# Appendix A

# Relevant Correspondence

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# Technical Memorandum

| | | | |
|---|---|---|---|
| To | Dave Doyle, NJDEP<br>Dave VanEck, NJDEP | Page | 1 of 6 |
| CC | Peter Sorge, JM Sorge<br>Dave Spader, ERFS<br>Prabal Amin, WESTON<br>Ralph Costa, WESTON<br>Talley Zhang, WESTON<br>Jody Overmyer, PPG<br>Mark Terril, PPG<br>Rich Feinberg, PPG<br>Shannon Gleason, AECOM | | |
| Subject | Additional Bedrock Investigation Scope of Work<br>for Groundwater Remedial Investigation<br>PPG Garfield Avenue Group<br>Hudson County Chromium Sites<br>Jersey City, New Jersey | | |
| From | Frederik Schuele, Bill Spronz, and Dan Folan | | |
| Date | April 21, 2021 | | |
| Attachments | Table 1 – Proposed Piezometers, Existing Monitoring Wells, and Screen Intervals<br>Table 2 – Existing Monitoring Wells Targeted for Groundwater Elevation Gauging<br>Figure 1 – Locations of Proposed Bedrock Wells and Piezometers<br>Figure 2 – Cross-sections A-A', B-B', and C-C'<br>Figure 3 – Existing Monitoring Wells Targeted for Groundwater Elevation Gauging | | |

**Introduction**

The purpose of this technical memorandum is to provide the New Jersey Department of Environmental Protection (NJDEP) with the proposed Scope of Work (SOW) for additional bedrock investigations being conducted as part of the groundwater Remedial Investigation (RI) at the PPG Garfield Avenue (GA) Group Sites in Jersey City, New Jersey. It is expected that this SOW will be discussed and finalized with NJDEP during technical meetings prior to implementation.

**Proposed Scope of Work**

The proposed bedrock investigation is being implemented in phases using an adaptive management approach pursuant to the revised draft groundwater RI report, which included the following recommendation (AECOM, 2021):

- A limited bedrock investigation should be conducted in the southwestern portion of Site 114 and northern portions of Site 143 and Site 132 to complete the delineation requirements of NJDEP's *Ground Water Technical Guidance for Site Investigation (SI), RI, Remedial Action (RA) Performance Monitoring* (NJDEP, 2012).

The objective of the proposed bedrock investigation is to complete the vertical and horizontal delineation of chromate chemical production waste (CCPW) impacts to bedrock groundwater within the area identified for further investigation in the revised draft groundwater RI report. A site plan showing existing bedrock wells and proposed well and piezometer locations within the investigation area is provided in **Figure 1**. This SOW includes the following activities:

- surface geophysics,
- installation and development of 2 open borehole bedrock wells on Site 114 and Site 132,
- deepening of 3 existing open borehole bedrock wells on Site 114,
- installation, construction, and development of 10 piezometers on Site 114,
- borehole geophysical logging of the newly installed bedrock wells and select existing bedrock wells,
- groundwater elevation gauging,
- packer installation at 114-MW52D,
- groundwater sampling,
- hydraulic testing of bedrock wells,
- FLUTe™ liner installation, and
- data evaluation.

The proposed SOW is consistent with NJDEP's *Ground Water Technical Guidance for SI/RI/RA* (NJDEP, 2012). All drilling work will be conducted in accordance with the New Jersey Administrative Code (N.J.A.C.) 7:9D regulations and will be supervised by an AECOM geologist.

**Surface Geophysics**

A seismic refraction geophysical survey will be performed across Site 114, Site 143, Site 132, Site 137, Site 133, and Site 135 to determine the depth and configuration of the bedrock surface. The seismic refraction data will be integrated with existing bedrock data to provide control points for the seismic survey and to develop an updated top of bedrock surface contour map. The seismic refraction data will also be used to define the contact between the Lockatong Formation and the diabase, if feasible, based on the anticipated velocity contrast between the two rock types.

**Bedrock Well Installation**

Based on borehole geophysical logging data collected at bedrock wells 114-MW4D, 114-MW6D, 114-MW52D, 114-MW57D, 114-MW61D, and 114-MW66D, the following preliminary conclusions can be made regarding the strike and dip of the bedrock:

- The strike direction of the bedding planes of the Lockatong Formation is approximately northeast-southwest. The mean dip azimuth for the bedding of the Lockatong Formation is approximately northwest, with a mean dip angle of approximately 14 to 15 degrees.
- The strike direction of the of the predominant fracture set of the Lockatong Formation is approximately northeast-southwest. The mean dip azimuth for the predominant fracture set of the Lockatong Formation is approximately northwest, with a mean dip angle of approximately 24 to 25 degrees.

- The mean dip azimuth for the predominant fracture set of the diabase is approximately east-southeast, with a mean dip angle of approximately 40 to 41 degrees.
- The strike and dip of the contact between the Lockatong Formation and the diabase is expected to be consistent with that of the bedding planes of the Lockatong Formation.

Based on this understanding of the bedrock structure and the findings presented in the revised draft groundwater RI report, two new bedrock wells will be installed using a combination of sonic and conventional drilling methods. The rationale for each proposed bedrock well is as follows:

- 114-MW71D: To provide horizontal delineation of the diabase unit and underlying Lockatong Formation, down-dip of the Lockatong Formation bedding (northwest) of impacted well 114-MW52D. A cross-section running approximately perpendicular to the predominant strike of the bedding of the Lockatong Formation illustrating the relationship between existing well 114-MW52D and proposed well 114-MW71D is presented on **Figure 2**. The cross-section alignment is shown on **Figure 1**.
- 114-MW72D: To provide horizontal delineation in the Lockatong Formation along the predominant northeast-southwest trending bedding plane strike south of impacted well 114-MW57D and to provide data to refine the bedrock surface south of Carteret Avenue.

At each proposed bedrock well location, the drilling program objectives are to:

- Conduct continuous soil logging from the ground surface to the top of bedrock using sonic drilling methods.
- Determine the top of meadow mat, top of till overlying bedrock, and the depth, thickness, and composition of the till.
- Perform continuous logging of the bedrock by collecting bedrock cores using 2-inch conventional coring equipment (HQ).
- Determine composition of bedrock, including Rock Quality Designation (RQD).
- Complete each borehole as a 6-inch diameter open borehole bedrock well which will be temporarily sealed with a Flute$^{TM}$ liner during data evaluation.

During advancement of the soil borings, continuous soil cores will be collected above and below the meadow mat using sonic drilling methods. Upon reaching the top of bedrock, sonic equipment will be used to advance the borehole through the weathered bedrock to competent rock. Conventional coring equipment will then be used to advance the borehole 10 feet into the competent bedrock. Once this target depth is reached, the borehole will be reamed to 10 inches in diameter and a 6-inch steel casing will be set 10 feet into the competent bedrock (inside the sonic casing) and grouted in place using a Portland cement and bentonite grout slurry. The annular space between the 6-inch steel casing and surrounding native materials will be filled to the ground surface with a Portland cement and bentonite grout slurry from the bottom up using a tremie pipe during removal of the sonic casing. The 6-inch steel casing will extend above the ground surface and the cement and bentonite slurry will be allowed to cure overnight. Additional bedrock coring will follow installation of the 6-inch steel casing.

Bedrock coring will be performed to a depth of up to twenty-five (25) feet below the bottom of the 6-inch steel casing using conventional coring equipment, except at 114-MW71D (situated down-dip along the Lockatong Formation bedding of impacted well 114-MW52D) where the borehole will be advanced up to 25 feet into the Lockatong Formation underlying the diabase. Final borehole depths will be selected based on field observations made during drilling. Upon completion of the bedrock coring, the bedrock borehole will be reamed out (if necessary) so that an open borehole (nominal 6-

inch diameter) remains below the bottom of the 6-inch steel casing. Each bedrock well will be completed with a 3-foot lockable steel stick up.

**Deepening of Existing Bedrock Wells**

Existing open borehole bedrock wells 114-MW4D and 114-MW61D will be deepened by extending each existing open borehole through the diabase and up to 25 feet into the underlying Lockatong Formation to complete horizontal delineation of groundwater impacts at the contact between the diabase and the Lockatong Formation and within the Lockatong Formation. This area is down-dip (along Lockatong Formation bedding) of wells 114-MW57D and 114-MW66D, where groundwater impacts have been identified in the Lockatong Formation. Cross-sections running perpendicular to strike of the bedding of the Lockatong Formation illustrating the relationship between well 114-MW4D and well 114-MW57D, and well 114-MW61D and well 114-MW66D, are presented on **Figure 2**. Cross-section alignments are shown on **Figure 1**. In addition, existing open borehole bedrock well 114-MW66D will be deepened by up to 25 feet to complete vertical delineation of groundwater impacts within the Lockatong Formation at this location. Final borehole depths will be selected based on field observations made during drilling.

**Piezometer Installation**

A total of 10 nested piezometers will be installed within 3 boreholes to assist in the evaluation of vertical hydraulic gradients between the intermediate, deep (including the basal till), weathered bedrock, and competent bedrock water-bearing zones. Piezometers will be paired with existing bedrock wells 114-MW52D, 114-MW57D, and 114-MW66D, and existing wells 114-MW52C (screened in basal till) and 114-MW57C (screened in weathered bedrock), all of which exhibited concentrations of Cr above the NJDEP Groundwater Quality Standard (GWQS).

Paired piezometers will be nested within 10-inch boreholes advanced using sonic drilling techniques. Piezometers will be constructed with either 1.5-inch or 2-inch polyvinyl chloride (PVC) casing and up to 5 feet of 10-slot PVC screen set in the target water-bearing zone for each location, as detailed in **Table 1**. At each boring location, the borehole will be advanced to bedrock and a minimum 5-foot confirmatory bedrock core will be collected using sonic drilling. Final screen intervals will be selected based on field observations made during drilling.

**Bedrock Well and Piezometer Development**

No sooner than 24 hours following installation, the newly installed bedrock wells, the deepened existing wells, and the piezometers will be developed using techniques in accordance with the NJDEP's Field Sampling Procedures Manual (NJDEP, 2005) (FSPM) and PPG's Field Sampling Plan/Quality Assurance Project Plan (FSP-QAPP) (AECOM, 2010).

**Borehole Geophysics**

Geophysical logging will be performed within the open borehole interval of each newly installed bedrock well, and at existing bedrock wells 114-MW4D, 114-MW61D, 114-MW66D following deepening of these boreholes. The following suite of borehole geophysics will be performed at each location:

- acoustic caliper,
- acoustic televiewer (ATV),
- optical televiewer (OTV),
- natural gamma,
- single-point-resistance (SPR),
- spontaneous potential (SP),
- fluid temperature,

- fluid resistivity,
- borehole deviation and
- high resolution heat pulse flow meter (ambient and pumping stressed conditions).

In addition, heat pulse flow meter logging will be performed at wells 114-MW52D and 114-MW57D to evaluate these wells under ambient conditions, as they were previously logged only under stressed conditions. Borehole geophysical logging will be performed by a qualified subcontractor with oversight by an AECOM geologist. Upon completion of the borehole geophysics program, the collected data will be evaluated and target zones for groundwater sampling within each borehole will be selected

**Groundwater Elevation Gauging**

A synoptic round of groundwater elevations will be collected from the newly installed bedrock wells and piezometers, and from select existing monitoring wells, to evaluate bedrock groundwater potentiometry and vertical hydraulic gradients between the intermediate, deep (including the basal till), weathered bedrock, and competent bedrock water-bearing zones. The existing monitoring wells targeted for groundwater elevation gauging are listed on **Table 2** and are identified on **Figure 3**.

**Packer Installation at 114-MW52D**

Additional groundwater sampling will be conducted at existing bedrock well 114-MW52D to complete vertical delineation within this borehole. Previously collected data at this location suggest that Cr-related impacts extend throughout the length of the open borehole, based on samples collected from 81 to 105 feet below top of well casing (ft btwc). However, geophysical logging indicates that flow into the borehole occurs primarily near the top of the open borehole, suggesting that lower intervals may not be impacted. Therefore, a single inflatable packer will be installed in the open borehole at 90 ft btwc to isolate the top and bottom of the borehole. The bottom portion of the borehole will then be purged up to 3 times and a low-flow sample will be collected from this interval in accordance with the NJDEP FSPM and the FSP-QAPP once the well recharges. The sample will be submitted to a NJ-certified laboratory for analysis of total phase hexavalent chromium ($Cr^{+6}$) and total phase Cr, and the data will be validated.

**Groundwater Sampling**

No sooner than 14 days following well development, the newly installed bedrock wells, the deepened portions of existing bedrock wells 114-MW4D, 114-MW61D, and 114-MW66D, and the piezometers completed within weathered bedrock (114-PZ-52WR and 114-PZ-66WR) will be sampled using low-flow sampling protocols as defined in the NJDEP FSPM and the FSP-QAPP.

Groundwater samples will be submitted to a NJ-certified laboratory for analysis of total phase hexavalent chromium ($Cr^{+6}$) and total phase Cr. Field parameters, including depth to water, pH, ORP, dissolved oxygen, temperature, specific conductivity, and turbidity will be recorded in field data collection sheets and groundwater samples will be collected upon stabilization of these parameters as defined in the FSP-QAPP. Upon completion of the groundwater sampling program, the collected data will be validated.

**Hydraulic Testing of Bedrock Wells**

Specific capacity testing will be performed at wells 114-MW52D, 114-MW53C, 114-MW57C, 114-MW57D, 114-MW61C, and 114-MW66D to estimate hydraulic conductivity values for the Lockatong Formation and the diabase in the area where concentrations of Cr above the NJDEP GWQS have been identified in bedrock groundwater. Pressure transducers will be installed in each of these wells during specific capacity testing conducted at individual wells to evaluate potential hydraulic connection between the wells.

### FLUTe™ Liner Installation

Upon completion of the investigation activities described above, the open borehole intervals of each bedrock well will be sealed using a FLUTe™ liner to allow for data evaluation without potential cross-contamination of the bedrock within the open borehole intervals.

### Data Evaluation

The data generated from this SOW will be evaluated and discussed with NJDEP. If the evaluation indicates that vertical and horizontal delineation of CCPW impacts to bedrock groundwater are complete, then PPG will prepare and submit to NJDEP an addendum to the revised groundwater RI report to document the investigation activities and associated findings and conclusions.

### Schedule

The field effort described herein will be executed pending approval of this SOW by NJDEP. The monthly groundwater Gantt chart submittals will reflect the investigation schedule.

### References

AECOM, 2010. *Field Sampling Plan/Quality Assurance Project Plan, PPG Non-Residential and Residential Chromium Sites*, Hudson County, New Jersey. June 2010.

AECOM, 2021. *Groundwater Remedial Investigation Report, Revised Draft*. March 24, 2021.

NJDEP, 2005. *Field Sampling Procedures Manual*. August 2005.

NJDEP, 2012. *Groundwater Technical Guidance: Site Investigation, Remedial Investigation, Remedial Action Performance Monitoring*, Site Remediation Program, April 3, 2012.

# Tables

## Table 1. Proposed Piezometers, Existing Monitoring Wells, and Screen Intervals

| Well ID | Screened Zone | Status | Casing Diameter (inches) | Top of Screen (ft bgs) | Bottom of Screen (ft bgs) |
|---|---|---|---|---|---|
| 114-PZ-52I | Intermediate | Proposed | 1.5 | 38 | 41.5 |
| 114-PZ-52D | Deep | Proposed | 1.5 | 55 | 56 |
| 114-MW52C | Basal Till | Existing | 2 | 68 | 73 |
| 114-PZ-52WR | Weathered BR | Proposed | 2 | 73 | 74 |
| 114-MW52D | BR (open borehole) | Existing | 6 | 80 | 105 |
| 114-PZ-57I | Intermediate | Proposed | 1.5 | 26 | 31 |
| 114-PZ-57D | Deep | Proposed | 1.5 | 53 | 58 |
| 114-PZ-57T | Basal Till | Proposed | 1.5 | 66.5 | 67.5 |
| 114-MW57C | Weathered BR | Existing | 2 | 68.5 | 70 |
| 114-MW57D | BR (open borehole) | Existing | 6 | 85 | 112.5 |
| 114-PZ-66I | Intermediate | Proposed | 1.5 | 30 | 35 |
| 114-PZ-66D | Deep | Proposed | 1.5 | 43.5 | 46 |
| 114-PZ-66T | Basal Till | Proposed | 1.5 | 71 | 74 |
| 114-PZ-66WR | Weathered BR | Proposed | 2 | 78 | 80 |
| 114-MW66D | BR (open borehole) | Existing | 6 | 90 | 115 |

**Notes:**
BR = Bedrock
ft bgs = Feet below ground surface

## Table 2. Existing Monitoring Wells Targeted for Groundwater Elevation Gauging

| Well ID | Screened Zone | Total Depth (ft) | Screened Interval (ft) | Top of Inner Casing Elevation (ft NAVD88) | Inner Well Diameter (inches) |
|---|---|---|---|---|---|
| 114-MW16A | Shallow | 19 | 2 - 17 | 15.81 | 2 |
| 114-MW16B | BR | 35.5 | 30.5 - 35.5 | 15.53 | 2 |
| 114-MW45C | Basal Till | 76 | 67 - 71 | 13.22 | 2 |
| 114-MW4D | BR | 107 | 87 - 107 | 12.97 | 6 |
| 114-MW52C | Basal Till | 79 | 68 - 73 | 15.85 | 2 |
| 114-MW52D | BR | 105 | 80 - 105 | 15.64 | 6 |
| 114-MW54C | Basal Till | 84 | 72 - 77 | 12.71 | 2 |
| 114-MW56C | Basal Till | 80 | 67 - 72 | 16.04 | 2 |
| 114-MW57C | Weathered BR | 75 | 68.5 - 70 | 14.55 | 2 |
| 114-MW57D | BR | 112.5 | 85 - 112.5 | 14.70 | 6 |
| 114-MW61C | Basal Till/Weathered BR | 75 | 62.5 - 67.5 | 16.67 | 2 |
| 114-MW61D | BR | 109 | 85 - 109 | 16.59 | 6 |
| 114-MW66D | BR | 115 | 90 - 115 | 16.20 | 6 |
| 114-MW67C | Deep | 58 | 50 - 56 | 14.67 | 6 |
| 114-MW68C | Deep | 58 | 50 - 56 | 15.75 | 6 |
| 114-MW6D | BR | 111 | 86 - 111 | 12.69 | 6 |
| 114-MW7D | BR | 90 | 85 - 90 | 11.92 | 2 |
| 114-P1B-MW103D | Deep | 56 | 51 - 56 | 16.73 | 2 |
| 114-P1B-MW103S | Shallow | 17 | 7 - 17 | 14.24 | 4 |
| MW6C | Deep | 65 | 55 - 65 | 12.90 | 2 |

**Notes:**
BR = bedrock
ft = feet
NAVD88 = North American Vertical Datum of 1988 (Vertical)

# Figures

File: G:\910 CAD\20 SHEETS\GW\Site 114 Bedrock Investigation\December 2020\2021-04-08 Site 114 Bedrock SOW.dwg Layout: BR SOW - Figure 1 User: frederik.schuele Plotted: Apr 20, 2021 - 8:23pm Xref's:

FRENCH PARK WAREHOUSE

JERSEY AUTO REPAIR

FORREST STREET

FORREST S PROPERT

HALLADAY STREET

CARTERET AVENUE

Site 114

Site 143

Site 132

114-MW50C -48.6
114-BSB-02 -48.0
114-MW62C -58.0
114-MW63C -50.5
114-MW6D -64.3
114-MW45C -59.5
114-MW51C -64.8
114-MW25C -44.6
SB-24A -67.3
114-MW67C -69.8
114-MW65C -53.6
114-MW55C -56.9
114-BSB-03 -62.1
114-MW52D -54.1
114-MW52C -59.0
114-MW61C -49.0
114-MW61D -48.6
114-MW66D -62.9
EF-37 -3.6
GT-15 -38.8
GT-14 -22.7
114-MW16B -2.9
114-MW53C -31.6
114-MW68C -59.2
114-MW56C -58.0
GT-9C -53.5
114-MW7D -64.1
MW-4F -64.1
114-MW58C -62.8
114-MW54C -66.2
SB-57 -61.3
GT-10A -54.4
114-MW22B -22.9
114-MW4D -74.1
114-MW57D -54.3
114-MW57C -55.1
114-MW69C -57.2
B-2 -56.3
SB-58 -55.9
114-MW72D
B-1 -61.2
SB-23 -73.0
114-MW59C -80.4
114-MW64C -82.2
114-MW20C -71.6
137-MW1C -59.5
SB-25 -80.8
114-MW60C -108.5
SB-30 -65.7

114-MW71D
114-PZ-52I/D/WR
114-PZ-66I/D/T/WR
114-PZ-57I/D/T
114-MW72D

A A' B B' C C'

## LEGEND

- GARFIELD AVENUE GROUP SITES
- HUDSON COUNTY PARCELS
- FORMER MORRIS CANAL
- REMOVED SHEET PILE
- IN PLACE SHEET PILE
- RAILROAD TRACKS
- -90 TOP OF BEDROCK SURFACE (ELEVATION IN FEET NAVD88)
- -90 INFERRED TOP OF BEDROCK SURFACE (ELEVATION IN FEET NAVD88)
- INFERRED LIMIT OF THE DEEP WATER-BEARING ZONE
- INVESTIGATION LOCATION

***Label:***

135-MW1C
-93.1
Location ID
Top of Bedrock Elevation (feet NAVD88)

- EXISTING BEDROCK WELL
- PROPOSED BEDROCK WELL
- PROPOSED NESTED PIEZOMETERS

**ROCK TYPE**

- IGNEOUS - DIABASE
- INDETERMINATE
- SEDIMENTARY
- SEDIMENTARY - LOCKATONG
- SEDIMENTARY - STOCKTON

**Map Sources:**

1. New Jersey State Plane North American Datum 1983 Coordinates, U.S. Survey Feet.
2. Vertical Elevations are in North American Vertical Datum of 1988 (NAVD88), U.S. Survey Feet.
3. Parcels of Hudson County, New Jersey State Plane NAD83, Hudson County Department of Planning, Jersey City, New Jersey, May 21, 2013.

**Notes:**

1. Data used to develop the interpreted top of bedrock surface was obtained from historical investigations conducted by PPG and Public Service Electric and Gas Company (PSEG), as well as bedrock investigations and monitoring well installations on Site 114 as part of the groundwater remedial investigation.
2. The bedrock type for 114-MW7D, B-1, and B-2 is noted as indeterminate based on review of Project Area data and published bedrock geology for this area. Information for the bedrock interval noted on the boring logs for these wells is inconsistent with the information compiled for the Project Area.

AECOM

50 0 100
GRAPHIC SCALE IN FEET

PPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY

DATE: 04/13/21 | DRWN: FS

# LOCATIONS OF PROPOSED BEDROCK WELLS AND PIEZOMETERS

FIGURE 1

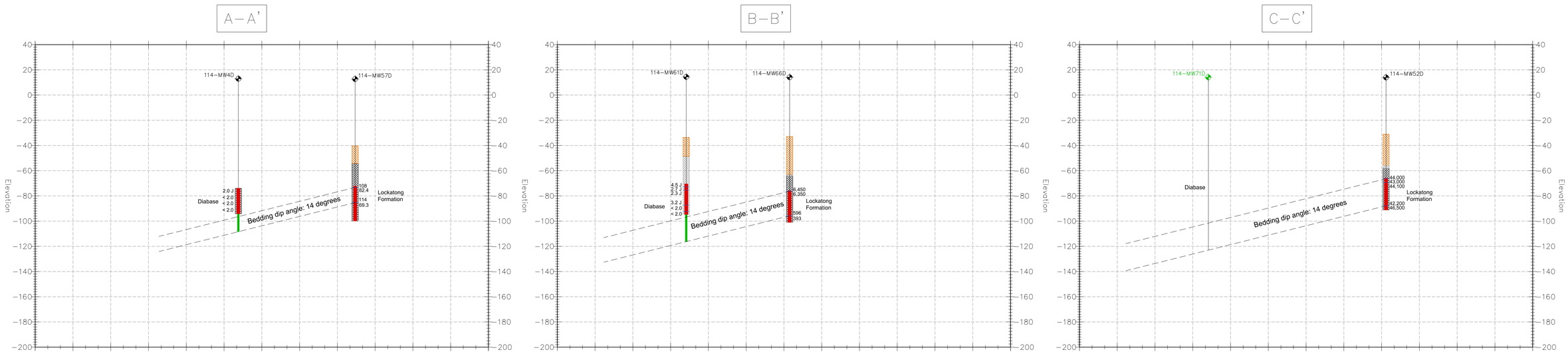


LEGEND

| | | | |
|---|---|---|---|
| 114–MW25C | EXISTING BEDROCK WELL | | BASAL TILL |
| 114–MW25C | PROPOSED BEDROCK WELL | | WEATHERED BEDROCK |
| | WELL CASING | | COMPETENT BEDROCK |
| | OPEN BOREHOLE | | INFLOWING FRACTURE TARGETED FOR SAMPLING |
| | PROPOSED OPEN BOREHOLE EXTENSION | | |
| 94,100 | Cr CONCENTRATION IN UNITS OF MICROGRAMS PER LITER | | |

NOTES:

1. ELEVATIONS ARE SHOWN IN FT NAVD88.
2. ALL RESULTS PRESENTED ARE FROM THE ANALYSIS OF UNFILTERED GROUNDWATER SAMPLES

ACRONYMS:

| | |
|---|---|
| Cr | TOTAL CHROMIUM |
| FT NAVD88 | FEET IN NORTH AMERICAN VERTICAL DATUM OF 1988 |

AECOM

PPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY

DATE: 04/09/2021 | DRWN: FS

**CROSS-SECTIONS A-A', B-B', AND C-C'**

**FIGURE 2**

File: G:\910 CAD\20 SHEETS\GW\Site 114 Bedrock Investigation\December 2020\2021-04-08 Site 114 Bedrock SOW.dwg Layout: BR SOW - Figure 2 User: frederik.schuele Plotted: Apr 15, 2021 - 11:51am Xref's:

1 inch = 50 feet

Site 186

Site 199

Site 114

Site 143

Site 132

Site 137

Site 135

Site 133 West

Site 133 East

NJ TRANSIT LIGHT RAIL

BERRY LANE PARK

FRENCH PARK WAREHOUSE

JERSEY AUTO REPAIR

FORREST ST PROPERTIES

TEN WEST APPAREL

AL SMITH MOVING & STORAGE

HALSTED

EDEN WOOD REALTY

GARFIELD AVENUE

HALLADAY STREET

FORREST STREET

CARTERET AVENUE

PACIFIC AVENUE

CAVEN POINT AVENUE

FORREST-SUMP-W

FORREST-SUMP-E

FORREST-SUMP-S

**Notes:**
1. New Jersey State Plane North American Datum 1983 Coordinates (NAD83), U.S. Survey Feet.
2. Parcels of Hudson County, New Jersey State Plane NAD83, Hudson County Department of Planning, Jersey City, New Jersey, May 21, 2013.
* - Wells 114-P1-IRM-27D, 114-P1-IRM-40D, 114-P1-IRM-5I, and 114-P1-MW-2I were installed by ARCADIS for the Phase 1 IRM on Site 114. These wells were used for the groundwater RI in place of originally proposed wells 114-P2B3-MW102D, 114-P2B1-MW103D, 114-P1B-MW105I, and 114-P1B-MW106I, respectively.
** - Phase 1 IRM wells 114-P1-IRM-36D and 114-P1-MW-2D were installed in locations where the depth to the bedrock surface is less than 45 feet below ground surface. Therefore, these wells are classified as intermediate zone wells.
*** - Well 114-MC-EW103 was reportedly damaged during site activities after the completion of the groundwater RI.

**Abbreviations:**
DNAPL = Dense Non-Aqueous Phase Liquid
GW = Groundwater
HPT = Hydraulic Profiling Tool
IRM = Interim Remedial Measure
NJ = New Jersey
RI = Remedial Investigation
ST = Street
VAP = Vertical Aquifer Profiling

Jersey City, NJ

**LEGEND**

- GARFIELD AVENUE GROUP BOUNDARY
- HUDSON COUNTY PARCELS
- FORMER MORRIS CANAL
- REMOVED SHEETPILE
- IN-PLACE SHEETPILE
- RAILROAD
- FENCE DIAGRAM ALIGNMENTS
- DENOTES WELL TARGETED FOR GROUNDWATER ELEVATION GAUGING

**MONITORING WELLS**
- SHALLOW
- INTERMEDIATE
- DEEP
- BEDROCK
- TILL / WEATHERED BEDROCK
- LOWER DEEP ZONE WELL
- LOWER DEEP ZONE SOIL BORING (WELL NOT INSTALLED)
- FRACTURE PILOT TEST WELL
- SUMPS
- DECOMMISSIONED/ABANDONED/ INACTIVE WELLS

**TEMPORARY SCREENING POINTS**
- DNAPL DELINEATION (2017)
- GROUNDWATER RI (2017 - 2018)
- FRACTURE PILOT TEST (2019)
- PHASE II IRM (2019)
- PRE-DESIGN INVESTIGATION VAP (2015)
- FORREST STREET HPT/VAP INVESTIGATION (2020)
- PHASE III IRM (2020)
- SITE 199 HPT/VAP INVESTIGATION (2020)
- SONIC SOIL BORINGS (2019)
- GEOTECHNICAL SOIL BORINGS INSTALLED BY CME ASSOCIATES (2019)

**PHASE I IRM WELLS**
- SHALLOW
- INTERMEDIATE
- DEEP

0 100 200 Feet

N W E S

PPG
GARFIELD AVENUE GROUP
JERSEY CITY, NEW JERSEY
60550261

DATE: 3/5/2021 | DRAWN BY: SR | CHECKED BY: FS

AECOM

# FIGURE 3
# EXISTING MONITORING WELLS TARGETED FOR GROUNDWATER ELEVATION GAUGING

Last Saved By: ravis
Path: Q:\920 GIS\MXD\Groundwater RI\RI\Fig 4-1 Site Plan and MWs.mxd

## Miller, Tina

**From:** VanEck, David [DEP] <David.VanEck@dep.nj.gov>
**Sent:** Wednesday, December 8, 2021 11:15 AM
**To:** Schuele, Frederik
**Cc:** Mark Pietrucha; Overmyer, Jody; Feinberg, Richard [C]; Gleason, Shannon; Spronz, William
**Subject:** [EXTERNAL] RE: PPG - GW RI Bedrock Well Sampling Protocol

Frederick,

Thank you for the explanation and supporting data in Table B-1. Considering the low flow observed from the inflowing fractures, collection of low-flow groundwater samples directly at these inflowing fractures, rather than above and below as recommended by the Guidance, is reasonable. The NJDEP hereby approves the request. (I will upload this correspondence in NJEMS and notify the Weston team.)

Dave

...

David Van Eck, Supervising Geologist
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Nothing in this correspondence affects your potential liability and obligations to the State Trustee, the Department or its Commissioner regarding natural resource injuries or damages.

---

**From:** Schuele, Frederik <frederik.schuele@aecom.com>
**Sent:** Tuesday, December 7, 2021 4:50 PM
**To:** VanEck, David [DEP] <David.VanEck@dep.nj.gov>
**Cc:** Mark Pietrucha <mpietrucha@woodardcurran.com>; Overmyer, Jody <overmyer@ppg.com>; Feinberg, Richard [C] <feinberg@ppg.com>; Gleason, Shannon <Shannon.Gleason@aecom.com>; Spronz, Bill <Bill.Spronz@aecom.com>
**Subject:** [EXTERNAL] PPG - GW RI Bedrock Well Sampling Protocol

Hi Dave.

As discussed earlier today, AECOM on behalf of PPG intends to collect a single low-flow sample at each inflowing fracture identified via borehole geophysical logging to characterize groundwater quality within the bedrock wells recently completed as part of the ongoing groundwater Remedial Investigation for the Garfield Avenue (GA) Group Sites in Jersey City, New Jersey. This sampling protocol will be applied to the open borehole intervals at newly installed bedrock wells 114-MW71D and 114-MW72D and for the deepened intervals for the existing bedrock wells 114-MW4D, 114-MW61D, and 114-MW66D. As the per bedrock groundwater investigation Scope of Work submitted to New Jersey Department of Environmental Protection on April 21, 2021, the collected samples will be analyzed for total phase hexavalent chromium (Cr+6) and total phase Chromium (Cr).

This sampling protocol deviates from the requirements of Appendix C of the Site Remediation Program Groundwater Technical Guidance. The guidance recommends collecting samples above and below the inflowing fracture in an open-hole section of bedrock, rather than directly at the fracture. The contaminant concentration is then calculated based on the measured vertical flow above and below the inflowing fracture and contaminant concentrations in samples collected above and below the inflowing fracture.

The requirements of Appendix C were previously followed during implementation of the groundwater RI for the collection of samples from bedrock wells in February 2021. Results from these activities were included in Appendix B of the final groundwater RI report submitted to NJDEP on August 31, 2021 and are attached to this email (see attached Table B-1). These results demonstrate that there is no significant difference between the concentrations of samples collected above and below inflowing fractures and the calculated concentration for the fracture. The flow observed in the newly completed and deepened bedrock wells is very low, similar to the low flow rates observed in the previously completed bedrock wells. We expect that there will be no significant difference between the concentrations for samples collected above and below inflowing fractures and the calculated concentration for the associated inflowing fracture due to the low flow rates and similar conditions in the new wells. We have concluded that collection of low-flow groundwater samples directly at the inflowing fractures is an appropriate method for sampling the new bedrock wells, rather than sampling above and below the fracture as recommended by the Guidance.

Best regards,

---

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# Table B-1
# Bedrock Fracture Sampling Results
# Groundwater Remedial Investigation Report
# Garfield Avenue Group Sites
# PPG, Jersey City, New Jersey

| Well ID | Top of Casing Elevation (ft NAVD88) | Depth Interval (ft bTOC) | Elevation (ft NAVD88) | Flow (gpm) | Chromium[1,2] (ug/L) | Visual Observation During Sampling |
|---|---|---|---|---|---|---|
| 114-MW52D | 15.64 | 81 | -65.36 | 0.02 | 44,000 | Green |
| Calculated concentration at inflowing fracture | 15.64 | 82 | -66.36 | - | 45,000 | - |
| 114-MW52D | 15.64 | 83.5 | -67.86 | 0.01 | 43,000 | Green |
| Calculated concentration at inflowing fracture | 15.64 | 85 | -69.36 | - | 43,000 | - |
| 114-MW52D | 15.64 | 88 | -72.36 | 0 | 44,100 | Green |
| No flow | - | 88-102 | - | - | - | - |
| 114-MW52D | 15.64 | 102 | -86.36 | 0.01 | 42,200 | Green |
| Calculated concentration at inflowing fracture | 15.64 | 103.5 | -87.86 | - | 42,200 | - |
| 114-MW52D | 15.64 | 105 | -89.36 | 0 | 46,500 | Green |
| 114-MW57D | 14.70 | 87.25 | -72.55 | 0.04 | 108 | Clear |
| Calculated concentration at inflowing fracture | 14.70 | 88 | -73.3 | - | 108 | - |
| 114-MW57D | 14.70 | 90 | -75.3 | 0 | 82.4 | Clear |
| No flow | - | 90-98 | - | - | - | - |
| 114-MW57D | 14.70 | 98 | -83.3 | 0.01 | 114 | Clear |
| Calculated concentration at inflowing fracture | 14.70 | 100 | -85.3 | - | 114 | - |
| 114-MW57D | 14.70 | 102 | -87.3 | 0 | 69.3 | Clear |
| 114-MW61D | 16.59 | 88 | -71.41 | 0.04 | 5 | Clear |
| Calculated concentration at inflowing fracture | 16.59 | 89.5 | -72.91 | - | 6 | - |
| 114-MW61D | 16.59 | 91 | -74.41 | 0.02 | 3 | Clear |
| Calculated concentration at inflowing fracture | 16.59 | 92 | -75.41 | - | 3 | - |
| 114-MW61D | 16.59 | 93.5 | -76.91 | 0 | 2 | Clear |
| No flow | - | 93.5-102 | - | - | - | - |
| 114-MW61D | 16.59 | 102 | -85.41 | 0.01 | 3 | Clear |
| Calculated concentration at inflowing fracture | 16.59 | 104 | -87.41 | - | 3 | - |
| 114-MW61D | 16.59 | 106.5 | -89.91 | 0 | 2 | Clear |
| Calculated concentration at inflowing fracture | 16.59 | 109 | -92.41 | - | 2 | - |
| 114-MW61D | 16.59 | 110 | -93.41 | 0.01 | 2 | Clear |
| 114-MW66D | 16.20 | 92 | -75.8 | 0.05 | 6,450 | Light Green |
| Calculated concentration at inflowing fracture | 16.20 | 92.5 | -76.3 | - | 6,475 | - |
| 114-MW66D | 16.20 | 94 | -77.8 | 0.01 | 6,350 | Light Green |
| Flow up borehole | - | 94-110 | - | 0.01 | - | - |
| 114-MW66D | 16.20 | 110 | -93.8 | 0.01 | 596 | Clear |
| Calculated concentration at inflowing fracture | 16.20 | 112 | -95.8 | - | 596 | - |
| 114-MW66D | 16.20 | 114 | -97.8 | 0 | 393 | Clear |

**Notes:**

[1]Results reported are for total fraction (unfiltered)

[2]Concentrations at inflowing fractures calculated in accordance with Appendix C of Groundwater Technical Guidance: Site Investigation, Remedial Investigation, Remedial Action Performance Monitoring, Site Remediation Program, NJDEP, April 3, 2012.

For non-detected results, the laboratory detection limit was used as the sample chromium concentration for calculation of chromium concentration at target inflowing fracture.

The following sample intervals exhibited non-detect chromium levels, with a reporting limit of 2.0 micrograms per liter: 114-MW61D at 106.5 ft btc and 114-MW61D at 110 ft btc.

For depth intervals where no flow was detected by the heat pulse flow meter but the geophyiscal logging results indicated possible minor flow into the borehole, a flow rate of of 0.01 gallons per minute was assigned to the interval.

**Abbreviations:**

bTOC - below top of inner casing
ft - feet
gpm - gallons per minute
NAVD88 - North American Vertical Datum of 1988
NJDEP - New Jersey Department of Environmental Protection
ug/L - micrograms per liter

## Gleason, Shannon

| | |
|---|---|
| From: | Gleason, Shannon |
| Sent: | Tuesday, January 25, 2022 5:41 PM |
| To: | 'Doyle, David'; David.VanEck@dep.nj.gov; 'James D. Ray' (Jray@mdmc-law.com); 'Nancy Colson (ncolson@mdmc-law.com)' (ncolson@mdmc-law.com); rriccio@mdmc-law.com; RobSchmitt@UHREIT.com; 'FioreC@JCNJ.org'; Chris Daggett; 'psorge@jmsorge.com' (psorge@jmsorge.com); 'dspader@erfs.com'; pbaker@jcnj.org; BDoshi@MSBNJ.com; ETomaszewski@MSBNJ.com; Costa, Ralph; Amend-Babcock, Laura; mclemente@jcnj.org; Amin, Prabal |
| Cc: | Overmyer, Jody; Terril, Mark; 'Feinberg, Richard [C]'; Laguzza, Dorothy M.; Joseph Lagrotteria; Schuele, Frederik; Spronz, William; Ravi, Shree; Mark Pietrucha |
| Subject: | PPG GA Group Groundwater - Groundwater RI Bedrock Investigation |
| Attachments: | PPG GW RI Bedrock Table_Figure_Attachment.pdf |
| Categories: | Yellow Category |

As discussed during the January 19, 2022 Principals' Call, and on behalf of PPG, AECOM is providing the following for information purposes, only:

- Attached file, which includes a table (Table 1) summarizing the bedrock well installation and sampling data from the Sept-Dec 2021 Bedrock Field Investigation and a figure (Figure 1) showing the bedrock well locations; and
- Summary of additional Bedrock Field Investigation to occur in 2022 (below).

*2022 Bedrock Field Investigation Summary*

Bedrock Well Installation, Development, and Geophysics: One new bedrock well (114-MW73D) will be installed on Site 132 using sonic and/or conventional drilling methods to provide horizontal delineation in the Lockatong Formation along the predominant northeast-southwest trending bedding plane strike south of impacted well 114-MW72D. No sooner than 24 hours following installation, the newly installed bedrock well will be developed using techniques in accordance with the NJDEP's Field Sampling Procedures Manual (NJDEP, 2005) (FSPM) and PPG's Field Sampling Plan/Quality Assurance Project Plan (FSP-QAPP) (AECOM, 2010). Geophysical logging will be performed within the open borehole interval of the newly installed bedrock well. The same suite of borehole geophysics will be performed at each location as was conducted for the Sept-Dec 2021 Bedrock Field Investigation.

Groundwater Elevation Gauging and Sampling: No sooner than 14 days following well development, the newly installed open hole bedrock well will be sampled using low-flow sampling protocols as defined in the NJDEP FSPM and the FSP-QAPP. Groundwater samples will be submitted to a NJ-certified laboratory for analysis of total phase Cr+6 and total phase Cr. Field parameters, including depth to water, pH, ORP, dissolved oxygen, temperature, specific conductivity, and turbidity will be recorded on field data collection sheets and groundwater samples will be collected upon stabilization of these parameters as defined in the FSP-QAPP. Upon completion of the groundwater sampling program, the collected data will be validated. Prior to sampling activities, a synoptic round of groundwater elevations will be collected from the newly installed bedrock well and existing bedrock wells to evaluate bedrock groundwater potentiometry. The wells targeted for groundwater elevation gauging include: 114-MW16B, 114-MW4D, 114-MW52D, 114-MW57D, 114-MW61D, 114-MW66D, 114-MW6D, 114-MW7D, 114-MW71D, 114-MW72D, and 114-MW73D.

Resampling of Bedrock Well 114-MW61D: The open borehole interval at well 114-MW61D was extended to 135 feet (ft) below ground surface (bgs) in November 2021 to complete horizontal delineation of groundwater impacts at the contact between the diabase and the Lockatong Formation, and within the Lockatong Formation, in the area down-dip (along Lockatong Formation bedding) of well 114-MW66D where groundwater impacts have been identified in the Lockatong Formation. Due to instability of the borehole (highly weathered/fractured rock causing borehole cave-in), well 114-

MW61D was completed with 2-inch polyvinyl chloride (PVC) casing and a 25-foot section of 10-slot PVC screen set from 110 to 135 ft bgs. Based on samples collected from well 114-MW61D in February 2021 (from 88 to 110 ft below top of well casing [btwc]) and in December 2021 (from 117 to 135 ft btwc), all intervals sampled exhibit Cr concentrations below the GWQS for Cr of 70 µg/L except for one field duplicate sample collected at 130.8 ft btwc where Cr was detected at 88.3 µg/L. Based on these findings, the result for the 130.8 depth interval seems anomalous and this interval will be re-sampled and compliance averaging will be used to complete delineation at this location. Well 114-MW61D will be sampled at 130.8 ft btwc using low-flow sampling protocols as defined in the NJDEP FSPM and the FSP-QAPP. Two samples will be collected, one month apart, to allow for compliance averaging. Groundwater samples will be submitted to a NJ-certified laboratory for analysis of total phase Cr. Field parameters, including depth to water, pH, ORP, dissolved oxygen, temperature, specific conductivity, and turbidity will be recorded in field data collection sheets and groundwater samples will be collected upon stabilization of these parameters as defined in the FSP-QAPP.

Multi-port Water FLUTe™ System Installation: Multi-port Water FLUTe™ systems will be installed at bedrock wells 114-MW52D, 114-MW66D, and 114-MW72D to conduct depth-discrete multilevel groundwater sampling within the boreholes to complete vertical delineation at these locations. Previously collected data at well 114-MW52D suggested that Cr-related impacts extended throughout the length of the open borehole, based on samples collected in February 2021 from 81 to 105 feet below top of well casing (ft btwc) which exhibited Cr concentrations ranging from 42,200 to 46,500 micrograms per liter (µg/L). However, a sample collected at 114-MW52D in December 2021 from a depth of 104 ft btwc, after installation of a packer at 100 ft btwc to isolate the bottom 5-foot section of the open borehole, exhibited a Cr concentration of 5,630 µg/L demonstrating that Cr concentrations attenuate with depth within the borehole. During sampling of the packered interval, it was difficult to fully purge the isolated portion of the open borehole due to the extremely low yield for this portion of the well (heat pulse flow meter logging showed no measurable flow in the borehole below 90 feet). Therefore, it is likely that the sample collected at 104 ft btwc exhibited residual Cr concentrations associated with impacted groundwater remaining within the borehole which could not be removed during purging. A similar condition is expected at wells 114-MW66D and 114-MW72D, where heat pulse flow meter logging showed no measurable flow at 114-MW66D below 125 feet and no measurable flow at 114-MW72D below 106 feet. The Multi-port Water FLUTe™ systems will be installed to allow for the collection of groundwater samples at fracture intervals identified within the boreholes based on geophysical logging and at the bottom of each borehole. The collected samples will be submitted to a NJ-certified laboratory for analysis of total phase Cr+6 and total phase Cr and the data will be validated.

Contingency Bedrock Well Installation to Achieve Vertical Delineation: Should the Multi-port Water FLUTe™ program not achieve vertical delineation, one new bedrock well will be installed next each of the existing bedrock wells 114-MW52D, 114-MW66D, and 114-MW72D for a total of three new bedrock wells (114-MW74D, 114-MW75D, 114-MW76D). Proposed contingency well locations are depicted on Figure 1.

Data Evaluation: The data generated will be evaluated. If the evaluation indicates that vertical and horizontal delineation of CCPW impacts to bedrock groundwater are complete, then PPG will prepare an addendum to the revised groundwater RI report to document the investigation activities and associated findings and conclusions.

Anticipated Schedule:

- Installation of the Multi-port Water FLUTe™ System is expected in March 2022;
- Installation of new bedrock wells, geophysics, elevation gauging and groundwater sampling are expected to occur between April and June 2022;
- Laboratory analysis and data validation are expected to occur in July 2022; and
- Preparation and submittal of the RIR Addendum for Bedrock is expected by the end of August 2022.

References

AECOM, 2010. Field Sampling Plan/Quality Assurance Project Plan, PPG Non-Residential and Residential Chromium Sites, Hudson County, New Jersey. June 2010.
AECOM, 2021. Groundwater Remedial Investigation Report, Final. August 31, 2021.
NJDEP, 2005. Field Sampling Procedures Manual. August 2005.

NJDEP, 2012. Groundwater Technical Guidance: Site Investigation, Remedial Investigation, Remedial Action Performance Monitoring, Site Remediation Program, April 3, 2012.

**Shannon Gleason**, P.E.
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**Note upcoming PTO: Jan 27 – Feb 4**

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**Table 1. 2021 Bedrock Investigation Summary**
**Groundwater Remedial Investigation**
**Garfield Avenue Group Sites**
**Jersey City, New Jersey**

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| Well ID | Well Installation/ Deepening | Activity | Total Depth (ft bgs) | Top of Till (ft bgs) | Top of Weathered Bedrock (ft bgs) | Top of Competent Bedrock (ft bgs) | Till Thickness (ft) | Rock Type | 6-inch Steel Casing Bottom (ft bgs) | Open Borehole Interval (ft bgs) | Open Borehole Length (feet) | Flute Liner Installed | 2-inch PVC Screened Interval (ft bgs) | Well Development | Well Development Final Turbidity (NTU) | Volume Removed (gal) | Well Development Observations | Sample Date | Turbidity (NTU) | Sampling Observations | Sample Depth (ft btwc) | Groundwater Analytical Results December 2021 (ug/L) Cr | Groundwater Analytical Results December 2021 (ug/L) $Cr^{+6}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 114-MW71D | 9/28-10/19 2021 | New Well Fall 2021 | 141 | 55 | 66 | NE | 11 | Diabase: 66-108 ft bgs<br>Lockatong: 108-115 ft bgs<br>Diabase: 115-121<br>Lockatong: 121-135<br>Diabase: 135-138<br>Lockatong: 138-141 | 115 | 115-141 | 26 | NA | NA | 11/8-11/16 2021 | 3.77 | 340 | Clear, no odor | 12/14/21<br>12/14/21<br>12/14/21<br>12/15/21<br>12/21/21 | 0.80<br>1.28<br>0.42<br>1.92<br>5.62 | Clear<br>Clear<br>Clear<br>Clear<br>Clear | 119<br>126<br>132.5<br>137<br>141.5 | 42.9<br>53.5<br>54.8<br>44.2<br>29.0 | 17.3<br>25.2<br>19.5<br>21.9 UB<br>8.1 U |
| 114-MW72D | 10/20-11/01 2021 | New Well Fall 2021 | 125 | 57 | 85 | 95 | 28 | Lockatong | 100 | 100-125 | 25 | NA | NA | 11/11-11/12 2021 | 3.69 | 530 | Pale yellow | 12/15/21<br>12/15/21<br>12/16/21 | 2.50<br>3.46<br>2.20 | Yellow<br>Yellow<br>Yellow | 103.5<br>113.5<br>125 | **2,200**<br>**2,250**<br>**2,580** | 2,400<br>2,490<br>2,480 J+ |
| 114-PZ-52WR | 11/23/21 | New Well Fall 2021 | 75 | 45 | 70 | 75 | 25 | Lockatong | NA | NA | NA | NA | 70-74 | 11/30-12/1 2021 | 3.77 | 140 | Green | 12/17/21 | 4.29 | Light yellow | 74 | **30,400** | 27,100 |
| 114-PZ-66WR | 11/18/21 | New Well Fall 2021 | 85 | 50 | 80 | 84 | 30 | Lockatong | NA | NA | NA | NA | 80.2-84.2 | 11/22/2021 | 1.12 | 50 | Bright yellow | 12/16/21 | 8.98 | Yellow | 82.2 | **195,000** | 198,000 J+ |
| 114-MW4D | 11/8-11/11 2021 | Deepening of existing borehole | 125 | -- | 87 | NE | -- | Diabase: 87-120 ft bgs<br>Lockatong: 120-125 ft bgs | 87 | 87-122<br>(3 ft of material in bottom of well) | 35 | 1/3/2022 | NA | 11/15-11/23 2021 | 74.2 | 510 | Brown, no odor | 12/16/21<br>12/16/21<br>12/17/21<br>12/17/21<br>12/17/21 | 9.55<br>9.87<br>9.8<br>4.8<br>9.6 | Clear<br>Clear<br>Clear<br>Clear<br>Clear | 106.3<br>112.3<br>118.8<br>122.3<br>123.8 | 2.5 J<br>3.0 J<br>2.6 J<br>3.0 J<br>2.9 J | 8.1 U<br>8.1 U<br>8.1 U<br>8.1 U<br>8.1 U |
| 114-MW61D | 11/12-11/29 2021 | Deepening of existing borehole | 135 | 48 | 63 | NE | 15 | Diabase: 63-117 ft bgs<br>Lockatong: 117-135 ft bgs | 85 | 85-135 | 50 | NA | 110-135<br>(25 ft) | 11/15-11/17 2021<br>(open borehole)<br><br>12/1/21<br>(PVC well) | Over range<br><br>8.80 | 230<br><br>34 | Brown/orange, gray<br><br>Clear, no odor | 12/15/21<br>12/15/21<br>12/15/21<br>12/16/21<br>12/16/21 | 2.45<br>8.84<br>8.31<br>8.73<br>5.32 | Clear<br>Clear<br>Clear<br>Clear<br>Clear | 117.3<br>120.8<br>125.8<br>130.8*<br>135.8 | 42.9<br>40.8<br>35.0<br>67.3/**88.3**<br>59.8 | 37.4 JB<br>53.9 JB<br>31.9 UB<br>58.6 J+/68.6 J+<br>45.3 J+ |
| 114-MW66D | 11/3-11/8 2021 | Deepening of existing borehole | 140 | 47 | 77 | 80 | 30 | Lockatong | 90 | 90-140 | 50 | 1/3/2022 | NA | 11/9/2021 | 8.1 | 600 | Yellow, no odor | 12/14/21<br>12/14/21<br>12/14/21<br>12/15/21<br>12/21/21 | 9.75<br>9.88<br>9.86<br>9.89<br>9.0 | Yellow<br>Yellow<br>Yellow<br>Yellow<br>Yellow | 118.5<br>121.5<br>124<br>128*<br>140 | **58,600**<br>**61,300**<br>**62,100**<br>**49,600/50,900**<br>**57,300** | 55,700<br>56,800<br>54,000<br>54,500/50,700<br>55,000 |
| 114-MW52D | 12/1-12/11 2020 | No modification, sample well below packer | 105 | 45 | 68 | 70 | 23 | Lockatong | 80 | 80-105 | 25 | NA | NA | -- | -- | -- | -- | 11/23/21<br>(collected below packer) | 34.5 | Yellow tint | 104* | **5,500/5,630** | 5,860 J+/6,150 J+ |

**Notes:**
-- = not applicable
* = denotes depth interval at which a field duplicate sample was collected
bgs = below ground surface
btwc = below top of well casing
Cr = total chromium
$Cr^{+6}$ = hexavalent chromium
ft = feet
gal = gallons
NA = not applicable
NAD83 = North American Datum of 1983
NAVD88 = North American Vertical Datum of 1988
NE = not encountered
NTU = Nephelometric Turbidity Units
PVC = polyvinyl chloride
ug/L = micrograms per liter

**Data validation qualifiers:**
J = Indicates the result was an estimated value; the associated numerical value was an approximate concentration of the analyte in the sample.
J+ = Indicates the analyte was positively identified; the associated numerical value is an estimated quantity with a potential high bias.
JB = The analyte concentration is greater than three (3) times, but less than or equal to ten (10) times the concentration in the associated method/prep blank. The presence of that analyte in the sample is considered "real." The concentration is quantitatively qualified (JB) due to method blank contamination.
U = Indicates the analyte was not detected in the sample above the sample reporting limit.
UB = The analyte concentration is less than or equal to three (3) times the concentration in the associated method/prep blank. The presence of the analyte in the sample is negated (UB) due to laboratory contamination.

File: G:\910 CAD\20 SHEETS\GW\Site 114 Bedrock Investigation\December 2020\2021-04-08 Site 114 Bedrock SOW.dwg Layout: BR SOW 2022 - Figure 1 User: frederik.schuele Plotted: Jon 17, 2022 - 1:01pm Xre

FRENCH PARK WAREHOUSE

JERSEY AUTO REPAIR

FORREST STREET

HALLADAY STREET

CARTERET AVENUE

Site 114

Site 143

Site 132

114-MW50C -48.6
114-BSB-02 -48.0
114-MW62C -58.0
114-MW63C -50.5
114-MW6D -64.3
114-MW45C -59.5
114-MW51C -64.8
114-MW25C -44.6
SB-24A -67.3
114-MW67C -69.8
114-MW65C -53.6
114-MW55C -56.9
114-BSB-03 -62.1
114-MW52C -59.0
114-MW52D -54.1
114-MW74D
114-MW71D
114-MW61C -49.0
114-MW61D -48.6
114-MW66D -59.9
114-MW75D
114-MW53C -31.6
EF-37 -3.6
GT-15 -38.8
GT-14 -22.7
114-MW16B -2.9
114-MW68C -59.2
114-MW56C -58.0
GT-9C -53.5
114-MW7D -64.1
114-MW58C -62.8
MW-4F -64.1
114-MW54C -66.2
SB-57 -61.3
114-MW22B -22.9
114-MW4D -74.1
GT-10A -54.4
114-MW57D -54.3
114-MW57C -55.1
114-MW69C -57.2
B-2 -56.3
SB-58 -55.9
SB-23 -73.0
114-MW59C -80.4
114-MW64C -82.2
114-MW20C -71.6
B-1 -61.2
137-MW1C -59.5
114-MW76D
114-MW72D
114-MW73D
SB-25 -80.8
114-MW60C -108.5
SB-30 -65.7

A A' B B' C C'

## LEGEND

- GARFIELD AVENUE GROUP SITES
- HUDSON COUNTY PARCELS
- FORMER MORRIS CANAL
- REMOVED SHEET PILE
- IN PLACE SHEET PILE
- RAILROAD TRACKS
- -90 TOP OF BEDROCK SURFACE (ELEVATION IN FEET NAVD88)
- -90 INFERRED TOP OF BEDROCK SURFACE (ELEVATION IN FEET NAVD88)
- INFERRED LIMIT OF THE DEEP WATER-BEARING ZONE
- INVESTIGATION LOCATION

**Label:**

135-MW1C
-93.1

Location ID
Top of Bedrock Elevation (feet NAVD88)

- EXISTING BEDROCK WELL
- PROPOSED BEDROCK WELL
- PROPOSED CONTINGENCY BEDROCK WELL

**ROCK TYPE**

- IGNEOUS - DIABASE
- INDETERMINATE
- SEDIMENTARY
- SEDIMENTARY - LOCKATONG
- SEDIMENTARY - STOCKTON

**Map Sources:**

1. New Jersey State Plane North American Datum 1983 Coordinates, U.S. Survey Feet.
2. Vertical Elevations are in North American Vertical Datum of 1988 (NAVD88), U.S. Survey Feet.
3. Parcels of Hudson County, New Jersey State Plane NAD83, Hudson County Department of Planning, Jersey City, New Jersey, May 21, 2013.

**Notes:**

1. Data used to develop the interpreted top of bedrock surface was obtained from historical investigations conducted by PPG and Public Service Electric and Gas Company (PSEG), as well as bedrock investigations and monitoring well installations on Site 114 as part of the groundwater remedial investigation.
2. The bedrock type for 114-MW7D, B-1, and B-2 is noted as indeterminate based on review of Project Area data and published bedrock geology for this area. Information for the bedrock interval noted on the boring logs for these wells is inconsistent with the information compiled for the Project Area.

AECOM

50 0 100
GRAPHIC SCALE IN FEET

PPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY

DATE: 01/14/22 | DRWN: FS

# LOCATION OF EXISTING AND PROPOSED BEDROCK WELLS

FIGURE 1

# Appendix A

# Previous Reports

**(Provided Separately)**

# Appendix B

# Borehole Geophysical Logging Results

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# Technical Memorandum

| | | |
|---|---|---|
| To | Shannon Gleason | Page 1 |
| CC | Frederik Schuele, Shree Ravi, and Bill Spronz | |
| Subject | Summary of Borehole Geophysical Results for Groundwater Remedial Investigation<br>Garfield Avenue Group Sites, City of Jersey City, Hudson County, New Jersey | |
| From | Rory Henderson | |
| Date | February 22, 2021 | |

## Introduction

This Technical Memorandum presents the results of borehole geophysical logging conducted as part of the groundwater Remedial Investigation (RI) at the Garfield Avenue (GA) Group Sites in Jersey City, New Jersey. Borehole geophysical logging was conducted in the open bedrock portions of the boreholes for wells 114-MW4D and 114-MW6D on September 22, 2020 and at wells 114-MW52D, 114-MW57D, 114-MW61D, and 114-MW66D from January 14 to 15, 2021. Borehole geophysical logging was conducted by Hager-Richter Geoscience, an AECOM subcontractor. Borehole geophysical logging reports are included in Attachment 1.

Borehole geophysical logging included the following at each location:

- Optical Televiewer (OTV) - ALT QL40-OBI-2G optical televiewer
- Acoustic Televiewer (ATV) - ALT QL40-ABI-2G acoustic televiewer
- Acoustic Caliper - ALT QL40-ABI-2G acoustic televiewer
- Natural Gamma - Mount Sopris 2PGA-1000 poly-gamma probe
- Spontaneous Potential (SP) - Mount Sopris 2PGA-1000 poly-gamma probe
- Single Point Resistance (SPR) - Mount Sopris 2PGA-1000 poly-gamma probe
- Fluid Temperature - Mount Sopris QL40-FTC fluid temperature and conductivity/resistivity probe
- Fluid Conductivity - Mount Sopris QL40-FTC fluid temperature and conductivity/resistivity probe
- Heat Pulse Flow Meter (HPFM) Under Ambient Conditions - Mount Sopris HFP-2293 heat pulse flow meter
- HPFM Under Stressed (Low Constant Rate Pumping) Conditions - Mount Sopris HFP-2293 heat pulse flow meter

A Mount Sopris Matrix portable digital logging system with a 4MXA-1000 winch was used to conduct the borehole geophysical logging. Results and key findings for each logged borehole are presented in the following sections.

## Borehole Geophysical Logging Results

### 114-MW4D

The open borehole at well 114-MW4D was logged from the bottom of the 6-inch steel casing to the bottom of the open borehole, approximately 85.5 to 105 feet (ft) below the top of the 6-inch steel casing (btc). Results of the borehole geophysical logging show a high density of fracturing along the length of the logged interval, as indicated by the OTV and ATV logs and high degree of variability in the acoustic caliper log. Natural gamma response slightly increases with depth but does not show repeatable increases and decreases that would be indicative of sedimentary layering. No flow was detected in the ambient and stressed HPFM, indicating that this highly fractured zone is relatively inactive. The fluid temperature log shows a generally linear decrease in temperature with depth and small perturbations in the log at 86 and 91 ft btc. SPR and SP logs indicate potential minor activity with lower SPR and slight increases in SP at the features identified at 87 and 91 ft btc. Similarly, minor fluctuations in the fluid conductivity log between 91 and 98 ft btc may be associated with the features identified at 91 and 95.5 ft btc. These perturbations may be indicative of minor flow in the borehole. The SPR tool measures the resistance between the sensor in the borehole and the surface. The SPR response decreased from 87 to 91 ft btc, which may be indicative of a higher degree of weathering or fracturing within this interval. Overall, the conditions in the open-borehole at 114-MW4D appear to be highly fractured with very limited flow over the logged interval. Based on the borehole geophysical logging and Site knowledge, the bedrock in this well is consistent with diabase.

### 114-MW6D

The open borehole at well 114-MW6D was logged from the bottom of the 6-inch steel casing to the bottom of the open borehole, approximately 85.5 to 110.5 ft btc. The OTV and ATV logs identify foliations or layered sedimentary lithology along the length of the borehole. No flow was detected in the ambient and stressed HPFM, indicative of no active flowing features in the borehole. Fluid temperature variation is extremely limited in the log (<0.2 degrees Fahrenheit), with a general increase in temperature with depth. Natural gamma is variable, showing peaks in specific layers which is consistent with sedimentary lithology where finer-grained materials would be deposited. Since there was no detected flow in the borehole, variability in SP and SPR are more likely attributable to lithology changes than to fractures or flow. Small variations in the fluid conductivity log are evident at 89.5 and 95.5 ft btc, which could potentially be contributing to minor flow below the resolution of the HPFM. Based on the borehole geophysical logging and Site knowledge, the bedrock is sedimentary rock consistent with the Lockatong formation.

### 114-MW52D

The open borehole at well 114-MW52D was logged from the bottom of the 6-inch steel casing to the bottom of the open borehole, approximately 80.5 to 107 ft btc. The OTV and ATV logs identify foliations or layered sedimentary lithology along the length of the borehole. Features identified in the ATV logs are generally characterized as bedding features or minor fractures (not distinct or continuous around the borehole). One fracture identified at 81.3 ft btc was classified as an intermediate fracture (distinct and continuous around the borehole with little apparent aperature). HPFM data was collected under stressed conditions imposed by slow water level recovery after well development, which occurred the day before geophysical logging. Two fracture sets appeared to be recharging the borehole under the stressed conditions. One set from the bottom of the casing to about 83 ft btc includes the more prominent fracture described above at 81.3 ft btc. The second set has a steeply dipping fracture at approximately 85.2 ft btc and two smaller fractures at 86.2 and 86.3 ft btc. Bedding features occur below this second set of fractures between 86.4 and 96.6 ft btc.

Minor fractures are also noted from 98 ft btc to the bottom of the borehole but no flow is evident based on the HPFM, fluid temperature, or fluid conductivity logs. The bedrock is sedimentary rock consistent with the Lockatong formation.

**114-MW57D**

The open borehole at well 114-MW57D was logged from the bottom of the 6-inch steel casing to the bottom of the open borehole, approximately 86.5 to 113.5 ft btc. The OTV and ATV logs identify foliations of layered sedimentary lithology along the length of the borehole with the majority of the features representing bedding and minor fractures that dip at a shallow angle to the northwest. Similar to well 114-MW52D, this well was logged while water levels were recovering from well development that occurred the previous day. Therefore the HPFM data that was collected simulated stressed conditions. HPFM indicated active recharge occurring in a fracture set between the bottom of the casing and 89 ft btc. These fractures are minor to intermediate fractures that dip at high angles toward the northwest. Fluid temperature and conductivity logs show inflections indicative of active features. No flow was detected by the HPFM below 90 ft btc. However, there is an inflection point in the fluid conductivity at about 100 ft btc associated with an increase in natural gamma and a steeply dipping intermediate fracture that may indicate minor flow into the borehole. This intermediate fracture is sub vertical with a dip direction toward the southeast. There was no flow detected by the HPFM below 100.5 ft btc. Variation in the SP log below this point is likely due to geochemical variation rather than fracture flow. This conclusion is based primarily on bedding and minor fractures being present, with no significant changes in the fluid temperature or conductivity logs. The SPR log shows gradual changes along the entire depth profile without significant/abrupt changes indicative of discrete open fractures. The bedrock is sedimentary rock consistent with the Lockatong formation.

**114-MW61D**

The open borehole at well 114-MW61D was logged from the bottom of the 6-inch steel casing to the bottom of the open borehole, approximately 87.5 to 110 ft btc. The OTV and ATV logs identify a highly fractured environment without clear bedding structure, indicative of weathered/weak bedrock. The caliper log indicates variability in the borehole diameter throughout the depth profile confirming a weak/highly fractured environment. The HPFM data was collected prior to the borehole hydraulic conditions stabilizing from well development the previous day. Therefore, the HPFM data collected is analogous to logging under pumped or stressed conditions. The HPFM detected flow in the interval between the bottom of the casing and 93 ft btc. Three or four major fractures (distinct and continuous around the borehole with apparent aperature) were observed in this depth interval on the OTV and ATV logs. There are numerous minor to intermediate fractures throughout the length of the borehole. A slight inflection in the fluid temperature log at 95.5 ft btc that may indicate very minor flow. Three major fractures located between 102.5 and 104.5 may be exhibiting minor flow based on slight deflections in the fluid temperature and conductivity logs. One major fracture at 109.5 ft btc near the bottom of the borehole may have minor flow into the borehole based on slight fluid conductivity increases. Natural gamma appears to increase with increasing depth. However, there are no indications of discrete layers normally observed in sedimentary rock. The SP and SPR logs show variability in this highly fractured/weathered environment but do not correlate with discrete features. The geophysical logs and Site knowledge indicate that the bedrock in this well is weathered diabase.

**114-MW66D**

The open borehole at well 114-MW66D was logged from the bottom of the 6-inch steel casing to the bottom of the open borehole, approximately 92 to 114.5 ft btc. The OTV and ATV logs identify foliations or layered sedimentary lithology along the length of the borehole with the majority of the features representing bedding and minor fractures that dip at a shallow angle to the northwest. More steeply dipping intermediate fractures, dipping toward the east were observed at 95.5, 97.5, 104, 107.5, 110, and 114 feet btc. The HPFM data was collected under stressed conditions due to prior day well development. The borehole was observed to be recharging with contribution attributed to a major fracture near the bottom of the casing. Fluid conductivity increases at this depth, with corresponding low SPR and high SP, are indicative of a major fracture with flowing water. While not indicated on the HPFM or fluid logs, an increase in SP with a decrease in SPR may indicate a feature of interest at 100 ft btc, where the ATV identified a minor fracture above bedding features. The HPFM data show minor fractures at about 110 and 111 ft btc, where low flow was observed. The bedrock is sedimentary rock consistent with the Lockatong formation.

**Key Findings**

Wells 114-MW6D, 114-MW52D, 114-MW57D, and 114-MW66D were installed in the sedimentary unit identified as the Lockatong Formation at the Site. In general, the bedding and primary fracture features have shallow dipping angles on the order of 10 to 20 degrees toward the northwest. A secondary set of fractures dip more steeply (60 to 80 degrees) to the southeast. Bedding dip azimuth is 299 degrees northwest. The majority of flow observed in these wells was observed within the top 10 ft of the borehole, but some minor fractures with very low flow were identified at greater depths based on smaller perturbations in the logs as described for each well.

Wells 114-MW4D and 114-MW61D were installed in the Jurassic Diabase unit. Regional bedrock geology maps identify this unit west of the Site, but based on drill logs and borehole geophysical logging, the boundary of this unit is farther east than indicated on the United States Geological Survey maps. The Jurassic Diabase is highly fractured without coherent structure, and fracture dip angles tend to be steeper than the sedimentary unit with the majority of fractures dipping in an easterly direction. Active fractures were identified in shallow portions of the logged hole where minor flow was present. The diabase is highly fractured and weak rock in the wells that were logged.

## Bedrock Well Sampling

Sampling of bedrock wells 114-MW52D, 114-MW57D, 114-MW61D, and 114-MW66D was performed from February 9 to 15, 2021 in accordance with Appendix C (Depth-Discrete Sampling and Profiling of Vertical Cross-Flows) of the New Jersey Department of Environmental Protection (NJDEP) *Groundwater Technical Guidance* (NJDEP, 2012). Selection of final sample intervals was completed upon review of preliminary geophysical logging results and approved by NJDEP during a technical meeting held on January 26, 2021. Results of the bedrock well sampling program are presented on Table B-1.

## References

NJDEP, 2012. *Groundwater Technical Guidance: Site Investigation, Remedial Investigation, Remedial Action Performance Monitoring*, Site Remediation Program, April 3, 2012.

# Table B-1
# Bedrock Fracture Sampling Results
# Groundwater Remedial Investigation Report
# Garfield Avenue Group Sites
# PPG, Jersey City, New Jersey

| Well ID | Top of Casing Elevation (ft NAVD88) | Depth Interval (ft bTOC) | Elevation (ft NAVD88) | Flow (gpm) | Chromium[1,2] (ug/L) | Visual Observation During Sampling |
|---|---|---|---|---|---|---|
| 114-MW52D | 15.64 | 81 | -65.36 | 0.02 | 44,000 | Green |
| Calculated concentration at inflowing fracture | 15.64 | 82 | -66.36 | - | 45,000 | - |
| 114-MW52D | 15.64 | 83.5 | -67.86 | 0.01 | 43,000 | Green |
| Calculated concentration at inflowing fracture | 15.64 | 85 | -69.36 | - | 43,000 | - |
| 114-MW52D | 15.64 | 88 | -72.36 | 0 | 44,100 | Green |
| No flow | - | 88-102 | - | - | - | - |
| 114-MW52D | 15.64 | 102 | -86.36 | 0.01 | 42,200 | Green |
| Calculated concentration at inflowing fracture | 15.64 | 103.5 | -87.86 | - | 42,200 | - |
| 114-MW52D | 15.64 | 105 | -89.36 | 0 | 46,500 | Green |
| 114-MW57D | 14.70 | 87.25 | -72.55 | 0.04 | 108 | Clear |
| Calculated concentration at inflowing fracture | 14.70 | 88 | -73.3 | - | 108 | - |
| 114-MW57D | 14.70 | 90 | -75.3 | 0 | 82.4 | Clear |
| No flow | - | 90-98 | - | - | - | - |
| 114-MW57D | 14.70 | 98 | -83.3 | 0.01 | 114 | Clear |
| Calculated concentration at inflowing fracture | 14.70 | 100 | -85.3 | - | 114 | - |
| 114-MW57D | 14.70 | 102 | -87.3 | 0 | 69.3 | Clear |
| 114-MW61D | 16.59 | 88 | -71.41 | 0.04 | 5 | Clear |
| Calculated concentration at inflowing fracture | 16.59 | 89.5 | -72.91 | - | 6 | - |
| 114-MW61D | 16.59 | 91 | -74.41 | 0.02 | 3 | Clear |
| Calculated concentration at inflowing fracture | 16.59 | 92 | -75.41 | - | 3 | - |
| 114-MW61D | 16.59 | 93.5 | -76.91 | 0 | 2 | Clear |
| No flow | - | 93.5-102 | - | - | - | - |
| 114-MW61D | 16.59 | 102 | -85.41 | 0.01 | 3 | Clear |
| Calculated concentration at inflowing fracture | 16.59 | 104 | -87.41 | - | 3 | - |
| 114-MW61D | 16.59 | 106.5 | -89.91 | 0 | 2 | Clear |
| Calculated concentration at inflowing fracture | 16.59 | 109 | -92.41 | - | 2 | - |
| 114-MW61D | 16.59 | 110 | -93.41 | 0.01 | 2 | Clear |
| 114-MW66D | 16.20 | 92 | -75.8 | 0.05 | 6,450 | Light Green |
| Calculated concentration at inflowing fracture | 16.20 | 92.5 | -76.3 | - | 6,475 | - |
| 114-MW66D | 16.20 | 94 | -77.8 | 0.01 | 6,350 | Light Green |
| Flow up borehole | - | 94-110 | - | 0.01 | - | - |
| 114-MW66D | 16.20 | 110 | -93.8 | 0.01 | 596 | Clear |
| Calculated concentration at inflowing fracture | 16.20 | 112 | -95.8 | - | 596 | - |
| 114-MW66D | 16.20 | 114 | -97.8 | 0 | 393 | Clear |

**Notes:**

[1]Results reported are for total fraction (unfiltered)

[2]Concentrations at inflowing fractures calculated in accordance with Appendix C of Groundwater Technical Guidance: Site Investigation, Remedial Investigation, Remedial Action Performance Monitoring, Site Remediation Program, NJDEP, April 3, 2012.

For non-detected results, the laboratory detection limit was used as the sample chromium concentration for calculation of chromium concentration at target inflowing fracture.

The following sample intervals exhibited non-detect chromium levels, with a reporting limit of 2.0 micrograms per liter: 114-MW61D at 106.5 ft btc and 114-MW61D at 110 ft btc.

For depth intervals where no flow was detected by the heat pulse flow meter but the geophyiscal logging results indicated possible minor flow into the borehole, a flow rate of of 0.01 gallons per minute was assigned to the interval.

**Abbreviations:**

bTOC - below top of inner casing
ft - feet
gpm - gallons per minute
NAVD88 - North American Vertical Datum of 1988
NJDEP - New Jersey Department of Environmental Protection
ug/L - micrograms per liter

# Attachment 1

Borehole Geophysics Reports

HAGER-RICHTER
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*GEOPHYSICS FOR THE ENGINEERING COMMUNITY*
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FORDS, NEW JERSEY
Tel: 732.661.0555

# BOREHOLE GEOPHYSICAL LOGGING – DATA REPORT
# BOREHOLES 114-MW4D & 114-MW6D
# PPG SITE 114 – GARFIELD AVENUE GROUP SITES
# JERSEY CITY, NEW JERSEY

*Prepared for:*

AECOM
Two City Center, Suite 200
Portland, Maine 04101

*Prepared by:*

Hager-Richter Geoscience, Inc.
846 Main Street
Fords, New Jersey 08863

File 19RG66
October 2020

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| Tadpole | Structure Category (Symbol Color) | Description |
|---|---|---|
|  | Bedding (Brown) | Planar geologic feature interpreted as bedding |
|  | Fracture Rank 1 (Light Blue) | Minor Fracture - not distinct and may not be continuous around the borehole |
|  | Fracture Rank 2 (Blue) | Intermediate Fracture - distinct and continuous around the borehole with little or no apparent aperture |
|  | Fracture Rank 3 (Red) | Major Fracture - distinct and continuous around the borehole with apparent aperture |

**Figure 1.** Key to bedrock structure categories.

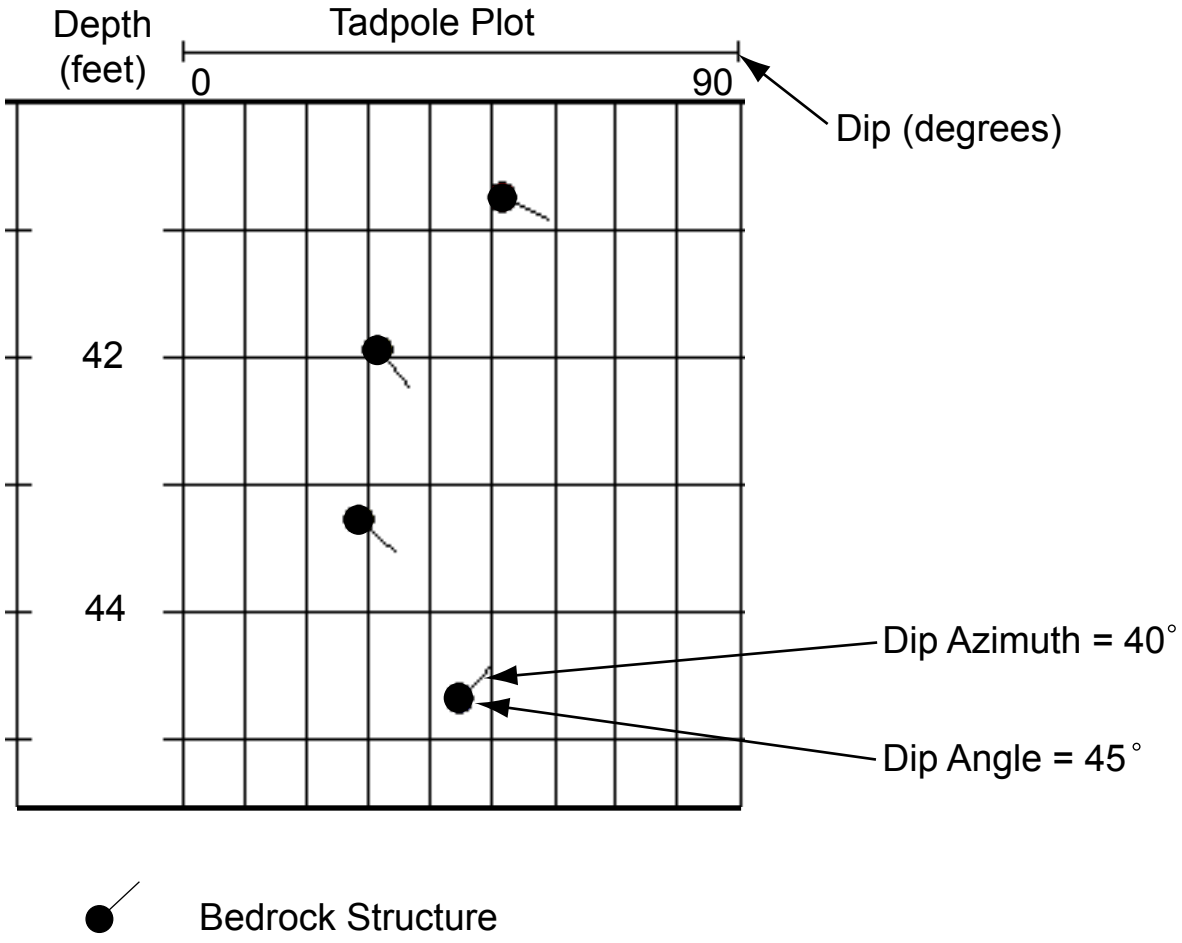


**Figure 2.** Tadpole plot explanation. The orientation of the bedrock structures is graphically displayed by a tadpole consisting of a circle, the head, and a line, the tail. The position of the head, left to right on the tadpole plot, gives the dip angle of the structure. The left side of the track indicates a dip angle of 0°, and the right side of the track indicates a dip angle of 90° from horizontal. The orientation of the tail gives the dip azimuth of the structure and can be read like a compass. The tail pointing directly up is 0°, north.

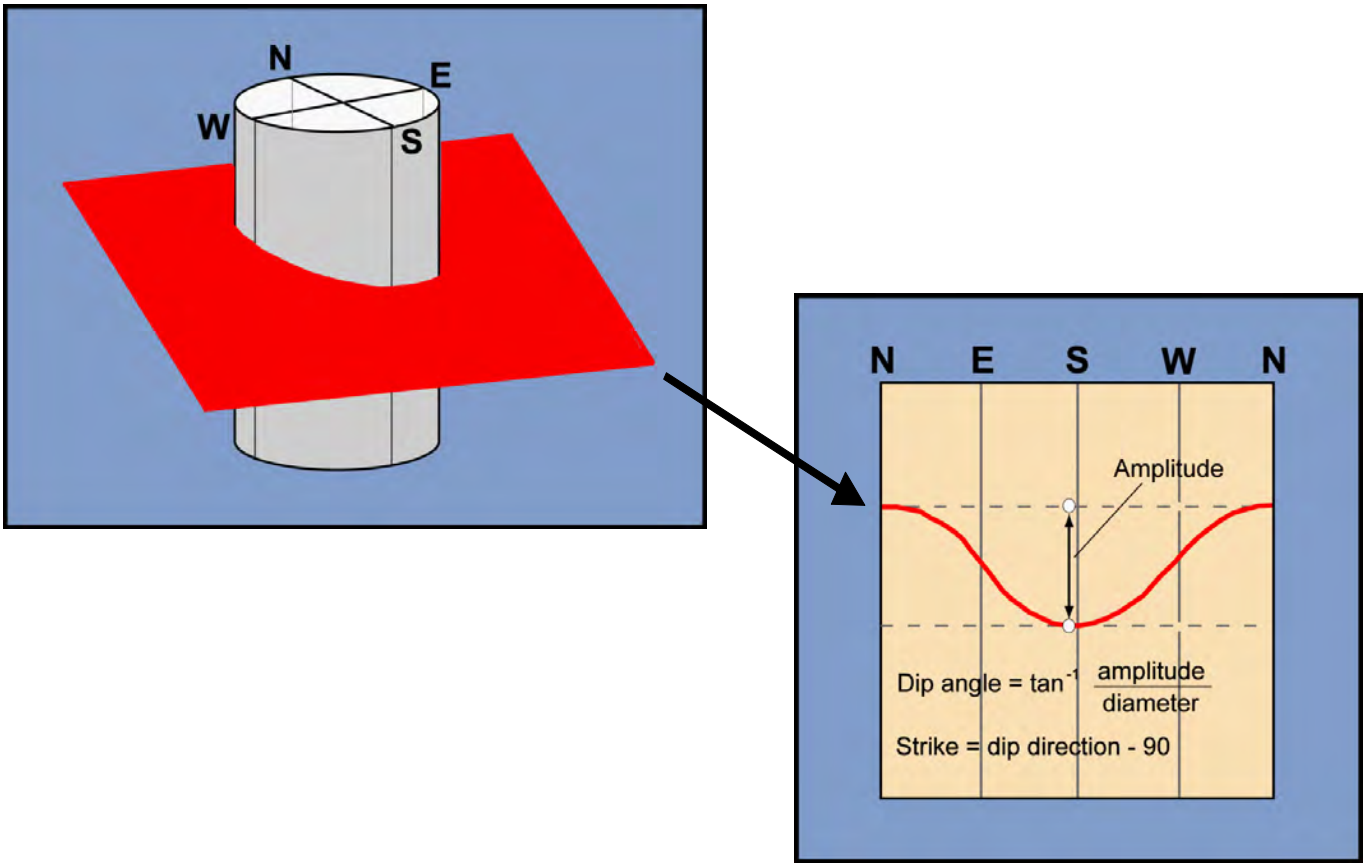


**Figure 3.** Televiewer explanation. The image on the left depicts a planar structure in red, such as a fracture or bedding plane, intersected by a borehole. The image on the right depicts the same structure unwrapped as it would be displayed in an optical televiewer (OTV) or acoustic televiewer (ATV) log.

Figure modified from: Garfield, R.L., Day-Lewis, F.D., Gray, M.B., Johnson, C.D., Williams, J.H. and Day-Lewis, A.D.F., 2003, Fractured-Rock Aquifer Characterization within a Regional Geologic Context: Results from the Bucknell University Hydrogeophysics Test Site, GSA Northeastern Section, 38th Annual Meeting, Paper No. 25-19.

# HAGER-RICHTER GEOSCIENCE, INC.

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Tel: 732.661.0555

114-MW4D - BOREHOLE GEOPHYSICAL LOGS

DATE(S) LOGGED: September 22, 2020

| | | | |
|---|---|---|---|
| CLIENT: | AECOM | HRGS FILE: | 19RG66 |
| PROJECT: | PPG Site 114 - Garfield Avenue Group Sites | LOG DATUM: | Top of the 6-Inch Steel Casing |
| LOCATION: | Jersey City, New Jersey | TOP OF CASING: | 0.1 Feet Below the Ground Surface |
| LOGGING GEOPHYSICIST(S): | Nick DeCristofaro & Mikko Aarnio | ORIENTATION REFERENCE: | True North (Magnetic Declination = 12.8° West) |
| PROJECT REP(S) ON-SITE: | Bill Spronz | BOREHOLE DIAMETER: | 6 Inches |
| LOGS PROCESSED BY: | Robert Garfield, P.G. & Nick DeCristofaro | WATER LEVEL DEPTH: | 7.8 Feet |

STRUCTURE LEGEND

Fracture Rank 1 Fracture Rank 2 Fracture Rank 3

## 114-MW4D - Borehole Geophysical Logs

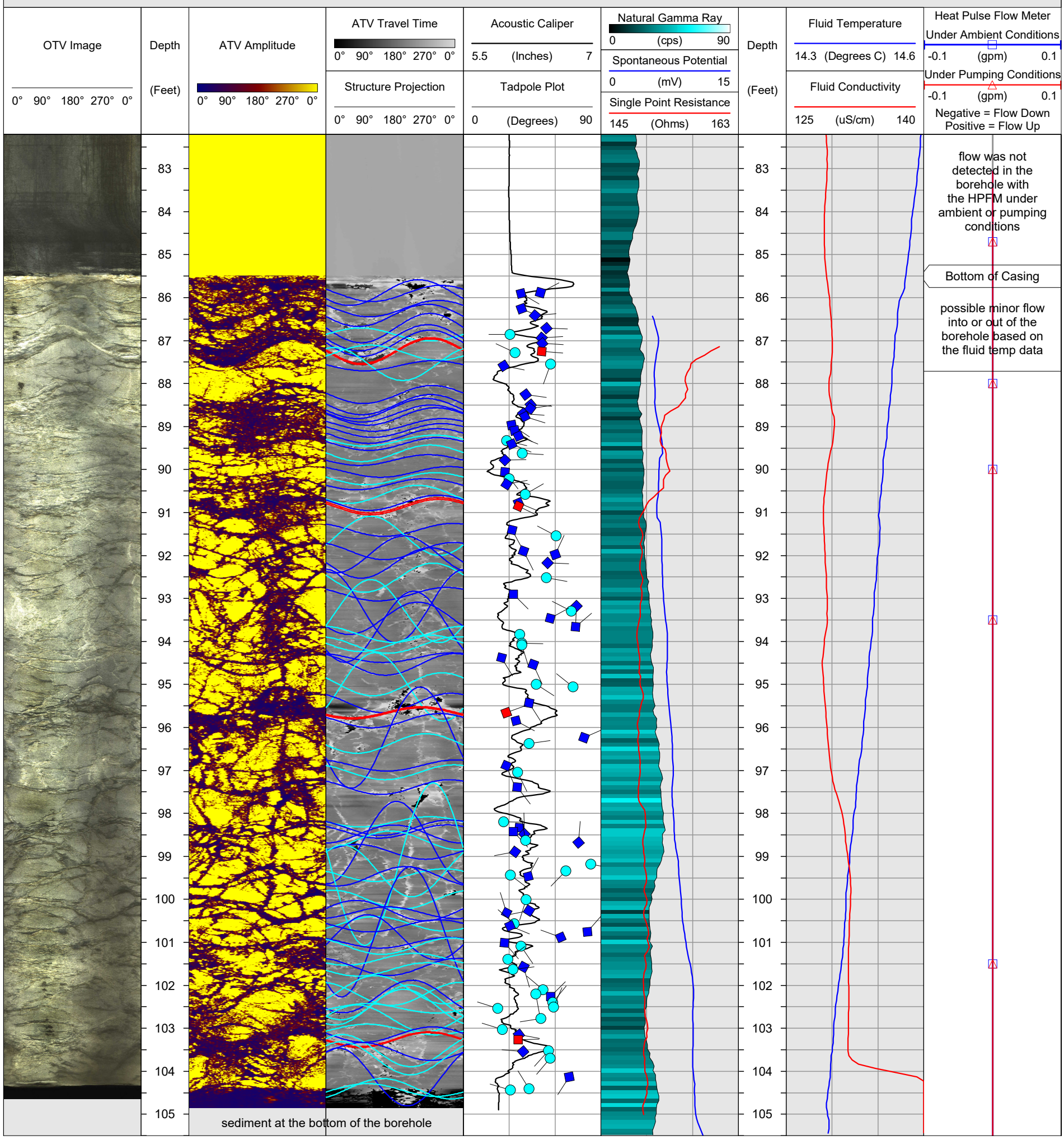

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# 114-MW6D - BOREHOLE GEOPHYSICAL LOGS

DATE(S) LOGGED: September 22, 2020

| | | | |
|---|---|---|---|
| CLIENT: | AECOM | HRGS FILE: | 19RG66 |
| PROJECT: | PPG Site 114 - Garfield Avenue Group Sites | LOG DATUM: | Top of the 8-Inch Steel Casing |
| LOCATION: | Jersey City, New Jersey | TOP OF CASING: | 1.0 Feet Below the Ground Surface |
| LOGGING GEOPHYSICIST(S): | Nick DeCristofaro & Mikko Aarnio | ORIENTATION REFERENCE: | True North (Magnetic Declination = 12.8° West) |
| PROJECT REP(S) ON-SITE: | Bill Spronz | BOREHOLE DIAMETER: | 6 Inches |
| LOGS PROCESSED BY: | Robert Garfield, P.G. & Nick DeCristofaro | WATER LEVEL DEPTH: | 0.2 Feet |

STRUCTURE LEGEND

Fracture Rank 1 Fracture Rank 2 Bedding

## 114-MW6D - Borehole Geophysical Logs

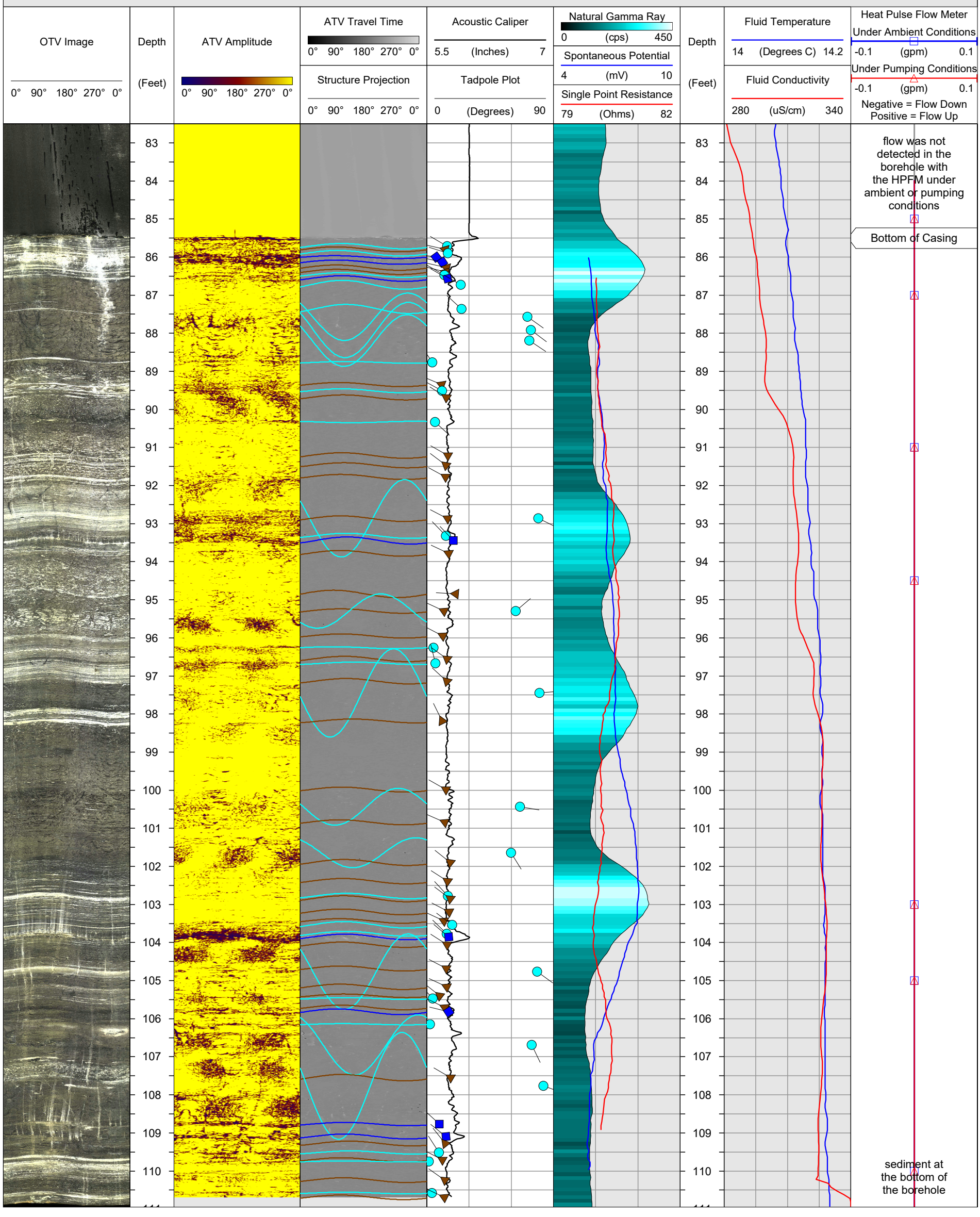

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# 114-MW4D - BEDROCK FRACTURE STATISTICS PLOTS

DATE(S) LOGGED: September 22, 2020

| | | | |
|---|---|---|---|
| CLIENT: | AECOM | HRGS FILE: | 19RG66 |
| PROJECT: | PPG Site 114 - Garfield Avenue Group Sites | ORIENTATION REFERENCE: | True North |
| LOCATION: | Jersey City, New Jersey | MAGNETIC DECLINATION: | 12.8° West |

STRUCTURE LEGEND

Fracture Rank 1 ■ Fracture Rank 2 ◆ Fracture Rank 3

## Stereogram - Lower Hemisphere of Bedrock Fractures

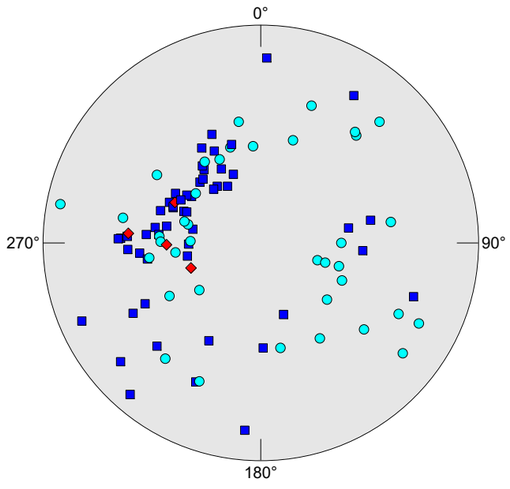


| | Counts | Dip[deg] | Azi[deg] |
|---|---|---|---|
| Mean | 95 | 43.33 | 107.84 |
| ■ | 53 | 43.25 | 107.01 |
| ● | 38 | 44.05 | 143.08 |
| ◆ | 4 | 37.71 | 92.06 |

## Contoured Stereogram - Lower Hemisphere of Bedrock Fractures

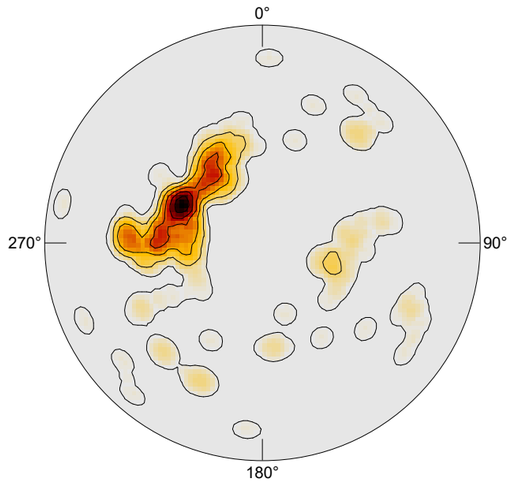


| | Counts | Dip[deg] | Azi[deg] |
|---|---|---|---|
| Mean | 95 | 43.33 | 107.84 |
| ■ | 53 | 43.25 | 107.01 |
| ● | 38 | 44.05 | 143.08 |
| ◆ | 4 | 37.71 | 92.06 |

## Dip Azimuth Rose Diagram of Bedrock Fractures

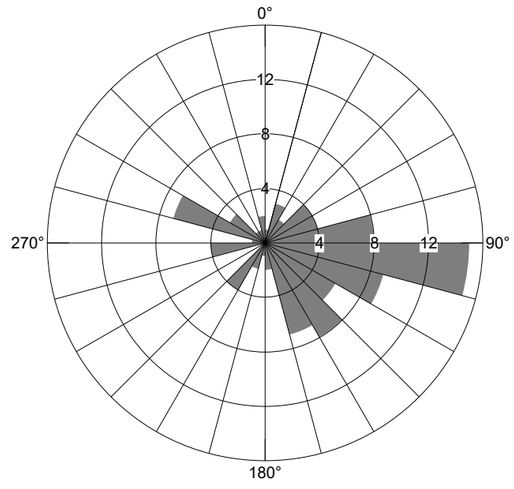


| | |
|---|---|
| Components: | Azimuth |
| Counts: | 95.00 |
| Mean (2D): | 107.84 |
| Std.Dev.: | 78.74 |
| Min: | 4.94 |
| Max: | 358.56 |

## Dip Angle Histogram of Bedrock Fractures

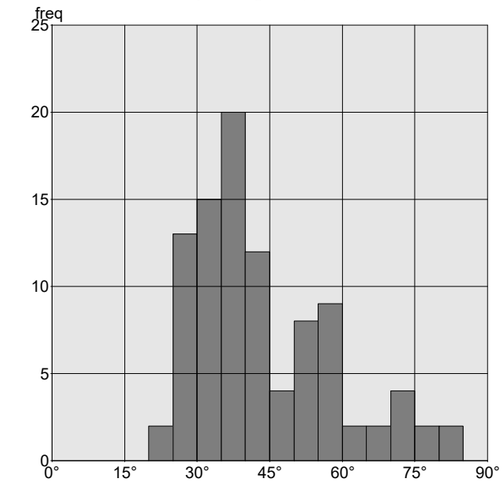


| | |
|---|---|
| Counts: | 95.00 |
| Mean (2D): | 43.33 |
| Std.Dev.: | 14.40 |
| Min: | 22.44 |
| Max: | 83.25 |

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114-MW6D - BEDROCK STUCTURE STATISTICS PLOTS

DATE(S) LOGGED: September 22, 2020

CLIENT: AECOM
PROJECT: PPG Site 114 - Garfield Avenue Group Sites
LOCATION: Jersey City, New Jersey

HRGS FILE: 19RG66
ORIENTATION REFERENCE: True North
MAGNETIC DECLINATION: 12.8° West

STRUCTURE LEGEND

Fracture Rank 1 | Fracture Rank 2 | Fracture Rank 3 | Bedding

| Stereogram - Lower Hemisphere of Fractures | Dip Azimuth Rose Diagram of Fractures | Dip Angle Histogram of Fractures | Stereogram - Lower Hemisphere of Bedding | Dip Azimuth Rose Diagram of Bedding | Dip Angle Histogram of Bedding |
|---|---|---|---|---|---|

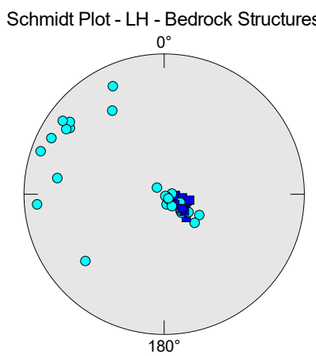


| | Counts | Dip[deg] | Azi[deg] |
|---|---|---|---|
| Mean | 38 | 28.04 | 313.96 |
| ○ | 30 | 32.62 | 330.04 |
| ■ | 8 | 13.08 | 299.13 |

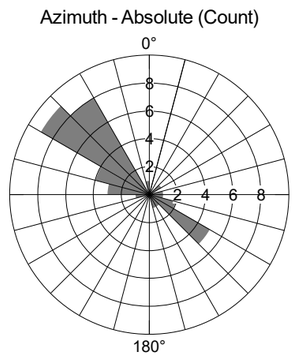


| Components: | Azimuth |
|---|---|
| Counts: | 38.00 |
| Mean (2D): | 313.96 |
| Std.Dev.: | 79.90 |
| Min: | 49.76 |
| Max: | 345.77 |

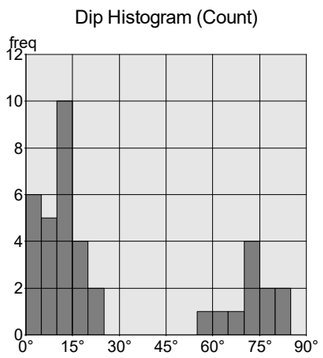


| | |
|---|---|
| Counts: | 38.00 |
| Mean (2D): | 28.04 |
| Std.Dev.: | 28.95 |
| Min: | 1.49 |
| Max: | 82.69 |

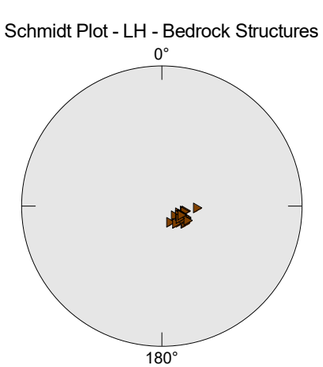


| | Counts | Dip[deg] | Azi[deg] |
|---|---|---|---|
| Mean | 33 | 13.72 | 299.47 |
| ▸ | 33 | 13.72 | 299.47 |

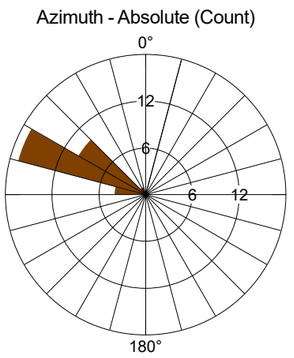


| Components: | Azimuth |
|---|---|
| Counts: | 33.00 |
| Mean (2D): | 299.47 |
| Std.Dev.: | 10.86 |
| Min: | 273.57 |
| Max: | 333.95 |

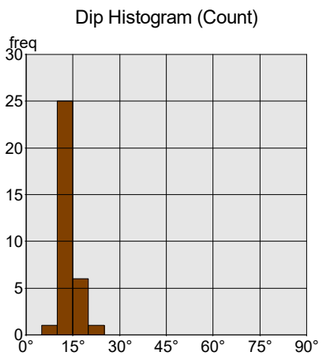


| | |
|---|---|
| Counts: | 33.00 |
| Mean (2D): | 13.72 |
| Std.Dev.: | 2.10 |
| Min: | 9.28 |
| Max: | 20.36 |

**HAGER-RICHTER GEOSCIENCE, INC.**

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Tel: 732.661.0555

114-MW6D - BEDROCK STUCTURE STATISTICS PLOTS

DATE(S) LOGGED: September 22, 2020

CLIENT: AECOM
PROJECT: PPG Site 114 - Garfield Avenue Group Sites
LOCATION: Jersey City, New Jersey

HRGS FILE: 19RG66
ORIENTATION REFERENCE: True North
MAGNETIC DECLINATION: 12.8° West

STRUCTURE LEGEND

Fracture Rank 1 | Fracture Rank 2 | Fracture Rank 3 | Bedding

### Stereogram - Lower Hemisphere of Fractures

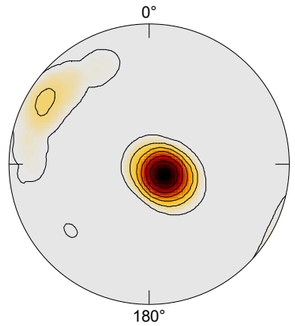


| | Counts | Dip[deg] | Azi[deg] |
|---|---|---|---|
| Mean | 38 | 28.04 | 313.96 |
| ○ | 30 | 32.62 | 330.04 |
| ■ | 8 | 13.08 | 299.13 |

### Dip Azimuth Rose Diagram of Fractures

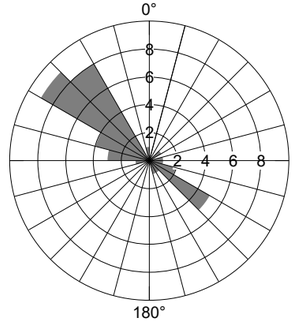


| | |
|---|---|
| Components: | Azimuth |
| Counts: | 38.00 |
| Mean (2D): | 313.96 |
| Std.Dev.: | 79.90 |
| Min: | 49.76 |
| Max: | 345.77 |

### Dip Angle Histogram of Fractures

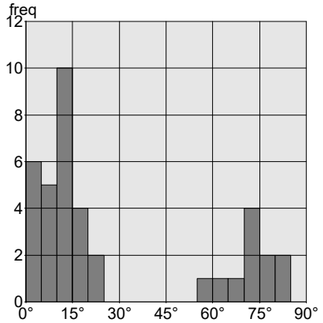


| | |
|---|---|
| Counts: | 38.00 |
| Mean (2D): | 28.04 |
| Std.Dev.: | 28.95 |
| Min: | 1.49 |
| Max: | 82.69 |

### Stereogram - Lower Hemisphere of Bedding

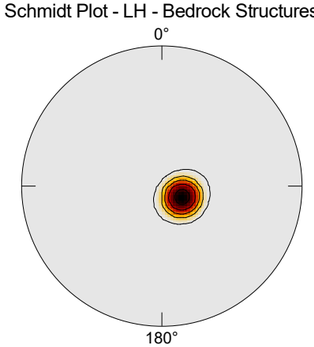


| | Counts | Dip[deg] | Azi[deg] |
|---|---|---|---|
| Mean | 33 | 13.72 | 299.47 |
| ▸ | 33 | 13.72 | 299.47 |

### Dip Azimuth Rose Diagram of Bedding

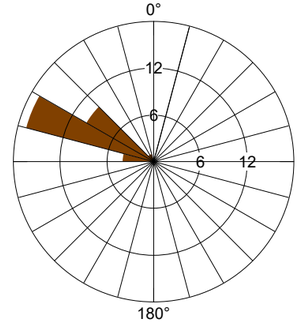


| | |
|---|---|
| Components: | Azimuth |
| Counts: | 33.00 |
| Mean (2D): | 299.47 |
| Std.Dev.: | 10.86 |
| Min: | 273.57 |
| Max: | 333.95 |

### Dip Angle Histogram of Bedding

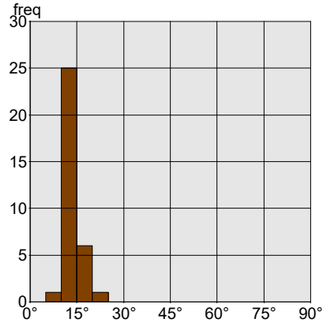


| | |
|---|---|
| Counts: | 33.00 |
| Mean (2D): | 13.72 |
| Std.Dev.: | 2.10 |
| Min: | 9.28 |
| Max: | 20.36 |

| HAGER-RICHTER GEOSCIENCE, INC. | |
|---|---|
| **114-MW4D - TABLE OF BEDROCK STRUCTURES** | |
| CLIENT | AECOM |
| PROJECT | PPG Site 114 - Garfield Avenue Group Sites |
| LOCATION | Jersey City, New Jersey |
| HRGS FILE | 19RG66 |
| DATE LOGGED | September 22, 2020 |
| LOG DATUM | Top of the 6-Inch Casing |
| DIP AZIMUTH | True North (Magnetic Declination = 12.8° West) |
| DIP ANGLE | Measured from Horizontal |

**114-MW4D - TABLE OF BEDROCK STRUCTURES**

| Depth (Feet) | Dip Azimuth (Degrees) | Dip Angle (Degrees) | Bedrock Fracture Category |
|---|---|---|---|
| 85.9 | 62 | 50 | Fracture Rank 2 |
| 85.9 | 120 | 38 | Fracture Rank 2 |
| 86.3 | 114 | 38 | Fracture Rank 2 |
| 86.4 | 85 | 47 | Fracture Rank 2 |
| 86.7 | 92 | 54 | Fracture Rank 2 |
| 86.9 | 270 | 31 | Fracture Rank 1 |
| 86.9 | 87 | 51 | Fracture Rank 2 |
| 87.1 | 93 | 52 | Fracture Rank 2 |
| 87.3 | 94 | 51 | Fracture Rank 3 |
| 87.3 | 295 | 34 | Fracture Rank 1 |
| 87.6 | 200 | 57 | Fracture Rank 1 |
| 87.6 | 102 | 26 | Fracture Rank 2 |
| 88.3 | 99 | 41 | Fracture Rank 2 |
| 88.5 | 94 | 44 | Fracture Rank 2 |
| 88.6 | 82 | 44 | Fracture Rank 2 |
| 88.7 | 95 | 39 | Fracture Rank 2 |
| 88.8 | 108 | 40 | Fracture Rank 2 |
| 89.0 | 124 | 32 | Fracture Rank 2 |
| 89.1 | 123 | 33 | Fracture Rank 2 |
| 89.2 | 112 | 36 | Fracture Rank 2 |
| 89.3 | 104 | 28 | Fracture Rank 1 |
| 89.4 | 112 | 32 | Fracture Rank 2 |
| 89.6 | 94 | 39 | Fracture Rank 1 |
| 89.8 | 89 | 27 | Fracture Rank 2 |
| 90.1 | 142 | 27 | Fracture Rank 2 |
| 90.2 | 106 | 30 | Fracture Rank 1 |
| 90.3 | 80 | 28 | Fracture Rank 2 |
| 90.6 | 60 | 40 | Fracture Rank 1 |
| 90.8 | 113 | 36 | Fracture Rank 2 |
| 90.9 | 116 | 36 | Fracture Rank 3 |
| 91.4 | 152 | 32 | Fracture Rank 2 |
| 91.5 | 297 | 61 | Fracture Rank 1 |
| 91.9 | 153 | 39 | Fracture Rank 2 |
| 92.0 | 25 | 60 | Fracture Rank 2 |
| 92.2 | 92 | 55 | Fracture Rank 2 |

**114-MW4D - TABLE OF BEDROCK STRUCTURES**

| Depth (Feet) | Dip Azimuth (Degrees) | Dip Angle (Degrees) | Bedrock Fracture Category |
|---|---|---|---|
| 92.5 | 100 | 54 | Fracture Rank 1 |
| 92.9 | 135 | 33 | Fracture Rank 2 |
| 93.2 | 182 | 74 | Fracture Rank 2 |
| 93.3 | 297 | 71 | Fracture Rank 1 |
| 93.5 | 61 | 57 | Fracture Rank 2 |
| 93.7 | 50 | 73 | Fracture Rank 2 |
| 93.8 | 175 | 37 | Fracture Rank 1 |
| 94.0 | 91 | 38 | Fracture Rank 1 |
| 94.1 | 162 | 38 | Fracture Rank 1 |
| 94.4 | 149 | 25 | Fracture Rank 2 |
| 94.5 | 156 | 46 | Fracture Rank 2 |
| 95.0 | 123 | 48 | Fracture Rank 1 |
| 95.1 | 308 | 72 | Fracture Rank 1 |
| 95.4 | 148 | 43 | Fracture Rank 2 |
| 95.7 | 70 | 28 | Fracture Rank 3 |
| 95.8 | 119 | 34 | Fracture Rank 2 |
| 96.2 | 66 | 79 | Fracture Rank 2 |
| 96.4 | 82 | 43 | Fracture Rank 1 |
| 96.9 | 158 | 28 | Fracture Rank 2 |
| 97.0 | 154 | 35 | Fracture Rank 1 |
| 97.4 | 142 | 35 | Fracture Rank 2 |
| 98.2 | 92 | 26 | Fracture Rank 1 |
| 98.3 | 143 | 37 | Fracture Rank 2 |
| 98.4 | 138 | 33 | Fracture Rank 2 |
| 98.5 | 359 | 40 | Fracture Rank 2 |
| 98.6 | 349 | 41 | Fracture Rank 1 |
| 98.7 | 5 | 75 | Fracture Rank 2 |
| 98.9 | 260 | 34 | Fracture Rank 2 |
| 99.2 | 101 | 83 | Fracture Rank 1 |
| 99.3 | 224 | 67 | Fracture Rank 1 |
| 99.4 | 127 | 31 | Fracture Rank 1 |
| 99.5 | 28 | 42 | Fracture Rank 2 |
| 100.0 | 198 | 41 | Fracture Rank 1 |
| 100.3 | 258 | 43 | Fracture Rank 2 |
| 100.3 | 342 | 28 | Fracture Rank 2 |
| 100.6 | 311 | 33 | Fracture Rank 1 |
| 100.6 | 113 | 30 | Fracture Rank 2 |
| 100.8 | 41 | 81 | Fracture Rank 2 |
| 100.9 | 289 | 64 | Fracture Rank 2 |
| 101.0 | 139 | 27 | Fracture Rank 2 |
| 101.1 | 145 | 38 | Fracture Rank 1 |
| 101.4 | 53 | 29 | Fracture Rank 1 |
| 101.6 | 163 | 39 | Fracture Rank 2 |
| 101.6 | 84 | 33 | Fracture Rank 1 |
| 102.1 | 310 | 52 | Fracture Rank 1 |

**114-MW4D - TABLE OF BEDROCK STRUCTURES**

| Depth (Feet) | Dip Azimuth (Degrees) | Dip Angle (Degrees) | Bedrock Fracture Category |
|---|---|---|---|
| 102.2 | 170 | 47 | Fracture Rank 1 |
| 102.3 | 45 | 57 | Fracture Rank 2 |
| 102.4 | 39 | 58 | Fracture Rank 1 |
| 102.5 | 24 | 59 | Fracture Rank 1 |
| 102.5 | 287 | 22 | Fracture Rank 1 |
| 102.8 | 261 | 51 | Fracture Rank 1 |
| 103.0 | 287 | 25 | Fracture Rank 1 |
| 103.1 | 100 | 36 | Fracture Rank 2 |
| 103.3 | 89 | 36 | Fracture Rank 3 |
| 103.5 | 222 | 56 | Fracture Rank 1 |
| 103.5 | 274 | 39 | Fracture Rank 2 |
| 103.7 | 220 | 57 | Fracture Rank 1 |
| 104.1 | 212 | 69 | Fracture Rank 2 |
| 104.4 | 328 | 43 | Fracture Rank 1 |
| 104.4 | 287 | 31 | Fracture Rank 1 |

| HAGER-RICHTER GEOSCIENCE, INC. | |
|---|---|
| **114-MW6D - TABLE OF BEDROCK STRUCTURES** | |
| CLIENT | AECOM |
| PROJECT | PPG Site 114 - Garfield Avenue Group Sites |
| LOCATION | Jersey City, New Jersey |
| HRGS FILE | 19RG66 |
| DATE LOGGED | September 22, 2020 |
| LOG DATUM | Top of the 6-Inch Casing |
| DIP AZIMUTH | True North (Magnetic Declination = 12.8° West) |
| DIP ANGLE | Measured from Horizontal |

**114-MW6D - TABLE OF BEDROCK STRUCTURES**

| Depth (Feet) | Dip Azimuth (Degrees) | Dip Angle (Degrees) | Bedrock Fracture Category |
|---|---|---|---|
| 85.7 | 300 | 14 | Fracture Rank 1 |
| 85.8 | 283 | 13 | Bedding |
| 85.9 | 287 | 15 | Fracture Rank 1 |
| 86.0 | 278 | 7 | Fracture Rank 2 |
| 86.1 | 282 | 11 | Fracture Rank 2 |
| 86.3 | 282 | 14 | Bedding |
| 86.4 | 284 | 13 | Bedding |
| 86.5 | 299 | 12 | Fracture Rank 1 |
| 86.6 | 300 | 15 | Fracture Rank 2 |
| 86.7 | 301 | 24 | Fracture Rank 1 |
| 87.4 | 313 | 25 | Fracture Rank 1 |
| 87.6 | 125 | 71 | Fracture Rank 1 |
| 87.9 | 127 | 74 | Fracture Rank 1 |
| 88.2 | 124 | 73 | Fracture Rank 1 |
| 88.8 | 326 | 4 | Fracture Rank 1 |
| 89.4 | 292 | 11 | Bedding |
| 89.5 | 298 | 11 | Fracture Rank 1 |
| 89.7 | 303 | 14 | Bedding |
| 90.3 | 133 | 6 | Fracture Rank 1 |
| 91.2 | 299 | 15 | Bedding |
| 91.5 | 307 | 14 | Bedding |
| 91.8 | 298 | 13 | Bedding |
| 92.9 | 116 | 79 | Fracture Rank 1 |
| 92.9 | 298 | 15 | Bedding |
| 93.3 | 316 | 13 | Fracture Rank 1 |
| 93.4 | 317 | 19 | Fracture Rank 2 |
| 93.8 | 295 | 16 | Bedding |
| 94.8 | 274 | 20 | Bedding |
| 95.3 | 295 | 12 | Bedding |
| 95.3 | 50 | 63 | Fracture Rank 1 |
| 96.0 | 298 | 11 | Bedding |
| 96.3 | 264 | 5 | Fracture Rank 1 |
| 96.6 | 306 | 14 | Bedding |
| 96.7 | 346 | 6 | Fracture Rank 1 |
| 97.1 | 313 | 14 | Bedding |

**114-MW6D - TABLE OF BEDROCK STRUCTURES**

| Depth (Feet) | Dip Azimuth (Degrees) | Dip Angle (Degrees) | Bedrock Fracture Category |
|---|---|---|---|
| 97.4 | 85 | 80 | Fracture Rank 1 |
| 98.2 | 334 | 11 | Bedding |
| 100.0 | 299 | 13 | Bedding |
| 100.4 | 99 | 66 | Fracture Rank 1 |
| 100.9 | 294 | 13 | Bedding |
| 101.6 | 148 | 60 | Fracture Rank 1 |
| 101.9 | 308 | 17 | Bedding |
| 102.4 | 303 | 15 | Bedding |
| 102.8 | 317 | 15 | Fracture Rank 1 |
| 102.9 | 306 | 17 | Bedding |
| 103.2 | 298 | 16 | Bedding |
| 103.4 | 295 | 12 | Bedding |
| 103.5 | 306 | 18 | Fracture Rank 1 |
| 103.8 | 314 | 14 | Fracture Rank 1 |
| 103.9 | 310 | 16 | Fracture Rank 2 |
| 104.1 | 302 | 15 | Bedding |
| 104.7 | 298 | 14 | Bedding |
| 104.8 | 126 | 78 | Fracture Rank 1 |
| 105.2 | 295 | 14 | Bedding |
| 105.4 | 308 | 9 | Bedding |
| 105.5 | 317 | 4 | Fracture Rank 1 |
| 105.7 | 296 | 13 | Bedding |
| 105.8 | 284 | 15 | Fracture Rank 2 |
| 106.1 | 316 | 2 | Fracture Rank 1 |
| 106.7 | 155 | 75 | Fracture Rank 1 |
| 107.5 | 300 | 17 | Bedding |
| 107.8 | 109 | 83 | Fracture Rank 1 |
| 108.8 | 313 | 9 | Fracture Rank 2 |
| 109.1 | 308 | 13 | Fracture Rank 2 |
| 109.3 | 322 | 13 | Bedding |
| 109.5 | 327 | 8 | Fracture Rank 1 |
| 109.7 | 298 | 11 | Bedding |
| 109.8 | 323 | 1 | Fracture Rank 1 |
| 110.2 | 306 | 13 | Bedding |
| 110.6 | 312 | 4 | Fracture Rank 1 |
| 110.7 | 295 | 13 | Bedding |

| HAGER-RICHTER GEOSCIENCE, INC. | |
|---|---|
| 114-MW4D - HPFM Data | |
| CLIENT | AECOM |
| PROJECT | PPG Site 114 - Garfield Avenue Group Sites |
| LOCATION | Jersey City, New Jersey |
| HRGS FILE | 19RG66 |
| DATE LOGGED | September 22, 2020 |
| LOG DATUM | Top of the 6-Inch Steel Casing |

114-MW4D - HPFM Data

| Depth (Feet) | HPFM - Ambient (gpm) | HPFM - Pumping (gpm) |
|---|---|---|
| 84.0 | 0.00 | 0.00 |
| 88.0 | 0.00 | 0.00 |
| 90.0 | 0.00 | 0.00 |
| 93.5 | 0.00 | 0.00 |
| 101.5 | 0.00 | 0.00 |

114-MW4D - Pumping & Drawdown Data

| | |
|---|---|
| PUMP RATE | 0.2 gpm |
| DRAWDOWN | 4.8 feet after 42 minutes of pumping and the water level was still drawing down at a rate of 0.2 gpm |

| Time | Water Level (Feet) | Pump Rate (gpm) |
|---|---|---|
| 8:00 AM | 7.80 | ambient |
| 11:17 AM | 8.00 | ambient |
| 11:18 AM | Start Pumping | |
| 11:25 AM | 9.20 | 0.2 |
| 11:30 AM | 10.00 | 0.2 |
| 11:35 AM | 10.60 | 0.2 |
| 11:40 AM | 11.20 | 0.2 |
| 11:45 AM | 11.90 | 0.2 |
| 11:50 AM | 12.60 | 0.2 |
| 11:55 AM | 13.30 | 0.2 |
| 12:00 PM | 14.00 | 0.2 |
| 12:05 PM | Stopped Pumping | |
| 12:20 PM | no measurable recovery 15 minutes after pumping was stopped | |

| HAGER-RICHTER GEOSCIENCE, INC. | |
|---|---|
| 114-MW6D - HPFM Data | |
| CLIENT | AECOM |
| PROJECT | PPG Site 114 - Garfield Avenue Group Sites |
| LOCATION | Jersey City, New Jersey |
| HRGS FILE | 19RG66 |
| DATE LOGGED | September 22, 2020 |
| LOG DATUM | Top of the 6-Inch Steel Casing |

114-MW6D - HPFM Data

| Depth (Feet) | HPFM - Ambient (gpm) | HPFM - Pumping (gpm) |
|---|---|---|
| 85.0 | 0.00 | 0.00 |
| 87.0 | 0.00 | 0.00 |
| 91.0 | 0.00 | 0.00 |
| 94.5 | 0.00 | 0.00 |
| 103.0 | 0.00 | 0.00 |
| 105.0 | 0.00 | 0.00 |
| 110.0 | 0.00 | 0.00 |

114-MW6D - Pumping & Drawdown Data

| | |
|---|---|
| PUMP RATE | 0.2 gpm |
| DRAWDOWN | 5.5 feet after 50 minutes of pumping and the water level was still drawing down at a rate of 0.2 gpm |

| Time | Water Level (Feet) | Pump Rate (gpm) |
|---|---|---|
| 12:30 PM | 0.10 | ambient |
| 3:30 PM | 0.10 | ambient |
| 3:35 PM | Start Pumping | |
| 3:40 PM | 0.40 | 0.2 |
| 3:45 PM | 1.00 | 0.2 |
| 3:50 PM | 1.65 | 0.2 |
| 3:55 PM | 2.40 | 0.2 |
| 4:00 PM | 3.10 | 0.2 |
| 4:05 PM | 3.80 | 0.2 |
| 4:10 PM | 4.50 | 0.2 |
| 4:15 PM | 5.20 | 0.2 |
| 4:20 PM | 5.90 | 0.2 |
| 4:25 PM | Stopped Pumping | |
| 4:35 PM | no measurable recovery 10 minutes after pumping was stopped | |

Schuele, Frederik

| | |
|---|---|
| From: | Robert Garfield <rob@hager-richter.com> |
| Sent: | Saturday, October 03, 2020 10:31 PM |
| To: | Schuele, Frederik; Spronz, Bill; Gleason, Shannon; Ravi, Shree |
| Cc: | Jeff Reid; Nick DeCristofaro; Mikko Aarnio |
| Subject: | [EXTERNAL] PPG Site 114 - GAG Sites - Jersey City, NJ - Borehole Geophysical Logging - Data Report |
| Attachments: | 114-MW4D - Table of Bedrock Structures.xlsx; 114-MW6D - Table of Bedrock Structures.xlsx; PPG Site 114 - GAG Sites - Jersey City, NJ - Borehole Geophysical Logging - Data Report.pdf |

Attached please find the data report for the borehole geophysical logging conducted in boreholes 114-MW4D and 114-MW6D at the PPG Site 114 – Garfield Avenue Group Sites in Jersey City, New Jersey. The data report consists of the borehole geophysical logs, bedrock structure statistics plots, tables of bedrock structures, and the borehole geophysical logging figures. The tables of bedrock structures are also provided in Microsoft Excel format for your use.

The borehole geophysical logging program consisted of the following in the of the logged boreholes:

- Optical Televiewer (OTV)
- Acoustic Televiewer (ATV)
- Acoustic Caliper
- Natural Gamma Ray
- Spontaneous Potential (SP)
- Single Point Resistance (SPR)
- Fluid Temperature
- Fluid Conductivity
- Heat Pulse Flow Meter (HPFM) Under Ambient Conditions
- HPFM Under Stressed (Low Constant Rate Pumping) Conditions

Explanation of the Borehole Geophysical Data Interpretation and Presentation

The datum for depths in this report is the top of the steel casing at the location of each borehole. The depths of bedrock structures are reported as the average depths of the top and bottom intersections of the bedrock structures and the borehole wall. The orientations of bedrock structures are reported as the dip azimuth (dip direction) and dip angle of each structure, as shown in the Televiewer Explanation Figure. The OTV, ATV, and bedrock structure dip azimuth data are referenced to true north using a magnetic declination of 12.8° west and the bedrock structure dip angle data are reported from horizontal. Please note that the bedrock structure dip azimuth data are perpendicular to strike as used commonly by geologists.

Bedrock structures detected in the televiewer (OTV & ATV) data are grouped into four categories (Fracture Rank 1, Fracture Rank 2, Fracture Rank 3, and Bedding) and are shown as color-coded lines and symbols on the structure projection plots and tadpole plots. The Key to Bedrock Structure Categories figure describes the bedrock structure categories and associated colors and tadpole shapes. The Tadpole Explanation Figure explains how to "read" the tadpole plots. Fracture Rank 1 consists of minor fractures that are not distinct and may not be continuous around the borehole. Fracture Rank 2 consists of intermediate fractures that are distinct and continuous around the borehole with little or no apparent aperture. Fracture Rank 3 consists of major fractures that are distinct and continuous around the borehole with apparent aperture. The Bedding category consists of planar geologic structures in the bedrock interpreted as bedding.

The data report consist of the following.

- Borehole Geophysical Logging Figures

  Figure 1. Key to bedrock structure categories
  Figure 2. Tadpole plot explanation figure
  Figure 3. Televiewer explanation figure

- Borehole Geophysical Logs – The borehole geophysical logs are provided at a scale of 1-inch to 2.5-feet, meant to be printed on portrait 11" x 17" paper, and consist of the following.

| Track # | Log & Description |
|---|---|
| 1. | OTV Image |
| 2. | Depth |
| 3. | ATV Amplitude |
| 4. | ATV Travel Time<br>Structure Projection – bedrock structure interpretation plotted in projection view |
| 5. | Acoustic Caliper – borehole diameter in inches<br>Tadpole Plot – bedrock structure interpretation plotted as tadpoles |
| 6. | Natural Gamma Ray, SP, & SPR |
| 7. | Depth |
| 8. | Fluid Temperature & Fluid Conductivity |
| 9. | HPFM Under Ambient & Pumping Conditions<br>Borehole Flow Interpretation |

- Bedrock Fracture Statistics Plots for 114-MW4D – The statistics plots include all detected bedrock fractures in borehole 114-MW4D, are meant to be printed on landscape 11" x 17" paper, and consist of the following:

| Track # | Description |
|---|---|
| 1. | Stereogram of Fractures – poles of fractures plotted on an equal area lower hemisphere stereogram |
| 2. | Contoured Stereogram of Fractures – contours of poles of fractures plotted on an equal area lower hemisphere stereogram |
| 3. | Dip Azimuth Rose Diagram of Fractures |
| 4. | Dip Angle Histogram of Fractures |

- Bedrock Structure Statistics Plots for 114-MW6D – The statistics plots consist of all detected bedrock structures in borehole 114-MW6D, are meant to be printed on landscape 11" x 17" paper, and consist of the following.

| Track # | Description |
|---|---|
| 1. | Stereogram of Fractures – poles/contours of fractures plotted on an equal area lower hemisphere stereogram |
| 2. | Dip Azimuth Rose Diagram of Fractures |
| 3. | Dip Angle Histogram of Fractures |
| 4. | Stereogram of Bedding – poles/ contours of bedding plotted on an equal area lower hemisphere stereogram |
| 5. | Dip Azimuth Rose Diagram of Bedding |
| 6. | Dip Angle Histogram of Bedding |

- Tables of Bedrock Structures – The tables of bedrock structures consist of all detected bedrock structures (fractures & bedding) in each borehole individually, are meant to be printed on standard portrait 8.5" x 11" paper, and consists of the following:

| Column # | Description |
|---|---|
| 1. | Depth |
| 2. | Bedrock Structure Dip Azimuth |
| 3. | Bedrock Structure Dip Angle |
| 4. | Bedrock Structure Category |

Summary of Borehole Flow

Flow was not detected in boreholes 114-MW4D or 114-MW6D with the HPFM under ambient or under pumping conditions. However, possible minor flow was detected in borehole 114-MW4D at the following depth interval.

- 85.5 – 87.7 feet (fractures at/near the bottom of casing):
  - possible minor flow into or out of the borehole based on the fluid temperature data

Summary of Bedrock Results

Based on the borehole geophysical logging data from the two logged boreholes, the bedrock encountered in borehole 114-MW4D appears to be igneous bedrock, possibly diabase based on information provided by AECOM; and the bedrock encountered in borehole 114-MW6D appears to be sedimentary bedrock, likely from the Lockatong Formation based on information provided by AECOM. The bedrock structure orientations and statistics are plotted and reported on the borehole geophysical logs, the bedrock structure statistics plots, and the bedrock structure tables.

114-MW4D. Based on the televiewer (OTV & ATV) data, the bedrock in 114-MW4D is highly fractured with many moderately to steeply dipping bedrock fractures, has no evidence of bedding, and has low gamma radiation (~30 cps) compared to borehole 114-MW6D. The most prominent orientation of bedrock fractures detected in borehole 114-MW4D has a dip azimuth to the east-southeast of 90° - 105° and a moderate dip angle of 25° - 45° from horizontal.

114-MW6D. Based on the televiewer data, the bedrock in 114-MW6D is relatively unfractured with the most prominent orientation of bedrock fractures being approximately parallel to the bedrock bedding evident in the bedrock. The bedrock in 114-MW6D also has much higher gamma radiation (~150-400 cps) as one would expect in the siltstones and mudstones found in the Lockatong formation. The most prominent orientation of bedding and bedrock fractures detected in borehole 114-MW6D has a dip azimuth to the northwest of 300° - 330° and a shallow dip angle of 0° - 20° from horizontal. A second, but significantly less prominent, bedrock fracture set was also detected in borehole 114-MW6D with is a dip azimuth to the southeast of 120° - 135° and a steep dip angle of 70° - 85° from horizontal.

The number of bedrock fractures and bedding detected and the most prominent orientations (dip azimuths and dip angles) of these bedrock fractures and bedding are reported in the tables below.

Summary of Bedrock Fracture Statistics

| Borehole ID | Number of Structures | Most Prominent Bedrock Fracture Dip Azimuths | Most Prominent Bedrock Fracture Dip Angles |
|---|---|---|---|
| 114-MW4D | 95 | east-southeast (90° - 105°) | 25° - 45° from horizontal |
| 114-MW6D | 38 | primary: northwest (300° - 330°)<br>secondary: southeast (120° - 135°) | 0° - 20° from horizontal<br>70° - 85° from horizontal |

Summary of Bedrock Bedding Statistics

| Borehole | Number of | Most Prominent Bedrock | Most Prominent Bedrock |
|---|---|---|---|

| ID | Structures | Bedding Dip Azimuths | Bedding Dip Angles |
|---|---|---|---|
| 114-MW4D | no bedding in igneous bedrock | | |
| 114-MW6D | 33 | northwest (285° - 315°) | 10° - 15° from horizontal |

If you have any questions or would like additional information, feel free to contact us at your convenience.

Thanks,
Rob

ROBERT GARFIELD, P.G.
Owner | Principal Borehole Geophysicist

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GEOSCIENCE, INC.

*GEOPHYSICS FOR THE ENGINEERING COMMUNITY*
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FORDS, NEW JERSEY
Tel: 732.661.0555

# BOREHOLE GEOPHYSICAL LOGGING – DATA REPORT
# BOREHOLES
# 114-MW52D, 114-MW57D, 114-MW61D, 114-MW66D
# PPG SITE 115 – GARFIELD AVENUE GROUP SITES
# JERSEY CITY, NEW JERSEY

*Prepared for:*

AECOM
Two City Center, Suite 200
Portland, Maine 04101

*Prepared by:*

Hager-Richter Geoscience, Inc.
846 Main Street
Fords, New Jersey 08863

File 19RG66
January 2021

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| Tadpole | Structure Category (Symbol Color) | Description |
|---|---|---|
|  | Bedding (Brown) | Planar geologic feature interpreted as bedding |
|  | Fracture Rank 1 (Light Blue) | Minor Fracture - not distinct and may not be continuous around the borehole |
|  | Fracture Rank 2 (Blue) | Intermediate Fracture - distinct and continuous around the borehole with little or no apparent aperture |
|  | Fracture Rank 3 (Red) | Major Fracture - distinct and continuous around the borehole with apparent aperture |

**Figure 1.** Key to bedrock structure categories.

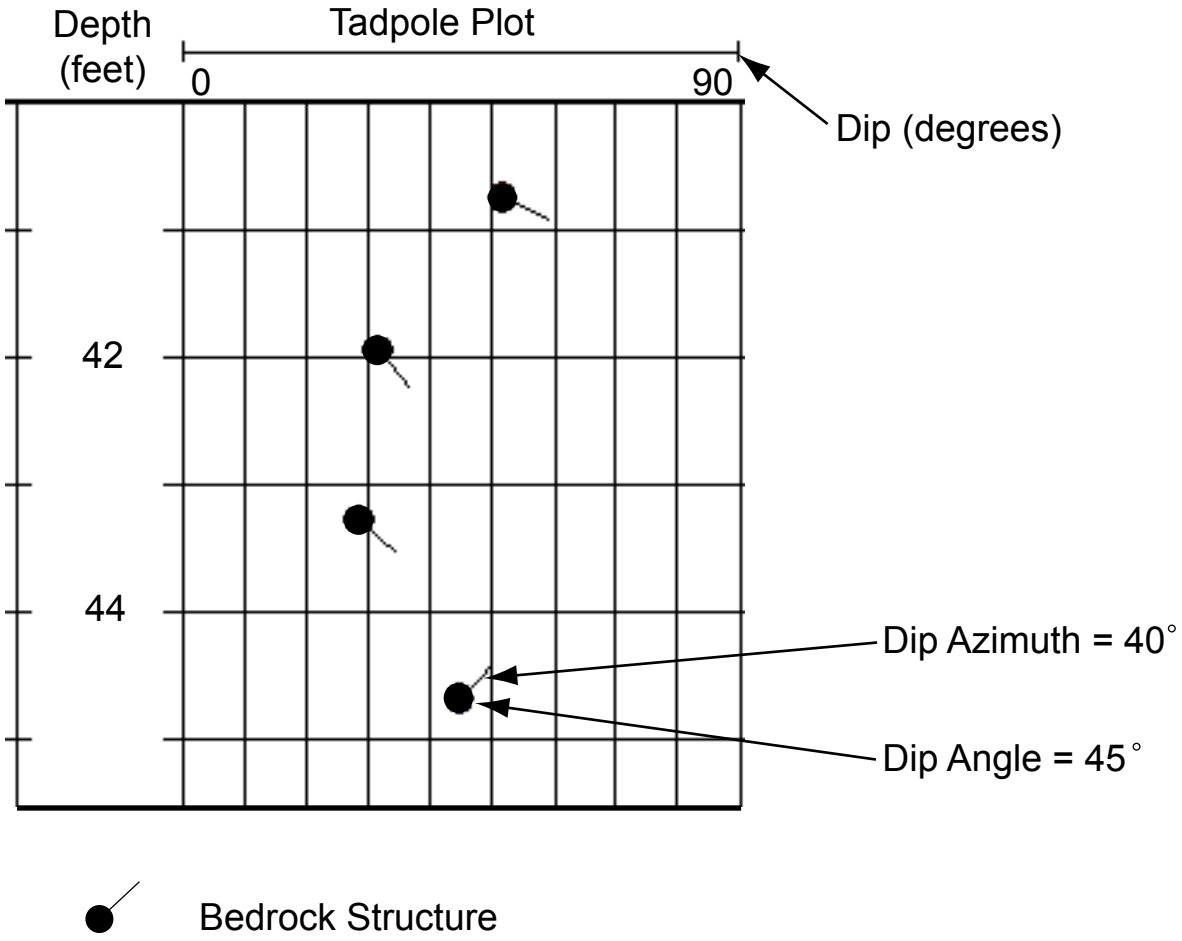


**Figure 2.** Tadpole plot explanation. The orientation of the bedrock structures is graphically displayed by a tadpole consisting of a circle, the head, and a line, the tail. The position of the head, left to right on the tadpole plot, gives the dip angle of the structure. The left side of the track indicates a dip angle of 0°, and the right side of the track indicates a dip angle of 90°from horizontal. The orientation of the tail gives the dip azimuth of the structure and can be read like a compass. The tail pointing directly up is 0°, north.

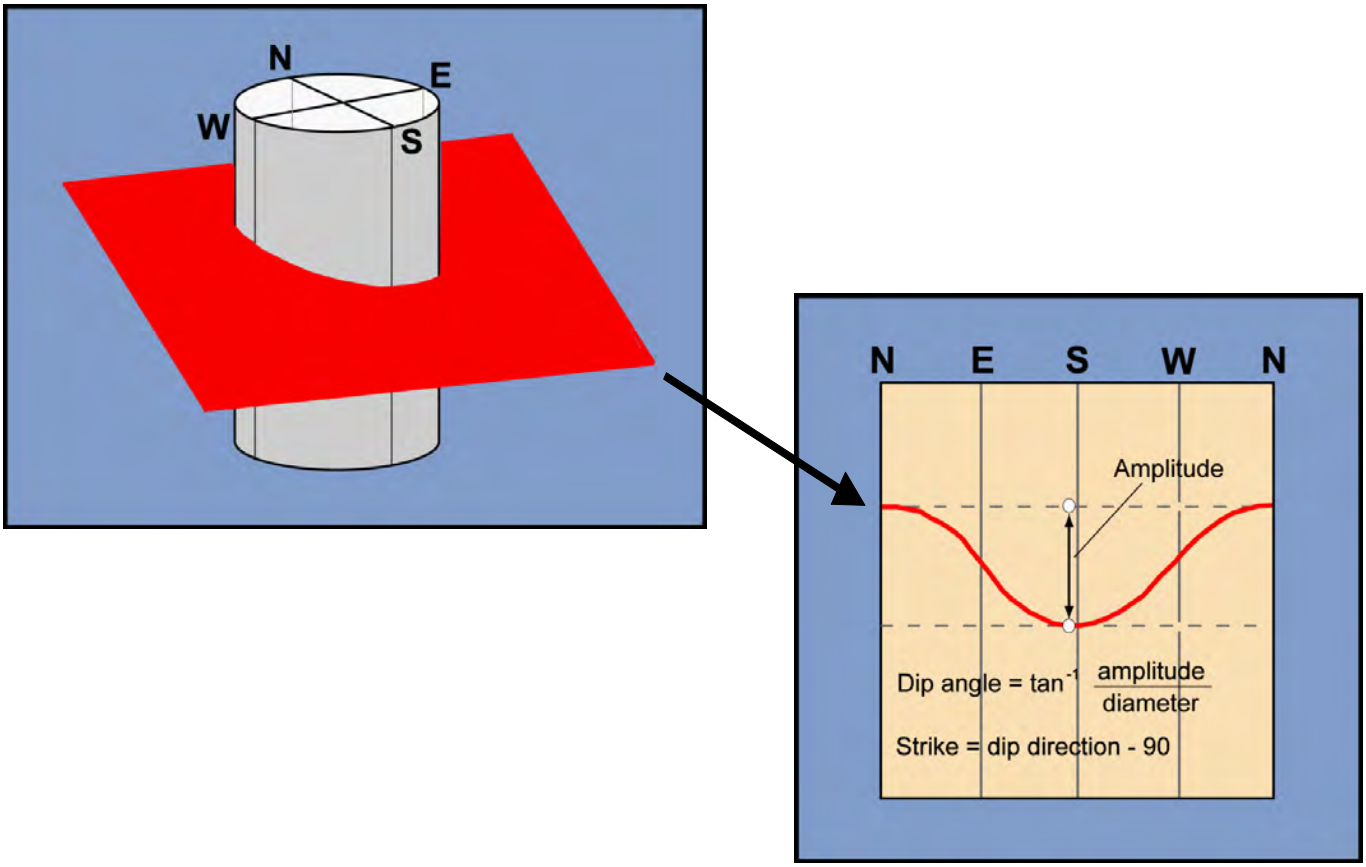


**Figure 3.** Televiewer explanation. The image on the left depicts a planar structure in red, such as a fracture or bedding plane, intersected by a borehole. The image on the right depicts the same structure unwrapped as it would be displayed in an optical televiewer (OTV) or acoustic televiewer (ATV) log.

Figure modified from: Garfield, R.L., Day-Lewis, F.D., Gray, M.B., Johnson, C.D., Williams, J.H. and Day-Lewis, A.D.F., 2003, Fractured-Rock Aquifer Characterization within a Regional Geologic Context: Results from the Bucknell University Hydrogeophysics Test Site, GSA Northeastern Section, 38th Annual Meeting, Paper No. 25-19.

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114-MW52D - BOREHOLE GEOPHYSICAL LOGS

DATE(S) LOGGED: January 14, 2021

| | | | |
|---|---|---|---|
| CLIENT: | AECOM | HRGS FILE: | 19RG66 |
| PROJECT: | PPG Site 114 - Garfield Avenue Group Sites | LOG DATUM: | Top of the 6-Inch Steel Casing |
| LOCATION: | Jersey City, New Jersey | TOP OF CASING: | 1.8 Feet Above the Ground Surface |
| LOGGING GEOPHYSICIST(S): | Nick DeCristofaro | ORIENTATION REFERENCE: | True North (Magnetic Declination = 12.8° West) |
| PROJECT REP(S) ON-SITE: | Bill Spronz | BOREHOLE DIAMETER: | 6 Inches |
| LOGS PROCESSED BY: | Robert Garfield, P.G. & Nick DeCristofaro | WATER LEVEL DEPTH: | 85.0 Feet at 07:00; 79.1 Feet at 14:00 |

STRUCTURE LEGEND

Fracture Rank 1 Fracture Rank 2 Bedding

NOTES: The borehole was developed the day before logging. The pumping associated with the development of the borehole caused the water level to drop in the borehole. At the time of logging the borehole the day after development, water was still rising (recovering) in the borehole at a rate of ~0.02 gpm. Because water was still filling the borehole at the time of logging, the borehole was under stressed conditions during the HPFM logging. When water in a borehole is rising/recovering during HPFM logging, the conditions mimic acquiring HPFM data under pumping conditions.

114-MW52D - Borehole Geophysical Logs

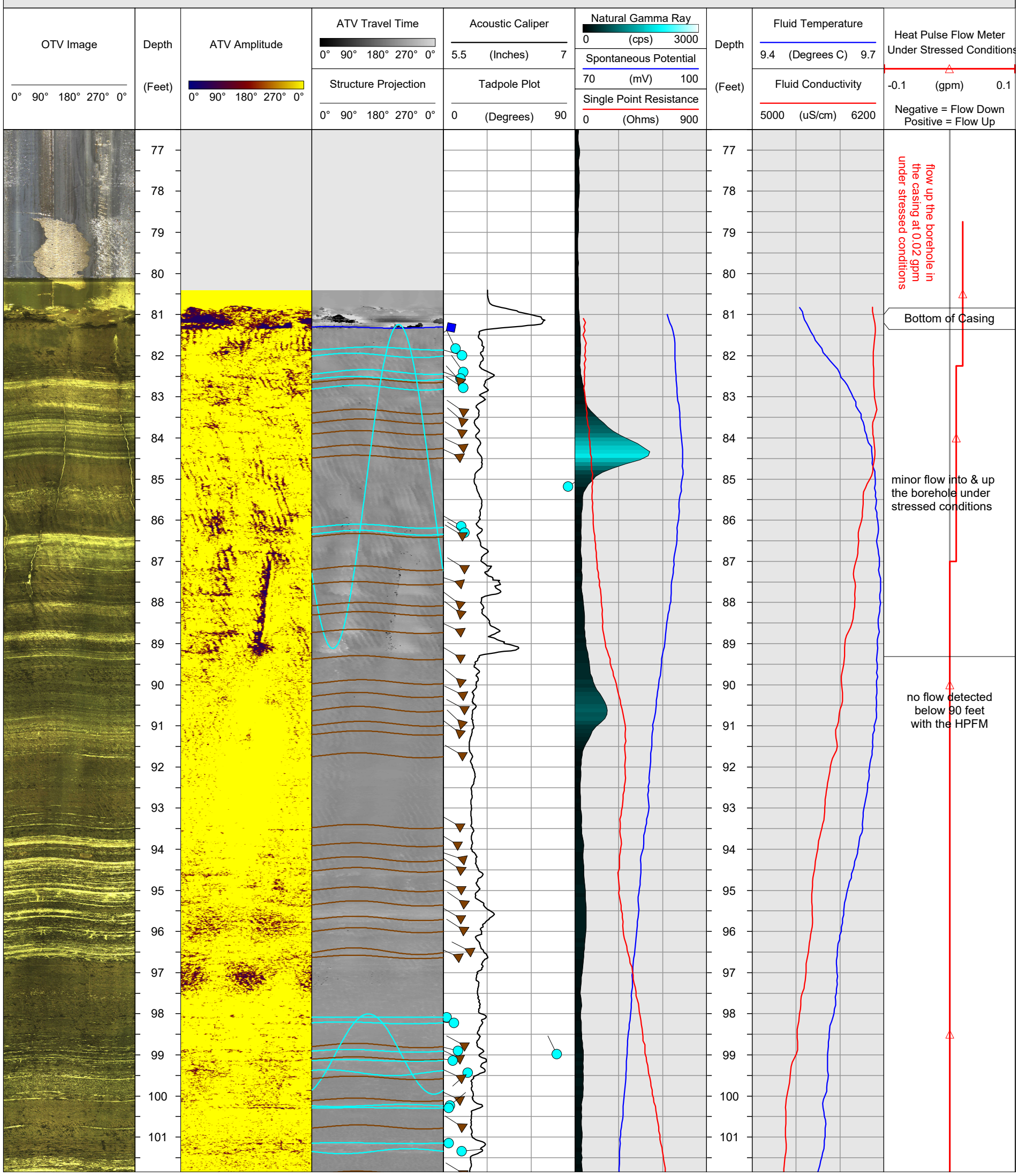

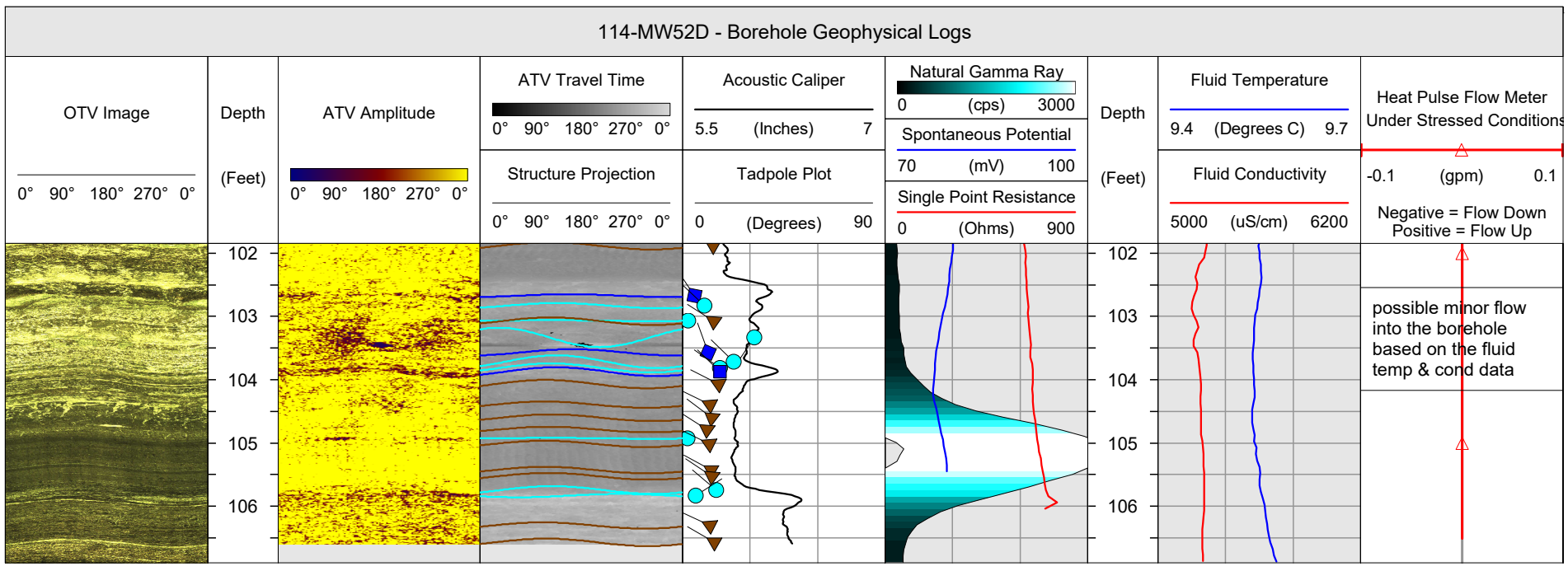
114-MW52D - Borehole Geophysical Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
5.5 (Inches) 7
Tadpole Plot
0 (Degrees) 90
Natural Gamma Ray
0 (cps) 3000
Spontaneous Potential
70 (mV) 100
Single Point Resistance
0 (Ohms) 900
Depth
(Feet)
Fluid Temperature
9.4 (Degrees C) 9.7
Fluid Conductivity
5000 (uS/cm) 6200
Heat Pulse Flow Meter
Under Stressed Conditions
-0.1 (gpm) 0.1
Negative = Flow Down
Positive = Flow Up
possible minor flow into the borehole based on the fluid temp & cond data
102
103
104
105
106

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# 114-MW57D - BOREHOLE GEOPHYSICAL LOGS

DATE(S) LOGGED: January 15, 2021

| | | | |
|---|---|---|---|
| CLIENT: | AECOM | HRGS FILE: | 19RG66 |
| PROJECT: | PPG Site 114 - Garfield Avenue Group Sites | LOG DATUM: | Top of the 6-Inch Steel Casing |
| LOCATION: | Jersey City, New Jersey | TOP OF CASING: | 2.0 Feet Above the Ground Surface |
| LOGGING GEOPHYSICIST(S): | Mikko Aarnio | ORIENTATION REFERENCE: | True North (Magnetic Declination = 12.8° West) |
| PROJECT REP(S) ON-SITE: | Bill Spronz | BOREHOLE DIAMETER: | 6 Inches |
| LOGS PROCESSED BY: | Robert Garfield, P.G. & Nick DeCristofaro | WATER LEVEL DEPTH: | 43.4 Feet at 12:00; 39.5 Feet at 14:15 |

STRUCTURE LEGEND

Fracture Rank 1 Fracture Rank 2 Bedding

NOTES: The borehole was developed the day before logging. The pumping associated with the development of the borehole caused the water level to drop in the borehole. At the time of logging the borehole the day after development, water was still rising (recovering) in the borehole at a rate of ~0.04 gpm. Because water was still filling the borehole at the time of logging, the borehole was under stressed conditions during the HPFM logging. When water in a borehole is rising/recovering during HPFM logging, the conditions mimic acquiring HPFM data under pumping conditions.

## 114-MW57D - Borehole Geophysical Logs

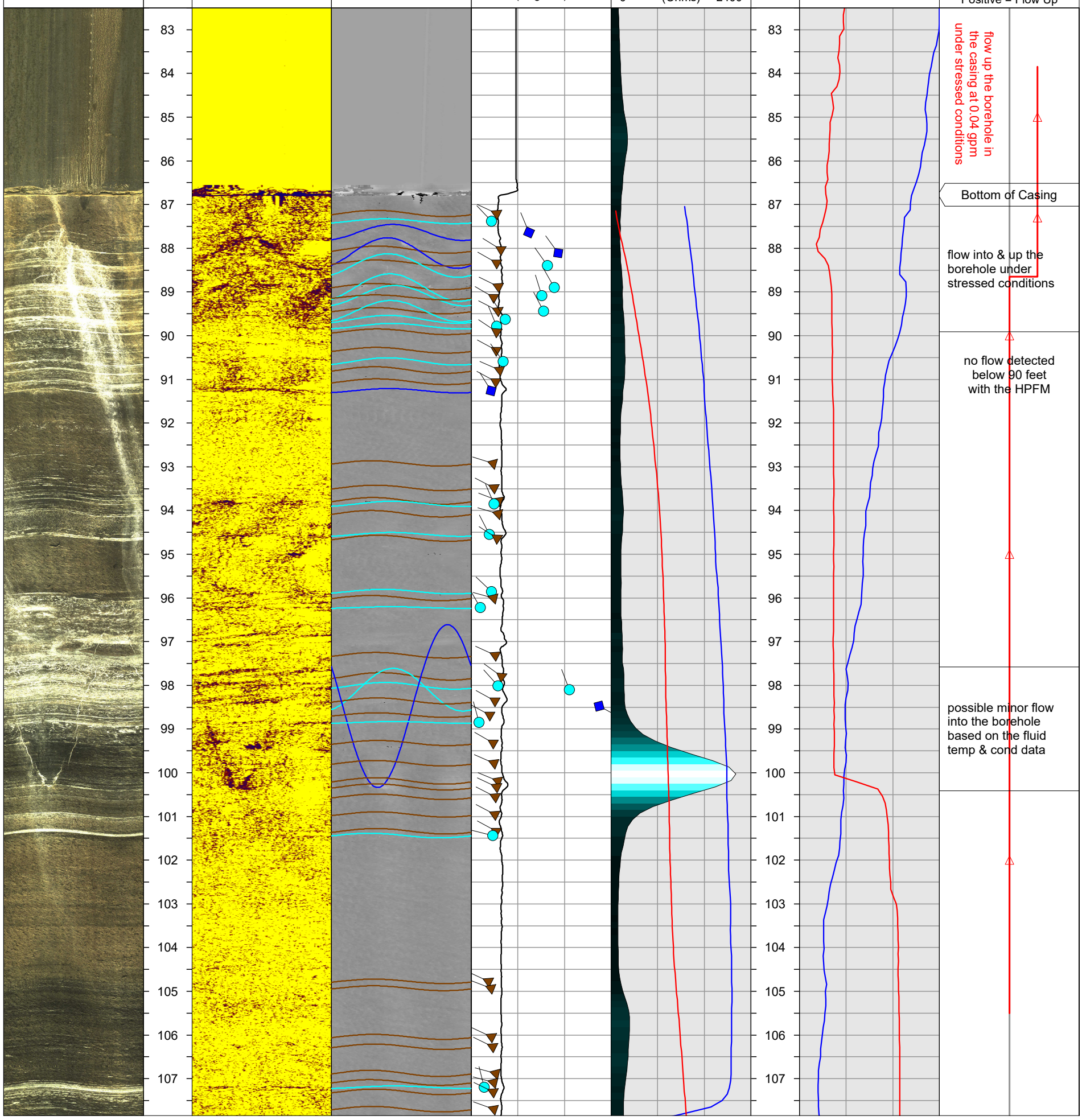

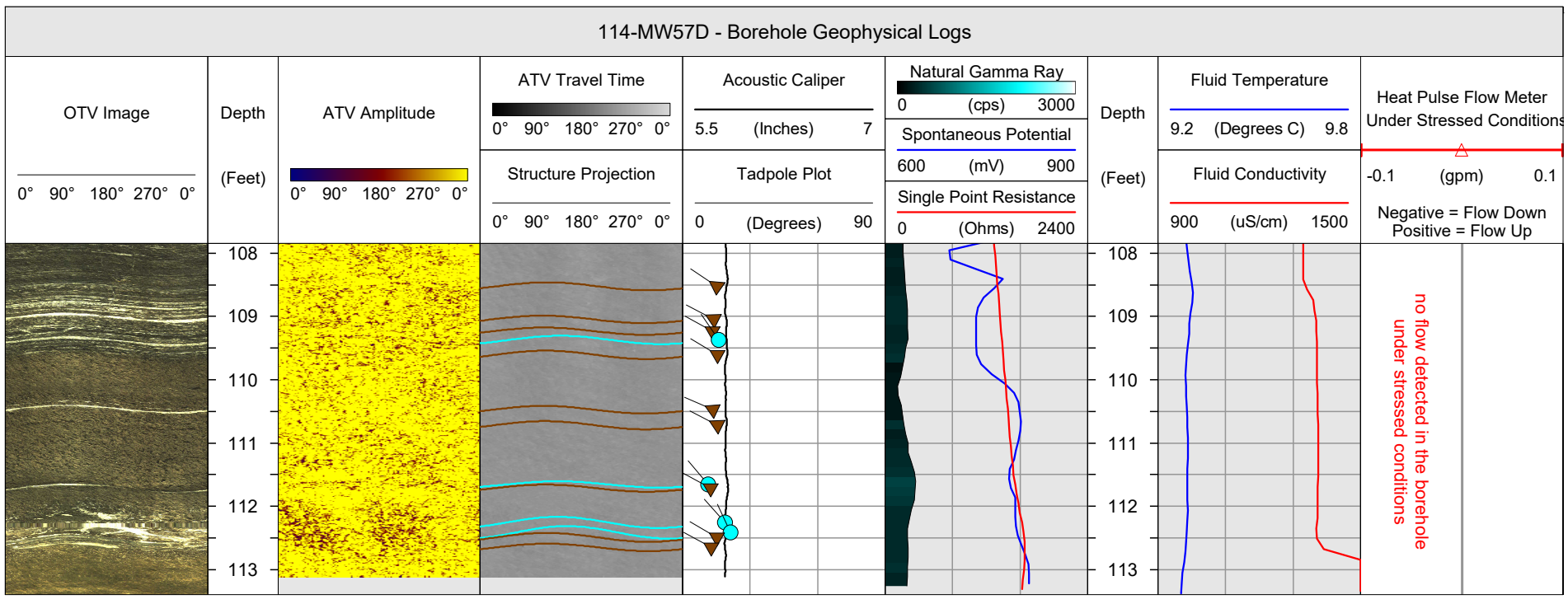
114-MW57D - Borehole Geophysical Logs
OTV Image
0° 90° 180° 270° 0°
Depth
(Feet)
ATV Amplitude
0° 90° 180° 270° 0°
ATV Travel Time
0° 90° 180° 270° 0°
Structure Projection
0° 90° 180° 270° 0°
Acoustic Caliper
5.5 (Inches) 7
Tadpole Plot
0 (Degrees) 90
Natural Gamma Ray
0 (cps) 3000
Spontaneous Potential
600 (mV) 900
Single Point Resistance
0 (Ohms) 2400
Depth
(Feet)
Fluid Temperature
9.2 (Degrees C) 9.8
Fluid Conductivity
900 (uS/cm) 1500
Heat Pulse Flow Meter
Under Stressed Conditions
-0.1 (gpm) 0.1
Negative = Flow Down
Positive = Flow Up
108
109
110
111
112
113
no flow detected in the borehole
under stressed conditions

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# 114-MW61D - BOREHOLE GEOPHYSICAL LOGS

DATE(S) LOGGED: January 15, 2021

| | | | |
|---|---|---|---|
| CLIENT: | AECOM | HRGS FILE: | 19RG66 |
| PROJECT: | PPG Site 114 - Garfield Avenue Group Sites | LOG DATUM: | Top of the 6-Inch Steel Casing |
| LOCATION: | Jersey City, New Jersey | TOP OF CASING: | 2.3 Feet Above the Ground Surface |
| LOGGING GEOPHYSICIST(S): | Mikko Aarnio | ORIENTATION REFERENCE: | True North (Magnetic Declination = 12.8° West) |
| PROJECT REP(S) ON-SITE: | Bill Spronz | BOREHOLE DIAMETER: | 6 Inches |
| LOGS PROCESSED BY: | Robert Garfield, P.G. & Nick DeCristofaro | WATER LEVEL DEPTH: | 47.0 Feet at 08:00; 42.5 Feet at 10:45 |

STRUCTURE LEGEND

Fracture Rank 1 Fracture Rank 2 Fracture Rank 3

NOTES: The borehole was developed the day before logging. The pumping associated with the development of the borehole caused the water level to drop in the borehole. At the time of logging the borehole the day after development, water was still rising (recovering) in the borehole at a rate of ~0.04 gpm. Because water was still filling the borehole at the time of logging, the borehole was under stressed conditions during the HPFM logging. When water in a borehole is rising/recovering during HPFM logging, the conditions mimic acquiring HPFM data under pumping conditions.

## 114-MW61D - Borehole Geophysical Logs

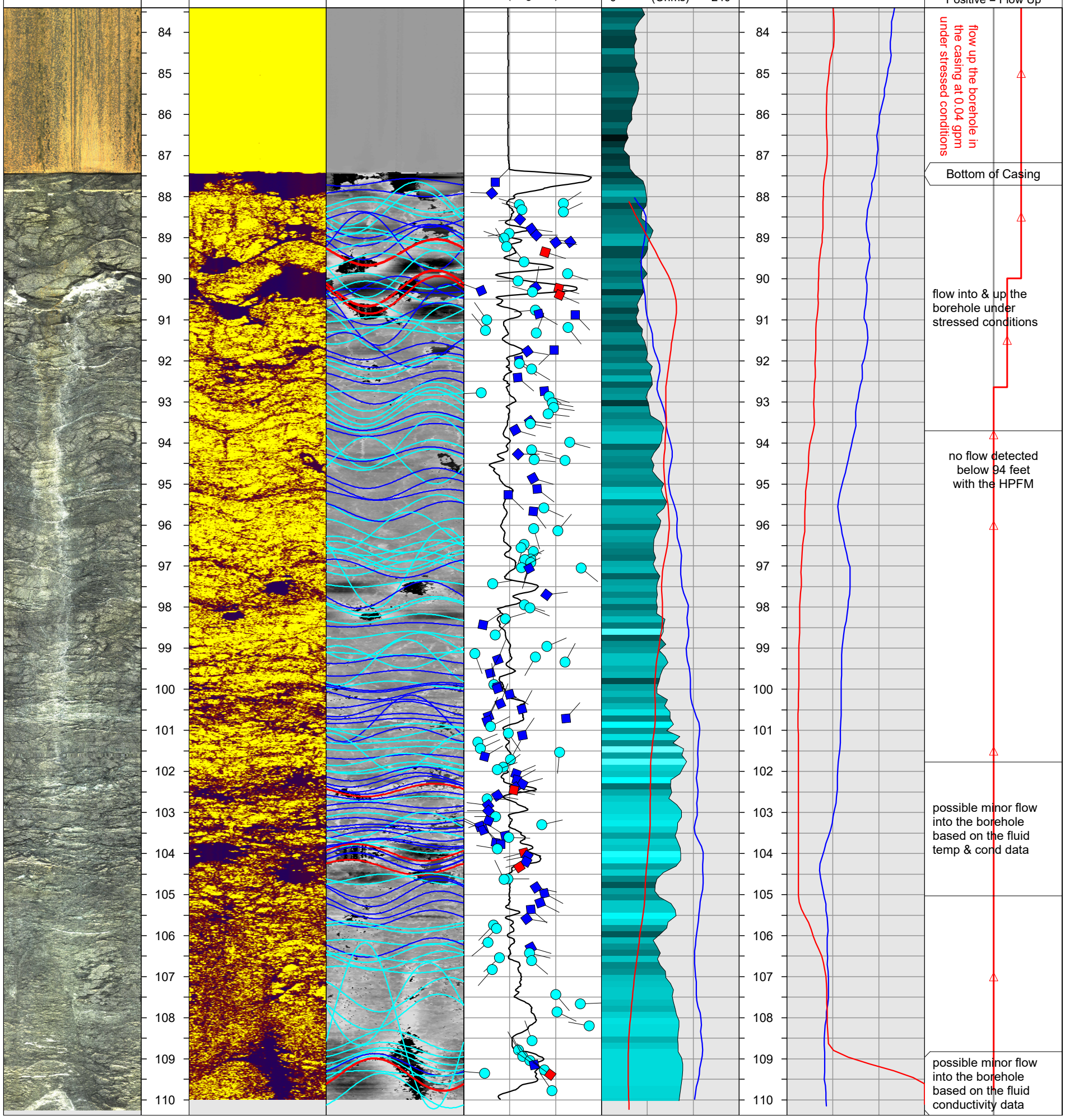

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# 114-MW66D - BOREHOLE GEOPHYSICAL LOGS

DATE(S) LOGGED: January 14, 2021

| | | | |
|---|---|---|---|
| CLIENT: | AECOM | HRGS FILE: | 19RG66 |
| PROJECT: | PPG Site 114 - Garfield Avenue Group Sites | LOG DATUM: | Top of the 6-Inch Steel Casing |
| LOCATION: | Jersey City, New Jersey | TOP OF CASING: | 2.1 Feet Above the Ground Surface |
| LOGGING GEOPHYSICIST(S): | Nick DeCristofaro | ORIENTATION REFERENCE: | True North (Magnetic Declination = 12.8° West) |
| PROJECT REP(S) ON-SITE: | Bill Spronz | BOREHOLE DIAMETER: | 6 Inches |
| LOGS PROCESSED BY: | Robert Garfield, P.G. & Nick DeCristofaro | WATER LEVEL DEPTH: | 58.5 Feet at 07:00; 51.3 Feet at 11:00 |

STRUCTURE LEGEND

Fracture Rank 1 | Fracture Rank 2 | Fracture Rank 3 | Bedding

NOTES: The borehole was developed the day before logging. The pumping associated with the development of the borehole caused the water level to drop in the borehole. At the time of logging the borehole the day after development, water was still rising (recovering) in the borehole at a rate of ~0.05 gpm. Because water was still filling the borehole at the time of logging, the borehole was under stressed conditions during the HPFM logging. When water in a borehole is rising/recovering during HPFM logging, the conditions mimic acquiring HPFM data under pumping conditions.

## 114-MW66D - Borehole Geophysical Logs

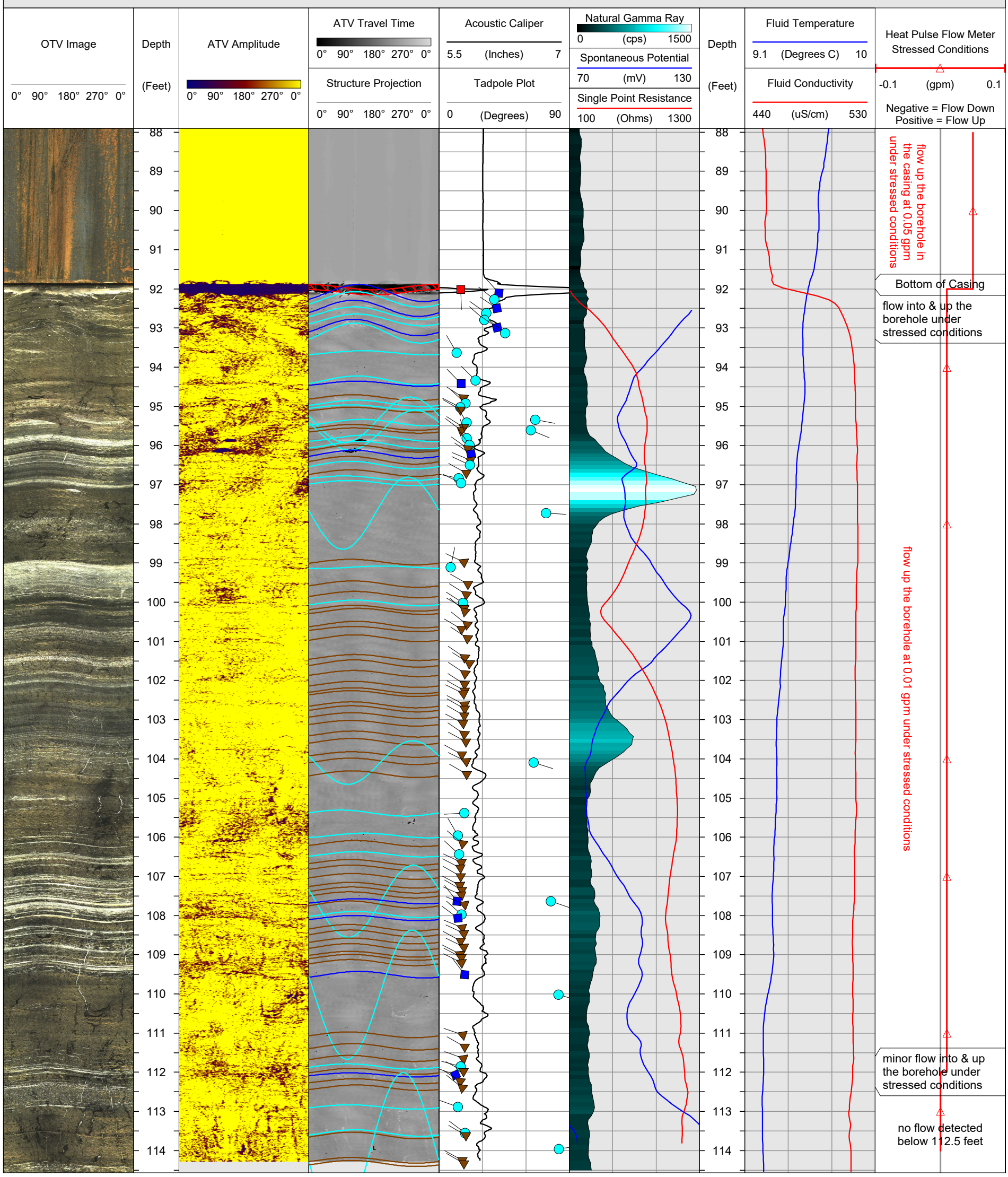

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SEDIMENTARY BEDROCK (114-MW6D, 114-MW52D, 114-MW57D, 114-MW66D) - BEDROCK STUCTURE STATISTICS PLOTS

DATE(S) LOGGED: September 22, 2020, January 14 & 15, 2021

CLIENT: AECOM
PROJECT: PPG Site 114 - Garfield Avenue Group Sites
LOCATION: Jersey City, New Jersey

HRGS FILE: 19RG66
ORIENTATION REFERENCE: True North
MAGNETIC DECLINATION: 12.8° West

STRUCTURE LEGEND

Fracture Rank 1 | Fracture Rank 2 | Fracture Rank 3 | Bedding

## Stereogram - Lower Hemisphere of Fractures

Schmidt Plot - LH - Bedrock Structures

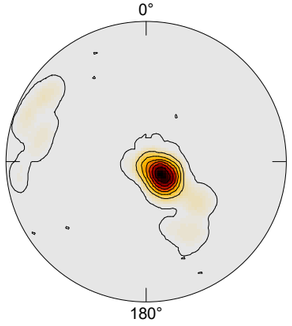


| | Counts | Dip[deg] | Azi[deg] |
|---|---|---|---|
| Mean | 133 | 24.95 | 316.61 |
| ■ | 25 | 21.23 | 308.95 |
| ○ | 107 | 25.96 | 319.98 |
| ◆ | 1 | 15.02 | 178.13 |

## Dip Azimuth Rose Diagram of Fractures

Azimuth - Absolute (Count)

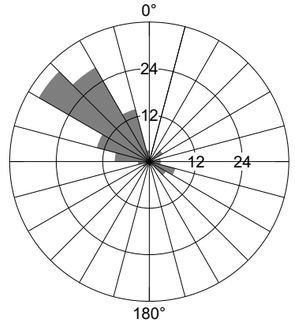


| | |
|---|---|
| Components: | Azimuth |
| Counts: | 133.00 |
| Mean (2D): | 316.61 |
| Std.Dev.: | 57.66 |
| Min: | 11.15 |
| Max: | 345.80 |

## Dip Angle Histogram of Fractures

Dip Histogram (Count)

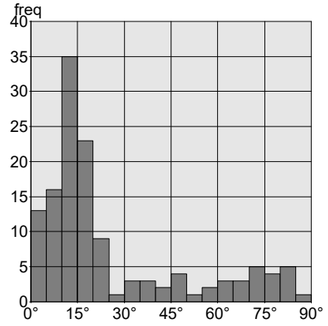


| | |
|---|---|
| Counts: | 133.00 |
| Mean (2D): | 24.95 |
| Std.Dev.: | 23.85 |
| Min: | 1.49 |
| Max: | 85.21 |

## Stereogram - Lower Hemisphere of Bedding

Schmidt Plot - LH - Bedrock Structures

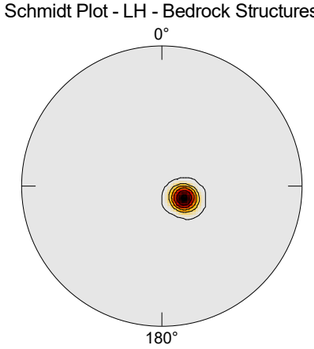


| | Counts | Dip[deg] | Azi[deg] |
|---|---|---|---|
| Mean | 176 | 14.87 | 298.95 |
| ▶ | 176 | 14.87 | 298.95 |

## Dip Azimuth Rose Diagram of Bedding

Azimuth - Absolute (Count)

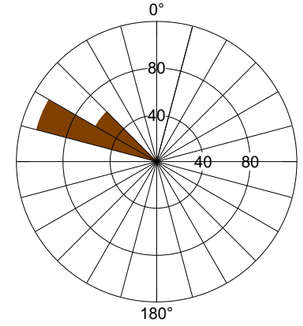


| | |
|---|---|
| Components: | Azimuth |
| Counts: | 176.00 |
| Mean (2D): | 298.95 |
| Std.Dev.: | 6.80 |
| Min: | 273.57 |
| Max: | 333.95 |

## Dip Angle Histogram of Bedding

Dip Histogram (Count)

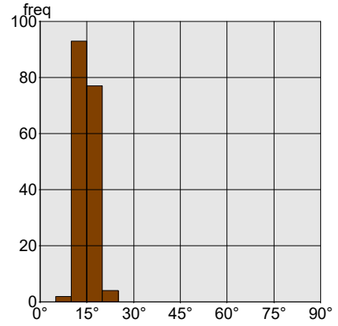


| | |
|---|---|
| Counts: | 176.00 |
| Mean (2D): | 14.87 |
| Std.Dev.: | 2.48 |
| Min: | 9.28 |
| Max: | 21.82 |

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114-MW52D - BEDROCK STUCTURE STATISTICS PLOTS

DATE(S) LOGGED: January 14, 2021

CLIENT: AECOM
PROJECT: PPG Site 114 - Garfield Avenue Group Sites
LOCATION: Jersey City, New Jersey

HRGS FILE: 19RG66
ORIENTATION REFERENCE: True North
MAGNETIC DECLINATION: 12.8° West

STRUCTURE LEGEND

Fracture Rank 1 | Fracture Rank 2 | Fracture Rank 3 | Bedding

| Stereogram - Lower Hemisphere of Fractures | Dip Azimuth Rose Diagram of Fractures | Dip Angle Histogram of Fractures | Stereogram - Lower Hemisphere of Bedding | Dip Azimuth Rose Diagram of Bedding | Dip Angle Histogram of Bedding |
|---|---|---|---|---|---|

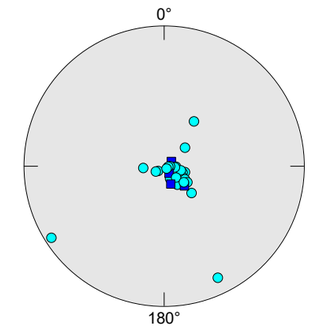


| | Counts | Dip[deg] | Azi[deg] |
|---|---|---|---|
| Mean | 30 | 14.41 | 305.25 |
| ■ | 4 | 9.59 | 308.06 |
| ● | 26 | 15.19 | 304.75 |

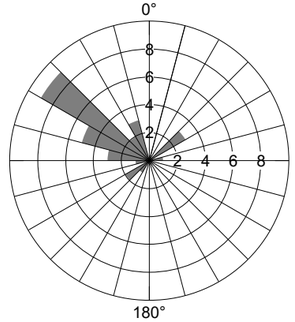


| Components: | Azimuth |
|---|---|
| Counts: | 30.00 |
| Mean (2D): | 305.25 |
| Std.Dev.: | 50.19 |
| Min: | 50.61 |
| Max: | 340.14 |

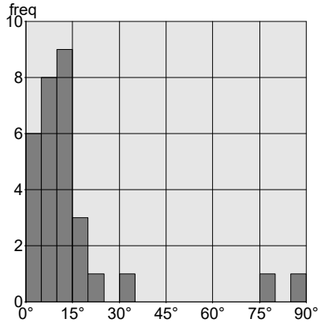


| Counts: | 30.00 |
|---|---|
| Mean (2D): | 14.41 |
| Std.Dev.: | 18.11 |
| Min: | 2.30 |
| Max: | 85.21 |

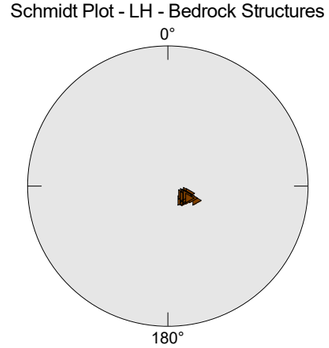


| | Counts | Dip[deg] | Azi[deg] |
|---|---|---|---|
| Mean | 45 | 12.65 | 300.67 |
| ▶ | 45 | 12.65 | 300.67 |

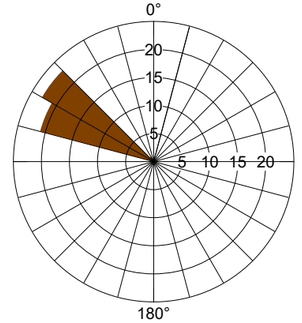


| Components: | Azimuth |
|---|---|
| Counts: | 45.00 |
| Mean (2D): | 300.67 |
| Std.Dev.: | 5.74 |
| Min: | 288.71 |
| Max: | 317.50 |

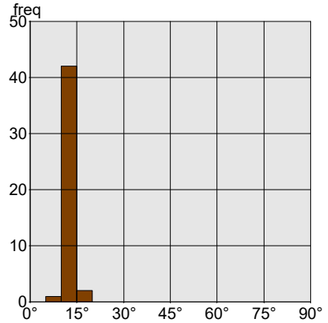


| Counts: | 45.00 |
|---|---|
| Mean (2D): | 12.65 |
| Std.Dev.: | 1.52 |
| Min: | 9.69 |
| Max: | 18.35 |

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114-MW57D - BEDROCK STUCTURE STATISTICS PLOTS

DATE(S) LOGGED: January 15, 2021

CLIENT: AECOM
PROJECT: PPG Site 114 - Garfield Avenue Group Sites
LOCATION: Jersey City, New Jersey

HRGS FILE: 19RG66
ORIENTATION REFERENCE: True North
MAGNETIC DECLINATION: 12.8° West

STRUCTURE LEGEND

Fracture Rank 1 | Fracture Rank 2 | Fracture Rank 3 | Bedding

### Stereogram - Lower Hemisphere of Fractures

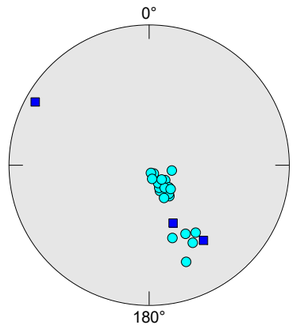


| | Counts | Dip[deg] | Azi[deg] |
|---|---|---|---|
| Mean | 25 | 26.46 | 329.25 |
| ○ | 21 | 22.85 | 327.73 |
| ■ | 4 | 46.94 | 343.53 |

### Dip Azimuth Rose Diagram of Fractures

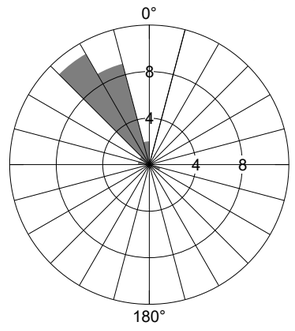


| | |
|---|---|
| Components: | Azimuth |
| Counts: | 25.00 |
| Mean (2D): | 329.25 |
| Std.Dev.: | 25.94 |
| Min: | 119.00 |
| Max: | 345.80 |

### Dip Angle Histogram of Fractures

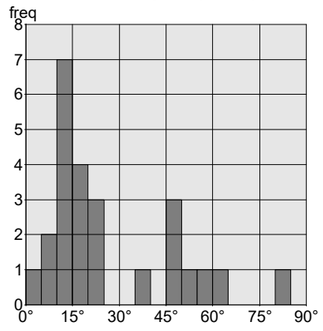


| | |
|---|---|
| Counts: | 25.00 |
| Mean (2D): | 26.46 |
| Std.Dev.: | 20.37 |
| Min: | 4.92 |
| Max: | 82.32 |

### Stereogram - Lower Hemisphere of Bedding

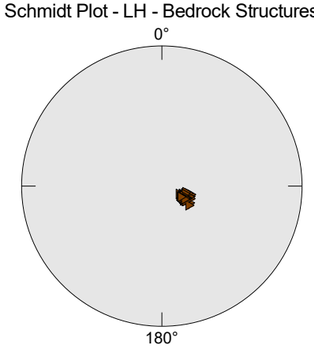


| | Counts | Dip[deg] | Azi[deg] |
|---|---|---|---|
| Mean | 44 | 15.24 | 296.11 |
| ▸ | 44 | 15.24 | 296.11 |

### Dip Azimuth Rose Diagram of Bedding

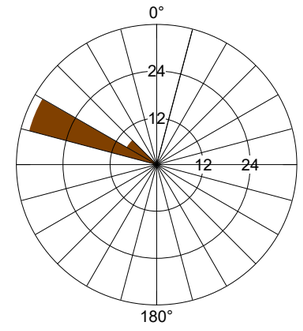


| | |
|---|---|
| Components: | Azimuth |
| Counts: | 44.00 |
| Mean (2D): | 296.11 |
| Std.Dev.: | 5.04 |
| Min: | 284.73 |
| Max: | 306.00 |

### Dip Angle Histogram of Bedding

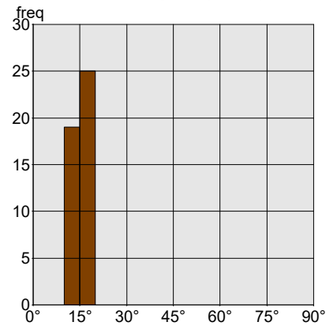


| | |
|---|---|
| Counts: | 44.00 |
| Mean (2D): | 15.24 |
| Std.Dev.: | 1.80 |
| Min: | 11.19 |
| Max: | 19.32 |

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114-MW66D - BEDROCK STUCTURE STATISTICS PLOTS

DATE(S) LOGGED: January 14, 2021

CLIENT: AECOM
PROJECT: PPG Site 114 - Garfield Avenue Group Sites
LOCATION: Jersey City, New Jersey

HRGS FILE: 19RG66
ORIENTATION REFERENCE: True North
MAGNETIC DECLINATION: 12.8° West

STRUCTURE LEGEND

Fracture Rank 1 | Fracture Rank 2 | Fracture Rank 3 | Bedding

| Stereogram - Lower Hemisphere of Fractures | Dip Azimuth Rose Diagram of Fractures | Dip Angle Histogram of Fractures | Stereogram - Lower Hemisphere of Bedding | Dip Azimuth Rose Diagram of Bedding | Dip Angle Histogram of Bedding |
|---|---|---|---|---|---|

Schmidt Plot - LH - Bedrock Structures

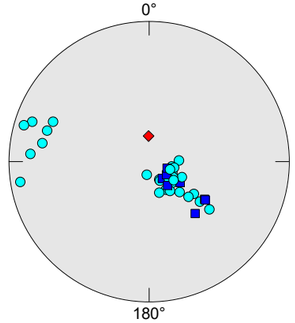


| | Counts | Dip[deg] | Azi[deg] |
|---|---|---|---|
| Mean | 40 | 29.26 | 316.02 |
| ◆ | 1 | 15.02 | 178.13 |
| ■ | 9 | 23.63 | 309.78 |
| ● | 30 | 31.58 | 321.97 |

Azimuth - Absolute (Count)

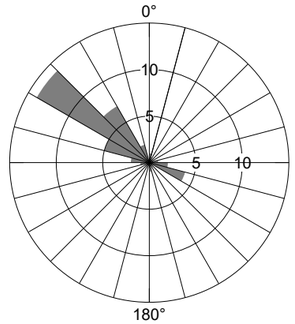


| | |
|---|---|
| Components: | Azimuth |
| Counts: | 40.00 |
| Mean (2D): | 316.02 |
| Std.Dev.: | 58.52 |
| Min: | 11.15 |
| Max: | 341.69 |

Dip Histogram (Count)

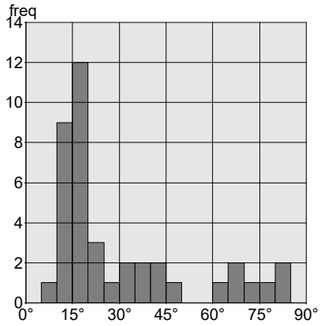


| | |
|---|---|
| Counts: | 40.00 |
| Mean (2D): | 29.26 |
| Std.Dev.: | 22.02 |
| Min: | 7.96 |
| Max: | 82.68 |

Schmidt Plot - LH - Bedrock Structures

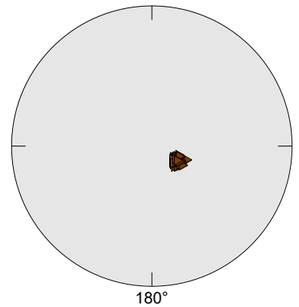


| | Counts | Dip[deg] | Azi[deg] |
|---|---|---|---|
| Mean | 54 | 17.13 | 299.53 |
| ▶ | 54 | 17.13 | 299.53 |

Azimuth - Absolute (Count)

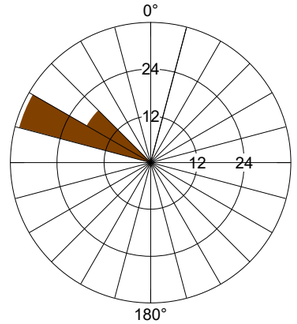


| | |
|---|---|
| Components: | Azimuth |
| Counts: | 54.00 |
| Mean (2D): | 299.53 |
| Std.Dev.: | 4.62 |
| Min: | 288.86 |
| Max: | 311.36 |

Dip Histogram (Count)

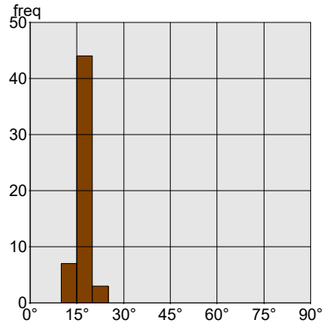


| | |
|---|---|
| Counts: | 54.00 |
| Mean (2D): | 17.13 |
| Std.Dev.: | 1.67 |
| Min: | 14.42 |
| Max: | 21.82 |

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IGNEOUS BEDROCK (114-MW4D & 114-MW61D) - BEDROCK FRACTURE STATISTICS PLOTS FOR 114-MW4D & 114-MW61D

DATE(S) LOGGED: September 22, 2020 & January 15, 2021

CLIENT: AECOM
PROJECT: PPG Site 114 - Garfield Avenue Group Sites
LOCATION: Jersey City, New Jersey

HRGS FILE: 19RG66
ORIENTATION REFERENCE: True North
MAGNETIC DECLINATION: 12.8° West

STRUCTURE LEGEND

Fracture Rank 1 ■ Fracture Rank 2 ◆ Fracture Rank 3

## Stereogram - Lower Hemisphere of Bedrock Fractures

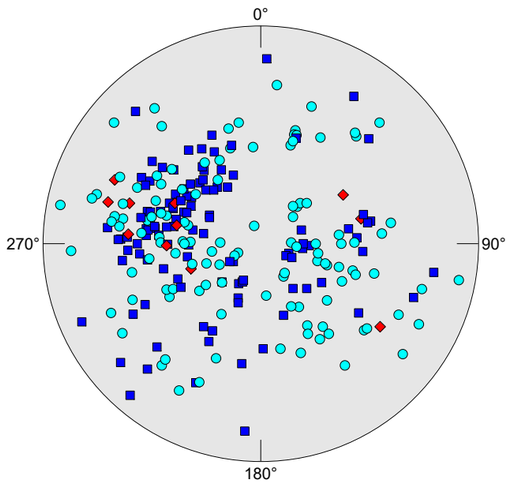


| | Counts | Dip[deg] | Azi[deg] |
|---|---|---|---|
| Mean | 244 | 40.38 | 97.38 |
| ■ | 113 | 39.08 | 97.85 |
| ● | 120 | 41.20 | 92.82 |
| ◆ | 11 | 44.84 | 106.76 |

## Contoured Stereogram - Lower Hemisphere of Bedrock Fractures

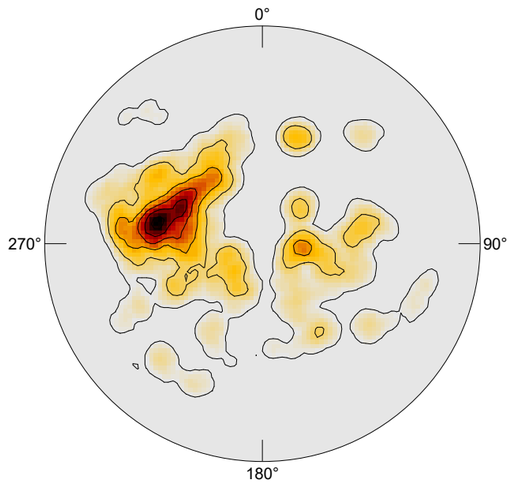


| | Counts | Dip[deg] | Azi[deg] |
|---|---|---|---|
| Mean | 244 | 40.38 | 97.38 |
| ■ | 113 | 39.08 | 97.85 |
| ● | 120 | 41.20 | 92.82 |
| ◆ | 11 | 44.84 | 106.76 |

## Dip Azimuth Rose Diagram of Bedrock Fractures

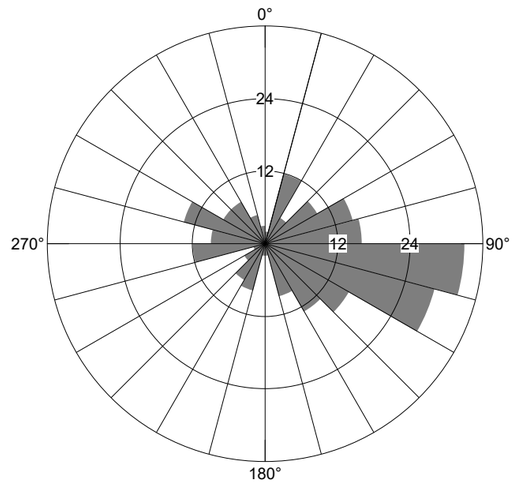


| | |
|---|---|
| Components: | Azimuth |
| Counts: | 244.00 |
| Mean (2D): | 97.38 |
| Std.Dev.: | 90.12 |
| Min: | 4.94 |
| Max: | 358.56 |

## Dip Angle Histogram of Bedrock Fractures

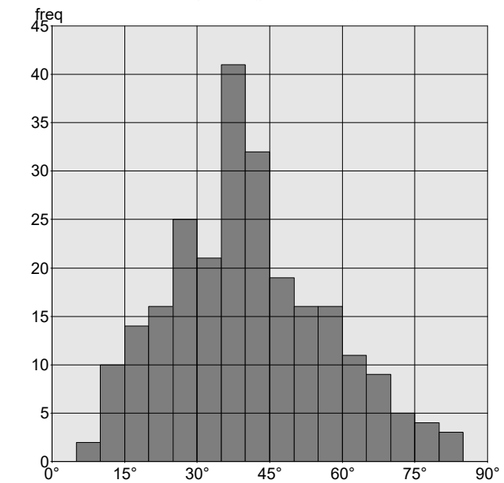


| | |
|---|---|
| Counts: | 244.00 |
| Mean (2D): | 40.38 |
| Std.Dev.: | 16.25 |
| Min: | 7.18 |
| Max: | 83.25 |

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# 114-MW61D - BEDROCK FRACTURE STATISTICS PLOTS

DATE(S) LOGGED: January 15, 2021

| | | | |
|---|---|---|---|
| CLIENT: | AECOM | HRGS FILE: | 19RG66 |
| PROJECT: | PPG Site 114 - Garfield Avenue Group Sites | ORIENTATION REFERENCE: | True North |
| LOCATION: | Jersey City, New Jersey | MAGNETIC DECLINATION: | 12.8° West |

STRUCTURE LEGEND

Fracture Rank 1 ■ Fracture Rank 2 ◆ Fracture Rank 3

## Stereogram - Lower Hemisphere of Bedrock Fractures

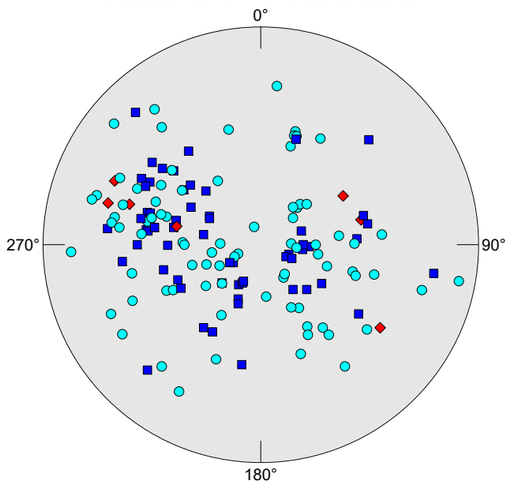


| | Counts | Dip[deg] | Azi[deg] |
|---|---|---|---|
| Mean | 149 | 38.48 | 86.36 |
| ■ | 60 | 35.38 | 83.27 |
| ● | 82 | 39.86 | 84.85 |
| ◆ | 7 | 48.95 | 139.65 |

## Contoured Stereogram - Lower Hemisphere of Bedrock Fractures

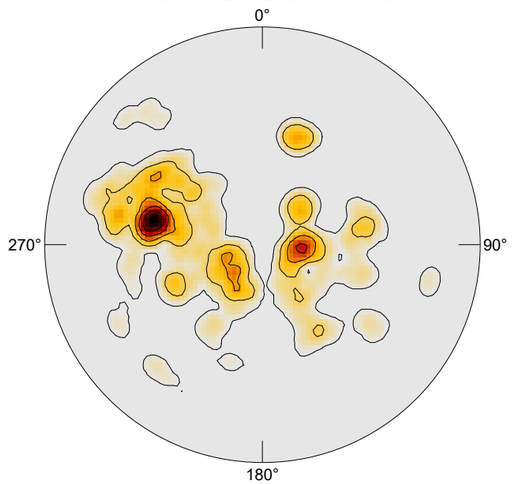


| | Counts | Dip[deg] | Azi[deg] |
|---|---|---|---|
| Mean | 149 | 38.48 | 86.36 |
| ■ | 60 | 35.38 | 83.27 |
| ● | 82 | 39.86 | 84.85 |
| ◆ | 7 | 48.95 | 139.65 |

## Dip Azimuth Rose Diagram of Bedrock Fractures

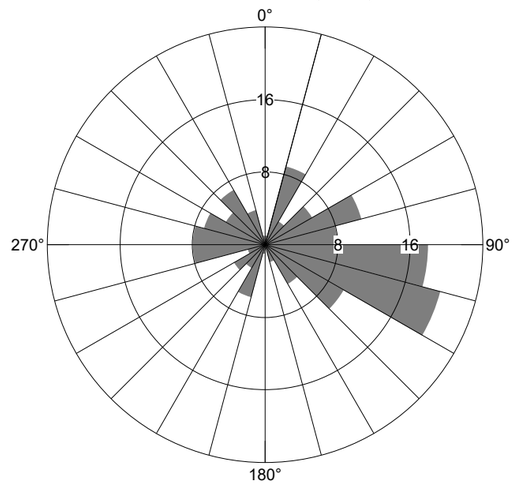


| | |
|---|---|
| Components: | Azimuth |
| Counts: | 149.00 |
| Mean (2D): | 86.36 |
| Std.Dev.: | 97.40 |
| Min: | 9.27 |
| Max: | 353.92 |

## Dip Angle Histogram of Bedrock Fractures

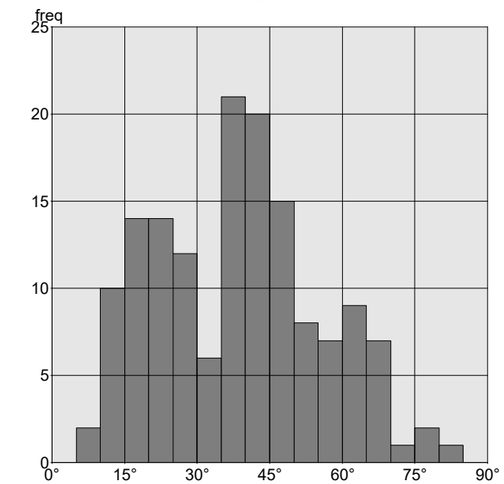


| | |
|---|---|
| Counts: | 149.00 |
| Mean (2D): | 38.48 |
| Std.Dev.: | 17.06 |
| Min: | 7.18 |
| Max: | 81.83 |

| HAGER-RICHTER GEOSCIENCE, INC. | |
|---|---|
| **114-MW52D - TABLE OF BEDROCK STRUCTURES** | |
| CLIENT | AECOM |
| PROJECT | PPG Site 114 - Garfield Avenue Group Sites |
| LOCATION | Jersey City, New Jersey |
| HRGS FILE | 19RG66 |
| DATE LOGGED | January 14, 2021 |
| LOG DATUM | Top of the 6-Inch Casing |
| DIP AZIMUTH | True North (Magnetic Declination = 12.8° West) |
| DIP ANGLE | Measured from Horizontal |

**114-MW52D - TABLE OF BEDROCK STRUCTURES**

| Depth (Feet) | Dip Azimuth (Degrees) | Dip Angle (Degrees) | Bedrock Fracture Category |
|---|---|---|---|
| 81.3 | 236 | 5 | Fracture Rank 2 |
| 81.8 | 334 | 8 | Fracture Rank 1 |
| 82.0 | 286 | 13 | Fracture Rank 1 |
| 82.4 | 325 | 13 | Fracture Rank 1 |
| 82.6 | 291 | 12 | Fracture Rank 1 |
| 82.6 | 318 | 11 | Bedding |
| 82.8 | 303 | 14 | Fracture Rank 1 |
| 83.4 | 305 | 14 | Bedding |
| 83.6 | 311 | 13 | Bedding |
| 83.9 | 303 | 13 | Bedding |
| 84.2 | 295 | 14 | Bedding |
| 84.5 | 295 | 11 | Bedding |
| 85.2 | 58 | 85 | Fracture Rank 1 |
| 86.2 | 300 | 12 | Fracture Rank 1 |
| 86.3 | 302 | 14 | Fracture Rank 1 |
| 86.4 | 301 | 13 | Bedding |
| 87.2 | 302 | 14 | Bedding |
| 87.5 | 289 | 11 | Bedding |
| 88.1 | 307 | 11 | Bedding |
| 88.3 | 307 | 12 | Bedding |
| 88.7 | 295 | 12 | Bedding |
| 89.3 | 301 | 12 | Bedding |
| 89.9 | 308 | 12 | Bedding |
| 90.3 | 296 | 13 | Bedding |
| 90.6 | 299 | 14 | Bedding |
| 90.9 | 314 | 12 | Bedding |
| 91.2 | 307 | 11 | Bedding |
| 91.7 | 300 | 13 | Bedding |
| 93.5 | 300 | 11 | Bedding |
| 93.9 | 302 | 10 | Bedding |
| 94.2 | 289 | 13 | Bedding |
| 94.5 | 303 | 12 | Bedding |
| 95.0 | 298 | 12 | Bedding |
| 95.3 | 304 | 14 | Bedding |
| 95.7 | 300 | 12 | Bedding |

**114-MW52D - TABLE OF BEDROCK STRUCTURES**

| Depth (Feet) | Dip Azimuth (Degrees) | Dip Angle (Degrees) | Bedrock Fracture Category |
|---|---|---|---|
| 96.0 | 302 | 14 | Bedding |
| 96.5 | 297 | 18 | Bedding |
| 96.6 | 294 | 10 | Bedding |
| 98.1 | 296 | 2 | Fracture Rank 1 |
| 98.2 | 274 | 7 | Fracture Rank 1 |
| 98.8 | 298 | 14 | Bedding |
| 98.9 | 284 | 10 | Fracture Rank 1 |
| 99.0 | 334 | 77 | Fracture Rank 1 |
| 99.1 | 296 | 11 | Bedding |
| 99.1 | 279 | 6 | Fracture Rank 1 |
| 99.4 | 228 | 17 | Fracture Rank 1 |
| 99.6 | 295 | 12 | Bedding |
| 100.1 | 295 | 11 | Bedding |
| 100.2 | 51 | 5 | Fracture Rank 1 |
| 100.3 | 292 | 4 | Fracture Rank 1 |
| 100.8 | 303 | 13 | Bedding |
| 101.2 | 265 | 4 | Fracture Rank 1 |
| 101.3 | 84 | 12 | Fracture Rank 1 |
| 101.9 | 301 | 14 | Bedding |
| 102.7 | 327 | 5 | Fracture Rank 2 |
| 102.8 | 314 | 10 | Fracture Rank 1 |
| 103.1 | 285 | 3 | Fracture Rank 1 |
| 103.1 | 303 | 14 | Bedding |
| 103.3 | 214 | 32 | Fracture Rank 1 |
| 103.6 | 340 | 11 | Fracture Rank 2 |
| 103.7 | 314 | 23 | Fracture Rank 1 |
| 103.8 | 305 | 17 | Fracture Rank 1 |
| 103.9 | 314 | 17 | Fracture Rank 2 |
| 104.1 | 297 | 16 | Bedding |
| 104.4 | 296 | 12 | Bedding |
| 104.6 | 307 | 13 | Bedding |
| 104.8 | 303 | 11 | Bedding |
| 104.9 | 313 | 2 | Fracture Rank 1 |
| 105.0 | 297 | 12 | Bedding |
| 105.4 | 299 | 13 | Bedding |
| 105.5 | 303 | 13 | Bedding |
| 105.7 | 310 | 15 | Fracture Rank 1 |
| 105.8 | 57 | 6 | Fracture Rank 1 |
| 106.3 | 295 | 12 | Bedding |
| 106.6 | 300 | 14 | Bedding |

| HAGER-RICHTER GEOSCIENCE, INC. | |
|---|---|
| **114-MW57D - TABLE OF BEDROCK STRUCTURES** | |
| CLIENT | AECOM |
| PROJECT | PPG Site 114 - Garfield Avenue Group Sites |
| LOCATION | Jersey City, New Jersey |
| HRGS FILE | 19RG66 |
| DATE LOGGED | January 15, 2021 |
| LOG DATUM | Top of the 6-Inch Casing |
| DIP AZIMUTH | True North (Magnetic Declination = 12.8° West) |
| DIP ANGLE | Measured from Horizontal |

**114-MW57D - TABLE OF BEDROCK STRUCTURES**

| Depth (Feet) | Dip Azimuth (Degrees) | Dip Angle (Degrees) | Bedrock Fracture Category |
|---|---|---|---|
| 87.2 | 295 | 16 | Bedding |
| 87.4 | 317 | 13 | Fracture Rank 1 |
| 87.6 | 338 | 37 | Fracture Rank 2 |
| 88.0 | 302 | 19 | Bedding |
| 88.1 | 324 | 56 | Fracture Rank 2 |
| 88.3 | 299 | 16 | Bedding |
| 88.4 | 325 | 49 | Fracture Rank 1 |
| 88.9 | 297 | 18 | Bedding |
| 88.9 | 331 | 53 | Fracture Rank 1 |
| 89.1 | 342 | 45 | Fracture Rank 1 |
| 89.1 | 301 | 14 | Bedding |
| 89.4 | 297 | 17 | Bedding |
| 89.4 | 332 | 46 | Fracture Rank 1 |
| 89.6 | 327 | 22 | Fracture Rank 1 |
| 89.8 | 337 | 16 | Fracture Rank 1 |
| 89.9 | 303 | 16 | Bedding |
| 90.3 | 299 | 16 | Bedding |
| 90.6 | 325 | 20 | Fracture Rank 1 |
| 90.8 | 294 | 18 | Bedding |
| 91.1 | 299 | 16 | Bedding |
| 91.3 | 328 | 13 | Fracture Rank 2 |
| 92.9 | 287 | 14 | Bedding |
| 93.5 | 297 | 15 | Bedding |
| 93.8 | 291 | 18 | Bedding |
| 93.9 | 336 | 15 | Fracture Rank 1 |
| 94.1 | 287 | 17 | Bedding |
| 94.5 | 333 | 12 | Fracture Rank 1 |
| 94.6 | 303 | 17 | Bedding |
| 95.9 | 314 | 13 | Fracture Rank 1 |
| 96.0 | 285 | 15 | Bedding |
| 96.2 | 330 | 6 | Fracture Rank 1 |
| 97.3 | 294 | 15 | Bedding |
| 97.8 | 306 | 19 | Bedding |
| 98.0 | 318 | 17 | Fracture Rank 1 |
| 98.1 | 339 | 63 | Fracture Rank 1 |

**114-MW57D - TABLE OF BEDROCK STRUCTURES**

| Depth (Feet) | Dip Azimuth (Degrees) | Dip Angle (Degrees) | Bedrock Fracture Category |
|---|---|---|---|
| 98.4 | 299 | 15 | Bedding |
| 98.5 | 119 | 82 | Fracture Rank 2 |
| 98.7 | 298 | 12 | Bedding |
| 98.9 | 345 | 5 | Fracture Rank 1 |
| 99.3 | 301 | 14 | Bedding |
| 99.8 | 293 | 15 | Bedding |
| 100.2 | 292 | 17 | Bedding |
| 100.3 | 295 | 16 | Bedding |
| 100.6 | 297 | 16 | Bedding |
| 101.0 | 297 | 15 | Bedding |
| 101.3 | 299 | 16 | Bedding |
| 101.4 | 284 | 14 | Fracture Rank 1 |
| 104.8 | 295 | 11 | Bedding |
| 104.9 | 291 | 13 | Bedding |
| 106.0 | 295 | 13 | Bedding |
| 106.3 | 296 | 14 | Bedding |
| 106.9 | 285 | 16 | Bedding |
| 107.1 | 285 | 15 | Bedding |
| 107.2 | 346 | 8 | Fracture Rank 1 |
| 107.3 | 296 | 14 | Bedding |
| 107.7 | 289 | 14 | Bedding |
| 108.5 | 303 | 15 | Bedding |
| 109.0 | 297 | 14 | Bedding |
| 109.2 | 299 | 13 | Bedding |
| 109.4 | 325 | 16 | Fracture Rank 1 |
| 109.6 | 301 | 16 | Bedding |
| 110.5 | 294 | 14 | Bedding |
| 110.7 | 298 | 15 | Bedding |
| 111.7 | 319 | 11 | Fracture Rank 1 |
| 111.7 | 298 | 12 | Bedding |
| 112.3 | 318 | 19 | Fracture Rank 1 |
| 112.4 | 335 | 21 | Fracture Rank 1 |
| 112.5 | 300 | 15 | Bedding |
| 112.7 | 299 | 13 | Bedding |

| HAGER-RICHTER GEOSCIENCE, INC. | |
|---|---|
| **114-MW61D - TABLE OF BEDROCK STRUCTURES** | |
| CLIENT | AECOM |
| PROJECT | PPG Site 114 - Garfield Avenue Group Sites |
| LOCATION | Jersey City, New Jersey |
| HRGS FILE | 19RG66 |
| DATE LOGGED | January 15, 2021 |
| LOG DATUM | Top of the 6-Inch Casing |
| DIP AZIMUTH | True North (Magnetic Declination = 12.8° West) |
| DIP ANGLE | Measured from Horizontal |

**114-MW61D - TABLE OF BEDROCK STRUCTURES**

| Depth (Feet) | Dip Azimuth (Degrees) | Dip Angle (Degrees) | Bedrock Fracture Category |
|---|---|---|---|
| 87.7 | 45 | 21 | Fracture Rank 2 |
| 87.9 | 273 | 18 | Fracture Rank 2 |
| 88.2 | 57 | 65 | Fracture Rank 1 |
| 88.2 | 286 | 36 | Fracture Rank 1 |
| 88.3 | 288 | 38 | Fracture Rank 1 |
| 88.4 | 65 | 65 | Fracture Rank 1 |
| 88.6 | 266 | 37 | Fracture Rank 2 |
| 88.8 | 98 | 44 | Fracture Rank 2 |
| 88.9 | 263 | 30 | Fracture Rank 1 |
| 88.9 | 90 | 47 | Fracture Rank 2 |
| 89.0 | 288 | 26 | Fracture Rank 1 |
| 89.1 | 280 | 70 | Fracture Rank 2 |
| 89.1 | 96 | 60 | Fracture Rank 2 |
| 89.2 | 329 | 28 | Fracture Rank 1 |
| 89.4 | 107 | 53 | Fracture Rank 3 |
| 89.6 | 323 | 39 | Fracture Rank 1 |
| 89.9 | 107 | 68 | Fracture Rank 1 |
| 90.1 | 269 | 35 | Fracture Rank 1 |
| 90.2 | 9 | 47 | Fracture Rank 2 |
| 90.2 | 105 | 62 | Fracture Rank 3 |
| 90.3 | 289 | 11 | Fracture Rank 2 |
| 90.3 | 285 | 45 | Fracture Rank 1 |
| 90.4 | 114 | 63 | Fracture Rank 3 |
| 90.8 | 265 | 47 | Fracture Rank 1 |
| 90.9 | 119 | 49 | Fracture Rank 2 |
| 90.9 | 137 | 73 | Fracture Rank 2 |
| 91.0 | 325 | 15 | Fracture Rank 1 |
| 91.2 | 142 | 68 | Fracture Rank 1 |
| 91.3 | 321 | 14 | Fracture Rank 1 |
| 91.3 | 21 | 47 | Fracture Rank 1 |
| 91.7 | 226 | 59 | Fracture Rank 2 |
| 91.8 | 99 | 42 | Fracture Rank 2 |
| 92.0 | 126 | 36 | Fracture Rank 2 |
| 92.1 | 125 | 36 | Fracture Rank 1 |
| 92.2 | 121 | 44 | Fracture Rank 1 |

**114-MW61D - TABLE OF BEDROCK STRUCTURES**

| Depth (Feet) | Dip Azimuth (Degrees) | Dip Angle (Degrees) | Bedrock Fracture Category |
|---|---|---|---|
| 92.4 | 130 | 35 | Fracture Rank 2 |
| 92.7 | 127 | 53 | Fracture Rank 2 |
| 92.8 | 267 | 11 | Fracture Rank 1 |
| 92.9 | 106 | 56 | Fracture Rank 1 |
| 93.0 | 101 | 58 | Fracture Rank 1 |
| 93.1 | 99 | 59 | Fracture Rank 1 |
| 93.3 | 97 | 55 | Fracture Rank 1 |
| 93.5 | 97 | 43 | Fracture Rank 2 |
| 93.5 | 102 | 43 | Fracture Rank 1 |
| 93.7 | 106 | 33 | Fracture Rank 2 |
| 94.0 | 105 | 69 | Fracture Rank 1 |
| 94.2 | 102 | 44 | Fracture Rank 1 |
| 94.3 | 90 | 35 | Fracture Rank 2 |
| 94.4 | 95 | 46 | Fracture Rank 1 |
| 94.4 | 286 | 66 | Fracture Rank 1 |
| 94.9 | 106 | 45 | Fracture Rank 2 |
| 95.1 | 128 | 48 | Fracture Rank 2 |
| 95.3 | 134 | 29 | Fracture Rank 2 |
| 95.6 | 114 | 52 | Fracture Rank 1 |
| 95.7 | 142 | 45 | Fracture Rank 2 |
| 96.1 | 164 | 46 | Fracture Rank 1 |
| 96.1 | 39 | 61 | Fracture Rank 1 |
| 96.5 | 197 | 39 | Fracture Rank 1 |
| 96.6 | 107 | 37 | Fracture Rank 1 |
| 96.7 | 197 | 45 | Fracture Rank 1 |
| 96.8 | 197 | 44 | Fracture Rank 1 |
| 96.8 | 64 | 40 | Fracture Rank 1 |
| 96.9 | 198 | 44 | Fracture Rank 1 |
| 97.0 | 63 | 38 | Fracture Rank 1 |
| 97.1 | 130 | 77 | Fracture Rank 1 |
| 97.1 | 198 | 43 | Fracture Rank 2 |
| 97.4 | 80 | 19 | Fracture Rank 1 |
| 97.7 | 83 | 54 | Fracture Rank 2 |
| 98.0 | 107 | 40 | Fracture Rank 1 |
| 98.0 | 112 | 43 | Fracture Rank 1 |
| 98.3 | 73 | 27 | Fracture Rank 1 |
| 98.4 | 56 | 12 | Fracture Rank 2 |
| 98.7 | 45 | 21 | Fracture Rank 1 |
| 99.0 | 66 | 54 | Fracture Rank 1 |
| 99.1 | 160 | 7 | Fracture Rank 1 |
| 99.2 | 209 | 47 | Fracture Rank 1 |
| 99.3 | 23 | 22 | Fracture Rank 2 |
| 99.3 | 29 | 66 | Fracture Rank 1 |
| 99.6 | 29 | 17 | Fracture Rank 2 |
| 99.9 | 354 | 20 | Fracture Rank 1 |

**114-MW61D - TABLE OF BEDROCK STRUCTURES**

| Depth (Feet) | Dip Azimuth (Degrees) | Dip Angle (Degrees) | Bedrock Fracture Category |
|---|---|---|---|
| 99.9 | 119 | 22 | Fracture Rank 2 |
| 100.0 | 117 | 22 | Fracture Rank 2 |
| 100.1 | 118 | 30 | Fracture Rank 2 |
| 100.4 | 21 | 24 | Fracture Rank 2 |
| 100.5 | 29 | 38 | Fracture Rank 2 |
| 100.7 | 26 | 16 | Fracture Rank 2 |
| 100.7 | 42 | 67 | Fracture Rank 2 |
| 100.8 | 26 | 15 | Fracture Rank 2 |
| 100.9 | 63 | 17 | Fracture Rank 1 |
| 101.1 | 146 | 29 | Fracture Rank 1 |
| 101.1 | 35 | 38 | Fracture Rank 2 |
| 101.3 | 68 | 9 | Fracture Rank 1 |
| 101.4 | 66 | 11 | Fracture Rank 1 |
| 101.5 | 186 | 62 | Fracture Rank 1 |
| 101.6 | 59 | 13 | Fracture Rank 2 |
| 101.7 | 29 | 30 | Fracture Rank 1 |
| 101.9 | 53 | 26 | Fracture Rank 1 |
| 102.0 | 70 | 22 | Fracture Rank 1 |
| 102.1 | 67 | 34 | Fracture Rank 2 |
| 102.2 | 61 | 34 | Fracture Rank 2 |
| 102.3 | 76 | 38 | Fracture Rank 2 |
| 102.4 | 102 | 34 | Fracture Rank 2 |
| 102.5 | 103 | 33 | Fracture Rank 3 |
| 102.6 | 101 | 22 | Fracture Rank 2 |
| 102.7 | 92 | 15 | Fracture Rank 1 |
| 102.8 | 277 | 16 | Fracture Rank 2 |
| 103.0 | 270 | 16 | Fracture Rank 2 |
| 103.1 | 270 | 21 | Fracture Rank 1 |
| 103.2 | 251 | 16 | Fracture Rank 2 |
| 103.3 | 77 | 51 | Fracture Rank 1 |
| 103.3 | 296 | 10 | Fracture Rank 2 |
| 103.4 | 294 | 13 | Fracture Rank 2 |
| 103.6 | 303 | 27 | Fracture Rank 2 |
| 103.6 | 92 | 29 | Fracture Rank 1 |
| 103.7 | 324 | 21 | Fracture Rank 2 |
| 103.8 | 314 | 24 | Fracture Rank 2 |
| 103.9 | 280 | 22 | Fracture Rank 1 |
| 104.0 | 256 | 39 | Fracture Rank 3 |
| 104.1 | 259 | 41 | Fracture Rank 2 |
| 104.2 | 254 | 41 | Fracture Rank 2 |
| 104.3 | 239 | 36 | Fracture Rank 3 |
| 104.6 | 90 | 29 | Fracture Rank 1 |
| 104.6 | 334 | 26 | Fracture Rank 1 |
| 104.8 | 103 | 47 | Fracture Rank 2 |
| 105.0 | 119 | 53 | Fracture Rank 2 |

**114-MW61D - TABLE OF BEDROCK STRUCTURES**

| Depth (Feet) | Dip Azimuth (Degrees) | Dip Angle (Degrees) | Bedrock Fracture Category |
|---|---|---|---|
| 105.2 | 117 | 50 | Fracture Rank 2 |
| 105.4 | 130 | 44 | Fracture Rank 2 |
| 105.6 | 99 | 41 | Fracture Rank 2 |
| 105.8 | 224 | 20 | Fracture Rank 1 |
| 105.8 | 224 | 21 | Fracture Rank 1 |
| 106.2 | 230 | 16 | Fracture Rank 1 |
| 106.3 | 106 | 44 | Fracture Rank 2 |
| 106.4 | 104 | 43 | Fracture Rank 1 |
| 106.5 | 229 | 23 | Fracture Rank 1 |
| 106.6 | 130 | 44 | Fracture Rank 1 |
| 106.8 | 221 | 19 | Fracture Rank 1 |
| 107.4 | 140 | 60 | Fracture Rank 1 |
| 107.7 | 88 | 76 | Fracture Rank 1 |
| 107.9 | 116 | 61 | Fracture Rank 1 |
| 108.2 | 280 | 82 | Fracture Rank 1 |
| 108.6 | 340 | 45 | Fracture Rank 1 |
| 108.8 | 330 | 36 | Fracture Rank 1 |
| 108.9 | 332 | 39 | Fracture Rank 1 |
| 109.0 | 323 | 43 | Fracture Rank 1 |
| 109.1 | 305 | 46 | Fracture Rank 2 |
| 109.3 | 309 | 53 | Fracture Rank 1 |
| 109.4 | 275 | 14 | Fracture Rank 1 |
| 109.4 | 305 | 57 | Fracture Rank 3 |
| 109.8 | 325 | 58 | Fracture Rank 1 |

| HAGER-RICHTER GEOSCIENCE, INC. | |
|---|---|
| **114-MW66D - TABLE OF BEDROCK STRUCTURES** | |
| CLIENT | AECOM |
| PROJECT | PPG Site 114 - Garfield Avenue Group Sites |
| LOCATION | Jersey City, New Jersey |
| HRGS FILE | 19RG66 |
| DATE LOGGED | January 14, 2021 |
| LOG DATUM | Top of the 6-Inch Casing |
| DIP AZIMUTH | True North (Magnetic Declination = 12.8° West) |
| DIP ANGLE | Measured from Horizontal |

**114-MW66D - TABLE OF BEDROCK STRUCTURES**

| Depth (Feet) | Dip Azimuth (Degrees) | Dip Angle (Degrees) | Bedrock Fracture Category |
|---|---|---|---|
| 92.0 | 178 | 15 | Fracture Rank 3 |
| 92.1 | 318 | 41 | Fracture Rank 2 |
| 92.3 | 308 | 38 | Fracture Rank 1 |
| 92.5 | 304 | 40 | Fracture Rank 2 |
| 92.6 | 306 | 33 | Fracture Rank 1 |
| 92.8 | 312 | 31 | Fracture Rank 1 |
| 93.0 | 304 | 40 | Fracture Rank 2 |
| 93.1 | 309 | 46 | Fracture Rank 1 |
| 93.6 | 330 | 12 | Fracture Rank 1 |
| 94.3 | 315 | 25 | Fracture Rank 1 |
| 94.4 | 316 | 15 | Fracture Rank 2 |
| 94.8 | 303 | 17 | Bedding |
| 94.9 | 313 | 18 | Fracture Rank 1 |
| 95.0 | 297 | 15 | Fracture Rank 1 |
| 95.1 | 300 | 15 | Bedding |
| 95.3 | 100 | 66 | Fracture Rank 1 |
| 95.4 | 329 | 19 | Fracture Rank 1 |
| 95.5 | 302 | 17 | Bedding |
| 95.6 | 113 | 63 | Fracture Rank 1 |
| 95.6 | 307 | 16 | Bedding |
| 95.8 | 342 | 19 | Fracture Rank 1 |
| 96.0 | 324 | 21 | Fracture Rank 1 |
| 96.1 | 306 | 20 | Bedding |
| 96.2 | 304 | 22 | Fracture Rank 2 |
| 96.4 | 292 | 22 | Bedding |
| 96.5 | 295 | 21 | Fracture Rank 1 |
| 96.7 | 299 | 19 | Bedding |
| 96.8 | 282 | 14 | Fracture Rank 1 |
| 97.0 | 296 | 15 | Fracture Rank 1 |
| 97.7 | 94 | 74 | Fracture Rank 1 |
| 99.0 | 295 | 17 | Bedding |
| 99.1 | 11 | 8 | Fracture Rank 1 |
| 99.5 | 300 | 20 | Bedding |
| 99.8 | 303 | 19 | Bedding |
| 100.0 | 303 | 17 | Fracture Rank 1 |

**114-MW66D - TABLE OF BEDROCK STRUCTURES**

| Depth (Feet) | Dip Azimuth (Degrees) | Dip Angle (Degrees) | Bedrock Fracture Category |
|---|---|---|---|
| 100.2 | 300 | 17 | Bedding |
| 100.2 | 311 | 18 | Bedding |
| 100.6 | 309 | 19 | Bedding |
| 100.7 | 300 | 15 | Bedding |
| 100.9 | 303 | 20 | Bedding |
| 101.4 | 304 | 18 | Bedding |
| 101.6 | 302 | 21 | Bedding |
| 101.8 | 304 | 18 | Bedding |
| 102.1 | 302 | 18 | Bedding |
| 102.3 | 300 | 18 | Bedding |
| 102.3 | 296 | 17 | Bedding |
| 102.6 | 298 | 18 | Bedding |
| 102.7 | 299 | 18 | Bedding |
| 102.9 | 301 | 17 | Bedding |
| 103.1 | 298 | 17 | Bedding |
| 103.4 | 304 | 18 | Bedding |
| 103.6 | 299 | 19 | Bedding |
| 103.9 | 299 | 16 | Bedding |
| 104.1 | 296 | 19 | Bedding |
| 104.1 | 107 | 65 | Fracture Rank 1 |
| 104.4 | 300 | 19 | Bedding |
| 105.4 | 267 | 17 | Fracture Rank 1 |
| 106.0 | 330 | 13 | Fracture Rank 1 |
| 106.2 | 310 | 16 | Bedding |
| 106.4 | 313 | 14 | Fracture Rank 1 |
| 106.6 | 295 | 16 | Bedding |
| 106.8 | 298 | 15 | Bedding |
| 107.0 | 299 | 15 | Bedding |
| 107.2 | 298 | 14 | Bedding |
| 107.3 | 300 | 16 | Bedding |
| 107.5 | 294 | 16 | Bedding |
| 107.6 | 109 | 77 | Fracture Rank 1 |
| 107.6 | 322 | 13 | Fracture Rank 2 |
| 107.7 | 293 | 18 | Bedding |
| 108.0 | 312 | 15 | Fracture Rank 1 |
| 108.1 | 307 | 13 | Fracture Rank 2 |
| 108.3 | 293 | 16 | Bedding |
| 108.5 | 295 | 17 | Bedding |
| 108.7 | 298 | 15 | Bedding |
| 108.8 | 297 | 17 | Bedding |
| 109.0 | 297 | 15 | Bedding |
| 109.1 | 298 | 15 | Bedding |
| 109.2 | 296 | 16 | Bedding |
| 109.5 | 322 | 18 | Fracture Rank 2 |
| 110.0 | 106 | 82 | Fracture Rank 1 |

**114-MW66D - TABLE OF BEDROCK STRUCTURES**

| Depth (Feet) | Dip Azimuth (Degrees) | Dip Angle (Degrees) | Bedrock Fracture Category |
|---|---|---|---|
| 111.0 | 289 | 16 | Bedding |
| 111.4 | 299 | 18 | Bedding |
| 111.7 | 290 | 17 | Bedding |
| 111.9 | 285 | 15 | Fracture Rank 1 |
| 112.0 | 299 | 17 | Bedding |
| 112.1 | 290 | 11 | Fracture Rank 2 |
| 112.2 | 303 | 15 | Bedding |
| 112.4 | 308 | 16 | Bedding |
| 112.9 | 290 | 13 | Fracture Rank 1 |
| 113.6 | 308 | 18 | Fracture Rank 1 |
| 113.6 | 300 | 19 | Bedding |
| 114.0 | 81 | 83 | Fracture Rank 1 |
| 114.3 | 299 | 16 | Bedding |
| 114.3 | 300 | 17 | Bedding |

| HAGER-RICHTER GEOSCIENCE, INC. | |
|---|---|
| 114-MW52D - HPFM Data | |
| CLIENT | AECOM |
| PROJECT | PPG Site 114 - Garfield Avenue Group Sites |
| LOCATION | Jersey City, New Jersey |
| HRGS FILE | 19RG66 |
| DATE LOGGED | January 14, 2021 |
| LOG DATUM | Top of the 6-Inch Steel Casing |

114-MW52D - HPFM Data

| Depth (Feet) | HPFM - Stressed (gpm) |
|---|---|
| 80.5 | 0.02 |
| 84.0 | 0.01 |
| 90.0 | 0.00 |
| 98.5 | 0.00 |
| 102.0 | 0.00 |
| 105.0 | 0.00 |

114-MW52D - Water Level Recovery Data

| DRAWDOWN | At the time of logging, the water level was rising (recovering) from well development the day before logging as summarized in the table below. | |
|---|---|---|
| Time | Water Level (Feet) | Recovery Rate (gpm) |
| 7:00 | 85.04 | 0.02 |
| 11:40 | 81.00 | |
| 14:00 | 79.02 | |

| HAGER-RICHTER GEOSCIENCE, INC. | |
|---|---|
| 114-MW57D - HPFM Data | |
| CLIENT | AECOM |
| PROJECT | PPG Site 114 - Garfield Avenue Group Sites |
| LOCATION | Jersey City, New Jersey |
| HRGS FILE | 19RG66 |
| DATE LOGGED | January 15, 2021 |
| LOG DATUM | Top of the 6-Inch Steel Casing |

114-MW57D - HPFM Data

| Depth (Feet) | HPFM - Stressed (gpm) |
|---|---|
| 85.0 | 0.04 |
| 87.3 | 0.04 |
| 90.0 | 0.00 |
| 95.0 | 0.00 |
| 102.0 | 0.00 |

114-MW57D - Water Level Recovery Data

| DRAWDOWN | At the time of logging, the water level was rising (recovering) from well development the day before logging as summarized in the table below. | |
|---|---|---|
| Time | Water Level (Feet) | Recovery Rate (gpm) |
| 12:00 | 43.40 | 0.04 |
| 14:15 | 39.50 | |

| HAGER-RICHTER GEOSCIENCE, INC. | |
|---|---|
| 114-MW61D - HPFM Data | |
| CLIENT | AECOM |
| PROJECT | PPG Site 114 - Garfield Avenue Group Sites |
| LOCATION | Jersey City, New Jersey |
| HRGS FILE | 19RG66 |
| DATE LOGGED | January 15, 2021 |
| LOG DATUM | Top of the 6-Inch Steel Casing |

114-MW61D - HPFM Data

| Depth (Feet) | HPFM - Stressed (gpm) |
|---|---|
| 85.0 | 0.04 |
| 88.5 | 0.04 |
| 91.5 | 0.02 |
| 93.8 | 0.00 |
| 96.0 | 0.00 |
| 101.5 | 0.00 |
| 107.0 | 0.00 |

114-MW61D - Water Level Recovery Data

| DRAWDOWN | At the time of logging, the water level was rising (recovering) from well development the day before logging as summarized in the table below. | |
|---|---|---|
| Time | Water Level (Feet) | Recovery Rate (gpm) |
| 8:05 | 47.00 | 0.04 |
| 10:10 | 43.50 | |
| 10:47 | 42.50 | |

| HAGER-RICHTER GEOSCIENCE, INC. | |
|---|---|
| 114-MW66D - HPFM Data | |
| CLIENT | AECOM |
| PROJECT | PPG Site 114 - Garfield Avenue Group Sites |
| LOCATION | Jersey City, New Jersey |
| HRGS FILE | 19RG66 |
| DATE LOGGED | January 14, 2021 |
| LOG DATUM | Top of the 6-Inch Steel Casing |

114-MW66D - HPFM Data

| Depth (Feet) | HPFM - Stressed (gpm) |
|---|---|
| 90.0 | 0.05 |
| 94.0 | 0.01 |
| 98.0 | 0.01 |
| 104.0 | 0.01 |
| 107.0 | 0.01 |
| 111.0 | 0.01 |
| 113.0 | 0.00 |

114-MW66D - Water Level Recovery Data

| DRAWDOWN | At the time of logging, the water level was rising (recovering) from well development the day before logging as summarized in the table below. | |
|---|---|---|
| Time | Water Level (Feet) | Recovery Rate (gpm) |
| 7:00 | 58.46 | 0.04 |
| 8:30 | 56.00 | |
| 10:00 | 53.40 | |
| 11:00 | 51.80 | |

Schuele, Frederik

| | |
|---|---|
| From: | Robert Garfield <rob@hager-richter.com> |
| Sent: | Thursday, January 28, 2021 2:05 PM |
| To: | Schuele, Frederik; Spronz, Bill; Gleason, Shannon; Ravi, Shree; Henderson, Rory |
| Cc: | Jeff Reid; Nick DeCristofaro; Mikko Aarnio |
| Subject: | [EXTERNAL] PPG Site 114 - GAG Sites - Jersey City, NJ - Borehole Geophysical Logging - Data Report 2021-01 |
| Attachments: | 114-MW52D - Table of Bedrock Structures.xlsx; 114-MW57D - Table of Bedrock Structures.xlsx; 114-MW61D - Table of Bedrock Structures.xlsx; 114-MW66D - Table of Bedrock Structures.xlsx; PPG Site 114 - GAG Sites - Jersey City NJ - Borehole Geophysical Logging - Data Report - 2021-01.pdf; 2021-01 - PPG Site 114 - GAG Sites - Jersey City, NJ - Borehole Geophysical Logging Data.xlsx |
| Follow Up Flag: | Follow up |
| Due By: | Tuesday, February 02, 2021 8:30 AM |
| Flag Status: | Flagged |

Attached please find the data report for the borehole geophysical logging conducted in the 4 boreholes listed below at the PPG Site 114 – Garfield Avenue Group (GAG) Sites in Jersey City, New Jersey on January 14 and 15, 2021. The data report consists of the borehole geophysical logs, bedrock structure statistics plots, tables of bedrock structures, and the borehole geophysical logging figures. The tables of bedrock structures and the linear logging data are also provided attached to this email in Microsoft Excel format as requested.

- 114-MW52D
- 114-MW57D
- 114-MW61D
- 114-MW66D

As you know, we also conducted borehole geophysical logging at this site in boreholes 114-MW4D and 114-MW6D on September 22, 2020. We refer to and include the bedrock structure results from these two boreholes in the bedrock structure portion of this report.

The borehole geophysical logging program consisted of the following in the logged boreholes:

- Optical Televiewer (OTV)
- Acoustic Televiewer (ATV)
- Acoustic Caliper
- Natural Gamma Ray
- Spontaneous Potential (SP)
- Single Point Resistance (SPR)
- Fluid Temperature
- Fluid Conductivity
- Heat Pulse Flow Meter (HPFM) Under Stressed Conditions*

*The boreholes were developed the day before the borehole geophysical logging was conducted in each borehole. The pumping associated with the development of the boreholes caused the water level to drop in all of the boreholes. At the time of logging the boreholes the day after development, water was still rising (recovering) in the boreholes. Because water was still rising each borehole at the time of logging, the boreholes were under stressed conditions during the

HPFM logging. When water in a borehole is rising/recovering during HPFM logging, the conditions mimic acquiring HPFM data under pumping conditions.

Based on the borehole televiewer images (OTV & ATV), the bedrock encountered in boreholes 114-MW6D, 114-MW52D, 114-MW57D, and 114-MW66D appears to be sedimentary bedrock, likely from the Lockatong Formation based on information provided by AECOM; and the bedrock encountered in boreholes 114-MW4D and 114-MW61D appears to be igneous bedrock, possibly diabase based on information provided by AECOM.

Explanation of the Borehole Geophysical Data Interpretation and Presentation

The datum for depths in this report is the top of the steel casing at the location of each borehole. The depths of bedrock structures are reported as the average depths of the top and bottom intersections of the bedrock structures and the borehole wall. The orientations of bedrock structures are reported as the dip azimuth (dip direction) and dip angle of each structure, as shown in the Televiewer Explanation Figure. The OTV, ATV, and bedrock structure dip azimuth data are referenced to true north using a magnetic declination of 12.8° west and the bedrock structure dip angle data are reported from horizontal. Please note that the bedrock structure dip azimuth data are perpendicular to strike as used commonly by geologists.

Bedrock structures detected in the televiewer (OTV & ATV) data are grouped into four categories (Fracture Rank 1, Fracture Rank 2, Fracture Rank 3, and Bedding) and are shown as color-coded lines and symbols on the structure projection plots and tadpole plots. The Key to Bedrock Structure Categories figure describes the bedrock structure categories and associated colors and tadpole shapes. The Tadpole Explanation Figure explains how to "read" the tadpole plots. Fracture Rank 1 consists of minor fractures that are not distinct and may not be continuous around the borehole. Fracture Rank 2 consists of intermediate fractures that are distinct and continuous around the borehole with little or no apparent aperture. Fracture Rank 3 consists of major fractures that are distinct and continuous around the borehole with apparent aperture. The Bedding category consists of planar geologic structures in the bedrock interpreted as bedding.

The data report consist of the following.

- Borehole Geophysical Logging Figures

  Figure 1. Key to bedrock structure categories
  Figure 2. Tadpole plot explanation figure
  Figure 3. Televiewer explanation figure

- Borehole Geophysical Logs – The borehole geophysical logs are provided at a scale of 1-inch to 2.5-feet, meant to be printed on portrait 11” x 17” paper, and consist of the following.

| Track # | Log & Description |
|---|---|
| 1. | OTV Image |
| 2. | Depth |
| 3. | ATV Amplitude |
| 4. | ATV Travel Time |
| | Structure Projection – bedrock structure interpretation plotted in projection view |
| 5. | Acoustic Caliper – borehole diameter in inches |
| | Tadpole Plot – bedrock structure interpretation plotted as tadpoles |
| 6. | Natural Gamma Ray, SP, & SPR |
| 7. | Depth |
| 8. | Fluid Temperature & Fluid Conductivity |
| 9. | HPFM Under Stressed Conditions |
| | Borehole Flow Interpretation |

- Bedrock Structure Statistics Plots for Sedimentary Bedrock – The statistics plots consist of all detected bedrock structures in each borehole individually and from all of the logged boreholes in sedimentary bedrock in 2020 and 2021 combined (114-MW6D, 114-MW52D, 114-MW57D, 114-MW66D), are meant to be printed on landscape 11" x 17" paper, and consist of the following.

| Track # | Description |
|---|---|
| 1. | Stereogram of Fractures – poles/contours of fractures plotted on an equal area lower hemisphere stereogram |
| 2. | Dip Azimuth Rose Diagram of Fractures |
| 3. | Dip Angle Histogram of Fractures |
| 4. | Stereogram of Bedding – poles/ contours of bedding plotted on an equal area lower hemisphere stereogram |
| 5. | Dip Azimuth Rose Diagram of Bedding |
| 6. | Dip Angle Histogram of Bedding |

- Bedrock Fracture Statistics Plots for Igneous Bedrock – The statistics plots consist of all detected bedrock structures in borehole 114-MW61D individually and from both of the logged boreholes in igneous bedrock in 2020 and 2021 combined (114-MW4D and 114-MW61D), are meant to be printed on landscape 11" x 17" paper, and consist of the following.

| Track # | Description |
|---|---|
| 1. | Stereogram of Fractures – poles of fractures plotted on an equal area lower hemisphere stereogram |
| 2. | Contoured Stereogram of Fractures – contours of poles of fractures plotted on an equal area lower hemisphere stereogram |
| 3. | Dip Azimuth Rose Diagram of Fractures |
| 4. | Dip Angle Histogram of Fractures |

- Tables of Bedrock Structures – The tables of bedrock structures consist of all detected bedrock structures (fractures & bedding) in each borehole individually, are meant to be printed on standard portrait 8.5" x 11" paper, and consists of the following:

| Column # | Description |
|---|---|
| 1. | Depth |
| 2. | Bedrock Structure Dip Azimuth |
| 3. | Bedrock Structure Dip Angle |
| 4. | Bedrock Structure Category |

Borehole Geophysical Logging Results

Summary of Borehole Flow

The boreholes were developed the day before the borehole geophysical logging was conducted in each borehole. The pumping associated with the development of the boreholes caused the water level to drop in all of the boreholes. At the time of logging the boreholes the day after development, water was still rising (recovering) in the boreholes. Because water was still rising each borehole at the time of logging, the boreholes were under stressed conditions during the HPFM logging. When water in a borehole is rising/recovering during HPFM logging, the conditions mimic acquiring HPFM data under pumping conditions.

Vertical flow was detected in each of the logged boreholes with the HPFM under the stressed conditions encountered in the boreholes at the time of logging. Below are tables summarizing the borehole flow conditions based on the borehole

geophysical logging data, specifically the approximate depths and rates where flow was detected with the HPFM into and up the boreholes from hydraulically transmissive fractures.

114-MW52D - Summary of Borehole Flow Under Stressed Conditions

| Depth (Feet) | Comments |
|---|---|
| 79.1 | Water Level - 79.1 Feet at 14:00 |
| 79.1 - 81.1 | flow up the borehole in the casing at 0.02 gpm under stressed conditions |
| 81.1 | Bottom of the 6-Inch Steel Casing |
| 81.1 - 89.3 | minor flow into & up the borehole under stressed conditions |
| 89.3 - 102.5 | no flow detected under stressed conditions |
| 102.5 - 104.2 | possible minor flow into the borehole based on the fluid temp & cond data |
| 104.2 - 106.9 | no flow detected under stressed conditions |
| 106.9 | Bottom of the Borehole (based on the geophysical logging) |

114-MW57D - Summary of Borehole Flow Under Stressed Conditions

| Depth (Feet) | Comments |
|---|---|
| 39.5 | Water Level - 39.5 Feet at 14:15 |
| 39.5 - 86.8 | flow up the borehole in the casing at 0.04 gpm under stressed conditions |
| 86.8 | Bottom of the 6-Inch Steel Casing |
| 86.8 - 89.9 | flow into & up the borehole under stressed conditions |
| 89.9 - 97.6 | no flow detected under pumping conditions |
| 97.6 - 100.4 | possible minor flow into the borehole based on the fluid temp & cond data |
| 100.4 - 113.4 | no flow detected under stressed conditions |
| 113.4 | Bottom of the Borehole (based on the geophysical logging) |

114-MW61D - Summary of Borehole Flow Under Stressed Conditions

| Depth (Feet) | Comments |
|---|---|
| 42.5 | Water Level - 42.5 Feet at 10:45 |
| 42.5 - 87.5 | flow up the borehole in the casing at 0.04 gpm under stressed conditions |
| 87.5 | Bottom of the 6-Inch Steel Casing |
| 87.5 - 93.7 | flow into & up the borehole under stressed conditions |
| 93.7 - 101.8 | no flow detected under pumping conditions |
| 101.8 - 105.0 | possible minor flow into the borehole based on the fluid temp & cond data |
| 105.0 - 109.0 | no flow detected under stressed conditions |
| 109.0 - 110.3 | possible minor flow into the borehole based on the fluid cond data |
| 110.3 | Bottom of the Borehole (based on the geophysical logging) |

114-MW66D - Summary of Borehole Flow Under Stressed Conditions

| Depth (Feet) | Comments |
|---|---|
| 51.3 | Water Level - 51.3 at 11:00 |
| 51.3 - 91.9 | flow up the borehole in the casing at 0.05 gpm under stressed conditions |
| 91.9 | Bottom of the 6-Inch Steel Casing |
| 91.9 - 93.3 | flow into & up the borehole under stressed conditions |
| 93.3 - 111.6 | flow up the borehole at 0.01 gpm under stressed conditions |
| 111.6 - 112.4 | minor flow into & up the borehole under stressed conditions |

| | |
|---|---|
| 112.4 - 114.6 | no flow detected under stressed conditions |
| 114.6 | Bottom of the Borehole (based on the geophysical logging) |

Summary of Bedrock Results

Based on the borehole televiewer images (OTV & ATV), the bedrock encountered in boreholes 114-MW6D, 114-MW52D, 114-MW57D, and 114-MW66D appears to be sedimentary bedrock, likely from the Lockatong Formation based on information provided by AECOM; and the bedrock encountered in boreholes 114-MW4D and 114-MW61D appears to be igneous bedrock, possibly diabase based on information provided by AECOM. The bedrock structure orientations and statistics are plotted and reported on the borehole geophysical logs, the bedrock structure statistics plots, and the bedrock structure tables.

Sedimentary Bedrock – Boreholes 114-MW6D, 114-MW52D, 114-MW57D, 114-MW66D. Based on the televiewer data, the sedimentary bedrock is relatively unfractured with the most prominent orientation of bedrock fractures being approximately parallel to the bedrock bedding evident in the bedrock. The bedrock in these boreholes also has much higher gamma radiation (~150-500 cps) as one would expect in the siltstones and mudstones found in the Lockatong formation. The most prominent orientation of bedding and bedrock fractures detected in the sedimentary bedrock has a dip azimuth to the northwest of 300° - 330° and a shallow dip angle of 0° - 20° from horizontal. A second, but significantly less prominent, bedrock fracture set was also detected in the sedimentary bedrock with a dip azimuth to the southeast of 105° - 135° and a steep dip angle of 65° - 85° from horizontal.

Igneous Bedrock – Boreholes 114-MW4D & 114-MW61D. Based on the televiewer data, the igneous bedrock is highly fractured with many moderately to steeply dipping bedrock fractures, has no evidence of bedding, and has low gamma radiation (~30 cps) compared to the sedimentary bedrock. The most prominent orientation of bedrock fractures detected in the igneous bedrock has a dip azimuth to the east-southeast of 90° - 120° and a moderate dip angle of 25° - 45° from horizontal.

The number of bedrock fractures and bedding detected and the most prominent orientations (dip azimuths and dip angles) of these bedrock fractures and bedding are reported in the tables below.

Summary of Bedrock Structure Statistics in the Sedimentary Bedrock
for Boreholes 114-MW6D, 114-MW52D, 114-MW57D, 114-MW66D

| Borehole ID & Date Logged | Structure Type | Number of Structures | Most Prominent Bedrock Structure Dip Azimuths | Most Prominent Bedrock Structure Dip Angles |
|---|---|---|---|---|
| 114-MW6D (September 22, 2020 | Fractures | 38 | primary: northwest (300° - 330°) secondary: southeast (120° - 135°) | primary: 0° - 20° from horizontal secondary: 70° - 85° from horizontal |
| | Bedding | 33 | northwest (285° - 315°) | 10° - 15° from horizontal |
| 114-MW52D (January 14, 2021) | Fractures | 30 | northwest (300° - 315°) | 0° - 15° from horizontal |
| | Bedding | 45 | northwest (285° - 315°) | 10° - 15° from horizontal |
| 114-MW57D (January 15, 2021) | Fractures | 25 | northwest (315° - 345°) | 10° - 15° from horizontal |
| | Bedding | 44 | northwest (285° - 300°) | 10° - 20° from horizontal |
| 114-MW66D (January 14, 2021) | Fractures | 40 | primary: northwest (300° - 315°) secondary: southeast (105° - 120°) | primary: 10° - 20° from horizontal secondary: 65° - 85° from horizontal |
| | Bedding | 54 | northwest (285° - 300°) | 15° - 20° from horizontal |
| All Boreholes in Sedimentary Bedrock | Fractures | 133 | primary: northwest (300° - 330°) secondary: southeast (105° - 135°) | primary: 0° - 20° from horizontal secondary: 65° - 85° from horizontal |
| | Bedding | 176 | northwest (285° - 300°) | 10° - 20° from horizontal |

Summary of Bedrock Structure Statistics in the Igneous Bedrock
for Boreholes 114-MW4D & 114-MW61D

| Borehole ID & Date Logged | Structure Type | Number of Structures | Most Prominent Bedrock Fracture Dip Azimuths | Most Prominent Bedrock Fracture Dip Angles |
|---|---|---|---|---|
| 114-MW4D (September 22, 2020) | Fractures | 95 | east-southeast (90° - 105°) | 25° - 45° from horizontal |
| 114-MW61D (January 15, 2021) | Fractures | 149 | east-southeast (90° - 120°) | 35° - 45° from horizontal |
| All Boreholes in Igneous Bedrock | Fractures | 244 | east-southeast (90° - 120°) | 25° - 45° from horizontal |

If you have any questions or would like additional information, feel free to contact us at your convenience.

Thanks,
Rob

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# Appendix C

# Summary of Historical Groundwater Elevations

**Appendix C**
**Summary of Historical Groundwater Elevations**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| Location ID | Measurement Date | Reference Elevation (ft NAVD88) | Depth to Water (ft) | Water Level Elevation (ft NAVD88) |
|---|---|---|---|---|
| 114-P2B2-MW101S | 4/3/2020 | 10.96 | 2.42 | 8.54 |
| 114-MW14A | 3/31/2020 | 12.07 | 2.75 | 9.32 |
| 114-MW25A | 3/31/2020 | 9.88 | 3.55 | 6.33 |
| 114-MW25B | 3/31/2020 | 10.08 | 4.02 | 6.06 |
| 114-MW25C | 3/31/2020 | 9.77 | 3.69 | 6.08 |
| 114-MW26B | 3/31/2020 | 11.32 | 5.78 | 5.54 |
| 114-MW27A | 3/31/2020 | 10.35 | 3.85 | 6.50 |
| 114-MW27B | 3/31/2020 | 10.20 | 3.07 | 7.13 |
| 114-MW28A | 3/31/2020 | 15.30 | 9.99 | 5.31 |
| 114-MW30A | 3/31/2020 | 9.90 | 3.74 | 6.16 |
| 114-MW36A | 3/31/2020 | 10.69 | 5.00 | 5.69 |
| 114-MW36B | 3/31/2020 | 9.93 | 4.02 | 5.91 |
| 114-MW37A | 3/31/2020 | 10.87 | 4.15 | 6.72 |
| 114-MW37B | 3/31/2020 | 10.79 | 4.18 | 6.61 |
| 114-MW38A | 3/31/2020 | 20.51 | 13.02 | 7.49 |
| 114-MW38B | 3/31/2020 | 20.55 | 13.89 | 6.66 |
| 114-MW41A | 3/31/2020 | 18.24 | 8.26 | 9.98 |
| 114-MW41B | 3/31/2020 | 17.67 | 10.64 | 7.03 |
| 114-P1C-MW101I | 3/31/2020 | 13.31 | 5.54 | 7.77 |
| 114-P1C-MW101S | 3/31/2020 | 13.68 | 5.30 | 8.38 |
| 114-P1C-MW104S | 3/31/2020 | 14.65 | 6.34 | 8.31 |
| 114-P1C-PZ1 | 3/31/2020 | 16.18 | 8.20 | 7.98 |
| 114-P2A-MW102I | 3/31/2020 | 13.11 | 6.22 | 6.89 |
| 114-P2A-MW102S | 3/31/2020 | 13.68 | 6.48 | 7.20 |
| 114-P2A-MW103I | 3/31/2020 | 15.39 | 8.91 | 6.48 |
| 114-P2A-MW103S | 3/31/2020 | 15.92 | 9.23 | 6.69 |
| 114-P2B1-MW101I | 3/31/2020 | 13.93 | 7.33 | 6.60 |
| 114-P2B1-MW101S | 3/31/2020 | 15.01 | 6.52 | 8.49 |
| 114-P2B1-MW102S | 3/31/2020 | 11.46 | 8.40 | 3.06 |
| 114-P2B2-MW101I | 3/31/2020 | 10.55 | 3.87 | 6.68 |
| 114-P2-MW-3D | 3/31/2020 | 15.22 | 8.66 | 6.56 |
| 114-P2-MW-3I | 3/31/2020 | 15.23 | 8.55 | 6.68 |
| FORREST-SUMP-E | 3/31/2020 | 3.3* | 1.68 | 1.62 |
| FORREST-SUMP-S | 3/31/2020 | 10.3* | 7.40 | 2.90 |
| FORREST-SUMP-W | 3/31/2020 | 3.2* | 1.00 | 2.20 |
| FS-MW101S | 3/31/2020 | 10.83 | 4.90 | 5.93 |
| MW1C-3 | 3/31/2020 | 18.45 | 7.49 | 10.96 |
| MW1C-4 | 3/31/2020 | 17.58 | 8.00 | 9.58 |
| 114-MW24AR | 3/30/2020 | 11.36 | 4.45 | 6.91 |
| 114-MW24B | 3/30/2020 | 11.56 | 4.81 | 6.75 |
| 114-MW2B1-2 | 3/30/2020 | 23.96 | 16.30 | 7.66 |
| 114-MW2B1-2I | 3/30/2020 | 23.95 | 16.96 | 6.99 |
| 114-MW37A | 6/11/2018 | 10.87 | 4.20 | 6.67 |
| 114-MW37B | 6/11/2018 | 10.79 | 4.20 | 6.59 |
| 114-MW38A | 6/11/2018 | 20.51 | 12.45 | 8.06 |
| 114-MW38B | 6/11/2018 | 20.55 | 14.00 | 6.55 |
| 114-MW41A | 6/1/2018 | 18.24 | 8.20 | 10.04 |
| 114-MW41B | 6/1/2018 | 17.67 | 10.19 | 7.48 |
| 114-MW7D | 6/1/2018 | 11.92 | 1.44 | 10.48 |
| 132-P3A-MW5 | 6/1/2018 | 12.45 | 2.70 | 9.75 |
| 133-MW1C | 6/1/2018 | 11.50 | 3.64 | 7.86 |
| FORREST-SUMP-E | 6/1/2018 | 3.30 | 0.79 | 2.51 |
| FORREST-SUMP-S | 6/1/2018 | 10.30 | 7.77 | 2.53 |
| FORREST-SUMP-W | 6/1/2018 | 3.20 | 0.75 | 2.45 |
| 10W-MW102S | 5/29/2018 | 15.11 | 6.53 | 8.58 |
| 10W-MW105I | 5/29/2018 | 10.92 | 3.34 | 7.58 |
| 114-MC-MW101S | 5/29/2018 | 14.17 | 2.94 | 11.23 |
| 114-MC-MW102S | 5/29/2018 | 14.65 | 4.22 | 10.43 |
| 114-MC-PZ103 | 5/29/2018 | 11.98 | 3.97 | 8.01 |
| 114-MC-PZ203 | 5/29/2018 | 14.01 | 5.58 | 8.43 |
| 114MON33 | 5/29/2018 | 16.74 | 3.96 | 12.78 |
| 114-MW14A | 5/29/2018 | 12.07 | 2.71 | 9.36 |
| 114-MW15A | 5/29/2018 | 13.05 | 2.62 | 10.43 |
| 114-MW17B | 5/29/2018 | 13.25 | 5.90 | 7.35 |
| 114-MW19B | 5/29/2018 | 12.66 | 5.28 | 7.38 |
| 114-MW19C | 5/29/2018 | 12.53 | 5.03 | 7.50 |
| 114-MW20A | 5/29/2018 | 12.17 | 8.00 | 4.17 |
| 114-MW20B | 5/29/2018 | 12.16 | 5.07 | 7.09 |
| 114-MW20C | 5/29/2018 | 12.07 | 4.26 | 7.81 |
| 114-MW22A | 5/29/2018 | 11.90 | 4.08 | 7.82 |
| 114-MW22B | 5/29/2018 | 12.23 | 5.34 | 6.89 |
| 114-MW24AR | 5/29/2018 | 11.36 | 3.58 | 7.78 |
| 114-MW24B | 5/29/2018 | 11.56 | 4.50 | 7.06 |
| 114-MW25A | 5/29/2018 | 9.88 | 2.98 | 6.90 |
| 114-MW25B | 5/29/2018 | 10.08 | 3.12 | 6.96 |
| 114-MW25C-2 | 5/29/2018 | 9.77 | 2.26 | 7.51 |
| 114-MW26A | 5/29/2018 | 14.20 | 6.79 | 7.41 |
| 114-MW26B | 5/29/2018 | 11.32 | 4.04 | 7.28 |
| 114-MW27A | 5/29/2018 | 10.35 | 3.52 | 6.83 |
| 114-MW27B | 5/29/2018 | 10.20 | 4.04 | 6.16 |
| 114-MW28A | 5/29/2018 | 15.30 | 6.89 | 8.41 |
| 114-MW2B1-2 | 5/29/2018 | 23.96 | 15.22 | 8.74 |
| 114-MW2B1-2I | 5/29/2018 | 23.95 | 16.66 | 7.29 |

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| Location ID | Measurement Date | Reference Elevation (ft NAVD88) | Depth to Water (ft) | Water Level Elevation (ft NAVD88) |
|---|---|---|---|---|
| 114-MW30A | 5/29/2018 | 9.90 | 1.33 | 8.57 |
| 114-MW36A | 5/29/2018 | 10.69 | 3.88 | 6.81 |
| 114-MW36B | 5/29/2018 | 9.93 | 2.88 | 7.05 |
| 114-MW39B | 5/29/2018 | 10.64 | 3.99 | 6.65 |
| 114-MW40B | 5/29/2018 | 10.29 | 3.94 | 6.35 |
| 114-MW42A | 5/29/2018 | 9.94 | 1.63 | 8.31 |
| 114-MW43A | 5/29/2018 | 11.38 | 1.14 | 10.24 |
| 114-MW44A | 5/29/2018 | 9.14 | 2.16 | 6.98 |
| 114-MW4D | 5/29/2018 | 12.97 | 5.42 | 7.55 |
| 114-MW6D | 5/29/2018 | 12.69 | 3.38 | 9.31 |
| 114-P1A-MW101I | 5/29/2018 | 14.40 | 6.03 | 8.37 |
| 114-P1A-MW101S | 5/29/2018 | 14.33 | 4.18 | 10.15 |
| 114-P1B-MW101I | 5/29/2018 | 14.13 | 6.08 | 8.05 |
| 114-P1B-MW101S | 5/29/2018 | 13.30 | 2.34 | 10.96 |
| 114-P1B-MW102I | 5/29/2018 | 12.63 | 4.73 | 7.90 |
| 114-P1B-MW103D | 5/29/2018 | 16.73 | 8.77 | 7.96 |
| 114-P1B-MW103S | 5/29/2018 | 14.24 | 2.70 | 11.54 |
| 114-P1B-MW104S | 5/29/2018 | 13.93 | 2.43 | 11.50 |
| 114-P1C-EW1 | 5/29/2018 | 13.08 | 1.30 | 11.78 |
| 114-P1C-MW101I | 5/29/2018 | 13.31 | 4.76 | 8.55 |
| 114-P1C-MW101S | 5/29/2018 | 13.68 | 4.29 | 9.39 |
| 114-P1C-MW102S | 5/29/2018 | 14.91 | 5.43 | 9.48 |
| 114-P1C-MW104S | 5/29/2018 | 14.60 | 5.28 | 9.32 |
| 114-P1C-PZ1 | 5/29/2018 | 16.18 | 7.41 | 8.77 |
| 114-P1C-PZ2 | 5/29/2018 | 13.24 | 4.43 | 8.81 |
| 114-P1-IRM-27D | 5/29/2018 | 13.26 | 6.11 | 7.15 |
| 114-P1-MW-2I | 5/29/2018 | 16.23 | 8.45 | 7.78 |
| 114-P2A-MW101I | 5/29/2018 | 12.71 | 3.04 | 9.67 |
| 114-P2A-MW102I | 5/29/2018 | 13.12 | 3.75 | 9.37 |
| 114-P2A-MW102S | 5/29/2018 | 13.70 | 4.09 | 9.61 |
| 114-P2A-MW103I | 5/29/2018 | 15.41 | 6.12 | 9.29 |
| 114-P2A-MW103S | 5/29/2018 | 15.98 | 6.34 | 9.64 |
| 114-P2A-MW104I | 5/29/2018 | 14.10 | 4.50 | 9.60 |
| 114-P2A-MW104S | 5/29/2018 | 12.83 | 3.51 | 9.32 |
| 114-P2B1-MW101I | 5/29/2018 | 13.95 | 5.83 | 8.12 |
| 114-P2B1-MW101S | 5/29/2018 | 15.01 | 4.84 | 10.17 |
| 114-P2B1-MW103S | 5/29/2018 | 12.99 | 2.45 | 10.54 |
| 114-P2B2-MW101I | 5/29/2018 | 10.55 | 2.41 | 8.14 |
| 114-P2B3-MW101I | 5/29/2018 | 12.93 | 4.40 | 8.53 |
| 114-P2B3-MW101S | 5/29/2018 | 13.93 | 3.44 | 10.49 |
| 114-P2B3-MW2 | 5/29/2018 | 11.97 | 1.31 | 10.66 |
| 114-P2B4-MW1 | 5/29/2018 | 10.50 | 0.00 | 10.50 |
| 114-P2B4-MW101S | 5/29/2018 | 13.48 | 4.76 | 8.72 |
| 114-P2B4-MW102I | 5/29/2018 | 11.86 | 3.54 | 8.32 |
| 114-P2B4-MW102S | 5/29/2018 | 13.44 | 3.11 | 10.33 |
| 114-P2B4-MW103I | 5/29/2018 | 13.05 | 4.44 | 8.61 |
| 114-P2B4-MW103S | 5/29/2018 | 15.30 | 4.84 | 10.46 |
| 114-P2B4-MW2 | 5/29/2018 | 10.75 | 0.59 | 10.16 |
| 132-P3A-MW102I | 5/29/2018 | 15.81 | 9.48 | 6.33 |
| 132-P3A-MW103I | 5/29/2018 | 13.21 | 5.74 | 7.47 |
| 132-P3A-MW103S | 5/29/2018 | 15.11 | 4.51 | 10.60 |
| 132-P3A-MW104D-1 | 5/29/2018 | 14.89 | 7.50 | 7.39 |
| 132-P3A-MW104D-2 | 5/29/2018 | 14.89 | 7.20 | 7.69 |
| 132-P3A-MW104I | 5/29/2018 | 12.88 | 5.25 | 7.63 |
| 132-P3A-MW104S | 5/29/2018 | 14.80 | 3.43 | 11.37 |
| 132-P3A-MW105I | 5/29/2018 | 14.10 | 6.74 | 7.36 |
| 132-P3A-MW2 | 5/29/2018 | 12.20 | 2.64 | 9.56 |
| 132-P3A-MW3 | 5/29/2018 | 13.01 | 4.35 | 8.66 |
| 132-P3A-MW4 | 5/29/2018 | 13.08 | 3.42 | 9.66 |
| 133-MW6A | 5/29/2018 | 11.49 | 5.50 | 5.99 |
| 133-P3C-MW101I | 5/29/2018 | 12.02 | 4.79 | 7.23 |
| 133-P3C-MW101S | 5/29/2018 | 12.16 | 2.59 | 9.57 |
| 133-P3C-MW102I | 5/29/2018 | 12.18 | 4.78 | 7.40 |
| 133-P3C-MW102S | 5/29/2018 | 12.57 | 3.16 | 9.41 |
| 135-MW1AR | 5/29/2018 | 9.71 | 1.70 | 8.01 |
| 135-MW1B | 5/29/2018 | 9.64 | 2.41 | 7.23 |
| 135-MW1C | 5/29/2018 | 9.34 | 1.41 | 7.93 |
| 135-MW2A | 5/29/2018 | 8.74 | 0.77 | 7.97 |
| 135-MW2B | 5/29/2018 | 8.65 | 1.62 | 7.03 |
| 135-MW3BR | 5/29/2018 | 10.94 | 3.62 | 7.32 |
| 135-P3C-MW101S | 5/29/2018 | 10.97 | 1.64 | 9.33 |
| 135-P3C-MW102S | 5/29/2018 | 10.99 | 2.81 | 8.18 |
| 137-MW1C | 5/29/2018 | 13.15 | 5.12 | 8.03 |
| 137-MW2C | 5/29/2018 | 13.87 | 6.14 | 7.73 |
| 137-P3B-MW1 | 5/29/2018 | 11.31 | 1.04 | 10.27 |
| 137-P3B-MW101I | 5/29/2018 | 13.00 | 5.61 | 7.39 |
| 137-P3B-MW101S | 5/29/2018 | 14.61 | 4.14 | 10.47 |
| 137-P3B-MW102I | 5/29/2018 | 12.94 | 4.16 | 8.78 |
| 137-P3B-MW102S | 5/29/2018 | 14.16 | 5.46 | 8.70 |
| 143-P3A-MW101I | 5/29/2018 | 12.93 | 5.32 | 7.61 |
| 186-MW01 | 5/29/2018 | 18.37 | 9.54 | 8.83 |
| 186-MW02R | 5/29/2018 | 13.10 | 4.38 | 8.72 |
| FS-MW101S | 5/29/2018 | 10.83 | 2.30 | 8.53 |

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**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| Location ID | Measurement Date | Reference Elevation (ft NAVD88) | Depth to Water (ft) | Water Level Elevation (ft NAVD88) |
|---|---|---|---|---|
| HSS-P3C-MW1S | 5/29/2018 | 11.97 | 2.46 | 9.51 |
| HSS-P3C-MW2S | 5/29/2018 | 12.37 | 2.87 | 9.50 |
| MW10S | 5/29/2018 | 13.79 | 5.96 | 7.83 |
| MW1C-3 | 5/29/2018 | 18.45 | 7.39 | 11.06 |
| MW1C-4 | 5/29/2018 | 17.58 | 7.97 | 9.61 |
| MW-31A | 5/29/2018 | 15.72 | 3.30 | 12.42 |
| MW-34 | 5/29/2018 | 15.65 | 4.99 | 10.66 |
| MW-35 | 5/29/2018 | 15.62 | 5.06 | 10.56 |
| MW6C | 5/29/2018 | 12.90 | 5.28 | 7.62 |
| MW7D | 5/29/2018 | 10.87 | 4.19 | 6.68 |
| MW7S | 5/29/2018 | 10.29 | 4.66 | 5.63 |
| MW8D | 5/29/2018 | 8.52 | 1.43 | 7.09 |
| MW8F | 5/29/2018 | 8.89 | 2.45 | 6.44 |
| MW8S | 5/29/2018 | 8.39 | 5.14 | 3.25 |
| MW-CR-2 | 5/29/2018 | 17.78 | 7.05 | 10.73 |
| MW-CR-3 | 5/29/2018 | 17.82 | 5.94 | 11.88 |
| MW-CR-3D | 5/29/2018 | 14.88 | 6.97 | 7.91 |
| MW-CR-4 | 5/29/2018 | 17.73 | 5.32 | 12.41 |
| MW-CR-5 | 5/29/2018 | 16.55 | 4.00 | 12.55 |
| MW-CR-6 | 5/29/2018 | 17.04 | 4.93 | 12.11 |
| MW-MORRIS1A | 5/29/2018 | 14.43 | 2.00 | 12.43 |
| 114-P1C-MW103S | 3/16/2017 | 14.72 | 7.16 | 7.56 |
| 114-P1C-MW104S | 3/16/2017 | 14.65 | 7.12 | 7.53 |
| 114-P1C-MW102S | 3/16/2017 | 14.93 | 7.26 | 7.67 |
| 114-MW14A | 12/6/2016 | 12.07 | 2.70 | 9.37 |
| 114-MW14B | 12/6/2016 | 11.88 | 3.65 | 8.23 |
| 114-MW15A | 12/6/2016 | 13.05 | 3.04 | 10.01 |
| 114-MW16A | 12/6/2016 | 15.81 | 6.91 | 8.90 |
| 114-MW16B | 12/6/2016 | 15.53 | 7.30 | 8.23 |
| 114-MW20A | 12/6/2016 | 12.17 | 7.61 | 4.56 |
| 114-MW20B | 12/6/2016 | 12.16 | 6.52 | 5.64 |
| 114-MW20C | 12/6/2016 | 12.07 | 5.85 | 6.22 |
| 114-MW24A | 12/6/2016 | 11.44 | 4.55 | 6.89 |
| 114-MW24B | 12/6/2016 | 11.41 | 4.71 | 6.70 |
| 114-MW25A | 12/6/2016 | 9.88 | 3.33 | 6.55 |
| 114-MW25B | 12/6/2016 | 10.08 | 4.08 | 6.00 |
| 114-MW27A | 12/6/2016 | 10.35 | 4.27 | 6.08 |
| 114-MW27B | 12/6/2016 | 10.20 | 4.07 | 6.13 |
| 114-MW2B1-2 | 12/6/2016 | 23.96 | 15.62 | 8.34 |
| 114-MW36A | 12/6/2016 | 10.69 | 4.45 | 6.24 |
| 114-MW36B | 12/6/2016 | 9.93 | 3.43 | 6.50 |
| 114-MW37A | 12/6/2016 | 10.87 | 4.04 | 6.83 |
| 114-MW37B | 12/6/2016 | 10.79 | 4.53 | 6.26 |
| 114-MW38A | 12/6/2016 | 20.51 | 12.59 | 7.92 |
| 114-MW38B | 12/6/2016 | 20.55 | 13.69 | 6.86 |
| 133-MW2C | 12/6/2016 | 9.84 | 3.67 | 6.17 |
| 133-MW6A | 12/6/2016 | 11.49 | 6.69 | 4.80 |
| 135-MW1A | 12/6/2016 | 9.36 | 3.33 | 6.03 |
| 135-MW1B | 12/6/2016 | 9.64 | 4.02 | 5.62 |
| 135-MW1C | 12/6/2016 | 9.34 | 3.64 | 5.70 |
| MW10S | 12/6/2016 | 13.79 | 4.29 | 9.50 |
| MW7D | 12/6/2016 | 10.87 | 5.03 | 5.84 |
| MW7S | 12/6/2016 | 10.29 | 4.48 | 5.81 |
| MW8D | 12/6/2016 | 8.52 | 2.72 | 5.80 |
| MW8F | 12/6/2016 | 8.89 | 3.43 | 5.46 |
| MW8S | 12/6/2016 | 8.39 | 5.84 | 2.55 |
| 114-MC-EW103 | 12/5/2016 | 12.02 | 3.28 | 8.74 |
| 114-MC-MW101S | 12/5/2016 | 14.17 | 5.16 | 9.01 |
| 114-MC-MW102S | 12/5/2016 | 13.50 | 4.86 | 8.64 |
| 114-MC-PZ103 | 12/5/2016 | 11.92 | 3.12 | 8.80 |
| 114-MC-PZ203 | 12/5/2016 | 14.01 | 5.41 | 8.60 |
| 114MON32 | 12/5/2016 | 15.53 | 5.23 | 10.30 |
| 114MON33 | 12/5/2016 | 15.96 | 5.66 | 10.30 |
| 114-MW19B | 12/5/2016 | 10.59 | 4.47 | 6.12 |
| 114-MW22A | 12/5/2016 | 11.90 | 4.91 | 6.99 |
| 114-MW22B | 12/5/2016 | 12.23 | 5.53 | 6.70 |
| 114-MW4D | 12/5/2016 | 12.90 | 2.98 | 9.92 |
| 114-MW6D | 12/5/2016 | 13.90 | 4.95 | 8.95 |
| 114-MW7D | 12/5/2016 | 12.42 | 3.95 | 8.47 |
| 114-P1A-MW101I | 12/5/2016 | 14.40 | 6.10 | 8.30 |
| 114-P1A-MW101S | 12/5/2016 | 14.33 | 5.60 | 8.73 |
| 114-P1B-MW101I | 12/5/2016 | 14.13 | 6.03 | 8.10 |
| 114-P1B-MW101S | 12/5/2016 | 13.30 | 4.31 | 8.99 |
| 114-P1B-MW102I | 12/5/2016 | 12.63 | 4.41 | 8.22 |
| 114-P1B-MW102S | 12/5/2016 | 13.06 | 3.87 | 9.19 |
| 114-P1B-MW103S | 12/5/2016 | 14.24 | 3.54 | 10.70 |
| 114-P1B-MW104S | 12/5/2016 | 13.93 | 3.63 | 10.30 |
| 114-P1C-MW101I | 12/5/2016 | 13.31 | 4.88 | 8.43 |
| 114-P1C-MW101S | 12/5/2016 | 13.66 | 5.00 | 8.66 |
| 114-P1C-PZ1 | 12/5/2016 | 16.18 | 7.71 | 8.47 |
| 114-P1C-PZ2 | 12/5/2016 | 13.24 | 5.72 | 7.52 |
| 114-P2A-MW101I | 12/5/2016 | 12.71 | 4.52 | 8.19 |
| 114-P2A-MW101S | 12/5/2016 | 12.52 | 4.25 | 8.27 |

**Appendix C**
**Summary of Historical Groundwater Elevations**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| Location ID | Measurement Date | Reference Elevation (ft NAVD88) | Depth to Water (ft) | Water Level Elevation (ft NAVD88) |
|---|---|---|---|---|
| 114-P2A-MW102I | 12/5/2016 | 13.11 | 5.33 | 7.78 |
| 114-P2A-MW102S | 12/5/2016 | 13.68 | 5.71 | 7.97 |
| 114-P2A-MW103I | 12/5/2016 | 15.39 | 8.10 | 7.29 |
| 114-P2A-MW103S | 12/5/2016 | 15.92 | 8.61 | 7.31 |
| 114-P2A-MW104I | 12/5/2016 | 14.10 | 6.13 | 7.97 |
| 114-P2A-MW104S | 12/5/2016 | 12.84 | 4.81 | 8.03 |
| 114-P2B1-MW101I | 12/5/2016 | 13.93 | 5.83 | 8.10 |
| 114-P2B1-MW101S | 12/5/2016 | 14.99 | 6.26 | 8.73 |
| 114-P2B1-MW102S | 12/5/2016 | 11.46 | 7.99 | 3.47 |
| 114-P2B1-MW103S | 12/5/2016 | 12.95 | 5.02 | 7.93 |
| 114-P2B2-MW101I | 12/5/2016 | 10.55 | 2.45 | 8.10 |
| 114-P2B2-MW101S | 12/5/2016 | 10.96 | 2.42 | 8.54 |
| 114-P2B3-MW1 | 12/5/2016 | 12.29 | 3.91 | 8.38 |
| 114-P2B3-MW101I | 12/5/2016 | 12.90 | 5.18 | 7.72 |
| 114-P2B3-MW101S | 12/5/2016 | 13.89 | 5.82 | 8.07 |
| 114-P2B3-MW2 | 12/5/2016 | 11.97 | 3.71 | 8.26 |
| 114-P2B4-MW1 | 12/5/2016 | 10.50 | 2.14 | 8.36 |
| 114-P2B4-MW101I | 12/5/2016 | 13.31 | 5.86 | 7.45 |
| 114-P2B4-MW101S | 12/5/2016 | 13.45 | 5.88 | 7.57 |
| 114-P2B4-MW102I | 12/5/2016 | 11.86 | 4.79 | 7.07 |
| 114-P2B4-MW102S | 12/5/2016 | 13.44 | 4.71 | 8.73 |
| 114-P2B4-MW103I | 12/5/2016 | 13.03 | 5.35 | 7.68 |
| 114-P2B4-MW103S | 12/5/2016 | 15.26 | 7.15 | 8.11 |
| 114-P2B4-MW2 | 12/5/2016 | 10.75 | 2.02 | 8.73 |
| 114REL8 | 12/5/2016 | 10.76 | 1.08 | 9.68 |
| 114REL9 | 12/5/2016 | 10.16 | 0.99 | 9.17 |
| 132-MW2A | 12/5/2016 | 14.12 | 7.24 | 6.88 |
| 132-P3A-MW102I | 12/5/2016 | 15.81 | 9.98 | 5.83 |
| 132-P3A-MW102S | 12/5/2016 | 15.38 | 7.51 | 7.87 |
| 132-P3A-MW103I | 12/5/2016 | 13.20 | 6.63 | 6.57 |
| 132-P3A-MW103S | 12/5/2016 | 15.11 | 5.82 | 9.29 |
| 132-P3A-MW104I | 12/5/2016 | 12.88 | 6.31 | 6.57 |
| 132-P3A-MW104S | 12/5/2016 | 14.80 | 5.23 | 9.57 |
| 132-P3A-MW2 | 12/5/2016 | 12.20 | 3.90 | 8.30 |
| 132-P3A-MW5 | 12/5/2016 | 12.45 | 4.54 | 7.91 |
| 133-P3C-MW101I | 12/5/2016 | 12.10 | 6.03 | 6.07 |
| 133-P3C-MW101S | 12/5/2016 | 12.26 | 4.98 | 7.28 |
| 133-P3C-MW102I | 12/5/2016 | 12.27 | 6.04 | 6.23 |
| 133-P3C-MW102S | 12/5/2016 | 12.66 | 5.53 | 7.13 |
| 135-MW2A | 12/5/2016 | 8.74 | 2.95 | 5.79 |
| 135-MW2B | 12/5/2016 | 8.65 | 2.79 | 5.86 |
| 137-MW2C | 12/5/2016 | 13.87 | 7.27 | 6.60 |
| 137-P3B-MW1 | 12/5/2016 | 11.31 | 2.95 | 8.36 |
| 137-P3B-MW101I | 12/5/2016 | 13.00 | 6.46 | 6.54 |
| 137-P3B-MW101S | 12/5/2016 | 14.65 | 6.67 | 7.98 |
| 137-P3B-MW102I | 12/5/2016 | 12.93 | 6.41 | 6.52 |
| 137-P3B-MW102S | 12/5/2016 | 14.16 | 6.67 | 7.49 |
| 143-P3A-MW101I | 12/5/2016 | 12.93 | 6.13 | 6.80 |
| 143-P3A-MW101S | 12/5/2016 | 12.17 | 3.07 | 9.10 |
| HSS-P3C-MW1S | 12/5/2016 | 12.19 | 4.98 | 7.21 |
| HSS-P3C-MW2S | 12/5/2016 | 12.38 | 5.29 | 7.09 |
| MW1C-3 | 12/5/2016 | 18.45 | 7.48 | 10.97 |
| MW1C-4 | 12/5/2016 | 17.58 | 8.23 | 9.35 |
| MW-31A | 12/5/2016 | 15.90 | 4.84 | 11.06 |
| MW-34 | 12/5/2016 | 15.55 | 5.73 | 9.82 |
| MW-35 | 12/5/2016 | 15.73 | 6.73 | 9.00 |
| MW6C | 12/5/2016 | 14.18 | 4.80 | 9.38 |
| MW-CR-1 | 12/5/2016 | 17.61 | 4.84 | 12.77 |
| MW-CR-3 | 12/5/2016 | 17.82 | 5.57 | 12.25 |
| MW-CR-4 | 12/5/2016 | 17.73 | 5.45 | 12.28 |
| MW-CR-5 | 12/5/2016 | 16.55 | 4.73 | 11.82 |
| MW-CR-6 | 12/5/2016 | 17.04 | 5.08 | 11.96 |
| MW-MORRIS1A | 12/5/2016 | 14.04 | 5.42 | 8.62 |
| 114-MW14A | 9/9/2016 | 12.07 | 4.19 | 7.88 |
| 114-MW14B | 9/9/2016 | 11.88 | 4.97 | 6.91 |
| 114-MW15A | 9/9/2016 | 13.05 | 3.88 | 9.17 |
| 114-MW16A | 9/9/2016 | 15.81 | 7.61 | 8.20 |
| 114-MW16B | 9/9/2016 | 15.53 | 8.11 | 7.42 |
| 114-MW20A | 9/9/2016 | 12.17 | 8.52 | 3.65 |
| 114-MW20B | 9/9/2016 | 12.16 | 7.28 | 4.88 |
| 114-MW20C | 9/9/2016 | 12.07 | 6.64 | 5.43 |
| 114-MW24A | 9/9/2016 | 11.44 | 5.59 | 5.85 |
| 114-MW24B | 9/9/2016 | 11.41 | 5.48 | 5.93 |
| 114-MW25A | 9/9/2016 | 9.88 | 4.28 | 5.60 |
| 114-MW25B | 9/9/2016 | 10.08 | 5.54 | 4.54 |
| 114-MW27A | 9/9/2016 | 10.35 | 4.68 | 5.67 |
| 114-MW27B | 9/9/2016 | 10.20 | 4.29 | 5.91 |
| 114-MW2B1-2 | 9/9/2016 | 23.96 | 16.12 | 7.84 |
| 114-MW30A | 9/9/2016 | 9.90 | 3.98 | 5.92 |
| 114-MW36A | 9/9/2016 | 10.69 | 4.67 | 6.02 |
| 114-MW36B | 9/9/2016 | 9.93 | 4.39 | 5.54 |
| 114-MW37A | 9/9/2016 | 10.87 | 5.00 | 5.87 |
| 114-MW37B | 9/9/2016 | 10.79 | 4.82 | 5.97 |

**Appendix C**
**Summary of Historical Groundwater Elevations**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| Location ID | Measurement Date | Reference Elevation (ft NAVD88) | Depth to Water (ft) | Water Level Elevation (ft NAVD88) |
|---|---|---|---|---|
| 114-MW38A | 9/9/2016 | 20.51 | 13.64 | 6.87 |
| 114-MW38B | 9/9/2016 | 20.55 | 14.65 | 5.90 |
| 133-MW1C | 9/9/2016 | 11.50 | 5.41 | 6.09 |
| 133-MW2C | 9/9/2016 | 9.84 | 4.82 | 5.02 |
| 133-MW6A | 9/9/2016 | 11.49 | 7.97 | 3.52 |
| 135-MW1A | 9/9/2016 | 9.36 | 4.89 | 4.47 |
| 135-MW1B | 9/9/2016 | 9.64 | 4.02 | 5.62 |
| 135-MW1C | 9/9/2016 | 9.34 | 4.25 | 5.09 |
| 186-MW01 | 9/9/2016 | 18.37 | 10.84 | 7.53 |
| MW10S | 9/9/2016 | 13.79 | 8.05 | 5.74 |
| MW7S | 9/9/2016 | 10.29 | 5.45 | 4.84 |
| MW8D | 9/9/2016 | 8.52 | 3.49 | 5.03 |
| MW8F | 9/9/2016 | 8.89 | 4.42 | 4.47 |
| MW8S | 9/9/2016 | 8.39 | 6.27 | 2.12 |
| 114-MC-EW103 | 9/8/2016 | 12.02 | 5.16 | 6.86 |
| 114-MC-MW101S | 9/8/2016 | 14.17 | 7.72 | 6.45 |
| 114-MC-MW102S | 9/8/2016 | 13.50 | 6.52 | 6.98 |
| 114-MC-PZ103 | 9/8/2016 | 11.92 | 5.11 | 6.81 |
| 114-MC-PZ203 | 9/8/2016 | 14.01 | 7.18 | 6.83 |
| 114MON32 | 9/8/2016 | 15.53 | 7.56 | 7.97 |
| 114MON33 | 9/8/2016 | 15.96 | 7.79 | 8.17 |
| 114-MW19B | 9/8/2016 | 10.59 | 5.45 | 5.14 |
| 114-MW22A | 9/8/2016 | 11.90 | 6.28 | 5.62 |
| 114-MW22B | 9/8/2016 | 12.23 | 6.23 | 6.00 |
| 114-MW4D | 9/8/2016 | 12.90 | 5.69 | 7.21 |
| 114-MW6D | 9/8/2016 | 13.90 | 6.46 | 7.44 |
| 114-MW7D | 9/8/2016 | 12.42 | 5.57 | 6.85 |
| 114-P1A-MW101I | 9/8/2016 | 14.40 | 7.53 | 6.87 |
| 114-P1A-MW101S | 9/8/2016 | 14.33 | 6.72 | 7.61 |
| 114-P1B-MW101I | 9/8/2016 | 14.13 | 7.39 | 6.74 |
| 114-P1B-MW101S | 9/8/2016 | 13.30 | 3.46 | 9.84 |
| 114-P1B-MW102I | 9/8/2016 | 12.63 | 5.82 | 6.81 |
| 114-P1B-MW102S | 9/8/2016 | 13.06 | 6.06 | 7.00 |
| 114-P1B-MW103S | 9/8/2016 | 14.24 | 6.76 | 7.48 |
| 114-P1B-MW104S | 9/8/2016 | 13.93 | 3.18 | 10.75 |
| 114-P1C-MW101I | 9/8/2016 | 13.31 | 6.42 | 6.89 |
| 114-P1C-MW101S | 9/8/2016 | 13.66 | 6.75 | 6.91 |
| 114-P1C-PZ1 | 9/8/2016 | 16.18 | 9.37 | 6.81 |
| 114-P1C-PZ2 | 9/8/2016 | 13.24 | 6.37 | 6.87 |
| 114-P2A-MW101I | 9/8/2016 | 12.71 | 6.51 | 6.20 |
| 114-P2A-MW101S | 9/8/2016 | 12.52 | 6.34 | 6.18 |
| 114-P2A-MW102I | 9/8/2016 | 13.11 | 6.96 | 6.15 |
| 114-P2A-MW102S | 9/8/2016 | 13.68 | 7.45 | 6.23 |
| 114-P2A-MW103I | 9/8/2016 | 15.39 | 9.27 | 6.12 |
| 114-P2A-MW103S | 9/8/2016 | 15.92 | 9.68 | 6.24 |
| 114-P2A-MW104I | 9/8/2016 | 14.10 | 7.84 | 6.26 |
| 114-P2A-MW104S | 9/8/2016 | 12.84 | 6.62 | 6.22 |
| 114-P2B1-MW101I | 9/8/2016 | 13.93 | 7.54 | 6.39 |
| 114-P2B1-MW101S | 9/8/2016 | 14.99 | 8.67 | 6.32 |
| 114-P2B1-MW102S | 9/8/2016 | 11.46 | 4.74 | 6.72 |
| 114-P2B1-MW103S | 9/8/2016 | 12.95 | 7.00 | 5.95 |
| 114-P2B2-MW101I | 9/8/2016 | 10.55 | 4.57 | 5.98 |
| 114-P2B2-MW101S | 9/8/2016 | 10.96 | 4.66 | 6.30 |
| 114-P2B3-MW1 | 9/8/2016 | 12.29 | 5.56 | 6.73 |
| 114-P2B3-MW101I | 9/8/2016 | 12.90 | 6.98 | 5.92 |
| 114-P2B3-MW101S | 9/8/2016 | 13.89 | 7.83 | 6.06 |
| 114-P2B3-MW2 | 9/8/2016 | 11.97 | 5.07 | 6.90 |
| 114-P2B4-MW1 | 9/8/2016 | 10.50 | 3.73 | 6.77 |
| 114-P2B4-MW101I | 9/8/2016 | 13.31 | 7.36 | 5.95 |
| 114-P2B4-MW101S | 9/8/2016 | 13.45 | 7.63 | 5.82 |
| 114-P2B4-MW102I | 9/8/2016 | 11.86 | 6.06 | 5.80 |
| 114-P2B4-MW102S | 9/8/2016 | 13.44 | 7.33 | 6.11 |
| 114-P2B4-MW103I | 9/8/2016 | 13.03 | 7.56 | 5.47 |
| 114-P2B4-MW103S | 9/8/2016 | 15.26 | 9.19 | 6.07 |
| 114-P2B4-MW2 | 9/8/2016 | 10.75 | 5.14 | 5.61 |
| 114-P2B4-MW3 | 9/8/2016 | 10.95 | 4.79 | 6.16 |
| 114REL8 | 9/8/2016 | 10.76 | 3.16 | 7.60 |
| 114REL9 | 9/8/2016 | 10.16 | 4.03 | 6.13 |
| 132-MW2A | 9/8/2016 | 14.12 | 9.16 | 4.96 |
| 132-P3A-MW102I | 9/8/2016 | 15.81 | 11.63 | 4.18 |
| 132-P3A-MW102S | 9/8/2016 | 15.38 | 9.50 | 5.88 |
| 132-P3A-MW103I | 9/8/2016 | 13.20 | 7.60 | 5.60 |
| 132-P3A-MW103S | 9/8/2016 | 15.11 | 7.97 | 7.14 |
| 132-P3A-MW104I | 9/8/2016 | 12.88 | 7.25 | 5.63 |
| 132-P3A-MW104S | 9/8/2016 | 14.80 | 7.52 | 7.28 |
| 132-P3A-MW2 | 9/8/2016 | 12.20 | 5.93 | 6.27 |
| 132-P3A-MW4 | 9/8/2016 | 13.08 | 5.68 | 7.40 |
| 132-P3A-MW5 | 9/8/2016 | 12.45 | 6.48 | 5.97 |
| 133-P3C-MW101I | 9/8/2016 | 12.10 | 6.95 | 5.15 |
| 133-P3C-MW101S | 9/8/2016 | 12.26 | 10.93 | 1.33 |
| 133-P3C-MW102I | 9/8/2016 | 12.27 | 6.87 | 5.40 |
| 133-P3C-MW102S | 9/8/2016 | 12.66 | 10.80 | 1.86 |
| 135-MW2A | 9/8/2016 | 8.74 | 4.78 | 3.96 |

**Appendix C**
**Summary of Historical Groundwater Elevations**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| Location ID | Measurement Date | Reference Elevation (ft NAVD88) | Depth to Water (ft) | Water Level Elevation (ft NAVD88) |
|---|---|---|---|---|
| 135-MW2B | 9/8/2016 | 8.65 | 3.70 | 4.95 |
| 135-MW3B | 9/8/2016 | 11.19 | 6.04 | 5.15 |
| 137-MW1C | 9/8/2016 | 13.15 | 7.05 | 6.10 |
| 137-MW2C | 9/8/2016 | 13.87 | 8.11 | 5.76 |
| 137-P3B-MW1 | 9/8/2016 | 11.31 | 4.59 | 6.72 |
| 137-P3B-MW101I | 9/8/2016 | 13.00 | 7.43 | 5.57 |
| 137-P3B-MW101S | 9/8/2016 | 14.65 | 7.61 | 7.04 |
| 137-P3B-MW102I | 9/8/2016 | 12.93 | 7.35 | 5.58 |
| 137-P3B-MW102S | 9/8/2016 | 14.16 | 7.16 | 7.00 |
| 143-P3A-MW101I | 9/8/2016 | 12.93 | 7.18 | 5.75 |
| 143-P3A-MW101S | 9/8/2016 | 12.17 | 6.17 | 6.00 |
| HSS-P3C-MW1S | 9/8/2016 | 12.19 | 11.02 | 1.17 |
| HSS-P3C-MW2S | 9/8/2016 | 12.38 | 10.64 | 1.74 |
| MW1C-3 | 9/8/2016 | 18.45 | 8.05 | 10.40 |
| MW1C-4 | 9/8/2016 | 17.58 | 9.78 | 7.80 |
| MW-31A | 9/8/2016 | 15.90 | 6.16 | 9.74 |
| MW-34 | 9/8/2016 | 15.55 | 8.81 | 6.74 |
| MW-35 | 9/8/2016 | 15.73 | 8.91 | 6.82 |
| MW6C | 9/8/2016 | 14.18 | 6.25 | 7.93 |
| MW7D | 9/8/2016 | 10.87 | 6.05 | 4.82 |
| MW-CR-1 | 9/8/2016 | 17.61 | 6.17 | 11.44 |
| MW-CR-3 | 9/8/2016 | 17.82 | 7.13 | 10.69 |
| MW-CR-4 | 9/8/2016 | 17.73 | 7.55 | 10.18 |
| MW-CR-5 | 9/8/2016 | 16.55 | 4.22 | 12.33 |
| MW-CR-6 | 9/8/2016 | 17.04 | 5.39 | 11.65 |
| MW-MORRIS1A | 9/8/2016 | 14.04 | 7.43 | 6.61 |
| 114-MW26A | 6/15/2016 | 14.20 | 8.24 | 5.96 |
| 114-MW28A | 6/15/2016 | 15.30 | 8.74 | 6.56 |
| 114-P2B3-MW1 | 6/15/2016 | 12.29 | 4.98 | 7.31 |
| 132-P3A-MW5 | 6/15/2016 | 12.45 | 6.07 | 6.38 |
| 114-MW14A | 6/14/2016 | 12.07 | 3.23 | 8.84 |
| 114-MW14B | 6/14/2016 | 11.88 | 4.32 | 7.56 |
| 114-MW15A | 6/14/2016 | 13.05 | 3.49 | 9.56 |
| 114-MW16A | 6/14/2016 | 15.81 | 7.37 | 8.44 |
| 114-MW16B | 6/14/2016 | 15.53 | 10.03 | 5.50 |
| 114-MW20A | 6/14/2016 | 12.17 | 9.10 | 3.07 |
| 114-MW20B | 6/14/2016 | 12.16 | 7.05 | 5.11 |
| 114-MW20C | 6/14/2016 | 12.07 | 6.30 | 5.77 |
| 114-MW24A | 6/14/2016 | 11.44 | 5.04 | 6.40 |
| 114-MW24B | 6/14/2016 | 11.41 | 5.09 | 6.32 |
| 114-MW25A | 6/14/2016 | 9.88 | 3.66 | 6.22 |
| 114-MW25B | 6/14/2016 | 10.08 | 3.97 | 6.11 |
| 114-MW27A | 6/14/2016 | 10.35 | 4.30 | 6.05 |
| 114-MW27B | 6/14/2016 | 10.20 | 4.50 | 5.70 |
| 114-MW2B1-2 | 6/14/2016 | 23.96 | 15.90 | 8.06 |
| 114-MW30A | 6/14/2016 | 9.90 | 3.06 | 6.84 |
| 114-MW36A | 6/14/2016 | 10.69 | 4.09 | 6.60 |
| 114-MW36B | 6/14/2016 | 9.93 | 3.37 | 6.56 |
| 114-MW37A | 6/14/2016 | 10.87 | 4.46 | 6.41 |
| 114-MW37B | 6/14/2016 | 10.79 | 4.38 | 6.41 |
| 114-MW38A | 6/14/2016 | 20.51 | 13.20 | 7.31 |
| 114-MW38B | 6/14/2016 | 20.55 | 14.05 | 6.50 |
| 114-P1B-MW104S | 6/14/2016 | 13.93 | 3.13 | 10.80 |
| 114-P2B4-MW2 | 6/14/2016 | 10.75 | 6.83 | 3.92 |
| 132-MW2A | 6/14/2016 | 14.12 | 8.25 | 5.87 |
| 132-P3A-MW3 | 6/14/2016 | 13.01 | 5.97 | 7.04 |
| 132-P3A-MW4 | 6/14/2016 | 13.08 | 4.87 | 8.21 |
| 133-MW1C | 6/14/2016 | 11.50 | 5.52 | 5.98 |
| 133-MW2C | 6/14/2016 | 9.84 | 4.36 | 5.48 |
| 133-MW6A | 6/14/2016 | 11.49 | 7.09 | 4.40 |
| 133-P3C-MW101I | 6/14/2016 | 12.10 | 8.71 | 3.39 |
| 133-P3C-MW101S | 6/14/2016 | 12.26 | 10.32 | 1.94 |
| 133-P3C-MW102I | 6/14/2016 | 12.27 | 8.17 | 4.10 |
| 133-P3C-MW102S | 6/14/2016 | 12.66 | 9.31 | 3.35 |
| 135-MW1A | 6/14/2016 | 9.36 | 4.16 | 5.20 |
| 135-MW1B | 6/14/2016 | 9.64 | 5.33 | 4.31 |
| 135-MW1C | 6/14/2016 | 9.34 | 3.91 | 5.43 |
| 135-MW2A | 6/14/2016 | 8.74 | 4.22 | 4.52 |
| 135-MW2B | 6/14/2016 | 8.65 | 5.83 | 2.82 |
| 135-MW3A | 6/14/2016 | 10.63 | 5.92 | 4.71 |
| 135-P3C-MW1 | 6/14/2016 | 10.34 | 5.09 | 5.25 |
| 137-MW1C | 6/14/2016 | 13.15 | 6.78 | 6.37 |
| 137-MW2C | 6/14/2016 | 13.87 | 7.96 | 5.91 |
| MW10S | 6/14/2016 | 13.79 | 7.68 | 6.11 |
| MW-31A | 6/14/2016 | 15.90 | 5.26 | 10.64 |
| MW-35 | 6/14/2016 | 15.73 | 7.94 | 7.79 |
| MW7D | 6/14/2016 | 10.87 | 5.76 | 5.11 |
| MW7S | 6/14/2016 | 10.29 | 5.10 | 5.19 |
| MW8D | 6/14/2016 | 8.52 | 4.39 | 4.13 |
| MW8F | 6/14/2016 | 8.89 | 4.05 | 4.84 |
| MW8S | 6/14/2016 | 8.39 | 6.05 | 2.34 |
| MW-CR-1 | 6/14/2016 | 17.61 | 5.23 | 12.38 |
| MW-CR-2 | 6/14/2016 | 17.78 | 5.82 | 11.96 |

**Appendix C**
**Summary of Historical Groundwater Elevations**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| Location ID | Measurement Date | Reference Elevation (ft NAVD88) | Depth to Water (ft) | Water Level Elevation (ft NAVD88) |
|---|---|---|---|---|
| MW-CR-3 | 6/14/2016 | 17.82 | 6.04 | 11.78 |
| MW-CR-5 | 6/14/2016 | 16.55 | 5.96 | 10.59 |
| MW-CR-6 | 6/14/2016 | 17.04 | 7.20 | 9.84 |
| 114-MC-EW103 | 6/13/2016 | 12.02 | 4.16 | 7.86 |
| 114-MC-MW101S | 6/13/2016 | 14.17 | 6.33 | 7.84 |
| 114-MC-MW102S | 6/13/2016 | 13.50 | 5.58 | 7.92 |
| 114-MC-PZ103 | 6/13/2016 | 11.92 | 4.05 | 7.87 |
| 114-MC-PZ203 | 6/13/2016 | 14.01 | 6.21 | 7.80 |
| 114MON32 | 6/13/2016 | 15.53 | 5.68 | 9.85 |
| 114MON33 | 6/13/2016 | 15.96 | 4.60 | 11.36 |
| 114-MW19B | 6/13/2016 | 10.59 | 7.45 | 3.14 |
| 114-MW22A | 6/13/2016 | 11.90 | 5.90 | 6.00 |
| 114-MW22B | 6/13/2016 | 12.23 | 6.10 | 6.13 |
| 114-MW4D | 6/13/2016 | 12.90 | 6.27 | 6.63 |
| 114-MW6D | 6/13/2016 | 13.90 | 5.47 | 8.43 |
| 114-MW7D | 6/13/2016 | 12.42 | 4.67 | 7.75 |
| 114-P1A-MW101I | 6/13/2016 | 14.40 | 6.77 | 7.63 |
| 114-P1A-MW101S | 6/13/2016 | 14.33 | 6.12 | 8.21 |
| 114-P1B-MW101I | 6/13/2016 | 14.13 | 6.78 | 7.35 |
| 114-P1B-MW101S | 6/13/2016 | 13.30 | 3.22 | 10.08 |
| 114-P1B-MW102I | 6/13/2016 | 12.63 | 5.17 | 7.46 |
| 114-P1B-MW102S | 6/13/2016 | 13.06 | 5.06 | 8.00 |
| 114-P1B-MW103S | 6/13/2016 | 14.24 | 6.68 | 7.56 |
| 114-P1C-EW1 | 6/13/2016 | 13.08 | 3.48 | 9.60 |
| 114-P1C-MW101I | 6/13/2016 | 13.31 | 5.54 | 7.77 |
| 114-P1C-MW101S | 6/13/2016 | 13.66 | 5.74 | 7.92 |
| 114-P1C-PZ1 | 6/13/2016 | 16.18 | 8.48 | 7.70 |
| 114-P1C-PZ2 | 6/13/2016 | 13.24 | 5.51 | 7.73 |
| 114-P2A-MW101I | 6/13/2016 | 12.71 | 5.61 | 7.10 |
| 114-P2A-MW101S | 6/13/2016 | 12.52 | 5.33 | 7.19 |
| 114-P2A-MW102I | 6/13/2016 | 13.11 | 6.27 | 6.84 |
| 114-P2A-MW102S | 6/13/2016 | 13.68 | 6.71 | 6.97 |
| 114-P2A-MW103I | 6/13/2016 | 15.39 | 8.79 | 6.60 |
| 114-P2A-MW103S | 6/13/2016 | 15.92 | 4.87 | 11.05 |
| 114-P2A-MW104I | 6/13/2016 | 14.10 | 7.28 | 6.82 |
| 114-P2A-MW104S | 6/13/2016 | 12.84 | 6.08 | 6.76 |
| 114-P2B1-MW101I | 6/13/2016 | 13.93 | 6.70 | 7.23 |
| 114-P2B1-MW101S | 6/13/2016 | 14.99 | 7.47 | 7.52 |
| 114-P2B1-MW102S | 6/13/2016 | 11.46 | 8.83 | 2.63 |
| 114-P2B1-MW103S | 6/13/2016 | 12.95 | 5.67 | 7.28 |
| 114-P2B2-MW101I | 6/13/2016 | 10.55 | 3.41 | 7.14 |
| 114-P2B2-MW101S | 6/13/2016 | 10.96 | 3.53 | 7.43 |
| 114-P2B3-MW101I | 6/13/2016 | 12.90 | 6.44 | 6.46 |
| 114-P2B3-MW101S | 6/13/2016 | 13.89 | 6.66 | 7.23 |
| 114-P2B3-MW2 | 6/13/2016 | 11.97 | 4.65 | 7.32 |
| 114-P2B4-MW1 | 6/13/2016 | 10.50 | 3.37 | 7.13 |
| 114-P2B4-MW101I | 6/13/2016 | 13.31 | 7.05 | 6.26 |
| 114-P2B4-MW101S | 6/13/2016 | 13.45 | 7.20 | 6.25 |
| 114-P2B4-MW102I | 6/13/2016 | 11.86 | 5.94 | 5.92 |
| 114-P2B4-MW102S | 6/13/2016 | 13.44 | 6.01 | 7.43 |
| 114-P2B4-MW103I | 6/13/2016 | 13.03 | 6.63 | 6.40 |
| 114-P2B4-MW103S | 6/13/2016 | 15.26 | 8.05 | 7.21 |
| 114-P2B4-MW3 | 6/13/2016 | 10.95 | 4.81 | 6.14 |
| 114REL8 | 6/13/2016 | 10.76 | 1.52 | 9.24 |
| 114REL9 | 6/13/2016 | 10.16 | 1.32 | 8.84 |
| 132-P3A-MW102I | 6/13/2016 | 15.81 | 10.55 | 5.26 |
| 132-P3A-MW102S | 6/13/2016 | 15.38 | 8.63 | 6.75 |
| 132-P3A-MW103I | 6/13/2016 | 13.20 | 8.18 | 5.02 |
| 132-P3A-MW103S | 6/13/2016 | 15.11 | 6.97 | 8.14 |
| 132-P3A-MW104I | 6/13/2016 | 12.88 | 7.76 | 5.12 |
| 132-P3A-MW104S | 6/13/2016 | 14.80 | 6.51 | 8.29 |
| 132-P3A-MW2 | 6/13/2016 | 12.20 | 4.90 | 7.30 |
| 137-P3B-MW1 | 6/13/2016 | 11.31 | 4.17 | 7.14 |
| 137-P3B-MW101I | 6/13/2016 | 13.00 | 8.06 | 4.94 |
| 137-P3B-MW101S | 6/13/2016 | 14.65 | 6.58 | 8.07 |
| 137-P3B-MW102I | 6/13/2016 | 12.93 | 7.99 | 4.94 |
| 137-P3B-MW102S | 6/13/2016 | 14.16 | 6.36 | 7.80 |
| 143-P3A-MW101I | 6/13/2016 | 12.93 | 7.11 | 5.82 |
| 143-P3A-MW101S | 6/13/2016 | 12.17 | 4.95 | 7.22 |
| HSS-P3C-MW1S | 6/13/2016 | 12.19 | 10.76 | 1.43 |
| HSS-P3C-MW2S | 6/13/2016 | 12.38 | 9.13 | 3.25 |
| MW1C-3 | 6/13/2016 | 18.45 | 7.61 | 10.84 |
| MW1C-4 | 6/13/2016 | 17.58 | 8.75 | 8.83 |
| MW-34 | 6/13/2016 | 15.55 | 6.46 | 9.09 |
| MW6C | 6/13/2016 | 14.18 | 5.55 | 8.63 |
| MW-MORRIS1A | 6/13/2016 | 14.04 | 3.43 | 10.61 |
| 114-MC-EW103 | 3/7/2016 | 12.02 | 4.00 | 8.02 |
| 114-MC-MW101S | 3/7/2016 | 14.17 | 6.03 | 8.14 |
| 114-MC-MW102S | 3/7/2016 | 13.50 | 5.28 | 8.22 |
| 114-MC-PZ103 | 3/7/2016 | 11.92 | 3.71 | 8.21 |
| 114-MC-PZ203 | 3/7/2016 | 14.01 | 6.03 | 7.98 |
| 114MON32 | 3/7/2016 | 15.53 | 5.79 | 9.74 |
| 114MON33 | 3/7/2016 | 15.96 | 6.27 | 9.69 |

**Appendix C**
**Summary of Historical Groundwater Elevations**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| Location ID | Measurement Date | Reference Elevation (ft NAVD88) | Depth to Water (ft) | Water Level Elevation (ft NAVD88) |
|---|---|---|---|---|
| 114-MW14A | 3/7/2016 | 12.07 | 2.75 | 9.32 |
| 114-MW14B | 3/7/2016 | 11.88 | 4.71 | 7.17 |
| 114-MW15A | 3/7/2016 | 13.05 | 2.78 | 10.27 |
| 114-MW16A | 3/7/2016 | 15.81 | 7.11 | 8.70 |
| 114-MW16B | 3/7/2016 | 15.53 | 13.34 | 2.19 |
| 114-MW19B | 3/7/2016 | 10.59 | 4.57 | 6.02 |
| 114-MW19C | 3/7/2016 | 11.12 | 4.14 | 6.98 |
| 114-MW20A | 3/7/2016 | 12.17 | 7.94 | 4.23 |
| 114-MW20B | 3/7/2016 | 12.16 | 6.97 | 5.19 |
| 114-MW20C | 3/7/2016 | 12.07 | 5.60 | 6.47 |
| 114-MW22A | 3/7/2016 | 11.90 | 5.33 | 6.57 |
| 114-MW22B | 3/7/2016 | 12.23 | 5.68 | 6.55 |
| 114-MW25A | 3/7/2016 | 9.88 | 3.74 | 6.14 |
| 114-MW25B | 3/7/2016 | 10.08 | 3.83 | 6.25 |
| 114-MW27A | 3/7/2016 | 10.35 | 4.45 | 5.90 |
| 114-MW27B | 3/7/2016 | 10.20 | 4.48 | 5.72 |
| 114-MW2B1-2 | 3/7/2016 | 23.96 | 15.22 | 8.74 |
| 114-MW30A | 3/7/2016 | 9.90 | 3.16 | 6.74 |
| 114-MW36A | 3/7/2016 | 10.69 | 4.73 | 5.96 |
| 114-MW36B | 3/7/2016 | 9.93 | 3.80 | 6.13 |
| 114-MW37A | 3/7/2016 | 10.87 | 4.40 | 6.47 |
| 114-MW37B | 3/7/2016 | 10.79 | 4.32 | 6.47 |
| 114-MW4D | 3/7/2016 | 12.90 | 6.85 | 6.05 |
| 114-MW6D | 3/7/2016 | 13.90 | 4.64 | 9.26 |
| 114-MW7D | 3/7/2016 | 10.14 | 4.67 | 5.47 |
| 114-P1A-MW101I | 3/7/2016 | 14.40 | 6.52 | 7.88 |
| 114-P1A-MW101S | 3/7/2016 | 14.33 | 6.08 | 8.25 |
| 114-P1B-MW101I | 3/7/2016 | 14.13 | 6.41 | 7.72 |
| 114-P1B-MW101S | 3/7/2016 | 13.30 | 3.74 | 9.56 |
| 114-P1B-MW102I | 3/7/2016 | 12.63 | 4.88 | 7.75 |
| 114-P1B-MW102S | 3/7/2016 | 13.06 | 4.70 | 8.36 |
| 114-P1B-MW103S | 3/7/2016 | 14.24 | 3.64 | 10.60 |
| 114-P1B-MW104S | 3/7/2016 | 13.93 | 3.70 | 10.23 |
| 114-P1C-MW101I | 3/7/2016 | 13.31 | 5.31 | 8.00 |
| 114-P1C-MW101S | 3/7/2016 | 13.66 | 5.55 | 8.11 |
| 114-P1C-PZ1 | 3/7/2016 | 16.18 | 8.25 | 7.93 |
| 114-P1C-PZ2 | 3/7/2016 | 13.24 | 5.23 | 8.01 |
| 114-P2A-MW101I | 3/7/2016 | 12.71 | 6.61 | 6.10 |
| 114-P2A-MW101S | 3/7/2016 | 12.52 | 5.40 | 7.12 |
| 114-P2A-MW102I | 3/7/2016 | 13.11 | 5.76 | 7.35 |
| 114-P2A-MW102S | 3/7/2016 | 13.68 | 6.28 | 7.40 |
| 114-P2A-MW103I | 3/7/2016 | 15.39 | 8.04 | 7.35 |
| 114-P2A-MW103S | 3/7/2016 | 15.92 | 8.49 | 7.43 |
| 114-P2A-MW104I | 3/7/2016 | 14.10 | 5.26 | 8.84 |
| 114-P2A-MW104S | 3/7/2016 | 12.84 | 5.11 | 7.73 |
| 114-P2B1-MW101I | 3/7/2016 | 13.93 | 6.43 | 7.50 |
| 114-P2B1-MW101S | 3/7/2016 | 14.99 | 7.12 | 7.87 |
| 114-P2B1-MW102S | 3/7/2016 | 11.46 | 3.45 | 8.01 |
| 114-P2B1-MW103S | 3/7/2016 | 12.95 | 5.51 | 7.44 |
| 114-P2B2-MW101I | 3/7/2016 | 10.55 | 3.08 | 7.47 |
| 114-P2B2-MW101S | 3/7/2016 | 10.96 | 3.26 | 7.70 |
| 114-P2B3-MW1 | 3/7/2016 | 12.29 | 4.76 | 7.53 |
| 114-P2B3-MW101I | 3/7/2016 | 12.90 | 5.78 | 7.12 |
| 114-P2B3-MW101S | 3/7/2016 | 13.89 | 6.58 | 7.31 |
| 114-P2B3-MW2 | 3/7/2016 | 11.97 | 4.65 | 7.32 |
| 114-P2B4-MW1 | 3/7/2016 | 10.50 | 3.40 | 7.10 |
| 114-P2B4-MW101I | 3/7/2016 | 13.31 | 6.28 | 7.03 |
| 114-P2B4-MW101S | 3/7/2016 | 13.45 | 6.59 | 6.86 |
| 114-P2B4-MW102I | 3/7/2016 | 11.86 | 4.80 | 7.06 |
| 114-P2B4-MW102S | 3/7/2016 | 13.44 | 5.82 | 7.62 |
| 114-P2B4-MW103I | 3/7/2016 | 13.03 | 5.96 | 7.07 |
| 114-P2B4-MW103S | 3/7/2016 | 15.26 | 7.95 | 7.31 |
| 114-P2B4-MW2 | 3/7/2016 | 10.75 | 3.51 | 7.24 |
| 114-P2B4-MW3 | 3/7/2016 | 10.95 | 4.56 | 6.39 |
| 114REL8 | 3/7/2016 | 10.76 | 1.61 | 9.15 |
| 114REL9 | 3/7/2016 | 10.16 | 2.00 | 8.16 |
| 132-MW2A | 3/7/2016 | 14.12 | 8.18 | 5.94 |
| 132-P3A-MW1 | 3/7/2016 | 11.19 | 3.00 | 8.19 |
| 132-P3A-MW102I | 3/7/2016 | 15.81 | 10.18 | 5.63 |
| 132-P3A-MW102S | 3/7/2016 | 15.38 | 8.52 | 6.86 |
| 132-P3A-MW103I | 3/7/2016 | 13.20 | 6.57 | 6.63 |
| 132-P3A-MW103S | 3/7/2016 | 15.11 | 6.61 | 8.50 |
| 132-P3A-MW104I | 3/7/2016 | 12.88 | 6.31 | 6.57 |
| 132-P3A-MW104S | 3/7/2016 | 14.80 | 6.39 | 8.41 |
| 132-P3A-MW2 | 3/7/2016 | 12.20 | 4.72 | 7.48 |
| 132-P3A-MW3 | 3/7/2016 | 13.01 | 5.75 | 7.26 |
| 132-P3A-MW4 | 3/7/2016 | 13.08 | 4.82 | 8.26 |
| 132-P3A-MW5 | 3/7/2016 | 12.45 | 4.89 | 7.56 |
| 133-MW1C | 3/7/2016 | 11.50 | 4.25 | 7.25 |
| 133-MW2C | 3/7/2016 | 9.84 | 3.41 | 6.43 |
| 133-MW6A | 3/7/2016 | 11.49 | 3.52 | 7.97 |
| 133-P3C-MW101I | 3/7/2016 | 12.10 | 5.90 | 6.20 |
| 133-P3C-MW101S | 3/7/2016 | 12.26 | 6.96 | 5.30 |

**Appendix C**
**Summary of Historical Groundwater Elevations**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| Location ID | Measurement Date | Reference Elevation (ft NAVD88) | Depth to Water (ft) | Water Level Elevation (ft NAVD88) |
|---|---|---|---|---|
| 133-P3C-MW102I | 3/7/2016 | 12.27 | 5.83 | 6.44 |
| 133-P3C-MW102S | 3/7/2016 | 12.66 | 6.99 | 5.67 |
| 135-MW1A | 3/7/2016 | 9.36 | 3.07 | 6.29 |
| 135-MW1B | 3/7/2016 | 9.64 | 3.15 | 6.49 |
| 135-MW1C | 3/7/2016 | 9.34 | 3.32 | 6.02 |
| 135-MW2A | 3/7/2016 | 8.74 | 3.41 | 5.33 |
| 135-MW2B | 3/7/2016 | 8.65 | 2.68 | 5.97 |
| 135-MW3A | 3/7/2016 | 10.63 | 5.10 | 5.53 |
| 135-MW3B | 3/7/2016 | 11.19 | 4.90 | 6.29 |
| 135-P3C-MW1 | 3/7/2016 | 10.34 | 4.09 | 6.25 |
| 137-MW1C | 3/7/2016 | 13.15 | 6.08 | 7.07 |
| 137-MW2C | 3/7/2016 | 13.87 | 7.18 | 6.69 |
| 137-P3B-MW1 | 3/7/2016 | 12.25 | 4.10 | 8.15 |
| 137-P3B-MW101I | 3/7/2016 | 13.00 | 6.49 | 6.51 |
| 137-P3B-MW101S | 3/7/2016 | 14.65 | 6.65 | 8.00 |
| 137-P3B-MW102I | 3/7/2016 | 12.93 | 6.39 | 6.54 |
| 137-P3B-MW102S | 3/7/2016 | 14.16 | 6.61 | 7.55 |
| 143-P3A-MW101I | 3/7/2016 | 12.93 | 6.40 | 6.53 |
| 143-P3A-MW101S | 3/7/2016 | 12.17 | 4.61 | 7.56 |
| HSS-P3C-MW1S | 3/7/2016 | 12.19 | 7.18 | 5.01 |
| HSS-P3C-MW2S | 3/7/2016 | 12.38 | 7.15 | 5.23 |
| MW10S | 3/7/2016 | 13.79 | 6.90 | 6.89 |
| MW1C-3 | 3/7/2016 | 15.20 | 7.57 | 7.63 |
| MW1C-4 | 3/7/2016 | 17.30 | 8.15 | 9.15 |
| MW-31A | 3/7/2016 | 15.90 | 5.36 | 10.54 |
| MW-34 | 3/7/2016 | 15.55 | 7.16 | 8.39 |
| MW-35 | 3/7/2016 | 15.73 | 7.49 | 8.24 |
| MW6C | 3/7/2016 | 14.18 | 5.26 | 8.92 |
| MW7D | 3/7/2016 | 10.87 | 5.10 | 5.77 |
| MW7S | 3/7/2016 | 10.29 | 4.45 | 5.84 |
| MW8D | 3/7/2016 | 8.52 | 2.47 | 6.05 |
| MW8F | 3/7/2016 | 8.89 | 3.23 | 5.66 |
| MW8S | 3/7/2016 | 8.39 | 5.78 | 2.61 |
| MW-CR-1 | 3/7/2016 | 17.61 | 5.08 | 12.53 |
| MW-CR-2 | 3/7/2016 | 17.78 | 6.45 | 11.33 |
| MW-CR-3 | 3/7/2016 | 17.82 | 5.60 | 12.22 |
| MW-CR-4 | 3/7/2016 | 17.73 | 5.80 | 11.93 |
| MW-CR-5 | 3/7/2016 | 16.55 | 4.60 | 11.95 |
| MW-CR-6 | 3/7/2016 | 17.04 | 5.19 | 11.85 |
| MW-MORRIS1A | 3/7/2016 | 11.81 | 3.45 | 8.36 |
| 135-MW1A | 12/11/2015 | 9.36 | 4.66 | 4.70 |
| 135-MW1B | 12/11/2015 | 9.64 | 4.57 | 5.07 |
| 135-MW1C | 12/11/2015 | 9.34 | 4.47 | 4.87 |
| 114-MC-EW103 | 12/8/2015 | 12.02 | 4.98 | 7.04 |
| 114-MC-MW101S | 12/8/2015 | 14.17 | 7.76 | 6.41 |
| 114-MC-MW102S | 12/8/2015 | 13.50 | 6.76 | 6.74 |
| 114-MC-PZ103 | 12/8/2015 | 11.92 | 5.05 | 6.87 |
| 114-MC-PZ203 | 12/8/2015 | 14.01 | 7.06 | 6.95 |
| 114MON32 | 12/8/2015 | 15.53 | 6.70 | 8.83 |
| 114MON33 | 12/8/2015 | 15.96 | 6.98 | 8.98 |
| 114-MW14A | 12/8/2015 | 12.07 | 4.02 | 8.05 |
| 114-MW14B | 12/8/2015 | 11.88 | 4.82 | 7.06 |
| 114-MW15A | 12/8/2015 | 13.05 | 4.09 | 8.96 |
| 114-MW16A | 12/8/2015 | 15.81 | 7.57 | 8.24 |
| 114-MW16B | 12/8/2015 | 15.53 | 6.25 | 9.28 |
| 114-MW19B | 12/8/2015 | 10.59 | 5.60 | 4.99 |
| 114-MW19C | 12/8/2015 | 11.12 | 5.17 | 5.95 |
| 114-MW20A | 12/8/2015 | 12.17 | 8.40 | 3.77 |
| 114-MW20B | 12/8/2015 | 12.16 | 7.78 | 4.38 |
| 114-MW20C | 12/8/2015 | 12.07 | 7.05 | 5.02 |
| 114-MW22A | 12/8/2015 | 11.90 | 6.45 | 5.45 |
| 114-MW22B | 12/8/2015 | 12.23 | 6.32 | 5.91 |
| 114-MW24A | 12/8/2015 | 11.44 | 5.52 | 5.92 |
| 114-MW24B | 12/8/2015 | 11.41 | 5.11 | 6.30 |
| 114-MW25A | 12/8/2015 | 9.88 | 4.31 | 5.57 |
| 114-MW25B | 12/8/2015 | 10.08 | 4.63 | 5.45 |
| 114-MW27A | 12/8/2015 | 10.35 | 5.10 | 5.25 |
| 114-MW27B | 12/8/2015 | 10.20 | 4.70 | 5.50 |
| 114-MW2B1-2 | 12/8/2015 | 23.96 | 16.50 | 7.46 |
| 114-MW30A | 12/8/2015 | 9.90 | 3.86 | 6.04 |
| 114-MW36A | 12/8/2015 | 10.69 | 5.35 | 5.34 |
| 114-MW36B | 12/8/2015 | 9.93 | 4.45 | 5.48 |
| 114-MW37A | 12/8/2015 | 10.87 | 4.93 | 5.94 |
| 114-MW37B | 12/8/2015 | 10.79 | 5.20 | 5.59 |
| 114-MW38A | 12/8/2015 | 20.51 | 13.75 | 6.76 |
| 114-MW38B | 12/8/2015 | 20.55 | 14.58 | 5.97 |
| 114-MW4D | 12/8/2015 | 12.90 | 7.25 | 5.65 |
| 114-MW6D | 12/8/2015 | 13.90 | 6.55 | 7.35 |
| 114-MW7D | 12/8/2015 | 12.42 | 8.19 | 4.23 |
| 114-P1A-MW101I | 12/8/2015 | 14.40 | 7.48 | 6.92 |
| 114-P1A-MW101S | 12/8/2015 | 14.33 | 6.78 | 7.55 |
| 114-P1B-MW101I | 12/8/2015 | 14.13 | 7.45 | 6.68 |
| 114-P1B-MW101S | 12/8/2015 | 13.30 | 3.72 | 9.58 |

**Appendix C**
**Summary of Historical Groundwater Elevations**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| Location ID | Measurement Date | Reference Elevation (ft NAVD88) | Depth to Water (ft) | Water Level Elevation (ft NAVD88) |
|---|---|---|---|---|
| 114-P1B-MW102I | 12/8/2015 | 12.63 | 5.81 | 6.82 |
| 114-P1B-MW102S | 12/8/2015 | 13.06 | 5.55 | 7.51 |
| 114-P1B-MW103S | 12/8/2015 | 14.24 | 4.45 | 9.79 |
| 114-P1B-MW104S | 12/8/2015 | 13.93 | 3.69 | 10.24 |
| 114-P1C-EW1 | 12/8/2015 | 13.08 | 2.75 | 10.33 |
| 114-P1C-MW101I | 12/8/2015 | 13.31 | 6.35 | 6.96 |
| 114-P1C-MW101S | 12/8/2015 | 13.66 | 6.65 | 7.01 |
| 114-P1C-PZ1 | 12/8/2015 | 16.18 | 9.30 | 6.88 |
| 114-P1C-PZ2 | 12/8/2015 | 13.24 | 6.30 | 6.94 |
| 114-P2B1-MW101I | 12/8/2015 | 13.93 | 7.54 | 6.39 |
| 114-P2B1-MW101S | 12/8/2015 | 14.99 | 8.56 | 6.43 |
| 114-P2B1-MW102S | 12/8/2015 | 11.46 | 4.62 | 6.84 |
| 114-P2B1-MW103S | 12/8/2015 | 12.95 | 6.78 | 6.17 |
| 114-P2B2-MW101I | 12/8/2015 | 10.55 | 4.24 | 6.31 |
| 114-P2B2-MW101S | 12/8/2015 | 10.96 | 4.65 | 6.31 |
| 114-P2B3-MW101I | 12/8/2015 | 12.90 | 6.96 | 5.94 |
| 114-P2B3-MW101S | 12/8/2015 | 13.89 | 7.83 | 6.06 |
| 114-P2B3-MW2 | 12/8/2015 | 11.97 | 6.03 | 5.94 |
| 114-P2B4-MW1 | 12/8/2015 | 10.50 | 4.81 | 5.69 |
| 114-P2B4-MW101I | 12/8/2015 | 13.31 | 7.42 | 5.89 |
| 114-P2B4-MW101S | 12/8/2015 | 13.45 | 7.76 | 5.69 |
| 114-P2B4-MW102I | 12/8/2015 | 11.86 | 9.17 | 2.69 |
| 114-P2B4-MW102S | 12/8/2015 | 13.44 | 7.25 | 6.19 |
| 114-P2B4-MW103I | 12/8/2015 | 13.03 | 7.12 | 5.91 |
| 114-P2B4-MW103S | 12/8/2015 | 15.26 | 9.25 | 6.01 |
| 114-P2B4-MW2 | 12/8/2015 | 10.75 | 4.92 | 5.83 |
| 114-P2B4-MW3 | 12/8/2015 | 10.95 | 5.56 | 5.39 |
| 114REL8 | 12/8/2015 | 10.76 | 2.06 | 8.70 |
| 114REL9 | 12/8/2015 | 10.16 | 3.70 | 6.46 |
| 132-MW2A | 12/8/2015 | 14.12 | 9.83 | 4.29 |
| 132-P3A-MW1 | 12/8/2015 | 11.19 | 4.80 | 6.39 |
| 132-P3A-MW102I | 12/8/2015 | 15.81 | 10.70 | 5.11 |
| 132-P3A-MW102S | 12/8/2015 | 15.38 | 9.98 | 5.40 |
| 132-P3A-MW103I | 12/8/2015 | 13.20 | 7.72 | 5.48 |
| 132-P3A-MW103S | 12/8/2015 | 15.11 | 8.33 | 6.78 |
| 132-P3A-MW104I | 12/8/2015 | 12.88 | 7.40 | 5.48 |
| 132-P3A-MW104S | 12/8/2015 | 14.80 | 7.95 | 6.85 |
| 132-P3A-MW2 | 12/8/2015 | 12.20 | 6.44 | 5.76 |
| 132-P3A-MW3 | 12/8/2015 | 13.01 | 7.16 | 5.85 |
| 132-P3A-MW4 | 12/8/2015 | 13.08 | 6.09 | 6.99 |
| 132-P3A-MW5 | 12/8/2015 | 12.45 | 6.61 | 5.84 |
| 133-MW1C | 12/8/2015 | 11.50 | 5.60 | 5.90 |
| 133-MW2C | 12/8/2015 | 9.84 | 4.74 | 5.10 |
| 133-MW6A | 12/8/2015 | 11.49 | 6.65 | 4.84 |
| 135-MW2A | 12/8/2015 | 8.74 | 4.85 | 3.89 |
| 135-MW2B | 12/8/2015 | 8.65 | 3.75 | 4.90 |
| 135-MW3A | 12/8/2015 | 10.63 | 6.10 | 4.53 |
| 135-MW3B | 12/8/2015 | 11.19 | 6.05 | 5.14 |
| 135-P3C-MW1 | 12/8/2015 | 10.34 | 5.66 | 4.68 |
| 137-MW1C | 12/8/2015 | 13.15 | 7.16 | 5.99 |
| 137-MW2C | 12/8/2015 | 13.87 | 8.26 | 5.61 |
| 137-P3B-MW101I | 12/8/2015 | 13.00 | 7.52 | 5.48 |
| 137-P3B-MW101S | 12/8/2015 | 14.65 | 8.04 | 6.61 |
| 137-P3B-MW102I | 12/8/2015 | 12.93 | 7.47 | 5.46 |
| 137-P3B-MW102S | 12/8/2015 | 14.16 | 7.65 | 6.51 |
| 143-P3A-MW101I | 12/8/2015 | 12.93 | 7.32 | 5.61 |
| 143-P3A-MW101S | 12/8/2015 | 12.17 | 6.32 | 5.85 |
| GPS-MW1S | 12/8/2015 | 14.53 | 6.74 | 7.79 |
| MW10S | 12/8/2015 | 13.79 | 8.30 | 5.49 |
| MW1C-3 | 12/8/2015 | 15.20 | 8.00 | 7.20 |
| MW1C-4 | 12/8/2015 | 17.30 | 9.98 | 7.32 |
| MW-31A | 12/8/2015 | 15.90 | 5.86 | 10.04 |
| MW-34 | 12/8/2015 | 15.55 | 7.67 | 7.88 |
| MW-35 | 12/8/2015 | 15.73 | 9.26 | 6.47 |
| MW6C | 12/8/2015 | 14.18 | 6.24 | 7.94 |
| MW7D | 12/8/2015 | 10.87 | 6.10 | 4.77 |
| MW7S | 12/8/2015 | 10.29 | 5.45 | 4.84 |
| MW8D | 12/8/2015 | 8.52 | 3.60 | 4.92 |
| MW8F | 12/8/2015 | 8.89 | 4.30 | 4.59 |
| MW8S | 12/8/2015 | 8.39 | 6.20 | 2.19 |
| MW-CR-1 | 12/8/2015 | 17.61 | 6.35 | 11.26 |
| MW-CR-2 | 12/8/2015 | 17.78 | 7.73 | 10.05 |
| MW-CR-3 | 12/8/2015 | 17.82 | 7.23 | 10.59 |
| MW-CR-4 | 12/8/2015 | 17.73 | 7.25 | 10.48 |
| MW-CR-5 | 12/8/2015 | 16.55 | 5.91 | 10.64 |
| MW-CR-6 | 12/8/2015 | 17.04 | 5.35 | 11.69 |
| MW-MORRIS1A | 12/8/2015 | 11.81 | 4.48 | 7.33 |
| 114-MW15A | 9/17/2015 | 13.05 | 4.48 | 8.57 |
| 114-P2B4-MW3 | 9/17/2015 | 10.95 | 5.80 | 5.15 |
| 132-MW2A | 9/17/2015 | 14.12 | 10.26 | 3.86 |
| 132-P3A-MW102I | 9/17/2015 | 15.81 | 10.98 | 4.83 |
| 132-P3A-MW102S | 9/17/2015 | 15.38 | 10.51 | 4.87 |
| 132-P3A-MW104I | 9/17/2015 | 12.88 | 8.22 | 4.66 |

**Appendix C**
**Summary of Historical Groundwater Elevations**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| Location ID | Measurement Date | Reference Elevation (ft NAVD88) | Depth to Water (ft) | Water Level Elevation (ft NAVD88) |
|---|---|---|---|---|
| 132-P3A-MW104S | 9/17/2015 | 14.80 | 8.81 | 5.99 |
| 135-P3C-MW1 | 9/17/2015 | 10.34 | 6.20 | 4.14 |
| 137-MW2C | 9/17/2015 | 13.87 | 8.75 | 5.12 |
| 137-P3B-MW102I | 9/17/2015 | 12.93 | 8.33 | 4.60 |
| MW1C-3 | 9/17/2015 | 15.20 | 8.39 | 6.81 |
| MW1C-4 | 9/17/2015 | 17.30 | 10.71 | 6.59 |
| MW7S | 9/17/2015 | 10.29 | 5.67 | 4.62 |
| MW8D | 9/17/2015 | 8.52 | 4.63 | 3.89 |
| MW8F | 9/17/2015 | 8.89 | 4.76 | 4.13 |
| MW8S | 9/17/2015 | 8.39 | 6.25 | 2.14 |
| MW-CR-1 | 9/17/2015 | 17.61 | 7.10 | 10.51 |
| MW-CR-2 | 9/17/2015 | 17.78 | 8.56 | 9.22 |
| MW-CR-3 | 9/17/2015 | 17.82 | 8.24 | 9.58 |
| MW-CR-4 | 9/17/2015 | 17.73 | 7.56 | 10.17 |
| MW-CR-5 | 9/17/2015 | 16.55 | 4.81 | 11.74 |
| MW-CR-6 | 9/17/2015 | 17.04 | 5.80 | 11.24 |
| 114-MC-EW103 | 9/16/2015 | 12.02 | 5.72 | 6.30 |
| 114-MC-MW101S | 9/16/2015 | 14.17 | 8.65 | 5.52 |
| 114-MC-MW102S | 9/16/2015 | 13.50 | 7.90 | 5.60 |
| 114-MC-PZ103 | 9/16/2015 | 11.92 | 5.86 | 6.06 |
| 114-MC-PZ203 | 9/16/2015 | 14.01 | 7.71 | 6.30 |
| 114MON32 | 9/16/2015 | 15.53 | 7.75 | 7.78 |
| 114MON33 | 9/16/2015 | 15.96 | 8.16 | 7.80 |
| 114-MW14A | 9/16/2015 | 16.14 | 9.21 | 6.93 |
| 114-MW14B | 9/16/2015 | 16.21 | 9.49 | 6.72 |
| 114-MW16A | 9/16/2015 | 15.81 | 7.77 | 8.04 |
| 114-MW16B | 9/16/2015 | 15.53 | 6.58 | 8.95 |
| 114-MW20A | 9/16/2015 | 12.17 | 8.62 | 3.55 |
| 114-MW20B | 9/16/2015 | 12.16 | 8.02 | 4.14 |
| 114-MW20C | 9/16/2015 | 12.07 | 7.51 | 4.56 |
| 114-MW22A | 9/16/2015 | 11.90 | 7.00 | 4.90 |
| 114-MW22B | 9/16/2015 | 12.23 | 6.66 | 5.57 |
| 114-MW24A | 9/16/2015 | 11.44 | 5.91 | 5.53 |
| 114-MW24B | 9/16/2015 | 11.41 | 5.65 | 5.76 |
| 114-MW25A | 9/16/2015 | 9.88 | 4.62 | 5.26 |
| 114-MW25B | 9/16/2015 | 10.08 | 4.91 | 5.17 |
| 114-MW26A | 9/16/2015 | 14.20 | 9.12 | 5.08 |
| 114-MW27A | 9/16/2015 | 10.35 | 5.21 | 5.14 |
| 114-MW27B | 9/16/2015 | 10.20 | 4.87 | 5.33 |
| 114-MW28A | 9/16/2015 | 15.30 | 9.66 | 5.64 |
| 114-MW30A | 9/16/2015 | 9.90 | 4.53 | 5.37 |
| 114-MW36A | 9/16/2015 | 10.69 | 5.65 | 5.04 |
| 114-MW36B | 9/16/2015 | 9.93 | 4.75 | 5.18 |
| 114-MW37A | 9/16/2015 | 10.87 | 5.32 | 5.55 |
| 114-MW37B | 9/16/2015 | 10.79 | 5.24 | 5.55 |
| 114-MW38A | 9/16/2015 | 20.51 | 13.94 | 6.57 |
| 114-MW38B | 9/16/2015 | 20.55 | 14.93 | 5.62 |
| 114-MW4D | 9/16/2015 | 12.90 | 7.03 | 5.87 |
| 114-MW7D | 9/16/2015 | 12.42 | 8.89 | 3.53 |
| 114-P1A-MW101I | 9/16/2015 | 14.40 | 7.90 | 6.50 |
| 114-P1A-MW101S | 9/16/2015 | 14.33 | 7.42 | 6.91 |
| 114-P1B-MW101I | 9/16/2015 | 14.13 | 7.57 | 6.56 |
| 114-P1B-MW101S | 9/16/2015 | 13.30 | 3.83 | 9.47 |
| 114-P1B-MW102I | 9/16/2015 | 12.63 | 5.91 | 6.72 |
| 114-P1B-MW102S | 9/16/2015 | 13.06 | 6.22 | 6.84 |
| 114-P1B-MW103S | 9/16/2015 | 14.24 | 4.55 | 9.69 |
| 114-P1B-MW104S | 9/16/2015 | 13.93 | 3.92 | 10.01 |
| 114-P1C-EW1 | 9/16/2015 | 13.08 | 1.42 | 11.66 |
| 114-P1C-MW101I | 9/16/2015 | 13.31 | 5.84 | 7.47 |
| 114-P1C-MW101S | 9/16/2015 | 13.66 | 7.46 | 6.20 |
| 114-P1C-PZ1 | 9/16/2015 | 16.18 | 9.95 | 6.23 |
| 114-P1C-PZ2 | 9/16/2015 | 13.24 | 6.90 | 6.34 |
| 114-P2B1-MW101I | 9/16/2015 | 13.93 | 8.20 | 5.73 |
| 114-P2B1-MW101S | 9/16/2015 | 14.99 | 9.31 | 5.68 |
| 114-P2B1-MW102S | 9/16/2015 | 11.46 | 5.45 | 6.01 |
| 114-P2B1-MW103S | 9/16/2015 | 12.95 | 7.55 | 5.40 |
| 114-P2B2-MW101I | 9/16/2015 | 10.55 | 4.90 | 5.65 |
| 114-P2B2-MW101S | 9/16/2015 | 10.96 | 5.40 | 5.56 |
| 114-P2B3-MW101I | 9/16/2015 | 12.90 | 4.75 | 8.15 |
| 114-P2B3-MW101S | 9/16/2015 | 13.89 | 8.65 | 5.24 |
| 114-P2B4-MW1 | 9/16/2015 | 10.50 | 4.71 | 5.79 |
| 114-P2B4-MW101I | 9/16/2015 | 13.31 | 8.23 | 5.08 |
| 114-P2B4-MW101S | 9/16/2015 | 13.45 | 8.61 | 4.84 |
| 114-P2B4-MW102I | 9/16/2015 | 11.86 | 7.06 | 4.80 |
| 114-P2B4-MW102S | 9/16/2015 | 13.44 | 7.18 | 6.26 |
| 114-P2B4-MW103I | 9/16/2015 | 13.03 | 7.94 | 5.09 |
| 114-P2B4-MW103S | 9/16/2015 | 15.26 | 10.03 | 5.23 |
| 132-P3A-MW103I | 9/16/2015 | 13.20 | 8.61 | 4.59 |
| 132-P3A-MW103S | 9/16/2015 | 15.11 | 9.26 | 5.85 |
| 132-P3A-MW2 | 9/16/2015 | 12.20 | 7.22 | 4.98 |
| 132-P3A-MW5 | 9/16/2015 | 12.45 | 6.59 | 5.86 |
| 135-MW1A | 9/16/2015 | 9.36 | 5.01 | 4.35 |
| 135-MW1B | 9/16/2015 | 9.64 | 5.01 | 4.63 |

**Appendix C**
**Summary of Historical Groundwater Elevations**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| Location ID | Measurement Date | Reference Elevation (ft NAVD88) | Depth to Water (ft) | Water Level Elevation (ft NAVD88) |
|---|---|---|---|---|
| 135-MW1C | 9/16/2015 | 9.34 | 4.53 | 4.81 |
| 135-MW2A | 9/16/2015 | 8.74 | 4.66 | 4.08 |
| 135-MW2B | 9/16/2015 | 8.65 | 4.96 | 3.69 |
| 135-MW3A | 9/16/2015 | 10.63 | 6.24 | 4.39 |
| 135-MW3B | 9/16/2015 | 11.19 | 7.11 | 4.08 |
| 137-MW1C | 9/16/2015 | 13.15 | 7.75 | 5.40 |
| 137-P3B-MW1 | 9/16/2015 | 12.25 | 5.63 | 6.62 |
| 137-P3B-MW101I | 9/16/2015 | 13.00 | 8.01 | 4.99 |
| 137-P3B-MW101S | 9/16/2015 | 14.65 | 8.76 | 5.89 |
| 143-P3A-MW101I | 9/16/2015 | 12.93 | 7.89 | 5.04 |
| 143-P3A-MW101S | 9/16/2015 | 12.17 | 6.98 | 5.19 |
| MW10S | 9/16/2015 | 13.79 | 8.41 | 5.38 |
| MW-31A | 9/16/2015 | 15.90 | 6.77 | 9.13 |
| MW-34 | 9/16/2015 | 15.55 | 8.17 | 7.38 |
| MW-35 | 9/16/2015 | 15.73 | 9.90 | 5.83 |
| MW6C | 9/16/2015 | 14.18 | 6.51 | 7.67 |
| MW7D | 9/16/2015 | 10.87 | 6.45 | 4.42 |
| MW-MORRIS1A | 9/16/2015 | 11.81 | 6.05 | 5.76 |
| 114-MC-EW103 | 4/16/2015 | 14.23 | 8.56 | 5.67 |
| 114-MC-MW101S | 4/16/2015 | 14.17 | 7.91 | 6.26 |
| 114-MC-MW102S | 4/16/2015 | 13.50 | 7.06 | 6.44 |
| 114-MC-PZ203 | 4/16/2015 | 14.01 | 7.19 | 6.82 |
| 114MON33 | 4/16/2015 | 15.96 | 7.46 | 8.50 |
| 114-MW15A | 4/16/2015 | 13.05 | 3.57 | 9.48 |
| 114-MW16A | 4/16/2015 | 15.81 | 7.89 | 7.92 |
| 114-MW16B | 4/16/2015 | 15.53 | 7.47 | 8.06 |
| 114-MW20A | 4/16/2015 | 12.17 | 6.63 | 5.54 |
| 114-MW20B | 4/16/2015 | 12.16 | 8.65 | 3.51 |
| 114-MW20C | 4/16/2015 | 12.07 | 6.63 | 5.44 |
| 114-MW24A | 4/16/2015 | 11.44 | 5.35 | 6.09 |
| 114-MW24B | 4/16/2015 | 11.41 | 5.25 | 6.16 |
| 114-MW25A | 4/16/2015 | 9.88 | 4.41 | 5.47 |
| 114-MW25B | 4/16/2015 | 10.08 | 4.11 | 5.97 |
| 114-MW27A | 4/16/2015 | 10.35 | 4.59 | 5.76 |
| 114-MW27B | 4/16/2015 | 10.20 | 4.59 | 5.61 |
| 114-MW30A | 4/16/2015 | 9.90 | 3.02 | 6.88 |
| 114-MW7D | 4/16/2015 | 12.42 | 8.29 | 4.13 |
| 114-P1A-MW101I | 4/16/2015 | 14.40 | 7.58 | 6.82 |
| 114-P1A-MW101S | 4/16/2015 | 14.33 | 6.68 | 7.65 |
| 114-P1B-MW101I | 4/16/2015 | 14.13 | 7.81 | 6.32 |
| 114-P1B-MW101S | 4/16/2015 | 13.30 | 4.01 | 9.29 |
| 114-P1B-MW102I | 4/16/2015 | 12.63 | 6.05 | 6.58 |
| 114-P1B-MW102S | 4/16/2015 | 13.06 | 5.79 | 7.27 |
| 114-P1B-MW103S | 4/16/2015 | 14.24 | 4.76 | 9.48 |
| 114-P1B-MW104S | 4/16/2015 | 13.93 | 3.80 | 10.13 |
| 114-P1C-EW1 | 4/16/2015 | 13.08 | 10.66 | 2.42 |
| 114-P1C-MW101I | 4/16/2015 | 13.31 | 6.32 | 6.99 |
| 114-P1C-MW101S | 4/16/2015 | 13.66 | 6.55 | 7.11 |
| 114-P1C-PZ1 | 4/16/2015 | 16.18 | 10.21 | 5.97 |
| 114-P1C-PZ2 | 4/16/2015 | 13.24 | 7.82 | 5.42 |
| 114-P2B1-MW101I | 4/16/2015 | 13.93 | 7.51 | 6.42 |
| 114-P2B1-MW101S | 4/16/2015 | 14.99 | 4.45 | 10.54 |
| 114-P2B1-MW102S | 4/16/2015 | 11.46 | 9.69 | 1.77 |
| 114-P2B1-MW103S | 4/16/2015 | 12.95 | 6.88 | 6.07 |
| 114-P2B2-MW101I | 4/16/2015 | 10.55 | 4.30 | 6.25 |
| 114-P2B2-MW101S | 4/16/2015 | 10.96 | 4.57 | 6.39 |
| 114-P2B3-MW101I | 4/16/2015 | 12.90 | 7.50 | 5.40 |
| 114-P2B3-MW101S | 4/16/2015 | 13.89 | 8.41 | 5.48 |
| 114-P2B4-MW101I | 4/16/2015 | 13.31 | 8.01 | 5.30 |
| 114-P2B4-MW101S | 4/16/2015 | 13.45 | 8.32 | 5.13 |
| 114-P2B4-MW102I | 4/16/2015 | 11.86 | 7.08 | 4.78 |
| 114-P2B4-MW102S | 4/16/2015 | 12.49 | 6.41 | 6.08 |
| 114-P2B4-MW103I | 4/16/2015 | 13.03 | 7.72 | 5.31 |
| 114-P2B4-MW103S | 4/16/2015 | 15.26 | 9.36 | 5.90 |
| 114-P2B4-MW3 | 4/16/2015 | 10.95 | 5.45 | 5.50 |
| 132-MW2A | 4/16/2015 | 14.12 | 9.68 | 4.44 |
| 132-P3A-MW2 | 4/16/2015 | 12.20 | 6.39 | 5.81 |
| 132-P3A-MW5 | 4/16/2015 | 12.45 | 8.56 | 3.89 |
| 135-MW1A | 4/16/2015 | 9.36 | 5.39 | 3.97 |
| 135-MW1B | 4/16/2015 | 9.64 | 6.21 | 3.43 |
| 135-MW2A | 4/16/2015 | 8.74 | 5.56 | 3.18 |
| 135-MW2B | 4/16/2015 | 8.65 | 4.00 | 4.65 |
| 135-MW3A | 4/16/2015 | 10.63 | 5.21 | 5.42 |
| 135-MW3B | 4/16/2015 | 11.19 | 8.05 | 3.14 |
| 135-P3C-MW1 | 4/16/2015 | 15.55 | 4.13 | 11.42 |
| MW10S | 4/16/2015 | 13.79 | 7.39 | 6.40 |
| MW-31A | 4/16/2015 | 15.90 | 6.12 | 9.78 |
| MW-34 | 4/16/2015 | 15.55 | 10.10 | 5.45 |
| MW-35 | 4/16/2015 | 15.73 | 11.02 | 4.71 |
| MW6C | 4/16/2015 | 14.18 | 6.27 | 7.91 |
| MW7D | 4/16/2015 | 10.87 | 6.01 | 4.86 |
| MW7S | 4/16/2015 | 10.29 | 4.78 | 5.51 |
| MW8D | 4/16/2015 | 8.52 | 5.28 | 3.24 |

**Appendix C**
**Summary of Historical Groundwater Elevations**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| Location ID | Measurement Date | Reference Elevation (ft NAVD88) | Depth to Water (ft) | Water Level Elevation (ft NAVD88) |
|---|---|---|---|---|
| MW8F | 4/16/2015 | 8.89 | 4.21 | 4.68 |
| MW-CR-1 | 4/16/2015 | 17.61 | 8.97 | 8.64 |
| MW-CR-2 | 4/16/2015 | 17.78 | 9.54 | 8.24 |
| MW-CR-3 | 4/16/2015 | 17.82 | 8.40 | 9.42 |
| MW-CR-4 | 4/16/2015 | 17.73 | 10.27 | 7.46 |
| MW-CR-5 | 4/16/2015 | 16.55 | 6.66 | 9.89 |
| MW-CR-6 | 4/16/2015 | 17.04 | 8.00 | 9.04 |
| MW-CR-7 | 4/16/2015 | 16.92 | 9.23 | 7.69 |
| MW-CR-8 | 4/16/2015 | 16.66 | 7.85 | 8.81 |
| MW-MORRIS1A | 4/16/2015 | 11.81 | 4.75 | 7.06 |
| 114-MC-PZ103 | 6/4/2014 | 14.94 | 9.64 | 5.30 |
| 114MON24 | 6/4/2014 | 13.54 | 7.72 | 5.82 |
| 114MON32 | 6/4/2014 | 16.97 | 6.87 | 10.10 |
| 114MON33 | 6/4/2014 | 17.08 | 6.97 | 10.11 |
| 114-MW14A | 6/4/2014 | 16.14 | 8.50 | 7.64 |
| 114-MW14B | 6/4/2014 | 16.21 | 9.56 | 6.65 |
| 114-MW19A | 6/4/2014 | 10.68 | 4.18 | 6.50 |
| 114-MW19B | 6/4/2014 | 10.59 | 7.40 | 3.19 |
| 114-MW19C | 6/4/2014 | 11.12 | 5.20 | 5.92 |
| 114-MW22A | 6/4/2014 | 11.90 | 6.69 | 5.21 |
| 114-MW22B | 6/4/2014 | 12.23 | 6.60 | 5.63 |
| 114-MW24A | 6/4/2014 | 11.44 | 5.50 | 5.94 |
| 114-MW24B | 6/4/2014 | 11.41 | 5.50 | 5.91 |
| 114-MW25A | 6/4/2014 | 9.88 | 4.10 | 5.78 |
| 114-MW25B | 6/4/2014 | 10.08 | 4.50 | 5.58 |
| 114-MW27A | 6/4/2014 | 10.35 | 4.80 | 5.55 |
| 114-MW27B | 6/4/2014 | 10.20 | 4.65 | 5.55 |
| 114-MW30A | 6/4/2014 | 9.90 | 3.19 | 6.71 |
| 114-MW4D | 6/4/2014 | 12.90 | 6.63 | 6.27 |
| 114-MW6D | 6/4/2014 | 13.90 | 6.87 | 7.03 |
| 114-MW7D | 6/4/2014 | 13.96 | 8.69 | 5.27 |
| 114-P1A-MW101I | 6/4/2014 | 14.40 | 8.91 | 5.49 |
| 114-P1A-MW101S | 6/4/2014 | 14.33 | 7.61 | 6.72 |
| 114-P1B-MW101I | 6/4/2014 | 16.31 | 10.60 | 5.71 |
| 114-P1B-MW101S | 6/4/2014 | 15.38 | 5.00 | 10.38 |
| 114-P1B-MW102I | 6/4/2014 | 12.64 | 7.00 | 5.64 |
| 114-P1B-MW103S | 6/4/2014 | 16.44 | 5.73 | 10.71 |
| 114-P1B-MW104S | 6/4/2014 | 16.78 | 5.49 | 11.29 |
| 114-P1C-EW1 | 6/4/2014 | 17.55 | 13.04 | 4.51 |
| 114-P1C-PZ1 | 6/4/2014 | 17.67 | 13.25 | 4.42 |
| 132-MW2A | 6/4/2014 | 14.12 | 7.58 | 6.54 |
| 133-MW1A | 6/4/2014 | 11.12 | 3.55 | 7.57 |
| 133-MW2C | 6/4/2014 | 9.84 | 3.95 | 5.89 |
| 133-MW6A | 6/4/2014 | 11.49 | 4.80 | 6.69 |
| 135-MW1B | 6/4/2014 | 9.64 | 5.45 | 4.19 |
| 135-MW1C | 6/4/2014 | 9.34 | 7.85 | 1.49 |
| 135-MW2A | 6/4/2014 | 8.74 | 3.60 | 5.14 |
| 135-MW2B | 6/4/2014 | 8.65 | 5.31 | 3.34 |
| 135-MW3A | 6/4/2014 | 10.63 | 4.45 | 6.18 |
| 135-MW3B | 6/4/2014 | 11.19 | 7.30 | 3.89 |
| 137-MW1A | 6/4/2014 | 12.80 | 5.86 | 6.94 |
| 137-MW1B | 6/4/2014 | 13.02 | 9.81 | 3.21 |
| 137-MW1C | 6/4/2014 | 13.15 | 7.72 | 5.43 |
| 137-MW2A | 6/4/2014 | 13.92 | 5.89 | 8.03 |
| 137-MW2B | 6/4/2014 | 13.95 | 10.32 | 3.63 |
| 137-MW2C | 6/4/2014 | 13.87 | 8.94 | 4.93 |
| GPS-MW1S | 6/4/2014 | 14.53 | 8.49 | 6.04 |
| GPS-MW2I | 6/4/2014 | 14.07 | 8.61 | 5.46 |
| GPS-MW2S | 6/4/2014 | 14.31 | 8.64 | 5.67 |
| GPS-MW3S | 6/4/2014 | 14.12 | 5.10 | 9.02 |
| GPS-MW4I | 6/4/2014 | 13.77 | 8.26 | 5.51 |
| GPS-MW4S | 6/4/2014 | 13.66 | 3.79 | 9.87 |
| GPS-MW5I | 6/4/2014 | 13.82 | 8.29 | 5.53 |
| GPS-MW5S | 6/4/2014 | 13.87 | 7.21 | 6.66 |
| GPS-MW7I | 6/4/2014 | 13.28 | 7.67 | 5.61 |
| GPS-MW7S | 6/4/2014 | 13.16 | 3.25 | 9.91 |
| MW10S | 6/4/2014 | 13.79 | 7.39 | 6.40 |
| MW1C-3 | 6/4/2014 | 18.45 | 7.67 | 10.78 |
| MW1C-4 | 6/4/2014 | 17.58 | 10.69 | 6.89 |
| MW2D | 6/4/2014 | 12.65 | 9.71 | 2.94 |
| MW-31A | 6/4/2014 | 15.90 | 5.80 | 10.10 |
| MW-32 | 6/4/2014 | 11.72 | 3.21 | 8.51 |
| MW-33 | 6/4/2014 | 11.57 | 2.30 | 9.27 |
| MW-34 | 6/4/2014 | 15.55 | 8.21 | 7.34 |
| MW-35 | 6/4/2014 | 15.73 | 7.91 | 7.82 |
| MW6C | 6/4/2014 | 14.18 | 7.67 | 6.51 |
| MW7D | 6/4/2014 | 10.87 | 5.93 | 4.94 |
| MW7S | 6/4/2014 | 10.29 | 4.51 | 5.78 |
| MW8D | 6/4/2014 | 8.52 | 5.31 | 3.21 |
| MW8F | 6/4/2014 | 8.89 | 3.92 | 4.97 |
| MW8S | 6/4/2014 | 8.39 | 5.26 | 3.13 |
| MW-MORRIS1A | 6/4/2014 | 11.81 | 6.06 | 5.75 |
| MW14S | 12/22/2011 | 13.75 | 5.23 | 8.52 |

**Appendix C**
**Summary of Historical Groundwater Elevations**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| Location ID | Measurement Date | Reference Elevation (ft NAVD88) | Depth to Water (ft) | Water Level Elevation (ft NAVD88) |
|---|---|---|---|---|
| 114-MW23A | 12/22/2011 | 14.40 | 4.20 | 10.20 |
| 114-MW24A | 12/22/2011 | 11.44 | 4.52 | 6.92 |
| 114-MW25A | 12/22/2011 | 9.88 | 3.35 | 6.53 |
| 114-MW26A | 12/22/2011 | 14.20 | 7.23 | 6.97 |
| 114-MW27A | 12/22/2011 | 10.35 | 4.12 | 6.23 |
| 114-MW28A | 12/22/2011 | 15.30 | 7.65 | 7.65 |
| MW10S | 12/22/2011 | 13.79 | 6.46 | 7.33 |
| MW1S | 12/22/2011 | 15.57 | 5.24 | 10.33 |
| MW3S | 12/22/2011 | 12.93 | 2.98 | 9.95 |
| MW6S | 12/22/2011 | 13.58 | 6.97 | 6.61 |
| W-3A | 11/22/2011 | 16.43 | 3.89 | 12.54 |
| W-3B | 11/22/2011 | 16.86 | 4.31 | 12.55 |
| W-1B | 11/22/2011 | 13.97 | 7.20 | 6.77 |
| W-1A | 11/22/2011 | 13.80 | 3.70 | 10.10 |
| SAP-3 | 11/22/2011 | 15.12 | 4.95 | 10.17 |
| SAP-1 | 11/22/2011 | 15.50 | 5.43 | 10.07 |
| 114-MW14A | 11/22/2011 | 12.11 | 2.90 | 9.21 |
| 114-MW14B | 11/22/2011 | 12.52 | 4.42 | 8.10 |
| 114-MW16A | 11/22/2011 | 15.81 | 6.91 | 8.90 |
| 114-MW16B | 11/22/2011 | 15.53 | 6.28 | 9.25 |
| 114-MW19A | 11/22/2011 | 10.68 | 3.90 | 6.78 |
| 114-MW19B | 11/22/2011 | 10.59 | 4.18 | 6.41 |
| 114-MW19C | 11/22/2011 | 11.12 | 4.00 | 7.12 |
| 114-MW20A | 11/22/2011 | 12.17 | 7.73 | 4.44 |
| 114-MW20B | 11/22/2011 | 12.16 | 5.50 | 6.66 |
| 114-MW21A | 11/22/2011 | 14.97 | 5.31 | 9.66 |
| 114-MW21B | 11/22/2011 | 15.06 | 7.55 | 7.51 |
| 114-MW22A | 11/22/2011 | 11.90 | 5.15 | 6.75 |
| 114-MW22B | 11/22/2011 | 12.23 | 8.60 | 3.63 |
| 114-MW23A | 11/22/2011 | 14.40 | 3.90 | 10.50 |
| 114-MW23B | 11/22/2011 | 14.50 | 7.34 | 7.16 |
| 114-MW4D | 11/22/2011 | 12.90 | 5.36 | 7.54 |
| 114-MW7D | 11/22/2011 | 12.42 | 4.76 | 7.66 |
| 132-MW2A | 11/22/2011 | 14.12 | 9.21 | 4.91 |
| 132-MW2B | 11/22/2011 | 14.44 | 7.88 | 6.56 |
| 133-MW1A | 11/22/2011 | 11.12 | 3.25 | 7.87 |
| 133-MW1B | 11/22/2011 | 11.40 | 4.45 | 6.95 |
| 133-MW1C | 11/22/2011 | 11.50 | 3.75 | 7.75 |
| 133-MW2A | 11/22/2011 | 9.64 | 3.03 | 6.61 |
| 133-MW2B | 11/22/2011 | 9.70 | 2.78 | 6.92 |
| 133-MW2C | 11/22/2011 | 9.84 | 3.05 | 6.79 |
| 135-MW1A | 11/22/2011 | 9.36 | 2.95 | 6.41 |
| 135-MW1B | 11/22/2011 | 9.64 | 2.90 | 6.74 |
| 135-MW1C | 11/22/2011 | 9.34 | 4.33 | 5.01 |
| 135-MW2A | 11/22/2011 | 8.74 | 4.15 | 4.59 |
| 135-MW2B | 11/22/2011 | 8.65 | 2.15 | 6.50 |
| 137-MW1A | 11/22/2011 | 12.80 | 2.56 | 10.24 |
| 137-MW1B | 11/22/2011 | 13.02 | 6.20 | 6.82 |
| 137-MW1C | 11/22/2011 | 13.15 | 6.22 | 6.93 |
| 137-MW2A | 11/22/2011 | 13.92 | 3.68 | 10.24 |
| 137-MW2B | 11/22/2011 | 13.95 | 7.20 | 6.75 |
| 137-MW2C | 11/22/2011 | 13.87 | 6.94 | 6.93 |
| 137-MW4A | 11/22/2011 | 13.20 | 5.75 | 7.45 |
| 137-MW4B | 11/22/2011 | 13.11 | 6.35 | 6.76 |
| 186-MW01 | 11/22/2011 | 18.37 | 9.89 | 8.48 |
| 186-MW02 | 11/22/2011 | 13.15 | 4.70 | 8.45 |
| MW10A | 11/22/2011 | 14.57 | 4.13 | 10.44 |
| MW10S | 11/22/2011 | 13.79 | 6.45 | 7.34 |
| MW12A | 11/22/2011 | 14.32 | 2.83 | 11.49 |
| MW12B | 11/22/2011 | 14.03 | 7.05 | 6.98 |
| MW13A | 11/22/2011 | 13.04 | 2.26 | 10.78 |
| MW13B | 11/22/2011 | 13.20 | 6.51 | 6.69 |
| MW14D | 11/22/2011 | 12.06 | 4.73 | 7.33 |
| MW14S | 11/22/2011 | 13.75 | 5.49 | 8.26 |
| MW1A | 11/22/2011 | 13.35 | 4.09 | 9.26 |
| MW1B | 11/22/2011 | 14.27 | 7.38 | 6.89 |
| MW1D | 11/22/2011 | 15.60 | 8.15 | 7.45 |
| MW1S | 11/22/2011 | 15.57 | 5.06 | 10.51 |
| MW2D | 11/22/2011 | 12.65 | 5.81 | 6.84 |
| MW2S | 11/22/2011 | 12.33 | 2.00 | 10.33 |
| MW3A | 11/22/2011 | 13.57 | 3.89 | 9.68 |
| MW3B | 11/22/2011 | 13.78 | 4.31 | 9.47 |
| MW3D | 11/22/2011 | 13.08 | 6.48 | 6.60 |
| MW3S | 11/22/2011 | 12.93 | 2.90 | 10.03 |
| MW4A | 11/22/2011 | 12.27 | 1.68 | 10.59 |
| MW4B | 11/22/2011 | 12.31 | 5.43 | 6.88 |
| MW4C | 11/22/2011 | 12.69 | 5.65 | 7.04 |
| MW4D | 11/22/2011 | 13.50 | 7.00 | 6.50 |
| MW4F | 11/22/2011 | 14.74 | 8.17 | 6.57 |
| MW4S | 11/22/2011 | 13.86 | 6.18 | 7.68 |
| MW5A | 11/22/2011 | 15.35 | 3.88 | 11.47 |
| MW5B | 11/22/2011 | 16.42 | 9.20 | 7.22 |
| MW5D | 11/22/2011 | 12.78 | 6.31 | 6.47 |

**Appendix C**
**Summary of Historical Groundwater Elevations**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| Location ID | Measurement Date | Reference Elevation (ft NAVD88) | Depth to Water (ft) | Water Level Elevation (ft NAVD88) |
|---|---|---|---|---|
| MW5S | 11/22/2011 | 13.11 | 2.65 | 10.46 |
| MW6D | 11/22/2011 | 13.82 | 7.08 | 6.74 |
| MW6S | 11/22/2011 | 13.58 | 7.03 | 6.55 |
| MW7A | 11/22/2011 | 12.72 | 2.40 | 10.32 |
| MW7B | 11/22/2011 | 12.73 | 6.05 | 6.68 |
| MW7C | 11/22/2011 | 12.43 | 5.34 | 7.09 |
| MW7D | 11/22/2011 | 10.87 | 4.76 | 6.11 |
| MW7S | 11/22/2011 | 10.29 | 4.80 | 5.49 |
| MW8A | 11/22/2011 | 14.62 | 4.45 | 10.17 |
| MW8B | 11/22/2011 | 14.83 | 8.19 | 6.64 |
| MW8D | 11/22/2011 | 8.52 | 1.96 | 6.56 |
| MW9D | 11/22/2011 | 11.56 | 6.74 | 4.82 |
| W-3B | 5/17/2011 | 16.86 | 3.71 | 13.15 |
| W-3A | 5/17/2011 | 16.43 | 3.35 | 13.08 |
| W-1A | 5/17/2011 | 13.80 | 2.25 | 11.55 |
| W-1B | 5/17/2011 | 13.97 | 7.40 | 6.57 |
| 114-MW14A | 5/17/2011 | 12.11 | 1.95 | 10.16 |
| 114-MW14B | 5/17/2011 | 12.52 | 4.18 | 8.34 |
| 114-MW16A | 5/17/2011 | 15.81 | 1.50 | 14.31 |
| 114-MW16B | 5/17/2011 | 15.53 | 5.03 | 10.50 |
| 114-MW19A | 5/17/2011 | 10.68 | 3.95 | 6.73 |
| 114-MW19B | 5/17/2011 | 10.59 | 4.44 | 6.15 |
| 114-MW19C | 5/17/2011 | 11.12 | 4.00 | 7.12 |
| 114-MW20A | 5/17/2011 | 12.17 | 7.70 | 4.47 |
| 114-MW20B | 5/17/2011 | 12.16 | 6.00 | 6.16 |
| 114-MW21A | 5/17/2011 | 14.97 | 6.75 | 8.22 |
| 114-MW21B | 5/17/2011 | 15.06 | 5.30 | 9.76 |
| 114-MW22A | 5/17/2011 | 11.90 | 4.80 | 7.10 |
| 114-MW22B | 5/17/2011 | 12.23 | 5.10 | 7.13 |
| 114-MW23A | 5/17/2011 | 14.40 | 4.85 | 9.55 |
| 114-MW23B | 5/17/2011 | 14.50 | 7.75 | 6.75 |
| 114-MW4D | 5/17/2011 | 12.90 | 5.70 | 7.20 |
| 114-MW7D | 5/17/2011 | 12.42 | 7.15 | 5.27 |
| 132-MW2A | 5/17/2011 | 14.12 | 6.00 | 8.12 |
| 132-MW2B | 5/17/2011 | 14.44 | 7.75 | 6.69 |
| 133-MW1B | 5/17/2011 | 11.40 | 4.15 | 7.25 |
| 133-MW1C | 5/17/2011 | 11.50 | 3.60 | 7.90 |
| 135-MW1C | 5/17/2011 | 9.34 | 3.40 | 5.94 |
| 135-MW2A | 5/17/2011 | 8.74 | 2.25 | 6.49 |
| 135-MW2B | 5/17/2011 | 8.65 | 2.15 | 6.50 |
| 137-MW1A | 5/17/2011 | 12.80 | 6.45 | 6.35 |
| 137-MW1B | 5/17/2011 | 13.02 | 6.30 | 6.72 |
| 137-MW1C | 5/17/2011 | 13.15 | 10.62 | 2.53 |
| 137-MW2A | 5/17/2011 | 13.92 | 2.80 | 11.12 |
| MW10A | 5/17/2011 | 14.57 | 3.25 | 11.32 |
| MW10S | 5/17/2011 | 13.79 | 5.60 | 8.19 |
| MW12A | 5/17/2011 | 14.32 | 7.75 | 6.57 |
| MW12B | 5/17/2011 | 14.03 | 7.41 | 6.62 |
| MW13A | 5/17/2011 | 13.04 | 1.15 | 11.89 |
| MW13B | 5/17/2011 | 13.20 | 6.49 | 6.71 |
| MW1A | 5/17/2011 | 13.35 | 3.30 | 10.05 |
| MW1B | 5/17/2011 | 14.27 | 7.62 | 6.65 |
| MW1D | 5/17/2011 | 15.60 | 8.75 | 6.85 |
| MW1S | 5/17/2011 | 15.57 | 5.10 | 10.47 |
| MW2D | 5/17/2011 | 12.65 | 6.20 | 6.45 |
| MW2S | 5/17/2011 | 12.33 | 0.40 | 11.93 |
| MW3A | 5/17/2011 | 13.57 | 4.27 | 9.30 |
| MW3B | 5/17/2011 | 13.78 | 6.50 | 7.28 |
| MW3D | 5/17/2011 | 13.08 | 7.45 | 5.63 |
| MW3S | 5/17/2011 | 12.93 | 2.60 | 10.33 |
| MW4A | 5/17/2011 | 12.27 | 5.10 | 7.17 |
| MW4B | 5/17/2011 | 12.31 | 5.66 | 6.65 |
| MW4C | 5/17/2011 | 12.69 | 5.80 | 6.89 |
| MW4D | 5/17/2011 | 13.50 | 7.15 | 6.35 |
| MW4F | 5/17/2011 | 14.74 | 8.25 | 6.49 |
| MW4S | 5/17/2011 | 13.86 | 3.05 | 10.81 |
| MW5A | 5/17/2011 | 15.35 | 4.90 | 10.45 |
| MW5B | 5/17/2011 | 16.42 | 9.75 | 6.67 |
| MW5D | 5/17/2011 | 12.78 | 6.45 | 6.33 |
| MW5S | 5/17/2011 | 13.11 | 1.75 | 11.36 |
| MW6D | 5/17/2011 | 13.82 | 7.20 | 6.62 |
| MW6S | 5/17/2011 | 13.58 | 7.07 | 6.51 |
| MW7A | 5/17/2011 | 12.72 | 1.50 | 11.22 |
| MW7C | 5/17/2011 | 12.43 | 5.55 | 6.88 |
| MW7D | 5/17/2011 | 10.87 | 4.65 | 6.22 |
| MW7S | 5/17/2011 | 10.29 | 2.10 | 8.19 |
| MW8A | 5/17/2011 | 14.62 | 3.33 | 11.29 |
| MW8B | 5/17/2011 | 14.83 | 8.40 | 6.43 |
| 114-MW20A | 10/23/2007 | 12.19 | 7.84 | 4.35 |
| 114-MW20B | 10/23/2007 | 12.18 | 6.41 | 5.77 |
| 135-MW1C | 10/23/2007 | 9.34 | 7.31 | 2.03 |
| 135-MW2A | 10/23/2007 | 8.77 | 4.04 | 4.73 |
| 135-MW2B | 10/23/2007 | 8.68 | 2.99 | 5.69 |

**Appendix C**
**Summary of Historical Groundwater Elevations**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| Location ID | Measurement Date | Reference Elevation (ft NAVD88) | Depth to Water (ft) | Water Level Elevation (ft NAVD88) |
|---|---|---|---|---|
| 137-MW1A | 10/23/2007 | 12.80 | 3.31 | 9.49 |
| 137-MW1C | 10/23/2007 | 13.18 | 7.31 | 5.87 |
| MW10S | 10/23/2007 | 13.82 | 7.59 | 6.23 |
| MW14D | 10/23/2007 | 12.03 | 5.65 | 6.38 |
| MW14S | 10/23/2007 | 13.76 | 7.45 | 6.31 |
| MW1D | 10/23/2007 | 15.45 | 9.16 | 6.29 |
| MW1S | 10/23/2007 | 15.57 | 5.41 | 10.16 |
| MW2D | 10/23/2007 | 12.71 | 6.79 | 5.92 |
| MW2S | 10/23/2007 | 12.24 | 2.66 | 9.58 |
| MW3D | 10/23/2007 | 13.08 | 7.31 | 5.77 |
| MW3S | 10/23/2007 | 12.92 | 3.21 | 9.71 |
| MW4D | 10/23/2007 | 13.61 | 7.85 | 5.76 |
| MW4F | 10/23/2007 | 14.76 | 9.05 | 5.71 |
| MW4S | 10/23/2007 | 14.34 | 7.16 | 7.18 |
| MW5D | 10/23/2007 | 12.72 | 7.19 | 5.53 |
| MW5S | 10/23/2007 | 13.09 | 3.09 | 10.00 |
| MW6D | 10/23/2007 | 13.83 | 7.99 | 5.84 |
| MW6S | 10/23/2007 | 13.59 | 7.87 | 5.72 |
| MW7D | 10/23/2007 | 10.95 | 5.65 | 5.30 |
| MW7S | 10/23/2007 | 10.35 | 4.99 | 5.36 |
| MW8D | 10/23/2007 | 8.59 | 2.85 | 5.74 |
| MW9D | 10/23/2007 | 11.60 | 4.84 | 6.76 |
| MW9S | 10/23/2007 | 11.30 | 3.11 | 8.19 |
| 114-MW14B | 9/25/2007 | 12.54 | 4.06 | 8.48 |
| 114-MW20A | 9/25/2007 | 12.19 | 7.94 | 4.25 |
| 114-MW20B | 9/25/2007 | 12.18 | 5.87 | 6.31 |
| 135-MW1C | 9/25/2007 | 9.34 | 7.70 | 1.64 |
| 135-MW2A | 9/25/2007 | 8.77 | 4.02 | 4.75 |
| 135-MW2B | 9/25/2007 | 8.68 | 2.91 | 5.77 |
| 137-MW1A | 9/25/2007 | 12.80 | 3.26 | 9.54 |
| 137-MW1C | 9/25/2007 | 13.18 | 7.70 | 5.48 |
| MW10S | 9/25/2007 | 13.82 | 7.24 | 6.58 |
| MW14D | 9/25/2007 | 12.03 | 5.49 | 6.54 |
| MW14S | 9/25/2007 | 13.76 | 7.27 | 6.49 |
| MW1D | 9/25/2007 | 15.45 | 9.01 | 6.44 |
| MW1S | 9/25/2007 | 15.57 | 5.45 | 10.12 |
| MW2D | 9/25/2007 | 12.71 | 6.61 | 6.10 |
| MW2S | 9/25/2007 | 12.24 | 2.69 | 9.55 |
| MW3D | 9/25/2007 | 13.08 | 7.17 | 5.91 |
| MW3S | 9/25/2007 | 12.92 | 3.31 | 9.61 |
| MW4D | 9/25/2007 | 13.61 | 7.71 | 5.90 |
| MW4S | 9/25/2007 | 14.34 | 7.09 | 7.25 |
| MW5D | 9/25/2007 | 12.72 | 7.00 | 5.72 |
| MW5S | 9/25/2007 | 13.09 | 3.37 | 9.72 |
| MW6D | 9/25/2007 | 13.83 | 7.77 | 6.06 |
| MW6S | 9/25/2007 | 13.59 | 7.69 | 5.90 |
| MW7D | 9/25/2007 | 10.95 | 5.47 | 5.48 |
| MW7S | 9/25/2007 | 10.35 | 5.11 | 5.24 |
| MW8D | 9/25/2007 | 8.59 | 2.55 | 6.04 |
| MW9D | 9/25/2007 | 11.60 | 5.42 | 6.18 |
| MW9S | 9/25/2007 | 11.30 | 3.11 | 8.19 |
| 114-MW14A | 5/7/2007 | 12.12 | 2.15 | 9.97 |
| 114-MW15A | 5/7/2007 | 13.03 | 2.45 | 10.58 |
| 114-MW16A | 5/7/2007 | 15.81 | 6.15 | 9.66 |
| 114-MW19A | 5/7/2007 | 10.69 | 4.70 | 5.99 |
| 114-MW19B | 5/7/2007 | 10.62 | 3.74 | 6.88 |
| 114-MW19C | 5/7/2007 | 10.53 | 8.54 | 1.99 |
| 114-MW20A | 5/7/2007 | 12.18 | 7.33 | 4.85 |
| 114-MW20B | 5/7/2007 | 12.17 | 5.16 | 7.01 |
| 114-MW21A | 5/7/2007 | 14.96 | 4.32 | 10.64 |
| 114-MW21B | 5/7/2007 | 15.06 | 7.25 | 7.81 |
| 114-MW22A | 5/7/2007 | 11.83 | 4.56 | 7.27 |
| 114-MW22B | 5/7/2007 | 12.22 | 5.36 | 6.86 |
| 114-MW23A | 5/7/2007 | 14.48 | 3.90 | 10.58 |
| 114-MW23B | 5/7/2007 | 14.52 | 6.91 | 7.61 |
| 114-MW4D | 5/7/2007 | 12.90 | 2.41 | 10.49 |
| 114-MW7D | 5/7/2007 | 12.43 | 5.08 | 7.35 |
| 132-MW2A | 5/7/2007 | 14.14 | 8.90 | 5.24 |
| 132-MW2B | 5/7/2007 | 14.44 | 8.71 | 5.73 |
| 133-MW1A | 5/7/2007 | 11.26 | 3.07 | 8.19 |
| 133-MW1B | 5/7/2007 | 11.42 | 3.91 | 7.51 |
| 133-MW1C | 5/7/2007 | 11.49 | 3.10 | 8.39 |
| 133-MW2A | 5/7/2007 | 9.66 | 2.60 | 7.06 |
| 133-MW2B | 5/7/2007 | 9.71 | 2.35 | 7.36 |
| 135-MW1A | 5/7/2007 | 9.43 | 2.70 | 6.73 |
| 135-MW1B | 5/7/2007 | 9.64 | 3.00 | 6.64 |
| 135-MW2A | 5/7/2007 | 8.76 | 3.87 | 4.89 |
| 135-MW2B | 5/7/2007 | 8.67 | 1.75 | 6.92 |
| 137-MW1A | 5/7/2007 | 12.79 | 3.14 | 9.65 |
| 137-MW1B | 5/7/2007 | 13.09 | 5.89 | 7.20 |
| 137-MW1C | 5/7/2007 | 13.17 | 9.27 | 3.90 |
| 137-MW2A | 5/7/2007 | 13.94 | 3.30 | 10.64 |
| 137-MW2B | 5/7/2007 | 13.96 | 6.76 | 7.20 |

**Appendix C**
**Summary of Historical Groundwater Elevations**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| Location ID | Measurement Date | Reference Elevation (ft NAVD88) | Depth to Water (ft) | Water Level Elevation (ft NAVD88) |
|---|---|---|---|---|
| 137-MW2C | 5/7/2007 | 13.88 | 6.30 | 7.58 |
| 137-MW4A | 5/7/2007 | 13.16 | 4.69 | 8.47 |
| 137-MW4B | 5/7/2007 | 13.12 | 5.91 | 7.21 |
| EW-1 | 5/7/2007 | 12.86 | 1.85 | 11.01 |
| EW-2 | 5/7/2007 | 15.05 | 4.30 | 10.75 |
| F1 | 5/7/2007 | 15.93 | 4.63 | 11.30 |
| F2 | 5/7/2007 | 15.96 | 4.15 | 11.81 |
| F3 | 5/7/2007 | 15.85 | 4.42 | 11.43 |
| F4 | 5/7/2007 | 15.91 | 4.00 | 11.91 |
| F5 | 5/7/2007 | 16.03 | 3.44 | 12.59 |
| F6 | 5/7/2007 | 16.04 | 3.43 | 12.61 |
| F7 | 5/7/2007 | 16.16 | 4.05 | 12.11 |
| MW11A | 5/7/2007 | 16.03 | 4.88 | 11.15 |
| MW11B | 5/7/2007 | 15.93 | 8.39 | 7.54 |
| MW12A | 5/7/2007 | 14.17 | 2.58 | 11.59 |
| MW12B | 5/7/2007 | 13.98 | 6.70 | 7.28 |
| MW13A | 5/7/2007 | 13.05 | 2.10 | 10.95 |
| MW13B | 5/7/2007 | 13.22 | 6.04 | 7.18 |
| MW1A | 5/7/2007 | 13.64 | 4.29 | 9.35 |
| MW1B | 5/7/2007 | 14.38 | 7.12 | 7.26 |
| MW1D | 5/7/2007 | 15.44 | 7.77 | 7.67 |
| MW1S | 5/7/2007 | 15.56 | 4.37 | 11.19 |
| MW2A | 5/7/2007 | 10.97 | 0.70 | 10.27 |
| MW2B | 5/7/2007 | 11.03 | 2.00 | 9.03 |
| MW2D | 5/7/2007 | 12.70 | 5.48 | 7.22 |
| MW2S | 5/7/2007 | 12.23 | 1.70 | 10.53 |
| MW3A | 5/7/2007 | 13.87 | 2.72 | 11.15 |
| MW3B | 5/7/2007 | 14.06 | 5.61 | 8.45 |
| MW3D | 5/7/2007 | 13.07 | 5.91 | 7.16 |
| MW3S | 5/7/2007 | 12.91 | 2.48 | 10.43 |
| MW4B | 5/7/2007 | 12.90 | 5.07 | 7.83 |
| MW4D | 5/7/2007 | 13.55 | 6.50 | 7.05 |
| MW4S | 5/7/2007 | 14.33 | 5.83 | 8.50 |
| MW5A | 5/7/2007 | 15.54 | 3.97 | 11.57 |
| MW5B | 5/7/2007 | 16.68 | 8.97 | 7.71 |
| MW5D | 5/7/2007 | 12.71 | 5.82 | 6.89 |
| MW5S | 5/7/2007 | 13.08 | 2.32 | 10.76 |
| MW6A | 5/7/2007 | 12.95 | 5.20 | 7.75 |
| MW6B | 5/7/2007 | 12.95 | 5.05 | 7.90 |
| MW6D | 5/7/2007 | 13.82 | 6.50 | 7.32 |
| MW6S | 5/7/2007 | 13.58 | 6.40 | 7.18 |
| MW7A | 5/7/2007 | 12.75 | 2.10 | 10.65 |
| MW7B | 5/7/2007 | 13.01 | 5.60 | 7.41 |
| MW7C | 5/7/2007 | 12.46 | 5.34 | 7.12 |
| MW8A | 5/7/2007 | 14.84 | 4.27 | 10.57 |
| MW8B | 5/7/2007 | 15.05 | 7.80 | 7.25 |
| MW9A | 5/7/2007 | 16.11 | 3.80 | 12.31 |
| MW9B | 5/7/2007 | 16.20 | 8.55 | 7.65 |
| MW9C | 5/7/2007 | 15.89 | 7.90 | 7.99 |
| MWP1 | 5/7/2007 | 16.33 | 4.22 | 12.11 |
| NW-1 | 5/7/2007 | 15.43 | 4.49 | 10.94 |
| NW-2 | 5/7/2007 | 16.00 | 4.80 | 11.20 |
| NW-3 | 5/7/2007 | 14.00 | 1.90 | 12.10 |
| NW-4 | 5/7/2007 | 16.03 | 3.91 | 12.12 |
| PZ1 | 5/7/2007 | 14.04 | 2.60 | 11.44 |
| PZ10 | 5/7/2007 | 16.27 | 3.52 | 12.75 |
| PZ11 | 5/7/2007 | 16.19 | 5.85 | 10.34 |
| PZ12 | 5/7/2007 | 16.33 | 8.24 | 8.09 |
| PZ14 | 5/7/2007 | 16.25 | 4.42 | 11.83 |
| PZ2 | 5/7/2007 | 14.04 | 3.25 | 10.79 |
| PZ3 | 5/7/2007 | 13.11 | 2.02 | 11.09 |
| PZ5 | 5/7/2007 | 16.51 | 5.00 | 11.51 |
| PZ6 | 5/7/2007 | 16.75 | 4.59 | 12.16 |
| PZ7 | 5/7/2007 | 16.28 | 4.72 | 11.56 |
| PZ8 | 5/7/2007 | 14.50 | 3.65 | 10.85 |
| PZ9 | 5/7/2007 | 13.98 | 2.83 | 11.15 |
| SW-1 | 5/7/2007 | 15.20 | 4.10 | 11.10 |
| SW-2 | 5/7/2007 | 16.08 | 4.38 | 11.70 |
| SW-3 | 5/7/2007 | 15.64 | 3.55 | 12.09 |
| SW-4 | 5/7/2007 | 16.06 | 3.78 | 12.28 |
| WW-2 | 5/7/2007 | 14.05 | 4.62 | 9.43 |
| WW-3 | 5/7/2007 | 12.73 | 0.03 | 12.70 |
| WW-4 | 5/7/2007 | 12.90 | 3.60 | 9.30 |
| 114-MW14A | 2/12/2007 | 12.12 | 4.91 | 7.21 |
| 114-MW14B | 2/12/2007 | 12.54 | 5.32 | 7.22 |
| 114-MW15A | 2/12/2007 | 13.03 | 3.96 | 9.07 |
| 114-MW19A | 2/12/2007 | 10.69 | 6.07 | 4.62 |
| 114-MW19B | 2/12/2007 | 10.62 | 4.73 | 5.89 |
| 114-MW19C | 2/12/2007 | 10.53 | 2.24 | 8.29 |
| 114-MW20A | 2/12/2007 | 12.18 | 7.90 | 4.28 |
| 114-MW20B | 2/12/2007 | 12.17 | 6.11 | 6.06 |
| 114-MW21A | 2/12/2007 | 14.96 | 6.18 | 8.78 |
| 114-MW21B | 2/12/2007 | 15.06 | 8.36 | 6.70 |

**Appendix C**
**Summary of Historical Groundwater Elevations**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| Location ID | Measurement Date | Reference Elevation (ft NAVD88) | Depth to Water (ft) | Water Level Elevation (ft NAVD88) |
|---|---|---|---|---|
| 114-MW22A | 2/12/2007 | 11.83 | 5.59 | 6.24 |
| 114-MW22B | 2/12/2007 | 12.22 | 8.42 | 3.80 |
| 114-MW23A | 2/12/2007 | 14.48 | 4.78 | 9.70 |
| 114-MW23B | 2/12/2007 | 14.52 | 7.85 | 6.67 |
| D-1 | 2/12/2007 | 13.02 | 2.49 | 10.53 |
| EW-1 | 2/12/2007 | 12.86 | 3.12 | 9.74 |
| EW-2 | 2/12/2007 | 15.05 | 5.85 | 9.20 |
| F1 | 2/12/2007 | 15.93 | 5.55 | 10.38 |
| F2 | 2/12/2007 | 15.96 | 4.69 | 11.27 |
| F3 | 2/12/2007 | 15.85 | 5.40 | 10.45 |
| F4 | 2/12/2007 | 15.91 | 4.61 | 11.30 |
| F5 | 2/12/2007 | 16.03 | 5.12 | 10.91 |
| F6 | 2/12/2007 | 16.04 | 4.30 | 11.74 |
| F7 | 2/12/2007 | 16.16 | 5.47 | 10.69 |
| MW10A | 2/12/2007 | 14.56 | 4.11 | 10.45 |
| MW11A | 2/12/2007 | 16.03 | 6.35 | 9.68 |
| MW11B | 2/12/2007 | 15.93 | 9.48 | 6.45 |
| MW12A | 2/12/2007 | 14.17 | 3.79 | 10.38 |
| MW12B | 2/12/2007 | 13.98 | 7.61 | 6.37 |
| MW13A | 2/12/2007 | 13.05 | 3.76 | 9.29 |
| MW13B | 2/12/2007 | 13.22 | 7.01 | 6.21 |
| MW1A | 2/12/2007 | 13.64 | 5.30 | 8.34 |
| MW1B | 2/12/2007 | 14.38 | 7.95 | 6.43 |
| MW1D | 2/12/2007 | 15.44 | 8.88 | 6.56 |
| MW1S | 2/12/2007 | 15.56 | 5.84 | 9.72 |
| MW2A | 2/12/2007 | 10.97 | 0.73 | 10.24 |
| MW2B | 2/12/2007 | 11.03 | 2.32 | 8.71 |
| MW2D | 2/12/2007 | 12.70 | 6.45 | 6.25 |
| MW2S | 2/12/2007 | 12.23 | 3.04 | 9.19 |
| MW3A | 2/12/2007 | 13.87 | 3.75 | 10.12 |
| MW3B | 2/12/2007 | 14.06 | 6.34 | 7.72 |
| MW3D | 2/12/2007 | 13.07 | 7.05 | 6.02 |
| MW3S | 2/12/2007 | 12.91 | 3.62 | 9.29 |
| MW4A | 2/12/2007 | 12.56 | 3.10 | 9.46 |
| MW4B | 2/12/2007 | 12.58 | 5.76 | 6.82 |
| MW4C | 2/12/2007 | 12.68 | 6.29 | 6.39 |
| MW4D | 2/12/2007 | 13.60 | 7.57 | 6.03 |
| MW4F | 2/12/2007 | 15.43 | 9.89 | 5.54 |
| MW4S | 2/12/2007 | 14.33 | 7.21 | 7.12 |
| MW5A | 2/12/2007 | 15.54 | 4.84 | 10.70 |
| MW5B | 2/12/2007 | 16.68 | 9.84 | 6.84 |
| MW5D | 2/12/2007 | 12.71 | 6.91 | 5.80 |
| MW5S | 2/12/2007 | 13.08 | 3.96 | 9.12 |
| MW6C | 2/12/2007 | 12.93 | 6.13 | 6.80 |
| MW6D | 2/12/2007 | 13.82 | 7.40 | 6.42 |
| MW7A | 2/12/2007 | 12.75 | 3.43 | 9.32 |
| MW7B | 2/12/2007 | 13.01 | 6.55 | 6.46 |
| MW7C | 2/12/2007 | 12.46 | 5.81 | 6.65 |
| MW8A | 2/12/2007 | 14.84 | 5.73 | 9.11 |
| MW8B | 2/12/2007 | 15.05 | 8.70 | 6.35 |
| MW9A | 2/12/2007 | 16.11 | 4.66 | 11.45 |
| MW9B | 2/12/2007 | 16.20 | 9.59 | 6.61 |
| MW9C | 2/12/2007 | 15.89 | 9.10 | 6.79 |
| MWP1 | 2/12/2007 | 16.33 | 5.23 | 11.10 |
| NW-1 | 2/12/2007 | 15.43 | 4.93 | 10.50 |
| NW-2 | 2/12/2007 | 16.00 | 5.71 | 10.29 |
| NW-3 | 2/12/2007 | 14.00 | 3.44 | 10.56 |
| NW-4 | 2/12/2007 | 16.03 | 5.31 | 10.72 |
| PZ1 | 2/12/2007 | 14.04 | 3.82 | 10.22 |
| PZ10 | 2/12/2007 | 16.27 | 4.71 | 11.56 |
| PZ11 | 2/12/2007 | 16.19 | 6.44 | 9.75 |
| PZ12 | 2/12/2007 | 16.33 | 5.96 | 10.37 |
| PZ14 | 2/12/2007 | 16.25 | 5.60 | 10.65 |
| PZ2 | 2/12/2007 | 14.04 | 4.65 | 9.39 |
| PZ3 | 2/12/2007 | 13.11 | 3.18 | 9.93 |
| PZ4 | 2/12/2007 | 13.17 | 3.41 | 9.76 |
| PZ6 | 2/12/2007 | 16.75 | 6.16 | 10.59 |
| PZ7 | 2/12/2007 | 16.28 | 5.96 | 10.32 |
| PZ8 | 2/12/2007 | 14.50 | 4.11 | 10.39 |
| SW-1 | 2/12/2007 | 15.20 | 4.62 | 10.58 |
| SW-3 | 2/12/2007 | 15.64 | 4.34 | 11.30 |
| SW-4 | 2/12/2007 | 16.06 | 4.58 | 11.48 |
| WW-2 | 2/12/2007 | 14.05 | 5.55 | 8.50 |
| WW-3 | 2/12/2007 | 12.73 | 1.79 | 10.94 |
| WW-4 | 2/12/2007 | 12.90 | 4.39 | 8.51 |
| D-1 | 5/19/2006 | 13.02 | 2.09 | 10.93 |
| EW-1 | 5/19/2006 | 12.86 | 1.25 | 11.61 |
| EW-2 | 5/19/2006 | 15.05 | 4.05 | 11.00 |
| F1 | 5/19/2006 | 15.93 | 4.51 | 11.42 |
| F2 | 5/19/2006 | 15.96 | 4.58 | 11.38 |
| F3 | 5/19/2006 | 15.85 | 4.32 | 11.53 |
| F4 | 5/19/2006 | 15.91 | 4.12 | 11.79 |
| F5 | 5/19/2006 | 16.03 | 3.73 | 12.30 |

**Appendix C**
**Summary of Historical Groundwater Elevations**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| Location ID | Measurement Date | Reference Elevation (ft NAVD88) | Depth to Water (ft) | Water Level Elevation (ft NAVD88) |
|---|---|---|---|---|
| F6 | 5/19/2006 | 16.04 | 3.15 | 12.89 |
| F7 | 5/19/2006 | 16.16 | 3.91 | 12.25 |
| MW10A | 5/19/2006 | 14.56 | 3.17 | 11.39 |
| MW11A | 5/19/2006 | 16.03 | 4.62 | 11.41 |
| MW11B | 5/19/2006 | 15.93 | 8.68 | 7.25 |
| MW12A | 5/19/2006 | 14.17 | 2.21 | 11.96 |
| MW12B | 5/19/2006 | 13.98 | 7.06 | 6.92 |
| MW13A | 5/19/2006 | 13.05 | 1.71 | 11.34 |
| MW13B | 5/19/2006 | 13.22 | 6.25 | 6.97 |
| MW1A | 5/19/2006 | 13.64 | 3.58 | 10.06 |
| MW1B | 5/19/2006 | 14.38 | 7.30 | 7.08 |
| MW1D | 5/19/2006 | 15.44 | 8.00 | 7.44 |
| MW1S | 5/19/2006 | 15.56 | 4.18 | 11.38 |
| MW2A | 5/19/2006 | 10.97 | 0.60 | 10.37 |
| MW2B | 5/19/2006 | 11.03 | 2.51 | 8.52 |
| MW2D | 5/19/2006 | 12.70 | 5.90 | 6.80 |
| MW2S | 5/19/2006 | 12.23 | 1.56 | 10.67 |
| MW3A | 5/19/2006 | 13.87 | 0.68 | 13.19 |
| MW3B | 5/19/2006 | 14.06 | 5.82 | 8.24 |
| MW3D | 5/19/2006 | 13.07 | 6.18 | 6.89 |
| MW3S | 5/19/2006 | 12.91 | 4.78 | 8.13 |
| MW4A | 5/19/2006 | 12.56 | 1.53 | 11.03 |
| MW4B | 5/19/2006 | 12.58 | 5.45 | 7.13 |
| MW4C | 5/19/2006 | 12.68 | 6.28 | 6.40 |
| MW4D | 5/19/2006 | 13.60 | 6.67 | 6.93 |
| MW4F | 5/19/2006 | 15.43 | 7.84 | 7.59 |
| MW4S | 5/19/2006 | 14.33 | 3.67 | 10.66 |
| MW5A | 5/19/2006 | 15.54 | 2.41 | 13.13 |
| MW5B | 5/19/2006 | 16.68 | 9.17 | 7.51 |
| MW5D | 5/19/2006 | 12.71 | 5.98 | 6.73 |
| MW5S | 5/19/2006 | 13.08 | 1.76 | 11.32 |
| MW6A | 5/19/2006 | 12.95 | 1.33 | 11.62 |
| MW6B | 5/19/2006 | 12.95 | 5.44 | 7.51 |
| MW6C | 5/19/2006 | 12.93 | 5.30 | 7.63 |
| MW6D | 5/19/2006 | 13.82 | 6.80 | 7.02 |
| MW6S | 5/19/2006 | 13.58 | 6.64 | 6.94 |
| MW7A | 5/19/2006 | 12.75 | 1.40 | 11.35 |
| MW7B | 5/19/2006 | 13.01 | 5.99 | 7.02 |
| MW7C | 5/19/2006 | 12.46 | 5.20 | 7.26 |
| MW8A | 5/19/2006 | 14.84 | 4.32 | 10.52 |
| MW8B | 5/19/2006 | 15.05 | 8.31 | 6.74 |
| MW9A | 5/19/2006 | 16.11 | 3.82 | 12.29 |
| MW9B | 5/19/2006 | 16.20 | 8.82 | 7.38 |
| MW9C | 5/19/2006 | 15.89 | 8.20 | 7.69 |
| MWP1 | 5/19/2006 | 16.33 | 4.02 | 12.31 |
| NW-1 | 5/19/2006 | 15.43 | 4.21 | 11.22 |
| NW-2 | 5/19/2006 | 16.00 | 4.64 | 11.36 |
| NW-3 | 5/19/2006 | 14.00 | 1.97 | 12.03 |
| NW-4 | 5/19/2006 | 16.03 | 3.92 | 12.11 |
| PZ1 | 5/19/2006 | 14.04 | 2.15 | 11.89 |
| PZ10 | 5/19/2006 | 16.27 | 4.00 | 12.27 |
| PZ11 | 5/19/2006 | 16.19 | 5.42 | 10.77 |
| PZ12 | 5/19/2006 | 16.33 | 5.03 | 11.30 |
| PZ13 | 5/19/2006 | 16.20 | 4.43 | 11.77 |
| PZ14 | 5/19/2006 | 16.25 | 4.47 | 11.78 |
| PZ2 | 5/19/2006 | 14.04 | 3.22 | 10.82 |
| PZ3 | 5/19/2006 | 13.11 | 0.45 | 12.66 |
| PZ4 | 5/19/2006 | 13.17 | 0.92 | 12.25 |
| PZ5 | 5/19/2006 | 16.51 | 4.60 | 11.91 |
| PZ6 | 5/19/2006 | 16.75 | 4.35 | 12.40 |
| PZ7 | 5/19/2006 | 16.28 | 4.60 | 11.68 |
| PZ8 | 5/19/2006 | 14.50 | 3.92 | 10.58 |
| PZ9 | 5/19/2006 | 13.98 | 7.45 | 6.53 |
| SW-1 | 5/19/2006 | 15.20 | 3.13 | 12.07 |
| SW-2 | 5/19/2006 | 16.08 | 4.23 | 11.85 |
| SW-3 | 5/19/2006 | 15.64 | 2.53 | 13.11 |
| SW-4 | 5/19/2006 | 16.06 | 3.59 | 12.47 |
| WW-1 | 5/19/2006 | 13.79 | 3.04 | 10.75 |
| WW-2 | 5/19/2006 | 14.05 | 3.71 | 10.34 |
| WW-3 | 5/19/2006 | 12.73 | 0.85 | 11.88 |
| WW-4 | 5/19/2006 | 12.90 | 2.71 | 10.19 |
| D-1 | 12/13/2005 | 13.02 | 2.71 | 10.31 |
| EW-1 | 12/13/2005 | 12.86 | 2.19 | 10.67 |
| EW-2 | 12/13/2005 | 15.05 | 4.72 | 10.33 |
| F1 | 12/13/2005 | 15.93 | 5.04 | 10.89 |
| F2 | 12/13/2005 | 15.96 | 4.43 | 11.53 |
| F3 | 12/13/2005 | 15.85 | 4.89 | 10.96 |
| F4 | 12/13/2005 | 15.91 | 4.31 | 11.60 |
| F5 | 12/13/2005 | 16.03 | 4.16 | 11.87 |
| F6 | 12/13/2005 | 16.04 | 3.68 | 12.36 |
| F7 | 12/13/2005 | 16.16 | 4.53 | 11.63 |
| MW10A | 12/13/2005 | 14.56 | 4.08 | 10.48 |
| MW11A | 12/13/2005 | 16.03 | 5.35 | 10.68 |

**Appendix C**
**Summary of Historical Groundwater Elevations**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| Location ID | Measurement Date | Reference Elevation (ft NAVD88) | Depth to Water (ft) | Water Level Elevation (ft NAVD88) |
|---|---|---|---|---|
| MW11B | 12/13/2005 | 15.93 | 8.87 | 7.06 |
| MW12A | 12/13/2005 | 14.17 | 2.78 | 11.39 |
| MW12B | 12/13/2005 | 13.98 | 7.18 | 6.80 |
| MW13A | 12/13/2005 | 13.05 | 2.68 | 10.37 |
| MW13B | 12/13/2005 | 13.22 | 6.67 | 6.55 |
| MW1A | 12/13/2005 | 13.64 | 4.61 | 9.03 |
| MW1B | 12/13/2005 | 14.38 | 7.51 | 6.87 |
| MW1D | 12/13/2005 | 15.44 | 8.20 | 7.24 |
| MW1S | 12/13/2005 | 15.56 | 4.86 | 10.70 |
| MW2A | 12/13/2005 | 10.97 | 0.36 | 10.61 |
| MW2B | 12/13/2005 | 11.03 | 2.31 | 8.72 |
| MW2D | 12/13/2005 | 12.70 | 6.16 | 6.54 |
| MW2S | 12/13/2005 | 12.23 | 1.98 | 10.25 |
| MW3A | 12/13/2005 | 13.87 | 3.09 | 10.78 |
| MW3B | 12/13/2005 | 14.06 | 6.03 | 8.03 |
| MW3D | 12/13/2005 | 13.07 | 6.58 | 6.49 |
| MW3S | 12/13/2005 | 12.91 | 2.66 | 10.25 |
| MW4A | 12/13/2005 | 12.56 | 5.36 | 7.20 |
| MW4B | 12/13/2005 | 12.58 | 6.77 | 5.81 |
| MW4C | 12/13/2005 | 12.68 | 5.67 | 7.01 |
| MW4D | 12/13/2005 | 13.60 | 7.04 | 6.56 |
| MW4F | 12/13/2005 | 15.43 | 8.15 | 7.28 |
| MW4S | 12/13/2005 | 14.33 | 6.41 | 7.92 |
| MW5A | 12/13/2005 | 15.54 | 3.89 | 11.65 |
| MW5B | 12/13/2005 | 16.68 | 9.35 | 7.33 |
| MW5D | 12/13/2005 | 12.71 | 6.37 | 6.34 |
| MW5S | 12/13/2005 | 13.08 | 2.82 | 10.26 |
| MW6A | 12/13/2005 | 12.95 | 1.98 | 10.97 |
| MW6B | 12/13/2005 | 12.95 | 5.46 | 7.49 |
| MW6C | 12/13/2005 | 12.93 | 5.48 | 7.45 |
| MW6D | 12/13/2005 | 13.82 | 7.50 | 6.32 |
| MW6S | 12/13/2005 | 13.58 | 7.00 | 6.58 |
| MW7A | 12/13/2005 | 12.75 | 2.49 | 10.26 |
| MW7B | 12/13/2005 | 13.01 | 6.11 | 6.90 |
| MW7C | 12/13/2005 | 12.46 | 5.42 | 7.04 |
| MW8A | 12/13/2005 | 14.84 | 4.64 | 10.20 |
| MW8B | 12/13/2005 | 15.05 | 8.54 | 6.51 |
| MW9A | 12/13/2005 | 16.11 | 4.15 | 11.96 |
| MW9B | 12/13/2005 | 16.20 | 9.00 | 7.20 |
| MW9C | 12/13/2005 | 15.89 | 8.36 | 7.53 |
| MWP1 | 12/13/2005 | 16.33 | 4.64 | 11.69 |
| NW-1 | 12/13/2005 | 15.43 | 4.68 | 10.75 |
| NW-2 | 12/13/2005 | 16.00 | 5.18 | 10.82 |
| NW-3 | 12/13/2005 | 14.00 | 2.54 | 11.46 |
| NW-4 | 12/13/2005 | 16.03 | 4.43 | 11.60 |
| PZ1 | 12/13/2005 | 14.04 | 2.81 | 11.23 |
| PZ10 | 12/13/2005 | 16.27 | 4.04 | 12.23 |
| PZ11 | 12/13/2005 | 16.19 | 6.02 | 10.17 |
| PZ12 | 12/13/2005 | 16.33 | 5.77 | 10.56 |
| PZ13 | 12/13/2005 | 16.20 | 5.29 | 10.91 |
| PZ14 | 12/13/2005 | 16.25 | 4.85 | 11.40 |
| PZ2 | 12/13/2005 | 14.04 | 3.57 | 10.47 |
| PZ3 | 12/13/2005 | 13.11 | 2.28 | 10.83 |
| PZ4 | 12/13/2005 | 13.17 | 2.53 | 10.64 |
| PZ5 | 12/13/2005 | 16.51 | 5.52 | 10.99 |
| PZ6 | 12/13/2005 | 16.75 | 5.06 | 11.69 |
| PZ7 | 12/13/2005 | 16.28 | 5.19 | 11.09 |
| PZ8 | 12/13/2005 | 14.50 | 3.94 | 10.56 |
| PZ9 | 12/13/2005 | 13.98 | 3.36 | 10.62 |
| SW-1 | 12/13/2005 | 15.20 | 4.23 | 10.97 |
| SW-2 | 12/13/2005 | 16.08 | 4.67 | 11.41 |
| SW-3 | 12/13/2005 | 15.64 | 3.72 | 11.92 |
| SW-4 | 12/13/2005 | 16.06 | 4.04 | 12.02 |
| WW-1 | 12/13/2005 | 13.79 | 4.73 | 9.06 |
| WW-2 | 12/13/2005 | 14.05 | 5.00 | 9.05 |
| WW-3 | 12/13/2005 | 12.73 | 0.04 | 12.69 |
| WW-4 | 12/13/2005 | 12.90 | 3.09 | 9.81 |
| MW1A | 9/30/2005 | 13.64 | 5.56 | 8.08 |
| MW1B | 9/30/2005 | 14.38 | 8.79 | 5.59 |
| MW1D | 9/30/2005 | 15.44 | 10.11 | 5.33 |
| MW1S | 9/30/2005 | 15.56 | 6.75 | 8.81 |
| MW2A | 9/30/2005 | 10.97 | 1.45 | 9.52 |
| MW2B | 9/30/2005 | 11.03 | 4.01 | 7.02 |
| MW2D | 9/30/2005 | 12.70 | 7.66 | 5.04 |
| MW2S | 9/30/2005 | 12.23 | 3.65 | 8.58 |
| MW3A | 9/30/2005 | 13.87 | 4.29 | 9.58 |
| MW3B | 9/30/2005 | 14.06 | 7.90 | 6.16 |
| MW3D | 9/30/2005 | 13.07 | 8.19 | 4.88 |
| MW3S | 9/30/2005 | 12.91 | 4.58 | 8.33 |
| MW4A | 9/30/2005 | 12.56 | 3.60 | 8.96 |
| MW4B | 9/30/2005 | 12.58 | 7.12 | 5.46 |
| MW4D | 9/30/2005 | 13.60 | 8.70 | 4.90 |
| MW4S | 9/30/2005 | 14.33 | 8.73 | 5.60 |

**Appendix C**
**Summary of Historical Groundwater Elevations**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| Location ID | Measurement Date | Reference Elevation (ft NAVD88) | Depth to Water (ft) | Water Level Elevation (ft NAVD88) |
|---|---|---|---|---|
| MW5A | 9/30/2005 | 15.54 | 5.38 | 10.16 |
| MW5B | 9/30/2005 | 16.68 | 10.97 | 5.71 |
| MW5D | 9/30/2005 | 12.71 | 7.98 | 4.73 |
| MW5S | 9/30/2005 | 13.08 | 4.81 | 8.27 |
| MW6A | 9/30/2005 | 12.95 | 3.74 | 9.21 |
| MW6B | 9/30/2005 | 12.95 | 8.35 | 4.60 |
| MW6D | 9/30/2005 | 13.82 | 8.80 | 5.02 |
| MW6S | 9/30/2005 | 13.58 | 8.75 | 4.83 |
| MW7A | 9/30/2005 | 12.75 | 4.15 | 8.60 |
| MW7B | 9/30/2005 | 13.01 | 7.73 | 5.28 |
| MW8A | 9/30/2005 | 14.84 | 6.39 | 8.45 |
| MW8B | 9/30/2005 | 15.05 | 9.95 | 5.10 |
| MW1D | 8/5/2005 | 15.45 | 9.18 | 6.27 |
| MW1S | 8/5/2005 | 15.57 | 5.62 | 9.95 |
| MW2D | 8/5/2005 | 12.71 | 6.81 | 5.90 |
| MW2S | 8/5/2005 | 12.24 | 2.61 | 9.63 |
| MW3D | 8/5/2005 | 13.08 | 7.42 | 5.66 |
| MW3S | 8/5/2005 | 12.92 | 3.56 | 9.36 |
| MW4D | 8/5/2005 | 13.61 | 7.86 | 5.75 |
| MW4F | 8/5/2005 | 14.76 | 9.07 | 5.69 |
| MW4S | 8/5/2005 | 14.34 | 7.46 | 6.88 |
| MW5D | 8/5/2005 | 12.72 | 7.14 | 5.58 |
| MW5S | 8/5/2005 | 13.09 | 3.72 | 9.37 |
| MW6D | 8/5/2005 | 13.83 | 8.14 | 5.69 |
| MW6S | 8/5/2005 | 13.59 | 7.94 | 5.65 |
| MW7D | 8/5/2005 | 10.95 | 5.52 | 5.43 |
| MW8D | 8/5/2005 | 8.59 | 2.76 | 5.83 |
| MW9D | 8/5/2005 | 11.60 | 5.81 | 5.79 |
| MW1D | 4/19/2004 | 15.45 | 7.73 | 7.72 |
| MW1S | 4/19/2004 | 15.57 | 3.93 | 11.64 |
| MW2D | 4/19/2004 | 12.71 | 5.41 | 7.30 |
| MW2S | 4/19/2004 | 12.24 | 1.16 | 11.08 |
| MW3D | 4/19/2004 | 13.08 | 5.72 | 7.36 |
| MW3S | 4/19/2004 | 12.92 | 1.52 | 11.40 |
| MW4D | 4/19/2004 | 13.61 | 5.21 | 8.40 |
| MW4S | 4/19/2004 | 14.34 | 4.71 | 9.63 |
| MW5D | 4/19/2004 | 12.72 | 5.54 | 7.18 |
| MW5S | 4/19/2004 | 13.09 | 1.74 | 11.35 |
| MW6D | 4/19/2004 | 13.83 | 6.36 | 7.47 |
| MW6S | 4/19/2004 | 13.59 | 6.17 | 7.42 |
| MW1A | 1/20/2004 | 13.64 | 4.34 | 9.30 |
| MW1B | 1/20/2004 | 14.38 | 7.33 | 7.05 |
| MW1D | 1/20/2004 | 15.44 | 8.22 | 7.22 |
| MW1S | 1/20/2004 | 15.56 | 4.70 | 10.86 |
| MW2A | 1/20/2004 | 10.97 | 0.85 | 10.12 |
| MW2B | 1/20/2004 | 11.03 | 3.05 | 7.98 |
| MW2D | 1/20/2004 | 12.70 | 5.74 | 6.96 |
| MW2S | 1/20/2004 | 12.23 | 1.82 | 10.41 |
| MW3A | 1/20/2004 | 13.87 | 3.26 | 10.61 |
| MW3B | 1/20/2004 | 14.06 | 5.09 | 8.97 |
| MW3D | 1/20/2004 | 13.07 | 6.41 | 6.66 |
| MW3S | 1/20/2004 | 12.91 | 2.78 | 10.13 |
| MW4A | 1/20/2004 | 12.56 | 2.31 | 10.25 |
| MW4B | 1/20/2004 | 12.58 | 4.76 | 7.82 |
| MW4D | 1/20/2004 | 13.60 | 6.90 | 6.70 |
| MW4S | 1/20/2004 | 14.33 | 6.12 | 8.21 |
| MW5A | 1/20/2004 | 15.54 | 3.32 | 12.22 |
| MW5B | 1/20/2004 | 16.68 | 9.21 | 7.47 |
| MW5D | 1/20/2004 | 12.71 | 6.12 | 6.59 |
| MW5S | 1/20/2004 | 13.08 | 2.87 | 10.21 |
| MW6A | 1/20/2004 | 12.95 | 1.89 | 11.06 |
| MW6B | 1/20/2004 | 12.95 | 5.49 | 7.46 |
| MW6D | 1/20/2004 | 13.82 | 6.85 | 6.97 |
| MW6S | 1/20/2004 | 13.58 | 6.92 | 6.66 |
| MW7A | 1/20/2004 | 12.75 | 1.86 | 10.89 |
| MW7B | 1/20/2004 | 13.01 | 5.84 | 7.17 |
| MW8A | 1/20/2004 | 14.84 | 4.79 | 10.05 |
| MW8B | 1/20/2004 | 15.05 | 7.96 | 7.09 |
| MW1A | 12/22/2003 | 13.64 | 3.91 | 9.73 |
| MW1B | 12/22/2003 | 14.38 | 6.78 | 7.60 |
| MW1D | 12/22/2003 | 15.44 | 7.52 | 7.92 |
| MW1S | 12/22/2003 | 15.56 | 3.88 | 11.68 |
| MW2A | 12/22/2003 | 10.97 | 0.06 | 10.91 |
| MW2B | 12/22/2003 | 11.03 | 1.89 | 9.14 |
| MW2D | 12/22/2003 | 12.70 | 2.32 | 10.38 |
| MW2S | 12/22/2003 | 12.23 | 1.13 | 11.10 |
| MW3A | 12/22/2003 | 13.87 | 2.32 | 11.55 |
| MW3B | 12/22/2003 | 14.06 | 5.09 | 8.97 |
| MW3D | 12/22/2003 | 13.07 | 5.49 | 7.58 |
| MW3S | 12/22/2003 | 12.91 | 1.79 | 11.12 |
| MW4A | 12/22/2003 | 12.56 | 2.31 | 10.25 |
| MW4B | 12/22/2003 | 12.58 | 4.76 | 7.82 |
| MW4D | 12/22/2003 | 13.60 | 6.08 | 7.52 |

**Appendix C**
**Summary of Historical Groundwater Elevations**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| Location ID | Measurement Date | Reference Elevation (ft NAVD88) | Depth to Water (ft) | Water Level Elevation (ft NAVD88) |
|---|---|---|---|---|
| MW4S | 12/22/2003 | 14.33 | 4.38 | 9.95 |
| MW5A | 12/22/2003 | 15.54 | 3.32 | 12.22 |
| MW5B | 12/22/2003 | 16.68 | 8.54 | 8.14 |
| MW5D | 12/22/2003 | 12.71 | 5.31 | 7.40 |
| MW5S | 12/22/2003 | 13.08 | 1.85 | 11.23 |
| MW6A | 12/22/2003 | 12.95 | 0.13 | 12.82 |
| MW6B | 12/22/2003 | 12.95 | 4.00 | 8.95 |
| MW6D | 12/22/2003 | 13.82 | 6.25 | 7.57 |
| MW6S | 12/22/2003 | 13.58 | 6.10 | 7.48 |
| MW7A | 12/22/2003 | 12.75 | 0.93 | 11.82 |
| MW7B | 12/22/2003 | 13.01 | 5.18 | 7.83 |
| MW8A | 12/22/2003 | 14.84 | 3.95 | 10.89 |
| MW8B | 12/22/2003 | 15.05 | 7.31 | 7.74 |

**Notes:**
ft - feet
NAVD88 - North American Vertical Datum of 1988

# Appendix D

# Summary of Pressure Transducer Data – June 2016 to June 2017

**Appendix D.1**
**Summary of Pressure Transducer Data**
**Groundwater Remedial Investigation**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| Well Pair | Average Vertical Hydraulic Gradient (ft/ft) | Percentage of Time Vertical Gradient is Negative |
|---|---|---|
| 114-P1B-MW101S/I | -0.132 | 100 |
| 114-P1B-MW102S/I | -0.035 | 99.5 |
| 114-P1C-MW101S/I | -0.006 | 85.1 |
| 114-P2A-MW103S/I | -0.007 | 65.6 |
| 114-P2B1-MW101S/I | -0.013 | 94.2 |
| 114-P2B3-MW101S/I | -0.025 | 99.3 |
| 114-P2B4-MW102S/I | -0.044 | 99.2 |
| 132-P3A-MW102S/I | -0.101 | 100 |
| 132-P3A-MW104S/I | -0.074 | 100 |
| 137-P3B-MW102S/I | -0.042 | 81.3 |
| 114-MC-PZ103/MW-MORRIS1A | 0.006 | 18.0 |

**Notes:**
1. This table presents a statistical summary of the data obtained from pressure transducers deployed at the listed wells between June 2016 and June 2017.
2. A negative vertical gradient indicates downward groundwater flow.
ft = feet

Site 186

NJ TRANSIT LIGHT RAIL LINE

Site 199

114-P1C-MW101S
114-P1C-MW101I

114-P2B1-MW101S
114-P2B1-MW101I

MW-MORRIS1A
114-MC-PZ103

GARFIELD AVENUE

FORREST STREET

114-P1B-MW101I
114-P1B-MW101S

Site 114

114-P2A-MW103S
114-P2A-MW103I

114-P1B-MW102I
114-P1B-MW102S

114-P2B3-MW101I
114-P2B3-MW101S

HALLADAY STREET

Site 143

CARTERET AVENUE

GARFIELD AVENUE

132-P3A-MW102I
132-P3A-MW102S

Site 132

PACIFIC AVENUE

114-P2B4-MW102S
114-P2B4-MW102I

132-P3A-MW104S
132-P3A-MW104I

Site 137

137-P3B-MW102S
137-P3B-MW102I

HALLADAY STREET

Site 133 East

Site 135

Site 133 West

PACIFIC AVENUE

CAVEN POINT AVENUE

**Map Sources:**
1. New Jersey State Plane North American Datum 1983 Coordinates (NAD83), U.S. Survey Feet.
2. Parcels of Hudson County, New Jersey State Plane NAD83, Hudson County Department of Planning, Jersey City, New Jersey, May 21, 2013.

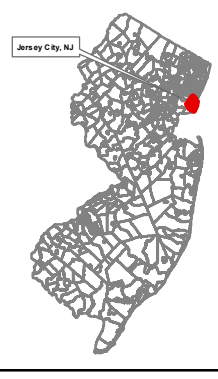


**LEGEND**

- Garfield Avenue Group Boundary
- Hudson County Parcels
- Railroad Tracks
- Shallow Monitoring Well
- Intermediate Monitoring Well

N W E S

0 75 150 Feet

AECOM

PPG
GARFIELD AVENUE GROUP
JERSEY CITY, NEW JERSEY
60550261

DATE: 9/30/2020 | DRAWN BY: SR | CHECKED BY: FS

APPENDIX D.2
LOCATIONS OF MONITORING WELLS
WITH PRESSURE TRANSDUCERS

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# Appendix E

# Implications of Soil Heterogeneities on Fate and Transport

# APPENDIX E – Implication of Soil Heterogeneities on Fate and Transport

## I. Relationship Between Soil Heterogeneities and Fate and Transport

## II. Matrix Diffusion Modeling – $Cr^{+6}$ Distribution and Future Transport

## I. Relationship Between Soil Heterogeneities and Fate and Transport

During implementation of the Phase II and Phase III IRM remediation and monitoring well networks, approximately 2,824 vertical feet of HPT boring was conducted at 54 different locations. Vertical depths ranged from approximately 22.08 feet (ft) below ground surface (bgs) to 85.05 feet bgs (-9.4 ft NAVD88 to -73.95 ft NAVD88). These borings were performed to obtain high-resolution hydraulic conductivity data within the Phase II and III IRM areas. This high-resolution IRM characterization information improved the understanding of site stratigraphic resolution and heterogeneities in the intermediate and deep water-bearing zones. The hydraulic conductivity response measured via HPT is obtained via minor injections of water from the tooling along the vertical extent of the boring, with concurrent measurements of downhole pressure change. This methodology has sufficient resolution to reliably identify hydraulic conductivity differences throughout the vertical extent of each boring. Outputs from the Phase II and III IRM HPT borings are included on **Figures E1** through **E33** and **Figures E34** through **E54**, respectively.

The data from individual high-resolution HPT borings are useful in understanding changes in relative permeability and apparent differences in boring-specific groundwater and Cr flux. A review of these individual borings also provides a clear indication that the migration of groundwater and Cr at Site 114 is not uniform. To support this analysis, the direct hydraulic conductivity data obtained from each HPT profile were sorted using a cumulative distribution function ($CDF_K$) plot to group individual aquifer fractions for relative permeability evaluation (see inset example at right) (Horst et al. 2017[1]). The $CDF_K$ figures are an effective method to sort and understand the relative fraction of hydraulic conductivity distribution on the y-axis (0.0 to 1.0) with the corresponding boring thickness along the x-axis. This improves visualization of the order of magnitude differences in hydraulic conductivity data to identify the fraction of the groundwater flow (approximated from the hydraulic conductivity) that occurs across the boring thickness. Based on the relative hydraulic conductivities observed across each HPT profile, the order of magnitude differences in relative permeability are illustrated by sorting them from most permeable to least permeable into three compartments: C1, C2, and C3. Given the order of magnitude changes between each compartment, these compartments identify the overall fraction of the soil profile through which 90%, 9%, and 1%, respectively, of the groundwater flux moves through Site 114 soils. In the inset figure at right for boring 114-P2-IRM-32D, the C1 compartment representing 90% of the flux ($CDF_K$ between 0.0 – 0.9) is encountered across

**Cumulative distribution function plot for 114-P2-IRM-32D**

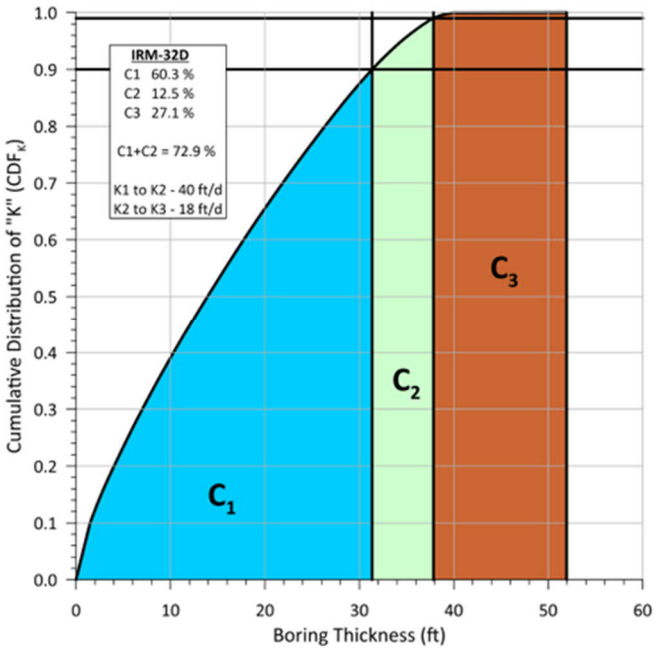


[1] Horst, J., S. Potter, M. Schnobrich, N. Welty, A. Gupta, and J. Quinan. 2017. *Advancing Contaminant Mass Flux Analysis to Focus Remediation: The Three-Compartment Model. Groundwater Monitoring & Remediation 37, no. 4, Fall.*

approximately 31 feet of the boring, the C2 compartment representing 9% of the flux ($CDF_K$ between 0.90 – 0.99) is encountered across 7 feet of the boring, and the C3 compartment representing 1% of the flow ($CDF_K$ between 0.99 – 1.0) is encountered across 14 feet of the boring.

C1 and C3 are separated by two orders of magnitude difference in relative permeability, which defines the difference between advection (C1) and diffusion (C3) transport processes (ESTCP 2012[2]). C2 resides between these two zones and is dominated by slow advection processes. Both advection-dominated zones (C1 and C2) can be considered permeable, whereas the diffusion-dominated zone (C3) can be considered to have little to no permeability. The net result for the inset example on the previous page is that 38 feet of the boring (73%) consists of permeable soils and 14 feet of the boring (27%) consists of soils with little to no permeability.

A summary of the $CDF_K$ plot output metrics for each of the Phase II and III IRM borings are presented in **Tables E1** and **E2**. When the individual borings are sorted via the above methods, the total 1,560 feet of Phase II IRM HPT borings indicate that approximately 852 feet (55%) are identified as C1 soils, 306 feet (20%) are identified as C2 soils, and 401 feet (25%) are identified as C3 soils (**Table E1**). Similarly, the total 1,264 feet of Phase III IRM HPT borings indicate that approximately 693 feet (55%) are identified as C1 soils, 203 feet (16%) are identified as C2 soils, and 368 feet (29%) are identified as C3 soils (**Table E2**). The compiled totals for each zone in the Phase II and Phase III IRM borings are considered equivalent considering the heterogeneities of the GAG site soils. Combining all 2,824 feet of HPT boring information from both Phase II and III IRM areas, approximately 73% of the intermediate and deep water-bearing zones soils are considered permeable and 27% of these soils are characterized by little to no permeability.

[2] ESTCP, 2012. Farhat, S.K., C.J. Newell, T.C. Sale, D.S. Dandy, J.J. Wahlberg, M.A. Seyedabbasi, J.M. McDade, and N.T. Mahler. *Matrix Diffusion Toolkit, developed for the Environmental Security Technology Certification Program (ESTCP) by GSI Environmental Inc., Houston, Texas*. 2012.

## II. Matrix Diffusion Modeling – $Cr^{+6}$ Distribution and Future Transport

To understand the effects of diffusive $Cr^{+6}$ mass discharge from the low permeability strata of the intermediate and deep water-bearing zones, two different matrix diffusion modeling methods were used to simulate both the loading and release phases between higher permeability and adjacent low permeability soils. These include a Numerical Diffusion Model developed by Arcadis as well as the Matrix Diffusion Toolkit (ESTCP 2012[3]). These models were designed to evaluate matrix diffusion relationships between soils of varied relative permeability. Both models leverage a loading phase wherein a groundwater analyte migrates via diffusion from a higher permeability advection zone into a lower permeability diffusion zone. The loading phase is then followed by a subsequent diffusion phase to assess: 1) mass discharge from the low permeability to the high permeability zone (i.e., back or reverse diffusion); and 2) continued diffusion deeper into the low permeability zone (i.e., forward diffusion).

Both models were set up using a range of parameters applicable to understanding diffusion at and near Site 114. The advective zone was assumed to be 10 feet (ft) thick with an average groundwater flow velocity of 0.01 ft/day. Groundwater velocity was determined within the sheet pile area using a hydraulic conductivity value of 5 ft per day, a gradient of 0.00025 ft per ft, and a mobile porosity of 12.5%. This slow flow rate is considered representative of flow within the sheet pile, but groundwater velocity does not have a significant bearing on the diffusion model outputs. The underlying mass storage zone was represented by a 10 ft thick clay unit with a total porosity (n) of 40% and no advective flow (Text Figure 1). While many of the clay sequences identified in the intermediate and deep water-bearing-zones are thinner than 10 ft, this thickness was selected to understand the extent of $Cr^{+6}$ diffusion over the modeled durations knowing that the outputs can therefore be applied to any other clay sequence of comparable or thinner thickness. An effective diffusivity ($D_e$) term of 5.60E-6 $cm^2$/sec was assigned for $Cr^{+6}$ based on the diffusivity (D) term of chloride in water value of 1.89E-5 $cm^2$/sec (Cussler, 1984[4]) using the equation $D_e = D^*n^{1.33}$.

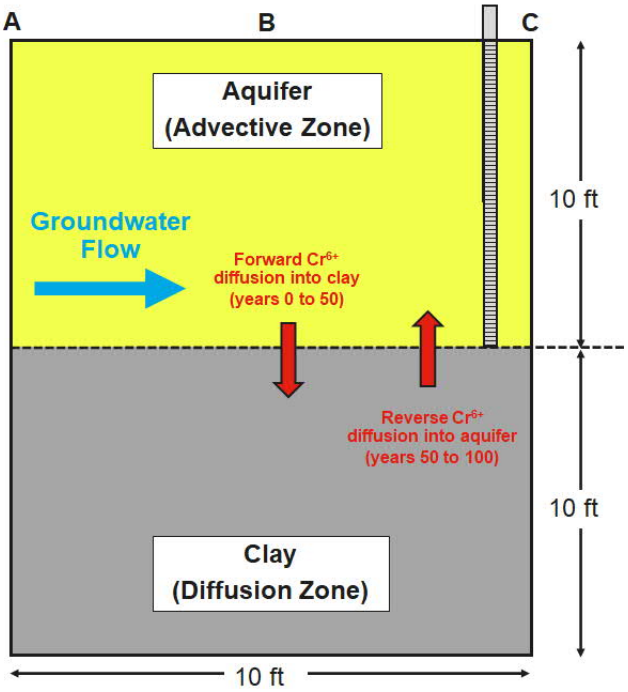


**Text Figure 1 – Conceptual numerical model domain**

To simulate the forward diffusion of $Cr^{+6}$ from the advective zone to the mass storage zone, a fixed concentration of 100 milligrams per liter (mg/L) $Cr^{+6}$ was simulated in the advective zone for a period of 50 years. The 100 mg/L $Cr^{+6}$ concentration was selected as it applies to most of the impacted groundwater area at Site 114. Investigation data have demonstrated that $Cr^{+6}$ concentrations are higher

[3] ESTCP, 2012. Farhat, S.K., C.J. Newell, T.C. Sale, D.S. Dandy, J.J. Wahlberg, M.A. Seyedabbasi, J.M. McDade, and N.T. Mahler, 2012. Matrix Diffusion Toolkit, developed for the Environmental Security Technology Certification Program (ESTCP) by GSI Environmental Inc., Houston, Texas.

[4] Cussler, E.L. 1984. Diffusion: Mass transfer in fluid systems. Cambridge University Press.

than this in select areas of the site and have also demonstrated that $Cr^{+6}$ attenuates in concentration with increased depth in other areas. Ultimately, the resulting outputs of the matrix diffusion modeling programs are proportional to the starting concentration, so can be easily modified based on the assumed starting concentration relative to that applied for the model. As an example, if 200 mg/L was used as the loading concentration, the model outputs would be two-fold higher than the concentration obtained using a 100 mg/L loading value. Given the spatial and vertical variability of $Cr^{+6}$ at the site, the 100 mg/L number therefore serves as a representative midpoint of what is found at Site 114 and is easily scalable to guide interpretations. While chromite ore processing predates the assumed timeframe of the 50-year loading period, it is challenging to pinpoint exactly when dissolved $Cr^{+6}$ migrated through the shallow zone, the meadow mat, and then the more permeable soils of the intermediate and deep water-bearing-zones where it began diffusing into lower permeability soils. Based on plume dynamics, it is expected that $Cr^{+6}$ transport would have started at lower concentrations and then built in $Cr^{+6}$ concentration over time. Given that the 50-year modeling duration assumes a stable $Cr^{+6}$ concentration (100 mg/L) and that diffusion is concentration dependent, the 50-year duration was chosen to account for the dynamics of early $Cr^{+6}$ plume invasion and to allow a long enough timeframe to understand matrix diffusion effects. Considering that the outputs of both models demonstrate that 50 years is sufficient longevity for $Cr^{+6}$ diffusion through the 10-ft clay zone, variability around the 50-year timeframe does not substantively affect the analysis.

The final modeling step included a step governed by diffusion only. After the loading period of 50 years, the advective zone $Cr^{+6}$ source concentration in both models was set to 0 mg/L to allow projection of the future mass discharge of $Cr^{+6}$ from the low permeability soils back into the advective zone. This reverse modeling portion was run for an additional 50 years. The outputs of both models employed are outlined in the sections below.

## Numerical Modeling Approach

For the numerical modeling simulation, the model domain established as outlined on the previous page and used to simulate 100 years of diffusion split between both the forward and reverse diffusion stages. The model was constructed in accordance with Text Figure 1 and with the model parameters stated on the previous page to allow evaluation of differences in diffusion profiles along a plume flow path (locations B and C) downgradient of the initial source (location A).

The results profiles for locations B and C are plotted on the following page. Solid lines represent incremental 5-year intervals during the forward diffusion phase and dashed lines represent the projections once the $Cr^{+6}$ concentration in the permeable zone is reduced to 0 mg/L after year 50.

The profiles on Text Figures 2 and 3 show that during the 50-year loading period, $Cr^{+6}$ concentrations are expected to gradually diffuse into at least 10 feet of lower permeability soils where they decline in concentration with depth. Following reduction of the $Cr^{+6}$ concentration to 0 mg/L after year 50, the reverse diffusion period begins and lower concentrations of $Cr^{+6}$ are predicted within the advective zone just above the interface. The highest mass discharge from the low permeability zone into the advective zone occurs immediately following source removal (years 51 through 55), following which mass discharge release from the low permeability soils declines. This decrease in mass discharge occurs due to the reduced concentrations of $Cr^{+6}$ at the diffusion zone interface associated with the loss of $Cr^{+6}$ from the low to high permeability zones and the further diffusion of $Cr^{+6}$ deeper into the low permeability zone. This pattern progresses with time, with sequential declines in mass discharge from low to high permeability zones and the gradual downward migration of the center of $Cr^{+6}$ mass into the low permeability zone where it stabilizes. While modeled for a 10-foot sequence of low permeability zone soils, this same relative pattern would be expected in zones that are both narrower or thicker in vertical thickness.

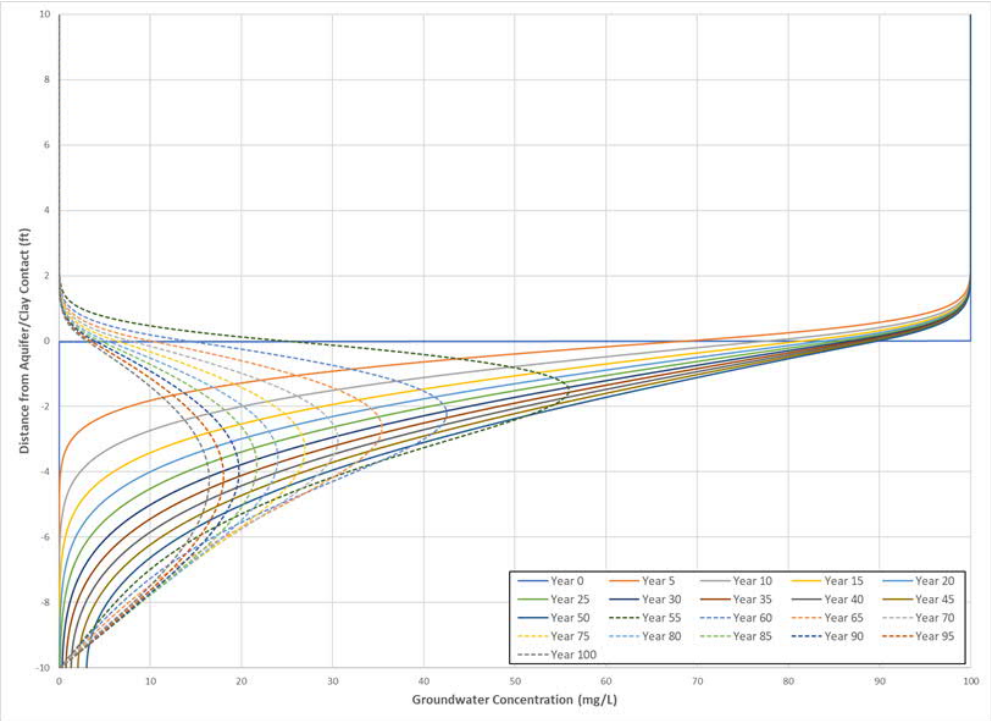


**Text Figure 2 – Forward and reverse diffusion projections for 100-year model duration 5 ft downgradient from source (B).**

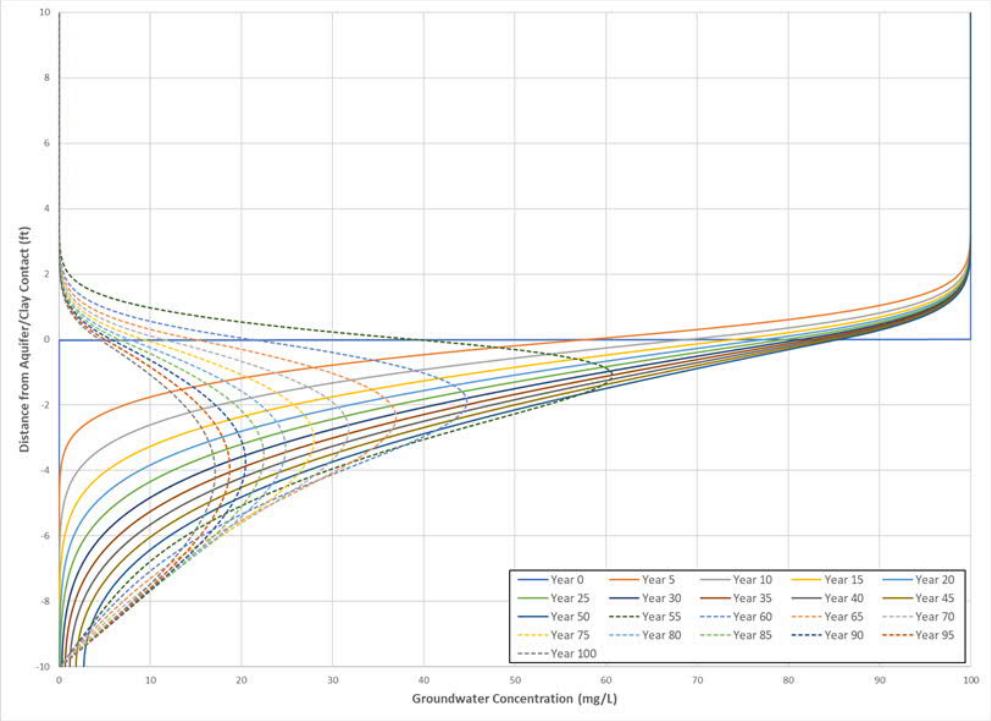


**Text Figure 3 – Forward and reverse diffusion projections for 100-year model duration 10 ft downgradient from source (C).**

The mass discharge profiles modeled on the previous page can be leveraged to calculate the expected $Cr^{+6}$ concentration in advection zone groundwater for each of the 5-year time periods between year 50 and 100. The graph presented on Text Figure 4 includes the predicted concentration in a theoretical monitoring well installed at both locations B and C and screened across 10 ft of the advection zone.

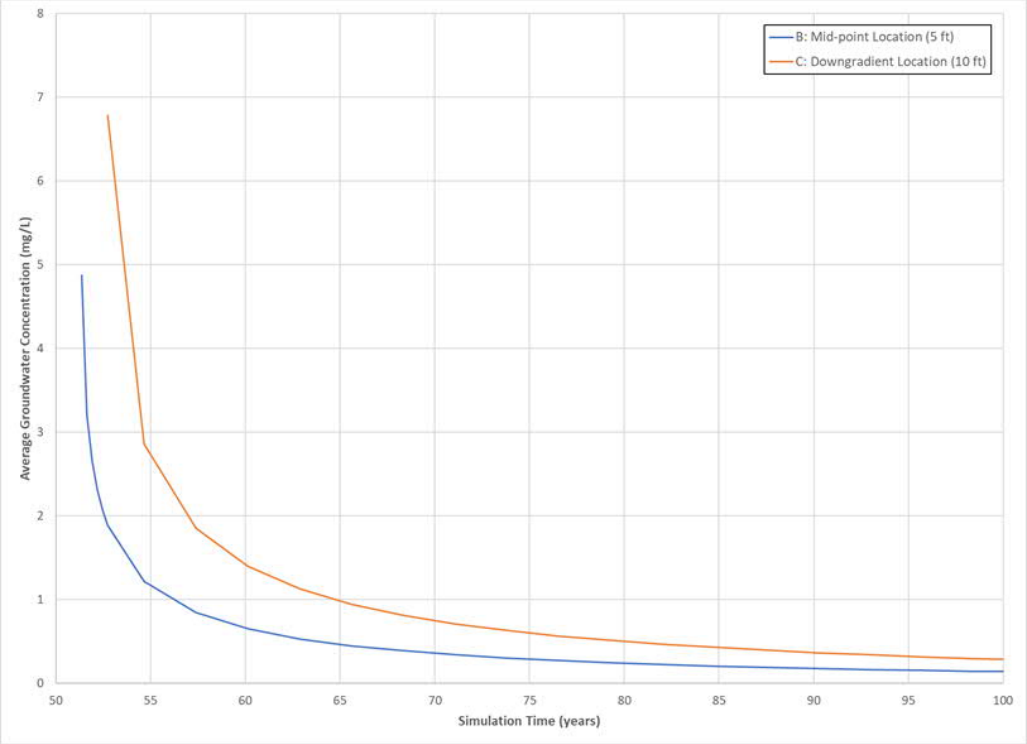


**Text Figure 4 – Predicted $Cr^{+6}$ concentrations at two theoretical monitoring wells installed at locations 5 ft (B) and 10 ft (C) within the model domain.**

## Matrix Diffusion Toolkit Application

The second model used to assess both forward and reverse $Cr^{+6}$ diffusion was the Matrix Diffusion Toolkit, which is an industry-accepted and publicly available method served to validate the simulations of the first modeling approach. The estimates were developed using the square root model input parameters, the same model domain size specifications, and the same source $Cr^{+6}$ concentration as outlined in the preceding section. The modeling process adhered to the guidance provided and used the Dandy-Sale Model (DSM) approach. The conceptual modeling approach related to both source loading and diffusion phases is outlined on Text Figure 5 at right.

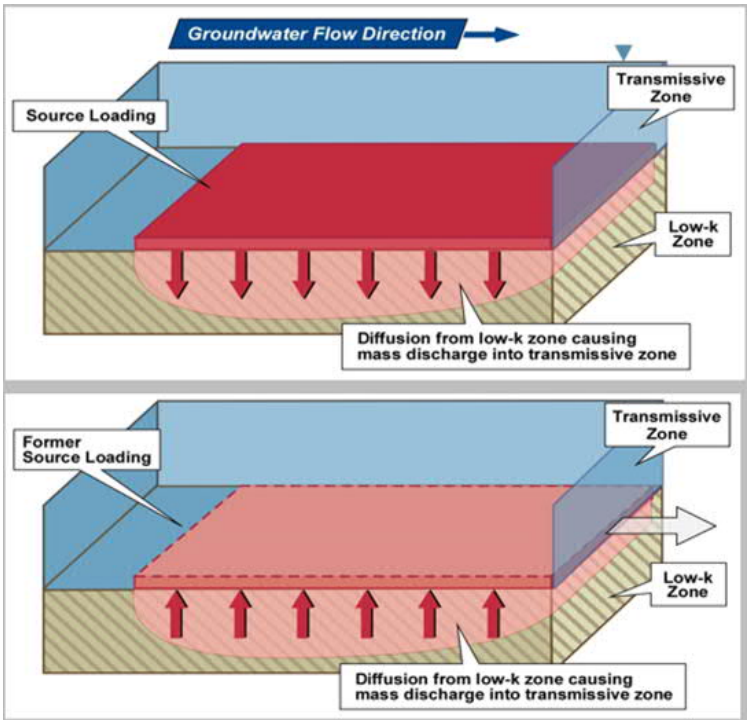


**Text Figure 5 - Dandy-Sale Model Domain**

A summary of the model data input parameters used as a basis for diffusion simulation are included in Text Figure 6. These utilized the same value for molecular diffusion, assumed no sorption, and assumed a source concentration of 100 mg/L.

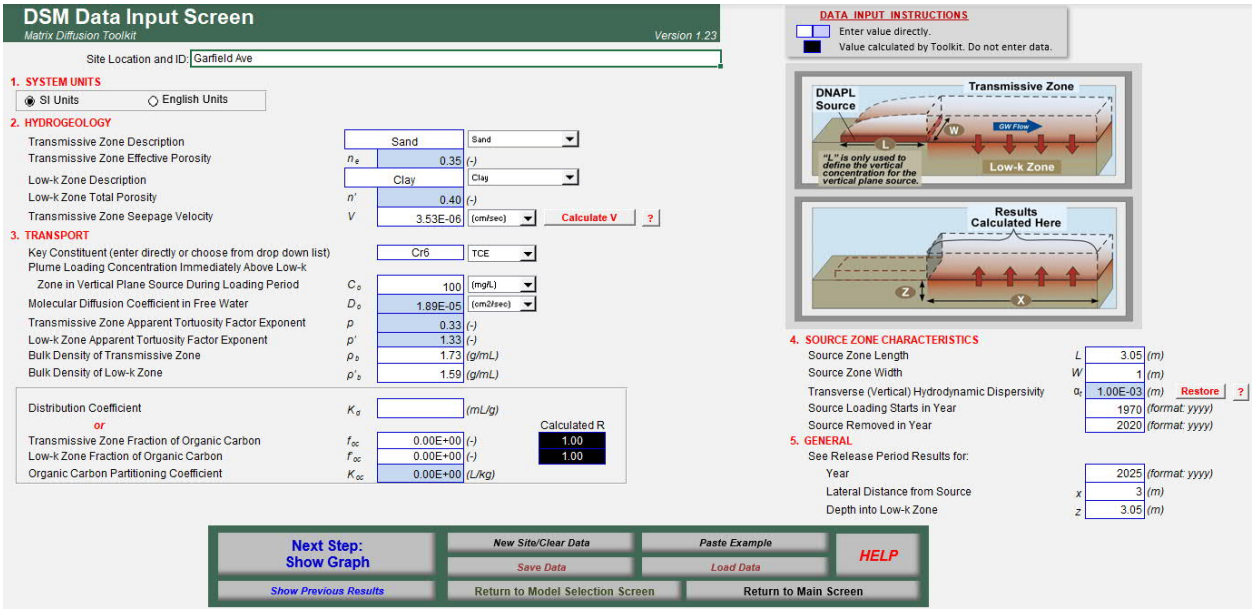


**Text Figure 6 - Matrix Diffusion Toolkit assumptions and input parameters**

Similar to the outputs of the first numerical model, the DSM methodology allows estimation of the potential diffusion depths of $Cr^{+6}$ during the initial 50-year loading period and then allows time-based estimates of the advective zone concentrations following source removal. Using the input entries from the

DSM interface on the preceding page, the plots for $Cr^{+6}$ diffusion into the low permeability zone and an example profile for $Cr^{+6}$ concentrations within the advective zone are included on Text Figure 7.

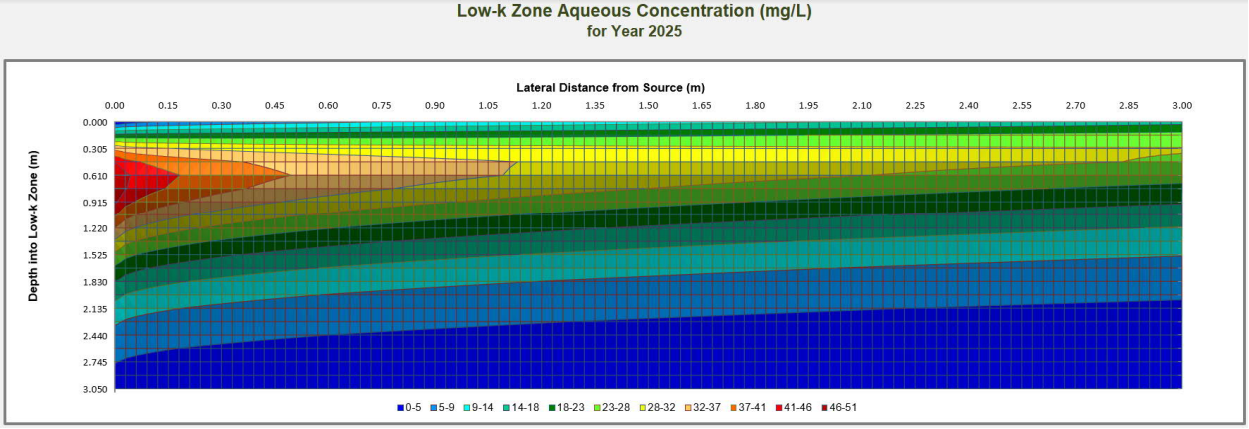


**Text Figure 7 - Projected $Cr^{+6}$ concentrations in low permeability soils during year 55, 5 years following source elimination.**

The Matrix Diffusion Toolkit approach does not allow outputs of multiple time series data over a prolonged timeframe similar to Text Figure 4; therefore, the data from the individual time periods (e.g., years 55, 60, 65, etc) were compiled from the 50- to 100-year durations to develop profiles for comparison both modeling approaches. Text Figure 8 is therefore provided the compare the predicted $Cr^{+6}$ concentrations within the advection zone in a theoretical 10-ft monitoring well for both modeling approaches.

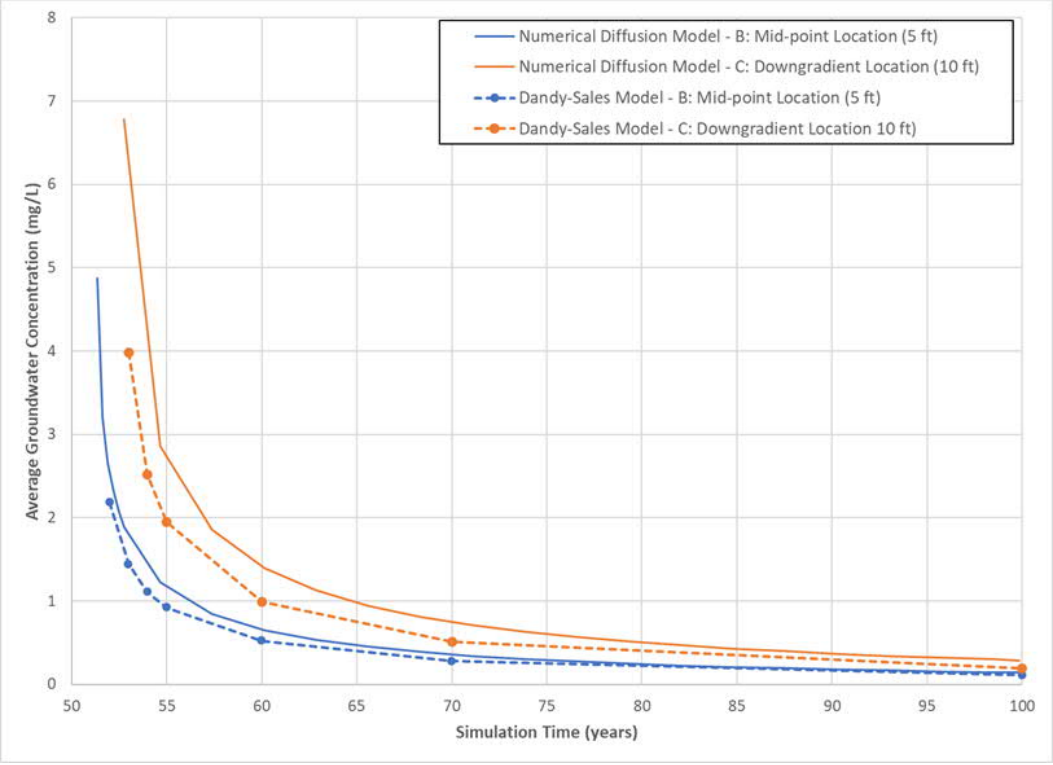


**Text Figure 8 - Predicted $Cr^{+6}$ concentrations at theoretical monitoring wells within modeled domains.**

## Diffusion Model Summary

Separate modeling runs were conducted in two different modeling packages to assess consistency of the results. The concentrations of $Cr^{+6}$ predicted in monitoring wells installed at the diffusion interface from both models are in good general agreement. Both models predicted that the highest $Cr^{+6}$ rate of diffusion-based $Cr^{+6}$ discharge occurs within the first 5 to 10 years after removing the $Cr^{+6}$ model source (55 to 60 years from beginning of loading), following which they gradually decline to less than 1 mg/L by year 15 (65 years from beginning of loading) (Text Figure 8).

The diffusion modeling provides information useful to understanding the relative distribution of $Cr^{+6}$ within lower permeability soils and its expected behavior following source removal in the more permeable zone soils. These are conceptualized in Section I as the C1 and C2 compartments which are dominated by advection, and the C3 compartment which is dominated by diffusion. In conjunction with the HPT $CDF_K$ analysis from Site 114, these collective findings have the following implications for the Conceptual Site Model and remedy development:

- Low permeability materials account for approximately 27% of the intermediate and deep water-bearing zones and are expected to contain $Cr^{+6}$ concentrations that are within one order of magnitude less than the concentrations measured in the adjacent higher permeability zones (prior to any treatment). The $Cr^{+6}$ concentrations within these low permeability soils decline with increased vertical thickness, and diffusion gradients limit migration deeper into the soil column.

- The models predicted that dissolved $Cr^{+6}$ is expected to reside in the low permeability soils for an extended period (at least an additional 50 years), but also demonstrate that the slow rate of diffusion serves to immobilize $Cr^{+6}$ within these soils, limits future migration of $Cr^{+6}$, and stabilizes $Cr^{+6}$ within the aquifer.

- The expected release of $Cr^{+6}$ from the low permeability zone will be highest within the first several years following $Cr^{+6}$ treatment, following which mass discharge from low to high permeability zones will decline significantly within 5 to 10 years.

**Attachments**


Table E1 Phase II IRM $CDF_K$ Summary Metrics
Table E2 Phase III IRM $CDF_K$ Summary Metrics

Figure E1 114-P2-MW-1D
Figure E2 114-P2-MW-2D
Figure E3 114-P2-MW-3D
Figure E4 114-P2-MW-4D
Figure E5 114-P2-MW-5D
Figure E6 114-P2-MW-6D
Figure E7 114-P2-MW-7D
Figure E8 114-P2-MW-8I
Figure E9 114-P2-MW-9D
Figure E10 114-P2-MW-10I
Figure E11 114-P2-MW-11I
Figure E12 114-P2-MW-12D
Figure E13 114-P2-IRM-1I
Figure E14 114-P2-IRM-5D
Figure E15 114-P2-IRM-11D
Figure E16 114-P2-IRM-15D
Figure E17 114-P2-IRM-17D
Figure E18 114-P2-IRM-29D
Figure E19 114-P2-IRM-32D
Figure E20 114-P2-IRM-35I
Figure E21 114-P2-IRM-42D
Figure E22 114-P2-IRM-53I
Figure E23 114-P2-IRM-55I
Figure E24 114-P2-IRM-69I
Figure E25 114-P2-IRM-74I
Figure E26 114-P2-IRM-76D
Figure E27 114-P2-IRM-87D
Figure E28 114-P2-IRM-89D
Figure E29 114-P2-IRM-92DR
Figure E30 114-P2-IRM-94I
Figure E31 114-P2-IRM-96I
Figure E32 114-P2-IRM-97I
Figure E33 114-P2-IRM-92D-2
Figure E34 P3-IRM-VAP01
Figure E35 P3-IRM-VAP02
Figure E36 P3-IRM-VAP03
Figure E37 P3-IRM-VAP04
Figure E38 P3-IRM-VAP05
Figure E39 P3-IRM-VAP06
Figure E40 P3-IRM-VAP07
Figure E41 P3-IRM-VAP08
Figure E42 P3-IRM-VAP09
Figure E43 P3-IRM-VAP10
Figure E44 P3-IRM-VAP11
Figure E45 P3-IRM-VAP12
Figure E46 P3-IRM-VAP13
Figure E47 P3-IRM-VAP14
Figure E48 P3-IRM-VAP15
Figure E49 P3-IRM-VAP16
Figure E50 P3-IRM-VAP17
Figure E51 P3-IRM-VAP18
Figure E52 P3-IRM-VAP19
Figure E53 199-SS1
Figure E54 199-SS2

Table E1 - Phase II IRM CDFK Summary Metrics

| Phase II IRM Well ID | | Zone of Relative Permeability | | |
|---|---|---|---|---|
| | | C1 | C2 | C3 |
| MW-1D | Thickness (ft) | 22.7 | 13.9 | 11.3 |
| | % of Boring | 47% | 29% | 24% |
| MW-2D | Thickness (ft) | 29.6 | 7.8 | 7.0 |
| | % of Boring | 67% | 18% | 16% |
| MW-3D | Thickness (ft) | 33.8 | 8.1 | 6.8 |
| | % of Boring | 69% | 17% | 14% |
| MW-4D | Thickness (ft) | 18.3 | 11.4 | 16.0 |
| | % of Boring | 40% | 25% | 35% |
| MW-5D | Thickness (ft) | 27.2 | 10.1 | 13.3 |
| | % of Boring | 54% | 20% | 26% |
| MW-6D | Thickness (ft) | 39.1 | 10.0 | 5.2 |
| | % of Boring | 72% | 18% | 10% |
| MW-7D | Thickness (ft) | 34.4 | 9.1 | 8.8 |
| | % of Boring | 66% | 17% | 17% |
| MW-8I | Thickness (ft) | 28.0 | 11.9 | 24.3 |
| | % of Boring | 44% | 18% | 38% |
| MW-9D | Thickness (ft) | 31.0 | 8.9 | 9.6 |
| | % of Boring | 63% | 18% | 19% |
| MW-10I | Thickness (ft) | 30.2 | 7.1 | 14.0 |
| | % of Boring | 59% | 14% | 27% |
| MW-11I | Thickness (ft) | 40.8 | 9.4 | 13.5 |
| | % of Boring | 64% | 15% | 21% |
| MW-12D | Thickness (ft) | 29.7 | 6.3 | 15.1 |
| | % of Boring | 58% | 12% | 30% |
| IRM-1I | % of Boring | 22.0 | 8.3 | 13.3 |
| | Thickness (ft) | 50% | 19% | 30% |
| IRM-5D | % of Boring | 29.4 | 12.0 | 7.7 |
| | Thickness (ft) | 60% | 24% | 16% |
| IRM-11D | % of Boring | 27.5 | 10.0 | 9.4 |
| | Thickness (ft) | 59% | 21% | 20% |
| IRM-15D | % of Boring | 30.7 | 12.7 | 15.6 |
| | Thickness (ft) | 52% | 22% | 26% |
| IRM-17D | % of Boring | 35.8 | 9.7 | 2.0 |
| | Thickness (ft) | 76% | 20% | 4% |
| IRM-29D | % of Boring | 28.8 | 8.3 | 13.8 |
| | Thickness (ft) | 57% | 16% | 27% |
| IRM-32D | % of Boring | 31.4 | 6.5 | 14.1 |
| | Thickness (ft) | 60% | 13% | 27% |
| IRM-35I | % of Boring | 8.9 | 1.9 | 12.1 |
| | Thickness (ft) | 39% | 8% | 53% |
| IRM-42D | % of Boring | 31.1 | 11.1 | 11.1 |
| | Thickness (ft) | 58% | 21% | 21% |
| IRM-53I | % of Boring | 22.3 | 13.5 | 11.3 |
| | Thickness (ft) | 47% | 29% | 24% |
| IRM-55I | % of Boring | 29.9 | 6.9 | 14.5 |
| | Thickness (ft) | 58% | 13% | 28% |
| IRM-69I | % of Boring | 20.5 | 7.7 | 8.0 |
| | % of Boring | 57% | 21% | 22% |
| IRM-74I | Thickness (ft) | 21.9 | 13.3 | 15.8 |
| | % of Boring | 43% | 26% | 31% |
| IRM-76D | Thickness (ft) | 17.1 | 8.5 | 10.6 |
| | % of Boring | 47% | 23% | 29% |
| IRM-87D | Thickness (ft) | 21.1 | 9.6 | 14.3 |
| | % of Boring | 47% | 21% | 32% |
| IRM-92DR | Thickness (ft) | 14.1 | 6.5 | 3.8 |
| | % of Boring | 58% | 27% | 16% |
| IRM-94I | Thickness (ft) | 29.9 | 10.9 | 11.0 |
| | % of Boring | 58% | 21% | 21% |
| IRM-96I | Thickness (ft) | 25.8 | 6.5 | 19.1 |
| | % of Boring | 50% | 13% | 37% |
| IRM-97I | Thickness (ft) | 28.5 | 5.8 | 16.8 |
| | % of Boring | 56% | 11% | 33% |
| IRM-89D | Thickness (ft) | 15.1 | 9.4 | 17.0 |
| | % of Boring | 36% | 23% | 41% |
| IRM-92D-2 | Thickness (ft) | 18.7 | 5.3 | 1.7 |
| | % of Boring | 73% | 21% | 6% |
| **Combined** | Thickness (ft) | **851.9** | **306.5** | **401.7** |
| | % of Boring | **54.6%** | **19.6%** | **25.7%** |

Table E2 - Phase III IRM CDFK Summary Metrics

| Phase III IRM VAP ID | | Zone of Relative Permeability | | |
|---|---|---|---|---|
| | | **C1** | **C2** | **C3** |
| P3-IRM-VAP01 | Thickness (ft) | 24.3 | 5.9 | 5.1 |
| | % of Boring | 69% | 17% | 14% |
| P3-IRM-VAP02 | Thickness (ft) | 27.6 | 11.0 | 13.0 |
| | % of Boring | 53% | 21% | 25% |
| P3-IRM-VAP03 | Thickness (ft) | 26.3 | 10.1 | 23.1 |
| | % of Boring | 44% | 17% | 39% |
| P3-IRM-VAP04 | Thickness (ft) | 42.1 | 9.7 | 19.7 |
| | % of Boring | 59% | 14% | 28% |
| P3-IRM-VAP05 | Thickness (ft) | 41.2 | 10.2 | 21.6 |
| | % of Boring | 56% | 14% | 30% |
| P3-IRM-VAP06 | Thickness (ft) | 44.3 | 13.1 | 4.4 |
| | % of Boring | 72% | 21% | 7% |
| P3-IRM-VAP07 | Thickness (ft) | 34.7 | 9.2 | 17.4 |
| | % of Boring | 57% | 15% | 28% |
| P3-IRM-VAP08 | Thickness (ft) | 36.7 | 9.0 | 25.5 |
| | % of Boring | 51% | 13% | 36% |
| P3-IRM-VAP09 | Thickness (ft) | 26.9 | 9.5 | 29.1 |
| | % of Boring | 41% | 14% | 44% |
| P3-IRM-VAP10 | Thickness (ft) | 34.3 | 9.4 | 22.4 |
| | % of Boring | 52% | 14% | 34% |
| P3-IRM-VAP11 | Thickness (ft) | 38.9 | 16.7 | 26.8 |
| | % of Boring | 47% | 20% | 33% |
| P3-IRM-VAP12 | Thickness (ft) | 43.9 | 11.3 | 29.8 |
| | % of Boring | 52% | 13% | 35% |
| P3-IRM-VAP13 | % of Boring | 29.2 | 8.5 | 31.3 |
| | Thickness (ft) | 42% | 12% | 45% |
| P3-IRM-VAP14 | % of Boring | 34.6 | 8.5 | 21.5 |
| | Thickness (ft) | 54% | 13% | 33% |
| P3-IRM-VAP15 | % of Boring | 26.5 | 6.3 | 18.4 |
| | Thickness (ft) | 52% | 12% | 36% |
| P3-IRM-VAP16 | % of Boring | 34.1 | 8.8 | 15.5 |
| | Thickness (ft) | 58% | 15% | 27% |
| P3-IRM-VAP17 | % of Boring | 40.0 | 11.0 | 2.9 |
| | Thickness (ft) | 74% | 20% | 5% |
| P3-IRM-VAP18 | % of Boring | 29.3 | 10.8 | 4.6 |
| | Thickness (ft) | 65% | 24% | 10% |
| P3-IRM-VAP19 | % of Boring | 28.1 | 8.3 | 4.1 |
| | Thickness (ft) | 69% | 21% | 10% |
| 199-SS1[1] | % of Boring | 21.85 | 5.15 | 14.75 |
| | Thickness (ft) | 52% | 12% | 35% |
| 199-SS2[1] | % of Boring | 28.15 | 10.65 | 16.65 |
| | Thickness (ft) | 51% | 19% | 30% |
| **Combined** | Thickness (ft) | **692.8** | **203.4** | **368.0** |
| | % of Boring | **54.8%** | **16.1%** | **29.1%** |

Notes:

1 Site 199 borings were advanced concurrent with the Phase III IRM borings so have been combined with the Phase III IRM locations for data review.

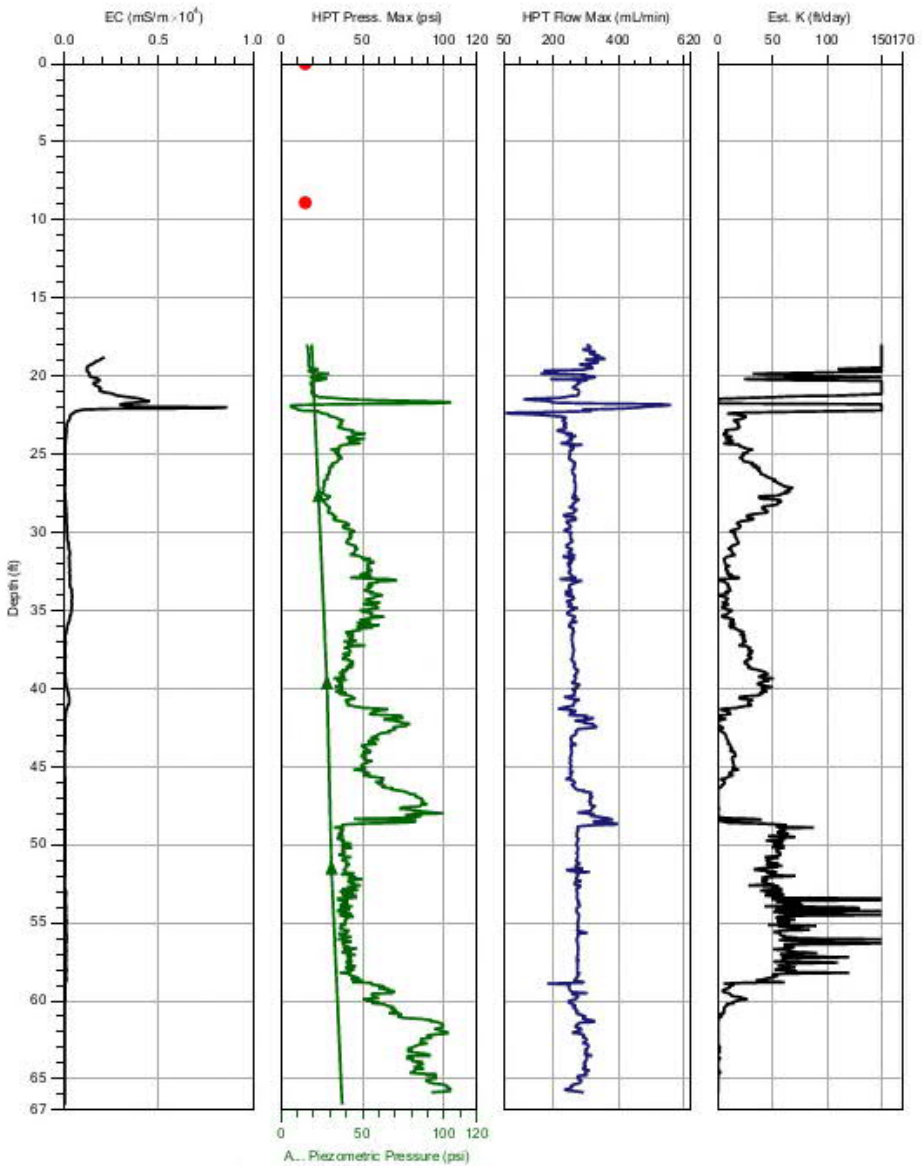


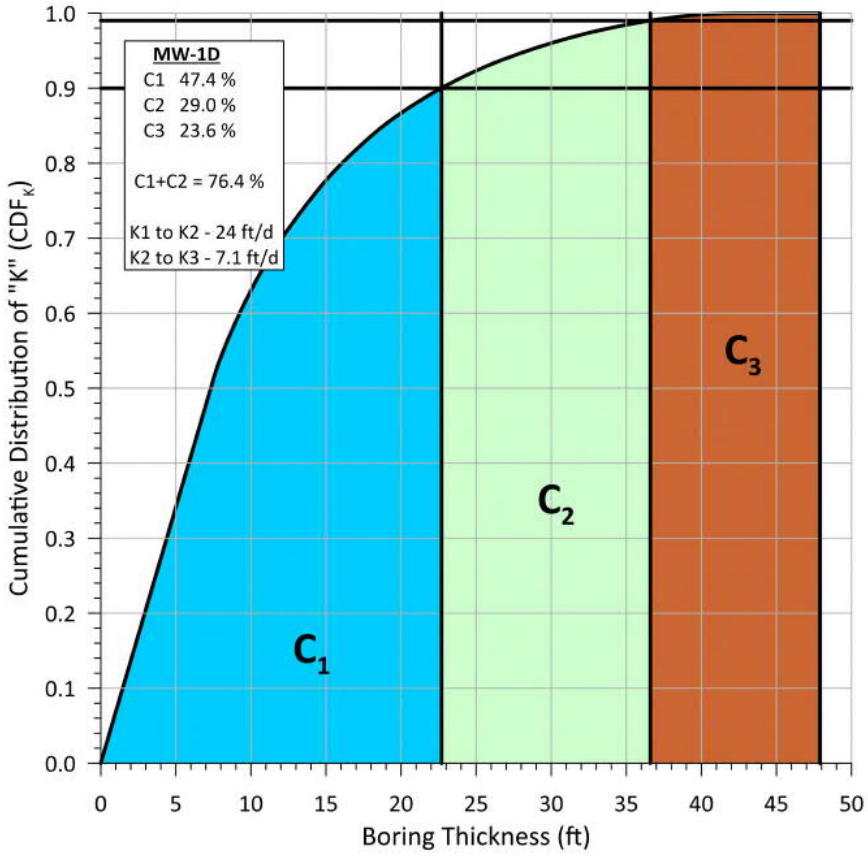


Notes:
C1 – most permeable soils, dominated by advective transport
C2 – moderately permeable soils, dominated by slow advection
C3 – low permeability soils, dominated by diffusion

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FIGURE
E1

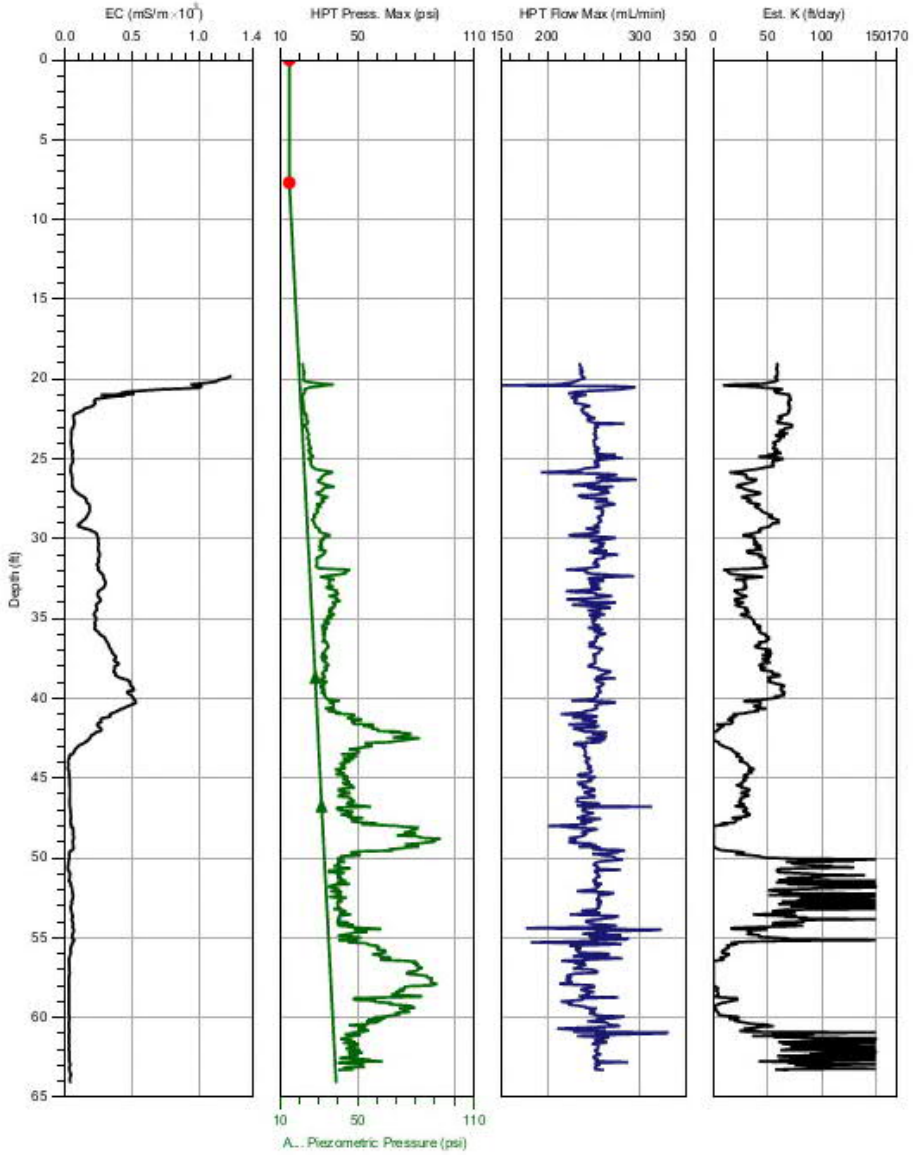


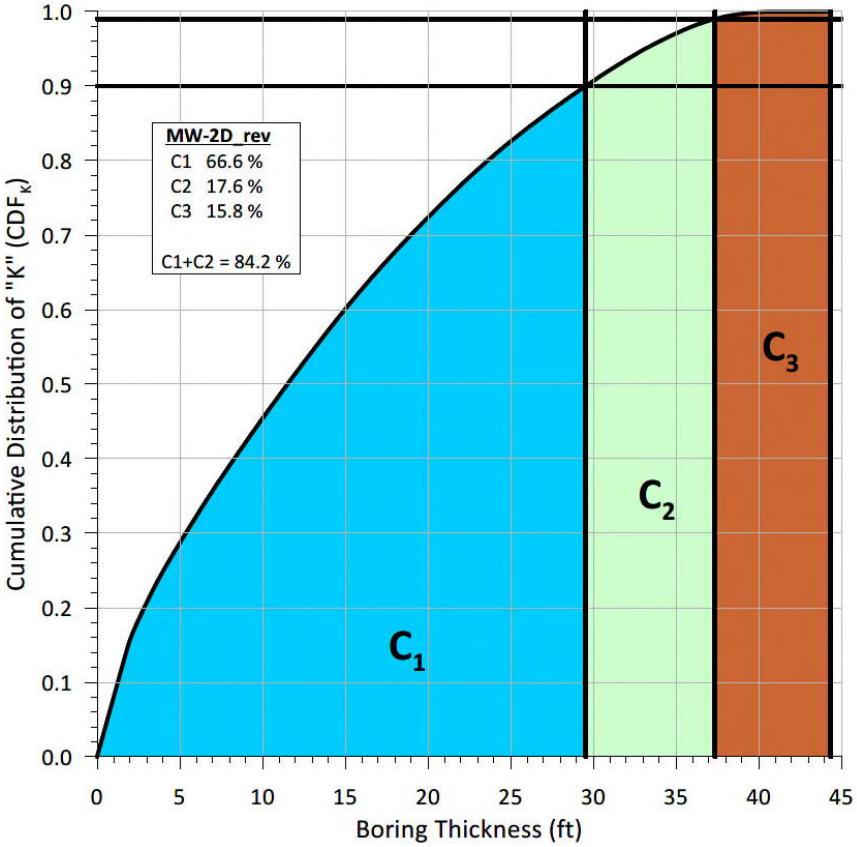


Notes:
C1 – most permeable soils, dominated by advective transport
C2 – moderately permeable soils, dominated by slow advection
C3 – low permeability soils, dominated by diffusion

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114-P2-MW-2D

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FIGURE
E2

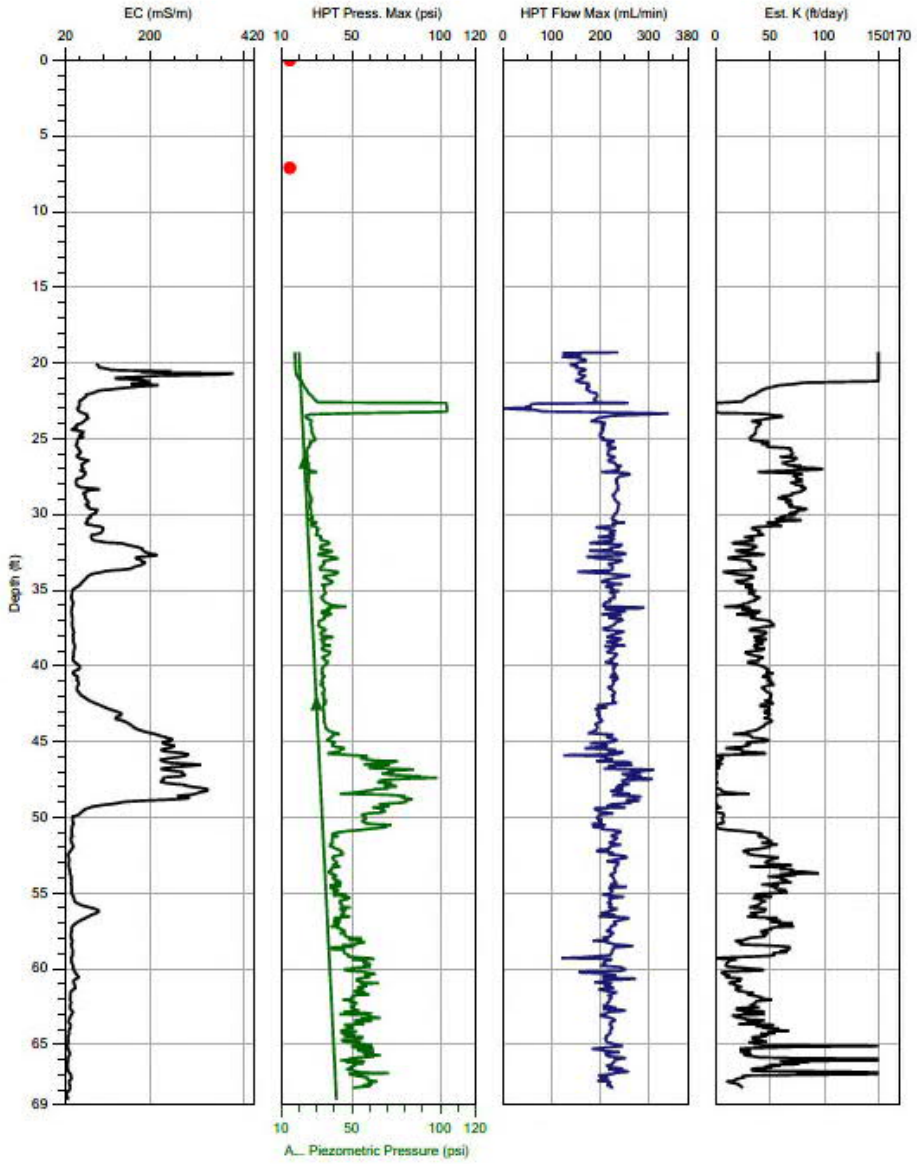


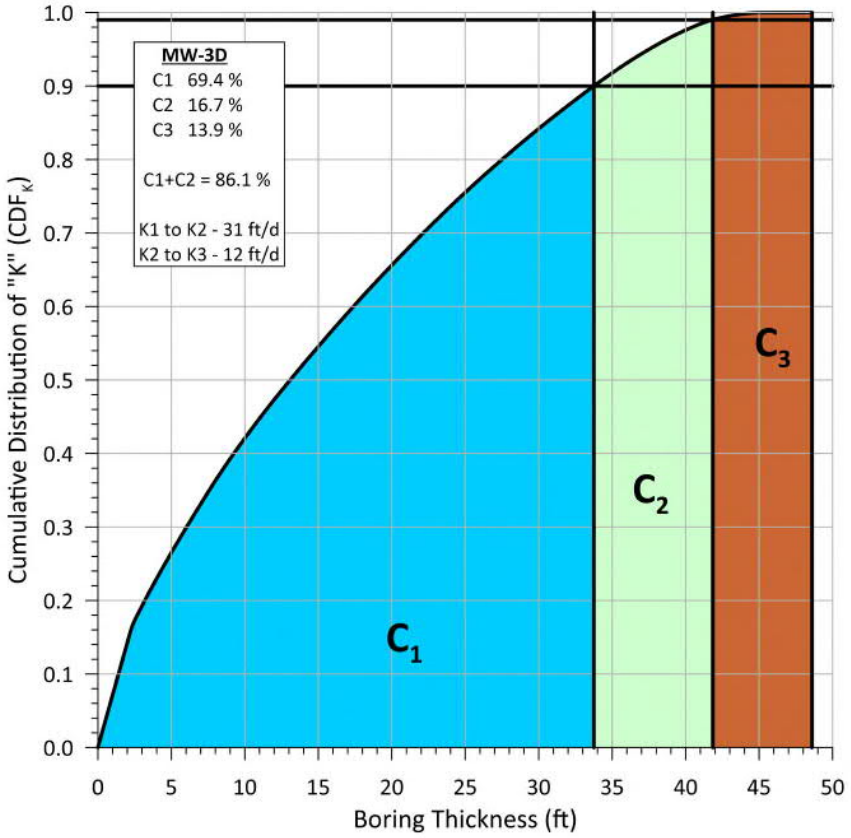


Notes:
C1 – most permeable soils, dominated by advective transport
C2 – moderately permeable soils, dominated by slow advection
C3 – low permeability soils, dominated by diffusion

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FIGURE
E3

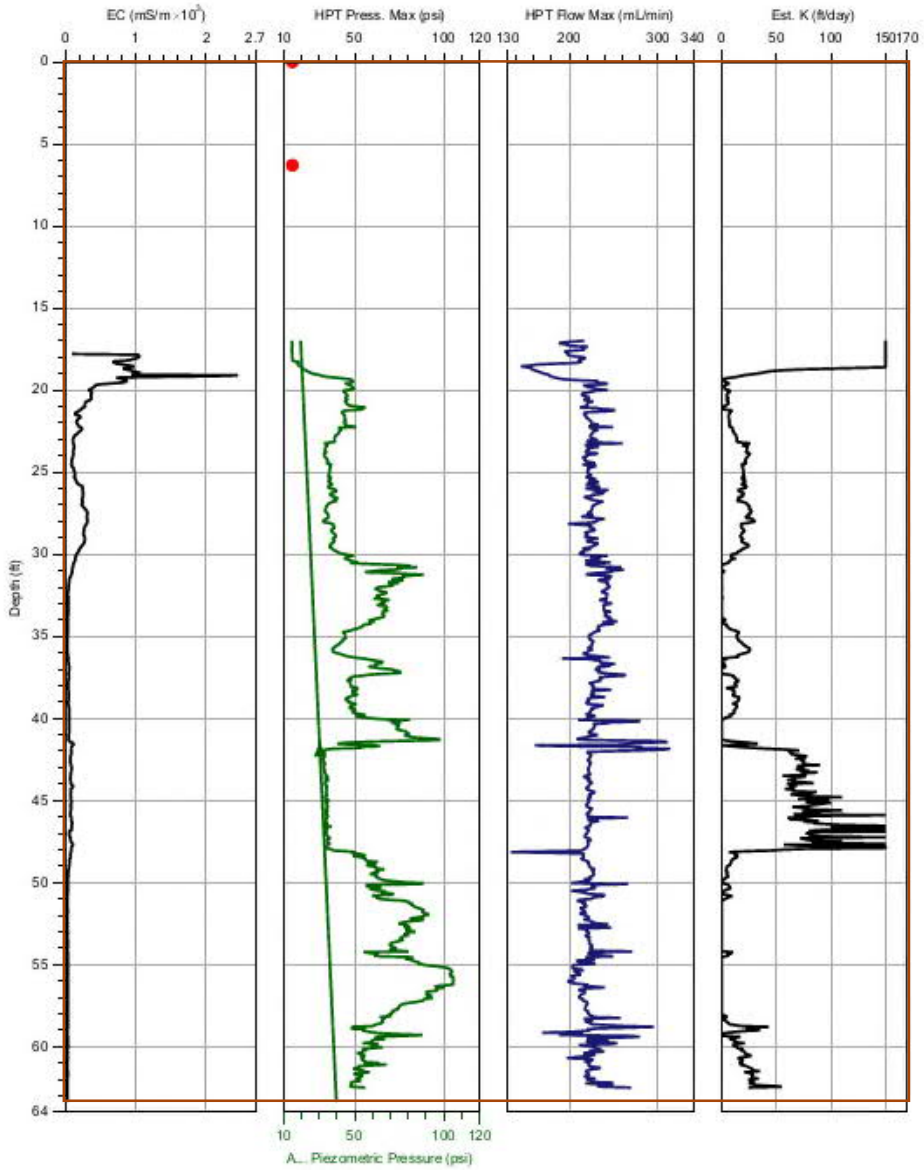


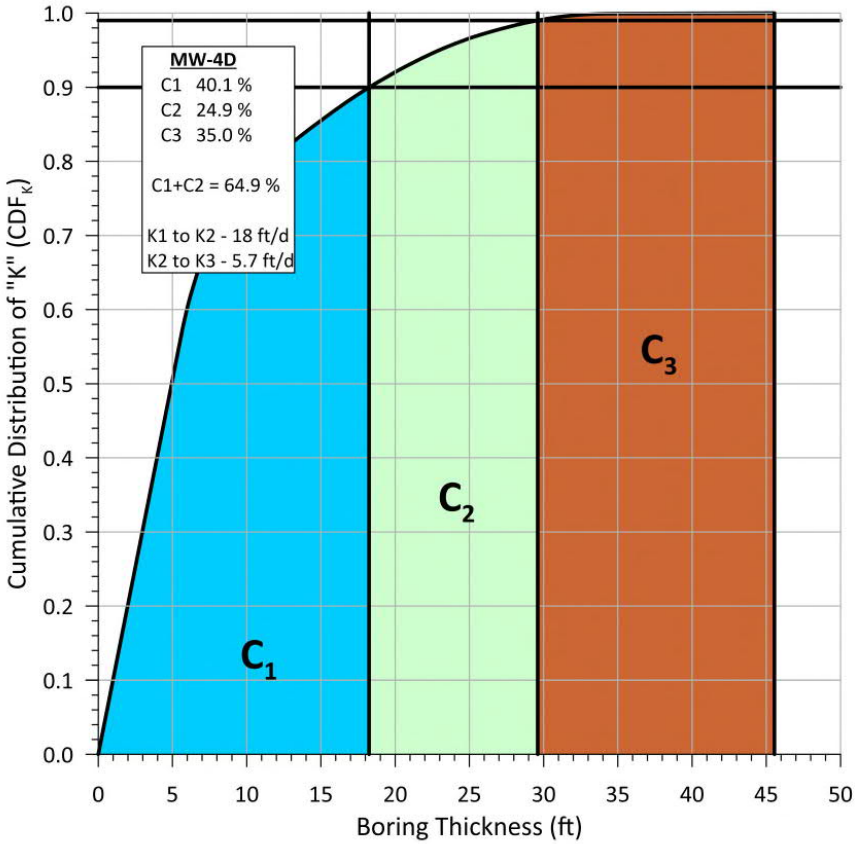


Notes:
C1 – most permeable soils, dominated by advective transport
C2 – moderately permeable soils, dominated by slow advection
C3 – low permeability soils, dominated by diffusion

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FIGURE
E4

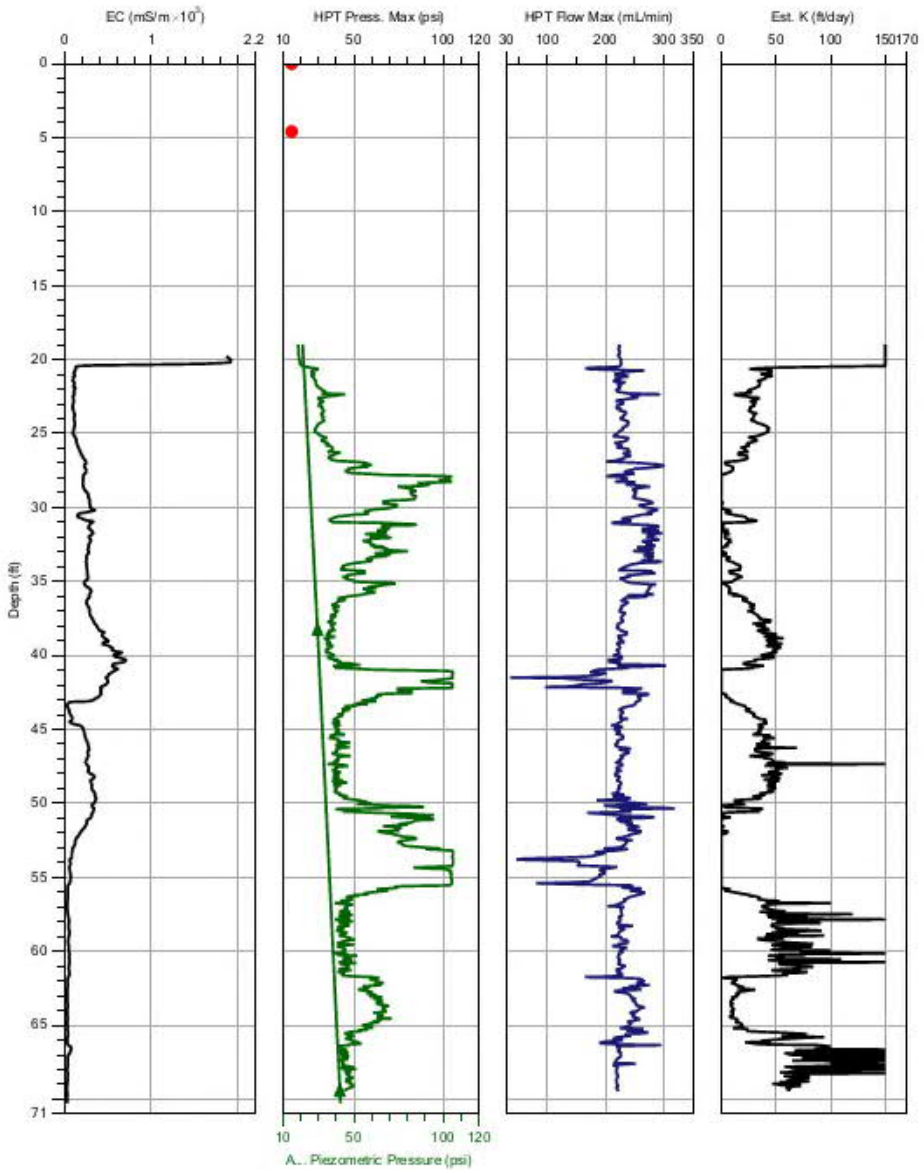


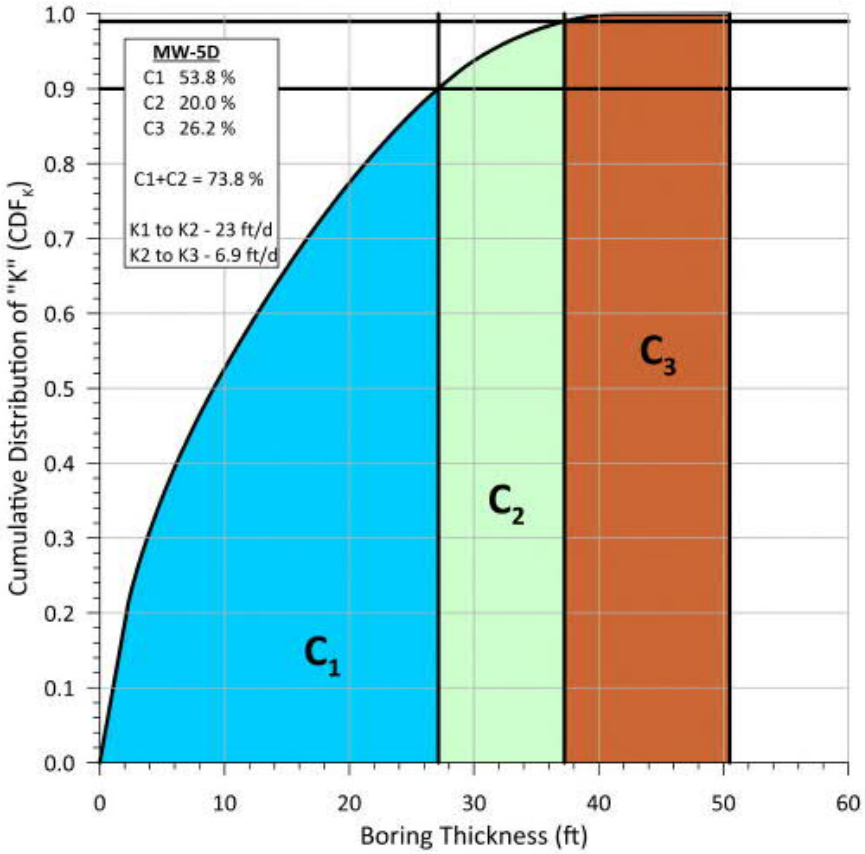


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114-P2-MW-5D

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FIGURE
E5

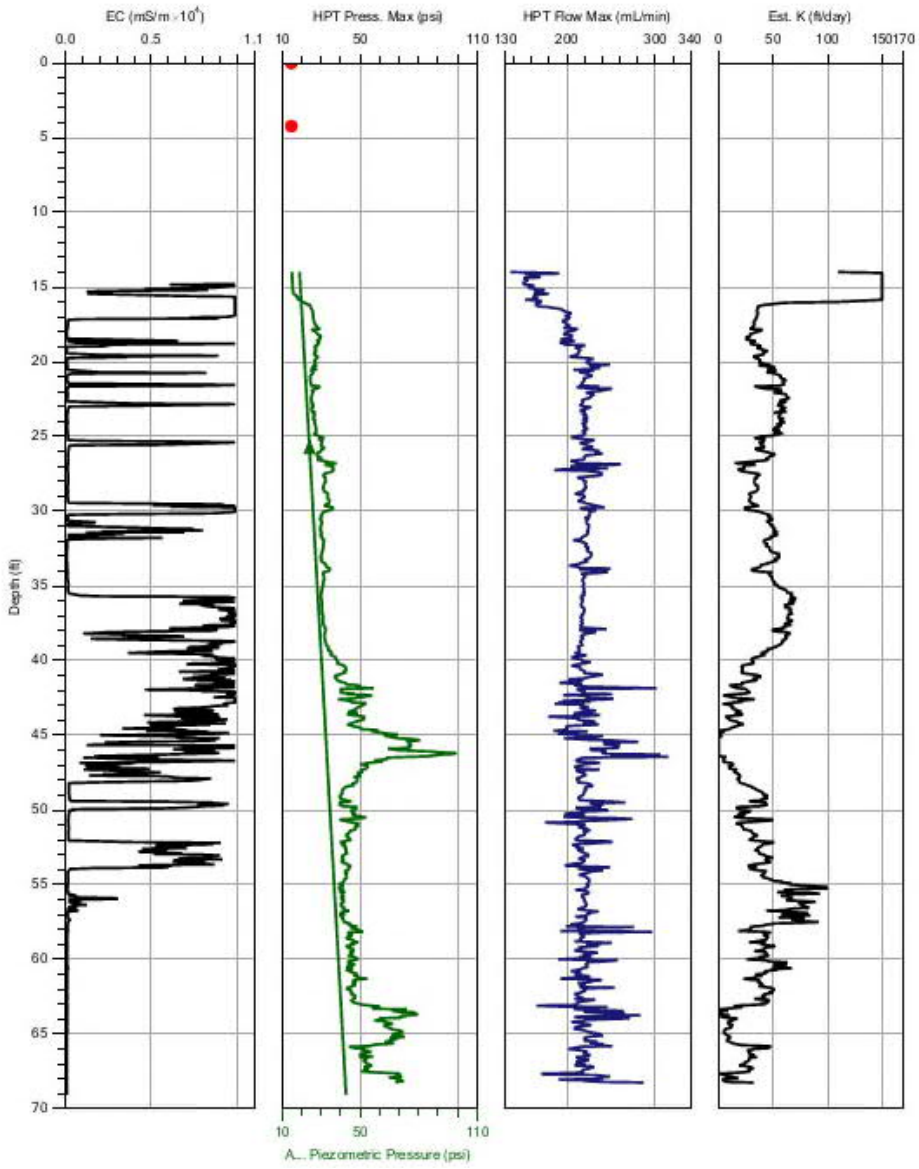


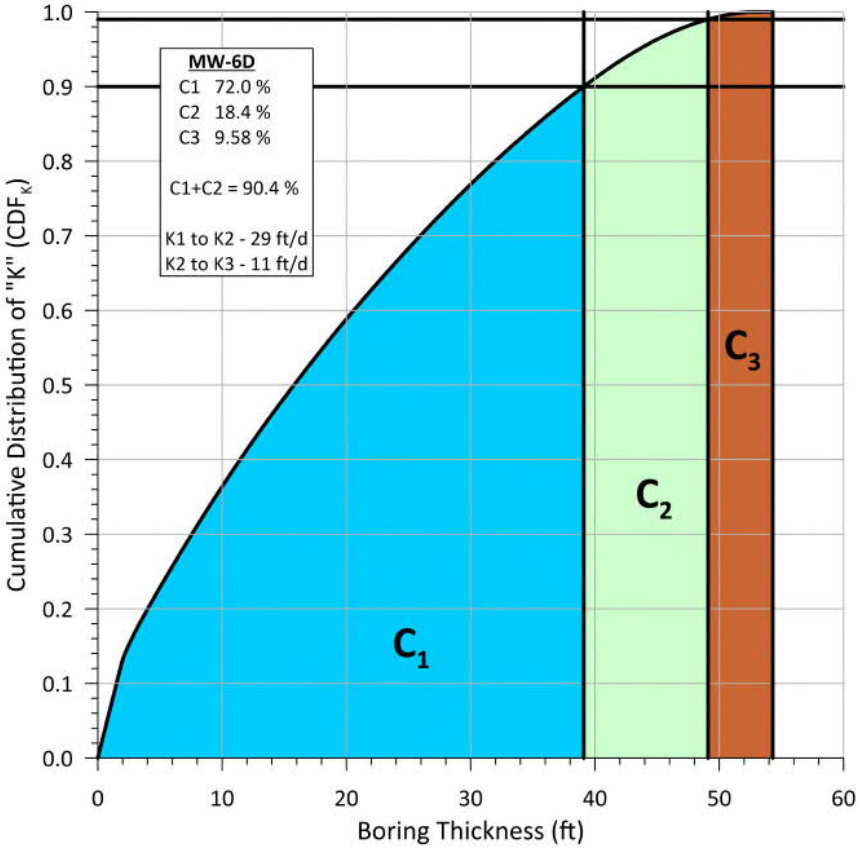


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114-P2-MW-6D

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FIGURE
E6

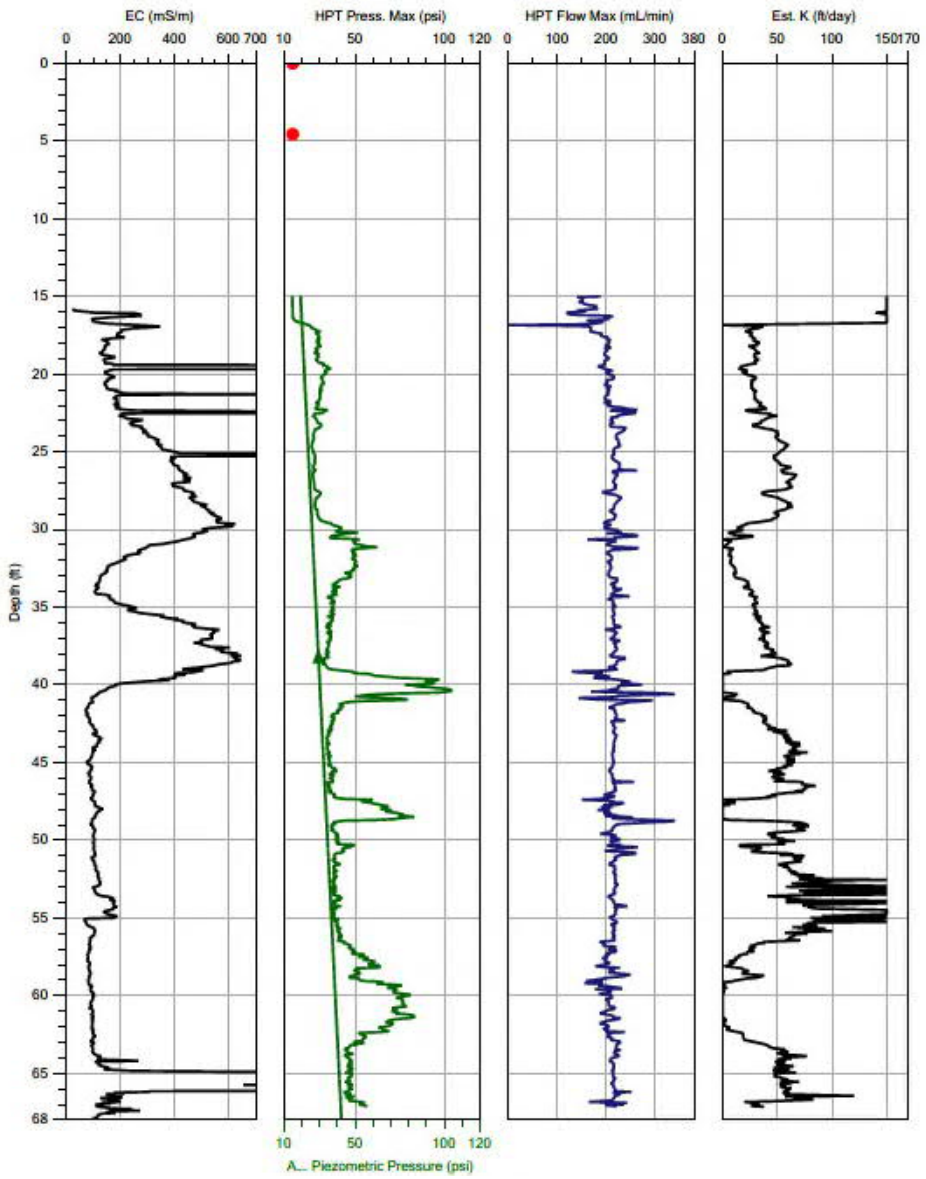


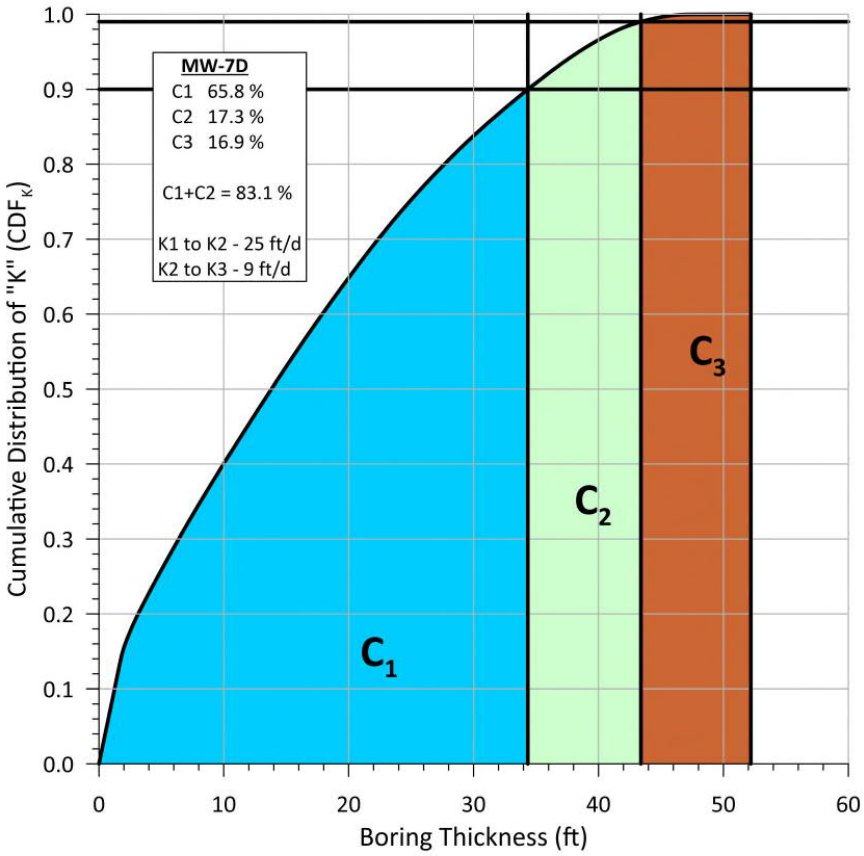


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114-P2-MW-7D

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FIGURE
E7

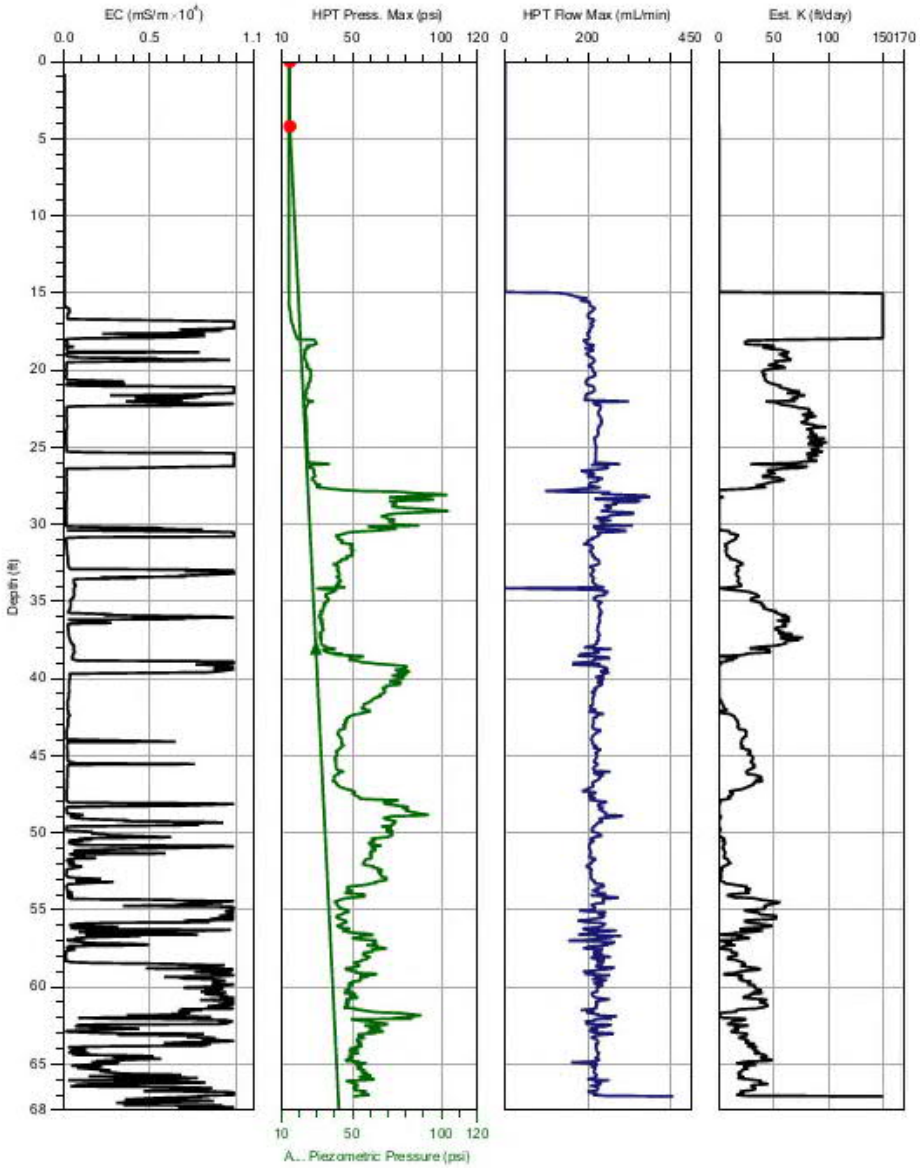


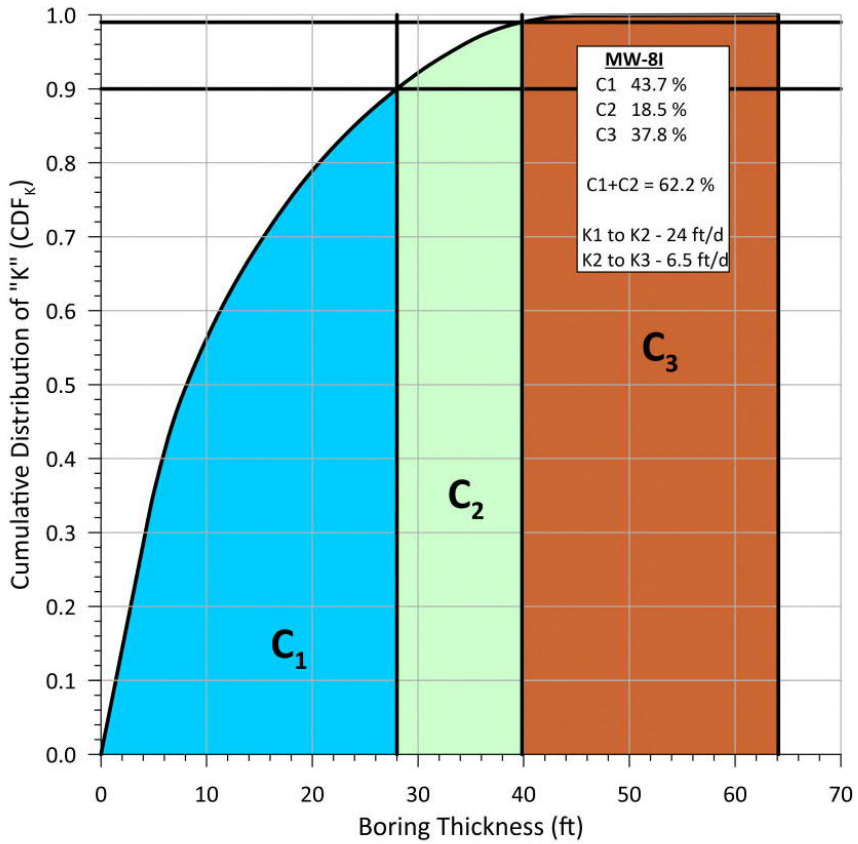


Notes:
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114-P2-MW-8I

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FIGURE
E8

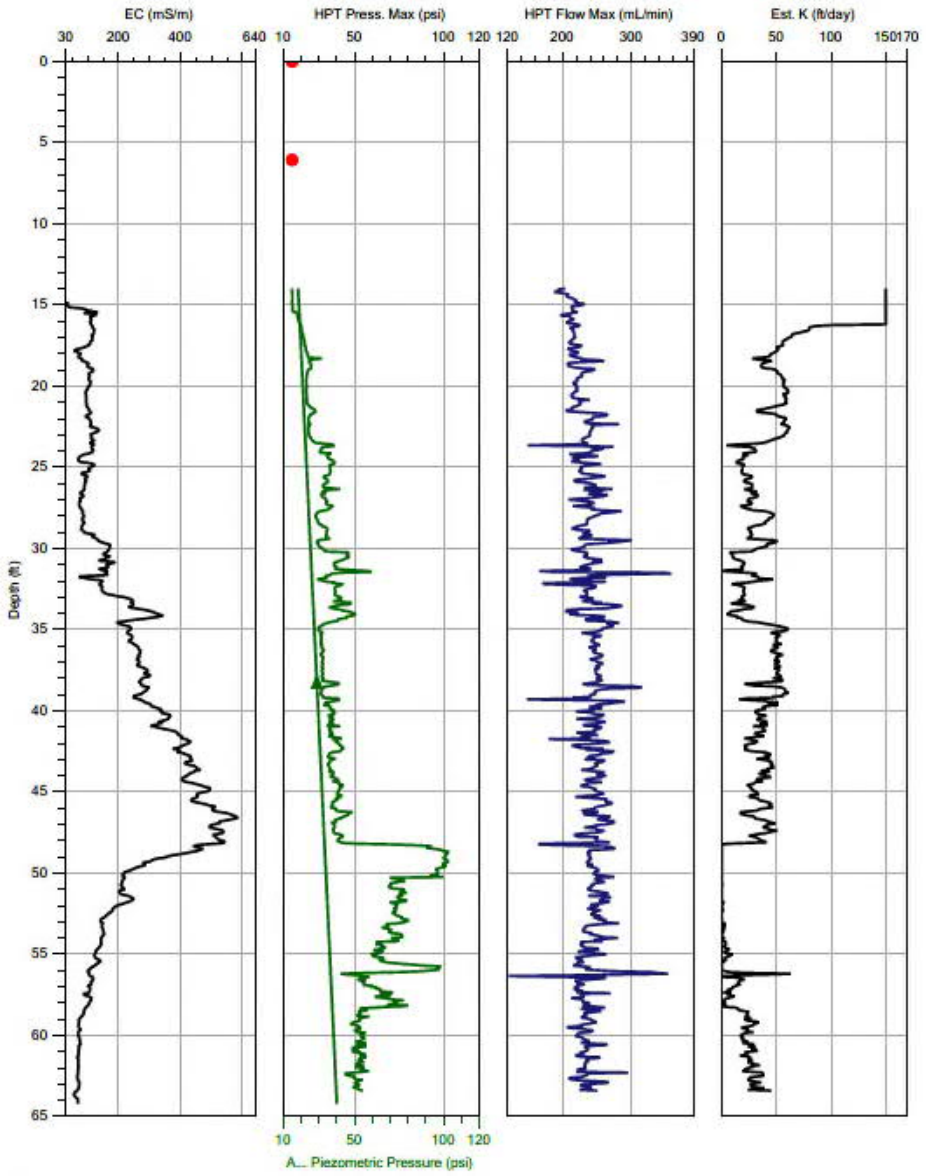


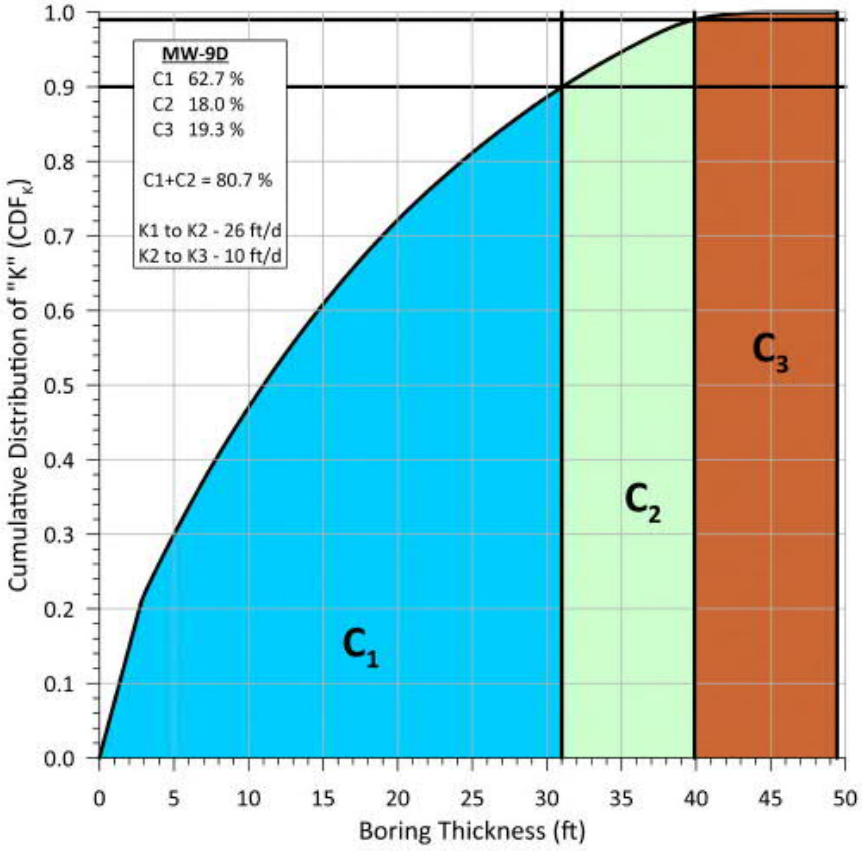


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114-P2-MW-9D

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FIGURE
E9

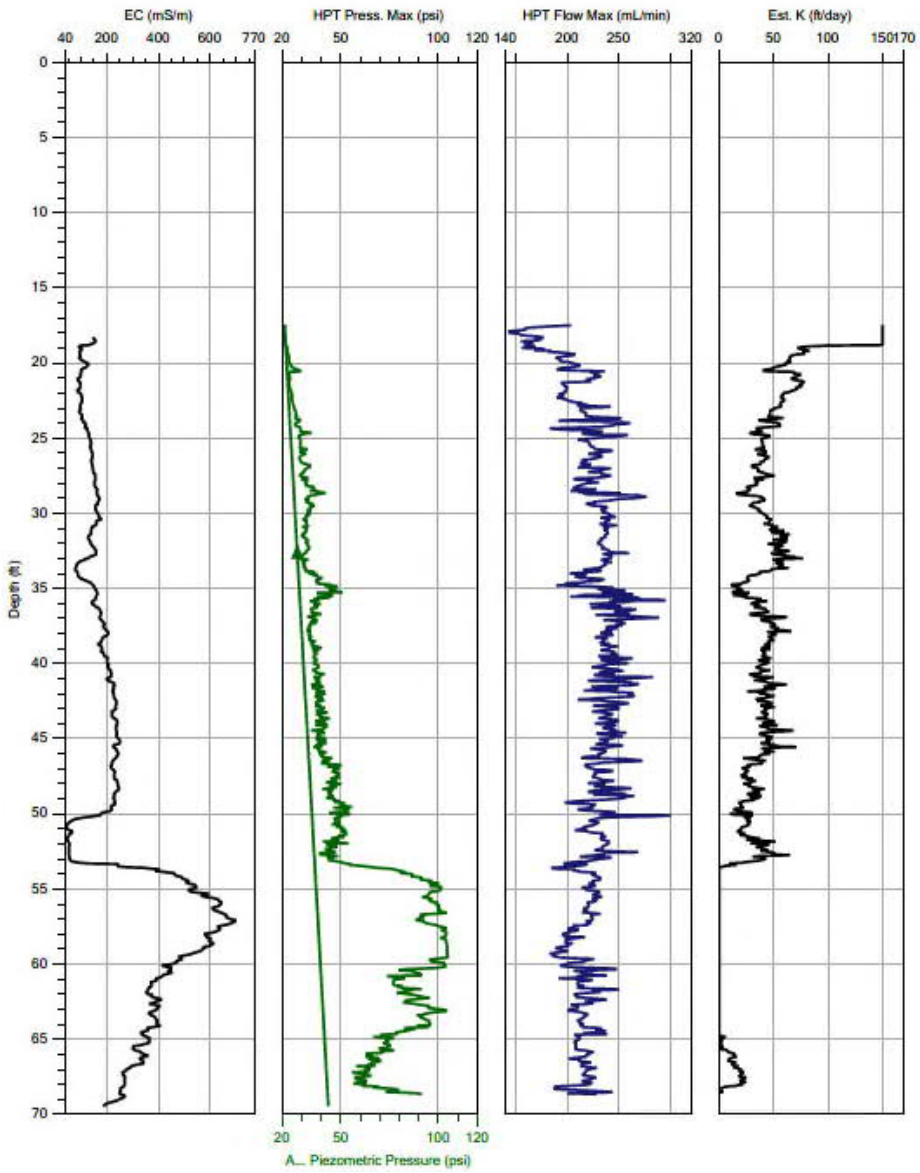


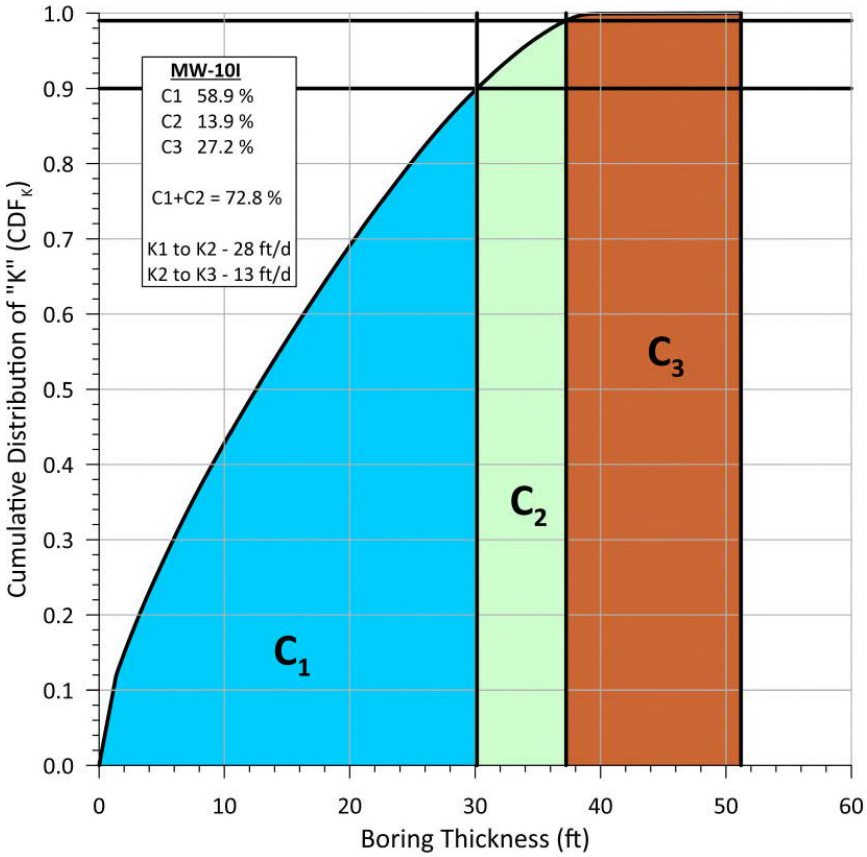


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114-P2-MW-10I

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FIGURE
E10

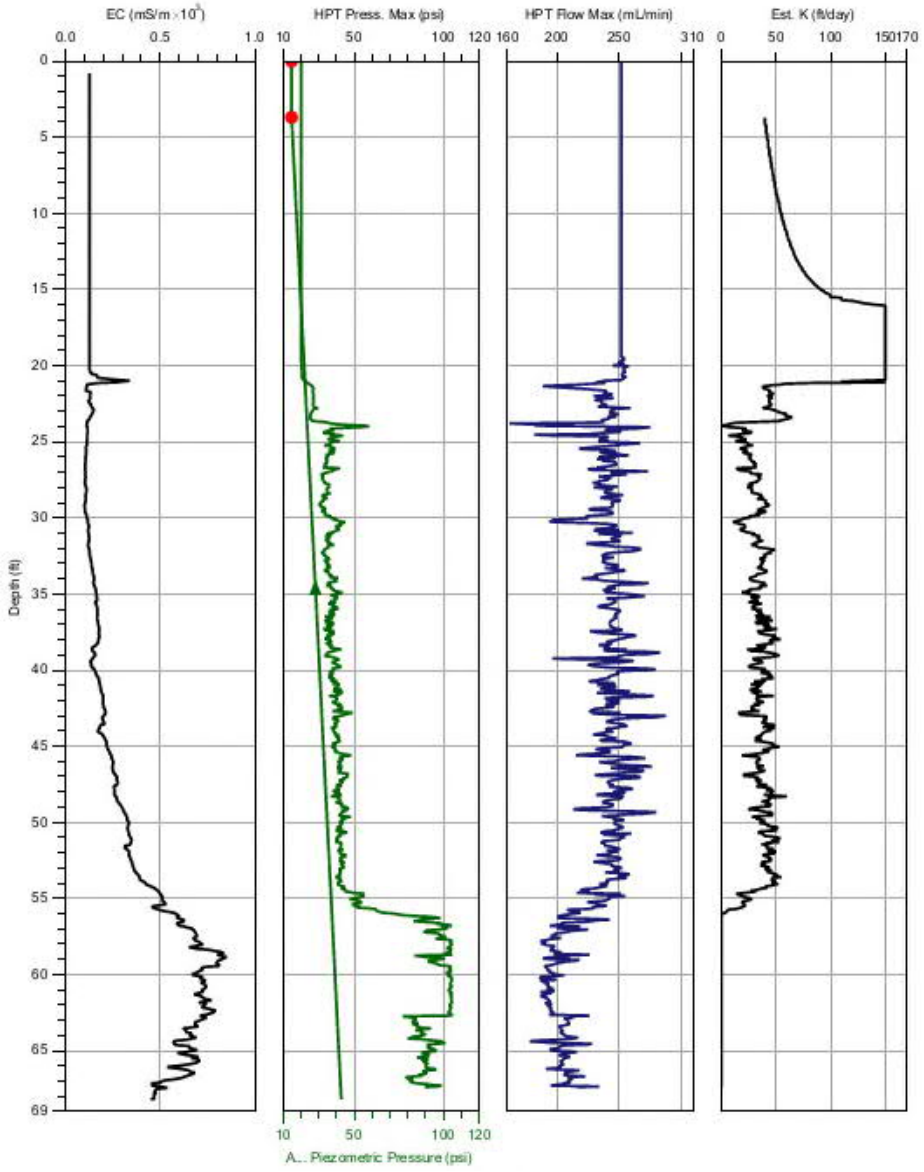


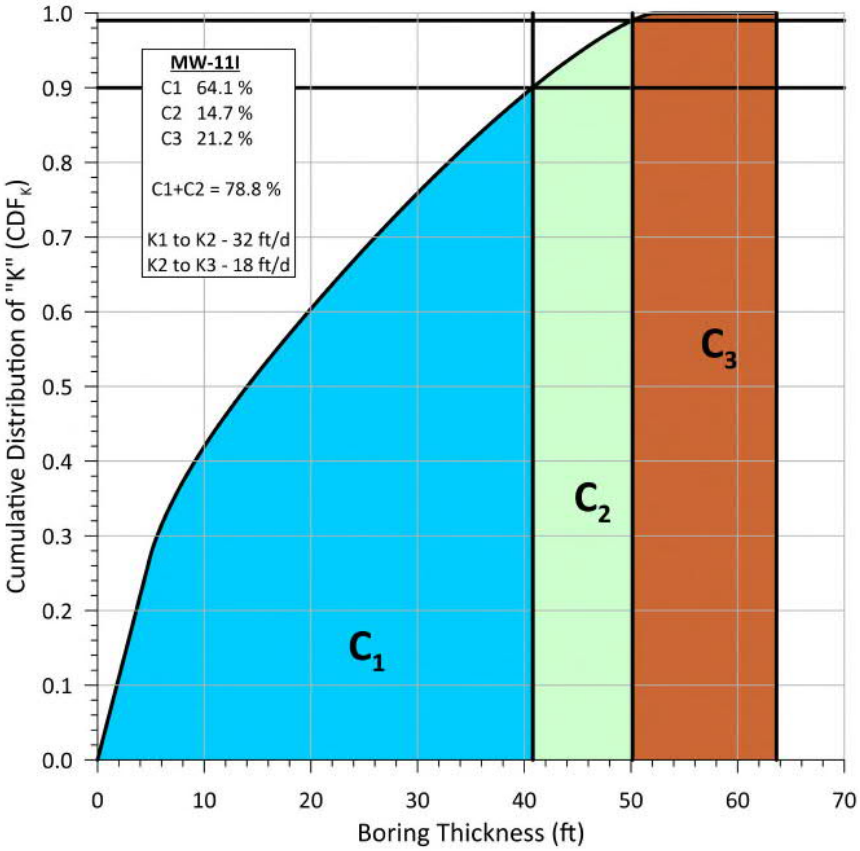


Notes:
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114-P2-MW-11I

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FIGURE
E11

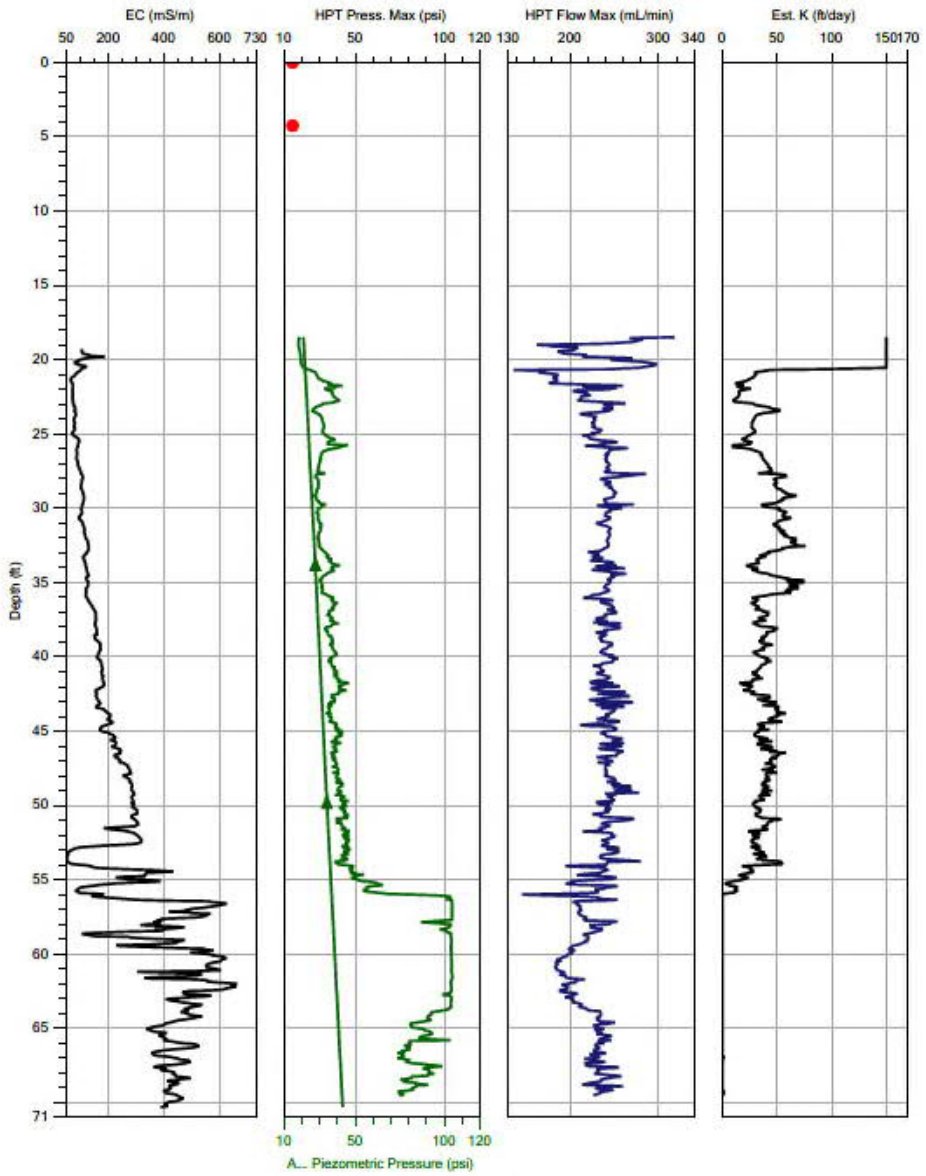


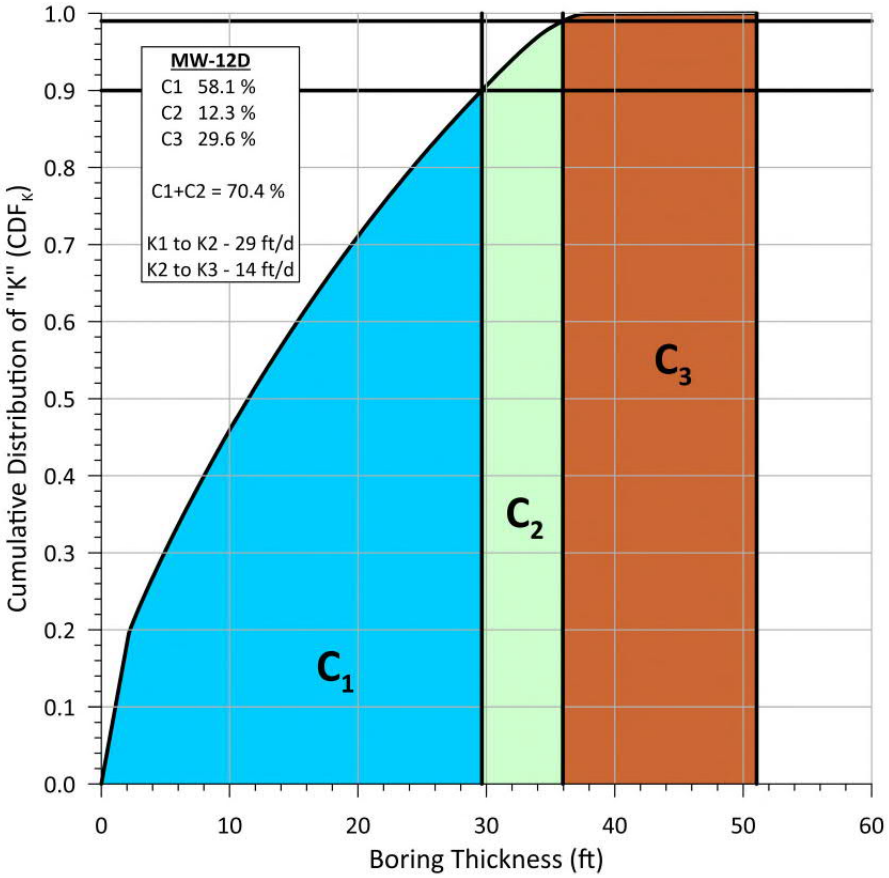


Notes:
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114-P2-MW-12D

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FIGURE
E12

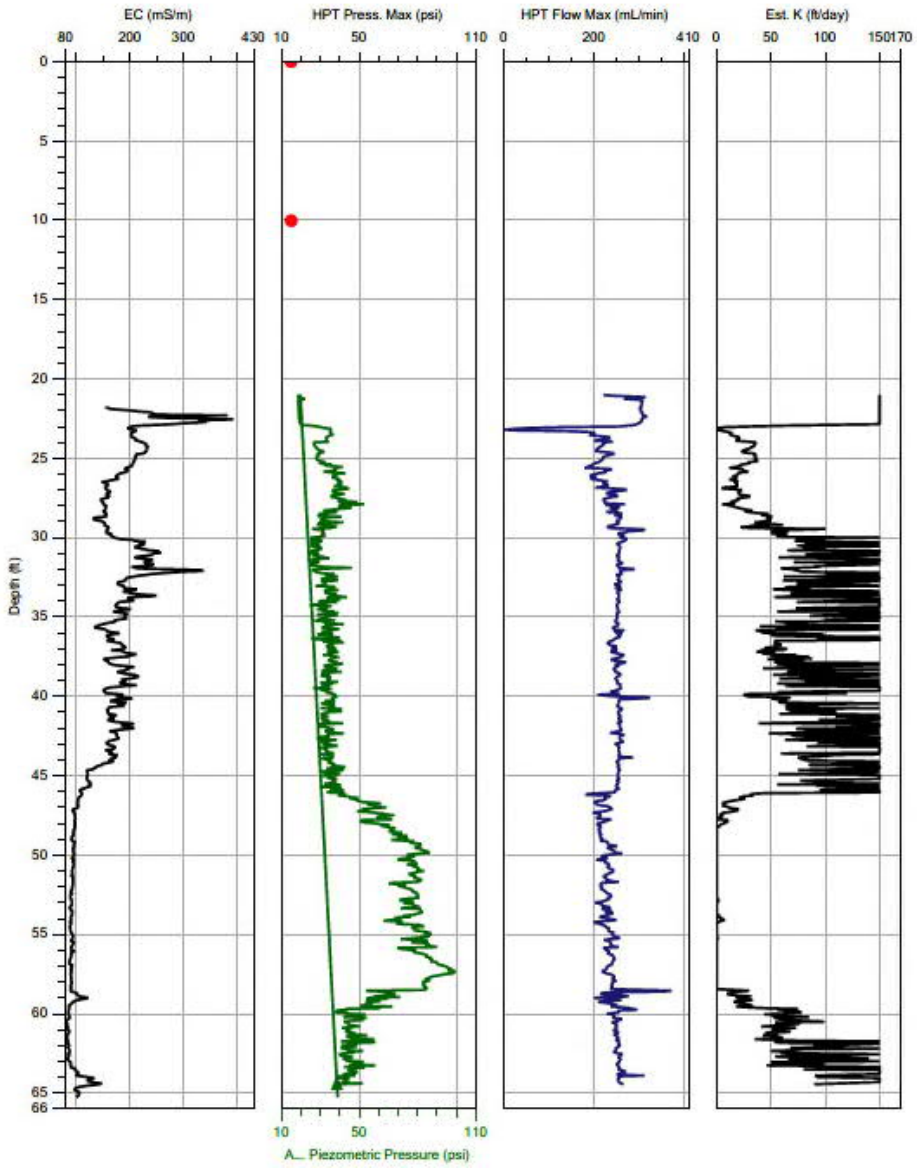


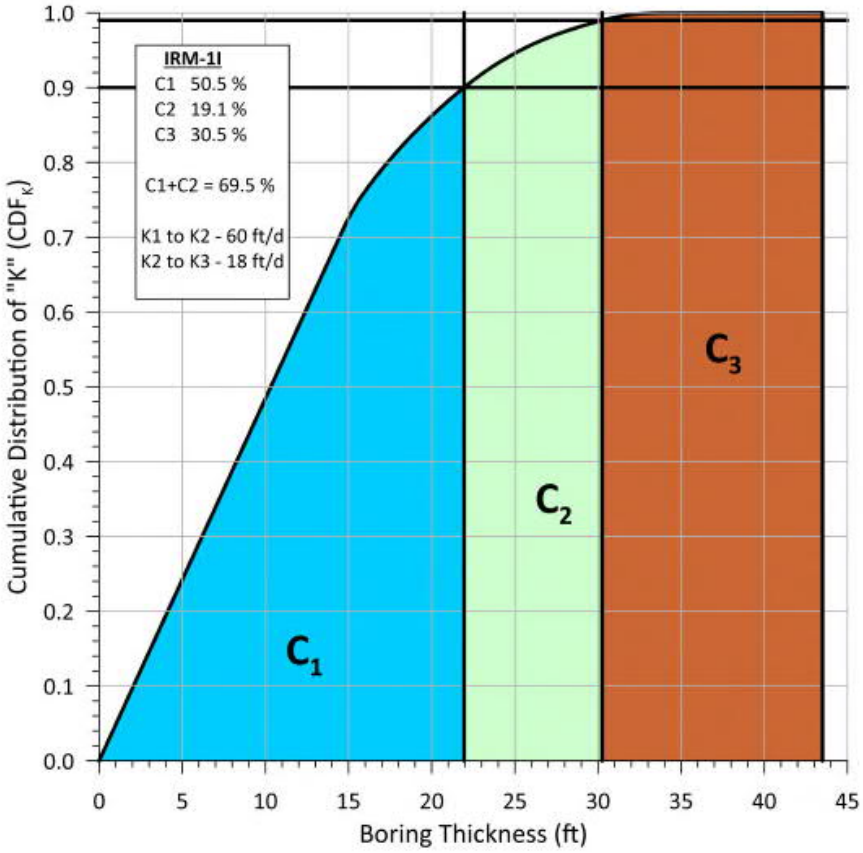


Notes:
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FIGURE
E13

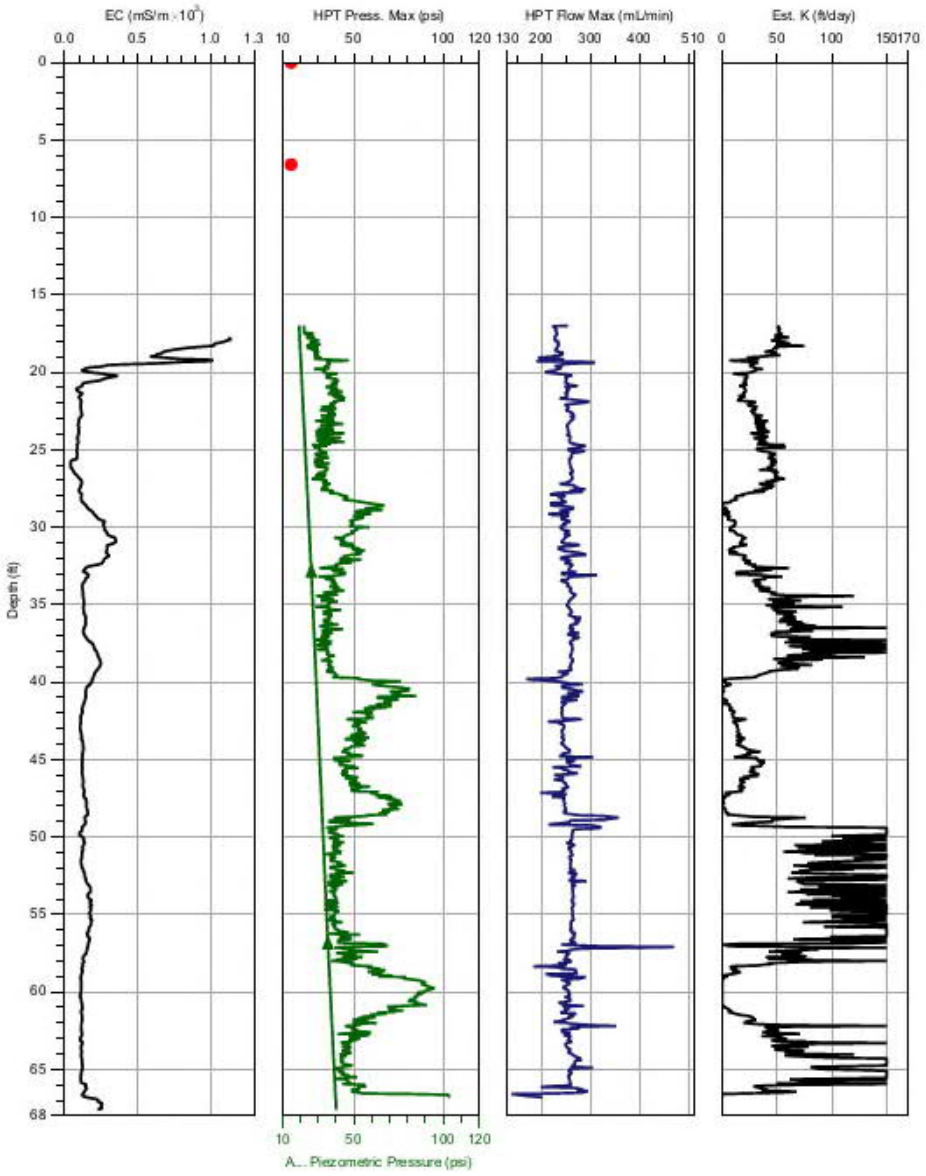


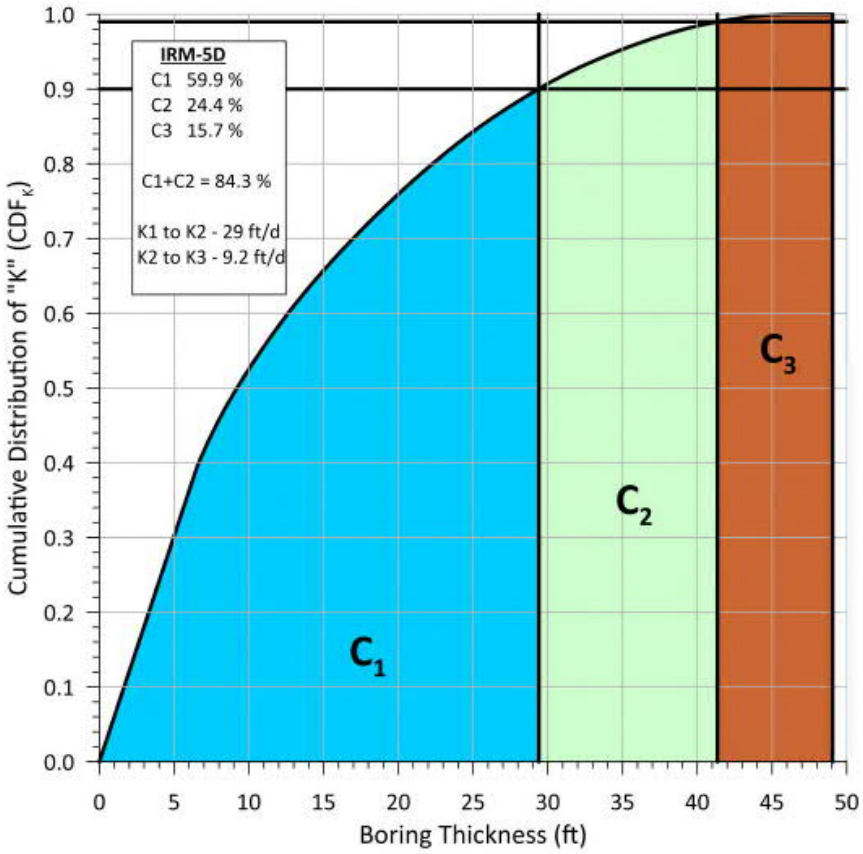


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FIGURE
E14

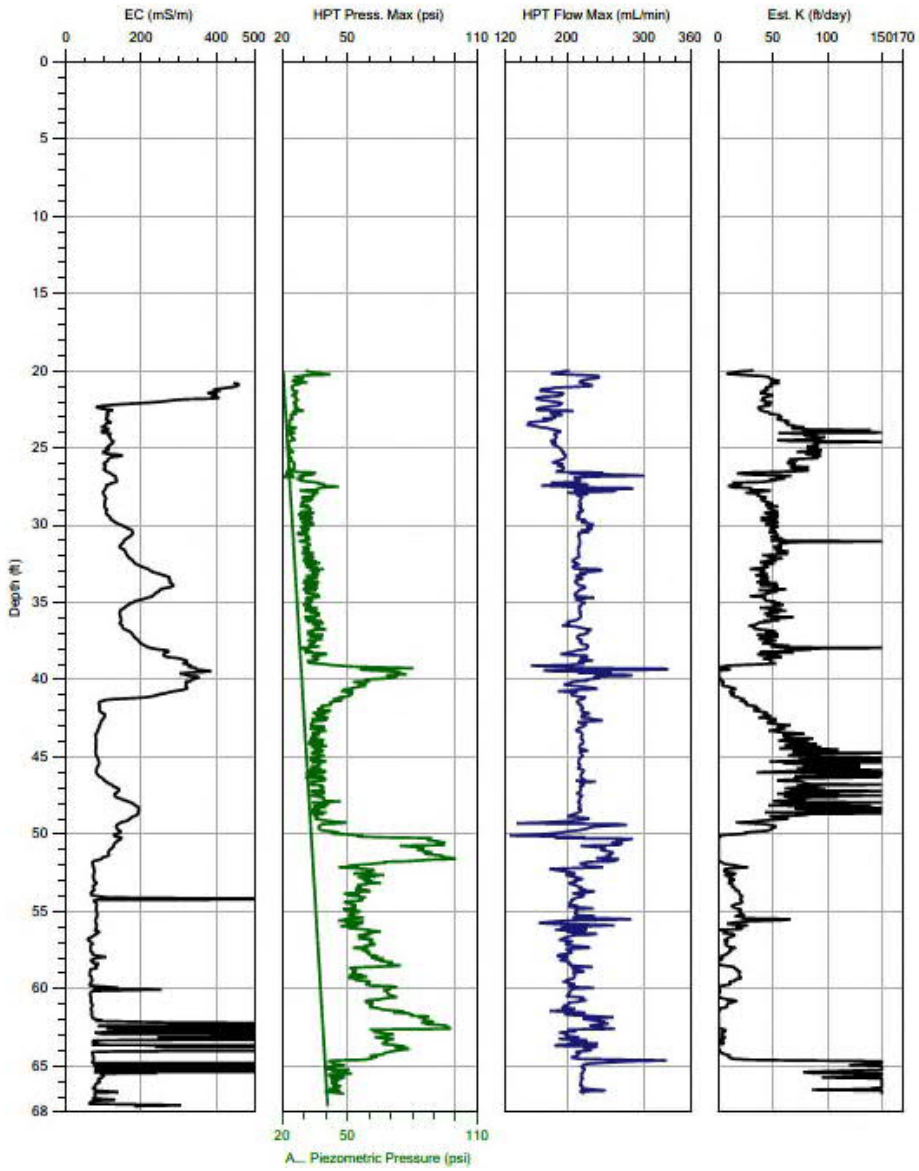


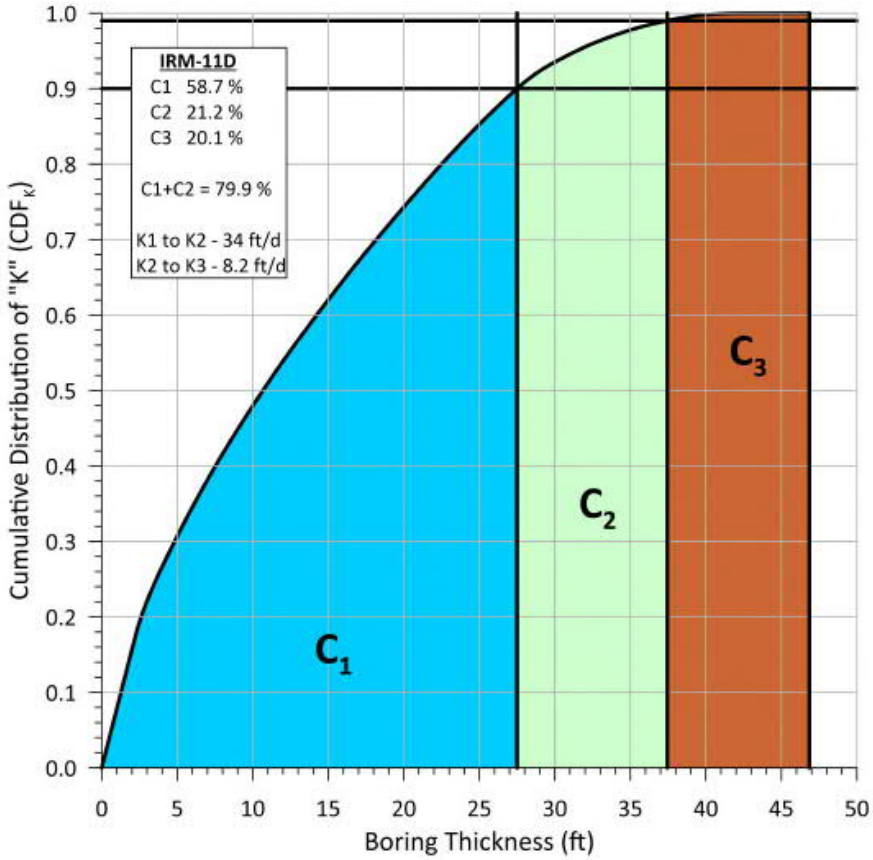


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FIGURE
E15

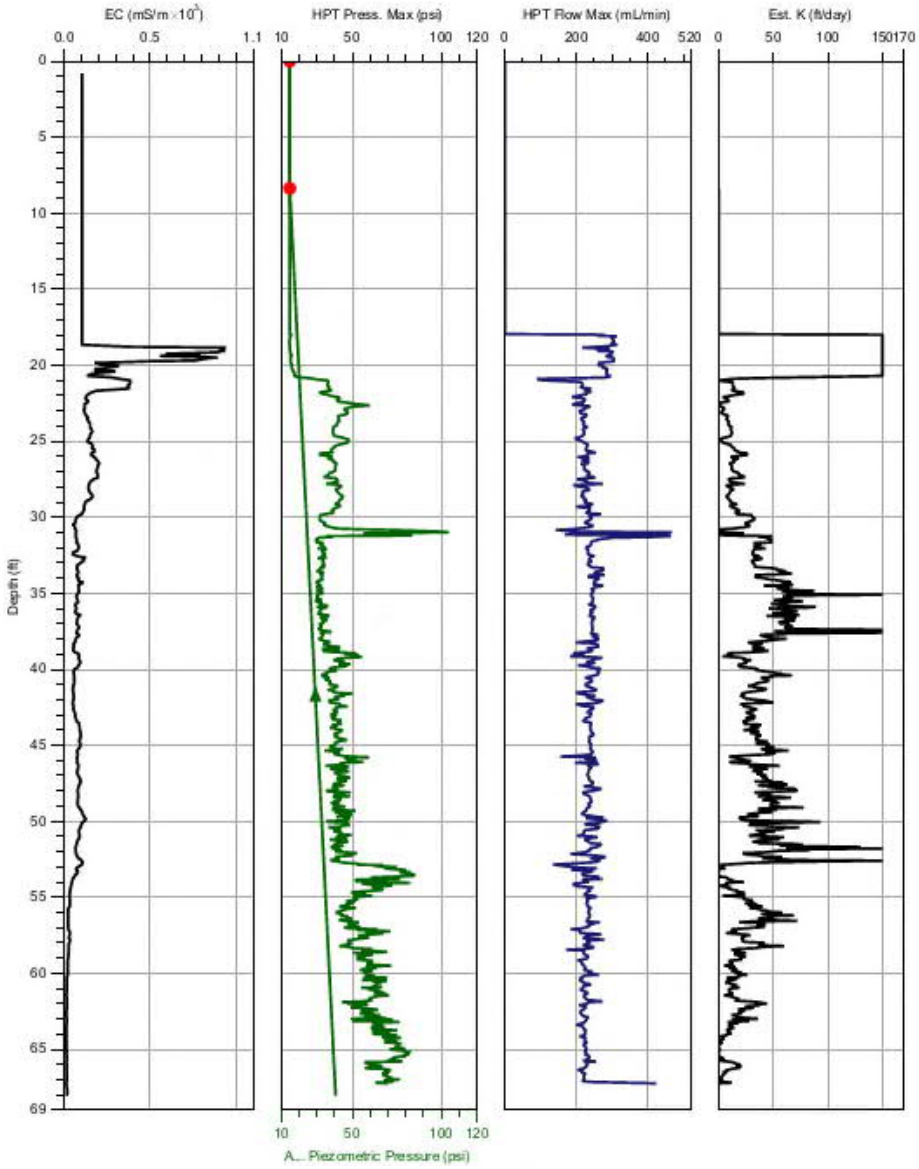


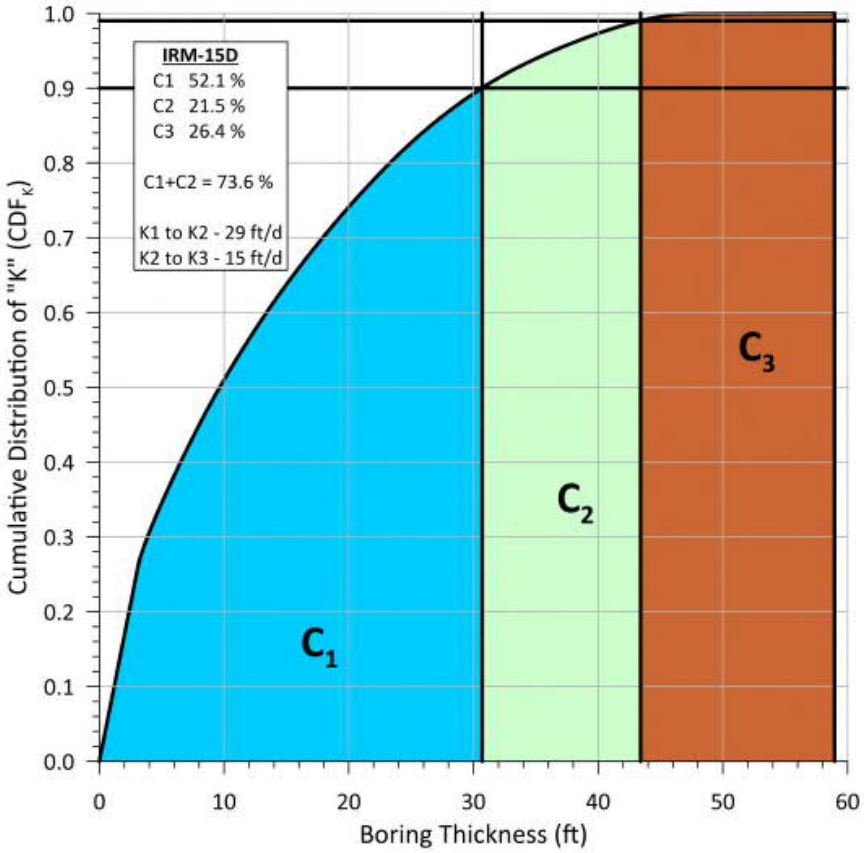


Notes:
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114-P2-IRM-15D

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FIGURE
E16

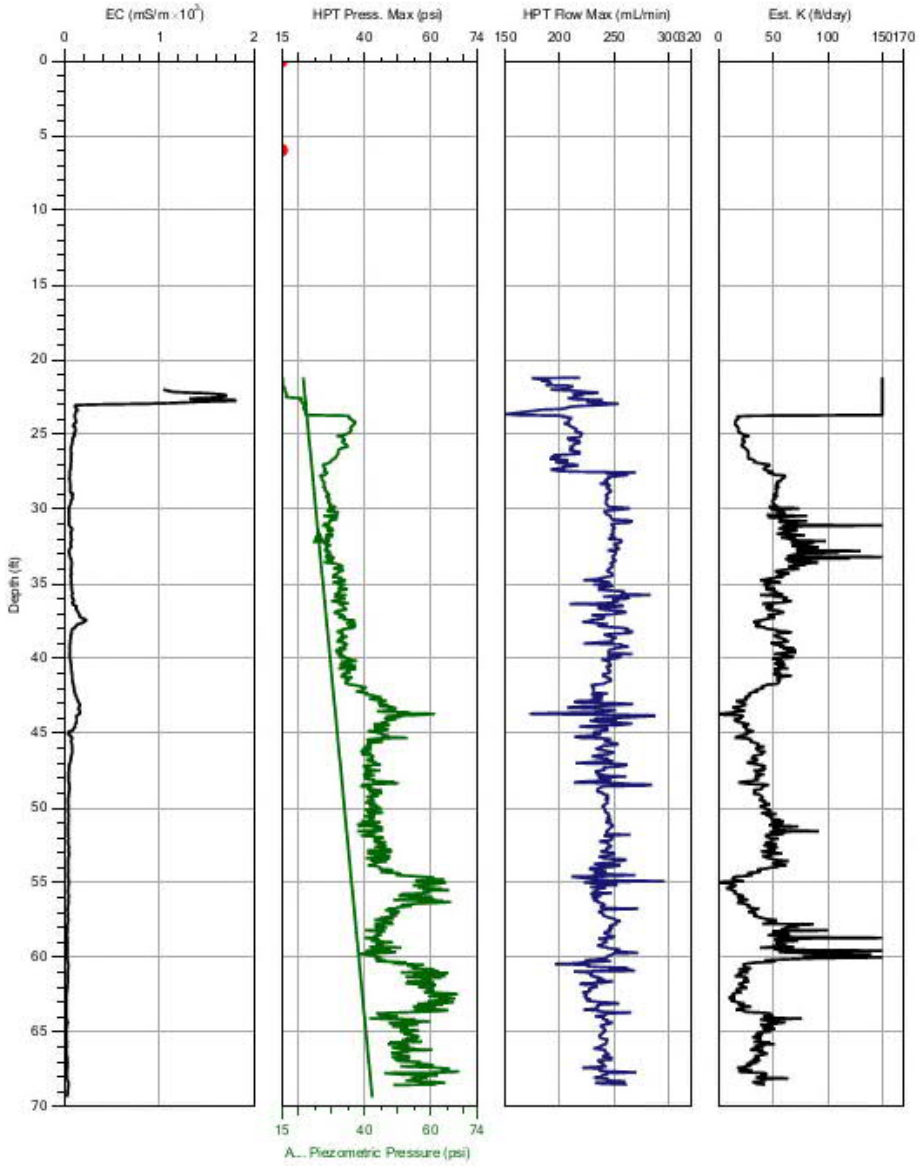


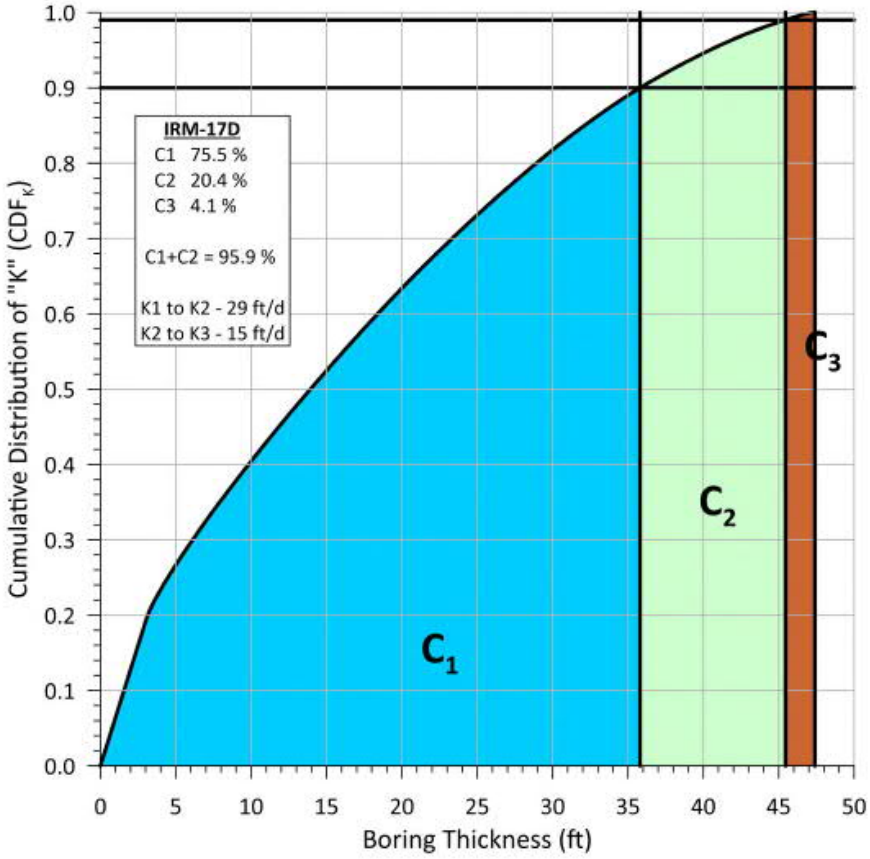


Notes:
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114-P2-IRM-17D

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FIGURE
E17

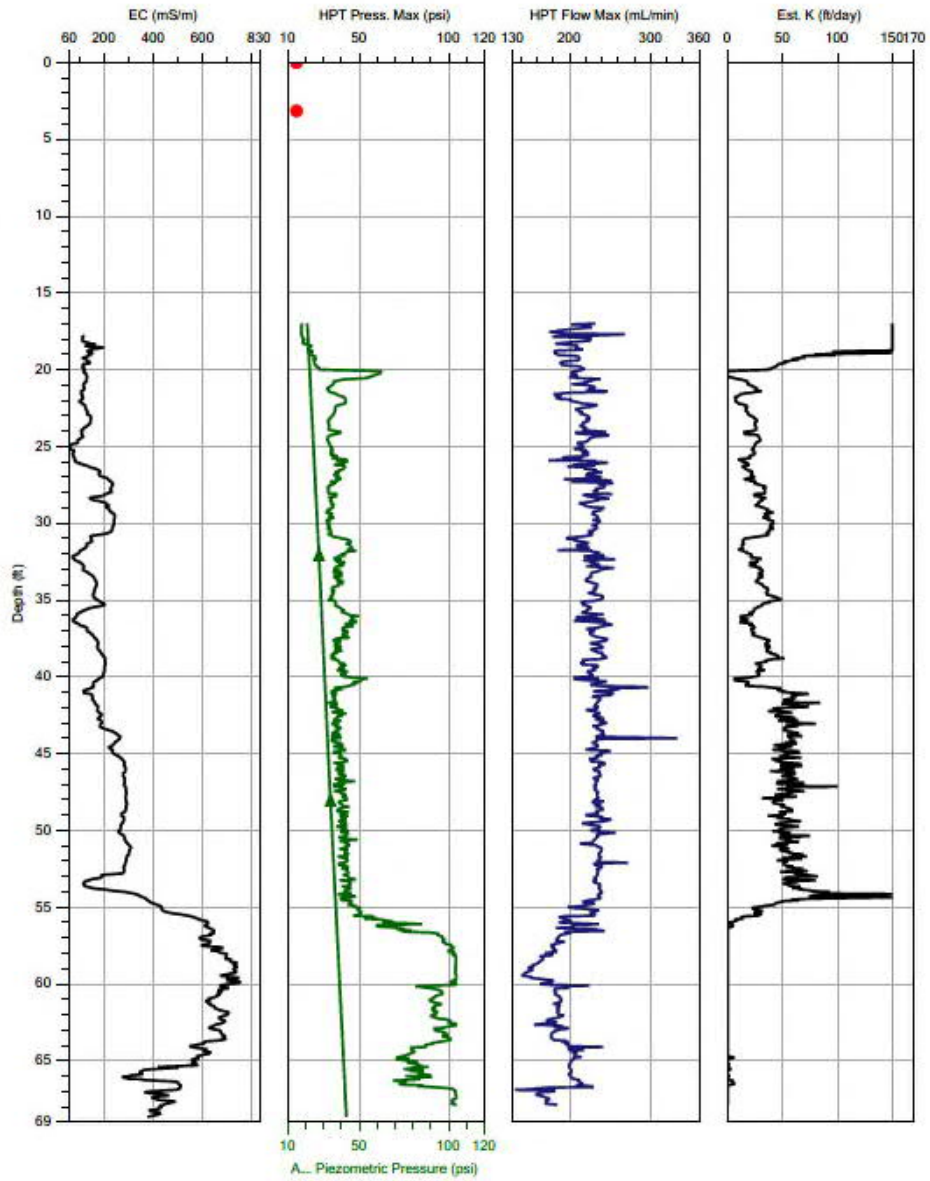


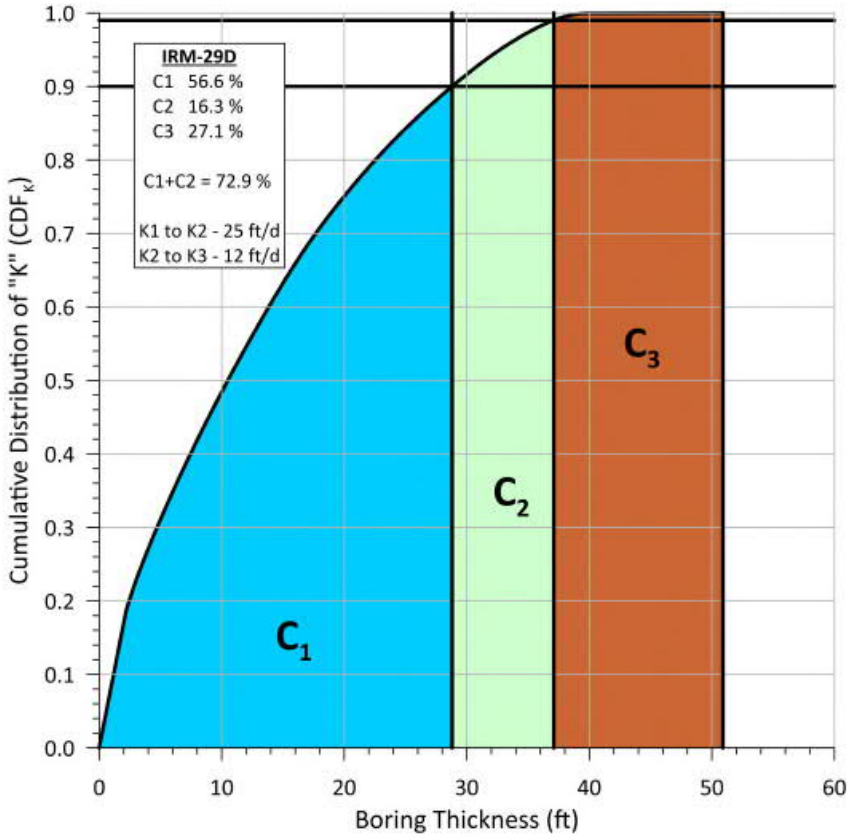


Notes:
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114-P2-IRM-29D

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FIGURE
E18

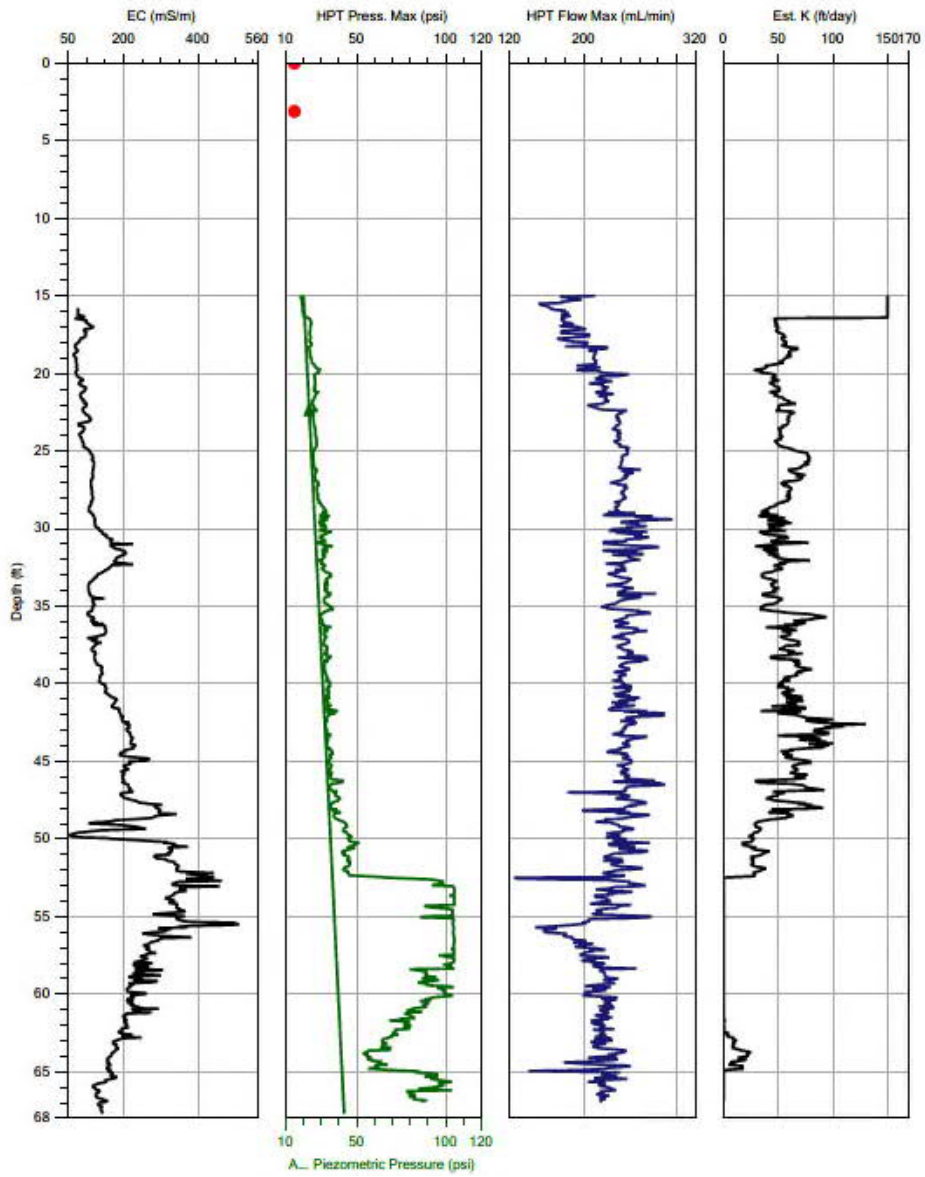


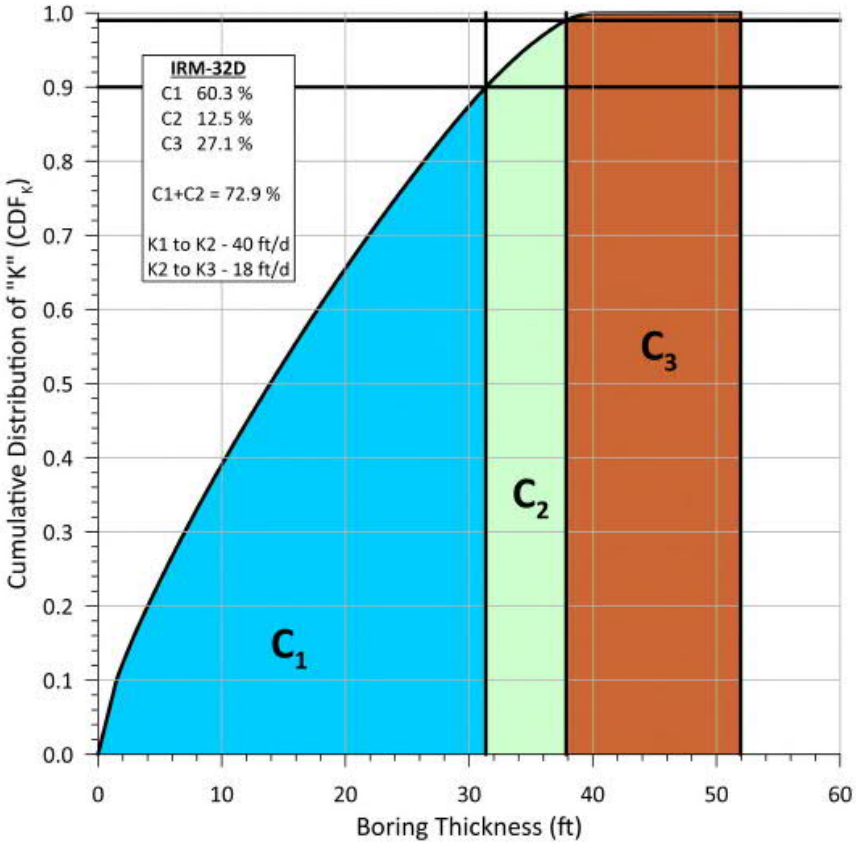


Notes:
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114-P2-IRM-32D

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FIGURE
E19

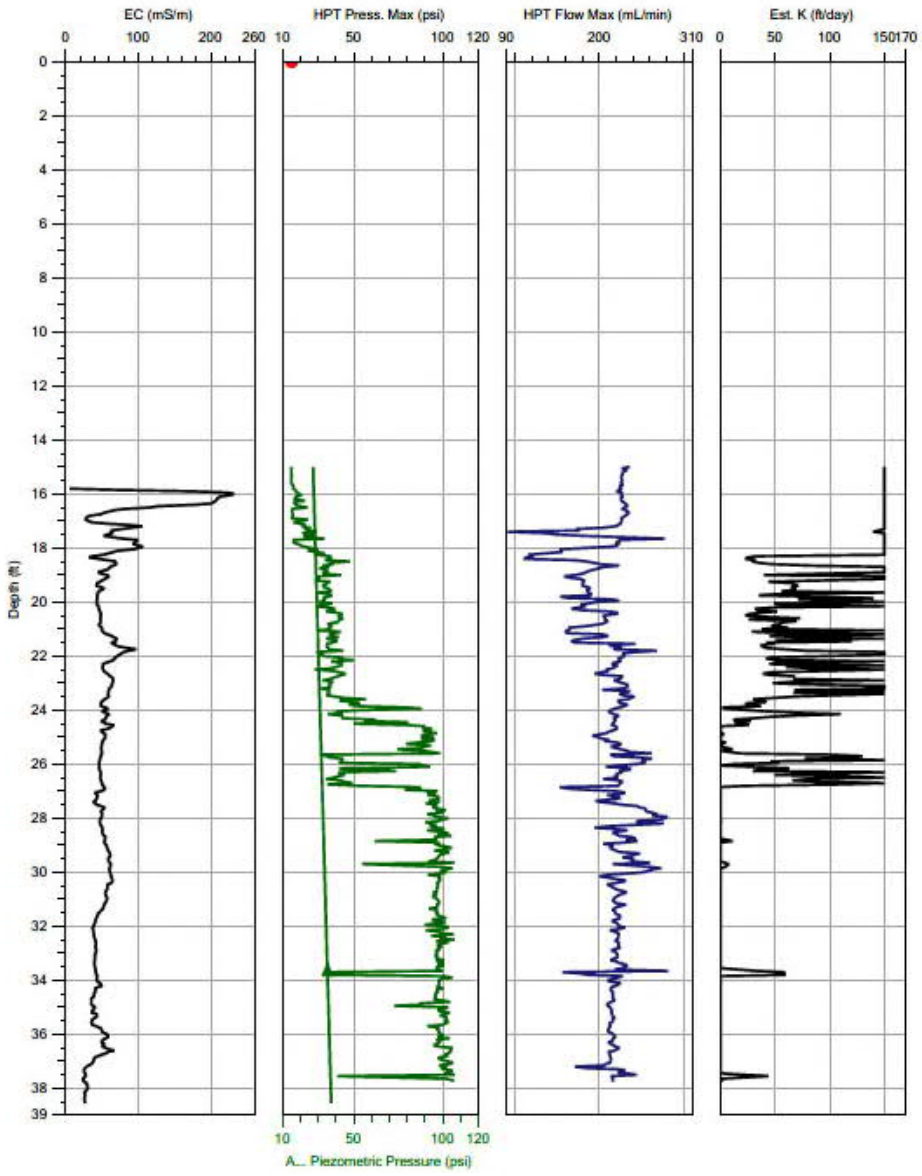


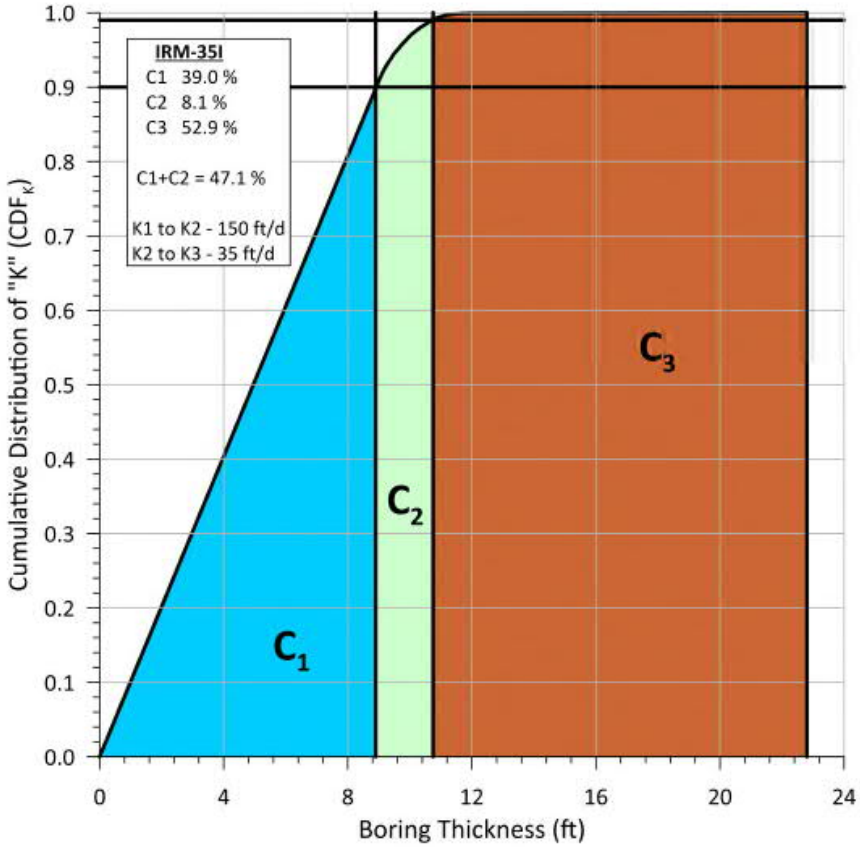


Notes:
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114-P2-IRM-35I

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FIGURE
E20

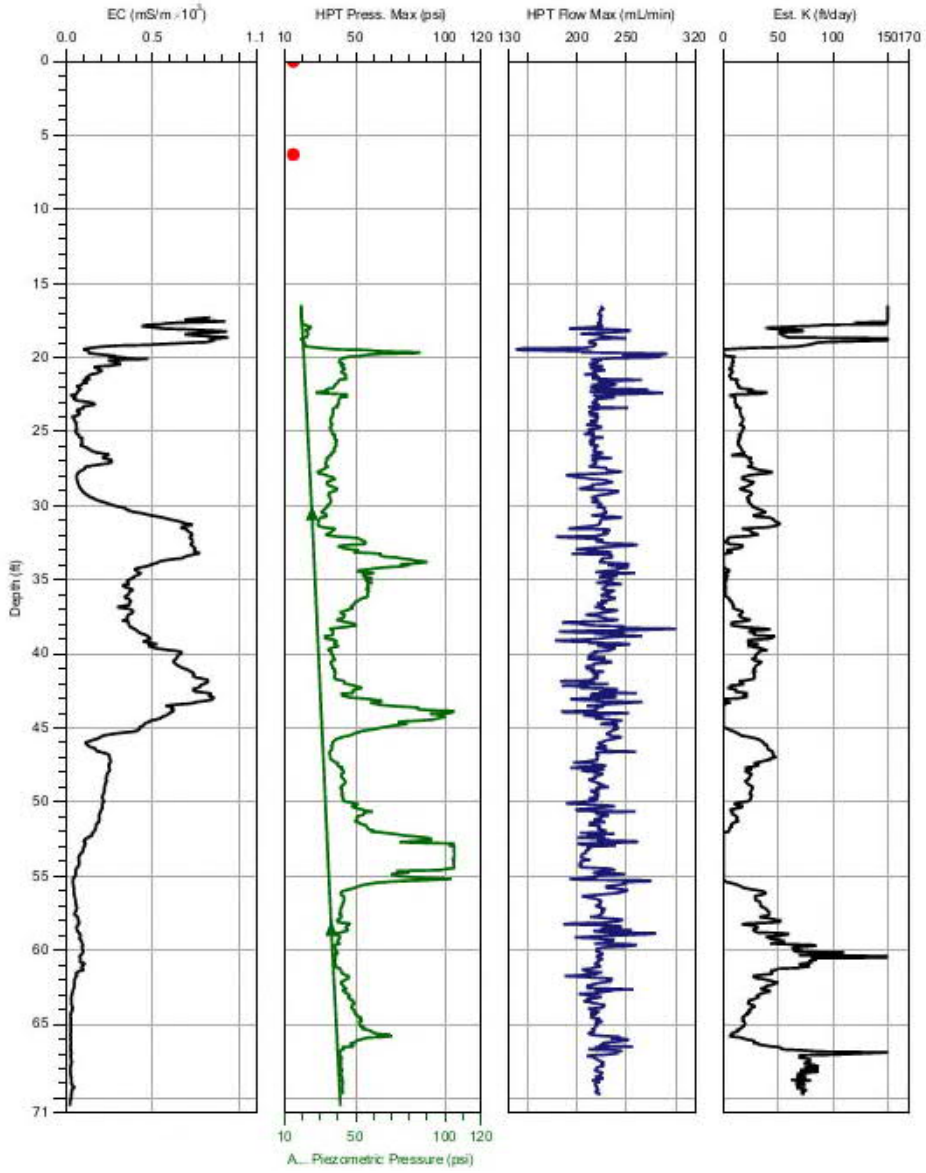


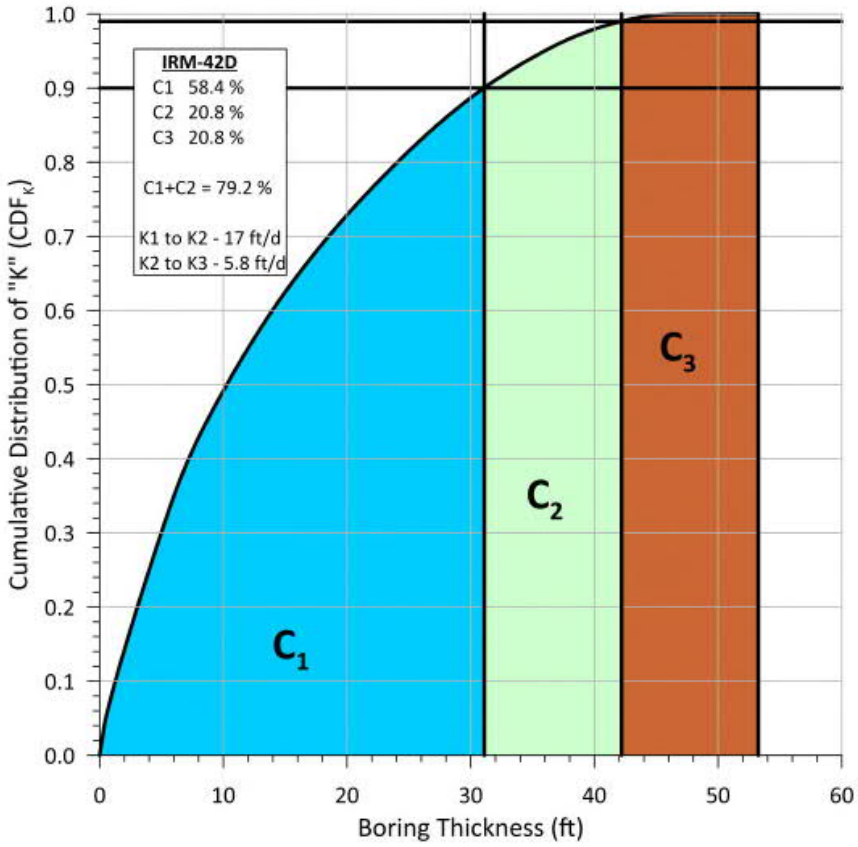


Notes:
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FIGURE
E21

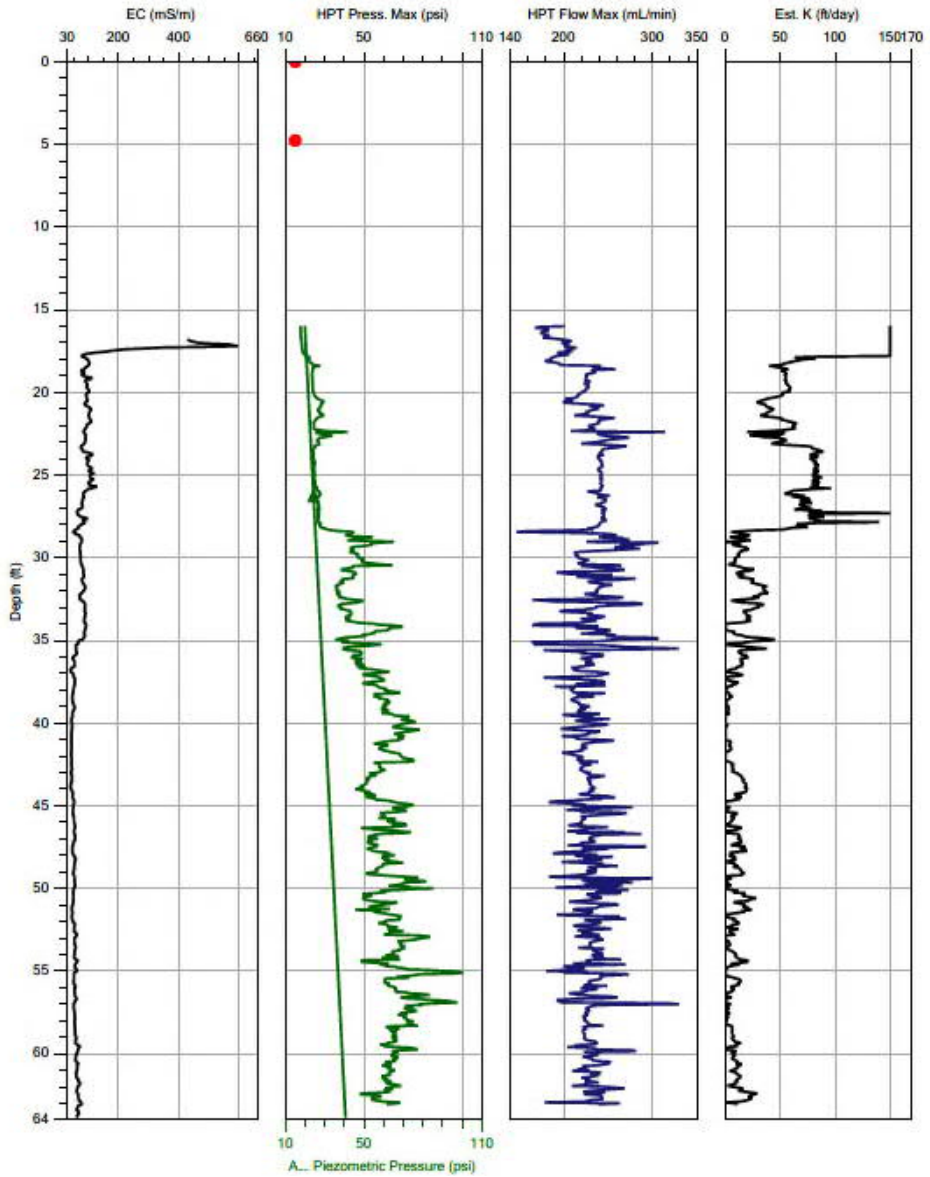


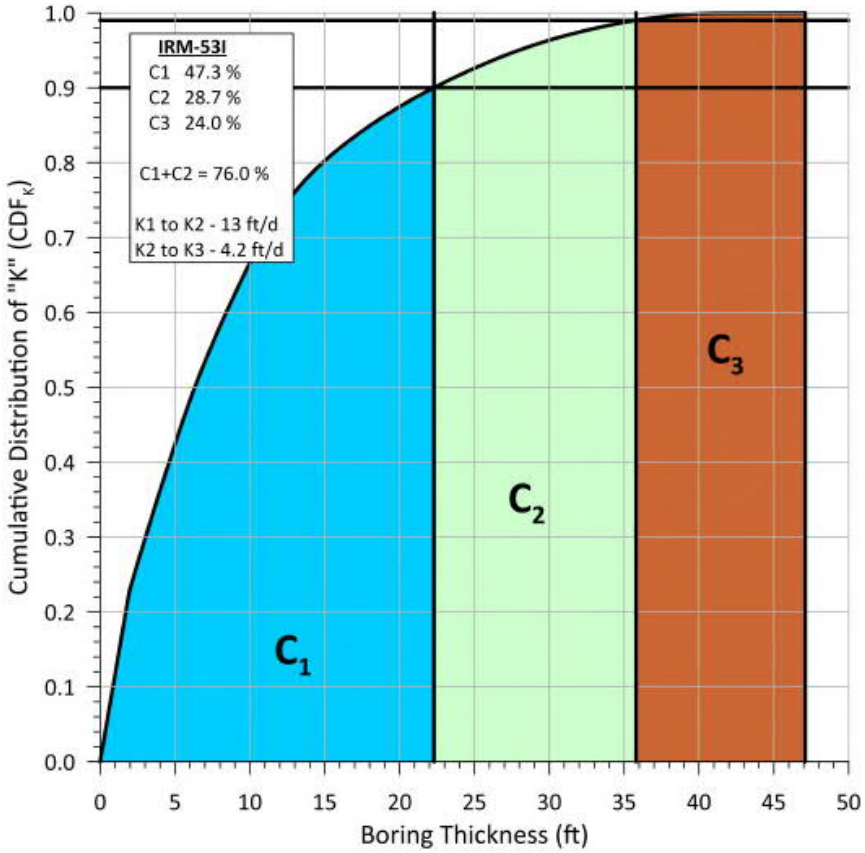


Notes:
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FIGURE
E22

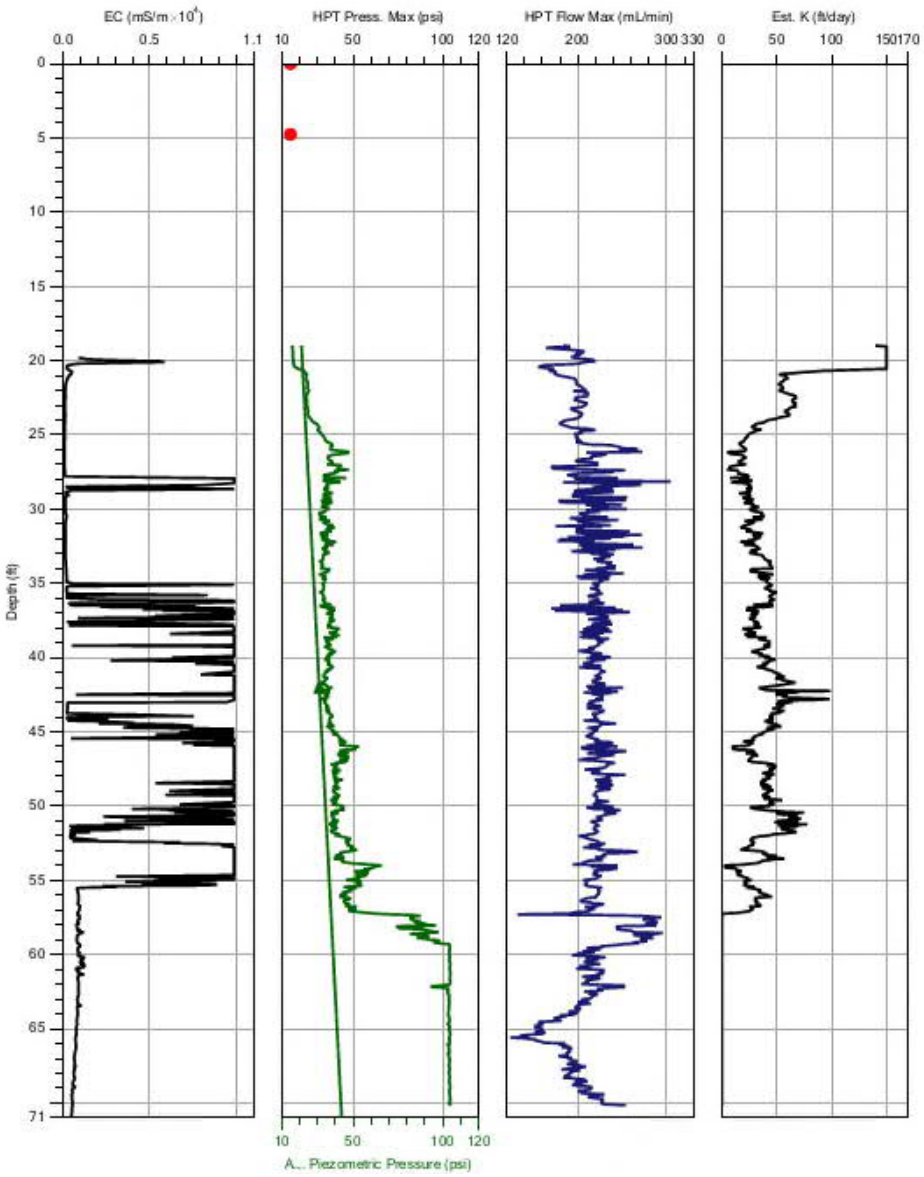


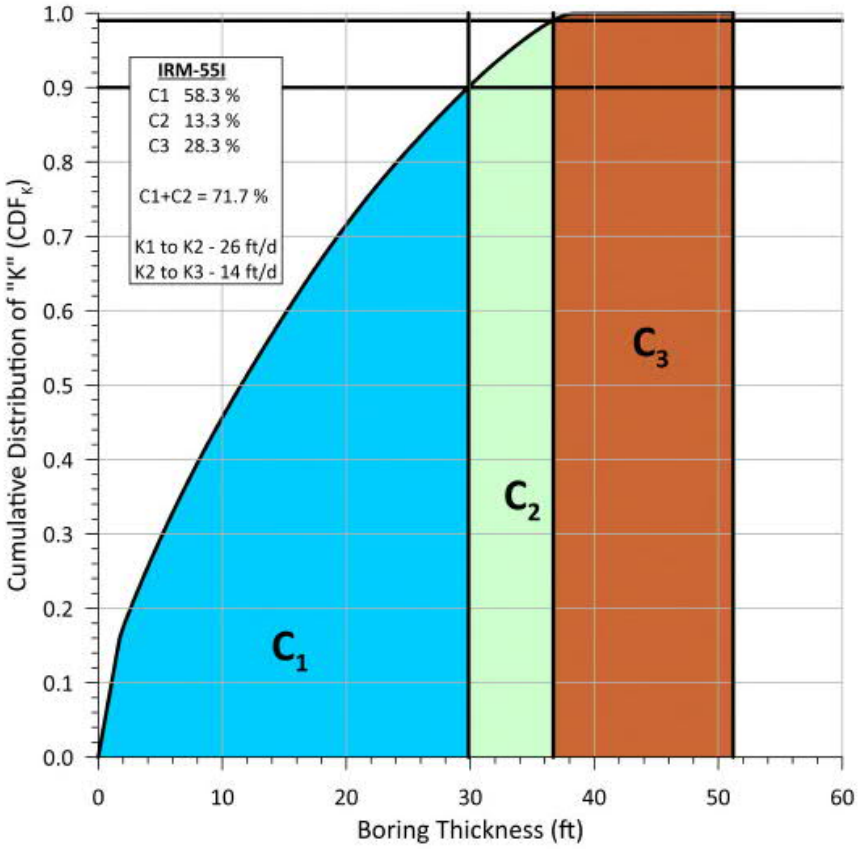


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FIGURE
E23

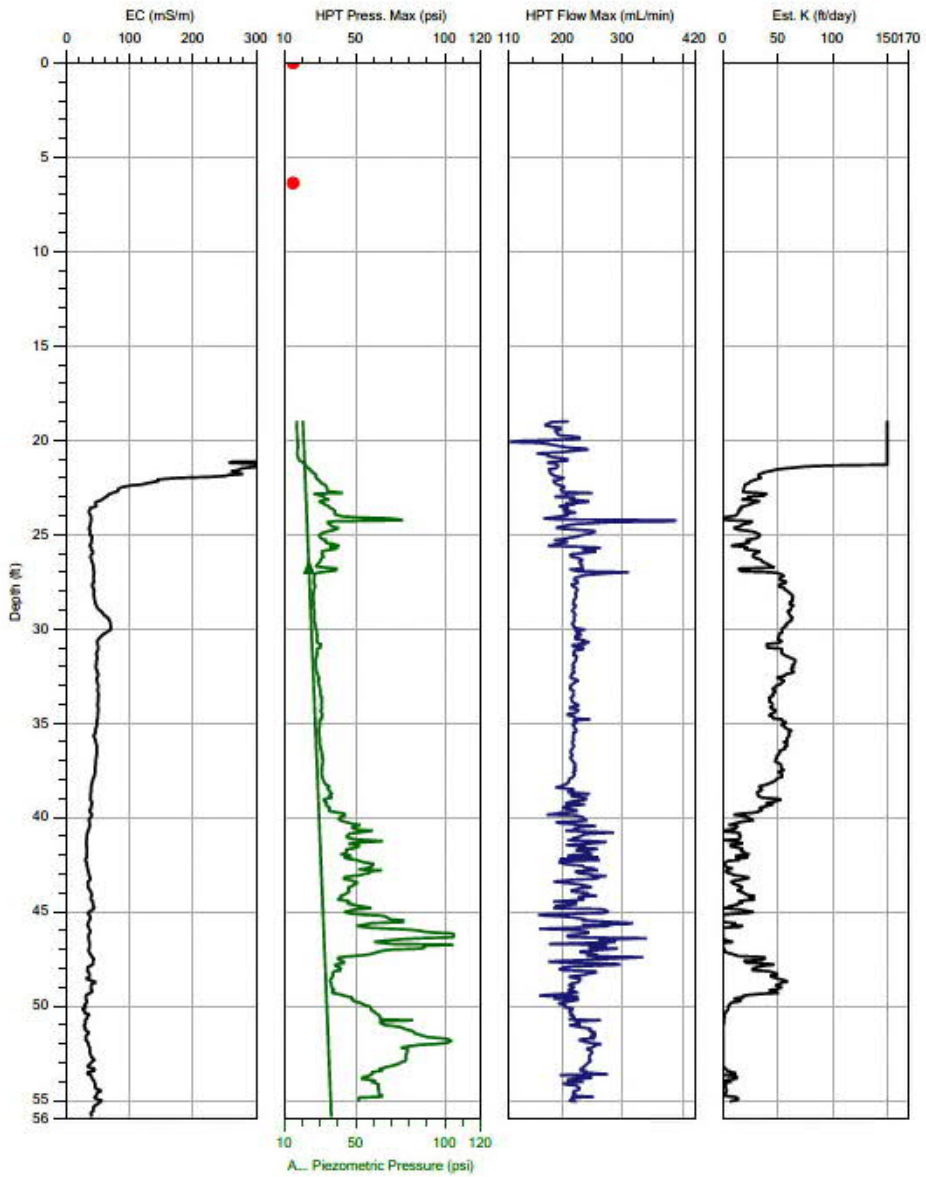


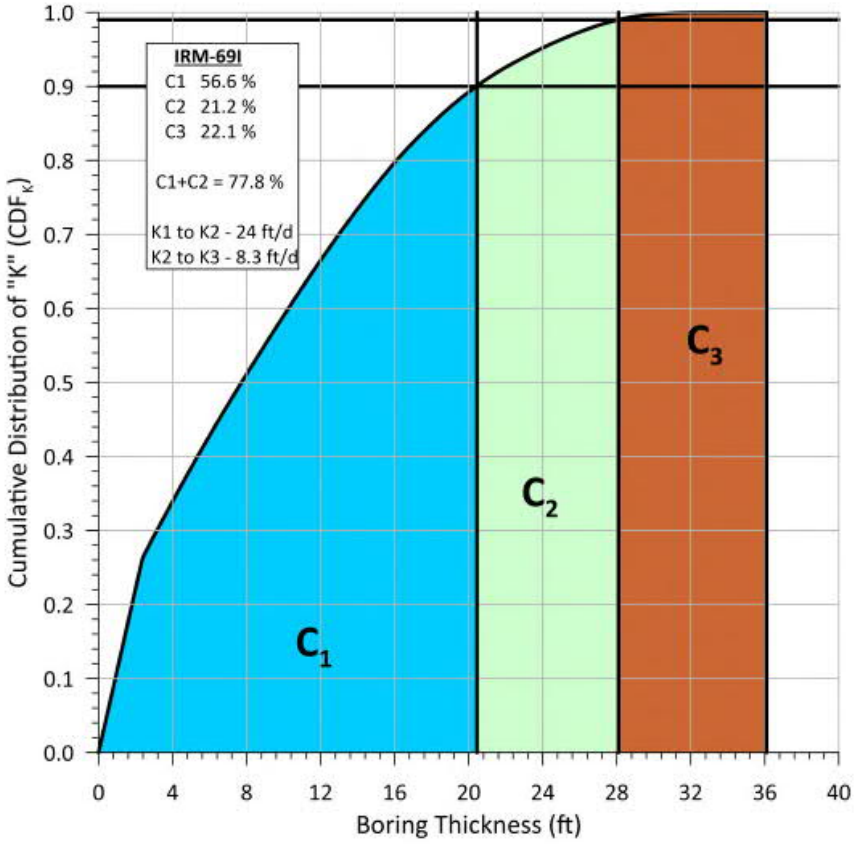


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FIGURE
E24

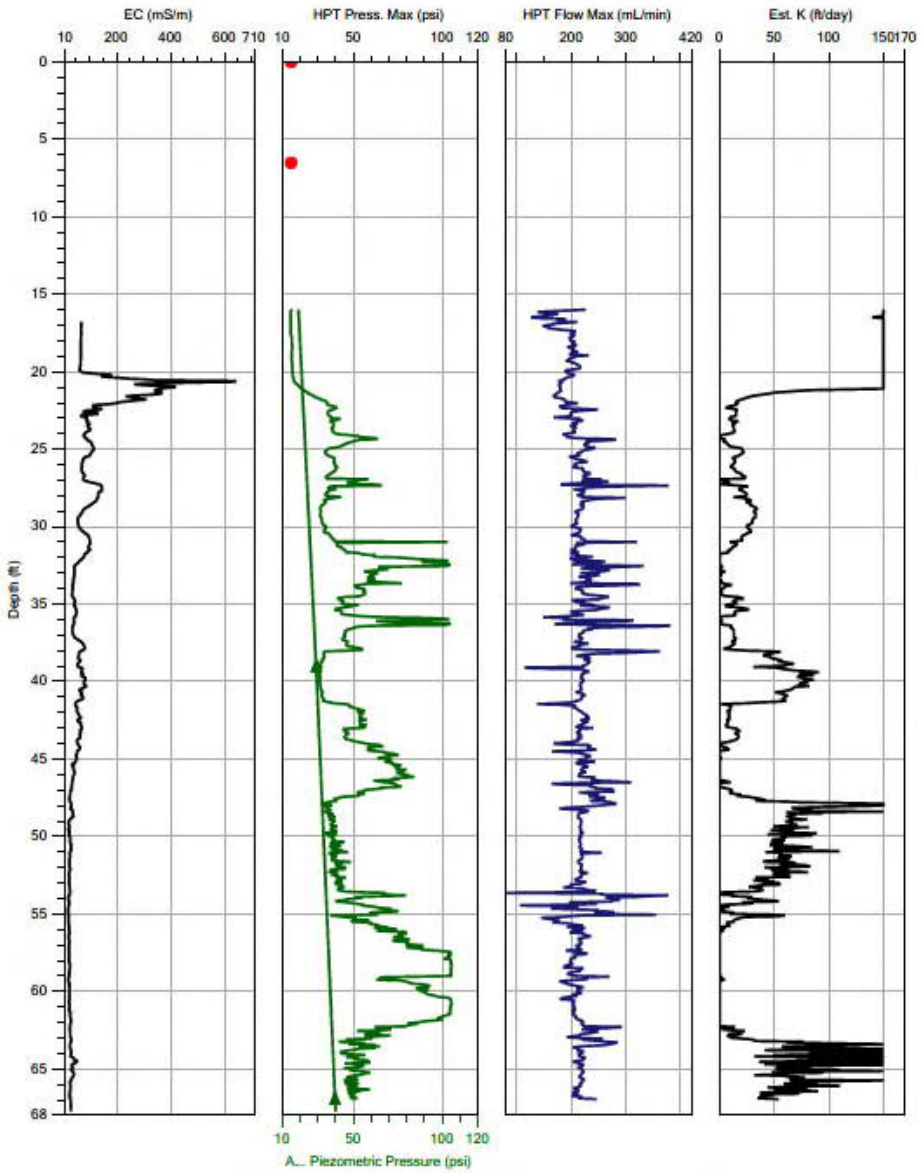


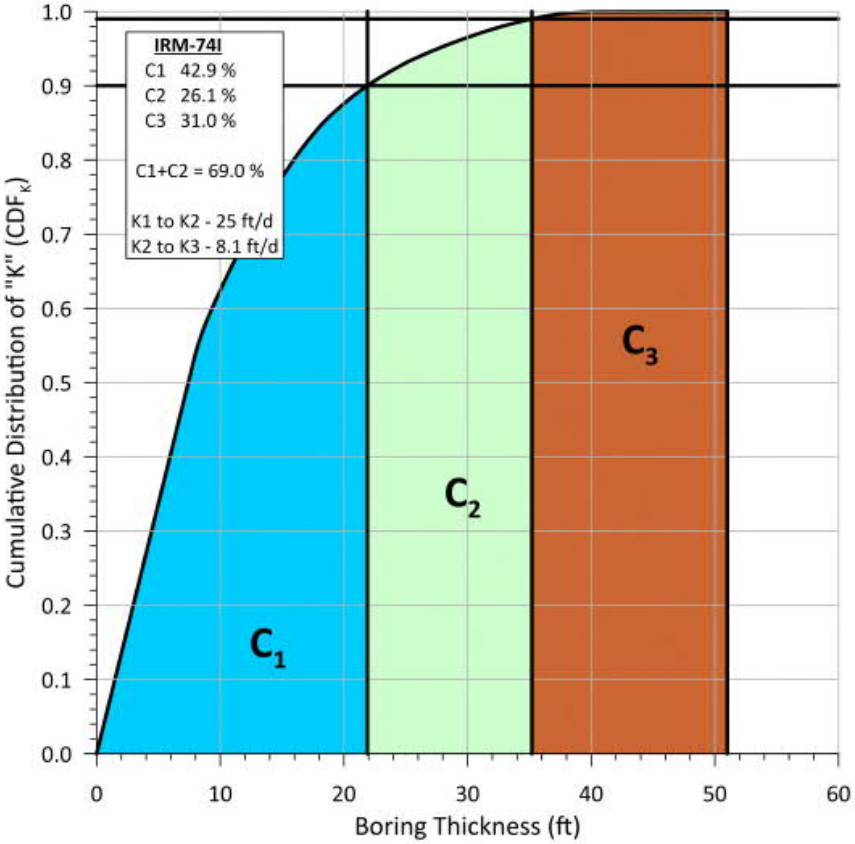


Notes:
C1 – most permeable soils, dominated by advective transport
C2 – moderately permeable soils, dominated by slow advection
C3 – low permeability soils, dominated by diffusion

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114-P2-IRM-74I

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FIGURE
E25

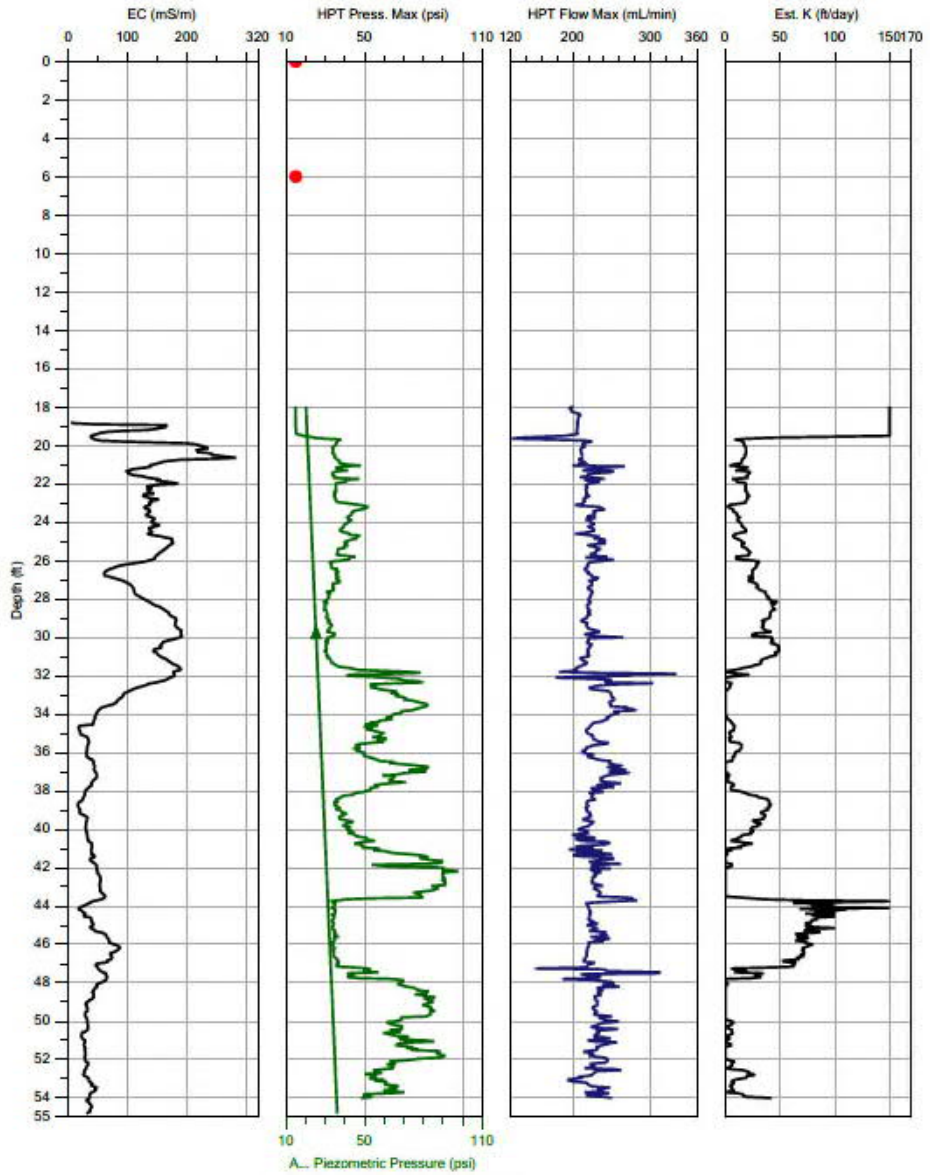


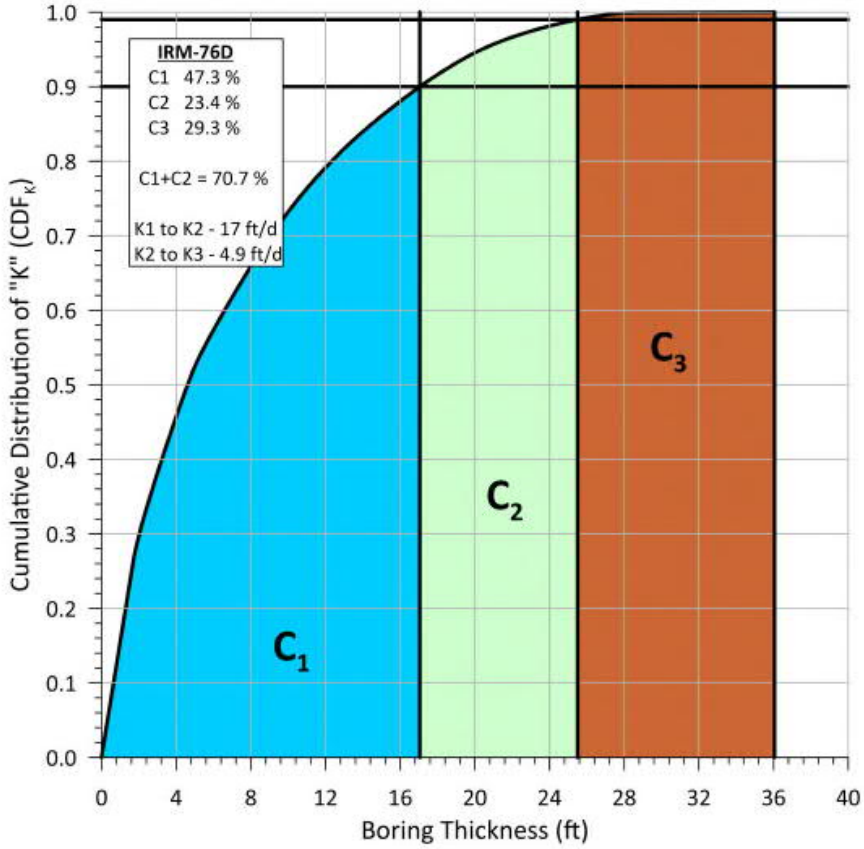


Notes:
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C3 – low permeability soils, dominated by diffusion

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114-P2-IRM-76D

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FIGURE
E26

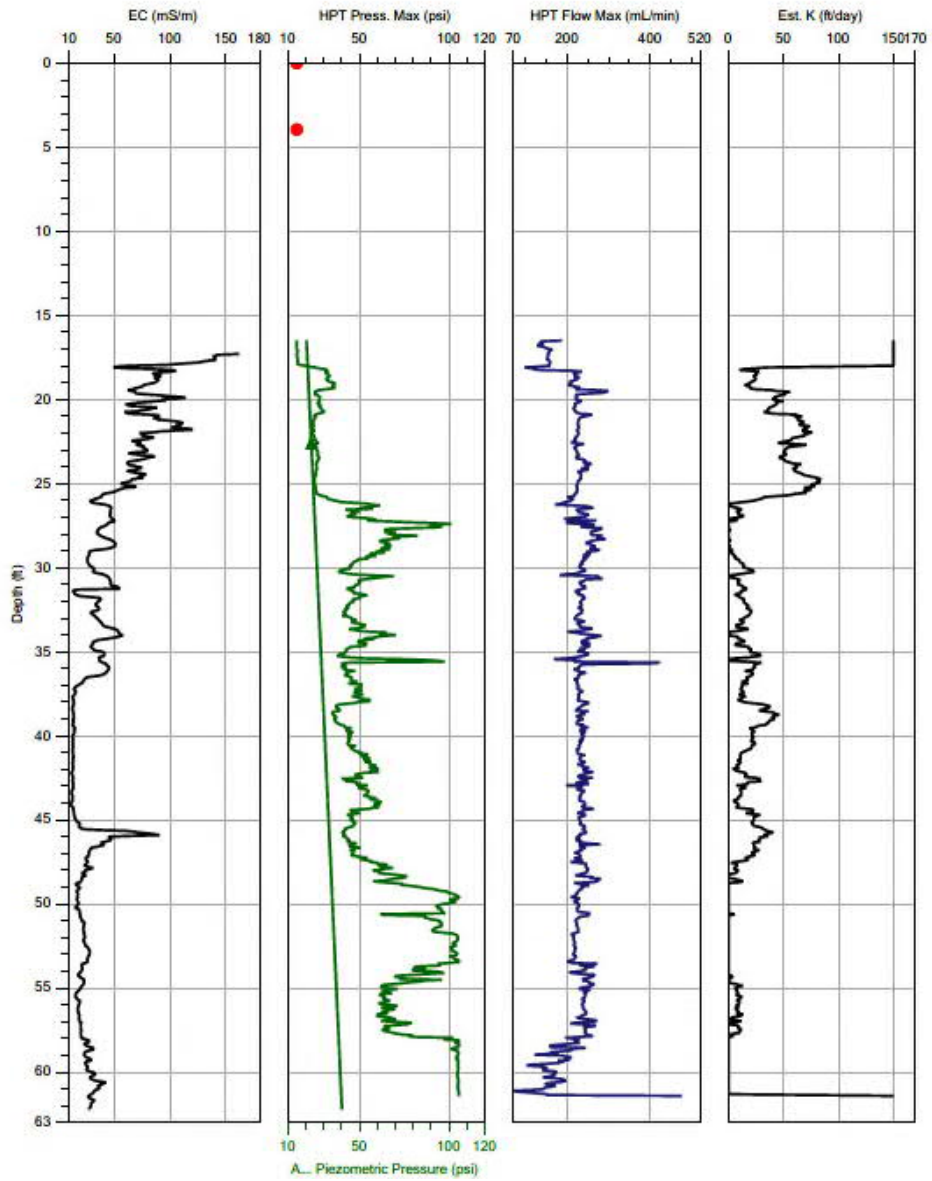


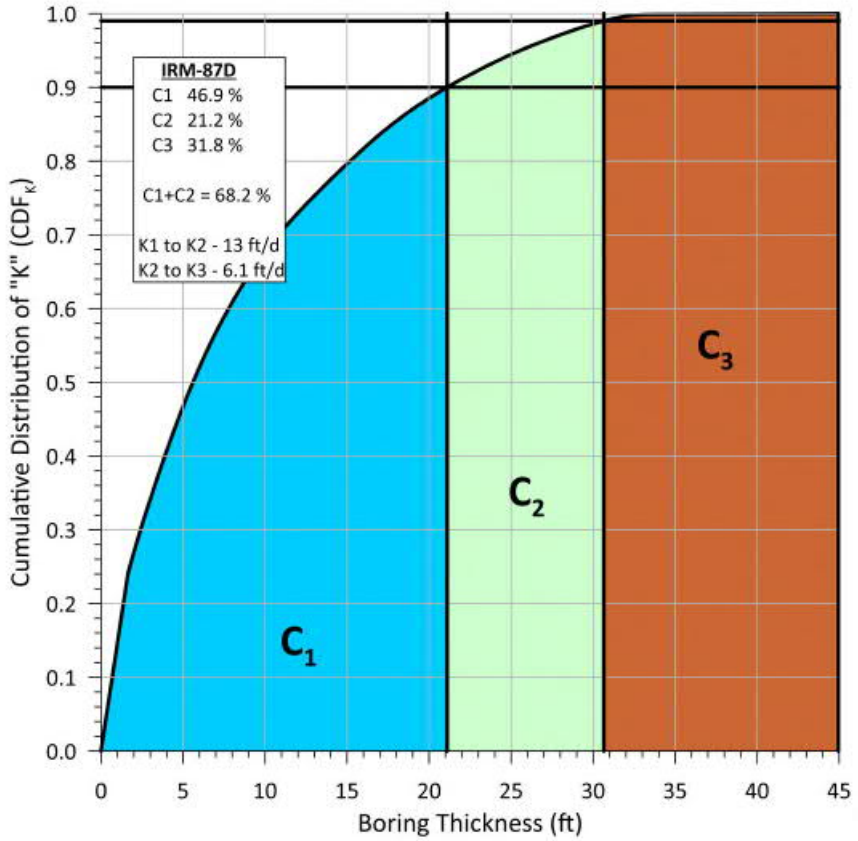


Notes:
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114-P2-IRM-87D

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FIGURE
E27

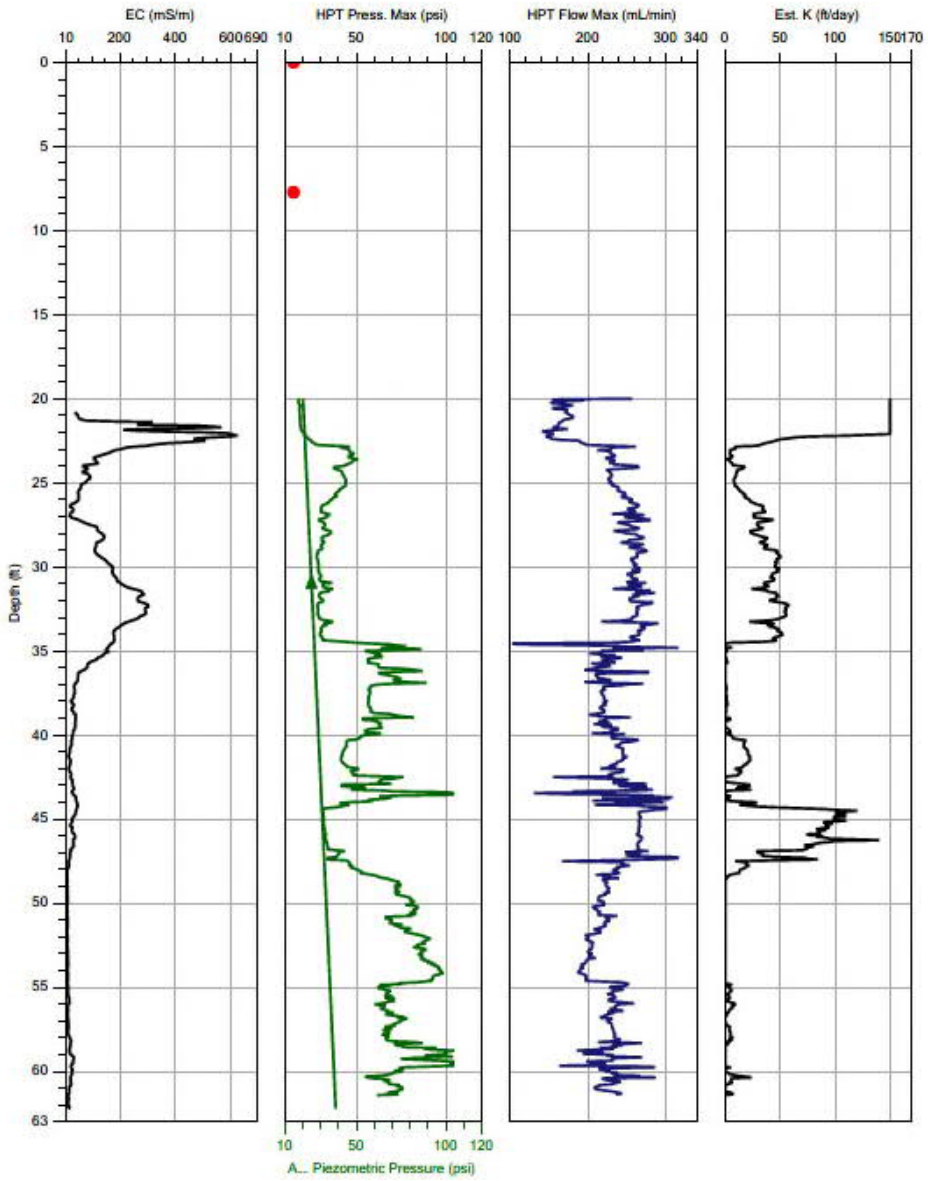


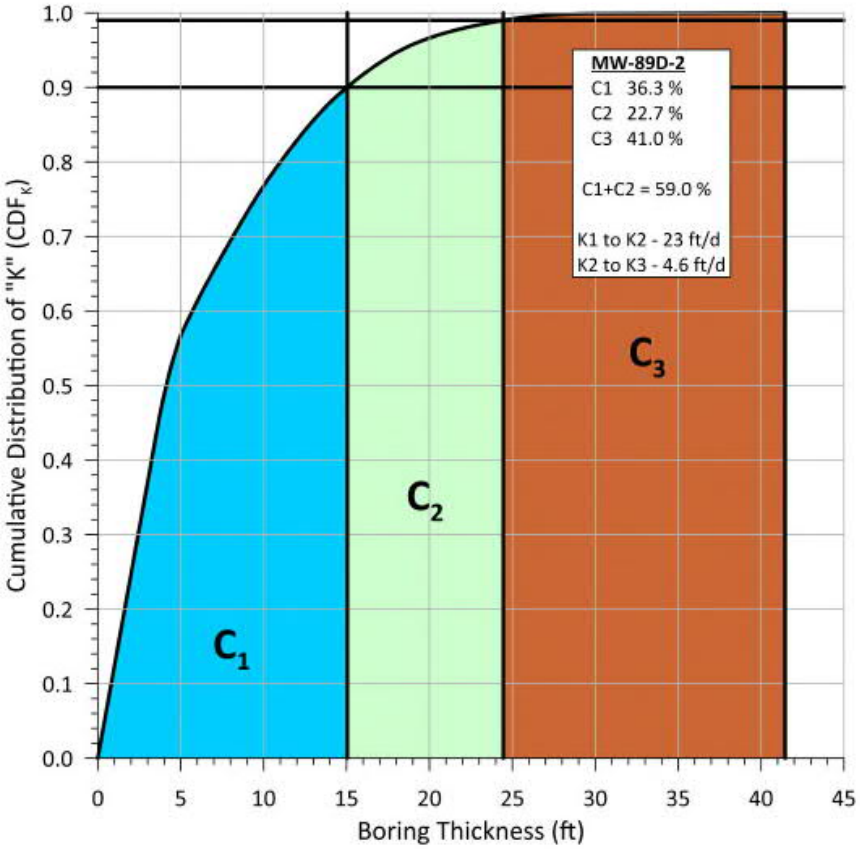


Notes:
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C3 – low permeability soils, dominated by diffusion

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114-P2-IRM-89D

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FIGURE
E28

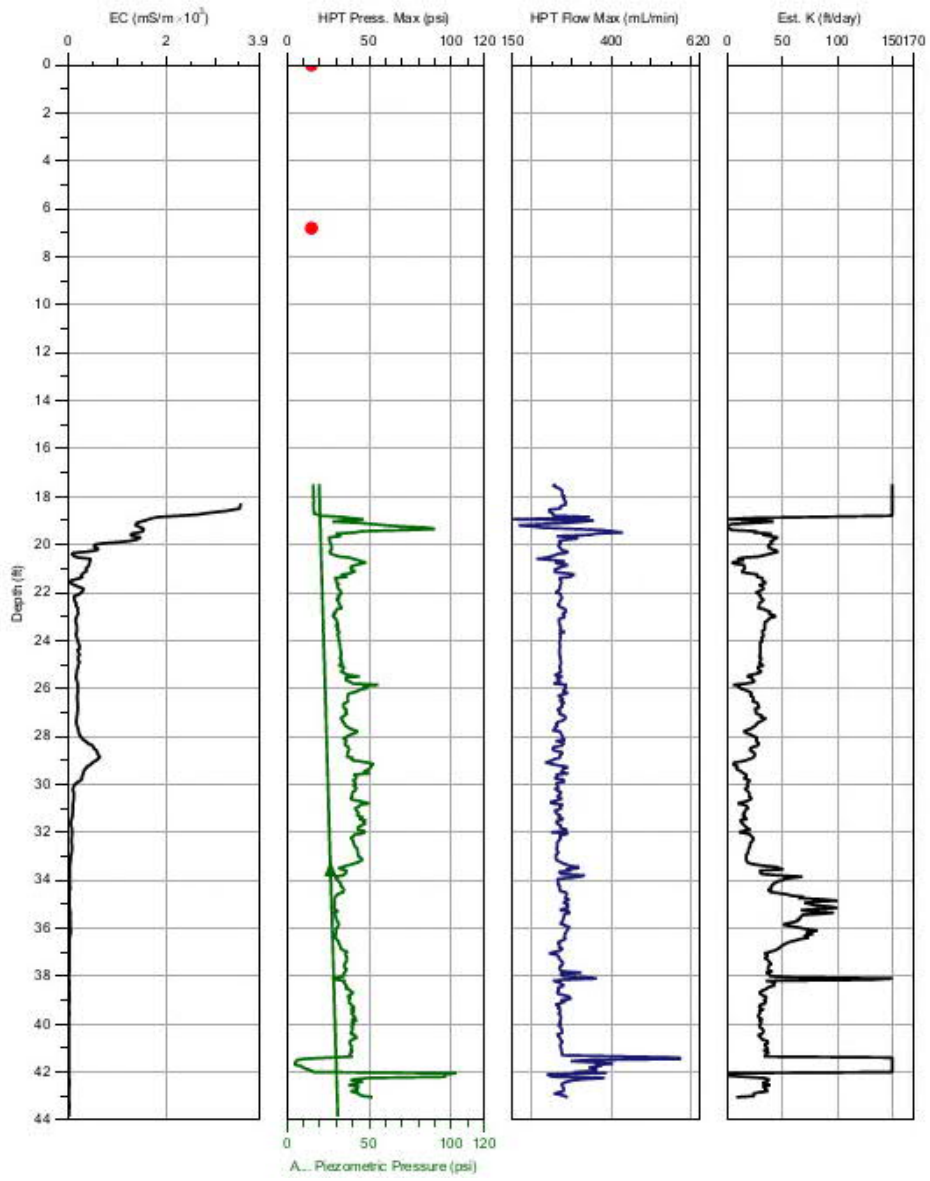


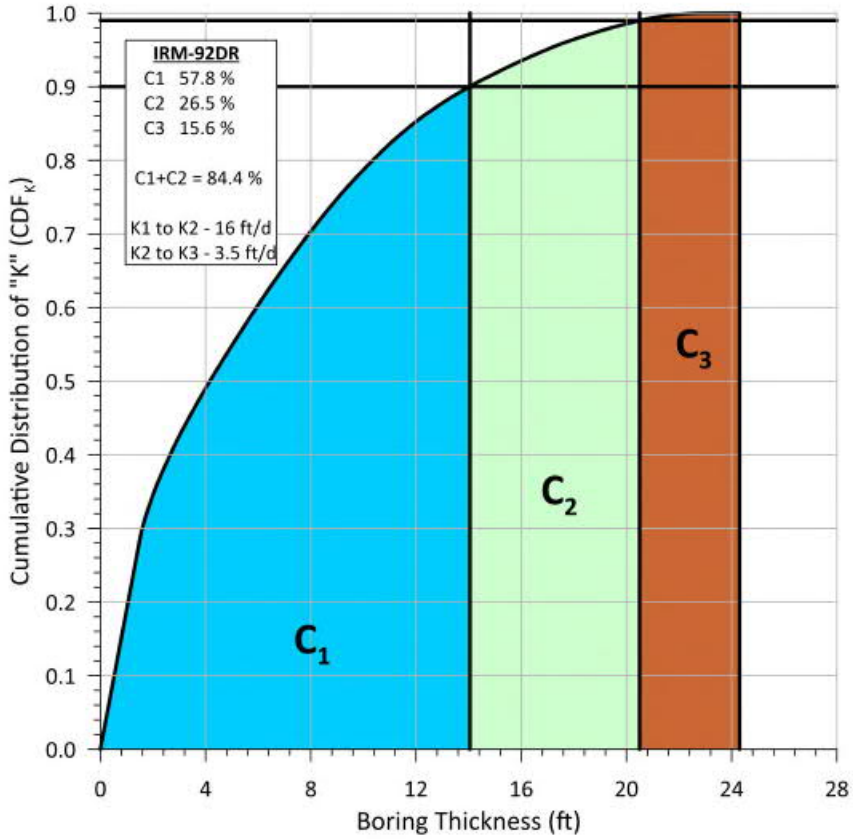


Notes:
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C3 – low permeability soils, dominated by diffusion

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114-P2-IRM-92DR

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FIGURE
E29

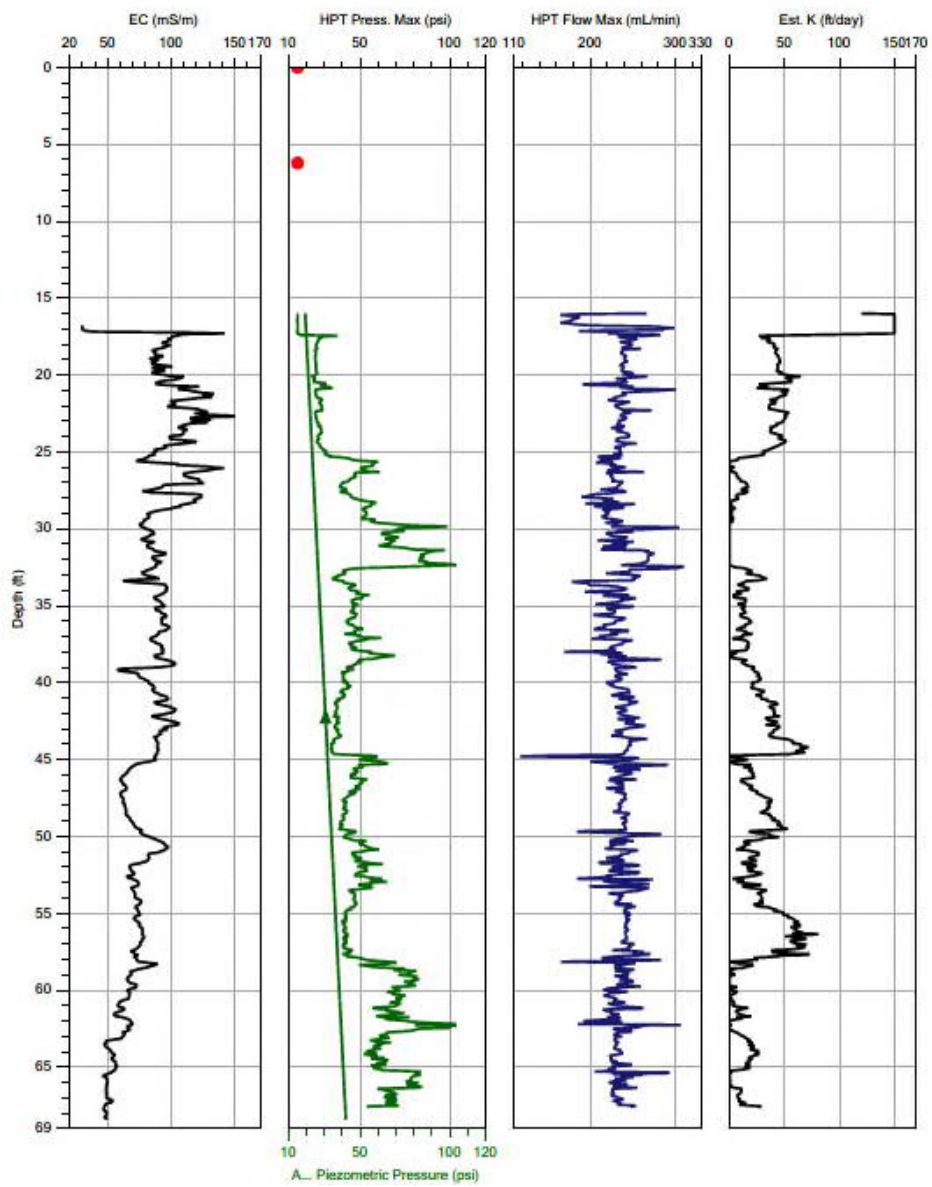


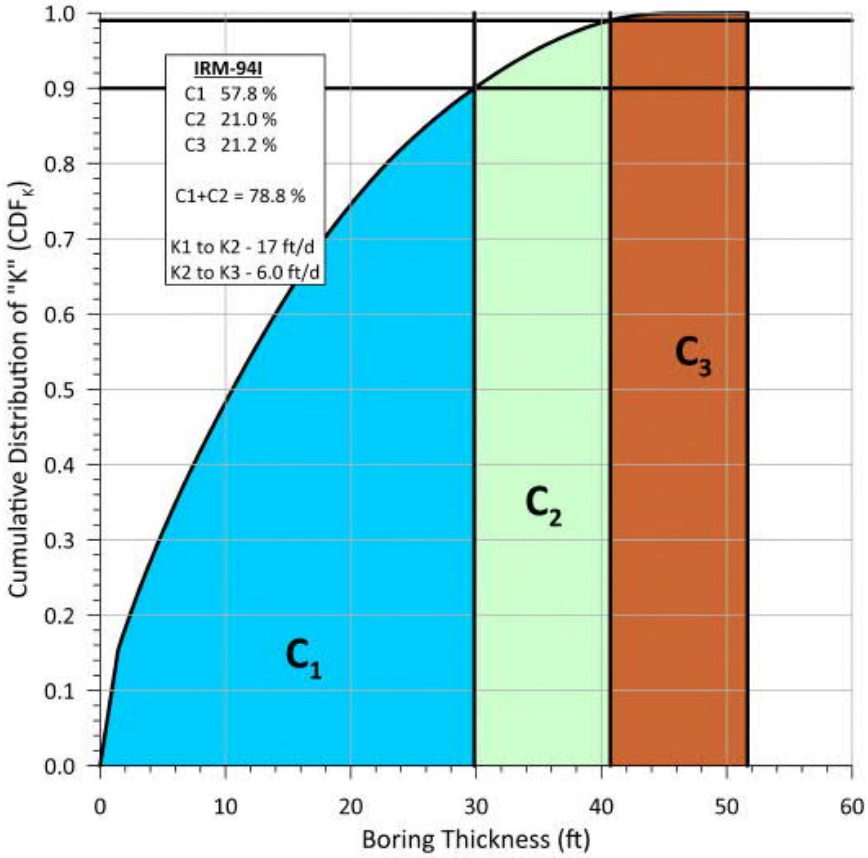


Notes:
C1 – most permeable soils, dominated by advective transport
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GARFIELD AVENUE GROUP SITES
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114-P2-IRM-94I

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FIGURE
E30

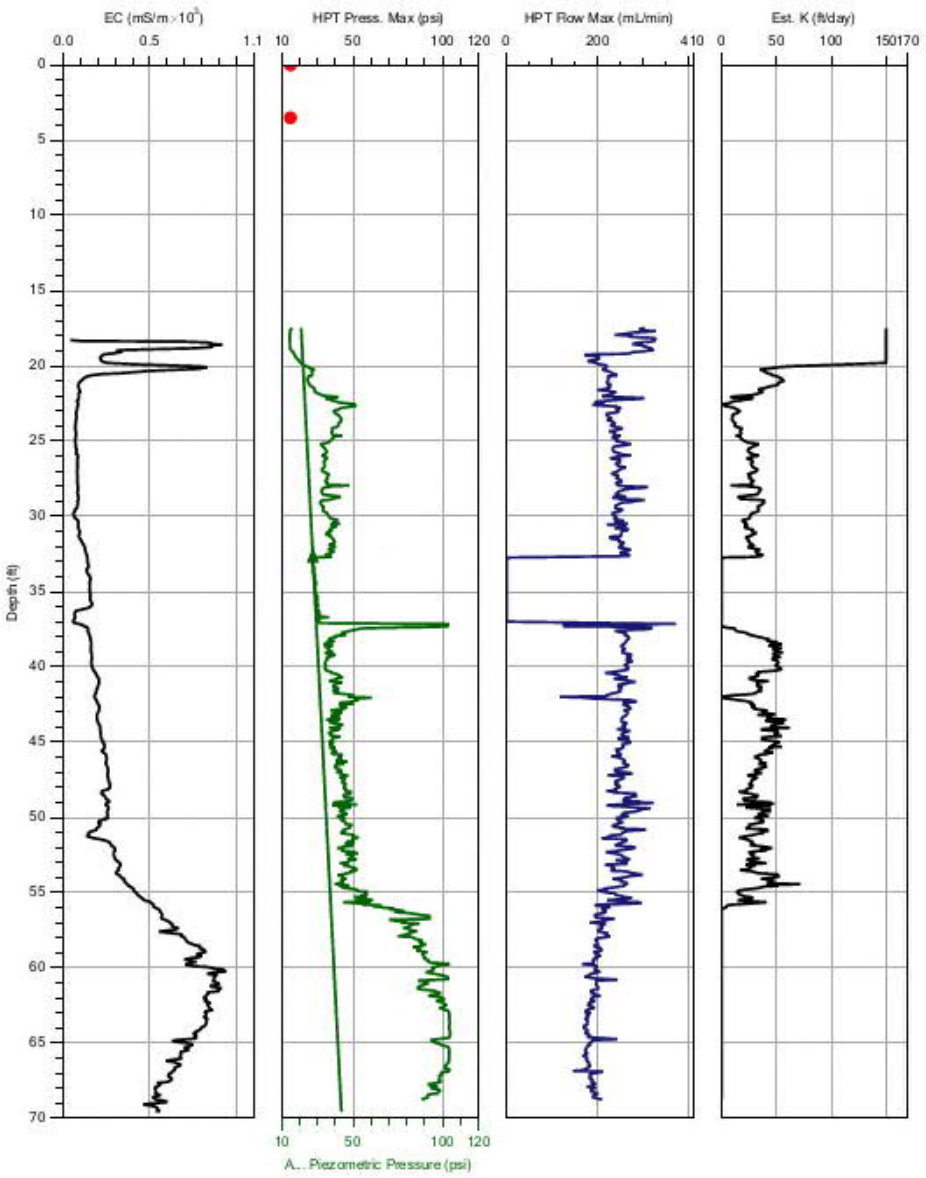


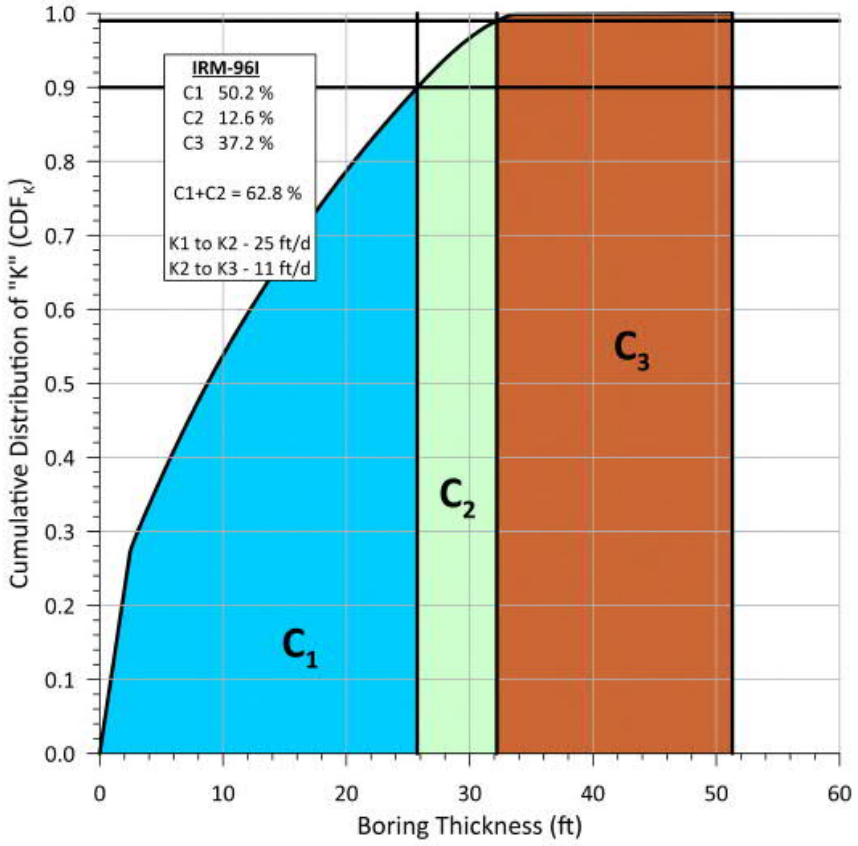


Notes:
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114-P2-IRM-96I

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FIGURE
E31

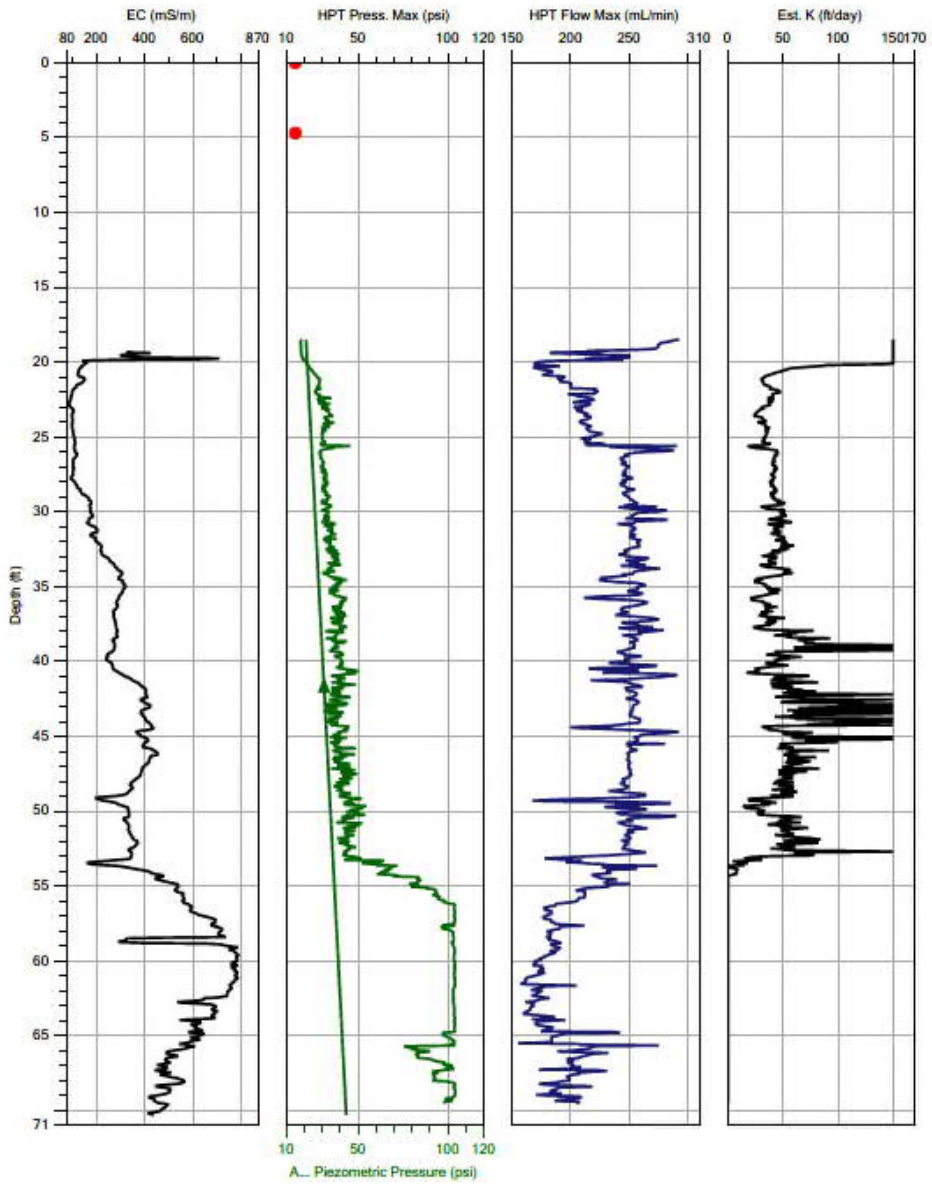


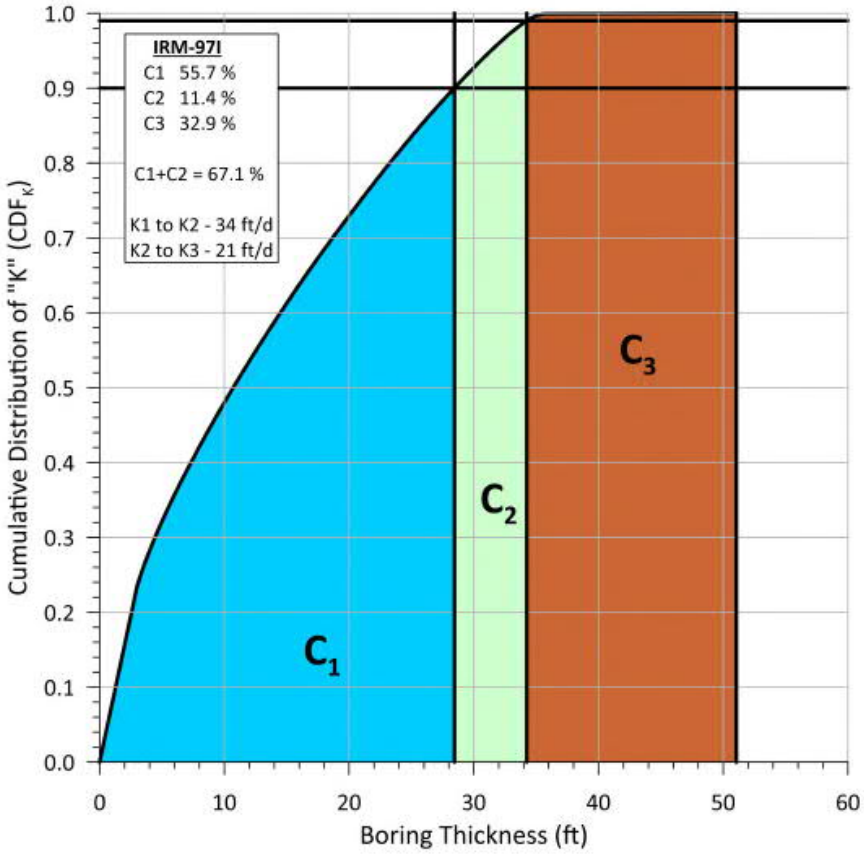


Notes:
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114-P2-IRM-97I

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FIGURE
E32

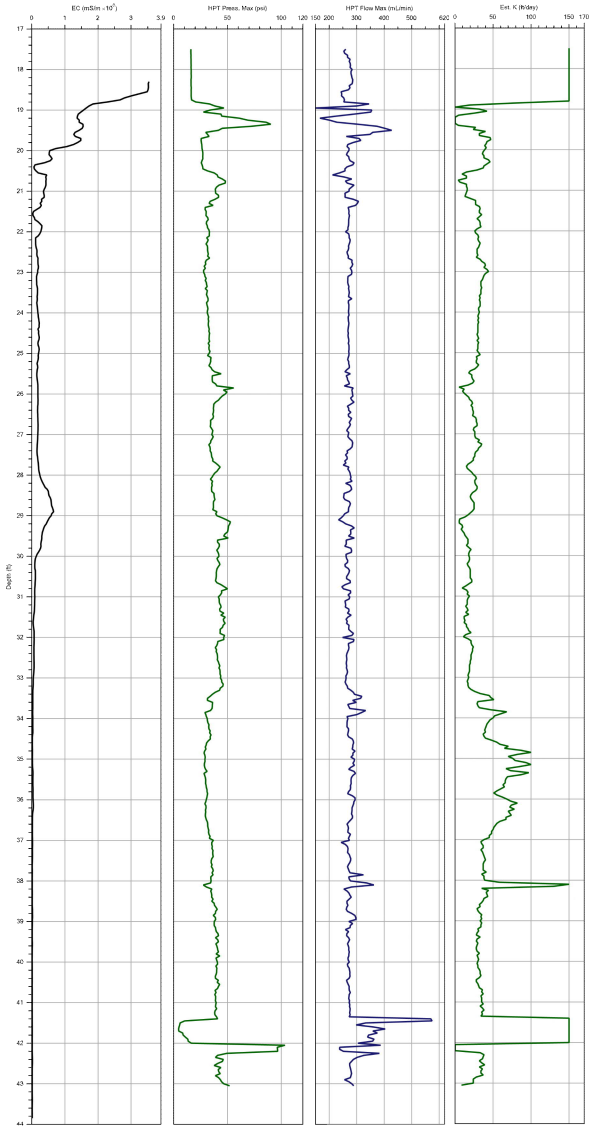

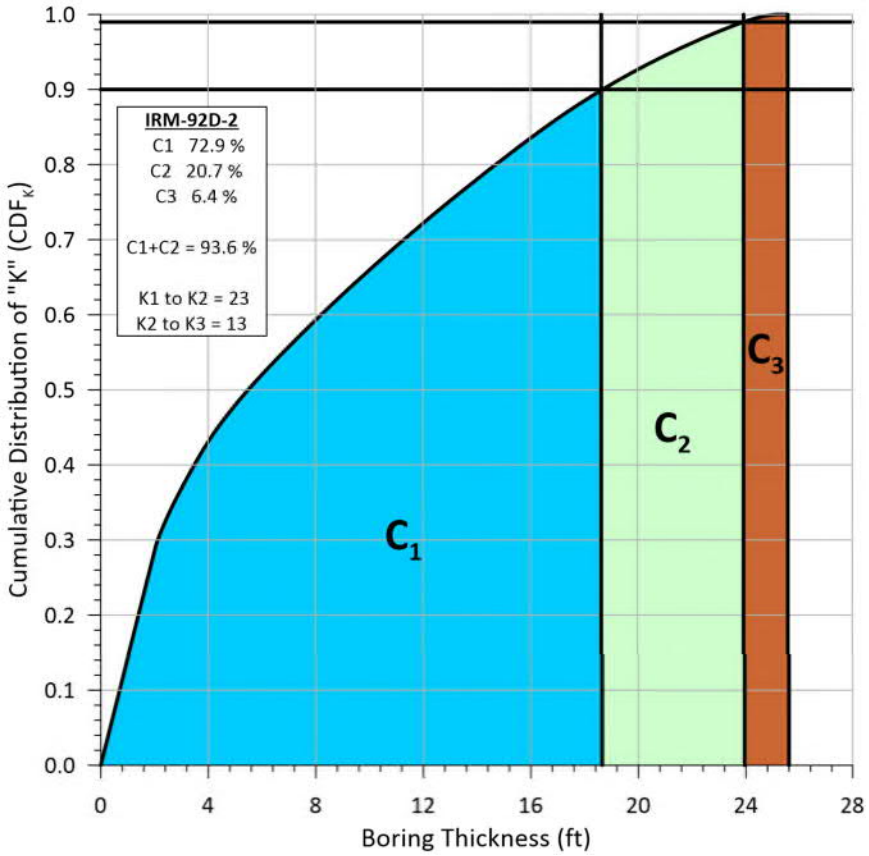


Notes:

C1 - most permeable soils, dominated by advective transport

C2 - moderately permeable soils, dominated by slow advection

C3 - low permeability soils, dominated by diffusion

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114-P2-IRM-92D-2

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FIGURE
E33

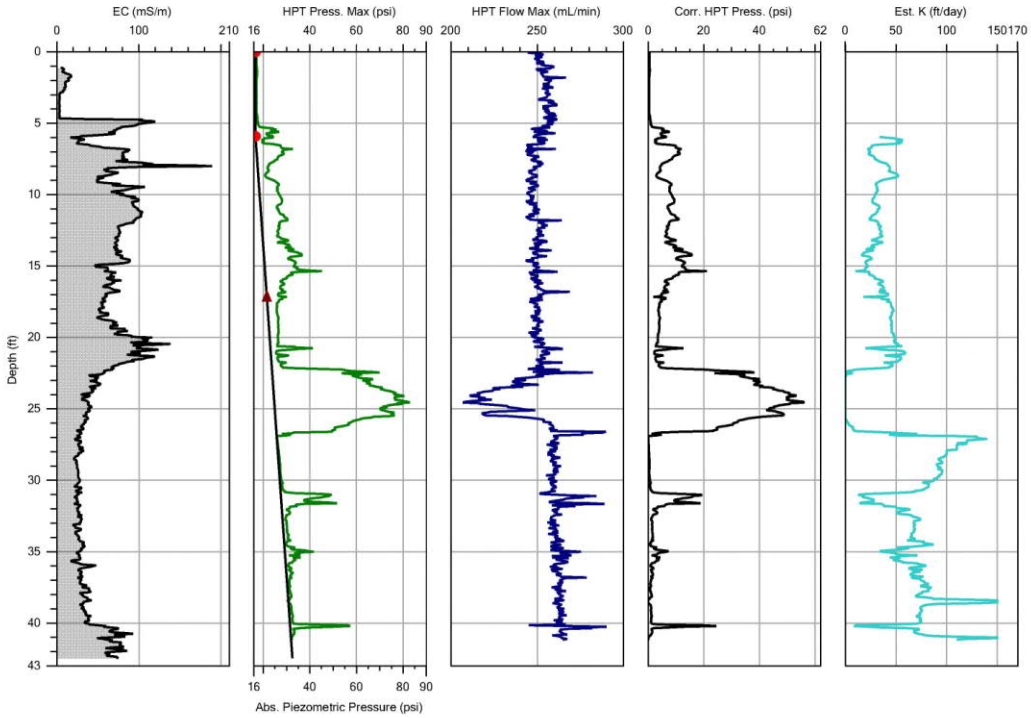


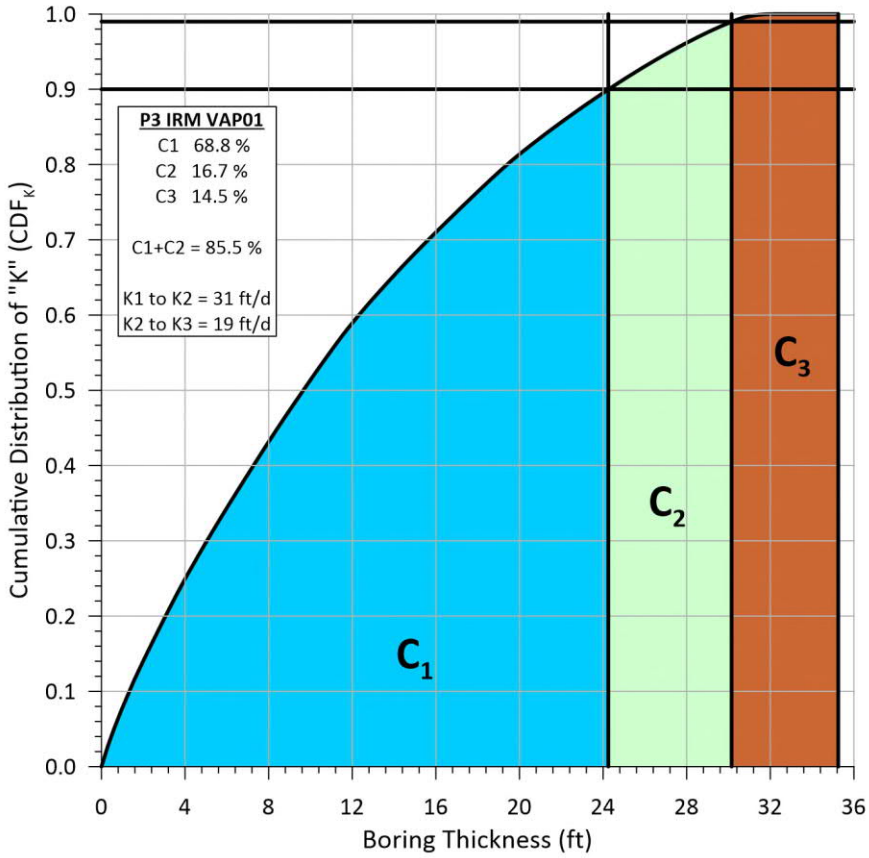


Notes:

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P3-IRM-VAP01

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FIGURE
E34

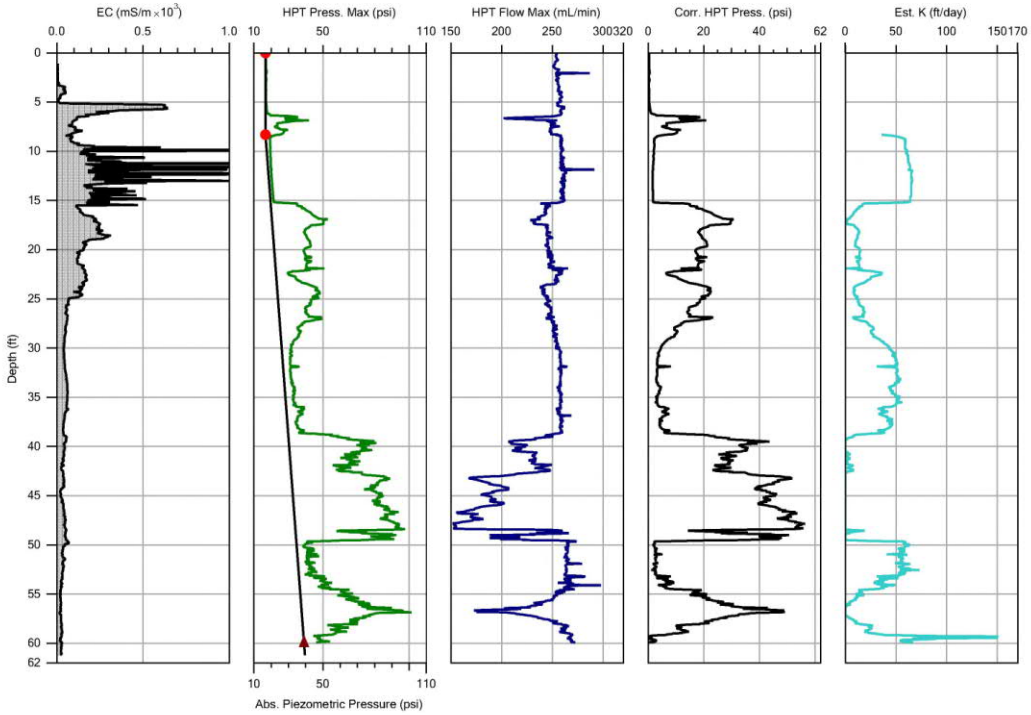


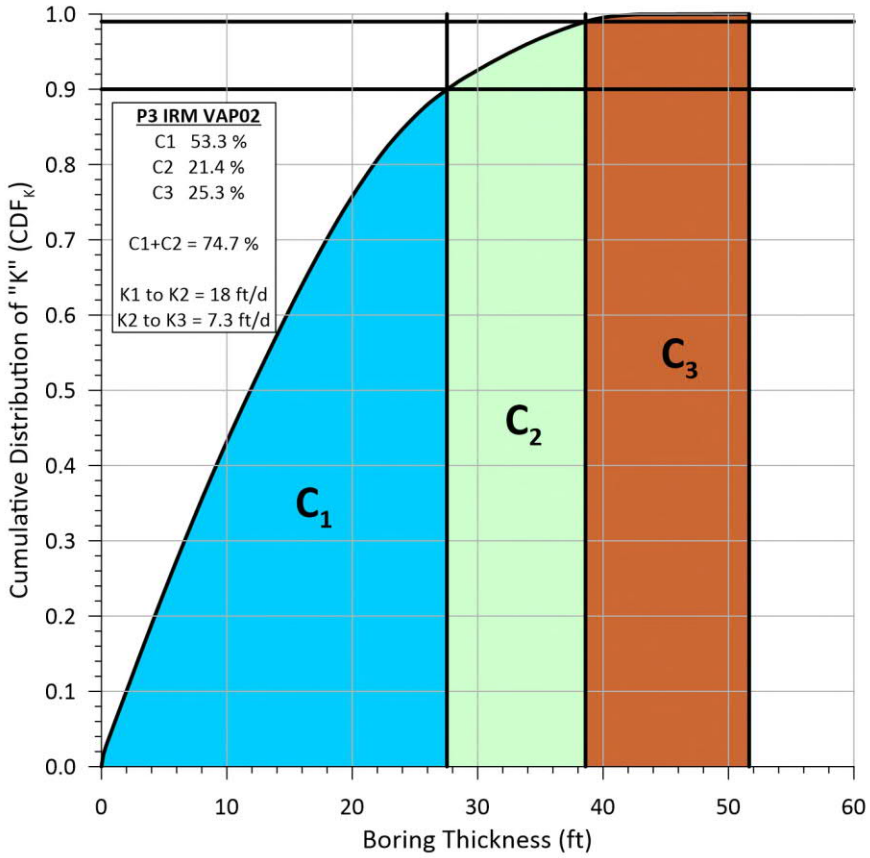


Notes:

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C3 - low permeability soils, dominated by diffusion

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P3-IRM-VAP02

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FIGURE
E35

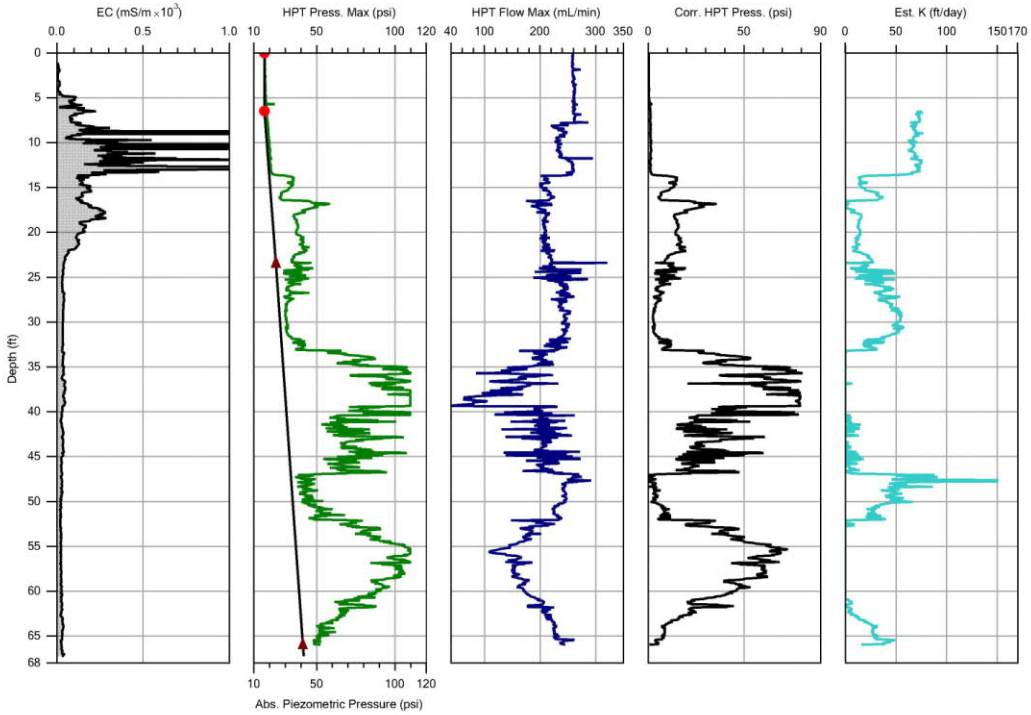


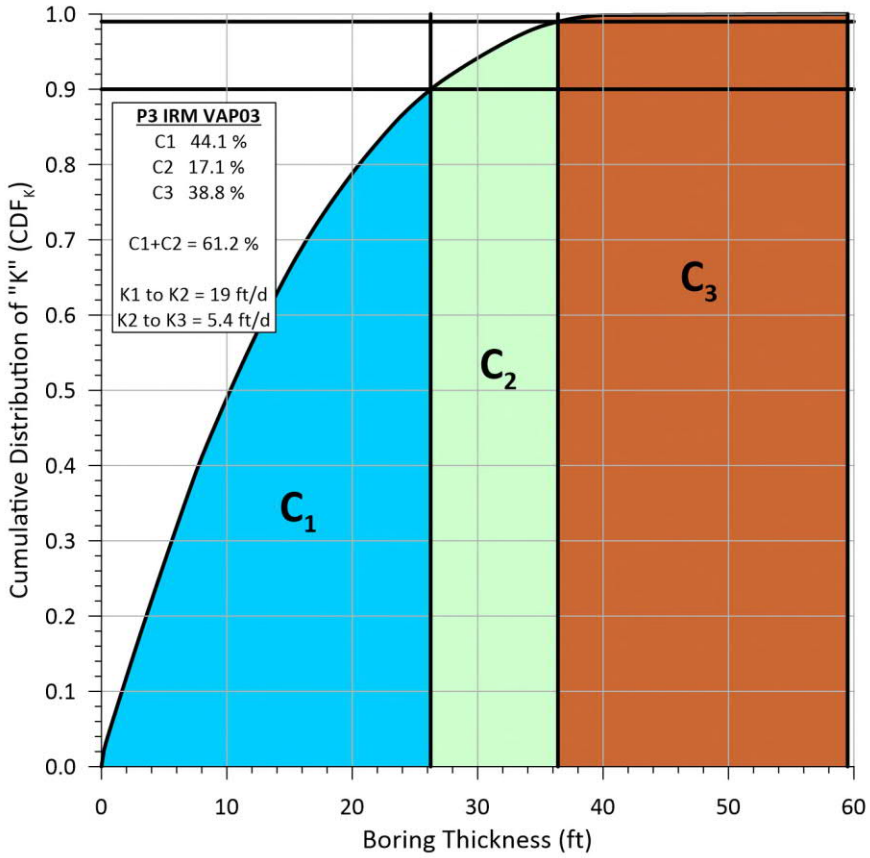


Notes:

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C2 - moderately permeable soils, dominated by slow advection

C3 - low permeability soils, dominated by diffusion

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P3-IRM-VAP03

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FIGURE
E36

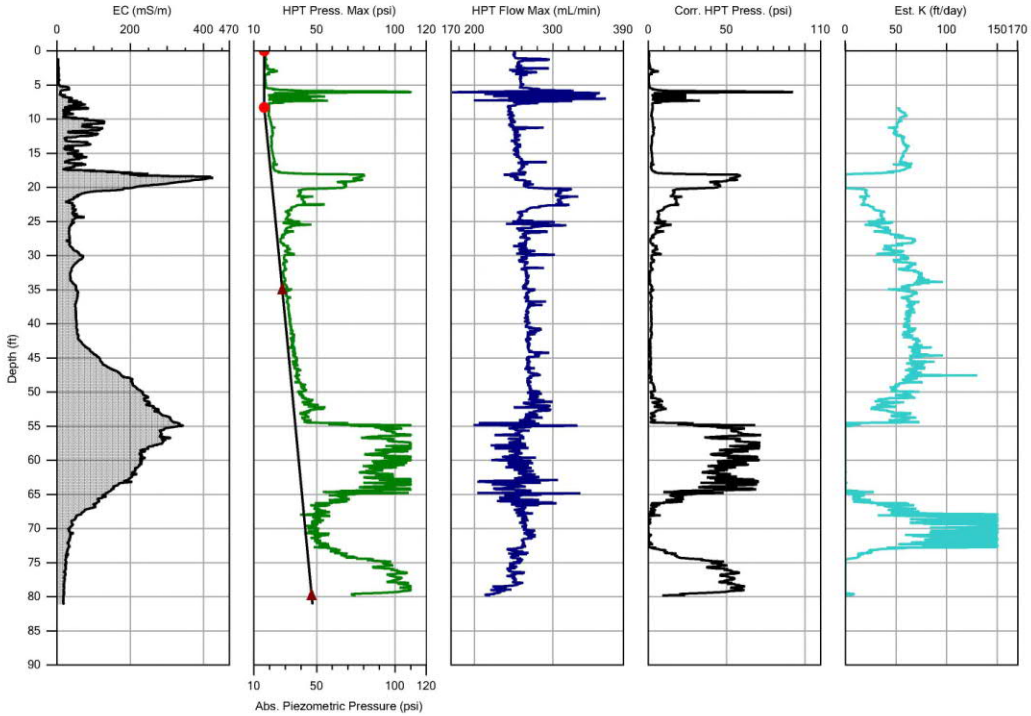


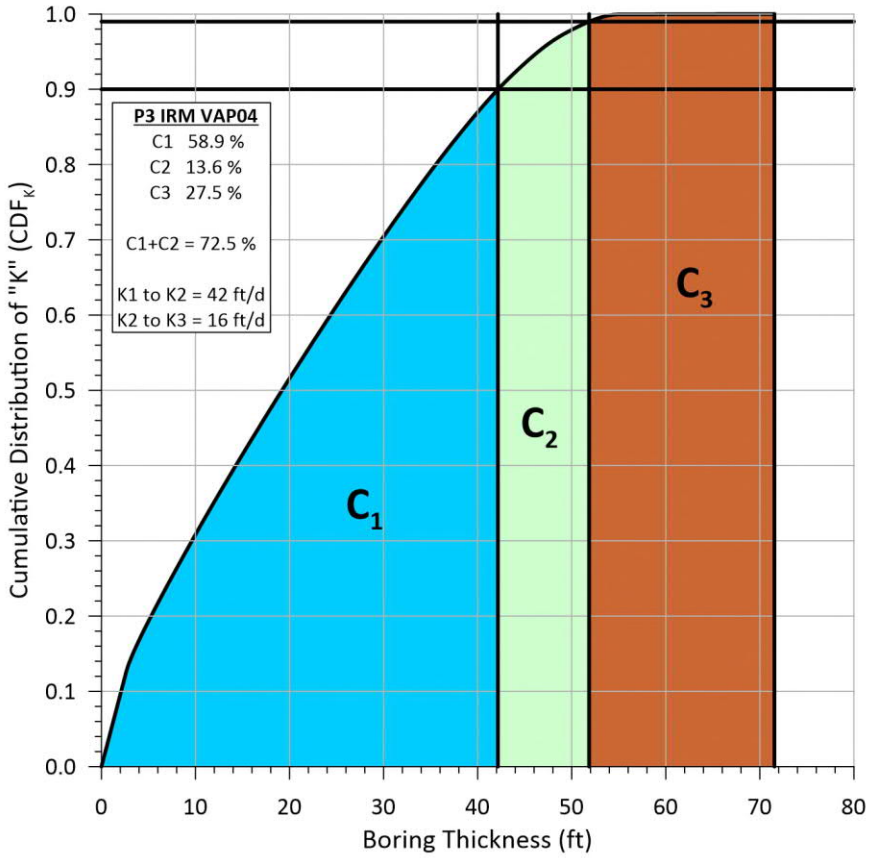


Notes:

C1 - most permeable soils, dominated by advective transport

C2 - moderately permeable soils, dominated by slow advection

C3 - low permeability soils, dominated by diffusion

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P3-IRM-VAP04

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FIGURE
E37

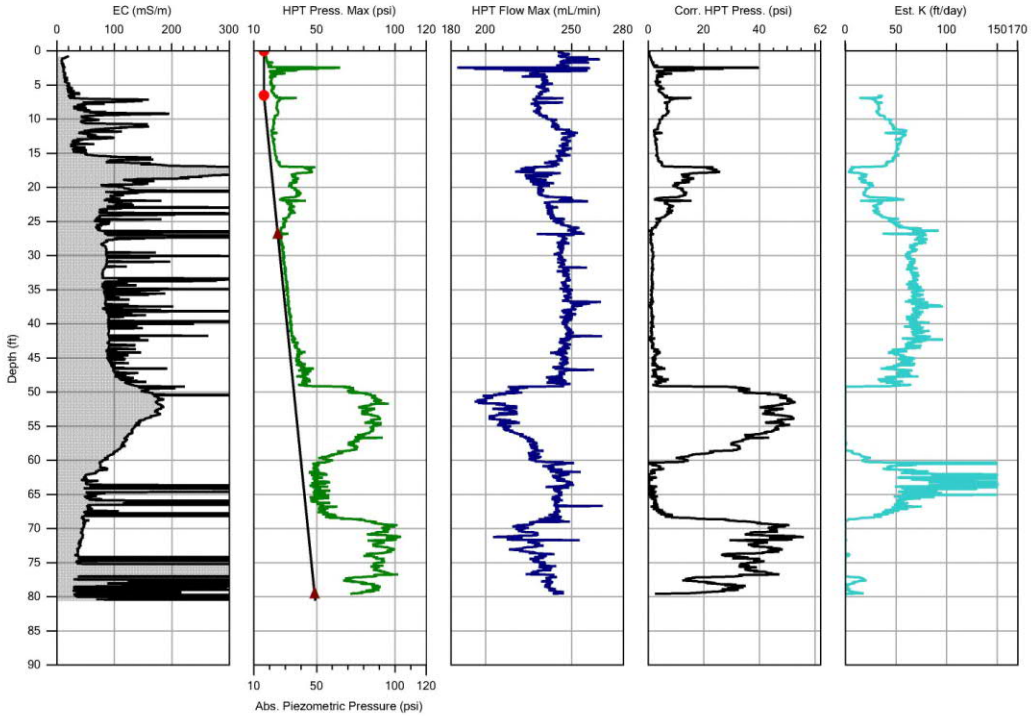


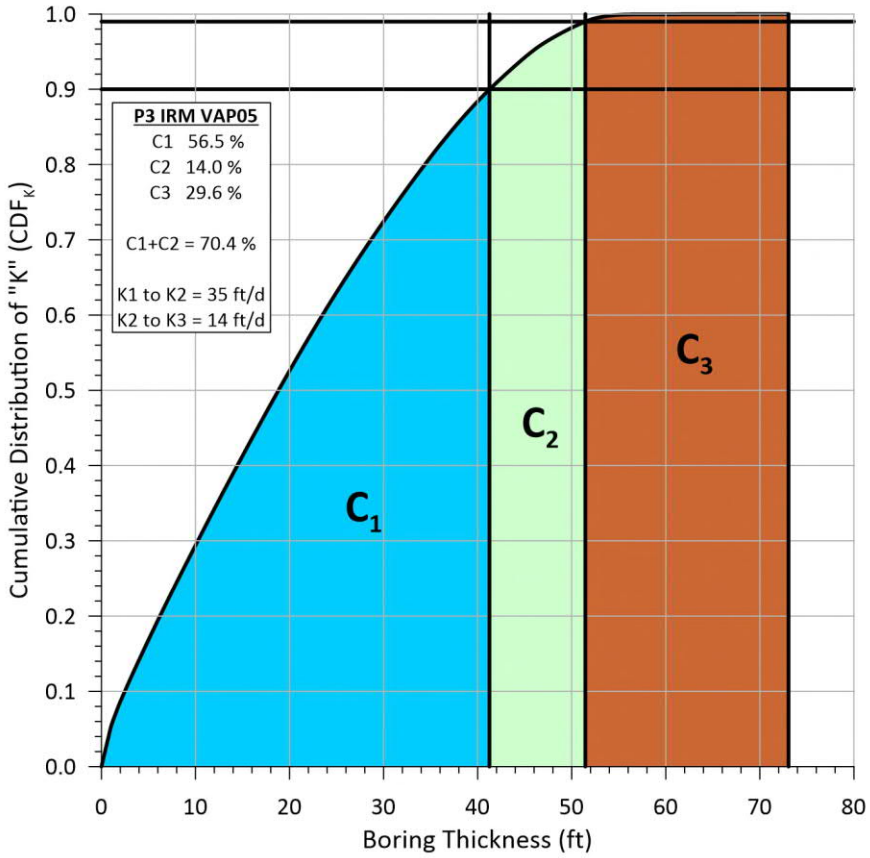


Notes:

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C2 - moderately permeable soils, dominated by slow advection

C3 - low permeability soils, dominated by diffusion

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P3-IRM-VAP05

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FIGURE
E38

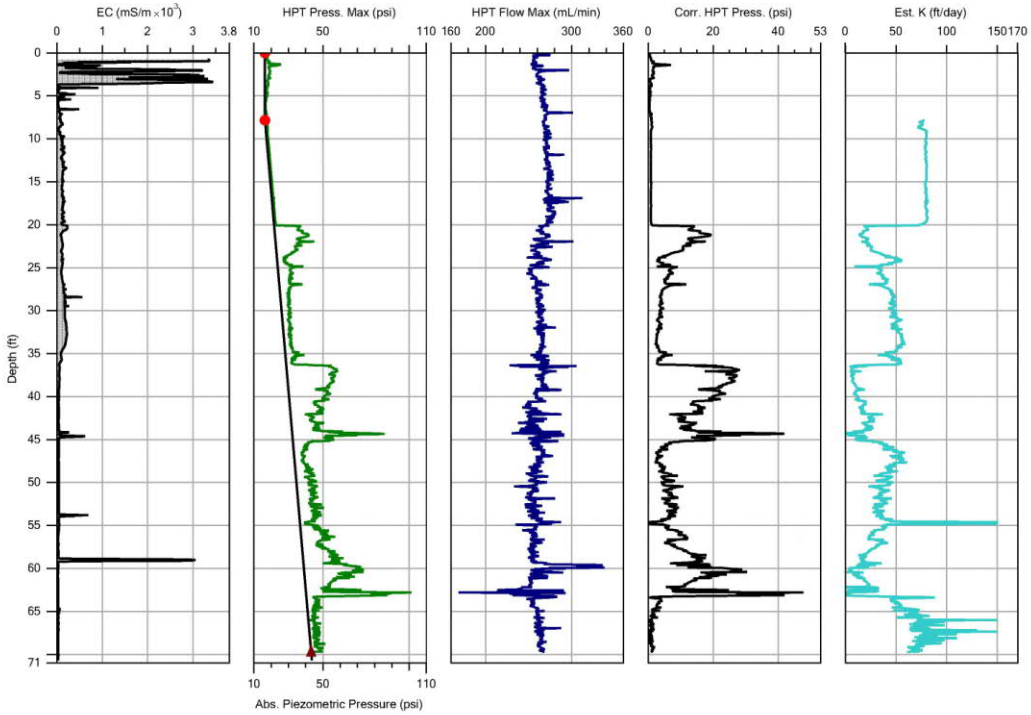


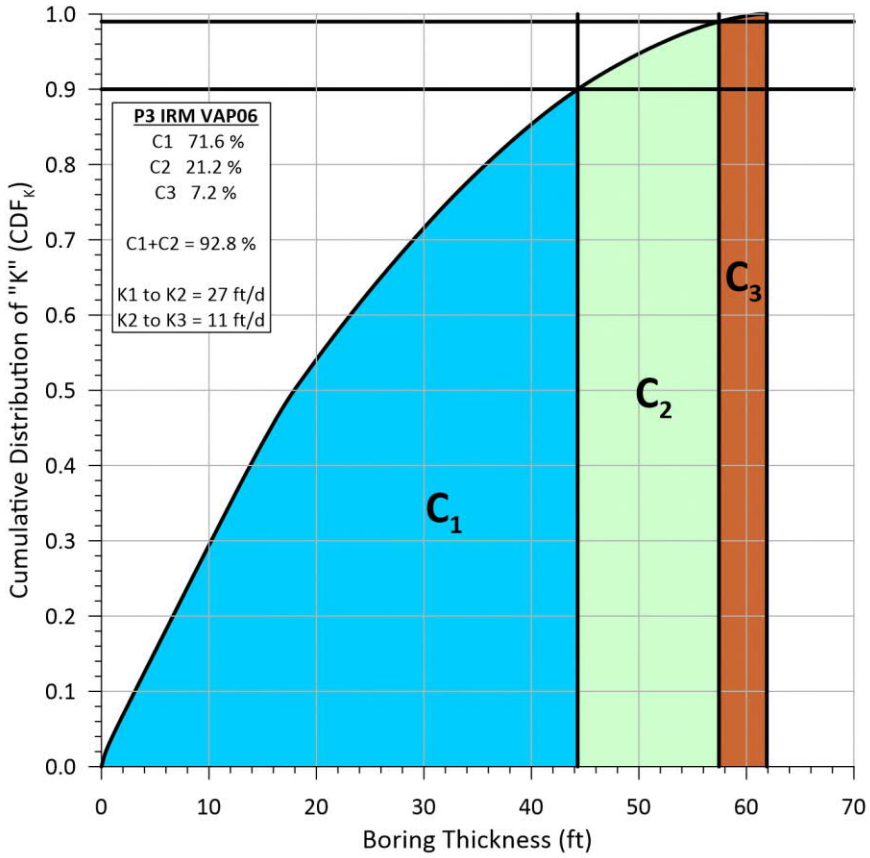


Notes:

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C2 - moderately permeable soils, dominated by slow advection

C3 - low permeability soils, dominated by diffusion

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P3-IRM-VAP06

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FIGURE
E39

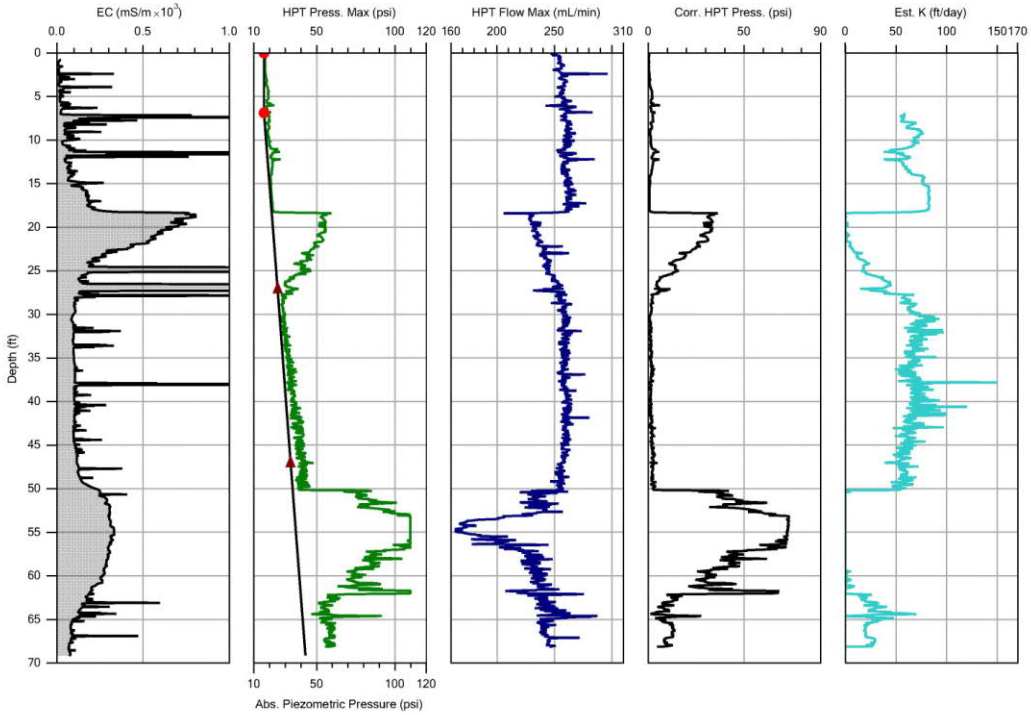


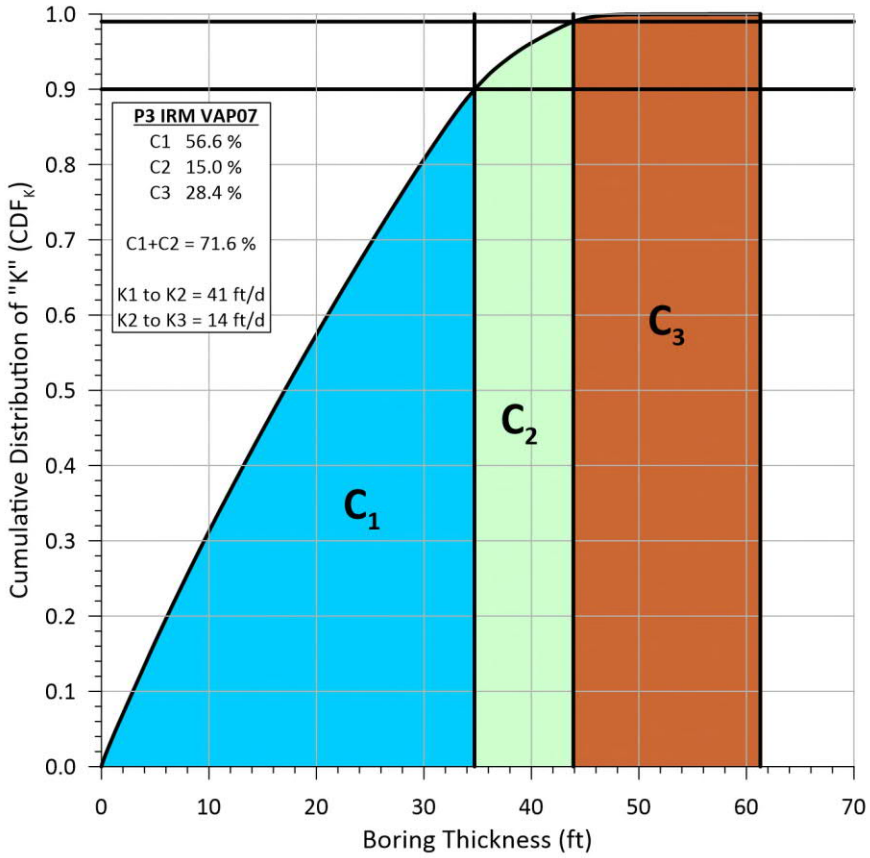


Notes:

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C2 - moderately permeable soils, dominated by slow advection

C3 - low permeability soils, dominated by diffusion

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P3-IRM-VAP07

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FIGURE
E40

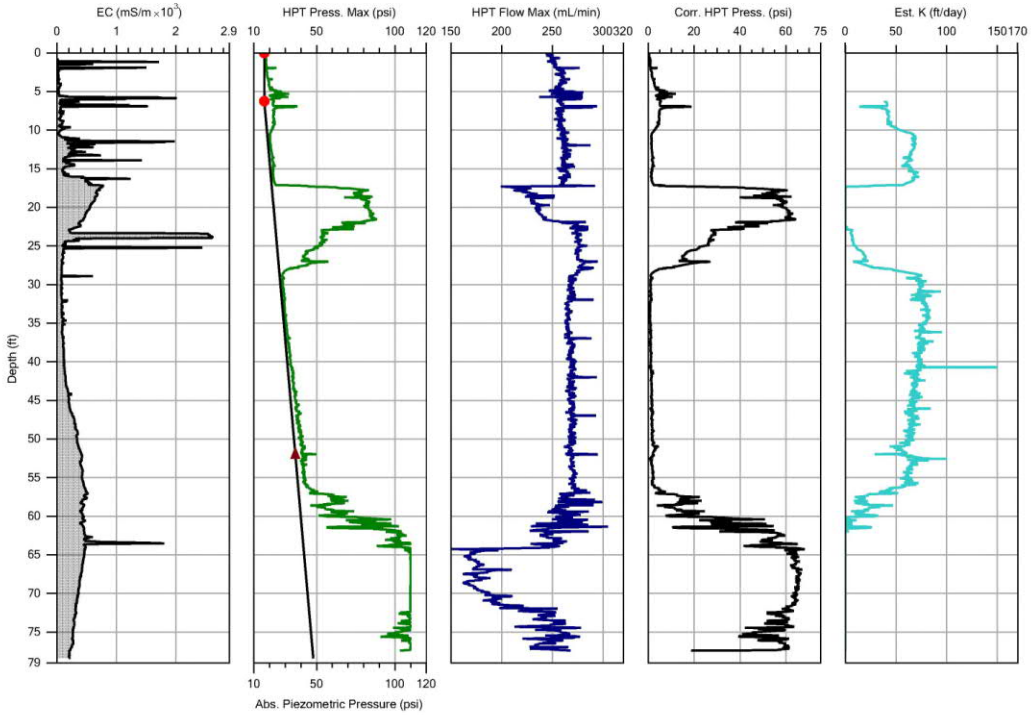


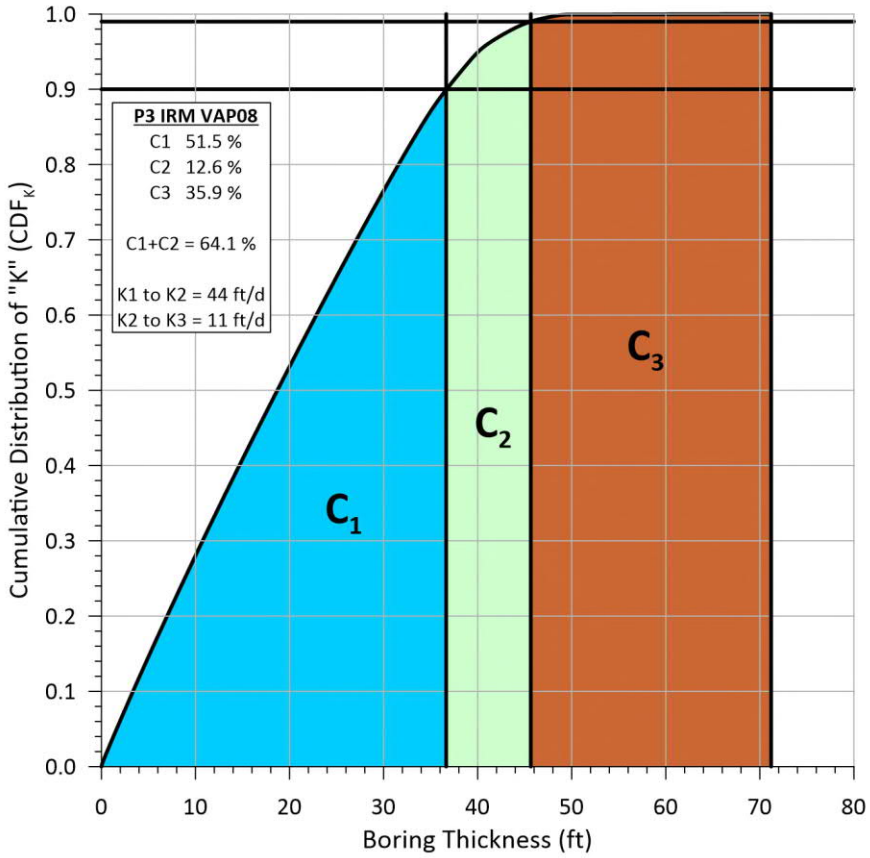


Notes:

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C2 - moderately permeable soils, dominated by slow advection

C3 - low permeability soils, dominated by diffusion

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P3-IRM-VAP08

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FIGURE
E41

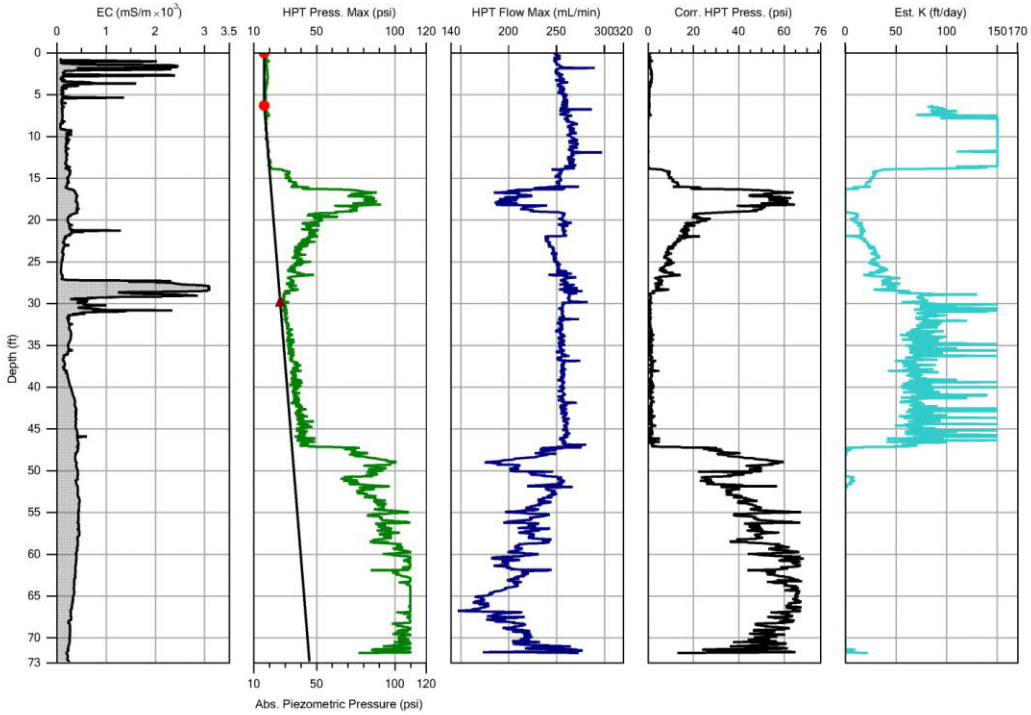


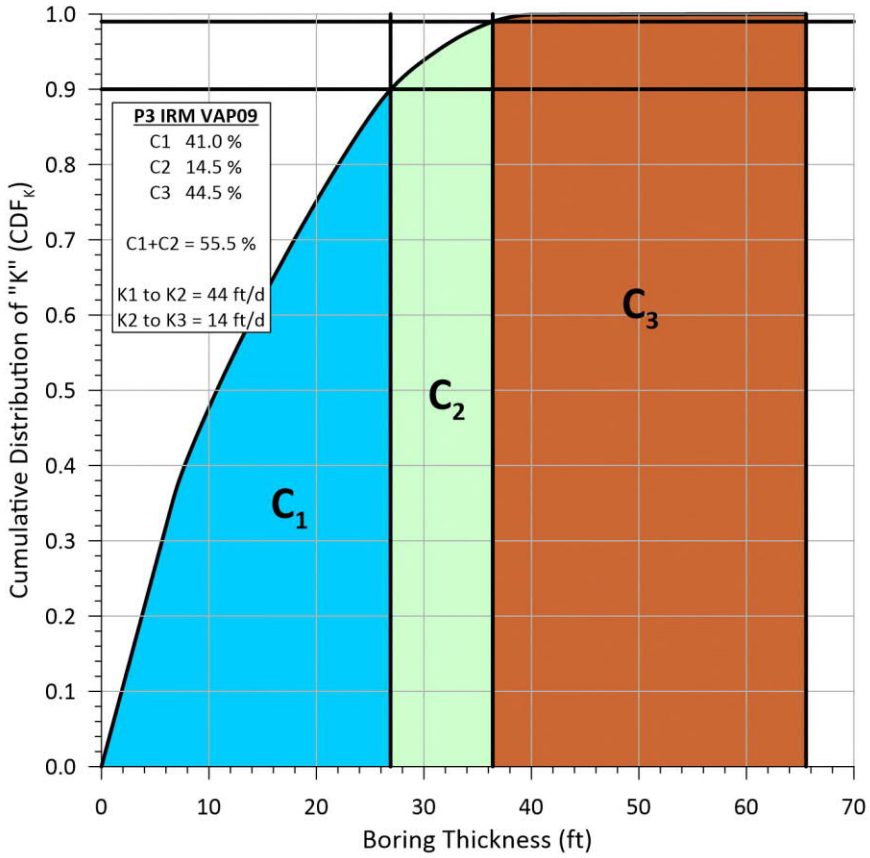


Notes:

C1 - most permeable soils, dominated by advective transport

C2 - moderately permeable soils, dominated by slow advection

C3 - low permeability soils, dominated by diffusion

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P3-IRM-VAP09

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FIGURE
E42

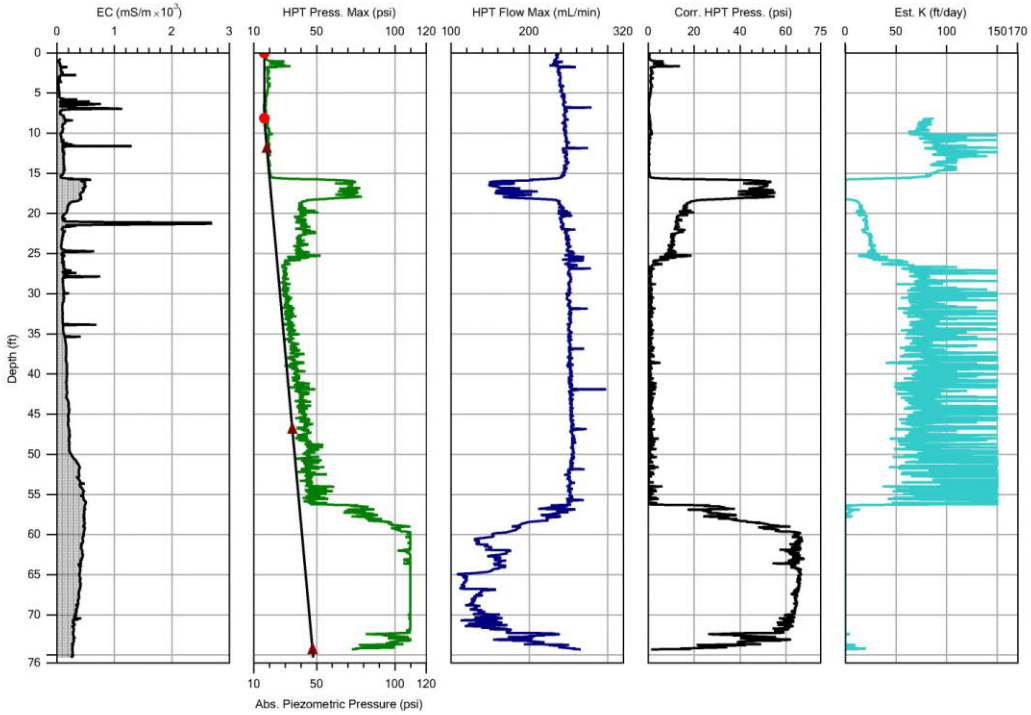


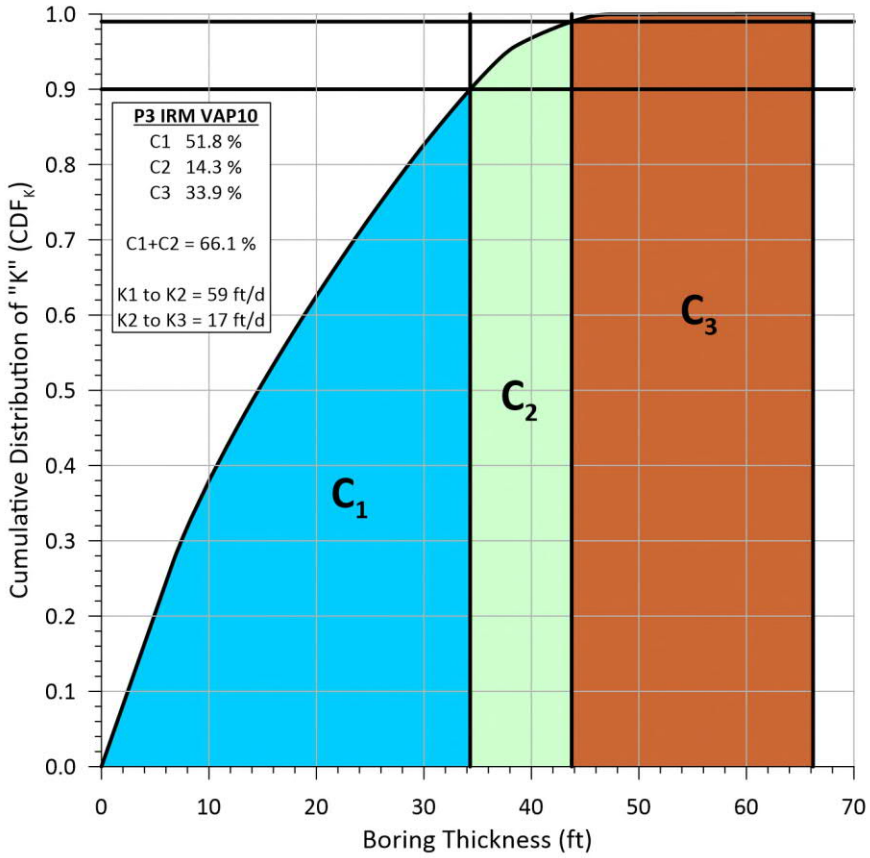


Notes:

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C2 - moderately permeable soils, dominated by slow advection

C3 - low permeability soils, dominated by diffusion

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P3-IRM-VAP10

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FIGURE
E43

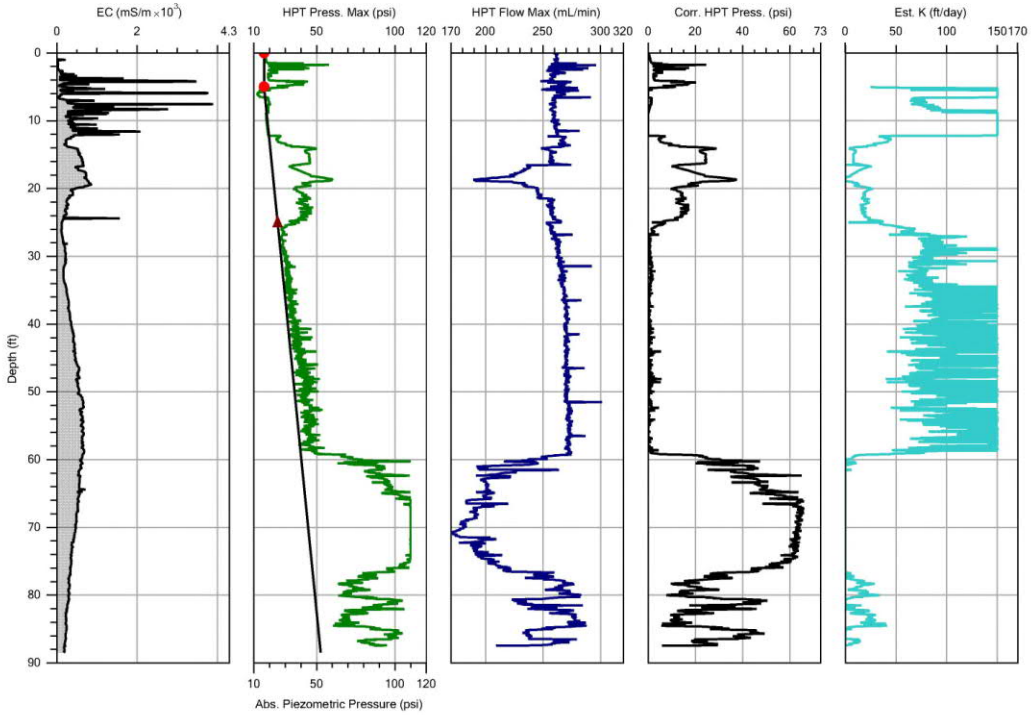


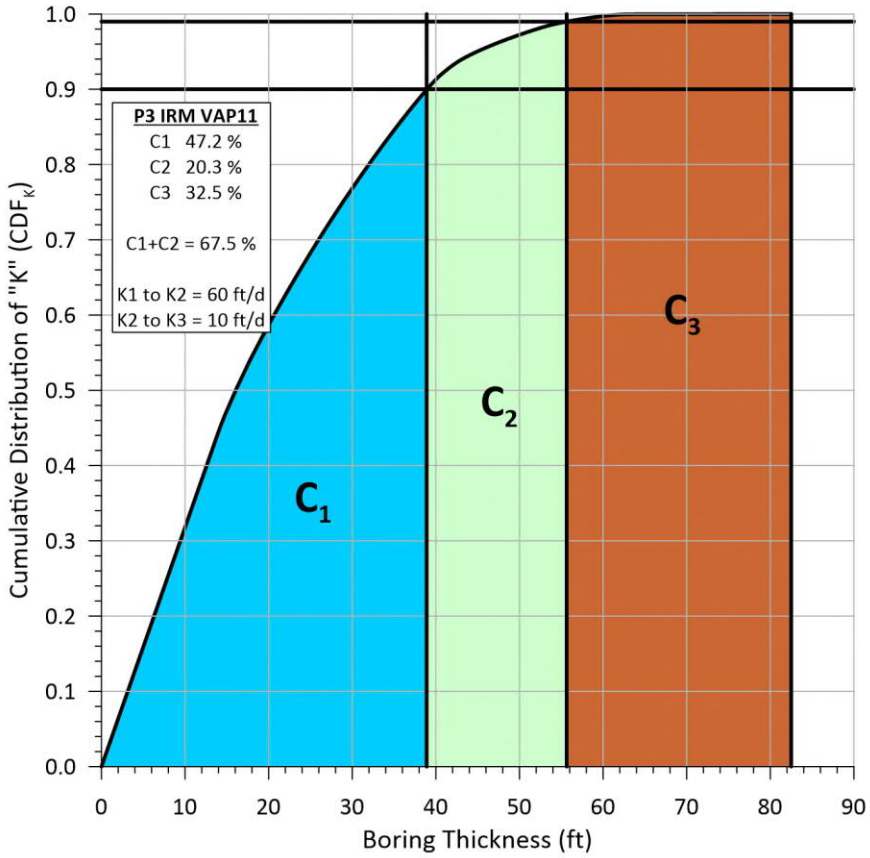


Notes:

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C2 - moderately permeable soils, dominated by slow advection

C3 - low permeability soils, dominated by diffusion

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P3-IRM-VAP11

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FIGURE
E44

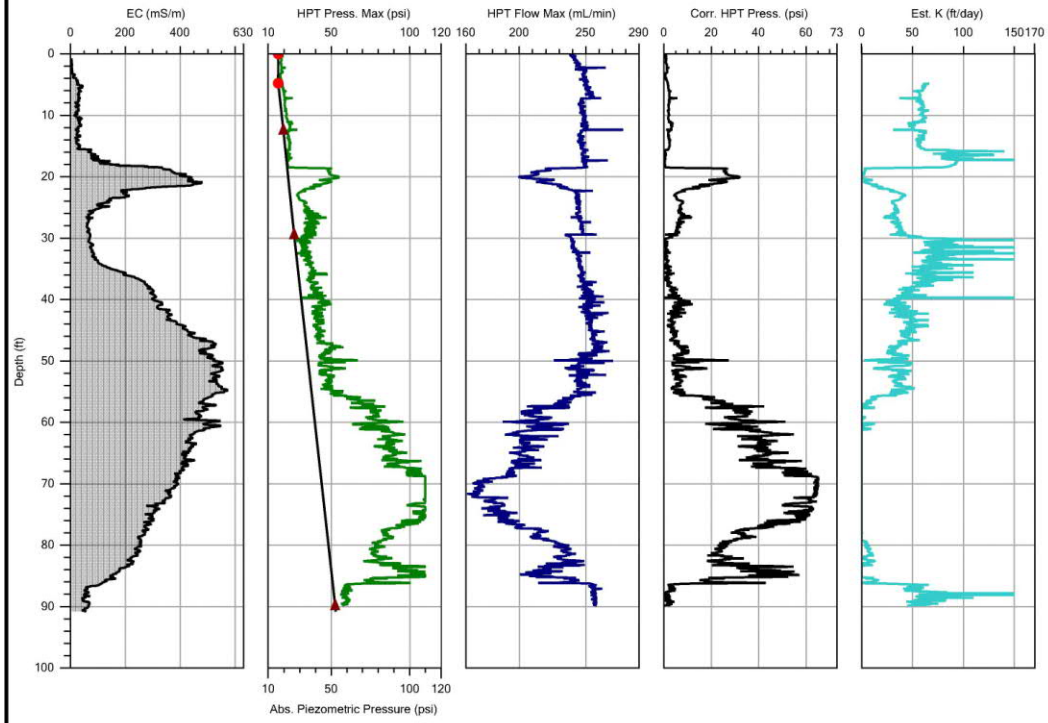


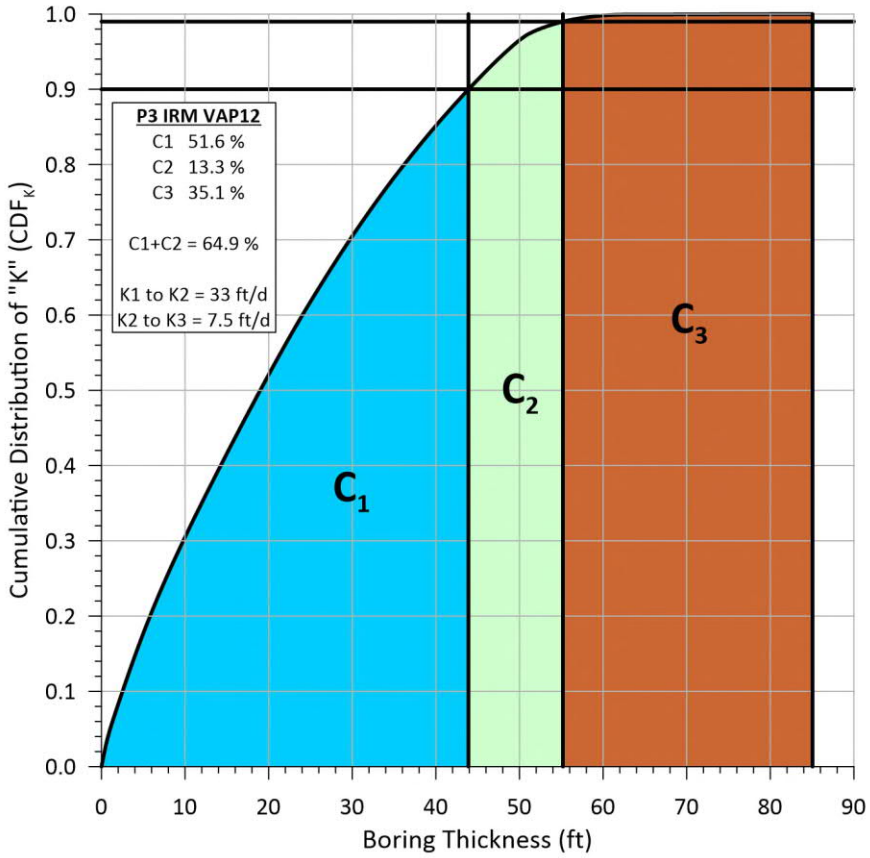


Notes:

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JERSEY CITY, NEW JERSEY

P3-IRM-VAP12

ARCADIS Design & Consultancy for natural and built assets

FIGURE
E45

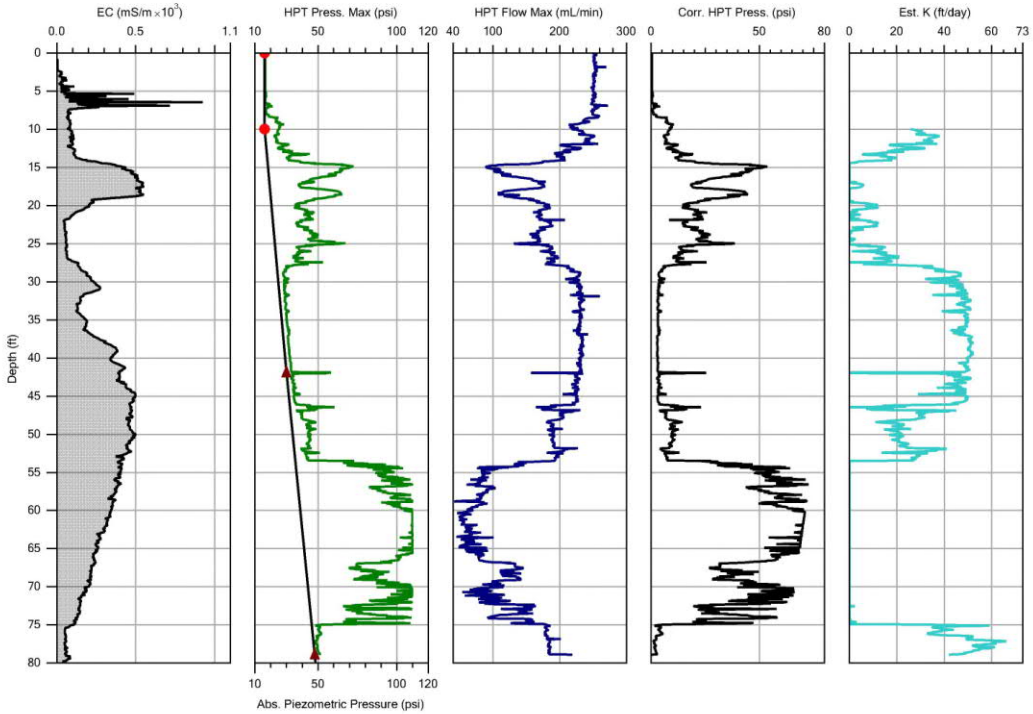


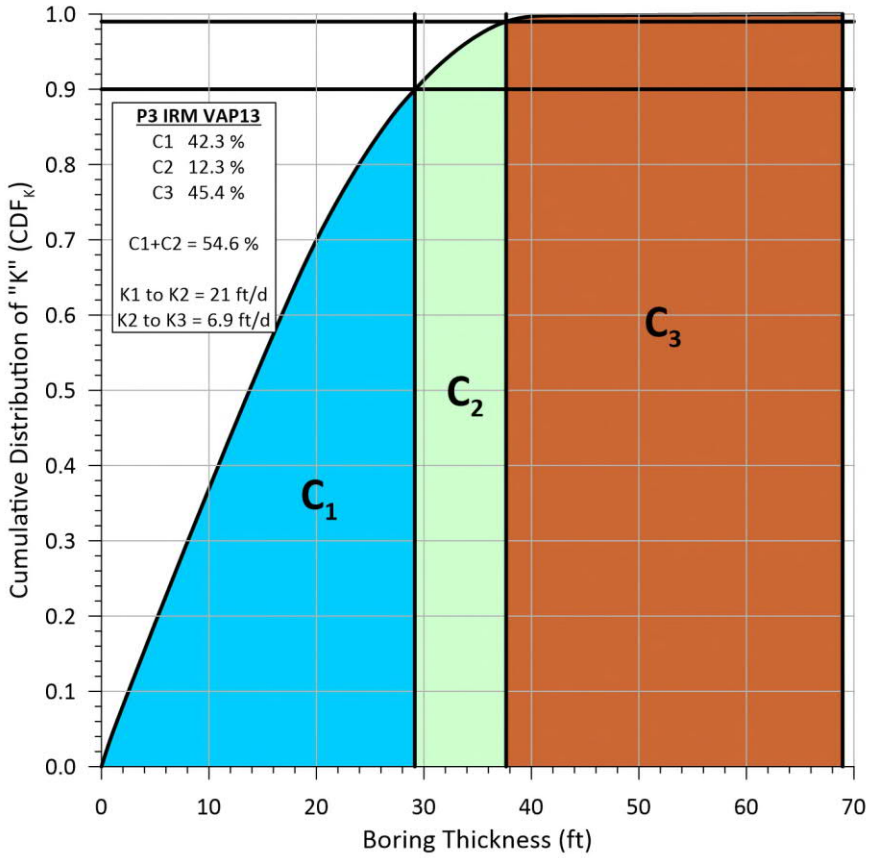


Notes:

C1 - most permeable soils, dominated by advective transport

C2 - moderately permeable soils, dominated by slow advection

C3 - low permeability soils, dominated by diffusion

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P3-IRM-VAP13

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FIGURE
E46

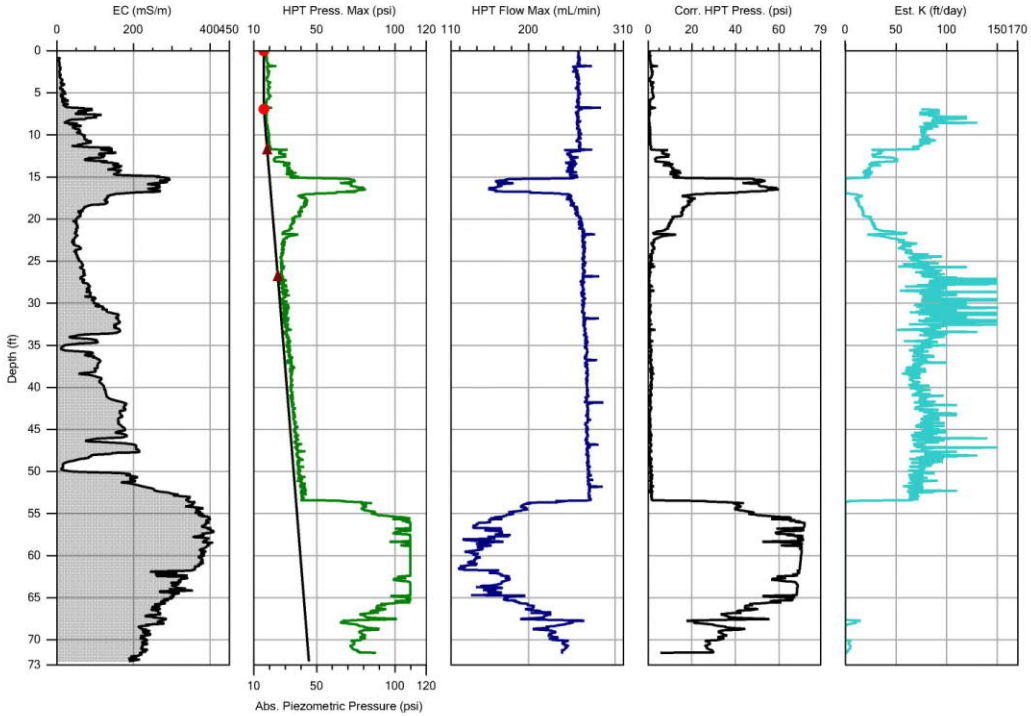


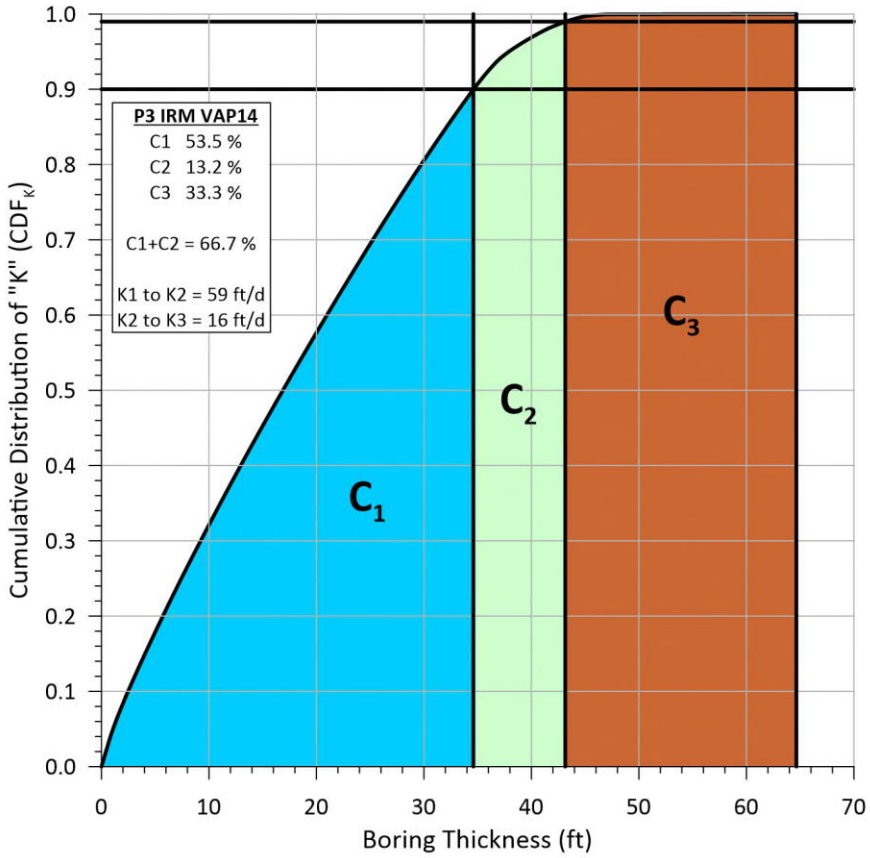


Notes:

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JERSEY CITY, NEW JERSEY

P3-IRM-VAP14

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FIGURE
E47

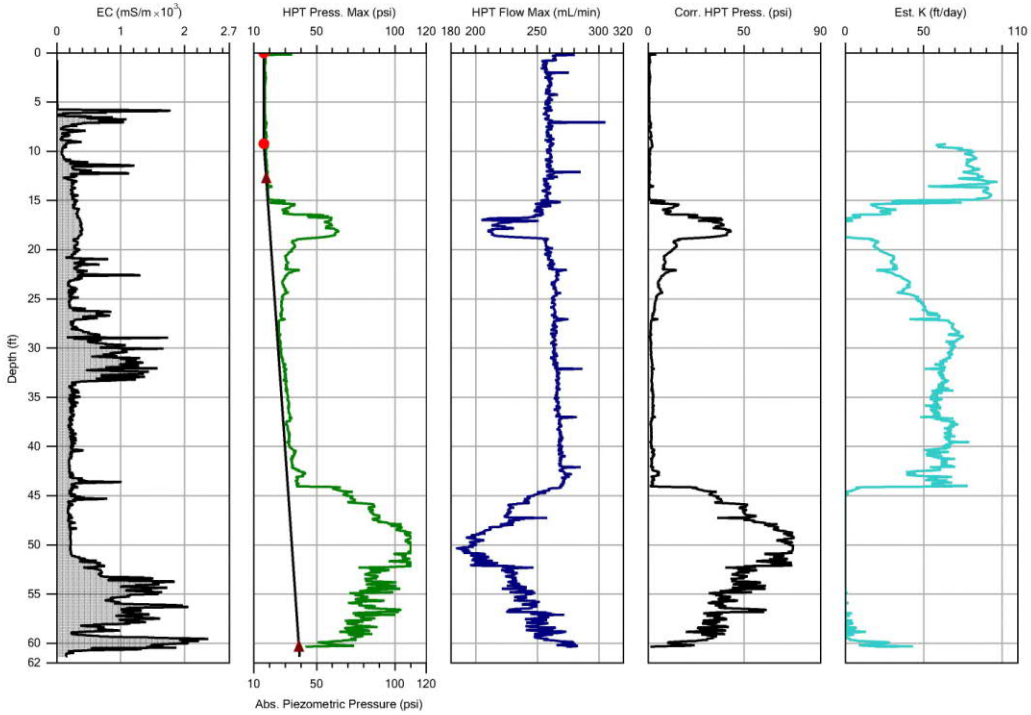


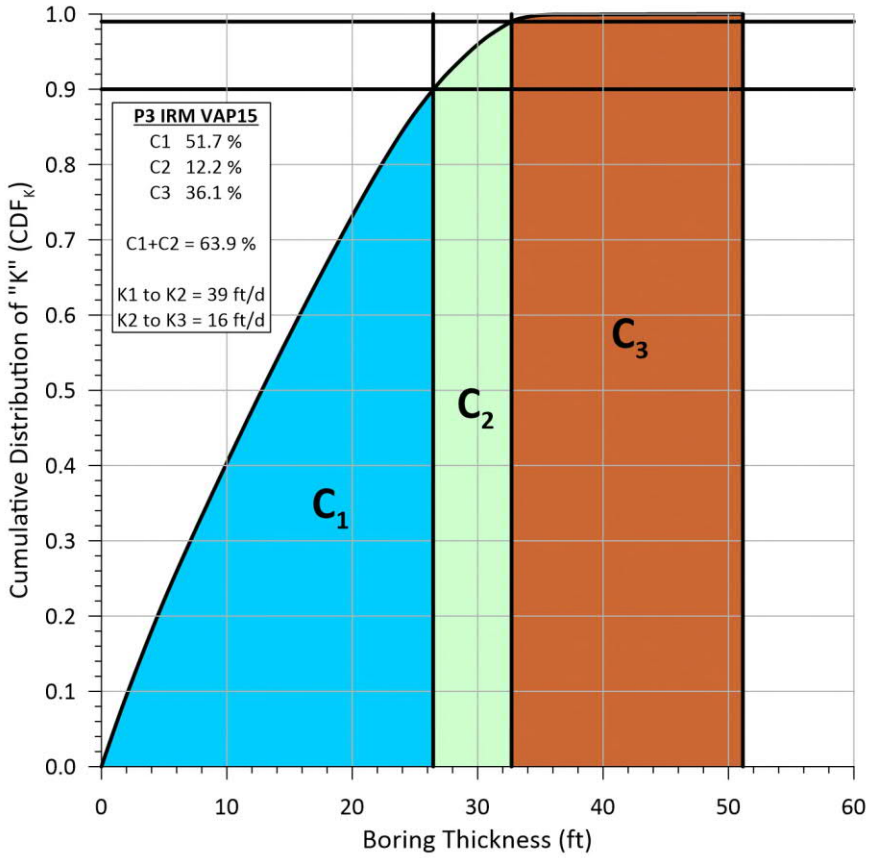


Notes:

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P3-IRM-VAP15

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FIGURE
E48

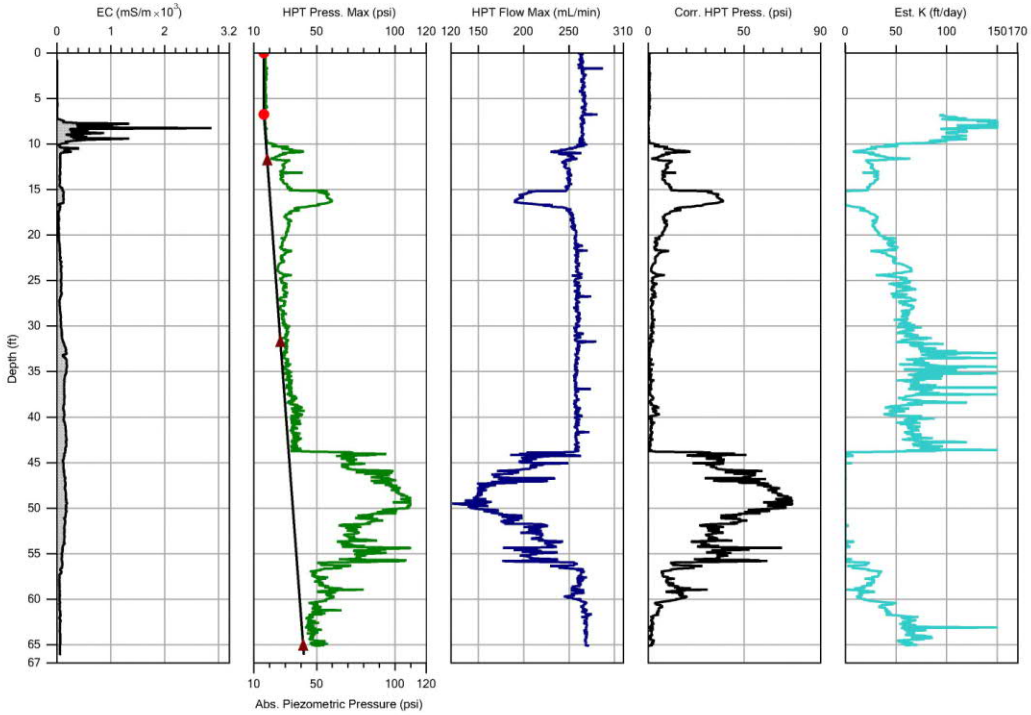


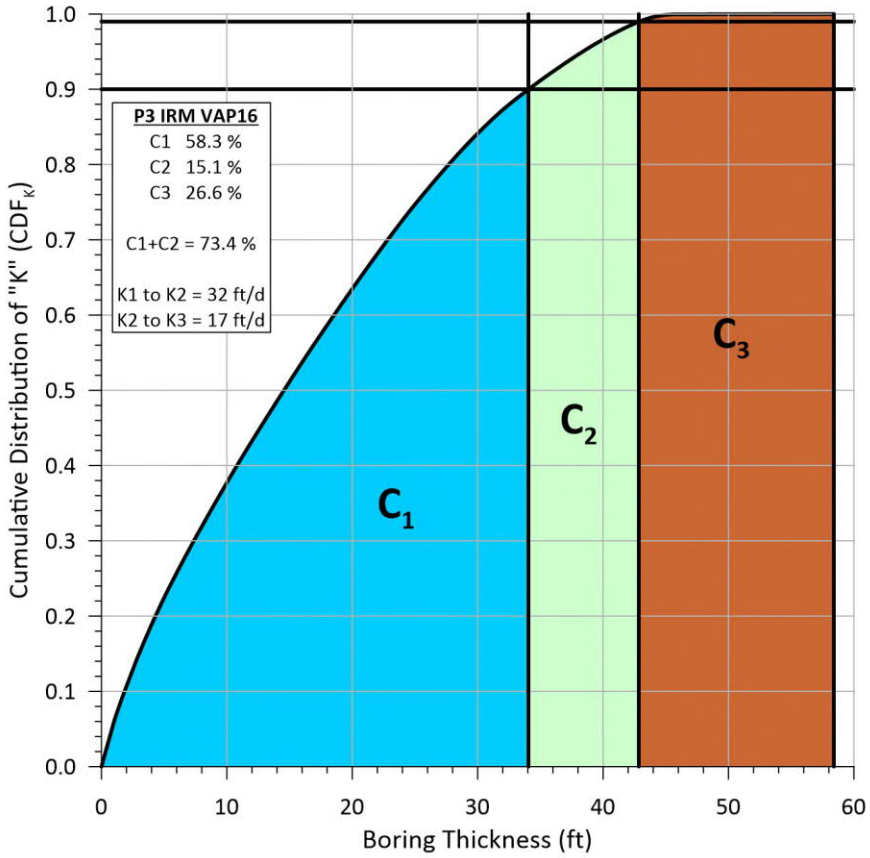


Notes:

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C2 - moderately permeable soils, dominated by slow advection

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P3-IRM-VAP16

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FIGURE
E49

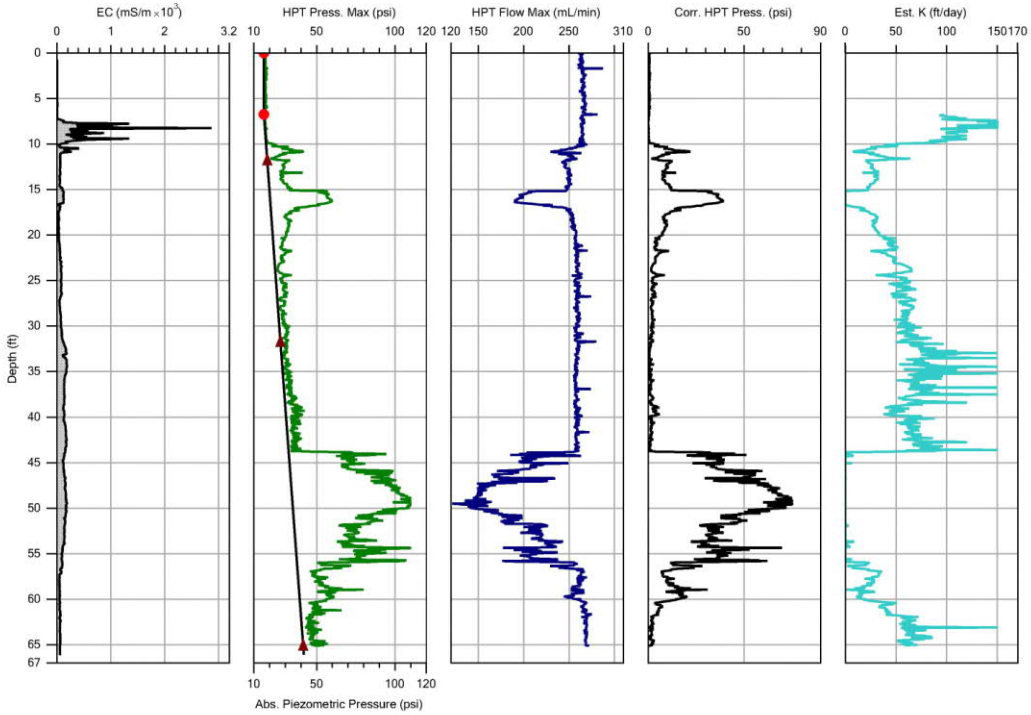


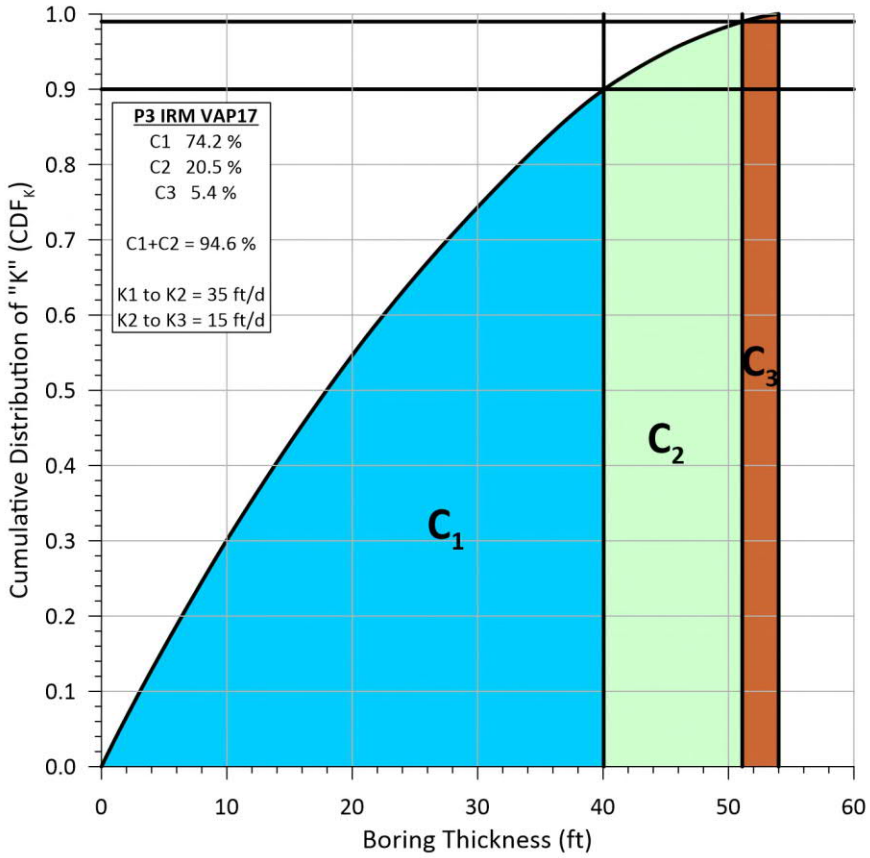


Notes:

C1 - most permeable soils, dominated by advective transport

C2 - moderately permeable soils, dominated by slow advection

C3 - low permeability soils, dominated by diffusion

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P3-IRM-VAP17

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FIGURE
E50

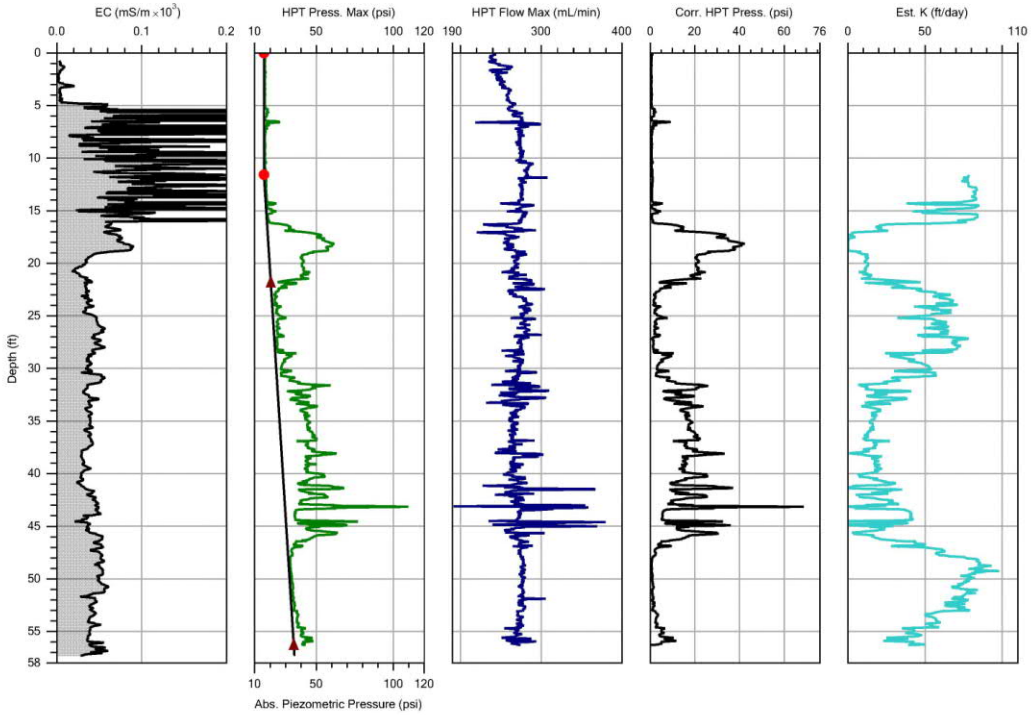


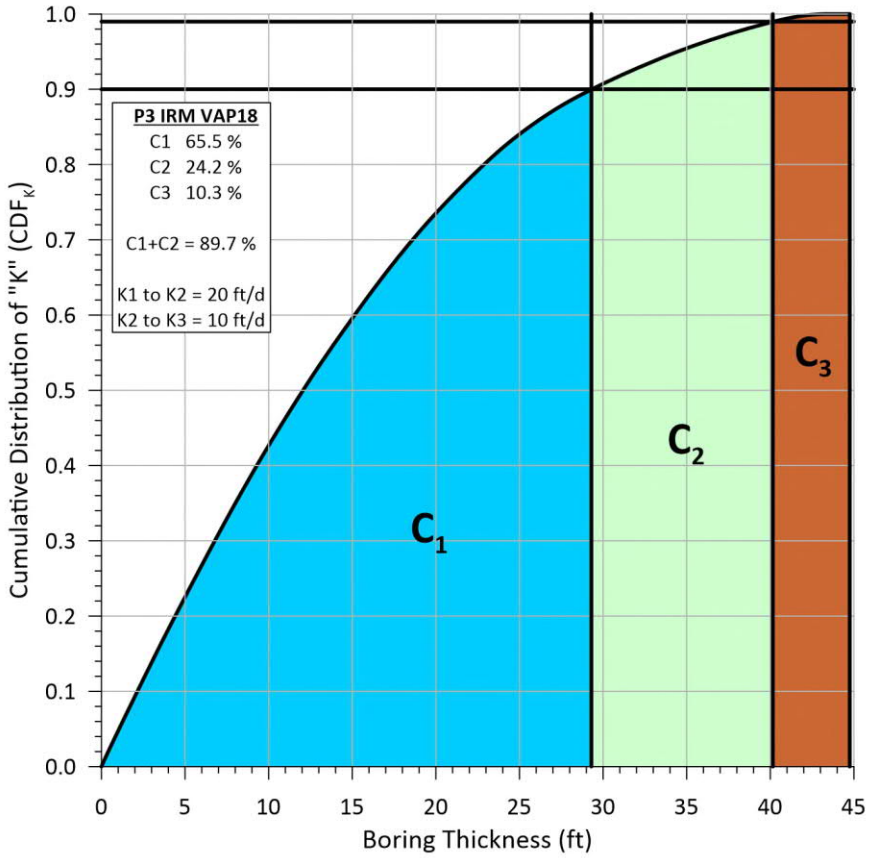


Notes:

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C2 - moderately permeable soils, dominated by slow advection

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P3-IRM-VAP18

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FIGURE
E51

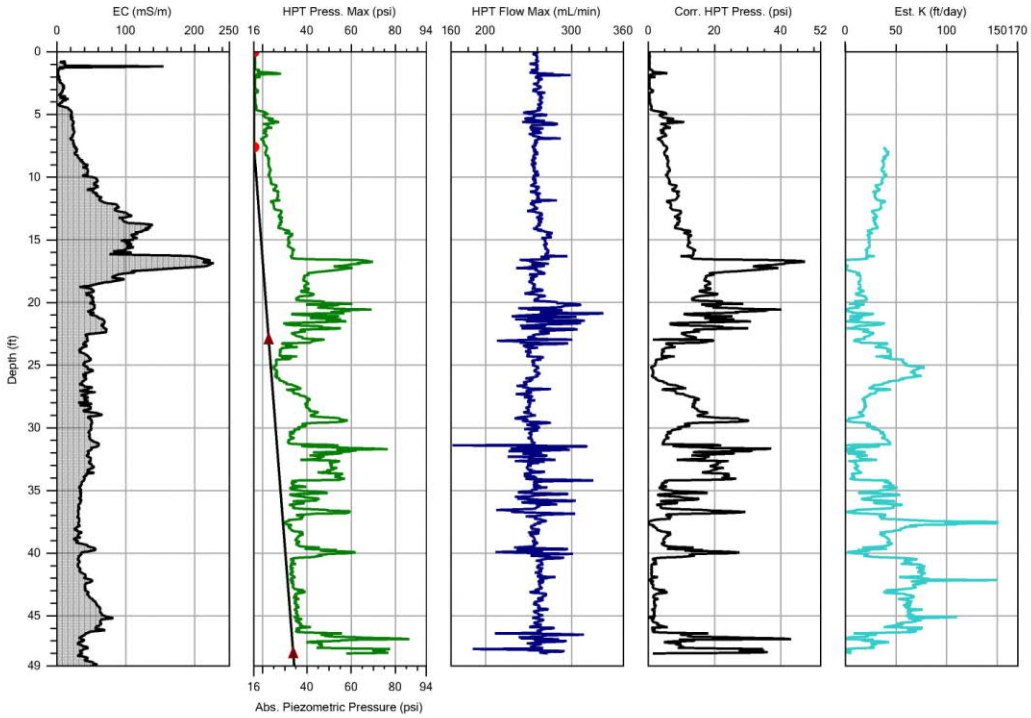


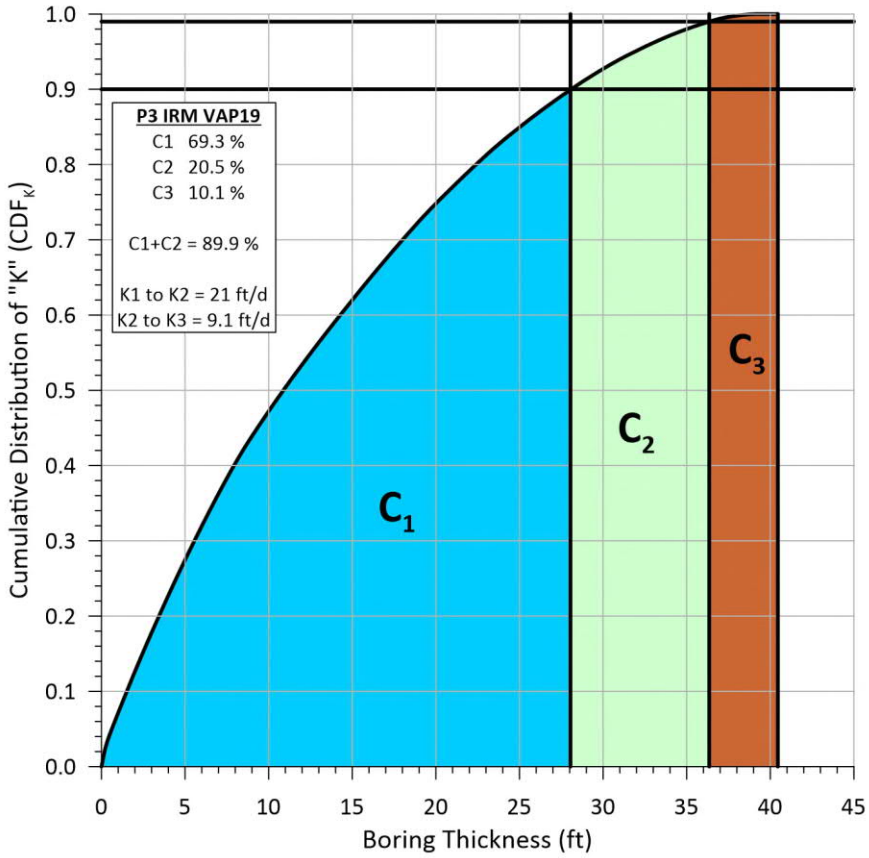


Notes:

C1 - most permeable soils, dominated by advective transport

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PPG INDUSTRIES
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P3-IRM-VAP19

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FIGURE
E52

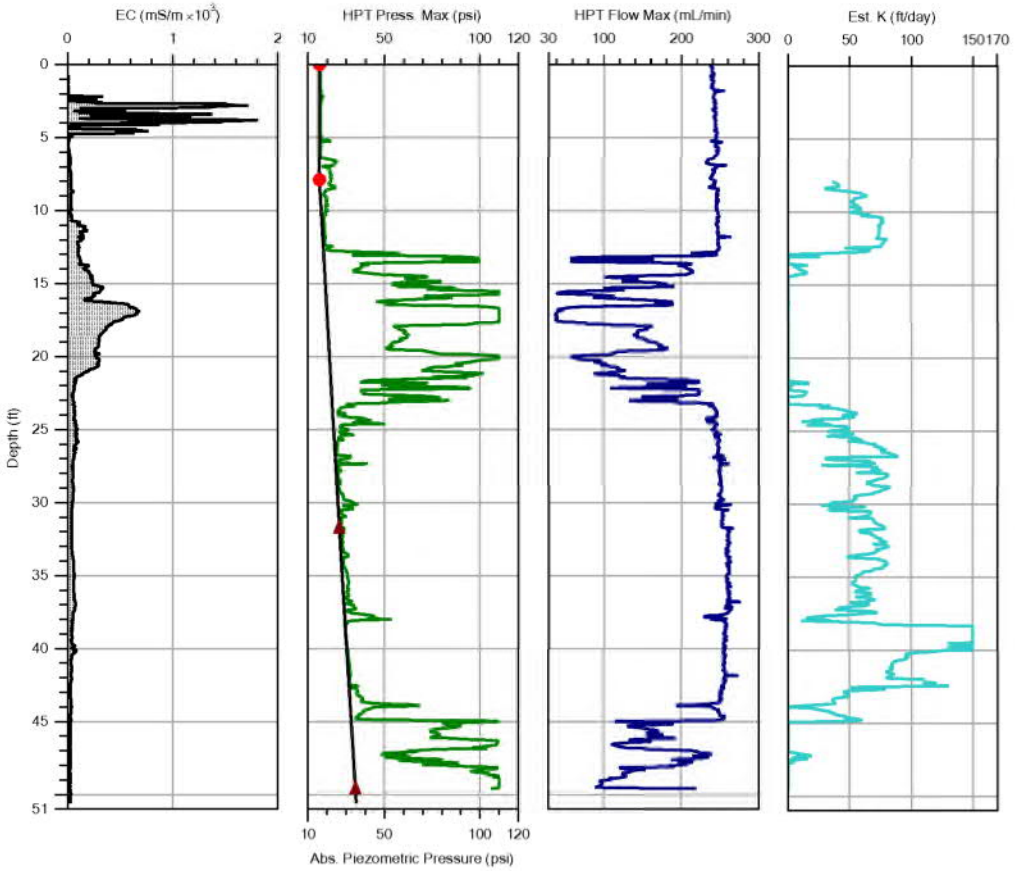


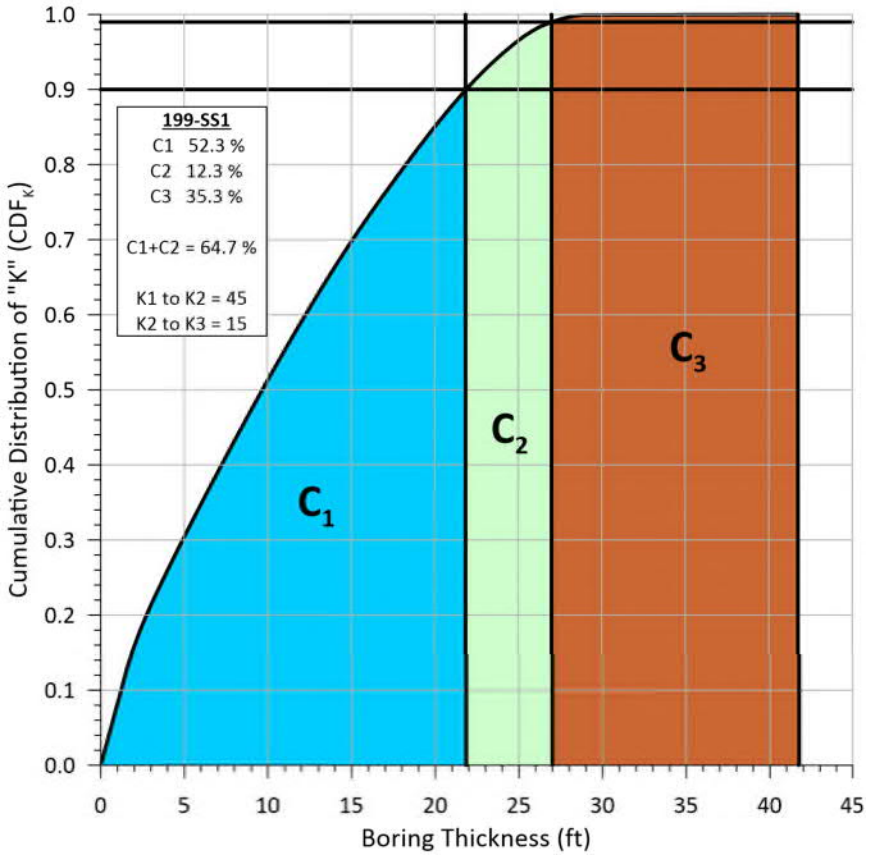


Notes:

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C3 - low permeability soils, dominated by diffusion

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JERSEY CITY, NEW JERSEY

199-SS1

ARCADIS Design & Consultancy for natural and built assets

FIGURE
E53

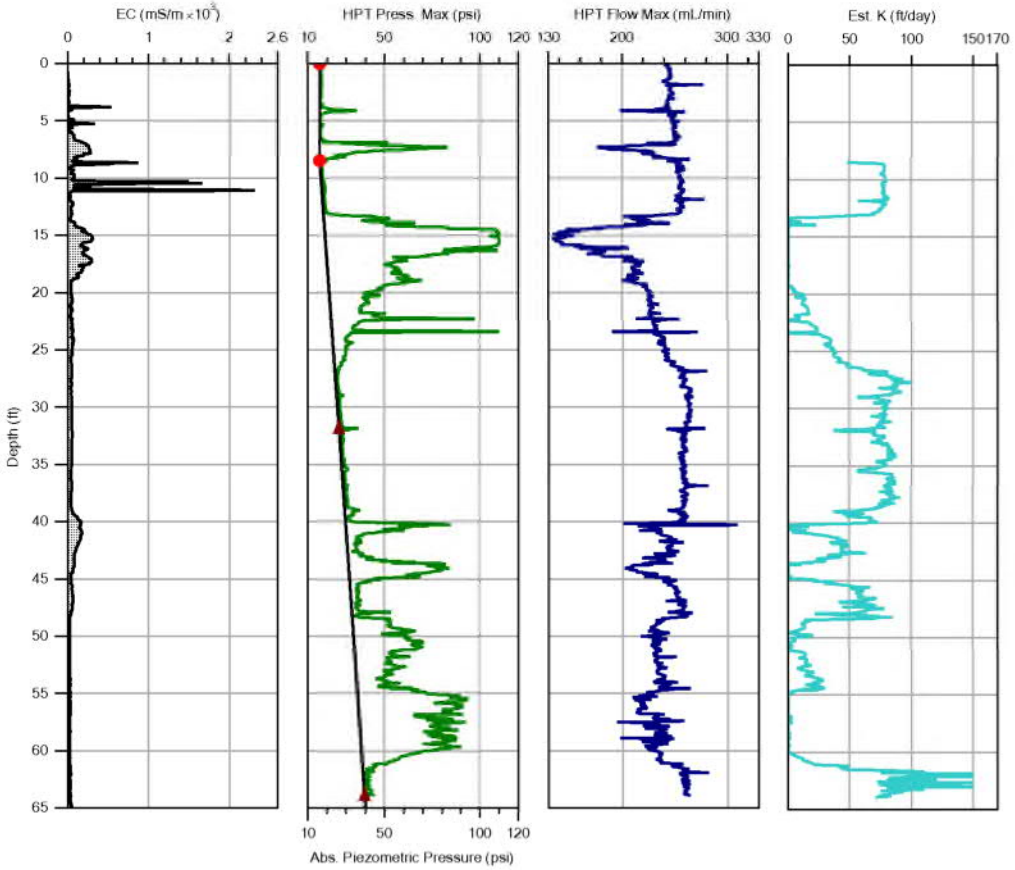


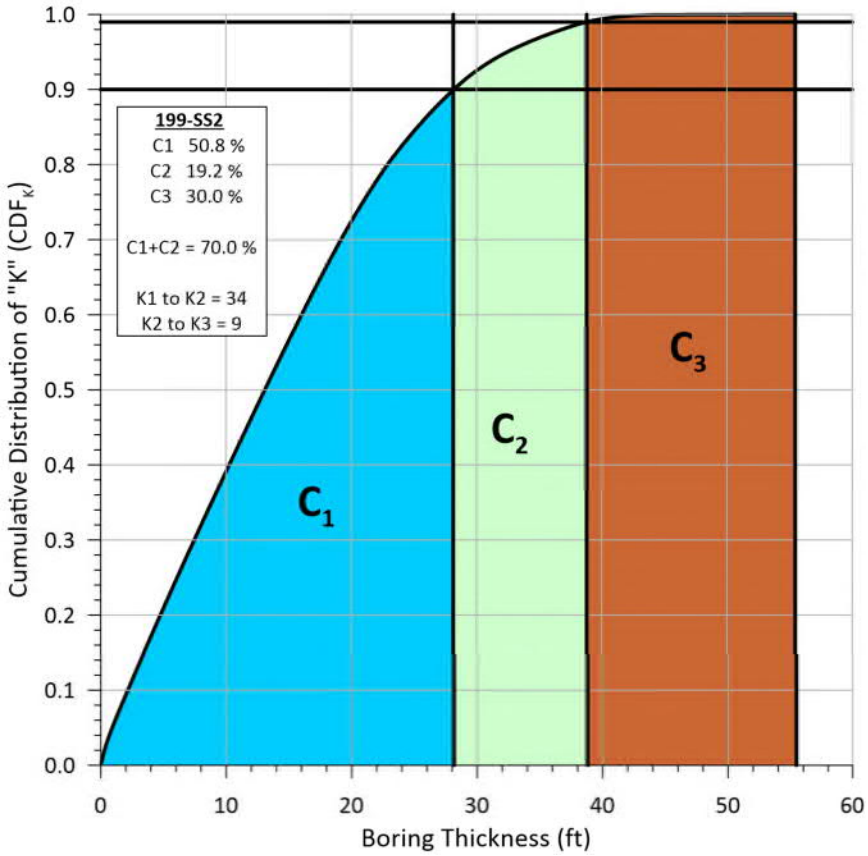


Notes:

C1 - most permeable soils, dominated by advective transport

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C3 - low permeability soils, dominated by diffusion

PPG INDUSTRIES
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY

199-SS2

ARCADIS Design & Consultancy for natural and built assets

FIGURE
E54

# Appendix F

# Boring Logs

**Appendix F**
**Boring Logs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| Location ID |
|---|
| 10W-MW101S |
| 10W-MW102S |
| 10W-MW105I |
| 10W-SS101S |
| 10W-SS102S |
| 10W-SS105I |
| 114-MW17B |
| 114-MW24AR[1] |
| 114-MW25C |
| 114-MW26B |
| 114-MW2B1-2I |
| 114-MW39B |
| 114-MW40B[2] |
| 114-MW41A |
| 114-MW41B |
| 114-MW42A[3] |
| 114-MW43A[4] |
| 114-P1B-MW103D |
| MW-CR-3D |
| 114-SS-39B |
| 114-SS-40B |

| Location ID |
|---|
| 132-P3A-MW104D-1[5] |
| 132-P3A-MW104D-2[5] |
| 114-SS-43A[4] |
| 132-P3A-MW105I |
| 132-P3A-SSI |
| 135-MW1AR |
| 135-MW3BR |
| 135-P3C-MW102S |
| 186-MW02R |
| DNAPL-S1 |
| DNAPL-W1 |
| GAR-PDI-A11B[4] |
| GAR-PDI-B`2A |
| GAR-PDI-B`3A |
| GAR-PDI-C13B |
| GAR-PDI-D14B |
| 114-MW45C |
| 114-MW48C |
| 114-MW49C |
| 114-MW50C |
| 114-MW51C |

| Location ID |
|---|
| 114-MW52C |
| 114-MW52D |
| 114-MW53C |
| 114-MW54C |
| 114-MW55C |
| 114-MW56C |
| 114-MW57C |
| 114-MW57D |
| 114-MW58C |
| 114-MW59C |
| 114-MW60C |
| 114-MW61C |
| 114-MW61D |
| 114-MW62C |
| 114-MW63C |
| 114-MW64C |
| 114-MW65C |
| 114-MW66D |
| 114-MW67C |
| 114-MW68C |
| 114-MW69C |

| Location ID |
|---|
| 114-MW70C |
| 114-BSB-01 |
| 114-BSB-02 |
| 114-BSB-03 |
| 132-P3-MW001D |
| HAL-P3-IRM-003I-B |
| HAL-P3-IRM-004I-B |
| HAL-P3-IRM-010I-B |

**Notes:**

Boring logs were not generated for wells that were "shared" between this groundwater RI and the Phase I groundwater IRM on Site 114. These include: 114-P1-IRM-5I, 114-P1-IRM-27D, 114-P1-IRM-40D, and 114-P1-MW2I. These monitoring wells were installed by another consultant (ARCADIS).

[1] - 114-MW24AR is a replacement for original RI program well 114-MW24A, and was installed in the same location as the original. The boring log for original well 114-MW24A is provided.

[2] - 114-MW40B was installed in the same location as boring 114-SS-40B. Refer to the boring log for 114-SS-40B for borehole lithology.

[3] - 114-MW42A was installed in the same location as soil PDI boring GAR-PDI-B`2A. Refer to the boring log for GAR-PDI-B`2A for borehole lithology.

[4] - 114-SS-43A and 114-MW43A were installed in the same location as soil PDI boring GAR-PDI-A11B. Refer to the boring log for GAR-PDI-A11B for borehole lithology.

[5] - 132-P3A-MW104D-1 and 132-P3A-MW104D-2 were installed within the same boring. Borehole lithology for both of these locations is provided on the boring log for 132-P3A-MW104D-2.

IRM - interim remedial measure

PDI - pre-design investigation

RI - Remedial Investigation

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732.564.3200 office telephone

# Boring ID: 10W-MW101S



| | | |
|---|---|---|
| **Project Name:** Groundwater Remedial Investigation | **Drilling Company:** SGS North America | |
| **Project Number:** 60507168 | **Drilling Method:** Augers | **Coordinates (NJSPNAD83) x:** 610587.4 |
| **Date Started Drilling:** 1/18/2018 9:30:00 AM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 682617.1 |
| **Date Finished Drilling:** 1/18/2018 3:00:00 PM | **Core Size:** | **Boring Total Depth:** 20 ft |
| **Logged By:** E. Acs | **Project Manager:** Scott Mikaelian | **Depth to Water:** 8.8 |
| **Physical Location:** Ten West Apparel | | **Surface Elevation:** 15.5 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 0 | | | | CONCRETE | | CONCRETE | |
| 1 | | | dry | FILL | | fine to medium silty SAND, trace gravel trace wood, (7.5YR 3/3) dark brown, loose, dry no odor no staining | |
| 2 | 3.5 | 0.0 | | | | | |
| 3 | | | | | | | |
| 4 | | | dry to wet | FILL | | ASH, trace gravel, (5YR 6/1) gray, loose, dry to wet no odor no staining, wet at 9' | |
| 5 | | | | | | | |
| 6 | 3.5 | 0.0 | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | 3 | 0.0 | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |
| 14 | | | wet | FILL | | fine SAND, some silt, (5YR 4/3) reddish brown, medium dense, wet no odor no staining | |
| 15 | | | | | | | |
| 16 | 4.5 | 0.0 | | | | | |
| 17 | | | moist | PT | | PEAT (degraded vegetated material), 60% fibers, 20% organic silt, (7.5YR 4/1) dark gray, soft, moist slight organic odor. Soils consistent with MM. | |
| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | | | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

PPG - 2012-09 RA PPG_LOGS_A.GDT - 6/7/18 15:14

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# Boring ID: 10W-MW102S



| | | |
|---|---|---|
| **Project Name:** Groundwater Remedial Investigation | **Drilling Company:** SGS North America | |
| **Project Number:** 60507168 | **Drilling Method:** Augers | **Coordinates (NJSPNAD83) x:** 610516.5 |
| **Date Started Drilling:** 1/19/2018 9:30:00 AM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 682453.4 |
| **Date Finished Drilling:** 1/19/2018 1:00:00 PM | **Core Size:** | **Boring Total Depth:** 20 ft |
| **Logged By:** E. Acs | **Project Manager:** Scott Mikaelian | **Depth to Water:** 8.12 |
| **Physical Location:** Ten West Apparel | | **Surface Elevation:** 15.5 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 0 | | | | CONCRETE | | CONCRETE | |
| 1 | | | dry | FILL | | ASH, trace silt, (5YR 6/1) gray, loose, dry no odor no staining | |
| 2 | 3 | 0.0 | dry | FILL | | fine to medium silty SAND, trace gravel trace wood, (7.5YR 3/4) dark brown, loose, dry no odor no staining | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | 3.5 | 0.0 | dry to wet | FILL | | ASH, trace silt, (7.5YR 4/1) dark gray, loose, dry to wet no odor no staining, wet at 9' | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | 3.5 | 0.0 | wet | FILL | | fine SAND, trace silt, (5YR 4/3) reddish brown, medium dense, wet no odor no staining | |
| 12 | | | | | | | |
| 13 | | | | | | | |
| 14 | | | | | | | |
| 15 | 3.5 | 0.0 | moist | PT | | PEAT (degraded vegetated material), 60% fibers, 40% organic silt, (7.5YR 3/4) dark brown, soft, moist slight organic odor. Soils consistent with MM. | |
| 16 | | | | | | | |
| 17 | | | | | | | |
| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | | | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

PPG - 2012-09 RA PPG_LOGS_A.GDT - 6/7/18 15:14

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732.564.3200 office telephone

# Boring ID: 10W-MW105I



| | | |
|---|---|---|
| **Project Name:** Groundwater Remedial Investigation | **Drilling Company:** SGS North America | |
| **Project Number:** 60507168 | **Drilling Method:** Augers/Mud Rotary | **Coordinates (NJSPNAD83) x:** 610626.9 |
| **Date Started Drilling:** 1/3/2018 11:30:00 AM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 682304.3 |
| **Date Finished Drilling:** 1/10/2018 4:00:00 PM | **Core Size:** | **Boring Total Depth:** 40 ft |
| **Logged By:** E. Acs | **Project Manager:** Scott Mikaelian | **Depth to Water:** 4.82 |
| **Physical Location:** Ten West Apparel | | **Surface Elevation:** 11.2 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 0 | | | dry | ASPHALT<br>FILL | | ASPHALT<br>fine to coarse silty SAND, (5YR 2.5/1) black, loose, dry to moist no odor no staining, wet at 5.5' (Hand Excavated) | |
| 6 | 1 | 0.0 | wet | FILL | | fine to coarse silty SAND, trace gravel, (5YR 2.5/1) black, very loose, wet no odor no staining | |
| 8 | 1.17 | 0.0 | wet | FILL | | fine to medium silty SAND, trace gravel trace wood, very loose, wet no odor no staining | |
| 10 | 1.17 | 0.0 | wet | FILL | | SILT, little fine to medium sand, (5YR 5/1) gray, very soft, wet no odor no staining | |
| 12 | 1.83 | 0.0 | moist | PT | | PEAT (degraded vegetated material), 80% fibers, 20% Organic Silt, (7.5YR 4/1) dark gray, moist slight organic odor. Soils consistent with MM. | |
| 14 | 0.5 | 0.0 | | | | | |
| 16 | 2 | 0.0 | | ML | | SILT, trace fine sand, (5YR 5/1) gray, very soft, wet no odor no staining. Soils consistent with UNDorg. | |
| 18 | 0.5 | 0.0 | | | | | |
| 20 | 1.67 | 0.0 | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

PPG - 2012-09 RA PPG_LOGS_A.GDT - 6/7/18 15:14

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30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# Boring ID: 10W-MW105I



| | | |
|---|---|---|
| **Project Name:** Groundwater Remedial Investigation | **Drilling Company:** SGS North America | |
| **Project Number:** 60507168 | **Drilling Method:** Augers/Mud Rotary | **Coordinates (NJSPNAD83) x:** 610626.9 |
| **Date Started Drilling:** 1/3/2018 11:30:00 AM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 682304.3 |
| **Date Finished Drilling:** 1/10/2018 4:00:00 PM | **Core Size:** | **Boring Total Depth:** 40 ft |
| **Logged By:** E. Acs | **Project Manager:** Scott Mikaelian | **Depth to Water:** 4.82 |
| **Physical Location:** Ten West Apparel | | **Surface Elevation:** 11.2 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 23 | 1.5 | 0.0 | wet | SP | | fine to medium SAND, trace silt trace gravel, (5YR 5/1) gray, medium dense, wet no odor no staining. Soils consistent with UNDno. | |
| 24 | | | | | | | |
| 25 | 1.33 | 0.0 | wet | SP | | fine to medium SAND, trace silt trace gravel, (5YR 4/3) reddish brown, loose, wet no odor no staining. Soils consistent with UNDno. | |
| 26 | | | | | | | |
| 27 | 1 | 0.0 | | | | | |
| 28 | | | | | | | |
| 29 | 1 | 0.0 | wet | SP | | fine SAND, trace silt, (5YR 4/3) reddish brown, very loose, wet no odor no staining. Soils consistent with UNDno. | |
| 30 | | | | | | | |
| 31 | 1 | 0.0 | | | | | |
| 32 | | | | | | | |
| 33 | 1.17 | 0.0 | | | | | |
| 34 | | | | | | | |
| 35 | 1.17 | 0.0 | | | | | |
| 36 | | | | | | | |
| 37 | 1 | 0.0 | | | | | |
| 38 | | | | | | | |
| 39 | 1 | 0.0 | | | | | |
| 40 | | | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
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UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
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**Comments:**

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30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# Boring ID: 10W-SS101S



| | | |
|---|---|---|
| **Project Name:** Groundwater RI | **Drilling Company:** SGS | |
| **Project Number:** 60550261 | **Drilling Method:** Direct Push | **Coordinates (NJSPNAD83) x:** 610641.8 |
| **Date Started Drilling:** 7/10/2017 12:00:00 PM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 682588.8 |
| **Date Finished Drilling:** 7/10/2017 1:30:00 PM | **Core Size:** | **Boring Total Depth:** 20 ft |
| **Logged By:** KW | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** Ten West Apparel | | **Surface Elevation:** 15.3 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 0 | | 0.0 | | CONCRETE | | CONCRETE | |
| 1 | | | dry | FILL | | fine to coarse silty SAND, little fill debris, (5YR 2.5/1) black, dry to moist no odor no staining | |
| 2 | | | moist | FILL | | SILT, trace fill debris, (5YR 2.5/1) black, moist no odor no staining | |
| 3 | | | moist | FILL | | CINDERS, and ash, (5YR 4/1) dark gray, moist no odor no staining | |
| 4 | | | | NR | | NO RECOVERY | |
| 5 | 4 | | | | | | |
| 6 | | | | NR | | NO RECOVERY | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | 0 | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |
| 14 | | | | | | | |
| 15 | 0 | | saturated | FILL | | CINDERS, and ash, (5YR 6/1) gray, saturated no odor no staining | |
| 16 | | | wet | FILL | | fine to medium silty SAND, (5YR 5/3) reddish brown, wet no odor no staining | |
| 17 | | | wet | FILL | | SILT, (5YR 2.5/1) black, wet no odor no staining | |
| 18 | | | moist | PT | | PEAT (degraded vegetated material), (50% Organic Fiber,50% Organic Silt), (5YR 2.5/1) black, moist moderate organic odor no staining | |
| 19 | | | | | | | |
| 20 | 4 | | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

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# Boring ID: 10W-SS102S



| | | |
|---|---|---|
| **Project Name:** Groundwater RI | **Drilling Company:** SGS North America | |
| **Project Number:** 60550261 | **Drilling Method:** Direct Push | **Coordinates (NJSPNAD83) x:** 610568.1 |
| **Date Started Drilling:** 7/11/2017 10:58:00 AM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 682447.4 |
| **Date Finished Drilling:** 7/11/2017 1:45:00 PM | **Core Size:** | **Boring Total Depth:** 15 ft |
| **Logged By:** KW | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** Ten West Apparel | | **Surface Elevation:** 15.6 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| | | | | CONCRETE | | CONCRETE | |
| 1–3 | 3.5 | 0.0 | dry | FILL | | fine to medium silty SAND, little fill debris (coal, brick, and metal), (7.5YR 5/2) brown, dry to moist no odor no staining | |
| 3–5 | | | | NR | | NO RECOVERY | |
| 5–7 | 2 | 0.0 | moist | FILL | | SILT, trace fine sand, fill debris (coal and glass), (7.5YR 4/2) brown, moist to saturated no odor no staining | |
| 7–10 | | | moist | FILL | | ASH, little ash, (5YR 2.5/1) black, moist no odor no staining | |
| | | | | NR | | NO RECOVERY | |
| 10–15 | 0 | 0.0 | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

PPG - 2012-09 RA PPG_LOGS_A.GDT - 6/7/18 14:48

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# Boring ID: 10W-SS105I



| | | |
|---|---|---|
| **Project Name:** Groundwater RI | **Drilling Company:** SGS North America | |
| **Project Number:** 60550261 | **Drilling Method:** Direct Push | **Coordinates (NJSPNAD83) x:** 610608 |
| **Date Started Drilling:** 7/13/2017 11:15:00 AM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 682323.4 |
| **Date Finished Drilling:** 7/13/2017 1:30:00 PM | **Core Size:** | **Boring Total Depth:** 35 ft |
| **Logged By:** KW | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** Ten West Apparel | | **Surface Elevation:** 11.5 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 0 | | | | ASPHALT | | ASPHALT, and Subase, (5YR 2.5/1) black | |
| 1 | | | dry | FILL | | fine to medium silty SAND, (5YR 2.5/1) black, dry to moist no staining, slight napthalene like odor | |
| 2 | 5 | 0.0 | | | | | |
| 3 | | | moist | FILL | | fine to coarse SAND, little fill debris, silt silt, (5YR 2.5/1) black, moist to wet no odor no staining | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | 3.5 | 0.0 | | | | | |
| 8 | | | | | | | |
| 9 | | | | NR | | NO RECOVERY | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | 0 | 0.0 | | | | | |
| 13 | | | | | | | |
| 14 | | | | | | | |
| 15 | | | | | | | |
| 16 | | | | | | | |
| 17 | 0 | 0.0 | | | | | |
| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | | | wet | FILL | | fine to coarse silty SAND, (5YR 6/1) gray, wet no odor no staining | |
| 21 | 5 | 0.0 | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

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# Boring ID: 10W-SS105I



| | | |
|---|---|---|
| **Project Name:** Groundwater RI | **Drilling Company:** SGS North America | |
| **Project Number:** 60550261 | **Drilling Method:** Direct Push | **Coordinates (NJSPNAD83) x:** 610608 |
| **Date Started Drilling:** 7/13/2017 11:15:00 AM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 682323.4 |
| **Date Finished Drilling:** 7/13/2017 1:30:00 PM | **Core Size:** | **Boring Total Depth:** 35 ft |
| **Logged By:** KW | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** Ten West Apparel | | **Surface Elevation:** 11.5 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 23 | | | wet | SM | | fine to coarse silty SAND, (5YR 3/3) dark reddish brown, wet no odor no staining. Soils consistent with UNDno. | |
| 24 | | | | | | | |
| 25 | | | | | | | |
| 26 | | | | | | | |
| 27 | 5 | 0.0 | | | | | |
| 28 | | | | | | | |
| 29 | | | | | | | |
| 30 | | | | | | | |
| 31 | | | | | | | |
| 32 | 5 | 0.0 | | | | | |
| 33 | | | | | | | |
| 34 | | | | | | | |
| 35 | | | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

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# Boring ID: 114-BSB-01



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** SGS North America | **Top of PVC Elevation:** Not Applicable ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611145.1 |
| **Date Started Drilling:** 7/9/2019 | **Rig Type:** Track-Mounted Sonic | **Coordinates (NJSPNAD83) y:** 683901.8 |
| **Date Finished Drilling:** 7/9/2019 | **Core Size:** 4 in | **Boring Total Depth:** 68 ft |
| **Logged By:** J. Harshman | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.7 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 | 72 / | 0 | DRY | FILL | | Soft dig to 5 ft bgs; Brown and gray DGA, fine to medium SAND and fine to coarse GRAVEL, loose, little black material at 8', dry. | | |
| 8 | 96 / | 0 | WET | FILL | | Black DGA (FILL) material, consisting of black SAND and GRAVEL, loose to medium dense, wet. | | |
| 16 | | | WET | ML | | Light gray sandy SILT, wet. | | |
| 18 | 120 / | 0 | WET | ML | | Light gray sandy SILT, wet. | | |
| 19 | | | WET | SW | | Reddish brown, silty fine to medium SAND and GRAVEL, well graded, loose to medium dense, wet. | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

PPG WITH WELL CONSTRUCTION - - 2/5/21 12:35

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# Boring ID: 114-BSB-01



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** SGS North America | **Top of PVC Elevation:** Not Applicable ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611145.1 |
| **Date Started Drilling:** 7/9/2019 | **Rig Type:** Track-Mounted Sonic | **Coordinates (NJSPNAD83) y:** 683901.8 |
| **Date Finished Drilling:** 7/9/2019 | **Core Size:** 4 in | **Boring Total Depth:** 68 ft |
| **Logged By:** J. Harshman | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.7 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 21 | | | WET | SW | | | | |
| 22 | | | | | | | | |
| 23 | | | | | | Gray, very fine silty SAND, loose to medium dense, wet. | | |
| 24 | | | | | | | | |
| 25 | | | WET | SM | | | | |
| 26 | | | | | | | | |
| 27 | | | | | | | | |
| 28 | / | 0 | | | | Gray, very fine silty SAND, wet. | | |
| 29 | | | WET | SM | | | | |
| 30 | | | | | | Reddish brown fine to medium SAND and fine to coarse GRAVEL, well graded, loose to medium dense, trace SILT, wet. | | |
| 31 | | | | | | | | |
| 32 | | | WET | SW | | | | |
| 33 | | | | | | SAND, poorly graded, loose to medium dense, wet. | | |
| 34 | | | WET | SP | | | | |
| 35 | | | | | | Reddish brown, fine to coarse SAND and subangular GRAVEL, well graded, medium dense, wet. | | |
| 36 | | | | | | | | |
| 37 | | | WET | SW | | | | |
| 38 | 60 / | 0 | | | | No Recovery | | |
| 39 | | | | NR | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

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# Boring ID: 114-BSB-01



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** SGS North America | **Top of PVC Elevation:** Not Applicable ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611145.1 |
| **Date Started Drilling:** 7/9/2019 | **Rig Type:** Track-Mounted Sonic | **Coordinates (NJSPNAD83) y:** 683901.8 |
| **Date Finished Drilling:** 7/9/2019 | **Core Size:** 4 in | **Boring Total Depth:** 68 ft |
| **Logged By:** J. Harshman | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.7 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 41 | | | | NR | | | | |
| 42 | | | | | | | | |
| 43 | | | | | | | | |
| 44 | | | WET | SM/GM | | Reddish brown, fine to medium silty SAND and fine to coarse GRAVEL, well graded, medium dense, density increases after 47' with lesser water content. | | |
| 45 | | | | | | | | |
| 46 | | | | | | | | |
| 47 | | | | | | | | |
| 48 | 108 / | 0 | | | | Reddish brown, very fine to fine/medium silty SAND and fine to coarse subangular and subrounded GRAVEL, well graded, medium dense, trace SILT and CLAY, wet. | | |
| 49 | | | | | | | | |
| 50 | | | WET | SM/GM | | | | |
| 51 | | | | | | | | |
| 52 | | | | | | | | |
| 53 | | | | | | Reddish brown, fine SAND and fine to coarse GRAVEL, medium dense, with little SILT and CLAY and trace cobbles, wet. | | |
| 54 | | | | | | | | |
| 55 | | | WET | SW-GW | | | | |
| 56 | | | | | | | | |
| 57 | | | WET | SM-GM | | Light brown-gray, fine silty SAND and fine to coarse GRAVEL, well graded, subangular and subrounded, wet. | | |
| 58 | 60 / | 0 | | | | Brown, fine to coarse SAND and fine to coarse GRAVEL, well graded, medium dense, wet. | | |
| 59 | | | WET | SW-GW | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

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# Boring ID: 114-BSB-01



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** SGS North America | **Top of PVC Elevation:** Not Applicable ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611145.1 |
| **Date Started Drilling:** 7/9/2019 | **Rig Type:** Track-Mounted Sonic | **Coordinates (NJSPNAD83) y:** 683901.8 |
| **Date Finished Drilling:** 7/9/2019 | **Core Size:** 4 in | **Boring Total Depth:** 68 ft |
| **Logged By:** J. Harshman | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.7 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 61 | | | WET | SW-GW | | | | |
| | | | DRY | SP-GP | | Gray/brown SAND and fine to medium GRAVEL (angular to sub-angular), very dense, dry (Basal Till). | | |
| 62 | | | DRY | GP | | Gray, broken fragments of possible bedrock, some angular gravel, dry (Basal Till). | | |
| 63 | 60 / | 0 | | | | Black Diabase. End of boring at 68 ft. | | |
| 64 | | | | | | | | |
| 65 | | | | BEDROCK | | | | |
| 66 | | | | | | | | |
| 67 | | | | | | | | |
| 68 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

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# Boring ID: 114-BSB-02



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** SGS North America | **Top of PVC Elevation:** Not Applicable ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611029 |
| **Date Started Drilling:** 7/9/2019 | **Rig Type:** Track-Mounted Sonic | **Coordinates (NJSPNAD83) y:** 683757.3 |
| **Date Finished Drilling:** 7/10/2019 | **Core Size:** 4 in | **Boring Total Depth:** 73 ft |
| **Logged By:** J. Harshman | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 13.5 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 – 6 | 0 / | 0 | DRY | FILL | | Soft dig to 5 ft bgs. Gray fine to medium SAND and GRAVEL, loose, dry (DGA). | | |
| 6 – 8 | 24 / | 0 | DRY | FILL | | Gray fine to medium SAND and GRAVEL, loose, dry (DGA). | | |
| 8 – 13 | 120 / | 0 | WET | FILL | | DGA (FILL) material consisting of fine to medium SAND and GRAVEL, wet. | | |
| 13 – 15 | | | DRY | PT | | Brown, PEAT meadow mat, highly organic, mostly dry. | | |
| 15 – 17 | | | MOIST | ML | | Gray, clayey SILT with trace fine GRAVEL, soft, moist. | | |
| 17 – 19 | 108 / | 0 | WET | GC-GM | | Gray, fine to medium GRAVEL and fine SAND, with some CLAY and SILT, loose, wet. | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

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# Boring ID: 114-BSB-02



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** SGS North America | **Top of PVC Elevation:** Not Applicable ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611029 |
| **Date Started Drilling:** 7/9/2019 | **Rig Type:** Track-Mounted Sonic | **Coordinates (NJSPNAD83) y:** 683757.3 |
| **Date Finished Drilling:** 7/10/2019 | **Core Size:** 4 in | **Boring Total Depth:** 73 ft |
| **Logged By:** J. Harshman | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 13.5 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 21 | | | WET | GC-GM | | | | |
| 22 | | | WET | SM/GM | | Reddish brown, fine silty SAND and fine to coarse GRAVEL, well graded, loose to medium dense, wet. | | |
| 23 | | | WET | GP | | Reddish brown, fine to medium GRAVEL with fine silty SAND, poorly graded, loose, wet. | | |
| 24 | | | WET | SP | | Reddish brown, fine to medium SAND with trace to little fine GRAVEL, poorly graded, loose to medium dense, wet. | | |
| 27 | | | WET | SM | | Reddish brown, fine silty SAND, medium dense, wet. | | |
| 28 | 96 / | 0 | WET | SP-SM | | Reddish brown, very fine to fine SAND with occassional silty SAND, poorly graded, loose, wet. | | |
| 34 | | | MOIST TO WET | SM/GM | | Reddish brown, very fine silty SAND and fine to coarse GRAVEL, well graded, medium dense to dense, tight, moist to wet. | | |
| 38 | 108 / | 0 | MOIST TO WET | SM-SC | | Dark brown, fine to medium silty and clayey SAND, with some fine to coarse subangular and subrounded GRAVEL, medium dense, trace cobbles, moist to wet. | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

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# Boring ID: 114-BSB-02



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** SGS North America | **Top of PVC Elevation:** Not Applicable ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611029 |
| **Date Started Drilling:** 7/9/2019 | **Rig Type:** Track-Mounted Sonic | **Coordinates (NJSPNAD83) y:** 683757.3 |
| **Date Finished Drilling:** 7/10/2019 | **Core Size:** 4 in | **Boring Total Depth:** 73 ft |
| **Logged By:** J. Harshman | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 13.5 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 41 | | | | | | | | |
| 42 | | | | | | | | |
| 43 | | | | | | | | |
| 44 | | | MOIST TO WET | SM-SC | | | | |
| 45 | | | | | | | | |
| 46 | | | | | | | | |
| 47 | | | | | | | | |
| 48 | 120 / | 0 | | | | Dark brown, fine to medium silty SAND with some fine to coarse subangular and subrounded GRAVEL, well graded, medium dense, trace cobbles, moist to wet. | | |
| 49 | | | | | | | | |
| 50 | | | | | | | | |
| 51 | | | MOIST TO WET | SW-GW | | | | |
| 52 | | | | | | | | |
| 53 | | | | | | | | |
| 54 | | | VERY DRY | SW | | Brown, SAND with rock fragments, very dry. | | |
| 55 | | | | | | Dark brown, fine to medium silty SAND with some fine to medium subangular and subrounded GRAVEL, with trace cobble/broken cobble, dense, moist (Basal Till). | | |
| 56 | | | | | | | | |
| 57 | | | MOIST | SM | | | | |
| 58 | 60 / | 0 | | | | Dark brown, fine to medium silty SAND with some fine to coarse GRAVEL (well graded), broken cobble, medium dense, moist to wet (Basal Till). | | |
| 59 | | | MOIST TO WET | SM | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

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# Boring ID: 114-BSB-02



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** SGS North America | **Top of PVC Elevation:** Not Applicable ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611029 |
| **Date Started Drilling:** 7/9/2019 | **Rig Type:** Track-Mounted Sonic | **Coordinates (NJSPNAD83) y:** 683757.3 |
| **Date Finished Drilling:** 7/10/2019 | **Core Size:** 4 in | **Boring Total Depth:** 73 ft |
| **Logged By:** J. Harshman | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 13.5 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 61 | | | MOIST TO WET | SM | | | | |
| | | | | MH | | Gray, clayey SILT with angular GRAVEL, highly compressed (Basal Till). | | |
| 62 | | | DRY | BEDROCK | | Gray, weathered BEDROCK, with some broken rock pieces, dry. | | |
| 63 | 60 / | 0 | | | | Gray to light gray, weathered BEDROCK, with some small dark gray rock pieces less than 4" at 67.5' - 68'. | | |
| 64 | | | | | | | | |
| 65 | | | | BEDROCK | | | | |
| 66 | | | | | | | | |
| 67 | | | | | | | | |
| 68 | 48 / | | | | | Black Diabase. End of boring at 73.0 ft. | | |
| 69 | | | | | | | | |
| 70 | | | | BEDROCK | | | | |
| 71 | | | | | | | | |
| 72 | | | | | | | | |
| 73 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

PPG WITH WELL CONSTRUCTION - - 2/5/21 12:35

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# Boring ID: 114-BSB-03



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** SGS North America | **Top of PVC Elevation:** Not Applicable ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611026.8 |
| **Date Started Drilling:** 7/10/2019 | **Rig Type:** Track-Mounted Sonic | **Coordinates (NJSPNAD83) y:** 683530.4 |
| **Date Finished Drilling:** 7/11/2019 | **Core Size:** 4 in | **Boring Total Depth:** 81 ft |
| **Logged By:** J. Harshman | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 13.9 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 | / | 0 | DRY TO WET | FILL | | Soft dig to 5 ft bgs; Gray DGA material (FILL), fine to coarse SAND and GRAVEL, wet at 3'. | | |
| 6 | / | 0 | | FILL | | Gray, DGA material (FILL), loose, trace FerroBlack-H at 7.5' to 8'. | | |
| 8 | 120 / | 0 | WET | FILL | | Gray, DGA material (FILL), fine to coarse SAND and GRAVEL, cobbles, loose, wet, some clayey gray/brown fine sand with gravel at 15' - 16'. | | |
| 16 | | | | PT | | Brown PEAT meadow mat, mostly dry, highly organic. | | |
| 18 | 120 / | 0 | WET | CL | | Gray CLAY, soft, wet. | | |
| 19 | | | WET | CL | | Gray CLAY and fine to medium GRAVEL, wet. | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

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# Boring ID: 114-BSB-03



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** SGS North America | **Top of PVC Elevation:** Not Applicable ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611026.8 |
| **Date Started Drilling:** 7/10/2019 | **Rig Type:** Track-Mounted Sonic | **Coordinates (NJSPNAD83) y:** 683530.4 |
| **Date Finished Drilling:** 7/11/2019 | **Core Size:** 4 in | **Boring Total Depth:** 81 ft |
| **Logged By:** J. Harshman | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 13.9 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 21 | | | WET | CL | | | | |
| 22 | | | WET | SP | | Reddish brown, fine to coarse SAND and rounded GRAVEL, poorly graded, loose, wet. | | |
| 24 | | | WET | SP | | Reddish brown, fine to medium SAND, poorly graded, loose, wet. | | |
| 28 | 120 / | 0 | WET | SP/SM | | Reddish brown, fine SAND, poorly graded, loose, wet. Intervals of fine silty SAND at 32' to 33' and 37' to 38'. Yellow groundwater observed leaching out of soil at 33' to 38'. | | |
| 38 | 120 / | 0 | WET | SM | | Very fine silty SAND, loose, wet. Soil saturated with yellow leaching material. | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

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# Boring ID: 114-BSB-03



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** SGS North America | **Top of PVC Elevation:** Not Applicable ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611026.8 |
| **Date Started Drilling:** 7/10/2019 | **Rig Type:** Track-Mounted Sonic | **Coordinates (NJSPNAD83) y:** 683530.4 |
| **Date Finished Drilling:** 7/11/2019 | **Core Size:** 4 in | **Boring Total Depth:** 81 ft |
| **Logged By:** J. Harshman | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 13.9 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 41 | | | WET | SM | | | | |
| 42 | | | | | | | | |
| 43 | | | | | | Reddish brown, silty CLAY with some clayey SILT, soft to medium stiff, wet. | | |
| 44 | | | | | | | | |
| 45 | | | WET | CL-ML | | | | |
| 46 | | | | | | | | |
| 47 | | | WET | SW-GW | | Reddish brown, gravelly SAND and fine to coarse GRAVEL, some sand and sandy gravel, trace cobbles, loose to medium dense, wet. | | |
| 48 | 48 / | 0 | | | | Dark brown to reddish brown/gray, fine silty and clayey SAND and fine to coarse GRAVEL with cobbles, medium dense to dense, wet (53' to 58'). Possibly running sands from 48' to 53'. Becoming damp to dry at 57' to 58'. Subangular to angular gravel at 57' to 58'. | | |
| 49 | | | | | | | | |
| 50 | | | | | | | | |
| 51 | | | | | | | | |
| 52 | | | | | | | | |
| 53 | | | WET TO DAMP | SM | | | | |
| 54 | | | | | | | | |
| 55 | | | | | | | | |
| 56 | | | | | | | | |
| 57 | | | | | | | | |
| 58 | 12 / | 0 | | | | Brown, fine silty and clayey SAND with fine to coarse GRAVEL, cobbles, loose to medium dense (appears to be continuation of lithology observed at 57' to 58'). | | |
| 59 | | | DAMP TO DRY | SM-SC | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

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# Boring ID: 114-BSB-03



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** SGS North America | **Top of PVC Elevation:** Not Applicable ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611026.8 |
| **Date Started Drilling:** 7/10/2019 | **Rig Type:** Track-Mounted Sonic | **Coordinates (NJSPNAD83) y:** 683530.4 |
| **Date Finished Drilling:** 7/11/2019 | **Core Size:** 4 in | **Boring Total Depth:** 81 ft |
| **Logged By:** J. Harshman | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 13.9 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 61 – 62 – 63 | | | DAMP TO DRY | SM-SC | | | | |
| 63 – 64 – 65 – 66 – 67 – 68 | 60 / | 0 | | SM-SC | | Brown, fine silty and clayey SAND with fine to coarse GRAVEL, cobbles, loose to medium dense. | | |
| 68 – 69 – 70 – 71 – 72 – 73 | 48 / | 0 | | SW/GW | | Dark brown, fine to coarse SAND and GRAVEL (subangular and subrounded), possible Basal Till, broken up into fragments due to water injection. | | |
| 73 – 74 – 75 – 76 | 36 / | 7 | MOIST TO WET | GM-GC | | Dark brown to gray, fine to coarse silty and clayey GRAVEL with fine to coarse GRAVEL, medium dense, moist to wet (Basal Till). Broken rock fragments at 75.5' to 76'. | | |
| 76 – 77 – 78 – 79 | 30 / | 0 | | BEDROCK | | Dark gray to black siltstone (Lockatong Formation). End of boring at 81 ft. | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

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# Boring ID: 114-BSB-03



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** SGS North America | **Top of PVC Elevation:** Not Applicable ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611026.8 |
| **Date Started Drilling:** 7/10/2019 | **Rig Type:** Track-Mounted Sonic | **Coordinates (NJSPNAD83) y:** 683530.4 |
| **Date Finished Drilling:** 7/11/2019 | **Core Size:** 4 in | **Boring Total Depth:** 81 ft |
| **Logged By:** J. Harshman | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 13.9 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 81 | | | | BEDROCK | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

PPG WITH WELL CONSTRUCTION - - 2/5/21 12:35

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# Boring ID: 114-MW2B1-2I



| | | |
|---|---|---|
| **Project Name:** GA Groundwater RI | **Drilling Company:** SGS | |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611639 |
| **Date Started Drilling:** 10/17/2017 11:30:00 AM | **Rig Type:** CRS XL Max | **Coordinates (NJSPNAD83) y:** 683809 |
| **Date Finished Drilling:** 10/20/2017 3:00:00 PM | **Core Size:** | **Boring Total Depth:** 38 ft |
| **Logged By:** KW | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** FSP | | **Surface Elevation:** 24.1 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 0 | 5 | 0.0 | dry | FILL | | ASPHALT MILLINGS | |
| 1–5 | | | dry to moist | FILL | | fine to medium silty SAND, little fill debris, (5YR 2.5/1) black, dry to moist no odor no staining | |
| 5 | | | | NR | | NO RECOVERY | |
| 10 | 2 | 0.0 | | | | | |
| 18 | | | wet | FILL | | fine to coarse silty SAND, some fine to coarse gravel, (5YR 4/3) reddish brown, wet no odor no staining | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

PPG - 2012-09 RA PPG_LOGS_A.GDT - 1/22/18 10:28

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# Boring ID: 114-MW2B1-2I



| | | |
|---|---|---|
| **Project Name:** GA Groundwater RI | **Drilling Company:** SGS | |
| **Project Number:** 60550261 | **Drilling Method:** | **Coordinates (NJSPNAD83) x:** 611639 |
| **Date Started Drilling:** 10/17/2017 11:30:00 AM | **Rig Type:** Sonic | **Coordinates (NJSPNAD83) y:** 683809 |
| **Date Finished Drilling:** 10/20/2017 3:00:00 PM | **Core Size:** | **Boring Total Depth:** 38 ft |
| **Logged By:** KW | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** FSP | | **Surface Elevation:** 24.1 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 23 | | | | | | | |
| 24 | | | moist | PT | | PEAT (degraded vegetated material), (60% Organic Fiber, 40% Organic Silt, (5YR 2.5/1) black, moist moderate organic odor no staining | |
| 25 | 10 | 0.0 | | | | | |
| 26 | | | | | | | |
| 27 | | | wet | OH | | organic SILT, little organic clay trace organics, (5YR 2.5/1) black, wet slight organic odor no staining | |
| 28 | | | wet | OH | | organic clayey SILT, trace fine gravel, (5YR 2.5/1) black, wet slight organic odor no staining | |
| 29 | | | | | | | |
| 30 | | | | | | | |
| 31 | | | | | | | |
| 32 | | | wet | SM | | fine to medium silty SAND, little fine to medium gravel, (5YR 4/3) reddish brown, wet no odor no staining | |
| 33 | | | | | | | |
| 34 | | | | | | | |
| 35 | 8 | 0.0 | | | | | |
| 36 | | | | | | | |
| 37 | | | | | | | |
| 38 | | | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

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# Boring ID: 114-MW17B



| | | |
|---|---|---|
| **Project Name:** Groundwater Remedial Investigation | **Drilling Company:** SGS North America | |
| **Project Number:** 60550261 | **Drilling Method:** Sonic Vibration | **Coordinates (NJSPNAD83) x:** 611688.5 |
| **Date Started Drilling:** 2/5/2018 7:00:00 AM | **Rig Type:** Sonic | **Coordinates (NJSPNAD83) y:** 683902 |
| **Date Finished Drilling:** 2/9/2018 3:00:00 PM | **Core Size:** | **Boring Total Depth:** 33 ft |
| **Logged By:** E. Acs | **Project Manager:** Scott Mikaelian | **Depth to Water:** 7.08 |
| **Physical Location:** Berry Lane Park | | **Surface Elevation:** 13.5 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 1–3 | 5 | 0 | | FILL | | Organic Topsoil | |
| 3–5 | | | dry | FILL | | fine to medium SAND, trace silt trace gravel, (5Y 2.5/2) black, loose, dry no odor no staining | |
| 5–8 | 3 | 0 | moist | FILL | | fine to medium SAND, trace silt trace gravel, (7.5YR 3/3) dark brown, loose, moist to wet no odor no staining | |
| 8–12 | 10 | 0 | wet | FILL | | fine to medium SAND, trace silt trace gravel, (5Y 2.5/1) black, loose, wet no odor no staining | |
| 12–13 | | | moist | FILL | | SILT, trace fine sand, (7.5YR 4/2) brown, soft, moist no odor no staining | |
| 13–15 | | | moist | PT | | PEAT (degraded vegetated material), 80%fibers 20% organic silt, soft, moist slight organic odor. Soils consistent with MM. | |
| 15–17 | | | moist | ML | | SILT, trace clay trace fine sand, (5YR 6/1) gray, soft, moist to wet no odor no staining. Soils consistent with UNDno. | |
| 17–18 | | | moist | CL | | silty CLAY, trace fine sand, (5Y 5/1) gray, medium stiff, moist no odor no staining. Soils consistent with UNDno. | |
| 18–19 | 10 | 0 | wet | GW | | fine to coarse GRAVEL, trace fine sand, (5YR 4/3) reddish brown, wet no odor no staining. Soils consistent with UNDno. | |
| 19–21 | | | wet | SP | | fine to medium SAND, trace gravel, (5YR 4/3) reddish brown, medium dense, wet no odor no staining. Soils consistent with UNDno. | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

PPG - 2012-09 RA PPG_LOGS_A.GDT - 6/7/18 15:27

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# Boring ID: 114-MW17B



| | | |
|---|---|---|
| **Project Name:** Groundwater Remedial Investigation | **Drilling Company:** SGS North America | |
| **Project Number:** 60550261 | **Drilling Method:** Sonic Vibration | **Coordinates (NJSPNAD83) x:** 611688.5 |
| **Date Started Drilling:** 2/5/2018 7:00:00 AM | **Rig Type:** Sonic | **Coordinates (NJSPNAD83) y:** 683902 |
| **Date Finished Drilling:** 2/9/2018 3:00:00 PM | **Core Size:** | **Boring Total Depth:** 33 ft |
| **Logged By:** E. Acs | **Project Manager:** Scott Mikaelian | **Depth to Water:** 7.08 |
| **Physical Location:** Berry Lane Park | | **Surface Elevation:** 13.5 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 23 | | | | | | | |
| 24 | | | | | | | |
| 25 | | | | | | | |
| 26 | | | | | | | |
| 27 | | | | | | | |
| 28 | | | | | | | |
| 29 | | | | | | | |
| 30 | 5 | 0 | | | | | |
| 31 | | | | | | | |
| 32 | | | | | | | |
| 33 | | | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

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# Boring ID: 114-MW24A



| | | |
|---|---|---|
| **Project Name:** Groundwater Remedial Investigation | **Drilling Company:** SGS North America | |
| **Project Number:** 60550261 | **Drilling Method:** Hurricane | **Coordinates (NJSPNAD83) x:** 611670 |
| **Date Started Drilling:** 11/29/2011 | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 683682.5 |
| **Date Finished Drilling:** 12/1/2011 | **Core Size:** 12 in | **Boring Total Depth:** 15 ft |
| **Logged By:** M. Merdinger | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** Forrest St | | **Surface Elevation:** 11.7 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 0 | | | dry | ASPHALT | | Asphalt and Gravel | MW24A-0.0 |
| 1 | | | dry | FILL | | Very Dark Grayish Brown (10YR 3/2) fine to medium SAND and fine to medium rounded Gravel (5% COPR), little Silt, medium dense. | |
| 2 | | | dry | FILL | | Dark Reddish Brown (5YR 3/2) fine to medium SAND and fine to medium rounded Gravel (10% COPR), little Silt, medium dense. | MW24A-2.0 |
| 3 | | | wet | CONCRETE | | Green-stained CONCRETE, weathered. | |
| 4 | | | wet | FILL | | Black SILT, little fine angular Gravel, loose. Coal tar odor. | |
| 5 | | | wet | FILL | | Black-stained medium to coarse crushed FILL (gravel, coal, glass, ceramics), little fine to coarse Sand and Silt, loose. Slight coal tar odor. | MW24A-5.0 |
| 6 | | | wet | VOID | | No Recovery. | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | wet | FILL | | Black-stained medium to coarse crushed FILL (gravel, coal, glass, ceramics), little fine to coarse Sand and Silt, loose, sheen from 13.6 to 14.0 ft. Strong coal tar odor. | MW24A-10.0 |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |
| 14 | | | moist | PEAT | | Dark Reddish Brown (5YR 3/2) PEAT, high Organics, some Silt, stiff. Sulfur and coal tar odor. | MW24A-14.0 |
| 15 | | | moist | SILT AND GRAVEL | | Reddish Brown (2.5YR 5/4) SILT and fine angular Gravel, trace fine Sand, very dense. | |
| | | | | NULL | | End of boring at 15 ft. Well set at 14 ft. | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:** Same borehole lithology for replacement well 114-MW24AR

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# Boring ID: 114-MW25C



| | | |
|---|---|---|
| **Project Name:** GA Groundwater RI | **Drilling Company:** SGS | |
| **Project Number:** 60550261 | **Drilling Method:** | **Coordinates (NJSPNAD83) x:** 611795.8 |
| **Date Started Drilling:** 11/3/2017 1:30:00 PM | **Rig Type:** Sonic | **Coordinates (NJSPNAD83) y:** 683600.4 |
| **Date Finished Drilling:** 10/12/2017 | **Core Size:** | **Boring Total Depth:** 58 ft |
| **Logged By:** KW | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** Forrest Street | | **Surface Elevation:** 10.4 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 1–5 | 5 | 0.0 | | | | See Log for Well 114-MW25B | |
| 6–10 | 5 | 0.0 | | | | | |
| 11–15 | 5 | 0.0 | | | | | |
| 16–20 | 5 | 0.0 | | | | | |
| 18–21 | | | wet | SM | | fine to medium silty SAND, trace coarse sand, (5YR 4/3) reddish brown, wet no odor no staining | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

AECOM
30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# Boring ID: 114-MW25C



| | | |
|---|---|---|
| **Project Name:** GA Groundwater RI | **Drilling Company:** SGS | |
| **Project Number:** 60550261 | **Drilling Method:** | **Coordinates (NJSPNAD83) x:** 611795.8 |
| **Date Started Drilling:** 11/3/2017 1:30:00 PM | **Rig Type:** Sonic | **Coordinates (NJSPNAD83) y:** 683600.4 |
| **Date Finished Drilling:** 10/12/2017 | **Core Size:** | **Boring Total Depth:** 58 ft |
| **Logged By:** KW | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** Forrest Street | | **Surface Elevation:** 10.4 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 23 | 5 | 0.0 | wet | SM | | fine to medium silty SAND, (5YR 4/3) reddish brown, wet no odor no staining | |
| 24 | | | wet | SM | | fine to medium SAND, little coarse sand, (5YR 4/4) reddish brown, wet no odor no staining | |
| 25 | | | wet | SM | | fine to medium silty SAND, (5YR 4/3) reddish brown, wet no odor no staining, Green staining to suspended water | |
| 26 | | | | | | | |
| 27 | 5 | 0.0 | wet | SM | | fine to medium silty SAND, some fine to medium gravel trace coarse sand, (5YR 4/3) reddish brown, wet no odor no staining | |
| 28 | | | wet | SM | | fine to medium silty SAND, trace coarse sand, (5YR 4/3) reddish brown, wet no odor no staining | |
| 29 | | | | | | | |
| 30 | | | | | | | |
| 31 | 5 | 0.0 | wet | SM | | fine to medium silty SAND, trace clay, (5YR 4/4) reddish brown, wet no odor no staining, Clay occurs in bands of light brown medium plasticity | |
| 32 | | | | | | | |
| 33 | | | wet | SM | | fine to medium silty SAND, trace coarse sand, (5YR 4/3) reddish brown, wet no odor no staining | |
| 34 | | | | | | | |
| 35 | 5 | 0.00 | | | | | |
| 36 | | | | | | | |
| 37 | | | | | | | |
| 38 | | | wet | SM | | fine silty SAND, (5YR 4/3) reddish brown, wet no odor no staining | |
| 39 | | | | | | | |
| 40 | 5 | 0.0 | | | | | |
| 41 | | | | | | | |
| 42 | | | | | | | |
| 43 | | | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

AECOM
30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# Boring ID: 114-MW25C



| | | |
|---|---|---|
| **Project Name:** GA Groundwater RI | **Drilling Company:** SGS | |
| **Project Number:** 60550261 | **Drilling Method:** | **Coordinates (NJSPNAD83) x:** 611795.8 |
| **Date Started Drilling:** 11/3/2017 1:30:00 PM | **Rig Type:** Sonic | **Coordinates (NJSPNAD83) y:** 683600.4 |
| **Date Finished Drilling:** 10/12/2017 | **Core Size:** | **Boring Total Depth:** 58 ft |
| **Logged By:** KW | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** Forrest Street | | **Surface Elevation:** 10.4 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 45 | | | | | | | |
| 46 | | | wet | SM | | fine to medium silty SAND, some black angular gravel, (5YR 4/3) reddish brown, wet no odor no staining | |
| 47 | 5 | 0.0 | wet | GW | | fine to coarse GRAVEL, little fine to medium sand trace silt, (7.5YR 4/3) brown, wet no odor no staining | |
| 48 | | | | | | | |
| 49 | | | | | | | |
| 50 | | | | | | | |
| 51 | 5 | 0.0 | | | | | |
| 52 | | | | | | | |
| 53 | | | | | | | |
| 54 | | | | | | | |
| 55 | | | moist | BEDROCK | | weathered BEDROCK, (5YR 2.5/1) black, moist no odor no staining | |
| 56 | 3 | 0.0 | | | | | |
| 57 | | | | | | | |
| 58 | | | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

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# Boring ID: 114-MW26B



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Group of Sites | **Drilling Company:** SGS North America | |
| **Project Number:** 60550261 | **Drilling Method:** | **Coordinates (NJSPNAD83) x:** 611844.2 |
| **Date Started Drilling:** 10/6/2017 9:00:00 AM | **Rig Type:** Sonic | **Coordinates (NJSPNAD83) y:** 683496.2 |
| **Date Finished Drilling:** 10/10/2017 4:30:00 PM | **Core Size:** | **Boring Total Depth:** 43 ft |
| **Logged By:** KW | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** Forrest Street | | **Surface Elevation:** 11.6 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| | | | | ASPHALT | | Asphalt and Subase | |
| 1–5 | 5 | 0.0 | dry | FILL | | fine to medium silty SAND, little fill debris, (5YR 2.5/1) black, dry to moist slight organic odor no staining | |
| | | | moist | FILL | | CINDERS and ASH, trace fill debris, (5YR 2.5/1) black, moist to wet no staining, slight fuel oil like odor | |
| 5–10 | 5 | 0.0 | wet | SM | | fine to medium silty SAND, trace fine to medium gravel, (5YR 4/3) reddish brown, wet no odor no staining. Soils consistent with UNDno. | |
| 10–15 | 5 | 0.0 | | | | | |
| 14–15 | | | wet | SW | | fine to coarse SAND, little silt trace fine to coarse gravel, (5YR 3/4) dark reddish brown, wet no odor no staining. Soils consistent with UNDno. | |
| 15–20 | 5 | 0.0 | | | | | |
| 20–21 | | | wet | SM | | fine to coarse SAND, with silt, (5YR 4/4) reddish brown, wet no odor no staining. Soils consistent with UNDno. | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

PPG - 2012-09 RA PPG_LOGS_A.GDT - 6/7/18 11:28

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30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# Boring ID: 114-MW26B



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Group of Sites | **Drilling Company:** SGS North America | |
| **Project Number:** 60550261 | **Drilling Method:** | **Coordinates (NJSPNAD83) x:** 611844.2 |
| **Date Started Drilling:** 10/6/2017 9:00:00 AM | **Rig Type:** Sonic | **Coordinates (NJSPNAD83) y:** 683496.2 |
| **Date Finished Drilling:** 10/10/2017 4:30:00 PM | **Core Size:** | **Boring Total Depth:** 43 ft |
| **Logged By:** KW | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** Forrest Street | | **Surface Elevation:** 11.6 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 23 | 5 | 0.0 | wet | SM | | fine to medium silty SAND, (5YR 4/3) reddish brown, wet no odor no staining. Soils consistent with UNDno. | |
| 25 | 5 | 0.0 | wet | SM | | fine silty SAND, (5YR 4/3) reddish brown, wet no odor no staining. Soils consistent with UNDno. | |
| 30 | 5 | 0.0 | | | | | |
| 35 | 5 | 0.0 | | | | | |
| 38 | | | wet | SM | | fine to medium silty SAND, little black sub-angular gravel, (5YR 4/3) reddish brown, wet no odor no staining. Soils consistent with UNDno. | |
| 40 | | | | GW | | Fragmented GRAVEL and COBBLES, (5YR 6/1) gray. Soils consistent with UNDno. | |
| 42 | 3 | 0.0 | wet | SM | | fine to medium silty SAND, trace black sub-angular gravel, (5YR 4/3) reddish brown, wet no odor no staining. Soils consistent with UNDno. | |
| 43 | | | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

AECOM

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732.564.3200 office telephone

# Boring ID: 114-MW39B



| | | |
|---|---|---|
| **Project Name:** Groundwater Remedial Investigation | **Drilling Company:** SGS North America | |
| **Project Number:** 60550261 | **Drilling Method:** Direct Push | **Coordinates (NJSPNAD83) x:** 611599.8 |
| **Date Started Drilling:** 10/16/2017 10:00:00 AM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 682533.1 |
| **Date Finished Drilling:** 10/16/2017 | **Core Size:** | **Boring Total Depth:** 50 ft |
| **Logged By:** E. Acs | **Project Manager:** Scott Mikaelian | **Depth to Water:** 5.32 |
| **Physical Location:** Eden Wood | | **Surface Elevation:** 11.1 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 0 | | | | FILL | | DGA | |
| 1 | 5 | | dry | FILL | | CINDERS, and ash little fill debris, (7.5YR 4/3) brown, dry to wet no odor no staining | |
| 5 | 5 | 0.0 | | | | | |
| 10 | 5 | 0.0 | | | | | |
| 14 | | | wet | FILL | | fine to medium silty SAND, trace fill debris, (5YR 4/3) reddish brown, wet no odor no staining | |
| 15 | 5 | 0.0 | moist | PT | | (70% Fibers and 30% Organic Silts) PEAT (degraded vegetated material), (7.5YR 4/2) brown, moist moderate organic odor no staining. Soils consistent with UNDorg. | |
| 20 | | | moist | SM | | fine to medium silty SAND, (5YR 6/1) gray, moist to wet no odor no staining. Soils consistent with UNDno. | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

PPG - 2012-09 RA PPG_LOGS_A.GDT - 6/7/18 15:27

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30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# Boring ID: 114-MW39B



| | | |
|---|---|---|
| **Project Name:** Groundwater Remedial Investigation | **Drilling Company:** SGS North America | |
| **Project Number:** 60550261 | **Drilling Method:** Direct Push | **Coordinates (NJSPNAD83) x:** 611599.8 |
| **Date Started Drilling:** 10/16/2017 10:00:00 AM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 682533.1 |
| **Date Finished Drilling:** 10/16/2017 | **Core Size:** | **Boring Total Depth:** 50 ft |
| **Logged By:** E. Acs | **Project Manager:** Scott Mikaelian | **Depth to Water:** 5.32 |
| **Physical Location:** Eden Wood | | **Surface Elevation:** 11.1 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 23 | 5 | 0.0 | moist | OL | | organic SILT, trace organic fibers, fine sand, (5YR 6/1) gray, moist slight organic odor no staining. Soils consistent with UNDorg. | |
| 24 | | | | | | | |
| 25 | | | | | | | |
| 26 | 5 | 0.0 | wet | SM | | fine to medium SAND, little silt, (5YR 6/1) gray, wet no odor no staining. Soils consistent with UNDno. | |
| 27 | | | | | | | |
| 28 | | | | | | | |
| 29 | | | | | | | |
| 30 | 5 | 0.0 | wet | SM | | fine silty SAND, (5YR 4/4) reddish brown, wet no odor no staining. Soils consistent with UNDno. | |
| 31 | | | | | | | |
| 32 | | | | | | | |
| 33 | | | | | | | |
| 34 | | | | | | | |
| 35 | 5 | 0.0 | moist | ML | | SILT, little fine sand, (5YR 4/4) reddish brown, moist no odor no staining. Soils consistent with UNDno. | |
| 36 | | | dry | CL | | CLAY, little fine sand, silt, (5YR 4/3) reddish brown, low plasticity, dry no odor no staining. Soils consistent with UNDno. | |
| 37 | | | | | | | |
| 38 | | | | | | | |
| 39 | | | | | | | |
| 40 | 5 | 0.0 | wet | SM | | fine silty SAND, (5YR 4/4) reddish brown, wet no odor no staining. Soils consistent with UNDno. | |
| 41 | | | | | | | |
| 42 | | | | | | | |
| 43 | | | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

AECOM
30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# Boring ID: 114-MW39B



| | | |
|---|---|---|
| **Project Name:** Groundwater Remedial Investigation | **Drilling Company:** SGS North America | |
| **Project Number:** 60550261 | **Drilling Method:** Direct Push | **Coordinates (NJSPNAD83) x:** 611599.8 |
| **Date Started Drilling:** 10/16/2017 10:00:00 AM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 682533.1 |
| **Date Finished Drilling:** 10/16/2017 | **Core Size:** | **Boring Total Depth:** 50 ft |
| **Logged By:** E. Acs | **Project Manager:** Scott Mikaelian | **Depth to Water:** 5.32 |
| **Physical Location:** Eden Wood | | **Surface Elevation:** 11.1 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 45 | 4.5 | 0.0 | dry | CL | | CLAY, little fine sand, silt fine sand, (5YR 4/4) reddish brown, low plasticity, dry to moist no odor no staining. Soils consistent with UNDno. | |
| 46 | | | dry | CH | | CLAY, trace silt, (5YR 4/4) reddish brown, high plasticity, dry no odor no staining. Soils consistent with UNDno. | |
| 47 | | | dry | CL | | CLAY, little fine sand, silt, (5YR 4/3) reddish brown, low plasticity, dry to moist no odor no staining. Soils consistent with UNDno. | |
| 48 | | | | | | | |
| 49 | | | | | | | |
| 50 | | | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

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30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# Boring ID: 114-MW41A



| | | |
|---|---|---|
| **Project Name:** PPG Garfield Ave | **Drilling Company:** SGS North America | |
| **Project Number:** 60240739 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611376.162 |
| **Date Started Drilling:** 10/25/2017 11:45:00 AM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 683888.751 |
| **Date Finished Drilling:** 10/25/2017 3:00:00 PM | **Core Size:** | **Boring Total Depth:** 16 ft |
| **Logged By:** KW | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** | | **Surface Elevation:** 14.803 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 0 | 10 | 0.0 | | FILL | | DGA | |
| 1 | | | moist | FILL | | CINDERS and ASH, some fill debris, trace COPR (<5%), (5YR 2.5/1) black, loose, moist no odor no staining | |
| 2 | | | wet | FILL | | fine to coarse SAND, little fill debris, (5YR 4/3) reddish brown, medium dense, wet no odor green staining, water at 4.5 feet | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | moist | FILL | | GGM (90%), little fill debris, (10GY 5/1) greenish gray, soft, wet no odor no staining | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | 6 | 0.0 | wet | FILL | | CINDERS and ASH, little fill debris, (5YR 2.5/1) black, medium dense, wet moderate MGP-like odor, free product globules and sheen | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |
| 14 | | | | | | | |
| 15 | | | wet | FILL | | SILT, some fine sand, little fill debris, (7.5YR 4/2) brown, firm, wet slight organic odor no staining | |
| 16 | | | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

AECOM
30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# Boring ID: 114-MW41B



| | | |
|---|---|---|
| **Project Name:** PPG Garfield Ave | **Drilling Company:** SGS North America | |
| **Project Number:** 60240739 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611366.586 |
| **Date Started Drilling:** 10/23/2017 11:00:00 AM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 683891.626 |
| **Date Finished Drilling:** 10/25/2017 3:00:00 PM | **Core Size:** | **Boring Total Depth:** 28 ft |
| **Logged By:** KW | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** | | **Surface Elevation:** 15.118 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 0 | 10 | 0.0 | dry | FILL | | ASH and CINDERS, little fill debris, (5YR 2.5/1) black, medium dense, dry no odor no staining | |
| 2 | | | moist | FILL | | CINDERS and ASH, little fill debris, trace COPR (<5%), (5YR 2.5/1) black, medium dense, moist slight MGP-like odor, green staining | |
| 4 | | | moist | FILL | | GGM (100%), (5G_/2) 4/2 grayish green, soft, moist to wet no odor no staining, water at 5.0 feet | |
| 8 | | | wet | FILL | | fine to medium silty SAND, (5YR 4/3) reddish brown, medium dense, wet slight MGP-like odor and staining | |
| 9 | | | wet | FILL | | CINDERS and ASH, some fill debris, (5YR 2.5/1) black, wet, moderate MGP-like odor, free product globules and sheen | |
| 13 | 10 | 0.0 | wet | FILL | | SILT, trace fill debris, (7.5YR 4/2) brown, soft, wet slight organic odor no staining | |
| 18 | | | wet | SP | | fine to coarse silty SAND, little fine to medium gravel, (5YR 4/3) reddish brown, dense, wet no odor no staining | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

AECOM
30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# Boring ID: 114-MW41B



| | | |
|---|---|---|
| **Project Name:** PPG Garfield Ave | **Drilling Company:** SGS North America | |
| **Project Number:** 60240739 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611366.586 |
| **Date Started Drilling:** 10/23/2017 11:00:00 AM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 683891.626 |
| **Date Finished Drilling:** 10/25/2017 3:00:00 PM | **Core Size:** | **Boring Total Depth:** 28 ft |
| **Logged By:** KW | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** | | **Surface Elevation:** 15.118 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 23 | | | | | | | |
| 24 | | | | | | | |
| 25 | 8 | 0.0 | | | | | |
| 26 | | | | | | | |
| 27 | | | | | | | |
| 28 | | | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

AECOM
30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# Boring ID: 114-MW67C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.67 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611021.9 |
| **Date Started Drilling:** 1/20/2021 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683615.9 |
| **Date Finished Drilling:** 1/20/2021 | **Core Size:** 8 in. | **Boring Total Depth:** 85 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 13.3 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 | | | MOIST | FILL | | Soft dig to 5 ft bgs. Gray fine to medium GRAVEL, trace fine sand (DGA), loose, moist. | | 8-inch steel protective casing (stick up) |
| 1 | | | | | | | | |
| 2 | 0 / 5 | 0 | MOIST | FILL | | Brownish gray well graded fine to coarse GRAVEL, trace to little fine to coarse sand, trace silt, very dense, moist. | | |
| 3 | | | | | | | | |
| 4 | | | MOIST | FILL | | Brownish gray well graded fine to coarse GRAVEL, some silty fine sand, very dense, moist. | | Riser set in grout |
| 5 | | | WET | FILL | | Gray fine to coarse GRAVEL, some silty fine sand, very dense, wet. | | |
| 6 | | | | | | Gray fine to coarse SAND, little fine to coarse gravel, very dense, wet. | | Portland-Bentonite Grout: 0-44 ft bgs |
| 7 | 3 / 5 | 0 | | | | | | |
| 8 | | | WET | FILL | | | | 4-inch PVC riser: 0-50 ft bgs |
| 9 | | | | | | | | |
| 10 | | | | | | Gray fine to coarse SAND, little fine to coarse gravel, very dense, wet. | | |
| 11 | | | | | | | | |
| 12 | 3 / 5 | 0 | WET | FILL | | | | |
| 13 | | | | | | | | |
| 14 | | | WET | PT | | Gray organic CLAY, fibrous (30%), medium stiff, wet. | | |
| 15 | | | WET | PT | | Gray organic CLAY, fibrous (30%), medium stiff, wet. | | |
| 16 | | | | | | Gray CLAY, trace silt, organics, medium stiff, wet. | | |
| 17 | 5 / 5 | 0 | | | | | | |
| 18 | | | WET | CL | | | | |
| 19 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

PPG WITH WELL CONSTRUCTION - - 2/16/21 16:28

AECOM
30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# Boring ID: 114-MW67C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.67 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611021.9 |
| **Date Started Drilling:** 1/20/2021 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683615.9 |
| **Date Finished Drilling:** 1/20/2021 | **Core Size:** 8 in. | **Boring Total Depth:** 85 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 13.3 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 21 | | | WET | CL | | Gray CLAY, trace silt, organics, medium stiff, wet. | | |
| | | | WET | SP | | Gray fine to medium SAND, little fine to medium gravel, loose, wet. | | |
| 22 | 5 / 5 | 0 | | | | Gray fine SAND, little silt, loose, wet. | | |
| 23 | | | WET | SP | | | | |
| 24 | | | | | | | | |
| 25 | | | | | | | | |
| 26 | 2.5 / 5 | 0 | WET | SP | | Brown fine to medium SAND, little fine to coarse subrounded gravel, trace silt, loose, saturated. | | |
| 27 | | | | | | | | |
| 28 | | | | | | | | |
| 29 | | | | | | | | |
| 30 | | | WET | SP | | Brown fine to medium SAND, little fine to coarse subrounded gravel, trace silt, loose, saturated. | | |
| 31 | | | | | | Reddish brown fine SAND, trace silt, loose, wet. | | |
| 32 | 4.5 / 5 | 0 | | | | | | |
| 33 | | | WET | SP | | | | |
| 34 | | | | | | | | |
| 35 | | | | | | Reddish brown fine SAND, trace silt, loose, wet. | | |
| 36 | | | | | | | | |
| 37 | 4 / 5 | 0 | WET | SP | | | | |
| 38 | | | | | | | | |
| 39 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

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# Boring ID: 114-MW67C



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|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.67 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611021.9 |
| **Date Started Drilling:** 1/20/2021 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683615.9 |
| **Date Finished Drilling:** 1/20/2021 | **Core Size:** 8 in. | **Boring Total Depth:** 85 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 13.3 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 41 | | | WET | SP | | Reddish brown fine SAND, trace silt, medium dense, wet. | | |
| 42 | 4 / 5 | 0 | WET | SP | | Reddish brown fine SAND, little silt, loose, wet. | | |
| 43 | | | | | | | | |
| 44 | | | WET | SP | | Reddish brown fine SAND, trace silt, loose, wet. | | |
| 45 | | | WET | SP | | Reddish brown fine SAND, little silt, loose, saturated. | | Bentonite: 44-46 ft bgs |
| 46 | | | | | | | | |
| 47 | 4.5 / 5 | 0 | | | | | | #00 Filter Sand: 46-48 ft bgs |
| 48 | | | | | | | | #0 Filter Sand: 48-58 ft bgs |
| 49 | | | WET | ML | | Reddish brown SILT, little fine sand, medium stiff, saturated. | | |
| 50 | | | WET | SP | | Reddish brown fine SAND, trace silt, loose, saturated. | | |
| 51 | | | WET | SP | | Reddish brown fine SAND, little silt, loose, wet. Yellow water observed. | | |
| 52 | 3.5 / 5 | 0 | | | | | | 4-inch PVC well screen: 50-56 ft bgs |
| 53 | | | WET | SP | | Reddish brown fine SAND, little silt, trace clay, loose, wet. | | |
| 54 | | | WET | SP | | Reddish brown fine SAND, little silt, trace clay, loose, laminated with fine sand, wet. | | |
| 55 | | | WET | SP | | Reddish brown fine SAND, trace silt, loose, saturated | | |
| 56 | | | WET | SM | | Reddish brown fine to medium SAND, some silt, trace fine to coarse gravel, dense, wet (Basal Till). | | |
| 57 | 3 / 5 | 0 | | | | | | 4-inch PVC Sump: 56-58 ft bgs |
| 58 | | | | | | | | #00 Filter Sand: 58-60 ft bgs |
| 59 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

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30 Knightsbridge Road, Piscataway, NJ 08854
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# Boring ID: 114-MW67C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.67 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611021.9 |
| **Date Started Drilling:** 1/20/2021 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683615.9 |
| **Date Finished Drilling:** 1/20/2021 | **Core Size:** 8 in. | **Boring Total Depth:** 85 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 13.3 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 61 | | | | | | Reddish brown fine to medium SAND, some silt, trace fine to coarse gravel, very dense, wet (Basal Till). | | |
| 62 | | | | | | | | |
| | 3.5 / 5 | 0 | WET | SM | | | | |
| 63 | | | | | | | | |
| 64 | | | | | | | | |
| 65 | | | | | | Reddish brown fine to medium SAND, some silt, trace to little fine to coarse gravel, very dense, wet (Basal Till). | | |
| 66 | | | | | | | | |
| 67 | | | | | | | | |
| | 3.5 / 5 | 0 | WET | SM | | | | |
| 68 | | | | | | | | |
| 69 | | | | | | | | |
| 70 | | | | | | Reddish brown fine to medium SAND, some silt, trace to little fine to coarse gravel, very dense, wet (Basal Till). | | Bentonite: 60-85 ft bgs |
| 71 | | | | | | | | |
| 72 | | | | | | | | |
| | 3.5 / 5 | 0 | WET | SM | | | | |
| 73 | | | | | | | | |
| 74 | | | | | | | | |
| 75 | | | | | | Reddish brown fine to medium SAND, some silt, trace to little fine to coarse subangular gravel, very dense, wet (Basal Till). | | |
| 76 | | | WET | SM | | | | |
| 77 | | | | | | Diabase boulder. | | |
| | 4.5 / 5 | 0 | NA | BEDROCK | | | | |
| 78 | | | | | | Gray fine to medium SAND, some silt, trace fine to coarse subangular gravel, very dense, wet (Basal Till). | | |
| 79 | | | WET | SM | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

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30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# Boring ID: 114-MW67C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.67 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611021.9 |
| **Date Started Drilling:** 1/20/2021 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683615.9 |
| **Date Finished Drilling:** 1/20/2021 | **Core Size:** 8 in. | **Boring Total Depth:** 85 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 13.3 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 81 | 4 / 5 | 0 | NA | SM | | Gray fine to medium SAND, some silt, trace to little fine to coarse subangular gravel, very dense (Basal Till). | | |
| 82 | | | | | | | | |
| 83 | | | NA | BEDROCK | | Light gray broken rock, slightly weathered, hard (Lockatong formation). | | |
| 84 | | | | | | | | |
| 85 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

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# Boring ID: 114-MW68C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.75 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 610851.6 |
| **Date Started Drilling:** 1/18/2021 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683321.4 |
| **Date Finished Drilling:** 1/19/2021 | **Core Size:** 8 in. | **Boring Total Depth:** 80 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.1 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 | 0 / 5 | 0 | DRY TO MOIST | FILL | | Soft dig to 5 ft bgs. Brownish gray well graded GRAVEL, some silty sand, very dense (DGA), dry to moist. | | 8-inch steel protective casing (stick up) |
| 3 | | | DRY TO MOIST | FILL | | Gray fine to coarse GRAVEL, trace to little fine sand, trace silt, well graded, very dense (DGA), dry to moist. | | Riser set in grout |
| 5 | 3.5 / 5 | 0 | MOIST | FILL | | Gray fine to medium SAND, some fine to coarse subrounded gravel, very dense (DGA), moist. | | Portland-Bentonite Grout: 0-45 ft bgs<br>4-inch PVC riser: 0-50 ft bgs |
| 10 | | | WET | FILL | | Gray fine to medium SAND, little fine to medium gravel, very dense (DGA), wet. | | |
| 11 | 3.5 / 5 | 0 | WET | FILL | | Red brown fine SAND, little fine to medium gravel (DGA), wet. | | |
| 13 | | | WET | FILL | | Black stained wood. | | |
| 15 | 5 / 5 | 0 | WET | FILL | | Black fine to medium GRAVEL, little fine to medium sand, dense, wet. | | |
| 16 | | | WET | PT | | Gray CLAY, fibrous (30%-40%), organic, medium stiff, wet. | | |
| 18 | | | WET | CL | | Gray CLAY, trace silt, organic, medium stiff, wet. | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

PPG WITH WELL CONSTRUCTION - - 2/17/21 08:31

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30 Knightsbridge Road, Piscataway, NJ 08854
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# Boring ID: 114-MW68C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.75 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 610851.6 |
| **Date Started Drilling:** 1/18/2021 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683321.4 |
| **Date Finished Drilling:** 1/19/2021 | **Core Size:** 8 in. | **Boring Total Depth:** 80 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.1 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 21 | | | WET | CL | | Gray CLAY, trace silt, organic, medium stiff, wet. | | |
| 22 | 4 / 5 | 0 | | | | | | |
| 23 | | | WET | SM | | Reddish brown fine SAND, some silt, little fine to medium gravel, medium dense, wet. | | |
| 24 | | | | | | | | |
| 25 | | | WET | SM | | Reddish brown fine to medium SAND, some silt, little fine to medium, gravel, wet. | | |
| 26 | | | | | | | | |
| 27 | 4 / 5 | 0 | WET | SP | | Reddish brown fine SAND, trace silt, loose, wet. | | |
| 28 | | | | | | | | |
| 29 | | | | | | | | |
| 30 | | | | | | | | |
| 31 | | | | | | Brown fine SAND, trace silt, loose, wet to saturated. | | |
| 32 | 5 / 5 | 0 | WET | SP | | | | |
| 33 | | | | | | | | |
| 34 | | | | | | | | |
| 35 | | | WET | SP | | Red brown fine SAND, trace silt, loose, wet. | | |
| 36 | | | | | | Brown fine SAND, little silt, loose, wet. | | |
| 37 | 4 / 5 | 0 | WET | SP | | | | |
| 38 | | | | | | Black fine SAND, trace silt, loose, wet. | | |
| 39 | | | WET | SP | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

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|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.75 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 610851.6 |
| **Date Started Drilling:** 1/18/2021 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683321.4 |
| **Date Finished Drilling:** 1/19/2021 | **Core Size:** 8 in. | **Boring Total Depth:** 80 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.1 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 41 | 5 / 5 | 0 | WET | CL | | Red brown CLAY, trace silt, medium stiff, wet. | | |
| 42 | | | WET | SM | | Red brown fine SAND, some silt, little clay, loose, wet. | | |
| 43 | | | WET | CL | | Gray CLAY, little silt, medium stiff, wet. | | |
| 45 | 5 / 5 | 0 | WET | CL | | Brown CLAY, little silt, medium stiff, wet. | | Bentonite: 45-46 ft bgs |
| 46 | | | | | | | | |
| 47 | | | | | | | | #00 Filter Sand: 46-48 ft bgs |
| 48 | | | | | | | | #0 Filter Sand: 48-58 ft bgs |
| 49 | | | | | | | | |
| 50 | 3 / 5 | 0 | WET | SM | | Reddish brown SAND, some silt, trace clay, medium dense, wet. | | |
| 51 | | | | | | | | |
| 52 | | | | | | | | 4-inch PVC well screen: 50-56 ft bgs |
| 53 | | | | | | | | |
| 54 | | | | | | | | |
| 55 | 2.5 / 5 | 0 | WET | SM | | Reddish brown fine SAND, some silt, trace clay, medium dense, wet. | | |
| 56 | | | WET | SM | | Reddish brown fine to coarse SAND, some silt, little fine to coarse subrounded gravel, very dense, wet (Basal Till). | | |
| 57 | | | | | | | | 4-inch PVC Sump: 56-58 ft bgs |
| 58 | | | | | | | | #00 Filter Sand: 58-60 ft bgs |
| 59 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

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# Boring ID: 114-MW68C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.75 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 610851.6 |
| **Date Started Drilling:** 1/18/2021 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683321.4 |
| **Date Finished Drilling:** 1/19/2021 | **Core Size:** 8 in. | **Boring Total Depth:** 80 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.1 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 61–65 | 5 / 5 | 0 | WET | SM | | Reddish brown fine to coarse, SAND, some silt, little fine to coarse, subrounded gravel, very dense, wet (Basal Till). | | |
| 65–70 | 4 / 5 | 0 | WET | SM | | Reddish brown fine to coarse, SAND, some silt, little fine to coarse, subrounded gravel, very dense, wet (Basal Till). | | |
| 70–73 | 4 / 5 | 0 | WET | SM | | Reddish brown fine to coarse, SAND, some silt, little fine to coarse, gravel, very dense, wet (Basal Till). | | Bentonite: 60-80 ft bgs |
| 73–75 | | | NA | BEDROCK | | Rock fragments, weathered, Diabase. | | |
| 75–77 | | | NA | BEDROCK | | Green broken rock fragments, weathered, Diabase. | | |
| 77–79 | 5 / 5 | 0 | NA | BEDROCK | | Gray broken rock, unweathered, Diabase. End of boring at 80 ft bgs. | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

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732.564.3200 office telephone

# Boring ID: 114-MW69C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** NA ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611145.2 |
| **Date Started Drilling:** 1/21/2021 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683213.2 |
| **Date Finished Drilling:** 1/21/2021 | **Core Size:** 8 in. | **Boring Total Depth:** 75 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 10.8 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 – 5 | 0 / 5 | 0 | DRY | FILL | | Soft dig to 5 ft bgs. Brown fine to medium SAND, some fine to coarse gravel, well graded, very dense (DGA), dry. | | No well installed. |
| 5 – 6 | 3.5 / 5 | 52 | MOIST | FILL | | Brown fine to coarse GRAVEL, trace fine to medium sand, loose, moist. | | |
| 6 – 7 | | | WET | FILL | | Brown fine to medium SAND, little fine to coarse gravel, trace silt, loose, wet. | | |
| 7 – 10 | | | WET | FILL | | Gray fine to coarse SAND, some fine to coarse gravel, stained black between approximately 7-8 ft bgs from coal tar oil, odorous, saturated. | | |
| 10 – 13 | 4 / 5 | 32 | MOIST | FILL | | Gray fine to coarse SAND, some fine to coarse gravel, loose, moist. | | |
| 13 – 14 | | | MOIST | PT | | Gray organic CLAY, fibrous (40%), medium stiff, moist. Coal tar free product observed at 13-13.5 ft bgs. | | |
| 15 – 19 | 4.5 / 5 | 10 | WET | CL | | Gray organic CLAY, medium stiff, wet. Slight petroleum odor. | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** No well installed at this location.

PPG WITH WELL CONSTRUCTION - - 2/25/21 09:34

AECOM
30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# Boring ID: 114-MW69C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** NA ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611145.2 |
| **Date Started Drilling:** 1/21/2021 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683213.2 |
| **Date Finished Drilling:** 1/21/2021 | **Core Size:** 8 in. | **Boring Total Depth:** 75 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 10.8 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 21 | | | WET | SP | | Gray fine to medium SAND, trace silt, loose, wet. Coal tar staining and odor. | | |
| 22 | 5 / 5 | 260 | WET | SM | | Gray fine to coarse SAND, some silt, little fine to coarse gravel, dense, wet. Coal tar staining and odor. | | |
| 23 | | | | | | | | |
| 24 | | | WET | GW | | Gray fine to coarse GRAVEL, trace fine to coarse sand, loose, wet. Coal tar staining and odor. | | |
| 25 | | | | | | | | |
| 26 | | | WET | SM | | Gray fine to coarse SAND, some silt, little fine to coarse subrounded gravel, medium dense, wet. Coal tar staining and odor. | | |
| 27 | 3.5 / 5 | 5.6 | | | | | | |
| 28 | | | WET | SP | | Reddish brown fine sand, trace silt, loose, wet. Petroleum staining from 27-27.5 ft bgs with odor. | | |
| 29 | | | | | | | | |
| 30 | | | | | | | | |
| 31 | | | | | | Reddish brown fine sand, trace silt, loose, wet. | | |
| 32 | 4 / 5 | 0 | WET | SP | | | | |
| 33 | | | | | | | | |
| 34 | | | | | | | | |
| 35 | | | | | | | | |
| 36 | | | WET | SP | | Reddish brown fine sand, trace silt, loose, wet. | | |
| 37 | 4 / 5 | 0 | | | | | | |
| 38 | | | | | | | | |
| 39 | | | WET | CL | | Reddish brown CLAY, medium stiff, wet. | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** No well installed at this location.

PPG WITH WELL CONSTRUCTION - - 2/25/21 09:34

AECOM
30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# Boring ID: 114-MW69C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** NA ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611145.2 |
| **Date Started Drilling:** 1/21/2021 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683213.2 |
| **Date Finished Drilling:** 1/21/2021 | **Core Size:** 8 in. | **Boring Total Depth:** 75 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 10.8 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 41 | | | WET | CL | | Reddish brown CLAY, stiff, wet. | | |
| 42 | 5 / 5 | 0 | WET | CL-SP | | Gray CLAY, varved with stringers of 1/8" thick fine SAND, medium stiff, wet. | | |
| 45 | | | WET | CL-SP | | Gray CLAY, varved with stringers of 1/8" thick fine SAND, medium stiff, wet. | | |
| 47 | 3.5 / 5 | 0 | WET | SM | | Reddish brown fine SAND, some silt, trace clay, medium dense, wet (Basal Till). | | |
| 50 | 2 / 5 | 0 | WET | SM | | Reddish brown fine to medium SAND, some silt, little fine gravel, very dense, wet (Basal Till). | | |
| 55 | 4 / 5 | 0 | WET | SM | | Reddish brown fine to medium SAND, some silt, little fine to coarse subrounded gravel, very dense, wet (Basal Till). | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** No well installed at this location.

PPG WITH WELL CONSTRUCTION - - 2/25/21 09:34

AECOM
30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# Boring ID: 114-MW69C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** NA ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611145.2 |
| **Date Started Drilling:** 1/21/2021 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683213.2 |
| **Date Finished Drilling:** 1/21/2021 | **Core Size:** 8 in. | **Boring Total Depth:** 75 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 10.8 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 61 | | | | | | Reddish brown fine to medium SAND, some silt, little fine to coarse subrounded gravel, very dense, wet (Basal Till). | | |
| 62 | | | | | | | | |
| | 3.5 / 5 | 0 | WET | SM | | | | |
| 63 | | | | | | | | |
| 64 | | | | | | | | |
| 65 | | | | | | Reddish brown fine to medium SAND, some silt, little fine to coarse subrounded gravel, very dense, wet (Basal Till). | | |
| 66 | | | | | | | | |
| | | | WET | SM | | | | |
| 67 | | | | | | | | |
| | 4 / 5 | 0 | | | | | | |
| 68 | | | | | | Broken rock, unweathered, fine sandstone, hard (Stockton formation). | | |
| 69 | | | NA | BEDROCK | | | | |
| 70 | | | | | | Broken rock, unweathered, fine sandstone, hard (Stockton formation). End of boring at 75 ft bgs. | | |
| 71 | | | | | | | | |
| 72 | | | | | | | | |
| | 0 / 5 | 0 | NA | BEDROCK | | | | |
| 73 | | | | | | | | |
| 74 | | | | | | | | |
| 75 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** No well installed at this location.

PPG WITH WELL CONSTRUCTION - - 2/25/21 09:34

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# Boring ID: 114-MW70C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 13.79 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611331.4 |
| **Date Started Drilling:** 1/22/2021 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 682887 |
| **Date Finished Drilling:** 1/25/2021 | **Core Size:** 8 in. | **Boring Total Depth:** 100 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 11.1 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 – 5 | 0 / 5 | 0 | DRY | FILL | | Soft dig to 5 ft bgs, brown fine to coarse SAND, some fine to coarse gravel, very dense (DGA), dry. | | 8-inch steel protective casing (stick up) |
| 5 – 8 | 3 / 5 | 0 | MOIST | FILL | | Gray fine to coarse GRAVEL, little fine to coarse sand, well graded (DGA), dense, moist. | | Riser set in grout<br>Portland-Bentonite Grout: 0-80 ft bgs |
| 8 – 10 | | | MOIST | FILL | | Black fine to coarse GRAVEL, little fine sand, well graded, dense (DGA), moist. | | 4-inch PVC riser: 0-85 ft bgs |
| 10 – 13 | 3 / 5 | 0 | MOIST | FILL | | Black fine to coarse GRAVEL, little fine sand, well graded, dense (DGA), moist. | | |
| 13 – 14 | | | MOIST | FILL | | Black fine to coarse SAND, little fine to coarse gravel, dense (DGA), moist. | | |
| 14 – 15 | | | WET | FILL | | Gray fine SAND, trace silt, trace fine to medium gravel (DGA), wet. | | |
| 15 – 16 | 4 / 5 | 0 | WET | FILL | | Black fine to coarse SAND, some fine to coarse gravel, dense (DGA), wet. | | |
| 16 – 17 | | | WET | PT | | Gray organic CLAY, fibrous (60%), medium stiff, wet. | | |
| 17 – 19 | | | WET | CL | | Gray organic CLAY, trace silt, medium stiff, wet. | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

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# Boring ID: 114-MW70C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 13.79 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611331.4 |
| **Date Started Drilling:** 1/22/2021 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 682887 |
| **Date Finished Drilling:** 1/25/2021 | **Core Size:** 8 in. | **Boring Total Depth:** 100 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 11.1 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 20 | | | WET | CL | | Gray organic CLAY, trace silt, medium stiff, wet. | | |
| 21 | | | WET | SP | | Grayish brown fine sand, little silt, little fine to medium gravel, wet. | | |
| 22 | 4 / 5 | 0 | | | | Reddish brown fine to medium SAND, some silt, little fine to coarse gravel, dense, wet. | | |
| 23 | | | WET | SM | | | | |
| 24 | | | | | | | | |
| 25 | | | | | | Reddish brown fine SAND, trace silt, trace fine gravel, loose, wet. | | |
| 26 | | | | | | | | |
| 27 | 3.5 / 5 | 0 | WET | SP | | | | |
| 28 | | | | | | | | |
| 29 | | | | | | | | |
| 30 | | | | | | Reddish brown fine SAND, trace silt, trace fine gravel, loose, wet. | | |
| 31 | | | | | | | | |
| 32 | 4 / 5 | 0 | WET | SP | | | | |
| 33 | | | | | | | | |
| 34 | | | | | | | | |
| 35 | | | | | | Reddish brown fine SAND, trace silt, trace fine gravel, loose, wet. Petroleum-impacted free product observed at 37 ft bgs; staining from 35-37 ft bgs. | | |
| 36 | | 30.2 | WET | SP | | | | |
| 37 | 4 / 5 | | | | | Reddish brown fine SAND, little silt, loose, wet. | | |
| 38 | | 2.5 | WET | SP | | | | |
| 39 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

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# Boring ID: 114-MW70C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 13.79 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611331.4 |
| **Date Started Drilling:** 1/22/2021 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 682887 |
| **Date Finished Drilling:** 1/25/2021 | **Core Size:** 8 in. | **Boring Total Depth:** 100 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 11.1 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 41 | 4 / 5 | 2.2 | WET | SP | | Reddish brown fine SAND, trace silt, loose, wet. | | |
| 42 | | | | | | | | |
| 43 | | 3.4 | WET | SP | | Reddish brown fine SAND, little silt, loose, wet. | | |
| 44 | | 4.2 | WET | SP | | Reddish brown fine SAND, trace silt, loose, wet. | | |
| 45 | 2.5 / 5 | 0.8 | WET | SP | | Reddish brown fine to medium SAND, trace silt, loose, wet. | | |
| 46 | | | | | | | | |
| 47 | | | | | | | | |
| 48 | | | | | | | | |
| 49 | | | | | | | | |
| 50 | 4.5 / 5 | 2.0 | WET | SP | | Reddish brown fine SAND, trace silt, loose, wet. Yellow coloration to water. | | |
| 51 | | | | | | | | |
| 52 | | | | | | | | |
| 53 | | 0.8 | WET | SP | | Reddish brown fine SAND, little silt, loose, wet. Yellow coloration to water. | | |
| 54 | | | | | | | | |
| 55 | 4.5 / 5 | 0 | WET | SP | | Reddish brown fine SAND, little silt, loose, wet. Yellow coloration to water. | | |
| 56 | | | | | | | | |
| 57 | | | WET | CL | | Gray to reddish brown CLAY, medium stiff to stiff, wet. | | |
| 58 | | | | | | | | |
| 59 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

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30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# Boring ID: 114-MW70C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 13.79 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611331.4 |
| **Date Started Drilling:** 1/22/2021 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 682887 |
| **Date Finished Drilling:** 1/25/2021 | **Core Size:** 8 in. | **Boring Total Depth:** 100 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 11.1 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 61 | | | | | | Reddish brown CLAY, trace silt, stiff, wet. | | |
| 62 | | | | | | | | |
| | 5 / 5 | 0 | WET | CL | | | | |
| 63 | | | | | | | | |
| 64 | | | | | | | | |
| 65 | | | | | | Gray CLAY, trace silt, stiff, wet. | | |
| 66 | | | | | | | | |
| | | | WET | CL | | | | |
| 67 | 5 / 5 | 0 | | | | | | |
| 68 | | | | | | Reddish brown CLAY, trace silt, varved with 1/8" stringers of fine SAND, wet. | | |
| 69 | | | WET | CL-SP | | | | |
| 70 | | | | | | Reddish brown CLAY, trace silt, varved with 1/8" stringers of fine SAND, wet. | | |
| 71 | | | | | | | | |
| 72 | | | | | | | | |
| | 4.5 / 5 | 0 | WET | CL-SP | | | | |
| 73 | | | | | | | | |
| 74 | | | | | | | | |
| 75 | | | | | | Reddish brown CLAY, trace silt, medium stiff, wet. | | |
| 76 | | | | | | | | |
| 77 | | | | | | | | |
| | 5 / 5 | 0 | WET | CL | | | | |
| 78 | | | | | | | | |
| 79 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

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30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# Boring ID: 114-MW70C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 13.79 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611331.4 |
| **Date Started Drilling:** 1/22/2021 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 682887 |
| **Date Finished Drilling:** 1/25/2021 | **Core Size:** 8 in. | **Boring Total Depth:** 100 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 11.1 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 81 | | | WET | CL | | Reddish brown CLAY, trace silt, medium stiff, wet. | | Bentonite: 80-81 ft bgs |
| 82 | 5 / 5 | 0 | | | | Reddish brown fine to medium SAND, some silt, little fine to coarse subrounded gravel, medium dense, wet. | | #00 Filter Sand: 81-83 ft bgs |
| 83 | | | WET | SM | | | | |
| 84 | | | | | | | | #0 Filter Sand: 83-97 ft bgs |
| 85 | | | | | | | | |
| 86 | | | WET | SM | | Reddish brown fine to medium SAND, some silt, little fine to coarse subrounded gravel, medium dense, wet. | | |
| 87 | 4.5 / 5 | 0 | | | | Reddish brown fine SAND, trace to little silt, medium dense, wet. | | |
| 88 | | | WET | SP | | | | |
| 89 | | | | | | | | |
| 90 | | | | | | | | 4-inch PVC well screen: 85-95 ft bgs |
| 91 | | | WET | SP | | Reddish brown fine SAND, trace to little silt, medium dense, wet. | | |
| 92 | 4 / 5 | 0 | | | | | | |
| 93 | | | | | | Reddish brown fine to medium SAND, some silt, little fine to coarse subrounded gravel, medium dense, wet. | | |
| 94 | | | WET | SM | | | | |
| 95 | | | | | | | | |
| 96 | | | | | | Reddish brown fine to medium SAND, some silt, little fine to coarse gravel, very dense, wet (Basal Till). End of boring at 100 ft bgs. | | 4-inch PVC Sump: 95-97 ft bgs |
| 97 | 4 / 5 | 0 | WET | SM | | | | #00 Filter Sand: 97-98 ft bgs |
| 98 | | | | | | | | Bentonite: 98-100 ft bgs |
| 99 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

PPG WITH WELL CONSTRUCTION - - 2/17/21 08:31

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30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# Boring ID: 114-P1B-MW103D



| | | |
|---|---|---|
| **Project Name:** Groundwater Remedial Investigation | **Drilling Company:** SGS North America | |
| **Project Number:** 60550261 | **Drilling Method:** Sonic Vibration | **Coordinates (NJSPNAD83) x:** 610887.2 |
| **Date Started Drilling:** 11/9/2017 7:00:00 AM | **Rig Type:** B-60/ CRS XL Max | **Coordinates (NJSPNAD83) y:** 683237 |
| **Date Finished Drilling:** 11/13/2017 2:00:00 PM | **Core Size:** 6 | **Boring Total Depth:** 68 ft |
| **Logged By:** M. Forbes | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** Site 114 (Phase 1B) | | **Surface Elevation:** 13.5 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 1–3 | 3 | 0 | dry | FILL | | DGA, (5YR 5/1) gray, dense, dry to wet no odor no staining | |
| 3–8 | 5 | 0 | | | | | |
| 8–18 | 10 | 0 | | | | | |
| 16–18 | | | moist | PT | | PEAT (degraded vegetated material), 80% fibers, 20% organic silt, (7.5YR 3/3) dark brown, moist slight organic odor. Soils consistent with MM. | |
| 19–21 | 10 | 0 | moist | SP | | fine to coarse SAND, trace coarse gravel, dense, moist to wet no odor no staining. Soils consistent with UNDno. | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

AECOM
30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# Boring ID: 114-P1B-MW103D



| | | |
|---|---|---|
| **Project Name:** Groundwater Remedial Investigation | **Drilling Company:** SGS North America | |
| **Project Number:** 60550261 | **Drilling Method:** Sonic Vibration | **Coordinates (NJSPNAD83) x:** 610887.2 |
| **Date Started Drilling:** 11/9/2017 7:00:00 AM | **Rig Type:** B-60/ CRS XL Max | **Coordinates (NJSPNAD83) y:** 683237 |
| **Date Finished Drilling:** 11/13/2017 2:00:00 PM | **Core Size:** 6 | **Boring Total Depth:** 68 ft |
| **Logged By:** M. Forbes | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** Site 114 (Phase 1B) | | **Surface Elevation:** 13.5 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 23 | | | | | | | |
| 24 | | | wet | SP | | fine SAND, trace silt, (5YR 4/3) reddish brown, medium dense, wet no odor no staining, green water at 35'. Soils consistent with UNDno. | |
| 25 | | | | | | | |
| 26 | | | | | | | |
| 27 | | | | | | | |
| 28 | | | | | | | |
| 29 | | | | | | | |
| 30 | | | | | | | |
| 31 | | | | | | | |
| 32 | | | | | | | |
| 33 | 10 | 0 | | | | | |
| 34 | | | | | | | |
| 35 | | | | | | | |
| 36 | | | moist | CH | | CLAY, trace silt, (7.5R 6/6) light red, medium stiff, moist no odor no staining. Soils consistent with UNDno. | |
| 37 | | | | | | | |
| 38 | | | | | | | |
| 39 | | | | | | | |
| 40 | | | | | | | |
| 41 | 10 | 0 | | | | | |
| 42 | | | | | | | |
| 43 | | | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

AECOM

30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# Boring ID: 114-P1B-MW103D



| | | |
|---|---|---|
| **Project Name:** Groundwater Remedial Investigation | **Drilling Company:** SGS North America | |
| **Project Number:** 60550261 | **Drilling Method:** Sonic Vibration | **Coordinates (NJSPNAD83) x:** 610887.2 |
| **Date Started Drilling:** 11/9/2017 7:00:00 AM | **Rig Type:** B-60/ CRS XL Max | **Coordinates (NJSPNAD83) y:** 683237 |
| **Date Finished Drilling:** 11/13/2017 2:00:00 PM | **Core Size:** 6 | **Boring Total Depth:** 68 ft |
| **Logged By:** M. Forbes | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** Site 114 (Phase 1B) | | **Surface Elevation:** 13.5 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 45 | | | | | | | |
| 46 | | | | | | | |
| 47 | | | | | | | |
| 48 | | | | | | | |
| 49 | | | | | | | |
| 50 | | | | | | | |
| 51 | | | | | | | |
| 52 | 10 | 0 | | | | | |
| 53 | | | | | | | |
| 54 | | | wet | SP | | fine SAND, trace silt, medium dense, wet no odor no staining. Soils consistent with UNDno. | |
| 55 | | | | | | | |
| 56 | | | moist | SP | | fine SAND, little silt little fine to medium gravel, dense, moist no odor no staining, glacial till. Soils consistent with UNDno. | |
| 57 | | | | | | | |
| 58 | | | | | | | |
| 59 | | | | | | | |
| 60 | | | | | | | |
| 61 | | | | | | | |
| 62 | 10 | 0 | | | | | |
| 63 | | | | | | | |
| 64 | | | | | | | |
| 65 | | | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

PPG - 2012-09 RA PPG_LOGS_A.GDT - 6/7/18 11:17

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30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# Boring ID: 114-P1B-MW103D



| | | |
|---|---|---|
| **Project Name:** Groundwater Remedial Investigation | **Drilling Company:** SGS North America | |
| **Project Number:** 60550261 | **Drilling Method:** Sonic Vibration | **Coordinates (NJSPNAD83) x:** 610887.2 |
| **Date Started Drilling:** 11/9/2017 7:00:00 AM | **Rig Type:** B-60/ CRS XL Max | **Coordinates (NJSPNAD83) y:** 683237 |
| **Date Finished Drilling:** 11/13/2017 2:00:00 PM | **Core Size:** 6 | **Boring Total Depth:** 68 ft |
| **Logged By:** M. Forbes | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** Site 114 (Phase 1B) | | **Surface Elevation:** 13.5 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 67 | | | | | | | |
| 68 | | | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

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# Boring ID: 114-SS39B



| | | |
|---|---|---|
| **Project Name:** GA Groundwater RI | **Drilling Company:** SGS | |
| **Project Number:** 60550261 | **Drilling Method:** Direct Push | **Coordinates (NJSPNAD83) x:** 611599.8 |
| **Date Started Drilling:** 10/16/2017 10:00:00 AM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 682533.1 |
| **Date Finished Drilling:** 10/16/2017 | **Core Size:** | **Boring Total Depth:** 49.5 ft |
| **Logged By:** KW | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** Eden Wood | | **Surface Elevation:** 11.1 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: 11.1 | Sample ID |
|---|---|---|---|---|---|---|---|
| 0 | 5 | | dry | | | DGA | |
| 1 | | | | | | CINDERS, and ash little fill debris, (7.5YR 4/3) brown, dry to wet no odor no staining | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | 5 | 0.0 | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | 5 | 0.0 | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |
| 14 | | | wet | | | fine to medium silty SAND, trace fill debris, (5YR 4/3) reddish brown, wet no odor no staining | |
| 15 | 5 | 0.0 | | | | | |
| 16 | | | wet | | | (70% Fibers and 30% Organic Silts) PEAT (degraded vegetated material), (7.5YR 4/2) brown, moist moderate organic odor no staining | |
| 17 | | | | | | | |
| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | 5 | 0.0 | wet | | | fine to medium silty SAND, (5YR 6/1) gray, moist to wet no odor no staining | |
| 21 | | | | | | | |
| 22 | | | | | | | |
| 23 | | | wet | | | organic SILT, trace organic fibers, fine sand, (5YR 6/1) gray, moist slight organic odor no staining | |
| 24 | | | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

PPG - 2012-09 RA PPG_LOGS_A.GDT - 1/10/18 09:56

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732.564.3200 office telephone

# Boring ID: 114-SS39B



| | | |
|---|---|---|
| **Project Name:** GA Groundwater RI | **Drilling Company:** SGS | |
| **Project Number:** 60550261 | **Drilling Method:** Direct Push | **Coordinates (NJSPNAD83) x:** |
| **Date Started Drilling:** 10/16/2017 10:00:00 AM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** |
| **Date Finished Drilling:** 10/16/2017 | **Core Size:** | **Boring Total Depth:** 49.5 ft |
| **Logged By:** KW | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** Eden Wood | | **Surface Elevation:** ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 26 | 5 | 0.0 | wet | | | fine to medium SAND, little silt, (5YR 6/1) gray, wet no odor no staining | |
| 30 | 5 | 0.0 | wet | | | fine silty SAND, (5YR 4/4) reddish brown, wet no odor no staining | |
| 35 | 5 | 0.0 | wet | | | SILT, little fine sand, (5YR 4/4) reddish brown, moist no odor no staining | |
| 36 | | | dry | | | CLAY, little fine sand, silt, (5YR 4/3) reddish brown, low plasticity, dry no odor no staining | |
| 40 | 5 | 0.0 | wet | | | fine silty SAND, (5YR 4/4) reddish brown, wet no odor no staining | |
| 45 | 4.5 | 0.0 | | | | CLAY, little fine sand, silt fine sand, (5YR 4/4) reddish brown, low plasticity, dry to moist no odor no staining | |
| 47 | | | dry | | | CLAY, trace silt, (5YR 4/4) reddish brown, high plasticity, dry no odor no staining | |
| 48 | | | | | | CLAY, little fine sand, silt, (5YR 4/3) reddish brown, low plasticity, dry to moist no odor no staining | |
| 49 | | | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

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# Boring ID: 114-SS40B



| | | |
|---|---|---|
| **Project Name:** GA Groundwater RI | **Drilling Company:** SGS | |
| **Project Number:** 60550261 | **Drilling Method:** Direct Push | **Coordinates (NJSPNAD83) x:** 611703.3 |
| **Date Started Drilling:** 11/2/2017 9:15:00 AM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 682730.4 |
| **Date Finished Drilling:** 11/2/2017 | **Core Size:** | **Boring Total Depth:** 40 ft |
| **Logged By:** KW | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** Eden Wood | | **Surface Elevation:** ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 0 | 5 | 0.0 | dry | CONCRETE | | ROAD GRAVEL | |
| 1 | | | moist | FILL | | fine to medium silty SAND, little fill debris, (7.5YR 4/2) brown, dry to moist no odor no staining | |
| 2 | | | | | | | |
| 3 | | | wet | FILL | | ASH, (5YR 2.5/1) black, moist to wet no odor no staining | |
| 4 | | | | | | | |
| 5 | 5 | 0.0 | wet | SM | | fine to medium silty SAND, trace fine gravel, (5YR 4/3) reddish brown, wet no odor no staining | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | 5 | 0.0 | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |
| 14 | | | | | | | |
| 15 | 5 | 0.0 | | | | | |
| 16 | | | | | | | |
| 17 | | | | | | | |
| 18 | | | | | | | |
| 19 | | | moist | OL | | organic SILT, some organic fibers, (5YR 2.5/1) black, moist slight organic odor no staining | |
| 20 | | 0.0 | wet | OL | | organic SILT, little fine sand trace organics, (5YR 6/1) gray, wet slight organic odor no staining | |
| 21 | | | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

PPG - 2012-09 RA PPG_LOGS_A.GDT - 6/7/18 14:26

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30 Knightsbridge Road, Piscataway, NJ 08854
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# Boring ID: 114-SS40B



| | | |
|---|---|---|
| **Project Name:** GA Groundwater RI | **Drilling Company:** SGS | |
| **Project Number:** 60550261 | **Drilling Method:** Direct Push | **Coordinates (NJSPNAD83) x:** |
| **Date Started Drilling:** 11/2/2017 9:15:00 AM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** |
| **Date Finished Drilling:** 11/2/2017 | **Core Size:** | **Boring Total Depth:** 40 ft |
| **Logged By:** KW | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** Eden Wood | | **Surface Elevation:** ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 23 | 5 | | wet | SM | | fine to medium SAND, trace silt, (5YR 5/1) gray, wet no odor no staining | |
| 25 | 5 | 0.0 | | | | | |
| 28 | | | wet | SM | | fine to medium SAND, little silt, (5YR 4/3) reddish brown, wet no odor no staining | |
| 30 | 5 | 0.0 | | | | | |
| 33 | | | moist | ML | | clayey SILT, trace fine sand, (5YR 4/3) reddish brown, moist no odor no staining | |
| 35 | 5 | 0.0 | wet | SP | | fine to medium SAND, (7.5YR 4/2) brown, wet no odor no staining | |
| 39 | | | moist | CH | | sandy CLAY, some silt, (5YR 4/3) reddish brown, moist no odor no staining | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

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# Boring ID: 132-P3A-MW104D-2



| | | |
|---|---|---|
| **Project Name:** Groundwater RI | **Drilling Company:** SGS | |
| **Project Number:** 60550261 | **Drilling Method:** | **Coordinates (NJSPNAD83) x:** 610794.3 |
| **Date Started Drilling:** 10/30/2017 | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 682807.3 |
| **Date Finished Drilling:** 11/15/2017 | **Core Size:** | **Boring Total Depth:** 78 ft |
| **Logged By:** L. Kinsey | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** Site 132 | | **Surface Elevation:** 15.2 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| | | | | FILL | | DGA | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:** Same borehole and lithology for 132-P3A-MW104D-1

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# Boring ID: 132-P3A-MW104D-2



| | | |
|---|---|---|
| **Project Name:** Groundwater RI | **Drilling Company:** SGS | |
| **Project Number:** 60550261 | **Drilling Method:** | **Coordinates (NJSPNAD83) x:** 610794.3 |
| **Date Started Drilling:** 10/30/2017 | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 682807.3 |
| **Date Finished Drilling:** 11/15/2017 | **Core Size:** | **Boring Total Depth:** 78 ft |
| **Logged By:** L. Kinsey | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** Site 132 | | **Surface Elevation:** 15.2 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 23 | | | moist | PT | | PEAT (degraded vegetable material), (60% organic fibers 40% organic silt), (5YR 2.5/1) black, moist, moderate organic odor, no staining | |
| | | | wet | SM | | SAND, trace silt, trace gravel, (7.5YR 5/1) gray, wet | |
| 24 | | | | | | | |
| 25 | | | | | | | |
| 26 | | | | | | | |
| 27 | | | | | | | |
| 28 | | | wet | SP-SM | | medium to coarse SAND, (5YR 5/2) reddish gray, wet | |
| | | | wet | SP-SM | | medium to coarse SAND, (5YR 4/3) reddish brown, wet | |
| 29 | | | | | | | |
| 30 | | | | | | | |
| 31 | | | | | | | |
| 32 | | | wet | SW-SM | | fine SAND, (5YR 4/3) reddish brown, wet | |
| 33 | | | | | | | |
| 34 | | | | | | | |
| 35 | | | | | | | |
| 36 | | | | | | | |
| 37 | | | | | | | |
| 38 | | | wet | SW-SM | | fine SAND, (5YR 4/3) reddish brown, wet | |
| 39 | | | | | | | |
| 40 | | | | | | | |
| 41 | | | saturated | SW-SM | | fine SAND, (5YR 4/3) reddish brown, saturated | |
| 42 | | | | | | | |
| 43 | | | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:** Same borehole and lithology for 132-P3A-MW104D-1

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# Boring ID: 132-P3A-MW104D-2



| | | |
|---|---|---|
| **Project Name:** Groundwater RI | **Drilling Company:** SGS | |
| **Project Number:** 60550261 | **Drilling Method:** | **Coordinates (NJSPNAD83) x:** 610794.3 |
| **Date Started Drilling:** 10/30/2017 | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 682807.3 |
| **Date Finished Drilling:** 11/15/2017 | **Core Size:** | **Boring Total Depth:** 78 ft |
| **Logged By:** L. Kinsey | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** Site 132 | | **Surface Elevation:** 15.2 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 45 | | | | | | | |
| 46 | | | | | | | |
| 47 | | | | | | | |
| 48 | | | wet | SW-SM | | fine SAND, little silt, (5YR 4/3) reddish brown, medium plasticity, wet | |
| 49 | | | | | | | |
| 50 | | | | | | | |
| 51 | | | | | | | |
| 52 | | | | | | | |
| 53 | | | | | | | |
| 54 | | | | | | | |
| 55 | | | | SC-SM | | CLAY, with little sand, little silt, (5YR 5/2) reddish gray, medium plasticity | |
| 56 | | | | | | | |
| 57 | | | | | | | |
| 58 | | | | | | | |
| 59 | | | | | | | |
| 60 | | | | | | | |
| 61 | | | | | | | |
| 62 | | | | | | | |
| 63 | | | | | | | |
| 64 | | | | | | | |
| 65 | | | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:** Same borehole and lithology for 132-P3A-MW104D-1

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# Boring ID: 132-P3A-MW104D-2



| | | |
|---|---|---|
| **Project Name:** Groundwater RI | **Drilling Company:** SGS | |
| **Project Number:** 60550261 | **Drilling Method:** | **Coordinates (NJSPNAD83) x:** 610794.3 |
| **Date Started Drilling:** 10/30/2017 | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 682807.3 |
| **Date Finished Drilling:** 11/15/2017 | **Core Size:** | **Boring Total Depth:** 78 ft |
| **Logged By:** L. Kinsey | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** Site 132 | | **Surface Elevation:** 15.2 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 67 | | | | | | | |
| 68 | | | | | | | |
| 69 | | | | | | | |
| 70 | | | | | | | |
| 71 | | | | | | | |
| 72 | | | | SP | | medium to coarse SAND, (5YR 5/2) reddish brown | |
| 73 | | | wet | GW | | fine to medium SAND, with gravel and angular cobbles, (5YR 4/3) reddish brown, wet | |
| 74 | | | | | | | |
| 75 | | | | | | | |
| 76 | | | | | | | |
| 77 | | | | | | | |
| 78 | | | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:** Same borehole and lithology for 132-P3A-MW104D-1

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# Boring ID: 132-P3A-MW105I



| | | |
|---|---|---|
| **Project Name:** Groundwater Remedial Investigation | **Drilling Company:** SGS North America | |
| **Project Number:** 60507168 | **Drilling Method:** Augers/Mud Rotary | **Coordinates (NJSPNAD83) x:** 610676.8 |
| **Date Started Drilling:** 1/11/2018 7:00:00 AM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 682695.3 |
| **Date Finished Drilling:** 1/15/2018 3:00:00 PM | **Core Size:** | **Boring Total Depth:** 50 ft |
| **Logged By:** E. Acs | **Project Manager:** Scott Mikaelian | **Depth to Water:** 7.86 |
| **Physical Location:** Ten West Apparel | | **Surface Elevation:** 14.4 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 0 | | | | ASPHALT | | ASPHALT | |
| 1 | | | | FILL | | fine to coarse SAND, some silt trace gravel, (5Y 4/1) dark gray, dry no odor no staining, (Hand Excavated) | |
| 2 | | | dry | FILL | | ASH, (5YR 6/1) gray, very loose, dry no odor no staining, wet @5.5'(Hand Excavated) | |
| 6 | 0.5 | 0.0 | wet | FILL | | ASH, trace silt, (5YR 2.5/1) black, very loose, wet no odor no staining | |
| 9 | 0.5 | 0.0 | | | | | |
| 10 | 0.5 | 0.0 | wet | FILL | | ASH, trace silt, (5YR 5/1) gray, very loose, wet no odor no staining | |
| 12 | 0.5 | 0.0 | wet | FILL | | ASH, trace silt, (5YR 2.5/1) black, very loose, wet no odor no staining | |
| 15 | 0.5 | 0.0 | | | | | |
| 16 | 1.67 | 0.0 | wet | FILL | | fine to coarse SAND, trace silt trace gravel, very loose, wet no odor no staining | |
| 17 | | | moist | PT | | PEAT (degraded vegetated material), 80% fibers 20% organic silt, (7.5YR 4/1) dark gray, moist slight organic odor. Soils consistent with MM. | |
| 19 | 1.67 | 0.0 | | | | | |
| 20 | 0.5 | 0.0 | | ML | | SILT, trace fine sand, very soft, wet slight organic odor no staining. Soils consistent with UNDorg. | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

PPG - 2012-09 RA PPG_LOGS_A.GDT - 6/7/18 15:14

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30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# Boring ID: 132-P3A-MW105I



| | | |
|---|---|---|
| **Project Name:** Groundwater Remedial Investigation | **Drilling Company:** SGS North America | |
| **Project Number:** 60507168 | **Drilling Method:** Augers/Mud Rotary | **Coordinates (NJSPNAD83) x:** 610676.8 |
| **Date Started Drilling:** 1/11/2018 7:00:00 AM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 682695.3 |
| **Date Finished Drilling:** 1/15/2018 3:00:00 PM | **Core Size:** | **Boring Total Depth:** 50 ft |
| **Logged By:** E. Acs | **Project Manager:** Scott Mikaelian | **Depth to Water:** 7.86 |
| **Physical Location:** Ten West Apparel | | **Surface Elevation:** 14.4 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 23 | 0.5 | 0.0 | wet | SM | | fine to medium SAND, some silt, (5YR 6/1) gray, very loose, wet no odor no staining. Soils consistent with UNDno. | |
| 24 | 0.83 | 0.0 | wet | SW | | fine to coarse SAND, little gravel, (5YR 4/3) reddish brown, medium dense, wet no odor no staining. Soils consistent with UNDno. | |
| 26 | 0.67 | 0.0 | wet | SP | | fine to medium SAND, trace silt trace gravel, (5YR 4/3) reddish brown, loose, wet no odor no staining. Soils consistent with UNDno. | |
| 28 | 1 | 0.0 | wet | SP | | fine SAND, trace silt, (5YR 4/3) reddish brown, very loose, wet no odor no staining. Soils consistent with UNDno. | |
| 30 | 1 | 0.0 | | | | | |
| 32 | 0.67 | 0.0 | | | | | |
| 34 | 0.67 | 0.0 | | | | | |
| 36 | 0.67 | 0.0 | | | | | |
| 38 | 0.83 | 0.0 | | | | | |
| 40 | 1 | 0.0 | | | | | |
| 42 | 1.5 | 0.0 | | | | | |
| 43 | | | slightly moist | CL | | CLAY, trace fine sand, (5YR 4/3) reddish brown, soft, slightly moist no odor no staining. Soils consistent with | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

AECOM

30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# Boring ID: 132-P3A-MW105I



| | | |
|---|---|---|
| **Project Name:** Groundwater Remedial Investigation | **Drilling Company:** SGS North America | |
| **Project Number:** 60507168 | **Drilling Method:** Augers/Mud Rotary | **Coordinates (NJSPNAD83) x:** 610676.8 |
| **Date Started Drilling:** 1/11/2018 7:00:00 AM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 682695.3 |
| **Date Finished Drilling:** 1/15/2018 3:00:00 PM | **Core Size:** | **Boring Total Depth:** 50 ft |
| **Logged By:** E. Acs | **Project Manager:** Scott Mikaelian | **Depth to Water:** 7.86 |
| **Physical Location:** Ten West Apparel | | **Surface Elevation:** 14.4 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 45 | 1.5 | 0.0 | | | | UNDno. | |
| 46 | | | | | | | |
| 47 | 1.33 | 0.0 | | | | | |
| 48 | | | | | | | |
| 49 | 1.5 | 0.0 | | | | | |
| 50 | | | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

PPG - 2012-09 RA PPG_LOGS_A.GDT - 6/7/18 15:14

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732.564.3200 office telephone

# Boring ID: 132-P3A-SSI



| | | |
|---|---|---|
| **Project Name:** Groundwater RI | **Drilling Company:** SGS North America | |
| **Project Number:** 60550261 | **Drilling Method:** Direct Push | **Coordinates (NJSPNAD83) x:** 610750.3 |
| **Date Started Drilling:** 7/11/2017 7:15:00 AM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 682658.8 |
| **Date Finished Drilling:** 7/11/2017 9:45:00 AM | **Core Size:** | **Boring Total Depth:** 30 ft |
| **Logged By:** KW | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** Ten West Apparel | | **Surface Elevation:** 13.7 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 0 | | | | ASPHALT | | ASPHALT, and Subase, (5YR 2.5/1) black | |
| 1 | | | dry | FILL | | fine to medium SAND, little silt trace fill debris, (7.5YR 4/2) brown, dry to moist no odor no staining | |
| 2 | | | moist | FILL | | fine to medium SAND, little COPR (30%), (5YR 3/3) dark reddish brown, moist no odor no staining, 30% COPR | |
| 3 | 2 | 0.0 | | NR | | NO RECOVERY | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | 0 | 0.0 | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | moist | FILL | | GGM, Green, moist no odor green staining | |
| 12 | 5 | 0.0 | | | | | |
| 13 | | | | | | | |
| 14 | | | | | | | |
| 15 | | | | NR | | NO RECOVERY | |
| 16 | | | | | | | |
| 17 | 0 | 0.0 | | | | | |
| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | | | wet | FILL | | GGM, Green, wet no odor green staining | |
| 21 | 2.5 | 0.0 | wet | FILL | | fine to coarse silty SAND, (7.5YR 6/1) gray, wet no odor no staining | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

PPG - 2012-09 RA PPG_LOGS_A.GDT - 6/7/18 14:48

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# Boring ID: 132-P3A-SSI



| | | |
|---|---|---|
| **Project Name:** Groundwater RI | **Drilling Company:** SGS North America | |
| **Project Number:** 60550261 | **Drilling Method:** Direct Push | **Coordinates (NJSPNAD83) x:** 610750.3 |
| **Date Started Drilling:** 7/11/2017 7:15:00 AM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 682658.8 |
| **Date Finished Drilling:** 7/11/2017 9:45:00 AM | **Core Size:** | **Boring Total Depth:** 30 ft |
| **Logged By:** KW | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** Ten West Apparel | | **Surface Elevation:** 13.7 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 23 | | | | NR | | NO RECOVERY | |
| 24 | | | | | | | |
| 25 | | | wet | SW | | fine to coarse SAND, trace silt, (5YR 3/2) dark reddish brown, wet no odor no staining. Soils consistent with UNDno. | |
| 26 | | | | | | | |
| 27 | 5 | 0.0 | | | | | |
| 28 | | | | | | | |
| 29 | | | | | | | |
| 30 | | | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

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# Boring ID: 135-MW1AR



| | | |
|---|---|---|
| **Project Name:** Groundwater Remedial Investigation | **Drilling Company:** SGS | |
| **Project Number:** 60550261 | **Drilling Method:** HSA | **Coordinates (NJSPNAD83) x:** 610949.4 |
| **Date Started Drilling:** 3/29/2018 12:00:00 PM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 682141.4 |
| **Date Finished Drilling:** 3/29/2018 1:00:00 PM | **Core Size:** | **Boring Total Depth:** 15 ft |
| **Logged By:** L. Kinsey | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** Al Smith Moving and Storage | | **Surface Elevation:** 10.1 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 0 | | | | FILL | | FILL | |
| 4 | | | moist | FILL | | fine to medium SAND, some gravel, coal fragments gravel, (7.5YR 4/2) brown, moist | |
| 6 | | | moist | SM | | fine to medium silty SAND, some medium gravel, (5R 5/6) red, moist | |
| 8 | | | moist | SM | | fine to medium silty SAND, some construction debris, (7.5YR 4/2) brown, moist, angular | |
| 10 | | | | NR | | NO RECOVERY | |
| 11 | | | moist | GW-GM | | SILT, trace fine gravel, (2.5YR 4/3) reddish brown, moist, no staining, no odor | |
| 12 | | | | | | No data | |
| 13 | | | moist | SP | | fine to medium SAND, trace fine gravel, (2.5YR 4/3) reddish brown, moist no odor no staining | |
| 15 | | | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:** Replacement Well for 135-MW1A

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# Boring ID: 135-MW3BR



| | | |
|---|---|---|
| **Project Name:** Groundwater Remedial Investigation | **Drilling Company:** SGS | |
| **Project Number:** 60550261 | **Drilling Method:** | **Coordinates (NJSPNAD83) x:** 611113.1 |
| **Date Started Drilling:** 4/3/2018 11:00:00 AM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 682304 |
| **Date Finished Drilling:** 4/6/2018 12:00:00 PM | **Core Size:** | **Boring Total Depth:** 34 ft |
| **Logged By:** J. Christopher | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** Site 135 | | **Surface Elevation:** 11.3 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 0 | | | dry | FILL | | DGA, some gravel, (10YR 6/2) light brownish gray, dry , no odor , no staining | |
| 3 | | | wet | FILL | | ASH, with cinders, wet , no odor , no staining | |
| 5 | | | wet | SM | | SILT, trace fine sand and fine to coarse gravel, (5YR 4/3) reddish brown, wet , no odor , no staining | |
| 7 | | | wet | SM | | SILT, little fine sand little fine to medium gravel, (2.5YR 4/3) reddish brown, wet , no odor , no staining | |
| 9 | | | wet | SM | | SILT, little fine sand little fine to medium gravel, (2.5YR 4/3) reddish brown, wet , no odor , no staining | |
| 11 | | | moist | SW-SM | | SILT, with fine gravel trace fine sand, (2.5YR 4/1) dark reddish gray, moist slight organic odor , no staining | |
| 13 | | | wet | SC-SM | | SILT, trace clay trace fine sand, (2.5Y 5/2) grayish brown, wet slight organic odor , no staining, (some organic material [roots]) | |
| 15 | | | | | | No Data | |
| 16 | 2 | 0.0 | wet | SC-SM | | SILT, trace clay trace fine sand, (7.5YR 5/2) brown, loose, wet no odor , no staining | |
| 17 | | 0.0 | moist | PT | | PEAT (degraded vegetated material), (7.5YR 3/2) dark brown, dense, moist , no odor , no staining | |
| 18 | 1.42 | 0.0 | wet | OH | | CLAY, trace silt trace organics (roots), (7.5YR 4/1) dark gray, soft, wet , moderate organic odor , no staining | |
| 20 | 2 | 0.0 | wet | OH | | CLAY, trace silt trace organics (roots), (7.5YR 4/1) dark gray, soft, wet , moderate organic odor , no staining | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:** Replacement Well for 135-MW3B

PPG - 2012-09 RA PPG_LOGS_A.GDT - 6/7/18 16:16

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# Boring ID: 135-MW3BR



| | | |
|---|---|---|
| **Project Name:** Groundwater Remedial Investigation | **Drilling Company:** SGS | |
| **Project Number:** 60550261 | **Drilling Method:** | **Coordinates (NJSPNAD83) x:** 611113.1 |
| **Date Started Drilling:** 4/3/2018 11:00:00 AM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 682304 |
| **Date Finished Drilling:** 4/6/2018 12:00:00 PM | **Core Size:** | **Boring Total Depth:** 34 ft |
| **Logged By:** J. Christopher | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** Site 135 | | **Surface Elevation:** 11.3 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 23 | 1.75 | 0.0 | wet | OH | | CLAY, trace silt trace organics (roots), (7.5YR 4/1) dark gray, soft, wet , moderate organic odor , no staining | |
| 24 | | | | | | | |
| 25 | 1.58 | 0.0 | wet | SM | | SILT, trace fine sand, (7.5YR 5/1) gray, loose, wet , no odor , no staining | |
| 26 | | | | | | | |
| 27 | 0 | 0.0 | | NR | | NO RECOVERY | |
| 28 | 1.67 | 0.0 | moist | SM | | fine silty SAND, trace coarse sand, (2.5Y 5/2) grayish brown, moist , no odor , no staining, tight | |
| 29 | | 0.0 | moist | SM | | fine silty SAND, trace coarse sand, (2.5YR 4/3) reddish brown, moist , no odor , no staining, tight | |
| 30 | | | | | | | |
| 31 | 1.17 | 0.0 | wet | SM | | fine SAND, little silt trace coarse sand, (2.5YR 4/3) reddish brown, loose, wet , no odor , no staining | |
| 32 | | | | | | | |
| 33 | 0.83 | 0.0 | wet | SM | | fine SAND, little silt little coarse sand, (2.5YR 4/3) reddish brown, loose, wet , no odor , no staining | |
| 34 | | | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:** Replacement Well for 135-MW3B

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# Boring ID: 135-P3C-MW102S



| | | |
|---|---|---|
| **Project Name:** Groundwater Remedial Investigation | **Drilling Company:** SGS | |
| **Project Number:** 60550261 | **Drilling Method:** HSA | **Coordinates (NJSPNAD83) x:** 611120.7 |
| **Date Started Drilling:** 4/3/2018 9:10:00 AM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 682311.9 |
| **Date Finished Drilling:** 4/3/2018 10:05:00 AM | **Core Size:** | **Boring Total Depth:** 15 ft |
| **Logged By:** J. Christopher | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** Site 135 | | **Surface Elevation:** 11.5 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 1–3 | 3 | 0.0 | dry | FILL | | DGA, some gravel, (10YR 6/2) light brownish gray, dry , no odor , no staining | |
| 3–5 | 2 | 0.0 | wet | FILL | | ASH, with cinders, wet , no odor , no staining | |
| 5–7 | 0.29 | 0.0 | wet | SM | | SILT, trace fine sand and fine to coarse gravel, (5YR 4/3) reddish brown, wet , no odor , no staining | |
| 7–9 | 1.29 | 0.0 | wet | SM | | SILT, little fine sand little fine to medium gravel, (2.5YR 4/3) reddish brown, wet , no odor , no staining | |
| 9–11 | 1.21 | 0.0 | wet | SM | | SILT, little fine sand little fine to medium gravel, (2.5YR 4/3) reddish brown, wet , no odor , no staining | |
| 11–13 | 0.42 | 0.0 | moist | SW-SM | | SILT, with fine gravel trace fine sand, (2.5YR 4/1) dark reddish gray, moist slight organic odor , no staining | |
| 13–15 | 0.58 | 0.0 | wet | SC-SM | | SILT, trace clay trace fine sand, (2.5Y 5/2) grayish brown, wet slight organic odor , no staining, (some organic material [roots]) | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:** Replacement Well for 135-MW3A

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# Boring ID: 186-MW02R



| | | |
|---|---|---|
| **Project Name:** Groundwater Remedial Investigation | **Drilling Company:** SGS North America | |
| **Project Number:** 60550261 | **Drilling Method:** Direct Push | **Coordinates (NJSPNAD83) x:** 611305 |
| **Date Started Drilling:** 9/30/2017 7:00:00 AM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 684165.2 |
| **Date Finished Drilling:** 9/30/2017 1:30:00 PM | **Core Size:** | **Boring Total Depth:** 15 ft |
| **Logged By:** KW | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** Site 186 | | **Surface Elevation:** 13.4 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 0 | 4.5 | 0 | dry | FILL | | DGA | |
| 5 | 4.5 | 0 | wet | FILL | | SILT, little fine to medium sand, (5YR 6/3) light reddish brown, wet no odor no staining | |
| 8 | | | wet | FILL | | fine to medium silty SAND, trace fine gravel, (5YR 4/3) reddish brown, wet no odor no staining | |
| 9 | | | | NR | | NO RECOVERY | |
| 10 | | 0 | wet | FILL | | fine to medium silty SAND, trace fine gravel, (5YR 4/3) reddish brown, wet no odor no staining | |
| 12 | | | wet | SM | | fine to coarse silty SAND, trace fine gravel, (5YR 4/4) reddish brown, wet no odor no staining. Soils consistent with UNDno. | |
| 15 | | | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

PPG - 2012-09 RA PPG_LOGS_A.GDT - 3/6/18 13:38

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# Boring ID: 114-MW52D



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.64 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic/Water Rotary | **Coordinates (NJSPNAD83) x:** 611077.5 |
| **Date Started Drilling:** 12/1/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683544.4 |
| **Date Finished Drilling:** 12/11/2020 | **Core Size:** 6 in. sonic, 2 in. rock core | **Boring Total Depth:** 105 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** NA |
| **Physical Location:** Site 114 | | **Surface Elevation:** 13.9 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 1 | 0 / 5 | 0 | DRY TO MOIST | FILL | | Soft dig to 5 ft bgs. Brown-gray well graded GRAVEL, some silty sand, very dense (Dense Graded Aggregate [DGA]), dry to moist. | | 8-inch steel protective casing (stick up) |
| 3 | | | MOIST | FILL | | Gray fine to coarse GRAVEL, trace to little silty sand, dense (DGA), moist. | | |
| 4 | | | | | | | | Riser set in grout |
| 5 | 3 / 5 | 0 | WET | FILL | | Gray fine to coarse GRAVEL, trace sand, well graded (DGA), wet. | | |
| 6 | | | | | | | | Grout: 0-80 ft bgs |
| 7 | | | WET | FILL | | Gray fine to medium SAND, trace silt, poorly sorted, medium dense, micaceous (DGA), wet. | | |
| 8 | | | | | | | | 6-inch steel threaded casing: 0-80 ft bgs |
| 9 | | | WET | FILL | | Gray SILT, little coarse gravel, soft, micaceous (DGA), wet. | | |
| 10 | 4 / 5 | 0 | DAMP TO WET | FILL | | Gray SILT, trace fine to coarse gravel, soft, micaceous (DGA), damp to wet. | | |
| 15 | 4.5 / 5 | 0 | WET | FILL | | Gray SILT, trace fine to coarse gravel, soft, micaceous (DGA), wet. | | |
| 16 | | | MOIST | OH | | Gray organic CLAY, trace brown fibers (5%), trace silt, stiff, moist. | | |
| 19 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; RQD = rock quality designation; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

PPG WITH WELL CONSTRUCTION - - 2/5/21 13:06

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# Boring ID: 114-MW52D



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.64 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic/Water Rotary | **Coordinates (NJSPNAD83) x:** 611077.5 |
| **Date Started Drilling:** 12/1/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683544.4 |
| **Date Finished Drilling:** 12/11/2020 | **Core Size:** 6 in. sonic, 2 in. rock core | **Boring Total Depth:** 105 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** NA |
| **Physical Location:** Site 114 | | **Surface Elevation:** 13.9 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 21 | | | WET | GP | | Gray coarse GRAVEL, little fine to coarse sand, poorly sorted, loose, wet. | | |
| 22 | 2.5 / 5 | 0 | | | | Red brown fine to coarse SAND, some fine to coarse gravel, trace silt, loose, wet. | | |
| 23 | | | WET | SW | | | | |
| 24 | | | | | | | | |
| 25 | | | WET | SM | | Reddish brown fine SAND, some silt, poorly graded, trace gravel, loose. | | |
| 26 | | | | | | | | |
| 27 | 2.5 / 5 | 0 | | | | Reddish brown SILT, some fine to medium sand, soft, wet. Slight yellow coloration to water. | | |
| 28 | | | WET | ML | | | | |
| 29 | | | | | | | | |
| 30 | | | WET | SM | | Reddish brown fine SAND, some silt, poorly graded, medium dense, wet. Slight yellow coloration to water. | | |
| 31 | | | | | | | | |
| 32 | 4.5 / 5 | 0 | | | | | | |
| 33 | | | DAMP TO MOIST | CL | | Reddish brown to gray CLAY, trace silt, medium stiff, damp to moist. Slight yellow coloration to water. | | |
| 34 | | | | | | | | |
| 35 | | | | | | | | |
| 36 | | | | | | | | |
| 37 | 4.5 / 5 | 0 | | | | Reddish brown SILT, little fine sand, medium stiff, wet. Slight yellow coloration to water. | | |
| 38 | | | WET | ML | | | | |
| 39 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; RQD = rock quality designation; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

PPG WITH WELL CONSTRUCTION - - 2/5/21 13:06

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30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# Boring ID: 114-MW52D



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.64 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic/Water Rotary | **Coordinates (NJSPNAD83) x:** 611077.5 |
| **Date Started Drilling:** 12/1/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683544.4 |
| **Date Finished Drilling:** 12/11/2020 | **Core Size:** 6 in. sonic, 2 in. rock core | **Boring Total Depth:** 105 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** NA |
| **Physical Location:** Site 114 | | **Surface Elevation:** 13.9 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 41 | 4 / 5 | 0 | MOIST | CL | | Reddish brown CLAY, trace silt, medium stiff, moist. Slight yellow coloration to water. | | |
| 42 | | | | | | | | |
| 43 | | | | | | | | |
| 44 | | | | | | | | |
| 45 | | | WET | GP | | Gray coarse GRAVEL, poorly sorted, dense, wet. | | |
| 46 | | | WET | SW | | Reddish brown fine to coarse SAND, trace to little gravel, medium dense, wet (Basal Till). | | |
| 47 | 4 / 5 | 0 | | | | | | |
| 48 | | | WET | SP | | Reddish brown fine to medium SAND, little fine to coarse gravel, very dense, wet (Basal Till). | | |
| 49 | | | | | | | | |
| 50 | | | | | | | | |
| 51 | 4 / 5 | 0 | WET | SP | | Reddish brown fine to medium SAND, some fine to coarse gravel, little silt, very dense, wet (Basal Till). | | |
| 52 | | | | | | | | |
| 53 | | | | | | | | |
| 54 | | | | | | | | |
| 55 | 4.5 / 5 | 0 | WET | SP | | Reddish brown fine to medium SAND, some fine to coarse angular gravel, little silt, very dense, wet (Basal Till). | | |
| 56 | | | | | | | | |
| 57 | | | | | | | | |
| 58 | | | | | | | | |
| 59 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; RQD = rock quality designation; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

PPG WITH WELL CONSTRUCTION - - 2/5/21 13:06

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30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# Boring ID: 114-MW52D



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.64 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic/Water Rotary | **Coordinates (NJSPNAD83) x:** 611077.5 |
| **Date Started Drilling:** 12/1/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683544.4 |
| **Date Finished Drilling:** 12/11/2020 | **Core Size:** 6 in. sonic, 2 in. rock core | **Boring Total Depth:** 105 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** NA |
| **Physical Location:** Site 114 | | **Surface Elevation:** 13.9 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 61 | | | WET | SW | | Reddish brown fine to coarse SAND, little fine to coarse angular gravel, poorly graded, very dense, wet (Basal Till). | | |
| 62 | 3 / 5 | 0 | | | | | | |
| 63 | | | WET | SP | | Reddish brown fine to medium SAND, some fine to coarse gravel, little silt, poorly graded, very dense, wet (Basal Till). | | |
| 64 | | | | | | | | |
| 65 | | | | | | | | |
| 66 | | | WET | SW | | Reddish brown fine to coarse SAND, some fine to coarse gravel, little silt, very dense, wet (Basal Till). | | |
| 67 | 4 / 5 | 0 | | | | | | |
| 68 | | | | | | | | Top of bedrock: 68 ft bgs |
| 69 | | | NA | BEDROCK | | Gray mudstone. Highly weathered, rock in clay matrix, fine-grained, laminated, weak rock, crushed fracture spacing (Lockatong formation). | | |
| 70 | | | | | | | | |
| 71 | | | | | | Gray mudstone (Argillite). Unweathered, fine-grained, laminated, strong rock, moderate fracture spacing. Vertical fracture at approximately 73 to 75 ft bgs, calcite-filled (Lockatong formation). Recovery = 83%; RQD = 75% (fair-good rock). | | |
| 72 | 4.4 / 5 | 0 | NA | BEDROCK | | | | |
| 73 | | | | | | | | |
| 74 | | | | | | | | |
| 75 | | | | | | | | |
| 76 | | | | | | Gray mudstone (Argillite). Unweathered, fine-grained, laminated, strong rock, moderate fracture spacing. Vertical fracture at approximately 75 to 76 ft bgs, and 79.5 to 80 ft bgs. Healed calcite vein at 77 to 78 ft bgs (Lockatong formation). Recovery = 97%; RQD = 77% (good rock). | | |
| 77 | 4.8 / 5 | 0 | NA | BEDROCK | | | | |
| 78 | | | | | | | | |
| 79 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; RQD = rock quality designation; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

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# Boring ID: 114-MW52D



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.64 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic/Water Rotary | **Coordinates (NJSPNAD83) x:** 611077.5 |
| **Date Started Drilling:** 12/1/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683544.4 |
| **Date Finished Drilling:** 12/11/2020 | **Core Size:** 6 in. sonic, 2 in. rock core | **Boring Total Depth:** 105 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** NA |
| **Physical Location:** Site 114 | | **Surface Elevation:** 13.9 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 81–85 | 4.6 / 5 | 0 | NA | BEDROCK | | Gray mudstone (Argillite). Unweathered, fine-grained, laminated, strong rock, wide fracture spacing. Vertical fracture throughout core. Calcite in fracture, rough joint alteration, some fractures healed. (Lockatong formation). Recovery = 93%; RQD = 90% (good - excellent rock). | | 5 7/8" open borehole in rock: 80-105 ft bgs |
| 85–90 | 4.8 / 5 | 0 | NA | BEDROCK | | Gray mudstone (Argillite). Unweathered, fine-grained, laminated, strong rock, wide fracture spacing, with few noticeable fractures, some healed (Lockatong formation). Recovery = 97%; RQD = 97% (excellent rock). | | |
| 90–95 | 5 / 5 | 0 | NA | BEDROCK | | Gray mudstone (Argillite). Unweathered, fine-grained, laminated, strong rock, wide fracture spacing (Lockatong formation). Small healed vertical fracture at 93 ft bgs. Recovery = 100%; RQD = 100% (excellent rock). | | |
| 95–99 | 5 / 5 | 0 | NA | BEDROCK | | Gray mudstone (Argillite). Unweathered, fine-grained, laminated, strong rock, wide fracture spacing (Lockatong formation). Vertical fracture from 99 to 100 ft bgs. Recovery = 100%; RQD = 100% (excellent rock). | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; RQD = rock quality designation; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

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# Boring ID: 114-MW52D



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.64 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic/Water Rotary | **Coordinates (NJSPNAD83) x:** 611077.5 |
| **Date Started Drilling:** 12/1/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683544.4 |
| **Date Finished Drilling:** 12/11/2020 | **Core Size:** 6 in. sonic, 2 in. rock core | **Boring Total Depth:** 105 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** NA |
| **Physical Location:** Site 114 | | **Surface Elevation:** 13.9 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 101 | 5 / 5 | 0 | NA | BEDROCK | | Gray mudstone (Argillite). Unweathered, fine-grained, laminated, strong rock, wide fracture spacing (Lockatong formation). Fractures at 103 ft bgs (at 5 deg) clay coated, and 103.4 ft bgs (at 15 deg) clay coated. Recovery = 100%; RQD = 100% (excellent rock). End of boring at 105 ft bgs. | | |
| 102 | | | | | | | | |
| 103 | | | | | | | | |
| 104 | | | | | | | | |
| 105 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; RQD = rock quality designation; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

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# Boring ID: 114-MW57D



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.70 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic/Water Rotary | **Coordinates (NJSPNAD83) x:** 610903.9 |
| **Date Started Drilling:** 12/23/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683215.5 |
| **Date Finished Drilling:** 1/4/2021 | **Core Size:** 6 in. sonic, 2 in. rock core | **Boring Total Depth:** 112.5 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** NA |
| **Physical Location:** Site 114 | | **Surface Elevation:** 12.7 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 | | | DRY | FILL | | Soft dig to 5 ft bgs. Gray fine to coarse GRAVEL, some fine to coarse sand, trace silt, dense, dry. | | 8-inch steel protective casing (stick up) |
| 1 | | | WET | FILL | | Gray COBBLES, some fine to coarse sand, dense (Dense Graded Aggregate [DGA]), wet. | | |
| 2 | 0 / 5 | 0 | | | | Gray fine to coarse GRAVEL, some fine to coarse sand, trace silt, dense (DGA), wet. | | |
| 3 | | | WET | FILL | | | | |
| 4 | | | | | | | | Riser set in grout |
| 5 | | | | | | Gray fine to coarse SAND, some silt, trace subangular gravel, dense (DGA), moist to wet. | | |
| 6 | | | MOIST TO WET | FILL | | | | Grout: 0-85 ft bgs |
| 7 | 3 / 5 | 0 | | | | | | |
| 8 | | | | | | Gray fine to coarse SAND, some gravel, little silt, dense (DGA), moist to wet. | | 6-inch steel threaded casing: 0-85 ft bgs |
| 9 | | | MOIST TO WET | FILL | | | | |
| 10 | | | | | | Gray fine SAND, some silt, little coarse gravel, dense (DGA), wet. | | |
| 11 | | | | | | | | |
| 12 | 4.5 / 5 | 0 | WET | FILL | | | | |
| 13 | | | | | | | | |
| 14 | | | MOIST | OH | | Gray organic CLAY, some brown fibers (40%), trace silt, stiff, moist. | | |
| 15 | | | | | | Gray organic CLAY, some brown fibers (40%), trace silt, stiff, moist. | | |
| 16 | | | MOIST | OH | | | | |
| 17 | 5 / 5 | 0 | | | | | | |
| 18 | | | | | | Gray SILT, little fine sand, trace fine to medium gravel, dense, moist to wet. | | |
| 19 | | | MOIST TO WET | ML | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; RQD = rock quality designation; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

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# Boring ID: 114-MW57D



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.70 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic/Water Rotary | **Coordinates (NJSPNAD83) x:** 610903.9 |
| **Date Started Drilling:** 12/23/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683215.5 |
| **Date Finished Drilling:** 1/4/2021 | **Core Size:** 6 in. sonic, 2 in. rock core | **Boring Total Depth:** 112.5 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** NA |
| **Physical Location:** Site 114 | | **Surface Elevation:** 12.7 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 21 | | | WET | SM | | Reddish brown fine to coarse SAND, some silt, little fine to medium gravel, dense, wet. | | |
| 22 | 3 / 5 | 0 | WET | SW | | Reddish brown fine to coarse SAND, trace silt, trace subrounded coarse gravel, dense, wet. | | |
| 25 | | | WET | SW | | Reddish brown fine to coarse SAND, trace silt, trace coarse gravel, dense, wet. | | |
| 26 | 4 / 5 | 0 | WET | SP | | Reddish brown fine SAND, trace silt, medium dense, wet. | | |
| 30 | | | WET | SP | | Reddish brown fine SAND, trace silt, medium dense, wet. | | |
| 32 | 4.5 / 5 | 0 | WET | SM | | Reddish brown fine SAND, some silt, trace clay, medium dense, wet. | | |
| 35 | | | WET | SP | | Reddish brown fine SAND, little silt, medium dense, wet. | | |
| 36 | 3.5 / 5 | 0 | WET | SM | | Reddish brown fine SAND, some silt, medium dense, wet. Slight yellow coloration to water. | | |
| 38 | | | MOIST | CL | | Gray CLAY, little fine sand stringers, trace silt, medium stiff, moist. | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; RQD = rock quality designation; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

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# Boring ID: 114-MW57D



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.70 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic/Water Rotary | **Coordinates (NJSPNAD83) x:** 610903.9 |
| **Date Started Drilling:** 12/23/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683215.5 |
| **Date Finished Drilling:** 1/4/2021 | **Core Size:** 6 in. sonic, 2 in. rock core | **Boring Total Depth:** 112.5 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** NA |
| **Physical Location:** Site 114 | | **Surface Elevation:** 12.7 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 41 | | | | | | Gray CLAY, trace silt, trace fine sand stringers, medium stiff, moist. | | |
| 42 | 1 / 5 | 0 | MOIST | CL | | | | |
| 43 | | | | | | | | |
| 44 | | | | | | | | |
| 45 | | | | | | Gray CLAY, trace silt, trace fine sand stringers, medium stiff, moist. | | |
| 46 | | | MOIST | CL | | | | |
| 47 | 5 / 5 | 0 | | | | | | |
| 48 | | | MOIST | CL | | Gray CLAY, interbedded with fine to medium sand, trace silt, medium stiff, moist. | | |
| 49 | | | WET | ML | | Red brown SILT, some fine sand, stiff, wet. | | |
| 50 | | | | | | | | |
| 51 | | | WET | ML/CL | | Red brown SILT and CLAY, trace fine sand, stiff, wet. | | |
| 52 | 5 / 5 | 0 | WET | CL | | Gray CLAY, trace silt, stiff, wet. | | |
| 53 | | | WET | SM | | Reddish brown fine SAND, some silt, medium dense, wet (Basal Till). | | |
| 54 | | | WET | SM | | Reddish brown fine SAND, some silt, trace medium to coarse gravel, trace cobbles, very dense, wet (Basal Till). | | |
| 55 | | | | | | Reddish brown fine to medium SAND, some silt, little fine to coarse angular gravel, trace cobbles, very dense, wet (Basal Till). | | |
| 56 | | | | | | | | |
| 57 | 4 / 5 | 0 | WET | SM | | | | |
| 58 | | | | | | | | |
| 59 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; RQD = rock quality designation; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

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# Boring ID: 114-MW57D



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.70 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic/Water Rotary | **Coordinates (NJSPNAD83) x:** 610903.9 |
| **Date Started Drilling:** 12/23/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683215.5 |
| **Date Finished Drilling:** 1/4/2021 | **Core Size:** 6 in. sonic, 2 in. rock core | **Boring Total Depth:** 112.5 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** NA |
| **Physical Location:** Site 114 | | **Surface Elevation:** 12.7 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 61–65 | 3.5 / 5 | 0 | WET | SM | | Reddish brown fine to coarse SAND, some silt, little fine to coarse gravel, trace cobbles, very dense, wet (Basal Till). | | |
| 65–67 | | | WET | SW | | Reddish brown fine to coarse SAND, trace silt, medium dense, wet (Basal Till). | | |
| 67–70 | 3 / 5 | 0 | NA | BEDROCK | | Gray mudstone (Argillite), unweathered, fine grained, laminated, rock broken by sonic drill, strong rock (Lockatong formation). | | Top of bedrock: 67 ft bgs |
| 70–75 | 4.17 / 5 | 0 | NA | BEDROCK | | Gray mudstone (Argillite), unweathered, fine grained, laminated, medium strong, broken rock with one vertical fracture at approximately 73.5 to 75 ft bgs (Lockatong formation). Recovery = 83%; RQD = 0% (very poor rock). | | |
| 75–80 | 5 / 5 | 0 | NA | BEDROCK | | Gray mudstone (Argillite), unweathered, laminated, very strong rock, very wide fracture spacing, highly fractured and broken rock at approximately 75 to 76 ft bgs, competent rock at approximately 76 to 80 ft bgs with mechanical fractures (Lockatong formation). Recovery = 100%; RQD = 77% (good rock). | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; RQD = rock quality designation; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

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# Boring ID: 114-MW57D



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.70 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic/Water Rotary | **Coordinates (NJSPNAD83) x:** 610903.9 |
| **Date Started Drilling:** 12/23/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683215.5 |
| **Date Finished Drilling:** 1/4/2021 | **Core Size:** 6 in. sonic, 2 in. rock core | **Boring Total Depth:** 112.5 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** NA |
| **Physical Location:** Site 114 | | **Surface Elevation:** 12.7 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 81–84 | 5 / 5 | 0 | NA | BEDROCK | | Gray mudstone (Argillite), unweathered, laminated, very strong rock, very wide fracture spacing, 80 degree fractures at 80.2 to 82 ft bgs, calcite-filled, 60 degree fractures at approximately 80 to 80.1 ft bgs, 60 degree fractures at approximately 83 to 83.2 ft bgs, calcite-filled (Lockatong formation). Recovery = 100%; RQD = 83% (good rock). | | |
| 85–87 | 0 / 2 | 0 | NA | BEDROCK | | Roller bit the boring to clear broken rock pieces left behind from the sonic rig casing installation. | | |
| 87–90 | 4 / 4 | 0 | NA | BEDROCK | | Gray mudstone (Argillite), unweathered, laminated 20%, very strong rock, very wide fracture spacing, numerous mechanical fractures (Lockatong formation). Recovery = 100%; RQD = 100% (excellent rock). | | 5 7/8" open borehole in rock: 85-112.5 ft bgs |
| 90–91 | | | NA | BEDROCK | | Gray mudstone (Argillite), unweathered, laminated 20%, very strong rock, very wide fracture spacing, numerous mechanical fractures (Lockatong formation). Recovery = 100%; RQD = 100% (excellent rock). | | |
| 91–97 | 5.25 / 6 | 0 | NA | BEDROCK | | Gray mudstone (Argillite), unweathered, laminated, strong rock, weak rock at approximately 91.5 to 92 ft bgs and 93.8 to 95 ft bgs, numerous mechanical fractures (possible highly fractured) (Lockatong formation). Recovery = 88%; RQD = 63% (fair rock). | | |
| 97–99 | 5 / 5 | 0 | NA | BEDROCK | | Grey mudstone (Argillite), unweathered, laminated at 0 to 10 degrees, very strong rock, very wide fracture spacing. 0 degree fracture at approximately 97.8 to 97.9 ft bgs (Lockatong formation). Recovery = 100%; RQD = 98% (excellent rock). | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; RQD = rock quality designation; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

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# Boring ID: 114-MW57D



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.70 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic/Water Rotary | **Coordinates (NJSPNAD83) x:** 610903.9 |
| **Date Started Drilling:** 12/23/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683215.5 |
| **Date Finished Drilling:** 1/4/2021 | **Core Size:** 6 in. sonic, 2 in. rock core | **Boring Total Depth:** 112.5 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** NA |
| **Physical Location:** Site 114 | | **Surface Elevation:** 12.7 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 101 | 5 / 5 | 0 | NA | BEDROCK | | | | |
| 102 | | | | | | Grey mudstone (Argillite), unweathered, laminated at 0 to 10 degrees, very strong rock, very wide fracture spacing. 10 degree fractures at approximately 103.5 to 103.6 ft bgs, 10 degree fractures at approximately 105.2 to 105.3 ft bgs (Lockatong formation). Recovery = 100%; RQD = 97% (excellent rock). | | |
| 103 | | | | | | | | |
| 104 | | | | | | | | |
| 105 | 5 / 5 | 0 | NA | BEDROCK | | | | |
| 106 | | | | | | | | |
| 107 | | | | | | | | |
| 108 | | | | | | No recovery - core barrel lost a portion of the diamond bit down the hole and this left the core in the hole. Boring reamed to 112.5 ft bgs. End of boring at 112.5 ft bgs. | | |
| 109 | 0 / 3 | 0 | NA | BEDROCK | | | | |
| 110 | | | | | | | | |
| 111 | | | | | | | | |
| 112 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; RQD = rock quality designation; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

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# Boring ID: 114-MW61D



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 16.59 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic/Water Rotary | **Coordinates (NJSPNAD83) x:** 610873.2 |
| **Date Started Drilling:** 12/15/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683469.8 |
| **Date Finished Drilling:** 12/28/2020 | **Core Size:** 6 in. sonic, 2 in. rock core | **Boring Total Depth:** 109 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** NA |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.4 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 | 0 / 5 | 0 | DRY TO MOIST | FILL | | Soft dig to 5 ft bgs, brownish gray well graded GRAVEL, some silt, fine to coarse sand (DGA), very dense, dry to moist. | | 8-inch steel protective casing (stick up) |
| 3 | | | WET | FILL | | Brownish gray fine to coarse GRAVEL, trace to little silty sand (DGA), dense, wet. | | Riser set in grout |
| 5 | | | WET | FILL | | Brownish gray fine to coarse GRAVEL, trace to little silty sand (DGA), dense, wet. | | Grout: 0-85 ft bgs |
| 6 | 3 / 5 | 0 | WET | FILL | | Gray silty fine to medium SAND, little fine to medium gravel, dense, wet. | | 6-inch steel threaded casing: 0-85 ft bgs |
| 10 | 3 / 5 | 0 | WET | FILL | | Gray silty fine to medium SAND, little fine to medium gravel, dense, wet. | | |
| 14 | | | DAMP | PT | | Gray CLAY, trace silt, organic, fibrous (20% fibers), medium stiff, damp. | | |
| 15 | | | WET | SW | | Gray fine to coarse SAND, trace silt, loose, wet. | | |
| 16 | 5 / 5 | 0 | WET | PT | | Gray CLAY, trace silt, organic, fibrous (50%), medium stiff, wet. | | |
| 17 | | | WET | CL | | Gray CLAY, some silt, little fine sand, trace fine to coarse gravel, soft, wet. | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; RQD = rock quality designation; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

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732.564.3200 office telephone

# Boring ID: 114-MW61D



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 16.59 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic/Water Rotary | **Coordinates (NJSPNAD83) x:** 610873.2 |
| **Date Started Drilling:** 12/15/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683469.8 |
| **Date Finished Drilling:** 12/28/2020 | **Core Size:** 6 in. sonic, 2 in. rock core | **Boring Total Depth:** 109 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** NA |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.4 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 21 | 3 / 5 | 0 | WET | CL | | Gray CLAY, some silt, little fine sand, trace fine to coarse gravel, soft, wet. | | |
| 22 | | | | | | | | |
| 23 | | | WET | SP | | Gray to black fine SAND, trace silt, loose, odorous, poorly sorted, wet. | | |
| 24 | | | | | | | | |
| 25 | 4 / 5 | 0 | WET | SP | | Gray to black fine SAND, trace silt, loose, odorous, poorly sorted, wet. | | |
| 26 | | | | | | | | |
| 27 | | | WET | SP | | Reddish brown fine SAND, trace silt, loose, well sorted, wet. | | |
| 28 | | | | | | | | |
| 29 | | | | | | | | |
| 30 | 5 / 5 | 0 | WET | SP | | Reddish brown fine SAND, trace silt, loose, well sorted, wet. | | |
| 31 | | | | | | | | |
| 32 | | | | | | | | |
| 33 | | | | | | | | |
| 34 | | | | | | | | |
| 35 | 5 / 5 | 0 | WET | SP | | Reddish brown fine SAND, trace silt, loose, well sorted, wet. | | |
| 36 | | | DAMP | CL | | Reddish brown CLAY, trace silt, trace fine sand, stiff, damp. | | |
| 37 | | | | | | | | |
| 38 | | | | | | | | |
| 39 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; RQD = rock quality designation; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

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# Boring ID: 114-MW61D



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 16.59 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic/Water Rotary | **Coordinates (NJSPNAD83) x:** 610873.2 |
| **Date Started Drilling:** 12/15/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683469.8 |
| **Date Finished Drilling:** 12/28/2020 | **Core Size:** 6 in. sonic, 2 in. rock core | **Boring Total Depth:** 109 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** NA |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.4 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 41 | | | DAMP | CL | | Reddish brown CLAY, trace silt, trace fine sand, stiff, damp. | | |
| 42 | 4.5 / 5 | 0 | WET | SP | | Reddish brown fine SAND, trace silt, very loose, well sorted, wet. Yellow coloration to water. | | |
| 45 | 5 / 5 | 0 | WET | SP | | Reddish brown fine SAND, trace silt, very loose, poorly graded, wet. Yellow coloration to water. | | |
| 48 | | | WET | SM | | Reddish brown fine to medium SAND, some silt, little fine to medium subrounded gravel, very dense, wet (Basal Till). | | |
| 50 | 4 / 5 | 0 | WET | SM | | Reddish brown fine to medium SAND, some silt, little fine to medium subrounded gravel, very dense, wet (Basal Till). | | |
| 55 | 5 / 5 | 0 | WET | SM | | Reddish brown fine to medium SAND, some silt, little fine to coarse subangular to subrounded gravel, very dense, wet (Basal Till). | | |
| 59 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; RQD = rock quality designation; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

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# Boring ID: 114-MW61D



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 16.59 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic/Water Rotary | **Coordinates (NJSPNAD83) x:** 610873.2 |
| **Date Started Drilling:** 12/15/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683469.8 |
| **Date Finished Drilling:** 12/28/2020 | **Core Size:** 6 in. sonic, 2 in. rock core | **Boring Total Depth:** 109 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** NA |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.4 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 61 | 4 / 5 | 0 | WET | SM | | Reddish brown fine to medium SAND, some silt, little fine to coarse subangular to subrounded gravel, very dense, wet (Basal Till). | | |
| 62 | | | | | | | | |
| 63 | | | WET | BEDROCK | | Gray diabase, highly weathered, friable, medium grain size, very weak rock, wet. | | Top of bedrock: 63 ft bgs |
| 64 | | | | | | | | |
| 65 | 5 / 5 | 0 | WET | BEDROCK | | Gray diabase, highly weathered (rock in clay matrix), friable, medium grain size, very weak rock, wet. | | |
| 66 | | | | | | | | |
| 67 | | | | | | | | |
| 68 | | | | | | | | |
| 69 | | | NA | BEDROCK | | Gray diabase, moderately weathered, medium grain size, very medium strong rock. | | |
| 70 | 4.67 / 5 | 0 | NA | BEDROCK | | Gray diabase, mederately weathered to highly weathered, medium grain size, weak rock, close fracture spacing. 50 degree fracture at approximately 71.5 to 71.7 ft bgs, calcite coated, fracture at approximately 72 to 72.5 ft bgs, broken clay disintegrated, 60 degree fracture at approximately 73.5 to 73.8 ft bgs, 60 degree fracture at approximately 73.8 to 74 ft bgs, fracture at approximately 74.5 to 74.8 ft bgs, broken clay disintegrated. Recovery = 93%; RQD = 38% (poor rock). | | |
| 71 | | | | | | | | |
| 72 | | | | | | | | |
| 73 | | | | | | | | |
| 74 | | | | | | | | |
| 75 | 4.17 / 5 | 0 | NA | BEDROCK | | Grey diabase, moderately weathered to highly weathered, medium grained, weak to very weak rock, close to very close fracture spacing, broken rock at approximately 75 to 77 ft bgs, 0 degree fracture at approximately 77.8 to 77.9 ft bgs, 70 degree fracture at approximately 74.4 to 74.8 ft bgs, numerous mechanical fractures. Recovery = 83%; RQD = 53% (fair rock) | | |
| 76 | | | | | | | | |
| 77 | | | | | | | | |
| 78 | | | | | | | | |
| 79 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; RQD = rock quality designation; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

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# Boring ID: 114-MW61D



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 16.59 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic/Water Rotary | **Coordinates (NJSPNAD83) x:** 610873.2 |
| **Date Started Drilling:** 12/15/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683469.8 |
| **Date Finished Drilling:** 12/28/2020 | **Core Size:** 6 in. sonic, 2 in. rock core | **Boring Total Depth:** 109 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** NA |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.4 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 81–84 | 4.83 / 5 | 0 | NA | BEDROCK | | Gray diabase, moderately weathered, medium grained, weak to very weak rock, close to very close fracture spacing, 70 degree fracture at approximately 80.6 to 80.8 ft bgs, 70 degree fracture at approximately 81.2 to 81.3 ft bgs, 60 degree fracture at approximately 82.9 to 83.0 ft bgs, 70 degree fracture at approximately 83.5 to 84.0 ft bgs, 80 degree fracture at approximately 83.4 to 85.0 ft bgs, numerous mechanical fractures. Recovery = 97%; RQD = 80% (fair to good rock) | | |
| 85–89 | 0.08 / 5 | 0 | NA | BEDROCK | | Gray diabase, moderately weathered to highly weathered, medium grained, weak to very weak rock, highly fractured, washed out rock at approximately 85 to 88 ft bgs, broken rock at approximately 88 to 90 ft bgs. Recovery = 0.02%; RQD = 0% (very poor rock). | | 5 7/8" open borehole in rock: 85-109 ft bgs |
| 90–96 | 1 / 7 | 0 | NA | BEDROCK | | Gray diabase, highly weathered, medium grained, weak to very weak rock, highly fractured, washed out at approximately 90 to 96 ft bgs, broken rock at approximately 96 to 97 ft bgs. Recovery = 14%; RQD = 0% (very poor rock). | | |
| 97–99 | 2 / 3 | 0 | NA | BEDROCK | | Gray diabase, moderately to highly weathered, medium grained, weak to very weak rock, highly fractured, washed out at approximately 97 to 98 ft bgs, broken rock at approximately 98 to 100 ft bgs. Recovery = 67%; RQD = 0% (very poor rock). | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; RQD = rock quality designation; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

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# Boring ID: 114-MW61D



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 16.59 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic/Water Rotary | **Coordinates (NJSPNAD83) x:** 610873.2 |
| **Date Started Drilling:** 12/15/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683469.8 |
| **Date Finished Drilling:** 12/28/2020 | **Core Size:** 6 in. sonic, 2 in. rock core | **Boring Total Depth:** 109 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** NA |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.4 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 101 | | | | | | Gray diabase, moderately to highly weathered, medium grained, weak to very weak rock, highly fractured, washed out at approximately 100 to 103 ft bgs, broken rock at approximately 103 to 105 ft bgs. Recovery = 40%; RQD = 0% (very poor rock). | | |
| 102 | | | | | | | | |
| | 2 / 5 | 0 | NA | BEDROCK | | | | |
| 103 | | | | | | | | |
| 104 | | | | | | | | |
| 105 | | | | | | Gray diabase, highly weathered, medium grained, highly fractured, pitted, discolored, washed out at approximately 105 to 106.5 ft bgs, broken rock at approximately 106.5 to 110 ft bgs. Recovery = 30%; RQD = 0% (very poor rock). End of boring at 109 ft bgs. | | |
| 106 | | | | | | | | |
| 107 | | | NA | BEDROCK | | | | |
| | 3.5 / 5 | 0 | | | | | | |
| 108 | | | | | | | | |
| 109 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; RQD = rock quality designation; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

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# Boring ID: 114-MW66D



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 16.20 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic/Water Rotary | **Coordinates (NJSPNAD83) x:** 610941.4 |
| **Date Started Drilling:** 12/9/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683423.4 |
| **Date Finished Drilling:** 12/30/2020 | **Core Size:** 6 in. sonic, 2 in. rock core | **Boring Total Depth:** 115 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** NA |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.1 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 | 0 / 5 | 0 | DRY TO MOIST | FILL | | Soft dig to 5 ft bgs, brown gray well graded GRAVEL, some silty sand, very dense (DGA), dry to moist. | | 8-inch steel protective casing (stick up) |
| 3 | | | WET | FILL | | Gray fine to coarse GRAVEL, trace to little silty sand, dense (DGA), wet. | | Riser set in grout |
| 5 | 1 / 5 | 0 | WET | FILL | | Gray fine to coarse SAND, little silt, trace cobbles, trace fine to coarse gravel, loose (DGA), wet. | | Grout: 0-90 ft bgs<br>6-inch steel threaded casing: 0-90 ft bgs |
| 10 | 3 / 5 | 0 | WET | FILL | | Gray fine to coarse SAND, some silt, little fine to coarse angular gravel, loose to medium dense (DGA), wet. | | |
| 15 | 3 / 5 | 0 | WET | FILL | | Gray fine to coarse SAND, some silt, little fine to medium angular gravel, loose to medium dense (DGA), wet. | | |
| 18 | | | DAMP | PT | | PEAT, fibrous, organic, 50% fibers, soft to medium stiff, damp. | | |
| 19 | | | DAMP | CL | | CLAY, organic, trace silt, medium stiff, damp | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; RQD = rock quality designation; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

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# Boring ID: 114-MW66D



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 16.20 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic/Water Rotary | **Coordinates (NJSPNAD83) x:** 610941.4 |
| **Date Started Drilling:** 12/9/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683423.4 |
| **Date Finished Drilling:** 12/30/2020 | **Core Size:** 6 in. sonic, 2 in. rock core | **Boring Total Depth:** 115 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** NA |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.1 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 21 | | | DAMP | CL | | Gray CLAY, trace silt, organic, medium stiff, damp. | | |
| 22 | 3 / 5 | 0 | WET | SW | | Reddish brown fine to coarse SAND, little fine to coarse, subrounded gravel, little silt, wet. | | |
| 23 | | | WET | SP | | Reddish brown fine to medium SAND, trace silt, wet. | | |
| 24 | | | | | | | | |
| 25 | 4 / 5 | 0 | WET | SM | | Reddish brown fine SAND, some silt, poorly graded, trace gravel, loose, wet. Yellow coloration to water. | | |
| 26 | | | | | | | | |
| 27 | | | | | | | | |
| 28 | | | | | | | | |
| 29 | | | WET | ML | | Reddish brown SILT, some fine to coarse sand, soft, wet. | | |
| 30 | 3 / 5 | 0 | WET | SM | | Reddish brown fine to medium SAND, some silt, poorly graded, loose, wet. Yellow coloration to water. | | |
| 31 | | | | | | | | |
| 32 | | | | | | | | |
| 33 | | | | | | | | |
| 34 | | | | | | | | |
| 35 | 4 / 5 | 0 | WET | ML | | Reddish brown SILT, some fine sand, soft, wet. | | |
| 36 | | | WET | SM | | Reddish brown fine to medium SAND, some silt, poorly graded, medium dense, wet. Yellow coloration to water. | | |
| 37 | | | | | | | | |
| 38 | | | DAMP | CL | | Reddish brown to gray CLAY, trace silt, medium stiff, damp. | | |
| 39 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; RQD = rock quality designation; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

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# Boring ID: 114-MW66D



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 16.20 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic/Water Rotary | **Coordinates (NJSPNAD83) x:** 610941.4 |
| **Date Started Drilling:** 12/9/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683423.4 |
| **Date Finished Drilling:** 12/30/2020 | **Core Size:** 6 in. sonic, 2 in. rock core | **Boring Total Depth:** 115 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** NA |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.1 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 41 | 4 / 5 | 0 | WET | SM | | Reddish brown fine to medium SAND, some silt, poorly graded, medium dense, wet. | | |
| 42 | | | DAMP | CL | | Reddish brown CLAY, trace silt, medium stiff, damp. | | |
| 43 | | | | | | | | |
| 44 | | | WET | ML | | Reddish brown SILT, little fine sand, trace clay soft, wet. | | |
| 45 | 4 / 5 | 0 | WET | ML | | Reddish brown SILT, little fine sand, trace clay soft, wet. | | |
| 46 | | | WET | CL | | Reddish brown CLAY, trace silt, medium stiff, wet. | | |
| 47 | | | WET | SW | | Reddish brown fine to coarse SAND, some fine to coarse angular gravel, little silt, poorly sorted (Basal Till), wet. | | |
| 48 | | | | | | | | |
| 49 | | | | | | | | |
| 50 | 4 / 5 | 0 | WET | SP | | Reddish Brown fine to medium SAND, trace silt, loose (Basal Till), wet. Yellow coloration to water. | | |
| 51 | | | WET | SW | | Reddish brown fine to coarse SAND, some fine to coarse angular gravel, little silt, poorly sorted, dense (Basal Till), wet. | | |
| 52 | | | | | | | | |
| 53 | | | | | | | | |
| 54 | | | | | | | | |
| 55 | 4 / 5 | 0 | WET | SW | | Reddish brown fine to coarse SAND, some fine to coarse subangular gravel, little silt, poorly sorted, dense (Basal Till), wet. | | |
| 56 | | | | | | | | |
| 57 | | | | | | | | |
| 58 | | | | | | | | |
| 59 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; RQD = rock quality designation; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

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# Boring ID: 114-MW66D



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 16.20 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic/Water Rotary | **Coordinates (NJSPNAD83) x:** 610941.4 |
| **Date Started Drilling:** 12/9/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683423.4 |
| **Date Finished Drilling:** 12/30/2020 | **Core Size:** 6 in. sonic, 2 in. rock core | **Boring Total Depth:** 115 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** NA |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.1 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 61 | | | | | | | | |
| 62 | 3 / 5 | 0 | WET | SW | | Reddish brown fine to coarse SAND, some fine to coarse gravel, little silt, very dense (Basal Till), wet. | | |
| 63 | | | | | | | | |
| 64 | | | | | | | | |
| 65 | | | WET | SW | | Reddish brown fine to coarse SAND, some fine to medium gravel, little silt, medium dense (Basal Till), wet. | | |
| 66 | | | | | | | | |
| 67 | 4 / 5 | 0 | WET | SW | | Reddish brown fine to coarse SAND, some fine to coarse subangular gravel, trace cobbles, trace silt, very dense (Basal Till), wet. | | |
| 68 | | | | | | | | |
| 69 | | | WET | CL | | Reddish brown CLAY, some silt, trace fine sand, medium stiff, wet. | | |
| 70 | | | | | | | | |
| 71 | | | | | | Reddish brown fine to coarse SAND, some fine to coarse subangular gravel, trace silt, trace cobbles, very dense (Basal Till) wet. | | |
| 72 | 3 / 5 | 0 | WET | SW | | | | |
| 73 | | | | | | | | |
| 74 | | | WET | BEDROCK | | Diabase boulder within Basal Till. | | |
| 75 | | | | | | Reddish brown fine to coarse SAND, little fine to coarse gravel, trace to little silt, very dense (Basal Till), wet. | | |
| 76 | | | WET | SM | | | | |
| 77 | 4 / 5 | 0 | NA | BEDROCK | | Gray mudstone (Argillite), highly weathered (rock in clay matrix), fine grained, laminated, weak rock (Lockatong formation). | | Top of bedrock: 77 ft bgs |
| 78 | | | | | | | | |
| 79 | | | NA | BEDROCK | | Gray mudstone (Argillite), highly weathered (rock in clay matrix), fine grained, laminated, strong rock (Lockatong formation). | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; RQD = rock quality designation; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

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# Boring ID: 114-MW66D



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 16.20 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic/Water Rotary | **Coordinates (NJSPNAD83) x:** 610941.4 |
| **Date Started Drilling:** 12/9/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683423.4 |
| **Date Finished Drilling:** 12/30/2020 | **Core Size:** 6 in. sonic, 2 in. rock core | **Boring Total Depth:** 115 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** NA |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.1 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 81–84 | 3.33 / 5 | 0 | NA | BEDROCK | | Gray mudstone (Argillite), unweathered, fine grained, laminated, strong rock, numerous vertical healed fractures, moderate fracture spacing (Lockatong formation). 80 degree calcite coated fracture at approximately 80.5 to 80.75 ft bgs, 40 degree calcite coated fracture at approximately 80.75 to 80.80 ft bgs, 60 degree calcite coated fracture at approximately 80.3 to 80.6 ft bgs, 60 degree calcite coated fracture at approximately 83.3 to 83.6 ft bgs, 60 degree epidote coated fracture at approximately 84.5 to 84.6 ft bgs, vertical epidote coated fracture at approximately 84.5 to 85 ft bgs. Recovery = 100%; RQD = 67% (fair rock). | | |
| 85–88 | 5 / 5 | 0 | NA | BEDROCK | | Gray mudstone (Argillite), unweathered, pitted at approximately 85.6 to 87.6 ft bgs, laminated, strong rock, moderate fracture spacing, fine grained (Lockatong formation). 70 degree quartz coated fracture at approximately 85.0 to 85.6 ft bgs, 0 degree quartz coated fracture at approximately 86.6 to 86.8 ft bgs, 70 degree quartz coated fracture at approximately 87.1 to 87.3 ft bgs, 50 degree quartz coated fracture at approximately 89.6 to 89.8 ft bgs. Recovery = 100%; RQD = 72% (fair rock). | | |
| 90–93 | 4.42 / 5 | 0 | NA | BEDROCK | | Gray mudstone (Argillite), unweathered, laminated, strong rock, very wide fracture spacing, fine grained, broken pieces at approximately 90-90.5 ft bgs, several mechanical breaks (Lockatong formation). Recovery = 100%; RQD = 88% (good rock). | | 5 7/8" open borehole in rock: 90-115 ft bgs |
| 95–98 | 5 / 5 | 0 | NA | BEDROCK | | Gray mudstone (Argillite), unweathered, laminated, strong rock, very wide fracture spacing, fine grained, mechanical breaks only (Lockatong formation). Recovery = 100%; RQD = 100% (excellent rock). | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; RQD = rock quality designation; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

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# Boring ID: 114-MW66D



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 16.20 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic/Water Rotary | **Coordinates (NJSPNAD83) x:** 610941.4 |
| **Date Started Drilling:** 12/9/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683423.4 |
| **Date Finished Drilling:** 12/30/2020 | **Core Size:** 6 in. sonic, 2 in. rock core | **Boring Total Depth:** 115 ft |
| **Logged By:** E. Acs | **Project Manager:** Shannon Gleason | **Depth to Water:** NA |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.1 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 101 | 5 / 5 | 0 | NA | BEDROCK | | Gray mudstone (Argillite), unweathered, 20% laminated, strong rock, very wide fracture spacing, fine grained, 20 degree fracture at approximately 101.8 to 102 ft bgs, numerous mechanical fractures (Lockatong formation). Recovery = 100%; RQD = 95% (excellent rock). | | |
| 105 | 4.92 / 5 | 0 | NA | BEDROCK | | Gray mudstone (Argillite), unweathered, 20% laminated, strong rock, very wide fracture spacing, fine grained (Lockatong formation), 20 degree fracture at approximately 105.7 to 105.8 ft bgs, 10 degree fracture at approximately 107.2 to 107.4 ft bgs, numerous mechanical fractures. Recovery = 98%; RQD = 93% (excellent rock). | | |
| 110 | 4.17 / 5 | 0 | NA | BEDROCK | | Gray mudstone (Argillite), unweathered, 20% laminated, strong rock, very wide fracture spacing, fine grained, mechanical breaks only (Lockatong formation). Recovery = 97%; RQD = 97% (excellent rock). End of boring at 115 ft bgs. | | |
| 115 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; RQD = rock quality designation; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

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# Boring ID: 114-MW45C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 13.22 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611411.8 |
| **Date Started Drilling:** 10/1/2019 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683675 |
| **Date Finished Drilling:** 10/2/2019 | **Core Size:** 3 in | **Boring Total Depth:** 76 ft |
| **Logged By:** J. Harshman | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 11.5 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 1–10 | 3 / 10 | 0 | DRY | FILL | | Dark brown SAND, fine to coarse gravel, DGA, loose (FILL). | | Riser set in grout<br>Grout: 0-64 ft bgs<br>2-inch Schedule 40 PVC riser: 0-67 ft bgs |
| 10–14 | 8 / 10 | 0 | | FILL | | Black DGA (FILL) material consisting of fine to coarse GRAVEL, loose. | | |
| 14–15 | | | | PT | | Brown PEAT, highly organic, peat odor (meadow mat). | | |
| 15–18 | | | DAMP | SM | | Gray very fine silty SAND, medium dense, damp. | | |
| 18–19 | | | DAMP | SP | | Reddish brown, very fine SAND (poorly graded), with little fine to coarse gravel, medium dense, damp. | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW45C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 13.22 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611411.8 |
| **Date Started Drilling:** 10/1/2019 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683675 |
| **Date Finished Drilling:** 10/2/2019 | **Core Size:** 3 in | **Boring Total Depth:** 76 ft |
| **Logged By:** J. Harshman | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 11.5 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 21 | | | | | | Reddish brown, very fine SAND (poorly graded), with little fine to coarse sand from 20' to 22', loose to medium dense, wet. | | |
| 22 | | | | | | | | |
| 23 | | | | | | | | |
| 24 | | | | | | | | |
| 25 | 7 / 10 | 0 | WET | SP | | | | |
| 26 | | | | | | | | |
| 27 | | | | | | | | |
| 28 | | | | | | | | |
| 29 | | | | | | | | |
| 30 | | | | | | Reddish brown, very fine SAND (poorly graded), medium dense, wet. Yellow water observed from soil core. | | |
| 31 | | | | | | | | |
| 32 | | | | | | | | |
| 33 | | | | | | | | |
| 34 | | | | | | | | |
| 35 | 6 / 10 | 0 | WET | SP | | | | |
| 36 | | | | | | | | |
| 37 | | | | | | | | |
| 38 | | | | | | | | |
| 39 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW45C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 13.22 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611411.8 |
| **Date Started Drilling:** 10/1/2019 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683675 |
| **Date Finished Drilling:** 10/2/2019 | **Core Size:** 3 in | **Boring Total Depth:** 76 ft |
| **Logged By:** J. Harshman | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 11.5 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 41 | | | | | | Reddish brown, very fine SAND (poorly graded) with trace silt, loose to medium dense, wet. Yellow water observed in soil core. | | |
| 42 | | | | | | | | |
| 43 | | | | | | | | |
| 44 | | | | | | | | |
| 45 | 7 / 10 | 0 | WET | SP | | | | |
| 46 | | | | | | | | |
| 47 | | | | | | | | |
| 48 | | | | | | | | |
| 49 | | | | | | | | |
| 50 | | | | | | Reddish brown CLAY, high plasticity, stiff, damp. | | |
| 51 | | | | | | | | |
| 52 | | | DAMP | CH | | | | |
| 53 | | | | | | Reddish brown, very fine SAND/silty sand (poorly graded), medium dense, wet. Trace coarse gravel and fine to medium sand (slightly denser) observed from 59.5' to 60'. | | |
| 54 | | | | | | | | |
| 55 | 9 / 10 | 0 | | | | | | |
| 56 | | | | | | | | |
| 57 | | | WET TO DAMP | SM | | | | |
| 58 | | | | | | | | |
| 59 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW45C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 13.22 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611411.8 |
| **Date Started Drilling:** 10/1/2019 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683675 |
| **Date Finished Drilling:** 10/2/2019 | **Core Size:** 3 in | **Boring Total Depth:** 76 ft |
| **Logged By:** J. Harshman | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 11.5 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 61 | | | | | | Reddish brown to brown, fine to medium poorly graded SAND, loose, wet. | | |
| 62 | | | WET | SP | | | | |
| 63 | | | | | | | | |
| 64 | | | | | | | | Bentonite Seal: 64-66 ft bgs |
| 65 | / 10 | 0 | | | | Brown, fine to coarse SAND and fine to coarse gravel, medium dense to dense, well graded (Basal Till), damp. | | |
| 66 | | | | | | | | |
| 67 | | | SLIGHTLY DAMP | SW-GW | | | | #00 Sand: 66-66.5 ft bgs; #0 Filter Sand: 66.5-71.5 ft bgs |
| 68 | | | | | | | | 2-inch Schedule 40 PVC screen: 67-71 ft bgs |
| 69 | | | | | | | | |
| 70 | | | | | | | | |
| | | | DAMP | SW | | Gray, tighly compressed, very dense SAND and angular gravel, some subangular pieces (Basal Till), damp. | | |
| 71 | | | | | | | | |
| 72 | | | | | | Dark gray to black siltstone and mudstone (Lockatong Formation). End of boring at 76 ft. | | |
| 73 | 5 / 6 | 0 | | | | | | |
| 74 | | | DRY | BEDROCK | | | | Bentonite Seal: 71.5-76 ft bgs |
| 75 | | | | | | | | |
| 76 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW48C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 16.2 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611163.8 |
| **Date Started Drilling:** 3/19/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683919.4 |
| **Date Finished Drilling:** 3/19/2020 | **Core Size:** 3 in | **Boring Total Depth:** 64 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 15.0 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 | 3.6 / 10 | 0.0 | DRY | FILL | | Soft dig to 5 ft bgs; Grey GRAVEL, silty sand, little fine to coarse gravel (DGA), dry. | | Riser set in grout |
| 5 | | | DAMP | FILL | | Yellowish Brown (10YR 5/4) silty SAND, fine to medium sand, little fine gravel, damp. | | Grout: 0-49 ft bgs |
| 7 | | | DAMP | FILL | | Brown (10YR 4/3) silty SAND, fine to coarse sand, little gravel, loose, damp. | | |
| 10 | 6.6 / 10 | | DAMP | FILL | | Black (10 YR 2/1) silty SAND, fine to coarse sand, little gravel, damp. | | 2-inch Schedule 40 PVC Riser: 0-53 ft bgs |
| 15 | | | DAMP | OH-PT | | Black organic soil with brown fibers (PEAT), damp. | | |
| 16 | | | DAMP | ML | | Gray (7.5YR 5/1) SILT with few brown fibers, grades into clayey silt, damp. | | |
| 17 | | | DAMP | ML | | Gray (7.5YR 5/1) clayey SILT, grades into greenish-gray (10Y 5/1) clayey silt, fine sand, damp. | | 20ft: 20% fines (silt/clay) |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW48C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 16.2 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611163.8 |
| **Date Started Drilling:** 3/19/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683919.4 |
| **Date Finished Drilling:** 3/19/2020 | **Core Size:** 3 in | **Boring Total Depth:** 64 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 15.0 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|
| 20 | | | WET | ML | Dark Gray (2.5Y 4/1) clayey SILT, little fine to coarse gravel, loose, wet. | | |
| 21–24 | | | | | Dark greyish brown (10YR 4/2) to brown (7.5YR 4/4), poorly graded SAND with silt, fine sand, little medium sand, silt, loose, wet. | | |
| 25 | 4.3 / 10 | | WET | SP-SM | | | 25ft: 5-10% fines (silt/clay) |
| 26–29 | | | | | | | |
| 30 | | | WET | SP-SM | Reddish brown (5YR 4/4) to strong brown (7.5YR 5/6), poorly graded SAND with silt, fine to medium sand, some silt, loose, wet. | | |
| 31 | | | WET | GW | Widely graded GRAVEL, fine to coarse gravel, some sand, wet. | | |
| 31 | | | WET | SM | Reddish brown silty SAND, fine sand, loose, wet. | | |
| 32–34 | | | | | Reddish brown (7.5YR 5/6) to yellowish red (5YR 4/6), poorly graded SAND with silt, fine sand, little medium sand, trace coarse sand, little subrounded fine to coarse gravel, loose, wet. | | |
| 35 | 5 / 10 | | | | | | 35ft: 10-15% fines (silt/clay) |
| 35–36 | | | WET | SP-SM | | | |
| 37–39 | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW48C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 16.2 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611163.8 |
| **Date Started Drilling:** 3/19/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683919.4 |
| **Date Finished Drilling:** 3/19/2020 | **Core Size:** 3 in | **Boring Total Depth:** 64 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 15.0 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 41 | | | | | | | | |
| 42 | | | | | | | | |
| 43 | | | | | | | | |
| 44 | | | WET | SP-SM | | | | |
| 45 | 4.8 / 10 | | | | | | | |
| 46 | | | | | | | | |
| 47 | | | | | | | | |
| 48 | | | DAMP | SW-SC | | Reddish brown (5YR 5/3) clayey SAND, fine to coarse sand, little angular fine to coarse gravelclay, dense, compacted, damp (Basal Till). | | |
| 49 | | | | | | | | 49ft: 30% fines (silt/clay) |
| 50 | | | | | | Reddish brown (5YR 5/3) clayey SAND, fine to coarse sand, little subrounded to subangular fine to coarse gravel, clay, damp (becomes dry to damp at 57.5' to 58') (Basal Till). Boulder at 52 ft bgs. | | 50ft: 20% fines (silt/clay) |
| 51 | | | | | | | | #00 Sand: 49-51 ft bgs |
| 52 | | | | | | | | |
| 53 | | | | | | | | |
| 54 | | | DAMP | SW-SC | | | | #0 Filter Sand: 51-58 ft bgs |
| 55 | 4.4 / 10 | | | | | | | 2-inch Schedule 40 PVC screen: 53-57 ft bgs |
| 56 | | | | | | | | |
| 57 | | | | | | | | |
| 58 | | | | | | Grey Diabase, powdered and broken pieces of rock. | | |
| 59 | | | | BEDROCK | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW48C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 16.2 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611163.8 |
| **Date Started Drilling:** 3/19/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683919.4 |
| **Date Finished Drilling:** 3/19/2020 | **Core Size:** 3 in | **Boring Total Depth:** 64 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 15.0 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 61 | | | | BEDROCK | | Grey Diabase (pulverized by sonic drilling). End of boring at 64 ft. | | Bentonite Seal: 58-64 ft bgs |
| 62 | | | | | | | | |
| 63 | | | | | | | | |
| 64 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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732.564.3200 office telephone

# Boring ID: 114-MW49C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 16.52 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611378.1 |
| **Date Started Drilling:** 3/20/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683872 |
| **Date Finished Drilling:** 3/20/2020 | **Core Size:** 3 in | **Boring Total Depth:** 75 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.6 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 1–5 | | | DRY | FILL | | Soft dig to 5 ft bgs; Gray silty SAND, fine to coarse sand, fine to coarse gravel (large gravel up to 2.5 inches across), highly compacted, dry (DGA). | | Riser set in grout |
| 5–10 | 2.6 / 10 | 0.0 | DRY | FILL | | Yellowish brown (10YR 5/4) widely graded SAND with silt, few subrounded fine to coarse sand, loose, dry. | | Grout: 0-60.5 ft bgs |
| 10–15 | 3.8 / 10 | 0.0 | WET | FILL | | Black (10YR 2/1) and dark gray (2.5Y 4/1) widely graded GRAVEL, fine to coarse gravel, some fine to coarse sand, little silt, wet. | | 2-inch Schedule 40 PVC riser: 0-64.5 ft bgs |
| 15–19 | | | WET | FILL | | Black (10YR 2/1) and dark gray (2.5Y 4/1) widely graded GRAVEL, fine to coarse gravelsome fine to coarse sand, little silt, wet. | | |
| | | | WET | FILL | | FILL, begins to grade into weak red (2.5YR 4/2) widely | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW49C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 16.52 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611378.1 |
| **Date Started Drilling:** 3/20/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683872 |
| **Date Finished Drilling:** 3/20/2020 | **Core Size:** 3 in | **Boring Total Depth:** 75 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.6 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 21 | | | WET | FILL | | graded GRAVEL, little fine to coarse sand, few silt, wet. | | |
| 22 | | | WET | SW | | Reddish brown (5YR 4/3) widely graded SAND, fine to medium sand, few coarse sand and trace silt, loose, wet. | | |
| 23 | | | | | | Red (2.5YR 4/6) silty SAND, fine sand, loose, wet. | | 22.5 ft: 15-20% fines (silt/clay) |
| 24 | | | | | | | | |
| 25 | 6 / 10 | 0.0 | | | | | | |
| 26 | | | WET | SM | | | | |
| 27 | | | | | | | | |
| 28 | | | | | | | | |
| 29 | | | | | | | | |
| 30 | | | | | | Red (2.5YR 4/6) poorly graded SAND with silt, fine sand, few silt, loose, wet. | | 30 ft: 15% fines (silt/clay) |
| 31 | | | | | | | | |
| 32 | | | WET | SP-SM | | | | |
| 33 | | | | | | | | |
| 34 | | | | | | Red (2.5YR 4/6) poorly graded SAND with silt, fine sand, silt, loose, wet. | | |
| 35 | 5.3 / 10 | 0.0 | WET | SP-SM | | | | |
| 36 | | | | | | | | |
| 37 | | | WET | SP | | Red (2.5YR 4/6) poorly graded SAND, fine sand, trace silt, loose, sharp contact with underlying clay, wet. | | 37 ft: 5% fines (silt/clay) |
| 38 | | | | | | | | |
| 39 | | | WET | CH | | Reddish brown (2.5YR 4/4) and reddish gray (2.5YR 5/1) fat CLAY, laminated layers of clay and silt, compact, malleable, high plasticity, wet to moist. | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW49C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 16.52 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611378.1 |
| **Date Started Drilling:** 3/20/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683872 |
| **Date Finished Drilling:** 3/20/2020 | **Core Size:** 3 in | **Boring Total Depth:** 75 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.6 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 41 | | | | | | | | |
| 42 | | | | | | | | |
| 43 | | | | | | | | |
| 44 | | | WET | CH | | | | |
| 45 | 4.4 / 10 | 0.0 | | | | | | |
| 46 | | | | | | | | |
| 47 | | | | | | | | |
| 48 | | | WET | SC | | Reddish brown (2.5YR 4/4) clayey SAND, fine sand, loose. | | |
| 49 | | | WET | SP | | Poorly graded SAND, fine to medium sand, loose. | | |
| 50 | | | | | | Reddish brown (2.5YR 4/3) clayey SAND, fine to coarse sand, little subangular fine to coarse gravel (up to 2.5 inch across), very hard, dense and compacted, damp (Basal Till). | | |
| 51 | | | | | | | | |
| 52 | | | | | | | | |
| 53 | | | | | | | | |
| 54 | | | | | | | | |
| 55 | 6 / 10 | 0.0 | DAMP | SW-SC | | | | 55 ft: 25% fines (silt/clay) |
| 56 | | | | | | | | |
| 57 | | | | | | | | |
| 58 | | | | | | | | |
| 59 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 16.52 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611378.1 |
| **Date Started Drilling:** 3/20/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683872 |
| **Date Finished Drilling:** 3/20/2020 | **Core Size:** 3 in | **Boring Total Depth:** 75 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.6 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 61 | | | | | | Dark reddish gray (5YR 4/2) poorly graded SAND with clay, fine to coarse angular sand with little fine to coarse gravel, varies from loose to hard, wet to moist (Basal Till). | | #00 Sand Seal: 60.5-62.5 ft bgs |
| 62 | | | | | | | | |
| 63 | | | MOIST | SC | | | | #0 Filter Sand: 62.5-70 ft bgs |
| 64 | | | | | | | | |
| 65 | 3 / 10 | 0.0 | | SP | | Interbedded SAND, poorly graded sand, fine to medium sand (Basal Till). | | 65 ft: 10% fines (silt/clay) |
| 66 | | | | | | Dark reddish gray (5YR 4/2) poorly graded SAND with clay, fine to coarse angular sand with little fine to coarse gravel, varies from loose to hard, wet to moist (Basal Till). | | 2-inch Schedule 40 PVC screen: 64.5-69.5 ft bgs |
| 67 | | | | | | | | |
| 68 | | | MOIST | SC | | | | |
| 69 | | | | | | | | |
| 70 | | | | | | Weathered mudstone and siltstone, broken rock in clay matrix, wet (Lockatong Formation). | | Bentonite Seal: 70-75 ft bgs |
| 71 | | | WET | BEDROCK | | | | |
| 72 | / 5 | 0.0 | | | | | | |
| 73 | | | | | | Weathered mudstone and siltstone, wet (Lockatong Formation). End of boring at 75 ft. | | |
| 74 | | | WET | BEDROCK | | | | |
| 75 | | | | | | | | |

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**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW50C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.36 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611043.1 |
| **Date Started Drilling:** 3/30/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683769.8 |
| **Date Finished Drilling:** 3/31/2020 | **Core Size:** 3 in | **Boring Total Depth:** 70 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 13.4 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 – 3 | 5 / 5 | 0 | DRY | FILL | | Soft dig to 5 ft bgs; Dark gray (7.5YR 4/1) silty SAND, little fine to coarse GRAVEL, dry (DGA). | | |
| 3 – 5 | | | DRY TO WET | FILL | | Gray to black angular fine to coarse GRAVEL, dry. (Note: Gravel collapsing into borehole) (FILL). Groundwater at 3.5 ft bgs. | | Riser set in grout |
| 5 – 7 | 3 / 5 | 0 | WET | FILL | | Dark gray (7.5YR 4/1) to black silty SAND, little fine to coarse GRAVEL, loose, few 4" long sections, wet (FILL). | | |
| 7 – 10 | | | WET | FILL | | Gray (7.5YR 5/1) silty SAND, little fine to coarse GRAVEL, loose (FILL). | | |
| 10 – 15 | 4 / 10 | 0 | WET | FILL | | Gray (7.5YR 5/1) silty SAND, little fine to coarse GRAVEL, loose (FILL). | | |
| 15 – 19 | | | MOIST | CH | | Mottled weak red (10YR 4/2) to dark gray/light greenish gray, sandy CLAY with few to little sub-angular fine to coarse GRAVEL, very firm, wet to moist. | | Grout 0-53 ft bgs |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.36 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611043.1 |
| **Date Started Drilling:** 3/30/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683769.8 |
| **Date Finished Drilling:** 3/31/2020 | **Core Size:** 3 in | **Boring Total Depth:** 70 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 13.4 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 21 | | | WET | SC-SM | | Reddish brown (5YR 5/3) poorly graded SAND with CLAY or SILT laminae, sand is thinly bedded, wet. | | |
| | | | WET | SC/SM | | Reddish brown (5YR 5/3) poorly graded SAND, wet. | | |
| 22 | | | WET | SC/SM | | Reddish brown (5YR 5/3) poorly graded SAND with CLAY or SILT laminae, wet. | | |
| 23 | | | WET | SP | | Reddish brown (5YR 5/3) poorly graded SAND, fine SAND, trace SILT, wet. | | 23.3 ft: 5% fines (silt/clay) |
| 24 | | | | | | | | |
| 25 | 4.3 / 10 | 0 | | | | Reddish brown (5YR 4/3) poorly graded SAND (SP) with CLAY or SILT laminae, sand is thinly bedded, wet. | | |
| 26 | | | | | | | | |
| 27 | | | WET | SC/SM | | | | |
| 28 | | | | | | | | |
| 29 | | | | | | | | |
| 30 | | | | | | | | 2-inch Schedule 40 PVC riser 0-57 ft bgs |
| 31 | | | WET | CL/ML | | Reddish brown (5YR 4/3) laminated SILT and CLAY, medium dense, wet. | | |
| | | | WET | ML | | Reddish brown (5YR 4/3) massive SILT, loose, wet. | | |
| 32 | | | | | | | | |
| 33 | | | WET | CL/ML | | Reddish brown (5YR 4/3) laminated SILT and CLAY, medium dense, wet. Pale yellow groundwater. | | 33 ft: 80% fines (silt/clay) |
| 34 | | | | | | | | |
| 35 | 4.8 / 10 | 0 | | | | | | |
| | | | MOIST | SM | | Reddish brown (5YR 4/3) silty SAND with some sub-angular to angular fine to coarse GRAVEL, moist. | | |
| 36 | | | | | | | | |
| 37 | | | | | | Reddish brown (5YR 4/3) silty SAND with few GRAVEL, medium SAND, little fine SAND, trace coarse SAND,few sub-angular fine to coarse GRAVEL, moist. | | |
| 38 | | | MOIST | SM | | | | |
| 39 | | | | | | | | 39 ft: 20% fines (silt/clay) |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.36 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611043.1 |
| **Date Started Drilling:** 3/30/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683769.8 |
| **Date Finished Drilling:** 3/31/2020 | **Core Size:** 3 in | **Boring Total Depth:** 70 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 13.4 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 41 | | | MOIST | SP | | Dark reddish brown (2.5YR 3/3) poorly graded SAND, medium SAND, loose, moist. | | |
| 42 | | | | | | | | |
| 43 | | | MOIST | SM | | Dark reddish brown (2.5YR 3/3) silty SAND, few sub-angular fine to coarse GRAVEL, moist. Color changes to light olive gray (5Y 6/2) from 44.5' to 44.6'. | | 43 ft: 20% fines (silt/clay) |
| 44 | | | | | | | | |
| 45 | 7 / 10 | 0 | | | | Dark reddish brown (2.5YR 3/3) silty SAND, few to little sub-angular fine to coarse GRAVEL. | | |
| 46 | | | | | | | | |
| 47 | | | MOIST | SM | | | | |
| 48 | | | | | | | | |
| 49 | | | MOIST | SC-SM | | Light brown (7.5YR 6/4) clayey SAND or silty SAND, fine to coarse SAND, SILT, few to little sub-angular to sub-rounded fine to coarse GRAVEL, coarse GRAVEL (up to 2" across), moist, firm (Basal Till). | | 49 ft: 20% fines (silt/clay) |
| 50 | | | | | | Dark reddish brown (2.5YR 3/3) clayey SAND or silty SAND, few to little sub-angular to sub-rounded fine to coarse GRAVEL, hard, moist (50' to 52.5') to dry (52.5' to 60') (Basal Till). | | |
| 51 | | | | | | | | |
| 52 | | | | | | | | |
| 53 | | | | | | | | |
| 54 | | | | | | | | Bentonite Seal 53-55 ft bgs |
| 55 | 5 / 10 | 0 | DRY | SC-SM | | | | |
| 56 | | | | | | | | #0 Filter sand 55-63 ft bgs |
| 57 | | | | | | | | |
| 58 | | | | | | | | 2-inch Schedule 40 Screen 57-62 ft bgs |
| 59 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW50C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.36 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611043.1 |
| **Date Started Drilling:** 3/30/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683769.8 |
| **Date Finished Drilling:** 3/31/2020 | **Core Size:** 3 in | **Boring Total Depth:** 70 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 13.4 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 61 | | | MOIST | SC | | Light brown (7.5YR 6/3) sandy CLAY, little sub-angular fine to coarse GRAVEL, very firm, moist (Basal Till). | | |
| 62 | 3.2 / 5 | 0 | DRY | BEDROCK | | Gray diabase (pulverized by sonic drilling), dry. | | |
| 63 | | | | | | | | |
| 64 | | | | | | | | Bentonite Seal 63-70 ft bgs |
| 65 | | | WET | BEDROCK | | Gray diabase (pulverized by sonic drilling), wet. | | |
| 66 | | | | | | | | |
| 67 | 3 / 5 | 0 | DRY | BEDROCK | | Gray diabase (pulverized by sonic drilling), dry. End of boring at 70 ft. | | |
| 68 | | | | | | | | |
| 69 | | | | | | | | |
| 70 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW51C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.13 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611633.3 |
| **Date Started Drilling:** 3/25/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683637.4 |
| **Date Finished Drilling:** 3/26/2020 | **Core Size:** 3 in | **Boring Total Depth:** 82 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 12.2 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 – 5 | | | DRY | FILL | | Soft dig to 5 ft bgs; Gray angular fine to coarse GRAVEL, gray silty SAND with sub-angular fine to coarse GRAVEL, dry (DGA). | | Riser set in grout |
| 5 – 10 | 5.5 / 10 | 0.0 | DRY | FILL | | Olive brown (2.5Y 4/3) silty SAND, little sub-rounded fine to coarse GRAVEL, dry (FILL). | | Grout: 0-68.5 ft bgs |
| 10 – 14 | | | WET | FILL | | Black to dark gray silty SAND, little sub-rounded GRAVEL, loose, wet. | | 2-inch Schedule 40 PVC riser: 0-71.5 ft bgs |
| 14 – 15 | 4.6 / 10 | 0.0 | MOIST | ML | | Light greenish gray clayey SILT, moist. | | |
| 15 – 16 | | | DRY | SM | | Reddish yellow (7.5YR 6/6) to reddish brown (5YR 4/6) silty SAND, sub-rounded fine to coarse GRAVEL, hard, dry. | | |
| 16 – 19 | | | MOIST | SW-SM | | Reddish yellow (7.5YR 6/6) to reddish brown (5YR 4/6) widely graded SAND with SILT, few sub-rounded fine to coarse GRAVEL, hard to loose, moist. | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW51C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.13 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611633.3 |
| **Date Started Drilling:** 3/25/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683637.4 |
| **Date Finished Drilling:** 3/26/2020 | **Core Size:** 3 in | **Boring Total Depth:** 82 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 12.2 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 21 | 7.5 / 10 | 0.0 | WET | SP | | Reddish brown (5YR 4/6) poorly graded SAND, fine to medium SAND, wet. | | |
| 22 | | | WET | SM | | Reddish brown (5YR 4/6) silty SAND with few to little fine to sub-rounded coarse GRAVEL, wet. | | |
| 23 | | | | | | | | |
| 24 | | | | | | | | |
| 25 | | | WET | ML | | SILT, wet. | | |
| 26 | | | WET | SP/ML | | Reddish brown (2.5YR 4/4) interbedded SILT, CLAY, fine to medium SAND, wet. | | |
| 27 | | | WET | SP-SM | | Reddish brown (2.5YR 4/4) poorly graded SAND with SILT, fine SAND, little medium SAND, few SILT, loose, wet. | | |
| 28 | | | | | | | | |
| 29 | | | | | | | | |
| 30 | 4 / 10 | 0.0 | WET | SP-SM | | Reddish brown (2.5YR 4/4) poorly graded SAND with SILT, fine SAND, sheen on groundwater, loose, wet. | | 30 ft: 5-10% fines (silt/clay) |
| 31 | | | | | | | | |
| 32 | | | | | | | | |
| 33 | | | | | | | | |
| 34 | | | | | | | | |
| 35 | | | WET | SP-SM | | Reddish brown (2.5YR 4/4) poorly graded SAND with SILT, fine SAND. | | 35 ft: 15% fines (silt/clay) |
| 36 | | | | | | | | |
| 37 | | | WET | CL/ML | | Weak red (10YR 4/3) SILT, CLAY, fine SAND, laminated. | | 38 ft: 80% fines (silt/clay) |
| 38 | | | | | | | | |
| 39 | | | WET | SM | | Weak red (10YR 4/3) silty SAND, little GRAVEL, hard, MGP sheen and odor. | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

PPG WITH WELL CONSTRUCTION - - 2/5/21 12:22

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732.564.3200 office telephone

# Boring ID: 114-MW51C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.13 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611633.3 |
| **Date Started Drilling:** 3/25/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683637.4 |
| **Date Finished Drilling:** 3/26/2020 | **Core Size:** 3 in | **Boring Total Depth:** 82 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 12.2 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 41 | | | | GW | | Reddish brown (2.5YR 4/4) sandy GRAVEL, fine to coarse GRAVEL, some SAND, loose, strong MGP odor, sheen. | | |
| 42 | | | | | | Reddish brown (2.5YR 4/4) lean CLAY, dense. | | |
| 43 | | | | | | | | |
| 44 | | | | | | | | |
| 45 | 6.7 / 10 | 0.0 | | | | | | |
| 46 | | | | CL | | | | |
| 47 | | | | | | | | |
| 48 | | | | | | | | |
| 49 | | | | | | | | |
| 50 | | | | | | Dark reddish gray (5YR 4/2) and reddish brown (5YR 4/3) SILT and CLAY laminae, medium hard, moist. | | |
| 51 | | | | | | | | |
| 52 | | | | | | | | |
| 53 | | | | | | | | |
| 54 | | | | | | | | |
| 55 | 9 / 10 | 0.0 | MOIST | ML/CL | | | | |
| 56 | | | | | | | | |
| 57 | | | | | | | | |
| 58 | | | | | | | | |
| 59 | | | | | | | | |
| | | | MOIST | SC | | Dark reddish brown (5YR 4/3) clayey SAND, few | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW51C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.13 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611633.3 |
| **Date Started Drilling:** 3/25/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683637.4 |
| **Date Finished Drilling:** 3/26/2020 | **Core Size:** 3 in | **Boring Total Depth:** 82 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 12.2 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 61 | | | | | | GRAVEL, hard, moist. | | 60 ft: 25% fines (silt/clay) |
| 62 | | | WET | SC | | Reddish brown (2YR 4/3) clayey SAND, fine to medium SAND, trace coarse SAND, few to little sub-rounded to sub-angular fine to coarse GRAVEL, medium hardness, wet. | | |
| 63 | | | | | | | | |
| 64 | | | | | | | | |
| 65 | 9 / 10 | 0.0 | | | | | | |
| 66 | | | WET | ML | | Reddish brown (2YR 4/3) SILT, wet. | | |
| 67 | | | | | | Dark reddish gray (2.5YR 4/1) sandy CLAY, angular, fine to coarse SAND, little fine to coarse GRAVEL, hard, very dense, dry (Basal Till). | | |
| 68 | | | DRY | CL | | | | 68 ft: 50-60% fines (silt/clay) |
| 69 | | | | | | | | Bentonite Seal: 68.5-70.5 ft bgs |
| 70 | | | DRY | CL | | Dark reddish gray (2.5YR 4/1) sandy CLAY, angular, fine to coarse SAND, little fine to coarse GRAVEL, hard, very dense, dry (Basal Till). | | |
| 71 | | | | | | Dark reddish gray (2.5YR 4/1) sandy CLAY, angular, fine to coarse SAND, little fine to coarse GRAVEL, hard, very dense, dry (Basal Till). | | |
| 72 | | | | | | | | #0 Filter Sand: 69.5-77.5 ft bgs |
| 73 | | | DRY | CL | | | | |
| 74 | | | | | | | | |
| 75 | 4 / 10 | 0.0 | | | | | | 2-inch Schedule 40 PVC screen: 71.5-76.5 ft bgs |
| 76 | | | | | | | | |
| 77 | | | DRY | CL | | Dark reddish gray (2.5YR 4/1) sandy CLAY, angular, fine to coarse SAND, little fine to coarse GRAVEL, hard, very dense, dry (Basal Till). | | |
| 78 | | | DRY | BEDROCK | | Gray bedrock, dry (Stockton Formation). End of boring at 82 ft. | | |
| 79 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW51C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.13 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611633.3 |
| **Date Started Drilling:** 3/25/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683637.4 |
| **Date Finished Drilling:** 3/26/2020 | **Core Size:** 3 in | **Boring Total Depth:** 82 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 12.2 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 81 | | | DRY | BEDROCK | | | | Bentonite Seal: 77.5-82 ft bgs |
| 82 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW52C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.85 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611034.7 |
| **Date Started Drilling:** 7/7/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683527.7 |
| **Date Finished Drilling:** 7/9/2020 | **Core Size:** 3 in | **Boring Total Depth:** 79 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.0 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 1–5 | 5 / 5 | 0 | DRY | FILL | | Soft dig to 5 ft bgs; Light brownish grey (10YR 6/2) well graded GRAVEL, some silty sand (DGA), very dense, dry. | | Riser set in grout |
| 5–10 | 4 / 5 | 0 | DRY TO DAMP | FILL | | Grey SILT, micaceous, little DGA, fine to coarse gravel, loose, dry to damp. | | |
| 10–12 | 4 / 5 | 0 | DRY | FILL | | Grey SILT, micaceous, little DGA, fine to coarse gravel, loose, dry to damp. | | |
| 12–15 | | | DRY | FILL | | DGA, grey SILT, micaceous, few subrounded to subangular fine to coarse gravel, dry. | | |
| 15–16 | 3 / 5 | 0 | WET | FILL | | DGA, GRAVEL with some silt, wet. | | Grout: 0 - 65 ft bgs |
| 16–18 | | | WET | OH | | Very dark grey (7.5YR 3/1) organic CLAY with brown fibers, gravel lens from 18 ft to 18.2 ft, wet. | | |
| 18–19 | | | WET | CL | | Grey silty CLAY, loose, wet. | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW52C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.85 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611034.7 |
| **Date Started Drilling:** 7/7/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683527.7 |
| **Date Finished Drilling:** 7/9/2020 | **Core Size:** 3 in | **Boring Total Depth:** 79 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.0 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 21 | | | WET | CL | | Grey silty CLAY with few to little brown fibers, medium dense, wet. | | |
| | | | WET | CL | | Grey silty CLAY, very dense, wet. | | |
| 22 | | | WET | SM | | Grey SAND with some silt, few to little subrounded fine to coarse gravel, wet. | | |
| | 4.5 / 5 | 0 | WET | SP | | Reddish brown, poorly graded SAND, medium sand with little silt, little subrounded fine to coarse gravel, loose to medium dense, wet. | | |
| 23 | | | WET | ML | | Olive (5Y 4/3) to yellowish olive SILT, medium dense, wet. | | |
| 24 | | | WET | SP | | Reddish brown poorly graded SAND, medium sand, little silt, little subrounded fine to coarse gravel, medium dense, wet. | | |
| 25 | | | | | | | | 25 ft: 30% fines (silt/clay) |
| 26 | | | WET | SM | | Reddish brown poorly graded sand, fine sand, some silt, loose, wet. Yellow groundwater observed at 25 ft. | | |
| 27 | 3 / 5 | 0 | | | | | | |
| 28 | | | WET | ML | | Reddish brown SILT, loose, wet. | | |
| 29 | | | WET | SM | | Reddish brown poorly graded sand, fine sand, some silt, loose, wet. Yellow groundwater observed at 30 ft. | | |
| 30 | | | | | | | | 2-inch Schedule 40 PVC Riser: 0 - 68 ft bgs |
| 31 | | | | | | Reddish brown poorly graded SAND, fine sand, loose. Pale yellow groundwater observed. | | |
| 32 | 1 / 5 | 0 | WET | SP | | | | |
| 33 | | | | | | | | |
| 34 | | | | | | | | |
| 35 | | | | | | | | |
| 36 | | | WET | ML | | Reddish brown SILT, saturated with bright yellow groundwater, loose. | | |
| 37 | 3 / 5 | 0 | | | | | | |
| 38 | | | | | | | | |
| 39 | | | WET | SP | | Reddish brown poorly graded SAND with few silt, fine sand, loose, wet. | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW52C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.85 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611034.7 |
| **Date Started Drilling:** 7/7/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683527.7 |
| **Date Finished Drilling:** 7/9/2020 | **Core Size:** 3 in | **Boring Total Depth:** 79 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.0 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 41 | | | WET | SP | | Reddish brown poorly graded SAND, fine sand, little medium sand, wet. | | 40 ft: 10% fines (silt/clay) |
| 42 | | | WET | CL | | Reddish brown CLAY laminae, wet. | | |
| 43 | 3 / 5 | 0 | WET | ML | | Reddish brown SILT, little clay, wet. | | |
| 44 | | | | | | | | |
| 45 | | | WET | GW-GC | | Well graded GRAVEL, fine to coarse gravel with little clay, one cobble, wet. | | |
| 46 | | | | | | Reddish brown well graded SAND, with little silt, fine to coarse sand, little subrounded to subangular fine to coarse gravel, several large pieces of gravel (up to 2.5 inch in diameter), wet. Bright yellow groundwater observed at 48 ft. | | |
| 47 | | | | | | | | |
| 48 | 2.5 / 5 | 0 | WET | SW | | | | 48 ft: 25% fines (silt/clay) |
| 49 | | | | | | | | |
| 50 | | | | | | | | |
| 51 | | | WET | SM | | Reddish brown SAND with some silt, few gravel, loose, wet. | | |
| 52 | | | | | | | | |
| 53 | 2.5 / 5 | 0 | WET | SM | | Reddish brown SAND wth some silt, little fine to coarse gravel, large gravel (up to 3 inch in diameter), very dense, wet. | | |
| 54 | | | WET | SW-SC | | Reddish brown well graded SAND with few clay, fine to coarse sand, wet. | | 54 ft: 10% fines (silt/clay) |
| 55 | | | WET | SP | | Reddish brown poorly graded SAND, medium sand (grades into medium sand with some fine to coarse gravel), wet. | | |
| 56 | | | | | | Reddish brown SAND with some clay, little fine to coarse gravel, medium dense, wet. | | |
| 57 | 4 / 5 | 0 | | | | | | |
| 58 | | | WET | SC | | | | |
| 59 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW52C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.85 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611034.7 |
| **Date Started Drilling:** 7/7/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683527.7 |
| **Date Finished Drilling:** 7/9/2020 | **Core Size:** 3 in | **Boring Total Depth:** 79 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.0 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 61 | 5 / 5 | 0 | WET | SW | | Reddish brown well graded SAND, fine to coarse sand, loose, wet. | | |
| | | | WET | SP | | Reddish brown SAND with little clay, little gravel, wet. | | |
| 62 | | | DAMP | SC | | Reddish brown well graded SAND with some clay, little subrounded to subangular fine to coarse gravel, very dense, damp (Basal Till). | | 61.5 ft: 30% fines (silt/clay) |
| 63 | | | DAMP TO WET | SP | | Reddish brown SAND with little clay, fine to coarse gravel, medium dense, damp to wet (Basal Till). | | |
| 64 | | | DAMP TO WET | CL | | Reddish brown CLAY, medium stiff, damp to wet (Basal Till). | | |
| 65 | | | DRY TO DAMP | SC/GC | | Reddish brown well graded SAND, fine to coarse sand, some clay, fine to coarse subangular gravel, dry to damp (Basal Till). Seam of well graded fine to coarse gravel from 65-65.2. | | Bentonite Seal: 65 - 67 ft bgs |
| 66 | | | | | | | | 66 ft: 30% fines (silt/clay) |
| 67 | 4.5 / 5 | 0 | | | | Bands of grey and dark brown pieces of TILL, sand, with some clay, fine to coarse gravel, loose, dry (Basal Till). | | |
| 68 | | | DRY | SC | | | | |
| 69 | | | | | | | | |
| 70 | | | DAMP TO WET | SC | | Brown (10YR 5/3) SAND with some clay, little fine to coarse gravel, damp to wet (Basal Till). | | 2-inch Schedule 40 PVC Screen: 68-73 ft bgs |
| 71 | | | | | | | | |
| 72 | 4.5 / 5 | 0 | DRY TO DAMP | SW-SC | | Well graded SAND, fine to coarse sand with some clay, fine to coarse gravel embedded in sandy clay, very dense, dry to damp (Basal Till). | | #0 Filter Sand: 67 - 73.5 ft bgs |
| 73 | | | | | | | | 72.5 ft: 40% fines (silt/clay) |
| 74 | | | | | | Grey mudstone and siltstone, wet (Lockatong Formation). Weathered from 73-74 ft bgs (broken rock in clay matrix), competent at 74 ft bgs. End of boring at 79 ft. | | |
| 75 | | | | | | | | Bentonite Seal: 73.5 - 79 ft bgs |
| 76 | 4 / 4 | 0 | WET | BEDROCK | | | | |
| 77 | | | | | | | | |
| 78 | | | | | | | | |
| 79 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW53C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.08 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611157.6 |
| **Date Started Drilling:** 7/9/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683435.6 |
| **Date Finished Drilling:** 7/14/2020 | **Core Size:** 3 in | **Boring Total Depth:** 55 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 13.9 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 1–5 | 3 / 5 | 0 | DRY | FILL | | Soft dig to 5 ft bgs. Grayish brown (2.5Y 5.2) well graded GRAVEL, some silty sand (DGA), micaceous, very dense, dry. | | Riser set in grout |
| 5–6 | | | WET | FILL | | Gray, well graded GRAVEL, little fine to coarse sand and little silt, wet (FILL). | | |
| 6–10 | 3.8 / 5 | 0 | WET | FILL | | Dark yellowish brown (10YR 4/4) poorly graded SAND with some silt, little fine to coarse gravel, wet (FILL). | | |
| 9–10 | | | DRY | FILL | | Dark yellowish brown (10YR 4/4) poorly graded SAND with some silt, little fine to coarse gravel, dry (FILL). | | |
| 10–13 | 4.5 / 5 | 0 | WET | FILL | | Sandy SILT with little fine to coarse gravel, DGA, medium dense, wet (FILL). | | Grout: 0 - 43.5 ft bgs |
| 13–15 | | | DAMP | FILL | | Brown (10YR 5/3) micaceous SILT, few sand, few fine to coarse gravel, loose, damp (FILL). | | |
| 15–16 | | | DAMP | FILL | | Micaceous SILT (DGA), few large gravel pieces, medium dense, damp (FILL). | | 2-inch Schedule 40 PVC Riser: 0-46 ft bgs |
| 16–19 | 4 / 5 | 0 | DAMP | FILL | | Gray and brown micaceous SILT, few coarse gravel, loose, damp (FILL). | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

PPG WITH WELL CONSTRUCTION - - 2/5/21 12:22

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# Boring ID: 114-MW53C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.08 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611157.6 |
| **Date Started Drilling:** 7/9/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683435.6 |
| **Date Finished Drilling:** 7/14/2020 | **Core Size:** 3 in | **Boring Total Depth:** 55 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 13.9 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 21 | | | DAMP | FILL | | Micaceous SILT (DGA), little subrounded fine to coarse gravel, medium dense, damp (FILL). | | |
| 22 | 5 / 5 | 0 | | | | | | |
| 23 | | | DAMP TO WET | SW | | Reddish brown well graded SAND, little silt, little fine to coarse subrounded GRAVEL, medium dense, damp to wet. | | 22.5 ft: 25% fines (silt/clay) |
| 24 | | | | | | | | |
| 25 | | | WET | SP | | Reddish brown poorly graded SAND, medium sand, loose, wet. | | |
| 26 | | | WET | SP | | Reddish brown poorly graded SAND with few silt, medium sand, some subrounded fine to coarse gravel, wet. | | |
| 27 | 5 / 5 | 0 | WET | SP | | Reddish brown fine SAND, grades into poorly graded sand with little silt, wet. | | |
| 28 | | | WET | SM | | Reddish brown poorly graded SAND with some silt, little fine to subrounded coarse gravel, wet. | | 28 ft: 30% fines (silt/clay) |
| 29 | | | WET | CL | | Reddish brown and gray CLAY, wet. | | |
| 30 | | | | | | | | |
| 31 | | | WET | SP | | Reddish brown poorly graded SAND with little silt, loose, wet. | | 31 ft: 25% fines (silt/clay) |
| 32 | 2.7 / 5 | 0 | WET | SM | | Reddish brown poorly graded SAND with some silt, fine sand, wet. | | |
| 33 | | | WET | SP | | Reddish brown poorly graded SAND with few silt, wet. | | |
| 34 | | | | | | | | |
| 35 | | | WET | CL | | Reddish brown sandy CLAY, loose, wet. | | |
| 36 | | | WET | ML/CL | | Reddish brown clayey SILT, little fine sand, clay laminae from 36-37 ft bgs (spaced 0.5 - 1 inch apart), wet. | | |
| 37 | 4 / 5 | 0 | | | | Reddish brown sandy SILT, medium dense, wet. | | 37 ft: 60% fines (silt/clay) |
| 38 | | | WET | ML | | | | |
| 39 | | | WET | ML | | Reddish brown sandy SILT, wet. | | 39 ft: 75% fines (silt/clay) |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW53C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.08 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611157.6 |
| **Date Started Drilling:** 7/9/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683435.6 |
| **Date Finished Drilling:** 7/14/2020 | **Core Size:** 3 in | **Boring Total Depth:** 55 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 13.9 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 41 | | | WET | SW | | Reddish brown well graded SAND, few silt, fine to medium sand, few coarse sand, loose, wet. | | 40 ft: 10-15% fines (silt/clay) |
| 42 | 2.5 / 5 | 0 | DAMP TO WET | SC | | Reddish brown well graded SAND with some clay, fine to coarse sand, few to fine to coarse gravel, medium dense, damp to wet (Basal Till). | | 43 ft: 30% fines (silt/clay) |
| 43 | | | | | | | | Bentonite Seal: 43.5 - 45.5 ft bgs |
| 44 | | | DAMP TO WET | CL/GC | | Gray sandy CLAY, fine to coarse sand, some fine to coarse gravel (up to 3 inches in diameter), very dense, damp to wet (Basal Till). | | 44 ft: 60% fines (silt/clay) |
| 45 | | | WET | SP | | Brown (7.5YR 4/3) poorly graded SAND, few silt, wet (Basal Till). | | 45 ft: 5-10% fines (silt/clay) |
| 46 | 3.5 / 5 | 0 | WET | BEDROCK | | Grey mudstone and siltstone, wet (Lockatong Formation). Weathered from 45.5-48 ft bgs (broken rock in clay matrix), competent at 48 ft bgs. End of boring at 55 ft. | | #0 Filter sand 45.5 - 48.5 ft bgs |
| 47 | | | | | | | | 2-inch Schedule 40 Screen: 46 - 47.5 ft bgs |
| 48 | | | | | | | | |
| 49 | | | | | | | | |
| 50 | | | | | | | | |
| 51 | 2 / 5 | 0 | | | | | | |
| 52 | | | | | | | | Bentonite Seal: 48.5 - 55 ft bgs |
| 53 | | | | | | | | |
| 54 | | | | | | | | |
| 55 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW54C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 12.71 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611214.9 |
| **Date Started Drilling:** 4/1/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683276.5 |
| **Date Finished Drilling:** 4/2/2020 | **Core Size:** 3 in | **Boring Total Depth:** 84 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 10.8 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 | 5 / 5 | 0.0 | DRY | FILL | | Soft dig to 5 ft bgs; Grayish brown silty SAND, little fine and coarse gravel, dry (DGA). | | |
| 3 | | | DRY | FILL | | Black angular GRAVEL, dry (DGA). | | Riser set in grout |
| 5 | 1.2 / 5 | 0.0 | DRY | FILL | | Dark yellowish brown (10YR 4/4) silty SAND, little sub-angular gravel, dry (FILL). | | Grout: 0-68 ft bgs |
| 8 | | | WET | FILL | | Gray (2.5Y 5/1) to black silty SAND, little fine to coarse sub-angular gravel, wet (FILL). | | |
| 10 | 1.9 / 10 | 0.0 | WET | FILL | | Gray (2.5Y 5/1) to black silty SAND, little fine to coarse sub-angular gravel, wet (FILL). | | 2-inch Schedule 40 PVC riser: 0-72 ft bgs |
| 15 | | | WET | SM | | Dark gray (5YR 4/1) silty SAND, strong MGP odor, loose, wet. | | |
| 17 | | | WET | GW | | Black widely graded GRAVEL, angular and rounded fine to coarse gravel (up to 2.5 inches across), MGP sheen, loose, wet. | | |
| 18 | | | WET | SC | | Mottled reddish brown (5YR 4/4) and dark gray (5YR 4/1) clayey SAND, few gravel, hard, wet. | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW54C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 12.71 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611214.9 |
| **Date Started Drilling:** 4/1/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683276.5 |
| **Date Finished Drilling:** 4/2/2020 | **Core Size:** 3 in | **Boring Total Depth:** 84 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 10.8 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 21 | | | WET | SM | | Dusky red (10YR 3/2) silty SAND, some medium sand, little fine sand, trace coarse sand, little fine to sub-rounded coarse gravel, MGP sheen, wet. | | 20 ft: 25% fines (silt/clay) |
| 22 | | | | | | | | |
| 23 | | | | | | | | |
| 24 | | | WET | SM | | Yellowish red (5YR 4/6) silty SAND, fine sand, loose, MGP sheen (up to 28'), wet. | | 23 ft: 20% fines (silt/clay) |
| 25 | 7.8 / 10 | 3.7 | | | | | | |
| 26 | | | | | | | | |
| 27 | | | | | | | | |
| 28 | | | | | | | | |
| 29 | | | | | | | | |
| 30 | | | WET | SP-SM | | Weak red (10YR 4/4) poorly graded SAND with silt, loose, wet. | | 30 ft: 15% fines (silt/clay) |
| 31 | | | | | | | | |
| 32 | | | | | | | | |
| 33 | | | | | | | | |
| 34 | | | | | | | | |
| 35 | 8 / 10 | 0.0 | | | | Weak red (10YR 4/4) silty SAND, fine sand, loose, wet. | | 35 ft: 30% fines (silt/clay) |
| 36 | | | WET | SM | | | | |
| 37 | | | WET | ML | | Light reddish brown (5YR 5/4) SILT, wet. | | 37.5 ft: 80% fines (silt/clay) |
| 38 | | | | | | | | |
| 39 | | | MOIST | ML/CL | | Light reddish brown (5YR 5/4) interbedded SILT and CLAY laminae, firm, moist. | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW54C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 12.71 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611214.9 |
| **Date Started Drilling:** 4/1/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683276.5 |
| **Date Finished Drilling:** 4/2/2020 | **Core Size:** 3 in | **Boring Total Depth:** 84 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 10.8 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 41 | | | MOIST | SM | | Light reddish brown (5YR 5/4) silty SAND, fine to medium sand, loose, moist. | | |
| | | | MOIST | ML/CL | | Reddish brown (5YR 4/4) to gray (7.5YR 5/1) laminated silt/clay, firm, moist. | | |
| 43 | | | MOIST | SM | | Weak red (10YR 5/4) silty SAND, fine sand, silt, loose, moist. | | 43.5 ft: 25% fines (silt/clay) |
| 45 | 8 / 10 | 0.0 | MOIST | ML/CL | | Reddish brown (5YR 4/4) to gray (7.5YR 5/1) interbedded laminae of SILT, CLAY and fine SAND, moist. | | |
| 49 | | | WET | SP-SC | | Reddish brown (5YR 4/4) poorly graded SAND with clay, fine sand with a few thin bands of clay, wet. | | |
| 50 | | | WET | SP-SM | | Reddish brown (2.5YR 4/3) poorly graded SAND with silt, fine sand, SILT, loose, wet. | | 50 ft: 15-20% fines (silt/clay) |
| 55 | 3.8 / 10 | 0.0 | MOIST | SM | | Reddish brown (2.5YR 4/3) silty SAND, little sub-rounded coarse gravel, firm, moist. | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW54C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 12.71 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611214.9 |
| **Date Started Drilling:** 4/1/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683276.5 |
| **Date Finished Drilling:** 4/2/2020 | **Core Size:** 3 in | **Boring Total Depth:** 84 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 10.8 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 61 | 3.9 / 5 | 0.0 | MOIST | SM | | Reddish brown (5YR 4/3) silty SAND, fine sand, moist. | | 60 ft: 20% fines (silt/clay) |
| 62 | | | | | | | | |
| 63 | | | | | | | | |
| 64 | | | DRY | SM | | Reddish brown silty SAND, few fine to coarse gravel, very firm, dry (Basal Till). | | |
| 65 | | | | | | | | |
| 66 | 3.5 / 5 | 0.0 | DRY | SC-SM | | Light brownish gray (10YR 6/2) clayey SAND or silty sand, fine to sand, little fine to coarse gravel (up to 2.5" across), very firm, dry (Basal Till). | | |
| 67 | | | | | | | | |
| 68 | | | | | | | | Bentonite Seal: 68-70 ft bgs |
| 69 | | | | | | | | 69 ft: 30% fines (silt/clay) |
| 70 | 4.4 / 5 | 0.0 | DRY | SM | | Dark gray (7.5YR 4/1) silty SAND, fine to coarse sand, few gravel, dry (Basal Till). | | 70 ft: 25% fines (silt/clay) |
| 71 | | | | | | | | #0 Filter Sand: 70-77 ft bgs |
| 72 | | | | | | | | |
| 73 | | | | | | | | 2-inch Schedule 40 PVC screen: 72-77 ft bgs |
| 74 | | | | | | | | |
| 75 | 3.4 / 5 | 0.0 | MOIST | SM | | Dark gray (7.5YR 4/1) silty SAND, fine to coarse sand, few gravel, dry (Basal Till). | | 75 ft: 25% fines (silt/clay) |
| 76 | | | WET | ML | | Clayey SILT (Basal Till). | | |
| 77 | | | | | | | | |
| 78 | | | WET | BEDROCK | | Gray bedrock, wet (Stockton Formation). | | |
| 79 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW54C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 12.71 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611214.9 |
| **Date Started Drilling:** 4/1/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683276.5 |
| **Date Finished Drilling:** 4/2/2020 | **Core Size:** 3 in | **Boring Total Depth:** 84 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 10.8 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 81 | 3.8 / 4 | 0.0 | WET | BEDROCK | | Gray bedrock, wet (Stockton Formation). | | Bentonite Seal: 78-84 ft bgs |
| 82 | | | | | | | | |
| 83 | | | WET | BEDROCK | | Dark reddish gray conglomerate, wet (Stockton Formation). End of borehole at 84 ft. | | |
| 84 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW55C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 13.23 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611439.1 |
| **Date Started Drilling:** 3/26/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683519.8 |
| **Date Finished Drilling:** 3/27/2020 | **Core Size:** 3 in | **Boring Total Depth:** 75 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 11.1 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 | | | DRY | FILL | | Soft dig to 5 ft bgs; Gray angular fine to coarse GRAVEL, dry (FILL). | | |
| 1 | | | | | | Dark yellowish brown (10YR 3/4) to black silty SAND with sub-angular fine to coarse gravel, compacted, dry (FILL). | | |
| 2 | | | | | | | | |
| 3 | | | DRY | FILL | | | | |
| 4 | | | | | | | | Riser set in grout |
| 5 | 5 / 10 | 0 | | | | Dark grayish brown (10YR 5/2) clayey SAND, little to some sub-rounded to sub-angular fine to coarse gravel, loose, wet (FILL). | | |
| 6 | | | WET | FILL | | | | Grout: 0-65.5 ft bgs |
| 7 | | | | | | | | |
| 8 | | | DRY | FILL | | Dark grayish brown (10YR 5/2) clayey SAND, little to some sub-rounded to sub-angular fine to coarse gravel, compacted (FILL). | | |
| 9 | | | DRY | FILL | | Dark grayish brown (10YR 5/2) clayey SAND, little to some sub-rounded to sub-angular fine to coarse gravel, loose, dry (FILL). | | |
| 10 | | | | | | Dark gray (2.5Y 4/1) to black silty SAND with sub-angular fine to coarse gravel, wet (10' to 12') to dry (12' to 15') (FILL). | | 2-inch Schedule 40 PVC riser: 0-68 ft bgs |
| 11 | | | | | | | | |
| 12 | | | WET TO DRY | FILL | | | | |
| 13 | | | | | | | | |
| 14 | | | | | | | | |
| 15 | 6.5 / 10 | 0 | DRY | PT | | Brown fibers in black organic material (PEAT), dry. | | |
| | | | DRY | CH | | Dark reddish brown (10YR 5/3) fat CLAY, dry. | | |
| | | | DRY | SP | | Dark reddish brown (10YR 5/3) poorly graded medium SAND, trace to few silt, dry. | | |
| 16 | | | | | | Dark reddish brown (10YR 5/3) clayey SAND, little sub-rounded to sub-angular fine to coarse gravel, dry. | | |
| 17 | | | | | | | | |
| 18 | | | DRY | SC | | | | |
| 19 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW55C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 13.23 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611439.1 |
| **Date Started Drilling:** 3/26/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683519.8 |
| **Date Finished Drilling:** 3/27/2020 | **Core Size:** 3 in | **Boring Total Depth:** 75 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 11.1 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 21–22 | | | WET | SP-SM | | Reddish brown (10YR 4/4) poorly graded SAND with SILT, medium SAND, few SILT, loose, wet. Yellowish groundwater at 21.5' to 22.5'. | | |
| 23–24 | | | WET | SP-SM | | Reddish brown (5YR 4/4) poorly graded SAND with silt, medium sand, some sub-rounded fine to coarse gravel, loose, wet. | | |
| 25 | 5.5 / 10 | 0 | WET | ML | | Yellowish red (5YR 4/6) SILT, massive, wet. | | |
| 26–28 | | | WET | ML/CL | | Yellowish red (5YR 4/6) laminated, interbedded SILT, CLAY, fine SAND, compacted, wet. | | |
| 29–30 | | | WET | ML | | Reddish brown (5YR 4/4) SILT, loose, wet. | | |
| 31–34 | | | WET | ML | | Yellowish red (5YR 4/6) sandy SILT, yellowish groundwater, loose, wet. | | 31 ft: 55% fines (silt/clay) |
| 35 | 6 / 10 | 0 | | | | | | |
| 36–39 | | | WET | ML/CL | | Yellowish red (5YR 4/6) interbedded fine SAND, SILT and CLAY, compact, wet. | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW55C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 13.23 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611439.1 |
| **Date Started Drilling:** 3/26/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683519.8 |
| **Date Finished Drilling:** 3/27/2020 | **Core Size:** 3 in | **Boring Total Depth:** 75 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 11.1 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 41 | | | WET | SM | | Yellowish red (5YR 4/6) silty SAND, fine sand, loose, wet, yellowish groundwater. | | 41 ft: 20% fines (silt/clay) |
| 42 | | | | | | | | |
| 43 | | | | | | | | |
| 44 | | | | | | | | |
| 45 | 7.3 / 10 | 0 | WET | ML | | Reddish brown (5YR 5/4) SILT, loose, wet. | | 45 ft: 90% fines (silt/clay) |
| 46 | | | | | | | | |
| 47 | | | | | | | | |
| 48 | | | N/A | ML/CL | | Reddish brown (5YR 5/4) laminated SILT and CLAY. | | |
| 49 | | | | | | | | |
| 50 | | | | | | | | 50 ft: 15-20% fines (silt/clay) |
| 51 | | | | | | Reddish brown (2.5YR 4/4) silty SAND, fine sand, wet, yellow groundwater. | | |
| 52 | | | WET | SM | | | | |
| 53 | | | | | | | | |
| 54 | | | WET | SM | | Reddish brown (2.5YR 4/4) silty SAND, fine sand, wet, yellow groundwater. | | 54 ft: 20% fines (silt/clay) |
| 55 | 6.5 / 10 | 0 | | | | Reddish brown (2.5YR 4/4) sandy SILT, fine SAND and CLAY laminae, yellow groundwater. | | 55 ft: 70% fines (silt/clay) |
| 56 | | | | | | | | |
| 57 | | | WET | ML/CL | | | | |
| 58 | | | | | | | | |
| 59 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW55C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 13.23 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611439.1 |
| **Date Started Drilling:** 3/26/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683519.8 |
| **Date Finished Drilling:** 3/27/2020 | **Core Size:** 3 in | **Boring Total Depth:** 75 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 11.1 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 61 | | | WET | SP-SM | | Reddish brown poorly graded SAND with silt, fine to medium sand, trace coarse sand. | | 61 ft: 10% fines (silt/clay) |
| 62 | | | MOIST | CL/ML | | Yellowish red (5YR 4/6) sandy CLAY and sandy silt, silt and clay laminae. | | 62.5 ft: 70% fines (silt/clay) |
| 63 | | | | | | Reddish brown SILT with fine sand. | | 63 ft: 80% fines (silt/clay) |
| 64 | | | | | | | | |
| 65 | 7.5 / 10 | 0 | MOIST | ML | | | | |
| 66 | | | | | | | | |
| 67 | | | | | | | | Bentonite Seal: 65.5-67.5 ft bgs |
| | | | DRY | SC-GC | | Reddish brown (5YR 5/4) clayey SAND, some sub-rounded to sub-angular fine to coarse gravel, dry (Basal Till). | | |
| 68 | | | | | | | | 2-inch Schedule 40 PVC well screen: 68-69 ft bgs |
| 69 | | | | | | Light gray sandstone, wet (Stockton Formation). Highly weathered from 68-70 ft bgs (broken rock in clay matrix), competent from 70-75 ft bgs. End of boring at 75 ft. | | #0 Filter Sand: 67.5-70 ft bgs |
| 70 | | | | | | | | |
| 71 | | | WET | BEDROCK | | | | |
| 72 | | | | | | | | Bentonite Seal: 70-75 ft bgs |
| | 5 / 5 | 0 | | | | | | |
| 73 | | | | | | | | |
| 74 | | | | | | | | |
| 75 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW56C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 16.04 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 610934.8 |
| **Date Started Drilling:** 7/1/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683324.4 |
| **Date Finished Drilling:** 7/7/2020 | **Core Size:** 3 in | **Boring Total Depth:** 80 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.0 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 1–3 | 4 / 5 | 0 | NA | FILL | | Soft dig to 5 ft bgs. Gray poorly graded SAND with some silt, micaceous, little subangular to angular fine to coarse gravel (FILL). | | |
| 3–5 | | | WET | FILL | | Liner at 3.0 ft bgs, cobbles to large GRAVEL (DGA), wet (FILL). | | Riser set in grout |
| 5–10 | 4 / 5 | 0 | WET | FILL | | Dark gray (10YR 4/1) sandy SILT, micaceous with angular fine to coarse gravel, medium dense, wet (FILL). | | |
| 10–11 | 7.5 / 10 | 0 | DAMP | FILL | | Very dark gray (5YR 3/1) to brown (10YR 5/3) sandy SILT with embedded subrounded fine to coarse gravel, medium dense, damp (FILL). | | Grout: 0-64 ft bgs |
| 12–15 | | | DAMP | FILL | | Very dark gray (5YR 3/1) to brown (10YR 5/3) sandy SILT with embedded subrounded fine to coarse gravel, loose, damp (FILL). | | 2-inch Schedule 40 PVC Riser: 0-67 ft bgs |
| 15–16 | | | DAMP | OH | | Black organic CLAY with brown fibers, medium dense, damp. | | |
| 17–19 | | | DAMP | CL | | Gray silty CLAY, little subrounded to subangular fine to coarse gravel, medium dense, damp. | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW56C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 16.04 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 610934.8 |
| **Date Started Drilling:** 7/1/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683324.4 |
| **Date Finished Drilling:** 7/7/2020 | **Core Size:** 3 in | **Boring Total Depth:** 80 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.0 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 21 | | | DAMP TO WET | CL | | Gray silty CLAY, little subrounded to subangular fine to coarse gravel, medium dense, damp to wet. | | |
| | | | DAMP TO WET | SP | | Dusky red (10YR 3/3) and dark reddish gray (5YR 4/2) SAND with little silt, fine to coarse subangular gravel, some subrounded gravel measuring up to 0.2 inches, damp to wet. | | |
| 22 | | | | | | Reddish brown poorly graded SAND, medium sand with few silt, damp to wet. | | |
| 23 | | | | | | | | |
| 24 | | | DAMP TO WET | SP | | | | 24 ft: 10-15% fines (silt/clay) |
| 25 | 6 / 10 | 0 | | | | | | |
| 26 | | | | | | | | |
| 27 | | | | | | Reddish brown poorly graded SAND, trace silt, fine to medium sand, damp to wet. Yellow tinged soils (strong brown, 7.5YR 5/6) observed between 29-30 ft bgs. | | |
| 28 | | | DAMP TO WET | SP | | | | 28 ft: 5% fines (silt/clay) |
| 29 | | | | | | | | |
| 30 | | | | | | Reddish brown poorly graded SAND, few silt, medium sand, loose, wet. | | |
| 31 | | | WET | SP | | | | |
| 32 | | | | | | Reddish brown (with black undertones) poorly graded fine SAND, few silt, grades into more silt at 33 ft bgs, loose, wet. | | |
| 33 | | | WET | SP | | | | |
| 34 | | | | | | | | |
| 35 | 6 / 10 | 0 | | | | Reddish brown poorly graded SAND with some silt, mostly fine sand, wet. Very pale yellow water observed between 38-40 ft bgs. | | |
| 36 | | | | | | | | |
| 37 | | | WET | SM | | | | |
| 38 | | | | | | | | |
| 39 | | | | | | | | 39 ft: 35% fines (silt/clay) |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW56C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 16.04 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 610934.8 |
| **Date Started Drilling:** 7/1/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683324.4 |
| **Date Finished Drilling:** 7/7/2020 | **Core Size:** 3 in | **Boring Total Depth:** 80 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.0 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 41 | 10 / 10 | 0 | WET | CL/SP | | Gray and very dark brown varves, silty CLAY, fine SAND laminae, medium stiff, wet. Yellow groundwater observed between 40-41 ft bgs. | | |
| 42 | | | WET | ML | | Reddish brown SILT, wet. | | |
| 43 | | | WET | CL/ML | | Gray and dark reddish brown CLAY, varves, grades into SILT at 43.6 ft bgs, wet. | | |
| 44 | | | WET | ML | | Reddish brown SILT, wet. | | |
| 45 | | | WET | CL | | Reddish brown CLAY, wet. | | |
| 46 | | | WET | CL/SP | | Reddish brown CLAY, varves, fine SAND laminae, very stiff, wet. | | |
| 47 | | | | | | | | |
| 48 | | | WET | SM | | Poorly graded fine SAND, some silt, wet. | | 48 ft: 30% fines (silt/clay) |
| 49 | | | WET | CL/SP | | Reddish brown CLAY varves, fine SAND laminae, wet. | | |
| 50 | | | WET | SP | | Reddish brown poorly graded SAND, wet, pale yellow groundwater observed between 49-50 ft bgs. | | |
| 51 | 4 / 5 | 0 | WET | SP | | Reddish brown poorly graded SAND with few silt, fine to medium sand, wet. Green-yellow water observed from 50-52 ft bgs. | | 50.5 ft: 10% fines (silt/clay) |
| 52 | | | WET | SC | | Reddish brown SAND with little clay, few gravel, wet. | | |
| 53 | | | NA | SC | | Reddish brown and gray clayey SAND, few fine to coarse gravel, medium dense (Basal Till). | | |
| 54 | | | NA | SP | | Reddish brown SAND (Basal Till) | | |
| 55 | 5 / 5 | 0 | WET | SP | | Reddish brown poorly graded medium SAND, few fine to coarse gravel, loose, wet (Basal Till). | | |
| 56 | | | DAMP | SC | | Reddish brown well graded SAND with some clay, embedded with fine to coarse gravel, medium dense, damp (Basal Till). Yellow water from 57-58 ft bgs. | | 57 ft: 35% fines (silt/clay) |
| 57 | | | | | | | | |
| 58 | | | DAMP | SC | | Gray to reddish brown clayey SAND, little fine to coarse subangular gravel, damp (Basal Till). | | |
| 59 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW56C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 16.04 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 610934.8 |
| **Date Started Drilling:** 7/1/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683324.4 |
| **Date Finished Drilling:** 7/7/2020 | **Core Size:** 3 in | **Boring Total Depth:** 80 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.0 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 61 | 4.75 / 5 | 0 | WET | SP | | Reddish brown poorly graded SAND, loose, wet (Basal Till). | | 60 ft: 1-5% fines (silt/clay) |
| | | | DAMP | SW | | Reddish brown well graded fine to coarse SAND with little silt/clay, little subrounded fine to coarse gravel, damp (Basal Till). | | |
| 62 | | | DAMP TO WET | CL | | Reddish brown sandy CLAY with embedded large gravel (up to 2 inches in diameter), very dense, damp to wet (Basal Till). | | |
| 63 | | | | | | | | |
| 64 | | | DRY TO DAMP | SC | | Well graded sand with some clay, fine to coarse sand, embedded fine gravel, dense, dry to damp (Basal Till). | | 64 ft: 30% fines (silt/clay) |
| 65 | | | | | | | | Bentonite Seal: 64-66 ft bgs |
| 66 | 5 / 5 | 0 | DAMP | CL | | Dark brown (10YR 3/3) sandy CLAY with little embedded fine to coarse gravel (up to 2.5 inches in diameter), very dense, damp (Basal Till). | | |
| 67 | | | | | | | | #0 Filter Sand: 66-72.5 ft bgs |
| 68 | | | DAMP | SP | | Gray poorly graded SAND with little clay, fine sand, little fine to coarse gravel, dense, damp (Basal Till). | | |
| 69 | | | DRY | GP | | Gray broken up GRAVEL, loose, dry (Basal Till). | | |
| 70 | | | DAMP | CL | | Brown (10YR 5/3) and gray sandy CLAY with little fine to coarse gravel, very dense, damp (Basal Till). | | 2-inch Schedule 40 PVC Well Screen: 67-72 ft bgs |
| 71 | | | | | | | | |
| 72 | 5 / 5 | 0 | | | | Dark grey mudstone and siltstone, wet (Lockatong Formation). End of boring at 80 ft bgs. | | |
| 73 | | | | | | | | |
| 74 | | | | | | | | |
| 75 | | | | | | | | Bentonite Seal: 72.5-80 ft bgs |
| 76 | 3 / 5 | 0 | WET | BEDROCK | | | | |
| 77 | | | | | | | | |
| 78 | | | | | | | | |
| 79 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW57C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.55 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 610949.9 |
| **Date Started Drilling:** 6/30/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683210.4 |
| **Date Finished Drilling:** 7/1/2020 | **Core Size:** 3 in | **Boring Total Depth:** 75 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 12.9 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 | | | DRY | FILL | | Soft dig to 5 ft bgs. Gray coarse angular GRAVEL, dry (FILL). | | |
| 1 | | | | | | | | |
| 2 | 5 / 5 | 0 | | | | Brown (10YR 4/3) SAND with little silt, little subangular to angular fine to coarse gravel, several subangular cobbles, very dense, dry (FILL). | | |
| 3 | | | DRY | FILL | | | | |
| 4 | | | | | | | | Riser set in grout |
| 5 | | | | | | | | |
| 6 | | | WET | FILL | | Light olive brown (2.5Y 5/3) well graded GRAVEL, subrounded to subangular, silty fine to coarse sand, wet (FILL). | | Grout: 0-66 ft bgs |
| 7 | | | | | | | | |
| 8 | 3.8 / 5 | 0 | | | | Dark gray (2.5Y 4/1) SAND with little silt, few subrounded fine to coarse gravel, dry (FILL). | | 2-inch Schedule 40 PVC Riser: 0-68.5 ft bgs |
| 9 | | | DRY | FILL | | | | |
| 10 | | | | | | | | |
| 11 | | | DRY | FILL | | Gray SILT, trace fine to coarse gravel, dense, dry (FILL). | | |
| 12 | | | | | | Strong brown (7.5YR 4/6) fine SAND with little silt, dried plant roots, dense. | | 11.5 ft: 25% fines (silt/clay) |
| 13 | | | DAMP | SP | | | | |
| 14 | | | | | | | | |
| 15 | 5 / 10 | 0 | DAMP | OH | | Black and dark brown (10YR 3/3) organic CLAY with brown fibers (top of meadow mat), damp. | | |
| 16 | | | | | | | | |
| 17 | | | | | | Gray SILT, dense, damp. | | |
| 18 | | | DAMP | ML | | | | |
| 19 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW57C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.55 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 610949.9 |
| **Date Started Drilling:** 6/30/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683210.4 |
| **Date Finished Drilling:** 7/1/2020 | **Core Size:** 3 in | **Boring Total Depth:** 75 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 12.9 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| | | | WET | ML | | Gray SILT, loose to medium dense, wet. | | |
| 21 | | | WET | SP | | Grayish brown (10YR 5/2) poorly graded medium SAND, little fine sand, trace coarse sand and silt, loose, wet. | | 21 ft: 1-5% fines (silt/clay) |
| 22 | | | WET | SP | | Reddish brown (5YR 5/4) poorly graded SAND with few silt, fine sand, loose to medium dense, wet. Yellow-tinged soils noted in the middle of the core after drying. | | 22.5 ft: 10% fines (silt/clay) |
| 23 | | | WET | ML | | Reddish brown sandy SILT, wet. | | 23 ft: 60% fines (silt/clay) |
| 24 | | | | | | | | |
| 25 | 6 / 10 | 0.1 | | | | Dark reddish brown (5YR 3/4) with gray to black mottling, poorly graded fine SAND, loose to medium dense, wet. | | |
| 26 | | | | | | | | 25.5 ft: 5% fines (silt/clay) |
| 27 | | | WET | SP | | | | |
| 28 | | | | | | | | |
| 29 | | | | | | | | |
| 30 | | | | | | Black and brown (7.5YR 4/2) and dark reddish brown (5YR 3/2) poorly graded SAND with trace silt, wet. | | |
| 31 | | | | | | | | 31 ft: 5% fines (silt/clay) |
| 32 | | | WET | SP | | | | |
| 33 | | | | | | Mottled black and reddish brown SILT, loose to medium dense, wet. | | |
| 34 | | | | | | | | |
| 35 | 6 / 10 | 0 | WET | ML | | | | |
| 36 | | | | | | Reddish brown, with layers of light reddish brown CLAY, medium dense, wet. | | |
| 37 | | | | | | | | |
| 38 | | | WET | CL | | | | |
| 39 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

PPG WITH WELL CONSTRUCTION - - 2/5/21 12:22

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# Boring ID: 114-MW57C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.55 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 610949.9 |
| **Date Started Drilling:** 6/30/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683210.4 |
| **Date Finished Drilling:** 7/1/2020 | **Core Size:** 3 in | **Boring Total Depth:** 75 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 12.9 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 41 | | | | | | Reddish brown and gray varves with interbedded layering of SILT and CLAY, wet. | | |
| 42 | | | | | | | | |
| 43 | | | | | | | | |
| 44 | | | | | | | | |
| 45 | 9 / 10 | 0 | WET | CL/ML | | | | |
| 46 | | | | | | | | |
| 47 | | | | | | | | |
| 48 | | | | | | | | |
| 49 | | | | | | | | |
| 50 | | | | | | | | |
| 51 | | | WET | CL | | Reddish brown CLAY, possible fracturing, filled with medium sand, soft, wet. | | |
| 52 | | | WET | CL | | Dark reddish brown and lighter reddish brown CLAY varves, fine sand laminae, wet. | | |
| 53 | | | | | | Dark reddish brown with black mottling, poorly graded SAND with little silt, fine sand, trace coarse sand, wet to damp. | | 53 ft: 25% fines (silt/clay) |
| 54 | | | | | | | | |
| 55 | 6.5 / 10 | 0 | WET TO DAMP | SP | | | | |
| 56 | | | | | | | | |
| 57 | | | | | | | | |
| 58 | | | DAMP | SP | | Reddish brown fine to medium SAND with little silt, little subrounded fine to coarse gravel, loose, damp. | | |
| 59 | | | DAMP TO DRY | ML | | Reddish brown and greenish gray sandy SILT with little embedded fine to coarse gravel, dense, damp to dry (Basal Till). | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW57C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.55 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 610949.9 |
| **Date Started Drilling:** 6/30/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683210.4 |
| **Date Finished Drilling:** 7/1/2020 | **Core Size:** 3 in | **Boring Total Depth:** 75 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 12.9 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 61 | | | | | | Reddish brown poorly graded SAND with little silt, few medium grained sand, loose, wet (Basal Till). | | |
| 62 | | | | | | | | 61.5 ft: 10% fines (silt/clay) |
| 63 | | | WET | SP | | | | |
| 64 | | | | | | | | |
| 65 | 4.5 / 10 | 0 | | | | | | |
| 66 | | | | | | | | |
| 67 | | | WET | CL | | Reddish brown CLAY with little sand, little fine to coarse gravel, loose, wet (Basal Till). | | Bentonite Seal: 66-68 ft bgs |
| 68 | | | DAMP | CL | | Gray sandy CLAY with embedded pieces of rock, very dense, damp (Basal Till). | | #0 Filter sand: 68-70.5 ft bgs |
| 69 | | | | | | Grey mudstone and siltstone, wet (Lockatong Formation). Weathered from 68-72.5 ft bgs. Competent from 72.5-75 ft bgs. End of boring at 75 ft bgs. | | 2-inch Schedule 40 PVC screen: 68.5-70 ft bgs |
| 70 | | | | | | | | |
| 71 | | | WET | BEDROCK | | | | |
| 72 | | | | | | | | Bentonite Seal: 70.5-75 ft bgs |
| 73 | 3.5 / 5 | 0 | | | | | | |
| 74 | | | | | | | | |
| 75 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW58C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 12.51 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611371.2 |
| **Date Started Drilling:** 6/17/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683296.6 |
| **Date Finished Drilling:** 6/18/2020 | **Core Size:** 3 in | **Boring Total Depth:** 80 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 11.2 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 | 5 / 5 | 0 | DRY | FILL | | Soft dig to 5 ft bgs; Yellowish brown (10YR 5/4) silty SAND, little subangular fine to coarse gravel, dense, dry (FILL). | | Riser set in grout |
| 5 | 1 / 5 | 0 | WET | FILL | | Dark grayish brown (2.5Y 4/2) well graded GRAVEL, fine to coarse subangular gravel with little silty sand, wet (FILL). | | Grout: 0-69.5 ft bgs |
| 10 | 6 / 10 | 0 | WET | FILL | | Very dark gray silty SAND, fine to coare gravel (FILL), wet. | | 2-inch Schedule 40 PVC riser: 0-72.5 ft |
| 14 | | | WET | OH | | Black (5YR 2.5/1) CLAY with brown fibers (meadow mat), black grades into brown (7.5YR 4/2), several large rounded gravel (up to 2 inches in diameter), brown fibers grade into trace to few fibers at 15 ft bgs, wet. | | |
| 15 | | | WET | SC | | Mottled reddish brown (2.5YR 4/2) and brown (7.5YR 4/2) with few spots of grayish green (5GY 6/1) clayey SAND with little fine to coarse gravel, medium dense to loose, wet. | | |
| 19 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW58C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 12.51 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611371.2 |
| **Date Started Drilling:** 6/17/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683296.6 |
| **Date Finished Drilling:** 6/18/2020 | **Core Size:** 3 in | **Boring Total Depth:** 80 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 11.2 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 21 | | | WET | SW | | Reddish brown (5YR 5/3) well graded SAND with little silt, fine to coarse sand, little to some fine to coarse gravel, loose, wet. MGP sheen and odor. | | 20.5 ft: 25% fines (silt/clay) |
| 22 | | | | | | | | |
| 23 | | | | | | Light reddish brown (2.5YR 3/3) poorly graded SAND with few silt, medium sand, trace coarse sand, loose, wet. | | 23 ft: 10% fines (silt/clay) |
| 24 | | | | | | | | |
| 25 | 6 / 10 | 5.3 (20'-5.3 | WET | SP | | | | |
| 26 | | | | | | | | |
| 27 | | | | | | | | |
| 28 | | | | | | Reddish brown (5YR 4/4) poorly graded SAND with little silt, mostly medium sand, trace coarse sand, loose, wet. | | 28 ft: 20% fines (silt/clay) |
| 29 | | | WET | SP | | | | |
| 30 | | | | | | Reddish brown poorly graded SAND with few silt, fine to medium sand, loose, wet. | | 30 ft: 10% fines (silt/clay) |
| 31 | | | | | | | | |
| 32 | | | | | | | | |
| 33 | | | WET | SP | | | | |
| 34 | | | | | | | | |
| 35 | 8 / 10 | 0 | | | | | | |
| | | | WET | SP | | Reddish brown poorly graded SAND with few silt, fine to medium sand, loose, wet. | | |
| 36 | | | | | | Reddish brown poorly graded SAND with few silt, mostly fine sand, loose, wet. | | |
| 37 | | | | | | | | |
| 38 | | | WET | SP | | | | 38 ft: 10% fines (silt/clay) |
| 39 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW58C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 12.51 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611371.2 |
| **Date Started Drilling:** 6/17/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683296.6 |
| **Date Finished Drilling:** 6/18/2020 | **Core Size:** 3 in | **Boring Total Depth:** 80 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 11.2 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 41 | 6.8 / 10 | 0 | WET | SP/ML | | Reddish brown poorly graded SAND, grades into silt, loose, wet. | | |
| 42 | | | WET | CL | | Reddish brown (2.5YR 5/3) CLAY varves, laminae, dense, wet. | | |
| 43 | | | WET | CL/ML | | Gray and reddish brown interbedded CLAY and SILT varves, laminae, MGP odor, wet. | | |
| 44 | | | WET | SP | | Reddish brown fine SAND stringer with strong MGP odor, loose, wet. | | |
| 45 | | | WET | SP | | Reddish brown poorly graded SAND, mostly fine sand, trace silt, loose, wet. | | |
| 46 | | | | | | | | 45.5 ft: 5% fines (silt/clay) |
| 47 | | | WET | CL/ML | | Reddish brown and gray CLAY and SILT laminae, few fine sand laminae, dense, wet. | | |
| 48 | | | | | | | | |
| 49 | | | | | | | | |
| 50 | | | | | | | | 50 ft: 25% fines (silt/clay) |
| 51 | | | WET | SP | | Reddish brown (5YR 4/4) poorly graded SAND with little silt, mostly fine sand, wet. | | |
| 52 | | | | | | | | |
| 53 | | | | | | | | |
| 54 | | | | | | | | |
| 55 | 6 / 10 | 0 | | | | | | 55 ft: 30% fines (silt/clay) |
| 56 | | | WET | SM-SC | | Reddish brown (5YR 4/4) poorly graded SAND with some silt/clay and fine gravel embedded, dense, wet. | | |
| 57 | | | WET | SM-SC | | Reddish brown SAND with some silt/clay, wet. | | |
| 58 | | | | | | | | |
| 59 | | | WET TO DAMP | SM-SC | | Reddish brown SAND with some silt/clay, dense, wet. | | |
| | | | WET | SP | | Reddish brown (5YR 4/1) poorly graded SAND with few | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW58C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 12.51 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611371.2 |
| **Date Started Drilling:** 6/17/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683296.6 |
| **Date Finished Drilling:** 6/18/2020 | **Core Size:** 3 in | **Boring Total Depth:** 80 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 11.2 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 61 | | | WET | SP | | silt, fine sand, loose, wet. | | 61 ft: 5-10% fines (silt/clay) |
| 62 | | | WET | SW | | Reddish brown (5YR 4/4) well graded SAND with little silt, mostly fine sand, some subangular to subrounded coarse gravel (up to 2 inches in diameter), medium dense to loose, wet. | | 62.5 ft: 20% fines (silt/clay) |
| 64 | 6 / 10 | 0 | DAMP TO WET | SM | | Reddish brown well graded SAND with some silt, fine to coarse sand, few embedded gravel, dense, damp to wet (Basal Till). | | 65 ft: 35% fines (silt/clay) |
| 69 | | | DAMP | SC/SM | | Gray clayey/silty SAND, very dense, damp (Basal Till). | | |
| 70 | | | DAMP | SM | | Reddish brown (5YR 4/4) poorly graded SAND with some silt, fine sand, loose, damp (Basal Till). | | 70 ft bgs: 70% fines (silt/clay) |
| 71 | | | DAMP | SC/SM | | Reddish brown and gray clayey/silty SAND with several large pieces of gravel, damp (Basal Till). | | Bentonite Seal: 69.5-71.5 ft bgs |
| 73 | | | | | | | | #0 Filter Sand: 71.5-76.5 ft bgs |
| 74 | 5 / 10 | 0 | NA | BEDROCK | | Gray bedrock (Stockton Formation), wet. Weathered from 74-77.5 ft bgs. Competent from 77.5-80 ft bgs. End of boring at 80 ft bgs. | | 2-inch Schedule 40 PVC well screen: 72.5-76 ft bgs |
| 78 | | | | | | | | Bentonite Seal: 76.5-80 ft bgs |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW59C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.07 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611255.2 |
| **Date Started Drilling:** 6/19/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683079.6 |
| **Date Finished Drilling:** 6/22/2020 | **Core Size:** 3 in | **Boring Total Depth:** 100 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 12.1 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 | 5 / 5 | 0 | DRY TO WET | FILL | | Soft dig to 5 ft bgs; Olive brown (2.5Y 4/4) well graded SAND with few silt, little subangular fine to coarse gravel (DGA), dry to wet. | | Riser set in grout |
| 5 | | | WET | FILL | | Gray GRAVEL, fine to coarse, with little fine to coarse sand, few silt, loose, wet (FILL). | | Grout: 0-86.5 ft bgs |
| 7 | 4 / 5 | 0 | WET | FILL | | Grayish brown well graded SAND with little silt, little subangular to angular fine to coarse gravel, medium dense, wet (FILL). | | |
| 10 | | | WET | FILL | | Black well graded SAND with little silt, little subangular to angular fine to coarse gravel, medium dense, wet. | | 2-inch Schedule 40 PVC riser: 0-89.5 ft bgs |
| 13 | | | WET | FILL | | Dark gray (5Y 4/1) silty SAND with fine to coarse gravel (DGA), wet. | | |
| 14 | | | WET | OH | | Black (7.5YR 2.5/1) CLAY with brown fibers (meadow mat), wet. | | |
| 15 | 6.2 / 10 | 0 | WET | OH | | Black (7.5YR 2.5/1) CLAY with few brown fibers (meadow mat), wet. | | |
| 16 | | | WET | SP | | Dark reddish brown (5YR 3/3) poorly graded SAND with little silt, fine to medium sand, little subrounded fine to coarse gravel, loose, wet. PID = 2.8 ppm. | | |
| 19 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW59C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.07 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611255.2 |
| **Date Started Drilling:** 6/19/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683079.6 |
| **Date Finished Drilling:** 6/22/2020 | **Core Size:** 3 in | **Boring Total Depth:** 100 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 12.1 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 21 | 4.6 / 10 | Varies | WET | SP | | Reddish brown poorly graded SAND with little silt, little subrounded fine to coarse gravel. Strong MGP odor and sheen. PID = 6 ppm. | | 20 ft: 25% fines (silt/clay) |
| 22 | | | | | | | | |
| 23 | | | WET | SP | | Dark reddish brown poorly graded SAND with few silt, mostly medium sand, little fine sand, loose, wet. Strong MGP odor and sheen. | | |
| 24 | | | | | | | | |
| 25 | | | | | | | | 25 ft: 5-10% fines (silt/clay) |
| 26 | | | WET | SP | | Reddish brown poorly graded SAND with few silt, medium sand, wet. Strong MGP odor and sheen. PID = 36 ppm. | | |
| 27 | | | | | | | | |
| 28 | | | | | | | | |
| 29 | | | WET | SP | | Dark reddish brown (black staining from MGP) poorly graded SAND with little silt, mostly medium sand, little fine sand, trace fine subrounded gravel, wet. Strong MGP odor and sheen. PID = 65 ppm. | | 29 ft: 10% fines (silt/clay) |
| 30 | 6 / 10 | Varies | WET | SP | | Reddish brown (2.5YR 4/3) poorly graded SAND, fine to medium sand, few medium sand, wet. PID = 39 ppm. | | 30 ft: 15-20% fines (silt/clay) |
| 31 | | | | | | | | |
| 32 | | | WET | SP | | Dark reddish brown (5YR 3/2) poorly graded SAND with few silt, fine sand, wet. PID = 63 ppm. | | |
| 33 | | | | | | | | |
| 34 | | | | | | | | |
| 35 | | | | | | | | 35 ft: 10-15% fines (silt/clay) |
| 36 | | | WET | SP | | Poorly graded SAND with little silt, mostly fine sand, wet. | | |
| 37 | | | | | | | | |
| 38 | | | | | | | | |
| 39 | | | | | | | | 39.5 ft: 20-25% fines (silt/clay) |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW59C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.07 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611255.2 |
| **Date Started Drilling:** 6/19/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683079.6 |
| **Date Finished Drilling:** 6/22/2020 | **Core Size:** 3 in | **Boring Total Depth:** 100 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 12.1 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 41 | 7.5 / 10 | Varies | WET | SP | | Reddish brown (5YR 4/3) poorly graded SAND with few silt, loose, wet. MGP odor and sheen. PID = decreases from 50 ppm to 0.8 ppm. | | 40 ft: 10-15% fines (silt/clay) |
| 42 | | | | | | | | |
| 43 | | | | | | | | |
| 44 | | | | | | | | |
| 45 | | | WET | SP | | Reddish brown poorly graded SAND, trace silt, fine sand, loose, wet. PID = 0.8 ppm. | | |
| 46 | | | | | | | | |
| 47 | | | WET | SP | | Reddish brown poorly graded SAND with few silt, loose, wet. PID = 118 ppm. | | |
| 48 | | | | | | | | |
| 49 | | | | | | | | |
| 50 | 5 / 10 | Varies | WET | SP/ML | | Reddish brown poorly graded SAND, grades into silt, wet. PID varies from 74 to 181 ppm. | | |
| 51 | | | | | | | | |
| 52 | | | WET | CL/ML | | Gray and reddish brown CLAY and SILT varves, wet. PID = 44 ppm (at 51.5 ft bgs), reduces to 0.8 ppm by 55 ft bgs. | | |
| 53 | | | | | | | | |
| 54 | | | | | | | | |
| 55 | | | | | | | | |
| 56 | | | | | | | | |
| 57 | | | | | | | | |
| 58 | | | | | | | | |
| 59 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

PPG WITH WELL CONSTRUCTION - - 2/5/21 12:22

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# Boring ID: 114-MW59C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.07 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611255.2 |
| **Date Started Drilling:** 6/19/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683079.6 |
| **Date Finished Drilling:** 6/22/2020 | **Core Size:** 3 in | **Boring Total Depth:** 100 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 12.1 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 61 | | | WET | CH | | Mottled gray and reddish brown fat CLAY, wet. | | |
| | | | WET | CL | | Reddish brown lean CLAY, wet. | | |
| 62 | | | WET | CL/ML | | Reddish brown and gray varves, layers of CLAY, SILT, few sand laminae, wet. | | |
| 63 | | | | | | | | |
| 64 | | | WET | CL | | Reddish brown CLAY, wet. | | |
| 65 | 6 / 10 | 0 | WET | CL | | Reddish brown CLAY laminae, wet. | | |
| 66 | | | | | | | | |
| 67 | | | WET | ML | | SILT with little subrounded to subangular fine to coarse gravel, medium dense, wet. | | |
| 68 | | | | | | | | |
| 69 | | | | | | | | |
| 70 | | | WET | CL | | Reddish brown CLAY with little sand, soft, wet. | | |
| 71 | | | | | | | | |
| 72 | | | | | | | | |
| 73 | | | | | | | | 72.5 ft: 75% fines (silt/clay) |
| 74 | | | | | | | | |
| 75 | 3.5 / 10 | 0 | WET | SP | | Reddish brown poorly graded SAND, fine sand, few coarse sand, wet. | | |
| 76 | | | WET | CL | | Reddish brown CLAY, soft, wet. | | |
| 77 | | | | | | | | |
| 78 | | | | | | | | |
| 79 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW59C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.07 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611255.2 |
| **Date Started Drilling:** 6/19/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683079.6 |
| **Date Finished Drilling:** 6/22/2020 | **Core Size:** 3 in | **Boring Total Depth:** 100 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 12.1 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 81 | | | MOIST TO WET | SP | | Reddish brown SAND with little silt, medium stiff, moist to wet. | | |
| 82 | | | MOIST TO WET | SC | | Reddish gray (5YR 5/2) SAND with some clay embedded with little to fine coarse gravel, very dense, moist to wet. | | |
| 83 | | | MOIST TO WET | CL | | Reddish brown CLAY, trace gravel, few faint varves, medium stiff, moist to wet. | | |
| 84 | | | | | | | | |
| 85 | 4.5 / 10 | 0 | | | | | | |
| 86 | | | | | | | | |
| 87 | | | | | | | | Bentonite Seal: 86.5-88.5 ft bgs |
| 88 | | | | | | | | |
| 89 | | | | | | | | #0 Filter Sand: 88.5-93 ft bgs |
| 90 | | | DAMP | CL | | Reddish brown CLAY with few sand and angular rock pieces, several cobbles (up to 2 inches in diameter), very dense, damp (Basal Till). | | 89.5 ft: 90% fines (silt/clay) |
| 91 | | | DAMP TO MOIST | SP | | Gray SAND with little silt, with embedded fine to coarse gravel, very dense, damp to moist, dry from 92-92.5 ft bgs (Basal Till). | | |
| 92 | 5 / 5 | 0 | | | | | | 2-inch Schedule 40 PVC well screen: 89.5-92.5 ft bgs |
| 93 | | | DRY | BEDROCK | | Dark gray to greyish-brown (10YR 3/1) bedrock (Stockton Formation), wet. End of boring at 100 ft bgs. | | |
| 94 | | | | | | | | |
| 95 | | | | | | | | Bentonite Seal: 93-100 ft bgs |
| 96 | | | | | | | | |
| 97 | 3 / 5 | 0 | | | | | | |
| 98 | | | | | | | | |
| 99 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW60C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 12.87 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611340.1 |
| **Date Started Drilling:** 6/25/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 682895.5 |
| **Date Finished Drilling:** 6/29/2020 | **Core Size:** 3 in | **Boring Total Depth:** 125 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 11.0 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 | | | DRY | FILL | | Soft dig to 5 ft bgs; Gray angular fine to coarse GRAVEL (DGA), dry (FILL). | | |
| 1 | | | | | | | | |
| 2 | 5 / 5 | 0 | | | | Light yellowish brown (10YR 6/4) poorly graded SAND with little silt, little fine to coarse gravel, dry (FILL). | | |
| 3 | | | DRY | FILL | | | | |
| 4 | | | | | | | | Riser set in grout |
| 5 | | | | | | | | |
| 6 | | | | | | Olive brown (2.5Y 4/3) silty GRAVEL with sand, fine to coarse subangular gravel with sand, little silt, loose, wet (FILL). | | Grout: 0-117 ft bgs |
| 7 | 2.5 / 5 | 0.2 | WET | FILL | | | | |
| 8 | | | | | | | | |
| 9 | | | | | | | | |
| 10 | | | | | | Black to dark gray SAND with some silt, embedded little angular fine to coarse gravel, wet. | | 2-inch Schedule 40 PVC riser: 0-119.5 ft bgs |
| 11 | | | | | | | | |
| 12 | | | | | | | | |
| 13 | | | WET | FILL | | | | |
| 14 | | | | | | | | |
| 15 | 6 / 10 | 1.2 | | | | | | |
| 16 | | | DAMP | OH | | Mostly brown fibers embedded in black organic CLAY, strong odor (meadow mat), damp. | | |
| 17 | | | DAMP | ML | | Gray SILT with few brown fibers, damp. | | |
| 18 | | | | | | Brown (10YR 5/3) to gray (10YR 5/1) layers (varves), CLAY, SILT and fine SAND, damp. | | |
| 19 | | | DAMP | CL-ML | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW60C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 12.87 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611340.1 |
| **Date Started Drilling:** 6/25/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 682895.5 |
| **Date Finished Drilling:** 6/29/2020 | **Core Size:** 3 in | **Boring Total Depth:** 125 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 11.0 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 21 | 5 / 10 | Varies | WET | ML | | Reddish brown to gray clayey SILT, medium density, wet. | | |
| 22 | | | WET | SP | | Reddish brown poorly graded SAND, medium sand, few coarse sand, few silt, few fine to coarse subrounded to subangular gravel, 1-inch thick clay lens at 21.8 ft bgs, wet. | | 21.5 ft: 5-10% fines (silt/clay) |
| 23 | | | | | | | | |
| 24 | | | WET | SP | | Reddish brown poorly graded SAND, medium sand, trace coarse sand, trace silt, wet. | | 23 ft: 1-5% fines (silt/clay) |
| 25 | | | | | | | | |
| 26 | | | WET | SP | | Reddish brown poorly graded SAND with few silt, medium sand, trace coarse sand, loose to medium density, wet. | | 25 ft: 10% fines (silt/clay) |
| 27 | | | | | | | | |
| 28 | | | WET | SP | | Reddish brown poorly graded SAND with few silt, fine sand, wet. | | |
| 29 | | | | | | | | |
| 30 | 5.5 / 10 | Varies | WET | SP | | Reddish brown poorly graded SAND with few silt, medium sand, trace coarse sand, wet. | | |
| 31 | | | WET | SP | | Reddish brown poorly graded SAND with few silt, fine sand, few medium sand, wet. MGP odor and sheen on soils from 31.5 ft bgs, soil stained to dark brown (7.5YR 3/2). | | 31 ft: 10% fines (silt/clay) |
| 32 | | | WET | SP | | Reddish brown poorly graded SAND with few silt, fine sand, little medium sand, wet. | | |
| 33 | | | | | | | | |
| 34 | | | | | | | | |
| 35 | | | | | | | | |
| 36 | | | | | | | | |
| 37 | | | | | | | | |
| 38 | | | | | | | | |
| 39 | | | WET | SP | | Reddish brown (5YR 4/4) SAND with little silt, wet. Yellow tinge on soil surface after drying. | | 39 ft: 20% fines (silt/clay) |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW60C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 12.87 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611340.1 |
| **Date Started Drilling:** 6/25/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 682895.5 |
| **Date Finished Drilling:** 6/29/2020 | **Core Size:** 3 in | **Boring Total Depth:** 125 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 11.0 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 41 | 5 / 10 | 0 | WET | SP | | Reddish brown poorly graded SAND with little silt, fine sand, few medium sand, trace coarse sand, loose, wet. Yellow groundwater observed at 40 ft bgs. | | 41 ft: 20% fines (silt/clay) |
| 42 | | | | | | | | |
| 43 | | | WET | SP/ML | | Reddish brown poorly graded SAND with little silt, grades into mostly silt, loose to medium dense, wet. | | |
| 44 | | | | | | | | |
| 45 | | | WET | SP | | Reddish brown poorly graded SAND with few silt, fine to medium sand, wet. | | |
| 46 | | | | | | | | |
| 47 | | | | | | | | |
| 48 | | | WET | SP | | Reddish brown poorly graded SAND with few silt, medium sand, wet. Yellow tinge on soils in 40-50 ft run after drying. | | |
| 49 | | | | | | | | |
| 50 | 6 / 10 | 0 | WET | SP | | Reddish brown poorly graded SAND with few silt, medium sand, trace coarse sand, loose, wet. | | |
| 51 | | | | | | | | |
| 52 | | | | | | | | |
| 53 | | | WET | ML | | Reddish brown sandy SILT, yellow groundwater, wet. | | 53.5 ft: 30% fines (silt/clay) |
| 54 | | | DAMP | CL/ML | | Reddish brown and gray lean CLAY, varves consist of contorted laminae, CLAY and SILT, medium stiff, damp. | | |
| 55 | | | | | | | | |
| 56 | | | | | | | | |
| 57 | | | | | | | | |
| 58 | | | | | | | | |
| 59 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW60C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 12.87 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611340.1 |
| **Date Started Drilling:** 6/25/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 682895.5 |
| **Date Finished Drilling:** 6/29/2020 | **Core Size:** 3 in | **Boring Total Depth:** 125 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 11.0 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 61 | | | WET | CL | | Reddish brown sandy CLAY, soft to firm, wet. | | |
| 62 | | | | | | Reddish brown CLAY, varves and laminae, firm, wet. | | |
| 63 | | | WET | CL | | | | |
| 64 | | | | | | | | |
| 65 | 8.5 / 10 | 0 | | | | | | |
| 66 | | | | | | Gray and Reddish brown CLAY and SILT, laminae, varves, firm, wet. | | |
| 67 | | | | | | | | |
| 68 | | | WET | CL | | | | |
| 69 | | | | | | | | |
| 70 | | | | | | Reddish brown lean CLAY, wet. | | |
| 71 | | | | | | | | |
| 72 | | | WET | CL | | | | |
| 73 | | | | | | Reddish brown and gray interbedded SILT and CLAY varves (gray clay varves are generally 1/4-inch thick), with fine sand laminae, one layer up to 1 inch thick, medium soft, wet. | | |
| 74 | | | WET | ML-CL | | | | |
| 75 | 8 / 10 | 0 | WET | ML | | Reddish brown SILT with few interbedded gray clay varves, wet. | | |
| 76 | | | | | | | | |
| 77 | | | WET | ML | | Reddish brown SILT, wet. | | |
| 78 | | | | | | Reddish brown lean CLAY with little fine sand, wet. | | |
| 79 | | | WET | CL | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW60C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 12.87 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611340.1 |
| **Date Started Drilling:** 6/25/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 682895.5 |
| **Date Finished Drilling:** 6/29/2020 | **Core Size:** 3 in | **Boring Total Depth:** 125 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 11.0 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 81 | 7.5 / 10 | 0 | WET | ML | | Reddish brown SILT, soft, wet. | | |
| 82 | | | WET | ML | | Reddish brown SILT, medium dense, wet. | | |
| 83 | | | WET | ML | | Sandy SILT with fine to coarse gravel (up to 3 inches in diameter), medium dense, wet. | | |
| 84 | | | | | | | | |
| 85 | | | WET | ML | | Reddish brown SILT, medium dense, wet. | | |
| 86 | | | WET | SP | | Reddish brown SAND with little silt, fine sand, medium dense, wet. | | |
| 87 | | | WET | SP | | Reddish brown poorly graded SAND, fine to medium sand, medium dense, wet. | | |
| 88 | | | WET | SP | | Reddish brown poorly graded SAND, fine sand, medium dense, wet. | | |
| 89 | | | | | | | | |
| 90 | 6.5 / 10 | 0 | WET | SP | | Reddish brown poorly graded SAND with few silt, fine sand, one thin layer of medium sand, wet. | | |
| 91 | | | WET | SP | | Reddish brown poorly graded SAND with few silt, fine sand, wet. Unidentifiable odor at 91 ft bgs (PID = 9 ppm). | | |
| 92 | | | WET | SP | | Reddish brown poorly graded SAND with few silt, fine sand, trace coarse sand, trace gravel, wet. | | 92 ft: 10% fines (silt/clay) |
| 93 | | | | | | | | |
| 94 | | | DAMP TO DRY | ML/GM | | Gray sandy SILT, fine sand, some fine to coarse gravel (diameter up to 1/4-inch), very dense, damp to dry (Basal Till). | | |
| 95 | | | | | | | | |
| 96 | | | | | | | | |
| 97 | | | | | | | | |
| 98 | | | | | | | | |
| 99 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW60C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 12.87 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611340.1 |
| **Date Started Drilling:** 6/25/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 682895.5 |
| **Date Finished Drilling:** 6/29/2020 | **Core Size:** 3 in | **Boring Total Depth:** 125 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 11.0 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 101 | 4.5 / 5 | 0 | DAMP | SM | | Pinkish gray (7.5YR 6/1) silty SAND, fine sand, few silt, few fine to coarse gravel, very dense, damp (Basal Till). | | |
| | | | DAMP | SM/SC | | Gray silty/clayey SAND, fine sand, subangular fine to coarse gravel, very dense, damp (Basal Till). | | |
| 102 | | | DRY TO DAMP | GW | | Gray powder (pulverized rock) with some subangular and subrounded fine to coarse gravel, loose, dry to damp (Basal Till). | | |
| 103 | | | DRY TO DAMP | GM | | Angular gray rock pieces with some fine sandy SILT, loose, dry to damp (Basal Till). | | |
| 104 | | | DRY TO DAMP | ML | | Gray sandy SILT, fine sand with little embedded subangular fine to coarse gravel, very dense, dry to damp (Basal Till). | | |
| 105 | 4 / 5 | 0 | DAMP | GP-GM | | Gray sandy SILT, interbedded with large gravel, very dense, damp. Solid core sections of till (sizes of up to 2 inch, 3 inch and 6 inch in length) (Basal Till). | | |
| 106 | | | DAMP | GW | | Gray powder (pulverized rock) with fine to coarse GRAVEL (up to 3 inches in diameter), loose, damp (Basal Till). | | |
| 107 | | | DAMP | ML/SM | | Very dark grayish brown (10YR 4/3) sandy SILT with subrounded to subangular fine to coarse gravel, very dense, damp (Basal Till). | | |
| 108 | | | | | | | | |
| 109 | | | | | | | | |
| 110 | 4 / 5 | 0 | WET | GW | | Black fine to coarse GRAVEL, little silt, loose, wet (Basal Till). | | |
| 111 | | | WET | CL | | Gray sandy CLAY with little fine to coarse gravel, loose, wet (Basal Till). | | |
| 112 | | | DAMP | CL | | Gray sandy CLAY with few subrounded coarse gravel, very hard, dense, damp (Basal Till). | | |
| 113 | | | | | | | | |
| 114 | | | DAMP | GP | | Gray subrounded coarse GRAVEL, one large gravel piece (1.5 inch in diameter), little silt, loose, damp (Basal Till). | | |
| 115 | 6 / 10 | 0 | WET | SP | | Gray coarse SAND, fine to coarse gravel, little silt or clay, loose, wet (Basal Till). | | |
| 116 | | | WET | SM | | Fine SAND with some silt, few medium to coarse rock pieces, loose, soft, wet (Basal Till). | | 116 ft: 35% fines (silt/clay) |
| 117 | | | WET | SM | | Reddish gray (5YR 5/2) SAND with silt, dense, wet (Basal Till). | | Bentonite seal: 117-119 ft bgs |
| 118 | | | WET | ML | | Reddish brown (5YR 5/3) sandy SILT, trace coarse sand, trace gravel, medium stiff, wet (Basal Till). | | 118 ft: 75% fines (silt/clay) |
| 119 | | | DAMP | CL | | Gray sandy CLAY, some fine to coarse rock pieces, very dense, damp (Basal Till). | | #0 Filter sand: 119-122 ft bgs |
| | | | NA | BEDROCK | | Gray bedrock (Stockton Formation), weathered with | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW60C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 12.87 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611340.1 |
| **Date Started Drilling:** 6/25/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 682895.5 |
| **Date Finished Drilling:** 6/29/2020 | **Core Size:** 3 in | **Boring Total Depth:** 125 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 11.0 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 121 | 6 / 10 | 0 | NA | BEDROCK | | some segments of broken rock in clay matrix, wet. End of boring at 125 ft bgs. | | 2-inch Schedule 40 PVC screen: 119.5-121.5 ft bgs |
| 122 | | | | | | | | |
| 123 | | | | | | | | Bentonite seal: 122-125 ft bgs |
| 124 | | | | | | | | |
| 125 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW61C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 16.67 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 610879.4 |
| **Date Started Drilling:** 7/14/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683478.6 |
| **Date Finished Drilling:** 7/16/2020 | **Core Size:** 3 in | **Boring Total Depth:** 75 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.0 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 – 5 | 5 / 5 | 0 | WET | FILL | | Soft dig to 5 ft bgs; Grayish brown (2.5Y 5/2) fine SAND with little silt, little subangular fine to coarse gravel (DGA), very dense, wet (FILL). | | Riser set in grout |
| 5 – 10 | 3 / 5 | 0 | WET TO DAMP | FILL | | Gray (10YR 5/1) fine SAND with some micaceous silt, little subangular fine to coarse gravel (DGA), wet to damp. Very dense between 5-6 ft bgs, loose from 6-10 ft bgs (FILL). | | Grout: 0-60 ft bgs |
| 10 – 13 | 3.5 / 5 | 0 | WET | FILL | | Gray (10YR 5/1) fine SAND with some micaceous silt, little subangular fine to coarse gravel (DGA), wet. Very dense between 5-6 ft bgs, loose from 6-10 ft bgs. (FILL). | | 2-inch Schedule 40 PVC riser: 0-62.5 ft bgs |
| 13 – 14 | | | DAMP | CL/OL | | Brown and black CLAY with few fibers, loose to medium dense, damp. | | |
| 14 – 16 | | | WET | CL/OL | | Brown and black organic CLAY with brown fibers, medium dense, wet. | | |
| 16 – 17 | | | WET | CH | | Gray silty fat CLAY with little brown fibers, medium dense, wet. | | |
| 17 – 18 | 4 / 5 | 0 | WET | CL | | Gray silty CLAY, grades into weak red (2.5YR 4/2), medium dense, wet. | | |
| 18 – 19 | | | DAMP | SP | | Weak red (2.5YR 4/2) to reddish brown (5YR 4/3) and olive gray (5Y 4/2) poorly graded SAND with little silt, embedded with fine gravel, very dense, damp. | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW61C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 16.67 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 610879.4 |
| **Date Started Drilling:** 7/14/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683478.6 |
| **Date Finished Drilling:** 7/16/2020 | **Core Size:** 3 in | **Boring Total Depth:** 75 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.0 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 21 | | | WET | SP | | Reddish brown and dark reddish brown poorly graded SAND with little silt, some black staining, medium dense, wet. | | |
| 22 | | | WET | SP | | Reddish brown poorly graded SAND with little silt, mostly fine sand, little medium sand, wet. | | |
| 23 | 4 / 5 | 0 | WET | SP | | Reddish brown poorly graded SAND with little silt, mostly fine sand, little medium sand, black staining from 24-25 ft bgs, loose, wet. | | 22.5 ft: 25% fines (silt/clay) |
| 24 | | | | | | | | |
| 25 | | | WET | SM | | Reddish brown poorly graded SAND, some silt, mostly fine sand, loose, wet. Very pale yellow groundwater at 26 ft bgs. | | |
| 26 | | | | | | | | |
| 27 | | | | | | | | |
| 28 | | | | | | | | |
| 29 | | | WET | SM | | Reddish brown poorly graded SAND, some silt, mostly fine sand, loose, medium dense, wet. | | |
| 30 | | | WET | SP | | Dark reddish brown (5YR 3/3) poorly graded fine SAND, trace silt, wet. | | 30 ft: 5% fines (silt/clay) |
| 31 | | | WET | ML | | Dark reddish brown SILT with black mottling, wet. | | |
| 32 | 4 / 5 | 0 | WET | SP | | Reddish brown poorly graded SAND with little silt, mostly fine sand, wet. | | 32.5 ft: 25% fines (silt/clay) |
| 33 | | | | | | | | |
| 34 | | | WET | SM | | Reddish brown poorly graded SAND with some silt, mostly fine sand, wet. | | |
| 35 | | | WET | CL | | Reddish brown CLAY with some interbedded fine sand laminae, medium stiff, wet. | | 35 ft: 30% fines (silt/clay) |
| 36 | | | | | | | | |
| 37 | 5 / 5 | 0 | | | | | | |
| 38 | | | WET | ML | | Reddish brown SILT with little clay, stiff, wet. | | |
| 39 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW61C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 16.67 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 610879.4 |
| **Date Started Drilling:** 7/14/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683478.6 |
| **Date Finished Drilling:** 7/16/2020 | **Core Size:** 3 in | **Boring Total Depth:** 75 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.0 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 41 | 3.5 / 5 | 0 | WET | SP/CL | | Reddish brown interbedded fine SAND and stiff CLAY, wet. Yellow water visible from 40-45 ft bgs. | | |
| 42 | | | WET | SP | | Reddish brown poorly graded SAND, fine to medium sand, wet. | | |
| 43 | | | WET | SP | | Reddish brown poorly graded SAND, fine to medium sand, loose, wet. | | 42.5 ft: 5% fines (silt/clay) |
| 44 | | | WET | SP | | Reddish brown poorly graded SAND with little silt, loose, wet. | | |
| 45 | 4 / 5 | 0 | WET | SP | | Reddish brown poorly graded SAND with trace silt, loose, wet. | | |
| 47 | | | | | | | | 47 ft: 5% fines (silt/clay) |
| 49 | | | DAMP | SW | | Reddish brown well graded SAND with few silt or clay, fine to coarse sand, few silt, little subrounded fine to coarse gravel, damp. Yellowish stain on sand after sun drying. | | |
| 50 | 3.5 / 5 | 0 | WET | SP | | Poorly graded SAND, wet. Faint yellow staining on sand after drying. | | 50 ft: 10-15% fines (silt/clay) |
| 51 | | | DAMP TO WET | SW-SC | | Well graded SAND with some clay, fine to coarse sand, little fine to coarse gravel, damp to wet (Basal Till). | | 50.5 ft: 5% fines (silt/clay) |
| 54 | | | | | | | | 54 ft: 35% fines (silt/clay) |
| 55 | 5 / 5 | 0 | WET | SP | | Reddish brown poorly graded SAND, mostly fine sand, few gravel, loose, wet (Basal Till). | | |
| 57 | | | DAMP | SW-SC | | Reddish brown well graded SAND with some clay, fine to coarse sand, little subrounded to subangular gravel, medium dense to very dense, damp (Basal Till). | | 57.5 ft: 30% fines (silt/clay) |
| 59 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW61C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 16.67 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 610879.4 |
| **Date Started Drilling:** 7/14/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683478.6 |
| **Date Finished Drilling:** 7/16/2020 | **Core Size:** 3 in | **Boring Total Depth:** 75 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.0 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 61 | | | DAMP TO WET | SW | | Reddish brown well graded SAND with few silt, loose, damp to wet (Basal Till). | | 60.5 ft: 10% fines (silt/clay) |
| 62 | 4 / 5 | 0 | DAMP TO WET | CL | | Reddish brown and light yellowish brown (2.5Y 6/3) sandy CLAY embedded with little fine to subrounded coarse gravel, medium dense, damp to wet (Basal Till). | | Bentonite Seal: 60-62 ft bgs |
| 63 | | | | | | | | |
| 64 | | | | | | Dark olive gray to gray Diabase. Weathered from 63-74 ft bgs (broken rock in clay matrix), competent at 74 ft bgs. End of boring at 75 ft bgs. | | #0 Filter sand: 62-67.5 ft bgs |
| 65 | | | | | | | | 2-inch Schedule 40 PVC well screen: 62.5-68 ft bgs |
| 66 | | | | | | | | |
| 67 | 5 / 5 | 0 | | | | | | |
| 68 | | | | | | | | |
| 69 | | | DAMP | BEDROCK | | | | |
| 70 | | | | | | | | |
| 71 | | | | | | | | |
| 72 | 4 / 5 | 0 | | | | | | Bentonite Seal: 68-75 ft bgs |
| 73 | | | | | | | | |
| 74 | | | | | | | | |
| 75 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

PPG WITH WELL CONSTRUCTION - - 2/8/21 08:33

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# Boring ID: 114-MW62C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.04 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611139 |
| **Date Started Drilling:** 6/15/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683749.8 |
| **Date Finished Drilling:** 6/16/2020 | **Core Size:** 3 in | **Boring Total Depth:** 80 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 13.0 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 – 5 | 5 / 5 | 0 | DAMP TO DRY | FILL | | Soft dig to 5 ft bgs. Gray fine to coarse GRAVEL, black fabric/black plastic encountered several inches below surface. Dark grayish brown (10YR 4/2) micaceous sand with little silt, fine sand, few fine to coarse subrounded gravel, loose, damp to dry (FILL). | | Riser set in grout |
| 5 – 10 | 5 / 5 | 0 | WET | FILL | | Grayish brown (10YR 5/2) silty SAND, few fine to coarse gravel, loose, with some medium dense pieces, wet (FILL). | | Grout: 0-66.5 ft bgs |
| 10 – 11 | 8.5 / 10 | 0 | WET | FILL | | Grayish brown (10YR 5/2) micaceous silty SAND, few fine to coarse gravel, loose to medium dense, wet (FILL). | | 2-inch Schedule 40 PVC riser: 0-69 ft bgs |
| 11 – 12 | | | WET | OH | | Black organic CLAY with brown fibers, soft, wet. | | |
| 12 – 13 | | | WET | OH | | Black organic CLAY with brown fibers, decreasing amount of brown fibers, wet. | | |
| 13 – 14 | | | WET | OH | | Very dark gray (10YR 3/2) organic CLAY with increasing amount brown fibrous material, wet. | | |
| 14 – 15 | | | WET | OH | | Very dark gray (10YR 3/2) organic CLAY with few brown fibers, wet. | | |
| 15 – 16 | | | WET | ML | | Dark grayish brown (5YR 4/2) sandy SILT, wet. | | |
| 16 – 17 | | | WET | SM | | Dark grayish brown to dark reddish gray (5YR 4/2) silty SAND, few fine to coarse gravel, wet. | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW62C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.04 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611139 |
| **Date Started Drilling:** 6/15/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683749.8 |
| **Date Finished Drilling:** 6/16/2020 | **Core Size:** 3 in | **Boring Total Depth:** 80 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 13.0 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 21 | | | WET | SP | | Dark reddish brown (2.5YR 3/3) poorly graded SAND with little silt, subangular medium sand, trace coarse sand, loose, wet. Pale yellow groundwater observed. | | 20 ft: 15% fines (silt/clay) |
| 22 | | | WET | SP | | Reddish brown (2.5YR 4/3) poorly graded SAND with little silt, fine sand, wet. | | 21 ft: 20% fines (silt/clay) |
| 23 | | | WET | SP | | Dark reddish brown (2.5YR 3/3) poorly graded SAND with little silt, wet. Pale yellow groundwater observed at 22.0 ft. | | 22 ft: 15% fines (silt/clay)<br>22.5 ft: 40% fines (silt/clay) |
| 24 | | | WET | SP | | Dark reddish brown (5YR 3/3) poorly graded SAND with some silt, fine sand, loose, wet. | | |
| | | | WET | ML | | Reddish brown (5YR 4/4) sandy SILT, fine sand, wet. | | 24.5 ft: 60% fines (silt/clay) |
| 25 | 6 / 10 | 0 | DAMP | ML/CL | | Dark brown (7.5YR 3/3) and gray SILT and CLAY, laminated silt and clay layers, fine sand layers, easily breaks apart along horizontal laminae, soft to medium stiff, damp. | | |
| 30 | | | WET | ML | | Reddish brown (5YR 4/4) SILT with sand, fine sand, loose, wet. | | |
| 31 | | | WET | ML | | Reddish brown (5YR 4/4) SILT with sand, fine sand, loose, wet. | | 31 ft: 55% fines (silt/clay) |
| 33 | | | WET | ML | | Reddish brown (2.5YR 5/3) SILT with trace fine sand, wet. | | 33 ft: 55% fines (silt/clay) |
| 35 | 6 / 10 | 0 | | | | | | 35 ft: 95% fines (silt/clay) |
| 36 | | | WET | ML | | Reddish brown (2.5YR 5/3) SILT with faint varves, medium stiff, wet. | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW62C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.04 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611139 |
| **Date Started Drilling:** 6/15/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683749.8 |
| **Date Finished Drilling:** 6/16/2020 | **Core Size:** 3 in | **Boring Total Depth:** 80 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 13.0 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 41 | | | WET | SP | | Reddish brown (5YR 4/3) poorly graded SAND, fine sand, loose, wet. | | |
| | | | WET | SP | | Reddish brown (5YR 4/3) poorly graded SAND with few silt, wet. | | 41 ft: 10% fines (silt/clay) |
| 42 | | | | | | Reddish brown (5YR 4/3) well graded SAND with few silt, medium sand, few fine sand, few coarse sand, little fine to coarse gravel (up to 2" across), grades into sand with little silt at 45 ft bgs, wet. | | |
| 43 | | | WET | SW | | | | |
| 44 | | | | | | | | |
| 45 | 5.2 / 10 | 0 | | | | | | |
| | | | WET | SP | | Reddish brown (5YR 4/3) poorly graded SAND with little silt, medium sand, few coarse sand, loose, wet. | | 45 ft: 20% fines (silt/clay) |
| 46 | | | | | | | | |
| 47 | | | | | | Reddish brown (2.5YR 4/4) widely graded SAND with some silt, fine to angular coarse sand, few embedded fine to coarse gravel, very dense, dry to damp (Basal Till). | | 46.5 ft: 30% fines (silt/clay) |
| 48 | | | DRY TO DAMP | SM | | | | |
| 49 | | | | | | | | |
| 50 | | | | | | Reddish brown (5YR 4/4) SAND with some silt, trace coarse sand, few fine to coarse subrounded to subangular gravel embedded in matrix, compact (at 50 ft), dense to very dense, damp (Basal Till). | | 50 ft: 30% fines (silt/clay) |
| 51 | | | | | | | | |
| 52 | | | | | | | | |
| 53 | | | | | | | | |
| 54 | | | | | | | | |
| 55 | 5.7 / 10 | 0 | DAMP | SM | | | | |
| 56 | | | | | | | | |
| 57 | | | | | | | | |
| 58 | | | | | | | | |
| 59 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW62C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.04 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611139 |
| **Date Started Drilling:** 6/15/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683749.8 |
| **Date Finished Drilling:** 6/16/2020 | **Core Size:** 3 in | **Boring Total Depth:** 80 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 13.0 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 61–65 | 7.5 / 10 | 0 | DAMP TO DRY | SW | | Reddish brown (5YR 4/4) well graded SAND with little silt, fine to coarse sand, little subangular to subrounded fine to coarse gravel, very dense, damp to dry (Basal Till). | | 60 ft: 25% fines (silt/clay) |
| 66–67 | | | DAMP | SM | | Reddish brown (5YR 4/4) poorly graded SAND with little silt, fine to medium sand, trace gravel, loose, damp (Basal Till). | | Bentonite Seal: 66.5-68.5 ft bgs<br>67 ft: 25% fines (silt/clay) |
| 68–70 | | | DAMP | SM | | Reddish brown (5YR 4/3) widely graded SAND with some silt, fine to coarse sand, few fine to coarse gravel embedded, very dense, damp (Basal Till). | | #0 Filter sand: 68.5-73.5 ft bgs<br>69 ft: 30% fines (silt/clay) |
| 71–79 | 4 / 10 | 0 | | BEDROCK | | Grey mudstone and siltstone, wet (Lockatong Formation). Weathered from 71-73 ft bgs (broken rock in clay matrix), competent at 73 ft bgs. End of boring at 80 ft. | | 2-inch Schedule 40 PVC well screen: 69-73 ft bgs<br>Bentonite Seal: 73.5-80 ft bgs |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

PPG WITH WELL CONSTRUCTION - - 2/5/21 12:23

AECOM
30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# Boring ID: 114-MW63C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** Not Available ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611436.6 |
| **Date Started Drilling:** 8/6/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683762.5 |
| **Date Finished Drilling:** 8/7/2020 | **Core Size:** 3 in | **Boring Total Depth:** 72 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.7 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 | | | | | | Soft dig to 5 ft bgs; Grayish brown silty SAND, little fine to coarse gravel, dry (DGA). | | |
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | DRY | FILL | | | | |
| 4 | | | | | | | | Riser set in grout |
| 5 | 5.4 / 10 | 0 | | | | Olive gray (5Y 4/2) silty SAND, fine to coarse sand, few fine to coarse gravel with loose and firm sections. Wet (5' to 9') to dry (9' to 10') (FILL). | | |
| 6 | | | | | | | | Grout: 0-60.75 ft bgs |
| 7 | | | | | | | | |
| 8 | | | WET | FILL | | | | |
| 9 | | | | | | | | |
| 10 | | | | | | Olive gray (5Y 4/2) silty SAND, fine to coarse sand, few fine to coarse gravel, firm to loose, moist (FILL). | | 2-inch Schedule 40 PVC riser: 0-63.75 ft bgs |
| 11 | | | | | | | | |
| 12 | | | MOIST | FILL | | | | |
| 13 | | | MOIST | FILL | | Black silty SAND, few fine to coarse sand, loose, moist (FILL). | | |
| 14 | | | | PT | | Black (10YR 2/1) to very dark gray (10YR 3/2) organic soil with brown fibers (PEAT). | | |
| 15 | 5.6 / 10 | 0 | | ML | | Dark brown (7.5YR 3/3) SILT, few organic fibers. | | |
| 16 | | | | CL/ML | | Brown (7.5YR 4/3) CLAY and SILT. | | |
| 17 | | | | SC | | Brown clayey SAND, fine sand, fine to coarse gravel. | | |
| 18 | | | | | | | | |
| 19 | | | | SP-SM | | Dark reddish brown (5YR 3/4) poorly graded SAND with silt, medium sand, few fine sand, trace coarse sand, little gravel. | | 19 ft: 10% fines (silt/clay) |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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732.564.3200 office telephone

# Boring ID: 114-MW63C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** Not Available ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611436.6 |
| **Date Started Drilling:** 8/6/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683762.5 |
| **Date Finished Drilling:** 8/7/2020 | **Core Size:** 3 in | **Boring Total Depth:** 72 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.7 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 21 | | | WET | SP | | Reddish brown poorly graded SAND, trace silt, fine to medium sand, trace coarse sand, little sub-angular fine to coarse gravel. | | |
| 22 | | | | | | | | |
| 23 | | | | | | | | 23 ft: 1-5% fines (silt/clay) |
| 24 | | | | | | Reddish brown, poorly graded SAND, trace silt, fine to medium sand, little sub-angular fine to coarse gravel, wet. | | |
| 25 | 7.5 / 10 | 0 | WET | SP | | | | |
| 26 | | | | | | | | |
| 27 | | | | | | Reddish brown, poorly graded SAND with silt, fine sand, few silt, loose, wet. Yellowish groundwater observed. | | |
| 28 | | | WET | SP-SM | | | | |
| 29 | | | | | | | | |
| 30 | | | | | | Reddish brown, poorly graded SAND with silt, fine sand, few silt, loose, wet. Yellowish groundwater observed. | | |
| 31 | | | | | | | | |
| 32 | | | | | | | | |
| 33 | | | | | | | | |
| 34 | | | | | | | | |
| 35 | 4.5 / 10 | 0 | WET | SP-SM | | | | |
| 36 | | | | | | | | |
| 37 | | | | | | | | |
| 38 | | | | | | | | |
| 39 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** Not Available ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611436.6 |
| **Date Started Drilling:** 8/6/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683762.5 |
| **Date Finished Drilling:** 8/7/2020 | **Core Size:** 3 in | **Boring Total Depth:** 72 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.7 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 41 | | | | | | Reddish brown (2.5YR 4/3) sandy SILT with fine sand, wet. | | 40 ft: 70% fines (silt/clay) |
| 42 | | | | | | | | |
| 43 | | | | | | | | |
| 44 | | | | | | | | |
| 45 | 5.1 / 10 | 0 | WET | ML | | | | |
| 46 | | | | | | | | |
| 47 | | | | | | | | |
| 48 | | | | | | | | |
| 49 | | | | | | | | |
| 50 | | | | | | Reddish brown SILT with fine SAND, wet, yellowish groundwater at 50 ft bgs. | | 50 ft: 90-95% fines (silt/clay) |
| 51 | | | WET | ML | | | | |
| 52 | | | | | | Reddish brown clayey SILT, wet. | | |
| 53 | | | | | | | | |
| 54 | | | | | | | | |
| 55 | 6.5 / 10 | 0 | | | | | | |
| 56 | | | WET | CL-ML | | | | |
| 57 | | | | | | | | |
| 58 | | | | | | | | |
| 59 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW63C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** Not Available ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611436.6 |
| **Date Started Drilling:** 8/6/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683762.5 |
| **Date Finished Drilling:** 8/7/2020 | **Core Size:** 3 in | **Boring Total Depth:** 72 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 14.7 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 61 | | | WET | SP | | Reddish brown poorly graded SAND, fine sand, wet. | | 61 ft: 4% fines (silt/clay) |
| 62 | | | | | | Reddish brown clayey SAND, little fine to coarse sand, little fine to coarse gravel, firm, (Basal Till). | | Bentonite Seal: 60.75-62.75 ft bgs |
| 63 | | | WET | SC | | | | 63 ft: 25% fines (silt/clay) |
| 64 | | | | | | Reddish brown clayey SAND, little fine to coarse sand, little fine to coarse gravel, firm (Basal Till). | | #0 Filter Sand: 62.75-66.5 ft bgs |
| 65 | 7.5 / 10 | 0 | MOIST | SC | | | | 2-inch Schedule 40 PVC well screen: 63.75-65.75 ft bgs |
| 66 | | | | | | Dark gray mudstone and siltstone, dry to wet (Lockatong Formation). End of boring at 72 ft. | | |
| 67 | | | | | | | | #00 Filter Sand: 66.5-68 ft bgs |
| 68 | | | | | | | | Sump: 65.75-67.75 ft bgs |
| 69 | | | | BEDROCK | | | | |
| 70 | | | | | | | | Bentonite Seal: 67.75-72 ft bgs |
| 71 | | | | | | | | |
| 72 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW64C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** SGS | **Top of PVC Elevation:** 12.3 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611381.9 |
| **Date Started Drilling:** 6/23/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683046 |
| **Date Finished Drilling:** 6/24/2020 | **Core Size:** 3 in | **Boring Total Depth:** 100 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 10.8 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 – 5 | 5 / 5 | 0 | DRY | FILL | | Soft dig to 5 ft bgs, Gray poorly graded fine SAND with little silt, little fine to coarse gravel (DGA), dry (FILL). | | Riser set in grout |
| 5 – 10 | 2.5 / 5 | 0 | WET | FILL | | Black to dark gray DGA, poorly graded SAND with little silt, some fine to coarse subangular gravel, loose (except for one 4-inch medium dense section), wet (FILL). | | Grout: 0-90.5 ft bgs |
| 10 – 15 | 9 / 10 | | MOIST | FILL | | Black (10YR 2/1) silty SAND, few to little subangular to subrounded gravel, loose to medium dense, moist (FILL). | | 2-inch Schedule 40 PVC riser: 0-93 ft bgs |
| 15 – 16 | | | MOIST | OH | | Black (10YR 2/1) silty CLAY with some brown fibers, medium stiff, moist. | | |
| 16 – 17 | | | MOIST | CL | | Dark gray (10YR 4/1) silty CLAY with few brown fibers, few embedded fine subrounded gravel, medium stiff, moist. | | |
| 17 – 18 | | | DAMP | CL | | Dark gray (10YR 4/1) silty CLAY with few brown fibers, few embedded fine subrounded gravel, medium stiff, damp. MGP sheen observed on soils. | | |
| 18 – 19 | | | WET TO MOIST | SP | | Brown (7.5YR 5/2) poorly graded SAND, fine sand, wet to moist. MGP sheen observed on soils. | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW64C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** SGS | **Top of PVC Elevation:** 12.3 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611381.9 |
| **Date Started Drilling:** 6/23/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683046 |
| **Date Finished Drilling:** 6/24/2020 | **Core Size:** 3 in | **Boring Total Depth:** 100 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 10.8 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 21 | | | | | | Brown (7.5YR 5/2) poorly graded SAND with few silt, loose between 22.5-24.2 ft bgs, medium dense between 24.2-25.2 ft bgs, wet. MGP sheen on soils between 20-22.5 ft bgs. | | |
| 22 | | | WET | SP | | | | |
| 23 | | | | | | | | |
| 24 | | | | | | | | 23.5 ft: 10-15% fines (silt/clay) |
| 25 | 6.5 / 10 | 65 | | | | Brown (7.5YR 5/2) poorly graded SAND with little silt, fine sand, loose to medium dense, moist. | | 24.5 ft: 25% fines (silt/clay) |
| 26 | | | | | | | | |
| 27 | | | MOIST | SP | | | | |
| 28 | | | | | | | | |
| 29 | | | | | | | | |
| 30 | | | | | | Reddish brown (5YR 4/4) poorly graded SAND with little silt, wet. Pale yellow groundwater observed in core. | | 30 ft: 25% fines (silt/clay) |
| 31 | | | | | | | | |
| 32 | | | WET | SP | | | | |
| 33 | | | | | | | | |
| 34 | | | | | | Reddish brown (5YR 4/4) poorly graded SAND, fine to medium sand, wet. | | |
| 35 | 5 / 10 | 0 | | | | | | 35 ft: 10% fines (silt/clay) |
| 36 | | | | | | | | |
| 37 | | | WET | SP | | | | |
| 38 | | | | | | | | |
| 39 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW64C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** SGS | **Top of PVC Elevation:** 12.3 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611381.9 |
| **Date Started Drilling:** 6/23/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683046 |
| **Date Finished Drilling:** 6/24/2020 | **Core Size:** 3 in | **Boring Total Depth:** 100 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 10.8 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 41 | 7.5 / 10 | 0 | WET | SP | | Reddish brown (5YR 4/4) poorly graded SAND with few silt, medium sand, trace coarse sand, trace subrounded fine to coarse gravel, wet. MGP sheen observed on soils. | | 41 ft: 10% fines (silt/clay) |
| 42 | | | | | | | | |
| 43 | | | | | | | | |
| 44 | | | | | | | | |
| 45 | | | | | | | | |
| 46 | | | | | | | | |
| 47 | | | WET | SP | | Black stained poorly graded SAND with few silt, fine sand, wet. | | |
| 48 | | | | | | | | |
| 49 | | | | | | | | |
| 50 | 8.8 / 10 | 7.1 | WET | SP | | Reddish brown poorly graded SAND with few silt, medium sand, little fine sand, loose, wet. MGP sheen observed on soils. | | 51 ft: 10% fines (silt/clay) |
| 51 | | | | | | | | |
| 52 | | | MOIST | CL/ML | | Dark reddish brown, gray and reddish brown (5YR 4/3) CLAY, SILT contorted laminae and varves, medium stiff, moist. | | |
| 53 | | | | | | | | |
| 54 | | | | | | | | |
| 55 | | | | | | | | |
| 56 | | | | | | | | |
| 57 | | | | | | | | |
| 58 | | | | | | | | |
| 59 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW64C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** SGS | **Top of PVC Elevation:** 12.3 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611381.9 |
| **Date Started Drilling:** 6/23/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683046 |
| **Date Finished Drilling:** 6/24/2020 | **Core Size:** 3 in | **Boring Total Depth:** 100 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 10.8 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 61 | | | | | | | | |
| 62 | | | | | | | | |
| 63 | | | | | | | | |
| 64 | | | | | | | | |
| 65 | 7 / 10 | 0 | WET | CL/ML/SP | | Reddish brown and gray CLAY, SILT and fine SAND layers (up to 0.1' layers of fine sand), varves, medium stiff, wet. | | |
| 66 | | | | | | | | |
| 67 | | | | | | | | |
| 68 | | | | | | | | |
| 69 | | | WET | ML | | Reddish brown SILT, wet. | | |
| 70 | | | | | | | | |
| 71 | | | WET | CL/ML | | Reddish brown and gray CLAY and SILT varves, wet. | | |
| 72 | | | | | | | | |
| 73 | | | | | | | | |
| 74 | | | | | | | | |
| 75 | 6.8 / 10 | 0 | | | | Reddish brown clayey SILT, wet. | | |
| 76 | | | WET | ML | | | | |
| 77 | | | | | | | | |
| 78 | | | | | | | | |
| 79 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** SGS | **Top of PVC Elevation:** 12.3 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611381.9 |
| **Date Started Drilling:** 6/23/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683046 |
| **Date Finished Drilling:** 6/24/2020 | **Core Size:** 3 in | **Boring Total Depth:** 100 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 10.8 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 81 | | | WET | SP | | Reddish brown poorly graded SAND, few silt, mostly fine sand, wet. | | |
| 82 | | | | | | | | 81 ft: 10% fines (silt/clay) |
| 83 | | | WET | SC | | Reddish brown clayey SAND with little fine to coarse gravel, medium dense, wet. | | |
| 84 | | | | | | | | 83 ft: 40% fines (silt/clay) |
| 85 | 6 / 10 | 0 | | | | Gray clayey SAND with little embedded coarse subrounded gravel, very dense, damp (Basal Till). | | |
| 86 | | | | | | | | |
| 87 | | | DAMP | SC | | | | |
| 88 | | | | | | | | |
| 89 | | | | | | | | |
| 90 | | | | | | | | |
| 91 | | | NA | SP | | Reddish brown poorly graded SAND with few silt, fine sand (Basal Till). | | 90.5 ft: 10% fines (silt/clay) |
| 92 | | | WET TO DAMP | GC/SC | | Gray fine to coarse GRAVEL, with some clayey sand, very dense, wet from 92-92.5 ft bgs, damp from 92.5-93 ft bgs (Basal Till). | | Bentonite Seal: 90.5-92.5 ft bgs |
| 93 | | | | | | | | #0 Filter sand: 92.5-96.5 ft bgs |
| 94 | | | | | | Gray bedrock (Stockton Formation), wet. Weathered from 93-96 ft bgs (broken rock in clay matrix), competent at 96 ft bgs. End of boring at 100 ft bgs. | | |
| 95 | 6 / 10 | 0 | | | | | | 2-inch Schedule 40 PVC well screen: 93-96 ft bgs |
| 96 | | | | | | | | |
| 97 | | | DAMP | BEDROCK | | | | |
| 98 | | | | | | | | Bentonite Seal: 96.5-100 ft bgs |
| 99 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

PPG WITH WELL CONSTRUCTION - - 2/5/21 12:23

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30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# Boring ID: 114-MW65C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.2 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611291.7 |
| **Date Started Drilling:** 3/17/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683583 |
| **Date Finished Drilling:** 3/18/2020 | **Core Size:** 3 in | **Boring Total Depth:** 72 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 12.4 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 | | | DRY | FILL | | Soft dig to 5 ft bgs; Grayish brown silty SAND, little fine to coarse gravel, dry (DGA) (FILL). | | |
| 5 | 5.3 / 10 | 0 | MOIST | FILL | | Dark yellowish brown, poorly graded SAND with clay, fine to coarse sand, little sub-angular gravel, moist (FILL). | | Riser set in grout |
| 10 | | | MOIST | FILL | | Black and gray well graded GRAVEL, angular, fine to coarse gravel, moist (FILL). | | |
| 15 | 2.4 / 10 | 0 | MOIST | FILL | | Black and gray well graded SAND with gravel, little fine to coarse subangular gravel, loose, moist (FILL). | | Grout 0-56 ft bgs |
| 19 | | | MOIST | SW-SC | | Weak red (10YR 4/4), reddish gray and dark grayish | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW65C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.2 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611291.7 |
| **Date Started Drilling:** 3/17/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683583 |
| **Date Finished Drilling:** 3/18/2020 | **Core Size:** 3 in | **Boring Total Depth:** 72 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 12.4 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 21 | | | MOIST | SW-SC | | brown (10YR 4/2) widely graded SAND with clay, fine to coarse sand, few sub-rounded to sub-angular fine gravel, hard. | | |
| | | | WET | SM | | Reddish brown (2.5YR 5/4) silty SAND, fine to coarse sand, some fine to coarse sub-rounded gravel to cobbles, loose, wet. | | |
| 22 | | | | | | Weak red (2.5YR 4/2) poorly graded SAND with silt, fine sand, loose. | | |
| 23 | | | | | | | | |
| 24 | | | | | | | | |
| 25 | 6 / 10 | 0 | | | | | | |
| 26 | | | WET | SP-SM | | | | 26 ft: 5-10% fines (silt/clay) |
| 27 | | | | | | | | |
| 28 | | | | | | | | |
| 29 | | | | | | | | |
| 30 | | | | | | | | 29.5 ft: 20% fines (silt/clay) |
| 31 | | | WET | CH/ML | | Weak red (2.5YR 4/2) fat CLAY with interbedded silt laminae, medium hard, wet. | | |
| 32 | | | | | | Strong brown (7.5YR 4/6) silty SAND, fine sand, loose, wet. Yellowish groundwater at 33' to 37'. | | 2-inch Schedule 40 PVC riser 0-60 ft bgs |
| 33 | | | | | | | | |
| 34 | | | | | | | | |
| 35 | 8 / 10 | 0 | | | | | | 35 ft: 30% fines (silt/clay) |
| 36 | | | WET | SM | | | | |
| 37 | | | | | | | | |
| 38 | | | | | | | | |
| 39 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW65C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.2 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611291.7 |
| **Date Started Drilling:** 3/17/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683583 |
| **Date Finished Drilling:** 3/18/2020 | **Core Size:** 3 in | **Boring Total Depth:** 72 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 12.4 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 41–42 | 6 / 10 | 0 | WET | CH | | Strong brown (7.5YR 4/6) fat CLAY with silt laminae, wet, yellowish groundwater. | | |
| 43–49 | | | WET | CH/MH | | Strong brown (7.5YR 4/6) fat CLAY with silt, laminae of silt and clay layers, medium hard, wet. | | |
| 50 | | | WET | SP-SM | | Reddish brown (2.5YR 4/3) poorly graded SAND silt, fine sand, few silt, wet. | | |
| 50–52 | | | | SP-SM | | Reddish brown (2.5YR 4/3) poorly graded SAND with silt, fine sand, little medium sand. | | 52 ft: 15% fines (silt/clay) |
| 53–59 | 7.2 / 10 | 0 | MOIST | SM | | Reddish brown (5YR 5/4) silty SAND, little sub-angular fine to sub-rounded coarse gravel, hard, moist (Basal Till). | Bentonite Seal 56-58 ft bgs<br>#0 Filter sand 58-66 ft bgs | 53 ft: 30% fines (silt/clay) |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

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# Boring ID: 114-MW65C



| | | |
|---|---|---|
| **Project Name:** Garfield Avenue Groundwater RI | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.2 ft NAVD88 |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611291.7 |
| **Date Started Drilling:** 3/17/2020 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 683583 |
| **Date Finished Drilling:** 3/18/2020 | **Core Size:** 3 in | **Boring Total Depth:** 72 ft |
| **Logged By:** V. Thayer | **Project Manager:** Shannon Gleason | **Depth to Water:** |
| **Physical Location:** Site 114 | | **Surface Elevation:** 12.4 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 61 | | | | | | | | |
| 62 | | | MOIST | SM | | | | 2-inch Schedule 40 Screen 60-65 ft bgs |
| 63 | | | | | | | | |
| 64 | | | MOIST | SW-SC | | Reddish brown (5YR 4/3) widely graded SAND with silt or clay, fine to coarse sand, little fine to coarse gravel, few large gravel (2" to 3" wide), hard, moist (Basal Till). | | 64 ft: 15% fines (silt/clay) |
| 65 | 5 / 10 | 0 | MOIST | SM | | Reddish brown (5YR 4/3) silty SAND, fine to coarse sand, few fine gravel, few coarse sub-rounded gravel (Basal Till). | | 65.5 ft: 20% fines (silt/clay) |
| 66 | | | DRY | BEDROCK | | Gray mudstone and siltstone, wet (Lockatong Formation). | | |
| 67 | | | | | | | | |
| 68 | | | | | | Gray mudstone and siltstone, wet (Lockatong Formation). End of boring at 72 ft. | | Bentonite Seal 66-72 ft bgs |
| 69 | | | WET | BEDROCK | | | | |
| 70 | | | | | | | | |
| 71 | 2 / 2 | | | | | | | |
| 72 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Percentage of fines (silt/clay) shown are an estimated value based on a field-testing method.

PPG WITH WELL CONSTRUCTION - - 2/5/21 12:23

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# Boring ID: DNAPL-S1



| | | |
|---|---|---|
| **Project Name:** Groundwater I - DNAPL Investigation | **Drilling Company:** SGS North America | |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611097.7 |
| **Date Started Drilling:** 11/16/2017 9:00:00 AM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 682918.1 |
| **Date Finished Drilling:** 11/16/2017 10:40:00 AM | **Core Size:** | **Boring Total Depth:** 48 ft |
| **Logged By:** E. Acs | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** Site 137 | | **Surface Elevation:** 10.8 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 0 | | 0 | DRY | FILL | | DGA, (7.5YR 4/2) brown, medium dense, dry, no odor, no staining | |
| 3 | | 0 | DRY | FILL | | DGA, (5Y 6/1) gray, medium dense, dry, no odor, no staining | |
| 7 | | 0 | DRY | FILL | | fine to medium SAND, little silt and gravel, (5YR 4/1) dark gray, medium dense, dry, no odor, no staining | |
| 8 | | 0 | WET | FILL | | DGA, (5YR 2.5/1) black, medium dense, wet no odor, no staining | |
| 16 | | 0 | MOIST | PT | | PEAT (degraded vegetated material), (30% fibers, 70% organic silt), (5YR 2.5/1) black, moist, strong organic odor. Soils consistent with MM. | |
| 18 | | 0 | MOIST | PT | | PEAT (degraded vegetated material), 30% fibers, 70% organic silt, (5YR 5/1) gray, moist strong organic odor. Soils consistent with MM. | |
| 21 | | 0 | WET | ML | | SILT, little fine to medium sand little gravel, (5YR 5/1) gray, soft, wet, no odor, no staining. Soils consistent with | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

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# Boring ID: DNAPL-S1



| | | |
|---|---|---|
| **Project Name:** Groundwater I - DNAPL Investigation | **Drilling Company:** SGS North America | |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611097.7 |
| **Date Started Drilling:** 11/16/2017 9:00:00 AM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 682918.1 |
| **Date Finished Drilling:** 11/16/2017 10:40:00 AM | **Core Size:** | **Boring Total Depth:** 48 ft |
| **Logged By:** E. Acs | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** Site 137 | | **Surface Elevation:** 10.8 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 23 | | | | | | UNDno. | |
| 24 | | 0 | WET | SP | | SAND, little silt, (5YR 5/1) gray, medium dense, wet, no odor, no staining. Soils consistent with UNDno. | |
| 25 | | | | | | | |
| 26 | | 28.0 | WET | SP-SM | | fine to medium SAND, little gravel some silt, (5YR 4/3) reddish brown, wet. Soils consistent with UNDno. | |
| 27 | | 67.0 | MOIST | SP | | fine SAND, some silt, (5YR 4/3) reddish brown, medium dense, moist to wet. Soils consistent with UNDno. | |
| 28 | | 148.0 | WET | SP | | fine SAND, some silt, (5YR 4/3) reddish brown, medium dense, wet hydrocarbon staining. Soils consistent with UNDno. | |
| 29 | | | | | | | |
| 30 | | | | | | | |
| 31 | | | | | | | |
| 32 | | | | | | | |
| 33 | | | | | | | 137-S1-32.5-33.0 |
| 34 | | | | | | | |
| 35 | | | | | | | |
| 36 | | | | | | | |
| 37 | | | | | | | |
| 38 | | 122.0 | WET | SP | | fine SAND, some silt, (5YR 4/3) reddish brown, medium dense, wet. Soils consistent with UNDno. | |
| 39 | | | | | | | |
| 40 | | | | | | | |
| 41 | | | | | | | |
| 42 | | | | | | | |
| 43 | | | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

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# Boring ID: DNAPL-S1



| | | |
|---|---|---|
| **Project Name:** Groundwater I - DNAPL Investigation | **Drilling Company:** SGS North America | |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611097.7 |
| **Date Started Drilling:** 11/16/2017 9:00:00 AM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 682918.1 |
| **Date Finished Drilling:** 11/16/2017 10:40:00 AM | **Core Size:** | **Boring Total Depth:** 48 ft |
| **Logged By:** E. Acs | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** Site 137 | | **Surface Elevation:** 10.8 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 45 | | | | | | | |
| 46 | | 67.0 | WET | SP | | fine SAND, some silt, (5YR 4/3) reddish brown, medium dense, wet. Soils consistent with UNDno. | |
| 47 | | | | | | | 137-S1-47.5-48.0 |
| 48 | | | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

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# Boring ID: DNAPL-W1



| | | |
|---|---|---|
| **Project Name:** Groundwater I - DNAPL Investigation | **Drilling Company:** SGS North America | |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611066 |
| **Date Started Drilling:** 11/16/2017 12:00:00 PM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 682952.4 |
| **Date Finished Drilling:** 11/16/2017 1:30:00 PM | **Core Size:** | **Boring Total Depth:** 48 ft |
| **Logged By:** E. Acs | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** Site 137 | | **Surface Elevation:** 10.8 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 0 | | 0.0 | DRY | FILL | | DGA, (7.5YR 4/2) brown, medium dense, dry | |
| 3 | | | DRY | FILL | | DGA, (5YR 4/1) dark gray (7.5YR 4/2) brown, medium dense, dry | |
| 7 | | | DRY | FILL | | DGA, (5YR 2.5/1) black, medium dense, dry | |
| 8 | | | DRY | FILL | | DGA, (5YR 2.5/1) black, medium dense, dry | |
| 16 | | | MOIST | PT | | PEAT (degraded vegetated material), (5YR 5/1) gray, moist strong organic odor. Soils consistent with MM. | |
| 18 | | 20.0 | WET | SP-SM | | SILT, fine to medium sand some gravel, (5YR 5/1) gray, wet. Soils consistent with UNDno. | |
| 20 | | | | NR | | No Recovery | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

PPG - 2012-09 RA PPG_LOGS_A.GDT - 6/7/18 14:17

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# Boring ID: DNAPL-W1



| | | |
|---|---|---|
| **Project Name:** Groundwater I - DNAPL Investigation | **Drilling Company:** SGS North America | |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611066 |
| **Date Started Drilling:** 11/16/2017 12:00:00 PM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 682952.4 |
| **Date Finished Drilling:** 11/16/2017 1:30:00 PM | **Core Size:** | **Boring Total Depth:** 48 ft |
| **Logged By:** E. Acs | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** Site 137 | | **Surface Elevation:** 10.8 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 23 | | 230.0 | WET | SP-SM | | fine to medium SAND, some silt, (5YR 4/3) reddish brown, medium dense, wet. Soils consistent with UNDno. | |
| 24 | | | | | | | |
| 25 | | | | | | | |
| 26 | | | | | | | |
| 27 | | | | | | | |
| 28 | | | WET | SM | | fine to medium SAND, some silt, (5YR 4/3) reddish brown, medium dense, petroleum staining, free product from 31.5' to 33.5', petroleum sheen from 28' to 31.5', wet. Soils consistent with UNDno. | |
| 29 | | | | | | | |
| 30 | | | | | | | |
| 31 | | | | | | | |
| 32 | | | | | | | |
| 33 | | | | | | | 137-W1-32.5-33.0 |
| 34 | | | | | | | |
| 35 | | | | | | | |
| 36 | | | | | | | |
| 37 | | | | | | | |
| 38 | | 40.0 | WET | SM | | fine to medium SAND, some silt, (5YR 4/3) reddish brown, medium dense, wet. Soils consistent with UNDno. | |
| 39 | | | | | | | |
| 40 | | | | | | | |
| 41 | | | | | | | |
| 42 | | | | | | | |
| 43 | | | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

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# Boring ID: DNAPL-W1



| | | |
|---|---|---|
| **Project Name:** Groundwater I - DNAPL Investigation | **Drilling Company:** SGS North America | |
| **Project Number:** 60550261 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611066 |
| **Date Started Drilling:** 11/16/2017 12:00:00 PM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 682952.4 |
| **Date Finished Drilling:** 11/16/2017 1:30:00 PM | **Core Size:** | **Boring Total Depth:** 48 ft |
| **Logged By:** E. Acs | **Project Manager:** Scott Mikaelian | **Depth to Water:** |
| **Physical Location:** Site 137 | | **Surface Elevation:** 10.8 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 45 | | | | | | | |
| 46 | | 10.0 | WET | SW-SM | | fine SAND, some silt, (5YR 4/3) reddish brown. Soils consistent with UNDno. | |
| 47 | | | | | | | |
| 48 | | | | | | | 137-W1-47.5-48.0 |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

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# Boring ID: GAR-PDI-A11B



| | | |
|---|---|---|
| **Project Name:** PPG Garfield Ave | **Drilling Company:** SGS North America | |
| **Project Number:** 60240739 | **Drilling Method:** Direct Push | **Coordinates (NJSPNAD83) x:** 611057.994 |
| **Date Started Drilling:** 2/12/2017 10:50:00 AM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 683942.359 |
| **Date Finished Drilling:** 2/12/2017 11:50:00 AM | **Core Size:** 3.0 in | **Boring Total Depth:** 21 ft |
| **Logged By:** TI | **Project Manager:** Scott Mikaelian | **Depth to Water:** 5.0 |
| **Physical Location:** Actual - GA PDI | | **Surface Elevation:** 11.982 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 0 | | 0.0 | | CONCRETE | | Concrete sidewalk | |
| 1 | | | dry | FILL | | fine to coarse SAND, little fine to coarse gravel, (7.5YR 4/1) dark gray, loose, dry to moist, no odor, no staining. | GAR-PDI-A11B-0.5-1.0 |
| 2 | | | moist | FILL | | fine to medium SAND, little silt, trace coarse gravel, (7.5YR 3/2) dark brown, medium dense, moist, no odor, no staining. | |
| 3 | 4.5 | | moist | FILL | | fine silty SAND, little coarse gravel, (7.5YR 2.5/2) very dark brown, medium dense, moist, no odor, no staining. | GAR-PDI-A11B-2.0-2.5 |
| 4 | | | | | | | GAR-PDI-A11B-4.0-4.5 |
| 5 | | | | NR | | NO RECOVERY | |
| 6 | | 0.0 | wet | FILL | | fine to coarse SAND, some fine to coarse gravel, (7.5YR 4/2) brown, medium dense, wet, no odor, no staining, water at 5.0 feet. | GAR-PDI-A11B-5.5-6.0 |
| 7 | 3.5 | | wet | OL | | fine sandy SILT, little coarse gravel, (7.5YR 3/2) dark brown, medium stiff, wet, no odor, no staining. SILT, trace fine sand and organics, (7.5YR 4/2) brown, medium stiff, wet, no odor, no staining. Soils consistent with UNDorg. | GAR-PDI-A11B-6.0-6.5 |
| 8 | | | | | | | GAR-PDI-A11B-8.0-8.5 |
| 9 | | | | NR | | NO RECOVERY | |
| 10 | | 0.0 | wet | OL | | SILT, trace fine sand and organics, (7.5YR 4/2) brown, medium stiff, wet, no odor, no staining. Soils consistent with UNDorg. | GAR-PDI-A11B-10.0-10.5 |
| 11 | | | wet | ML | | SILT, little coarse gravel, trace fine sand, (7.5YR 6/1) gray, medium stiff, wet, no odor, no staining. Soils consistent with UNDno. | |
| 12 | 4.5 | | wet | SP | | fine to medium SAND, some fine to coarse gravel, (7.5YR 5/1) gray, medium dense, wet, no odor, no staining. Soils consistent with UNDno. | GAR-PDI-A11B-12.0-12.5 |
| 13 | | | wet | SP | | fine to coarse SAND, some fine to coarse gravel, (7.5YR 2.5/2) very dark brown, medium dense, wet, no odor, no staining. Soils consistent with UNDno. | |
| 14 | | | | | | | GAR-PDI-A11B-14.0-14.5 |
| 15 | | | | NR | | NO RECOVERY | |
| 16 | | 0.0 | wet | SM | | SILT, some fine to coarse gravel, (7.5YR 4/1) dark gray, soft, wet, no odor, no staining. Soils consistent with UNDno. | |
| 17 | 5 | | wet | SP | | fine to coarse SAND, some fine to coarse gravel, (5YR 3/2) dark reddish brown, medium dense, wet, no odor, no staining. Soils consistent with UNDno. | GAR-PDI-A11B-16.0-16.5 |
| 18 | | | | | | | GAR-PDI-A11B-18.0-18.5 |
| 19 | | | | | | | |
| 20 | 1 | 0.0 | | | | | GAR-PDI-A11B-20.0-20.5 |
| 21 | | | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:** 1) 3 attempts were made to obtain best recovery 2) No CCPW (COPR or GGM) present in any interval of this boring 3) MM/UND confirmed to be 1 ft thick.

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# Boring ID: GAR-PDI-B`2A



| | | |
|---|---|---|
| **Project Name:** PPG Garfield Ave | **Drilling Company:** SGS North America | |
| **Project Number:** 60240739 | **Drilling Method:** direct push | **Coordinates (NJSPNAD83) x:** 610825.372 |
| **Date Started Drilling:** 12/11/2016 11:35:00 AM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 683625.87 |
| **Date Finished Drilling:** 12/11/2016 12:35:00 PM | **Core Size:** 3.0 in | **Boring Total Depth:** 20 ft |
| **Logged By:** Eric Stone | **Project Manager:** Scott Mikaelian | **Depth to Water:** 5.0 |
| **Physical Location:** Actual - GA PDI | | **Surface Elevation:** 10.319 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 0 | 5 | 0.0 | slightly moist | CONCRETE / FILL | | Concrete sidewalk<br>fine to medium SAND, little ash and fine to medium gravel, (5YR 4/4) reddish brown, medium dense, slightly moist, no odor, no staining. | |
| 1–5 | | | moist | FILL | | fine silty SAND, little brick, trace ash and coal, (7.5YR 4/3) brown, medium dense, moist, no odor, no staining. | |
| 4–5 | | | moist | FILL | | SILT, little concrete debris, trace fine gravel, ash and coal, (7.5YR 4/3) brown, soft, moist to wet, no odor, no staining, water at 5.0 feet. | |
| 5–10 | 5 | 0.0 | wet | SM | | fine to medium silty SAND, some fine to medium gravel, (5YR 4/4) reddish brown, medium dense, wet, no odor, no staining. Soils consistent with UNDno. | GAR-PDI-B'2A-6.0-6.5<br>GAR-PDI-B'2A-6.5-7.0<br>GAR-PDI-B'2A-7.0-7.5<br>GAR-PDI-B'2A-8.0-8.5 |
| 10–15 | 5 | 0.0 | wet | ML | | SILT, (7.5YR 4/3) brown, soft, wet, no odor, no staining. Soils consistent with UNDno. | GAR-PDI-B'2A-10.0-10.5 |
| 11–12 | | | wet | SM | | fine to medium silty SAND, little fine gravel, (5YR 4/4) reddish brown, medium dense, wet, no odor, no staining. Soils consistent with UNDorg. | |
| 12–15 | | | wet | SP | | fine to coarse SAND, some fine to medium gravel, trace silt, (5YR 4/4) reddish brown, dense, wet, no odor, no staining. Soils consistent with UNDno. | GAR-PDI-B'2A-13.0-13.5<br>GAR-PDI-B'2A-15.0-15.5 |
| 15–20 | 5 | 0.0 | wet | SM | | fine silty SAND, (5YR 4/4) reddish brown, medium dense, wet, no odor, no staining. Soils consistent with UNDno. | GAR-PDI-B'2A-18.0-18.5 |

**Notes:**
bgs - below surface grade | COPR - chromite ore processing residue | UNDno - non-organic undisturbed native deposits | MGP - manufactured gas plant
MM - meadow mat | GGM - green grey mud | UNDorg - organic undisturbed native deposits | CCPW - chromate chemical production waste

**Comments:** 1) 3 attempts were made to obtain best recovery 2) MM/UND confirmed to be 1 ft thick 3) No CCPW (COPR or GGM) present in any interval of this boring.
4) Monitoring well 114-MW42A was installed in this location.

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# Boring ID: GAR-PDI-B`3A



| | | |
|---|---|---|
| **Project Name:** PPG Garfield Ave | **Drilling Company:** SGS North America | |
| **Project Number:** 60240739 | **Drilling Method:** direct push | **Coordinates (NJSPNAD83) x:** 610814.856 |
| **Date Started Drilling:** 12/11/2016 1:15:00 PM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 683606.098 |
| **Date Finished Drilling:** 12/11/2016 2:30:00 PM | **Core Size:** 3.0 in | **Boring Total Depth:** 21 ft |
| **Logged By:** Eric Stone | **Project Manager:** Scott Mikaelian | **Depth to Water:** 5.0 |
| **Physical Location:** Actual - GA PDI | | **Surface Elevation:** 10.352 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 0 | | 0.0 | | CONCRETE | | Concrete sidewalk | |
| 1 | 5 | | dry | FILL | | fine to medium SAND, some ash, little fine gravel, (2.5Y 4/2) dark grayish brown, medium dense, dry, no odor, no staining. | GAR-PDI-B'3A-0.5-1.0 |
| 2 | | | dry | FILL | | fine to medium SAND, some fine to medium gravel, little silt and ash, trace coal, (7.5YR 4/3) brown, medium dense, dry, no odor, no staining. | GAR-PDI-B'3A-2.0-2.5 |
| 3 | | | | | | | |
| 4 | | | moist | FILL | | SILT, little brick, trace coal, (7.5YR 4/3) brown, soft, moist to wet, no odor, no staining, water at 5.0 ft bgs. | |
| 5 | 5 | 0.0 | | | | | |
| 6 | | | | | | | GAR-PDI-B'3A-6.5-7.0 |
| 7 | | | wet | SP | | fine to coarse SAND, some fine to medium gravel, (5YR 4/3) reddish brown, medium dense, wet, no odor, no staining. Soils consistent with UNDno. | GAR-PDI-B'3A-7.0-7.5 |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | 5 | 0.0 | | | | | GAR-PDI-B'3A-10.0-10.5 |
| 11 | | | wet | GW | | fine to coarse GRAVEL, some fine to medium sand, (5YR 4/4) reddish brown, dense, wet, no odor, no staining. Soils consistent with UNDno. | |
| 12 | | | | | | | GAR-PDI-B'3A-12.0-12.5 |
| 13 | | | | | | | |
| 14 | | | | | | | GAR-PDI-B'3A-14.0-14.5 |
| 15 | 5 | 0.0 | | | | | |
| 16 | | | wet | SP | | fine to coarse SAND, some fine to medium gravel, (5YR 4/4) reddish brown, medium dense, wet, no odor, no staining. Soils consistent with UNDno. | GAR-PDI-B'3A-16.0-16.5 |
| 17 | | | | | | | |
| 18 | | | | | | | GAR-PDI-B'3A-18.0-18.5 |
| 19 | | | | | | | |
| 20 | 1 | 0.0 | | | | | GAR-PDI-B'3A-20.0-20.5 |
| 21 | | | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:** 1) 3 attempts were made to obtain best recovery 2) MM/UND confirmed to be 1 ft thick 3) No CCPW (COPR or GGM) present in any interval of this boring.

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# Boring ID: GAR-PDI-C13B



| | | |
|---|---|---|
| **Project Name:** PPG Garfield Ave | **Drilling Company:** SGS North America | |
| **Project Number:** 60240739 | **Drilling Method:** Direct Push | **Coordinates (NJSPNAD83) x:** 611144.3 |
| **Date Started Drilling:** 12/18/2016 9:20:00 AM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 683957.33 |
| **Date Finished Drilling:** 12/18/2016 | **Core Size:** 3.0 in | **Boring Total Depth:** 25 ft |
| **Logged By:** Kyle Willis | **Project Manager:** Scott Mikaelian | **Depth to Water:** 3.5 |
| **Physical Location:** Actual - GA PDI | | **Surface Elevation:** 12.05 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 0 | | 0.0 | | ASPHALT | | ASPHALT | |
| 1 | | | | CONCRETE | | Concrete slab | |
| 2 | 5 | | moist | FILL | | CINDERS, little ash, (5YR 2.5/1) black, loose, moist, no odor, no staining. | GAR-PDI-C13B-2.0-2.5 |
| 3 | | | wet | FILL | | fine to coarse GRAVEL, little cobbles, (5YR 2.5/1) black, dense, wet, no odor, no staining, water at 3.5 feet. | |
| 4 | | | wet | FILL | | SILT, trace wood and fill debris, (5YR 2.5/1) black, soft, wet, no odor, no staining. | GAR-PDI-C13B-4.0-4.5 |
| 5 | | 0.0 | wet | FILL | | SILT, little ash, trace fill debris, (5YR 2.5/1) black, soft, wet, no odor, no staining. | |
| 6 | | | | | | | GAR-PDI-C13B-6.0-6.5 |
| 7 | 4 | | wet | FILL | | fine to medium SAND, little fill debris, trace ash, (5YR 2.5/2) dark reddish brown, medium dense, wet, no odor, no staining. | |
| 8 | | | | | | | GAR-PDI-C13B-8.0-8.5 |
| 9 | | | wet | SW | | fine to coarse SAND, little fine to coarse gravel, (5YR 4/3) reddish brown, medium dense, wet, no odor, no staining. Soils consistent with UNDno. | GAR-PDI-C13B-8.5-9.0 |
| 10 | | | | NR | | NO RECOVERY | |
| 11 | 4.5 | 0.0 | wet | SM | | fine to coarse silty SAND, little fine to coarse gravel, (5YR 3/2) dark reddish brown, medium dense, wet, no odor, no staining. Soils consistent with UNDno. | GAR-PDI-C13B-10.0-10.5 |
| 12 | | | wet | OL | | Organic SILT, 90% organic silt, 10% organic fibers, (7.5YR 3/2) dark brown, firm, wet, slight organic odor, no staining. Soils consistent with UNDorg. | GAR-PDI-C13B-12.0-12.5 |
| 13 | | | wet | SM | | fine silty SAND, (10G 7/1) light greenish gray, medium dense, wet, no odor, no staining. Soils consistent with UNDno. | |
| 14 | | | | | | | GAR-PDI-C13B-14.0-14.5 |
| 15 | | | | NR | | NO RECOVERY | |
| 16 | 5 | 0.0 | wet | SM | | fine to coarse silty SAND, little fine to coarse gravel, (5YR 4/3) reddish brown, dense, wet, no odor, no staining. Soils consistent with UNDno. | GAR-PDI-C13B-16.0-16.5 |
| 17 | | | | | | | |
| 18 | | | | | | | GAR-PDI-C13B-18.0-18.5 |
| 19 | | | | | | | |
| 20 | 5 | 0.0 | | | | | GAR-PDI-C13B-20.0-20.5 |
| 21 | | | | | | | |
| 22 | | | | | | | |
| 23 | | | | | | | |
| 24 | | | | | | | |
| 25 | | | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:** 1) 3 attempts were made to obtain best recovery 2) No CCPW (COPR or GGM) present in any interval of this boring 3) MM/UND confirmed to be 1 ft thick.

PPG - 2012-09 RA PPG_LOGS_A.GDT - 4/20/17 21:29

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# Boring ID: GAR-PDI-D14B



| | | |
|---|---|---|
| **Project Name:** PPG Garfield Ave | **Drilling Company:** SGS North America | |
| **Project Number:** 60240739 | **Drilling Method:** direct push | **Coordinates (NJSPNAD83) x:** 611173.388 |
| **Date Started Drilling:** 12/11/2016 9:45:00 AM | **Rig Type:** | **Coordinates (NJSPNAD83) y:** 683976.164 |
| **Date Finished Drilling:** 12/11/2016 11:20:00 AM | **Core Size:** 3.0 in | **Boring Total Depth:** 9.5 ft |
| **Logged By:** Eric Stone | **Project Manager:** Scott Mikaelian | **Depth to Water:** 5.0 |
| **Physical Location:** Actual - GA PDI | | **Surface Elevation:** 12.891 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 0 | 5 | 0.0 | | CONCRETE | | Concrete sidewalk | |
| | | | dry | FILL | | DGA, fine to coarse SAND, little asphalt, (2.5Y 5/2) grayish brown, loose, dry, no odor, no staining. | |
| 1 | | | dry | FILL | | DGA, fine to coarse SAND, some fine to medium gravel, (7.5YR 6/4) light brown, medium dense, dry, no odor, no staining. | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | 4.5 | 0.0 | wet | FILL | | fine to coarse SAND, some fine to coarse gravel, (7.5YR 4/3) brown, medium dense, wet, no odor, no staining, water at 5.0 feet. | GAR-PDI-D14B-5.0-5.5 |
| 6 | | | | | | | |
| 7 | | | wet | FILL | | ASH, some fine to coarse sand, little fill debris, (2.5Y 5/2) grayish brown, medium dense, wet, no odor, no staining. | GAR-PDI-D14B-7.0-7.5 |
| 8 | | | | | | | GAR-PDI-D14B-8.5-9.0 |
| 9 | | | wet | GW | | fine to coarse GRAVEL, some fine to medium sand, (5YR 4/4) reddish brown, medium dense, wet, no odor, no staining, refusal at 9.5 feet. Soils consistent with UNDno. | GAR-PDI-D14B-9.0-9.5 |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:** 1) 3 attempts were made to obtain best recovery 2) No CCPW (COPR or GGM) present in any interval of this boring.

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# Boring ID: MW-CR-3D



| | | |
|---|---|---|
| **Project Name:** Groundwater Remedial Investigation | **Drilling Company:** SGS North America | |
| **Project Number:** 60550261 | **Drilling Method:** Sonic Vibration | **Coordinates (NJSPNAD83) x:** 611443.5 |
| **Date Started Drilling:** 1/29/2018 7:00:00 AM | **Rig Type:** Sonic | **Coordinates (NJSPNAD83) y:** 683987.8 |
| **Date Finished Drilling:** 2/2/2018 3:00:00 PM | **Core Size:** | **Boring Total Depth:** 48 ft |
| **Logged By:** E. Acs | **Project Manager:** Scott Mikaelian | **Depth to Water:** 5.94 |
| **Physical Location:** Berry Lane Park | | **Surface Elevation:** 15.2 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 0 | | | | FILL | | Organic Topsoil | |
| 2 | | 0 | | FILL | | DGA, (5Y 7/1) light gray, fine to corase sand, little fine to coarse gravel, dry to wet, medium dense to very dense, no odor or staining, wet at 8' | |
| 5 | 3 | 0 | | | | | |
| 8 | 8 | 0 | | | | | |
| 16 | 2 | 0 | | | | | |
| 18 | 2 | 0 | | | | | |
| 20 | | | wet | GW | | fine to medium GRAVEL, trace fine sand, (5YR 4/1) dark gray, medium dense, wet no odor no staining. Soils | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

PPG - 2012-09 RA PPG_LOGS_A.GDT - 6/7/18 15:28

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732.564.3200 office telephone

# Boring ID: MW-CR-3D



| | | |
|---|---|---|
| **Project Name:** Groundwater Remedial Investigation | **Drilling Company:** SGS North America | |
| **Project Number:** 60550261 | **Drilling Method:** Sonic Vibration | **Coordinates (NJSPNAD83) x:** 611443.5 |
| **Date Started Drilling:** 1/29/2018 7:00:00 AM | **Rig Type:** Sonic | **Coordinates (NJSPNAD83) y:** 683987.8 |
| **Date Finished Drilling:** 2/2/2018 3:00:00 PM | **Core Size:** | **Boring Total Depth:** 48 ft |
| **Logged By:** E. Acs | **Project Manager:** Scott Mikaelian | **Depth to Water:** 5.94 |
| **Physical Location:** Berry Lane Park | | **Surface Elevation:** 15.2 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| | | | | | | consistent with UNDno. | |
| 23 | | | wet | SW | | fine to coarse SAND, some fine to coarse gravel, (5YR 4/3) reddish brown, medium dense, wet no odor no staining. Soils consistent with UNDno. | |
| 24 | 8 | 0 | | | | | |
| 25 | | | | | | | |
| 26 | | | | | | | |
| 27 | | | | | | | |
| 28 | | | | | | | |
| 29 | | | | | | | |
| 30 | | | | | | | |
| 31 | | | | | | | |
| 32 | | | | | | | |
| 33 | 10 | 0 | | | | | |
| 34 | | | | | | | |
| 35 | | | | | | | |
| 36 | | | wet | SP | | fine SAND, trace silt, (5YR 4/3) reddish brown, medium dense, wet no odor no staining. Soils consistent with UNDno. | |
| 37 | | | | | | | |
| 38 | | | | | | | |
| 39 | | | | | | | |
| 40 | | | | | | | |
| 41 | 10 | 0 | | | | | |
| 42 | | | | | | | |
| 43 | | | wet | SW | | fine to coarse SAND, little fine to coarse gravel, (5YR 4/3) reddish brown, medium dense, wet no odor no | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

PPG - 2012-09 RA PPG_LOGS_A.GDT - 6/7/18 15:28

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732.564.3200 office telephone

# Boring ID: MW-CR-3D



| | | |
|---|---|---|
| **Project Name:** Groundwater Remedial Investigation | **Drilling Company:** SGS North America | |
| **Project Number:** 60550261 | **Drilling Method:** Sonic Vibration | **Coordinates (NJSPNAD83) x:** 611443.5 |
| **Date Started Drilling:** 1/29/2018 7:00:00 AM | **Rig Type:** Sonic | **Coordinates (NJSPNAD83) y:** 683987.8 |
| **Date Finished Drilling:** 2/2/2018 3:00:00 PM | **Core Size:** | **Boring Total Depth:** 48 ft |
| **Logged By:** E. Acs | **Project Manager:** Scott Mikaelian | **Depth to Water:** 5.94 |
| **Physical Location:** Berry Lane Park | | **Surface Elevation:** 15.2 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Surface Cover and Thickness: | Sample ID |
|---|---|---|---|---|---|---|---|
| 45 | | | | | | staining. Soils consistent with UNDno. | |
| 46 | | | moist | SM | | fine silty SAND, trace gravel, (5YR 4/3) reddish brown, dense, moist no odor no staining, (glacial till). Soils consistent with UNDno. | |
| 47 | | | | | | | |
| 48 | | | | | | | |

**Notes:**
bgs - below surface grade
MM - meadow mat
COPR - chromite ore processing residue
GGM - green grey mud
UNDno - non-organic undisturbed native deposits
UNDorg - organic undisturbed native deposits
MGP - manufactured gas plant
CCPW - chromate chemical production waste

**Comments:**

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# Boring ID: 132-P3-MW001D



| | | |
|---|---|---|
| **Project Name:** Phase III Groundwater IRM | **Drilling Company:** ADT | **Top of PVC Elevation:** 18.30 ft NAVD88 |
| **Project Number:** 60658620 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 610786.4 |
| **Date Started Drilling:** 2021-06-03 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 682809.4 |
| **Date Finished Drilling:** 2021-06-03 | **Core Size:** 3 inch | **Boring Total Depth:** 100 ft |
| **Logged By:** J. Patel | **Project Manager:** Carey Letts | **Depth to Water:** |
| **Physical Location:** Site 132 | | **Surface Elevation:** 15.04 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | DGA [FILL]<br>- 10YR 4/2 (dark grayish brown / dark yellowish brown), moist<br>- no odor, no staining | | annular seal (bent-cement grout) (0-74 ft bgs) |
| 2 | | | | | | | | |
| 3 | | | | | | | | Riser (Schedule 40 PVC) (0-78 ft bgs) |
| 4 | | | | | | | | |
| 5 | 4 / 10 | 0 | | | | | | |
| 6 | | | | | | | | |
| 7 | | | | | | | | |
| 8 | | | | | | | | |
| 9 | | | | | | | | |
| 10 | | | moist | FILL | | | | |
| 11 | | | | | | | | |
| 12 | | | | | | | | |
| 13 | | | | | | | | |
| 14 | | | | | | | | |
| 15 | 3 / 10 | | | | | | | |
| 16 | | | | | | | | |
| 17 | | | | | | | | |
| 18 | | | | | | | | |
| 19 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Well is to be repurposed for groundwater RI to delineate impacts within the basal till south of Carteret Avenue.

PPG WITH WELL CONSTRUCTION - - 21-8-17 08:38

AECOM
30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# Boring ID: 132-P3-MW001D



| | | |
|---|---|---|
| **Project Name:** Phase III Groundwater IRM | **Drilling Company:** ADT | **Top of PVC Elevation:** 18.30 ft NAVD88 |
| **Project Number:** 60658620 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 610786.4 |
| **Date Started Drilling:** 2021-06-03 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 682809.4 |
| **Date Finished Drilling:** 2021-06-03 | **Core Size:** 3 inch | **Boring Total Depth:** 100 ft |
| **Logged By:** J. Patel | **Project Manager:** Carey Letts | **Depth to Water:** |
| **Physical Location:** Site 132 | | **Surface Elevation:** 15.04 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 21 | | | moist | PT | | Peat [MEADOW MAT]<br>- 10BG 3/1 (very dark greenish gray), moist<br>- peaty odor, no staining | | |
| 22 | | | moist | CL | | Lean clay (CL), <10% subangular, fine sand, 10-20% silt [NATIVE]<br>- 10R 7/1 (light gray), moist<br>- no odor, no staining | | |
| 23 | | | | | | | | |
| 24 | | | | | | Silty sand (SM), fine to medium, well-graded, 20-30% silt [NATIVE]<br>- 10R 3/4 (dusky red / dark reddish brown), wet<br>- no odor, no staining | | |
| 25 | 4 / 10 | | | | | | | |
| 26 | | | | | | | | |
| 27 | | | | | | | | |
| 28 | | | | | | | | |
| 29 | | | | | | | | |
| 30 | | | wet | SM | | | | |
| 31 | | | | | | | | |
| 32 | | | | | | | | |
| 33 | | | | | | | | |
| 34 | | | | | | | | |
| 35 | 5 / 10 | | | | | | | |
| 36 | | | | | | | | |
| 37 | | | | | | Elastic silt (MH) [NATIVE]<br>- 10R 3/4 (dusky red / dark reddish brown), wet<br>- no odor, no staining | | |
| 38 | | | wet | MH | | | | |
| 39 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Well is to be repurposed for groundwater RI to delineate impacts within the basal till south of Carteret Avenue.

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30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# Boring ID: 132-P3-MW001D



| | | |
|---|---|---|
| **Project Name:** Phase III Groundwater IRM | **Drilling Company:** ADT | **Top of PVC Elevation:** 18.30 ft NAVD88 |
| **Project Number:** 60658620 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 610786.4 |
| **Date Started Drilling:** 2021-06-03 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 682809.4 |
| **Date Finished Drilling:** 2021-06-03 | **Core Size:** 3 inch | **Boring Total Depth:** 100 ft |
| **Logged By:** J. Patel | **Project Manager:** Carey Letts | **Depth to Water:** |
| **Physical Location:** Site 132 | | **Surface Elevation:** 15.04 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 41 | | | | | | | | |
| 42 | | | | | | | | |
| 43 | | | | | | | | |
| 44 | | | | | | | | |
| 45 | 10 / 10 | | | | | | | |
| 46 | | | | | | | | |
| 47 | | | | | | | | |
| | | | wet | MH | | | | |
| 48 | | | | | | | | |
| 49 | | | | | | | | |
| 50 | | | | | | | | |
| 51 | | | | | | | | |
| 52 | | | | | | | | |
| 53 | | | | | | | | |
| 54 | | | | | | | | |
| 55 | 10 / 10 | | | | | Varved sands, silts, and clays [Transition Zone] [NATIVE]<br>- 10YR 5/2 (grayish brown), moist<br>- no odor, no staining | | |
| 56 | | | | | | | | |
| 57 | | | | | | | | |
| | | | moist | CL-ML-SP | | | | |
| 58 | | | | | | | | |
| 59 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Well is to be repurposed for groundwater RI to delineate impacts within the basal till south of Carteret Avenue.

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732.564.3200 office telephone

# Boring ID: 132-P3-MW001D



| | | |
|---|---|---|
| **Project Name:** Phase III Groundwater IRM | **Drilling Company:** ADT | **Top of PVC Elevation:** 18.30 ft NAVD88 |
| **Project Number:** 60658620 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 610786.4 |
| **Date Started Drilling:** 2021-06-03 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 682809.4 |
| **Date Finished Drilling:** 2021-06-03 | **Core Size:** 3 inch | **Boring Total Depth:** 100 ft |
| **Logged By:** J. Patel | **Project Manager:** Carey Letts | **Depth to Water:** |
| **Physical Location:** Site 132 | | **Surface Elevation:** 15.04 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 61 | | | | | | | | |
| 62 | | | | | | | | |
| 63 | | | | | | | | |
| 64 | | | | | | | | |
| 65 | 10 / 10 | | | | | | | |
| 66 | | | moist | CL-ML-SP | | | | |
| 67 | | | | | | | | |
| 68 | | | | | | | | |
| 69 | | | | | | | | |
| 70 | | | | | | | | |
| 71 | | | | | | | | |
| 72 | | | | | | | | |
| 73 | | | moist | SW-SM | | Well-graded sand with silt (SW-SM), subrounded, 5-15% silt, 15-25% cobbles [NATIVE]<br>- 10R 2.5/2 (very dusky red), moist<br>- no odor, no staining | | |
| 74 | | | | | | | | Annular seal (bentonite slurry) (74-76 ft bgs) |
| 75 | 10 / 10 | | | | | Fine to coarse SAND and fine to coarse gravel with silt and clay, medium dense to dense [Basal Till]<br>- 10R 2.5/2 (very dusky red), moist<br>- no odor, no staining | | |
| 76 | | | | | | | | Sand Pack (#0 Sand Pack) (76-88 ft bgs) |
| 77 | | | moist | SW-GW | | | | |
| 78 | | | | | | | | Screen (Schedule 40 PVC) (78-88 ft bgs) |
| 79 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Well is to be repurposed for groundwater RI to delineate impacts within the basal till south of Carteret Avenue.

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732.564.3200 office telephone

# Boring ID: 132-P3-MW001D



| | | |
|---|---|---|
| **Project Name:** Phase III Groundwater IRM | **Drilling Company:** ADT | **Top of PVC Elevation:** 18.30 ft NAVD88 |
| **Project Number:** 60658620 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 610786.4 |
| **Date Started Drilling:** 2021-06-03 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 682809.4 |
| **Date Finished Drilling:** 2021-06-03 | **Core Size:** 3 inch | **Boring Total Depth:** 100 ft |
| **Logged By:** J. Patel | **Project Manager:** Carey Letts | **Depth to Water:** |
| **Physical Location:** Site 132 | | **Surface Elevation:** 15.04 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 81 | | | | | | | | |
| 82 | | | | | | | | |
| 83 | | | | | | | | |
| 84 | | | moist | SW-GW | | | | |
| 85 | 3 / 10 | | | | | | | |
| 86 | | | | | | | | |
| 87 | | | | | | | | |
| 88 | | | | | | Bedrock, Diabase [NATIVE]<br>- 10YR 3/1 (very dark gray), dry<br>- no odor, no staining | | Sand Pack (#00 Sand Pack) (88-89 ft bgs) |
| 89 | | | dry | BEDROCK | | | | annular seal (bent-cement grout) (89-100 ft bgs) |
| 90 | | | | | | Bedrock, Metamorphosed shale (Banded Hornfels) [Lockatong Formation]<br>- 10YR 3/1 (very dark gray), dry<br>- no odor, no staining | | |
| 91 | | | | | | | | |
| 92 | | | | | | | | |
| 93 | | | | | | | | |
| 94 | | | | | | | | |
| 95 | 4 / 10 | | dry | BEDROCK | | | | |
| 96 | | | | | | | | |
| 97 | | | | | | | | |
| 98 | | | | | | | | |
| 99 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Well is to be repurposed for groundwater RI to delineate impacts within the basal till south of Carteret Avenue.

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# Boring ID: HAL-P3-IRM-003I-B



| | | |
|---|---|---|
| **Project Name:** Phase III Groundwater IRM | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.76 ft NAVD88 |
| **Project Number:** 60658620 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611406.3 |
| **Date Started Drilling:** 2021-05-19 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 682918.3 |
| **Date Finished Drilling:** 2021-05-19 | **Core Size:** 3 inch | **Boring Total Depth:** 80 ft |
| **Logged By:** J. Hlavaty | **Project Manager:** Carey Letts | **Depth to Water:** |
| **Physical Location:** Halladay Street | | **Surface Elevation:** 10.91 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 | | | | | | DGA, <10% subrounded, medium gravel [FILL]<br>- 7.5YR 4/2 (brown), dry<br>- no odor, no staining | | annular seal (bent-cement grout) (0-56 ft bgs) |
| 5 | 5 / 10 | 0 | dry | FILL | | | | Riser (Schedule 40 PVC) (0-60 ft bgs) |
| 12 | | | moist | PT | | Peat [MEADOW MAT]<br>- 7.5YR 2.5/2 (very dark brown), moist<br>- peaty odor, no staining<br>- cohesive, soft | | |
| 13 | | | | | | Sandy silt (ML), 25-35% subrounded, fine sand, 5-15% subangular, fine to medium gravel [NATIVE]<br>- 10YR 7/1 (light gray), wet<br>- organics odor, no staining<br>- cohesive, medium stiff | | |
| 15 | 4.2 / 10 | 2.9 | wet | ML | | | | |
| 18 | | | wet | SW | | Well-graded sand (SW), fine to medium, subrounded, <10% subrounded, medium gravel [NATIVE]<br>- 10R 5/1 (reddish gray), wet<br>- no odor, no staining | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Lithology taken from boring log for HAL-P3-IRM-003D.

PPG WITH WELL CONSTRUCTION - - 21-8-17 08:38

AECOM
30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# Boring ID: HAL-P3-IRM-003I-B



| | | |
|---|---|---|
| **Project Name:** Phase III Groundwater IRM | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.76 ft NAVD88 |
| **Project Number:** 60658620 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611406.3 |
| **Date Started Drilling:** 2021-05-19 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 682918.3 |
| **Date Finished Drilling:** 2021-05-19 | **Core Size:** 3 inch | **Boring Total Depth:** 80 ft |
| **Logged By:** J. Hlavaty | **Project Manager:** Carey Letts | **Depth to Water:** |
| **Physical Location:** Halladay Street | | **Surface Elevation:** 10.91 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 21 | | | wet | SW | | | | |
| 22 | | | | | | Well-graded sand (SW), fine to medium, subrounded [NATIVE]<br>- 10YR 5/1 (gray), wet<br>- no odor, no staining | | |
| 23 | | | | | | | | |
| 24 | | | wet | SW | | | | |
| 25 | 8.5 / 10 | 21.8 | | | | Well-graded sand (SW), fine to medium, subrounded [NATIVE]<br>- 10R 4/8 (red), dry<br>- no odor, no staining | | |
| 26 | | | | | | | | |
| 27 | | | | | | | | |
| 28 | | | dry | SW | | | | |
| 29 | | | | | | | | |
| 30 | | | | | | Well-graded sand (SW), fine to medium, subrounded [NATIVE]<br>- 10BG 4/1 (dark greenish gray), moist<br>- solvent odor, some DNAPL staining<br>- cohesive, soft | | |
| 31 | | | | | | | | |
| 32 | | | | | | | | |
| 33 | | | moist | SW | | | | |
| 34 | | | | | | | | |
| 35 | 10 / 10 | 82.8 | | | | Well-graded sand (SW), fine to medium, subrounded [NATIVE]<br>- 10R 3/3 (dusky red), dry<br>- solvent odor, no staining | | |
| 36 | | | | | | | | |
| 37 | | | | | | | | |
| 38 | | | dry | SW | | | | |
| 39 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Lithology taken from boring log for HAL-P3-IRM-003D.

PPG WITH WELL CONSTRUCTION - - 21-8-17 08:38

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30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# Boring ID: HAL-P3-IRM-003I-B



| | | |
|---|---|---|
| **Project Name:** Phase III Groundwater IRM | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.76 ft NAVD88 |
| **Project Number:** 60658620 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611406.3 |
| **Date Started Drilling:** 2021-05-19 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 682918.3 |
| **Date Finished Drilling:** 2021-05-19 | **Core Size:** 3 inch | **Boring Total Depth:** 80 ft |
| **Logged By:** J. Hlavaty | **Project Manager:** Carey Letts | **Depth to Water:** |
| **Physical Location:** Halladay Street | | **Surface Elevation:** 10.91 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 41–48 | 10 / 10 | 322.4 | dry | SW | | Well-graded sand (SW), fine to medium, subrounded, <10% subrounded, fine to medium gravel [NATIVE]<br>- 10R 3/6 (dark red), dry<br>- solvent odor, heavy DNAPL staining<br>- cohesive, soft | | |
| 48–50 | | | dry | SW | | Well-graded sand (SW), fine to medium, subrounded [NATIVE]<br>- 10R 3/3 (dusky red), dry<br>- solvent odor, no staining | | |
| 50–52 | | | wet | SW | | Well-graded sand (SW), fine to medium, subrounded, <10% silt [NATIVE]<br>- 10R 3/3 (dusky red), wet<br>- no odor, no staining | | |
| 52–55 | | | moist | SW | | Well-graded sand (SW), fine to medium, subrounded, <10% silt [NATIVE]<br>- 10R 3/3 (dusky red), moist<br>- no odor, no staining | | |
| 55–59 | 9 / 10 | 0.5 | moist | CL-ML-SP | | Varved sands, silts, and clays [Transition Zone] [NATIVE]<br>- 10R 3/4 (dusky red / dark reddish brown), moist<br>- no odor, no staining | | Annular seal (bentonite slurry) (56-58 ft bgs)<br>Sand Pack (#0 Sand Pack) (58-80 ft bgs) |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Lithology taken from boring log for HAL-P3-IRM-003D.

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AECOM
30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# Boring ID: HAL-P3-IRM-003I-B



| | | |
|---|---|---|
| **Project Name:** Phase III Groundwater IRM | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.76 ft NAVD88 |
| **Project Number:** 60658620 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611406.3 |
| **Date Started Drilling:** 2021-05-19 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 682918.3 |
| **Date Finished Drilling:** 2021-05-19 | **Core Size:** 3 inch | **Boring Total Depth:** 80 ft |
| **Logged By:** J. Hlavaty | **Project Manager:** Carey Letts | **Depth to Water:** |
| **Physical Location:** Halladay Street | | **Surface Elevation:** 10.91 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 61 | | | | | | Varved sands, silts, and clays [Transition Zone] [NATIVE]<br>- 10R 3/1 (dark reddish gray), moist<br>- no odor, no staining | | |
| 62 | | | | | | | | Screen (Stainless Steel) (60-80 ft bgs) |
| 63 | | | | | | | | |
| 64 | | | | | | | | |
| 65 | 10 / 10 | 8.4 | moist | CL-ML-SP | | | | |
| 66 | | | | | | | | |
| 67 | | | | | | | | |
| 68 | | | | | | | | |
| 69 | | | | | | | | |
| 70 | | | | | | Varved sands, silts, and clays [Transition Zone] [NATIVE]<br>- 10R 3/3 (dusky red), wet<br>- no odor, no staining | | |
| 71 | | | | | | | | |
| 72 | | | | | | | | |
| 73 | | | wet | CL-ML-SP | | | | |
| 74 | | | | | | | | |
| 75 | 8.5 / 10 | 0 | | | | Varved sands, silts, and clays [Transition Zone] [NATIVE]<br>- 10R 3/3 (dusky red), moist, no odor, no staining at 75 ft. | | |
| 76 | | | | | | | | |
| 77 | | | moist | CL-ML-SP | | | | |
| 78 | | | | | | | | |
| 79 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Lithology taken from boring log for HAL-P3-IRM-003D.

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# Boring ID: HAL-P3-IRM-004I-B



| | | |
|---|---|---|
| **Project Name:** Phase III Groundwater IRM | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.17 ft NAVD88 |
| **Project Number:** 60658620 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611455.5 |
| **Date Started Drilling:** 2021-05-20 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 682962.6 |
| **Date Finished Drilling:** 2021-05-20 | **Core Size:** 3 inch | **Boring Total Depth:** 91 ft |
| **Logged By:** J. Hlavaty | **Project Manager:** Carey Letts | **Depth to Water:** |
| **Physical Location:** Halladay Street | | **Surface Elevation:** 11.10 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 | 5 / 10 | 0 | dry | FILL | | DGA, 10-20% subrounded, fine to medium gravel [FILL]<br>- 10YR 5/1 (gray), dry<br>- no odor, no staining | | annular seal (bent-cement grout) (0-56 ft bgs)<br>Riser (Schedule 40 PVC) (0-60 ft bgs) |
| 10 | 7 / 10 | 0 | | | | | | |
| 15 | | | dry | PT | | Peat [MEADOW MAT]<br>- 10YR 4/3 (brown), dry<br>- peaty odor, no staining | | |
| 18 | | | moist | ML | | Silt (ML), 5-15% roots [NATIVE]<br>- 10YR 3/3 (dark brown), moist<br>- no odor, no staining | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

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732.564.3200 office telephone

# Boring ID: HAL-P3-IRM-004I-B



| | | |
|---|---|---|
| **Project Name:** Phase III Groundwater IRM | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.17 ft NAVD88 |
| **Project Number:** 60658620 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611455.5 |
| **Date Started Drilling:** 2021-05-20 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 682962.6 |
| **Date Finished Drilling:** 2021-05-20 | **Core Size:** 3 inch | **Boring Total Depth:** 91 ft |
| **Logged By:** J. Hlavaty | **Project Manager:** Carey Letts | **Depth to Water:** |
| **Physical Location:** Halladay Street | | **Surface Elevation:** 11.10 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 21 | 5 / 10 | 0 | wet | ML | | Silt (ML), 5-15% subrounded, fine to medium sand [NATIVE]<br>- 10YR 5/1 (gray), wet, no odor, no staining at 20 ft | | |
| 22 | | | wet | SW | | Well-graded sand, fine to medium, subrounded, <10% silt [NATIVE]<br>- 10YR 5/1 (gray), wet, no odor, no staining at 22 ft | | |
| 25 | | | moist | SW | | Well-graded sand (SW), fine to medium, subrounded [NATIVE]<br>- 10R 3/3 (dusky red), moist<br>- no odor, no staining | | |
| 30 | 7 / 10 | 96.1 | moist | SW | | Well-graded sand, fine to medium, subrounded [NATIVE]<br>- 10R 3/3 (dusky red), moist, solvent odor, some DNAPL staining at 30 ft | | |
| 38 | | | moist | ML | | Silt (ML) [NATIVE]<br>- 10R 3/3 (dusky red), moist<br>- solvent odor, some DNAPL staining | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

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# Boring ID: HAL-P3-IRM-004I-B



| | | |
|---|---|---|
| **Project Name:** Phase III Groundwater IRM | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.17 ft NAVD88 |
| **Project Number:** 60658620 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611455.5 |
| **Date Started Drilling:** 2021-05-20 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 682962.6 |
| **Date Finished Drilling:** 2021-05-20 | **Core Size:** 3 inch | **Boring Total Depth:** 91 ft |
| **Logged By:** J. Hlavaty | **Project Manager:** Carey Letts | **Depth to Water:** |
| **Physical Location:** Halladay Street | | **Surface Elevation:** 11.10 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 41 | 8 / 10 | 379.1 | wet | SW | | Well-graded sand (SW), fine to medium, subrounded [NATIVE]<br>- 10R 3/3 (dusky red), wet<br>- solvent odor, trace DNAPL staining | | |
| 42 | | | moist | SW | | Well-graded sand, fine to medium, subrounded [NATIVE]<br>- 10R 3/3 (dusky red), moist, solvent odor, heavy DNAPL staining at 42 ft | | |
| 45 | | | moist | ML | | Silt (ML), 5-15% clay [NATIVE]<br>- 10R 3/3 (dusky red), moist<br>- solvent odor, no staining | | |
| 46 | | | dry | ML | | Silt (ML), <10% subrounded, fine to medium sand [NATIVE]<br>- 10R 3/3 (dusky red), dry<br>- solvent odor, no staining | | |
| 49 | | | moist | SW | | Well-graded sand (SW), fine to medium, subrounded [NATIVE]<br>- 10R 2/2 (very dusky red), moist<br>- solvent odor, trace DNAPL staining | | |
| 50 | 10 / 10 | 94.9 | | | | | | |
| 51 | | | moist | CL-ML-SP | | Varved sands, silts, and clays [Transition Zone] [NATIVE]<br>- 10R 3/4 (dusky red / dark reddish brown), moist<br>- no odor, no staining | | |
| 56 | | | | | | | | Annular seal (bentonite slurry) (56-58 ft bgs) |
| 58 | | | | | | | | Sand Pack (#0 Sand Pack) (58-80 ft bgs) |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

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# Boring ID: HAL-P3-IRM-004I-B



| | | |
|---|---|---|
| **Project Name:** Phase III Groundwater IRM | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.17 ft NAVD88 |
| **Project Number:** 60658620 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611455.5 |
| **Date Started Drilling:** 2021-05-20 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 682962.6 |
| **Date Finished Drilling:** 2021-05-20 | **Core Size:** 3 inch | **Boring Total Depth:** 91 ft |
| **Logged By:** J. Hlavaty | **Project Manager:** Carey Letts | **Depth to Water:** |
| **Physical Location:** Halladay Street | | **Surface Elevation:** 11.10 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 61 | 10 / 10 | 0 | moist | CL-ML-SP | | Varved sands, silts, and clays [Transition Zone] [NATIVE] - 10R 3/3 (dusky red), moist, no odor, no staining at 60 ft | | |
| 62 | | | | | | Varved sands, silts, and clays [Transition Zone] [NATIVE] - 10R 3/4 (dusky red / dark reddish brown), moist, no odor, no staining at 61 ft | | Screen (Stainless Steel) (60-80 ft bgs) |
| 63 | | | | | | | | |
| 64 | | | | | | | | |
| 65 | | | | | | | | |
| 66 | | | moist | CL-ML-SP | | | | |
| 67 | | | | | | | | |
| 68 | | | | | | | | |
| 69 | | | | | | | | |
| 70 | 8 / 10 | 0 | | | | Varved sands, silts, and clays [Transition Zone] [NATIVE] - 10r 3/4 (dusky red / dark reddish brown), wet, no odor, no staining, cohesive, medium stiff at 70 ft | | |
| 71 | | | | | | | | |
| 72 | | | | | | | | |
| 73 | | | | | | | | |
| 74 | | | | | | | | |
| 75 | | | wet | CL-ML-SP | | | | |
| 76 | | | | | | | | |
| 77 | | | | | | | | |
| 78 | | | | | | | | |
| 79 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

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# Boring ID: HAL-P3-IRM-004I-B



| | | |
|---|---|---|
| **Project Name:** Phase III Groundwater IRM | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.17 ft NAVD88 |
| **Project Number:** 60658620 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611455.5 |
| **Date Started Drilling:** 2021-05-20 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 682962.6 |
| **Date Finished Drilling:** 2021-05-20 | **Core Size:** 3 inch | **Boring Total Depth:** 91 ft |
| **Logged By:** J. Hlavaty | **Project Manager:** Carey Letts | **Depth to Water:** |
| **Physical Location:** Halladay Street | | **Surface Elevation:** 11.10 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 81 | 7 / 10 | 0 | wet | CL-ML-SP | | Varved sands, silts, and clays [Transition Zone] [NATIVE]<br>- 10r 3/4 (dusky red / dark reddish brown), wet, no odor, no staining, cohesive, medium stiff at 70 ft | | Sand Pack (#0 Sand Pack) (80-83 ft bgs) |
| 82 | | | | | | | | |
| 83 | | | wet | SM | | Silty sand, fine to medium, well-graded, subrounded, 10-20% silt [NATIVE]<br>- 10R 3/3 (dusky red), wet, no odor, no staining at 82 ft | | Annular seal (bentonite slurry) (83-91 ft bgs) |
| 84 | | | | | | | | |
| 85 | | | | | | | | |
| 86 | | | moist | SM | | Silty sand (SM), fine to medium, well-graded, subrounded, 20-30% silt, 5-15% subangular, fine to medium gravel [NATIVE]<br>- 10R 3/3 (dusky red), moist<br>- no odor, no staining | | |
| 87 | | | | | | | | |
| 88 | | | | | | | | |
| 89 | | | | | | | | |
| 90 | / | 0 | dry | SW-GW | | Gravelly silt with sand, 20-30% subrounded, fine to medium sand, 20-30% subangular, fine to medium gravel [Basal Till]<br>- 10YR 5/1 (gray), dry<br>- no odor, no staining | | |
| 91 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:**

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# Boring ID: HAL-P3-IRM-010I-B



| | | |
|---|---|---|
| **Project Name:** Phase III Groundwater IRM | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.83 ft NAVD88 |
| **Project Number:** 60658620 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611460.5 |
| **Date Started Drilling:** 2021-05-25 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 682906.5 |
| **Date Finished Drilling:** 2021-05-25 | **Core Size:** 3 inch | **Boring Total Depth:** 90 ft |
| **Logged By:** J. Hlavaty | **Project Manager:** Carey Letts | **Depth to Water:** |
| **Physical Location:** Halladay Street | | **Surface Elevation:** 10.70 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 1–10 | 6 / 10 | 0 | dry | FILL | | DGA, 25-35% subrounded, fine to medium sand, 5-15% subangular, fine to medium gravel [FILL]<br>- 10YR 5/3 (brown), dry<br>- no odor, no staining | | annular seal (bent-cement grout) (0-56 ft bgs)<br>Riser (Schedule 40 PVC) (0-60 ft bgs) |
| 10–19 | 5 / 10 | 0 | dry | ML | | Silt (ML), <10% subangular, fine to medium gravel [NATIVE]<br>- 10R 4/1 (dark reddish gray), dry<br>- no odor, no staining | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Well was originally installed on 5/21/2021; re-drilled due to damaged threading in PVC riser.

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# Boring ID: HAL-P3-IRM-010I-B



| | | |
|---|---|---|
| **Project Name:** Phase III Groundwater IRM | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.83 ft NAVD88 |
| **Project Number:** 60658620 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611460.5 |
| **Date Started Drilling:** 2021-05-25 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 682906.5 |
| **Date Finished Drilling:** 2021-05-25 | **Core Size:** 3 inch | **Boring Total Depth:** 90 ft |
| **Logged By:** J. Hlavaty | **Project Manager:** Carey Letts | **Depth to Water:** |
| **Physical Location:** Halladay Street | | **Surface Elevation:** 10.70 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 21–22 | | | moist | ML | | Silt (ML), <10% subangular, fine to medium gravel [NATIVE]<br>- 10YR 5/1 (gray), moist<br>- no odor, no staining | | |
| 23–24 | | | moist | SW | | Well graded sand, fine to medium, subrounded [NATIVE]<br>- 10YR 5/1 (gray), moist, no odor, no staining at 23 ft | | |
| 25–30 | 8 / 10 | 0 | moist | SW | | Well graded sand (SW), fine to medium, subrounded, <10% subangular, fine to medium gravel [NATIVE]<br>- 10R 3/3 (dusky red), moist<br>- no odor, no staining | | |
| 30–33 | | | wet | SW | | Well graded sand (SW), fine to medium, subrounded, <10% subangular, fine to medium gravel [NATIVE]<br>- 10R 3/3 (dusky red), wet<br>- no odor, no staining | | |
| 33–38 | 8 / 10 | 6.1 | dry | SW | | Well graded sand, fine to medium, subrounded, <10% subangular, fine to medium gravel [NATIVE]<br>- 10r 3/3 (dusky red), dry, no odor, no staining at 33 ft | | |
| 38–39 | | | dry | ML | | Silt (ML) [NATIVE]<br>- 10R 3/3 (dusky red), dry<br>- no odor, no staining | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Well was originally installed on 5/21/2021; re-drilled due to damaged threading in PVC riser.

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# Boring ID: HAL-P3-IRM-010I-B



| | | |
|---|---|---|
| **Project Name:** Phase III Groundwater IRM | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.83 ft NAVD88 |
| **Project Number:** 60658620 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611460.5 |
| **Date Started Drilling:** 2021-05-25 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 682906.5 |
| **Date Finished Drilling:** 2021-05-25 | **Core Size:** 3 inch | **Boring Total Depth:** 90 ft |
| **Logged By:** J. Hlavaty | **Project Manager:** Carey Letts | **Depth to Water:** |
| **Physical Location:** Halladay Street | | **Surface Elevation:** 10.70 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 41 | | | wet | SW | | Well-graded sand, fine to medium, subrounded [NATIVE]<br>- 10R 3/3 (dusky red), wet, solvent odor, no staining at 40 ft | | |
| 42 | | | dry | ML | | Silt with sand (ML), 10-20% subrounded, fine to medium sand [NATIVE]<br>- 10R 3/3 (dusky red), dry<br>- solvent odor, no staining | | |
| 43 | | | | | | | | |
| 44 | | | | | | Silty sand (SM), fine to medium, well-graded, subrounded, 15-25% silt [NATIVE]<br>- 10R 3/3 (dusky red), dry<br>- solvent odor, trace DNAPL staining | | |
| 45 | 8.5 / 10 | 507 | | | | | | |
| 46 | | | | | | | | |
| 47 | | | dry | SM | | | | |
| 48 | | | | | | | | |
| 49 | | | | | | | | |
| 50 | | | | | | | | |
| 51 | | | moist | SW | | Well-graded sand, fine to medium, subrounded [NATIVE]<br>- 10R 3/3 (dusky red), moist, solvent odor, heavy dnapl staining at 50 ft | | |
| 52 | | | | | | | | |
| 53 | | | | | | Silt (ML), 5-15% subrounded, fine to medium sand, 5-15% clay [NATIVE]<br>- 10R 3/3 (dusky red), wet<br>- solvent odor, trace DNAPL staining | | |
| 54 | | | | | | | | |
| 55 | 10 / 10 | 635.1 | | | | | | |
| 56 | | | wet | ML | | | | Annular seal (bentonite slurry) (56-58 ft bgs) |
| 57 | | | | | | | | |
| 58 | | | | | | Varved sands, silts, and clays [Transition Zone] [NATIVE]<br>- 10R 3/3 (dusky red), moist<br>- no odor, no staining | | Sand Pack (#0 Sand Pack) (58-80 ft bgs) |
| 59 | | | moist | CL-ML-SP | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Well was originally installed on 5/21/2021; re-drilled due to damaged threading in PVC riser.

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# Boring ID: HAL-P3-IRM-010I-B



| | | |
|---|---|---|
| **Project Name:** Phase III Groundwater IRM | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.83 ft NAVD88 |
| **Project Number:** 60658620 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611460.5 |
| **Date Started Drilling:** 2021-05-25 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 682906.5 |
| **Date Finished Drilling:** 2021-05-25 | **Core Size:** 3 inch | **Boring Total Depth:** 90 ft |
| **Logged By:** J. Hlavaty | **Project Manager:** Carey Letts | **Depth to Water:** |
| **Physical Location:** Halladay Street | | **Surface Elevation:** 10.70 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 61 | | | | | | Varved sands, silts, and clays [Transition Zone] [NATIVE]<br>- 10R 3/4 (dusky red / dark reddish brown), moist, no odor, no staining at 60 ft | | Screen (Stainless Steel) (60-80 ft bgs) |
| 62 | | | | | | | | |
| 63 | | | | | | | | |
| 64 | | | | | | | | |
| 65 | 10 / 10 | 1.5 | | | | | | |
| 66 | | | | | | | | |
| 67 | | | | | | | | |
| 68 | | | | | | | | |
| 69 | | | | | | | | |
| 70 | | | moist | CL-ML-SP | | | | |
| 71 | | | | | | | | |
| 72 | | | | | | | | |
| 73 | | | | | | | | |
| 74 | | | | | | | | |
| 75 | 10 / 10 | 1.1 | | | | | | |
| 76 | | | | | | | | |
| 77 | | | | | | | | |
| 78 | | | | | | | | |
| 79 | | | | | | | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Well was originally installed on 5/21/2021; re-drilled due to damaged threading in PVC riser.

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# Boring ID: HAL-P3-IRM-010I-B



| | | |
|---|---|---|
| **Project Name:** Phase III Groundwater IRM | **Drilling Company:** ADT | **Top of PVC Elevation:** 14.83 ft NAVD88 |
| **Project Number:** 60658620 | **Drilling Method:** Sonic | **Coordinates (NJSPNAD83) x:** 611460.5 |
| **Date Started Drilling:** 2021-05-25 | **Rig Type:** Fraste XL Max 170 | **Coordinates (NJSPNAD83) y:** 682906.5 |
| **Date Finished Drilling:** 2021-05-25 | **Core Size:** 3 inch | **Boring Total Depth:** 90 ft |
| **Logged By:** J. Hlavaty | **Project Manager:** Carey Letts | **Depth to Water:** |
| **Physical Location:** Halladay Street | | **Surface Elevation:** 10.70 ft NAVD88 |

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description | Well Construction | Remarks |
|---|---|---|---|---|---|---|---|---|
| 81 | | | | | | Varved sands, silts, and clays [Transition Zone] [NATIVE]<br>- 10R 3/4 (dusky red / dark reddish brown), moist, no odor, no staining | | Sand Seal (#00 Sand) (80-82 ft bgs) |
| 82 | | | | | | | | |
| 83 | | | moist | CL-ML-SP | | | | Annular seal (bentonite slurry) (80-90 ft bgs) |
| 84 | | | | | | | | |
| 85 | 8.5 / 10 | 0 | | | | | | |
| 86 | | | | | | Well-graded sand (SW), fine to medium, subrounded, 5-15% subangular, fine to medium gravel, <10% silt [NATIVE]<br>- 10R 3/4 (dusky red / dark reddish brown), wet<br>- no odor, no staining | | |
| 87 | | | wet | SW | | | | |
| 88 | | | | | | | | |
| 89 | | | | | | | | |
| 90 | | | moist | SW-GW | | Silty sand with gravel, fine to medium, well-graded, subrounded, 10-20% silt, 25-35% subangular, fine to medium gravel [Basal Till]<br>- 10R 4/1 (dark reddish gray), moist<br>- no odor, no staining | | |

**Notes:** bgs = below surface grade; DGA = dense graded aggregate; NAD83 = North American Horizontal Datum of 1983; NAVD88 = North American Vertical Datum of 1988; NJSP = New Jersey State Plane; PID = photoionization detector; ppm = parts per million; USCS = Unified Soil Classification System; ft = feet; in = inches

**Comments:** Well was originally installed on 5/21/2021; re-drilled due to damaged threading in PVC riser.

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# Appendix G

# Evaluation of Permeable Zones within the Basal Till

# Table G.1
# Evaluation of Permeable Zones Within the Basal Till
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

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| Well ID | Top (ft bgs) | Bottom (ft bgs) | USCS Code | Description | Total Basal Till Thickness (ft) | Interval Thickness (ft) | Permeable Zone Within Basal Till? |
|---|---|---|---|---|---|---|---|
| 114-MW45C | 65.0 | 70.0 | SW-GW | Brown, fine to coarse SAND and fine to coarse gravel, medium dense to dense, well graded (Basal Till), damp. | 6.0 | 5.0 | No |
| 114-MW45C | 70.0 | 71.0 | SW | Gray, tighly compressed, very dense SAND and angular gravel, some subangular pieces (Basal Till), damp. | | 1.0 | No |
| 114-MW48C | 48.0 | 50.0 | SW-SC | Reddish brown (5YR 5/3) clayey SAND, fine to coarse sand, little angular fine to coarse gravelclay, dense, compacted, damp (Basal Till). | 10.0 | 2.0 | No |
| 114-MW48C | 50.0 | 58.0 | SW-SC | Reddish brown (5YR 5/3) clayey SAND, fine to coarse sand, little subrounded to subangular fine to coarse gravel, clay, damp (becomes dry to damp at 57.5' to 58') (Basal Till). Boulder at 52 ft bgs. | | 8.0 | No |
| 114-MW49C | 49.5 | 60.0 | SW-SC | Reddish brown (2.5YR 4/3) clayey SAND, fine to coarse sand, little subangular fine to coarse gravel (up to 2.5 inch across), very hard, dense and compacted, damp (Basal Till). | 20.5 | 10.5 | No |
| 114-MW49C | 60.0 | 65.0 | SC | Dark reddish gray (5YR 4/2) poorly graded SAND with clay, fine to coarse angular sand with little fine to coarse gravel, varies from loose to hard, wet to moist (Basal Till). | | 5.0 | No |
| 114-MW49C | 65.0 | 65.2 | SP | Interbedded SAND, poorly graded sand, fine to medium sand (Basal Till). | | 0.2 | Yes |
| 114-MW49C | 65.2 | 70.0 | SC | Dark reddish gray (5YR 4/2) poorly graded SAND with clay, fine to coarse angular sand with little fine to coarse gravel, varies from loose to hard, wet to moist (Basal Till). | | 4.8 | No |
| 114-MW50C | 49.0 | 50.0 | SC-SM | Light brown (7.5YR 6/4) clayey SAND or silty SAND, fine to coarse SAND, SILT, few to little sub-angular to sub-rounded fine to coarse GRAVEL, coarse GRAVEL (up to 2" across), moist, firm (Basal Till). | 13.0 | 1.0 | No |
| 114-MW50C | 50.0 | 60.0 | SC-SM | Dark reddish brown (2.5YR 3/3) clayey SAND or silty SAND, few to little sub-angular to sub-rounded fine to coarse GRAVEL, hard, moist (50' to 52.5') to dry (52.5' to 60') (Basal Till). | | 10.0 | No |
| 114-MW50C | 60.0 | 62.0 | SC | Light brown (7.5YR 6/3) sandy CLAY, little sub-angular fine to coarse GRAVEL, very firm, moist (Basal Till). | | 2.0 | No |
| 114-MW51C | 66.5 | 69.5 | CL | Dark reddish gray (2.5YR 4/1) sandy CLAY, angular, fine to coarse SAND, little fine to coarse GRAVEL, hard, very dense, dry (Basal Till). | 10.5 | 3.0 | No |
| 114-MW51C | 69.5 | 70.0 | CL | Dark reddish gray (2.5YR 4/1) sandy CLAY, angular, fine to coarse SAND, little fine to coarse GRAVEL, hard, very dense, dry (Basal Till). | | 0.5 | No |
| 114-MW51C | 70.0 | 76.5 | CL | Dark reddish gray (2.5YR 4/1) sandy CLAY, angular, fine to coarse SAND, little fine to coarse GRAVEL, hard, very dense, dry (Basal Till). | | 6.5 | No |
| 114-MW51C | 76.5 | 77.0 | CL | Dark reddish gray (2.5YR 4/1) sandy CLAY, angular, fine to coarse SAND, little fine to coarse GRAVEL, hard, very dense, dry (Basal Till). | | 0.5 | No |

# Table G.1
# Evaluation of Permeable Zones Within the Basal Till
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

| Well ID | Top (ft bgs) | Bottom (ft bgs) | USCS Code | Description | Total Basal Till Thickness (ft) | Interval Thickness (ft) | Permeable Zone Within Basal Till? |
|---|---|---|---|---|---|---|---|
| 114-MW52C | 61.5 | 62.0 | SC | Reddish brown well graded SAND with some clay, little subrounded to subangular fine to coarse gravel, very dense, damp (Basal Till). | 11.5 | 0.5 | No |
| 114-MW52C | 62.0 | 64.0 | SP | Reddish brown SAND with little clay, fine to coarse gravel, medium dense, damp to wet (Basal Till). | | 2.0 | No |
| 114-MW52C | 64.0 | 65.0 | CL | Reddish brown CLAY, medium stiff, damp to wet (Basal Till). | | 1.0 | No |
| 114-MW52C | 65.0 | 65.2 | SC/GC | Seam of well graded fine to coarse gravel from 65-65.2 (Basal Till). | | 0.2 | Yes |
| 114-MW52C | 65.2 | 66.5 | SC/GC | Reddish brown well graded SAND, fine to coarse sand, some clay, fine to coarse subangular gravel, dry to damp (Basal Till). | | 1.3 | No |
| 114-MW52C | 66.5 | 70.0 | SC | Bands of grey and dark brown pieces of TILL, sand, with some clay, fine to coarse gravel, loose, dry (Basal Till). | | 3.5 | No |
| 114-MW52C | 70.0 | 71.5 | SC | Brown (10YR 5/3) SAND with some clay, little fine to coarse gravel, damp to wet (Basal Till). | | 1.5 | No |
| 114-MW52C | 71.5 | 73.0 | SW-SC | Well graded SAND, fine to coarse sand with some clay, fine to coarse gravel embedded in sandy clay, very dense, dry to damp (Basal Till). | | 1.5 | No |
| 114-MW53C | 42.0 | 44.0 | SC | Reddish brown well graded SAND with some clay, fine to coarse sand, few to fine to coarse gravel, medium dense, damp to wet (Basal Till). | 3.5 | 2.0 | No |
| 114-MW53C | 44.0 | 45.0 | CL/GC | Gray sandy CLAY, fine to coarse sand, some fine to coarse gravel (up to 3 inches in diameter), very dense, damp to wet (Basal Till). | | 1.0 | No |
| 114-MW53C | 45.0 | 45.5 | SP | Brown (7.5YR 4/3) poorly graded SAND, few silt, wet (Basal Till). | | 0.5 | Yes |
| 114-MW54C | 63.5 | 66.0 | SM | Reddish brown silty SAND, few fine to coarse gravel, very firm, dry (Basal Till). | 13.5 | 2.5 | No |
| 114-MW54C | 66.0 | 70.0 | SC-SM | Light brownish gray (10YR 6/2) clayey SAND or silty sand, fine to sand, little fine to coarse gravel (up to 2.5" across), very firm, dry (Basal Till). | | 4.0 | No |
| 114-MW54C | 70.0 | 75.0 | SM | Dark gray (7.5YR 4/1) silty SAND, fine to coarse sand, few gravel, dry (Basal Till). | | 5.0 | No |
| 114-MW54C | 75.0 | 76.0 | SM | Dark gray (7.5YR 4/1) silty SAND, fine to coarse sand, few gravel, dry (Basal Till). | | 1.0 | No |
| 114-MW54C | 76.0 | 77.0 | ML | Clayey SILT (Basal Till). | | 1.0 | No |
| 114-MW55C | 67.0 | 68.0 | SC-GC | Reddish brown (5YR 5/4) clayey SAND, some sub-rounded to sub-angular fine to coarse gravel, dry (Basal Till). | 1.0 | 1.0 | No |

# Table G.1
# Evaluation of Permeable Zones Within the Basal Till
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

AECOM

| Well ID | Top (ft bgs) | Bottom (ft bgs) | USCS Code | Description | Total Basal Till Thickness (ft) | Interval Thickness (ft) | Permeable Zone Within Basal Till? |
|---|---|---|---|---|---|---|---|
| 114-MW56C | 53.0 | 54.0 | SC | Reddish brown and gray clayey SAND, few fine to coarse gravel, medium dense (Basal Till). | 19.0 | 1.0 | No |
| 114-MW56C | 54.0 | 55.0 | SP | Reddish brown SAND (Basal Till). | | 1.0 | Yes |
| 114-MW56C | 55.0 | 56.0 | SP | Reddish brown poorly graded medium SAND, few fine to coarse gravel, loose, wet (Basal Till). | | 1.0 | Yes |
| 114-MW56C | 56.0 | 58.0 | SC | Reddish brown well graded SAND with some clay, embedded with fine to coarse gravel, medium dense, damp (Basal Till). Yellow water from 57-58 ft bgs. | | 2.0 | No |
| 114-MW56C | 58.0 | 60.0 | SC | Gray to reddish brown clayey SAND, little fine to coarse subangular gravel, damp (Basal Till). | | 2.0 | No |
| 114-MW56C | 60.0 | 60.5 | SP | Reddish brown poorly graded SAND, loose, wet (Basal Till). | | 0.5 | Yes |
| 114-MW56C | 60.5 | 61.0 | SW | Reddish brown well graded fine to coarse SAND with little silt/clay, little subrounded fine to coarse gravel, damp (Basal Till). | | 0.5 | No |
| 114-MW56C | 61.0 | 63.0 | CL | Reddish brown sandy CLAY with embedded large gravel (up to 2 inches in diameter), very dense, damp to wet (Basal Till). | | 2.0 | No |
| 114-MW56C | 63.0 | 65.0 | SC | Well graded sand with some clay, fine to coarse sand, embedded fine gravel, dense, dry to damp (Basal Till). | | 2.0 | No |
| 114-MW56C | 65.0 | 68.0 | CL | Dark brown (10YR 3/3) sandy CLAY with little embedded fine to coarse gravel (up to 2.5 inches in diameter), very dense, damp (Basal Till). | | 3.0 | No |
| 114-MW56C | 68.0 | 69.0 | SP | Gray poorly graded SAND with little clay, fine sand, little fine to coarse gravel, dense, damp (Basal Till). | | 1.0 | No |
| 114-MW56C | 69.0 | 70.0 | GP | Gray broken up GRAVEL, loose, dry (Basal Till). | | 1.0 | No |
| 114-MW56C | 70.0 | 72.0 | CL | Brown (10YR 5/3) and gray sandy CLAY with little fine to coarse gravel, very dense, damp (Basal Till). | | 2.0 | No |
| 114-MW57C | 59.0 | 60.0 | ML | Reddish brown and greenish gray sandy SILT with little embedded fine to coarse gravel, dense, damp to dry (Basal Till). | 9.0 | 1.0 | No |
| 114-MW57C | 60.0 | 66.5 | SP | Reddish brown poorly graded SAND with little silt, few medium grained sand, loose, wet (Basal Till). | | 6.5 | Yes |
| 114-MW57C | 66.5 | 67.5 | CL | Reddish brown CLAY with little sand, little fine to coarse gravel, loose, wet (Basal Till). | | 1.0 | No |
| 114-MW57C | 67.5 | 68.0 | CL | Gray sandy CLAY with embedded pieces of rock, very dense, damp (Basal Till). | | 0.5 | No |
| 114-MW58C | 64.0 | 68.5 | SM | Reddish brown well graded SAND with some silt, fine to coarse sand, few embedded gravel, dense, damp to wet (Basal Till). | 10.0 | 4.5 | No |
| 114-MW58C | 68.5 | 69.5 | SC/SM | Gray clayey/silty SAND, very dense, damp (Basal Till). | | 1.0 | No |
| 114-MW58C | 69.5 | 70.5 | SM | Reddish brown (5YR 4/4) poorly graded SAND with some silt, fine sand, loose, damp (Basal Till). | | 1.0 | Yes |
| 114-MW58C | 70.5 | 74.0 | SC/SM | Reddish brown and gray clayey/silty SAND with several large pieces of gravel, damp (Basal Till). | | 3.5 | No |
| 114-MW59C | 89.5 | 90.0 | CL | Reddish brown CLAY with few sand and angular rock pieces, several cobbles (up to 2 inches in diameter), very dense, damp (Basal Till). | 3.0 | 0.5 | No |
| 114-MW59C | 90.0 | 92.5 | SP | Gray SAND with little silt, with embedded fine to coarse gravel, very dense, damp to moist, dry from 92-92.5 ft bgs (Basal Till). | | 2.5 | No |

# Table G.1
# Evaluation of Permeable Zones Within the Basal Till
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

AECOM

| Well ID | Top (ft bgs) | Bottom (ft bgs) | USCS Code | Description | Total Basal Till Thickness (ft) | Interval Thickness (ft) | Permeable Zone Within Basal Till? |
|---|---|---|---|---|---|---|---|
| 114-MW60C | 93.5 | 100.0 | ML/GM | Gray sandy SILT, fine sand, some fine to coarse gravel (diameter up to 1/4-inch), very dense, damp to dry (Basal Till). | 26.0 | 6.5 | No |
| 114-MW60C | 100.0 | 101.0 | SM | Pinkish gray (7.5YR 6/1) silty SAND, fine sand, few silt, few fine to coarse gravel, very dense, damp (Basal Till). | | 1.0 | No |
| 114-MW60C | 101.0 | 102.0 | SM/SC | Gray silty/clayey SAND, fine sand, subangular fine to coarse gravel, very dense, damp (Basal Till). | | 1.0 | No |
| 114-MW60C | 102.0 | 103.0 | GW | Gray powder (pulverized rock) with some subangular and subrounded fine to coarse gravel, loose, dry to damp (Basal Till). | | 1.0 | No |
| 114-MW60C | 103.0 | 104.0 | GM | Angular gray rock pieces with some fine sandy SILT, loose, dry to damp (Basal Till). | | 1.0 | No |
| 114-MW60C | 104.0 | 105.0 | ML | Gray sandy SILT, fine sand with little embedded subangular fine to coarse gravel, very dense, dry to damp (Basal Till). | | 1.0 | No |
| 114-MW60C | 105.0 | 106.0 | GP-GM | Gray sandy SILT, interbedded with large gravel, very dense, damp. Solid core sections of till (sizes of up to 2 inch, 3 inch and 6 inch in length) (Basal Till). | | 1.0 | No |
| 114-MW60C | 106.0 | 107.0 | GW | Gray powder (pulverized rock) with fine to coarse GRAVEL (up to 3 inches in diameter), loose, damp (Basal Till). | | 1.0 | No |
| 114-MW60C | 107.0 | 110.0 | ML/SM | Very dark grayish brown (10YR 4/3) sandy SILT with subrounded to subangular fine to coarse gravel, very dense, damp (Basal Till). | | 3.0 | No |
| 114-MW60C | 110.0 | 110.5 | GW | Black fine to coarse GRAVEL, little silt, loose, wet (Basal Till). | | 0.5 | Yes |
| 114-MW60C | 110.5 | 111.5 | CL | Gray sandy CLAY with little fine to coarse gravel, loose, wet (Basal Till). | | 1.0 | No |
| 114-MW60C | 111.5 | 114.0 | CL | Gray sandy CLAY with few subrounded coarse gravel, very hard, dense, damp (Basal Till). | | 2.5 | No |
| 114-MW60C | 114.0 | 115.0 | GP | Gray subrounded coarse GRAVEL, one large gravel piece (1.5 inch in diameter), little silt, loose, damp (Basal Till). | | 1.0 | No |
| 114-MW60C | 115.0 | 116.0 | SP | Gray coarse SAND, fine to coarse gravel, little silt or clay, loose, wet (Basal Till). | | 1.0 | Yes |
| 114-MW60C | 116.0 | 117.0 | SM | Fine SAND with some silt, few medium to coarse rock pieces, loose, soft, wet (Basal Till). | | 1.0 | Yes |
| 114-MW60C | 117.0 | 118.0 | SM | Reddish gray (5YR 5/2) SAND with silt, dense, wet (Basal Till). | | 1.0 | No |
| 114-MW60C | 118.0 | 119.0 | ML | Reddish brown (5YR 5/3) sandy SILT, trace coarse sand, trace gravel, medium stiff, wet (Basal Till). | | 1.0 | Yes |
| 114-MW60C | 119.0 | 119.5 | CL | Gray sandy CLAY, some fine to coarse rock pieces, very dense, damp (Basal Till). | | 0.5 | No |
| 114-MW61C | 50.5 | 55.0 | SW-SC | Well graded SAND with some clay, fine to coarse sand, little fine to coarse gravel, damp to wet (Basal Till). | 12.5 | 4.5 | No |
| 114-MW61C | 55.0 | 55.5 | SP | Reddish brown poorly graded SAND, mostly fine sand, few gravel, loose, wet (Basal Till). | | 0.5 | Yes |
| 114-MW61C | 55.5 | 60.0 | SW-SC | Reddish brown well graded SAND with some clay, fine to coarse sand, little subrounded to subangular gravel, medium dense to very dense, damp (Basal Till). | | 4.5 | No |
| 114-MW61C | 60.0 | 61.0 | SW | Reddish brown well graded SAND with few silt, loose, damp to wet (Basal Till). | | 1.0 | Yes |
| 114-MW61C | 61.0 | 63.0 | CL | Reddish brown and light yellowish brown (2.5Y 6/3) sandy CLAY embedded with little fine to subrounded coarse gravel, medium dense, damp to wet (Basal Till). | | 2.0 | No |

# Table G.1
# Evaluation of Permeable Zones Within the Basal Till
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

| Well ID | Top (ft bgs) | Bottom (ft bgs) | USCS Code | Description | Total Basal Till Thickness (ft) | Interval Thickness (ft) | Permeable Zone Within Basal Till? |
|---|---|---|---|---|---|---|---|
| 114-MW62C | 46.5 | 50.0 | SM | Reddish brown (2.5YR 4/4) widely graded SAND with some silt, fine to angular coarse sand, few embedded fine to coarse gravel, very dense, dry to damp (Basal Till). | 24.5 | 3.5 | No |
| 114-MW62C | 50.0 | 60.0 | SM | Reddish brown (5YR 4/4) SAND with some silt, trace coarse sand, few fine to coarse subrounded to subangular gravel embedded in matrix, compact (at 50 ft), dense to very dense, damp (Basal Till). | | 10.0 | No |
| 114-MW62C | 60.0 | 66.0 | SW | Reddish brown (5YR 4/4) well graded SAND with little silt, fine to coarse sand, little subangular to subrounded fine to coarse gravel, very dense, damp to dry (Basal Till). | | 6.0 | No |
| 114-MW62C | 66.0 | 68.0 | SM | Reddish brown (5YR 4/4) poorly graded SAND with little silt, fine to medium sand, trace gravel, loose, damp (Basal Till). | | 2.0 | Yes |
| 114-MW62C | 68.0 | 71.0 | SM | Reddish brown (5YR 4/3) widely graded SAND with some silt, fine to coarse sand, few fine to coarse gravel embedded, very dense, damp (Basal Till). | | 3.0 | No |
| 114-MW63C | 61.5 | 64.0 | SC | Reddish brown clayey SAND, little fine to coarse sand, little fine to coarse gravel, firm, (Basal Till). | 4.5 | 2.5 | No |
| 114-MW63C | 64.0 | 66.0 | SC | Reddish brown clayey SAND, little fine to coarse sand, little fine to coarse gravel, firm (Basal Till). | | 2.0 | No |
| 114-MW64C | 83.5 | 90.0 | SC | Gray clayey SAND with little embedded coarse subrounded gravel, very dense, damp (Basal Till). | 9.5 | 6.5 | No |
| 114-MW64C | 90.0 | 92.0 | SP | Reddish brown poorly graded SAND with few silt, fine sand (Basal Till). | | 2.0 | Yes |
| 114-MW64C | 92.0 | 93.0 | GC/SC | Gray fine to coarse GRAVEL, with some clayey sand, very dense, wet from 92-92.5 ft bgs, damp from 92.5-93 ft bgs (Basal Till). | | 1.0 | No |
| 114-MW65C | 53.0 | 63.8 | SM | Reddish brown (5YR 5/4) silty SAND, little sub-angular fine to sub-rounded coarse gravel, hard, moist (Basal Till). | 13.0 | 10.8 | No |
| 114-MW65C | 63.8 | 65.0 | SW-SC | Reddish brown (5YR 4/3) widely graded SAND with silt or clay, fine to coarse sand, little fine to coarse gravel, few large gravel (2" to 3" wide), hard, moist (Basal Till). | | 1.2 | No |
| 114-MW65C | 65.0 | 66.0 | SM | Reddish brown (5YR 4/3) silty SAND, fine to coarse sand, few fine gravel, few coarse sub-rounded gravel (Basal Till). | | 1.0 | No |

# Table G.1
# Evaluation of Permeable Zones Within the Basal Till
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

| Well ID | Top (ft bgs) | Bottom (ft bgs) | USCS Code | Description | Total Basal Till Thickness (ft) | Interval Thickness (ft) | Permeable Zone Within Basal Till? |
|---|---|---|---|---|---|---|---|
| 114-MW52D | 45.0 | 47.0 | SW | Reddish brown fine to coarse SAND, trace to little gravel, medium dense, wet (Basal Till) | 23.0 | 2.0 | No |
| 114-MW52D | 47.0 | 50.0 | SP | Reddish brown fine to medium SAND, little fine to coarse gravel, very dense, wet (Basal Till). | | 3.0 | No |
| 114-MW52D | 50.0 | 55.0 | SP | Reddish brown fine to medium SAND, some fine to coarse gravel, little silt, very dense, wet (Basal Till). | | 5.0 | No |
| 114-MW52D | 55.0 | 60.0 | SP | Reddish brown fine to medium SAND, some fine to coarse angular gravel, little silt, very dense, wet (Basal Till). | | 5.0 | No |
| 114-MW52D | 60.0 | 62.0 | SW | Reddish brown fine to coarse SAND, little fine to coarse angular gravel, poorly graded, very dense, wet (Basal Till). | | 2.0 | No |
| 114-MW52D | 62.0 | 65.0 | SP | Reddish brown fine to medium SAND, some fine to coarse gravel, little silt, poorly graded, very dense, wet (Basal Till). | | 3.0 | No |
| 114-MW52D | 65.0 | 68.0 | SW | Reddish brown fine to coarse SAND, some fine to coarse gravel, little silt, very dense, wet (Basal Till). | | 3.0 | No |
| 114-MW57D | 53.0 | 54.0 | CL | Reddish brown fine SAND, some silt, medium dense, wet (Basal Till). | 14.0 | 1.0 | No |
| 114-MW57D | 54.0 | 55.0 | SM | Reddish brown fine SAND, some silt, trace medium to coarse gravel, trace cobbles, very dense, wet (Basal Till). | | 1.0 | No |
| 114-MW57D | 55.0 | 60.0 | SM | Reddish brown fine to medium SAND, some silt, little fine to coarse angular gravel, trace cobbles, very dense, wet (Basal Till). | | 5.0 | No |
| 114-MW57D | 60.0 | 65.0 | SM | Reddish brown fine to coarse SAND, some silt, little fine to coarse gravel, trace cobbles, very dense, wet (Basal Till). | | 5.0 | No |
| 114-MW57D | 65.0 | 67.0 | SW | Reddish brown fine to coarse SAND, trace silt, medium dense, wet (Basal Till). | | 2.0 | No |
| 114-MW61D | 48.0 | 50.0 | SM | Reddish brown fine to medium SAND, some silt, little fine to medium subrounded gravel, very dense, wet (Basal Till). | 15.0 | 2.0 | No |
| 114-MW61D | 50.0 | 55.0 | SM | Reddish brown fine to medium SAND, some silt, little fine to medium subrounded gravel, very dense, wet (Basal Till). | | 5.0 | No |
| 114-MW61D | 55.0 | 60.0 | SM | Reddish brown fine to medium SAND, some silt, little fine to coarse subangular to subrounded gravel, very dense, wet (Basal Till). | | 5.0 | No |
| 114-MW61D | 60.0 | 63.0 | SM | Reddish brown fine to medium SAND, some silt, little fine to coarse subangular to subrounded gravel, very dense, wet (Basal Till). | | 3.0 | No |

# Table G.1
# Evaluation of Permeable Zones Within the Basal Till
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

| Well ID | Top (ft bgs) | Bottom (ft bgs) | USCS Code | Description | Total Basal Till Thickness (ft) | Interval Thickness (ft) | Permeable Zone Within Basal Till? |
|---|---|---|---|---|---|---|---|
| 114-MW66D | 47.0 | 50.0 | SW | Reddish brown fine to coarse SAND, some fine to coarse angular gravel, little silt, poorly sorted (Basal Till), wet. | 30.0 | 3.0 | No |
| 114-MW66D | 50.0 | 51.0 | SP | Reddish Brown fine to medium SAND, trace silt, loose (Basal Till), wet. Yellow coloration to water. | | 1.0 | Yes |
| 114-MW66D | 51.0 | 55.0 | SW | Reddish brown fine to coarse SAND, some fine to coarse angular gravel, little silt, poorly sorted, dense (Basal Till), wet. | | 4.0 | No |
| 114-MW66D | 55.0 | 60.0 | SW | Reddish brown fine to coarse SAND, some fine to coarse subangular gravel, little silt, poorly sorted, dense (Basal Till), wet. | | 5.0 | No |
| 114-MW66D | 60.0 | 65.0 | SW | Reddish brown fine to coarse SAND, some fine to coarse gravel, little silt, very dense (Basal Till), wet. | | 5.0 | No |
| 114-MW66D | 65.0 | 66.0 | SW | Reddish brown fine to coarse SAND, some fine to medium gravel, little silt, medium dense (Basal Till), wet. | | 1.0 | No |
| 114-MW66D | 66.0 | 69.0 | sw | Reddish brown fine to coarse SAND, some fine to coarse subangular gravel, trace cobbles, trace silt, very dense (Basal Till), wet. | | 3.0 | No |
| 114-MW66D | 69.0 | 70.0 | CL | Reddish brown CLAY, some silt, trace fine sand, medium stiff, wet. | | 1.0 | No |
| 114-MW66D | 70.0 | 74.0 | SW | Reddish brown fine to coarse SAND, some fine to coarse subangular gravel, trace silt, trace cobbles, very dense (Basal Till) wet. | | 4.0 | No |
| 114-MW66D | 75.0 | 77.0 | SM | Reddish brown fine to coarse SAND, little fine to coarse gravel, trace to little silt, very dense (Basal Till), wet. | | 2.0 | No |
| 114-BSB-01 | 60.5 | 62.0 | SP-GP | Gray/brown SAND and fine to medium GRAVEL (angular to sub-angular), very dense, dry (Basal Till) | 2.5 | 1.5 | No |
| 114-BSB-01 | 62.0 | 63.0 | GP | Gray, broken fragments of possible bedrock, some angular gravel, dry (Basal Till). | | 1.0 | No |
| 114-BSB-02 | 55.0 | 58.0 | SM | Dark brown, fine to medium silty SAND with some fine to medium subangular and subrounded GRAVEL, with trace cobble/broken cobble, dense, moist (Basal Till). | 6.5 | 3.0 | No |
| 114-BSB-02 | 58.0 | 61.0 | SM | Dark brown, fine to medium silty SAND with some fine to coarse GRAVEL (well graded), broken cobble, medium dense, moist to wet (Basal Till). | | 3.0 | No |
| 114-BSB-02 | 61.0 | 61.5 | MH | Gray, clayey SILT with angular GRAVEL, highly compressed (Basal Till). | | 0.5 | No |
| 114-BSB-03 | 68.0 | 73.0 | SW/GW | Dark brown, fine to coarse SAND and GRAVEL (subangular and subrounded), possible Basal Till, broken up into fragments due to water injection | 8.0 | 5.0 | No |
| 114-BSB-03 | 73.0 | 76.0 | GM-GC | Dark brown to gray, fine to coarse silty and clayey GRAVEL with fine to coarse GRAVEL, medium dense, moist to wet (Basal Till). Broken rock fragments at 75.5' to 76'. | | 3.0 | No |

# Table G.1
# Evaluation of Permeable Zones Within the Basal Till
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# PPG, Jersey City, New Jersey

| Well ID | Top (ft bgs) | Bottom (ft bgs) | USCS Code | Description | Total Basal Till Thickness (ft) | Interval Thickness (ft) | Permeable Zone Within Basal Till? |
|---|---|---|---|---|---|---|---|
| 114-MW67C | 56 | 60 | SM | Reddish brown fine to medium SAND, some silt, trace fine to coarse gravel, dense, wet (Basal Till). | 27.0 | 4.0 | No |
| 114-MW67C | 60 | 65 | SM | Reddish brown fine to medium SAND, some silt, trace fine to coarse gravel, very dense, wet (Basal Till). | | 5.0 | No |
| 114-MW67C | 65 | 70 | SM | Reddish brown fine to medium SAND, some silt, trace to little fine to coarse gravel, very dense, wet (Basal Till). | | 5.0 | No |
| 114-MW67C | 70 | 75 | SM | Reddish brown fine to medium SAND, some silt, trace to little fine to coarse gravel, very dense, wet (Basal Till). | | 5.0 | No |
| 114-MW67C | 75 | 77 | SM | Reddish brown fine to medium SAND, some silt, trace to little fine to coarse subangular gravel, very dense, wet (Basal Till). | | 2.0 | No |
| 114-MW67C | 78 | 80 | SM | Gray fine to medium SAND, some silt, trace fine to coarse subangular gravel, very dense, wet (Basal Till). | | 2.0 | No |
| 114-MW67C | 80 | 83 | SM | Gray fine to medium SAND, some silt, trace to little fine to coarse subangular gravel, very dense (Basal Till). | | 3.0 | No |
| 114-MW68C | 56 | 60 | SM | Reddish brown fine to coarse SAND, some silt, little fine to coarse subrounded gravel, very dense, wet (Basal Till). | 17.0 | 4.0 | No |
| 114-MW68C | 60 | 65 | SM | Reddish brown fine to coarse, SAND, some silt, little fine to coarse, subrounded gravel, very dense, wet (Basal Till). | | 5.0 | No |
| 114-MW68C | 65 | 70 | SM | Reddish brown fine to coarse, SAND, some silt, little fine to coarse, subrounded gravel, very dense, wet (Basal Till). | | 5.0 | No |
| 114-MW68C | 70 | 73 | SM | Reddish brown fine to coarse, SAND, some silt, little fine to coarse, gravel, very dense, wet (Basal Till). | | 3.0 | No |
| 114-MW69C | 47 | 50 | SM | Reddish brown fine SAND, some silt, trace clay, medium dense, wet (Basal Till). | 21.0 | 3.0 | No |
| 114-MW69C | 50 | 55 | SM | Reddish brown fine to medium SAND, some silt, little fine gravel, very dense, wet (Basal Till). | | 5.0 | No |
| 114-MW69C | 55 | 60 | SM | Reddish brown fine to medium SAND, some silt, little fine to coarse subrounded gravel, very dense, wet (Basal Till). | | 5.0 | No |
| 114-MW69C | 60 | 65 | SM | Reddish brown fine to medium SAND, some silt, little fine to coarse subrounded gravel, very dense, wet (Basal Till). | | 5.0 | No |
| 114-MW69C | 65 | 68 | SM | Reddish brown fine to medium SAND, some silt, little fine to coarse subrounded gravel, very dense, wet (Basal Till). | | 3.0 | No |
| 114-MW70C | 95 | 100 | SM | Reddish brown fine to medium SAND, some silt, little fine to coarse gravel, very dense, wet (Basal Till). End of boring at 100 ft bgs. | 5.0 | 5.0 | No |

| | |
|---|---|
| Total thickness of basal till logged (ft) | 389.5 |
| Total thickness of permeable zones in basal till (ft) | 20.9 |
| Percentage of permeable zones in basal till | 5.4% |

**Notes**

bgs - below ground surface

ft - feet

USCS - Unified Soil Classification System

# Appendix H

# Receptor Evaluation

**New Jersey Department of Environmental Protection**
Site Remediation and Waste Management Program

# RECEPTOR EVALUATION (RE) FORM

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE

Forrest Street and Forrest Street Properties, Al Smith Moving & Storage, Fishbein, Roadways

Site Name: Hudson County Chromate Sites 114, 132, 133, 135, 137, 143, 186, 199, Ten West Apparel, Halsted Co.,

Program Interest (PI) Number(s): G000005480, G000008749, 25695, 246332, 629345, G000008753, G000008759,

Communication Center Number(s) and/or ISRA number(s) for this submission: (as *many as will fit in the space provided)*

N/A

**This form must be attached to the Cover/Certification Form if not submitted through a Remedial Phase Online Service**

PI Numbers continued: 777089, 722429, 775706, 775998, 629388, G000044581, G000011477

**Indicate the type of submission:**

☐ Initial RE Submission

☒ Updated RE Submission

Indicate the reason for submission of an updated RE form

- ☐ Submission of an Immediate Environmental Concern (IEC) source control report;
- ☒ Submission of a Remedial Investigation Report;
- ☐ Submission of a Remedial Action Report;

Check if included in updated RE

- ☐ The known concentration or extent of contamination in any medium has increased;
- ☐ A new AOC has been identified;
- ☐ A new receptor is identified;
- ☐ A new exposure pathway has been identified.

## SECTION B. ON SITE AND SURROUNDING PROPERTY USE

1. Identify any sensitive populations/uses that are currently on-site or surrounding property usage within 200 feet of the site property boundary (*check all that apply*):

| | On-site | Off-site |
|---|---|---|
| None of the following | ☒ | ☐ |
| Residences or residential property | ☐ | ☒ |
| Public or Private Schools Grades K-12 | ☐ | ☐ |
| Child care centers | ☐ | ☐ |
| Public parks, playgrounds or other recreation areas | ☐ | ☒ |
| Other sensitive population use(s) Explain _____ | ☐ | ☐ |

If any of the above applies, attach a list of addresses, facility names, type of use, and a map depicting each location relative to the site.

2. Current site uses (*check all that apply*): See Attachment 1

| | | |
|---|---|---|
| ☐ Industrial | ☐ Residential | ☒ Commercial |
| ☐ School or child care | ☐ Government | ☐ Park or recreational use |
| ☒ Vacant | ☐ Agricultural | ☒ Other: Roadways |

3. Planned future on-site uses and off-site uses within 200 feet of the site boundary (*check all that apply*):

| On-Site | Off-Site | | On-Site | Off-Site | | On-Site | Off-Site | |
|---|---|---|---|---|---|---|---|---|
| ☐ | ☐ | Industrial | ☒ | ☒ | Residential | ☒ | ☒ | Commercial |
| ☐ | ☐ | School or child care | ☐ | ☐ | Government | ☒ | ☒ | Park or recreational use |
| ☐ | ☐ | Vacant | ☐ | ☐ | Agricultural | ☒ | ☒ | Other: Canal Crossing Redevelopment ** |

Provide a map depicting the location of the proposed changes in land use.



** Refer to http://www.tandmassociates.com/projects/planning-design-environmental-services-canal-crossing-redevelopment-area/

## SECTION C. DESCRIPTION OF CONTAMINATION

1. Identify if any of the following exist at the site:

| Yes | No | |
|---|---|---|
| ☒ | ☐ | Free product [N.J.A.C. 7:26E-1.8] identified is ☐ LNAPL* or ☒ DNAPL**. |
| | | Date identified: 10/01/2007 |
| ☐ | ☒ | Residual product [N.J.A.C. 7:26E-1.8] |
| ☒ | ☐ | Other primary source materials not identified above (e.g., buried drums, containers, unsecured friable asbestos). See form instructions for additional information. |
| | | Explain: Source material has been remediated or is in the process of being remediated. |

* LNAPL – measured thickness of .01 feet or more

**DNAPL – See *Ground Water Technical Guidance* and *USEPA Assessment and Delineation of DNAPL Source Zones at Hazardous Waste Sites* (attached as Appendix A of the NJDEP GW Guidance) available at: http://www.nj.gov/dep/srp/guidance/#pa_si_ri_gw. Also, see US EPA DNAPL Overview available at: http://cluin.org/contaminantfocus/default.focus/sec/Dense_Nonaqueous_Phase_Liquids_(DNAPLS)/cat/Overview

2. Soil Migration Pathway

Has soil contamination been delineated to the applicable Direct Contact Soil Remediation Standard pursuant to N.J.A.C. 7:26E-4.2? ☒ Yes ☐ No

Are all soils either below the applicable Direct Contact Criteria or under an institutional control (i.e. deed notice)? Source material has been remediated or is in the process of being remediated. ☐ Yes ☒ No

3. If this evaluation is submitted with a technical document that includes contaminant summary information, proceed to Section D. Otherwise, attach a brief summary of all currently available data and information to be included in the site investigation or remedial investigation report. Included with a Remedial Investigation Report

## SECTION D. GROUND WATER USE

1. Have all potentially contaminated areas of concern been evaluated to determine if there is a potential that ground water is contaminated pursuant to N.J.A.C. 7:26E-3.5? ☒ Yes ☐ No

   If "**No**," proceed to Section E.

2. Is a ground water investigation required? ☒ Yes ☐ No

   If "**No**," proceed to Section E.

3. Has a groundwater investigation been conducted? ☒ Yes ☐ No

   If "**Yes**":
   Has the laboratory data package been received? ☒ Yes ☐ No

   If the laboratory data package has not been received, provide the expected due date for data: _____ and proceed to Section E.

   If "**No**":
   Proceed to Section E.

4. Is ground water contaminated above the Ground Water Remediation Standards [N.J.A.C.7:9C]? ☒ Yes ☐ No

   If "**Yes**": Provide the date that the laboratory data package was available and confirmed contamination was identified above the Ground Water Remediation Standards. Date: 05/15/2007

   If "**No**": Proceed to Section E.

5. Has ground water contamination been delineated to the applicable Remediation Standard pursuant to N.J.A.C 7:26E-4.3? ☒ Yes ☐ No

6. What is the ground water classification for this site as per N.J.A.C. 7:9C? (*check all that apply*) See Note 1.

| | |
|---|---|
| ☐ Class I-A | ☒ Class II-A |
| ☐ Class I-PL Pinelands Protection Area | ☐ Class III-A |
| ☐ Class I-PL Pinelands Preservation Area | ☐ Class III-B |



Note 1: Groundwater contamination in the overburden has been delineated to the applicable remediation standards pursuant to N.J.A.C. 7:26E-4.3. Delineation of impacts in the bedrock zone will be discussed in a future addendum to this report.

7. Has a well search been completed? ☒ Yes ☐ No

Date of most recent or updated well search: 02/01/2021 See Attachment 2

8. Is a completed Well Search Spreadsheet or historical well search table attached and has an electronic copy of the spreadsheet been submitted to srpgis_wrs@dep.nj.gov. ☒ Yes ☐ No

**Note: Redacted wells must be excluded from all non-confidential documents including maps, tables, etc. (see RE Instructions).**

If "**No**," explain: _____

9. Are any potable or irrigation wells located within ½ mile of the currently known extent of contamination? ☐ Yes ☒ No

If "**Yes**,":

- A door to door survey is required in accordance with [N.J.A.C.7:26E-1.14(a)ii]. Attach results of the door to door survey.
- Identify if any of the following conditions exist based on the well search and door to door survey [N.J.A.C.7:26E-1.14(a)]:

| Yes | No | |
|---|---|---|
| ☐ | ☐ | Potable wells located within 500 feet from the downgradient edge of the currently known extent of contamination. |
| ☐ | ☐ | Potable wells located 250 feet upgradient or 500 feet side gradient of the currently known extent of contamination. |
| ☐ | ☐ | Ground water contamination from the discharge is located within a Tier 1 wellhead protection area (WHPA). |

10. Has sampling been conducted of ☐ potable well(s) and /or ☐ non-potable use well(s)? ☐ Yes ☒ No

If "No," provide justification then proceed to Question 12.

No potable wells or non-potable wells within 1/2 mile

11. Has contamination been identified in potable well(s), **not attributed to background conditions**, above the Class II Ground Water Remediation Standards or State Safe Drinking Water levels, N.J.A.C 7:1E, whichever is applicable? ☐ Yes ☐ No

If "**Yes**":

- Provide the date laboratory data package was received: _____
- Follow the **IEC** Guidance Document at http://www.nj.gov/dep/srp/guidance/IEC/index.html for required actions and answer the following:
- Has an engineered system response action been completed on all impacted receptors? ☐ Yes ☐ No
  Provide a brief narrative description:

Date completed: _____ NJDEP Case Manager: _____

12. Has contamination been identified in non-potable well(s), **not attributed to background conditions**, above the Class II Ground Water Remediation Standards? ☐ Yes ☒ No

If "**Yes**," provide the date laboratory data package was received: _____

13. Has the ground water use evaluation been completed pursuant to N.J.A.C. 7:26E-1.14? ☒ Yes ☐ No

This receptor evaluation is being submitted as part of a Groundwater Remedial Investigation Report. PPG and Public Service Electric and Gas Company (PSEG) are jointly responsible for remediation of manufactured gas plant (MGP) impacts including those emanating from Site 114. PSEG, as the former MGP operator, is the lead party for addressing these impacts. In 2012 and 2013, PSEG performed a VI investigation in accordance with CMX s March 2010 *Vapor Intrusion Investigation Work Plan, Former Halladay Street Gas Works, Jersey City, New Jersey.* No further evaluation of vapor intrusion as part of the Groundwater RI is necessary.

## SECTION E. VAPOR INTRUSION (VI)

1. Indicate if any of the following conditions exist that trigger a Vapor Intrusion investigation. For each condition checked "Yes", provide the date the condition was first identified (e.g. date laboratory data package was available). (*see NJDEP Vapor Intrusion Technical Guidance*)

| Yes | No | | Date Condition First Identified |
|---|---|---|---|
| ☐ | ☐ | Ground water contamination in excess of the NJDEP Vapor Intrusion Ground Water Screening Levels (VIGWSL) and within 30 feet of a building for Petroleum Hydrocarbon Compounds (PHC) or 100 feet for non-PHC compounds | _____ |
| ☐ | ☐ | Free product within 30 feet of a building for PHC or 100 feet for non-PHC compounds | _____ |
| ☐ | ☐ | Soil gas contamination detected at concentrations that exceed the Soil Gas Screening Levels (SGSL) | _____ |
| ☐ | ☐ | Indoor air contamination that exceeds the Indoor Air Screening Levels | _____ |
| ☐ | ☐ | Wet basement or sump containing free product or ground water containing detectable concentration of volatile organic contaminants | _____ |
| ☐ | ☐ | Methane generating conditions causing oxygen deficient or explosion concern | _____ |
| ☐ | ☐ | Other human or safety concern from the VI pathway (i.e. elemental mercury, unsaturated soil contamination), *explain below:* | _____ |

**If you checked "No" to <u>all</u> boxes in Question 1., proceed to Section F, "Ecological Receptors", otherwise complete the rest of this section.**

2. Has ground water contamination been delineated to the applicable Vapor Intrusion Ground Water Screening Levels pursuant to N.J.A.C 7:26E-4.3? ☐ Yes ☐ No

3. Was a site-specific screening level, modeling or other alternative approach employed for the VI pathway? ☐ Yes ☐ No

4. Identify and locate, on a scaled map, any buildings/sensitive populations that exist within the following distances from ground water contaminant concentrations above the Vapor Intrusion Ground Water Screening Levels or other specific triggers noted in Question 1 above.:

| Yes | No | |
|---|---|---|
| ☐ | ☐ | 30 feet of petroleum free product or dissolved petroleum hydrocarbon contamination in ground water |
| ☐ | ☐ | 100 feet of any non-petroleum free product (e.g. chlorinated hydrocarbons) or any non-petroleum dissolved volatile organic ground water contamination |
| ☐ | ☐ | Other specific triggers |
| ☐ | ☐ | No buildings exist within the specified distances or other specific triggers |

5. Is the vapor intrusion pathway a concern at or adjacent to the site? (if "No," attach justification) ☐ Yes ☐ No

6. Has soil gas sampling of the building(s) been conducted? ☐ Yes ☐ No
   If "**Yes**," has the laboratory data package been received? ☐ Yes ☐ No
   If the data package was received, did constituents exceed the Soil Gas Screening Levels? ☐ Yes ☐ No
   If "**No**," attach technical justification consistent with the NJDEP Vapor Intrusion Technical Guidance.

7. Has indoor air sampling been conducted at the identified building(s)? ☐ Yes ☐ No
   If "**Yes**," has the laboratory data package been received? ☐ Yes ☐ No
   If the data package has been received, did constituents exceed the Indoor Air Screening Levels? ☐ Yes ☐ No
   If "**No**," or awaiting indoor air laboratory data package, proceed to Question 12.

8 Has indoor air contamination been identified but not suspected to be from a discharge? (if "**Yes**," attach justification) ..... ☐ Yes ☐ No

9. Were indoor air results above the NJDEP's Rapid Action Levels? ..... ☐ Yes ☐ No

If "**Yes**":

- Provide the date laboratory data package was received: _____
- Follow the **IEC** Guidance Document at http://www.nj.gov/dep/srp/guidance/index.html#iec for required actions and answer the following:
- Was the IEC engineering system response for control implemented for all impacted structures? ..... ☐ Yes ☐ No

  Date implemented: _____ NJDEP Case Manager: _____

10. Were the results of indoor air sampling above the NJDEP's Indoor Air Screening Levels but at, or below, the Rapid Action Levels ..... ☐ Yes ☐ No

If "**Yes**," answer the following:

- Provide the date laboratory data package was received: _____
- Has the Vapor Concern (VC) Response Action Form notifying the NJDEP of the exceedances been submitted? ..... ☐ Yes ☐ No

  Date: _____
- Has a plan to mitigate and monitor the exposure been submitted? ..... ☐ Yes ☐ No

  Date: _____
- Has the Mitigation Response Action Report been submitted? ..... ☐ Yes ☐ No

  Date: _____

11. Do one or more buildings have an Indeterminate VI Pathway status? ..... ☐ Yes ☐ No

If "**Yes**," attach a list of the building(s) with address(s) and block/lot(s)

12. Has the vapor intrusion investigation been completed? ..... ☐ Yes ☐ No

If "**No**", is the vapor intrusion investigation stepping out as part of the site investigation or remedial investigation. (If "No," attach justification) ..... ☐ Yes ☐ No

## SECTION F. ECOLOGICAL RECEPTORS

1. Has an Ecological Evaluation (EE) been conducted? [N.J.A.C. 7:26E-1.16] ..... ☒ Yes ☐ No

   Date conducted: 05/13/2011
2. Are any site-related contaminants above any Ecological Screening Criteria? ..... ☐ Yes ☒ No
3. Are there any Environmentally Sensitive Natural Resources (ESNRs) on or adjacent to the site, or potentially impacted by site related contamination? [N.J.A.C. 7:26E-1.16] ..... ☐ Yes ☒ No
4. Do any potential or complete migration pathways exist between Contaminant of Potential Ecological Concern (COPECs) and ESNRs, or did historic migration pathways exist? ..... ☐ Yes ☒ No

**If You answered "No" to Questions 2, 3, or 4, above <u>Stop Here</u> (form is complete).**

5. If site-related free or residual product is/was present, does/did a potential or complete migration pathway exist to an ESNR? ..... ☐ Yes ☐ No
6. Do the results of an EE trigger a remedial investigation of ecological receptors? [N.J.A.C. 7:26E-4.8] ..... ☐ Yes ☐ No

   If "**Yes**", has a remedial investigation of ecological receptors been conducted? ..... ☐ Yes ☐ No

   Date conducted: _____

7. Do available data indicate an impact (COPECs above Ecological Screening Criteria in ESNRs) to Ecological Receptor(s), Surface water, or Sediment? ☐ Yes ☐ No

   If "**Yes**,"

   a) Check all ESNRs or media that apply:

   ☐ Surface water ☐ Sediment ☐ Soil ☐ Wetlands

   b) If this information is not submitted with an ecological evaluation that includes contaminant summary information, attach a brief summary of all currently available data and a description of all actions to be taken to mitigate exposure.

8. Have COPECs been fully delineated to the Ecological Screening Criteria [N.J.A.C. 7:26E-4.8(a)] in:

   a) Migration pathways ☐ Yes ☐ No

   b) ESNR ☐ Yes ☐ No

9. Has an Ecological Risk Assessment been conducted? ☐ Yes ☐ No

10. Provide the following information for any on-site and/or off-site surface water body, which is potentially impacted by the site related discharges:

| Surface Water Body Name | Stream Classification | Antidegradation Designation | Trout Production | Trout Maintenance |
|---|---|---|---|---|
| | | | ☐ | ☐ |
| | | | ☐ | ☐ |
| | | | ☐ | ☐ |
| | | | ☐ | ☐ |
| | | | ☐ | ☐ |
| | | | ☐ | ☐ |

11. Has a Program Interest (PI) or Permit number been issued for any regulated areas by the Division of Land Use Regulation? (e.g. wetlands, transition areas, flood hazard areas, coastal areas, tidelands, etc.). ☐ Yes ☐ No

    If "**Yes**,":

    Identify the type(s) of regulated areas: _____

    Provide the Land Use Regulation Program (LURP) PI or Permit number(s) for the site:

    _____

12 Are there any **pending** applications for LURP jurisdiction letters or approvals under review by the NJDEP for the remediation? ☐ Yes ☐ No

13. Are there any **valid** LURP jurisdiction letters or approvals issued for the remediation? ☐ Yes ☐ No

Completed forms should be sent to the municipal clerk, designate health department, and:

Bureau of Case Assignment & Initial Notice
Site Remediation Program
NJ Department of Environmental Protection
401-05H
PO Box 420
Trenton, NJ 08625-0420

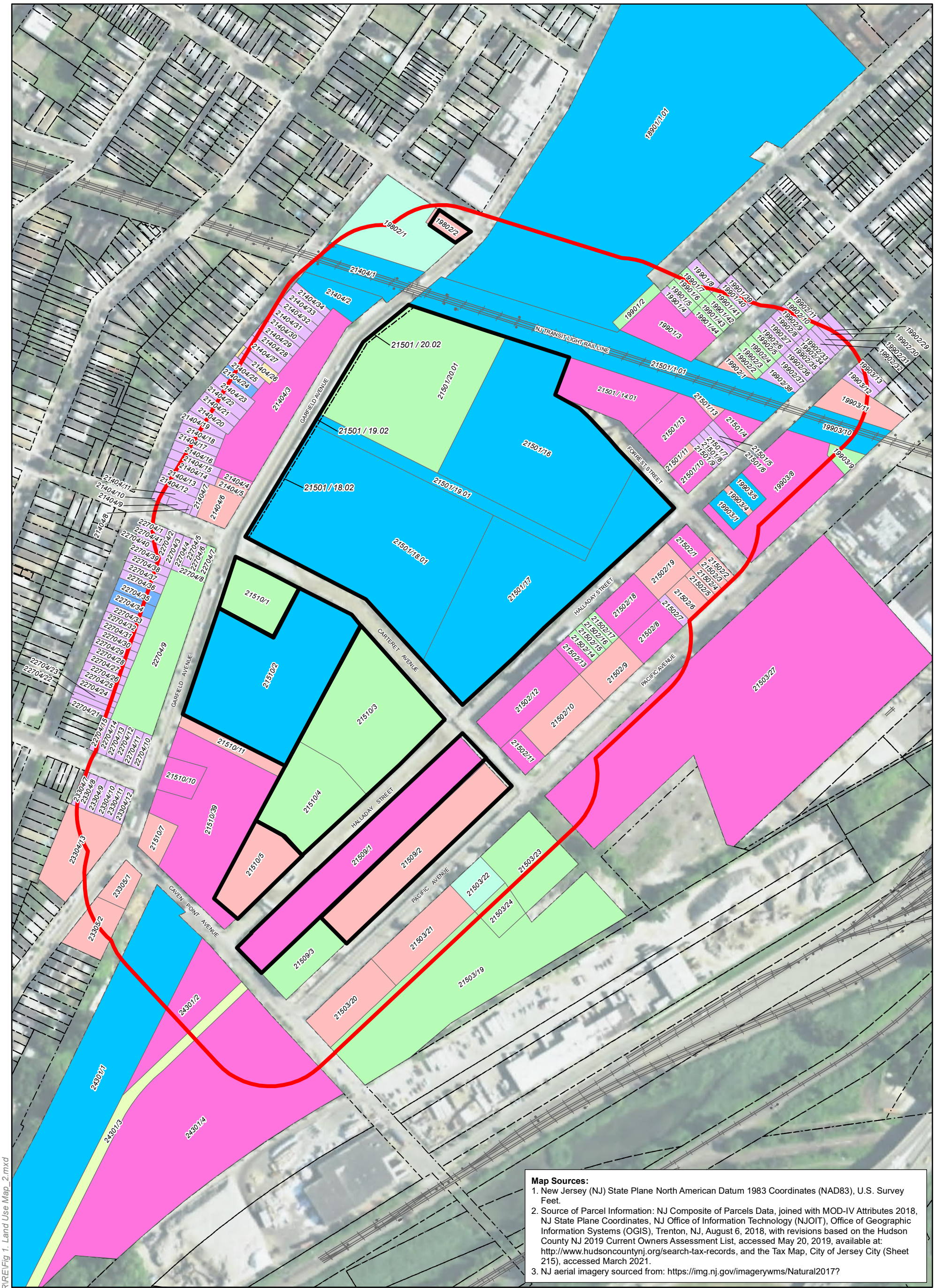


**Map Sources:**

1. New Jersey (NJ) State Plane North American Datum 1983 Coordinates (NAD83), U.S. Survey Feet.
2. Source of Parcel Information: NJ Composite of Parcels Data, joined with MOD-IV Attributes 2018, NJ State Plane Coordinates, NJ Office of Information Technology (NJOIT), Office of Geographic Information Systems (OGIS), Trenton, NJ, August 6, 2018, with revisions based on the Hudson County NJ 2019 Current Owners Assessment List, accessed May 20, 2019, available at: http://www.hudsoncountynj.org/search-tax-records, and the Tax Map, City of Jersey City (Sheet 215), accessed March 2021.
3. NJ aerial imagery sourced from: https://img.nj.gov/imagerywms/Natural2017?

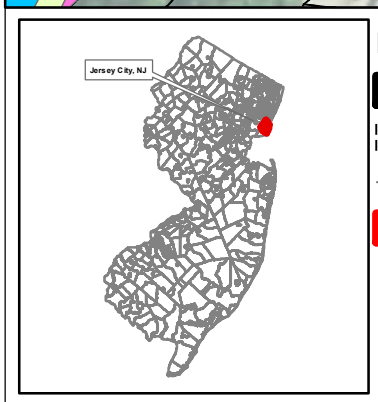


## LEGEND

- GARFIELD AVENUE GROUP SITES
- PARCELS
- RAILROAD TRACKS
- 200 FOOT BUFFER

**PROPERTY CLASS (WITHIN 200 FEET)**

- 1 - VACANT LAND
- 2 - RESIDENTIAL (SENSITIVE)
- 4A - COMMERCIAL
- 4B - INDUSTRIAL
- 4C - APARTMENT (SENSITIVE)
- 5B - RAILROAD CLASS II
- 15C - EXEMPT PUBLIC
- 15D - EXEMPT CHARITABLE
- 15F - EXEMPT (OTHER)

N W E S

0 125 250 Feet

PPG SITE 114
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY

FIGURE 1
RECEPTOR EVALUATION - LAND USE

AECOM

DATE: 2021-08-11 | DRAWN BY: SR | CHECKED BY: CKS

*Last Saved By: ravis*
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Attachment 1
Properties Within 200 Feet of Sites 114, 132, 133, 135, 137, 143, and 186
PPG, Jersey City, New Jersey

| BLOCK | LOT | PROPERTY CLASS | COUNTY | MUNICIPALITY | PROPERTY STREET ADDRESS | OWNER NAME | OWNER STREET ADDRESS | OWNER CITY, STATE | OWNER ZIP CODE |
|---|---|---|---|---|---|---|---|---|---|
| SENSITIVE RECEPTORS WITHIN 200 FEET | | | | | | | | | |
| 19901 | 4 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 72 WOODWARD ST. | WALLABOUT REALTY HOLDING, LLC | 26 RUTLEDGE STREET | BROOKLYN, N.Y. | 11249 |
| 19901 | 8 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 80-80.5 WOODWARD STREET | VASQUEZ, GILBERTO | 80-80.5 WOODWARD ST. | JERSEY CITY, N.J. | 07304 |
| 19901 | 39 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 103 VAN HORNE ST. | GONZALEZ, ALBERTO & MARIA A. | 103-103.5 VAN HORNE ST. | JERSEY CITY, N.J. | 07304 |
| 19901 | 40 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 101 VAN HORNE ST. | JORDAN, SANDRA | 101 VAN HORNE ST | JERSEY CITY, N J | 07306 |
| 19902 | 6 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 100 VAN HORNE ST. | HARRIS, ELIZABETH | 100 VAN HORNE ST. | JERSEY CITY, N.J. | 07304 |
| 19902 | 7 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 102 VAN HORNE ST. | WANG, ZHI SHAN | 414 59TH STREET,APT#1 | WEST NEW YORK, NJ | 07093 |
| 19902 | 8 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 104 VAN HORNE ST. | PHILISTIN, JEAN O. & RENETTE P. | 104 VAN HORNE ST. | JERSEY CITY, N.J. | 07304 |
| 19902 | 9 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 106 VAN HORNE ST. | RODRIGUEZ, MIRIAM | 106 VAN HORNE ST. | JERSEY CITY, NJ | 07304 |
| 19902 | 11 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 110 VAN HORNE ST. | CORNIELLE, AILEEN A. | 110 VAN HORNE ST. | JERSEY CITY, N.J. | 07304 |
| 19902 | 29 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 187 HALLADAY ST. | BLOCKY, RICHARD | 187 HALLADAY ST. | JERSEY CITY, NJ | 07304 |
| 19902 | 30 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 185 HALLADAY ST. | BARROWS,JAMES & KORZAN,EVA H/W | 185 HALLADAY ST. | JERSEY CITY, N.J. | 07304 |
| 19902 | 31 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 183 HALLADAY ST. | BRADSHAW, TIMOTHY & CARLY | 183 HALLADAY ST. | JERSEY CITY, NJ | 07304 |
| 19902 | 32 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 181 HALLADAY ST. | DWULET, JANET M. | 181 HALLADAY ST. | JERSEY CITY, NJ | 07304 |
| 19902 | 33 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 179 HALLADAY ST. | J & J DBH, LLC | 435 CENTRAL PARK WEST#4-L | NEW YORK, NY | 10025 |
| 19902 | 34 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 177 HALLADAY ST. | MILLER-WEBB, MARY I. | 255 PACIFIC AVENUE | JERSEY CITY, N.J. | 07304 |
| 19902 | 35 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 175 HALLADAY ST. | DOTY, CECELIA M. | 175 HALLADAY ST. | JERSEY CITY, N.J. | 07304 |
| 19902 | 36 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 173 HALLADAY ST. | 318 WHITON JC LLC | ONE UNIVERSITY PLAZA,#312 | HACKENSACK, NJ | 07601 |
| 19902 | 37 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 171 HALLADAY ST. | ESTRELLA,WILBERT & PAULINO,DIGNA | 171 HALLADAY ST. | JERSEY CITY, NJ | 07304 |
| 19902 | 38 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 169 HALLADAY ST. | 169 HALLADAY LLC. | 207 8TH ST. | JERSEY CITY, NJ | 07302 |
| 19903 | 12 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 186 HALLADAY ST. | DOTY, JAMES A. & CECELIA | 186 HALLADAY ST. | JERSEY CITY, NJ | 07304 |
| 19903 | 13 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 188 HALLADAY ST. | 350 RANDOLPH, L.L.C. | 336 ST.PAULS AVE. | JERSEY CITY, NJ | 07306 |
| 21404 | 7 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 118 CARTERET AVE. | FULTON CAPITAL GROUP MOCH LLC. | 7 GLENWOOD AVE. | EAST ORANGE, NJ | 07017 |
| 21404 | 8 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 122 CARTERET AVE. | TORAH, YESHIVA TIFERES | 5 BIRCHARD AVE. | STATEN ISLAND, N.Y. | 10314 |
| 21404 | 9 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 124 CARTERET AVE. | REID, DWAYNE | 9 PULASKI AVE | CARTERET, NJ | 07008 |
| 21404 | 10 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 142 RANDOLPH AVE. | MARION, E. & R. JR. | 142 RANDOLPH AVE. | JERSEY CITY, N.J. | 07305 |
| 21404 | 11 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 144 RANDOLPH AVE. | PERKINS, GLENDA | 144 RANDOLPH AVE. | JERSEY CITY, N.J. | 07305 |
| 21404 | 12 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 146 RANDOLPH AVE. | JC CAPITAL FUND MOCH 3 LLC. | 146 RANDOLPH AVE. | JERSEY CITY, NJ | 07305 |
| 21404 | 13 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 148A RANDOLPH AVE. | L & A ASSET HOLDINGS LLC | 252 PACIFIC AVE | JERSEY CITY, NJ | 07304 |
| 21404 | 14 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 150 RANDOLPH AVE. | BRUCE CONSTRUCTION CORP. | 117-05 89TH AVE. | RICHMOND HILLS, NY | 11418 |
| 21404 | 15 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 152 RANDOLPH AVE. | GULIN, IVAN N | 152 RANDOLPH AVE. | JERSEY CITY, NJ | 07305 |
| 21404 | 16 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 154 RANDOLPH AVE. | WILLIAMS, ANNIE | 154 RANDOLPH AVE. | JERSEY CITY, N.J. | 07305 |
| 21404 | 17 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 156 RANDOLPH AVE. | THUESDAY, MARTHA | 156 RANDOLPH AVE. | JERSEY CITY, N.J. | 07305 |
| 21404 | 18 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 158 RANDOLPH AVE. | CRAYTON, FREDERICK D. | PO BOX 4381 | HARTFORD, CT | 06147 |
| 21404 | 19 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 160 RANDOLPH AVE. | HARMON, EMMA N. | 160 RANDOLPH AVE. | JERSEY CITY, N.J. | 07305 |
| 21404 | 20 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 166 RANDOLPH AVE. | TORAL, RAFAEL & ROGELIO | PO BOX 8189 | JERSEY CITY, NJ | 07308 |
| 21404 | 21 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 168 RANDOLPH AVE. | TUDELA, LUIS V. & KATHIUSKA | 168 RANDOLPH AVE. | JERSEY CITY, NJ | 07302 |
| 21404 | 22 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 170 RANDOLPH AVE. | HADDAD 170 RANDOLPH AVENUE, LLC. | 1130 MCBRIDE AVENUE | WOODLAND PARK, N.J. | 07424 |
| 21404 | 23 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 172 RANDOLPH AVE. | SHAW, DOLORES | 172 RANDOLPH AVE. | JERSEY CITY, NJ | 07305 |
| 21404 | 25 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 180 RANDOLPH AVE. | GND BUILDERS, L.L.C. | 17 FOUR COLUMNS DR | MORGANVILLE, NJ | 07751 |
| 21404 | 26 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 182 RANDOLPH AVE. | HARLEY, LINET | 182 RANDOLPH AVE. | JERSEY CITY, NJ | 07305 |
| 21404 | 26 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 182 RANDOLPH AVE. | GRUEL, YEVETTE | 182 RANDOLPH AVE, UNIT 1 | JERSEY CITY, NJ | 07305 |
| 21404 | 27 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 184 RANDOLPH AVE. | THOMPSON, ROBERT G. & ADOLPHUS,LENA | 184 RANDOLPH AVE. | JERSEY CITY, NJ | 07305 |
| 21404 | 28 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 186 RANDOLPH AVE. | OKOEGUUALE, ERO- MOSELE | 186 RANDOLPH AVE. | JERSEY CITY, NJ | 07304 |
| 21404 | 29 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 188 RANDOLPH AVE. | MAZUR, ANATOLIY & MARIA | 8 RALE PLACE | PALM COAST, FL | 32164 |
| 21404 | 30 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 190 RANDOLPH AVE. | GULIN,IRYNA & VOLODYMYR | 190 RANDOLPH AVE. | JERSEY CITY, NJ | 07304 |
| 21404 | 31 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 192 RANDOLPH AVE. | ORACH, ROSTYSLAV | 711 AMSTERDAM AVE #21L | NEW YORK, NY | 10025 |
| 21404 | 32 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 194 RANDOLPH AVE. | MAZUR, TARAS | 194 RANDOLPH AVE. | JERSEY CITY, NJ | 07304 |
| 21404 | 33 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 196 RANDOLPH AVE. | 196 RANDOLPH LLC | 199 VAN HORNE STREET | JERSEY CITY, NJ | 07304 |

Attachment 1
Properties Within 200 Feet of Sites 114, 132, 133, 135, 137, 143, and 186
PPG, Jersey City, New Jersey

| BLOCK | LOT | PROPERTY CLASS | COUNTY | MUNICIPALITY | PROPERTY STREET ADDRESS | OWNER NAME | OWNER STREET ADDRESS | OWNER CITY, STATE | OWNER ZIP CODE |
|---|---|---|---|---|---|---|---|---|---|
| 21404 | 34 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 198 RANDOLPH AVE. | MALICH,O.,CHAYKIVSKYY,M. & S. | 198 RANDOLPH AVE. | JERSEY CITY,N.J. | 07305 |
| 21501 | 5 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 149 HALLADAY ST. | GLUSHKO, WALTER | 149 HALLADAY ST. | JERSEY CITY, N.J. | 07304 |
| 21501 | 6 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 147 HALLADAY ST. | 1ST RATE INVESTMENT PROPERTIES LLC. | 147 HALLADAY ST. | JERSEY CITY, NJ | 07304 |
| 21501 | 7 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 145 HALLADAY ST. | GARCIA, MARGARITA | 145 HALLADAY ST. | JERSEY CITY, N.J. | 07304 |
| 21501 | 8 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 143 HALLADAY ST. | BONILLA, JULISSA | 143 HALLADAY ST. | JERSEY CITY, NJ | 07304 |
| 21501 | 9 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 141 HALLADAY ST. | KULOZU, BEKIR | 141 HALLADAY ST. | JERSEY CITY, NJ | 07304 |
| 21502 | 7 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 145 PACIFIC AVE. | ROSS, ISAAC %ARTIS JORDAN | 28 LORELEI DR | HOWELL, NJ | 07731 |
| 22704 | 1 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 140 RANDOLPH AVE. | ESSENDON, LLC % DIXON ADVISORY | PO BOX 2032 | JERSEY CITY, NJ | 07303 |
| 22704 | 2 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 123 CARTERET AVE. | RUSSELL. WILLIE & ELLA | 123 CARTERET AVE. | JERSEY CITY, N.J. | 07305 |
| 22704 | 3 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 121 CARTERET AVE. | 121 RESIDENCE NJ,LLC | 183 WILSON ST #111 | BROOKLYN, NY | 11211 |
| 22704 | 4 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 119 CARTERET AVE. | TEAGUE, GARTHELIA A. | 119 CARTERET AVE. | JERSEY CITY, N.J. | 07305 |
| 22704 | 5 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 117 CARTERET AVE. | BRUN, DONALD | 117 CARTERET AVE. | JERSEY CITY, N.J. | 07305 |
| 22704 | 6 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 115 CARTERET AVE. | 115 CARTERET AVE., LLC. | 115 CARTERET AVE., LLC. | JERSEY CITY, NJ | 07305 |
| 22704 | 10 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 2 CLAREMONT AVE. | BASCOM, MALINI | 2 CLAREMONT AVENUE | JERSEY CITY, N.J. | 07305 |
| 22704 | 11 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 4 CLAREMONT AVE. | VELEZ, DAVID | 4 CLAREMONT AE. | JERSEY CITY, N.J. | 07305 |
| 22704 | 12 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 6 CLAREMONT AVE. | BUNBURY, SOPHI | 6 CLAREMONT AVE. | JERSEY CITY, NJ. | 07305 |
| 22704 | 13 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 8 CLAREMONT AVE. | OSTREICHER, ABRAHAM | 8 CLAREMONT AVE. | JERSEY CITY, N.J. | 07310 |
| 22704 | 14 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 10 CLAREMONT AVE. | MIRTHIL, REGINALD | 10 CLAREMONT AVENUE | JERSEY CITY, NEW JERSEY | 07305 |
| 22704 | 15 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 12 CLAREMONT AVE. | MERRITT, J & B | 12 CLAREMONT AVE | JERSEY CITY, N J | 07305 |
| 22704 | 21 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 98 RANDOLPH AVE. | GEELONG, LLC % DIXON ADVISORY | 1000 PLAZA TWO, 10 FL | JERSEY CITY, NJ | 07311 |
| 22704 | 22 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 98.5 RANDOLPH AVE. | RODRIGUEZ, ROBINSON | 98A RANDOLPH AVE. | JERSEY CITY, N.J. | 07305 |
| 22704 | 23 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 100 RANDOLPH AVE. | O'MARDE, HEIDI | 100 RANDOLPH AVE. | JERSEY CITY, N.J. | 07305 |
| 22704 | 24 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 102 RANDOLPH AVE. | DIONISIO, MICHAEL | 102 RANDOLPH AVENUE | JERSEY CITY, NJ | 07305 |
| 22704 | 25 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 104 RANDOLPH AVE. | ABI, LLC | 259 NEWKIRK AVE | BROOKLYN, NY | 11230 |
| 22704 | 26 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 106 RANDOLPH AVE. | GANNON, DANA | 106 RANDOLPH AVE. | JERSEY CITY, NJ | 07305 |
| 22704 | 27 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 108 RANDOLPH AVE. | ROLLINS, LORRAINE A. | 108 RANDOLPH AVE. | JERSEY CITY, NJ | 07305 |
| 22704 | 28 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 110 RANDOLPH AVE. | 110 RANDOLPH, LLC | 110 RANDOLPH AVE. | JERSEY CITY, NJ | 07305 |
| 22704 | 29 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 112 RANDOLPH AVE. | WEATHERS, THIMOTHY | 112 RANDOLPH AVE. | JERSEY CITY, N.J. | 07305 |
| 22704 | 30 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 114 RANDOLPH AVE. | SMITH,ARNOLD & REGINA & PEOPLES,MAE | 114 RANDOLPH AVE. | JERSEY CITY, NJ | 07305 |
| 22704 | 31 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 116 RANDOLPH AVE. | RANDOLPH ESTATES LLC. | 1274 49TH ST,#546 | BROOKLYN, NY | 11219 |
| 22704 | 32 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 118 RANDOLPH AVE. | BADAWI, FAHMI | 68 MAGNOLIA AVE. #C2 | JERSEY CITY, NJ | 07306 |
| 22704 | 33 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 120 RANDOLPH AVE. | LITTLE, ORALEE J | 120 RANDOLPH AVE. | JERSEY CITY, N.J. | 07305 |
| 22704 | 36 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 128 RANDOLPH AVE. | VERGARA, LUIS E. & DIANE VALENCIA | 47 GALLINSON DRIVE | NEW PROVIDENCE, NJ | 07974 |
| 22704 | 37 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 130 RANDOLPH AVE. | 130 RANDOLPH, LLC | 777 KENT AVE #241 | BROOKLYN , NY | 11205 |
| 22704 | 38 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 132 RANDOLPH AVE. | LUYANDO, BEMGIL | 132 RANDOLPH AVE. | JERSEY CITY, NJ | 07305 |
| 22704 | 39 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 134 RANDOLPH AVE. | 134 RANDOLPH, LLC | 224 93RD STREET | BROOKLYN, NY | 11209 |
| 22704 | 40 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 136 RANDOLPH AVE. | ATAKENT, AYDIN | 987 E. GLEN AVE | RIDGEWOOD, NJ | 07450 |
| 22704 | 41 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 138 RANDOLPH AVE. | GLASTER, MICHAEL | 138 RANDOLPH AVENUE | JERSEY CITY, N.J. | 07305 |
| 23304 | 7 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 15 CLAREMONT AVE. | KELLER, ROBBIN | 15 CLAREMONT AVE. | JERSEY CITY, N.J. | 07305 |
| 23304 | 8 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 11 CLAREMONT AVE. | GG MEDINA | 11 CLAREMONT AVE. | JERSEY CITY, NJ | 07305 |
| 23304 | 9 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 9 CLAREMONT AVE. | RAY, THERESA | 9 CLAREMONT AVE. | JERSEY CITY, NJ | 07304 |
| 23304 | 10 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 5 CLAREMONT AVE. | YELDELL, DION | 7 JUNEGRASS WAY | HACKETTSTOWN, NJ | 07840 |
| 23304 | 11 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 3 CLAREMONT AVE. | 3 CLAREMONT AVE, LLC. | 1068 40TH ST | BROOKLYN, NY | 11219 |
| 23304 | 12 | 2 - RESIDENTIAL (SENSITIVE) | HUDSON | JERSEY CITY CITY | 1 CLAREMONT AVE. | JACOB KING LLC. | 1 CLAREMONT AVE. | JERSEY CITY, NJ | 07305 |
| 21404 | 24 | 4C - APARTMENT (SENSITIVE) | HUDSON | JERSEY CITY CITY | 176 RANDOLPH AVE. | GAME HOLDINGS, LLC | P.O.BOX 38 | POMONA, N.Y. | 10970 |
| 22704 | 34 | 4C - APARTMENT (SENSITIVE) | HUDSON | JERSEY CITY CITY | 122 RANDOLPH AVE. | ABREV, YOLANDA A. | 440 RACE TRACK RD. | RIDGEWOOD, N.J. | 07450 |
| 22704 | 35 | 4C - APARTMENT (SENSITIVE) | HUDSON | JERSEY CITY CITY | 126 RANDOLPH AVE. | 126 RANDOLPH HOLDINGS, LLC. | 85 MAIN STREET#204 | HACKENSACK, NJ | 07601 |
| OTHER PROPERTIES WITHIN 200 FEET | | | | | | | | | |
| 19901 | 2 | 1 - VACANT LAND | HUDSON | JERSEY CITY CITY | WOODWARD ST | WALLABOUT REALTY HOLDING LLC | 26 RUTLEDGE ST. | BROOKLYN, N.Y. | 11249 |

Attachment 1
Properties Within 200 Feet of Sites 114, 132, 133, 135, 137, 143, and 186
PPG, Jersey City, New Jersey

| BLOCK | LOT | PROPERTY CLASS | COUNTY | MUNICIPALITY | PROPERTY STREET ADDRESS | OWNER NAME | OWNER STREET ADDRESS | OWNER CITY, STATE | OWNER ZIP CODE |
|---|---|---|---|---|---|---|---|---|---|
| 19901 | 5 | 1 - VACANT LAND | HUDSON | JERSEY CITY CITY | 74 WOODWARD ST. | WALLABOUT REALTY HOLDING LLC | 26 RUTLEDGE ST. | BROOKLYN, N.Y. | 11249 |
| 19901 | 6 | 1 - VACANT LAND | HUDSON | JERSEY CITY CITY | 76 WOODWARD ST. | WALLABOUT REALTY HOLDING LLC | 26 RUTLEDGE ST. | BROOKLYN, N.Y. | 11249 |
| 19901 | 7 | 1 - VACANT LAND | HUDSON | JERSEY CITY CITY | 78 WOODWARD ST. | WALLABOUT REALTY HOLDING LLC | 26 RUTLEDGE ST. | BROOKLYN, N.Y. | 11249 |
| 19901 | 41 | 1 - VACANT LAND | HUDSON | JERSEY CITY CITY | 99 VAN HORNE ST. | WALLABOUT REALTY HOLDING LLC | 26 RUTLEDGE ST. | BROOKLYN, N.Y. | 11249 |
| 19901 | 42 | 1 - VACANT LAND | HUDSON | JERSEY CITY CITY | 97 VAN HORNE ST. | WALLABOUT REALTY HOLDING LLC | 26 RUTLEDGE ST. | BROOKLYN, N.Y. | 11249 |
| 19901 | 43 | 1 - VACANT LAND | HUDSON | JERSEY CITY CITY | 95 VAN HORNE ST. | WALLABOUT REALTY HOLDING LLC | 26 RUTLEDGE ST. | BROOKLYN, N.Y. | 11249 |
| 19901 | 44 | 1 - VACANT LAND | HUDSON | JERSEY CITY CITY | 93 VAN HORNE ST. | WALLABOUT REALTY HOLDING LLC | 26 RUTLEDGE ST. | BROOKLYN, N.Y. | 11249 |
| 19902 | 2 | 1 - VACANT LAND | HUDSON | JERSEY CITY CITY | 92 VAN HORNE ST. | ABS BUILDERS, L.L.C. | 17 FOUR COLUMNS DR. | MORGANVILLE, NJ | 07751 |
| 19902 | 3 | 1 - VACANT LAND | HUDSON | JERSEY CITY CITY | 94 VAN HORNE ST. | ABS BUILDERS, L.L.C. | 17 FOUR COLUMNS DR | MORGANVILLE, NJ | 07751 |
| 19902 | 4 | 1 - VACANT LAND | HUDSON | JERSEY CITY CITY | VAN HORNE ST. | ABS BUILDERS, L.L.C. | 17 FOUR COLUMNS DR | MORGANVILLE, NJ | 07751 |
| 19902 | 5 | 1 - VACANT LAND | HUDSON | JERSEY CITY CITY | 98 VAN HORNE ST. | ABS BUILDERS, L.L.C. | 17 FOUR COLUMNS DR | MORGANVILLE, NJ | 07751 |
| 19902 | 10 | 1 - VACANT LAND | HUDSON | JERSEY CITY CITY | 108 VAN HORNE ST. | RODRIQUEZ, MIRIAM | 106 VAN HORNE ST. | JERSEY CITY, N.J. | 07304 |
| 19903 | 9 | 1 - VACANT LAND | HUDSON | JERSEY CITY CITY | 189 PACIFIC AVE. | LEONARD PARNESS TRUCKING CORP. | 181 PACIFIC AVE. | JERSEY CITY NJ | 07304 |
| 21501 | 20.01 | 1 - VACANT LAND | HUDSON | JERSEY CITY CITY | 900 GARFIELD AVE | 900 GARFIELD AVE,% RYANN LLC | 1735 MARKET ST.,STE A-400 | PHILADELPHIA, PA. | 19103 |
| 21502 | 14 | 1 - VACANT LAND | HUDSON | JERSEY CITY CITY | 98 HALLADAY ST. | PPG INDUSTRIES, INC. | ONE PPG PLACE | PITTSBURGH, PA | 15272 |
| 21502 | 15 | 1 - VACANT LAND | HUDSON | JERSEY CITY CITY | 100 HALLADAY ST. | PPG INDUSTRIES, INC. | ONE PPG PLACE | PITTSBURGH, PA | 15272 |
| 21502 | 16 | 1 - VACANT LAND | HUDSON | JERSEY CITY CITY | 102 HALLADAY ST. | PPG INDUSTRIES, INC. | ONE PPG PLACE | PITTSBURGH, PA | 15272 |
| 21502 | 17 | 1 - VACANT LAND | HUDSON | JERSEY CITY CITY | 104 HALLADAY ST. | PPG INDUSTRIES, INC. | ONE PPG PLACE | PITTSBURGH, PA | 15272 |
| 21503 | 19 | 1 - VACANT LAND | HUDSON | JERSEY CITY CITY | 34 CAVEN POINT AVE. | CAVEN POINT PARTNERS LLC | 418 WEST SIDE AVE. | JERSEY CITY, N.J. | 07305 |
| 21503 | 23 | 1 - VACANT LAND | HUDSON | JERSEY CITY CITY | 33-47 CARTERET AVE. | EDEN WOOD REALTY, LLC | 47 PARSIPANNY ROAD | WHIPPANY, N.J. | 07981 |
| 21503 | 24 | 1 - VACANT LAND | HUDSON | JERSEY CITY CITY | CENTRAL R R INS | EDEN WOOD REALTY, LLC | 47 PARSIPANNY ROAD | WHIPPANY, N.J. | 07981 |
| 21509 | 3 | 1 - VACANT LAND | HUDSON | JERSEY CITY CITY | 33 PACIFIC AVE. | NJEDA,C/O A.SMITH MOVING & FURN | 33 PACIFIC AVE. | JERSEY CITY, N.J. | 07304 |
| 21510 | 1 | 1 - VACANT LAND | HUDSON | JERSEY CITY CITY | 846 GARFIELD AVE. | PPG INDUSTRIES, INC.%TAX ADMIN.DEPT | ONE PPG PLACE | PITTSBURGH, PA | 15272 |
| 21510 | 3 | 1 - VACANT LAND | HUDSON | JERSEY CITY CITY | 45 HALLADAY ST. | PPG INDUSTRIES, INC.%TAX ADMIN.DEPT | ONE PPG PLACE | PITTSBURGH, PA | 15272 |
| 21510 | 4 | 1 - VACANT LAND | HUDSON | JERSEY CITY CITY | 25 HALLADAY ST. | PPG INDUSTRIES, INC.%TAX ADMIN.DEPT | ONE PPG PLACE | PITTSBURGH, PA | 15272 |
| 22704 | 7 | 1 - VACANT LAND | HUDSON | JERSEY CITY CITY | 113 CARTERET AVE. | LBM GROUP LLC | 1481 47TH ST. | BROOKLYN, NY | 11219 |
| 22704 | 8 | 1 - VACANT LAND | HUDSON | JERSEY CITY CITY | 843 GARFIELD AVE. | LBM GROUP LLC | 1481 47TH ST. | BROOKLYN, NY | 11219 |
| 22704 | 9 | 1 - VACANT LAND | HUDSON | JERSEY CITY CITY | 829 GARFIELD AVE. | LBM GROUP LLC | 1481 47TH ST. | BROOKLYN, NY | 11219 |
| 19802 | 2 | 4A - COMMERCIAL | HUDSON | JERSEY CITY CITY | 947 GARFIELD AVE. | RODRIGUEZ, JORGE | 100 LINDEN AVE. APT# 1 | JERSEY CITY, NJ | 07305 |
| 19902 | 1 | 4A - COMMERCIAL | HUDSON | JERSEY CITY CITY | 90 VAN HORNE ST. | 90 VAN HORNE STREET | 206 RAILROAD STREET | BAYPORT, NY | 11705 |
| 19903 | 4 | 4A - COMMERCIAL | HUDSON | JERSEY CITY CITY | 142 HALLADAY ST. | LEONARD PARNESS TRUCKING CORP. | 181 PACIFIC AVE. | JERSEY CITY, NJ | 07304 |
| 19903 | 11 | 4A - COMMERCIAL | HUDSON | JERSEY CITY CITY | 176 HALLADAY STREET | HALLADAY REAL ESTATE, LLC | 84 SHERMAN PL. | JERSEY CITY, NJ | 07307 |
| 21404 | 5 | 4A - COMMERCIAL | HUDSON | JERSEY CITY CITY | 859 GARFIELD AVE. | FRENCHPARK WAREHOUSE CO. | P.O. BOX 280 | KENILWORTH, NJ | 07033 |
| 21404 | 6 | 4A - COMMERCIAL | HUDSON | JERSEY CITY CITY | 851 GARFIELD AVE. | 851 GARFIELD AVENUE, LLC | 54 EDGEWATER RD. | CLIFFSIDE, NJ | 07010 |
| 21501 | 11 | 4A - COMMERCIAL | HUDSON | JERSEY CITY CITY | 84 FORREST ST. | 90 FORREST ASSOCIATES, L.L.C. | 28 BROMLEIGH RD. | STEWART MANOR, NY | 11530 |
| 21501 | 13 | 4A - COMMERCIAL | HUDSON | JERSEY CITY CITY | INSIDE HALLADAY ST. | 151 HALLADAY STREET, LLC | 181 PACIFIC ST. | JERSEY CITY, NJ | 07304 |
| 21502 | 2 | 4A - COMMERCIAL | HUDSON | JERSEY CITY CITY | 163 PACIFIC AVE. | QUARTZ REALTY, L.L.C. | 20 BIRCH STREET | JERSEY CITY, NJ | 07305 |
| 21502 | 3 | 4A - COMMERCIAL | HUDSON | JERSEY CITY CITY | 161 PACIFIC AVE. | PACIFIC KATER LLC | 210 FAIRMOUNT AVENUE | JERSEY CITY, N.J. | 07306 |
| 21502 | 4 | 4A - COMMERCIAL | HUDSON | JERSEY CITY CITY | 159 PACIFIC AVE. | PACIFIC KATER LLC | 210 FAIRMOUNT AVENUE | JERSEY CITY, N.J. | 07306 |
| 21502 | 5 | 4A - COMMERCIAL | HUDSON | JERSEY CITY CITY | 157 PACIFIC AVE. | PACIFIC KATER LLC | 210 FAIRMOUNT AVENUE | JERSEY CITY, NJ | 07306 |
| 21502 | 6 | 4A - COMMERCIAL | HUDSON | JERSEY CITY CITY | 149 PACIFIC AVE. | METRICK, STUART & MICHELLE | 149 PACIFIC AVE. | JERSEY CITY, NJ | 07304 |
| 21502 | 9 | 4A - COMMERCIAL | HUDSON | JERSEY CITY CITY | 131 PACIFIC AVE. | 107-123 & 127 PACIFIC AVE ASSO,LLC. | 130 NORTH MAIN ST.#ST201 | NEW CITY, NY. | 10956 |
| 21502 | 10 | 4A - COMMERCIAL | HUDSON | JERSEY CITY CITY | 107 PACIFIC AVE. | 107-123 & 127 PACIFIC AVE.ASSOC,LLC | 130 NORTH MAIN ST.#ST 201 | NEW CITY, N.Y. | 10956 |
| 21502 | 19 | 4A - COMMERCIAL | HUDSON | JERSEY CITY CITY | 118-126 HALLADAY ST. | HALLADAY INVEST.INC. | 416 LIBERTY AVE. | JERSEY CITY, N.J. | 07307 |
| 21503 | 20 | 4A - COMMERCIAL | HUDSON | JERSEY CITY CITY | 2-22 PACIFIC AVE. | ANTONUCCI,ALAN | P.O. BOX 6466 | JERSEY CITY, N J | 07306 |
| 21503 | 21 | 4A - COMMERCIAL | HUDSON | JERSEY CITY CITY | 24-46 PACIFIC AVE. | ANTONUCCI, ALAN & CHRISTOPHER | P.O. BOX 6466AVE. | JERSEY CITY, N.J. | 07306 |
| 21509 | 2 | 4A - COMMERCIAL | HUDSON | JERSEY CITY CITY | 51-99 PACIFIC AVENUE | PPG INDUSTRIES, INC. | ONE PPG PLACE | PITTSBURGH, PA | 15272 |
| 21510 | 5 | 4A - COMMERCIAL | HUDSON | JERSEY CITY CITY | 15 HALLADAY ST. | PPG INDUSTRIES, INC.%TAX ADMIN.DEPT | ONE PPG PLACE | PITTSBURGH, PA | 15272 |
| 21510 | 7 | 4A - COMMERCIAL | HUDSON | JERSEY CITY CITY | 784 GARFIELD AVE. | MICHAEL, JOHN | 344 PRINCETON AVE. | JERSEY CITY, N.J. | 07305 |

Attachment 1
Properties Within 200 Feet of Sites 114, 132, 133, 135, 137, 143, and 186
PPG, Jersey City, New Jersey

| BLOCK | LOT | PROPERTY CLASS | COUNTY | MUNICIPALITY | PROPERTY STREET ADDRESS | OWNER NAME | OWNER STREET ADDRESS | OWNER CITY, STATE | OWNER ZIP CODE |
|---|---|---|---|---|---|---|---|---|---|
| 21510 | 11 | 4A - COMMERCIAL | HUDSON | JERSEY CITY CITY | 816 GARFIELD AVE. | PPG INDUSTRIES, INC.%TAX ADMIN.DEPT | ONE PPG PLACE | PITTSBURGH, PA | 15272 |
| 23304 | 13 | 4A - COMMERCIAL | HUDSON | JERSEY CITY CITY | 783 GARFIELD AVE | ANTHONY RICCARDI, JR., L.L.C. | 783 GARIFELD AVE. | JERSEY CITY, NJ | 07305 |
| 23305 | 1 | 4A - COMMERCIAL | HUDSON | JERSEY CITY CITY | 770 GARFIELD AVE. | T & C INVESTMENTS, L.L.C. | 770 GARFIELD AVE. | JERSEY CITY, N.J. | 07305 |
| 23305 | 2 | 4A - COMMERCIAL | HUDSON | JERSEY CITY CITY | 758 GARFIELD AVE. | T AND C INVESTMENTS, LLC. | 758 GARFIELD AVE. | JERSEY CITY, N. J. | 07305 |
| 19901 | 3 | 4B - INDUSTRIAL | HUDSON | JERSEY CITY CITY | 87 VAN HORNE ST. | WALLABOUT REALTY HOLDING LLC | 26 RUTLEDGE ST. | BROOKLYN, N.Y. | 11249 |
| 19903 | 8 | 4B - INDUSTRIAL | HUDSON | JERSEY CITY CITY | 181 PACIFIC AVE. | LEONARD PARNESS TRUCKING CORP | 181 PACIFIC AVE | JERSEY CITY NJ | 07304 |
| 21404 | 3 | 4B - INDUSTRIAL | HUDSON | JERSEY CITY CITY | 855 GARFIELD AVE. | FRENCHPARK WAREHOUSE CO. | P.O BOX 280 | KENILWORTH, NJ | 07033 |
| 21404 | 4 | 4B - INDUSTRIAL | HUDSON | JERSEY CITY CITY | 861 GARFIELD AVE. | FRENCHPARK WAREHOUSE CO. | P.O. BOX 280 | KENILWORTH, NJ | 07033 |
| 21501 | 4 | 4B - INDUSTRIAL | HUDSON | JERSEY CITY CITY | 151 HALLADAY ST. | E27 STREET LLC | 181 PACIFIC AVE. | JERSEY CITY, N.J. | 07304 |
| 21501 | 10 | 4B - INDUSTRIAL | HUDSON | JERSEY CITY CITY | 78 FORREST ST. | 78 FORREST ASSOCIATES, LLC. | 28 BROMLEIGH ROAD | STUART MANOR, NY | 11530 |
| 21501 | 12 | 4B - INDUSTRIAL | HUDSON | JERSEY CITY CITY | 86 FORREST ST. | 90 FORREST ASSOCIATES, L.L.C. | 28 BROMLEIGH RD. | STEWART MANOR, NY | 11530 |
| 21501 | 14.01 | 4B - INDUSTRIAL | HUDSON | JERSEY CITY CITY | 98 FORREST ST. | 100 FORREST ASSOCIATES, L.L.C. | 28 BROMLEIGH RD. | STEWART MANOR, NY | 11530 |
| 21502 | 1 | 4B - INDUSTRIAL | HUDSON | JERSEY CITY CITY | 77 FORREST ST. | CAVALLONE, JAMES | 1208 BOULEVARD | SEASIDE PARK, NJ | 08752 |
| 21502 | 8 | 4B - INDUSTRIAL | HUDSON | JERSEY CITY CITY | 133 PACIFIC AVE. | NINE LAWTON ST., INC. | 271 ROSLYN COURT | WEST NEW YORK, NJ | 07093 |
| 21502 | 11 | 4B - INDUSTRIAL | HUDSON | JERSEY CITY CITY | 105-101 PACIFIC AVE. | ONE0ONE PACIFIC AVE, LLC | 415 NEWARK ST #6B | HOBOKEN, NJ | 07030 |
| 21502 | 12 | 4B - INDUSTRIAL | HUDSON | JERSEY CITY CITY | 78 HALLADAY ST. | PPG INDUSTRIES, INC. | ONE PPG PLACE | PITTSBURGH, PA | 15272 |
| 21502 | 13 | 4B - INDUSTRIAL | HUDSON | JERSEY CITY CITY | 94 HALLADAY ST. | PPG INDUSTRIES, INC. | ONE PPG PLACE | PITTSBURGH, PA | 15272 |
| 21502 | 18 | 4B - INDUSTRIAL | HUDSON | JERSEY CITY CITY | 106-116 HALLADAY ST. | HALLADAY INVEST.INC. | 416 LIBERTY AVE. | JERSEY CITY, N.J. | 07307 |
| 21503 | 27 | 4B - INDUSTRIAL | HUDSON | JERSEY CITY CITY | 150 PACIFIC AVE. | EDEN WOOD REALTY, LLC | 47 PARSIPANNY ROAD | WHIPPANY, N.J. | 07981 |
| 21509 | 1 | 4B - INDUSTRIAL | HUDSON | JERSEY CITY CITY | 22 HALLADAY ST. | PPG INDUSTRIES, INC. | ONE PPG PLACE | PITTSBURGH, PA | 15272 |
| 21510 | 10 | 4B - INDUSTRIAL | HUDSON | JERSEY CITY CITY | 802 GARFIELD AVE. | PACE, CLEMENT | 1120 HECKEL AVE. | MOUNTAINSIDE, NJ | 07092 |
| 21510 | 39 | 4B - INDUSTRIAL | HUDSON | JERSEY CITY CITY | 800 GARFIELD AVE. | PPG INDUSTRIES INC. | ONE PPG PLACE | PITTSBURG, PA | 15272 |
| 24301 | 2 | 4B - INDUSTRIAL | HUDSON | JERSEY CITY CITY | 55 CAVEN POINT AVE. | SUDYLO, ANDREW & JULIA | 534 RIDGE ROAD | PHILLIPSBURG, N.J. | 08865 |
| 24301 | 4 | 4B - INDUSTRIAL | HUDSON | JERSEY CITY CITY | 21 CAVEN POINT AVE. | NEWARK INDUST.ASSOC.C/O C.DANIELS | 501 SEVENTH AVE #400 | NEW YORK, NY | 10018 |
| 24301 | 3 | 5B - RAILROAD CLASS II | HUDSON | JERSEY CITY CITY | CAVEN POINT AVE. | CONSOLIDATED RAIL | P. O. BOX 8499 | PHILADELPHIA, PA | 19101 |
| 18901 | 1.01 | 15C - EXEMPT PUBLIC | HUDSON | JERSEY CITY CITY | 1 BERRY ROAD | JERSEY CITY REDEVELOPMENT AGENCY | 66 YORK ST. | JERSEY CITY, NJ | 07302 |
| 19903 | 1 | 15C - EXEMPT PUBLIC | HUDSON | JERSEY CITY CITY | 136 HALLADAY ST. | CITY OF JERSEY CITY | 280 GROVE ST. | JERSEY CITY NJ | 07302 |
| 19903 | 5 | 15C - EXEMPT PUBLIC | HUDSON | JERSEY CITY CITY | 144 HALLADAY ST. | CITY OF JERSEY CITY | 280 GROVE ST. | JERSEY CITY NJ | 07302 |
| 19903 | 10 | 15C - EXEMPT PUBLIC | HUDSON | JERSEY CITY CITY | 172 HALLADAY ST. | JERSEY CITY SEWERAGE AUTHORITY | 575 STATE HIGHWAY 440 | JERSEY CITY, N.J. | 07305 |
| 21404 | 1 | 15C - EXEMPT PUBLIC | HUDSON | JERSEY CITY CITY | 207 RANDOLPH AVE. | JERSEY CITY SEWERAGE AUTHORITY | 555 ROUTE 440 | JERSEY CITY, NJ | 07305 |
| 21404 | 2 | 15C - EXEMPT PUBLIC | HUDSON | JERSEY CITY CITY | 923 GARFIELD AVE. | NEW JERSEY TRANSIT | ONE PENN PLAZA EAST | NEWARK, NJ | 07105 |
| 21501 | 1.01 | 15C - EXEMPT PUBLIC | HUDSON | JERSEY CITY CITY | 163 HALLADAY STREET | JERSEY CITY SEWERAGE AUTHORITY | 575 STATE HIGHWAY 440 | JERSEY CITY, N.J. | 07305 |
| 21501 | 16 | 15C - EXEMPT PUBLIC | HUDSON | JERSEY CITY CITY | 2 DAKOTA ST. | JERSEY CITY REDEVELOPMENT AGENCY | 30 MONTGOMERY ST. | JERSEY CITY, NJ | 07302 |
| 21501 | 17 | 15C - EXEMPT PUBLIC | HUDSON | JERSEY CITY CITY | 70 CARTERET AVE. | JERSEY CITY REDEVELOPMENT AGENCY | 30 MONTGOMERY ST. | JERSEY CITY, NJ | 07302 |
| 21501 | 18.01 | 15C - EXEMPT PUBLIC | HUDSON | JERSEY CITY CITY | 880 GARFIELD AVE. | JERSEY CITY REDEVELOPMENT AGENCY | 30 MONTGOMERY ST. | JERSEY CITY, NJ | 07302 |
| 21501 | 19.01 | 15C - EXEMPT PUBLIC | HUDSON | JERSEY CITY CITY | 884 GARFIELD AVE. | JERSEY CITY REDEVELOPMENT AGENCY | 30 MONTOMERY ST. | JERSEY CITY, NJ | 07302 |
| 21510 | 2 | 15C - EXEMPT PUBLIC | HUDSON | JERSEY CITY CITY | 824 GARFIELD AVE. | JERSEY CITY REDEVELOPMENT AGENCY | 30 MONTGOMERY STREET | JERSEY CITY, NJ | 07302 |
| 24301 | 1 | 15C - EXEMPT PUBLIC | HUDSON | JERSEY CITY CITY | 20 COMMERCIAL ST. | CITY OF JERSEY CITY | 280 GROVE ST. | JERSEY CITY, N.J. | 07302 |
| 19802 | 1 | 15D - EXEMPT CHARITABLE | HUDSON | JERSEY CITY CITY | 935 GARFIELD AVE. | METROPOLITAN FAMILY HEALTH NETWORK | 935 GARFIELD AVE. | JERSEY CITY, NJ | 07304 |
| 21503 | 22 | 15D - EXEMPT CHARITABLE | HUDSON | JERSEY CITY CITY | 74-80 PACIFIC AVE. | SPECTRUM HEALTH CARE INC.ATT:SIMON | 74-80 PACIFIC AVENUE | JERSEY CITY, NJ | 07304 |
| 21404 | 26 | 15F - EXEMPT (OTHER) | HUDSON | JERSEY CITY CITY | 182 RANDOLPH AVE. | 182 RANDOLPH AVE.CONDOMINIUM ASSOC. | 182 RANDOLPH AVE. | JERSEY CITY, NJ | 07305 |

2600004995
2600043694
2600001335
2600056260
E201503280
E202010565
2600049931
2600004392
E201605261
2600012777

**Map Sources:**
1. New Jersey (NJ) State Plane North American Datum 1983 Coordinates (NAD83), U.S. Survey Feet.
2. Source of Parcel Information: Jersey City Open Data, Jersey City Parcels, last updated May 5, 2019, accessed at: https://data.jerseycitynj.gov/explore/dataset/jersey-city-parcels/information/
3. NJ aerial imagery sourced from: https://img.nj.gov/imagerywms/Natural2017?
4. Well search completed on February 1, 2021, using the NJDEP SRP Data Miner XY Well Search Tool.
5. Wells are labeled with their well permit numbers.

NJDEP = New Jersey Department of Environmental Protection
SRP = Site Remediation Program

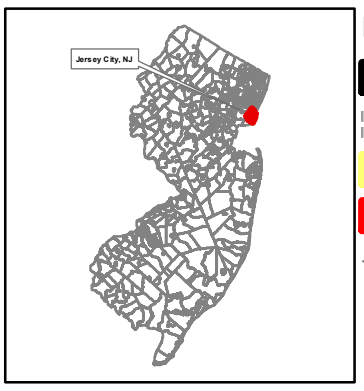


## LEGEND

- GARFIELD AVENUE GROUP SITES
- PARCELS
- 1 MILE BUFFER
- HALF MILE BUFFER
- RAILROAD TRACKS

**WELLS WITHIN ONE MILE**

- DOMESTIC
- INDUSTRIAL
- IRRIGATION
- NON-PUBLIC

N W E S

0 750 1,500 Feet

AECOM

PPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY

| DATE: 2021-08-11 | DRAWN BY: SR | CHECKED BY: CKS |
|---|---|---|

FIGURE 2
WELL SEARCH

*Last Saved By: ravis*
*Document Path: Q:\920 GIS\MXD\Groundwater R\R\RE\Fig 2. Well Search.mxd*

**Atttachment 2**
**Well Search Site 114, Site 132, Site 133, Site 135, Site 137, and Site 143**

| | |
|---|---|
| **SITE NAME** | Hudson County Chromate Sites 114, 132, 133, 135, 137, 143, 186, 199, Ten West Apparel, Halsted Co., Forrest Street and Forrest Street Properties, Al Smith Moving & Storage, Fishbein, Roadways |
| **SITE STREET ADDRESS** | 880 Garfield Ave., 2 Dakota Street, 900 Garfield Ave., 824 Garfield Ave., 84, 86-90, and 98-100 Forrest Street, 15 Halladay Street, 22 Halladay Street, 51-99 Pacific Ave., 25 Halladay Street, 45 Halladay Street, 163 Halladay Street, 800 Garfield Ave., 846 Garfield Ave., 816 Garfield Ave., 947 Garfield Ave., 33 Pacific Ave. |
| **SITE COUNTY (select)** | Hudson |
| **SITE MUNICIPALITY (select)** | Jersey City |
| **PROGRAM INTEREST (PI) ID # :** | G000005480, G000008749, 25695, 246332, 629345, G000008753, G000008759, 777089, 722429, 775706, 775998, 629388, G000044581, G000011477 |
| **SOURCE COORDINATE X** | 611210 |
| **SOURCE COORDINATE Y** | 683224 |
| **GROUNDWATER FLOW DIRECTION USED (if any)** | |
| **WERE APPLICABLE WELL TYPES FOUND? (Yes/No)** | Yes |
| **IS THIS SUBMISSION AN UPDATE? (Yes/No)** | Yes |
| **AUTHOR (name of company)** | AECOM |
| **AUTHOR STREET ADDRESS (include town and zip code)** | 30 Knightsbridge Road, Piscataway, NJ 08854 |
| **LSRP LICENSE NUMBER OVERSEEING WORK** | N/A - Direct Oversight |
| **LSRP NAME OVERSEEING WORK** | N/A - Direct Oversight |
| **PROFESSIONAL WHO PREPARED SUBMISSION** | Shree Ravi |
| **EMAIL CONTACT** | shree.ravi@aecom.com |
| **PHONE CONTACT** | 647-542-4310 |

**Atttachment 2**
**Well Search Site 114, Site 132, Site 133, Site 135, Site 137, and Site 143**

| Permit_Number | Well_Use | Potentially_Potable | Document | Date (permitted/ drilled/sealed) | Physical_Address | County | Municipality | Block | Lot | Location_Method | Easting_X | Northing_Y | Distance_(feet) | Depth (feet) | Capacity (gal/min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| E202010565 | Non-Public | Yes | Permit | 10/13/2020 | 176 Wegman Pkwy | Hudson | Jersey City | 24002 | 93 | GPS | 607562 | 682330 | 3756 | 250 | 10 |
| E201605261 | Irrigation | Yes | Permit | 5/4/2016 | 100 Caven Point Road | Hudson | Jersey City | 27401 | 16 | Digital Image | 609444 | 678650 | 4903 | 300 | 65 |
| E201605261 | Irrigation | Yes | Record | 6/3/2016 | 100 Caven Point Road | Hudson | Jersey City | 27401 | 16 | GPS | 609444 | 678650 | 4903 | 300 | |
| E201503280 | Industrial | Yes | Record | 5/13/2015 | Martin Luther King Jr. Drive | Hudson | Jersey City | 21201 | 17 | GPS | 609575 | 684261 | 1936 | 450 | 40 |
| E201503280 | Industrial | Yes | Permit | 4/9/2015 | Martin Luther King Jr. Drive | Hudson | Jersey City | 21201 | 17 | GPS | 609575 | 684261 | 1936 | 300 | 10 |
| A1805041 | Industrial | Yes | Decommissioning | 9/24/2019 | 80 Water Street | Hudson | Jersey City | 21701 | 1 | GPS | 604777 | 686537 | 7236 | | |
| 2600001335 | Industrial | Yes | Permit | 12/16/1955 | | Hudson | Jersey City | | | Prop Loc - Hard Copy | 609825 | 683567 | | 200 | 250 |
| 2600001335 | Industrial | Yes | Record | 4/18/1956 | GRAND STREET | Hudson | Jersey City | | | Prop Loc - Dig Image | 614920 | 686324 | 4834 | 335 | 0 |
| 2600004392 | Industrial | Yes | Permit | 4/23/1971 | | Hudson | Jersey City | | | Prop Loc - Hard Copy | 613468 | 678828 | | 150 | 40 |
| 2600004392 | Industrial | Yes | Record | 4/27/1971 | MORRISPESIN | Hudson | Jersey City | | | Prop Loc - Hard Copy | 613468 | 678828 | | 180 | 0 |
| 2600004995 | Industrial | Yes | Permit | 2/24/1981 | | Hudson | Jersey City | 1880 | 12B | Prop Loc - Hard Copy | 607255 | 689626 | | 400 | 50 |
| 2600012777 | Domestic | Yes | Permit | 4/21/1988 | FOOT OF CHAPEL AVENUE | Hudson | Jersey City | 1500 | 7 | Prop Loc - Hard Copy | 606312 | 677478 | | 15 | |
| 2600012777 | Domestic | Yes | Record | 4/25/1988 | FOOT OF CHAPEL AVENUE | Hudson | Jersey City | 1500 | 7 | Prop Loc - Hard Copy | 606312 | 677478 | | 22 | |
| 2600043694 | Industrial | Yes | Permit | 2/26/1996 | 37 MALLORY AVE. | Hudson | Jersey City | 1296.5 | 1.8 | Prop Loc - Hard Copy | 606261 | 688306 | | 150 | 35 |
| 2600043694 | Industrial | Yes | Record | 10/15/1996 | 37 MALLORY AVE. | Hudson | Jersey City | 1296.5 | 1.8 | Prop Loc - Hard Copy | 606261 | 688306 | | 205 | 40 |
| 2600049931 | Industrial | Yes | Permit | 2/3/1998 | 758 GARFIELD AVE. | Hudson | Jersey City | 1487 | 11A,11B | Prop Loc - Hard Copy | 610374 | 681545 | | 300 | 65 |
| 2600056260 | Industrial | Yes | Permit | 12/23/1999 | 757 OCEAN AVE. | Hudson | Jersey City | 19.74 | 27 | Prop Loc - Hard Copy | 609277 | 685588 | | 500 | 50 |
| 2600056260 | Industrial | Yes | Record | 5/4/2000 | 757 OCEAN AVE. | Hudson | Jersey City | 19.74 | 27 | Prop Loc - Hard Copy | 609277 | 685588 | | 855 | |

# Appendix I

# Utility Maps

File: C:\Users\bossalinid\AECOM Directory\PPG - GDS\910 CAD\25 SKETCHES\2021-02-09 GAC UTILITIES.dwg Layout: ANSI B FIGURE User: bossalinid Plotted: Feb 09, 2021 - 4:58pm Xref's:

SEWER UTILITY LINE
GAS UTILITY LINE
WATER UTILITY LINE
OVERHEAD ELECTRIC UTILITY LINE
UNDERGROUND ELECTRIC UTILITY LINE
DRAINAGE LINE
COMMUNICATION LINE
GROUNDWATER EXTRACTION/INJECTION PIPING (≈ 3' BGS)

96" STEEL COMBINED SEWER (APPROXIMATE)

UTILITY POLE
COMBINED SEWER MANHOLE
PUBLIC SERVICE MANHOLE
FIRE HYDRANT
WATER VALVE
GAS VALVE

AECOM

75 0 150
GRAPHIC SCALE IN FEET

PPG
GARFIELD AVENUE GROUP
JERSEY CITY, NEW JERSEY

**SITEWIDE UTILITIES**

DATE: 02/09/2021 | DRWN: CAD | **APPENDIX D**

July 19, 2017

Ron Kantor
Aecom
1140 Route 22E, Suite 101
Bridgewater, NJ 08807

**Project: Geophysical Survey – Garfield Avenue and Caven Point Road, Jersey City, NJ**

Dear Ron;

The following is a brief letter report detailing the results of the geophysical survey performed at the above referenced site. Site maps and/or pertinent ground penetrating radar (GPR) transects are contained in the report and Appendix A. It would be helpful to review Appendix A and the site maps when reading this report. TPI's standard practice is to indicate the results of the geophysical survey by marking all identified utility lines, tanks, and GPR anomalies etc. with chalk, paint or flags. It should be noted that this report is a means of transferring data and results of data interpretation, which was performed during the time allotted for the fieldwork.

Project Scope and Visual Site Inspection

TPI Environmental, Inc. (TPI) was contracted by Aecom (client) to clear soil borings and locate private utilities in the immediate vicinity of the soil borings. The site consists of multiple businesses and a warehouse located at the above address and as indicated on Figure 1. Upon arrival to the site on July 07, 2017, TPI performed a site walk to review One Call utility mark outs and evidence of other on-site utilities in the vicinity of the soil boring locations. During the site walk the following areas of interest were noted;

- Utilities to be investigated during this survey include private electric, communication, sanitary sewer, storm sewer, water, and gas.

Methodology

Geophysical surveys are typically accomplished by employing the following techniques; GPR, Fisher TW6 electromagnetic metal detection (TW6 EM), a Geonics EM61-MK2 Time – Domain Electromagnetic Detector unit (EM61), radio frequency line locating (RF), and magnetics. Known utilities are typically traced with the RF unit, GPR, and the TW6 EM unit depending on the size, matrix and conductive properties of the line. The EM61 is a high power, high sensitivity metal detector capable of detecting both ferrous and non-ferrous metal. The TW6 EM unit sounds an audible alarm in the presence of a large mass of metal such as an UST. A description and discussion of these geophysical methods as well as TPI's standard procedures for performing geophysical surveys is found in Appendix A. In general, "blind surveys" are typically performed by initially scanning the site with a TW6 EM unit and/or an EM61 unit and noting areas of relatively high EM response. Then locations with high EM response are further investigated with GPR. EM units are typically not effective and practical in areas underlain with reinforced concrete and/or the presence of ubiquitous metallic objects.

Geophysical Survey Results

The geophysical survey at this site was accomplished with the RF and GPR units. Known utilities were traced with RF and confirmed with GPR. Proposed soil boring locations were scanned and cleared with a combination of RF and GPR. Results of the geophysical survey were marked on the ground with paint and a map of the survey results, as well as pertinent GPR images, are contained in this report. Results of the geophysical survey are as follows;

- Private water, sanitary sewer, storm sewer, and gas utilities were located and marked with paint in addition to any linear, "pipe-style" anomalies.
- Eight (8) soil boring locations were scanned, moved as needed, and marked with white paint.

TPI completes non-intrusive geophysical surveys using equipment and techniques representing best available technology. TPI does not accept responsibility for survey limitations due to inherent technological limitations or unforeseen and varying site-specific conditions such as metal-reinforced concrete. In practical terms, TPI serves to reduce the risk of encountering subsurface utilities during excavation operations or greatly increase the chance of locating man made subsurface objects depending on the goal of the project. The results of this investigation should only be used as a tool and should not be considered a guarantee regarding the presence or absence of USTs or piping.

If you should have any questions or concerns, please do not hesitate to contact us.

**Your Project Team at TPI:**


Frank Fendler, M.S., P.G.
President
ffendler@tpienv.com

Mike Robbins, M.S.
Geologist
mrobbins@tpienv.com

Dustin Lutz
Geologist/P.M.
dlutz@tpienv.com




| | | | |
|---|---|---|---|
| TPI environmental | Garfield Avenue and Caven Point Road, Jersey City, NJ | | Figure 1 |
| | Client: Aecom | Date: 07/07/17 | Geophysical Survey Results |

# Appendix A

# GPR Transects and Survey Methods

**GPR Transect 65**
**See Figure 1 for Location**

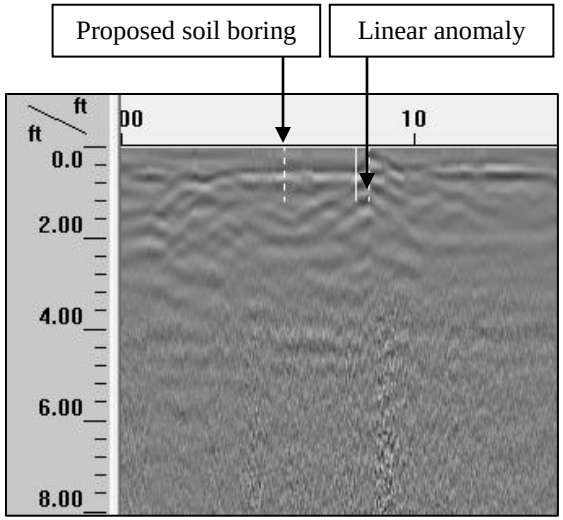


**GPR Transect 75**
**See Figure 1 for Location**

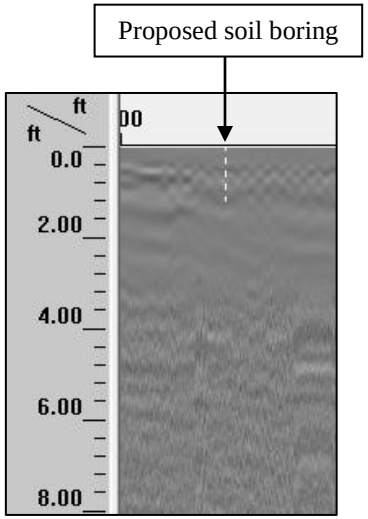

**Attachment A**
**TPI's Geophysical Survey Equipment & Methods**

## Geonics EM61-MK2

The EM61 is a high resolution time-domain metal detector which is used to detect ferrous and non-ferrous metallic objects. It consists of a powerful transmitter that generates a pulsed primary magnetic field, which induces eddy currents in nearby metallic objects. The decay of these currents is measured by two receiver coils mounted on the coil assembly. The responses are recorded and displayed by an integrated computer based digital data logger with real time numeric and graphic display. Two ports on the logger allows simultaneous collection of EM and GPS data. For further processing and interpretation data can be transferred to a laptop computer in the field and a color contoured map of the EM61 reponse is prepared (see below).

**EM61 Color Contoured Map**

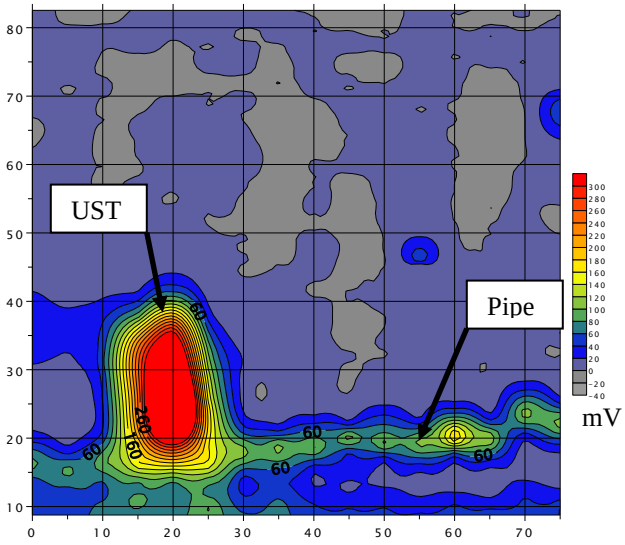


The EM61-MK2 detects a single 55 gallon drum at a depth of over 10-feet beneath the instrument, yet it is relatively insentsitive to interference from nearby surface metal such as fences, buildings, cars, etc. By making the measurement at a relatively long time after termination of the primary pulse, the response is practically independent of the electrical conductivity of the ground.

Due to its unique coil arrangements, the response curve is a single well defined positive peak greatly facilitating quick and accurate location of the target, the depth of which can usually be estimated from the width of the response and/or from relative response from each of the two receiver coils.

## GPR

This method is one of the most powerful and cost effective methods of locating man made objects and stratigraphic layers in the subsurface. It is an active method that transmits electromagnetic pulses into the ground, the radar pulses are reflected from materials or layers of differing dielectric and electrical conductive properties. The GPR computer measures the elapsed time in billionths of a second (nanoseconds) from when the pulses are sent and when they are received back at the surface that can then be converted to depth. Results of the radar scan are displayed as a continuous cross-section of the subsurface on the computer screen in real time. Metallic materials such as tanks, pipes, conduits, rebar etc. have vastly different dielectric properties then soils so there reflections are striking and relatively easy to identify. Pipes and tanks constructed of PVC, concrete, and terracotta also produce distinct reflections, however, these reflections are typically not as striking as metallic materials. A typical radar image of two metallic underground storage tanks is found below.

**GPR Image of Two Metallic USTs**

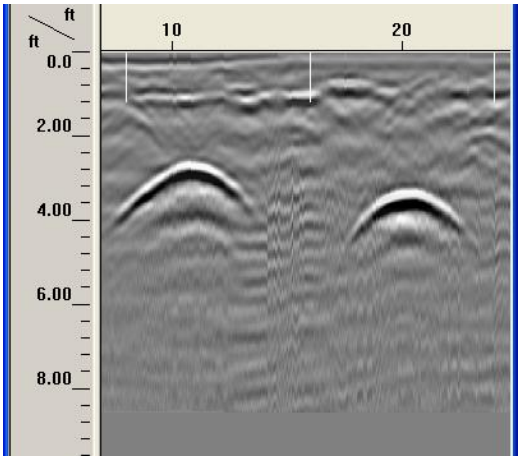


GPR surveys are conducted with the most advanced GPR equipment currently available

724 S. 27th Street
Easton, PA 18045
ffendler@tpienv.com
www.tpienv.com
888-204-3266-Phone
888-204-3266-Fax

including a Geophysical Survey Systems (GSSI) SIR-3000 subsurface radar unit with a 400 MHz antenna. The 400 MHz antenna has a depth range of approximately 20-feet and other antennas may be employed with the system depending on specific site conditions and objectives of the survey. The GPR transect data may be saved on the internal hard drive and transferred to a PC for storage, printing, and post processing. GSSI is the world leader in the development of GPR systems and was the first company to commercialize GPR in 1970. GPR hardware and software has improved dramatically over the last several years allowing for relatively rapid and economical GPR surveys. With 3-dimensional capabilities, the latest GPR software takes data processing a step farther then the former 2-dimensional viewing method. Three-dimensional visualization helps you to see the whole picture, giving you a powerful tool to interpret complex utility layouts and identify subtle linear features that may have otherwise been missed.

GPR surveys are typically conducted by searching for GPR hyperbolas indicative of subsurface pipes or tanks signatures in the vicinity of known entities. Theses signatures are marked on the ground and areas progressively further from the known entity are scanned and marked. This process is continued until the GPR operator performed enough scans to determine and mark the subsurface pipe, tank or anomaly. During this process the GPR data is typically not saved due to the immense size of the data files. After this phase of the GPR survey is completed, representative GPR transects or grids are performed and saved for the report and post processing. Some of the factors that may negatively affect GPR results include clay soils, rebar in concrete, high moisture content, depth of the target, and the integrity, size, and material of the target.

## TW-6 EM Unit

TPI routinely employs a Fisher TW-6 electromagnetic metal detector when performing GPR surveys. The TW-6 creates an electromagnetic field with a transmitting coil and measures the strength of that field with a receiving coil. As the TW-6 passes over electrically conductive materials such as metal tanks or drums the field is distorted and the instrument produces an audible alarm based on the degree of the distortion. The TW-6 can detect conductive materials the size of drums or small tanks to depths of 10-feet. The instrument is actually a relatively poor metal detector which makes it ideal for locating large conductive materials such as metal drums, medium to large metal pipes, reinforced concrete pipes, and metal tanks. A more sensitive metal detector would produce "false positives" on small pieces of metal that are typically found in fill and throughout developed sites. If the survey area is underlain by reinforced concrete or cars and other large surficial metallic features are within 10-feet, the TW-6 will not be useful.

## Line Locating

Line locating is performed with a Radiodetection RD400 PXL-2 line locator with a 433 HCTX-2 transmitter. The transmitter emits a specific radio or electromagnetic signal which is indirectly induced or directly conducted onto the metallic line. The transmitter is capable of producing frequencies of 512 Hz, 8 kHz, or 33 kHz and the receiver is configured for the specific transmitted frequency. The induced signal is coupled with the line by either using an induction clamp which surrounds an exposed line or placing the transmitter above a buried line and transmitting the signal to it. The receiver may also be used in a passive locate mode (power) to identify the presence of current carrying lines. Nonmetallic lines may also be located by snaking a sonde down accessible lines with push rods. A sonde is a small transmitter that emits a specific electromagnetic frequency which can be detected by the receiver at depths of 12 to 16-feet.

**Inductive Sweep With Transmitter/Receiver**

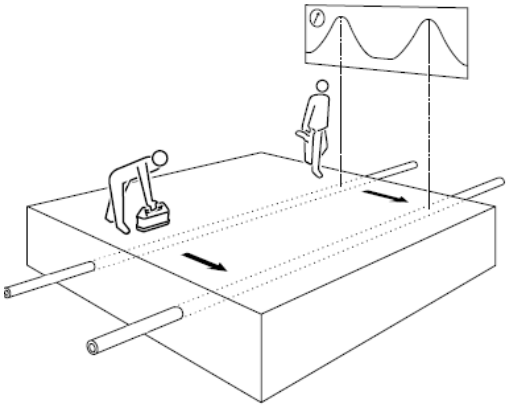

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# Attachment A
# TPI's Geophysical Survey Equipment & Methods

## Resistivity

TPI conducts subsurface resistivity surveys using the AGI SuperSting R8 IP Earth Resistivity and IP Meter. The SuperSting unit measures the voltage drop of an induced electrical current across numerous electrodes as it travels through the electrically heterogenous subsurface. Multiple survey profiles are completed in this manner based upon the specific conditions of the field area in order to assemble a complete characterization of the ground resistivity properties. The resistivity data is then processed and examined for evidence of significant subsurface features including bedrock surfaces, perched groundwater tables, cavities/sinkholes, or potential contaminant plumes.




**AGI SuperSting R8 IP Earth Resistivity and IP Meter assembly.**

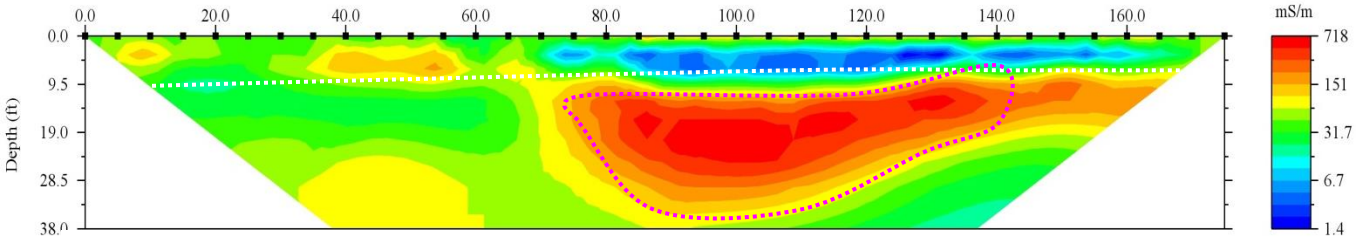


**Resistivity pseudosection across a backfilled canal. Approximately 10' of high resistivity/low conductivity surficial fill (blue) over low resistivity/high conductivity canal backfill (orange-red).**

## Down-hole Conductivity

TPI is also able to collect down-hole soil conductivity data with an electric conductivity probe. The EC probe is driven into the subsurface by a direct push unit. A current is induced in the native soil between two contacts at opposite ends of the probe. The soil conductivity is then calculated based upon the ratio of induced current to resultant voltage across the probe. Down-hole EC profiling is particularly useful in the efficient determination of soil grain size (permeable sands vs impermeable clays), water content, and metal content.

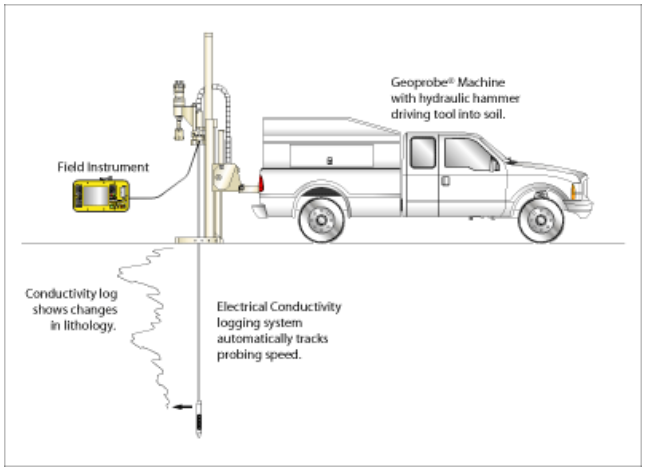




**Electrical conductivity probe**

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October 17, 2017

Ron Kantor
Aecom
30 Knightsbridge Road, Suite 520
Piscataway, NJ 08854

**Project: Geophysical Survey – Forrest Street and Garfield Avenue, Jersey City, NJ**

Dear Ron;

The following is a brief letter report detailing the results of the geophysical survey performed at the above referenced site. Site maps and/or pertinent ground penetrating radar (GPR) transects are contained in the report and Appendix A. It would be helpful to review Appendix A and the site maps when reading this report. TPI's standard practice is to indicate the results of the geophysical survey by marking all identified utility lines, tanks, and GPR anomalies etc. with chalk, paint or flags. It should be noted that this report is a means of transferring data and results of data interpretation, which was performed during the time allotted for the fieldwork.

Project Scope and Visual Site Inspection

TPI Environmental, Inc. (TPI) was contracted by Aecom (client) to clear soil borings and locate private utilities in the immediate vicinity of the soil borings. The site consists of a parking lot, sidewalk, construction area, and building with adjacent paved areas located at the above address and as indicated on Figures 1 through 5. Upon arrival to the site on September 27, 2017, TPI performed a site walk to review One Call utility mark outs and evidence of other on-site utilities in the vicinity of the soil boring locations. During the site walk the following areas of interest were noted;

- Utilities to be investigated during this survey include private electric, communication, sanitary sewer, storm sewer, water, and gas.

Methodology

Geophysical surveys are typically accomplished by employing the following techniques; GPR, Fisher TW6 electromagnetic metal detection (TW6 EM), a Geonics EM61-MK2 Time – Domain Electromagnetic Detector unit (EM61), radio frequency line locating (RF), and magnetics. Known utilities are typically traced with the RF unit, GPR, and the TW6 EM unit depending on the size, matrix and conductive properties of the line. The EM61 is a high power, high sensitivity metal detector capable of detecting both ferrous and non-ferrous metal. The TW6 EM unit sounds an audible alarm in the presence of a large mass of metal such as an UST. A description and discussion of these geophysical methods as well as TPI's standard procedures for performing geophysical surveys is found in Appendix A. In general, "blind surveys" are typically performed by initially scanning the site with a TW6 EM unit and/or an EM61 unit and noting areas of relatively high EM response. Then locations with high EM response are further investigated with GPR. EM units are typically not effective and practical in areas underlain with reinforced concrete and/or the presence of ubiquitous metallic objects.

Geophysical Survey Results

The geophysical survey at this site was accomplished with the RF and GPR units. Known utilities were traced with RF and confirmed with GPR. Proposed soil boring locations were scanned and cleared with a combination of RF and GPR. Results of the geophysical survey were marked on the ground with paint and a map of the survey results, as well as pertinent GPR images, are contained in this report. Results of the geophysical survey are as follows;

- Private electric, communication, sanitary sewer, storm sewer, water, and gas utilities were located and marked with paint in addition to sheet piling and any linear, "pipe-style" anomalies.
- Six (6) soil boring locations were scanned, moved as needed, and marked with white paint.

TPI completes non-intrusive geophysical surveys using equipment and techniques representing best available technology. TPI does not accept responsibility for survey limitations due to inherent technological limitations or unforeseen and varying site-specific conditions such as metal-reinforced concrete. In practical terms, TPI serves to reduce the risk of encountering subsurface utilities during excavation operations or greatly increase the chance of locating man made subsurface objects depending on the goal of the project. The results of this investigation should only be used as a tool and should not be considered a guarantee regarding the presence or absence of USTs or piping.

If you should have any questions or concerns, please do not hesitate to contact us.

**Your Project Team at TPI:**


Frank Fendler, M.S., P.G.
President
ffendler@tpienv.com

Mike Robbins, M.S.
Geologist
mrobbins@tpienv.com

Dustin Lutz
Geologist/P.M.
dlutz@tpienv.com

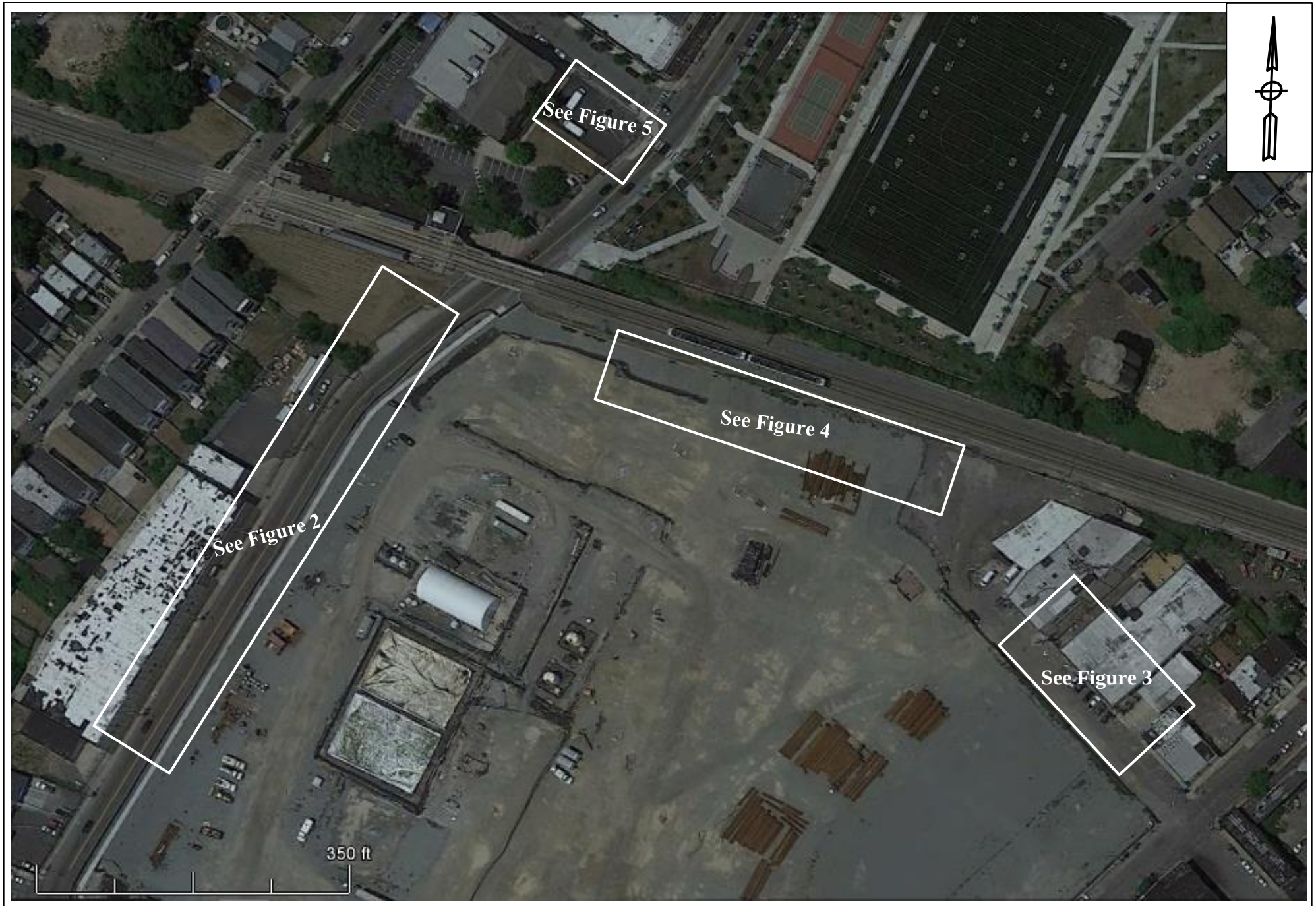


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|---|---|---|---|
| TPI environmental | Jersey City, NJ | | Figure 1 |
| | Client: Aecom | Date: 09/27/17 | Geophysical Survey Results |

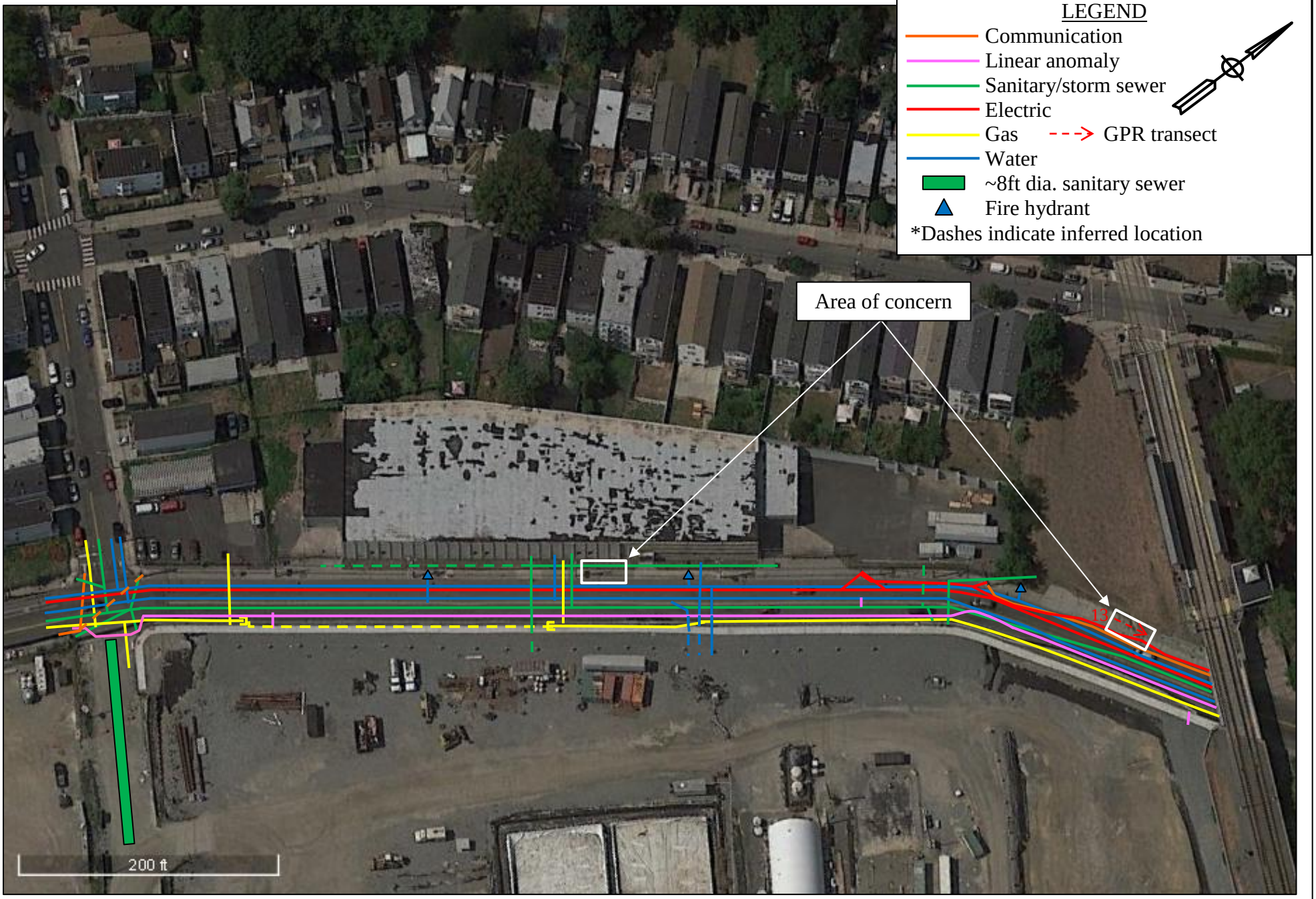


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| TPI environmental | Garfield Avenue, Jersey City, NJ | | Figure 2 |
| | Client: Aecom | Date: 09/27/17 | Geophysical Survey Results |




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| TPI environmental | 90 & 98 Forrest Street, Jersey City, NJ | | Figure 3 |
| | Client: Aecom | Date: 09/27/17 | Geophysical Survey Results |

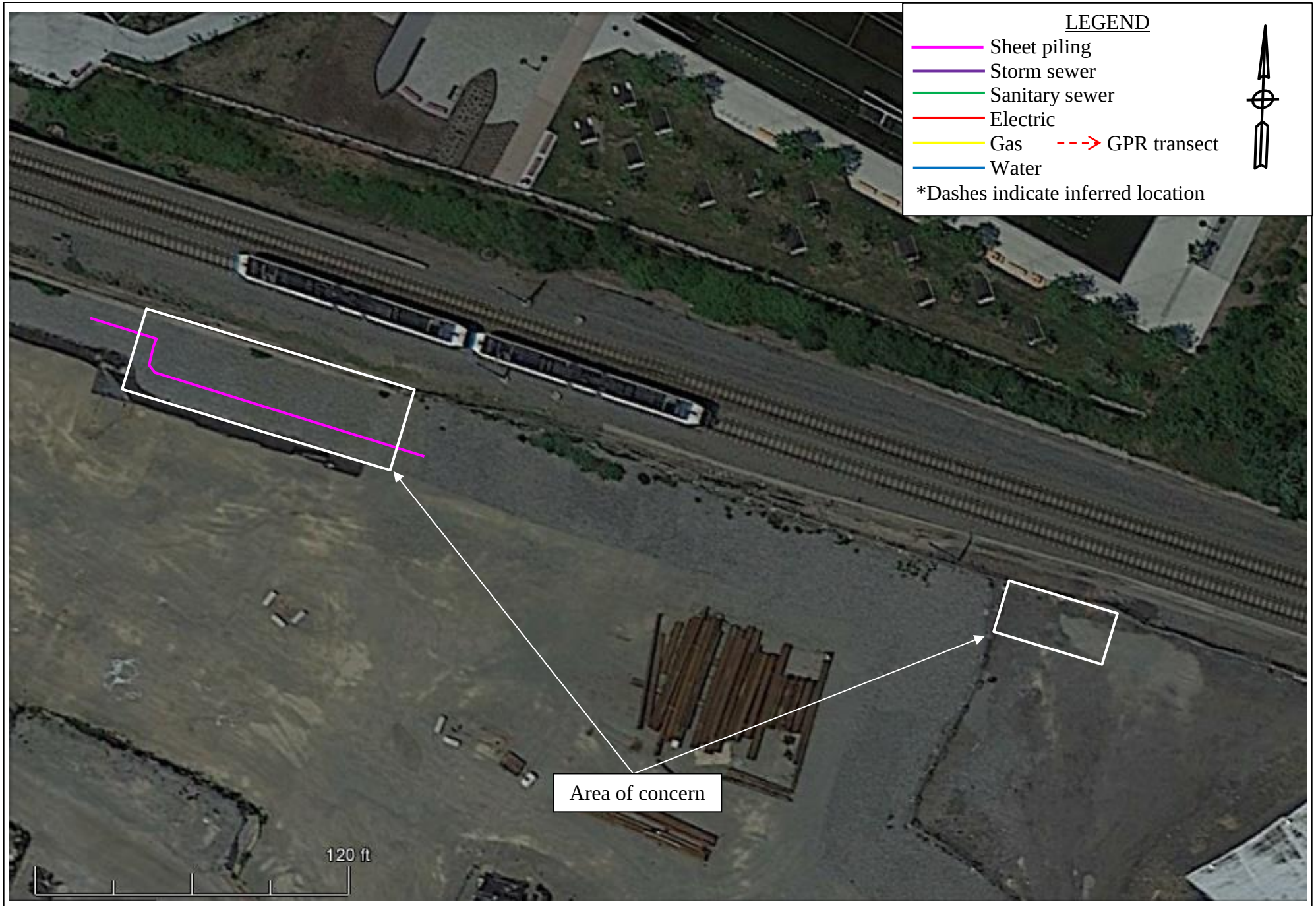


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| TPI environmental | Jersey City, NJ | | Figure 4 |
| | Client: Aecom | Date: 09/27/17 | Geophysical Survey Results |

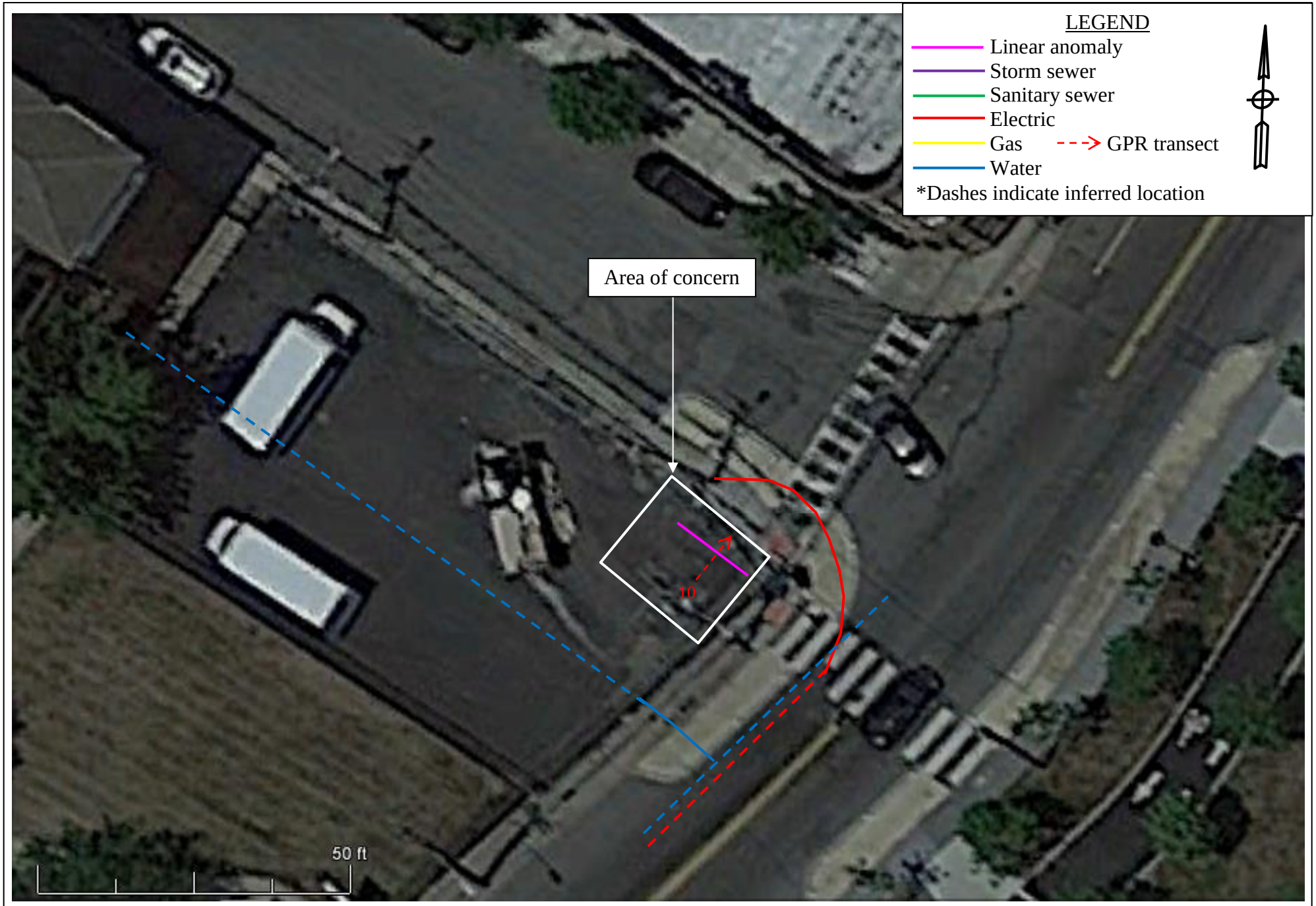


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| TPI environmental | Garfield Avenue, Jersey City, NJ | | Figure 5 |
| | Client: Aecom | Date: 09/27/17 | Geophysical Survey Results |

# Appendix A

# GPR Transects and Survey Methods

**GPR Transect 10**
**See Figure 5 for Location**

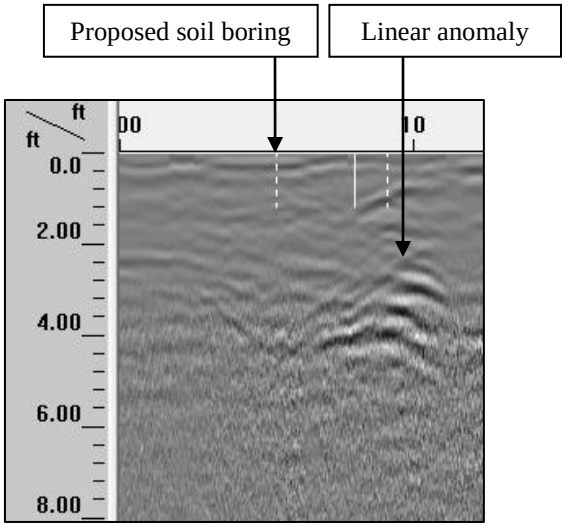


**GPR Transect 13**
**See Figure 2 for Location**

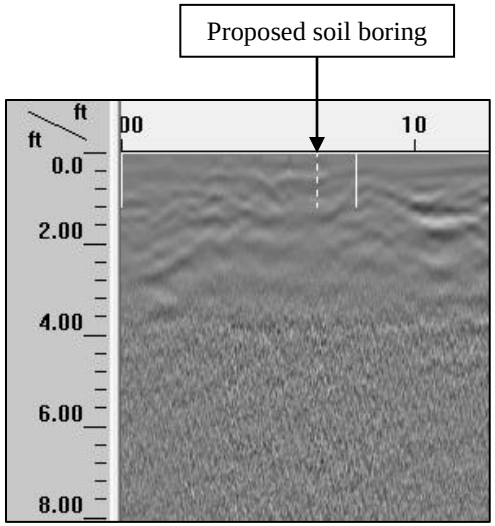

**Attachment A**
**TPI's Geophysical Survey Equipment & Methods**

## Geonics EM61-MK2

The EM61 is a high resolution time-domain metal detector which is used to detect ferrous and non-ferrous metallic objects. It consists of a powerful transmitter that generates a pulsed primary magnetic field, which induces eddy currents in nearby metallic objects. The decay of these currents is measured by two receiver coils mounted on the coil assembly. The responses are recorded and displayed by an integrated computer based digital data logger with real time numeric and graphic display. Two ports on the logger allows simultaneous collection of EM and GPS data. For further processing and interpretation data can be transferred to a laptop computer in the field and a color contoured map of the EM61 reponse is prepared (see below).

**EM61 Color Contoured Map**

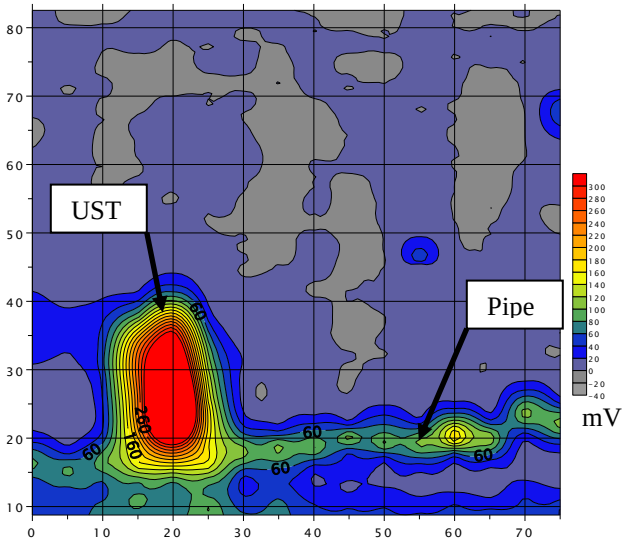


The EM61-MK2 detects a single 55 gallon drum at a depth of over 10-feet beneath the instrument, yet it is relatively insentsitive to interference from nearby surface metal such as fences, buildings, cars, etc. By making the measurement at a relatively long time after termination of the primary pulse, the response is practically independent of the electrical conductivity of the ground.

Due to its unique coil arrangements, the response curve is a single well defined positive peak greatly facilitating quick and accurate location of the target, the depth of which can usually be estimated from the width of the response and/or from relative response from each of the two receiver coils.

## GPR

This method is one of the most powerful and cost effective methods of locating man made objects and stratigraphic layers in the subsurface. It is an active method that transmits electromagnetic pulses into the ground, the radar pulses are reflected from materials or layers of differing dielectric and electrical conductive properties. The GPR computer measures the elapsed time in billionths of a second (nanoseconds) from when the pulses are sent and when they are received back at the surface that can then be converted to depth. Results of the radar scan are displayed as a continuous cross-section of the subsurface on the computer screen in real time. Metallic materials such as tanks, pipes, conduits, rebar etc. have vastly different dielectric properties then soils so there reflections are striking and relatively easy to identify. Pipes and tanks constructed of PVC, concrete, and terracotta also produce distinct reflections, however, these reflections are typically not as striking as metallic materials. A typical radar image of two metallic underground storage tanks is found below.

**GPR Image of Two Metallic USTs**

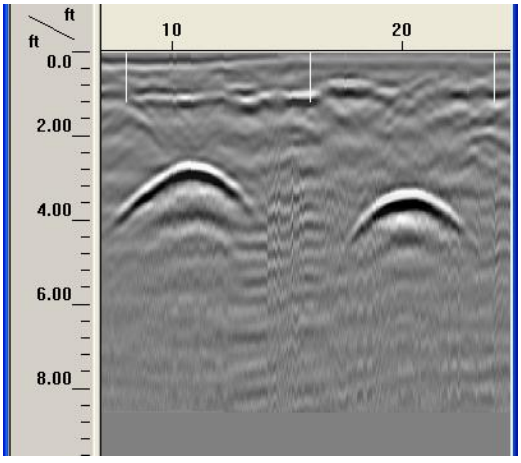


GPR surveys are conducted with the most advanced GPR equipment currently available

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including a Geophysical Survey Systems (GSSI) SIR-3000 subsurface radar unit with a 400 MHz antenna. The 400 MHz antenna has a depth range of approximately 20-feet and other antennas may be employed with the system depending on specific site conditions and objectives of the survey. The GPR transect data may be saved on the internal hard drive and transferred to a PC for storage, printing, and post processing. GSSI is the world leader in the development of GPR systems and was the first company to commercialize GPR in 1970. GPR hardware and software has improved dramatically over the last several years allowing for relatively rapid and economical GPR surveys. With 3-dimensional capabilities, the latest GPR software takes data processing a step farther then the former 2-dimensional viewing method. Three-dimensional visualization helps you to see the whole picture, giving you a powerful tool to interpret complex utility layouts and identify subtle linear features that may have otherwise been missed.

GPR surveys are typically conducted by searching for GPR hyperbolas indicative of subsurface pipes or tanks signatures in the vicinity of known entities. Theses signatures are marked on the ground and areas progressively further from the known entity are scanned and marked. This process is continued until the GPR operator performed enough scans to determine and mark the subsurface pipe, tank or anomaly. During this process the GPR data is typically not saved due to the immense size of the data files. After this phase of the GPR survey is completed, representative GPR transects or grids are performed and saved for the report and post processing. Some of the factors that may negatively affect GPR results include clay soils, rebar in concrete, high moisture content, depth of the target, and the integrity, size, and material of the target.

## TW-6 EM Unit

TPI routinely employs a Fisher TW-6 electromagnetic metal detector when performing GPR surveys. The TW-6 creates an electromagnetic field with a transmitting coil and measures the strength of that field with a receiving coil. As the TW-6 passes over electrically conductive materials such as metal tanks or drums the field is distorted and the instrument produces an audible alarm based on the degree of the distortion. The TW-6 can detect conductive materials the size of drums or small tanks to depths of 10-feet. The instrument is actually a relatively poor metal detector which makes it ideal for locating large conductive materials such as metal drums, medium to large metal pipes, reinforced concrete pipes, and metal tanks. A more sensitive metal detector would produce "false positives" on small pieces of metal that are typically found in fill and throughout developed sites. If the survey area is underlain by reinforced concrete or cars and other large surficial metallic features are within 10-feet, the TW-6 will not be useful.

## Line Locating

Line locating is performed with a Radiodetection RD400 PXL-2 line locator with a 433 HCTX-2 transmitter. The transmitter emits a specific radio or electromagnetic signal which is indirectly induced or directly conducted onto the metallic line. The transmitter is capable of producing frequencies of 512 Hz, 8 kHz, or 33 kHz and the receiver is configured for the specific transmitted frequency. The induced signal is coupled with the line by either using an induction clamp which surrounds an exposed line or placing the transmitter above a buried line and transmitting the signal to it. The receiver may also be used in a passive locate mode (power) to identify the presence of current carrying lines. Nonmetallic lines may also be located by snaking a sonde down accessible lines with push rods. A sonde is a small transmitter that emits a specific electromagnetic frequency which can be detected by the receiver at depths of 12 to 16-feet.

**Inductive Sweep With Transmitter/Receiver**

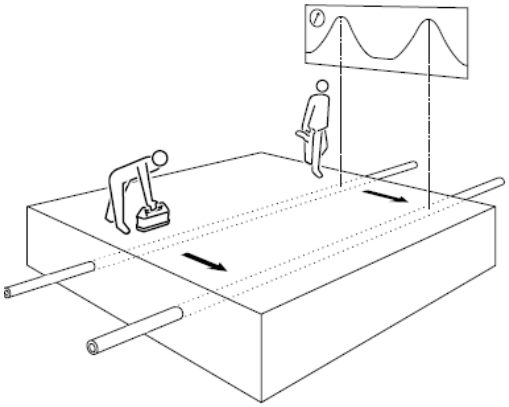

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# Attachment A
# TPI's Geophysical Survey Equipment & Methods

## Resistivity

TPI conducts subsurface resistivity surveys using the AGI SuperSting R8 IP Earth Resistivity and IP Meter. The SuperSting unit measures the voltage drop of an induced electrical current across numerous electrodes as it travels through the electrically heterogenous subsurface. Multiple survey profiles are completed in this manner based upon the specific conditions of the field area in order to assemble a complete characterization of the ground resistivity properties. The resistivity data is then processed and examined for evidence of significant subsurface features including bedrock surfaces, perched groundwater tables, cavities/sinkholes, or potential contaminant plumes.




**AGI SuperSting R8 IP Earth Resistivity and IP Meter assembly.**

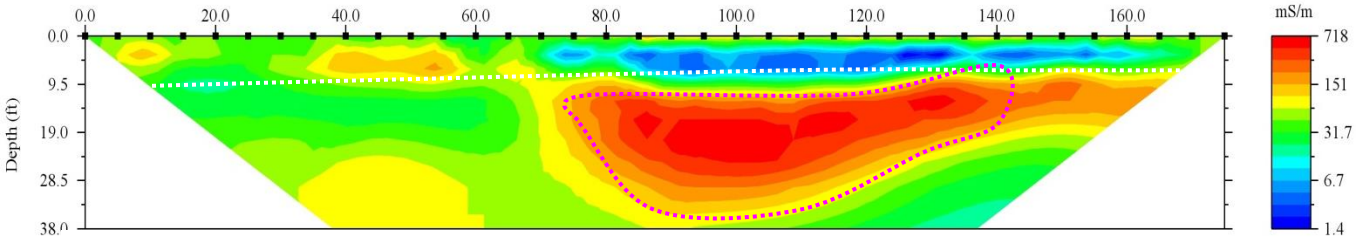


**Resistivity pseudosection across a backfilled canal. Approximately 10' of high resistivity/low conductivity surficial fill (blue) over low resistivity/high conductivity canal backfill (orange-red).**

## Down-hole Conductivity

TPI is also able to collect down-hole soil conductivity data with an electric conductivity probe. The EC probe is driven into the subsurface by a direct push unit. A current is induced in the native soil between two contacts at opposite ends of the probe. The soil conductivity is then calculated based upon the ratio of induced current to resultant voltage across the probe. Down-hole EC profiling is particularly useful in the efficient determination of soil grain size (permeable sands vs impermeable clays), water content, and metal content.

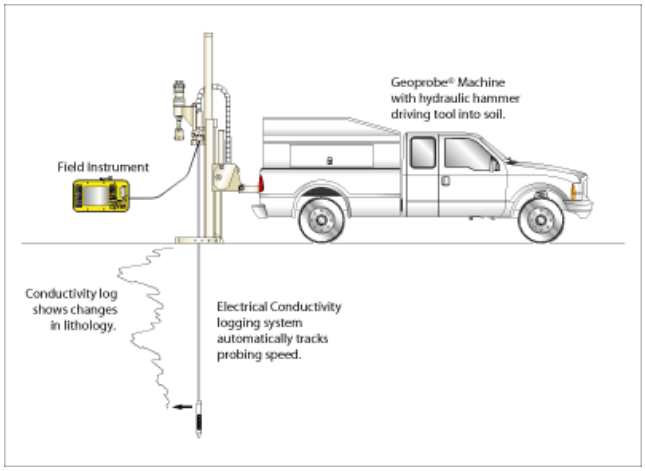




**Electrical conductivity probe**

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February 09, 2018

Shannon Gleason
AECOM
855 Smead Road
Salisbury, VT 05769

**Project: Geophysical Survey – Berry Lane Park, 1000 Garfield Avenue, Jersey City, NJ**

Dear Shannon;

The following is a brief letter report detailing the results of the geophysical survey performed at the above referenced site. Site maps and/or pertinent ground penetrating radar (GPR) transects are contained in the report and Appendix A. It would be helpful to review Appendix A and the site maps when reading this report. TPI's standard practice is to indicate the results of the geophysical survey by marking all identified utility lines, tanks, and GPR anomalies etc. with chalk, paint or flags. It should be noted that this report is a means of transferring data and results of data interpretation, which was performed during the time allotted for the fieldwork.

Project Scope and Visual Site Inspection

TPI Environmental, Inc. (TPI) was contracted by AECOM (client) to clear proposed monitoring well locations and to locate private utilities in the immediate vicinity of the wells. The site consists of a recreational park located at the above address and as indicated on Figure 1. Upon arrival to the site on January 24, 2018, TPI performed a site walk to review One Call utility mark outs and evidence of other on-site utilities in the vicinity of the well locations. During the site walk the following areas of interest were noted;

- Utilities to be investigated during this survey include; electric, water, storm sewer, communication, and irrigation.

Methodology

Geophysical surveys are typically accomplished by employing the following techniques; GPR, Fisher TW6 electromagnetic metal detection (TW6 EM), a Geonics EM61-MK2 Time – Domain Electromagnetic Detector unit (EM61), radio frequency line locating (RF), and magnetics. Known utilities are typically traced with the RF unit, GPR, and the TW6 EM unit depending on the size, matrix and conductive properties of the line. The EM61 is a high power, high sensitivity metal detector capable of detecting both ferrous and non-ferrous metal. The TW6 EM unit sounds an audible alarm in the presence of a large mass of metal such as an UST. A description and discussion of these geophysical methods as well as TPI's standard procedures for performing geophysical surveys is found in Appendix A. In general, "blind surveys" are typically performed by initially scanning the site with a TW6 EM unit and/or an EM61 unit and noting areas of relatively high EM response. Then locations with high EM response are further investigated with GPR. EM units are typically not effective and practical in areas underlain with reinforced concrete and/or the presence of ubiquitous metallic objects.

Geophysical Survey Results

The geophysical survey at this site was accomplished with the RF and GPR units. Known utilities were traced with RF and confirmed with GPR. Proposed monitoring well locations were scanned and cleared with a combination of RF and GPR. Results of the geophysical survey were marked on the ground with paint and a map of the survey results, as well as pertinent GPR images, are contained in this report. Results of the geophysical survey are as follows;

- Electric, water, storm sewer, communication, and irrigation utilities in addition to linear pipe-style anomalies, were located and marked with paint.
- Two monitoring well locations were scanned, moved as needed, and marked with paint.

TPI completes non-intrusive geophysical surveys using equipment and techniques representing best available technology. TPI does not accept responsibility for survey limitations due to inherent technological limitations or unforeseen and varying site-specific conditions such as metal-reinforced concrete. In practical terms, TPI serves to reduce the risk of encountering subsurface utilities during excavation operations or greatly increase the chance of locating man made subsurface objects depending on the goal of the project. The results of this investigation should only be used as a tool and should not be considered a guarantee regarding the presence or absence of USTs or piping.

If you should have any questions or concerns, please do not hesitate to contact us.

**Your Project Team at TPI:**


Frank Fendler, M.S., P.G.
President
ffendler@tpienv.com

Mike Robbins, M.S.
Geologist
mrobbins@tpienv.com

Dustin Lutz
Geologist/P.M.
dlutz@tpienv.com




| | | | |
|---|---|---|---|
| TPI environmental | 1000 Garfield Avenue, Jersey City, NJ | | Figure 1 |
| | Client: Aecom | Date: 01/24/18 | Geophysical Survey Results |

# Appendix A

# GPR Transects, Field Notes, and Survey Methods

**GPR Transect 01**
**See Figure 1 for Location**

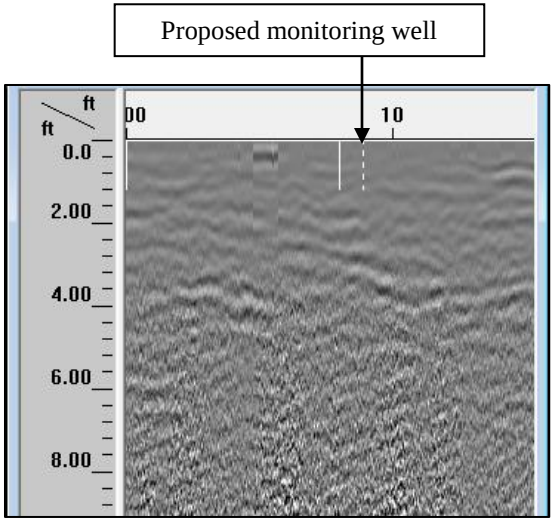

Client:
Aecom
1000 Garfield Ave
Jersey City, NJ

01/24/18

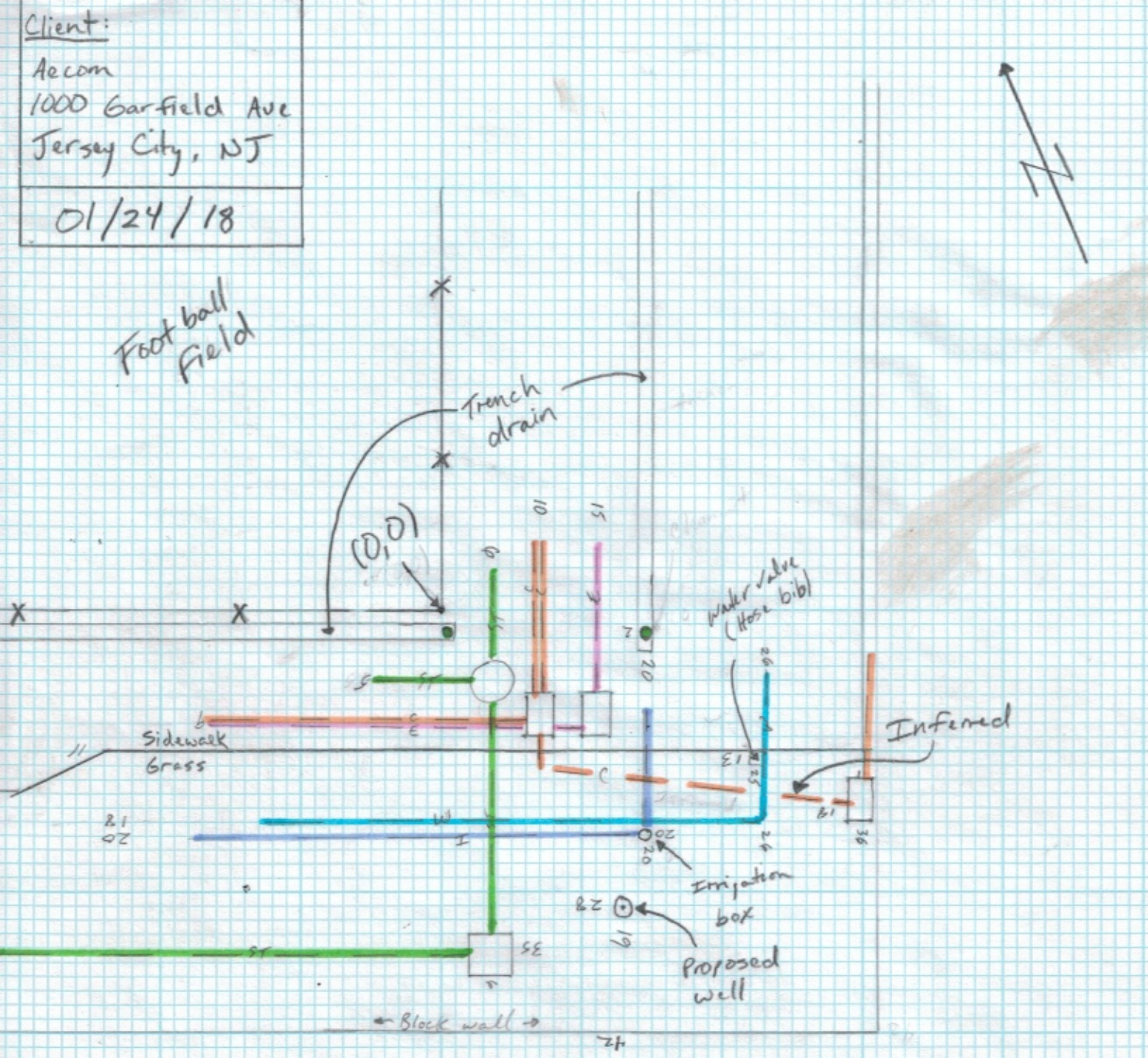


Legend:
- Water
- Electric
- Communication
- Storm sewer
- Irrigation
- Trench drain clean outs

Field Notes 1

TPI environmental

Field Notes

Client:

Aecom
1000 Garfield Ave
Jersey City, NJ

01/24/18

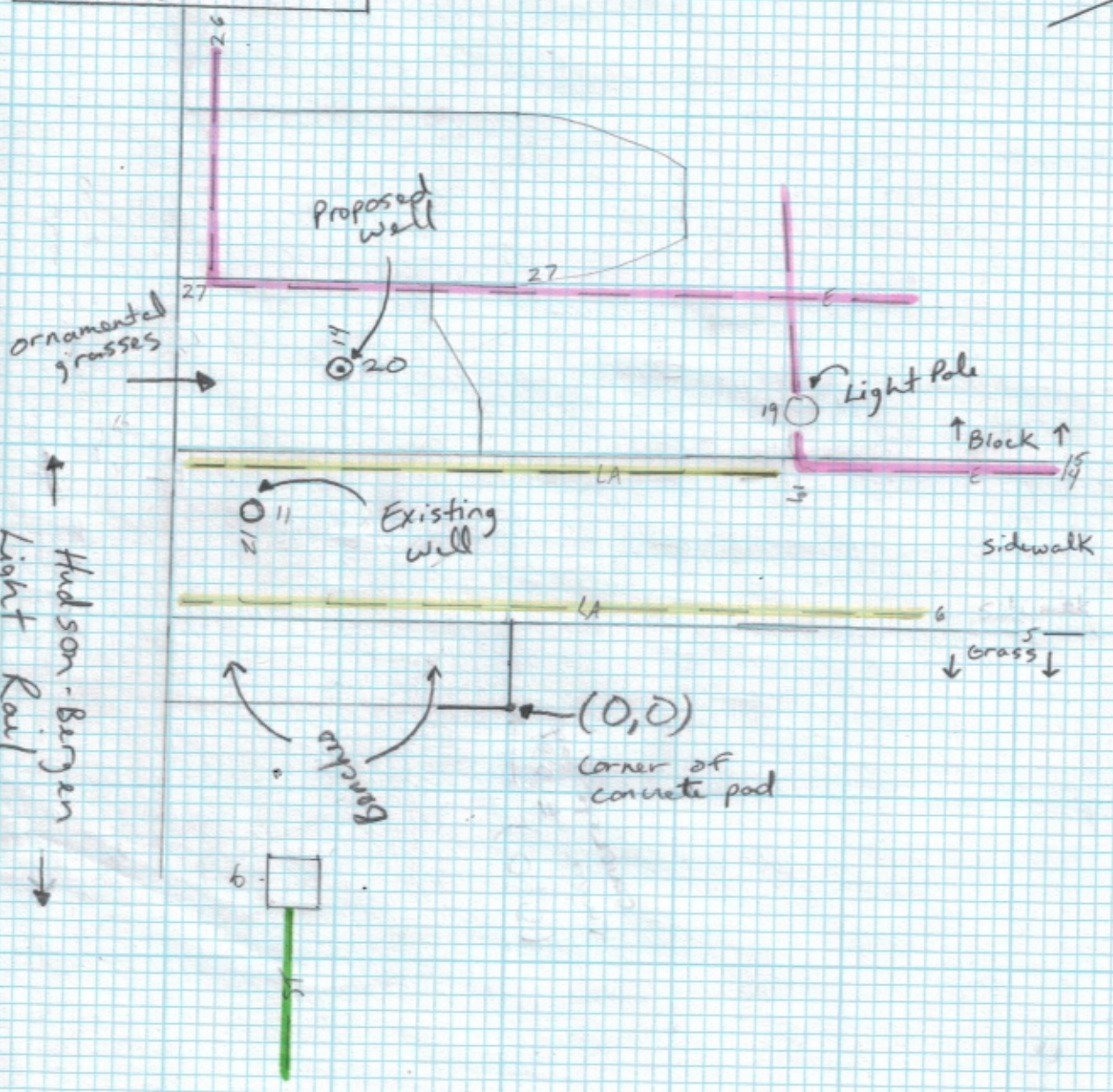


Legend:

- E — Electric
- ST — Storm Sewer
- LA — Linear pipe-style anomaly

Field Notes 2

TPI environmental

Field Notes

**Attachment A**
**TPI's Geophysical Survey Equipment & Methods**

## Geonics EM61-MK2

The EM61 is a high resolution time-domain metal detector which is used to detect ferrous and non-ferrous metallic objects. It consists of a powerful transmitter that generates a pulsed primary magnetic field, which induces eddy currents in nearby metallic objects. The decay of these currents is measured by two receiver coils mounted on the coil assembly. The responses are recorded and displayed by an integrated computer based digital data logger with real time numeric and graphic display. Two ports on the logger allows simultaneous collection of EM and GPS data. For further processing and interpretation data can be transferred to a laptop computer in the field and a color contoured map of the EM61 reponse is prepared (see below).

**EM61 Color Contoured Map**

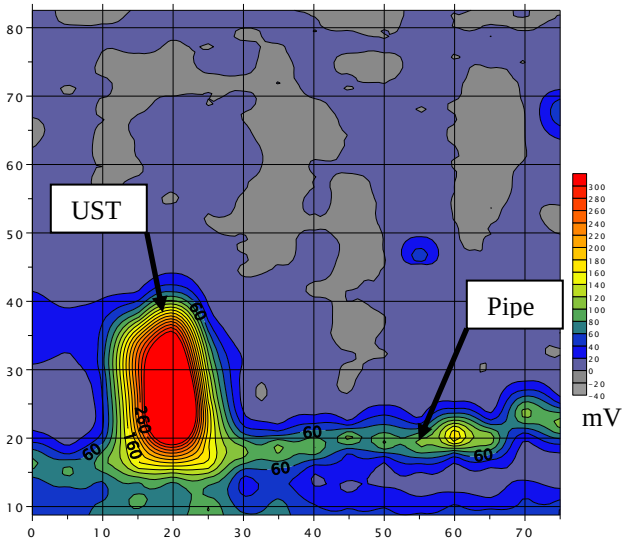


The EM61-MK2 detects a single 55 gallon drum at a depth of over 10-feet beneath the instrument, yet it is relatively insentsitive to interference from nearby surface metal such as fences, buildings, cars, etc. By making the measurement at a relatively long time after termination of the primary pulse, the response is practically independent of the electrical conductivity of the ground.

Due to its unique coil arrangements, the response curve is a single well defined positive peak greatly facilitating quick and accurate location of the target, the depth of which can usually be estimated from the width of the response and/or from relative response from each of the two receiver coils.

## GPR

This method is one of the most powerful and cost effective methods of locating man made objects and stratigraphic layers in the subsurface. It is an active method that transmits electromagnetic pulses into the ground, the radar pulses are reflected from materials or layers of differing dielectric and electrical conductive properties. The GPR computer measures the elapsed time in billionths of a second (nanoseconds) from when the pulses are sent and when they are received back at the surface that can then be converted to depth. Results of the radar scan are displayed as a continuous cross-section of the subsurface on the computer screen in real time. Metallic materials such as tanks, pipes, conduits, rebar etc. have vastly different dielectric properties then soils so there reflections are striking and relatively easy to identify. Pipes and tanks constructed of PVC, concrete, and terracotta also produce distinct reflections, however, these reflections are typically not as striking as metallic materials. A typical radar image of two metallic underground storage tanks is found below.

**GPR Image of Two Metallic USTs**

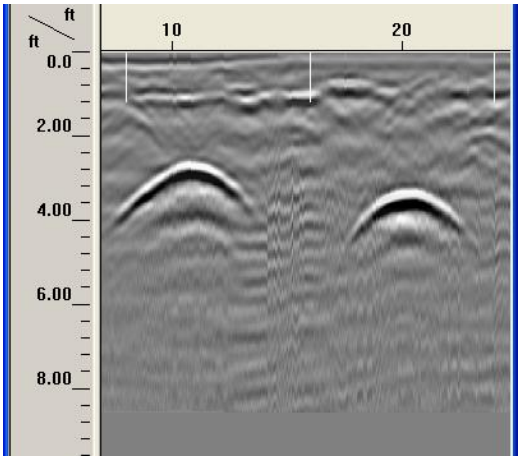


GPR surveys are conducted with the most advanced GPR equipment currently available

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including a Geophysical Survey Systems (GSSI) SIR-3000 subsurface radar unit with a 400 MHz antenna. The 400 MHz antenna has a depth range of approximately 20-feet and other antennas may be employed with the system depending on specific site conditions and objectives of the survey. The GPR transect data may be saved on the internal hard drive and transferred to a PC for storage, printing, and post processing. GSSI is the world leader in the development of GPR systems and was the first company to commercialize GPR in 1970. GPR hardware and software has improved dramatically over the last several years allowing for relatively rapid and economical GPR surveys. With 3-dimensional capabilities, the latest GPR software takes data processing a step farther then the former 2-dimensional viewing method. Three-dimensional visualization helps you to see the whole picture, giving you a powerful tool to interpret complex utility layouts and identify subtle linear features that may have otherwise been missed.

GPR surveys are typically conducted by searching for GPR hyperbolas indicative of subsurface pipes or tanks signatures in the vicinity of known entities. Theses signatures are marked on the ground and areas progressively further from the known entity are scanned and marked. This process is continued until the GPR operator performed enough scans to determine and mark the subsurface pipe, tank or anomaly. During this process the GPR data is typically not saved due to the immense size of the data files. After this phase of the GPR survey is completed, representative GPR transects or grids are performed and saved for the report and post processing. Some of the factors that may negatively affect GPR results include clay soils, rebar in concrete, high moisture content, depth of the target, and the integrity, size, and material of the target.

## TW-6 EM Unit

TPI routinely employs a Fisher TW-6 electromagnetic metal detector when performing GPR surveys. The TW-6 creates an electromagnetic field with a transmitting coil and measures the strength of that field with a receiving coil. As the TW-6 passes over electrically conductive materials such as metal tanks or drums the field is distorted and the instrument produces an audible alarm based on the degree of the distortion. The TW-6 can detect conductive materials the size of drums or small tanks to depths of 10-feet. The instrument is actually a relatively poor metal detector which makes it ideal for locating large conductive materials such as metal drums, medium to large metal pipes, reinforced concrete pipes, and metal tanks. A more sensitive metal detector would produce "false positives" on small pieces of metal that are typically found in fill and throughout developed sites. If the survey area is underlain by reinforced concrete or cars and other large surficial metallic features are within 10-feet, the TW-6 will not be useful.

## Line Locating

Line locating is performed with a Radiodetection RD400 PXL-2 line locator with a 433 HCTX-2 transmitter. The transmitter emits a specific radio or electromagnetic signal which is indirectly induced or directly conducted onto the metallic line. The transmitter is capable of producing frequencies of 512 Hz, 8 kHz, or 33 kHz and the receiver is configured for the specific transmitted frequency. The induced signal is coupled with the line by either using an induction clamp which surrounds an exposed line or placing the transmitter above a buried line and transmitting the signal to it. The receiver may also be used in a passive locate mode (power) to identify the presence of current carrying lines. Nonmetallic lines may also be located by snaking a sonde down accessible lines with push rods. A sonde is a small transmitter that emits a specific electromagnetic frequency which can be detected by the receiver at depths of 12 to 16-feet.

**Inductive Sweep With Transmitter/Receiver**

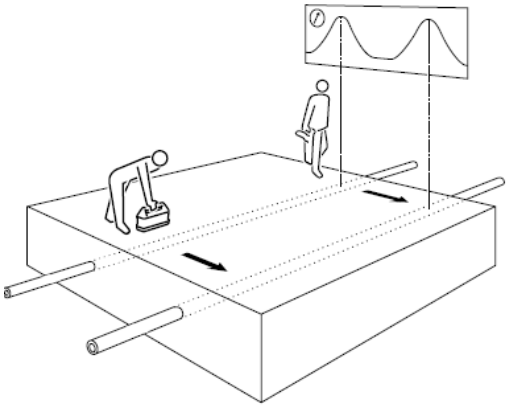

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# Attachment A
# TPI's Geophysical Survey Equipment & Methods

## Resistivity

TPI conducts subsurface resistivity surveys using the AGI SuperSting R8 IP Earth Resistivity and IP Meter. The SuperSting unit measures the voltage drop of an induced electrical current across numerous electrodes as it travels through the electrically heterogenous subsurface. Multiple survey profiles are completed in this manner based upon the specific conditions of the field area in order to assemble a complete characterization of the ground resistivity properties. The resistivity data is then processed and examined for evidence of significant subsurface features including bedrock surfaces, perched groundwater tables, cavities/sinkholes, or potential contaminant plumes.




**AGI SuperSting R8 IP Earth Resistivity and IP Meter assembly.**

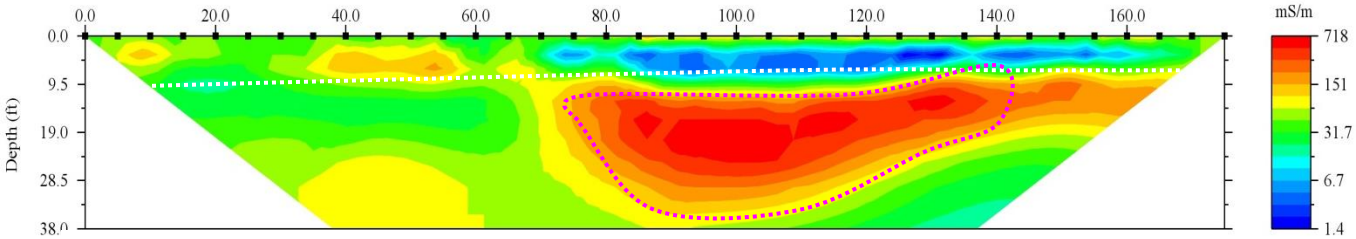


**Resistivity pseudosection across a backfilled canal. Approximately 10' of high resistivity/low conductivity surficial fill (blue) over low resistivity/high conductivity canal backfill (orange-red).**

## Down-hole Conductivity

TPI is also able to collect down-hole soil conductivity data with an electric conductivity probe. The EC probe is driven into the subsurface by a direct push unit. A current is induced in the native soil between two contacts at opposite ends of the probe. The soil conductivity is then calculated based upon the ratio of induced current to resultant voltage across the probe. Down-hole EC profiling is particularly useful in the efficient determination of soil grain size (permeable sands vs impermeable clays), water content, and metal content.

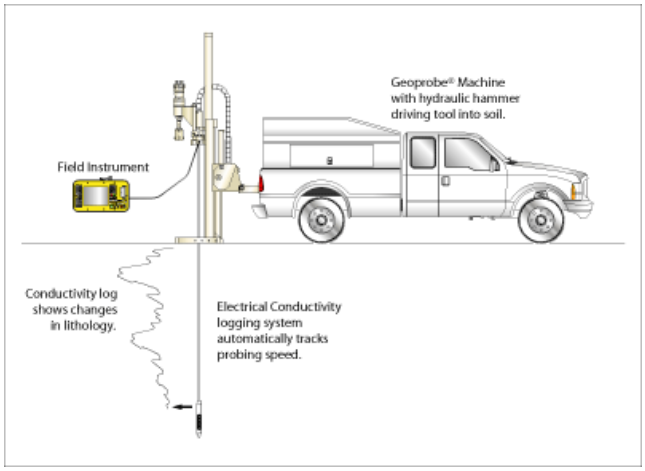




**Electrical conductivity probe**

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April 10, 2018

Shannon Gleason
AECOM
855 Smead Road
Salisbury, VT 05769

**Project: Geophysical Survey – Pacific Avenue, Jersey City, NJ**
**Forrest Street, Jersey City, NJ**

Dear Shannon;

The following is a brief letter report detailing the results of the geophysical survey performed at the above referenced site. Site maps and/or pertinent ground penetrating radar (GPR) transects are contained in the report and Appendix A. It would be helpful to review Appendix A and the site maps when reading this report. TPI's standard practice is to indicate the results of the geophysical survey by marking all identified utility lines, tanks, and GPR anomalies etc. with chalk, paint or flags. It should be noted that this report is a means of transferring data and results of data interpretation, which was performed during the time allotted for the fieldwork.

Project Scope and Visual Site Inspection

TPI Environmental, Inc. (TPI) was contracted by AECOM (client) to clear proposed monitoring well locations and to locate private utilities in the immediate vicinity of the wells. The sites consist of gravel-filled areas located at the above addresses and as indicated on Figures 1-3. Upon arrival to the site on March 23, 2018, TPI performed a site walk to review One Call utility mark outs and evidence of other on-site utilities in the vicinity of the well locations. During the site walk the following areas of interest were noted;

- Utilities to be investigated during this survey include; water, storm sewer and sanitary sewer.

Methodology

Geophysical surveys are typically accomplished by employing the following techniques; GPR, Fisher TW6 electromagnetic metal detection (TW6 EM), a Geonics EM61-MK2 Time – Domain Electromagnetic Detector unit (EM61), radio frequency line locating (RF), and magnetics. Known utilities are typically traced with the RF unit, GPR, and the TW6 EM unit depending on the size, matrix and conductive properties of the line. The EM61 is a high power, high sensitivity metal detector capable of detecting both ferrous and non-ferrous metal. The TW6 EM unit sounds an audible alarm in the presence of a large mass of metal such as an UST. A description and discussion of these geophysical methods as well as TPI's standard procedures for performing geophysical surveys is found in Appendix A. In general, "blind surveys" are typically performed by initially scanning the site with a TW6 EM unit and/or an EM61 unit and noting areas of relatively high EM response. Then locations with high EM response are further investigated with GPR. EM units are typically not effective and practical in areas underlain with reinforced concrete and/or the presence of ubiquitous metallic objects.

Geophysical Survey Results

The geophysical survey at this site was accomplished with the RF and GPR units. Known utilities were traced with RF and confirmed with GPR. Proposed monitoring well locations were scanned and cleared with a combination of RF and GPR. Results of the geophysical survey were marked on the ground with paint and a map of the survey results are contained in this report. Results of the geophysical survey are as follows;

- Water, storm sewer, and sanitary sewer utilities in addition to linear pipe-style anomalies, were located and marked with paint.
- Seven monitoring well locations were scanned, moved as needed, and marked with paint.

TPI completes non-intrusive geophysical surveys using equipment and techniques representing best available technology. TPI does not accept responsibility for survey limitations due to inherent technological limitations or unforeseen and varying site-specific conditions such as metal-reinforced concrete. In practical terms, TPI serves to reduce the risk of encountering subsurface utilities during excavation operations or greatly increase the chance of locating man made subsurface objects depending on the goal of the project. The results of this investigation should only be used as a tool and should not be considered a guarantee regarding the presence or absence of USTs or piping.

If you should have any questions or concerns, please do not hesitate to contact us.

**Your Project Team at TPI:**


Frank Fendler, M.S., P.G.
President
ffendler@tpienv.com

Mike Robbins, M.S.
Geologist
mrobbins@tpienv.com

Dustin Lutz
Geologist/P.M.
dlutz@tpienv.com

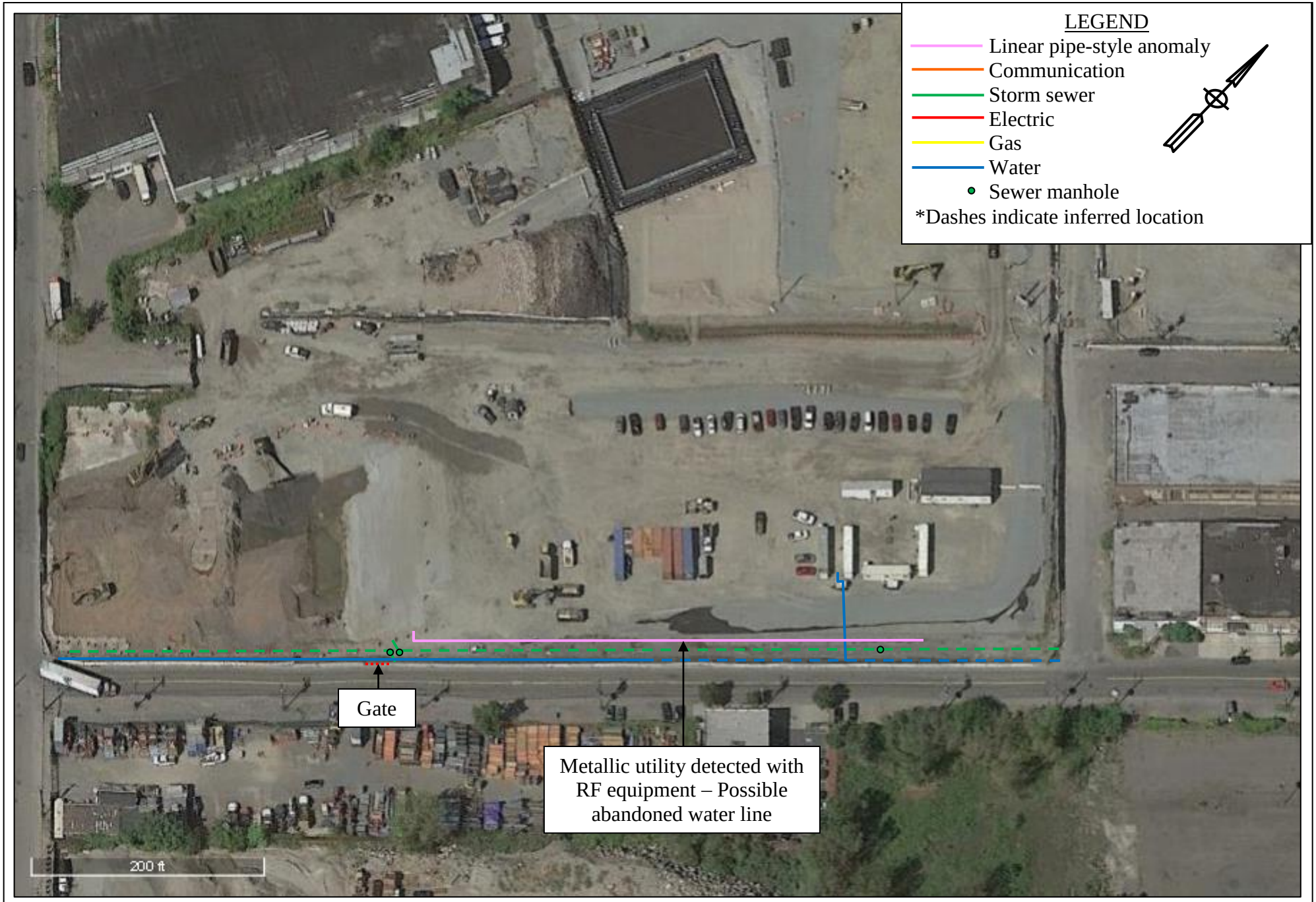


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| TPI environmental | Pacific Avenue, Jersey City, NJ | | Figure 1 |
| | Client: Aecom | Date: 03/23/18 | Geophysical Survey Results |

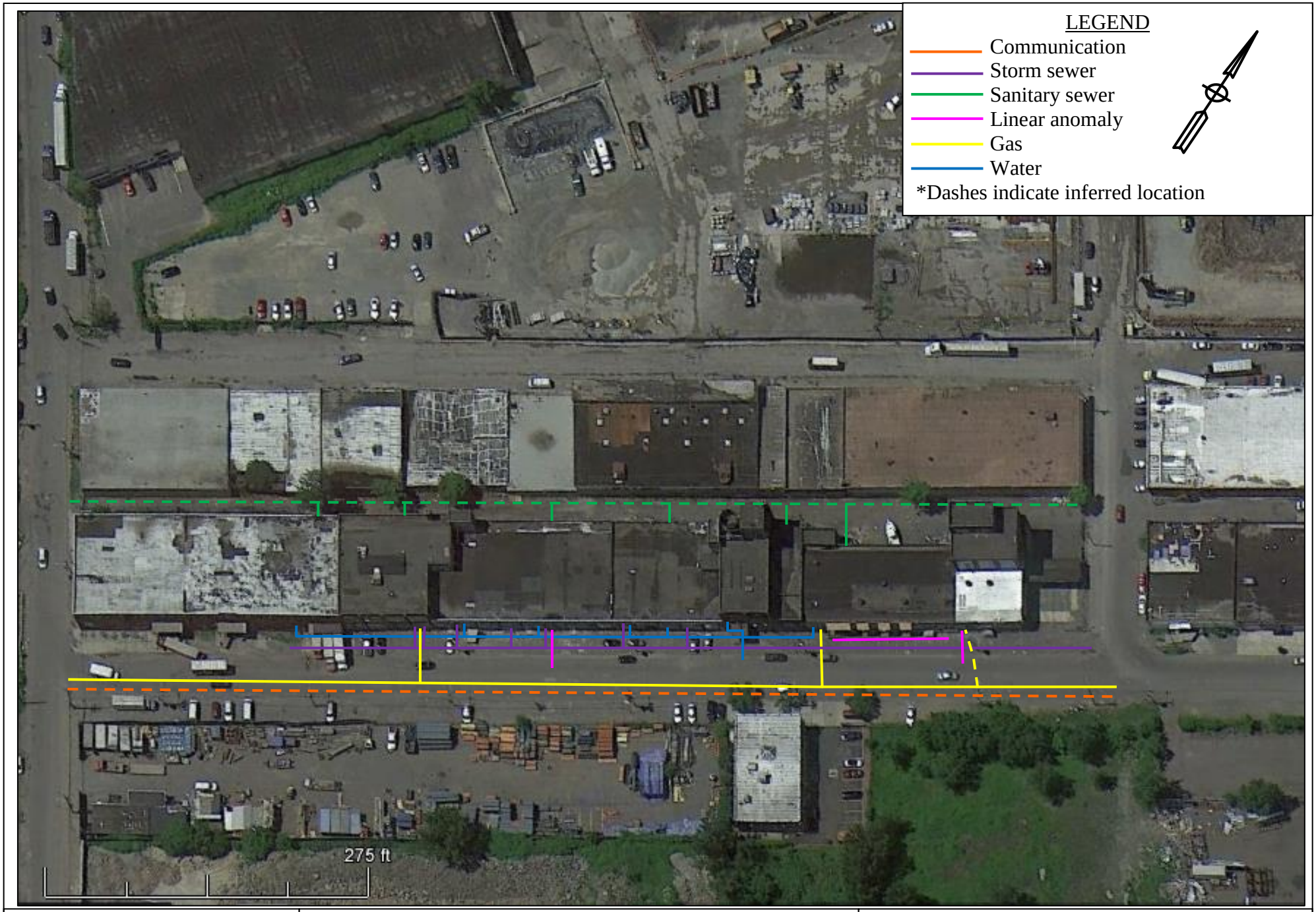


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| TPI environmental | Pacific Avenue, Jersey City, NJ | | Figure 2 |
| | Client: Aecom | Date: 08/21/15 | Geophysical Survey Results |




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| TPI environmental | 90 & 98 Forrest Street, Jersey City, NJ | | Figure 3 |
| | Client: Aecom | Date: 03/23/18 | Geophysical Survey Results |

# Appendix A

# Survey Methods

**Attachment A**
**TPI's Geophysical Survey Equipment & Methods**

## Geonics EM61-MK2

The EM61 is a high resolution time-domain metal detector which is used to detect ferrous and non-ferrous metallic objects. It consists of a powerful transmitter that generates a pulsed primary magnetic field, which induces eddy currents in nearby metallic objects. The decay of these currents is measured by two receiver coils mounted on the coil assembly. The responses are recorded and displayed by an integrated computer based digital data logger with real time numeric and graphic display. Two ports on the logger allows simultaneous collection of EM and GPS data. For further processing and interpretation data can be transferred to a laptop computer in the field and a color contoured map of the EM61 reponse is prepared (see below).

**EM61 Color Contoured Map**

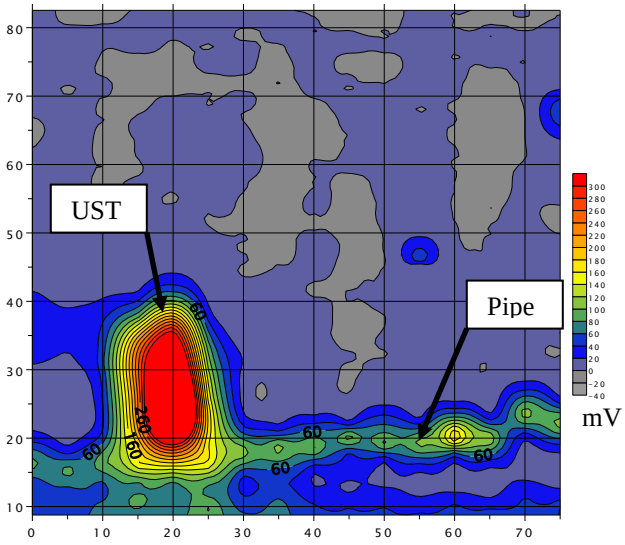


The EM61-MK2 detects a single 55 gallon drum at a depth of over 10-feet beneath the instrument, yet it is relatively insentsitive to interference from nearby surface metal such as fences, buildings, cars, etc. By making the measurement at a relatively long time after termination of the primary pulse, the response is practically independent of the electrical conductivity of the ground.

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**GPR Image of Two Metallic USTs**

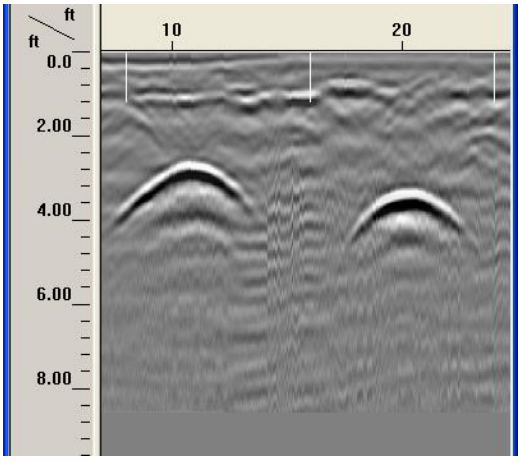


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including a Geophysical Survey Systems (GSSI) SIR-3000 subsurface radar unit with a 400 MHz antenna. The 400 MHz antenna has a depth range of approximately 20-feet and other antennas may be employed with the system depending on specific site conditions and objectives of the survey. The GPR transect data may be saved on the internal hard drive and transferred to a PC for storage, printing, and post processing. GSSI is the world leader in the development of GPR systems and was the first company to commercialize GPR in 1970. GPR hardware and software has improved dramatically over the last several years allowing for relatively rapid and economical GPR surveys. With 3-dimensional capabilities, the latest GPR software takes data processing a step farther then the former 2-dimensional viewing method. Three-dimensional visualization helps you to see the whole picture, giving you a powerful tool to interpret complex utility layouts and identify subtle linear features that may have otherwise been missed.

GPR surveys are typically conducted by searching for GPR hyperbolas indicative of subsurface pipes or tanks signatures in the vicinity of known entities. Theses signatures are marked on the ground and areas progressively further from the known entity are scanned and marked. This process is continued until the GPR operator performed enough scans to determine and mark the subsurface pipe, tank or anomaly. During this process the GPR data is typically not saved due to the immense size of the data files. After this phase of the GPR survey is completed, representative GPR transects or grids are performed and saved for the report and post processing. Some of the factors that may negatively affect GPR results include clay soils, rebar in concrete, high moisture content, depth of the target, and the integrity, size, and material of the target.

## TW-6 EM Unit

TPI routinely employs a Fisher TW-6 electromagnetic metal detector when performing GPR surveys. The TW-6 creates an electromagnetic field with a transmitting coil and measures the strength of that field with a receiving coil. As the TW-6 passes over electrically conductive materials such as metal tanks or drums the field is distorted and the instrument produces an audible alarm based on the degree of the distortion. The TW-6 can detect conductive materials the size of drums or small tanks to depths of 10-feet. The instrument is actually a relatively poor metal detector which makes it ideal for locating large conductive materials such as metal drums, medium to large metal pipes, reinforced concrete pipes, and metal tanks. A more sensitive metal detector would produce "false positives" on small pieces of metal that are typically found in fill and throughout developed sites. If the survey area is underlain by reinforced concrete or cars and other large surficial metallic features are within 10-feet, the TW-6 will not be useful.

## Line Locating

Line locating is performed with a Radiodetection RD400 PXL-2 line locator with a 433 HCTX-2 transmitter. The transmitter emits a specific radio or electromagnetic signal which is indirectly induced or directly conducted onto the metallic line. The transmitter is capable of producing frequencies of 512 Hz, 8 kHz, or 33 kHz and the receiver is configured for the specific transmitted frequency. The induced signal is coupled with the line by either using an induction clamp which surrounds an exposed line or placing the transmitter above a buried line and transmitting the signal to it. The receiver may also be used in a passive locate mode (power) to identify the presence of current carrying lines. Nonmetallic lines may also be located by snaking a sonde down accessible lines with push rods. A sonde is a small transmitter that emits a specific electromagnetic frequency which can be detected by the receiver at depths of 12 to 16-feet.

**Inductive Sweep With Transmitter/Receiver**

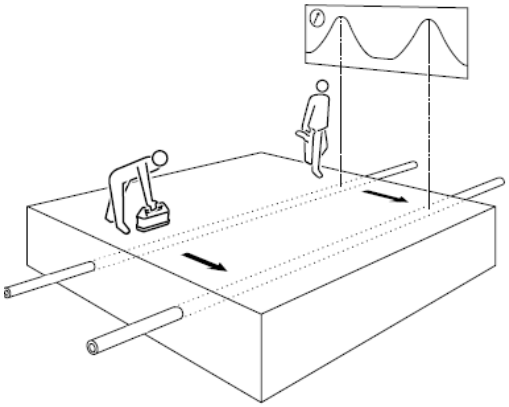

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# Attachment A
# TPI's Geophysical Survey Equipment & Methods

## Resistivity

TPI conducts subsurface resistivity surveys using the AGI SuperSting R8 IP Earth Resistivity and IP Meter. The SuperSting unit measures the voltage drop of an induced electrical current across numerous electrodes as it travels through the electrically heterogenous subsurface. Multiple survey profiles are completed in this manner based upon the specific conditions of the field area in order to assemble a complete characterization of the ground resistivity properties. The resistivity data is then processed and examined for evidence of significant subsurface features including bedrock surfaces, perched groundwater tables, cavities/sinkholes, or potential contaminant plumes.




**AGI SuperSting R8 IP Earth Resistivity and IP Meter assembly.**

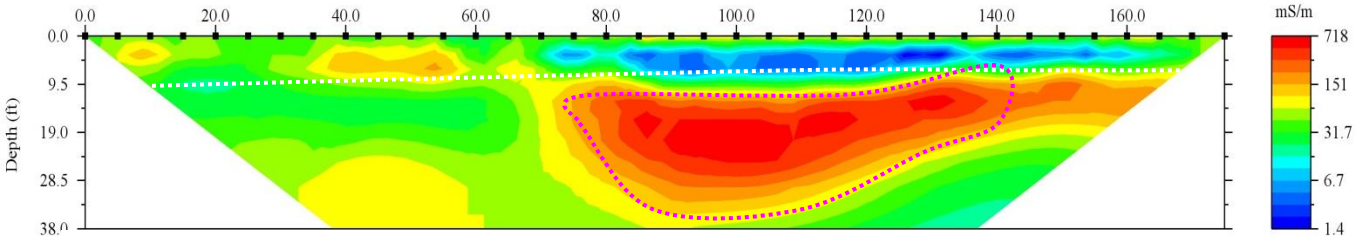


**Resistivity pseudosection across a backfilled canal. Approximately 10' of high resistivity/low conductivity surficial fill (blue) over low resistivity/high conductivity canal backfill (orange-red).**

## Down-hole Conductivity

TPI is also able to collect down-hole soil conductivity data with an electric conductivity probe. The EC probe is driven into the subsurface by a direct push unit. A current is induced in the native soil between two contacts at opposite ends of the probe. The soil conductivity is then calculated based upon the ratio of induced current to resultant voltage across the probe. Down-hole EC profiling is particularly useful in the efficient determination of soil grain size (permeable sands vs impermeable clays), water content, and metal content.

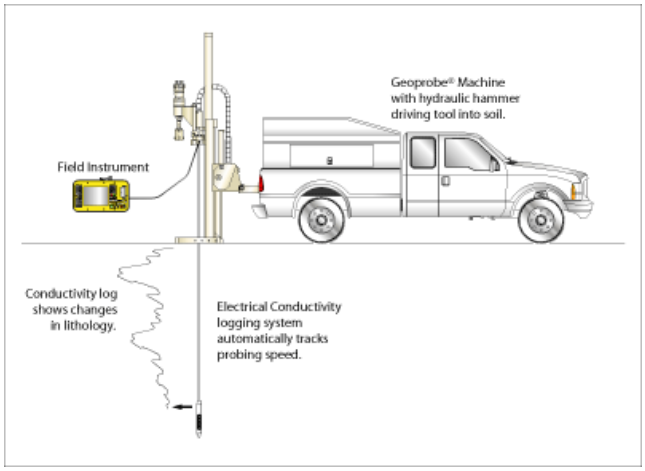




**Electrical conductivity probe**

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April 13, 2018

Lindi Higgins
Aecom
9 Jonathan Bourne Drive
Pocasset, MA 02559

**Project: Geophysical Survey – Pacific Avenue, Jersey City, NJ**

Dear Lindi;

The following is a brief letter report detailing the results of the geophysical survey performed at the above referenced site. Site maps and/or pertinent ground penetrating radar (GPR) transects are contained in the report and Appendix A. It would be helpful to review Appendix A and the site maps when reading this report. TPI's standard practice is to indicate the results of the geophysical survey by marking all identified utility lines, tanks, and GPR anomalies etc. with chalk, paint or flags. It should be noted that this report is a means of transferring data and results of data interpretation, which was performed during the time allotted for the fieldwork.

Project Scope and Visual Site Inspection

TPI Environmental, Inc. (TPI) was contracted by Aecom (client) to clear a soil boring and locate private utilities in the immediate vicinity of the soil boring. The site consists of a parking lot located at the above address and as indicated on Figure 1. Upon arrival to the site on April 05, 2018, TPI performed a site walk to review One Call utility mark outs and evidence of other on-site utilities in the vicinity of the soil boring location. During the site walk the following areas of interest were noted;

- Utilities to be investigated during this survey include private electric, communication, sanitary sewer, storm sewer, water, and gas.

Methodology

Geophysical surveys are typically accomplished by employing the following techniques; GPR, Fisher TW6 electromagnetic metal detection (TW6 EM), a Geonics EM61-MK2 Time – Domain Electromagnetic Detector unit (EM61), radio frequency line locating (RF), and magnetics. Known utilities are typically traced with the RF unit, GPR, and the TW6 EM unit depending on the size, matrix and conductive properties of the line. The EM61 is a high power, high sensitivity metal detector capable of detecting both ferrous and non-ferrous metal. The TW6 EM unit sounds an audible alarm in the presence of a large mass of metal such as an UST. A description and discussion of these geophysical methods as well as TPI's standard procedures for performing geophysical surveys is found in Appendix A. In general, "blind surveys" are typically performed by initially scanning the site with a TW6 EM unit and/or an EM61 unit and noting areas of relatively high EM response. Then locations with high EM response are further investigated with GPR. EM units are typically not effective and practical in areas underlain with reinforced concrete and/or the presence of ubiquitous metallic objects.

Geophysical Survey Results

The geophysical survey at this site was accomplished with the RF and GPR units. Known utilities were traced with RF and confirmed with GPR. The proposed soil boring location was scanned and cleared with a combination of RF and GPR. Results of the geophysical survey were marked on the ground with paint and a map of the survey results, as well as pertinent GPR images, are contained in this report. Results of the geophysical survey are as follows;

- Private electric, communication, storm sewer, water, and gas utilities were located and marked with paint.
- One (1) soil boring location was scanned, moved as needed, and marked with white paint.

TPI completes non-intrusive geophysical surveys using equipment and techniques representing best available technology. TPI does not accept responsibility for survey limitations due to inherent technological limitations or unforeseen and varying site-specific conditions such as metal-reinforced concrete. In practical terms, TPI serves to reduce the risk of encountering subsurface utilities during excavation operations or greatly increase the chance of locating man made subsurface objects depending on the goal of the project. The results of this investigation should only be used as a tool and should not be considered a guarantee regarding the presence or absence of USTs or piping.

If you should have any questions or concerns, please do not hesitate to contact us.

**Your Project Team at TPI:**


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mrobbins@tpienv.com

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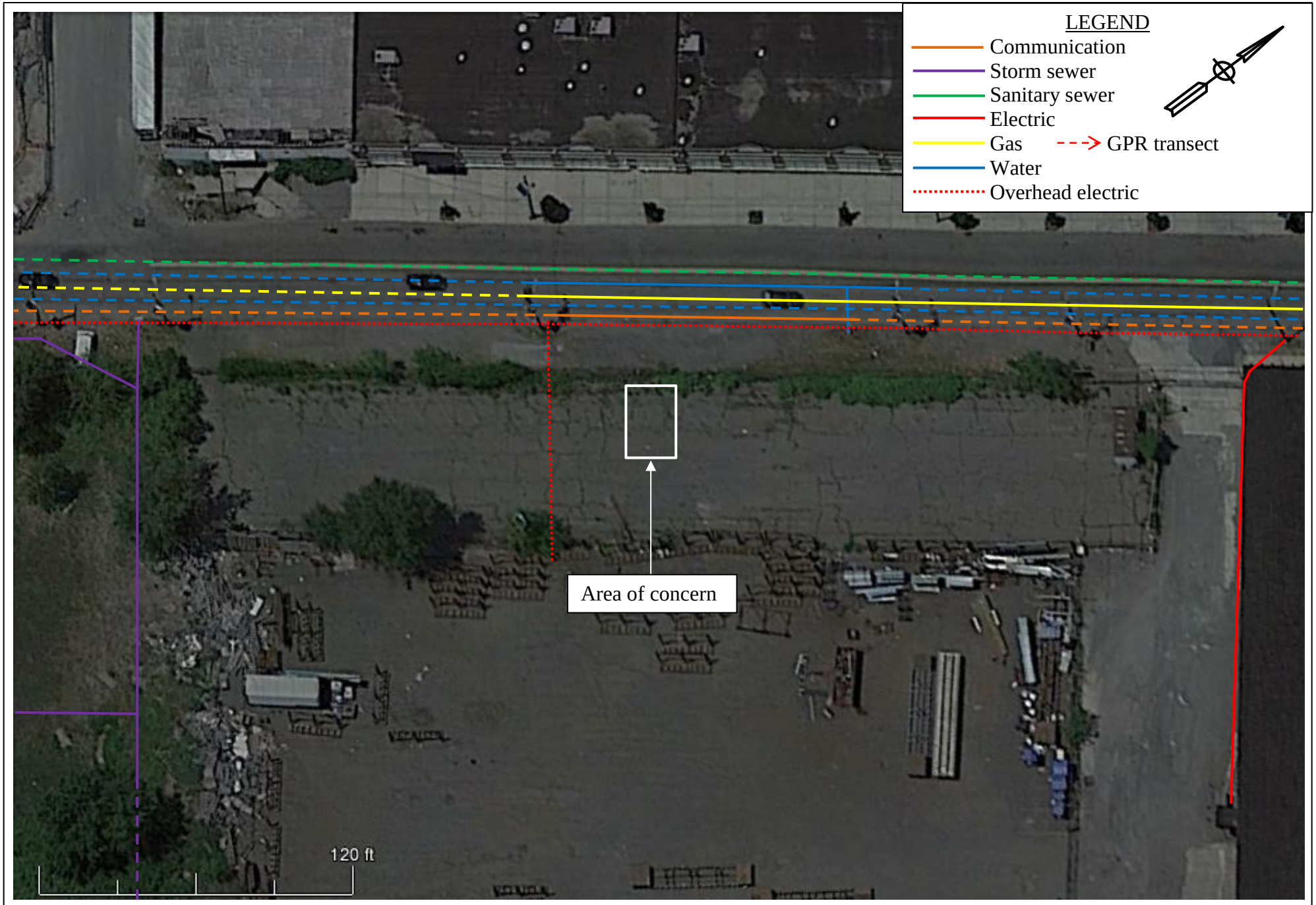


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| TPI environmental | Pacific Avenue, Jersey City, NJ | | Figure 1 |
| | Client: Aecom | Date: 04/05/18 | Geophysical Survey Results |

# Appendix A

# Survey Methods

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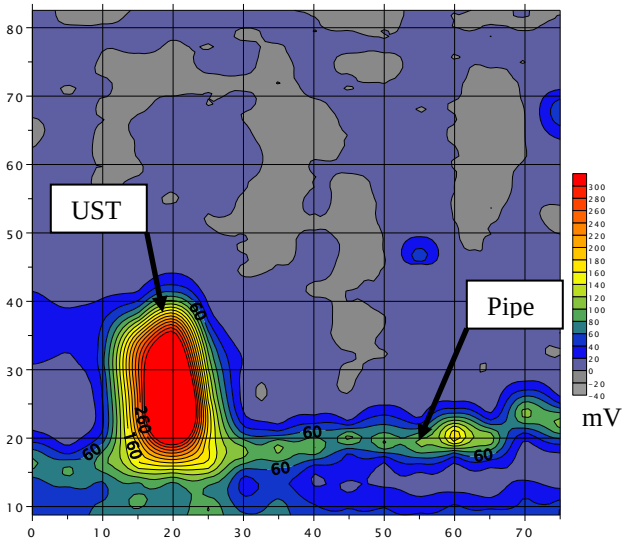


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Due to its unique coil arrangements, the response curve is a single well defined positive peak greatly facilitating quick and accurate location of the target, the depth of which can usually be estimated from the width of the response and/or from relative response from each of the two receiver coils.

## GPR

This method is one of the most powerful and cost effective methods of locating man made objects and stratigraphic layers in the subsurface. It is an active method that transmits electromagnetic pulses into the ground, the radar pulses are reflected from materials or layers of differing dielectric and electrical conductive properties. The GPR computer measures the elapsed time in billionths of a second (nanoseconds) from when the pulses are sent and when they are received back at the surface that can then be converted to depth. Results of the radar scan are displayed as a continuous cross-section of the subsurface on the computer screen in real time. Metallic materials such as tanks, pipes, conduits, rebar etc. have vastly different dielectric properties then soils so there reflections are striking and relatively easy to identify. Pipes and tanks constructed of PVC, concrete, and terracotta also produce distinct reflections, however, these reflections are typically not as striking as metallic materials. A typical radar image of two metallic underground storage tanks is found below.

**GPR Image of Two Metallic USTs**

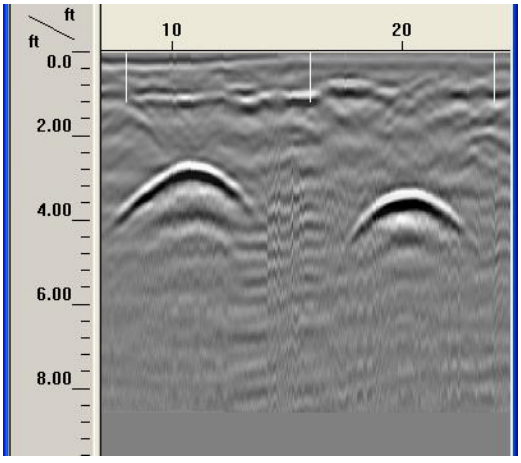


GPR surveys are conducted with the most advanced GPR equipment currently available

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including a Geophysical Survey Systems (GSSI) SIR-3000 subsurface radar unit with a 400 MHz antenna. The 400 MHz antenna has a depth range of approximately 20-feet and other antennas may be employed with the system depending on specific site conditions and objectives of the survey. The GPR transect data may be saved on the internal hard drive and transferred to a PC for storage, printing, and post processing. GSSI is the world leader in the development of GPR systems and was the first company to commercialize GPR in 1970. GPR hardware and software has improved dramatically over the last several years allowing for relatively rapid and economical GPR surveys. With 3-dimensional capabilities, the latest GPR software takes data processing a step farther then the former 2-dimensional viewing method. Three-dimensional visualization helps you to see the whole picture, giving you a powerful tool to interpret complex utility layouts and identify subtle linear features that may have otherwise been missed.

GPR surveys are typically conducted by searching for GPR hyperbolas indicative of subsurface pipes or tanks signatures in the vicinity of known entities. Theses signatures are marked on the ground and areas progressively further from the known entity are scanned and marked. This process is continued until the GPR operator performed enough scans to determine and mark the subsurface pipe, tank or anomaly. During this process the GPR data is typically not saved due to the immense size of the data files. After this phase of the GPR survey is completed, representative GPR transects or grids are performed and saved for the report and post processing. Some of the factors that may negatively affect GPR results include clay soils, rebar in concrete, high moisture content, depth of the target, and the integrity, size, and material of the target.

## TW-6 EM Unit

TPI routinely employs a Fisher TW-6 electromagnetic metal detector when performing GPR surveys. The TW-6 creates an electromagnetic field with a transmitting coil and measures the strength of that field with a receiving coil. As the TW-6 passes over electrically conductive materials such as metal tanks or drums the field is distorted and the instrument produces an audible alarm based on the degree of the distortion. The TW-6 can detect conductive materials the size of drums or small tanks to depths of 10-feet. The instrument is actually a relatively poor metal detector which makes it ideal for locating large conductive materials such as metal drums, medium to large metal pipes, reinforced concrete pipes, and metal tanks. A more sensitive metal detector would produce "false positives" on small pieces of metal that are typically found in fill and throughout developed sites. If the survey area is underlain by reinforced concrete or cars and other large surficial metallic features are within 10-feet, the TW-6 will not be useful.

## Line Locating

Line locating is performed with a Radiodetection RD400 PXL-2 line locator with a 433 HCTX-2 transmitter. The transmitter emits a specific radio or electromagnetic signal which is indirectly induced or directly conducted onto the metallic line. The transmitter is capable of producing frequencies of 512 Hz, 8 kHz, or 33 kHz and the receiver is configured for the specific transmitted frequency. The induced signal is coupled with the line by either using an induction clamp which surrounds an exposed line or placing the transmitter above a buried line and transmitting the signal to it. The receiver may also be used in a passive locate mode (power) to identify the presence of current carrying lines. Nonmetallic lines may also be located by snaking a sonde down accessible lines with push rods. A sonde is a small transmitter that emits a specific electromagnetic frequency which can be detected by the receiver at depths of 12 to 16-feet.

**Inductive Sweep With Transmitter/Receiver**

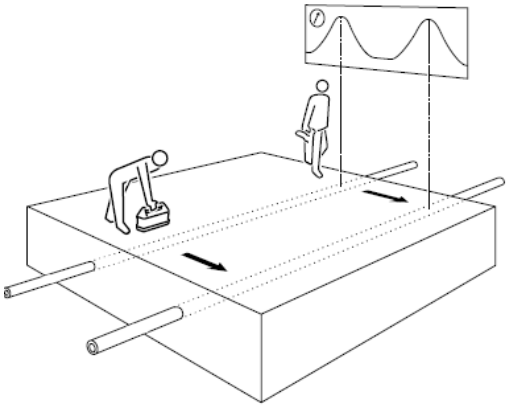

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# Attachment A
# TPI's Geophysical Survey Equipment & Methods

## Resistivity

TPI conducts subsurface resistivity surveys using the AGI SuperSting R8 IP Earth Resistivity and IP Meter. The SuperSting unit measures the voltage drop of an induced electrical current across numerous electrodes as it travels through the electrically heterogenous subsurface. Multiple survey profiles are completed in this manner based upon the specific conditions of the field area in order to assemble a complete characterization of the ground resistivity properties. The resistivity data is then processed and examined for evidence of significant subsurface features including bedrock surfaces, perched groundwater tables, cavities/sinkholes, or potential contaminant plumes.




**AGI SuperSting R8 IP Earth Resistivity and IP Meter assembly.**

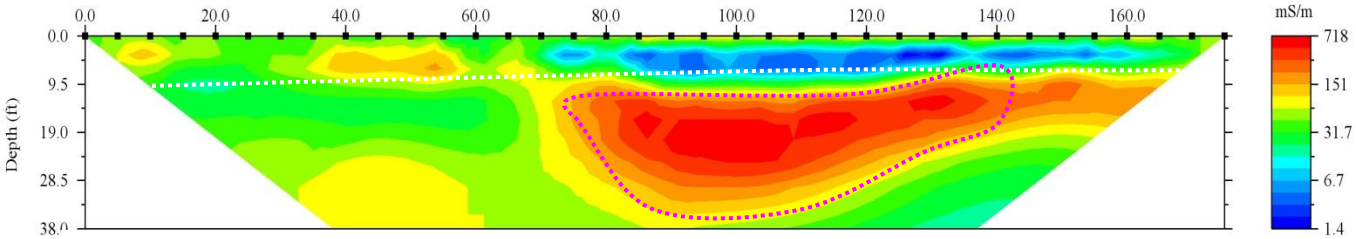


**Resistivity pseudosection across a backfilled canal. Approximately 10' of high resistivity/low conductivity surficial fill (blue) over low resistivity/high conductivity canal backfill (orange-red).**

## Down-hole Conductivity

TPI is also able to collect down-hole soil conductivity data with an electric conductivity probe. The EC probe is driven into the subsurface by a direct push unit. A current is induced in the native soil between two contacts at opposite ends of the probe. The soil conductivity is then calculated based upon the ratio of induced current to resultant voltage across the probe. Down-hole EC profiling is particularly useful in the efficient determination of soil grain size (permeable sands vs impermeable clays), water content, and metal content.

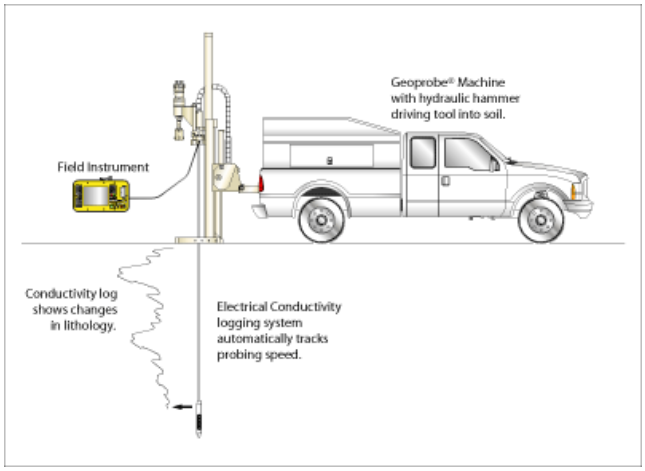




**Electrical conductivity probe**

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April 10, 2020

Shree Ravi
Aecom
30 Knightsbridge Road, Suite 520
Piscataway, NJ 08854

**Project: Geophysical Survey – Site 114, Carteret Avenue, Jersey City, NJ**

Dear Shree;

The following is a brief letter report detailing the results of the geophysical survey performed at the above referenced site. Site maps and/or pertinent ground penetrating radar (GPR) transects are contained in the report and Appendix A. It would be helpful to review Appendix A and the site maps when reading this report. TPI's standard practice is to indicate the results of the geophysical survey by marking all identified utility lines, tanks, and GPR anomalies etc. with chalk, paint or flags. It should be noted that this report is a means of transferring data and results of data interpretation, which was performed during the time allotted for the fieldwork.

Project Scope and Visual Site Inspection

TPI Environmental, Inc. (TPI) was contracted by Aecom (client) to clear proposed well locations and to locate private utilities in the immediate vicinity of the wells. The site consists of an active construction site, located at the above address and as indicated on Figure 1. Upon arrival to the site on March 25, 2020, TPI performed a site walk to review One Call utility mark outs and evidence of other on-site utilities in the vicinity of the soil boring locations. During the site walk the following areas of interest were noted;

- Utilities to be investigated during this survey include private electric and remediation piping.

Methodology

Geophysical surveys are typically accomplished by employing the following techniques; GPR, Fisher TW6 electromagnetic metal detection (TW6 EM), a Geonics EM61-MK2 Time – Domain Electromagnetic Detector unit (EM61), radio frequency line locating (RF), and magnetics. Known utilities are typically traced with the RF unit, GPR, and the TW6 EM unit depending on the size, matrix and conductive properties of the line. The EM61 is a high power, high sensitivity metal detector capable of detecting both ferrous and non-ferrous metal. The TW6 EM unit sounds an audible alarm in the presence of a large mass of metal such as an UST. A description and discussion of these geophysical methods as well as TPI's standard procedures for performing geophysical surveys is found in Appendix A. In general, "blind surveys" are typically performed by initially scanning the site with a TW6 EM unit and/or an EM61 unit and noting areas of relatively high EM response. Then locations with high EM response are further investigated with GPR. EM units are typically not effective and practical in areas underlain with reinforced concrete and/or the presence of ubiquitous metallic objects.

Geophysical Survey Results

The geophysical survey at this site was accomplished with the RF and GPR units. Known utilities were traced with RF and confirmed with GPR. The proposed well locations were scanned and cleared with a combination of RF and GPR. Results of the geophysical survey were marked on the ground with paint and a map of the survey results is contained in this report. Results of the geophysical survey are as follows;

- Private electric utilities, in addition to remediation piping, were located and marked with paint.
- Six (6) proposed well locations were scanned, moved as needed, and marked with white paint.

TPI completes non-intrusive geophysical surveys using equipment and techniques representing best available technology. TPI does not accept responsibility for survey limitations due to inherent technological limitations or unforeseen and varying site-specific conditions such as metal-reinforced concrete. In practical terms, TPI serves to reduce the risk of encountering subsurface utilities during excavation operations or greatly increase the chance of locating man made subsurface objects depending on the goal of the project. The results of this investigation should only be used as a tool and should not be considered a guarantee regarding the presence or absence of USTs or piping.

If you should have any questions or concerns, please do not hesitate to contact us.

**Your Project Team at TPI:**


Frank Fendler, M.S., P.G.
President
ffendler@tpienv.com

Mike Robbins, M.S.
Geologist
mrobbins@tpienv.com

Dustin Lutz
Geologist/P.M.
dlutz@tpienv.com




| | | | |
|---|---|---|---|
| TPI environmental | Site 114, Carteret Avenue, Jersey City, NJ | | Figure 1 |
| | Client: Aecom | Date: 03/25/20 | Geophysical Survey Results |

# Appendix A

# Field Notes and Survey Methods

AECOM
Site 114
Jersey City, NJ
03/25/20

114-P2-1RM-SS1
Ø +61

114-P2-1RM-SSD
Ø -61'

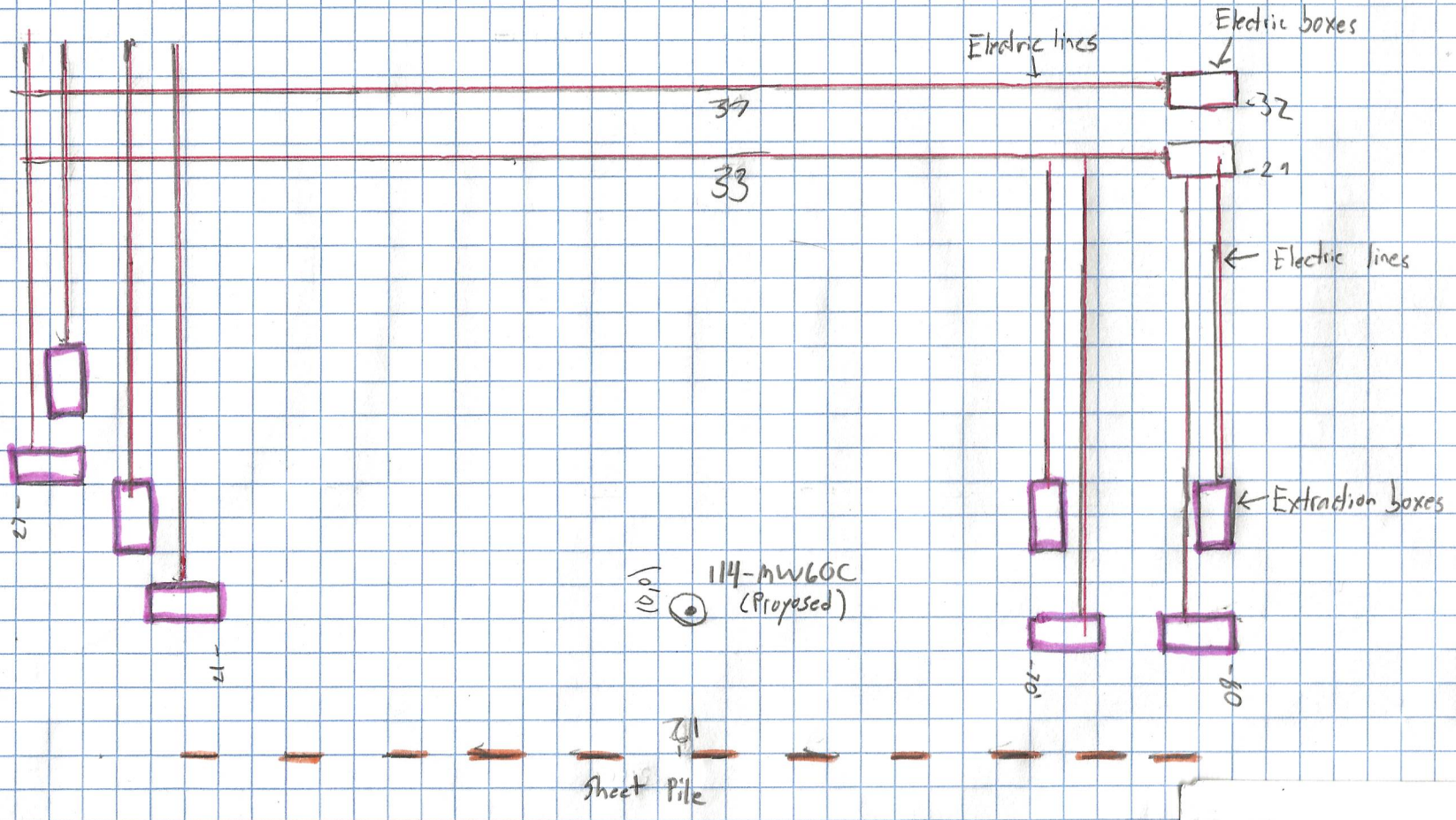


TPI environmental

**Field Notes**

1 of 4

AECOM
Site 114
Jersey City, NJ
03/25/20

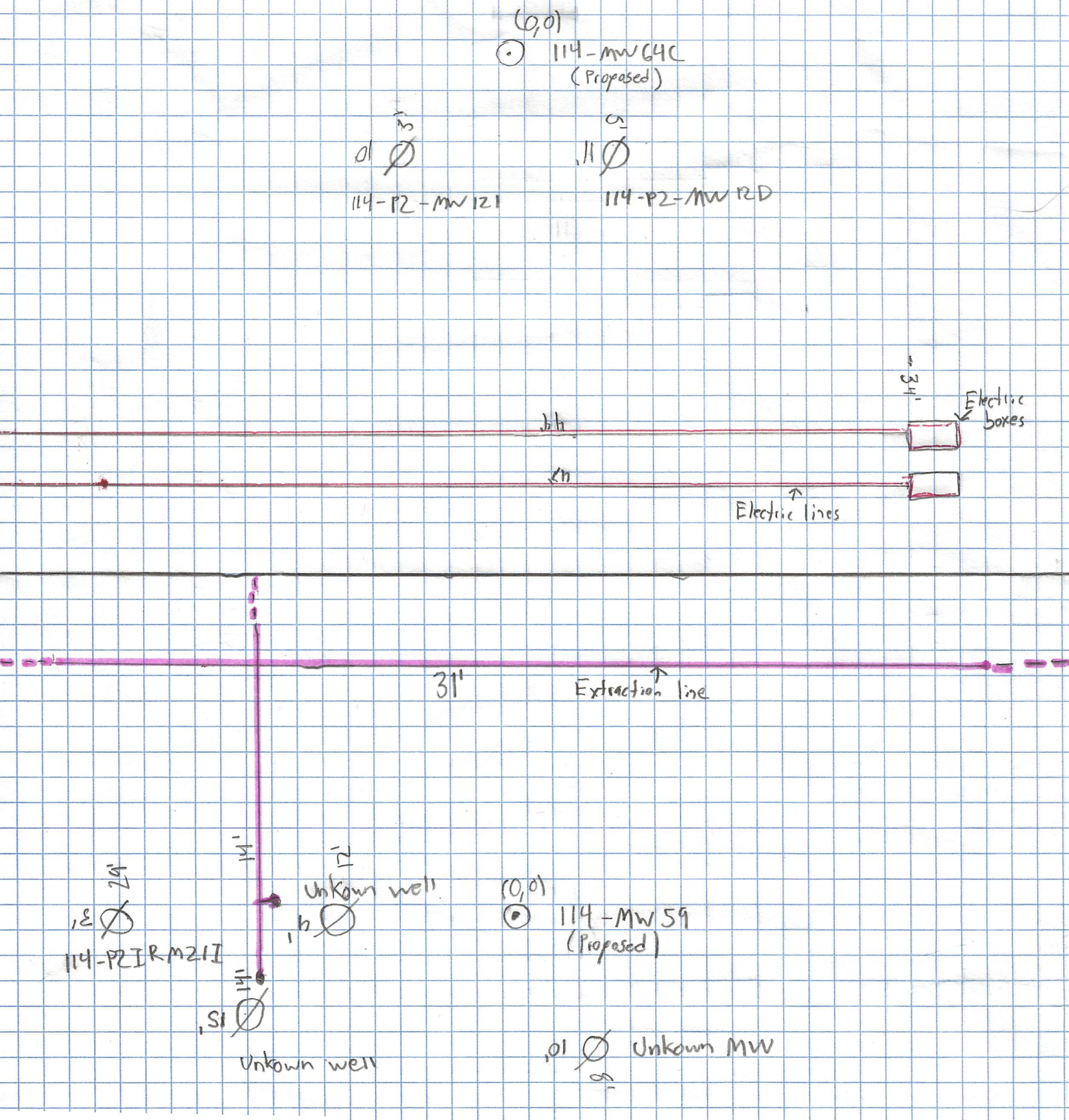


TPI environmental

**Field Notes**

TPI environmental

**Field Notes**

3 of 4

AECOM
Suite 1114
Jersey City, NJ
03/25/20

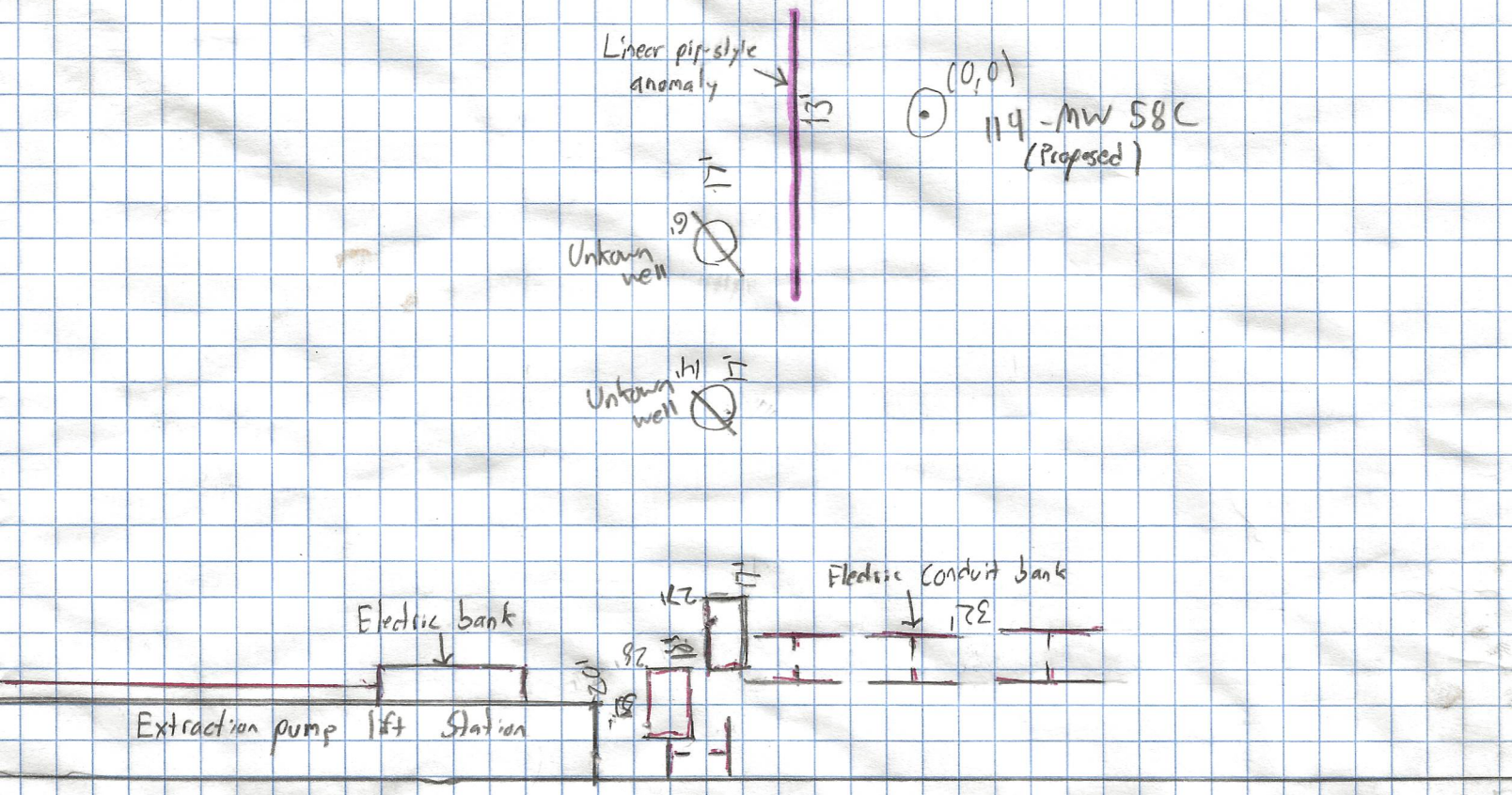


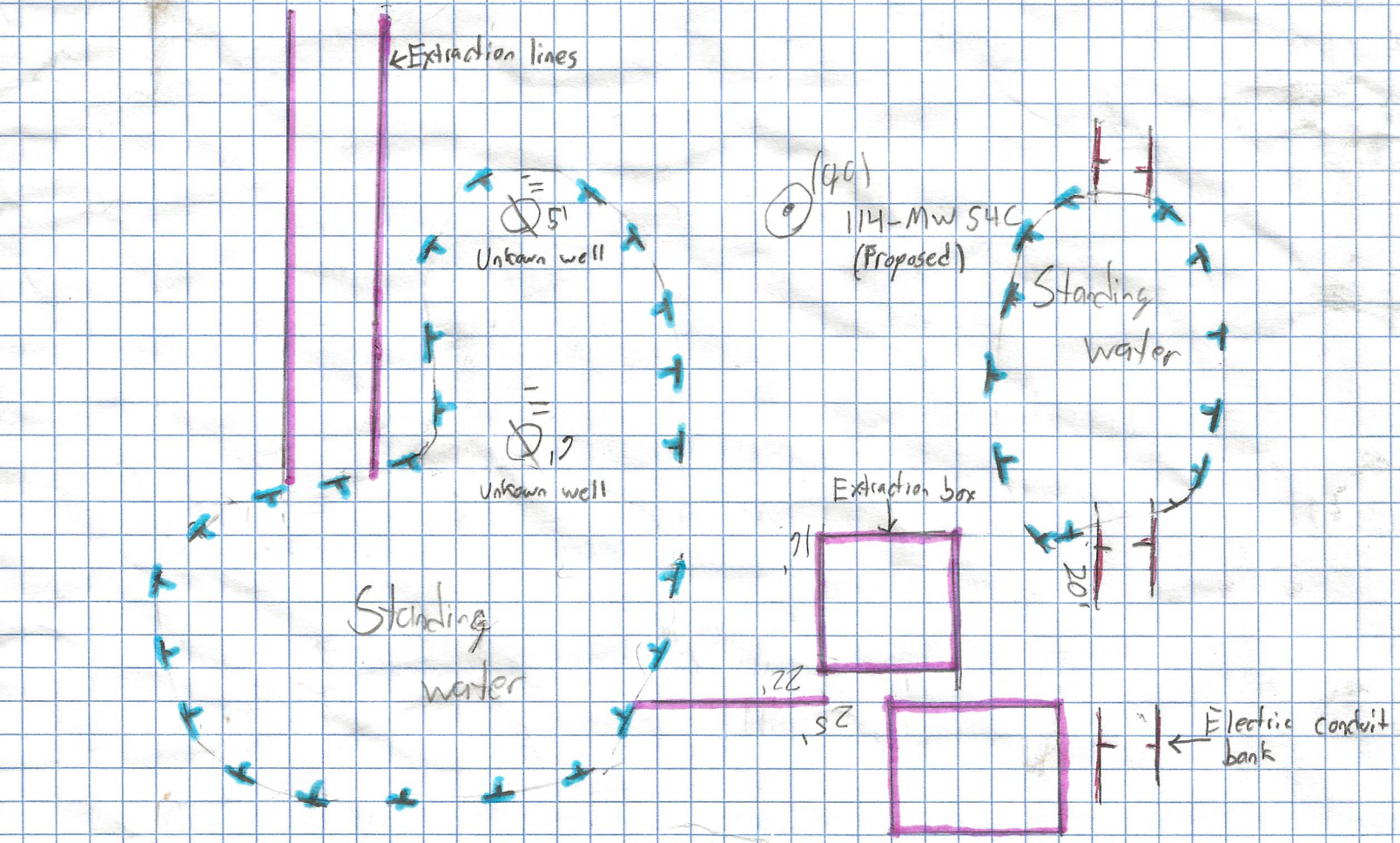

AECOM
Site 114
Jersey City, NJ
03/25/20

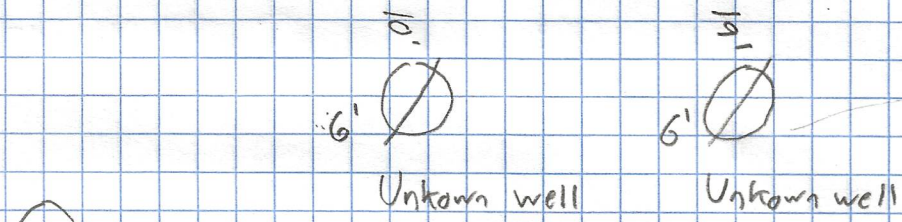


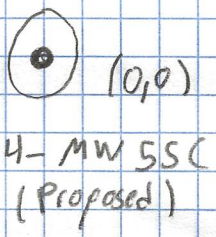


TPI environmental

**Field Notes**

**Attachment A**
**TPI's Geophysical Survey Equipment & Methods**

## Geonics EM61-MK2

The EM61 is a high resolution time-domain metal detector which is used to detect ferrous and non-ferrous metallic objects. It consists of a powerful transmitter that generates a pulsed primary magnetic field, which induces eddy currents in nearby metallic objects. The decay of these currents is measured by two receiver coils mounted on the coil assembly. The responses are recorded and displayed by an integrated computer based digital data logger with real time numeric and graphic display. Two ports on the logger allows simultaneous collection of EM and GPS data. For further processing and interpretation data can be transferred to a laptop computer in the field and a color contoured map of the EM61 reponse is prepared (see below).

**EM61 Color Contoured Map**

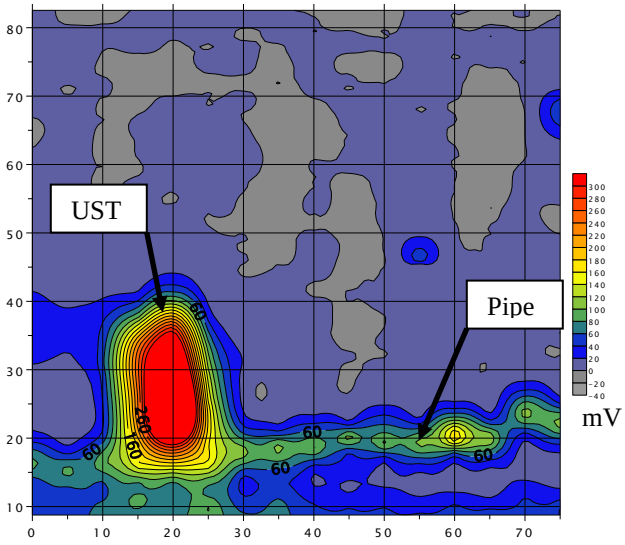


The EM61-MK2 detects a single 55 gallon drum at a depth of over 10-feet beneath the instrument, yet it is relatively insentsitive to interference from nearby surface metal such as fences, buildings, cars, etc. By making the measurement at a relatively long time after termination of the primary pulse, the response is practically independent of the electrical conductivity of the ground.

Due to its unique coil arrangements, the response curve is a single well defined positive peak greatly facilitating quick and accurate location of the target, the depth of which can usually be estimated from the width of the response and/or from relative response from each of the two receiver coils.

## GPR

This method is one of the most powerful and cost effective methods of locating man made objects and stratigraphic layers in the subsurface. It is an active method that transmits electromagnetic pulses into the ground, the radar pulses are reflected from materials or layers of differing dielectric and electrical conductive properties. The GPR computer measures the elapsed time in billionths of a second (nanoseconds) from when the pulses are sent and when they are received back at the surface that can then be converted to depth. Results of the radar scan are displayed as a continuous cross-section of the subsurface on the computer screen in real time. Metallic materials such as tanks, pipes, conduits, rebar etc. have vastly different dielectric properties then soils so there reflections are striking and relatively easy to identify. Pipes and tanks constructed of PVC, concrete, and terracotta also produce distinct reflections, however, these reflections are typically not as striking as metallic materials. A typical radar image of two metallic underground storage tanks is found below.

**GPR Image of Two Metallic USTs**

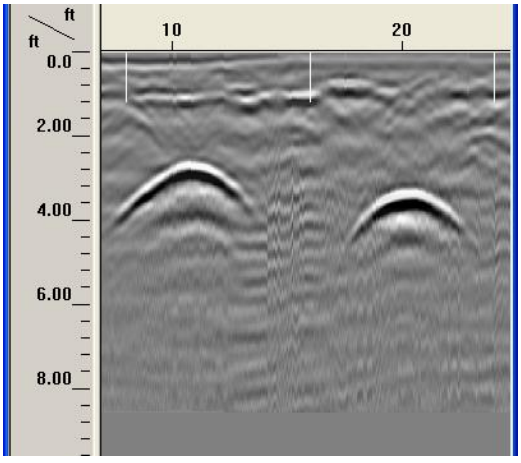


GPR surveys are conducted with the most advanced GPR equipment currently available

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including a Geophysical Survey Systems (GSSI) SIR-3000 subsurface radar unit with a 400 MHz antenna. The 400 MHz antenna has a depth range of approximately 20-feet and other antennas may be employed with the system depending on specific site conditions and objectives of the survey. The GPR transect data may be saved on the internal hard drive and transferred to a PC for storage, printing, and post processing. GSSI is the world leader in the development of GPR systems and was the first company to commercialize GPR in 1970. GPR hardware and software has improved dramatically over the last several years allowing for relatively rapid and economical GPR surveys. With 3-dimensional capabilities, the latest GPR software takes data processing a step farther then the former 2-dimensional viewing method. Three-dimensional visualization helps you to see the whole picture, giving you a powerful tool to interpret complex utility layouts and identify subtle linear features that may have otherwise been missed.

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## TW-6 EM Unit

TPI routinely employs a Fisher TW-6 electromagnetic metal detector when performing GPR surveys. The TW-6 creates an electromagnetic field with a transmitting coil and measures the strength of that field with a receiving coil. As the TW-6 passes over electrically conductive materials such as metal tanks or drums the field is distorted and the instrument produces an audible alarm based on the degree of the distortion. The TW-6 can detect conductive materials the size of drums or small tanks to depths of 10-feet. The instrument is actually a relatively poor metal detector which makes it ideal for locating large conductive materials such as metal drums, medium to large metal pipes, reinforced concrete pipes, and metal tanks. A more sensitive metal detector would produce "false positives" on small pieces of metal that are typically found in fill and throughout developed sites. If the survey area is underlain by reinforced concrete or cars and other large surficial metallic features are within 10-feet, the TW-6 will not be useful.

## Line Locating

Line locating is performed with a Radiodetection RD400 PXL-2 line locator with a 433 HCTX-2 transmitter. The transmitter emits a specific radio or electromagnetic signal which is indirectly induced or directly conducted onto the metallic line. The transmitter is capable of producing frequencies of 512 Hz, 8 kHz, or 33 kHz and the receiver is configured for the specific transmitted frequency. The induced signal is coupled with the line by either using an induction clamp which surrounds an exposed line or placing the transmitter above a buried line and transmitting the signal to it. The receiver may also be used in a passive locate mode (power) to identify the presence of current carrying lines. Nonmetallic lines may also be located by snaking a sonde down accessible lines with push rods. A sonde is a small transmitter that emits a specific electromagnetic frequency which can be detected by the receiver at depths of 12 to 16-feet.

**Inductive Sweep With Transmitter/Receiver**

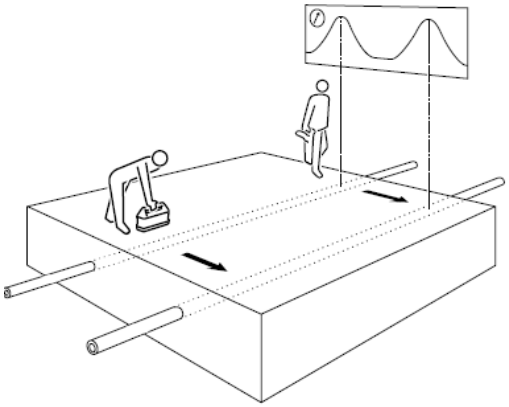

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# TPI's Geophysical Survey Equipment & Methods

## Resistivity

TPI conducts subsurface resistivity surveys using the AGI SuperSting R8 IP Earth Resistivity and IP Meter. The SuperSting unit measures the voltage drop of an induced electrical current across numerous electrodes as it travels through the electrically heterogenous subsurface. Multiple survey profiles are completed in this manner based upon the specific conditions of the field area in order to assemble a complete characterization of the ground resistivity properties. The resistivity data is then processed and examined for evidence of significant subsurface features including bedrock surfaces, perched groundwater tables, cavities/sinkholes, or potential contaminant plumes.




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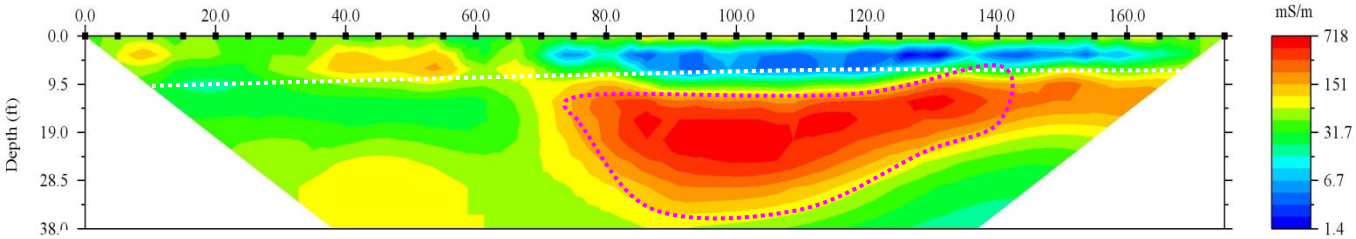


**Resistivity pseudosection across a backfilled canal. Approximately 10' of high resistivity/low conductivity surficial fill (blue) over low resistivity/high conductivity canal backfill (orange-red).**

## Down-hole Conductivity

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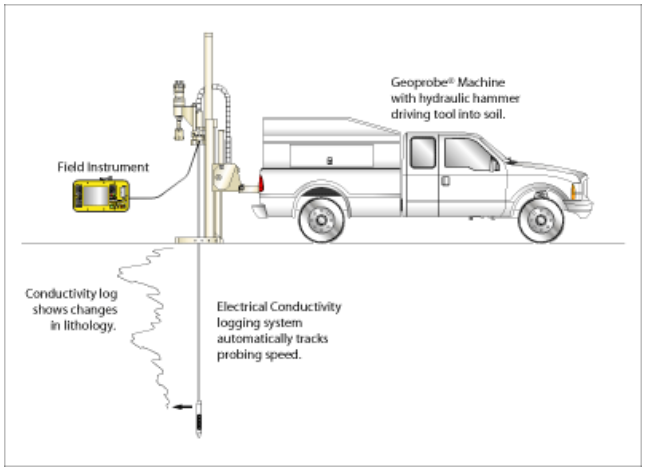




**Electrical conductivity probe**

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July 09, 2020

Shree Ravi
Aecom
30 Knightsbridge Road, Suite 520
Piscataway, NJ 08854

**Project: Geophysical Survey – Site 114, Carteret Avenue, Jersey City, NJ**

Dear Shree;

The following is a brief letter report detailing the results of the geophysical survey performed at the above referenced site. Site maps and/or pertinent ground penetrating radar (GPR) transects are contained in the report and Appendix A. It would be helpful to review Appendix A and the site maps when reading this report. TPI's standard practice is to indicate the results of the geophysical survey by marking all identified utility lines, tanks, and GPR anomalies etc. with chalk, paint or flags. It should be noted that this report is a means of transferring data and results of data interpretation, which was performed during the time allotted for the fieldwork.

Project Scope and Visual Site Inspection

TPI Environmental, Inc. (TPI) was contracted by Aecom (client) to clear proposed well locations and to locate private utilities in the immediate vicinity of the wells. The site consists of an active construction site, located at the above address and as indicated on Figure 1. Upon arrival to the site on June 18, 2020, TPI performed a site walk to review One Call utility mark outs and evidence of other on-site utilities in the vicinity of the soil boring locations. During the site walk the following areas of interest were noted;

- Utilities to be investigated during this survey include private electric and remediation piping.

Methodology

Geophysical surveys are typically accomplished by employing the following techniques; GPR, Fisher TW6 electromagnetic metal detection (TW6 EM), a Geonics EM61-MK2 Time – Domain Electromagnetic Detector unit (EM61), radio frequency line locating (RF), and magnetics. Known utilities are typically traced with the RF unit, GPR, and the TW6 EM unit depending on the size, matrix and conductive properties of the line. The EM61 is a high power, high sensitivity metal detector capable of detecting both ferrous and non-ferrous metal. The TW6 EM unit sounds an audible alarm in the presence of a large mass of metal such as an UST. A description and discussion of these geophysical methods as well as TPI's standard procedures for performing geophysical surveys is found in Appendix A. In general, "blind surveys" are typically performed by initially scanning the site with a TW6 EM unit and/or an EM61 unit and noting areas of relatively high EM response. Then locations with high EM response are further investigated with GPR. EM units are typically not effective and practical in areas underlain with reinforced concrete and/or the presence of ubiquitous metallic objects.

Geophysical Survey Results

The geophysical survey at this site was accomplished with the RF and GPR units. Known utilities were traced with RF and confirmed with GPR. The proposed well locations were scanned and cleared with a combination of RF and GPR. Results of the geophysical survey were marked on the ground with paint and a map of the survey results is contained in this report. Results of the geophysical survey are as follows;

- Private electric utilities, in addition to remediation piping, were located and marked with paint.
- Five (5) proposed well locations were scanned, moved as needed, and marked with white paint.

TPI completes non-intrusive geophysical surveys using equipment and techniques representing best available technology. TPI does not accept responsibility for survey limitations due to inherent technological limitations or unforeseen and varying site-specific conditions such as metal-reinforced concrete. In practical terms, TPI serves to reduce the risk of encountering subsurface utilities during excavation operations or greatly increase the chance of locating man made subsurface objects depending on the goal of the project. The results of this investigation should only be used as a tool and should not be considered a guarantee regarding the presence or absence of USTs or piping.

If you should have any questions or concerns, please do not hesitate to contact us.

**Your Project Team at TPI:**


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Mike Robbins, M.S.
Geologist
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Dustin Lutz
Geologist/P.M.
dlutz@tpienv.com




| | | | |
|---|---|---|---|
| TPI environmental | Site 114, Carteret Avenue, Jersey City, NJ | | Figure 1 |
| | Client: Aecom | Date: 06/18/20 | Geophysical Survey Results |

# Appendix A

# Field Notes and Survey Methods

TPI environmental

06/18/20

**Field Notes**

1 of 2

Client: AECOM

Site 114

Jersey City, NJ

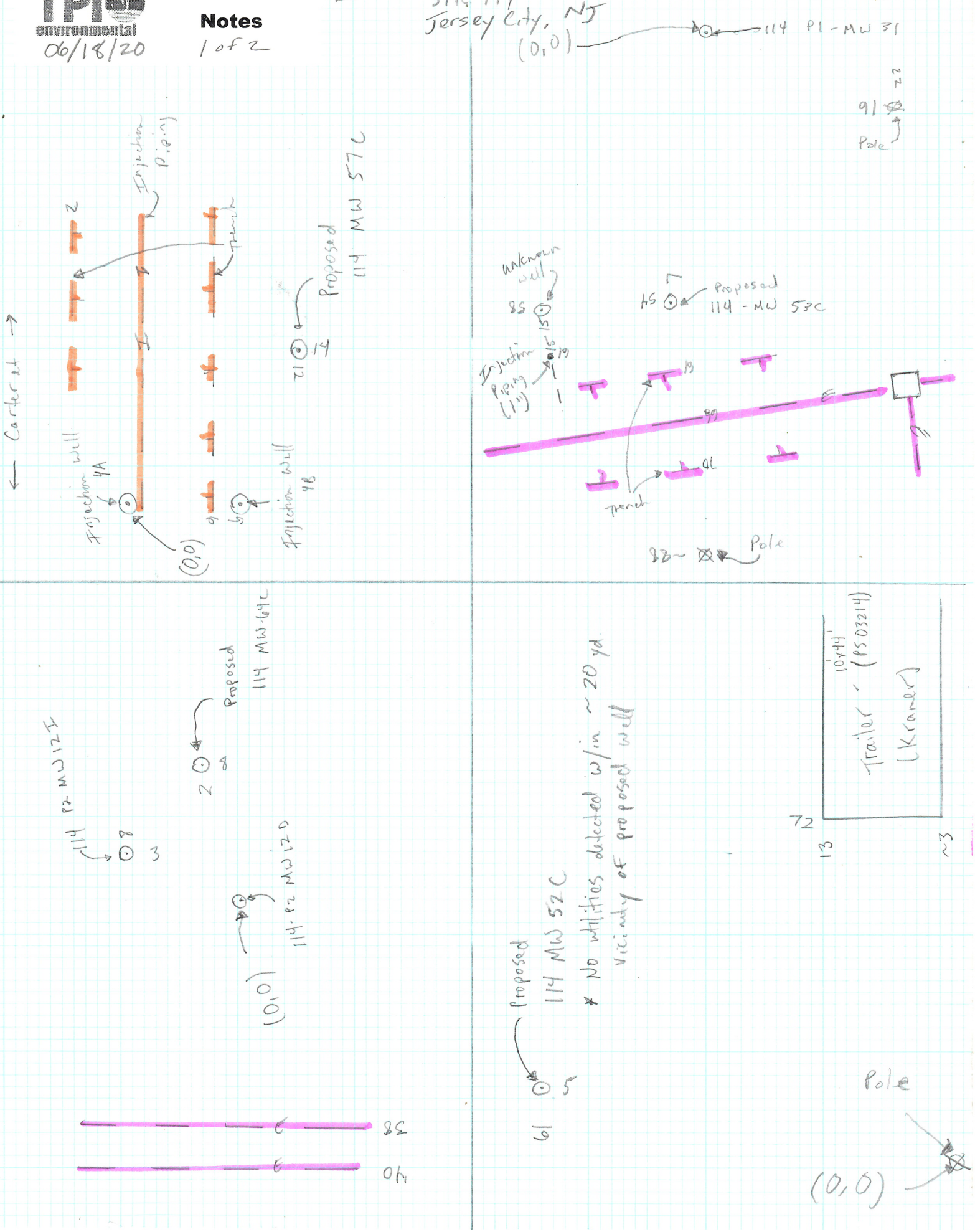

Client: AECOM
Site 114
Jersey City, NJ

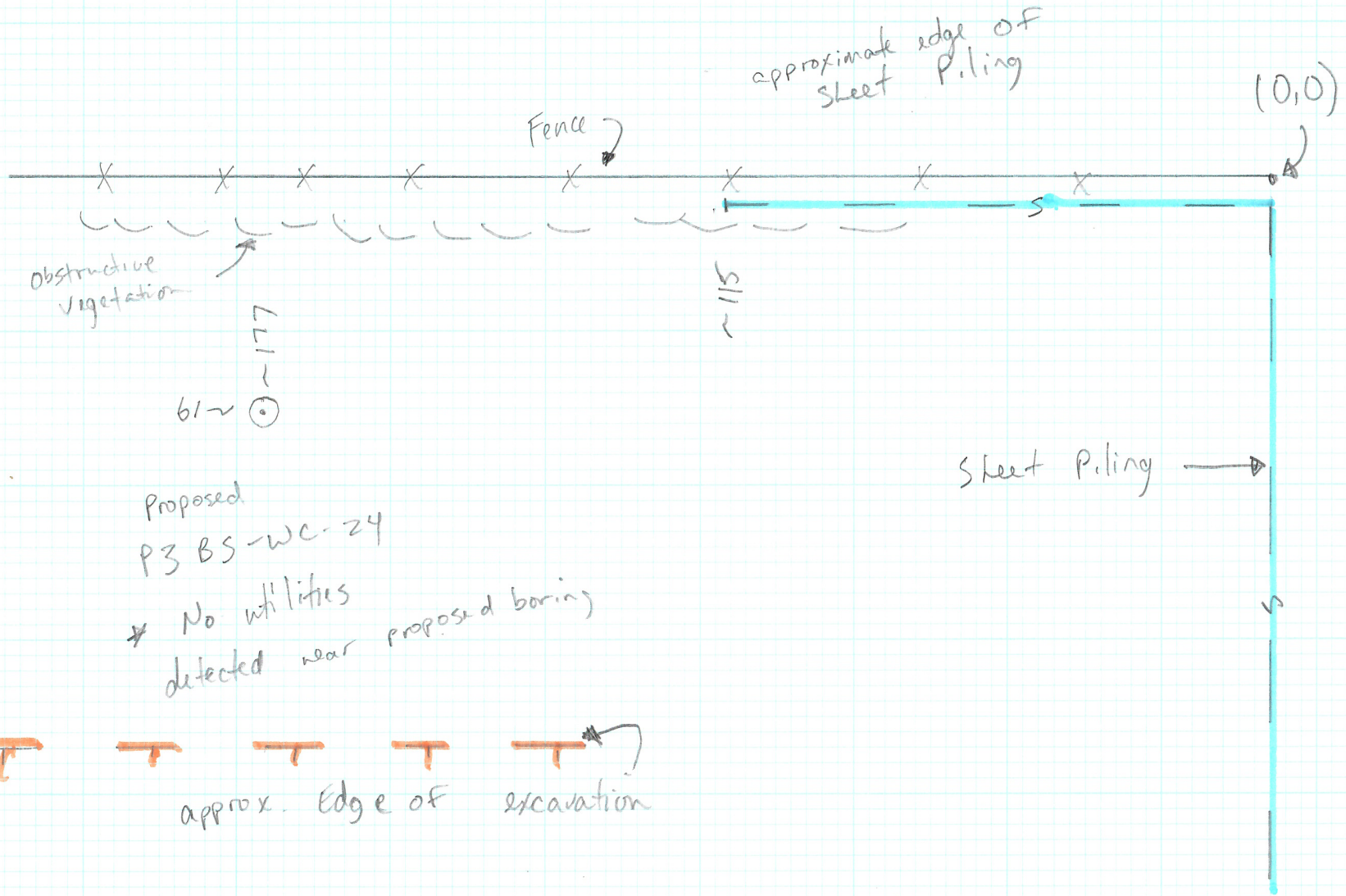


TPI environmental
06/18/20

Field Notes
2 of 2

**Attachment A**
**TPI's Geophysical Survey Equipment & Methods**

## Geonics EM61-MK2

The EM61 is a high resolution time-domain metal detector which is used to detect ferrous and non-ferrous metallic objects. It consists of a powerful transmitter that generates a pulsed primary magnetic field, which induces eddy currents in nearby metallic objects. The decay of these currents is measured by two receiver coils mounted on the coil assembly. The responses are recorded and displayed by an integrated computer based digital data logger with real time numeric and graphic display. Two ports on the logger allows simultaneous collection of EM and GPS data. For further processing and interpretation data can be transferred to a laptop computer in the field and a color contoured map of the EM61 reponse is prepared (see below).

**EM61 Color Contoured Map**

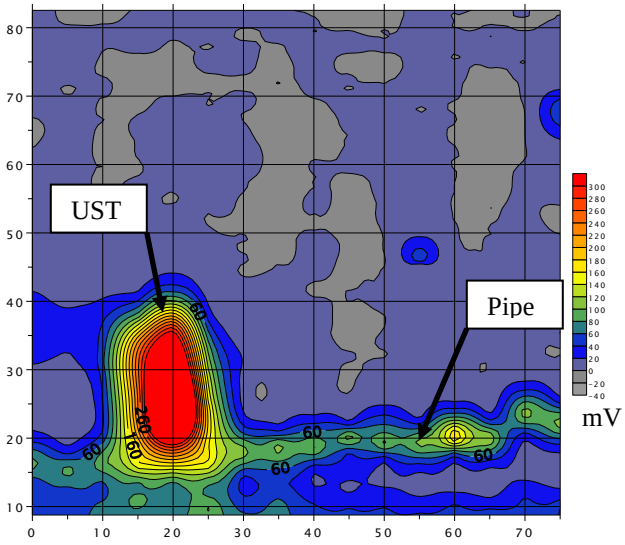


The EM61-MK2 detects a single 55 gallon drum at a depth of over 10-feet beneath the instrument, yet it is relatively insentsitive to interference from nearby surface metal such as fences, buildings, cars, etc. By making the measurement at a relatively long time after termination of the primary pulse, the response is practically independent of the electrical conductivity of the ground.

Due to its unique coil arrangements, the response curve is a single well defined positive peak greatly facilitating quick and accurate location of the target, the depth of which can usually be estimated from the width of the response and/or from relative response from each of the two receiver coils.

## GPR

This method is one of the most powerful and cost effective methods of locating man made objects and stratigraphic layers in the subsurface. It is an active method that transmits electromagnetic pulses into the ground, the radar pulses are reflected from materials or layers of differing dielectric and electrical conductive properties. The GPR computer measures the elapsed time in billionths of a second (nanoseconds) from when the pulses are sent and when they are received back at the surface that can then be converted to depth. Results of the radar scan are displayed as a continuous cross-section of the subsurface on the computer screen in real time. Metallic materials such as tanks, pipes, conduits, rebar etc. have vastly different dielectric properties then soils so there reflections are striking and relatively easy to identify. Pipes and tanks constructed of PVC, concrete, and terracotta also produce distinct reflections, however, these reflections are typically not as striking as metallic materials. A typical radar image of two metallic underground storage tanks is found below.

**GPR Image of Two Metallic USTs**

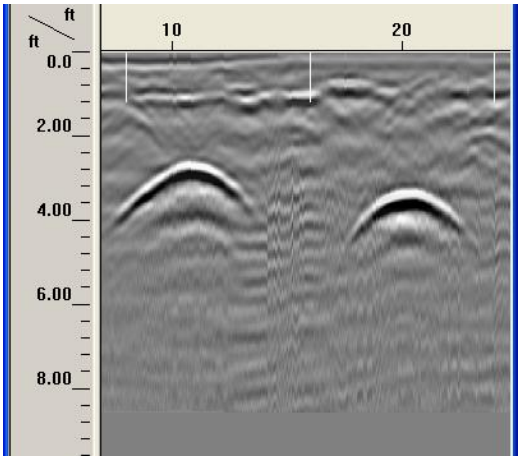


GPR surveys are conducted with the most advanced GPR equipment currently available

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including a Geophysical Survey Systems (GSSI) SIR-3000 subsurface radar unit with a 400 MHz antenna. The 400 MHz antenna has a depth range of approximately 20-feet and other antennas may be employed with the system depending on specific site conditions and objectives of the survey. The GPR transect data may be saved on the internal hard drive and transferred to a PC for storage, printing, and post processing. GSSI is the world leader in the development of GPR systems and was the first company to commercialize GPR in 1970. GPR hardware and software has improved dramatically over the last several years allowing for relatively rapid and economical GPR surveys. With 3-dimensional capabilities, the latest GPR software takes data processing a step farther then the former 2-dimensional viewing method. Three-dimensional visualization helps you to see the whole picture, giving you a powerful tool to interpret complex utility layouts and identify subtle linear features that may have otherwise been missed.

GPR surveys are typically conducted by searching for GPR hyperbolas indicative of subsurface pipes or tanks signatures in the vicinity of known entities. Theses signatures are marked on the ground and areas progressively further from the known entity are scanned and marked. This process is continued until the GPR operator performed enough scans to determine and mark the subsurface pipe, tank or anomaly. During this process the GPR data is typically not saved due to the immense size of the data files. After this phase of the GPR survey is completed, representative GPR transects or grids are performed and saved for the report and post processing. Some of the factors that may negatively affect GPR results include clay soils, rebar in concrete, high moisture content, depth of the target, and the integrity, size, and material of the target.

## TW-6 EM Unit

TPI routinely employs a Fisher TW-6 electromagnetic metal detector when performing GPR surveys. The TW-6 creates an electromagnetic field with a transmitting coil and measures the strength of that field with a receiving coil. As the TW-6 passes over electrically conductive materials such as metal tanks or drums the field is distorted and the instrument produces an audible alarm based on the degree of the distortion. The TW-6 can detect conductive materials the size of drums or small tanks to depths of 10-feet. The instrument is actually a relatively poor metal detector which makes it ideal for locating large conductive materials such as metal drums, medium to large metal pipes, reinforced concrete pipes, and metal tanks. A more sensitive metal detector would produce "false positives" on small pieces of metal that are typically found in fill and throughout developed sites. If the survey area is underlain by reinforced concrete or cars and other large surficial metallic features are within 10-feet, the TW-6 will not be useful.

## Line Locating

Line locating is performed with a Radiodetection RD400 PXL-2 line locator with a 433 HCTX-2 transmitter. The transmitter emits a specific radio or electromagnetic signal which is indirectly induced or directly conducted onto the metallic line. The transmitter is capable of producing frequencies of 512 Hz, 8 kHz, or 33 kHz and the receiver is configured for the specific transmitted frequency. The induced signal is coupled with the line by either using an induction clamp which surrounds an exposed line or placing the transmitter above a buried line and transmitting the signal to it. The receiver may also be used in a passive locate mode (power) to identify the presence of current carrying lines. Nonmetallic lines may also be located by snaking a sonde down accessible lines with push rods. A sonde is a small transmitter that emits a specific electromagnetic frequency which can be detected by the receiver at depths of 12 to 16-feet.

**Inductive Sweep With Transmitter/Receiver**

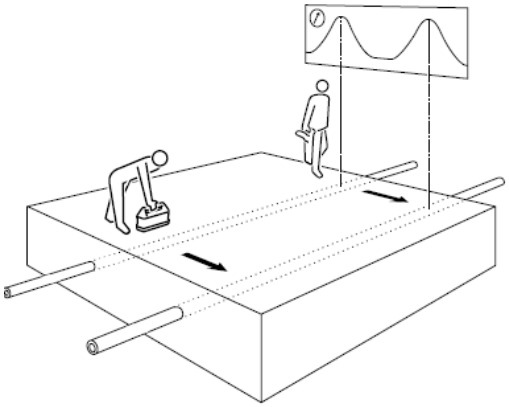

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# Attachment A
# TPI's Geophysical Survey Equipment & Methods

## Resistivity

TPI conducts subsurface resistivity surveys using the AGI SuperSting R8 IP Earth Resistivity and IP Meter. The SuperSting unit measures the voltage drop of an induced electrical current across numerous electrodes as it travels through the electrically heterogenous subsurface. Multiple survey profiles are completed in this manner based upon the specific conditions of the field area in order to assemble a complete characterization of the ground resistivity properties. The resistivity data is then processed and examined for evidence of significant subsurface features including bedrock surfaces, perched groundwater tables, cavities/sinkholes, or potential contaminant plumes.




**AGI SuperSting R8 IP Earth Resistivity and IP Meter assembly.**

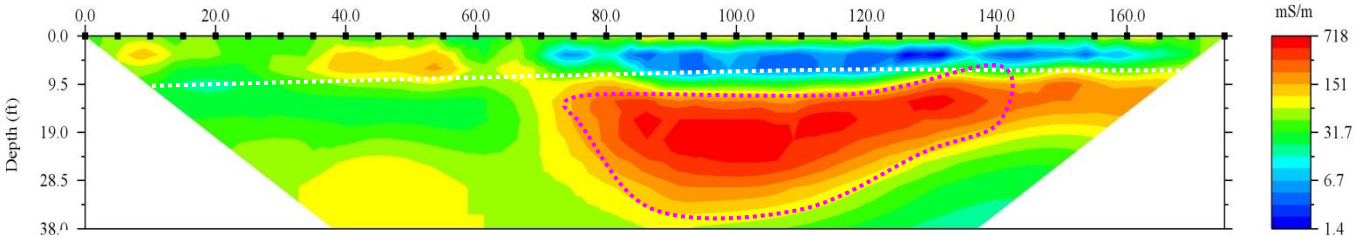


**Resistivity pseudosection across a backfilled canal. Approximately 10' of high resistivity/low conductivity surficial fill (blue) over low resistivity/high conductivity canal backfill (orange-red).**

## Down-hole Conductivity

TPI is also able to collect down-hole soil conductivity data with an electric conductivity probe. The EC probe is driven into the subsurface by a direct push unit. A current is induced in the native soil between two contacts at opposite ends of the probe. The soil conductivity is then calculated based upon the ratio of induced current to resultant voltage across the probe. Down-hole EC profiling is particularly useful in the efficient determination of soil grain size (permeable sands vs impermeable clays), water content, and metal content.

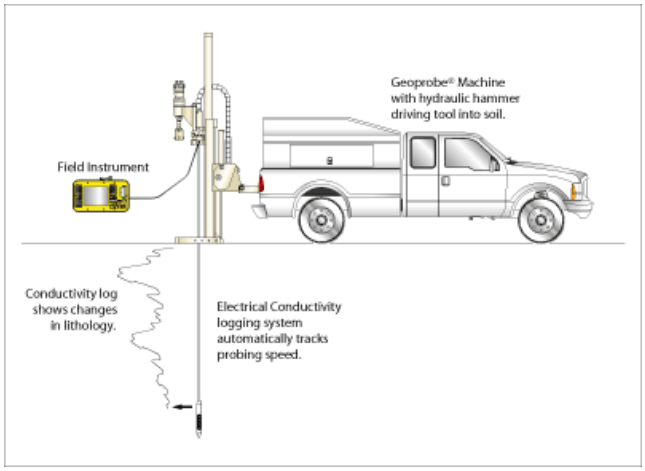




**Electrical conductivity probe**

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December 18, 2020

Shree Ravi
AECOM
30 Knightsbridge Road, Suite 520
Piscataway, NJ 08854

**Project: Geophysical Survey – 70 Carteret Avenue, Jersey City, NJ**

Dear Shree;

The following is a brief letter report detailing the results of the geophysical survey performed at the above referenced site. Site maps and/or pertinent ground penetrating radar (GPR) transects are contained in the report and Appendix A. It would be helpful to review Appendix A and the site maps when reading this report. TPI's standard practice is to indicate the results of the geophysical survey by marking all identified utility lines, tanks, and GPR anomalies etc. with chalk, paint or flags. It should be noted that this report is a means of transferring data and results of data interpretation, which was performed during the time allotted for the fieldwork.

Project Scope and Visual Site Inspection

TPI Environmental, Inc. (TPI) was contracted by AECOM (client) to clear soil borings and to locate private utilities in the immediate vicinity of the soil borings. The site consists of a large gravel-filled lot currently under environmental remediation, located at the above address and as indicated on Figures 1 – 4. Upon arrival to the site on December 01, 2020, TPI performed a site walk to review One Call utility mark outs and evidence of other on-site utilities in the vicinity of the soil boring locations. During the site walk the following areas of interest were noted;

- Utilities to be investigated during this survey include private electric, water, and sheet piling.

Methodology

Geophysical surveys are typically accomplished by employing the following techniques; GPR, Fisher TW6 electromagnetic metal detection (TW6 EM), a Geonics EM61-MK2 Time – Domain Electromagnetic Detector unit (EM61), radio frequency line locating (RF), and magnetics. Known utilities are typically traced with the RF unit, GPR, and the TW6 EM unit depending on the size, matrix and conductive properties of the line. The EM61 is a high power, high sensitivity metal detector capable of detecting both ferrous and non-ferrous metal. The TW6 EM unit sounds an audible alarm in the presence of a large mass of metal such as an UST. A description and discussion of these geophysical methods as well as TPI's standard procedures for performing geophysical surveys is found in Appendix A. In general, "blind surveys" are typically performed by initially scanning the site with a TW6 EM unit and/or an EM61 unit and noting areas of relatively high EM response. Then locations with high EM response are further investigated with GPR. EM units are typically not effective and practical in areas underlain with reinforced concrete and/or the presence of ubiquitous metallic objects.

Geophysical Survey Results

The geophysical survey at this site was accomplished with the RF and GPR units. Known utilities were traced with RF and confirmed with GPR. Proposed soil boring locations were scanned and cleared with a combination of RF and GPR. Results of the geophysical survey were marked on the ground with paint and maps of the survey results are contained in this report. Results of the geophysical survey are as follows;

- Sheet piling, electric and water utilities were located and marked with paint.
- Seven soil boring locations were scanned, moved as needed, and marked with white paint.

TPI completes non-intrusive geophysical surveys using equipment and techniques representing best available technology. TPI does not accept responsibility for survey limitations due to inherent technological limitations or unforeseen and varying site-specific conditions such as metal-reinforced concrete. In practical terms, TPI serves to reduce the risk of encountering subsurface utilities during excavation operations or greatly increase the chance of locating man made subsurface objects depending on the goal of the project. The results of this investigation should only be used as a tool and should not be considered a guarantee regarding the presence or absence of USTs or piping.

If you should have any questions or concerns, please do not hesitate to contact us.

**Your Project Team at TPI:**


Frank Fendler, M.S., P.G.
President
ffendler@tpienv.com

Mike Robbins, M.S.
Geologist
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Dustin Lutz
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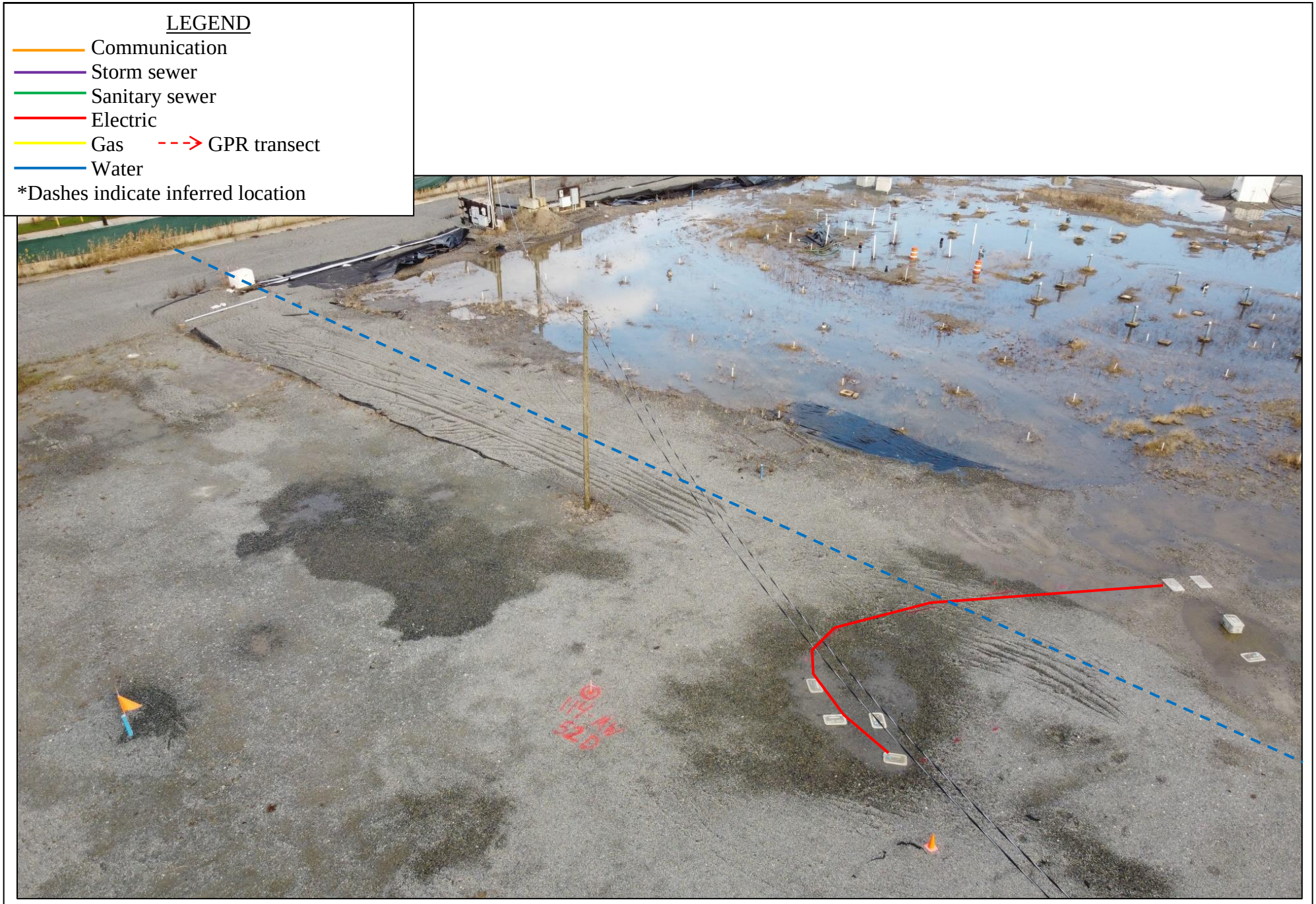


| | | | |
|---|---|---|---|
| TPI environmental | 70 Carteret Avenue, Jersey City, NJ | | Figure 1 |
| | Client: AECOM | Date: 12/01/20 | Geophysical Survey Results |

LEGEND

- Communication
- Storm sewer
- Sanitary sewer
- Electric
- Gas
- GPR transect
- Extraction piping

*Dashes indicate inferred location

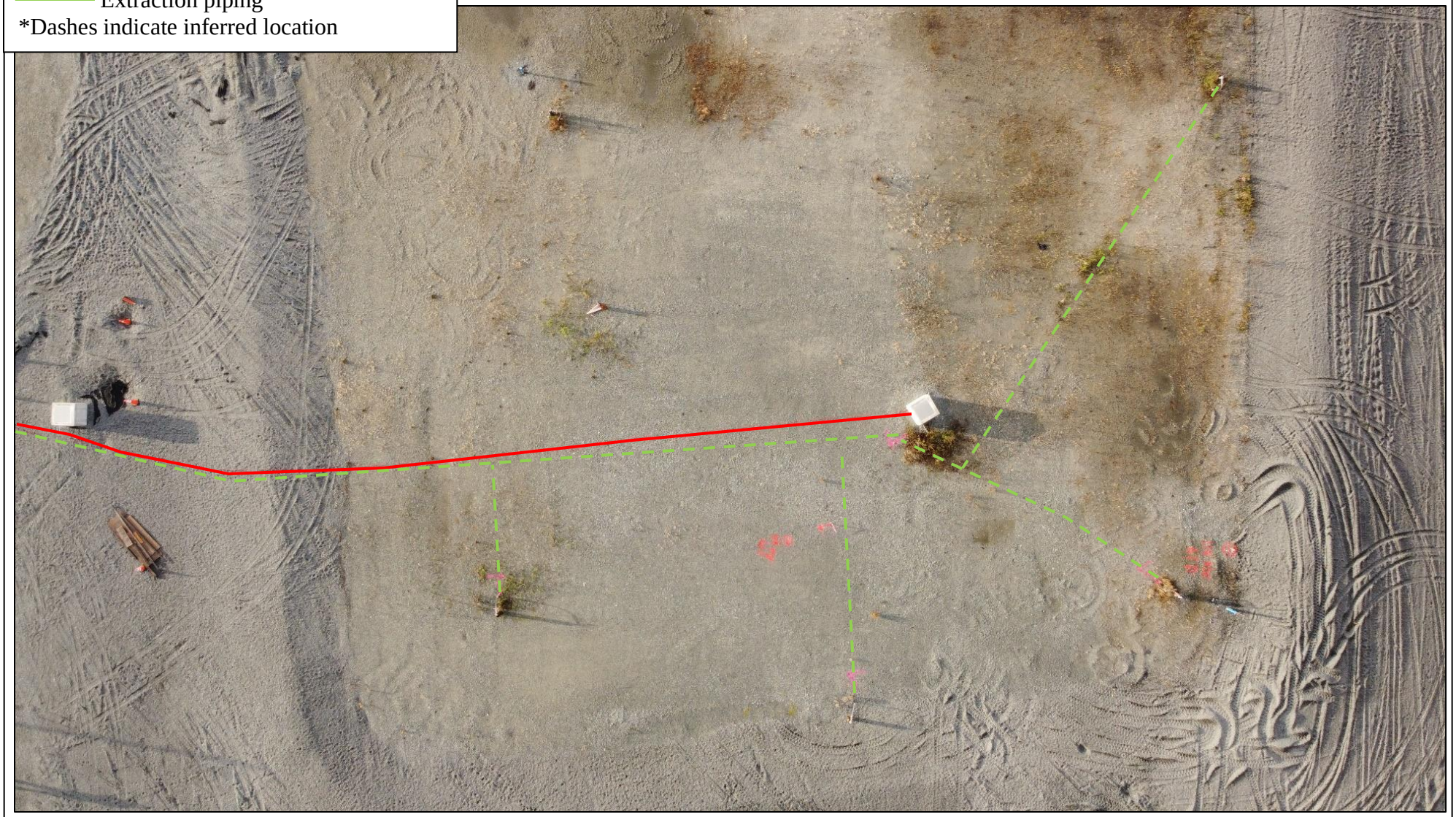

| | | | |
|---|---|---|---|
| TPI environmental | 70 Carteret Avenue, Jersey City, NJ | | Figure 2 |
| | Client: AECOM | Date: 12/01/20 | Geophysical Survey Results |

LEGEND

- Communication
- Storm sewer
- Sanitary sewer
- Electric
- Gas
- GPR transect
- Water

*Dashes indicate inferred location



| | | | |
|---|---|---|---|
| TPI environmental | 70 Carteret Avenue, Jersey City, NJ | | Figure 3 |
| | Client: AECOM | Date: 12/01/20 | Geophysical Survey Results |




| | | | |
|---|---|---|---|
| TPI environmental | 70 Carteret Avenue, Jersey City, NJ | | Figure 4 |
| | Client: AECOM | Date: 12/01/20 | Geophysical Survey Results |

# Appendix A

# Survey Methods

**Attachment A**
**TPI's Geophysical Survey Equipment & Methods**

## Geonics EM61-MK2

The EM61 is a high resolution time-domain metal detector which is used to detect ferrous and non-ferrous metallic objects. It consists of a powerful transmitter that generates a pulsed primary magnetic field, which induces eddy currents in nearby metallic objects. The decay of these currents is measured by two receiver coils mounted on the coil assembly. The responses are recorded and displayed by an integrated computer based digital data logger with real time numeric and graphic display. Two ports on the logger allows simultaneous collection of EM and GPS data. For further processing and interpretation data can be transferred to a laptop computer in the field and a color contoured map of the EM61 reponse is prepared (see below).

**EM61 Color Contoured Map**

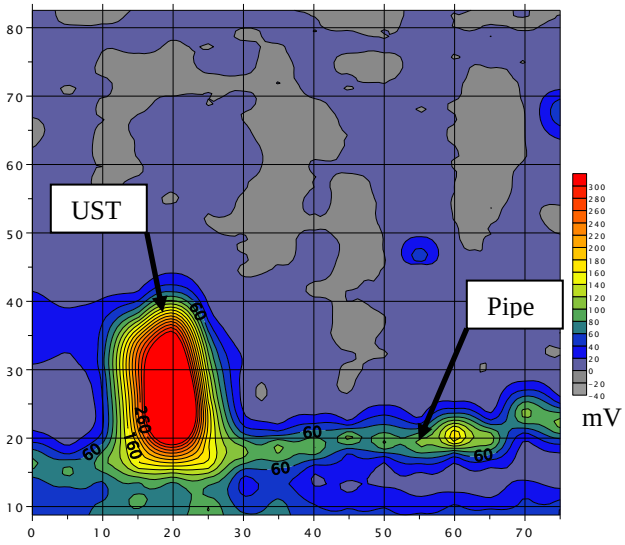


The EM61-MK2 detects a single 55 gallon drum at a depth of over 10-feet beneath the instrument, yet it is relatively insentsitive to interference from nearby surface metal such as fences, buildings, cars, etc. By making the measurement at a relatively long time after termination of the primary pulse, the response is practically independent of the electrical conductivity of the ground.

Due to its unique coil arrangements, the response curve is a single well defined positive peak greatly facilitating quick and accurate location of the target, the depth of which can usually be estimated from the width of the response and/or from relative response from each of the two receiver coils.

## GPR

This method is one of the most powerful and cost effective methods of locating man made objects and stratigraphic layers in the subsurface. It is an active method that transmits electromagnetic pulses into the ground, the radar pulses are reflected from materials or layers of differing dielectric and electrical conductive properties. The GPR computer measures the elapsed time in billionths of a second (nanoseconds) from when the pulses are sent and when they are received back at the surface that can then be converted to depth. Results of the radar scan are displayed as a continuous cross-section of the subsurface on the computer screen in real time. Metallic materials such as tanks, pipes, conduits, rebar etc. have vastly different dielectric properties then soils so there reflections are striking and relatively easy to identify. Pipes and tanks constructed of PVC, concrete, and terracotta also produce distinct reflections, however, these reflections are typically not as striking as metallic materials. A typical radar image of two metallic underground storage tanks is found below.

**GPR Image of Two Metallic USTs**

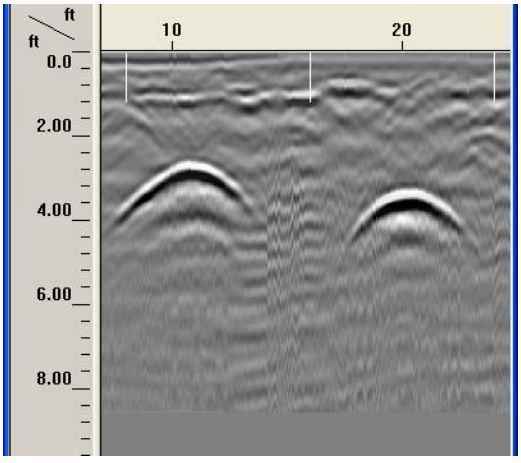


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including a Geophysical Survey Systems (GSSI) SIR-3000 subsurface radar unit with a 400 MHz antenna. The 400 MHz antenna has a depth range of approximately 20-feet and other antennas may be employed with the system depending on specific site conditions and objectives of the survey. The GPR transect data may be saved on the internal hard drive and transferred to a PC for storage, printing, and post processing. GSSI is the world leader in the development of GPR systems and was the first company to commercialize GPR in 1970. GPR hardware and software has improved dramatically over the last several years allowing for relatively rapid and economical GPR surveys. With 3-dimensional capabilities, the latest GPR software takes data processing a step farther then the former 2-dimensional viewing method. Three-dimensional visualization helps you to see the whole picture, giving you a powerful tool to interpret complex utility layouts and identify subtle linear features that may have otherwise been missed.

GPR surveys are typically conducted by searching for GPR hyperbolas indicative of subsurface pipes or tanks signatures in the vicinity of known entities. Theses signatures are marked on the ground and areas progressively further from the known entity are scanned and marked. This process is continued until the GPR operator performed enough scans to determine and mark the subsurface pipe, tank or anomaly. During this process the GPR data is typically not saved due to the immense size of the data files. After this phase of the GPR survey is completed, representative GPR transects or grids are performed and saved for the report and post processing. Some of the factors that may negatively affect GPR results include clay soils, rebar in concrete, high moisture content, depth of the target, and the integrity, size, and material of the target.

## TW-6 EM Unit

TPI routinely employs a Fisher TW-6 electromagnetic metal detector when performing GPR surveys. The TW-6 creates an electromagnetic field with a transmitting coil and measures the strength of that field with a receiving coil. As the TW-6 passes over electrically conductive materials such as metal tanks or drums the field is distorted and the instrument produces an audible alarm based on the degree of the distortion. The TW-6 can detect conductive materials the size of drums or small tanks to depths of 10-feet. The instrument is actually a relatively poor metal detector which makes it ideal for locating large conductive materials such as metal drums, medium to large metal pipes, reinforced concrete pipes, and metal tanks. A more sensitive metal detector would produce "false positives" on small pieces of metal that are typically found in fill and throughout developed sites. If the survey area is underlain by reinforced concrete or cars and other large surficial metallic features are within 10-feet, the TW-6 will not be useful.

## Line Locating

Line locating is performed with a Radiodetection RD400 PXL-2 line locator with a 433 HCTX-2 transmitter. The transmitter emits a specific radio or electromagnetic signal which is indirectly induced or directly conducted onto the metallic line. The transmitter is capable of producing frequencies of 512 Hz, 8 kHz, or 33 kHz and the receiver is configured for the specific transmitted frequency. The induced signal is coupled with the line by either using an induction clamp which surrounds an exposed line or placing the transmitter above a buried line and transmitting the signal to it. The receiver may also be used in a passive locate mode (power) to identify the presence of current carrying lines. Nonmetallic lines may also be located by snaking a sonde down accessible lines with push rods. A sonde is a small transmitter that emits a specific electromagnetic frequency which can be detected by the receiver at depths of 12 to 16-feet.

**Inductive Sweep With Transmitter/Receiver**

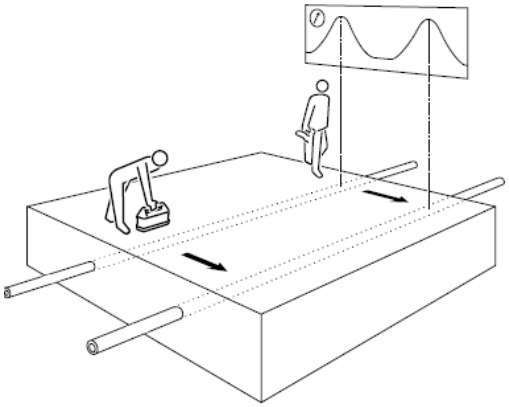

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# Attachment A
# TPI's Geophysical Survey Equipment & Methods

## Resistivity

TPI conducts subsurface resistivity surveys using the AGI SuperSting R8 IP Earth Resistivity and IP Meter. The SuperSting unit measures the voltage drop of an induced electrical current across numerous electrodes as it travels through the electrically heterogenous subsurface. Multiple survey profiles are completed in this manner based upon the specific conditions of the field area in order to assemble a complete characterization of the ground resistivity properties. The resistivity data is then processed and examined for evidence of significant subsurface features including bedrock surfaces, perched groundwater tables, cavities/sinkholes, or potential contaminant plumes.




**AGI SuperSting R8 IP Earth Resistivity and IP Meter assembly.**

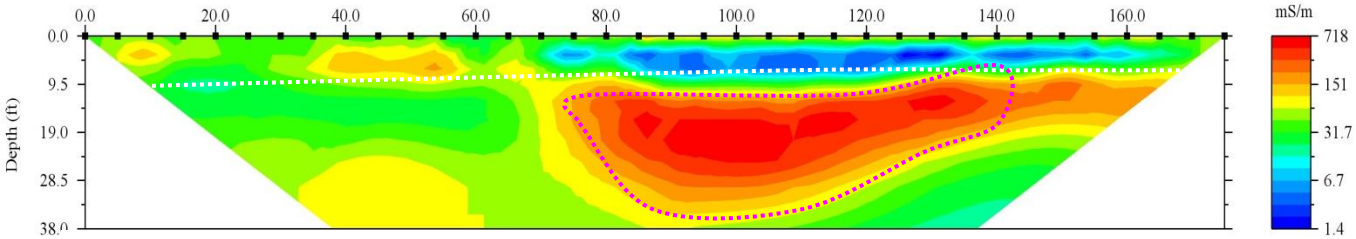


**Resistivity pseudosection across a backfilled canal. Approximately 10' of high resistivity/low conductivity surficial fill (blue) over low resistivity/high conductivity canal backfill (orange-red).**

## Down-hole Conductivity

TPI is also able to collect down-hole soil conductivity data with an electric conductivity probe. The EC probe is driven into the subsurface by a direct push unit. A current is induced in the native soil between two contacts at opposite ends of the probe. The soil conductivity is then calculated based upon the ratio of induced current to resultant voltage across the probe. Down-hole EC profiling is particularly useful in the efficient determination of soil grain size (permeable sands vs impermeable clays), water content, and metal content.

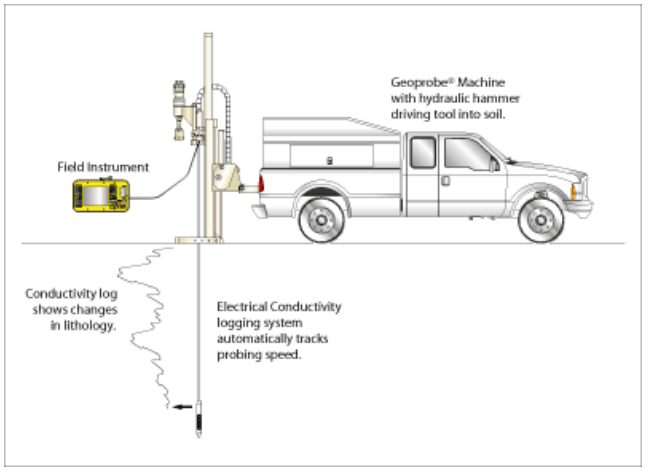




**Electrical conductivity probe**

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March 19, 2020

Shree Ravi
Aecom
30 Knightsbridge Road, Suite 520
Piscataway, NJ 08854

**Project: Geophysical Survey – Site 114, Carteret Avenue, Jersey City, NJ**

Dear Shree;

The following is a brief letter report detailing the results of the geophysical survey performed at the above referenced site. Site maps and/or pertinent ground penetrating radar (GPR) transects are contained in the report and Appendix A. It would be helpful to review Appendix A and the site maps when reading this report. TPI's standard practice is to indicate the results of the geophysical survey by marking all identified utility lines, tanks, and GPR anomalies etc. with chalk, paint or flags. It should be noted that this report is a means of transferring data and results of data interpretation, which was performed during the time allotted for the fieldwork.

Project Scope and Visual Site Inspection

TPI Environmental, Inc. (TPI) was contracted by Aecom (client) to clear proposed well locations and to locate private utilities in the immediate vicinity of the wells. The site consists of an active construction site, located at the above address and as indicated on Figure 1. Upon arrival to the site on March 11, 2020, TPI performed a site walk to review One Call utility mark outs and evidence of other on-site utilities in the vicinity of the soil boring locations. During the site walk the following areas of interest were noted;

- Utilities to be investigated during this survey include private electric and remediation piping.

Methodology

Geophysical surveys are typically accomplished by employing the following techniques; GPR, Fisher TW6 electromagnetic metal detection (TW6 EM), a Geonics EM61-MK2 Time – Domain Electromagnetic Detector unit (EM61), radio frequency line locating (RF), and magnetics. Known utilities are typically traced with the RF unit, GPR, and the TW6 EM unit depending on the size, matrix and conductive properties of the line. The EM61 is a high power, high sensitivity metal detector capable of detecting both ferrous and non-ferrous metal. The TW6 EM unit sounds an audible alarm in the presence of a large mass of metal such as an UST. A description and discussion of these geophysical methods as well as TPI's standard procedures for performing geophysical surveys is found in Appendix A. In general, "blind surveys" are typically performed by initially scanning the site with a TW6 EM unit and/or an EM61 unit and noting areas of relatively high EM response. Then locations with high EM response are further investigated with GPR. EM units are typically not effective and practical in areas underlain with reinforced concrete and/or the presence of ubiquitous metallic objects.

Geophysical Survey Results

The geophysical survey at this site was accomplished with the RF and GPR units. Known utilities were traced with RF and confirmed with GPR. The proposed well locations were scanned and cleared with a combination of RF and GPR. Results of the geophysical survey were marked on the ground with paint and a map of the survey results is contained in this report. Results of the geophysical survey are as follows;

- Private electric utilities, in addition to remediation piping, were located and marked with paint.
- Five proposed well locations were scanned, moved as needed, and marked with white paint.

TPI completes non-intrusive geophysical surveys using equipment and techniques representing best available technology. TPI does not accept responsibility for survey limitations due to inherent technological limitations or unforeseen and varying site-specific conditions such as metal-reinforced concrete. In practical terms, TPI serves to reduce the risk of encountering subsurface utilities during excavation operations or greatly increase the chance of locating man made subsurface objects depending on the goal of the project. The results of this investigation should only be used as a tool and should not be considered a guarantee regarding the presence or absence of USTs or piping.

If you should have any questions or concerns, please do not hesitate to contact us.

**Your Project Team at TPI:**


Frank Fendler, M.S., P.G.
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Geologist
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Dustin Lutz
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| | | | |
|---|---|---|---|
| TPI environmental | Site 114, Carteret Avenue, Jersey City, NJ | | Figure 1 |
| | Client: Aecom | Date: 03/11/20 | Geophysical Survey Results |

# Appendix A

# Field Notes and Survey Methods

AECOM
Site 114
Jersey City, NJ

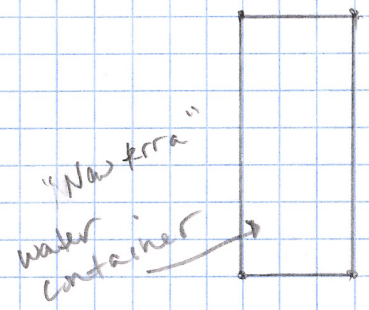


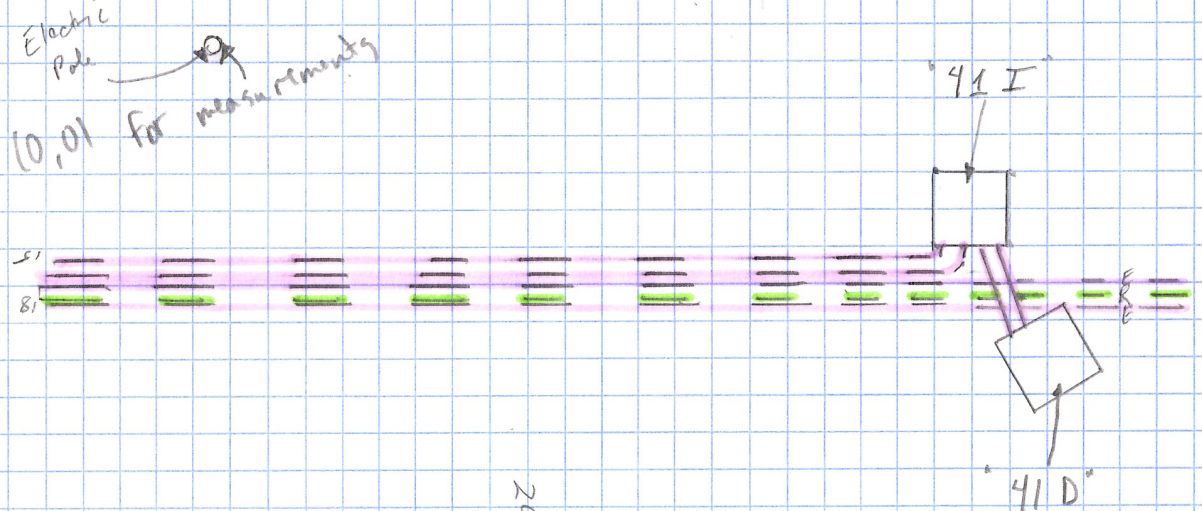


03/11/20

TPI environmental

**Field Notes**

1 of 1

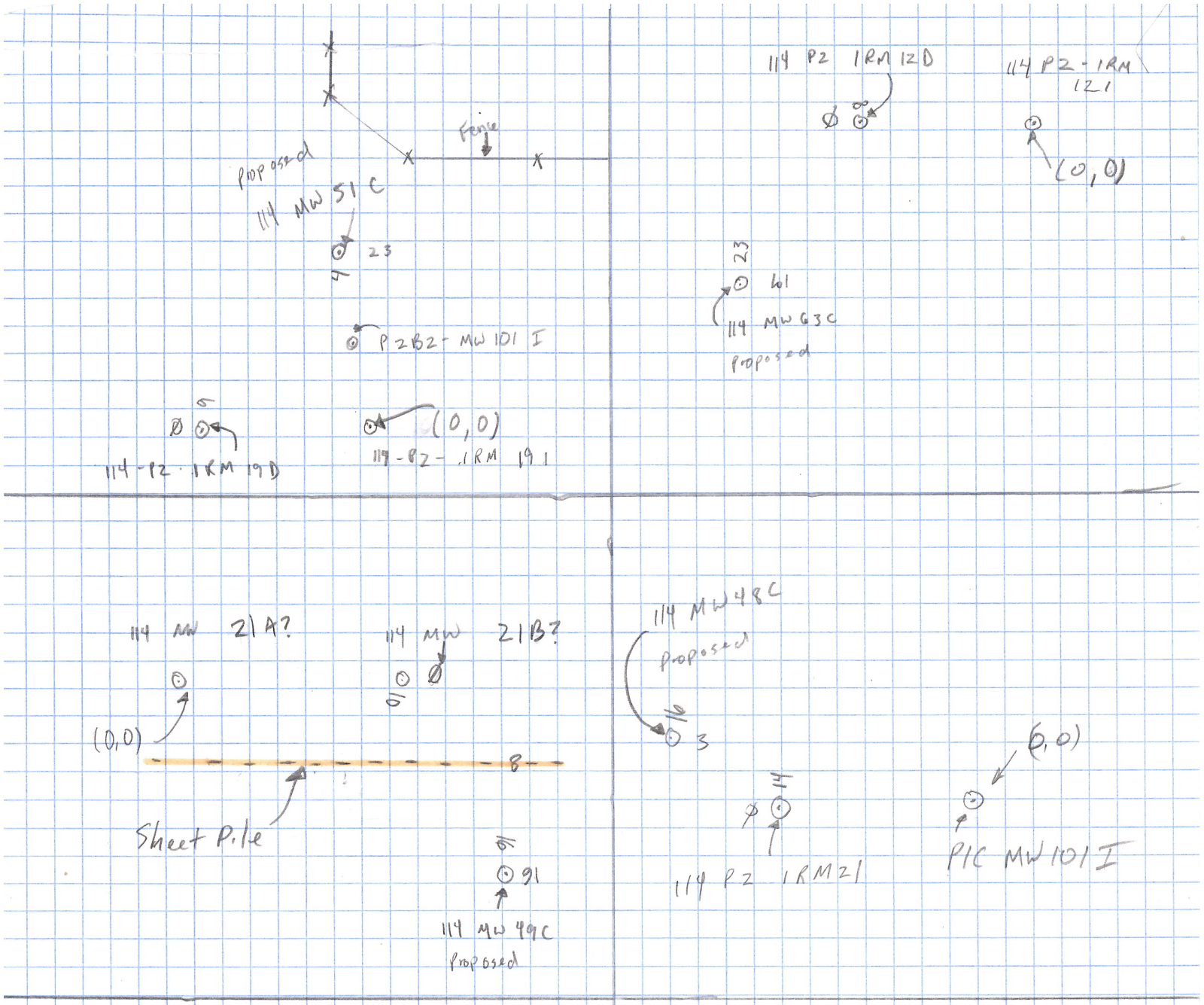


AECOM
Site 114
Jersey City, NJ

03/11/20

TPI environmental

**Field Notes**
2 of 2

**Attachment A**
**TPI's Geophysical Survey Equipment & Methods**

## Geonics EM61-MK2

The EM61 is a high resolution time-domain metal detector which is used to detect ferrous and non-ferrous metallic objects. It consists of a powerful transmitter that generates a pulsed primary magnetic field, which induces eddy currents in nearby metallic objects. The decay of these currents is measured by two receiver coils mounted on the coil assembly. The responses are recorded and displayed by an integrated computer based digital data logger with real time numeric and graphic display. Two ports on the logger allows simultaneous collection of EM and GPS data. For further processing and interpretation data can be transferred to a laptop computer in the field and a color contoured map of the EM61 reponse is prepared (see below).

**EM61 Color Contoured Map**

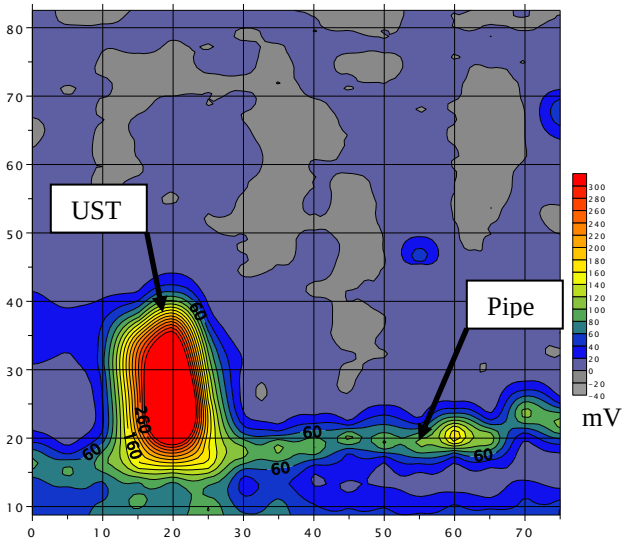


The EM61-MK2 detects a single 55 gallon drum at a depth of over 10-feet beneath the instrument, yet it is relatively insentsitive to interference from nearby surface metal such as fences, buildings, cars, etc. By making the measurement at a relatively long time after termination of the primary pulse, the response is practically independent of the electrical conductivity of the ground.

Due to its unique coil arrangements, the response curve is a single well defined positive peak greatly facilitating quick and accurate location of the target, the depth of which can usually be estimated from the width of the response and/or from relative response from each of the two receiver coils.

## GPR

This method is one of the most powerful and cost effective methods of locating man made objects and stratigraphic layers in the subsurface. It is an active method that transmits electromagnetic pulses into the ground, the radar pulses are reflected from materials or layers of differing dielectric and electrical conductive properties. The GPR computer measures the elapsed time in billionths of a second (nanoseconds) from when the pulses are sent and when they are received back at the surface that can then be converted to depth. Results of the radar scan are displayed as a continuous cross-section of the subsurface on the computer screen in real time. Metallic materials such as tanks, pipes, conduits, rebar etc. have vastly different dielectric properties then soils so there reflections are striking and relatively easy to identify. Pipes and tanks constructed of PVC, concrete, and terracotta also produce distinct reflections, however, these reflections are typically not as striking as metallic materials. A typical radar image of two metallic underground storage tanks is found below.

**GPR Image of Two Metallic USTs**

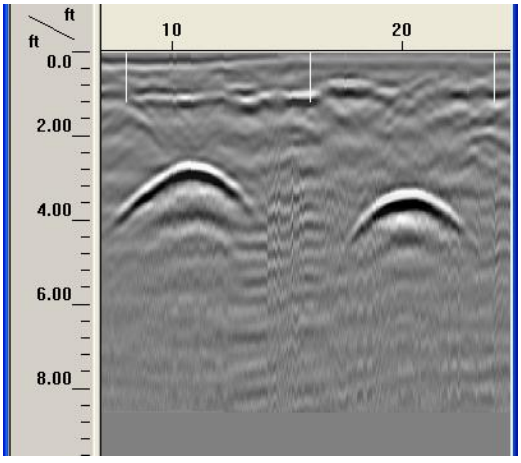


GPR surveys are conducted with the most advanced GPR equipment currently available

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Easton, PA 18045
ffendler@tpienv.com
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888-204-3266-Phone
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including a Geophysical Survey Systems (GSSI) SIR-3000 subsurface radar unit with a 400 MHz antenna. The 400 MHz antenna has a depth range of approximately 20-feet and other antennas may be employed with the system depending on specific site conditions and objectives of the survey. The GPR transect data may be saved on the internal hard drive and transferred to a PC for storage, printing, and post processing. GSSI is the world leader in the development of GPR systems and was the first company to commercialize GPR in 1970. GPR hardware and software has improved dramatically over the last several years allowing for relatively rapid and economical GPR surveys. With 3-dimensional capabilities, the latest GPR software takes data processing a step farther then the former 2-dimensional viewing method. Three-dimensional visualization helps you to see the whole picture, giving you a powerful tool to interpret complex utility layouts and identify subtle linear features that may have otherwise been missed.

GPR surveys are typically conducted by searching for GPR hyperbolas indicative of subsurface pipes or tanks signatures in the vicinity of known entities. Theses signatures are marked on the ground and areas progressively further from the known entity are scanned and marked. This process is continued until the GPR operator performed enough scans to determine and mark the subsurface pipe, tank or anomaly. During this process the GPR data is typically not saved due to the immense size of the data files. After this phase of the GPR survey is completed, representative GPR transects or grids are performed and saved for the report and post processing. Some of the factors that may negatively affect GPR results include clay soils, rebar in concrete, high moisture content, depth of the target, and the integrity, size, and material of the target.

## TW-6 EM Unit

TPI routinely employs a Fisher TW-6 electromagnetic metal detector when performing GPR surveys. The TW-6 creates an electromagnetic field with a transmitting coil and measures the strength of that field with a receiving coil. As the TW-6 passes over electrically conductive materials such as metal tanks or drums the field is distorted and the instrument produces an audible alarm based on the degree of the distortion. The TW-6 can detect conductive materials the size of drums or small tanks to depths of 10-feet. The instrument is actually a relatively poor metal detector which makes it ideal for locating large conductive materials such as metal drums, medium to large metal pipes, reinforced concrete pipes, and metal tanks. A more sensitive metal detector would produce "false positives" on small pieces of metal that are typically found in fill and throughout developed sites. If the survey area is underlain by reinforced concrete or cars and other large surficial metallic features are within 10-feet, the TW-6 will not be useful.

## Line Locating

Line locating is performed with a Radiodetection RD400 PXL-2 line locator with a 433 HCTX-2 transmitter. The transmitter emits a specific radio or electromagnetic signal which is indirectly induced or directly conducted onto the metallic line. The transmitter is capable of producing frequencies of 512 Hz, 8 kHz, or 33 kHz and the receiver is configured for the specific transmitted frequency. The induced signal is coupled with the line by either using an induction clamp which surrounds an exposed line or placing the transmitter above a buried line and transmitting the signal to it. The receiver may also be used in a passive locate mode (power) to identify the presence of current carrying lines. Nonmetallic lines may also be located by snaking a sonde down accessible lines with push rods. A sonde is a small transmitter that emits a specific electromagnetic frequency which can be detected by the receiver at depths of 12 to 16-feet.

**Inductive Sweep With Transmitter/Receiver**

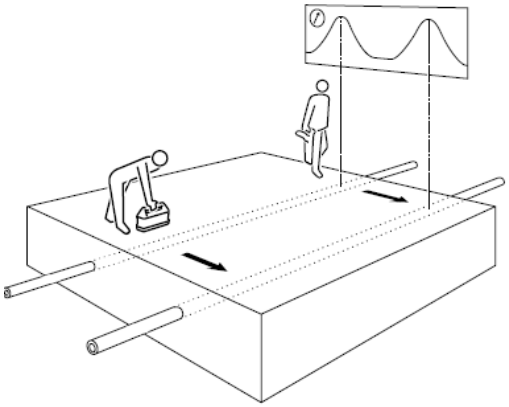

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# Attachment A
# TPI's Geophysical Survey Equipment & Methods

## Resistivity

TPI conducts subsurface resistivity surveys using the AGI SuperSting R8 IP Earth Resistivity and IP Meter. The SuperSting unit measures the voltage drop of an induced electrical current across numerous electrodes as it travels through the electrically heterogenous subsurface. Multiple survey profiles are completed in this manner based upon the specific conditions of the field area in order to assemble a complete characterization of the ground resistivity properties. The resistivity data is then processed and examined for evidence of significant subsurface features including bedrock surfaces, perched groundwater tables, cavities/sinkholes, or potential contaminant plumes.




**AGI SuperSting R8 IP Earth Resistivity and IP Meter assembly.**

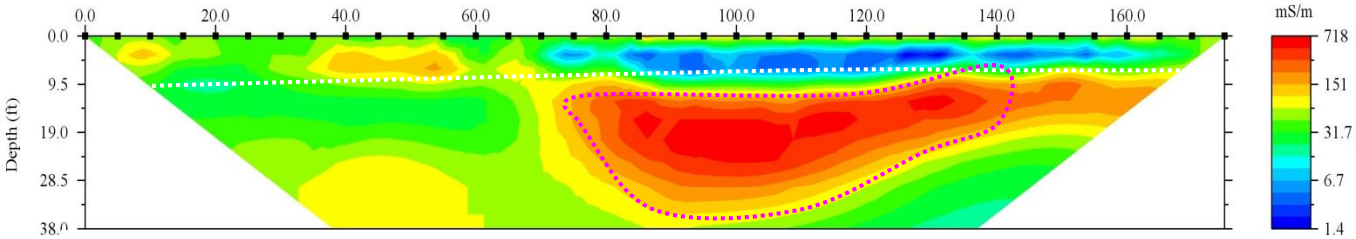


**Resistivity pseudosection across a backfilled canal. Approximately 10' of high resistivity/low conductivity surficial fill (blue) over low resistivity/high conductivity canal backfill (orange-red).**

## Down-hole Conductivity

TPI is also able to collect down-hole soil conductivity data with an electric conductivity probe. The EC probe is driven into the subsurface by a direct push unit. A current is induced in the native soil between two contacts at opposite ends of the probe. The soil conductivity is then calculated based upon the ratio of induced current to resultant voltage across the probe. Down-hole EC profiling is particularly useful in the efficient determination of soil grain size (permeable sands vs impermeable clays), water content, and metal content.

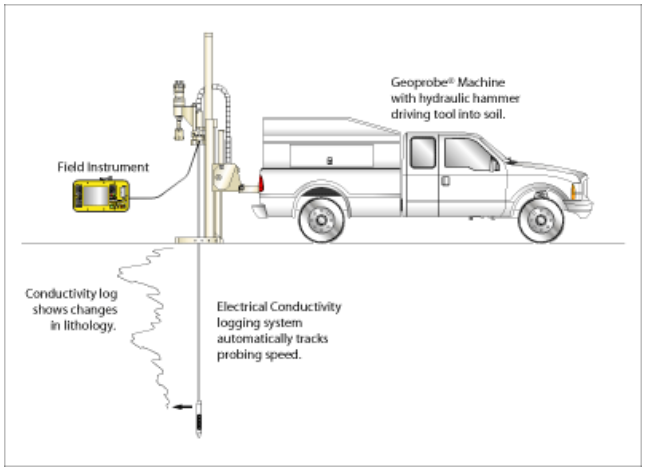




**Electrical conductivity probe**

724 S. 27th Street
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www.tpienv.com

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888-204-3266-Fax

# Appendix J

# Well Documentation

# Appendix J.1

# Well Records for Newly Installed Monitoring Wells

As of August 17, 2021, well records for the following wells were not available on Data Miner: 114-MW48C, 114-MW49C, 114-MW50C, 114-MW51C, 114-MW52C, 114-MW53C, 114-MW54C, 114-MW55C, 114-MW56C, 114-MW57C, 114-MW58C, 114-MW59C, 114-MW60C, 114-MW61C, 114-MW62C, 114-MW63C, 114-MW64C, 114-MW65C, and 114-MW57D.

Well records for wells 132-P3-MW001D, HAL-P3-IRM-003I-B, HAL-P3-IRM-004I-B, and HAL-P3-IRM-010I-B will be submitted under a separate cover, as these wells were installed for the Phase III groundwater interim remedial measures program.

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201710694**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** NICHOLAS A FALLUCCA, MASTER LICENSE # 749523

**Permit Issued to:** SGS NORTH AMERICA INC.

**Company Address:** PO BOX 423 WEST CREEK, NJ 08092

**PROPERTY OWNER**

Name: T. GADAY

Organization: Mid-Newark L.P. c/o Ten West Apparel

Address: 10 West 33rd St, Suite 216

City: New York State: New York Zip Code: 10001

**PROPOSED WELL LOCATION**

Facility Name: Ten West

Address: 800 Garfield Ave /10W-MW101S confimed by client / 6136

County: Hudson Municipality: Jersey City Lot: 39 Block: 21510

Easting (X): 610641 Northing (Y): 682588
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 10W-MW101S

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings: OI

Depth (ft.): 20

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Hollow Stem Augers

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

Approved by the authority of:
Bob Martin
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

**Approval Date:** September 19, 2017
**Expiration Date:** September 19, 2018

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201710694**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201710694**

# MONITORING WELL RECORD

**PROPERTY OWNER:** MID- NEWARK

Company/Organization: Mid-Newark L.P. c/o Ten West Apparel

Address: 10 West 33rd St, Suite 216 New York, New York 10001

**WELL LOCATION:** Ten West

Address: 800 Garfield Ave /10W-MW101S confimed by client / 6136

County: Hudson Municipality: Jersey City Lot: 39 Block: 21510

Easting (X): 610641 Northing (Y): 682588
Coordinate System: NJ State Plane (NAD83) - USFEET

**DATE WELL STARTED:** January 17, 2018

**DATE WELL COMPLETED:** January 18, 2018

**WELL USE:** MONITORING

**Other Use(s):**

**Local ID:** 10W-MW101S

**WELL CONSTRUCTION**

Total Depth Drilled (ft.): 17 Finished Well Depth (ft.): 17 Well Surface: Flush Mount

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt/Rating/Screen # Used (lbs/ch no.) |
|---|---|---|---|---|---|
| Borehole | 0 | 17 | 6 | | |
| Casing | 0 | 12 | 2 | PVC | sch 40 |
| Screen | 12 | 17 | 2 | PVC | .010 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in.) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 11 | 6 | 2 | | 150 | 9 |
| Gravel Pack | 11 | 17 | 6 | 2 | # 1 sand | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Hollow Stem Augers

**ADDITIONAL INFORMATION**

Protective Casing: Yes
Static Water Level: 8.5 ft. below land surface
Water Level Measure Tool: tape
Well Development Period: 1 hrs.
Method of Development: pump and surge
Pump Type:

Pump Capacity: _ gpm
Total Design Head: _ ft.
Drilling Fluid:
Drill Rig: Geoprobe 7822
Health and Safety Plan Submitted? Yes

**ATTACHMENTS:**

| **GEOLOGIC LOG** |
|---|
| 0 - 6: black OT - Other fill |
| 6 - 16: brown GM - Silty gravels, gravel-sand-silt mixtures |
| 16 - 17: black PT - Peat, muck, and other highly organic soils |

**ADDITIONAL INFORMATION:**

Driller of Record: Keith Butcher, JOURNEYMAN LICENSE # 203616 Company: SGS NORTH AMERICA INC.

| | | |
|---|---|---|
| AECOM | *Client: PPG* | ***WELL ID: 10W-MW101S*** |
| | *Project Number: 60550261* | |
| | *Site Location: Jersey City, New Jersey* | *Date Installed: 1/18/2018* |
| | *Well Location: Ten West Apparel* *Coords: X: 610587.4, Y:682617.1* | *Inspector: Eric Acs* |
| | *Method: Hollow Stem Auger* | *Contractor: SGS* |

## MONITORING WELL CONSTRUCTION DETAIL

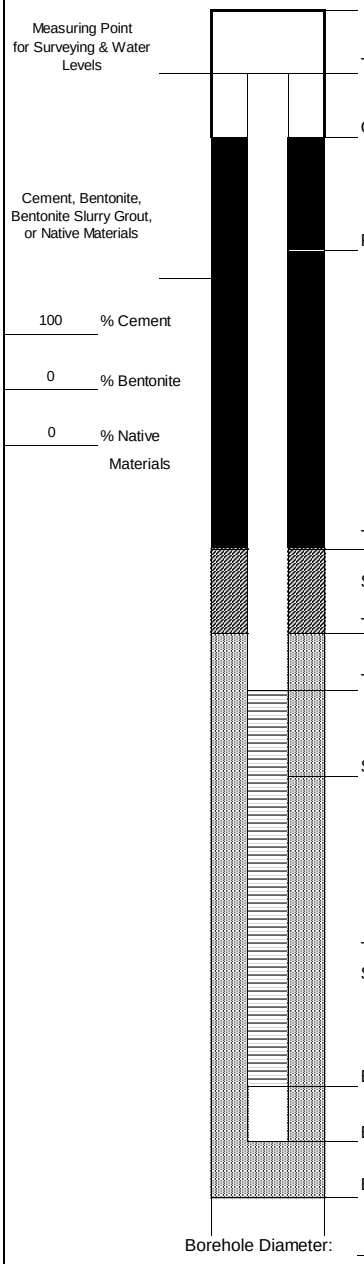


| | | Depth from G.S. (feet) | Elevation(feet) Datum: ft NAVD88 |
|---|---|---|---|
| Top of Steel Guard Pipe | | 0.0 | 15.55 |
| Top of Riser Pipe | | 0.0 | 15.15 |
| Ground Surface (G.S.) | | 0.0 | 15.5 |
| Riser Pipe: | | | |
| Length | 12 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Type of Material | PVC sch 40 | | |
| Top of Sand Seal | | N/A | |
| Sand Seal Thickness | N/A | | |
| Top of Filter Sand | | 11.0 | |
| Top of Screen | | 12.0 | |
| Screen: | | | |
| Length | 5 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Slot Size | 0.010 | | |
| Type of Material | PVC | | |
| Type/Size of Sand | #1 Sand | | |
| Sand Pack Thickness | 6 ft | | |
| Bottom of Screen | | 17.0 | |
| Bottom of Tail Pipe: | | | |
| Bottom of Borehole | | 17.0 | |

Borehole Diameter: 6 in

Well Type: Flush Mount
Measuring Point: Top of Riser Pipe

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Ten West

List all AKAs: Ten West Apparel

Street Address: 800 Garfield Ave

Municipality: Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 800 Garfield Ave, Jersey City ,NJ
3. Well Location (Municipal Block and Lot) Block# 21510 Lot # 39

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing):.. | E201710694 |
| 2. Site Well Number as shown on application or plans): ..... | 10W-MW101S |
| 3. Well Completion Date: ..... | 1/18/18 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): ..... | |
| 5. Total Depth of Well to the nearest ½ foot: ..... | 17' |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'):..... | 12' |
| 7. Screen Length (or length of open hole) in feet: ..... | 5' |
| 8. Screen or Slot Size: ..... | 0.010" |
| 9. Screen or Slot Material: ..... | PVC |
| 10. Casing Material (PVC, steel, or other – specify): ..... | PVC |
| 11. Casing Diameter (inches): ..... | 2" |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): ..... | 8.50 |
| 13. Yield (gallons per minute): ..... | 1.0 |
| 14. Development Techinque (specify): ..... | Pump and Surge |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): ..... | 1 hour |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: PPG Site 114
List all AKAs: Garfield Avenue Group Chrome Sites (PPG)
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): G000008738 Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) 70 Caven Point Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # Lot #

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing):
2. Site Well Number (As shown on application or plans): 10W-MW101S
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'23.95" Longitude: West 74°04'21.67"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 682617.1 East 610587.4
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 15.15
   Elevation of Top of Outer Casing: 15.55 Elevation of Ground: 15.5
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark: Reference stations NJI2, NJNT, NYBP, NYBR and NYVH.
7. Significant observations and notes:
   On site control points used: BSM-359 (Spike in Caven Point Avenue , Elev= 10.83') and BSM-358 (Spike and Tag on ramp in 10West Property, Elev= 13.22')

## SECTION D. LAND SURVEYOR'S CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

SEAL

Professional Land Surveyor's Signature: Date: 2/7/2018
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201710695**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** NICHOLAS A FALLUCCA, MASTER LICENSE # 749523

**Permit Issued to:** SGS NORTH AMERICA INC.

**Company Address:** PO BOX 423 WEST CREEK, NJ 08092

**PROPERTY OWNER**

Name: T. GADAY

Organization: Mid-Newark L.P. c/o Ten West Apparel

Address: 10 West 33rd St, Suite 216

City: New York State: New York Zip Code: 10001

**PROPOSED WELL LOCATION**

Facility Name: Ten West

Address: 800 Garfield Ave /10W-MW102S confimed by client / 6136

County: Hudson Municipality: Jersey City Lot: 39 Block: 21510

Easting (X): 610568 Northing (Y): 682447
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 10W-MW102S

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings: OI

Depth (ft.): 20

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Hollow Stem Augers

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

Approved by the authority of:
Bob Martin
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

**Approval Date:** September 19, 2017
**Expiration Date:** September 19, 2018

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201710695**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201710695**

# MONITORING WELL RECORD

**PROPERTY OWNER:** MID- NEWARK

Company/Organization: Mid-Newark L.P. c/o Ten West Apparel

Address: 10 West 33rd St, Suite 216 New York, New York 10001

**WELL LOCATION:** Ten West

Address: 800 Garfield Ave /10W-MW102S confimed by client / 6136

County: Hudson Municipality: Jersey City Lot: 39 Block: 21510

Easting (X): 610533 Northing (Y): 682458
Coordinate System: NJ State Plane (NAD83) - USFEET

**DATE WELL STARTED:** January 18, 2018

**DATE WELL COMPLETED:** January 19, 2018

**WELL USE:** MONITORING

**Other Use(s):**

**Local ID:** 10W-MW102S

**WELL CONSTRUCTION**

Total Depth Drilled (ft.): 17 Finished Well Depth (ft.): 17 Well Surface: Flush Mount

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt/Rating/Screen # Used (lbs/ch no.) |
|---|---|---|---|---|---|
| Borehole | 0 | 17 | 6 | | |
| Casing | 0 | 12 | 2 | PVC | sch 40 |
| Screen | 12 | 17 | 2 | PVC | .010 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in.) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 11 | 6 | 2 | | 140 | 8 |
| Gravel Pack | 11 | 17 | 6 | 2 | # 1 sand | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Hollow Stem Augers

**ADDITIONAL INFORMATION**

Protective Casing: Yes
Static Water Level: 9 ft. below land surface
Water Level Measure Tool: tape
Well Development Period: 1 hrs.
Method of Development: pump and surge
Pump Type:

Pump Capacity: _ gpm
Total Design Head: _ ft.
Drilling Fluid:
Drill Rig: Geoprobe 7822
Health and Safety Plan Submitted? Yes

**ATTACHMENTS:**

| **GEOLOGIC LOG** |
|---|
| 0 - 5: black OT - Other fill |
| 5 - 16: brown GM - Silty gravels, gravel-sand-silt mixtures |
| 16 - 17: black PT - Peat, muck, and other highly organic soils |

**ADDITIONAL INFORMATION:**

Driller of Record: Keith Butcher, JOURNEYMAN LICENSE # 203616 Company: SGS NORTH AMERICA INC.

| | | |
|---|---|---|
| AECOM | *Client: PPG* | ***WELL ID: 10W-MW102S*** |
| | *Project Number: 60550261* | |
| | *Site Location: Jersey City, New Jersey* | *Date Installed: 1/19/2018* |
| | *Well Location: Ten West Apparel* *Coords: X: 610516.5, Y:682453.4* | *Inspector: Eric Acs* |
| | *Method: Hollow Stem Auger* | *Contractor: SGS* |

## MONITORING WELL CONSTRUCTION DETAIL

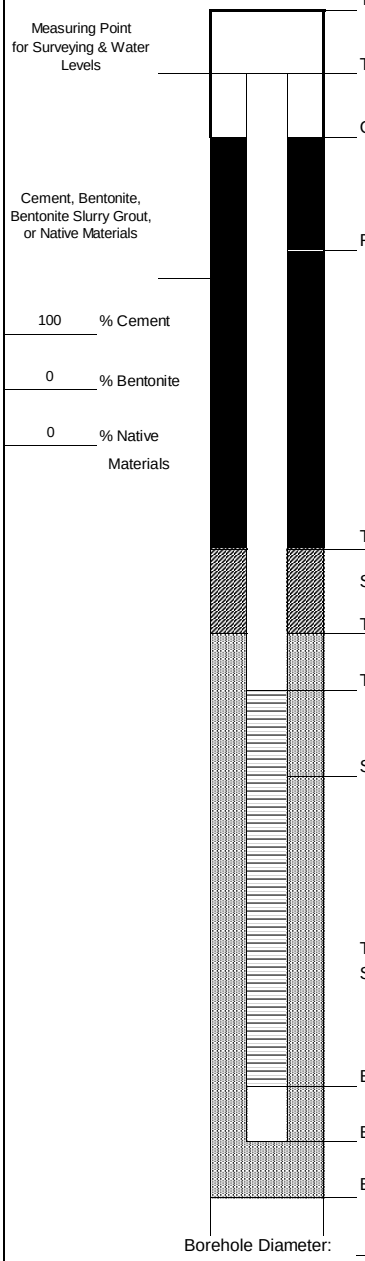


| | | Depth from G.S. (feet) | Elevation(feet) Datum: ft NAVD88 |
|---|---|---|---|
| Top of Steel Guard Pipe | | N/A | N/A |
| Top of Riser Pipe | | 0.0 | 15.11 |
| Ground Surface (G.S.) | | 0.0 | 15.5 |
| Riser Pipe: | | | |
| Length | 12 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Type of Material | PVC sch 40 | | |
| Top of Sand Seal | | N/A | |
| Sand Seal Thickness | N/A | | |
| Top of Filter Sand | | 11.0 | |
| Top of Screen | | 12.0 | |
| Screen: | | | |
| Length | 5 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Slot Size | 0.010 | | |
| Type of Material | PVC | | |
| Type/Size of Sand | #1 Sand | | |
| Sand Pack Thickness | 6 ft | | |
| Bottom of Screen | | 17.0 | |
| Bottom of Tail Pipe: | | | |
| Bottom of Borehole | | 17.0 | |

Borehole Diameter: 6 in

Well Type: Flush Mount

Measuring Point: Top of Riser Pipe

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Ten West

List all AKAs: Ten West Apparel

Street Address: 800 Garfield Ave

Municipality: Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 800 Garfield Ave, Jersey City ,NJ
3. Well Location (Municipal Block and Lot) Block# 21510 Lot # 39

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing): | E201710695 |
| 2. Site Well Number as shown on application or plans): | 10W-MW102S |
| 3. Well Completion Date: | 1/19/18 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): | |
| 5. Total Depth of Well to the nearest ½ foot: | 17' |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'): | 12' |
| 7. Screen Length (or length of open hole) in feet: | 5' |
| 8. Screen or Slot Size: | 0.010" |
| 9. Screen or Slot Material: | PVC |
| 10. Casing Material (PVC, steel, or other – specify): | PVC |
| 11. Casing Diameter (inches): | 2" |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): | 9' |
| 13. Yield (gallons per minute): | 1.0 |
| 14. Development Techinque (specify): | Pump and Surge |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): | 1 hour |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: PPG Site 114
List all AKAs: Garfield Avenue Group Chrome Sites (PPG)
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): G000008738 Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) 70 Caven Point Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # Lot #

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing):
2. Site Well Number (As shown on application or plans): 10W-MW102S
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'22.34" Longitude: West 74°04'22.60"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 682453.4 East 610516.5
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 15.11
   Elevation of Top of Outer Casing: 15.46 Elevation of Ground: 15.5
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark: Reference stations NJI2, NJNT, NYBP, NYBR and NYVH.
7. Significant observations and notes:
   On site control points used: BSM-359 (Spike in Caven Point Avenue , Elev= 10.83') and BSM-358 (Spike and Tag on ramp in 10West Property, Elev= 13.22')

## SECTION D. LAND SURVEYOR'S CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

SEAL

Professional Land Surveyor's Signature: Date: 2/7/2018
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201712014**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** NICHOLAS A FALLUCCA, MASTER LICENSE # 749523

**Permit Issued to:** SGS NORTH AMERICA INC.

**Company Address:** PO BOX 423 WEST CREEK, NJ 08092

**PROPERTY OWNER**

Name: T. GADAY

Organization: Mid-Newark L.P. c/o Ten West Apparel

Address: 10 West 33rd Street, Suite 216

City: New York State: New York Zip Code: 10001

**PROPOSED WELL LOCATION**

Facility Name: Ten West

Address: 800 Garfield Ave / 10W-MW105 I confimed by client / 6136

County: Hudson Municipality: Jersey City Lot: 39 Block: 21510

Easting (X): 610608 Northing (Y): 682323
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 10W-MW105 I

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings: Owner Investigation

Depth (ft.): 50

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

Approved by the authority of:
Bob Martin
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

**Approval Date:** October 19, 2017
**Expiration Date:** October 19, 2018

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201712014**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201712014**

# MONITORING WELL RECORD

**PROPERTY OWNER:** T. GADAY

Company/Organization: Mid-Newark L.P. c/o Ten West Apparel

Address: 10 West 33rd Street, Suite 216 New York, New York 10001

**WELL LOCATION:** Ten West

Address: 800 Garfield Ave / 10W-MW105 I confimed by client / 6136

County: Hudson Municipality: Jersey City Lot: 39 Block: 21510

Easting (X): 610608 Northing (Y): 682323
Coordinate System: NJ State Plane (NAD83) - USFEET

**DATE WELL STARTED:** January 3, 2018

**DATE WELL COMPLETED:** January 10, 2018

**WELL USE:** MONITORING

**Other Use(s):**

**Local ID:** 10W-MW105 I

**WELL CONSTRUCTION**

Total Depth Drilled (ft.): 40 Finished Well Depth (ft.): 40 Well Surface: Flush Mount

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt/Rating/Screen # Used (lbs/ch no.) |
|---|---|---|---|---|---|
| Borehole | 0 | 13 | 14 | | |
| Borehole | 13 | 40 | 6 | | |
| Casing | 0 | 35 | 2 | PVC | 40 |
| Casing | 0 | 13 | 6 | Steel | 40 |
| Screen | 35 | 40 | 2 | pvc | .010 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in.) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 32 | 6 | 2 | 27 | 491 | 41 |
| Grout | 0 | 13 | 14 | 6 | 55 | 997 | 84 |
| Gravel Pack | 32 | 34 | 6 | 2 | #00 | | |
| Gravel Pack | 34 | 35 | 6 | 2 | #1 | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Hollow Stem Augers

**ADDITIONAL INFORMATION**

Protective Casing: No
Static Water Level: 3 ft. below land surface
Water Level Measure Tool: m scope
Well Development Period: 4 hrs.
Method of Development: pump & surge
Pump Type:

Pump Capacity: _ gpm
Total Design Head: _ ft.
Drilling Fluid:
Drill Rig: Mobil Drill B-60
Health and Safety Plan Submitted? Yes

**ATTACHMENTS:**

| **GEOLOGIC LOG** |
|---|
| 0 - 5: black OT - Other fill |
| 5 - 16: brown GM - Silty gravels, gravel-sand-silt mixtures |
| 16 - 17: black PT - Peat, muck, and other highly organic soils |
| 17 - 23: red SM - Silty sands, sand-silt mixtures |
| 23 - 40: brown red GM - Silty gravels, gravel-sand-silt mixtures |

**ADDITIONAL INFORMATION:** Well record entered on behalf of Larry Lynch.

Driller of Record: Wesley M Eichfeld, MASTER LICENSE # 592848 Company: SGS NORTH AMERICA INC.

| | | |
|---|---|---|
| AECOM | *Client:* PPG | ***WELL ID: 10W-MW105I*** |
| | *Project Number:* 60550261 | |
| | *Site Location:* Jersey City, New Jersey | *Date Installed: 1/10/2018* |
| | *Well Location:* Ten West Apparel *Coords: X: 610626.9, Y: 682304.3* | *Inspector: Jim Christopher* |
| | *Method: Hollow Stem Augers* | *Contractor: SGS* |

## MONITORING WELL CONSTRUCTION DETAIL

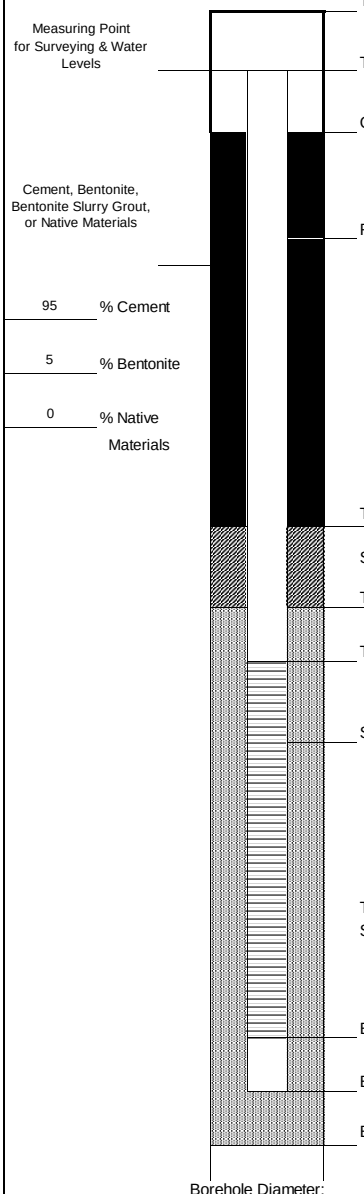


| | | Depth from G.S. (feet) | Elevation (feet) Datum: NAVD88 |
|---|---|---|---|
| Top of Steel Guard Pipe | | 0.0 | 11.25 |
| Top of Riser Pipe | | 0.0 | 10.92 |
| Ground Surface (G.S.) | | 0.0 | 11.2 |
| Riser Pipe: | | | |
| Length | 35 | | |
| Inside Diameter (ID) | 2 in | | |
| Type of Material | PVC sch 40 | | |
| Top of Sand Seal | | 32.0 | |
| Sand Seal Thickness | 2 ft | | |
| Top of Filter Sand | | 34.0 | |
| Top of Screen | | 35.0 | |
| Screen: | | | |
| Length | 5 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Slot Size | 0.010 | | |
| Type of Material | PVC | | |
| Type/Size of Sand | #1 Sand | | |
| Sand Pack Thickness | 6 ft | | |
| Bottom of Screen | | 40.0 | |
| Bottom of Tail Pipe: | | | |
| Bottom of Borehole | | 40.0 | |

Borehole Diameter: 6 in

Well Type: Flush Mount

Measuring Point: Top of Riser Pipe

Additional Information:

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Ten West

List all AKAs: Ten West Apparel

Street Address: 800 Garfield Ave

Municipality: Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 800 Garfield Ave, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block# 21510 Lot # 39

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing): | E201712014 |
| 2. Site Well Number as shown on application or plans): | 10W-MW105I |
| 3. Well Completion Date: | 1/10/18 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): | |
| 5. Total Depth of Well to the nearest ½ foot: | 40' |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'): | 35' |
| 7. Screen Length (or length of open hole) in feet: | 5' |
| 8. Screen or Slot Size: | 0.010" |
| 9. Screen or Slot Material: | PVC |
| 10. Casing Material (PVC, steel, or other – specify): | PVC |
| 11. Casing Diameter (inches): | 2" |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): | 4.82 |
| 13. Yield (gallons per minute): | 2.0 |
| 14. Development Techinque (specify): | Pump and Surge |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): | 2 hours |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: PPG Site 114
List all AKAs: Garfield Avenue Group Chrome Sites (PPG)
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): G000008738 Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) 70 Caven Point Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # Lot #

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing):
2. Site Well Number (As shown on application or plans): 10W-MW105I
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'20.86" Longitude: West 74°04'21.18"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 682304.3 East 610626.9
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 10.92
   Elevation of Top of Outer Casing: 11.25 Elevation of Ground: 11.2
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark: Reference stations NJI2, NJNT, NYBP, NYBR and NYVH.
7. Significant observations and notes:
   On site control points used: BSM-359 (Spike in Caven Point Avenue , Elev= 10.83') and BSM-358 (Spike and Tag on ramp in 10West Property, Elev= 13.22')

## SECTION D. LAND SURVEYOR'S CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

SEAL

Professional Land Surveyor's Signature: Date: 2/7/2018
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201710717**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** NICHOLAS A FALLUCCA, MASTER LICENSE # 749523

**Permit Issued to:** SGS NORTH AMERICA INC.

**Company Address:** PO BOX 423 WEST CREEK, NJ 08092

**PROPERTY OWNER**

Name: JERSEY CITY SEWAGE AUTHORITY

Organization: Jersey City Sewage Authority

Address: 575 State Hwy 440

City: Jersey City State: New Jersey Zip Code: 07305

**PROPOSED WELL LOCATION**

Facility Name: 163 Halladay Street

Address: 163 Halladay St / 114-MW2B1-2 I confimed by client / 6074

County: Hudson Municipality: Jersey City Lot: 1 Block: 21501

Easting (X): 611620 Northing (Y): 683822
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-MW2B1-2 I

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings:

Depth (ft.): 60

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

Approved by the authority of:
Bob Martin
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

**Approval Date:** September 19, 2017
**Expiration Date:** September 19, 2018

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201710717**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201710717**

# MONITORING WELL RECORD

**PROPERTY OWNER:** JERSEY CITY SEWAGE AUTHORITY

Company/Organization: Jersey City Sewage Authority

Address: 575 State Hwy 440 Jersey City, New Jersey 07305

**WELL LOCATION:** 163 Halladay Street

Address: 163 Halladay St / 114-MW2B1-2 I confimed by client / 6074

County: Hudson Municipality: Jersey City Lot: 1 Block: 21501

Easting (X): 611620 Northing (Y): 683822
Coordinate System: NJ State Plane (NAD83) - USFEET

**DATE WELL STARTED:** October 20, 2017

**DATE WELL COMPLETED:** October 20, 2017

**WELL USE:** MONITORING

**Other Use(s):**

**Local ID:** 114-MW2B1-2 I

**WELL CONSTRUCTION**

Total Depth Drilled (ft.): 38 Finished Well Depth (ft.): 38 Well Surface: Flush Mount

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt/Rating/Screen # Used (lbs/ch no.) |
|---|---|---|---|---|---|
| Borehole | 0 | 26 | 10 | | |
| Borehole | 26 | 38 | 6 | | |
| Casing | 0 | 33 | 2 | PVC | sch 40 |
| Casing | 0 | 26 | 6 | Steel | 19 lbs |
| Screen | 33 | 38 | 2 | PVC | .010 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in.) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 31 | 6 | 2 | 26 | 475 | 40 |
| Grout | 0 | 26 | 10 | 6 | 44 | 797 | 68 |
| Gravel Pack | 31 | 32 | 6 | 2 | #00 Filpro | | |
| Gravel Pack | 32 | 38 | 6 | 2 | #1 Filpro | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Sonic

**ADDITIONAL INFORMATION**

Protective Casing: Yes
Static Water Level: 28 ft. below land surface
Water Level Measure Tool: m scope
Well Development Period: 1 hrs.
Method of Development: surge & pump
Pump Type:

Pump Capacity: _ gpm
Total Design Head: _ ft.
Drilling Fluid:
Drill Rig: CRS XL Max
Health and Safety Plan Submitted? Yes

**ATTACHMENTS:**

| **GEOLOGIC LOG** |
|---|
| 0 - 22: Brownish OT - Other Fill |
| 22 - 28: Brownish PT - Peat, muck, and other highly organic soils |
| 28 - 38: Brown-Red GM - Silty gravels, gravel-sand-silt mixtures some clay |

**ADDITIONAL INFORMATION:** Well Record submitted on behalf of Scott Moore. License#MW665028

Driller of Record: Nicholas A Fallucca, MASTER LICENSE # 749523 Company: SGS NORTH AMERICA INC.

| | | |
|---|---|---|
| AECOM | *Client: PPG* | ***WELL ID: 114-MW2B1-2I*** |
| | *Project Number: 60550261* | |
| | *Site Location: Jersey City, New Jersey* | *Date Installed: 10/20/2017* |
| | *Well Location: Block 21501, Lot 1* *Coords: X: 611639.0, Y:683809.0* | *Inspector: Kyle Willis* |
| | *Method: Sonic* | *Contractor: SGS* |

## MONITORING WELL CONSTRUCTION DETAIL

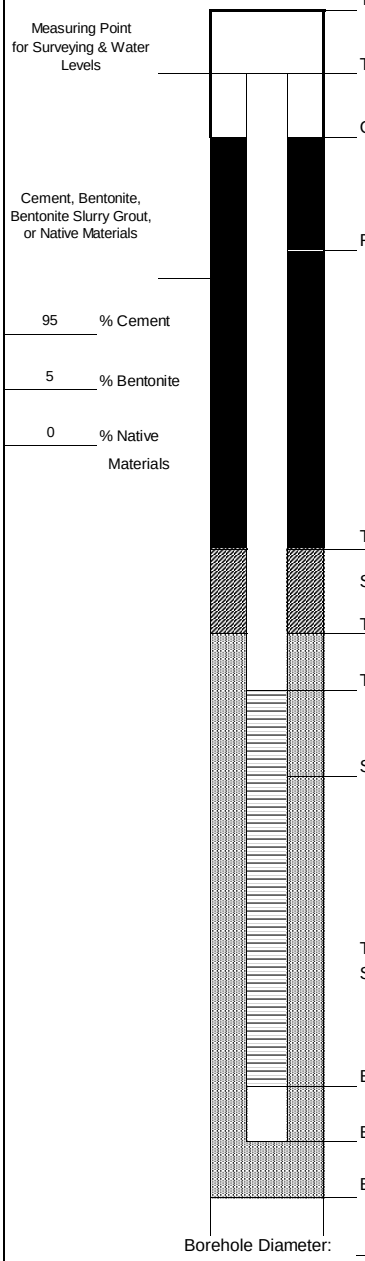


| | | Depth from G.S. (feet) | Elevation (feet) Datum: NAVD88 |
|---|---|---|---|
| Top of Steel Guard Pipe | | 0.0 | 24.14 |
| Top of Riser Pipe | | 0.0 | 23.95 |
| Ground Surface (G.S.) | | 0.0 | 24.1 |
| Riser Pipe: | | | |
| Length | 33 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Type of Material | PVC sch 40 | | |
| Top of Sand Seal | | 31.0 | |
| Sand Seal Thickness | 1 ft | | |
| Top of Filter Sand | | 32.0 | |
| Top of Screen | | 33.0 | |
| Screen: | | | |
| Length | 5 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Slot Size | 0.010 | | |
| Type of Material | PVC | | |
| Type/Size of Sand | #1 Sand | | |
| Sand Pack Thickness | 6 ft | | |
| Bottom of Screen | | 38.0 | |
| Bottom of Tail Pipe: | | | |
| Bottom of Borehole | | 38.0 | |

Borehole Diameter: 6 in

Well Type: Flush Mount

Measuring Point: Top of Riser Pipe

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: PPG Site 114

List all AKAs: Garfield Avenue Group Chrome Sites (PPG)

Street Address: Garfield Avenue and Carteret Avenue

Municipality: City of Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): G000008738 Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 163 Halladay Street, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block# 21501 Lot # 1

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing):.. | E201710717 |
| 2. Site Well Number as shown on application or plans): ..... | 114-MW2B1-2I |
| 3. Well Completion Date: ..... | 10/20/2017 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): ..... | 0.15 |
| 5. Total Depth of Well to the nearest ½ foot: ..... | 38.0 |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'):..... | 33.0 |
| 7. Screen Length (or length of open hole) in feet: ..... | 5.0 |
| 8. Screen or Slot Size: ..... | 0.010 inches |
| 9. Screen or Slot Material: ..... | Machine Slot |
| 10. Casing Material (PVC, steel, or other – specify): ..... | Sch 40 PVC (Inner) |
| 11. Casing Diameter (inches): ..... | 6 |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): ..... | 28.0 |
| 13. Yield (gallons per minute): ..... | 1.83 |
| 14. Development Techinque (specify): ..... | Pump/Surge Block |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): ..... | 1 hour |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: PPG Site 114
List all AKAs: Garfield Avenue Group Chrome Sites (PPG)
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): G000008738 Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) Site 114, Garfield Avenue and Carteret Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # Lot #

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing):
2. Site Well Number (As shown on application or plans): 114-MW2B1-2I
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'35.68" Longitude: West 74°04'07.94"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 683809.0 East 611639.0
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 23.95
   Elevation of Top of Outer Casing: 24.14 Elevation of Ground: 24.1
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark reference stations: NJI2, NJNT, NYBP, NYBR and NYVH.
7. Significant observations and notes:
   On site control points used: Spike and Tag in the top of curb at the intersection of east side of Carteret Avenue and south side of Halladay Street, Elev= 10.76' and Spike and Tag in the face of the retaining wall for the railroad at the north end of Site 114, Elev= 18.02'

## SECTION D. LAND SURVEYOR'S CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

SEAL

Professional Land Surveyor's Signature: Date: 11/30/2017
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201711856**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** NICHOLAS A FALLUCCA, MASTER LICENSE # 749523

**Permit Issued to:** SGS NORTH AMERICA INC.

**Company Address:** PO BOX 423 WEST CREEK, NJ 08092

**PROPERTY OWNER**

Name: ANNE MARIE MILLER

Organization: City of Jersey City

Address: 280 Grove Street

City: Jersey City State: New Jersey Zip Code: 07302

**PROPOSED WELL LOCATION**

Facility Name: Berry Lane Park

Address: 1 Berry Road / 114- MW-17B confirmed by client / 6136

County: Hudson Municipality: Jersey City Lot: 18 Block: 18901

Easting (X): 611618 Northing (Y): 683901
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-MW17B

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings: Owner Investigation

Depth (ft.): 50

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

Approved by the authority of:
Bob Martin
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

**Approval Date:** October 17, 2017
**Expiration Date:** October 17, 2018

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201711856**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201711856**

# MONITORING WELL RECORD

**PROPERTY OWNER:** ANNE MARIE MILLER

Company/Organization: City of Jersey City

Address: 280 Grove Street Jersey City, New Jersey 07302

**WELL LOCATION:** Berry Lane Park

Address: 1 Berry Road / 114- MW-17B confirmed by client / 6136

County: Hudson Municipality: Jersey City Lot: 18 Block: 18901

Easting (X): 611618 Northing (Y): 683901
Coordinate System: NJ State Plane (NAD83) - USFEET

**DATE WELL STARTED:** February 5, 2018

**DATE WELL COMPLETED:** February 7, 2018

**WELL USE:** MONITORING

**Other Use(s):**

**Local ID:** 114-MW17B

**WELL CONSTRUCTION**

Total Depth Drilled (ft.): 30 Finished Well Depth (ft.): 30 Well Surface: Flush Mount

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt/Rating/Screen # Used (lbs/ch no.) |
|---|---|---|---|---|---|
| Borehole | 0 | 14 | 10 | | |
| Borehole | 14 | 30 | 6 | | |
| Casing | 0 | 25 | 2 | PVC | sch 40 |
| Casing | 0 | 14 | 6 | Steel | sch 40 |
| Screen | 25 | 30 | 2 | pvc | .010 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in.) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 22 | 6 | 2 | 10 | 194 | 17 |
| Grout | 0 | 14 | 10 | 6 | 13 | 247 | 22 |
| Gravel Pack | 22 | 23 | 6 | 2 | #00 | | |
| Gravel Pack | 23 | 30 | 6 | 2 | #1 | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Sonic

**ADDITIONAL INFORMATION**

Protective Casing: No
Static Water Level: 5 ft. below land surface
Water Level Measure Tool: mscope
Well Development Period: 2 hrs.
Method of Development: pump and surge
Pump Type:

Pump Capacity: _ gpm
Total Design Head: _ ft.
Drilling Fluid:
Drill Rig: CRS XL 170
Health and Safety Plan Submitted? Yes

**ATTACHMENTS:**

| **GEOLOGIC LOG** |
|---|
| 0 - 8: black GP - Poorly graded gravels and gravel-sand mixtures, little or no fines |
| 8 - 13: black GM - Silty gravels, gravel-sand-silt mixtures |
| 13 - 16: black PT - Peat, muck, and other highly organic soils |
| 16 - 18: brown SC - Clayey sands, sand-clay mixtures |
| 18 - 20: brown SP - Poorly graded sands and gravelly sands, little or no fines |
| 20 - 30: brown SM - Silty sands, sand-silt mixtures |

**ADDITIONAL INFORMATION:** Double cased well

Driller of Record: Scott D Moore, MONITORING LICENSE # 665028 Company: SGS NORTH AMERICA INC.

| | | |
|---|---|---|
| AECOM | *Client: PPG* | ***WELL ID: 114-MW17B*** |
| | *Project Number: 60550261* | |
| | *Site Location: Jersey City, New Jersey* | *Date Installed: 2/7/2018* |
| | *Well Location: Berry Lane Park* *Coords: X: 611688.5, Y: 683902.0* | *Inspector: Eric Acs* |
| | *Method: Sonic* | *Contractor: SGS* |

## MONITORING WELL CONSTRUCTION DETAIL

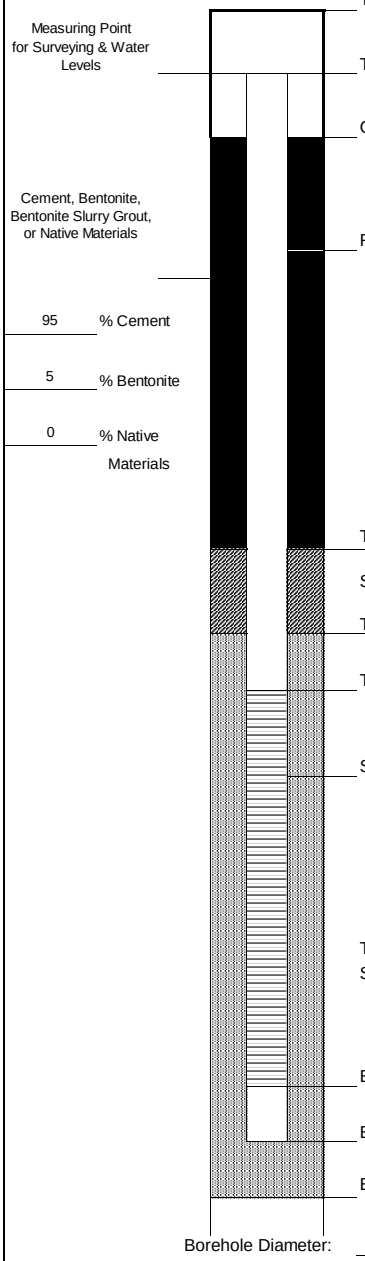


| | | Depth from G.S. (feet) | Elevation (feet) Datum: NAVD88 |
|---|---|---|---|
| Top of Steel Guard Pipe | | 0.0 | 13.52 |
| Top of Riser Pipe | | 0.0 | 13.25 |
| Ground Surface (G.S.) | | 0.0 | 13.5 |
| Riser Pipe: | | | |
| Length | 25 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Type of Material | PVC sch 40 | | |
| Top of Sand Seal | | 22.0 | |
| Sand Seal Thickness | 1 ft | | |
| Top of Filter Sand | | 23.0 | |
| Top of Screen | | 25.0 | |
| Screen: | | | |
| Length | 5 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Slot Size | 0.010 | | |
| Type of Material | PVC | | |
| Type/Size of Sand | #1 Sand | | |
| Sand Pack Thickness | 7 ft | | |
| Bottom of Screen | | 30.0 | |
| Bottom of Tail Pipe: | | | |
| Bottom of Borehole | | 30.0 | |
| Borehole Diameter: | 6 in | | |

Well Type: Flush Mount
Measuring Point: Top of Riser Pipe

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Berry Lane Park

List all AKAs:

Street Address: 1 Berry Road

Municipality: Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner: City of Jersey City
2. Well Location (Street Address): 1 Berry Road
3. Well Location (Municipal Block and Lot) Block# 18901 Lot # 18

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing): | E01711856 |
| 2. Site Well Number as shown on application or plans): | 114-MW17B |
| 3. Well Completion Date: | 2/7/18 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): | |
| 5. Total Depth of Well to the nearest ½ foot: | 30' |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'): | 25' |
| 7. Screen Length (or length of open hole) in feet: | 5' |
| 8. Screen or Slot Size: | 0.010" |
| 9. Screen or Slot Material: | PVC |
| 10. Casing Material (PVC, steel, or other – specify): | PVC |
| 11. Casing Diameter (inches): | 2" |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): | 5.0 |
| 13. Yield (gallons per minute): | 1 GPM |
| 14. Development Techinque (specify): | Pump and Surge |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): | 2 Hours |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: Garfield Avenue Group Chrome Sites (PPG)
List all AKAs: PPG Site 114
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) 1000 Garfield Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # 18901 Lot # 18

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing):
2. Site Well Number (As shown on application or plans): 114-MW17B
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'36.59" Longitude: West 74°04'07.29"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 683902.0 East 611688.5
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 13.25
   Elevation of Top of Outer Casing: 13.52 Elevation of Ground: 13.5
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS Network on May 10, 2012. Benchmark: Reference Stations NJI2, NJNT, NYBP, NYBR and NYVH.
7. Significant observations and notes:
   Lot and Block information is for reference only and does not necessarily indicate that property, boundary, or lot lines have been surveyed relative to this well.

## SECTION D. LAND SURVEYOR'S CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

SEAL

Professional Land Surveyor's Signature: Date: 6/7/2018
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201802594**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** NICHOLAS A FALLUCCA, MASTER LICENSE # 749523

**Permit Issued to:** SGS NORTH AMERICA INC.

**Company Address:** PO BOX 423 WEST CREEK, NJ 08092

**PROPERTY OWNER**

Name: SAL CARAGLIANO

Organization: 100 Forrest Associates, LLC

Address: 2473 NW 66th Drive

City: Boca Raton State: Florida Zip Code: 33496

**PROPOSED WELL LOCATION**

Facility Name: Garfield Ave Chrome Sites (PPG)

Address: Forrest St / 114-MW24AR confirmed by client / 6299

County: Hudson Municipality: Jersey City Lot: 15 Block: 21501

Easting (X): 611670 Northing (Y): 683682
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-MW24AR

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings:

Depth (ft.): 15

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Hollow Stem Augers

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

Terry D. Pilawski

**Approval Date:** March 23, 2018
**Expiration Date:** March 23, 2019

Approved by the authority of:
Catherine R. McCabe
Acting Commissioner

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201802594**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Hudson County Chromate (HCC) Sites

List all AKAs: Garfield Avenue Group, PPG

Street Address: 70 Carteret Avenue

Municipality: Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 90 Forrest St
3. Well Location (Municipal Block and Lot) Block# 21501 Lot # 15

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing): | E201802594 |
| 2. Site Well Number as shown on application or plans): | 114-MW24AR |
| 3. Well Completion Date: | 4/10/2018 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): | |
| 5. Total Depth of Well to the nearest ½ foot: | 15.31 (Stickup, not to final grade) |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'): | 9' |
| 7. Screen Length (or length of open hole) in feet: | 5' |
| 8. Screen or Slot Size: | 10-slot |
| 9. Screen or Slot Material: | PVC |
| 10. Casing Material (PVC, steel, or other – specify): | PVC |
| 11. Casing Diameter (inches): | 2 |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): | 5' |
| 13. Yield (gallons per minute): | 2 |
| 14. Development Techinque (specify): | purge/surge |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): | 2 hr |

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201802594**

# MONITORING WELL RECORD

**PROPERTY OWNER:** SAL CARAGLIANO

Company/Organization: 100 Forrest Associates, LLC

Address: 2473 NW 66th Drive Boca Raton, Florida 33496

**WELL LOCATION:** Garfield Ave Chrome Sites (PPG)

Address: Forrest St / 114-MW24AR confirmed by client / 6299

County: Hudson Municipality: Jersey City Lot: 15 Block: 21501

Easting (X): 611670 Northing (Y): 683682
Coordinate System: NJ State Plane (NAD83) - USFEET

**DATE WELL STARTED:** April 9, 2018

**DATE WELL COMPLETED:** April 10, 2018

**WELL USE:** MONITORING

**Other Use(s):**

**Local ID:** 114-MW24AR

**WELL CONSTRUCTION**

Total Depth Drilled (ft.): 14 Finished Well Depth (ft.): 14 Well Surface: Above Grade

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt/Rating/Screen # Used (lbs/ch no.) |
|---|---|---|---|---|---|
| Borehole | 0 | 14 | 7 | | |
| Casing | 0 | 9 | 2 | PVC | sch 40 |
| Screen | 9 | 14 | 2 | PVC | .010 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in.) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 8 | 7 | 2 | 10 | 100 | 8 |
| Gravel Pack | 8 | 14 | 7 | 2 | # 1 sand | | |

Grouting Method: Displacement Method Drilling Method: Hollow Stem Augers

**ADDITIONAL INFORMATION**

Protective Casing: Yes
Static Water Level: 5 ft. below land surface
Water Level Measure Tool: tape
Well Development Period: 2 hrs.
Method of Development: pump and surge
Pump Type:

Pump Capacity: _ gpm
Total Design Head: _ ft.
Drilling Fluid:
Drill Rig: Geoprobe 6610
Health and Safety Plan Submitted? Yes

**ATTACHMENTS:**

| **GEOLOGIC LOG** |
|---|
| 0 - 5: grey OT - Other fill DGA |
| 5 - 14: red GC - Clayey gravels, gravel-sand-clay mixtures |

**ADDITIONAL INFORMATION:**

Driller of Record: Keith Butcher, JOURNEYMAN LICENSE # 203616 Company: SGS NORTH AMERICA INC.

| | | |
|---|---|---|
| AECOM | *Client: PPG* | ***WELL ID: 114-MW24AR*** |
| | *Project Number: 60550261* | |
| | *Site Location: Jersey City, New Jersey* | *Date Installed:4/10/2018* |
| | *Well Location: Forrest Street* *Coords: X: 611670.2, Y: 683681.8* | *Inspector: Stefanie Paige* |
| | *Method: Hollow Stem Auger* | *Contractor: SGS* |

## MONITORING WELL CONSTRUCTION DETAIL

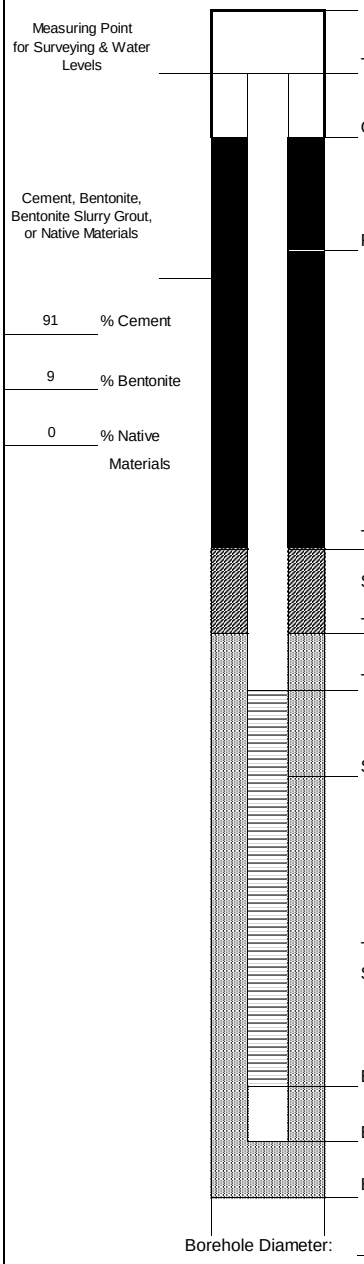


| | | Depth from G.S. (feet) | Elevation(feet) Datum: NAVD88 |
|---|---|---|---|
| Top of Steel Guard Pipe | | 0.0 | 11.81 |
| Top of Riser Pipe | | 0.0 | 11.36 |
| Ground Surface (G.S.) | | 0.0 | 11.8 |
| Riser Pipe: | | | |
| Length | 12 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Type of Material | PVC sch 40 | | |
| Top of Sand Seal | | N/A | |
| Sand Seal Thickness | N/A | | |
| Top of Filter Sand | | 8.0 | |
| Top of Screen | | 9.0 | |
| Screen: | | | |
| Length | 5 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Slot Size | 0.010 | | |
| Type of Material | PVC | | |
| Type/Size of Sand | #1 Sand | | |
| Sand Pack Thickness | 6 ft | | |
| Bottom of Screen | | 14.0 | |
| Bottom of Tail Pipe: | | | |
| Bottom of Borehole | | 14.0 | |

Borehole Diameter: 7 in

Well Type: Flush Mount
Measuring Point: Top of Riser Pipe

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: Garfield Avenue Group Chrome Sites (PPG)
List all AKAs: PPG Site 114
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) 86 Forrest Street, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # 21501 Lot # 15

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing):
2. Site Well Number (As shown on application or plans): 114-MW24AR
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'34.42" Longitude: West 74°04'07.55"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 683681.8 East 611670.2
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 11.36
   Elevation of Top of Outer Casing: 11.81 Elevation of Ground: 11.8
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS Network on May 10, 2012. Benchmark: Reference Stations NJI2, NJNT, NYBP, NYBR and NYVH.
7. Significant observations and notes:
   Lot and Block information is for reference only and does not necessarily indicate that property, boundary, or lot lines have been surveyed relative to this well.

## SECTION D. LAND SURVEYOR'S CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

SEAL

Professional Land Surveyor's Signature: Date: 6/7/2018
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201710719**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** NICHOLAS A FALLUCCA, MASTER LICENSE # 749523

**Permit Issued to:** SGS NORTH AMERICA INC.

**Company Address:** PO BOX 423 WEST CREEK, NJ 08092

**PROPERTY OWNER**

Name: NA 90 FORREST ASSOCIATES, LLC

Organization: 90 Forrest Associates, LLC

Address: 28 Bromleigh Rd

City: Stewart Manor State: New York Zip Code: 11530

**PROPOSED WELL LOCATION**

Facility Name: Forrest Street Properties

Address: 86-98 Forrest St / 114-MW25C confimed by client / 6074

County: Hudson Municipality: Jersey City Lot: 12 Block: 21501

Easting (X): 611790 Northing (Y): 683590
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-MW25C

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 4

Regulatory Program Requiring Wells/Borings: OI

Depth (ft.): 100

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

Approved by the authority of:
Bob Martin
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

**Approval Date:** September 21, 2017
**Expiration Date:** September 21, 2018

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201710719**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201710719**

# MONITORING WELL RECORD

**PROPERTY OWNER:** NA 90 FORREST ASSOCIATES, LLC

Company/Organization: 90 Forrest Associates, LLC

Address: 28 Bromleigh Rd Stewart Manor, New York 11530

**WELL LOCATION:** Forrest Street Properties

Address: 86-98 Forrest St / 114-MW25C confimed by client / 6074

County: Hudson Municipality: Jersey City Lot: 12 Block: 21501

Easting (X): 611790 Northing (Y): 683590
Coordinate System: NJ State Plane (NAD83) - USFEET

**DATE WELL STARTED:** October 11, 2017

**DATE WELL COMPLETED:** October 13, 2017

**WELL USE:** MONITORING

**Other Use(s):**

**Local ID:** 114-MW25C

**WELL CONSTRUCTION**

Total Depth Drilled (ft.): 58 Finished Well Depth (ft.): 47 Well Surface: Flush Mount

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt/Rating/Screen # Used (lbs/ch no.) |
|---|---|---|---|---|---|
| Borehole | 0 | 18 | 12 | | |
| Borehole | 18 | 58 | 6 | | |
| Casing | 0 | 42 | 2 | PVC | sch 40 |
| Casing | 0 | 18 | 8 | Steel | sch 40 |
| Screen | 42 | 47 | 2 | pvc | .010 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in.) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 40 | 6 | 2 | 19 | 353 | 31 |
| Grout | 0 | 18 | 12 | 8 | 21 | 397 | 35 |
| Grout | 47 | 58 | 6 | 0 | 6 | 109 | 10 |
| Gravel Pack | 40 | 41 | 6 | 2 | #00 | | |
| Gravel Pack | 41 | 47 | 6 | 2 | #1 | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Sonic

**ADDITIONAL INFORMATION**

Protective Casing: No
Static Water Level: 22 ft. below land surface
Water Level Measure Tool: mscope
Well Development Period: 1 hrs.
Method of Development: pump and surge
Pump Type:

Pump Capacity: _ gpm
Total Design Head: _ ft.
Drilling Fluid:
Drill Rig: CRS XL 170
Health and Safety Plan Submitted? Yes

**ATTACHMENTS:**

| **GEOLOGIC LOG** |
|---|
| 0 - 1: black OT - Other asphalt |
| 1 - 3: mix OT - Other fill |
| 3 - 5: black OT - Other cinders/ash |
| 5 - 47: brown SM - Silty sands, sand-silt mixtures |
| 47 - 56: brown ML - Inorganic silts, very fine sands, rock four, silty or clayey fine sands |
| 56 - 58: brown WR - Weathered Rock shale |

**ADDITIONAL INFORMATION:** Double cased well.
Borehole was backgrouted from 58' to 47'

Driller of Record: Scott D Moore, MONITORING LICENSE # 665028 Company: SGS NORTH AMERICA INC.

| | | |
|---|---|---|
| AECOM | *Client: PPG* | ***WELL ID: 114-MW25C*** |
| | *Project Number: 60550261* | |
| | *Site Location: Jersey City, New Jersey* | *Date Installed: 10/13/2017* |
| | *Well Location: Forrest Street* *Coords: X: 611795.8, Y: 683600.4* | *Inspector: Kyle Willis* |
| | *Method: Sonic* | *Contractor: SGS* |

## MONITORING WELL CONSTRUCTION DETAIL

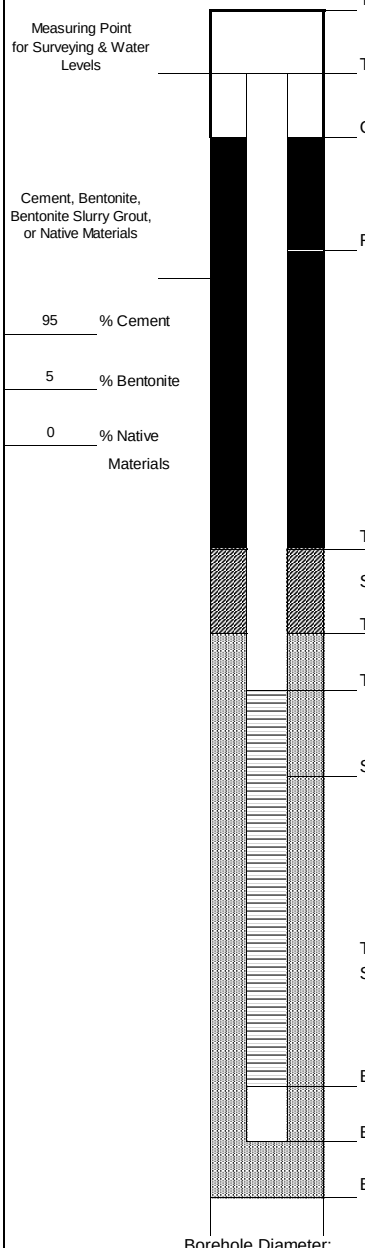


| | | Depth from G.S. (feet) | Elevation (feet) Datum: NAVD88 |
|---|---|---|---|
| Top of Steel Guard Pipe | | 0.0 | 10.37 |
| Top of Riser Pipe | | 0.0 | 9.77 |
| Ground Surface (G.S.) | | 0.0 | 10.4 |
| Riser Pipe: | | | |
| Length | 42 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Type of Material | PVC sch 40 | | |
| Top of Sand Seal | | 40.0 | |
| Sand Seal Thickness | 1 ft | | |
| Top of Filter Sand | | 41.0 | |
| Top of Screen | | 42.0 | |
| Screen: | | | |
| Length | 5 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Slot Size | 0.010 | | |
| Type of Material | PVC | | |
| Type/Size of Sand | #1 Sand | | |
| Sand Pack Thickness | 6 ft | | |
| Bottom of Screen | | 47.0 | |
| Bottom of Tail Pipe: | | | |
| Bottom of Borehole | | 47.0 | |
| Borehole Diameter: | 6 in | | |

Well Type: Flush Mount

Measuring Point: Top of Riser Pipe

Additional Information: Double cased well

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: PPG Site 114

List all AKAs: Garfield Avenue Group Chrome Sites (PPG)

Street Address: Garfield Avenue and Carteret Avenue

Municipality: City of Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): G000008738 Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) 86-98 Forrest Street, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block# 21501 Lot # 10

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing):.. | E201710719 |
| 2. Site Well Number as shown on application or plans): ..... | 114-MW25C |
| 3. Well Completion Date: ..... | 10/13/2017 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): ..... | 0.63 |
| 5. Total Depth of Well to the nearest ½ foot: ..... | 47.0 |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'):..... | 42.0 |
| 7. Screen Length (or length of open hole) in feet: ..... | 6.0 |
| 8. Screen or Slot Size: ..... | 0.010 inches |
| 9. Screen or Slot Material: ..... | Machine Slot |
| 10. Casing Material (PVC, steel, or other – specify): ..... | sch 40 PVC (Inner) |
| 11. Casing Diameter (inches): ..... | 8.0 |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): ..... | 22.0 |
| 13. Yield (gallons per minute): ..... | Not Available |
| 14. Development Techinque (specify): ..... | Pump/Surge Block |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): ..... | 1 hour |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: PPG Site 114
List all AKAs: Garfield Avenue Group Chrome Sites (PPG)
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): G000008738 Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) Site 114, Garfield Avenue and Carteret Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # Lot #

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing):
2. Site Well Number (As shown on application or plans): 114-MW25C
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'33.61" Longitude: West 74°04'05.92"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 683600.4 East 611795.8
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 9.77
   Elevation of Top of Outer Casing: 10.37 Elevation of Ground: 10.4
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark reference stations: NJI2, NJNT, NYBP, NYBR and NYVH.
7. Significant observations and notes:
   On site control points used: Spike and Tag in the top of curb at the intersection of east side of Carteret Avenue and south side of Halladay Street, Elev= 10.76' and Spike and Tag in the face of the retaining wall for the railroad at the north end of Site 114, Elev= 18.02'

## SECTION D. LAND SURVEYOR'S CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

SEAL

Professional Land Surveyor's Signature: Date: 11/30/2017
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201710720**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** NICHOLAS A FALLUCCA, MASTER LICENSE # 749523

**Permit Issued to:** SGS NORTH AMERICA INC.

**Company Address:** PO BOX 423 WEST CREEK, NJ 08092

**PROPERTY OWNER**

Name: NA 78 FORREST ASSOCIATES, LLC

Organization: 78 Forrest Associates, LLC

Address: 28 Bromleigh Rd

City: Stewart Manor State: New York Zip Code: 11530

**PROPOSED WELL LOCATION**

Facility Name: Forrest Street Properties

Address: 78 Forrest St / 114-MW26B confimed by client / 6074

County: Hudson Municipality: Jersey City Lot: 10 Block: 21501

Easting (X): 611892 Northing (Y): 683491
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-MW26B

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 4

Regulatory Program Requiring Wells/Borings: OI

Depth (ft.): 100

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

Approved by the authority of:
Bob Martin
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

**Approval Date:** September 21, 2017
**Expiration Date:** September 21, 2018

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201710720**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201710720**

# MONITORING WELL RECORD

**PROPERTY OWNER:** NA 78 FORREST ASSOCIATES, LLC

Company/Organization: 78 Forrest Associates, LLC

Address: 28 Bromleigh Rd Stewart Manor, New York 11530

**WELL LOCATION:** Forrest Street Properties

Address: 78 Forrest St / 114-MW26B confimed by client / 6074

County: Hudson Municipality: Jersey City Lot: 10 Block: 21501

Easting (X): 611892 Northing (Y): 683491
Coordinate System: NJ State Plane (NAD83) - USFEET

**DATE WELL STARTED:** October 6, 2017

**DATE WELL COMPLETED:** October 10, 2017

**WELL USE:** MONITORING

**Other Use(s):**

**Local ID:** 114-MW26B

**WELL CONSTRUCTION**

Total Depth Drilled (ft.): 38 Finished Well Depth (ft.): 38 Well Surface: Flush Mount

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt/Rating/Screen # Used (lbs/ch no.) |
|---|---|---|---|---|---|
| Borehole | 0 | 20 | 10 | | |
| Borehole | 20 | 38 | 6 | | |
| Casing | 0 | 33 | 2 | PVC | sch 40 |
| Casing | 0 | 20 | 6 | Steel | sch 40 |
| Screen | 33 | 38 | 2 | pvc | .010 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in.) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 30 | 6 | 2 | 14 | 265 | 23 |
| Grout | 0 | 20 | 10 | 6 | 19 | 353 | 31 |
| Gravel Pack | 30 | 31 | 6 | 2 | #00 | | |
| Gravel Pack | 31 | 38 | 6 | 2 | #1 | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Sonic

**ADDITIONAL INFORMATION**

Protective Casing: Yes
Static Water Level: 17 ft. below land surface
Water Level Measure Tool: mscope
Well Development Period: 1 hrs.
Method of Development: pump and surge
Pump Type:

Pump Capacity: _ gpm
Total Design Head: _ ft.
Drilling Fluid:
Drill Rig: CRS XL 170
Health and Safety Plan Submitted? Yes

**ATTACHMENTS:**

| **GEOLOGIC LOG** |
|---|
| 0 - 1: black OT - Other asphalt |
| 2 - 3: black OT - Other fill |
| 3 - 5: black OT - Other cinders/ash |
| 5 - 36: brown SM - Silty sands, sand-silt mixtures |
| 36 - 38: brown CL - Inorganic clays of low to medium plasticity, gravelly/sandy/silty/lean clays |

**ADDITIONAL INFORMATION:** Double cased well

Driller of Record: Scott D Moore, MONITORING LICENSE # 665028 Company: SGS NORTH AMERICA INC.

| | | |
|---|---|---|
| AECOM | *Client: PPG* | ***WELL ID: 114-MW26B*** |
| | *Project Number: 60550261* | |
| | *Site Location: Jersey City, New Jersey* | *Date Installed: 10/10/2017* |
| | *Well Location: Forrest Street* *Coords: X: 611844.2, Y: 683496.2* | *Inspector: Kyle Willis* |
| | *Method: Sonic* | *Contractor: SGS* |

## MONITORING WELL CONSTRUCTION DETAIL

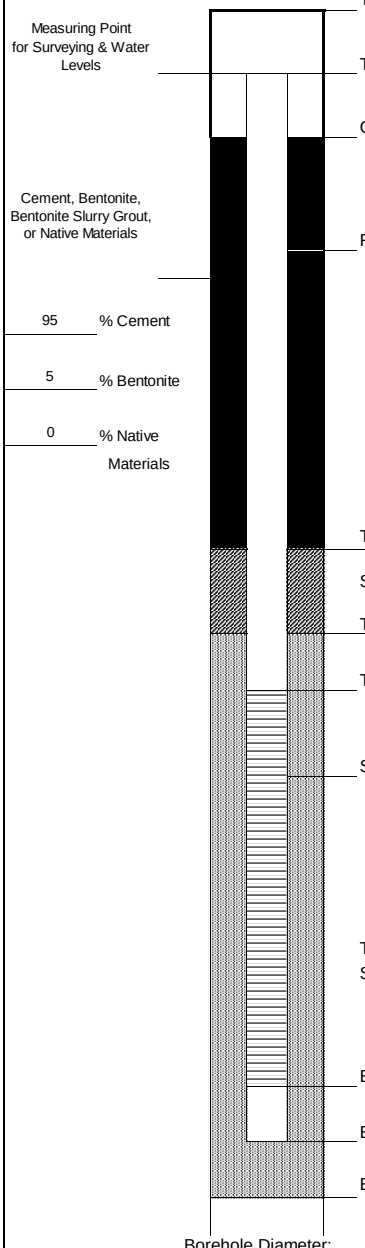


| | | Depth from G.S. (feet) | Elevation (feet) Datum: NAVD88 |
|---|---|---|---|
| Top of Steel Guard Pipe | | 0.0 | 11.62 |
| Top of Riser Pipe | | 0.0 | 11.32 |
| Ground Surface (G.S.) | | 0.0 | 11.6 |
| Riser Pipe: | | | |
| Length | 33 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Type of Material | PVC sch 40 | | |
| Top of Sand Seal | | 30.0 | |
| Sand Seal Thickness | 1 ft | | |
| Top of Filter Sand | | 31.0 | |
| Top of Screen | | 33.0 | |
| Screen: | | | |
| Length | 5 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Slot Size | 0.010 | | |
| Type of Material | PVC | | |
| Type/Size of Sand | #1 Sand | | |
| Sand Pack Thickness | 7 ft | | |
| Bottom of Screen | | 38.0 | |
| Bottom of Tail Pipe: | | | |
| Bottom of Borehole | | 38.0 | |

Borehole Diameter: 6 in

Well Type: Flush Mount

Measuring Point: Top of Riser Pipe

Additional Information: Double cased well

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: PPG Site 114

List all AKAs: Garfield Avenue Group Chrome Sites (PPG)

Street Address: Garfield Avenue and Carteret Avenue

Municipality: City of Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): G000008738 Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner: PPG Industries
2. Well Location (Street Address): 78 Forrest Street, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block# 21501 Lot # 10

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing): | E201710720 |
| 2. Site Well Number as shown on application or plans): | 114-MW26B |
| 3. Well Completion Date: | 10/10/2017 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): | 0.28 |
| 5. Total Depth of Well to the nearest ½ foot: | 39.0 |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'): | 33.0 |
| 7. Screen Length (or length of open hole) in feet: | 5.0 |
| 8. Screen or Slot Size: | 0.010 inches |
| 9. Screen or Slot Material: | Machine Slot |
| 10. Casing Material (PVC, steel, or other – specify): | Sch 40 PVC (Inner) |
| 11. Casing Diameter (inches): | 6 |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): | 17.0 |
| 13. Yield (gallons per minute): | Not Available |
| 14. Development Techinque (specify): | Pump/Surge Block |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): | 1 hour |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: PPG Site 114
List all AKAs: Garfield Avenue Group Chrome Sites (PPG)
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): G000008738 Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) Site 114, Garfield Avenue and Carteret Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # Lot #

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing):
2. Site Well Number (As shown on application or plans): 114-MW26B
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'32.58" Longitude: West 74°04'05.30"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 683496.2 East 611844.2
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 11.32
   Elevation of Top of Outer Casing: 11.62 Elevation of Ground: 11.6
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark reference stations: NJI2, NJNT, NYBP, NYBR and NYVH.
7. Significant observations and notes:
   On site control points used: Spike and Tag in the top of curb at the intersection of east side of Carteret Avenue and south side of Halladay Street, Elev= 10.76' and Spike and Tag in the face of the retaining wall for the railroad at the north end of Site 114, Elev= 18.02'

## SECTION D. LAND SURVEYOR'S CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

SEAL

Professional Land Surveyor's Signature: Date: 11/30/2017
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201711884**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** NICHOLAS A FALLUCCA, MASTER LICENSE # 749523

**Permit Issued to:** SGS NORTH AMERICA INC.

**Company Address:** PO BOX 423 WEST CREEK, NJ 08092

**PROPERTY OWNER**

Name: ANNA NEU

Organization: Eden Wood Realty, LLC

Address: 47 Parsippany Road

City: Whippany State: New Jersey Zip Code: 07981

**PROPOSED WELL LOCATION**

Facility Name: Eden Wood

Address: 33-47 Carteret Ave / 114-MW39B confirmed by client / 6136

County: Hudson Municipality: Jersey City Lot: 23 Block: 21503

Easting (X): 611549 Northing (Y): 682461
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-MW39B

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings: Owner Investigation

Depth (ft.): 50

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

Approved by the authority of:
Bob Martin
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

**Approval Date:** October 17, 2017
**Expiration Date:** October 17, 2018

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201711884**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201712605**

# MONITORING WELL RECORD

**PROPERTY OWNER:** ANNA NEU

Company/Organization: Eden Wood Realty, LLC

Address: 47 Parsippany Rd Whippany, New Jersey 07981

**WELL LOCATION:** Eden Wood

Address: 33-47 Carteret Ave / 114-MW39B confimed by client / 6136

County: Hudson Municipality: Jersey City Lot: 23 Block: 21503

Easting (X): 611556 Northing (Y): 682463
Coordinate System: NJ State Plane (NAD83) - USFEET

**DATE WELL STARTED:** January 23, 2018

**DATE WELL COMPLETED:** January 25, 2018

**WELL USE:** MONITORING

**Other Use(s):**

**Local ID:** 114-MW39B

**WELL CONSTRUCTION**

Total Depth Drilled (ft.): 45 Finished Well Depth (ft.): 45 Well Surface: Flush Mount

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt/Rating/Screen # Used (lbs/ch no.) |
|---|---|---|---|---|---|
| Borehole | 0 | 18 | 10 | | |
| Borehole | 18 | 45 | 6 | | |
| Casing | 0 | 18 | 6 | Steel | .280 wall |
| Casing | 0 | 40 | 2 | PVC | sch 40 |
| Screen | 40 | 45 | 2 | PVC | .010 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in.) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 18 | 10 | 6 | | 600 | 45 |
| Grout | 0 | 39 | 6 | 2 | | 590 | 30 |
| Gravel Pack | 39 | 45 | 6 | 2 | # 1 sand | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Mud Rotary

**ADDITIONAL INFORMATION**

Protective Casing: Yes
Static Water Level: 9 ft. below land surface
Water Level Measure Tool: tape
Well Development Period: 2 hrs.
Method of Development: pump and surge
Pump Type:

Pump Capacity: _ gpm
Total Design Head: _ ft.
Drilling Fluid:
Drill Rig: Mobil B-60
Health and Safety Plan Submitted? Yes

**ATTACHMENTS:**

| **GEOLOGIC LOG** |
|---|
| 0 - 5: black OT - Other fill |
| 5 - 16: brown GC - Clayey gravels, gravel-sand-clay mixtures |
| 16 - 18: black PT - Peat, muck, and other highly organic soils |
| 18 - 37: tan SC - Clayey sands, sand-clay mixtures |
| 37 - 45: white SM - Silty sands, sand-silt mixtures |

**ADDITIONAL INFORMATION:** Double cased well 6 by 2

Driller of Record: Wesley M Eichfeld, MASTER LICENSE # 592848 Company: SGS NORTH AMERICA INC.

| | | |
|---|---|---|
| AECOM | *Client: PPG* | ***WELL ID: 114-MW39B*** |
| | *Project Number: 60550261* | |
| | *Site Location: Jersey City, New Jersey* | *Date Installed: 1/25/2018* |
| | *Well Location: 33-47 Carteret Ave* *Coords: X: 611599.8, Y: 682533.1* | *Inspector: Eric Acs* |
| | *Method: Mud Rotary* | *Contractor: SGS* |

## MONITORING WELL CONSTRUCTION DETAIL

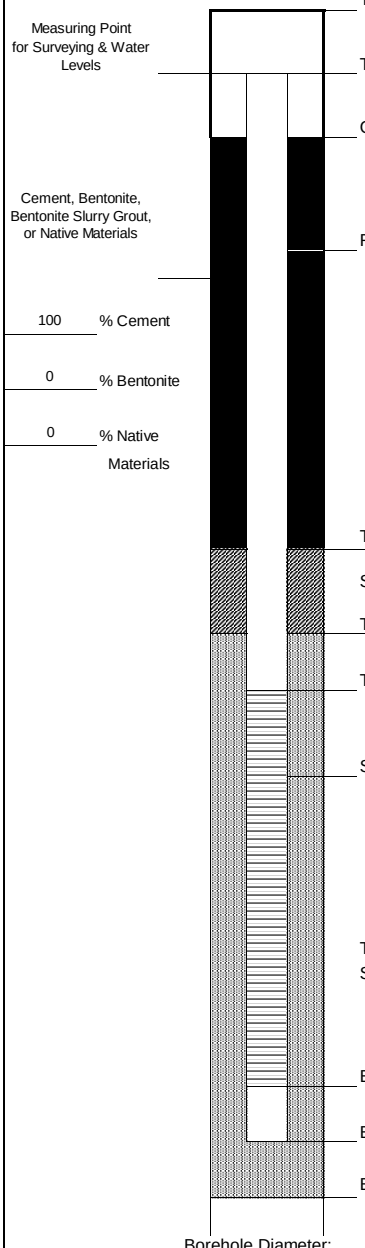


| | | Depth from G.S. (feet) | Elevation (feet) Datum: NAVD88 |
|---|---|---|---|
| Top of Steel Guard Pipe | | 0.0 | 11.07 |
| Top of Riser Pipe | | 0.0 | 10.64 |
| Ground Surface (G.S.) | | 0.0 | 11.1 |
| Riser Pipe: | | | |
| Length | 40 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Type of Material | PVC sch 40 | | |
| Top of Sand Seal | | N/A | |
| Sand Seal Thickness | N/A | | |
| Top of Filter Sand | | N/A | |
| Top of Screen | | 40.0 | |
| Screen: | | | |
| Length | 5 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Slot Size | 0.010 | | |
| Type of Material | PVC | | |
| Type/Size of Sand | #1 Sand | | |
| Sand Pack Thickness | 6 ft | | |
| Bottom of Screen | | 45.0 | |
| Bottom of Tail Pipe: | | | |
| Bottom of Borehole | | 45.0 | |

Borehole Diameter: 6 in

Well Type: Flush Mount

Measuring Point: Top of Riser Pipe

Additional Information: Double cased well

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Eden Wood

List all AKAs:

Street Address: 33-47 Carteret Ave

Municipality: Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 33-47 Carteret Ave, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block# 21503 Lot # 23

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing): | E201712605 |
| 2. Site Well Number as shown on application or plans): | 114-MW39B |
| 3. Well Completion Date: | 1/25/18 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): | |
| 5. Total Depth of Well to the nearest ½ foot: | 45' |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'): | 40' |
| 7. Screen Length (or length of open hole) in feet: | 5' |
| 8. Screen or Slot Size: | 0.010" |
| 9. Screen or Slot Material: | PVC |
| 10. Casing Material (PVC, steel, or other – specify): | PVC |
| 11. Casing Diameter (inches): | 2" |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): | 9.0 |
| 13. Yield (gallons per minute): | 2 |
| 14. Development Techinque (specify): | Pump and Surge |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): | 2 hours |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: Garfield Avenue Group Chrome Sites (PPG)
List all AKAs: PPG Site 114
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) 150 Pacific Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # 21503 Lot # 27

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing):
2. Site Well Number (As shown on application or plans): 114-MW39B
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'23.07" Longitude: West 74°04'08.53"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 682533.1 East 611599.8
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 10.64
   Elevation of Top of Outer Casing: 11.07 Elevation of Ground: 11.1
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS Network on May 10, 2012. Benchmark: Reference Stations NJI2, NJNT, NYBP, NYBR and NYVH.
7. Significant observations and notes:
   Lot and Block information is for reference only and does not necessarily indicate that property, boundary, or lot lines have been surveyed relative to this well.

## SECTION D. LAND SURVEYOR'S CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

SEAL

Professional Land Surveyor's Signature: Date: 6/7/2018
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201803066**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** NICHOLAS A FALLUCCA, MASTER LICENSE # 749523

**Permit Issued to:** SGS NORTH AMERICA INC.

**Company Address:** PO BOX 423 WEST CREEK, NJ 08092

**PROPERTY OWNER**

Name: NA EDEN WOOD REALTY, LLC

Organization: Eden Wood Realty, LLC

Address: 47 Parsippany Rd

City: Whippany State: New Jersey Zip Code: 07981

**PROPOSED WELL LOCATION**

Facility Name: Eden Wood

Address: 150 Pacific Ave / 114-MW40B confirmed by client / 6299

County: Hudson Municipality: Jersey City Lot: 27 Block: 21503

Easting (X): 611701 Northing (Y): 682734
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-MW40B

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings:

Depth (ft.): 40

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Hollow Stem Augers

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

Terry D. Pilawski

**Approval Date:** April 4, 2018
**Expiration Date:** April 4, 2019

Approved by the authority of:
Catherine R. McCabe
Acting Commissioner

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201803066**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201803066**

# MONITORING WELL RECORD

**PROPERTY OWNER:** NA EDEN WOOD REALTY, LLC

Company/Organization: Eden Wood Realty, LLC

Address: 47 Parsippany Rd Whippany, New Jersey 07981

**WELL LOCATION:** Eden Wood

Address: 150 Pacific Ave / 114-MW40B confirmed by client / 6299

County: Hudson Municipality: Jersey City Lot: 27 Block: 21503

Easting (X): 611701 Northing (Y): 682734
Coordinate System: NJ State Plane (NAD83) - USFEET

**DATE WELL STARTED:** April 9, 2018

**DATE WELL COMPLETED:** April 11, 2018

**WELL USE:** MONITORING

**Other Use(s):**

**Local ID:** 114-MW40B

**WELL CONSTRUCTION**

Total Depth Drilled (ft.): 47 Finished Well Depth (ft.): 43 Well Surface: Flush Mount

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt/Rating/Screen # Used (lbs/ch no.) |
|---|---|---|---|---|---|
| Borehole | 0 | 18 | 12 | | |
| Borehole | 18 | 47 | 6 | | |
| Casing | 0 | 38 | 2 | PVC | 40 |
| Casing | 0 | 18 | 6 | Steel | 40 |
| Screen | 38 | 43 | 2 | pvc | .020 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in.) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 18 | 12 | 6 | 51 | 931 | 79 |
| Grout | 0 | 36 | 6 | 2 | 30 | 552 | 46 |
| Grout | 43 | 47 | 6 | 0 | 3 | 50 | 6 |
| Gravel Pack | 36 | 43 | 6 | 2 | #1 | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Mud Rotary

**ADDITIONAL INFORMATION**

Protective Casing: No
Static Water Level: 7 ft. below land surface
Water Level Measure Tool: m scope
Well Development Period: 4 hrs.
Method of Development: pump and surge
Pump Type:

Pump Capacity: _ gpm
Total Design Head: _ ft.
Drilling Fluid:
Drill Rig: Mobile Drill B-60
Health and Safety Plan Submitted? Yes

**ATTACHMENTS:**

| **GEOLOGIC LOG** |
|---|
| 0 - 5: black OT - Other fill |
| 5 - 16: brown GM - Silty gravels, gravel-sand-silt mixtures |
| 16 - 17: black PT - Peat, muck, and other highly organic soils |
| 17 - 23: red SM - Silty sands, sand-silt mixtures |
| 23 - 38: brown red GM - Silty gravels, gravel-sand-silt mixtures |
| 38 - 47: brown SM - Silty sands, sand-silt mixtures |

**ADDITIONAL INFORMATION:** Hole back grouted from 47 - 43 ft. Well record entered on behalf of Larry Lynch.

Driller of Record: Wesley M Eichfeld, MASTER LICENSE # 592848 Company: SGS NORTH AMERICA INC.

| | | |
|---|---|---|
| AECOM | *Client:* PPG | ***WELL ID: 114-MW40B*** |
| | *Project Number:* 60550261 | |
| | *Site Location:* Jersey City, New Jersey | *Date Installed: 4/11/2018* |
| | *Well Location:* 150 Pacific Ave *Coords: X: 611703.3, Y: 682730.4* | *Inspector: Jim Christopher* |
| | *Method: Mud Rotary* | *Contractor: SGS* |

## MONITORING WELL CONSTRUCTION DETAIL

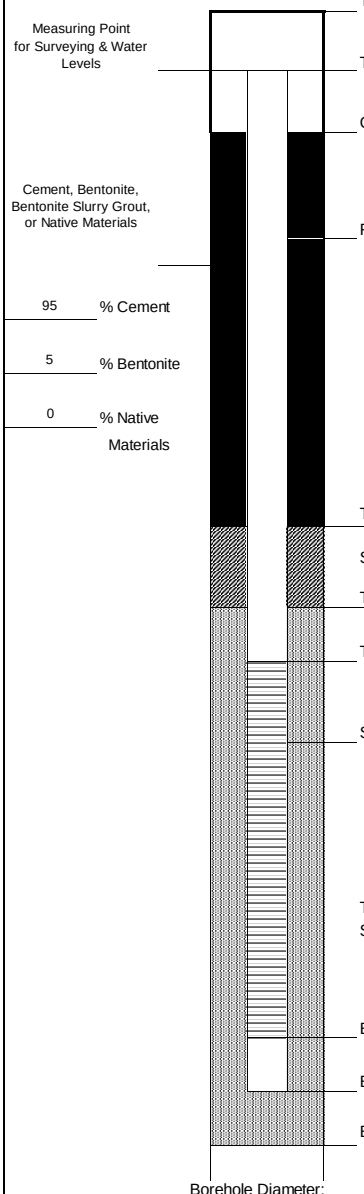


| | | Depth from G.S. (feet) | Elevation (feet) Datum: NAVD88 |
|---|---|---|---|
| Top of Steel Guard Pipe | | 0.0 | 10.77 |
| Top of Riser Pipe | | 0.0 | 10.29 |
| Ground Surface (G.S.) | | 0.0 | 10.8 |
| Riser Pipe: | | | |
| Length | 38 | | |
| Inside Diameter (ID) | 2 in | | |
| Type of Material | PVC sch 40 | | |
| Top of Sand Seal | | N/A | |
| Sand Seal Thickness | N/A | | |
| Top of Filter Sand | | 36.0 | |
| Top of Screen | | 38.0 | |
| Screen: | | | |
| Length | 5 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Slot Size | 0.010 | | |
| Type of Material | PVC | | |
| Type/Size of Sand | #1 Sand | | |
| Sand Pack Thickness | 7 ft | | |
| Bottom of Screen | | 43.0 | |
| Bottom of Tail Pipe: | | | |
| Bottom of Borehole | | 47.0 | |

Borehole Diameter: 6 in

Well Type: Flush Mount

Measuring Point: Top of Riser Pipe

Additional Information:

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Hudson County Chromate (HCC) Sites

List all AKAs: Garfield Avenue Group, PPG

Street Address: 70 Carteret Avenue

Municipality: Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 33-47 Pacific Avenue
3. Well Location (Municipal Block and Lot) Block# 21503 Lot # 27

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing):.. | E201803066 |
| 2. Site Well Number as shown on application or plans): ..... | 114-MW40B |
| 3. Well Completion Date: ..... | 4/10/18 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): ..... | |
| 5. Total Depth of Well to the nearest ½ foot: ..... | 43 |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'):..... | 38 |
| 7. Screen Length (or length of open hole) in feet: ..... | 5 |
| 8. Screen or Slot Size: ..... | 10-slot |
| 9. Screen or Slot Material: ..... | PVC |
| 10. Casing Material (PVC, steel, or other – specify): ..... | PVC/Steel (outer) |
| 11. Casing Diameter (inches): ..... | 2 |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): ..... | 17.92 |
| 13. Yield (gallons per minute): ..... | 1.2 |
| 14. Development Techinque (specify): ..... | surge/purge |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): ..... | 1 hr 50 min |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: Garfield Avenue Group Chrome Sites (PPG)
List all AKAs: PPG Site 114
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) 150 Pacific Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # 21503 Lot # 27

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing):
2. Site Well Number (As shown on application or plans): 114-MW40B
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'25.02" Longitude: West 74°04'07.18"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 682730.4 East 611703.3
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 10.29
   Elevation of Top of Outer Casing: 10.77 Elevation of Ground: 10.8
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS Network on May 10, 2012. Benchmark: Reference Stations NJI2, NJNT, NYBP, NYBR and NYVH.
7. Significant observations and notes:
   Lot and Block information is for reference only and does not necessarily indicate that property, boundary, or lot lines have been surveyed relative to this well.

## SECTION D. LAND SURVEYOR'S CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

SEAL

Professional Land Surveyor's Signature: Date: 6/7/2018
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201710722**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** NICHOLAS A FALLUCCA, MASTER LICENSE # 749523

**Permit Issued to:** SGS NORTH AMERICA INC.

**Company Address:** PO BOX 423 WEST CREEK, NJ 08092

**PROPERTY OWNER**

Name: NA JERSEY CITY SEWAGE AUTHORITY

Organization: Jersey City Sewage Authority

Address: 575 State Hwy 440

City: Jersey City State: New Jersey Zip Code: 07305

**PROPOSED WELL LOCATION**

Facility Name: 163 Halladay Street

Address: 163 Halladay St / 114-MW41A confimed by client / 6074

County: Hudson Municipality: Jersey City Lot: 1.01 Block: 21501

Easting (X): 611421 Northing (Y): 683887
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-MW41A

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings:

Depth (ft.): 60

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

Approved by the authority of:
Bob Martin
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

**Approval Date:** September 20, 2017
**Expiration Date:** September 20, 2018

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201710722**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201710722**

# MONITORING WELL RECORD

**PROPERTY OWNER:** NA JERSEY CITY SEWAGE AUTHORITY

Company/Organization: Jersey City Sewage Authority

Address: 575 State Hwy 440 Jersey City, New Jersey 07305

**WELL LOCATION:** 163 Halladay Street

Address: 163 Halladay St / 114-MW41A confimed by client / 6074

County: Hudson Municipality: Jersey City Lot: 1.01 Block: 21501

Easting (X): 611421 Northing (Y): 683887
Coordinate System: NJ State Plane (NAD83) - USFEET

**DATE WELL STARTED:** October 25, 2017

**DATE WELL COMPLETED:** October 25, 2017

**WELL USE:** MONITORING

**Other Use(s):**

**Local ID:** 114-MW41A

**WELL CONSTRUCTION**

Total Depth Drilled (ft.): 15 Finished Well Depth (ft.): 15 Well Surface: Above Grade

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt/Rating/Screen # Used (lbs/ch no.) |
|---|---|---|---|---|---|
| Borehole | 0 | 15 | 6 | | |
| Casing | 0 | 10 | 2 | PVC | sch 40 |
| Screen | 10 | 15 | 2 | pvc | .010 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in.) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 8 | 6 | 2 | 4 | 71 | 6 |
| Gravel Pack | 8 | 9 | 6 | 2 | #00 | | |
| Gravel Pack | 9 | 15 | 6 | 2 | #1 | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Sonic

**ADDITIONAL INFORMATION**

Protective Casing: Yes
Static Water Level: 4 ft. below land surface
Water Level Measure Tool: mscope
Well Development Period: 1 hrs.
Method of Development: pump and surge
Pump Type:

Pump Capacity: _ gpm
Total Design Head: _ ft.
Drilling Fluid:
Drill Rig: CRS XL 170
Health and Safety Plan Submitted? Yes

**ATTACHMENTS:**

| **GEOLOGIC LOG** |
|---|
| 0 - 5: grey OT - Other Fill/DGA |
| 5 - 15: black CL - Inorganic clays of low to medium plasticity, gravelly/sandy/silty/lean clays |

**ADDITIONAL INFORMATION:**

Driller of Record: Scott D Moore, MONITORING LICENSE # 665028 Company: SGS NORTH AMERICA INC.

| | | |
|---|---|---|
| AECOM | *Client: PPG* | ***WELL ID: 114-MW41A*** |
| | *Project Number: 60550261* | |
| | *Site Location: Jersey City, New Jersey* | *Date Installed: 10/25/2017* |
| | *Well Location: Block 21501, Lot 1.01 Coords: X: 611376.3, Y: 683888.8* | *Inspector: Kyle Willis* |
| | *Method: Sonic* | *Contractor: SGS* |

## MONITORING WELL CONSTRUCTION DETAIL

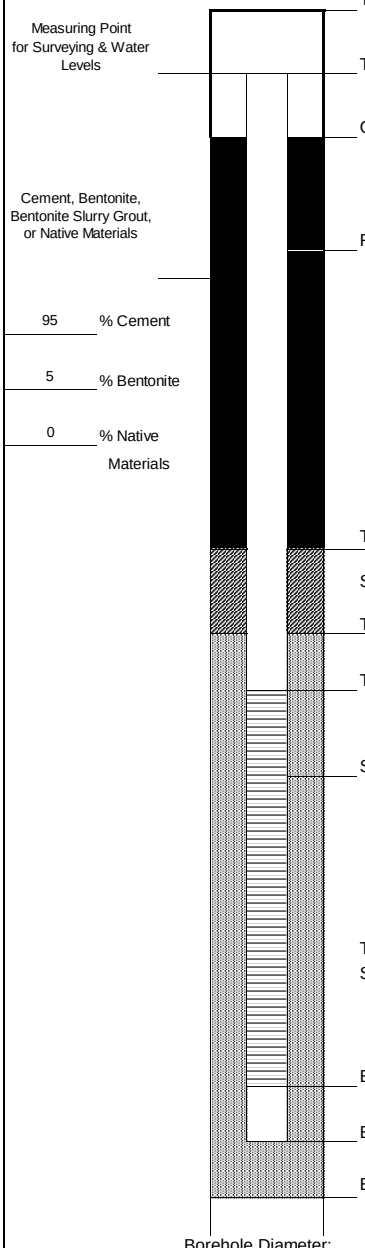


| | | Depth from G.S. (feet) | Elevation (feet) Datum: NAVD88 |
|---|---|---|---|
| Top of Steel Guard Pipe | | 0.0 | 18.67 |
| Top of Riser Pipe | | 0.0 | 18.24 |
| Ground Surface (G.S.) | | 0.0 | 14.7 |
| Riser Pipe: | | | |
| Length | 10 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Type of Material | PVC sch 40 | | |
| Top of Sand Seal | | 8.0 | |
| Sand Seal Thickness | N/A | | |
| Top of Filter Sand | | 9.0 | |
| Top of Screen | | 10.0 | |
| Screen: | | | |
| Length | 5 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Slot Size | 0.010 | | |
| Type of Material | PVC | | |
| Type/Size of Sand | #1 Sand | | |
| Sand Pack Thickness | 6 ft | | |
| Bottom of Screen | | 15.0 | |
| Bottom of Tail Pipe: | | | |
| Bottom of Borehole | | 15.0 | |

Borehole Diameter: 6 in

Well Type: Stick Up

Measuring Point: Top of Riser Pipe

Additional Information:

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: PPG Site 114

List all AKAs: Garfield Avenue Group Chrome Sites (PPG)

Street Address: Garfield Avenue and Carteret Avenue

Municipality: City of Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): G000008738 Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 163 Halladay Street, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block# 21501 Lot # 1.01

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing):.. | E201710722 |
| 2. Site Well Number as shown on application or plans): ..... | 114-MW41A |
| 3. Well Completion Date: ..... | 10/25/2017 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): ..... | 3.54 |
| 5. Total Depth of Well to the nearest ½ foot: ..... | 15.0 |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'):..... | 10.0 |
| 7. Screen Length (or length of open hole) in feet: ..... | 5.0 |
| 8. Screen or Slot Size: ..... | 0.010 inches |
| 9. Screen or Slot Material: ..... | Machine Slot |
| 10. Casing Material (PVC, steel, or other – specify): ..... | Sch 40 PVC (Inner) |
| 11. Casing Diameter (inches): ..... | 2.0 |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): ..... | 4.0 |
| 13. Yield (gallons per minute): ..... | 0.55 |
| 14. Development Techinque (specify): ..... | Pump/Surge Block |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): ..... | 1 hour |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: PPG Site 114
List all AKAs: Garfield Avenue Group Chrome Sites (PPG)
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): G000008738 Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) Site 114, Garfield Avenue and Carteret Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # Lot #

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing):
2. Site Well Number (As shown on application or plans): 114-MW41A
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'36.48" Longitude: West 74°04'11.35"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 683888.8 East 611376.3
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 18.24
   Elevation of Top of Outer Casing: 18.67 Elevation of Ground: 14.7
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark reference stations: NJI2, NJNT, NYBP, NYBR and NYVH.
7. Significant observations and notes:
   On site control points used: Spike and Tag in the top of curb at the intersection of east side of Carteret Avenue and south side of Halladay Street, Elev= 10.76' and Spike and Tag in the face of the retaining wall for the railroad at the north end of Site 114, Elev= 18.02'

## SECTION D. LAND SURVEYOR'S CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

SEAL

Professional Land Surveyor's Signature: Date: 11/30/2017
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201710723**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** NICHOLAS A FALLUCCA, MASTER LICENSE # 749523

**Permit Issued to:** SGS NORTH AMERICA INC.

**Company Address:** PO BOX 423 WEST CREEK, NJ 08092

**PROPERTY OWNER**

Name: NA JERSEY CITY SEWAGE AUTHORITY

Organization: Jersey City Sewage Authority

Address: 575 State Hwy 440

City: Jersey City State: New Jersey Zip Code: 07305

**PROPOSED WELL LOCATION**

Facility Name: 163 Halladay Street

Address: 163 Halladay St / 114-MW41B confimed by client / 6074

County: Hudson Municipality: Jersey City Lot: 1.01 Block: 21501

Easting (X): 611382 Northing (Y): 683901
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-MW41B

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings:

Depth (ft.): 60

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

Approved by the authority of:
Bob Martin
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

**Approval Date:** September 20, 2017
**Expiration Date:** September 20, 2018

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201710723**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201710723**

# MONITORING WELL RECORD

**PROPERTY OWNER:** NA JERSEY CITY SEWAGE AUTHORITY

Company/Organization: Jersey City Sewage Authority

Address: 575 State Hwy 440 Jersey City, New Jersey 07305

**WELL LOCATION:** 163 Halladay Street

Address: 163 Halladay St / 114-MW41B confimed by client / 6074

County: Hudson Municipality: Jersey City Lot: 1.01 Block: 21501

Easting (X): 611382 Northing (Y): 683901
Coordinate System: NJ State Plane (NAD83) - USFEET

**DATE WELL STARTED:** October 23, 2017

**DATE WELL COMPLETED:** October 25, 2017

**WELL USE:** MONITORING

**Other Use(s):**

**Local ID:** 114-MW41B

**WELL CONSTRUCTION**

Total Depth Drilled (ft.): 27 Finished Well Depth (ft.): 27 Well Surface: Above Grade

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt/Rating/Screen # Used (lbs/ch no.) |
|---|---|---|---|---|---|
| Borehole | 0 | 20 | 10 | | |
| Borehole | 20 | 27 | 6 | | |
| Casing | 0 | 22 | 2 | PVC | sch 40 |
| Casing | 0 | 20 | 6 | Steel | sch 40 |
| Screen | 22 | 27 | 2 | pvc | .010 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in.) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 20 | 6 | 2 | 9 | 177 | 16 |
| Grout | 0 | 20 | 10 | 6 | 19 | 353 | 31 |
| Gravel Pack | 20 | 21 | 6 | 2 | #00 | | |
| Gravel Pack | 21 | 27 | 6 | 2 | #1 | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Sonic

**ADDITIONAL INFORMATION**

Protective Casing: Yes
Static Water Level: 8 ft. below land surface
Water Level Measure Tool: mscope
Well Development Period: 1 hrs.
Method of Development: pump and surge
Pump Type:

Pump Capacity: _ gpm
Total Design Head: _ ft.
Drilling Fluid:
Drill Rig: CRS XL 170
Health and Safety Plan Submitted? Yes

**ATTACHMENTS:**

| **GEOLOGIC LOG** |
|---|
| 0 - 5: grey OT - Other Fill/DGA |
| 5 - 17: grey CL - Inorganic clays of low to medium plasticity, gravelly/sandy/silty/lean clays |
| 17 - 21: grey PT - Peat, muck, and other highly organic soils |
| 21 - 27: grey SM - Silty sands, sand-silt mixtures |

**ADDITIONAL INFORMATION:** Double cased well

Driller of Record: Scott D Moore, MONITORING LICENSE # 665028 Company: SGS NORTH AMERICA INC.

| | | |
|---|---|---|
| AECOM | *Client: PPG* | ***WELL ID: 114-MW41B*** |
| | *Project Number: 60550261* | |
| | *Site Location: Jersey City, New Jersey* | *Date Installed: 10/25/2017* |
| | *Well Location: Block 21501, Lot 1.01 Coords: X: 611366.9, Y: 683891.9* | *Inspector: Kyle Willis* |
| | *Method: Sonic* | *Contractor: SGS* |

## MONITORING WELL CONSTRUCTION DETAIL

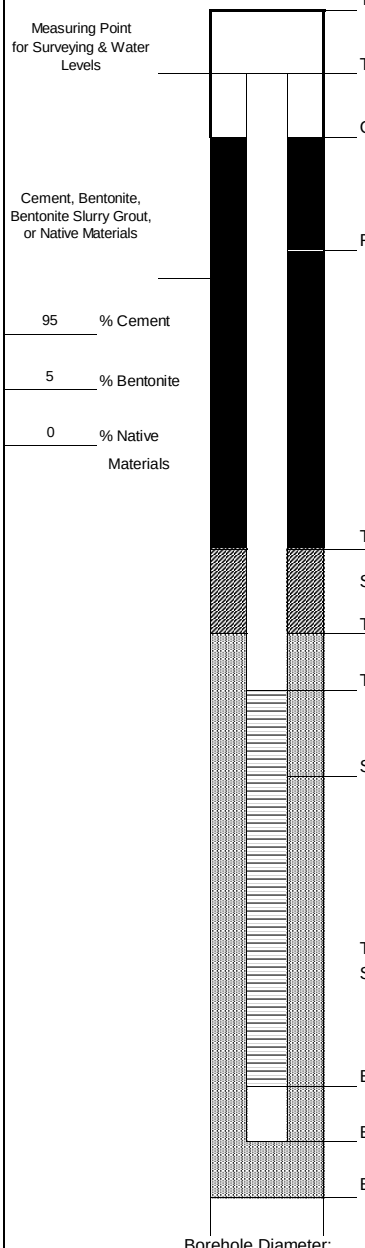


| | | Depth from G.S. (feet) | Elevation (feet) Datum: NAVD88 |
|---|---|---|---|
| Top of Steel Guard Pipe | | 0.0 | 18.12 |
| Top of Riser Pipe | | 0.0 | 17.67 |
| Ground Surface (G.S.) | | 0.0 | 15.0 |
| Riser Pipe: | | | |
| Length | 22 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Type of Material | PVC sch 40 | | |
| Top of Sand Seal | | 20.0 | |
| Sand Seal Thickness | N/A | | |
| Top of Filter Sand | | 21.0 | |
| Top of Screen | | 22.0 | |
| Screen: | | | |
| Length | 5 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Slot Size | 0.010 | | |
| Type of Material | PVC | | |
| Type/Size of Sand | #1 Sand | | |
| Sand Pack Thickness | 6 ft | | |
| Bottom of Screen | | 27.0 | |
| Bottom of Tail Pipe: | | | |
| Bottom of Borehole | | 27.0 | |

Borehole Diameter: 6 in

Well Type: Stick Up

Measuring Point: Top of Riser Pipe

Additional Information: Double cased well

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: PPG Site 114

List all AKAs: Garfield Avenue Group Chrome Sites (PPG)

Street Address: Garfield Avenue and Carteret Avenue

Municipality: City of Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): G000008738 Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 163 Halladay Street, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block# 21501 Lot # 1.01

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing): | E201710723 |
| 2. Site Well Number as shown on application or plans): | 114-MW41B |
| 3. Well Completion Date: | 10/25/2017 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): | 2.67 |
| 5. Total Depth of Well to the nearest ½ foot: | 27.0 |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'): | 22.0 |
| 7. Screen Length (or length of open hole) in feet: | 5.0 |
| 8. Screen or Slot Size: | 0.010 inches |
| 9. Screen or Slot Material: | Machine Slot |
| 10. Casing Material (PVC, steel, or other – specify): | Sch 40 PVC (Inner) |
| 11. Casing Diameter (inches): | 6.0 |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): | 8.0 |
| 13. Yield (gallons per minute): | 1.0 |
| 14. Development Techinque (specify): | Pump/Surge Block |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): | 1 hour |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: PPG Site 114
List all AKAs: Garfield Avenue Group Chrome Sites (PPG)
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): G000008738 Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) Site 114, Garfield Avenue and Carteret Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # Lot #

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing):
2. Site Well Number (As shown on application or plans): 114-MW41B
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'36.51" Longitude: West 74°04'11.47"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 683891.9 East 611366.9
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 17.67
   Elevation of Top of Outer Casing: 18.12 Elevation of Ground: 15.0
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark reference stations: NJI2, NJNT, NYBP, NYBR and NYVH.
7. Significant observations and notes:
   On site control points used: Spike and Tag in the top of curb at the intersection of east side of Carteret Avenue and south side of Halladay Street, Elev= 10.76' and Spike and Tag in the face of the retaining wall for the railroad at the north end of Site 114, Elev= 18.02'

## SECTION D. LAND SURVEYOR'S CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

SEAL

Professional Land Surveyor's Signature: Date: 11/30/2017
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201712012**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** NICHOLAS A FALLUCCA, MASTER LICENSE # 749523

**Permit Issued to:** SGS NORTH AMERICA INC.

**Company Address:** PO BOX 423 WEST CREEK, NJ 08092

**PROPERTY OWNER**

Name: JIM RILEY SR.

Organization: French Park Warehouse Co.

Address: PO Box 280

City: Kenilworth State: New Jersey Zip Code: 07033

**PROPOSED WELL LOCATION**

Facility Name: French Park Warehouse

Address: 855 Garfield Ave / 114-MW42A confimed by client / 6136

County: Hudson Municipality: Jersey City Lot: 3 Block: 21404

Easting (X): 610810 Northing (Y): 683624
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-MW42A

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings:

Depth (ft.): 20

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

Terry D. Pilawski

**Approval Date:** October 19, 2017
**Expiration Date:** October 19, 2018

Approved by the authority of:
Bob Martin
Commissioner

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201712012**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201712012**

# MONITORING WELL RECORD

**PROPERTY OWNER:** JIM RILEY SR.

Company/Organization: French Park Warehouse Co.

Address: PO Box 280 Kenilworth, New Jersey 07033

**WELL LOCATION:** French Park Warehouse

Address: 855 Garfield Ave / 114-MW42A confimed by client / 6136

County: Hudson Municipality: Jersey City Lot: 3 Block: 21404

Easting (X): 610810 Northing (Y): 683624
Coordinate System: NJ State Plane (NAD83) - USFEET

**DATE WELL STARTED:** November 1, 2017

**DATE WELL COMPLETED:** November 1, 2017

**WELL USE:** MONITORING

**Other Use(s):**

**Local ID:** 114-MW42A

**WELL CONSTRUCTION**

Total Depth Drilled (ft.): 12 Finished Well Depth (ft.): 12 Well Surface: Flush Mount

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt/Rating/Screen # Used (lbs/ch no.) |
|---|---|---|---|---|---|
| Borehole | 0 | 12 | 8 | | |
| Casing | 0 | 7 | 2 | PVC | Sch 40 |
| Screen | 7 | 12 | 2 | Pvc | .010 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in.) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 5 | 8 | 2 | 5 | 94 | 8 |
| Gravel Pack | 5 | 12 | 8 | 2 | #1 | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Hollow Stem Augers

**ADDITIONAL INFORMATION**

Protective Casing: Yes
Static Water Level: 3 ft. below land surface
Water Level Measure Tool: M-scope
Well Development Period: 1 hrs.
Method of Development: Pump & surge
Pump Type:

Pump Capacity: _ gpm
Total Design Head: _ ft.
Drilling Fluid:
Drill Rig: 7822
Health and Safety Plan Submitted? Yes

**ATTACHMENTS:**

| **GEOLOGIC LOG** |
|---|
| 0 - .5: White/gray OT - Other Concrete |
| .5 - 6: Dark brown GP - Poorly graded gravels and gravel-sand mixtures, little or no fines |
| 6 - 12: Dark redish brown GP - Poorly graded gravels and gravel-sand mixtures, little or no fines |

**ADDITIONAL INFORMATION:**

Driller of Record: Peter Hanley, MONITORING LICENSE # 572679 Company: SGS NORTH AMERICA INC.

| | | |
|---|---|---|
| AECOM | *Client: PPG* | ***WELL ID: 114-MW42A*** |
| | *Project Number: 60550261* | |
| | *Site Location: Jersey City, New Jersey* | *Date Installed: 11/1/2017* |
| | *Well Location: French Park Warehouse Coords: X: 610825.5, Y: 683625.8* | *Inspector: Kyle Willis* |
| | *Method: Hollow Stem Augers* | *Contractor: SGS* |

## MONITORING WELL CONSTRUCTION DETAIL

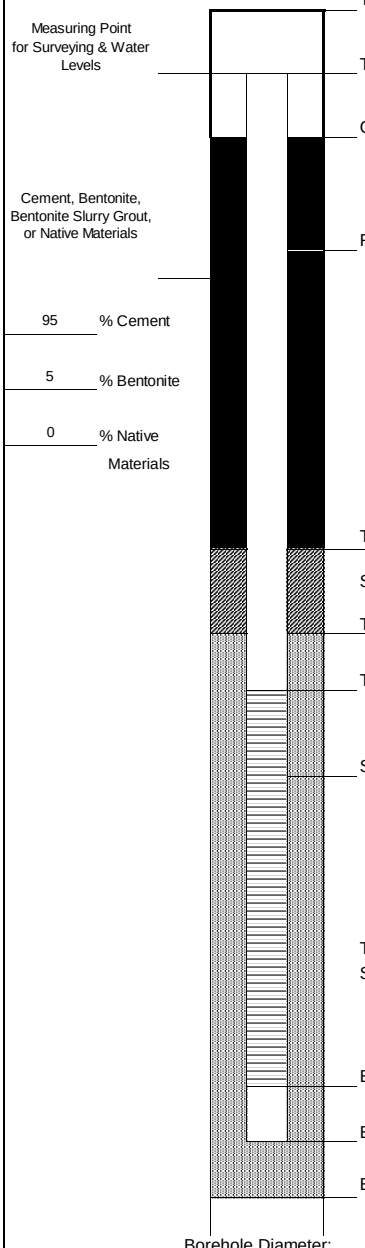


| | | Depth from G.S. (feet) | Elevation (feet) Datum: NAVD88 |
|---|---|---|---|
| Top of Steel Guard Pipe | | 0.0 | 10.37 |
| Top of Riser Pipe | | 0.0 | 9.94 |
| Ground Surface (G.S.) | | 0.0 | 10.4 |
| Riser Pipe: | | | |
| Length | 7 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Type of Material | PVC sch 40 | | |
| Top of Sand Seal | | N/A | |
| Sand Seal Thickness | N/A | | |
| Top of Filter Sand | | 5.0 | |
| Top of Screen | | 7.0 | |
| Screen: | | | |
| Length | 5 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Slot Size | 0.010 | | |
| Type of Material | PVC | | |
| Type/Size of Sand | #1 Sand | | |
| Sand Pack Thickness | 7 ft | | |
| Bottom of Screen | | 12.0 | |
| Bottom of Tail Pipe: | | | |
| Bottom of Borehole | | 12.0 | |

Borehole Diameter: 6 in

Well Type: Flush Mount

Measuring Point: Top of Riser Pipe

Additional Information:

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: PPG Site 114

List all AKAs: Garfield Avenue Group Chrome Sites (PPG)

Street Address: Garfield Avenue and Carteret Avenue

Municipality: City of Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): G000008738 Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 855 Garfield Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block# 21404 Lot # 3

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing):.. | E201712012 |
| 2. Site Well Number as shown on application or plans): ..... | 114-MW42A |
| 3. Well Completion Date: ..... | 11/01/2017 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): ..... | 0.46 |
| 5. Total Depth of Well to the nearest ½ foot: ..... | 12.0 |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'):..... | 7.0 |
| 7. Screen Length (or length of open hole) in feet: ..... | 5.0 |
| 8. Screen or Slot Size: ..... | 0.010 inches |
| 9. Screen or Slot Material: ..... | Machine Slot |
| 10. Casing Material (PVC, steel, or other – specify): ..... | Sch 40 PVC (Inner) |
| 11. Casing Diameter (inches): ..... | 2.0 |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): ..... | 3.0 |
| 13. Yield (gallons per minute): ..... | Not Available |
| 14. Development Techinque (specify): ..... | Pump/Surge Block |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): ..... | 1 hour |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: PPG Site 114
List all AKAs: Garfield Avenue Group Chrome Sites (PPG)
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): G000008738 Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) Site 114, Garfield Avenue and Carteret Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # Lot #

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing):
2. Site Well Number (As shown on application or plans): 114-MW42A
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'33.91" Longitude: West 74°04'18.52"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 683625.8 East 610825.5
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 9.94
   Elevation of Top of Outer Casing: 10.37 Elevation of Ground: 10.4
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark reference stations: NJI2, NJNT, NYBP, NYBR and NYVH.
7. Significant observations and notes:
   On site control points used: Spike and Tag in the top of curb at the intersection of east side of Carteret Avenue and south side of Halladay Street, Elev= 10.76' and Spike and Tag in the face of the retaining wall for the railroad at the north end of Site 114, Elev= 18.02'

## SECTION D. LAND SURVEYOR'S CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

SEAL

Professional Land Surveyor's Signature: Date: 11/30/2017
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201712608**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** NICHOLAS A FALLUCCA, MASTER LICENSE # 749523

**Permit Issued to:** SGS NORTH AMERICA INC.

**Company Address:** PO BOX 423 WEST CREEK, NJ 08092

**PROPERTY OWNER**

Name: M REDFIELD

Organization: Jersey City DPW

Address: 13-15 Linden Ave East Suite 200

City: Jersey City State: New Jersey Zip Code: 07305

**PROPOSED WELL LOCATION**

Facility Name: Garfield Ave ROW

Address: Garfield Ave / 114-MW43A confirmed by client / 6136

County: Hudson Municipality: Jersey City Lot: ROW Block: ROW

Easting (X): 611058 Northing (Y): 683942
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-MW43A

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings:

Depth (ft.): 20

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Hollow Stem Augers

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

Approved by the authority of:
Bob Martin
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

**Approval Date:** November 2, 2017
**Expiration Date:** November 2, 2018

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201712608**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201712608**

# MONITORING WELL RECORD

**PROPERTY OWNER:** M REDFIELD

Company/Organization: Jersey City DPW

Address: 13-15 Linden Ave East Suite 200 Jersey City, New Jersey 07305

**WELL LOCATION:** Garfield Ave ROW

Address: Garfield Ave / 114-MW43A confirmed by client / 6136

County: Hudson Municipality: Jersey City Lot: ROW Block: ROW

Easting (X): 611058 Northing (Y): 683942
Coordinate System: NJ State Plane (NAD83) - USFEET

**DATE WELL STARTED:** November 9, 2017

**DATE WELL COMPLETED:** November 9, 2017

**WELL USE:** MONITORING

**Other Use(s):**

**Local ID:** 114-MW43A

**WELL CONSTRUCTION**

Total Depth Drilled (ft.): 12 Finished Well Depth (ft.): 12 Well Surface: Flush Mount

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt/Rating/Screen # Used (lbs/ch no.) |
|---|---|---|---|---|---|
| Borehole | 0 | 12 | 8 | | |
| Casing | 0 | 7 | 2 | PVC | sch 40 |
| Screen | 7 | 12 | 2 | PVC | .010 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in.) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 5 | 8 | 2 | 8 | 144 | 12 |
| Gravel Pack | 5 | 12 | 8 | 2 | #1 Filpro | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Hollow Stem Augers

**ADDITIONAL INFORMATION**

Protective Casing: Yes
Static Water Level: 9 ft. below land surface
Water Level Measure Tool: m scope
Well Development Period: 1 hrs.
Method of Development: Pump / Surge
Pump Type:

Pump Capacity: _ gpm
Total Design Head: _ ft.
Drilling Fluid:
Drill Rig: Geoprobe 7822DT
Health and Safety Plan Submitted? Yes

**ATTACHMENTS:**

| **GEOLOGIC LOG** |
|---|
| 0 - 5: Brownish OT - Other Fill |
| 5 - 12: Brownish SM - Silty sands, sand-silt mixtures |

**ADDITIONAL INFORMATION:** Well record submitted on behalf of Peter Hanley.
License #572679

Driller of Record: Nicholas A Fallucca, MASTER LICENSE # 749523 Company: SGS NORTH AMERICA INC.

| | | |
|---|---|---|
| AECOM | *Client: PPG* | ***WELL ID: 114-MW43A*** |
| | *Project Number: 60550261* | |
| | *Site Location: Jersey City, New Jersey* | *Date Installed: 11/9/2017* |
| | *Well Location: Garfield Ave* *Coords: X: 611056.7, Y: 683941.8* | *Inspector: Eric Acs* |
| | *Method: Hollow Stem Augers* | *Contractor: SGS* |

## MONITORING WELL CONSTRUCTION DETAIL

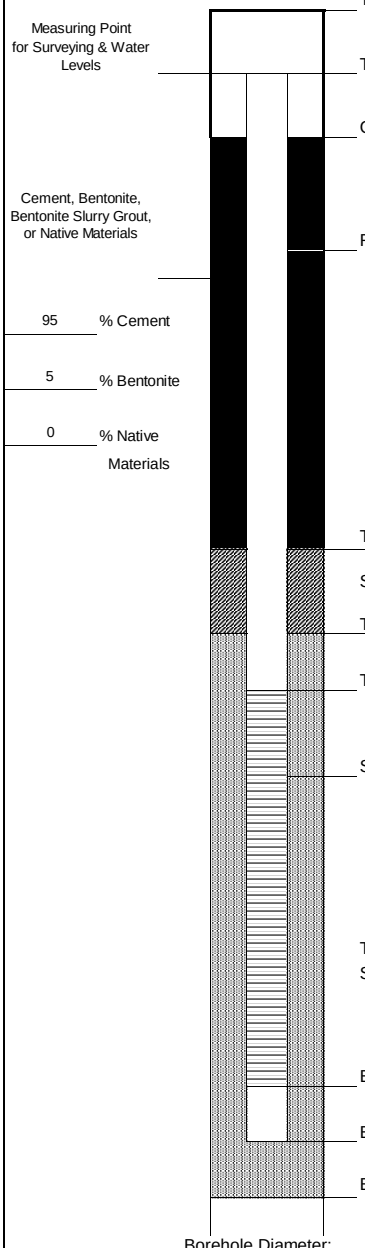


| | | Depth from G.S. (feet) | Elevation (feet) Datum: NAVD88 |
|---|---|---|---|
| Top of Steel Guard Pipe | | 0.0 | 11.83 |
| Top of Riser Pipe | | 0.0 | 11.38 |
| Ground Surface (G.S.) | | 0.0 | 11.8 |
| Riser Pipe: | | | |
| Length | 7 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Type of Material | PVC sch 40 | | |
| Top of Sand Seal | | N/A | |
| Sand Seal Thickness | N/A | | |
| Top of Filter Sand | | 5.0 | |
| Top of Screen | | 7.0 | |
| Screen: | | | |
| Length | 5 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Slot Size | 0.010 | | |
| Type of Material | PVC | | |
| Type/Size of Sand | #1 Sand | | |
| Sand Pack Thickness | 7 ft | | |
| Bottom of Screen | | 12.0 | |
| Bottom of Tail Pipe: | | | |
| Bottom of Borehole | | 12.0 | |

Borehole Diameter: 8 in

Well Type: Flush Mount

Measuring Point: Top of Riser Pipe

Additional Information:

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: PPG Site 114

List all AKAs: Garfield Avenue Group Chrome Sites (PPG)

Street Address: Garfield Avenue and Carteret Avenue

Municipality: City of Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): G000008738 Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) Garfield Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block# Lot #

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing): | E201712608 |
| 2. Site Well Number as shown on application or plans): | 114-MW43A |
| 3. Well Completion Date: | 11/09/2017 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): | 0.42 |
| 5. Total Depth of Well to the nearest ½ foot: | 12.0 |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'): | 7.0 |
| 7. Screen Length (or length of open hole) in feet: | 5.0 |
| 8. Screen or Slot Size: | 0.010 inches |
| 9. Screen or Slot Material: | Machine Slot |
| 10. Casing Material (PVC, steel, or other – specify): | Sch 40 PVC (Inner) |
| 11. Casing Diameter (inches): | 2.0 |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): | 9.0 |
| 13. Yield (gallons per minute): | |
| 14. Development Techinque (specify): | Pump/Surge Block |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): | 1 hour |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: PPG Site 114
List all AKAs: Garfield Avenue Group Chrome Sites (PPG)
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): G000008738 Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) Site 114, Garfield Avenue and Carteret Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # Lot #

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing):
2. Site Well Number (As shown on application or plans): 114-MW43A
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'37.02" Longitude: West 74°04'15.50"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 683941.8 East 611056.7
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 11.38
   Elevation of Top of Outer Casing: 11.83 Elevation of Ground: 11.8
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark reference stations: NJI2, NJNT, NYBP, NYBR and NYVH.
7. Significant observations and notes:
   On site control points used: Spike and Tag in the top of curb at the intersection of east side of Carteret Avenue and south side of Halladay Street, Elev= 10.76' and Spike and Tag in the face of the retaining wall for the railroad at the north end of Site 114, Elev= 18.02'

## SECTION D. LAND SURVEYOR'S CERTIFICATION

SEAL

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Professional Land Surveyor's Signature: Date: 11/30/2017
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201909974**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** SHAWN TIBBETTS, MONITORING LICENSE # 587209

**Permit Issued to:** AQUIFER DRILLING & TESTING

**Company Address:** 75 EAST SECOND ST MINEOLA, NY 11501

**PROPERTY OWNER**

Name: JUDY OVERMYER

Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery Street

City: Jersey City State: New Jersey Zip Code: 21501

**PROPOSED WELL LOCATION**

Facility Name: PPG Site 114

Address: 2 Dakota Street

County: Hudson Municipality: Jersey City Lot: 16 Block: 21501

Easting (X): 611412 Northing (Y): 683675
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-MW45D

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 6

Regulatory Program Requiring Wells/Borings:

Depth (ft.): 125

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

**Approval Date:** September 24, 2019
**Expiration Date:** September 23, 2020

Approved by the authority of:
Catherine R. McCabe
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201909974**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: PPG Site 114

List all AKAs: Hudson County Chrome (HCC) Site 114

Street Address: 900 Garfield Avenue

Municipality: Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 2 Dakota Street
3. Well Location (Municipal Block and Lot) Block# 21501 Lot # 16

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing):.. | E201909974 |
| 2. Site Well Number as shown on application or plans): ..... | 114-MW45C |
| 3. Well Completion Date: ..... | 10-2-2019 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): ..... | 1.95' |
| 5. Total Depth of Well to the nearest ½ foot: ..... | 72.95' PVC |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'):..... | 68.95' PVC |
| 7. Screen Length (or length of open hole) in feet: ..... | 4' |
| 8. Screen or Slot Size: ..... | 10 slot (0.010) |
| 9. Screen or Slot Material: ..... | #0 sand |
| 10. Casing Material (PVC, steel, or other – specify): ..... | PVC Sch 40 |
| 11. Casing Diameter (inches): ..... | 2" |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): ..... | 7.90' PVC |
| 13. Yield (gallons per minute): ..... | 2 - 2.5 GPM |
| 14. Development Techinque (specify): ..... | submersible pump, surge block |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): ..... | 2 Hr 20 Min |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Garfield Avenue Group Chrome Sites (PPG)
List all AKAs: PPG Site 114
Street Address: Garfield Avenue and Carteret Avenue
Municipality: Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) Garfield Avenue and Carteret Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # 21501 Lot # 16

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing):
2. Site Well Number (As shown on application or plans): 114-MW45C
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'34.36" Longitude: West 74°04'10.90"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 683675.0 East 611411.8
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 13.22
   Elevation of Top of Outer Casing: 13.73 Elevation of Ground: 11.5
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network.
7. Significant observations and notes:
   Lot and Block information is for reference only and does not necessarily indicate that property, boundary, or lot lines have been surveyed relative to this well.

## SECTION D. LAND SURVEYOR'S CERTIFICATION

SEAL

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Professional Land Surveyor's Signature: Date: 10/14/19
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

Service ID: 1183643

This document has not yet been reviewed and approved or denied by the NJ DEP. Deficiencies in submittal information or actual construction may result in denial.

## WELL RECORD SUBMITTAL PDF

**PROPERTY OWNER:** Judy Overmyer

Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery Street, Jersey City (Hudson), New Jersey 21501

**WELL LOCATION:** PPG Site 114

Address: 2 Dakota Street

County: Hudson Municipality: Jersey City Lot: 16 Block: 21501

Easting(X): 611411 Northing(Y): 683675 Coordinate System: NJ State Plane (NAD83) - USFEET

Method: GPS Point of Reference: Well

GPS Manufacturer: Trimble Surveyor Name:

GPS Model: Juno Surveyor License #:

Accuracy: 10 Accuracy units: Feet

**WELL USE:** Monitoring **DATE WELL STARTED:** 10/02/2019

**Other Use(s):** **DATE WELL COMPLETED:** 10/02/2019

**WELL CONSTRUCTION**

**Permit Number** Total Depth Drilled(ft): 76 Drilling Company:

E201909974 Finished Well Depth(ft): 71 Driller Name: Shawn Tibbetts

Local ID: 114-MW45D Well was finished: Above Grade License No.: 587209

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt./Rating/Screen Slot # (lbs/sch no.) |
|---|---|---|---|---|---|
| Borehole(s) | 0 | 76 | 6 | N/A | N/A |
| Casing(s) | 0 | 67 | 2 | PVC | 40 |
| Screen(s) | 67 | 71 | 2 | PVC | .010 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 66 | 6 | 2 | 36 | 685 | 60 |
| Gravel Pack | 66 | 71 | 6 | 2 | Sand | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Sonic

Additional Information:

Attachments:

**RECORD OF TEST** Depth to Pump: ft. below land surface

Test Date: Pump Capacity: gpm

PENDING APPROVAL

Static Water Level: 8 ft. below land surface

Pumping Water Level: _____ ft. below land surface

Water Level Measure Tool: Water Level Indicator

Pumping Equipment: _____

Well Yield: _____ gpm

Total Design Head: _____ ft.

Pump Horsepower: _____

If pump tested Discharge Rate: _____ gpm

Duration of Test: _____ hours

Date Boring Decommissioned: _____

**PUMPING EQUIPMENT AND ADDITIONAL INFORMATION**

Installed: _____

Installer's Name: _____

Installer's Registration No.: _____

Pump Type: _____

Well Development Period: 1 hours

Method of Development: _____

Protective Casing: Yes

Drilling Fluid: _____

Drill Rig: Sonic

Health and Safety Plan: No

**GEOLOGIC LOG**

| Depth to Top | Depth to Bottom | Color | USCS | Additional Description |
|---|---|---|---|---|
| 0 | 15 | light brown | SM - Silty sands, sand-silt mixtures | |
| 15 | 50 | light brown | SW - Well-graded sands and gravelly sands, little or no fines | |
| 50 | 60 | gray | GM - Silty gravels, gravel-sand-silt mixtures | |
| 60 | 76 | gray | GP - Poorly graded gravels and gravel-sand mixtures, little or no fines | |

PENDING APPROVAL

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002714**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** SHAWN TIBBETTS, MONITORING LICENSE # 587209

**Permit Issued to:** AQUIFER DRILLING & TESTING

**Company Address:** 75 EAST SECOND ST MINEOLA, NY 11501

**PROPERTY OWNER**

Name: JODI OVERMEYER

Organization: 900 Garfield Ave, %Ryan LLC

Address: 1735 MARKET ST.,STE A-400

City: Philadelphia State: Pennsylvania Zip Code: 19103

**PROPOSED WELL LOCATION**

Facility Name: PPG Garfield Avenue Group Site 114

Address: 900 Garfield Avenue

County: Hudson Municipality: Jersey City Lot: 20 Block: 21501

Easting (X): 611157 Northing (Y): 683915
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-MW48C

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings:

Depth (ft.): 80

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

**Approval Date:** March 13, 2020
**Expiration Date:** March 13, 2021

Approved by the authority of:
Catherine R. McCabe
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002714**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

Service ID: 1173204

This document has not yet been reviewed and approved or denied by the NJ DEP. Deficiencies in submittal information or actual construction may result in denial.

**WELL RECORD SUBMITTAL PDF**

**PROPERTY OWNER:** Jodi Overmeyer

Organization: 900 Garfield Ave, %Ryan LLC

Address: 1735 MARKET ST.,STE A-400, Philadelphia, Pennsylvania 19103

**WELL LOCATION:** PPG Garfield Avenue Group Site 114

Address: 900 Garfield Avenue

County: Hudson Municipality: Jersey City Lot: 20 Block: 21501

Easting(X): 611154 Northing(Y): 683915 Coordinate System: NJ State Plane (NAD83) - USFEET

Method: GPS Point of Reference: Well

GPS Manufacturer: Trimble Surveyor Name:

GPS Model: Juno Surveyor License #:

Accuracy: 10 Accuracy units: Feet

**WELL USE:** Monitoring **DATE WELL STARTED:** 03/19/2020

**Other Use(s):** **DATE WELL COMPLETED:** 03/19/2020

**WELL CONSTRUCTION**

**Permit Number** Total Depth Drilled(ft): 64 Drilling Company:

E202002714 Finished Well Depth(ft): 59 Driller Name: Shawn Tibbetts

Local ID: 114-MW48C Well was finished: Above Grade License No.: 587209

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt./Rating/Screen Slot # (lbs/sch no.) |
|---|---|---|---|---|---|
| Borehole(s) | 0 | 64 | 6 | N/A | N/A |
| Casing(s) | 0 | 55 | 2 | PVC | 40 |
| Screen(s) | 55 | 59 | 2 | PVC | .020 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 53 | 6 | 2 | 28 | 540 | 47 |
| Grout | 59 | 64 | 6 | 0 | 3 | 57 | 5 |
| Gravel Pack | 53 | 59 | 6 | 2 | sand | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Sonic

Additional Information:

Attachments:

**RECORD OF TEST** Depth to Pump: ft. below land surface

PENDING APPROVAL

Test Date: _____ Pump Capacity: _____ gpm

Static Water Level: 5 ft. below land surface Total Design Head: _____ ft.

Pumping Water Level: _____ ft. below land surface Pump Horsepower: _____

Water Level Measure Tool: Water Level Indicator If pump tested Discharge Rate: _____ gpm

Pumping Equipment: _____ Duration of Test: _____ hours

Well Yield: _____ gpm Date Boring Decommissioned: _____

**PUMPING EQUIPMENT AND ADDITIONAL INFORMATION**

Well Development Period: 1 hours

Method of Development: _____

Installed: _____ Protective Casing: No

Installer's Name: _____ Drilling Fluid: _____

Installer's Registration No.: _____ Drill Rig: Sonic

Pump Type: _____ Health and Safety Plan: No

**GEOLOGIC LOG**

| Depth to Top | Depth to Bottom | Color | USCS | Additional Description |
|---|---|---|---|---|
| 0 | 15 | light brown | SM - Silty sands, sand-silt mixtures | |
| 15 | 50 | light brown | SW - Well-graded sands and gravelly sands, little or no fines | |
| 50 | 60 | gray | GM - Silty gravels, gravel-sand-silt mixtures | |
| 60 | 64 | gray | GP - Poorly graded gravels and gravel-sand mixtures, little or no fines | |

PENDING APPROVAL

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Hudson COunty CHromate Site 114

List all AKAs: PPG Site 114

Street Address: 70 Carteret Avenue

Municipality: Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): G000008791; G000005480 Case Tracking Number(s): N/A

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 900 Garfield Avenue
3. Well Location (Municipal Block and Lot) Block# 21501 Lot # 20

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing):.. | E202002714 |
| 2. Site Well Number as shown on application or plans): ..... | 114-MW48C |
| 3. Well Completion Date: ..... | 03/19/20 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): ..... | 1.2 (Field measured) |
| 5. Total Depth of Well to the nearest ½ foot: ..... | 59.59 |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'):..... | 54.2 (Field Measured) |
| 7. Screen Length (or length of open hole) in feet: ..... | 4 |
| 8. Screen or Slot Size: ..... | 0.01 in |
| 9. Screen or Slot Material: ..... | PVC |
| 10. Casing Material (PVC, steel, or other – specify): ..... | PVC |
| 11. Casing Diameter (inches): ..... | 2 in |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): ..... | 7.72 |
| 13. Yield (gallons per minute): ..... | 7 |
| 14. Development Techinque (specify): ..... | whale pump |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): ..... | 1 hour 20 minutes |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: Garfield Avenue Group Chrome Sites (PPG)
List all AKAs: PPG Site 114
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) Garfield Avenue and Carteret Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # 21501 Lot # 20

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing): E202002714
2. Site Well Number (As shown on application or plans): 114-MW48C
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'36.79" Longitude: West 74°04'14.11"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 683919.4 East 611163.8
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 16.20
   Elevation of Top of Outer Casing: 16.72 Elevation of Ground: 15.0
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark: Reference Stations NJI2, NJNT, NYBP, NYBR and NYVH. On-site benchmarks have been set.
7. Significant observations and notes:
   Lot and Block information is for reference only and does not necessarily indicate that property, boundary, or lot lines have been surveyed relative to this well.

## SECTION D. LAND SURVEYOR'S CERTIFICATION

SEAL

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Professional Land Surveyor's Signature: Date: 8/10/2020
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002715**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** SHAWN TIBBETTS, MONITORING LICENSE # 587209

**Permit Issued to:** AQUIFER DRILLING & TESTING

**Company Address:** 75 EAST SECOND ST MINEOLA, NY 11501

**PROPERTY OWNER**

Name: JODI OVERMEYER

Organization: 900 Garfield Ave, %Ryan LLC

Address: 1735 MARKET ST.,STE A-400

City: Philadelphia State: Pennsylvania Zip Code: 19103

**PROPOSED WELL LOCATION**

Facility Name: PPG Garfield Avenue Group Site 114

Address: 900 Garfield Avenue

County: Hudson Municipality: Jersey City Lot: 20 Block: 21501

Easting (X): 611378 Northing (Y): 683873
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-MW49C

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings:

Depth (ft.): 80

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

**Approval Date:** March 13, 2020
**Expiration Date:** March 13, 2021

Approved by the authority of:
Catherine R. McCabe
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002715**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

Service ID: 1173272

This document has not yet been reviewed and approved or denied by the NJ DEP. Deficiencies in submittal information or actual construction may result in denial.

## WELL RECORD SUBMITTAL PDF

**PROPERTY OWNER:** Jodi Overmeyer

Organization: 900 Garfield Ave, %Ryan LLC

Address: 1735 MARKET ST.,STE A-400, Philadelphia, Pennsylvania 19103

**WELL LOCATION:** PPG Garfield Avenue Group Site 114

Address: 900 Garfield Avenue

County: Hudson Municipality: Jersey City Lot: 20 Block: 21501

Easting(X): 611380 Northing(Y): 683870 Coordinate System: NJ State Plane (NAD83) - USFEET

Method: GPS Point of Reference: Well

GPS Manufacturer: Trimble Surveyor Name:

GPS Model: Juno Surveyor License #:

Accuracy: 10 Accuracy units: Feet

**WELL USE:** Monitoring **DATE WELL STARTED:** 03/20/2020

**Other Use(s):** **DATE WELL COMPLETED:** 03/20/2020

**WELL CONSTRUCTION**

**Permit Number** Total Depth Drilled(ft): 75 Drilling Company:

E202002715 Finished Well Depth(ft): 72 Driller Name: Shawn Tibbetts

Local ID: 114-MW49C Well was finished: Above Grade License No.: 587209

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt./Rating/Screen Slot # (lbs/sch no.) |
|---|---|---|---|---|---|
| Borehole(s) | 0 | 75 | 6 | N/A | N/A |
| Casing(s) | 0 | 67 | 2 | PVC | 40 |
| Screen(s) | 62 | 67 | 2 | PVC | 20 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 60 | 6 | 2 | 32 | 612 | 55 |
| Grout | 72 | 75 | 6 | 0 | 57 | 3 | 5 |
| Gravel Pack | 60 | 67 | 6 | 2 | sand | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Sonic

Additional Information:

Attachments:

**RECORD OF TEST** Depth to Pump: ft. below land surface

PENDING APPROVAL

Test Date: _____ Pump Capacity: _____ gpm

Static Water Level: 5 ft. below land surface Total Design Head: _____ ft.

Pumping Water Level: _____ ft. below land surface Pump Horsepower: _____

Water Level Measure Tool: Water Level Indicator If pump tested Discharge Rate: _____ gpm

Pumping Equipment: _____ Duration of Test: _____ hours

Well Yield: _____ gpm Date Boring Decommissioned: _____

**PUMPING EQUIPMENT AND ADDITIONAL INFORMATION**

Well Development Period: 1 hours

Method of Development: _____

Installed: _____ Protective Casing: No

Installer's Name: _____ Drilling Fluid: _____

Installer's Registration No.: _____ Drill Rig: Sonic

Pump Type: _____ Health and Safety Plan: No

**GEOLOGIC LOG**

| Depth to Top | Depth to Bottom | Color | USCS | Additional Description |
|---|---|---|---|---|
| 0 | 15 | light brown | SM - Silty sands, sand-silt mixtures | |
| 15 | 50 | light brown | SW - Well-graded sands and gravelly sands, little or no fines | |
| 50 | 65 | gray | GM - Silty gravels, gravel-sand-silt mixtures | |
| 65 | 75 | gray | GP - Poorly graded gravels and gravel-sand mixtures, little or no fines | |

PENDING APPROVAL

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Hudson COunty Chromate Site 114

List all AKAs: PPG Site 114

Street Address: 70 Carteret Avenue

Municipality: Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): G000008791; G000005480 Case Tracking Number(s): N/A

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 900 Garfield Avenue
3. Well Location (Municipal Block and Lot) Block# 21501 Lot # 20

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing):.. | E202002715 |
| 2. Site Well Number as shown on application or plans): ..... | 114-MW49C |
| 3. Well Completion Date: ..... | 03/20/20 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): ..... | 1.95 (Field measured) |
| 5. Total Depth of Well to the nearest ½ foot: ..... | 69.42 |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'):..... | 66.45 (Field Measured) |
| 7. Screen Length (or length of open hole) in feet: ..... | 5 |
| 8. Screen or Slot Size: ..... | 0.01 in |
| 9. Screen or Slot Material: ..... | PVC |
| 10. Casing Material (PVC, steel, or other – specify): ..... | PVC |
| 11. Casing Diameter (inches): ..... | 2 in |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): ..... | 8.41 |
| 13. Yield (gallons per minute): ..... | 7 |
| 14. Development Techinque (specify): ..... | whale pump |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): ..... | 6 hour 25 minutes |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: Garfield Avenue Group Chrome Sites (PPG)
List all AKAs: PPG Site 114
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) Garfield Avenue and Carteret Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # 21501 Lot # 20

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing): E202002715
2. Site Well Number (As shown on application or plans): 114-MW49C
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'36.31" Longitude: West 74°04'11.33"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 683872.0 East 611378.1
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 16.52
   Elevation of Top of Outer Casing: 16.73 Elevation of Ground: 14.6
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark: Reference Stations NJI2, NJNT, NYBP, NYBR and NYVH. On-site benchmarks have been set.
7. Significant observations and notes:
   Lot and Block information is for reference only and does not necessarily indicate that property, boundary, or lot lines have been surveyed relative to this well.

## SECTION D. LAND SURVEYOR'S CERTIFICATION

SEAL

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Professional Land Surveyor's Signature: Date: 8/10/2020
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002716**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** SHAWN TIBBETTS, MONITORING LICENSE # 587209

**Permit Issued to:** AQUIFER DRILLING & TESTING

**Company Address:** 75 EAST SECOND ST MINEOLA, NY 11501

**PROPERTY OWNER**

Name: JODI OVERMEYER

Organization: 900 Garfield Ave, %Ryan LLC

Address: 1735 MARKET ST.,STE A-400

City: Philadelphia State: Pennsylvania Zip Code: 19103

**PROPOSED WELL LOCATION**

Facility Name: PPG Garfield Avenue Group Site 114

Address: 900 Garfield Avenue

County: Hudson Municipality: Jersey City Lot: 20 Block: 21501

Easting (X): 611029 Northing (Y): 683783
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-MW50C

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings:

Depth (ft.): 80

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

**Approval Date:** March 13, 2020
**Expiration Date:** March 13, 2021

Approved by the authority of:
Catherine R. McCabe
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002716**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

Service ID: 1173358

This document has not yet been reviewed and approved or denied by the NJ DEP. Deficiencies in submittal information or actual construction may result in denial.

## WELL RECORD SUBMITTAL PDF

**PROPERTY OWNER:** Jodi Overmeyer

Organization: 900 Garfield Ave, %Ryan LLC

Address: 1735 MARKET ST.,STE A-400, Philadelphia, Pennsylvania 19103

**WELL LOCATION:** PPG Garfield Avenue Group Site 114

Address: 900 Garfield Avenue

County: Hudson Municipality: Jersey City Lot: 20 Block: 21501

Easting(X): 611026 Northing(Y): 683782 Coordinate System: NJ State Plane (NAD83) - USFEET

Method: GPS Point of Reference: Well

GPS Manufacturer: Trimble Surveyor Name:

GPS Model: Juno Surveyor License #:

Accuracy: 10 Accuracy units: Feet

**WELL USE:** Monitoring **DATE WELL STARTED:** 03/30/2020

**Other Use(s):** **DATE WELL COMPLETED:** 03/31/2020

**WELL CONSTRUCTION**

**Permit Number** Total Depth Drilled(ft): 75 Drilling Company:

E202002716 Finished Well Depth(ft): 64 Driller Name: Shawn Tibbetts

Local ID: 114-MW50C Well was finished: Above Grade License No.: 587209

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt./Rating/Screen Slot # (lbs/sch no.) |
|---|---|---|---|---|---|
| Borehole(s) | 0 | 75 | 6 | N/A | N/A |
| Casing(s) | 0 | 59 | 2 | PVC | 40 |
| Screen(s) | 59 | 64 | 2 | PVC | 20 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 57 | 6 | 2 | 30 | 580 | 50 |
| Grout | 64 | 75 | 6 | 0 | 7 | 125 | 11 |
| Gravel Pack | 57 | 64 | 6 | 2 | sand | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Sonic

Additional Information:

Attachments:

**RECORD OF TEST** Depth to Pump: ft. below land surface

PENDING APPROVAL

Test Date: _____ Pump Capacity: _____ gpm

Static Water Level: 5 ft. below land surface Total Design Head: _____ ft.

Pumping Water Level: _____ ft. below land surface Pump Horsepower: _____

Water Level Measure Tool: Water Level Indicator If pump tested Discharge Rate: _____ gpm

Pumping Equipment: _____ Duration of Test: _____ hours

Well Yield: _____ gpm Date Boring Decommissioned: _____

**PUMPING EQUIPMENT AND ADDITIONAL INFORMATION**

Well Development Period: 1 hours

Method of Development: _____

Installed: _____ Protective Casing: No

Installer's Name: _____ Drilling Fluid: _____

Installer's Registration No.: _____ Drill Rig: Sonic

Pump Type: _____ Health and Safety Plan: No

**GEOLOGIC LOG**

| Depth to Top | Depth to Bottom | Color | USCS | Additional Description |
|---|---|---|---|---|
| 0 | 15 | light brown | SW - Well-graded sands and gravelly sands, little or no fines | |
| 15 | 50 | light brown | SM - Silty sands, sand-silt mixtures | |
| 50 | 65 | gray | GM - Silty gravels, gravel-sand-silt mixtures | |
| 65 | 75 | gray | GP - Poorly graded gravels and gravel-sand mixtures, little or no fines | |

PENDING APPROVAL

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Hudson COunty Chromate Site 114

List all AKAs: PPG Site 114

Street Address: 70 Carteret Avenue

Municipality: Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): G000008791; G000005480 Case Tracking Number(s): N/A

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 900 Garfield Avenue
3. Well Location (Municipal Block and Lot) Block# 21501 Lot # 20

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing):.. | E202002716 |
| 2. Site Well Number as shown on application or plans): ..... | 114-MW50C |
| 3. Well Completion Date: ..... | 03/31/20 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): ..... | 1.97 (Field measured) |
| 5. Total Depth of Well to the nearest ½ foot: ..... | 64.11 |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'):..... | 58.97 (Field Measured) |
| 7. Screen Length (or length of open hole) in feet: ..... | 5 |
| 8. Screen or Slot Size: ..... | 0.01 in |
| 9. Screen or Slot Material: ..... | PVC |
| 10. Casing Material (PVC, steel, or other – specify): ..... | PVC |
| 11. Casing Diameter (inches): ..... | 2 in |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): ..... | 7.31 |
| 13. Yield (gallons per minute): ..... | 1.1 |
| 14. Development Techinque (specify): ..... | whale pump |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): ..... | 3 hour 20 minutes |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: Garfield Avenue Group Chrome Sites (PPG)
List all AKAs: PPG Site 114
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) Garfield Avenue and Carteret Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # 21501 Lot # 20

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing): E202002716
2. Site Well Number (As shown on application or plans): 114-MW50C
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'35.32" Longitude: West 74°04'15.68"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 683769.8 East 611043.1
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 15.36
   Elevation of Top of Outer Casing: 16.04 Elevation of Ground: 13.4
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark: Reference Stations NJI2, NJNT, NYBP, NYBR and NYVH. On-site benchmarks have been set.
7. Significant observations and notes:
   Lot and Block information is for reference only and does not necessarily indicate that property, boundary, or lot lines have been surveyed relative to this well.

## SECTION D. LAND SURVEYOR'S CERTIFICATION

SEAL

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Professional Land Surveyor's Signature: Date: 8/10/2020
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002718**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** SHAWN TIBBETTS, MONITORING LICENSE # 587209

**Permit Issued to:** AQUIFER DRILLING & TESTING

**Company Address:** 75 EAST SECOND ST MINEOLA, NY 11501

**PROPERTY OWNER**

Name: JODY OVERMEYER

Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery Street

City: Jersey City State: New Jersey Zip Code: 07302

**PROPOSED WELL LOCATION**

Facility Name: PPG Garfield Avenue Group Site 114

Address: 2 Dakota Street

County: Hudson Municipality: Jersey City Lot: 16 Block: 21501

Easting (X): 611625 Northing (Y): 683626
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-MW51C

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings:

Depth (ft.): 80

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

**Approval Date:** March 13, 2020
**Expiration Date:** March 13, 2021

Approved by the authority of:
Catherine R. McCabe
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002718**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

Service ID: 1173313

This document has not yet been reviewed and approved or denied by the NJ DEP. Deficiencies in submittal information or actual construction may result in denial.

## WELL RECORD SUBMITTAL PDF

**PROPERTY OWNER:** Jody Overmeyer

Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery Street, Jersey City (Hudson), New Jersey 07302

**WELL LOCATION:** PPG Garfield Avenue Group Site 114

Address: 2 Dakota Street

County: Hudson Municipality: Jersey City Lot: 16 Block: 21501

Easting(X): 611625 Northing(Y): 683625 Coordinate System: NJ State Plane (NAD83) - USFEET

Method: GPS Point of Reference: Well

GPS Manufacturer: Trimble Surveyor Name:

GPS Model: Juno Surveyor License #:

Accuracy: 10 Accuracy units: Feet

**WELL USE:** Monitoring **DATE WELL STARTED:** 03/25/2020

**Other Use(s):** **DATE WELL COMPLETED:** 03/26/2020

**WELL CONSTRUCTION**

**Permit Number** Total Depth Drilled(ft): 77 Drilling Company:

E202002718 Finished Well Depth(ft): 77 Driller Name: Shawn Tibbetts

Local ID: 114-MW51C Well was finished: Above Grade License No.: 587209

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt./Rating/Screen Slot # (lbs/sch no.) |
|---|---|---|---|---|---|
| Borehole(s) | 0 | 77 | 6 | N/A | N/A |
| Casing(s) | 0 | 72 | 2 | PVC | 40 |
| Screen(s) | 72 | 77 | 2 | PVC | 20 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 70 | 6 | 2 | 38 | 715 | 65 |
| Gravel Pack | 70 | 77 | 6 | 2 | PVC | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Sonic

Additional Information:

Attachments:

**RECORD OF TEST** Depth to Pump: ft. below land surface

Test Date: Pump Capacity: gpm

PENDING APPROVAL

Static Water Level: 5 ft. below land surface

Pumping Water Level: ft. below land surface

Water Level Measure Tool: Water Level Indicator

Pumping Equipment:

Well Yield: gpm

Total Design Head: ft.

Pump Horsepower:

If pump tested Discharge Rate: gpm

Duration of Test: hours

Date Boring Decommissioned:

**PUMPING EQUIPMENT AND ADDITIONAL INFORMATION**

Installed:

Installer's Name:

Installer's Registration No.:

Pump Type:

Well Development Period: 1 hours

Method of Development:

Protective Casing: No

Drilling Fluid:

Drill Rig: Sonic

Health and Safety Plan: No

**GEOLOGIC LOG**

| Depth to Top | Depth to Bottom | Color | USCS | Additional Description |
|---|---|---|---|---|
| 0 | 15 | light brown | SM - Silty sands, sand-silt mixtures | |
| 15 | 50 | light brown | SW - Well-graded sands and gravelly sands, little or no fines | |
| 50 | 65 | gray | GM - Silty gravels, gravel-sand-silt mixtures | |
| 65 | 77 | gray | GP - Poorly graded gravels and gravel-sand mixtures, little or no fines | |

PENDING APPROVAL

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Hudson COunty Chromate Site 114

List all AKAs: PPG Site 114

Street Address: 70 Carteret Avenue

Municipality: Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): G000008791; G000005480 Case Tracking Number(s): N/A

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 2 Dakota Street
3. Well Location (Municipal Block and Lot) Block# 21501 Lot # 16

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing):.. | E202002718 |
| 2. Site Well Number as shown on application or plans): ..... | 114-MW51C |
| 3. Well Completion Date: ..... | 03/25/20 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): ..... | 1.94 (Field measured) |
| 5. Total Depth of Well to the nearest ½ foot: ..... | 78.41 |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'):..... | 73.44 (Field Measured) |
| 7. Screen Length (or length of open hole) in feet: ..... | 5 |
| 8. Screen or Slot Size: ..... | 0.01 in |
| 9. Screen or Slot Material: ..... | PVC |
| 10. Casing Material (PVC, steel, or other – specify): ..... | PVC |
| 11. Casing Diameter (inches): ..... | 2 in |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): ..... | 7.49 |
| 13. Yield (gallons per minute): ..... | 7 |
| 14. Development Techinque (specify): ..... | whale pump |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): ..... | 7 hour 15 minutes |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Garfield Avenue Group Chrome Sites (PPG)
List all AKAs: PPG Site 114
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) Garfield Avenue and Carteret Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # 21501 Lot # 16

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing): E202002718
2. Site Well Number (As shown on application or plans): 114-MW51C
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'33.98" Longitude: West 74°04'08.03"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 683637.4 East 611633.3
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 14.13
   Elevation of Top of Outer Casing: 15.00 Elevation of Ground: 12.2
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark: Reference Stations NJI2, NJNT, NYBP, NYBR and NYVH. On-site benchmarks have been set.
7. Significant observations and notes:
   Lot and Block information is for reference only and does not necessarily indicate that property, boundary, or lot lines have been surveyed relative to this well.

## SECTION D. LAND SURVEYOR'S CERTIFICATION

SEAL

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Professional Land Surveyor's Signature: Date: 8/10/2020
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002719**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** SHAWN TIBBETTS, MONITORING LICENSE # 587209

**Permit Issued to:** AQUIFER DRILLING & TESTING

**Company Address:** 75 EAST SECOND ST MINEOLA, NY 11501

**PROPERTY OWNER**

Name: JODY OVERMEYER

Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery Street

City: Jersey City State: New Jersey Zip Code: 07302

**PROPOSED WELL LOCATION**

Facility Name: PPG Garfield Avenue Group Site 114

Address: 880 Garfield Avenue

County: Hudson Municipality: Jersey City Lot: 18 Block: 21501

Easting (X): 611035 Northing (Y): 683527
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-MW52C

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings:

Depth (ft.): 80

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

**Approval Date:** March 13, 2020
**Expiration Date:** March 13, 2021

Approved by the authority of:
Catherine R. McCabe
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002719**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

Service ID: 1173860

This document has not yet been reviewed and approved or denied by the NJ DEP. Deficiencies in submittal information or actual construction may result in denial.

## WELL RECORD SUBMITTAL PDF

**PROPERTY OWNER:** Jody Overmeyer

Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery Street, Jersey City (Hudson), New Jersey 07302

**WELL LOCATION:** PPG Garfield Avenue Group Site 114

Address: 880 Garfield Avenue

County: Hudson Municipality: Jersey City Lot: 18 Block: 21501

Easting(X): 611033 Northing(Y): 683529 Coordinate System: NJ State Plane (NAD83) - USFEET

Method: GPS Point of Reference: Well

GPS Manufacturer: Trimble Surveyor Name:

GPS Model: Juno Surveyor License #:

Accuracy: 10 Accuracy units: Feet

**WELL USE:** Monitoring **DATE WELL STARTED:** 07/07/2020

**Other Use(s):** **DATE WELL COMPLETED:** 07/08/2020

**WELL CONSTRUCTION**

**Permit Number** Total Depth Drilled(ft): 80 Drilling Company:

E202002719 Finished Well Depth(ft): 75 Driller Name: Shawn Tibbetts

Local ID: 114-MW52C Well was finished: Above Grade License No.: 587209

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt./Rating/Screen Slot # (lbs/sch no.) |
|---|---|---|---|---|---|
| Borehole(s) | 0 | 80 | 6 | N/A | N/A |
| Casing(s) | 0 | 70 | 2 | PVC | 40 |
| Screen(s) | 70 | 75 | 2 | PVC | 20 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 68 | 6 | 2 | 37 | 695 | 60 |
| Grout | 75 | 80 | 6 | 0 | 3 | 55 | 5 |
| Gravel Pack | 68 | 75 | 6 | 2 | PVC | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Sonic

Additional Information:

Attachments:

**RECORD OF TEST** Depth to Pump: ft. below land surface

PENDING APPROVAL

Test Date: _____ Pump Capacity: _____ gpm

Static Water Level: 5 ft. below land surface Total Design Head: _____ ft.

Pumping Water Level: _____ ft. below land surface Pump Horsepower: _____

Water Level Measure Tool: Water Level Indicator If pump tested Discharge Rate: _____ gpm

Pumping Equipment: _____ Duration of Test: _____ hours

Well Yield: _____ gpm Date Boring Decommissioned: _____

**PUMPING EQUIPMENT AND ADDITIONAL INFORMATION**

Well Development Period: 1 hours

Method of Development: _____

Installed: _____ Protective Casing: No

Installer's Name: _____ Drilling Fluid: _____

Installer's Registration No.: _____ Drill Rig: Sonic

Pump Type: _____ Health and Safety Plan: No

**GEOLOGIC LOG**

| Depth to Top | Depth to Bottom | Color | USCS | Additional Description |
|---|---|---|---|---|
| 0 | 15 | light brown | SM - Silty sands, sand-silt mixtures | |
| 15 | 50 | light brown | SW - Well-graded sands and gravelly sands, little or no fines | |
| 50 | 65 | gray | GM - Silty gravels, gravel-sand-silt mixtures | |
| 65 | 80 | gray | GP - Poorly graded gravels and gravel-sand mixtures, little or no fines | |

PENDING APPROVAL

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Hudson COunty Chromate Site 114

List all AKAs: PPG Site 114

Street Address: 70 Carteret Avenue

Municipality: Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): G000008791; G000005480 Case Tracking Number(s): N/A

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 880 Garfield Avenue
3. Well Location (Municipal Block and Lot) Block# 21501 Lot # 18

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing):.. | E202002719 |
| 2. Site Well Number as shown on application or plans): ..... | 114-MW52C |
| 3. Well Completion Date: ..... | 07/9/20 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): ..... | 1.87 (Field measured) |
| 5. Total Depth of Well to the nearest ½ foot: ..... | 75.14 |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'):..... | 69.87 (Field Measured) |
| 7. Screen Length (or length of open hole) in feet: ..... | 5 |
| 8. Screen or Slot Size: ..... | 0.01 in |
| 9. Screen or Slot Material: ..... | PVC |
| 10. Casing Material (PVC, steel, or other – specify): ..... | PVC |
| 11. Casing Diameter (inches): ..... | 2 in |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): ..... | 8.08 |
| 13. Yield (gallons per minute): ..... | 1 |
| 14. Development Techinque (specify): ..... | whale pump |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): ..... | 7 hour 25 minutes |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: Garfield Avenue Group Chrome Sites (PPG)
List all AKAs: PPG Site 114
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner: PPG Industries
2. Well Location (Street Address): Garfield Avenue and Carteret Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot): Block # 21501 Lot # 18

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing): E202002719
2. Site Well Number (As shown on application or plans): 114-MW52C
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'32.93" Longitude: West 74°04'15.81"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 683527.7 East 611034.7
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 15.85
   Elevation of Top of Outer Casing: 16.47 Elevation of Ground: 14.0
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark: Reference Stations NJI2, NJNT, NYBP, NYBR and NYVH. On-site benchmarks have been set.
7. Significant observations and notes:
   Lot and Block information is for reference only and does not necessarily indicate that property, boundary, or lot lines have been surveyed relative to this well.

## SECTION D. LAND SURVEYOR'S CERTIFICATION

SEAL

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Professional Land Surveyor's Signature: Date: 8/10/2020
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202012657**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** SHAWN TIBBETTS, ENV RESOURCE GEOTEC LICENSE # 587209

**Permit Issued to:** AQUIFER DRILLING & TESTING

**Company Address:** 75 EAST SECOND ST MINEOLA, NY 11501

**PROPERTY OWNER**

Name: JODY OVERMEYER

Organization: Jersey City Redevelopment Agency

Address: 66 York Street

City: Jersey City State: New Jersey Zip Code: 07302

**PROPOSED WELL LOCATION**

Facility Name: PPG Garfield Avenue Group Site 114

Address: 884 Garfield Ave

County: Hudson Municipality: Jersey City Lot: 19.01 Block: 21501

Easting (X): 611077 Northing (Y): 683544
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-MW52D

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 4

Regulatory Program Requiring Wells/Borings:

Depth (ft.): 125

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

**Approval Date:** November 30, 2020
**Expiration Date:** November 30, 2021

Approved by the authority of:
Catherine R. McCabe
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202012657**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

Service ID: 1193051

This document has not yet been reviewed and approved or denied by the NJ DEP. Deficiencies in submittal information or actual construction may result in denial.

**WELL RECORD SUBMITTAL PDF**

**PROPERTY OWNER:** Jody Overmeyer

Organization: Jersey City Redevelopment Agency

Address: 66 York Street, Jersey City (Hudson), New Jersey 07302

**WELL LOCATION:** PPG Garfield Avenue Group Site 114

Address: 884 Garfield Ave

County: Hudson Municipality: Jersey City Lot: 19.01 Block: 21501

Easting(X): 611075 Northing(Y): 683545 Coordinate System: NJ State Plane (NAD83) - USFEET

Method: GPS Point of Reference: Well

GPS Manufacturer: Trimble Surveyor Name:

GPS Model: Juno Surveyor License #:

Accuracy: 10 Accuracy units: Feet

**WELL USE:** Monitoring **DATE WELL STARTED:** 12/01/2020

**Other Use(s):** **DATE WELL COMPLETED:** 12/11/2020

**WELL CONSTRUCTION**

**Permit Number** Total Depth Drilled(ft): 105 Drilling Company:

E202012657 Finished Well Depth(ft): 105 Driller Name: Shawn Tibbetts

Local ID: 114-MW52D Well was finished: Flush Mount License No.: 587209

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt./Rating/Screen Slot # (lbs/sch no.) |
|---|---|---|---|---|---|
| Borehole(s) | 0 | 80 | 10 | N/A | N/A |
| Borehole(s) | 80 | 100 | 6 | N/A | N/A |
| Casing(s) | 0 | 80 | 6 | Steel | 40 |
| Screen(s) | | | | | |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 80 | 10 | 6 | 90 | 1630 | 145 |
| Gravel Pack | | | | | | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Sonic

Additional Information:

Attachments:

**RECORD OF TEST** Depth to Pump: ft. below land surface

PENDING APPROVAL

Test Date: _____ Pump Capacity: _____ gpm

Static Water Level: 10 ft. below land surface Total Design Head: _____ ft.

Pumping Water Level: _____ ft. below land surface Pump Horsepower: _____

Water Level Measure Tool: Water Level Indicator If pump tested Discharge Rate: _____ gpm

Pumping Equipment: _____ Duration of Test: _____ hours

Well Yield: _____ gpm Date Boring Decommissioned: _____

**PUMPING EQUIPMENT AND ADDITIONAL INFORMATION**

Well Development Period: 1 hours

Method of Development: _____

Installed: _____ Protective Casing: No

Installer's Name: _____ Drilling Fluid: _____

Installer's Registration No.: _____ Drill Rig: Sonic

Pump Type: _____ Health and Safety Plan: No

**GEOLOGIC LOG**

| Depth to Top | Depth to Bottom | Color | USCS | Additional Description |
|---|---|---|---|---|
| 0 | 22 | gray | SM - Silty sands, sand-silt mixtures | |
| 22 | 68 | red brown | SW - Well-graded sands and gravelly sands, little or no fines | |
| 68 | 70 | gray | WR - Weathered Rock | weathered rock |
| 70 | 105 | gray | CR - Competent Rock | competent rock |

PENDING APPROVAL

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Hudson COunty Chromate Site 144

List all AKAs: PPG Site 114

Street Address: 70 Carteret Avenue

Municipality: Jersey CIty (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 66 York Street Jersey City
3. Well Location (Municipal Block and Lot) Block# 21501 Lot # 18

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing):.. | E202012657 |
| 2. Site Well Number as shown on application or plans): ..... | 114-MW52D |
| 3. Well Completion Date: ..... | 12/11/20 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): ..... | 2.72 FT |
| 5. Total Depth of Well to the nearest ½ foot: ..... | 105 FT BGS |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'):..... | 87.33 |
| 7. Screen Length (or length of open hole) in feet: ..... | 25 |
| 8. Screen or Slot Size: ..... | N/A OPEN HOLE |
| 9. Screen or Slot Material: ..... | N/A OPEN HOLE |
| 10. Casing Material (PVC, steel, or other – specify): ..... | STEEL |
| 11. Casing Diameter (inches): ..... | 6 IN |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): ..... | 8.32 |
| 13. Yield (gallons per minute): ..... | < 1 GPM |
| 14. Development Techinque (specify): ..... | AIR LIFT/ PUMPING |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): ..... | 9 HOURS |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: Garfield Avenue Group Chrome Sites (PPG)
List all AKAs: PPG Site 114
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) Site 114, Garfield Avenue and Carteret Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # 21501 Lot # 18

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing): E202012657
2. Site Well Number (As shown on application or plans): 114-MW52D
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'33.09" Longitude: West 74°04'15.25"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 683544.4 East 611077.5
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 15.64
   Elevation of Top of Outer Casing: 16.15 Elevation of Ground: 13.9
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark: Reference Stations NJI2, NJNT, NYBP, NYBR and NYVH. On-site benchmarks have been set.
7. Significant observations and notes:
   Lot and Block information is for reference only and does not necessarily indicate that property, boundary, or lot lines have been surveyed relative to this well.

## SECTION D. LAND SURVEYOR'S CERTIFICATION

SEAL

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Professional Land Surveyor's Signature: Date: 1/19/2021
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax:

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002720**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** SHAWN TIBBETTS, MONITORING LICENSE # 587209

**Permit Issued to:** AQUIFER DRILLING & TESTING

**Company Address:** 75 EAST SECOND ST MINEOLA, NY 11501

**PROPERTY OWNER**

Name: JODY OVERMEYER

Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery Street

City: Jersey City State: New Jersey Zip Code: 07302

**PROPOSED WELL LOCATION**

Facility Name: PPG Garfield Avenue Group Site 114

Address: 880 Garfield Avenue

County: Hudson Municipality: Jersey City Lot: 18 Block: 21501

Easting (X): 611157 Northing (Y): 683435
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-MW53C

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings:

Depth (ft.): 80

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

**Approval Date:** March 13, 2020
**Expiration Date:** March 13, 2021

Approved by the authority of:
Catherine R. McCabe
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002720**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

Service ID: 1173873

This document has not yet been reviewed and approved or denied by the NJ DEP. Deficiencies in submittal information or actual construction may result in denial.

## WELL RECORD SUBMITTAL PDF

**PROPERTY OWNER:** Jody Overmeyer

Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery Street, Jersey City (Hudson), New Jersey 07302

**WELL LOCATION:** PPG Garfield Avenue Group Site 114

Address: 880 Garfield Avenue

County: Hudson Municipality: Jersey City Lot: 18 Block: 21501

Easting(X): 611155 Northing(Y): 683435 Coordinate System: NJ State Plane (NAD83) - USFEET

Method: GPS Point of Reference: Well

GPS Manufacturer: Trimble Surveyor Name:

GPS Model: Juno Surveyor License #:

Accuracy: 10 Accuracy units: Feet

**WELL USE:** Monitoring **DATE WELL STARTED:** 07/09/2020

**Other Use(s):** **DATE WELL COMPLETED:** 07/13/2020

**WELL CONSTRUCTION**

**Permit Number** Total Depth Drilled(ft): 55 Drilling Company:

E202002720 Finished Well Depth(ft): 50 Driller Name: Shawn Tibbetts

Local ID: 114-MW53C Well was finished: Above Grade License No.: 587209

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt./Rating/Screen Slot # (lbs/sch no.) |
|---|---|---|---|---|---|
| Borehole(s) | 0 | 55 | 2 | N/A | N/A |
| Casing(s) | 0 | 53.5 | 2 | PVC | 40 |
| Screen(s) | 48.5 | 50 | 2 | PVC | 20 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 46.5 | 6 | 2 | 25 | 475 | 40 |
| Grout | 50 | 55 | 6 | 0 | 3 | 60 | 5 |
| Gravel Pack | 46.5 | 50 | 6 | 2 | sand | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Sonic

Additional Information:

Attachments:

**RECORD OF TEST** Depth to Pump: ft. below land surface

PENDING APPROVAL

Test Date: _____ Pump Capacity: _____ gpm

Static Water Level: 5 ft. below land surface Total Design Head: _____ ft.

Pumping Water Level: _____ ft. below land surface Pump Horsepower: _____

Water Level Measure Tool: Water Level Indicator If pump tested Discharge Rate: _____ gpm

Pumping Equipment: _____ Duration of Test: _____ hours

Well Yield: _____ gpm Date Boring Decommissioned: _____

**PUMPING EQUIPMENT AND ADDITIONAL INFORMATION**

Well Development Period: 1 hours

Method of Development: _____

Installed: _____ Protective Casing: No

Installer's Name: _____ Drilling Fluid: _____

Installer's Registration No.: _____ Drill Rig: Sonic

Pump Type: _____ Health and Safety Plan: No

**GEOLOGIC LOG**

| Depth to Top | Depth to Bottom | Color | USCS | Additional Description |
|---|---|---|---|---|
| 0 | 15 | light brown | SM - Silty sands, sand-silt mixtures | |
| 15 | 50 | light brown | SW - Well-graded sands and gravelly sands, little or no fines | |
| 50 | 55 | gray | GM - Silty gravels, gravel-sand-silt mixtures | |

PENDING APPROVAL

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Hudson COunty Chromate Site 114

List all AKAs: PPG Site 114

Street Address: 70 Carteret Avenue

Municipality: Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): G000008791; G000005480 Case Tracking Number(s): N/A

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 880 Garfield Avenue
3. Well Location (Municipal Block and Lot) Block# 21501 Lot # 18

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing):.. | E202002720 |
| 2. Site Well Number as shown on application or plans): ..... | 114-MW53C |
| 3. Well Completion Date: ..... | 07/13/20 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): ..... | 1.15 (Field measured) |
| 5. Total Depth of Well to the nearest ½ foot: ..... | 48.59 |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'):..... | 47.59 (Field Measured) |
| 7. Screen Length (or length of open hole) in feet: ..... | 1.5 |
| 8. Screen or Slot Size: ..... | 0.01 in |
| 9. Screen or Slot Material: ..... | PVC |
| 10. Casing Material (PVC, steel, or other – specify): ..... | PVC |
| 11. Casing Diameter (inches): ..... | 2 in |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): ..... | 7.13 |
| 13. Yield (gallons per minute): ..... | 1 |
| 14. Development Techinque (specify): ..... | whale pump |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): ..... | 11 hour 35 minutes |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: Garfield Avenue Group Chrome Sites (PPG)
List all AKAs: PPG Site 114
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) Garfield Avenue and Carteret Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # 21501 Lot # 18

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing): E202002720
2. Site Well Number (As shown on application or plans): 114-MW53C
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'32.01" Longitude: West 74°04'14.22"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 683435.6 East 611157.6
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 15.08
   Elevation of Top of Outer Casing: 15.86 Elevation of Ground: 13.9
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark: Reference Stations NJI2, NJNT, NYBP, NYBR and NYVH. On-site benchmarks have been set.
7. Significant observations and notes:
   Lot and Block information is for reference only and does not necessarily indicate that property, boundary, or lot lines have been surveyed relative to this well.

## SECTION D. LAND SURVEYOR'S CERTIFICATION

SEAL

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Professional Land Surveyor's Signature: Date: 8/10/2020
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002721**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** SHAWN TIBBETTS, MONITORING LICENSE # 587209

**Permit Issued to:** AQUIFER DRILLING & TESTING

**Company Address:** 75 EAST SECOND ST MINEOLA, NY 11501

**PROPERTY OWNER**

Name: JODY OVERMEYER

Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery Street

City: Jersey City State: New Jersey Zip Code: 07302

**PROPOSED WELL LOCATION**

Facility Name: PPG Garfield Avenue Group Site 114

Address: 880 Garfield Avenue

County: Hudson Municipality: Jersey City Lot: 18 Block: 21501

Easting (X): 611215 Northing (Y): 683276
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-MW54C

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings:

Depth (ft.): 80

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

**Approval Date:** March 13, 2020
**Expiration Date:** March 13, 2021

Approved by the authority of:
Catherine R. McCabe
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002721**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

Service ID: 1173381

This document has not yet been reviewed and approved or denied by the NJ DEP. Deficiencies in submittal information or actual construction may result in denial.

## WELL RECORD SUBMITTAL PDF

**PROPERTY OWNER:** Jody Overmeyer

Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery Street, Jersey City (Hudson), New Jersey 07302

**WELL LOCATION:** PPG Garfield Avenue Group Site 114

Address: 880 Garfield Avenue

County: Hudson Municipality: Jersey City Lot: 18 Block: 21501

Easting(X): 611214 Northing(Y): 683274 Coordinate System: NJ State Plane (NAD83) - USFEET

Method: GPS Point of Reference: Well

GPS Manufacturer: Trimble Surveyor Name:

GPS Model: Juno Surveyor License #:

Accuracy: 10 Accuracy units: Feet

**WELL USE:** Monitoring **DATE WELL STARTED:** 04/01/2020

**Other Use(s):** **DATE WELL COMPLETED:** 04/02/2020

**WELL CONSTRUCTION**

**Permit Number** Total Depth Drilled(ft): 80 Drilling Company:

E202002721 Finished Well Depth(ft): 79 Driller Name: Shawn Tibbetts

Local ID: 114-MW54C Well was finished: Above Grade License No.: 587209

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt./Rating/Screen Slot # (lbs/sch no.) |
|---|---|---|---|---|---|
| Borehole(s) | 0 | 80 | 6 | N/A | N/A |
| Casing(s) | 0 | 74 | 2 | PVC | 40 |
| Screen(s) | 74 | 79 | 2 | PVC | 20 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 72 | 6 | 2 | 40 | 735 | 65 |
| Grout | 79 | 80 | 6 | 0 | 1 | 11 | 1 |
| Gravel Pack | 72 | 79 | 6 | 2 | sand | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Sonic

Additional Information:

Attachments:

**RECORD OF TEST** Depth to Pump: ft. below land surface

PENDING APPROVAL

Test Date: _____ Pump Capacity: _____ gpm

Static Water Level: 5 ft. below land surface Total Design Head: _____ ft.

Pumping Water Level: _____ ft. below land surface Pump Horsepower: _____

Water Level Measure Tool: Water Level Indicator If pump tested Discharge Rate: _____ gpm

Pumping Equipment: _____ Duration of Test: _____ hours

Well Yield: _____ gpm Date Boring Decommissioned: _____

**PUMPING EQUIPMENT AND ADDITIONAL INFORMATION**

Well Development Period: 1 hours

Method of Development: _____

Installed: _____ Protective Casing: No

Installer's Name: _____ Drilling Fluid: _____

Installer's Registration No.: _____ Drill Rig: Sonic

Pump Type: _____ Health and Safety Plan: No

**GEOLOGIC LOG**

| Depth to Top | Depth to Bottom | Color | USCS | Additional Description |
|---|---|---|---|---|
| 0 | 15 | light brown | SM - Silty sands, sand-silt mixtures | |
| 15 | 50 | light brown | SW - Well-graded sands and gravelly sands, little or no fines | |
| 60 | 65 | gray | GM - Silty gravels, gravel-sand-silt mixtures | |
| 65 | 80 | gray | GP - Poorly graded gravels and gravel-sand mixtures, little or no fines | |

PENDING APPROVAL

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Hudson COunty Chromate Site 114

List all AKAs: PPG Site 114

Street Address: 70 Carteret Avenue

Municipality: Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): G000008791; G000005480 Case Tracking Number(s): N/A

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 880 Garfield Avenue
3. Well Location (Municipal Block and Lot) Block# 21501 Lot # 18

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing):.. | E202002721 |
| 2. Site Well Number as shown on application or plans): ..... | 114-MW54C |
| 3. Well Completion Date: ..... | 04/2/20 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): ..... | 1.89 (Field measured) |
| 5. Total Depth of Well to the nearest ½ foot: ..... | 79.12 |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'):..... | 73.89 (Field Measured) |
| 7. Screen Length (or length of open hole) in feet: ..... | 1.55 |
| 8. Screen or Slot Size: ..... | 0.01 in |
| 9. Screen or Slot Material: ..... | PVC |
| 10. Casing Material (PVC, steel, or other – specify): ..... | PVC |
| 11. Casing Diameter (inches): ..... | 2 in |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): ..... | 5.90 |
| 13. Yield (gallons per minute): ..... | 2 |
| 14. Development Techinque (specify): ..... | whale pump |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): ..... | 6 hour 55 minutes |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Garfield Avenue Group Chrome Sites (PPG)
List all AKAs: PPG Site 114
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) Garfield Avenue and Carteret Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # 21501 Lot # 18

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing): E202002721
2. Site Well Number (As shown on application or plans): 114-MW54C
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'30.44" Longitude: West 74°04'13.48"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 683276.5 East 611214.9
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 12.71
   Elevation of Top of Outer Casing: 13.05 Elevation of Ground: 10.8
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark: Reference Stations NJI2, NJNT, NYBP, NYBR and NYVH. On-site benchmarks have been set.
7. Significant observations and notes:
   Lot and Block information is for reference only and does not necessarily indicate that property, boundary, or lot lines have been surveyed relative to this well.

## SECTION D. LAND SURVEYOR'S CERTIFICATION

SEAL

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Professional Land Surveyor's Signature: Date: 8/10/2020
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002722**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** SHAWN TIBBETTS, MONITORING LICENSE # 587209

**Permit Issued to:** AQUIFER DRILLING & TESTING

**Company Address:** 75 EAST SECOND ST MINEOLA, NY 11501

**PROPERTY OWNER**

Name: JODY OVERMEYER

Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery Street

City: Jersey City State: New Jersey Zip Code: 07302

**PROPOSED WELL LOCATION**

Facility Name: PPG Garfield Avenue Group Site 114

Address: 2 Dakota Street

County: Hudson Municipality: Jersey City Lot: 16 Block: 21501

Easting (X): 611442 Northing (Y): 683520
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-MW55C

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings:

Depth (ft.): 80

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

Terry D. Pilawski

**Approval Date:** March 13, 2020
**Expiration Date:** March 13, 2021

Approved by the authority of:
Catherine R. McCabe
Commissioner

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002722**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

Service ID: 1173324

This document has not yet been reviewed and approved or denied by the NJ DEP. Deficiencies in submittal information or actual construction may result in denial.

**WELL RECORD SUBMITTAL PDF**

**PROPERTY OWNER:** Jody Overmeyer

Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery Street, Jersey City (Hudson), New Jersey 07302

**WELL LOCATION:** PPG Garfield Avenue Group Site 114

Address: 2 Dakota Street

County: Hudson Municipality: Jersey City Lot: 16 Block: 21501

Easting(X): 611440 Northing(Y): 683518 Coordinate System: NJ State Plane (NAD83) - USFEET

Method: GPS Point of Reference: Well

GPS Manufacturer: Trimble Surveyor Name:

GPS Model: Juno Surveyor License #:

Accuracy: 10 Accuracy units: Feet

**WELL USE:** Monitoring **DATE WELL STARTED:** 03/26/2020

**Other Use(s):** **DATE WELL COMPLETED:** 03/27/2020

**WELL CONSTRUCTION**

**Permit Number** Total Depth Drilled(ft): 75 Drilling Company:

E202002722 Finished Well Depth(ft): 69 Driller Name: Shawn Tibbetts

Local ID: 114-MW55C Well was finished: Above Grade License No.: 587209

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt./Rating/Screen Slot # (lbs/sch no.) |
|---|---|---|---|---|---|
| Borehole(s) | 0 | 75 | 6 | N/A | N/A |
| Casing(s) | 0 | 68 | 2 | PVC | 40 |
| Screen(s) | 68 | 69 | 2 | PVC | .020 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 66 | 6 | 2 | 37 | 700 | 60 |
| Grout | 69 | 75 | 6 | 0 | 4 | 68 | 6 |
| Gravel Pack | 66 | 69 | 6 | 2 | sand | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Sonic

Additional Information:

Attachments:

**RECORD OF TEST** Depth to Pump: ft. below land surface

PENDING APPROVAL

Test Date: _____ Pump Capacity: _____ gpm

Static Water Level: 5 ft. below land surface Total Design Head: _____ ft.

Pumping Water Level: _____ ft. below land surface Pump Horsepower: _____

Water Level Measure Tool: Water Level Indicator If pump tested Discharge Rate: _____ gpm

Pumping Equipment: _____ Duration of Test: _____ hours

Well Yield: _____ gpm Date Boring Decommissioned: _____

**PUMPING EQUIPMENT AND ADDITIONAL INFORMATION**

Well Development Period: 1 hours

Method of Development: _____

Installed: _____ Protective Casing: No

Installer's Name: _____ Drilling Fluid: _____

Installer's Registration No.: _____ Drill Rig: Sonic

Pump Type: _____ Health and Safety Plan: No

**GEOLOGIC LOG**

| Depth to Top | Depth to Bottom | Color | USCS | Additional Description |
|---|---|---|---|---|
| 0 | 15 | light brown | SW - Well-graded sands and gravelly sands, little or no fines | |
| 15 | 50 | light brown | SM - Silty sands, sand-silt mixtures | |
| 50 | 65 | gray | GM - Silty gravels, gravel-sand-silt mixtures | |
| 65 | 75 | gray | GP - Poorly graded gravels and gravel-sand mixtures, little or no fines | |

PENDING APPROVAL

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Hudson COunty Chromate Site 114

List all AKAs: PPG Site 114

Street Address: 70 Carteret Avenue

Municipality: Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): G000008791; G000005480 Case Tracking Number(s): N/A

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 2 Dakota Street
3. Well Location (Municipal Block and Lot) Block# 21501 Lot # 16

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing):.. | E202002722 |
| 2. Site Well Number as shown on application or plans): ..... | 114-MW55C |
| 3. Well Completion Date: ..... | 3/27/20 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): ..... | 2.13 (Field measured) |
| 5. Total Depth of Well to the nearest ½ foot: ..... | 70.78 |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'):..... | 70.13 (Field Measured) |
| 7. Screen Length (or length of open hole) in feet: ..... | 1 |
| 8. Screen or Slot Size: ..... | 0.01 in |
| 9. Screen or Slot Material: ..... | PVC |
| 10. Casing Material (PVC, steel, or other – specify): ..... | PVC |
| 11. Casing Diameter (inches): ..... | 2 in |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): ..... | 5.59 |
| 13. Yield (gallons per minute): ..... | .5 |
| 14. Development Techinque (specify): ..... | whale pump |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): ..... | 7 hour 15 minutes |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

**SECTION A. SITE NAME AND LOCATION**

Site Name: Garfield Avenue Group Chrome Sites (PPG)
List all AKAs: PPG Site 114
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): Case Tracking Number(s):

**SECTION B. WELL OWNER AND LOCATION**

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) Garfield Avenue and Carteret Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # 21501 Lot # 16

**SECTION C. WELL LOCATION SPECIFICS**

1. Well Permit Number (This number must be permanently affixed to the well casing): E202002722
2. Site Well Number (As shown on application or plans): 114-MW55C
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'32.83" Longitude: West 74°04'10.56"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 683519.8 East 611439.1
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 13.23
   Elevation of Top of Outer Casing: 13.73 Elevation of Ground: 11.1
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark: Reference Stations NJI2, NJNT, NYBP, NYBR and NYVH. On-site benchmarks have been set.
7. Significant observations and notes:
   Lot and Block information is for reference only and does not necessarily indicate that property, boundary, or lot lines have been surveyed relative to this well.

**SECTION D. LAND SURVEYOR'S CERTIFICATION**

SEAL

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Professional Land Surveyor's Signature: Date: 8/10/2020
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002723**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** SHAWN TIBBETTS, MONITORING LICENSE # 587209

**Permit Issued to:** AQUIFER DRILLING & TESTING

**Company Address:** 75 EAST SECOND ST MINEOLA, NY 11501

**PROPERTY OWNER**

Name: JODY OVERMEYER

Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery Street

City: Jersey City State: New Jersey Zip Code: 07302

**PROPOSED WELL LOCATION**

Facility Name: PPG Garfield Avenue Group Site 114

Address: 880 Garfield Avenue

County: Hudson Municipality: Jersey City Lot: 18 Block: 21501

Easting (X): 610933 Northing (Y): 683336
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-MW56C

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings:

Depth (ft.): 80

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

**Approval Date:** March 13, 2020
**Expiration Date:** March 13, 2021

Approved by the authority of:
Catherine R. McCabe
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002723**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

Service ID: 1173845

This document has not yet been reviewed and approved or denied by the NJ DEP. Deficiencies in submittal information or actual construction may result in denial.

## WELL RECORD SUBMITTAL PDF

**PROPERTY OWNER:** Jody Overmeyer

Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery Street, Jersey City (Hudson), New Jersey 07302

**WELL LOCATION:** PPG Garfield Avenue Group Site 114

Address: 880 Garfield Avenue

County: Hudson Municipality: Jersey City Lot: 18 Block: 21501

Easting(X): 610931 Northing(Y): 683337 Coordinate System: NJ State Plane (NAD83) - USFEET

Method: GPS Point of Reference: Well

GPS Manufacturer: Trimble Surveyor Name:

GPS Model: Juno Surveyor License #:

Accuracy: 10 Accuracy units: Feet

**WELL USE:** Monitoring **DATE WELL STARTED:** 07/02/2020

**Other Use(s):** **DATE WELL COMPLETED:** 07/06/2020

**WELL CONSTRUCTION**

**Permit Number** Total Depth Drilled(ft): 80 Drilling Company:

E202002723 Finished Well Depth(ft): 74 Driller Name: Shawn Tibbetts

Local ID: 114-MW56C Well was finished: Above Grade License No.: 587209

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt./Rating/Screen Slot # (lbs/sch no.) |
|---|---|---|---|---|---|
| Borehole(s) | 0 | 80 | 6 | N/A | N/A |
| Casing(s) | 0 | 69 | 2 | PVC | 40 |
| Screen(s) | 69 | 74 | 2 | PVC | 20 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 67 | 6 | 2 | 35 | 685 | 60 |
| Grout | 74 | 80 | 6 | 0 | 4 | 70 | 6 |
| Gravel Pack | 0 | 67 | 6 | 2 | sand | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Sonic

Additional Information:

Attachments:

**RECORD OF TEST** Depth to Pump: ft. below land surface

PENDING APPROVAL

Test Date: _____ Pump Capacity: _____ gpm

Static Water Level: 5 ft. below land surface Total Design Head: _____ ft.

Pumping Water Level: _____ ft. below land surface Pump Horsepower: _____

Water Level Measure Tool: Water Level Indicator If pump tested Discharge Rate: _____ gpm

Pumping Equipment: _____ Duration of Test: _____ hours

Well Yield: _____ gpm Date Boring Decommissioned: _____

**PUMPING EQUIPMENT AND ADDITIONAL INFORMATION**

Well Development Period: 1 hours

Method of Development: _____

Installed: _____ Protective Casing: No

Installer's Name: _____ Drilling Fluid: _____

Installer's Registration No.: _____ Drill Rig: Sonic

Pump Type: _____ Health and Safety Plan: No

**GEOLOGIC LOG**

| Depth to Top | Depth to Bottom | Color | USCS | Additional Description |
|---|---|---|---|---|
| 0 | 15 | light brown | SM - Silty sands, sand-silt mixtures | |
| 15 | 50 | light brown | SW - Well-graded sands and gravelly sands, little or no fines | |
| 50 | 65 | gray | GM - Silty gravels, gravel-sand-silt mixtures | |
| 65 | 80 | gray | GP - Poorly graded gravels and gravel-sand mixtures, little or no fines | |

PENDING APPROVAL

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Hudson COunty Chromate Site 114

List all AKAs: PPG Site 114

Street Address: 70 Carteret Avenue

Municipality: Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): G000008791; G000005480 Case Tracking Number(s): N/A

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 880 Garfield Avenue
3. Well Location (Municipal Block and Lot) Block# 21501 Lot # 18

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing):.. | E202002723 |
| 2. Site Well Number as shown on application or plans): ..... | 114-MW56C |
| 3. Well Completion Date: ..... | 7/6/20 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): ..... | 2.03 (Field measured) |
| 5. Total Depth of Well to the nearest ½ foot: ..... | 73.76 |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'):..... | 69.03 (Field Measured) |
| 7. Screen Length (or length of open hole) in feet: ..... | 5 |
| 8. Screen or Slot Size: ..... | 0.01 in |
| 9. Screen or Slot Material: ..... | PVC |
| 10. Casing Material (PVC, steel, or other – specify): ..... | PVC |
| 11. Casing Diameter (inches): ..... | 2 in |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): ..... | 8.24 |
| 13. Yield (gallons per minute): ..... | 1.5 |
| 14. Development Techinque (specify): ..... | whale pump |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): ..... | 11 hour 15 minutes |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: Garfield Avenue Group Chrome Sites (PPG)
List all AKAs: PPG Site 114
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) Garfield Avenue and Carteret Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # 21501 Lot # 16

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing): E202002723
2. Site Well Number (As shown on application or plans): 114-MW56C
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'30.92" Longitude: West 74°04'17.12"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 683324.4 East 610934.8
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 16.04
   Elevation of Top of Outer Casing: 16.61 Elevation of Ground: 14.0
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark: Reference Stations NJI2, NJNT, NYBP, NYBR and NYVH. On-site benchmarks have been set.
7. Significant observations and notes:
   Lot and Block information is for reference only and does not necessarily indicate that property, boundary, or lot lines have been surveyed relative to this well.

## SECTION D. LAND SURVEYOR'S CERTIFICATION

SEAL

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Professional Land Surveyor's Signature: Date: 8/10/2020
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002724**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** SHAWN TIBBETTS, MONITORING LICENSE # 587209

**Permit Issued to:** AQUIFER DRILLING & TESTING

**Company Address:** 75 EAST SECOND ST MINEOLA, NY 11501

**PROPERTY OWNER**

Name: JODY OVERMEYER

Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery Street

City: Jersey City State: New Jersey Zip Code: 07302

**PROPOSED WELL LOCATION**

Facility Name: PPG Garfield Avenue Group Site 114

Address: 880 Garfield Avenue

County: Hudson Municipality: Jersey City Lot: 18 Block: 21501

Easting (X): 610947 Northing (Y): 683199
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-MW57C

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings:

Depth (ft.): 80

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

**Approval Date:** March 13, 2020
**Expiration Date:** March 13, 2021

Approved by the authority of:
Catherine R. McCabe
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002724**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

Service ID: 1173831

This document has not yet been reviewed and approved or denied by the NJ DEP. Deficiencies in submittal information or actual construction may result in denial.

## WELL RECORD SUBMITTAL PDF

**PROPERTY OWNER:** Jody Overmeyer

Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery Street, Jersey City (Hudson), New Jersey 07302

**WELL LOCATION:** PPG Garfield Avenue Group Site 114

Address: 880 Garfield Avenue

County: Hudson Municipality: Jersey City Lot: 18 Block: 21501

Easting(X): 610946 Northing(Y): 683196 Coordinate System: NJ State Plane (NAD83) - USFEET

Method: GPS Point of Reference: Well

GPS Manufacturer: Trimble Surveyor Name:

GPS Model: Juno Surveyor License #:

Accuracy: 10 Accuracy units: Feet

**WELL USE:** Monitoring **DATE WELL STARTED:** 06/30/2020

**Other Use(s):** **DATE WELL COMPLETED:** 07/01/2020

**WELL CONSTRUCTION**

**Permit Number** Total Depth Drilled(ft): 75 Drilling Company:

E202002724 Finished Well Depth(ft): 70 Driller Name: Shawn Tibbetts

Local ID: 114-MW57C Well was finished: Above Grade License No.: 587209

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt./Rating/Screen Slot # (lbs/sch no.) |
|---|---|---|---|---|---|
| Borehole(s) | 0 | 75 | 6 | N/A | N/A |
| Casing(s) | 0 | 68 | 2 | PVC | 40 |
| Screen(s) | 68.5 | 70 | 2 | PVC | 20 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 66.5 | 6 | 2 | 35 | 680 | 60 |
| Grout | 70 | 75 | 6 | 0 | 3 | 55 | 5 |
| Gravel Pack | 66.5 | 70 | 6 | 2 | sand | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Sonic

Additional Information:

Attachments:

**RECORD OF TEST** Depth to Pump: ft. below land surface

PENDING APPROVAL

Test Date: _____ Pump Capacity: _____ gpm

Static Water Level: 5 ft. below land surface Total Design Head: _____ ft.

Pumping Water Level: _____ ft. below land surface Pump Horsepower: _____

Water Level Measure Tool: Water Level Indicator If pump tested Discharge Rate: _____ gpm

Pumping Equipment: _____ Duration of Test: _____ hours

Well Yield: _____ gpm Date Boring Decommissioned: _____

**PUMPING EQUIPMENT AND ADDITIONAL INFORMATION**

Well Development Period: 1 hours

Method of Development: _____

Installed: _____ Protective Casing: No

Installer's Name: _____ Drilling Fluid: _____

Installer's Registration No.: _____ Drill Rig: Sonic

Pump Type: _____ Health and Safety Plan: No

**GEOLOGIC LOG**

| Depth to Top | Depth to Bottom | Color | USCS | Additional Description |
|---|---|---|---|---|
| 0 | 15 | light brown | SW - Well-graded sands and gravelly sands, little or no fines | |
| 15 | 50 | light brown | SM - Silty sands, sand-silt mixtures | |
| 50 | 65 | gray | GM - Silty gravels, gravel-sand-silt mixtures | |
| 65 | 75 | gray | GP - Poorly graded gravels and gravel-sand mixtures, little or no fines | |

PENDING APPROVAL

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Hudson County Chromate Site 114

List all AKAs: PPG Site 114

Street Address: 70 Carteret Avenue

Municipality: Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): G000008791; G000005480 Case Tracking Number(s): N/A

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 880 Garfield Avenue
3. Well Location (Municipal Block and Lot) Block# 21501 Lot # 18

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing):.. | E202002724 |
| 2. Site Well Number as shown on application or plans): ..... | 114-MW57C |
| 3. Well Completion Date: ..... | 7/1/20 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): ..... | 1.58 (Field measured) |
| 5. Total Depth of Well to the nearest ½ foot: ..... | 71.93 |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'):..... | 70.08 (Field Measured) |
| 7. Screen Length (or length of open hole) in feet: ..... | 1.5 |
| 8. Screen or Slot Size: ..... | 0.01 in |
| 9. Screen or Slot Material: ..... | PVC |
| 10. Casing Material (PVC, steel, or other – specify): ..... | PVC |
| 11. Casing Diameter (inches): ..... | 2 in |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): ..... | 7.29 |
| 13. Yield (gallons per minute): ..... | 1 |
| 14. Development Techinque (specify): ..... | whale pump |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): ..... | 6 hour 30 minutes |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: Garfield Avenue Group Chrome Sites (PPG)
List all AKAs: PPG Site 114
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) Garfield Avenue and Carteret Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # 21501 Lot # 18

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing): E202002724
2. Site Well Number (As shown on application or plans): 114-MW57C
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'29.79" Longitude: West 74°04'16.93"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 683210.4 East 610949.9
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 14.55
   Elevation of Top of Outer Casing: 15.37 Elevation of Ground: 12.9
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark: Reference Stations NJI2, NJNT, NYBP, NYBR and NYVH. On-site benchmarks have been set.
7. Significant observations and notes:
   Lot and Block information is for reference only and does not necessarily indicate that property, boundary, or lot lines have been surveyed relative to this well.

## SECTION D. LAND SURVEYOR'S CERTIFICATION

SEAL

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Professional Land Surveyor's Signature: Date: 8/10/2020
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202012660**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** SHAWN TIBBETTS, ENV RESOURCE GEOTEC LICENSE # 587209

**Permit Issued to:** AQUIFER DRILLING & TESTING

**Company Address:** 75 EAST SECOND ST MINEOLA, NY 11501

**PROPERTY OWNER**

Name: JODY OVERMEYER

Organization: Jersey City Redevelopment Agency

Address: 66 York Street

City: Jersey City State: New Jersey Zip Code: 07302

**PROPOSED WELL LOCATION**

Facility Name: PPG Garfield Avenue Group Site 114

Address: 880 Garfield Ave

County: Hudson Municipality: Jersey City Lot: 18.01 Block: 21501

Easting (X): 610904 Northing (Y): 683215
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-MW57D

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 4

Regulatory Program Requiring Wells/Borings:

Depth (ft.): 125

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

**Approval Date:** November 30, 2020
**Expiration Date:** November 30, 2021

Approved by the authority of:
Catherine R. McCabe
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202012660**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

Service ID: 1193139

This document has not yet been reviewed and approved or denied by the NJ DEP. Deficiencies in submittal information or actual construction may result in denial.

## WELL RECORD SUBMITTAL PDF

**PROPERTY OWNER:** Jody Overmeyer

Organization: Jersey City Redevelopment Agency

Address: 66 York Street, Jersey City (Hudson), New Jersey 07302

**WELL LOCATION:** PPG Garfield Avenue Group Site 114

Address: 880 Garfield Ave

County: Hudson Municipality: Jersey City Lot: 18.01 Block: 21501

Easting(X): 610904 Northing(Y): 683214 Coordinate System: NJ State Plane (NAD83) - USFEET

Method: GPS Point of Reference: Well

GPS Manufacturer: Trimble Surveyor Name:

GPS Model: Juno Surveyor License #:

Accuracy: 10 Accuracy units: Feet

**WELL USE:** Monitoring **DATE WELL STARTED:** 12/23/2020

**Other Use(s):** **DATE WELL COMPLETED:** 01/04/2021

**WELL CONSTRUCTION**

**Permit Number** Total Depth Drilled(ft): 110 Drilling Company:

E202012660 Finished Well Depth(ft): 110 Driller Name: Shawn Tibbetts

Local ID: 114-MW57D Well was finished: Flush Mount License No.: 587209

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt./Rating/Screen Slot # (lbs/sch no.) |
|---|---|---|---|---|---|
| Borehole(s) | 0 | 85 | 10 | N/A | N/A |
| Borehole(s) | 85 | 110 | 6 | N/A | N/A |
| Casing(s) | 0 | 85 | 6 | Steel | 40 |
| Screen(s) | | | | | |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 85 | 10 | 6 | 1735 | 95 | 155 |
| Gravel Pack | | | | | | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Sonic

Additional Information:

Attachments:

**RECORD OF TEST** Depth to Pump: ft. below land surface

PENDING APPROVAL

Test Date: _____ Pump Capacity: _____ gpm

Static Water Level: 10 ft. below land surface Total Design Head: _____ ft.

Pumping Water Level: _____ ft. below land surface Pump Horsepower: _____

Water Level Measure Tool: Water Level Indicator If pump tested Discharge Rate: _____ gpm

Pumping Equipment: _____ Duration of Test: _____ hours

Well Yield: _____ gpm Date Boring Decommissioned: _____

**PUMPING EQUIPMENT AND ADDITIONAL INFORMATION**

Well Development Period: 1 hours

Method of Development: _____

Installed: _____ Protective Casing: No

Installer's Name: _____ Drilling Fluid: _____

Installer's Registration No.: _____ Drill Rig: Sonic

Pump Type: _____ Health and Safety Plan: No

**GEOLOGIC LOG**

| Depth to Top | Depth to Bottom | Color | USCS | Additional Description |
|---|---|---|---|---|
| 0 | 20 | gray | SM - Silty sands, sand-silt mixtures | |
| 20 | 37 | red brown | SM - Silty sands, sand-silt mixtures | |
| 37 | 49 | gray | SM - Silty sands, sand-silt mixtures | |
| 49 | 67 | red brown | SM - Silty sands, sand-silt mixtures | |
| 67 | 75 | gray | WR - Weathered Rock | gray weathered rock |
| 75 | 110 | gray | CR - Competent Rock | competent bedrock |

PENDING APPROVAL

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Hudson COunty Chromate Site 144

List all AKAs: PPG Site 114

Street Address: 70 Carteret Avenue

Municipality: Jersey CIty (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 66 York Street Jersey City
3. Well Location (Municipal Block and Lot) Block# 21501 Lot # 18.01

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing):.. | E202012660 |
| 2. Site Well Number as shown on application or plans): ..... | 114-MW57D |
| 3. Well Completion Date: ..... | 1/4/21 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): ..... | 2.02 FT |
| 5. Total Depth of Well to the nearest ½ foot: ..... | 112.5 FT BGS |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'):..... | 87.02 |
| 7. Screen Length (or length of open hole) in feet: ..... | 27.5 |
| 8. Screen or Slot Size: ..... | N/A OPEN HOLE |
| 9. Screen or Slot Material: ..... | N/A OPEN HOLE |
| 10. Casing Material (PVC, steel, or other – specify): ..... | STEEL |
| 11. Casing Diameter (inches): ..... | 6 IN |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): ..... | 9.98 |
| 13. Yield (gallons per minute): ..... | < 1 GPM |
| 14. Development Techinque (specify): ..... | AIR LIFT/ PUMPING |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): ..... | 15 HOURS |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Garfield Avenue Group Chrome Sites (PPG)
List all AKAs: PPG Site 114
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) Site 114, Garfield Avenue and Carteret Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # 21501 Lot # 18

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing): E202012660
2. Site Well Number (As shown on application or plans): 114-MW57D
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'29.85" Longitude: West 74°04'17.53"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 683215.5 East 610903.9
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 14.70
   Elevation of Top of Outer Casing: 14.98 Elevation of Ground: 12.7
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark: Reference Stations NJI2, NJNT, NYBP, NYBR and NYVH. On-site benchmarks have been set.
7. Significant observations and notes:
   Lot and Block information is for reference only and does not necessarily indicate that property, boundary, or lot lines have been surveyed relative to this well.

## SECTION D. LAND SURVEYOR'S CERTIFICATION

SEAL

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Professional Land Surveyor's Signature: Date: 1/19/2021
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax:

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002725**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** SHAWN TIBBETTS, MONITORING LICENSE # 587209

**Permit Issued to:** AQUIFER DRILLING & TESTING

**Company Address:** 75 EAST SECOND ST MINEOLA, NY 11501

**PROPERTY OWNER**

Name: JODY OVERMEYER

Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery Street

City: Jersey City State: New Jersey Zip Code: 07302

**PROPOSED WELL LOCATION**

Facility Name: PPG Garfield Avenue Group Site 114

Address: 70 Carteret Avenue

County: Hudson Municipality: Jersey City Lot: 17 Block: 21501

Easting (X): 611370 Northing (Y): 683285
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-MW58C

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings:

Depth (ft.): 80

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

**Approval Date:** March 13, 2020
**Expiration Date:** March 13, 2021

Approved by the authority of:
Catherine R. McCabe
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002725**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

Service ID: 1173426

This document has not yet been reviewed and approved or denied by the NJ DEP. Deficiencies in submittal information or actual construction may result in denial.

## WELL RECORD SUBMITTAL PDF

**PROPERTY OWNER:** Jody Overmeyer

Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery Street, Jersey City (Hudson), New Jersey 07302

**WELL LOCATION:** PPG Garfield Avenue Group Site 114

Address: 70 Carteret Avenue

County: Hudson Municipality: Jersey City Lot: 17 Block: 21501

Easting(X): 611367 Northing(Y): 683287 Coordinate System: NJ State Plane (NAD83) - USFEET

Method: GPS Point of Reference: Well

GPS Manufacturer: Trimble Surveyor Name:

GPS Model: Juno Surveyor License #:

Accuracy: 10 Accuracy units: Feet

**WELL USE:** Monitoring **DATE WELL STARTED:** 06/17/2020

**Other Use(s):** **DATE WELL COMPLETED:** 06/18/2020

**WELL CONSTRUCTION**

**Permit Number** Total Depth Drilled(ft): 80 Drilling Company:

E202002725 Finished Well Depth(ft): 76.5 Driller Name: Shawn Tibbetts

Local ID: 114-MW58C Well was finished: Above Grade License No.: 587209

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt./Rating/Screen Slot # (lbs/sch no.) |
|---|---|---|---|---|---|
| Borehole(s) | 0 | 80 | 6 | N/A | N/A |
| Casing(s) | 0 | 72.5 | 2 | PVC | 40 |
| Screen(s) | 72.5 | 76.5 | 2 | PVC | 20 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 70.5 | 6 | 2 | 40 | 720 | 65 |
| Grout | 76.5 | 80 | 6 | 0 | 2 | 40 | 3 |
| Gravel Pack | 70.5 | 76.5 | 6 | 2 | sand | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Sonic

Additional Information:

Attachments:

**RECORD OF TEST** Depth to Pump: ft. below land surface

PENDING APPROVAL

Test Date: _____ Pump Capacity: _____ gpm

Static Water Level: 5 ft. below land surface Total Design Head: _____ ft.

Pumping Water Level: _____ ft. below land surface Pump Horsepower: _____

Water Level Measure Tool: Water Level Indicator If pump tested Discharge Rate: _____ gpm

Pumping Equipment: _____ Duration of Test: _____ hours

Well Yield: _____ gpm Date Boring Decommissioned: _____

**PUMPING EQUIPMENT AND ADDITIONAL INFORMATION**

Well Development Period: 1 hours

Method of Development: _____

Installed: _____ Protective Casing: No

Installer's Name: _____ Drilling Fluid: _____

Installer's Registration No.: _____ Drill Rig: Sonic

Pump Type: _____ Health and Safety Plan: No

**GEOLOGIC LOG**

| Depth to Top | Depth to Bottom | Color | USCS | Additional Description |
|---|---|---|---|---|
| 0 | 15 | light brown | SM - Silty sands, sand-silt mixtures | |
| 15 | 50 | light brown | SW - Well-graded sands and gravelly sands, little or no fines | |
| 50 | 65 | gray | GM - Silty gravels, gravel-sand-silt mixtures | |
| 65 | 80 | gray | GP - Poorly graded gravels and gravel-sand mixtures, little or no fines | |

PENDING APPROVAL

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Hudson County Chromate Site 114

List all AKAs: PPG Site 114

Street Address: 70 Carteret Avenue

Municipality: Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): G000008791; G000005480 Case Tracking Number(s): N/A

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 70 Carteret Avenue
3. Well Location (Municipal Block and Lot) Block# 21501 Lot # 17

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing): | E202002725 |
| 2. Site Well Number as shown on application or plans): | 114-MW58C |
| 3. Well Completion Date: | 6/18/20 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): | 1.34 (Field measured) |
| 5. Total Depth of Well to the nearest ½ foot: | 78.0 |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'): | 73.84 (Field Measured) |
| 7. Screen Length (or length of open hole) in feet: | 3.5 |
| 8. Screen or Slot Size: | 0.01 in |
| 9. Screen or Slot Material: | PVC |
| 10. Casing Material (PVC, steel, or other – specify): | PVC |
| 11. Casing Diameter (inches): | 2 in |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): | 5.26 |
| 13. Yield (gallons per minute): | 0.5 |
| 14. Development Techinque (specify): | whale pump |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): | 11 hour 25 minutes |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: Garfield Avenue Group Chrome Sites (PPG)
List all AKAs: PPG Site 114
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) Site 114, Garfield Avenue and Carteret Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # 21501 Lot # 17

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing): E202002725
2. Site Well Number (As shown on application or plans): 114-MW58C
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'30.63" Longitude: West 74°04'11.45"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 683296.6 East 611371.2
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 13.01
   Elevation of Top of Outer Casing: 13.36 Elevation of Ground: 11.1
   *Check one:* [x] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark: Reference Stations NJI2, NJNT, NYBP, NYBR and NYVH. On-site benchmarks have been set.
7. Significant observations and notes:
   Lot and Block information is for reference only and does not necessarily indicate that property, boundary, or lot lines have been surveyed relative to this well.

## SECTION D. LAND SURVEYOR'S CERTIFICATION

SEAL

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Professional Land Surveyor's Signature: Date: 9/9/2020
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax:

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002726**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** SHAWN TIBBETTS, MONITORING LICENSE # 587209

**Permit Issued to:** AQUIFER DRILLING & TESTING

**Company Address:** 75 EAST SECOND ST MINEOLA, NY 11501

**PROPERTY OWNER**

Name: JODY OVERMEYER

Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery Street

City: Jersey City State: New Jersey Zip Code: 07302

**PROPOSED WELL LOCATION**

Facility Name: PPG Garfield Avenue Group Site 114

Address: 70 Carteret Avenue

County: Hudson Municipality: Jersey City Lot: 17 Block: 21501

Easting (X): 611255 Northing (Y): 683079
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-MW59C

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings:

Depth (ft.): 80

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

**Approval Date:** March 13, 2020
**Expiration Date:** March 13, 2021

Approved by the authority of:
Catherine R. McCabe
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002726**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

Service ID: 1173769

This document has not yet been reviewed and approved or denied by the NJ DEP. Deficiencies in submittal information or actual construction may result in denial.

**WELL RECORD SUBMITTAL PDF**

**PROPERTY OWNER:** Jody Overmeyer

Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery Street, Jersey City (Hudson), New Jersey 07302

**WELL LOCATION:** PPG Garfield Avenue Group Site 114

Address: 70 Carteret Avenue

County: Hudson Municipality: Jersey City Lot: 17 Block: 21501

Easting(X): 611253 Northing(Y): 683075 Coordinate System: NJ State Plane (NAD83) - USFEET

Method: GPS Point of Reference: Well

GPS Manufacturer: Trimble Surveyor Name:

GPS Model: Juno Surveyor License #:

Accuracy: 10 Accuracy units: Feet

**WELL USE:** Monitoring **DATE WELL STARTED:** 06/19/2020

**Other Use(s):** **DATE WELL COMPLETED:** 06/22/2020

**WELL CONSTRUCTION**

**Permit Number** Total Depth Drilled(ft): 100 Drilling Company:

E202002726 Finished Well Depth(ft): 92.5 Driller Name: Shawn Tibbetts

Local ID: 114-MW59C Well was finished: Above Grade License No.: 587209

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt./Rating/Screen Slot # (lbs/sch no.) |
|---|---|---|---|---|---|
| Borehole(s) | 0 | 100 | 6 | N/A | N/A |
| Casing(s) | 0 | 89.5 | 2 | PVC | 40 |
| Screen(s) | 89.5 | 92.5 | 2 | PVC | 20 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 87.5 | 6 | 2 | 50 | 890 | 80 |
| Grout | 92.5 | 100 | 6 | 0 | 5 | 85 | 8 |
| Gravel Pack | 87.5 | 92.5 | 6 | 2 | PVC | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Sonic

Additional Information:

Attachments:

**RECORD OF TEST** Depth to Pump: ft. below land surface

PENDING APPROVAL

Test Date: _____ Pump Capacity: _____ gpm

Static Water Level: 5 ft. below land surface Total Design Head: _____ ft.

Pumping Water Level: _____ ft. below land surface Pump Horsepower: _____

Water Level Measure Tool: Water Level Indicator If pump tested Discharge Rate: _____ gpm

Pumping Equipment: _____ Duration of Test: _____ hours

Well Yield: _____ gpm Date Boring Decommissioned: _____

**PUMPING EQUIPMENT AND ADDITIONAL INFORMATION**

Well Development Period: 1 hours

Method of Development: _____

Installed: _____ Protective Casing: No

Installer's Name: _____ Drilling Fluid: _____

Installer's Registration No.: _____ Drill Rig: Sonic

Pump Type: _____ Health and Safety Plan: No

**GEOLOGIC LOG**

| Depth to Top | Depth to Bottom | Color | USCS | Additional Description |
|---|---|---|---|---|
| 0 | 15 | light brown | SW - Well-graded sands and gravelly sands, little or no fines | |
| 15 | 50 | light brown | SM - Silty sands, sand-silt mixtures | |
| 50 | 65 | gray | GM - Silty gravels, gravel-sand-silt mixtures | |
| 65 | 90 | gray | GP - Poorly graded gravels and gravel-sand mixtures, little or no fines | |
| 90 | 100 | gray | WR - Weathered Rock | gray weathered rock |

PENDING APPROVAL

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Hudson County Chromate Site 114

List all AKAs: PPG Site 114

Street Address: 70 Carteret Avenue

Municipality: Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): G000008791; G000005480 Case Tracking Number(s): N/A

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 70 Carteret Avenue
3. Well Location (Municipal Block and Lot) Block# 21501 Lot # 17

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing):.. | E202002726 |
| 2. Site Well Number as shown on application or plans): ..... | 114-MW59C |
| 3. Well Completion Date: ..... | 6/22/20 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): ..... | 2.09 (Field measured) |
| 5. Total Depth of Well to the nearest ½ foot: ..... | 94.7 |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'):..... | 91.59 (Field Measured) |
| 7. Screen Length (or length of open hole) in feet: ..... | 3 |
| 8. Screen or Slot Size: ..... | 0.01 in |
| 9. Screen or Slot Material: ..... | PVC |
| 10. Casing Material (PVC, steel, or other – specify): ..... | PVC |
| 11. Casing Diameter (inches): ..... | 2 in |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): ..... | 7.29 |
| 13. Yield (gallons per minute): ..... | 1.5 |
| 14. Development Techinque (specify): ..... | whale pump |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): ..... | 15 hour 5 minutes |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

**SECTION A. SITE NAME AND LOCATION**

Site Name: Garfield Avenue Group Chrome Sites (PPG)
List all AKAs: PPG Site 114
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): Case Tracking Number(s):

**SECTION B. WELL OWNER AND LOCATION**

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) Garfield Avenue and Carteret Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # 21501 Lot # 17

**SECTION C. WELL LOCATION SPECIFICS**

1. Well Permit Number (This number must be permanently affixed to the well casing): E202002726
2. Site Well Number (As shown on application or plans): 114-MW59C
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'28.49" Longitude: West 74°04'12.97"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 683079.6 East 611255.2
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 14.07
   Elevation of Top of Outer Casing: 14.45 Elevation of Ground: 12.1
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark: Reference Stations NJI2, NJNT, NYBP, NYBR and NYVH. On-site benchmarks have been set.
7. Significant observations and notes:
   Lot and Block information is for reference only and does not necessarily indicate that property, boundary, or lot lines have been surveyed relative to this well.

**SECTION D. LAND SURVEYOR'S CERTIFICATION**

SEAL

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Professional Land Surveyor's Signature: Date: 8/10/2020
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002727**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** SHAWN TIBBETTS, MONITORING LICENSE # 587209

**Permit Issued to:** AQUIFER DRILLING & TESTING

**Company Address:** 75 EAST SECOND ST MINEOLA, NY 11501

**PROPERTY OWNER**

Name: JODY OVERMEYER

Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery Street

City: Jersey City State: New Jersey Zip Code: 07302

**PROPOSED WELL LOCATION**

Facility Name: PPG Garfield Avenue Group Site 114

Address: 70 Carteret Avenue

County: Hudson Municipality: Jersey City Lot: 17 Block: 21501

Easting (X): 611344 Northing (Y): 682891
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-MW60C

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings:

Depth (ft.): 80

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

**Approval Date:** March 13, 2020
**Expiration Date:** March 13, 2021

Approved by the authority of:
Catherine R. McCabe
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002727**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

Service ID: 1173799

This document has not yet been reviewed and approved or denied by the NJ DEP. Deficiencies in submittal information or actual construction may result in denial.

## WELL RECORD SUBMITTAL PDF

**PROPERTY OWNER:** Jody Overmeyer

Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery Street, Jersey City (Hudson), New Jersey 07302

**WELL LOCATION:** PPG Garfield Avenue Group Site 114

Address: 70 Carteret Avenue

County: Hudson Municipality: Jersey City Lot: 17 Block: 21501

Easting(X): 611345 Northing(Y): 682894 Coordinate System: NJ State Plane (NAD83) - USFEET

Method: GPS Point of Reference: Well

GPS Manufacturer: Trimble Surveyor Name:

GPS Model: Juno Surveyor License #:

Accuracy: 10 Accuracy units: Feet

**WELL USE:** Monitoring **DATE WELL STARTED:** 06/25/2020

**Other Use(s):** **DATE WELL COMPLETED:** 06/29/2020

**WELL CONSTRUCTION**

**Permit Number** Total Depth Drilled(ft): 125 Drilling Company:

E202002727 Finished Well Depth(ft): 121.5 Driller Name: Shawn Tibbetts

Local ID: 114-MW60C Well was finished: Above Grade License No.: 587209

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt./Rating/Screen Slot # (lbs/sch no.) |
|---|---|---|---|---|---|
| Borehole(s) | 0 | 125 | 6 | N/A | N/A |
| Casing(s) | 0 | 119.5 | 2 | PVC | 40 |
| Screen(s) | 119.5 | 121.5 | 2 | PVC | 20 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 117.5 | 6 | 2 | 65 | 1200 | 110 |
| Grout | 121.5 | 125 | 6 | 0 | 2 | 40 | 4 |
| Gravel Pack | 117.5 | 121.5 | 6 | 2 | sand | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Sonic

Additional Information:

Attachments:

**RECORD OF TEST** Depth to Pump: ft. below land surface

PENDING APPROVAL

Test Date: _____ Pump Capacity: _____ gpm

Static Water Level: 5 ft. below land surface Total Design Head: _____ ft.

Pumping Water Level: _____ ft. below land surface Pump Horsepower: _____

Water Level Measure Tool: Water Level Indicator If pump tested Discharge Rate: _____ gpm

Pumping Equipment: _____ Duration of Test: _____ hours

Well Yield: _____ gpm Date Boring Decommissioned: _____

**PUMPING EQUIPMENT AND ADDITIONAL INFORMATION**

Well Development Period: 1 hours

Method of Development: _____

Installed: _____ Protective Casing: No

Installer's Name: _____ Drilling Fluid: _____

Installer's Registration No.: _____ Drill Rig: Sonic

Pump Type: _____ Health and Safety Plan: No

**GEOLOGIC LOG**

| Depth to Top | Depth to Bottom | Color | USCS | Additional Description |
|---|---|---|---|---|
| 0 | 15 | light brown | SM - Silty sands, sand-silt mixtures | |
| 15 | 50 | light brown | SW - Well-graded sands and gravelly sands, little or no fines | |
| 50 | 65 | gray | GM - Silty gravels, gravel-sand-silt mixtures | |
| 65 | 95 | gray | GP - Poorly graded gravels and gravel-sand mixtures, little or no fines | |
| 95 | 125 | gray | WR - Weathered Rock | gray weathered rock |

PENDING APPROVAL

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Hudson County Chromate Site 114

List all AKAs: PPG Site 114

Street Address: 70 Carteret Avenue

Municipality: Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): G000008791; G000005480 Case Tracking Number(s): N/A

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 70 Carteret Avenue
3. Well Location (Municipal Block and Lot) Block# 21501 Lot # 17

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing): | E202002727 |
| 2. Site Well Number as shown on application or plans): | 114-MW60C |
| 3. Well Completion Date: | 6/29/20 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): | 1.9 (Field measured) |
| 5. Total Depth of Well to the nearest ½ foot: | 123.1 |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'): | 121.5 (Field Measured) |
| 7. Screen Length (or length of open hole) in feet: | 2 |
| 8. Screen or Slot Size: | 0.01 in |
| 9. Screen or Slot Material: | PVC |
| 10. Casing Material (PVC, steel, or other – specify): | PVC |
| 11. Casing Diameter (inches): | 2 in |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): | 5.53 |
| 13. Yield (gallons per minute): | 1.7 |
| 14. Development Techinque (specify): | whale pump |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): | 4 hour 53 minutes |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: Garfield Avenue Group Chrome Sites (PPG)
List all AKAs: PPG Site 114
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) Garfield Avenue and Carteret Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # 21501 Lot # 17

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing): E202002727
2. Site Well Number (As shown on application or plans): 114-MW60C
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'26.66" Longitude: West 74°04'11.88"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 682895.5 East 611340.1
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 12.87
   Elevation of Top of Outer Casing: 13.63 Elevation of Ground: 11.0
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark: Reference Stations NJI2, NJNT, NYBP, NYBR and NYVH. On-site benchmarks have been set.
7. Significant observations and notes:
   Lot and Block information is for reference only and does not necessarily indicate that property, boundary, or lot lines have been surveyed relative to this well.

## SECTION D. LAND SURVEYOR'S CERTIFICATION

SEAL

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Professional Land Surveyor's Signature: Date: 8/10/2020
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002939**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** SHAWN TIBBETTS, MONITORING LICENSE # 587209

**Permit Issued to:** AQUIFER DRILLING & TESTING

**Company Address:** 75 EAST SECOND ST MINEOLA, NY 11501

**PROPERTY OWNER**

Name: JODI OVERMEYER

Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery Street

City: Jersey City State: New Jersey Zip Code: 07302

**PROPOSED WELL LOCATION**

Facility Name: PPG Garfield Avenue Group Site 114

Address: 880 Garfield Ave

County: Hudson Municipality: Jersey City Lot: 18 Block: 21501

Easting (X): 610879 Northing (Y): 683478
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-MW61C

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings:

Depth (ft.): 80

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

**Approval Date:** March 18, 2020
**Expiration Date:** March 18, 2021

Approved by the authority of:
Catherine R. McCabe
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002939**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

Service ID: 1173901

This document has not yet been reviewed and approved or denied by the NJ DEP. Deficiencies in submittal information or actual construction may result in denial.

## WELL RECORD SUBMITTAL PDF

**PROPERTY OWNER:** Jodi Overmeyer

Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery Street, Jersey City (Hudson), New Jersey 07302

**WELL LOCATION:** PPG Garfield Avenue Group Site 114

Address: 880 Garfield Ave

County: Hudson Municipality: Jersey City Lot: 18 Block: 21501

Easting(X): 610877 Northing(Y): 683475 Coordinate System: NJ State Plane (NAD83) - USFEET

Method: GPS Point of Reference: Well

GPS Manufacturer: Trimble Surveyor Name:

GPS Model: Juno Surveyor License #:

Accuracy: 10 Accuracy units: Feet

**WELL USE:** Monitoring **DATE WELL STARTED:** 07/14/2020

**Other Use(s):** **DATE WELL COMPLETED:** 07/15/2020

**WELL CONSTRUCTION**

**Permit Number** Total Depth Drilled(ft): 75 Drilling Company:

E202002939 Finished Well Depth(ft): 69.5 Driller Name: Shawn Tibbetts

Local ID: 114-MW61C Well was finished: Above Grade License No.: 587209

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt./Rating/Screen Slot # (lbs/sch no.) |
|---|---|---|---|---|---|
| Borehole(s) | 0 | 75 | 6 | N/A | N/A |
| Casing(s) | 0 | 64.5 | 2 | PVC | 40 |
| Screen(s) | 64.5 | 69.5 | 2 | PVC | 20 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 62.5 | 6 | 2 | 34 | 635 | 55 |
| Grout | 69.5 | 75 | 6 | 0 | 4 | 65 | 6 |
| Gravel Pack | 62.5 | 69.5 | 6 | 2 | sand | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Sonic

Additional Information:

Attachments:

**RECORD OF TEST** Depth to Pump: ft. below land surface

PENDING APPROVAL

Test Date: _____ Pump Capacity: _____ gpm

Static Water Level: 5 ft. below land surface Total Design Head: _____ ft.

Pumping Water Level: _____ ft. below land surface Pump Horsepower: _____

Water Level Measure Tool: Water Level Indicator If pump tested Discharge Rate: _____ gpm

Pumping Equipment: _____ Duration of Test: _____ hours

Well Yield: _____ gpm Date Boring Decommissioned: _____

**PUMPING EQUIPMENT AND ADDITIONAL INFORMATION**

Well Development Period: 1 hours

Method of Development: _____

Installed: _____ Protective Casing: No

Installer's Name: _____ Drilling Fluid: _____

Installer's Registration No.: _____ Drill Rig: Sonic

Pump Type: _____ Health and Safety Plan: No

**GEOLOGIC LOG**

| Depth to Top | Depth to Bottom | Color | USCS | Additional Description |
|---|---|---|---|---|
| 0 | 15 | light brown | SW - Well-graded sands and gravelly sands, little or no fines | |
| 15 | 50 | light brown | SM - Silty sands, sand-silt mixtures | |
| 50 | 65 | gray | GM - Silty gravels, gravel-sand-silt mixtures | |
| 65 | 75 | gray | GP - Poorly graded gravels and gravel-sand mixtures, little or no fines | |

PENDING APPROVAL

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Hudson County Chromate Site 114

List all AKAs: PPG Site 114

Street Address: 70 Carteret Avenue

Municipality: Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): G000008791; G000005480 Case Tracking Number(s): N/A

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 880 Garfield Ave
3. Well Location (Municipal Block and Lot) Block# 21501 Lot # 18

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing):.. | E202002939 |
| 2. Site Well Number as shown on application or plans): ..... | 114-MW61C |
| 3. Well Completion Date: ..... | 7/15/20 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): ..... | 2.64 (Field measured) |
| 5. Total Depth of Well to the nearest ½ foot: ..... | 69.61 |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'):..... | 65.14 (Field Measured) |
| 7. Screen Length (or length of open hole) in feet: ..... | 5 |
| 8. Screen or Slot Size: ..... | 0.01 in |
| 9. Screen or Slot Material: ..... | PVC |
| 10. Casing Material (PVC, steel, or other – specify): ..... | PVC |
| 11. Casing Diameter (inches): ..... | 2 in |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): ..... | 9.19 |
| 13. Yield (gallons per minute): ..... | 1.5 |
| 14. Development Techinque (specify): ..... | whale pump |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): ..... | 4 hour 55 minutes |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

**SECTION A. SITE NAME AND LOCATION**

Site Name: Garfield Avenue Group Chrome Sites (PPG)
List all AKAs: PPG Site 114
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): Case Tracking Number(s):

**SECTION B. WELL OWNER AND LOCATION**

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) Garfield Avenue and Carteret Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # 21501 Lot # 18

**SECTION C. WELL LOCATION SPECIFICS**

1. Well Permit Number (This number must be permanently affixed to the well casing): E202002939
2. Site Well Number (As shown on application or plans): 114-MW61C
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'32.45" Longitude: West 74°04'17.83"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 683478.6 East 610879.4
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 16.67
   Elevation of Top of Outer Casing: 17.24 Elevation of Ground: 14.0
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark: Reference Stations NJI2, NJNT, NYBP, NYBR and NYVH. On-site benchmarks have been set.
7. Significant observations and notes:
   Lot and Block information is for reference only and does not necessarily indicate that property, boundary, or lot lines have been surveyed relative to this well.

**SECTION D. LAND SURVEYOR'S CERTIFICATION**

SEAL

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Professional Land Surveyor's Signature: Date: 8/10/2020
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202012658**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** SHAWN TIBBETTS, ENV RESOURCE GEOTEC LICENSE # 587209

**Permit Issued to:** AQUIFER DRILLING & TESTING

**Company Address:** 75 EAST SECOND ST MINEOLA, NY 11501

**PROPERTY OWNER**

Name: JODY OVERMEYER

Organization: Jersey City Redevelopment Agency

Address: 66 York Street

City: Jersey City State: New Jersey Zip Code: 07302

**PROPOSED WELL LOCATION**

Facility Name: PPG Garfield Avenue Group Site 114

Address: 880 Garfield Ave

County: Hudson Municipality: Jersey City Lot: 18.01 Block: 21501

Easting (X): 610872 Northing (Y): 683469
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-MW61D

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 4

Regulatory Program Requiring Wells/Borings:

Depth (ft.): 125

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

**Approval Date:** November 30, 2020
**Expiration Date:** November 30, 2021

Approved by the authority of:
Catherine R. McCabe
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202012658**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

Service ID: 1193173

This document has not yet been reviewed and approved or denied by the NJ DEP. Deficiencies in submittal information or actual construction may result in denial.

**WELL RECORD SUBMITTAL PDF**

**PROPERTY OWNER:** Jody Overmeyer

Organization: Jersey City Redevelopment Agency

Address: 66 York Street, Jersey City (Hudson), New Jersey 07302

**WELL LOCATION:** PPG Garfield Avenue Group Site 114

Address: 880 Garfield Ave

County: Hudson Municipality: Jersey City Lot: 18.01 Block: 21501

Easting(X): 610870 Northing(Y): 683468 Coordinate System: NJ State Plane (NAD83) - USFEET

Method: GPS Point of Reference: Well

GPS Manufacturer: Trimble Surveyor Name:

GPS Model: Juno Surveyor License #:

Accuracy: 10 Accuracy units: Feet

**WELL USE:** Monitoring **DATE WELL STARTED:** 12/15/2020

**Other Use(s):** **DATE WELL COMPLETED:** 12/28/2020

**WELL CONSTRUCTION**

**Permit Number** Total Depth Drilled(ft): 115 Drilling Company:

E202012658 Finished Well Depth(ft): 115 Driller Name: Shawn Tibbetts

Local ID: 114-MW61D Well was finished: Flush Mount License No.: 587209

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt./Rating/Screen Slot # (lbs/sch no.) |
|---|---|---|---|---|---|
| Borehole(s) | 0 | 85 | 10 | N/A | N/A |
| Borehole(s) | 85 | 115 | 6 | N/A | N/A |
| Casing(s) | 0 | 85 | 6 | Steel | 40 |
| Screen(s) | | | | | |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 85 | 10 | 6 | 95 | 1735 | 155 |
| Gravel Pack | | | | | | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Sonic

Additional Information:

Attachments:

**RECORD OF TEST** Depth to Pump: ft. below land surface

PENDING APPROVAL

Test Date: _____ Pump Capacity: _____ gpm

Static Water Level: 10 ft. below land surface Total Design Head: _____ ft.

Pumping Water Level: _____ ft. below land surface Pump Horsepower: _____

Water Level Measure Tool: Water Level Indicator If pump tested Discharge Rate: _____ gpm

Pumping Equipment: _____ Duration of Test: _____ hours

Well Yield: _____ gpm Date Boring Decommissioned: _____

**PUMPING EQUIPMENT AND ADDITIONAL INFORMATION**

Well Development Period: 1 hours

Method of Development: _____

Installed: _____ Protective Casing: No

Installer's Name: _____ Drilling Fluid: _____

Installer's Registration No.: _____ Drill Rig: Sonic

Pump Type: _____ Health and Safety Plan: No

**GEOLOGIC LOG**

| Depth to Top | Depth to Bottom | Color | USCS | Additional Description |
|---|---|---|---|---|
| 0 | 26 | gray | SP - Poorly graded sands and gravelly sands, little or no fines | |
| 26 | 63 | red brown | SW - Well-graded sands and gravelly sands, little or no fines | |
| 63 | 70 | gray | WR - Weathered Rock | weathered rock |
| 70 | 115 | gray | CR - Competent Rock | competent rock |

PENDING APPROVAL

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Hudson COunty Chromate Site 144

List all AKAs: PPG Site 114

Street Address: 70 Carteret Avenue

Municipality: Jersey CIty (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 66 York Street Jersey City
3. Well Location (Municipal Block and Lot) Block# 21501 Lot # 18.01

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing):.. | E202012658 |
| 2. Site Well Number as shown on application or plans): ..... | 114-MW61D |
| 3. Well Completion Date: ..... | 12/28/20 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): ..... | 2.20 FT |
| 5. Total Depth of Well to the nearest ½ foot: ..... | 109.0 FT BGS |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'):..... | 87.20 |
| 7. Screen Length (or length of open hole) in feet: ..... | 24 |
| 8. Screen or Slot Size: ..... | N/A OPEN HOLE |
| 9. Screen or Slot Material: ..... | N/A OPEN HOLE |
| 10. Casing Material (PVC, steel, or other – specify): ..... | STEEL |
| 11. Casing Diameter (inches): ..... | 6 IN |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): ..... | 9.72 |
| 13. Yield (gallons per minute): ..... | < 1 GPM |
| 14. Development Techinque (specify): ..... | AIR LIFT/ PUMPING |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): ..... | 12 HOURS |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Garfield Avenue Group Chrome Sites (PPG)
List all AKAs: PPG Site 114
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner: PPG Industries
2. Well Location (Street Address): Site 114, Garfield Avenue and Carteret Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot): Block # 21501 Lot # 18

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing): E202012658
2. Site Well Number (As shown on application or plans): 114-MW61D
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'32.36" Longitude: West 74°04'17.91"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 683469.8 East 610873.2
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 16.59
   Elevation of Top of Outer Casing: 16.86 Elevation of Ground: 14.4
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark: Reference Stations NJI2, NJNT, NYBP, NYBR and NYVH. On-site benchmarks have been set.
7. Significant observations and notes:
   Lot and Block information is for reference only and does not necessarily indicate that property, boundary, or lot lines have been surveyed relative to this well.

## SECTION D. LAND SURVEYOR'S CERTIFICATION

SEAL

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Professional Land Surveyor's Signature: Date: 1/19/2021
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax:

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002717**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** SHAWN TIBBETTS, MONITORING LICENSE # 587209

**Permit Issued to:** AQUIFER DRILLING & TESTING

**Company Address:** 75 EAST SECOND ST MINEOLA, NY 11501

**PROPERTY OWNER**

Name: JODI OVERMEYER

Organization: 900 Garfield Ave, %Ryan LLC

Address: 1735 MARKET ST.,STE A-400

City: Philadelphia State: Pennsylvania Zip Code: 19103

**PROPOSED WELL LOCATION**

Facility Name: PPG Garfield Avenue Group Site 114

Address: 900 Garfield Avenue

County: Hudson Municipality: Jersey City Lot: 20 Block: 21501

Easting (X): 611153 Northing (Y): 683756
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-MW62C

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings:

Depth (ft.): 80

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

**Approval Date:** March 13, 2020
**Expiration Date:** March 13, 2021

Approved by the authority of:
Catherine R. McCabe
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002717**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

Service ID: 1173411

This document has not yet been reviewed and approved or denied by the NJ DEP. Deficiencies in submittal information or actual construction may result in denial.

## WELL RECORD SUBMITTAL PDF

**PROPERTY OWNER:** Jodi Overmeyer

Organization: 900 Garfield Ave, %Ryan LLC

Address: 1735 MARKET ST.,STE A-400, Philadelphia, Pennsylvania 19103

**WELL LOCATION:** PPG Garfield Avenue Group Site 114

Address: 900 Garfield Avenue

County: Hudson Municipality: Jersey City Lot: 20 Block: 21501

Easting(X): 611154 Northing(Y): 683754 Coordinate System: NJ State Plane (NAD83) - USFEET

Method: GPS Point of Reference: Well

GPS Manufacturer: Trimble Surveyor Name:

GPS Model: Juno Surveyor License #:

Accuracy: 10 Accuracy units: Feet

**WELL USE:** Monitoring **DATE WELL STARTED:** 06/16/2020

**Other Use(s):** **DATE WELL COMPLETED:** 06/17/2020

**WELL CONSTRUCTION**

**Permit Number** Total Depth Drilled(ft): 80 Drilling Company:

E202002717 Finished Well Depth(ft): 73 Driller Name: Shawn Tibbetts

Local ID: 114-MW62C Well was finished: Above Grade License No.: 587209

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt./Rating/Screen Slot # (lbs/sch no.) |
|---|---|---|---|---|---|
| Borehole(s) | 0 | 80 | 6 | N/A | N/A |
| Casing(s) | 0 | 69 | 2 | PVC | 40 |
| Screen(s) | 69 | 73 | 2 | PVC | 20 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 67 | 6 | 2 | 35 | 685 | 60 |
| Grout | 73 | 80 | 6 | 0 | 4 | 80 | 7 |
| Gravel Pack | 67 | 73 | 6 | 2 | sand | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Sonic

Additional Information:

Attachments:

**RECORD OF TEST** Depth to Pump: ft. below land surface

PENDING APPROVAL

Test Date: _____ Pump Capacity: _____ gpm

Static Water Level: 5 ft. below land surface Total Design Head: _____ ft.

Pumping Water Level: _____ ft. below land surface Pump Horsepower: _____

Water Level Measure Tool: Water Level Indicator If pump tested Discharge Rate: _____ gpm

Pumping Equipment: _____ Duration of Test: _____ hours

Well Yield: _____ gpm Date Boring Decommissioned: _____

**PUMPING EQUIPMENT AND ADDITIONAL INFORMATION**

Well Development Period: 1 hours

Method of Development: _____

Installed: _____ Protective Casing: No

Installer's Name: _____ Drilling Fluid: _____

Installer's Registration No.: _____ Drill Rig: Sonic

Pump Type: _____ Health and Safety Plan: No

**GEOLOGIC LOG**

| Depth to Top | Depth to Bottom | Color | USCS | Additional Description |
|---|---|---|---|---|
| 0 | 15 | light brown | SM - Silty sands, sand-silt mixtures | |
| 15 | 50 | light brown | SW - Well-graded sands and gravelly sands, little or no fines | |
| 50 | 65 | gray | GM - Silty gravels, gravel-sand-silt mixtures | |
| 65 | 80 | gray | GP - Poorly graded gravels and gravel-sand mixtures, little or no fines | |

PENDING APPROVAL

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Hudson County Chromate Site 114

List all AKAs: PPG Site 114

Street Address: 70 Carteret Avenue

Municipality: Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): G000008791; G000005480 Case Tracking Number(s): N/A

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 900 Garfield Ave
3. Well Location (Municipal Block and Lot) Block# 21501 Lot # 20

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing):.. | E202002717 |
| 2. Site Well Number as shown on application or plans): ..... | 114-MW62C |
| 3. Well Completion Date: ..... | 6/16/20 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): ..... | 2.02 (Field measured) |
| 5. Total Depth of Well to the nearest ½ foot: ..... | 74.85 |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'):..... | 71.02 (Field Measured) |
| 7. Screen Length (or length of open hole) in feet: ..... | 4 |
| 8. Screen or Slot Size: ..... | 0.01 in |
| 9. Screen or Slot Material: ..... | PVC |
| 10. Casing Material (PVC, steel, or other – specify): ..... | PVC |
| 11. Casing Diameter (inches): ..... | 2 in |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): ..... | 7.88 |
| 13. Yield (gallons per minute): ..... | 1.5 |
| 14. Development Techinque (specify): ..... | whale pump |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): ..... | 7 hour 25 minutes |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

**SECTION A. SITE NAME AND LOCATION**

Site Name: Garfield Avenue Group Chrome Sites (PPG)
List all AKAs: PPG Site 114
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): Case Tracking Number(s):

**SECTION B. WELL OWNER AND LOCATION**

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) Garfield Avenue and Carteret Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # 21501 Lot # 20

**SECTION C. WELL LOCATION SPECIFICS**

1. Well Permit Number (This number must be permanently affixed to the well casing): E202002717
2. Site Well Number (As shown on application or plans): 114-MW62C
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'35.12" Longitude: West 74°04'14.44"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 683749.8 East 611139.0
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 15.04
   Elevation of Top of Outer Casing: 15.18 Elevation of Ground: 13.0
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark: Reference Stations NJI2, NJNT, NYBP, NYBR and NYVH. On-site benchmarks have been set.
7. Significant observations and notes:
   Lot and Block information is for reference only and does not necessarily indicate that property, boundary, or lot lines have been surveyed relative to this well.

**SECTION D. LAND SURVEYOR'S CERTIFICATION**

SEAL

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Professional Land Surveyor's Signature: Date: 8/10/2020
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002938**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** SHAWN TIBBETTS, MONITORING LICENSE # 587209

**Permit Issued to:** AQUIFER DRILLING & TESTING

**Company Address:** 75 EAST SECOND ST MINEOLA, NY 11501

**PROPERTY OWNER**

Name: JODI OVERMEYER

Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery Street

City: Jersey City State: New Jersey Zip Code: 07302

**PROPOSED WELL LOCATION**

Facility Name: PPG Garfield Avenue Group Site 114

Address: 2 Dakota Street

County: Hudson Municipality: Jersey City Lot: 16 Block: 21501

Easting (X): 611436 Northing (Y): 683762
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-MW63C

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings:

Depth (ft.): 80

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

Terry D. Pilawski

**Approval Date:** March 18, 2020
**Expiration Date:** March 18, 2021

Approved by the authority of:
Catherine R. McCabe
Commissioner

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002938**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

Service ID: 1173291

This document has not yet been reviewed and approved or denied by the NJ DEP. Deficiencies in submittal information or actual construction may result in denial.

## WELL RECORD SUBMITTAL PDF

**PROPERTY OWNER:** Jodi Overmeyer

Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery Street, Jersey City (Hudson), New Jersey 07302

**WELL LOCATION:** PPG Garfield Avenue Group Site 114

Address: 2 Dakota Street

County: Hudson Municipality: Jersey City Lot: 16 Block: 21501

Easting(X): 611434 Northing(Y): 683762 Coordinate System: NJ State Plane (NAD83) - USFEET

Method: GPS Point of Reference: Well

GPS Manufacturer: Trimble Surveyor Name:

GPS Model: Juno Surveyor License #:

Accuracy: 10 Accuracy units: Feet

**WELL USE:** Monitoring **DATE WELL STARTED:** 03/23/2020

**Other Use(s):** **DATE WELL COMPLETED:** 03/24/2020

**WELL CONSTRUCTION**

**Permit Number** Total Depth Drilled(ft): 72 Drilling Company:

E202002938 Finished Well Depth(ft): 67 Driller Name: Shawn Tibbetts

Local ID: 114-MW63C Well was finished: Above Grade License No.: 587209

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt./Rating/Screen Slot # (lbs/sch no.) |
|---|---|---|---|---|---|
| Borehole(s) | 0 | 72 | 6 | N/A | N/A |
| Casing(s) | 0 | 65 | 2 | PVC | 40 |
| Screen(s) | 65 | 67 | 2 | PVC | 20 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 63 | 6 | 2 | 640 | 35 | 55 |
| Grout | 67 | 72 | 6 | 0 | 57 | 3 | 5 |
| Gravel Pack | 63 | 67 | 6 | 2 | sand | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Sonic

Additional Information:

Attachments:

**RECORD OF TEST** Depth to Pump: ft. below land surface

PENDING APPROVAL

Test Date: _____ Pump Capacity: _____ gpm

Static Water Level: 5 ft. below land surface Total Design Head: _____ ft.

Pumping Water Level: _____ ft. below land surface Pump Horsepower: _____

Water Level Measure Tool: Water Level Indicator If pump tested Discharge Rate: _____ gpm

Pumping Equipment: _____ Duration of Test: _____ hours

Well Yield: _____ gpm Date Boring Decommissioned: _____

**PUMPING EQUIPMENT AND ADDITIONAL INFORMATION**

Well Development Period: 1 hours

Method of Development: _____

Installed: _____ Protective Casing: No

Installer's Name: _____ Drilling Fluid: _____

Installer's Registration No.: _____ Drill Rig: Sonic

Pump Type: _____ Health and Safety Plan: No

**GEOLOGIC LOG**

| Depth to Top | Depth to Bottom | Color | USCS | Additional Description |
|---|---|---|---|---|
| 0 | 15 | light brown | SM - Silty sands, sand-silt mixtures | |
| 15 | 50 | light brown | SW - Well-graded sands and gravelly sands, little or no fines | |
| 50 | 65 | gray | GM - Silty gravels, gravel-sand-silt mixtures | |
| 65 | 72 | gray | GP - Poorly graded gravels and gravel-sand mixtures, little or no fines | |

PENDING APPROVAL

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Hudson County Chromate Site 114

List all AKAs: PPG Site 114

Street Address: 70 Carteret Avenue

Municipality: Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): G000008791; G000005480 Case Tracking Number(s): N/A

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 2 Dakota Street
3. Well Location (Municipal Block and Lot) Block# 21501 Lot # 16

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing):.. | E202002938 |
| 2. Site Well Number as shown on application or plans): ..... | 114-MW63C |
| 3. Well Completion Date: ..... | 8/6/20 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): ..... | 2.1 (Field measured) |
| 5. Total Depth of Well to the nearest ½ foot: ..... | 70.11 |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'):..... | 64.85 (Field Measured) |
| 7. Screen Length (or length of open hole) in feet: ..... | 2 |
| 8. Screen or Slot Size: ..... | 0.01 in |
| 9. Screen or Slot Material: ..... | PVC |
| 10. Casing Material (PVC, steel, or other – specify): ..... | PVC |
| 11. Casing Diameter (inches): ..... | 2 in |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): ..... | 9.53 |
| 13. Yield (gallons per minute): ..... | 0.5 |
| 14. Development Techinque (specify): ..... | whale pump |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): ..... | 9 hour 5 minutes |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: Garfield Avenue Group Chrome Sites (PPG)
List all AKAs:
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) Site 114 Garfield Avenue and Carteret Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # 21501 Lot # 16

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing):
2. Site Well Number (As shown on application or plans): 114-MW63C
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'35.22" Longitude: West 74°04'10.57"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 683762.1 East 611437.0
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 17.68
   Elevation of Top of Outer Casing: 17.97 Elevation of Ground: 15.5
   *Check one:* [x] NAVD 88 [ ] NGVD29 [0] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The veritcal datum is North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS Network on August 24, 2020. Benchmark reference stations: NJ12, NJNT, NYBP, NYBR, NYVH. On-site benchmarks have been set.
7. Significant observations and notes:
   Lot and Block information is for reference only and does not necessarily indicate that property, boundary, or lot lines have been surveyed relative to this well.

## SECTION D. LAND SURVEYOR'S CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

SEAL

Professional Land Surveyor's Signature: Date: 8/31/2020
Surveyor's Name: J. Peter Borbas License Number: 24GS03165300
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax:

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002937**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** SHAWN TIBBETTS, MONITORING LICENSE # 587209

**Permit Issued to:** AQUIFER DRILLING & TESTING

**Company Address:** 75 EAST SECOND ST MINEOLA, NY 11501

**PROPERTY OWNER**

Name: JODI OVERMEYER

Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery Street

City: Jersey City State: New Jersey Zip Code: 07302

**PROPOSED WELL LOCATION**

Facility Name: PPG Garfield Avenue Group Site 114

Address: 70 Carteret Avenue

County: Hudson Municipality: Jersey City Lot: 17 Block: 21501

Easting (X): 611381 Northing (Y): 683046
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-MW64C

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings:

Depth (ft.): 80

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

**Approval Date:** March 18, 2020
**Expiration Date:** March 18, 2021

Approved by the authority of:
Catherine R. McCabe
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002937**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

Service ID: 1173925

This document has not yet been reviewed and approved or denied by the NJ DEP. Deficiencies in submittal information or actual construction may result in denial.

## WELL RECORD SUBMITTAL PDF

**PROPERTY OWNER:** Jodi Overmeyer

Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery Street, Jersey City (Hudson), New Jersey 07302

**WELL LOCATION:** PPG Garfield Avenue Group Site 114

Address: 70 Carteret Avenue

County: Hudson Municipality: Jersey City Lot: 17 Block: 21501

Easting(X): 611381 Northing(Y): 683044 Coordinate System: NJ State Plane (NAD83) - USFEET

Method: GPS Point of Reference: Well

GPS Manufacturer: Trimble Surveyor Name:

GPS Model: Juno Surveyor License #:

Accuracy: 10 Accuracy units: Feet

**WELL USE:** Monitoring **DATE WELL STARTED:** 06/23/2020

**Other Use(s):** **DATE WELL COMPLETED:** 06/24/2020

**WELL CONSTRUCTION**

**Permit Number** Total Depth Drilled(ft): 100 Drilling Company:

E202002937 Finished Well Depth(ft): 96 Driller Name: Shawn Tibbetts

Local ID: 114-MW64C Well was finished: Above Grade License No.: 587209

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt./Rating/Screen Slot # (lbs/sch no.) |
|---|---|---|---|---|---|
| Borehole(s) | 0 | 100 | 2 | N/A | N/A |
| Casing(s) | 0 | 93 | 2 | PVC | 40 |
| Screen(s) | 93 | 96 | 2 | PVC | 20 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 91 | 6 | 2 | 50 | 925 | 80 |
| Grout | 96 | 100 | 6 | 0 | 3 | 45 | 4 |
| Gravel Pack | 91 | 96 | 6 | 2 | sand | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Sonic

Additional Information:

Attachments:

**RECORD OF TEST** Depth to Pump: ft. below land surface

PENDING APPROVAL

Test Date: _____ Pump Capacity: _____ gpm

Static Water Level: 5 ft. below land surface Total Design Head: _____ ft.

Pumping Water Level: _____ ft. below land surface Pump Horsepower: _____

Water Level Measure Tool: Water Level Indicator If pump tested Discharge Rate: _____ gpm

Pumping Equipment: _____ Duration of Test: _____ hours

Well Yield: _____ gpm Date Boring Decommissioned: _____

**PUMPING EQUIPMENT AND ADDITIONAL INFORMATION**

Well Development Period: 1 hours

Method of Development: _____

Installed: _____ Protective Casing: No

Installer's Name: _____ Drilling Fluid: _____

Installer's Registration No.: _____ Drill Rig: Sonic

Pump Type: _____ Health and Safety Plan: No

**GEOLOGIC LOG**

| Depth to Top | Depth to Bottom | Color | USCS | Additional Description |
|---|---|---|---|---|
| 0 | 15 | light brown | SM - Silty sands, sand-silt mixtures | |
| 15 | 50 | light brown | SW - Well-graded sands and gravelly sands, little or no fines | |
| 50 | 65 | gray | GM - Silty gravels, gravel-sand-silt mixtures | |
| 65 | 90 | gray | GP - Poorly graded gravels and gravel-sand mixtures, little or no fines | |
| 90 | 100 | gray | WR - Weathered Rock | gray weathered bedrock |

PENDING APPROVAL

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Hudson County Chromate Site 114

List all AKAs: PPG Site 114

Street Address: 70 Carteret Avenue

Municipality: Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): G000008791; G000005480 Case Tracking Number(s): N/A

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 70 Carteret Avenue
3. Well Location (Municipal Block and Lot) Block# 21501 Lot # 17

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing):.. | E202002937 |
| 2. Site Well Number as shown on application or plans): ..... | 114-MW64C |
| 3. Well Completion Date: ..... | 6/24/20 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): ..... | 1.34 (Field measured) |
| 5. Total Depth of Well to the nearest ½ foot: ..... | 97.77 |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'):..... | 94.34 (Field Measured) |
| 7. Screen Length (or length of open hole) in feet: ..... | 3 |
| 8. Screen or Slot Size: ..... | 0.01 in |
| 9. Screen or Slot Material: ..... | PVC |
| 10. Casing Material (PVC, steel, or other – specify): ..... | PVC |
| 11. Casing Diameter (inches): ..... | 2 in |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): ..... | 5.99 |
| 13. Yield (gallons per minute): ..... | 0.5 |
| 14. Development Techinque (specify): ..... | whale pump |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): ..... | 11 hour 35 minutes |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: Garfield Avenue Group Chrome Sites (PPG)
List all AKAs: PPG Site 114
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) Garfield Avenue and Carteret Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # 21501 Lot # 17

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing): E202002937
2. Site Well Number (As shown on application or plans): 114-MW64C
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'28.15" Longitude: West 74°04'11.33"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 683046.0 East 611381.9
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 12.30
   Elevation of Top of Outer Casing: 12.98 Elevation of Ground: 10.8
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark: Reference Stations NJI2, NJNT, NYBP, NYBR and NYVH. On-site benchmarks have been set.
7. Significant observations and notes:
   Lot and Block information is for reference only and does not necessarily indicate that property, boundary, or lot lines have been surveyed relative to this well.

## SECTION D. LAND SURVEYOR'S CERTIFICATION

SEAL

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Professional Land Surveyor's Signature: Date: 8/10/2020
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002936**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** SHAWN TIBBETTS, MONITORING LICENSE # 587209

**Permit Issued to:** AQUIFER DRILLING & TESTING

**Company Address:** 75 EAST SECOND ST MINEOLA, NY 11501

**PROPERTY OWNER**

Name: JODI OVERMEYER

Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery Street

City: Jersey City State: New Jersey Zip Code: 07302

**PROPOSED WELL LOCATION**

Facility Name: PPG Garfield Avenue Group Site 114

Address: 2 Dakota Street

County: Hudson Municipality: Jersey City Lot: 16 Block: 21501

Easting (X): 611301 Northing (Y): 683587
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-MW65C

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings:

Depth (ft.): 80

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

Terry D. Pilawski

**Approval Date:** March 18, 2020
**Expiration Date:** March 18, 2021

Approved by the authority of:
Catherine R. McCabe
Commissioner

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202002936**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

Service ID: 1173146

This document has not yet been reviewed and approved or denied by the NJ DEP. Deficiencies in submittal information or actual construction may result in denial.

## WELL RECORD SUBMITTAL PDF

**PROPERTY OWNER:** Jodi Overmeyer

Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery Street, Jersey City (Hudson), New Jersey 07302

**WELL LOCATION:** PPG Garfield Avenue Group Site 114

Address: 2 Dakota Street

County: Hudson Municipality: Jersey City Lot: 16 Block: 21501

Easting(X): 611300 Northing(Y): 683587 Coordinate System: NJ State Plane (NAD83) - USFEET

Method: GPS Point of Reference: Well

GPS Manufacturer: Trimble Surveyor Name:

GPS Model: Juno Surveyor License #:

Accuracy: 10 Accuracy units: Feet

**WELL USE:** Monitoring **DATE WELL STARTED:** 03/17/2020

**Other Use(s):** **DATE WELL COMPLETED:** 03/18/2020

**WELL CONSTRUCTION**

**Permit Number** Total Depth Drilled(ft): 72 Drilling Company:

E202002936 Finished Well Depth(ft): 67 Driller Name: Shawn Tibbetts

Local ID: 114-MW65C Well was finished: Above Grade License No.: 587209

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt./Rating/Screen Slot # (lbs/sch no.) |
|---|---|---|---|---|---|
| Borehole(s) | 0 | 72 | 6 | N/A | N/A |
| Casing(s) | 0 | 62 | 2 | PVC | 40 |
| Screen(s) | 62 | 67 | 2 | PVC | .020 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 60 | 6 | 2 | 615 | 32 | 54 |
| Grout | 67 | 72 | 6 | 0 | 57 | 3 | 5 |
| Gravel Pack | 60 | 67 | 6 | 2 | sand | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Sonic

Additional Information:

Attachments:

**RECORD OF TEST** Depth to Pump: ft. below land surface

PENDING APPROVAL

Test Date: _____ Pump Capacity: _____ gpm

Static Water Level: 5 ft. below land surface Total Design Head: _____ ft.

Pumping Water Level: _____ ft. below land surface Pump Horsepower: _____

Water Level Measure Tool: Water Level Indicator If pump tested Discharge Rate: _____ gpm

Pumping Equipment: _____ Duration of Test: _____ hours

Well Yield: _____ gpm Date Boring Decommissioned: _____

**PUMPING EQUIPMENT AND ADDITIONAL INFORMATION**

Well Development Period: 1 hours

Method of Development: _____

Installed: _____ Protective Casing: No

Installer's Name: _____ Drilling Fluid: _____

Installer's Registration No.: _____ Drill Rig: Sonic

Pump Type: _____ Health and Safety Plan: No

**GEOLOGIC LOG**

| Depth to Top | Depth to Bottom | Color | USCS | Additional Description |
|---|---|---|---|---|
| 0 | 15 | light brown | SM - Silty sands, sand-silt mixtures | |
| 15 | 50 | light brown | SW - Well-graded sands and gravelly sands, little or no fines | |
| 50 | 65 | gray | GM - Silty gravels, gravel-sand-silt mixtures | |
| 65 | 72 | gray | GP - Poorly graded gravels and gravel-sand mixtures, little or no fines | |

PENDING APPROVAL

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Hudson County Chromate Site 114

List all AKAs: PPG Site 114

Street Address: 70 Carteret Avenue

Municipality: Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): G000008791; G000005480 Case Tracking Number(s): N/A

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 70 Carteret Avenue
3. Well Location (Municipal Block and Lot) Block# 21501 Lot # 16

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing):.. | E202002936 |
| 2. Site Well Number as shown on application or plans): ..... | 114-MW65C |
| 3. Well Completion Date: ..... | 3/18/20 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): ..... | 1.72 (Field measured) |
| 5. Total Depth of Well to the nearest ½ foot: ..... | 67.61 |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'):..... | 61.72 (Field Measured) |
| 7. Screen Length (or length of open hole) in feet: ..... | 5 |
| 8. Screen or Slot Size: ..... | 0.01 in |
| 9. Screen or Slot Material: ..... | PVC |
| 10. Casing Material (PVC, steel, or other – specify): ..... | PVC |
| 11. Casing Diameter (inches): ..... | 2 in |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): ..... | 6.41 |
| 13. Yield (gallons per minute): ..... | 7 |
| 14. Development Techinque (specify): ..... | whale pump |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): ..... | 2 hour 15 minutes |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: Garfield Avenue Group Chrome Sites (PPG)
List all AKAs: PPG Site 114
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) Garfield Avenue and Carteret Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # 21501 Lot # 16

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing): E202002936
2. Site Well Number (As shown on application or plans): 114-MW65C
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'33.46" Longitude: West 74°04'12.47"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 683583.0 East 611291.7
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 14.20
   Elevation of Top of Outer Casing: 14.69 Elevation of Ground: 12.4
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark: Reference Stations NJI2, NJNT, NYBP, NYBR and NYVH. On-site benchmarks have been set.
7. Significant observations and notes:
   Lot and Block information is for reference only and does not necessarily indicate that property, boundary, or lot lines have been surveyed relative to this well.

## SECTION D. LAND SURVEYOR'S CERTIFICATION

SEAL

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Professional Land Surveyor's Signature: Date: 8/10/2020
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202012659**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** SHAWN TIBBETTS, ENV RESOURCE GEOTEC LICENSE # 587209

**Permit Issued to:** AQUIFER DRILLING & TESTING

**Company Address:** 75 EAST SECOND ST MINEOLA, NY 11501

**PROPERTY OWNER**

Name: JODY OVERMEYER

Organization: Jersey City Redevelopment Agency

Address: 66 York Street

City: Jersey City State: New Jersey Zip Code: 07302

**PROPOSED WELL LOCATION**

Facility Name: PPG Garfield Avenue Group Site 114

Address: 880 Garfield Ave

County: Hudson Municipality: Jersey City Lot: 18.01 Block: 21501

Easting (X): 610932 Northing (Y): 683425
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-MW66D

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 4

Regulatory Program Requiring Wells/Borings:

Depth (ft.): 125

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

**Approval Date:** November 30, 2020
**Expiration Date:** November 30, 2021

Approved by the authority of:
Catherine R. McCabe
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202012659**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

Service ID: 1193249

This document has not yet been reviewed and approved or denied by the NJ DEP. Deficiencies in submittal information or actual construction may result in denial.

**WELL RECORD SUBMITTAL PDF**

**PROPERTY OWNER:** Jody Overmeyer

Organization: Jersey City Redevelopment Agency

Address: 66 York Street, Jersey City (Hudson), New Jersey 07302

**WELL LOCATION:** PPG Garfield Avenue Group Site 114

Address: 880 Garfield Ave

County: Hudson Municipality: Jersey City Lot: 18.01 Block: 21501

Easting(X): 610932 Northing(Y): 683425 Coordinate System: NJ State Plane (NAD83) - USFEET

Method: GPS Point of Reference: Well

GPS Manufacturer: Trimble Surveyor Name:

GPS Model: Juno Surveyor License #:

Accuracy: 10 Accuracy units: Feet

**WELL USE:** Monitoring **DATE WELL STARTED:** 12/10/2020

**Other Use(s):** **DATE WELL COMPLETED:** 12/23/2020

**WELL CONSTRUCTION**

**Permit Number** Total Depth Drilled(ft): 115 Drilling Company:

E202012659 Finished Well Depth(ft): 115 Driller Name: Shawn Tibbetts

Local ID: 114-MW66D Well was finished: Above Grade License No.: 587209

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt./Rating/Screen Slot # (lbs/sch no.) |
|---|---|---|---|---|---|
| Borehole(s) | 0 | 90 | 10 | N/A | N/A |
| Borehole(s) | 90 | 115 | 6 | N/A | N/A |
| Casing(s) | 0 | 90 | 6 | Steel | 40 |
| Screen(s) | | | | | |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 90 | 10 | 6 | 100 | 1840 | 165 |
| Gravel Pack | | | | | | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Sonic

Additional Information:

Attachments:

**RECORD OF TEST** Depth to Pump: ft. below land surface

PENDING APPROVAL

Test Date: _____ Pump Capacity: _____ gpm

Static Water Level: 10 ft. below land surface Total Design Head: _____ ft.

Pumping Water Level: _____ ft. below land surface Pump Horsepower: _____

Water Level Measure Tool: Water Level Indicator If pump tested Discharge Rate: _____ gpm

Pumping Equipment: _____ Duration of Test: _____ hours

Well Yield: _____ gpm Date Boring Decommissioned: _____

**PUMPING EQUIPMENT AND ADDITIONAL INFORMATION**

Well Development Period: 1 hours

Method of Development: _____

Installed: _____ Protective Casing: Yes

Installer's Name: _____ Drilling Fluid: _____

Installer's Registration No.: _____ Drill Rig: Sonic

Pump Type: _____ Health and Safety Plan: No

**GEOLOGIC LOG**

| Depth to Top | Depth to Bottom | Color | USCS | Additional Description |
|---|---|---|---|---|
| 0 | 26 | gray | GM - Silty gravels, gravel-sand-silt mixtures | |
| 26 | 63 | red brown | GP - Poorly graded gravels and gravel-sand mixtures, little or no fines | |
| 63 | 80 | gray | WR - Weathered Rock | weathered rock |
| 80 | 115 | gray | CR - Competent Rock | competent rock |

PENDING APPROVAL

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Hudson COunty Chromate Site 144

List all AKAs: PPG Site 114

Street Address: 70 Carteret Avenue

Municipality: Jersey CIty (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 66 York Street Jersey City
3. Well Location (Municipal Block and Lot) Block# 21501 Lot # 18.01

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing):.. | E202012659 |
| 2. Site Well Number as shown on application or plans): ..... | 114-MW66D |
| 3. Well Completion Date: ..... | 12/28/20 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): ..... | 2.20 FT |
| 5. Total Depth of Well to the nearest ½ foot: ..... | 115 FT BGS |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'):..... | 92.20 |
| 7. Screen Length (or length of open hole) in feet: ..... | 25 |
| 8. Screen or Slot Size: ..... | N/A OPEN HOLE |
| 9. Screen or Slot Material: ..... | N/A OPEN HOLE |
| 10. Casing Material (PVC, steel, or other – specify): ..... | STEEL |
| 11. Casing Diameter (inches): ..... | 6 IN |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): ..... | 9.96 |
| 13. Yield (gallons per minute): ..... | < 1 GPM |
| 14. Development Techinque (specify): ..... | AIR LIFT/ PUMPING |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): ..... | 12 HOURS |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Garfield Avenue Group Chrome Sites (PPG)
List all AKAs: PPG Site 114
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) Site 114, Garfield Avenue and Carteret Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # 21501 Lot # 18

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing): E202012659
2. Site Well Number (As shown on application or plans): 114-MW66D
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'31.90" Longitude: West 74°04'17.03"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 683423.4 East 610941.4
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 16.20
   Elevation of Top of Outer Casing: 16.64 Elevation of Ground: 14.1
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark: Reference Stations NJI2, NJNT, NYBP, NYBR and NYVH. On-site benchmarks have been set.
7. Significant observations and notes:
   Lot and Block information is for reference only and does not necessarily indicate that property, boundary, or lot lines have been surveyed relative to this well.

## SECTION D. LAND SURVEYOR'S CERTIFICATION

SEAL

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Professional Land Surveyor's Signature: Date: 1/19/2021
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax:

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201711877**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** NICHOLAS A FALLUCCA, MASTER LICENSE # 749523

**Permit Issued to:** SGS NORTH AMERICA INC.

**Company Address:** PO BOX 423 WEST CREEK, NJ 08092

**PROPERTY OWNER**

Name: NA JERSEY CITY REDEVELOPMENT AGENCY

Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery St

City: Jersey City State: New Jersey Zip Code: 07302

**PROPOSED WELL LOCATION**

Facility Name: Site 114

Address: 880 Garfield Ave / 114-P1B-MW103D confirmed by client / 6136

County: Hudson Municipality: Jersey City Lot: 18 Block: 21501

Easting (X): 610887 Northing (Y): 683222
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-P1B-MW103D

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings: Owner Investigation

Depth (ft.): 60

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

Approved by the authority of:
Bob Martin
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

**Approval Date:** October 17, 2017
**Expiration Date:** October 17, 2018

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201711877**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201711877**

# MONITORING WELL RECORD

**PROPERTY OWNER:** NA JERSEY CITY REDEVELOPMENT AGENCY

Company/Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery St Jersey City, New Jersey 07302

**WELL LOCATION:** Site 114

Address: 880 Garfield Ave / 114-P1B-MW103D confirmed by client / 6136

County: Hudson Municipality: Jersey City Lot: 18 Block: 21501

Easting (X): 610887 Northing (Y): 683222
Coordinate System: NJ State Plane (NAD83) - USFEET

**DATE WELL STARTED:** November 10, 2017

**DATE WELL COMPLETED:** November 13, 2017

**WELL USE:** MONITORING

**Other Use(s):**

**Local ID:** 114-P1B-MW103D

**WELL CONSTRUCTION**

Total Depth Drilled (ft.): 68 Finished Well Depth (ft.): 56 Well Surface: Flush Mount

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt/Rating/Screen # Used (lbs/ch no.) |
|---|---|---|---|---|---|
| Borehole | 0 | 17 | 10 | | |
| Borehole | 17 | 68 | 6 | | |
| Casing | 0 | 51 | 2 | PVC | sch 40 |
| Casing | 0 | 17 | 6 | Steel | sch 40 .250 wall |
| Screen | 51 | 56 | 2 | PVC | .010 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in.) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 17 | 10 | 6 | 29 | 521 | 44 |
| Grout | 0 | 48.5 | 6 | 2 | 63 | 744 | 41 |
| Grout | 56 | 68 | 6 | 0 | 16 | 184 | 10 |
| Gravel Pack | 48.5 | 49.5 | 6 | 2 | #00 Filpro | | |
| Gravel Pack | 49.5 | 56 | 6 | 2 | #1 Filpro | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Other

**ADDITIONAL INFORMATION**

Protective Casing: Yes
Static Water Level: 43 ft. below land surface
Water Level Measure Tool: m scope
Well Development Period: 1.5 hrs.
Method of Development: surge & pump
Pump Type:

Pump Capacity: _ gpm
Total Design Head: _ ft.
Drilling Fluid:
Drill Rig: B-60 / CRS XL Max
Health and Safety Plan Submitted? Yes

**ATTACHMENTS:**

| **GEOLOGIC LOG** |
|---|
| 0 - 15: Brownish OT - Other Fill |
| 15 - 17: Brownish OL - Organic silts and organic silty clays of low plasticity |
| 17 - 38: Brown-Red SM - Silty sands, sand-silt mixtures some clay |
| 38 - 48: Brownish CH - Inorganic clays or high plasticity, fat clays |
| 48 - 56: Brownish SC - Clayey sands, sand-clay mixtures silts |
| 56 - 68: Brownish GC - Clayey gravels, gravel-sand-clay mixtures Till |

**ADDITIONAL INFORMATION:** Well Record submitted on behalf of Scott Moore.
License #MW665028

Driller of Record: Nicholas A Fallucca, MASTER LICENSE # 749523 Company: SGS NORTH AMERICA INC.

| | | |
|---|---|---|
| AECOM | *Client: PPG* | ***WELL ID: 114-P1B-MW103D*** |
| | *Project Number: 60550261* | |
| | *Site Location: Jersey City, New Jersey* | *Date Installed: 11/13/2017* |
| | *Well Location: Site 114* *Coords: X: 610887.2, Y: 683237.0* | *Inspector: Micah Forbes / Eric Acs* |
| | *Method: Other* | *Contractor: SGS* |

## MONITORING WELL CONSTRUCTION DETAIL

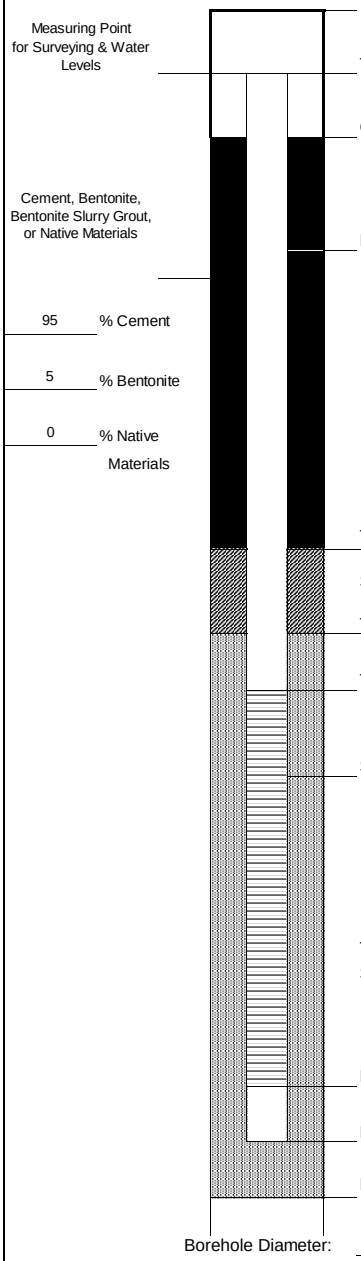


| | | Depth from G.S. (feet) | Elevation (feet) Datum: NAVD88 |
|---|---|---|---|
| Top of Steel Guard Pipe | | 0.0 | 16.68 |
| Top of Riser Pipe | | 0.0 | 16.73 |
| Ground Surface (G.S.) | | 0.0 | 13.5 |
| Riser Pipe: | | | |
| Length | 51 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Type of Material | PVC sch 40 | | |
| Top of Sand Seal | | 48.5 | |
| Sand Seal Thickness | 1 ft | | |
| Top of Filter Sand | | 49.5 | |
| Top of Screen | | 51.0 | |
| Screen: | | | |
| Length | 5 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Slot Size | 0.010 | | |
| Type of Material | PVC | | |
| Type/Size of Sand | #1 Sand | | |
| Sand Pack Thickness | 6.5 ft | | |
| Bottom of Screen | | 56.0 | |
| Bottom of Tail Pipe: | | | |
| Bottom of Borehole | | 56.0 | |

Borehole Diameter: 6 in

Well Type: Flush Mount

Measuring Point: Top of Riser Pipe

Additional Information:

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: PPG Site 114

List all AKAs: Garfield Avenue Group Chrome Sites (PPG)

Street Address: Garfield Avenue and Carteret Avenue

Municipality: City of Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): G000008738 Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 880 Garfield Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block# 21501 Lot # 18

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing): | E201711877 |
| 2. Site Well Number as shown on application or plans): | 114-P1B-MW103D |
| 3. Well Completion Date: | 11/13/2017 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): | 3.23 |
| 5. Total Depth of Well to the nearest ½ foot: | 56.0 |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'): | 51.0 |
| 7. Screen Length (or length of open hole) in feet: | 5.0 |
| 8. Screen or Slot Size: | 0.010 |
| 9. Screen or Slot Material: | Machine Slot |
| 10. Casing Material (PVC, steel, or other – specify): | Sch 40 PVC (Inner) |
| 11. Casing Diameter (inches): | 2.0 |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): | 43.0 |
| 13. Yield (gallons per minute): | Not Available |
| 14. Development Techinque (specify): | Pump |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): | 1.5 hours |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: PPG Site 114
List all AKAs: Garfield Avenue Group Chrome Sites (PPG)
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): G000008738 Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) Site 114, Garfield Avenue and Carteret Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # Lot #

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing):
2. Site Well Number (As shown on application or plans): 114-P1B-MW103D
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'30.06" Longitude: West 74°04'17.74"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 683237.0 East 610887.2
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 16.73
   Elevation of Top of Outer Casing: 16.68 Elevation of Ground: 13.5
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark reference stations: NJI2, NJNT, NYBP, NYBR and NYVH.
7. Significant observations and notes:
   On site control points used: Spike and Tag in the top of curb at the intersection of east side of Carteret Avenue and south side of Halladay Street, Elev= 10.76' and Spike and Tag in the face of the retaining wall for the railroad at the north end of Site 114, Elev= 18.02'

## SECTION D. LAND SURVEYOR'S CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

SEAL

Professional Land Surveyor's Signature: Date: 11/30/2017
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201712010**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** NICHOLAS A FALLUCCA, MASTER LICENSE # 749523

**Permit Issued to:** SGS NORTH AMERICA INC.

**Company Address:** PO BOX 423 WEST CREEK, NJ 08092

**PROPERTY OWNER**

Name: NA JERSEY CITY REDEVELOPMENT AGENCY

Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery Ave

City: Jersey City State: New Jersey Zip Code: 07302

**PROPOSED WELL LOCATION**

Facility Name: Site 132

Address: 824 Garfield Ave / 132-P3A-MW104D-1 confimed by client / 6136

County: Hudson Municipality: Jersey City Lot: 2 Block: 21510

Easting (X): 610791 Northing (Y): 682809
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 132-P3A-MW104D-1

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings:

Depth (ft.): 60

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

Approved by the authority of:
Bob Martin
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

**Approval Date:** October 19, 2017
**Expiration Date:** October 19, 2018

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201712010**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201712010**

# MONITORING WELL RECORD

**PROPERTY OWNER:** NA JERSEY CITY REDEVELOPMENT AGENCY

Company/Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery Ave Jersey City, New Jersey 07302

**WELL LOCATION:** Site 132

Address: 824 Garfield Ave / 132-P3A-MW104D-1 confimed by client / 6136

County: Hudson Municipality: Jersey City Lot: 2 Block: 21510

Easting (X): 610791 Northing (Y): 682809
Coordinate System: NJ State Plane (NAD83) - USFEET

**DATE WELL STARTED:** October 30, 2017

**DATE WELL COMPLETED:** November 15, 2017

**WELL USE:** MONITORING

**Other Use(s):**

**Local ID:** 132-P3A-MW104D-1

**WELL CONSTRUCTION**

Total Depth Drilled (ft.): 77 Finished Well Depth (ft.): 55 Well Surface: Flush Mount

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt/Rating/Screen # Used (lbs/ch no.) |
|---|---|---|---|---|---|
| Borehole | 0 | 23 | 12 | | |
| Borehole | 23 | 77 | 8 | | |
| Casing | 0 | 50 | 2 | PVC | sch 40 |
| Casing | 0 | 23 | 8 | Steel | sch 40 .322 wall |
| Screen | 50 | 55 | 2 | PVC | .010 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in.) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 23 | 12 | 8 | 49 | 882 | 75 |
| Grout | 0 | 47.5 | 8 | 2 | 76 | 1365 | 116 |
| Grout | 55 | 65 | 8 | 2 | 16 | 287 | 24 |
| Grout | 72 | 77 | 8 | 0 | 8 | 144 | 12 |
| Gravel Pack | 47.5 | 48.5 | 8 | 2 | #00 Filpro | | |
| Gravel Pack | 48.5 | 55 | 8 | 2 | #1 Filpro | | |
| Gravel Pack | 65 | 66 | 8 | 2 | #00 Filpro | | |
| Gravel Pack | 66 | 72 | 8 | 2 | #1 Filpro | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Other

**ADDITIONAL INFORMATION**

Protective Casing: Yes
Static Water Level: 38 ft. below land surface
Water Level Measure Tool: m scope
Well Development Period: 1 hrs.
Method of Development: surge & pump
Pump Type:

Pump Capacity: _ gpm
Total Design Head: _ ft.
Drilling Fluid:
Drill Rig: B-60 / CRS XL Max
Health and Safety Plan Submitted? Yes

**ATTACHMENTS:**

| **GEOLOGIC LOG** |
|---|
| 0 - 20: Brownish OT - Other Fill |
| 20 - 23: Brownish PT - Peat, muck, and other highly organic soils |
| 23 - 48: Brown-Red SM - Silty sands, sand-silt mixtures |
| 48 - 72: Brown/red SM - Silty sands, sand-silt mixtures some clay |
| 72 - 77: Brownish red GC - Clayey gravels, gravel-sand-clay mixtures Till |

Driller of Record: Nicholas A Fallucca, MASTER LICENSE # 749523 Company: SGS NORTH AMERICA INC.

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201712010**

# MONITORING WELL RECORD

**ADDITIONAL INFORMATION:** Nested w/E201712011 132-P3A-MW104D-2
Well Record submitted on behalf of Scott MooreLicense #MW665028

Driller of Record: Nicholas A Fallucca, MASTER LICENSE # 749523 Company: SGS NORTH AMERICA INC.

| | | |
|---|---|---|
| AECOM | *Client: PPG* | ***WELL ID: 132-P3A-MW104D-1*** |
| | *Project Number: 60550261* | |
| | *Site Location: Jersey City, New Jersey* | *Date Installed: 11/15/2017* |
| | *Well Location: Site 132* *Coords: X: 610794.3, Y: 682807.3* | *Inspector: Laura Kinsey* |
| | *Method: Other* | *Contractor: SGS* |

## MONITORING WELL CONSTRUCTION DETAIL

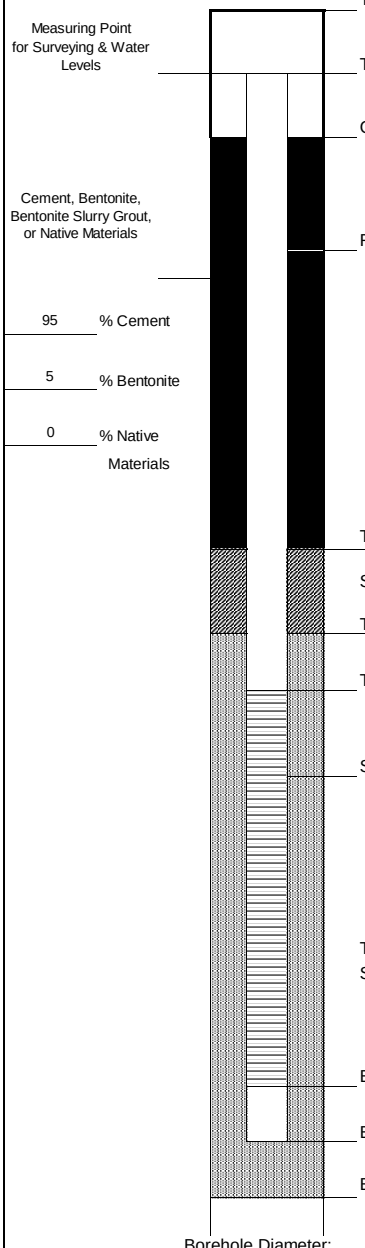


| | | Depth from G.S. (feet) | Elevation (feet) Datum: NAVD88 |
|---|---|---|---|
| Top of Steel Guard Pipe | | 0.0 | 15.23 |
| Top of Riser Pipe | | 0.0 | 14.89 |
| Ground Surface (G.S.) | | 0.0 | 15.2 |
| Riser Pipe: | | | |
| Length | 50 | | |
| Inside Diameter (ID) | 2 in | | |
| Type of Material | PVC sch 40 | | |
| Top of Sand Seal | | 47.5 | |
| Sand Seal Thickness | 1 ft | | |
| Top of Filter Sand | | 48.5 | |
| Top of Screen | | 50.0 | |
| Screen: | | | |
| Length | 5 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Slot Size | 0.010 | | |
| Type of Material | PVC | | |
| Type/Size of Sand | #1 Sand | | |
| Sand Pack Thickness | 6.5 ft | | |
| Bottom of Screen | | 55.0 | |
| Bottom of Tail Pipe: | | | |
| Bottom of Borehole | | 77.0 | |

Borehole Diameter: 8 in

Well Type: Flush Mount

Measuring Point: Top of Riser Pipe

Additional Information:

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: PPG Garfield Avenue Group of Sites

List all AKAs: Garfield Avenue Group Chrome Sites (PPG), Hudson County Chromate (HCC) Sites

Street Address: Garfield Avenue

Municipality: City of Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): G000008738 Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address)
3. Well Location (Municipal Block and Lot) Block# Lot #

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing):.. | E201712010 |
| 2. Site Well Number as shown on application or plans): ..... | 132-P3A-MW104D-1 |
| 3. Well Completion Date: ..... | 11/15/2017 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): ..... | |
| 5. Total Depth of Well to the nearest ½ foot: ..... | 55.0 |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'):..... | 50.0 |
| 7. Screen Length (or length of open hole) in feet: ..... | 5.0 |
| 8. Screen or Slot Size: ..... | 0.010 |
| 9. Screen or Slot Material: ..... | PVC |
| 10. Casing Material (PVC, steel, or other – specify): ..... | PVC |
| 11. Casing Diameter (inches): ..... | 2.0 |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): ..... | 38.0 |
| 13. Yield (gallons per minute): ..... | |
| 14. Development Techinque (specify): ..... | pump and surge block |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): ..... | 1 hour |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: PPG Site 132
List all AKAs: Garfield Avenue Group Chrome Sites (PPG)
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): G000008738 Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) Site 132, Garfield Avenue and Carteret Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # Lot #

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing):
2. Site Well Number (As shown on application or plans): 132-P3A-MW104D-1
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'25.82" Longitude: West 74°04'18.98"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 682807.3 East 610794.3
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 14.89
   Elevation of Top of Outer Casing: 15.23 Elevation of Ground: 15.2
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark reference stations: NJI2, NJNT, NYBP, NYBR and NYVH.
7. Significant observations and notes: This well shares an outer casing with well 132-P3A-MW104D-2
   On site control points used: Spike and Tag in the top of curb at the intersection of east side of Carteret Avenue and south side of Halladay Street, Elev= 10.76' and Spike and Tag in the face of the retaining wall for the railroad at the north end of Site 114, Elev= 18.02'

## SECTION D. LAND SURVEYOR'S CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

SEAL

Professional Land Surveyor's Signature: Date: 1/5/2018
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201712011**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** NICHOLAS A FALLUCCA, MASTER LICENSE # 749523

**Permit Issued to:** SGS NORTH AMERICA INC.

**Company Address:** PO BOX 423 WEST CREEK, NJ 08092

**PROPERTY OWNER**

Name: NA JERSEY CITY REDEVELOPMENT AGENCY

Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery Ave

City: Jersey City State: New Jersey Zip Code: 07302

**PROPOSED WELL LOCATION**

Facility Name: Site 132

Address: 824 Garfield Ave / 132-P3A-MW104D-1 confimed by client / 6136

County: Hudson Municipality: Jersey City Lot: 2 Block: 21510

Easting (X): 610790 Northing (Y): 682808
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 132-P3A-MW104D-2

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings:

Depth (ft.): 60

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

Approved by the authority of:
Bob Martin
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

**Approval Date:** October 19, 2017
**Expiration Date:** October 19, 2018

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201712011**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201712011**

# MONITORING WELL RECORD

**PROPERTY OWNER:** NA JERSEY CITY REDEVELOPMENT AGENCY

Company/Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery Ave Jersey City, New Jersey 07302

**WELL LOCATION:** Site 132

Address: 824 Garfield Ave / 132-P3A-MW104D-1 confimed by client / 6136

County: Hudson Municipality: Jersey City Lot: 2 Block: 21510

Easting (X): 610790 Northing (Y): 682808
Coordinate System: NJ State Plane (NAD83) - USFEET

**DATE WELL STARTED:** October 30, 2017

**DATE WELL COMPLETED:** November 15, 2017

**WELL USE:** MONITORING

**Other Use(s):**

**Local ID:** 132-P3A-MW104D-2

**WELL CONSTRUCTION**

Total Depth Drilled (ft.): 77 Finished Well Depth (ft.): 72 Well Surface: Flush Mount

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt/Rating/Screen # Used (lbs/ch no.) |
|---|---|---|---|---|---|
| Borehole | 0 | 23 | 12 | | |
| Borehole | 23 | 77 | 8 | | |
| Casing | 0 | 23 | 8 | Steel | sch 40 .322 wall |
| Casing | 0 | 67 | 2 | PVC | sch 40 |
| Screen | 67 | 72 | 2 | PVC | .010 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in.) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 23 | 12 | 8 | 49 | 882 | 75 |
| Grout | 0 | 47.5 | 8 | 2 | 76 | 1365 | 116 |
| Grout | 55 | 65 | 8 | 2 | 16 | 287 | 24 |
| Grout | 72 | 77 | 8 | 0 | 8 | 144 | 12 |
| Gravel Pack | 47.5 | 48.5 | 8 | 2 | #00 Filpro | | |
| Gravel Pack | 48.5 | 55 | 8 | 2 | #1 Filpro | | |
| Gravel Pack | 65 | 66 | 8 | 2 | #00 Filpro | | |
| Gravel Pack | 66 | 72 | 8 | 2 | #1 Filpro | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Other

**ADDITIONAL INFORMATION**

Protective Casing: Yes
Static Water Level: 60 ft. below land surface
Water Level Measure Tool: m scope
Well Development Period: 1.5 hrs.
Method of Development: surge & pump
Pump Type:

Pump Capacity: _ gpm
Total Design Head: _ ft.
Drilling Fluid:
Drill Rig: B-60 / CRS XL Max
Health and Safety Plan Submitted? Yes

**ATTACHMENTS:**

| **GEOLOGIC LOG** |
|---|
| 0 - 20: Brownish OT - Other Fill |
| 20 - 23: Brownish PT - Peat, muck, and other highly organic soils |
| 23 - 48: Brown-Red SM - Silty sands, sand-silt mixtures |
| 48 - 72: Brownish red SM - Silty sands, sand-silt mixtures some clay |
| 72 - 77: Brownish red GC - Clayey gravels, gravel-sand-clay mixtures Till |

Driller of Record: Nicholas A Fallucca, MASTER LICENSE # 749523 Company: SGS NORTH AMERICA INC.

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201712011**

# MONITORING WELL RECORD

**ADDITIONAL INFORMATION:** Nested w/E201712010 132-P3A-MW104D-1
Well Record submitted on behalf of Scott MooreLicense #MW665028

Driller of Record: Nicholas A Fallucca, MASTER LICENSE # 749523 Company: SGS NORTH AMERICA INC.

| | | |
|---|---|---|
| AECOM | *Client: PPG* | ***WELL ID: 132-P3A-MW104D-2*** |
| | *Project Number: 60550261* | |
| | *Site Location: Jersey City, New Jersey* | *Date Installed: 11/15/2017* |
| | *Well Location: Site 132* *Coords: X: 610794.3, Y: 682807.3* | *Inspector: Laura Kinsey* |
| | *Method: Other* | *Contractor: SGS* |

## MONITORING WELL CONSTRUCTION DETAIL

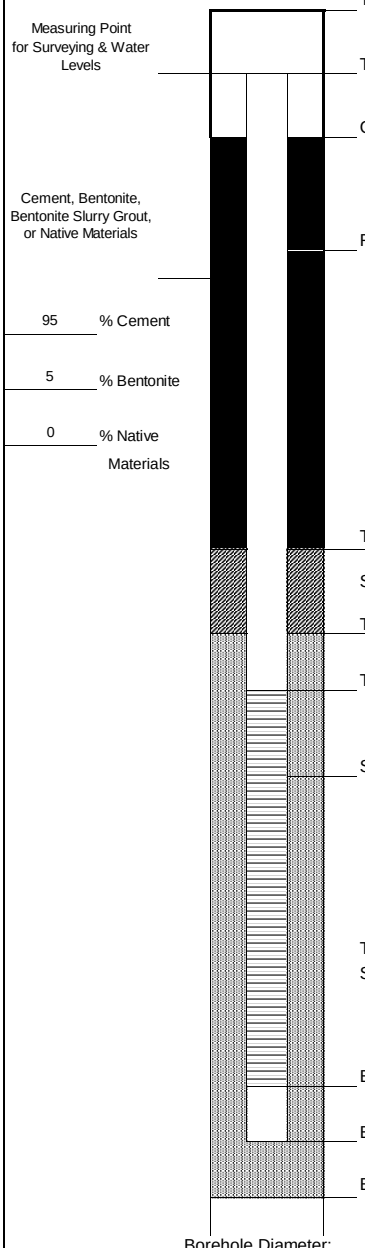


| | | Depth from G.S. (feet) | Elevation (feet) Datum: NAVD88 |
|---|---|---|---|
| Top of Steel Guard Pipe | | 0.0 | 15.23 |
| Top of Riser Pipe | | 0.0 | 14.89 |
| Ground Surface (G.S.) | | 0.0 | 15.2 |
| Riser Pipe: | | | |
| Length | 67 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Type of Material | PVC sch 40 | | |
| Top of Sand Seal | | 65.0 | |
| Sand Seal Thickness | 1 ft | | |
| Top of Filter Sand | | 66.0 | |
| Top of Screen | | 67.0 | |
| Screen: | | | |
| Length | 5 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Slot Size | 0.010 | | |
| Type of Material | PVC | | |
| Type/Size of Sand | #1 Sand | | |
| Sand Pack Thickness | 6 ft | | |
| Bottom of Screen | | 72.0 | |
| Bottom of Tail Pipe: | | | |
| Bottom of Borehole | | 77.0 | |

Borehole Diameter: 8 in

Well Type: Flush Mount

Measuring Point: Top of Riser Pipe

Additional Information: Same outer casing as 132-P3A-MW104D-1

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: PPG Garfield Avenue Group of Sites

List all AKAs: Garfield Avenue Group Chrome Sites (PPG), Hudson County Chromate (HCC) Sites

Street Address: Garfield Avenue

Municipality: City of Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): G000008738 Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address)
3. Well Location (Municipal Block and Lot) Block# Lot #

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing): | E201712011 |
| 2. Site Well Number as shown on application or plans): | 132-P3A-MW104D-2 |
| 3. Well Completion Date: | 11/15/2017 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): | |
| 5. Total Depth of Well to the nearest ½ foot: | 72.0 |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'): | 67.0 |
| 7. Screen Length (or length of open hole) in feet: | 5.0 |
| 8. Screen or Slot Size: | 0.010 |
| 9. Screen or Slot Material: | PVC |
| 10. Casing Material (PVC, steel, or other – specify): | PVC |
| 11. Casing Diameter (inches): | 2.0 |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): | 60 |
| 13. Yield (gallons per minute): | |
| 14. Development Techinque (specify): | pump and surge block |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): | 1 hour 30 minutes |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: PPG Site 132
List all AKAs: Garfield Avenue Group Chrome Sites (PPG)
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): G000008738 Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) Site 132, Garfield Avenue and Carteret Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # Lot #

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing):
2. Site Well Number (As shown on application or plans): 132-P3A-MW104D-2
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'25.82" Longitude: West 74°04'18.98"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 682807.3 East 610794.3
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 14.89
   Elevation of Top of Outer Casing: 15.23 Elevation of Ground: 15.2
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark reference stations: NJI2, NJNT, NYBP, NYBR and NYVH.
7. Significant observations and notes: This well shares an outer casing with well 132-P3A-MW104D-1
   On site control points used: Spike and Tag in the top of curb at the intersection of east side of Carteret Avenue and south side of Halladay Street, Elev= 10.76' and Spike and Tag in the face of the retaining wall for the railroad at the north end of Site 114, Elev= 18.02'

## SECTION D. LAND SURVEYOR'S CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

SEAL

Professional Land Surveyor's Signature: Date: 1/5/2018
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201712013**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** NICHOLAS A FALLUCCA, MASTER LICENSE # 749523

**Permit Issued to:** SGS NORTH AMERICA INC.

**Company Address:** PO BOX 423 WEST CREEK, NJ 08092

**PROPERTY OWNER**

Name: T. GADAY

Organization: Mid-Newark L.P. c/o Ten West Apparel

Address: 10 West 33rd Street, Suite 216

City: New York State: New York Zip Code: 10001

**PROPOSED WELL LOCATION**

Facility Name: Ten West

Address: 800 Garfield Ave / 132-P3A-MW105 I confimed by client / 6136

County: Hudson Municipality: Jersey City Lot: 39 Block: 21510

Easting (X): 610750 Northing (Y): 682658
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 132-P3A-MW105 I

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings: Owner Investigation

Depth (ft.): 50

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

**Approval Date:** October 19, 2017
**Expiration Date:** October 19, 2018

Approved by the authority of:
Bob Martin
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201712013**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201712013**

# MONITORING WELL RECORD

**PROPERTY OWNER:** T. GADAY

Company/Organization: Mid-Newark L.P. c/o Ten West Apparel

Address: 10 West 33rd Street, Suite 216 New York, New York 10001

**WELL LOCATION:** Ten West

Address: 800 Garfield Ave / 132-P3A-MW105 I confimed by client / 6130

County: Hudson Municipality: Jersey City Lot: 39 Block: 21510

Easting (X): 610750 Northing (Y): 682658
Coordinate System: NJ State Plane (NAD83) - USFEET

**DATE WELL STARTED:** January 11, 2018

**DATE WELL COMPLETED:** January 16, 2018

**WELL USE:** MONITORING

**Other Use(s):**

**Local ID:** 132-P3A-MW105 I

**WELL CONSTRUCTION**

Total Depth Drilled (ft.): 50 Finished Well Depth (ft.): 42 Well Surface: Flush Mount

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt/Rating/Screen # Used (lbs/ch no.) |
|---|---|---|---|---|---|
| Borehole | 0 | 18.5 | 14 | | |
| Borehole | 18.5 | 50 | 6 | | |
| Casing | 0 | 37 | 2 | PVC | 40 |
| Casing | 0 | 18.5 | 6 | Steel | 40 |
| Screen | 37 | 42 | 2 | pvc | .010 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in.) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 18.5 | 14 | 6 | 78 | 1418 | 120 |
| Grout | 0 | 34 | 6 | 2 | 28 | 521 | 44 |
| Grout | 42 | 50 | 6 | 0 | 5 | 100 | 12 |
| Gravel Pack | 34 | 36 | 6 | 2 | #00 | | |
| Gravel Pack | 36 | 42 | 6 | 2 | #1 | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Hollow Stem Augers

**ADDITIONAL INFORMATION**

Protective Casing: No
Static Water Level: 7.5 ft. below land surface
Water Level Measure Tool: m scope
Well Development Period: 4 hrs.
Method of Development: pump & surge
Pump Type:

Pump Capacity: _ gpm
Total Design Head: _ ft.
Drilling Fluid:
Drill Rig: Mobile Drill B-60
Health and Safety Plan Submitted? Yes

**ATTACHMENTS:**

| **GEOLOGIC LOG** |
|---|
| 0 - 4: black OT - Other fill |
| 4 - 17: brown GM - Silty gravels, gravel-sand-silt mixtures |
| 17 - 24: red SM - Silty sands, sand-silt mixtures |
| 24 - 38: brown GM - Silty gravels, gravel-sand-silt mixtures |
| 38 - 50: brown SM - Silty sands, sand-silt mixtures |

**ADDITIONAL INFORMATION:** Double cased well. Hole back grouted 50-42 ft. Well record entered on behalf of Larry Lynch.

Driller of Record: Wesley M Eichfeld, MASTER LICENSE # 592848 Company: SGS NORTH AMERICA INC.

| | | |
|---|---|---|
| AECOM | *Client:* PPG | ***WELL ID: 132-P3A-MW105I*** |
| | *Project Number:* 60507168 | |
| | *Site Location:* Jersey City, New Jersey | *Date Installed: 1/16/2018* |
| | *Well Location:* Ten West Apparel *Coords: X: 610676.8, Y: 682695.3* | *Inspector: Eric Acs* |
| | *Method: Hollow Stem Augers* | *Contractor: SGS* |

## MONITORING WELL CONSTRUCTION DETAIL

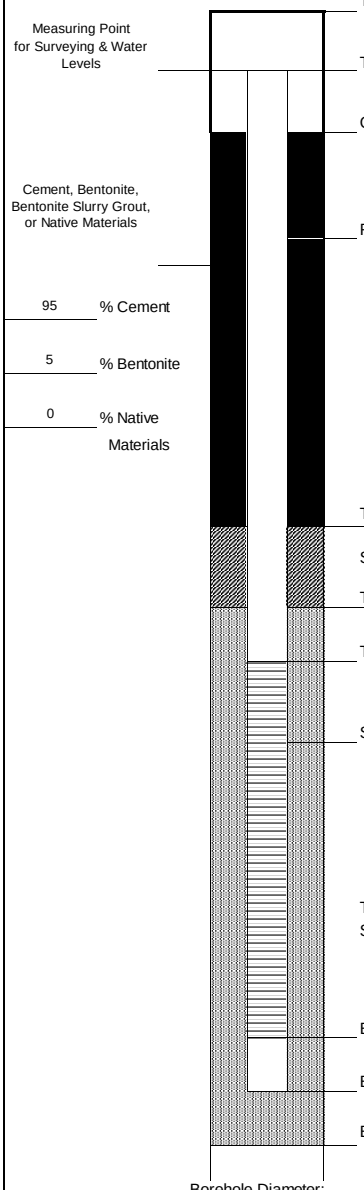


| | | Depth from G.S. (feet) | Elevation (feet) Datum: NAVD88 |
|---|---|---|---|
| Top of Steel Guard Pipe | | 0.0 | 14.41 |
| Top of Riser Pipe | | 0.0 | 14.1 |
| Ground Surface (G.S.) | | 0.0 | 14.4 |
| Riser Pipe: | | | |
| Length (ft) | 37 | | |
| Inside Diameter (ID) | 2 in | | |
| Type of Material | PVC sch 40 | | |
| Top of Sand Seal | | 34.0 | |
| Sand Seal Thickness | 2 ft | | |
| Top of Filter Sand | | 36.0 | |
| Top of Screen | | 37.0 | |
| Screen: | | | |
| Length | 5 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Slot Size | 0.010 | | |
| Type of Material | PVC | | |
| Type/Size of Sand | #1 Sand | | |
| Sand Pack Thickness | 6 ft | | |
| Bottom of Screen | | 42.0 | |
| Bottom of Tail Pipe: | | | |
| Bottom of Borehole | | 50.0 | |

Borehole Diameter: 6 in

Well Type: Flush Mount

Measuring Point: Top of Riser Pipe

Additional Information:

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Ten West

List all AKAs: Ten West Apparel

Street Address: 800 Garfield Ave

Municipality: Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 800 Garfield Ave, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block# 21510 Lot # 39

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing): | E201712013 |
| 2. Site Well Number as shown on application or plans): | 132-P3A-MW105I |
| 3. Well Completion Date: | 1/1518 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): | |
| 5. Total Depth of Well to the nearest ½ foot: | 42' |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'): | 37' |
| 7. Screen Length (or length of open hole) in feet: | 5' |
| 8. Screen or Slot Size: | 0.010" |
| 9. Screen or Slot Material: | PVC |
| 10. Casing Material (PVC, steel, or other – specify): | PVC |
| 11. Casing Diameter (inches): | 2" |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): | 7.86 |
| 13. Yield (gallons per minute): | 2.0 |
| 14. Development Techinque (specify): | Pump and Surge |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): | 2 hours |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: PPG Site 114
List all AKAs: Garfield Avenue Group Chrome Sites (PPG)
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): G000008738 Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) 70 Caven Point Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # Lot #

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing):
2. Site Well Number (As shown on application or plans): 132-P3A-MW105I
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'24.72" Longitude: West 74°04'20.51"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 682695.3 East 610676.8
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 14.10
   Elevation of Top of Outer Casing: 14.41 Elevation of Ground: 14.4
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark: Reference stations NJI2, NJNT, NYBP, NYBR and NYVH.
7. Significant observations and notes:
   On site control points used: BSM-359 (Spike in Caven Point Avenue , Elev= 10.83') and BSM-358 (Spike and Tag on ramp in 10West Property, Elev= 13.22')

## SECTION D. LAND SURVEYOR'S CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

SEAL

Professional Land Surveyor's Signature: Date: 2/7/2018
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201802595**

# MONITORING WELL RECORD

**PROPERTY OWNER:** NA CITY OF JERSEY CITY

Company/Organization: City of Jersey City

Address: 280 Grove Street Jersey City, New Jersey 07302

**WELL LOCATION:** Garfield Ave Chrome Sites (PPG)

Address: Pacific Avenue / 135-MW1A confirmed by client / 6299

County: Hudson Municipality: Jersey City Lot: ROW Block: ROW

Easting (X): 610954 Northing (Y): 682134
Coordinate System: NJ State Plane (NAD83) - USFEET

**DATE WELL STARTED:** March 29, 2018

**DATE WELL COMPLETED:** March 29, 2018

**WELL USE:** MONITORING REPLACEMENT

**Other Use(s):**

**Local ID:** 135-MW1AR

**WELL CONSTRUCTION**

Total Depth Drilled (ft.): 15 Finished Well Depth (ft.): 15 Well Surface: Flush Mount

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt/Rating/Screen # Used (lbs/ch no.) |
|---|---|---|---|---|---|
| Borehole | 0 | 15 | 8 | | |
| Casing | 0 | 10 | 2 | PVC | 40 |
| Screen | 10 | 15 | 2 | pvc | .010 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in.) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 8 | 8 | 2 | 12 | 230 | 19 |
| Gravel Pack | 8 | 15 | 8 | 2 | #1 | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Hollow Stem Augers

**ADDITIONAL INFORMATION**

Protective Casing: No
Static Water Level: 5 ft. below land surface
Water Level Measure Tool: tape
Well Development Period: 1 hrs.
Method of Development: submersible
Pump Type:

Pump Capacity: _ gpm
Total Design Head: _ ft.
Drilling Fluid:
Drill Rig: Mobile Drill B-60
Health and Safety Plan Submitted? Yes

**ATTACHMENTS:**

| **GEOLOGIC LOG** |
|---|
| 0 - 4: gray OT - Other fill |
| 4 - 9: red GC - Clayey gravels, gravel-sand-clay mixtures |
| 9 - 15: brown black PT - Peat, muck, and other highly organic soils |

**ADDITIONAL INFORMATION:** Well record entered on behalf of Larry Lynch.

Driller of Record: Wesley M Eichfeld, MASTER LICENSE # 592848 Company: SGS NORTH AMERICA INC.

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201802596**

# MONITORING WELL RECORD

**PROPERTY OWNER:** JODY OVERMYER

Company/Organization: PPG Industries, Inc.

Address: One PPG Place Pittsburgh, Pennsylvania 15272

**WELL LOCATION:** Garfield Ave Chrome Sites (PPG)

Address: Pacific Avenue / 135-MW3B confirmed by client / 6299

County: Hudson Municipality: Jersey City Lot: 2 Block: 21509

Easting (X): 611114 Northing (Y): 682301
Coordinate System: NJ State Plane (NAD83) - USFEET

**DATE WELL STARTED:** April 3, 2018

**DATE WELL COMPLETED:** April 3, 2018

**WELL USE:** MONITORING REPLACEMENT

**Other Use(s):**

**Local ID:** 135-MW3BR

**WELL CONSTRUCTION**

Total Depth Drilled (ft.): 37 Finished Well Depth (ft.): 37 Well Surface: Flush Mount

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt/Rating/Screen # Used (lbs/ch no.) |
|---|---|---|---|---|---|
| Borehole | 0 | 15 | 12 | | |
| Borehole | 15 | 37 | 6 | | |
| Casing | 0 | 32 | 2 | PVC | 40 |
| Casing | 0 | 15 | 6 | Steel | 40 |
| Screen | 32 | 37 | 2 | pvc | .010 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in.) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 30 | 6 | 2 | 25 | 460 | 39 |
| Grout | 0 | 15 | 12 | 6 | 42 | 776 | 66 |
| Gravel Pack | 30 | 37 | 6 | 2 | #1 | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Mud Rotary

**ADDITIONAL INFORMATION**

Protective Casing: No
Static Water Level: 7 ft. below land surface
Water Level Measure Tool: m scope
Well Development Period: 3 hrs.
Method of Development: pump and surge
Pump Type:

Pump Capacity: _ gpm
Total Design Head: _ ft.
Drilling Fluid:
Drill Rig: Mobil Drill B-60
Health and Safety Plan Submitted? Yes

**ATTACHMENTS:**

| **GEOLOGIC LOG** |
|---|
| 0 - 1: black OT - Other asphalt |
| 1 - 10: red brown SM - Silty sands, sand-silt mixtures |
| 10 - 20: brown black PT - Peat, muck, and other highly organic soils |
| 20 - 33: red SM - Silty sands, sand-silt mixtures |
| 33 - 37: brown red GM - Silty gravels, gravel-sand-silt mixtures |

**ADDITIONAL INFORMATION:** Well record entered on behalf of Larry Lynch.

Driller of Record: Wesley M Eichfeld, MASTER LICENSE # 592848 Company: SGS NORTH AMERICA INC.

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201802598**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** NICHOLAS A FALLUCCA, MASTER LICENSE # 749523

**Permit Issued to:** SGS NORTH AMERICA INC.

**Company Address:** PO BOX 423 WEST CREEK, NJ 08092

**PROPERTY OWNER**

Name: JODY OVERMYER

Organization: PPG Industries, Inc.

Address: One PPG Place

City: Pittsburgh State: Pennsylvania Zip Code: 15272

**PROPOSED WELL LOCATION**

Facility Name: Garfield Ave Chrome Sites (PPG)

Address: Pacific Avenue / 135-P3C-MW102S confirmed by client / 6299

County: Hudson Municipality: Jersey City Lot: 2 Block: 21509

Easting (X): 611125 Northing (Y): 682308
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 135-P3C-MW102S

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings:

Depth (ft.): 15

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Hollow Stem Augers

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

Approved by the authority of:
Catherine R. McCabe
Acting Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

**Approval Date:** March 23, 2018
**Expiration Date:** March 23, 2019

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201802598**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201802598**

# MONITORING WELL RECORD

**PROPERTY OWNER:** JODY OVERMYER

Company/Organization: PPG Industries, Inc.

Address: One PPG Place Pittsburgh, Pennsylvania 15272

**WELL LOCATION:** Garfield Ave Chrome Sites (PPG)

Address: Pacific Avenue / 135-P3C-MW102S confirmed by client / 6299

County: Hudson Municipality: Jersey City Lot: 2 Block: 21509

Easting (X): 611125 Northing (Y): 682308
Coordinate System: NJ State Plane (NAD83) - USFEET

**DATE WELL STARTED:** April 3, 2018

**DATE WELL COMPLETED:** April 3, 2018

**WELL USE:** MONITORING

**Other Use(s):**

**Local ID:** 135-P3C-MW102S

**WELL CONSTRUCTION**

Total Depth Drilled (ft.): 15 Finished Well Depth (ft.): 15 Well Surface: Flush Mount

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt/Rating/Screen # Used (lbs/ch no.) |
|---|---|---|---|---|---|
| Borehole | 0 | 15 | 8 | | |
| Casing | 0 | 10 | 2 | PVC | 40 |
| Screen | 10 | 15 | 2 | pvc | .010 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in.) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 8 | 8 | 2 | 12 | 230 | 19 |
| Gravel Pack | 8 | 15 | 8 | 2 | pvc | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Hollow Stem Augers

**ADDITIONAL INFORMATION**

Protective Casing: No
Static Water Level: 5 ft. below land surface
Water Level Measure Tool: m scope
Well Development Period: 1 hrs.
Method of Development: pump and surge
Pump Type:

Pump Capacity: _ gpm
Total Design Head: _ ft.
Drilling Fluid:
Drill Rig: Mobil Drill B-60
Health and Safety Plan Submitted? Yes

**ATTACHMENTS:**

| **GEOLOGIC LOG** |
|---|
| 0 - 4: gray OT - Other fill |
| 4 - 10: red brown SM - Silty sands, sand-silt mixtures |
| 10 - 15: brown black PT - Peat, muck, and other highly organic soils |

**ADDITIONAL INFORMATION:** Well record entered on behalf of Larry Lynch.

Driller of Record: Wesley M Eichfeld, MASTER LICENSE # 592848 Company: SGS NORTH AMERICA INC.

| | | |
|---|---|---|
| AECOM | *Client:* PPG | ***WELL ID: 135-P3C-MW102S*** |
| | *Project Number:* 60550261 | |
| | *Site Location:* Jersey City, New Jersey | *Date Installed: 4/3/2018* |
| | *Well Location:* Site 135 *Coords: X: 611120.7, Y: 682311.9* | *Inspector: J. Christopher* |
| | *Method: Hollow Stem Augers* | *Contractor: SGS* |

## MONITORING WELL CONSTRUCTION DETAIL

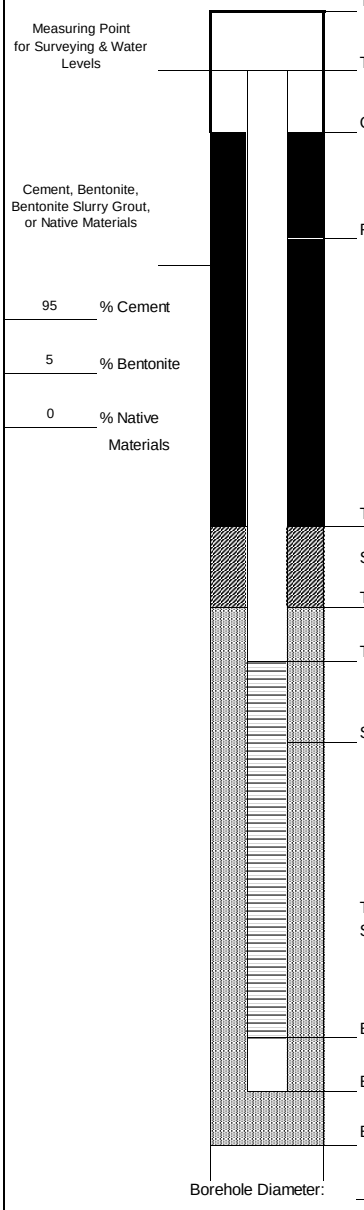


| | | Depth from G.S. (feet) | Elevation (feet) Datum: NAVD88 |
|---|---|---|---|
| Top of Steel Guard Pipe | | 0.0 | 11.49 |
| Top of Riser Pipe | | 0.0 | 10.99 |
| Ground Surface (G.S.) | | 0.0 | 11.5 |
| Riser Pipe: | | | |
| Length (ft) | 10 | | |
| Inside Diameter (ID) | 2 in | | |
| Type of Material | PVC sch 40 | | |
| Top of Sand Seal | | N/A | |
| Sand Seal Thickness | N/A | | |
| Top of Filter Sand | | 8.0 | |
| Top of Screen | | 10.0 | |
| Screen: | | | |
| Length | 5 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Slot Size | 0.010 | | |
| Type of Material | PVC | | |
| Type/Size of Sand | #1 Sand | | |
| Sand Pack Thickness | 7 ft | | |
| Bottom of Screen | | 15.0 | |
| Bottom of Tail Pipe: | | | |
| Bottom of Borehole | | 15.0 | |

Borehole Diameter: 8 in

Well Type: Flush Mount

Measuring Point: Top of Riser Pipe

Additional Information: Replacement for original RI well 135-MW3A

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Hudson County Chromate (HCC) Sites

List all AKAs: Garfield Avenue Group, PPG

Street Address: 70 Carteret Avenue

Municipality: Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) Pacific Ave
3. Well Location (Municipal Block and Lot) Block# 21509 Lot # 2

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing):.. | E201802598 |
| 2. Site Well Number as shown on application or plans): ..... | 135-P3C-MW102S |
| 3. Well Completion Date: ..... | 4/3/18 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): ..... | |
| 5. Total Depth of Well to the nearest ½ foot: ..... | 17.29 |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'):..... | 10 |
| 7. Screen Length (or length of open hole) in feet: ..... | 5 |
| 8. Screen or Slot Size: ..... | 10-slot |
| 9. Screen or Slot Material: ..... | PVC |
| 10. Casing Material (PVC, steel, or other – specify): ..... | PVC |
| 11. Casing Diameter (inches): ..... | 2 |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): ..... | 5.85 |
| 13. Yield (gallons per minute): ..... | 1 |
| 14. Development Techinque (specify): ..... | purge/surge |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): ..... | 2 hr 55 min |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: Garfield Avenue Group Chrome Sites (PPG)
List all AKAs: PPG Site 135
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 65 Pacific Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # 21509 Lot # 2

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing):
2. Site Well Number (As shown on application or plans): 135-P3C-MW102S
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'20.91" Longitude: West 74°04'14.77"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 682311.9 East 611120.7
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 10.99
   Elevation of Top of Outer Casing: 11.49 Elevation of Ground: 11.5
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS Network on May 10, 2012. Benchmark: Reference Stations NJI2, NJNT, NYBP, NYBR and NYVH.
7. Significant observations and notes:
   Lot and Block information is for reference only and does not necessarily indicate that property, boundary, or lot lines have been surveyed relative to this well.

## SECTION D. LAND SURVEYOR'S CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

SEAL

Professional Land Surveyor's Signature: Date: 6/7/2018
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201710902**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** NICHOLAS A FALLUCCA, MASTER LICENSE # 749523

**Permit Issued to:** SGS NORTH AMERICA INC.

**Company Address:** PO BOX 423 WEST CREEK, NJ 08092

**PROPERTY OWNER**

Name: JORGE RODRIGUEZ

Organization: Jorge Rodriguez

Address: 947 Garfield Avenue

City: Jersey City State: New Jersey Zip Code: 07305

**PROPOSED WELL LOCATION**

Facility Name: Site 186

Address: 947 Garfield Avenue / 186-MW02R confimed by client / 6074

County: Hudson Municipality: Jersey City Lot: 2 Block: 19802

Easting (X): 611311 Northing (Y): 684171
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 186-MW02R

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings: Owner Investigation

Depth (ft.): 20

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Hollow Stem Augers

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

Approved by the authority of:
Bob Martin
Commissioner

Terry D. Pilawski

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

**Approval Date:** September 26, 2017
**Expiration Date:** September 26, 2018

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201710902**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201710902**

# MONITORING WELL RECORD

**PROPERTY OWNER:** JORGE RODRIGUEZ

Company/Organization: Jorge Rodriguez

Address: 947 Garfield Avenue Jersey City, New Jersey 07305

**WELL LOCATION:** Site 186

Address: 947 Garfield Avenue / 186-MW02R confimed by client / 6074

County: Hudson Municipality: Jersey City Lot: 2 Block: 19802

Easting (X): 611311 Northing (Y): 684171
Coordinate System: NJ State Plane (NAD83) - USFEET

**DATE WELL STARTED:** September 30, 2017

**DATE WELL COMPLETED:** September 30, 2017

**WELL USE:** MONITORING

**Other Use(s):**

**Local ID:** 186-MW02R

**WELL CONSTRUCTION**

Total Depth Drilled (ft.): 15 Finished Well Depth (ft.): 15 Well Surface: Flush Mount

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt/Rating/Screen # Used (lbs/ch no.) |
|---|---|---|---|---|---|
| Borehole | 0 | 15 | 8 | | |
| Casing | 0 | 5 | 2 | PVC | Sch 40 |
| Screen | 5 | 15 | 2 | Pvc | .010 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in.) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 3 | 8 | 2 | 5 | 94 | 8 |
| Gravel Pack | 3 | 15 | 8 | 2 | #1 | | |

Grouting Method: Gravity method Drilling Method: Hollow Stem Augers

**ADDITIONAL INFORMATION**

Protective Casing: Yes
Static Water Level: 6 ft. below land surface
Water Level Measure Tool: M-scope
Well Development Period: 1 hrs.
Method of Development: Pump & surge
Pump Type:

Pump Capacity: _ gpm
Total Design Head: _ ft.
Drilling Fluid:
Drill Rig: 7822
Health and Safety Plan Submitted? Yes

**ATTACHMENTS:**

| **GEOLOGIC LOG** |
|---|
| 0 - 1: Black OT - Other Asphalt |
| 1 - 5: Dark brown GP - Poorly graded gravels and gravel-sand mixtures, little or no fines |
| 5 - 10: Brown GP - Poorly graded gravels and gravel-sand mixtures, little or no fines |
| 10 - 15: Brown GC - Clayey gravels, gravel-sand-clay mixtures |

**ADDITIONAL INFORMATION:**

Driller of Record: Peter Hanley, MONITORING LICENSE # 572679 Company: SGS NORTH AMERICA INC.

| | | |
|---|---|---|
| AECOM | *Client: PPG* | ***WELL ID: 186-MW02R*** |
| | *Project Number: 60550261* | |
| | *Site Location: Jersey City, New Jersey* | *Date Installed: 9/30/2017* |
| | *Well Location: Site 186* *Coords: X: 611305.0, Y: 684165.2* | *Inspector: Eric Acs* |
| | *Method: Hollow Stem Augers* | *Contractor: SGS* |

## MONITORING WELL CONSTRUCTION DETAIL

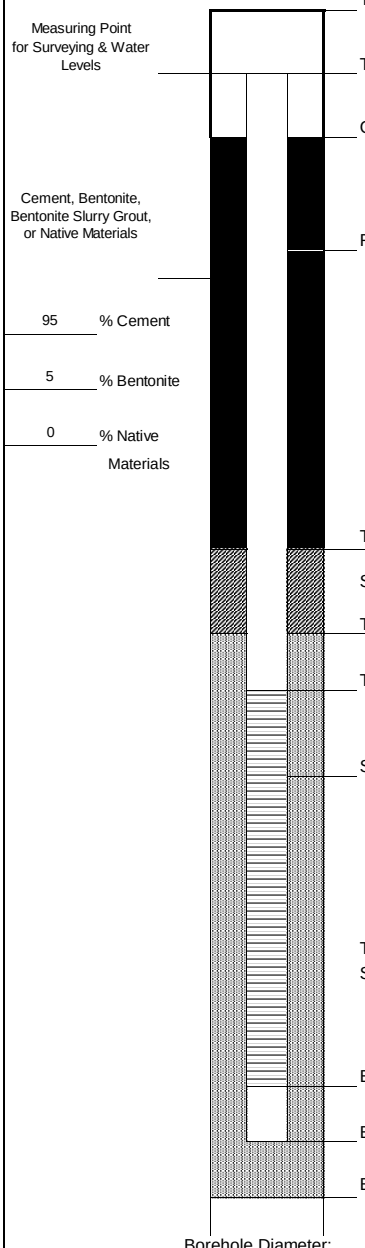


| | | Depth from G.S. (feet) | Elevation (feet) Datum: NAVD88 |
|---|---|---|---|
| Top of Steel Guard Pipe | | 0.0 | 13.38 |
| Top of Riser Pipe | | 0.0 | 13.1 |
| Ground Surface (G.S.) | | 0.0 | 13.4 |
| Riser Pipe: | | | |
| Length | 5 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Type of Material | PVC sch 40 | | |
| Top of Sand Seal | | N/A | |
| Sand Seal Thickness | N/A | | |
| Top of Filter Sand | | 3.0 | |
| Top of Screen | | 5.0 | |
| Screen: | | | |
| Length | 10 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Slot Size | 0.010 | | |
| Type of Material | PVC | | |
| Type/Size of Sand | #1 Sand | | |
| Sand Pack Thickness | 12 ft | | |
| Bottom of Screen | | 15.0 | |
| Bottom of Tail Pipe: | | | |
| Bottom of Borehole | | 15.0 | |
| Borehole Diameter: | 8 in | | |

Well Type: Flush Mount
Measuring Point: Top of Riser Pipe
Additional Information:

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: PPG Site 114

List all AKAs: Garfield Avenue Group Chrome Sites (PPG)

Street Address: Garfield Avenue and Carteret Avenue

Municipality: City of Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): G000008738 Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG
2. Well Location (Street Address) 947 Garfield Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block# 19802 Lot # 2

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing): | E201710902 |
| 2. Site Well Number as shown on application or plans): | 186-MW02R |
| 3. Well Completion Date: | 09/30/2017 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): | 0.30 |
| 5. Total Depth of Well to the nearest ½ foot: | 15.0 |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'): | 5.0 |
| 7. Screen Length (or length of open hole) in feet: | 10.0 |
| 8. Screen or Slot Size: | 0.010 inches |
| 9. Screen or Slot Material: | Machine Slot |
| 10. Casing Material (PVC, steel, or other – specify): | Sch 40 PVC (Inner) |
| 11. Casing Diameter (inches): | 2.0 (Inner) |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): | 6.0 |
| 13. Yield (gallons per minute): | 0.85 |
| 14. Development Techinque (specify): | Pump |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): | 1 hour |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: Garfield Avenue Group Chrome Sites (PPG)
List all AKAs:
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): G000008738 Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) 935 Garfield Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # 19802 Lot # 2

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing):
2. Site Well Number (As shown on application or plans): 186-MW02R
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'39.21" Longitude: West 74°04'12.26"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 684165.2 East 611305.0
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 13.10
   Elevation of Top of Outer Casing: 13.38 Elevation of Ground: 13.4
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012. Benchmark reference stations: NJI2, NJNT, NYBP, NYBR and NYVH.
7. Significant observations and notes:
   On site control points used: Spike and Tag in the top of curb at the intersection of east side of Carteret Avenue and south side of Halladay Street, Elev= 10.76' and Spike and Tag in the face of the retaining wall for the railroad at the north end of Site 114, Elev= 18.02'

## SECTION D. LAND SURVEYOR'S CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

SEAL

Professional Land Surveyor's Signature: Date: 11/30/2017
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201711855**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** NICHOLAS A FALLUCCA, MASTER LICENSE # 749523

**Permit Issued to:** SGS NORTH AMERICA INC.

**Company Address:** PO BOX 423 WEST CREEK, NJ 08092

**PROPERTY OWNER**

Name: ANNE MARIE MILLER

Organization: City of Jersey City

Address: 280 Grove Street

City: Jersey City State: New Jersey Zip Code: 07302

**PROPOSED WELL LOCATION**

Facility Name: Berry Lane Park

Address: 942 GArfield Ave / MW-CR-3D confirmed by client / 6136

County: Hudson Municipality: Jersey City Lot: 8 Block: 19803

Easting (X): 611444 Northing (Y): 684005
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** MW-CR-3D

**SITE CHARACTERISTICS**

**PROPOSED CONSTRUCTION**

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 2

Regulatory Program Requiring Wells/Borings: Owner Investigation

Depth (ft.): 60

Case ID Number:

Pump Capacity (gpm): 0

Deviation Requested: N

Drilling Method: Sonic

Attachments:

**SPECIFIC CONDITIONS/REQUIREMENTS**

Terry D. Pilawski

**Approval Date:** October 17, 2017
**Expiration Date:** October 17, 2018

Approved by the authority of:
Bob Martin
Commissioner

Terry Pilawski, Chief
Bureau of Water Allocation and Well Permitting

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201711855**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201711855**

# MONITORING WELL RECORD

**PROPERTY OWNER:** ANNE MARIE MILLER

Company/Organization: City of Jersey City

Address: 280 Grove Street Jersey City, New Jersey 07302

**WELL LOCATION:** Berry Lane Park

Address: 942 GArfield Ave / MW-CR-3D confirmed by client / 6136

County: Hudson Municipality: Jersey City Lot: 8 Block: 19803

Easting (X): 611444 Northing (Y): 684005
Coordinate System: NJ State Plane (NAD83) - USFEET

**DATE WELL STARTED:** January 30, 2018

**DATE WELL COMPLETED:** February 2, 2018

**WELL USE:** MONITORING

**Other Use(s):**

**Local ID:** MW-CR-3D

**WELL CONSTRUCTION**

Total Depth Drilled (ft.): 46 Finished Well Depth (ft.): 46 Well Surface: Flush Mount

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt/Rating/Screen # Used (lbs/ch no.) |
|---|---|---|---|---|---|
| Borehole | 0 | 20.5 | 10 | | |
| Borehole | 20.5 | 46 | 6 | | |
| Casing | 0 | 20.5 | 6 | Steel | sch 40 |
| Casing | 0 | 46 | 2 | PVC | sch 40 |
| Screen | 41 | 46 | 2 | pvc | .010 |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in.) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 39 | 6 | 2 | 18 | 344 | 30 |
| Grout | 0 | 20.5 | 10 | 6 | 19 | 361 | 32 |
| Gravel Pack | 39 | 40 | 6 | 2 | #00 | | |
| Gravel Pack | 40 | 46 | 6 | 2 | #1 | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Sonic

**ADDITIONAL INFORMATION**

Protective Casing: No
Static Water Level: 7.5 ft. below land surface
Water Level Measure Tool: mscope
Well Development Period: 2 hrs.
Method of Development: pump and surge
Pump Type:

Pump Capacity: _ gpm
Total Design Head: _ ft.
Drilling Fluid:
Drill Rig: CRS XL 170
Health and Safety Plan Submitted? Yes

**ATTACHMENTS:**

| **GEOLOGIC LOG** |
|---|
| 0 - 3: brown GP - Poorly graded gravels and gravel-sand mixtures, little or no fines |
| 3 - 20: grey OT - Other Fill / DGA |
| 20 - 46: brown GM - Silty gravels, gravel-sand-silt mixtures |

**ADDITIONAL INFORMATION:** Double cased well

Driller of Record: Scott D Moore, MONITORING LICENSE # 665028 Company: SGS NORTH AMERICA INC.

| | | |
|---|---|---|
| AECOM | *Client: PPG* | ***WELL ID: MW-CR-3D*** |
| | *Project Number: 60550261* | |
| | *Site Location: Jersey City, New Jersey* | *Date Installed: 2/2/2018* |
| | *Well Location: Berry Lane Park* *Coords: X: 611443.5, Y: 683987.8* | *Inspector: Eric Acs* |
| | *Method: Sonic* | *Contractor: SGS* |

## MONITORING WELL CONSTRUCTION DETAIL

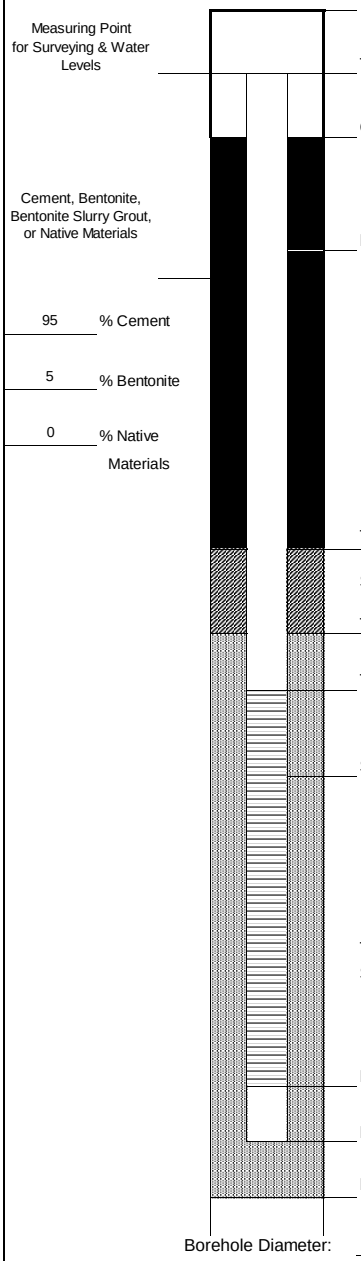


| | | Depth from G.S. (feet) | Elevation (feet) Datum: NAVD88 |
|---|---|---|---|
| Top of Steel Guard Pipe | | 0.0 | 15.2 |
| Top of Riser Pipe | | 0.0 | 14.88 |
| Ground Surface (G.S.) | | 0.0 | 15.2 |
| Riser Pipe: | | | |
| Length | 46 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Type of Material | PVC sch 40 | | |
| Top of Sand Seal | | 39.0 | |
| Sand Seal Thickness | N/A | | |
| Top of Filter Sand | | 40.0 | |
| Top of Screen | | 41.0 | |
| Screen: | | | |
| Length | 5 ft | | |
| Inside Diameter (ID) | 2 in | | |
| Slot Size | 0.010 | | |
| Type of Material | PVC | | |
| Type/Size of Sand | #1 Sand | | |
| Sand Pack Thickness | 6 ft | | |
| Bottom of Screen | | 46.0 | |
| Bottom of Tail Pipe: | | | |
| Bottom of Borehole | | 46.0 | |

Borehole Diameter: 6 in

Well Type: Flush Mount

Measuring Point: Top of Riser Pipe

Additional Information: Double cased well

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Berry Lane Park

List all AKAs:

Street Address: 1 Berry Road

Municipality: Jersey City (Township, Borough or City)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner: City of Jersey City
2. Well Location (Street Address): 1 Berry Road
3. Well Location (Municipal Block and Lot) Block# 18901 Lot # 18

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing): | E201711855 |
| 2. Site Well Number as shown on application or plans): | MW-CR-3D |
| 3. Well Completion Date: | 2/2/18 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): | |
| 5. Total Depth of Well to the nearest ½ foot: | 46' |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'): | 41' |
| 7. Screen Length (or length of open hole) in feet: | 5' |
| 8. Screen or Slot Size: | 0.010" |
| 9. Screen or Slot Material: | PVC |
| 10. Casing Material (PVC, steel, or other – specify): | PVC |
| 11. Casing Diameter (inches): | 2" |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): | 7.5 |
| 13. Yield (gallons per minute): | 2 GPM |
| 14. Development Techinque (specify): | Pump and Surge |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): | 2 hours |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: Garfield Avenue Group Chrome Sites (PPG)
List all AKAs: PPG Site 114
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner PPG Industries
2. Well Location (Street Address) 1000 Garfield Avenue, Jersey City, NJ
3. Well Location (Municipal Block and Lot) Block # 19803 Lot # 8

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing):
2. Site Well Number (As shown on application or plans): MW-CR-3D
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'37.45" Longitude: West 74°04'10.47"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 683987.8 East 611443.5
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 14.88
   Elevation of Top of Outer Casing: 15.20 Elevation of Ground: 15.2
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS Network on May 10, 2012. Benchmark: Reference Stations NJI2, NJNT, NYBP, NYBR and NYVH.
7. Significant observations and notes:
   Lot and Block information is for reference only and does not necessarily indicate that property, boundary, or lot lines have been surveyed relative to this well.

## SECTION D. LAND SURVEYOR'S CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

SEAL

Professional Land Surveyor's Signature: Date: 6/7/2018
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax: 973-402-6627

# Borbas Surveying & Mapping, LLC

402 Main Street, Boonton, New Jersey 07005  Phone (973) 316-8743  Fax (973) 402-6627  www.borbas.com


## MONITORING WELL CHART

PPG Industries (Site 114)

Garfield Avenue and Carteret Avenue

City of Jersey City, Hudson County, New Jersey

June 12, 2018

| Monitor Well ID | Grade Elev | Inner Casing | Northing | Easting | Survey Date |
|---|---|---|---|---|---|
| 114-MC-MW101S | 13.87 | 14.17 | 683240.3 | 611054.3 | 6/11/2018 |
| 114-MC-MW102S | 14.02 | 14.65 | 683403.8 | 611155.1 | 6/11/2018 |
| 114MON33 | 13.15 | 16.74 | 683570.3 | 611187.0 | 6/13/2018 |
| 114-MW19B | 10.64 | 12.66 | 682735.0 | 611259.9 | 6/8/2018 |
| 114-MW19C | 10.63 | 12.53 | 682737.3 | 611263.3 | 6/8/2018 |
| 114-MW4D | 13.22 | 12.97 | 683258.9 | 610821.8 | 6/13/2018 |
| 114-MW6D | 14.00 | 12.69 | 683683.3 | 611298.4 | 6/13/2018 |
| 114-MW7D | 11.21 | 11.92 | 683329.1 | 611189.2 | 6/11/2018 |
| 114-P1C-MW101S | 14.31 | 13.68 | 683916.7 | 611175.1 | 6/13/2018 |
| 114-P1C-MW102S | 12.60 | 14.91 | 683864.2 | 611067.2 | 6/13/2018 |
| 114-P1C-MW104S | 14.55 | 14.60 | 683908.9 | 611259.7 | 6/13/2018 |
| 114-P1-MW-2I | 13.98 | 16.23 | 683574.0 | 610974.0 | 6/11/2018 |
| 114-P2A-MW101I | 12.18 | 12.71 | 683373.3 | 611562.6 | 6/13/2018 |
| 114-P2A-MW102I | 11.90 | 13.12 | 683489.7 | 611686.2 | 6/13/2018 |
| 114-P2A-MW102S | 12.01 | 13.70 | 683499.6 | 611697.4 | 6/13/2018 |
| 114-P2A-MW103I | 11.20 | 15.41 | 683382.7 | 611823.6 | 6/13/2018 |
| 114-P2A-MW103S | 11.38 | 15.98 | 683389.7 | 611833.4 | 6/13/2018 |
| 114-P2A-MW104I | 11.95 | 14.10 | 683175.0 | 611579.1 | 6/11/2018 |
| 114-P2A-MW104S | 11.88 | 12.83 | 683170.1 | 611588.5 | 6/11/2018 |
| 114-P2B1-MW101I | 14.61 | NO ACCESS | 683756.1 | 611441.8 | 6/13/2018 |
| 114-P2B1-MW101S | 14.64 | 15.01 | 683761.5 | 611427.8 | 6/13/2018 |
| 114-P2B1-MW103S | 13.16 | 12.99 | 683489.7 | 611290.4 | 6/13/2018 |
| 114-P2B3-MW101I | 11.84 | 12.93 | 683256.6 | 611359.0 | 6/11/2018 |
| 114-P2B3-MW101S | 12.21 | 13.93 | 683243.7 | 611356.2 | 6/11/2018 |
| 114-P2B4-MW101S | 11.98 | 13.48 | 683076.0 | 611266.9 | 6/11/2018 |
| 114-P2B4-MW102I | 11.67 | 11.86 | 682875.0 | 611299.5 | 6/11/2018 |
| 114-P2B4-MW102S | 10.97 | 13.44 | 682895.5 | 611283.9 | 6/11/2018 |
| 114-P2B4-MW103I | 10.87 | 13.05 | 683137.7 | 611508.4 | 6/11/2018 |
| 114-P2B4-MW103S | 10.95 | 15.30 | 683152.3 | 611496.7 | 6/11/2018 |
| 132-P3A-MW103I | 12.89 | 13.21 | 682958.1 | 610888.4 | 6/8/2018 |
| 132-P3A-MW103S | 12.60 | 15.11 | 682953.6 | 610902.2 | 6/8/2018 |
| 133-P3C-MW101I | 10.83 | 12.02 | 682630.9 | 611148.2 | 6/8/2018 |
| 133-P3C-MW101S | 11.03 | 12.16 | 682638.6 | 611157.8 | 6/8/2018 |
| 133-P3C-MW102I | 10.88 | 12.18 | 682452.2 | 610958.2 | 6/8/2018 |
| 133-P3C-MW102S | 10.91 | 12.57 | 682441.5 | 610947.8 | 6/8/2018 |
| 137-P3B-MW101S | 12.54 | 14.61 | 682945.1 | 611109.9 | 6/8/2018 |
| 137-P3B-MW102I | 11.54 | 12.94 | 682651.6 | 610954.2 | 6/8/2018 |
| HSS-P3C-MW1S | 10.78 | 11.97 | 682785.5 | 611265.2 | 6/8/2018 |
| HSS-P3C-MW2S | 10.87 | 12.37 | 682542.7 | 610994.0 | 6/8/2018 |
| MW-31A | 13.68 | 15.72 | 683596.6 | 611088.6 | 6/13/2018 |
| MW-34 | 13.13 | 15.65 | 683260.4 | 610794.7 | 6/11/2018 |
| MW-35 | 12.88 | 15.62 | 683183.3 | 610947.9 | 6/11/2018 |
| MW6C | 13.93 | 12.90 | 683686.7 | 611301.5 | 6/13/2018 |

Notes:

1. The horizontal datum is the New Jersey State Plane Coordinate System NAD83 verified by differential GPS observations from the NGS CORS Network on September 3, 2015 using reference stations NJHT and NYBR.

2. The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the NGS CORS network on May 10, 2012.  Benchmark reference stations: NJI2, NJNT, NYBP, NYBR and NYVH.

3. All coordinates and elevations shown hereon are in U.S. Survey Feet.

4. All monitoring wells on this chart have been resurveyed to reflect a modification to the inner casing.

# Appendix J.2

# Monitoring Well Decommissioning Records

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201400710**

# WELL DECOMMISSIONING REPORT

**PROPERTY OWNER:** N/A 100 FORREST ASSOC. LLC

Company/Organization: 100 Forrest Assoc. LLC

Address: 2473 NW 66th Dr. Boca Rotan, Florida 33496

**WELL LOCATION:** PPG Industries

Address: Forrest St addressed confirmed by W. Eichfeld

County: Hudson Municipality: Jersey City Lot: 15 Block: 21501

Easting (X): 611582 Northing (Y): 683702
Coordinate System: NJ State Plane (NAD83) - USFEET

**DATE WELL DECOMMISSIONED:** April 13, 2017

**WELL USE:** MONITORING

**Other Use(s):**

**Local ID:** 114-MW2B1-3

Reason for Decommissioning: No longer in use

Finished Well Depth (ft.): 18

Was a New Well Drilled? N

Formation Type: Unconsolidated

New Well Permit Number:

**WELL DECOMMISSIONING INFORMATION**

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt/Rating/Screen # Used (lbs/ch no.) |
|---|---|---|---|---|---|
| Borehole | | | | | |
| Casing | 0 | 8 | 2 | PVC | Sch40 |
| Screen | 8 | 18 | 2 | Pvc | 0.010 |

**MATERIALS USED**

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in.) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 18 | 2 | 0 | 1 | 25 | 3 |
| Sand/Gravel | | | | | | | |

**ADDITIONAL INFORMATION**

Obstructions: No

Authorization Official:

Obstruction Type:

Authorization Number:

Alternative Decomm. Method? No

Authorization Date:

Method Used

ATTACHMENTS:

Wesley M Eichfeld
MASTER
Sealing Driller: LICENSE # 592848

SGS NORTH AMERICA INC.
PO BOX 423
Company: West Creek (Ocean), NJ 08092

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**2600082034**

# WELL DECOMMISSIONING REPORT

**PROPERTY OWNER:** JERSEY CITY SEWERAGE AUTHORITY

Company/Organization: Jersey City Sewerage Auth.

Address: 575 State Hwy 440 Jersey City, New Jersey 07305

**WELL LOCATION:** PPG

Address: 942 GARFIELD AVE GARFIELD AUTO BODY

County: Hudson Municipality: Jersey City Lot: 1 Block: 21501

Easting (X): 611250 Northing (Y): 684020
Coordinate System: NJ State Plane (NAD83) - USFEET

**DATE WELL DECOMMISSIONED:** May 18, 2018

**WELL USE:** MONITORING

**Other Use(s):**

**Local ID:** PPG-114-14B

Reason for Decommissioning: No longer in use

Finished Well Depth (ft.): 32.5

Was a New Well Drilled? N

Formation Type: Unconsolidated

New Well Permit Number:

**WELL DECOMMISSIONING INFORMATION**

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt/Rating/Screen # Used (lbs/ch no.) |
|---|---|---|---|---|---|
| Borehole | 0 | 17 | 12 | | |
| Casing | 17 | 27.5 | 2 | PVC | |
| Screen | 27.5 | 32.5 | 2 | | |

**MATERIALS USED**

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in.) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 17 | 12 | 0 | 0 | 940 | 52.5 |
| Grout | 17 | 32.5 | 2 | 0 | 0 | 94 | 5.25 |
| Sand/Gravel | | | | | | | |

**ADDITIONAL INFORMATION**

Obstructions: No

Authorization Official: Julia Altieri

Obstruction Type:

Authorization Number: A1805090

Alternative Decomm. Method? No

Authorization Date: May 17, 2018

Method Used

ATTACHMENTS: 816760_Overdrill_As-Built_05-18-2018.pdf

Douglas Myerchin
MASTER
Sealing Driller: LICENSE # 0001612

B & B DRILLING INC
BOX 8 RT 206
Company: Netcong (Morris), NJ 07857

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**2600080774**

# WELL DECOMMISSIONING REPORT

**PROPERTY OWNER:** NA JERSEY CITY REDEVELOPMENT AGENCY

Company/Organization: Jersey City Redevelopment Agency

Address: 30 Montgomery St Jersey City, New Jersey 07302

**WELL LOCATION:** PPG Industries

Address: 2 DAKOTA ST. PPG GARFIELD AVE

County: Hudson Municipality: Jersey City Lot: 4 Block: 2026.1

Easting (X): 611533 Northing (Y): 683073
Coordinate System: NJ State Plane (NAD83) - USFEET

**DATE WELL DECOMMISSIONED:** June 21, 2018

**WELL USE:** MONITORING

**Other Use(s):**

**Local ID:** PPG-114-20A

Reason for Decommissioning: No longer in use

Finished Well Depth (ft.): 15

Was a New Well Drilled? N

Formation Type: Unconsolidated

New Well Permit Number:

**WELL DECOMMISSIONING INFORMATION**

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt/Rating/Screen # Used (lbs/ch no.) |
|---|---|---|---|---|---|
| Borehole | | | | | |
| Casing | 0 | 3 | 2 | PVC | 40 |
| Screen | 3 | 15 | 2 | pvc | .0121 |

**MATERIALS USED**

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in.) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 15 | 2 | 0 | | 45 | 1.5 |
| Sand/Gravel | | | | | | | |

**ADDITIONAL INFORMATION**

Obstructions: No

Authorization Official:

Obstruction Type:

Authorization Number:

Alternative Decomm. Method? No

Authorization Date:

Method Used

ATTACHMENTS:

Nicholas A Fallucca
MASTER
Sealing Driller: LICENSE # 749523

SGS NORTH AMERICA INC.
PO BOX 423
Company: West Creek (Ocean), NJ 08092

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**2600080775**

# WELL DECOMMISSIONING REPORT

**PROPERTY OWNER:** NA JERSEY CITY REDEVELOPMENT AGENCY

Company/Organization: Jersey City Redevelopment Agency

Address: 30 MontgomerySt Jersey City, New Jersey 07302

**WELL LOCATION:** PPG Industries

Address: 2 DAKOTA ST. PPG GARFIELD AVE

County: Hudson Municipality: Jersey City Lot: 4 Block: 2026.1

Easting (X): 611469 Northing (Y): 683037
Coordinate System: NJ State Plane (NAD83) - USFEET

**DATE WELL DECOMMISSIONED:** June 21, 2018

**WELL USE:** MONITORING

**Other Use(s):**

**Local ID:** PPG-114-20B

Reason for Decommissioning: No longer in use

Finished Well Depth (ft.): 40

Was a New Well Drilled? N

Formation Type: Unconsolidated

New Well Permit Number:

**WELL DECOMMISSIONING INFORMATION**

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt/Rating/Screen # Used (lbs/ch no.) |
|---|---|---|---|---|---|
| Borehole | | | | | |
| Casing | 0 | 35 | 2 | PVC | 40 |
| Casing | 0 | 18.5 | 6 | Steel | 144 wall |
| Screen | 35 | 40 | 2 | PVC | .010 |

**MATERIALS USED**

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in.) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 40 | 2 | 0 | | 80 | 3 |
| Sand/Gravel | | | | | | | |

**ADDITIONAL INFORMATION**

Obstructions: No

Authorization Official: Mark Ortega

Obstruction Type:

Authorization Number: A1806067

Alternative Decomm. Method? No

Authorization Date: June 14, 2018

Method Used

ATTACHMENTS:

Nicholas A Fallucca
MASTER
Sealing Driller: LICENSE # 749523

SGS NORTH AMERICA INC.
PO BOX 423
Company: West Creek (Ocean), NJ 08092

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201317211**

# WELL DECOMMISSIONING REPORT

**PROPERTY OWNER:** SEVENTY-EIGHT HALLADAY ST, LLC N/A

Company/Organization: Seventy Eight Halladay ST, LLC

Address: PPG Industries Jersey City, New Jersey 07305

**WELL LOCATION:** PPG Industries

Address: 78 Halladay St

County: Hudson Municipality: Jersey City Lot: 12 Block: 21502

Easting (X): 611535 Northing (Y): 683002
Coordinate System: NJ State Plane (NAD83) - USFEET

**DATE WELL DECOMMISSIONED:** June 21, 2018

**WELL USE:** MONITORING

**Other Use(s):**

**Local ID:** 114-MW20C

Reason for Decommissioning: No longer in use

Finished Well Depth (ft.): 83

Was a New Well Drilled? N

Formation Type: Unconsolidated

New Well Permit Number:

**WELL DECOMMISSIONING INFORMATION**

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt/Rating/Screen # Used (lbs/ch no.) |
|---|---|---|---|---|---|
| Borehole | | | | | |
| Casing | 0 | 16 | 8 | Steel | 40 |
| Casing | 0 | 78 | 4 | PVC | 40 |
| Screen | 78 | 83 | 4 | pvc | .010 |

**MATERIALS USED**

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in.) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 83 | 4 | 0 | 50 | 752 | 50 |
| Sand/Gravel | | | | | | | |

**ADDITIONAL INFORMATION**

Obstructions: No

Authorization Official: Mark Ortega

Obstruction Type:

Authorization Number: A1806033

Alternative Decomm. Method? No

Authorization Date: June 13, 2018

Method Used

ATTACHMENTS:

Nicholas A Fallucca
MASTER
Sealing Driller: LICENSE # 749523

SGS NORTH AMERICA INC.
PO BOX 423
Company: West Creek (Ocean), NJ 08092

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201118847**

# WELL DECOMMISSIONING REPORT

**PROPERTY OWNER:** N/A PPG INDUSTRIES N/A PPG INDUSTRIES

Company/Organization: PPG Industries

Address: 4325 Rosanna Drive Pittsburgh, Pennsylvania 15101

**WELL LOCATION:** Forrest Street

Address: 90 Forrest Street correct as per client D Dillon

County: Hudson Municipality: Jersey City Lot: C.2 Block: 2028

Easting (X): 611714 Northing (Y): 683673
Coordinate System: NJ State Plane (NAD83) - USFEET

**DATE WELL DECOMMISSIONED:** April 13, 2017

**WELL USE:** MONITORING

**Other Use(s):**

**Local ID:** 114-MW24A

Reason for Decommissioning: No longer in use

Finished Well Depth (ft.): 14

Was a New Well Drilled? N

Formation Type: Unconsolidated

New Well Permit Number:

**WELL DECOMMISSIONING INFORMATION**

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt/Rating/Screen # Used (lbs/ch no.) |
|---|---|---|---|---|---|
| Borehole | | | | | |
| Casing | 0 | 9 | 4 | PVC | Sch40 |
| Screen | 9 | 14 | 4 | Pvc | 0.010 |

**MATERIALS USED**

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in.) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 14 | 4 | | 10 | 188 | 16 |
| Sand/Gravel | | | | | | | |

**ADDITIONAL INFORMATION**

Obstructions: No

Authorization Official:

Obstruction Type:

Authorization Number:

Alternative Decomm. Method? No

Authorization Date:

Method Used

ATTACHMENTS:

Peter Hanley
MONITORING
Sealing Driller: LICENSE # 572679

SGS NORTH AMERICA INC.
PO BOX 423
Company: West Creek (Ocean), NJ 08092

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201409189**

# WELL DECOMMISSIONING REPORT

**PROPERTY OWNER:** 900 GARFIELD AVE THOMSON TAX ACCT

Company/Organization: 900 Garfield ave Thomson Tax Acct

Address: Site 114 Garfield Ave Jersey City, New Jersey 07305

**WELL LOCATION:** Site 114

Address: 900 Garfield Avenue / 114-P2B4-MW2 Address confirmed by client W Eichfeld

County: Hudson Municipality: Jersey City Lot: 17 Block: 21501

Easting (X): 611324 Northing (Y): 682856
Coordinate System: NJ State Plane (NAD83) - USFEET

**DATE WELL DECOMMISSIONED:** June 21, 2018

**WELL USE:** MONITORING

**Other Use(s):**

**Local ID:** 114-P2B4-MW2

Reason for Decommissioning: No longer in use

Finished Well Depth (ft.): 17

Was a New Well Drilled? N

Formation Type: Unconsolidated

New Well Permit Number:

**WELL DECOMMISSIONING INFORMATION**

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt/Rating/Screen # Used (lbs/ch no.) |
|---|---|---|---|---|---|
| Borehole | 0 | 17 | 8 | | |
| Casing | 0 | 7 | 2 | PVC | 40 |
| Screen | 7 | 17 | 2 | pvc | .010 |

**MATERIALS USED**

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in.) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 17 | 2 | 0 | | 45 | 1.5 |
| Sand/Gravel | | | | | | | |

**ADDITIONAL INFORMATION**

Obstructions: No

Authorization Official:

Obstruction Type:

Authorization Number:

Alternative Decomm. Method? No

Authorization Date:

Method Used

ATTACHMENTS:

Nicholas A Fallucca
MASTER
Sealing Driller: LICENSE # 749523

SGS NORTH AMERICA INC.
PO BOX 423
Company: West Creek (Ocean), NJ 08092

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201409190**

# WELL DECOMMISSIONING REPORT

**PROPERTY OWNER:** 900 GARFIELD AVE THOMSONTAX ACCT

Company/Organization: 900 Garfield ave Thomson Tax Acct

Address: Site 114 Garfield Ave Jersey City, New Jersey 07305

**WELL LOCATION:** Site 114

Address: Garfield Avenue / 114-P2B4-MW3 Address confirmed by client W Eichfeld

County: Hudson Municipality: Jersey City Lot: 17 Block: 21501

Easting (X): 611465 Northing (Y): 682973
Coordinate System: NJ State Plane (NAD83) - USFEET

**DATE WELL DECOMMISSIONED:** June 21, 2018

**WELL USE:** MONITORING

**Other Use(s):**

**Local ID:** 114-P2B4-MW3

Reason for Decommissioning: No longer in use

Finished Well Depth (ft.): 17

Was a New Well Drilled? N

Formation Type: Unconsolidated

New Well Permit Number:

**WELL DECOMMISSIONING INFORMATION**

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt/Rating/Screen # Used (lbs/ch no.) |
|---|---|---|---|---|---|
| Borehole | 0 | 17 | 8 | | |
| Casing | 0 | 7 | 2 | PVC | 40 |
| Screen | 7 | 17 | 2 | pvc | .010 |

**MATERIALS USED**

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in.) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 17 | 2 | 0 | | 45 | 1.5 |
| Sand/Gravel | | | | | | | |

**ADDITIONAL INFORMATION**

Obstructions: No

Authorization Official:

Obstruction Type:

Authorization Number:

Alternative Decomm. Method? No

Authorization Date:

Method Used

ATTACHMENTS:

Nicholas A Fallucca
MASTER
Sealing Driller: LICENSE # 749523

SGS NORTH AMERICA INC.
PO BOX 423
Company: West Creek (Ocean), NJ 08092

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**2600082193**

# WELL DECOMMISSIONING REPORT

**PROPERTY OWNER:** NJ DEA NJ DEA

Company/Organization: NJ DEA

Address: 33 Pacific Ave. A. Smith Moving &Furniture Jersey City, New Jersey 07304

**WELL LOCATION:** NJ DEA

Address: 33 PACIFIC AVENUE A. SMITH MOVING & FURNITURE

County: Hudson Municipality: Jersey City Lot: 3 Block: 21509

Easting (X): 610965 Northing (Y): 682159
Coordinate System: NJ State Plane (NAD83) - USFEET

**DATE WELL DECOMMISSIONED:** April 13, 2017

**WELL USE:** MONITORING

**Other Use(s):**

**Local ID:** PPG135-1A

Reason for Decommissioning: No longer in use

Finished Well Depth (ft.): 13

Was a New Well Drilled? N

Formation Type: Unconsolidated

New Well Permit Number:

**WELL DECOMMISSIONING INFORMATION**

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt/Rating/Screen # Used (lbs/ch no.) |
|---|---|---|---|---|---|
| Borehole | | | | | |
| Casing | 0 | 3 | 2 | PVC | Sch40 |
| Screen | 3 | 13 | 2 | Pvc | 0.010 |

**MATERIALS USED**

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in.) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 13 | 2 | | 5 | 50 | 8 |
| Sand/Gravel | | | | | #1 | | |

**ADDITIONAL INFORMATION**

Obstructions: No

Authorization Official:

Obstruction Type:

Authorization Number:

Alternative Decomm. Method? No

Authorization Date:

Method Used

ATTACHMENTS:

Wesley M Eichfeld
MASTER
Sealing Driller: LICENSE # 592848

SGS NORTH AMERICA INC.
PO BOX 423
Company: West Creek (Ocean), NJ 08092

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E201502322**

# WELL DECOMMISSIONING REPORT

**PROPERTY OWNER:** PPG INDUSTRIES PPG INDUSTRIES

Company/Organization: PPG Industries

Address: 4325 Rosanna Drive Pittsburg, Pennsylvania 15101

**WELL LOCATION:** Site 135

Address: 22 Halladay St address verified by W. Eichfeld

County: Hudson Municipality: Jersey City Lot: 1 Block: 21509

Easting (X): 610900 Northing (Y): 682250
Coordinate System: NJ State Plane (NAD83) - USFEET

**DATE WELL DECOMMISSIONED:** April 13, 2017

**WELL USE:** MONITORING

**Other Use(s):**

**Local ID:** 135-P3C-MW1

Reason for Decommissioning: No longer in use

Finished Well Depth (ft.): 16

Was a New Well Drilled? N

Formation Type: Unconsolidated

New Well Permit Number:

**WELL DECOMMISSIONING INFORMATION**

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt/Rating/Screen # Used (lbs/ch no.) |
|---|---|---|---|---|---|
| Borehole | | | | | |
| Casing | 0 | 6 | 2 | PVC | Sch40 |
| Screen | 6 | 16 | 2 | Pvc | 0.010 |

**MATERIALS USED**

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in.) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 16 | 2 | 0 | 10 | 188 | 8 |
| Sand/Gravel | | | | | | | |

**ADDITIONAL INFORMATION**

Obstructions: No

Authorization Official:

Obstruction Type:

Authorization Number:

Alternative Decomm. Method? No

Authorization Date:

Method Used

ATTACHMENTS:

Peter Hanley
MONITORING
Sealing Driller: LICENSE # 572679

SGS NORTH AMERICA INC.
PO BOX 423
Company: West Creek (Ocean), NJ 08092

The well decommissioning reports for the folllowing wells have been submitted to the NJDEP for approval, but final decommissioning reports have not yet been issued or uploaded to Data Miner.

Service ID: 1156733

This document has not yet been reviewed and approved or denied by the NJ DEP. Deficiencies in submittal information or actual construction may result in denial.

## WELL DECOMMISSIONING SUBMITTAL PDF

**PROPERTY OWNER:** NA Jersey City Dev Agency

Organization: Jersey City Dev Agency

Address: 30 Montgomery St, Jersey City (Hudson), New Jersey 07302

**WELL LOCATION:** PPG Site 114

Well Location Description: 20'S of Carteret Ave & 39'E of Garfield Ave

Address: 880 GARFIELD AVENUE / MW-22A confirmed by client / 6554

County: Hudson Municipality: Jersey City Lot: 2A Block: 2026A

Easting(X): 610687 Northing(Y): 683257 Coordinate System: NJ State Plane (NAD83) - USFEET

Method: GPS Point of Reference: Well

GPS Manufacturer: Surveyor Name:

GPS Model: Surveyor License #:

Accuracy: 5 Accuracy units: Feet

**WELL USE:** Monitoring **DATE WELL**

**Other Use(s):** **DECOMMISSIONED:** 05/02/2019

Reason for Decommissioning: No longer in use

Was a New Well Drilled? No New Well Permit Number:

**WELL DECOMMISSIONING INFORMATION**

Permit Number: 2600081172

Local ID: PPG-114-MW-22A Drilling Company: SGS NORTH AMERICA INC.

328 Stafford Forge Rd., West Creek

Finished Well Depth (ft.): 19 Address: (Ocean), New Jersey 08092

Formation Type: Unconsolidated Driller Name and Lic.: Nicholas Fallucca, 749523

Well Search Completed? No

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt./Rating/Screen Slot # (lbs/sch no.) |
|---|---|---|---|---|---|
| Borehole(s) | | | | N/A | N/A |
| Casing(s) | 0 | 7 | 2 | PVC | Sch 40 |
| Screen(s) | 7 | 19 | 2 | PVC | .010 |

**MATERIALS USED**

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 19 | 2 | 0 | 2 | 50 | 3 |

PENDING APPROVAL

Grouting Method: _____

**ADDITIONAL INFORMATION**

Obstructions: No _____ Authorization Official: _____

Obstruction Type: _____ Authorization Number: _____

Alternative Decomm. Method? No _____ Authorization Date: _____

Method Used: _____

**ATTACHMENTS:** _____

PENDING APPROVAL

Service ID: 1156754

This document has not yet been reviewed and approved or denied by the NJ DEP. Deficiencies in submittal information or actual construction may result in denial.

## WELL DECOMMISSIONING SUBMITTAL PDF

**PROPERTY OWNER:** NA PPG Industries%Tax Admin Dept

Organization: PPG Industries%Tax Admin Dept

Address: One PPG Place, Pittsburgh, Pennsylvania 15272

**WELL LOCATION:** PPG Site 114

Well Location Description: 21'S of Carteret Ave & 45'E of Garfield Ave

Address: 880 GARFIELD AVENUE / MW-22B confirmed by client / 6554

County: Hudson Municipality: Jersey City Lot: 2A Block: 2026A

Easting(X): 610693 Northing(Y): 683254 Coordinate System: NJ State Plane (NAD83) - USFEET

Method: GPS Point of Reference: Well

GPS Manufacturer: Surveyor Name:

GPS Model: Surveyor License #:

Accuracy: 5 Accuracy units: Feet

**WELL USE:** Monitoring **DATE WELL**

**Other Use(s):** **DECOMMISSIONED:** 05/02/2019

Reason for Decommissioning: No longer in use

Was a New Well Drilled? No New Well Permit Number:

## WELL DECOMMISSIONING INFORMATION

Permit Number: 2600081173

Local ID: PPG-114-MW-22B Drilling Company: SGS NORTH AMERICA INC.

328 Stafford Forge Rd., West Creek

Finished Well Depth (ft.): 33 Address: (Ocean), New Jersey 08092

Formation Type: Unconsolidated Driller Name and Lic.: Nicholas Fallucca, 749523

Well Search Completed? No

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt./Rating/Screen Slot # (lbs/sch no.) |
|---|---|---|---|---|---|
| Borehole(s) | | | | N/A | N/A |
| Casing(s) | 0 | 22 | 6 | Steel | Sch 40 |
| Casing(s) | 0 | 28 | 2 | PVC | sch 40 |
| Screen(s) | 28 | 33 | 2 | PVC | .010 |

**MATERIALS USED**

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |

PENDING APPROVAL

| | | | | | |
|---|---|---|---|---|---|
| Gravel Pack | | | | | |

Grouting Method:

**ADDITIONAL INFORMATION**

Obstructions: No

Obstruction Type:

Alternative Decomm. Method? No

Method Used:

Authorization Official: Mark Ortega

Authorization Number: A1904074

Authorization Date: 2019-04-25

**ATTACHMENTS:**

PENDING APPROVAL

Service ID: 1155708

This document has not yet been reviewed and approved or denied by the NJ DEP. Deficiencies in submittal information or actual construction may result in denial.

## WELL DECOMMISSIONING SUBMITTAL PDF

**PROPERTY OWNER:** NA Jersey City Dev Agency

Organization: Jersey City Dev Agency

Address: 30 Montgomery St, Jersey City (Hudson), New Jersey 07302

**WELL LOCATION:** PPG Site 114

Well Location Description: 26'N of Carteret Ave & 136'E of Garfield Ave

Address: 900 Garfield Ave / MW-34 confirmed by client / 6554

County: Hudson Municipality: Jersey City Lot: 2.a Block: 2026.1

Easting(X): 610794 Northing(Y): 683260 Coordinate System: NJ State Plane (NAD83) - USFEET

Method: GPS Point of Reference: Well

GPS Manufacturer: Surveyor Name:

GPS Model: Surveyor License #:

Accuracy: 5 Accuracy units: Feet

**WELL USE:** Monitoring **DATE WELL**

**Other Use(s):** **DECOMMISSIONED:** 05/02/2019

Reason for Decommissioning: No longer in use

Was a New Well Drilled? No New Well Permit Number:

## WELL DECOMMISSIONING INFORMATION

Permit Number: E201211015

Local ID: MW-34 Drilling Company: SGS NORTH AMERICA INC.

328 Stafford Forge Rd., West Creek

Finished Well Depth (ft.): 18 Address: (Ocean), New Jersey 08092

Formation Type: Unconsolidated Driller Name and Lic.: Nicholas Fallucca, 749523

Well Search Completed? No

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt./Rating/Screen Slot # (lbs/sch no.) |
|---|---|---|---|---|---|
| Borehole(s) | | | | N/A | N/A |
| Casing(s) | 0 | 8 | 2 | PVC | Sch 40 |
| Screen(s) | 8 | 18 | 2 | PVC | .020 |

**MATERIALS USED**

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 18 | 2 | 0 | 2 | 47 | 3 |

PENDING APPROVAL

Grouting Method: Pressure method (Tremie Pipe)

**ADDITIONAL INFORMATION**

Obstructions: No

Obstruction Type:

Alternative Decomm. Method? No

Method Used:

Authorization Official:

Authorization Number:

Authorization Date:

**ATTACHMENTS:**

PENDING APPROVAL

Service ID: 1155716

This document has not yet been reviewed and approved or denied by the NJ DEP. Deficiencies in submittal information or actual construction may result in denial.

## WELL DECOMMISSIONING SUBMITTAL PDF

**PROPERTY OWNER:** NA Jersey City Dev Agency

Organization: Jersey City Dev Agency

Address: 30 Montgomery St, Jersey City (Hudson), New Jersey 07302

**WELL LOCATION:** PPG Site 114

Well Location Description: 33'N of Carteret Ave & 303'E of Garfield Ave

Address: 900 Garfield Ave / MW-35 confirmed by client / 6554

County: Hudson Municipality: Jersey City Lot: 2.a Block: 2026.1

Easting(X): 610947 Northing(Y): 683183 Coordinate System: NJ State Plane (NAD83) - USFEET

Method: GPS Point of Reference: Well

GPS Manufacturer: Surveyor Name:

GPS Model: Surveyor License #:

Accuracy: 5 Accuracy units: Feet

**WELL USE:** Monitoring **DATE WELL**

**Other Use(s):** **DECOMMISSIONED:** 05/02/2019

Reason for Decommissioning: No longer in use

Was a New Well Drilled? No New Well Permit Number:

## WELL DECOMMISSIONING INFORMATION

Permit Number: E201211016

Local ID: MW-35 Drilling Company: SGS NORTH AMERICA INC.

328 Stafford Forge Rd., West Creek

Finished Well Depth (ft.): 18 Address: (Ocean), New Jersey 08092

Formation Type: Unconsolidated Driller Name and Lic.: Nicholas Fallucca, 749523

Well Search Completed? No

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt./Rating/Screen Slot # (lbs/sch no.) |
|---|---|---|---|---|---|
| Borehole(s) | | | | N/A | N/A |
| Casing(s) | 0 | 8 | 2 | PVC | Sch 40 |
| Screen(s) | 8 | 18 | 2 | PVC | .020 |

**MATERIALS USED**

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 18 | 2 | 0 | 2 | 47 | 3 |

PENDING APPROVAL

Grouting Method: Pressure method (Tremie Pipe)

**ADDITIONAL INFORMATION**

Obstructions: No

Obstruction Type:

Alternative Decomm. Method? No

Method Used:

Authorization Official:

Authorization Number:

Authorization Date:

**ATTACHMENTS:**

PENDING APPROVAL

Service ID: 1155723

This document has not yet been reviewed and approved or denied by the NJ DEP. Deficiencies in submittal information or actual construction may result in denial.

## WELL DECOMMISSIONING SUBMITTAL PDF

**PROPERTY OWNER:** NA Jersey City Dev Agency

Organization: Jersey City Dev Agency

Address: 30 Montgomery St, Jersey City (Hudson), New Jersey 07302

**WELL LOCATION:** PPG Site 114

Well Location Description: 17'N of Carteret Ave & 213'W of Halladay Ave

Address: 900 Garfield Avenue / 114-P2B3-MW2 Address confirmed by client W Eichfeld

County: Hudson Municipality: Jersey City Lot: 18 Block: 21501

Easting(X): 611161 Northing(Y): 682967 Coordinate System: NJ State Plane (NAD83) - USFEET

Method: GPS Point of Reference: Well

GPS Manufacturer: Surveyor Name:

GPS Model: Surveyor License #:

Accuracy: 5 Accuracy units: Feet

**WELL USE:** Monitoring **DATE WELL**

**Other Use(s):** **DECOMMISSIONED:** 05/02/2019

Reason for Decommissioning: No longer in use

Was a New Well Drilled? No New Well Permit Number:

**WELL DECOMMISSIONING INFORMATION**

Permit Number: E201409187

Local ID: 114-P2B3-MW2 Drilling Company: SGS NORTH AMERICA INC.

328 Stafford Forge Rd., West Creek

Finished Well Depth (ft.): 17 Address: (Ocean), New Jersey 08092

Formation Type: Unconsolidated Driller Name and Lic.: Nicholas Fallucca, 749523

Well Search Completed? No

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt./Rating/Screen Slot # (lbs/sch no.) |
|---|---|---|---|---|---|
| Borehole(s) | | | | N/A | N/A |
| Casing(s) | 0 | 7 | 2 | PVC | Sch 40 |
| Screen(s) | 7 | 17 | 2 | PVC | .020 |

**MATERIALS USED**

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 17 | 2 | 0 | 2 | 45 | 3 |

PENDING APPROVAL

Grouting Method: Pressure method (Tremie Pipe)

**ADDITIONAL INFORMATION**

Obstructions: No

Obstruction Type:

Alternative Decomm. Method? No

Method Used:

Authorization Official:

Authorization Number:

Authorization Date:

**ATTACHMENTS:**

PENDING APPROVAL

Service ID: 1156273

This document has not yet been reviewed and approved or denied by the NJ DEP. Deficiencies in submittal information or actual construction may result in denial.

## WELL DECOMMISSIONING SUBMITTAL PDF

**PROPERTY OWNER:** NA Jersey City Dev Agency

Organization: Jersey City Dev Agency

Address: 30 Montgomery St, Jersey City (Hudson), New Jersey 07302

**WELL LOCATION:** PPG Site 114

Well Location Description: 1'N of Carteret Ave & 45'Wof Halladay Ave

Address: Carteret Avenue / 114-P2B4-MW1 Address confirmed by client W Eichfeld

County: Hudson Municipality: Jersey City Lot: 17 Block: 21501

Easting(X): 611284 Northing(Y): 682838 Coordinate System: NJ State Plane (NAD83) - USFEET

Method: GPS Point of Reference: Well

GPS Manufacturer: Surveyor Name:

GPS Model: Surveyor License #:

Accuracy: 5 Accuracy units: Feet

**WELL USE:** Monitoring **DATE WELL**

**Other Use(s):** **DECOMMISSIONED:** 05/02/2019

Reason for Decommissioning: No longer in use

Was a New Well Drilled? No New Well Permit Number:

**WELL DECOMMISSIONING INFORMATION**

Permit Number: E201409188

Local ID: 114-P2B4-MW1 Drilling Company: SGS NORTH AMERICA INC.

328 Stafford Forge Rd., West Creek

Finished Well Depth (ft.): 17 Address: (Ocean), New Jersey 08092

Formation Type: Unconsolidated Driller Name and Lic.: Nicholas Fallucca, 749523

Well Search Completed? No

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt./Rating/Screen Slot # (lbs/sch no.) |
|---|---|---|---|---|---|
| Borehole(s) | | | | N/A | N/A |
| Casing(s) | 0 | 7 | 2 | PVC | Sch 40 |
| Screen(s) | 7 | 17 | 2 | PVC | .020 |

**MATERIALS USED**

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 17 | 2 | 0 | 2 | 45 | 3 |

PENDING APPROVAL

Grouting Method: Pressure method (Tremie Pipe)

**ADDITIONAL INFORMATION**

Obstructions: No

Obstruction Type:

Alternative Decomm. Method? No

Method Used:

Authorization Official:

Authorization Number:

Authorization Date:

**ATTACHMENTS:**

PENDING APPROVAL

Service ID: 1156275

This document has not yet been reviewed and approved or denied by the NJ DEP. Deficiencies in submittal information or actual construction may result in denial.

## WELL DECOMMISSIONING SUBMITTAL PDF

**PROPERTY OWNER:** NA Jersey City Dev Agency

Organization: Jersey City Dev Agency

Address: 30 Mongomery St, Jersey City (Hudson), New Jersey 07302

**WELL LOCATION:** PPG Site 132

Well Location Description: 20'S of Carteret Ave & 246'E of Garfield Ave

Address: 824 Garfield Ave address verified by Wes Eichfeld

County: Hudson Municipality: Jersey City Lot: 2 Block: 21510

Easting(X): 610877 Northing(Y): 683164 Coordinate System: NJ State Plane (NAD83) - USFEET

Method: GPS Point of Reference: Well

GPS Manufacturer: Surveyor Name:

GPS Model: Surveyor License #:

Accuracy: 5 Accuracy units: Feet

**WELL USE:** Monitoring **DATE WELL**

**Other Use(s):** **DECOMMISSIONED:** 05/02/2019

Reason for Decommissioning: No longer in use

Was a New Well Drilled? No New Well Permit Number:

## WELL DECOMMISSIONING INFORMATION

Permit Number: E201410048

Local ID: 132-P3A-MW1 Drilling Company: SGS NORTH AMERICA INC.

328 Stafford Forge Rd., West Creek

Finished Well Depth (ft.): 15 Address: (Ocean), New Jersey 08092

Formation Type: Unconsolidated Driller Name and Lic.: Nicholas Fallucca, 749523

Well Search Completed? No

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt./Rating/Screen Slot # (lbs/sch no.) |
|---|---|---|---|---|---|
| Borehole(s) | | | | N/A | N/A |
| Casing(s) | 0 | 5 | 2 | PVC | Sch 40 |
| Screen(s) | 5 | 15 | 2 | PVC | .010 |

**MATERIALS USED**

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 15 | 2 | 0 | 2 | 43 | 3 |

PENDING APPROVAL

Grouting Method: Pressure method (Tremie Pipe)

**ADDITIONAL INFORMATION**

Obstructions: No

Obstruction Type:

Alternative Decomm. Method? No

Method Used:

Authorization Official:

Authorization Number:

Authorization Date:

**ATTACHMENTS:**

PENDING APPROVAL

Service ID: 1156279

This document has not yet been reviewed and approved or denied by the NJ DEP. Deficiencies in submittal information or actual construction may result in denial.

## WELL DECOMMISSIONING SUBMITTAL PDF

**PROPERTY OWNER:** NA Jersey City Dev Agency

Organization: Jersey City Dev Agency

Address: 30 Mongomery St, Jersey City (Hudson), New Jersey 07302

**WELL LOCATION:** PPG Site 132

Well Location Description: 22'S of Carteret Ave & 389'E of Garfield Ave

Address: 824 Garfield Ave address verified by Wes Eichfeld

County: Hudson Municipality: Jersey City Lot: 2 Block: 21510

Easting(X): 611001 Northing(Y): 683094 Coordinate System: NJ State Plane (NAD83) - USFEET

Method: GPS Point of Reference: Well

GPS Manufacturer: Surveyor Name:

GPS Model: Surveyor License #:

Accuracy: 5 Accuracy units: Feet

**WELL USE:** Monitoring **DATE WELL**

**Other Use(s):** **DECOMMISSIONED:** 05/02/2019

Reason for Decommissioning: No longer in use

Was a New Well Drilled? No New Well Permit Number:

**WELL DECOMMISSIONING INFORMATION**

Permit Number: E201410052

Local ID: 132-P3A-MW5 Drilling Company: SGS NORTH AMERICA INC.

328 Stafford Forge Rd., West Creek

Finished Well Depth (ft.): 17 Address: (Ocean), New Jersey 08092

Formation Type: Unconsolidated Driller Name and Lic.: Nicholas Fallucca, 749523

Well Search Completed? No

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt./Rating/Screen Slot # (lbs/sch no.) |
|---|---|---|---|---|---|
| Borehole(s) | | | | N/A | N/A |
| Casing(s) | 0 | 7 | 2 | PVC | Sch 40 |
| Screen(s) | 7 | 17 | 2 | PVC | .010 |

**MATERIALS USED**

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 17 | 2 | 0 | 2 | 45 | 3 |

PENDING APPROVAL

Grouting Method: Pressure method (Tremie Pipe)

**ADDITIONAL INFORMATION**

Obstructions: No

Obstruction Type:

Alternative Decomm. Method? No

Method Used:

Authorization Official:

Authorization Number:

Authorization Date:

**ATTACHMENTS:**

PENDING APPROVAL

Service ID: 1156282

This document has not yet been reviewed and approved or denied by the NJ DEP. Deficiencies in submittal information or actual construction may result in denial.

## WELL DECOMMISSIONING SUBMITTAL PDF

**PROPERTY OWNER:** NA Jersey City Dev Agency

Organization: Jersey City Dev Agency

Address: 30 Montgomery St, Jersey City (Hudson), New Jersey 07302

**WELL LOCATION:** PPG Site 137

Well Location Description: 39'S of CArteret Ave & 168'W of Halladay Ave

Address: 45 Halladay Street / 137-P3A-MW1 Address confirmed by client W Eichfeld

County: Hudson Municipality: Jersey City Lot: 3 Block: 21510

Easting(X): 611156 Northing(Y): 682898 Coordinate System: NJ State Plane (NAD83) - USFEET

Method: GPS Point of Reference: Well

GPS Manufacturer: Surveyor Name:

GPS Model: Surveyor License #:

Accuracy: 5 Accuracy units: Feet

**WELL USE:** Monitoring **DATE WELL**

**Other Use(s):** **DECOMMISSIONED:** 05/02/2019

Reason for Decommissioning: No longer in use

Was a New Well Drilled? No New Well Permit Number:

**WELL DECOMMISSIONING INFORMATION**

Permit Number: E201413188

Local ID: 137-P3B-MW1 Drilling Company: SGS NORTH AMERICA INC.

328 Stafford Forge Rd., West Creek

Finished Well Depth (ft.): 15 Address: (Ocean), New Jersey 08092

Formation Type: Unconsolidated Driller Name and Lic.: Nicholas Fallucca, 749523

Well Search Completed? No

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt./Rating/Screen Slot # (lbs/sch no.) |
|---|---|---|---|---|---|
| Borehole(s) | | | | N/A | N/A |
| Casing(s) | 0 | 5 | 2 | PVC | Sch 40 |
| Screen(s) | 5 | 15 | 2 | PVC | .010 |

**MATERIALS USED**

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 15 | 2 | 0 | 2 | 43 | 3 |

PENDING APPROVAL

Grouting Method: Pressure method (Tremie Pipe)

**ADDITIONAL INFORMATION**

Obstructions: No

Obstruction Type:

Alternative Decomm. Method? No

Method Used:

Authorization Official:

Authorization Number:

Authorization Date:

**ATTACHMENTS:**

PENDING APPROVAL

# Appendix K

# Groundwater Low-Flow Sampling Records

# Low Flow Groundwater Sample Collection Record

**Well ID:** 114-P2B2-MW101S

Client: PPG
Project Number: 60550261.GA.GW.RI.GWSA/60544821.RAWP
Site Location: GA Group Sites, Jersey City
Field Personnel: Kyle Willis

Date: 9/25/2017
Start Time (24 HR): 1300
Finish Time (24 HR): 1330
Weather Conditions: 85°F and Sunny

**Well & Water Level Data (Measured from Top of Casing)**

Well Length (feet): 15
Depth to Water (feet): 3.83
Depth to Bottom (feet): 14.5
Length of Water Column (feet) 10.67
Screened Interval (feet bgs) 4.5 - 14.5

Casing Diameter (inches): 4
Material: PVC
Calculated System Volume (gallons):
Pump Depth Intake (feet below TOC) 9.5 ft bgs

**Field Testing Equipment**

| Equipment | Make | Model | Serial Number |
|---|---|---|---|
| Multimeter | YSI | Sonde: 600 XL, Display: 650 | |
| Turbidimeter | Lamotte | 2020WE | |
| Pump | QED | SamplePro | |

**Water Quality Indicator Parameters Stability Criteria (NJDEP FSPM 2005)**

| | | | |
|---|---|---|---|
| Water Level Drawdown | < 0.3 ft | Dissolved Oxygen | ± 10% |
| pH | ± 0.1 unit | ORP | ± 10 millivolts |
| Specific Conductance | ± 3% | Turbidity | ± 10% for values greater than 1 NTU |
| Temperature | ± 3% | | |

**Purge Method:** low flow (teflon bladder pump)

**Water Quality Indicator Parameters Measurements**

| Time 24 Hr | Drawdown feet | Flow Rate mL/min | Purge Vol. ~~Gallons~~ mL | Temp. °C | Spec. Cond. µS/cm² | pH s.u. | ORP mV | DO mg/L | Turbidity NTU | Color/ Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1301 | 3.85 | 200 | 0 | 21.41 | 3.83 | 7.31 | -83 | 0.46 | 12.1 | clear |
| 1306 | 3.86 | 200 | 200 | 22.03 | 3.51 | 6.80 | -84 | 0.04 | 15.6 | clear |
| 1311 | 3.86 | 200 | 400 | 22.41 | 3.52 | 6.76 | -79 | 0.08 | 14.2 | clear |
| 1316 | 3.86 | 200 | 600 | 22.62 | 3.54 | 6.76 | -79.3 | 0.08 | 13.4 | clear |
| 1321 | 3.86 | 200 | 800 | 22.75 | 3.54 | 6.76 | -80.1 | 0.10 | 13.4 | clear |
| 1326 | 3.86 | 200 | 1000 | 22.97 | 3.54 | 6.76 | -74.4 | 0.13 | 14.4 | clear |
| 1340 | 3.86 | — | — | 23.74 | 3.53 | 6.75 | -64.5 | 0.12 | — | clear |
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(additional readings on page 2)

**Sample Collection**

**Method:** direct from tubing

| Sample ID | # Containers | Preservative | Analysis Requested | Time (24 hr) |
|---|---|---|---|---|
| 114-P2B2-MW101S-20170925 | 2x 1 liter Amber | none | SVOCs | 0945 |
| 114-P2B2-MW101S-20170925 | 3x 40 ml VOA Vial | HCL | VOCs | 0945 |

**Signature:** [signature] **Date:** 9/25/2017

**Well ID:** **114-P2B2-MW101S**

Calculated System Volume:

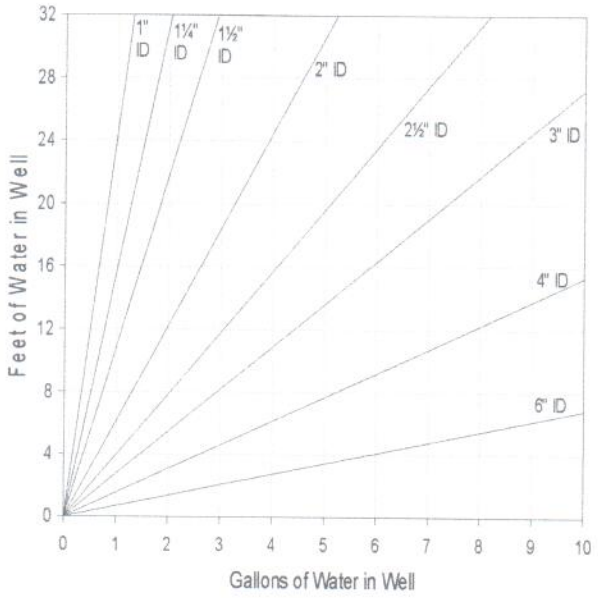


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| Inner Diameter | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

**Water Quality Indicator Parameters Measurements** (continued from front)

| Time 24 Hr | Drawdown feet | Flow Rate mL/min | Purge Vol. gallons | Temp. °C | Spec. Cond. µS/cm² | pH s.u. | ORP mV | DO mg/L | Turbidity NTU | Color/ Odor |
|---|---|---|---|---|---|---|---|---|---|---|
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**Comments** (If parameters not stabilized or do not pass criteria, please explain here)

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# Low Flow Groundwater Sample Collection Record

**Well ID:** 114-MW25A
Client: PPG
Project Number: 60550261.GA.GW.RI.GWSA/60544821.RAWP
Site Location: GA Group Sites, Jersey City
Field Personnel: Kyle Willis

Date: 9/26/2017
Start Time (24 HR): 1310
Finish Time (24 HR):
Weather Conditions:

**Well & Water Level Data (Measured from Top of Casing)**

Well Length (feet): 14.0
Depth to Water (feet):
Depth to Bottom (feet):
Length of Water Column (feet)
Screened Interval (feet bgs): 9.0 - 14.0

Casing Diameter (inches): 4
Material: PVC
Calculated System Volume (gallons):
Pump Depth Intake (feet below TOC): 11.5 ft bgs

**Field Testing Equipment**

| Equipment | Make | Model | Serial Number |
|---|---|---|---|
| Multimeter | YSI | Sonde: 600 XL, Display: 650 | Sonde: 24871 Display: 30422 |
| Turbidimeter | Lamotte | 2020WE | 31135 |
| Pump | QED | SamplePro | Pine #: 34018 |

**Water Quality Indicator Parameters Stability Criteria (NJDEP FSPM 2005)**

| | | | |
|---|---|---|---|
| Water Level Drawdown | < 0.3 ft | Dissolved Oxygen | ± 10% |
| pH | ± 0.1 unit | ORP | ± 10 millivolts |
| Specific Conductance | ± 3% | Turbidity | ± 10% for values greater than 1 NTU |
| Temperature | ± 3% | | |

**Purge Method:** low flow (teflon bladder pump)

**Water Quality Indicator Parameters Measurements**

| Time 24 Hr | Drawdown feet | Flow Rate mL/min | Purge Vol. Gallons | Temp. °C | Spec. Cond. µS/cm² | pH s.u. | ORP mV | DO mg/L | Turbidity NTU | Color/ Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1315 | 0 | 200 | — | 14.20 | 1.093 | 6.81 | 31.6 | 6.05 | 5.17 | clear |
| 1320 | 0 | 200 | — | 19.84 | 1.103 | 6.79 | 9.1 | 0.04 | 4.84 | clear |
| 1325 | 0 | 200 | — | 20.34 | 1.112 | 6.79 | 8.8 | 0.05 | 1.35 | clear |
| 1330 | 0 | 200 | — | 20.54 | 1.113 | 6.79 | 4.2 | 6.05 | 2.33 | clear |
| 1335 | 0 | 200 | — | 20.88 | 1.113 | 6.79 | 3.7 | 0.06 | 2.41 | clear |
| 1340 | 0 | 200 | — | 21.27 | 1.114 | 6.79 | 3.4 | 0.05 | 2.32 | clear |
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(additional readings on page 2)

**Sample Collection**

**Method:** direct from tubing

| Sample ID | # Containers | Preservative | Analysis Requested | Time (24 hr) |
|---|---|---|---|---|
| 114-MW25A-20170926 | 2x 1 liter Amber | none | SVOCs | 1355 |
| 114-MW25A-20170926 | 3x 40 ml VOA Vial | HCL | VOCs | 1355 |
| 114-MW25A-20170926 | 1x 500 ml Poly | none | Cr+6/pH/ORP | 1355 |
| 114-MW25A-20170926 | 1x 500 ml Poly | HNO3 | Total Cr | 1355 |
| 114-MW25A-20170926 | 1x 500 ml Poly | HNO3 | TAL metals (excluding total Cr) | 1355 |

**Signature:** Kyle Willis **Date:** 9/26/2017

**Well ID:** **114-MW25A**

Calculated System Volume:

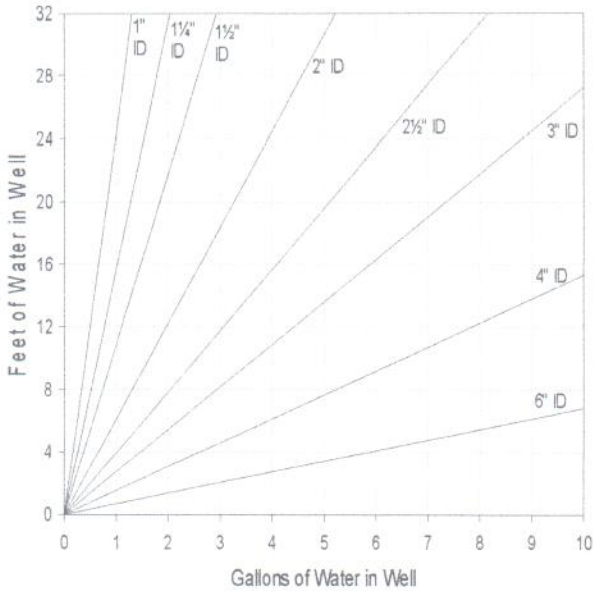


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| Inner Diameter | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

**Water Quality Indicator Parameters Measurements** (continued from front)

| Time 24 Hr | Drawdown feet | Flow Rate mL/min | Purge Vol. gallons | Temp. °C | Spec. Cond. µS/cm² | pH s.u. | ORP mV | DO mg/L | Turbidity NTU | Color/ Odor |
|---|---|---|---|---|---|---|---|---|---|---|
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**Comments** (If parameters not stabilized or do not pass criteria, please explain here)

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# Low Flow Groundwater Sample Collection Record

**Well ID:** 114-MW27A
Client: PPG
Project Number: 60550261.GA.GW.RI.GWSA/60544821.RAWP
Site Location: GA Group Sites, Jersey City
Field Personnel: Kyle Willis

Date: 9/26/2017
Start Time (24 HR): 1147
Finish Time (24 HR): 1235
Weather Conditions:

**Well & Water Level Data (Measured from Top of Casing)**

Well Length (feet): 16.0
Depth to Water (feet):
Depth to Bottom (feet):
Length of Water Column (feet)
Screened Interval (feet bgs) 11.0 - 16.0

Casing Diameter (inches): 4
Material: PVC
Calculated System Volume (gallons):
Pump Depth Intake (feet below TOC) 13.5 ft bgs

**Field Testing Equipment**

| Equipment | Make | Model | Serial Number |
|---|---|---|---|
| Multimeter | YSI | Sonde: 600 XL, Display: 650 | Sonde: 24871 Display: 30422 |
| Turbidimeter | Lamotte | 2020WE | 31135 |
| Pump | QED | SamplePro | Pine #: 34018 |

**Water Quality Indicator Parameters Stability Criteria (NJDEP FSPM 2005)**

| | | | |
|---|---|---|---|
| Water Level Drawdown | < 0.3 ft | Dissolved Oxygen | ± 10% |
| pH | ± 0.1 unit | ORP | ± 10 millivolts |
| Specific Conductance | ± 3% | Turbidity | ± 10% for values greater than 1 NTU |
| Temperature | ± 3% | | |

**Purge Method:** low flow (teflon bladder pump)

**Water Quality Indicator Parameters Measurements**

| Time 24 Hr | Drawdown feet | Flow Rate mL/min | Purge Vol. Gallons | Temp. °C | Spec. Cond. µS/cm² | pH s.u. | ORP mV | DO mg/L | Turbidity NTU | Color/ Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1152 | 0 | 200 | — | 17.99 | 0.610 | 7.52 | 88.2 | 5.80 | 2.86 | clear |
| 1157 | 0 | 200 | — | 17.98 | 0.016 | 7.52 | 88.2 | 5.80 | 6.70 | clear |
| 1202 | 0 | 200 | — | 18.42 | 0.837 | 6.79 | 183.6 | 6.06 | 1.35 | clear |
| 1207 | 0 | 200 | — | 18.99 | 0.846 | 6.79 | 181.9 | 6.05 | 1.32 | clear |
| 1212 | 0 | 200 | — | 19.25 | 0.844 | 6.79 | 176.7 | 0.06 | 1.25 | clear |
| 1217 | 0 | 200 | — | 19.66 | 0.844 | 6.79 | 175.7 | 0.06 | 1.29 | clear |
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(additional readings on page 2)

**Sample Collection**

**Method:** direct from tubing

| Sample ID | # Containers | Preservative | Analysis Requested | Time (24 hr) |
|---|---|---|---|---|
| 114-MW27A-20170926 | 2x 1 liter Amber | none | SVOCs | 1230 |
| 114-MW27A-20170926 | 3x 40 ml VOA Vial | HCL | VOCs | 1230 |
| 114-MW27A-20170926 | 1x 500 ml Poly | none | Cr+6/pH/ORP | 1230 |
| 114-MW27A-20170926 | 1x 500 ml Poly | HNO3 | Total Cr | 1230 |
| 114-MW27A-20170926 | 1x 500 ml Poly | HNO3 | TAL metals (excluding total Cr) | 1230 |

**Signature:** Kyle Willis **Date:** 9/26/2017

**Well ID:** **114-MW27A**

Calculated System Volume:

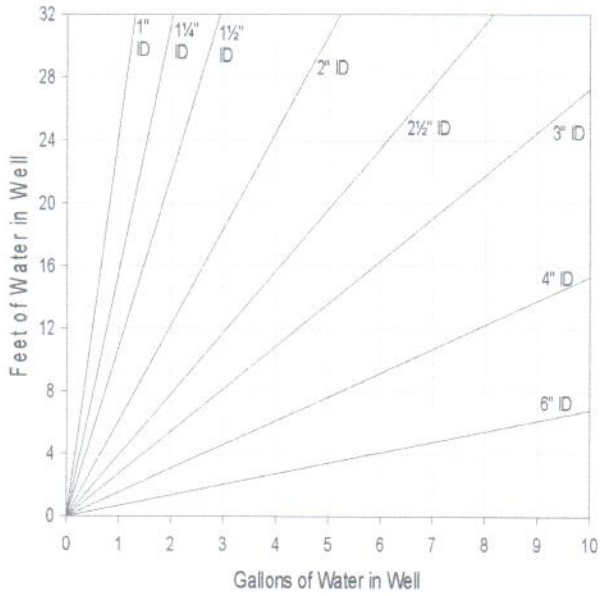


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| Inner Diameter | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

**Water Quality Indicator Parameters Measurements** (continued from front)

| Time 24 Hr | Drawdown feet | Flow Rate mL/min | Purge Vol. gallons | Temp. °C | Spec. Cond. µS/cm² | pH s.u. | ORP mV | DO mg/L | Turbidity NTU | Color/ Odor |
|---|---|---|---|---|---|---|---|---|---|---|
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**Comments** (If parameters not stabilized or do not pass criteria, please explain here)

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# Low Flow Groundwater Sample Collection Record

**Well ID:** 114-MW37A
Client: PPG
Project Number: 60550261.GA.GW.RI.GWSA/60544821.RAWP
Site Location: GA Group Sites, Jersey City
Field Personnel: Kyle Willis

Date: 9/26/2017
Start Time (24 HR): 0837
Finish Time (24 HR): 0950
Weather Conditions: 70°F mostly cloudy

**Well & Water Level Data (Measured from Top of Casing)**

Well Length (feet): 15.0
Depth to Water (feet): 4.53
Depth to Bottom (feet): 15.0
Length of Water Column (feet) 10.47
Screened Interval (feet bgs) 10.0 - 15.0

Casing Diameter (inches): 2
Material: PVC
Calculated System Volume (gallons):
Pump Depth Intake (feet below TOC) 12.5 ft bgs

**Field Testing Equipment**

| Equipment | Make | Model | Serial Number |
|---|---|---|---|
| Multimeter | YSI | Sonde: 600 XL, Display: 650 | Sonde: 24871 Display: 30422 |
| Turbidimeter | Lamotte | 2020WE | 31135 |
| Pump | QED | SamplePro | Pine #: 34018 |

**Water Quality Indicator Parameters Stability Criteria (NJDEP FSPM 2005)**

| | | | |
|---|---|---|---|
| Water Level Drawdown | < 0.3 ft | Dissolved Oxygen | ± 10% |
| pH | ± 0.1 unit | ORP | ± 10 millivolts |
| Specific Conductance | ± 3% | Turbidity | ± 10% for values greater than 1 NTU |
| Temperature | ± 3% | | |

**Purge Method:** low flow (peristaltic pump)

**Water Quality Indicator Parameters Measurements**

| Time 24 Hr | Drawdown feet | Flow Rate mL/min | Purge Vol. Gallons | Temp. °C | Spec. Cond. µS/cm² | pH s.u. | ORP mV | DO mg/L | Turbidity NTU | Color/ Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 0841 | 0 | 200 | — | 18.08 | 0.721 | 6.63 | 54.0 | 2.63 | 125 | cloudy |
| 0846 | 0 | 200 | — | 17.73 | 0.718 | 6.57 | 21.3 | 3.13 | 76.0 | cloudy |
| 0851 | 0 | 200 | — | 17.61 | 0.712 | 6.56 | 13.6 | 3.17 | 39.5 | cloudy |
| 0856 | 0 | 200 | — | 17.61 | 0.713 | 6.58 | 10.2 | 3.84 | 36.6 | cloudy |
| 0901 | 0 | 200 | — | 17.61 | 0.713 | 6.58 | 13.3 | 3.09 | 25.4 | cloudy |
| 0906 | 0 | 200 | — | 17.62 | 0.713 | 6.59 | 13.5 | 3.07 | 14.8 | cloudy |
| 0911 | 0 | 200 | — | 17.68 | 0.713 | 6.59 | 13.7 | 3.06 | 15.2 | cloudy |
| 0916 | 0 | 200 | — | 17.64 | 0.714 | 6.58 | 13.2 | 3.01 | 9.8 | cloudy |
| 0921 | 0 | 200 | — | 17.70 | 0.713 | 6.54 | 10.2 | 3.02 | 9.7 | clear |
| 0926 | 0 | 200 | — | 17.68 | 0.713 | 6.54 | 11.4 | 3.04 | 9.4 | clear |
| | | | | | | | | | | |
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(additional readings on page 2)

**Sample Collection**

**Method:** direct from tubing

| Sample ID | # Containers | Preservative | Analysis Requested | Time (24 hr) |
|---|---|---|---|---|
| 114-MW37A-20170926 | 2x 1 liter Amber | none | SVOCs | 0945 |
| 114-MW37A-20170926 | 3x 40 ml VOA Vial | HCL | VOCs | 0945 |
| 114-MW37A-20170926 | 1x 500 ml Poly | none | Cr+6/pH/ORP | 0945 |
| 114-MW37A-20170926 | 1x 500 ml Poly | HNO3 | Total Cr | 0945 |
| 114-MW37A-20170926 | 1x 500 ml Poly | HNO3 | TAL metals (excluding total Cr) | 0945 |

**Signature:** Kyle Willis **Date:** 9/26/2017

**Well ID:** **114-MW37A**

Calculated System Volume:

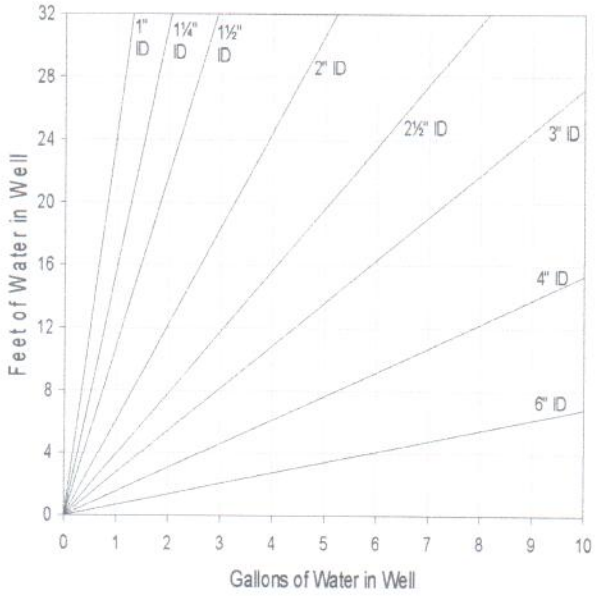


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| Inner Diameter | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

**Water Quality Indicator Parameters Measurements** (continued from front)

| Time 24 Hr | Drawdown feet | Flow Rate mL/min | Purge Vol. gallons | Temp. °C | Spec. Cond. µS/cm² | pH s.u. | ORP mV | DO mg/L | Turbidity NTU | Color/ Odor |
|---|---|---|---|---|---|---|---|---|---|---|
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**Comments** (If parameters not stabilized or do not pass criteria, please explain here)

# Low Flow Groundwater Sample Collection Record

| | | | |
|---|---|---|---|
| **Well ID:** | **114-MW37B** | | |
| Client: | PPG | Date: | 9/26/2017 |
| Project Number: | 60550261.GA.GW.RI.GWSA/60544821.RAWP | Start Time (24 HR): | 0956 |
| Site Location: | GA Group Sites, Jersey City | Finish Time (24 HR): | 1051 |
| Field Personnel: | Kyle Willis | Weather Conditions: | |

**Well & Water Level Data (Measured from Top of Casing)**

| | | | |
|---|---|---|---|
| Well Length (feet): | 35.0 | Casing Diameter (inches): | 2 |
| Depth to Water (feet): | 4.45 | Material: | PVC |
| Depth to Bottom (feet): | 35.0 | Calculated System Volume (gallons): | |
| Length of Water Column (feet) | 30.55 | | |
| Screened Interval (feet bgs) | 30.0 - 35.0 | Pump Depth Intake (feet below TOC) | 32.5 ft bgs |

**Field Testing Equipment**

| Equipment | Make | Model | Serial Number |
|---|---|---|---|
| Multimeter | YSI | Sonde: 600 XL, Display: 650 | |
| Turbidimeter | Lamotte | 2020WE | |
| Pump | QED | SamplePro | |

**Water Quality Indicator Parameters Stability Criteria (NJDEP FSPM 2005)**

| | | | |
|---|---|---|---|
| Water Level Drawdown | < 0.3 ft | Dissolved Oxygen | ± 10% |
| pH | ± 0.1 unit | ORP | ± 10 millivolts |
| Specific Conductance | ± 3% | Turbidity | ± 10% for values greater than 1 NTU |
| Temperature | ± 3% | | |

**Purge Method:** low flow (teflon bladder pump)

**Water Quality Indicator Parameters Measurements**

| Time 24 Hr | Drawdown feet | Flow Rate mL/min | Purge Vol. Gallons | Temp. °C | Spec. Cond. µS/cm² | pH s.u. | ORP mV | DO mg/L | Turbidity NTU | Color/ Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1005 | 0 | 200 | — | 17.35 | 0.852 | 7.35 | 148.0 | 1.74 | 91.5 | brown |
| 1010 | 0 | 200 | — | 17.33 | 6.857 | 7.41 | 94.8 | 1.51 | 78.6 | brownish |
| 1015 | 0 | 200 | — | 16.86 | 0.855 | 7.46 | 51.6 | 0.42 | 34.9 | brownish |
| 1020 | 0 | 200 | — | 16.71 | 0.856 | 7.48 | 37.3 | 0.87 | 32.5 | cloudy |
| 1025 | 0 | 200 | — | 16.74 | 0.856 | 7.49 | 30.0 | 0.72 | 10.0 | clear |
| 1030 | 0 | 200 | — | 16.56 | 0.855 | 7.51 | 35.1 | 0.71 | 9.8 | clear |
| 1035 | 0 | 200 | — | 16.29 | 0.854 | 7.50 | 36.6 | 0.72 | 4.9 | clear |
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(additional readings on page 2)

**Sample Collection**

**Method:** direct from tubing

| Sample ID | # Containers | Preservative | Analysis Requested | Time (24 hr) |
|---|---|---|---|---|
| 114-MW37B-20170926 | 2x 1 liter Amber | none | SVOCs | 1050 |
| 114-MW37B-20170926 | 3x 40 ml VOA Vial | HCL | VOCs | 1050 |
| 114-MW37B-20170926 | 1x 500 ml Poly | none | Cr+6/pH/ORP | 1050 |
| 114-MW37B-20170926 | 1x 500 ml Poly | HNO3 | Total Cr | 1050 |
| 114-MW37B-20170926 | 1x 500 ml Poly | HNO3 | TAL metals (excluding total Cr) | 1050 |

**Signature:** [signature] **Date:** 9/26/2017

**Well ID:** **114-MW37B**

Calculated System Volume:

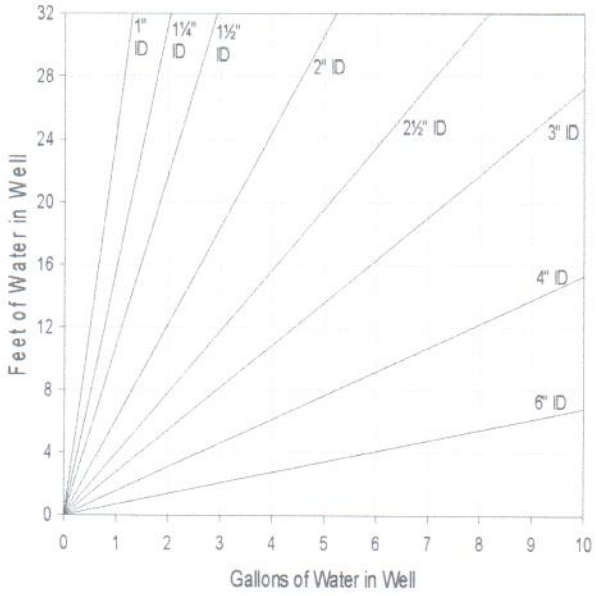


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| Inner Diameter | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

**Water Quality Indicator Parameters Measurements** (continued from front)

| Time 24 Hr | Drawdown feet | Flow Rate mL/min | Purge Vol. gallons | Temp. °C | Spec. Cond. µS/cm² | pH s.u. | ORP mV | DO mg/L | Turbidity NTU | Color/ Odor |
|---|---|---|---|---|---|---|---|---|---|---|
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**Comments** (If parameters not stabilized or do not pass criteria, please explain here)

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# Low Flow Groundwater Sample Collection Record

**Well ID:** 114-MW25A
Client: PPG
Project Number: 60550261.GA.GW.RI.GWSA/60544821.RAWP
Site Location: GA Group Sites, Jersey City
Field Personnel: Kyle Willis

Date: 9/27/2017
Start Time (24 HR): 1310
Finish Time (24 HR): 1405
Weather Conditions:

**Well & Water Level Data (Measured from Top of Casing)**

Well Length (feet):
Depth to Water (feet):
Depth to Bottom (feet):
Length of Water Column (feet)
Screened Interval (feet bgs): 9.0 - 14.0

Casing Diameter (inches): 4
Material: PVC
Calculated System Volume (gallons):
Pump Depth Intake (feet below TOC): 11.5 ft bgs

**Field Testing Equipment**

| Equipment | Make | Model | Serial Number |
|---|---|---|---|
| Multimeter | YSI | Sonde: 600 XL, Display: 650 | Sonde: 24871 Display: 30422 |
| Turbidimeter | Lamotte | 2020WE | 31135 |
| Pump | QED | SamplePro | Pine #: 34018 |

**Water Quality Indicator Parameters Stability Criteria (NJDEP FSPM 2005)**

| | | | |
|---|---|---|---|
| Water Level Drawdown | < 0.3 ft | Dissolved Oxygen | ± 10% |
| pH | ± 0.1 unit | ORP | ± 10 millivolts |
| Specific Conductance | ± 3% | Turbidity | ± 10% for values greater than 1 NTU |
| Temperature | ± 3% | | |

**Purge Method:** low flow (teflon bladder pump)

**Water Quality Indicator Parameters Measurements**

| Time 24 Hr | Drawdown feet | Flow Rate mL/min | Purge Vol. Gallons | Temp. °C | Spec. Cond. µS/cm² | pH s.u. | ORP mV | DO mg/L | Turbidity NTU | Color/ Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1325 | 0 | 200 | – | 20.07 | 0.464 | 7.07 | 11.4 | 0.53 | 5.12 | clear |
| 1330 | 0 | 200 | – | 19.26 | 0.605 | 6.84 | -37.1 | 0.26 | 3.25 | clear |
| 1335 | 0 | 200 | – | 18.63 | 1.006 | 6.79 | -52.1 | 0.18 | 2.16 | clear |
| 1340 | 0 | 200 | – | 18.30 | 1.090 | 6.77 | -38.7 | 0.16 | 2.17 | clear |
| 1345 | 0 | 200 | – | 18.27 | 1.091 | 6.76 | -39.2 | 0.15 | 2.14 | clear |
| 1350 | 0 | 200 | – | 18.15 | 1.102 | 6.72 | -41.0 | 0.16 | 2.15 | clear |
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(additional readings on page 2)

**Sample Collection**

**Method:** direct from tubing

| Sample ID | # Containers | Preservative | Analysis Requested | Time (24 hr) |
|---|---|---|---|---|
| 114-MW25A-20170927 | 2x 1 liter Amber | none | SVOCs | 1400 |

**Signature:** [signature] **Date:** 9/27/2017

**Well ID:** **114-MW25A**

Calculated System Volume:

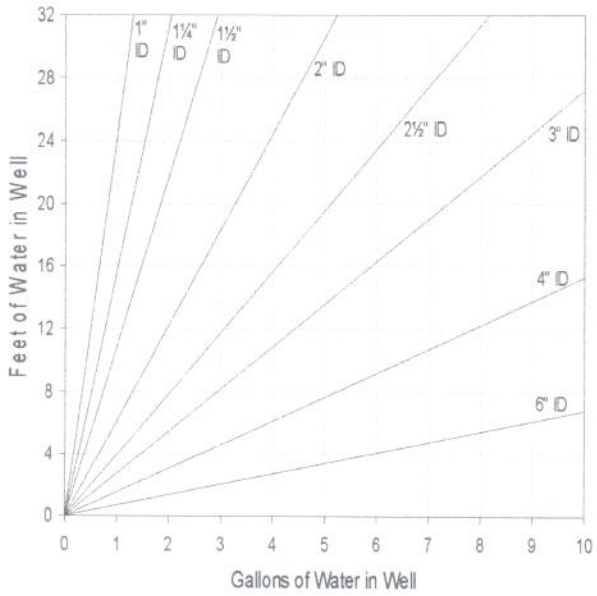


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| Inner Diameter | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

**Water Quality Indicator Parameters Measurements** (continued from front)

| Time 24 Hr | Drawdown feet | Flow Rate mL/min | Purge Vol. gallons | Temp. °C | Spec. Cond. µS/cm² | pH s.u. | ORP mV | DO mg/L | Turbidity NTU | Color/ Odor |
|---|---|---|---|---|---|---|---|---|---|---|
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**Comments** (If parameters not stabilized or do not pass criteria, please explain here)

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# Low Flow Groundwater Sample Collection Record

**Well ID:** 114-MW36A

Client: PPG
Project Number: 60550261.GA.GW.RI.GWSA/60544821.RAWP
Site Location: GA Group Sites, Jersey City
Field Personnel: Kyle Willis

Date: 9/27/2017
Start Time (24 HR): 0756
Finish Time (24 HR): 0910
Weather Conditions:

**Well & Water Level Data (Measured from Top of Casing)**

Well Length (feet): 15.0
Depth to Water (feet):
Depth to Bottom (feet):
Length of Water Column (feet)
Screened Interval (feet bgs): 5.0 - 15.0

Casing Diameter (inches): 2
Material: PVC
Calculated System Volume (gallons):
Pump Depth Intake (feet below TOC): 10.0 ft bgs

**Field Testing Equipment**

| Equipment | Make | Model | Serial Number |
|---|---|---|---|
| Multimeter | YSI | Sonde: 600 XL, Display: 650 | Sonde: 24871 Display: 30422 |
| Turbidimeter | Lamotte | 2020WE | 31135 |
| Pump | QED | SamplePro | Pine #: 34018 |

**Water Quality Indicator Parameters Stability Criteria (NJDEP FSPM 2005)**

| | | | |
|---|---|---|---|
| Water Level Drawdown | < 0.3 ft | Dissolved Oxygen | ± 10% |
| pH | ± 0.1 unit | ORP | ± 10 millivolts |
| Specific Conductance | ± 3% | Turbidity | ± 10% for values greater than 1 NTU |
| Temperature | ± 3% | | |

**Purge Method:** low flow (teflon bladder pump)

**Water Quality Indicator Parameters Measurements**

| Time 24 Hr | Drawdown feet | Flow Rate mL/min | Purge Vol. Gallons | Temp. °C | Spec. Cond. µS/cm² | pH s.u. | ORP mV | DO mg/L | Turbidity NTU | Color/ Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 0800 | 0 | 200 | — | 20.77 | 0.898 | 4.80 | 132.4 | 1.07 | 5.51 | clear |
| 0805 | 0 | 200 | — | 20.87 | 0.820 | 4.71 | 122.7 | 0.76 | 5.43 | clear |
| 0810 | 0 | 200 | — | 20.84 | 1.821 | 11.18 | 54.3 | 6.63 | 5.82 | clear |
| 0815 | 0 | 200 | — | 20.73 | 2.224 | 11.47 | 9.3 | 0.60 | 3.42 | clear |
| 0820 | 0 | 200 | — | 20.39 | 2.312 | 11.77 | 1.4 | 0.61 | 3.39 | clear |
| 0825 | 0 | 200 | — | 20.21 | 2.304 | 11.78 | 3.2 | 0.60 | 3.40 | clear |
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(additional readings on page 2)

**Sample Collection**

**Method:** direct from tubing

| Sample ID | # Containers | Preservative | Analysis Requested | Time (24 hr) |
|---|---|---|---|---|
| 114-MW36A-20170927 | 2x 1 liter Amber | none | SVOCs | 0840 |
| 114-MW36A-20170927 | 3x 40 ml VOA Vial | HCL | VOCs | 0840 |
| 114-MW36A-20170927 | 1x 500 ml Poly | none | Cr+6/pH/ORP | 0840 |
| 114-MW36A-20170927 | 1x 500 ml Poly | HNO3 | Total Cr | 0840 |
| 114-MW36A-20170927 | 1x 500 ml Poly | HNO3 | TAL metals (excluding total Cr) | 0840 |

**Signature:** [signature] **Date:** 9/27/2017

**Well ID:** 114-MW36A

Calculated System Volume:

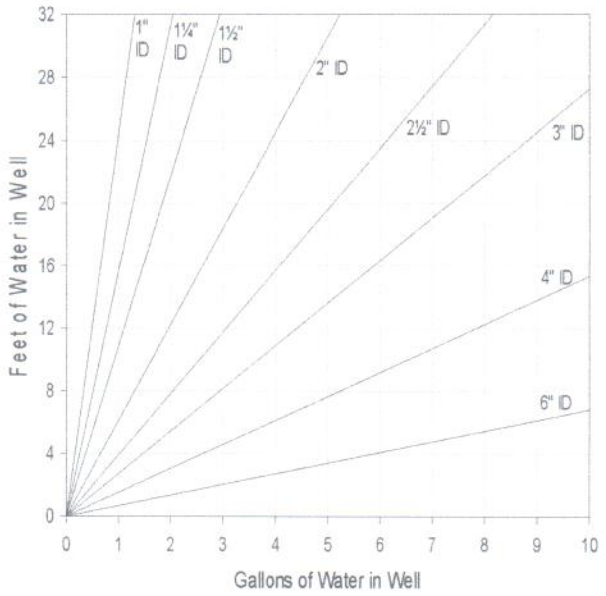


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| Inner Diameter | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

**Water Quality Indicator Parameters Measurements** (continued from front)

| Time 24 Hr | Drawdown feet | Flow Rate mL/min | Purge Vol. gallons | Temp. °C | Spec. Cond. µS/cm² | pH s.u. | ORP mV | DO mg/L | Turbidity NTU | Color/ Odor |
|---|---|---|---|---|---|---|---|---|---|---|
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**Comments** (If parameters not stabilized or do not pass criteria, please explain here)

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# Low Flow Groundwater Sample Collection Record

**Well ID:** 114-MW36B

Client: PPG
Project Number: 60550261.GA.GW.RI.GWSA/60544821.RAWP
Site Location: GA Group Sites, Jersey City
Field Personnel: Kyle Willis

Date: 9/27/2017
Start Time (24 HR): 0954
Finish Time (24 HR): 1120
Weather Conditions:

**Well & Water Level Data (Measured from Top of Casing)**

Well Length (feet): 35.0
Depth to Water (feet):
Depth to Bottom (feet):
Length of Water Column (feet)
Screened Interval (feet bgs): 30.0 - 35.0

Casing Diameter (inches): 2
Material: PVC
Calculated System Volume (gallons):
Pump Depth Intake (feet below TOC): 32.5 ft bgs

**Field Testing Equipment**

| Equipment | Make | Model | Serial Number |
|---|---|---|---|
| Multimeter | YSI | Sonde: 600 XL, Display: 650 | Sonde: 24871 Display: 30422 |
| Turbidimeter | Lamotte | 2020WE | 31135 |
| Pump | QED | SamplePro | Pine #: 34018 |

**Water Quality Indicator Parameters Stability Criteria (NJDEP FSPM 2005)**

| | | | |
|---|---|---|---|
| Water Level Drawdown | < 0.3 ft | Dissolved Oxygen | ± 10% |
| pH | ± 0.1 unit | ORP | ± 10 millivolts |
| Specific Conductance | ± 3% | Turbidity | ± 10% for values greater than 1 NTU |
| Temperature | ± 3% | | |

**Purge Method:** low flow (teflon bladder pump)

**Water Quality Indicator Parameters Measurements**

| Time 24 Hr | Drawdown feet | Flow Rate mL/min | Purge Vol. Gallons | Temp. °C | Spec. Cond. µS/cm² | pH s.u. | ORP mV | DO mg/L | Turbidity NTU | Color/ Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1010 | 0 | 200 | — | 17.93 | 0.590 | 9.19 | 98.3 | 0.74 | 102.1 | cloudy |
| 1015 | 0 | 200 | — | 17.64 | 0.590 | 8.86 | 107.8 | 6.34 | 140.0 | cloudy |
| 1020 | 0 | 200 | — | 18.43 | 0.584 | 8.83 | 109.0 | 0.38 | 100.0 | cloudy |
| 1025 | 0 | 100 | — | 20.22 | 0.582 | 8.80 | 106.5 | 0.39 | 87.0 | cloudy |
| 1030 | 0 | 100 | — | 20.82 | 0.583 | 8.75 | 106.3 | 6.38 | 54.0 | cloudy |
| 1035 | 0 | 100 | — | 21.69 | 0.586 | 8.71 | 105.0 | 6.33 | 32.1 | cloudy |
| 1040 | 0 | 100 | — | 14.77 | 0.575 | 8.50 | 106.4 | 0.25 | 19.4 | clear |
| 1045 | 0 | 100 | — | 14.65 | 0.568 | 8.38 | 104.0 | 6.21 | 10.1 | clear |
| 1050 | 0 | 100 | — | 14.67 | 0.568 | 8.32 | 99.4 | 0.18 | 9.9 | clear |
| 1055 | 0 | 100 | — | 14.79 | 0.568 | 8.31 | 98.1 | 0.11 | 9.8 | clear |
| | | | | | | | | | | |
| | | | | | | | | | | |

(additional readings on page 2)

**Sample Collection**

**Method:** direct from tubing

| Sample ID | # Containers | Preservative | Analysis Requested | Time (24 hr) |
|---|---|---|---|---|
| 114-MW36B-20170927 | 2x 1 liter Amber | none | SVOCs | |
| 114-MW36B-20170927 | 3x 40 ml VOA Vial | HCL | VOCs | |
| 114-MW36B-20170927 | 1x 500 ml Poly | none | Cr+6/pH/ORP | |
| 114-MW36B-20170927 | 1x 500 ml Poly | HNO3 | Total Cr | |
| 114-MW36B-20170927 | 1x 500 ml Poly | HNO3 | TAL metals (excluding total Cr) | |

**Signature:** [signature]

**Date:** 9/27/2017

**Well ID:** **114-MW36B**

Calculated System Volume:

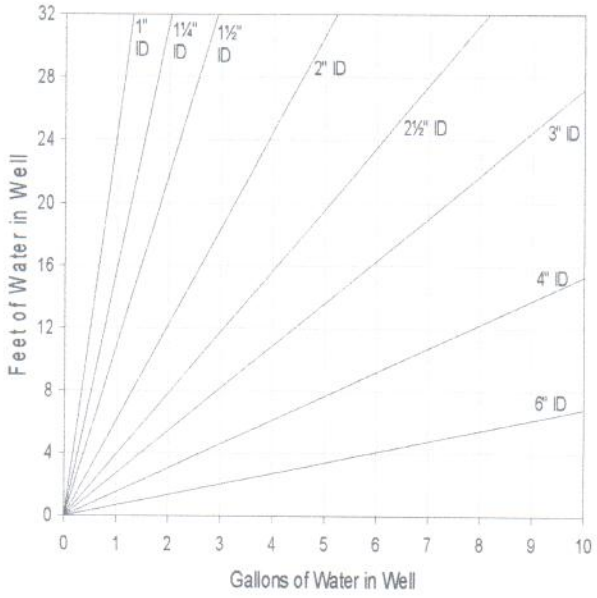


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| Inner Diameter | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

**Water Quality Indicator Parameters Measurements** (continued from front)

| Time 24 Hr | Drawdown feet | Flow Rate mL/min | Purge Vol. gallons | Temp. °C | Spec. Cond. µS/cm² | pH s.u. | ORP mV | DO mg/L | Turbidity NTU | Color/ Odor |
|---|---|---|---|---|---|---|---|---|---|---|
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**Comments** (If parameters not stabilized or do not pass criteria, please explain here)

Collected Duplicate Samples with Sample ID: 114-MW36B-20170927

# Low Flow Groundwater Sample Collection Record

**Well ID:** 114-MW25B
Client: PPG
Project Number: 60550261.GA.GW.RI.GWSA/60544821.RAWP
Site Location: GA Group Sites, Jersey City
Field Personnel: Kyle Willis

Date: 9/28/2017
Start Time (24 HR): 0800
Finish Time (24 HR): 0855
Weather Conditions: Sunny high 70s

**Well & Water Level Data (Measured from Top of Casing)**

Well Length (feet):
Depth to Water (feet): 3.47
Depth to Bottom (feet): 35.0
Length of Water Column (feet) 30.03
Screened Interval (feet bgs) 30.0 - 35.0

Casing Diameter (inches): 2
Material: PVC
Calculated System Volume (gallons):
Pump Depth Intake (feet below TOC) 32.5 ft bgs

**Field Testing Equipment**

| Equipment | Make | Model | Serial Number |
|---|---|---|---|
| Multimeter | YSI | Sonde: 600 XL, Display: 650 | Sonde: 24871 Display: 30422 |
| Turbidimeter | Lamotte | 2020WE | 31135 |
| Pump | QED | SamplePro | Pine #: 34018 |

**Water Quality Indicator Parameters Stability Criteria (NJDEP FSPM 2005)**

| | | | |
|---|---|---|---|
| Water Level Drawdown | < 0.3 ft | Dissolved Oxygen | ± 10% |
| pH | ± 0.1 unit | ORP | ± 10 millivolts |
| Specific Conductance | ± 3% | Turbidity | ± 10% for values greater than 1 NTU |
| Temperature | ± 3% | | |

**Purge Method:** low flow (Poly bladder pump)

**Water Quality Indicator Parameters Measurements**

| Time 24 Hr | Drawdown feet | Flow Rate mL/min | Purge Vol. Gallons | Temp. °C | Spec. Cond. µS/cm² | pH s.u. | ORP mV | DO mg/L | Turbidity NTU | Color/ Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 0810 | 4.24 | 150 | – | 18.43 | 0.448 | 6.44 | 240.7 | 1.27 | 1.43 | clear |
| 0815 | 4.32 | 150 | – | 18.21 | 0.384 | 6.99 | 227.2 | 0.70 | 0.19 | clear |
| 0820 | 4.51 | 150 | – | 18.03 | 0.342 | 7.29 | 211.5 | 0.38 | 0.24 | clear |
| 0825 | 4.53 | 150 | – | 18.01 | 0.337 | 7.41 | 203.9 | 0.36 | 0.11 | clear |
| 0830 | 4.53 | 100 | – | 18.70 | 0.335 | 7.53 | 190.5 | 0.43 | 0.12 | clear |
| 0835 | 4.52 | 100 | – | 19.01 | 0.335 | 7.65 | 188.4 | 0.45 | 0.16 | clear |
| 0840 | 4.50 | 100 | – | 19.38 | 0.334 | 7.71 | 183.6 | 0.44 | 0.23 | clear |
| 0845 | 4.49 | 100 | – | 19.63 | 0.334 | 7.75 | 179.5 | 0.40 | 0.13 | clear |
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(additional readings on page 2)

**Sample Collection**

**Method:** direct from tubing

| Sample ID | # Containers | Preservative | Analysis Requested | Time (24 hr) |
|---|---|---|---|---|
| 114-MW25B-20170928 | 1x 500 ml Poly | none | Cr+6/pH/ORP | 0850 |
| 114-MW25B-20170928 | 1x 500 ml Poly | HNO3 | Total Cr | 0850 |
| 114-MW25B-20170928 | 1x 500 ml Poly | HNO3 | TAL metals (excluding total Cr) | 0850 |

**Signature:** Kyle Willis **Date:** 9/28/2017

**Well ID:** **114-MW25B**

Calculated System Volume:

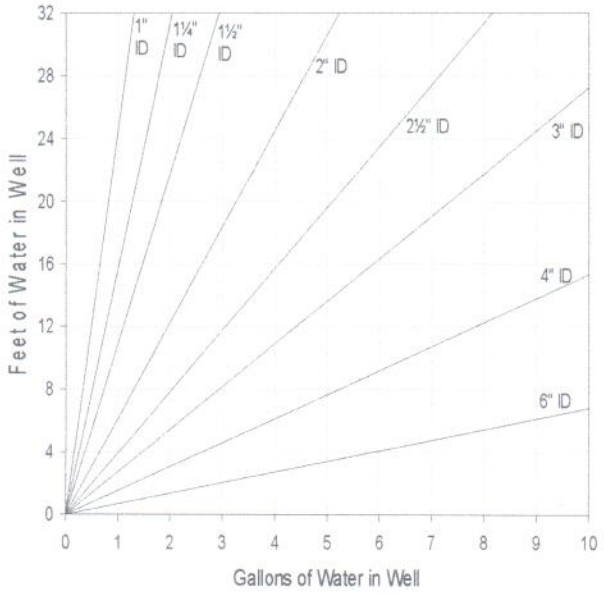


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| Inner Diameter | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

**Water Quality Indicator Parameters Measurements** (continued from front)

| Time 24 Hr | Drawdown feet | Flow Rate mL/min | Purge Vol. gallons | Temp. °C | Spec. Cond. µS/cm² | pH s.u. | ORP mV | DO mg/L | Turbidity NTU | Color/ Odor |
|---|---|---|---|---|---|---|---|---|---|---|
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**Comments** (If parameters not stabilized or do not pass criteria, please explain here)

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# Low Flow Groundwater Sample Collection Record

| | | | |
|---|---|---|---|
| **Well ID:** | **114-MW27B** | | |
| Client: | PPG | Date: | 9/28/2017 |
| Project Number: | 60550261.GA.GW.RI.GWSA/60544821.RAWP | Start Time (24 HR): | 0920 |
| Site Location: | GA Group Sites, Jersey City | Finish Time (24 HR): | 1030 |
| Field Personnel: | Kyle Willis | Weather Conditions: | |

**Well & Water Level Data (Measured from Top of Casing)**

| | | | |
|---|---|---|---|
| Well Length (feet): | | Casing Diameter (inches): | 4 |
| Depth to Water (feet): | 3.74 | Material: | PVC |
| Depth to Bottom (feet): | 35.00 | Calculated System Volume (gallons): | |
| Length of Water Column (feet) | 21.26 | | |
| Screened Interval (feet bgs) | 30.0 - 35.0 | Pump Depth Intake (feet below TOC) | 32.5 ft bgs |

**Field Testing Equipment**

| Equipment | Make | Model | Serial Number |
|---|---|---|---|
| Multimeter | YSI | Sonde: 600 XL, Display: 650 | Sonde: 24871 Display: 30422 |
| Turbidimeter | Lamotte | 2020WE | 31135 |
| Pump | QED | SamplePro | Pine #: 34018 |

**Water Quality Indicator Parameters Stability Criteria (NJDEP FSPM 2005)**

| | | | |
|---|---|---|---|
| Water Level Drawdown | < 0.3 ft | Dissolved Oxygen | ± 10% |
| pH | ± 0.1 unit | ORP | ± 10 millivolts |
| Specific Conductance | ± 3% | Turbidity | ± 10% for values greater than 1 NTU |
| Temperature | ± 3% | | |

**Purge Method:** low flow (Poly bladder pump)

**Water Quality Indicator Parameters Measurements**

| Time 24 Hr | Drawdown feet | Flow Rate mL/min | Purge Vol. Gallons | Temp. °C | Spec. Cond. µS/cm² | pH s.u. | ORP mV | DO mg/L | Turbidity NTU | Color/ Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 0940 | 3.84 | 210 | — | 20.55 | 0.546 | 7.87 | 174.2 | 5.82 | 4.76 | clear |
| 0945 | 3.86 | 180 | — | 17.18 | 0.546 | 7.49 | 150.3 | 0.01 | 4.57 | clear |
| 0950 | 4.06 | 150 | — | 17.24 | 0.546 | 7.59 | 115.4 | 0.03 | 4.23 | clear |
| 0955 | 4.34 | 150 | — | 17.60 | 0.546 | 7.59 | 89.6 | 0.00 | 4.21 | clear |
| 1000 | 4.49 | 100 | — | 17.85 | 0.543 | 7.59 | 71.6 | 0.00 | 4.12 | clear |
| 1005 | 4.51 | 100 | — | 18.37 | 0.540 | 7.61 | 43.2 | 0.00 | 4.15 | clear |
| 1010 | 4.56 | 100 | — | 19.03 | 0.538 | 7.64 | 35.3 | 0.00 | 4.16 | clear |
| 1015 | 4.65 | 100 | — | 19.37 | 0.536 | 7.65 | 32.6 | 0.00 | 4.18 | clear |
| 1020 | 4.70 | 100 | — | 19.50 | 0.535 | 7.65 | 31.3 | 0.00 | 4.15 | clear |
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(additional readings on page 2)

**Sample Collection**

**Method:** direct from tubing

| Sample ID | # Containers | Preservative | Analysis Requested | Time (24 hr) |
|---|---|---|---|---|
| 114-MW27B-20170928 | 1x 500 ml Poly | none | Cr+6/pH/ORP | 1025 |
| 114-MW27B-20170928 | 1x 500 ml Poly | HNO3 | Total Cr | 1025 |
| 114-MW27B-20170928 | 1x 500 ml Poly | HNO3 | TAL metals (excluding total Cr) | 1025 |

**Signature:** Kyle Willis **Date:** 9/28/2017

**Well ID:** **114-MW27B**

Calculated System Volume:

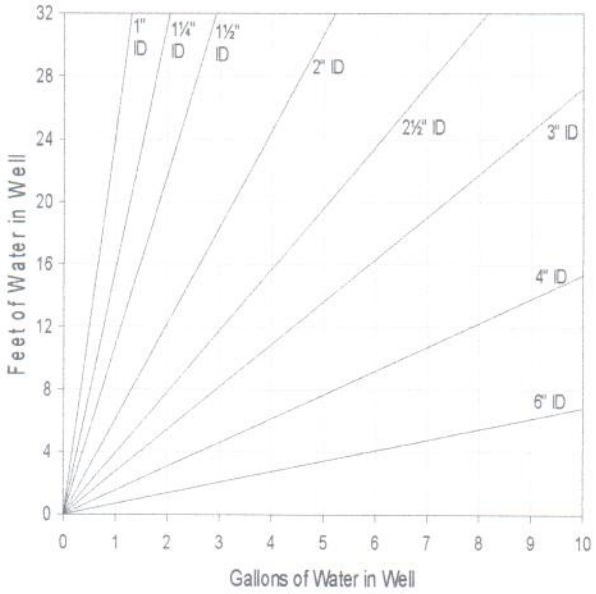


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| Inner Diameter | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

**Water Quality Indicator Parameters Measurements** (continued from front)

| Time 24 Hr | Drawdown feet | Flow Rate mL/min | Purge Vol. gallons | Temp. °C | Spec. Cond. µS/cm² | pH s.u. | ORP mV | DO mg/L | Turbidity NTU | Color/ Odor |
|---|---|---|---|---|---|---|---|---|---|---|
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**Comments** (If parameters not stabilized or do not pass criteria, please explain here)

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# Low Flow Groundwater Sample Collection Record

| | | | |
|---|---|---|---|
| **Well ID:** | **114-MW37A** | | |
| Client: | PPG | Date: | 9/28/2017 |
| Project Number: | 60550261.GA.GW.RI.GWSA/60544821.RAWP | Start Time (24 HR): | 1055 |
| Site Location: | GA Group Sites, Jersey City | Finish Time (24 HR): | 1300 |
| Field Personnel: | Kyle Willis | Weather Conditions: | |

**Well & Water Level Data (Measured from Top of Casing)**

| | | | |
|---|---|---|---|
| Well Length (feet): | | Casing Diameter (inches): | 2 |
| Depth to Water (feet): | | Material: | PVC |
| Depth to Bottom (feet): | | Calculated System Volume (gallons): | |
| Length of Water Column (feet) | | | |
| Screened Interval (feet bgs) | 10.0 - 15.0 | Pump Depth Intake (feet below TOC) | 12.5 ft bgs |

**Field Testing Equipment**

| Equipment | Make | Model | Serial Number |
|---|---|---|---|
| Multimeter | YSI | Sonde: 600 XL, Display: 650 | Sonde: 24871 Display: 30422 |
| Turbidimeter | Lamotte | 2020WE | 31135 |
| Pump | QED | SamplePro | Pine #: 34018 |

**Water Quality Indicator Parameters Stability Criteria (NJDEP FSPM 2005)**

| | | | |
|---|---|---|---|
| Water Level Drawdown | < 0.3 ft | Dissolved Oxygen | ± 10% |
| pH | ± 0.1 unit | ORP | ± 10 millivolts |
| Specific Conductance | ± 3% | Turbidity | ± 10% for values greater than 1 NTU |
| Temperature | ± 3% | | |

**Purge Method:** low flow (Poly bladder pump)

**Water Quality Indicator Parameters Measurements**

| Time 24 Hr | Drawdown feet | Flow Rate mL/min | Purge Vol. Gallons | Temp. °C | Spec. Cond. µS/cm² | pH s.u. | ORP mV | DO mg/L | Turbidity NTU | Color/ Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1125 | 4.65 | 240 | – | 18.24 | 0.616 | 6.75 | -19.1 | 6.01 | 41.8 | cloudy |
| 1130 | 4.68 | 180 | – | 18.28 | 0.616 | 6.68 | -46.1 | 0.00 | 34.9 | cloudy |
| 1135 | 4.68 | 180 | – | 18.20 | 0.626 | 6.66 | -41.2 | 0.00 | 36.9 | cloudy |
| 1140 | 4.69 | 186 | – | 18.16 | 0.632 | 6.65 | -48.2 | 0.00 | 32.5 | cloudy |
| 1145 | 4.72 | 180 | – | 18.27 | 0.635 | 6.65 | -48.1 | 0.00 | 27.1 | clear |
| 1150 | 4.74 | 180 | – | 18.14 | 0.638 | 6.64 | -41.5 | 0.00 | 22.6 | clear |
| 1155 | 4.72 | 180 | – | 18.10 | 0.638 | 6.64 | -35.4 | 0.00 | 14.5 | clear |
| 1200 | 4.75 | 180 | – | 18.23 | 0.638 | 6.64 | -34.0 | 0.00 | 13.8 | clear |
| 1205 | 4.75 | 186 | – | 18.21 | 0.639 | 6.64 | -36.9 | 0.00 | 7.3 | clear |
| 1210 | 4.75 | 180 | – | 18.44 | 0.640 | 6.65 | -46.1 | 0.01 | 7.7 | clear |
| 1215 | 4.76 | 180 | – | 18.36 | 0.642 | 6.64 | -44.9 | 0.01 | 7.63 | clear |
| | | | | | | | | | | |

(additional readings on page 2)

**Sample Collection**

**Method:** direct from tubing

| Sample ID | # Containers | Preservative | Analysis Requested | Time (24 hr) |
|---|---|---|---|---|
| 114-MW37A-20170928 | 1x 500 ml Poly | HNO3 | TAL Metals (Excluding total Cr) | 1220 |

**Signature:** [signature] **Date:** 9/28/2017

**Well ID:** **114-MW37A**

Calculated System Volume:

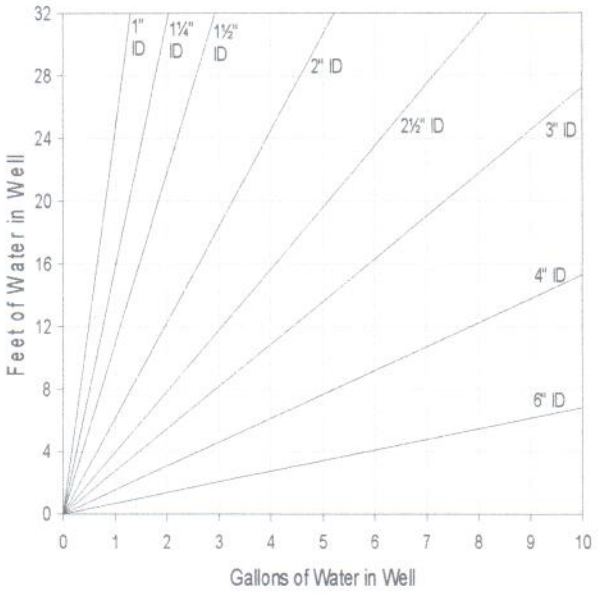


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| Inner Diameter | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

**Water Quality Indicator Parameters Measurements** (continued from front)

| Time 24 Hr | Drawdown feet | Flow Rate mL/min | Purge Vol. gallons | Temp. °C | Spec. Cond. µS/cm² | pH s.u. | ORP mV | DO mg/L | Turbidity NTU | Color/ Odor |
|---|---|---|---|---|---|---|---|---|---|---|
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**Comments** (If parameters not stabilized or do not pass criteria, please explain here)

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114-

Well ID: MW-44A

AECOM

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries  Date: 11/13/17  Time: Start 900 am/pm
Project No: 60317455  Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: 43°F rain  Collector: JA / JC

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 12.00  c. Length of Water Column 9.23 (a-b)  Casing Diameter/Material 2" / PVC

b. Water Table Depth 2.77  d. Calculated System Volume (see back) 1.5 gal

**2. WELL PURGE DATA**

a. Purge Method: Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 650 MDS | 17953 |
| | HACH | 2100 Q | 17070CC59586 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 915 | - | 16.14 | 6.84 | 1.647 | 3.71 | 165.8 | 359 | 200 | 2.51 | brown | none |
| 920 | - | 16.75 | 6.81 | 1.671 | 2.79 | 8.6 | 289 | 200 | 2.68 | brown | none |
| 925 | - | 17.03 | 6.81 | 1.677 | 2.07 | -40.5 | 275 | 200 | 2.69 | brown | none |
| 930 | - | 17.06 | 6.82 | 1.654 | 1.11 | -41.7 | 91.9 | 200 | 2.69 | brown | none |
| 935 | - | 17.06 | 6.82 | 1.644 | 0.54 | -32.4 | 49.1 | 200 | 2.70 | cloudy | none |
| 940 | - | 17.06 | 6.82 | 1.635 | 0.61 | -29.6 | 29.3 | 200 | 2.70 | clear | none |
| 945 | 2.5 | 17.06 | 6.82 | 1.661 | 0.42 | -26.8 | 16.6 | 200 | 2.66 | clear | none |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Low Flow

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW44A | 500mL PL | 2 | $HNO_3$ / None | Metals / XCR | 1030 |
| FSP-FB-20171113 | 500mL PL | 2 | $HNO_3$ / None | Metals / XCR | |

Comments JC 945 pump on @913
Drawdown flux from bladder pump cycles

Date 11/13/17

Purge Volume Calculation

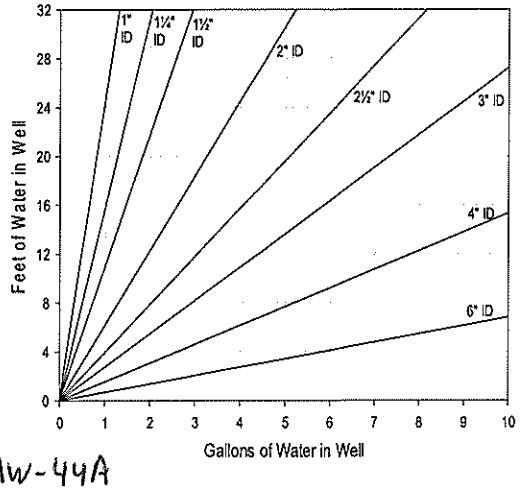


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

MW-44A

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 950 | - | 17.06 | 6.82 | 1.667 | 0.34 | -24.3 | 16.7 | 200 | 2.67 | clear / none |
| 955 | - | 17.06 | 6.83 | 1.669 | 0.32 | -23.6 | 11.3 | 200 | 2.68 | clear / none |
| 1000 | - | 17.04 | 6.82 | 1.673 | 0.28 | -22.8 | 9.61 | 200 | 2.68 | clear / none |
| 1005 | - | 17.02 | 6.81 | 1.674 | 0.23 | -22.8 | 9.03 | 200 | 2.70 | clear / none |
| 1010 | 5 gal | 17.02 | 6.85 | 1.680 | 0.23 | -24.6 | 8.03 | 200 | 2.68 | clear / none |
| 1015 | - | 17.01 | 6.82 | 1.683 | 0.24 | -23.0 | 6.98 | 200 | 2.66 | clear / none |
| 1020 | - | 17.01 | 6.82 | 1.685 | 0.22 | -22.4 | 6.97 | 200 | 2.72 | clear / none |
| 1025 | 7 gal | 17.01 | 6.82 | 1.690 | 0.21 | -22.9 | 4.69 | 200 | 2.66 | clear / none |
| | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

# Low Flow Groundwater Sample Collection Record

**Well ID: 114-MW38A**

| | | | |
|---|---|---|---|
| Client: | PPG | Date: | 12/4/2017 |
| Project Number: | 60550261 | Start Time (24 HR): | 13:30 |
| Site Location: | Garfield Avenue Sites | Finish Time (24 HR): | 15:50 |
| Field Personnel: | J. Angelone, B. Tate | Weather Conditions: | |

**Well & Water Level Data (Measured from Top of Casing)**

| | | | |
|---|---|---|---|
| Well Length (feet): | 25 | Casing Diameter (inches): | |
| Depth to Water (feet): | 12.34 | Material: | PVC |
| Depth to Bottom (feet): | | Calculated System Volume: | (gallons) |
| Length of Water Column (feet) | 12.66 | (see back) | (liters) |
| Screened Interval (feet) | | Pump Depth Intake (feet below TOC) | |

**Field Testing Equipment**

| Equipment | Make | Model | Serial Number |
|---|---|---|---|
| | Horiba | 45000 | 20895 |
| | Horiba | 457 | |
| | LaMotte | 2020we | 18960 |

**Water Quality Indicator Parameters Stability Criteria (NJDEP FSPM 2005)**

| | | | |
|---|---|---|---|
| Water Level Drawdown | < 0.3 ft | Dissolved Oxygen | ± 10% |
| pH | ± 0.1 unit | ORP | ± 10 millivolts |
| Specific Conductance | ± 3% | Turbidity | ± 10% for values greater than 1 NTU |
| Temperature | ± 3% | | |

**Water Quality Indicator Parameters Measurements**

| Time | Vol. Removed | Temp. | pH | Spec. Cond. | DO | ORP | Turbidity | Flow Rate | DTW | Color/ |
|---|---|---|---|---|---|---|---|---|---|---|
| 24 Hr | gal | °C | s.u. | mS/cm | mg/L | mV | NTU | mL/min | feet | Odor |
| 14:05 | 0.4 | 14.7 | 7.08 | 0.678 | 3.41 | -111 | > 1000 | 400 | 14.35 | cloudy/ none |
| 14:10 | 0.8 | 15.67 | 7.11 | 0.662 | 0.47 | -111 | 59.1 | 400 | 14.85 | cloudy/ none |
| 14:15 | 1.1 | 15.9 | 7.09 | 0.655 | 0.05 | -100 | 54.1 | 300 | 15.17 | cloudy/ none |
| 14:20 | 1.4 | 15.22 | 7.06 | 0.657 | 0 | -92 | 46.8 | 270 | 15.23 | cloudy/ none |
| 14:25 | 1.6 | 14.74 | 7.06 | 0.656 | 0 | -91 | 42.5 | 270 | 15.27 | cloudy/ none |
| 14:30 | 1.9 | 14.43 | 7.03 | 0.658 | 0 | -84 | 47.7 | 270 | 15.35 | cloudy/ none |
| 14:35 | 2.3 | 14.15 | 7.01 | 0.659 | 0 | -82 | 53.7 | 270 | 15.38 | cloudy/ none |
| 14:40 | 2.7 | 14.41 | 6.96 | 0.669 | 0 | -89 | 47 | 270 | 15.4 | cloudy/ none |
| 14:45 | 2.9 | 14.67 | 6.89 | 0.673 | 0 | -81 | 40.8 | 270 | 15.41 | cloudy/ none |
| 14:50 | 3.2 | 14.78 | 6.87 | 0.674 | 0 | -81 | 36.1 | 270 | 15.41 | cloudy/ none |

(continued on back)

If parameters have not stabilized, or other acceptance criteria passed, explain: N/A

**Sample Collection** **Method:** Low-Flow Sampling

| Sample ID | Container Type | # Containers | Preservative | Analysis Requested | Time (24 hr) |
|---|---|---|---|---|---|
| FORREST-114-MW38A-20171204 | 500 mL plastic | 1 | None | Cr+6 | 15:40 |
| | 500 mL plastic | 1 | HNO3 | TAL Metals | 15:40 |
| | 1L Ambers | 2 | None | SVOC | 15:40 |
| | 40 mL glass | 3 | HCl | VOC | 15:40 |

**Signature:** _____ **Date:** 12/4/2017

# Low Flow Groundwater Sample Collection Record

**Well ID: 114-MW38A**

Calculated System Volume:

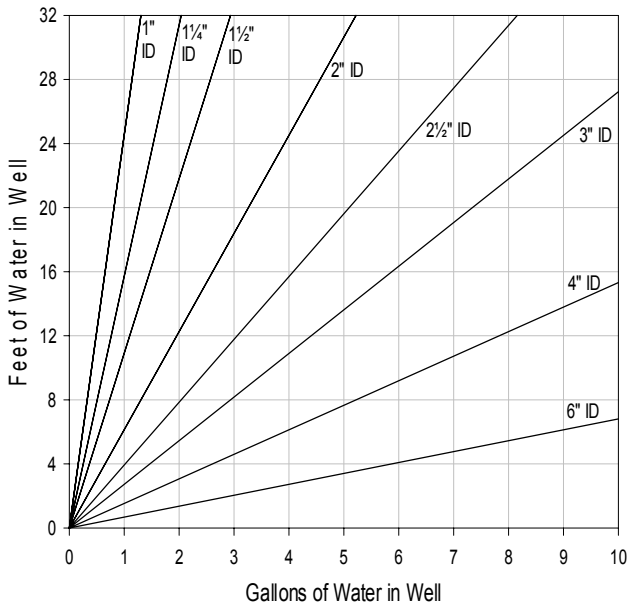


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| Inner Diameter | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

**Water Quality Indicator Parameters Measurements** (continued from front)

| **Time** 24 Hr | **Vol. Removed** gal | **Temp.** °C | **pH** s.u. | **Spec. Cond.** mS/cm | **DO** mg/L | **ORP** mV | **Turbidity** NTU | **Flow Rate** mL/min | **DTW** feet | **Color/ Odor** |
|---|---|---|---|---|---|---|---|---|---|---|
| 14:55 | 3.5 | 14.81 | 6.85 | 0.673 | 0 | -87 | 32.2 | 270 | 15.42 | cloudy/none |
| 15:00 | 3.8 | 14.85 | 6.85 | 0.676 | 0 | -83 | 25.8 | 270 | 15.41 | clear/none |
| 15:05 | 4.1 | 14.88 | 6.84 | 0.674 | 0 | -85 | 24.6 | 270 | 15.41 | clear/none |
| 15:10 | 4.5 | 14.87 | 6.86 | 0.672 | 0 | -88 | 21.7 | 270 | 15.42 | clear/none |
| 15:15 | 4.9 | 14.86 | 6.87 | 0.672 | 0 | -89 | 19.6 | 270 | 15.42 | clear/none |
| 15:20 | 5.7 | 14.86 | 6.88 | 0.671 | 0 | -90 | 17.7 | 270 | 15.42 | clear/none |
| 15:25 | 6 | 14.85 | 6.9 | 0.668 | 0 | -93 | 15.1 | 270 | 15.42 | clear/none |
| 15:30 | 6.3 | 14.97 | 6.94 | 0.672 | 0 | -97 | 13.2 | 270 | 15.43 | clear/none |
| 15:35 | 6.6 | 14.99 | 6.95 | 0.673 | 0 | -99 | 10.8 | 270 | 15.43 | clear/none |
| | | | | | | | | | | |
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**Comments**

# Low Flow Groundwater Sample Collection Record

**Well ID: 114-MW38B**

| | | | |
|---|---|---|---|
| Client: | PPG | Date: | 12/4/2017 |
| Project Number: | 60550261 | Start Time (24 HR): | 9:35 |
| Site Location: | Garfield Avenue Sites | Finish Time (24 HR): | 12:15 |
| Field Personnel: | J. Angelone, B. Tate | Weather Conditions: | sunny |

**Well & Water Level Data (Measured from Top of Casing)**

| | | | |
|---|---|---|---|
| Well Length (feet): | 42 | Casing Diameter (inches): | 2" |
| Depth to Water (feet): | 14.56 | Material: | PVC |
| Depth to Bottom (feet): | | Calculated System Volume: | (gallons) |
| Length of Water Column (feet) | 27.44 | (see back) | (liters) |
| Screened Interval (feet) | | Pump Depth Intake (feet below TOC) | |

**Field Testing Equipment**

| Equipment | Make | Model | Serial Number |
|---|---|---|---|
| | Horiba | 45000 | 20895 |
| | LaMotte | 2020we | 18960 |

**Water Quality Indicator Parameters Stability Criteria (NJDEP FSPM 2005)**

| | | | |
|---|---|---|---|
| Water Level Drawdown | < 0.3 ft | Dissolved Oxygen | ± 10% |
| pH | ± 0.1 unit | ORP | ± 10 millivolts |
| Specific Conductance | ± 3% | Turbidity | ± 10% for values greater than 1 NTU |
| Temperature | ± 3% | | |

**Water Quality Indicator Parameters Measurements**

| Time | Vol. Removed | Temp. | pH | Spec. Cond. | DO | ORP | Turbidity | Flow Rate | DTW | Color/ |
|---|---|---|---|---|---|---|---|---|---|---|
| 24 Hr | gal | °C | s.u. | mS/cm | mg/L | mV | NTU | mL/min | feet | Odor |
| 10:20 | 0.25 | 12.51 | 7.4 | 0.203 | 6.83 | 68 | > 1000 | 260 | 14.49 | cloudy/none |
| 10:25 | 0.5 | 13.32 | 8 | 0.244 | 5.7 | 82 | > 1000 | 260 | 14.48 | cloudy/none |
| 10:30 | 0.75 | 13.89 | 8.09 | 0.169 | 5.18 | 87 | > 1000 | 260 | 14.48 | cloudy/none |
| 10:35 | 1 | 14.33 | 8.11 | 0.266 | 4.86 | 91 | > 1000 | 260 | 14.47 | cloudy/none |
| 10:40 | 1.25 | 14.71 | 8.12 | 0.264 | 4.63 | 96 | 570 | 260 | 14.4 | cloudy/none |
| 10:45 | 1.5 | 14.67 | 8.12 | 0.268 | 4.42 | 98 | 480 | 260 | 14.47 | cloudy/none |
| 10:50 | 1.75 | 14.77 | 8.12 | 0.26 | 4.21 | 101 | 310 | 260 | 14.49 | cloudy/none |
| 10:55 | 2 | 14.79 | 8.14 | 0.264 | 3.57 | 104 | 452 | 260 | 14.49 | cloudy/none |
| 11:00 | 2.25 | 14.8 | 8.11 | 0.187 | 2.41 | 104 | 215 | 260 | 14.49 | cloudy/none |
| 11:05 | 2.5 | 14.75 | 8.11 | 0.303 | 2.02 | 118 | 172 | 260 | 14.5 | cloudy/none |

(continued on back)

If parameters have not stabilized, or other acceptance criteria passed, explain: N/A

**Sample Collection** **Method:** Low-Flow Sampling

| Sample ID | Container Type | # Containers | Preservative | Analysis Requested | Time (24 hr) |
|---|---|---|---|---|---|
| FORREST-114-MW38B- | 500 mL plastic | 1 | None | Cr+6 | 11:55 |
| 20171204 | 500 mL plastic | 1 | HNO3 | TAL Metals | 11:55 |

**Signature:** _____ **Date:** 12/4/2017

# Low Flow Groundwater Sample Collection Record

**Well ID: 114-MW38B**

Calculated System Volume:

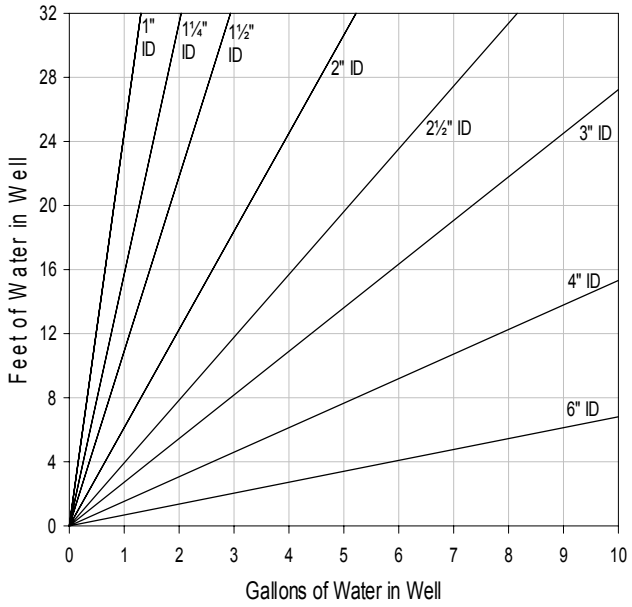


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| Inner Diameter | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

**Water Quality Indicator Parameters Measurements** (continued from front)

| **Time** | **Vol. Removed** | **Temp.** | **pH** | **Spec. Cond.** | **DO** | **ORP** | **Turbidity** | **Flow Rate** | **DTW** | **Color/** |
|---|---|---|---|---|---|---|---|---|---|---|
| 24 Hr | gal | °C | s.u. | mS/cm | mg/L | mV | NTU | mL/min | feet | **Odor** |
| 11:10 | 2.75 | 14.77 | 8.12 | 0.312 | 1.46 | 110 | 98 | 260 | 14.51 | cloudy/none |
| 11:15 | 3 | 14.75 | 8.12 | 0.318 | 1.05 | 105 | 35 | 260 | 14.51 | cloudy/none |
| 11:20 | 3.25 | 14.82 | 8.11 | 0.319 | 0.93 | 104 | 29 | 260 | 14.51 | cloudy/none |
| 11:25 | 3.5 | 14.83 | 8.11 | 0.325 | 0.81 | 103 | 21 | 260 | 14.5 | cloudy/none |
| 11:30 | 3.75 | 14.83 | 8.1 | 0.321 | 0.8 | 103 | 19 | 260 | 14.51 | cloudy/none |
| 11:35 | 4 | 14.83 | 8.11 | 0.335 | 0.82 | 101 | 12 | 260 | 14.51 | cloudy/none |
| 11:40 | 4.25 | 14.82 | 8.1 | 0.339 | 0.76 | 99 | 9.7 | 260 | 14.51 | cloudy/none |
| 11:45 | 4.5 | 14.83 | 8.1 | 0.359 | 0.75 | 94 | 8.1 | 260 | 14.51 | cloudy/none |
| 11:50 | 4.75 | 14.85 | 8.09 | 0.366 | 0.74 | 94 | 6.5 | 260 | 14.51 | cloudy/none |
| post-sample: | | | | | | | | | | |
| 12:00 | 7.5 | 14.81 | 8.05 | 0.386 | 0.92 | 95 | 7.1 | 260 | 14.51 | cloudy/none |
| | | | | | | | | | | |
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| | | | | | | | | | | |
| | | | | | | | | | | |

**Comments**

# Low Flow Groundwater Sample Collection Record

**Well ID: 114-MW2B1-2**

| | | | |
|---|---|---|---|
| Client: | PPG | Date: | 12/6/2017 |
| Project Number: | 60550261 | Start Time (24 HR): | 14:05 |
| Site Location: | Garfield Avenue Sites | Finish Time (24 HR): | 15:40 |
| Field Personnel: | J. Angelone, B. Tate | Weather Conditions: | sunny, 30s, windy |

**Well & Water Level Data (Measured from Top of Casing)**

| | | | |
|---|---|---|---|
| Well Length (feet): | 26 | Casing Diameter (inches): | 2" |
| Depth to Water (feet): | 17.43 | Material: | PVC |
| Depth to Bottom (feet): | | Calculated System Volume: | (gallons) |
| Length of Water Column (feet) | 8.57 | (see back) | (liters) |
| Screened Interval (feet) | | Pump Depth Intake (feet below TOC) | |

**Field Testing Equipment**

| Equipment | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600 | 036419/8464 |
| | LaMotte | 2020we | 18960 |

**Water Quality Indicator Parameters Stability Criteria (NJDEP FSPM 2005)**

| | | | |
|---|---|---|---|
| Water Level Drawdown | < 0.3 ft | Dissolved Oxygen | ± 10% |
| pH | ± 0.1 unit | ORP | ± 10 millivolts |
| Specific Conductance | ± 3% | Turbidity | ± 10% for values greater than 1 NTU |
| Temperature | ± 3% | | |

**Water Quality Indicator Parameters Measurements**

| Time | Vol. Removed | Temp. | pH | Spec. Cond. | DO | ORP | Turbidity | Flow Rate | DTW | Color/ |
|---|---|---|---|---|---|---|---|---|---|---|
| 24 Hr | gal | °C | s.u. | mS/cm | mg/L | mV | NTU | mL/min | feet | Odor |
| 14:20 | 0.6 | 15.53 | 7.56 | 1.137 | 1.72 | -111 | 1271 | 120 | 17.52 | brown, none |
| 14:25 | 1.2 | 15.6 | 7.3 | 1.121 | 0.45 | -114.7 | 1006 | 120 | 17.53 | brown, none |
| 14:30 | 1.8 | 15.72 | 7.33 | 1.103 | 0.84 | -122 | 899 | 120 | 17.5 | cloudy, none |
| 14:35 | 2.4 | 15.8 | 7.31 | 1.085 | 0.48 | -119 | 720 | 120 | 17.55 | cloudy, none |
| 14:40 | 3 | 15.89 | 7.3 | 1.066 | 0.41 | -119.1 | 660 | 120 | 17.55 | cloudy, none |
| 14:45 | 3.6 | 15.91 | 7.31 | 1.048 | 0.36 | -113 | 230 | 120 | 17.55 | cloudy, none |
| 14:50 | 4.2 | 15.8 | 7.31 | 1.021 | 0.36 | -121.4 | 40.9 | 120 | 17.55 | cloudy, none |
| 14:55 | 4.8 | 15.87 | 7.31 | 1.008 | 0.38 | -90.3 | 33.5 | 120 | 17.55 | slightly cloudy |
| 15:00 | 5.4 | 15.9 | 7.3 | 0.992 | 0.38 | -86.5 | 30.2 | 120 | 17.57 | slightly cloudy |
| 15:05 | 6 | 15.9 | 7.3 | 0.984 | 0.35 | -95.8 | 23.1 | 120 | 17.57 | none |

(continued on back)

If parameters have not stabilized, or other acceptance criteria passed, explain: N/A

**Sample Collection** **Method:** Low-Flow Sampling

| Sample ID | Container Type | # Containers | Preservative | Analysis Requested | Time (24 hr) |
|---|---|---|---|---|---|
| FORREST-114-MW2B1-2-20171206 | 500 mL plastic | 1 | None | Cr+6 | 15:25 |
| | 500 mL plastic | 1 | HNO3 | TAL metals | 15:25 |
| | 1L Ambers | 2 | None | SVOC | 15:25 |
| | 40 mL glass | 3 | HCl | VOC | 15:25 |

**Signature:** _____ **Date:** 12/6/2017

# Low Flow Groundwater Sample Collection Record

**Well ID: 114-MW2B1-2**

Calculated System Volume:

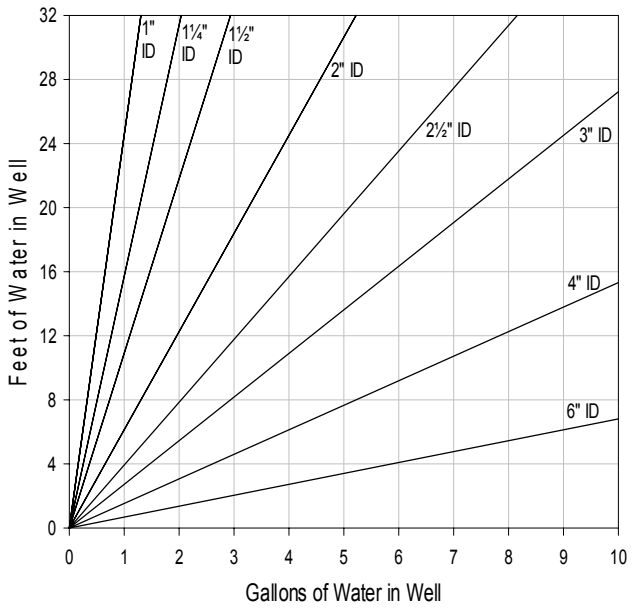


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| Inner Diameter | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

**Water Quality Indicator Parameters Measurements** (continued from front)

| **Time** 24 Hr | **Vol. Removed** gal | **Temp.** °C | **pH** s.u. | **Spec. Cond.** mS/cm | **DO** mg/L | **ORP** mV | **Turbidity** NTU | **Flow Rate** mL/min | **DTW** feet | **Color/ Odor** |
|---|---|---|---|---|---|---|---|---|---|---|
| 15:10 | 6.6 | 15.4 | 7.22 | 0.952 | 0.35 | -122 | 12.2 | 120 | 17.57 | none |
| 15:15 | 7.2 | 15.89 | 7.25 | 0.92 | 0.33 | -95.2 | 11.1 | 120 | 17.57 | none |
| 15:20 | 7.8 | 15.93 | 7.22 | 0.897 | 0.31 | -98.7 | 10.8 | 120 | 17.57 | none |
| | | | | | | | | | | |
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**Comments**

AECOM

Well ID: 114-MW2B1-2I

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries  Date: 12/6/17  Time: Start _____ am/pm
Project No: ~~60317455~~ 60550261  Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Cloudy, Windy, High 30's low 40's  Collector: J. Angelone B. Tate

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 38.43 ft  c. Length of Water Column _____ (a-b)  Casing Diameter/Material 2" PVC

b. Water Table Depth 17.26  d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: Bladder Pump low flow

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| Make | Model | Serial Number |
|---|---|---|
| ~~Horiba~~ YSI (JA) | ~~U5000~~ 600 (JA) | ~~20895~~ 036419/8464 (JA) |
| ~~Horiba~~ YSI | ~~U52~~ | |
| LaMotte | 2020we | 018960 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1435 | ~~14~~ | 14.01 | 7.83 | 2.883 | 2.99 | 171.1 | 193.1 | 160 | 17.29 | slight green | none |
| 1440 | | 14.72 | 7.25 | 3.297 | 0.72 | 182.0 | 94.6 | 160 | 17.35 | slight green | none |
| 1445 | | 14.70 | 7.21 | 3.308 | 0.65 | 181.7 | 70.1 | 160 | 17.37 | slight green | none |
| 1450 | | 14.86 | 7.18 | 3.299 | 0.66 | 177.5 | 66.9 | 160 | 17.45 | slight green | none |
| 1455 | | 14.61 | 7.16 | 3.287 | 0.52 | 175.3 | 60.2 | 160 | 17.51 | slight green | none |
| 1500 | | 14.64 | 7.16 | 3.302 | 0.52 | 171.7 | 53.8 | 160 | 17.52 | slight green | none |
| 1505 | | 14.65 | 7.16 | 3.289 | 0.53 | 169.8 | 45.4 | 160 | 17.52 | slight green | none |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.

No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Low Flow Sampling

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| (Forrest-114-MW2B1-2I-20171206) | 500ml Poly | 1 | HNO3 | TAL Metals | |
| | 1L Amber | 2 | none | SVOC TICs 1,4 Dioxane | |
| | 500ml Poly | 1 | none | Chromium (Hexavalent) | |
| | VOA | 3 | HCl | VOCs | |

Comments

Signature [signature]  Date 12/6/17

## Purge Volume Calculation

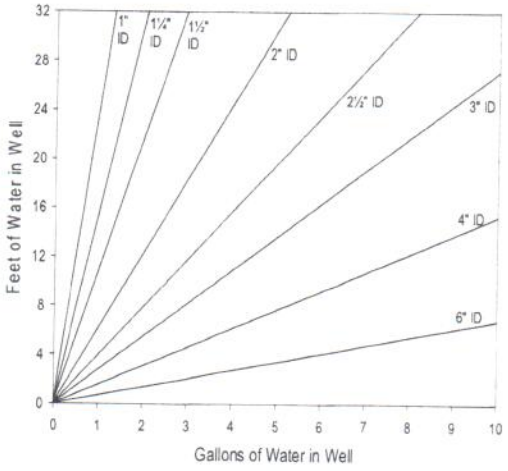


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1510 | | 14.56 | 7.14 | 3.287 | 0.52 | 163 | 37.5 | 160 | 17.52 | slight green |
| 1515 | | 14.56 | 7.13 | 3.286 | 0.53 | 161 | 25.4 | 160 | 17.52 | slight green |
| 1520 | | | | | | | | | | Sample taken |

AECOM

Well ID: 114-MW30A

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries
Project No: ~~60317455~~ 60550261
Site Location: Garfield Avenue Sites
Weather Conds: Sunny, 40's

Date: 12/7/17
Time: Start 0929 am/pm
Finish _____ am/pm
Collector: J. Angelone

1. **WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 14 ft
b. Water Table Depth 2.31 ft
c. Length of Water Column _____ (a-b)
d. Calculated System Volume (see back) _____

Casing Diameter/Material: 2" PVC

2. **WELL PURGE DATA**

a. Purge Method: Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' (SA) |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | ~~Horiba~~ YSI | ~~U52~~ 6600 | |
| | ~~Horiba~~ YSI | ~~U52~~ MDS6 | 030419 |
| | LaMotte | 2020we | 041109 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0933 | | 15.06 | 6.68 | 0.637 | 3.24 | -96.6 | 198 | 200 | — | brown | none |
| 0938 | | 15.18 | 6.72 | 0.624 | 3.06 | -100.9 | 160 | 200 | 6.20 | brown | none |
| 0943 | | 15.11 | 6.76 | 0.627 | 2.66 | -103.2 | 83.2 | 200 | 6.18 | light brown | none |
| 0948 | | 15.19 | 6.78 | 0.626 | 2.62 | -103.6 | 84 | 200 | 6.68 | " /clear | none |
| 0953 | | 15.01 | 6.80 | 0.628 | 3.13 | -101.6 | 11 | 200 | 6.36 | clear | none |
| 0958 | | 14.39 | 6.80 | 0.628 | 3.53 | -83.6 | 45.6 | 200 | 5.81 | clear | none |
| 1003 | | 14.19 | 6.80 | 0.626 | 3.67 | -78.1 | 37.7 | 200 | 5.15 | clear | none |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: Low Flow

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| (Forrest-114-MW30A-20171207) | 500ml Poly | 1 | HNO3 | TAL Metals | 1033 |
| | 500ml Poly | 1 | none | $Cr^{+6}$ | 1033 |
| | VOA | 3 | HCl | VOC | 1033 |
| | 1L Amber | 2 | none | SVOC | 1033 |

Comments _____

Signature _____ Date 12/7/17

114-MW30A
12/7/2017

## Purge Volume Calculation

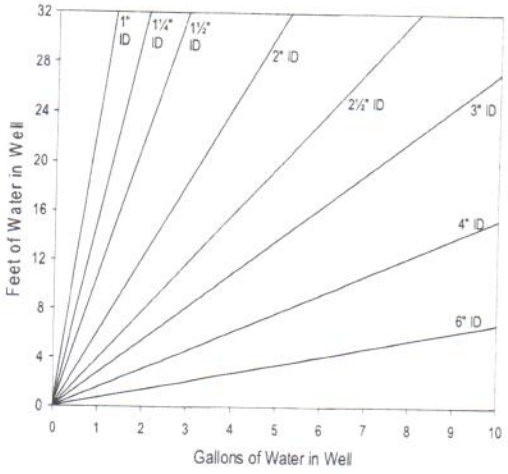


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1008 | | 13.99 | 6.81 | 0.624 | 4.35 | -73.6 | 20.7 | 200 | 4.64 | clear/none |
| 1013 | | 13.84 | 6.82 | 0.619 | 3.30 | -63.9 | 21.4 | 200 | 4.60 | clear/none |
| 1018 | | 13.64 | 6.84 | 0.618 | 3.04 | -66.1 | 23.9 | 200 | 4.32 | clear/none |
| 1023 | | 13.08 | 6.85 | 0.613 | 2.62 | -69.2 | 26.1 | 200 | 3.81 | clear/none |
| 1028 | | 12.84 | 6.86 | 0.612 | 2.58 | -70.7 | 4.16 | 200 | 3.45 | clear/none |
| ~~1024~~ | | | | | | | | | | |
| 1033 | 11 L | | | | | | | | | Sample taken |

JA

AECOM

Well ID: 114-P2B4-MW101I

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 12/12/17 Time: Start _____ am/pm
Project No: 60317455 Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Cloudy, 40's Collector: J. Angelone

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 49 ft c. Length of Water Column _____ (a-b) Casing Diameter/Material 4" PVC

b. Water Table Depth 5.75 d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 6920 | 030724 |
| | | 650 MDS | |
| | LaMotte | 2020we | 041109 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 47.0 ft | | | | | | | | | | | |
| 10:00 | | 13.16 | 9.13 | 0.117 | 1.24 | 214.1 | 58.6 | 100 | 6.11 | Yellow | |
| 10:05 | | 13.14 | 9.15 | 0.104 | 1.06 | 211.6 | 58.7 | 100 | 6.13 | Yellow | |
| 10:10 | | 12.90 | 9.15 | 0.159 | 0.91 | 203.4 | ~~85.5~~ | 100 | 6.16 | Yellow | |
| 10:15 | | 12.84 | 9.15 | 0.194 | 0.91 | 201.7 | 55.0 | 100 | 6.17 | Yellow | |
| 10:20 | | 12.95 | 9.14 | 0.323 | 0.74 | 196.8 | 54.2 | 100 | 6.17 | Yellow | |
| 10:25 | | 12.96 | 9.13 | 0.354 | 0.73 | 195.7 | 53.7 | 100 | 6.17 | Yellow | |
| 10:30 | | 12.98 | 9.13 | 0.459 | 0.45 | 170.0 | 49.3 | 100 | 6.17 | Yellow | |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Low Flow Sampling

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| | 1L Amber | 2 | none | SVOC | |
| | VOA | 3 | HCl | VOC | |
| | 1L Amber | 2 | none | SVOC | |
| | VOA | 3 | ~~none~~ HCl (SA) | VOC | |

Comments _____

Signature _____ Date _____

Purge Volume Calculation

114-P2B4-MW101I

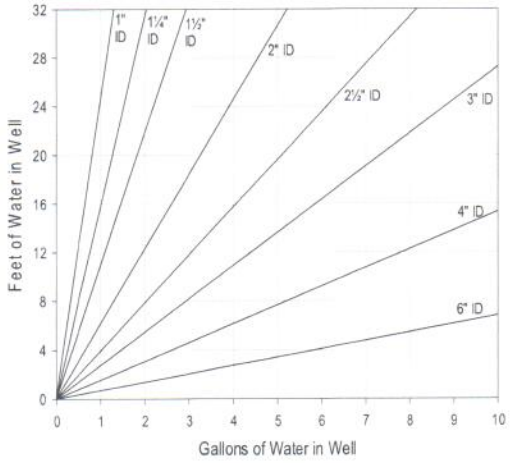


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 47.0 Ft | | | | | | | | | | |
| 1115 | | 12.92 | 9.13 | 6.464 | 0.38 | 168.0 | 48.9 | 100 | 6.17 | Yellow |
| 1120 | | 12.94 | 9.13 | 6.464 | 0.33 | 167.2 | 48.3 | 100 | 6.17 | Yellow |
| 1125 | | | | | | | | | | Sample taken |
| | | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ | |
| 42.08 | | | | | | | | | | |
| 1150 | | 12.67 | 9.19 | 5.338 | 0.29 | 155.6 | 55.0 | 100 | 6.14 | Yellow |
| 1155 | | 12.97 | 9.23 | 4.798 | 0.28 | 150.6 | 57.1 | 100 | 6.12 | Yellow |
| 1200 | | 12.99 | 9.24 | 4.814 | 0.24 | 149.3 | 56.3 | 100 | 6.11 | Yellow |
| 1205 | | 12.98 | 9.23 | 4.826 | 0.25 | 148.9 | 56.7 | 100 | 6.11 | Yellow |
| 1210 | | 12.50 | 9.24 | 4.846 | 0.26 | 147.6 | 55.9 | 100 | 6.11 | Yellow |
| 1215 | | | | | | | | | | Sample taken |

AECOM

Well ID: 114-P2B4-MW101S

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries
Project No: ~~60317455~~ 60550261
Site Location: Garfield Avenue Sites
Weather Conds: 40's overcast

Date: 12/12/2017
Time: Start 0945 (am/pm)
(SR) Finish ~~1000~~ 1305 (am/pm)
Collector: SHREE RAVI

1. **WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 18 ft
b. Water Table Depth 5.88 ft
c. Length of Water Column _____ (a-b)
d. Calculated System Volume (see back) _____

Casing Diameter/Material: 4" PVC

2. **WELL PURGE DATA**

a. Purge Method: low flow w/ bladder pump.

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 650 MDS | 030419 |
| | LaMotte | 2020 we | 041109 |

| Time (24hr) | Volume Removed ~~(Liters)~~ | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0955 | 0 | 13.82 | 6.51 | 10.32 | 2.77 | -67.6 | 141 | 200 | 6.30 | slightly cloudy | none |
| 1000 | | 13.71 | 6.55 | 10.69 | 2.39 | -55.8 | 109 | 200 | 6.35 | " | none |
| 1005 | | 13.10 | 6.58 | 10.98 | 2.16 | -50.5 | 118 | 200 | 6.35 | " | " |
| 1010 | | 13.45 | 6.60 | 11.13 | 2.02 | -49.0 | 122 | 200 | 6.32 | " | " |
| 1015 | | 12.93 | 6.62 | 11.30 | 1.96 | -47.2 | 134 | 200 | 6.27 | " | " |
| 1020 | | 12.61 | 6.65 | 11.31 | 2.04 | -45.5 | 122 | 200 | 6.25 | " | " |
| 1025 | | 13.59 | 6.64 | 11.44 | 1.97 | -44.0 | 127 | 200 | 6.35 | " | " |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☐ | ☑ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling. See comments on turbidity.

3. **SAMPLE COLLECTION:** Method: low flow, dedicated tubing.

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-P2B4-MW101S-16.0-20171212 | 1L Amber | 2 | None | SVOC | 1105 |
| " | VOA | 3 | HCl | VOC | 1105 |
| ~~114-P2B4-MW101S-11.0-20171212~~ (SR) | ~~1L Amber~~ | ~~2~~ | ~~None~~ | ~~SVOC~~ | (SR) ~~1105~~ |
| " | ~~VOA~~ | ~~3~~ | ~~HCl~~ | ~~VOC~~ | ~~1105~~ |

Comments: Turbidity did not reduce below 130 NTU sampled per B. Sprenz's (@16ft) direction
Did not sample @ 11.0 ft - Turbidity > 200 NTU & did not decrease

Signature: Shree Ravi Date: 12/12/2017

114-P2B4-MW1015
12/12/17

Purge Volume Calculation

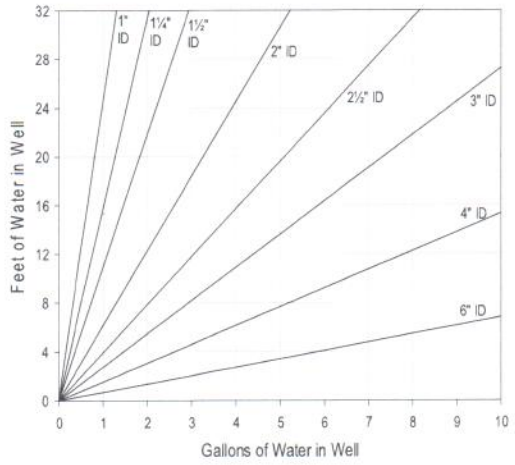


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed gal (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1030 | | 13.82 | 6.61 | 11.65 | 1.96 | -43.4 | 131 | 200 | 6.42 | cloudy/no odor |
| 1035 | | 13.80 | 6.64 | 11.70 | 2.10 | -43.1 | 129 | 200 | 6.43 | " |
| 1040 | | 13.80 | 6.64 | 11.78 | 2.11 | -42.2 | 130 | 200 | 6.40 | " |
| 1045 | | 13.80 | 6.64 | 11.82 | 1.94 | -42.7 | 132 | 200 | 6.46 | " |
| 1050 | | 13.85 | 6.65 | 11.91 | 2.12 | -42.5 | 133 | 200 | 6.50 | " |
| 1055 | 1.8gal | 13.88 | 6.65 | 12.01 | 2.13 | -42.8 | 132 | 200 | 6.50 | " |
| | | | | | | | | | | |
| | | | | | | | | | | |
| 11.0ft 1155 | | 12.99 | 6.64 | 11.99 | 2.30 | -42.2 | ~~148~~ 148 | 200 | 6.50 | " |
| 1200 | | 13.71 | 6.64 | 12.08 | 2.26 | -43.2 | 139 | 200 | 6.64 | " |
| 1205 | | 13.92 | 6.64 | 12.04 | 2.36 | -44.1 | 151 | 200 | 6.72 | " |
| 1210 | 2.6gal | 13.94 | 6.64 | 12.11 | 2.29 | -44.6 | 138 | 200 | 6.71 | " |
| 1215 | | 14.01 | 6.64 | 12.20 | 2.30 | -44.8 | 134 | 200 | 6.72 | " |
| 1220 | | 13.98 | 6.64 | 12.21 | 2.31 | -45.4 | 139 | 200 | 6.75 | " |
| 1225 | | 13.88 | 6.64 | 12.31 | 2.40 | -45.7 | 186 | 200 | 6.72 | " |
| 1230 | 3.5gal | 13.79 | 6.64 | 12.36 | 2.57 | -45.8 | 198 | 200 | 6.73 | " |

AECOM

Well ID: 114-P2B3-MW1CI

# Low Flow Ground Water Sample Collection Record

Client: PPG Date: 12/13/17 Time: Start 1050 am/pm
Project No: 60656261 Finish _____ am/pm
Site Location: Garfield Avenue Group of Sites
Weather Conds: _____ Collector: J. Angelico

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 35ft c. Length of Water Column _____ (a-b)

Casing Diameter/Material 4" PVC

b. Water Table Depth 5.11 d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make YSI Model 6920 Serial Number _____

LaMotte 2020

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1040 | | 9.74 | 9.55 | 3.310 | 4.27 | 154.5 | 6.41 | 100 | 3.43 | yellow | |
| 1045 | | 10.47 | 9.57 | 3.391 | 3.01 | 154.0 | 6.12 | 100 | 3.50 | yellow | |
| 1050 | | 10.55 | 9.58 | 3.481 | 2.71 | 155.3 | 6.13 | 100 | 3.51 | yellow | |
| 1055 | | 11.00 | 9.58 | 3.436 | 1.71 | 151.6 | 6.52 | 100 | 3.52 | yellow | |
| 1100 | | 11.05 | 9.57 | 3.455 | 0.92 | 147.9 | 6.67 | 100 | 3.52 | yellow | |
| 1105 | | 10.76 | 9.57 | 3.457 | 0.81 | 145.0 | 6.63 | 100 | 3.52 | yellow | |
| 1110 | | 10.62 | 9.57 | 3.451 | 0.83 | 144.1 | 6.41 | 100 | 3.53 | yellow | |

3.52ft

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Low Flow Sampling

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-P2B3-MW1CI-33.0-20171213 | 1L Amber | 2 | None | SVOC | 1130 |
| | VOA | 3 | HCl | VOC | 1130 |
| 114-P2B3-MW1CI-28.0-20171213 | 1L Amber | 2 | None | SVOC | 1225 |
| | VOA | 3 | HCl | VOC | 1225 |

Comments _____

Signature _____ Date 12/13/17

Purge Volume Calculation

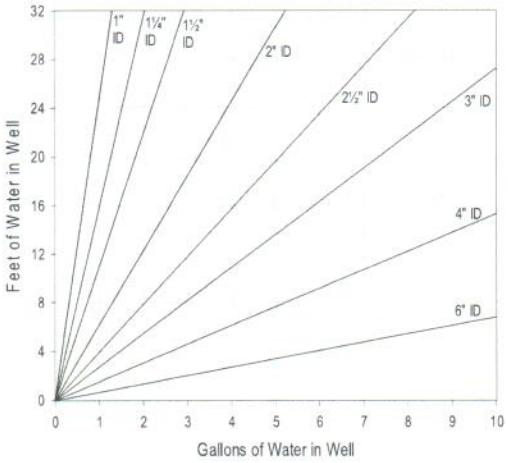


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1115 | | 10.48 | 9.57 | 3.442 | 0.36 | 130.7 | 0.23 | 100 | 5.53 | Yellow |
| 1120 | | | | | | | | | | Sample taken |
| | | | | | | | | | | |
| | | | | | | | | | | |
| 1150 | | 10.05 | 9.53 | 3.301 | 0.60 | 127.7 | 3.32 | 100 | 5.50 | Yellow |
| 1155 | | 10.21 | 9.68 | 3.014 | 0.54 | 123.7 | 3.37 | 100 | 5.50 | Yellow |
| 1200 | | 10.31 | 9.72 | 2.884 | 0.51 | 119.9 | 3.22 | 100 | 5.56 | Yellow |
| 1205 | | 11.34 | 9.72 | 2.823 | 0.53 | 118.3 | 3.61 | 100 | 5.51 | Yellow |
| 1210 | | 10.98 | 9.72 | 2.840 | 0.48 | 117.0 | 3.49 | 100 | 5.51 | Yellow |
| 1215 | | 11.17 | 9.71 | 2.817 | 0.49 | 116.2 | 3.72 | 100 | 5.51 | Yellow |
| 1220 | | 11.09 | 9.72 | 2.831 | 0.47 | 116.2 | 3.74 | 100 | 5.51 | Yellow |
| 1225 | | | | | | | | | | Sample taken |

AECOM

Well ID: 114-P2B3-MW1018

# Low Flow Ground Water Sample Collection Record

Client: PPG
Date: 12/13/17
Time: Start 1000 am/pm
Finish 1400 am/pm
Project No: 60550261
Site Location: Garfield Avenue Group of Sites
Weather Conds: 20's Windy Clear
Collector: E. Acs

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 16 ft
c. Length of Water Column _____ (a-b)
Casing Diameter/Material 4" PVC
b. Water Table Depth 5.56
d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: BLADDER PUMP W DEDICATED TUBING

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| Make | Model | Serial Number |
|---|---|---|
| YSI | 600 XLM | 13J 00447 |
| Lamotte | 2020 | |

| | Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14 DEPTH | 10:35 | 0 | 12.47 | 7.29 | 4.026 | 7.50 | -91.8 | 483 | 60 | 5.56 | Brown | |
| 1040 | 10:40 | | 13.80 | 7.18 | 3.837 | 8.21 | -91.2 | 452 | 60 | 5.72 | ↓ | |
| | 10:45 | | 14.11 | 7.13 | 3.836 | 8.23 | -91.3 | 444 | 60 | 5.77 | ↓ | |
| | 10:50 | | 12.06 | 7.13 | 3.796 | 6.96 | -87.8 | 127.3 | 60 | 5.77 | ↓ | |
| | 10:55 | | 12.08 | 7.17 | 3.614 | 6.86 | -86.8 | 27.3 | 60 | 5.62 | ↓ | |
| | 11:00 | | 9.92 | 7.18 | 3.717 | 5.54 | -88.6 | 36.9 | 60 | 5.60 | ↓ | |
| | 11:05 | | 9.01 | 7.18 | 3.677 | 5.12 | -82.3 | 32.8 | 60 | 5.58 | | |

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☑ | ☐ | ☐ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

(continued on back)

**3. SAMPLE COLLECTION:** Method: BLADDER PUMP

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-P2B3-MW1015-14-20171213 | 40mL VIA | (3) (HCL) | 1 L Amber (2) | VOC + SVOC | 11:35 |
| 114-P2B3-MW1015-9A-20171213 | 40mL VIA | (3) (HCL) | 1 L Amber (2) | VOC + SVOC | 13:10 |

Comments

Signature [signature]
Date 12/13/17

## Purge Volume Calculation

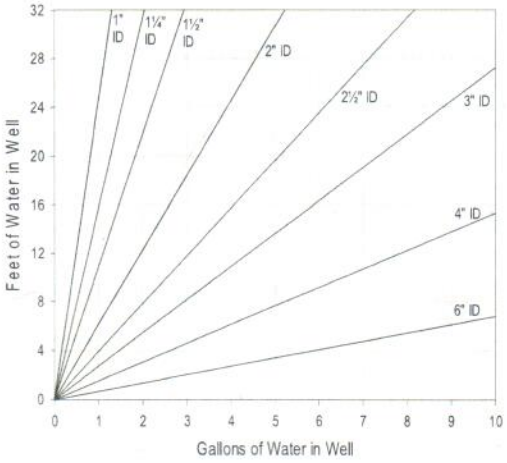


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 14 DEPTH 11:10 | ~1 GAL | 9.09 | 7.21 | 3.658 | 4.79 | -82.8 | 37.8 | 60 | 5.56 | LT-BROWN |
| 11:15 | | 8.64 | 7.23 | 3.655 | 4.22 | -81.4 | 35.2 | 60 | 5.58 | |
| 11:20 | | 8.58 | 7.24 | 3.636 | 4.34 | -80.6 | 33.8 | 60 | 5.58 | |
| 11:25 | | 8.52 | 7.24 | 3.623 | 4.30 | -79.2 | 35.2 | 60 | 5.58 | |
| 11:30 | ~1.5GAL | 8.47 | 7.25 | 3.618 | 4.36 | -77.2 | 28.2 | 60 | 5.58 | |
| | | | | | | | | | | |
| 9 DEPTH 12:25 | 0 | 9.52 | 7.41 | 2.996 | 4.13 | -80.1 | 47.6 | 60 | 5.60 | |
| 12:30 | | 11.17 | 7.39 | 3.755 | 2.37 | -80.9 | 38.2 | 60 | 5.56 | |
| 1235 | | 11:52 | 7.33 | 2.898 | 2.67 | -98.5 | 25.9 | 60 | 5.58 | |
| 1240 | | 9.92 | 7.29 | 2.999 | 2.78 | -90.2 | 22.1 | 60 | 5.58 | |
| 1245 | | 9.89 | 7.26 | 3.449 | 2.97 | -102.4 | 24.2 | 60 | 5.59 | |
| 1250 | ~1 GAL | 9.92 | 7.25 | 3.537 | 3.06 | -104.9 | 22.2 | 60 | 5.60 | |
| 13:00 | | 9.82 | 7.25 | 3.649 | 2.98 | -106.1 | 25.2 | 60 | 5.60 | |
| 1305 | | 9.88 | 7.25 | 3.652 | 3.00 | -105.2 | 25.8 | 60 | 5.60 | |



G.T.GW.R1.GWSA

AECOM

Well ID: 114-P1B+MW103D

# Low Flow Ground Water Sample Collection Record

Client: PPG Date: 12/14/17 Time: Start _____ am/pm
Project No: 60550261 Finish _____ am/pm
Site Location: Garfield Avenue Group of Sites
Weather Conds: Sunny 30's Collector: C. Acs

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 16.5 c. Length of Water Column _____ (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 9.65 d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make / Model / Serial Number

YSI 6920
Cummins 2020

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 0 | 12.73 | 11.58 | 1.072 | 4.12 | -80.9 | 238 | 100 | 9.45 | Brown | |
| 1005 | | 13.31 | 11.54 | 0.948 | 2.54 | -93.7 | 240.2 | 100 | 9.43 | | |
| 1010 | | 13.31 | 11.35 | 0.926 | 3.25 | -102.2 | 173.8 | 100 | 9.43 | | |
| 1015 | | 12.18 | 11.17 | 0.900 | 2.87 | -103.3 | 132.0 | 80 | 9.43 | | |
| 1020 | | 9.07 | 11.08 | 0.897 | 4.16 | -94.0 | 153.0 | 90 | 9.42 | | |
| 1025 | | 9.03 | 10.99 | 0.893 | 5.03 | -93.2 | 160.8 | 90 | 9.43 | | |
| 1030 | | 9.08 | 10.97 | 0.899 | 4.25 | -90.7 | 125.4 | 80 | 9.44 | ✓ | |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: _____

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-P1B-MW103D-20171214 | Plastic | 4 | TAL Metals only | CR6 TAL Metals | 13:20 |

Comments _____

Signature _____ Date 12/14/17

## Purge Volume Calculation

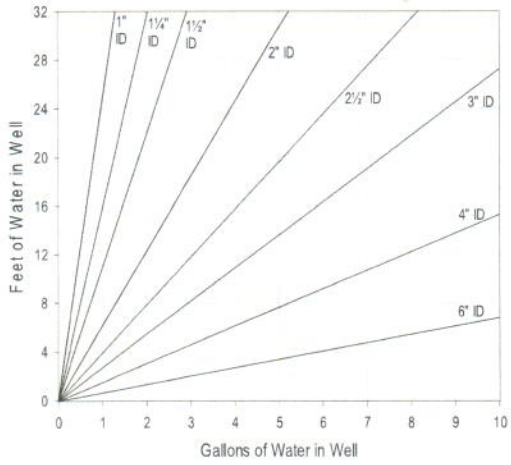


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1045 | | 9.70 | 10.92 | 0.868 | 2.90 | -95.6 | 1114 | 50 | 9.44 | Clear Brown |
| 1050 | | 9.33 | 11.00 | 0.859 | 2.15 | -101.4 | 945 | 50 | 9.43 | |
| 1055 | | 9.28 | 11.01 | 0.859 | 1.87 | -104.2 | 872 | 50 | 9.43 | |
| 11:00 | | 9.25 | 11.06 | 0.862 | 1.22 | -109.2 | 838 | 50 | 9.44 | |
| 1105 | | 9.23 | 11.04 | 0.865 | 0.88 | -111.4 | 850 | 50 | 9.44 | |
| 1110 | | 9.20 | 11.02 | 0.878 | 0.53 | -114.8 | 865 | 50 | 9.43 | |
| 11:15 | | 9.22 | 11.03 | 0.972 | 0.55 | -114.6 | 915 | 50 | 9.43 | |
| 1130 | | 9.25 | 10.85 | 0.902 | 0.22 | -110.1 | 802 | 50 | 9.43 | |
| 1145 | | 9.30 | 10.01 | 0.924 | 0.12 | -108.9 | 791 | 50 | 9.43 | |
| 1200 | | 9.40 | 10.52 | 0.935 | 0.10 | -104.9 | 688 | 50 | 9.43 | |
| 1215 | | 9.42 | 10.44 | 0.960 | 0.05 | -102.5 | 794 | 50 | 9.44 | |
| 1230 | | 9.61 | 10.41 | 0.973 | 0.04 | -103.7 | 826 | 50 | 9.44 | |
| 1246 | | 9.52 | 10.39 | 0.982 | 0.03 | -102.9 | 887 | 50 | 9.45 | |
| 13:00 | | 9.67 | 10.41 | 0.987 | 0.03 | -101.9 | 890 | 50 | 9.45 | |
| 1305 | | 9.56 | 10.37 | 0.993 | 0.03 | -100.1 | 762 | 50 | 9:45 | |
| 1310 | | 9.58 | 10.30 | 0.990 | 0.02 | -102.1 | 826 | 50 | 9.44 | |
| 1315 | ~3.7L | 9.60 | 10:32 | 0.993 | 0.03 | -101.9 | 816 | 50 | 9.44 | |
| | | | | | | | | | | |
| 1320 | 5 min | | | | | | | | | |

114-PIB-MW101J.

Well ID: ~~[illegible]~~

AECOM

# Low Flow Ground Water Sample Collection Record

Client: PPG Date: 12/15/2017 Time: Start 1400 am/pm
Project No: 60550261 Finish 1545 am/pm
Site Location: Garfield Avenue Group of Sites
Weather Conds: 20's, cloudy/snow Collector: S. Ravi, J. Angelone.

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 33ft c. Length of Water Column _____ (a-b)

Casing Diameter/Material 4" PVC

b. Water Table Depth 6.85ft d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: low flow w/ bladder pump

(*) pump set at 31 ft.

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI & LaMotte | 650 MDS 2020 we | 04-1109 |

31 ft

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1420 | 0 | 5.01 | 6.59 | 2.368 | 0.78 | 151.1 | 19.3 | | 6.85 | clear/green | none |
| 1425 | | 5.06 | 6.60 | 2.359 | 0.75 | 156.7 | 20.1 | | 6.83 | " | " |
| 1430 | | 6.09 | 6.60 | 2.347 | 0.79 | 162.7 | 10.93 | | 6.83 | " | " |
| 1435 | | 6.61 | 6.63 | 2.356 | 0.75 | 167.2 | 5.61 | | 6.82 | " | " |
| 1440 | | 7.69 | 6.64 | 2.362 | 0.63 | 170.8 | 4.35 | | 6.82 | " | " |
| 1445 | | 7.57 | 6.65 | 2.371 | 0.60 | 173.1 | 9.58 | | 6.82 | " | " |
| 1450 | | 7.28 | 6.66 | 2.371 | 0.63 | 176.3 | 4.27 | | 6.82 | " | " |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: _____

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-PIB-MW101I-31-0-20171215 | 1L Amber | 2 | — | SVOC | 1500 |
| " | 40ml vials | 3 | HCl | VOC | 1500 |

Comments _____

Signature Shree Ravi Date 12/15/17

114-PIB-MW101I
12/15/17

Purge Volume Calculation

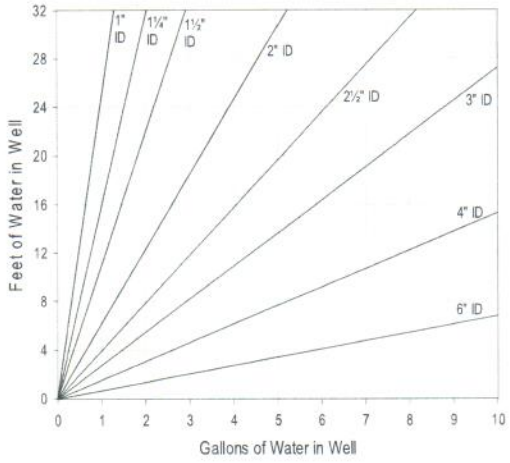


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1455 | | 7.24 | 6.66 | 2.370 | 0.60 | 178.0 | 4.38 | | 6.82 | green, clear/no odor |
| 1500 | | 7.18 | 6.66 | 2.374 | 0.58 | 179.8 | 4.97 | | 6.83 | " |

sampled

AECOM

Well ID: 133-MW6A

# Low Flow Ground Water Sample Collection Record

Client: PPG
Date: 12/15/17
Time: Start 1000 am/pm
Finish 1145 am/pm
Project No: 60550261
Site Location: Garfield Avenue Group of Sites
Weather Conds: 20s, cloudy
Collector: S Ravi, J. Angelone

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 16 ft
c. Length of Water Column _____ (a-b)
Casing Diameter/Material 2"
b. Water Table Depth 7.69 ft
d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: low flow, bladder pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% ✓ | -D.O. | 10% ✓ |
| - pH | ± 1.0 unit ✓ | - ORP | ± 10mV ✓ |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' ✓ |

c. Field Testing Equipment used:

| Make | Model | Serial Number |
|---|---|---|
| YSI | 650 MDS | |
| LaMotte | 2020 we | |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color clear/ | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1025 | 0 | 14.12 | 6.38 | 0.523 | 1.15 | -76.2 | 7.23 | ~~7~~ | ~~6.3~~ 7.8 | none | none |
| 1030 | | 14.71 | 6.50 | 0.531 | 1.33 | -103.4 | 4.88 | | 7.60 | " | " |
| 1035 | | 14.99 | 6.56 | 0.560 | 1.23 | -113.3 | 5.93 | | 7.91 | " | " |
| 1040 | | 15.12 | 6.62 | 0.640 | 1.20 | -120.0 | 4.96 | | 7.92 | " | " |
| 1045 | | 15.20 | 6.63 | 0.680 | 1.24 | -125.6 | 5.49 | | 7.95 | " | " |
| 1050 | | 15.25 | 6.63 | 0.701 | 1.25 | -127.5 | 4.97 | | 7.99 | " | " |
| 1055 | | 15.36 | 6.63 | 0.800 | 1.40 | -130.0 | 3.85 | | 7.97 | " | " |

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

(continued on back)

**3. SAMPLE COLLECTION:** Method: low flow, dedicated tubing.

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 133-MW6A-20171215 | | 1 | none | xCr/pH/ORP | 1130 |
| 133-MW6A-20171215 | | 1 | $HNO_3$ | CCPW | 1130 |

Comments

Signature Sheer Ravi
Date 12/15/17

133-MW6A
12/15/17

## Purge Volume Calculation

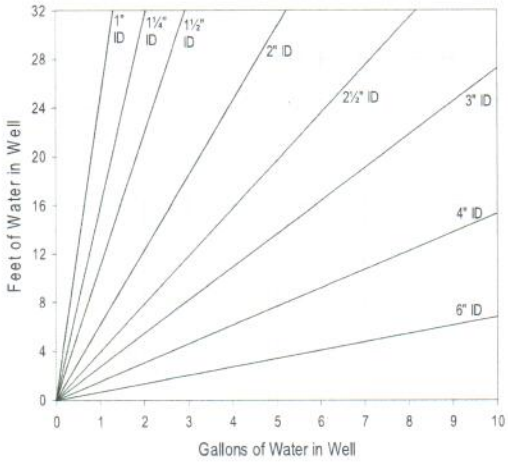


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1100 | | 15.36 | 6.64 | 0.851 | 1.41 | -131.2 | 3.71 | | 7.98 | clear/none |
| 1105 | | 15.37 | 6.64 | 0.872 | 1.46 | -135.3 | 3.75 | | 7.98 | " |
| 1110 | | 15.41 | 6.64 | 0.931 | 1.29 | -138.1 | 3.42 | | 7.98 | " |
| 1115 | | 15.43 | 6.64 | 0.966 | 1.21 | -139.5 | 3.33 | | 7.98 | " |
| 1120 | | 15.40 | 6.65 | 0.987 | 1.12 | -140.6 | 4.04 | | 7.98 | " |
| 1125 | | 15.41 | 6.66 | 1.010 | 1.08 | -141.7 | 4.86 | | 7.98 | " |
| 1130 | | | | | | | | | | sample time |

Well ID: 114-MW28I

# Low Flow Ground Water Sample Collection Record

Client: PRS Date: 12/18/17 Time: Start 925 am/pm
Project No: Finish ~~1230~~ 1145 am/pm
Site Location: Forrest St
Weather Conds: Clouds Collector(s): B. Tate, T. Patel

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 14.95 c. Length of Water Column 6.82 (a-b) Casing Diameter/Material 4"

b. Water Table Depth 8.13 d. Calculated System Volume (see back) [redacted]

**2. WELL PURGE DATA**

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 0.1 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make YSI Model 600 Serial Number 18008/2264

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (µS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 10:00 | | 7.95 | 7.08 | 1.011 | ~~5.44~~ 5.44 | 54.0 | 19.9 | 110 | 8.17 | Clear |
| 10:05 | | 14.65 | 7.05 | 1.002 | 3.91 | 12.5 | 14.2 | 110 | 8.25 | |
| 10:10 | | 14.92 | 7.04 | 1.000 | 2.52 | -24.7 | 7.55 | 110 | 8.35 | |
| 10:15 | | 14.86 | 7.01 | 1.005 | 1.89 | -36.2 | 9.14 | 100 | 8.50 | |
| 10:20 | | 14.57 | 7.01 | 1.012 | 1.61 | -47.4 | 13.4 | 100 | 8.52 | |
| 10:25 | | 14.45 | 7.00 | 1.015 | 1.67 | -52.2 | 14.3 | 100 | 8.55 | |
| 10:30 | | 14.32 | 7.00 | 1.020 | 1.46 | -51.4 | 11.60 | 100 | 8.55 | |

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.

(continued on back)

**3. SAMPLE COLLECTION:** Method: From Tube

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| Forrest-114-MW28I-20171210 VOA | 3 | HCL | VOC | 1200 |
| | 500mL | 1 | HNO3 | MTL | |
| | 500mL | 1 | None | Cr+6, pH, ORP | |
| | 1L Amber | 2 | None | SVOC | |

Comments No comments

Signature [signature] Date 12/18/17

## Purge Volume Calculation

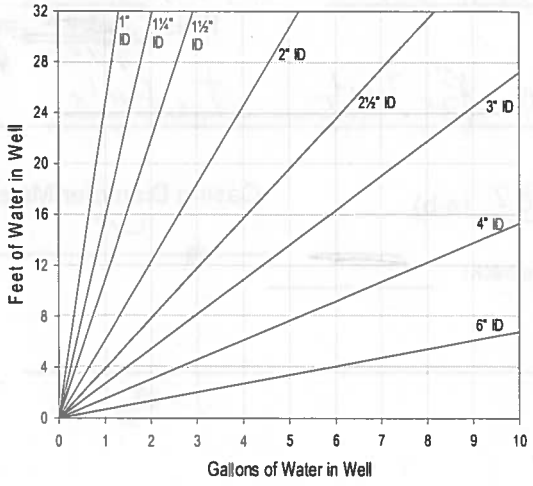


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH | Spec. Cond (µS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 10:35 | | 14.22 | 7.00 | 1.030 | 1.67 | -52.0 | 12.2 | 100 | 8.55 | Clear |
| 10:40 | | 14.17 | 6.98 | 1.039 | 1.43 | -56.0 | 13.2 | 100 | 8.55 | " |
| 10:45 | | 14.12 | 6.98 | 1.043 | 1.39 | -61.0 | 13.1 | 100 | 8.56 | " |
| 10:50 | | 14.11 | 6.98 | 1.047 | 1.54 | -64.2 | 12.2 | 100 | 8.56 | " |
| | | | | | | | | | | |
| Post 11:40 | | 11.74 | 6.97 | 1.062 | 1.17 | -75.2 | 12.5 | 100 | 8.60 | |

Well ID: 114-MW28A

# Low Flow Ground Water Sample Collection Record

1140

Client: PPG Date: 12/18/2017 Time: Start ~~1145~~ 1140 am/pm
Project No: 60550261 Finish 1345 am/pm
Site Location: Forrest St
Weather Conds: Clear, sunny Collector(s): Taj Patel

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 14.00 c. Length of Water Column 5.28 (a-b) Casing Diameter/Material 4

b. Water Table Depth 8.72 d. Calculated System Volume (see back) —

**2. WELL PURGE DATA**

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 0.1 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make YSI Model ~~YSI~~ 600XL Serial Number 18008/2244

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (µS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 12:10 | | 14.90 | 7.08 | 0.780 | 8.88 | 139.9 | 31.0 | 70 | 8.60 | Clear |
| 12:15 | | 14.59 | 6.95 | 0.780 | 8.66 | 149.8 | 38.6 | 70 | 8.61 | |
| 12:20 | | 13.74 | 6.92 | 0.781 | 8.53 | 161.5 | 22.3 | 70 | 8.70 | |
| 12:25 | | 14.37 | 6.89 | 0.773 | 8.57 | 167.1 | 14.5 | 70 | 8.72 | |
| 12:30 | | 15.06 | 6.86 | 0.771 | 8.28 | 171.4 | 11.6 | 70 | 8.74 | |
| 12:35 | | 15.37 | 6.84 | 0.772 | 7.94 | 177.0 | 11.06 | 70 | 8.75 | |
| 12:40 | | 15.54 | 6.82 | 0.765 | 7.71 | 183.1 | 7.96 | 70 | 8.75 | |

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.

(continued on back)

**3. SAMPLE COLLECTION:** Method: From Tube

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| Forrest-114-MW28A-20171218 | 40 VOA | 3 | HCL | VOC | 1309 |
| ~~Forrest-114-MW28A~~ | 1L Amber | 2 | None | SVOC | 1300 |
| | 500mL | 1 | None | Cr6 | 1300 |
| | 500mL | 1 | HNO3 | metals | 1300 |

Comments No comments

Signature Taj Patel Date 12/18/17

## Purge Volume Calculation

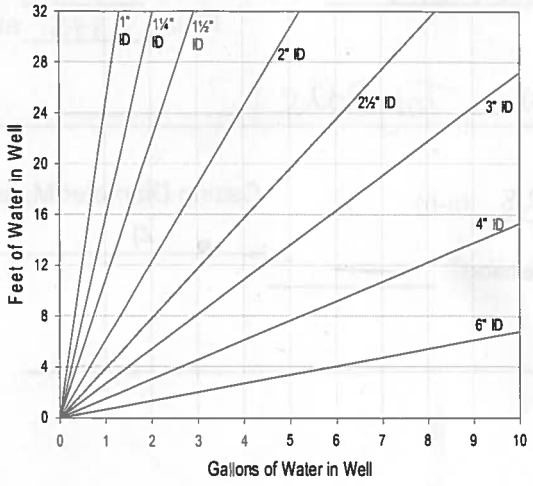


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH | Spec. Cond. (µS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 12:45 | | 15.77 | 6.82 | 0.750 | 7.45 | 190.3 | 6.13 | 70 | 8.75 | |
| 12:50 | | 15.75 | 6.81 | 0.730 | 7.30 | 193.0 | 5.08 | 70 | 8.75 | |
| | | | | | | | | | | |
| Post | | 1600 | 6.88 | 0.707 | 3.91 | 218.1 | 4.17 | 70 | 8.75 | None |

Well ID: MW-MW14A

(b)

# Low Flow Ground Water Sample Collection Record

Client: PPG Date: 12/19/17 Time: Start 10:25 am/pm
Project No: 60555061 Finish 11:00 am/pm
Site Location: Jersey City
Weather Conds: Cloudy Collector(s): Taj Patel

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 125 c. Length of Water Column 8.9 (a-b)

b. Water Table Depth 3.6 d. Calculated System Volume (see back)

Casing Diameter/Material 4" 2

**2. WELL PURGE DATA**

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 0.1 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make YSI Model 600XL Serial Number

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (µS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 10:25 | 0.630 | 13.77 | 6.90 | 2.000 | 0.41 | -71.6 | 21.8 | 126 | 5.15 | |
| 10:30 | 0.630 | 13.69 | 6.90 | 2.012 | 0.38 | -68.2 | 23.7 | 126 | 5.16 | |
| 10:35 | 0.630 | 13.60 | 6.91 | 2.015 | 0.36 | -69.0 | 17.7 | 126 | 5.18 | |
| 10:40 | 0.630 | 13.60 | 6.91 | 2.028 | 0.32 | -74.0 | 13.7 | 126 | 5.18 | |
| 10:45 | 0.630 | 13.67 | 6.91 | 2.041 | 0.31 | -78.4 | 11.97 | 126 | 5.18 | |
| 10:50 | 0.630 | 13.80 | 6.91 | 2.050 | 0.35 | -81.5 | 11.86 | 126 | 5.18 | |
| 11:00 | 0.630 | 13.93 | 6.91 | 2061 | 0.28 | -85.0 | 9.03 | 126 | 5.18 | |

(last sample)

d. Acceptance criteria pass/fail (continued on back)

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.

**3. SAMPLE COLLECTION:** Method: From Tube

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| MW-MW14A-5.0-20171219 | | | | | 10:52 |
| | 500mL | 1 | None | $Cr6^+$, PH ORP | |
| | 500mL | 1 | $HNO_3$ | Metals | |

Comments Same as purge log from 10ft interval. Drawdown measurement is from top of outer casing, which is 0.8 inches higher than inner casing.

Signature Taj Patel Date 12/19/2017

## Purge Volume Calculation

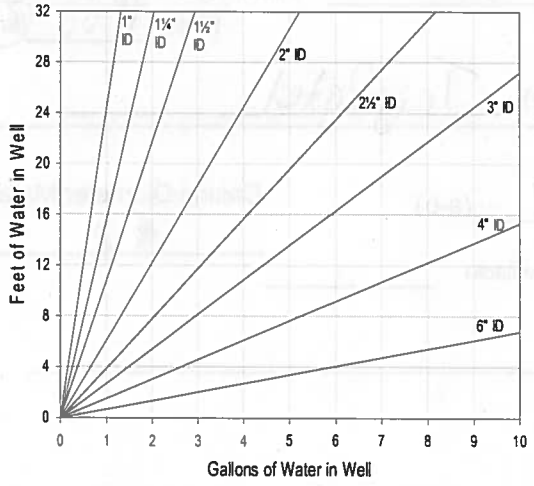


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH | Spec. Cond. (µS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Well ID: 14-MW14A

(10)

# Low Flow Ground Water Sample Collection Record

Client: PPG Date: 12/19/17 Time: Start 8:30 am/pm
Project No: 60555061 Finish 10:15 am/pm
Site Location: Jersey city
Weather Conds: Cloudy Collector(s): Taj Patel

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 12.5 c. Length of Water Column 8.9 (a-b)

Casing Diameter/Material 2

b. Water Table Depth ~~Each~~ 3.6 d. Calculated System Volume (see back)

**2. WELL PURGE DATA**

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 0.1 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make YSI Model 600 XL Serial Number

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (µS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 9:20 | 0.675 | 14.21 | 6.64 | 2.045 | 1.33 | -9.6 | 62.3 | 135 | 4.49 | mostly clear |
| 9:25 | 0.675 | 14.30 | 6.75 | 2.054 | 0.65 | -53.6 | 48.8 | 135 | 4.58 | |
| 9:30 | 0.675 | 14.22 | 6.81 | 2.067 | 0.64 | -54.7 | 40.8 | 135 | 4.63 | |
| 9:35 | 0.675 | 14.19 | 6.85 | 2.078 | 0.61 | -56.5 | 27.4 | 135 | 4.71 | |
| 9:40 | 0.675 | 14.12 | 6.87 | 2.091 | 0.54 | -60.1 | 22.9 | 135 | 4.74 | |
| 9:45 | 0.675 | 14.11 | 6.89 | 2.106 | 0.48 | -75.5 | 19.2 | 135 | 4.76 | |
| 9:50 | 0.675 | 14.11 | 6.90 | 2.122 | 0.41 | -75.0 | 11.91 | 135 | 4.81 | |

d. Acceptance criteria pass/fail (continued on back)

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☑ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.

**3. SAMPLE COLLECTION:** Method: From Tube

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 14-MW14A-10.0-20171219 | 500mL | 1 | None | $Cr6^+$, PH ORP | 10:06 |
| | 500mL | 1 | $HNO_3$ | Metals | |

Comments Drawdowns measurements are from top of outer casing which is ~~one~~ 0.8 inches higher than inner casing.

Signature Taj Patel Date 12/19/2017

## Purge Volume Calculation

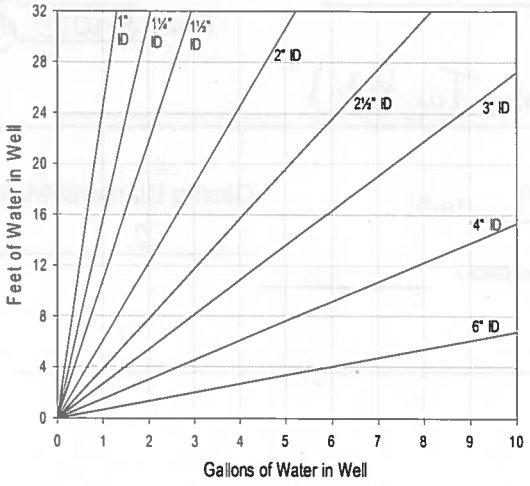


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH | Spec. Cond (µS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 9:55 | 0.675 | 14.10 | 6.91 | 2.124 | 0.49 | -85.5 | 9.41 | 135 | 4.87 | Clear |
| 10:00 | 0.675 | 14.13 | 6.91 | 2.122 | 0.42 | -79.5 | 11.33 | 135 | 4.90 | |
| 10:05 | 0.675 | 14.19 | 6.91 | 2.116 | 0.38 | -67.1 | 8.18 | 135 | 4.94 | |
| | | | | | | | | | | |
| 10:15 | 0.675 | 14.02 | 6.92 | 2.111 | 0.39 | -86.2 | 7.85 | 135 | 5.01 | |

Post

Well ID: 114_MW14B

# Low Flow Ground Water Sample Collection Record

Client: PPG Date: 12/19/17 Time: Start 900 am/pm
Project No: 60555061 Finish 1030 am/pm
Site Location: Jersey City
Weather Conds: Cloudy Collector(s): B. Tate

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 33. c. Length of Water Column 38.63 (a-b) Casing Diameter/Material 2

b. Water Table Depth 4.37 d. Calculated System Volume (see back) —

**2. WELL PURGE DATA**

a. Purge Method: Low Flow 3/4"

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 0.1 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make YSI Model 6820 Serial Number 27880/028248
La Motte 2020we 041109

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (µS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 925 | 0.5 | 9.00 | 6.25 | 1.542 | 3.20 | 260.9 | 21.0 | 100 | 4.45 | none |
| 930 | 1.0 | 9.51 | 6.30 | 1.503 | 2.21 | 259.3 | 18.9 | 100 | 4.53 | none |
| 935 | 1.5 | 10.00 | 6.40 | 1.480 | 1.36 | 266.0 | 15.4 | 100 | 4.67 | none |
| 940 | 2.0 | 10.6 | 6.44 | 1.479 | 1.10 | 270.8 | 12.4 | 100 | 4.73 | none |
| 945 | 2.4 | 10.09 | 6.47 | 1.466 | 1.04 | 270.9 | 12.6 | 100 | 4.48 | none |
| 950 | 3.0 | 10.11 | 6.49 | 1.469 | 1.00 | 270.4 | 10.64 | 100 | 4.85 | none |
| 955 | 3.5 | 10.15 | 6.50 | 1.465 | 0.97 | 268.8 | 10.23 | 100 | 4.91 | none |

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.

(continued on back)

**3. SAMPLE COLLECTION:** Method: from tubing

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 14-MW14B-20171219 | 500mL | 1 | HNO3 | mtl | |
| | 500ml | 1 | None | Cr+6 | |

Comments

Signature Date 12/19/17

## Purge Volume Calculation

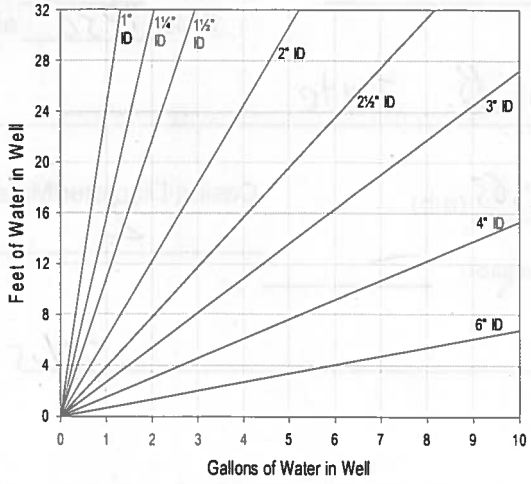


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH | Spec. Cond. (µS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 4.0 | 10.16 | 6.91 | 1.465 | 0.96 | 266.4 | 9.71 | 100 | 4.96 | none |
| | | | | | | | | | | |
| Post 1015 | 6.5 | 10.40 | 6.63 | 1.480 | 1.26 | 261.7 | 8.71 | 100 | 4.96 | none |

AECOM

Well ID: 114-PIB-MW101I

# Low Flow Ground Water Sample Collection Record

Client: PPG Date: 12/19/2017 Time: Start 13:20 am/pm
Project No: 6055061 Finish 14:20 am/pm
Site Location: Garfield Avenue Group of Sites
Weather Conds: Sunny, Windy Collector: Taij Patel

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 33 c. Length of Water Column 26.36 (a-b)

Casing Diameter/Material 4

b. Water Table Depth 6.64 d. Calculated System Volume (see back)

**2. WELL PURGE DATA**

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make YSI Model 600 XL Serial Number

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 13:25 | 0.725 | 14.94 | 6.56 | 2.199 | 1.73 | 184.0 | 4.28 | 145 | 6.74 | ← | Brown/Yellow |
| 13:30 | 0.725 | 14.92 | 6.50 | 2.207 | 1.47 | 185.7 | 4.02 | 145 | 6.75 | Green/Yellow | |
| 13:35 | 0.725 | 14.91 | 6.47 | 2.208 | 1.58 | 188.2 | 3.63 | 145 | 6.75 | | |
| 13:40 | 0.725 | 14.84 | 6.47 | 2.209 | 3.51 | 190.5 | 0.82 | 145 | 6.75 | | |
| 13:45 | 0.725 | 14.81 | 6.47 | 2.207 | 1.89 | 193.0 | 0.71 | 145 | 6.75 | | |
| 13:50 | 0.725 | 14.79 | 6.47 | 2.206 | 1.79 | 195.4 | 0.56 | 145 | 6.75 | | |
| 13:55 | 0.725 | 14.77 | 6.47 | 2.207 | 1.64 | 196.9 | 0.45 | 145 | 6.75 | | |

(continued on back) post sample →

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: From Tube

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| | VOA | | | | 13:57 |
| | Amber 1L | 1 | | | |
| | Amber 1L | 1 | | | |

Comments Depth at 26.5

Signature Taij Patel Date 12/19/2017

## Purge Volume Calculation

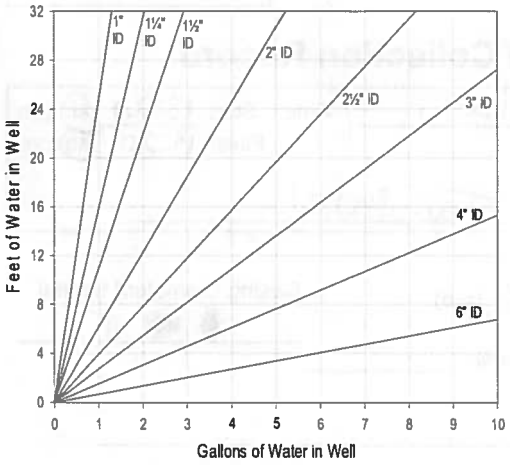


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

Post

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 14:18 | 0.725 | 14.82 | 6.47 | 2.211 | 1.05 | 208.0 | 0.25 | 145 | 6.75 | |
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AECOM

Well ID: 114-MC-PZ103

# Low Flow Ground Water Sample Collection Record

Client: PPG Date: 12/20/17 Time: Start 1030 am/pm
Project No: Finish 1350 am/pm
Site Location: Garfield Avenue Group of Sites
Weather Conds: Collector:

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 42 ft c. Length of Water Column 37.43 (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 4.57 d. Calculated System Volume (see back)

**2. WELL PURGE DATA**

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make YSI Model Lamotte 2020we Serial Number

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1105 | | [illegible] | 5.25 | 15.26 | 4.85 | -345.1 | 49.5 | 140 | 5.2 | Light Yellow | Organic-like |
| 1110 | 1.0 5.8 | [illegible] | 5.21 | 15.37 | 1.71 | -355.5 | 25 | 135 | 5.35 | Yellow-green | Organic like |
| 1115 | 1.25 | 5.83 | 5.21 | 15.39 | 1.49 | -344.3 | 610 | 135 | 5.38 | Cloudy-dark brown | Organic-like |
| 1120 | 1.50 | 5.95 | 5.17 | 15.50 | 0.84 | -346 | 965 AV | 135 | 5.39 | Yellow-green | Organic like |
| 1130 | 2.10 | 5.91 | 5.17 | 15.54 | 3.20 | -345 | 968 AV | 135 | 5.25 | " | " |
| 1140 | 2.15 | 5.91 | 5.23 | 15.48 | 0.20 | -334 | 794 AV | 135 | 4.52 | " | " |
| 1155 | " | 5.90 | 5.30 | 15.64 | 0.07 | -337 | 23 | 135 | 4.80 | " | " |

↳ NTU

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☐ | ☒ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: From Teflon Tubing

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| ① 114-MC-PZ103-20171220 | | 2 | None | SVOC | ~~1320~~ 1320 |
| ② " | | 3 | HCL | VOC | " |

Comments Screen interval 37 - 42 ft bgs. Pump set at 39.5 ft bgs. Stick issues with locking flow cell. Tubing secured and leaking issues minimized. Issues with turbidity.

Signature Date 12/20/17

Purge Volume Calculation

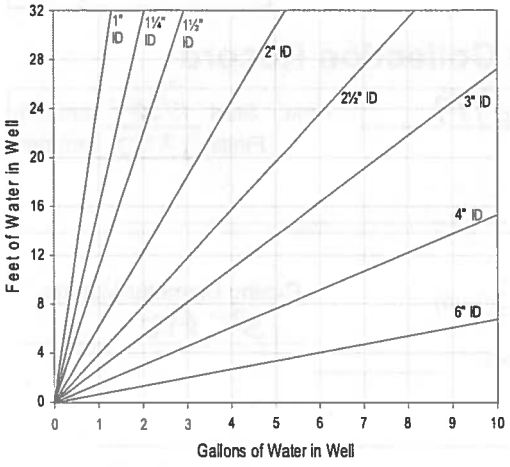


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1200 | 2.25 | 8.63 | 8.26 | 15.50 | 3.39 | -333 | 23 | 140 | 4.60 | Green-yellow - organic-like |
| 1205 | 2.35 | 8.03 | 8.30 | 15.57 | 4.13 | -331 | 25 | 140 | 4.63 | " |
| 1210 | 2.40 | 8.10 | 8.32 | 15.55 | 3.25 | -355 | 49.3 | 140 | 5.10 | " |
| 1215 | 2.45 | 9.02 | 8.20 | 15.52 | 0.76 | -339 | 26.0 | 145 | 5.20 | " |
| 1220 | 2.49 | 9.06 | 8.17 | 15.51 | 0.72 | -343 | 32.1 | 145 | 5.30 | " |
| 1225 | 2.50 | 9.29 | 8.19 | 15.46 | 0.51 | -338 | 25 | 145 | 5.15 | " |
| 1230 | 2.55 | 9.25 | 8.23 | 15.40 | -0.06 | -339 | 27.8 | 145 | 4.80 | " |
| 1235 | 2.60 | 9.25 | 8.15 | 15.50 | 0.75 | -355 | 28.0 | 145 | 5.40 | " |
| 1240 | 2.80 | 9.18 | 8.13 | 15.47 | 2.60 | -355 | 30.1 | 145 | 5.48 | " |
| 1245 | 3.0 | 9.10 | 8.11 | 15.43 | 4.70 | -355 | 31 | 145 | 5.55 | " |
| 1250 | 3.5 | 9.14 | 8.11 | 15.40 | 4.31 | -350 | 1846 AV | 145 | 5.66 | Cloudy, dark brown, slight organic like odor |
| 1255 | 4.0 | 9.16 | 8.11 | 15.36 | 3.97 | -345 | 2044 AV | 145 | 5.65 | " |
| 1300 | 4.50 | 9.11 | 8.12 | 15.29 | 2.16 | -340 | 2196 AV | 145 | 5.70 | " |
| 1305 | 4.70 | 9.05 | 8.12 | 15.26 | 0.12 | -335 | 2400 AV | 145 | 5.72 | " |
| 1310 | 4.75 | 9.18 | 8.09 | 15.28 | 0.80 | -341 | 1803 AV | 145 | 5.75 | Dark brown/black color no odor |
| 1315 | 4.85 | 9.11 | 8.08 | 15.25 | 0.57 | -342 | 1361 AV | 145 | 5.78 | |
| | | | | | | | | | | |
| 1320 | SAMPLING | | | | | | | | | |
| | | | | | | | | | | |
| Post Reading 1340 | 5.25 | 8.53 | 8.19 | 15.05 | 2.57 | -344 | 40 NTU | 145 | 5.70 | |

Well ID: MW 6C

# Low Flow Ground Water Sample Collection Record

Client: PPG | Date: 12/20/2017 | Time: Start 13:00 am/pm | Finish 14:00 am/pm
Project No: 60550261 | Interval: 57 Ft bgs
Site Location: Jersey City
Weather Conds: Cold, Sunny | Collector(s): Taij Patel

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 65 | c. Length of Water Column 59.4 (a-b) | Casing Diameter/Material 2 in

b. Water Table Depth 5.6 | d. Calculated System Volume (see back)

**2. WELL PURGE DATA**

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 0.1 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make: YSI 600XL | Model: 650 MDS | Serial Number:

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (µS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 13:00 | 550 | 12.71 | 7.13 | 1.466 | 2.53 | 192.3 | 21.6 | 110 | 5.60 | yellow/Green |
| 13:05 | 550 | 13.21 | 7.32 | 1.141 | 2.11 | 188.4 | 26.7 | 110 | 5.60 | |
| 13:10 | 550 | 13.37 | 7.32 | 1.139 | 1.88 | 188.5 | 22.6 | 110 | 5.60 | |
| 13:15 | 550 | 13.43 | 7.27 | 1.229 | 1.72 | 189.1 | 21.6 | 110 | 5.60 | |
| 13:20 | 550 | 13.36 | 7.09 | 1.677 | 1.48 | 193.9 | 11.8 | 110 | 5.60 | |
| 13:25 | 550 | 13.18 | 7.02 | 1.859 | 1.36 | 194.8 | 9.37 | 110 | 5.60 | |
| 13:30 | 550 | 13.29 | 6.98 | 1.948 | 1.47 | 194.8 | 6.58 | 110 | 5.60 | |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.

**3. SAMPLE COLLECTION:** Method: From Tube

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| MW6C-57-20171220 | | | | | 13:49 |
| | 500mL | 1 | None | | |
| | 500mL | 1 | HNO3 | | |

Comments N/A

Signature Taij Patel | Date 12/20/2017

## Purge Volume Calculation

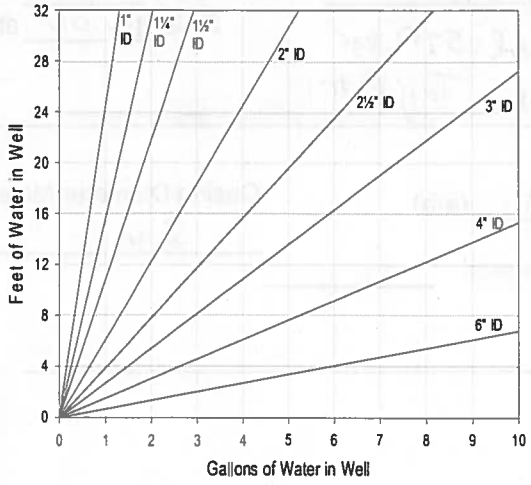


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH | Spec. Cond. (µS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 13:35 | | 13.16 | 6.97 | 1.974 | 1.03 | 194.6 | 6.62 | 110 | 5.60 | |
| 13:40 | | 13.15 | 6.97 | 1.983 | 0.91 | 194.2 | 6.56 | 110 | 5.60 | |
| 13:45 | | 13.13 | 6.97 | 1.989 | 0.81 | 193.8 | 5.67 | 110 | 5.60 | |
| | | | | | | | | | | |
| Post 13:56 | | 12.62 | 6.99 | 1.980 | 0.59 | 193.2 | 3.51 | 110 | 5.60 | |

Well ID: MW 6C

# Low Flow Ground Water Sample Collection Record

Client: PPG - Groundwater RI  Date: 12/20/2017  Time: Start 10:30 am/pm
Project No: 60550261  Finish 13:00 am/pm
Site Location: Forest St.  Interval: 62 bgs
Weather Conds: Sunny, Cold  Collector(s):

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 65  c. Length of Water Column 59.4 (a-b)  Casing Diameter/Material 2in

b. Water Table Depth 5.5  d. Calculated System Volume (see back)

**2. WELL PURGE DATA**

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 0.1 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| Make | Model | Serial Number |
|---|---|---|
| YSI 600XL | 650 MDS | |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (µS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 11:10 | 510 | 11.92 | 6.93 | 1.204 | 168.8 | 182.8 | 74.9 | 102 | 5.55 | yellow/green |
| 11:15 | 510 | 12.59 | 7.00 | 1.279 | 86.69 | 177.5 | 79.8 | 102 | 5.58 | |
| 11:20 | 500 | 12.91 | 7.03 | 1.387 | 63.56 | 180.2 | 30.0 | 100 | 5.58 | |
| 11:25 | 500 | 12.99 | 6.94 | 1.638 | 37.09 | 188.5 | 64.0 | 100 | 5.58 | |
| 11:30 | 500 | 13.10 | 6.90 | 1.779 | 25.26 | 214.6 | 51.4 | 100 | 5.58 | |
| 11:35 | 500 | 12.97 | 6.90 | 1.843 | 17.99 | 223.8 | 43.1 | 100 | 5.58 | |
| 11:40 | 500 | 13.06 | 6.89 | 1.886 | 12.30 | 224.0 | 34.9 | 100 | 5.58 | |

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

(continued on back)

If no or N/A - Explain below.

**3. SAMPLE COLLECTION:** Method: From Tube

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| MW6C-62-20171220 | | | | | 12:30 |
| | 500 mL | 1 | None | | |
| | 500 mL | 1 | HNO3 | | |

Comments: Interval between 55-65 bgs, 1st interval 57, 2nd interval 62

Signature: Tay Pates  Date: 12/20/2017

## Purge Volume Calculation

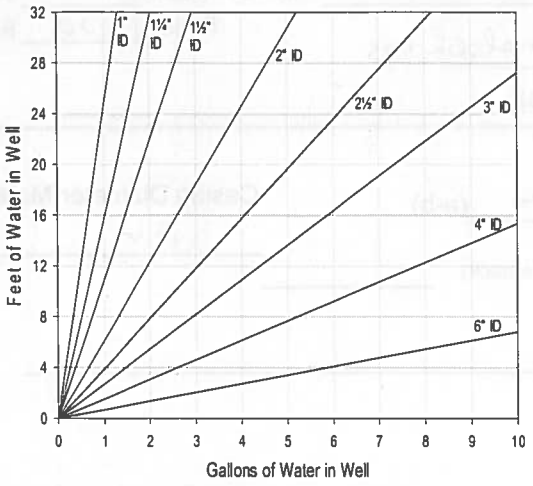


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH | Spec. Cond. (µS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 11:45 | 500 | 13.28 | 6.90 | 1.904 | 8.55 | 215.8 | 35.3 | 100 | 5.58 | yellow/green |
| 11:50 | 500 | 13.41 | 6.90 | 1.916 | 6.96 | 211.4 | 28.6 | 100 | 5.58 | |
| 11:55 | 500 | 13.39 | 6.91 | 1.923 | 6.29 | 209.5 | 27.8 | 100 | 5.58 | |
| 12:00 | 500 | 13.15 | 6.93 | 1.927 | 5.48 | 206.5 | 26.1 | 100 | 5.58 | |
| 12:05 | 500 | 13.02 | 6.93 | 1.930 | 5.17 | 204.9 | 28.2 | 100 | 5.58 | |
| 12:10 | 500 | 12.96 | 6.94 | 1.932 | 5.52 | 204.2 | 24.8 | 100 | 5.58 | |
| 12:15 | 500 | 13.18 | 6.94 | 1.937 | 5.60 | 203.6 | 19.9 | 100 | 5.58 | |
| 12:20 | 500 | 13.54 | 6.93 | 1.943 | 5.38 | 202.7 | 16.6 | 100 | 5.58 | |
| 12:25 | 500 | 13.58 | 6.92 | 1.951 | 5.24 | 202.1 | 15.0 | 100 | 5.58 | |
| | | | | | | | | | | |
| Post 12:42 | 500 | 13.17 | 6.94 | 1.974 | 3.80 | 199.2 | 12.37 | 100 | 5.58 | |

Well ID: 114-PIA-MW101I

# Low Flow Ground Water Sample Collection Record

Client: PPG Date: Dec 21, 2017 Time: Start 0900 am/pm
Project No: Interval: 32 ft bgs Finish ____ am/pm
Site Location: Jeacey City
Weather Conds: Sunny - Cold Collector(s): Noushin Fallahpour, Taij Patel

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 35 c. Length of Water Column [illegible] (a-b) Casing Diameter/Material 4"

b. Water Table Depth 6.46 d. Calculated System Volume (see back) ____

**2. WELL PURGE DATA**

a. Purge Method: lowflow

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 0.1 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

bladder pump
Teflon

c. Field Testing Equipment used: Make YSI Model 600XO Serial Number

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (µS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 9:20 | | 14.14 | 6.85 | 1.092 | 2.04 | 209.0 | 2013 | 125 | 6.83 | clear/None |
| 9:25 | | 14.43 | 6.86 | 1.092 | 1.77 | 204.9 | 725 | 125 | 6.83 | clear/None |
| 9:30 | | 14.44 | 6.87 | 1.090 | 2.48 | 201.2 | 31.1 | 125 | 6.83 | clear/None |
| 9:35 | | 14.48 | 6.87 | 1.090 | 2.26 | 199.2 | 8.51 | 125 | 6.83 | clear/None |
| 9:40 | | 14.49 | 6.87 | 1.089 | 1.45 | 198.7 | 9.21 | 125 | 6.83 | clear/None |
| 9:45 | | 14.52 | 6.86 | 1.088 | 1.95 | 198.0 | 8.64 | 125 | 6.88 | clear/None |
| 9:50 | | 14.43 | 6.85 | 1.087 | 1.69 | 197.2 | 8.27 | 125 | 6.88 | clear/None |

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

(continued on back)

If no or N/A - Explain below.

**3. SAMPLE COLLECTION:** Method: From Tube

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-PIA-MW101I-32.0-20171221 | Amber | 2 | None | SVOCs | 10:45 |
| 114-PIA-MW101I-32.0-20171221 | 40ML-clear | 3 | HCl | VOCs | 10:45 |

Comments

Signature Noushin Fallahpour Date 21, Dec, 2017

## Purge Volume Calculation

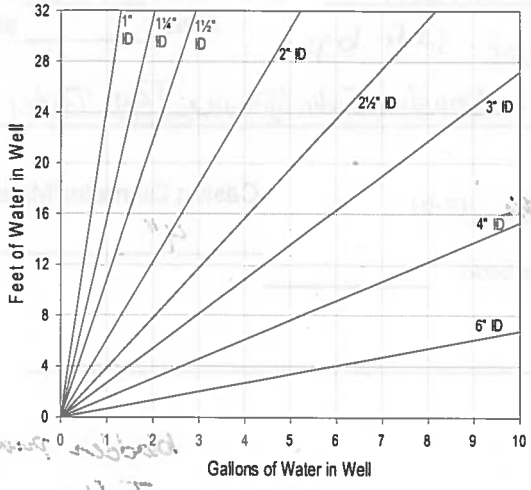


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH | Spec. Cond (µS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 9:55 | | 14.41 | 6.83 | 1.087 | 2.03 | 197.3 | 8.14 | 125 | 6.88 | clear/None |
| 10:00 | | 14.40 | 6.85 | 1.086 | 1.17 | 196.7 | 7.53 | 125 | 6.88 | clear/None |
| 10:05 | | 14.42 | 6.88 | 1.086 | 1.46 | 195.9 | 7.36 | 125 | 6.88 | clear/None |
| 10:10 | | 14.46 | 6.86 | 1.086 | 1.03 | 195.7 | 7.81 | 125 | 6.90 | clear/None |
| 10:15 | | 14.48 | 6.87 | 1.086 | 1.79 | 195.6 | 8.30 | 125 | 6.90 | clear/None |
| 10:20 | | 14.56 | 6.87 | 1.086 | 0.94 | 194.8 | 8.05 | 125 | 6.90 | clear/None |
| 10:25 | | 14.58 | 6.86 | 1.086 | 1.35 | 194.7 | 7.63 | 125 | 6.90 | clear/None |
| 10:30 | | 14.60 | 6.86 | 1.086 | 1.06 | 194.3 | 7.09 | 125 | 6.90 | clear/None |
| 10:50 | | 14.61 | 6.87 | 1.086 | 1.21 | 194.5 | 7.21 | 125 | 6.90 | clear/None |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | |

Well ID: 114-P1A_MW101I

# Low Flow Ground Water Sample Collection Record

Client: PPG Date: 21 Dec 2017 Time: Start 10:50 am/pm
Project No: Interval : 27 ft bgs Finish _____ am/pm
Site Location: Jersey City
Weather Conds: Sunny - Cold Collector(s): Noushin Fallahpour, Taij Patel

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 35 c. Length of Water Column [illegible] (a-b) Casing Diameter/Material 4" PVC

b. Water Table Depth 6.46 d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: low flow bladder pump

b. Acceptance Criteria defined (see workplan) Teflon

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 0.1 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make YSI Model 600XL Serial Number

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (µS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 10:55 | | 14.77 | 6.92 | 1.080 | 1.18 | 194.8 | 5.05 | 125 | 6.93 | Clear/None |
| 11:00 | | 14.77 | 6.90 | 1.079 | 1.07 | 194.4 | 4.31 | 125 | 6.93 | Yellowish/None |
| 11:05 | | 14.94 | 6.89 | 1.079 | 0.89 | 192.5 | 3.46 | 125 | 6.93 | Yellowish/None |
| 11:10 | | 14.96 | 6.87 | 1.078 | 0.93 | 191.2 | 3.12 | 125 | 6.93 | Yellowish/None |
| 11:15 | | 14.85 | 6.88 | 1.080 | 0.75 | 189.8 | 3.05 | 125 | 6.95 | Yellowish/None |
| 11:20 | | 14.89 | 6.88 | 1.080 | 0.82 | 189.5 | 2.96 | 125 | 6.95 | Yellowish/None |
| 11:25 | | 14.90 | 6.88 | 1.079 | 0.81 | 188.7 | 2.86 | 125 | 6.95 | Yellowish/None |

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

(continued on back)

If no or N/A - Explain below.

_____

**3. SAMPLE COLLECTION:** Method: From Tube

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-P1A-MW101I-27.0-20171221 | | 2 | None | SVOCs | [illegible] |
| 114-P1A-MW101I-27.0-20171221 | | 3 | HCl | VOCs | [illegible] 11:45 |

Comments _____

Signature Noushin Fallahpour Date Dec 21, 2017

## Purge Volume Calculation

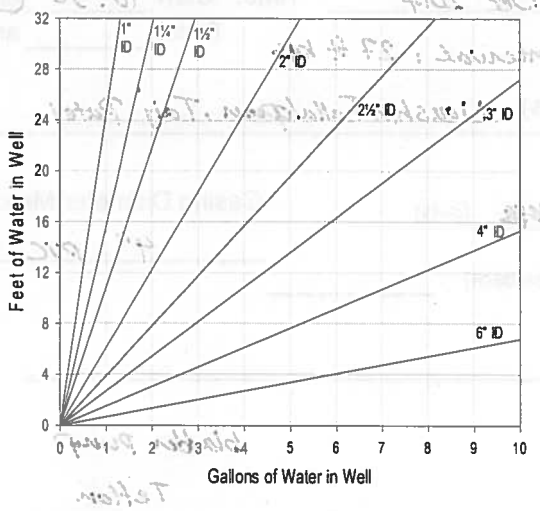


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| | Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH | Spec. Cond (µS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Post | 11:50 | | 14.92 | 6.86 | 1.078 | 0.74 | 188.2 | 2.93 | 125 | 6.95 | Yellowish / None |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | |

correct sample depth =
50 ft below top of casing.

Well ID: 114-P1-1RM27D

# Low Flow Ground Water Sample Collection Record

Client: PPG | Date: 12/21/2017 | Time: Start 9:50 am/pm
Project No: | Interval: 62 ft bgs | Finish ____ am/pm
Site Location: Jersey City, NJ
Weather Conds: Sunny | Collector(s): Taj Patel, Noushin Fallapour

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 65 c. Length of Water Column 58.8 (a-b)

b. Water Table Depth 62 d. Calculated System Volume (see back) ____

Casing Diameter/Material: 4 in

**2. WELL PURGE DATA**

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 0.1 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make: YSI 6280 Model: Serial Number:

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (µS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 10:50 | | 6.38 | 9.52 | 1.614 | 3.48 | 66.5 | 14.30 | 110 | 6.38 | yellow/brown |
| 10:55 | | 6.47 | 9.65 | 1.622 | 2.97 | 58.6 | 8.50 | 110 | 6.40 | |
| ~~11:00~~ | | 6.17 | 9.72 | 1.621 | 2.69 | 54.2 | 5.88 | 110 | 6.40 | |
| 11:05 | | 6.56 | 9.76 | 1.614 | 6.89 | 50.0 | 8.29 | 110 | 6.40 | |
| 11:10 | | 6.95 | 9.79 | 1.618 | 2.11 | 96.1 | 7.23 | 110 | 6.40 | |
| 11:15 | | 6.77 | 9.81 | 1.621 | 2.17 | 43.6 | 5.22 | 110 | 6.40 | |
| 11:20 | | 7.06 | 9.81 | 1.615 | 3.32 | 41.8 | 3.96 | 110 | 6.40 | |

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.

(continued on back)

**3. SAMPLE COLLECTION:** Method: From Tube

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-P1-1RM-27D | | | | | 11:35 |
| | Amber 1L | 2 | None | SVOC | |
| | 500mL | 2 | None, HNO3 | Cr6+, TAL Metals | |
| | 40mL | 3 | HCL | VOC | |

Comments

Signature: Taj Patel Date: 12/21/2017

## Purge Volume Calculation

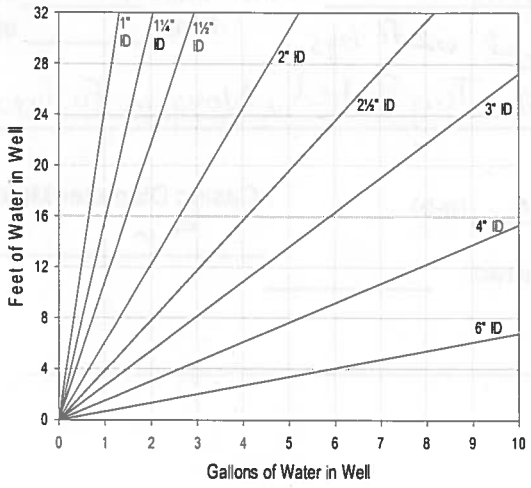


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH | Spec. Cond. (µS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 11:25 | | 7.05 | 9.83 | 1.620 | 3.59 | 39.9 | 3.74 | 110 | 6.40 | |
| 11:30 | | 6.87 | 9.84 | 1.625 | 3.78 | 38.5 | 5.02 | 110 | 6.40 | |
| ~~11:35~~ | | | | | | | | | | |
| 12:05 | | 7.60 | 9.70 | 1.650 | 7.50 | 36.0 | 7.81 | 110 | 6.40 | |

Post

correct sample depth = 45 ft below top of casing.

Well ID: 27D

# Low Flow Ground Water Sample Collection Record

Client: PPG Date: 12/21/2017 Time: Start _____ am/pm
Project No: _____ Interval: 57 ft bgs Finish _____ am/pm
Site Location: Jersey City, NJ
Weather Conds: Sunny Collector(s): Taij Patel

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 65 c. Length of Water Column 58.6 (a-b)

Casing Diameter/Material 4in

b. Water Table Depth 6.4 d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 0.1 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make YST Model 6280 Serial Number _____

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH 7.19 | Spec. Cond. (µS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 12:25 | | [illegible] | 9.80 | 1.613 | 10.41 | 37.9 | 2.72 | 110 | 6.40 | yellow/green |
| 12:30 | | 7.53 | 9.80 | 1.605 | 6.17 | 37.1 | 1.84 | 110 | 6.40 | |
| 12:35 | | 7.34 | 9.82 | 1.605 | 6.38 | 35.6 | 2.61 | 110 | 6.40 | |
| 12:40 | | 7.38 | 9.82 | 1.606 | 6.07 | 34.9 | 2.80 | 110 | 6.40 | |
| 12:45 | | 7.08 | 9.83 | 1.608 | 6.60 | 33.8 | 2.97 | 110 | 6.40 | |
| 12:50 | | 7.04 | 9.83 | 1.608 | 6.34 | 33.6 | 3.40 | 110 | 6.40 | |
| 13:20 (last sample) | | 7.43 | 9.81 | 1.600 | 11.30 | 34.0 | 3.66 | 110 | 6.40 | |

d. Acceptance criteria pass/fail (continued on back)

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☑ | ☐ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.

_____

**3. SAMPLE COLLECTION:** Method: From Tube

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-P1-1RM-27D | | | | | 1:00 |
| | Amber 1L | 2 | None | SVOC | |
| | 500 mL | 2 | None, HNO3 | Cr6+, TAL Metals | |
| | 40 mL | 3 | HCL | VOC | |

Comments _____

Signature Taij Patel Date 12/21/2017

## Purge Volume Calculation

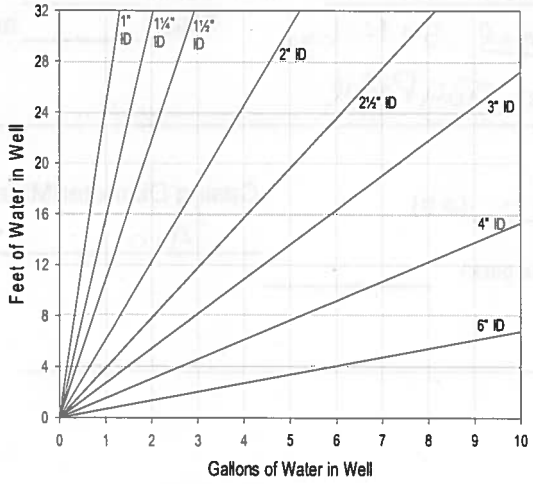


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH | Spec. Cond. (µS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

correct sample depth =
35 ft below top of casing.

AECOM

Well ID: 114-P1-IRM-27D

# Low Flow Ground Water Sample Collection Record

Client: PPG
Project No: 60550261
Site Location: Garfield Avenue Group of Sites
Weather Conds:

Date: 12/22/2017
Interval: 47ft
Collector: Taij Patel

Time: Start 11:10 am/pm
Finish _____ am/pm

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 65
b. Water Table Depth 6.4
c. Length of Water Column 58.6 (a-b)
d. Calculated System Volume (see back) _____

Casing Diameter/Material: 4in

**2. WELL PURGE DATA**

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ±1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make: YSI 556 Model: MPS Serial Number: _____

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 11:10 | | 12.92 | 8.77 | 1.911 | 0.65 | 106.0 | 5.45 | 128 | 6.4 | yellow/green | |
| 11:15 | | 13.01 | 8.74 | 1.861 | 0.46 | 104.3 | 4.10 | 128 | 6.4 | | |
| 11:20 | | 13.20 | 8.72 | 1.819 | 0.41 | 102.0 | 3.10 | 128 | 6.4 | | |
| 11:25 | | 13.23 | 8.71 | 1.810 | 0.46 | 99.9 | 2.48 | 128 | 6.4 | | |
| 11:30 | | 13.17 | 8.71 | 1.804 | 0.43 | 98.1 | 2.45 | 128 | 6.4 | | |
| 11:35 | | 13.25 | 8.70 | 1.798 | 0.43 | 95.9 | 2.01 | 128 | 6.4 | | |
| 11:55 | | 13.51 | 8.71 | 1.762 | 0.40 | 87.6 | 2.41 | 128 | 6.4 | | |

Post

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

(continued on back)

**3. SAMPLE COLLECTION:** Method: From Tube

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-P1-IRM-27D-47.0-20171222 | | | | | 11:40 |
| | Amber 1L | 2 | None | SVOC | |
| | 500mL | 2 | None, HNO3 | Cr6+, TAL metals | |
| | 40mL vial | 3 | HCL | VOC | |

Comments _____

Signature: Taij Patel Date: 12/22/2017

AECOM

correct sample depth = 40 ft below top of casing.

Well ID: 114-PI-IRM-27D

# Low Flow Ground Water Sample Collection Record

Client: PPG | Date: 12/22/2017 | Time: Start 9:40 am/pm
Project No: 60550261 | Interval: 52 ft bgs | Finish 11:05 am/pm
Site Location: Garfield Avenue Group of Sites
Weather Conds: Cloudy | Collector: Taij Patel

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 65 c. Length of Water Column 58.6 (a-b) Casing Diameter/Material 4in

b. Water Table Depth 6.4 d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make YSI Model 556 Serial Number _____

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9:40 | | 13.37 | 8.68 | 1.852 | 1.07 | 205.0 | 15.5 | 128 | 6.4 | yellow/brown | |
| 9:45 | | 13.22 | 8.72 | 1.878 | 1.04 | 192.1 | 12.4 | 128 | 6.4 | | |
| 9:50 | | 13.46 | 8.74 | 1.881 | 0.81 | 195.0 | 10.05 | 128 | 6.4 | | |
| 9:55 | | 13.37 | 8.75 | 1.891 | 0.70 | 185.2 | 8.97 | 128 | 6.4 | | |
| 10:00 | | 13.37 | 8.75 | 1.900 | 0.65 | 168.5 | 5.86 | 128 | 6.4 | | |
| 10:05 | | 13.32 | 8.76 | 1.896 | 0.61 | 161.2 | 8.17 | 128 | 6.4 | | |
| 10:10 | | 13.25 | 8.76 | 1.906 | 0.59 | 151.9 | 6.63 | 128 | 6.4 | | |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: From Tube

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 4-PI-IRM-27D-52.0-20171222 | | | | | 10:20 |
| | Amber 1L | 2 | None | SVOC | |
| | 500 mL | 2 | None, HNO3 | TAL Metals, Cr6+ | |
| | 40 mL vial | 3 | HCL | VOC | |

Comments: 2nd day for well 114-PI-IRM-27D. Shallowest 2 intervals (52ft, 47 ft bg).

Signature: Taij Patel Date: 12/22/2017

## Purge Volume Calculation

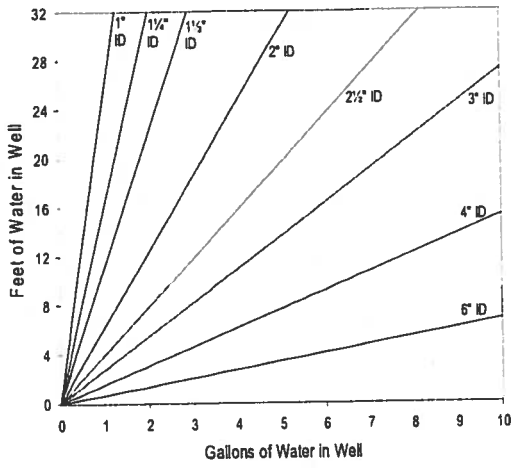


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 10:15 | | 13.44 | 8.76 | 1.899 | 0.56 | 145.7 | 6.71 | 128 | 6.4 | yellow / green |
| 10:20 | | 13.55 | 8.76 | 1.902 | 0.55 | 142.0 | 6.29 | 128 | 6.4 | |
| | | | | | | | | | | |
| Post 11:05 | | 12.07 | 8.77 | 1.909 | 0.72 | 108.0 | 5.01 | 128 | 6.4 | |

P1-IRM-5I-37.5

AECOM

Well ID: 114-~~MW14B~~

# Low Flow Ground Water Sample Collection Record

Client: PPG Date: 12/26/2017 Time: Start 11:30 am/pm
Project No: Finish 12:20 am/pm
Site Location: Garfield Avenue Group of Sites
Weather Conds: Collector: J. Angelone B. Murphy

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 42.9 c. Length of Water Column 35.5 (a-b) Casing Diameter/Material 4" PVC

b. Water Table Depth 9.41 d. Calculated System Volume (see back) 21.8638

**2. WELL PURGE DATA**

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make YSI Model 650 MDS Serial Number 11E 101108

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 11:30 | | 9.90 | 7.37 | 3.765 | 3.90 | 191.3 | 105.9 | 115 | 9.6 | green | murky |
| 11:35 | | 9.96 | 7.32 | 3.962 | 2.24 | 191.7 | 65.9 | 115 | 1.5 | green | |
| 11:40 | | 9.91 | 7.32 | 3.999 | 1.94 | 191.6 | 58.9 | 115 | 9.3 | green | |
| 11:45 | | 10.0 | 7.30 | 3.996 | 1.03 | 196.6 | 58.7 | 115 | 9.8 | green | |
| 11:50 | | 10.03 | 7.28 | 3.999 | 1.05 | 190.0 | 50.9 | 115 | 10.0 | green | |
| 11:55 | | 10.00 | 7.28 | 4.000 | 0.54 | 186.6 | 50.8 | 115 | 10.0 | green | |
| 12:0 | | 10.20 | 7.23 | 3.999 | 0.81 | 186.6 | 50.8 | 115 | 10.0 | green | |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method:

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-P1-IRM-5I-37.5-20171226 | 24 Liter | 1 | — | Silica | 12:20 |
| | plastic | 500ml | — | Cr+6 | |
| | plastic | 500ml | | Total Metals | |
| | Vials | 3 | HCl | VOC | |

Comments

Signature Date 12/26/2017

114-P1-IRM-ST-37.5

12/26/2017.

## Purge Volume Calculation

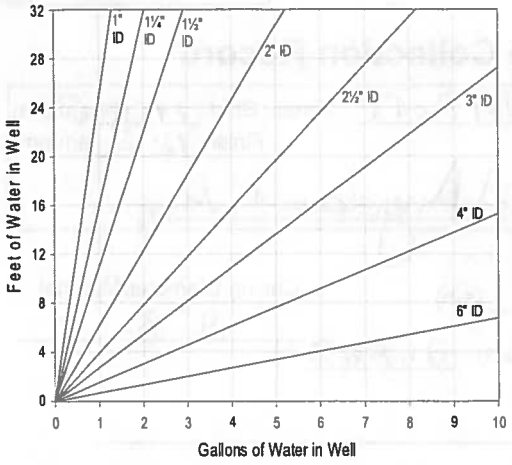


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 12:15 | | 10.21 | 7.29 | 3.958 | 0.83 | 196.5 | 49.9 | 115 | 10.0 | |
| 12:25 | | 10.21 | 7.29 | 3.998 | 0.84 | 186.6 | 49.5 | 115 | 10.0 | |

AECOM

Well ID: 14-~~IRM-PI~~ PI-IRM-5I-32.5

# Low Flow Ground Water Sample Collection Record

Client: PPG Date: 12/26/2017 Time: Start 12:35 am/pm
Project No: Finish ____ am/pm
Site Location: Garfield Avenue Group of Sites
Weather Conds: ____ Collector: ____

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 42.9 c. Length of Water Column 32.9 (a-b)

Casing Diameter/Material 4.0"

b. Water Table Depth 10.0 d. Calculated System Volume (see back) ____

**2. WELL PURGE DATA**

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make Model Serial Number

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 12:30 | | 13.65 | 7.27 | 3.877 | 2.70 | -112.0 | 30.3 | 115 | 10.0 | light green | |
| 12:35 | | 13.61 | 7.26 | 3.874 | 1.43 | -113.5 | 28.5 | 115 | 10.0 | | |
| 12:40 | | 13.70 | 7.27 | 3.872 | 0.83 | -114.0 | 28.1 | 115 | 10.0 | | |
| 12:45 | | 13.74 | 7.28 | 3.871 | 0.56 | -114.1 | 17.6 | 115 | 10.0 | | |
| 12:50 | | 13.71 | 7.27 | 3.869 | 0.47 | -113.8 | 14.8 | 115 | 10.0 | | |
| 12:55 | | 13.70 | 7.27 | 3.876 | 0.23 | -116.3 | 14.5 | 115 | 10.0 | | |
| 13:00 | | 13.74 | 7.27 | 3.878 | 0.28 | -116.1 | 13.6 | 115 | 10.0 | | |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: ____

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 14-PI-IRM-5I-32.5-20171226 | | 3 | Vials | HCl | VOC | 13:15 |
| | | 1 | 500 ml | HNO3 | TAL Metals | |
| | | 1 | 500 ml | — | Cr+6 | |
| | | 2 | 1 Liter Amber | — | SVOC | |

Comments ____

Signature ____ Date 12/26/2017

AECOM

Low Flow Groundwater Sample Collection Record

114-P1-IRM-5I-32.5

12/26/2017.

## Purge Volume Calculation

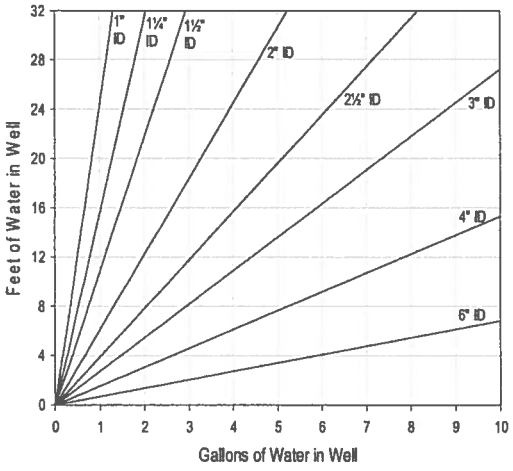


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 13:05 | | 13.75 | 7.27 | 3.577 | 0.27 | -116.2 | 13.4 | 115 | 10.00 | Light grey - clear |
| 13:10 | | 13.75 | 7.27 | 3.576 | 0.22 | -111.1 | 13.4 | 115 | 10.00 | |
| 13:20 | | 13.12 | 7.34 | 3.876 | 0.26 | -97.3 | 13.5 | 115 | 10.00 | |

post

AECOM

Well ID: 114-MW-IRM-5I-27.5

# Low Flow Ground Water Sample Collection Record

Client: PPG
Project No: 60502611
Site Location: Garfield Avenue Group of Sites
Weather Conds:
Date: 12/27/2017
Time: Start 10:00 am/pm
Finish 11:20 am/pm
Collector: Brendan Murphy

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 40 c. Length of Water Column 30.4 (a-b) Casing Diameter/Material 4.0"
   b. Water Table Depth 9.6 d. Calculated System Volume (see back) 19.845

2. **WELL PURGE DATA**
   a. Purge Method: Low Flow
   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used: Make: YSI 600XL Model: 650 MDS Serial Number: 11E101108

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10:00 | ~~13.35~~ | 13.35 | 7.02 | 3.586 | 4.80 | 226 | 18.9 | 110 | 10.0 | light yellow/green | |
| 10:05 | ~~14.10~~ | 14.10 | 7.12 | 3.654 | 3.76 | 207.7 | 18.4 | 110 | 10.0 | light yellow-green | |
| 10:10 | | 14.71 | 7.42 | 3.689 | 3.20 | 179.4 | 15.2 | 110 | 10.0 | light yellow/green | |
| 10:15 | | 14.72 | 7.46 | 3.688 | 3.09 | 178.3 | 25.6 | 110 | 10.0 | light yellow | |
| 10:20 | | 14.72 | 7.44 | 3.70 | 2.51 | 178.8 | 21.2 | 110 | 10.0 | light yellow | |
| 10:30 | | 14.73 | 7.48 | 3.687 | 2.47 | 171.6 | 24.0 | 110 | 10.0 | light yellow | |
| 10:35 | | 14.73 | 7.48 | 3.686 | 1.04 | 171.6 | 21.1 | 110 | 10.0 | light yellow | |

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

(continued on back)

3. **SAMPLE COLLECTION:** Method:

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW-IRM-5I-27.5 | 3 Vial | glass | HCl | VOC | 11:00 |
| | 1 500 ml | plastic | $HNO_3$ | TAL Metals | 11:00 |
| | 1 500mg/l | plastic | — | Cr+6 | |
| | 2 1 Liter | Amber | — | SVOC | |

Comments

Signature: Brendan Murphy Date: 12/27/2017

## Purge Volume Calculation

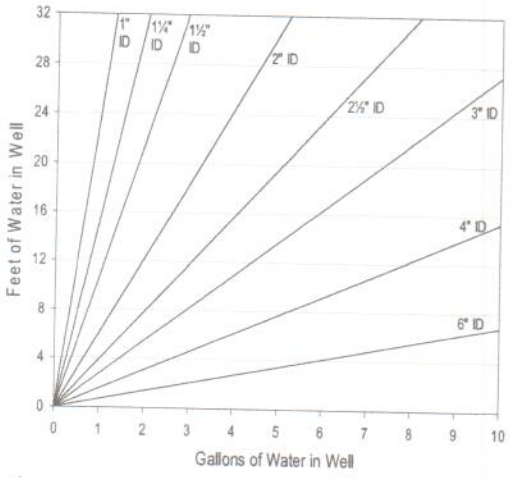


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 10:40 | | 14.73 | 7.48 | 3.686 | ~~21.20~~ 0.79 | 171.6 | 21.2 | 110 | 10.0 | light green |
| 10:45 | | 14.78 | 7.49 | 3.687 | ~~15.10~~ 0.14 | 155.2 | 15.1 | 110 | 10.0 | light green - |
| 10:50 | | 14.80 | 7.49 | 3.686 | 0.78 | 158 | 15.1 | 110 | 10.5 | light yellow |
| 10:55 | | 14.78 | 7.87 | 3.6[illegible] | 0.78 | ~~350~~ 158 | 26.9 | 110 | 10.0 | light yellow |

PI-IRM-5I-225

AECOM

Well ID: 114-MW14A

# Low Flow Ground Water Sample Collection Record

Client: PPG
Project No: 60550261
Site Location: Garfield Avenue Group of Sites
Weather Conds:
Date: 12/27/2017
Time: Start 11:30 am/pm
Finish 12:15 am/pm
Collector: J. Angelucci

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 40
c. Length of Water Column ~~100~~ 30.0 (BW) (a-b)
Casing Diameter/Material 4.0"
b. Water Table Depth 10.0
d. Calculated System Volume (see back) 19.58

**2. WELL PURGE DATA**

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make YSI 600 XL Model 650 MDS Serial Number 11 E101108

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 11:30 | | 12.69 | 7.86 | 3.681 | 5.21 | -94.1 | 26.1 | 110 | 10.0 | light yellow | |
| 11:35 | | 12.86 | 7.91 | 3.308 | 4.95 | -37.1 | 21.4 | 110 | 10.0 | light yellow | |
| 11:40 | | 13.15 | 8.03 | 3.189 | 3.10 | -41.8 | 26.6 | 110 | 10.0 | light yellow | |
| 11:45 | | 13.16 | 8.03 | 3.211 | 2.87 | -41.5 | 29.7 | 110 | 10.0 | light yellow | |
| 11:50 | | 14.14 | 8.05 | 3.210 | 2.91 | -41.5 | 26.4 | 110 | 10.0 | light yellow | |
| 11:55 | | 14.17 | 8.03 | 3.311 | 1.09 | -36.2 | 28.4 | 110 | 10.0 | light yellow | |
| 12:00 | | 14.15 | 8.03 | 3.312 | 1.02 | -36.1 | 26.2 | 110 | 10.0 | light yellow | |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method:

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-PI-IRM-5I-122.5-20171226 | 3 vial | glass | HCl | VOC | 12:10 |
| | 1 500ml | plastic | HNO3 | TAL Metals | |
| | 1 500ml | plastic | — | Cr+6 | |
| | 2 1 liter | amber | — | SVOC | |

Comments

Signature [signature] Date 12/27/2017

Purge Volume Calculation

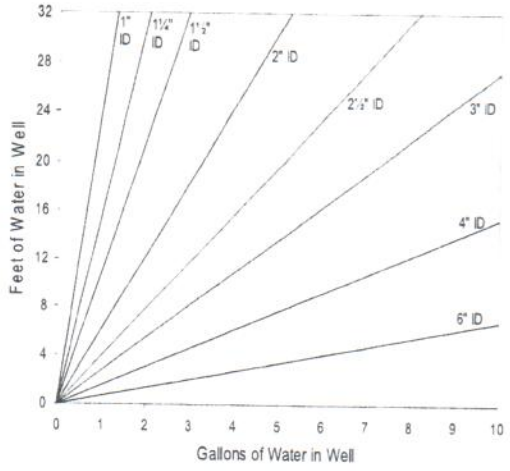


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1205 | | 14.15 | 8.04 | 3.371 | 0.92 | 36.2 | 19.9 | 110 | 10.0 | light yellow |
| post 1225 | | 14.53 | 7.94 | 3.342 | 0.90 | 56.4 | 19.8 | 110 | 10.0 | light yellow |

Well ID: 114-PIC-MW101I

AECOM

# Low Flow Ground Water Sample Collection Record

Client: PPG Date: 1/11/2018 Time: Start 10:00 am/pm
Project No: Finish 11:50 am/pm
Site Location: Garfield Avenue Group of Sites
Weather Conds: 36°-48°F Partly Cloudy Collector: B Murphy

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 35' c. Length of Water Column 28.91' (a-b) Casing Diameter/Material 4.0"

b. Water Table Depth 6.09 d. Calculated System Volume (see back) 18.87 gal

**2. WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make YSI Model 6920 Serial Number Probe 5599 Handset 3250

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10:10 | | 14.26 | 8.49 | 3.126 | 1.49 | 198.8 | 1021 | 113 | 6.02 | cloudy light brown | — |
| 10:15 | | 14.13 | 8.50 | 3.125 | 1.49 | 199.0 | 1032 | 113 | 6.02 | cloudy light brown | — |
| 10:20 | | 14.14 | 8.48 | 3.124 | 1.35 | 198.6 | 1014 | 113 | 6.02 | Cloudy light brown | — |
| 10:25 | | 13.94 | 8.54 | 3.128 | 1.65 | 191.9 | 896.3 | 113 | 6.02 | slightly cloudy light brown | — |
| 10:30 | | 13.99 | 8.55 | 3.098 | 0.98 | 190.0 | 537.4 | 113 | 6.04 | Slightly cloudy | light brown — |
| 10:35 | | 14.57 | 8.59 | 3.091 | 0.82 | 188.3 | 210.3 | 113 | 6.04 | Slightly cloudy | light brown — |
| 10:40 | | 14.58 | 8.59 | 3.092 | 0.80 | 186.8 | 166.9 | 113 | 6.04 | Slightly cloudy | light brown — |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: dedicated tubing

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-PIC-MW101I-20180111 | | 2 | 1 Ltr Amber | None | SVOC | 11:50 |
| | | 3 | glass vial | HCl | VOC | |

Comments

Signature B Murphy Date 1/11/2018

## Purge Volume Calculation

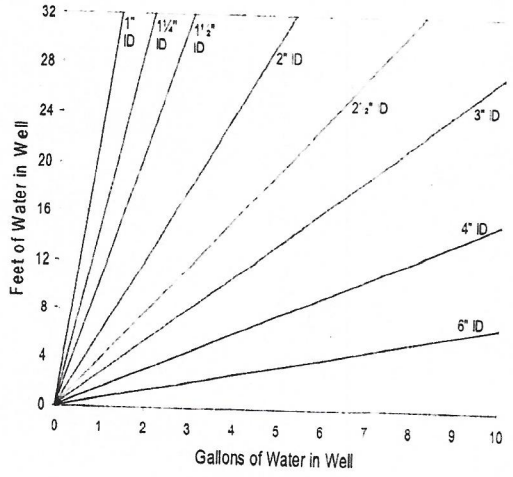


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 10:45 | | 14.65 | 8.63 | 3.085 | 0.88 | 181.7 | 146.0 | 113 | 6.04 | light brown – |
| 10:50 | | 14.69 | 8.66 | 3.084 | 0.85 | 181.4 | 133.2 | 113 | 6.04 | light brown – |
| 10:55 | | 14.70 | 8.69 | 3.083 | 0.84 | 180.2 | 123.6 | 113 | 6.04 | light brown – |
| 11:00 | | 14.71 | 8.68 | 3.085 | 0.85 | 180.3 | 88.1 | 113 | 6.04 | light brown – |
| 11:05 | | 14.71 | 8.67 | 3.084 | 0.86 | 181.9 | 86.2 | 113 | 6.04 | light brown – |
| 11:10 | | 14.76 | 8.74 | 3.087 | 0.87 | 184.1 | 63.1 | 113 | 6.04 | light brown – |
| 11:15 | | 14.78 | 8.71 | 3.088 | 0.88 | 184.4 | 68.2 | 113 | 6.04 | light brown – |
| 11:20 | | 14.80 | 8.71 | 3.089 | 0.88 | 182.1 | 40.3 | 105 | 6.04 | light brown – |
| 11:25 | | 14.81 | 8.72 | 3.086 | 0.86 | 182.4 | 34.1 | 105 | 6.04 | light brown – |
| 11:30 | | 14.81 | 8.72 | 3.087 | 0.86 | 182.4 | 27.8 | 105 | 6.04 | — — |
| 11:35 | | 14.82 | 8.72 | 3.086 | 0.87 | 182.3 | 15.5 | 105 | 6.04 | — — |
| 11:40 | | 14.82 | 8.72 | 3.086 | 0.88 | 182.3 | 15.8 | 105 | 6.04 | — — |
| 11:45 | | 14.85 | 8.73 | 3.084 | 0.89 | 184.1 | 15.8 | 105 | 6.04 | — — |
| 11:50 | | | | | | | | | | |
| 11:55 | | 14.85 | 8.73 | 3.085 | 0.89 | 184.3 | 15.0 | 105 | 6.04 | — — |

sample

AECOM

Well ID: 114-P2BI-MW101I-~~37.5~~ 37.5

# Low Flow Ground Water Sample Collection Record

Client: PPG Date: 1/11/2018 Time: Start 13:00 am/pm
Project No: 60550261 Finish 14:00 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Collector: Brendan Murphy

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 40' c. Length of Water Column 33.1 (a-b) Casing Diameter/Material 4.0"

b. Water Table Depth 6.90' d. Calculated System Volume (see back) 21.61 gal

**2. WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make YSI Model 6920 Serial Number (Probe 5599) 3250

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 13:00 | | 13.49 | 7.77 | 3.487 | 4.38 | 111.5 | 10.77 | 113 | 6.90 | green | — |
| 13:05 | | 13.56 | 7.76 | 3.490 | 3.78 | 111.7 | 11.38 | 113 | 7.05 | yellow-green | — |
| 13:10 | | 13.75 | 7.71 | 3.565 | 1.88 | 114.3 | 5.64 | 113 | 7.10 | yellow-green | — |
| 13:15 | | 13.69 | 7.71 | 3.576 | 1.74 | 114.5 | 3.88 | 113 | 7.15 | yellow-green | — |
| 13:20 | | 13.61 | 7.72 | 3.573 | 1.64 | 115.5 | 3.51 | 110 | 7.15 | yellow-green | — |
| 13:25 | | 14.07 | 7.802 | 3.583 | 2.43 | 118.1 | 2.12 | 110 | 7.15 | yellow green | — |
| 13:30 | | 13.46 | 7.71 | 3.585 | 2.39 | 118.3 | 2.05 | 110 | 7.15 | yellow-green | — |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: dedicated tubing

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-P2BI-MW101I-~~37.5~~ 20180111 | 1Ltr Amber | 2 | non-preserved | SVOC | 13:55 |
| -37.5- | 3 glass vial | | HCl | VOC | |

Comments

Signature Brendan Murphy Date 1/11/2018

## Purge Volume Calculation

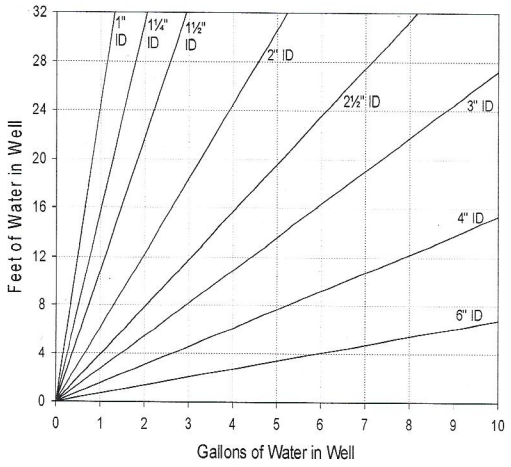


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 13:35 | | 13.51 | 7.61 | 4.464 | 0.14 | 120.1 | 1.78 | 112 | 7.15 | yellow, green — |
| 13:40 | | 13.52 | 7.60 | 4.470 | 0.98 | 125.4 | 1.59 | 110 | 7.15 | Yellow green — |
| 13:45 | | 13.61 | 7.60 | 4.510 | 0.88 | 126.3 | 1.60 | 110 | 7.15 | Yellow - green — |
| 13:50 | | 13.61 | 7.61 | 4.468 | 0.86 | 127.1 | 1.63 | 110 | 7.15 | |
| 13:55 | | | | | | | | | | Sample |
| 14:00 | | 13.09 | 7.59 | 3.854 | 0.58 | 132.5 | 1.10 | 110 | 7.15 | Post-sample yellow green — |

AECOM

Well ID: 114-P2B1-MW101I ~~37~~ 32.5 (BTM)

# Low Flow Ground Water Sample Collection Record

Client: PPG Date: 1/11/2018 Time: Start 14:05 am/pm
Project No: 60550261 Finish 15:00 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Collector: B. Murphy

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 40.0' c. Length of Water Column 32.85 (a-b)
Casing Diameter/Material 4.0"
b. Water Table Depth 7.15' d. Calculated System Volume (see back) 21.44

**2. WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make YSI Model 6920 Serial Number (Probe 5599) 3250

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 14:05 | | 12.12 | 8.38 | 3.203 | 3.26 | 125.9 | 1.13 | 112 | 7.15 | yellow green | — |
| 14:10 | | 12.16 | 8.39 | 3.758 | 3.47 | 125.7 | 1.29 | 112 | 7.15 | yellow green | |
| 14:15 | | 12.19 | 8.39 | 3.744 | 3.57 | 125.7 | 1.53 | 112 | 7.15 | yellow green | |
| 14:20 | | 12.22 | 8.37 | 3.363 | 3.64 | 125.6 | 1.66 | 112 | 7.15 | yellow green | |
| 14:25 | | 12.30 | 8.37 | 3.374 | 3.56 | 128.9 | 0.98 | 112 | 7.15 | yellow green | |
| 14:30 | | 12.37 | 8.63 | 5.203 | 0.83 | 131.1 | 1.26 | 112 | 7.15 | yellow green | |
| 14:35 | | 12.34 | 7.57 | 5.312 | 0.69 | 131.4 | 1.49 | 112 | 7.15 | yellow green | |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: dedicated tubing

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-P2B1-MW101I ~~37~~ 32.5 | 20180111 | 2 1Ltr. Amber | — | SVOC | 14:55 |
| | | 3 glass Vial | HCl | VOC | |

Comments

Signature B. Murphy Date 1/11/2018

## Purge Volume Calculation

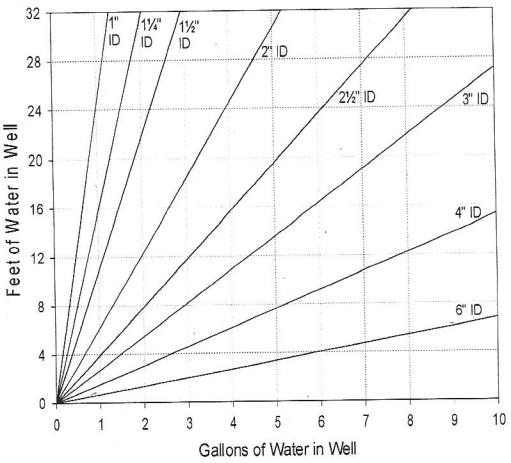


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 14:40 | | 12.39 | 7.55 | 5.35 | 0.66 | 134.6 | 1.53 | 112 | 7.15 | yellow-green |
| 14:45 | | 12.39 | 7.57 | 5.40 | 0.68 | 134.8 | 1.52 | 112 | 7.15 | yellow-green |
| 14:50 | | 12.39 | 7.57 | 5.41 | 0.69 | 134.8 | 1.50 | 112 | 7.15 | yellow-green |
| 14:55 | | | | | | | | | | Sample |
| 15:00 | | 12:37 | 7.50 | 5.37 | 0.62 | 135.3 | 1.65 | 112 | 7.15 | yellow green |

AECOM

Well ID: 114 - PIB - MW102I-26.5

# Low Flow Ground Water Sample Collection Record

Client: PPG | Date: 1/12/2018 | Time: Start 10:40 am/pm | Finish 12:00 am/pm
Project No: 60550261
Site Location: Garfield Avenue Sites
Weather Conds: | Collector: B. Murphy

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 34' | c. Length of Water Column 28.65' (a-b) | Casing Diameter/Material 4.0"

b. Water Table Depth 5.35' | d. Calculated System Volume (see back) 18.70 ga

**2. WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make YSI | Model 6920 | Serial Number Probe 5599 Handset 3250

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10:40 | | 13.54 | 7.28 | 2.196 | 2.33 | 162.9 | 5.46 | 113 | 5.48 | Yellow-gray | — |
| 10:45 | | 13.53 | 7.29 | 2.197 | 2.33 | 162.1 | 4.62 | 113 | 5.51 | | |
| 10:50 | | 13.73 | 7.28 | 2.214 | 1.86 | 152.7 | 3.02 | 110 | 5.61 | | |
| 10:55 | | 14.02 | 7.29 | 2.128 | 1.64 | 148.5 | 2.95 | 110 | 5.61 | | |
| 11:00 | | 14.03 | 7.26 | 2.117 | 1.47 | 147.9 | 2.90 | 110 | 5.61 | | |
| 11:05 | | 14.18 | 7.26 | 2.121 | 1.40 | 148.1 | 2.64 | 110 | 5.61 | | |
| 11:10 | | 14.21 | 7.27 | 2.129 | 1.24 | 146.2 | 2.31 | 110 | 5.61 | Yellow-gray | — |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: dedicated tubing / pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-PIB-MW102I-26.5-20180112(2) | 1 Ltr Amber | 1 | — | SVOC | 11:55 |
| | (3) glass vial | | HCl | VOC | |

Comments

Signature [signature] Date 1/12/2018

## Purge Volume Calculation

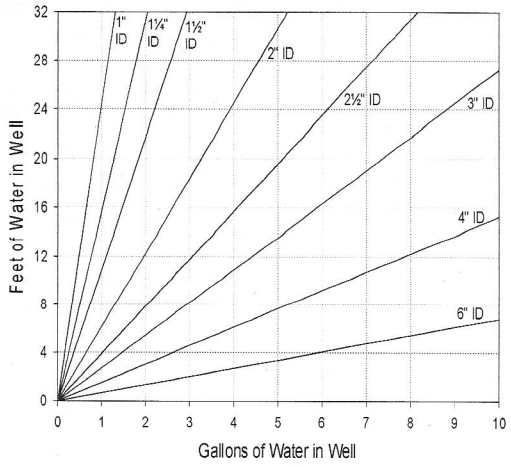


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 11:15 | 14. | 14.51 | 7.27 | 1.36 | 1.954 | 145.3 | 2.20 | 110 | 5.61 | yellow-green |
| 11:20 | | 14.51 | 7.28 | 1.34 | 1.954 | 145.2 | 2.21 | 110 | 5.61 | |
| 11:25 | | 14.52 | 7.28 | 1.34 | 1.953 | 145.4 | 1.90 | 110 | 5.01 | |
| 11:30 | | 14.61 | 7.26 | 1.456 | 1.24 | 145.2 | 1.96 | 100 | 5.61 | |
| 11:35 | | 14.58 | 7.27 | 1.958 | 1.26 | 145.4 | 1.91 | 100 | 5.61 | |
| 11:40 | | 14.58 | 7.28 | 1.956 | 1.27 | 145.7 | 1.93 | 100 | 5.61 | |
| 11:45 | | 14.58 | 7.28 | 1.958 | 1.27 | 145.8 | 1.91 | 100 | 5.61 | |
| 11:55 | Sample | | | | | | | | | |
| 12:00 | | 14.63 | 7.31 | 2.114 | 1.74 | 146.2 | 2.05 | 100 | 5.01 | |

Post Sample

AECOM

Well ID: 114-PIB- MW-102I-31.5

# Low Flow Ground Water Sample Collection Record

Client: PPG Date: 1/12/2018 Time: Start 12:05 am/pm
Project No: 60550261 Finish 12:45 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Collector: Brendan Murphy

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 34' c. Length of Water Column 28.39 (a-b) Casing Diameter/Material 4"
   b. Water Table Depth 5.61 d. Calculated System Volume (see back) 18.53

2. **WELL PURGE DATA**
   a. Purge Method: Low Flow Bladder Pump
   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used: Make YSI Model 6920 Probe ~~Handset~~ Serial Number 5599 handset 3250

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 12:05 | | 14.27 | 7.12 | 4.402 | 1.74 | 160.4 | 4.46 | 110 | 5.61 | yellowgreen | — |
| 12:10 | | 14.31 | 7.09 | 4.293 | 1.45 | 166.4 | 4.28 | 110 | 5.61 | | |
| 12:15 | | 14.31 | 7.11 | 4.291 | 1.67 | 166.9 | 1.07 | 110 | 5.61 | | |
| 12:20 | | 14.35 | 7.11 | 4.199 | 1.64 | 166.8 | 1.09 | 110 | 5.61 | yellowgreen | — |
| 12:25 | | 14.32 | 7.10 | 4.086 | 1.09 | 172.0 | 1.06 | 110 | 5.61 | | |
| 12:30 | | 14.33 | 7.09 | 4.079 | 1.10 | 172.3 | 1.07 | 110 | 5.61 | | |
| 12:35 | | 14.32 | 7.10 | 4.079 | 1.09 | 172.6 | 1.06 | 110 | 5.61 | yellowgreen | — |

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

(continued on back)

3. **SAMPLE COLLECTION:** Method: dedicated tubing / pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-PIB-MW102I-31.5-20180112 | 1 Lt. Amber | (2) | — | SVOC | 12:40 |
| | glass Vial | (3) | HCl | VOC | |

Comments

Signature Date 1/12/2018

## Purge Volume Calculation

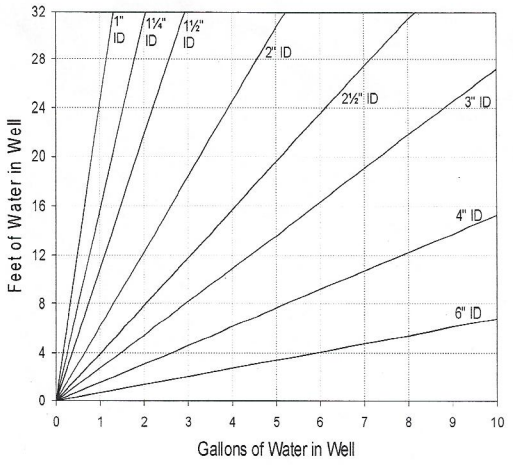


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| | Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample 12:40 | 12:45 | | 14.32 | 7.10 | 4084 | 6.0 | 172.3 | 1.07 | 110 | 5.61 | yellow green / — |
| ~~Sample~~ | ~~[illegible]~~ | | | | | | | | ~~[illegible]~~ | | |
| Post Sample | ~~[illegible]~~ | | | | | | | | ~~110~~ | ~~5.61~~ | ~~yellow green~~ |
| | | | | | | | | | | | |
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MW21-37.5
114-P1-~~MW21~~

Well ID: ~~114-MW21~~

AECOM

# Low Flow Ground Water Sample Collection Record

Client: PPG
Project No: 60550261
Site Location: Garfield Avenue Sites
Weather Conds:
Date: 1/16/2018
Time: Start 13:00 am/pm
Finish 14:00 am/pm
Collector: Brendan Murphy

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 40 c. Length of Water Column 31.5 (a-b)
Casing Diameter/Material 4"

b. Water Table Depth 8.5 d. Calculated System Volume (see back) 20.56 gal

**2. WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make YSI Model 6920 Serial Number Probe 5599 Handset 3250

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 13:00 | | 13.56 | 7.05 | 2.865 | 0.92 | 88.8 | 39.6 | 105 | 8.50 | No Color | No odor |
| 13:05 | | 13.63 | 7.01 | 2.863 | 1.05 | 88.4 | 39.2 | 105 | 8.50 | | |
| 13:10 | | 13.60 | 7.05 | 2.875 | 0.85 | 88.2 | 27.3 | 105 | 8.50 | | |
| 13:15 | | 13.61 | 7.04 | 2.877 | 0.90 | 88.2 | 25.2 | 105 | 8.50 | | |
| 13:20 | | 13.59 | 7.04 | 2.877 | 0.96 | 88.2 | 16.7 | 103 | 8.50 | | |
| 13:25 | | 13.56 | 7.04 | 2.864 | 1.08 | 88.8 | 12.0 | 103 | 8.50 | | |
| 13:30 | | 13.51 | 7.01 | 2.834 | 1.11 | 89.0 | ~~10~~ 9.7 | 103 | 8.50 | | |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: dedicated tubing

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-P1-MW21-375-20180116 | glass Vial | 3 | HCl | VOC | 1355 |
| | plastic | 1 500 ml | HNO3 | SVOC | |
| | Liter Amber | 2 | — | Cr+6 | |
| | plastic | 1 500 ml | — | TAL Metals | |

Comments

Signature [signature] Date 1/16/2018

## Purge Volume Calculation

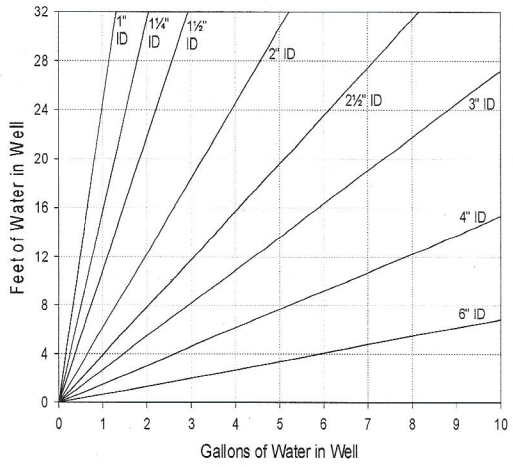


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 12:40 | | 13.56 | 6.98 | 2.832 | 1.14 | 88.4 | 7.6 | 103 | 8.50 | |
| 12:45 | | 13.56 | 6.98 | 2.834 | 1.14 | 88.7 | 7.4 | 103 | 8.50 | No Color No odor |
| | | | | | | | | | | |
| 13:35 | | 13.56 | 7.03 | 2.834 | 1.18 | 88.8 | 8.3 | 103 | 8.50 | No Color No Odor |

AECOM

Well ID: 114-P1-MW-21-32.5

# Low Flow Ground Water Sample Collection Record

Client: PPG
Project No: 60550261
Site Location: Garfield Avenue Sites
Weather Conds:
Date: 1/16/2018
Time: Start 11:45 (am/pm) Finish 12:35 (am/pm)
Collector: Brendan Murphy

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 40
b. Water Table Depth 8.50
c. Length of Water Column 31.5 (a-b)
d. Calculated System Volume (see back) 20.56.
Casing Diameter/Material 4"

**2. WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| ✓ Temperature | 3% | ✓ D.O. | 10% |
| ✓ pH | ± 1.0 unit | ✓ ORP | ± 10mV |
| ✓ Sp. Cond. | 3% | ✓ Drawdown | < 0.3' |

c. Field Testing Equipment used: Make YSI Model 6920 Probe 5599 Serial Number handset 3250

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 11:45 | | 12.55 | 6.99 | 2.952 | 0.81 | 82.7 | 112.2 | 105 | 8.50 | No Color | No Odor |
| 11:50 | | 13.10 | 6.97 | 2.954 | 0.82 | 82.4 | 62.7 | 105 | 8.50 | | |
| 11:55 | | 13.18 | 6.95 | 2.950 | 0.85 | 81.5 | 50.1 | 105 | 8.50 | | |
| 12:00 | | 13.23 | 6.94 | 2.949 | 0.82 | 81.4 | 32.0 | 105 | 8.50 | | |
| 12:05 | | 13.33 | 6.95 | 2.943 | 0.79 | 81.1 | 29.5 | 105 | 8.50 | | |
| 12:10 | | 13.28 | 6.95 | 2.941 | 0.84 | 81.9 | 20.1 | 105 | 8.50 | | |
| 12:15 | | 13.26 | 6.95 | 2.928 | 0.79 | ~~81.6~~ 81.5 | 14.3 | 105 | 8.50 | | |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: dedicated tubing

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-P1-MW21-32.5-20180116 | 3 glass Vial | 3 | HCl | VOC | 12:35 |
| | 1500 ml plastic | 1 | HNO3 | TAL Metals | |
| | 2 1Ltr Amber | 2 | — | SVOC | |
| | 500 ml plastic | 1 | — | Cr+6 pH ORP | |

Comments

Signature: Brendan Murphy Date: 1/16/2018

## Purge Volume Calculation

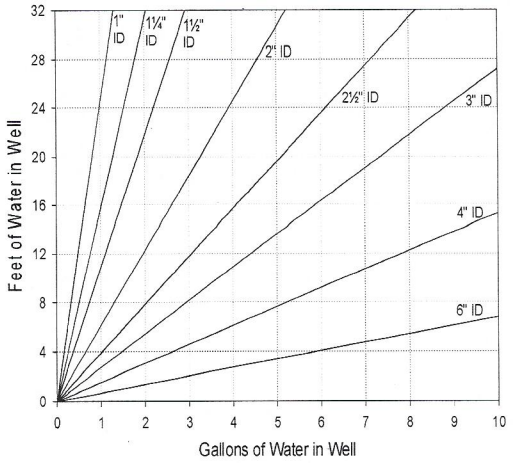


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 12:20 | | 13.26 | 6.95 | 2.924 | 0.83 | 81.6 | 8.4 | 105 | 8.50 | No color No Odor |
| 12:25 | | 13.28 | 6.95 | 2.922 | 0.85 | 81.8 | 7.6 | 105 | 8.50 | |
| 12:30 | | 13.26 | 6.95 | 2.923 | 0.85 | 81.7 | 5.8 | 105 | 8.50 | |
| 12:35 | | | | | | | | | | Sample |
| 12:40 | | 13.27 | 6.95 | 2.925 | 0.88 | 81.8 | 9.3 | 105 | 8.50 | |

AECOM

Well ID: 114-P1-MW2I-27.5

# Low Flow Ground Water Sample Collection Record

Client: PPG
Project No: 60550261
Site Location: Garfield Avenue Sites
Weather Conds:
Date: 11/16/2018
Time: Start 10:00 am/pm
Finish 11:20 am/pm
Collector: Brendan Murphy

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 40
b. Water Table Depth 8.50
c. Length of Water Column 31.5 (a-b)
d. Calculated System Volume (see back) 20.56 gal
Casing Diameter/Material 2.0"

**2. WELL PURGE DATA**

a. Purge Method: Low Flow Bladder pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| ✓ Temperature | 3% | ✓ D.O. | 10% |
| ✓ pH | ± 1.0 unit | ✓ ORP | ± 10mV |
| ✓ Sp. Cond. | 3% | ✓ Drawdown | < 0.3' |

c. Field Testing Equipment used: Make YSI Model 6920 Serial Number Probe 599 · Handset 3250

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10:00 | | 10.64 | 6.91 | 3.135 | 0.84 | 34.9 | 224.7 | 110 | 8.50 | No color | No odor |
| 10:05 | | 11.55 | 6.91 | 3.124 | 0.85 | 35.2 | 220.8 | 110 | 8.50 | | |
| 10:10 | | 12.73 | 6.91 | 3.157 | 0.75 | 33.6 | 208.1 | 110 | 8.50 | | |
| 10:15 | | 12.84 | 6.91 | 3.160 | 0.80 | 34.3 | 203.7 | 110 | 8.50 | | |
| 10:20 | | 12.90 | 6.92 | 3.144 | 0.65 | 36.4 | 140.5 | 110 | 8.50 | | |
| 10:25 | | 13.01 | 6.91 | 3.127 | 0.44 | 38.0 | 118 | 105 | 8.50 | | |
| 10:30 | | 13.03 | 6.92 | 3.113 | 0.45 | 38.8 | 93.5 | 105 | 8.50 | | |

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

(continued on back)

**3. SAMPLE COLLECTION:** Method: dedicated tubing

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-P1-MW2I-27.5-20180116 | | 3 | glass Vial | HCl | VOC | 11:15 |
| | | 1 | 500 ml plastic | HNO3 | TAL Metals |
| | | 2 | 1 Ltr Amber | — | SVOC |
| | | 1 | 500 ml plastic | — | Cr+6 pH ORP |

Comments

Signature Brendan Murphy Date 11/16/2018

## Purge Volume Calculation

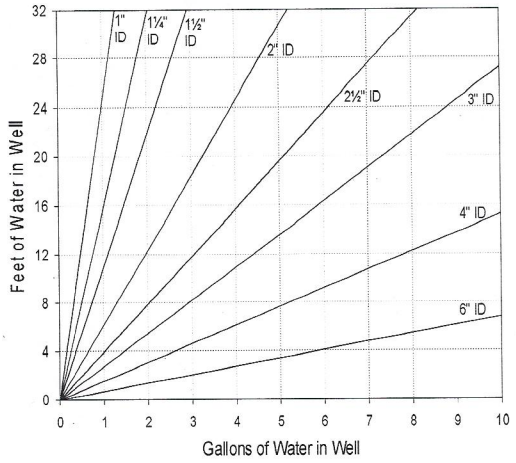


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 10:35 | | 12.93 | 6.94 | 3.089 | 0.41 | 43.8 | 60.2 | 105 | 8.50 | No Color No odor |
| 10:40 | | 12.87 | 6.93 | 3.082 | 0.47 | 40.5 | 40.5 | 105 | 8.50 | |
| 10:45 | | 12.85 | 6.95 | 3.083 | 0.48 | 42.3 | 33.5 | 105 | 8.50 | |
| 10:50 | | 12.88 | 6.95 | 3.078 | 0.50 | 46.0 | 25.3 | 105 | 8.50 | |
| 10:55 | | 12.92 | 6.95 | 3.080 | 0.49 | 48.8 | 13.8 | 105 | 8.50 | |
| 11:00 | | 13.01 | 6.95 | 3.056 | 0.50 | 51.3 | 8.2 | 105 | 8.50 | |
| 11:05 | | 13.01 | 6.95 | 3.11 | 0.47 | 51.7 | 7.8 | 105 | 8.50 | |
| 11:10 | | 13.10 | 6.95 | 3.14 | 0.47 | 50.9 | 7.7 | 105 | 8.50 | No Color No odor |
| 11:15 | | | | | | | | ↓ | | |
| 11:20 | | 13.45 | 6.96 | 3.13 | 0.47 | 50.8 | 7.7 | 105 | 8.50 | — — |

Sample

114-PI-MW-21-22.5

Well ID: ~~114-MW-21~~

AECOM

# Low Flow Ground Water Sample Collection Record

Client: PPG
Project No: 60550261
Site Location: Garfield Avenue Sites
Weather Conds:
Date: 1/15/2018
Time: Start 8:40 am/pm
Finish 9:40 am/pm
Collector: Brendan Murphy

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 40
b. Water Table Depth 8.75
c. Length of Water Column 31.25 (a-b)
d. Calculated System Volume (see back) 20.4 gal
Casing Diameter/Material 2"

**2. WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make YSI Model 6920 Serial Number Probe 5599 handset 3250

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 8:40 | | 11.42 | 6.85 | 2.760 | 2.93 | 166.0 | 44.7 | 113 | 8.51 | slightly turbid | — |
| 8:45 | | 11.71 | 6.77 | 2.938 | 2.40 | 163.6 | 38.6 | 110 | 8.50 | | — |
| 8:50 | | 12.34 | 6.72 | 3.147 | 1.48 | 58.0 | 41.9 | 110 | 8.50 | | — |
| 8:55 | | 12.41 | 6.72 | 3.166 | 1.81 | 54.2 | 40.2 | 110 | 8.50 | | — |
| 9:00 | | 12.63 | 6.71 | 3.177 | 1.15 | 42.1 | 27.5 | 110 | 8.50 | no color | no odor |
| 9:05 | | 12.67 | 6.70 | 3.177 | 1.12 | 33.3 | 22.3 | 110 | 8.50 | — | — |
| 9:10 | | 12.72 | 6.72 | 3.175 | 1.03 | 27.2 | 12.9 | 110 | 8.50 | | |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: dedicated tubing

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-PI-MW-21-22.5-20180116 | | 3 glass vial | HCl | VOC | 9:35 |
| | | 2 Poly Amber | — | SVOC | |
| | | 1 500 ml plastic | — | $Cr^{+6}$ alk ORP | |
| | | 1 500 ml plastic | $HNO_3$ | TAL Metals | |

Comments

Signature [signature] Date 1/16/2018

## Purge Volume Calculation

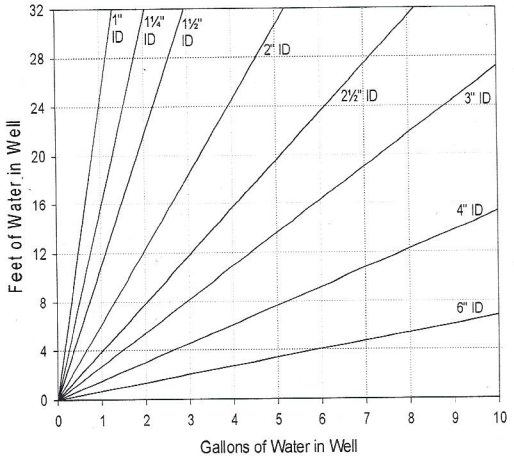


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 9:15 | | 12.73 | 6.73 | 3.172 | 1.28 | 27.1 | 10.5 | 110 | 8.5 | - / - |
| 9:20 | | 12.72 | 6.74 | 3.175 | 1.02 | 26.8 | 9.73 | 110 | 8.5 | - / - |
| 9:25 | | 12.72 | 6.75 | 3.177 | 0.98 | 20.5 | 8.95 | 110 | 8.5 | - |
| 9:30 | | 12.72 | 6.74 | 3.176 | 1.05 | 23.7 | 8.98 | 110 | 8.5 | - |
| 9:35 | | | | | | | | | | |
| 9:40 | | 12.74 | 6.75 | 3.177 | 1.05 | 24.1 | 9.31 | 110 | 8.5 | |

sample

AECOM

Well ID: 10W-MW101S

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries
Project No: 60507168
Site Location: Garfield Avenue Sites
Weather Conds:

Date: 02/08/18
Time: Start 1340 am/pm
Finish 14:50 am/pm
Collector: J. Angelone / T. Patel

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 17ft
b. Water Table Depth 8.65
c. Length of Water Column 8.35 (a-b)
d. Calculated System Volume (see back)

Casing Diameter/Material: 2in PVC

**2. WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| Make | Model | Serial Number |
|---|---|---|
| ✓ SI | 600 XL | 01F0657 |
| LaMotte | 2020 we | 030480 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 14:10 | | 14.45 | 6.79 | 0.169 | 0.06 | -80.0 | 88 | 140 | 8.7 | cloudy | |
| 14:15 | | 14.76 | 6.79 | 0.168 | 0.05 | -95.8 | 49.9 | 140 | 8.7 | | |
| 14:20 | | 14.90 | 6.79 | 0.167 | 0.04 | -99.4 | 32.5 | 140 | 8.7 | | |
| 14:25 | | 14.94 | 6.79 | 0.167 | 0.04 | -104.9 | 20.1 | 140 | 8.7 | clear | |
| 14:30 | | 15.05 | 6.79 | 0.167 | 0.04 | -108.2 | 12.9 | 140 | 8.7 | clear | |
| 14:35 | | 15.06 | 6.79 | 0.167 | 0.04 | -110.6 | 7.76 | 140 | 8.7 | clear | |
| Post → 14:45 | | 14.28 | 6.78 | 0.168 | 0.04 | -110.3 | 6.89 | 140 | 8.7 | clear | |

Post Sample

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

(continued on back)

**3. SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 10W-MW101S-20180208 | 500mL poly | 1 | none | Cr+6/pH/ORP | |
| | 500 mL poly | 1 | $HNO_3$ | CC PW Metals | |

Comments

Signature [signature] Date 2/8/18

1000-MW1015

Purge Volume Calculation

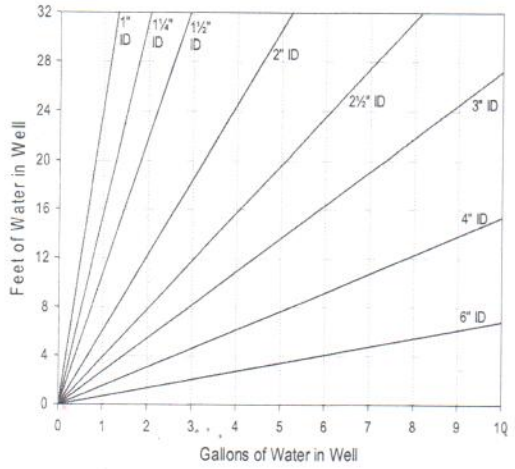


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

AECOM

Well ID: 10W-MW1025

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries
Project No: 60507168
Site Location: Garfield Avenue Sites
Weather Conds:
Date: 2/6/18
Time: Start 12:00 am/pm
Finish 13:20 am/pm
Collector: J. Angelone / T. Patel

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 17 ft
b. Water Table Depth 7.93ft
c. Length of Water Column 9.03ft (a-b)
d. Calculated System Volume (see back)
Casing Diameter/Material 2in PVC

**2. WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600XL | 01F 0657 |
| | LaMotte | 2020we | 030480 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 12:30 | | 13.61 | 6.72 | 0.357 | 0.02 | -152.0 | 700 | 100 | 7.90 | Cloudy | |
| 12:35 | | 15.13 | 6.67 | 0.351 | 0.03 | -148.0 | 773 | 180 | 8.00 | ↓ | |
| 12:40 | | 15.39 | 6.67 | 0.350 | 0.02 | -150.9 | 92 | 180 | 8.00 | ↓ | |
| 12:45 | | 15.60 | 6.67 | 0.346 | 0.01 | -152.1 | 30.3 | 180 | 8.00 | clear | |
| 12:50 | | 15.65 | 6.67 | 0.341 | 0.01 | -151.0 | 17.0 | 180 | 8.00 | ↓ | |
| 12:55 | | 15.67 | 6.67 | 0.339 | 0.01 | -150.1 | 13.5 | 180 | 8.00 | ↓ | |
| 13:00 | | 15.67 | 6.67 | 0.338 | 0.01 | -147.2 | 12.9 | 180 | 8.00 | ↓ | |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 10W-MW1025-20180206 | 500 mL poly | 1 x 2 | none | Cr+6/pH/ORP | 13:10 |
| | 500 mL poly | 1 x 2 | $HNO_3$ | CCR Metals | 13:10 |

Comments: MS / MSD

Signature: [signature]
Date: 2/8/18

IOW-MW1025

Purge Volume Calculation

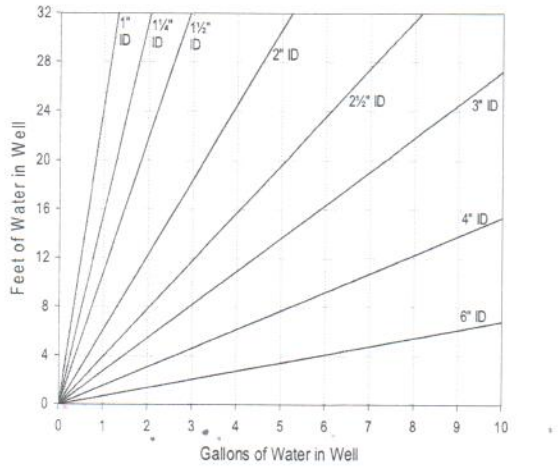


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| | Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 13:05 | | 15.69 | 6.67 | 0.338 | 0.01 | -146.7 | 10.05 | 180 | 8.00 | |
| | | | | | | ~~0.01~~ | ~~-136.9~~ | | | | |
| Post Samp. | 13:15 | | 15.48 | 6.67 | 0.334 | 0.01 | -136.9 | 10.03 | 180 | 8.00 | |

AECOM

Well ID: 132-P3A-MW105I

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries
Project No: 60507168
Site Location: Garfield Avenue Sites
Weather Conds:

Date: 02/08/17
Time: Start 10:12 am/pm
Finish 11:40 am/pm
Collector: J. Angelone / T. Patel

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 42ft
b. Water Table Depth 7.82
c. Length of Water Column _____ (a-b)
d. Calculated System Volume (see back) _____

Casing Diameter/Material: 2in PVC

**2. WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600 XL | 01F0657 |
| | LaMotte | 2020e | 030480 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10:40 | | 11.09 | 11.79 | 0.427 | 0.03 | 175.0 | 50.1 | 90 | 7.65 | Clear | None |
| 10:45 | | 11.23 | 11.82 | 0.426 | 0.05 | 136.6 | 38.4 | 90 | 7.65 | Clear | |
| 10:50 | | 11.31 | 11.83 | 0.420 | 0.06 | 101.7 | 31.4 | 90 | 7.65 | Clear | |
| 10:55 | | 11.31 | 11.82 | 0.412 | 0.07 | 90.3 | 29.2 | 90 | 7.65 | Clear | |
| 11:00 | | 11.22 | 11.80 | 0.404 | 0.08 | 84.2 | 16.4 | 90 | 7.65 | Clear | |
| 11:05 | | 11.40 | 11.80 | 0.397 | 0.08 | 81.7 | 16.3 | 90 | 7.65 | Clear | |
| 11:10 | | 11.28 | 11.79 | 0.391 | 0.08 | 79.6 | 13.3 | 90 | 7.65 | Clear | |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| | 500 mL poly | 1 | none | Cr6/pH/ORP | |
| | 500 mL poly | 1 | $HNO_3$ | CCR Metals | |

Comments

Signature _____ Date 2/8/18

132-P3A-MW105I

Purge Volume Calculation

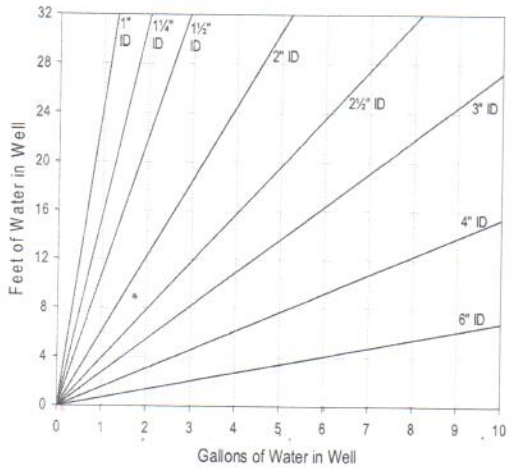


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| | Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 11:15 | | 11.27 | 11.78 | 0.380 | 0.08 | 78.0 | 9.24 | 90 | 7.65 | Clear |
| | | | | | | | | | | | |
| Post, Sample | 11:35 | | 10.08 | 11.82 | 0.365 | 0.07 | 74.5 | | 90 | 7.65 | Clear |

AECOM

Well ID: 132-P3A-MW105I

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries
Project No: 60507168
Site Location: Garfield Avenue Sites
Weather Conds:

Date: 2/9/18
Time: Start ____ am/pm
Finish ____ am/pm
Collector: J. Agelone, T. Patel

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 42
b. Water Table Depth 7.75
c. Length of Water Column 34.25 (a-b)
d. Calculated System Volume (see back) ____

Casing Diameter/Material: 2in PVC

**2. WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| Make | Model | Serial Number |
|---|---|---|
| YSI | 600XL | 0F0657 |
| LaMotte | 2020wc | 030480 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 14:45 | | 13.51 | 11.43 | [illegible] | [illegible] | 128.6 | 11.00 | 100 | 7.80 | Clear | |
| 14:50 | | 13.74 | 11.27 | 0.775 | 9.99 | 140.3 | 10.98 | 100 | 7.80 | Clear | |
| 14:55 | | 13.68 | 11.18 | 0.774 | 9.77 | 144.7 | 8.60 | 100 | 7.80 | | |
| 15:00 | | 13.51 | 10.84 | 0.759 | 9.65 | 151.3 | 5.27 | 100 | 7.80 | | |
| 15:05 | | 13.46 | 10.61 | 0.744 | 9.53 | 155.2 | 5.55 | 100 | 7.80 | | |
| 15:10 | | 13.29 | 10.09 | 0.735 | 9.27 | 160.7 | 2.05 | 100 | 7.80 | | |
| | | | | | | | | | | | |

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

(continued on back)

**3. SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 132-P3A-MW105I-20180209 | 500 poly | 1 | none | Cr+C/pH/ORP | 15:15 |
| | 500 poly | 1 | $HNO_3$ | CCPW metal | |
| 132-P3A-MW105I-20180209 | ↓ | ↓ | ↓ | ↓ | 15:16 |

Comments

Signature [signature] Date 2/9/18

AECOM

Well ID: 10W-MW105I

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries
Project No: 60507168
Site Location: Garfield Avenue Sites
Weather Conds:

Date: 2/9/18
Time: Start _____ am/pm
Finish _____ am/pm
Collector: J. Angelone / T. Patel

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 40
b. Water Table Depth 4.72
c. Length of Water Column 35.28 (a-b)
d. Calculated System Volume (see back) _____

Casing Diameter/Material 2in PVC

**2. WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| Make | Model | Serial Number |
|---|---|---|
| YSI | 600XL | 01F0657 |
| LaMotte | 2020we | 030480 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 11:45 | | 11.63 | 13.12 | 4.620 | 2.31 | -59.2 | 26.3 | 160 | 4.78 | Clear/White | |
| 11:50 | | 12.14 | 13.14 | 4.532 | 2.53 | -66.2 | 33.1 | 160 | 4.78 | Clear/White | |
| 11:55 | | 12.74 | 13.15 | 4.451 | 2.45 | -70.5 | 47.8 | 160 | 4.78 | | |
| 12:00 | | 12.14 | 13.10 | 4.242 | 2.16 | -72.4 | 41.2 | 160 | 4.78 | | |
| 12:05 | | 13.24 | 13.05 | 5.740 | 1.80 | -71.6 | 61.7 | 160 | 4.78 | Clear/White | |
| 12:10 | | 12.86 | 13.04 | 5.556 | 1.62 | -71.0 | 45.7 | 160 | 4.78 | | |
| 12:15 | | 12.10 | 13.02 | 5.416 | 1.47 | -71.3 | 35.3 | 160 | 4.78 | | |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☐ | ☑ | ☐ |
| Have parameters stabilized | ☐ | ☑ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| NO SAMPLE | 500 mL Poly | 1 | none | $Cr^{+6}$/pH/ORP | |
| | 500 mL Poly | 1 | $HNO_3$ | CCPW Metals | |

Comments Well has Bentonite

Signature [signature] Date 2/9/18

AECOM

Well ID: 133-MW6A

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries | Date: _____ | Time: Start _____ am/pm | Finish _____ am/pm
Project No: 60507168
Site Location: Garfield Avenue Sites
Weather Conds: _____ | Collector: J. Angelone / T. Patel

1. **WATER LEVEL DATA: (measured from Top of Casing)** 32.16

a. Total Well Length 15 ft | c. Length of Water Column [illegible] (a-b) | Casing Diameter/Material 2 in PVC

b. Water Table Depth [illegible] ft | d. Calculated System Volume (see back) _____
6.84 (T)

2. **WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600 XL | 01F0657 |
| | LaMotte | 2020 we | 030780 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10:05 | | 10.46 | 7.07 | 1.051 | 1.84 | -75.5 | 31.0 | 140 | 6.87 | Clear | None |
| 10:10 | | 10.53 | 7.11 | 1.019 | 1.52 | -82.3 | 26.8 | 140 | 6.87 | | |
| 10:15 | | 11.03 | 7.16 | 0.922 | 1.12 | -94.7 | 14.9 | 140 | 6.87 | | |
| 10:20 | | 11.65 | 7.18 | 0.861 | 0.67 | -105.7 | 7.46 | 140 | 6.87 | | |
| 10:25 | | 12.05 | 7.17 | 0.874 | 0.74 | -110.9 | 3.54 | 140 | 6.87 | | |
| 10:30 | | 12.42 | 7.14 | 1.013 | 0.76 | -112.0 | 25.1 | 140 | 6.87 | | |
| 10:35 | | 12.41 | 7.15 | 1.021 | 0.85 | -112.7 | 14.2 | 140 | 6.87 | | |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☐ | ☑ | ☐ |
| Have parameters stabilized | ☐ | ☑ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 133-MW6A-20180209 | 500 mL poly | 1 | none | Cl, pH/ORP | |
| 133-MW6A-20180209 | 500 mL poly | 1 | HNO3 | CCPCW Metals | |

Comments At 10:25 plume of silt came through flow cell.

Signature Tay Patel | Date 2/9/2018

Purge Volume Calculation

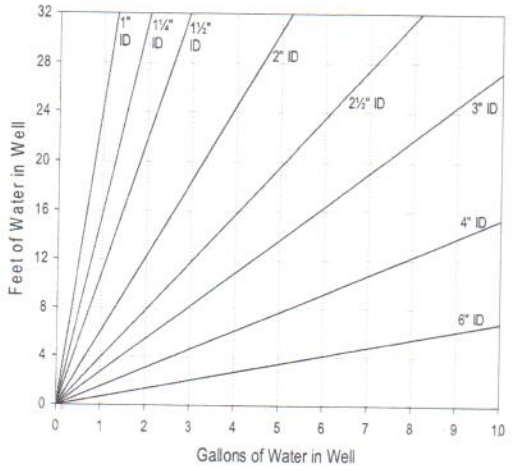


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 10:40 | | 12.54 | 7.13 | 1.037 | 0.71 | -113.2 | 4.63 | 140 | 6.87 | |
| 10:45 | | 12.54 | 7.13 | 1.050 | 0.45 | -113.4 | 10.00 | 140 | 6.87 | |
| | | | | | | | | | | |
| Post Sam 11:05 | | 12.5 | 7.13 | 1.052 | 0.61 | -111.6 | 8.62 | 140 | 6.87 | |

AECOM

Well ID: 114-MW39B

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries
Project No: 60507168
Site Location: Garfield Avenue Sites
Weather Conds: Cloudy / Windy / 45° F
Date: 2/12/2018
Time: Start 7:00 (am)/pm Finish _____ am/pm
Collector: Taij Patel / John Angelone

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 45 ft
b. Water Table Depth 4.81
c. Length of Water Column 40.19 (a-b)
d. Calculated System Volume (see back) _____
Casing Diameter/Material 2 in

**2. WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600 | 06G147 |
| | LaMotte | | 030480 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10:00 | | 13.48 | 6.55 | 18.88 | 1.00 | 250.8 | 449 | 280 | 4.9 | Clear | |
| 10:05 | | 13.90 | 6.85 | 20.58 | 0.59 | 135 | 2.15 | 280 | 5.2 | | |
| 10:10 | | 13.76 | 6.92 | 20.78 | 0.49 | -44.7 | 2.07 | 200 | 5.15 | | |
| 10:15 | | 13.65 | 6.94 | 21.02 | 0.43 | -62.1 | 3.14 | 200 | 5.15 | | |
| 10:20 | | 13.64 | 6.93 | 21.68 | 0.39 | -53.2 | 2.75 | 200 | 5.15 | | |
| 10:25 | | 13.62 | 6.93 | 21.83 | 0.31 | -52.7 | 2.18 | 200 | 5.15 | | |
| | | | | | | | | | | | |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: ~~From Tube~~ (JA) Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW39B-20180212 | 500mL poly | 2 | $HNO_3$ | CCPW | 10:30 |
| | 500mL poly | 2 | none | $Cr^{+6}$ | |
| | 1L Amber | 2 (JA) | none | SVOC | |
| | VOA | 3 (JA) | HCl | VOC | |

Comments _____

Signature John Angelone Date 2/12/2018

| | | | | | |
|---|---|---|---|---|---|
| 114-MW39B-20180212X | 500mL poly | 1 | $HNO_3$ | CCPW | 10:31 |
| | 500mL poly | 1 | none | $Cr^{+6}$ | |
| | 1L Amber | 2 | none | SVOC | |
| | VOA | 3 | HCl | VOC | |

Purge Volume Calculation

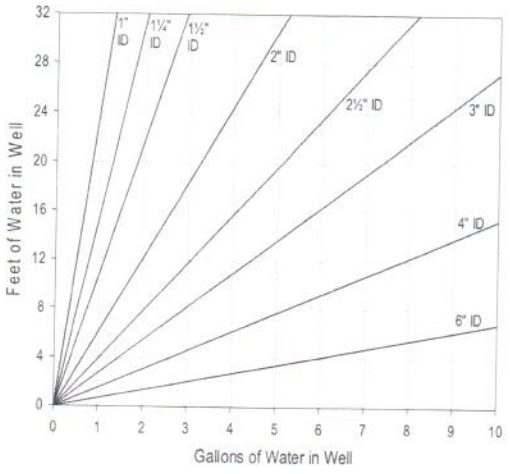


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

AECOM

Well ID: OW-MW105I

# Low Flow Ground Water Sample Collection Record

Client: PPG Date: 3/12/2018 Time: Start 1150 am/pm
Project No: 60552a1 Finish _____ am/pm
Site Location: Garfield Avenue Group of Sites
Weather Conds: Clear 30's Collector: J. Angelone, B. Tate

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 40ft c. Length of Water Column ~~9~~ 36.9 (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 3.10 d. Calculated System Volume (see back) 6 gal

**2. WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600XL | 303775 |
| | LaMotte | 2020we | 0324849 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1200 | | 13.36 | 12.81 | 6.413 | 7.05 | -33.3 | 29.2 | 85 | 3.05 | clear | none |
| 1205 | | 13.48 | 12.81 | 5.948 | 5.69 | -17.6 | 24.7 | 86 | 3.07 | clear | none |
| 1210 | | 13.50 | 12.81 | 5.815 | 5.17 | -24.3 | 21.1 | 86 | 3.10 | clear | none |
| 1215 | | 13.52 | 12.80 | 5.469 | 4.59 | -30.0 | 12.84 | 85 | 3.07 | clear | none |
| 1220 | | 13.42 | 12.79 | 5.424 | 3.96 | -37.5 | 7.84 | 85 | 3.07 | clear | none |
| 1225 | | 13.44 | 12.77 | 5.300 | 3.15 | -39.5 | 6.84 | 85 | 3.07 | clear | none |
| 1230 | | 13.40 | 12.76 | 5.207 | 2.96 | -41.0 | 3.89 | 86 | 3.07 | clear | none |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| OW-MW105I-20180312 | ~~1L AG~~ | | | | |
| | 500mL Poly | 1 | None | Cr+6, pH, GH | 1240 |
| | 500 mL Poly | 1 | $H_2NO_3$ | TCL PCB Metals | 1240 |

Comments Colloids Observed in Flow Cell

Signature _____ Date 3/12/18

Purge Volume Calculation

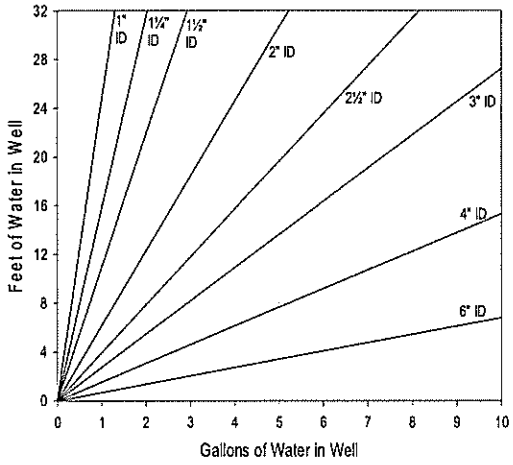


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1235 | | 13.39 | 12.75 | 5.085 | 2.78 | -43.5 | 4.24 | ~~3.08~~ 0.5 | 3.08 | clear / none |
| 1240 | | | | | | | | | | Sample Taken |

AECOM

Well ID: 114-MW24B

# Low Flow Ground Water Sample Collection Record

Client: PPG Date: 3/12/18 Time: Start 900 am/pm
Project No: Finish 1040 am/pm
Site Location: Garfield Avenue Group of Sites
Weather Conds: Collector: B. Teate, J. Angelone

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length _____ c. Length of Water Column _____ (a-b)

Casing Diameter/Material 4 / PVC

b. Water Table Depth 3.32 d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA** 33

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make YSI Model 650 Serial Number 11E101107

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 920 | | 11.18 | 7.32 | 0.978 | 4.44 | 214.2 | 14.11 | 200 | 3.47 | clear | NONE |
| 925 | | 11.78 | 7.26 | 1.011 | 2.29 | 187.2 | 13.09 | 200 | 3.51 | clear | none |
| 930 | | 12.54 | 7.18 | 1.012 | 2.23 | 151.0 | 12.11 | 200 | 3.53 | Clear | none |
| 935 | | 12.67 | 7.23 | 1.013 | 2.25 | 144.6 | 11.10 | 200 | 3.56 | Clear | none |
| 940 | | 12.78 | 7.26 | 1.016 | 2.23 | 137.7 | 12.36 | 200 | 3.55 | clear | none |
| 945 | | 12.84 | 7.28 | 1.019 | 2.33 | 126.7 | 11.45 | 200 | 3.56 | Clear | none |
| 950 | | 12.77 | 7.28 | 1.019 | 2.24 | 116.4 | 11.10 | 200 | 3.54 | clear | none |

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

(continued on back)

If no or N/A - Explain below.

No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 4-MW24B-20180312 | 500 mL Poly | 1 | None | Cr6 | 1015 |
| | 500 mL Poly | 1 | $HNO_3$ | TAL Metals | 1015 |
| | 1 L Amber Glass | 2 | None | SVOC | 1015 |
| | VOA 40mL | 3 | HCl | VOCs | 1015 |

Comments _____

Signature John Ang Date 3/12/18

Purge Volume Calculation

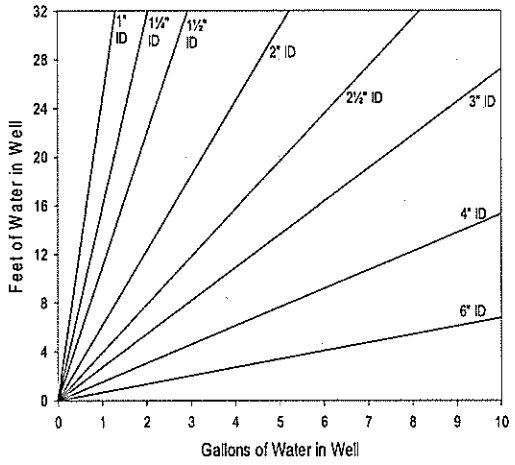


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 955 | | 12.76 | 7.28 | 1.010 | 2.21 | 112 | 10.9 | 200 | 3.56 | |
| 1000 | | 12.81 | 7.28 | 1.009 | 2.00 | 105 | 10.2 | 200 | 3.57 | |
| 1005 | | 12.41 | 7.24 | 1.012 | 1.80 | 100.9 | 8.7 | 200 | 3.5[illegible] | |
| 1010 | | 12.[illegible] | 7.24 | 1.014 | 1.84 | 97.2 | 9.24 | 200 | 3.58 | |
| 1015 | | | | | | | | | | Sample Taken |

AECOM

Well ID: 114-MW25C

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 3/13/18 Time: Start 1100 am/pm
Project No: 60550261.GA.GW.RI.GWSA-field Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: _____ Collector: J. Angelone

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length _____ c. Length of Water Column _____ (a-b) Casing Diameter/Material 2in PVC

b. Water Table Depth 1.54 d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600 XL | PinelD# 30375 |
| | LaMotte | 2020we | 033175 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1120 | | 11.96 | 8.04 | 0.668 | 0.84 | 180.9 | 3.95 | 150 | 1.67 | Clear | None |
| 1125 | | 11.94 | 7.97 | 0.704 | 0.54 | 162.3 | 3.72 | 150 | 1.67 | Clear | None |
| 1130 | | 11.99 | 8.00 | 0.716 | 0.43 | 149.0 | 12.71 | 150 | 1.69 | Clear | None |
| 1135 | | 11.94 | 8.00 | 0.718 | 0.46 | 148.9 | 38.10 | 150 | 1.70 | Clear | None |
| 1140 | | 12.04 | 7.99 | 0.716 | 0.43 | 146.7 | 1234 | 150 | 1.70 | Clear | None |
| 1145 | | 12.04 | 8.00 | 0.717 | 0.39 | 143.9 | 1323 | 150 | 1.70 | Clear | None |
| 1150 | | 12.57 | 8.01 | 0.714 | 0.40 | 134.7 | | 150 | 1.70 | Clear | None |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☐ | ☐ | ☒ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 4-MW25C-20180313 | 500ml Poly | 2 | $H_2NO_3$ | Cr+6 | |
| | 500ml poly | 2 | None | Cr+6 | |
| | 500 ml poly | 4 | None | TAL Metals | |
| | VOA | 6 | HCl | VOCs | |
| | 1L Amber Glass | 4 | None | SVOCs | |

Comments MS/MSD

Signature _____ Date 3/13/18

Purge Volume Calculation

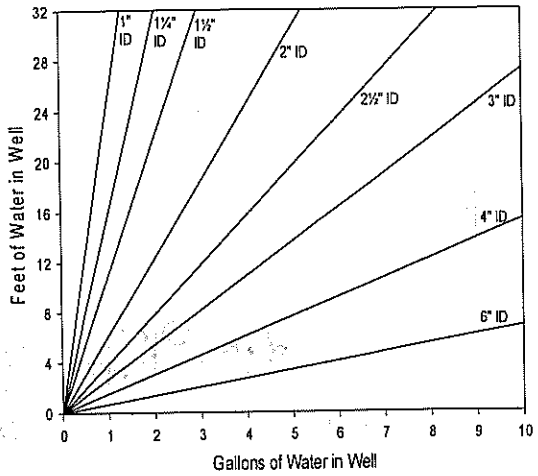


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1200 | | 12.01 | 8.00 | 0.715 | 0.37 | 125.3 | 1547 | 150 | 1.70 | None |
| 1205 | | 12.41 | 8.02 | 0.716 | 0.33 | 120.4 | 1899 | 150 | 1.70 | None |
| 1210 | | 12.64 | 8.03 | 0.718 | 0.29 | 112.0 | 2223 | 150 | 1.72 | None Slight odor (acid) |
| 1215 | | 12.23 | 8.03 | 0.719 | 0.27 | 90.9 | 2312 | 150 | 1.73 | None |
| 1220 | | 12.19 | 8.02 | 0.719 | 0.28 | 81.3 | 2346 | 150 | 1.73 | None |
| 1225 | | 12.04 | 8.03 | 0.718 | 0.28 | 89.4 | 2474 | 150 | 1.73 | None Slight odor |
| 1230 | | 11.99 | 8.00 | 0.717 | 0.28 | 82.9 | 2491 | 150 | 1.73 | None |
| 1235 | | 11.83 | 8.00 | 0.717 | 0.29 | 80.1 | 3421 | 150 | 1.73 | None |
| 1240 | | 11.84 | 8.01 | 0.717 | 0.28 | 77.1 | 3100 | 150 | 1.74 | None |
| 1245 | | 11.86 | 8.00 | 0.717 | 0.26 | 76.5 | 3008 | 150 | 1.74 | None |
| 1250 | | 11.85 | 8.02 | 0.717 | 0.27 | 71.4 | 2987 | 150 | 1.74 | None |
| 1255 | | 11.87 | 8.03 | 0.716 | 0.27 | 70.1 | 2882 | 150 | 1.74 | None |
| 1300 | | | | | | | | | | Sample taken |

AECOM

Well ID: 114-MW26B

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 3/13/18 Time: Start 1025 am/pm
Project No: 60317455 Finish 1355 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: SNOW, 30's Collector: L. KINSEY

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 37' c. Length of Water Column 32.6' (a-b)
   b. Water Table Depth 3.4' d. Calculated System Volume (see back) _____
   Casing Diameter/Material 2IN PVC

2. **WELL PURGE DATA**
   a. Purge Method: BLADDER PUMP

   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ±1.0 unit | - ORP | ±10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600XLM | 03531/16662 (METER, PROBE) |
| | LA MOTTE | 2020WE | 032789 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1030 | | 12.29 | 7.75 | 0.875 | 4.28 | 218.2 | 69.1 | 120 | 3.4 | BRN (LT) CLEAR | NONE |
| 1035 | | 10.48 | 7.9 | 0.875 | 3.62 | 210.8 | 250.3 | 120 | 4.0 | LT BRN - CLEAR | NONE |
| 1040 | | 9.02 | 8.21 | 0.870 | 3.19 | 204.2 | 186.4 | 120 | 4.2 | LT TAN - CLEAR | NONE |
| 1045 | | 8.69 | 8.32 | 0.869 | 2.90 | 199.4 | 110.4 | 120 | 4.2 | LT TAN - CLEAR | NONE |
| 1050 | | 8.47 | 8.34 | 0.864 | 2.43 | 171.3 | 108.7 | 120 | 4.5 | LT TAN - CLEAR | NONE |
| 1055 | | 8.28 | 8.35 | 0.868 | 2.29 | 147.7 | 109.3 | 120 | 4.5 | LT TAN - CLEAR | NONE |
| 1100 | | 8.01 | 8.36 | 0.870 | 2.16 | 130.6 | 68.4 | 120 | 4.7 | LT TAN - CLEAR | NONE |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: LOW FLOW BLADDER PUMP

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW26-20180318 | | 9 | SEE | SOW | 1220 |
| 114-MW26-20180313X | | 9 | SEE | SOW | 1221 |

Comments: low recharge rate

Signature: _____ Date 3/13/2018

Purge Volume Calculation

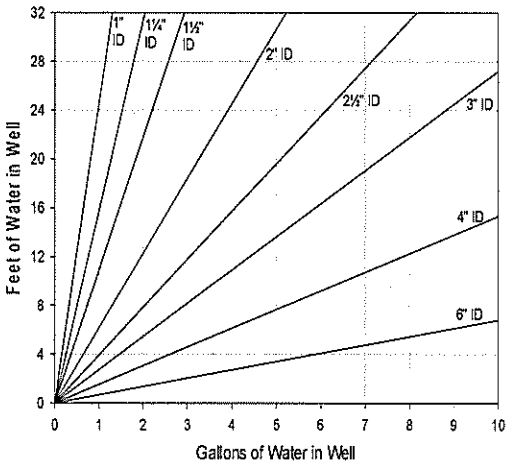


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1105 | | 7.94 | 8.38 | 0.870 | 2.10 | 121.1 | 84.4 | ~~4750~~ | 4.75 | Lt TAN-CLEAR-NONE |
| 1110 | | 7.80 | 8.38 | 0.872 | 2.09 | 118.8 | 70.7 | ~~4850~~ | 4.8 | Lt TAN CLEAR-NONE |
| 1115 | | 7.45 | 8.39 | 0.875 | 2.08 | 119.4 | 61.3 | ~~4850~~ | 4.8 | Lt TAN. CLEAR-NONE |
| 1120 | | 7.24 | 8.39 | 0.875 | 2.03 | 113.4 | 67.3 | ~~4750~~ | 4.75 | Lt TAN-CLEAR-NONE |
| 1125 | | 6.99 | 8.37 | 0.881 | 1.96 | 100.0 | 52.9 | ~~4650~~ | 4.65 | Lt TAN-CLEAR-NONE |
| 1130 | | 6.100 | 8.31 | 0.891 | 1.77 | 70.0 | 48.2 | ~~4600~~ | 4.6 | Lt TAN-CLEAR-NONE |
| 1135 | | 6.101 | 8.30 | 0.892 | 1.106 | 57.8 | 44.1 | 120 | 4.5 | Lt TAN-CLEAR-NONE |
| 1140 | | 6.37 | 8.27 | 0.896 | 1.57 | 41.5 | 53.8 | 120 | 4.5 | Lt TAN-CLEAR-NONE |
| 115 | | 6.25 | 8.24 | 0.901 | 1.43 | 29.3 | 45.6 | 120 | 4.4 | Lt TAN CLEAR NONE |
| 1150 | | 6.24 | 8.24 | 0.90 | 1.39 | 24.4 | 50.2 | 120 | 4.4 | Lt TAN-CLEAR-NONE |
| 1155 | | 6.04 | 8.24 | 0.902 | 1.33 | 19.0 | 46.3 | 120 | 4.35 | Lt TAN. CLEAR-NONE |
| 1200 | | 6.04 | 8.23 | 0.898 | 1.30 | 16.2 | 43.8 | 120 | 4.35 | Lt TAN-CLEAR NONE |
| 1205 | | 5.98 | 8.24 | 0.897 | 1.30 | 14.3 | 45.4 | 120 | 4.35 | Lt TAN-CLEAR-NONE |
| 1210 | | 5.96 | 8.24 | 0.894 | 1.30 | 14.5 | 47.8 | 120 | 4.3 | Lt TAN-CLEAR-NONE |
| 1215 | | 5.94 | 8.24 | 0.894 | 1.31 | 14.5 | 46.5 | 120 | 4.3 | Lt TAN-CLEAR-NONE |
| 1220 | | | | | | | | | | Samples Taken |

AECOM

Well ID: 114-MW15A

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries
Project No: 60317455
Site Location: Garfield Avenue Sites
Weather Cond: Clear 50's

Date: ~~4/16/18~~ 4/17/18 (JA)
Time: Start ~~1245~~ 1045 am/pm
Finish _____ am/pm
Collector: J. Angelone, Alan B.

1. WATER LEVEL DATA: (measured from Top of Casing)
   a. Total Well Length 6ft
   b. Water Table Depth 0.7
   c. Length of Water Column 5.3ft (a-b)
   d. Calculated System Volume (see back) _____
   Casing Diameter/Material 2" PVC

2. WELL PURGE DATA
   a. Purge Method: Low Flow Bladder Pump
   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600XL | Pine# 1F0657 |
| | LaMotte | 2020we | |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1105 | | 12.66 | 8.39 | 0.350 | 3.46 | 83.3 | 67.5 | 50 | 1.1 | Brown | none |
| 1110 | | 13.06 | 8.31 | 0.326 | 3.44 | 86.3 | 61.5 | 50 | 1.2 | Brown | none |
| 1115 | | 13.24 | 8.25 | 0.313 | 3.18 | 87.8 | 55.1 | 50 | 1.2 | Brown | none |
| 1120 | | 13.31 | 8.22 | 0.312 | 2.99 | 88.7 | 51.6 | 50 | 1.2 | Brown | none |
| 1125 | | 13.47 | 8.16 | 0.307 | 2.98 | 90.3 | 43.2 | 50 | 1.3 | Brownish | none |
| 1130 | | 13.49 | 8.11 | 0.307 | 2.11 | 96.7 | 37.2 | 50 | 1.5 | Clear | none |
| 1135 | | 13.40 | 8.08 | 0.312 | 1.80 | 98.3 | 32.5 | 50 | 1.4 | Clear | none |

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

(continued on back)

3. SAMPLE COLLECTION: Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW15A-20180417 | 500 ml Poly | 1 | HNO3 | MTAL | 1215 |
| | 500 ml poly | 1 | NP | MTAL -LF | 1215 |
| | 500ml poly | 1 | NP | Cr6 | 1215 |
| | 500ml Poly | 1 | NP | Cr6 -LF | 1215 |

Comments _____

Signature John Angelone Date 04-17-2018

114-MW15A
continued

4/17/18

Purge Volume Calculation

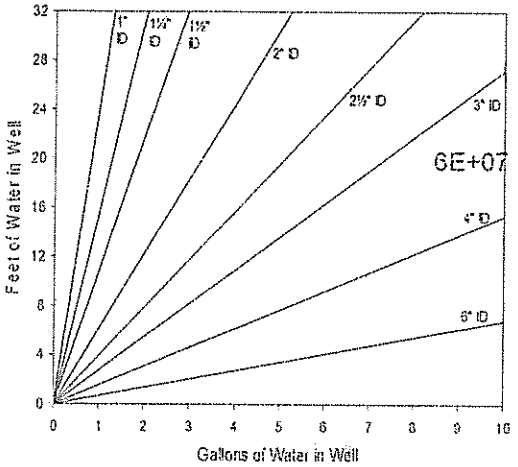


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1140 | | 13.33 | 8.06 | 0.320 | 1.54 | 95.0 | 34.1 | 50 | 1.5 | Clear / none |
| 1145 | | 13.11 | 8.04 | 0.326 | 1.32 | 97.7 | 30.3 | 50 | 1.5 | Clear / none |
| 1150 | | 13.00 | 8.04 | 0.328 | 1.22 | 99.2 | 25.3 | 50 | 1.6 | clear / none |
| 1155 | | 12.88 | 8.04 | 0.330 | 1.09 | 101.6 | 24.2 | 50 | 1.6 | clear / none |
| 1200 | | 12.79 | 8.05 | 0.332 | 0.94 | 101.3 | 20.2 | 50 | 1.9 | |
| 1205 | | 12.66 | 8.04 | 0.332 | 0.84 | 103.2 | 23.0 | 50 | 1.6 | |
| 1210 | | 12.62 | 8.04 | 0.333 | 0.77 | 86.8 | 22.6 | 50 | 1.7 | |
| 1215 | | | | | | | | | | Sample taken |

AECOM

Well ID: 114-MW42A

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 4/17/18 Time: Start 1300 am/pm
Project No: 60550261 Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Clear 50s Collector: J. Angelone, Alan B

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 12ft c. Length of Water Column 10.95 (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 1.05 d. Calculated System Volume (see back). _____

**2. WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600XL | Pine # IF0657 |
| | LaMotte | 2020we | Pine # |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1325 | | 12.28 | 7.00 | 1.175 | 0.00 | 142.4 | 86 | | 1.15 | ~~Clear~~ | none |
| 1330 | | 12.37 | 6.90 | 1.195 | 0.10 | 134.3 | 107 | | 1.17 | Brown | |
| 1335 | | 12.25 | 6.88 | 1.196 | 0.11 | 128.4 | 89 | | 1.17 | ↓ | |
| 1340 | | 12.31 | 6.86 | 1.194 | 0.11 | 123.6 | 117 | | 1.19 | | |
| 1345 | | 12.59 | 6.86 | 1.195 | 0.11 | 118.3 | 89.7 | | 1.26 | Clear/Cloudy | |
| 1350 | | 12.44 | 6.95 | 1.190 | 0.08 | 114.6 | 72.5 | | 1.29 | ↓ | |
| 1355 | | 12.44 | 6.86 | 1.187 | 0.11 | 110.9 | 64.7 | | 1.32 | | |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW42A-20180417 | 500ml Poly | 1 | None | Cr+6 | 1440 |
| | 500ml Poly | 1 | $HNO_3$ | MTAL | 1440 |

Comments _____

Signature John Angelone Date 04/17/2018

Purge Volume Calculation

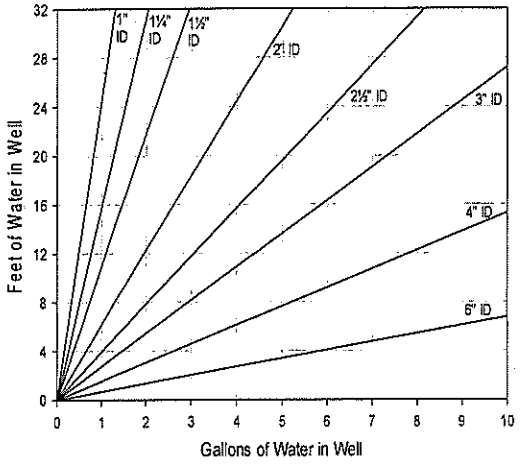


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) ✓ | pH (S.U.) ✓ | Spec. Cond. (mS/cm) ✓ | DO (mg/L) ✓ | ORP (mV) ✓ | Turbidity (NTU) ✓ | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1400 | | 12.60 | 6.85 | 1.182 | 0.10 | 106.7 | 62.7 | | 1.39 | |
| 1405 | | 12.94 | 6.85 | 1.184 | 0.10 | 104.6 | 46.3 | | 1.43 | |
| 1410 | | 12.78 | 6.85 | 1.186 | 0.10 | 102.4 | 36.8 | | 1.44 | |
| 1415 | | 12.52 | 6.85 | 1.179 | 0.10 | 98.9 | 29.9 | | 1.44 | |
| 1420 | | 12.46 | 6.85 | 1.177 | 0.11 | 97.0 | 23.2 | | 1.44 | |
| 1425 | | 12.38 | 6.88 | 1.176 | 0.11 | 94.4 | 19.7 | | 1.44 | |
| 1430 | | 12.30 | 6.87 | 1.172 | 0.11 | 90.7 | 11.4 | | 1.44 | |
| 1435 | | 12.28 | 6.86 | 1.170 | 0.11 | 90.1 | 9.2 | | 1.44 | |
| 1440 | | | | | | | | | | Sample taken |

AECOM

Well ID: 114-MW43A

114-MW43A

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries  Date: 4/17/18  Time: Start 0840 am/pm
Project No: 60550261  Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Cloudy 40's  Collector: J. Angelone Alan B

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 12 ft  c. Length of Water Column 11.88 (a-b)  Casing Diameter/Material 2" PVC

b. Water Table Depth 0.12 ft  d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| Make | Model | | Serial Number |
|---|---|---|---|
| YSI | 600XL | Pine# | 01F0657 |
| LaMotte | 2020ue | Pine# | |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0910 | | 11.16 | 6.91 | 1.889 | 0.24 | -82.9 | 89 | 120 | 0.2 | Opaque tan | none |
| 0915 | | 11.20 | 6.92 | 1.884 | 0.36 | -100.0 | 74 | 120 | 0.2 | ↓ | none |
| 0920 | | 11.23 | 6.94 | 1.880 | 0.49 | -106.6 | 88.5 | 120 | 0.3 | | none |
| 0925 | | 11.21 | 6.95 | 1.880 | 0.53 | -103.0 | 49.9 | 120 | 0.3 | | none |
| 0930 | | 11.23 | 6.95 | 1.879 | 0.49 | -97.7 | 35.9 | 120 | 0.3 | | none |
| 0935 | | 11.26 | 6.96 | 1.874 | 0.49 | -94.5 | 24.9 | 120 | 0.4 | | |
| 0940 | | 11.21 | 6.96 | 1.874 | 0.46 | -92.7 | 23.9 | 120 | 0.4 | | |

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

(continued on back)

If no or N/A - Explain below.

No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW43A-20180417 | 500mL Poly | 1 | None | Cr+6 | 1000 |
| | 500mL Poly | 1 | HNO3 | MTAL | 1000 |

Comments _____

Signature [signature]  Date 4/17/18

Purge Volume Calculation

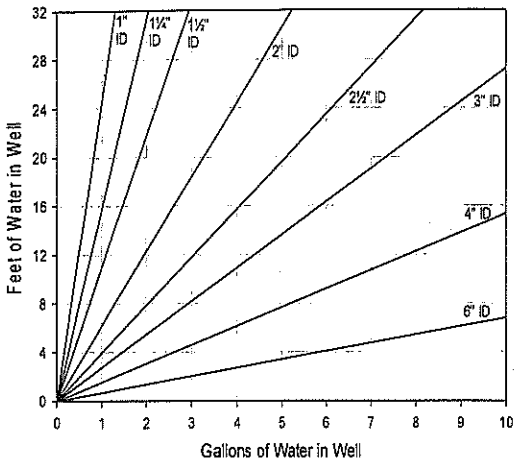


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 0945 | | 11.18 | 6.97 | 1.870 | 0.44 | -89.6 | 17.6 | 120 | 0.4 | |
| 0950 | | 11.20 | 6.98 | 1.859 | 0.41 | -94.3 | 14.5 | 120 | 0.4 | |
| 0955 | | 11.27 | 6.97 | 1.860 | 0.41 | -96.7 | 9.8 | 120 | 0.5 | |
| 1000 | | | | | | | | | | Sample Falcon |

AECOM

Well ID: 114-MW17B

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 4/18/18 Time: Start 10:40 am/pm
Project No: 60550261 Finish 11:20 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Sunny/clear Collector: A. Bud

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 30 c. Length of Water Column 25.8ft (a-b) Casing Diameter/Material 2in. PVC

b. Water Table Depth 5.2ft d. Calculated System Volume (see back). 41.25gal

**2. WELL PURGE DATA**

a. Purge Method: low flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600XL | |
| | LaMotte | 2020 | |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10:70 | | 11.17 | 6.70 | 1.836 | 5.34 | 170.6 | 21.7 | 175 | 5.2 | Clear | none |
| 10:45 | | 11.35 | 6.72 | 1.934 | 4.77 | 162.8 | 9.77 | 175 | 5.2 | Clear | none |
| 10:50 | | 11.79 | 6.73 | 1.961 | 4.03 | 158.7 | 8.15 | 179 | 5.2 | Clear | none |
| 10:55 | | 12.24 | 6.75 | 2.028 | 3.39 | 1500 | 6.52 | 179 | 5.2 | Clear | none |
| 11:00 | | 12:33 | 6.75 | 2.063 | 2.92 | 142.5 | 6.67 | 179 | 5.2 | clear | none |
| 11:05 | | 12.58 | 6.76 | 2.064 | 2.51 | 131.4 | 6.62 | 179 | 5.2 | Clear | none |
| 11:10 | | 12.51 | 6.77 | 2.100 | 2.28 | 123.4 | 6.64 | 179 | 5.2 | clear | none |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: low flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 14-MW17B-20180418 | 500mL Poly | 1 | $HNO_3$ | CCPW Metals | 1115 |
| | 500mL Poly | 1 | None | Cr+6 | 1115 |
| | 1L Amber | 2 | None | SVOC | 1115 |
| | 40mL VOA | 3 | HCl | VOC | 1115 |

Comments

Signature [signature] Date 4/18/18

Purge Volume Calculation

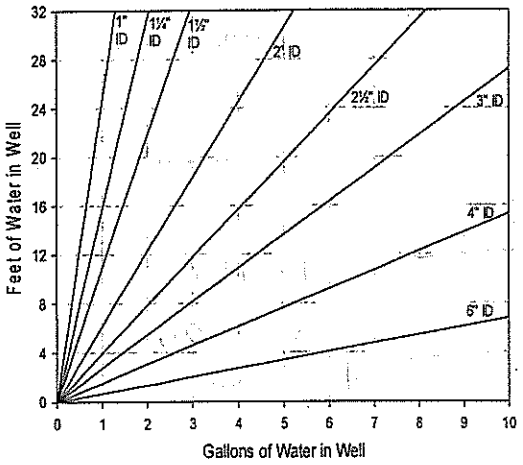


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

AECOM

Well ID: 114-P2A-MW103I

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 4-18-18 Time: Start 930 am/pm
Project No: 60550261 Finish 1235 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Sunny, slight winds, ~43°F Collector: S Parag

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 44.02 c. Length of Water Column 38.43 (a-b)
b. Water Table Depth 5.59 d. Calculated System Volume (see back) —
Casing Diameter/Material 2inch PVC

**2. WELL PURGE DATA**

a. Purge Method: Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make / Model / Pine ID Serial Number

YSI 650 MDS meter-5732 probe-5735
LaMotte 2020we 30500

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1015 | 0 | 6.68 | 7.71 | 0.941 | 17.00 | 205.6 | 8.69 | 200 | 6.17 | clear | none |
| 1020 | 1 | 6.70 | 7.87 | 0.708 | 12.55 | 172.4 | 6.55 | 200 | 6.26 | clear | none |
| 1025 | 2 | 7.03 | 7.88 | 0.693 | 11.30 | 191.8 | 8.51 | 200 | 6.34 | clear | none |
| 1030 | 3 | 7.29 | 7.83 | 0.729 | 7.29 | 200.1 | 15.0 | 200 | 6.39 | clear | none |
| 1035 | 4 | 7.02 | 7.81 | 0.769 | 5.09 | 208.7 | 25.2 | 200 | 6.39 | clear | none |
| 1040 | 5 | 6.89 | 7.80 | 0.783 | 4.12 | 211.6 | 34.9 | 200 | 6.41 | clear | none |
| 1045 | 6 | 7.03 | 7.79 | 0.787 | 2.98 | 213.2 | 49.7 | 200 | 6.43 | clear | none |

Pump set at 34ft bgs

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☐ | ☐ | ☑ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Purge Low Flow

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-P2A-MW103I-20180418 | 1L amber glass | (2) amber glass | none | SVOC | 1125 |
| 114-P2A-MW103I-20180418 | 40mL vials | (3) vials | HCl | VOC | 1215 |

Comments Screen length - 10ft; 32-42 ft bgs; pump set at 34ft bgs
*Note- riser placed on well to elevate to grade - pump was set based off original riser*

Signature S Parag Date 4-18-18

Purge Volume Calculation

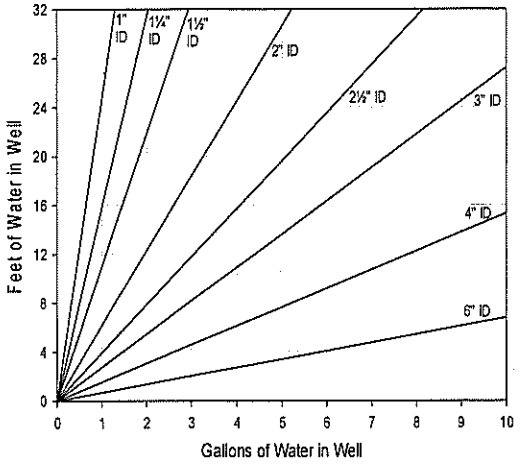


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| | Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1050 | 7 | 7.26 | 7.79 | 0.785 | 2.56 | 211.9 | 70.3 | 200 | 6.44 | cloudy/none |
| | 1055 | 8 | 7.11 | 7.83 | 0.785 | 4.46 | 224.0 | 86.0 | 200 | 6.46 | cloudy/none |
| | 1100 | 9 | 7.56 | 7.79 | 0.781 | 2.54 | 221.7 | 85.3 | 200 | 6.46 | cloudy/none |
| | 1105 | 10 | 7.64 | 7.79 | 0.779 | 2.04 | 218.1 | 98.1 | 200 | 6.46 | cloudy/none |
| | 1110 | 11 | 7.92 | 7.79 | 0.779 | 1.65 | 212.6 | 78.6 | 200 | 6.46 | cloudy/none |
| | 1115 | 12 | 7.65 | 7.80 | 0.778 | 1.54 | 208.2 | 124 | 200 | 6.46 | cloudy/none |
| sample | 1120 | 13 | 8.17 | 7.80 | 0.773 | 1.44 | 204.3 | 113 | 200 | 6.46 | cloudy/none |
| | | | | | | | | | | | |
| post | 1140 | | 8.79 | 7.81 | 0.774 | 1.40 | 213.9 | 98 | 200 | 6.49 | cloudy/none |
| | | | | | | | | | | | |
| set well at 39.5ft | 1145 | 0 | 8.21 | 7.81 | 0.768 | 1.41 | 212 | 125 | 200 | 6.34 | cloudy/none |
| | 1150 | 1 | 7.65 | 7.80 | 0.778 | 1.33 | 209.3 | 1502AU | 200 | 6.34 | cloudy/none |
| | 1155 | 2 | 8.21 | 7.81 | 0.777 | 1.26 | 207.5 | 1746AU | 200 | 6.34 | cloudy/none |
| | 1200 | 3 | 8.23 | 7.81 | 0.774 | 1.00 | 206.2 | 1738AU | 200 | 6.34 | cloudy/none |
| | 1205 | 4 | 8.20 | 7.80 | 0.772 | 0.99 | 205.6 | 1383AU | 200 | 6.34 | cloudy/none |
| | 1210 | 5 | 8.76 | 7.80 | 0.770 | 0.99 | 207.1 | 1253AU | 200 | 6.34 | cloudy/none |
| | | | | | | | | | | | |
| SAMPLE post → | 1230 | | 10.01 | 7.80 | 0.778 | 0.76 | 219.3 | 140NTU | 200 | 6.34 | cloudy/none |
| | | | | | | | | | | | |
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AECOM

Well ID: 114 - P2A - MW103S

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries  Date: 4/18/2018  Time: Start 930 am/pm
Project No: 60550261  Finish 1235 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Sunny/Partially ~~cloudy~~ cloudy 43°F  Collector: M Beer

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 22.35'  c. Length of Water Column 16.4 (a-b)  Casing Diameter/Material 2" PVC

b. Water Table Depth 5.95'  d. Calculated System Volume (see back) —

**2. WELL PURGE DATA**

a. Purge Method: Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| Make | Model | ~~Serial~~ Number |
|---|---|---|
| YSI | Meter: 650MDS Probe 600XL | Pine Meter-13554 Probe = 3180 |
| LaMotte | MB ~~2220~~ we 2020 | 30500 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 ~~0939~~ | 0 | 10 | 7.18 | 2.228 | 1.5 | 133.8 | 102.9 | 400 | 7.3 | Cloudy | None |
| 1005 | ~~0.4~~ 2 | 9.94 | 7.20 | 2.236 | 0.43 | 126.3 | 78.1 | 400 | 8.15 | ↓ | ↓ |
| 1010 | ~~0.7~~ 3.5 | 9.83 | 7.22 | 2.248 | 0.40 | 120.8 | 37.2 | 300 | 8.3 | ↓ | ↓ |
| 1015 | 4.5 | 9.61 | 7.24 | 2.255 | 0.44 | 116.8 | 23.0 | 200 | 7.92 | Clear | None |
| 1020 | 5.5 | 9.75 | 7.27 | 2.263 | 0.42 | 111.3 | 18.7 | 200 | 7.69 | ↓ | ↓ |
| 1025 | 6.5 | 9.79 | 7.28 | 2.276 | 0.42 | 108.7 | 16.6 | 200 | 7.61 | ↓ | ↓ |
| 1030 | 7.5 | 10 | 7.29 | 2.283 | 0.40 | 106.4 | 13.8 | 200 | 7.51 | ↓ | ↓ |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☐ | ☐ | ☑ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Purge low flow

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-P2A-MW103S-11.0-20180418 | (2) amber glass jars | | no preservations | SVOC | 105 |
| | (3) voas | | HCl preservation | VOC | 1050 |
| 114-P2A-MW103S-16.0-20180418 | " | | " | " | 1200 |
| | " | | " | " | 1200 |

Comments Screen Length: 10' (8.5' to 18.5' bgs)
Possible riser as part of stickup well (top of casing)

Signature [signature]  Date 4/18/18

samples @ 11' and 16' bgs

Purge Volume Calculation

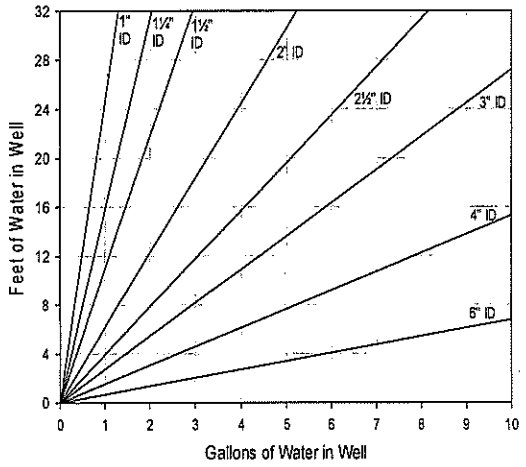


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1035 | 8.5 | 9.79 | 7.29 | 2.284 | 0.39 | 105.9 | 14.1 | 200 | 7.45 | Clear / no odor |
| 1040 | 9.5 | 9.62 | 7.29 | 2.289 | 0.39 | 105.4 | 15.0 | 200 | 7.45 | |
| 1045 | 10.5 | 9.79 | 7.3 | 2.288 | 0.37 | 102.7 | 10.33 | 200 | 7.38 | |
| 1050 | 11.5 | 10.02 | 7.32 | 2.304 | 0.37 | 100 | 8.95 | 200 | 7.35 | |
| ~~1055~~ | Sample @ 1055 | | | | | | | | | |
| Post-sample 1120 ~~1100~~ MB | | 10.47 | 7.41 | 2.376 | 1.47 | 129.7 | 10.06 | 200 | 7.39 | |
| 1125 | 0 | 11.02 | 7.34 | 2.373 | 0.50 | 121.3 | 78.9 | 200 | 7.00 | Slightly cloudy / no odor ~~none~~ |
| 1130 | 1 | 11.19 | 7.31 | 2.387 | 0.42 | 113.7 | 99.1 | 200 | 7.00 | |
| 1135 | 2 | 10.51 | 7.32 | 2.402 | 0.37 | 106.9 | 77.3 | 200 | 6.96 | |
| 1140 | 3 | 10.69 | 7.31 | 2.411 | 0.35 | 101.4 | 48.8 | 200 | 6.89 | |
| 1145 | 4 | 10.66 | 7.32 | 2.419 | 0.35 | 99.9 | 50.4 | 200 | 6.9 | Clear / no odor |
| 1150 | 5 | 10.45 | 7.31 | 2.423 | 0.34 | 98.4 | 42.7 | 200 | 6.89 | |
| 1155 | 6 | 10.82 | 7.32 | 2.426 | 0.32 | 96.3 | 33.9 | 200 | 6.81 | |
| Sample @ 1200 | | | | | | | | | | |
| Post-sample 1230 | | 11.18 | 7.4 | 2.482 | 0.87 | 131.0 | 16.3 | 200 | 6.8 | |

Pump set @ 16'

AECOM

Well ID: MW-CR-3

21 ft

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 4-18-18 Time: Start 1140 am/pm
Project No: 60550261 Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Clear Windy 40's Collector: J. Angelone

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 23 ft c. Length of Water Column 16.63 (a-b) Casing Diameter/Material 2" PVC
   b. Water Table Depth 6.37 d. Calculated System Volume (see back). _____

2. **WELL PURGE DATA**
   a. Purge Method: Low Flow Bladder Pump
   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | Go0x | |
| | LaMotte | 2020we | |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) ✓ | pH ✓ | Spec. Cond. (mS/cm) ✓ | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1205 | | 13.02 | 10.71 | 1.211 | 1.79 | -88.5 | 9.84 | 150 | | Clear | None |
| 1210 | | 13.21 | 10.81 | 1.204 | 1.11 | -101.5 | 9.41 | 150 | | | |
| 1215 | | 13.32 | 10.93 | 1.201 | 0.60 | -118.6 | 8.63 | 150 | | | |
| 1220 | | 13.34 | 10.95 | 1.202 | 0.22 | -132.4 | 7.96 | 150 | | | |
| 1225 | | 13.06 | 10.94 | 1.203 | 0.22 | -135.2 | 7.63 | 150 | | | |
| 1230 | | 13.21 | 10.89 | 1.261 | 0.21 | -137.8 | 7.49 | 150 | | | |
| 1235 | | 13.19 | 10.86 | 1.199 | 0.20 | -136.1 | 7.30 | 150 | | ✓ | |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| MW-CR-3-21.0-20180418 | 500ml Poly | 1 | HNO3 | CCPW Metals | 1240 |
| | 500 ml Poly | 1 | None | Cr+6 | 1240 |
| | 1L Amber | 2 | None | SVOC | 1240 |
| | 40ml VOA | 3 | HCl | VOC | 1240 |

Comments _____

Signature John Cuy Date 4-18-18

AECOM

Well ID: MW-CR-3
16ft

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 4/18/18 Time: Start 1300 am/pm
Project No: 60550261 Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Windy, Sunny, 40's Collector: J. Angelone

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 23ft c. Length of Water Column _____ (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 6.39 d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600XL | |
| | LaMotte | 2020we | |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1320 | | 13.37 | 10.92 | 1.198 | 0.07 | -96.9 | 12.1 | 150 | 6.43 | Clear | None |
| 1325 | | 13.27 | 10.74 | 1.200 | 0.05 | -107.5 | 10.3 | 150 | 6.43 | ↓ | ↓ |
| 1330 | | 13.28 | 10.65 | 1.209 | 0.05 | -116.3 | 8.00 | 150 | 6.44 | | |
| 1335 | | 13.36 | 10.58 | 1.216 | 0.13 | -133.4 | 7.81 | 150 | 6.46 | | |
| 1340 | | 13.47 | 10.57 | 1.225 | 0.13 | -140.0 | 8.21 | 150 | 6.46 | | |
| 1345 | | 13.46 | 10.53 | 1.230 | 0.13 | -136.1 | 7.13 | 150 | 6.46 | | |
| 1350 | | 13.47 | 10.50 | 1.236 | 0.13 | -138.0 | 6.94 | 150 | 6.48 | | |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| MW-CR-3-16.0-20180418 | 500 mL Poly | 1 | $HNO_3$ | CCPW Metals | 1355 |
| | 500 mL Poly | 1 | None | Cr+6 | 1355 |
| | 1L Amber | 2 | None | SVOC | 1359 |
| | 40mL VOA | 3 | HCl None (JA) | VOC | 1355 |

Comments _____

Signature _____ Date 04-18-18

AECOM

Well ID: MW-CR-3
11 ft

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries  Date: 4/18/18  Time: Start 1415 am/pm  Finish ____ am/pm
Project No: 60550261
Site Location: Garfield Avenue Sites
Weather Conds: Sunny, Clear, Windy, 40's  Collector: J. Angelone

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 23ft  c. Length of Water Column 16.79 (a-b)  Casing Diameter/Material 2" PVC
   b. Water Table Depth 6.21ft  d. Calculated System Volume (see back). ____

2. **WELL PURGE DATA**
   a. Purge Method: Low Flow Bladder Pump
   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600XL | |
| | LaMotte | 2020we | |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1415 | | 13.25 | 10.50 | 1.237 | 0.25 | -124.4 | 6.70 | 150 | | | |
| 1420 | | 13.41 | 10.25 | 1.280 | 0.15 | -149.9 | 7.21 | 150 | | | |
| 1425 | | 13.48 | 10.22 | 1.299 | 0.11 | -163.9 | 6.48 | 150 | | | |
| 1430 | | 13.52 | 10.21 | 1.301 | 0.10 | -165.0 | 5.61 | 150 | | | |
| 1435 | | 13.64 | 10.15 | 1.325 | 0.09 | -169.8 | 5.57 | 150 | | | |
| 1440 | | 13.70 | 10.11 | 1.335 | 0.09 | -183.7 | 5.44 | 150 | | | |
| 1445 | | 13.72 | 10.11 | 1.336 | 0.09 | -184.9 | 5.22 | 150 | | | |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| MW-CR-3-20180418 | 500 mL Poly | 1 | None | Cr+6 | 1450 |
| | 500 mL Poly | 1 | $HNO_3$ | CrTot | 1450 |
| | 1L Amber | 2 | None | SVOC | 1450 |
| | 40mL VOA | 3 | HCl | VOC | 1450 |

Comments ____

Signature John Angelone  Date 4/18/18

AECOM

Well ID: MW-CR-3D

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 4/18/18 Time: Start 13:25 am/pm
Project No: 60550261 Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Sunny/clear Collector: A. Bvob

1. **WATER LEVEL DATA: (measured from Top of Casing)** 35.5 41.5
a. Total Well Length ~~40~~46 c. Length of Water Column 35.5 (a-b)
b. Water Table Depth 4.5 d. Calculated System Volume (see back) _____
Casing Diameter/Material 2in PVC

2. **WELL PURGE DATA**
a. Purge Method: low flow Bladder pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make / Model / Serial Number
YSI 600XL
LaMotte 2020

| Time (24hr) | Volume Removed (Liters) | Temp (°C) | pH | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 13:25 | | 13.37 | 7.75 | 1.435 | 3.52 | +139.4 | 8.02 | | 4.5 | Clear | none |
| 13:30 | | 13.37 | 7.69 | 1.413 | 2.88 | +180.8 | 6.68 | | 4.5 | Clear | none |
| 13:35 | | 13.33 | 7.65 | 1.395 | 1.58 | +238.0 | 6.60 | | 4.5 | Clear | none |
| 13:40 | | 13.45 | 7.63 | 1.373 | 0.91 | +260.0 | 12.9 | | 4.5 | Clear | none |
| 13:45 | | 13.52 | 7.60 | 1.363 | 0.76 | +265.3 | 13.8 | | 4.5 | Clear | none |
| 13:50 | | 13.51 | 7.59 | 1.353 | 0.56 | +269.8 | 11.19 | | 4.5 | clear | none |
| 13:55 | | 13.54 | 7.55 | 1.353 | .60 | +259.9 | 9.77 | | 4.5 | Clear | none |

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

(continued on back)

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: low flow Bladder pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| MW-CR-3D-20180418 | 500 ml Poly | 1 | None | Cr+6 | 14:00 |
| | 500ml Poly | 1 | $HNO_3$ | CCPW Metals | 14:00 |
| | 1L Amber | 2 | None | SVOC | 14:00 |
| | 40mL VOA | 3 | HCl | VOC | 14:00 |

Comments _____

Signature _____ Date 4/18/18

## Purge Volume Calculation

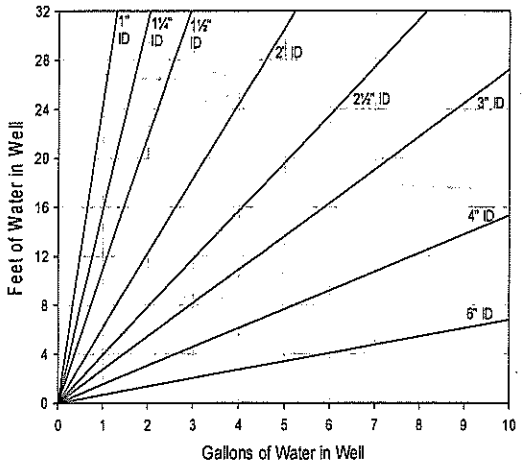


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

AECOM

Well ID: 114-MW20B

# Low Flow Ground Water Sample Collection Record

Client: PPG
Project No: 60555021.1
Site Location: 70 Carteret Ave JC, NJ
Weather Conds: Rain ~40°F
Date: 4-19-18
Time: Start 1415 am/pm
Finish 1525 am/pm
Collector: S. Paige

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 40
   c. Length of Water Column 33.81 (a-b)
   Casing Diameter/Material 2inch / PVC
   b. Water Table Depth 6.19
   d. Calculated System Volume (see back) —

2. **WELL PURGE DATA**
   a. Purge Method: Bladder Pump
   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ±1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600XL | meter-13558 probe-5735 |
| | LaMotte | 2020we | 30500 |

Pine ID

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1425 | 0 | 7.68 | 12.59 | 4.644 | 5.45 | -82.6 | 6.85 | 200 | 6.19 | green | none |
| 1430 | 1 | 8.44 | 12.60 | 4.752 | 4.53 | -73.4 | 3.72 | 200 | 6.49 | green | none |
| 1435 | 2 | 8.67 | 12.61 | 4.785 | 4.27 | -68.0 | 0.96 | 200 | 7.25 | green | none |
| 1440 | 3 | 8.78 | 12.61 | 4.788 | 4.18 | -64.7 | 0.40 | 200 | 7.51 | green | none |
| 1445 | 4 | 8.86 | 12.61 | 4.794 | 4.00 | -60.7 | 0.87 | 200 | 8.06 | green | none |
| 1450 | 5 | 9.04 | 12.35 | 4.072 | 1.5 | -63.8 | 2.46 | 200 | 8.06 | green | none |
| 1455 | 6 | 9.07 | 11.77 | 3.551 | .77 | -76.0 | 1.40 | 200 | 8.06 | green | none |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☐ | ☐ | ☑ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: Low Flow

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW20B-20180419 | | (3) vials | HCl | VOC | 1515 |
| | | (2) amber glass | — | SVOC | |
| | | (1) 500ml plastic | HNO3 | metals | |
| | | (1) 500ml plastic | — | Cr+6 | |

Comments: Well set at 37.5ft bgs, screen 5ft

Signature: Paige
Date: 4-19-18

AECOM ** Second Page for well **

Well ID: 114-MW20B

# Low Flow Ground Water Sample Collection Record

Client: PPG Date: 4-19-18 Time: Start _____ am/pm
Project No: 60550201 Finish _____ am/pm
Site Location: 70 Carteret ave JC, NJ
Weather Conds: Rain ~40°C Collector: S. Paige

1. **WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length _____ c. Length of Water Column _____ (a-b) Casing Diameter/Material _____

b. Water Table Depth _____ d. Calculated System Volume (see back) _____

2. **WELL PURGE DATA**

a. Purge Method: _____

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make Model Serial Number

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 7 | 9.30 | 10.81 | 3.300 | 0.43 | -112.9 | 0.66 | 200 | 8.31 | green | none |
| 1505 | 8 | 9.36 | 10.78 | 3.291 | 0.42 | -121.4 | 0.67 | 200 | 8.52 | green | none |
| 1510 | 9 | 9.36 | 10.72 | 3.294 | 0.39 | -126.6 | 0.65 | 200 | 8.67 | green | none |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: _____

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| | | | | | 1515 |

Comments * see page 1 for well details *

Signature SPaige Date 4-19-18

AECOM

Well ID: 114-MW20C

# Low Flow Ground Water Sample Collection Record

Client: PPG Date: 4/19/18 Time: Start 14:10 am/pm
Project No: 60550261 Finish 1535 am/pm
Site Location: 70 Carfuel Ave
Weather Conds: rain, ~45°F Collector: A.B.C.D / S.Paige

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 83 c. Length of Water Column 78.7 (a-b) Casing Diameter/Material 4inch PVC
   b. Water Table Depth 4.3 d. Calculated System Volume (see back) —

2. **WELL PURGE DATA**
   a. Purge Method: Bladder Pump
   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used: YSI Make, 600 Model, meter-5733~~3180~~ PineID, probe-3180 Serial Number
   Chemetric, 2020, 19293

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 14:15 | 0 | 10.10 | 6.50 | 0.842 | 6.59 | 61.5 | 16.0 | 200 | 4.3 | clear | none |
| 14:20 | 1 | 10.96 | 6.25 | 0.926 | 2.60 | 1.6 | 14.1 | | 4.40 | | |
| 14:25 | 2 | 10.59 | 6.29 | 0.942 | 1.76 | -11.2 | 17.1 | | 4.46 | | |
| 14:30 | 3 | 10.18 | 6.23 | 0.947 | 1.31 | -15.1 | 15.7 | | 4.50 | | |
| 14:35 | 4 | 10.14 | 6.22 | 0.957 | 1.23 | -21.7 | 14.1 | | 4.51 | | |
| 14:40 | 5 | 10.34 | 6.21 | 0.961 | 1.12 | -29.6 | 26.7 | | 4.56 | | |
| 14:45 | 6 | 10.40 | 6.21 | 0.971 | 1.01 | -37.3 | 24.1 | ↓ | 4.57 | ↓ | ↓ |

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

(continued on back)

3. **SAMPLE COLLECTION:** Method: LOW FLOW

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW20C-20180419 | (3) VOA's | | HCl | VOC | 1525 |
| | (2) amber | | — | SVOC | |
| | (1) 500ml plastic | | HNO3 | metal | |
| | (1) 500ml plast | | — | Cr+6 | |

Comments 5ft screen, pump set at 80.5 ft

Signature S.Paige Date 4-19-18

AECOM *Second page for well*

Well ID: 114-MW20C

# Low Flow Ground Water Sample Collection Record

Client: PPG Date: 4/19/18 Time: Start _____ am/pm
Project No: 60550261 Finish _____ am/pm
Site Location: 70 Carteret Ave
Weather Conds: Rain ~ 40°F Collector: A. Bvob / S. Paige

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length _____ c. Length of Water Column _____ (a-b) Casing Diameter/Material _____
   b. Water Table Depth _____ d. Calculated System Volume (see back) _____

2. **WELL PURGE DATA**
   a. Purge Method: _____
   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used: Make Model Serial Number

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 14:50 | 7 | 10.32 | 6.21 | 0.983 | 0.89 | -41.9 | 17.1 | 200 | SW: 4.59 | clear | none |
| 14:55 | 8 | 10.29 | 6.23 | 1.042 | 0.86 | -44.7 | 16.3 | 200 | 4.59 | clear | none |
| 15:00 | 9 | 10.30 | 6.26 | 1.109 | 0.63 | -48.5 | 14.9 | 200 | 4.59 | clear | none |
| 1505 | 10 | 10.50 | 6.37 | 1.235 | 0.77 | -54.5 | 12.1 | 200 | 4.59 | clear | none |
| 1510 | 11 | 10.58 | 6.46 | 1.308 | 0.74 | -59.9 | 9.70 | 200 | 4.59 | clear | none |
| 1515 | 12 | 10.65 | 6.49 | 1.316 | 0.72 | -61.6 | 9.49 | 200 | 4.59 | clear | none |
| 1520 | 13 | 10.70 | 6.51 | 1.320 | 0.72 | -61.1 | 8.71 | 200 | 4.59 | clear | none |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: _____

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| | | | | VOC | |
| | | | | SVOC | 1525 |
| | | | | MTAL | |

Comments: *see page 1 for well details*

Signature _____ Date 4-19-18

AECOM

Well ID: 114-MW22A
11ft

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 4-19-18 Time: Start 1428 am/pm
Project No: 60550261 Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: 40's Rain Collector: J. Angelone

1. **WATER LEVEL DATA: (measured from Top of Casing)** 15.52
   a. Total Well Length 19ft c. Length of Water Column 16 (a-b) Casing Diameter/Material 2" PVC
   b. Water Table Depth 3.52 d. Calculated System Volume (see back). 2.33 gallons
2. **WELL PURGE DATA**
   a. Purge Method: Low Flow Bladder Pump
   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used: Make LaMotte Model 2020we Serial Number

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1450 | | 8.87 | 7.29 | 1.906 | 0.28 | -133.5 | 1.47 | 150 | 3.57 | Clear | None |
| 1455 | | 8.86 | 7.29 | 1.907 | 0.29 | -132.7 | 1.42 | 150 | 3.57 | | |
| 1500 | | 8.85 | 7.29 | 1.913 | 0.28 | -134.0 | 1.29 | 150 | 3.59 | | |
| 1505 | | 8.93 | 7.29 | 1.914 | 0.26 | -133.4 | 1.24 | 150 | 3.60 | | |
| 1510 | | 9.00 | 7.28 | 1.913 | 0.24 | -133.8 | 1.23 | 150 | 3.60 | | |
| 1515 | | 9.27 | 7.28 | 1.912 | 0.23 | -135.0 | 1.18 | 150 | 3.63 | | |
| 1520 | | 9.65 | 7.28 | 1.908 | 0.23 | -133.9 | 1.03 | 156 | 3.64 | | |

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

(continued on back)

3. **SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 1-MW22A-11.0-20180419 | 500 mL Poly | 1 | None | Cr6 | 1535 |
| | 500 mL Poly | 1 | $HNO_3$ | MTAL | 1535 |

Comments

Signature John Angelone Date 04-19-18

Purge Volume Calculation

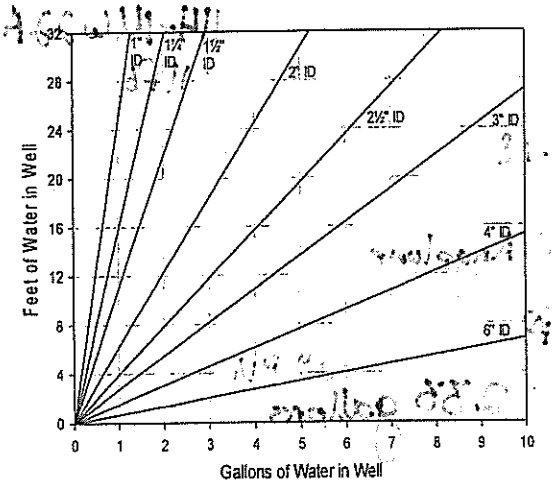


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1525 | | 9.39 | 7.28 | 1.910 | 0.18 | -134.1 | 1.01 | 150 | 3.64 | Clear / None |
| 1530 | | 9.55 | 7.28 | 1.915 | 0.19 | -131.9 | 0.94 | 150 | 3.67 | Clear / None |

AECOM

Well ID: 114-MW22A

16 Ft

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 4/19/18 Time: Start 1340 am/pm
Project No: 60317455 Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: 40's, Rain Collector: J. Angelone

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 19 ft c. Length of Water Column 16.2 (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 2.80 d. Calculated System Volume (see back) 2.75 gallons

2. WELL PURGE DATA

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make / Model / Serial Number

YSI / 600XL
LaMotte / 2020we

| Time (24hr) | Volume Removed (Liters) | Temp. ✓ (°C) | pH ✓ | Spec. Cond. ✓ (mS/cm) | DO ✓ (mg/L) | ORP ✓ (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1400 | | 9.18 | 7.32 | 1.889 | 0.57 | -130.9 | | 150 | | | |
| 1405 | | 9.17 | 7.32 | 1.889 | 0.50 | -134.7 | | 150 | | | |
| 1410 | | 9.18 | 7.32 | 1.889 | 0.48 | -134.7 | 2.51 | 150 | 3.55 | | |
| 1415 | | 9.17 | 7.31 | 1.891 | 0.44 | -136.1 | | 150 | | | |
| 1420 | | 9.18 | 7.31 | 1.892 | 0.44 | -134.6 | | 150 | | | |
| 1425 | | 9.19 | 7.31 | 1.896 | 0.40 | -135.6 | | 150 | | | |
| 1430 | | 9.20 | 7.31 | 1.897 | 0.39 | -136.1 | 2.07 | 150 | | | |

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

(continued on back)

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

3. SAMPLE COLLECTION: Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 1-MW22A-16.0-20180419 | 500ml poly | 1 | None | Cr+6 | 1435 |
| | 500ml poly | 1 | $HNO_3$ | MTAL | 1435 |

Comments

Signature John Angelone Date 4-19-18

Purge Volume Calculation

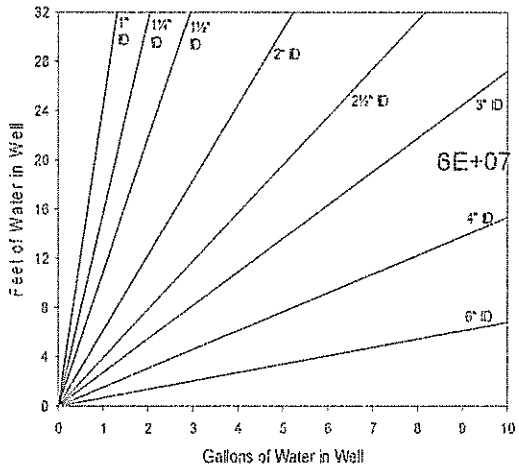


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
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AECOM

Well ID: 114-MW22B

# Low Flow Ground Water Sample Collection Record

~~16ft~~ 30ft (SA)

Client: PPG Industries Date: 04/19/18 Time: Start 0920 (am/pm)
Project No: 60550261 Finish 1220 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Cloudy, windy 40's Collector: T. Islam

1. **WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 33ft c. Length of Water Column ~~4.75~~ 28.25 (a-b) Casing Diameter/Material 2 in PVC

b. Water Table Depth 4.75 d. Calculated System Volume (see back). 4.5 gal/bag

2. **WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make Model Serial Number

YSI
Lamotte

| Time (24hr) | Volume Removed (liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1020 | 0 | 11.07 | 12.30 | 1.752 | 9.19 | 197.0 | 32.1 | 100 | @4.75 | Clear | No odor |
| 1025 | .75 | 11.56 | 12.33 | 1.735 | 8.64 | 173.4 | 27.8 | 100 | 4.96 | Light green | No odor |
| 1030 | 1.0 | 12.14 | 12.40 | 1.710 | 8.13 | 155.2 | 32.2 | 100 | 5.18 | Light green | No odor |
| 1035 | 1.12 | 12.28 | 12.31 | 1.436 | 7.73 | 146.7 | 29.3 | 100 | 5.97 | Light Green | No odor |
| 1040 | 1.25 | 12.49 | 11.94 | 1.170 | 6.82 | 134.9 | 38.1 | 100 | 6.75 | Light Green | No odor |
| 1045 | 1.50 | 12.51 | 11.13 | 1.032 | 5.97 | 137.2 | 44.7 | 100 | 6.92 | Light Green | No odor |
| 1050 | 1.75 | 12.59 | 10.55 | 0.840 | 5.19 | 139.7 | 52.4 | 100 | 7.05 | Light Green | No odor |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: Low Flow

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW22B-20180419 | 500 mL Plastic | 2 | None | XCR | 11:55 |
| 114-MW22B-20180419 | 500 mL Plastic | 1 | None | MTAL | 11:55 |
| 114-MW22B-20180419 | 500 mL Plastic | 1 | HNO3 | MTAL | 11:55 |

Comments

Signature Date 04/19/18

Purge Volume Calculation

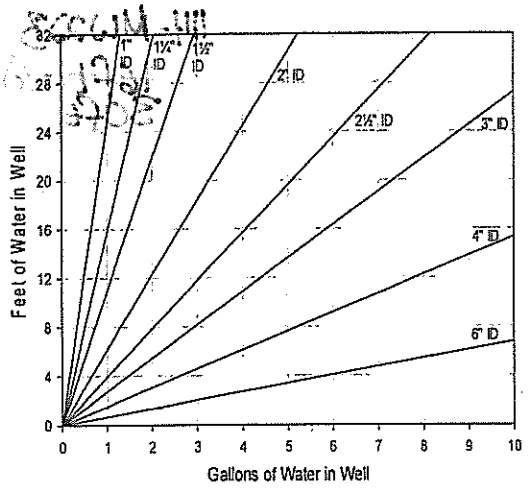


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed ~~(Liters)~~ Gallons | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1055 | 2.10 | 12.62 | 9.97 | 0.840 | 4.59 | 142.3 | 48.7 | 100 | 7.11 | Light brown | Mild |
| 1100 | 2.25 | 12.67 | 9.59 | 0.839 | 4.03 | 148.6 | 44.1 | 100 | 7.25 | " | " |
| 1105 | 2.50 | 12.67 | 8.17 | 0.858 | 3.51 | 152.3 | 51.7 | 100 | 7.35 | " | " |
| 1110 | 2.75 | 12.67 | 8.55 | 0.882 | 3.03 | 156.0 | 59.5 | 100 | 7.45 | " | " |
| 1115 | 2.90 | 12.71 | 8.51 | 0.892 | 2.89 | 161.7 | 46.1 | 100 | 7.95 | " | " |
| 1120 | 2.10 | 12.75 | 8.20 | 0.901 | 2.46 | 165.2 | 35.3 | 100 | 7.45 | " | " |
| 1125 | 3.15 | 12.78 | 7.91 | 0.909 | 2.29 | 170.3 | 37.6 | 100 | 7.42 | " | " |
| 1130 | 3.25 | 12.69 | 7.77 | 0.915 | 2.17 | 175.0 | 37.0 | 100 | 7.40 | " | " |
| 1135 | 3.30 | 12.71 | 7.69 | 0.917 | 2.01 | 177.1 | 38.3 | 100 | 7.38 | " | " |
| 1140 | 3.50 | 12.73 | 7.62 | 0.919 | 1.87 | 178.4 | 39.1 | 100 | 7.35 | " | " |
| 1145 | 3.62 | 12.74 | 7.54 | 0.922 | 1.81 | 176.0 | 38.8 | 100 | 7.30 | " | " |
| 1150 | 3.75 | 12.76 | 7.48 | 0.925 | 1.75 | 181.4 | 37.9 | 100 | 7.25 | " | " |

AECOM

Well ID: 114-MW22B

# Low Flow Ground Water Sample Collection Record

~~16ft~~ 30ft (SA)

Client: PPG Industries Date: 04/19/18 Time: Start 0920 (am/pm)
Project No: 60550261 Finish 1220 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Cloudy, windy 40's Collector: T. Islam

1. **WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 33ft c. Length of Water Column ~~4.75~~ 28.25 (a-b) Casing Diameter/Material 2 in PVC

b. Water Table Depth 4.75 d. Calculated System Volume (see back). 4.5 gal/bag

2. **WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make Model Serial Number

YSI
Lamotte

| Time (24hr) | Volume Removed (liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1020 | 0 | 11.07 | 12.30 | 1.752 | 9.19 | 197.0 | 32.1 | 100 | @4.75 | Clear | No odor |
| 1025 | .75 | 11.56 | 12.33 | 1.735 | 8.64 | 173.4 | 27.8 | 100 | 4.96 | Light green | No odor |
| 1030 | 1.0 | 12.14 | 12.40 | 1.710 | 8.13 | 155.2 | 32.2 | 100 | 5.18 | Light green | No odor |
| 1035 | 1.12 | 12.28 | 12.31 | 1.436 | 7.73 | 146.7 | 29.3 | 100 | 5.97 | Light Green | No odor |
| 1040 | 1.25 | 12.49 | 11.94 | 1.170 | 6.82 | 134.9 | 38.1 | 100 | 6.75 | Light Green | No odor |
| 1045 | 1.50 | 12.51 | 11.13 | 1.032 | 5.97 | 137.2 | 44.7 | 100 | 6.92 | Light Green | No odor |
| 1050 | 1.75 | 12.59 | 10.55 | 0.840 | 5.19 | 139.7 | 52.4 | 100 | 7.05 | Light Green | No odor |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: Low Flow

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW22B-20180419 | 500 mL Plastic | 2 | None | XCR | 11:55 |
| 114-MW22B-20180419 | 500 mL Plastic | 1 | None | MTAL | 11:55 |
| 114-MW22B-20180419 | 500 mL Plastic | 1 | HNO3 | MTAL | 11:55 |

Comments

Signature Date 04/19/18

Purge Volume Calculation

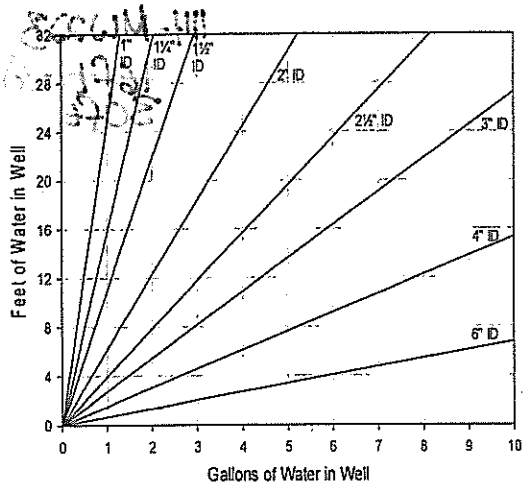


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed ~~(Liters)~~ Gallons | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1055 | 2.10 | 12.62 | 9.97 | 0.840 | 4.59 | 142.3 | 48.7 | 100 | 7.11 | Light brown | Mild |
| 1100 | 2.25 | 12.67 | 9.59 | 0.839 | 4.03 | 148.6 | 44.1 | 100 | 7.25 | " | " |
| 1105 | 2.50 | 12.67 | 8.17 | 0.858 | 3.51 | 152.3 | 51.7 | 100 | 7.35 | " | " |
| 1110 | 2.75 | 12.67 | 8.55 | 0.882 | 3.03 | 156.0 | 59.5 | 100 | 7.45 | " | " |
| 1115 | 2.90 | 12.71 | 8.51 | 0.892 | 2.89 | 161.7 | 46.1 | 100 | 7.95 | " | " |
| 1120 | 2.10 | 12.75 | 8.20 | 0.901 | 2.46 | 165.2 | 35.3 | 100 | 7.45 | " | " |
| 1125 | 3.15 | 12.78 | 7.91 | 0.909 | 2.29 | 170.3 | 37.6 | 100 | 7.42 | " | " |
| 1130 | 3.25 | 12.69 | 7.77 | 0.915 | 2.17 | 175.0 | 37.0 | 100 | 7.40 | " | " |
| 1135 | 3.30 | 12.71 | 7.69 | 0.917 | 2.01 | 177.1 | 38.3 | 100 | 7.38 | " | " |
| 1140 | 3.50 | 12.73 | 7.62 | 0.919 | 1.87 | 178.4 | 39.1 | 100 | 7.35 | " | " |
| 1145 | 3.62 | 12.74 | 7.54 | 0.922 | 1.81 | 176.0 | 38.8 | 100 | 7.30 | " | " |
| 1150 | 3.75 | 12.76 | 7.48 | 0.925 | 1.75 | 181.4 | 37.9 | 100 | 7.25 | " | " |

AECOM

Well ID: 114-P2B4-MW102I 28ft

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 4/19/18 Time: Start 9:58 am/pm
Project No: 60550261 Finish 10:40 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Cloudy rain/wind Collector: A. Bush

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 36ft c. Length of Water Column 33.26 (a-b) Casing Diameter/Material 4 in PVC
   b. Water Table Depth 2.74 d. Calculated System Volume (see back). ✓

2. **WELL PURGE DATA**
   a. Purge Method: low flow Bladder pump
   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600XL | (M)030774 (P)01F0657 |
| | LaMotte | 2020we | 19243 |

| Time (24hr) | Volume Removed (Liters) | Temp (°C) | pH | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10:00 | 0 | 10.98 | 7.63 | 2.940 | 2.54 | 209.1 | 7.84 | 200 | 2.74 | light green | none |
| 10:05 | 1 | 11.00 | 7.56 | 2.923 | .87 | 208.5 | 3.54 | ↓ | 2.74 | light green | none |
| 10:10 | 2 | 10.11 | 7.52 | 2.923 | .65 | 208.0 | 18.6 | | 2.74 | light green | none |
| 10:15 | 3 | 10.04 | 7.50 | 2.925 | .62 | 207.8 | 15.1 | | 2.74 | light green | none |
| 10:20 | 4 | 10.04 | 7.48 | 2.921 | .71 | 207.5 | 15.4 | | 2.74 | light green | none |
| 10:25 | 5 | 10.86 | 7.47 | 2.922 | .55 | 207.4 | 16.8 | | 2.74 | light green | none |
| 10:30 | 6 | 10.82 | 7.45 | 2.923 | .55 | 206.9 | 15.9 | | 2.74 | light green | none |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☐ | ☐ | ☒ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: low flow Bladder pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-P2B4-MW102I-25.0-20180419 | 3 vials | | HCL | VOC | 10:35 |
| | 2 amber Jars | | None | SVOC | 10:35 |

Comments (M)=Meter (P)=Probe

Signature Allen B Date 04/19/18

AECOM

Well ID: 114-P2B4-MW102I
33.0 ft

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries
Project No: 60550261
Site Location: Garfield Avenue Sites
Weather Conds: Cloudy wind / rain
Date: 04/19/18
Time: Start 10:45 am/pm
Finish 11:20 am/pm
Collector: A. Brod

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 36ft
   b. Water Table Depth 2.74
   c. Length of Water Column 33.26 (a-b)
   d. Calculated System Volume (see back). —
   Casing Diameter/Material 4in PVC

2. **WELL PURGE DATA**
   a. Purge Method: low flow Bladder pump

   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600XL | (M) 030779 (P) 1F0657 |
| | LaMotte | 2020we | 14293 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10:50 | ~~1~~ 17 | 11.11 | 9.18 | 3.616 | 0.48 | 200.4 | 16.3 | 200 | 2.74 | green | none |
| 10:55 | 1 | 11.26 | 9.34 | 3.709 | 0.43 | 210.8 | 19.9 | | 2.74 | green | none |
| 11:00 | 2 | 11.23 | 9.29 | 3.715 | 0.37 | 211.2 | 16.2 | | 2.74 | green | none |
| 11:05 | 3 | 11.21 | 9.26 | 3.700 | 0.19 | 211.2 | 14.2 | | 2.74 | green | none |
| 11:10 | 4 | 11.19 | 9.16 | 3.653 | 0.20 | 211.5 | 15.3 | | 2.74 | green | none |
| 11:15 | 5 | 11.34 | 9.09 | 3.617 | 0.19 | 211.4 | 11.1 | | 2.74 | green | none |
| 11:20 | 6 | 11.34 | 9.02 | 3.590 | 0.14 | 211.6 | 13.0 | | 2.74 | green | none |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☐ | ☐ | ☒ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: low flow Bladder pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-P2B4-MW102I-33.0-20180419 | 3 vials | 3 | HCl | VOC | 11:25 |
| | Amber Jar | 1 | None | SVOC | 11:25 |

Comments (M) = meter (P) = Probe

Signature [signature] Date 04/19/18

AECOM

Well ID: 114-P2B4 - MW1025 8ft

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 4-19-18 Time: Start 940 am/pm
Project No: 60550261 Finish 1120 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Rain ~50°F Collector: S. Paige

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 16ft c. Length of Water Column 13.31 (a-b) Casing Diameter/Material 4inch PVC
   b. Water Table Depth 2.69 d. Calculated System Volume (see back). —

2. **WELL PURGE DATA**
   a. Purge Method: Bladder Pump
   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used:

| | Make | Model | Pine ID ~~Serial Number~~ | |
|---|---|---|---|---|
| | YSI | 600XL | meter-13558 | probe-5735 |
| | LaMotte | 2020we | 30500 | |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 0 | 4.49 | 6.93 | 1.255 | 6.47 | 202.6 | 24.5 | 300 | 2.80 | clear | none |
| 1005 | 1.5 | 4.41 | 6.80 | 1.374 | 4.75 | 192.6 | 20.1 | 300 | 2.80 | clear | none |
| 1010 | 3 | 4.38 | 6.78 | 1.488 | 3.78 | 137.0 | 18.1 | 300 | 2.80 | clear | none |
| 1015 | 4.5 | 4.40 | 6.76 | 1.621 | 3.17 | 99.7 | 10.4 | 300 | 2.80 | clear | none |
| 1020 | 6 | 4.45 | 6.77 | 1.745 | 2.46 | 82.2 | 12.8 | 300 | 2.80 | clear | none |
| 1025 | 7.5 | 4.46 | 6.78 | 1.868 | 2.06 | 66.9 | 12.4 | 300 | 2.80 | clear | none |
| 1030 | 9 | 4.44 | 6.79 | 2.102 | 1.85 | 57.0 | 11.9 | 300 | 2.80 | clear | none |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☐ | ☐ | ☒ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: Low Flow

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-P2B4-MW1025-8.0-20180419 | 3 vials | | HCl | VOC | 1015 |
| | 2 amber | | none | SVOC | |

Comments pump set at 8ft, 10ft screen - first interval

Signature S Paige Date 4-19-18

Purge Volume Calculation

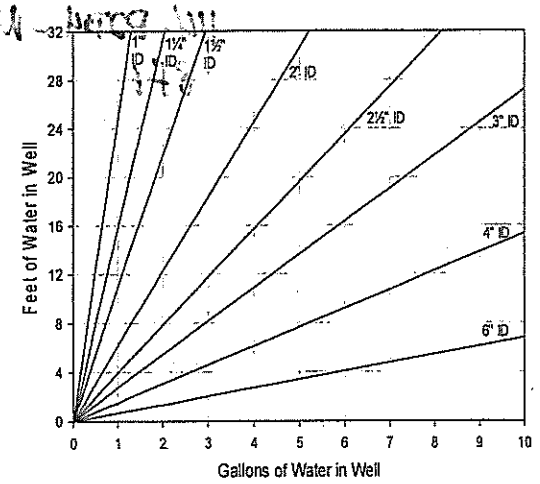


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

3% 10% 10mV

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1035 | 10.5 | 4.55 | 6.81 | 2.253 | 1.80 | 44.1 | 11.9 | 300 | 2.80 | clear/none |
| 1040 | 12 | 4.51 | 6.86 | 2.601 | 1.55 | 23.7 | 11.5 | 300 | 2.80 | clear/none |
| 1045 | 13.5 | 4.63 | 6.91 | 3.049 | 1.29 | 13.2 | 10.92 | 300 | 2.80 | clear/none |
| 1050 | 15 | 4.66 | 6.94 | 3.392 | 1.23 | 0.0 | 10.95 | 300 | 2.80 | clear/none |
| 1055 | 17.5 | 4.68 | 6.96 | 3.511 | 1.15 | -4.4 | 10.27 | 300 | 2.80 | clear/none |
| 1200 | 19 | 4.70 | 6.98 | 3.609 | 1.11 | -11.8 | 10.01 | 300 | 2.80 | clear/none |
| 1205 | 20.5 | 4.69 | 7.00 | 3.648 | 1.05 | -16.8 | 9.36 | 300 | 2.80 | clear/none |
| 1210 | 21 | 4.68 | 7.01 | 3.669 | 1.04 | -22.1 | 9.10 | 300 | 2.80 | clear none |

AECOM

Well ID: 114-P2B4-MW1025 13ft

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries  Date: 4-19-18  Time: Start 1225 am/pm  Finish _____ am/pm
Project No: 60550261
Site Location: Garfield Avenue Sites
Weather Conds: Rain ~ 45°F  Collector: S. Paige

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 16ft  c. Length of Water Column 13.20 (a-b)  Casing Diameter/Material 4inch PVC
   b. Water Table Depth 2.80  d. Calculated System Volume (see back) —

2. **WELL PURGE DATA**
   a. Purge Method: Bladder Pump
   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used:

| Make | Model | ~~Serial Number~~ Pine ID |
|---|---|---|
| YSI | 600XL | meter-13558 probe-5735 |
| LaMotte | 2020we | 30500 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1130 | | 4.55 | 6.99 | 4.956 | 0.81 | -41.3 | 5.16 | 300 | 2.80 | clear | none |
| 1135 | | 4.56 | 6.98 | 5.196 | 0.77 | -46.8 | 4.26 | 300 | 2.80 | clear | none |
| 1140 | | 4.61 | 6.99 | 5.278 | 0.76 | -50.8 | 2.74 | 300 | 2.80 | clear | none |
| 1145 | | 4.58 | 6.99 | 5.286 | 0.73 | -52.5 | 2.07 | 300 | 2.80 | clear | none |
| 1150 | | 4.53 | 6.99 | 5.281 | 0.71 | -55.1 | 1.87 | 300 | 2.80 | clear | none |
| 1155 | | 4.57 | 6.99 | 5.250 | 0.70 | -56.9 | 0.22 | 300 | 2.80 | clear | none |
| 1200 | | 4.53 | 7.00 | 5.264 | 0.69 | -58.3 | 0.21 | 300 | 2.80 | clear | none |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: Low Flow

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-P2B4-MW1025-13.0-20180419 | 3 vials | 3 | HCl | VOC | 1205 |
| | 2 amber | 2 | none | SVOC | |

Comments Screen 10ft; 2nd interval

Signature S Paige  Date 4-19-18

Purge Volume Calculation

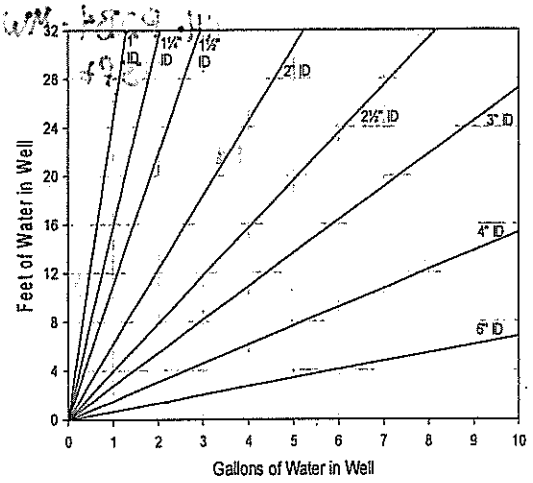


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

AECOM

Well ID: 114-MW20A INT. #2

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 4/20/2018 Time: Start 1107 am/pm
Project No: 60317455 Finish 1215 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: 39°F p. cloudy, min Collector: SC

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 15.0 c. Length of Water Column 7.48 (a-b) Casing Diameter/Material 2" / PVC
   b. Water Table Depth 7.52 d. Calculated System Volume (see back)

2. **WELL PURGE DATA**
   a. Purge Method: low flow

   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 650 MDS | 3531 |
| | LaMotte | 2020 WE | |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1110 | | 8.77 | 6.94 | 1.373 | 1.16 | -44.7 | 5.72 | 150 | 7.92 | yellow | none |
| 1115 | | 8.83 | 6.98 | 1.407 | 1.23 | -48.6 | 4.61 | 150 | 7.92 | yellow | none |
| 1120 | | 8.84 | 7.07 | 1.541 | 1.41 | -61.5 | 2.95 | 150 | 7.92 | yellow | none |
| 1125 | | 8.90 | 7.13 | 1.553 | 1.50 | -80.5 | 2.86 | 150 | 7.92 | yellow | none |
| 1130 | | 8.91 | 7.22 | 1.601 | 1.59 | -92.3 | 2.16 | 150 | 7.92 | yellow | none |
| 1135 | | 9.96 | 7.28 | 1.651 | 1.62 | -94.7 | 2.09 | 150 | 7.92 | yellow | none |
| 1140 | | 9.02 | 7.33 | 1.674 | 1.69 | -97.1 | 2.11 | 150 | 7.92 | yellow | none |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW20A-8.0-20180420 | | | | | 1145 |

Comments: pump inlet @ 8.0 ft, proposed 7.0 ft is above water table

Signature [signature] Date 4/20/2018

Pump Set at 7 ft and 11 ft!

AECOM

Well ID: 114-MW20A INT #1

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 4/20/18 Time: Start 955 am/pm
Project No: 60550261 Finish 1100 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: 39°F, p. cloudy, windy Collector: SC

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 13.0 ft c. Length of Water Column 7.48 (a-b) Casing Diameter/Material 2"/PVC
   b. Water Table Depth 7.52 d. Calculated System Volume (see back)

2. **WELL PURGE DATA**
   a. Purge Method: Low Flow
   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 650 MDS | 3531 |
| | LaMotte | 2020 WE | |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1005 | | 8.61 | 6.59 | 1.898 | 1.77 | 103.1 | 11.8 | 225 | 7.91 | yellow | none |
| 1010 | | 9.07 | 6.76 | 1.822 | 1.90 | 43.4 | 11.1 | 225 | 7.99 | yellow | none |
| 1015 | | 9.12 | 6.80 | 1.651 | 2.70 | -63.1 | 6.27 | 225 | 8.01 | yellow | none |
| 1020 | | 9.17 | 6.87 | 1.503 | 2.83 | -62.3 | 4.98 | 225 | 8.11 | yellow | none |
| 1025 | | 9.18 | 6.92 | 1.453 | 2.91 | -61.5 | 4.61 | 225 | 8.14 | yellow | none |
| 1030 | | 9.20 | 6.96 | 1.452 | 2.77 | -60.5 | 3.77 | 225 | 8.14 | yellow | none |
| 1035 | | 9.22 | 6.98 | 1.453 | 2.74 | -59.1 | 4.12 | 225 | 8.14 | yellow | none |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW20A-11.0-20180420 | | | | | 1040 |

Comments Pump Inlet @ 18.0 ft

Signature [signature] Date 4/20/2018

Purge Volume Calculation

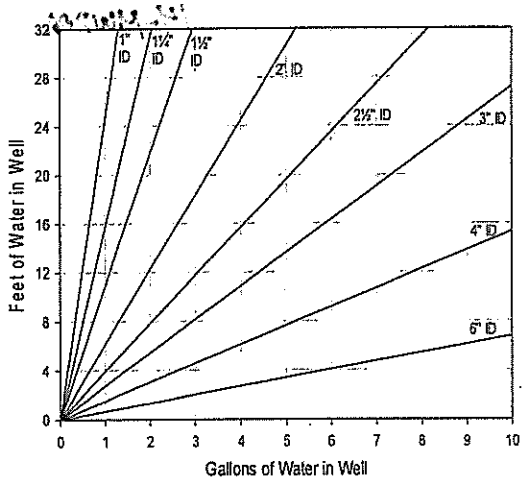


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

AECOM

Well ID: 114-MW41B

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 4/20/18 Time: Start 1330 am/pm
Project No: 60317455 Finish 1505 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: 41°F clear windy Collector: SC

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length ~~27.0~~ 17.2 * c. Length of Water Column ~~19.62~~ (a-b)

Casing Diameter/Material 2" pvc

b. Water Table Depth 7.38 d. Calculated System Volume (see back)

**2. WELL PURGE DATA**

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make / Model / Serial Number

YSI 650 MDS
La Motte 2020 WE

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1345 | | 15.87 | 12.60 | 4.348 | 1.86 | -168.6 | 22.0 | 200 | 7.47 | green | none |
| 1350 | | 15.86 | 12.63 | 4.344 | 1.13 | -163.2 | 22.7 | 200 | 7.47 | green | none |
| 1355 | | 15.87 | 12.68 | 4.328 | 0.48 | -126.7 | 23.9 | 200 | 7.47 | green | none |
| 1400 | | 15.86 | 12.70 | 4.284 | 0.31 | -114.5 | 19.6 | 200 | 7.47 | green | none |
| 1405 | | 15.98 | 12.71 | 4.244 | 0.40 | -111.3 | 12.5 | 200 | 7.47 | green | none |
| 1410 | | 16.01 | 12.69 | 4.241 | 0.45 | -107.4 | 9.21 | 200 | 7.47 | green | none |
| 1415 | | 16.13 | 12.67 | 4.239 | 0.48 | -103.2 | 7.88 | 200 | 7.47 | green | none |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Bladder pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW41B-15.0-20180420 | | | | | 1425 |

Comments * from TOR
Pump inlet @ 15.0' from TOR

Signature _____ Date 4/20/2018

AECOM

Well ID: 114-MW41B

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries
Date: 4/20/18
Time: Start 13:55 am/pm
Finish 14:40 am/pm
Project No: 60317455
Site Location: Garfield Avenue Sites
Weather Conds: Sunny windy
Collector: Ai Bush

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 30.4*
c. Length of Water Column 21.2 (a-b)
Casing Diameter/Material 2in PVC
b. Water Table Depth 9.2
d. Calculated System Volume (see back) —

**2. WELL PURGE DATA**

a. Purge Method: low flow Bladder pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| Make | Model | Serial Number |
|---|---|---|
| YSI | 600XL | 03774 01F0657 |
| Lemone | 2020 | 30500 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 14:00 | | 14.5 | 9.78 | 3.719 | 1.89 | 20.2 | 15.0 | 250 | 9.2 | Green | none |
| 14:05 | | 14.35 | 9.39 | 3.755 | 1.17 | 19.9 | 14.2 | 250 | 9.2 | Green | none |
| 14:10 | | 14.25 | 9.47 | 3.553 | 0.91 | 24.7 | 8.43 | 250 | 9.2 | Green | none |
| 14:15 | | 14.24 | 9.47 | 3.479 | 0.77 | 22.2 | 5.43 | 250 | 9.2 | Green | none |
| 14:20 | | 14.3 | 9.46 | 3.432 | 0.73 | 20.0 | 4.09 | 250 | 9.2 | Green | none |
| 14:25 | | 14.26 | 9.46 | 3.393 | 0.69 | 18.8 | 3.56 | 250 | 9.2 | Green | none |
| 14:30 | | 14.24 | 9.46 | 3.393 | 0.66 | 18.7 | 3.31 | 250 | 9.2 | Green | none |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: low flow Bladder pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW41B-20180420 | | 2 amber Jars | None | SVOC | 14:35 |
| | | 1 plastics | None | | 14:35 |
| | | 3 vials | HCl | VOC | |
| | | 1 plastic | | Mtal | |

Comments *from top of Risor

Signature [signature] Date 4/20/18

Pump set at 37.0 ft

Well ID: 14-P2A-MW104I

AECOM

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries  Date: 04/20/18  Time: Start 1250 am/pm
Project No: 60317455  Finish 1440 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Sunny, windy 50's  Collector: TC Tskm

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 40.0 ft  c. Length of Water Column 35.59 (a-b)  Casing Diameter/Material 2" PVC
   b. Water Table Depth 4.41  d. Calculated System Volume (see back)

2. **WELL PURGE DATA**
   a. Purge Method: Low Flow
   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used: Make  Model  Serial Number

| Time (24hr) | Gallon Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1250 | 0 | 11.24 | 5.22 | 11.13 | 0.95 | -32.1 | 13.9 | 100 | 4.41 | Clear | None |
| 1255 | 0.12 | 11.38 | 5.29 | 11.12 | 0.62 | -56.1 | 15.7 | 100 | 4.41 | " | " |
| 1300 | 0.25 | 11.57 | 5.36 | 11.12 | 0.36 | -79.3 | 19.2 | 100 | 4.42 | " | " |
| 1305 | 0.38 | 11.57 | 5.36 | 11.14 | 0.30 | -96.3 | 16.2 | 100 | 4.41 | " | " |
| 1310 | 0.50 | 11.58 | 5.3 | 11.16 | 0.25 | -105.0 | 13.0 | 100 | 4.40 | " | " |
| 1315 | 0.75 | 11.55 | 5.35 | 11.17 | 0.23 | -111.2 | 12.1 | 100 | 4.42 | " | " |
| 1320 | @1.0 | 11.55 | 5.36 | 11.18 | 0.23 | -115.3 | 10.84 | 100 | 4.43 | " | " |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: Low Flow

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 4-P2A-MW104I-37.0-20180420 | 1L Amber Jar | 2 | None | SVOC | 1415 |
| 4-P2A-MW104I-37.0-20180420 | 40 mL Vials | 3 | HCL | VOC | 1415 |

Comments

Signature  Date 04/20/18

Purge Volume Calculation

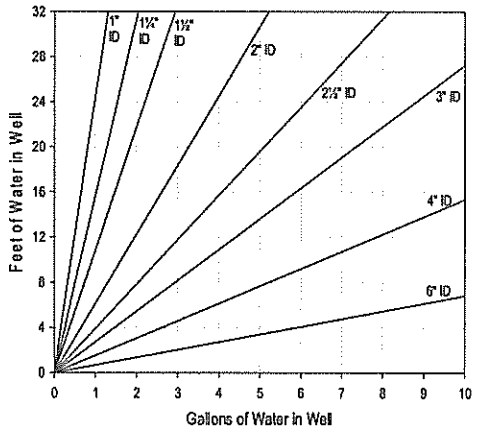


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Gallons / Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1325 | 1.25 | 11.61 | 5.33 | 11.18 | 0.21 | -119.6 | 4.12 | 100 | 4.93 | Clear / None |
| 1330 | 1.50 | 11.69 | 5.41 | 11.17 | 0.20 | -134.2 | 7.32 | 100 | 4.93 | " " |
| 1335 | 1.75 | 11.72 | 5.45 | 11.15 | 0.19 | -139.6 | 6.73 | 100 | 4.42 | " " |
| 1340 | 2.00 | 11.75 | 5.49 | 11.14 | 0.17 | -133 | 5.55 | 100 | 4.41 | " " |
| 1345 | 2.25 | 11.79 | 5.52 | 11.13 | 0.17 | -135.6 | 4.96 | 100 | 4.43 | " " |
| 1350 | 2.50 | 11.82 | 5.54 | 11.12 | 0.17 | -142.3 | 4.37 | 100 | 4.45 | " " |
| 1355 | 2.75 | 11.82 | 5.56 | 11.13 | 0.16 | -149.6 | 4.30 | 100 | 4.43 | " " |
| 1400 | 3.0 | 11.82 | 5.58 | 11.14 | 0.15 | -158.3 | 4.21 | 100 | 4.40 | " " |
| 1405 | 3.25 | 11.83 | 5.60 | 11.13 | 0.15 | -159.9 | 3.96 | 100 | 4.41 | " " |
| 1410 | 3.50 | 11.83 | 5.61 | 11.12 | 0.15 | -160.5 | 3.53 | 100 | 4.42 | " " |

Pump set at 33 ft ~~35 ft~~

Well ID: 114-P2A-MW104I

AECOM

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 04/20/18 Time: Start 1045 am/pm
Project No: 60550261 Finish 1250 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Sunny 50's (Windy) Collector:

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 40.0 ft c. Length of Water Column 25.84 (a-b) Casing Diameter/Material 2" PVC
   b. Water Table Depth 14.16 d. Calculated System Volume (see back).

2. **WELL PURGE DATA**
   a. Purge Method: Low Flow
   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used: Make Model Serial Number

| Time (24hr) | Gallon Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1100 | 0 | 10.64 | 6.43 | 8.702 | 6.61 | 134.0 | 5.10 | 100 | 4.25 | Clear | None |
| 1105 | 0.12 | 10.97 | 7.01 | 9.59 | 5.12 | 101.8 | 4.97 | 100 | 4.27 | Clear | None |
| 1110 | 0.25 | 11.33 | 7.58 | 10.66 | 3.38 | 71.8 | 4.54 | 100 | 4.29 | Clear | None |
| 1130 | 1.0 | 10.69 | 7.77 | 10.23 | 2.38 | 51.2 | 87.8 | 100 | 4.55 | " | " |
| 1135 | 1.25 | 10.92 | 7.89 | 10.50 | 1.43 | 15.7 | 4.6 | 100 | 4.55 | " | " |
| 1140 | 1.5 | 11.24 | 8.01 | 10.80 | 0.61 | < 7.0 | 5.09 | 100 | 4.54 | " | " |
| 1145 | 1.70 | 11.31 | 8.09 | 10.85 | 0.48 | -42.1 | 4.72 | 100 | 4.50 | " | " |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: Low Flow

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 14-P2A-MW104I-33.0-20180420 | 1L Amber Jars | 2 | None | SVOC | 1230 |
| 4-P2A-MW104I-33.0-20180420 | 40 mL Vials | 3 | HCl | VOC | 1230 |

Comments

Signature Date 04/20/18

Purge Volume Calculation

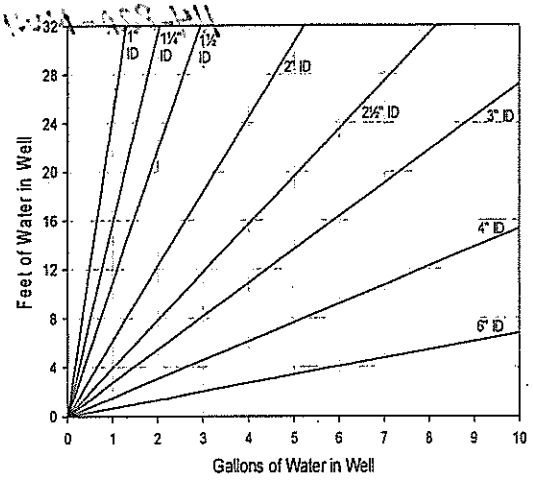


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front) Gallon

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | 2.0 | 11.32 | 5.16 | 10.96 | 0.33 | -72.6 | 4.34 | 100 | 4.48 | Clear / none |
| 1155 | 2.5 | 11.46 | 5.22 | 10.96 | 0.30 | -93.4 | 4.07 | 100 | 4.50 | " " |
| 1200 | 3.0 | 11.59 | 5.26 | 10.96 | 0.27 | -110.4 | 3.82 | 100 | 4.51 | " " |
| 1205 | 3.75 | 11.63 | 5.29 | 10.96 | 0.25 | -117.6 | 4.07 | 100 | 4.51 | |
| 1210 | 3.0 | 11.68 | 5.32 | 10.96 | 0.23 | -132.1 | 4.23 | 100 | 4.52 | " " |
| 1215 | 3.5 | 11.64 | 5.36 | 10.98 | 0.22 | -135.6 | 4.17 | 100 | 4.52 | " " |
| 1220 | 4.0 | 11.70 | 5.39 | 10.99 | 0.21 | -139.2 | 4.11 | 100 | 4.52 | " " |
| 1225 | 4.5 | 11.71 | 5.42 | 11.01 | 0.20 | -144.9 | 4.05 | 100 | 4.52 | " " |

AECOM

Well ID: 114-D2A-MW104S ~~11.0~~ ~~20180420~~ JA

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries  Date: 04-20-18  Time: Start 1250 am/pm
Project No: 60317455  Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Sunny Windy, 40's  Collector: J. Angelone

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length _____  c. Length of Water Column _____ (a-b)  Casing Diameter/Material _____

b. Water Table Depth _____  d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| Make | Model | Serial Number |
|---|---|---|
| YSI | 600XL | |
| LaMotte | 2020ue | |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1305 | 0 | 7.69 | 10.71 | 2.104 | 3.17 | 1.9 | 107 | 100 | 10% | Cloudy | None |
| 1310 | 0.10 | 7.42 | 10.71 | 2.094 | 2.41 | -1.1 | 99.6 | 100 | [illegible] | " | " |
| 1315 | 0.20 | 7.20 | 10.72 | 2.072 | 1.23 | -2.7 | 91.8 | 100 | [illegible] | " | " |
| 1320 | 0.3 | 7.39 | 10.72 | 2.096 | 0.92 | -12.3 | 73.6 | 100 | | " | " |
| 1325 | 0.4 | 7.55 | 10.73 | 2.115 | 0.69 | -21.9 | 57.1 | 100 | | " | " |
| 1330 | | 7.69 | 10.73 | 2.129 | 0.48 | -42.7 | 39.2 | 100 | | " | " |
| 1335 | | 7.88 | 10.72 | 2.140 | 0.39 | -51.4 | 23.6 | 100 | | " | " |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

If no or N/A - Explain below.

No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-D2A-MW104S-11.0- | 1L Amber | 2 | None | SVOC | 1405 |
| 20180420 | 40mL VOA | 3 | HCl | VOC | 1405 |

Comments _____

Signature [signature]  Date 4-20-18

Purge Volume Calculation

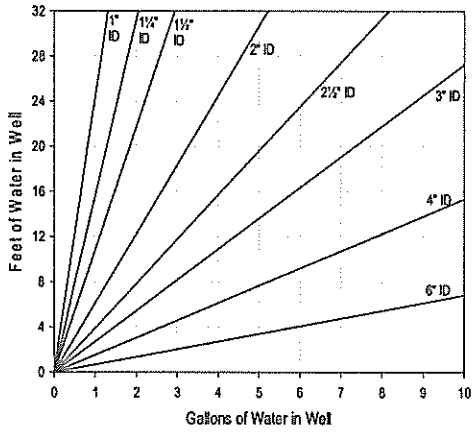


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) ✓ | pH (S.U.) ✓ | Spec. Cond (mS/cm) ✓ | DO (mg/L) ✓ | ORP (mV) ✓ | Turbidity (NTU) ✓ | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1340 | | 7.84 | 10.71 | 2.143 | 0.34 | -71.8 | 21.8 | 100 | | |
| 1345 | | 7.88 | 10.70 | 2.151 | 0.29 | -69.1 | 20.7 | 100 | | |
| 1350 | | 7.92 | 10.71 | 2.156 | 0.24 | -66.3 | 19.1 | 100 | | |
| 1355 | | 7.95 | 10.71 | 2.159 | 0.27 | -64.2 | 17.1 | 100 | | |
| 1400 | | 7.95 | 10.71 | 2.161 | 0.25 | -66.7 | 17.8 | 100 | | |
| 1405 | | | | | | | | | | Sample Taken |

AECOM

Well ID: 114-P2A-1045 @17PE

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 4-20-18 Time: Start 0945 am/pm
Project No: 60317455 Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: 40's Sunny Windy Collector: J. Angelone

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 20ft c. Length of Water Column _____ (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 2.81 d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600XL | |
| | LaMotte | 2020we | |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1130 | | 7.33 | 11.80 | 2.101 | 4.49 | 10.3 | 1622 | 100 | | | |
| 1135 | | 7.29 | 10.88 | 2.103 | 4.11 | 9.2 | 2066 | 100 | | | |
| 1140 | | 7.54 | 10.80 | 2.107 | 3.53 | 6.5 | 1687 | 100 | | | |
| 1145 | | 7.62 | 10.80 | 2.111 | 3.27 | 4.1 | 1359 | 100 | | | |
| 1150 | | 7.72 | 10.80 | 2.108 | 2.85 | 0.9 | 1081 | 100 | | | |
| 1155 | | 7.72 | 10.80 | 2.103 | 2.58 | -2.0 | 954 | 100 | | | |
| 1200 | | 7.80 | 10.79 | 2.102 | 2.46 | -5.8 | 771 | 100 | | | |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| P2A-1045-17.0-20180420 | 1L Amber | 2 | None | SVOC | 1235 |
| | 40mL VOA | 3 | HCl | VOC's | 1235 |

Comments

Signature John Angelone Date 4-20-18

Purge Volume Calculation

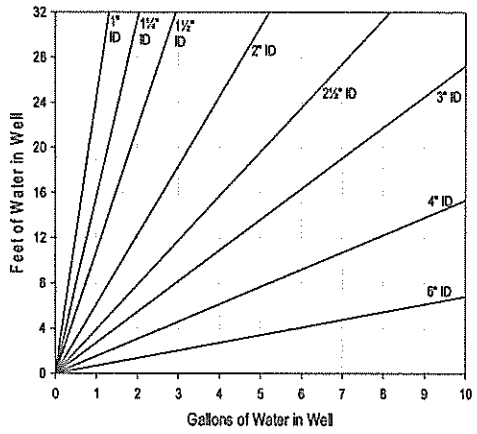


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1205 | | 7.84 | 10.77 | 2.094 | 2.02 | -10.3 | 132 | 100 | | |
| 1210 | | 7.84 | 10.76 | 2.092 | 1.78 | -13.5 | 97 | 100 | | |
| 1215 | | 7.85 | 10.76 | 2.095 | 1.71 | -14.8 | 115 | 100 | | |
| 1220 | | 7.87 | 10.76 | 2.092 | 1.52 | -18.4 | 106.5 | 100 | | |
| 1225 | | 7.94 | 10.76 | 2.091 | 1.33 | -22.9 | 68.8 | 100 | | |
| 1230 | | 7.86 | 10.75 | 2.099 | 1.29 | -24.3 | 47.9 | 100 | | |

AECOM

Well ID: 114-P2B4-MW3-10.0

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 4/20/18 Time: Start 10:40 am/pm
Project No: 60550261 Finish 11:30 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Sunny, wind Collector: A. Bush

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 17.0 c. Length of Water Column 14.2 (a-b) Casing Diameter/Material 2 in PVC
   b. Water Table Depth 2.8 d. Calculated System Volume (see back). —

2. **WELL PURGE DATA**
   a. Purge Method: low flow Bladder pump
   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600XL | 030774 AF0657 |
| | Lemotte | 2020 | 30500 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORR (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10:50 | | 10.21 | 8.24 | 5.585 | 0.59 | 20.8 | 11.5 | 250 | 2.8 | clear | none |
| 10:55 | | 10.03 | 8.45 | 5.610 | 0.40 | 20.2 | 6.68 | | 2.8 | clear | none |
| 11:00 | | 10.04 | 8.50 | 5.623 | 0.38 | 20.0 | 5.81 | | 2.8 | clear | none |
| 11:05 | | 10.03 | 8.50 | 5.635 | 0.34 | 19.9 | 4.17 | | 2.8 | clear | none |
| 11:10 | | 10.02 | 8.55 | 5.661 | 0.32 | 20.3 | 4.08 | | 2.8 | clear | none |
| 11:15 | | 10.07 | 8.56 | 5.677 | 0.30 | 20.6 | 2.50 | | 2.8 | clear | none |
| 11:20 | | 10.23 | 8.58 | 5.676 | 0.27 | 20.3 | 2.44 | | 2.8 | clear | none |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: low flow Bladder pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-P2B4-MW3-10.0-20180420 | 500 ml Plastic | 1 | HNO3 | Metals | |
| | 500 ml Plastic | 1 | none | | |

Comments

Signature [signature] Date 4/20/18

Purge Volume Calculation

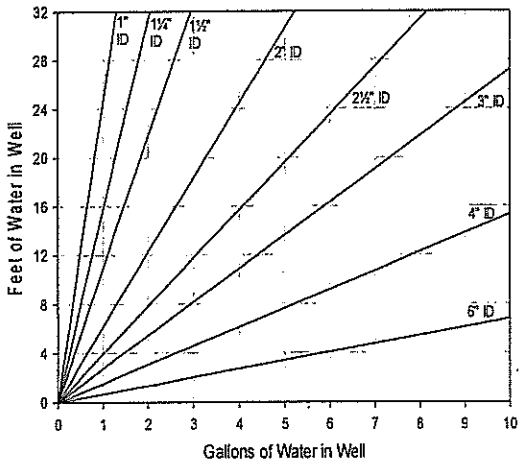


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Pump Set at
10 ft and 14 ft

AECOM

Well ID: 114-P2B4-MW3-14.0

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries
Date: 4/20/18
Time: Start 9:50 am/pm
Finish 10:30 am/pm
Project No: 60550261
Site Location: Garfield Avenue Sites
Weather Conds: Sunny Windy
Collector: A. Buab

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 17.0 ft
c. Length of Water Column 14.2 (a-b)
Casing Diameter/Material 2 in PVC
b. Water Table Depth 2.8
d. Calculated System Volume (see back). —

**2. WELL PURGE DATA**

a. Purge Method: low flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| Make | Model | Serial Number |
|---|---|---|
| YSI | 600XL | 030779 01F0657 |
| LC Mette | 2000 | 30500 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond (mS/cm) | DO (mg/L) | ORR (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9:55 | | 10.10 | 7.41 | 5.545 | 1.92 | 41.8 | 24.2 | 250 | 2.8 | Clear | none |
| 10:00 | | 10.14 | 7.54 | 5.618 | 0.87 | 4.7 | 23.5 | 250 | 2.8 | Clear | none |
| 10:05 | | 10.11 | 7.58 | 5.615 | 0.96 | -8.4 | 21.3 | 250 | 2.8 | Clear | none |
| 10:10 | | 10.09 | 7.66 | 5.547 | 1.18 | -17.0 | 19.3 | 250 | 2.8 | Clear | none |
| 10:15 | | 9.92 | 7.78 | 5.406 | 1.18 | -19.2 | 12.1 | 250 | 2.8 | Clear | none |
| 10:20 | | 9.76 | 7.9 | 5.374 | 1.05 | -17.9 | 8.34 | 250 | 2.8 | Clear | none |
| 10:25 | | 9.88 | 8.01 | 5.361 | .97 | -14.4 | 6.31 | 250 | 2.8 | Clear | none |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: low flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-P2B4-MW3-14.0-20180420 | 500 mL Plastic | 1 | HNO3 | Metals | 10:30 |
| | 500 mL Plastic | 1 | None | | 10:30 |

Comments

Signature [signature]
Date 4/20/18

Purge Volume Calculation

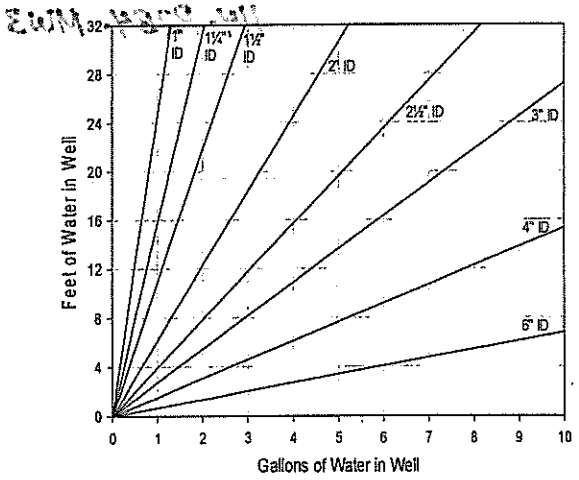


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Pump set at 38.0 ft

AECOM

Well ID: 133-P3C-MW101I

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 4/23/2018 Time: Start 1040 am/pm
Project No: 60317455 Finish 1130 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: 61°F clear Collector: JC

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 45.0 c. Length of Water Column 40.35 (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 4.65 d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 650 MDS | 2408 |
| | LaMotte | 2020WE | 18087 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1045 | - | 14.68 | 10.54 | 7.452 | 4.45 | -124.0 | 22.8 | 350 | 4.65 | clear | none |
| 1050 | - | 14.51 | 8.91 | 9.586 | 1.26 | -155.8 | 21.6 | 350 | 4.68 | " | " |
| 1055 | - | 14.51 | 8.01 | 10.96 | 0.80 | -221.8 | 24.7 | 350 | 4.68 | " | " |
| 1100 | - | 14.51 | 7.65 | 11.61 | 0.76 | -161.6 | 12.1 | 350 | 4.68 | " | " |
| 1105 | - | 14.58 | 7.51 | 11.77 | 0.71 | -159.2 | 8.47 | 350 | 4.68 | " | " |
| 1110 | - | 14.61 | 7.45 | 11.85 | 0.60 | -157.9 | 6.21 | 350 | 4.68 | " | " |
| 1115 | 3.5gal | 14.62 | 7.54 | 11.85 | 0.59 | -149.7 | 4.48 | 350 | 4.68 | " | " |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 133-P3C-MW101I-38.0-20180423 | | | HCl | VOCs | 1120 |
| | | | — | SVOCs | 1120 |

Comments Pump inlet set @ 38.0 ftbg

Signature _____ Date 4/23/2018

Pump Set at 42.0 ft

AECOM

Well ID: 133-P3C-MW101I

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 4/23/18 Time: Start 930 am/pm
Project No: 60317455 Finish 1030 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: 61°F clear Collector: JC

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 45.0 c. Length of Water Column 40.39 (a-b)

Casing Diameter/Material 2" / PVC

b. Water Table Depth 4.61 d. Calculated System Volume (see back)

**2. WELL PURGE DATA**

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 650 MDS | 2408 |
| | LaMotte | 2020 WE | 18087 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 945 | - | 13.64 | 8.09 | 12.56 | 1.34 | -181.1 | 44.9 | 350 | 4.65 | Brown | none |
| 950 | - | 13.80 | 7.86 | 12.97 | 0.87 | -172.2 | 28.8 | 350 | 4.67 | Clearing | " |
| 955 | - | 13.84 | 7.74 | 13.29 | 0.77 | -166.5 | 15.0 | 350 | 4.67 | " | " |
| 1000 | - | 13.95 | 7.65 | 13.64 | 0.67 | -158.6 | 10.78 | 350 | 4.67 | " | " |
| 1005 | - | 13.96 | 7.59 | 13.61 | 0.64 | -148.3 | 8.03 | 350 | 4.68 | " | " |
| 1010 | - | 14.02 | 7.58 | 13.60 | 0.59 | -150.5 | 7.78 | 350 | 4.68 | " | " |
| 1015 | 3.99 | 14.04 | 7.57 | 13.37 | 0.61 | -147.8 | 5.74 | 350 | 4.68 | " | " |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

If no or N/A - Explain below.

No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 133-P3C-MW101I-42.0-20180423 | | | HCl | VOCs | 1020 |
| | | | - | SVOCs | |

Comments Pump inlet @ 42.0 ftbg

Signature [signature] Date 4/23/18

Pump set at 12.0 ft

AECOM

Well ID: 133-P3C-MW1015

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 4/23/2018 Time: Start 9:20 am/pm
Project No: 60317455 Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Sunny 60° Collector: Tanj Patel

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 15.0 c. Length of Water Column 12 (a-b) Casing Diameter/Material 2in

b. Water Table Depth 3.0 d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: Low flow

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make Model Serial Number

YSI
LaMotte

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0945 | | 11.10 | 6.36 | 11.73 | 0.99 | 136.5 | 60.1 | 100 | 3.0 | Brown | |
| 0950 | | 10.90 | 6.39 | 12.17 | 0.92 | -54.4 | 9.38 | 100 | 3.0 | Clear | |
| 0955 | | 9.99 | 6.42 | 12.31 | 0.76 | -70.8 | 8.53 | 100 | 2.9 | ↓ | |
| 1000 | | 9.97 | 6.43 | 12.35 | 0.67 | -77.9 | 8.29 | 100 | 2.9 | | |
| 1005 | | 10.17 | 6.44 | 12.45 | 0.65 | -83.1 | 8.04 | 100 | 2.9 | | |
| 1010 | | 10.18 | 6.45 | 12.50 | 0.87 | -89.3 | 6.69 | 100 | 2.9 | | |
| 1015 | | 10.26 | 6.46 | 12.43 | 0.86 | -84.6 | 5.23 | 100 | 2.9 | | |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: From Tube

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 133-P3C-MW1015-12.0-20180423 | 2 | ~~HCL~~ | SVOC | 1020 | |
| 133-P3C-MW1015-12.0-20180423 | 3 | HCL | VOC | ~~1010~~ 1020 (DUP) | |

Comments _____

Signature Tanj Patel Date 4/23/2018

Pump set at 8.0 ft

AECOM

Well ID: 133-P3C MW1015

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 4/23/2018 Time: Start 1035 am/pm
Project No: 60317455 Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: _____ Collector: Taij Patel

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 15.0 c. Length of Water Column 12 (a-b) Casing Diameter/Material 2in
   b. Water Table Depth 3.0 d. Calculated System Volume (see back) _____

2. **WELL PURGE DATA**
   a. Purge Method: Low Flow
   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used: Make Model Serial Number
   YSI
   LaMotte

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1040 | | 11.77 | 6.49 | 12.61 | 0.99 | -90.1 | 28.6 | 100 | 2.9 | Clear | N/A |
| 1045 | | 10.14 | 6.62 | 8.901 | 4.82 | -73.2 | 43.4 | 100 | 2.9 | ↓ | |
| 1050 | | 9.99 | 6.65 | 8.280 | 4.77 | -69.3 | 32.9 | 100 | 2.9 | | |
| 1055 | | 9.96 | 6.66 | 7.781 | 4.83 | -59.5 | 32.7 | 100 | 2.9 | | |
| 1100 | | 9.92 | 6.68 | 7.397 | 4.86 | -56.5 | 28.0 | 100 | 2.9 | | |
| 1105 | | 10.56 | 6.72 | 7.039 | 4.88 | -55.9 | 25.6 | 100 | 2.9 | | |
| 1110 | | 10.61 | 6.74 | 6.853 | 4.84 | -54.7 | 27.6 | 100 | 2.9 | | |

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

(continued on back)

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: From Tube

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 3-P3C-MW1015-8.0-20180423 | | 2 | None | SVOC | 1130 |
| 3-P3C-MW1015-8.0-20180423 | | 3 | HCL | VOC | ~~1140~~ 1130 JA |

Comments _____

Signature Taij Patel Date 4/23/2018

Purge Volume Calculation

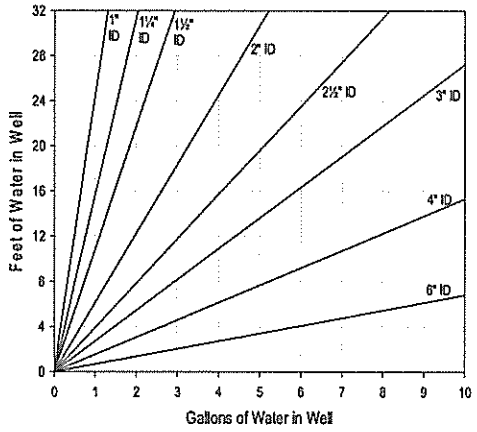


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 11:15 | | 11.74 | 6.75 | 6.671 | 4.89 | -54.4 | 28.9 | 100 | 2.9 | Clear |
| 11:20 | | 11.93 | 6.76 | 6.606 | 4.94 | -54.8 | 28.6 | 100 | 2.9 | |

Pump Set at 6.0 ft

AECOM

Well ID: 135-MW2A

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 4/23/2018 Time: Start 1455 am/pm Finish 1545 am/pm
Project No: 60317455
Site Location: Garfield Avenue Sites
Weather Conds: 61°F clear Collector: RC

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 16.5 c. Length of Water Column 13.67 (a-b) Casing Diameter/Material 2" / PVC

b. Water Table Depth 2.83 d. Calculated System Volume (see back) 2.2gal

**2. WELL PURGE DATA**

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 650 MDS | 2408 |
| | La Motte | 2020WE | 18087 |

| | Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 35 | 1500 | - | 12.14 | 6.86 | 6.278 | 1.02 | -95.4 | 1.85 | 250 | 3.10 | clear | none |
| 40 | 1505 | - | 12.06 | 6.86 | 6.300 | 1.01 | -94.7 | 161 | 250 | 3.16 | " | " |
| 45 | 1510 | - | 12.13 | 6.87 | 6.308 | 0.93 | -95.3 | 1.49 | 250 | 3.27 | " | " |
| 50 | 1515 | - | 12.02 | 6.87 | 6.321 | 1.01 | -99.1 | 1.41 | 250 | 3.38 | " | " |
| 55 | 1520 | - | 12.08 | 6.87 | 6.338 | 0.98 | -101.1 | 1.70 | 250 | 3.44 | " | " |
| 00 | 1525 | 1.5gal | 12.04 | 6.87 | 6.407 | 0.91 | -102.0 | 1.69 | 250 | 3.51 | " | " |
| 05 | | | | | | | | | | | | |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 135-MW2A-6.0-20180423 | | | | | 1530 |

Comments Pump inlet @ 6.0 fbg

Signature [signature] Date 4/23/2018

Pump set at 14.0 ft

AECOM

Well ID: 135-MW2A

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 4/23/2018 Time: Start 1315 am/pm
Project No: 60317455 Finish 1410 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: 61°F clear Collector: SC

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 16.5 c. Length of Water Column 15.19 (a-b) Casing Diameter/Material 2" /PVC

b. Water Table Depth 1.31 d. Calculated System Volume (see back) 2.5 gal

**2. WELL PURGE DATA**

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 650MDS | 2408 |
| | La Motte | 2020WE | 180871 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1325 | ~ | 13.76 | 6.61 | 6.134 | 1.32 | -137.4 | 20.6 | 300 | 1.62 | clear | none |
| 1330 | – | 13.33 | 6.72 | 5.558 | 0.99 | -138.3 | 12.22 | 300 | 1.91 | " | " |
| 1335 | – | 13.23 | 6.77 | 5.313 | 0.84 | -140.5 | 8.35 | 200 | 1.94 | " | " |
| 1340 | – | 13.08 | 6.82 | 5.208 | 0.82 | -146.7 | 7.31 | 200 | 1.98 | " | " |
| 1345 | – | 13.12 | 6.83 | 5.129 | 0.84 | -151.7 | 9.82 | 200 | 2.02 | " | " |
| 1350 | 2 gal | 13.10 | 6.84 | 5.087 | 0.89 | -153.7 | 7.66 | 200 | 2.04 | " | " |
| | | | | | | | | | | | |

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

(continued on back)

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Bladder pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 135-MW2A-14.0-20180423 | | | | | 1355 |

Comments Pump inlet @ 14.0 fbg

Signature [signature] Date 4/23/2018

Pump Set at 10.0 ft

AECOM

Well ID: 135-MW2A

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 4/23/18 Time: Start 1410 am/pm
Project No: 60317455 Finish 1455 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: 61°F clear Collector: JC

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 16.5 c. Length of Water Column 14.16 (a-b) Casing Diameter/Material 2"/PVC

b. Water Table Depth 2.34 d. Calculated System Volume (see back) 2.3 gal

**2. WELL PURGE DATA**

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 650 MDS | 2408 |
| | La Motte | 2020 we | 18087 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1415 | - | 13.39 | 6.92 | 5.006 | 1.59 | -112.7 | 6.53 | 200 | 2.36 | clear | none |
| 1420 | - | 12.57 | 6.90 | 5.030 | 1.25 | -88.2 | 4.11 | 200 | 2.51 | " | " |
| 1425 | - | 12.41 | 6.89 | 5.151 | 1.00 | -83.4 | 2.76 | 200 | 2.64 | " | " |
| 1430 | - | 12.42 | 6.89 | 5.225 | 0.99 | -83.6 | 3.17 | 200 | 2.71 | " | " |
| 1435 | - | 12.43 | 6.89 | 5.324 | 1.12 | -84.4 | 2.44 | 200 | 2.79 | " | " |
| 1440 | 2.5 gal | 12.38 | 6.89 | 5.404 | 1.09 | -86.0 | 2.01 | 200 | 2.82 | " | " |
| | | | | | | | | | | | |

1 05
1 10
1 15

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

(continued on back)

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 135-MW2A-10.0-20180423 | | | | | 1445 |

Comments Pump Inlet @ 10.0 ftbg

Signature [signature] Date 4/23/2018

Pump Set at 12.5 ft

AECOM

Well ID: 135-P3C-MW1025

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 4/23/2018 Time: Start 200 am/pm
Project No: 60317455 Finish 3:00 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Sunny, 60° Collector: Taij Patel

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 15.0 c. Length of Water Column 9.4 (a-b) Casing Diameter/Material 2in
   b. Water Table Depth 5.6 d. Calculated System Volume (see back) _____

2. **WELL PURGE DATA**
   a. Purge Method: Low Flow
   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI 600XL | ~~1617~~ 650MDS | 1617 |
| | LaMotte | 2020WE | 986 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1405 | | 15.20 | 7.01 | 2.717 | 3.33 | 58.1 | 28.9 | 100 | 5.5 | Clear | NA |
| 1410 | | 15.00 | 6.81 | 2.604 | 1.34 | 60.6 | 18.6 | 100 | 6.0 | | |
| 1415 | | 13.73 | 6.77 | 2.570 | 0.75 | 62.4 | 11.7 | 80 | 6.5 | | |
| 1420 | | 13.11 | 6.76 | 2.513 | 0.51 | 63.0 | 6.37 | 80 | 6.8 | | |
| 1425 | | 13.07 | 6.76 | 2.498 | 0.52 | 62.3 | 5.84 | 80 | 7.0 | | |
| 1430 | | 12.89 | 6.76 | 2.473 | 0.58 | 60.9 | 5.72 | 80 | 7.1 | | |
| | | | | | | | | | | | |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☑ | ☐ | ☐ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: From Tube

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 5-P3C-MW1025-12.5-20180423 | | 2 | None | SVOC | ~~1435~~ 1435 |
| 5-P3C-MW1025-12.5-20180423 | | 1 | None | Cr6+ | 1440 |
| 5-P3C-MW1025-12.5-20180423 | | 1 | HNO3 | TCPW Metals | 1445 |
| 5-P3C-MW1025-12.5-20180423 | | 3 | HCl | VOC | 1450 |

Comments _____

Signature Taij Patel Date 4/23/2018

Pump Set at 41.0 ft

AECOM

Well ID: MW7D

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: Time: Start 0955 am/pm
Project No: 60317455 Finish am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Collector:

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 48.0 c. Length of Water Column 43.88 (a-b)

Casing Diameter/Material 4" PVC

b. Water Table Depth 4.12 d. Calculated System Volume (see back)

**2. WELL PURGE DATA**

a. Purge Method:

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make Model Serial Number

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1015 | 0 | 15.10 | 6.33 | 1.030 | 6.53 | 37.9 | 5.72 | 100 | 4.45 | Clear | None |
| 1020 | 0.12 | 15.07 | 6.39 | 1.018 | 6.44 | -12.8 | 5.03 | 100 | 4.47 | " | " |
| 1025 | 0.25 | 15.03 | 6.44 | 1.007 | 6.36 | -68.0 | 4.46 | 100 | 4.50 | " | " |
| 1030 | 0.38 | 15.04 | 6.49 | 1.007 | 5.97 | -74.6 | 4.12 | 100 | 4.52 | " | " |
| 1035 | 0.50 | 15.06 | 6.59 | 1.007 | 5.13 | -79.8 | 3.87 | 100 | 4.53 | " | " |
| 1040 | 0.63 | 15.07 | 6.60 | 1.007 | 4.59 | -82.3 | 3.63 | 100 | 4.54 | " | " |
| 1045 | | 15.11 | 6.69 | 1.008 | 3.92 | -84.5 | 3.51 | 100 | 4.53 | " | " |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method:

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Comments

Signature Date

Purge Volume Calculation

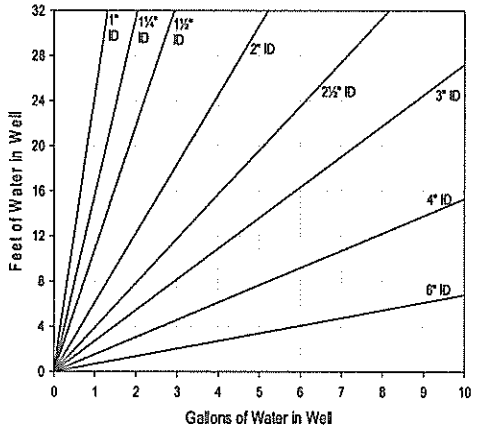


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1050 | 0.25 | 15.18 | 6.68 | 1.010 | 3.16 | -86.0 | 3.42 | 100 | 4.52 | Clear / None |
| 1055 | 1.50 | 15.18 | 6.69 | 1.011 | 2.58 | -85.1 | 3.02 | 100 | 4.52 | " " |
| 1100 | 1.75 | 15.19 | 6.70 | 1.012 | 2.07 | -84.3 | 2.56 | 100 | 4.52 | " " |
| 1105 | 2.0 | 15.23 | 6.72 | 1.011 | 1.64 | -87.3 | 2.92 | 100 | 4.53 | " " |
| 1110 | 2.25 | 15.27 | 6.73 | 1.010 | 1.36 | -89.1 | 3.41 | 100 | 4.53 | " " |
| 1115 | 2.50 | 15.29 | 6.73 | 1.011 | 1.19 | -87.3 | 2.87 | 100 | 4.53 | " " |
| 1120 | 2.75 | 15.32 | 6.74 | 1.012 | 1.01 | -85.5 | 2.26 | 100 | 4.53 | " " |
| 1125 | 3.25 | 15.32 | 6.75 | 1.012 | 0.88 | -80.2 | 2.39 | 100 | 4.54 | " " |
| 1130 | 4.0 | 15.32 | 6.75 | 1.012 | 0.73 | -75.4 | 2.50 | 100 | 4.54 | " " |
| 1135 | 4.5 | 15.33 | 6.76 | 1.013 | 0.64 | -75.1 | 2.50 | 100 | 4.53 | " " |
| 1140 | 5.0 | 15.34 | 6.76 | 1.013 | 0.53 | -76.8 | 2.50 | 100 | 4.53 | " " |
| 1145 | 5.25 | 15.34 | 6.77 | 1.012 | 0.48 | -76.7 | 2.49 | 100 | 4.54 | " " |
| 1150 | 5.50 | 15.35 | 6.77 | 1.011 | 0.45 | -76.7 | 2.48 | 100 | 4.54 | " " |
| 1155 | 6.0 | 15.36 | 6.78 | 1.012 | 0.40 | -77.2 | 2.71 | 100 | 4.54 | " " |
| 1200 | 6.5 | 15.37 | 6.78 | 1.014 | 0.35 | -77.5 | 2.96 | 100 | 4.55 | " " |
| 1205 | 6.75 | 15.44 | 6.79 | 1.014 | 0.37 | -76.4 | 3.15 | 100 | 4.55 | " " |
| 1210 | 7.0 | 15.44 | 6.78 | 1.014 | 0.35 | -77.6 | 3.36 | 100 | 4.56 | " " |

Pump Set at 45.0 ft

AECOM

Well ID: MW7D

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: Time: Start 1235 am/pm
Project No: 60317455 Finish am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Collector:

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 48.0 c. Length of Water Column 43.8 (a-b) Casing Diameter/Material 4" PVC
   b. Water Table Depth 4.2 d. Calculated System Volume (see back)

2. **WELL PURGE DATA**
   a. Purge Method:
   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used: Make Model Serial Number

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1235 | 0 | 16.03 | 6.95 | 1.027 | 3.13 | -35.7 | 6.35 | 100 | 4.20 | Clear | None |
| 1240 | 0.25 | 15.78 | 6.73 | 1.022 | 3.97 | -49.6 | 7.17 | 100 | 4.32 | " | " |
| 1245 | 0.50 | 15.47 | 6.69 | 1.016 | 4.44 | -61.1 | 7.70 | 100 | 4.47 | " | " |
| 1250 | 0.75 | 15.46 | 6.72 | 1.016 | 4.17 | -66.3 | 7.74 | 100 | 4.48 | " | " |
| 1255 | 1.0 | 15.45 | 6.74 | 1.017 | 3.87 | -75.0 | 7.77 | 100 | 4.48 | " | " |
| 1300 | 1.25 | 15.45 | 6.76 | 1.017 | 2.92 | -79.7 | 6.52 | 100 | 4.46 | " | " |
| 1305 | 1.50 | 15.44 | 6.78 | 1.016 | 2.04 | -84.4 | 5.39 | 100 | 4.45 | " | " |

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

(continued on back)

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method:

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| | | | | | 1335 |

Comments

Signature Date

Purge Volume Calculation

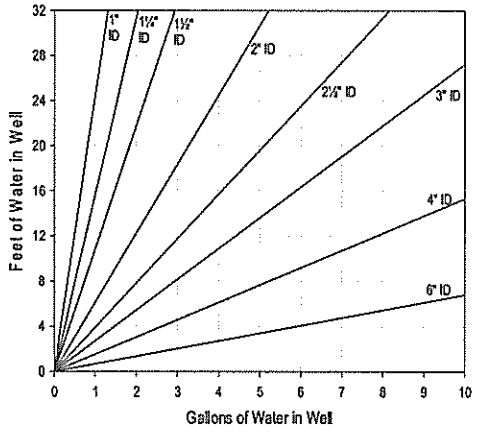


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1310 | 1.75 | 15.49 | 6.78 | 1.016 | 1.83 | -85.9 | 4.92 | 100 | 4.45 | Clear / None |
| 1315 | 2.0 | 15.44 | 6.78 | 1.016 | 1.61 | -87.0 | 4.51 | 100 | 4.45 | " " |
| 1320 | 2.25 | 15.48 | 6.79 | 1.015 | 1.43 | -87.6 | 4.62 | 100 | 4.45 | " " |
| 1325 | 2.50 | 15.49 | 6.79 | 1.016 | 1.37 | -89.3 | 4.76 | 100 | 4.45 | " " |
| 1330 | | 15.49 | 6.79 | 1.015 | 1.32 | -90.2 | 3.83 | 100 | 4.45 | " " |

Pump set at 15.0 ft

AECOM

Well ID: 132-P3A-MW3

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries  Date: 04/24/18  Time: Start 1250 am/pm
Project No: 60317455  Finish 1405 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Sunny, 60's  Collector: T. Teskan

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 18.0  c. Length of Water Column 13.83 (a-b)  Casing Diameter/Material 2" PVC
   b. Water Table Depth 4.17  d. Calculated System Volume (see back)

2. **WELL PURGE DATA**
   a. Purge Method: Low Flow
   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used: Make  Model  Serial Number

| Time (24hr) | Volume Removed (Liters) (Gallons) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1250 | 0 | 14.39 | 7.47 | 1.253 | 0.003 | -116.7 | 16.2 | 100 | 4.17 | Clear to Light Gray | None |
| 1255 | 0.75 | 14.19 | 7.38 | 1.245 | 0 | -116.7 | 14.7 | 100 | 4.16 | " | " |
| 1300 | 0.50 | 14.20 | 5.92 | 1.022 | 1.22 | -116.7 | 12.2 | 100 | 4.15 | " | " |
| 1305 | 1.0 | 14.19 | 6.59 | 0.890 | 0.99 | -103.0 | 10.50 | 100 | 4.15 | " | " |
| 1310 | 1.5 | 13.92 | 6.45 | 0.853 | 0.98 | -98.1 | 9.98 | 100 | 4.17 | " | " |
| 1315 | 2.0 | 13.76 | 6.36 | 0.820 | 0.47 | -92.3 | 9.44 | 100 | 4.18 | " | " |
| 1320 | 2.25 | 13.53 | 6.25 | 0.800 | 0.84 | -92.5 | 8.30 | 100 | 4.19 | " | " |

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

(continued on back)

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: Low Flow

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 132-P3A-MW3-15.0-20180424 | 500mL | 1 | None | Cr⁶, EH, PH | 1340 |
| 132-P3A-MW3-15.0-20180424 | 500mL | 1 | HNO3 | Cd, Ni, Sb, Tl, V | 1340 |

Comments

Signature  Date 04/24/18

Purge Volume Calculation

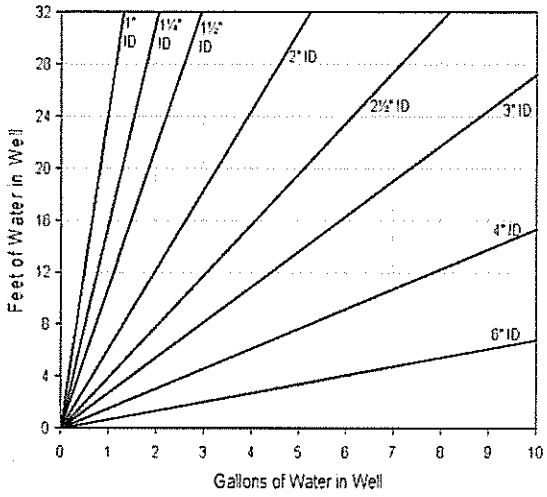


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed ~~(Liters)~~ Gallon | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1325 | 2.50 | 13.62 | 8.19 | 0.818 | 0.70 | -101.5 | 6.87 | 100 | 4.18 | Clear to light gray / Nil |
| 1330 | 2.75 | 13.64 | 8.17 | 0.822 | 0.67 | -111.5 | 6.91 | 100 | 4.19 | " " |
| 1335 | 3.00 | 13.65 | 8.16 | 0.824 | 0.63 | -106.6 | 6.94 | 100 | 4.20 | " " |

Pump Set at 11.0 ft

AECOM

Well ID: 132-P3A-MW3

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 04/24/18 Time: Start 1030 am/pm
Project No: 60317455 Finish 1250 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Sunny 60's Collector: T. Islam

1. WATER LEVEL DATA: (measured from Top of Casing)
   a. Total Well Length 18.0 c. Length of Water Column 13.89 (a-b) Casing Diameter/Material 2" PVC
   b. Water Table Depth 4.11 d. Calculated System Volume (see back)

2. WELL PURGE DATA
   a. Purge Method: Low Flow
   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ±1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used: Make Model Serial Number

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1040 | 0 | 13.92 | 6.50 | 1.235 | 06.58 | 112.5 | | 100 | | light green | None |
| 1045 | | 13.34 | 7.12 | 0.871 | 27.32 | 19.4 | 39.9 | 100 | 4.11 | " | " |
| 1050 | 0.25 | 13.72 | 7.43 | 0.817 | 16.59 | -19.7 | 32.4 | 100 | | " | " |
| 1145 | 0.50 | 13.82 | 8.11 | 0.796 | 6.97 | 48.0 | 41.9 | 100 | 4.15 | " | " |
| 1150 | 1.00 | 12.73 | 8.08 | 0.764 | 7.06 | 32.1 | 35.2 | 100 | 4.16 | " | " |
| 1155 | 1.75 | 12.66 | 8.14 | 0.752 | 6.72 | 12.7 | 28.0 | 100 | 4.18 | " | " |
| 1200 | 2.50 | 12.50 | 8.36 | 0.765 | 5.08 | -45.3 | 11.3 | 100 | 4.21 | " | " |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. SAMPLE COLLECTION: Method: Low Flow

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time | |
|---|---|---|---|---|---|---|
| 2-P3A-MW3-11.0-20180424 | Grab | 1 | None | $Cr^{6+}$, EH, PH | 1240 | |
| 2-P3A-MW3-11.0-20180424 | " | 1 | $HNO_3$ | Cr, Ni, Sb, Tl, V | 1240 | |
| 2-P3A-MW3-11.0-20180424 | " | 1 | None | $Cr^{6+}$, EH, PH | 1240 | MS/MSD |
| 2-P3A-MW3-11.0-20180424 | " | 1 | $HNO_3$ | Cr, Ni, Sb, Tl, V | 1240 | MS/MSD |

Comments

Signature Date 04/24/2018

Purge Volume Calculation

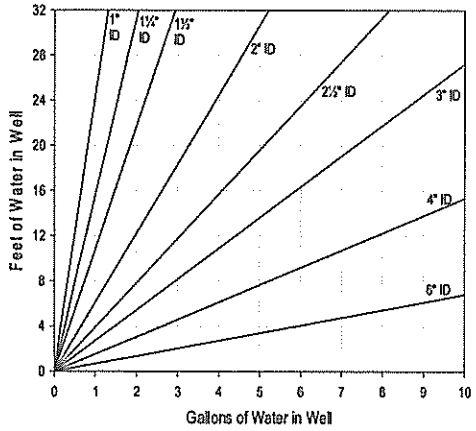


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1205 | 3.0 | 12.55 | 6.33 | 0.771 | 4.63 | -58.1 | 12.9 | 100 | 4.21 | Clear / None |
| 1210 | 3.5 | 12.47 | 6.33 | 0.797 | 3.63 | -75.7 | 11.1 | 100 | 4.24 | " " |
| 1215 | 3.5 | 12.77 | 6.32 | 0.778 | 3.00 | -92.6 | 9.58 | 100 | 4.25 | " " |
| 1220 | 4.0 | 12.85 | 6.34 | 0.783 | 2.84 | -97.2 | 9.46 | 100 | 4.27 | " " |
| 1225 | 4.5 | 12.78 | 6.32 | 0.818 | 2.41 | -105.6 | 9.28 | 100 | 4.29 | " " |
| 1230 | 5.0 | 12.80 | 6.32 | 0.825 | 2.27 | -112.4 | 9.59 | 100 | 4.32 | " " |
| 1235 | 5.5 | 12.88 | 8.31 | 0.828 | 2.17 | -115.3 | 9.28 | 100 | 4.35 | " " |

Pump set at ~~13.0 ft~~ 17.0 ft (JA)

Well ID: 132-P3A-MW4

AECOM

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 4-24-18 Time: Start 1000 am/pm
Project No: 60317455 Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: _____ Collector: J. Angelone

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 20.0 c. Length of Water Column _____ (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 3.6 d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make YSI / LaMotte Model 600XLM Serial Number Pin#2840

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1030 | | 12.26 | 12.79 | 4.886 | 2.44 | 168.9 | | 100 | 3.56 | | |
| 1035 | | 12.14 | 12.85 | 4.855 | 1.64 | 158.7 | | 100 | 3.62 | | |
| 1040 | | 11.42 | 12.89 | 4.965 | 0.84 | 170.2 | 36.1 | 100 | 3.64 | | |
| 1045 | | 10.71 | 12.93 | 4.990 | 0.57 | 163.0 | | 100 | 3.61 | | |
| 1050 | | 10.78 | 12.94 | 4.983 | 0.52 | 147.0 | 29.0 | 100 | 3.60 | | |
| 1055 | | 10.61 | 12.93 | 4.990 | 0.54 | 118.0 | | 100 | 3.60 | | |
| 1100 | | 10.34 | 12.95 | 4.982 | 0.52 | 89.5 | 19.1 | 100 | 3.68 | | |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 32-P3A-MW4-17.0- | 500 mL Poly | 1 | None | $Cr^{+6}$ | 1125 |
| 10180424 | 500 mL Poly | 1 | $HNO_3$ | CCPW Metals | 1125 |
| 32-P3A-MW4-17.0- | 500 mL Poly | 1 | None | $Cr^{+6}$ | 1126 |
| 20180424X | 500 mL Poly | 1 | $HNO_3$ | CCPW Metals | 1126 |

Comments _____

Signature John Angelone Date 4-24-18

Purge Volume Calculation

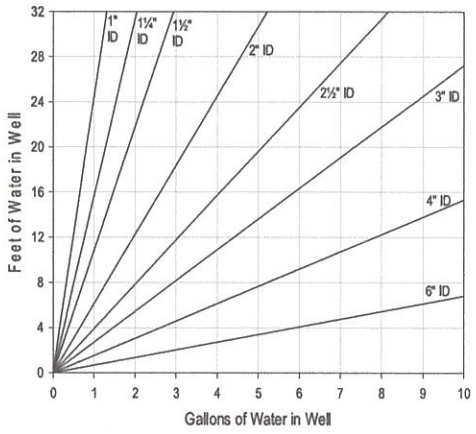


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) ✓ | pH (S.U.) ✓ | Spec. Cond. (mS/cm) ✓ | DO (mg/L) ✓ | ORP (mV) ✓ | Turbidity (NTU) ✓ | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1105 | | 10.14 | 13.01 | 4.983 | 0.51 | 44.5 | | 100 | 3.60 | |
| 1110 | | 10.04 | 13.03 | 5.002 | 0.50 | 27.0 | | 100 | 3.60 | |
| 1115 | | 9.96 | 13.05 | 5.011 | 0.47 | 22.1 | 9.16 | 100 | 3.60 | |
| 1120 | | 9.93 | 13.05 | 5.010 | 0.47 | 16.8 | 8.77 | 100 | 3.60 | |

Pump Set at ~~17.0 ft~~ 13 ft

AECOM

Well ID: 132-P3A-MW4

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 04-24-18 Time: Start 1200 am/pm
Project No: 60317455 Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: _____ Collector: J. Angelone

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 20.0 c. Length of Water Column _____ (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 3.60 d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make: YSI, LaMotte Model: 600XLM, 2020we Serial Number: _____

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1205 | | 10.33 | 13.02 | 4.427 | 1.22 | -47.6 | 31.0 | 100 | 3.60 | Green | None |
| 1210 | | 9.90 | 13.03 | 4.247 | 1.02 | -47.3 | 26.4 | 100 | 3.60 | Green | None |
| 1215 | | 10.15 | 13.02 | 4.320 | 0.87 | -46.6 | 19.8 | 100 | 3.60 | Green | None |
| 1220 | | 10.85 | 13.05 | 4.392 | 0.66 | -46.6 | 14.0 | 100 | 3.60 | Green | None |
| 1225 | | 11.01 | 13.07 | 4.498 | 0.56 | -44.8 | 11.3 | 100 | 3.60 | Green | None |
| 1230 | | 10.80 | 13.07 | 4.544 | 0.60 | -42.9 | 9.72 | 100 | 3.60 | Green | None |
| 1235 | | 10.80 | 13.07 | 4.555 | 0.57 | -42.0 | 8.94 | 100 | 3.60 | Green | None |

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

(continued on back)

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 132-P3A-MW4-13.0-20180424 | 500mL Poly | 1 | None | Cr+6 | 1240 |
| | 500mL Poly | 1 | $HNO_3$ | CCPEJ Mptals | 1240 |

Comments _____

Signature _____ Date 04-24-18

Purge Volume Calculation

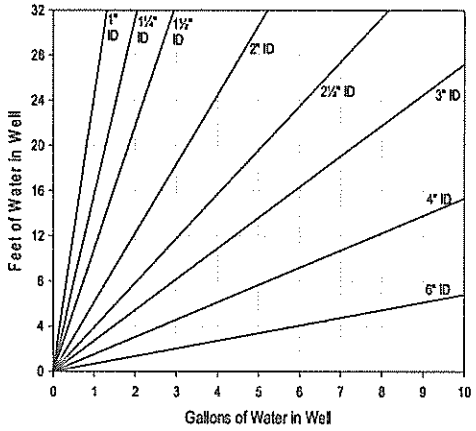


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Pump Set at 9.0 ft

AECOM

Well ID: 137-P3B-MW1015

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries
Project No: 60317455
Site Location: Garfield Avenue Sites
Weather Conds:

Date: 4/24/2018
Time: Start 9:30 am/pm
Finish ____ am/pm
Collector:

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 16.0
b. Water Table Depth 4.4
c. Length of Water Column 11.6 (a-b)
d. Calculated System Volume (see back)

Casing Diameter/Material 4in

**2. WELL PURGE DATA**

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make: YSI 650 MDS Model: Serial Number:

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9:40 | | 12.32 | 6.54 | 22.97 | 1.92 | -125.5 | 4.02 | 160 | 4.4 | Murky | |
| 0945 | | 13.00 | 6.55 | 23.01 | 0.99 | -122.4 | 4.00 | 160 | 4.4 | Clear/Tan | |
| 0950 | | 13.20 | 6.55 | 22.93 | 0.87 | -114.7 | 4.01 | 160 | 4.4 | Clear/tan | |
| 0955 | | 13.28 | 6.55 | 22.90 | 0.83 | -105.1 | 2.65 | 160 | 4.4 | ↓ | |
| 1000 | | 13.33 | 6.55 | 22.96 | 0.78 | -105.9 | 2.37 | 160 | 4.4 | ↓ | |
| 1005 | | 13.66 | 6.55 | 23.00 | 0.76 | -108.7 | 2.35 | 160 | 4.4 | | |
| | | | | | | | | | | | |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☑ | ☐ | ☐ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method:

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 37-P3B-MW1015-9.0-20180424 | | 2 | None | SVOC | 1010 |
| 37-P3B-MW1015-9.0-20180424 | | 3 | HCL | VOC | 1010 |

Comments

Signature: Tay Pates
Date: 4/24/2018

Pump set at 13.0 ft

AECOM

Well ID: 137-P3B-MW1015

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries  Date: 4/24/2018  Time: Start 10:35 am/pm
Project No: 60317455  Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: _____  Collector: Tej Patel

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 16.0  c. Length of Water Column 11.6 (a-b)  Casing Diameter/Material 4in

b. Water Table Depth 4.4  d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make / Model / Serial Number
YST
LaMotte

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0945 | | 12.79 | 6.53 | 23.64 | 0.25 | -96.2 | 4.91 | 130 | 4.4 | murky | |
| 1050 | | 12.33 | 6.53 | 23.59 | 0.08 | -101.2 | 4.21 | 130 | 4.4 | ↓ | |
| 1055 | | 12.60 | 6.57 | 23.43 | 0.21 | -104.7 | 3.20 | 130 | 4.4 | | |
| 1100 | | 12.77 | 6.54 | 23.68 | 0.40 | -92.8 | 2.74 | 140 | 4.4 | | |
| 1105 | | 12.96 | 6.53 | 23.69 | 0.38 | -93.6 | 1.78 | 140 | 4.4 | | |
| 1110 | | 12.33 | 6.55 | 23.71 | 0.36 | -92.6 | 1.87 | 140 | 4.4 | | |
| | | | | | | | | | | | |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☑ | ☐ | ☐ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: From Tube

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 137-P3B-MW1015-13.0-20180424 | 2 | None | SVOC | 1120 |
| 137-P3B-MW1015-13.0-20180424 | | HCL | VOC | 1120 |

Comments MS / MSD

Signature Tej Patel  Date 4/24/2018

Pump set at 9.0 ft

AECOM

Well ID: ~~132-P3A-MW1045~~ 137-P3B-MW1025

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 4/24/2018 Time: Start 2:15 am/pm
Project No: 60317455 Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: _____ Collector: _____

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length ~~140~~ 17.0 c. Length of Water Column 12.4 (a-b) Casing Diameter/Material 4 in
   b. Water Table Depth 4.6 d. Calculated System Volume (see back) _____

2. **WELL PURGE DATA**
   a. Purge Method: Low Flow

   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used: Make / Model / Serial Number
   YSI
   LaMotte

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1415 | [redacted] | 11.83 | 6.99 | 3.034 | 2.98 | -47.4 | 55.8 | 240 | 4.6 | Murky | |
| 1420 | | 11.78 | 6.75 | 3.875 | 1.11 | -56.5 | 37.6 | 240 | 4.6 | | |
| 1425 | | 11.72 | 6.66 | 6.751 | 0.45 | -63.2 | 26.8 | 240 | 4.6 | | |
| 1420 | | 11.66 | 6.56 | 7.335 | 0.22 | -64.7 | 17.4 | 240 | 4.6 | | |
| 1435 | | 11.64 | 6.55 | 7.774 | 0.14 | -64.9 | 13.5 | 240 | 4.6 | | |
| 1440 | | 11.64 | 6.55 | 8.154 | 0.04 | -67.5 | 11.9 | 240 | 4.6 | | |
| 1445 | | 11.66 | 6.56 | 8.142 | 0.05 | -69.2 | 8.23 | 240 | 4.6 | | |

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☑ | ☐ | ☐ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

(continued on back)

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: From Tube

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 137-P3B-MW1025-9.0-20180424 | | 2 | None | SVOC | 1445 |
| 137-P3B-MW1025-9.0-20180424 | | 3 | HCL | VOC | 1445 |

Comments Bottom @ 12ft

Signature Tay Pastor Date 4/24/2018

Pump set at 10.0 ft

AECOM

Well ID: 114-P2B4-MW1

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 4/25/14 Time: Start 1110 am/pm
Project No: 60317455 Finish 1315 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: 57°F cloudy + rainy Collector:

1. **WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 17.0 c. Length of Water Column 12.36 (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 4.64 d. Calculated System Volume (see back) 2.0

2. **WELL PURGE DATA**

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 650MDS | Pine #: 12141 |
| | LaMotte | 2020we | 30500 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1115 | | 11.29 | 13.13 | 5.600 | 0.64 | -137.0 | 9.67 | 200 | 5.09 | Green | N/A |
| 1120 | | 11.22 | 13.13 | 5.542 | 0.69 | -134.3 | 9.52 | 200 | 5.11 | Green | N/A |
| 1125 | | 11.16 | 13.15 | 5.506 | 0.74 | -131.0 | 9.35 | 200 | 5.20 | Green | N/A |
| 1130* | | 11.15 | 12.96 | ~~4.65~~ 2.310 | 2.57 | -120.0 | 3092 | 200 | | ~~Green~~ Brown | N/A |
| 1135 | | 11.50 | 12.67 | 2.261 | 5.48 | -83.9 | 2761 | 200 | 3.92 | Brown | N/A |
| 1140 | | 11.66 | 12.68 | 3.059 | 4.62 | -119.4 | 2512 | 200 | 4.10 | Brown | N/A |
| 1145 | | 11.62 | 12.56 | 3.168 | 4.57 | -120.3 | 2392 | 200 | 4.45 | Brown | N/A |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: Bladder pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-P2B4-MW1-10.0-20140425 | | | | | 1310 |
| 114-P2B4-MW1-10.0-20140425X | | | | | 1311 |

Comments: Pump inlet set @ 10.0'
* Muddy water from outside the well entered the well before the 1130 reading. Surface water got in the well

Signature _____ Date _____

Purge Volume Calculation

114-P2B4-MW1 @ 16.0' (continued)

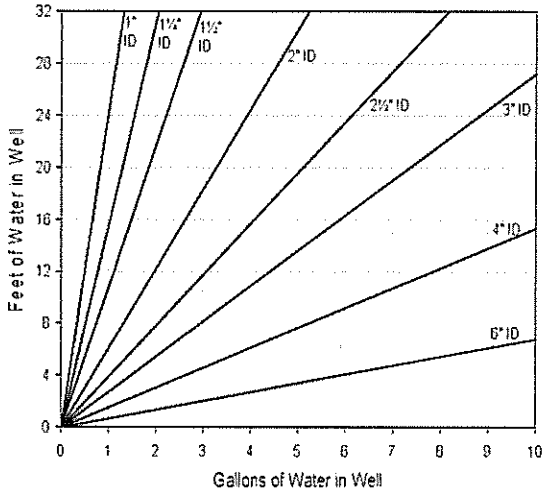


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

Drum ~~[illegible]~~, flow-thru cell

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | | | | | | | | | | |
| 1155 | | 11.60 | 13.00 | 4.068 | 3.26 | -134.6 | 2326 | 200 | 5.19 | Brown, N/A |
| 1205 | | 11.50 | 13.03 | 4.284 | 2.74 | -140.2 | | | | |
| 1220 | | 11.40 | 13.10 | 4.891 | 1.79 | -150.3 | 804 | 200 | | |
| 1225 | | | | | | | | | | |
| 1230 | | | | | | | | | | |
| 1235 | | | | | | | | | | |
| 1240 | | | | | | | | | | |
| 1245 | | | | | | | | | | |
| 1250 | | | | | | | | | | |
| 1255 | | | | | | | | | | |
| 1300 | | | | | | | | | | |
| 1305 | | ~~[illegible]~~ | | | ~~[illegible]~~ | | 107 | | | |
| 1310 | | | | | | | | | | |
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Pump set at 14.0 ft

AECOM

Well ID: 114-P2B4-MW1

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 4/25/18 Time: Start 1030 (am)/pm
Project No: 60317455 Finish 1110 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: 56°F cloudy/rainy Collector: SC

1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 17.0 c. Length of Water Column 15.85 (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 1.15 d. Calculated System Volume (see back) 2.6

2. WELL PURGE DATA

a. Purge Method: Low flow

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 650MDS | Pine #: 12141 |
| | LaMotte | 2020we | 30500 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1030 | | 11.69 | 12.81 | 5.391 | 1.61 | 206.6 | 29.4 | 250 | 2.22 | Green | N/A |
| 1035 | | 11.96 | 12.92 | 5.451 | 0.9 | -49.4 | 19.9 | 250 | 3.82 | Green | N/A |
| 1040 | | 11.23 | 12.97 | 5.466 | 0.53 | -113.5 | 12.9 | 200 | 4.15 | Green | N/A |
| 1045 | | 11.26 | 12.98 | 5.460 | 0.55 | -127.2 | 10.30 | 200 | 4.42 | Green | N/A |
| 1050 | | 11.29 | 13.00 | 5.454 | 0.76 | -136.7 | 9.74 | 200 | 4.70 | Green | N/A |
| 1055 | | 11.33 | 13.03 | 5.442 | 0.68 | -141.0 | 9.46 | 200 | 4.89 | Green | N/A |
| 1100 | | 11.35 | 13.06 | 5.440 | 0.70 | -142.0 | 5.52 | 200 | 5.04 | Green | N/A |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

3. SAMPLE COLLECTION: Method: Bladder pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-P2B4-MW1-14.0-20180425 | | | | | 1105 |

Comments: Pump inlet set at 14.0'

Signature _____ Date _____

Purge Volume Calculation

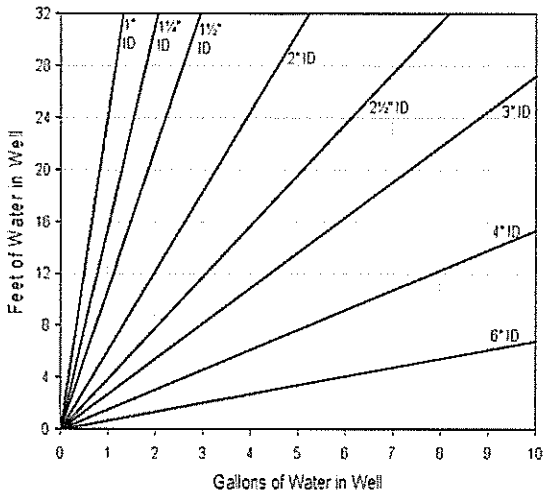


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
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Pump set at 30 ft

AECOM

Well ID: 135-MW2B

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 4/25/18 Time: Start 1410 am/pm
Project No: 60317455 Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: 56°F Cloudy / rainy Collector: _____

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 33.0 c. Length of Water Column 31.82 (a-b) Casing Diameter/Material 2" PVC
   b. Water Table Depth 1.18 d. Calculated System Volume (see back) _____

2. **WELL PURGE DATA**
   a. Purge Method: Low flow
   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 650 MDS | Pine # 12141 |
| | LaMotte | 2020 we | 30500 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1415 | | 14.30 | 8.6 | 6.612 | 1.83 | 53.6 | 26.5 | 250 | 1.24 | Clear | N/A |
| 1420 | | 14.39 | 7.48 | 7.614 | 1.00 | 55.3 | 37.5 | 250 | 1.24 | Clear | N/A |
| 1425 | | 14.16 | 7.34 | 7.401 | 0.54 | 43.0 | 24.3 | 200 | 1.24 | Clear | N/A |
| 1430 | | 14.13 | 7.49 | 7.325 | 0.7 | 37.0 | 22.3 | 200 | 1.24 | Clear | N/A |
| 1435 | | 14.15 | 7.42 | 7.06 | 0.63 | 29.2 | ~~12.4~~ | 200 | 1.24 | Clear | N/A |
| 1440 | | 14.22 | 7.37 | 6.997 | 0.6 | 22.5 | 20.1 | 200 | 1.24 | Clear | N/A |
| 1445 | | 14.25 | 7.34 | 6.868 | 0.54 | 19.4 | 9.25 | 200 | 1.24 | Clear | N/A |

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

12.2

(continued on back)

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: Bladder pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 135-MW2B-30.0-20180425 | | | | | 1450 |
| 135-MW55B-30.0-20180426 | | | MS/MSD | | 1450 |

Comments _____

Signature _____ Date _____

Purge Volume Calculation

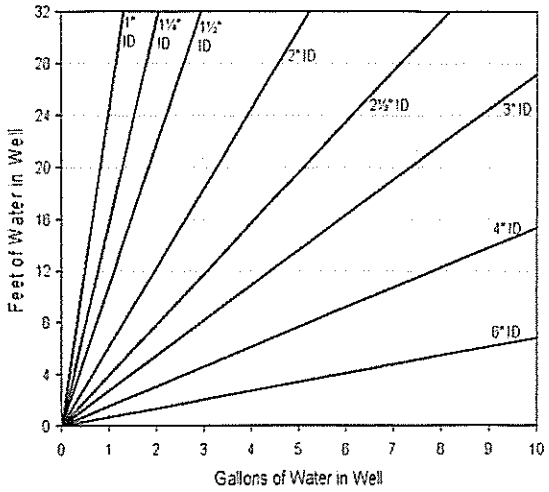


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

AECOM

Well ID: MW8D @41ft

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 04/25/18 Time: Start 1050 am/pm
Project No: 60317455 Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Rain, windy 50's Collector: T. Islam

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 49ft c. Length of Water Column 48.01 (a-b) Casing Diameter/Material 4" PVC

b. Water Table Depth 0.99 d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make Model Serial Number

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1100 | 0 | 14.09 | 7.52 | 0.226 | 7.64 | 136.4 | 5.10 | 100 | 0.99 | Clear | None |
| 1105 | 0.12 | 14.26 | 7.22 | 0.216 | 4.85 | 136.0 | 4.47 | 100 | 1.06 | " | " |
| 1110 | 0.25 | 14.28 | 7.16 | 0.239 | 4.23 | 140.0 | 3.96 | 100 | 1.15 | " | " |
| 1115 | 0.50 | 14.25 | 7.16 | 0.486 | 4.17 | 151.3 | 3.51 | 100 | 1.15 | " | " |
| 1120 | 0.75 | 14.22 | 7.15 | 0.702 | 4.02 | 160.4 | 3.28 | 100 | 1.15 | " | " |
| 1125 | 1.0 | 14.25 | 7.43 | 0.973 | 2.96 | 187.3 | 3.41 | 100 | 1.15 | Light Gray | " |
| 1130 | 1.22 | 14.29 | 7.61 | 5.920 | 1.38 | 210.6 | 3.51 | 100 | 1.15 | " | " |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Low Flow

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| MW8D-41.0-20180425 | 500 mL | 1 | None | Cr, SH, PH | 1225 |
| MW8D-41.0-20180425 | 1L Amber | 2 | None | SVOC | 1225 |
| MW8D-41.0-20180425 | 500 mL | 1 | HNO3 | CCPW Metals | 1225 |
| MW8D-41.0-20180425 | 40 mL VOC | 3 | HCL | VOC | 125 |

Comments Duplicate collected for all parameters at 1240

Signature _____ Date 04/25/2018

Purge Volume Calculation

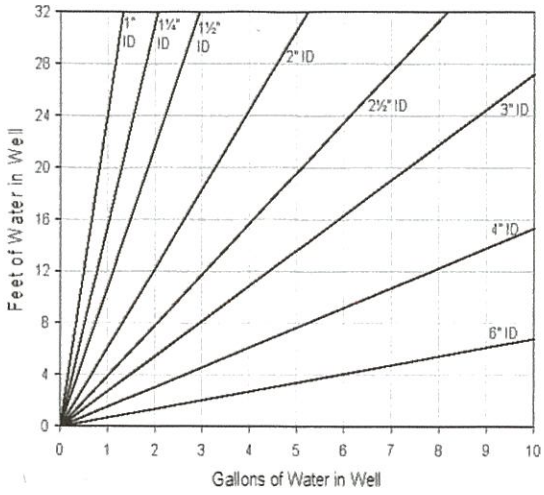


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1135 | 1.25 | 14.32 | 7.68 | 7.134 | 0.94 | 218.3 | 3.31 | 100 | 1.17 | Green / None |
| 1140 | 1.50 | 14.30 | 7.74 | 8.927 | 0.66 | 221.7 | 3.14 | 100 | 1.18 | " " |
| 1145 | 1.62 | 14.34 | 7.81 | 10.73 | 0.47 | 225.4 | 3.21 | 100 | 1.18 | " " |
| 1150 | 1.75 | 14.33 | 7.88 | 12.58 | 0.24 | 229.7 | 3.28 | 100 | 1.18 | " " |
| 1155 | 1.85 | 14.33 | 7.90 | 13.24 | 0.27 | 231.2 | 2.87 | 100 | 1.18 | " " |
| 1200 | 2.0 | 14.32 | 7.93 | 14.03 | 0.30 | 232.9 | 2.29 | 100 | 1.18 | " " |
| 1205 | 2.12 | 14.39 | 7.95 | 14.37 | 0.36 | 232.6 | 2.37 | 100 | 1.18 | " " |
| 1210 | 2.25 | 14.51 | 7.96 | 14.50 | 0.40 | 232.9 | 2.48 | 100 | 1.18 | " " |
| 1215 | 2.35 | 14.52 | 7.96 | 14.52 | 0.42 | 233.3 | 2.92 | 100 | | " " |
| 1220 | 2.50 | 14.45 | 7.97 | 14.65 | 0.38 | 234.0 | 3.42 | 100 | | " " |

AECOM

Well ID: MW 8D @ 45ft

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 04/25/18 Time: Start 1315 am/pm Finish 1445 am/pm
Project No: 60317455
Site Location: Garfield Avenue Sites
Weather Conds: Rain, Windy ~50's Collector:

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 49 ft c. Length of Water Column 47.82 (a-b) Casing Diameter/Material 4" PVC
   b. Water Table Depth 1.18 d. Calculated System Volume (see back)

2. **WELL PURGE DATA**
   a. Purge Method: Low Flow
   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used: Make Model Serial Number

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ~~1320~~ | ~~0~~ | 14.67 | 8.12 | 13.40 | 0.28 | 240.0 | 6.93 | 100 | 1.18 | Green | None |
| ~~1325~~ | 0.12 | 14.51 | 7.79 | 21.62 | 0.19 | 252.8 | 15.6 | 100 | 1.15 | " | " |
| ~~1330~~ | 0.5 | 14.54 | 7.76 | 23.40 | 0.09 | 244.3 | 37.0 | 100 | 1.15 | " Green | " |
| ~~1335~~ | 0.35 | 14.56 | 7.78 | 23.42 | 0.09 | 241.9 | 19.9 | 100 | 1.15 | Lt brown-Clear | " |
| 1340 | 0.5 | 14.55 | 7.79 | 23.42 | 0.14 | 237.5 | 17.9 | 100 | 1.14 | Lt green to Clear | " |
| 1345 | 0.75 | 14.52 | 7.80 | 23.43 | 0.19 | 232.1 | 17.6 | 100 | 1.13 | " | " |
| 1350 | 1.0 | 14.50 | 7.80 | 23.43 | 0.23 | 229.7 | 15.1 | 100 | 1.12 | " | " |

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

(continued on back)

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: Low Flow

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| MW8D-45.0-20180425 | 500 mL Plastic | 1 | None | $Cr^{+6}$, EH, PA | 1415 |
| MW8D-45.0-20180425 | 500 mL Plastic | 1 | $HNO_3$ | CCPW Metals | 1415 |
| MW8D-45.0-20180425 | 1L Amber | 2 | None | SVOC | 1415 |
| MW8D-45.0-20180425 | 40 mL VOC | 3 | HCl | VOC | 1415 |

Comments ~~Field~~ Filter Samples collected for $Cr^{+6}$, EH, PA and CCPW metals (non-preserved)

Signature Date 04/25/18

Purge Volume Calculation

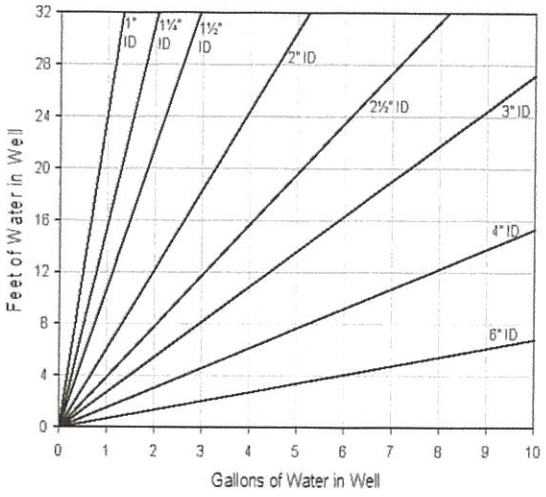


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1355 | 1.25 | 14.48 | 7.81 | 23.62 | 0.22 | 224.4 | 15.1 | 100 | 1.12 | L. Green to clear / None |
| 1400 | 1.50 | 14.50 | 7.81 | 23.40 | 0.19 | 219.9 | 15.1 | 100 | 1.11 | " " |
| 1405 | 1.75 | 14.51 | 7.81 | 23.39 | 0.18 | 216.1 | 15.2 | 100 | 1.10 | " " |
| 1410 | 2.0 | 14.53 | 7.81 | 23.37 | 0.18 | 212.9 | 15.4 | 100 | 1.10 | " " |

AECOM

Well ID: MW8F

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries  Date: 04/25/18  Time: Start 1025 am/pm
Project No: 60317455  Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: _____  Collector: J. Angelone

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 84 ft  c. Length of Water Column _____ (a-b)  Casing Diameter/Material 4" PVC

b. Water Table Depth 2.1 ft  d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| Make | Model | Serial Number |
|---|---|---|
| YSI | 600XLM | ~~Pinett 17280~~ 2408 |
| LaMotte | 2020we | |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1100 | | 14.36 | 6.42 | 1.811 | | | | | | | |
| Reset YSI | | | | | | | | | | | |
| 1150 | | 14.58 | 7.91 | 2.241 | 4.66 | 222.9 | | 175 | | | |
| 1155 | | 14.52 | 7.96 | 2.238 | 3.87 | 222.2 | 6.40 | 175 | | | |
| 1200 | | 14.39 | 8.01 | 2.239 | 3.65 | 221.4 | 6.36 | 175 | | | |
| 1205 | | 14.48 | 8.04 | 2.240 | 3.44 | 218.6 | | 175 | | | |
| 1210 | | 14.55 | 8.06 | 2.260 | 2.84 | 213.0 | 7.83 | 175 | | | |

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

(continued on back)

If no or N/A - Explain below.

No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| | | | | | |

Comments MS/MSD

Signature _____  Date _____

Purge Volume Calculation

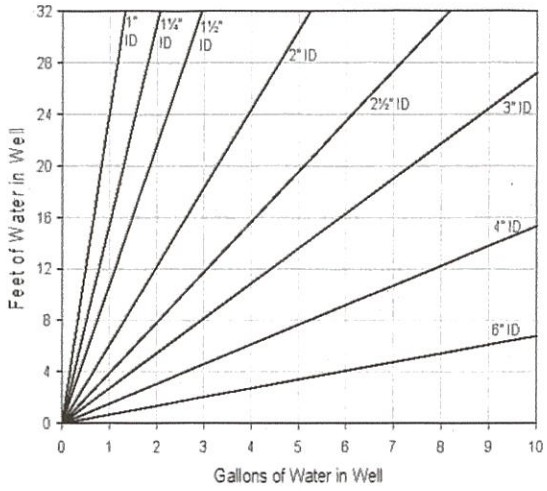


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| ~~1215~~ | | | | | | | | | | |
| 1215 | | 14.61 | 8.08 | 2.258 | 2.48 | 202.4 | | 175 | | |
| 1220 | | 14.61 | 8.09 | 2.252 | 2.26 | 197.2 | | 175 | | |
| 1225 | | 14.61 | 8.09 | 2.246 | 2.08 | 192.7 | 6.73 | 175 | | |
| 1230 | | | | | | | | | | Sample Taken |

3 15
7 20
4584

11 ft

AECOM

Well ID: 132-MW2A

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 4/26/2018 Time: Start 13:10 am/pm
Project No: 60317455 Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: _____ Collector: _____

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 18.0 c. Length of Water Column 12.2 (a-b) Casing Diameter/Material 2in
   b. Water Table Depth 5.8 d. Calculated System Volume (see back) _____

2. **WELL PURGE DATA**
   a. Purge Method: Low Flow
   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ±1.0 unit | - ORP | ±10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used: Make Model Serial Number

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 13:20 | | 14.30 | 7.16 | 0.878 | 8.64 | -22.3 | 870 AU | 150 | 5.8 | Brown | |
| 1325 | | 12.52 | 6.73 | 0.823 | 7.63 | -17.0 | 160 NTU | 150 | 5.8 | Brown | |
| 1330 | | 12.23 | 6.68 | 0.807 | 5.10 | -13.3 | 71 | 150 | 5.8 | Brown | |
| 1335 | | 11.66 | 6.49 | 0.798 | 3.97 | -10.1 | 36.6 | 150 | 5.8 | Clear | |
| 1340 | | 11.79 | 6.45 | 0.794 | 3.24 | -10.2 | 17.4 | 150 | 5.8 | Clear | |
| 1345 | | 11.82 | 6.40 | 0.793 | 2.61 | -7.5 | 12.9 | 150 | 5.8 | Clear | |
| 1350 | | 11.84 | 6.40 | 0.796 | 2.85 | -7.2 | 9.96 | 150 | 5.8 | Clear | |

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

(continued on back)

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: From Tube

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 132-MW2A-11.0-20180426 | | 1 | HNO3 | CR, NI, SB, TL, V | 13:55 |
| 132-MW2A-11.0-20180426 | | 1 | None | EH, PH, XXCRNJ | 13:55 |
| 132-MW2A-11.0-20180426(x) | | 1 | HNO3 | CR, NI, SB, TL, V | 13:55 |
| 132-MW2A-11.0-20180426(x) | | 1 | None | EH, PH, XXCRNJ | 13:55 |

Comments Duplicates
Silted @ 14.5 ftbg - no second Sample

Signature Taylor Peters Date 4/26/2018

AECOM

Well ID: 132-P3A-MW102S @ 11ft

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 4/26/2018 Time: Start 1240 am/pm
Project No: 60317455 Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: _____ Collector: JC

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 14ft c. Length of Water Column 4.49 (a-b) Casing Diameter/Material 4" PVC

b. Water Table Depth 9.51 d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 650 MDS | 6709 |
| | LaMotte | 2020 WE | 19293 |

| | Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1250 | | 12.30 | 6.72 | 1.120 | 45.17 | -115.8 | 32.0 | 200 | 9.53 | turbid | none |
| 5 | 1255 | | 12.76 | 6.79 | 1.115 | 40.19 | -107.5 | 13.2 | 200 | 9.61 | " | " |
| 10 | 1300 | | 12.26 | 6.93 | 1.112 | 36.05 | -167.1 | 14.0 | 200 | 9.63 | " | " |
| 15 | 1305 | | 12.21 | 6.41 | 1.111 | 30.22 | -108.2 | 12.6 | 200 | 9.63 | clear | " |
| 20 | 1310 | | 12.16 | 6.49 | 1.112 | 29.86 | -102.4 | 11.3 | 200 | 9.63 | " | " |
| 25 | 1315 | | 12.20 | 6.49 | 1.110 | 27.44 | -102.9 | 9.28 | 200 | 9.63 | " | " |
| 30 | 1320 | | 12.24 | 6.48 | 1.109 | 26.84 | -101.8 | | 200 | 9.63 | " | |

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

(continued on back)

**3. SAMPLE COLLECTION:** Method: Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 132-P3A-MW102S-11.0-20180426 | | | | | 1325 |
| 132-P3A-MW102S-11.0-20180426 MS/MSD | | | | | 1325 |

Comments 2nd interval not collected due to WT.
Pump inlet @ 11.0 ftbg

Signature _____ Date 4/26/18

* Poly

@ 52.0 Ft

AECOM

Well ID: 132-P3A-MW104D1

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: Time: Start 955 am/pm
Project No: 60317455 Finish am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Collector:

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 55.0 c. Length of Water Column (a-b) Casing Diameter/Material
   b. Water Table Depth 6.94 d. Calculated System Volume (see back)

2. **WELL PURGE DATA**
   a. Purge Method:
   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used: Make Model Serial Number

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 942 | | 13.95 | 13.13 | 6.860 | 77.99 | 258.5 | 6.66 | 200 | 8.78 | Clear | none |
| 947 | | 13.93 | 13.28 | 6.950 | 78.03 | 250.1 | 5.81 | 200 | 10.77 | " | " |
| 952 | | 13.99 | 13.33 | 7.030 | 78.06 | 227.7 | 5.33 | 200 | 11.90 | " | " |
| 957 | | 13.95 | 13.38 | 7.027 | 77.97 | 252.4 | 4.16 | 200 | 12.01 | " | " |
| 1002 | | 14.06 | 13.39 | 7.031 | 77.62 | 228.6 | 5.22 | 200 | 12.10 | " | " |
| 1007 | | 14.11 | 13.41 | 7.038 | 77.49 | 225.3 | 4.21 | 200 | 12.14 | " | " |
| 1012 | | 14.19 | 13.41 | 7.029 | 77.36 | 220.9 | 3.66 | 200 | 12.19 | " | " |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method:

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 132-P3A-MW104D-1-52.0-20180426 | | | | | 1017 |
| 132-P3A-MW104D-1-52.0-20180426 X | | | | | 1018 |

Comments

Signature Date

* Poly

@ 69.0 Ft

AECOM

Well ID: 132-P3A-MW104D-2

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: Time: Start 935 am/pm
Project No: 60317455 Finish am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Collector:

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 72.0 c. Length of Water Column (a-b) Casing Diameter/Material 2" PVC
   b. Water Table Depth 6.59 d. Calculated System Volume (see back)

2. **WELL PURGE DATA**
   a. Purge Method:
   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ±1.0 unit | - ORP | ±10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used: Make Model Serial Number

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 940 | | 13.77 | 7.08 | 2.085 | 7.00 | -138.5 | 11.38 | 250 | 7.11 | Clear | none |
| 945 | | 13.67 | 7.34 | 2.225 | 1.72 | -240.2 | 8.98 | 250 | 8.45 | " | " |
| 950 | | 13.91 | 7.59 | 2.042 | 1.51 | -289.3 | 6.21 | 200 | 9.55 | " | " |
| 955 | | 13.90 | 7.66 | 2.046 | 1.17 | -294.2 | 5.91 | 200 | 9.71 | " | " |
| 1000 | | 13.86 | 7.77 | 2.084 | 1.09 | -295.1 | 5.87 | 200 | 9.74 | " | " |
| 1005 | | 13.82 | 7.85 | 2.101 | 1.04 | -296.0 | 5.94 | 200 | 9.75 | " | " |
| 1010 | | 13.85 | 7.79 | 2.114 | 1.02 | -297.1 | 5.77 | 200 | 9.76 | " | " |

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

(continued on back)

3. **SAMPLE COLLECTION:** Method:

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 132-P3A-MW104D-2-69.0-20180426 | | | | | 1015 |
| 132-P3A-MW104D-2-69.0-20180426 MS/MSD | | | | | |

Comments

Signature Date

* Teflon

@ 13.0 ft.

AECOM

Well ID: 132-P3A-MW1045

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 4/26/2018 Time: Start 9:20 am/pm
Project No: 60317455 Finish 10:00 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Collector:

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length ~~16.0~~ 16.0 c. Length of Water Column 11.0 (a-b) Casing Diameter/Material 4in
   b. Water Table Depth 5.0 d. Calculated System Volume (see back)

2. **WELL PURGE DATA**
   a. Purge Method: Low Flow

   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ±1.0 unit | - ORP | ±10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used: Make Model Serial Number
   YSI 650 MDS
   LaMotte 2020WE

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0930 | | 13.31 | 9.18 | 0.980 | 81.43 | 176.8 | 11.7 | 95 | 5.0 | Clear | |
| 0935 | | 12.38 | 9.18 | 0.880 | 83.18 | 172.3 | 9.16 | 95 | 5.0 | ↓ | |
| 0940 | | 12.71 | 9.56 | 0.805 | 83.28 | 168.4 | 8.82 | 95 | 5.0 | | |
| 0945 | | 12.75 | 9.58 | 0.787 | 83.18 | 163.4 | 8.36 | 95 | 5.0 | | |
| 0950 | | 12.77 | 9.59 | 0.780 | 83.05 | 159.1 | 7.54 | 95 | 5.0 | | |
| 0955 | | 12.84 | 9.59 | 0.776 | 82.99 | 156.6 | 7.73 | 95 | 5.0 | | |
| | | | | | | | | | | | |

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

(continued on back)

3. **SAMPLE COLLECTION:** Method: From Tube

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 132-P3A-MW1045-13.0-20180426 | | 2 | None | SVOC | 10:00 |
| 132-P3A-MW1045-13.0-20180426 | | 3 | HCL | VOC | 10:00 |

Comments

Signature Date 4/26/2018

~~poly~~ TEFLON

@ 9.0 ft

AECOM

Well ID: TK

132-P3A-MW1045

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 4/26/2018 Time: Start 10:00 am/pm
Project No: 60317455 Finish 11:15 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: _____ Collector: _____

1. **WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length ~~16.0~~ 16.0 c. Length of Water Column 11.0 (a-b) Casing Diameter/Material 4 in

b. Water Table Depth 5.0 d. Calculated System Volume (see back) _____

2. **WELL PURGE DATA**

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ±1.0 unit | - ORP | ±10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make Model Serial Number

YSI 650MDS
LaMotte 2020WE

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1030 | | 13.54 | 9.60 | 0.779 | 68.39 | 139.8 | 9.00 | 95 | 5.0 | Clear | None |
| 1035 | | 12.81 | 9.60 | 0.775 | 65.97 | 140.9 | 8.03 | 95 | 5.0 | ↓ | |
| 1090 | | 12.87 | 9.60 | 0.773 | 57.06 | 141.5 | 8.65 | 95 | 5.0 | | |
| 1045 | | 12.80 | 9.61 | 0.774 | 51.82 | 141.8 | 7.71 | 95 | 5.0 | | |
| 1050 | | 12.91 | 9.61 | 0.773 | 48.06 | 141.2 | 7.27 | 95 | 5.0 | | |
| 1055 | | 12.97 | 9.60 | 0.774 | 42.89 | 141.6 | 8.96 | 95 | 5.0 | | |
| | | | | | | | | | | | |

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

(continued on back)

3. **SAMPLE COLLECTION:** Method: From Tube

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 132-P3A-MW1045-9.0-20180420 18 | | 2 | & None | SVOC | 1100 |
| 132-P3A-MW1045-9.0-20180420 18 | | 3 | HCL | VOC | |

Comments _____

Signature _____ Date 4/26/2018

Pump Set at ~~10~~ 8.0 ft

AECOM

Well ID: MW10S

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: Time: Start 1320 am/pm
Project No: 60317455 Finish am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Collector:

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 15.0 c. Length of Water Column 9.1 (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 5.9 d. Calculated System Volume (see back)

**2. WELL PURGE DATA**

a. Purge Method:

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make Model Serial Number

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1320 | 0 | 12.47 | 6.99 | 4.634 | ~~4.67~~ | -26.1 | 41.6 | 100 | 5.90 | Clear | None |
| 1325 | 0.12 | 12.01 | 6.85 | 4.603 | | -20.0 | 34.3 | 100 | 6.03 | " | " |
| 1330 | 0.25 | 12.20 | 6.80 | 4.489 | | -55.9 | 33.0 | 100 | 5.90 | " | " |
| 1335 | 0.35 | 12.32 | 6.78 | 4.425 | | -59.7 | 31.5 | 100 | 5.85 | " | " |
| 1340 | 0.50 | 12.30 | 6.77 | 4.398 | | -64.6 | 29.1 | 100 | 5.85 | " | " |
| 1345 | 0.75 | 12.38 | 6.76 | 4.378 | | -68.4 | 29.7 | 100 | 5.84 | " | " |
| 1350 | 1.0 | 12.43 | 6.73 | 4.338 | | -66.9 | 28.6 | 100 | 5.85 | " | " |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method:

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| MW10S-8.0-20180426 | 500 mL | 1 | None | $Cr^{6}$, Eh, pH | 1355 |
| MW10S-8.0-20180426 | 500 mL | 1 | HNO3 | CCPW metals | |
| MW10S-8.0-20180426 | 1L Amber | 2 | None | SVOC | |
| MW10S-8.0-20180426 | 40 mL | 3 | HCl | VOC | |

Comments

Signature Date

MW10S-8.0-20180426 500mL 1 None $Cr^{6}$, Eh, pH
MW10S-8.0-20180426 500mL 1 None CCPW Metals

Purge Volume Calculation

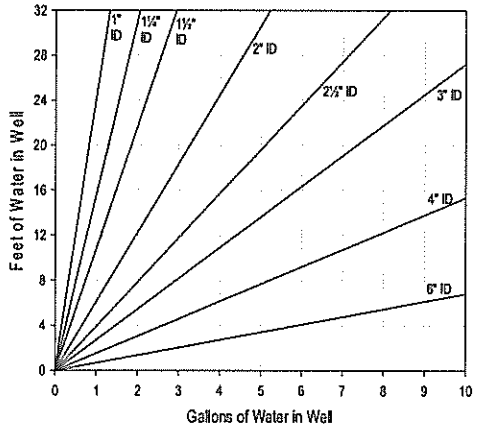


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Pump set at 2.0 ft

AECOM

Well ID: MW105

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 04/26/18 Time: Start 1055 (am)/pm
Project No: 60317455 Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Sunny 60's Collector: T. Islam / J. Angelone

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 15.0 c. Length of Water Column 9.45 (a-b) Casing Diameter/Material 2" PVC
   b. Water Table Depth 5.50 d. Calculated System Volume (see back) _____

2. **WELL PURGE DATA**
   a. Purge Method: Low Flow

   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ±1.0 unit | - ORP | ±10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used: Make / Model / Serial Number
   YSI 600XL
   Lamotte 2020WE

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1055 | 0 | 13.62 | 6.97 | 1.921 | 3.01 | 217.6 | 59.2 | 100 | 5.50 | Brown-Red | Hydr |
| 1100 | 0.12 | 13.07 | 6.98 | 2.763 | 2.52 | 212.9 | 62.4 | 100 | 5.65 | " | " |
| 1105 | 0.25 | 12.98 | 6.97 | 2.798 | 2.49 | 207.3 | 66.7 | 100 | 5.68 | " | " |
| 1110 | 0.35 | 12.86 | 6.97 | 2.834 | 2.36 | 209.0 | 49.3 | 100 | 5.68 | Light Brown | " |
| 1115 | 0.50 | 12.72 | 6.96 | 2.841 | 2.19 | 205.3 | 36.1 | 100 | 5.68 | " | " |
| 1120 | 0.65 | 12.65 | 6.97 | 2.845 | 2.02 | 201.2 | 36.3 | 100 | 5.68 | " | " |
| 1125 | 0.75 | 12.52 | 6.97 | 2.859 | 1.91 | 193.6 | 32.5 | 100 | 5.69 | " | " |

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

(continued on back)

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| MW105-12.0-20180426 | 500 mL Plastic | 2 | None | $C_6$ EH P4 | 1225 |
| " | 500 mL Plastic | 2 | ~~H2O~~ HNO3 | $C_6$ Plus Metals | 1225 |
| " | 1 L Amber | 4 | None | SVOC | 1225 |
| " | 40 mL VOC | 6 | HCL | VOC | 1225 |

Comments: YSI not working initially due to condensation in unit. Waited for unit to dry.
MS/MSD Collected at this interval.
VOC/SVOC placed on Hold.

Signature _____ Date 04/26/18

Purge Volume Calculation

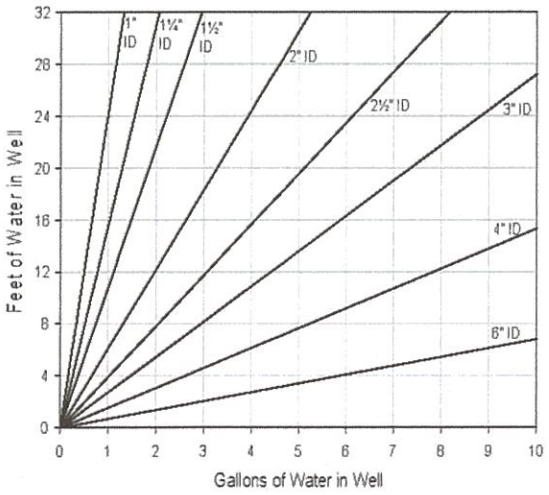


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1130 | 0.85 | 12.46 | 6.96 | 2.846 | 1.85 | 185.2 | 28.8 | 100 | 5.68 | Light Brown | None |
| 1135 | 1.0 | 12.31 | 6.96 | 2.832 | 1.83 | 183.1 | 23.5 | 100 | 5.68 | " | " |
| 1140 | 1.12 | 12.23 | 6.97 | 2.812 | 1.78 | 179.2 | 20.7 | 100 | 5.69 | " | " |
| 1145 | 1.25 | 12.11 | 6.97 | 2.792 | 1.76 | 177.6 | 17.9 | 100 | 5.67 | " | " |
| 1150 | 1.35 | 12.05 | 6.97 | 2.772 | 1.74 | 174.3 | 15.8 | 100 | 5.65 | " | " |
| 1155 | 1.50 | 12.01 | 6.97 | 2.770 | 1.71 | 170.9 | 13.7 | 100 | 5.67 | " | " |
| 1200 | 1.65 | 11.92 | 6.96 | 2.768 | 1.68 | 168.4 | 12.3 | 100 | 5.65 | " | " |
| 1205 | 1.75 | 11.92 | 6.96 | 2.768 | 1.67 | 166.7 | 10.9 | 100 | 5.65 | Clear | " |
| 1210 | 1.85 | 11.90 | 6.96 | 2.767 | 1.67 | 165.2 | 10.0 | 100 | 5.68 | " | " |
| 1215 | 2.0 | 11.89 | 6.97 | 2.766 | 1.66 | 163.8 | 10.0 | 100 | 5.69 | " | " |
| 1220 | 2.12 | 11.89 | 6.97 | 2.765 | 1.66 | 158.7 | 9.3 | 100 | 5.69 | " | " |

AECOM

9986 Well ID: 114-MW19C

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 04- -18 Time: Start _____ am/pm
Project No: 60317455 Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: _____ Collector: _____

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 101.4 c. Length of Water Column 97.4 (a-b) Casing Diameter/Material _____
   b. Water Table Depth 4.0 d. Calculated System Volume (see back) _____

2. **WELL PURGE DATA**
   a. Purge Method: Low Flow Bladder Pump
   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ±1.0 unit | - ORP | ±10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used: Make Model Serial Number

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 11:40 | | 11.87 | 9.37 | 0.403 | 8.19 | 229.5 | 34.9 | 60 | 5.2 | Clear | |
| 11:45 | | 11.07 | 9.56 | 0.400 | 7.23 | 219.6 | 43.1 | 40 | 5.3 | Clear | |
| 11:50 | | 11.10 | 9.62 | 0.389 | 6.72 | 214.6 | 44.4 | 40 | 5.3 | Clear | |
| 11:55 | | 11.12 | 9.69 | 0.401 | 6.64 | 206.2 | 46.4 | 40 | 5.3 | Clear | |
| 12:00 | | 11.16 | 9.74 | 0.386 | 6.04 | 202.9 | 47.4 | 40 | 5.3 | Clear | |
| 12:05 | | 11.22 | 9.76 | 0.385 | 5.87 | 198.7 | 45.0 | 40 | 5.3 | Clear | |
| 12:10 | | 11.41 | 9.79 | 0.386 | 5.90 | 196.7 | 48.4 | 40 | 5.3 | Clear | |

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

(continued on back)

3. **SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW19C-990-20180427 | | 2 | None | SVOC | 12:45 |
| 114-MW19C-990-20180427 | | 3 | HCL | VOC | 12:45 |

Comments _____

Signature _____ Date _____

Purge Volume Calculation

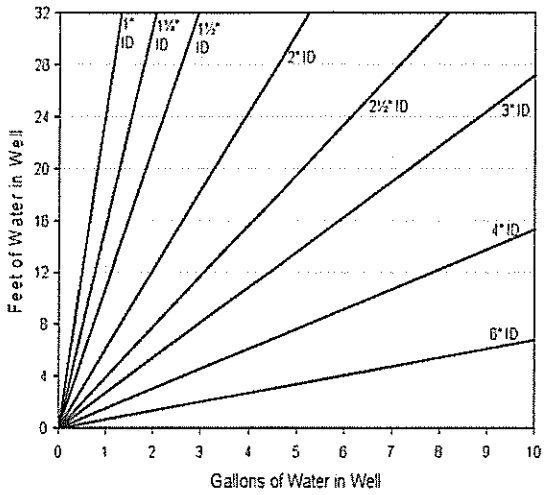


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 12:15 | | 11.51 | 9.81 | 0.384 | ~~5.4~~ 5.34 | 189.9 | 50.8 | 40 | 5.3 | Clear |
| 12:20 | | 11.54 | 9.78 | 0.382 | 5.66 | 185.3 | 48.7 | 40 | 5.3 | Clear |
| 12:25 | | 11.55 | 9.69 | 0.392 | 5.42 | 182.6 | 51.3 | 40 | 5.3 | Clear |
| 12:30 | | 11.54 | 9.56 | 0.388 | 4.99 | 189.7 | 50.7 | 40 | 5.3 | Clear |

Pump set at 37.0 ft

AECOM

Well ID: 114-MW40B

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 04-27-18 Time: Start 1010 am/pm
Project No: 60317455 Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: _____ Collector: J. Angelone, T. Islam

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 40 ft c. Length of Water Column 36.28 (a-b) Casing Diameter/Material 2" PVC
   b. Water Table Depth 3.72 d. Calculated System Volume (see back) _____

2. **WELL PURGE DATA**
   a. Purge Method: Low Flow Bladder Pump
   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600XL | |
| | LaMotte | 2020we | |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1015 | 0 | 14.89 | 7.64 | 1,930 | 20.08 | 240.9 | 13.5 | 100 | 3.72 | Clear | None |
| 1020 | 0.25 | 15.01 | 8.30 | 2.107 | 9.26 | 222.3 | 14.2 | 100 | 3.75 | " | " |
| 1025 | 0.50 | 15.05 | 8.44 | 2.122 | 7.95 | 210.8 | 14.8 | 100 | 3.79 | " | " |
| 1030 | 0.75 | 15.09 | 8.64 | 2.139 | 6.20 | 197.3 | 14.1 | 100 | 3.79 | " | " |
| 1035 | 1.0 | 15.10 | 8.76 | 2.144 | 5.37 | 189.4 | 13.6 | 100 | 3.79 | " | " |
| 1040 | 1.25 | 15.08 | 8.89 | 2.148 | 4.47 | 173.7 | 13.7 | 100 | 3.79 | " | " |
| 1045 | 1.50 | 15.15 | 8.98 | 2.146 | 3.90 | 159.7 | 13.8 | 100 | 3.79 | " | " |

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

(continued on back)

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW40B-20180427 | 500 mL Plastic | 1 | None | Cr+, Et, PH | 1135 |
| 14-MW40B-20180427 | 500 mL Plastic | 1 | HNO3 | CrPb Metals | |
| 114-MW40B-20180427 | 1L Amber | 2 | None | SVOC | |
| 14-MW40B-20180427 | 40 mL VOC | 3 | HCL | VOC | |

Comments _____

Signature _____ Date _____

Purge Volume Calculation

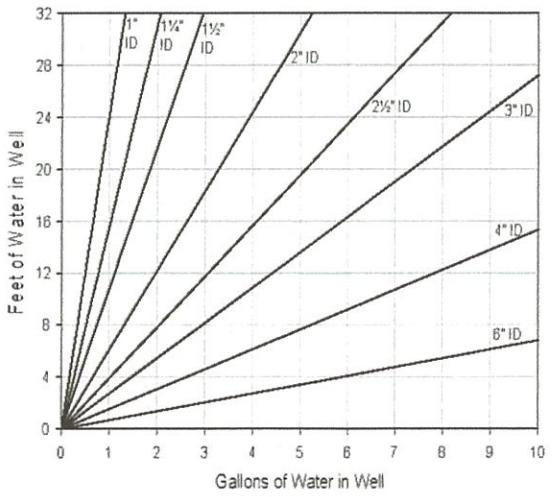


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1050 | 1.75 | 15.12 | 9.03 | 2.146 | 3.50 | 143.9 | 12.90 | 100 | 3.79 | Clear / None |
| 1055 | 2.0 | 15.08 | 9.06 | 2.146 | 3.23 | 138.7 | 12.40 | 100 | 3.79 | " " |
| 1100 | 2.25 | 15.05 | 9.09 | 2.146 | 3.16 | 130.9 | 12.40 | 100 | 3.79 | " " |
| 1105 | 2.35 | 15.08 | 9.17 | 2.143 | 2.86 | 99.1 | 12.2 | 100 | 3.79 | " " |
| 1110 | 2.50 | 15.07 | 9.17 | 2.143 | 2.83 | 89.2 | 13.1 | 100 | 3.79 | " " |
| 1115 | 2.75 | 15.04 | 9.18 | 2.143 | 2.72 | 87.5 | 12.7 | 100 | 3.79 | " " |
| 1120 | 3.0 | 15.05 | 9.22 | 2.140 | 2.60 | 76.7 | 11.9 | 100 | 3.79 | " " |
| 1125 | 3.25 | 15.03 | 9.24 | 2.141 | 2.50 | 71.8 | 12.2 | 100 | 3.79 | " " |
| 1130 | 3.50 | 14.96 | 9.25 | 2.141 | 2.46 | 63.1 | 12.5 | 100 | 3.79 | " " |

Pump set at 14.0 ft

AECOM

Well ID: 114-P2B4-MW2

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 4/27/18 Time: Start 1240 am/pm
Project No: 60317455 Finish 1430 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Rain 60°F Collector: Sasha Mallon

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 17.0 c. Length of Water Column _____ (a-b) Casing Diameter/Material 4"
   b. Water Table Depth surfaced. Calculated System Volume (see back) _____

2. **WELL PURGE DATA**
   a. Purge Method: Low flow

   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ±1.0 unit | - ORP | ±10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used: Make Model Serial Number

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1240 | | 11.12 | 13.35 | 5.825 | 1.87 | 36.9 | 1410 | 100 | | yellow | none |
| 1245 | | 11.05 | 13.35 | 5.650 | 1.53 | -137.6 | 1385 | ↓ | | ↓ | ↓ |
| 1250 | | 11.06 | 13.36 | 5.268 | 1.45 | 144.7 | 1598 | | | | |
| 1255 | | 11.08 | 13.36 | 5.428 | 1.72 | 152.9 | 943 | | | | |
| 1300 | | 11.10 | 13.36 | 5.581 | 1.02 | 170.3 | 822 | | | | |
| 1305 | | 11.11 | 13.37 | 5.666 | 2.30 | 168.7 | 901 | | | | |
| 1310 | | 11.12 | 13.37 | 5.731 | 2.36 | -172.8 | 636 | ↓ | | ↓ | ↓ |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☑ | ☐ | ☐ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: low flow from tube

| Sample ID | Container Type | No. of Containers | (2) Preservation | (2) Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-P2B4-MW2-14-20180427 | | | None/HNO3 | ~~TAL metals~~ chrome Cr6, Ni, Sb, Tl, V | 1430 |
| 114-P2B4-MW2-14-20180427(X)4 | | | None/HNO3 | EH, PH, XXCRNS | 1436 |

Comments _____

Signature A. Mallon Date 4/27/18

Purge Volume Calculation

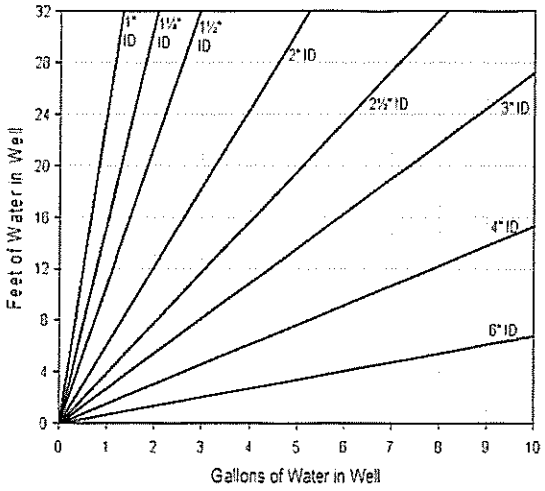


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

5.635

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1315 | | 11.09 | 13.34 | ~~1.86~~ | 1.80 | -172.2 | 99 | 160 | | yellow/none |
| 1320 | | 10.98 | 13.35 | 5.044 | 2.45 | -163.6 | 96.2 | | | |
| 1325 | | 10.95 | 13.21 | 4.017 | 2.78 | -144.5 | 63.3 | | | |
| 1330 | | 10.87 | 13.25 | 3.187 | 3.69 | -131.8 | 57.5 | | | |
| 1335 | | 10.84 | 13.18 | 3.082 | 3.80 | -130.9 | 43.6 | | | |
| 1340 | | 10.81 | 13.15 | 2.954 | 3.89 | -125.7 | 30.4 | | | |
| 1345 | | 10.80 | 13.09 | 2.770 | 3.99 | -116.5 | 31.0 | | | |
| 1350 | | 10.76 | 13.05 | 2.669 | 4.31 | -105.3 | 25.7 | | | |
| 1355 | | 10.75 | 13.05 | 2.728 | 4.46 | -100.6 | 20.8 | | | |
| 1400 | | 10.74 | 13.05 | 2.701 | 4.42 | -98.3 | 15.6 | | | |
| 1405 | | 10.73 | 13.05 | 2.678 | 4.42 | -97.6 | 9.8 | | | |
| 1410 | | 10.73 | 13.05 | 2.699 | 4.41 | -99.5 | 10.9 | | | |
| 1415 | | 10.72 | 13.04 | 2.723 | 4.42 | -103.2 | 13.2 | | | |
| 1420 | | 10.72 | 13.04 | 2.6662 | 4.42 | -100.5 | 11.6 | | | |
| 1425 | | 10.72 | 13.05 | 2.683 | 4.42 | -98.3 | 9.1 | | | |
| 1430 | | 10.72 | 13.05 | 2.667 | 4.42 | -100.3 | 9.7 | | | |

Pump Set at 10.0 ft

AECOM

Well ID: 114-P2B4-MW2

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 4/27/18 Time: Start 1045 am/pm
Project No: 60317455 Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Rain, 60°F Collector: _____

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 17.0 c. Length of Water Column 17.0 (a-b) Casing Diameter/Material 2in
   b. Water Table Depth Surface (0.0) d. Calculated System Volume (see back) _____

2. **WELL PURGE DATA**
   a. Purge Method: Low Flow

   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | | 02H1013 |
| | LaMotte | | 3971 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1045 | | 10.80 | 12.55 | 5.111 | 3.89 | 206.0 | 58.5 | 100 | 0.0 | yellow | none |
| 1050 | | 10.65 | 12.95 | 5.503 | 3.79 | 166.5 | 52.8 | ↓ | | ↓ | ↓ |
| 1055 | | 10.44 | 13.05 | 5.028 | 2.58 | 151.4 | 34.6 | | | | |
| 1100 | | 10.36 | 13.07 | 4.935 | 3.85 | 140.6 | 26.8 | | | | |
| 1105 | | 10.24 | 13.10 | 4.918 | 3.72 | 146.1 | 19.0 | | | | |
| 1110 | | 10.10 | 13.18 | 4.917 | 1.55 | 139.5 | 13.1 | | | | |
| 1115 | | 10.00 | 13.22 | 5.363 | 1.15 | 130.3 | 11.2 | ↓ | | ↓ | ↓ |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☑ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: From Tube

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-P2B4-MW2-10.0-20180427 | | 2 | | Cr6, pH, Fe, CCPW metals | 1130 |
| 114-P2B4-MW2-10.0-20180427(X) | | 2 | | " | 1136 |

Comments _____

Signature A. Mallon Date 4/27/18

Purge Volume Calculation

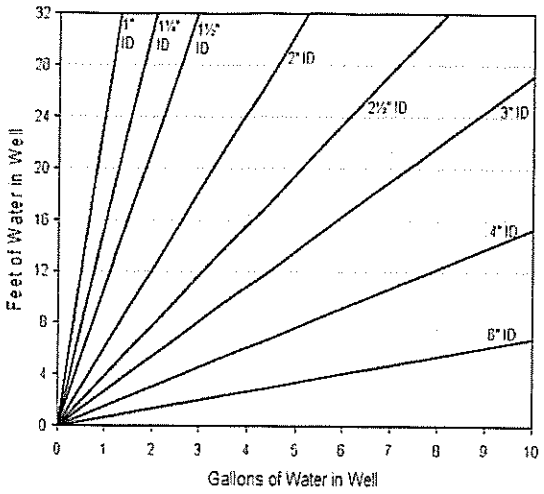


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO 2.0% (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1120 | | 16.00 | 13.24 | 5.927 | ~~[illegible]~~ | 135.7 | 10.92 | 100 | | yellow/none |
| 1125 | | 5.97 | 13.24 | 5.947 | 133.2 | 132.5 | 3.51 | | | |
| | | | | | 1.97 | | | | | |
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Pump set at 9.0 ft

AECOM

Well ID: MW85

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 04/27/18 Time: Start 1335 am/pm
Project No: 60317455 Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Cloudy 50's Collector: J. Angelone, T. Islen

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 12 ft c. Length of Water Column 7.0 (a-b) Casing Diameter/Material 2" PVC
   b. Water Table Depth 5.0 d. Calculated System Volume (see back) _____

2. **WELL PURGE DATA**
   a. Purge Method: Low Flow
   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used: Make: YSI, LaMotte; Model: 600XLM, 2020we; Serial Number: _____

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1340 | 0 | 13.22 | 9.17 | 2.361 | 6.28 | 118.0 | 80.7 | 100 | 5.0 | Cloudy | None |
| 1345 | 0.5 | 12.99 | 8.72 | 2.012 | 4.93 | 115.7 | 75.6 | 100 | 5.37 | " | " |
| 1350 | 1.0 | 12.93 | 8.37 | 1.738 | 3.44 | 112.5 | 70.1 | 100 | 5.72 | " | " |
| 1355 | 1.25 | 12.99 | 8.21 | 1.640 | 4.00 | 112.0 | 54.2 | 100 | 5.87 | Light Green | " |
| 1400 | 1.5 | 13.01 | 8.12 | 1.610 | 4.04 | 112.4 | 46.5 | 100 | 6.03 | " | " |
| 1405 | 1.75 | 13.07 | 8.04 | 1.579 | 4.06 | 113.3 | 36.4 | 100 | 6.15 | " | " |
| 1410 | 2.0 | 13.12 | 8.00 | 1.577 | 4.16 | 113.8 | | | 6.21 | | |

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

(continued on back)

3. **SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| MW85-20180427 | 500mL poly (1L Amber) | 2 | None | Cr+6 (Lab filter) | 1415 |
| | 500mL poly | 1 | $HNO_3$ | CCPW | 1415 |
| | 500mL poly | 1 | None | CCPW Lab filter | 1415 |
| (JA) | ~~500mL poly~~ 40mL VOA | 3 | HCl | VOC | 1415 |

Comments: Well has a very low recharge rate, should be pumped as slowly as possible.

Signature: _____ Date: 4-27-18

Purge Volume Calculation

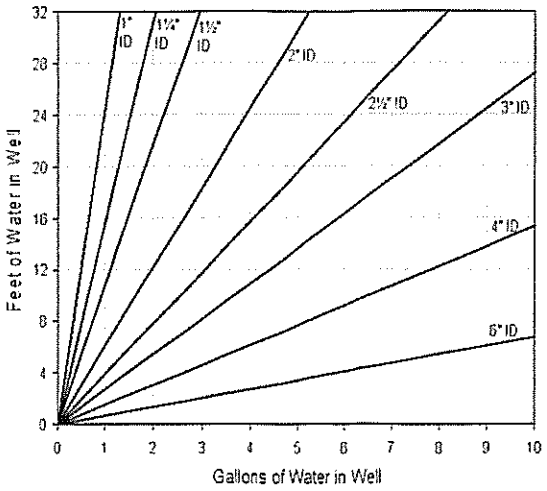


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
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SVOC + VOC only

AECOM

Well ID: 114-P2A-MW102I @ 35ft

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: Time: Start 1345 am/pm
Project No: 60317455 Finish am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Collector: T. Islam

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 37.5 c. Length of Water Column _____ (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 3.50 d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: _____

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make Model Serial Number

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | 0 | 12.42 | 6.87 | 3.943 | 0.35 | -65.7 | 25.1 | 100 | 3.50 | Clear | None |
| 1355 | | 12.08 | 6.84 | 3.990 | 0.17 | -101.6 | | 100 | 3.50 | " | " |
| 1400 | | 12.65 | 6.84 | 4.021 | 0.13 | -108.9 | | 100 | 3.50 | " | " |
| 1405 | | 12.74 | 6.84 | 4.016 | 0.10 | -113.4 | | 100 | 3.50 | " | " |
| 1410 | | 12.53 | 6.84 | 4.074 | 0.07 | -117.8 | | 100 | 3.50 | " | " |
| 1415 | | 12.45 | 6.84 | 4.051 | 0.09 | -119.8 | | 100 | 3.50 | " | " |
| 1420 | 2.0 | 12.25 | 6.84 | 4.096 | 0.06 | -122.6 | 11.1 | 100 | 3.5 | | |

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

(continued on back)

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: _____

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| | | | | | 1425 |

Comments _____

Signature _____ Date _____

Purge Volume Calculation

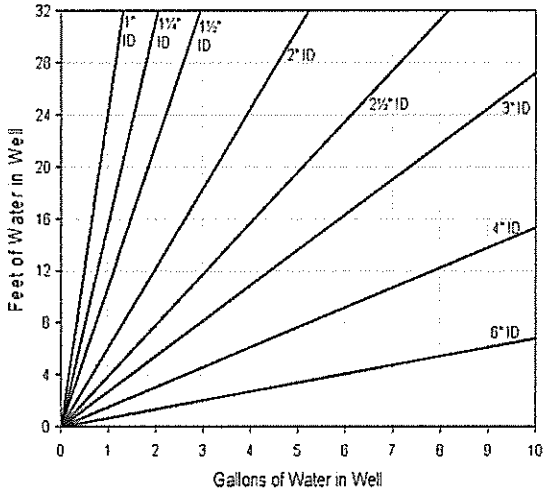


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
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SVOC + VOC only

AECOM

Well ID: 114-P2A-MW102R @30ft

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: Time: Start 1205 am/pm
Project No: 60317455 Finish am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Collector: T. Islam

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 37.5 c. Length of Water Column _____ (a-b) Casing Diameter/Material

b. Water Table Depth 3.50 d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: _____

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make Model Serial Number

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1210 | 0.00 | 11.74 | 6.89 | 2.832 | 2.87 | 195.6 | 15.9 | 100 | 3.50 | Clear | None |
| 1215 | 0.12 | 11.93 | 6.86 | 3.082 | 1.58 | 186.8 | 14.6 | 100 | 3.52 | " | " |
| 1220 | 0.25 | 12.12 | 6.74 | 3.631 | 0.81 | 173.7 | 10.2 | 100 | 3.50 | " | " |
| 1225 | 0.38 | 12.19 | 6.75 | 3.705 | 0.63 | 164.0 | 8.04 | 100 | 3.50 | " | " |
| 1230 | 0.50 | 11.93 | 6.77 | 3.774 | 0.49 | 146.8 | 8.02 | 100 | 3.50 | " | " |
| 1235 | 0.78 | 11.86 | 6.79 | 3.782 | 0.43 | 124.7 | 7.72 | 100 | 3.50 | " | " |
| 1240 | | 11.95 | 6.80 | 3.193 | 0.36 | 54.1 | 7.35 | 100 | 3.50 | | |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: _____

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| | | | | | 1315 |

Comments _____

Signature _____ Date _____

Purge Volume Calculation

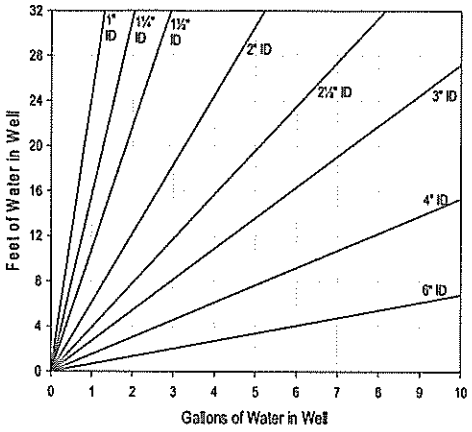


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1245 | | 12.07 | 6.82 | 3.511 | 0.27 | -65.9 | 7.29 | 100 | 3.50 | Clear / Weak |
| 1250 | | 12.07 | 6.82 | 3.516 | 0.25 | -82.3 | 7.24 | 100 | 3.50 | " " |
| 1255 | | 12.12 | 6.82 | 3.528 | 0.23 | -98.5 | 7.52 | 100 | 3.50 | " " |
| 1300 | | 12.20 | 6.83 | 3.536 | 0.20 | -112.0 | 7.39 | 100 | 3.50 | " " |
| 1305 | | 12.10 | 6.83 | 3.544 | 0.16 | -116.4 | 7.04 | 100 | 3.50 | " " |
| 1310 | | 12.07 | 6.84 | 3.549 | 0.14 | -121.6 | | 100 | 3.50 | " " |

SVOC + VOC only

AECOM

Well ID: 114-P2A-MW1025 @ 11 ft

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: Time: Start 1200 am/pm
Project No: 60317455 Finish am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Collector: T. Islam

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 18 ft c. Length of Water Column _____ (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 3.85 d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: _____

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make Model Serial Number

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1205 | 0.10 | 11.25 | 10.50 | 1.210 | 2.23 | 224.0 | 17.3 | 100 | 3.85 | Clear | None |
| 1210 | 0.12 | 11.14 | 10.77 | 1.168 | 1.03 | 218.0 | 14.2 | 100 | 4.25 | " | " |
| 1215 | 0.25 | 11.19 | 10.86 | 1.167 | 1.21 | 215.4 | 12.8 | 100 | 4.06 | " | " |
| 1220 | 0.35 | 11.81 | 10.94 | 1.156 | 1.42 | 208.7 | 8.26 | 100 | 4.08 | " | " |
| 1225 | 0.50 | 12.05 | 10.98 | 1.157 | | 204.8 | 5.36 | 100 | 4.05 | " | " |
| 1230 | 0.75 | 11.99 | 11.02 | 1.167 | | 201.1 | 5.62 | 100 | 4.02 | " | " |
| 1235 | | 12.04 | 11.03 | 1.163 | | 198.6 | 5.95 | 100 | 4.0 | " | " |

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

(continued on back)

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: _____

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| | | | | | 1335 |

Comments DO Readings jumping 0.1 - 0.5.

Signature _____ Date _____

Purge Volume Calculation

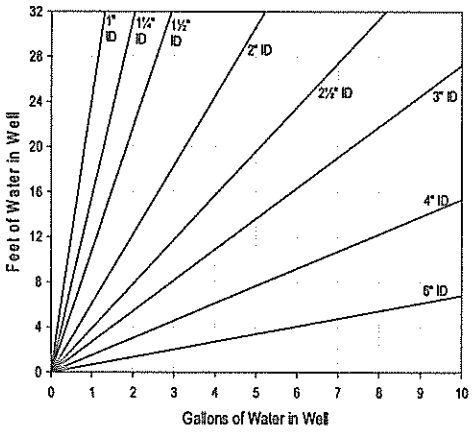


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1240 | | 12.21 | 11.03 | ~~1.161~~ | | 196.5 | 7.97 | 100 | 4.0 | Clear / none |
| 1245 → stopped Y4 | | 10.90 | 10.56 | 1.173 | 1.76 | 107.6 | 7.51 | 100 | 4.0 | " " |
| 1250 | | 10.94 | 10.76 | 1.119 | 1.07 | 81.0 | 7.26 | 100 | 4.0 | " " |
| 1255 | | 10.99 | 10.98 | 1.143 | 0.60 | 36.3 | 7.93 | 100 | 4.0 | " " |
| 1300 | | 10.96 | 11.11 | 1.145 | 0.52 | 15.4 | 7.19 | 100 | 4.0 | " " |
| 1305 | | 10.73 | 11.19 | 1.145 | 0.44 | -4.2 | 7.52 | 100 | 4.0 | " " |
| 1310 | | 10.55 | 11.24 | 1.145 | 0.40 | -13.9 | | 100 | 4.0 | " " |
| 1315 | | 10.48 | 11.28 | 1.146 | 0.37 | -22.6 | | 100 | 4.0 | " " |
| 1320 | | 10.34 | 11.32 | 1.146 | 0.32 | -32.2 | | 100 | 4.0 | " " |
| 1325 | | 10.32 | 11.33 | 1.146 | 0.34 | -34.9 | | 100 | 4.0 | " " |
| 1330 | | 10.25 | 11.36 | 1.146 | 0.32 | -40.9 | | 100 | 4.0 | " " |

SVOC + VOC only

AECOM

Well ID: 114-P2A-MW1023 @ 16 ft

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: Time: Start 1400 am/pm
Project No: 60317455 Finish am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Collector: T. Islam

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 18ft c. Length of Water Column (a-b) Casing Diameter/Material 2" PVC
   b. Water Table Depth 3.85 d. Calculated System Volume (see back)

2. **WELL PURGE DATA**
   a. Purge Method:
   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used: Make Model Serial Number

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1405 | | 10.82 | 11.32 | 1.148 | 0.65 | -8.8 | 31.7 | 100 | 3.85 | Clear | Non |
| 1410 | | 10.28 | 11.32 | 1.146 | 0.45 | -25.5 | | 100 | 3.85 | " | " |
| 1415 | | 10.15 | 11.35 | 1.142 | 0.52 | -37.7 | | 100 | 3.85 | " | " |
| 1420 | | 10.02 | 11.39 | 1.139 | 0.81 | -52.3 | | 100 | 3.85 | " | " |
| 1425 | | 9.88 | 11.40 | 1.139 | 0.62 | -56.7 | | 100 | 3.85 | " | " |
| 1430 | | 9.77 | 11.40 | 1.136 | 0.41 | -59.6 | | 100 | 3.85 | " | " |
| 1435 | | 9.63 | 11.40 | 1.136 | 0.36 | -63.6 | 23.9 | 100 | 3.85 | " | " |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method:

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| | | | | | 1440 |

Comments

Signature Date

Purge Volume Calculation

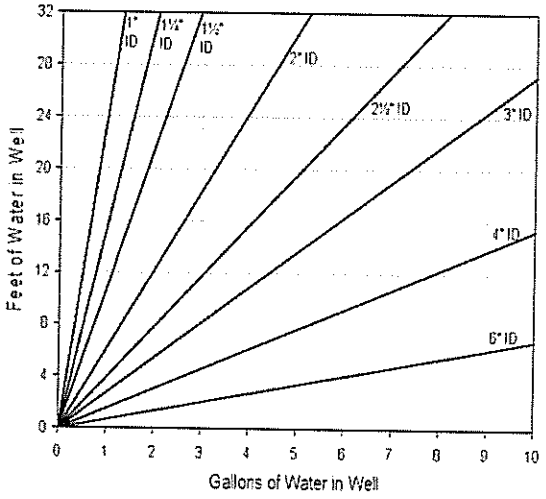


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

AECOM

Well ID: MW7S @10ft

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries (JA) Date: ~~4/26/18~~ 4/30/18 (JA) Time: Start 1245 am/pm
Project No: ~~60317455~~ 60550261 Finish ____ am/pm
Site Location: Garfield Avenue Sites (JA)
Weather Conds: ~~Sunny 60's~~ Cloudy 50's Collector: J. Angelone

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 12ft c. Length of Water Column 8.27 (a-b) Casing Diameter/Material 2" PVC
   b. Water Table Depth 3.73 d. Calculated System Volume (see back) 1.33 gallons

2. **WELL PURGE DATA**
   a. Purge Method: Low Flow Bladder Pump
   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ±1.0 unit | - ORP | ±10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

   c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 6000XL | |
| | LaMotte | 2020we | |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1300 | | 12.43 | 6.94 | 1.791 | 1.80 | 221.9 | 9.27 | | 3.73 | none | none |
| 1305 | | 12.13 | 6.92 | 1.434 | 3.00 | 262.4 | 12.0 | | 3.83 | | |
| 1310 | | 12.13 | 6.96 | 1.346 | 2.64 | 263.8 | 13.9 | | 3.91 | | |
| 1315 | | 12.10 | 6.97 | 1.322 | 3.29 | 260.6 | 13.2 | | 4.02 | | |
| 1320 | | 12.08 | 6.99 | 1.284 | 3.31 | 254.5 | 9.01 | | 4.10 | | |
| 1325 | | 12.09 | 7.00 | 1.242 | 3.52 | 240.3 | 12.7 | | 4.19 | | |
| 1330 | | 11.99 | 7.00 | 1.180 | 3.63 | 217.5 | 13.3 | | 4.25 | | |

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

(continued on back)

3. **SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| MW7S-10.0-20180430 | 500mL Poly | 2 | None | $Cr^{+6}$ (1 is Lab Filter) | 1400 |
| | 500mL Poly | 1 | $HNO_3$ | CCRCW | 1400 |
| | 500mL Poly | 1 | None | CCRCW w/ Lab Filter | 1400 |
| | 1L Amber | 2 | None | SVOC | 1400 |
| | 40mL VOA | 3 | HCl | VOC | 1400 |

Comments

Signature A. Mallon Date 4/30/18

Purge Volume Calculation

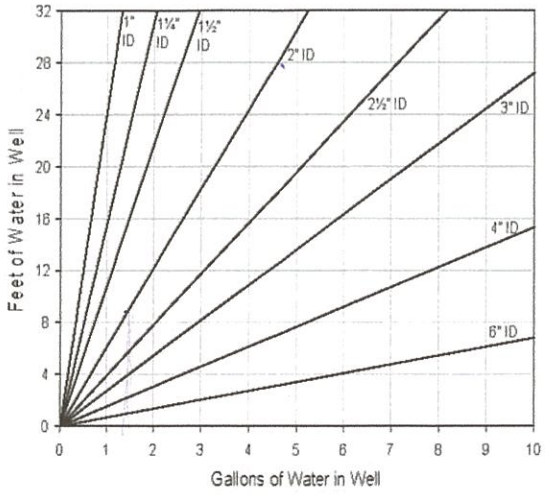


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 13:35 | | 11.99 | 7.01 | 1.150 | 3.57 | 203.3 | 13.7 | | 4.32 | none / none |
| 13:40 | | 12.01 | 7.01 | 1.142 | 3.64 | 197.5 | 16.1 | | 4.56 | |
| 13:45 | | 12.11 | 7.01 | 1.134 | 3.61 | 186.8 | 15.7 | | | |
| 13:50 | | 12.22 | 7.00 | 1.131 | 3.51 | 181.2 | 15.4 | | | |
| 13:55 | | 12.34 | 7.00 | 1.116 | 3.46 | 173.5 | 15.1 | | 4.91 | None / none |

AECOM

Well ID: 114-MW1913

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 05-01-2018 Time: Start 1015 am/pm
Project No: 60317455 Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Sunny 70's Collector: J. Angelone

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 50.0 c. Length of Water Column 45.0 (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 5.0ft d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ±1.0 unit | - ORP | ±10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YST | 600XL | Pine # 2132 |
| | LaMotte | 2020we | Pine # 18087 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1045 | 0.2 | 19.18 | 7.11 | 0.348 | 5.97 | 166.7 | 21.3 | 40 | 5.01 | Clear | None |
| 1050 | 0.4 | 18.81 | 7.21 | 0.405 | 5.72 | 164.2 | 20.7 | 40 | 5.02 | Clear | None |
| 1055 | 0.6 | 18.21 | 7.35 | 0.763 | 5.19 | 160.0 | 20.6 | 40 | 5.02 | Clear | None |
| 1100 | 0.8 | 17.39 | 7.65 | 0.731 | 4.47 | 150.5 | 19.2 | 40 | 5.02 | Clear | None |
| 1105 | 1.0 | 17.34 | 7.70 | 0.728 | 4.38 | 150.0 | 16.6 | 40 | 5.02 | Clear | None |
| 1110 | 1.2 | 17.56 | 7.81 | 0.705 | 4.30 | 183.3 | 13.0 | 40 | 5.06 | Clear | None |
| 1115 | 1.4 | 17.48 | 7.81 | 0.695 | 4.24 | 181.1 | 12.4 | 40 | 5.06 | Clear | None |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |

Comments: Well bent @ ~5 ft. Use MiniPro to sample
Special Blanks taken to check the effects of MiniPro. See COC.

Signature _____ Date _____

Purge Volume Calculation

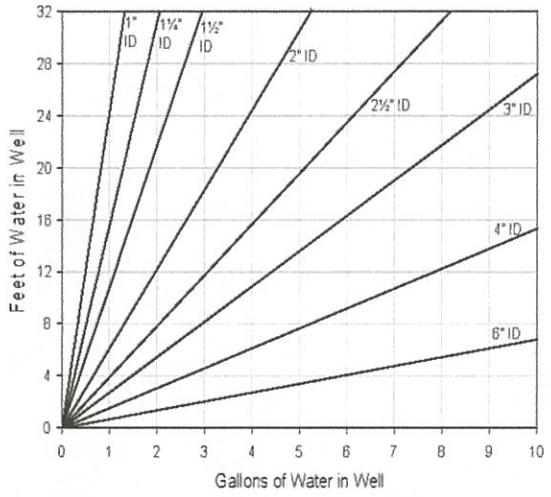


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

45.0000
X 0.1632

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1120 ~~17.41~~ | 1.6 | 17.42 | 7.90 | 0.677 | 4.12 | 181.7 | 12.4 | 40 | 5.06 | |
| 1125 | 1.8 | 17.39 | 7.92 | 0.674 | 4.10 | 183.4 | 10.3 | 40 | 5.06 | |
| 1130 | 2.0 | 17.43 | 7.94 | 0.673 | 4.08 | 187.2 | 9.8 | 40 | 5.07 | |
| 1135 | | | | | | | | | | Sample Taken |

Cr+6, CCPs, SVOC, VOC

Correct well ID = 135-MW1A**R**

AECOM

Well ID: 135-MW1A @13Ft

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 5-1-18 Time: Start 915 am/pm
Project No: 60317455 Finish 1045 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Collector: A. MALLON

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 16.0 c. Length of Water Column _____ (a-b)
   b. Water Table Depth 2.47 d. Calculated System Volume (see back) _____
   Casing Diameter/Material 2" PVC

2. **WELL PURGE DATA**
   a. Purge Method: Low-Flow
   b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | VSI | 650-MDS | 2177 |
| | LaMotte | 2020 we | 30500 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 920 | | 10.18 | 6.42 | 4.813 | 4.37 | 76.4 | 99.1 | | 2.34 | brown | none |
| 925 | | 9.76 | 6.50 | 4.800 | 0.04 | 17.6 | 100.4 | | 3.31 | | |
| 930 | | 9.77 | 6.52 | 4.610 | *1.49 | 6.2 | 78.5 | | 3.92 | | |
| 935 | | 9.74 | 6.56 | 4.178 | 1.99 | -5.8 | 65.7 | | 4.51 | | |
| 940 | | 9.71 | 6.58 | 3.933 | 2.58 | -9.7 | 44.7 | | 5.05 | | |
| 945 | | 9.73 | 6.59 | 3.806 | 0.28 | -8.1 | 37.9 | | 5.49 | | |
| 950 | | 9.76 | 6.60 | 3.689 | 0.99 | -6.4 | 23.8 | | 5.90 | ↓ | ↓ |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: _____

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| | | | | | 1015 |

Comments: Discharge rate adjusted based on anticipated recharge.

Signature: A. Mallon Date: 5-1-18

Purge Volume Calculation

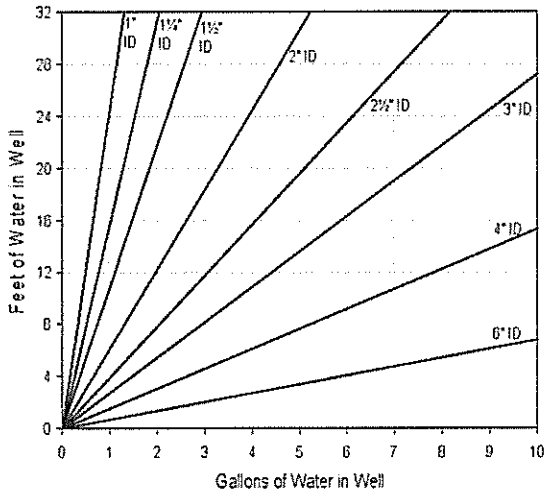


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 955 | | 9.69 | 6.60 | 3.621 | 1.70 | -1.5 | 16.9 | | 6.05 | light brown/none |
| 1000 | | 9.73 | 6.61 | 3.566 | 1.21 | 0.2 | 14.7 | | 6.25 | |
| 1005 | | 9.86 | 6.61 | 3.500 | 1.38 | 5.0 | 15.1 | | 6.52 | |
| 1010 | | 10.00 | 6.60 | 3.484 | 1.37 | 5.0 | 12.3 | | 6.71 | |
| 1015 | | 10.14 | 6.60 | 3.482 | 1.34 | 5.1 | 9.7 | | 6.87 | |

AECOM

Well ID: 135-MW1B

# Low Flow Ground Water Sample Collection Record

031.0

Client: PPG Industries Date: 5/1/2018 Time: Start 905 am/pm
Project No: 60317455 Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: 76° F clear Collector: JC

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length: ~~32.5~~ 31.5 c. Length of Water Column 28.47 (a-b)

Casing Diameter/Material: 2" pvc

b. Water Table Depth 2.03 d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: low flow

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 650 MDS | 560Z |
| | La Motte | 2020WE | 19293 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 915 | | 13.20 | 6.99 | 5.644 | 1.16 | 224.1 | 39.8 | 250 | 3.17 | cloudy | none |
| 920 | | 13.14 | 7.31 | 4.713 | 1.41 | 234.6 | 32.5 | 200 | 3.41 | " | " |
| 925 | | 13.16 | 7.34 | 4.814 | 1.27 | 231.9 | 28.8 | 200 | 3.45 | " | " |
| 930 | | 13.26 | 7.39 | 5.223 | 0.96 | 227.6 | 23.6 | 200 | 3.47 | clear | " |
| 935 | | 13.31 | 7.42 | 5.394 | 0.72 | 224.5 | 22.5 | 200 | 3.48 | " | " |
| 940 | | 13.37 | 7.44 | 5.582 | 0.55 | 220.2 | 21.4 | 200 | 3.47 | " | " |
| 945 | | 13.45 | 7.46 | 5.680 | 0.43 | 215.9 | 22.2 | 200 | 3.47 | " | " |

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

(continued on back)

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 135-MW1B-31.0-20180501 | | | | | 1020 |
| 135-MW1B-31.0-20180501 MS/MSD | | | | | 1020 |
| 135-MW1B-31.0-20180501 X | | | | | 1021 |

Comments: Pump inlet @ 31.0'
Dup + MS/MSD here

Signature _____ Date 5/1/2018

Purge Volume Calculation

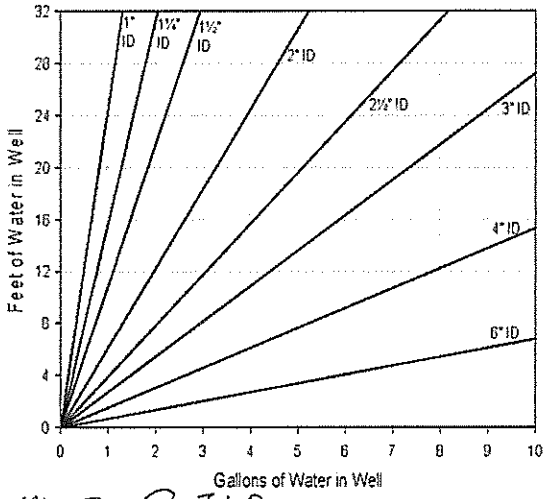


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

/

135. MW1B @ 31.0

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 950 | | 13.47 | 7.48 | 5.719 | 0.38 | 211.0 | 21.5 | 200 | 3.47 | clear / none |
| 955 | | 13.49 | 7.49 | 5.750 | 0.32 | 205.4 | 17.4 | 200 | 3.47 | " |
| 1000 | | 13.53 | 7.50 | 5.776 | 0.30 | 199.9 | 15.6 | 200 | 3.47 | " |
| 1005 | | 13.55 | 7.50 | 5.781 | 0.26 | 194.6 | 11.7 | 200 | 3.47 | " |
| 1010 | | 13.56 | 7.51 | 5.790 | 0.23 | 189.4 | 10.12 | 200 | 3.47 | " |
| 1015 | | 13.57 | 7.52 | 5.797 | 0.23 | 186.2 | 9.47 | 200 | 3.47 | " |
| 1020 | — | — | — | — | — | — | — | — | — | SAMPLED |

Correct well ID = 135-MW3B**R**

'18 4 19 2

AECOM

Well ID: 135-MW3B @ 30 ft

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 5-1-18 Time: Start 1250 am/pm
Project No: 60317455 Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: 75°F, Sunny Collector: A. Malon

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 33.0 c. Length of Water Column _____ (a-b)

b. Water Table Depth 6.42 d. Calculated System Volume (see back) _____

Casing Diameter/Material 2"

**2. WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ±1.0 unit | - ORP | ±10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600XL | 5602/16846 |
| | LaMotte | 2020we | 30500 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1250 | | 16.27 | 7.32 | 3.047 | 1.39 | 33.5 | 14.8 | 192 | 6.55 | none | none |
| 1255 | | 16.08 | 7.15 | 3.374 | 0.71 | -13.0 | 10.3 | | 6.51 | | |
| 1300 | | 16.27 | 7.11 | 3.495 | 0.54 | -30.6 | 7.97 | | ~~7.99~~ 6.50 | | |
| 1305 | | 16.11 | 7.06 | 3.633 | 0.43 | -32.6 | 7.60 | | 6.53 | | |
| 1310 | | 16.14 | 7.05 | 3.677 | 0.38 | -31.7 | 7.17 | | 6.53 | | |
| 1315 | | 16.38 | 7.06 | 3.687 | 0.35 | -33.5 | 10.08 | | 6.55 | | |
| 1320 | | 16.38 | 7.06 | 3.689 | 0.32 | -33.9 | 9.20 | | 6.55 | | |

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

(continued on back)

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 135-MW3B-30.0-20180501 | 1 | | $HNO_3$ | Cr, Ni, Sb, Tl, V | 1330 |
| | 2 | | Amber | 8270TCL-W | ~~1330~~ |
| | 1 | | NP | EH, pH, chrome | |
| | 3 | | HCl | VOCs | |

Comments _____

Signature A. Malon Date 5-1-18

Purge Volume Calculation

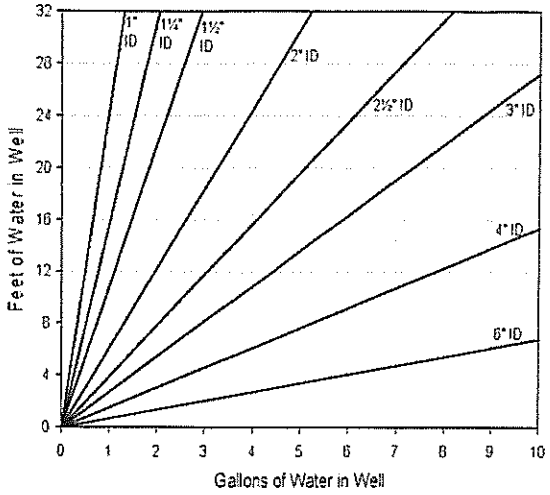


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1325 | | 16.29 | 7.07 | 3.699 | 0.29 | -37.9 | 8.97 | | 6.56 | none / none |
| 1330 | | 16.30 | 7.01 | 3.697 | 0.26 | -39.4 | 9.35 | | 6.54 | |

SVOC + VOC only
Teflon

HSS-P3C-MW15

AECOM

Well ID:

@ 15 ft

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 05/01/18 Time: Start 1315 am/pm
Project No: 60317455 Finish 1440 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Sunny 60's Collector: T. Islam

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 17.0 c. Length of Water Column _____ (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 2.65 d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make Model Serial Number

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1320 | 0 | 13.52 | 7.16 | 10.60 | 1.21 | -82.8 | 24.7 | 100 | 2.65 | Cloudy-Clear | None |
| 1325 | 0.25 | 12.54 | 7.09 | 14.60 | 0.80 | -87.7 | 2.0 | 100 | 2.66 | Clear | " |
| 1330 | 0.50 | 12.17 | 7.08 | 15.45 | 0.62 | -90.3 | 1.0 | 100 | 2.65 | " | " |
| 1335 | 0.75 | 12.12 | 7.06 | 15.57 | 0.51 | -91.7 | 43.0 | 100 | 2.65 | " | " |
| 1340 | 1.0 | 11.93 | 7.05 | 15.75 | 0.45 | -91.7 | 32.2 | 100 | 2.65 | " | " |
| 1345 | 1.12 | 11.92 | 7.05 | 15.91 | 0.41 | -90.2 | 26.7 | 100 | 2.65 | " | " |
| 1350 | 1.25 | 11.86 | 7.05 | 16.07 | 0.38 | -89.3 | 21.1 | 100 | 2.65 | Clear | " |

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

(continued on back)

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Low Flow

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| HSS-P3C-MW15-15.0-20180501 | 1L Amber | 2 | None | SVOC | 1415 |
| HSS-P3C-MW15-15.0-20180501 | 40 mL VOA | 3 | HCL | VOC | 1415 |

Comments

Signature Date 05/01/18

Purge Volume Calculation

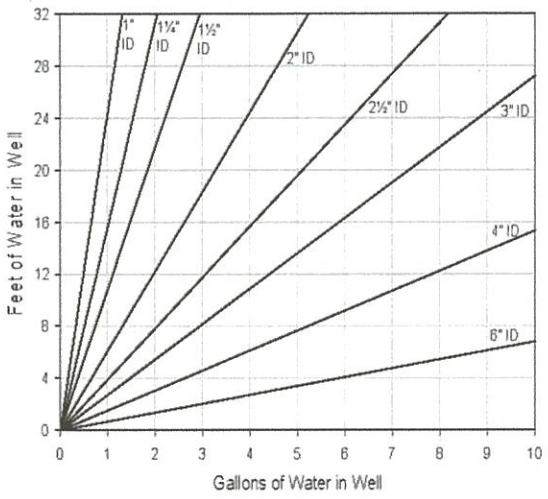


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1355 | 1.50 | 11.81 | 7.05 | 16.12 | 0.34 | -91.7 | 16.6 | 100 | 2.65 | Clear / None |
| 1400 | 1.75 | 11.99 | 7.03 | 16.16 | 0.30 | -90.5 | 15.0 | 100 | 2.65 | " " |
| 1405 | 2.0 | 12.18 | 7.02 | 16.18 | 0.30 | -91.0 | 11.9 | 100 | 2.65 | " " |
| 1410 | 2.25 | 12.17 | 7.01 | 16.25 | 0.29 | -90.4 | 10.55 | 100 | 2.65 | " " |

SVOC + VOC only
Teflon

1155-P3C-MW15

AECOM

Well ID:

@ 10ft

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries  Date: 05/01/18  Time: Start 1045 am/pm
Project No: 60317455  Finish 1250 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Sunny 60's  Collector: T. Islam

1. **WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 17.0  c. Length of Water Column _____ (a-b)  Casing Diameter/Material 2" PVC

b. Water Table Depth 2.62  d. Calculated System Volume (see back) _____

2. **WELL PURGE DATA**

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make _____ Model _____ Serial Number _____

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1050 | 0.0 | 13.01 | 7.41 | 0.892 | 4.42 | 181.7 | 918 | 100 | 2.62 | Cloudy | None |
| 1055 | 0.25 | 13.23 | 7.35 | 1.033 | 3.26 | 191.6 | 562 | 100 | 2.68 | " | " |
| 1100 | 0.35 | 13.26 | 7.41 | 1.111 | 2.52 | 184.2 | 138 | 100 | 2.67 | " | " |
| 1105 | 0.5 | 11.47 | 7.44 | 1.442 | 1.84 | 180.2 | 38.6 | 100 | 2.66 | Cloudy-Clear | " |
| 1110 | 0.75 | 11.11 | 7.46 | 1.576 | 0.76 | 163.7 | 16.7 | 100 | 2.65 | Clear | " |
| 1115 | 0.65 | 11.20 | 7.50 | 1.594 | 0.41 | 144.4 | 11.9 | 100 | 2.65 | " | " |
| 1120 | | 11.12 | 7.52 | 1.621 | 0.68 | 100.8 | 8.12 | 100 | 2.65 | " | " |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: Low Flow

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| SS-P3C-MW15-20180501 | 1L Amber | 2 | None | SVOC | 1205 |
| SS-P3C-MW15-10.0-20180501 (10.0 ↓) | 40 mL VOA | 3 | HCL | VOC | ~~1215~~ 1205 |

Comments _____

Signature _____  Date 05/01/18

Purge Volume Calculation

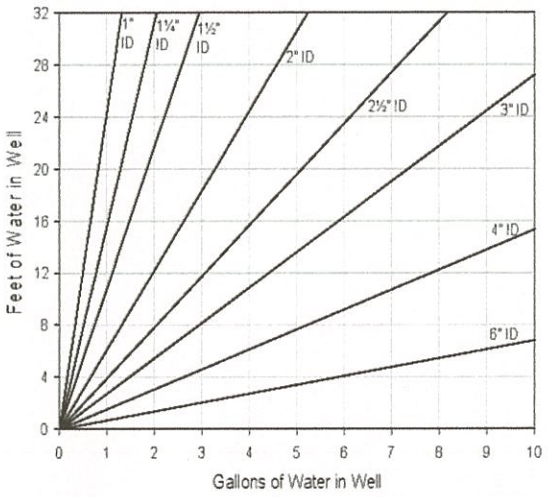


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

3%

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1125 | 1.00 | 11.10 | 7.57 | 1.633 | 0.72 | 67.8 | 6.94 | 100 | 2.65 | Clear / None |
| 1130 | 1.25 | 11.14 | 7.61 | 1.636 | 0.77 | 44.7 | 5.86 | 100 | 2.65 | " " |
| 1135 | 1.50 | 11.07 | 7.64 | 1.627 | 0.56 | 32.1 | 5.10 | 100 | 2.65 | " " |
| 1140 | 1.75 | 11.25 | 7.66 | 1.635 | 0.73 | 19.1 | 6.91 | 100 | 2.65 | " " |
| 1145 | 2.00 | 11.43 | 7.68 | 1.627 | 0.65 | 15.4 | 6.12 | 100 | 2.65 | " " |
| 1150 | 2.25 | 11.50 | 7.69 | 1.625 | 0.58 | 7.2 | 5.52 | 100 | 2.65 | " " |
| 1155 | 2.5 | 11.47 | 7.70 | 1.624 | 0.56 | 3.8 | 4.30 | 100 | 2.65 | " " |
| 1200 | 2.75 | 11.42 | 7.71 | 1.621 | 0.55 | 3.2 | 3.32 | 100 | 2.65 | " " |

Cr+6, MTAL, SVOC, VOC

AECOM

Well ID: 114-MW24AR

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 05-02-18 Time: Start 1330 am/pm
Project No: 60317455 Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: Sunny 60's/90's Collector: T. Islam, ~~S. Paige~~ J. Angelone

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 14.0 c. Length of Water Column _____ (a-b)

b. Water Table Depth 4.55 d. Calculated System Volume (see back) _____

Casing Diameter/Material: 2" PVC

**2. WELL PURGE DATA**

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make Model Serial Number

(II)

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ~~1040~~ 1040 | 0 | 16.10 | 7.27 | 1.975 | 3.90 | 96.0 | 12.9 | 100 | 4.55 | Clear | None |
| ~~1045~~ 1045 | 0.25 | 12.81 | 6.84 | 1.989 | 3.52 | 70.0 | 12.6 | 100 | 4.55 | " | " |
| ~~1050~~ 1350 | 0.50 | 12.62 | 6.80 | 1.990 | 3.42 | 61.8 | 12.3 | 100 | 4.80 | " | " |
| ~~1055~~ 1355 | 0.75 | 12.54 | 6.74 | 2.026 | 3.01 | 55.0 | 12.2 | 100 | 4.80 | " | " |
| 1400 | 1.0 | 12.55 | 6.74 | 2.029 | 2.95 | 54.0 | 11.9 | 100 | 4.80 | " | " |
| ~~1405~~ 1405 | 1.25 | 12.82 | 6.74 | 2.022 | 2.98 | 52.6 | 11.5 | 100 | 4.80 | " | " |
| 1410 | 1.50 | 13.02 | 6.74 | 2.008 | 3.16 | 52.4 | 11.1 | 100 | 4.80 | " | " |

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

(continued on back)

If no or N/A - Explain below.

No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| | | | | | 14:15 |

Comments _____

Signature _____ Date _____

AECOM

Well ID: 114-P2A-MW101I @ 33.0

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries
Project No: ~~60508053. GA.GW.FBPBR~~ 60550261
Site Location: Garfield Avenue Sites
Weather Conds:
Date: 5-31-2018
Time: Start 930 am/pm
Finish 1020 am/pm
Collector:

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 41.0
b. Water Table Depth 4.55
c. Length of Water Column 36.45 (a-b)
d. Calculated System Volume (see back) 5.9
Casing Diameter/Material 2" pvc

**2. WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | ProDSS | |
| | LaMotte | 2020we | |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 935 | | 13.74 | 8.77 | 2.161 | 1.54 | 182.3 | 6.22 | 200 | 4.54 | clear | none |
| 940 | | 13.82 | 8.41 | 2.246 | 1.75 | 182.2 | 4.13 | 200 | 4.54 | " | " |
| 945 | | 13.81 | 8.36 | 2.271 | 1.32 | 176.3 | 3.88 | 200 | 4.54 | " | " |
| 950 | | 13.80 | 8.27 | 2.313 | 1.33 | 172.1 | 3.81 | 200 | 4.54 | " | " |
| 955 | | 13.81 | 8.21 | 2.318 | 1.38 | 168.5 | 2.94 | 200 | 4.54 | " | " |
| 1000 | | 13.80 | 8.21 | 2.321 | 1.31 | 164.3 | 2.25 | 200 | 4.54 | " | " |
| 1005 | | 13.79 | 8.21 | 2.324 | 1.29 | 159.0 | 2.19 | 200 | 4.54 | " | " |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-P2A-MW101I@33.0-20180531 | | | | | 1011 |

Comments

Signature _____ Date 5/31/2018

1 of 1

AECOM

Well ID: 114-P2A-MW101I @ 38.0

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 5-31-2018 Time: Start 830 am/pm
Project No: ~~60508053. CA.GW.FBPBR~~ 60550261 Finish 930 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: 66°F Overcast Collector: JC

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 41.0 c. Length of Water Column 37.76 (a-b) Casing Diameter/Material 2" pvc

b. Water Table Depth 3.24 d. Calculated System Volume (see back) 6.2

**2. WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 6600XL | 3180 |
| | LaMotte | 2020we | 30508 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 845 | | 13.61 | 7.90 | 2.202 | 2.62 | 217.7 | 33.1 | 200 | 4.15 | cloudy | none |
| 850 | | 13.55 | 7.97 | 2.251 | 1.25 | 211.7 | 38.6 | 200 | 4.27 | " | " |
| 855 | | 13.52 | 8.10 | 2.265 | 0.82 | 208.9 | 33.8 | 200 | 4.31 | " | " |
| 900 | | 13.47 | 8.16 | 2.271 | 0.65 | 206.0 | 26.1 | 200 | 4.38 | " | " |
| 905 | | 13.50 | 8.17 | 2.281 | 0.55 | 201.7 | 15.4 | 200 | 4.43 | clear | " |
| 910 | | 13.54 | 8.16 | 2.290 | 0.51 | 199.7 | 11.6 | 200 | 4.41 | " | " |
| 915 | | 13.50 | 8.15 | 2.296 | 0.47 | 145.6 | 9.61 | 200 | 4.39 | " | " |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-P2A-MW101I-20180531-~~38.0~~ -38.0- | | | | | 921 |

Comments MS/MSD collected

Signature [signature] Date 5/31/18

AECOM

Well ID: 114-P2B2-MW101I @29

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 5-31-2018 Time: Start 1030 am/pm
Project No: ~~60508053.GA.GW.FBPBR~~ 60550281 Finish 1120 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: 70's Cloudy Collector:

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 37.0 c. Length of Water Column 33.47 (a-b) Casing Diameter/Material 4" PVC

b. Water Table Depth 3.53 d. Calculated System Volume (see back)

**2. WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600XL | |
| | LaMotte | 2020we | |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1035 | 0 | 13.79 | 7.91 | 1.222 | 0.20 | 171.9 | | 200 | 3.51 | Clear | None |
| 1040 | 1 | 13.73 | 7.85 | 1.529 | 0.14 | 176.3 | | 200 | 3.56 | Clear | None |
| 1045 | 2 | 13.85 | 7.81 | 1.695 | 0.06 | 177.1 | | 200 | 3.61 | Clear | None |
| 1050 | 3 | 13.87 | 7.79 | 1.901 | 0.12 | 177.4 | | 200 | 3.65 | Clear | None |
| 1055 | 4 | 13.86 | 7.78 | 1.955 | 0.11 | 177.6 | | 200 | 3.72 | Clear | None |
| 1100 | 5 | 13.94 | 7.78 | 1.976 | 0.06 | 177.1 | | 200 | 3.69 | Clear | None |
| 1105 | 6 | 13.92 | 7.78 | 2.014 | 0.00 | 176.8 | | 200 | 3.64 | Clear | None |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

If no or N/A - Explain below.

No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-P2B2-MW101I-20180531 | 1L Amber | 2 | None | SVOC | ~~1100~~ 1110 |
| | 40 mL VOA | 3 | HCl | VOC | |

Comments

Signature Date

AECOM

Well ID: 114-P2B2-MW101I @34

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries
Date: 5-31-2018
Time: Start 0820 am/pm
Project No: ~~60508053.CA.GW.FBPBR~~ 60550201
Finish 1830 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: 70's Cloudy
Collector: J. Angelone

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 37.0
c. Length of Water Column _____ (a-b)
Casing Diameter/Material 4" PVC
b. Water Table Depth 2.60
d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600XL | 30375 |
| | LaMotte | 2020we | 23234 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0840 | 0 | 13.85 | 7.28 | 1.168 | 4.63 | 208.2 | 11.41 | 200 | 2.71 | Clear | None |
| 0845 | 1 | 13.85 | 7.35 | 1.133 | 4.64 | 205.0 | 10.23 | 200 | 2.77 | Clear | None |
| 0850 | 2 | 13.75 | 7.42 | 1.101 | 4.51 | 203.6 | 10.74 | 200 | 2.80 | Clear | None |
| 0855 | 3 | 14.08 | 7.61 | 1.087 | 3.66 | 194.1 | 9.01 | 200 | 2.86 | Clear | None |
| 0900 | 4 | 14.15 | 7.65 | 1.090 | 3.42 | 191.9 | 7.30 | 200 | 2.94 | Clear | None |
| 0905 | 5 | 14.15 | 7.64 | 1.125 | 3.00 | 198.1 | 9.67 | 200 | 3.02 | Clear | None |
| 0910 | 6 | 14.18 | 7.72 | 1.162 | 2.53 | 197.7 | 9.61 | 200 | 3.04 | Clear | None |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-P2B2-MW101I-34.0-20180531 | 40mlVOA | 3 | HCl | VOC | 1000 |
| | 1L Amber | 2 | None | SVOC | |
| 114-P2B2-MW101I-34.0-20180531X | 40mlVOA | 3 | HCl | VOC | 1001 |
| | 1L Amber | 2 | None | SVOC | |

Comments _____

Signature _____ Date 05-31-2018

## Purge Volume Calculation

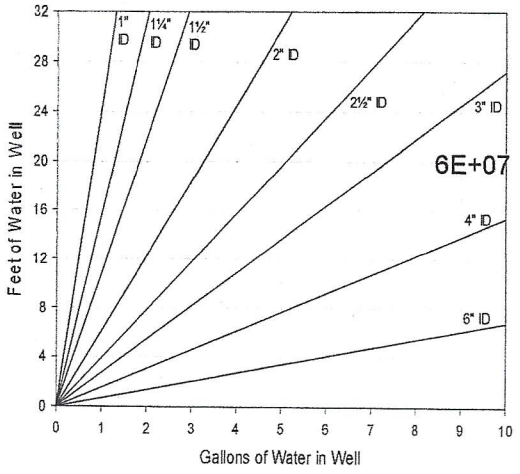


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 0915 | 7 | 13.51 | 7.70 | 1.208 | 2.26 | 197.5 | 9.43 NTU | 200 | 3.12 | Clear / None |
| 0920 | 8 | 13.52 | 7.71 | 1.217 | 2.14 | 194.9 | 9.61 NTU | 200 | 3.21 | Clear / None |
| 0925 | 9 | 13.61 | 7.74 | 1.275 | 1.99 | 191.6 | 9.47 NTU | 200 | 3.37 | Clear / None |
| 0930 | 10 | 13.55 | 7.75 | 1.304 | 1.65 | 189.7 | 9.07 NTU | 200 | 3.41 | Clear / None |
| 0935 | 11 | 13.60 | 7.76 | 1.368 | 1.22 | 186.1 | 10.2 NTU | 200 | 3.53 | Clear / None |
| 0940 | 12 | 13.61 | 7.77 | 1.473 | 0.76 | 182.3 | 11.0 NTU | 200 | 3.57 | Clear / None |
| 0945 | 13 | 13.58 | 7.77 | 1.520 | 0.67 | 181.6 | 10.7 NTU | 200 | 3.63 | Clear / None |
| 0950 | 14 | 13.56 | 7.77 | 1.550 | 0.66 | 180.9 | 10.4 NTU | 200 | 3.68 | Clear / None |
| 0955 | 15 | 13.54 | 7.77 | 1.582 | 0.61 | 179.9 | 10.1 NTU | 200 | 3.71 | Clear / None |
| 1000 | | | | | | | | | | Sample taken |

AECOM

Well ID: 132-P3A-MW5

# Low Flow Ground Water Sample Collection Record @ 10.0

Client: PPG Industries
Date: 05-31-2018
Time: Start 1515 am/pm
Project No: ~~60508053.GA.GW.FBPBR~~ 60350261
Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: 70's Cloudy/Rain
Collector: J. Angelone

1. **WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 17.0
c. Length of Water Column 14.30 (a-b)
Casing Diameter/Material 2" PVC
b. Water Table Depth 2.70
d. Calculated System Volume (see back) _____

2. **WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600XL | 03075 |
| | LaMotte | 2020we | 030500 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1525 | 0 | 13.90 | 13.22 | 6.235 | 0.57 | -99.5 | 783 | 200 | 2.70 | Green | None |
| 1530 | 1 | 13.76 | 13.33 | 6.323 | 0.61 | -102.7 | 7.71 | 200 | 2.71 | Green | None |
| 1535 | 2 | 13.80 | 13.33 | 6.227 | 0.55 | -119.7 | 7.21 | 200 | 2.71 | Green | None |
| 1540 | 3 | 13.73 | 13.32 | 6.129 | 0.86 | -135.8 | 6.87 | 200 | 2.73 | Green | None |
| 1545 | 4 | 13.72 | 13.33 | 6.168 | 0.86 | -137.9 | 6.95 | 200 | 2.73 | Green | None |
| 1550 | 5 | 13.72 | 13.33 | 6.197 | 0.36 | -143.2 | 6.74 | 200 | 2.73 | Green | None |
| 1555 | 6 | 13.74 | 13.32 | 6.191 | 0.86 | -149.9 | 6.60 | 200 | 2.73 | Green | None |

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

(continued on back)

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 132-P3A-MW5-10.0-20180531 | 500ml Poly | 1 | $HNO_3$ | CCDW | 1600 |
| | 500ml Poly | 1 | None | Cr+6 | |
| | 1L Amber | 2 | None | SVOC | |
| | 40mL VOA | 3 | HCl | VOC | |

Comments: Well is below grade on South side of Cortese Ave. Well indicated by spray paint on liner near sheet pile.

Signature _____ Date 05-31-18

AECOM

Well ID: 132-P3A-MW5 ©15.0

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries  Date: 05/31/2018  Time: Start 1400 am/pm
Project No: 60550261  Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: 70's cloudy  Collector: J. Angelone

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 17.0  c. Length of Water Column _____ (a-b)  Casing Diameter/Material 2" PVC

b. Water Table Depth 2.0  d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600XL | 30375 |
| | LaMotte | 2020we | 30500 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1410 | 0 | 13.74 | 12.70 | 3.221 | 0.07 | -123.0 | 56.0 | 200 | 3.15 | lightgreen | None |
| 1415 | 1 | 13.74 | 12.81 | 3.269 | 0.14 | -160.9 | 48.1 | 200 | 3.03 | lightgreen | None |
| 1420 | 2 | 13.75 | 12.87 | 3.493 | 0.31 | -183.2 | 33.6 | 200 | 2.87 | lightgreen | None |
| 1425 | 3 | 13.72 | 12.95 | 3.877 | 0.45 | -192.6 | 29.3 | 200 | 2.81 | lightgreen | None |
| 1430 | 4 | 13.68 | 13.00 | 4.184 | 0.51 | -191.3 | 17.6 | 200 | 2.81 | lightgreen | None |
| 1435 | 5 | 13.52 | 13.12 | 5.126 | 0.55 | -189.1 | 11.1 | 200 | 2.81 | lightgreen | None |
| 1440 | 6 | 13.52 | 13.17 | 5.495 | 0.62 | -180.3 | 7.85 | 200 | 2.81 | lightgreen | None |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 132-P3A-MW5-15.0-20180531 | 500mL Poly | 1 | None | Cr+6 | 1505 |
| | 500mL Poly | 1 | $HNO_3$ | CCPW | |
| | 1L Amber | 2 | None | SVOC | |
| | 40mL | 3 | HCl | VOC | |

Comments _____

Signature John Angelone  Date 5-31-18

## Purge Volume Calculation

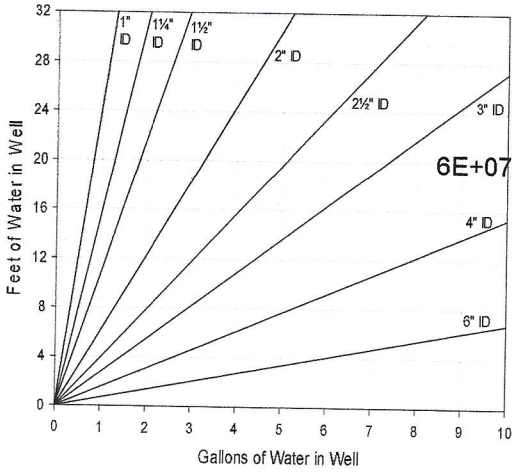


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1445 | 7 | 13.51 | 13.20 | 5.737 | 0.72 | -189.0 | 7.21 | 200 | 2.81 | Lightgreen/None |
| 1450 | 8 | 13.51 | 13.23 | 5.944 | 0.78 | -188.0 | 6.82 | 200 | 2.78 | Lightgreen/None |
| 1455 | 9 | 13.52 | 13.24 | 5.991 | 0.79 | -189.6 | 6.43 | 200 | 2.77 | Lightgreen/None |
| 1500 | 10 | 13.52 | 13.25 | 6.073 | 0.80 | -189.1 | 6.41 | 200 | 2.77 | Lightgreen/None |
| 1505 | | | | | | | | | | Sample Taken |

AECOM

Well ID: 137-P3B-MW102I

# Low Flow Ground Water Sample Collection Record

37.0 ft

Client: PPG Industries
Project No: 60508053. GA.GW.FBPBR
Site Location: Garfield Avenue Sites
Weather Conds: 66°F rain

Date: 5/31/18
Time: Start 1505 am/pm
Finish 1605 am/pm
Collector: JC

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 45.0
b. Water Table Depth 6.03
c. Length of Water Column 38.97 (a-b)
d. Calculated System Volume (see back)

Casing Diameter/Material 4" pvc

**2. WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| Make | Model | Serial Number |
|---|---|---|
| YSI | 600XL | 3180 |
| LaMotte | 2020WE | 23234 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1515 | | 15.90 | 9.85 | 1.759 | 0.92 | 137.4 | 2.00 | 200 | 6.04 | clear | none |
| 1520 | | 15.22 | 9.87 | 1.759 | 0.61 | 137.7 | 1.26 | 200 | 6.04 | " | " |
| 1525 | | 14.72 | 9.82 | 1.742 | 0.36 | 140.5 | 0.71 | 200 | 6.04 | " | " |
| 1530 | | 14.83 | 9.83 | 1.743 | 0.23 | 139.4 | 0.29 | 200 | 6.03 | " | " |
| 1535 | | 14.80 | 9.84 | 1.744 | 0.25 | 138.2 | 0.31 | 200 | 6.03 | " | " |
| 1540 | | 14.76 | 9.85 | 1.744 | 0.26 | 137.6 | 0.17 | 200 | 6.04 | " | " |
| 1545 | | | | | | | | 200 | 6.04 | " | " |

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

(continued on back)

**3. SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 137-P3B-MW102I-37.0-20180531 | | | | | 1550 |

Comments

Signature [signature] Date 5/31/2018

AECOM

Well ID: 137-P3B-MW102I-~~42.0~~ @ 42.0 FT

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries
Project No: 60508053. GA.GW.FBPBR
Site Location: Garfield Avenue Sites
Weather Conds: 66°F Rain
Date: 5/31/18
Time: Start 1425 am/pm
Finish 1505 am/pm
Collector: SC

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 45.0
b. Water Table Depth 6.04
c. Length of Water Column 38.96 (a-b)
d. Calculated System Volume (see back)
Casing Diameter/Material 4" PVC

**2. WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600XL | 3180 |
| | LaMotte | 2020WE | 23234 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1430 | | 14.69 | 9.87 | 1.744 | 0.69 | 146.9 | 8.21 | 200 | 6.04 | clear | none |
| 1435 | | 14.67 | 9.82 | 1.740 | 0.51 | 144.0 | 5.67 | 200 | 6.04 | clear | none |
| 1440 | | 14.64 | 9.81 | 1.739 | 0.40 | 143.6 | 3.81 | 200 | 6.04 | clear | none |
| 1445 | | 14.61 | 9.79 | 1.739 | 0.34 | 144.1 | 4.06 | 200 | 6.04 | clear | none |
| 1450 | | 14.64 | 9.79 | 1.739 | 0.31 | 143.8 | 3.24 | 200 | 6.04 | clear | none |
| 1455 ~~1500~~ | | 14.63 | 9.79 | 1.739 | 0.29 | 143.6 | 2.62 | 200 | 6.04 | clear | none |
| 1500 ~~1505~~ | | 14.65 | 9.80 | 1.739 | 0.27 | 143.4 | 2.11 | 200 | 6.04 | clear | none |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☒ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 137-P3B-MW102I-42.0-20180531 | | | | | 1505 |

Comments

Signature _____ Date 5/31/2018

AECOM

Well ID: 186-MW02R @ 13 ft

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 5/31/2018 Time: Start 1145 am/pm
Project No: 60508053. GA.GW.FBPBR Finish 248 am/pm
Site Location: Garfield Avenue Sites
Weather Conds: 68°F drizzle Collector: JC / JA

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 15.0 c. Length of Water Column 10.56 (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 4.44 d. Calculated System Volume (see back) 1.7

**2. WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600XL | 30375 |
| | LaMotte | 2020WE | 30500 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1200 | 0 | 17.55 | 7.13 | 2.456 | 0.30 | 158.4 | 81.1 | 200 | 4.57 | cloudy | none |
| 1205 | 1 | 17.47 | 7.058 | 2.477 | 0.27 | 143.6 | 64.3 | 200 | 4.59 | Cloudy | none |
| 1210 | 2 | 17.38 | 6.99 | 2.497 | 0.23 | 133.0 | 36.1 | 200 | 4.49 | Cloudy | none |
| 1215 | 3 | 17.38 | 6.97 | 2.513 | 0.28 | 124.0 | 10.62 | 200 | 4.46 | Clear | none |
| 1220 | 4 | 17.38 | 6.96 | 2.515 | 0.26 | 115.1 | 5.44 | 200 | 4.46 | Clear | none |
| 1225 | 5 | 17.39 | 6.95 | 2.507 | 0.30 | 108.5 | 3.21 | 200 | 4.46 | Clear | none |
| 1230 | 6 | 17.39 | 6.95 | 2.505 | 0.30 | 102.7 | 2.94 | 200 | 4.46 | Clear | none |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 186-MW02R-13.0-20180531 | | | | | 1235 |

Comments

Signature [signature] Date 05-31-2018

AECOM

Well ID: 186-MW02R @8 PT

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 5/31/18 Time: Start _____ am/pm
Project No: 60508053. GA.GW.FBPBR Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: 68°F drizzle Collector: SC/JA

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 15.0 c. Length of Water Column 9.51 (a-b) Casing Diameter/Material 2" pvc

b. Water Table Depth 4.49 d. Calculated System Volume (see back) 1.7

**2. WELL PURGE DATA**

a. Purge Method: Low Flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600 XL | |
| | LaMotte | 2020 WE | |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1240 | | 17.44 | 6.93 | 2.502 | 0.46 | 106.4 | - | 200 | 4.49 | brown | none |
| 1245 | | 17.46 | 6.94 | 2.507 | 0.34 | 109.1 | - | 200 | 4.49 | " | " |
| 1250 | | 17.44 | 6.94 | 2.512 | 0.29 | 98.7 | 29.5 | 200 | 4.49 | clearing | " |
| 1255 | | 17.45 | 6.93 | 2.505 | 0.29 | 89.1 | 6.96 | 200 | 4.49 | " | " |
| 1300 | | 17.44 | 6.93 | 2.503 | 0.29 | 85.2 | 5.77 | 200 | 4.49 | clear | " |
| 1305 | | 17.43 | 6.92 | 2.501 | 0.27 | 82.6 | 4.31 | 200 | 4.49 | " | " |
| 1310 | | 17.45 | 6.92 | 2.501 | 0.27 | 79.6 | 3.96 | 200 | 4.49 | " | " |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Low Flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 186-MW02R-8.0-20180531 | | | | | 1315 |

Comments

Signature _____ Date 5/31/2018

AECOM

Well ID: 114-MW45C

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 10/21/19 Time: Start 735 am/pm
Project No: 60550261. GA.GW.BR-field Finish 835 am/pm
Site Location: PPG Site 114, Jersey City, NJ
Weather Conds: Clear + Cool 50° Collector: Stephen Libert

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 72.50 c. Length of Water Column 65.51 (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 6.99 d. Calculated System Volume (see back) 10.67

**2. WELL PURGE DATA**

a. Purge Method: Low Flow

b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600XL | |
| | MiniRAE 3000 | | |
| | LaMotte 2020we | | |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 735 | 0.5 | 15.32 | 8.09 | 1.22 | 2.02 | -26.1 | 16.8 | 100 | 6.99 | Clear | none |
| 740 | 1 | 15.30 | 7.72 | 1.32 | 0.85 | -18.8 | 15.5 | 100 | 7.02 | | |
| 745 | 1.5 | 15.27 | 7.64 | 1.35 | 0.65 | -12.1 | 12.6 | 100 | 7.03 | | |
| 750 | 2 | 15.32 | 7.54 | 1.36 | 0.52 | -6.4 | 10.50 | 100 | 7.03 | Clear | None |
| 755 | 2.5 | 15.29 | 7.53 | 1.36 | 0.45 | -8.0 | 8.99 | 100 | 7.04 | | |
| 800 | 3 | 15.25 | 7.52 | 1.37 | 0.41 | -9.4 | 8.90 | 100 | 7.04 | | |
| 805 | 3.5 | 15.30 | 7.52 | 1.37 | 0.38 | -11.7 | 7.65 | 100 | 7.04 | Clear | none |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method:

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW45C-70.5-20191021 | 2x PI 500mL | 1 NP<br>1 $HNO_3$ | | | 835 |

Comments: Pump set ~2.5' from bottom PID = 0.0 ppm
Purge water is clear + colorless - no odor
Well depth listed at 71' bgs - measures 72.5 to TOC

Signature: Date 10/21/19

## Purge Volume Calculation

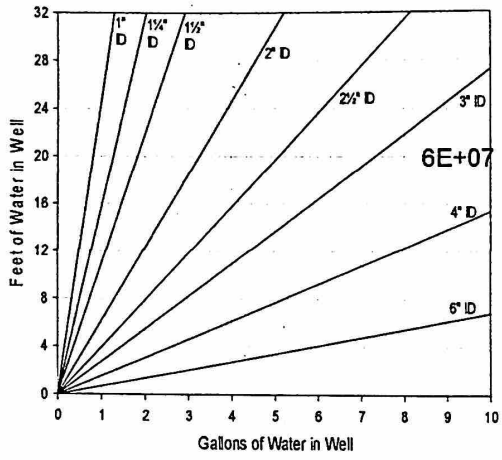


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 810 | 4 | 15.31 | 7.52 | 1.36 | 0.33 | -24.5 | 7.50 | 100 | 7.05 | |
| 815 | 4.5 | 15.32 | 7.51 | 1.36 | 0.27 | -28.7 | 6.99 | 100 | 7.06 | Clear / none |
| 820 | 5 | 15.33 | 7.51 | 1.36 | 0.25 | -29.0 | 6.91 | 100 | 7.06 | |
| 825 | 5.5 | 15.34 | 7.51 | 1.36 | 0.21 | -30.1 | 6.90 | 100 | 7.06 | |
| 830 | 6 | 15.36 | 7.50 | 1.35 | 0.20 | -30.9 | 6.84 | 100 | 7.06 | Clear / none |
| | | | | | | | | | | |
| 835 | | SAMPLE | | | TIME | | | | | |

AECOM

Well ID: MW-4D

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries
Project No: 60508053. GA.GW.CB.GWM
Site Location: Garfield Avenue Sites
Weather Conds: _____
Date: _____ Time: Start _____ am/pm
Finish _____ am/pm
Collector: _____

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 110.2 c. Length of Water Column _____ (a-b) Casing Diameter/Material _____

b. Water Table Depth 4.93 d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: _____

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make Model Serial Number

_____

_____

_____

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 920 | | 15.15 | 10.94 | 0.170 | 3.91 | 21.3 | | | | | |
| | | | | Technical Difficulties | | | | | | | |
| 1040 | | 15.27 | 11.03 | 0.181 | 2.94 | 36.0 | 31.8 | 200 | 4.94 | none | none |
| 1045 | | 15.28 | 11.05 | 0.182 | 1.69 | 35.8 | 30.7 | 200 | 4.94 | none | none |
| 1050 | | 15.28 | 11.04 | 0.183 | 1.23 | 35.2 | 27.7 | 200 | 4.94 | ↓ | |
| 1055 | | 15.29 | 11.04 | 0.183 | 0.99 | 34.7 | 25.1 | 200 | 4.94 | | |
| 1100 | | 15.29 | 11.04 | 0.182 | 0.88 | 33.4 | 26.4 | 200 | 4.94 | ↓ | ↓ |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.

No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: _____

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 104.5 | | | | | 1150 (DUP 1151) |
| 99.5 | | | | | 1210 |
| 94.5 | | | | | 1230 |
| 89.5 | | | | | 1240 |

Comments Screen 87-107. Samples at 104.5, 99.5, 94.5, 89.5

Signature _____ Date _____

## Purge Volume Calculation

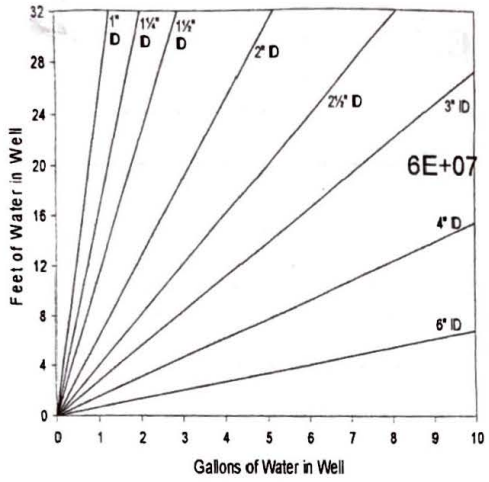


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1105 | | 15.46 | 11.04 | 0.183 | 0.79 | 33.0 | 27.9 | 200 | 4.94 | Clear/none |
| 1110 | | 15.46 | 11.04 | 0.184 | 0.75 | 32.4 | 27.5 | | 4.94 | |
| 1115 | | 15.33 | 11.04 | 0.184 | 0.67 | 31.1 | 25.3 | | 4.94 | |
| 1120 | | 15.38 | 11.04 | 0.185 | 0.64 | 30.3 | 23.5 | | 4.94 | |
| 1125 | | 15.39 | 11.06 | 0.185 | 0.61 | 29.6 | 27.1 | | 4.94 | |
| 1130 | | 15.39 | 11.05 | 0.185 | 0.61 | 29.0 | 25.1 | | 4.94 | |
| 1135 | | 15.43 | 11.06 | 0.185 | 0.53 | 28.3 | 26.9 | | 4.94 | |
| 1140 | | 15.52 | 11.06 | 0.185 | 0.53 | 27.7 | 22.3 | | 4.94 | |
| 1145 | | 15.58 | 11.06 | 0.185 | 0.52 | 27.4 | 21.8 | ↓ | 4.94 | ↓ |

AECOM

Well ID: MW-6D

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 5/30/19 Time: Start 1335 am/pm
Project No: 60508053. GA.GW.CB.GWM Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: _____ Collector: T. Bond

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 116.98 c. Length of Water Column _____ (a-b) Casing Diameter/Material _____

b. Water Table Depth 0 d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: _____

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make Model Serial Number

_____

_____

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1425 | | 15.44 | 10.23 | 0.426 | 2.01 | 31.8 | 22.9 | 150 | 0.3 | Clear | none |
| 1430 | | 15.23 | 10.23 | 0.441 | 1.57 | 33.0 | 21.6 | 150 | 0.5 | ↓ | ↓ |
| 1435 | | 15.20 | 10.22 | 0.450 | 1.12 | 31.5 | 11.3 | 150 | 0.5 | | |
| 1440 | | 15.18 | 10.22 | 0.456 | 0.93 | 29.9 | 12.9 | 150 | 0.5 | | |
| 1445 | | 15.06 | 10.22 | 0.459 | 0.66 | 28.8 | 11.1 | 150 | 0.5 | | |
| 1450 | | 14.83 | 10.2 | 0.456 | 0.70 | 28.1 | 9.4 | 150 | 0.5 | | |
| 1455 | | 14.94 | 10.19 | 0.453 | 0.7 | 27.0 | 9.6 | 150 | 0.5 | | |

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.

No minimum purge volume required for low-flow sampling.

(continued on back)

**3. SAMPLE COLLECTION:** Method: _____

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 109.5 | | | | | 1500 |
| 104.5 | | | | | 1510 |
| 99.5 | | | | | 1515 |
| 94.5 | | | | | 1520 |
| 89.5 | | | | | 1525 |

Comments Screen from 86 - 111. Samples at 109.5, 104.5, 99.5, 94.5, and 89.5

Water level above Top of casing.

Signature _____ Date _____

AECOM

Well ID: 114-MW7D

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries  Date: 5/31/19  Time: Start 0745 am/pm
Project No: 60508053. GA.GW.CB.GWM  Finish _____ am/pm
Site Location: Garfield Avenue Sites
Weather Conds: _____  Collector: T. Bond

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 88.05  c. Length of Water Column _____ (a-b)  Casing Diameter/Material _____

b. Water Table Depth 0.4  d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: _____

b. Acceptance Criteria defined (see workplan)

| | | | |
|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% |
| - pH | ± 1.0 unit | - ORP | ± 10mV |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' |

c. Field Testing Equipment used: Make _____ Model _____ Serial Number _____

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0835 | | 19.77 | 7.26 | 1.741 | 1.41 | -137 | 65.2 | 50 | 0.4 | cloudy | none |
| 0840 | | 19.96 | 7.26 | 1.732 | 2.68 | -143.1 | 55.4 | 50 | 0.4 | cloudy | none |
| 0845 | | 20.09 | 7.28 | 1.703 | 1.54 | -144.5 | 46.8 | 50 | 0.4 | cloudy | none |
| 0850 | | 20.17 | 7.32 | 1.637 | 0.78 | -148.1 | 30.9 | 50 | 0.4 | clear | none |
| 0855 | | 20.35 | 7.37 | 1.599 | 0.69 | -154.2 | 27.9 | 50 | 0.4 | clear | none |
| 0900 | | 20.52 | 7.42 | 1.565 | 0.64 | -155.0 | 23.1 | 50 | 0.4 | clear | none |
| 0905 | | 20.56 | 7.44 | 1.554 | 0.61 | -155.1 | 12.1 | 50 | 0.4 | clear | none |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: _____

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| | | | | | 0925 |

Comments: Sample @ 87.5 ft. Small bladder pump used due to obstruction.

Signature _____ Date _____

## Purge Volume Calculation

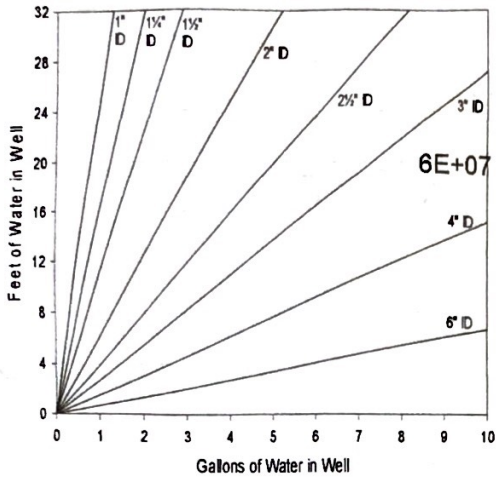


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 0910 | | 20.50 | 7.47 | 1.545 | 0.63 | -157.7 | 10.76 | 50 | 0 | Clear/none |
| 0915 | | 20.51 | 7.48 | 1.540 | 0.62 | -159.6 | 10.76 | 50 | 0 | Clear/none |
| 0920 | | 20.73 | 7.50 | 1.537 | 0.64 | -147.5 | 7.95 | 50 | 0 | Clear/none |
| 0925 | | Sample | | | | | | | | |

AECOM

Well ID: 114-MW48C

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 8/19/2020 Time: Start 0800 am/pm
Project No: 60550261. GA.GW.FIELD.RI-field Finish 1100 am/pm
Site Location: PPG Site 114, Jersey City, NJ
Weather Conds: Rain+Thunder, 85°F Collector: T. Bond

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 58.85 c. Length of Water Column 50.81 (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 8.04 d. Calculated System Volume (see back) 8.29

**2. WELL PURGE DATA**

a. Purge Method: low flow bladder

b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

c. Field Testing Equipment used:

| Make | Model | Serial Number |
|---|---|---|
| YSI | 650 MDS | 13047 |
| LaMotte | 2020 we | 22393 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1030 | 15 | 16.94 | 6.63 | 1.267 | 0.50 | 2.2 | 6.15 | 150 | 8.04 | clear | none |
| 1035 | 16 | 16.93 | 6.64 | 1.263 | 0.48 | 1.1 | 6.03 | 150 | 8.04 | clear | none |
| 1040 | 17 | 16.98 | 6.65 | 1.260 | 0.47 | 3.2 | 5.94 | 150 | 8.04 | clear | none |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☑ | ☐ | ☐ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

(continued on back)

If no or N/A - Explain below.

No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: low flow bladder

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW48C-56.2-20200819 | | | | | 1050 |

Comments Cr+6, CCDW, TOC

Signature T Bond Date 8/19/20

AECOM

Well ID: 114-MW49C

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 8/19/20 Time: Start 1120 am/pm
Project No: 60550261. GA.GW.FIELD.RI-field Finish 1540 am/pm
Site Location: PPG Site 114, Jersey City, NJ
Weather Conds: 87°F, Cloudy Collector: T. Bond

Set @ 690

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 69.45 c. Length of Water Column 59.74 (a-b)
   b. Water Table Depth 9.71 d. Calculated System Volume (see back) 9.75 g
   Casing Diameter/Material 2" PVC

2. **WELL PURGE DATA**
   a. Purge Method: low flow bladder

   b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

   c. Field Testing Equipment used:

| Make | Model | Serial Number |
|---|---|---|
| YSI | 650 MDS | 13047 |
| LaMotte | 2020 we | 22393 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1355 | 15 | 17.85 | 7.07 | 1.746 | 0.47 | -98.4 | 47.4 | 200 | 9.71 | clear | none |
| 1400 | 16 | 17.93 | 7.06 | 1.748 | 0.47 | -99.1 | 41.7 | 200 | 9.71 | clear | none |
| 1405 | 17 | 18.07 | 7.05 | 1.753 | 0.48 | -100.4 | 32.2 | 200 | 9.71 | clear | none |
| 1410 | 18 | 18.00 | 7.05 | 1.752 | 0.49 | -98.3 | 28.3 | 200 | 9.71 | clear | none |
| 1415 | 19 | 17.90 | 7.04 | 1.751 | 0.49 | -96.0 | 25.1 | 200 | 9.71 | clear | none |
| 1420 | 20 | 17.84 | 7.05 | 1.750 | 0.49 | -96.5 | 26.5 | 200 | 9.71 | clear | none |
| 1425 | 21 | 17.71 | 7.05 | 1.748 | 0.49 | -97.7 | 28.7 | 200 | 9.71 | clear | none |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | X | | |
| Has required turbidity been reached | X | | |
| Have parameters stabilized | X | | |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: low flow bladder

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW49C-69.0-20200819 | | | | | 15:30 |

Comments Begin purging @ 1130

Signature T Bond Date 8/19/20

1114-MW49C

## Purge Volume Calculation

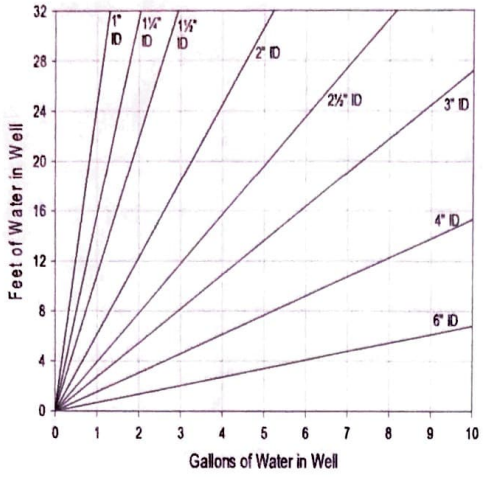


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| | Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1420 | 22 | 17.65 | 7.05 | 1.747 | 0.53 | -98.0 | 27.5 | 200 | 0 | clear/none |
| | 1435 | 23 | 17.58 | 7.06 | 1.746 | 0.55 | -98.2 | 27.2 | 200 | 0 | clear/none |
| | 1440 | 24 | 17.45 | 7.06 | 1.746 | 0.57 | -98.4 | 26.8 | 200 | 0 | clear/none |
| | 1445 | 25 | 17.30 | 7.06 | 1.746 | 0.58 | -98.6 | 26.2 | 200 | 0 | clear/none |
| | 1450 | 26 | 17.34 | 7.06 | 1.746 | 0.58 | -98.6 | 26.1 | 200 | 0 | clear/none |
| | 1455 | 27 | 17.36 | 7.06 | 1.746 | 0.58 | -98.7 | 25.9 | 200 | 0 | clear/none |
| | 1500 | 28 | 17.41 | 7.06 | 1.747 | 0.59 | -98.9 | 25.9 | 200 | 0 | clear/none |
| | 1505 | 29 | 17.44 | 7.06 | 1.746 | 0.60 | -98.8 | 25.4 | 200 | 0 | clear/none |
| | 1510 | 30 | 17.46 | 7.06 | 1.746 | 0.59 | -98.5 | 25.3 | 200 | 0 | clear/none |
| | 1515 | 31 | 17.47 | 7.06 | 1.746 | 0.59 | -98.3 | 25.1 | 200 | 0 | clear/none |
| | 1520 | 32 | 17.47 | 7.06 | 1.749 | 0.60 | -98.4 | 24.8 | 200 | 0 | clear/none |
| | 1525 | 33 | 17.48 | 7.06 | 1.748 | 0.61 | -98.6 | 24.7 | 200 | 0 | clear/none |
| Sample | 1530 | 34 | 17.49 | 7.06 | 1.747 | 0.60 | -98.8 | 24.5 | 200 | 0 | clear/none |

AECOM

Well ID: 114-MW45C

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries
Project No: 60550261. GA.GW.FIELD.RI-field
Site Location: PPG Site 114, Jersey City, NJ
Weather Conds: 80°F, Clear
Date: 8/20/2020 Time: Start 0740 am/pm
Finish 1215 am/pm
Collector: T. Bond

Set @ 71.0

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 72.21 c. Length of Water Column 66.6 (a-b)

b. Water Table Depth 5.61 d. Calculated System Volume (see back) 10.87 g

Casing Diameter/Material 2" PVC

**2. WELL PURGE DATA**

a. Purge Method: low flow bladder

b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 650 MDS | 13047 |
| | LaMotte | 2020we | 22393 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0900 | 5 | 19.43 | 7.37 | 2.442 | 0.50 | -70.7 | 32.5 | 130 | 5.61 | Clear | none |
| 0930 | 6 | 19.92 | 7.35 | 2.430 | 0.47 | -70.5 | 11.5 | 130 | 5.61 | Clear | none |
| 0935 | 7 | 19.90 | 7.33 | 2.428 | 0.45 | -71.0 | 27.4 | 130 | 5.61 | Clear | none |
| 0940 | 8 | 20.11 | 7.31 | 2.426 | 0.45 | -71.8 | 35.3 | 130 | 5.61 | Clear | none |
| 0945 | 9 | 20.32 | 7.30 | 2.425 | 0.45 | -72.3 | 32.1 | 130 | 5.61 | Clear | none |
| 0950 | 10 | 20.37 | 7.30 | 2.424 | 0.45 | -72.8 | 29.5 | 130 | 5.61 | Clear | none |
| 0955 | 11 | 20.46 | 7.29 | 2.423 | 0.45 | -73.2 | 29.0 | 130 | 5.61 | Clear | none |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☑ | ☐ | ☐ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.

No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: low flow bladder

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW45C-71.0-20200820 | | | | | 1200 |

Comments 0800 Begin purge

Signature T Bond Date 8/20/2020

114-MW45C

## Purge Volume Calculation

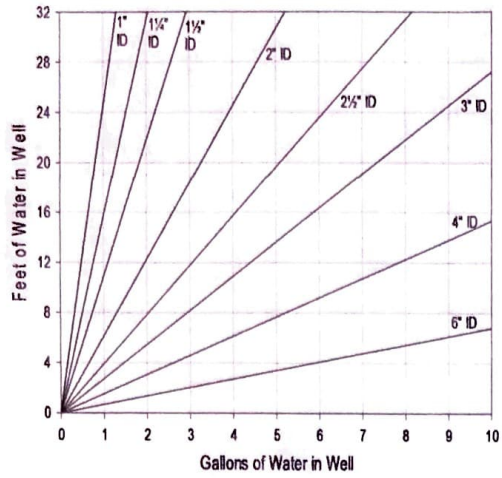


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 12 | 20.51 | 7.29 | 2.423 | 0.44 | -73.5 | 27.4 | 130 | 0 | Clear | none |
| 1005 | 13 | 20.64 | 7.28 | 2.423 | 0.44 | -73.7 | 26.3 | 130 | 0 | clear | none |
| 1010 | 14 | 20.73 | 7.28 | 2.423 | 0.44 | -74.0 | 24.1 | 130 | 0 | clear | none |
| 1015 | 15 | 20.81 | 7.28 | 2.423 | 0.44 | -74.2 | 22.2 | 130 | 0 | Clear | none |
| 1020 | 16 | 20.75 | 7.27 | 2.420 | 0.43 | -74.6 | 22.0 | 130 | 0 | clear | none |
| 1025 | 17 | 20.63 | 7.27 | 2.418 | 0.42 | -75.5 | 21.5 | 130 | 0 | clear | none |
| 1030 | 18 | 20.47 | 7.26 | 2.415 | 0.42 | -76.4 | 20.4 | 130 | 0 | clear | none |
| 1035 | 19 | 20.53 | 7.24 | 2.413 | 0.41 | -75.1 | 19.3 | 130 | 0 | clear | none |
| 1040 | 20 | 20.74 | 7.23 | 2.413 | 0.40 | -72.8 | 18.2 | 130 | 0 | clear | none |
| 1045 | 21 | 20.89 | 7.23 | 2.412 | 0.40 | -71.3 | 17.1 | 130 | 0 | clear | none |
| 1050 | 22 | 21.09 | 7.22 | 2.411 | 0.40 | -69.4 | 16.4 | 130 | 0 | clear | none |
| 1055 | 23 | 21.17 | 7.23 | 2.411 | 0.40 | -69.2 | 15.7 | 130 | 0 | clear | clear |
| 1100 | 24 | 21.25 | 7.24 | 2.412 | 0.39 | -69.0 | 13.4 | 130 | 0 | Clear | none |
| 1105 | 25 | 21.37 | 7.24 | 2.411 | 0.39 | -68.8 | 13.0 | 130 | 0 | clear | none |
| 1110 | 26 | 21.48 | 7.24 | 2.412 | 0.39 | -68.6 | 12.4 | 130 | 0 | clear | none |
| 1115 | 27 | 21.57 | 7.25 | 2.412 | 0.39 | -68.5 | 11.6 | 130 | 0 | clear | none |
| 1120 | 28 | 21.65 | 7.28 | 2.414 | 0.39 | -69.5 | 11.7 | 130 | 0 | Clear | none |
| 1125 | 29 | 21.76 | 7.29 | 2.416 | 0.39 | -73.1 | 11.5 | 130 | 0 | Clear | none |
| 1130 | 30 | 21.85 | 7.30 | 2.418 | 0.39 | -78.6 | 12.0 | 130 | 0 | clear | none |
| 1135 | 31 | 21.89 | 7.31 | 2.419 | 0.39 | -78.7 | 11.4 | 130 | 0 | Clear | none |
| 1140 | 32 | 21.96 | 7.31 | 2.419 | 0.39 | -79.1 | 11.4 | 130 | 0 | Clear | none |
| 1145 | 33 | 22.03 | 7.33 | 2.419 | 0.39 | -79.8 | 11.3 | 130 | 0 | Clear | none |
| 1150 | 34 | 22.09 | 7.34 | 2.420 | 0.39 | -80.5 | 11.0 | 130 | 0 | Clear | none |
| 1155 | 35 | 22.14 | 7.35 | 2.420 | 0.39 | -81.6 | 10.9 | 130 | 0 | Clear | none |
| 1200 | 36 | 22.19 | 7.35 | 2.420 | 0.39 | -83.6 | 10.7 | 130 | 0 | Clear | none |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

AECOM

Well ID: 114-MW50C

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 8/20/20 Time: Start 12:30 pm
Project No: 60550261. GA.GW.FIELD.RI-field Finish 1515 am/pm
Site Location: PPG Site 114, Jersey City, NJ
Weather Conds: 82°F, Clear Collector: T. Bond

Set @ 61.5

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 64.10 c. Length of Water Column 56.96 (a-b)
b. Water Table Depth 7.14 d. Calculated System Volume (see back) 9.3 gal
Casing Diameter/Material 2" PVC

**2. WELL PURGE DATA**

a. Purge Method: low flow bladder

b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

c. Field Testing Equipment used:

| Make | Model | Serial Number |
|---|---|---|
| YSI | 650 MDS | 13041 7 |
| LaMotte | 2020 we | 22393 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1425 | 16 | 19.35 | 6.53 | 2.919 | 0.42 | 77.5 | 10.55 | 125 | 7.14 | Clear | none |
| 1440 | 16 | 19.21 | 6.52 | 2.908 | 0.42 | 75.5 | 7.55 | 125 | 7.14 | Clear | none |
| 1445 | 17 | 19.55 | 6.54 | 2.914 | 0.42 | 75.0 | 7.89 | 125 | 7.14 | Clear | none |
| 1450 | 18 | 19.48 | 6.54 | 2.908 | 0.41 | 74.7 | 7.91 | 125 | 7.14 | Clear | none |
| 1455 | 19 | 19.48 | 6.54 | 2.910 | 0.41 | 74.9 | 8.04 | 125 | 7.14 | Clear | none |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☑ | ☐ | ☐ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: low flow bladder

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW50C-61.5-20200820 | | | | | 1500 |

Comments Start Purge @ 1250

Signature T Bond Date 8/20/2020

Well ID: 114-MW16B

AECOM

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries
Project No: 60550261. GA.GW.FIELD.RI-field
Site Location: PPG Site 114, Jersey City, NJ
Weather Conds: 80°F, clear

Date: 8/21/20
Time: Start 0840 am/pm
Finish 1010 am/pm
Collector: T. Bond

Set @33.0 ft

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 35.02 c. Length of Water Column 33.97 (a-b)
   b. Water Table Depth 1.05 d. Calculated System Volume (see back) 5.50 g
   Casing Diameter/Material 2" PVC

2. **WELL PURGE DATA**
   a. Purge Method: low flow bladder
   b. Acceptance Criteria defined (see workplan)
   - Temperature 3% -D.O. 10% - Turbidity < 10 NTU
   - pH ± 0.1 unit - ORP ± 10mV
   - Sp. Cond. 3% - Drawdown < 0.3'
   c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 650 MDS | 130417 |
| | LaMotte | 2020 we | 22393 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0900 | 0 | 26.26 | 7.57 | 0.738 | 4.95 | 93.6 | 9.15 | 150 | 1.05 | clear | none |
| 0905 | 0.5 | 27.06 | 7.52 | 0.725 | 4.49 | 94.7 | 10.11 | 150 | 1.05 | clear | none |
| 0910 | 1 | 28.18 | 7.54 | 0.720 | 4.34 | 94.1 | 11.23 | 150 | 1.05 | clear | none |
| 0915 | 1.5 | 29.06 | 7.56 | 0.718 | 4.19 | 93.1 | 12.57 | 150 | 1.05 | clear | none |
| 0920 | 2 | 29.63 | 7.59 | 0.720 | 4.09 | 93.0 | 13.9 | 150 | 1.05 | clear | none |
| 0925 | 2.5 | 25.15 | 7.56 | 0.711 | 3.75 | 47.4 | 8.5 | 150 | 1.05 | clear | none |
| 0930 | 3 | 22.07 | 7.54 | 0.702 | 3.69 | 102.2 | 5.5 | 150 | 1.05 | clear | none |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☑ | ☐ | ☐ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: low flow bladder

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW16B-33.0-20200821 | | | | | 0950 |

Comments: Begin purging @ 0850

Signature: T Bond Date: 8/21/2020

## Purge Volume Calculation

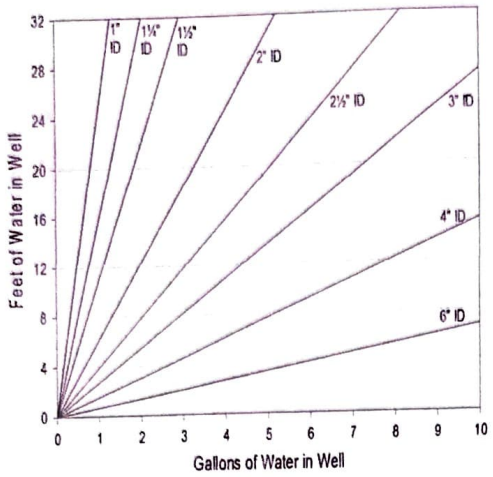


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

114-MW16B

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 0935 | | 21.81 | 7.28 | 0.701 | 3.68 | 108.3 | 5.45 | 150 | 0 | Clear none |
| 0940 | | 21.83 | 7.28 | 0.700 | 3.66 | 108.7 | 5.39 | 150 | 0 | Clear none |

Well ID: 114-MW56C

AECOM

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries
Date: 8/21/2020
Time: Start 1110 am/pm
Finish 1435 am/pm
Project No: 60550261. GA.GW.FIELD.RI-field
Site Location: PPG Site 114, Jersey City, NJ
Weather Conds: Sunny
Collector: A. Bush

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 73.85 c. Length of Water Column 65.04 (a-b) Casing Diameter/Material 2in
   b. Water Table Depth 8.81 d. Calculated System Volume (see back) 10.61 gal

2. **WELL PURGE DATA**
   a. Purge Method: Bladder
   b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

   c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 650MDS | 13047 |
| | LaMotte | 2020we | 22393 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1110 | 0 | 22.18 | 7.92 | 1.563 | 3.00 | 93.8 | 85.5 | 200 | 9.61 | tan green | none |
| 1115 | 1 | 21.93 | 7.73 | 1.562 | 2.01 | 103.1 | 80.8 | 200 | 9.61 | tan green | none |
| 1120 | 2 | 21.31 | 7.81 | 1.544 | 1.3 | 96.2 | 83.0 | 200 | 9.61 | tan green | none |
| 1125 | 3 | 20.93 | 7.84 | 1.548 | 1.14 | 93.0 | 68.5 | 200 | 9.61 | tan green | none |
| 1130 | 4 | 21.37 | 7.86 | 1.539 | 1.14 | 91.8 | 56.1 | 200 | 9.61 | tan green | none |
| 1135 | 5 | 21.13 | 7.88 | 1.549 | 1.12 | 88.1 | 46.8 | 200 | 9.61 | tan green | none |
| 1140 | 6 | 20.98 | 7.89 | 1.561 | 1.02 | 86.7 | 43.7 | 200 | 9.61 | tan green | none |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: low flow Bladder

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW56C-72-20200821 | | 3 | | | 1435 |

Comments: Initial color- tan/dirty green lost color aproximatly halfway (hour 1.5-2) ending color clear no visible coloration

Signature: [signature] Date 8/21/2020

114-MW56C

## Purge Volume Calculation

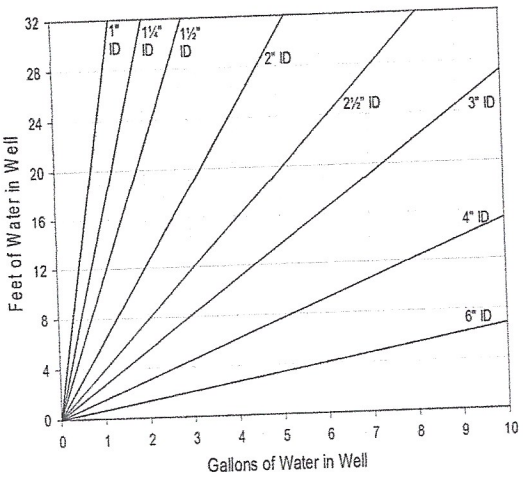


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1145 | 7 | 22.44 | 7.90 | 1.550 | 0.98 | 83.2 | 52.2 | 200 | 9.61 | tan |
| 1150 | 8 | 21.36 | 7.93 | 1.560 | 1.10 | 81.2 | 54.7 | 200 | 9.61 | tan |
| 1155 | 9 | 22.22 | 7.93 | 1.540 | 1.00 | 79.7 | 58.9 | 200 | 9.61 | tan |
| 1200 | 10 | 21.19 | 7.94 | 1.552 | 0.98 | 77.2 | 91.8 | 200 | 9.61 | tan |
| 1205 | 11 | 20.64 | 7.96 | 1.522 | 0.89 | 75.5 | 82.4 | 200 | 9.61 | tan/foggy |
| 1210 | 12 | 20.84 | 7.95 | 1.523 | 0.85 | 74.9 | 55.3 | 200 | 9.61 | tan/foggy |
| 1215 | 13 | 20.89 | 7.93 | 1.532 | 0.80 | 74.1 | 35.6 | 200 | 9.61 | tan |
| 1220 | 14 | 21.03 | 7.94 | 1.532 | 0.79 | 73.0 | 34.7 | 200 | 9.61 | Slightly tan |
| 1225 | 15 | 20.96 | 7.96 | 1.523 | 0.75 | 71.0 | 31.6 | 200 | 9.61 | clear |
| 1230 | 16 | 20.89 | 7.98 | 1.540 | 0.74 | 69.5 | 26.1 | 200 | 9.61 | clear |
| 1235 | 17 | 21.25 | 7.98 | 1.525 | 0.71 | 69.0 | 22.9 | 200 | 9.61 | clear |
| 1240 | 18 | 21.04 | 7.97 | 1.539 | 0.71 | 68.9 | 20.4 | 200 | 9.61 | clear |
| 1245 | 19 | 20.92 | 7.97 | 1.536 | 0.70 | 67.1 | 18.2 | 200 | 9.61 | clear |
| 1250 | 20 | 20.75 | 7.96 | 1.537 | 0.69 | 67.3 | 19.0 | 200 | 9.61 | clear |
| 1255 | 21 | 20.99 | 7.94 | 1.539 | 0.67 | 66.9 | 17.1 | 200 | 9.61 | clear |
| 1300 | 22 | 21.23 | 7.93 | 1.545 | 0.66 | 66.0 | 14.3 | 200 | 9.61 | clear |
| 1305 | 23 | 20.96 | 7.93 | 1.550 | 0.64 | 65.3 | 14.3 | 200 | 9.61 | clear |
| 1310 | 24 | 20.81 | 7.93 | 1.546 | 0.60 | 64.7 | 14.7 | 200 | 9.61 | clear |
| 1315 | 25 | 21.07 | 7.94 | 1.541 | 0.59 | 64.4 | 15.0 | 200 | 9.61 | clear |
| 1320 | 26 | 20.64 | 7.93 | 1.540 | 0.58 | 64.5 | 12.9 | 200 | 9.61 | clear |
| 1325 | 27 | 20.75 | 7.94 | 1.532 | 0.55 | 64.9 | 12.9 | 200 | 9.61 | clear |
| 1330 | 28 | 20.53 | 7.95 | 1.547 | 0.55 | 65.1 | 11.5 | 200 | 9.61 | clear |
| 1335 | 29 | 20.60 | 7.94 | 1.541 | 0.53 | 65.1 | 16.5 | 200 | 9.61 | clear |
| 1340 | 30 | 20.70 | 7.96 | 1.542 | 0.52 | 64.9 | 19.0 | 200 | 9.61 | clear |
| 1345 | 31 | 20.49 | 7.96 | 1.540 | 0.52 | 63.8 | 13.0 | 200 | 9.61 | clear |
| 1350 | 32 | 20.61 | 7.95 | 1.545 | 0.51 | 63.0 | 11.4 | 200 | 9.61 | clear |
| 1355 | 33 | 20.60 | 7.95 | 1.542 | 0.50 | 61.8 | 11.8 | 200 | 9.61 | clear |
| 1400 | 34 | 21.00 | 7.95 | 1.541 | 0.50 | 60.6 | 32.2 | 200 | 9.61 | clear |
| 1405 | 35 | 20.90 | 7.95 | 1.541 | 0.49 | 59.4 | 11.2 | 200 | 9.61 | clear |
| 1410 | 36 | 21.02 | 7.95 | 1.542 | 0.49 | 58.5 | 10.07 | 200 | 9.61 | clear |
| 1415 | 37 | 21.14 | 7.95 | 1.542 | 0.49 | 57.7 | 20.4 | 200 | 9.61 | clear |

114-MW56C

## Purge Volume Calculation

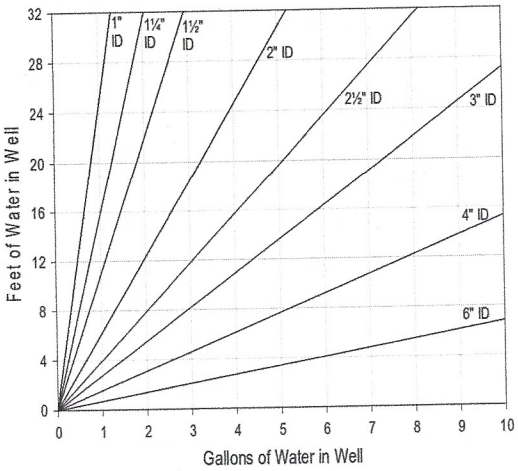


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) ✓ | pH (S.U.) ✓ | Spec. Cond (mS/cm) ✓ | DO (mg/L) ✓ | ORP (mV) ✓ | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1420 | ~~41.27~~ | 21.30 | 7.94 | 1.545 | 0.49 | 56.8 | 10.96 | 200 | 9.61 | clear |
| 1425 | 39 | 21.60 | 7.95 | 1.555 | 0.51 | 56.0 | 4.56 | 200 | 9.61 | clear |
| 1430 | 40 | 21.30 | 7.94 | 1.559 | 0.53 | 55.6 | 10.96 | 200 | 9.61 | clear |
| 1435 | 41 | 21.51 | 7.94 | 1.549 | 0.51 | 56.6 | 9.81 | 200 | 9.61 | |

AECOM

Well ID: 114-MW52C

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries
Project No: 60550261. GA.GW.FIELD.RI-field
Site Location: PPG Site 114, Jersey City, NJ
Weather Conds: 85°F, Clear

Date: 8/24/20
Time: Start 0740 am/pm
Finish 1030 am/pm
Collector: T. Bond

Set @ 72.5

## 1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 75.17 c. Length of Water Column 66.68 (a-b)
Casing Diameter/Material 2" PVC
b. Water Table Depth 8.49 d. Calculated System Volume (see back) 10.88 gal

## 2. WELL PURGE DATA

a. Purge Method: low flow bladder

b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

c. Field Testing Equipment used:

| Make | Model | Serial Number |
|---|---|---|
| YSI | 600 XL | 13047 |
| LaMotte | 2020 we | 22393 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0820 | 0.1 | 21.27 | 7.19 | 2.120 | 0.91 | 129.8 | 39.7 | 50 | 8.49 | Cloudy | none |
| 0825 | 0.2 | 21.35 | 7.19 | 2.117 | 0.87 | 129.9 | 36.2 | 50 | 8.49 | Cloudy | none |
| 0830 | 0.3 | 21.50 | 7.18 | 2.111 | 0.80 | 130.8 | 34.4 | 50 | 8.49 | Cloudy | none |
| 0850 | 5 | 21.68 | 7.15 | 2.077 | 0.68 | 118.2 | 22.8 | 50 | 8.49 | Cloudy | none |
| 0915 | 6 | 22.64 | 7.12 | 2.064 | 0.66 | 96.1 | 12.7 | 50 | 8.49 | Clear | none |
| 0920 | 6.5 | 22.79 | 7.11 | 2.065 | 0.64 | 88.8 | 11.51 | 50 | 8.49 | Clear | none |
| 0925 | 7 | 23.01 | 7.12 | 2.062 | 0.64 | 86.1 | 10.25 | 50 | 8.49 | Clear | none |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

## 3. SAMPLE COLLECTION:

Method: low flow bladder

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW52C-72.5-20200824 | | | | | 1010 |

Comments

Signature T Bond Date 8/24/20

## Purge Volume Calculation

114-MW52C

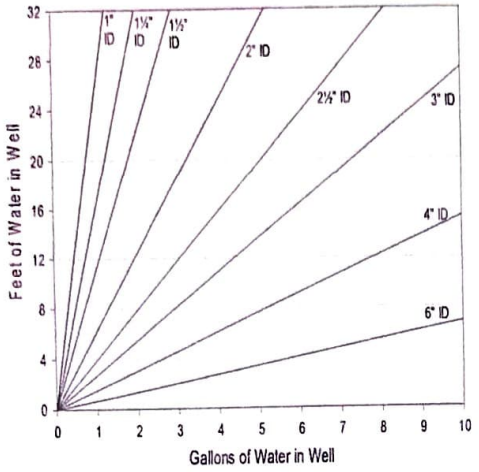


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 0930 | 7.5 | 23.53 | 7.14 | 2.060 | 0.61 | 77.3 | 10.15 | 50 | 0 | Clear / none |
| 0935 | 8 | 23.55 | 7.15 | 2.062 | 0.60 | 75.0 | 10.04 | 50 | 0 | Clear / none |
| 0940 | 8.5 | 23.74 | 7.16 | 2.058 | 0.59 | 65.7 | 9.38 | 50 | 0 | Clear none |
| 0945 | 9 | 23.92 | 7.17 | 2051 | 0.58 | 65.8 | 9.25 | 50 | 0 | Clear none |
| 0950 | 9.5 | 23.98 | 7.17 | 2.049 | 0.56 | 66.0 | 8.79 | 50 | 0 | Clear none |
| 0955 | 10 | 24.27 | 7.17 | 2.046 | 0.52 | 66.2 | 8.15 | 50 | 0 | Clear none |
| 1000 | 10.5 | 24.27 | 7.17 | 2.049 | 0.54 | 64.3 | 8.03 | 50 | 0 | Clear none |
| 1005 | 11 | 24.27 | 7.17 | 2.050 | 0.56 | 63.0 | 7.95 | 50 | 0 | Clear none |

114-MW62C

Well ID: [redacted]

AECOM

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 8/24/20 Time: Start 1130 am/pm
Project No: 60550261. GA.GW.FIELD.RI-field Finish 1300 am/pm
Site Location: PPG Site 114, Jersey City, NJ
Weather Conds: 85° F, Clear Collector: T. Bond

Set @ 73.0

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 74.81 c. Length of Water Column 67.61 (a-b)

b. Water Table Depth 7.20 d. Calculated System Volume (see back) 11.03 g

Casing Diameter/Material 2" PVC

**2. WELL PURGE DATA**

a. Purge Method: low flow bladder

b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600XL | 13047 |
| | LaMotte | 2020we | 22393 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1130 | 0 | 26.80 | 7.47 | 1.442 | 2.20 | 64.9 | 15.70 | 65 | 7.20 | clear | none |
| 1230 | 5 | 24.95 | 6.39 | 2.154 | 0.93 | 102.3 | 3.25 | 65 | 7.20 | clear | none |
| 1235 | 6 | 25.04 | 6.38 | 2.144 | 0.91 | 103.6 | 3.19 | 65 | 7.20 | clear | none |
| 1240 | | 25.24 | 6.38 | 2.146 | 0.89 | 104.3 | 3.12 | 65 | 7.20 | clear | none |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

(continued on back)

If no or N/A - Explain below.

No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: low flow bladder

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW62C-73.0-20200824 | | | | | 1245 |

Comments

Signature T Bond Date 8/24/20

AECOM

Well ID: 114-MW6SC

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries
Project No: 60550261. GA.GW.FIELD.RI-field
Site Location: PPG Site 114, Jersey City, NJ
Weather Conds: Sunny
Date: 8/24/18
Time: Start 0850 am/pm, Finish 1350 am/pm
Collector: A. Bvob

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 66.65 c. Length of Water Column 59.9 (a-b)
   b. Water Table Depth 6.75 d. Calculated System Volume (see back) 9.78 gal
   Casing Diameter/Material 2in PVC

2. **WELL PURGE DATA**
   a. Purge Method: Bladder pump
   b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

   c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 650MDS | 03042 |
| | LaMotte | 2020we | 030364 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0850 | 0 | 24.68 | 8.07 | 1.967 | 4.25 | 53.8 | 11.85 | 100 | 6.75 | green | none |
| 0930 | .5 | 27.91 | 7.97 | 1.987 | 2.22 | 100.5 | 26.0 | 100 | 6.75 | green | none |
| 0935 | 1 | 23.67 | 7.94 | 1.934 | 2.23 | 105.4 | 37.2 | 100 | 6.75 | green | none |
| 0940 | 1.5 | 23.58 | 7.94 | 1.908 | 1.68 | 107.8 | 45.1 | 100 | 6.75 | green | none |
| 0945 | 2 | 23.20 | 7.94 | 1.901 | 1.20 | 110.2 | 53.5 | 100 | 6.75 | green | none |
| 0950 | 2.5 | 23.26 | 7.93 | 1.864 | 0.60 | 114.4 | 58.7 | 100 | 6.75 | green | none |
| 0955 | 3 | 23.22 | 7.93 | 1.839 | 0.33 | 117.0 | 64.8 | 100 | 6.75 | green | none |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: low flow Bladder pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW6SC-62.5-20200824 | | 3 | | | 1350 |

Comments 0855 - lost pressure in pump / no discharge / switched out small master d.c not fix / switch QED did not fix / switch batteries - worked (PINE gave dead Battery / 1010 - DO went negative, took readings up to 1025 / stopped Discharge to recal, failed PI recalled performed factory reset did not work / Rebuild of DO membrane, Discharging while rebuild

Signature [signature] Date 8/24/2020

Rebuild of membrane failed, PINE to replace unit, continue sampling without DO, / lost approximately 1 hour of purge time in total
4 hour limit reached

114-MW65C
Pg 2

## Purge Volume Calculation

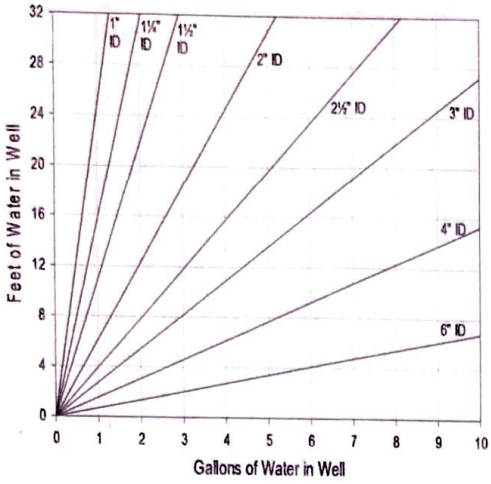


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | 3.5 | 22.41 | 7.93 | 1.820 | 0.15 | 119.7 | 52.8 | 100 | 6.77 | green/none |
| 1005 | 4 | 22.74 | 7.93 | 1.807 | 0.07 | 121.8 | 68.5 | 100 | 6.77 | green/none |
| 1010 | 4.5 | 22.69 | 7.93 | 1.802 | 0.00 | 124.8 | 61.6 | 100 | 6.77 | green |
| 1015 | 5 | 22.50 | 7.92 | 1.779 | / | 130.1 | 50.8 | 100 | 6.77 | green |
| 1020 | 5.5 | 22.47 | 7.92 | 1.763 | / | 133.7 | 52.9 | 100 | 6.77 | green |
| 1025 | 6 | 22.45 | 7.91 | 1.754 | / | 135.2 | 57.8 | 100 | 6.77 | green |
| 1030 | 6.5 | / | / | / | / | / | 36.6 | 100 | 6.77 | green |
| 1100 | 7 | — | — | — | — | — | 29.3 | 100 | 6.77 | green |
| 1105 | 7.5 | / | / | / | / | / | 26.7 | 100 | 6.77 | green |
| 1110 | 8 | / | / | / | / | / | 22.4 | 100 | 6.77 | green |
| 1115 | 8.5 | | | | / | | 22.1 | 100 | 6.77 | green |
| 1120 | 9 | 24.24 | 7.85 | 2.059 | / | -36.4 | 23.5 | 100 | 6.77 | green |
| 1125 | 9.5 | 24.96 | 7.85 | 1.884 | / | -29.1 | 25.3 | 100 | 6.77 | green |
| 1130 | 10 | 24.90 | 7.85 | 1.881 | / | -3.8 | 22.6 | 100 | 6.77 | green |
| 1135 | 10.5 | 24.60 | 7.83 | 1.817 | / | 18.1 | 20.9 | 100 | 6.77 | green |
| 1140 | 11 | 25.27 | 7.83 | 1.780 | / | 28.3 | 23.9 | 100 | 6.77 | green |
| 1145 | 11.5 | 25.07 | 7.84 | 1.788 | / | 38.7 | 20.9 | 100 | 6.77 | green |
| 1150 | 12 | 25.20 | 7.83 | 1.778 | / | 46.7 | 22.5 | 100 | 6.77 | green |
| 1155 | 12.5 | 24.35 | 7.88 | 1.765 | / | 52.0 | 20.8 | 100 | 6.77 | green |
| 1200 | 13 | 24.28 | 7.84 | 1.769 | / | 61.9 | 19.2 | 100 | 6.77 | green |
| 1205 | 13.5 | 24.84 | 7.84 | 1.759 | / | 65.2 | 18.8 | 100 | 6.77 | green |
| 1210 | 14 | 25.63 | 7.85 | 1.752 | / | 69.7 | 19.5 | 100 | 6.77 | green |
| 1215 | 14.5 | 24.00 | 7.85 | 1.772 | / | 72.3 | 20.1 | 100 | 6.77 | green |
| 1220 | 15 | 23.30 | 7.83 | 1.772 | / | 76.2 | 18.8 | 100 | 6.77 | green |
| 1225 | 15.5 | 22.51 | 7.84 | 1.772 | / | 79.8 | 16.9 | 100 | 6.77 | green |
| 1230 | 16 | 22.91 | 7.84 | 1.780 | / | 80.9 | 17.4 | 100 | 6.77 | green |
| 1235 | 16.5 | 22.60 | 7.84 | 1.790 | / | 84.4 | 17.8 | 100 | 6.77 | green |
| 1240 | 17 | 23.10 | 7.83 | 1.790 | / | 85.5 | 16.8 | 100 | 6.77 | green |
| 1245 | 17.5 | 23.05 | 7.88 | 1.778 | / | 87.9 | 15.6 | 100 | 6.77 | green |
| 1250 | 18 | 22.94 | 7.84 | 1.740 | / | 90.4 | 15.4 | 100 | 6.77 | green |
| 1255 | 18.5 | 24.64 | 7.84 | 1.733 | / | 92.1 | 16.3 | 100 | 6.77 | green |

## Purge Volume Calculation

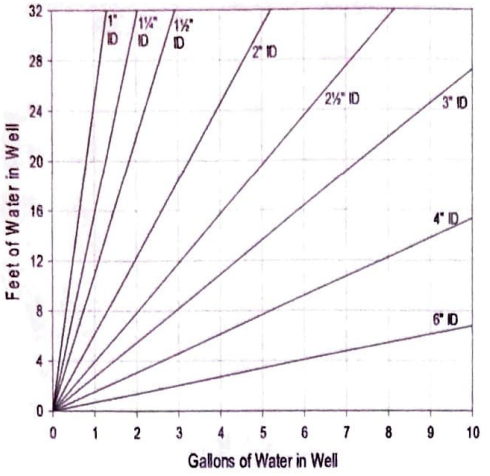


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1300 | 19 | 22.67 | 7.85 | 1.739 | — | 94.7 | 14.9 | 100 | 6.77 | green |
| 1305 | 19.5 | 22.59 | 7.85 | 1.730 | — | 97.3 | 15.2 | 100 | 6.77 | green |
| 1310 | 20 | 22.60 | 7.83 | 1.727 | — | 98.4 | 13.1 | 100 | 6.77 | green |
| 1315 | 20.5 | 22.64 | 7.83 | 1.734 | — | 100.1 | 14.6 | 100 | 6.77 | green |
| 1320 | 21 | 23.24 | 7.84 | 1.737 | — | 102.0 | 14.3 | 100 | 6.77 | green |
| 1325 | 21.5 | 23.82 | 7.83 | 1.725 | — | 103.3 | 11.8 | 100 | 6.77 | green |
| 1330 | 22 | 22.81 | 7.83 | 1.738 | — | 105.1 | 11.9 | 100 | 6.77 | green |
| 1335 | 22.5 | 23.00 | 7.82 | 1.717 | — | 106.9 | 12.9 | 100 | 6.77 | green |
| 1340 | 23 | 23.63 | 7.83 | 1.706 | — | 107.8 | 12.0 | 100 | 6.77 | green |
| 1345 | 23.5 | 23.30 | 7.83 | 1.720 | — | 108.7 | 12.7 | 100 | 6.77 | green |
| 1350 | 24 | 23.91 | 7.83 | 1.722 | — | 109.6 | 11.3 | 100 | 6.77 | green |

AECOM

Well ID: 114-MW53C

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries  Date: 8/25/20  Time: Start 1100 am/pm
Project No: 60550261. GA.GW.FIELD.RI-field  Finish 1330 am/pm
Site Location: PPG Site 114, Jersey City, NJ
Weather Conds: 85°F, clear  Collector: T. Band

Set @47.0

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 48.44  c. Length of Water Column 40.61 (a-b)  Casing Diameter/Material 2" PVC

b. Water Table Depth 7.83  d. Calculated System Volume (see back) 6.63

**2. WELL PURGE DATA**

a. Purge Method: low flow bladder

b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

c. Field Testing Equipment used:

| Make | Model | Serial Number |
|---|---|---|
| YSI | 600XL | 13044 |
| LaMotte | 2020 we | 22393 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1135 | 8 | 20.99 | 7.04 | 2.585 | 1.42 | 129.8 | 6.67 | 100 | 7.83 | green | none |
| 1245 | 15 | 21.20 | 7.02 | 2.485 | 0.95 | 104.9 | 4.23 | 100 | 7.83 | green | none |
| 1250 | 16 | 21.37 | 7.01 | 2.473 | 0.94 | 104.2 | 4.19 | 100 | 7.83 | green | none |
| 1255 | 17 | 21.09 | 7.00 | 2.464 | 0.94 | 104.0 | 4.12 | 100 | 7.83 | green | none |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.

No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: low flow bladder

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW53C-47.0-20200825 | | | | | 1300 |

Comments: Begin Purge @ 11:10
Green water

Signature: T Band  Date: 8/25/20

1 of 1

AECOM

Well ID: 114-MW57C

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 8/25/2020 Time: Start 0915 am/pm
Project No: 60550261. GA.GW.FIELD.RI-field Finish 1145 am/pm
Site Location: PPG Site 114, Jersey City, NJ
Weather Conds: Collector: A. Bush

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 71.99 c. Length of Water Column 64.35 (a-b) Casing Diameter/Material 2in PVC
   b. Water Table Depth 7.64 d. Calculated System Volume (see back) 10.67

2. **WELL PURGE DATA**
   a. Purge Method: Bladder pump
   b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

   c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | Horiba | U-5000 | 43280 |
| | la motte | 2020we | 030364 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0915 | 0 | 26.82 | 7.65 | 0.694 | 0.37 | 73 | 20.1 | 100 | 7.64 | green | ND |
| 0940 | 1 | 25.66 | 8.07 | 1.37 | 0.29 | 19 | 17.4 | 100 | 7.64 | green | ND |
| 0945 | 1.5 | 27.28 | 8.09 | 0.710 | 0.31 | 19 | 16.5 | 100 | 7.64 | green | ND |
| 0950 | 3 | 25.81 | 8.08 | 0.659 | 0.06 | 29 | 14.7 | 100 | 7.64 | green | ND |
| 0955 | 3.5 | 26.09 | 8.07 | 0.680 | 0.28 | 52 | 18.6 | 100 | 7.64 | green | ND |
| 1000 | 4 | 26.09 | 8.08 | 0.682 | 0.12 | 24.9 | 21.3 | 100 | 7.64 | green | ND |
| 1005 | 4.5 | 25.44 | 8.08 | 0.689 | 0.03 | 41 | 16.2 | 100 | 7.64 | green | ND |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: low flow Bladder pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW57C-7020200825 | | 6 | | | 1145 |

Comments: Battery died after start up/did not charge on charger overnight lost 25 minutes of purging// Ending color - pale green

Signature: Date: 8/25/2020

~~#4-57~~
114-MW57C
Pg 2

## Purge Volume Calculation

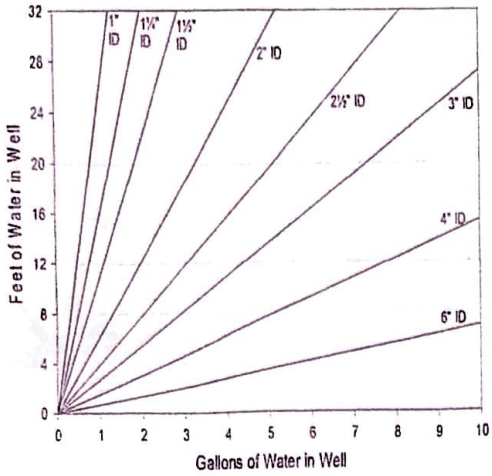


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1010 | 5 | 24.69 | 8.09 | 0.733 | 0.0 | 44 | 18.1 | 100 | 7.64 | green / NO |
| 1015 | 5.5 | 25.63 | 8.09 | 0.751 | 0.73 | 49 | 17.90 | 100 | 7.64 | Very pale green |
| 1020 | 6 | 25.64 | 8.08 | 0.809 | 1.45 | 53 | 16.76 | 100 | 7.64 | Very pale green |
| 1025 | 6.5 | 25.67 | 8.07 | 0.845 | 2.11 | 59 | 16.87 | 100 | 7.64 | Very pale green |
| 1030 | 7 | 23.68 | 8.08 | 1.13 | 2.48 | 52 | 16.91 | 100 | 7.64 | Very pale green |
| 1035 | 7.5 | 25.11 | 8.08 | 1.13 | 1.97 | 55 | 13.94 | 100 | 7.64 | Very pale green |
| 1040 | 8 | 26.90 | 8.06 | 1.20 | 1.94 | 55 | 11.73 | 100 | 7.64 | Very pale green |
| 1045 | 8.5 | 27.21 | 8.06 | 1.19 | 1.81 | 55 | 11.15 | 100 | 7.64 | Very pale green |
| 1050 | 9 | 27.49 | 8.06 | 1.20 | 1.69 | 55 | 12.06 | 100 | 7.64 | Very pale green |
| 1055 | 9.5 | 27.29 | 8.06 | 1.19 | 1.45 | 54 | 11.51 | 100 | 7.64 | Very pale green |
| 1100 | 10 | 27.41 | 8.06 | 1.19 | 1.32 | 54 | 10.97 | 100 | 7.64 | Very pale green |
| 1105 | 10.5 | 27.35 | 8.05 | 1.21 | 1.16 | 53 | 9.48 | 100 | 7.64 | Very pale green |
| 1110 | 11 | 27.54 | 8.05 | 1.21 | 1.07 | 53 | 10.84 | 100 | 7.64 | Very pale green |
| 1115 | 11.5 | 28.37 | 8.05 | 1.22 | 0.88 | 50 | 9.72 | 100 | 7.64 | Very pale green |
| 1120 | 12 | 28.89 | 8.05 | 1.23 | 0.80 | 50 | 9.13 | 100 | 7.64 | pale green |
| 1125 | 12.5 | 29.48 | 8.05 | 1.23 | 0.17 | 49 | 9.09 | 100 | 7.64 | pale green |
| 1130 | 13 | 30.10 | 8.10 | 1.24 | 0.42 | 51 | 9.05 | 100 | 7.64 | pale green |
| 1135 | 13.5 | 30.53 | 8.10 | 1.24 | 0.51 | 51 | 8.7 | 100 | 7.64 | pale green |
| 1140 | 14 | 30.52 | 8.10 | 1.24 | 0.17 | 51 | 7.88 | 100 | 7.64 | pale green |
| 1140 | 14.5 | 31.19 | 8.10 | 1.23 | 0.17 | 50 | 7.67 | 100 | 7.64 | pale green |
| 1145 | 15 | 31.19 | 8.09 | 1.23 | 0.17 | 50 | 8.23 | 100 | 7.64 | pale green |

AECOM

Well ID: MW-61C

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries
Project No: 60550261. GA.GW.FIELD.RI-field
Site Location: PPG Site 114, Jersey City, NJ
Weather Conds: 85°F, Clear
Date: 8/25/2020
Time: Start 0745 am/pm
Finish 0950 am/pm
Collector: T. Bond

Set @ 67.5

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 69.62 c. Length of Water Column 60.15 (a-b)
Casing Diameter/Material 2" PVC
b. Water Table Depth 9.47 d. Calculated System Volume (see back) 9.82 g

**2. WELL PURGE DATA**

a. Purge Method: low flow bladder

b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600XL | 13047 |
| | LaMotte | 2020we | 22393 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0815 | 1 | 19.08 | 6.81 | 1.406 | 1.65 | 138.6 | 23.2 | 100 | 9.47 | green | none |
| 0900 | 10 | 19.09 | 7.07 | 1.510 | 2.74 | 115.8 | 5.62 | 100 | 9.47 | green | none |
| 0905 | 11 | 19.14 | 6.97 | 1.508 | 1.58 | 120.4 | 5.49 | 100 | 9.47 | green | none |
| 0910 | 12 | 19.47 | 6.96 | 1.504 | 1.60 | 120.0 | 5.39 | 100 | 9.47 | green | none |
| 0915 | 13 | 19.58 | 6.94 | 1.510 | 1.64 | 119.3 | 5.26 | 100 | 9.47 | green | none |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

(continued on back)

**3. SAMPLE COLLECTION:** Method: low flow bladder

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| MW-61C-67.5-20200825 | | | | | 0920 |
| MW-61C-67.5-20200825X | | | | | 0921 |

Comments: Begin purge @ 0800
Green Water

Signature: T Bond Date: 8/25/20

AECOM

Well ID: 114-MW40

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 8/26/2020 Time: Start 0805 am/pm
Project No: 60550261. GA.GW.FIELD.RI-field Finish 1135 am/pm
Site Location: PPG Site 114, Jersey City, NJ
Weather Conds: 85°F clear Collector: A. Blob

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 105.5 c. Length of Water Column 99.85 (a-b) Casing Diameter/Material 4in Steel
   b. Water Table Depth 5.65 d. Calculated System Volume (see back) 64.95

2. **WELL PURGE DATA**
   a. Purge Method: Bladder pump
   b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

   c. Field Testing Equipment used:

| Make | Model | Serial Number |
|---|---|---|
| Horiba | U-5000 | 44015 |
| LaMotte | 2020we | 039542 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0805 | 0 | 23.14 | 5.67 | 0.162 | 0.98 | 114 | 11.12 | 100 40 | 5.65 | clear | None |
| 0810 | 0.2 | 23.28 | 6.41 | 0.153 | 0.65 | 85 | 10.70 | 40 | 5.65 | Clear | None |
| 0815 | 0.4 | 23.49 | 7.09 | 0.137 | 0.46 | 58 | 13.34 | 40 | 5.65 | clear | none |
| 0820 | 0.6 | 23.88 | 7.58 | 0.131 | 0.51 | 46 | 12.24 | 40 | 5.65 | clear | none |
| 0825 | 0.8 | 23.88 | 7.94 | 0.127 | 0.55 | 32 | 10.32 | 40 | 5.65 | clear | none |
| 0830 | 1 | 24.23 | 8.15 | 0.124 | 0.48 | 11 | 9.41 | 40 | 5.65 | Clear | none |
| 0835 | 1.2 | 24.56 | 8.34 | 0.120 | 0.36 | 6 | 9.37 | 40 | 5.65 | clear | none |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: low flow Bladder pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW40-100-20200826 | | 3 | | | 0855 |
| 114-MW40-95-20200826 | | 3 | | | 1005 |
| 114-MW40-90-20200826 | | 3 | | | 1055 |
| 114-MW40-85-20200826 | | 3 | | | 1135 |

Comments

Signature [signature] Date 8/26/2020

114-MW4D
Pg 2

## Purge Volume Calculation

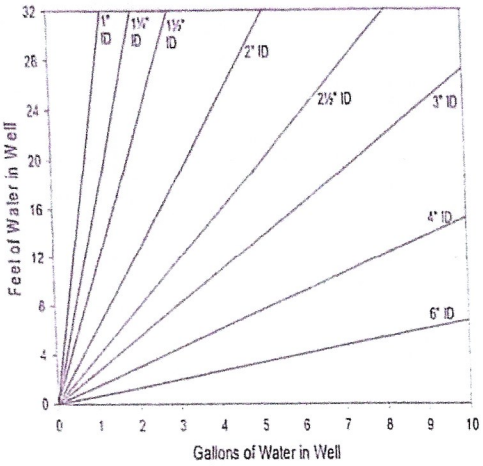


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| | Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0840 | 1.4 | 24.63 | 8.47 | 0.117 | 0.14 | 13 | 9.31 | 40 | 5.65 | clear/None |
| | 0845 | 1.6 | 24.54 | 8.63 | 0.110 | 0.00 | -26 | 9.00 | 40 | 5.65 | |
| | 0850 | 1.8 | 24.46 | 8.66 | 0.109 | 0.00 | -30 | 8.77 | 40 | 5.65 | |
| 100ft sample | 0855 | 2.0 | 24.20 | 8.70 | 0.107 | 0.00 | -36 | 8.32 | 40 | 5.65 | |
| | 0915 | 2.4 | 24.15 | 8.68 | 0.107 | 0.02 | 28 | 8.08 | 40 | 5.65 | |
| | 0920 | 2.6 | 22.95 | 8.75 | 0.106 | 0.00 | -15 | 7.73 | 40 | 5.65 | |
| | 0925 | 2.8 | 23.07 | 8.75 | 0.106 | 0.00 | -20 | 7.59 | 40 | 5.65 | |
| | 0930 | 3 | 22.98 | 8.75 | 0.106 | 7.06 | -28 | 7.03 | 40 | 5.65 | |
| | 0935 | 3.2 | 23.13 | 8.80 | 0.105 | 6.84 | -32 | 7.15 | 40 | 5.65 | |
| | 0940 | 3.4 | 23.07 | 8.80 | 0.105 | 6.81 | -34 | 7.26 | 40 | 5.65 | |
| | 0945 | 3.6 | 23.20 | 8.81 | 0.105 | 6.85 | -34 | 7.43 | 40 | 5.65 | |
| | 0950 | 3.8 | 23.39 | 8.82 | 0.105 | 7.58 | -34 | 8.11 | 40 | 5.65 | |
| | 0955 | 4 | 23.39 | 8.82 | 0.105 | 6.53 | -39 | 8.29 | 40 | 5.65 | |
| | 1000 | 4.2 | 23.36 | 8.82 | 0.105 | 6.29 | -38 | 8.57 | 40 | 5.65 | |
| 95ft sample | 1005 | 4.4 | 23.51 | 8.83 | 0.105 | 6.18 | -37 | 8.73 | 40 | 5.65 | |
| | 1030 | 5.00 | 25.51 | 8.79 | [illegible] | [illegible] | 37 | 7.1 | 40 | 5.89 | |
| | 1035 | 5.2 | 24.41 | 8.83 | 0.105 | 0.00 | -6 | 6.78 | 40 | 5.94 | |
| | 1040 | 5.4 | 23.94 | 8.84 | 0.105 | 7.10 | -19 | 6.93 | 40 | 6.02 | |
| | 1045 | 5.6 | 24.03 | 8.85 | 0.105 | 6.68 | -26 | 6.84 | 40 | 6.09 | |
| | 1050 | 5.8 | 24.00 | 8.86 | 0.105 | 6.67 | -30 | 7.07 | 40 | 6.13 | |
| 90ft sample | 1055 | 9.0 | 24.04 | 8.86 | 0.105 | 6.62 | -30 | 7.30 | 40 | 6.27 | |
| | 1115 | 11.0 | 24.93 | 8.80 | 0.105 | 5.99 | 25 | 7.41 | 40 | 6.41 | |
| | 1120 | 11.2 | 24.92 | 8.82 | 0.105 | 5.84 | 9 | 7.32 | 40 | 6.45 | |
| | 1125 | 11.4 | 25.02 | 8.83 | 0.105 | 5.60 | -9 | 7.09 | 40 | 6.52 | |
| | 1130 | 11.6 | 25.13 | 8.85 | 0.106 | 5.47 | -16 | 6.24 | 40 | 6.73 | |
| | 1135 | 11.8 | 25.42 | 8.85 | 0.106 | 5.22 | -20 | 6.95 | 40 | 6.94 | |

1/34

Well ID: 114-MW6D

AECOM

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries
Date: 8/26/2020
Time: Start 0745 am/pm
Finish 1400 am/pm
Project No: 60550261. GA.GW.FIELD.RI-field
Site Location: PPG Site 114, Jersey City, NJ
Weather Conds: 85°F, Clear
Collector: T. Bond / A. Buob

Set @ 108.5 ✓
103.5 ✓
98.5 ✓
93.5 ✓
88.5 ✓

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 112.20 c. Length of Water Column 111.8 (a-b)

Casing Diameter/Material 4" Steel

b. Water Table Depth 0.4 d. Calculated System Volume (see back) 72.98

**2. WELL PURGE DATA**

a. Purge Method: low flow bladder

b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

c. Field Testing Equipment used:

| Make | Model | Serial Number |
|---|---|---|
| YSI | 600XL | (8/24/20) 3173 |
| LaMotte | 2020we | (8/24/20) 24058/(8/27/20) |
| Horiba | V-5000 | (8/27/20) 43280 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| set @ 108.5 0805 | 0 | 19.27 | 9.60 | 0.493 | 1.35 | -25.0 | 46.6 | 175 | 0.4 | Clear | none |
| 0810 | 0 | 19.26 | 9.61 | 0.505 | 0.71 | -42.1 | 46.5 | 175 | 0.4 | Clear | none |
| 0815 | 0 | 19.21 | 9.61 | 0.516 | 0.52 | -46.2 | 46.5 | 175 | 0.4 | Clear | none |
| 0820 | 0 | 19.25 | 9.61 | 0.518 | 0.47 | -55.0 | 46.4 | 175 | 0.4 | Clear | none |
| 0825 | 0 | 19.26 | 9.61 | 0.520 | 0.41 | -62.0 | 46.1 | 175 | 0.4 | Clear | none |
| 0830 | 1 | 19.30 | 9.61 | 0.521 | 0.37 | -69.9 | 46.0 | 175 | 0.4 | clear | none |
| 0835 | 1 | 19.50 | 9.60 | 0.521 | 0.43 | -44.8 | 46.0 | 175 | 0.4 | Clear | none |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.

No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: low flow bladder

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW6D-108.5-20200826 | | | | | 1200 |
| 114-MW6D-103.5-20200826 | | | | | 1335 |
| 114-MW6D-98.5-20200827 | | | | | 0945 |
| 114-MW6D-93.5-20200827 | | | | | 1050 |

Comments Begin Purge @ 0800/5th Sample 114-MW6D-88.5-20200827 Time 1105
8/27/2020 Start time - 0835 end - 1105

Signature [signature] Date 8/26/20

2/34

## Purge Volume Calculation

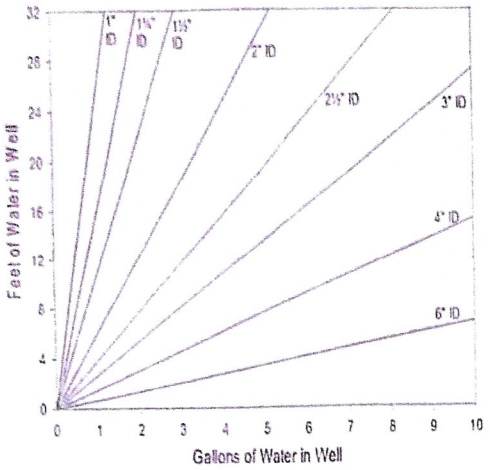


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

114-MW6D

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 0840 | 1 | 20.15 | 9.60 | 0.521 | 0.53 | -56.0 | 45.8 | 175 | 0 | Clear / none |
| 0845 | 1 | 20.16 | 9.60 | 0.521 | 0.51 | -59.5 | 45.4 | 175 | 0 | Clear / none |
| 0850 | 1 | 20.18 | 9.61 | 0.521 | 0.49 | -62.4 | 45.3 | 175 | 0 | Clear / none |
| 0855 | 2 | 20.50 | 9.60 | 0.520 | 0.42 | -56.5 | 45.2 | 175 | 0 | Clear / none |
| 0900 | 2 | 20.62 | 9.60 | 0.519 | 0.38 | -51.7 | 45.1 | 175 | 0 | Clear / none |
| 0905 | 2 | 20.67 | 9.61 | 0.519 | 0.35 | -55.5 | 48.5 | 175 | 0 | Clear / none |
| 0910 | 3 | 20.71 | 9.61 | 0.519 | 0.31 | -59.7 | 46.2 | 175 | 0 | Clear / none |
| 0915 | 3 | 20.84 | 9.61 | 0.518 | 0.29 | -68.5 | 47.5 | 175 | 0 | Clear / none |
| 0920 | 3 | 20.93 | 9.62 | 0.518 | 0.27 | -82.1 | 47.7 | 175 | 0 | Clear / none |
| 0925 | 4 | 20.98 | 9.62 | 0.517 | 0.25 | -65.1 | 47.6 | 175 | 0 | Clear / none |
| 0930 | 4 | 21.18 | 9.62 | 0.515 | 0.21 | -54.3 | 47.1 | 175 | 0 | Clear / none |
| 0935 | 4 | 21.27 | 9.62 | 0.513 | 0.18 | -53.9 | 44.3 | 175 | 0 | Clear / none |
| 0940 | 4 | 21.47 | 9.62 | 0.512 | 0.13 | -53.5 | 46.2 | 175 | 0 | Clear / none |
| 0945 | 5 | 21.61 | 9.61 | 0.512 | 0.13 | -53.1 | 44.1 | 175 | 0 | Clear / none |
| 0950 | 5 | 21.73 | 9.61 | 0.512 | 0.12 | -52.7 | 43.9 | 175 | 0 | Clear / none |
| 0955 | 5 | 21.85 | 9.61 | 0.512 | 0.12 | -52.1 | 43.8 | 175 | 0 | Clear / none |
| 1000 | 5 | 22.02 | 9.61 | 0.512 | 0.12 | -51.3 | 43.9 | 175 | 0 | Clear / none |
| 1005 | 6 | 22.15 | 9.61 | 0.512 | 0.11 | -51.8 | 42.5 | 175 | 0 | Clear / none |
| 1010 | 6 | 22.30 | 9.61 | 0.512 | 0.11 | -52.9 | 41.9 | 175 | 0 | Clear / none |
| 1015 | 6 | 22.45 | 9.61 | 0.512 | 0.10 | -54.2 | 41.4 | 175 | 0 | Clear / none |
| 1020 | 6 | 22.65 | 9.61 | 0.513 | 0.10 | -57.5 | 39.7 | 175 | 0 | Clear / none |
| 1025 | 7 | 22.73 | 9.60 | 0.513 | 0.10 | -61.4 | 39.1 | 175 | 0 | Clear / none |
| 1030 | 7 | 22.94 | 9.60 | 0.514 | 0.10 | -65.8 | 38.5 | 175 | 0 | Clear / none |
| 1035 | 7 | 23.11 | 9.60 | 0.514 | 0.10 | -69.7 | 379 | 175 | 0 | Clear / none |
| 1040 | 7 | 2330 | 9.60 | 0.515 | 0.10 | -75.0 | 37.50 | 175 | 0 | Clear / none |
| 1045 | 8 | 23.47 | 9.59 | 0.515 | 0.09 | -74.7 | 37.55 | 175 | 0 | Clear / none |
| 1050 | 8 | 23.59 | 9.59 | 0.515 | 0.09 | -73.8 | 37.48 | 175 | 0 | Clear / none |
| 1055 | 8 | 2374 | 9.59 | 0.514 | 0.09 | -69.4 | 37.50 | 175 | 0 | Clear / none |
| 1100 | 8 | 23.87 | 9.59 | 0.514 | 0.09 | -67.2 | 37.35 | 175 | 0 | Clear / none |
| 1105 | 9 | 23.94 | 9.59 | 0.514 | 0.08 | -63.7 | 37.31 | 175 | 0 | Clear / none |
| 1110 | 9 | 24.19 | 9.58 | 0.514 | 0.08 | -62.2 | 36.98 | 175 | 0 | Clear / none |

114-MW6D 3/3/4

## Purge Volume Calculation

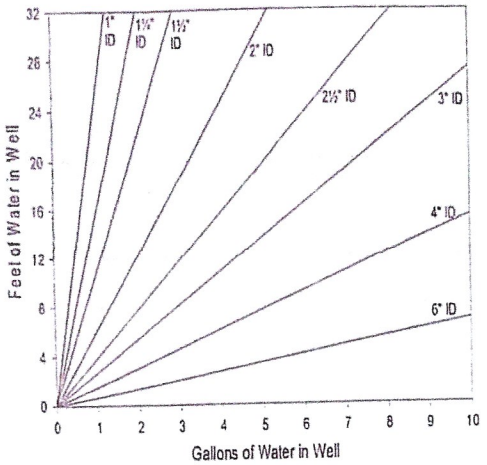


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1115 | 9 | 24.27 | 9.58 | 0.514 | 0.08 | -62.0 | 36.95 | 175 | 0 | Clear / none |
| 1120 | 9 | 24.35 | 9.57 | 0.514 | 0.09 | -60.5 | 37.07 | 175 | 0 | Clear / none |
| 1125 | 10 | 24.48 | 9.57 | 0.515 | 0.09 | -59.4 | 36.85 | 175 | 0 | clear / none |
| 1130 | 10 | 25.07 | 9.56 | 0.515 | 0.09 | -55.1 | 36.91 | 175 | 0 | Clear / none |
| 1135 | 10 | 25.36 | 9.56 | 0.515 | 0.09 | -52.5 | 36.94 | 175 | 0 | Clear / none |
| 1140 | 10 | 25.87 | 9.56 | 0.516 | 0.09 | -51.7 | 36.87 | 175 | 0 | Clear / none |
| 1145 | 11 | 26.25 | 9.55 | 0.515 | 0.10 | -52.5 | 36.84 | 175 | 0 | Clear / none |
| 1150 | 11 | 26.91 | 9.55 | 0.515 | 0.10 | -54.7 | 36.80 | 175 | 0 | Clear / none |
| 1155 | 11 | 27.25 | 9.55 | 0.515 | 0.11 | -55.3 | 36.77 | 175 | 0 | clear / none |
| 1200 | 11 | 27.75 | 9.54 | 0.515 | 0.12 | -56.1 | 36.75 | 175 | 0 | clear / none |
| Sed@108.5 | 0 | 24.18 | 9.55 | 0.514 | 0.09 | -84.0 | 16.8 | 100 | 0 | clear / none |
| 1305 | 0 | 24.94 | 9.55 | 0.514 | 0.06 | -65.6 | 15.9 | 100 | 0 | clear / none |
| 1310 | 0 | 25.05 | 9.54 | 0.514 | 0.06 | -66.8 | 14.7 | 100 | 0 | clear / none |
| 1315 | 0 | 25.03 | 9.54 | 0.515 | 0.05 | -65.5 | 10.08 | 100 | 0 | clear / none |
| 1320 | 1 | 24.44 | 9.54 | 0.513 | 0.05 | -65.5 | 9.94 | 100 | 0 | clear / none |
| 1330 | 1 | 23.83 | 9.56 | 0.514 | 0.6 | -69.1 | 9.91 | 100 | 0 | Clear / none |
| 8/27/2020 0835 | 0 | 21.04 | 6.84 | 0.106 | 0.0 | 73 | 6.15 | | 2.86 | Clear / None |
| 0840 | 1 | 20.73 | 7.76 | 0.109 | 0.8 | 24 | 6.23 | | 2.86 | Clear / None |
| 0845 | 2 | 20.20 | 8.44 | 0.109 | 0.7 | -26 | 6.35 | | 3.05 | |
| 0850 | 3 | 20.81 | 8.68 | 0.109 | 1.0 | -51 | 6.73 | | 3.17 | |
| 0855 | 4 | 20.92 | 8.78 | 0.109 | 0.8 | -67 | 6.31 | | 3.25 | |
| 0900 | 4 | 21.02 | 8.84 | 0.109 | 1.2 | -72 | 6.45 | | 3.25 | |
| 0905 | 4 | 21.07 | 8.87 | 0.109 | 1.9 | -75 | 6.61 | | 3.31 | |
| 0910 | 4.25 | 21.27 | 8.91 | 0.109 | 3.1 | -79 | 6.57 | | 3.34 | |
| 0915 | 4.75 | 21.22 | 8.92 | 0.108 | 3.4 | -79 | 8.53 | | 3.37 | |
| 0920 | 5 | 21.25 | 8.93 | 0.108 | 4.0 | -81 | 8.64 | | 3.51 | |
| 0925 | 5.5 | 21.65 | 8.96 | 0.109 | 0.00 | -77 | 8.64 | | 3.58 | |
| 0930 | 6.0 | 21.83 | 8.96 | 0.109 | 0.00 | -77 | 8.66 | | 3.60 | |
| 0935 | 6.25 | 22.62 | 8.98 | 0.110 | 0.00 | -70 | 8.05 | | 3.63 | |
| 0940 | 6.5 | 22.77 | 8.97 | 0.110 | 0.00 | -72 | 7.32 | | 3.65 | |
| 98 Sft sample 0945 | 6.75 | 23.06 | 9.00 | 0.110 | 0.00 | -71 | 7.21 | | 3.72 | |

114-MW6D
4/4

## Purge Volume Calculation

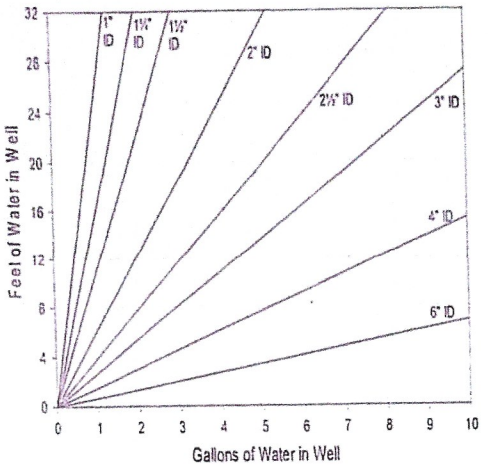


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1015 | 7.0 | 23.91 | 8.98 | 0.111 ✓ | 0.11 | -49 ✓ | 7.19 | ~~0.42~~ | 3.95 | Clear None |
| 1020 | 7.5 | 22.68 | 9.01 ✓ | 0.111 ✓ | 0.00 ✓ | -73 ✓ | 7.01 | ~~7.07~~ | 4.05 | |
| 1025 | 8 | 22.78 | 9.01 ✓ | 0.110 ✓ | 0.00 ✓ | -76 | 6.47 | | 4.07 | |
| 1030 | 8.5 | 23.06 | 9.00 ✓ | 0.109 ✓ | 0.00 ✓ | -77 ✓ | 5.71 | 3.1 | 4.15 | |
| 1035 | 9.0 | 24.03 | 9.02 | 0.109 ✓ | 0.00 | -57 | 6.11 | | 3.41 | |
| 1040 | 9.5 | 23.84 | 9.01 ✓ | 0.109 ✓ | 0.00 | -68 ✓ | 6.21 ✓ | | 4.48 | |
| 1100 | 10 | 23.62 | 9.01 ✓ | 0.109 ✓ | 0.00 ✓ | -75 ✓ | 6.02 ✓ | | 4.54 | |
| 1105 | 11.0 | 23.35 | 8.98 ✓ | 0.106 ✓ | 0.00 ✓ | -78 ✓ | 5.01 ✓ | | 4.63 | |

13.5 Sample

18.5 Sample

AECOM

Well ID: 114-MW54C

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 8/27/20 Time: Start 0740 am/pm
Project No: 60550261. GA.GW.FIELD.RI-field Finish 1015 am/pm
Site Location: PPG Site 114, Jersey City, NJ
Weather Conds: 80°F, Rain Collector: T. Bond

Set @76.5

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 79.17 c. Length of Water Column 72.87 (a-b) Casing Diameter/Material 2" PVC

b. Water Table Depth 6.30 d. Calculated System Volume (see back) 11.89

**2. WELL PURGE DATA**

a. Purge Method: low flow bladder

b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

c. Field Testing Equipment used:

| Make | Model | Serial Number |
|---|---|---|
| YSI | 600XL | 3173 |
| LaMotte | 2020 we | 24058 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0800 | 0 | 15.56 | 8.24 | 1.662 | 1.90 | -76.0 | 31.5 | 200 | 6.30 | Cloudy | none |
| 0850 | 1 | 15.32 | 8.08 | 1.664 | 0.63 | -107.2 | 7.97 | 200 | 6.30 | Clear | none |
| 0855 | 2 | 15.35 | 8.08 | 1.662 | 0.52 | -112.9 | 7.81 | 200 | 6.30 | Clear | none |
| 0900 | 3 | 15.41 | 8.08 | 1.657 | 0.64 | -63.3 | 7.54 | 200 | 6.30 | Clear | none |
| 0905 | 4 | 15.40 | 8.08 | 1.654 | 0.65 | -117.0 | 7.23 | 200 | 6.30 | Clear | none |
| 0910 | 5 | 15.41 | 8.09 | 1.652 | 0.60 | -116.1 | 7.17 | 200 | 6.30 | Clear | none |
| 0915 | 6 | 15.47 | 8.09 | 1.651 | 0.53 | -113.6 | 7.11 | 200 | 6.30 | Clear | none |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.

No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: low flow bladder

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW54C-76.5-20200827 | | | | | 0925 |

Comments Collected additional volume for MS/MSD

Signature T Bond Date 8/27/20

114-MW54C

## Purge Volume Calculation

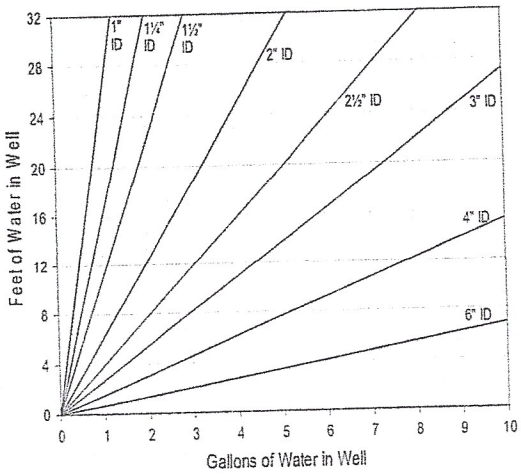


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 0920 | 7 | 15.43 | 8.09 | 1.650 | 0.51 | -115.7 | 7.01 | 200 | 0 | Clear / none |
| 0925 | Sample | | | | | | | | | |

AECOM

Well ID: 114-MW63C

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries
Project No: 60550261. GA.GW.FIELD.RI-field
Site Location: PPG Site 114, Jersey City, NJ
Weather Conds: 85°F, Clear
Date: 8/27/20
Time: Start 1050 am/pm
Finish 1330 am/pm
Collector: T. Bond

Set @ 67.0

1. **WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 70.17 c. Length of Water Column 59.12 (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 11.05 d. Calculated System Volume (see back) 9.65 g

2. **WELL PURGE DATA**

a. Purge Method: low flow bladder

b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

c. Field Testing Equipment used:

| Make | Model | Serial Number |
|---|---|---|
| YSI | 600XL | 3173 |
| LaMotte | 2020we | 24058 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1245 | 5 | 27.21 | 12.28 | 11.03 | 0.65 | -54.5 | 3.49 | 100 | 11.05 | Clear | none |
| 1250 | 5 | 25.95 | 12.33 | 11.09 | 0.58 | -58.0 | 0.47 | 100 | 11.05 | Clear | none |
| 1255 | 5 | 26.58 | 12.31 | 11.00 | 0.56 | -70.7 | 0.48 | 100 | 11.05 | Clear | none |
| 1300 | 6 | 27.47 | 12.28 | 10.98 | 0.54 | -69.3 | 0.46 | 100 | 11.05 | Clear | none |
| 1305 | 6 | 27.50 | 12.26 | 10.98 | 0.53 | -68.5 | 0.49 | 100 | 11.05 | Clear | none |
| 1310 | 6 | 27.90 | 12.25 | 10.98 | 0.53 | -67.7 | 0.53 | 100 | 11.05 | Clear | none |
| 1315 | Sample | | | | | | | | | | |

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

(continued on back)

If no or N/A - Explain below.

No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: low flow bladder

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW63C-67.0-20200827 | | | | | 1315 |

Comments: Begin purge @ 11:00

Signature: T Bond Date: 8/27/20

AECOM

Well ID: 114-MW51C

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries
Project No: 60550261. GA.GW.FIELD.RI-field
Site Location: PPG Site 114, Jersey City, NJ
Weather Conds: 85°F, Clear
Date: 8/28/2020
Time: Start 0740 am/pm
Finish 1330 am/pm
Collector: T. Bond

Set @ 76.0

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 78.29 c. Length of Water Column 70.53 (a-b)

b. Water Table Depth 7.76 d. Calculated System Volume (see back) 11.51

Casing Diameter/Material 2" PVC

**2. WELL PURGE DATA**

a. Purge Method: low flow bladder

b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

c. Field Testing Equipment used:

| Make | Model | Serial Number |
|---|---|---|
| YSI | 600 XL | 3173 |
| LaMotte | LaMotte 2020we | 24058 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0955 | 15 | 20.10 | 8.06 | 0.997 | 8.32 | -10.9 | 14.1 | 150 | 7.76 | Clear | none |
| 1000 | 16 | 19.54 | 8.06 | 0.985 | 8.94 | -8.4 | 18.5 | 150 | 7.76 | Clear | none |
| 1005 | 17 | 18.69 | 8.05 | 0.970 | 9.55 | -6.5 | 17.4 | 150 | 7.76 | Clear | none |
| 1010 | 18 | 18.45 | 8.05 | 0.969 | 9.98 | -6.3 | 19.8 | 150 | 7.76 | Clear | none |
| 1015 | 19 | 18.34 | 8.05 | 0.968 | 10.68 | -6.2 | 23.1 | 150 | 7.76 | Clear | none |
| 1020 | 20 | 18.27 | 8.06 | 0.965 | 11.51 | -7.1 | 20.5 | 150 | 7.76 | Clear | None |
| 1025 | 21 | 18.23 | 8.07 | 0.964 | 12.33 | -10.1 | 21.8 | 150 | 7.76 | Clear | none |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.

No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: low flow bladder

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW51C-76.0-20200828 | | | | | 1105 |

Comments: Begin purge @ 0800

Signature: T Bond Date: 8/28/20

## Purge Volume Calculation

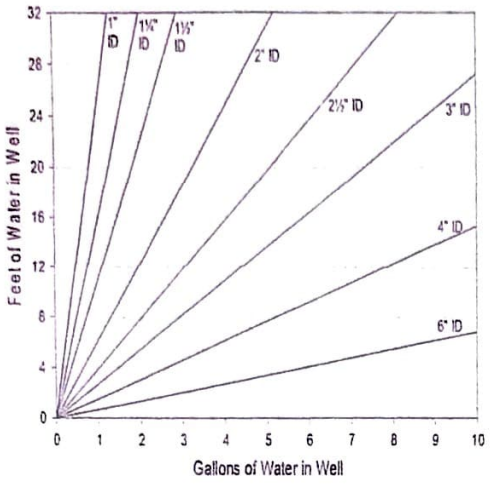


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

114-MW51C

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1030 | 22 | 18.35 | 8.06 | 0.964 | 11.45 | -8.7 | 19.5 | 150 | 0 | Clear/none |
| 1035 | 23 | 18.47 | 8.06 | 0.961 | 10.11 | -6.5 | 24.8 | 150 | 0 | Clear/none |
| 1040 | 24 | 18.53 | 8.06 | 0.960 | 9.87 | -5.1 | 23.5 | 150 | 0 | Clear/none |
| 1045 | 25 | 18.71 | 8.06 | 0.957 | 9.82 | -4.8 | 24.1 | 150 | 0 | Clear/none |
| 1050 | 26 | 18.85 | 8.07 | 0.957 | 9.80 | -4.5 | 21.5 | 150 | 0 | Clear/none |
| 1055 | 27 | 18.90 | 8.07 | 0.958 | 9.64 | -4.4 | 19.4 | 150 | 0 | Clear/none |
| 1100 | 28 | 18.94 | 8.07 | 0.958 | 9.58 | -4.3 | 18.7 | 150 | 0 | Clear/none |

AECOM

Well ID: 114-MW60C

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries
Project No: 60550261. GA.GW.FIELD.RI-field
Site Location: PPG Site 114, Jersey City, NJ
Weather Conds: 85of clear
Date: 8/28/2020 Time: Start 0850 am/pm Finish 1035 am/pm
Collector: A. Bush

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 123.24 c. Length of Water Column 115.64 (a-b)
   b. Water Table Depth 7.65 d. Calculated System Volume (see back) 18.87
   Casing Diameter/Material 2in PVC

2. **WELL PURGE DATA**
   a. Purge Method: Bladder pump
   b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

   c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | Horiba | U-5000 | 43280 |
| | LaMotte | 2020we | 039542 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0850 | 0 | 24.13 | 6.69 | 0.299 | 6.32 | 111 | 11.4 | | 7.65 | clear | none |
| 0855 | 0 | 24.30 | 7.61 | 0.329 | 4.72 | 77 | 12.5 | | 7.65 | clear | none |
| 0900 | | 24.54 | 7.88 | 0.368 | 4.42 | -2 | 13.9 | | 7.65 | clear | |
| 0930 | | 25.40 | 7.80 | 0.393 | 4.09 | -52 | 12.7 | | | clear | none |
| 0935 | | 27.70 | 7.98 | 0.530 | 3.72 | -147 | 18.6 | | 7.64 | clear | none |
| 0940 | | 26.55 | 7.98 | 0.541 | 3.16 | -137 | 15.6 | | 7.61 | clear | none |
| 0945 | | 25.95 | 7.81 | 0.549 | 6.81 | -144 | 12.5 | | 7.61 | clear | none |

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

(continued on back)

3. **SAMPLE COLLECTION:** Method: low-flow Bladder pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW60C-121-20200828 | | 3 | | | 1035 |
| 114-MW60C-121-20200428X | | 3 | | | 1036 |

Comments lost Discharge at 0910 restarted flow at 0930

Signature [signature] Date 8/28/2020

## Purge Volume Calculation

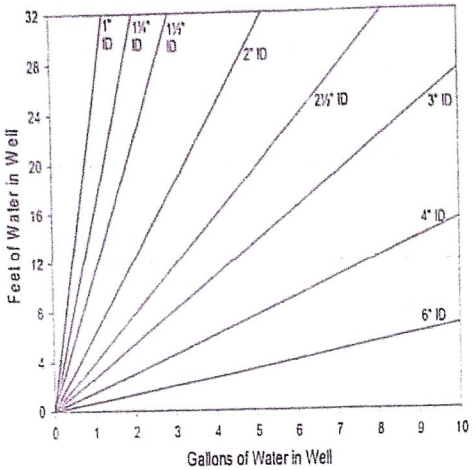


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 0955 | | 25.96 | 7.73 | 0.541 | 6.56 | -142 | 12.2 | | 7.61 | Clear |
| 1000 | | 26.06 | 7.63 | 0.544 | 6.25 | -145 | 13.7 | | 7.61 | |
| 1005 | | 26.10 | 7.21 | 0.545 | 7.84 | -84 | 13.7 | | 7.69 | |
| 1010 | | 25.92 | 7.66 | 0.547 ✓ | 5.98 ✓ | -153 ✓ | 13.7 | | 7.73 | |
| 1015 | | 25.37 | 7.77 | 0.552 ✓ | 6.09 ✓ | -153 ✓ | 10.07 | | 7.68 | |
| 1020 | | 25.14 ✓ | 7.73 | 0.556 ✓ | 6.03 ✓ | -153 ✓ | 6.66 ✓ | | 7.61 | |
| 1025 | | 24.95 ✓ | 7.59 ✓ | 0.565 ✓ | 5.81 ✓ | -142 ✓ | 7.41 ✓ | | 7.61 | |
| 1030 | | 25.06 ✓ | 7.59 ✓ | 0.568 ✓ | 5.64 ✓ | -138 ✓ | 6.2 ✓ | | 7.61 | |
| 1035 | 4.7 | 25.57 ✓ | 7.50 ✓ | 0.574 ✓ | 5.64 ✓ | -138 ✓ | 6.0 ✓ | | 7.61 | |

AECOM

Well ID: 114-MW-7D

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries
Project No: 60550261. GA.GW.FIELD.RI-field
Site Location: PPG Site 114, Jersey City, NJ
Weather Conds: 85°F, Cloudy
Date: 8/31/20
Time: Start 1215 am/pm
Finish 1645 am/pm
Collector: T. Bonel

Set @ 87.5

1. **WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 85.46 c. Length of Water Column 80.49 (a-b)

Casing Diameter/Material 2" PVC

b. Water Table Depth 4.97 d. Calculated System Volume (see back) 13.13 g

2. **WELL PURGE DATA**

a. Purge Method: low flow bladder (mini)

b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ±0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

c. Field Testing Equipment used:

| Make | Model | Serial Number |
|---|---|---|
| YSI | 600XL | 3173 |
| LaMotte | 2020we | 24058 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1400 | 10 | 20.70 | 7.36 | 2.325 | 0.34 | -180.3 | 13.8 | 100 | 4.97 | 15 green tint | none |
| 1415 | 12 | 20.96 | 7.46 | 2.324 | 0.45 | -186.0 | 28.5 | 100 | 4.97 | | none |
| 1430 | 14 | 20.86 | 7.47 | 2.324 | 0.39 | -190.5 | 27.2 | 100 | 4.97 | | none |
| 1500 | 16 | 20.52 | 7.52 | 2.328 | 0.17 | -208.2 | 25.3 | 100 | 4.97 | | none |
| 1520 | 18 | 19.85 | 7.51 | 2.522 | 0.15 | -205.0 | 28.5 | 100 | 4.97 | | none |
| 1530 | 20 | 19.65 | 7.50 | 2.318 | 0.13 | -188.6 | 34.2 | 100 | 4.97 | | none |
| 1600 | 22 | 19.85 | 7.51 | 2.321 | 0.13 | -201.4 | 29.9 | 100 | 4.97 | | none |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.

No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: low flow bladder (mini).

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW-7D-87.5-20200831 | | | | | 1630 |

Comments: ~~Begin~~ purge @ 1230. Mini bladder used due to bend in pipe @ ~10 ft bTOIC.

Signature: T Bonel Date: 8/31/20

## Purge Volume Calculation

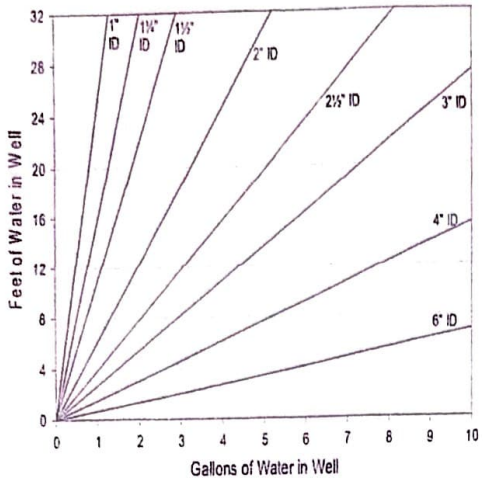


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

114-MW7D

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor (green tint (TB)) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1610 | 24 | 19.53 | 7.50 | 2.320 | 0.13 | -200.6 | 29.74 | 100 | 0 | [redacted] / none |
| 1615 | 25 | 19.46 | 7.49 | 2.318 | 0.13 | -191.3 | 28.40 | 100 | 0 | [redacted] / none |
| 1620 | 26 | 20.42 | 7.46 | 2.316 | 0.12 | -170.6 | 28.59 | 100 | 0 | green tint / none |
| 1625 | 27 | 20.45 | 7.46 | 2.319 | 0.12 | -173.4 | 27.91 | 100 | 0 | green tint / none |
| 1630 | 28 | 20.49 | 7.46 | 2.322 | 0.12 | -175.7 | 27.74 | 100 | 0 | green tint / none |

AECOM

Well ID: 114-MW58C

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries
Project No: 60550261. GA.GW.FIELD.RI-field
Site Location: PPG Site 114, Jersey City, NJ
Weather Conds: 85°F, Cloudy
Date: 8/31/2020 Time: Start 0740 am/pm
Finish 1215 am/pm
Collector: T. Bond

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 78.33 c. Length of Water Column 71.29 (a-b)
   b. Water Table Depth 7.04 d. Calculated System Volume (see back) 11.63 g
   Casing Diameter/Material 2" PVC

2. **WELL PURGE DATA**
   a. Purge Method: low flow bladder

   b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

   c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600XC | 3173 |
| | LaMotte | 2020we | 24038 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0900 | 4 | 17.38 | 7.71 | 1.991 | 0.42 | -92.6 | 41.9 | 150 | 7.04 | brown | none |
| 0930 | 6 | 17.38 | 7.57 | 1.910 | 0.32 | -100.6 | 34.6 | 150 | 7.04 | cloudy | none |
| 1000 | 8 | 17.51 | 7.56 | 1.866 | 0.28 | -111.4 | 31.4 | 150 | 7.04 | cloudy | none |
| 1030 | 10 | 18.52 | 7.50 | 1.838 | 0.25 | -122.1 | 29.8 | 150 | 7.04 | Cloudy | none |
| 1100 | 12 | 18.66 | 7.44 | 1.823 | 0.22 | -132.3 | 27.0 | 150 | 7.04 | Clear | none |
| 1130 | 15 | 18.85 | 7.36 | 1.807 | 0.18 | -122.9 | 26.4 | 150 | 7.04 | Clear | none |
| 1200 | 18 | 18.91 | 7.31 | 1.815 | 0.16 | -120.7 | 26.1 | 150 | 7.04 | Clear | none |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☑ | ☐ |
| Have parameters stabilized | ☑ | ☑ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: low flow bladder

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW58C-76.0-20200831 | | | | | 1200 |

Comments: Begin Purge @ 0800
Sample collected at 1200 after 4 hours

Signature: T Bond Date: 8/31/2020

AECOM

Well ID: 114-MW55C

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries
Project No: 60550261. GA.GW.FIELD.RI-field
Site Location: PPG Site 114, Jersey City, NJ
Weather Conds: 80°F, Cloudy
Date: 9/1/2020
Time: Start 0740 am/pm
Finish 1330 am/pm
Collector: T. Bond

Set @70.5

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 70.85 c. Length of Water Column 64.66 (a-b) 10.55 g
   b. Water Table Depth 6.19 d. Calculated System Volume (see back)
   Casing Diameter/Material 2" PVC

2. **WELL PURGE DATA**
   a. Purge Method: low flow bladder
   b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

   c. Field Testing Equipment used:

| Make | Model | Serial Number |
|---|---|---|
| YSI | 600 XL | 3175 |
| LaMotte | 2020 we | 24058 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0750 | 0 | 18.75 | 8.33 | 0.832 | 3.55 | -64.1 | 34.6 | 150 | 6.19 | Clear | none |
| 0900 | | 20.17 | 8.34 | 0.787 | 1.35 | -131.8 | 101.0 | 150 | 6.19 | Clear | none |
| 1000 | | 21.68 | 8.29 | 0.792 | 1.18 | -132.8 | 30.8 | 150 | 6.19 | Clear | none |
| 1245 | | 19.50 | 6.32 | 0.1803 | 7.60 | -23.9 | 28.7 | 150 | 6.19 | | |
| 1250 | | 19.05 | 8.3 | 0.798 | 10.27 | -32.0 | 19.0 | 150 | 6.19 | | |
| 1255 | | 19.94 | 8.37 | 0.796 | 11.41 | -37.8 | | 150 | 6.19 | | |
| 1300 | | 19.88 | 8.38 | 0.797 | 11.19 | -42.4 | | 150 | 6.19 | | |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: low flow bladder

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW55C-70.5-20200901 | | | | | |

Comments Begin purge @ 0750 / lost power at 1000 / Restarted at 1245

Signature T Bond Date 9/1/2020

## Purge Volume Calculation

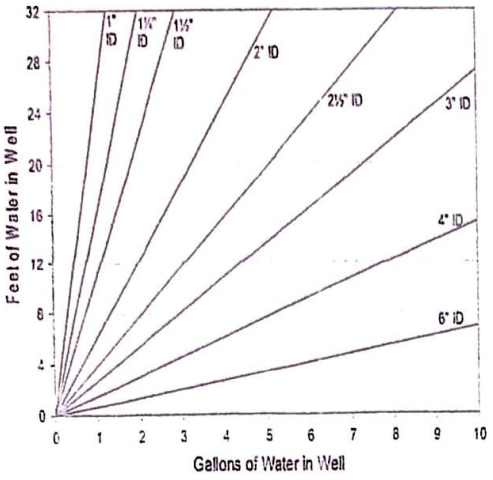


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1305 | | 18.87 | 8.40 | 0.796 | 11.41 | -49.2 | 12.2 | 150 | 6.19 | clear none |
| 1310 | | 19.01 | 8.41 | 0.796 | 11.00 | -61.0 | 9.31 | 150 | 6.19 | clear none |
| 1315 | | 19.51 | 8.41 | 0.797 | 11.37 | -49.9 | 7.34 | 150 | 6.19 | clear none |
| 1320 | | 19.51 | 8.42 | 0.798 | 11.36 | -55.3 | 6.47 | 150 | 6.19 | clear |

AECOM

Well ID: 114-MW6C

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 9/1/2020 Time: Start 0815 am/pm
Project No: 60550261. GA.GW.FIELD.RI-field Finish 1215 am/pm
Site Location: PPG Site 114, Jersey City, NJ
Weather Conds: overcast Collector: A. Burb

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 97.79 c. Length of Water Column 90.78 (a-b) Casing Diameter/Material 2in PVC
   b. Water Table Depth 7.01 d. Calculated System Volume (see back) 14.92

2. **WELL PURGE DATA**
   a. Purge Method: Bladder pump
   b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

   c. Field Testing Equipment used:

| Make | Model | Serial Number |
|---|---|---|
| Horiba | U-5000 | 14790 |
| LaMotte | 2020we | 039542 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0815 | 0 | 21.03 | 7.02 | 0.749 | 0.68 | 60 | 220 | | 7.01 | clear | none |
| 0820 | 1.0 | 20.22 | 7.5 | 0.763 | 0.48 | -13 | 37.9 | | 7.11 | clear | none |
| 0825 | 1.5 | 19.79 | 8.11 | 0.777 | 0.00 | -114 | 54.8 | | 7.17 | clear | none |
| 0830 | 2 | 19.28 | 8.19 | 0.776 | 0.00 | -126 | 59.2 | | 7.19 | foggy | none |
| 0835 | 2.5 | 19.16 | 8.25 | 0.776 | 0.00 | -134 | 64.5 | | 7.22 | foggy | none |
| 0840 | 3.0 | 19.09 | 8.31 | 0.773 | 0.00 | -137 | 79.9 | | 7.22 | foggy | clear |
| 0845 | 4.0 | 18.84 | 8.34 | 0.769 | 0.00 | -141 | 96.9 | | 7.[illegible] | | |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: low flow Bladder pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW6C-9&S-20200901 | | 3 | | | 1215 |

Comments

Signature [signature] Date 9/1/2020

## Purge Volume Calculation

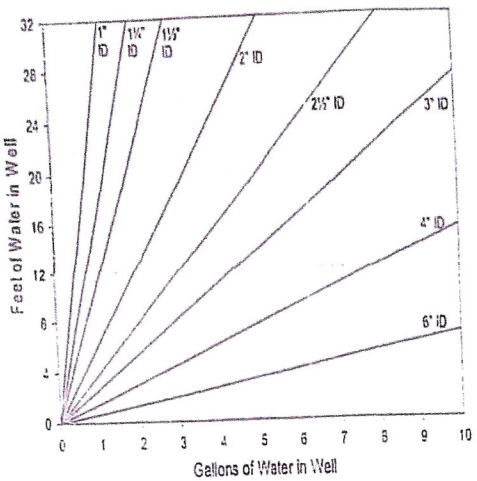


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 0850 | 4.25 | 19,42 | 8.36 | 0.764 | 0.00 | -140 | 103.6 | 100 | 7.10 | foggy/slight |
| 0855 | 4.5 | 19.53 | 8.36 | 0.763 | 0.00 | -139 | 97.4 | | 7.10 | |
| 0900 | 4.75 | 19.54 | 8.37 | 0.761 | 0.00 | -137 | 91.7 | | 7.11 | |
| 0905 | 5 | 19.53 | 8.39 | 0.760 | 0.00 | -137 | 89.4 | | 7.12 | |
| 0910 | 5.25 | 19.54 | 8.39 | 0.760 | 0.00 | -137 | 86.16 | | 7.12 | |
| 0915 | 5.5 | 19.56 | 8.39 | 0.760 | 0.18 | -136 | 81.8 | | 7.12 | |
| 0920 | 5.75 | 19.58 | 8.40 | 0.758 | 0.00 | -137 | 79.3 | | 7.12 | |
| 0925 | 6 | 19.56 | 8.40 | 0.758 | 0.00 | -137 | 78.1 | | 7.12 | |
| 0930 | 6.25 | 19.69 | 8.40 | 0.752 | 0.00 | -136 | 73.1 | | 7.12 | |
| 0935 | 6.75 | 19.72 | 8.40 | 0.757 | 0.00 | -137 | 65.7 | | 7.12 | |
| 0940 | 7.5 | 19.91 | 8.40 | 0.756 | 0.00 | -136 | 52.2 | | 7.12 | |
| 0945 | 8.0 | 20.21 | 8.40 | 0.756 | 0.00 | -136 | 52.1 | | 7.12 | |
| 0950 | | 20.2 | 8.40 | 0.757 | 0.00 | -136 | 52.2 | | 7.12 | |
| 0955 | | 20.26 | 8.40 | 0.755 | 0.00 | -137 | 52.1 | | 7.12 | |
| 1000 | 9.0 | 20.91 | 8.41 | 0.756 | 0.00 | -137 | 47.3 | | 7.12 | |
| 1005 | 9.5 | 20.97 | 8.40 | 0.754 | 0.00 | -138 | 38.8 | | 7.12 | |
| 1010 | 10 | 20.94 | 8.40 | 0.756 | 0.00 | -137 | 36.5 | | 7.12 | |
| 1015 | | 21.22 | 8.39 | 0.756 | 0.34 | -140 | 36.1 | | 7.12 | |
| 1020 | | 21.54 | 8.40 | 0.753 | 0.04 | -139 | 35.7 | | 7.12 | |
| 1025 | 11.25 | 21.87 | 8.40 | 0.753 | 0.02 | -140 | 35.5 | | 7.12 | |
| 1030 | | 22.40 | 8.39 | 0.752 | 0.03 | -140 | 33.2 | | 7.12 | |
| 1035 | | 22.10 | 8.39 | 0.749 | 0.01 | -141 | 30.9 | | 7.12 | |
| 1040 | | 22.18 | 8.39 | 0.743 | 0.02 | -142 | 30.2 | | 7.12 | |
| 1045 | | 21.91 | 8.39 | 0.750 | 0.00 | -145 | 28.7 | | 7.12 | |
| 1050 | 14 | 21.80 | 8.39 | 0.749 | 0.00 | -146 | 27.2 | | 7.12 | |
| 1055 | | 21.69 | 8.39 | 0.740 | 0.00 | -145 | 26.8 | | 7.12 | |
| 1100 | 14.75 | 21.82 | 8.39 | 0.751 | 0.00 | -146 | 27.0 | | 7.12 | |
| 1105 | 15 | 21.55 | 8.38 | 0.755 | 0.06 | -146 | 27.2 | | 7.12 | |
| 1110 | | 21.54 | 8.39 | 0.752 | 0.00 | -146 | 25.9 | | 7.12 | |
| 1115 | 16 | 21.34 | 8.38 | 0.744 | 0.00 | -144 | 24.6 | | 7.12 | |
| 1120 | | 21.19 | 8.38 | 0.750 | 0.00 | -145 | | | 7.12 | |

## Purge Volume Calculation

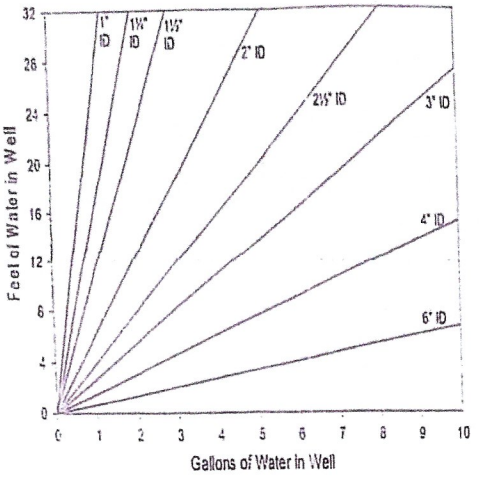


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1125 | 16.25 | 20.80 | 8.38 | 0.752 | 0.00 | -146 | 23.4 | | 7.12 | |
| 1130 | | 20.65 | 8.37 | 0.751 | 0.00 | -146 | 21.7 | | 7.12 | |
| 1135 | 17.0 | 20.51 | 8.37 | 0.753 | 0.00 | -147 | 19.1 | | 7.12 | Clear/non. |
| 1140 | | 20.97 | 8.37 | 0.746 | 0.00 | -150 | 16.1 | | 7.12 | |
| 1145 | | 20.75 | 8.37 | 0.745 | 0.00 | -150 | 20.3 | | 7.12 | Clear/Non. |
| 1150 | 18.0 | 19.96 | 8.37 | 0.755 | 0.00 | -151 | 27.2 | | 7.12 | |
| 1155 | 18.5 | 19.73 | 8.36 | 0.754 | 0.00 | -148 | 23.4 | | 7.12 | |
| 1200 | | 19.73 | 8.37 | 0.754 | 0.62 | -146 | 19.1 | | 7.12 | |
| 1205 | 19.0 | 19.73 | 8.36 | 0.754 | 0.54 | -136 | 17.6 | | 7.12 | |
| 1210 | | 19.63 | 8.36 | 0.755 | 0.47 | -145 | 15.7 | | 7.12 | |
| 1215 | | 19.84 | 8.35 | 0.751 | 0.42 | -145 | 14.0 | | 7.12 | |

AECOM

Well ID: 114-MW59C

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries
Date: 9/2/2020
Time: Start 0815 am/pm
Finish 1215 am/pm
Project No: 60550261. GA.GW.FIELD.RI-field
Site Location: PPG Site 114, Jersey City, NJ
Weather Conds: rain
Collector: A. Buob

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 94.29 c. Length of Water Column 86.28 (a-b)
   Casing Diameter/Material 2in PVC
   b. Water Table Depth 8.01 d. Calculated System Volume (see back) 14.08

2. **WELL PURGE DATA**
   a. Purge Method: Bladder Pump

   b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

   c. Field Testing Equipment used:

| Make | Model | Serial Number |
|---|---|---|
| Horiba | V-5000 | 14790 |
| LaMotte | 2020we | 039542 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0815 | 0 | 20.77 | 6.62 | 0.364 | 2.08 | 105 | 49.6 | 135 | 8.01 | Clear | None |
| 0820 | .5 | 20.16 | 7.56 | 0.343 | 0.26 | -24 | 37.7 | 135 | 8.01 | Clear | None |
| 0825 | 1 | 19.82 | 8.04 | 0.337 | 0.00 | -89 | 435 | 135 | 8.01 | Clear/Brown | None |
| 0830 | 1.5 | 19.75 | 8.12 | 0.335 | 0.00 | -104 | 1226 | 135 | 8.01 | Brown | None |
| 0835 | 2 | 19.76 | 8.20 | 0.333 | 0.00 | -123 | 1473 | 135 | 8.04 | Brown | None |
| 0840 | 2.5 | 19.76 | 8.22 | 0.333 | 0.01 | -134 | 1589 | 135 | 8.04 | Brown | None |
| 0845 | 3 | 19.80 | 8.24 | 0.332 | 0.20 | -143 | 1668 | 135 | 8.04 | Brown | None |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☐ | ☑ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling. /4 hour limit reached

3. **SAMPLE COLLECTION:** Method: low flow Bladder pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW59C-92.5-20200902 | | 5 | | | 1215 |

Comments Highly turbid/4 hour limit reached/4 500mL unpreserved samples taken 2 for (LF) 2 ~~too~~ settle out at field before decanting to new bottles.

Signature [signature] Date 9/2/2020



A

114-MW59C
P82

## Purge Volume Calculation

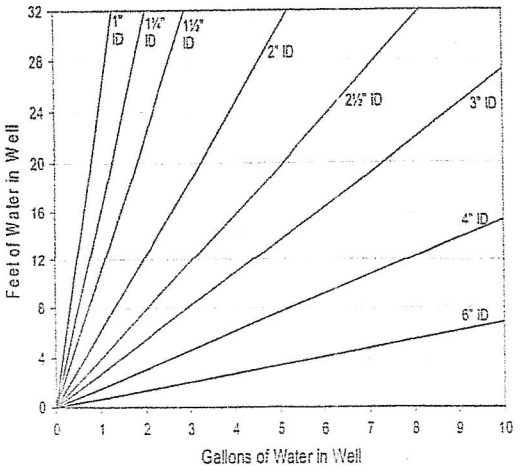


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 0850 | | 19.90 | 8.27 | 0.331 | 0.00 | -145 | 1693 | 135 | 8.04 | Brown |
| 0855 | | 19.93 | 8.28 | 0.331 | 0.00 | -151 | 1753 | 135 | 8.04 | Brown |
| 0900 | | 19.93 | 8.29 | 0.330 | 0.00 | -153 | 1747 | 135 | 8.04 | Brown |
| 0905 | | 19.97 | 8.29 | 0.330 | 0.00 | -153 | 1762 | 135 | 8.07 | Brown |
| 0910 | | 20.02 | 8.29 | 0.330 | 0.00 | -154 | 1764 | 135 | 8.07 | Brown |
| 0915 | | 20.08 | 8.30 | 0.329 | 0.00 | -156 | 1693 | 135 | 8.07 | Brown |
| 0920 | | 20.11 | 8.30 | 0.329 | 0.00 | -157 | 1511 | 135 | 8.07 | |
| 0925 | | 20.20 | 8.31 | 0.329 | 0.00 | -158 | 1359 | 135 | 8.13 | |
| 0930 | | 20.19 | 8.31 | 0.329 | 0.00 | -159 | 1287 | 135 | 8.13 | |
| 0935 | | 20.20 | 8.31 | 0.329 | 0.00 | -160 | 1235 | 135 | 8.13 | |
| 0940 | | 20.24 | 8.31 | 0.329 | 0.00 | -159 | 1354 | 135 | 8.18 | |
| 0945 | | 20.22 | 8.32 | 0.329 | 0.00 | -160 | 1364 | 135 | 8.18 | |
| 0950 | | 20.24 | 8.32 | 0.329 | 0.00 | -160 | 1427 | 135 | 8.18 | |
| 0955 | | 20.22 | 8.32 | 0.329 | 0.00 | -161 | 1456 | 135 | 8.18 | |
| 1000 | | 20.20 | 8.32 | 0.329 | 0.00 | -161 | 1473 | 135 | 8.18 | |
| 1005 | | 20.24 | 8.33 | 0.329 | 0.00 | -159 | 1497 | 135 | 8.18 | |
| 1010 | | 20.22 | 8.33 | 0.328 | 0.00 | -160 | 1462 | 135 | 8.18 | |
| 1015 | | 20.24 | 8.33 | 0.329 | 0.00 | -160 | 1455 | 135 | 8.18 | |
| 1020 | | 20.31 | 8.33 | 0.329 | 0.00 | -160 | 1467 | 135 | 8.18 | |
| 1025 | | 20.45 | 8.34 | 0.329 | 0.00 | -160 | 1453 | 135 | 8.18 | |
| 1030 | | 20.51 | 8.34 | 0.330 | 0.00 | -161 | 1458 | 135 | 8.18 | |
| 1035 | 19 | 20.57 | 8.34 | 0.329 | 0.00 | -160 | 1462 | 135 | 8.18 | |
| 1040 | | 20.84 | 8.34 | 0.329 | 0.00 | -160 | 1393 | 135 | 8.18 | |
| 1045 | | 20.89 | 8.33 | 0.329 | 0.00 | -160 | 12.011 | 135 | 8.18 | |
| 1050 | | 20.89 | 8.33 | 0.328 | 0.00 | -163 | 1187 | 135 | 8.18 | |
| 1055 | | 20.88 | 8.34 | 0.328 | 0.00 | -164 | 1053 | 135 | 8.18 | |
| 1100 | | 20.12 | 8.34 | 0.328 | 0.00 | -162 | 1047 | 135 | 8.18 | |
| 1105 | | 20.88 | 8.27 | 0.328 | 0.00 | -163 | 1041 | 135 | 8.18 | |
| 1110 | | 20.83 | 8.34 | 0.329 | 0.00 | -162 | 1039 | 135 | 8.18 | |
| 1115 | | 20.85 | 8.34 | 0.328 | 0.00 | -163 | 1029 | 135 | 8.18 | |
| 1120 | | 20.88 | 8.34 | 0.328 | 0.00 | -165 | 1025 | 135 | 8.18 | |



1

114-MW59C
Pg 3

## Purge Volume Calculation

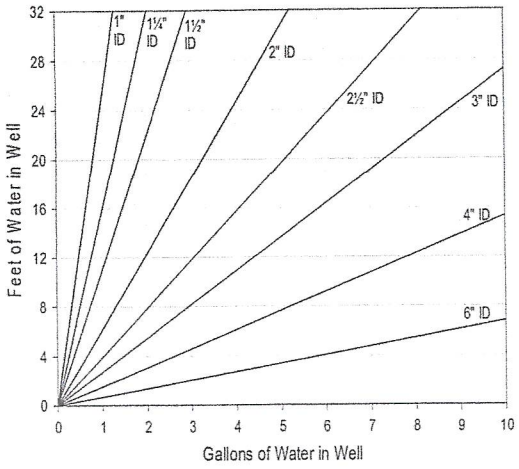


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1125 | | 20.78 | 8.34 | 0.328 | 0.00 | -164 | 1023 | 135 | 8.18 | Brown |
| 1130 | | 20.91 | 8.34 | 0.328 | 0.00 | -164 | 1016 | 135 | 8.18 | |
| 1135 | | 20.70 | 8.33 | 0.329 | 0.00 | -164 | 947 | 135 | 8.18 | |
| 1140 | | 20.68 | 8.34 | 0.328 | 0.00 | -167 | 983 | 135 | 8.18 | |
| 1145 | | 20.75 | 8.33 | 0.328 | 0.00 | -166 | 974 | 135 | 8.18 | |
| 1150 | | 20.92 | 8.33 | 0.329 | 0.00 | -160 | 873 | 135 | 8.18 | |
| 1155 | 10 | 20.96 | 8.34 | 0.329 | 0.00 | -160 | 870 | 135 | 8.18 | |
| 1200 | | 21.04 | 8.34 | 0.329 | 0.00 | -160 | 825 | 135 | 8.18 | |
| 1205 | | 21.19 | 8.34 | 0.328 | 0.00 | -161 | 710 | 135 | 8.18 | |
| 1210 | | 21.23 | 8.35 | 0.327 | 0.00 | -160 | 685 | 135 | 8.18 | |
| 1215 | | 21.21 | 8.34 | 0.327 | 0.00 | -161 | 722 | 135 | 8.18 | |

AECOM

Well ID: 114-MW52D-81-20210211

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 2/11/2021 Time: Start 945 am/pm
Project No: Finish 1035 am/pm
Site Location: PPG site 114
Weather Conds: Cold, windy, cloudy, 20°F Collector: S Ellington

1. **WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 107.85 c. Length of Water Column _____ (a-b)

b. Water Table Depth 6.26 d. Calculated System Volume (see back) _____

Casing Diameter/Material: 4in / steel

2. **WELL PURGE DATA**

a. Purge Method: Bladder pump

b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 6000XL | 17031 |
| | Camotte | 2020WP | 20596 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 950 | | 4.28 | 12.38 | 7.166 | 2.94 | -2.41 | 6.12 | 125 | 6.26 | Neon Yellow | None |
| 955 | | 7.55 | 12.55 | 7.262 | 1.54 | -9.4 | 3.35 | | 6.91 | | |
| 1000 | | 7.78 | 12.84 | 7.315 | 1.34 | -26.2 | 4.11 | | 6.64 | | |
| 1005 | | 7.62 | 12.83 | 7.311 | 1.20 | -31.9 | 3.82 | | 6.82 | | |
| 1010 | | 9.24 | 12.55 | 7.282 | 1.11 | -36.3 | 3.11 | | 6.95 | | |
| 1015 | | 7.95 | 12.87 | 7.343 | 1.13 | -40.0 | 2.86 | | 7.08 | | |
| 1020 | | 7.47 | 12.82 | 7.366 | 1.10 | -39.8 | 2.48 | | 7.16 | | |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: Bladder pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW52D-81-20210211 | | | | | 1035 |

Comments

Signature _____ Date 2/11/21

Well ID:

## Purge Volume Calculation

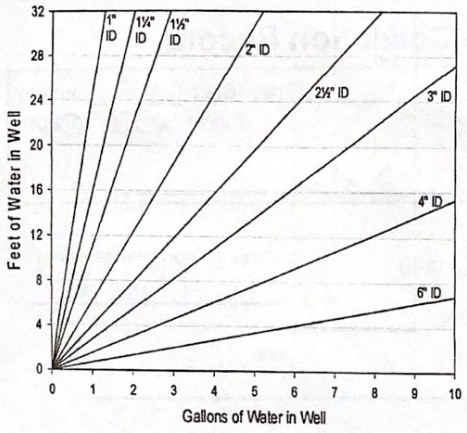


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1025 | | 7.36 | 12.77 | 7.342 | 1.10 | -39.4 | 1.21 | 125 | 7.29 | Green/none |
| 1030 | | 7.31 | 12.77 | 7.356 | 1.11 | -39.4 | 1.08 | 125 | 7.32 | Green/none |

AECOM

Well ID: 114-MW-52D

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 2/11/21 Time: Start 1055 (am/pm)
Project No: Finish 1130 am/pm
Site Location: PPG Site 114
Weather Conds: Cold, windy, 20°F Collector: S Elkington

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 107.85 c. Length of Water Column _____ (a-b)
   b. Water Table Depth 7.68 d. Calculated System Volume (see back) _____
   Casing Diameter/Material: 6in/steel

2. **WELL PURGE DATA**
   a. Purge Method: Bladder pump
   b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

   c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 1000XL | 17031 |
| | Lamotte | 2020we | 20956 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1055 | | 3.04 | 12.44 | 7.394 | 3.83 | -31.1 | 3.06 | 125 | 7.68 | yellow | none |
| 1100 | | 4.49 | 12.48 | 7.404 | 1.29 | -32.8 | 4.16 | | 7.76 | | |
| 1105 | | 4.81 | 12.54 | 7.414 | 1.10 | -34.6 | 3.84 | | 7.81 | | |
| 1110 | | 4.79 | 12.61 | 7.423 | 0.96 | -36.1 | 3.12 | | 7.94 | | |
| 1115 | | 4.82 | 12.63 | 7.418 | 0.96 | -37.2 | 2.89 | | 7.99 | | |
| 1120 | | 4.78 | 12.68 | 7.409 | 0.96 | -38.9 | 2.11 | | 8.10 | | |
| 1125 | | 4.80 | 12.65 | 7.411 | 0.96 | -40.1 | 2.06 | ↓ | 8.23 | ↓ | ↓ |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: Bladder pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW52D-83.5-20210211 | | | | | 1130 |

Comments

Signature _____ Date 2/11/21

Well ID:

## Purge Volume Calculation

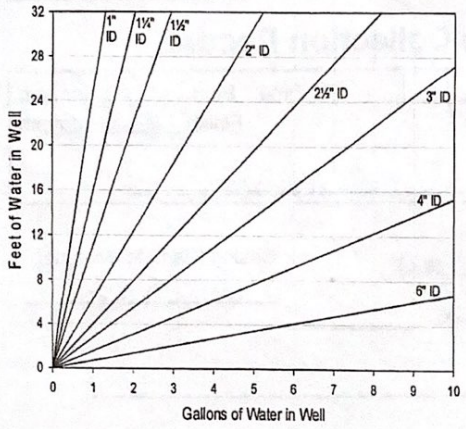


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

AECOM

Well ID: 114-MW52D-88-20210211

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 2/11/2021 Time: Start 1220 am/pm
Project No: Finish 1300 am/pm
Site Location:
Weather Conds: 30°, windy, snow cover, cloudy Collector: SE; JH

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 107.85 c. Length of Water Column _____(a-b)

Casing Diameter/Material: 6 inch Steel

b. Water Table Depth 8.48 d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: Low flow Bladder pump

b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 650MDS | 17031 |
| | Lamotte | 2020WE | 20956 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1225 | | 4.84 | 12.91 | 7.317 | 2.35 | -39.5 | 2.74 | 125 | 8.48 | Neon Yellow | None |
| 1230 | | 6.35 | 12.74 | 7.304 | 1.34 | -40.3 | 2.96 | 125 | 8.54 | Neon Yellow | None |
| 1235 | | 7.05 | 12.55 | 7.323 | 1.11 | -43.2 | 2.42 | 125 | 8.67 | Neon Yellow | None |
| 1240 | | 6.94 | 12.87 | 7.362 | 1.13 | -43.5 | 2.97 | 125 | 8.73 | Neon Yellow | None |
| 1245 | | 7.21 | 12.88 | 7.321 | 1.02 | -44.0 | 2.39 | 125 | 8.88 | Neon Yellow | None |
| 1250 | | 7.19 | 12.89 | 7.329 | 1.06 | -43.9 | 2.63 | 125 | 8.92 | Neon Yellow | None |
| 1255 | | 7.28 | 12.84 | 7.341 | 1.06 | -43.4 | 2.31 | 125 | 8.98 | Neon Yellow | None |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Low flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW52D-88-20210211 | | 2 | | | 1300 |

Comments

Signature _____ Date 2/11/2021

Well ID: 114-52D-102-20210211

## Purge Volume Calculation

30"; Partly cloudy; snow cover; windy

Start: 1315

Sample @ 1355

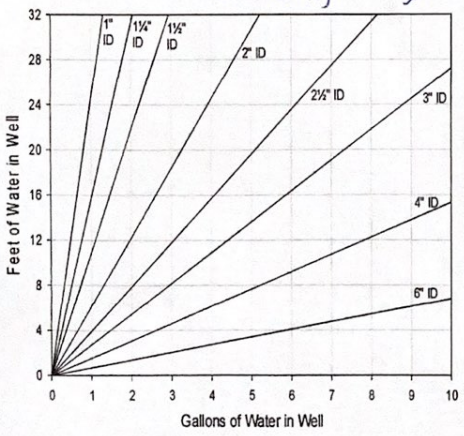


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1320 | | 5.60 | 12.69 | 7.372 | 3.61 | -34.3 | 2.32 | 125 | 9.24 | Neon Yellow |
| 1325 | | 5.79 | 12.72 | 7.344 | 1.49 | -36.0 | 2.09 | 125 | 9.28 | Neon Yellow |
| 1330 | | 5.45 | 12.71 | 7.429 | 0.93 | -36.8 | 1.86 | 125 | 9.30 | |
| 1335 | | 5.44 | 12.69 | 7.367 | 0.84 | -36.5 | 2.11 | | 9.32 | |
| 1340 | | 5.52 | 12.65 | 7.365 | 0.87 | -37.1 | 2.32 | | 9.34 | |
| 1345 | | 5.56 | 12.67 | 7.360 | 0.90 | -37.7 | 2.41 | | 9.36 | |
| 1350 | | 5.60 | 12.68 | 7.358 | 0.91 | -37.2 | 2.38 | | 9.36 | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | 114-MW-52D-105 | | |
| 1410 | | 6.42 | 12.76 | 7.294 | 3.17 | -35.8 | 3.10 | 125 | 9.160 | Green Yellow |
| 1415 | | 7.36 | 12.84 | 7.283 | 1.99 | -39.5 | 3.33 | | 9.164 | |
| 1420 | | 7.68 | 12.87 | 7.282 | 1.56 | -42.0 | 2.87 | | 9.76 | |
| 1425 | | 7.77 | 12.87 | 7.278 | 1.57 | -42.4 | 2.81 | | 9.73 | |
| 1430 | | 7.81 | 12.87 | 7.275 | 1.56 | -43.4 | 3.26 | | 9.76 | |
| 1435 | | 7.86 | 12.88 | 7.276 | 1.54 | -42.6 | 3.38 | | 9.78 | |
| 1440 | | 7.87 | 12.88 | 7.278 | 1.52 | -43.8 | 3.26 | | 9.81 | |
| | | | | | | | | | | |
| | | | | | | | | | | |
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| | | | | | | | | Sample @ 1445 | | |
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AECOM

Well ID: 114-MW57D-87.25-20210209

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 2/9/2021 Time: Start 1015 am/pm
Project No: Finish 1055 am/pm
Site Location: Garfield Avenue Jersey City
Weather Conds: 32° ; Snow; Cold; Cloudy Collector: S. Elkington ; J; Hiavaty

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 114.55 c. Length of Water Column _____ (a-b) Casing Diameter/Material 6 inch Steel

b. Water Table Depth 9.00 d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: Low-flow Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

c. Field Testing Equipment used:

| Make | Model | Serial Number |
|---|---|---|
| YSI | 600XL | 17031 |
| Lamotte | 2020WE | 20596 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1020 | | 6.89 | 7.83 | 1.656 | 3.46 | 201.1 | 17.48 | 125 | 9.06 | Clear | None |
| 1025 | | 7.67 | 8.01 | 1.625 | 1.82 | 172.6 | 17.12 | | 9.09 | Clear | None |
| 1030 | | 7.44 | 8.01 | 1.618 | 1.27 | 157.6 | 16.53 | | 9.14 | Clear | None |
| 1035 | | 7.14 | 8.03 | 1.616 | 0.95 | 132.7 | 15.96 | | 9.18 | Clear | None |
| 1040 | | 6.89 | 8.01 | 1.614 | 0.72 | 124.1 | 15.62 | | 9.23 | Clear | None |
| 1045 | | 6.64 | 8.06 | 1.609 | 0.72 | 101.3 | 14.99 | | 9.34 | Clear | None |
| 1050 | | 6.64 | 8.09 | 1.606 | 0.64 | 80.0 | 14.10 | | 9.40 | Clear | None |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

If no or N/A - Explain below.

No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Low flow Bladder Pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW57D-87.25-20210209 | | 2 | multi | Various | 1120 |

Comments

Signature [signature] Date 2/9/2021

Well ID: 114-MW51D-97.25-20210209

## Purge Volume Calculation

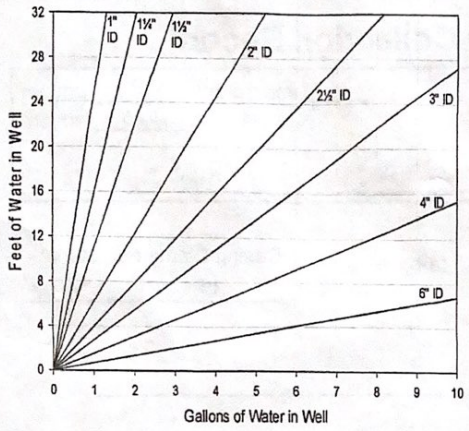


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1055 | | 6.03 | 8.19 | 1.613 | 0.77 | 45.9 | 12.61 | 125 | 9.51 | Clear / None |
| 1100 | | 5.77 | 8.20 | 1.609 | 0.60 | 34.5 | 10.87 | " | 9.52 | Clear / None |
| 1105 | | 5.76 | 8.21 | 1.606 | 0.62 | -7.2 | 9.91 | " | 9.55 | Clear / None |
| 1110 | | 5.73 | 8.24 | 1.610 | 0.60 | -9.3 | 9.11 | " | 9.56 | Clear / None |
| 1115 | | 5.72 | 8.23 | 1.612 | 0.61 | -11.1 | 8.81 | " | 9.57 | Clear / None |

AECOM

Well ID: 114-MW57D-90-20210209

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 02/09/2021 Time: Start 1215 am/pm
Project No: Finish 1255 am/pm
Site Location: Garfield Avenue Jersey City
Weather Conds: 32° Snow; cold, cloudy Collector: J. Elkington

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 114.55 c. Length of Water Column _____ (a-b) Casing Diameter/Material 6 inch
   b. Water Table Depth 9.06 d. Calculated System Volume (see back) _____

2. **WELL PURGE DATA**
   a. Purge Method: Low flow Bladder pump
   b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

   c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600XL | 17031 |
| | Lamotte | 2020 we | 20596 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1220 | | 3.95 | 8.43 | 1.586 | 1.20 | -27.4 | 7.62 | 125 | 9.87 | Clear | None |
| 1225 | | 4.17 | 8.46 | 1.590 | 1.15 | -32.6 | 7.45 | 125 | 9.91 | Clear | None |
| 1230 | | 4.20 | 8.51 | 1.597 | 1.01 | -45.3 | 7.37 | 125 | 9.94 | Clear | None |
| 1235 | | 4.18 | 8.55 | 1.598 | 0.67 | -79.7 | 7.26 | 125 | 9.97 | Clear | None |
| 1240 | | 3.98 | 8.62 | 1.595 | 0.59 | -97.6 | 6.84 | 125 | 9.99 | Clear | None |
| 1245 | | 3.96 | 8.64 | 1.594 | 0.57 | -98.6 | 6.59 | 125 | 10.01 | Clear | None |
| 1250 | | 3.98 | 8.64 | 1.591 | 0.56 | -97.0 | 6.12 | 125 | 10.05 | Clear | None |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: Low flow Bladder pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW57D-90-20210209 | | 2 | None, HNO3 | Various | 1255 |

Comments

Signature _____ Date 2/9/2021

Well ID:

## Purge Volume Calculation

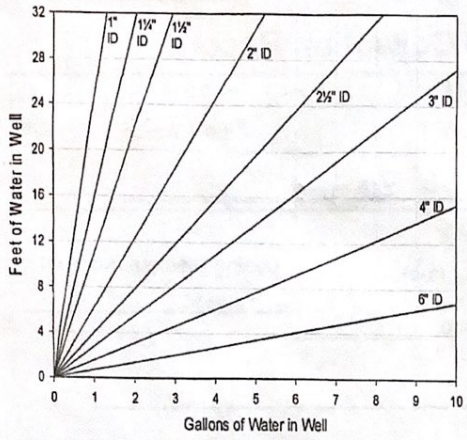


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

AECOM

Well ID: 114-MW57D-98

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 2/10/21 Time: Start 900 am/pm
Project No: Finish 950 am/pm
Site Location: PPG, Site 114
Weather Conds: Cold, Snowy, < 30°F Collector: S. Elkington, J Hlavaty

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 114.55 c. Length of Water Column _____ (a-b) Casing Diameter/Material 6in/steel
   b. Water Table Depth 10.12 d. Calculated System Volume (see back) _____

2. **WELL PURGE DATA**
   a. Purge Method: Bladder pump
   b. Acceptance Criteria defined (see workplan)
   - Temperature 3% -D.O. 10% - Turbidity < 10 NTU
   - pH ± 0.1 unit - ORP ± 10mV
   - Sp. Cond. 3% - Drawdown < 0.3'

   c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600XL | 17031 |
| | Lamotte | 2020we | 20596 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 900 | | 6.36 | 8.36 | 1.6446 | 3.70 | 209.7 | 12.12 | 125 | 10.12 | clear | none |
| 905 | | 6.36 | 8.36 | 1.592 | 2.47 | 185.3 | 11.78 | | 10.18 | | |
| 910 | | 7.96 | 8.42 | 1.549 | 1.65 | 162.1 | 9.03 | | 10.23 | | |
| 915 | | 8.48 | 8.51 | 1.548 | 1.28 | 143.0 | 6.82 | | 10.31 | | |
| 920 | | 8.50 | 8.55 | 1.552 | 1.06 | 111.2 | 7.12 | | 10.44 | | |
| 925 | | 8.53 | 8.54 | 1.549 | 1.04 | 102.8 | 6.11 | | 10.52 | | |
| 930 | | | | 1.551 | 1.02 | 97.2 | 5.82 | ↓ | 10.61 | ↓ | ↓ |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: Bladder pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW57D-98-20210210 | | | None, $HNO_3$ | Various | 940 |

Comments

Signature _____ Date 2/10/21

Well ID:

## Purge Volume Calculation

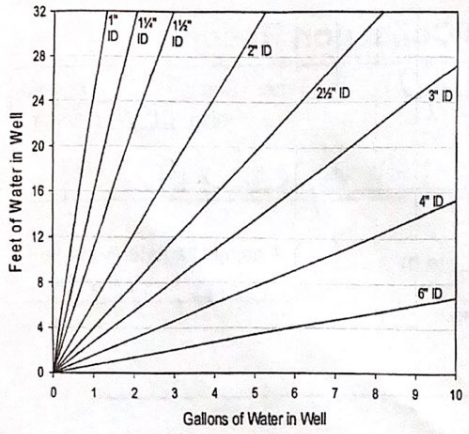


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 935 | | 8.50 | 8.56 | 1.548 | 1.02 | 96.8 | 5.55 | 125 | 10.68 | CLEAR/NONE |
| | | | | | | | | | | |
| | | | | | | | | | | |
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AECOM

Well ID: 114-MW57D-102

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries
Date: 2/10/21
Time: Start 1020 am/pm
Finish 1110 am/pm
Project No:
Site Location: PPG-Site 114
Weather Conds: Cold, snow, <30°F
Collector: S. Elkington, J. Hlavaty

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 114.55 c. Length of Water Column _____ (a-b)

Casing Diameter/Material 6in/steel

b. Water Table Depth 11.02 d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: Bladder pump

b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

c. Field Testing Equipment used:

| Make | Model | Serial Number |
|---|---|---|
| YSI | 600N | 17031 |
| Lamotte | 2020we | 20596 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1020 | | 9.46 | 8.76 | 1.544 | 3.24 | -26.5 | 11.29 | 150 | 11.02 | Clear | None |
| 1025 | | 10.21 | 8.86 | 1.548 | 2.24 | -36.3 | 10.46 | | 11.06 | | |
| 1030 | | 10.29 | 8.87 | 1.551 | 1.33 | -47.0 | 9.22 | | 11.11 | | |
| 1035 | | 9.95 | 8.87 | 1.551 | 0.70 | -79.8 | 8.48 | | 11.18 | | |
| 1040 | | 9.92 | 8.86 | 1.550 | 0.68 | -89.5 | 7.91 | | 11.24 | | |
| 1045 | | 9.90 | 8.86 | 1.553 | 0.67 | -94.2 | 8.12 | | 11.30 | | |
| 1050 | | 9.90 | 8.86 | 1.552 | 0.67 | -101.6 | 7.64 | | 11.36 | | |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

If no or N/A - Explain below.

No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Bladder pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW57D-102-20210210 | | | None, $HNO_3$ | Various | 1055 |

Comments

Signature [signature] Date 2/10/21

Well ID:

## Purge Volume Calculation

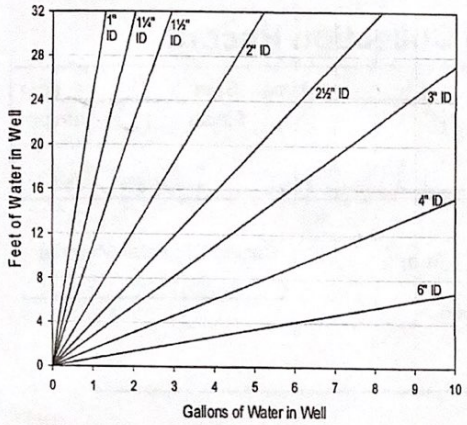


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
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AECOM

Well ID: 114-MW61D-88

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 2/12/21 Time: Start 900 am/pm
Project No: Finish 935 am/pm
Site Location: PPG - Site 114
Weather Conds: Sunny, cold, windy Collector: S Elkington / J Hickey

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 111.62 c. Length of Water Column _____(a-b)
   b. Water Table Depth 10.91 d. Calculated System Volume (see back) _____
   Casing Diameter/Material 6in/Steel

2. **WELL PURGE DATA**
   a. Purge Method: Bladder pump
   b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

   c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600XL | 17031 |
| | Cuimette | 2020WE | 20596 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 900 | | 8.63 | 10.28 | 0.856 | 5.61 | 226.6 | 3.13 | 150 | 10.91 | clear | None |
| 905 | | 7.92 | 10.72 | 0.785 | 2.45 | 183.3 | 2.84 | | 11.00 | | |
| 910 | | 6.36 | 10.58 | 0.773 | 2.08 | 170.5 | 2.41 | | 11.12 | | |
| 915 | | 6.02 | 10.41 | 0.768 | 1.90 | 171.2 | 2.32 | | 11.21 | | |
| 920 | | 5.99 | 10.24 | 0.765 | 1.86 | 172.3 | 2.41 | | 11.26 | | |
| 925 | | 5.96 | 10.21 | 0.761 | 1.85 | 170.3 | 2.08 | | 11.34 | | |
| 930 | | 5.94 | 10.22 | 0.763 | 1.86 | 171.6 | 1.99 | | 11.41 | | |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: Bladder pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW61D-88-20210212 | | | None, $HNO_3$ | | 935 |

Comments

Signature _____ Date 2/12/21

Well ID:

## Purge Volume Calculation

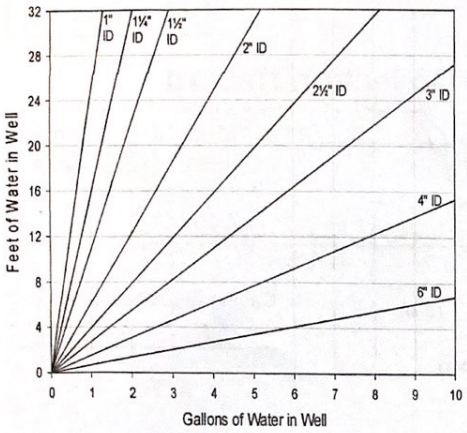


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
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AECOM

Well ID: 114-MW6ID-91

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 2/12/21 Time: Start 1000 am/pm
Project No: Finish 1035 am/pm
Site Location: PPG Site 114
Weather Conds: Sunny Cold Windy Collector: S. Ellington

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 111.62 c. Length of Water Column _____ (a-b)

Casing Diameter/Material 6in / Steel

b. Water Table Depth 11.41 d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: Bladder pump

b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

c. Field Testing Equipment used:

| Make | Model | Serial Number |
|---|---|---|
| YSI | 600XL | |
| Lamotte | 2020WE | |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | | 8.60 | 10.80 | 0.744 | 2.89 | ~~0.744~~ 131.6 | 3.41 | 150 | 11.41 | Clear | None |
| 1005 | | 7.79 | 10.76 | 0.754 | 1.31 | ~~[illegible]~~ 126.2 | 4.68 | | 11.47 | | |
| 1010 | | 6.63 | 10.55 | 0.744 | 0.88 | 124.5 | 3.11 | | 11.52 | | |
| 1015 | | 6.61 | 10.51 | 0.746 | 0.86 | 125.1 | 4.87 | | 11.58 | | |
| 1020 | | 6.58 | 10.50 | 0.745 | 0.85 | 125.6 | 5.01 | | 11.61 | | |
| 1025 | | 6.57 | 10.49 | 0.745 | 0.86 | 124.0 | 4.41 | | 11.64 | | |
| 1030 | | 6.57 | 10.50 | 0.746 | 0.87 | 124.6 | 4.06 | | 11.69 | | |

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

(continued on back)

If no or N/A - Explain below.

No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Bladder pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW6ID-91-20210212 | | | | | 1035 |

Comments

Signature [signature] Date 2/12/21

Well ID:

## Purge Volume Calculation

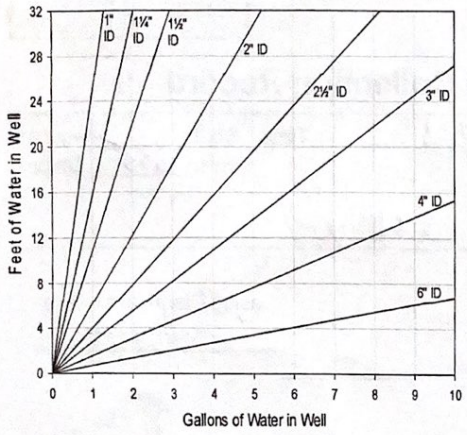


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
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AECOM

Well ID: 114-MW01D-93.5

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 2/12/21 Time: Start 1100 am/pm
Project No: Finish 1150 am/pm
Site Location: Site 114
Weather Conds: Sunny, cold, windy Collector: S. Elkington

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 111.62 c. Length of Water Column _____(a-b)
   b. Water Table Depth 11.88 d. Calculated System Volume (see back) _____
   Casing Diameter/Material: 4in/steel

2. **WELL PURGE DATA**
   a. Purge Method: Bladder pump
   b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

   c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600MDS | 17031 |
| | Lamotte | 2020we | 20596 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1100 | | 3.42 | 10.37 | 0.742 | 2.39 | 110.1 | 6.11 | 150 | 11.88 | clear | None |
| 1105 | | 3.56 | 10.34 | 0.745 | 0.98 | 33.1 | 5.54 | | 11.64 | | |
| 1110 | | 3.72 | 10.36 | 0.746 | 0.64 | 32.6 | 4.31 | | 12.00 | | |
| 1115 | | 3.71 | 10.70 | 0.747 | 0.62 | 30.3 | 3.32 | | 12.04 | | |
| 1120 | | 3.70 | 10.76 | 0.746 | 0.90 | 31.6 | 3.61 | | 12.11 | | |
| 1125 | | 3.69 | 10.75 | 0.748 | 0.89 | 32.4 | 3.62 | | 12.16 | | |
| 1130 | | 3.70 | 10.74 | 0.747 | 0.90 | 31.8 | 2.51 | | 12.21 | | |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: Bladder pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW01D-93.5-20210212 | | | | | 1140 |

Comments _____

Signature _____ Date _____

Well ID:

## Purge Volume Calculation

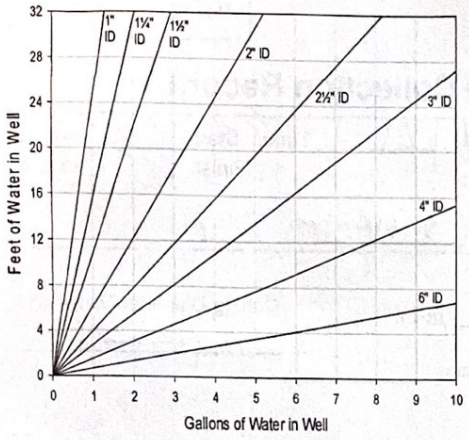


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
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AECOM

Well ID: 114-MW61D-102-20210212

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 2/12/2021 Time: Start 1150 am/pm
Project No: Finish 1235 am/pm
Site Location:
Weather Conds: cloudy, snow cover Collector: S. Elkington

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 111.62 c. Length of Water Column _____ (a-b)

b. Water Table Depth 17.25 d. Calculated System Volume (see back) _____

Casing Diameter/Material: Cem/Steel

**2. WELL PURGE DATA**

a. Purge Method: Low-flow Bladder pump

b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

c. Field Testing Equipment used:

| Make | Model | Serial Number |
|---|---|---|
| YSI | 600XL | 17031 |
| Lamotte | 2020we | 20596 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1200 | | 5.02 | 10.16 | 0.731 | 5.09 | 95.8 | 6.73 | 150 | 12.25 | clear | None |
| 1205 | | 4.65 | 10.23 | 0.742 | 1.60 | 79.4 | 6.42 | | 12.29 | | |
| 1210 | | 4.69 | 10.26 | 0.742 | 1.70 | 75.8 | 6.33 | | 12.33 | | |
| 1215 | | 4.73 | 10.27 | 0.742 | 1.69 | 74.6 | 6.51 | | 12.37 | | |
| 1220 | | 4.76 | 10.30 | 0.742 | 1.54 | 68.2 | 6.22 | | 12.40 | | |
| 1225 | | 4.79 | 10.34 | 0.741 | 1.33 | 63.0 | 5.98 | | 12.43 | | |
| 1230 | | 4.85 | 10.39 | 0.740 | 1.28 | 60.6 | 5.57 | ↓ | 12.47 | ↓ | ↓ |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Low flow bladder pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW61D-102-20210212 | | | | | 1240 |

Comments

Signature _____ Date _____

Well ID:

## Purge Volume Calculation

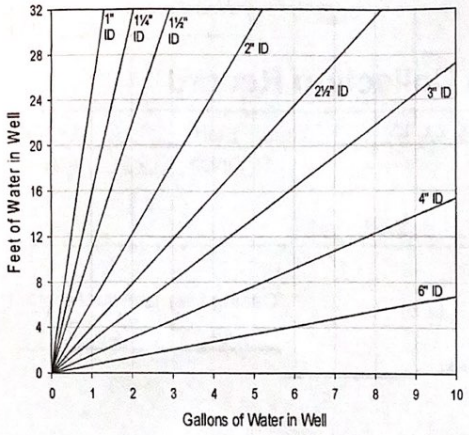


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1235 | | 4.87 | 10.43 | 0.741 | 1.25 | 56.6 | 5.52 | 125 | 12.47 | Clear / None |
| | | | | | | | | | | |
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AECOM

Well ID: 114-MW61D-106.5-20210215

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 2/15/2021 Time: Start 1030 am/pm
Project No: Finish 1113 am/pm
Site Location:
Weather Conds: Cloudy; Snow cover 34° Collector: S. Elkington

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 111.62 c. Length of Water Column _____ (a-b) Casing Diameter/Material 6 inch Steel

b. Water Table Depth 10.71 d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: low flow Bladder pump

b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

c. Field Testing Equipment used:

| Make | Model | Serial Number |
|---|---|---|
| YSI | 650MDS | 8975 |
| Lamotte | 2020WQ | 045016 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1035 | | 8.15 | 11.28 | 0.882 | 2.52 | -206.7 | 3.18 | 125 | 10.71 | Clear | None |
| 1040 | | 8.70 | 11.39 | 0.875 | 1.89 | -220.0 | 3.11 | 125 | 10.77 | Clear | None |
| 1045 | | 9.03 | 11.43 | 0.870 | 1.59 | -223.2 | 3.28 | 125 | 10.83 | Clear | None |
| 1050 | | 9.16 | 11.45 | 0.866 | 1.26 | -224.2 | 4.07 | 125 | 10.87 | Clear | None |
| 1055 | | 9.21 | 11.49 | 0.860 | 1.13 | -226.2 | 3.72 | 125 | 10.94 | Clear | None |
| 1100 | | 9.24 | 11.50 | 0.855 | 1.09 | -223.9 | 3.55 | 125 | 10.99 | Clear | None |
| 1105 | | 9.28 | 11.51 | 0.854 | 1.05 | -219.4 | 3.39 | 125 | 11.09 | Clear | None |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Have parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A - Explain below.

No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Low flow Bladder pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW61D-106.5-20210215 | | | | | 1110 |

Comments No well cap when arrived

Signature [signature] Date 2/15/2021

Well ID:

## Purge Volume Calculation

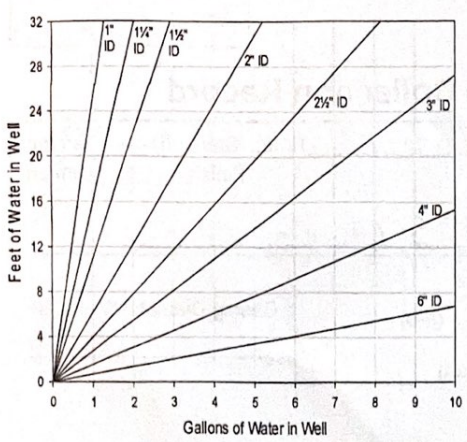


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

AECOM

Well ID: 114-MW61D-110-20210215

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 2/15/2021 Time: Start 1140 am/pm
Project No: Finish 1225 am/pm
Site Location: Site 114
Weather Conds: cloudy; Snow (Cover) Collector: S. Ellington

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 111.62 c. Length of Water Column _____(a-b)

Casing Diameter/Material 6 inch Steel

b. Water Table Depth 11.35 d. Calculated System Volume (see back) _____

**2. WELL PURGE DATA**

a. Purge Method: low flow Bladder pump

b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

c. Field Testing Equipment used:

| Make | Model | Serial Number |
|---|---|---|
| YSI | 656 MDS | 8975 |
| Lamotte | 2020 WQ | |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1145 | | 9.52 | 11.44 | 0.848 | 1.15 | -222.6 | 4.20 | 125 | 11.35 | Clear | None |
| 1150 | | 9.44 | 11.46 | 0.853 | 1.09 | -221.7 | 4.13 | 125 | 11.39 | Clear | None |
| 1155 | | 9.28 | 11.48 | 0.853 | 0.95 | -230.5 | 3.92 | 125 | 11.43 | Clear | None |
| 1200 | | 9.10 | 11.48 | 0.856 | 0.85 | -231.8 | 3.99 | 125 | 11.48 | Clear | None |
| 1205 | | 8.95 | 11.51 | 0.859 | 0.83 | -233.3 | 3.87 | 125 | 11.52 | Clear | None |
| 1210 | | 8.89 | 11.51 | 0.860 | 0.81 | -233.8 | 3.81 | 125 | 11.55 | Clear | None |
| 1215 | | 8.81 | 11.51 | 0.859 | 0.80 | -234.5 | 3.92 | 125 | 11.59 | Clear | None |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: Low flow Bladder pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW61D-110-20210215 | | 2 | None, HNO3 | Various | 1220 |

Comments

Signature _____ Date 2/15/2021

Well ID:

Purge Volume Calculation

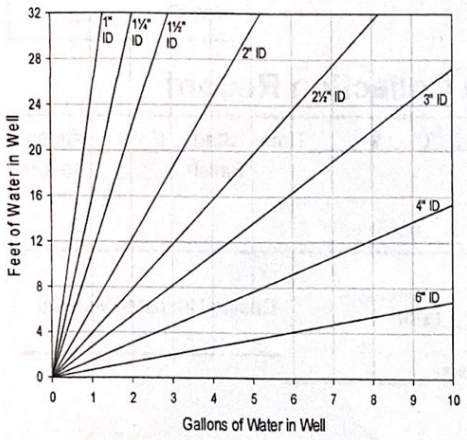


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

AECOM

Well ID: 114-MW66D-92

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 2/10/21 Time: Start 1150 am/pm
Project No: Finish 1230 am/pm
Site Location: PPG Site 114
Weather Conds: Sunny, cold, 230°F Collector: S Elkington, J. Hlavaty

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 115.45 c. Length of Water Column _____ (a-b)
   b. Water Table Depth 11.26 d. Calculated System Volume (see back) _____
   Casing Diameter/Material: 6in/Steel

2. **WELL PURGE DATA**
   a. Purge Method: Bladder pump
   b. Acceptance Criteria defined (see workplan)

| | | | | |
|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | |

   c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 6000XL | 17031 |
| | Lamotte | 2020we | 705016 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1150 | | 8.71 | 9.72 | 0.645 | 4.32 | -59.1 | 11.67 | 175 | 11.26 | light green | none |
| 1155 | | 9.33 | 9.59 | 0.626 | 2.19 | -52.1 | 11.44 | | 11.29 | | |
| 1200 | | 8.60 | 9.60 | 0.611 | 1.61 | -52.2 | 11.02 | | 11.34 | | |
| 1205 | | 8.54 | 9.55 | 0.607 | 1.41 | -50.3 | 10.21 | | 11.34 | | |
| 1210 | | 7.98 | 9.54 | 0.603 | 1.21 | -51.0 | 9.91 | | 11.42 | | |
| 1215 | | 8.12 | 9.53 | 0.604 | 1.17 | -50.5 | 8.68 | | 11.46 | | |
| 1220 | | 8.16 | 9.54 | 0.605 | 1.16 | -51.2 | 8.81 | ↓ | 11.50 | ↓ | ↓ |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: Bladder pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW66D-92-20210210 | | | None, $HNO_3$ | VOCs | 1230 |

Comments

Signature _____ Date 2/10/21

Well ID:

## Purge Volume Calculation

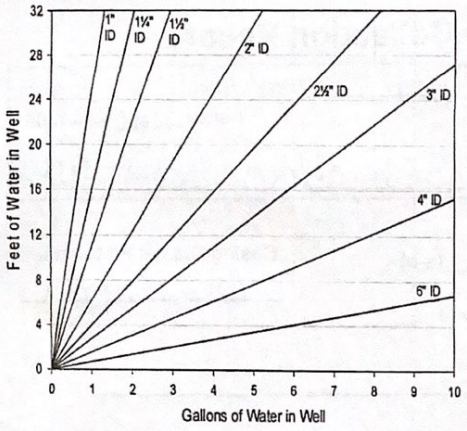


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1225 | 8.18 | [illegible] | 9.55 | 0.604 | 1.16 | -52.0 | 7.96 | 175 | 11.53 | light green/none |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | |

AECOM

Well ID: 114-MW66D-94-20210210

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 2/10/2021 Time: Start 1235 am/pm
Project No: Finish 1240 am/pm
Site Location: PPG Site 114
Weather Conds: Sunny, Snow cover/34° Collector: S. Elkington

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 115.45 c. Length of Water Column _____ (a-b)
   b. Water Table Depth 11.77 d. Calculated System Volume (see back) _____
   Casing Diameter/Material: 6 inch Steel

2. **WELL PURGE DATA**
   a. Purge Method: Low-flow Bladder pump
   b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

   c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 650 MDS | 17031 |
| | Landtte | 2020 we | 20596 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1240 | | 7.71 | 9.33 | 0.606 | 1.35 | -31.9 | 12.13 | 125 | 11.77 | green tint | None |
| 1245 | | 7.95 | 9.30 | 0.606 | 1.00 | -30.3 | 11.25 | 125 | 11.83 | green tint | None |
| 1250 | | 8.11 | 9.32 | 0.606 | 0.92 | -29.7 | 10.09 | | 11.94 | green tint | None |
| 1255 | | 8.13 | 9.34 | 0.605 | 0.80 | -31.4 | 9.86 | | 11.97 | green tint | None |
| 1300 | | 7.85 | 9.35 | 0.605 | 0.75 | -29.0 | 10.11 | | 11.99 | green tint | None |
| 1305 | | 7.81 | 9.33 | 0.604 | 0.67 | -27.8 | 9.65 | V | 12.01 | green tint | None |
| 1310 | | 7.78 | 9.32 | 0.603 | 0.65 | -25.9 | 9.32 | | 12.04 | green tint | None |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: Low flow Bladder pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW66D-94-20210210 | | | None, HNO3 | Various | 1320 |

Comments

Signature _____ Date 2/10/2021

Well ID:

Purge Volume Calculation

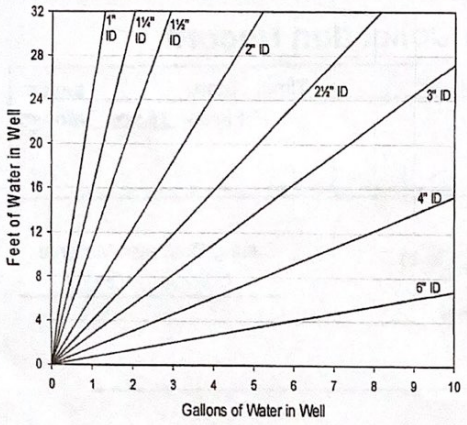


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1315 | | 7.76 | 9.30 | 0.604 | 0.65 | -25.9 | 9.57 | 125 | 12.10 | green tint / None |

AECOM

Well ID: 114-MW606D-110

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 2/10/21 Time: Start 1350 am/pm
Project No: Finish 1435 am/pm
Site Location: PPG Site 114
Weather Conds: Sunny, Cold, <30°F Collector: S.Elkington, J.Hlavaty

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 115.45 c. Length of Water Column _____(a-b)
   b. Water Table Depth 12.44 d. Calculated System Volume (see back) _____
   Casing Diameter/Material: 6in/Steel

2. **WELL PURGE DATA**
   a. Purge Method: Bladder pump
   b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

   c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600XL | 17031 |
| | Cambrie | 2020we | 205960 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1350 | | 9.44 | 9.57 | 0.605 | 1.31 | -34.3 | 9.87 | 150 | 12.44 | light green | None |
| 1355 | | 10.56 | 9.06 | 0.575 | 0.68 | -28.1 | 8.11 | | 12.45 | | |
| 1400 | | 11.07 | 8.92 | 0.561 | 0.57 | -30.4 | 7.89 | | 12.50 | " | |
| 1405 | | 11.27 | 8.91 | 0.554 | 0.50 | -36.3 | 6.28 | | 12.53 | Clear | |
| 1410 | | 11.31 | 8.91 | 0.557 | 0.49 | -41.4 | 6.68 | | 12.61 | | |
| 1415 | | 11.28 | 8.89 | 0.554 | 0.48 | -42.8 | 5.81 | | 12.63 | | |
| 1420 | | 11.25 | 8.90 | 0.560 | 0.47 | -44.2 | 5.12 | | 12.66 | | |

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

(continued on back)

3. **SAMPLE COLLECTION:** Method: Bladder pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MW606D-110-20210210 | | | | | 1425 |

Comments

Signature James Date 2/10/21

Well ID:

## Purge Volume Calculation

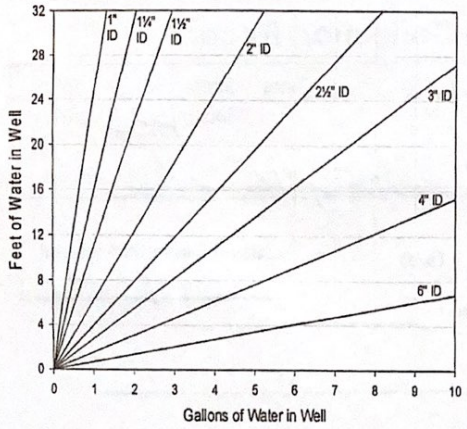


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

AECOM

Well ID: 114-MWGGD-114

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 2/10/21 Time: Start 1435 am/pm
Project No: Finish 1515 am/pm
Site Location: PPG-Site 114
Weather Conds: Sunny, cold, <30°F Collector: S Elkington, J Hlavaty

1. **WATER LEVEL DATA: (measured from Top of Casing)**
   a. Total Well Length 115.45 c. Length of Water Column _____ (a-b)
   b. Water Table Depth 12.55 d. Calculated System Volume (see back) _____
   Casing Diameter/Material: 6in/Steel

2. **WELL PURGE DATA**
   a. Purge Method: Bladder pump
   b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

   c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600XL | 17031 |
| | Lamotte | 2020we | 205a16 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1435 | | 10.42 | 9.09 | 0.533 | 3.87 | -43.5 | 7.26 | 150 | 12.85 | clear | None |
| 1440 | | 11.07 | 8.74 | 0.534 | 0.68 | -36.2 | 5.11 | | 12.94 | | |
| 1445 | | 10.91 | 8.71 | 0.532 | 0.59 | -37.0 | 4.21 | | 13.06 | | |
| 1450 | | 10.72 | 8.70 | 0.531 | 0.36 | -38.3 | 5.36 | | 13.09 | | |
| 1455 | | 10.74 | 8.68 | 0.531 | 0.55 | -38.7 | 5.01 | | 13.11 | | |
| 1500 | | 10.76 | 8.68 | 0.530 | 0.54 | -34.3 | 4.96 | | 13.15 | | |
| 1505 | | 10.77 | 8.68 | 0.529 | 0.55 | -38.7 | 4.44 | ↓ | 13.17 | ↓ | ↓ |

(continued on back)

   d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

   If no or N/A - Explain below.
   No minimum purge volume required for low-flow sampling.

3. **SAMPLE COLLECTION:** Method: Bladder pump

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 114-MWGGD-114-20210210 | | | | | 1510 |

Comments

Signature _____ Date 2/10/21

Well ID:

## Purge Volume Calculation

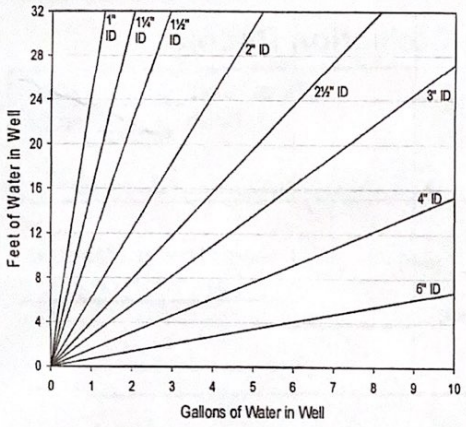


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

TOC = +3.25' AGS

AECOM

Well ID: 132-P3-MW001D

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 6-24-21 Time: Start 1330 am/pm
Project No: 60658620 Finish _____ am/pm
Site Location: JC
Weather Conds: Sun 85° Collector: STEVE LIBERT

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 92.10 c. Length of Water Column _____ (a-b)

b. Water Table Depth 11.65 d. Calculated System Volume (see back) _____

Casing Diameter/Material: 2" PVC

**2. WELL PURGE DATA**

a. Purge Method: Low Flow - Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

c. Field Testing Equipment used:

| | Make | Model | Serial Number |
|---|---|---|---|
| | YSI | 600XL/650 MDS | |
| | LaMotte | 2020 we | 17992 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1330 | 0.5 | 20.57 | 8.00 | 1.09 | 0.51 | 2.4 | 310 | 160 | 11.65 | NONE | NONE |
| 1350 | 2 | 20.70 | 7.97 | 1.09 | 0.71 | -28.5 | 66.5 | | | | |
| 1355 | | 20.96 | 7.95 | 1.09 | 0.85 | -36.4 | 39.9 | 100 | | | |
| 1400 | 3 | 21.20 | 7.93 | 1.09 | 0.99 | -44.1 | 21.4 | | | | |
| 1405 | | 21.43 | 7.90 | 1.09 | 1.04 | -49.3 | 16.9 | 100 | | | |
| 1410 | 4 | 21.65 | 7.87 | 1.08 | 1.05 | -52.0 | 10.21 | | | | |
| 1415 | | 21.80 | 7.85 | 1.08 | 1.07 | -56.7 | 8.45 | 100 | | | |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: _____

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| 132-P3-MW001D - 80.5 | | MS/MSD | 6x | CCPW Metals | 1430 |
| [redacted] | | [redacted] | | Cr+6 | |
| 85.5 | | | 2x | | |
| 85.5 - X | | DUP | 2x | | |

Comments _____

Signature _____ Date 6/24/21

Well ID: 132-P3-MW001D

## Purge Volume Calculation

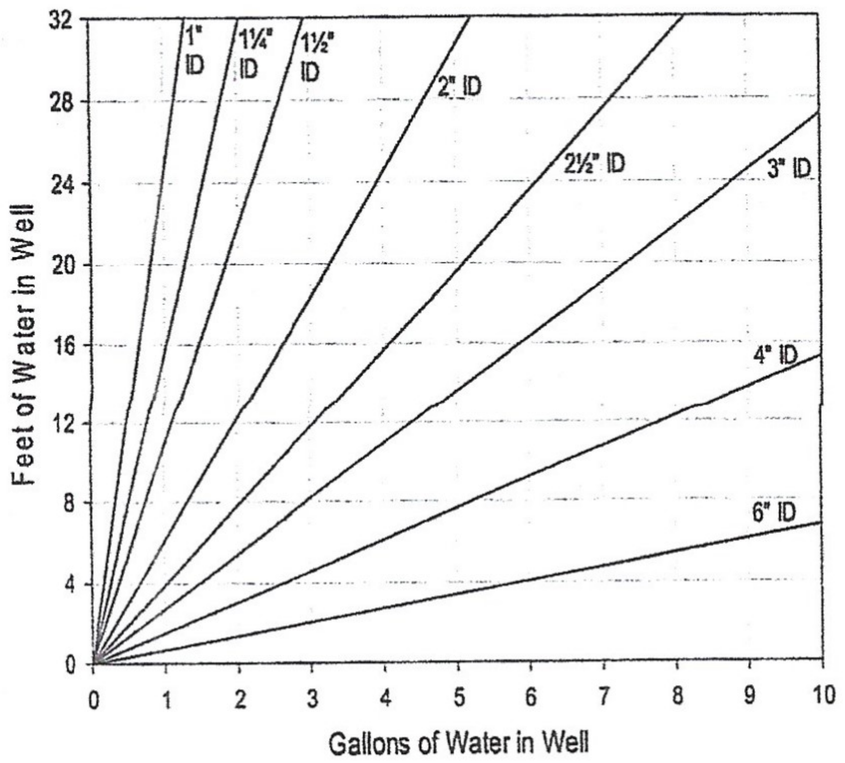


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1420 | 5 | 21.91 | 7.82 | 1.08 | 1.08 | -61.3 | 6.09 | 100 | | Clear |
| 1425 | | 21.95 | 7.80 | 1.08 | 1.10 | -64.9 | 5.16 | | | |
| 1430 | 6 | 22.01 | 7.79 | 1.08 | 1.14 | -67.2 | 5.41 | 100 | 11.85 | |
| 1440 | | 18.30 | 7.76 | 1.10 | 1.02 | -24.7 | 15.5 | | 11.67 | |
| 1445 | 7 | 18.17 | 7.76 | 1.10 | 1.03 | -26.9 | 10.04 | 100 | | |
| 1450 | | 18.12 | 7.75 | 1.10 | 1.05 | -28.0 | 9.03 | | | |
| 1455 | 8 | 18.08 | 7.75 | 1.10 | 1.07 | -29.6 | 7.54 | 100 | | |
| 1500 | | 18.05 | 7.75 | 1.10 | 1.07 | -30.3 | 6.19 | | | |
| 1505 | 9 | 18.09 | 7.75 | 1.10 | 1.08 | -31.6 | 5.16 | 100 | | Clear |
| 1510 | 9.5 | 18.03 | 7.75 | 1.10 | 1.09 | -32.0 | 4.95 | | 11.80 | |

MS/MSD 80.5' ①

DUP-X 85.5 ②

TOC - +3.7'

SAMPLE DEPTHS
4 77.5 1330
3 72.5 1200
2 67.5 1010
1 62.5 830

AECOM

Well ID: HAL-P3-IRM-003I-B

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 6-10-21 Time: Start 0725 am/pm
Project No: 60658620 Finish 1330 am/pm
Site Location: JC
Weather Conds: Cloudy 70° Collector: STEVE LIBERT

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 84.18 c. Length of Water Column _____ (a-b)

b. Water Table Depth 7.40 d. Calculated System Volume (see back) _____

Casing Diameter/Material 2" PVC

**2. WELL PURGE DATA**

a. Purge Method: Low Flow bladder pump

b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

c. Field Testing Equipment used:

| Make | Model | Serial Number |
|---|---|---|
| YSI | 650 MDS | 3353 |
| LaMotte | 2020 we | |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0725 | 0.5 | 17.67 | 8.36 | 10.69 | 1.64 | -46.1 | 105.9 | 100 | 7.40 | NONE | NONE |
| 0730 | 1 | 17.67 | 8.34 | 10.69 | 1.49 | -48.8 | 116.9 | | | | |
| 0735 | 1.5 | 17.66 | 8.32 | 10.69 | 1.40 | -52.6 | 102.3 | 100 | | | |
| 0740 | 2 | 17.65 | 8.31 | 10.69 | 1.26 | -54.9 | 90.6 | | | | |
| 0745 | 2.5 | 17.66 | 8.30 | 10.69 | 1.16 | -55.9 | 87.3 | 100 | 9.30 | | |
| 0750 | 3 | 17.65 | 8.29 | 10.68 | 1.07 | -57.0 | 80.4 | | | | |
| 0755 | 3.5 | 17.64 | 8.29 | 10.68 | 0.90 | -59.3 | 74.5 | 100 | | | |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: _____

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| HAL-P3-IRM-003I-B-62.5 | | | | | 830 |
| -67.5 | | | | | 1010 |
| -72.5 | | | | | 1200 |
| -77.5 | | | | | 1330 |

Comments _____

Signature _____ Date 6-10-21

Well ID: HAL-P3-VRM-003I-B

## Purge Volume Calculation

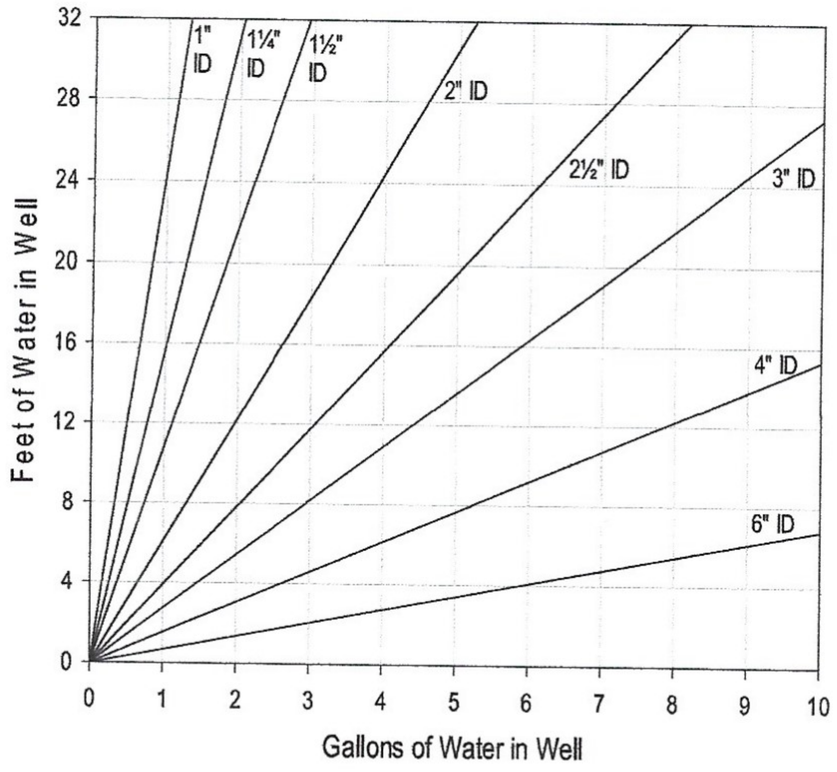


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| | Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0800 | 4 | 17.64 | 8.28 | 10.68 | 0.76 | -61.7 | 70.7 | 100 | | NONE |
| | 0805 | 4.5 | 17.64 | 8.27 | 10.68 | 0.64 | -63.4 | 67.9 | | | |
| | 0810 | 5 | 17.63 | 8.26 | 10.68 | 0.57 | -66.0 | 58.1 | 100 | | |
| | 0815 | 5.5 | 17.61 | 8.26 | 10.68 | 0.49 | -67.5 | 50.5 | | | |
| | 0820 | 6 | 17.61 | 8.26 | 10.68 | 0.42 | -69.8 | 48.3 | 100 | | NONE |
| 62.5' | 0825 | 6.5 | 17.60 | 8.25 | 10.68 | 0.37 | -71.1 | 43.0 | | | |
| Sample ① | 0830 | 7 | 17.60 | 8.25 | 10.68 | 0.34 | -72.2 | 38.9 | 100 | 11.51 | |
| | 0925 | 7.5 | 20.43 | 8.25 | 10.72 | 0.49 | -93.7 | 120.9 | | 8.65 | |
| | 930 | 8 | 18.90 | 8.25 | 10.73 | 0.44 | -90.6 | 84.1 | 100 | | NONE |
| | 935 | 8.5 | 18.91 | 8.25 | 10.73 | 0.41 | -88.8 | 67.3 | | | |
| | 940 | 9 | 18.91 | 8.25 | 10.72 | 0.38 | -86.9 | 60.9 | 100 | | |
| | 945 | 9.5 | 18.92 | 8.25 | 10.72 | 0.38 | -85.1 | 55.5 | | | |
| | 950 | 10 | 18.93 | 8.26 | 10.72 | 0.37 | -84.0 | 50.1 | 100 | | NONE |
| | 955 | 10.5 | 18.95 | 8.26 | 10.71 | 0.36 | -84.0 | 47.8 | | | |
| | 1000 | 11 | 18.95 | 8.26 | 10.71 | 0.36 | -83.7 | 43.3 | 100 | | |
| 67.5' | 1005 | 11.5 | 18.96 | 8.27 | 10.70 | 0.36 | -82.9 | 38.9 | | | |
| Sample ② | 1010 | 12 | 18.98 | 8.27 | 10.70 | 0.36 | -83.0 | 37.0 | 100 | 11.33 | NONE |
| | 1110 | 12.5 | 19.01 | 8.27 | 10.70 | 0.64 | -69.6 | 216 | | 8.75 | |
| | 1115 | 13 | 18.40 | 8.28 | 10.51 | 0.52 | -74.5 | 108.3 | 100 | | |
| | 1120 | 13.5 | 18.19 | 8.28 | 10.33 | 0.44 | -76.9 | 81.1 | | | |
| | 1125 | 14 | 18.11 | 8.29 | 10.08 | 0.40 | -79.0 | 75.4 | 100 | | |
| | 1130 | 14.5 | 18.06 | 8.30 | 9.92 | 0.35 | -83.9 | 61.9 | | | NONE |
| | 1135 | 15 | 18.00 | 8.30 | 9.84 | 0.31 | -86.6 | 55.5 | 100 | | |
| | 1140 | 15.5 | 17.93 | 8.31 | 9.74 | 0.28 | -89.7 | 56.8 | | | |
| | 1145 | 16 | 17.86 | 8.31 | 9.73 | 0.25 | -93.0 | 53.0 | 100 | | |
| 72.5' | 1150 | 16.5 | 17.80 | 8.31 | 9.72 | 0.23 | -94.5 | 48.6 | | | NONE |
| | 1155 | 17 | 17.75 | 8.32 | 9.71 | 0.23 | -95.8 | 43.2 | 100 | 11.68 | |
| Sample ③ | 1200 | 17.5 | 17.71 | 8.32 | 9.71 | 0.22 | -96.4 | 35.1 | | | |
| | 1245 | 18 | 17.09 | 8.31 | 10.42 | 0.25 | -103.8 | 136.6 | 100 | 8.81 | |
| | 1250 | 18.5 | 16.31 | 8.33 | 10.30 | 0.22 | -109.5 | 96.5 | | | NONE |
| | 1255 | 19 | 16.26 | 8.36 | 10.09 | 0.19 | -116.0 | 56.3 | 100 | | |

Well ID: HAL-P3-1RM-0053I-B

## Purge Volume Calculation

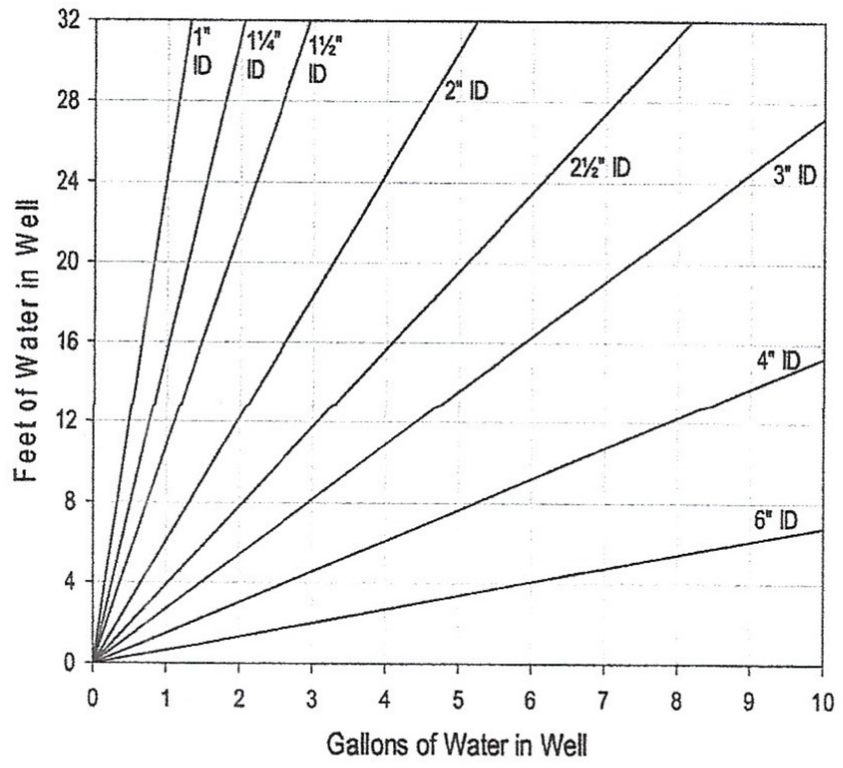


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|
| 1300 | 19.5 | 16.39 | 8.36 | 9.88 | 0.18 | -100.3 | 80.9 | 100 | | |
| 1305 | 20 | 16.50 | 8.36 | 9.70 | 0.17 | -94.7 | 70.1 | | | NONE |
| 1310 | 20.5 | 16.61 | 8.36 | 9.63 | 0.15 | -90.2 | 58.8 | 100 | | |
| 1315 | 21 | 16.69 | 8.36 | 9.56 | 0.15 | -89.1 | 53.6 | | | |
| 1320 | 21.5 | 16.71 | 8.37 | 9.52 | 0.14 | -87.0 | 49.3 | 100 | | |
| 1325 | 22 | 16.73 | 8.37 | 9.50 | 0.14 | -87.1 | 43.5 | | | |
| 1330 | 22.5 | 16.75 | 8.37 | 9.49 | 0.12 | -85.3 | 44.0 | 100 | 11.65 | NONE |

77.5'
Sample (4)

4 intervals
① 62.5
② 67.5
③ 72.5
④ 77.5

TOC = +4' AGS

① 62.5

AECOM

Well ID: HAL-P3-IRM-004I-B

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 6-9-21 Time: Start 0730 am/pm
Project No: 60658620 Finish 1140 am/pm
Site Location: JERSEY CITY
Weather Conds: MOSTLY CLOUDY 80° Collector: STEVE LIBERT

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 83.50 c. Length of Water Column _____ (a-b)

b. Water Table Depth 8.81 d. Calculated System Volume (see back) _____

Casing Diameter/Material: 2" PVC

**2. WELL PURGE DATA**

a. Purge Method: Low Flow - Bladder Pump

b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

c. Field Testing Equipment used:

| Make | Model | Serial Number |
|---|---|---|
| YSI | 650 MDS | 3353 |
| LaMotte | 2020 we | 041109 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0730 | .5 | 15.17 | 8.56 | 6.143 | 0.63 | -48.6 | 100.4 | 100 | 8.80 | NONE | NONE |
| 0735 | 1 | 14.90 | 8.57 | 6.115 | 0.50 | -77.5 | 90.1 | 100 | | | |
| 0740 | 1.5 | 14.87 | 8.59 | 6.119 | 0.41 | -111.9 | 66.5 | 100 | | | |
| 0745 | 2 | 14.84 | 8.59 | 6.121 | 0.40 | -124.3 | 47.2 | 100 | | | |
| 0750 | 2.5 | 14.82 | 8.60 | 6.124 | 0.36 | -126.6 | 46.0 | 100 | | | |
| 0755 | 3 | 14.86 | 8.61 | 6.131 | 0.34 | -128.0 | 43.5 | 100 | | | |
| 0800 | 3.5 | 14.89 | 8.61 | 6.135 | 0.33 | -128.3 | 41.1 | 100 | ↓ | ↓ | ↓ |

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☒ | ☐ | ☒ |
| Has required turbidity been reached | ☒ | ☐ | ☐ |
| Have parameters stabilized | ☒ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

(continued on back)

**3. SAMPLE COLLECTION:** Method: _____

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time |
|---|---|---|---|---|---|
| HAL-P3-IRM-004I-B-62.5 | | 10 cont | | | 810 |
| -67.5 | | ↓ | | | 910 |
| -72.5 | | | | | 1015 |
| -77.5 | | | | | 1140 |

Comments _____

Signature _____ Date 6-9-21

Well ID: HAL-P3-IRM-004I-B

## Purge Volume Calculation

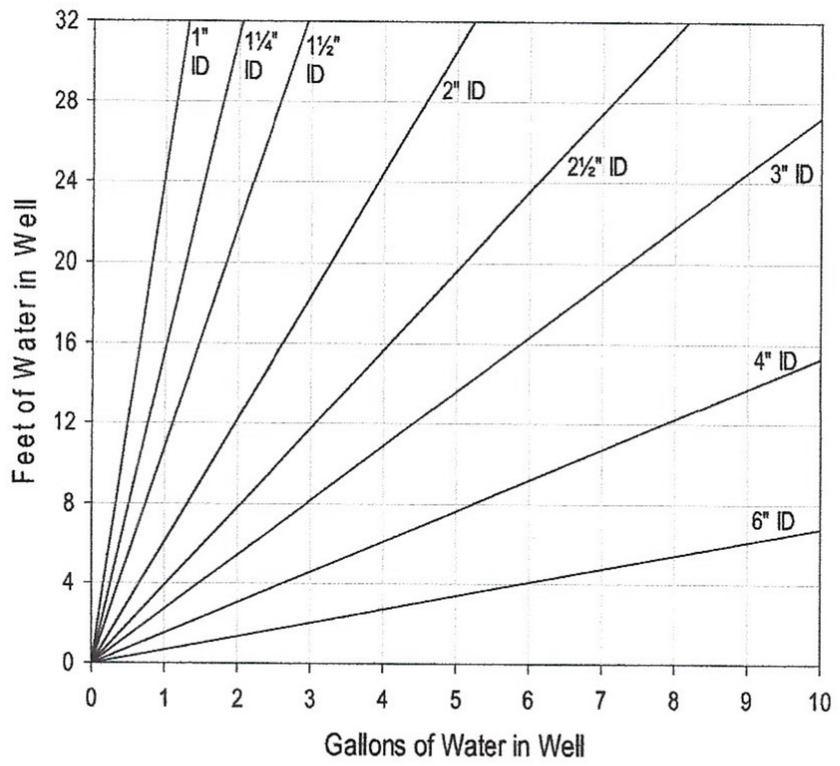


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| | Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 62.5' SAMPLE ① | 805 | 4 | 14.92 | 8.61 | 6.130 | 0.32 | -126.7 | 37.5 | 100 | 8.80 | NONE | |
| | 810 | 4.5 | 14.95 | 8.61 | 6.128 | 0.32 | -125.9 | 37.0 | 100 | 8.88 | NONE | |
| | 830 | 5 | 19.41 | 8.58 | 6.26 | 0.42 | -103.9 | 280 | 100 | 8.95 | | LOWER PUMP 5' ↓ |
| | 835 | 5.5 | 19.47 | 8.58 | 6.26 | 0.40 | -105.5 | 116.5 | 100 | | | |
| | 840 | 6 | 19.60 | 8.57 | 6.25 | 0.38 | -107.6 | 81.7 | 100 | | | |
| | 845 | 6.5 | 19.75 | 8.56 | 6.24 | 0.38 | -111.5 | 77.5 | 100 | | | |
| | 850 | 7 | 19.83 | 8.55 | 6.23 | 0.36 | -114.6 | 59.9 | 100 | | | |
| | 855 | 7.5 | 19.88 | 8.55 | 6.23 | 0.31 | -117.5 | 50.5 | 100 | | | |
| | 900 | 8 | 19.95 | 8.54 | 6.22 | 0.29 | -119.5 | 47.7 | 100 | | | |
| 67.5' SAMPLE ② | 905 | 8.5 | 20.04 | 8.54 | 6.21 | 0.27 | -120.3 | 46.9 | 100 | | | |
| | 910 | 9 | 20.11 | 8.54 | 6.21 | 0.25 | -121.1 | 45.4 | 100 | 9.22 | | |
| | 940 | 9.5 | 20.09 | 8.51 | 6.12 | 6.27 | -129.1 | 178 | 100 | 9.08 | | LOWER 5' ↓ |
| | 945 | 10 | 20.14 | 8.49 | 6.11 | 0.26 | -129.0 | 114.6 | 100 | | | |
| | 950 | 10.5 | 20.15 | 8.47 | 6.10 | 0.25 | -128.1 | 95.1 | 100 | | | |
| | 955 | 11 | 20.19 | 8.46 | 6.08 | 0.24 | -127.5 | 75.3 | 100 | | | |
| | 1000 | 11.5 | 20.18 | 8.44 | 6.06 | 0.20 | -126.0 | 61.1 | 100 | | | |
| | 1005 | 12 | 20.18 | 8.42 | 6.05 | 0.18 | -124.4 | 49.9 | 100 | | | |
| 72.5' SAMPLE ③ | 1010 | 12.5 | 20.16 | 8.41 | 6.04 | 0.19 | -124.5 | 45.6 | 100 | | | |
| | 1015 | 13 | 20.16 | 8.40 | 6.03 | 0.19 | -123.8 | 43.2 | 100 | 9.30 | | |
| | 1050 | 13.5 | 19.66 | 8.38 | 5.03 | 0.55 | -126.9 | 414 | 100 | 9.16 | | LOWER 5' ↓ |
| | 1055 | 14 | 19.68 | 8.38 | 5.03 | 0.50 | -130.1 | 250 | 100 | | | |
| | 1100 | 14.5 | 19.68 | 8.39 | 5.03 | 0.46 | -133.5 | 169.3 | 100 | | | |
| | 1105 | 15 | 19.67 | 8.40 | 5.02 | 0.39 | -138.9 | -88.4 | 100 | | | |
| | 1110 | 15.5 | 19.69 | 8.41 | 5.02 | 0.32 | -144.5 | -79.9 | 100 | | | |
| | 1115 | 16 | 19.70 | 8.41 | 5.01 | 0.30 | -146.9 | -81.2 | 100 | | | |
| | 1120 | 16.5 | 19.71 | 8.42 | 5.01 | 0.28 | -148.8 | -70.3 | 100 | | | |
| | 1125 | 17 | 19.72 | 8.43 | 5.01 | 0.27 | -150.0 | -56.1 | 100 | | | |
| 77.5' SAMPLE ④ | 1130 | 17.5 | 19.72 | 8.44 | 5.00 | 0.28 | -151.1 | -49.3 | 100 | | | |
| | 1135 | 18 | 19.73 | 8.44 | 5.00 | 0.26 | -151.8 | -45.1 | 100 | | | |
| | 1140 | 18.5 | 19.74 | 8.45 | 5.00 | 0.25 | -152.5 | -45.0 | 100 | 9.33 | | |
| | | | | | | | | | | | | |

TOC = +4.2' AGS

AECOM

Well ID: HAL-P3-IRM-010I-B

# Low Flow Ground Water Sample Collection Record

Client: PPG Industries Date: 6-10-21 Time: Start 1415 am/pm 6-10-21
Project No: 60658620 6-11-21 Finish 1105 am/pm 6-11-21
Site Location: JC
Weather Conds: Sun 80° Collector: STEVE LIBERT

**1. WATER LEVEL DATA: (measured from Top of Casing)**

a. Total Well Length 83.85 c. Length of Water Column _____ (a-b)

b. Water Table Depth 7.30 d. Calculated System Volume (see back) _____

Casing Diameter/Material: 2" PVC

**2. WELL PURGE DATA**

a. Purge Method: Low Flow - Bladder pump

b. Acceptance Criteria defined (see workplan)

| | | | | | |
|---|---|---|---|---|---|
| - Temperature | 3% | -D.O. | 10% | - Turbidity | < 10 NTU |
| - pH | ± 0.1 unit | - ORP | ± 10mV | | |
| - Sp. Cond. | 3% | - Drawdown | < 0.3' | | |

c. Field Testing Equipment used:

| Make | Model | Serial Number |
|---|---|---|
| YSI | MDS 650 | 3353 |
| LaMotte | 2020 we | 041109 |

| Time (24hr) | Volume Removed (Liters) | Temp. (°C) | pH | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | DTW (feet) | Color | Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1415 | 0.5 | 18.82 | 9.21 | 5.52 | 1.74 | 26.0 | 145.0 | 100 | 7.30 | NONE | NONE |
| 1420 | 1 | 19.07 | 8.96 | 5.57 | 1.03 | -36.6 | 100.1 | | | | |
| 1425 | 1.5 | 18.50 | 8.87 | 5.61 | 0.86 | -80.1 | 85.3 | 100 | | | |
| 1430 | 2 | 18.39 | 8.76 | 5.64 | 0.65 | -87.5 | 77.2 | | | | |
| 1435 | 2.5 | 18.24 | 8.72 | 5.67 | 0.54 | -91.5 | 62.1 | 100 | | | |
| 1440 | 3 | 17.71 | 8.70 | 5.68 | 0.50 | -94.6 | 51.1 | | | | |
| 1445 | 3.5 | 17.66 | 8.69 | 5.68 | 0.48 | -96.9 | 49.5 | 100 | | | |

(continued on back)

d. Acceptance criteria pass/fail

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☑ |
| Has required turbidity been reached | ☑ | ☐ | ☐ |
| Have parameters stabilized | ☑ | ☐ | ☐ |

If no or N/A - Explain below.
No minimum purge volume required for low-flow sampling.

**3. SAMPLE COLLECTION:** Method: _____

| Sample ID | Container Type | No. of Containers | Preservation | Analysis Req. | Time | |
|---|---|---|---|---|---|---|
| HAL-P3-IRM-010I-B-62.5 | | | | | 1500 | 6/10 |
| 67.5 | | | | | 755 | 6/11 |
| 72.5 | | | | | 930 | ↓ |
| 77.5 | | | | | 1105 | |

Comments _____

Signature _____ Date 6-10-21

Well ID: HAL-P3-IRM-010I-B

## Purge Volume Calculation

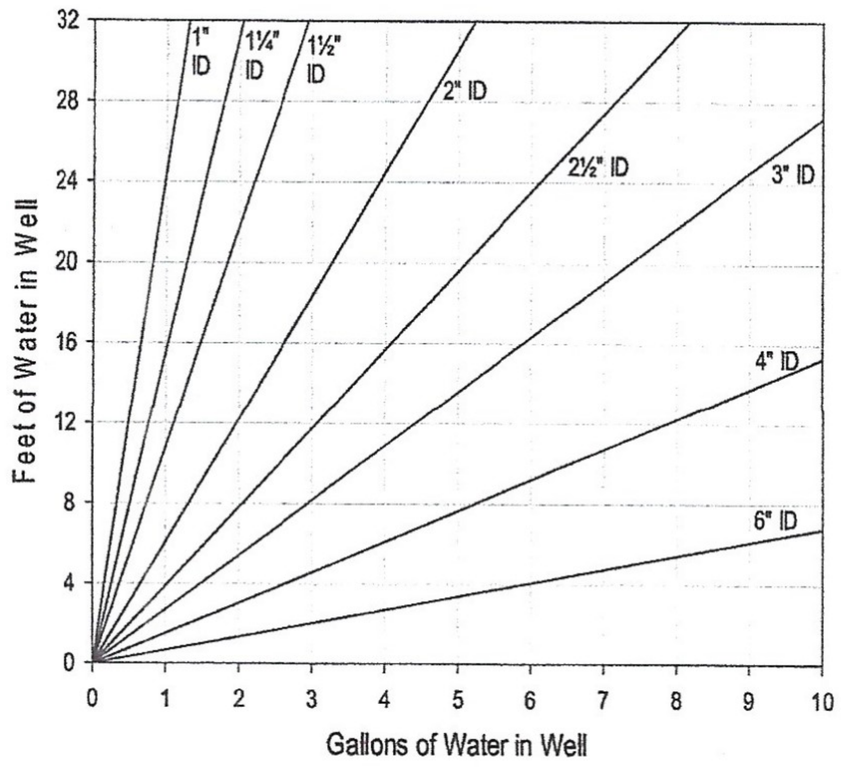


| Volume / Linear Ft. of Pipe | | |
|---|---|---|
| ID (in) | Gallon | Liter |
| 0.25 | 0.0025 | 0.0097 |
| 0.375 | 0.0057 | 0.0217 |
| 0.5 | 0.0102 | 0.0386 |
| 0.75 | 0.0229 | 0.0869 |
| 1 | 0.0408 | 0.1544 |
| 1.25 | 0.0637 | 0.2413 |
| 1.5 | 0.0918 | 0.3475 |
| 2 | 0.1632 | 0.6178 |
| 2.5 | 0.2550 | 0.9653 |
| 3 | 0.3672 | 1.3900 |
| 4 | 0.6528 | 2.4711 |
| 6 | 1.4688 | 5.5600 |

(continued from front)

| | Time (24 hr) | Volume Removed (Liters) | Temp (°C) | pH (S.U.) | Spec. Cond. (mS/cm) | DO (mg/L) | ORP (mV) | Turbidity (NTU) | Flow Rate (ml/min) | Drawdown (ft) | Color/Odor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 62.5' Sample ① | 1450 | 4 | 17.50 | 8.68 | 5.69 | 6.47 | -98.0 | 48.0 | 100 | | |
| | 1455 | | 17.44 | 8.68 | 5.69 | 0.45 | -99.3 | 45.2 | | | |
| | 1500 | 5 | 17.39 | 8.67 | 5.70 | 6.44 | -100.8 | 39.6 | 100 | 9.25 | NONE |
| 6-11-21 | 710 | | 14.69 | 8.61 | 5.66 | 0.67 | -105.5 | 111.5 | | 8.40 | ↓ 5' |
| | 715 | 6 | 14.69 | 8.61 | 5.65 | 0.68 | -106.1 | 87.5 | 100 | | |
| | 720 | | 14.70 | 8.61 | 5.65 | 6.66 | -107.5 | 71.1 | | | |
| | 725 | 7 | 14.72 | 8.61 | 5.65 | 0.65 | -104.0 | 62.6 | 100 | | |
| | 730 | | 14.74 | 8.61 | 5.64 | 0.65 | -102.3 | 56.5 | | | |
| | 735 | 8 | 14.75 | 8.60 | 5.63 | 0.64 | -102.6 | 54.9 | 100 | | NONE |
| | 740 | | 14.75 | 8.60 | 5.63 | 0.64 | -101.5 | 50.1 | | | |
| | 745 | 9 | 14.76 | 8.60 | 5.62 | 0.63 | -100.4 | 46.9 | 100 | | |
| 67.5' Sample ② | 750 | | 14.77 | 8.60 | 5.62 | 0.62 | -100.3 | 42.2 | | | |
| | 755 | 10 | 14.77 | 8.60 | 5.61 | 0.63 | -99.1 | 40.5 | 100 | 9.33 | |
| | 845 | | 14.69 | 8.60 | 5.49 | 0.98 | -94.6 | 301.0 | | 8.48 | ↓ 5' |
| | 850 | 11 | 14.67 | 8.59 | 5.48 | 0.90 | -94.0 | 167 | 100 | | |
| | 855 | | 14.65 | 8.59 | 5.47 | 0.77 | -93.3 | 96.2 | | | |
| | 900 | 12 | 14.61 | 8.58 | 5.45 | 0.73 | -92.5 | 67.6 | 100 | | |
| | 905 | | 14.57 | 8.57 | 5.43 | 0.61 | -91.8 | 61.3 | | | |
| | 910 | 13 | 14.56 | 8.57 | 5.42 | 0.50 | -90.6 | 54.7 | 100 | | |
| | 915 | | 14.55 | 8.57 | 5.41 | 0.36 | -91.9 | 48.8 | | | |
| | 920 | 14 | 14.53 | 8.56 | 5.40 | 0.28 | -91.0 | 44.1 | 100 | | |
| 72.5' Sample ③ | 925 | | 14.52 | 8.56 | 5.39 | 0.25 | -89.0 | 41.4 | | | |
| | 930 | 15 | 14.50 | 8.56 | 5.38 | 0.20 | -88.7 | 38.5 | 100 | 9.33 | |
| | 1015 | | 14.46 | 8.51 | 5.84 | 0.63 | -86.1 | 288.0 | | 8.69 | ↓ 5' |
| | 1020 | 16 | 14.45 | 8.51 | 5.83 | 0.54 | -68.4 | 226. | 100 | | |
| | 1025 | | 14.45 | 8.50 | 5.82 | 0.50 | -63.5 | 113.5 | | | |
| | 1030 | 17 | 14.44 | 8.50 | 5.81 | 0.48 | -50.1 | 101.1 | 100 | | |
| | 1035 | | 14.43 | 8.50 | 5.80 | 0.45 | -43.3 | 104.9 | | | |
| | 1040 | 18 | 14.42 | 8.49 | 5.79 | 0.43 | -39.8 | 83.4 | 100 | | |
| | 1045 | | 14.41 | 8.49 | 5.79 | 0.40 | -37.5 | 76.1 | | | |
| | 1050 | 19 | 14.39 | 8.50 | 5.78 | 0.38 | -35.0 | 56.9 | 100 | | |
| 77.5 | 1055 | 19.5 | 14.35 | 8.50 | 5.77 | 0.37 | -31.1 | 50.0 | | | |
| | 1100 | 20 | 14.30 | 8.51 | 5.77 | 0.37 | -28.8 | 47.9 | 100 | | |
| Sample ④ | 1105 | 20.5 | 14.28 | 8.51 | 5.77 | 0.35 | -27.5 | 46.7 | 100 | 9.25 | |

# Appendix L

# Historical Groundwater Analytical Data (September 2015 – September 2020)

# Appendix L.1

# Historical Groundwater Analytical Data – $Cr^{+6}$ and CCPW Metals

**Appendix L.1**
**Historical Groundwater Analytical Data - Cr+6 and CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ANTIMONY | CHROMIUM | CHROMIUM (HEXAVALENT) | NICKEL | THALLIUM | VANADIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-36-0 | 7440-47-3 | 18540-29-9 | 7440-02-0 | 7440-28-0 | 7440-62-2 |
| | | | | | | | **GWQS** | 6 | 70 | 70 | 100 | 2 | 60 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | GPS-EW1S | GPS-EW1S-022516 | N | T | JC14874 | 2016-02-25 | < 3.0 U | **170** | **130** | 16.3 | **< 5.2 U** | 32.2 J |
| WELL | SHALLOW | GPS-EW1S | GPS-EW1S-022516-F | N | D | JC14874 | 2016-02-25 | - | **157** | **120** | - | - | - |
| WELL | SHALLOW | GPS-EW1S | GPS-EW1S-060316 | N | T | JC21504 | 2016-06-03 | < 3.3 U | **193** | **170** | 15.7 J | **< 5.7 U** | 33.8 J |
| WELL | SHALLOW | GPS-EW1S | GPS-EW1S-060316-F | N | D | JC21504 | 2016-06-03 | - | **210** | **160** | - | - | - |
| WELL | SHALLOW | GPS-EW1S | GPS-EW1S-083016 | N | T | JC26754 | 2016-08-30 | 3.4 J | 20.8 | < 3.9 U | 19.4 | **< 9.5 U** | 30.8 J |
| WELL | SHALLOW | GPS-EW1S | GPS-EW1S-083016-F | N | D | JC26754 | 2016-08-30 | - | 15.2 | 5.6 J | - | - | - |
| WELL | SHALLOW | GPS-EW1S | GPS-EW1S-111715 | N | T | JC8703 | 2015-11-17 | 5.8 J | **219** | **200** | 21.1 | **< 5.2 U** | 48.2 J |
| WELL | SHALLOW | GPS-EW1S | GPS-EW1S-111715F | N | D | JC8703 | 2015-11-17 | - | **211** | **190** | - | - | - |
| WELL | SHALLOW | GPS-EW2S | GPS-EW2S-022516 | N | T | JC14874 | 2016-02-25 | < 3.0 U | **152** | **120 J** | 10.6 | **< 3.5 U** | 50.0 |
| WELL | SHALLOW | GPS-EW2S | GPS-EW2S-022516-F | N | D | JC14874 | 2016-02-25 | - | **152** | **120 J** | - | - | - |
| WELL | SHALLOW | GPS-EW2S | GPS-EW2S-060316 | N | T | JC21504 | 2016-06-03 | < 3.3 U | 3.4 J | < 3.9 U | 11.5 J | **< 3.8 U** | 5.6 J |
| WELL | SHALLOW | GPS-EW2S | GPS-EW2S-060316-F | N | D | JC21504 | 2016-06-03 | - | 2.3 J | < 3.9 U | - | - | - |
| WELL | SHALLOW | GPS-EW2S | GPS-EW2S-083016 | N | T | JC26754 | 2016-08-30 | 3.7 J | 1.4 J | < 3.9 U | 25.9 | < 1.9 U | 41.4 J |
| WELL | SHALLOW | GPS-EW2S | GPS-EW2S-083016-F | N | D | JC26754 | 2016-08-30 | - | < 0.81 U | < 3.9 U | - | - | - |
| WELL | SHALLOW | GPS-EW2S | GPS-EW2S-111715 | N | T | JC8703 | 2015-11-17 | 5.7 J | **109** | **98** | 20.9 | **< 3.5 U** | 39.4 J |
| WELL | SHALLOW | GPS-EW2S | GPS-EW2S-111715F | N | D | JC8703 | 2015-11-17 | - | **106** | **100** | - | - | - |
| WELL | SHALLOW | GPS-EW3S | GPS-EW3S-022516 | N | T | JC14874 | 2016-02-25 | < 3.0 U | **3470** | **2900** | 8.6 J | **3.9 J** | 22.7 J |
| WELL | SHALLOW | GPS-EW3S | GPS-EW3S-022516-F | N | D | JC14874 | 2016-02-25 | - | **3490** | **3100** | - | - | - |
| WELL | SHALLOW | GPS-EW3S | GPS-EW3S-060316 | N | T | JC21504 | 2016-06-03 | < 3.3 U | **108** | **81** | 27.3 J | **< 3.8 U** | 51.1 |
| WELL | SHALLOW | GPS-EW3S | GPS-EW3S-060316-F | N | D | JC21504 | 2016-06-03 | - | **115** | **80** | - | - | - |
| WELL | SHALLOW | GPS-EW3S | GPS-EW3S-083016 | N | T | JC26754 | 2016-08-30 | 4.8 J | 9.2 J | < 3.9 U | 12.2 | < 1.9 U | 4.3 J |
| WELL | SHALLOW | GPS-EW3S | GPS-EW3S-083016-F | N | D | JC26754 | 2016-08-30 | - | < 0.81 U | < 3.9 U | - | - | - |
| WELL | SHALLOW | GPS-EW3S | GPS-EW3S-111715 | N | T | JC8703 | 2015-11-17 | 5.2 J | **70.5** | 65 | 10.9 | < 1.7 U | 19.3 J |
| WELL | SHALLOW | GPS-EW3S | GPS-EW3S-111715F | N | D | JC8703 | 2015-11-17 | - | **79.1** | 63 | - | - | - |
| WELL | SHALLOW | 10W-MW101S | 10W-MW101S-20180208 | N | T | JC60477 | 2018-02-08 | < 4.3 U | 6.4 J | 21 JB | < 10 U | < 1.6 U | 3.0 J |
| WELL | SHALLOW | 10W-MW102S | 10W-MW102S-20180208 | N | T | JC60477 | 2018-02-08 | < 4.3 U | < 10 U | 29 JB | < 10 U | < 1.6 U | 3.3 J |
| WELL | SHALLOW | 114-MC-MW101S | 114-MC-MW101S-20150921 | N | T | JC4371 | 2015-09-21 | - | - | 15 | - | - | - |
| WELL | SHALLOW | 114-MC-MW101S | 114-MC-MW101S-20150921 | N | T | JC4371A | 2015-09-21 | **17.1 J** | 28.8 | - | 18.4 | **< 17 U** | 0.70 J |
| WELL | SHALLOW | 114-MC-MW101S | 114-MC-MW101S-20151209 | N | T | JC10220 | 2015-12-09 | - | - | < 0.92 U | - | - | - |
| WELL | SHALLOW | 114-MC-MW101S | 114-MC-MW101S-20151209 | N | T | JC10220A | 2015-12-09 | < 3.0 U | 7.6 J | - | 2.9 J | **< 17 U** | 1.3 J |
| WELL | SHALLOW | 114-MC-MW101S | 114-MC-MW101S-20160314 | N | T | JC16175 | 2016-03-14 | < 3.3 U | 1.0 J | < 0.74 RA | < 0.76 UB | **< 9.5 U** | 1.7 J |
| WELL | SHALLOW | 114-MC-MW101S | 114-MC-MW101S-20160314X | FD | T | JC16175 | 2016-03-14 | < 3.3 U | 5.9 J | < 0.74 RA | 4.9 J | **< 9.5 U** | 1.8 J |
| WELL | SHALLOW | 114-MC-MW101S | 114-MC-MW101S-20160622 | N | T | JC22758 | 2016-06-22 | < 3.3 U | 14.3 J | 17 RA | < 0.76 U | **< 19 U** | 1.3 J |
| WELL | SHALLOW | 114-MC-MW101S | 114-MC-MW101S-20160622-F | N | D | JC22758 | 2016-06-22 | - | < 0.81 UB | 4.0 RA | - | - | - |
| WELL | SHALLOW | 114-MC-MW101S | 114-MC-MW101S-F-20150921 | N | D | JC4371 | 2015-09-21 | - | - | < 3.1 U | - | - | - |
| WELL | SHALLOW | 114-MC-MW101S | 114-MC-MW101S-F-20150921 | N | D | JC4371A | 2015-09-21 | - | 10.0 J | - | - | - | - |
| WELL | SHALLOW | 114-MC-MW101S | 114-MC-MW101S-F-20151209 | N | D | JC10220 | 2015-12-09 | - | - | < 0.92 U | - | - | - |
| WELL | SHALLOW | 114-MC-MW101S | 114-MC-MW101S-F-20151209 | N | D | JC10220A | 2015-12-09 | - | 5.8 J | - | - | - | - |
| WELL | SHALLOW | 114-MC-MW101S | 114-MC-MW101S-F-20160314 | N | D | JC16175 | 2016-03-14 | - | 1.8 J | < 0.92 RA | - | - | - |
| WELL | SHALLOW | 114-MC-MW101S | 114-MC-MW101S-F-20160314X | FD | D | JC16175 | 2016-03-14 | - | 2.2 J | < 0.92 RA | - | - | - |
| WELL | SHALLOW | 114-MC-MW102S | 114-MC-MW102S-20150921 | N | T | JC4371 | 2015-09-21 | - | - | < 3.1 U | - | - | - |
| WELL | SHALLOW | 114-MC-MW102S | 114-MC-MW102S-20150921 | N | T | JC4371A | 2015-09-21 | **33.8** | 13.1 J | - | 26.0 J | **< 17 U** | 9.6 J |
| WELL | SHALLOW | 114-MC-MW102S | 114-MC-MW102S-20151210 | N | T | JC10380 | 2015-12-10 | **< 15 U** | 10.5 J | < 0.97 RA | < 20 U | **< 43 U** | 7.7 J |
| WELL | SHALLOW | 114-MC-MW102S | 114-MC-MW102S-20160314 | N | T | JC16175 | 2016-03-14 | < 3.3 U | 4.9 J | < 0.74 RA | 7.4 J | **< 48 U** | 3.6 J |
| WELL | SHALLOW | 114-MC-MW102S | 114-MC-MW102S-20160624 | N | T | JC22939 | 2016-06-24 | **< 16 U** | 5.8 J | 18 J | 15.9 J | **< 38 U** | 3.9 J |
| WELL | SHALLOW | 114-MC-MW102S | 114-MC-MW102S-20160624-F | N | D | JC22939 | 2016-06-24 | - | < 4.1 U | < 3.9 U | - | - | - |
| WELL | SHALLOW | 114-MC-MW102S | 114-MC-MW102S-F-20150921 | N | D | JC4371 | 2015-09-21 | - | - | < 3.1 U | - | - | - |
| WELL | SHALLOW | 114-MC-MW102S | 114-MC-MW102S-F-20150921 | N | D | JC4371A | 2015-09-21 | - | 10.7 J | - | - | - | - |
| WELL | SHALLOW | 114-MC-MW102S | 114-MC-MW102S-F-20151210 | N | D | JC10380 | 2015-12-10 | - | 7.8 J | < 0.97 RA | - | - | - |
| WELL | SHALLOW | 114-MC-MW102S | 114-MC-MW102S-F-20160314 | N | D | JC16175 | 2016-03-14 | - | < 0.81 U | < 0.92 RA | - | - | - |
| WELL | SHALLOW | 114-MW14A | 114-MW14A-10.0-20171219 | N | T | JC57638 | 2017-12-19 | < 4.3 U | 16.9 J | 40 J | < 3.2 UB | < 1.6 U | 4.7 J |
| WELL | SHALLOW | 114-MW14A | 114-MW14A-20151216-10.5 | N | T | JC10815 | 2015-12-16 | - | 8.4 J | < 0.92 UJ | - | - | - |
| WELL | SHALLOW | 114-MW14A | 114-MW14A-20151216-7.5 | N | T | JC10815 | 2015-12-16 | - | 3.9 J | < 0.92 U | - | - | - |
| WELL | SHALLOW | 114-MW14A | 114-MW14A-5.0-20171219 | N | T | JC57638 | 2017-12-19 | < 4.3 U | 21.4 | 28 | < 2.9 UB | < 1.6 U | 5.5 J |
| WELL | SHALLOW | 114-MW14A | 114-MW14A-F-20151216-7.5 | N | D | JC10815 | 2015-12-16 | - | 5.9 J | 1.8 J | - | - | - |

**Appendix L.1**
**Historical Groundwater Analytical Data - Cr+6 and CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ANTIMONY | CHROMIUM | CHROMIUM (HEXAVALENT) | NICKEL | THALLIUM | VANADIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-36-0 | 7440-47-3 | 18540-29-9 | 7440-02-0 | 7440-28-0 | 7440-62-2 |
| | | | | | | | **GWQS** | 6 | 70 | 70 | 100 | 2 | 60 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-MW15A | 114-MW15A-20180417 | N | D | JC64376 | 2018-04-17 | < 4.3 U | 3.1 J | < 8.1 U | < 1.3 U | < 0.047 U | 2.1 J |
| WELL | SHALLOW | 114-MW15A | 114-MW15A-20180417 | N | T | JC64376 | 2018-04-17 | < 4.3 U | 5.0 JB | < 8.1 U | 1.8 J | < 0.089 UB | 3.8 J |
| WELL | SHALLOW | 114-MW16A | 114-MW16A-20151214-10.65 | N | T | JC10597 | 2015-12-14 | < 3.0 U | 3.1 J | 1.1 J | < 0.79 UB | < 1.7 U | 1.0 J |
| WELL | SHALLOW | 114-MW16A | 114-MW16A-20151215-14.65 | N | T | JC10722 | 2015-12-15 | - | < 0.77 U | < 0.92 U | - | - | - |
| WELL | SHALLOW | 114-MW16A | 114-MW16A-F-20151214-10.65 | N | D | JC10597 | 2015-12-14 | - | 3.2 J | < 0.92 U | - | - | - |
| WELL | SHALLOW | 114-MW16A | 114-MW16A-F-20151215-14.65 | N | D | JC10722 | 2015-12-15 | - | < 0.77 U | < 0.92 U | - | - | - |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-10.5-20151001 | N | T | JC5237 | 2015-10-01 | - | - | < 3.1 U | - | - | - |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-10.5-20151001 | N | T | JC5237A | 2015-10-01 | **7.0** | 23.5 | - | 4.4 J | < 1.7 U | 20.7 J |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-11.0-20180420 | N | T | JC64643 | 2018-04-20 | < 4.3 U | 27.6 | < 8.1 U | 5.1 J | < 0.047 U | 22.4 J |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-12.5-20151001 | N | T | JC5237 | 2015-10-01 | - | - | < 3.1 U | - | - | - |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-12.5-20151001 | N | T | JC5237A | 2015-10-01 | **8.0** | 28.1 | - | 6.0 J | < 1.7 U | 28.0 J |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-8.0-20180420 | N | T | JC64643 | 2018-04-20 | < 4.3 U | 32.0 | < 8.1 U | 8.9 J | < 0.047 U | 27.6 J |
| WELL | SHALLOW | 114-MW22A | 114-MW22A-11.0-20180419 | N | T | JC64571 | 2018-04-19 | < 4.3 U | < 0.85 U | < 8.1 U | < 1.3 U | < 0.047 U | < 1.3 U |
| WELL | SHALLOW | 114-MW22A | 114-MW22A-16.0-20180419 | N | T | JC64571 | 2018-04-19 | < 4.3 U | 1.0 J | < 8.1 U | < 1.3 U | < 0.047 U | < 1.3 U |
| WELL | SHALLOW | 114-MW24A | 114-MW24A-20170405 | N | T | JC40469 | 2017-04-05 | - | 15.4 J | < 8.1 U | - | - | - |
| WELL | SHALLOW | 114-MW24A | 114-MW24A-20170405-F | N | D | JC40469 | 2017-04-05 | - | 7.0 J | < 8.1 U | - | - | - |
| WELL | SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | N | D | JC65325 | 2018-05-02 | - | < 0.85 U | < 8.1 U | - | - | - |
| WELL | SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | N | T | JC65325 | 2018-05-02 | < 4.3 U | 3.6 J | < 8.1 U | 32.5 | < 0.047 U | < 1.3 U |
| WELL | SHALLOW | 114-MW25A | 114-MW25A-20160926 | N | T | JC28410 | 2016-09-26 | - | **165** | **98** | - | - | - |
| WELL | SHALLOW | 114-MW25A | 114-MW25A-20170926 | N | T | JC51802 | 2017-09-26 | - | **102** | < 8.1 U | - | - | - |
| WELL | SHALLOW | 114-MW25A | 114-MW25A-20170926 | N | T | JC51824 | 2017-09-26 | < 4.3 U | - | - | 10.0 | < 1.6 U | 2.6 J |
| WELL | SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | N | T | JC57565 | 2017-12-18 | < 4.3 U | 2.2 J | < 8.1 U | 26.4 | < 0.047 U | < 1.3 U |
| WELL | SHALLOW | 114-MW27A | 114-MW27A-20170926 | N | T | JC51802 | 2017-09-26 | - | 66.6 | 56 | - | - | - |
| WELL | SHALLOW | 114-MW27A | 114-MW27A-20170926 | N | T | JC51824 | 2017-09-26 | < 4.3 U | - | - | 9.4 J | < 1.6 U | 4.3 J |
| WELL | SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | N | T | JC57565 | 2017-12-18 | < 4.3 U | 3.5 J | < 8.1 U | < 4.4 UB | < 0.047 U | 1.5 J |
| WELL | SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | N | T | JC56729 | 2017-12-06 | - | - | < 8.1 U | - | - | - |
| WELL | SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | N | T | JC56729A | 2017-12-06 | < 4.3 U | 3.9 J | - | < 1.3 U | < 0.047 U | 2.4 J |
| WELL | SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | N | T | JC56859 | 2017-12-07 | - | - | < 8.1 U | - | - | - |
| WELL | SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | N | T | JC56859A | 2017-12-07 | < 4.3 U | < 0.85 U | - | < 1.7 UB | 0.048 J | 4.1 J |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20160926-13.5 | N | T | JC28410 | 2016-09-26 | - | < 0.81 UB | < 3.9 U | - | - | - |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20160926-8.5 | N | T | JC28410 | 2016-09-26 | - | < 0.81 UB | < 3.9 U | - | - | - |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927 | N | T | JC51874 | 2017-09-27 | - | 1.5 J | < 8.1 U | - | - | - |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927 | N | T | JC51890 | 2017-09-27 | < 4.3 U | - | - | 14.1 | < 1.6 U | 9.5 J |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927-X | FD | T | JC51874 | 2017-09-27 | - | 1.1 J | < 8.1 U | - | - | - |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927-X | FD | T | JC51890 | 2017-09-27 | < 4.3 U | - | - | 14.4 | < 1.6 U | 9.5 J |
| WELL | SHALLOW | 114-MW37A | 114-MW37A-20170926 | N | T | JC51802 | 2017-09-26 | - | 1.5 J | 16 J | - | - | - |
| WELL | SHALLOW | 114-MW37A | 114-MW37A-20170928 | N | T | JC52029 | 2017-09-28 | < 4.3 U | - | - | 4.0 J | < 1.6 U | 2.6 J |
| WELL | SHALLOW | 114-MW38A | 114-MW38A-20170331 | N | T | JC40140 | 2017-03-31 | - | 8.0 J | < 8.1 U | - | - | - |
| WELL | SHALLOW | 114-MW38A | 114-MW38A-20170331-F | N | D | JC40140 | 2017-03-31 | - | 2.4 J | < 8.1 U | - | - | - |
| WELL | SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | N | T | JC56504 | 2017-12-04 | - | - | < 8.1 U | - | - | - |
| WELL | SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | N | T | JC56504A | 2017-12-04 | **< 8.6 U** | 20.4 | - | 10.4 J | 0.18 J | 21.6 J |
| WELL | SHALLOW | 114-MW41A | 114-MW41A-20180420 | N | T | JC64643 | 2018-04-20 | **< 43 U** | **65600** | **66900** | 46.0 J | < 0.24 U | 17.5 J |
| WELL | SHALLOW | 114-MW42A | 114-MW42A-20180417 | N | T | JC64376 | 2018-04-17 | < 4.3 U | 3.5 JB | < 8.1 U | 5.5 J | < 0.047 U | 2.1 J |
| WELL | SHALLOW | 114-MW43A | 114-MW43A-20180417 | N | T | JC64376 | 2018-04-17 | < 4.3 U | < 1.7 U | < 8.1 U | < 1.3 U | < 0.053 UB | 1.9 J |
| WELL | SHALLOW | 114-MW44A | 114-MW44A | N | T | JC55349 | 2017-11-13 | - | - | < 8.1 U | - | - | - |
| WELL | SHALLOW | 114-MW44A | 114-MW44A | N | T | JC55349A | 2017-11-13 | < 4.3 U | < 0.85 U | - | 5.3 J | < 1.6 U | < 1.3 U |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-20150921 | N | T | JC4371 | 2015-09-21 | - | - | 30 J | - | - | - |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-20150921 | N | T | JC4371A | 2015-09-21 | 4.9 J | 40.8 J | - | 30.7 | **< 3.5 U** | 57.0 |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-20151209 | N | T | JC10220 | 2015-12-09 | - | - | **10800 RA** | - | - | - |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-20151209 | N | T | JC10220A | 2015-12-09 | < 3.0 U | **10800 J** | - | 20.9 | < 1.7 U | < 0.70 U |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-20160317 | N | T | JC16446 | 2016-03-17 | < 3.3 U | 9.1 JB | 0.75 RA | 32.0 | **< 9.5 U** | 56.5 |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-20160617 | N | T | JC22504 | 2016-06-17 | < 3.3 U | 5.0 J | < 3.9 U | 14.7 J | **< 3.8 U** | 11.6 J |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-20160617-F | N | D | JC22504 | 2016-06-17 | - | 3.1 J | < 3.9 U | - | - | - |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-20160916 | N | T | JC27812 | 2016-09-16 | < 3.3 U | < 0.81 U | < 3.9 U | 15.8 | **< 3.8 U** | 7.7 J |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-20160916-F | N | D | JC27812 | 2016-09-16 | - | 3.0 J | < 3.9 U | - | - | - |

**Appendix L.1**
**Historical Groundwater Analytical Data - Cr+6 and CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ANTIMONY | CHROMIUM | CHROMIUM (HEXAVALENT) | NICKEL | THALLIUM | VANADIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-36-0 | 7440-47-3 | 18540-29-9 | 7440-02-0 | 7440-28-0 | 7440-62-2 |
| | | | | | | | **GWQS** | 6 | 70 | 70 | 100 | 2 | 60 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-20170718 | N | T | JC47211 | 2017-07-18 | - | 3.5 | < 8.1 | - | - | - |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-20170718-F | N | D | JC47211 | 2017-07-18 | - | 3.0 | < 8.1 | - | - | - |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-20170718X | FD | T | JC47211 | 2017-07-18 | - | 3.2 | < 8.1 | - | - | - |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-20170718X-F | FD | D | JC47211 | 2017-07-18 | - | 3.1 | < 8.1 | - | - | - |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-F-20150921 | N | D | JC4371 | 2015-09-21 | - | - | 51 J | - | - | - |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-F-20150921 | N | D | JC4371A | 2015-09-21 | - | **70.9 J** | - | - | - | - |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-F-20151209 | N | D | JC10220 | 2015-12-09 | - | - | **11600 RA** | - | - | - |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-F-20151209 | N | D | JC10220A | 2015-12-09 | - | **11600 J** | - | - | - | - |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-F-20160317 | N | D | JC16446 | 2016-03-17 | - | 5.3 JB | < 0.67 RA | - | - | - |
| WELL | SHALLOW | 114-P1B-MW101S | 114-P1B-MW101S-20150922 | N | T | JC4452 | 2015-09-22 | - | - | < 3.1 U | - | - | - |
| WELL | SHALLOW | 114-P1B-MW101S | 114-P1B-MW101S-20150922 | N | T | JC4452A | 2015-09-22 | < 3.0 U | 37.9 J | - | 14.4 | **< 3.5 U** | 31.9 J |
| WELL | SHALLOW | 114-P1B-MW101S | 114-P1B-MW101S-20151209 | N | T | JC10220 | 2015-12-09 | - | - | < 0.92 U | - | - | - |
| WELL | SHALLOW | 114-P1B-MW101S | 114-P1B-MW101S-20151209 | N | T | JC10220A | 2015-12-09 | < 3.0 U | 6.4 J | - | 8.6 J | **< 5.2 U** | 9.8 J |
| WELL | SHALLOW | 114-P1B-MW101S | 114-P1B-MW101S-20160314 | N | T | JC16175 | 2016-03-14 | < 3.3 U | 54.4 | < 0.74 RA | 38.9 | **< 3.8 U** | 12.7 J |
| WELL | SHALLOW | 114-P1B-MW101S | 114-P1B-MW101S-20160621 | N | T | JC22642 | 2016-06-21 | < 3.3 U | 39.2 J | 7.8 J | 17.9 | **< 3.8 U** | 35.0 J |
| WELL | SHALLOW | 114-P1B-MW101S | 114-P1B-MW101S-20160621-F | N | D | JC22642 | 2016-06-21 | - | 18.9 J | 21 | - | - | - |
| WELL | SHALLOW | 114-P1B-MW101S | 114-P1B-MW101S-F-20150922 | N | D | JC4452 | 2015-09-22 | - | - | < 3.1 U | - | - | - |
| WELL | SHALLOW | 114-P1B-MW101S | 114-P1B-MW101S-F-20150922 | N | D | JC4452A | 2015-09-22 | - | 7.7 J | - | - | - | - |
| WELL | SHALLOW | 114-P1B-MW101S | 114-P1B-MW101S-F-20151209 | N | D | JC10220 | 2015-12-09 | - | - | < 0.92 U | - | - | - |
| WELL | SHALLOW | 114-P1B-MW101S | 114-P1B-MW101S-F-20151209 | N | D | JC10220A | 2015-12-09 | - | 6.3 J | - | - | - | - |
| WELL | SHALLOW | 114-P1B-MW101S | 114-P1B-MW101S-F-20160314 | N | D | JC16175 | 2016-03-14 | - | 2.4 J | < 0.92 RA | - | - | - |
| WELL | SHALLOW | 114-P1B-MW102S | 114-P1B-MW102S-20150922 | N | T | JC4452 | 2015-09-22 | - | - | 27 | - | - | - |
| WELL | SHALLOW | 114-P1B-MW102S | 114-P1B-MW102S-20150922 | N | T | JC4452A | 2015-09-22 | < 3.0 U | **220** | - | 16.0 | **< 5.2 U** | 42.0 J |
| WELL | SHALLOW | 114-P1B-MW102S | 114-P1B-MW102S-20151210 | N | T | JC10380 | 2015-12-10 | < 3.0 U | **277** | < 0.92 RA | 8.4 J | **< 8.7 U** | 57.4 |
| WELL | SHALLOW | 114-P1B-MW102S | 114-P1B-MW102S-20160314 | N | T | JC16175 | 2016-03-14 | 4.2 J | **299** | < 0.74 RA | 9.2 J | **< 9.5 U** | **75.7** |
| WELL | SHALLOW | 114-P1B-MW102S | 114-P1B-MW102S-20160916 | N | T | JC27812 | 2016-09-16 | **< 6.5 U** | **366** | 32 J | 10.6 J | **< 3.8 U** | **82.4 J** |
| WELL | SHALLOW | 114-P1B-MW102S | 114-P1B-MW102S-20160916-F | N | D | JC27812 | 2016-09-16 | - | **306** | 50 J | - | - | - |
| WELL | SHALLOW | 114-P1B-MW102S | 114-P1B-MW102S-20170412 | N | T | JC41030 | 2017-04-12 | - | **184** | < 8.1 U | - | - | - |
| WELL | SHALLOW | 114-P1B-MW102S | 114-P1B-MW102S-20170412-F | N | D | JC41030 | 2017-04-12 | - | **150** | < 8.1 U | - | - | - |
| WELL | SHALLOW | 114-P1B-MW102S | 114-P1B-MW102S-F-20150922 | N | D | JC4452 | 2015-09-22 | - | - | < 3.1 U | - | - | - |
| WELL | SHALLOW | 114-P1B-MW102S | 114-P1B-MW102S-F-20150922 | N | D | JC4452A | 2015-09-22 | - | **179** | - | - | - | - |
| WELL | SHALLOW | 114-P1B-MW102S | 114-P1B-MW102S-F-20151210 | N | D | JC10380 | 2015-12-10 | - | **203** | < 0.92 RA | - | - | - |
| WELL | SHALLOW | 114-P1B-MW102S | 114-P1B-MW102S-F-20160314 | N | D | JC16175 | 2016-03-14 | - | **273** | < 0.92 RA | - | - | - |
| WELL | SHALLOW | 114-P1B-MW103S | 114-P1B-MW103S-20150922 | N | T | JC4452 | 2015-09-22 | - | - | < 3.1 U | - | - | - |
| WELL | SHALLOW | 114-P1B-MW103S | 114-P1B-MW103S-20150922 | N | T | JC4452A | 2015-09-22 | 3.6 J | **83.7** | - | 42.0 | **< 8.7 U** | 5.3 JB |
| WELL | SHALLOW | 114-P1B-MW103S | 114-P1B-MW103S-20151210 | N | T | JC10380 | 2015-12-10 | < 3.0 U | 4.6 J | < 0.92 RA | 6.8 J | **< 17 U** | 5.0 J |
| WELL | SHALLOW | 114-P1B-MW103S | 114-P1B-MW103S-20160318 | N | T | JC16549 | 2016-03-18 | < 3.3 U | 4.7 J | < 0.74 UJ | 3.8 JB | **< 9.5 U** | 2.3 J |
| WELL | SHALLOW | 114-P1B-MW103S | 114-P1B-MW103S-20160622 | N | T | JC22758 | 2016-06-22 | < 3.3 U | 9.5 JB | < 3.9 RA | < 0.76 U | **< 9.5 U** | 3.8 J |
| WELL | SHALLOW | 114-P1B-MW103S | 114-P1B-MW103S-20160622-F | N | D | JC22758 | 2016-06-22 | - | < 0.81 UB | < 3.9 RA | - | - | - |
| WELL | SHALLOW | 114-P1B-MW103S | 114-P1B-MW103S-F-20150922 | N | D | JC4452 | 2015-09-22 | - | - | < 3.1 U | - | - | - |
| WELL | SHALLOW | 114-P1B-MW103S | 114-P1B-MW103S-F-20150922 | N | D | JC4452A | 2015-09-22 | - | 2.1 J | - | - | - | - |
| WELL | SHALLOW | 114-P1B-MW103S | 114-P1B-MW103S-F-20151210 | N | D | JC10380 | 2015-12-10 | - | < 0.77 U | < 0.92 RA | - | - | - |
| WELL | SHALLOW | 114-P1B-MW103S | 114-P1B-MW103S-F-20160318 | N | D | JC16549 | 2016-03-18 | - | 3.5 J | 4.1 J | - | - | - |
| WELL | SHALLOW | 114-P1B-MW104S | 114-P1B-MW104S-20150922 | N | T | JC4452 | 2015-09-22 | - | - | 68 J | - | - | - |
| WELL | SHALLOW | 114-P1B-MW104S | 114-P1B-MW104S-20150922 | N | T | JC4452A | 2015-09-22 | < 3.0 U | < 0.77 UJ | - | 38.5 | < 1.7 U | **73.7** |
| WELL | SHALLOW | 114-P1B-MW104S | 114-P1B-MW104S-20151211 | N | T | JC10525 | 2015-12-11 | < 3.0 U | 5.5 J | 8.1 RA | 45.8 | < 1.7 U | **74.8** |
| WELL | SHALLOW | 114-P1B-MW104S | 114-P1B-MW104S-20160322 | N | T | JC16738 | 2016-03-22 | < 3.3 U | 20.3 J | 30 J | 47.0 | < 1.9 U | **65.7** |
| WELL | SHALLOW | 114-P1B-MW104S | 114-P1B-MW104S-20160621 | N | T | JC22642 | 2016-06-21 | < 3.3 U | 56.4 | 8.8 J | 47.0 | < 1.9 U | **67.8** |
| WELL | SHALLOW | 114-P1B-MW104S | 114-P1B-MW104S-20160621-F | N | D | JC22642 | 2016-06-21 | - | 9.1 J | 9.9 J | - | - | - |
| WELL | SHALLOW | 114-P1B-MW104S | 114-P1B-MW104S-F-20150922 | N | D | JC4452 | 2015-09-22 | - | - | **74 J** | - | - | - |
| WELL | SHALLOW | 114-P1B-MW104S | 114-P1B-MW104S-F-20150922 | N | D | JC4452A | 2015-09-22 | - | 2.9 J | - | - | - | - |
| WELL | SHALLOW | 114-P1B-MW104S | 114-P1B-MW104S-F-20151211 | N | D | JC10525 | 2015-12-11 | - | 3.4 J | 14 RA | - | - | - |
| WELL | SHALLOW | 114-P1B-MW104S | 114-P1B-MW104S-F-20160322 | N | D | JC16738 | 2016-03-22 | - | 11.2 J | 31 J | - | - | - |
| WELL | SHALLOW | 114-P1C-MW101S | 114-P1C-MW101S-20150923 | N | T | JC4555 | 2015-09-23 | - | - | 9.3 RA | - | - | - |
| WELL | SHALLOW | 114-P1C-MW101S | 114-P1C-MW101S-20150923 | N | T | JC4555A | 2015-09-23 | 3.4 J | 53.7 | - | 47.6 | **< 17 U** | < 0.70 UB |

**Appendix L.1**
**Historical Groundwater Analytical Data - Cr+6 and CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ANTIMONY | CHROMIUM | CHROMIUM (HEXAVALENT) | NICKEL | THALLIUM | VANADIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-36-0 | 7440-47-3 | 18540-29-9 | 7440-02-0 | 7440-28-0 | 7440-62-2 |
| | | | | | | | **GWQS** | 6 | 70 | 70 | 100 | 2 | 60 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-P1C-MW101S | 114-P1C-MW101S-20150923X | FD | T | JC4555 | 2015-09-23 | - | - | 5.9 RA | - | - | - |
| WELL | SHALLOW | 114-P1C-MW101S | 114-P1C-MW101S-20150923X | FD | T | JC4555A | 2015-09-23 | < 3.0 U | 47.6 | - | 40.2 | **< 17 U** | < 0.70 UB |
| WELL | SHALLOW | 114-P1C-MW101S | 114-P1C-MW101S-20151211 | N | T | JC10525 | 2015-12-11 | < 3.0 U | 17.2 | < 0.92 RA | 16.0 J | **< 17 U** | < 0.70 U |
| WELL | SHALLOW | 114-P1C-MW101S | 114-P1C-MW101S-20160316 | N | T | JC16336 | 2016-03-16 | **< 16 U** | 30.0 J | 4.6 RA | 26.7 J | **< 9.5 U** | 4.8 J |
| WELL | SHALLOW | 114-P1C-MW101S | 114-P1C-MW101S-20160620 | N | T | JC22555 | 2016-06-20 | < 3.3 U | 32.2 | 13 RA | 22.8 | **< 19 U** | 3.1 J |
| WELL | SHALLOW | 114-P1C-MW101S | 114-P1C-MW101S-20160620-F | N | D | JC22555 | 2016-06-20 | - | 12.7 | 14 RA | - | - | - |
| WELL | SHALLOW | 114-P1C-MW101S | 114-P1C-MW101S-F-20150923 | N | D | JC4555 | 2015-09-23 | - | - | 5.9 RA | - | - | - |
| WELL | SHALLOW | 114-P1C-MW101S | 114-P1C-MW101S-F-20150923 | N | D | JC4555A | 2015-09-23 | - | 25.8 JB | - | - | - | - |
| WELL | SHALLOW | 114-P1C-MW101S | 114-P1C-MW101S-F-20150923X | FD | D | JC4555 | 2015-09-23 | - | - | 5.9 RA | - | - | - |
| WELL | SHALLOW | 114-P1C-MW101S | 114-P1C-MW101S-F-20150923X | FD | D | JC4555A | 2015-09-23 | - | 22.6 JB | - | - | - | - |
| WELL | SHALLOW | 114-P1C-MW101S | 114-P1C-MW101S-F-20151211 | N | D | JC10525 | 2015-12-11 | - | 15.6 | < 0.92 RA | - | - | - |
| WELL | SHALLOW | 114-P1C-MW101S | 114-P1C-MW101S-F-20160316 | N | D | JC16336 | 2016-03-16 | - | 13.9 J | < 0.74 RA | - | - | - |
| WELL | SHALLOW | 114-P1C-MW102S | 114-P1C-MW102S-20170403 | N | T | JC40254 | 2017-04-03 | - | 5.3 J | < 8.1 U | - | - | - |
| WELL | SHALLOW | 114-P1C-MW102S | 114-P1C-MW102S-20170403-F | N | D | JC40254 | 2017-04-03 | - | 5.3 J | < 8.1 U | - | - | - |
| WELL | SHALLOW | 114-P1C-MW102S | 114-P1C-MW102S-20170403X | FD | T | JC40254 | 2017-04-03 | - | 4.5 J | < 8.1 U | - | - | - |
| WELL | SHALLOW | 114-P1C-MW102S | 114-P1C-MW102S-20170403X-F | FD | D | JC40254 | 2017-04-03 | - | 4.8 J | < 8.1 U | - | - | - |
| WELL | SHALLOW | 114-P1C-MW102S | 114-P1C-MW102S-20170523 | N | T | JC43922 | 2017-05-23 | - | 5.9 J | < 8.1 U | - | - | - |
| WELL | SHALLOW | 114-P1C-MW102S | 114-P1C-MW102S-20170523-F | N | D | JC43922 | 2017-05-23 | - | 5.2 J | < 8.1 U | - | - | - |
| WELL | SHALLOW | 114-P1C-MW103S | 114-P1C-MW103S-20170404 | N | T | JC40335 | 2017-04-04 | - | 16.5 | < 8.1 U | - | - | - |
| WELL | SHALLOW | 114-P1C-MW103S | 114-P1C-MW103S-20170404-F | N | D | JC40335 | 2017-04-04 | - | 5.0 J | < 8.1 U | - | - | - |
| WELL | SHALLOW | 114-P1C-MW103S | 114-P1C-MW103S-20170523 | N | T | JC43922 | 2017-05-23 | - | 4.0 J | < 8.1 U | - | - | - |
| WELL | SHALLOW | 114-P1C-MW103S | 114-P1C-MW103S-20170523-F | N | D | JC43922 | 2017-05-23 | - | 3.4 J | 13 | - | - | - |
| WELL | SHALLOW | 114-P1C-MW104S | 114-P1C-MW104S-20170404 | N | T | JC40335 | 2017-04-04 | - | 2.8 J | < 8.1 U | - | - | - |
| WELL | SHALLOW | 114-P1C-MW104S | 114-P1C-MW104S-20170404-F | N | D | JC40335 | 2017-04-04 | - | 1.9 J | < 8.1 U | - | - | - |
| WELL | SHALLOW | 114-P1C-MW104S | 114-P1C-MW104S-20170523 | N | T | JC43922 | 2017-05-23 | - | 0.90 J | < 8.1 U | - | - | - |
| WELL | SHALLOW | 114-P1C-MW104S | 114-P1C-MW104S-20170523-F | N | D | JC43922 | 2017-05-23 | - | 1.3 J | 12 J | - | - | - |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-20160324 | N | T | JC16953 | 2016-03-24 | **< 16 U** | 15.5 J | < 0.74 UJ | 11.1 J | **< 9.5 U** | 6.6 J |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-20160628 | N | T | JC23103 | 2016-06-28 | < 3.3 U | 28.0 | 6.9 J | 49.6 J | **< 9.5 U** | < 0.66 U |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-20160628-F | N | D | JC23103 | 2016-06-28 | - | 15.3 | 12 | - | - | - |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-20160914 | N | T | JC27595 | 2016-09-14 | < 3.3 U | 4.1 J | < 3.9 U | < 0.76 U | < 1.9 U | 4.4 J |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-20160914-F | N | D | JC27595 | 2016-09-14 | - | < 0.81 U | < 3.9 U | - | - | - |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-20160914X | FD | T | JC27595 | 2016-09-14 | 4.0 J | 3.7 J | 5.6 J | 5.7 J | < 1.9 U | 4.3 J |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-20160914X-F | FD | D | JC27595 | 2016-09-14 | - | < 0.81 U | < 3.9 U | - | - | - |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-20161212 | N | T | JC33522 | 2016-12-12 | < 3.3 U | 3.8 J | 7.6 J | 2.3 J | < 1.9 U | 3.1 J |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-20161212-F | N | D | JC33522 | 2016-12-12 | - | 0.90 J | < 3.9 U | - | - | - |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-20161212X | FD | T | JC33522 | 2016-12-12 | < 3.3 U | < 0.81 U | 4.4 J | 1.5 J | < 1.9 U | 2.3 J |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-20161212X-F | FD | D | JC33522 | 2016-12-12 | - | 0.90 J | < 3.9 U | - | - | - |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-F-20160324 | N | D | JC16953 | 2016-03-24 | - | 10.8 J | < 0.74 UJ | - | - | - |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-20160324 | N | T | JC16953 | 2016-03-24 | **< 16 U** | 12.3 J | < 0.74 UJ | 14.6 J | **< 9.5 U** | 15.2 J |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-20160628 | N | T | JC23103 | 2016-06-28 | < 3.3 U | 49.3 | < 3.9 U | 72.0 | **< 5.7 U** | 32.3 J |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-20160628-F | N | D | JC23103 | 2016-06-28 | - | < 0.81 U | < 3.9 U | - | - | - |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-20160914 | N | T | JC27595 | 2016-09-14 | **6.6** | 5.0 J | 6.7 J | 16.8 J | **< 5.7 U** | 14.7 J |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-20160914-F | N | D | JC27595 | 2016-09-14 | - | < 0.81 U | < 3.9 U | - | - | - |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-20160927-13.5 | N | T | JC28464 | 2016-09-27 | - | 5.1 J | 5.7 J | - | - | - |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-20160927-18.5 | N | T | JC28464 | 2016-09-27 | - | 7.0 J | 10 | - | - | - |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-20161212 | N | T | JC33522 | 2016-12-12 | < 3.3 U | 8.4 J | 14 | 24.0 | **< 5.7 U** | 16.4 J |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-20161212-F | N | D | JC33522 | 2016-12-12 | - | 1.0 J | < 3.9 U | - | - | - |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-F-20160324 | N | D | JC16953 | 2016-03-24 | - | 6.0 JB | < 0.74 UJ | - | - | - |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-20160325 | N | T | JC17059 | 2016-03-25 | **< 16 U** | 28.8 J | < 0.74 U | 32.2 J | **< 48 U** | 39.2 J |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-20160627 | N | T | JC23029 | 2016-06-27 | < 3.3 U | 35.2 | < 3.9 U | 31.6 | **< 19 U** | 20.4 J |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-20160627-F | N | D | JC23029 | 2016-06-27 | - | 2.4 J | 8.0 J | - | - | - |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-20160915 | N | T | JC27716 | 2016-09-15 | **< 6.5 U** | 26.8 | 23 JB | 26.6 | **< 19 U** | 46.6 J |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-20160915-F | N | D | JC27716 | 2016-09-15 | - | 9.6 J | 19 JB | - | - | - |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-20161213 | N | T | JC33573 | 2016-12-13 | < 3.3 U | < 4.1 U | < 3.9 U | 14.0 | **< 19 U** | < 0.66 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-20161213-F | N | D | JC33573 | 2016-12-13 | - | < 4.1 U | < 3.9 U | - | - | - |

**Appendix L.1**
**Historical Groundwater Analytical Data - Cr+6 and CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ANTIMONY | CHROMIUM | CHROMIUM (HEXAVALENT) | NICKEL | THALLIUM | VANADIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-36-0 | 7440-47-3 | 18540-29-9 | 7440-02-0 | 7440-28-0 | 7440-62-2 |
| | | | | | | | **GWQS** | 6 | 70 | 70 | 100 | 2 | 60 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-F-20160325 | N | D | JC17059 | 2016-03-25 | - | < 4.1 U | 17 J | - | - | - |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-20160325 | N | T | JC17059 | 2016-03-25 | **< 16 U** | 12.7 J | < 0.74 U | 16.8 J | **< 9.5 U** | 14.4 J |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-20160629 | N | T | JC23208 | 2016-06-29 | < 3.3 U | 32.5 | < 3.9 U | 34.4 J | **< 9.5 U** | 26.7 J |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-20160629-F | N | D | JC23208 | 2016-06-29 | - | 1.8 J | < 3.9 UJ | - | - | - |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-20160915 | N | T | JC27716 | 2016-09-15 | < 3.3 U | < 0.81 U | < 3.9 UB | 13.4 J | **< 5.7 U** | 9.9 J |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-20160915-F | N | D | JC27716 | 2016-09-15 | - | 2.2 J | < 3.9 UB | - | - | - |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-20161214 | N | T | JC33691 | 2016-12-14 | 3.5 J | 5.1 JB | < 3.9 U | 13.8 | **< 9.5 U** | 11.8 J |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-20161214-F | N | D | JC33691 | 2016-12-14 | - | < 0.81 UB | < 3.9 U | - | - | - |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-F-20160325 | N | D | JC17059 | 2016-03-25 | - | < 4.1 U | < 0.74 UJ | - | - | - |
| WELL | SHALLOW | 114-P2B1-MW101S | 114-P2B1-MW101S-20150922 | N | T | JC4452 | 2015-09-22 | - | - | < 3.1 U | - | - | - |
| WELL | SHALLOW | 114-P2B1-MW101S | 114-P2B1-MW101S-20150922 | N | T | JC4452A | 2015-09-22 | **< 30 U** | **97.1** | - | 60.7 | **< 17 U** | 0.90 JB |
| WELL | SHALLOW | 114-P2B1-MW101S | 114-P2B1-MW101S-20151210 | N | T | JC10380 | 2015-12-10 | < 3.0 U | 5.3 J | < 0.92 RA | 5.0 J | **< 17 U** | < 0.70 U |
| WELL | SHALLOW | 114-P2B1-MW101S | 114-P2B1-MW101S-20151210X | FD | T | JC10380 | 2015-12-10 | < 3.0 U | 3.8 J | < 0.92 RA | 5.3 J | **< 17 U** | < 0.70 U |
| WELL | SHALLOW | 114-P2B1-MW101S | 114-P2B1-MW101S-20160315 | N | T | JC16239 | 2016-03-15 | < 3.3 U | 4.1 J | R | 9.4 J | **< 19 U** | < 0.66 U |
| WELL | SHALLOW | 114-P2B1-MW101S | 114-P2B1-MW101S-20160620 | N | T | JC22555 | 2016-06-20 | < 3.3 U | 37.5 | < 3.9 RA | 10.5 | **< 19 U** | 0.80 J |
| WELL | SHALLOW | 114-P2B1-MW101S | 114-P2B1-MW101S-20160620-F | N | D | JC22555 | 2016-06-20 | - | < 0.81 U | < 3.9 RA | - | - | - |
| WELL | SHALLOW | 114-P2B1-MW101S | 114-P2B1-MW101S-F-20150922 | N | D | JC4452 | 2015-09-22 | - | - | 32 | - | - | - |
| WELL | SHALLOW | 114-P2B1-MW101S | 114-P2B1-MW101S-F-20150922 | N | D | JC4452A | 2015-09-22 | - | 32.9 | - | - | - | - |
| WELL | SHALLOW | 114-P2B1-MW101S | 114-P2B1-MW101S-F-20151210 | N | D | JC10380 | 2015-12-10 | - | 3.2 J | < 0.92 RA | - | - | - |
| WELL | SHALLOW | 114-P2B1-MW101S | 114-P2B1-MW101S-F-20151210X | FD | D | JC10380 | 2015-12-10 | - | 3.3 J | < 0.92 RA | - | - | - |
| WELL | SHALLOW | 114-P2B1-MW101S | 114-P2B1-MW101S-F-20160315 | N | D | JC16239 | 2016-03-15 | - | 1.7 J | R | - | - | - |
| WELL | SHALLOW | 114-P2B1-MW102S | 114-P2B1-MW102S-20150923 | N | T | JC4555 | 2015-09-23 | - | - | 19 RA | - | - | - |
| WELL | SHALLOW | 114-P2B1-MW102S | 114-P2B1-MW102S-20150923 | N | T | JC4555A | 2015-09-23 | **< 15 U** | **412** | - | 46.7 J | **< 17 U** | < 0.70 U |
| WELL | SHALLOW | 114-P2B1-MW102S | 114-P2B1-MW102S-20151211 | N | T | JC10525 | 2015-12-11 | < 3.0 U | **244** | < 0.92 RA | 4.9 J | **< 43 U** | < 0.70 U |
| WELL | SHALLOW | 114-P2B1-MW102S | 114-P2B1-MW102S-20160316 | N | T | JC16336 | 2016-03-16 | **< 16 U** | 22.9 J | < 0.74 RA | 4.7 J | **< 38 U** | < 3.3 U |
| WELL | SHALLOW | 114-P2B1-MW102S | 114-P2B1-MW102S-20160623 | N | T | JC22854 | 2016-06-23 | < 3.3 U | **484** | < 3.9 RA | 9.0 J | **< 48 U** | 4.9 J |
| WELL | SHALLOW | 114-P2B1-MW102S | 114-P2B1-MW102S-20160623-F | N | D | JC22854 | 2016-06-23 | - | 4.7 J | 11 RA | - | - | - |
| WELL | SHALLOW | 114-P2B1-MW102S | 114-P2B1-MW102S-20170412 | N | T | JC41030 | 2017-04-12 | - | 2.9 J | < 8.1 U | - | - | - |
| WELL | SHALLOW | 114-P2B1-MW102S | 114-P2B1-MW102S-20170412-F | N | D | JC41030 | 2017-04-12 | - | 1.9 J | < 8.1 U | - | - | - |
| WELL | SHALLOW | 114-P2B1-MW102S | 114-P2B1-MW102S-20170524 | N | T | JC44024 | 2017-05-24 | - | 0.90 J | < 8.1 U | - | - | - |
| WELL | SHALLOW | 114-P2B1-MW102S | 114-P2B1-MW102S-20170524-F | N | D | JC44024 | 2017-05-24 | - | 1.1 J | < 8.1 U | - | - | - |
| WELL | SHALLOW | 114-P2B1-MW102S | 114-P2B1-MW102S-F-20150923 | N | D | JC4555 | 2015-09-23 | - | - | 44 RA | - | - | - |
| WELL | SHALLOW | 114-P2B1-MW102S | 114-P2B1-MW102S-F-20150923 | N | D | JC4555A | 2015-09-23 | - | 31.9 JB | - | - | - | - |
| WELL | SHALLOW | 114-P2B1-MW102S | 114-P2B1-MW102S-F-20151211 | N | D | JC10525 | 2015-12-11 | - | 7.0 J | < 0.92 RA | - | - | - |
| WELL | SHALLOW | 114-P2B1-MW102S | 114-P2B1-MW102S-F-20160316 | N | D | JC16336 | 2016-03-16 | - | 6.1 J | < 0.74 RA | - | - | - |
| WELL | SHALLOW | 114-P2B1-MW103S | 114-P2B1-MW103S-20150923 | N | T | JC4555 | 2015-09-23 | - | - | < 3.1 RA | - | - | - |
| WELL | SHALLOW | 114-P2B1-MW103S | 114-P2B1-MW103S-20150923 | N | T | JC4555A | 2015-09-23 | **< 15 U** | 48.1 | - | 36.2 J | **< 35 U** | < 0.70 U |
| WELL | SHALLOW | 114-P2B1-MW103S | 114-P2B1-MW103S-20151211 | N | T | JC10525 | 2015-12-11 | < 3.0 U | 7.9 J | < 0.92 RA | 6.2 J | **< 43 U** | < 0.70 U |
| WELL | SHALLOW | 114-P2B1-MW103S | 114-P2B1-MW103S-20160316 | N | T | JC16336 | 2016-03-16 | **< 16 U** | 43.2 J | < 0.74 RA | 6.3 J | **< 19 U** | < 3.3 U |
| WELL | SHALLOW | 114-P2B1-MW103S | 114-P2B1-MW103S-20160623 | N | T | JC22854 | 2016-06-23 | < 3.3 U | 43.9 | 19 RA | 29.5 | **< 48 U** | 5.2 J |
| WELL | SHALLOW | 114-P2B1-MW103S | 114-P2B1-MW103S-20160623-F | N | D | JC22854 | 2016-06-23 | - | 9.1 J | 26 RA | - | - | - |
| WELL | SHALLOW | 114-P2B1-MW103S | 114-P2B1-MW103S-F-20150923 | N | D | JC4555 | 2015-09-23 | - | - | 13 RA | - | - | - |
| WELL | SHALLOW | 114-P2B1-MW103S | 114-P2B1-MW103S-F-20150923 | N | D | JC4555A | 2015-09-23 | - | 17.5 JB | - | - | - | - |
| WELL | SHALLOW | 114-P2B1-MW103S | 114-P2B1-MW103S-F-20151211 | N | D | JC10525 | 2015-12-11 | - | 8.7 J | < 0.92 RA | - | - | - |
| WELL | SHALLOW | 114-P2B1-MW103S | 114-P2B1-MW103S-F-20160316 | N | D | JC16336 | 2016-03-16 | - | 4.1 J | < 0.74 RA | - | - | - |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20150921 | N | T | JC4371 | 2015-09-21 | - | - | < 3.1 U | - | - | - |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20150921 | N | T | JC4371A | 2015-09-21 | **18.6** | 12.8 | - | 10.2 | **< 17 U** | 2.1 J |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20151209 | N | T | JC10220 | 2015-12-09 | - | - | < 0.92 U | - | - | - |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20151209 | N | T | JC10220A | 2015-12-09 | < 3.0 U | 13.1 | - | 5.9 J | **< 17 U** | 2.9 J |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20160315 | N | T | JC16239 | 2016-03-15 | < 3.3 U | 10.9 | R | 6.8 JB | **< 19 U** | 2.1 J |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20160620 | N | T | JC22555 | 2016-06-20 | < 3.3 U | 19.3 | 13 RA | 5.7 J | **< 19 U** | 1.7 J |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20160620-F | N | D | JC22555 | 2016-06-20 | - | 5.7 J | 12 RA | - | - | - |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-F-20150921 | N | D | JC4371 | 2015-09-21 | - | - | < 3.1 U | - | - | - |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-F-20150921 | N | D | JC4371A | 2015-09-21 | - | 6.1 J | - | - | - | - |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-F-20151209 | N | D | JC10220 | 2015-12-09 | - | - | < 0.92 U | - | - | - |

**Appendix L.1**
**Historical Groundwater Analytical Data - Cr+6 and CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ANTIMONY | CHROMIUM | CHROMIUM (HEXAVALENT) | NICKEL | THALLIUM | VANADIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-36-0 | 7440-47-3 | 18540-29-9 | 7440-02-0 | 7440-28-0 | 7440-62-2 |
| | | | | | | | **GWQS** | 6 | 70 | 70 | 100 | 2 | 60 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-F-20151209 | N | D | JC10220A | 2015-12-09 | - | 9.6 J | - | - | - | - |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-F-20160315 | N | D | JC16239 | 2016-03-15 | - | 4.8 J | R | - | - | - |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-20150925 | N | T | JC4798 | 2015-09-25 | - | - | < 3.1 RA | - | - | - |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-20150925 | N | T | JC4798A | 2015-09-25 | **< 15 U** | 7.1 JB | - | 2.2 J | **< 17 U** | 3.0 J |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-20151210 | N | T | JC10380 | 2015-12-10 | < 3.0 U | 14.3 | < 0.92 RA | 5.6 J | **< 17 U** | 3.5 J |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-20160315 | N | T | JC16239 | 2016-03-15 | < 3.3 U | 4.7 J | < 0.74 UJ | < 0.76 UB | **< 9.5 U** | 3.3 J |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-20160622 | N | T | JC22758 | 2016-06-22 | < 3.3 U | 9.5 JB | 33 RA | < 0.76 U | **< 19 U** | 3.5 J |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-20160622-F | N | D | JC22758 | 2016-06-22 | - | < 0.81 UB | < 3.9 RA | - | - | - |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-F-20150925 | N | D | JC4798 | 2015-09-25 | - | - | 8.2 RA | - | - | - |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-F-20150925 | N | D | JC4798A | 2015-09-25 | - | 4.8 JB | - | - | - | - |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-F-20151210 | N | D | JC10380 | 2015-12-10 | - | 3.4 J | < 0.92 RA | - | - | - |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-F-20160315 | N | D | JC16239 | 2016-03-15 | - | 4.5 J | < 0.74 UJ | - | - | - |
| WELL | SHALLOW | 114-P2B4-MW1 | 114-P2B4-MW1-10.0-20180425 | N | D | JC64901 | 2018-04-25 | **< 26 U** | **39600** | **35700** | 15.8 J | 0.12 J | < 7.7 U |
| WELL | SHALLOW | 114-P2B4-MW1 | 114-P2B4-MW1-10.0-20180425 | N | T | JC64901 | 2018-04-25 | **< 26 U** | **38600** | **37400** | 29.4 J | 0.37 J | 21.2 J |
| WELL | SHALLOW | 114-P2B4-MW1 | 114-P2B4-MW1-10.0-20180425X | FD | D | JC64901 | 2018-04-25 | **< 26 U** | **41000** | **35100** | 15.8 J | < 0.094 U | < 7.7 U |
| WELL | SHALLOW | 114-P2B4-MW1 | 114-P2B4-MW1-10.0-20180425X | FD | T | JC64901 | 2018-04-25 | **< 26 U** | **38400** | **36800** | 61.8 J | 0.40 J | **63.6 J** |
| WELL | SHALLOW | 114-P2B4-MW1 | 114-P2B4-MW1-14.0-20180425 | N | T | JC64901 | 2018-04-25 | **< 43 U** | **47900** | **47100** | 19.0 J | < 0.094 U | < 13 U |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-20150928 | N | T | JC4872 | 2015-09-28 | - | - | 26 | - | - | - |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-20150928 | N | T | JC4872A | 2015-09-28 | **< 150 U** | **76.0** | - | 12.6 J | **< 170 U** | < 35 U |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-20151210 | N | T | JC10380 | 2015-12-10 | **< 15 U** | 17.2 J | < 0.97 RA | < 4.0 U | **< 43 U** | 3.8 J |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-20160316 | N | T | JC16336 | 2016-03-16 | **< 16 U** | 16.4 J | < 0.74 RA | 4.3 J | **< 38 U** | < 3.3 U |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-20160621 | N | T | JC22642 | 2016-06-21 | **< 16 U** | 29.3 J | 26 | 11.1 J | **< 19 U** | < 3.3 U |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-20160621-F | N | D | JC22642 | 2016-06-21 | - | 12.0 J | 22 | - | - | - |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-F-20150928 | N | D | JC4872 | 2015-09-28 | - | - | 12 | - | - | - |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-F-20150928 | N | D | JC4872A | 2015-09-28 | - | < 3.9 U | - | - | - | - |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-F-20151210 | N | D | JC10380 | 2015-12-10 | - | 22.4 J | < 0.97 RA | - | - | - |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-F-20160316 | N | D | JC16336 | 2016-03-16 | - | 13.3 J | < 0.74 RA | - | - | - |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-20150925 | N | T | JC4798 | 2015-09-25 | - | - | < 3.1 RA | - | - | - |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-20150925 | N | T | JC4798A | 2015-09-25 | **15.4 J** | 20.7 | - | 6.5 J | **< 43 U** | < 3.5 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-20151211 | N | T | JC10525 | 2015-12-11 | **< 15 U** | 11.1 J | < 0.92 RA | < 20 U | **< 43 U** | 5.3 J |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-20160322 | N | T | JC16738 | 2016-03-22 | 5.0 J | 45.3 J | < 0.74 U | 2.2 J | **< 9.5 U** | 5.3 J |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-20160621 | N | T | JC22642 | 2016-06-21 | **< 16 U** | 18.1 J | 24 J | 5.0 J | **< 48 U** | < 3.3 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-20160621-F | N | D | JC22642 | 2016-06-21 | - | 6.1 J | 58 J | - | - | - |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-F-20150925 | N | D | JC4798 | 2015-09-25 | - | - | < 3.1 RA | - | - | - |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-F-20150925 | N | D | JC4798A | 2015-09-25 | - | 14.4 | - | - | - | - |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-F-20151211 | N | D | JC10525 | 2015-12-11 | - | 11.8 J | < 0.92 RA | - | - | - |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-F-20160322 | N | D | JC16738 | 2016-03-22 | - | 49.1 J | < 0.74 U | - | - | - |
| WELL | SHALLOW | 114-P2B4-MW103S | 114-P2B4-MW103S-20150928 | N | T | JC4872 | 2015-09-28 | - | - | < 3.1 U | - | - | - |
| WELL | SHALLOW | 114-P2B4-MW103S | 114-P2B4-MW103S-20150928 | N | T | JC4872A | 2015-09-28 | **< 15 U** | 7.9 J | - | 91.4 | **< 43 U** | 8.3 J |
| WELL | SHALLOW | 114-P2B4-MW103S | 114-P2B4-MW103S-20151210 | N | T | JC10380 | 2015-12-10 | **< 15 U** | 17.9 J | < 0.97 RA | **105** | **< 43 U** | 7.2 J |
| WELL | SHALLOW | 114-P2B4-MW103S | 114-P2B4-MW103S-20160316 | N | T | JC16336 | 2016-03-16 | **< 16 U** | 20.0 J | < 0.74 RA | 64.7 | **< 38 U** | < 3.3 U |
| WELL | SHALLOW | 114-P2B4-MW103S | 114-P2B4-MW103S-20160622 | N | T | JC22758 | 2016-06-22 | **< 16 U** | 16.1 JB | 70 RA | 57.1 | **< 48 U** | 19.5 J |
| WELL | SHALLOW | 114-P2B4-MW103S | 114-P2B4-MW103S-20160622-F | N | D | JC22758 | 2016-06-22 | - | < 8.1 U | 8.2 RA | - | - | - |
| WELL | SHALLOW | 114-P2B4-MW103S | 114-P2B4-MW103S-F-20150928 | N | D | JC4872 | 2015-09-28 | - | - | < 3.1 U | - | - | - |
| WELL | SHALLOW | 114-P2B4-MW103S | 114-P2B4-MW103S-F-20150928 | N | D | JC4872A | 2015-09-28 | - | 35.0 J | - | - | - | - |
| WELL | SHALLOW | 114-P2B4-MW103S | 114-P2B4-MW103S-F-20151210 | N | D | JC10380 | 2015-12-10 | - | < 15 UJ | < 0.97 RA | - | - | - |
| WELL | SHALLOW | 114-P2B4-MW103S | 114-P2B4-MW103S-F-20160316 | N | D | JC16336 | 2016-03-16 | - | 13.8 J | < 0.74 RA | - | - | - |
| WELL | SHALLOW | 114-P2B4-MW2 | 114-P2B4-MW2-10.0-20180427 | N | T | JC65066 | 2018-04-27 | < 4.3 U | **7310 J** | **39600 J** | < 1.3 U | < 0.047 U | < 1.3 U |
| WELL | SHALLOW | 114-P2B4-MW2 | 114-P2B4-MW2-10.0-20180427X | FD | T | JC65066 | 2018-04-27 | < 4.3 U | **7220 J** | **34600 J** | < 1.3 U | < 0.047 U | < 1.3 U |
| WELL | SHALLOW | 114-P2B4-MW2 | 114-P2B4-MW2-14.0-20180427 | N | T | JC65066 | 2018-04-27 | **< 17 U** | **21400** | **21200** | 8.2 J | < 0.094 U | 14.4 J |
| WELL | SHALLOW | 114-P2B4-MW2 | 114-P2B4-MW2-14.0-20180427X | FD | T | JC65066 | 2018-04-27 | **< 17 U** | **21100** | **21100** | 4.4 J | < 0.094 U | 14.4 J |
| WELL | SHALLOW | 114-P2B4-MW3 | 114-P2B4-MW3-10.0-20180420 | N | T | JC64643 | 2018-04-20 | < 4.3 U | 4.9 J | < 8.1 U | < 1.3 U | < 0.047 U | < 1.3 U |
| WELL | SHALLOW | 114-P2B4-MW3 | 114-P2B4-MW3-14.0-20180420 | N | T | JC64643 | 2018-04-20 | < 4.3 U | 18.4 | < 8.1 U | < 1.3 U | < 0.047 U | 1.5 J |
| WELL | SHALLOW | 132-MW2A | 132-MW2A-11.0-20180426 | N | T | JC64986 | 2018-04-26 | < 4.3 U | < 0.85 U | < 8.1 U | 10.0 | < 0.047 U | < 1.3 U |
| WELL | SHALLOW | 132-MW2A | 132-MW2A-11.0-20180426X | FD | T | JC64986 | 2018-04-26 | < 4.3 U | < 0.85 U | < 8.1 U | 10.4 | < 0.047 U | < 1.3 U |

**Appendix L.1**
**Historical Groundwater Analytical Data - Cr+6 and CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ANTIMONY | CHROMIUM | CHROMIUM (HEXAVALENT) | NICKEL | THALLIUM | VANADIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-36-0 | 7440-47-3 | 18540-29-9 | 7440-02-0 | 7440-28-0 | 7440-62-2 |
| | | | | | | | **GWQS** | 6 | 70 | 70 | 100 | 2 | 60 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 132-P3A-MW102S | 132-P3A-MW102S-11.0-20180426 | N | T | JC64986 | 2018-04-26 | < 4.3 U | < 0.85 U | < 8.1 U | 1.7 J | < 0.047 U | < 1.3 U |
| WELL | SHALLOW | 132-P3A-MW102S | 132-P3A-MW102S-20150929 | N | T | JC4978 | 2015-09-29 | - | - | < 3.1 U | - | - | - |
| WELL | SHALLOW | 132-P3A-MW102S | 132-P3A-MW102S-20150929 | N | T | JC4978A | 2015-09-29 | < 3.0 U | **263** | - | **189** | < 1.7 U | **304** |
| WELL | SHALLOW | 132-P3A-MW102S | 132-P3A-MW102S-20151215 | N | T | JC10723 | 2015-12-15 | < 3.0 U | **85.2** | < 0.92 U | 53.8 | **< 5.2 U** | **99.3** |
| WELL | SHALLOW | 132-P3A-MW102S | 132-P3A-MW102S-20160317 | N | T | JC16446 | 2016-03-17 | < 3.3 U | **93.0** | < 0.74 RA | 78.1 | **< 9.5 U** | 5.8 J |
| WELL | SHALLOW | 132-P3A-MW102S | 132-P3A-MW102S-20160617 | N | T | JC22504 | 2016-06-17 | < 3.3 U | 27.2 | < 3.9 U | 16.8 J | **< 3.8 U** | 5.3 J |
| WELL | SHALLOW | 132-P3A-MW102S | 132-P3A-MW102S-20160617-F | N | D | JC22504 | 2016-06-17 | - | 1.6 J | < 3.9 U | - | - | - |
| WELL | SHALLOW | 132-P3A-MW102S | 132-P3A-MW102S-20170313 | N | T | JC38888 | 2017-03-13 | - | 2.4 J | < 8.1 U | - | - | - |
| WELL | SHALLOW | 132-P3A-MW102S | 132-P3A-MW102S-20170313-F | N | D | JC38888 | 2017-03-13 | - | 1.1 J | < 8.1 U | - | - | - |
| WELL | SHALLOW | 132-P3A-MW102S | 132-P3A-MW102S-F-20150929 | N | D | JC4978 | 2015-09-29 | - | - | 8.5 J | - | - | - |
| WELL | SHALLOW | 132-P3A-MW102S | 132-P3A-MW102S-F-20150929 | N | D | JC4978A | 2015-09-29 | - | 6.6 J | - | - | - | - |
| WELL | SHALLOW | 132-P3A-MW102S | 132-P3A-MW102S-F-20151215 | N | D | JC10723 | 2015-12-15 | - | < 0.77 U | < 0.92 RA | - | - | - |
| WELL | SHALLOW | 132-P3A-MW102S | 132-P3A-MW102S-F-20160317 | N | D | JC16446 | 2016-03-17 | - | < 0.81 U | < 0.74 RA | - | - | - |
| WELL | SHALLOW | 132-P3A-MW103S | 132-P3A-MW103S-20150930 | N | T | JC5099 | 2015-09-30 | - | - | < 3.1 RA | - | - | - |
| WELL | SHALLOW | 132-P3A-MW103S | 132-P3A-MW103S-20150930 | N | T | JC5099A | 2015-09-30 | **< 15 U** | **72.7 J** | - | 27.0 J | **< 43 U** | 12.8 J |
| WELL | SHALLOW | 132-P3A-MW103S | 132-P3A-MW103S-20151215 | N | T | JC10723 | 2015-12-15 | < 3.0 U | 23.7 J | < 0.92 U | 13.8 | **< 8.7 U** | 8.6 J |
| WELL | SHALLOW | 132-P3A-MW103S | 132-P3A-MW103S-20160318 | N | T | JC16549 | 2016-03-18 | < 3.3 U | 6.7 J | < 0.74 UJ | 8.9 JB | **< 9.5 U** | 2.6 J |
| WELL | SHALLOW | 132-P3A-MW103S | 132-P3A-MW103S-20160616 | N | T | JC22356 | 2016-06-16 | < 3.3 U | 6.6 J | 4.3 J | 15.2 J | **< 19 U** | < 0.66 U |
| WELL | SHALLOW | 132-P3A-MW103S | 132-P3A-MW103S-20160616-F | N | D | JC22356 | 2016-06-16 | - | 8.9 J | 44 J | - | - | - |
| WELL | SHALLOW | 132-P3A-MW103S | 132-P3A-MW103S-F-20150930 | N | D | JC5099 | 2015-09-30 | - | - | < 3.1 RA | - | - | - |
| WELL | SHALLOW | 132-P3A-MW103S | 132-P3A-MW103S-F-20150930 | N | D | JC5099A | 2015-09-30 | - | 37.0 | - | - | - | - |
| WELL | SHALLOW | 132-P3A-MW103S | 132-P3A-MW103S-F-20151215 | N | D | JC10723 | 2015-12-15 | - | < 0.77 U | < 0.92 RA | - | - | - |
| WELL | SHALLOW | 132-P3A-MW103S | 132-P3A-MW103S-F-20160318 | N | D | JC16549 | 2016-03-18 | - | 1.2 J | < 0.74 UJ | - | - | - |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-20150929 | N | T | JC4978 | 2015-09-29 | - | - | < 3.1 U | - | - | - |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-20150929 | N | T | JC4978A | 2015-09-29 | < 3.0 U | 4.1 J | - | 7.6 J | < 1.7 U | 1.3 J |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-20150929X | FD | T | JC4978 | 2015-09-29 | - | - | < 3.1 U | - | - | - |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-20150929X | FD | T | JC4978A | 2015-09-29 | < 3.0 U | 3.7 J | - | 7.1 J | < 1.7 U | 1.5 J |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-20151215 | N | T | JC10723 | 2015-12-15 | < 3.0 U | < 0.77 U | < 0.92 U | 7.3 J | **< 5.2 U** | 0.80 J |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-20160318 | N | T | JC16549 | 2016-03-18 | < 3.3 U | 3.5 J | < 0.74 UJ | 9.0 JB | < 1.9 U | 1.0 J |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-20160616 | N | T | JC22356 | 2016-06-16 | < 3.3 U | 1.7 J | < 3.9 U | 5.6 J | < 1.9 U | < 0.66 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-20160616-F | N | D | JC22356 | 2016-06-16 | - | < 0.81 U | < 3.9 U | - | - | - |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-F-20150929 | N | D | JC4978 | 2015-09-29 | - | - | < 3.1 U | - | - | - |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-F-20150929 | N | D | JC4978A | 2015-09-29 | - | 1.3 J | - | - | - | - |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-F-20150929X | FD | D | JC4978 | 2015-09-29 | - | - | < 3.1 U | - | - | - |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-F-20150929X | FD | D | JC4978A | 2015-09-29 | - | 1.1 J | - | - | - | - |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-F-20151215 | N | D | JC10723 | 2015-12-15 | - | < 0.77 U | < 0.92 RA | - | - | - |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-F-20160318 | N | D | JC16549 | 2016-03-18 | - | 2.0 J | < 0.74 UJ | - | - | - |
| WELL | SHALLOW | 132-P3A-MW3 | 132-P3A-MW3-11.0-20180424 | N | T | JC64822 | 2018-04-24 | < 4.3 U | 4.3 J | < 8.1 U | 2.7 J | < 0.047 U | 10.0 J |
| WELL | SHALLOW | 132-P3A-MW3 | 132-P3A-MW3-15.0-20180424 | N | T | JC64822 | 2018-04-24 | **< 22 U** | 20.5 J | < 8.1 U | 10.0 J | < 0.047 U | 46.5 J |
| WELL | SHALLOW | 132-P3A-MW3 | 132-P3A-MW3-20151215-10.0 | N | T | JC10722 | 2015-12-15 | - | 8.8 J | < 0.92 U | - | - | - |
| WELL | SHALLOW | 132-P3A-MW3 | 132-P3A-MW3-20151215-10.0X | FD | T | JC10722 | 2015-12-15 | - | 12.8 | < 0.92 U | - | - | - |
| WELL | SHALLOW | 132-P3A-MW3 | 132-P3A-MW3-20151215-15.0 | N | T | JC10722 | 2015-12-15 | - | 16.4 | < 0.92 U | - | - | - |
| WELL | SHALLOW | 132-P3A-MW3 | 132-P3A-MW3-F-20151215-10.0 | N | D | JC10722 | 2015-12-15 | - | 12.3 | < 0.92 U | - | - | - |
| WELL | SHALLOW | 132-P3A-MW3 | 132-P3A-MW3-F-20151215-10.0X | FD | D | JC10722 | 2015-12-15 | - | 11.0 J | < 0.92 U | - | - | - |
| WELL | SHALLOW | 132-P3A-MW3 | 132-P3A-MW3-F-20151215-15.0 | N | D | JC10722 | 2015-12-15 | - | 6.5 J | < 0.92 U | - | - | - |
| WELL | SHALLOW | 132-P3A-MW4 | 132-P3A-MW4-13.0-20180424 | N | T | JC64822 | 2018-04-24 | **< 22 U** | **28200** | **30500** | < 6.7 U | 0.075 J | 7.5 J |
| WELL | SHALLOW | 132-P3A-MW4 | 132-P3A-MW4-17.0-20180424 | N | T | JC64822 | 2018-04-24 | **< 22 U** | **22800 J** | **24100** | 8.0 J | < 0.24 U | 10.0 J |
| WELL | SHALLOW | 132-P3A-MW4 | 132-P3A-MW4-17.0-20180424X | FD | T | JC64822 | 2018-04-24 | < 4.3 U | **4720 J** | **26100 J** | < 1.3 U | 0.059 J | 1.7 J |
| WELL | SHALLOW | 132-P3A-MW4 | 132-P3A-MW4-20151215-13.0 | N | T | JC10722 | 2015-12-15 | - | **8750 J** | **7700 J** | - | - | - |
| WELL | SHALLOW | 132-P3A-MW4 | 132-P3A-MW4-20151215-17.0 | N | T | JC10722 | 2015-12-15 | - | **7770 J** | **7500 J** | - | - | - |
| WELL | SHALLOW | 132-P3A-MW4 | 132-P3A-MW4-F-20151215-13.0 | N | D | JC10722 | 2015-12-15 | - | **7720 J** | **8000 J** | - | - | - |
| WELL | SHALLOW | 132-P3A-MW4 | 132-P3A-MW4-F-20151215-17.0 | N | D | JC10722 | 2015-12-15 | - | **7280 J** | **7300 J** | - | - | - |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | N | T | JC67069 | 2018-05-31 | **< 22 U** | **36700** | **41100** | 17.5 J | < 0.24 U | 10.0 J |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | N | T | JC67069 | 2018-05-31 | **< 22 U** | **34800** | **38900** | 15.5 J | < 0.24 U | 8.5 J |
| WELL | SHALLOW | 133-MW6A | 133-MW6A-20151217-12.0 | N | T | JC10941 | 2015-12-17 | - | **263** | < 0.92 UJ | - | - | - |

**Appendix L.1**
**Historical Groundwater Analytical Data - Cr+6 and CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ANTIMONY | CHROMIUM | CHROMIUM (HEXAVALENT) | NICKEL | THALLIUM | VANADIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-36-0 | 7440-47-3 | 18540-29-9 | 7440-02-0 | 7440-28-0 | 7440-62-2 |
| | | | | | | | **GWQS** | 6 | 70 | 70 | 100 | 2 | 60 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 133-MW6A | 133-MW6A-20151217-9.0 | N | T | JC10941 | 2015-12-17 | - | 46.3 | < 0.92 UJ | - | - | - |
| WELL | SHALLOW | 133-MW6A | 133-MW6A-20171215 | N | T | JC57501 | 2017-12-15 | - | - | 8.4 J | - | - | - |
| WELL | SHALLOW | 133-MW6A | 133-MW6A-20171215 | N | T | JC57501A | 2017-12-15 | < 4.3 U | 7.3 J | - | < 1.3 U | < 1.6 U | 2.1 J |
| WELL | SHALLOW | 133-MW6A | 133-MW6A-20180209 | N | T | JC60563 | 2018-02-09 | < 4.3 U | 9.9 J | < 8.1 UJ | < 1.5 UB | < 1.6 U | 3.1 J |
| WELL | SHALLOW | 133-MW6A | 133-MW6A-F-20151217-9.0 | N | D | JC10941 | 2015-12-17 | - | < 0.77 U | < 0.92 RA | - | - | - |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-20160324 | N | T | JC16937 | 2016-03-24 | **< 16 U** | 7.4 JB | < 0.74 U | 12.8 J | **< 9.5 U** | < 3.3 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-20160616 | N | T | JC22356 | 2016-06-16 | < 3.3 U | 36.2 | < 3.9 U | 27.8 | **< 9.5 U** | 1.4 J |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-20160616-F | N | D | JC22356 | 2016-06-16 | - | 4.4 J | < 3.9 U | - | - | - |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-20160913 | N | T | JC27486 | 2016-09-13 | **< 6.5 U** | 3.2 J | < 3.9 RA | 9.6 J | **< 19 U** | < 0.66 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-20160913-F | N | D | JC27486 | 2016-09-13 | - | 3.0 J | < 3.9 RA | - | - | - |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-20160913X | FD | T | JC27486 | 2016-09-13 | < 3.3 U | 3.3 J | < 3.9 RA | 7.4 J | **< 19 U** | < 0.66 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-20160913X-F | FD | D | JC27486 | 2016-09-13 | - | 3.0 J | 5.5 RA | - | - | - |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-20161216 | N | T | JC33887 | 2016-12-16 | < 3.3 U | < 0.81 UB | < 3.9 U | 12.8 | **< 19 U** | < 0.66 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-20161216-F | N | D | JC33887 | 2016-12-16 | - | < 0.81 UB | < 3.9 U | - | - | - |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-F-20160324 | N | D | JC16937 | 2016-03-24 | - | 8.7 JB | < 0.74 U | - | - | - |
| WELL | SHALLOW | 133-P3C-MW102S | 133-P3C-MW102S-20160324 | N | T | JC16937 | 2016-03-24 | **< 16 U** | 12.0 J | < 0.74 U | 6.8 J | **< 9.5 U** | < 3.3 U |
| WELL | SHALLOW | 133-P3C-MW102S | 133-P3C-MW102S-20160615 | N | T | JC22273 | 2016-06-15 | < 3.3 U | 4.3 J | < 3.9 U | 9.6 J | **< 5.7 U** | 1.8 J |
| WELL | SHALLOW | 133-P3C-MW102S | 133-P3C-MW102S-20160615-F | N | D | JC22273 | 2016-06-15 | - | 3.2 J | < 3.9 U | - | - | - |
| WELL | SHALLOW | 133-P3C-MW102S | 133-P3C-MW102S-20160913 | N | T | JC27486 | 2016-09-13 | < 3.3 U | 10.6 | < 3.9 RA | 8.0 J | < 1.9 U | 4.7 J |
| WELL | SHALLOW | 133-P3C-MW102S | 133-P3C-MW102S-20160913-F | N | D | JC27486 | 2016-09-13 | - | 4.3 J | < 3.9 RA | - | - | - |
| WELL | SHALLOW | 133-P3C-MW102S | 133-P3C-MW102S-20161216 | N | T | JC33887 | 2016-12-16 | < 3.3 U | 4.4 JB | < 3.9 U | 6.7 JB | **< 9.5 U** | < 0.66 UB |
| WELL | SHALLOW | 133-P3C-MW102S | 133-P3C-MW102S-20161216-F | N | D | JC33887 | 2016-12-16 | - | 3.8 JB | < 3.9 U | - | - | - |
| WELL | SHALLOW | 133-P3C-MW102S | 133-P3C-MW102S-20161216X | FD | T | JC33887 | 2016-12-16 | < 3.3 U | 4.7 JB | < 3.9 U | 6.7 JB | **< 9.5 U** | < 0.66 U |
| WELL | SHALLOW | 133-P3C-MW102S | 133-P3C-MW102S-20161216X-F | FD | D | JC33887 | 2016-12-16 | - | 3.8 JB | < 3.9 U | - | - | - |
| WELL | SHALLOW | 133-P3C-MW102S | 133-P3C-MW102S-F-20160324 | N | D | JC16937 | 2016-03-24 | - | 10.1 J | < 0.74 U | - | - | - |
| WELL | SHALLOW | 135-MW1AR | 135-MW1A-13.0-20180501 | N | T | JC65255 | 2018-05-01 | < 4.3 U | 19.5 | < 8.1 U | 18.1 JB | 0.12 J | 23.1 J |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | N | T | JC64763 | 2018-04-23 | < 4.3 U | 1.0 J | < 8.1 U | 4.8 J | < 0.12 U | 2.1 J |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-12.5 | N | T | JC5499 | 2015-10-06 | < 3.0 U | 2.9 J | 10 | 3.3 J | < 1.7 U | 2.5 J |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | N | T | JC64763 | 2018-04-23 | < 4.3 U | 2.3 J | < 8.1 U | 4.5 J | < 0.094 U | 1.9 J |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.7 | N | T | JC5499 | 2015-10-06 | < 3.0 U | 5.5 J | 25 | 3.4 J | < 1.7 U | 5.7 J |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-20170316 | N | T | JC39023 | 2017-03-16 | - | 1.5 J | < 8.1 U | - | - | - |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-20170316-F | N | D | JC39023 | 2017-03-16 | - | 1.2 J | < 8.1 U | - | - | - |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | N | T | JC64763 | 2018-04-23 | < 4.3 U | 1.1 J | < 8.1 U | 3.8 J | < 0.12 U | 2.7 J |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-8.5 | N | T | JC5499 | 2015-10-06 | < 3.0 U | 5.1 J | < 3.1 U | 5.3 J | < 1.7 U | 3.3 J |
| WELL | SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | N | T | JC64763 | 2018-04-23 | < 4.3 U | 3.4 J | < 8.1 U | 5.8 J | < 0.047 U | 5.4 J |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-20150930 | N | T | JC5099 | 2015-09-30 | - | - | < 3.1 RA | - | - | - |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-20150930 | N | T | JC5099A | 2015-09-30 | **< 15 U** | **172 J** | - | 31.4 J | **< 43 U** | 16.2 J |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-20151216 | N | T | JC10831 | 2015-12-16 | **< 15 U** | **380 JB** | < 0.92 UJ | 14.9 J | **< 35 U** | < 3.5 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-20160321 | N | T | JC16664 | 2016-03-21 | < 3.3 U | **121** | < 0.74 U | < 3.8 U | **< 19 U** | 7.0 J |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-20160615 | N | T | JC22273 | 2016-06-15 | **< 6.5 U** | **78.8** | 50 | 6.6 J | **< 38 U** | < 1.3 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-20160615-F | N | D | JC22273 | 2016-06-15 | - | **75.4** | 52 | - | - | - |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-20170316 | N | T | JC39023 | 2017-03-16 | - | < 8.1 U | 37 J | - | - | - |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-20170316-F | N | D | JC39023 | 2017-03-16 | - | < 8.1 U | 31 | - | - | - |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-20170316X | FD | T | JC39023 | 2017-03-16 | - | < 8.1 UJ | **190 J** | - | - | - |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-20170316X-F | FD | D | JC39023 | 2017-03-16 | - | < 8.1 U | 37 | - | - | - |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-20170525 | N | T | JC44131 | 2017-05-25 | - | 41.7 | 16 RA | - | - | - |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-20170525-F | N | D | JC44131 | 2017-05-25 | - | 37.1 | 25 RA | - | - | - |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-20170525X | FD | T | JC44131 | 2017-05-25 | - | 41.2 | 27 RA | - | - | - |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-20170525X-F | FD | D | JC44131 | 2017-05-25 | - | 38.9 | 14 RA | - | - | - |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-F-20150930 | N | D | JC5099 | 2015-09-30 | - | - | < 3.1 RA | - | - | - |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-F-20150930 | N | D | JC5099A | 2015-09-30 | - | **112** | - | - | - | - |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-F-20151216 | N | D | JC10831 | 2015-12-16 | - | **273 JB** | < 0.92 UJ | - | - | - |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-F-20160321 | N | D | JC16664 | 2016-03-21 | - | **98.2** | < 0.74 U | - | - | - |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-20150930 | N | T | JC5099 | 2015-09-30 | - | - | 6.2 RA | - | - | - |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-20150930 | N | T | JC5099A | 2015-09-30 | **< 15 U** | **73.7 J** | - | 7.0 J | **45.4 J** | 12.2 J |

**Appendix L.1**
**Historical Groundwater Analytical Data - Cr+6 and CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ANTIMONY | CHROMIUM | CHROMIUM (HEXAVALENT) | NICKEL | THALLIUM | VANADIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-36-0 | 7440-47-3 | 18540-29-9 | 7440-02-0 | 7440-28-0 | 7440-62-2 |
| | | | | | | | **GWQS** | 6 | 70 | 70 | 100 | 2 | 60 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-20151216 | N | T | JC10831 | 2015-12-16 | **< 15 U** | < 3.9 UB | < 0.92 UJ | < 4.0 U | **< 35 U** | < 3.5 U |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-20160321 | N | T | JC16664 | 2016-03-21 | **< 16 U** | **89.2** | < 0.74 U | < 3.8 U | **< 48 U** | < 3.3 U |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-20160615 | N | T | JC22273 | 2016-06-15 | **< 65 U** | < 16 UJ | **72 J** | < 15 U | **< 38 U** | < 0.66 U |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-20160615-F | N | D | JC22273 | 2016-06-15 | - | 6.2 J | 63 J | - | - | - |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-20160615-FX | FD | D | JC22273 | 2016-06-15 | - | 6.3 J | 64 J | - | - | - |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-20160615X | FD | T | JC22273 | 2016-06-15 | **< 65 U** | < 16 UJ | **71 J** | < 15 U | **< 38 U** | < 0.66 U |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-20170317 | N | T | JC39113 | 2017-03-17 | - | < 0.81 U | 13 RA | - | - | - |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-20170317-F | N | D | JC39113 | 2017-03-17 | - | < 0.81 U | < 8.1 RA | - | - | - |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-F-20150930 | N | D | JC5099 | 2015-09-30 | - | - | < 3.1 RA | - | - | - |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-F-20150930 | N | D | JC5099A | 2015-09-30 | - | 42.6 J | - | - | - | - |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-F-20151216 | N | D | JC10831 | 2015-12-16 | - | < 3.9 UB | < 0.92 UJ | - | - | - |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-F-20160321 | N | D | JC16664 | 2016-03-21 | - | 33.7 J | < 0.74 U | - | - | - |
| WELL | SHALLOW | 143-P3A-MW101S | 143-P3A-MW101S-20150928 | N | T | JC4872 | 2015-09-28 | - | - | **200 J** | - | - | - |
| WELL | SHALLOW | 143-P3A-MW101S | 143-P3A-MW101S-20150928 | N | T | JC4872A | 2015-09-28 | < 3.0 U | 2.8 J | - | 2.7 J | **3.6 J** | < 0.70 U |
| WELL | SHALLOW | 143-P3A-MW101S | 143-P3A-MW101S-20151214 | N | T | JC10593 | 2015-12-14 | < 3.0 U | **93.4** | < 0.92 U | 9.7 J | **< 8.7 U** | < 0.70 UB |
| WELL | SHALLOW | 143-P3A-MW101S | 143-P3A-MW101S-20160318 | N | T | JC16549 | 2016-03-18 | < 3.3 U | 3.0 J | < 0.74 UJ | 4.1 JB | **< 3.8 U** | < 0.66 U |
| WELL | SHALLOW | 143-P3A-MW101S | 143-P3A-MW101S-20160318X | FD | T | JC16549 | 2016-03-18 | < 3.3 U | 6.6 J | < 0.74 UJ | 4.9 JB | **< 3.8 U** | 1.9 J |
| WELL | SHALLOW | 143-P3A-MW101S | 143-P3A-MW101S-20160620 | N | T | JC22555 | 2016-06-20 | < 3.3 U | 20.0 | < 3.9 RA | 3.9 J | **< 3.8 U** | 1.8 J |
| WELL | SHALLOW | 143-P3A-MW101S | 143-P3A-MW101S-20160620-F | N | D | JC22555 | 2016-06-20 | - | 1.3 J | < 3.9 RA | - | - | - |
| WELL | SHALLOW | 143-P3A-MW101S | 143-P3A-MW101S-F-20150928 | N | D | JC4872 | 2015-09-28 | - | - | 18 | - | - | - |
| WELL | SHALLOW | 143-P3A-MW101S | 143-P3A-MW101S-F-20150928 | N | D | JC4872A | 2015-09-28 | - | 2.1 J | - | - | - | - |
| WELL | SHALLOW | 143-P3A-MW101S | 143-P3A-MW101S-F-20151214 | N | D | JC10593 | 2015-12-14 | - | 38.7 | < 0.92 UJ | - | - | - |
| WELL | SHALLOW | 143-P3A-MW101S | 143-P3A-MW101S-F-20160318 | N | D | JC16549 | 2016-03-18 | - | 1.2 J | < 0.74 UJ | - | - | - |
| WELL | SHALLOW | 143-P3A-MW101S | 143-P3A-MW101S-F-20160318X | FD | D | JC16549 | 2016-03-18 | - | 1.7 J | < 0.74 UJ | - | - | - |
| WELL | SHALLOW | 186-MW01 | 186-MW01 | N | T | JC10941 | 2015-12-17 | - | - | 1.8 J | - | - | - |
| WELL | SHALLOW | 186-MW02R | 186-MW02R-13.0-20180531 | N | T | JC67069 | 2018-05-31 | < 4.3 U | 1.6 J | < 8.1 U | 27.4 | < 0.047 U | < 1.3 U |
| WELL | SHALLOW | 186-MW02R | 186-MW02R-8.0-20180531 | N | T | JC67069 | 2018-05-31 | < 4.3 U | 2.1 J | < 8.1 U | 27.8 | < 0.047 U | 1.7 J |
| WELL | SHALLOW | GPS-MW1S | GPS-MW1S-022516 | N | T | JC14874 | 2016-02-25 | **14.8** | **673** | < 3.1 U | 76.6 | **< 17 U** | **91.2 J** |
| WELL | SHALLOW | GPS-MW1S | GPS-MW1S-022516-F | N | D | JC14874 | 2016-02-25 | - | **736** | < 3.1 U | - | - | - |
| WELL | SHALLOW | GPS-MW1S | GPS-MW1S-060316 | N | T | JC21504 | 2016-06-03 | **15.2** | **839** | < 3.9 U | 94.2 | **< 19 U** | **99.0 J** |
| WELL | SHALLOW | GPS-MW1S | GPS-MW1S-060316-F | N | D | JC21504 | 2016-06-03 | - | **885** | < 3.9 U | - | - | - |
| WELL | SHALLOW | GPS-MW1S | GPS-MW1S-083016 | N | T | JC26754 | 2016-08-30 | **9.1** | **373** | < 3.9 U | 65.0 | < 1.9 U | **86.1** |
| WELL | SHALLOW | GPS-MW1S | GPS-MW1S-083016-F | N | D | JC26754 | 2016-08-30 | - | **401** | < 3.9 U | - | - | - |
| WELL | SHALLOW | GPS-MW1S | GPS-MW1S-111715 | N | T | JC8703 | 2015-11-17 | **6.2** | **749** | **100 J** | 70.6 | **< 8.7 U** | 52.4 |
| WELL | SHALLOW | GPS-MW1S | GPS-MW1S-111715F | N | D | JC8703 | 2015-11-17 | - | **410** | **330 J** | - | - | - |
| WELL | SHALLOW | GPS-MW1S | GPS-MW1S-20171221 | N | D | JC57864 | 2017-12-21 | < 6.0 U | R | R | 25.1 | **< 6.0 U** | **72.2 J** |
| WELL | SHALLOW | GPS-MW1S | GPS-MW1S-20171221 | N | T | JC57864 | 2017-12-21 | < 6.0 U | R | R | 26.3 | **< 6.0 U** | 56.4 J |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-022516 | N | T | JC14874 | 2016-02-25 | < 3.0 U | 7.9 J | < 3.1 U | 2.9 J | **< 3.5 U** | **77.7** |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-022516-F | N | D | JC14874 | 2016-02-25 | - | 8.0 J | < 3.1 U | - | - | - |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-060316 | N | T | JC21504 | 2016-06-03 | < 3.3 U | 21.2 | 15 | < 0.76 U | **< 5.7 U** | **73.5** |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-060316-F | N | D | JC21504 | 2016-06-03 | - | 20.7 | 18 | - | - | - |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-083016 | N | T | JC26754 | 2016-08-30 | 3.9 J | 10.2 | < 3.9 U | 22.2 | < 1.9 U | 48.1 J |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-083016-F | N | D | JC26754 | 2016-08-30 | - | 7.3 J | < 3.9 U | - | - | - |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-111715 | N | T | JC8703 | 2015-11-17 | 6.0 | 9.7 J | < 3.1 U | 20.7 | **< 8.7 U** | 46.0 J |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-111715F | N | D | JC8703 | 2015-11-17 | - | 6.3 J | < 3.1 U | - | - | - |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-20171221 | N | D | JC57859 | 2017-12-21 | < 6.0 U | < 10 U | < 10 U | < 10 U | **< 4.0 U** | < 50 U |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-20171221 | N | T | JC57859 | 2017-12-21 | < 6.0 U | < 10 U | < 10 U | < 10 U | **< 4.0 U** | < 50 U |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-DUP-20171221 | FD | D | JC57859 | 2017-12-21 | < 6.0 U | < 10 U | 11 | < 10 U | **< 4.0 U** | < 50 U |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-DUP-20171221 | FD | T | JC57859 | 2017-12-21 | < 6.0 U | < 10 U | < 10 U | < 10 U | **< 4.0 U** | < 50 U |
| WELL | SHALLOW | GPS-MW3S | GPS-MW3S-022516 | N | T | JC14874 | 2016-02-25 | < 3.0 U | 35.0 | < 3.1 U | 28.4 | **< 8.7 U** | 27.4 J |
| WELL | SHALLOW | GPS-MW3S | GPS-MW3S-022516-F | N | D | JC14874 | 2016-02-25 | - | 30.0 | < 3.1 U | - | - | - |
| WELL | SHALLOW | GPS-MW3S | GPS-MW3S-060316 | N | T | JC21504 | 2016-06-03 | < 3.3 U | 1.7 J | < 3.9 U | 26.2 J | **< 9.5 U** | 24.5 J |
| WELL | SHALLOW | GPS-MW3S | GPS-MW3S-060316-F | N | D | JC21504 | 2016-06-03 | - | < 0.81 U | < 3.9 U | - | - | - |
| WELL | SHALLOW | GPS-MW3S | GPS-MW3S-083016 | N | T | JC26754 | 2016-08-30 | < 3.3 U | 4.2 J | < 3.9 U | 33.3 | < 1.9 U | 23.4 J |
| WELL | SHALLOW | GPS-MW3S | GPS-MW3S-083016-F | N | D | JC26754 | 2016-08-30 | - | < 0.81 U | < 3.9 U | - | - | - |

**Appendix L.1**
**Historical Groundwater Analytical Data - Cr+6 and CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ANTIMONY | CHROMIUM | CHROMIUM (HEXAVALENT) | NICKEL | THALLIUM | VANADIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-36-0 | 7440-47-3 | 18540-29-9 | 7440-02-0 | 7440-28-0 | 7440-62-2 |
| | | | | | | | **GWQS** | 6 | 70 | 70 | 100 | 2 | 60 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | GPS-MW3S | GPS-MW3S-111715 | N | T | JC8703 | 2015-11-17 | 5.8 J | 24.0 | < 3.1 U | 37.8 | < 1.7 U | 33.8 J |
| WELL | SHALLOW | GPS-MW3S | GPS-MW3S-111715F | N | D | JC8703 | 2015-11-17 | - | 8.1 J | < 3.1 U | - | - | - |
| WELL | SHALLOW | GPS-MW3S | GPS-MW3S-20171221 | N | D | JC57864 | 2017-12-21 | < 6.0 U | < 10 U | < 10 U | 28.2 | **< 6.0 U** | < 50 U |
| WELL | SHALLOW | GPS-MW3S | GPS-MW3S-20171221 | N | T | JC57864 | 2017-12-21 | < 6.0 U | < 10 U | < 10 U | 30.9 | **< 6.0 U** | < 50 U |
| WELL | SHALLOW | GPS-MW4S | GPS-MW4S-022516 | N | T | JC14874 | 2016-02-25 | < 3.0 U | 2.4 J | < 3.1 U | 85.3 | < 1.7 U | 41.9 J |
| WELL | SHALLOW | GPS-MW4S | GPS-MW4S-022516-F | N | D | JC14874 | 2016-02-25 | - | 1.2 J | < 3.1 U | - | - | - |
| WELL | SHALLOW | GPS-MW4S | GPS-MW4S-060316 | N | T | JC21504 | 2016-06-03 | < 3.3 U | 2.0 J | < 3.9 U | 88.6 | < 1.9 U | 47.4 J |
| WELL | SHALLOW | GPS-MW4S | GPS-MW4S-060316-F | N | D | JC21504 | 2016-06-03 | - | 0.90 J | < 3.9 U | - | - | - |
| WELL | SHALLOW | GPS-MW4S | GPS-MW4S-083016 | N | T | JC26754 | 2016-08-30 | < 3.3 U | 1.3 J | < 3.9 U | 86.6 | < 1.9 U | 44.2 J |
| WELL | SHALLOW | GPS-MW4S | GPS-MW4S-083016-F | N | D | JC26754 | 2016-08-30 | - | < 0.81 U | < 3.9 U | - | - | - |
| WELL | SHALLOW | GPS-MW4S | GPS-MW4S-111715 | N | T | JC8703 | 2015-11-17 | < 3.0 U | 9.9 J | < 3.1 U | 77.7 | < 1.7 U | **61.3** |
| WELL | SHALLOW | GPS-MW4S | GPS-MW4S-111715F | N | D | JC8703 | 2015-11-17 | - | 0.90 J | < 3.1 U | - | - | - |
| WELL | SHALLOW | GPS-MW4S | GPS-MW4S-20171221 | N | D | JC57859 | 2017-12-21 | < 6.0 U | < 10 U | < 10 U | 87.8 | < 2.0 U | < 50 U |
| WELL | SHALLOW | GPS-MW4S | GPS-MW4S-20171221 | N | T | JC57859 | 2017-12-21 | < 6.0 U | < 10 U | < 10 U | 89.3 | < 2.0 U | < 50 U |
| WELL | SHALLOW | GPS-MW5S | GPS-MW5S-20180130 | N | D | JC59976 | 2018-01-30 | **< 12 U** | **108** | < 10 U | **106** | **< 20 U** | **< 100 U** |
| WELL | SHALLOW | GPS-MW5S | GPS-MW5S-20180130 | N | T | JC59976 | 2018-01-30 | **< 12 U** | **134** | < 10 U | **121** | **< 4.0 U** | **< 100 U** |
| WELL | SHALLOW | GPS-MW7S | GPS-MW7S-20171221 | N | D | JC57864 | 2017-12-21 | < 6.0 U | < 10 U | < 10 U | 32.3 | < 2.0 U | < 50 U |
| WELL | SHALLOW | GPS-MW7S | GPS-MW7S-20171221 | N | T | JC57864 | 2017-12-21 | < 6.0 U | 10.6 | < 10 U | 37.2 | < 2.0 U | < 50 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-20160617 | N | T | JC22504 | 2016-06-17 | **< 6.5 U** | **1050** | 15 | **531** | **< 95 U** | **402** |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-20160617-F | N | D | JC22504 | 2016-06-17 | - | 7.2 J | 23 J | - | - | - |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-20161219 | N | T | JC33993 | 2016-12-19 | < 3.3 U | < 0.81 UB | < 3.9 U | 17.7 | **< 19 U** | < 0.66 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-20161219-F | N | D | JC33993 | 2016-12-19 | - | < 0.81 U | < 3.9 U | - | - | - |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-20170316 | N | T | JC39023 | 2017-03-16 | - | 1.2 J | < 8.1 U | - | - | - |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-20170316-F | N | D | JC39023 | 2017-03-16 | - | < 0.81 U | < 8.1 U | - | - | - |
| WELL | SHALLOW | HSS-P3C-MW2S | HSS-P3C-MW2S-20160616 | N | T | JC22356 | 2016-06-16 | < 3.3 U | 26.3 | < 3.9 U | 5.6 J | **< 9.5 U** | 12.5 J |
| WELL | SHALLOW | HSS-P3C-MW2S | HSS-P3C-MW2S-20160616-F | N | D | JC22356 | 2016-06-16 | - | 17.0 | < 3.9 U | - | - | - |
| WELL | SHALLOW | HSS-P3C-MW2S | HSS-P3C-MW2S-20161215 | N | T | JC33793 | 2016-12-15 | < 3.3 U | 6.0 JB | 17 J | 17.1 | **< 19 U** | 3.9 JB |
| WELL | SHALLOW | HSS-P3C-MW2S | HSS-P3C-MW2S-20161215-F | N | D | JC33793 | 2016-12-15 | - | < 0.81 UB | 4.7 J | - | - | - |
| WELL | SHALLOW | MW10S | MW10S-12.0-20180426 | N | T | JC64986 | 2018-04-26 | < 4.3 U | 2.2 J | < 8.1 U | 4.6 J | 0.093 J | < 1.3 U |
| WELL | SHALLOW | MW10S | MW10S-8.0-20180426 | N | D | JC64986 | 2018-04-26 | < 4.3 U | < 0.85 U | < 8.1 U | 4.1 J | 0.059 J | < 1.3 U |
| WELL | SHALLOW | MW10S | MW10S-8.0-20180426 | N | T | JC64986 | 2018-04-26 | < 4.3 U | 1.4 J | < 8.1 U | 4.2 J | 0.070 J | < 1.3 U |
| WELL | SHALLOW | MW1C-3 | MW1C-3-20151217 | N | T | JC10941 | 2015-12-17 | - | **6690 J** | **6300 J** | - | - | - |
| WELL | SHALLOW | MW1C-4 | MW1C-4-20141217-15.5 | N | T | JC10941 | 2015-12-17 | - | **637000 J** | **618000 J** | - | - | - |
| WELL | SHALLOW | MW1C-4 | MW1C-4-20151217-12.5 | N | T | JC10941 | 2015-12-17 | - | **157000 J** | **252000 J** | - | - | - |
| WELL | SHALLOW | MW-31A | MW31A-20151217-13.0 | N | T | JC10941 | 2015-12-17 | - | 9.0 J | < 0.92 UJ | - | - | - |
| WELL | SHALLOW | MW-31A | MW-31A-20151217-15.0 | N | T | JC10941 | 2015-12-17 | - | 39.9 J | < 0.92 UJ | - | - | - |
| WELL | SHALLOW | MW-31A | MW-31A-20170403 | N | T | JC40254 | 2017-04-03 | - | 1.2 J | < 8.1 U | - | - | - |
| WELL | SHALLOW | MW-31A | MW-31A-20170403-F | N | D | JC40254 | 2017-04-03 | - | < 0.81 U | < 8.1 U | - | - | - |
| WELL | SHALLOW | MW-31A | MW-31A-F-20151217-15.0 | N | D | JC10941 | 2015-12-17 | - | **72.8 J** | < 0.92 RA | - | - | - |
| WELL | SHALLOW | MW-34 | MW34-20151214-10.5 | N | T | JC10597 | 2015-12-14 | < 3.0 U | **209** | < 0.92 U | 12.5 | < 1.7 U | 7.4 J |
| WELL | SHALLOW | MW-34 | MW34-20151214-15.5 | N | T | JC10597 | 2015-12-14 | < 3.0 U | **191** | < 0.92 U | 4.6 JB | < 1.7 U | 7.0 J |
| WELL | SHALLOW | MW-34 | MW34-F-20151214-10.5 | N | D | JC10597 | 2015-12-14 | - | 4.5 J | < 0.92 U | - | - | - |
| WELL | SHALLOW | MW-34 | MW34-F-20151214-15.5 | N | D | JC10597T | 2015-12-14 | - | 2.9 J | R | - | - | - |
| WELL | SHALLOW | MW-35 | 114-MW-35-20151215-10.5 | N | T | JC10722 | 2015-12-15 | - | **961** | < 0.92 U | - | - | - |
| WELL | SHALLOW | MW-35 | 114-MW-35-20151215-15.5 | N | T | JC10722 | 2015-12-15 | - | **1460** | < 0.92 U | - | - | - |
| WELL | SHALLOW | MW-35 | 114-MW-35-F-20151215-10.5 | N | D | JC10722 | 2015-12-15 | - | **92.9** | < 0.94 UB | - | - | - |
| WELL | SHALLOW | MW-35 | 114-MW-35-F-20151215-15.5 | N | D | JC10722 | 2015-12-15 | - | **468** | < 0.92 U | - | - | - |
| WELL | SHALLOW | MW7S | MW7S-10.0-20180430 | N | D | JC65178 | 2018-04-30 | < 4.3 U | 2.0 J | < 8.1 U | 3.8 J | 0.19 J | < 1.3 U |
| WELL | SHALLOW | MW7S | MW7S-10.0-20180430 | N | T | JC65178 | 2018-04-30 | < 4.3 U | 4.0 J | < 8.1 U | 4.3 J | 0.21 J | 1.7 J |
| WELL | SHALLOW | MW7S | MW7S-10.2-20150930 | N | T | JC5098 | 2015-09-30 | - | - | < 3.1 U | - | - | - |
| WELL | SHALLOW | MW7S | MW7S-10.2-20150930 | N | T | JC5098A | 2015-09-30 | < 3.0 U | 1.2 J | - | 4.3 J | < 1.7 U | < 0.70 U |
| WELL | SHALLOW | MW7S | MW7S-7.2-20150930 | N | T | JC5098 | 2015-09-30 | - | - | 28 J | - | - | - |
| WELL | SHALLOW | MW7S | MW7S-7.2-20150930 | N | T | JC5098A | 2015-09-30 | < 3.0 U | 2.3 J | - | 13.0 | < 1.7 U | < 0.70 U |
| WELL | SHALLOW | MW8S | MW8S-20180427 | N | D | JC65066 | 2018-04-27 | < 4.3 U | 1.6 J | < 8.1 U | < 2.3 UB | < 0.047 U | < 1.3 U |
| WELL | SHALLOW | MW8S | MW8S-20180427 | N | T | JC65066 | 2018-04-27 | < 4.3 U | 6.2 J | < 8.1 U | 3.4 J | 0.16 J | 3.3 J |

**Appendix L.1**
**Historical Groundwater Analytical Data - Cr+6 and CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ANTIMONY | CHROMIUM | CHROMIUM (HEXAVALENT) | NICKEL | THALLIUM | VANADIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-36-0 | 7440-47-3 | 18540-29-9 | 7440-02-0 | 7440-28-0 | 7440-62-2 |
| | | | | | | | **GWQS** | 6 | 70 | 70 | 100 | 2 | 60 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | MW8S | MW8S-9.5-20151001 | N | T | JC5237 | 2015-10-01 | - | - | < 3.1 U | - | - | - |
| WELL | SHALLOW | MW8S | MW8S-9.5-20151001 | N | T | JC5237A | 2015-10-01 | < 3.0 U | 1.9 J | - | 2.8 J | < 1.7 U | 2.5 J |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | N | T | JC64444 | 2018-04-18 | < 4.3 U | 2.0 J | < 8.1 U | 50.4 | < 0.047 U | 6.7 J |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | N | T | JC64444 | 2018-04-18 | < 4.3 U | 2.1 J | 9.3 J | 56.0 | < 0.047 U | 7.5 J |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | N | T | JC64444 | 2018-04-18 | < 4.3 U | 3.0 J | 8.1 J | 65.8 | < 0.047 U | 8.5 J |
| WELL | SHALLOW | MW-Morris1A | 114-MW-MORRIS1A-20160321 | N | T | JC16664 | 2016-03-21 | < 3.3 U | 14.6 | < 0.74 UJ | 16.4 J | **< 19 U** | 17.0 J |
| WELL | SHALLOW | MW-Morris1A | 114-MW-MORRIS1A-F-20160321 | N | D | JC16664 | 2016-03-21 | - | 1.2 J | < 0.74 UJ | - | - | - |
| WELL | SHALLOW | MW-Morris1A | MW-MORRIS-1A-20150924 | N | T | JC4675 | 2015-09-24 | - | - | 60 RA | - | - | - |
| WELL | SHALLOW | MW-Morris1A | MW-MORRIS-1A-20150924 | N | T | JC4675A | 2015-09-24 | - | **72.6** | - | - | - | - |
| WELL | SHALLOW | MW-Morris1A | MW-MORRIS1A-20170331 | N | T | JC40140 | 2017-03-31 | - | 1.3 J | < 8.1 U | - | - | - |
| WELL | SHALLOW | MW-Morris1A | MW-MORRIS1A-20170331-F | N | D | JC40140 | 2017-03-31 | - | 1.0 J | < 8.1 U | - | - | - |
| WELL | SHALLOW | MW-Morris1A | MW-MORRIS-1A-F-20150924 | N | D | JC4675 | 2015-09-24 | - | - | 40 RA | - | - | - |
| WELL | SHALLOW | MW-Morris1A | MW-MORRIS-1A-F-20150924 | N | D | JC4675A | 2015-09-24 | - | 11.9 J | - | - | - | - |
| WELL | SHALLOW | PZ1-1 | 114-PLT1-1-20160624 | N | T | JC22940 | 2016-06-24 | - | 1.6 J | 7.8 J | - | - | - |
| WELL | SHALLOW | PZ1-1 | 114-PLT1-1-20160916 | N | T | JC27821 | 2016-09-16 | - | **2770** | 49 J | - | - | - |
| WELL | SHALLOW | PZ1-1 | 114-PLT1-1-20170403 | N | T | JC40254R | 2017-04-03 | - | 2.2 J | - | - | - | - |
| WELL | SHALLOW | PZ1-1 | 114-PLT1-1-20170403-F | N | D | JC40254R | 2017-04-03 | - | 0.90 J | - | - | - | - |
| WELL | SHALLOW | PZ1-1 | 114-PLT-1-20160329 | N | T | JC17157 | 2016-03-29 | - | 27.3 | < 3.1 U | - | - | - |
| WELL | SHALLOW | PZ1-1 | PZ1-1-20170524 | N | T | JC44024 | 2017-05-24 | - | 1.4 J | < 8.1 U | - | - | - |
| WELL | SHALLOW | PZ1-1 | PZ1-1-20170524-F | N | D | JC44024 | 2017-05-24 | - | < 0.85 U | < 8.1 U | - | - | - |
| WELL | SHALLOW | PZ2-1 | 114-PLT2-1-20160624 | N | T | JC22940 | 2016-06-24 | - | < 0.81 U | < 3.9 UJ | - | - | - |
| WELL | SHALLOW | PZ2-1 | 114-PLT2-1-20160624X | FD | T | JC22940 | 2016-06-24 | - | < 0.81 U | < 3.9 UJ | - | - | - |
| WELL | SHALLOW | PZ2-1 | 114-PLT2-1-20160916 | N | T | JC27821 | 2016-09-16 | - | 5.1 J | 57 J | - | - | - |
| WELL | SHALLOW | PZ2-1 | 114-PLT2-1-20160916X | FD | T | JC27821 | 2016-09-16 | - | 5.2 J | 49 J | - | - | - |
| WELL | SHALLOW | PZ2-1 | 114-PLT-2-20160329 | N | T | JC17157 | 2016-03-29 | - | 22.0 | 11 | - | - | - |
| WELL | SHALLOW | PZ3-1 | 114-PLT3-1-20160624 | N | T | JC22940 | 2016-06-24 | - | 1.6 J | 14 J | - | - | - |
| WELL | SHALLOW | PZ3-1 | 114-PLT3-1-20160916 | N | T | JC27821 | 2016-09-16 | - | < 0.81 U | 28 J | - | - | - |
| WELL | SHALLOW | PZ3-1 | 114-PLT-3-20160329 | N | T | JC17157 | 2016-03-29 | - | 3.8 J | 9.3 J | - | - | - |
| WELL | SHALLOW | PZ3-1 | 114-PLT-3-20160329X | FD | T | JC17157 | 2016-03-29 | - | 2.5 J | 13 J | - | - | - |
| WELL | SHALLOW | PZ4-1 | 114-PLT4-1-20160624 | N | T | JC22940 | 2016-06-24 | - | 3.6 J | < 3.9 UJ | - | - | - |
| WELL | SHALLOW | PZ4-1 | 114-PLT4-1-20160916 | N | T | JC27821 | 2016-09-16 | - | 1.4 J | 7.7 J | - | - | - |
| WELL | SHALLOW | PZ4-1 | 114-PLT-4-20160329 | N | T | JC17157 | 2016-03-29 | - | 35.5 | < 3.1 U | - | - | - |
| WELL | SHALLOW | PZ5-1 | 114-PLT5-1-20160624 | N | T | JC22940 | 2016-06-24 | - | < 0.81 U | < 3.9 UJ | - | - | - |
| WELL | SHALLOW | PZ5-1 | 114-PLT5-1-20160916 | N | T | JC27821 | 2016-09-16 | - | < 0.81 U | 13 J | - | - | - |
| WELL | SHALLOW | PZ5-1 | 114-PLT-5-20160329 | N | T | JC17157 | 2016-03-29 | - | 1.8 J | 3.7 J | - | - | - |
| SOILBORE | N/A | IRM1-PDI-1 | IRM1-PDI-1-12.0-16.0 | N | T | JC47028 | 2017-07-14 | < 4.3 | 22.4 | 8.8 | 38.7 | **< 4.9** | 12.7 |
| SOILBORE | N/A | IRM1-PDI-1 | IRM1-PDI-1-12.0-16.0FF | N | D | JC47028 | 2017-07-14 | < 4.3 | 9.9 | < 8.1 | 35.7 | **< 8.2** | 4.8 |
| SOILBORE | N/A | IRM1-PDI-2 | IRM1-PDI-2-8.0-12.0 | N | T | JC46818 | 2017-07-12 | **< 8.6** | **131** | < 8.1 | **188** | **< 3.3** | **150** |
| SOILBORE | N/A | IRM1-PDI-2 | IRM1-PDI-2-8.0-12.0FF | N | D | JC46818 | 2017-07-12 | < 4.3 | 1.7 | < 8.1 | 46.8 | < 1.6 | 22.9 |
| SOILBORE | N/A | IRM1-PDI-3 | IRM1-PDI-3-8.0-12.0 | N | T | JC46905 | 2017-07-13 | **< 43** | **241** | < 8.1 | **290** | **< 16** | **288** |
| SOILBORE | N/A | IRM1-PDI-3 | IRM1-PDI-3-8.0-12.0FF | N | D | JC46905 | 2017-07-13 | < 4.3 | 1.1 | < 8.1 | 97.8 | < 1.6 | 51.7 |
| SOILBORE | N/A | IRM1-PDI-4 | IRM1-PDI-4-8.0-12.0 | N | T | JC47124 | 2017-07-17 | - | 23.2 | < 8.1 | - | - | - |
| SOILBORE | N/A | IRM1-PDI-4 | IRM1-PDI-4-8.0-12.0FF | N | D | JC47124 | 2017-07-17 | - | < 0.85 | < 8.1 | - | - | - |
| SOILBORE | N/A | IRM1-PDI-5 | IRM1-PDI-5-8.0-12.0 | N | T | JC47124 | 2017-07-17 | - | **124** | 8.4 | - | - | - |
| SOILBORE | N/A | IRM1-PDI-5 | IRM1-PDI-5-8.0-12.0FF | N | D | JC47124 | 2017-07-17 | - | 1.3 | < 8.1 | - | - | - |
| SOILBORE | N/A | IRM1-PDI-6 | IRM1-PDI-6-13.0-17.0 | N | T | JC47028 | 2017-07-14 | < 4.3 | **840** | **450** | **170** | **< 3.3** | 46.2 |
| SOILBORE | N/A | IRM1-PDI-6 | IRM1-PDI-6-13.0-17.0FF | N | D | JC47028 | 2017-07-14 | < 4.3 | **823** | **360** | **163** | **< 3.3** | 42.1 |
| SOILBORE | N/A | 10W-SS101S | 10W-SS101S-11.0-15.0 | N | T | JC46649 | 2017-07-10 | **< 8.6 U** | **115** | R | 30.0 | **< 3.3 U** | **70.0 J** |
| SOILBORE | N/A | 10W-SS101S | 10W-SS101S-11.0-15.0FF | N | D | JC46649 | 2017-07-10 | < 4.3 U | 64.1 | < 8.1 UJ | 4.5 J | < 1.6 U | 36.5 J |
| SOILBORE | N/A | 10W-SS102S | 10W-SS102S-11.0-15.0 | N | T | JC46746 | 2017-07-11 | **< 43 U** | **701** | 39 J | **103** | **< 16 U** | **139 J** |
| SOILBORE | N/A | 10W-SS102S | 10W-SS102S-11.0-15.0FF | N | D | JC46746 | 2017-07-11 | < 4.3 U | < 0.85 UJ | **85 J** | 3.9 J | < 1.6 UJ | 1.3 J |
| SOILBORE | N/A | 10W-SS105I | 10W-SSI105I-36.0-40.0 | N | T | JC46901 | 2017-07-13 | **< 8.6 U** | 63.2 | < 8.1 U | 24.2 | **< 3.3 U** | 13.8 J |
| SOILBORE | N/A | 10W-SS105I | 10W-SSI105I-36.0-40.0FF | N | D | JC46901 | 2017-07-13 | < 4.3 U | 0.90 J | < 8.1 U | 11.6 | < 1.6 U | < 1.3 U |
| SOILBORE | N/A | 114-P1C-PZ1-S1 | 114-P1C-PZ1-W1-24.0-26.0 | N | T | JC29542 | 2016-10-12 | **< 33 U** | **7840** | 8.4 J | **2670** | **< 19 U** | **1880** |
| SOILBORE | N/A | 114-P1C-PZ1-S1 | 114-P1C-PZ1-W1-31.0-33.0 | N | T | JC29542 | 2016-10-12 | **< 16 U** | **1810** | < 3.9 U | **308** | **< 9.5 U** | **308** |

**Appendix L.1**
**Historical Groundwater Analytical Data - Cr+6 and CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ANTIMONY | CHROMIUM | CHROMIUM (HEXAVALENT) | NICKEL | THALLIUM | VANADIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-36-0 | 7440-47-3 | 18540-29-9 | 7440-02-0 | 7440-28-0 | 7440-62-2 |
| | | | | | | | **GWQS** | 6 | 70 | 70 | 100 | 2 | 60 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| SOILBORE | N/A | 114-P1C-PZ1-S2 | 114-P1C-PZ1-W2-24.0-26.0 | N | T | JC29754 | 2016-10-14 | < 3.3 U | **161** | < 3.9 UJ | 39.2 | **< 3.8 U** | 17.6 J |
| SOILBORE | N/A | 114-P1C-PZ1-S2 | 114-P1C-PZ1-W2-27.0-29.0 | N | T | JC29754 | 2016-10-14 | **< 16 U** | **5040** | < 3.9 UJ | **223** | **< 9.5 U** | **225 J** |
| SOILBORE | N/A | 114-P1C-PZ2-S1 | 114-P1C-PZ2-W1-16.5-17.5 | N | T | JC29434 | 2016-10-11 | **< 33 U** | **52800** | 15 J | **1080** | **< 38 U** | **2100** |
| SOILBORE | N/A | 114-P1C-PZ2-S1 | 114-P1C-PZ2-W1-25.0-27.0 | N | T | JC29434 | 2016-10-11 | **< 16 U** | **2560** | < 3.9 UJ | **380** | **< 9.5 U** | **190 J** |
| SOILBORE | N/A | 114-P1C-PZ2-S2 | 114-P1C-PZ2-W2-25.0-27.0 | N | T | JC29606 | 2016-10-13 | **< 33 U** | **8390** | < 3.9 RA | **1390** | **< 19 U** | **724** |
| SOILBORE | N/A | 114-P1C-PZ2-S2 | 114-P1C-PZ2-W2-31.0-33.0 | N | T | JC29606 | 2016-10-13 | **< 33 U** | **2120** | < 3.9 RA | **370** | **< 19 U** | **288 J** |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-24.0-28.0 | N | T | JC53234 | 2017-10-16 | **< 43 U** | **690** | - | **332** | **< 16 U** | **930** |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-24.0-28.0 | N | T | JC53234A | 2017-10-16 | - | - | **230** | - | - | - |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-24.0-28.0-F | N | D | JC53234 | 2017-10-16 | < 4.3 U | 6.1 J | - | 1.9 J | **< 3.3 U** | 9.8 J |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-24.0-28.0-F | N | D | JC53234A | 2017-10-16 | - | - | < 8.1 U | - | - | - |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-32.0-36.0 | N | T | JC53234 | 2017-10-16 | **< 43 U** | **1230** | - | **348** | **< 16 U** | **423 J** |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-32.0-36.0 | N | T | JC53234A | 2017-10-16 | - | - | < 41 UJ | - | - | - |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-32.0-36.0-F | N | D | JC53234 | 2017-10-16 | < 4.3 U | 3.7 J | - | 7.7 J | **< 8.2 U** | 2.5 J |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-32.0-36.0-F | N | D | JC53234A | 2017-10-16 | - | - | 13 J | - | - | - |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-40.0-44.0 | N | T | JC53234 | 2017-10-16 | **< 22 U** | **322** | - | **118** | **< 8.2 U** | 57.0 J |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-40.0-44.0 | N | T | JC53234A | 2017-10-16 | - | - | < 41 UJ | - | - | - |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-40.0-44.0-F | N | D | JC53234 | 2017-10-16 | < 4.3 U | 2.1 J | - | 9.8 J | **< 8.2 U** | 2.5 J |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-40.0-44.0-F | N | D | JC53234A | 2017-10-16 | - | - | 15 J | - | - | - |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-46.0-49.5 | N | T | JC53234 | 2017-10-16 | **< 220 U** | **5310** | - | **2380** | **< 82 U** | **2540** |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-46.0-49.5 | N | T | JC53234A | 2017-10-16 | - | - | < 41 U | - | - | - |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-46.0-49.5-F | N | D | JC53234 | 2017-10-16 | **< 8.6 U** | 25.4 | - | 35.0 | **< 3.3 U** | 10.8 J |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-46.0-49.5-F | N | D | JC53234A | 2017-10-16 | - | - | 8.7 J | - | - | - |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-22.0-26.0 | N | T | JC54569 | 2017-11-02 | - | - | < 8.1 U | - | - | - |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-22.0-26.0 | N | T | JC54569A | 2017-11-02 | **< 220 U** | **1260** | - | **770** | **< 82 U** | **1130 J** |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-22.0-26.0-F | N | D | JC54569 | 2017-11-02 | - | - | < 8.1 U | - | - | - |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-22.0-26.0-F | N | D | JC54569A | 2017-11-02 | < 4.3 U | 5.6 J | - | 6.7 J | < 1.6 U | 28.0 J |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-30.0-34.0 | N | T | JC54569 | 2017-11-02 | - | - | < 8.1 U | - | - | - |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-30.0-34.0 | N | T | JC54569A | 2017-11-02 | **< 220 U** | **1630** | - | **1190** | **< 82 U** | **1280 J** |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-30.0-34.0-F | N | D | JC54569 | 2017-11-02 | - | - | < 8.1 U | - | - | - |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-30.0-34.0-F | N | D | JC54569A | 2017-11-02 | < 4.3 U | < 0.85 U | - | 13.4 | < 1.6 U | < 1.3 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-36.0-40.0 | N | T | JC54569 | 2017-11-02 | - | - | < 8.1 U | - | - | - |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-36.0-40.0 | N | T | JC54569A | 2017-11-02 | < 4.3 U | 11.8 | - | 7.6 J | < 1.6 U | 6.6 J |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-36.0-40.0-F | N | D | JC54569 | 2017-11-02 | - | - | < 8.1 U | - | - | - |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-36.0-40.0-F | N | D | JC54569A | 2017-11-02 | < 4.3 U | < 0.85 U | - | 8.9 J | < 1.6 U | < 1.3 U |
| SOILBORE | N/A | 114-SS-43A | 114-SS-43A-11.0-15.0 | N | T | JC54328 | 2017-10-31 | - | - | **128000 J** | - | - | - |
| SOILBORE | N/A | 114-SS-43A | 114-SS-43A-11.0-15.0 | N | T | JC54328A | 2017-10-31 | **< 220 U** | **3690 J** | - | **2430** | **< 82 U** | **5180** |
| SOILBORE | N/A | 114-SS-43A | 114-SS-43A-11.0-15.0-LF | N | D | JC54328 | 2017-10-31 | - | - | 9.3 J- | - | - | - |
| SOILBORE | N/A | 114-SS-43A | 114-SS-43A-11.0-15.0-LF | N | D | JC54328A | 2017-10-31 | < 4.3 U | < 0.85 U | - | 3.1 J | < 1.6 U | 2.7 J |
| SOILBORE | N/A | 132-P3A-SSI | 132-P3A-SSI-30.0-34.0 | N | T | JC46746 | 2017-07-11 | < 4.3 U | **96.4** | < 8.1 U | 8.1 J | < 1.6 UJ | 9.2 J |
| SOILBORE | N/A | 132-P3A-SSI | 132-P3A-SSI-30.0-34.0FF | N | D | JC46746 | 2017-07-11 | < 4.3 U | 23.4 J | < 8.1 U | 3.3 J | < 1.6 UJ | < 1.3 U |
| SOILBORE | N/A | 132-P3A-SSI | 132-P3A-SSI-30.0-34.0X | FD | T | JC46746 | 2017-07-11 | < 4.3 U | **99.3** | < 8.1 U | 10.3 J | < 1.6 UJ | 10.5 J |
| SOILBORE | N/A | 132-P3A-SSI | 132-P3A-SSI-30.0-34.0XFF | FD | D | JC46746 | 2017-07-11 | < 4.3 U | 17.4 J | < 8.1 U | 4.1 J | < 1.6 UJ | < 1.3 U |
| SOILBORE | N/A | 199-SS1 | 199-SS1(10-14) | N | D | JD13912 | 2020-09-30 | < 4.7 | **847** | **5600** | 29.8 | < 0.17 | 2.9 |
| SOILBORE | N/A | 199-SS1 | 199-SS1(23-27) | N | D | JD13912 | 2020-09-30 | **< 24** | **16500** | **17500** | 39.8 | < 0.17 | < 9.0 |
| SOILBORE | N/A | 199-SS1 | 199-SS1(31-35) | N | D | JD13912 | 2020-09-30 | < 4.7 | **1200** | **4000** | 21 | < 0.17 | < 1.8 |
| SOILBORE | N/A | 199-SS1 | 199-SS1(38-42) | N | D | JD13912 | 2020-09-30 | < 4.7 | **445** | **480** | 10.7 | < 0.17 | < 1.8 |
| SOILBORE | N/A | 199-SS1 | 199-SS1(46-50) | N | D | JD13912 | 2020-09-30 | < 4.7 | 16.1 | < 5.8 | 15.9 | < 0.17 | < 1.8 |
| SOILBORE | N/A | 199-SS2 | 199-SS2(10-14) | N | D | JD13912 | 2020-09-30 | **< 24** | **18200** | **16100** | 23.9 | < 0.17 | < 9.0 |
| SOILBORE | N/A | 199-SS2 | 199-SS2(20-24) | N | D | JD13912 | 2020-09-30 | **10.7** | **11200** | **8500** | 18 | < 0.17 | < 3.6 |
| SOILBORE | N/A | 199-SS2 | 199-SS2(28-32) | N | D | JD13912 | 2020-09-30 | 5.1 | 6.2 | **200** | 12.3 | < 0.17 | < 1.8 |
| SOILBORE | N/A | 199-SS2 | 199-SS2(36-40) | N | D | JD13912 | 2020-09-30 | **6.6** | 27.5 | **780** | 33.5 | < 0.17 | < 1.8 |
| SOILBORE | N/A | 199-SS2 | 199-SS2(45-49) | N | D | JD13912 | 2020-09-30 | < 4.7 | 6.2 | < 5.8 | 35.6 | < 0.17 | < 1.8 |
| SOILBORE | N/A | 199-SS2 | 199-SS2(60-64) | N | D | JD13912 | 2020-09-30 | 4.8 | **3010** | **4000** | 28.3 | < 0.17 | < 1.8 |
| SOILBORE | N/A | GAR-PDI-B'2A | GAR-RI-B'2A-GW-2.0-7.0 | N | T | JC33474 | 2016-12-11 | **< 16 U** | **3160** | 8.6 J | **1540** | **< 19 U** | **2950** |
| SOILBORE | N/A | GAR-PDI-B'2A | GAR-RI-B'2A-GW-2.0-7.0X | FD | T | JC33474 | 2016-12-11 | **< 16 U** | **3080** | 17 J | **1510** | **< 9.5 U** | **2900** |

**Appendix L.1**
**Historical Groundwater Analytical Data - Cr+6 and CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ANTIMONY | CHROMIUM | CHROMIUM (HEXAVALENT) | NICKEL | THALLIUM | VANADIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-36-0 | 7440-47-3 | 18540-29-9 | 7440-02-0 | 7440-28-0 | 7440-62-2 |
| | | | | | | | **GWQS** | 6 | 70 | 70 | 100 | 2 | 60 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| SOILBORE | N/A | GAR-PDI-B'2A | GAR-RI-B'2A-GWFF-2.0-7.0 | N | D | JC33474 | 2016-12-11 | < 3.3 U | 1.1 J | < 3.9 UJ | 4.0 J | < 1.9 U | 1.8 J |
| SOILBORE | N/A | GAR-PDI-B'2A | GAR-RI-B'2A-GWFF-2.0-7.0X | FD | D | JC33474 | 2016-12-11 | < 3.3 U | < 0.81 U | < 3.9 UJ | 4.0 J | < 1.9 U | 1.2 J |
| SOILBORE | N/A | GAR-PDI-B'3A | GAR-RI-B'3A-GW-4.0-9.0 | N | T | JC33474 | 2016-12-11 | **< 16 U** | **477** | 6.5 J | **249** | **9.5 J** | **528** |
| SOILBORE | N/A | GAR-PDI-B'3A | GAR-RI-B'3A-GWFF-4.0-9.0 | N | D | JC33474 | 2016-12-11 | < 3.3 U | 1.0 J | < 3.9 UJ | 3.1 J | < 1.9 U | 1.3 J |
| SOILBORE | N/A | GAR-PDI-C13B | GAR-RI-C13B-GW-22.0-22.5 | N | T | JC33969 | 2016-12-18 | **< 16 U** | **801** | < 3.9 U | **187** | **< 9.5 U** | **215 J** |
| SOILBORE | N/A | GAR-PDI-C13B | GAR-RI-C13B-GWFF-22.0-22.5 | N | D | JC33969 | 2016-12-18 | < 3.3 U | 1.9 J | < 3.9 UJ | 37.7 | < 1.9 U | < 0.66 U |
| SOILBORE | N/A | GAR-PDI-D14B | GAR-RI-D14B-GW-0.0-5.0 | N | T | JC33474 | 2016-12-11 | **< 33 U** | **49700** | **260 J** | **2140** | **< 19 U** | **1860** |
| SOILBORE | N/A | GAR-PDI-D14B | GAR-RI-D14B-GWFF-0.0-5.0 | N | D | JC33474 | 2016-12-11 | < 3.3 U | **359** | **290 J** | 11.8 | **< 9.5 U** | 2.4 J |
| SOILBORE | N/A | P3-IRM-VAP01 | P3-IRM-VAP01(13-17) | N | D | JD13200 | 2020-09-16 | - | **278** | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP01 | P3-IRM-VAP01(19-23) | N | D | JD13200 | 2020-09-16 | - | **3030** | **3600** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP01 | P3-IRM-VAP01(27-31) | N | D | JD13200 | 2020-09-16 | - | **328** | **170** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP01 | P3-IRM-VAP01(37-41) | N | D | JD13200 | 2020-09-16 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP01 | P3-IRM-VAP01(6-10) | N | D | JD13200 | 2020-09-16 | - | 2.1 B | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP02 | P3-IRM-VAP02(20-24) | N | D | JD13200 | 2020-09-16 | - | **41500** | **32600** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP02 | P3-IRM-VAP02(30-34) | N | D | JD13200 | 2020-09-16 | - | **106000** | **126000** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP02 | P3-IRM-VAP02(36-40) | N | D | JD13200 | 2020-09-16 | - | **20700** | **23300** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP02 | P3-IRM-VAP02(49-53) | N | D | JD13200 | 2020-09-16 | - | **63900** | **74100** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP02 | P3-IRM-VAP02(56-60) | N | D | JD13200 | 2020-09-16 | - | 3.4 B | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP02 | P3-IRM-VAP02(8-12) | N | D | JD13200 | 2020-09-16 | - | **18800** | **24500** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP03 | P3-IRM-VAP03(16-20) | N | D | JD13255 | 2020-09-17 | - | 52.1 | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP03 | P3-IRM-VAP03(23-27) | N | D | JD13255 | 2020-09-17 | - | **7580** | **11000** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP03 | P3-IRM-VAP03(30-34) | N | D | JD13255 | 2020-09-17 | - | **3800** | **8600** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP03 | P3-IRM-VAP03(40-44) | N | D | JD13255 | 2020-09-17 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP03 | P3-IRM-VAP03(46-50) | N | D | JD13255 | 2020-09-17 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP03 | P3-IRM-VAP03(6-10) | N | D | JD13255 | 2020-09-17 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP03 | P3-IRM-VAP03(62-66) | N | D | JD13255 | 2020-09-17 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP04 | P3-IRM-VAP04(21-25) | N | D | JD13255 | 2020-09-17 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP04 | P3-IRM-VAP04(31-35) | N | D | JD13255 | 2020-09-17 | - | **1300** | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP04 | P3-IRM-VAP04(43-47) | N | D | JD13255 | 2020-09-17 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP04 | P3-IRM-VAP04(51-55) | N | D | JD13255 | 2020-09-17 | - | < 2.0 U | < 12 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP04 | P3-IRM-VAP04(64-68) | N | D | JD13255 | 2020-09-17 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP04 | P3-IRM-VAP04(70-74) | N | D | JD13255 | 2020-09-17 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP04 | P3-IRM-VAP04(76-80) | N | D | JD13255 | 2020-09-17 | - | 5.1 B | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP04 | P3-IRM-VAP04(9-13) | N | D | JD13255 | 2020-09-17 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP05 | P3-IRM-VAP05(07-11) | N | D | JD13425 | 2020-09-21 | - | 2.2 B | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP05 | P3-IRM-VAP05(20-24) | N | D | JD13425 | 2020-09-21 | - | 6.5 B | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP05 | P3-IRM-VAP05(24-33) | N | D | JD13425 | 2020-09-21 | - | **91400** | **106000** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP05 | P3-IRM-VAP05(37-45) | N | D | JD13425 | 2020-09-21 | - | **161000** | **158000** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP05 | P3-IRM-VAP05(45-49) | N | D | JD13425 | 2020-09-21 | - | **40000** | **21700** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP05 | P3-IRM-VAP05(59-63) | N | D | JD13425 | 2020-09-21 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP05 | P3-IRM-VAP05(65-69) | N | D | JD13425 | 2020-09-21 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP05 | P3-IRM-VAP05(75-79) | N | D | JD13425 | 2020-09-21 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP06 | P3-IRM-VAP06(09-13) | N | D | JD13425 | 2020-09-21 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP06 | P3-IRM-VAP06(21-25) | N | D | JD13425 | 2020-09-21 | - | **3360** | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP06 | P3-IRM-VAP06(32-36) | N | D | JD13425 | 2020-09-21 | - | **10500** | **4700** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP06 | P3-IRM-VAP06(40-44) | N | D | JD13425 | 2020-09-21 | - | < 2.0 U | 7.3 B | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP06 | P3-IRM-VAP06(46-50) | N | D | JD13425 | 2020-09-21 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP06 | P3-IRM-VAP06(53-57) | N | D | JD13425 | 2020-09-21 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP06 | P3-IRM-VAP06(66-70) | N | D | JD13425 | 2020-09-21 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP07 | P3-IRM-VAP07(08-12) | N | D | JD13425 | 2020-09-21 | - | 10.8 | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP07 | P3-IRM-VAP07(14-18) | N | D | JD13425 | 2020-09-21 | - | **134** | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP07 | P3-IRM-VAP07(26-30) | N | D | JD13425 | 2020-09-21 | - | **204000** | **134000** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP07 | P3-IRM-VAP07(34-38) | N | D | JD13425 | 2020-09-21 | - | **279000** | **307000** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP07 | P3-IRM-VAP07(40-44) | N | D | JD13425 | 2020-09-21 | - | **365000** | **363000** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP07 | P3-IRM-VAP07(46-50) | N | D | JD13425 | 2020-09-21 | - | **294000** | **178000** | - | - | - |

**Appendix L.1**
**Historical Groundwater Analytical Data - Cr+6 and CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ANTIMONY | CHROMIUM | CHROMIUM (HEXAVALENT) | NICKEL | THALLIUM | VANADIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-36-0 | 7440-47-3 | 18540-29-9 | 7440-02-0 | 7440-28-0 | 7440-62-2 |
| | | | | | | | **GWQS** | 6 | 70 | 70 | 100 | 2 | 60 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| SOILBORE | N/A | P3-IRM-VAP07 | P3-IRM-VAP07(64-68) | N | D | JD13425 | 2020-09-21 | - | 3.8 B | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP08 | P3-IRM-VAP08(07-11) | N | D | JD13630 | 2020-09-24 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP08 | P3-IRM-VAP08(14-18) | N | D | JD13630 | 2020-09-24 | - | 4.8 B | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP08 | P3-IRM-VAP08(29-33) | N | D | JD13630 | 2020-09-24 | - | 5.1 B | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP08 | P3-IRM-VAP08(38-42) | N | D | JD13630 | 2020-09-24 | - | 2.1 B | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP08 | P3-IRM-VAP08(49-53) | N | D | JD13630 | 2020-09-24 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP08 | P3-IRM-VAP08(58-63) | N | D | JD13630 | 2020-09-24 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP08 | P3-IRM-VAP08(73-77) | N | D | JD13630 | 2020-09-24 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP09 | P3-IRM-VAP09 (20-24) | N | D | JD13703 | 2020-09-25 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP09 | P3-IRM-VAP09(08-12) | N | D | JD13703 | 2020-09-25 | - | 2.1 B | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP09 | P3-IRM-VAP09(28-32) | N | D | JD13703 | 2020-09-25 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP09 | P3-IRM-VAP09(36-40) | N | D | JD13703 | 2020-09-25 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP09 | P3-IRM-VAP09(42-46) | N | D | JD13703 | 2020-09-25 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP09 | P3-IRM-VAP09(50-54) | N | D | JD13703 | 2020-09-25 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP09 | P3-IRM-VAP09(68-72) | N | D | JD13703 | 2020-09-25 | - | 2.4 B | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP10 | P3-IRM-VAP10(10-14) | N | D | JD13703 | 2020-09-25 | - | **133000** | **46000** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP10 | P3-IRM-VAP10(20-24) | N | D | JD13703 | 2020-09-25 | - | **34700** | **53600** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP10 | P3-IRM-VAP10(29-33) | N | D | JD13703 | 2020-09-25 | - | **183000** | **340000** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP10 | P3-IRM-VAP10(36-40) | N | D | JD13703 | 2020-09-25 | - | **706000** | **710000** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP10 | P3-IRM-VAP10(44-48) | N | D | JD13703 | 2020-09-25 | - | **501000** | **37900** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP10 | P3-IRM-VAP10(52-56) | N | D | JD13703 | 2020-09-25 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP10 | P3-IRM-VAP10(70-74) | N | D | JD13703 | 2020-09-25 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP11 | P3-IRM-VAP11(08-12) | N | D | JD13785 | 2020-09-28 | - | 3.5 B | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP11 | P3-IRM-VAP11(18-22) | N | D | JD13785 | 2020-09-28 | - | **12100** | **23400** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP11 | P3-IRM-VAP11(26-30) | N | D | JD13785 | 2020-09-28 | - | **130000** | **329000** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP11 | P3-IRM-VAP11(36-40) | N | D | JD13785 | 2020-09-28 | - | **685000** | **465000** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP11 | P3-IRM-VAP11(46-50) | N | D | JD13785 | 2020-09-28 | - | 4.7 B | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP11 | P3-IRM-VAP11(56-60) | N | D | JD13785 | 2020-09-28 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP11 | P3-IRM-VAP11(76-80) | N | D | JD13785 | 2020-09-28 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP11 | P3-IRM-VAP11(83-87) | N | D | JD13785 | 2020-09-28 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP12 | P3-IRM-VAP12(08-12) | N | D | JD13840 | 2020-09-29 | - | 2.7 B | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP12 | P3-IRM-VAP12(15-19) | N | D | JD13840 | 2020-09-29 | - | 3.4 B | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP12 | P3-IRM-VAP12(22-26) | N | D | JD13840 | 2020-09-29 | - | 2.6 B | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP12 | P3-IRM-VAP12(30-34) | N | D | JD13840 | 2020-09-29 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP12 | P3-IRM-VAP12(40-44) | N | D | JD13840 | 2020-09-29 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP12 | P3-IRM-VAP12(48-52) | N | D | JD13840 | 2020-09-29 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP12 | P3-IRM-VAP12(58-62) | N | D | JD13840 | 2020-09-29 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP12 | P3-IRM-VAP12(79-83) | N | D | JD13840 | 2020-09-29 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP12 | P3-IRM-VAP12(86-90) | N | D | JD13840 | 2020-09-29 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP13 | P3-IRM-VAP13(11-15) | N | D | JD13785 | 2020-09-28 | - | 2.9 B | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP13 | P3-IRM-VAP13(19-23) | N | D | JD13785 | 2020-09-28 | - | **9750** | **5900** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP13 | P3-IRM-VAP13(28-32) | N | D | JD13785 | 2020-09-28 | - | **114000** | **135000** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP13 | P3-IRM-VAP13(35-39) | N | D | JD13785 | 2020-09-28 | - | **11500** | **154000** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP13 | P3-IRM-VAP13(43-47) | N | D | JD13785 | 2020-09-28 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP13 | P3-IRM-VAP13(50-54) | N | D | JD13785 | 2020-09-28 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP13 | P3-IRM-VAP13(75-79) | N | D | JD13785 | 2020-09-28 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP14 | P3-IRM-VAP14(08-12) | N | D | JD13785 | 2020-09-28 | - | **15400** | **38100** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP14 | P3-IRM-VAP14(20-24) | N | D | JD13785 | 2020-09-28 | - | **22500** | **11500** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP14 | P3-IRM-VAP14(28-32) | N | D | JD13785 | 2020-09-28 | - | **162000** | **384000** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP14 | P3-IRM-VAP14(35-39) | N | D | JD13785 | 2020-09-28 | - | **812000** | **557000** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP14 | P3-IRM-VAP14(43-47) | N | D | JD13785 | 2020-09-28 | - | **1030000** | **1010000** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP14 | P3-IRM-VAP14(50-54) | N | D | JD13785 | 2020-09-28 | - | 5.0 B | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP14 | P3-IRM-VAP14(67-71) | N | D | JD13785 | 2020-09-28 | - | **263000** | **194000** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP15 | P3-IRM-VAP15(11-15) | N | D | JD13703 | 2020-09-25 | - | 8.3 B | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP15 | P3-IRM-VAP15(20-24) | N | D | JD13703 | 2020-09-25 | - | **62800** | **148000** | - | - | - |

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**Historical Groundwater Analytical Data - Cr+6 and CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ANTIMONY | CHROMIUM | CHROMIUM (HEXAVALENT) | NICKEL | THALLIUM | VANADIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-36-0 | 7440-47-3 | 18540-29-9 | 7440-02-0 | 7440-28-0 | 7440-62-2 |
| | | | | | | | **GWQS** | 6 | 70 | 70 | 100 | 2 | 60 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| SOILBORE | N/A | P3-IRM-VAP15 | P3-IRM-VAP15(26-30) | N | D | JD13703 | 2020-09-25 | - | **60500** | **95300** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP15 | P3-IRM-VAP15(33-37) | N | D | JD13703 | 2020-09-25 | - | **355000** | **442000** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP15 | P3-IRM-VAP15(41-45) | N | D | JD13703 | 2020-09-25 | - | **641000** | **739000** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP15 | P3-IRM-VAP15(56-60) | N | D | JD13703 | 2020-09-25 | - | 2.4 B | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP16 | P3-IRM-VAP16(18-22) | N | D | JD13703 | 2020-09-25 | - | **81800** | **158000** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP16 | P3-IRM-VAP16(25-29) | N | D | JD13703 | 2020-09-25 | - | **79300** | **416000** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP16 | P3-IRM-VAP16(33-37) | N | D | JD13703 | 2020-09-25 | - | **625000** | **647000** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP16 | P3-IRM-VAP16(40-44) | N | D | JD13703 | 2020-09-25 | - | **968000** | **917000** | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP16 | P3-IRM-VAP16(55-59) | N | D | JD13703 | 2020-09-25 | - | 3.0 B | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP16 | P3-IRM-VAP16(61-65) | N | D | JD13703 | 2020-09-25 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP16 | P3-IRM-VAP16(8-12) | N | D | JD13703 | 2020-09-25 | - | 25.7 | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP17 | P3-IRM-VAP-17-20-24-20201208 | N | D | JD17347 | 2020-12-08 | - | 9.8 B | 5.8 B | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP17 | P3-IRM-VAP-17-26-30-20201208 | N | D | JD17347 | 2020-12-08 | - | 5.5 B | 9.5 B | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP17 | P3-IRM-VAP-17-33-37-20201208 | N | D | JD17347 | 2020-12-08 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP17 | P3-IRM-VAP-17-41-45-20201208 | N | D | JD17347 | 2020-12-08 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP17 | P3-IRM-VAP-17-60-64-20201208 | N | D | JD17347 | 2020-12-08 | - | < 2.0 U | 7.0 B | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP18 | P3-IRM-VAP-18-20-24-20201208 | N | D | JD17347 | 2020-12-08 | - | 4.9 B | 7.0 B | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP18 | P3-IRM-VAP-18-27-31-20201208 | N | D | JD17347 | 2020-12-08 | - | < 2.0 U | 8.3 B | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP18 | P3-IRM-VAP-18-33-37-20201208 | N | D | JD17347 | 2020-12-08 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP18 | P3-IRM-VAP-18-40-44-20201208 | N | D | JD17347 | 2020-12-08 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP18 | P3-IRM-VAP-18-47-51-20201208 | N | D | JD17347 | 2020-12-08 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP18 | P3-IRM-VAP-18-53-57-20201208 | N | D | JD17347 | 2020-12-08 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP19 | P3-IRM-VAP-19-20-24-20201209 | N | D | JD17430 | 2020-12-09 | - | 3.0 B | < 29 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP19 | P3-IRM-VAP-19-25-29-20201209 | N | D | JD17430 | 2020-12-09 | - | < 2.0 U | < 29 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP19 | P3-IRM-VAP-19-30-34-20201209 | N | D | JD17430 | 2020-12-09 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP19 | P3-IRM-VAP-19-35-39-20201209 | N | D | JD17430 | 2020-12-09 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP19 | P3-IRM-VAP-19-40-44-20201209 | N | D | JD17430 | 2020-12-09 | - | < 2.0 U | < 5.8 U | - | - | - |
| SOILBORE | N/A | P3-IRM-VAP19 | P3-IRM-VAP-19-45-49-20201209 | N | D | JD17430 | 2020-12-09 | - | < 2.0 U | < 5.8 U | - | - | - |
| SUMP | N/A | 133-Y22A-SUMP | 133-Y22ASUMP-20160204 | N | T | JC13704 | 2016-02-04 | - | 3.9 J | 21 RA | - | - | - |
| SUMP | N/A | Forrest-Sump-E | FORREST-SUMP-E-20160926 | N | T | JC28410 | 2016-09-26 | - | **346 J** | **160** | - | - | - |
| SUMP | N/A | Forrest-Sump-E | FORREST-SUMP-E-20160926X | FD | T | JC28410 | 2016-09-26 | - | **273 J** | **170** | - | - | - |
| SUMP | N/A | Forrest-Sump-E | FORREST-SUMP-E-20170928 | N | T | JC52007 | 2017-09-28 | - | - | **550** | - | - | - |
| SUMP | N/A | Forrest-Sump-E | FORREST-SUMP-E-20170928 | N | T | JC52007A | 2017-09-28 | - | **647** | - | - | - | - |
| SUMP | N/A | Forrest-Sump-S | FORREST-SUMP-S-20160926 | N | T | JC28410 | 2016-09-26 | - | **12900** | **2900** | - | - | - |
| SUMP | N/A | Forrest-Sump-S | FORREST-SUMP-S-20170925 | N | T | JC51716 | 2017-09-25 | - | **47700** | **8500** | - | - | - |
| SUMP | N/A | Forrest-Sump-S | FORREST-SUMP-S-20170928 | N | T | JC52007 | 2017-09-28 | - | - | **7700** | - | - | - |
| SUMP | N/A | Forrest-Sump-S | FORREST-SUMP-S-20170928 | N | T | JC52007A | 2017-09-28 | - | **67700** | - | - | - | - |
| SUMP | N/A | Forrest-Sump-W | FORREST-SUMP-W-20160926 | N | T | JC28410 | 2016-09-26 | - | **100** | < 3.9 U | - | - | - |
| SUMP | N/A | Forrest-Sump-W | FORREST-SUMP-W-20170925 | N | T | JC51716 | 2017-09-25 | - | 46.3 | 23 | - | - | - |
| SUMP | N/A | Forrest-Sump-W | FORREST-SUMP-W-20170928 | N | T | JC52007 | 2017-09-28 | - | - | **380** | - | - | - |
| SUMP | N/A | Forrest-Sump-W | FORREST-SUMP-W-20170928 | N | T | JC52007A | 2017-09-28 | - | **446** | - | - | - | - |
| TW | N/A | HSD-CC18A-GW | HSD-CC18A-GW | N | T | JC21402 | 2016-06-02 | - | 14.3 | 7.2 J | - | - | - |
| TW | N/A | HSD-CC18A-GW | HSD-CC18A-GW-F | N | D | JC21402 | 2016-06-02 | - | 2.8 J | < 3.9 UJ | - | - | - |
| TW | N/A | HSD-DD11A-GW | HSD-DD11A-GW | N | T | JC21402 | 2016-06-02 | - | 52.8 | < 3.9 UJ | - | - | - |
| TW | N/A | HSD-DD11A-GW | HSD-DD11A-GW-F | N | D | JC21402 | 2016-06-02 | - | 21.9 | < 3.9 UJ | - | - | - |
| TW | N/A | HSD-DD11A-GW | HSD-DD11A-GW-FX | FD | D | JC21402 | 2016-06-02 | - | 22.1 | < 3.9 UJ | - | - | - |
| TW | N/A | HSD-DD11A-GW | HSD-DD11A-GWX | FD | T | JC21402 | 2016-06-02 | - | 45.3 | < 3.9 UJ | - | - | - |
| WELL | INTERMEDIATE | 114-MC-EW103 | 114-MC-EW103-20150924 | N | T | JC4675 | 2015-09-24 | - | - | 45 RA | - | - | - |
| WELL | INTERMEDIATE | 114-MC-EW103 | 114-MC-EW103-20150924 | N | T | JC4675A | 2015-09-24 | < 3.0 U | **8950** | - | 60.6 | **< 17 U** | 1.6 J |
| WELL | INTERMEDIATE | 114-MC-EW103 | 114-MC-EW103-20151214 | N | T | JC10593 | 2015-12-14 | < 3.0 U | **5070** | < 0.92 U | 51.8 | **< 43 U** | < 0.70 UB |
| WELL | INTERMEDIATE | 114-MC-EW103 | 114-MC-EW103-20160322 | N | T | JC16738 | 2016-03-22 | **8.6** | **1070** | < 0.74 U | 42.3 | **< 19 U** | 1.8 J |
| WELL | INTERMEDIATE | 114-MC-EW103 | 114-MC-EW103-20160623 | N | T | JC22854 | 2016-06-23 | 5.3 J | **388** | < 3.9 RA | 24.3 | **< 9.5 U** | 0.80 J |
| WELL | INTERMEDIATE | 114-MC-EW103 | 114-MC-EW103-20160623-F | N | D | JC22854 | 2016-06-23 | - | 31.3 | < 3.9 RA | - | - | - |
| WELL | INTERMEDIATE | 114-MC-EW103 | 114-MC-EW103-F-20150924 | N | D | JC4675 | 2015-09-24 | - | - | 58 RA | - | - | - |
| WELL | INTERMEDIATE | 114-MC-EW103 | 114-MC-EW103-F-20150924 | N | D | JC4675A | 2015-09-24 | - | **92.0** | - | - | - | - |

**Appendix L.1**
**Historical Groundwater Analytical Data - Cr+6 and CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ANTIMONY | CHROMIUM | CHROMIUM (HEXAVALENT) | NICKEL | THALLIUM | VANADIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-36-0 | 7440-47-3 | 18540-29-9 | 7440-02-0 | 7440-28-0 | 7440-62-2 |
| | | | | | | | **GWQS** | 6 | 70 | 70 | 100 | 2 | 60 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-MC-EW103 | 114-MC-EW103-F-20151214 | N | D | JC10593 | 2015-12-14 | - | **182** | < 0.92 UJ | - | - | - |
| WELL | INTERMEDIATE | 114-MC-EW103 | 114-MC-EW103-F-20160322 | N | D | JC16738 | 2016-03-22 | - | 31.8 | < 0.74 U | - | - | - |
| WELL | INTERMEDIATE | GPS-EW1I | GPS-EW1I-010616 | N | T | JC12114 | 2016-01-06 | **< 15 U** | **272** | < 3.1 RA | 57.3 | **< 8.7 U** | 2.7 J |
| WELL | INTERMEDIATE | GPS-EW1I | GPS-EW1I-010616-F | N | D | JC12114 | 2016-01-06 | - | 20.3 | < 3.1 RA | - | - | - |
| WELL | INTERMEDIATE | GPS-EW1I | GPS-EW1I-040616 | N | T | JC17755 | 2016-04-06 | < 3.3 U | **87.9** | 50 | 86.9 | < 1.9 U | 16.5 J |
| WELL | INTERMEDIATE | GPS-EW1I | GPS-EW1I-040616-F | N | D | JC17755 | 2016-04-06 | - | 59.7 | 41 | - | - | - |
| WELL | INTERMEDIATE | GPS-EW1I | GPS-EW1I-071216 | N | T | JC23920 | 2016-07-12 | < 3.3 U | **74.6** | < 3.9 U | 92.3 | **< 9.5 U** | 15.4 J |
| WELL | INTERMEDIATE | GPS-EW1I | GPS-EW1I-071216-F | N | D | JC23920 | 2016-07-12 | - | 70.0 | 12 | - | - | - |
| WELL | INTERMEDIATE | GPS-EW1I | GPS-EW1I-100616 | N | T | JC29150 | 2016-10-06 | **< 16 U** | **121** | < 3.9 RA | **106** | **< 9.5 U** | 15.9 J |
| WELL | INTERMEDIATE | GPS-EW1I | GPS-EW1I-100616-F | N | D | JC29150 | 2016-10-06 | - | 61.5 | < 3.9 RA | - | - | - |
| WELL | INTERMEDIATE | GPS-EW2I | GPS-EW2I-010616 | N | T | JC12114 | 2016-01-06 | **6.8** | **379** | < 3.1 RA | 53.3 | < 1.7 U | 0.80 J |
| WELL | INTERMEDIATE | GPS-EW2I | GPS-EW2I-010616-F | N | D | JC12114 | 2016-01-06 | - | 36.7 | 45 RA | - | - | - |
| WELL | INTERMEDIATE | GPS-EW2I | GPS-EW2I-040616 | N | T | JC17755 | 2016-04-06 | < 3.3 U | **334** | **< 200 U** | 25.8 | < 1.9 U | 1.1 J |
| WELL | INTERMEDIATE | GPS-EW2I | GPS-EW2I-040616-F | N | D | JC17755 | 2016-04-06 | - | 17.1 | **< 200 U** | - | - | - |
| WELL | INTERMEDIATE | GPS-EW2I | GPS-EW2I-071216 | N | T | JC23920 | 2016-07-12 | < 3.3 U | **342** | < 3.9 UJ | 26.6 | **< 9.5 U** | 2.8 J |
| WELL | INTERMEDIATE | GPS-EW2I | GPS-EW2I-071216-F | N | D | JC23920 | 2016-07-12 | - | 20.8 J | 58 J | - | - | - |
| WELL | INTERMEDIATE | GPS-EW2I | GPS-EW2I-100616 | N | T | JC29150 | 2016-10-06 | **< 9.8 U** | **287** | < 3.9 RA | 36.9 | **< 5.7 U** | 2.7 J |
| WELL | INTERMEDIATE | GPS-EW2I | GPS-EW2I-100616-F | N | D | JC29150 | 2016-10-06 | - | 34.6 | < 3.9 RA | - | - | - |
| WELL | INTERMEDIATE | GPS-IW12I | GPS-IW12I-010616 | N | T | JC12114 | 2016-01-06 | **< 9.1 U** | **137** | < 3.1 RA | 25.8 | **< 5.2 U** | 8.0 J |
| WELL | INTERMEDIATE | GPS-IW12I | GPS-IW12I-010616-F | N | D | JC12114 | 2016-01-06 | - | **95.4** | < 3.1 RA | - | - | - |
| WELL | INTERMEDIATE | GPS-IW12I | GPS-IW12I-040616 | N | T | JC17755 | 2016-04-06 | < 3.3 U | **160** | < 3.9 U | 14.6 | < 1.9 U | 6.9 J |
| WELL | INTERMEDIATE | GPS-IW12I | GPS-IW12I-040616-F | N | D | JC17755 | 2016-04-06 | - | 62.9 | 17 | - | - | - |
| WELL | INTERMEDIATE | GPS-IW12I | GPS-IW12I-071216 | N | T | JC23920 | 2016-07-12 | < 3.3 U | **166** | 12 | 22.9 | **< 9.5 U** | 17.5 J |
| WELL | INTERMEDIATE | GPS-IW12I | GPS-IW12I-071216-F | N | D | JC23920 | 2016-07-12 | - | 62.4 | 19 | - | - | - |
| WELL | INTERMEDIATE | GPS-IW12I | GPS-IW12I-100616 | N | T | JC29150 | 2016-10-06 | **< 16 U** | **215** | < 3.9 RA | 34.1 | **< 9.5 U** | 33.2 J |
| WELL | INTERMEDIATE | GPS-IW12I | GPS-IW12I-100616-F | N | D | JC29150 | 2016-10-06 | - | 61.1 | < 3.9 RA | - | - | - |
| WELL | INTERMEDIATE | GPS-IW3I | GPS-IW3I-010616 | N | T | JC12114 | 2016-01-06 | **< 30 U** | **103** | 3.7 RA | 18.4 | **< 17 U** | 8.5 J |
| WELL | INTERMEDIATE | GPS-IW3I | GPS-IW3I-010616-F | N | D | JC12114 | 2016-01-06 | - | **105** | < 3.1 RA | - | - | - |
| WELL | INTERMEDIATE | GPS-IW3I | GPS-IW3I-040616 | N | T | JC17755 | 2016-04-06 | < 3.3 U | **121** | 18 | 59.6 | **< 19 U** | 23.6 J |
| WELL | INTERMEDIATE | GPS-IW3I | GPS-IW3I-040616-F | N | D | JC17755 | 2016-04-06 | - | **118** | 21 | - | - | - |
| WELL | INTERMEDIATE | GPS-IW3I | GPS-IW3I-071216 | N | T | JC23920 | 2016-07-12 | < 3.3 U | **70.8** | < 3.9 U | 52.5 | **< 9.5 U** | 9.6 J |
| WELL | INTERMEDIATE | GPS-IW3I | GPS-IW3I-071216-F | N | D | JC23920 | 2016-07-12 | - | 61.5 | < 3.9 U | - | - | - |
| WELL | INTERMEDIATE | GPS-IW3I | GPS-IW3I-100616 | N | T | JC29150 | 2016-10-06 | **< 33 U** | **108** | 19 RA | **112** | **< 19 U** | 44.2 J |
| WELL | INTERMEDIATE | GPS-IW3I | GPS-IW3I-100616-F | N | D | JC29150 | 2016-10-06 | - | **102** | 15 RA | - | - | - |
| WELL | INTERMEDIATE | GPS-IW4I | GPS-IW4I-010616 | N | T | JC12114 | 2016-01-06 | **< 15 U** | 48.8 | < 3.1 RA | 24.3 | **< 8.7 U** | 4.0 J |
| WELL | INTERMEDIATE | GPS-IW4I | GPS-IW4I-010616-F | N | D | JC12114 | 2016-01-06 | - | 47.9 | < 3.1 RA | - | - | - |
| WELL | INTERMEDIATE | GPS-IW4I | GPS-IW4I-040616 | N | T | JC17755 | 2016-04-06 | **< 6.5 U** | 69.2 | **< 200 U** | 89.4 | **< 3.8 U** | 11.2 J |
| WELL | INTERMEDIATE | GPS-IW4I | GPS-IW4I-040616-F | N | D | JC17755 | 2016-04-06 | - | 60.2 | **< 200 U** | - | - | - |
| WELL | INTERMEDIATE | GPS-IW4I | GPS-IW4I-071216 | N | T | JC23920 | 2016-07-12 | **8.6 J** | 63.8 | < 3.9 U | 94.4 | **< 19 U** | 21.0 J |
| WELL | INTERMEDIATE | GPS-IW4I | GPS-IW4I-071216-F | N | D | JC23920 | 2016-07-12 | - | 64.0 | < 3.9 U | - | - | - |
| WELL | INTERMEDIATE | GPS-IW4I | GPS-IW4I-100616 | N | T | JC29150 | 2016-10-06 | **< 16 U** | **72.5** | < 3.9 RA | 98.0 | **< 19 U** | 26.0 J |
| WELL | INTERMEDIATE | GPS-IW4I | GPS-IW4I-100616-F | N | D | JC29150 | 2016-10-06 | - | 61.1 | < 3.9 RA | - | - | - |
| WELL | INTERMEDIATE | GPS-IW6I | GPS-IW6I-010616 | N | T | JC12114 | 2016-01-06 | **< 15 U** | **81.3** | < 3.1 RA | 26.5 | **8.8 J** | 6.3 J |
| WELL | INTERMEDIATE | GPS-IW6I | GPS-IW6I-010616-F | N | D | JC12114 | 2016-01-06 | - | **80.6** | < 3.1 RA | - | - | - |
| WELL | INTERMEDIATE | GPS-IW6I | GPS-IW6I-040616 | N | T | JC17755 | 2016-04-06 | < 3.3 U | **101** | < 3.9 U | 72.9 | < 1.9 U | 12.0 J |
| WELL | INTERMEDIATE | GPS-IW6I | GPS-IW6I-040616-F | N | D | JC17755 | 2016-04-06 | - | **93.5** | < 3.9 U | - | - | - |
| WELL | INTERMEDIATE | GPS-IW6I | GPS-IW6I-071216 | N | T | JC23920 | 2016-07-12 | < 3.3 U | **80.4** | < 3.9 U | 84.7 | **< 9.5 U** | 13.8 J |
| WELL | INTERMEDIATE | GPS-IW6I | GPS-IW6I-071216-F | N | D | JC23920 | 2016-07-12 | - | **72.8** | < 3.9 U | - | - | - |
| WELL | INTERMEDIATE | GPS-IW6I | GPS-IW6I-100616 | N | T | JC29150 | 2016-10-06 | **< 16 U** | **85.2** | < 20 RA | 83.3 | **< 9.5 U** | 17.2 J |
| WELL | INTERMEDIATE | GPS-IW6I | GPS-IW6I-100616-F | N | D | JC29150 | 2016-10-06 | - | **81.5** | < 3.9 RA | - | - | - |
| WELL | INTERMEDIATE | GPS-IW9I | GPS-IW9I-010616 | N | T | JC12114 | 2016-01-06 | **< 15 U** | 54.6 | < 3.1 RA | 26.9 | **< 8.7 U** | 4.6 J |
| WELL | INTERMEDIATE | GPS-IW9I | GPS-IW9I-010616-F | N | D | JC12114 | 2016-01-06 | - | 50.9 | < 3.1 RA | - | - | - |
| WELL | INTERMEDIATE | GPS-IW9I | GPS-IW9I-040616 | N | T | JC17755 | 2016-04-06 | < 3.3 U | **73.8** | < 3.9 U | 39.2 | **< 5.7 U** | 8.9 J |
| WELL | INTERMEDIATE | GPS-IW9I | GPS-IW9I-040616-F | N | D | JC17755 | 2016-04-06 | - | **71.7** | < 3.9 U | - | - | - |
| WELL | INTERMEDIATE | GPS-IW9I | GPS-IW9I-071216 | N | T | JC23920 | 2016-07-12 | < 3.3 U | **106** | 37 | **102** | **< 38 U** | 30.1 J |

**Appendix L.1**
**Historical Groundwater Analytical Data - Cr+6 and CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ANTIMONY | CHROMIUM | CHROMIUM (HEXAVALENT) | NICKEL | THALLIUM | VANADIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-36-0 | 7440-47-3 | 18540-29-9 | 7440-02-0 | 7440-28-0 | 7440-62-2 |
| | | | | | | | **GWQS** | 6 | 70 | 70 | 100 | 2 | 60 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | GPS-IW9I | GPS-IW9I-071216-F | N | D | JC23920 | 2016-07-12 | - | **88.6** | 18 | - | - | - |
| WELL | INTERMEDIATE | GPS-IW9I | GPS-IW9I-100616 | N | T | JC29150 | 2016-10-06 | **6.8** | 56.2 | < 3.9 RA | 58.6 | **< 9.5 U** | 13.3 J |
| WELL | INTERMEDIATE | GPS-IW9I | GPS-IW9I-100616-F | N | D | JC29150 | 2016-10-06 | - | 60.9 | < 3.9 RA | - | - | - |
| WELL | INTERMEDIATE | 114-P1-IRM-1 | 114-P1-IRM-1-20180116 | N | D | JC58932 | 2018-01-16 | **< 300 U** | **372000 J** | **311000** | **< 500 U** | **< 100 U** | **< 2500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-1 | 114-P1-IRM-1-20180116 | N | T | JC58932 | 2018-01-16 | **< 300 U** | **263000 J** | **316000** | **< 500 U** | **< 100 U** | **< 2500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-10I | 114-P1-IRM-10I | N | D | JC59745 | 2018-01-25 | **< 240 U** | **152000** | **162000** | 31.8 | **< 80 U** | **< 2000 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-10I | 114-P1-IRM-10I | N | T | JC59745 | 2018-01-25 | **< 300 U** | **218000** | **195000** | 26.4 | **< 100 U** | **< 2500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-11 | 114-P1-IRM-11-20180118 | N | D | JC59349 | 2018-01-18 | **< 300 U** | **186000** | **179000** | **145** | **< 100 U** | **< 2500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-11 | 114-P1-IRM-11-20180118 | N | T | JC59349 | 2018-01-18 | **< 300 U** | **222000** | **255000** | **155** | **< 100 U** | **< 2500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-12 | 114-P1-IRM-12-20180118 | N | D | JC59349 | 2018-01-18 | **< 300 U** | **186000** | **172000** | 88.0 | **< 100 U** | **< 2500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-12 | 114-P1-IRM-12-20180118 | N | T | JC59349 | 2018-01-18 | **< 300 U** | **195000** | **174000** | 96.5 | **< 100 U** | **< 2500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-13 | 114-P1-IRM-13-20180116 | N | D | JC58932 | 2018-01-16 | **< 750 U** | **929000** | **813000** | **< 1300 U** | **< 250 U** | **< 6300 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-13 | 114-P1-IRM-13-20180116 | N | T | JC58932 | 2018-01-16 | **< 750 U** | **918000** | **788000** | **< 1300 U** | **< 250 U** | **< 6300 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-14 | 114-P1-IRM-14-20180116 | N | D | JC58932 | 2018-01-16 | **< 300 U** | **333000 J** | **299000** | **< 500 U** | **< 100 U** | **< 2500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-14 | 114-P1-IRM-14-20180116 | N | T | JC58932 | 2018-01-16 | **< 300 U** | **256000 J** | **308000** | **863** | **< 100 U** | **< 2500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-15 | 114-P1-IRM-15-20180122 | N | D | JC59495 | 2018-01-22 | **< 60 U** | **35200** | **32300** | < 20 U | **< 20 U** | **< 500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-15 | 114-P1-IRM-15-20180122 | N | T | JC59495 | 2018-01-22 | **< 60 U** | **36800** | **36300** | < 20 U | **< 20 U** | **< 500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-16 | 114-P1-IRM-16-20180116 | N | D | JC58932 | 2018-01-16 | **< 600 U** | **690000** | **591000** | **< 1000 U** | **< 200 U** | **< 5000 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-16 | 114-P1-IRM-16-20180116 | N | T | JC58932 | 2018-01-16 | **< 600 U** | **663000** | **516000** | **< 1000 U** | **< 200 U** | **< 5000 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-17 | 114-P1-IRM-17-20180122 | N | D | JC59495 | 2018-01-22 | **< 30 U** | **98.4** | < 10 U | 63.8 | **< 20 U** | **< 250 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-17 | 114-P1-IRM-17-20180122 | N | T | JC59495 | 2018-01-22 | **< 30 U** | **1330** | < 10 U | 74.2 | **< 20 U** | **< 250 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-18I | 114-P1-IRM-18I-20180118 | N | D | JC59349 | 2018-01-18 | **< 150 U** | **170000** | **153000** | < 50 U | **< 50 U** | **< 1300 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-18I | 114-P1-IRM-18I-20180118 | N | T | JC59349 | 2018-01-18 | **< 150 U** | **179000** | **169000** | < 50 U | **< 50 U** | **< 1300 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-19I | 114-P1-IRM-19I-20180117 | N | D | JC59023 | 2018-01-17 | **< 60 U** | **46800** | **41000** | < 50 U | **< 20 U** | **< 250 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-19I | 114-P1-IRM-19I-20180117 | N | T | JC59023 | 2018-01-17 | **< 60 U** | **59500** | **43500** | < 50 U | **< 20 U** | **< 250 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-2 | 114-P1-IRM-2-20180116 | N | D | JC58932 | 2018-01-16 | **< 600 U** | **587000** | **548000** | **< 1000 U** | **< 200 U** | **< 5000 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-2 | 114-P1-IRM-2-20180116 | N | T | JC58932 | 2018-01-16 | **< 600 U** | **608000** | **543000** | < 50 U | **< 200 U** | **< 5000 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-20I | 114-P1-IRM-20I-20180117 | N | D | JC59023 | 2018-01-17 | < 6.0 U | **3260** | **2400** | 19.5 | < 2.0 U | < 50 U |
| WELL | INTERMEDIATE | 114-P1-IRM-20I | 114-P1-IRM-20I-20180117 | N | T | JC59023 | 2018-01-17 | < 6.0 U | **4740** | **2600** | 20.0 | < 2.0 U | < 50 U |
| WELL | INTERMEDIATE | 114-P1-IRM-21I | 114-P1-IRM-21I-20180118 | N | D | JC59349 | 2018-01-18 | < 6.0 U | **87.7** | 20 | 57.1 | **< 50 U** | < 50 U |
| WELL | INTERMEDIATE | 114-P1-IRM-21I | 114-P1-IRM-21I-20180118 | N | T | JC59349 | 2018-01-18 | < 6.0 U | **3650** | 16 | 56.4 | **< 50 U** | < 50 U |
| WELL | INTERMEDIATE | 114-P1-IRM-22I | 114-P1-IRM-22I-20180118 | N | D | JC59349 | 2018-01-18 | **< 12 U** | **9830** | **19300** | 68.3 | **< 4.0 U** | **< 100 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-22I | 114-P1-IRM-22I-20180118 | N | T | JC59349 | 2018-01-18 | **< 24 U** | **18600** | **20500** | 32.6 | **< 8.0 U** | **< 200 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-24I | 114-P1-IRM-24I-20180118 | N | D | JC59349 | 2018-01-18 | **< 60 U** | **32300** | **27300** | < 20 U | **< 20 U** | **< 500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-24I | 114-P1-IRM-24I-20180118 | N | T | JC59349 | 2018-01-18 | **< 60 U** | **31400** | **30700** | < 20 U | **< 20 U** | **< 500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-25I | 114-P1-IRM-25I-20180118 | N | D | JC59349 | 2018-01-18 | < 6.0 U | **2270** | **5000** | 44.6 | **< 10 U** | < 50 U |
| WELL | INTERMEDIATE | 114-P1-IRM-25I | 114-P1-IRM-25I-20180118 | N | T | JC59349 | 2018-01-18 | < 6.0 U | **3470** | **5300** | 44.2 | **< 10 U** | < 50 U |
| WELL | INTERMEDIATE | 114-P1-IRM-26I | 114-P1-IRM-26I-20180118 | N | D | JC59349 | 2018-01-18 | < 6.0 U | **135** | 11 | 41.4 | < 2.0 U | < 50 U |
| WELL | INTERMEDIATE | 114-P1-IRM-26I | 114-P1-IRM-26I-20180118 | N | T | JC59349 | 2018-01-18 | < 6.0 U | **1140** | 11 | 42.1 | < 2.0 U | < 50 U |
| WELL | INTERMEDIATE | 114-P1-IRM-27I | 114-P1-IRM-27I-20180122 | N | D | JC59495 | 2018-01-22 | **< 750 U** | **500000** | **521000** | **223** | **< 250 U** | **< 6300 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-27I | 114-P1-IRM-27I-20180122 | N | T | JC59495 | 2018-01-22 | **< 750 U** | **569000** | **542000** | **255** | **< 250 U** | **< 6300 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-28I | 114-P1-IRM-28I-20180118 | N | D | JC59349 | 2018-01-18 | **< 60 U** | **35400** | **27700** | 99.3 | **< 20 U** | **< 500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-28I | 114-P1-IRM-28I-20180118 | N | T | JC59349 | 2018-01-18 | **< 60 U** | **34200** | **31900** | 98.7 | **< 20 U** | **< 500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-29I | 114-P1-IRM-29I-20180118 | N | D | JC59349 | 2018-01-18 | **< 12 U** | **12400** | **17700** | 79.8 | **< 10 U** | **< 100 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-29I | 114-P1-IRM-29I-20180118 | N | T | JC59349 | 2018-01-18 | **< 12 U** | **16700** | **20400** | 80.2 | **< 10 U** | **< 100 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-3 | 114-P1-IRM-3-20180124 | N | D | JC59667 | 2018-01-24 | < 6.0 U | **6460** | **1700** | 88.9 | **< 10 U** | < 50 U |
| WELL | INTERMEDIATE | 114-P1-IRM-3 | 114-P1-IRM-3-20180124 | N | T | JC59667 | 2018-01-24 | < 6.0 U | **8240** | 37 | 90.5 | **< 10 U** | < 50 U |
| WELL | INTERMEDIATE | 114-P1-IRM-30I | 114-P1-IRM-30I-20180122 | N | D | JC59495 | 2018-01-22 | **< 300 U** | **287000** | **269000** | 85.5 | **< 100 U** | **< 2500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-30I | 114-P1-IRM-30I-20180122 | N | T | JC59495 | 2018-01-22 | **< 300 U** | **352000** | **276000** | **108** | **< 100 U** | **< 2500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-30I | 114-P1-IRM-30I-DUP-20180122 | FD | D | JC59495 | 2018-01-22 | **< 300 U** | **306000** | **290000** | 88.5 | **< 100 U** | **< 2500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-30I | 114-P1-IRM-30I-DUP-20180122 | FD | T | JC59495 | 2018-01-22 | **< 300 U** | **334000** | **292000** | 96.5 | **< 100 U** | **< 2500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-31I | 114-P1-IRM-31I-20180119 | N | D | JC59431 | 2018-01-19 | **< 12 U** | **13300** | **13900** | 85.4 | **< 4.0 U** | **137** |
| WELL | INTERMEDIATE | 114-P1-IRM-31I | 114-P1-IRM-31I-20180119 | N | T | JC59431 | 2018-01-19 | **< 12 U** | **13100** | **15200** | 79.8 | **< 4.0 U** | **128** |
| WELL | INTERMEDIATE | 114-P1-IRM-32I | 114-P1-IRM-32I-20180122 | N | D | JC59495 | 2018-01-22 | **< 300 U** | **218000** | **203000** | < 50 U | **< 100 U** | **< 2500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-32I | 114-P1-IRM-32I-20180122 | N | T | JC59495 | 2018-01-22 | **< 300 U** | **253000** | **211000** | < 50 U | **< 100 U** | **< 2500 U** |

**Appendix L.1**
**Historical Groundwater Analytical Data - Cr+6 and CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ANTIMONY | CHROMIUM | CHROMIUM (HEXAVALENT) | NICKEL | THALLIUM | VANADIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-36-0 | 7440-47-3 | 18540-29-9 | 7440-02-0 | 7440-28-0 | 7440-62-2 |
| | | | | | | | **GWQS** | 6 | 70 | 70 | 100 | 2 | 60 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P1-IRM-33I | 114-P1-IRM-33I-20180124 | N | D | JC59667 | 2018-01-24 | **< 120 U** | **150000** | R | **182** | **< 40 U** | **< 1000 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-33I | 114-P1-IRM-33I-20180124 | N | T | JC59667 | 2018-01-24 | **< 120 U** | **149000** | R | **189** | **< 40 U** | **< 1000 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-34I | 114-P1-IRM-34I | N | D | JC59745 | 2018-01-25 | **< 300 U** | **333000** | **320000** | **123** | **< 100 U** | **< 2500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-34I | 114-P1-IRM-34I | N | T | JC59745 | 2018-01-25 | **< 300 U** | **346000** | **312000** | **123** | **< 100 U** | **< 2500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-35I | 114-P1-IRM-35I-20180122 | N | D | JC59495 | 2018-01-22 | **< 300 U** | **284000** | **276000** | < 50 U | **< 100 U** | **< 2500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-35I | 114-P1-IRM-35I-20180122 | N | T | JC59495 | 2018-01-22 | **< 600 U** | **407000** | **320000** | 64.5 | **< 200 U** | **< 5000 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-36D | 114-P1-IRM-36D-20180124 | N | D | JC59667 | 2018-01-24 | **< 30 U** | **12600** | R | 87.5 | **< 10 U** | **< 250 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-36D | 114-P1-IRM-36D-20180124 | N | T | JC59667 | 2018-01-24 | **< 30 U** | **16100** | R | **101** | **< 10 U** | **< 250 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-36I | 114-P1-IRM-36I-20180124 | N | D | JC59667 | 2018-01-24 | **< 30 U** | **38900** | **36900** | **164** | **< 10 U** | **< 250 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-36I | 114-P1-IRM-36I-20180124 | N | T | JC59667 | 2018-01-24 | **< 30 U** | **37800** | **35800** | **162** | **< 10 U** | **< 250 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-37I | 114-P1-IRM-37I-20180117 | N | D | JC59023 | 2018-01-17 | < 6.0 U | **1530** | **990** | < 10 U | **< 10 U** | < 50 U |
| WELL | INTERMEDIATE | 114-P1-IRM-37I | 114-P1-IRM-37I-20180117 | N | T | JC59023 | 2018-01-17 | < 6.0 U | **1420** | **980** | < 10 U | **< 10 U** | < 50 U |
| WELL | INTERMEDIATE | 114-P1-IRM-38 | 114-P1-IRM-38-20180126 | N | D | JC59838 | 2018-01-26 | < 6.0 U | 33.6 J- | < 10 U | 53.3 | **< 10 U** | < 50 U |
| WELL | INTERMEDIATE | 114-P1-IRM-38 | 114-P1-IRM-38-20180126 | N | T | JC59838 | 2018-01-26 | < 6.0 U | **1160** | < 10 U | 81.8 | **< 10 U** | < 50 U |
| WELL | INTERMEDIATE | 114-P1-IRM-39 | 114-P1-IRM-39-20180126 | N | D | JC59838 | 2018-01-26 | **< 30 U** | **72.4 J-** | < 10 U | **116** | **< 50 U** | < 50 U |
| WELL | INTERMEDIATE | 114-P1-IRM-39 | 114-P1-IRM-39-20180126 | N | T | JC59838 | 2018-01-26 | **< 30 U** | **4640** | < 10 U | **121** | **< 50 U** | < 50 U |
| WELL | INTERMEDIATE | 114-P1-IRM-40I | 114-P1-IRM-40I-20180117 | N | D | JC59023 | 2018-01-17 | **< 750 U** | **1220000** | **1040000** | **< 250 U** | **< 250 U** | **< 6300 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-40I | 114-P1-IRM-40I-20180117 | N | T | JC59023 | 2018-01-17 | **< 750 U** | **1120000** | **1010000** | **< 250 U** | **< 250 U** | **< 6300 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-41I | 114-P1-IRM-41I-20180126 | N | D | JC59838 | 2018-01-26 | **< 300 U** | **223000 J-** | **204000** | 90.0 | **< 100 U** | **< 2500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-41I | 114-P1-IRM-41I-20180126 | N | T | JC59838 | 2018-01-26 | **< 300 U** | **260000** | **248000** | **109** | **< 100 U** | **< 2500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-42I | 114-P1-IRM-42I-20180126 | N | D | JC59838 | 2018-01-26 | **< 150 U** | **188000 J-** | **183000** | **281** | **< 50 U** | **< 1300 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-42I | 114-P1-IRM-42I-20180126 | N | T | JC59838 | 2018-01-26 | **< 150 U** | **191000** | **180000** | **281** | **< 50 U** | **< 1300 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-4I | 114-P1-IRM-4I-20180124 | N | D | JC59667 | 2018-01-24 | **< 1200 U** | **942000** | **834000** | < 100 U | **< 400 U** | **< 10000 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-4I | 114-P1-IRM-4I-20180124 | N | T | JC59667 | 2018-01-24 | **< 1200 U** | **920000** | **928000** | < 100 U | **< 400 U** | **< 10000 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-6 | 114-P1-IRM-6-20180116 | N | D | JC58932 | 2018-01-16 | **< 750 U** | **708000** | **601000** | **< 1300 U** | **< 250 U** | **< 6300 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-6 | 114-P1-IRM-6-20180116 | N | T | JC58932 | 2018-01-16 | **< 750 U** | **811000** | **630000** | **< 1300 U** | **< 250 U** | **< 6300 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-7 | 114-P1-IRM-7-20180124 | N | D | JC59667 | 2018-01-24 | **< 300 U** | **442000** | **448000** | < 100 U | **< 100 U** | **< 500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-7 | 114-P1-IRM-7-20180124 | N | T | JC59667 | 2018-01-24 | **< 300 U** | **441000** | **427000** | < 100 U | **< 100 U** | **< 500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-8 | 114-P1-IRM-8-20180116 | N | D | JC58932 | 2018-01-16 | **< 600 U** | **579000** | **434000** | **< 1000 U** | **< 200 U** | **< 5000 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-8 | 114-P1-IRM-8-20180116 | N | T | JC58932 | 2018-01-16 | **< 600 U** | **504000** | **451000** | **< 1000 U** | **< 200 U** | **< 5000 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-9 | 114-P1-IRM-9-20180116 | N | D | JC58932 | 2018-01-16 | **< 600 U** | **490000** | **415000** | **< 1000 U** | **< 200 U** | **< 5000 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-9 | 114-P1-IRM-9-20180116 | N | T | JC58932 | 2018-01-16 | **< 600 U** | **437000** | **497000** | **< 1000 U** | **< 200 U** | **< 250 U** |
| WELL | INTERMEDIATE | 114-P1-MW-1I | 114-P1-MW-1I-20180129 | N | D | JC59916 | 2018-01-29 | **< 180 U** | **158000** | **145000** | < 100 U | **< 60 U** | **< 1500 U** |
| WELL | INTERMEDIATE | 114-P1-MW-1I | 114-P1-MW-1I-20180129 | N | T | JC59916 | 2018-01-29 | **< 180 U** | **161000** | **153000** | < 100 U | **< 60 U** | **< 1500 U** |
| WELL | INTERMEDIATE | 114-P1-MW-2D | 114-P1-MW2D-20180119 | N | D | JC59431 | 2018-01-19 | < 6.0 U | < 50 U | < 10 U | 28.4 | < 2.0 U | < 50 U |
| WELL | INTERMEDIATE | 114-P1-MW-2D | 114-P1-MW2D-20180119 | N | T | JC59431 | 2018-01-19 | < 6.0 U | 49.0 | < 10 U | 32.3 | < 2.0 U | < 50 U |
| WELL | INTERMEDIATE | 114-P1-MW-3I | 114-P1-MW-3I-20180126 | N | D | JC59838 | 2018-01-26 | **< 12 U** | **9110 J-** | **7400** | 62.8 | **< 4.0 U** | **< 100 U** |
| WELL | INTERMEDIATE | 114-P1-MW-3I | 114-P1-MW-3I-20180126 | N | T | JC59838 | 2018-01-26 | **< 12 U** | **8680** | **8300** | 68.6 | **< 4.0 U** | **< 100 U** |
| WELL | INTERMEDIATE | 114-P1-MW-4I | 114-P1-MW-4I-20180126 | N | D | JC59838 | 2018-01-26 | **177** | **115000 J-** | **111000** | < 50 U | **< 50 U** | **< 1300 U** |
| WELL | INTERMEDIATE | 114-P1-MW-4I | 114-P1-MW-4I-20180126 | N | T | JC59838 | 2018-01-26 | **151** | **98700** | **106000** | < 50 U | **< 50 U** | **< 1300 U** |
| WELL | INTERMEDIATE | 114-P1-MW-5I | 114-P1-MW-5I-20180123 | N | D | JC59667 | 2018-01-23 | < 6.0 U | 12.0 | 18 | < 10 U | **< 10 U** | < 50 U |
| WELL | INTERMEDIATE | 114-P1-MW-5I | 114-P1-MW-5I-20180123 | N | T | JC59667 | 2018-01-23 | < 6.0 U | **244** | 18 | < 10 U | **< 10 U** | < 50 U |
| WELL | INTERMEDIATE | 114-P1-MW-6I | 114-P1-MW6I-20180119 | N | D | JC59431 | 2018-01-19 | **< 600 U** | **652000** | **667000** | **190** | **< 200 U** | **< 5000 U** |
| WELL | INTERMEDIATE | 114-P1-MW-6I | 114-P1-MW6I-20180119 | N | T | JC59431 | 2018-01-19 | **< 600 U** | **564000** | **719000** | **185** | **< 200 U** | **< 5000 U** |
| WELL | INTERMEDIATE | 114-P1-MW-7I | 114-P1-MW7I-20180125 | N | D | JC59745 | 2018-01-25 | **< 300 U** | **384000** | **382000** | **160** | **< 100 U** | **< 2500 U** |
| WELL | INTERMEDIATE | 114-P1-MW-7I | 114-P1-MW7I-20180125 | N | T | JC59745 | 2018-01-25 | **< 300 U** | **398000** | **1560000** | **174** | **< 100 U** | **< 2500 U** |
| WELL | INTERMEDIATE | 10W-MW105I | 10W-MW105I-20180312 | N | T | JC62130 | 2018-03-12 | < 4.3 U | 23.3 | 26 | 6.0 J | 0.12 J | 6.3 J |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-20150924 | N | T | JC4675 | 2015-09-24 | - | - | **102000 RA** | - | - | - |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-20150924 | N | T | JC4675A | 2015-09-24 | **< 15 U** | **109000 J** | - | 33.7 | **< 8.7 U** | < 3.5 U |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-20151214 | N | T | JC10593 | 2015-12-14 | **< 76 U** | **135000 J** | **133000 J** | 24.7 | **< 43 U** | < 18 U |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-20160322 | N | T | JC16738 | 2016-03-22 | **89.4 J** | **173000** | **128000** | 53.4 | < 1.9 U | < 13 U |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-20160623 | N | T | JC22854 | 2016-06-23 | **< 130 U** | **215000** | **188000 RA** | 20.6 | **< 76 U** | **128 J** |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-20160623-F | N | D | JC22854 | 2016-06-23 | - | **161000** | **159000 RA** | - | - | - |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-20180129 | N | D | JC59916 | 2018-01-29 | **< 180 U** | **128000** | **122000** | < 100 U | **< 60 U** | **< 1500 U** |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-20180129 | N | T | JC59916 | 2018-01-29 | **< 180 U** | **150000** | **171000** | < 100 U | **< 60 U** | **< 1500 U** |

**Appendix L.1**
**Historical Groundwater Analytical Data - Cr+6 and CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ANTIMONY | CHROMIUM | CHROMIUM (HEXAVALENT) | NICKEL | THALLIUM | VANADIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-36-0 | 7440-47-3 | 18540-29-9 | 7440-02-0 | 7440-28-0 | 7440-62-2 |
| | | | | | | | **GWQS** | 6 | 70 | 70 | 100 | 2 | 60 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-F-20150924 | N | D | JC4675 | 2015-09-24 | - | - | **104000 RA** | - | - | - |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-F-20150924 | N | D | JC4675A | 2015-09-24 | - | **111000 J** | - | - | - | - |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-F-20151214 | N | D | JC10593 | 2015-12-14 | - | **142000 J** | **142000 J** | - | - | - |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-F-20160322 | N | D | JC16738 | 2016-03-22 | - | **152000** | **133000** | - | - | - |
| WELL | INTERMEDIATE | 114-MW14B | 114-MW14B-20171219 | N | T | JC57638 | 2017-12-19 | < 4.3 U | 5.9 J | < 8.1 U | 6.3 JB | < 1.6 U | 14.3 J |
| WELL | INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | N | T | JC64444 | 2018-04-18 | < 4.3 U | 7.4 J | < 8.1 U | 25.0 | < 0.047 U | 1.9 J |
| WELL | INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | N | T | JC65255 | 2018-05-01 | < 4.3 U | **168** | < 8.1 U | < 2.6 UB | 0.12 J | 2.6 J |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | N | T | JC64571 | 2018-04-19 | **< 430 U** | **412000** | **211000** | < 6.7 U | < 0.24 U | **< 130 U** |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-36.0-20151001 | N | T | JC5237 | 2015-10-01 | - | - | **40800 J** | - | - | - |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-36.0-20151001 | N | T | JC5237A | 2015-10-01 | **15.0 J** | **52000 J** | - | 8.0 J | **< 8.7 U** | **206 J** |
| WELL | INTERMEDIATE | 114-MW22B | 114-MW22B-20180419 | N | D | JC64571 | 2018-04-19 | < 4.3 U | **4590** | **1700** | 1.4 J | < 0.047 U | 1.5 J |
| WELL | INTERMEDIATE | 114-MW22B | 114-MW22B-20180419 | N | T | JC64571 | 2018-04-19 | < 4.3 U | **4680** | **1800** | 2.6 J | < 0.047 U | 3.1 J |
| WELL | INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | N | T | JC62130 | 2018-03-12 | < 4.3 U | 3.5 J | < 8.1 U | 12.6 | < 0.047 U | 2.6 J |
| WELL | INTERMEDIATE | 114-MW25B | 114-MW25B-20170928 | N | T | JC52007 | 2017-09-28 | - | - | < 8.1 U | - | - | - |
| WELL | INTERMEDIATE | 114-MW25B | 114-MW25B-20170928 | N | T | JC52007A | 2017-09-28 | - | 6.2 J | - | - | - | - |
| WELL | INTERMEDIATE | 114-MW25B | 114-MW25B-20170928 | N | T | JC52029 | 2017-09-28 | < 4.3 U | - | - | < 1.3 U | < 1.6 U | 2.6 J |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | D | JC62228 | 2018-03-13 | < 4.3 U | < 0.85 U | < 8.1 U | 8.1 J | < 0.047 U | 7.5 J |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | T | JC62228 | 2018-03-13 | < 4.3 U | 5.0 J | < 8.1 U | 13.1 | 0.048 J | 7.3 J |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | D | JC62228 | 2018-03-13 | < 4.3 U | < 0.85 U | < 8.1 U | 8.5 J | < 0.047 U | 8.0 J |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | T | JC62228 | 2018-03-13 | < 4.3 U | 2.4 J | < 8.1 U | 9.8 J | < 0.047 U | 8.5 J |
| WELL | INTERMEDIATE | 114-MW27B | 114-MW27B-20170928 | N | T | JC52007 | 2017-09-28 | - | - | < 8.1 U | - | - | - |
| WELL | INTERMEDIATE | 114-MW27B | 114-MW27B-20170928 | N | T | JC52007A | 2017-09-28 | - | 5.1 J | - | - | - | - |
| WELL | INTERMEDIATE | 114-MW27B | 114-MW27B-20170928 | N | T | JC52029 | 2017-09-28 | < 4.3 U | - | - | 4.6 J | < 1.6 U | 6.1 J |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | N | T | JC56729 | 2017-12-06 | - | - | **8800** | - | - | - |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | N | T | JC56729A | 2017-12-06 | **< 22 U** | **9940** | - | 34.0 | 0.057 J | 8.4 J |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | FD | T | JC56729 | 2017-12-06 | - | - | **9300** | - | - | - |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | FD | T | JC56729A | 2017-12-06 | **< 22 U** | **9930** | - | 34.0 | 0.062 J | 6.6 J |
| WELL | INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | N | T | JC51874 | 2017-09-27 | - | 42.2 | < 8.1 U | - | - | - |
| WELL | INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | N | T | JC51890 | 2017-09-27 | **< 8.6 U** | - | - | 17.4 J | **< 3.3 U** | 27.0 J |
| WELL | INTERMEDIATE | 114-MW37B | 114-MW37B-20170926 | N | T | JC51802 | 2017-09-26 | - | 1.8 J | < 8.1 U | - | - | - |
| WELL | INTERMEDIATE | 114-MW37B | 114-MW37B-20170926 | N | T | JC51824 | 2017-09-26 | < 4.3 U | - | - | 20.6 | < 1.6 U | 2.2 J |
| WELL | INTERMEDIATE | 114-MW38B | FORREST-114-MW38B-20171204 | N | T | JC56504 | 2017-12-04 | - | - | < 8.1 U | - | - | - |
| WELL | INTERMEDIATE | 114-MW38B | FORREST-114-MW38B-20171204 | N | T | JC56504A | 2017-12-04 | < 4.3 U | 5.9 J | - | < 1.6 UB | 0.089 J | 5.5 J |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | N | T | JC60652 | 2018-02-12 | - | 6.3 J | < 8.1 U | < 6.7 U | - | < 6.4 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | N | T | JC60652R | 2018-02-12 | **< 18 U** | - | - | - | < 0.47 U | - |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | FD | T | JC60652 | 2018-02-12 | - | 5.2 J | 9.2 J | < 6.7 U | - | < 6.4 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | FD | T | JC60652R | 2018-02-12 | **< 18 U** | - | - | - | 0.49 J | - |
| WELL | INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | N | D | JC65066 | 2018-04-27 | < 4.3 U | < 0.85 U | < 8.1 U | < 1.3 U | < 0.047 U | 1.4 J |
| WELL | INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | N | T | JC65066 | 2018-04-27 | < 4.3 U | 1.3 J | < 8.1 U | < 1.3 U | < 0.047 U | 1.9 J |
| WELL | INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | N | T | JC64643 | 2018-04-20 | **< 220 U** | **282000** | **275000** | **227** | < 0.24 U | **68.5 J** |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20150921 | N | T | JC4371 | 2015-09-21 | - | - | **16800 J** | - | - | - |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20150921 | N | T | JC4371A | 2015-09-21 | **< 6.1 U** | **17100 J** | - | 33.3 | **< 3.5 U** | 27.5 J |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20151211 | N | T | JC10525 | 2015-12-11 | < 3.0 U | **14000 J** | **14400 RA** | 38.8 | < 1.7 U | < 0.70 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20160317 | N | T | JC16446 | 2016-03-17 | **7.4** | **10600** | **11300 RA** | 34.8 | 1.9 J | 3.4 J |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20160617 | N | T | JC22504 | 2016-06-17 | **16.5** | **8710** | **7700** | 23.5 | < 1.9 U | < 0.66 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20160617-F | N | D | JC22504 | 2016-06-17 | - | **8330** | **7700** | - | - | - |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20160617-FX | FD | D | JC22504 | 2016-06-17 | - | **8500** | **7700** | - | - | - |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20160617X | FD | T | JC22504 | 2016-06-17 | **16.7** | **8830** | **8000** | 21.8 | < 1.9 U | < 0.66 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20180129 | N | D | JC59916 | 2018-01-29 | **< 30 U** | **4670** | **3600** | < 50 U | **< 10 U** | **< 250 U** |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20180129 | N | T | JC59916 | 2018-01-29 | **< 30 U** | **4730** | **4000** | < 50 U | **< 10 U** | **< 250 U** |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-F-20150921 | N | D | JC4371 | 2015-09-21 | - | - | **16800 J** | - | - | - |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-F-20150921 | N | D | JC4371A | 2015-09-21 | - | **16700 J** | - | - | - | - |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-F-20151211 | N | D | JC10525 | 2015-12-11 | - | **13700 J** | **14400 RA** | - | - | - |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-F-20160317 | N | D | JC16446 | 2016-03-17 | - | **10600** | **11800 RA** | - | - | - |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-20150922 | N | T | JC4452 | 2015-09-22 | - | - | **82900 J** | - | - | - |

**Appendix L.1**
**Historical Groundwater Analytical Data - Cr+6 and CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ANTIMONY | CHROMIUM | CHROMIUM (HEXAVALENT) | NICKEL | THALLIUM | VANADIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-36-0 | 7440-47-3 | 18540-29-9 | 7440-02-0 | 7440-28-0 | 7440-62-2 |
| | | | | | | | **GWQS** | 6 | 70 | 70 | 100 | 2 | 60 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-20150922 | N | T | JC4452A | 2015-09-22 | **< 30 U** | **78300 J** | - | 27.5 | **< 17 U** | 34.8 J |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-20151216 | N | T | JC10831 | 2015-12-16 | **< 61 U** | **107000 J** | **109000 J** | 52.4 J | **< 35 U** | **69.1 J** |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-20160323 | N | T | JC16843 | 2016-03-23 | **< 82 UJ** | **140000** | **131000 J** | 40.7 J | **< 48 U** | < 17 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-20160621 | N | T | JC22642 | 2016-06-21 | **< 65 U** | **149000** | **117000** | 69.4 J | **< 38 U** | 54.8 J |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-20160621-F | N | D | JC22642 | 2016-06-21 | - | **145000** | **119000** | - | - | - |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-ARC | N | D | JC59556 | 2018-01-23 | **< 150 U** | **143000** | **115000** | 68.0 | **< 50 U** | **< 1300 U** |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-ARC | N | T | JC59556 | 2018-01-23 | **< 150 U** | **134000** | **119000** | 65.0 | **< 50 U** | **< 1300 U** |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-F-20150922 | N | D | JC4452 | 2015-09-22 | - | - | **70100 J** | - | - | - |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-F-20150922 | N | D | JC4452A | 2015-09-22 | - | **84400 J** | - | - | - | - |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-F-20151216 | N | D | JC10831 | 2015-12-16 | - | **107000 J** | **115000 J** | - | - | - |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-F-20160323 | N | D | JC16843 | 2016-03-23 | - | **136000** | **133000 J** | - | - | - |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-20150924 | N | T | JC4675 | 2015-09-24 | - | - | **498000 RA** | - | - | - |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-20150924 | N | T | JC4675A | 2015-09-24 | **< 150 U** | **267000 J** | - | 67.5 | **< 87 U** | < 35 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-20151216 | N | T | JC10831 | 2015-12-16 | **< 150 U** | **321000 J** | **366000 J** | 54.1 J | **< 87 U** | **193 J** |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-20160323 | N | T | JC16843 | 2016-03-23 | **< 160 UJ** | **380000** | **345000** | 50.8 J | **< 95 U** | < 33 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-20160916 | N | T | JC27812 | 2016-09-16 | **< 330 U** | **541000** | **566000** | 26.2 | **< 190 U** | **< 66 U** |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-20160916-F | N | D | JC27812 | 2016-09-16 | - | **515000** | **437000** | - | - | - |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-ARC | N | D | JC59556 | 2018-01-23 | **< 12 U** | **346** | 15 | 21.0 | **< 4.0 U** | **< 100 U** |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-ARC | N | T | JC59556 | 2018-01-23 | **< 12 U** | **724** | 37 | 23.6 | **< 4.0 U** | **< 100 U** |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-F-20150924 | N | D | JC4675 | 2015-09-24 | - | - | **478000 RA** | - | - | - |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-F-20150924 | N | D | JC4675A | 2015-09-24 | - | **426000 J** | - | - | - | - |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-F-20151216 | N | D | JC10831 | 2015-12-16 | - | **368000 J** | **635000 J** | - | - | - |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-F-20160323 | N | D | JC16843 | 2016-03-23 | - | **296000** | **349000** | - | - | - |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I | N | D | JC59556 | 2018-01-23 | < 6.0 U | **1490** | **930** | **298** | **< 10 U** | < 50 U |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I | N | T | JC59556 | 2018-01-23 | < 6.0 U | **1580** | **990** | **252** | **< 10 U** | < 50 U |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20150923 | N | T | JC4555 | 2015-09-23 | - | - | **490 RA** | - | - | - |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20150923 | N | T | JC4555A | 2015-09-23 | 4.5 J | **1640** | - | **172** | **< 8.7 U** | **156** |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20151211 | N | T | JC10525 | 2015-12-11 | < 3.0 U | **7440 J** | **7300 RA** | **240** | **< 8.7 U** | **114** |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20160316 | N | T | JC16336 | 2016-03-16 | **< 16 U** | **4990** | **5000 RA** | **241** | **< 9.5 U** | **61.6 J** |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20160620 | N | T | JC22555 | 2016-06-20 | 5.8 J | **6230** | **5100 RA** | **268** | **< 19 U** | 47.8 J |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20160620-F | N | D | JC22555 | 2016-06-20 | - | **5960** | **4900 RA** | - | - | - |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-F-20150923 | N | D | JC4555 | 2015-09-23 | - | - | **580 RA** | - | - | - |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-F-20150923 | N | D | JC4555A | 2015-09-23 | - | **1040** | - | - | - | - |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-F-20151211 | N | D | JC10525 | 2015-12-11 | - | **7660 J** | **7200 RA** | - | - | - |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-F-20160316 | N | D | JC16336 | 2016-03-16 | - | **4980** | **5200 RA** | - | - | - |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-20180123 | N | D | JC59556 | 2018-01-23 | **< 300 U** | **427000** | **315000** | **148** | **< 100 U** | **< 2500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-20180123 | N | T | JC59556 | 2018-01-23 | **< 300 U** | **407000** | **328000** | **271** | **< 100 U** | **< 2500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | N | T | JC58073 | 2017-12-27 | - | - | **710** | - | - | - |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | N | T | JC58073A | 2017-12-27 | < 4.3 U | **3270** | - | 7.5 J | < 0.047 U | 10.0 J |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | N | T | JC58073 | 2017-12-27 | - | - | 8.7 J | - | - | - |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | N | T | JC58073A | 2017-12-27 | < 4.3 U | **542** | - | 7.8 J | < 0.047 U | 6.1 J |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | N | T | JC58028 | 2017-12-26 | - | - | < 8.1 U | - | - | - |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | N | T | JC58028A | 2017-12-26 | < 4.3 U | **644** | - | 11.5 | < 0.047 U | 5.7 J |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | N | T | JC58028 | 2017-12-26 | - | - | **1700** | - | - | - |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | N | T | JC58028A | 2017-12-26 | < 4.3 U | **4430** | - | 20.3 | < 0.047 U | 6.1 J |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | N | T | JC58942 | 2018-01-16 | < 4.3 U | **230** | < 8.1 U | 32.7 | 0.11 J | 5.6 J |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | N | T | JC58942 | 2018-01-16 | < 4.3 U | **1370** | **860** | 54.9 | < 0.047 U | 7.4 J |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | N | T | JC58942 | 2018-01-16 | < 4.3 U | **2040** | **1100** | 63.2 | < 0.047 U | 7.4 J |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | N | T | JC58942 | 2018-01-16 | < 4.3 U | **2880** | **2000** | 71.6 | < 0.047 U | 7.5 J |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-20160324 | N | T | JC16953 | 2016-03-24 | **< 16 U** | 15.5 J | 4.9 J | 5.1 J | **< 9.5 U** | 14.8 J |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-20160628 | N | T | JC23103 | 2016-06-28 | < 3.3 U | 4.8 J | 11 | < 0.76 U | **< 3.8 U** | 9.5 J |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-20160628-F | N | D | JC23103 | 2016-06-28 | - | 2.4 J | < 3.9 U | - | - | - |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-20160914 | N | T | JC27595 | 2016-09-14 | 3.3 J | 12.4 | 17 | 16.2 J | **< 3.8 U** | 18.4 J |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-20160914-F | N | D | JC27595 | 2016-09-14 | - | < 0.81 U | < 3.9 U | - | - | - |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-20161212 | N | T | JC33522 | 2016-12-12 | < 3.3 U | 4.6 J | 6.5 J | 4.3 J | < 1.9 U | 6.3 J |

**Appendix L.1**
**Historical Groundwater Analytical Data - Cr+6 and CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ANTIMONY | CHROMIUM | CHROMIUM (HEXAVALENT) | NICKEL | THALLIUM | VANADIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-36-0 | 7440-47-3 | 18540-29-9 | 7440-02-0 | 7440-28-0 | 7440-62-2 |
| | | | | | | | **GWQS** | 6 | 70 | 70 | 100 | 2 | 60 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-20161212-F | N | D | JC33522 | 2016-12-12 | - | 1.3 J | < 3.9 U | - | - | - |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-20180130 | N | D | JC59976 | 2018-01-30 | < 6.0 U | < 10 U | R | < 10 U | **< 50 U** | < 50 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-20180130 | N | T | JC59976 | 2018-01-30 | < 6.0 U | < 10 U | R | < 10 U | **< 50 U** | < 50 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-F-20160324 | N | D | JC16953 | 2016-03-24 | - | 6.3 JB | < 0.74 UJ | - | - | - |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-20160324 | N | T | JC16953 | 2016-03-24 | **< 16 U** | 30.4 J | < 0.74 UJ | 44.9 J | **< 9.5 U** | < 3.3 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-20160628 | N | T | JC23103 | 2016-06-28 | < 3.3 U | 6.2 J | < 3.9 U | < 0.76 U | **< 3.8 U** | 4.4 J |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-20160628-F | N | D | JC23103 | 2016-06-28 | - | < 0.81 U | < 3.9 U | - | - | - |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-20160914 | N | T | JC27595 | 2016-09-14 | < 3.3 U | 8.8 J | 16 | 37.1 | **< 5.7 U** | < 0.66 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-20160914-F | N | D | JC27595 | 2016-09-14 | - | 8.8 J | < 3.9 U | - | - | - |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-20161219 | N | T | JC33991 | 2016-12-19 | < 3.3 U | 7.7 JB | 17 | 36.7 | **< 19 U** | 1.9 J |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-20161219-F | N | D | JC33991 | 2016-12-19 | - | 11.6 | 13 | - | - | - |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-F-20160324 | N | D | JC16953 | 2016-03-24 | - | 30.2 J | < 0.74 UJ | - | - | - |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-20160325 | N | T | JC17059 | 2016-03-25 | < 3.3 U | **77.1** | < 0.74 U | 51.4 | < 1.9 U | 25.9 J |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-20160325X | FD | T | JC17059 | 2016-03-25 | < 3.3 U | **77.8** | < 0.74 U | 56.7 | < 1.9 U | 42.0 J |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-20160627 | N | T | JC23029 | 2016-06-27 | < 3.3 U | 33.5 | 16 | 6.0 J | < 1.9 U | 5.2 J |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-20160627-F | N | D | JC23029 | 2016-06-27 | - | 4.7 J | < 3.9 U | - | - | - |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-20160915 | N | T | JC27716 | 2016-09-15 | < 3.3 U | 7.2 J | < 3.9 UB | 6.2 J | < 1.9 U | 8.0 J |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-20160915-F | N | D | JC27716 | 2016-09-15 | - | 10.9 | < 3.9 UB | - | - | - |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-20161214 | N | T | JC33691 | 2016-12-14 | **< 6.5 U** | 23.2 | < 3.9 U | 19.8 J | **< 3.8 U** | 26.2 J |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-20161214-F | N | D | JC33691 | 2016-12-14 | - | < 0.81 UB | < 3.9 U | - | - | - |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-F-20160325 | N | D | JC17059 | 2016-03-25 | - | < 0.81 U | < 0.74 UJ | - | - | - |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-F-20160325X | FD | D | JC17059 | 2016-03-25 | - | < 0.81 U | < 0.74 UJ | - | - | - |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-20160325 | N | T | JC17059 | 2016-03-25 | **< 16 U** | 7.4 J | < 0.74 U | 6.2 J | **< 9.5 U** | 7.4 J |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-20160629 | N | T | JC23208 | 2016-06-29 | < 3.3 U | 13.5 | < 3.9 U | < 3.8 U | **< 9.5 U** | - |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-20160629-F | N | D | JC23208 | 2016-06-29 | - | 6.0 J | < 3.9 UJ | - | - | - |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-20160629-FX | FD | D | JC23208 | 2016-06-29 | - | 1.1 J | < 3.9 UJ | - | - | - |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-20160629X | FD | T | JC23208 | 2016-06-29 | < 3.3 U | 7.3 J | < 3.9 U | < 0.76 U | **< 9.5 U** | 2.5 J |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-20160915 | N | T | JC27716 | 2016-09-15 | < 3.3 U | 4.0 J | < 3.9 UB | 7.7 J | **< 9.5 U** | 4.6 J |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-20160915-F | N | D | JC27716 | 2016-09-15 | - | 1.1 J | < 3.9 UB | - | - | - |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-20161219 | N | T | JC33991 | 2016-12-19 | < 3.3 U | < 0.81 UB | < 3.9 U | < 0.76 U | **< 48 U** | 1.5 J |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-20161219-F | N | D | JC33991 | 2016-12-19 | - | < 0.81 U | < 3.9 U | - | - | - |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-F-20160325 | N | D | JC17059 | 2016-03-25 | - | < 4.1 U | < 0.74 UJ | - | - | - |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-20150925 | N | T | JC4798 | 2015-09-25 | - | - | **425000 RA** | - | - | - |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-20150925 | N | T | JC4798A | 2015-09-25 | **< 300 U** | **444000 J** | - | **440** | **< 170 U** | **< 70 U** |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-20151216 | N | T | JC10831 | 2015-12-16 | **< 1500 U** | **1510000 J** | **1630000 J** | **969 J** | **< 870 U** | **717 J** |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-20151216X | FD | T | JC10831 | 2015-12-16 | **< 1500 U** | **1490000 J** | **1700000 J** | **1010 J** | **< 870 U** | **496 J** |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-20160322 | N | T | JC16738 | 2016-03-22 | **1160 J** | **1520000** | **1450000** | **875** | **< 480 U** | **< 170 U** |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-20160620 | N | T | JC22555 | 2016-06-20 | **< 650 U** | **1320000** | **891000 RA** | **945 J** | **< 380 U** | **434 J** |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-20160620-F | N | D | JC22555 | 2016-06-20 | - | **1400000** | **1070000 RA** | - | - | - |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-ARC | N | D | JC59556 | 2018-01-23 | **< 30 U** | **506** | < 10 U | 72.0 | **< 50 U** | **< 250 U** |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-ARC | N | T | JC59556 | 2018-01-23 | **< 30 U** | **756** | < 10 U | 62.1 | **< 50 U** | **< 250 U** |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-F-20150925 | N | D | JC4798 | 2015-09-25 | - | - | **434000 RA** | - | - | - |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-F-20150925 | N | D | JC4798A | 2015-09-25 | - | **446000 J** | - | - | - | - |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-F-20151216 | N | D | JC10831 | 2015-12-16 | - | **1510000 J** | **1750000 J** | - | - | - |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-F-20151216X | FD | D | JC10831 | 2015-12-16 | - | **1520000 J** | **1690000 J** | - | - | - |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-F-20160322 | N | D | JC16738 | 2016-03-22 | - | **1640000** | **1520000** | - | - | - |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20150925 | N | T | JC4798 | 2015-09-25 | - | - | **399000 RA** | - | - | - |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20150925 | N | T | JC4798A | 2015-09-25 | **< 300 U** | **463000 J** | - | < 0.79 U | **< 170 U** | **< 70 U** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20151216 | N | T | JC10831 | 2015-12-16 | **< 300 U** | **551000 J** | **552000 J** | < 79 U | **179 J** | **321 J** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20160323 | N | T | JC16843 | 2016-03-23 | **< 160 UJ** | **413000** | **408000 J** | < 7.6 U | **< 95 U** | < 33 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20160323X | FD | T | JC16843 | 2016-03-23 | **440 J** | **410000** | **412000 J** | 7.6 J | **< 95 U** | < 33 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20160620 | N | T | JC22555 | 2016-06-20 | **< 330 U** | **473000** | **403000 RA** | < 76 U | **< 190 U** | **< 66 U** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20160620-F | N | D | JC22555 | 2016-06-20 | - | **492000** | **379000 RA** | - | - | - |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20180130 | N | D | JC59976 | 2018-01-30 | **< 3000 U** | **2740000** | **2280000** | < 100 U | **< 1000 U** | **< 13000 U** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20180130 | N | T | JC59976 | 2018-01-30 | **< 3000 U** | **2750000** | **2260000** | < 100 U | **< 1000 U** | **< 13000 U** |

**Appendix L.1**
**Historical Groundwater Analytical Data - Cr+6 and CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ANTIMONY | CHROMIUM | CHROMIUM (HEXAVALENT) | NICKEL | THALLIUM | VANADIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-36-0 | 7440-47-3 | 18540-29-9 | 7440-02-0 | 7440-28-0 | 7440-62-2 |
| | | | | | | | **GWQS** | 6 | 70 | 70 | 100 | 2 | 60 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-F-20150925 | N | D | JC4798 | 2015-09-25 | - | - | **395000 RA** | - | - | - |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-F-20150925 | N | D | JC4798A | 2015-09-25 | - | **443000 J** | - | - | - | - |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-F-20151216 | N | D | JC10831 | 2015-12-16 | - | **505000 J** | **753000 J** | - | - | - |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-F-20160323 | N | D | JC16843 | 2016-03-23 | - | **402000** | **391000 J** | - | - | - |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-F-20160323X | FD | D | JC16843 | 2016-03-23 | - | **395000** | **384000 J** | - | - | - |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-20150925 | N | T | JC4798 | 2015-09-25 | - | - | **402000 RA** | - | - | - |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-20150925 | N | T | JC4798A | 2015-09-25 | **< 300 U** | **478000 J** | - | 74.2 | **< 170 U** | **239 J** |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-20151216 | N | T | JC10831 | 2015-12-16 | **< 150 U** | **400000 J** | **415000 J** | 61.4 | **< 87 U** | **279 J** |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-20160323 | N | T | JC16843 | 2016-03-23 | **< 160 UJ** | **365000** | **358000** | 58.6 J | **< 95 U** | < 33 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-20160622 | N | T | JC22758 | 2016-06-22 | **< 65 U** | **142000 J** | **136000 RA** | 30.8 | **< 38 U** | < 13 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-20160622-F | N | D | JC22758 | 2016-06-22 | - | **156000 J** | **183000 RA** | - | - | - |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW-101I-20180119 | N | D | JC59431 | 2018-01-19 | **< 300 U** | **263000** | **297000** | < 50 U | **< 100 U** | **< 2500 U** |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW-101I-20180119 | N | T | JC59431 | 2018-01-19 | **< 300 U** | **284000** | **277000** | < 50 U | **< 100 U** | **< 2500 U** |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-F-20150925 | N | D | JC4798 | 2015-09-25 | - | - | **405000 RA** | - | - | - |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-F-20150925 | N | D | JC4798A | 2015-09-25 | - | **472000 J** | - | - | - | - |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-F-20151216 | N | D | JC10831 | 2015-12-16 | - | **417000 J** | **647000 J** | - | - | - |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-F-20160323 | N | D | JC16843 | 2016-03-23 | - | **394000** | **380000** | - | - | - |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I | N | D | JC59556 | 2018-01-23 | **< 300 U** | **439000** | **389000** | 67.5 | **< 100 U** | **< 2500 U** |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I | N | T | JC59556 | 2018-01-23 | **< 600 U** | **427000** | **402000** | 77.0 | **< 200 U** | **< 5000 U** |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-20150928 | N | T | JC4872 | 2015-09-28 | - | - | **694000 J** | - | - | - |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-20150928 | N | T | JC4872A | 2015-09-28 | **508** | **666000** | - | 19.7 | **89.9 J** | **399 J** |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-20151216 | N | T | JC10831 | 2015-12-16 | **< 300 U** | **744000 J** | **776000 J** | **120 J** | **< 170 U** | **274 J** |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-20160323 | N | T | JC16843 | 2016-03-23 | **< 160 UJ** | **500000 J** | **488000 J** | 57.0 J | **< 95 U** | 36.4 J |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-20160621 | N | T | JC22642 | 2016-06-21 | **< 130 U** | **224000** | **142000 J** | 59.6 J | **< 76 U** | **87.8 J** |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-20160621-F | N | D | JC22642 | 2016-06-21 | - | **269000** | **244000 J** | - | - | - |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-20160621X | FD | T | JC22642 | 2016-06-21 | **< 130 U** | **221000 J** | **171000 J** | 51.2 J | **< 76 U** | **118 J** |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-20160621X-F | FD | D | JC22642 | 2016-06-21 | - | **311000 J** | **262000 J** | - | - | - |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-F-20150928 | N | D | JC4872 | 2015-09-28 | - | - | **722000 J** | - | - | - |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-F-20150928 | N | D | JC4872A | 2015-09-28 | - | **762000** | - | - | - | - |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-F-20151216 | N | D | JC10831 | 2015-12-16 | - | **767000 J** | **1640000 J** | - | - | - |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-F-20160323 | N | D | JC16843 | 2016-03-23 | - | **702000 J** | **735000 J** | - | - | - |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I | N | D | JC59745 | 2018-01-25 | < 6.0 U | **2100** | **1200** | 12.1 | < 2.0 U | < 50 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I | N | T | JC59745 | 2018-01-25 | < 6.0 U | **3270** | < 10 U | 11.8 | < 2.0 U | < 50 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-20150925 | N | T | JC4798 | 2015-09-25 | - | - | **65900 RA** | - | - | - |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-20150925 | N | T | JC4798A | 2015-09-25 | **< 30 U** | **57000 J** | - | 9.5 J | **< 17 U** | 45.8 J |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-20151216 | N | T | JC10831 | 2015-12-16 | **< 61 U** | **171000 J** | **135000 J** | 20.7 J | **< 35 U** | **126 J** |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-20160322 | N | T | JC16738 | 2016-03-22 | **< 33 U** | **89700 J** | **71500 J** | 11.6 | **< 19 U** | < 6.6 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-20160621 | N | T | JC22642 | 2016-06-21 | **< 6.5 U** | **16200 J** | **15300** | 17.2 | **< 3.8 U** | 14.5 J |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-20160621-F | N | D | JC22642 | 2016-06-21 | - | **20600 J** | **15800** | - | - | - |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-F-20150925 | N | D | JC4798 | 2015-09-25 | - | - | **83500 RA** | - | - | - |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-F-20150925 | N | D | JC4798A | 2015-09-25 | - | **87700 J** | - | - | - | - |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-F-20151216 | N | D | JC10831 | 2015-12-16 | - | **192000 J** | **157000 J** | - | - | - |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-F-20160322 | N | D | JC16738 | 2016-03-22 | - | **124000 J** | **136000 J** | - | - | - |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I | N | D | JC59556 | 2018-01-23 | < 6.0 U | < 10 U | < 10 U | < 10 U | < 2.0 U | < 50 U |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I | N | T | JC59556 | 2018-01-23 | < 6.0 U | < 10 U | < 10 U | < 10 U | < 2.0 U | < 50 U |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I-20150928 | N | T | JC4872 | 2015-09-28 | - | - | < 3.1 U | - | - | - |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I-20150928 | N | T | JC4872A | 2015-09-28 | 5.1 J | 13.5 | - | 9.2 J | **9.2 J** | 2.5 J |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I-20151210 | N | T | JC10380 | 2015-12-10 | < 3.0 U | 13.6 | < 0.92 RA | 7.8 J | **< 17 U** | 2.8 J |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I-20160316 | N | T | JC16336 | 2016-03-16 | **< 16 U** | 19.5 J | < 0.74 RA | 18.6 J | **< 9.5 U** | < 3.3 U |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I-20160622 | N | T | JC22758 | 2016-06-22 | < 3.3 U | 9.2 JB | 9.3 RA | < 0.76 U | < 1.9 U | 4.0 J |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I-20160622-F | N | D | JC22758 | 2016-06-22 | - | < 0.81 UB | 6.1 RA | - | - | - |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I-20160622-FX | FD | D | JC22758 | 2016-06-22 | - | < 0.81 UB | 6.1 RA | - | - | - |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I-20160622X | FD | T | JC22758 | 2016-06-22 | < 3.3 U | 6.3 JB | 8.2 RA | < 0.76 U | < 1.9 U | 3.9 J |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I-F-20150928 | N | D | JC4872 | 2015-09-28 | - | - | < 3.1 U | - | - | - |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I-F-20150928 | N | D | JC4872A | 2015-09-28 | - | 8.2 J | - | - | - | - |

**Appendix L.1**
**Historical Groundwater Analytical Data - Cr+6 and CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ANTIMONY | CHROMIUM | CHROMIUM (HEXAVALENT) | NICKEL | THALLIUM | VANADIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-36-0 | 7440-47-3 | 18540-29-9 | 7440-02-0 | 7440-28-0 | 7440-62-2 |
| | | | | | | | **GWQS** | 6 | 70 | 70 | 100 | 2 | 60 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I-F-20151210 | N | D | JC10380 | 2015-12-10 | - | 3.8 J | < 0.92 RA | - | - | - |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I-F-20160316 | N | D | JC16336 | 2016-03-16 | - | < 4.1 U | < 0.74 RA | - | - | - |
| WELL | INTERMEDIATE | 132-P3A-MW102I | 132-P3A-MW102I-20150929 | N | T | JC4978 | 2015-09-29 | - | - | **270** | - | - | - |
| WELL | INTERMEDIATE | 132-P3A-MW102I | 132-P3A-MW102I-20150929 | N | T | JC4978A | 2015-09-29 | < 3.0 U | **420** | - | 8.9 J | < 1.7 U | 3.7 J |
| WELL | INTERMEDIATE | 132-P3A-MW102I | 132-P3A-MW102I-20151215 | N | T | JC10723 | 2015-12-15 | < 3.0 U | 23.4 J | < 0.92 U | 3.9 J | < 1.7 U | < 0.70 U |
| WELL | INTERMEDIATE | 132-P3A-MW102I | 132-P3A-MW102I-20160317 | N | T | JC16446 | 2016-03-17 | < 3.3 U | 68.1 | < 0.74 RA | 43.6 | **< 9.5 U** | < 0.66 U |
| WELL | INTERMEDIATE | 132-P3A-MW102I | 132-P3A-MW102I-20160617 | N | T | JC22504 | 2016-06-17 | < 3.3 U | 10.2 J | 21 J | < 0.76 U | **< 3.8 U** | < 0.66 U |
| WELL | INTERMEDIATE | 132-P3A-MW102I | 132-P3A-MW102I-20160617-F | N | D | JC22504 | 2016-06-17 | - | 2.7 J | 23 J | - | - | - |
| WELL | INTERMEDIATE | 132-P3A-MW102I | 132-P3A-MW102I-F-20150929 | N | D | JC4978 | 2015-09-29 | - | - | **310** | - | - | - |
| WELL | INTERMEDIATE | 132-P3A-MW102I | 132-P3A-MW102I-F-20150929 | N | D | JC4978A | 2015-09-29 | - | **354** | - | - | - | - |
| WELL | INTERMEDIATE | 132-P3A-MW102I | 132-P3A-MW102I-F-20151215 | N | D | JC10723 | 2015-12-15 | - | < 0.77 U | < 0.92 RA | - | - | - |
| WELL | INTERMEDIATE | 132-P3A-MW102I | 132-P3A-MW102I-F-20160317 | N | D | JC16446 | 2016-03-17 | - | < 0.81 UB | < 0.74 RA | - | - | - |
| WELL | INTERMEDIATE | 132-P3A-MW103I | 132-P3A-MW103I-20150930 | N | T | JC5099 | 2015-09-30 | - | - | **28500 RA** | - | - | - |
| WELL | INTERMEDIATE | 132-P3A-MW103I | 132-P3A-MW103I-20150930 | N | T | JC5099A | 2015-09-30 | **< 15 U** | **30700 J** | - | 10.2 | < 1.7 U | < 3.5 U |
| WELL | INTERMEDIATE | 132-P3A-MW103I | 132-P3A-MW103I-20151215 | N | T | JC10723 | 2015-12-15 | **< 15 U** | **43800 J** | **40200 J** | 4.2 J | **< 8.7 U** | < 3.5 U |
| WELL | INTERMEDIATE | 132-P3A-MW103I | 132-P3A-MW103I-20160318 | N | T | JC16549 | 2016-03-18 | **< 16 U** | **30400** | **31700 RA** | 9.8 J | < 1.9 U | 12.0 J |
| WELL | INTERMEDIATE | 132-P3A-MW103I | 132-P3A-MW103I-20160616 | N | T | JC22356 | 2016-06-16 | **< 9.8 U** | **20900 J** | **21700** | 4.6 J | **< 5.7 U** | 5.1 J |
| WELL | INTERMEDIATE | 132-P3A-MW103I | 132-P3A-MW103I-20160616-F | N | D | JC22356 | 2016-06-16 | - | **26400 J** | **22000** | - | - | - |
| WELL | INTERMEDIATE | 132-P3A-MW103I | 132-P3A-MW103I-F-20150930 | N | D | JC5099 | 2015-09-30 | - | - | **30800 RA** | - | - | - |
| WELL | INTERMEDIATE | 132-P3A-MW103I | 132-P3A-MW103I-F-20150930 | N | D | JC5099A | 2015-09-30 | - | **32500 J** | - | - | - | - |
| WELL | INTERMEDIATE | 132-P3A-MW103I | 132-P3A-MW103I-F-20151215 | N | D | JC10723 | 2015-12-15 | - | **44700 J** | **42400 RA** | - | - | - |
| WELL | INTERMEDIATE | 132-P3A-MW103I | 132-P3A-MW103I-F-20160318 | N | D | JC16549 | 2016-03-18 | - | **35800** | **34500 RA** | - | - | - |
| WELL | INTERMEDIATE | 132-P3A-MW104I | 132-P3A-MW104I-20150929 | N | T | JC4978 | 2015-09-29 | - | - | < 3.1 U | - | - | - |
| WELL | INTERMEDIATE | 132-P3A-MW104I | 132-P3A-MW104I-20150929 | N | T | JC4978A | 2015-09-29 | < 3.0 U | 2.6 J | - | 2.7 J | < 1.7 U | 1.8 J |
| WELL | INTERMEDIATE | 132-P3A-MW104I | 132-P3A-MW104I-20151215 | N | T | JC10723 | 2015-12-15 | < 3.0 U | < 0.77 U | < 0.92 U | 2.7 J | < 1.7 U | 1.0 J |
| WELL | INTERMEDIATE | 132-P3A-MW104I | 132-P3A-MW104I-20151215-X | FD | T | JC10723 | 2015-12-15 | < 3.0 U | < 0.77 U | < 0.92 U | 2.3 J | < 1.7 U | < 0.70 U |
| WELL | INTERMEDIATE | 132-P3A-MW104I | 132-P3A-MW104I-20160318 | N | T | JC16549 | 2016-03-18 | < 3.3 U | 2.9 J | < 0.74 UJ | 3.1 JB | < 1.9 U | < 0.66 U |
| WELL | INTERMEDIATE | 132-P3A-MW104I | 132-P3A-MW104I-20160616 | N | T | JC22356 | 2016-06-16 | < 3.3 U | 1.5 J | < 3.9 U | < 0.76 U | < 1.9 U | < 0.66 U |
| WELL | INTERMEDIATE | 132-P3A-MW104I | 132-P3A-MW104I-20160616-F | N | D | JC22356 | 2016-06-16 | - | 0.90 J | < 3.9 U | - | - | - |
| WELL | INTERMEDIATE | 132-P3A-MW104I | 132-P3A-MW104I-F-20150929 | N | D | JC4978 | 2015-09-29 | - | - | < 3.1 U | - | - | - |
| WELL | INTERMEDIATE | 132-P3A-MW104I | 132-P3A-MW104I-F-20150929 | N | D | JC4978A | 2015-09-29 | - | < 0.77 U | - | - | - | - |
| WELL | INTERMEDIATE | 132-P3A-MW104I | 132-P3A-MW104I-F-20151215 | N | D | JC10723 | 2015-12-15 | - | < 0.77 U | < 0.92 RA | - | - | - |
| WELL | INTERMEDIATE | 132-P3A-MW104I | 132-P3A-MW104I-F-20151215-X | FD | D | JC10723 | 2015-12-15 | - | < 0.77 U | < 0.92 RA | - | - | - |
| WELL | INTERMEDIATE | 132-P3A-MW104I | 132-P3A-MW104I-F-20160318 | N | D | JC16549 | 2016-03-18 | - | 1.2 J | < 0.74 UJ | - | - | - |
| WELL | INTERMEDIATE | 132-P3A-MW105I | 132-P3A-MW105I-20180208 | N | T | JC60477 | 2018-02-08 | < 4.3 U | 30.8 | 28 JB | < 10 U | **< 3.3 U** | 33.7 J |
| WELL | INTERMEDIATE | 132-P3A-MW105I | 132-P3A-MW105I-20180209X | FD | T | JC60564 | 2018-02-09 | < 4.3 U | 14.3 | 15 JB | 1.7 J | < 1.6 U | 17.6 J |
| WELL | INTERMEDIATE | 132-P3A-MW105I | 132-P3A-MW105I-20180209Xa | FD | T | JC60564 | 2018-02-09 | < 4.3 U | 17.4 | 21 JB | 1.5 J | < 1.6 U | 19.1 J |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-20160324 | N | T | JC16937 | 2016-03-24 | **< 16 U** | 5.7 JB | < 0.74 U | 5.1 J | **< 9.5 U** | < 3.3 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-20160616 | N | T | JC22356 | 2016-06-16 | < 3.3 U | 21.1 | 7.6 J | 16.2 J | **< 9.5 U** | 4.0 J |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-20160616-F | N | D | JC22356 | 2016-06-16 | - | < 0.81 U | < 3.9 U | - | - | - |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-20160913 | N | T | JC27486 | 2016-09-13 | < 3.3 U | 2.9 J | < 3.9 RA | < 0.76 U | **< 3.8 U** | 3.0 J |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-20160913-F | N | D | JC27486 | 2016-09-13 | - | < 0.81 U | < 3.9 RA | - | - | - |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-20161215 | N | T | JC33793 | 2016-12-15 | < 3.3 U | 4.0 JB | 13 | 3.9 JB | **< 3.8 U** | 3.2 JB |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-20161215-F | N | D | JC33793 | 2016-12-15 | - | < 0.81 UB | 5.8 J | - | - | - |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-F-20160324 | N | D | JC16937 | 2016-03-24 | - | 6.5 JB | < 0.74 U | - | - | - |
| WELL | INTERMEDIATE | 133-P3C-MW102I | 133-P3C-MW102I-20160324 | N | T | JC16937 | 2016-03-24 | **< 16 U** | 9.0 J | < 0.74 U | 5.3 J | **< 9.5 U** | 4.7 J |
| WELL | INTERMEDIATE | 133-P3C-MW102I | 133-P3C-MW102I-20160615 | N | T | JC22273 | 2016-06-15 | < 3.3 U | 2.7 J | < 3.9 U | < 0.76 U | < 1.9 U | 4.9 J |
| WELL | INTERMEDIATE | 133-P3C-MW102I | 133-P3C-MW102I-20160615-F | N | D | JC22273 | 2016-06-15 | - | 3.1 J | < 3.9 U | - | - | - |
| WELL | INTERMEDIATE | 133-P3C-MW102I | 133-P3C-MW102I-20160913 | N | T | JC27486 | 2016-09-13 | < 3.3 U | 1.8 J | < 3.9 RA | < 0.76 U | < 1.9 U | 2.7 J |
| WELL | INTERMEDIATE | 133-P3C-MW102I | 133-P3C-MW102I-20160913-F | N | D | JC27486 | 2016-09-13 | - | 1.4 J | < 3.9 RA | - | - | - |
| WELL | INTERMEDIATE | 133-P3C-MW102I | 133-P3C-MW102I-20161216 | N | T | JC33887 | 2016-12-16 | < 3.3 U | 6.0 JB | < 3.9 U | 4.6 JB | < 1.9 U | 5.8 JB |
| WELL | INTERMEDIATE | 133-P3C-MW102I | 133-P3C-MW102I-20161216-F | N | D | JC33887 | 2016-12-16 | - | < 0.81 UB | < 3.9 U | - | - | - |
| WELL | INTERMEDIATE | 133-P3C-MW102I | 133-P3C-MW102I-F-20160324 | N | D | JC16937 | 2016-03-24 | - | 16.9 J | < 0.74 U | - | - | - |
| WELL | INTERMEDIATE | 135-MW1B | 135-MW1B-31.0-20180501 | N | T | JC65255 | 2018-05-01 | < 4.3 U | 9.9 J | < 8.1 U | < 2.7 UB | 0.057 J | 13.3 J |
| WELL | INTERMEDIATE | 135-MW1B | 135-MW1B-31.0-20180501X | FD | T | JC65255 | 2018-05-01 | < 4.3 U | 9.6 J | < 8.1 U | < 3.3 UB | < 0.047 U | 13.6 J |

**Appendix L.1**
**Historical Groundwater Analytical Data - Cr+6 and CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ANTIMONY | CHROMIUM | CHROMIUM (HEXAVALENT) | NICKEL | THALLIUM | VANADIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-36-0 | 7440-47-3 | 18540-29-9 | 7440-02-0 | 7440-28-0 | 7440-62-2 |
| | | | | | | | **GWQS** | 6 | 70 | 70 | 100 | 2 | 60 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | N | T | JC64901 | 2018-04-25 | < 4.3 U | 5.5 J | < 8.1 U | 19.6 | < 0.047 U | 14.1 J |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-30.5 | N | T | JC5499 | 2015-10-06 | < 3.0 U | 5.7 J | < 3.1 U | 3.0 J | < 1.7 U | 7.7 J |
| WELL | INTERMEDIATE | 135-MW3BR | 135-MW3B-30.0-20180501 | N | T | JC65255 | 2018-05-01 | < 4.3 U | 1.2 J | < 8.1 U | < 2.6 UB | < 0.047 U | 1.6 J |
| WELL | INTERMEDIATE | 137-P3B-MW101I | 137-P3B-MW101I-20150930 | N | T | JC5099 | 2015-09-30 | - | - | **130 RA** | - | - | - |
| WELL | INTERMEDIATE | 137-P3B-MW101I | 137-P3B-MW101I-20150930 | N | T | JC5099A | 2015-09-30 | 3.3 J | **164 J** | - | 3.1 J | **< 3.5 U** | 1.1 J |
| WELL | INTERMEDIATE | 137-P3B-MW101I | 137-P3B-MW101I-20151218 | N | T | JC11088 | 2015-12-18 | 3.8 J | **2120** | **1200 J** | 8.0 JB | **< 3.5 U** | < 0.70 U |
| WELL | INTERMEDIATE | 137-P3B-MW101I | 137-P3B-MW101I-20160323 | N | T | JC16843 | 2016-03-23 | < 3.3 UJ | **7960** | **4400 J** | < 0.76 UB | **< 9.5 U** | 3.1 J |
| WELL | INTERMEDIATE | 137-P3B-MW101I | 137-P3B-MW101I-20160624 | N | T | JC22939 | 2016-06-24 | < 3.3 U | **140** | < 3.9 U | 6.0 J | < 1.9 U | 1.7 J |
| WELL | INTERMEDIATE | 137-P3B-MW101I | 137-P3B-MW101I-20160624-F | N | D | JC22939 | 2016-06-24 | - | 51.7 | < 3.9 U | - | - | - |
| WELL | INTERMEDIATE | 137-P3B-MW101I | 137-P3B-MW101I-F-20150930 | N | D | JC5099 | 2015-09-30 | - | - | **160 RA** | - | - | - |
| WELL | INTERMEDIATE | 137-P3B-MW101I | 137-P3B-MW101I-F-20150930 | N | D | JC5099A | 2015-09-30 | - | **242 J** | - | - | - | - |
| WELL | INTERMEDIATE | 137-P3B-MW101I | 137-P3B-MW101I-F-20151218 | N | D | JC11088 | 2015-12-18 | - | **2370** | **1900 J** | - | - | - |
| WELL | INTERMEDIATE | 137-P3B-MW101I | 137-P3B-MW101I-F-20160323 | N | D | JC16843 | 2016-03-23 | - | **8570** | **7400 J** | - | - | - |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-20150930 | N | T | JC5099 | 2015-09-30 | - | - | < 3.1 RA | - | - | - |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-20150930 | N | T | JC5099A | 2015-09-30 | 5.1 J | 15.8 J | - | < 0.79 U | **< 17 U** | 1.7 J |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-20150930X | FD | T | JC5099 | 2015-09-30 | - | - | < 3.1 RA | - | - | - |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-20150930X | FD | T | JC5099A | 2015-09-30 | < 3.0 U | 4.9 J | - | < 0.79 U | **< 17 U** | 2.1 J |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-20151216 | N | T | JC10831 | 2015-12-16 | < 3.0 U | **589 JB** | < 0.92 UJ | 2.5 J | **< 3.5 U** | 1.1 J |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-20160321 | N | T | JC16664 | 2016-03-21 | < 3.3 U | 18.4 | < 0.74 U | < 0.76 U | < 1.9 U | < 0.66 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-20160615 | N | T | JC22273 | 2016-06-15 | < 3.3 U | 1.5 J | < 3.9 U | < 0.76 U | < 1.9 U | 1.3 J |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-20160615-F | N | D | JC22273 | 2016-06-15 | - | 1.6 J | < 3.9 U | - | - | - |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-F-20150930 | N | D | JC5099 | 2015-09-30 | - | - | < 3.1 RA | - | - | - |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-F-20150930 | N | D | JC5099A | 2015-09-30 | - | 5.1 J | - | - | - | - |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-F-20150930X | FD | D | JC5099 | 2015-09-30 | - | - | < 3.1 RA | - | - | - |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-F-20150930X | FD | D | JC5099A | 2015-09-30 | - | < 0.77 U | - | - | - | - |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-F-20151216 | N | D | JC10831 | 2015-12-16 | - | < 0.77 UB | < 0.92 UJ | - | - | - |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-F-20160321 | N | D | JC16664 | 2016-03-21 | - | 3.4 J | < 0.74 U | - | - | - |
| WELL | INTERMEDIATE | 143-P3A-MW101I | 143-P3A-MW101I-20150928 | N | T | JC4872 | 2015-09-28 | - | - | **12100 J** | - | - | - |
| WELL | INTERMEDIATE | 143-P3A-MW101I | 143-P3A-MW101I-20150928 | N | T | JC4872A | 2015-09-28 | **< 150 U** | **12700** | - | 7.3 J | **< 8.7 U** | 11.1 J |
| WELL | INTERMEDIATE | 143-P3A-MW101I | 143-P3A-MW101I-20151214 | N | T | JC10593 | 2015-12-14 | **< 15 U** | **11700 J** | **8600 J** | 3.8 J | **< 8.7 U** | < 3.5 U |
| WELL | INTERMEDIATE | 143-P3A-MW101I | 143-P3A-MW101I-20160318 | N | T | JC16549 | 2016-03-18 | **< 6.5 U** | **14100** | **15000 J** | 3.2 JB | < 1.9 U | 6.2 J |
| WELL | INTERMEDIATE | 143-P3A-MW101I | 143-P3A-MW101I-20160620 | N | T | JC22555 | 2016-06-20 | **9.3 J** | **10700** | **9800 RA** | 3.1 J | **< 3.8 U** | < 0.66 U |
| WELL | INTERMEDIATE | 143-P3A-MW101I | 143-P3A-MW101I-20160620-F | N | D | JC22555 | 2016-06-20 | - | **11000** | **8800 RA** | - | - | - |
| WELL | INTERMEDIATE | 143-P3A-MW101I | 143-P3A-MW101I-F-20150928 | N | D | JC4872 | 2015-09-28 | - | - | **12100 J** | - | - | - |
| WELL | INTERMEDIATE | 143-P3A-MW101I | 143-P3A-MW101I-F-20150928 | N | D | JC4872A | 2015-09-28 | - | **12400** | - | - | - | - |
| WELL | INTERMEDIATE | 143-P3A-MW101I | 143-P3A-MW101I-F-20151214 | N | D | JC10593 | 2015-12-14 | - | **9590 J** | **9700 J** | - | - | - |
| WELL | INTERMEDIATE | 143-P3A-MW101I | 143-P3A-MW101I-F-20160318 | N | D | JC16549 | 2016-03-18 | - | **12800** | **13500 J** | - | - | - |
| WELL | INTERMEDIATE | GPS-MW2I | GPS-MW2I-20180131 | N | D | JC60035 | 2018-01-31 | **< 150 U** | **155000** | **143000** | **234** | **< 50 U** | **< 250 U** |
| WELL | INTERMEDIATE | GPS-MW2I | GPS-MW2I-20180131 | N | T | JC60035 | 2018-01-31 | **< 150 U** | **153000** | **140000** | **234** | **< 50 U** | **< 250 U** |
| WELL | INTERMEDIATE | GPS-MW3I | GPS-MW3I-20180131 | N | D | JC60035 | 2018-01-31 | **< 12 U** | **17200** | **30600** | **127** | **< 4.0 U** | **< 100 U** |
| WELL | INTERMEDIATE | GPS-MW3I | GPS-MW3I-20180131 | N | T | JC60035 | 2018-01-31 | **< 12 U** | **17100** | **28500** | **124** | **< 4.0 U** | **< 100 U** |
| WELL | INTERMEDIATE | GPS-MW3I | GPS-MW3I-20180131-DUP | FD | D | JC60035 | 2018-01-31 | **< 12 U** | **17200** | **32800** | **127** | **< 4.0 U** | **< 100 U** |
| WELL | INTERMEDIATE | GPS-MW3I | GPS-MW3I-20180131-DUP | FD | T | JC60035 | 2018-01-31 | **< 12 U** | **17300** | **29300** | **126** | **< 4.0 U** | **< 100 U** |
| WELL | INTERMEDIATE | GPS-MW5I | GPS-MW5I-010616 | N | T | JC12114 | 2016-01-06 | **< 15 U** | **291** | < 3.1 RA | 24.8 | **< 8.7 U** | 20.2 J |
| WELL | INTERMEDIATE | GPS-MW5I | GPS-MW5I-010616-F | N | D | JC12114 | 2016-01-06 | - | 35.4 | < 3.1 RA | - | - | - |
| WELL | INTERMEDIATE | GPS-MW5I | GPS-MW5I-040616 | N | T | JC17755 | 2016-04-06 | **< 6.5 U** | **1150** | **160** | **108** | **< 3.8 U** | **107** |
| WELL | INTERMEDIATE | GPS-MW5I | GPS-MW5I-040616-F | N | D | JC17755 | 2016-04-06 | - | 38.4 | < 3.9 U | - | - | - |
| WELL | INTERMEDIATE | GPS-MW5I | GPS-MW5I-071216 | N | T | JC23920 | 2016-07-12 | **< 6.5 U** | **236** | < 3.9 UJ | 24.4 | **< 19 U** | 16.2 J |
| WELL | INTERMEDIATE | GPS-MW5I | GPS-MW5I-071216-F | N | D | JC23920 | 2016-07-12 | - | 33.1 J | 48 J | - | - | - |
| WELL | INTERMEDIATE | GPS-MW5I | GPS-MW5I-100616 | N | T | JC29150 | 2016-10-06 | **< 16 U** | **92.4** | < 3.9 RA | 21.3 | **< 9.5 U** | 11.1 J |
| WELL | INTERMEDIATE | GPS-MW5I | GPS-MW5I-100616-F | N | D | JC29150 | 2016-10-06 | - | 30.6 | < 3.9 RA | - | - | - |
| WELL | INTERMEDIATE | GPS-MW5I | GPS-MW5I-20180131 | N | D | JC60035 | 2018-01-31 | < 6.0 U | 32.5 | < 10 U | 26.4 | **< 20 U** | < 50 U |
| WELL | INTERMEDIATE | GPS-MW5I | GPS-MW5I-20180131 | N | T | JC60035 | 2018-01-31 | **< 30 U** | **901** | < 10 U | 64.0 | **< 10 U** | **< 250 U** |
| WELL | INTERMEDIATE | GPS-MW6I | GPS-MW6I-010616 | N | T | JC12114 | 2016-01-06 | **< 30 U** | **4020** | < 3.1 RA | 35.5 | **< 17 U** | < 0.70 U |
| WELL | INTERMEDIATE | GPS-MW6I | GPS-MW6I-010616-F | N | D | JC12114 | 2016-01-06 | - | **838** | < 3.1 RA | - | - | - |

**Appendix L.1**
**Historical Groundwater Analytical Data - Cr+6 and CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ANTIMONY | CHROMIUM | CHROMIUM (HEXAVALENT) | NICKEL | THALLIUM | VANADIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-36-0 | 7440-47-3 | 18540-29-9 | 7440-02-0 | 7440-28-0 | 7440-62-2 |
| | | | | | | | **GWQS** | 6 | 70 | 70 | 100 | 2 | 60 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | GPS-MW6I | GPS-MW6I-040616 | N | T | JC17755 | 2016-04-06 | **< 6.5 U** | **3380** | **< 200 U** | 48.4 | **< 3.8 U** | < 1.3 UJ |
| WELL | INTERMEDIATE | GPS-MW6I | GPS-MW6I-040616-F | N | D | JC17755 | 2016-04-06 | - | **2200** | **< 200 U** | - | - | - |
| WELL | INTERMEDIATE | GPS-MW6I | GPS-MW6I-071216 | N | T | JC23920 | 2016-07-12 | **233** | **34800** | 8.3 J | 69.5 | **< 19 U** | 5.0 J |
| WELL | INTERMEDIATE | GPS-MW6I | GPS-MW6I-071216-F | N | D | JC23920 | 2016-07-12 | - | **31200** | < 3.9 U | - | - | - |
| WELL | INTERMEDIATE | GPS-MW6I | GPS-MW6I-100616 | N | T | JC29150 | 2016-10-06 | **< 33 U** | **91300** | 27 RA | 82.5 | **< 19 U** | 12.0 J |
| WELL | INTERMEDIATE | GPS-MW6I | GPS-MW6I-100616-F | N | D | JC29150 | 2016-10-06 | - | **95300** | 15 RA | - | - | - |
| WELL | INTERMEDIATE | GPS-MW6I | GPS-MW6I-20180130 | N | D | JC59976 | 2018-01-30 | **< 240 U** | **206000** | R | **144** | **< 80 U** | **< 1000 U** |
| WELL | INTERMEDIATE | GPS-MW6I | GPS-MW6I-20180130 | N | T | JC59976 | 2018-01-30 | **< 150 U** | **144000** | R | **137** | **< 50 U** | **< 1300 U** |
| WELL | INTERMEDIATE | GPS-MW7I | GPS-MW7I-010616 | N | T | JC12114 | 2016-01-06 | **< 15 U** | **3300** | < 3.1 RA | 68.5 | **< 8.7 U** | < 0.70 U |
| WELL | INTERMEDIATE | GPS-MW7I | GPS-MW7I-010616-F | N | D | JC12114 | 2016-01-06 | - | **170** | < 3.1 RA | - | - | - |
| WELL | INTERMEDIATE | GPS-MW7I | GPS-MW7I-040616 | N | T | JC17755 | 2016-04-06 | < 3.3 U | **122** | **< 200 U** | 69.7 | < 1.9 U | < 0.66 UJ |
| WELL | INTERMEDIATE | GPS-MW7I | GPS-MW7I-040616-F | N | D | JC17755 | 2016-04-06 | - | 12.7 | **< 200 U** | - | - | - |
| WELL | INTERMEDIATE | GPS-MW7I | GPS-MW7I-071216 | N | T | JC23920 | 2016-07-12 | 3.6 J | **125** | 8.3 J | 79.1 | **< 9.5 U** | 1.6 J |
| WELL | INTERMEDIATE | GPS-MW7I | GPS-MW7I-071216-F | N | D | JC23920 | 2016-07-12 | - | 16.6 | 6.2 J | - | - | - |
| WELL | INTERMEDIATE | GPS-MW7I | GPS-MW7I-100616 | N | T | JC29150 | 2016-10-06 | **< 16 U** | **74.5** | < 3.9 RA | 70.5 | **< 9.5 U** | 3.2 J |
| WELL | INTERMEDIATE | GPS-MW7I | GPS-MW7I-100616-F | N | D | JC29150 | 2016-10-06 | - | 17.9 | < 3.9 RA | - | - | - |
| WELL | INTERMEDIATE | HAL-P3-IRM-003I-B | HAL-P3-IRM-003I-B-62.5 | N | T | 4602362281 | 2021-06-10 | < 0.76 U | 13.8 | < 8.1 U | 64.0 | < 0.21 U | 4.2 |
| WELL | INTERMEDIATE | HAL-P3-IRM-003I-B | HAL-P3-IRM-003I-B-67.5 | N | T | 4602362281 | 2021-06-10 | < 0.76 U | 13.7 | < 8.1 U | 50.2 | < 0.21 U | 6.1 |
| WELL | INTERMEDIATE | HAL-P3-IRM-003I-B | HAL-P3-IRM-003I-B-72.5 | N | T | 4602362281 | 2021-06-10 | < 0.76 U | 17.9 | < 16.3 U | 44.4 | < 0.21 U | 9.0 |
| WELL | INTERMEDIATE | HAL-P3-IRM-003I-B | HAL-P3-IRM-003I-B-77.5 | N | T | 4602362281 | 2021-06-10 | < 0.76 U | 8.1 | < 8.1 U | 29.3 | < 0.21 U | 3.8 |
| WELL | INTERMEDIATE | HAL-P3-IRM-004I-B | HAL-P3-IRM-004I-B-62.5 | N | T | 4602361231 | 2021-06-09 | < 0.76 U | < 2.5 U | < 8.1 U | 3.0 | < 0.21 U | 1.0 |
| WELL | INTERMEDIATE | HAL-P3-IRM-004I-B | HAL-P3-IRM-004I-B-67.5 | N | T | 4602361231 | 2021-06-09 | < 0.76 U | 4.0 | < 16.3 U | 3.9 | < 0.21 U | 2.6 |
| WELL | INTERMEDIATE | HAL-P3-IRM-004I-B | HAL-P3-IRM-004I-B-72.5 | N | T | 4602361231 | 2021-06-09 | < 0.76 U | 4.4 | < 16.3 U | 4.7 | < 0.21 U | 3.0 |
| WELL | INTERMEDIATE | HAL-P3-IRM-004I-B | HAL-P3-IRM-004I-B-77.5 | N | T | 4602361231 | 2021-06-09 | < 0.76 U | 3.8 J | < 16.3 U | 2.6 | < 0.21 U | 3.0 |
| WELL | INTERMEDIATE | HAL-P3-IRM-010I-B | HAL-P3-IRM-010I-B-62.5 | N | T | 4602362281 | 2021-06-10 | < 0.76 U | 7.9 | < 8.1 U | 24.8 | < 0.21 U | 4.4 |
| WELL | INTERMEDIATE | HAL-P3-IRM-010I-B | HAL-P3-IRM-010I-B-67.5 | N | T | 4602363611 | 2021-06-11 | < 0.76 U | 7.4 | < 16.3 U | 24.9 | < 0.21 U | 4.0 |
| WELL | INTERMEDIATE | HAL-P3-IRM-010I-B | HAL-P3-IRM-010I-B-72.5 | N | T | 4602363611 | 2021-06-11 | < 0.76 U | 10.5 | < 40.7 U | 26.6 | < 0.21 U | 18.1 |
| WELL | INTERMEDIATE | HAL-P3-IRM-010I-B | HAL-P3-IRM-010I-B-77.5 | N | T | 4602363611 | 2021-06-11 | < 0.76 U | < 2.5 U | < 8.1 U | 15.9 | < 0.21 U | 3.6 |
| WELL | INTERMEDIATE | MW7D | MW7D-20151217-41.0 | N | T | JC10941 | 2015-12-17 | - | < 0.77 U | < 0.92 UJ | - | - | - |
| WELL | INTERMEDIATE | MW7D | MW7D-20151217-43.0 | N | T | JC10941 | 2015-12-17 | - | < 0.77 U | < 0.92 UJ | - | - | - |
| WELL | INTERMEDIATE | MW7D | MW7D-40.5-20150930 | N | T | JC5098 | 2015-09-30 | - | - | < 3.1 U | - | - | - |
| WELL | INTERMEDIATE | MW7D | MW7D-40.5-20150930 | N | T | JC5098A | 2015-09-30 | < 3.0 U | 1.1 J | - | 8.1 J | < 1.7 U | < 0.70 U |
| WELL | INTERMEDIATE | MW7D | MW7D-41.0-20180423 | N | T | JC64763 | 2018-04-23 | < 4.3 U | < 0.85 U | < 8.1 U | 4.6 J | < 0.047 U | < 1.3 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.0-20180423 | N | T | JC64763 | 2018-04-23 | < 4.3 U | < 0.85 U | < 8.1 U | 4.0 J | < 0.047 U | < 1.3 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930 | N | T | JC5098 | 2015-09-30 | - | - | < 3.1 U | - | - | - |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930 | N | T | JC5098A | 2015-09-30 | < 3.0 U | 10.8 | - | 17.6 | < 1.7 U | 13.8 J |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930X | FD | T | JC5098 | 2015-09-30 | - | - | < 3.1 U | - | - | - |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930X | FD | T | JC5098A | 2015-09-30 | < 3.0 U | 9.6 J | - | 16.6 | < 1.7 U | 12.8 J |
| WELL | INTERMEDIATE | MW7D | MW7D-F-20151217-43.0 | N | D | JC10941 | 2015-12-17 | - | < 0.77 U | < 0.92 RA | - | - | - |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425 | N | T | JC64901 | 2018-04-25 | **< 43 U** | **63100** | **77100** | < 2.7 U | < 0.094 U | < 13 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425X | FD | T | JC64901 | 2018-04-25 | **< 43 U** | **70800** | **69600** | < 2.7 U | < 0.094 U | < 13 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.5-20150929 | N | T | JC4976 | 2015-09-29 | - | - | **71300 J** | - | - | - |
| WELL | INTERMEDIATE | MW8D | MW8D-41.5-20150929 | N | T | JC4976A | 2015-09-29 | **< 76 U** | **65600 J** | - | < 4.0 U | **< 43 U** | < 18 U |
| WELL | INTERMEDIATE | MW8D | MW8D-45.0-20180425 | N | D | JC64901 | 2018-04-25 | **< 22 U** | **398** | < 8.1 U | < 6.7 U | < 0.12 U | < 6.4 U |
| WELL | INTERMEDIATE | MW8D | MW8D-45.0-20180425 | N | T | JC64901 | 2018-04-25 | **< 22 U** | **1390** | < 8.1 U | < 6.7 U | < 0.12 U | < 6.4 U |
| WELL | INTERMEDIATE | MW8D | MW8D-46.5-20150929 | N | T | JC4976 | 2015-09-29 | - | - | **3900 J** | - | - | - |
| WELL | INTERMEDIATE | MW8D | MW8D-46.5-20150929 | N | T | JC4976A | 2015-09-29 | < 3.0 U | **3120 J** | - | < 4.0 U | **< 8.7 U** | 4.0 J |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-20150924 | N | T | JC4675 | 2015-09-24 | - | - | **14000 RA** | - | - | - |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-20150924 | N | T | JC4675A | 2015-09-24 | **< 9.1 U** | **20900 J** | - | 85.2 | **< 17 U** | < 2.1 U |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-20151214 | N | T | JC10593 | 2015-12-14 | **< 15 U** | **16500 J** | **11600 J** | 62.3 | **< 43 U** | < 3.5 U |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-20160321 | N | T | JC16664 | 2016-03-21 | **< 33 U** | **12400** | **5800** | 58.8 J | **< 19 U** | < 0.66 U |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-20160623 | N | T | JC22854 | 2016-06-23 | **< 16 U** | **15000** | < 3.9 RA | 51.6 | **< 48 U** | 3.4 J |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-20160623-F | N | D | JC22854 | 2016-06-23 | - | **6080** | 34 RA | - | - | - |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-20180129 | N | D | JC59916 | 2018-01-29 | **< 30 U** | **135** | < 10 U | 73.5 | **< 10 U** | **< 250 U** |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-20180129 | N | T | JC59916 | 2018-01-29 | **< 30 U** | **3450** | < 10 U | 53.5 | **< 10 U** | **< 250 U** |

**Appendix L.1**
**Historical Groundwater Analytical Data - Cr+6 and CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ANTIMONY | CHROMIUM | CHROMIUM (HEXAVALENT) | NICKEL | THALLIUM | VANADIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-36-0 | 7440-47-3 | 18540-29-9 | 7440-02-0 | 7440-28-0 | 7440-62-2 |
| | | | | | | | **GWQS** | 6 | 70 | 70 | 100 | 2 | 60 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-F-20150924 | N | D | JC4675 | 2015-09-24 | - | - | **11100 RA** | - | - | - |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-F-20150924 | N | D | JC4675A | 2015-09-24 | - | **12600 J** | - | - | - | - |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-F-20151214 | N | D | JC10593 | 2015-12-14 | - | **13700 J** | **13200 J** | - | - | - |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-F-20160321 | N | D | JC16664 | 2016-03-21 | - | **8080** | **7100** | - | - | - |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-20150923 | N | T | JC4555 | 2015-09-23 | - | - | **590 RA** | - | - | - |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-20150923 | N | T | JC4555A | 2015-09-23 | < 3.0 U | **880** | - | 19.2 JB | < 1.7 U | < 0.70 UB |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-20151211 | N | T | JC10525 | 2015-12-11 | < 3.0 U | **2450** | **2300 RA** | 29.9 | < 1.7 U | < 0.70 U |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-20160325 | N | T | JC17054 | 2016-03-25 | < 3.3 U | **494** | **200** | 31.3 | < 1.9 U | 4.1 J |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-20160624 | N | T | JC22933 | 2016-06-24 | < 3.3 U | **3720** | **3200** | 59.3 | **< 3.8 U** | 4.0 J |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-20160624-F | N | D | JC22933 | 2016-06-24 | - | **3520** | **2700** | - | - | - |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-20160912 | N | T | JC27433 | 2016-09-12 | **< 6.5 U** | **1620** | **1300** | 41.0 | **< 3.8 U** | 0.90 J |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-20160912-F | N | D | JC27433 | 2016-09-12 | - | **1550** | **1400** | - | - | - |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-ARC | N | D | JC59745 | 2018-01-25 | < 6.0 U | 32.0 | < 10 U | 18.6 | **< 10 U** | < 50 U |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-ARC | N | T | JC59745 | 2018-01-25 | < 6.0 U | **139** | < 10 U | 15.7 | **< 10 U** | < 50 U |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-F-20150923 | N | D | JC4555 | 2015-09-23 | - | - | **690 RA** | - | - | - |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-F-20150923 | N | D | JC4555A | 2015-09-23 | - | **876** | - | - | - | - |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-F-20151211 | N | D | JC10525 | 2015-12-11 | - | **2360** | **2500 RA** | - | - | - |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-F-20160325 | N | D | JC17054 | 2016-03-25 | - | **381** | **210** | - | - | - |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-W1-24.0-26.0-F | N | D | JC29542 | 2016-10-12 | - | < 0.81 U | < 3.9 U | - | - | - |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-W1-31.0-33.0-F | N | D | JC29542 | 2016-10-12 | - | **96.2** | < 3.9 U | - | - | - |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-W2-24.0-26.0-F | N | D | JC29754 | 2016-10-14 | - | 13.2 | < 3.9 UJ | - | - | - |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-W2-27.0-29.0-F | N | D | JC29754 | 2016-10-14 | - | 41.6 | < 3.9 UJ | - | - | - |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-20150923 | N | T | JC4555 | 2015-09-23 | - | - | **850 RA** | - | - | - |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-20150923 | N | T | JC4555A | 2015-09-23 | < 3.0 U | **1180** | - | 40.0 | < 1.7 U | 11.0 JB |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-20151211 | N | T | JC10525 | 2015-12-11 | < 3.0 U | **678** | **340 RA** | 28.8 | < 1.7 U | 5.2 J |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-20160325 | N | T | JC17054 | 2016-03-25 | < 3.3 U | **2450 J** | **3100 J** | 37.7 | < 1.9 U | < 0.66 U |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-20160624 | N | T | JC22933 | 2016-06-24 | < 3.3 U | **629** | **170** | 50.8 | < 1.9 U | 4.5 J |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-20160624-F | N | D | JC22933 | 2016-06-24 | - | **384** | **200** | - | - | - |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-20160912 | N | T | JC27433 | 2016-09-12 | < 3.3 U | **615** | **200 J** | 28.2 | < 1.9 U | 3.8 J |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-20160912-F | N | D | JC27433 | 2016-09-12 | - | **475** | **280 J** | - | - | - |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-ARC | N | D | JC59745 | 2018-01-25 | < 6.0 U | 68.3 | < 10 U | 38.7 | **< 10 U** | < 50 U |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-ARC | N | T | JC59745 | 2018-01-25 | < 6.0 U | **104** | < 10 U | 37.0 | **< 10 U** | < 50 U |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-F-20150923 | N | D | JC4555 | 2015-09-23 | - | - | **790 RA** | - | - | - |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-F-20150923 | N | D | JC4555A | 2015-09-23 | - | **996** | - | - | - | - |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-F-20151211 | N | D | JC10525 | 2015-12-11 | - | **501** | **350 RA** | - | - | - |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-F-20160325 | N | D | JC17054 | 2016-03-25 | - | **2460** | **2500** | - | - | - |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-W1-16.5-17.5-F | N | D | JC29434 | 2016-10-11 | - | 61.0 | 3.9 J | - | - | - |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-W1-25.0-27.0-F | N | D | JC29434 | 2016-10-11 | - | 26.1 | < 3.9 UJ | - | - | - |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-W2-25.0-27.0-F | N | D | JC29606 | 2016-10-13 | - | 40.2 | 4.8 RA | - | - | - |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-W2-31.0-33.0-F | N | D | JC29606 | 2016-10-13 | - | 39.8 | < 3.9 RA | - | - | - |
| WELL | DEEP | 114-P1-IRM-10D | 114-P1-IRM-10D | N | D | JC59745 | 2018-01-25 | **< 120 U** | **126000** | **121000** | < 20 U | **< 40 U** | **< 1000 U** |
| WELL | DEEP | 114-P1-IRM-10D | 114-P1-IRM-10D | N | T | JC59745 | 2018-01-25 | **< 120 U** | **124000** | **122000** | < 20 U | **< 40 U** | **< 1000 U** |
| WELL | DEEP | 114-P1-IRM-18D | 114-P1-IRM-18D-20180118 | N | D | JC59349 | 2018-01-18 | **< 150 U** | **155000** | **133000** | < 50 U | **< 50 U** | **< 1300 U** |
| WELL | DEEP | 114-P1-IRM-18D | 114-P1-IRM-18D-20180118 | N | T | JC59349 | 2018-01-18 | **< 150 U** | **149000** | **137000** | < 50 U | **< 50 U** | **< 1300 U** |
| WELL | DEEP | 114-P1-IRM-19D | 114-P1-IRM-19D-20180117 | N | D | JC59023 | 2018-01-17 | **< 24 U** | **24200** | **22800** | < 20 U | **< 8.0 U** | **< 100 U** |
| WELL | DEEP | 114-P1-IRM-19D | 114-P1-IRM-19D-20180117 | N | T | JC59023 | 2018-01-17 | **< 24 U** | **24000** | **22300** | < 20 U | **< 8.0 U** | **< 100 U** |
| WELL | DEEP | 114-P1-IRM-20D | 114-P1-IRM-20B-20180117-DUP | FD | D | JC59023 | 2018-01-17 | < 6.0 U | < 10 U | < 10 U | < 10 U | < 2.0 U | < 50 U |
| WELL | DEEP | 114-P1-IRM-20D | 114-P1-IRM-20B-20180117-DUP | FD | T | JC59023 | 2018-01-17 | < 6.0 U | 24.1 | < 10 U | 12.7 | < 2.0 U | < 50 U |
| WELL | DEEP | 114-P1-IRM-20D | 114-P1-IRM-20D-20180117 | N | D | JC59023 | 2018-01-17 | < 6.0 U | < 10 U | < 10 U | < 10 U | < 2.0 U | < 50 U |
| WELL | DEEP | 114-P1-IRM-20D | 114-P1-IRM-20D-20180117 | N | T | JC59023 | 2018-01-17 | < 6.0 U | < 10 U | < 10 U | 11.3 | < 2.0 U | < 50 U |
| WELL | DEEP | 114-P1-IRM-21D | 114-P1-IRM-21D-20180118 | N | D | JC59349 | 2018-01-18 | **< 90 U** | **98300** | **73600** | < 50 U | **< 30 U** | **< 750 U** |
| WELL | DEEP | 114-P1-IRM-21D | 114-P1-IRM-21D-20180118 | N | T | JC59349 | 2018-01-18 | **< 90 U** | **93500** | **85900** | < 50 U | **< 30 U** | **< 750 U** |
| WELL | DEEP | 114-P1-IRM-22D | 114-P1-IRM-22D-20180118 | N | D | JC59349 | 2018-01-18 | **< 60 U** | **48600** | **44200** | 41.6 | **< 20 U** | **< 500 U** |
| WELL | DEEP | 114-P1-IRM-22D | 114-P1-IRM-22D-20180118 | N | T | JC59349 | 2018-01-18 | **< 60 U** | **48700** | **46400** | 42.4 | **< 20 U** | **< 500 U** |
| WELL | DEEP | 114-P1-IRM-23D | 114-P1-IRM-23D-20180124 | N | D | JC59667 | 2018-01-24 | **< 1200 U** | **1030000** | **1040000** | < 100 U | **< 400 U** | **< 10000 U** |

**Appendix L.1**
**Historical Groundwater Analytical Data - Cr+6 and CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ANTIMONY | CHROMIUM | CHROMIUM (HEXAVALENT) | NICKEL | THALLIUM | VANADIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-36-0 | 7440-47-3 | 18540-29-9 | 7440-02-0 | 7440-28-0 | 7440-62-2 |
| | | | | | | | **GWQS** | 6 | 70 | 70 | 100 | 2 | 60 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | DEEP | 114-P1-IRM-23D | 114-P1-IRM-23D-20180124 | N | T | JC59667 | 2018-01-24 | **< 1200 U** | **1070000** | **1090000** | < 100 U | **< 400 U** | **< 10000 U** |
| WELL | DEEP | 114-P1-IRM-24D | 114-P1-IRM-24D-20180119 | N | D | JC59431 | 2018-01-19 | **< 150 U** | **159000** | **145000** | < 50 U | **< 50 U** | **< 1300 U** |
| WELL | DEEP | 114-P1-IRM-24D | 114-P1-IRM-24D-20180119 | N | T | JC59431 | 2018-01-19 | **< 150 U** | **154000** | **154000** | < 50 U | **< 50 U** | **< 1300 U** |
| WELL | DEEP | 114-P1-IRM-25D | 114-P1-IRM-25D-20180118 | N | D | JC59349 | 2018-01-18 | **< 150 U** | **243000** | **192000** | **133** | **< 50 U** | **< 1300 U** |
| WELL | DEEP | 114-P1-IRM-25D | 114-P1-IRM-25D-20180118 | N | T | JC59349 | 2018-01-18 | **< 150 U** | **208000** | **201000** | **115** | **< 50 U** | **< 1300 U** |
| WELL | DEEP | 114-P1-IRM-26D | 114-P1-IRM-26D-20180119 | N | D | JC59431 | 2018-01-19 | **< 600 U** | **938000** | **893000** | **109** | **< 200 U** | **< 5000 U** |
| WELL | DEEP | 114-P1-IRM-26D | 114-P1-IRM-26D-20180119 | N | T | JC59431 | 2018-01-19 | **604** | **978000** | **920000** | **114** | **< 200 U** | **< 5000 U** |
| WELL | DEEP | 114-P1-IRM-28D | 114-P1-IRM-28D-20180124 | N | D | JC59667 | 2018-01-24 | < 6.0 U | **2460** | **2100** | 31.6 | **< 6.0 U** | < 50 U |
| WELL | DEEP | 114-P1-IRM-28D | 114-P1-IRM-28D-20180124 | N | T | JC59667 | 2018-01-24 | < 6.0 U | **3000** | **2200** | 33.4 | **< 6.0 U** | < 50 U |
| WELL | DEEP | 114-P1-IRM-29D | 114-P1-IRM-29D-20180118 | N | D | JC59349 | 2018-01-18 | **< 600 U** | **594000** | **492000** | 79.0 | **< 200 U** | **< 5000 U** |
| WELL | DEEP | 114-P1-IRM-29D | 114-P1-IRM-29D-20180118 | N | T | JC59349 | 2018-01-18 | **< 600 U** | **554000** | **513000** | 77.5 | **< 200 U** | **< 5000 U** |
| WELL | DEEP | 114-P1-IRM-30D | 114-P1-IRM-30D-20180122 | N | D | JC59495 | 2018-01-22 | < 6.0 U | **92.8** | < 10 U | 23.2 | < 2.0 U | < 50 U |
| WELL | DEEP | 114-P1-IRM-30D | 114-P1-IRM-30D-20180122 | N | T | JC59495 | 2018-01-22 | < 6.0 U | **1120** | < 10 U | 33.5 | < 2.0 U | < 50 U |
| WELL | DEEP | 114-P1-IRM-31D | 114-P1-IRM-31D-20180119 | N | D | JC59431 | 2018-01-19 | **< 30 U** | **71900 J** | **72900** | < 50 U | **< 10 U** | **< 250 U** |
| WELL | DEEP | 114-P1-IRM-31D | 114-P1-IRM-31D-20180119 | N | T | JC59431 | 2018-01-19 | **< 30 U** | **55500 J** | **77200** | 78.0 | **< 10 U** | **< 250 U** |
| WELL | DEEP | 114-P1-IRM-32D | 114-P1-IRM-32D-20180122 | N | D | JC59495 | 2018-01-22 | **< 18 U** | **16400** | **29400** | < 10 U | **< 6.0 U** | **< 150 U** |
| WELL | DEEP | 114-P1-IRM-32D | 114-P1-IRM-32D-20180122 | N | T | JC59495 | 2018-01-22 | **< 60 U** | **33500** | **34900** | < 20 U | **< 20 U** | **< 500 U** |
| WELL | DEEP | 114-P1-IRM-33D | 114-P1-IRM-33D-20180124 | N | D | JC59667 | 2018-01-24 | **< 120 U** | **149000** | R | < 100 U | **< 40 U** | **< 1000 U** |
| WELL | DEEP | 114-P1-IRM-33D | 114-P1-IRM-33D-20180124 | N | T | JC59667 | 2018-01-24 | **< 120 U** | **141000** | R | < 100 U | **< 40 U** | **< 1000 U** |
| WELL | DEEP | 114-P1-IRM-34D | 114-P1-IRM-34D | N | D | JC59745 | 2018-01-25 | **8.6** | **8400** | **8200** | 51.0 | < 2.0 U | < 50 U |
| WELL | DEEP | 114-P1-IRM-34D | 114-P1-IRM-34D | N | T | JC59745 | 2018-01-25 | < 6.0 U | **8670** | **7600** | 48.3 | < 2.0 U | < 50 U |
| WELL | DEEP | 114-P1-IRM-35D | 114-P1-IRM-35D-20180122 | N | D | JC59495 | 2018-01-22 | **< 750 U** | **856000** | **745000** | **198** | **< 250 U** | **< 6300 U** |
| WELL | DEEP | 114-P1-IRM-35D | 114-P1-IRM-35D-20180122 | N | T | JC59495 | 2018-01-22 | **< 750 U** | **806000** | **715000** | **194** | **< 250 U** | **< 6300 U** |
| WELL | DEEP | 114-P1-IRM-37D | 114-P1-IRM-37D-20180117 | N | D | JC59023 | 2018-01-17 | **< 90 U** | **87900** | **108000** | < 50 U | **< 30 U** | **< 750 U** |
| WELL | DEEP | 114-P1-IRM-37D | 114-P1-IRM-37D-20180117 | N | T | JC59023 | 2018-01-17 | **< 90 U** | **91800** | **99400** | < 50 U | **< 30 U** | **< 750 U** |
| WELL | DEEP | 114-P1-IRM-41D | 114-P1-IRM-41D-20180126 | N | D | JC59838 | 2018-01-26 | **< 30 U** | **35700 J-** | **28300** | < 50 U | **< 10 U** | **< 250 U** |
| WELL | DEEP | 114-P1-IRM-41D | 114-P1-IRM-41D-20180126 | N | T | JC59838 | 2018-01-26 | **< 30 U** | **45500** | **52000** | < 50 U | **< 10 U** | **< 250 U** |
| WELL | DEEP | 114-P1-IRM-42D | 114-P1-IRM-42D-20180126 | N | D | JC59838 | 2018-01-26 | **< 1200 U** | **1320000 J-** | **1390000** | **< 2000 U** | **< 400 U** | **< 10000 U** |
| WELL | DEEP | 114-P1-IRM-42D | 114-P1-IRM-42D-20180126 | N | T | JC59838 | 2018-01-26 | **< 1200 U** | **1410000** | **1340000** | **< 2000 U** | **< 400 U** | **< 10000 U** |
| WELL | DEEP | 114-P1-IRM-42D | 114-P1-IRM-42D-20180126-DUP | FD | D | JC59838 | 2018-01-26 | **< 1200 U** | **1380000 J-** | **1490000** | **< 2000 U** | **< 400 U** | **< 10000 U** |
| WELL | DEEP | 114-P1-IRM-42D | 114-P1-IRM-42D-20180126-DUP | FD | T | JC59838 | 2018-01-26 | **< 1200 U** | **1380000** | **1460000** | **< 2000 U** | **< 400 U** | **< 10000 U** |
| WELL | DEEP | 114-P1-IRM-4D | 114-P1-IRM-4D-20180124 | N | D | JC59667 | 2018-01-24 | **< 300 U** | **401000** | **387000** | < 100 U | **< 100 U** | **< 2500 U** |
| WELL | DEEP | 114-P1-IRM-4D | 114-P1-IRM-4D-20180124 | N | T | JC59667 | 2018-01-24 | **< 300 U** | **417000** | **401000** | < 100 U | **< 100 U** | **< 2500 U** |
| WELL | DEEP | 114-P1-IRM-5D | 114-P1-IRM-5D-DUP-20180124 | FD | D | JC59667 | 2018-01-24 | **< 300 U** | **223000** | **222000** | < 20 U | **< 100 U** | **< 500 U** |
| WELL | DEEP | 114-P1-IRM-5D | 114-P1-IRM-5D-DUP-20180124 | FD | T | JC59667 | 2018-01-24 | **< 300 U** | **282000** | **257000** | < 20 U | **< 100 U** | **< 500 U** |
| WELL | DEEP | 114-P1-IRM-5D | 114-P1-MW-5I-20180124 | N | D | JC59556 | 2018-01-24 | **< 150 U** | **94000** | **74300** | 72.5 | **< 50 U** | **< 1300 U** |
| WELL | DEEP | 114-P1-IRM-5D | 114-P1-MW-5I-20180124 | N | T | JC59556 | 2018-01-24 | **< 150 U** | **95900** | **87600** | 93.0 | **< 50 U** | **< 1300 U** |
| WELL | DEEP | 114-P1-MW-1D | 114-P1-MW-1D-20180129 | N | D | JC59916 | 2018-01-29 | **< 300 U** | **235000** | **217000 J** | < 100 U | **< 100 U** | **< 2500 U** |
| WELL | DEEP | 114-P1-MW-1D | 114-P1-MW-1D-20180129 | N | T | JC59916 | 2018-01-29 | **< 300 U** | **244000** | **175000 J** | < 100 U | **< 100 U** | **< 2500 U** |
| WELL | DEEP | 114-P1-MW-4D | 114-P1-MW-4D-20180126 | N | D | JC59838 | 2018-01-26 | **< 60 U** | **46900 J-** | **53600** | < 50 U | **< 20 U** | **< 500 U** |
| WELL | DEEP | 114-P1-MW-4D | 114-P1-MW-4D-20180126 | N | T | JC59838 | 2018-01-26 | **< 60 U** | **47900** | **46700** | < 50 U | **< 20 U** | **< 500 U** |
| WELL | DEEP | 114-P1-MW-5D | 114-P1-MW-5D-20180123 | N | D | JC59667 | 2018-01-24 | **< 300 U** | **259000** | **222000** | < 100 U | **< 100 U** | **< 2500 U** |
| WELL | DEEP | 114-P1-MW-5D | 114-P1-MW-5D-20180123 | N | T | JC59667 | 2018-01-24 | **< 300 U** | **270000** | **261000** | < 100 U | **< 100 U** | **< 2500 U** |
| WELL | DEEP | 114-P1-MW-6D | 114-P1-MW-6D-20180119 | N | D | JC59431 | 2018-01-19 | **< 90 U** | **76700** | **84600** | < 50 U | **< 30 U** | **< 750 U** |
| WELL | DEEP | 114-P1-MW-6D | 114-P1-MW-6D-20180119 | N | T | JC59431 | 2018-01-19 | **< 90 U** | **89900** | **90100** | < 50 U | **< 30 U** | **< 750 U** |
| WELL | DEEP | 114-P1-MW-7D | 114-P1-MW7D-20180125 | N | D | JC59745 | 2018-01-25 | **< 60 U** | **61300** | **59500** | < 20 U | **< 20 U** | **< 500 U** |
| WELL | DEEP | 114-P1-MW-7D | 114-P1-MW7D-20180125 | N | T | JC59745 | 2018-01-25 | **< 60 U** | **70000** | **61300** | < 20 U | **< 20 U** | **< 500 U** |
| WELL | DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | N | T | JC65066 | 2018-04-27 | < 4.3 U | 33.7 | < 8.1 U | 3.6 J | 0.053 J | 6.6 J |
| WELL | DEEP | 114-MW20C | 114-MW20C-20180419 | N | T | JC64571 | 2018-04-19 | < 4.3 U | 4.8 J | < 8.1 U | 14.1 | < 0.047 U | 1.7 J |
| WELL | DEEP | 114-MW20C | 114-MW20C-78.5-20151001 | N | T | JC5237 | 2015-10-01 | - | - | < 3.1 U | - | - | - |
| WELL | DEEP | 114-MW20C | 114-MW20C-78.5-20151001 | N | T | JC5237A | 2015-10-01 | < 3.0 U | 17.5 | - | 6.1 J | < 1.7 U | 3.6 J |
| WELL | DEEP | 114-MW25C-2 | 114-MW25C-20180313 | N | D | JC62228 | 2018-03-13 | < 4.3 U | 1.1 J | < 8.1 U | 5.5 J | < 0.047 U | < 1.3 U |
| WELL | DEEP | 114-MW25C-2 | 114-MW25C-20180313 | N | T | JC62228 | 2018-03-13 | **< 22 U** | 41.5 J | < 8.1 U | 43.0 J | 0.50 J | 51.0 J |
| WELL | DEEP | 114-P1B-MW103D | 114-P1B-MW103D-20171214 | N | T | JC57385 | 2017-12-14 | **< 110 U** | **101000** | **95500** | < 6.7 U | < 0.24 U | 33.0 J |
| WELL | DEEP | 114-P1B-MW103D | 114-P1B-MW103D-20171214X | FD | T | JC57385 | 2017-12-14 | **< 110 U** | **104000** | **95000** | < 6.7 U | < 0.24 U | < 32 U |

**Appendix L.1**
**Historical Groundwater Analytical Data - Cr+6 and CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ANTIMONY | CHROMIUM | CHROMIUM (HEXAVALENT) | NICKEL | THALLIUM | VANADIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-36-0 | 7440-47-3 | 18540-29-9 | 7440-02-0 | 7440-28-0 | 7440-62-2 |
| | | | | | | | **GWQS** | 6 | 70 | 70 | 100 | 2 | 60 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-20180122 | N | D | JC59495 | 2018-01-22 | **< 60 U** | **52200** | **47400** | 36.8 | **< 20 U** | **< 500 U** |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-20180122 | N | T | JC59495 | 2018-01-22 | **< 60 U** | **57300** | **49400** | 40.2 | **< 20 U** | **< 500 U** |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | N | T | JC57943 | 2017-12-22 | - | - | **51000** | - | - | - |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | N | T | JC57943A | 2017-12-22 | **47.0 J** | **61000** | - | 34.8 | < 0.094 U | < 13 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | N | T | JC57943 | 2017-12-22 | - | - | **65600** | - | - | - |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | N | T | JC57943A | 2017-12-22 | **< 43 U** | **79000** | - | 38.6 | < 0.094 U | < 13 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | N | T | JC57820 | 2017-12-21 | **< 43 U** | **71700** | **63100** | 44.1 | < 0.047 U | < 13 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | N | T | JC57820 | 2017-12-21 | **58.0 J** | **67500** | **59500** | 42.3 | < 0.047 U | < 13 U |
| WELL | DEEP | 114-P1-IRM-40D | 114-P1-IRM-40D-20180118 | N | D | JC59349 | 2018-01-18 | **< 300 U** | **265000** | **172000** | < 50 U | **< 100 U** | **< 2500 U** |
| WELL | DEEP | 114-P1-IRM-40D | 114-P1-IRM-40D-20180118 | N | T | JC59349 | 2018-01-18 | **< 300 U** | **311000** | **289000** | < 50 U | **< 100 U** | **< 2500 U** |
| WELL | DEEP | 132-P3A-MW104D-1 | 132-P3A-MW104D-1-52.0-20180426 | N | T | JC64986 | 2018-04-26 | < 4.3 U | 45.3 | 17 | < 1.3 U | 0.19 J | < 1.3 U |
| WELL | DEEP | 132-P3A-MW104D-1 | 132-P3A-MW104D-1-52.0-20180426X | FD | T | JC64986 | 2018-04-26 | < 4.3 U | 41.8 | 18 | < 1.3 U | 0.21 J | < 1.3 U |
| WELL | DEEP | 132-P3A-MW104D-2 | 132-P3A-MW104D-2-69.0-20180426 | N | T | JC64986 | 2018-04-26 | < 4.3 U | 3.8 J | < 8.1 U | 3.1 J | 0.066 J | 2.5 J |
| WELL | DEEP | 135-MW1C | 135-MW1C-20151216 | N | T | JC10815 | 2015-12-16 | - | 5.2 J | < 0.92 U | - | - | - |
| WELL | DEEP | 135-MW1C | 135-MW1C-F-20151216 | N | D | JC10815 | 2015-12-16 | - | 3.9 J | < 0.92 U | - | - | - |
| WELL | DEEP | 137-MW1C | 137-MW1C-20151218-42.0 | N | T | JC11095 | 2015-12-18 | - | **92.4** | 1.4 J | - | - | - |
| WELL | DEEP | 137-MW1C | 137-MW1C-F-20151218-42.0 | N | D | JC11095 | 2015-12-18 | - | **96.7** | 3.3 J | - | - | - |
| WELL | DEEP | 137-MW2C | 137-MW2C-20151214 | N | T | JC10597 | 2015-12-14 | < 3.0 U | **271** | < 0.94 U | 4.3 JB | < 1.7 U | 2.2 J |
| WELL | DEEP | 137-MW2C | 137-MW2C-F-20151214 | N | D | JC10597 | 2015-12-14 | - | 2.6 J | < 0.92 U | - | - | - |
| WELL | DEEP | MW6C | 114-MW6C-20160321 | N | T | JC16664 | 2016-03-21 | < 3.3 U | **9890** | **10400** | 70.2 | < 1.9 U | 9.8 J |
| WELL | DEEP | MW6C | 114-MW6C-F-20160321 | N | D | JC16664 | 2016-03-21 | - | **9650** | **9500** | - | - | - |
| WELL | DEEP | MW6C | MC6C-20180129 | N | D | JC59916 | 2018-01-29 | **< 30 U** | **8700** | **7900** | 55.5 | **< 10 U** | **< 250 U** |
| WELL | DEEP | MW6C | MC6C-20180129 | N | T | JC59916 | 2018-01-29 | **< 30 U** | **9070** | **7700** | 56.5 | **< 10 U** | **< 250 U** |
| WELL | DEEP | MW6C | MW-6C-20150924 | N | T | JC4675 | 2015-09-24 | - | - | **2100 RA** | - | - | - |
| WELL | DEEP | MW6C | MW-6C-20150924 | N | T | JC4675A | 2015-09-24 | - | **2090 J** | - | - | - | - |
| WELL | DEEP | MW6C | MW6C-20151218-57.0 | N | T | JC11095 | 2015-12-18 | - | **6130 J** | **8200 J** | - | - | - |
| WELL | DEEP | MW6C | MW6C-20151218-60.0 | N | T | JC11095 | 2015-12-18 | - | **5680** | **5300 J** | - | - | - |
| WELL | DEEP | MW6C | MW6C-57.0-20171220 | N | T | JC57752 | 2017-12-20 | **< 22 U** | **25800** | **14300** | 62.1 | < 0.047 U | < 1.3 U |
| WELL | DEEP | MW6C | MW6C-62.0-20171220 | N | T | JC57752 | 2017-12-20 | **< 22 U** | **35900** | **22900** | 62.4 | < 0.047 U | < 1.3 U |
| WELL | DEEP | MW6C | MW-6C-F-20150924 | N | D | JC4675 | 2015-09-24 | - | - | **1800 RA** | - | - | - |
| WELL | DEEP | MW6C | MW-6C-F-20150924 | N | D | JC4675A | 2015-09-24 | - | **2070 J** | - | - | - | - |
| WELL | DEEP | MW6C | MW6C-F-20151218-57.0 | N | D | JC11095 | 2015-12-18 | - | **6560 J** | **6100 J** | - | - | - |
| WELL | DEEP | MW8F | MW8F-20180425 | N | T | JC64901 | 2018-04-25 | < 4.3 U | 2.0 J | < 8.1 U | < 1.3 U | < 0.047 U | 1.4 J |
| WELL | DEEP | MW8F | MW8F-79.5-20151001 | N | T | JC5237 | 2015-10-01 | - | - | < 3.1 U | - | - | - |
| WELL | DEEP | MW8F | MW8F-79.5-20151001 | N | T | JC5237A | 2015-10-01 | < 3.0 U | 6.1 J | - | 3.5 J | < 1.7 U | 4.2 J |
| WELL | DEEP | MW8F | MW8F-82.0-20151001 | N | T | JC5237 | 2015-10-01 | - | - | < 3.1 U | - | - | - |
| WELL | DEEP | MW8F | MW8F-82.0-20151001 | N | T | JC5237A | 2015-10-01 | < 3.0 U | 34.1 | - | 17.6 | < 1.7 U | 14.2 J |
| WELL | DEEP | MW-CR-3D | MW-CR-3D-20180418 | N | T | JC64444 | 2018-04-18 | < 4.3 U | 2.0 J | < 8.1 U | 9.0 J | < 0.047 U | < 1.3 U |
| WELL | BASAL TILL | 132-P3-MW001D | 132-P3-MW-001D-80.5 | N | T | 4602373171 | 2021-06-24 | 1.2 | < 2.5 U | < 8.1 U | 2.1 | < 0.21 U | 2.6 |
| WELL | BASAL TILL | 132-P3-MW001D | 132-P3-MW-001D-85.5 | N | T | 4602373171 | 2021-06-24 | 1.0 | < 2.5 U | < 8.1 U | 1.9 | < 0.21 U | 2.7 |
| WELL | BASAL TILL | 132-P3-MW001D | 132-P3-MW-001D-85.5-X | FD | T | 4602373171 | 2021-06-24 | 0.82 | < 2.5 U | < 8.1 U | 2.5 | < 0.21 U | 3.8 |
| WELL | BEDROCK | 114-MW16B | 114-MW16B-20151214 | N | T | JC10597 | 2015-12-14 | < 3.0 U | 27.0 | 22 | 3.1 JB | < 1.7 U | 10.7 J |
| WELL | BEDROCK | 114-MW16B | 114-MW16B-F-20151214 | N | D | JC10597 | 2015-12-14 | - | 26.8 | 21 | - | - | - |
| WELL | BEDROCK | 114-MW4D | 114-MW4D-20151215-100 | N | T | JC10722 | 2015-12-15 | - | 14.5 | < 0.92 U | - | - | - |
| WELL | BEDROCK | 114-MW4D | 114-MW4D-20151215-103.5 | N | T | JC10722 | 2015-12-15 | - | 6.8 J | < 0.92 U | - | - | - |
| WELL | BEDROCK | 114-MW4D | 114-MW4D-20151215-90 | N | T | JC10722 | 2015-12-15 | - | 4.5 J | < 0.92 U | - | - | - |
| WELL | BEDROCK | 114-MW4D | 114-MW4D-20151215-95 | N | T | JC10722 | 2015-12-15 | - | 5.6 J | < 0.92 U | - | - | - |
| WELL | BEDROCK | 114-MW4D | 114-MW4D-F-20151215-100 | N | D | JC10722 | 2015-12-15 | - | < 0.77 U | < 0.92 U | - | - | - |
| WELL | BEDROCK | 114-MW4D | 114-MW4D-F-20151215-103.5 | N | D | JC10722 | 2015-12-15 | - | < 0.77 U | < 0.92 U | - | - | - |
| WELL | BEDROCK | 114-MW4D | 114-MW4D-F-20151215-90 | N | D | JC10722 | 2015-12-15 | - | < 0.77 U | < 0.92 U | - | - | - |
| WELL | BEDROCK | 114-MW4D | 114-MW4D-F-20151215-95 | N | D | JC10722 | 2015-12-15 | - | 4.0 J | < 0.92 U | - | - | - |
| WELL | BEDROCK | 114-MW6D | 114-MW6D-20151221-103.5 | N | T | JC11194 | 2015-12-21 | - | 2.6 J | < 0.92 U | - | - | - |
| WELL | BEDROCK | 114-MW6D | 114-MW6D-20151221-108.5 | N | T | JC11194 | 2015-12-21 | - | 2.5 J | < 0.92 U | - | - | - |
| WELL | BEDROCK | 114-MW6D | 114-MW6D-20151221-88.5 | N | T | JC11194 | 2015-12-21 | - | 3.6 J | < 0.92 U | - | - | - |
| WELL | BEDROCK | 114-MW6D | 114-MW6D-20151221-93.5 | N | T | JC11194 | 2015-12-21 | - | 2.6 J | < 0.92 U | - | - | - |

**Appendix L.1**
**Historical Groundwater Analytical Data - Cr+6 and CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ANTIMONY | CHROMIUM | CHROMIUM (HEXAVALENT) | NICKEL | THALLIUM | VANADIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-36-0 | 7440-47-3 | 18540-29-9 | 7440-02-0 | 7440-28-0 | 7440-62-2 |
| | | | | | | | **GWQS** | 6 | 70 | 70 | 100 | 2 | 60 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | BEDROCK | 114-MW6D | 114-MW6D-20151221-98.5 | N | T | JC11194 | 2015-12-21 | - | 1.8 J | < 0.92 U | - | - | - |
| WELL | BEDROCK | 114-MW6D | 114-MW6D-20151221-98.5-X | FD | T | JC11194 | 2015-12-21 | - | 1.8 J | < 0.92 U | - | - | - |
| WELL | BEDROCK | 114-MW6D | 114-MW6D-F-20151221-98.5 | N | D | JC11194 | 2015-12-21 | - | 1.1 J | < 0.92 U | - | - | - |
| WELL | BEDROCK | 114-MW6D | 114-MW6D-F-20151221-98.5-X | FD | D | JC11194 | 2015-12-21 | - | 1.1 J | < 0.92 U | - | - | - |
| WELL | BEDROCK | 114-MW7D | 114-MW7D-20151222-60.0 | N | T | JC11265 | 2015-12-22 | - | 24.5 | 3.4 RA | - | - | - |

**NOTES:**

1. The reporting convention for non-detects in environmental analytical chemistry is that non-detects be reported as less than the RL. Outputs from the database default to reporting non-detects as less than the MDL.

2. Results may be reporting as less than the MDL or RL, but above the associated regulatory standard when dilution is required due to the presence of a significant quantity of a target or non-target analyte, or an interference from a target or non-target analyte. The presence of other substances, or combinations of other substances in a sample can impact whether an analytical method can be used to achieve the lowest possible RL.

3. **Bold** - Indicates an exceedance of the NJDEP's GWQS.

4. A "-" indicates that the sample was not tested for the analyte.

**ABBREVIATIONS:**

CAS RN - Chemical Abstracts Service Registry Number

CCPW - Chromate Chemical Production Waste

$Cr^{+6}$ - hexavalent chromium

Fractions:

D - dissolved/filtered

T - total/unfiltered

GWQS - Groundwater Quality Standard

MDL - method detection limit

N/A - not applicable

NJDEP - New Jersey Department of Environmental Protection

RL - reporting limit

Sample Types:

N - normal environmental sample

FD - field duplicate sample

SDG - sample delivery group

TW - temporary well

ug/L - micrograms per liter

**QUALIFIERS:**

B - Indicates the result was an estimated value; the associated numerical value was an approximate concentration of the analyte in the sample (qualifier assigned by the analytical laboratory).

J - Indicates the result was an estimated value; the associated numerical value was an approximate concentration of the analyte in the sample. J+ or J - is used when the direction of bias can be determined.

JB - The analyte concentration is greater than three (3) times, but less than or equal to ten (10) times the concentration in the associated method/preparation blank. The presence of that analyte in the sample is considered “real” but the concentration is quantitatively qualified due to method blank contamination.

R - The sample result was rejected due to serious deficiencies; the presence or absence of the analyte could not be confirmed.

RA - The sample result was rejected, but is still considered usable.

U - Indicates the analyte was not detected in the sample above the sample RL.

UB - The analyte concentration is less than or equal to three (3) times the concentration in the associated method/preparation blank. The presence of the analyte in the sample is negated due to laboratory blank contamination.

UJ - Indicates the analyte was not detected above the RL and the RL was approximate.

# Appendix L.2

# Historical Groundwater Analytical Data – Non-CCPW Metals

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ALUMINUM | ARSENIC | BARIUM | BERYLLIUM | CADMIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7429-90-5 | 7440-38-2 | 7440-39-3 | 7440-41-7 | 7440-43-9 |
| | | | | | | | **GWQS** | 200 | 3 | 6000 | 1 | 4 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-MC-MW101S | 114-MC-MW101S-20160622 | N | T | JC22758 | 6/22/2016 | 70.8 J | **< 22 U** | 28.7 J | < 0.25 U | 0.80 J |
| WELL | SHALLOW | 114-MC-MW101S | 114-MC-MW101S-20160314X | FD | T | JC16175 | 3/14/2016 | < 21 U | **< 11 U** | 19.5 J | 0.90 J | 2.1 J |
| WELL | SHALLOW | 114-MC-MW101S | 114-MC-MW101S-20160314 | N | T | JC16175 | 3/14/2016 | 127 J | **< 11 U** | 18.1 J | 0.70 J | 0.60 J |
| WELL | SHALLOW | 114-MC-MW101S | 114-MC-MW101S-20151209 | N | T | JC10220A | 12/9/2015 | **223** | **< 20 U** | 32.5 J | < 0.35 U | < 0.28 UB |
| WELL | SHALLOW | 114-MC-MW101S | 114-MC-MW101S-20150921 | N | T | JC4371A | 9/21/2015 | **259** | **< 20 U** | 40.9 J | **< 1.1 U** | 0.40 J |
| WELL | SHALLOW | 114-MC-MW102S | 114-MC-MW102S-20160624 | N | T | JC22939 | 6/24/2016 | 81.6 J | **48.2 J** | 101 J | < 0.25 U | < 2.0 U |
| WELL | SHALLOW | 114-MC-MW102S | 114-MC-MW102S-20160314 | N | T | JC16175 | 3/14/2016 | **202** | **< 54 U** | 76.3 J | 1.0 | < 0.40 U |
| WELL | SHALLOW | 114-MC-MW102S | 114-MC-MW102S-20151210 | N | T | JC10380 | 12/10/2015 | < 33 U | **< 49 U** | 155 J | < 0.35 U | 2.9 JB |
| WELL | SHALLOW | 114-MC-MW102S | 114-MC-MW102S-20150921 | N | T | JC4371A | 9/21/2015 | **269 J** | **30.4** | 161 J | **< 1.8 U** | < 1.4 U |
| WELL | SHALLOW | 114-MW15A | 114-MW15A-20180417 | N | D | JC64376 | 4/17/2018 | < 33 U | < 2.7 U | 40.1 J | < 0.40 U | < 0.70 U |
| WELL | SHALLOW | 114-MW15A | 114-MW15A-20180417 | N | T | JC64376 | 4/17/2018 | **1420** | < 2.7 U | 47.8 J | < 0.40 U | < 0.70 U |
| WELL | SHALLOW | 114-MW16A | 114-MW16A-20151214-10.65 | N | T | JC10597 | 12/14/2015 | **286** | < 2.0 U | 107 J | < 0.35 U | < 0.28 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-8.0-20180420 | N | T | JC64643 | 4/20/2018 | **216 JB** | **10.6** | 63.7 J | < 0.40 U | < 0.70 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-11.0-20180420 | N | T | JC64643 | 4/20/2018 | 153 JB | **11.6** | 58.9 J | < 0.40 U | < 0.70 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-12.5-20151001 | N | T | JC5237A | 10/1/2015 | **270 J** | **66.5** | 104 J | < 0.35 U | < 0.28 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-10.5-20151001 | N | T | JC5237A | 10/1/2015 | **240 J** | **55.4** | 121 J | < 0.35 U | 0.40 J |
| WELL | SHALLOW | 114-MW22A | 114-MW22A-11.0-20180419 | N | T | JC64571 | 4/19/2018 | < 33 U | **44.3** | 303 | < 0.40 U | < 0.70 U |
| WELL | SHALLOW | 114-MW22A | 114-MW22A-16.0-20180419 | N | T | JC64571 | 4/19/2018 | < 33 U | **44.0** | 293 | < 0.40 U | < 0.70 U |
| WELL | SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | N | T | JC65325 | 5/2/2018 | **237 JB** | **< 14 U** | 57.5 J | < 0.40 U | < 0.70 U |
| WELL | SHALLOW | 114-MW25A | 114-MW25A-20170926 | N | T | JC51824 | 9/26/2017 | 66.7 J | < 2.7 U | 130 J | < 0.40 U | 0.70 J |
| WELL | SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | N | T | JC57565 | 12/18/2017 | < 33 U | **23.9** | 150 J | < 0.40 U | 1.3 J |
| WELL | SHALLOW | 114-MW27A | 114-MW27A-20170926 | N | T | JC51824 | 9/26/2017 | 73.2 J | 2.7 J | 121 J | < 0.40 U | 2.7 J |
| WELL | SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | N | T | JC57565 | 12/18/2017 | < 33 U | < 2.7 U | 114 J | < 0.40 U | < 0.70 U |
| WELL | SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | N | T | JC56729A | 12/6/2017 | 135 J | **4.7** | 140 J | < 0.40 U | 1.1 J |
| WELL | SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | N | T | JC56859A | 12/7/2017 | < 33 U | **20.5** | 51.1 J | < 0.40 U | 1.4 J+ |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927-X | FD | T | JC51890 | 9/27/2017 | **3770** | **3.4** | 74.2 J | < 0.40 U | < 0.70 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927 | N | T | JC51890 | 9/27/2017 | **3770** | 3.0 | 76.2 J | < 0.40 U | < 0.70 U |
| WELL | SHALLOW | 114-MW37A | 114-MW37A-20170928 | N | T | JC52029 | 9/28/2017 | **491** | **6.7** | 73.5 J | < 0.40 U | 0.70 J |
| WELL | SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | N | T | JC56504A | 12/4/2017 | **9560** | **22.4** | 153 J | < 0.80 U | < 1.4 U |
| WELL | SHALLOW | 114-MW41A | 114-MW41A-20180420 | N | T | JC64643 | 4/20/2018 | **210 JB** | **< 27 U** | 51.0 J | **< 2.0 U** | < 3.5 U |
| WELL | SHALLOW | 114-MW42A | 114-MW42A-20180417 | N | T | JC64376 | 4/17/2018 | **900** | < 2.7 U | 183 J | < 0.40 U | < 0.70 U |
| WELL | SHALLOW | 114-MW43A | 114-MW43A-20180417 | N | T | JC64376 | 4/17/2018 | **758** | < 2.7 U | 346 | < 0.40 U | < 0.70 U |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-20160916 | N | T | JC27812 | 9/16/2016 | **802** | **7.2** | 36.2 J | < 0.25 U | < 0.40 U |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-20160617 | N | T | JC22504 | 6/17/2016 | **635** | **< 4.3 U** | 35.7 J | < 0.25 U | 0.80 J |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-20160317 | N | T | JC16446 | 3/17/2016 | **1250** | **< 11 U** | 31.1 J | < 0.25 U | 0.60 J |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-20151209 | N | T | JC10220A | 12/9/2015 | < 33 U | < 2.0 U | 102 J | < 0.35 U | < 0.28 UB |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-20150921 | N | T | JC4371A | 9/21/2015 | **1390** | **7.0 JB** | 43.5 J | < 0.35 U | < 0.28 U |
| WELL | SHALLOW | 114-P1B-MW101S | 114-P1B-MW101S-20160621 | N | T | JC22642 | 6/21/2016 | **618 J** | **6.6** | 33.6 J | < 0.25 U | < 0.40 U |
| WELL | SHALLOW | 114-P1B-MW101S | 114-P1B-MW101S-20160314 | N | T | JC16175 | 3/14/2016 | **360** | 2.8 J | 24.0 J | 1.0 | 1.7 J |
| WELL | SHALLOW | 114-P1B-MW101S | 114-P1B-MW101S-20151209 | N | T | JC10220A | 12/9/2015 | 167 J | **13.5** | 25.4 J | < 0.35 U | < 0.28 UB |
| WELL | SHALLOW | 114-P1B-MW101S | 114-P1B-MW101S-20150922 | N | T | JC4452A | 9/22/2015 | **223** | **10.1** | 20.5 J | < 0.35 U | < 0.28 UJB |
| WELL | SHALLOW | 114-P1B-MW102S | 114-P1B-MW102S-20160916 | N | T | JC27812 | 9/16/2016 | **675** | **14.0** | 149 J | < 0.50 U | < 0.80 U |
| WELL | SHALLOW | 114-P1B-MW102S | 114-P1B-MW102S-20160314 | N | T | JC16175 | 3/14/2016 | **404** | **< 11 U** | 106 J | 0.80 J | 1.6 J |
| WELL | SHALLOW | 114-P1B-MW102S | 114-P1B-MW102S-20151210 | N | T | JC10380 | 12/10/2015 | **549** | **16.1** | 207 | < 0.35 U | < 0.28 UB |
| WELL | SHALLOW | 114-P1B-MW102S | 114-P1B-MW102S-20150922 | N | T | JC4452A | 9/22/2015 | **374** | **5.8** | 151 J | < 0.35 U | < 0.28 UJB |
| WELL | SHALLOW | 114-P1B-MW103S | 114-P1B-MW103S-20160622 | N | T | JC22758 | 6/22/2016 | 128 J | **27.5** | 30.0 J | < 0.25 U | 0.40 J |
| WELL | SHALLOW | 114-P1B-MW103S | 114-P1B-MW103S-20160318 | N | T | JC16549 | 3/18/2016 | 37.7 J | **< 11 U** | 30.3 J | < 0.25 U | 0.80 J |
| WELL | SHALLOW | 114-P1B-MW103S | 114-P1B-MW103S-20151210 | N | T | JC10380 | 12/10/2015 | < 33 U | **< 20 U** | 50.3 J | < 0.35 U | < 0.28 UB |
| WELL | SHALLOW | 114-P1B-MW103S | 114-P1B-MW103S-20150922 | N | T | JC4452A | 9/22/2015 | 183 J | < 2.0 U | 43.9 J | < 0.35 U | < 0.28 UJB |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | **Analyte** | ALUMINUM | ARSENIC | BARIUM | BERYLLIUM | CADMIUM |
| | | | | | | **CAS RN** | 7429-90-5 | 7440-38-2 | 7440-39-3 | 7440-41-7 | 7440-43-9 |
| | | | | | | **GWQS** | 200 | 3 | 6000 | 1 | 4 |
| | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-P1B-MW104S | 114-P1B-MW104S-20160621 | N | T | JC22642 | 6/21/2016 | **646 J** | **5.0** | 27.1 J | < 0.25 U | < 0.40 U |
| WELL | SHALLOW | 114-P1B-MW104S | 114-P1B-MW104S-20160322 | N | T | JC16738 | 3/22/2016 | **669** | **6.0** | 27.8 J | 0.70 J | 0.60 J |
| WELL | SHALLOW | 114-P1B-MW104S | 114-P1B-MW104S-20151211 | N | T | JC10525 | 12/11/2015 | **704** | **8.5** | 34.5 J | < 0.35 U | < 0.28 UB |
| WELL | SHALLOW | 114-P1B-MW104S | 114-P1B-MW104S-20150922 | N | T | JC4452A | 9/22/2015 | **639** | **8.5** | 31.6 J | < 0.35 U | < 0.28 UJB |
| WELL | SHALLOW | 114-P1C-MW101S | 114-P1C-MW101S-20160620 | N | T | JC22555 | 6/20/2016 | **368** | **< 22 U** | 48.7 J | < 0.25 U | 0.70 J |
| WELL | SHALLOW | 114-P1C-MW101S | 114-P1C-MW101S-20160316 | N | T | JC16336 | 3/16/2016 | **554 J** | **< 11 U** | 39.2 J | **< 1.3 U** | < 2.0 U |
| WELL | SHALLOW | 114-P1C-MW101S | 114-P1C-MW101S-20151211 | N | T | JC10525 | 12/11/2015 | 198 J | **< 20 U** | 36.5 J | < 0.35 U | < 0.28 UB |
| WELL | SHALLOW | 114-P1C-MW101S | 114-P1C-MW101S-20150923X | FD | T | JC4555A | 9/23/2015 | **241 JB** | **< 20 U** | 54.1 J | 0.60 J | < 0.28 U |
| WELL | SHALLOW | 114-P1C-MW101S | 114-P1C-MW101S-20150923 | N | T | JC4555A | 9/23/2015 | **354 JB** | **< 20 U** | 56.2 J | 0.70 J | < 0.28 U |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-20161212X | FD | T | JC33522 | 12/12/2016 | **566 J** | < 2.2 U | 30.8 J | < 0.25 U | < 0.40 U |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-20161212 | N | T | JC33522 | 12/12/2016 | **902 J** | < 2.2 U | 35.0 J | < 0.25 U | < 0.40 U |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-20160914X | FD | T | JC27595 | 9/14/2016 | **1330** | **4.1** | 44.1 J | < 0.25 U | < 0.40 U |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-20160914 | N | T | JC27595 | 9/14/2016 | **1220** | **4.4** | 43.3 J | < 0.25 U | < 0.40 U |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-20160628 | N | T | JC23103 | 6/28/2016 | **497** | **35.0** | 185 J | 0.40 J | < 0.40 U |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-20160324 | N | T | JC16953 | 3/24/2016 | **1920** | **< 11 U** | 48.9 J | **< 1.3 U** | < 2.0 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-20161212 | N | T | JC33522 | 12/12/2016 | **2970** | **19.2** | 45.7 J | < 0.25 U | < 0.40 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-20160914 | N | T | JC27595 | 9/14/2016 | **1750** | **16.2** | 40.7 J | < 0.25 U | < 0.40 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-20160628 | N | T | JC23103 | 6/28/2016 | **7150** | **11.9** | 95.3 J | 0.30 J | 0.60 J |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-20160324 | N | T | JC16953 | 3/24/2016 | **1170** | **< 11 U** | 48.4 J | **2.1 J** | < 2.0 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-20161213 | N | T | JC33573 | 12/13/2016 | **2470** | **< 11 U** | 49.0 J | < 0.25 U | < 0.40 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-20160915 | N | T | JC27716 | 9/15/2016 | **6330** | **< 22 U** | 86.0 J | < 0.50 U | < 0.80 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-20160627 | N | T | JC23029 | 6/27/2016 | **7410** | **< 22 U** | 82.0 J | < 0.25 U | 0.40 J |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-20160325 | N | T | JC17059 | 3/25/2016 | **7600 J** | **< 11 U** | 66.1 J | **2.7 J** | < 2.0 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-20161214 | N | T | JC33691 | 12/14/2016 | **1410** | **26.4** | 35.1 J | < 0.25 U | < 0.40 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-20160915 | N | T | JC27716 | 9/15/2016 | **281** | **29.4** | 22.2 J | < 0.25 U | < 0.40 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-20160629 | N | T | JC23208 | 6/29/2016 | **5640 J** | **27.2** | 66.7 J | < 0.25 U | < 0.40 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-20160325 | N | T | JC17059 | 3/25/2016 | **2360 J** | **15.3** | 38.8 J | **< 1.3 U** | < 2.0 U |
| WELL | SHALLOW | 114-P2B1-MW101S | 114-P2B1-MW101S-20160620 | N | T | JC22555 | 6/20/2016 | 57.0 J | **< 22 U** | 24.6 J | < 0.25 U | 0.80 J |
| WELL | SHALLOW | 114-P2B1-MW101S | 114-P2B1-MW101S-20160315 | N | T | JC16239 | 3/15/2016 | < 21 U | **< 22 U** | 14.5 J | < 0.25 U | 1.0 J |
| WELL | SHALLOW | 114-P2B1-MW101S | 114-P2B1-MW101S-20151210X | FD | T | JC10380 | 12/10/2015 | < 33 U | **< 20 U** | 18.6 JB | < 0.35 U | < 0.28 UB |
| WELL | SHALLOW | 114-P2B1-MW101S | 114-P2B1-MW101S-20151210 | N | T | JC10380 | 12/10/2015 | < 33 U | **20.3 J** | 19.8 JB | < 0.35 U | < 0.28 UB |
| WELL | SHALLOW | 114-P2B1-MW101S | 114-P2B1-MW101S-20150922 | N | T | JC4452A | 9/22/2015 | 194 J | **< 20 U** | 23.8 J | 0.40 J | < 0.28 UJB |
| WELL | SHALLOW | 114-P2B1-MW102S | 114-P2B1-MW102S-20160623 | N | T | JC22854 | 6/23/2016 | **911** | **11.6 J** | 34.0 J | < 0.25 U | 0.50 J |
| WELL | SHALLOW | 114-P2B1-MW102S | 114-P2B1-MW102S-20160316 | N | T | JC16336 | 3/16/2016 | < 100 U | **< 43 U** | 24.6 J | **< 1.3 U** | 3.4 J |
| WELL | SHALLOW | 114-P2B1-MW102S | 114-P2B1-MW102S-20151211 | N | T | JC10525 | 12/11/2015 | **300** | **< 49 U** | 34.6 J | < 0.35 U | 1.3 JB |
| WELL | SHALLOW | 114-P2B1-MW102S | 114-P2B1-MW102S-20150923 | N | T | JC4555A | 9/23/2015 | **723** | **< 9.9 U** | 42.5 J | **1.4** | < 0.28 U |
| WELL | SHALLOW | 114-P2B1-MW103S | 114-P2B1-MW103S-20160623 | N | T | JC22854 | 6/23/2016 | **1340** | **< 54 U** | 40.7 J | < 0.25 U | 0.70 J |
| WELL | SHALLOW | 114-P2B1-MW103S | 114-P2B1-MW103S-20160316 | N | T | JC16336 | 3/16/2016 | < 100 U | **< 11 U** | 21.3 J | **< 1.3 U** | < 2.0 U |
| WELL | SHALLOW | 114-P2B1-MW103S | 114-P2B1-MW103S-20151211 | N | T | JC10525 | 12/11/2015 | < 33 U | **< 49 U** | 33.3 J | < 0.35 U | 1.5 JB |
| WELL | SHALLOW | 114-P2B1-MW103S | 114-P2B1-MW103S-20150923 | N | T | JC4555A | 9/23/2015 | < 33 UB | **< 9.9 U** | 32.2 JB | **1.3** | 1.0 J |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20160620 | N | T | JC22555 | 6/20/2016 | 82.6 J | **< 22 U** | 27.5 J | < 0.25 U | 1.1 J |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20160315 | N | T | JC16239 | 3/15/2016 | < 21 U | **< 22 U** | 19.8 J | < 0.25 U | 1.1 J |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20151209 | N | T | JC10220A | 12/9/2015 | **385** | **21.2 J** | 47.4 J | < 0.35 U | < 0.28 UB |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20150921 | N | T | JC4371A | 9/21/2015 | **467** | **< 20 U** | 60.5 J | < 0.70 U | < 0.28 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-20160622 | N | T | JC22758 | 6/22/2016 | **230** | **33.7** | 42.8 J | < 0.25 U | 0.90 J |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-20160315 | N | T | JC16239 | 3/15/2016 | **291** | **12.4 J** | 22.0 J | < 0.25 U | 1.1 J |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-20151210 | N | T | JC10380 | 12/10/2015 | **1010** | **< 20 U** | 54.1 J | < 0.35 U | < 0.28 UB |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-20150925 | N | T | JC4798A | 9/25/2015 | **742 JB** | **< 9.9 U** | 37.9 J | **1.8** | < 0.28 U |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-20160621 | N | T | JC22642 | 6/21/2016 | **422 J** | **< 22 U** | 46.3 J | < 0.25 U | < 0.40 U |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | **Analyte** | ALUMINUM | ARSENIC | BARIUM | BERYLLIUM | CADMIUM |
| | | | | | | **CAS RN** | 7429-90-5 | 7440-38-2 | 7440-39-3 | 7440-41-7 | 7440-43-9 |
| | | | | | | **GWQS** | 200 | 3 | 6000 | 1 | 4 |
| | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-20160316 | N | T | JC16336 | 3/16/2016 | < 100 U | **< 43 U** | 47.6 J | **2.8 J** | **5.0 J** |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-20151210 | N | T | JC10380 | 12/10/2015 | < 33 U | **< 49 U** | 67.9 J | < 0.35 UB | 2.4 JB |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-20150928 | N | T | JC4872A | 9/28/2015 | **684 J** | **< 99 U** | 87.5 J | **< 18 U** | < 0.28 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-20160621 | N | T | JC22642 | 6/21/2016 | **243 J** | **< 54 U** | 73.4 J | < 0.25 U | < 0.40 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-20160322 | N | T | JC16738 | 3/22/2016 | 136 J | **< 43 U** | 49.1 J | **2.0** | < 0.40 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-20151211 | N | T | JC10525 | 12/11/2015 | 75.7 J | **< 49 U** | 96.9 J | < 0.35 U | < 1.4 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-20150925 | N | T | JC4798A | 9/25/2015 | **4570** | **< 9.9 U** | 128 J | **3.1** | < 1.4 U |
| WELL | SHALLOW | 114-P2B4-MW103S | 114-P2B4-MW103S-20160622 | N | T | JC22758 | 6/22/2016 | **578** | **31.0** | 40.4 J | < 0.25 U | 1.4 J |
| WELL | SHALLOW | 114-P2B4-MW103S | 114-P2B4-MW103S-20160316 | N | T | JC16336 | 3/16/2016 | **363 J** | **< 43 U** | 33.8 J | **3.0 J** | 3.6 J |
| WELL | SHALLOW | 114-P2B4-MW103S | 114-P2B4-MW103S-20151210 | N | T | JC10380 | 12/10/2015 | **601** | **< 49 U** | 57.3 J | < 0.35 UB | < 1.4 U |
| WELL | SHALLOW | 114-P2B4-MW103S | 114-P2B4-MW103S-20150928 | N | T | JC4872A | 9/28/2015 | **521 J** | **< 9.9 U** | 53.0 J | **4.2 J** | < 1.4 U |
| WELL | SHALLOW | 132-P3A-MW102S | 132-P3A-MW102S-20160617 | N | T | JC22504 | 6/17/2016 | **2280** | **< 4.3 U** | 81.5 J | < 0.25 U | 2.4 J |
| WELL | SHALLOW | 132-P3A-MW102S | 132-P3A-MW102S-20160317 | N | T | JC16446 | 3/17/2016 | **2330** | **< 11 U** | 43.1 J | < 0.25 U | 3.9 |
| WELL | SHALLOW | 132-P3A-MW102S | 132-P3A-MW102S-20151215 | N | T | JC10723 | 12/15/2015 | **41400** | **22.4** | 457 | **2.3** | 2.1 J |
| WELL | SHALLOW | 132-P3A-MW102S | 132-P3A-MW102S-20150929 | N | T | JC4978A | 9/29/2015 | **134000** | **54.0** | 921 | **7.8** | **4.3** |
| WELL | SHALLOW | 132-P3A-MW103S | 132-P3A-MW103S-20160616 | N | T | JC22356 | 6/16/2016 | **475** | **< 22 U** | 62.3 J | **< 2.5 UJ** | 0.40 J |
| WELL | SHALLOW | 132-P3A-MW103S | 132-P3A-MW103S-20160318 | N | T | JC16549 | 3/18/2016 | **1160 J** | **< 11 U** | 41.6 J | < 0.25 U | 0.70 J |
| WELL | SHALLOW | 132-P3A-MW103S | 132-P3A-MW103S-20151215 | N | T | JC10723 | 12/15/2015 | **3430** | **< 9.9 U** | 49.1 J | 0.60 J | < 0.28 U |
| WELL | SHALLOW | 132-P3A-MW103S | 132-P3A-MW103S-20150930 | N | T | JC5099A | 9/30/2015 | **1720** | **< 20 U** | 99.1 J | **6.6** | < 0.28 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-20160616 | N | T | JC22356 | 6/16/2016 | **217** | < 2.2 U | 23.9 J | < 0.25 UJ | < 0.40 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-20160318 | N | T | JC16549 | 3/18/2016 | **338 J** | < 2.2 U | 41.4 J | < 0.25 U | < 0.40 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-20151215 | N | T | JC10723 | 12/15/2015 | **450** | **< 5.9 U** | 49.2 J | 0.50 J | 0.40 J |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-20150929X | FD | T | JC4978A | 9/29/2015 | **337 J** | **8.4** | 123 J | < 0.35 U | < 0.28 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-20150929 | N | T | JC4978A | 9/29/2015 | **259 J** | **8.0** | 129 J | < 0.35 U | < 0.28 U |
| WELL | SHALLOW | 132-P3A-MW3 | 132-P3A-MW3-15.0-20180424 | N | T | JC64822 | 4/24/2018 | - | - | - | - | - |
| WELL | SHALLOW | 132-P3A-MW3 | 132-P3A-MW3-11.0-20180424 | N | T | JC64822 | 4/24/2018 | - | - | - | - | - |
| WELL | SHALLOW | 132-P3A-MW4 | 132-P3A-MW4-13.0-20180424 | N | T | JC64822 | 4/24/2018 | - | - | - | - | - |
| WELL | SHALLOW | 132-P3A-MW4 | 132-P3A-MW4-17.0-20180424X | FD | T | JC64822 | 4/24/2018 | - | - | - | - | - |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-20161216 | N | T | JC33887 | 12/16/2016 | 26.9 J | **< 22 U** | 40.5 J | < 0.25 U | < 0.40 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-20160913X | FD | T | JC27486 | 9/13/2016 | 31.7 J | **< 4.3 U** | 46.2 J | < 0.25 U | < 0.40 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-20160913 | N | T | JC27486 | 9/13/2016 | 26.6 J | **< 4.3 U** | 47.0 J | < 0.25 U | < 0.40 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-20160616 | N | T | JC22356 | 6/16/2016 | **606** | **< 11 U** | 46.2 J | < 0.25 UJ | < 0.40 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-20160324 | N | T | JC16937 | 3/24/2016 | **308 J** | **< 11 U** | 31.6 J | **< 1.3 U** | < 2.0 U |
| WELL | SHALLOW | 133-P3C-MW102S | 133-P3C-MW102S-20161216X | FD | T | JC33887 | 12/16/2016 | 59.0 J | < 2.2 U | 43.3 J | < 0.25 U | < 0.40 U |
| WELL | SHALLOW | 133-P3C-MW102S | 133-P3C-MW102S-20161216 | N | T | JC33887 | 12/16/2016 | 71.5 J | < 2.2 U | 44.6 J | < 0.25 U | < 0.40 U |
| WELL | SHALLOW | 133-P3C-MW102S | 133-P3C-MW102S-20160913 | N | T | JC27486 | 9/13/2016 | **1030** | **4.8** | 72.3 J | < 0.25 U | < 0.40 U |
| WELL | SHALLOW | 133-P3C-MW102S | 133-P3C-MW102S-20160615 | N | T | JC22273 | 6/15/2016 | **353 J** | **< 6.5 U** | 65.4 J | 0.50 J | < 0.40 U |
| WELL | SHALLOW | 133-P3C-MW102S | 133-P3C-MW102S-20160324 | N | T | JC16937 | 3/24/2016 | **588 J** | **< 11 U** | 75.6 J | **1.6 J** | < 2.0 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | N | T | JC64763 | 4/23/2018 | < 33 U | - | 87.4 J | < 0.40 U | < 0.70 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | N | T | JC64763 | 4/23/2018 | < 33 U | - | 77.2 J | < 0.40 U | < 0.70 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | N | T | JC64763 | 4/23/2018 | 160 JB | - | 65.7 J | < 0.40 U | < 0.70 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.7 | N | T | JC5499 | 10/6/2015 | **1080** | **66.5** | 333 | < 0.35 U | < 0.28 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-12.5 | N | T | JC5499 | 10/6/2015 | **463** | **28.5** | 275 | < 0.35 U | < 0.28 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-8.5 | N | T | JC5499 | 10/6/2015 | **765** | **49.6** | 289 | < 0.35 U | 0.30 J |
| WELL | SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | N | T | JC64763 | 4/23/2018 | 170 JB | - | 225 | < 0.40 U | < 0.70 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-20160615 | N | T | JC22273 | 6/15/2016 | **473 J** | **< 43 U** | 73.6 J | **2.2** | < 0.80 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-20160321 | N | T | JC16664 | 3/21/2016 | < 21 U | **< 22 U** | 92.5 J | 0.30 J | 1.7 J |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-20151216 | N | T | JC10831 | 12/16/2015 | 121 J | **< 39 U** | 59.7 J | < 0.35 U | < 1.4 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-20150930 | N | T | JC5099A | 9/30/2015 | **594 J** | **< 9.9 U** | 105 J | **4.6 J** | < 0.28 U |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ALUMINUM | ARSENIC | BARIUM | BERYLLIUM | CADMIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7429-90-5 | 7440-38-2 | 7440-39-3 | 7440-41-7 | 7440-43-9 |
| | | | | | | | **GWQS** | 200 | 3 | 6000 | 1 | 4 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-20160615X | FD | T | JC22273 | 6/15/2016 | 28.3 J | **< 43 U** | 40.0 J | **1.3** | < 0.40 U |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-20160615 | N | T | JC22273 | 6/15/2016 | **309 J** | **< 43 U** | 48.3 J | **1.9** | < 0.40 U |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-20160321 | N | T | JC16664 | 3/21/2016 | < 21 U | **< 54 U** | 47.6 J | 0.50 J | < 2.0 U |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-20151216 | N | T | JC10831 | 12/16/2015 | < 33 U | **< 39 U** | 50.1 J | < 0.35 U | < 1.4 U |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-20150930 | N | T | JC5099A | 9/30/2015 | **570 J** | **< 20 U** | 110 J | **5.5** | < 1.4 U |
| WELL | SHALLOW | 143-P3A-MW101S | 143-P3A-MW101S-20160620 | N | T | JC22555 | 6/20/2016 | **392** | 3.0 | 118 J | < 0.25 U | 1.0 J |
| WELL | SHALLOW | 143-P3A-MW101S | 143-P3A-MW101S-20160318X | FD | T | JC16549 | 3/18/2016 | **1010 J** | < 2.2 U | 61.7 J | < 0.25 U | 0.40 J |
| WELL | SHALLOW | 143-P3A-MW101S | 143-P3A-MW101S-20160318 | N | T | JC16549 | 3/18/2016 | 199 J | < 2.2 U | 59.1 J | < 0.25 U | 0.50 J |
| WELL | SHALLOW | 143-P3A-MW101S | 143-P3A-MW101S-20151214 | N | T | JC10593 | 12/14/2015 | **339** | **11.0** | 168 J | < 0.35 U | < 0.28 U |
| WELL | SHALLOW | 143-P3A-MW101S | 143-P3A-MW101S-20150928 | N | T | JC4872A | 9/28/2015 | **255** | **6.3** | 239 | 0.40 J | 0.50 J |
| WELL | SHALLOW | GPS-EW1S | GPS-EW1S-083016 | N | T | JC26754 | 8/30/2016 | 165 J | **< 11 U** | 98.0 J | 0.30 J | 0.40 J |
| WELL | SHALLOW | GPS-EW1S | GPS-EW1S-060316 | N | T | JC21504 | 6/3/2016 | 199 J | **8.8** | 88.9 J | < 0.25 U | < 0.40 U |
| WELL | SHALLOW | GPS-EW1S | GPS-EW1S-022516 | N | T | JC14874 | 2/25/2016 | **440** | **6.8 J** | 85.0 J | < 0.35 U | 0.70 J |
| WELL | SHALLOW | GPS-EW1S | GPS-EW1S-111715 | N | T | JC8703 | 11/17/2015 | **370** | **6.0 J** | 66.5 J | < 0.35 U | < 0.28 UB |
| WELL | SHALLOW | GPS-EW2S | GPS-EW2S-083016 | N | T | JC26754 | 8/30/2016 | **342** | **5.0 J** | 45.8 J | < 0.25 U | < 0.40 U |
| WELL | SHALLOW | GPS-EW2S | GPS-EW2S-060316 | N | T | JC21504 | 6/3/2016 | 116 J | **7.8** | 42.9 J | < 0.25 U | < 0.40 U |
| WELL | SHALLOW | GPS-EW2S | GPS-EW2S-022516 | N | T | JC14874 | 2/25/2016 | **746** | **5.8** | < 0.80 U | < 0.35 U | 0.60 J |
| WELL | SHALLOW | GPS-EW2S | GPS-EW2S-111715 | N | T | JC8703 | 11/17/2015 | **269** | **4.4 J** | 64.8 J | < 0.35 U | < 0.28 UB |
| WELL | SHALLOW | GPS-EW3S | GPS-EW3S-083016 | N | T | JC26754 | 8/30/2016 | 101 J | **5.8 J** | 43.8 J | < 0.25 U | < 0.40 U |
| WELL | SHALLOW | GPS-EW3S | GPS-EW3S-060316 | N | T | JC21504 | 6/3/2016 | **335** | **8.7** | 46.8 J | < 0.25 U | < 0.40 U |
| WELL | SHALLOW | GPS-EW3S | GPS-EW3S-022516 | N | T | JC14874 | 2/25/2016 | 79.3 J | **4.6 J** | < 0.80 U | < 0.35 U | 0.40 J |
| WELL | SHALLOW | GPS-EW3S | GPS-EW3S-111715 | N | T | JC8703 | 11/17/2015 | 48.8 J | **6.5** | 49.5 J | < 0.35 U | < 0.28 UB |
| WELL | SHALLOW | GPS-MW1S | GPS-MW1S-20171221 | N | D | JC57864 | 12/21/2017 | **701** | **< 9.0 U** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | SHALLOW | GPS-MW1S | GPS-MW1S-20171221 | N | T | JC57864 | 12/21/2017 | **983** | **< 9.0 U** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | SHALLOW | GPS-MW1S | GPS-MW1S-083016 | N | T | JC26754 | 8/30/2016 | **1070** | **15.7** | 20.6 J | < 0.25 U | < 0.40 U |
| WELL | SHALLOW | GPS-MW1S | GPS-MW1S-060316 | N | T | JC21504 | 6/3/2016 | **933** | **39.2** | 25.0 J | < 0.50 U | < 0.80 U |
| WELL | SHALLOW | GPS-MW1S | GPS-MW1S-022516 | N | T | JC14874 | 2/25/2016 | **996** | **30.0** | < 1.6 U | < 0.70 U | 0.60 J |
| WELL | SHALLOW | GPS-MW1S | GPS-MW1S-111715 | N | T | JC8703 | 11/17/2015 | **452** | **13.2 J** | 23.2 J | < 0.35 U | < 0.28 UB |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-20171221 | N | D | JC57859 | 12/21/2017 | **386** | **< 6.0 U** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-20171221 | N | T | JC57859 | 12/21/2017 | **380** | **< 6.0 U** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-DUP-20171221 | FD | D | JC57859 | 12/21/2017 | **391** | **< 6.0 U** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-DUP-20171221 | FD | T | JC57859 | 12/21/2017 | **366** | **< 6.0 U** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-083016 | N | T | JC26754 | 8/30/2016 | **922** | **< 11 U** | 41.1 J | < 0.25 U | < 0.40 U |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-060316 | N | T | JC21504 | 6/3/2016 | **1010** | **10.4** | 28.0 J | < 0.25 U | < 0.40 U |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-022516 | N | T | JC14874 | 2/25/2016 | **1120** | **3.4** | < 0.80 U | < 0.35 U | 0.50 J |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-111715 | N | T | JC8703 | 11/17/2015 | **1140** | **12.5 J** | 78.0 J | < 0.35 U | < 0.28 UB |
| WELL | SHALLOW | GPS-MW3S | GPS-MW3S-20171221 | N | D | JC57864 | 12/21/2017 | **788** | **< 9.0 U** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | SHALLOW | GPS-MW3S | GPS-MW3S-20171221 | N | T | JC57864 | 12/21/2017 | **1280** | **9.8** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | SHALLOW | GPS-MW3S | GPS-MW3S-083016 | N | T | JC26754 | 8/30/2016 | **1030** | **< 6.5 U** | 88.9 J | < 0.25 U | < 0.40 U |
| WELL | SHALLOW | GPS-MW3S | GPS-MW3S-060316 | N | T | JC21504 | 6/3/2016 | **883** | **11.2** | 98.9 J | < 0.25 U | < 0.40 U |
| WELL | SHALLOW | GPS-MW3S | GPS-MW3S-022516 | N | T | JC14874 | 2/25/2016 | **851** | **< 9.9 U** | 104 J | < 0.35 U | 0.70 J |
| WELL | SHALLOW | GPS-MW3S | GPS-MW3S-111715 | N | T | JC8703 | 11/17/2015 | **1660** | **9.6** | 71.7 J | < 0.35 U | < 0.28 UB |
| WELL | SHALLOW | GPS-MW4S | GPS-MW4S-20171221 | N | D | JC57859 | 12/21/2017 | **1460** | **10.2** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | SHALLOW | GPS-MW4S | GPS-MW4S-20171221 | N | T | JC57859 | 12/21/2017 | **1580** | **9.9** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | SHALLOW | GPS-MW4S | GPS-MW4S-083016 | N | T | JC26754 | 8/30/2016 | **1690** | **13.0** | 21.1 J | < 0.25 U | < 0.40 U |
| WELL | SHALLOW | GPS-MW4S | GPS-MW4S-060316 | N | T | JC21504 | 6/3/2016 | **1680** | **12.8** | 20.2 J | < 0.25 U | < 0.40 U |
| WELL | SHALLOW | GPS-MW4S | GPS-MW4S-022516 | N | T | JC14874 | 2/25/2016 | **1580** | **9.5** | < 0.80 U | < 0.35 U | 1.0 J |
| WELL | SHALLOW | GPS-MW4S | GPS-MW4S-111715 | N | T | JC8703 | 11/17/2015 | **2080** | **6.8** | 21.0 J | < 0.35 U | < 0.28 UB |
| WELL | SHALLOW | GPS-MW5S | GPS-MW5S-20180130 | N | D | JC59976 | 1/30/2018 | **3580** | **21.2** | < 2000 U | **< 10 U** | **< 6.0 U** |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ALUMINUM | ARSENIC | BARIUM | BERYLLIUM | CADMIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7429-90-5 | 7440-38-2 | 7440-39-3 | 7440-41-7 | 7440-43-9 |
| | | | | | | | **GWQS** | 200 | 3 | 6000 | 1 | 4 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | GPS-MW5S | GPS-MW5S-20180130 | N | T | JC59976 | 1/30/2018 | **6380** | **20.2** | < 400 U | **< 2.0 U** | **< 6.0 U** |
| WELL | SHALLOW | GPS-MW7S | GPS-MW7S-20171221 | N | D | JC57864 | 12/21/2017 | **707** | **5.1** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | SHALLOW | GPS-MW7S | GPS-MW7S-20171221 | N | T | JC57864 | 12/21/2017 | **2490** | **4.9** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-20161219 | N | T | JC33993 | 12/19/2016 | < 21 U | **< 22 U** | 34.0 J | < 0.25 U | 0.60 J |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-20160617 | N | T | JC22504 | 6/17/2016 | **124000** | **< 22 U** | 728 | **6.4** | 3.6 J |
| WELL | SHALLOW | HSS-P3C-MW2S | HSS-P3C-MW2S-20161215 | N | T | JC33793 | 12/15/2016 | **1130** | **< 22 U** | 63.8 J | < 0.25 U | 0.60 J |
| WELL | SHALLOW | HSS-P3C-MW2S | HSS-P3C-MW2S-20160616 | N | T | JC22356 | 6/16/2016 | **237** | **< 11 U** | 76.5 J | < 0.25 UJ | < 0.40 U |
| WELL | SHALLOW | MW-34 | MW34-20151214-15.5 | N | T | JC10597 | 12/14/2015 | **740** | < 2.0 U | 99.4 J | < 0.35 U | < 0.28 U |
| WELL | SHALLOW | MW-34 | MW34-20151214-10.5 | N | T | JC10597 | 12/14/2015 | **672** | < 2.0 U | 91.8 J | < 0.35 U | 0.40 J |
| WELL | SHALLOW | MW7S | MW7S-10.2-20150930 | N | T | JC5098A | 9/30/2015 | < 33 UB | **32.4** | 631 | < 0.35 U | 0.80 J |
| WELL | SHALLOW | MW7S | MW7S-7.2-20150930 | N | T | JC5098A | 9/30/2015 | 117 JB | **29.4** | 589 | < 0.35 U | 0.90 J |
| WELL | SHALLOW | MW8S | MW8S-9.5-20151001 | N | T | JC5237A | 10/1/2015 | **364 J** | **10.2** | 123 J | < 0.35 U | 0.30 J |
| WELL | SHALLOW | MW-Morris1A | 114-MW-MORRIS1A-20160321 | N | T | JC16664 | 3/21/2016 | **390** | **< 11 U** | 80.7 J | < 0.25 U | 0.80 J |
| SOILBORE | N/A | 114-P1C-PZ1-S1 | 114-P1C-PZ1-W1-31.0-33.0 | N | T | JC29542 | 10/12/2016 | **111000** | **73.0** | 894 J | **10.0** | 3.0 J |
| SOILBORE | N/A | 114-P1C-PZ1-S1 | 114-P1C-PZ1-W1-24.0-26.0 | N | T | JC29542 | 10/12/2016 | **681000** | **286** | 3570 | **38.0** | **9.0 J** |
| SOILBORE | N/A | 114-P1C-PZ1-S2 | 114-P1C-PZ1-W2-27.0-29.0 | N | T | JC29754 | 10/14/2016 | **87700** | **48.0** | 1150 | **8.0** | 3.0 J |
| SOILBORE | N/A | 114-P1C-PZ1-S2 | 114-P1C-PZ1-W2-24.0-26.0 | N | T | JC29754 | 10/14/2016 | **7520** | **10.3** | 73.3 J | 0.40 J | < 0.40 U |
| SOILBORE | N/A | 114-P1C-PZ2-S1 | 114-P1C-PZ2-W1-25.0-27.0 | N | T | JC29434 | 10/11/2016 | **59800** | **137** | 931 J | **7.5** | < 2.0 U |
| SOILBORE | N/A | 114-P1C-PZ2-S1 | 114-P1C-PZ2-W1-16.5-17.5 | N | T | JC29434 | 10/11/2016 | **556000** | **623** | 4750 | **51.0** | **8.0 J** |
| SOILBORE | N/A | 114-P1C-PZ2-S2 | 114-P1C-PZ2-W2-31.0-33.0 | N | T | JC29606 | 10/13/2016 | **110000** | **77.0** | 1150 J | **10.0** | 4.0 J |
| SOILBORE | N/A | 114-P1C-PZ2-S2 | 114-P1C-PZ2-W2-25.0-27.0 | N | T | JC29606 | 10/13/2016 | **252000** | **200** | 3380 | **23.0** | < 4.0 U |
| WELL | INTERMEDIATE | 10W-MW105I | 10W-MW105I-20180312 | N | T | JC62130 | 3/12/2018 | **1400** | **< 5.5 U** | 245 | < 0.40 U | < 0.70 U |
| WELL | INTERMEDIATE | 114-MC-EW103 | 114-MC-EW103-20160623 | N | T | JC22854 | 6/23/2016 | 45.6 J | **139** | 86.9 J | < 0.25 U | 0.40 J |
| WELL | INTERMEDIATE | 114-MC-EW103 | 114-MC-EW103-20160322 | N | T | JC16738 | 3/22/2016 | 72.9 J | **158** | 64.6 J | **1.4** | 1.8 J |
| WELL | INTERMEDIATE | 114-MC-EW103 | 114-MC-EW103-20151214 | N | T | JC10593 | 12/14/2015 | 140 J | **172** | 74.8 J | < 0.35 U | < 0.28 U |
| WELL | INTERMEDIATE | 114-MC-EW103 | 114-MC-EW103-20150924 | N | T | JC4675A | 9/24/2015 | **385** | **184** | 104 J | < 0.35 U | 3.6 |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-20180129 | N | D | JC59916 | 1/29/2018 | **< 1000 U** | **47.5** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-20180129 | N | T | JC59916 | 1/29/2018 | **< 1000 U** | **66.0** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-20160623 | N | T | JC22854 | 6/23/2016 | **458** | **18.8** | 28.7 J | < 0.25 U | 1.3 J |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-20160321 | N | T | JC16664 | 3/21/2016 | 200 J | **< 22 U** | 17.6 J | < 0.25 U | 0.60 J |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-20151214 | N | T | JC10593 | 12/14/2015 | **1870** | **13.6 J** | 36.4 J | < 0.35 U | 1.6 J |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-20150924 | N | T | JC4675A | 9/24/2015 | **212** | **< 20 U** | 22.7 J | < 0.35 U | < 0.28 U |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-20180129 | N | D | JC59916 | 1/29/2018 | **< 2000 U** | **< 90 U** | < 2000 U | **< 10 U** | **< 30 U** |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-20180129 | N | T | JC59916 | 1/29/2018 | **< 2000 U** | **< 90 U** | < 2000 U | **< 10 U** | **< 30 U** |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-20160623 | N | T | JC22854 | 6/23/2016 | **631** | **< 86 U** | 28.2 J | **< 2.5 U** | **5.3 J** |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-20160322 | N | T | JC16738 | 3/22/2016 | **245 J** | **< 43 U** | 26.9 J | **4.3 J** | **< 8.0 U** |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-20151214 | N | T | JC10593 | 12/14/2015 | 195 J | **< 49 U** | 28.5 J | **2.6 J** | **8.8 J** |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-20150924 | N | T | JC4675A | 9/24/2015 | **206** | **< 9.9 U** | 34.7 J | < 0.35 U | < 0.28 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | N | T | JC64571 | 4/19/2018 | **204 JB** | **< 270 U** | 26.0 J | **< 2.0 U** | < 3.5 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-36.0-20151001 | N | T | JC5237A | 10/1/2015 | **289 J** | **119** | 21.8 J | < 0.35 U | < 0.28 U |
| WELL | INTERMEDIATE | 114-MW22B | 114-MW22B-20180419 | N | D | JC64571 | 4/19/2018 | < 33 U | < 2.7 U | 141 J | < 0.40 U | < 0.70 U |
| WELL | INTERMEDIATE | 114-MW22B | 114-MW22B-20180419 | N | T | JC64571 | 4/19/2018 | **660** | < 2.7 U | 167 J | < 0.40 U | < 0.70 U |
| WELL | INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | N | T | JC62130 | 3/12/2018 | **331** | < 2.7 U | 90.2 J | < 0.40 U | < 0.70 U |
| WELL | INTERMEDIATE | 114-MW25B | 114-MW25B-20170928 | N | T | JC52029 | 9/28/2017 | 54.5 J | **5.4** | 51.5 J | < 0.40 U | < 0.70 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | D | JC62228 | 3/13/2018 | < 33 U | **4.5** | 40.8 J | < 0.40 U | < 0.70 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | T | JC62228 | 3/13/2018 | **586 J** | **5.3** | 46.8 J | < 0.40 U | < 0.70 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | D | JC62228 | 3/13/2018 | < 33 U | **4.6** | 40.3 J | < 0.40 U | < 0.70 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | T | JC62228 | 3/13/2018 | **2520 J** | **5.5** | 64.6 J | < 0.40 U | < 0.70 U |
| WELL | INTERMEDIATE | 114-MW27B | 114-MW27B-20170928 | N | T | JC52029 | 9/28/2017 | **2610** | **3.9** | 91.4 J | < 0.40 U | < 0.70 U |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | **Analyte** | ALUMINUM | ARSENIC | BARIUM | BERYLLIUM | CADMIUM |
| | | | | | | **CAS RN** | 7429-90-5 | 7440-38-2 | 7440-39-3 | 7440-41-7 | 7440-43-9 |
| | | | | | | **GWQS** | 200 | 3 | 6000 | 1 | 4 |
| | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | FD | T | JC56729A | 12/6/2017 | **415** | **< 14 U** | 62.4 J | < 0.40 U | 3.6 |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | N | T | JC56729A | 12/6/2017 | **489** | **< 14 U** | 62.1 J | < 0.40 U | 3.5 |
| WELL | INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | N | T | JC51890 | 9/27/2017 | **12400** | **6.0** | 139 J | 1.0 J | < 1.4 U |
| WELL | Intermediate | 114-MW37B | 114-MW37B-20170926 | N | T | JC51824 | 9/26/2017 | 78.7 J | **15.0** | 48.0 J | < 0.40 U | < 0.70 U |
| WELL | Intermediate | 114-MW38B | FORREST-114-MW38B-20171204 | N | T | JC56504A | 12/4/2017 | **1720** | **15.4** | 134 J | < 0.40 U | < 0.70 U |
| WELL | INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | N | T | JC64643 | 4/20/2018 | < 170 U | **< 140 U** | 21.0 J | **< 2.0 U** | **6.5 J** |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20180129 | N | D | JC59916 | 1/29/2018 | **< 1000 U** | **< 15 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20180129 | N | T | JC59916 | 1/29/2018 | **< 1000 U** | **< 15 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20160617X | FD | T | JC22504 | 6/17/2016 | < 21 U | < 2.2 U | 97.5 J | < 0.25 U | 1.6 J |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20160617 | N | T | JC22504 | 6/17/2016 | < 21 U | 2.3 J | 95.6 J | < 0.25 U | 1.5 J |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20160317 | N | T | JC16446 | 3/17/2016 | < 21 U | < 2.2 U | 96.7 J | < 0.25 U | 1.7 J |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20151211 | N | T | JC10525 | 12/11/2015 | < 33 U | < 2.0 U | 96.7 J | < 0.35 U | 1.5 JB |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20150921 | N | T | JC4371A | 9/21/2015 | 48.3 J | **< 3.9 U** | 92.5 J | 0.60 J | 0.70 J |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-ARC | N | D | JC59556 | 1/23/2018 | **< 1000 U** | **< 75 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-ARC | N | T | JC59556 | 1/23/2018 | **< 1000 U** | **< 75 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-20160621 | N | T | JC22642 | 6/21/2016 | 46.0 J | **< 43 U** | 60.4 J | < 0.50 U | < 0.80 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-20160323 | N | T | JC16843 | 3/23/2016 | < 100 U | **< 54 UJ** | 55.9 J | **< 1.3 U** | 2.3 J |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-20151216 | N | T | JC10831 | 12/16/2015 | **304** | **< 39 U** | 59.6 J | < 0.35 U | 1.8 J |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-20150922 | N | T | JC4452A | 9/22/2015 | 117 J | **< 20 U** | 52.4 J | < 0.35 U | **5.6 J** |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-ARC | N | D | JC59556 | 1/23/2018 | **715** | **10.4** | < 400 U | **< 2.0 U** | **< 6.0 U** |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-ARC | N | T | JC59556 | 1/23/2018 | **2350** | **12.0** | < 400 U | **< 2.0 U** | **< 6.0 U** |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-20160916 | N | T | JC27812 | 9/16/2016 | < 41 U | **< 220 U** | 30.0 J | **< 2.5 U** | < 4.0 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-20160323 | N | T | JC16843 | 3/23/2016 | **< 210 U** | **< 110 UJ** | 38.2 J | **< 2.5 U** | **4.6 J** |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-20151216 | N | T | JC10831 | 12/16/2015 | < 33 U | **< 99 U** | 36.5 J | < 0.35 U | **4.4 J** |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-20150924 | N | T | JC4675A | 9/24/2015 | 76.3 J | **< 99 U** | 44.3 J | **< 8.8 U** | **< 7.0 U** |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I | N | D | JC59556 | 1/23/2018 | < 200 U | **< 15 U** | < 200 U | < 1.0 U | **5.0** |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I | N | T | JC59556 | 1/23/2018 | **638** | **< 15 U** | < 200 U | < 1.0 U | **4.2** |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20160620 | N | T | JC22555 | 6/20/2016 | **606** | **< 22 U** | 21.7 J | < 0.25 U | **6.5** |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20160316 | N | T | JC16336 | 3/16/2016 | **324 J** | **17.3** | 17.2 J | **< 1.3 U** | **4.9 J** |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20151211 | N | T | JC10525 | 12/11/2015 | **605** | **34.6** | 13.0 J | < 0.35 U | **4.3** |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20150923 | N | T | JC4555A | 9/23/2015 | **678** | **34.7** | 21.8 JB | < 0.35 U | 1.8 J |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-ARC | N | D | JC59745 | 1/25/2018 | < 200 U | **< 15 U** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-ARC | N | T | JC59745 | 1/25/2018 | < 200 U | **< 15 U** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-20160912 | N | T | JC27433 | 9/12/2016 | 57.2 J | **< 4.3 U** | 160 J | < 0.25 U | 0.80 J |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-20160624 | N | T | JC22933 | 6/24/2016 | **230** | **7.2** | 174 J | < 0.25 U | 1.4 J |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-20160325 | N | T | JC17054 | 3/25/2016 | **415** | **7.1** | 90.9 J | < 0.25 U | 0.70 J |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-20151211 | N | T | JC10525 | 12/11/2015 | < 33 U | 2.0 J | 85.7 J | < 0.35 U | < 0.28 UB |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-20150923 | N | T | JC4555A | 9/23/2015 | < 33 UB | < 2.0 U | 81.1 J | < 0.35 U | < 0.28 U |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-ARC | N | D | JC59745 | 1/25/2018 | < 200 U | **< 15 U** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-ARC | N | T | JC59745 | 1/25/2018 | < 200 U | **< 15 U** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-20160912 | N | T | JC27433 | 9/12/2016 | 169 J | **5.9** | 81.4 J | < 0.25 U | 0.40 J |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-20160624 | N | T | JC22933 | 6/24/2016 | **426** | **4.8** | 89.8 J | < 0.25 U | 0.90 J |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-20160325 | N | T | JC17054 | 3/25/2016 | < 21 U | < 2.2 U | 140 J | 0.60 J | 1.0 J |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-20151211 | N | T | JC10525 | 12/11/2015 | **539** | **9.5** | 67.2 J | < 0.35 U | < 0.28 UB |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-20150923 | N | T | JC4555A | 9/23/2015 | < 33 UB | **8.2** | 125 J | 0.40 J | 1.1 J |
| WELL | INTERMEDIATE | 114-P1-IRM-1 | 114-P1-IRM-1-20180116 | N | D | JC58932 | 1/16/2018 | **< 1000 U** | **< 150 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-1 | 114-P1-IRM-1-20180116 | N | T | JC58932 | 1/16/2018 | **24000** | **< 150 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-10I | 114-P1-IRM-10I | N | D | JC59745 | 1/25/2018 | **< 400 U** | **< 120 U** | < 400 U | **< 2.0 U** | **< 6.0 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-10I | 114-P1-IRM-10I | N | T | JC59745 | 1/25/2018 | **463** | **< 150 U** | < 400 U | **< 2.0 U** | **< 30 U** |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ALUMINUM | ARSENIC | BARIUM | BERYLLIUM | CADMIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7429-90-5 | 7440-38-2 | 7440-39-3 | 7440-41-7 | 7440-43-9 |
| | | | | | | | **GWQS** | 200 | 3 | 6000 | 1 | 4 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P1-IRM-11 | 114-P1-IRM-11-20180118 | N | D | JC59349 | 1/18/2018 | **< 1000 U** | **< 150 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-11 | 114-P1-IRM-11-20180118 | N | T | JC59349 | 1/18/2018 | **< 1000 U** | **< 150 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-12 | 114-P1-IRM-12-20180118 | N | D | JC59349 | 1/18/2018 | **< 1000 U** | **< 150 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-12 | 114-P1-IRM-12-20180118 | N | T | JC59349 | 1/18/2018 | **< 1000 U** | **< 150 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-13 | 114-P1-IRM-13-20180116 | N | D | JC58932 | 1/16/2018 | **< 1000 U** | **< 380 U** | < 1000 U | **< 5.0 U** | **< 380 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-13 | 114-P1-IRM-13-20180116 | N | T | JC58932 | 1/16/2018 | **< 1000 U** | **< 380 U** | < 1000 U | **< 5.0 U** | **< 380 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-14 | 114-P1-IRM-14-20180116 | N | D | JC58932 | 1/16/2018 | **< 1000 U** | **< 150 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-14 | 114-P1-IRM-14-20180116 | N | T | JC58932 | 1/16/2018 | **16200** | **< 150 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-15 | 114-P1-IRM-15-20180122 | N | D | JC59495 | 1/22/2018 | **< 400 U** | **< 30 U** | < 400 U | **< 2.0 U** | **< 6.0 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-15 | 114-P1-IRM-15-20180122 | N | T | JC59495 | 1/22/2018 | **< 400 U** | **< 30 U** | < 400 U | **< 2.0 U** | **< 6.0 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-16 | 114-P1-IRM-16-20180116 | N | D | JC58932 | 1/16/2018 | **< 1000 U** | **< 300 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-16 | 114-P1-IRM-16-20180116 | N | T | JC58932 | 1/16/2018 | **< 1000 U** | **< 300 U** | < 1000 U | **< 5.0 U** | **< 300 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-17 | 114-P1-IRM-17-20180122 | N | D | JC59495 | 1/22/2018 | < 200 U | **16.5** | < 200 U | < 1.0 U | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-17 | 114-P1-IRM-17-20180122 | N | T | JC59495 | 1/22/2018 | **236** | **< 15 U** | < 200 U | < 1.0 U | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-18I | 114-P1-IRM-18I-20180118 | N | D | JC59349 | 1/18/2018 | **< 1000 U** | **< 75 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-18I | 114-P1-IRM-18I-20180118 | N | T | JC59349 | 1/18/2018 | **< 1000 U** | **< 75 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-19I | 114-P1-IRM-19I-20180117 | N | D | JC59023 | 1/17/2018 | **< 1000 U** | **< 30 U** | < 1000 U | **< 5.0 U** | **< 30 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-19I | 114-P1-IRM-19I-20180117 | N | T | JC59023 | 1/17/2018 | **< 1000 U** | **< 30 U** | < 1000 U | **< 5.0 U** | **< 30 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-2 | 114-P1-IRM-2-20180116 | N | D | JC58932 | 1/16/2018 | **< 1000 U** | **< 300 U** | < 1000 U | **< 5.0 U** | **< 300 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-2 | 114-P1-IRM-2-20180116 | N | T | JC58932 | 1/16/2018 | **< 1000 U** | **< 300 U** | < 1000 U | **< 5.0 U** | **< 300 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-20I | 114-P1-IRM-20I-20180117 | N | D | JC59023 | 1/17/2018 | < 200 U | **20.4** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1-IRM-20I | 114-P1-IRM-20I-20180117 | N | T | JC59023 | 1/17/2018 | < 200 U | **30.2** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1-IRM-21I | 114-P1-IRM-21I-20180118 | N | D | JC59349 | 1/18/2018 | < 200 U | **< 15 U** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1-IRM-21I | 114-P1-IRM-21I-20180118 | N | T | JC59349 | 1/18/2018 | **330** | **23.8** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1-IRM-22I | 114-P1-IRM-22I-20180118 | N | D | JC59349 | 1/18/2018 | < 200 U | **23.0** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1-IRM-22I | 114-P1-IRM-22I-20180118 | N | T | JC59349 | 1/18/2018 | **< 400 U** | **27.8** | < 400 U | **< 2.0 U** | **< 6.0 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-24I | 114-P1-IRM-24I-20180118 | N | D | JC59349 | 1/18/2018 | **< 400 U** | **37.2** | < 400 U | **< 2.0 U** | **< 6.0 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-24I | 114-P1-IRM-24I-20180118 | N | T | JC59349 | 1/18/2018 | **610** | **36.6** | < 400 U | **< 2.0 U** | **< 6.0 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-25I | 114-P1-IRM-25I-20180118 | N | D | JC59349 | 1/18/2018 | < 200 U | **109** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1-IRM-25I | 114-P1-IRM-25I-20180118 | N | T | JC59349 | 1/18/2018 | < 200 U | **105** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1-IRM-26I | 114-P1-IRM-26I-20180118 | N | D | JC59349 | 1/18/2018 | < 200 U | **55.9** | 327 | < 1.0 U | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1-IRM-26I | 114-P1-IRM-26I-20180118 | N | T | JC59349 | 1/18/2018 | **528** | **59.0** | 390 | < 1.0 U | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1-IRM-27I | 114-P1-IRM-27I-20180122 | N | D | JC59495 | 1/22/2018 | **< 1000 U** | **< 380 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-27I | 114-P1-IRM-27I-20180122 | N | T | JC59495 | 1/22/2018 | **< 1000 U** | **< 380 U** | < 1000 U | **< 5.0 U** | **< 380 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-28I | 114-P1-IRM-28I-20180118 | N | D | JC59349 | 1/18/2018 | < 200 U | **< 30 U** | < 200 U | < 1.0 U | **7.4** |
| WELL | INTERMEDIATE | 114-P1-IRM-28I | 114-P1-IRM-28I-20180118 | N | T | JC59349 | 1/18/2018 | < 200 U | **< 30 U** | < 200 U | < 1.0 U | **13.2** |
| WELL | INTERMEDIATE | 114-P1-IRM-29I | 114-P1-IRM-29I-20180118 | N | D | JC59349 | 1/18/2018 | < 200 U | **231** | < 200 U | < 1.0 U | 3.6 |
| WELL | INTERMEDIATE | 114-P1-IRM-29I | 114-P1-IRM-29I-20180118 | N | T | JC59349 | 1/18/2018 | < 200 U | **215** | < 200 U | < 1.0 U | **4.6** |
| WELL | INTERMEDIATE | 114-P1-IRM-3 | 114-P1-IRM-3-20180124 | N | D | JC59667 | 1/24/2018 | < 200 U | < 3.0 U | < 200 U | < 1.0 U | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1-IRM-3 | 114-P1-IRM-3-20180124 | N | T | JC59667 | 1/24/2018 | **206** | < 3.0 U | < 200 U | < 1.0 U | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1-IRM-30I | 114-P1-IRM-30I-20180122 | N | D | JC59495 | 1/22/2018 | **< 1000 U** | **< 150 U** | < 1000 U | **< 5.0 U** | **21.5** |
| WELL | INTERMEDIATE | 114-P1-IRM-30I | 114-P1-IRM-30I-20180122 | N | T | JC59495 | 1/22/2018 | **1390** | **< 150 U** | < 1000 U | **< 5.0 U** | **28.5** |
| WELL | INTERMEDIATE | 114-P1-IRM-30I | 114-P1-IRM-30I-DUP-20180122 | FD | D | JC59495 | 1/22/2018 | **< 1000 U** | **< 150 U** | < 1000 U | **< 5.0 U** | **21.0** |
| WELL | INTERMEDIATE | 114-P1-IRM-30I | 114-P1-IRM-30I-DUP-20180122 | FD | T | JC59495 | 1/22/2018 | **1390** | **< 150 U** | < 1000 U | **< 5.0 U** | **24.5** |
| WELL | INTERMEDIATE | 114-P1-IRM-31I | 114-P1-IRM-31I-20180119 | N | D | JC59431 | 1/19/2018 | < 200 U | **76.3** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1-IRM-31I | 114-P1-IRM-31I-20180119 | N | T | JC59431 | 1/19/2018 | **8420** | **68.6** | < 400 U | **< 2.0 U** | **< 6.0 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-32I | 114-P1-IRM-32I-20180122 | N | D | JC59495 | 1/22/2018 | **< 1000 U** | **< 150 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-32I | 114-P1-IRM-32I-20180122 | N | T | JC59495 | 1/22/2018 | **6800** | **< 150 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-33I | 114-P1-IRM-33I-20180124 | N | D | JC59667 | 1/24/2018 | **< 2000 U** | **85.0** | < 2000 U | **< 10 U** | **< 30 U** |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | **Analyte** | ALUMINUM | ARSENIC | BARIUM | BERYLLIUM | CADMIUM |
| | | | | | | **CAS RN** | 7429-90-5 | 7440-38-2 | 7440-39-3 | 7440-41-7 | 7440-43-9 |
| | | | | | | **GWQS** | 200 | 3 | 6000 | 1 | 4 |
| | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P1-IRM-33I | 114-P1-IRM-33I-20180124 | N | T | JC59667 | 1/24/2018 | **< 2000 U** | **71.0** | < 2000 U | **< 10 U** | **< 30 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-34I | 114-P1-IRM-34I | N | D | JC59745 | 1/25/2018 | **< 1000 U** | **225** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-34I | 114-P1-IRM-34I | N | T | JC59745 | 1/25/2018 | **< 1000 U** | **163** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-35I | 114-P1-IRM-35I-20180122 | N | D | JC59495 | 1/22/2018 | **< 1000 U** | **< 150 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-35I | 114-P1-IRM-35I-20180122 | N | T | JC59495 | 1/22/2018 | **< 1000 U** | **< 300 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-36D | 114-P1-IRM-36D-20180124 | N | D | JC59667 | 1/24/2018 | **< 1000 U** | **< 15 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-36D | 114-P1-IRM-36D-20180124 | N | T | JC59667 | 1/24/2018 | **< 1000 U** | **30.5** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-36I | 114-P1-IRM-36I-20180124 | N | D | JC59667 | 1/24/2018 | **< 1000 U** | **< 15 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-36I | 114-P1-IRM-36I-20180124 | N | T | JC59667 | 1/24/2018 | **1060** | **< 15 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-37I | 114-P1-IRM-37I-20180117 | N | D | JC59023 | 1/17/2018 | < 200 U | **9.7** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1-IRM-37I | 114-P1-IRM-37I-20180117 | N | T | JC59023 | 1/17/2018 | < 200 U | **9.6** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1-IRM-38 | 114-P1-IRM-38-20180126 | N | D | JC59838 | 1/26/2018 | < 200 U | **< 15 U** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1-IRM-38 | 114-P1-IRM-38-20180126 | N | T | JC59838 | 1/26/2018 | **1770** | **15.4** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1-IRM-39 | 114-P1-IRM-39-20180126 | N | D | JC59838 | 1/26/2018 | < 200 U | **< 15 U** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1-IRM-39 | 114-P1-IRM-39-20180126 | N | T | JC59838 | 1/26/2018 | **2160** | **30.2** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1-IRM-40I | 114-P1-IRM-40I-20180117 | N | D | JC59023 | 1/17/2018 | **< 1000 U** | **< 380 U** | < 1000 U | **< 25 U** | **< 75 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-40I | 114-P1-IRM-40I-20180117 | N | T | JC59023 | 1/17/2018 | **6300** | **< 380 U** | < 1000 U | **< 25 U** | **< 75 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-41I | 114-P1-IRM-41I-20180126 | N | D | JC59838 | 1/26/2018 | **< 1000 U** | **< 150 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-41I | 114-P1-IRM-41I-20180126 | N | T | JC59838 | 1/26/2018 | **1630** | **< 150 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-42I | 114-P1-IRM-42I-20180126 | N | D | JC59838 | 1/26/2018 | **< 1000 U** | **< 75 U** | < 1000 U | **< 5.0 U** | **22.0** |
| WELL | INTERMEDIATE | 114-P1-IRM-42I | 114-P1-IRM-42I-20180126 | N | T | JC59838 | 1/26/2018 | **< 1000 U** | **< 75 U** | < 1000 U | **< 5.0 U** | **22.0** |
| WELL | INTERMEDIATE | 114-P1-IRM-4I | 114-P1-IRM-4I-20180124 | N | D | JC59667 | 1/24/2018 | **< 2000 U** | **< 600 U** | < 2000 U | **< 10 U** | **< 30 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-4I | 114-P1-IRM-4I-20180124 | N | T | JC59667 | 1/24/2018 | **< 2000 U** | **< 600 U** | < 2000 U | **< 10 U** | **< 30 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-20180123 | N | D | JC59556 | 1/23/2018 | **< 1000 U** | **< 150 U** | < 1000 U | **< 5.0 U** | **34.5** |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-20180123 | N | T | JC59556 | 1/23/2018 | **93000** | **< 150 U** | < 1000 U | **7.5** | **30.5** |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | N | T | JC58073A | 12/27/2017 | **282** | **11.5** | 65.5 J | < 0.40 U | 1.1 J |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | N | T | JC58073A | 12/27/2017 | **468** | **< 8.2 U** | 80.1 J | < 0.40 U | 1.5 J |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | N | T | JC58028A | 12/26/2017 | **249** | **< 8.2 U** | 86.7 J | < 0.40 U | 1.3 J |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | N | T | JC58028A | 12/26/2017 | **539** | **< 8.2 U** | 87.9 J | < 0.40 U | 1.1 J |
| WELL | INTERMEDIATE | 114-P1-IRM-6 | 114-P1-IRM-6-20180116 | N | D | JC58932 | 1/16/2018 | **< 1000 U** | **< 380 U** | < 1000 U | **< 5.0 U** | **< 380 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-6 | 114-P1-IRM-6-20180116 | N | T | JC58932 | 1/16/2018 | **2010** | **< 380 U** | < 1000 U | **< 5.0 U** | **< 380 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-7 | 114-P1-IRM-7-20180124 | N | D | JC59667 | 1/24/2018 | **< 400 U** | **< 150 U** | < 400 U | **< 2.0 U** | **< 30 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-7 | 114-P1-IRM-7-20180124 | N | T | JC59667 | 1/24/2018 | **2660** | **< 150 U** | < 400 U | **< 2.0 U** | **< 30 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-8 | 114-P1-IRM-8-20180116 | N | D | JC58932 | 1/16/2018 | **< 1000 U** | **< 300 U** | < 1000 U | **< 5.0 U** | **< 300 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-8 | 114-P1-IRM-8-20180116 | N | T | JC58932 | 1/16/2018 | **1050** | **< 300 U** | < 1000 U | **< 5.0 U** | **< 300 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-9 | 114-P1-IRM-9-20180116 | N | D | JC58932 | 1/16/2018 | **< 1000 U** | **< 300 U** | < 1000 U | **< 5.0 U** | **< 300 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-9 | 114-P1-IRM-9-20180116 | N | T | JC58932 | 1/16/2018 | **1760** | **< 300 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-MW-1I | 114-P1-MW-1I-20180129 | N | D | JC59916 | 1/29/2018 | **< 2000 U** | **< 90 U** | < 2000 U | **< 10 U** | **< 30 U** |
| WELL | INTERMEDIATE | 114-P1-MW-1I | 114-P1-MW-1I-20180129 | N | T | JC59916 | 1/29/2018 | **2200** | **< 90 U** | < 2000 U | **< 10 U** | **< 30 U** |
| WELL | INTERMEDIATE | 114-P1-MW-2D | 114-P1-MW2D-20180119 | N | D | JC59431 | 1/19/2018 | < 200 U | **3.4** | 275 | < 1.0 U | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1-MW-2D | 114-P1-MW2D-20180119 | N | T | JC59431 | 1/19/2018 | **2890** | **6.2** | 307 | < 1.0 U | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | N | T | JC58942 | 1/16/2018 | **957** | **5.9** | 208 | < 0.40 U | 1.7 J |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | N | T | JC58942 | 1/16/2018 | **800** | **5.5** | 224 | < 0.40 U | 1.8 J |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | N | T | JC58942 | 1/16/2018 | **1080** | **6.3** | 229 | < 0.40 U | 1.7 J |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | N | T | JC58942 | 1/16/2018 | **882** | **7.1** | 255 | < 0.40 U | 1.2 J |
| WELL | INTERMEDIATE | 114-P1-MW-3I | 114-P1-MW-3I-20180126 | N | D | JC59838 | 1/26/2018 | **< 400 U** | **7.6** | < 400 U | **< 2.0 U** | **< 6.0 U** |
| WELL | INTERMEDIATE | 114-P1-MW-3I | 114-P1-MW-3I-20180126 | N | T | JC59838 | 1/26/2018 | **5400** | **7.4** | < 400 U | **< 2.0 U** | **< 6.0 U** |
| WELL | INTERMEDIATE | 114-P1-MW-4I | 114-P1-MW-4I-20180126 | N | D | JC59838 | 1/26/2018 | **< 1000 U** | **93.0** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-MW-4I | 114-P1-MW-4I-20180126 | N | T | JC59838 | 1/26/2018 | **3120** | **79.5** | < 1000 U | **< 5.0 U** | **< 15 U** |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ALUMINUM | ARSENIC | BARIUM | BERYLLIUM | CADMIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7429-90-5 | 7440-38-2 | 7440-39-3 | 7440-41-7 | 7440-43-9 |
| | | | | | | | **GWQS** | 200 | 3 | 6000 | 1 | 4 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P1-MW-5I | 114-P1-MW-5I-20180123 | N | D | JC59667 | 1/23/2018 | < 200 U | < 3.0 U | < 200 U | < 1.0 U | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1-MW-5I | 114-P1-MW-5I-20180123 | N | T | JC59667 | 1/23/2018 | **606** | < 3.0 U | < 200 U | < 1.0 U | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1-MW-6I | 114-P1-MW6I-20180119 | N | D | JC59431 | 1/19/2018 | **< 1000 U** | **< 300 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-MW-6I | 114-P1-MW6I-20180119 | N | T | JC59431 | 1/19/2018 | **25700** | **< 300 U** | < 2000 U | **< 10 U** | **< 30 U** |
| WELL | INTERMEDIATE | 114-P1-MW-7I | 114-P1-MW7I-20180125 | N | D | JC59745 | 1/25/2018 | **< 400 U** | **< 150 U** | < 400 U | **< 2.0 U** | **< 30 U** |
| WELL | INTERMEDIATE | 114-P1-MW-7I | 114-P1-MW7I-20180125 | N | T | JC59745 | 1/25/2018 | **4350** | **242** | < 400 U | **< 2.0 U** | **< 150 U** |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-20180130 | N | D | JC59976 | 1/30/2018 | **< 1000 U** | **< 15 U** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-20180130 | N | T | JC59976 | 1/30/2018 | **< 1000 U** | **< 15 U** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-20161212 | N | T | JC33522 | 12/12/2016 | **994** | **7.7** | 24.7 J | < 0.25 UB | < 0.40 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-20160914 | N | T | JC27595 | 9/14/2016 | **6510** | **11.6** | 60.3 J | 0.40 J | < 0.40 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-20160628 | N | T | JC23103 | 6/28/2016 | **914** | **9.2** | 24.6 J | < 0.25 U | < 0.40 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-20160324 | N | T | JC16953 | 3/24/2016 | **774 J** | **< 11 U** | 28.3 J | **1.7 J** | 2.6 J |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-20161219 | N | T | JC33991 | 12/19/2016 | **254** | **35.9** | 169 J | 0.30 J | < 0.40 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-20160914 | N | T | JC27595 | 9/14/2016 | 23.4 J | **33.3** | 199 J | < 0.25 U | < 0.40 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-20160628 | N | T | JC23103 | 6/28/2016 | **1310** | **4.3** | 43.6 J | < 0.25 U | < 0.40 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-20160324 | N | T | JC16953 | 3/24/2016 | **446 J** | - | 132 J | **2.4 J** | < 2.0 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-20161214 | N | T | JC33691 | 12/14/2016 | **14300** | **< 4.3 U** | 164 J | 1.0 J | < 0.80 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-20160915 | N | T | JC27716 | 9/15/2016 | **3970** | 2.2 J | 84.2 J | < 0.25 U | < 0.40 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-20160627 | N | T | JC23029 | 6/27/2016 | **2130** | < 2.2 U | 48.6 J | < 0.25 U | < 0.40 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-20160325X | FD | T | JC17059 | 3/25/2016 | **17700 J** | **8.3** | 162 J | **1.6 J** | 0.90 J |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-20160325 | N | T | JC17059 | 3/25/2016 | **10400 J** | **5.1** | 111 J | **1.1 J** | 0.70 J |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-20161219 | N | T | JC33991 | 12/19/2016 | 55.0 J | **14.5 J** | 66.7 J | < 0.25 U | 0.70 J |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-20160915 | N | T | JC27716 | 9/15/2016 | **1030** | **< 11 U** | 93.5 J | < 0.25 U | < 0.40 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-20160629X | FD | T | JC23208 | 6/29/2016 | **946 J** | **12.0 J** | 102 J | < 0.25 U | 0.70 J |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-20160629 | N | T | JC23208 | 6/29/2016 | **1270 J** | **14.7 J** | 103 J | < 0.25 U | < 0.40 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-20160325 | N | T | JC17059 | 3/25/2016 | **1820 J** | **< 11 U** | 80.1 J | **1.5 J** | < 2.0 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-ARC | N | D | JC59556 | 1/23/2018 | < 200 U | **< 75 U** | < 200 U | < 1.0 U | **< 15 U** |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-ARC | N | T | JC59556 | 1/23/2018 | < 200 U | **< 75 U** | < 200 U | < 1.0 U | **< 15 U** |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-20160620 | N | T | JC22555 | 6/20/2016 | **1200** | **< 430 U** | 23.2 J | **9.2** | **84.4** |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-20160322 | N | T | JC16738 | 3/22/2016 | **< 520 U** | **< 540 U** | 28.0 J | **34.5** | **149** |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-20151216X | FD | T | JC10831 | 12/16/2015 | 81.6 J | **< 990 U** | 26.2 J | < 0.35 U | **89.6 J** |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-20151216 | N | T | JC10831 | 12/16/2015 | **285** | **< 990 U** | 26.3 J | < 0.35 U | **81.3 J** |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-20150925 | N | T | JC4798A | 9/25/2015 | **235 JB** | **< 200 U** | 14.6 J | **< 35 U** | **18.7** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20180130 | N | D | JC59976 | 1/30/2018 | **28000** | **< 1500 U** | **< 10000 U** | **< 50 U** | **< 750 U** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20180130 | N | T | JC59976 | 1/30/2018 | **< 2000 U** | **< 1500 U** | < 2000 U | **< 10 U** | **< 150 U** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20160620 | N | T | JC22555 | 6/20/2016 | < 41 U | **< 220 U** | 20.2 J | 0.80 J | **6.2 J** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20160323X | FD | T | JC16843 | 3/23/2016 | **< 210 U** | **< 110 UJ** | 23.0 J | **< 2.5 U** | **4.8 J** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20160323 | N | T | JC16843 | 3/23/2016 | **220 J** | **< 110 UJ** | 22.8 J | **< 2.5 U** | **4.4 J** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20151216 | N | T | JC10831 | 12/16/2015 | 54.5 J | **< 200 U** | 30.8 J | < 0.35 U | **4.5 J** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20150925 | N | T | JC4798A | 9/25/2015 | < 33 UB | **< 200 U** | 31.8 J | **< 35 U** | 3.0 J |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW-101I-20180119 | N | D | JC59431 | 1/19/2018 | **< 1000 U** | **< 150 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW-101I-20180119 | N | T | JC59431 | 1/19/2018 | **< 1000 U** | **< 150 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-20160622 | N | T | JC22758 | 6/22/2016 | 108 J | **< 43 U** | 5.8 J | < 0.50 U | 3.2 J |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-20160323 | N | T | JC16843 | 3/23/2016 | **< 210 U** | **< 110 UJ** | 16.0 J | **< 2.5 U** | **5.8 J** |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-20151216 | N | T | JC10831 | 12/16/2015 | 120 J | **< 99 U** | 13.4 J | 0.80 J | **25.9 J** |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-20150925 | N | T | JC4798A | 9/25/2015 | < 33 UB | **< 200 U** | 17.7 J | **< 35 U** | **7.9 J** |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I | N | D | JC59556 | 1/23/2018 | **< 1000 U** | **< 150 U** | < 1000 U | **< 5.0 U** | **17.5** |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I | N | T | JC59556 | 1/23/2018 | **< 1000 U** | **< 300 U** | < 1000 U | **< 5.0 U** | **18.0** |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-20160621X | FD | T | JC22642 | 6/21/2016 | **5350 J** | **< 86 U** | 25.2 J | < 0.50 U | **4.4 J** |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | **Analyte** | ALUMINUM | ARSENIC | BARIUM | BERYLLIUM | CADMIUM |
| | | | | | | **CAS RN** | 7429-90-5 | 7440-38-2 | 7440-39-3 | 7440-41-7 | 7440-43-9 |
| | | | | | | **GWQS** | 200 | 3 | 6000 | 1 | 4 |
| | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-20160621 | N | T | JC22642 | 6/21/2016 | **4330 J** | **< 86 U** | 21.4 J | < 0.50 U | **5.0 J** |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-20160323 | N | T | JC16843 | 3/23/2016 | **1910 J** | **< 110 UJ** | 25.4 J | **< 2.5 U** | **10.6 J** |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-20151216 | N | T | JC10831 | 12/16/2015 | **810** | **< 200 U** | 26.6 J | < 0.35 U | **< 14 U** |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-20150928 | N | T | JC4872A | 9/28/2015 | **528 J** | **< 99 U** | 25.3 J | **< 18 U** | **32.2 J** |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I | N | D | JC59745 | 1/25/2018 | < 200 U | **7.2** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I | N | T | JC59745 | 1/25/2018 | < 200 U | **7.7** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-20160621 | N | T | JC22642 | 6/21/2016 | 89.9 J | **< 4.3 U** | 13.6 J | < 0.25 U | < 0.40 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-20160322 | N | T | JC16738 | 3/22/2016 | 98.4 J | **< 22 U** | 19.2 J | **2.3** | 1.8 J |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-20151216 | N | T | JC10831 | 12/16/2015 | 74.8 J | **< 39 U** | 26.7 J | < 0.35 U | < 1.4 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-20150925 | N | T | JC4798A | 9/25/2015 | < 33 UB | **< 20 U** | 29.5 J | **< 3.5 U** | **5.5** |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I | N | D | JC59556 | 1/23/2018 | < 200 U | **117** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I | N | T | JC59556 | 1/23/2018 | < 200 U | **122** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I-20160622 | N | T | JC22758 | 6/22/2016 | 36.3 J | **157** | 97.3 J | < 0.25 U | < 0.40 U |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I-20160622X | FD | T | JC22758 | 6/22/2016 | 29.6 J | **155** | 128 J | < 0.25 U | < 0.40 U |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I-20160316 | N | T | JC16336 | 3/16/2016 | < 100 U | **117** | 240 J | **< 1.3 U** | < 2.0 U |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I-20151210 | N | T | JC10380 | 12/10/2015 | **277 J** | **105** | 161 J | < 0.35 U | < 0.28 U |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I-20150928 | N | T | JC4872A | 9/28/2015 | 182 J | **102** | 131 J | **1.2** | < 0.28 U |
| WELL | INTERMEDIATE | 132-P3A-MW102I | 132-P3A-MW102I-20160617 | N | T | JC22504 | 6/17/2016 | 85.1 J | **59.0** | 279 | < 0.25 U | < 0.40 U |
| WELL | INTERMEDIATE | 132-P3A-MW102I | 132-P3A-MW102I-20160317 | N | T | JC16446 | 3/17/2016 | < 21 U | **59.5** | 214 | < 0.25 U | 0.50 J |
| WELL | INTERMEDIATE | 132-P3A-MW102I | 132-P3A-MW102I-20151215 | N | T | JC10723 | 12/15/2015 | 98.7 J | **72.2** | 305 | 0.50 J | < 0.28 U |
| WELL | INTERMEDIATE | 132-P3A-MW102I | 132-P3A-MW102I-20150929 | N | T | JC4978A | 9/29/2015 | **613 J** | **5.6** | 135 J | 0.50 J | < 0.28 U |
| WELL | INTERMEDIATE | 132-P3A-MW103I | 132-P3A-MW103I-20160616 | N | T | JC22356 | 6/16/2016 | < 21 U | **< 6.5 U** | 33.2 J | < 0.25 UJ | < 0.40 U |
| WELL | INTERMEDIATE | 132-P3A-MW103I | 132-P3A-MW103I-20160318 | N | T | JC16549 | 3/18/2016 | 51.8 J | **< 11 U** | 45.4 J | < 0.25 U | 0.40 J |
| WELL | INTERMEDIATE | 132-P3A-MW103I | 132-P3A-MW103I-20151215 | N | T | JC10723 | 12/15/2015 | 178 J | **< 9.9 U** | 51.9 J | **1.1** | 2.1 J |
| WELL | INTERMEDIATE | 132-P3A-MW103I | 132-P3A-MW103I-20150930 | N | T | JC5099A | 9/30/2015 | 152 J | **< 9.9 U** | 46.6 J | **5.1** | 2.0 J |
| WELL | INTERMEDIATE | 132-P3A-MW104I | 132-P3A-MW104I-20160616 | N | T | JC22356 | 6/16/2016 | 26.8 J | < 2.2 U | 55.9 J | < 0.25 UJ | < 0.40 U |
| WELL | INTERMEDIATE | 132-P3A-MW104I | 132-P3A-MW104I-20160318 | N | T | JC16549 | 3/18/2016 | 33.3 J | < 2.2 U | 46.8 J | < 0.25 U | 0.50 J |
| WELL | INTERMEDIATE | 132-P3A-MW104I | 132-P3A-MW104I-20151215-X | FD | T | JC10723 | 12/15/2015 | **541** | < 2.0 U | 78.6 J | < 0.35 U | < 0.28 U |
| WELL | INTERMEDIATE | 132-P3A-MW104I | 132-P3A-MW104I-20151215 | N | T | JC10723 | 12/15/2015 | **744** | < 2.0 U | 85.3 J | 0.40 J | < 0.28 U |
| WELL | INTERMEDIATE | 132-P3A-MW104I | 132-P3A-MW104I-20150929 | N | T | JC4978A | 9/29/2015 | **916** | < 2.0 U | 65.3 J | < 0.35 U | < 0.28 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-20161215 | N | T | JC33793 | 12/15/2016 | **366** | **16.6** | 53.3 J | < 0.25 U | < 0.40 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-20160913 | N | T | JC27486 | 9/13/2016 | **494** | **13.8** | 54.7 J | < 0.25 U | < 0.40 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-20160616 | N | T | JC22356 | 6/16/2016 | **700** | **20.3** | 59.0 J | < 0.25 UJ | < 0.40 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-20160324 | N | T | JC16937 | 3/24/2016 | **411 J** | **< 11 U** | 108 J | **< 1.3 U** | < 2.0 U |
| WELL | INTERMEDIATE | 133-P3C-MW102I | 133-P3C-MW102I-20161216 | N | T | JC33887 | 12/16/2016 | **1390** | **12.4** | 202 | 0.40 J | < 0.40 U |
| WELL | INTERMEDIATE | 133-P3C-MW102I | 133-P3C-MW102I-20160913 | N | T | JC27486 | 9/13/2016 | 92.1 J | **13.2** | 198 J | < 0.25 U | < 0.40 U |
| WELL | INTERMEDIATE | 133-P3C-MW102I | 133-P3C-MW102I-20160615 | N | T | JC22273 | 6/15/2016 | **340 J** | **13.2** | 270 | < 0.25 U | < 0.40 U |
| WELL | INTERMEDIATE | 133-P3C-MW102I | 133-P3C-MW102I-20160324 | N | T | JC16937 | 3/24/2016 | **346 J** | **12.4 J** | 367 J | **< 1.3 U** | < 2.0 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-30.5 | N | T | JC5499 | 10/6/2015 | **2320** | < 2.0 U | 447 | < 0.35 U | 0.50 J |
| WELL | INTERMEDIATE | 137-P3B-MW101I | 137-P3B-MW101I-20160624 | N | T | JC22939 | 6/24/2016 | 41.3 J | **4.0** | 65.7 J | < 0.25 U | < 0.40 U |
| WELL | INTERMEDIATE | 137-P3B-MW101I | 137-P3B-MW101I-20160323 | N | T | JC16843 | 3/23/2016 | 126 J | **6.8 J** | 112 J | < 0.25 U | < 0.40 U |
| WELL | INTERMEDIATE | 137-P3B-MW101I | 137-P3B-MW101I-20151218 | N | T | JC11088 | 12/18/2015 | 119 J | **< 3.9 U** | 139 J | < 0.35 U | < 0.28 U |
| WELL | INTERMEDIATE | 137-P3B-MW101I | 137-P3B-MW101I-20150930 | N | T | JC5099A | 9/30/2015 | **229** | < 2.0 U | 171 J | < 0.35 U | 0.40 J |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-20160615 | N | T | JC22273 | 6/15/2016 | 30.6 J | **9.3** | 136 J | < 0.25 U | < 0.40 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-20160321 | N | T | JC16664 | 3/21/2016 | < 21 U | **5.6** | 149 J | < 0.25 U | < 0.40 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-20151216 | N | T | JC10831 | 12/16/2015 | 38.9 J | **5.9 J** | 161 J | < 0.35 U | < 0.28 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-20150930X | FD | T | JC5099A | 9/30/2015 | **357** | **10.3** | 176 J | < 0.35 U | 0.70 J |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-20150930 | N | T | JC5099A | 9/30/2015 | **460** | **11.2** | 196 J | < 0.70 U | 0.60 J |
| WELL | INTERMEDIATE | 143-P3A-MW101I | 143-P3A-MW101I-20160620 | N | T | JC22555 | 6/20/2016 | **251** | **< 4.3 U** | 66.4 J | < 0.25 U | 0.40 J |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ALUMINUM | ARSENIC | BARIUM | BERYLLIUM | CADMIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7429-90-5 | 7440-38-2 | 7440-39-3 | 7440-41-7 | 7440-43-9 |
| | | | | | | | **GWQS** | 200 | 3 | 6000 | 1 | 4 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 143-P3A-MW101I | 143-P3A-MW101I-20160318 | N | T | JC16549 | 3/18/2016 | 81.0 J | **< 4.3 U** | 40.0 J | < 0.25 U | 0.40 J |
| WELL | INTERMEDIATE | 143-P3A-MW101I | 143-P3A-MW101I-20151214 | N | T | JC10593 | 12/14/2015 | **1160** | **< 9.9 U** | 46.2 J | **1.3 J** | 1.7 J |
| WELL | INTERMEDIATE | 143-P3A-MW101I | 143-P3A-MW101I-20150928 | N | T | JC4872A | 9/28/2015 | **429** | < 2.0 U | 37.7 J | **< 1.8 U** | < 1.4 U |
| WELL | INTERMEDIATE | GPS-EW1I | GPS-EW1I-100616 | N | T | JC29150 | 10/6/2016 | < 21 U | **15.0** | 33.3 J | < 0.25 U | < 0.40 U |
| WELL | INTERMEDIATE | GPS-EW1I | GPS-EW1I-071216 | N | T | JC23920 | 7/12/2016 | 33.6 J | **17.0** | 34.4 J | < 0.25 U | < 0.40 U |
| WELL | INTERMEDIATE | GPS-EW1I | GPS-EW1I-040616 | N | T | JC17755 | 4/6/2016 | < 21 U | **20.1** | 38.8 J | < 0.25 U | 0.50 J |
| WELL | INTERMEDIATE | GPS-EW1I | GPS-EW1I-010616 | N | T | JC12114 | 1/6/2016 | < 33 U | **76.4** | 37.2 J | < 0.35 U | < 0.28 U |
| WELL | INTERMEDIATE | GPS-EW2I | GPS-EW2I-100616 | N | T | JC29150 | 10/6/2016 | < 21 U | **4.9** | 15.4 J | < 0.25 U | < 0.40 U |
| WELL | INTERMEDIATE | GPS-EW2I | GPS-EW2I-071216 | N | T | JC23920 | 7/12/2016 | 61.4 J | **< 11 U** | 24.0 J | < 0.25 U | 0.60 J |
| WELL | INTERMEDIATE | GPS-EW2I | GPS-EW2I-040616 | N | T | JC17755 | 4/6/2016 | < 21 U | **< 11 U** | 29.9 J | < 0.25 U | 1.6 J |
| WELL | INTERMEDIATE | GPS-EW2I | GPS-EW2I-010616 | N | T | JC12114 | 1/6/2016 | < 33 U | **14.9** | 13.9 J | < 0.35 U | **5.2** |
| WELL | INTERMEDIATE | GPS-IW12I | GPS-IW12I-100616 | N | T | JC29150 | 10/6/2016 | < 21 UB | **12.7** | 57.0 J | < 0.25 U | < 0.40 U |
| WELL | INTERMEDIATE | GPS-IW12I | GPS-IW12I-071216 | N | T | JC23920 | 7/12/2016 | 86.3 J | **29.9** | 30.5 J | < 0.25 U | 0.40 J |
| WELL | INTERMEDIATE | GPS-IW12I | GPS-IW12I-040616 | N | T | JC17755 | 4/6/2016 | 107 J | **37.3** | 30.4 J | < 0.25 U | 0.40 J |
| WELL | INTERMEDIATE | GPS-IW12I | GPS-IW12I-010616 | N | T | JC12114 | 1/6/2016 | 64.1 J | **84.3** | 31.7 J | < 0.35 U | < 0.28 U |
| WELL | INTERMEDIATE | GPS-IW3I | GPS-IW3I-100616 | N | T | JC29150 | 10/6/2016 | < 21 U | **< 22 U** | 51.2 J | < 0.25 U | 0.50 J |
| WELL | INTERMEDIATE | GPS-IW3I | GPS-IW3I-071216 | N | T | JC23920 | 7/12/2016 | 50.4 J | **157** | 40.5 J | < 0.25 U | 2.3 J |
| WELL | INTERMEDIATE | GPS-IW3I | GPS-IW3I-040616 | N | T | JC17755 | 4/6/2016 | < 21 U | **< 54 U** | 71.9 J | < 0.25 U | 1.1 J |
| WELL | INTERMEDIATE | GPS-IW3I | GPS-IW3I-010616 | N | T | JC12114 | 1/6/2016 | **407** | **10.9** | 99.5 J | < 0.35 U | < 0.28 U |
| WELL | INTERMEDIATE | GPS-IW4I | GPS-IW4I-100616 | N | T | JC29150 | 10/6/2016 | < 100 U | **449** | 109 J | **< 1.3 U** | < 2.0 U |
| WELL | INTERMEDIATE | GPS-IW4I | GPS-IW4I-071216 | N | T | JC23920 | 7/12/2016 | 70.0 J | **477** | 114 J | < 0.50 U | **6.8** |
| WELL | INTERMEDIATE | GPS-IW4I | GPS-IW4I-040616 | N | T | JC17755 | 4/6/2016 | < 41 U | **484** | 86.8 J | < 0.50 U | < 0.80 U |
| WELL | INTERMEDIATE | GPS-IW4I | GPS-IW4I-010616 | N | T | JC12114 | 1/6/2016 | < 33 U | **252** | 67.9 J | < 0.35 U | < 0.28 U |
| WELL | INTERMEDIATE | GPS-IW6I | GPS-IW6I-100616 | N | T | JC29150 | 10/6/2016 | < 21 U | **52.5** | 77.0 J | < 0.25 U | < 0.40 U |
| WELL | INTERMEDIATE | GPS-IW6I | GPS-IW6I-071216 | N | T | JC23920 | 7/12/2016 | 47.0 J | **27.7** | 77.0 J | < 0.25 U | 0.40 J |
| WELL | INTERMEDIATE | GPS-IW6I | GPS-IW6I-040616 | N | T | JC17755 | 4/6/2016 | 52.6 J | **31.7** | 55.1 J | < 0.25 U | < 0.40 U |
| WELL | INTERMEDIATE | GPS-IW6I | GPS-IW6I-010616 | N | T | JC12114 | 1/6/2016 | 141 J | **81.8** | 44.7 J | < 0.35 U | < 0.28 U |
| WELL | INTERMEDIATE | GPS-IW9I | GPS-IW9I-100616 | N | T | JC29150 | 10/6/2016 | < 21 U | **187** | 40.9 J | < 0.25 U | < 0.40 U |
| WELL | INTERMEDIATE | GPS-IW9I | GPS-IW9I-071216 | N | T | JC23920 | 7/12/2016 | 74.4 J | **< 43 U** | 58.9 J | < 0.25 U | 0.90 J |
| WELL | INTERMEDIATE | GPS-IW9I | GPS-IW9I-040616 | N | T | JC17755 | 4/6/2016 | 24.4 J | **192** | 36.3 J | < 0.25 U | < 0.40 U |
| WELL | INTERMEDIATE | GPS-IW9I | GPS-IW9I-010616 | N | T | JC12114 | 1/6/2016 | 46.7 J | **158** | 43.1 J | < 0.35 U | 0.30 J |
| WELL | INTERMEDIATE | GPS-MW2I | GPS-MW2I-20180131 | N | D | JC60035 | 1/31/2018 | **< 1000 U** | **< 75 U** | < 1000 U | **< 5.0 U** | **22.5** |
| WELL | INTERMEDIATE | GPS-MW2I | GPS-MW2I-20180131 | N | T | JC60035 | 1/31/2018 | **< 1000 U** | **< 75 U** | < 1000 U | **< 5.0 U** | **24.0** |
| WELL | INTERMEDIATE | GPS-MW3I | GPS-MW3I-20180131 | N | D | JC60035 | 1/31/2018 | **< 400 U** | **< 6.0 U** | < 400 U | **< 2.0 U** | **< 6.0 U** |
| WELL | INTERMEDIATE | GPS-MW3I | GPS-MW3I-20180131 | N | T | JC60035 | 1/31/2018 | **702** | **< 6.0 U** | < 400 U | **< 2.0 U** | **< 6.0 U** |
| WELL | INTERMEDIATE | GPS-MW3I | GPS-MW3I-20180131-DUP | FD | D | JC60035 | 1/31/2018 | **< 400 U** | **< 6.0 U** | < 400 U | **< 2.0 U** | **< 6.0 U** |
| WELL | INTERMEDIATE | GPS-MW3I | GPS-MW3I-20180131-DUP | FD | T | JC60035 | 1/31/2018 | **768** | **< 6.0 U** | < 400 U | **< 2.0 U** | **< 6.0 U** |
| WELL | INTERMEDIATE | GPS-MW5I | GPS-MW5I-20180131 | N | D | JC60035 | 1/31/2018 | < 200 U | **< 30 U** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | INTERMEDIATE | GPS-MW5I | GPS-MW5I-20180131 | N | T | JC60035 | 1/31/2018 | **23100** | **26.5** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | GPS-MW5I | GPS-MW5I-100616 | N | T | JC29150 | 10/6/2016 | **436** | **22.1** | 60.4 J | < 0.25 U | < 0.40 U |
| WELL | INTERMEDIATE | GPS-MW5I | GPS-MW5I-071216 | N | T | JC23920 | 7/12/2016 | **3630** | **37.8** | 111 J | < 0.50 U | 0.80 J |
| WELL | INTERMEDIATE | GPS-MW5I | GPS-MW5I-040616 | N | T | JC17755 | 4/6/2016 | **49800** | **< 43 U** | 339 J | **3.0** | 1.8 J |
| WELL | INTERMEDIATE | GPS-MW5I | GPS-MW5I-010616 | N | T | JC12114 | 1/6/2016 | **9970** | **33.5** | 154 J | 0.70 J | < 0.28 U |
| WELL | INTERMEDIATE | GPS-MW6I | GPS-MW6I-20180130 | N | D | JC59976 | 1/30/2018 | **< 400 U** | **77.0** | < 400 U | **< 2.0 U** | **< 6.0 U** |
| WELL | INTERMEDIATE | GPS-MW6I | GPS-MW6I-20180130 | N | T | JC59976 | 1/30/2018 | **< 1000 U** | **103** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | INTERMEDIATE | GPS-MW6I | GPS-MW6I-100616 | N | T | JC29150 | 10/6/2016 | < 100 U | **< 22 U** | 48.5 J | **< 1.3 U** | **9.5 J** |
| WELL | INTERMEDIATE | GPS-MW6I | GPS-MW6I-071216 | N | T | JC23920 | 7/12/2016 | < 100 U | **< 11 U** | 80.0 J | **< 1.3 U** | **13.5 J** |
| WELL | INTERMEDIATE | GPS-MW6I | GPS-MW6I-040616 | N | T | JC17755 | 4/6/2016 | < 41 U | **< 43 U** | 134 J | < 0.50 U | **21.2** |
| WELL | INTERMEDIATE | GPS-MW6I | GPS-MW6I-010616 | N | T | JC12114 | 1/6/2016 | < 33 U | **< 20 U** | 128 J | < 0.35 U | 3.6 |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | ALUMINUM | ARSENIC | BARIUM | BERYLLIUM | CADMIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **Analyte** | | | | | |
| | | | | | | | **CAS RN** | 7429-90-5 | 7440-38-2 | 7440-39-3 | 7440-41-7 | 7440-43-9 |
| | | | | | | | **GWQS** | 200 | 3 | 6000 | 1 | 4 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | GPS-MW7I | GPS-MW7I-100616 | N | T | JC29150 | 10/6/2016 | < 21 UB | **162** | 44.6 J | < 0.25 U | 0.70 J |
| WELL | INTERMEDIATE | GPS-MW7I | GPS-MW7I-071216 | N | T | JC23920 | 7/12/2016 | 71.9 J | **146** | 46.6 J | < 0.25 U | 2.2 J |
| WELL | INTERMEDIATE | GPS-MW7I | GPS-MW7I-040616 | N | T | JC17755 | 4/6/2016 | < 21 U | **78.9** | 53.7 J | < 0.25 U | 1.5 J |
| WELL | INTERMEDIATE | GPS-MW7I | GPS-MW7I-010616 | N | T | JC12114 | 1/6/2016 | 50.5 J | **10.2 J** | 79.4 J | < 0.35 U | 2.9 J |
| WELL | INTERMEDIATE | MW7D | MW7D-45.0-20180423 | N | T | JC64763 | 4/23/2018 | < 61.8 UB | **266** | 260 | < 0.40 U | < 0.70 U |
| WELL | INTERMEDIATE | MW7D | MW7D-41.0-20180423 | N | T | JC64763 | 4/23/2018 | < 40.8 UB | **302** | 268 | < 0.40 U | < 0.70 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930X | FD | T | JC5098A | 9/30/2015 | **6120** | **451** | 296 | 0.50 J | 0.50 J |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930 | N | T | JC5098A | 9/30/2015 | **7120** | **406** | 281 | 0.40 J | < 0.28 U |
| WELL | INTERMEDIATE | MW7D | MW7D-40.5-20150930 | N | T | JC5098A | 9/30/2015 | **247 JB** | **565** | 304 | < 0.35 U | 0.30 J |
| WELL | INTERMEDIATE | MW8D | MW8D-46.5-20150929 | N | T | JC4976A | 9/29/2015 | **241 J** | **< 9.9 U** | 50.9 J | < 0.35 U | 0.50 J |
| WELL | INTERMEDIATE | MW8D | MW8D-41.5-20150929 | N | T | JC4976A | 9/29/2015 | < 33 U | **< 49 U** | 39.2 J | < 0.35 U | 1.3 J |
| WELL | DEEP | 114-MW20C | 114-MW20C-20180419 | N | T | JC64571 | 4/19/2018 | **650** | < 2.7 U | 158 J | < 0.40 U | < 0.70 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-78.5-20151001 | N | T | JC5237A | 10/1/2015 | **876** | **3.7** | 289 | < 0.35 U | < 0.28 U |
| WELL | DEEP | 114-MW25C-2 | 114-MW25C-20180313 | N | D | JC62228 | 3/13/2018 | < 33 U | **16.5** | 54.2 J | < 0.40 U | < 0.70 U |
| WELL | DEEP | 114-MW25C-2 | 114-MW25C-20180313 | N | T | JC62228 | 3/13/2018 | **28500** | **27.0** | 222 J | **< 2.0 U** | < 3.5 U |
| WELL | DEEP | 114-P1B-MW103D | 114-P1B-MW103D-20171214X | FD | T | JC57385 | 12/14/2017 | **1130 J** | **< 68 U** | 83.5 J | **< 2.0 U** | < 3.5 U |
| WELL | DEEP | 114-P1B-MW103D | 114-P1B-MW103D-20171214 | N | T | JC57385 | 12/14/2017 | **1500 J** | **< 68 U** | 82.0 J | **< 2.0 U** | < 3.5 U |
| WELL | DEEP | 114-P1-IRM-10D | 114-P1-IRM-10D | N | D | JC59745 | 1/25/2018 | **< 400 U** | **77.4** | < 400 U | **< 2.0 U** | **< 6.0 U** |
| WELL | DEEP | 114-P1-IRM-10D | 114-P1-IRM-10D | N | T | JC59745 | 1/25/2018 | **< 400 U** | **87.0** | < 400 U | **< 2.0 U** | **< 6.0 U** |
| WELL | DEEP | 114-P1-IRM-18D | 114-P1-IRM-18D-20180118 | N | D | JC59349 | 1/18/2018 | **< 1000 U** | **< 75 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | DEEP | 114-P1-IRM-18D | 114-P1-IRM-18D-20180118 | N | T | JC59349 | 1/18/2018 | **< 1000 U** | **< 75 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | DEEP | 114-P1-IRM-19D | 114-P1-IRM-19D-20180117 | N | D | JC59023 | 1/17/2018 | **< 400 U** | **13.4** | < 400 U | **< 2.0 U** | **< 12 U** |
| WELL | DEEP | 114-P1-IRM-19D | 114-P1-IRM-19D-20180117 | N | T | JC59023 | 1/17/2018 | **433** | **< 12 U** | < 400 U | **< 2.0 U** | **< 12 U** |
| WELL | DEEP | 114-P1-IRM-20D | 114-P1-IRM-20D-20180117 | N | D | JC59023 | 1/17/2018 | < 200 U | **12.6** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | DEEP | 114-P1-IRM-20D | 114-P1-IRM-20D-20180117 | N | T | JC59023 | 1/17/2018 | **207** | **14.6** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | DEEP | 114-P1-IRM-20D | 114-P1-IRM-20B-20180117-DUP | FD | D | JC59023 | 1/17/2018 | < 200 U | **14.2** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | DEEP | 114-P1-IRM-20D | 114-P1-IRM-20B-20180117-DUP | FD | T | JC59023 | 1/17/2018 | **293** | **14.9** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | DEEP | 114-P1-IRM-21D | 114-P1-IRM-21D-20180118 | N | D | JC59349 | 1/18/2018 | **< 1000 U** | **< 45 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | DEEP | 114-P1-IRM-21D | 114-P1-IRM-21D-20180118 | N | T | JC59349 | 1/18/2018 | **< 1000 U** | **< 45 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | DEEP | 114-P1-IRM-22D | 114-P1-IRM-22D-20180118 | N | D | JC59349 | 1/18/2018 | **< 400 U** | **< 30 U** | < 400 U | **< 2.0 U** | **< 6.0 U** |
| WELL | DEEP | 114-P1-IRM-22D | 114-P1-IRM-22D-20180118 | N | T | JC59349 | 1/18/2018 | **< 400 U** | **< 30 U** | < 400 U | **< 2.0 U** | **< 6.0 U** |
| WELL | DEEP | 114-P1-IRM-23D | 114-P1-IRM-23D-20180124 | N | D | JC59667 | 1/24/2018 | **< 2000 U** | **< 600 U** | < 2000 U | **< 10 U** | **< 30 U** |
| WELL | DEEP | 114-P1-IRM-23D | 114-P1-IRM-23D-20180124 | N | T | JC59667 | 1/24/2018 | **< 2000 U** | **< 600 U** | < 2000 U | **< 10 U** | **< 30 U** |
| WELL | DEEP | 114-P1-IRM-24D | 114-P1-IRM-24D-20180119 | N | D | JC59431 | 1/19/2018 | **< 1000 U** | **< 75 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | DEEP | 114-P1-IRM-24D | 114-P1-IRM-24D-20180119 | N | T | JC59431 | 1/19/2018 | **< 1000 U** | **< 75 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | DEEP | 114-P1-IRM-25D | 114-P1-IRM-25D-20180118 | N | D | JC59349 | 1/18/2018 | **< 1000 U** | **76.0** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | DEEP | 114-P1-IRM-25D | 114-P1-IRM-25D-20180118 | N | T | JC59349 | 1/18/2018 | **< 1000 U** | **< 75 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | DEEP | 114-P1-IRM-26D | 114-P1-IRM-26D-20180119 | N | D | JC59431 | 1/19/2018 | **< 1000 U** | **< 300 U** | < 1000 U | **< 5.0 U** | **< 300 U** |
| WELL | DEEP | 114-P1-IRM-26D | 114-P1-IRM-26D-20180119 | N | T | JC59431 | 1/19/2018 | **< 1000 U** | **< 300 U** | < 1000 U | **< 5.0 U** | **< 300 U** |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-20180122 | N | D | JC59495 | 1/22/2018 | **< 400 U** | **< 30 U** | < 400 U | **< 2.0 U** | **< 6.0 U** |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-20180122 | N | T | JC59495 | 1/22/2018 | **< 400 U** | **< 30 U** | < 400 U | **< 2.0 U** | **< 6.0 U** |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | N | T | JC57943A | 12/22/2017 | 107 J | **< 27 U** | 53.4 J | < 0.80 U | < 1.4 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | N | T | JC57943A | 12/22/2017 | **221 J** | **28.2 J** | 54.8 J | < 0.80 U | < 1.4 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | N | T | JC57820 | 12/21/2017 | 139 J | **< 27 U** | 60.4 J | < 0.40 U | 2.4 J |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | N | T | JC57820 | 12/21/2017 | 54.7 J | **32.3** | 57.6 J | < 0.40 U | 2.3 J |
| WELL | DEEP | 114-P1-IRM-28D | 114-P1-IRM-28D-20180124 | N | D | JC59667 | 1/24/2018 | < 200 U | **7.6** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | DEEP | 114-P1-IRM-28D | 114-P1-IRM-28D-20180124 | N | T | JC59667 | 1/24/2018 | < 200 U | **8.8** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | DEEP | 114-P1-IRM-29D | 114-P1-IRM-29D-20180118 | N | D | JC59349 | 1/18/2018 | **< 1000 U** | **< 300 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | DEEP | 114-P1-IRM-29D | 114-P1-IRM-29D-20180118 | N | T | JC59349 | 1/18/2018 | **< 1000 U** | **< 300 U** | < 1000 U | **< 5.0 U** | **< 15 U** |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ALUMINUM | ARSENIC | BARIUM | BERYLLIUM | CADMIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7429-90-5 | 7440-38-2 | 7440-39-3 | 7440-41-7 | 7440-43-9 |
| | | | | | | | **GWQS** | 200 | 3 | 6000 | 1 | 4 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | DEEP | 114-P1-IRM-30D | 114-P1-IRM-30D-20180122 | N | D | JC59495 | 1/22/2018 | < 200 U | < 3.0 U | < 200 U | < 1.0 U | < 3.0 U |
| WELL | DEEP | 114-P1-IRM-30D | 114-P1-IRM-30D-20180122 | N | T | JC59495 | 1/22/2018 | **358** | < 3.0 U | < 200 U | < 1.0 U | < 3.0 U |
| WELL | DEEP | 114-P1-IRM-31D | 114-P1-IRM-31D-20180119 | N | D | JC59431 | 1/19/2018 | **< 1000 U** | **34.0** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | DEEP | 114-P1-IRM-31D | 114-P1-IRM-31D-20180119 | N | T | JC59431 | 1/19/2018 | **14600** | **27.5** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | DEEP | 114-P1-IRM-32D | 114-P1-IRM-32D-20180122 | N | D | JC59495 | 1/22/2018 | < 200 U | **10.9** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | DEEP | 114-P1-IRM-32D | 114-P1-IRM-32D-20180122 | N | T | JC59495 | 1/22/2018 | **< 400 U** | **34.0** | < 400 U | **< 2.0 U** | **< 6.0 U** |
| WELL | DEEP | 114-P1-IRM-33D | 114-P1-IRM-33D-20180124 | N | D | JC59667 | 1/24/2018 | **< 2000 U** | **73.0** | < 2000 U | **< 10 U** | **< 30 U** |
| WELL | DEEP | 114-P1-IRM-33D | 114-P1-IRM-33D-20180124 | N | T | JC59667 | 1/24/2018 | **8690** | **< 60 U** | < 2000 U | **< 10 U** | **< 30 U** |
| WELL | DEEP | 114-P1-IRM-34D | 114-P1-IRM-34D | N | D | JC59745 | 1/25/2018 | < 200 U | **7.1** | < 200 U | < 1.0 U | < 3.0 U |
| WELL | DEEP | 114-P1-IRM-34D | 114-P1-IRM-34D | N | T | JC59745 | 1/25/2018 | **280** | < 3.0 U | < 200 U | < 1.0 U | < 3.0 U |
| WELL | DEEP | 114-P1-IRM-35D | 114-P1-IRM-35D-20180122 | N | D | JC59495 | 1/22/2018 | **< 1000 U** | **< 380 U** | < 1000 U | **< 5.0 U** | **< 380 U** |
| WELL | DEEP | 114-P1-IRM-35D | 114-P1-IRM-35D-20180122 | N | T | JC59495 | 1/22/2018 | **2020** | **< 380 U** | < 1000 U | **< 5.0 U** | **< 380 U** |
| WELL | DEEP | 114-P1-IRM-37D | 114-P1-IRM-37D-20180117 | N | D | JC59023 | 1/17/2018 | **< 1000 U** | **< 45 U** | < 1000 U | **< 5.0 U** | **< 45 U** |
| WELL | DEEP | 114-P1-IRM-37D | 114-P1-IRM-37D-20180117 | N | T | JC59023 | 1/17/2018 | **< 1000 U** | **< 45 U** | < 1000 U | **< 5.0 U** | **< 45 U** |
| WELL | DEEP | 114-P1-IRM-40D | 114-P1-IRM-40D-20180118 | N | D | JC59349 | 1/18/2018 | **< 1000 U** | **< 150 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | DEEP | 114-P1-IRM-40D | 114-P1-IRM-40D-20180118 | N | T | JC59349 | 1/18/2018 | **1010** | **< 150 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | DEEP | 114-P1-IRM-41D | 114-P1-IRM-41D-20180126 | N | D | JC59838 | 1/26/2018 | **< 1000 U** | **< 15 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | DEEP | 114-P1-IRM-41D | 114-P1-IRM-41D-20180126 | N | T | JC59838 | 1/26/2018 | **< 1000 U** | **16.5** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | DEEP | 114-P1-IRM-42D | 114-P1-IRM-42D-20180126 | N | D | JC59838 | 1/26/2018 | **< 2000 U** | **< 600 U** | < 2000 U | **< 10 U** | **< 600 U** |
| WELL | DEEP | 114-P1-IRM-42D | 114-P1-IRM-42D-20180126 | N | T | JC59838 | 1/26/2018 | **< 2000 U** | **< 600 U** | < 2000 U | **< 10 U** | **< 600 U** |
| WELL | DEEP | 114-P1-IRM-42D | 114-P1-IRM-42D-20180126-DUP | FD | D | JC59838 | 1/26/2018 | **< 2000 U** | **< 600 U** | < 2000 U | **< 10 U** | **< 600 U** |
| WELL | DEEP | 114-P1-IRM-42D | 114-P1-IRM-42D-20180126-DUP | FD | T | JC59838 | 1/26/2018 | **< 2000 U** | **683** | < 2000 U | **< 10 U** | **< 600 U** |
| WELL | DEEP | 114-P1-IRM-4D | 114-P1-IRM-4D-20180124 | N | D | JC59667 | 1/24/2018 | **< 2000 U** | **< 150 U** | < 2000 U | **< 10 U** | **< 30 U** |
| WELL | DEEP | 114-P1-IRM-4D | 114-P1-IRM-4D-20180124 | N | T | JC59667 | 1/24/2018 | **< 2000 U** | **< 150 U** | < 2000 U | **< 10 U** | **< 30 U** |
| WELL | DEEP | 114-P1-IRM-5D | 114-P1-IRM-5D-DUP-20180124 | FD | D | JC59667 | 1/24/2018 | **< 400 U** | **< 150 U** | < 400 U | **< 2.0 U** | **< 30 U** |
| WELL | DEEP | 114-P1-IRM-5D | 114-P1-IRM-5D-DUP-20180124 | FD | T | JC59667 | 1/24/2018 | **< 400 U** | **< 150 U** | < 400 U | **< 2.0 U** | **< 30 U** |
| WELL | DEEP | 114-P1-IRM-5D | 114-P1-MW-5I-20180124 | N | D | JC59556 | 1/24/2018 | **< 1000 U** | **< 75 U** | < 1000 U | **< 5.0 U** | **15.0** |
| WELL | DEEP | 114-P1-IRM-5D | 114-P1-MW-5I-20180124 | N | T | JC59556 | 1/24/2018 | **13400** | **< 75 U** | < 1000 U | **< 5.0 U** | **17.0** |
| WELL | DEEP | 114-P1-MW-1D | 114-P1-MW-1D-20180129 | N | D | JC59916 | 1/29/2018 | **< 2000 U** | **< 150 U** | < 2000 U | **< 10 U** | **< 30 U** |
| WELL | DEEP | 114-P1-MW-1D | 114-P1-MW-1D-20180129 | N | T | JC59916 | 1/29/2018 | **< 2000 U** | **< 150 U** | < 2000 U | **< 10 U** | **< 30 U** |
| WELL | DEEP | 114-P1-MW-4D | 114-P1-MW-4D-20180126 | N | D | JC59838 | 1/26/2018 | **< 1000 U** | **33.0** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | DEEP | 114-P1-MW-4D | 114-P1-MW-4D-20180126 | N | T | JC59838 | 1/26/2018 | **< 1000 U** | **30.0** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | DEEP | 114-P1-MW-5D | 114-P1-MW-5D-20180123 | N | D | JC59667 | 1/24/2018 | **< 2000 U** | **< 150 U** | < 2000 U | **< 10 U** | **< 30 U** |
| WELL | DEEP | 114-P1-MW-5D | 114-P1-MW-5D-20180123 | N | T | JC59667 | 1/24/2018 | **< 2000 U** | **< 150 U** | < 2000 U | **< 10 U** | **< 30 U** |
| WELL | DEEP | 114-P1-MW-6D | 114-P1-MW-6D-20180119 | N | D | JC59431 | 1/19/2018 | **< 1000 U** | **< 45 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | DEEP | 114-P1-MW-6D | 114-P1-MW-6D-20180119 | N | T | JC59431 | 1/19/2018 | **< 1000 U** | **< 45 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | DEEP | 114-P1-MW-7D | 114-P1-MW7D-20180125 | N | D | JC59745 | 1/25/2018 | **< 400 U** | **47.4** | < 400 U | **< 2.0 U** | **< 6.0 U** |
| WELL | DEEP | 114-P1-MW-7D | 114-P1-MW7D-20180125 | N | T | JC59745 | 1/25/2018 | **554** | **40.0** | < 400 U | **< 2.0 U** | **< 6.0 U** |
| WELL | DEEP | 137-MW2C | 137-MW2C-20151214 | N | T | JC10597 | 12/14/2015 | **1340** | 2.5 J | 75.2 J | < 0.35 U | < 0.28 U |
| WELL | DEEP | MW6C | MC6C-20180129 | N | D | JC59916 | 1/29/2018 | **< 1000 U** | **< 15 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | DEEP | MW6C | MC6C-20180129 | N | T | JC59916 | 1/29/2018 | **< 1000 U** | **< 15 U** | < 1000 U | **< 5.0 U** | **< 15 U** |
| WELL | DEEP | MW6C | MW6C-57.0-20171220 | N | T | JC57752 | 12/20/2017 | **286** | **< 14 U** | 121 J | < 0.40 U | **6.1** |
| WELL | DEEP | MW6C | MW6C-62.0-20171220 | N | T | JC57752 | 12/20/2017 | **663** | **< 14 U** | 120 J | < 0.40 U | **6.6** |
| WELL | DEEP | MW6C | 114-MW6C-20160321 | N | T | JC16664 | 3/21/2016 | **549** | 2.4 J | 65.1 J | < 0.25 U | 2.0 J |
| WELL | DEEP | MW8F | MW8F-82.0-20151001 | N | T | JC5237A | 10/1/2015 | **6000** | **20.6** | 205 | < 0.35 U | < 0.28 U |
| WELL | DEEP | MW8F | MW8F-79.5-20151001 | N | T | JC5237A | 10/1/2015 | **2120** | **23.4** | 181 J | < 0.35 U | < 0.28 U |
| WELL | Bedrock | 114-MW16B | 114-MW16B-20151214 | N | T | JC10597 | 12/14/2015 | 105 J | **10.5** | 15.5 J | < 0.35 U | 2.4 J |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | CALCIUM | COBALT | COPPER | IRON | LEAD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-70-2 | 7440-48-4 | 7440-50-8 | 7439-89-6 | 7439-92-1 |
| | | | | | | | **GWQS** | N/A | 100 | 1300 | 300 | 5 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-MC-MW101S | 114-MC-MW101S-20160622 | N | T | JC22758 | 6/22/2016 | 526000 | < 0.69 U | 4.8 J | **29800** | **< 23 U** |
| WELL | SHALLOW | 114-MC-MW101S | 114-MC-MW101S-20160314X | FD | T | JC16175 | 3/14/2016 | 451000 | 2.3 J | < 2.4 UB | **17400 J** | **< 11 U** |
| WELL | SHALLOW | 114-MC-MW101S | 114-MC-MW101S-20160314 | N | T | JC16175 | 3/14/2016 | 469000 | < 0.69 U | < 2.4 U | **12000 J** | **< 11 U** |
| WELL | SHALLOW | 114-MC-MW101S | 114-MC-MW101S-20151209 | N | T | JC10220A | 12/9/2015 | 496000 | < 0.54 UB | 6.3 J | **26000** | **< 23 U** |
| WELL | SHALLOW | 114-MC-MW101S | 114-MC-MW101S-20150921 | N | T | JC4371A | 9/21/2015 | 600000 | 1.9 J | 2.7 J | **34700** | **< 23 U** |
| WELL | SHALLOW | 114-MC-MW102S | 114-MC-MW102S-20160624 | N | T | JC22939 | 6/24/2016 | 1110000 | < 3.5 U | < 12 U | **6560** | **< 11 U** |
| WELL | SHALLOW | 114-MC-MW102S | 114-MC-MW102S-20160314 | N | T | JC16175 | 3/14/2016 | 1150000 | 4.3 J | 18.4 J | **31600 J** | **< 57 U** |
| WELL | SHALLOW | 114-MC-MW102S | 114-MC-MW102S-20151210 | N | T | JC10380 | 12/10/2015 | 1300000 | < 14 U | 17.7 J | **4340** | **< 58 U** |
| WELL | SHALLOW | 114-MC-MW102S | 114-MC-MW102S-20150921 | N | T | JC4371A | 9/21/2015 | 1330000 | < 2.7 U | < 9.3 U | **10400** | **< 23 U** |
| WELL | SHALLOW | 114-MW15A | 114-MW15A-20180417 | N | D | JC64376 | 4/17/2018 | 32300 | < 0.72 U | 4.2 J | < 32 U | < 2.6 U |
| WELL | SHALLOW | 114-MW15A | 114-MW15A-20180417 | N | T | JC64376 | 4/17/2018 | 33300 | < 0.72 U | 8.2 J | **1340** | < 2.6 U |
| WELL | SHALLOW | 114-MW16A | 114-MW16A-20151214-10.65 | N | T | JC10597 | 12/14/2015 | 69200 | < 0.54 U | < 1.9 U | 203 | < 2.3 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-8.0-20180420 | N | T | JC64643 | 4/20/2018 | 41800 | 1.3 J | 29.5 | **1110** | **24.6** |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-11.0-20180420 | N | T | JC64643 | 4/20/2018 | 43900 | 0.80 J | < 3.2 U | **1750** | **20.5** |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-12.5-20151001 | N | T | JC5237A | 10/1/2015 | 31800 | < 0.54 U | < 1.9 U | **593** | **30.4** |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-10.5-20151001 | N | T | JC5237A | 10/1/2015 | 40800 | < 0.54 U | 8.6 J | **734** | **23.3** |
| WELL | SHALLOW | 114-MW22A | 114-MW22A-11.0-20180419 | N | T | JC64571 | 4/19/2018 | 191000 | < 0.72 U | < 3.2 U | **11000** | < 2.6 U |
| WELL | SHALLOW | 114-MW22A | 114-MW22A-16.0-20180419 | N | T | JC64571 | 4/19/2018 | 188000 | < 0.72 U | < 3.2 U | **10700** | < 2.6 U |
| WELL | SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | N | T | JC65325 | 5/2/2018 | 408000 | 6.8 J | 4.8 J | **884** | **< 13 U** |
| WELL | SHALLOW | 114-MW25A | 114-MW25A-20170926 | N | T | JC51824 | 9/26/2017 | 129000 | 1.9 J | 8.1 J | **352** | < 2.6 U |
| WELL | SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | N | T | JC57565 | 12/18/2017 | 108000 | 22.0 J | 6.9 J | **12200** | < 2.6 U |
| WELL | SHALLOW | 114-MW27A | 114-MW27A-20170926 | N | T | JC51824 | 9/26/2017 | 111000 | < 0.72 U | 3.4 J | 182 | < 2.6 U |
| WELL | SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | N | T | JC57565 | 12/18/2017 | 52300 | < 0.72 U | 12.1 | **438** | **11.0** |
| WELL | SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | N | T | JC56729A | 12/6/2017 | 110000 | < 0.72 U | < 3.2 U | **2420** | < 2.6 U |
| WELL | SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | N | T | JC56859A | 12/7/2017 | 90200 | < 0.72 U | < 3.2 U | **26800** | < 2.6 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927-X | FD | T | JC51890 | 9/27/2017 | 203000 | 1.2 J | < 3.2 U | 118 | < 2.6 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927 | N | T | JC51890 | 9/27/2017 | 203000 | 0.90 J | < 3.2 U | 48.1 J | < 2.6 U |
| WELL | SHALLOW | 114-MW37A | 114-MW37A-20170928 | N | T | JC52029 | 9/28/2017 | 107000 | 6.4 J | 4.4 J | **12600** | < 2.6 U |
| WELL | SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | N | T | JC56504A | 12/4/2017 | 76200 | 4.0 J | 14.6 J | **16300** | **12.2** |
| WELL | SHALLOW | 114-MW41A | 114-MW41A-20180420 | N | T | JC64643 | 4/20/2018 | 409000 | < 3.6 U | < 32 U | 245 J | **< 26 U** |
| WELL | SHALLOW | 114-MW42A | 114-MW42A-20180417 | N | T | JC64376 | 4/17/2018 | 156000 | 1.6 J | 4.3 J | **1150** | < 2.6 U |
| WELL | SHALLOW | 114-MW43A | 114-MW43A-20180417 | N | T | JC64376 | 4/17/2018 | 303000 | < 0.72 U | < 3.2 U | **13500** | **< 5.3 U** |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-20160916 | N | T | JC27812 | 9/16/2016 | 126000 | < 0.69 U | < 2.4 U | 43.4 J | < 2.3 U |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-20160617 | N | T | JC22504 | 6/17/2016 | 129000 | < 0.69 U | < 2.4 UB | 58.3 J | < 4.6 U |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-20160317 | N | T | JC16446 | 3/17/2016 | 109000 | 0.80 J | < 2.4 U | 230 | **< 11 U** |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-20151209 | N | T | JC10220A | 12/9/2015 | 125000 | 9.8 J | 16.0 | 49.1 J | < 2.3 U |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-20150921 | N | T | JC4371A | 9/21/2015 | 116000 | < 0.54 U | 2.9 J | 194 | < 4.6 U |
| WELL | SHALLOW | 114-P1B-MW101S | 114-P1B-MW101S-20160621 | N | T | JC22642 | 6/21/2016 | 158000 | 1.3 J | 8.4 J | **527** | < 4.6 U |
| WELL | SHALLOW | 114-P1B-MW101S | 114-P1B-MW101S-20160314 | N | T | JC16175 | 3/14/2016 | 123000 | 2.3 J | < 2.4 UB | **807 J** | 3.8 |
| WELL | SHALLOW | 114-P1B-MW101S | 114-P1B-MW101S-20151209 | N | T | JC10220A | 12/9/2015 | 157000 | < 0.54 UB | < 1.9 U | 83.5 J | **< 6.9 U** |
| WELL | SHALLOW | 114-P1B-MW101S | 114-P1B-MW101S-20150922 | N | T | JC4452A | 9/22/2015 | 132000 | < 0.54 UJB | 3.9 J | 93.4 J | < 2.3 U |
| WELL | SHALLOW | 114-P1B-MW102S | 114-P1B-MW102S-20160916 | N | T | JC27812 | 9/16/2016 | 40400 | 2.2 J | 5.6 J | **5940** | **6.2** |
| WELL | SHALLOW | 114-P1B-MW102S | 114-P1B-MW102S-20160314 | N | T | JC16175 | 3/14/2016 | 49900 | 4.6 J | < 2.4 UB | **8260 J** | **11.0 J** |
| WELL | SHALLOW | 114-P1B-MW102S | 114-P1B-MW102S-20151210 | N | T | JC10380 | 12/10/2015 | 73700 | 2.8 J | < 1.9 U | **14400** | **14.3 J** |
| WELL | SHALLOW | 114-P1B-MW102S | 114-P1B-MW102S-20150922 | N | T | JC4452A | 9/22/2015 | 80700 | 2.4 JB | 3.5 J | **15100** | **11.1** |
| WELL | SHALLOW | 114-P1B-MW103S | 114-P1B-MW103S-20160622 | N | T | JC22758 | 6/22/2016 | 341000 | < 0.69 U | < 2.4 U | 19.1 J | **< 11 U** |
| WELL | SHALLOW | 114-P1B-MW103S | 114-P1B-MW103S-20160318 | N | T | JC16549 | 3/18/2016 | 363000 | 1.0 J | 2.6 J | < 12 UB | **< 11 UJ** |
| WELL | SHALLOW | 114-P1B-MW103S | 114-P1B-MW103S-20151210 | N | T | JC10380 | 12/10/2015 | 411000 | 0.80 J | 2.2 J | **431** | **< 23 U** |
| WELL | SHALLOW | 114-P1B-MW103S | 114-P1B-MW103S-20150922 | N | T | JC4452A | 9/22/2015 | 386000 | 0.80 JB | < 1.9 U | **442** | 3.1 |

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**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | CALCIUM | COBALT | COPPER | IRON | LEAD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-70-2 | 7440-48-4 | 7440-50-8 | 7439-89-6 | 7439-92-1 |
| | | | | | | | **GWQS** | N/A | 100 | 1300 | 300 | 5 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-P1B-MW104S | 114-P1B-MW104S-20160621 | N | T | JC22642 | 6/21/2016 | 67200 | 2.4 J | 11.4 J | 70.6 J | < 2.3 U |
| WELL | SHALLOW | 114-P1B-MW104S | 114-P1B-MW104S-20160322 | N | T | JC16738 | 3/22/2016 | 76700 | 2.0 J | 14.9 | 62.0 J | < 2.3 U |
| WELL | SHALLOW | 114-P1B-MW104S | 114-P1B-MW104S-20151211 | N | T | JC10525 | 12/11/2015 | 65300 | 2.5 J | 21.7 | 147 | < 2.3 U |
| WELL | SHALLOW | 114-P1B-MW104S | 114-P1B-MW104S-20150922 | N | T | JC4452A | 9/22/2015 | 61200 | 1.8 JB | 8.7 J | 176 | < 2.3 U |
| WELL | SHALLOW | 114-P1C-MW101S | 114-P1C-MW101S-20160620 | N | T | JC22555 | 6/20/2016 | 205000 | 1.8 J | 4.6 J | **12900** | **< 23 U** |
| WELL | SHALLOW | 114-P1C-MW101S | 114-P1C-MW101S-20160316 | N | T | JC16336 | 3/16/2016 | 189000 | < 3.5 U | < 12 U | **17400** | **< 11 U** |
| WELL | SHALLOW | 114-P1C-MW101S | 114-P1C-MW101S-20151211 | N | T | JC10525 | 12/11/2015 | 188000 | < 2.7 U | < 1.9 U | **7100** | **< 23 U** |
| WELL | SHALLOW | 114-P1C-MW101S | 114-P1C-MW101S-20150923X | FD | T | JC4555A | 9/23/2015 | 228000 | < 0.54 UB | < 1.9 UB | **16500** | **< 23 U** |
| WELL | SHALLOW | 114-P1C-MW101S | 114-P1C-MW101S-20150923 | N | T | JC4555A | 9/23/2015 | 227000 | < 0.54 UB | < 1.9 UB | **18100** | **< 23 U** |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-20161212X | FD | T | JC33522 | 12/12/2016 | 82900 | < 0.69 U | < 2.4 U | **355 J** | 2.7 J |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-20161212 | N | T | JC33522 | 12/12/2016 | 82700 | < 0.69 U | < 2.4 U | **735 J** | < 2.3 U |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-20160914X | FD | T | JC27595 | 9/14/2016 | 112000 | < 0.69 U | < 2.4 U | **1190** | < 2.3 U |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-20160914 | N | T | JC27595 | 9/14/2016 | 110000 | 0.70 J | < 2.4 U | **1050** | < 2.3 U |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-20160628 | N | T | JC23103 | 6/28/2016 | 263000 | 1.5 J | 9.3 J | **13300** | **< 11 U** |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-20160324 | N | T | JC16953 | 3/24/2016 | 121000 | < 3.5 U | < 12 UJ | **2440** | **< 11 U** |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-20161212 | N | T | JC33522 | 12/12/2016 | 130000 | 2.3 J | 4.6 J | **3850** | **< 6.9 U** |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-20160914 | N | T | JC27595 | 9/14/2016 | 184000 | 2.0 J | 5.5 J | **2410** | < 2.3 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-20160628 | N | T | JC23103 | 6/28/2016 | 206000 | 8.3 J | 79.4 | **11000** | **13.5** |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-20160324 | N | T | JC16953 | 3/24/2016 | 272000 | 3.6 J | < 12 UJ | **1900** | **< 11 U** |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-20161213 | N | T | JC33573 | 12/13/2016 | 538000 | 5.3 J | 6.4 J | **9470** | **< 23 U** |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-20160915 | N | T | JC27716 | 9/15/2016 | 597000 | 7.2 J | 24.0 | **22300** | **< 23 U** |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-20160627 | N | T | JC23029 | 6/27/2016 | 584000 | 10.0 J | 36.7 | **24000** | **< 23 U** |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-20160325 | N | T | JC17059 | 3/25/2016 | 480000 J | 11.1 J | 19.2 J | **19600 J** | **< 57 UJ** |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-20161214 | N | T | JC33691 | 12/14/2016 | 196000 | 5.2 J | 4.5 J | **2010** | **< 11 U** |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-20160915 | N | T | JC27716 | 9/15/2016 | 164000 | 3.8 J | 6.0 J | **491** | < 2.3 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-20160629 | N | T | JC23208 | 6/29/2016 | 199000 | 8.2 J | 64.2 J | **9220** | **13.4 J** |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-20160325 | N | T | JC17059 | 3/25/2016 | 206000 J | 4.7 J | < 12 UJ | **3450 J** | **< 11 UJ** |
| WELL | SHALLOW | 114-P2B1-MW101S | 114-P2B1-MW101S-20160620 | N | T | JC22555 | 6/20/2016 | 532000 | 4.3 J | < 2.4 U | **16900** | **< 23 U** |
| WELL | SHALLOW | 114-P2B1-MW101S | 114-P2B1-MW101S-20160315 | N | T | JC16239 | 3/15/2016 | 462000 | 1.6 J | < 2.4 UB | **6920** | **< 23 U** |
| WELL | SHALLOW | 114-P2B1-MW101S | 114-P2B1-MW101S-20151210X | FD | T | JC10380 | 12/10/2015 | 451000 | 2.3 J | 1.9 J | **41500** | **< 23 U** |
| WELL | SHALLOW | 114-P2B1-MW101S | 114-P2B1-MW101S-20151210 | N | T | JC10380 | 12/10/2015 | 459000 | 2.1 J | 1.9 J | **46800** | **< 23 U** |
| WELL | SHALLOW | 114-P2B1-MW101S | 114-P2B1-MW101S-20150922 | N | T | JC4452A | 9/22/2015 | 403000 | 2.8 JB | < 1.9 U | **51900** | **< 23 U** |
| WELL | SHALLOW | 114-P2B1-MW102S | 114-P2B1-MW102S-20160623 | N | T | JC22854 | 6/23/2016 | 454000 | 1.6 J | 61.7 | **38400** | **< 11 U** |
| WELL | SHALLOW | 114-P2B1-MW102S | 114-P2B1-MW102S-20160316 | N | T | JC16336 | 3/16/2016 | 545000 | < 3.5 U | < 12 U | **101000** | **< 46 U** |
| WELL | SHALLOW | 114-P2B1-MW102S | 114-P2B1-MW102S-20151211 | N | T | JC10525 | 12/11/2015 | 479000 | < 2.7 U | < 1.9 UB | **23900** | **< 58 U** |
| WELL | SHALLOW | 114-P2B1-MW102S | 114-P2B1-MW102S-20150923 | N | T | JC4555A | 9/23/2015 | 424000 | < 2.7 UB | < 1.9 UB | **37700** | **< 12 U** |
| WELL | SHALLOW | 114-P2B1-MW103S | 114-P2B1-MW103S-20160623 | N | T | JC22854 | 6/23/2016 | 511000 | 1.5 J | 12.3 | **88700** | **< 11 U** |
| WELL | SHALLOW | 114-P2B1-MW103S | 114-P2B1-MW103S-20160316 | N | T | JC16336 | 3/16/2016 | 474000 | < 3.5 U | < 12 U | **26700** | **< 11 U** |
| WELL | SHALLOW | 114-P2B1-MW103S | 114-P2B1-MW103S-20151211 | N | T | JC10525 | 12/11/2015 | 569000 | 3.1 J | < 1.9 U | **72700** | **< 58 U** |
| WELL | SHALLOW | 114-P2B1-MW103S | 114-P2B1-MW103S-20150923 | N | T | JC4555A | 9/23/2015 | 565000 | < 2.7 UB | < 1.9 U | **96000** | **< 12 U** |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20160620 | N | T | JC22555 | 6/20/2016 | 366000 | 3.9 J | < 2.4 U | **30800** | **< 23 U** |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20160315 | N | T | JC16239 | 3/15/2016 | 400000 | 2.2 J | < 2.4 UB | **29000** | **< 23 U** |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20151209 | N | T | JC10220A | 12/9/2015 | 384000 | 3.5 JB | < 1.9 U | **63800** | **< 23 U** |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20150921 | N | T | JC4371A | 9/21/2015 | 423000 | 4.6 J | < 1.9 U | **57600** | **< 23 U** |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-20160622 | N | T | JC22758 | 6/22/2016 | 536000 | 0.80 J | 5.8 J | **49400** | **< 23 U** |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-20160315 | N | T | JC16239 | 3/15/2016 | 257000 | 0.70 J | < 2.4 U | **28100** | **< 11 U** |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-20151210 | N | T | JC10380 | 12/10/2015 | 501000 | 1.7 J | 4.0 J | **38100** | **< 23 U** |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-20150925 | N | T | JC4798A | 9/25/2015 | 462000 | 1.3 J | < 1.9 U | **31500** | **< 12 U** |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-20160621 | N | T | JC22642 | 6/21/2016 | 805000 | < 3.5 U | 39.1 | **87700** | **53.8** |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | CALCIUM | COBALT | COPPER | IRON | LEAD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-70-2 | 7440-48-4 | 7440-50-8 | 7439-89-6 | 7439-92-1 |
| | | | | | | | **GWQS** | N/A | 100 | 1300 | 300 | 5 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-20160316 | N | T | JC16336 | 3/16/2016 | 879000 | < 3.5 U | < 12 U | **123000** | **< 46 U** |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-20151210 | N | T | JC10380 | 12/10/2015 | 951000 | < 2.7 U | 16.1 J | **124000** | **< 58 U** |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-20150928 | N | T | JC4872A | 9/28/2015 | 1090000 | < 2.7 U | < 93 U | **168000** | **< 120 U** |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-20160621 | N | T | JC22642 | 6/21/2016 | 758000 | 3.6 J | 26.4 J | **74300** | **63.6 J** |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-20160322 | N | T | JC16738 | 3/22/2016 | 711000 | < 3.5 U | < 2.4 U | **73700** | **< 46 U** |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-20151211 | N | T | JC10525 | 12/11/2015 | 835000 | < 14 U | 15.5 JB | **87100** | **< 58 U** |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-20150925 | N | T | JC4798A | 9/25/2015 | 900000 | < 2.7 U | < 9.3 U | **79200** | **< 12 U** |
| WELL | SHALLOW | 114-P2B4-MW103S | 114-P2B4-MW103S-20160622 | N | T | JC22758 | 6/22/2016 | 757000 | 32.7 J | 51.8 | **99000** | **< 23 U** |
| WELL | SHALLOW | 114-P2B4-MW103S | 114-P2B4-MW103S-20160316 | N | T | JC16336 | 3/16/2016 | 717000 | 37.0 J | < 12 U | **52700** | **< 46 U** |
| WELL | SHALLOW | 114-P2B4-MW103S | 114-P2B4-MW103S-20151210 | N | T | JC10380 | 12/10/2015 | 809000 | 61.9 J | 20.3 J | **93800** | **< 58 U** |
| WELL | SHALLOW | 114-P2B4-MW103S | 114-P2B4-MW103S-20150928 | N | T | JC4872A | 9/28/2015 | 814000 | 45.7 J | < 9.3 U | **51400** | **< 12 U** |
| WELL | SHALLOW | 132-P3A-MW102S | 132-P3A-MW102S-20160617 | N | T | JC22504 | 6/17/2016 | 224000 | 3.5 J | < 2.4 UB | **3250** | **12.2** |
| WELL | SHALLOW | 132-P3A-MW102S | 132-P3A-MW102S-20160317 | N | T | JC16446 | 3/17/2016 | 223000 | 3.1 J | 9.4 J | **3380** | **< 11 U** |
| WELL | SHALLOW | 132-P3A-MW102S | 132-P3A-MW102S-20151215 | N | T | JC10723 | 12/15/2015 | 174000 | 22.6 J | 113 | **56200 J** | **288** |
| WELL | SHALLOW | 132-P3A-MW102S | 132-P3A-MW102S-20150929 | N | T | JC4978A | 9/29/2015 | 92100 | 76.1 | 292 | **155000** | **828** |
| WELL | SHALLOW | 132-P3A-MW103S | 132-P3A-MW103S-20160616 | N | T | JC22356 | 6/16/2016 | 635000 | < 6.9 U | 17.8 | **256000** | **< 23 U** |
| WELL | SHALLOW | 132-P3A-MW103S | 132-P3A-MW103S-20160318 | N | T | JC16549 | 3/18/2016 | 429000 | 2.3 J | 10.6 | **2530 J** | **< 11 UJ** |
| WELL | SHALLOW | 132-P3A-MW103S | 132-P3A-MW103S-20151215 | N | T | JC10723 | 12/15/2015 | 351000 | 3.4 J | 17.2 | **7860 J** | **21.0** |
| WELL | SHALLOW | 132-P3A-MW103S | 132-P3A-MW103S-20150930 | N | T | JC5099A | 9/30/2015 | 821000 | < 2.7 U | < 9.3 U | **480000** | **34.5** |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-20160616 | N | T | JC22356 | 6/16/2016 | 126000 | 1.5 J | 6.4 J | **568** | 2.7 J |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-20160318 | N | T | JC16549 | 3/18/2016 | 99500 | 3.1 J | 8.7 J | **1120 J** | 3.2 J |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-20151215 | N | T | JC10723 | 12/15/2015 | 307000 | 1.3 J | 2.4 J | **752 J** | **7.4 J** |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-20150929X | FD | T | JC4978A | 9/29/2015 | 80900 | 2.5 JB | 2.7 J | **2740** | **6.9** |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-20150929 | N | T | JC4978A | 9/29/2015 | 84400 | 2.8 JB | 2.7 J | **2690** | **5.9** |
| WELL | SHALLOW | 132-P3A-MW3 | 132-P3A-MW3-15.0-20180424 | N | T | JC64822 | 4/24/2018 | - | - | - | - | - |
| WELL | SHALLOW | 132-P3A-MW3 | 132-P3A-MW3-11.0-20180424 | N | T | JC64822 | 4/24/2018 | - | - | - | - | - |
| WELL | SHALLOW | 132-P3A-MW4 | 132-P3A-MW4-13.0-20180424 | N | T | JC64822 | 4/24/2018 | - | - | - | - | - |
| WELL | SHALLOW | 132-P3A-MW4 | 132-P3A-MW4-17.0-20180424X | FD | T | JC64822 | 4/24/2018 | - | - | - | - | - |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-20161216 | N | T | JC33887 | 12/16/2016 | 507000 | 4.9 J | < 2.4 U | 275 | **< 23 U** |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-20160913X | FD | T | JC27486 | 9/13/2016 | 416000 | 4.9 J | 2.8 J | **10200** | **< 23 U** |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-20160913 | N | T | JC27486 | 9/13/2016 | 421000 | 5.1 J | 2.5 J | **9510** | **< 23 U** |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-20160616 | N | T | JC22356 | 6/16/2016 | 224000 | 5.2 J | 16.6 | **5440** | **< 11 U** |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-20160324 | N | T | JC16937 | 3/24/2016 | 337000 | 8.0 J | < 12 UJ | **941** | **< 11 U** |
| WELL | SHALLOW | 133-P3C-MW102S | 133-P3C-MW102S-20161216X | FD | T | JC33887 | 12/16/2016 | 236000 | 1.1 J | 3.1 J | **833** | **< 11 U** |
| WELL | SHALLOW | 133-P3C-MW102S | 133-P3C-MW102S-20161216 | N | T | JC33887 | 12/16/2016 | 245000 | 0.90 J | 3.3 J | **886** | **< 11 U** |
| WELL | SHALLOW | 133-P3C-MW102S | 133-P3C-MW102S-20160913 | N | T | JC27486 | 9/13/2016 | 171000 | 3.8 J | 3.3 J | **3530** | 2.5 J |
| WELL | SHALLOW | 133-P3C-MW102S | 133-P3C-MW102S-20160615 | N | T | JC22273 | 6/15/2016 | 165000 | 3.9 J | 3.8 J | **681 J** | 2.8 J |
| WELL | SHALLOW | 133-P3C-MW102S | 133-P3C-MW102S-20160324 | N | T | JC16937 | 3/24/2016 | 201000 | 3.8 J | < 12 UJ | **2240** | **< 11 U** |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | N | T | JC64763 | 4/23/2018 | - | 1.0 J | < 3.2 U | **23400** | - |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | N | T | JC64763 | 4/23/2018 | - | 1.0 J | 3.3 J | **12400** | - |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | N | T | JC64763 | 4/23/2018 | - | 1.0 J | 3.6 J | **1700** | - |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.7 | N | T | JC5499 | 10/6/2015 | 95200 | 1.0 J | 6.4 J | **9430** | **13.5** |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-12.5 | N | T | JC5499 | 10/6/2015 | 74600 | 0.70 J | 6.6 J | **6460** | 4.7 |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-8.5 | N | T | JC5499 | 10/6/2015 | 80800 | 1.6 J | 8.5 J | **9520** | **9.1** |
| WELL | SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | N | T | JC64763 | 4/23/2018 | 166000 | 5.0 J | 3.5 J | **1700** | < 2.6 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-20160615 | N | T | JC22273 | 6/15/2016 | 632000 | 7.6 J | 7.0 J | **168000 J** | **< 46 U** |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-20160321 | N | T | JC16664 | 3/21/2016 | 553000 | < 3.5 U | 13.8 | **105000** | **< 23 U** |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-20151216 | N | T | JC10831 | 12/16/2015 | 786000 | 12.9 J | 29.9 J | **239000** | **< 46 U** |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-20150930 | N | T | JC5099A | 9/30/2015 | 758000 | 4.8 J | < 1.9 U | **182000** | **13.7 J** |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | CALCIUM | COBALT | COPPER | IRON | LEAD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-70-2 | 7440-48-4 | 7440-50-8 | 7439-89-6 | 7439-92-1 |
| | | | | | | | **GWQS** | N/A | 100 | 1300 | 300 | 5 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-20160615X | FD | T | JC22273 | 6/15/2016 | 650000 | < 14 U | < 2.4 U | **72300 J** | **< 46 U** |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-20160615 | N | T | JC22273 | 6/15/2016 | 656000 | < 14 U | 6.5 J | **106000 J** | **< 46 U** |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-20160321 | N | T | JC16664 | 3/21/2016 | 738000 | < 3.5 U | 57.2 | **134000** | **< 57 U** |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-20151216 | N | T | JC10831 | 12/16/2015 | 623000 | < 2.7 U | 18.5 J | **66500** | **< 46 U** |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-20150930 | N | T | JC5099A | 9/30/2015 | 961000 | < 2.7 U | < 9.3 U | **114000** | **< 23 U** |
| WELL | SHALLOW | 143-P3A-MW101S | 143-P3A-MW101S-20160620 | N | T | JC22555 | 6/20/2016 | 164000 | 1.2 J | 3.4 J | **6520** | 3.5 |
| WELL | SHALLOW | 143-P3A-MW101S | 143-P3A-MW101S-20160318X | FD | T | JC16549 | 3/18/2016 | 138000 | 1.4 J | 6.9 J | **3320 J** | **11.1 J** |
| WELL | SHALLOW | 143-P3A-MW101S | 143-P3A-MW101S-20160318 | N | T | JC16549 | 3/18/2016 | 145000 | 1.1 J | 4.4 J | **1780 J** | 2.9 J |
| WELL | SHALLOW | 143-P3A-MW101S | 143-P3A-MW101S-20151214 | N | T | JC10593 | 12/14/2015 | 172000 | 0.70 J | 13.8 JB | **12400** | 3.7 |
| WELL | SHALLOW | 143-P3A-MW101S | 143-P3A-MW101S-20150928 | N | T | JC4872A | 9/28/2015 | 175000 | 1.2 J | < 1.9 U | **19300** | < 2.3 U |
| WELL | SHALLOW | GPS-EW1S | GPS-EW1S-083016 | N | T | JC26754 | 8/30/2016 | 386000 | 1.4 J | < 2.4 U | < 12 U | < 2.3 U |
| WELL | SHALLOW | GPS-EW1S | GPS-EW1S-060316 | N | T | JC21504 | 6/3/2016 | 398000 | < 0.69 U | 3.1 J | 18.1 J | **< 6.9 U** |
| WELL | SHALLOW | GPS-EW1S | GPS-EW1S-022516 | N | T | JC14874 | 2/25/2016 | 376000 | 1.7 J | 21.0 JB | 39.1 J | **< 6.9 U** |
| WELL | SHALLOW | GPS-EW1S | GPS-EW1S-111715 | N | T | JC8703 | 11/17/2015 | 239000 | 1.5 J | 18.9 JB | 32.3 J | **< 6.9 U** |
| WELL | SHALLOW | GPS-EW2S | GPS-EW2S-083016 | N | T | JC26754 | 8/30/2016 | 211000 | 0.80 J | < 2.4 U | < 12 U | < 2.3 U |
| WELL | SHALLOW | GPS-EW2S | GPS-EW2S-060316 | N | T | JC21504 | 6/3/2016 | 270000 | < 0.69 U | < 2.4 UJ | 23.3 J | < 4.6 U |
| WELL | SHALLOW | GPS-EW2S | GPS-EW2S-022516 | N | T | JC14874 | 2/25/2016 | 198000 | 1.6 J | 21.0 JB | 51.3 J | < 2.3 U |
| WELL | SHALLOW | GPS-EW2S | GPS-EW2S-111715 | N | T | JC8703 | 11/17/2015 | 310000 | 1.3 J | 9.7 JB | 33.2 J | < 4.6 U |
| WELL | SHALLOW | GPS-EW3S | GPS-EW3S-083016 | N | T | JC26754 | 8/30/2016 | 219000 | < 0.69 U | < 2.4 U | < 12 U | < 2.3 U |
| WELL | SHALLOW | GPS-EW3S | GPS-EW3S-060316 | N | T | JC21504 | 6/3/2016 | 257000 | < 0.69 U | < 2.4 UJ | 22.9 J | < 2.3 U |
| WELL | SHALLOW | GPS-EW3S | GPS-EW3S-022516 | N | T | JC14874 | 2/25/2016 | 327000 | 1.3 J | 9.7 JB | < 21 U | < 4.6 U |
| WELL | SHALLOW | GPS-EW3S | GPS-EW3S-111715 | N | T | JC8703 | 11/17/2015 | 226000 | 1.0 J | < 1.9 UB | 23.5 J | < 4.6 U |
| WELL | SHALLOW | GPS-MW1S | GPS-MW1S-20171221 | N | D | JC57864 | 12/21/2017 | 146000 | < 50 U | < 10 U | < 100 U | **< 9.0 U** |
| WELL | SHALLOW | GPS-MW1S | GPS-MW1S-20171221 | N | T | JC57864 | 12/21/2017 | 165000 | < 50 U | < 10 U | **788** | **< 9.0 U** |
| WELL | SHALLOW | GPS-MW1S | GPS-MW1S-083016 | N | T | JC26754 | 8/30/2016 | 85900 | 4.3 J | < 2.4 U | < 12 U | < 2.3 U |
| WELL | SHALLOW | GPS-MW1S | GPS-MW1S-060316 | N | T | JC21504 | 6/3/2016 | 120000 | 8.0 J | < 4.8 UJ | **337** | < 4.6 U |
| WELL | SHALLOW | GPS-MW1S | GPS-MW1S-022516 | N | T | JC14874 | 2/25/2016 | 129000 | 7.6 J | 16.6 JB | 184 J | < 4.6 U |
| WELL | SHALLOW | GPS-MW1S | GPS-MW1S-111715 | N | T | JC8703 | 11/17/2015 | 109000 | 2.7 J | < 1.9 UB | 39.0 J | **< 12 U** |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-20171221 | N | D | JC57859 | 12/21/2017 | 133000 | < 50 U | < 10 U | < 100 U | < 3.0 U |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-20171221 | N | T | JC57859 | 12/21/2017 | 135000 | < 50 U | < 10 U | < 100 U | < 3.0 U |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-DUP-20171221 | FD | D | JC57859 | 12/21/2017 | 133000 | < 50 U | < 10 U | < 100 U | < 3.0 U |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-DUP-20171221 | FD | T | JC57859 | 12/21/2017 | 136000 | < 50 U | < 10 U | < 100 U | < 3.0 U |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-083016 | N | T | JC26754 | 8/30/2016 | 173000 | 1.1 J | 7.8 J | < 12 U | < 2.3 U |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-060316 | N | T | JC21504 | 6/3/2016 | 142000 | < 0.69 U | 16.0 J | 13.9 J | **< 6.9 U** |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-022516 | N | T | JC14874 | 2/25/2016 | 87800 | < 0.54 U | 18.4 JB | < 21 U | < 2.3 U |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-111715 | N | T | JC8703 | 11/17/2015 | 341000 | 1.8 J | 22.4 JB | 139 | **< 12 U** |
| WELL | SHALLOW | GPS-MW3S | GPS-MW3S-20171221 | N | D | JC57864 | 12/21/2017 | 138000 | < 50 U | < 10 U | < 100 U | **< 9.0 U** |
| WELL | SHALLOW | GPS-MW3S | GPS-MW3S-20171221 | N | T | JC57864 | 12/21/2017 | 136000 | < 50 U | < 10 U | **1120** | **< 9.0 U** |
| WELL | SHALLOW | GPS-MW3S | GPS-MW3S-083016 | N | T | JC26754 | 8/30/2016 | 263000 | 0.90 J | < 2.4 U | < 12 U | < 2.3 U |
| WELL | SHALLOW | GPS-MW3S | GPS-MW3S-060316 | N | T | JC21504 | 6/3/2016 | 369000 | < 0.69 U | < 2.4 UJ | 74.1 J | **< 11 U** |
| WELL | SHALLOW | GPS-MW3S | GPS-MW3S-022516 | N | T | JC14874 | 2/25/2016 | 398000 | 1.0 J | 9.8 JB | 184 | **< 12 U** |
| WELL | SHALLOW | GPS-MW3S | GPS-MW3S-111715 | N | T | JC8703 | 11/17/2015 | 238000 | 1.5 J | < 1.9 UB | **439** | < 4.6 U |
| WELL | SHALLOW | GPS-MW4S | GPS-MW4S-20171221 | N | D | JC57859 | 12/21/2017 | 63900 | < 50 U | < 10 U | < 100 U | < 3.0 U |
| WELL | SHALLOW | GPS-MW4S | GPS-MW4S-20171221 | N | T | JC57859 | 12/21/2017 | 64800 | < 50 U | < 10 U | 157 | < 3.0 U |
| WELL | SHALLOW | GPS-MW4S | GPS-MW4S-083016 | N | T | JC26754 | 8/30/2016 | 53400 | < 0.69 U | < 2.4 U | < 12 U | < 2.3 U |
| WELL | SHALLOW | GPS-MW4S | GPS-MW4S-060316 | N | T | JC21504 | 6/3/2016 | 64500 | < 0.69 U | < 2.4 UJ | 116 | < 2.3 U |
| WELL | SHALLOW | GPS-MW4S | GPS-MW4S-022516 | N | T | JC14874 | 2/25/2016 | 60100 | 0.90 J | 9.0 JB | 108 | < 2.3 U |
| WELL | SHALLOW | GPS-MW4S | GPS-MW4S-111715 | N | T | JC8703 | 11/17/2015 | 47500 | 0.80 J | < 1.9 UB | **414** | < 2.3 U |
| WELL | SHALLOW | GPS-MW5S | GPS-MW5S-20180130 | N | D | JC59976 | 1/30/2018 | 29200 | < 100 U | < 20 U | **< 1000 U** | **< 6.0 U** |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | CALCIUM | COBALT | COPPER | IRON | LEAD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-70-2 | 7440-48-4 | 7440-50-8 | 7439-89-6 | 7439-92-1 |
| | | | | | | | **GWQS** | N/A | 100 | 1300 | 300 | 5 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | GPS-MW5S | GPS-MW5S-20180130 | N | T | JC59976 | 1/30/2018 | 30600 | < 100 U | < 20 U | **8000** | **< 6.0 U** |
| WELL | SHALLOW | GPS-MW7S | GPS-MW7S-20171221 | N | D | JC57864 | 12/21/2017 | 125000 | < 50 U | < 10 U | < 100 U | < 3.0 U |
| WELL | SHALLOW | GPS-MW7S | GPS-MW7S-20171221 | N | T | JC57864 | 12/21/2017 | 127000 | < 50 U | < 10 U | **2740** | < 3.0 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-20161219 | N | T | JC33993 | 12/19/2016 | 548000 | 5.9 J | < 24 U | **4790** | **< 23 U** |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-20160617 | N | T | JC22504 | 6/17/2016 | 748000 | **161 J** | 824 | **296000** | **102** |
| WELL | SHALLOW | HSS-P3C-MW2S | HSS-P3C-MW2S-20161215 | N | T | JC33793 | 12/15/2016 | 480000 | 4.8 J | 6.0 J | **3300** | **< 23 U** |
| WELL | SHALLOW | HSS-P3C-MW2S | HSS-P3C-MW2S-20160616 | N | T | JC22356 | 6/16/2016 | 82900 | 1.1 J | 5.0 J | **832** | **< 11 U** |
| WELL | SHALLOW | MW-34 | MW34-20151214-15.5 | N | T | JC10597 | 12/14/2015 | 94200 | < 0.54 U | 9.9 J | **1780** | **8.8** |
| WELL | SHALLOW | MW-34 | MW34-20151214-10.5 | N | T | JC10597 | 12/14/2015 | 89600 | < 0.54 U | 16.9 J | **2240** | **8.8** |
| WELL | SHALLOW | MW7S | MW7S-10.2-20150930 | N | T | JC5098A | 9/30/2015 | 237000 | < 0.54 UB | 10.2 J | **43300** | **6.4** |
| WELL | SHALLOW | MW7S | MW7S-7.2-20150930 | N | T | JC5098A | 9/30/2015 | 238000 | 2.9 JB | 14.7 J | **42200** | **11.3** |
| WELL | SHALLOW | MW8S | MW8S-9.5-20151001 | N | T | JC5237A | 10/1/2015 | 61400 | 0.60 J | 11.5 J | **11800** | 4.0 |
| WELL | SHALLOW | MW-Morris1A | 114-MW-MORRIS1A-20160321 | N | T | JC16664 | 3/21/2016 | 386000 | < 3.5 U | 11.8 | **2700** | **< 11 U** |
| SOILBORE | N/A | 114-P1C-PZ1-S1 | 114-P1C-PZ1-W1-31.0-33.0 | N | T | JC29542 | 10/12/2016 | 400000 | 98.0 J | 421 | **245000** | **180** |
| SOILBORE | N/A | 114-P1C-PZ1-S1 | 114-P1C-PZ1-W1-24.0-26.0 | N | T | JC29542 | 10/12/2016 | 544000 | **749** | **3860** | **1940000** | **546** |
| SOILBORE | N/A | 114-P1C-PZ1-S2 | 114-P1C-PZ1-W2-27.0-29.0 | N | T | JC29754 | 10/14/2016 | 678000 | 90.5 J | 255 | **162000** | **189** |
| SOILBORE | N/A | 114-P1C-PZ1-S2 | 114-P1C-PZ1-W2-24.0-26.0 | N | T | JC29754 | 10/14/2016 | 113000 | 8.6 J | 32.6 | **14900** | **12.4** |
| SOILBORE | N/A | 114-P1C-PZ2-S1 | 114-P1C-PZ2-W1-25.0-27.0 | N | T | JC29434 | 10/11/2016 | 28900 | 51.5 J | 280 | **127000** | **462** |
| SOILBORE | N/A | 114-P1C-PZ2-S1 | 114-P1C-PZ2-W1-16.5-17.5 | N | T | JC29434 | 10/11/2016 | 166000 | **310 J** | **2140** | **982000** | **1050** |
| SOILBORE | N/A | 114-P1C-PZ2-S2 | 114-P1C-PZ2-W2-31.0-33.0 | N | T | JC29606 | 10/13/2016 | 511000 | 96.0 J | 309 | **221000** | **298** |
| SOILBORE | N/A | 114-P1C-PZ2-S2 | 114-P1C-PZ2-W2-25.0-27.0 | N | T | JC29606 | 10/13/2016 | 202000 | **261 J** | 955 | **572000** | **669** |
| WELL | INTERMEDIATE | 10W-MW105I | 10W-MW105I-20180312 | N | T | JC62130 | 3/12/2018 | 444000 | 6.9 J | 14.7 | **1470** | < 2.6 U |
| WELL | INTERMEDIATE | 114-MC-EW103 | 114-MC-EW103-20160623 | N | T | JC22854 | 6/23/2016 | 149000 | 11.8 J | 35.8 | **4000** | **< 11 U** |
| WELL | INTERMEDIATE | 114-MC-EW103 | 114-MC-EW103-20160322 | N | T | JC16738 | 3/22/2016 | 111000 | 15.5 J | 9.2 J | **3850** | **< 23 U** |
| WELL | INTERMEDIATE | 114-MC-EW103 | 114-MC-EW103-20151214 | N | T | JC10593 | 12/14/2015 | 107000 | 18.4 J | 5.5 JB | **3360** | **< 12 U** |
| WELL | INTERMEDIATE | 114-MC-EW103 | 114-MC-EW103-20150924 | N | T | JC4675A | 9/24/2015 | 116000 | 21.3 J | 5.1 J | **4130** | **< 23 U** |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-20180129 | N | D | JC59916 | 1/29/2018 | 132000 | **< 250 U** | < 50 U | **2050** | **< 15 U** |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-20180129 | N | T | JC59916 | 1/29/2018 | 98700 | **< 250 U** | < 50 U | **3510** | **< 15 U** |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-20160623 | N | T | JC22854 | 6/23/2016 | 48200 | 7.5 J | 13.3 | **1520** | **< 11 U** |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-20160321 | N | T | JC16664 | 3/21/2016 | 42100 | < 6.9 U | 8.3 J | **637** | **< 23 U** |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-20151214 | N | T | JC10593 | 12/14/2015 | 50900 | 4.3 J | 34.3 J | **2790** | **< 58 U** |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-20150924 | N | T | JC4675A | 9/24/2015 | 60200 | 6.6 J | 6.5 J | **679** | **< 23 U** |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-20180129 | N | D | JC59916 | 1/29/2018 | 69500 | **< 500 U** | < 100 U | **< 1000 U** | **< 90 U** |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-20180129 | N | T | JC59916 | 1/29/2018 | 74600 | **< 500 U** | < 100 U | **< 1000 U** | **< 90 U** |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-20160623 | N | T | JC22854 | 6/23/2016 | 81000 | < 0.69 U | < 24 U | **737** | **< 92 U** |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-20160322 | N | T | JC16738 | 3/22/2016 | 75200 | 43.0 J | < 48 U | **521 J** | **< 46 U** |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-20151214 | N | T | JC10593 | 12/14/2015 | 67300 | < 0.54 U | 112 J | 265 | **< 58 U** |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-20150924 | N | T | JC4675A | 9/24/2015 | 69500 | 6.3 J | 12.2 J | 238 J | **< 12 U** |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | N | T | JC64571 | 4/19/2018 | 12000 J | < 3.6 U | < 320 U | < 160 U | **< 260 U** |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-36.0-20151001 | N | T | JC5237A | 10/1/2015 | 6990 | 8.7 J | < 1.9 U | 245 | **< 12 U** |
| WELL | INTERMEDIATE | 114-MW22B | 114-MW22B-20180419 | N | D | JC64571 | 4/19/2018 | 133000 | < 0.72 U | < 3.2 U | < 32 U | < 2.6 U |
| WELL | INTERMEDIATE | 114-MW22B | 114-MW22B-20180419 | N | T | JC64571 | 4/19/2018 | 151000 | < 0.72 U | < 3.2 U | **790** | < 2.6 U |
| WELL | INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | N | T | JC62130 | 3/12/2018 | 137000 | 1.3 J | 5.4 J | **609** | 4.3 |
| WELL | INTERMEDIATE | 114-MW25B | 114-MW25B-20170928 | N | T | JC52029 | 9/28/2017 | 56300 | < 0.72 U | < 3.2 U | 61.4 J | < 2.6 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | D | JC62228 | 3/13/2018 | 95300 | < 0.72 U | < 3.2 U | < 32 U | < 2.6 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | T | JC62228 | 3/13/2018 | 97500 | < 0.72 U | 5.2 J | **821 J** | < 2.6 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | D | JC62228 | 3/13/2018 | 94900 | < 0.72 U | < 3.2 U | < 32 U | < 2.6 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | T | JC62228 | 3/13/2018 | 110000 | 2.4 J | 6.7 J | **3240 J** | < 2.6 U |
| WELL | INTERMEDIATE | 114-MW27B | 114-MW27B-20170928 | N | T | JC52029 | 9/28/2017 | 82300 | 1.9 J | 8.4 J | **3300** | 4.7 |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | CALCIUM | COBALT | COPPER | IRON | LEAD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **Analyte** | 7440-70-2 | 7440-48-4 | 7440-50-8 | 7439-89-6 | 7439-92-1 |
| | | | | | | | **CAS RN** | N/A | 100 | 1300 | 300 | 5 |
| | | | | | | | **GWQS** | ug/L | ug/L | ug/L | ug/L | ug/L |
| | | | | | | | **Units** | | | | | |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | FD | T | JC56729A | 12/6/2017 | 240000 | 16.4 J | 70.3 | **538** | **< 13 U** |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | N | T | JC56729A | 12/6/2017 | 239000 | 17.0 J | 71.0 | **634** | **< 13 U** |
| WELL | INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | N | T | JC51890 | 9/27/2017 | 94800 | 8.6 J | 31.0 | **15300** | **23.0** |
| WELL | Intermediate | 114-MW37B | 114-MW37B-20170926 | N | T | JC51824 | 9/26/2017 | 125000 | < 0.72 U | < 3.2 U | **2470** | < 2.6 U |
| WELL | Intermediate | 114-MW38B | FORREST-114-MW38B-20171204 | N | T | JC56504A | 12/4/2017 | 56200 | < 0.72 U | 8.4 J | **1860** | **6.1** |
| WELL | INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | N | T | JC64643 | 4/20/2018 | 104000 | 28.0 J | < 160 U | 282 J | **< 130 U** |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20180129 | N | D | JC59916 | 1/29/2018 | 166000 | **< 250 U** | < 50 U | **< 500 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20180129 | N | T | JC59916 | 1/29/2018 | 166000 | **< 250 U** | < 50 U | **< 500 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20160617X | FD | T | JC22504 | 6/17/2016 | 123000 | 12.1 J | 30.6 JB | 24.1 J | < 2.3 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20160617 | N | T | JC22504 | 6/17/2016 | 122000 | 12.0 J | 30.1 JB | 38.8 J | < 2.3 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20160317 | N | T | JC16446 | 3/17/2016 | 131000 | 16.9 J | 21.4 | 177 | < 2.3 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20151211 | N | T | JC10525 | 12/11/2015 | 122000 | 24.1 J | 30.3 | 149 | < 2.3 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20150921 | N | T | JC4371A | 9/21/2015 | 130000 | 28.2 J | 38.0 | 25.6 J | < 2.3 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-ARC | N | D | JC59556 | 1/23/2018 | 163000 | **< 250 U** | < 50 U | **< 500 U** | **< 75 U** |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-ARC | N | T | JC59556 | 1/23/2018 | 151000 | **< 250 U** | < 50 U | **< 500 U** | **< 75 U** |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-20160621 | N | T | JC22642 | 6/21/2016 | 161000 | 35.8 J | 51.4 J | 138 J | **< 46 U** |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-20160323 | N | T | JC16843 | 3/23/2016 | 149000 | 31.2 J | 23.7 J | 116 J | **< 57 U** |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-20151216 | N | T | JC10831 | 12/16/2015 | 136000 | 35.5 J | 47.1 J | **451** | **< 46 U** |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-20150922 | N | T | JC4452A | 9/22/2015 | 135000 | 17.6 J | 54.4 J | 119 | **< 23 U** |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-ARC | N | D | JC59556 | 1/23/2018 | 22100 | < 100 U | < 20 U | **359** | **< 6.0 U** |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-ARC | N | T | JC59556 | 1/23/2018 | 24200 | < 100 U | 21.6 | **1070** | **< 6.0 U** |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-20160916 | N | T | JC27812 | 9/16/2016 | 164000 | 54.8 J | 38.0 | < 120 U | **< 110 U** |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-20160323 | N | T | JC16843 | 3/23/2016 | 133000 | 53.0 J | < 24 U | 230 J | **< 110 U** |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-20151216 | N | T | JC10831 | 12/16/2015 | 109000 | 63.5 | < 93 U | 197 | **< 120 U** |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-20150924 | N | T | JC4675A | 9/24/2015 | 108000 | 42.0 J | 141 J | **< 520 U** | **< 120 U** |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I | N | D | JC59556 | 1/23/2018 | 18000 | **115** | 21.4 | **665** | **25.8** |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I | N | T | JC59556 | 1/23/2018 | 16800 | 97.9 | 24.0 | **1400** | **24.2** |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20160620 | N | T | JC22555 | 6/20/2016 | 15200 | **107** | 25.1 | **927** | **< 23 U** |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20160316 | N | T | JC16336 | 3/16/2016 | 15900 J | 78.6 J | < 12 U | **1210** | **19.4** |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20151211 | N | T | JC10525 | 12/11/2015 | 11300 | **109** | 14.0 JB | **612** | **13.1 J** |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20150923 | N | T | JC4555A | 9/23/2015 | 15300 | 40.8 J | 10.1 JB | **910** | **6.2** |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-ARC | N | D | JC59745 | 1/25/2018 | 307000 | < 50 U | 10.4 | **505** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-ARC | N | T | JC59745 | 1/25/2018 | 330000 | < 50 U | 11.6 | **654** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-20160912 | N | T | JC27433 | 9/12/2016 | 339000 | 20.7 J | 41.8 | **366** | < 4.6 U |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-20160624 | N | T | JC22933 | 6/24/2016 | 304000 | 23.5 J | 46.5 | **1060** | < 4.6 U |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-20160325 | N | T | JC17054 | 3/25/2016 | 117000 | 14.8 J | 16.2 | **581** | 4.1 |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-20151211 | N | T | JC10525 | 12/11/2015 | 124000 | 18.1 J | 30.7 | 244 | 3.5 |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-20150923 | N | T | JC4555A | 9/23/2015 | 122000 | 11.4 JB | 15.9 JB | 137 JB | < 2.3 U |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-ARC | N | D | JC59745 | 1/25/2018 | 391000 | < 50 U | < 10 U | **1750** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-ARC | N | T | JC59745 | 1/25/2018 | 395000 | < 50 U | < 10 U | **1860** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-20160912 | N | T | JC27433 | 9/12/2016 | 104000 | 16.4 J | 12.3 | **469** | 2.9 J |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-20160624 | N | T | JC22933 | 6/24/2016 | 109000 | 17.1 J | 17.6 | **1000** | **5.5** |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-20160325 | N | T | JC17054 | 3/25/2016 | 252000 | 18.9 J | 36.6 | 288 | **5.5** |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-20151211 | N | T | JC10525 | 12/11/2015 | 84800 | 18.2 J | 15.5 JB | **493** | 4.1 |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-20150923 | N | T | JC4555A | 9/23/2015 | 152000 | 17.5 JB | 19.2 JB | 217 JB | 4.5 |
| WELL | INTERMEDIATE | 114-P1-IRM-1 | 114-P1-IRM-1-20180116 | N | D | JC58932 | 1/16/2018 | 170000 | **< 250 U** | < 50 U | **< 500 U** | **< 150 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-1 | 114-P1-IRM-1-20180116 | N | T | JC58932 | 1/16/2018 | 126000 | **< 250 U** | 93.0 | **29600** | **< 150 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-10I | 114-P1-IRM-10I | N | D | JC59745 | 1/25/2018 | 93500 | < 100 U | < 20 U | < 200 U | **< 120 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-10I | 114-P1-IRM-10I | N | T | JC59745 | 1/25/2018 | 99200 | < 100 U | < 20 U | **808** | **< 30 U** |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | CALCIUM | COBALT | COPPER | IRON | LEAD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-70-2 | 7440-48-4 | 7440-50-8 | 7439-89-6 | 7439-92-1 |
| | | | | | | | **GWQS** | N/A | 100 | 1300 | 300 | 5 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P1-IRM-11 | 114-P1-IRM-11-20180118 | N | D | JC59349 | 1/18/2018 | 119000 | **< 250 U** | 116 | **< 500 U** | **< 150 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-11 | 114-P1-IRM-11-20180118 | N | T | JC59349 | 1/18/2018 | 123000 | **< 250 U** | 132 | **< 500 U** | **< 150 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-12 | 114-P1-IRM-12-20180118 | N | D | JC59349 | 1/18/2018 | 112000 | **< 250 U** | 144 | **< 500 U** | **< 150 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-12 | 114-P1-IRM-12-20180118 | N | T | JC59349 | 1/18/2018 | 121000 | **< 250 U** | 161 | **< 500 U** | **< 150 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-13 | 114-P1-IRM-13-20180116 | N | D | JC58932 | 1/16/2018 | 222000 | **< 250 U** | 384 | **< 13000 U** | **< 380 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-13 | 114-P1-IRM-13-20180116 | N | T | JC58932 | 1/16/2018 | 220000 | **< 250 U** | 377 | **< 13000 U** | **< 380 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-14 | 114-P1-IRM-14-20180116 | N | D | JC58932 | 1/16/2018 | 79300 | **< 250 U** | 65.5 | **< 500 U** | **< 150 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-14 | 114-P1-IRM-14-20180116 | N | T | JC58932 | 1/16/2018 | 84500 | **< 250 U** | 132 | **23500** | **< 150 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-15 | 114-P1-IRM-15-20180122 | N | D | JC59495 | 1/22/2018 | 73000 | < 100 U | 29.6 | < 200 U | **< 30 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-15 | 114-P1-IRM-15-20180122 | N | T | JC59495 | 1/22/2018 | 76200 | < 100 U | 38.0 | **309** | **< 30 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-16 | 114-P1-IRM-16-20180116 | N | D | JC58932 | 1/16/2018 | 181000 | **< 250 U** | 276 | **< 10000 U** | **< 300 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-16 | 114-P1-IRM-16-20180116 | N | T | JC58932 | 1/16/2018 | 171000 | **< 250 U** | 256 | **< 10000 U** | **< 300 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-17 | 114-P1-IRM-17-20180122 | N | D | JC59495 | 1/22/2018 | 860000 | **< 250 U** | < 50 U | 190 | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-17 | 114-P1-IRM-17-20180122 | N | T | JC59495 | 1/22/2018 | 851000 | **< 250 U** | 78.8 | **804** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-18I | 114-P1-IRM-18I-20180118 | N | D | JC59349 | 1/18/2018 | 66400 | **< 250 U** | < 50 U | **< 500 U** | **< 75 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-18I | 114-P1-IRM-18I-20180118 | N | T | JC59349 | 1/18/2018 | 68300 | **< 250 U** | < 50 U | **< 500 U** | **< 75 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-19I | 114-P1-IRM-19I-20180117 | N | D | JC59023 | 1/17/2018 | 75300 | **< 250 U** | < 50 U | **< 500 U** | **< 30 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-19I | 114-P1-IRM-19I-20180117 | N | T | JC59023 | 1/17/2018 | 75300 | **< 250 U** | < 50 U | **614** | **< 30 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-2 | 114-P1-IRM-2-20180116 | N | D | JC58932 | 1/16/2018 | 194000 | **< 250 U** | < 50 U | **< 10000 U** | **< 300 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-2 | 114-P1-IRM-2-20180116 | N | T | JC58932 | 1/16/2018 | 202000 | **< 250 U** | < 50 U | **< 10000 U** | **< 300 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-20I | 114-P1-IRM-20I-20180117 | N | D | JC59023 | 1/17/2018 | 45300 | < 50 U | < 10 U | 142 | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1-IRM-20I | 114-P1-IRM-20I-20180117 | N | T | JC59023 | 1/17/2018 | 43300 | < 50 U | < 10 U | **2150** | 3.2 |
| WELL | INTERMEDIATE | 114-P1-IRM-21I | 114-P1-IRM-21I-20180118 | N | D | JC59349 | 1/18/2018 | 312000 | **< 250 U** | < 10 U | **28900** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-21I | 114-P1-IRM-21I-20180118 | N | T | JC59349 | 1/18/2018 | 300000 | **< 250 U** | < 10 U | **38700** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-22I | 114-P1-IRM-22I-20180118 | N | D | JC59349 | 1/18/2018 | 59500 | < 50 U | 14.2 | 201 | **< 6.0 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-22I | 114-P1-IRM-22I-20180118 | N | T | JC59349 | 1/18/2018 | 60800 | < 100 U | 27.0 | **1870** | **< 12 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-24I | 114-P1-IRM-24I-20180118 | N | D | JC59349 | 1/18/2018 | 51800 | < 100 U | < 20 U | < 200 U | **< 30 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-24I | 114-P1-IRM-24I-20180118 | N | T | JC59349 | 1/18/2018 | 50300 | < 100 U | < 20 U | **866** | **< 30 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-25I | 114-P1-IRM-25I-20180118 | N | D | JC59349 | 1/18/2018 | 70000 | < 50 U | 24.4 | **1260** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-25I | 114-P1-IRM-25I-20180118 | N | T | JC59349 | 1/18/2018 | 69600 | < 50 U | 28.9 | **2290** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-26I | 114-P1-IRM-26I-20180118 | N | D | JC59349 | 1/18/2018 | 115000 | < 50 U | < 10 U | **7800** | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1-IRM-26I | 114-P1-IRM-26I-20180118 | N | T | JC59349 | 1/18/2018 | 114000 | < 50 U | < 10 U | **9220** | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1-IRM-27I | 114-P1-IRM-27I-20180122 | N | D | JC59495 | 1/22/2018 | < 25000 U | **< 250 U** | 248 | **< 500 U** | **< 380 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-27I | 114-P1-IRM-27I-20180122 | N | T | JC59495 | 1/22/2018 | < 25000 U | **< 250 U** | 282 | **683** | **< 380 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-28I | 114-P1-IRM-28I-20180118 | N | D | JC59349 | 1/18/2018 | 15300 | < 50 U | 91.8 | 227 | **160** |
| WELL | INTERMEDIATE | 114-P1-IRM-28I | 114-P1-IRM-28I-20180118 | N | T | JC59349 | 1/18/2018 | 15100 | < 50 U | 222 | 274 | **146** |
| WELL | INTERMEDIATE | 114-P1-IRM-29I | 114-P1-IRM-29I-20180118 | N | D | JC59349 | 1/18/2018 | 35300 | < 50 U | < 10 U | **997** | **30.6** |
| WELL | INTERMEDIATE | 114-P1-IRM-29I | 114-P1-IRM-29I-20180118 | N | T | JC59349 | 1/18/2018 | 33400 | < 50 U | 49.7 | **3470** | **49.9** |
| WELL | INTERMEDIATE | 114-P1-IRM-3 | 114-P1-IRM-3-20180124 | N | D | JC59667 | 1/24/2018 | 70800 | < 50 U | < 10 U | 138 | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1-IRM-3 | 114-P1-IRM-3-20180124 | N | T | JC59667 | 1/24/2018 | 67100 | < 50 U | 11.4 | **912** | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1-IRM-30I | 114-P1-IRM-30I-20180122 | N | D | JC59495 | 1/22/2018 | < 25000 U | **< 250 U** | 242 | **< 500 U** | **187** |
| WELL | INTERMEDIATE | 114-P1-IRM-30I | 114-P1-IRM-30I-20180122 | N | T | JC59495 | 1/22/2018 | 28000 | **< 250 U** | 297 | **1220** | **289** |
| WELL | INTERMEDIATE | 114-P1-IRM-30I | 114-P1-IRM-30I-DUP-20180122 | FD | D | JC59495 | 1/22/2018 | 25200 | **< 250 U** | 261 | **< 500 U** | **193** |
| WELL | INTERMEDIATE | 114-P1-IRM-30I | 114-P1-IRM-30I-DUP-20180122 | FD | T | JC59495 | 1/22/2018 | 27100 | **< 250 U** | 274 | **1190** | **263** |
| WELL | INTERMEDIATE | 114-P1-IRM-31I | 114-P1-IRM-31I-20180119 | N | D | JC59431 | 1/19/2018 | 22200 | < 50 U | < 10 U | 124 | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1-IRM-31I | 114-P1-IRM-31I-20180119 | N | T | JC59431 | 1/19/2018 | 22800 | < 100 U | < 20 U | **8550** | **11.6** |
| WELL | INTERMEDIATE | 114-P1-IRM-32I | 114-P1-IRM-32I-20180122 | N | D | JC59495 | 1/22/2018 | 56700 | **< 250 U** | < 50 U | **< 500 U** | **< 150 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-32I | 114-P1-IRM-32I-20180122 | N | T | JC59495 | 1/22/2018 | 67400 | **< 250 U** | < 50 U | **6460** | **< 150 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-33I | 114-P1-IRM-33I-20180124 | N | D | JC59667 | 1/24/2018 | < 50000 U | **< 500 U** | 575 | **< 1000 U** | **246** |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | **Analyte** | CALCIUM | COBALT | COPPER | IRON | LEAD |
| | | | | | | **CAS RN** | 7440-70-2 | 7440-48-4 | 7440-50-8 | 7439-89-6 | 7439-92-1 |
| | | | | | | **GWQS** | N/A | 100 | 1300 | 300 | 5 |
| | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P1-IRM-33I | 114-P1-IRM-33I-20180124 | N | T | JC59667 | 1/24/2018 | < 50000 U | **< 500 U** | 591 | **1540** | **235** |
| WELL | INTERMEDIATE | 114-P1-IRM-34I | 114-P1-IRM-34I | N | D | JC59745 | 1/25/2018 | < 25000 U | **< 250 U** | 472 | **< 500 U** | **235** |
| WELL | INTERMEDIATE | 114-P1-IRM-34I | 114-P1-IRM-34I | N | T | JC59745 | 1/25/2018 | < 25000 U | **< 250 U** | 469 | **920** | **225** |
| WELL | INTERMEDIATE | 114-P1-IRM-35I | 114-P1-IRM-35I-20180122 | N | D | JC59495 | 1/22/2018 | 83000 | **< 250 U** | < 50 U | **< 500 U** | **< 150 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-35I | 114-P1-IRM-35I-20180122 | N | T | JC59495 | 1/22/2018 | 80800 | **< 250 U** | 53.0 | **< 500 U** | **< 300 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-36D | 114-P1-IRM-36D-20180124 | N | D | JC59667 | 1/24/2018 | 47100 | **< 250 U** | < 50 U | **< 500 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-36D | 114-P1-IRM-36D-20180124 | N | T | JC59667 | 1/24/2018 | 51900 | **< 250 U** | < 50 U | **< 500 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-36I | 114-P1-IRM-36I-20180124 | N | D | JC59667 | 1/24/2018 | 72200 | **< 250 U** | 172 | **< 500 U** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-36I | 114-P1-IRM-36I-20180124 | N | T | JC59667 | 1/24/2018 | 68900 | **< 250 U** | 160 | **1590** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-37I | 114-P1-IRM-37I-20180117 | N | D | JC59023 | 1/17/2018 | 45500 | < 50 U | < 10 U | < 100 U | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-37I | 114-P1-IRM-37I-20180117 | N | T | JC59023 | 1/17/2018 | 43300 | < 50 U | 11.1 | 131 | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-38 | 114-P1-IRM-38-20180126 | N | D | JC59838 | 1/26/2018 | 125000 | < 50 U | < 10 U | **912** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-38 | 114-P1-IRM-38-20180126 | N | T | JC59838 | 1/26/2018 | 122000 | < 50 U | 35.1 | **4700** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-39 | 114-P1-IRM-39-20180126 | N | D | JC59838 | 1/26/2018 | 435000 | **< 250 U** | < 10 U | **7630** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-39 | 114-P1-IRM-39-20180126 | N | T | JC59838 | 1/26/2018 | 406000 | **< 250 U** | 32.7 | **19300** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-40I | 114-P1-IRM-40I-20180117 | N | D | JC59023 | 1/17/2018 | 98100 | **< 250 U** | 304 | **< 2500 U** | **< 380 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-40I | 114-P1-IRM-40I-20180117 | N | T | JC59023 | 1/17/2018 | 84500 | **< 250 U** | 263 | **7510** | **< 380 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-41I | 114-P1-IRM-41I-20180126 | N | D | JC59838 | 1/26/2018 | 27500 | **< 250 U** | 87.0 | **< 500 U** | **< 150 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-41I | 114-P1-IRM-41I-20180126 | N | T | JC59838 | 1/26/2018 | 30700 | **< 250 U** | 104 | **3800** | **< 150 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-42I | 114-P1-IRM-42I-20180126 | N | D | JC59838 | 1/26/2018 | 415000 | **< 250 U** | 536 | **< 500 U** | **< 75 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-42I | 114-P1-IRM-42I-20180126 | N | T | JC59838 | 1/26/2018 | 414000 | **< 250 U** | 531 | **< 500 U** | **< 75 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-4I | 114-P1-IRM-4I-20180124 | N | D | JC59667 | 1/24/2018 | 288000 | **< 500 U** | **< 2000 U** | **< 1000 U** | **< 600 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-4I | 114-P1-IRM-4I-20180124 | N | T | JC59667 | 1/24/2018 | 291000 | **< 500 U** | **< 2000 U** | **1130** | **< 600 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-20180123 | N | D | JC59556 | 1/23/2018 | 75300 | **< 250 U** | 1180 | **< 500 U** | **520** |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-20180123 | N | T | JC59556 | 1/23/2018 | 184000 | **< 250 U** | 1190 | **114000** | **561** |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | N | T | JC58073A | 12/27/2017 | 129000 | 1.6 J | 4.1 J | **8240** | < 2.6 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | N | T | JC58073A | 12/27/2017 | 148000 | 1.5 J | 3.5 J | **11400** | < 2.6 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | N | T | JC58028A | 12/26/2017 | 134000 | 1.7 J | 3.2 J | **6950** | < 2.6 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | N | T | JC58028A | 12/26/2017 | 132000 | 2.2 J | 4.7 J | **7020** | < 2.6 U |
| WELL | INTERMEDIATE | 114-P1-IRM-6 | 114-P1-IRM-6-20180116 | N | D | JC58932 | 1/16/2018 | 221000 | **< 250 U** | 55.0 | **< 13000 U** | **< 380 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-6 | 114-P1-IRM-6-20180116 | N | T | JC58932 | 1/16/2018 | 258000 | **< 250 U** | 71.0 | **< 13000 U** | **< 380 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-7 | 114-P1-IRM-7-20180124 | N | D | JC59667 | 1/24/2018 | 146000 | < 100 U | < 20 U | **< 1000 U** | **< 150 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-7 | 114-P1-IRM-7-20180124 | N | T | JC59667 | 1/24/2018 | 146000 | < 100 U | 20.8 | **3860** | **< 150 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-8 | 114-P1-IRM-8-20180116 | N | D | JC58932 | 1/16/2018 | 156000 | **< 250 U** | 139 | **< 10000 U** | **< 300 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-8 | 114-P1-IRM-8-20180116 | N | T | JC58932 | 1/16/2018 | 136000 | **< 250 U** | 121 | **< 10000 U** | **< 300 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-9 | 114-P1-IRM-9-20180116 | N | D | JC58932 | 1/16/2018 | 169000 | **< 250 U** | < 50 U | **< 10000 U** | **< 300 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-9 | 114-P1-IRM-9-20180116 | N | T | JC58932 | 1/16/2018 | 159000 | **< 250 U** | < 50 U | **< 10000 U** | **< 300 U** |
| WELL | INTERMEDIATE | 114-P1-MW-1I | 114-P1-MW-1I-20180129 | N | D | JC59916 | 1/29/2018 | 110000 | **< 500 U** | < 100 U | **< 1000 U** | **< 90 U** |
| WELL | INTERMEDIATE | 114-P1-MW-1I | 114-P1-MW-1I-20180129 | N | T | JC59916 | 1/29/2018 | 107000 | **< 500 U** | < 100 U | **2060** | **< 90 U** |
| WELL | INTERMEDIATE | 114-P1-MW-2D | 114-P1-MW2D-20180119 | N | D | JC59431 | 1/19/2018 | 152000 | < 50 U | < 10 U | **2150** | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1-MW-2D | 114-P1-MW2D-20180119 | N | T | JC59431 | 1/19/2018 | 157000 | < 50 U | < 10 U | **5950** | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | N | T | JC58942 | 1/16/2018 | 165000 | 32.0 J | 19.3 | **2020** | 2.6 J |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | N | T | JC58942 | 1/16/2018 | 167000 | 26.4 J | 15.8 | **1940** | < 2.6 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | N | T | JC58942 | 1/16/2018 | 164000 | 21.3 J | 13.4 | **2380** | 2.6 J |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | N | T | JC58942 | 1/16/2018 | 169000 | 10.3 J | 5.1 J | **2440** | < 2.6 U |
| WELL | INTERMEDIATE | 114-P1-MW-3I | 114-P1-MW-3I-20180126 | N | D | JC59838 | 1/26/2018 | 129000 | < 100 U | 159 | < 200 U | **7.6** |
| WELL | INTERMEDIATE | 114-P1-MW-3I | 114-P1-MW-3I-20180126 | N | T | JC59838 | 1/26/2018 | 124000 | < 100 U | 170 | **6900** | **9.6** |
| WELL | INTERMEDIATE | 114-P1-MW-4I | 114-P1-MW-4I-20180126 | N | D | JC59838 | 1/26/2018 | 83600 | **< 250 U** | 563 | **< 500 U** | **< 75 U** |
| WELL | INTERMEDIATE | 114-P1-MW-4I | 114-P1-MW-4I-20180126 | N | T | JC59838 | 1/26/2018 | 80700 | **< 250 U** | 648 | **4030** | **< 75 U** |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | CALCIUM | COBALT | COPPER | IRON | LEAD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-70-2 | 7440-48-4 | 7440-50-8 | 7439-89-6 | 7439-92-1 |
| | | | | | | | **GWQS** | N/A | 100 | 1300 | 300 | 5 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P1-MW-5I | 114-P1-MW-5I-20180123 | N | D | JC59667 | 1/23/2018 | 205000 | < 50 U | < 10 U | **17800** | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1-MW-5I | 114-P1-MW-5I-20180123 | N | T | JC59667 | 1/23/2018 | 205000 | < 50 U | < 10 U | **19200** | < 3.0 U |
| WELL | INTERMEDIATE | 114-P1-MW-6I | 114-P1-MW6I-20180119 | N | D | JC59431 | 1/19/2018 | < 25000 U | **< 250 U** | < 1000 U | **< 500 U** | **< 300 U** |
| WELL | INTERMEDIATE | 114-P1-MW-6I | 114-P1-MW6I-20180119 | N | T | JC59431 | 1/19/2018 | < 50000 U | **< 500 U** | < 1000 U | **33700** | **325** |
| WELL | INTERMEDIATE | 114-P1-MW-7I | 114-P1-MW7I-20180125 | N | D | JC59745 | 1/25/2018 | 14700 | < 100 U | < 100 U | **< 1000 U** | **< 150 U** |
| WELL | INTERMEDIATE | 114-P1-MW-7I | 114-P1-MW7I-20180125 | N | T | JC59745 | 1/25/2018 | 19100 | **131** | 88.0 | **4600** | **< 150 U** |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-20180130 | N | D | JC59976 | 1/30/2018 | 723000 | < 50 U | < 10 U | **38600** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-20180130 | N | T | JC59976 | 1/30/2018 | 667000 | < 50 U | < 10 U | **44900** | **< 15 U** |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-20161212 | N | T | JC33522 | 12/12/2016 | 41800 | 0.70 J | < 2.4 U | **1240** | < 4.6 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-20160914 | N | T | JC27595 | 9/14/2016 | 71100 | 4.6 J | 12.5 | **9010** | **6.3** |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-20160628 | N | T | JC23103 | 6/28/2016 | 59300 | 0.90 J | 8.1 J | **1120** | < 2.3 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-20160324 | N | T | JC16953 | 3/24/2016 | 60200 | < 3.5 U | < 12 UJ | **1120** | **< 11 U** |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-20161219 | N | T | JC33991 | 12/19/2016 | 333000 | 1.3 J | < 4.8 U | **14000** | **< 23 U** |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-20160914 | N | T | JC27595 | 9/14/2016 | 344000 | 0.90 J | < 2.4 U | **12800** | < 2.3 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-20160628 | N | T | JC23103 | 6/28/2016 | 122000 | 0.80 J | < 2.4 U | **1170** | < 2.3 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-20160324 | N | T | JC16953 | 3/24/2016 | 198000 | < 3.5 U | < 12 UJ | **10400** | **15.0** |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-20161214 | N | T | JC33691 | 12/14/2016 | 100000 | 7.0 J | 17.2 J | **17100** | **26.4** |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-20160915 | N | T | JC27716 | 9/15/2016 | 89400 | 2.3 J | 4.5 J | **4540** | 3.0 |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-20160627 | N | T | JC23029 | 6/27/2016 | 53000 | 1.1 J | 7.2 J | **3040** | 4.6 |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-20160325X | FD | T | JC17059 | 3/25/2016 | 99100 J | 13.3 J | 28.1 J | **26900 J** | **27.2 J** |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-20160325 | N | T | JC17059 | 3/25/2016 | 88300 J | 7.7 J | 15.9 J | **15200 J** | **14.5 J** |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-20161219 | N | T | JC33991 | 12/19/2016 | 877000 | 2.7 J | < 12 U | **1810** | **< 11 U** |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-20160915 | N | T | JC27716 | 9/15/2016 | 803000 | 2.6 J | 4.1 J | **4220** | **< 11 U** |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-20160629X | FD | T | JC23208 | 6/29/2016 | 581000 | 2.7 J | 184 J | **4230** | **< 11 U** |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-20160629 | N | T | JC23208 | 6/29/2016 | 606000 | < 3.5 U | 22.4 J | **5060** | **< 11 U** |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-20160325 | N | T | JC17059 | 3/25/2016 | 481000 J | < 3.5 U | < 12 UJ | **4260 J** | **< 11 UJ** |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-ARC | N | D | JC59556 | 1/23/2018 | 813000 | **< 250 U** | 62.6 | **38800** | **< 75 U** |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-ARC | N | T | JC59556 | 1/23/2018 | 801000 | **< 250 U** | 68.2 | **49000** | **< 75 U** |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-20160620 | N | T | JC22555 | 6/20/2016 | 198000 | **321** | **2020** | **1370** | **< 230 U** |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-20160322 | N | T | JC16738 | 3/22/2016 | 247000 | **682 J** | **2290 J** | **1000 J** | **< 57 U** |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-20151216X | FD | T | JC10831 | 12/16/2015 | 218000 | **380** | **1890 J** | 268 | **< 1200 U** |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-20151216 | N | T | JC10831 | 12/16/2015 | 218000 | **385** | **1750 J** | 250 | **< 1200 U** |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-20150925 | N | T | JC4798A | 9/25/2015 | 150000 | **153** | 926 J | 142 J | **< 230 U** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20180130 | N | D | JC59976 | 1/30/2018 | 299000 | **< 500 U** | < 500 U | **< 5000 U** | **< 1500 U** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20180130 | N | T | JC59976 | 1/30/2018 | 261000 | **< 500 U** | < 500 U | **< 1000 U** | **< 1500 U** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20160620 | N | T | JC22555 | 6/20/2016 | 147000 | 25.2 J | < 24 U | 239 | **< 230 U** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20160323X | FD | T | JC16843 | 3/23/2016 | 139000 | 20.0 J | < 24 U | 263 J | **< 110 U** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20160323 | N | T | JC16843 | 3/23/2016 | 128000 | 20.2 J | < 24 U | **1420 J** | **< 110 U** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20151216 | N | T | JC10831 | 12/16/2015 | 157000 | 54.4 | < 190 U | 127 | **< 230 U** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20150925 | N | T | JC4798A | 9/25/2015 | 135000 | 11.5 J | < 190 U | < 100 U | **< 230 U** |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW-101I-20180119 | N | D | JC59431 | 1/19/2018 | < 25000 U | **< 250 U** | < 500 U | **< 500 U** | **< 150 U** |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW-101I-20180119 | N | T | JC59431 | 1/19/2018 | < 25000 U | **< 250 U** | < 500 U | **< 500 U** | **< 150 U** |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-20160622 | N | T | JC22758 | 6/22/2016 | 12500 | 20.4 J | 49.4 J | 155 J | **< 46 U** |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-20160323 | N | T | JC16843 | 3/23/2016 | 5800 J | 60.4 J | 41.2 J | **313 J** | **< 110 U** |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-20151216 | N | T | JC10831 | 12/16/2015 | 7530 | 32.7 J | 197 J | **< 520 U** | **< 120 U** |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-20150925 | N | T | JC4798A | 9/25/2015 | 8580 | 91.2 | 231 J | < 100 U | **< 230 U** |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I | N | D | JC59556 | 1/23/2018 | < 25000 U | **< 250 U** | 730 | **< 500 U** | **269** |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I | N | T | JC59556 | 1/23/2018 | < 25000 U | **< 250 U** | 785 | **640** | **< 300 U** |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-20160621X | FD | T | JC22642 | 6/21/2016 | 22700 | 29.4 J | 176 J | **2760** | **< 92 U** |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | **Analyte** | CALCIUM | COBALT | COPPER | IRON | LEAD |
| | | | | | | **CAS RN** | 7440-70-2 | 7440-48-4 | 7440-50-8 | 7439-89-6 | 7439-92-1 |
| | | | | | | **GWQS** | N/A | 100 | 1300 | 300 | 5 |
| | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-20160621 | N | T | JC22642 | 6/21/2016 | 21300 | 27.6 J | 302 J | **2310** | **< 92 U** |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-20160323 | N | T | JC16843 | 3/23/2016 | 28500 J | 48.2 J | 497 | **1220 J** | **156** |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-20151216 | N | T | JC10831 | 12/16/2015 | 35400 | 96.1 | 614 | **488** | **< 230 U** |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-20150928 | N | T | JC4872A | 9/28/2015 | 39300 | **253** | 974 | **5620** | **< 120 U** |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I | N | D | JC59745 | 1/25/2018 | 20800 | < 50 U | < 10 U | **395** | < 3.0 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I | N | T | JC59745 | 1/25/2018 | 22100 | < 50 U | < 10 U | **5160** | < 3.0 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-20160621 | N | T | JC22642 | 6/21/2016 | 25400 | 2.3 J | 21.2 J | **626** | < 2.3 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-20160322 | N | T | JC16738 | 3/22/2016 | 22400 | 21.0 J | < 24 U | **959** | **< 23 U** |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-20151216 | N | T | JC10831 | 12/16/2015 | 20800 | 24.6 J | < 9.3 U | **1280** | **49.8 J** |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-20150925 | N | T | JC4798A | 9/25/2015 | 24400 | 6.8 J | 26.1 J | **714** | **< 23 U** |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I | N | D | JC59556 | 1/23/2018 | 68200 | < 50 U | < 10 U | **4310** | < 3.0 U |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I | N | T | JC59556 | 1/23/2018 | 68800 | < 50 U | < 10 U | **5900** | < 3.0 U |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I-20160622 | N | T | JC22758 | 6/22/2016 | 84400 | 0.70 J | < 2.4 U | **6340** | < 2.3 U |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I-20160622X | FD | T | JC22758 | 6/22/2016 | 100000 | < 0.69 U | < 2.4 U | **5920** | < 2.3 U |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I-20160316 | N | T | JC16336 | 3/16/2016 | 224000 | < 3.5 U | < 12 U | **5000** | **< 11 U** |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I-20151210 | N | T | JC10380 | 12/10/2015 | 240000 | 0.80 J | 3.4 J | **5660** | **< 23 U** |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I-20150928 | N | T | JC4872A | 9/28/2015 | 235000 | 1.4 J | 2.8 J | **5430** | **< 12 U** |
| WELL | INTERMEDIATE | 132-P3A-MW102I | 132-P3A-MW102I-20160617 | N | T | JC22504 | 6/17/2016 | 129000 | 2.7 J | < 2.4 UB | **28900** | < 2.3 U |
| WELL | INTERMEDIATE | 132-P3A-MW102I | 132-P3A-MW102I-20160317 | N | T | JC16446 | 3/17/2016 | 113000 | 2.7 J | < 2.4 U | **22700** | < 2.3 U |
| WELL | INTERMEDIATE | 132-P3A-MW102I | 132-P3A-MW102I-20151215 | N | T | JC10723 | 12/15/2015 | 142000 | 2.7 J | 2.1 J | **27300 J** | < 2.3 U |
| WELL | INTERMEDIATE | 132-P3A-MW102I | 132-P3A-MW102I-20150929 | N | T | JC4978A | 9/29/2015 | 121000 | 2.2 JB | 3.4 J | **1570** | < 2.3 U |
| WELL | INTERMEDIATE | 132-P3A-MW103I | 132-P3A-MW103I-20160616 | N | T | JC22356 | 6/16/2016 | 9940 | 1.3 J | 4.0 J | 176 | < 2.3 U |
| WELL | INTERMEDIATE | 132-P3A-MW103I | 132-P3A-MW103I-20160318 | N | T | JC16549 | 3/18/2016 | 125000 | 4.0 J | < 2.4 U | 109 JB | < 2.3 UJ |
| WELL | INTERMEDIATE | 132-P3A-MW103I | 132-P3A-MW103I-20151215 | N | T | JC10723 | 12/15/2015 | 136000 | < 0.54 U | 10.5 J | 299 J | **13.1 J** |
| WELL | INTERMEDIATE | 132-P3A-MW103I | 132-P3A-MW103I-20150930 | N | T | JC5099A | 9/30/2015 | 103000 | 14.6 J | 111 | **460** | **< 12 U** |
| WELL | INTERMEDIATE | 132-P3A-MW104I | 132-P3A-MW104I-20160616 | N | T | JC22356 | 6/16/2016 | 80300 | < 0.69 U | 5.7 J | 78.2 J | < 2.3 U |
| WELL | INTERMEDIATE | 132-P3A-MW104I | 132-P3A-MW104I-20160318 | N | T | JC16549 | 3/18/2016 | 62500 | 0.80 J | 3.6 J | 81.3 J | < 2.3 UJ |
| WELL | INTERMEDIATE | 132-P3A-MW104I | 132-P3A-MW104I-20151215-X | FD | T | JC10723 | 12/15/2015 | 85600 | 0.90 J | 8.9 J | **684 J** | 2.7 J |
| WELL | INTERMEDIATE | 132-P3A-MW104I | 132-P3A-MW104I-20151215 | N | T | JC10723 | 12/15/2015 | 86300 | 0.90 J | 6.6 J | **1000 J** | < 2.3 U |
| WELL | INTERMEDIATE | 132-P3A-MW104I | 132-P3A-MW104I-20150929 | N | T | JC4978A | 9/29/2015 | 68600 | < 0.54 UB | 3.7 J | **837** | < 2.3 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-20161215 | N | T | JC33793 | 12/15/2016 | 82300 | < 0.69 U | < 2.4 U | **5330** | 4.2 |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-20160913 | N | T | JC27486 | 9/13/2016 | 86900 | 1.4 J | 4.1 J | **5640** | < 2.3 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-20160616 | N | T | JC22356 | 6/16/2016 | 87500 | 7.5 J | 19.0 | **6150** | **< 11 U** |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-20160324 | N | T | JC16937 | 3/24/2016 | 87800 | < 3.5 U | < 12 UJ | **3730** | **< 11 U** |
| WELL | INTERMEDIATE | 133-P3C-MW102I | 133-P3C-MW102I-20161216 | N | T | JC33887 | 12/16/2016 | 64700 J | 0.90 J | < 2.4 U | **5600** | 3.7 |
| WELL | INTERMEDIATE | 133-P3C-MW102I | 133-P3C-MW102I-20160913 | N | T | JC27486 | 9/13/2016 | 66500 | < 0.69 U | < 2.4 U | **3200** | < 2.3 U |
| WELL | INTERMEDIATE | 133-P3C-MW102I | 133-P3C-MW102I-20160615 | N | T | JC22273 | 6/15/2016 | 63300 | < 0.69 U | < 2.4 U | **2970 J** | 2.3 J |
| WELL | INTERMEDIATE | 133-P3C-MW102I | 133-P3C-MW102I-20160324 | N | T | JC16937 | 3/24/2016 | 65900 | < 3.5 U | < 12 UJ | **2080** | **< 11 U** |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-30.5 | N | T | JC5499 | 10/6/2015 | 49900 | 0.60 J | 8.3 J | **3280** | **9.4** |
| WELL | INTERMEDIATE | 137-P3B-MW101I | 137-P3B-MW101I-20160624 | N | T | JC22939 | 6/24/2016 | 37900 | < 0.69 U | 5.9 J | **784** | < 2.3 U |
| WELL | INTERMEDIATE | 137-P3B-MW101I | 137-P3B-MW101I-20160323 | N | T | JC16843 | 3/23/2016 | 71600 | 0.70 J | < 2.4 U | **1610 J** | 5.0 |
| WELL | INTERMEDIATE | 137-P3B-MW101I | 137-P3B-MW101I-20151218 | N | T | JC11088 | 12/18/2015 | 77000 | < 0.54 U | 10.8 | **1710** | < 4.6 U |
| WELL | INTERMEDIATE | 137-P3B-MW101I | 137-P3B-MW101I-20150930 | N | T | JC5099A | 9/30/2015 | 90100 | 1.7 J | < 1.9 U | **954** | < 2.3 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-20160615 | N | T | JC22273 | 6/15/2016 | 61100 | < 0.69 U | < 2.4 U | **934 J** | < 2.3 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-20160321 | N | T | JC16664 | 3/21/2016 | 75400 | < 0.69 U | < 2.4 U | **1180** | 2.5 J |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-20151216 | N | T | JC10831 | 12/16/2015 | 78600 | < 0.54 U | 2.1 J | **1160** | < 4.6 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-20150930X | FD | T | JC5099A | 9/30/2015 | 81700 | 1.3 J | < 1.9 U | **1320** | < 2.3 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-20150930 | N | T | JC5099A | 9/30/2015 | 84300 | 1.4 J | 12.4 J | **1200** | < 2.3 U |
| WELL | INTERMEDIATE | 143-P3A-MW101I | 143-P3A-MW101I-20160620 | N | T | JC22555 | 6/20/2016 | 87600 | 1.3 J | < 2.4 U | **398** | 3.4 |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | **Analyte** | CALCIUM | COBALT | COPPER | IRON | LEAD |
| | | | | | | **CAS RN** | 7440-70-2 | 7440-48-4 | 7440-50-8 | 7439-89-6 | 7439-92-1 |
| | | | | | | **GWQS** | N/A | 100 | 1300 | 300 | 5 |
| | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 143-P3A-MW101I | 143-P3A-MW101I-20160318 | N | T | JC16549 | 3/18/2016 | 82800 | 1.1 J | < 2.4 U | 133 J | 3.0 J |
| WELL | INTERMEDIATE | 143-P3A-MW101I | 143-P3A-MW101I-20151214 | N | T | JC10593 | 12/14/2015 | 88000 | 0.70 J | 6.5 JB | **1430** | **< 12 U** |
| WELL | INTERMEDIATE | 143-P3A-MW101I | 143-P3A-MW101I-20150928 | N | T | JC4872A | 9/28/2015 | 79900 | 5.6 J | 4.1 J | **801** | **< 12 U** |
| WELL | INTERMEDIATE | GPS-EW1I | GPS-EW1I-100616 | N | T | JC29150 | 10/6/2016 | 226000 | 4.1 J | < 2.4 U | < 12 UB | **< 11 U** |
| WELL | INTERMEDIATE | GPS-EW1I | GPS-EW1I-071216 | N | T | JC23920 | 7/12/2016 | 238000 | 4.6 J | < 2.4 U | 14.1 J | **< 11 U** |
| WELL | INTERMEDIATE | GPS-EW1I | GPS-EW1I-040616 | N | T | JC17755 | 4/6/2016 | 266000 | 7.7 J | < 2.4 U | 29.3 J | **< 11 U** |
| WELL | INTERMEDIATE | GPS-EW1I | GPS-EW1I-010616 | N | T | JC12114 | 1/6/2016 | 231000 | 13.1 J | < 1.9 U | 33.7 J | **< 12 U** |
| WELL | INTERMEDIATE | GPS-EW2I | GPS-EW2I-100616 | N | T | JC29150 | 10/6/2016 | 158000 | 2.0 J | < 2.4 UB | < 12 UB | < 2.3 U |
| WELL | INTERMEDIATE | GPS-EW2I | GPS-EW2I-071216 | N | T | JC23920 | 7/12/2016 | 185000 | 2.2 J | < 2.4 U | 45.4 J | **< 11 U** |
| WELL | INTERMEDIATE | GPS-EW2I | GPS-EW2I-040616 | N | T | JC17755 | 4/6/2016 | 239000 | 3.8 J | 13.1 | 50.6 J | **< 11 U** |
| WELL | INTERMEDIATE | GPS-EW2I | GPS-EW2I-010616 | N | T | JC12114 | 1/6/2016 | 105000 | 17.8 J | 40.3 | 61.3 J | 4.7 |
| WELL | INTERMEDIATE | GPS-IW12I | GPS-IW12I-100616 | N | T | JC29150 | 10/6/2016 | 42100 | 2.2 J | < 2.4 UB | **340** | **< 11 U** |
| WELL | INTERMEDIATE | GPS-IW12I | GPS-IW12I-071216 | N | T | JC23920 | 7/12/2016 | 17800 | 3.5 J | < 2.4 U | **320** | **< 11 U** |
| WELL | INTERMEDIATE | GPS-IW12I | GPS-IW12I-040616 | N | T | JC17755 | 4/6/2016 | 12100 | 4.0 J | < 2.4 U | **325** | **< 11 U** |
| WELL | INTERMEDIATE | GPS-IW12I | GPS-IW12I-010616 | N | T | JC12114 | 1/6/2016 | 13300 | 6.4 J | < 1.9 U | 219 | **< 6.9 U** |
| WELL | INTERMEDIATE | GPS-IW3I | GPS-IW3I-100616 | N | T | JC29150 | 10/6/2016 | 508000 | 1.5 J | < 2.4 U | **46900** | **< 23 U** |
| WELL | INTERMEDIATE | GPS-IW3I | GPS-IW3I-071216 | N | T | JC23920 | 7/12/2016 | 19200 | 10.7 J | < 2.4 U | 148 | **< 11 U** |
| WELL | INTERMEDIATE | GPS-IW3I | GPS-IW3I-040616 | N | T | JC17755 | 4/6/2016 | 397000 | < 3.5 U | < 2.4 U | **41400** | **< 57 U** |
| WELL | INTERMEDIATE | GPS-IW3I | GPS-IW3I-010616 | N | T | JC12114 | 1/6/2016 | 118000 | 2.5 J | 8.7 J | **2380** | **< 23 U** |
| WELL | INTERMEDIATE | GPS-IW4I | GPS-IW4I-100616 | N | T | JC29150 | 10/6/2016 | 228000 | 43.5 J | 19.0 JB | **316 J** | **< 11 U** |
| WELL | INTERMEDIATE | GPS-IW4I | GPS-IW4I-071216 | N | T | JC23920 | 7/12/2016 | 162000 | 42.4 J | < 4.8 U | **421** | **< 23 U** |
| WELL | INTERMEDIATE | GPS-IW4I | GPS-IW4I-040616 | N | T | JC17755 | 4/6/2016 | 68900 | 42.2 J | < 4.8 U | **703** | **< 92 U** |
| WELL | INTERMEDIATE | GPS-IW4I | GPS-IW4I-010616 | N | T | JC12114 | 1/6/2016 | 16800 | 10.8 J | < 1.9 U | 57.2 J | **< 12 U** |
| WELL | INTERMEDIATE | GPS-IW6I | GPS-IW6I-100616 | N | T | JC29150 | 10/6/2016 | 86700 | 4.6 J | < 2.4 UB | 151 JB | **< 11 U** |
| WELL | INTERMEDIATE | GPS-IW6I | GPS-IW6I-071216 | N | T | JC23920 | 7/12/2016 | 61600 | 6.3 J | < 2.4 U | 128 | **< 11 U** |
| WELL | INTERMEDIATE | GPS-IW6I | GPS-IW6I-040616 | N | T | JC17755 | 4/6/2016 | 23000 | 5.0 J | < 2.4 U | 153 | **< 23 U** |
| WELL | INTERMEDIATE | GPS-IW6I | GPS-IW6I-010616 | N | T | JC12114 | 1/6/2016 | 15800 | 5.0 J | < 1.9 U | 222 | **< 12 U** |
| WELL | INTERMEDIATE | GPS-IW9I | GPS-IW9I-100616 | N | T | JC29150 | 10/6/2016 | 24500 | 2.0 J | < 2.4 UB | < 12 UB | **< 11 U** |
| WELL | INTERMEDIATE | GPS-IW9I | GPS-IW9I-071216 | N | T | JC23920 | 7/12/2016 | 471000 | 0.90 J | < 2.4 U | **53500** | **< 11 U** |
| WELL | INTERMEDIATE | GPS-IW9I | GPS-IW9I-040616 | N | T | JC17755 | 4/6/2016 | 13700 | 8.7 J | < 2.4 U | 271 | **< 11 U** |
| WELL | INTERMEDIATE | GPS-IW9I | GPS-IW9I-010616 | N | T | JC12114 | 1/6/2016 | 15700 | 6.5 J | < 1.9 U | **375** | **< 12 U** |
| WELL | INTERMEDIATE | GPS-MW2I | GPS-MW2I-20180131 | N | D | JC60035 | 1/31/2018 | 167000 | **< 250 U** | 474 | **< 500 U** | **< 75 U** |
| WELL | INTERMEDIATE | GPS-MW2I | GPS-MW2I-20180131 | N | T | JC60035 | 1/31/2018 | 166000 | **< 250 U** | 470 | **< 500 U** | **< 75 U** |
| WELL | INTERMEDIATE | GPS-MW3I | GPS-MW3I-20180131 | N | D | JC60035 | 1/31/2018 | 166000 | < 100 U | 134 | < 200 U | **< 6.0 U** |
| WELL | INTERMEDIATE | GPS-MW3I | GPS-MW3I-20180131 | N | T | JC60035 | 1/31/2018 | 165000 | < 100 U | 134 | **726** | **< 6.0 U** |
| WELL | INTERMEDIATE | GPS-MW3I | GPS-MW3I-20180131-DUP | FD | D | JC60035 | 1/31/2018 | 167000 | < 100 U | 134 | < 200 U | **< 6.0 U** |
| WELL | INTERMEDIATE | GPS-MW3I | GPS-MW3I-20180131-DUP | FD | T | JC60035 | 1/31/2018 | 168000 | < 100 U | 138 | **824** | **< 6.0 U** |
| WELL | INTERMEDIATE | GPS-MW5I | GPS-MW5I-20180131 | N | D | JC60035 | 1/31/2018 | 232000 | < 50 U | < 10 U | < 100 U | **< 30 U** |
| WELL | INTERMEDIATE | GPS-MW5I | GPS-MW5I-20180131 | N | T | JC60035 | 1/31/2018 | 286000 | **< 250 U** | 50.0 | **29600** | **29.0** |
| WELL | INTERMEDIATE | GPS-MW5I | GPS-MW5I-100616 | N | T | JC29150 | 10/6/2016 | 130000 | 4.5 J | 14.7 JB | **1920** | **< 11 U** |
| WELL | INTERMEDIATE | GPS-MW5I | GPS-MW5I-071216 | N | T | JC23920 | 7/12/2016 | 129000 | 10.0 J | < 4.8 U | **5970** | **< 23 U** |
| WELL | INTERMEDIATE | GPS-MW5I | GPS-MW5I-040616 | N | T | JC17755 | 4/6/2016 | 160000 | 46.0 J | 56.2 | **80200** | **71.4** |
| WELL | INTERMEDIATE | GPS-MW5I | GPS-MW5I-010616 | N | T | JC12114 | 1/6/2016 | 101000 | 9.8 J | 22.3 | **15500** | **16.3** |
| WELL | INTERMEDIATE | GPS-MW6I | GPS-MW6I-20180130 | N | D | JC59976 | 1/30/2018 | 17700 | < 100 U | < 20 U | < 200 U | **< 120 U** |
| WELL | INTERMEDIATE | GPS-MW6I | GPS-MW6I-20180130 | N | T | JC59976 | 1/30/2018 | 51800 | **< 250 U** | < 50 U | **601** | **< 75 U** |
| WELL | INTERMEDIATE | GPS-MW6I | GPS-MW6I-100616 | N | T | JC29150 | 10/6/2016 | 200000 | < 3.5 U | 72.5 | < 62 U | **< 11 U** |
| WELL | INTERMEDIATE | GPS-MW6I | GPS-MW6I-071216 | N | T | JC23920 | 7/12/2016 | 313000 | 4.5 J | 43.0 J | 85.5 J | **< 23 U** |
| WELL | INTERMEDIATE | GPS-MW6I | GPS-MW6I-040616 | N | T | JC17755 | 4/6/2016 | 531000 | 6.0 J | 61.0 | < 25 U | **< 46 U** |
| WELL | INTERMEDIATE | GPS-MW6I | GPS-MW6I-010616 | N | T | JC12114 | 1/6/2016 | 595000 | 4.6 J | 51.4 | 23.9 J | **< 23 U** |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
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**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | CALCIUM | COBALT | COPPER | IRON | LEAD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-70-2 | 7440-48-4 | 7440-50-8 | 7439-89-6 | 7439-92-1 |
| | | | | | | | **GWQS** | N/A | 100 | 1300 | 300 | 5 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | GPS-MW7I | GPS-MW7I-100616 | N | T | JC29150 | 10/6/2016 | 198000 | 59.6 | < 2.4 U | < 12 UB | **< 11 U** |
| WELL | INTERMEDIATE | GPS-MW7I | GPS-MW7I-071216 | N | T | JC23920 | 7/12/2016 | 223000 | 52.8 | < 2.4 U | 27.0 J | **< 11 U** |
| WELL | INTERMEDIATE | GPS-MW7I | GPS-MW7I-040616 | N | T | JC17755 | 4/6/2016 | 398000 | 36.6 J | < 2.4 U | < 12 U | **< 23 U** |
| WELL | INTERMEDIATE | GPS-MW7I | GPS-MW7I-010616 | N | T | JC12114 | 1/6/2016 | 575000 | 13.9 J | 10.8 J | 65.7 J | **< 12 U** |
| WELL | INTERMEDIATE | MW7D | MW7D-45.0-20180423 | N | T | JC64763 | 4/23/2018 | 148000 | 0.90 J | < 3.2 U | **5750** | < 2.6 U |
| WELL | INTERMEDIATE | MW7D | MW7D-41.0-20180423 | N | T | JC64763 | 4/23/2018 | 147000 | 1.1 J | < 3.2 U | **6300** | < 2.6 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930X | FD | T | JC5098A | 9/30/2015 | 147000 | 5.0 JB | 19.4 J | **15400** | **9.0** |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930 | N | T | JC5098A | 9/30/2015 | 138000 | 6.1 J | 19.9 J | **16200** | **9.8** |
| WELL | INTERMEDIATE | MW7D | MW7D-40.5-20150930 | N | T | JC5098A | 9/30/2015 | 146000 | < 0.54 UB | < 1.9 U | **9870** | 4.1 |
| WELL | INTERMEDIATE | MW8D | MW8D-46.5-20150929 | N | T | JC4976A | 9/29/2015 | 292000 | < 2.7 U | 19.1 J | **1080** | **< 12 U** |
| WELL | INTERMEDIATE | MW8D | MW8D-41.5-20150929 | N | T | JC4976A | 9/29/2015 | 191000 | < 2.7 U | 7.5 J | **346** | **13.5 J** |
| WELL | DEEP | 114-MW20C | 114-MW20C-20180419 | N | T | JC64571 | 4/19/2018 | 111000 | < 0.72 U | 18.7 | **2750** | < 2.6 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-78.5-20151001 | N | T | JC5237A | 10/1/2015 | 147000 | 1.0 J | 13.8 J | **3260** | 4.6 |
| WELL | DEEP | 114-MW25C-2 | 114-MW25C-20180313 | N | D | JC62228 | 3/13/2018 | 95900 | 7.8 J | < 3.2 U | < 32 U | < 2.6 U |
| WELL | DEEP | 114-MW25C-2 | 114-MW25C-20180313 | N | T | JC62228 | 3/13/2018 | 137000 | 24.5 J | 38.5 J | **36400** | **22.0** |
| WELL | DEEP | 114-P1B-MW103D | 114-P1B-MW103D-20171214X | FD | T | JC57385 | 12/14/2017 | 154000 | < 3.6 U | < 16 U | **1270 J** | **< 66 U** |
| WELL | DEEP | 114-P1B-MW103D | 114-P1B-MW103D-20171214 | N | T | JC57385 | 12/14/2017 | 149000 | < 3.6 U | < 16 U | **1610 J** | **< 66 U** |
| WELL | DEEP | 114-P1-IRM-10D | 114-P1-IRM-10D | N | D | JC59745 | 1/25/2018 | 147000 | < 100 U | < 20 U | < 200 U | **< 60 U** |
| WELL | DEEP | 114-P1-IRM-10D | 114-P1-IRM-10D | N | T | JC59745 | 1/25/2018 | 146000 | < 100 U | < 20 U | < 200 U | **< 60 U** |
| WELL | DEEP | 114-P1-IRM-18D | 114-P1-IRM-18D-20180118 | N | D | JC59349 | 1/18/2018 | 85300 | **< 250 U** | < 50 U | **< 500 U** | **< 75 U** |
| WELL | DEEP | 114-P1-IRM-18D | 114-P1-IRM-18D-20180118 | N | T | JC59349 | 1/18/2018 | 82000 | **< 250 U** | < 50 U | **< 500 U** | **< 75 U** |
| WELL | DEEP | 114-P1-IRM-19D | 114-P1-IRM-19D-20180117 | N | D | JC59023 | 1/17/2018 | 30000 | < 100 U | < 20 U | < 200 U | **< 12 U** |
| WELL | DEEP | 114-P1-IRM-19D | 114-P1-IRM-19D-20180117 | N | T | JC59023 | 1/17/2018 | 29600 | < 100 U | < 20 U | **460** | **< 12 U** |
| WELL | DEEP | 114-P1-IRM-20D | 114-P1-IRM-20D-20180117 | N | D | JC59023 | 1/17/2018 | 166000 | < 50 U | < 10 U | 199 | < 3.0 U |
| WELL | DEEP | 114-P1-IRM-20D | 114-P1-IRM-20D-20180117 | N | T | JC59023 | 1/17/2018 | 169000 | < 50 U | < 10 U | **535** | < 3.0 U |
| WELL | DEEP | 114-P1-IRM-20D | 114-P1-IRM-20B-20180117-DUP | FD | D | JC59023 | 1/17/2018 | 168000 | < 50 U | < 10 U | 206 | < 3.0 U |
| WELL | DEEP | 114-P1-IRM-20D | 114-P1-IRM-20B-20180117-DUP | FD | T | JC59023 | 1/17/2018 | 180000 | < 50 U | < 10 U | **650** | < 3.0 U |
| WELL | DEEP | 114-P1-IRM-21D | 114-P1-IRM-21D-20180118 | N | D | JC59349 | 1/18/2018 | 75100 | **< 250 U** | < 50 U | **< 500 U** | **< 45 U** |
| WELL | DEEP | 114-P1-IRM-21D | 114-P1-IRM-21D-20180118 | N | T | JC59349 | 1/18/2018 | 69800 | **< 250 U** | < 50 U | **< 500 U** | **< 45 U** |
| WELL | DEEP | 114-P1-IRM-22D | 114-P1-IRM-22D-20180118 | N | D | JC59349 | 1/18/2018 | 115000 | < 100 U | 417 | < 200 U | **< 30 U** |
| WELL | DEEP | 114-P1-IRM-22D | 114-P1-IRM-22D-20180118 | N | T | JC59349 | 1/18/2018 | 119000 | < 100 U | 431 | < 200 U | **< 30 U** |
| WELL | DEEP | 114-P1-IRM-23D | 114-P1-IRM-23D-20180124 | N | D | JC59667 | 1/24/2018 | < 50000 U | **< 500 U** | **< 2000 U** | **< 1000 U** | **< 600 U** |
| WELL | DEEP | 114-P1-IRM-23D | 114-P1-IRM-23D-20180124 | N | T | JC59667 | 1/24/2018 | < 50000 U | **< 500 U** | **< 2000 U** | **< 1000 U** | **< 600 U** |
| WELL | DEEP | 114-P1-IRM-24D | 114-P1-IRM-24D-20180119 | N | D | JC59431 | 1/19/2018 | 57400 | **< 250 U** | < 50 U | **< 500 U** | **< 75 U** |
| WELL | DEEP | 114-P1-IRM-24D | 114-P1-IRM-24D-20180119 | N | T | JC59431 | 1/19/2018 | 56600 | **< 250 U** | < 50 U | **759** | **< 75 U** |
| WELL | DEEP | 114-P1-IRM-25D | 114-P1-IRM-25D-20180118 | N | D | JC59349 | 1/18/2018 | 75800 | **< 250 U** | 1010 | **< 500 U** | **128** |
| WELL | DEEP | 114-P1-IRM-25D | 114-P1-IRM-25D-20180118 | N | T | JC59349 | 1/18/2018 | 66800 | **< 250 U** | 878 | **667** | **117** |
| WELL | DEEP | 114-P1-IRM-26D | 114-P1-IRM-26D-20180119 | N | D | JC59431 | 1/19/2018 | 43000 | **< 250 U** | < 1000 U | **< 10000 U** | **362** |
| WELL | DEEP | 114-P1-IRM-26D | 114-P1-IRM-26D-20180119 | N | T | JC59431 | 1/19/2018 | 48400 | **< 250 U** | < 1000 U | **< 10000 U** | **445** |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-20180122 | N | D | JC59495 | 1/22/2018 | 37600 | < 100 U | < 20 U | < 200 U | **< 30 U** |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-20180122 | N | T | JC59495 | 1/22/2018 | 40900 | < 100 U | < 20 U | 274 | **< 30 U** |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | N | T | JC57943A | 12/22/2017 | 38300 | 12.4 J | 9.4 J | 160 J | **< 26 U** |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | N | T | JC57943A | 12/22/2017 | 35500 | 15.2 J | 10.0 J | 272 | **< 26 U** |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | N | T | JC57820 | 12/21/2017 | 39300 | 6.6 J | 15.2 | 261 | **< 26 U** |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | N | T | JC57820 | 12/21/2017 | 38500 | 6.8 J | 14.6 | 147 | **< 26 U** |
| WELL | DEEP | 114-P1-IRM-28D | 114-P1-IRM-28D-20180124 | N | D | JC59667 | 1/24/2018 | 40100 | < 50 U | 19.0 | < 100 U | **9.6** |
| WELL | DEEP | 114-P1-IRM-28D | 114-P1-IRM-28D-20180124 | N | T | JC59667 | 1/24/2018 | 39600 | < 50 U | 21.1 | < 100 U | **9.5** |
| WELL | DEEP | 114-P1-IRM-29D | 114-P1-IRM-29D-20180118 | N | D | JC59349 | 1/18/2018 | 33700 | **< 250 U** | 317 | **< 500 U** | **< 300 U** |
| WELL | DEEP | 114-P1-IRM-29D | 114-P1-IRM-29D-20180118 | N | T | JC59349 | 1/18/2018 | 32500 | **< 250 U** | 307 | **< 500 U** | **< 300 U** |

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| | | | | | | | **Analyte** | CALCIUM | COBALT | COPPER | IRON | LEAD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-70-2 | 7440-48-4 | 7440-50-8 | 7439-89-6 | 7439-92-1 |
| | | | | | | | **GWQS** | N/A | 100 | 1300 | 300 | 5 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | DEEP | 114-P1-IRM-30D | 114-P1-IRM-30D-20180122 | N | D | JC59495 | 1/22/2018 | 18500 | < 50 U | < 10 U | **304** | < 3.0 U |
| WELL | DEEP | 114-P1-IRM-30D | 114-P1-IRM-30D-20180122 | N | T | JC59495 | 1/22/2018 | 19200 | < 50 U | < 10 U | **1480** | **7.1** |
| WELL | DEEP | 114-P1-IRM-31D | 114-P1-IRM-31D-20180119 | N | D | JC59431 | 1/19/2018 | 27200 | **< 250 U** | < 50 U | **< 500 U** | **< 15 U** |
| WELL | DEEP | 114-P1-IRM-31D | 114-P1-IRM-31D-20180119 | N | T | JC59431 | 1/19/2018 | 27800 | **< 250 U** | < 50 U | **15500** | **17.5** |
| WELL | DEEP | 114-P1-IRM-32D | 114-P1-IRM-32D-20180122 | N | D | JC59495 | 1/22/2018 | 6010 | < 50 U | < 10 U | < 100 U | **< 9.0 U** |
| WELL | DEEP | 114-P1-IRM-32D | 114-P1-IRM-32D-20180122 | N | T | JC59495 | 1/22/2018 | 12600 | < 100 U | < 20 U | < 200 U | **< 30 U** |
| WELL | DEEP | 114-P1-IRM-33D | 114-P1-IRM-33D-20180124 | N | D | JC59667 | 1/24/2018 | < 50000 U | **< 500 U** | < 100 U | **< 1000 U** | **< 30 U** |
| WELL | DEEP | 114-P1-IRM-33D | 114-P1-IRM-33D-20180124 | N | T | JC59667 | 1/24/2018 | 72500 | **< 500 U** | < 100 U | **9620** | **< 30 U** |
| WELL | DEEP | 114-P1-IRM-34D | 114-P1-IRM-34D | N | D | JC59745 | 1/25/2018 | 68400 | < 50 U | 68.0 | < 100 U | 3.9 |
| WELL | DEEP | 114-P1-IRM-34D | 114-P1-IRM-34D | N | T | JC59745 | 1/25/2018 | 69300 | < 50 U | 63.0 | **370** | 4.5 |
| WELL | DEEP | 114-P1-IRM-35D | 114-P1-IRM-35D-20180122 | N | D | JC59495 | 1/22/2018 | 80100 | **< 250 U** | 219 | **< 500 U** | **< 380 U** |
| WELL | DEEP | 114-P1-IRM-35D | 114-P1-IRM-35D-20180122 | N | T | JC59495 | 1/22/2018 | 78000 | **< 250 U** | 213 | **2150** | **< 380 U** |
| WELL | DEEP | 114-P1-IRM-37D | 114-P1-IRM-37D-20180117 | N | D | JC59023 | 1/17/2018 | 52900 | **< 250 U** | < 50 U | **< 500 U** | **< 45 U** |
| WELL | DEEP | 114-P1-IRM-37D | 114-P1-IRM-37D-20180117 | N | T | JC59023 | 1/17/2018 | 44600 | **< 250 U** | < 50 U | **< 500 U** | **< 45 U** |
| WELL | DEEP | 114-P1-IRM-40D | 114-P1-IRM-40D-20180118 | N | D | JC59349 | 1/18/2018 | 122000 | **< 250 U** | < 50 U | **< 500 U** | **< 150 U** |
| WELL | DEEP | 114-P1-IRM-40D | 114-P1-IRM-40D-20180118 | N | T | JC59349 | 1/18/2018 | 139000 | **< 250 U** | < 50 U | **1400** | **< 150 U** |
| WELL | DEEP | 114-P1-IRM-41D | 114-P1-IRM-41D-20180126 | N | D | JC59838 | 1/26/2018 | 80800 | **< 250 U** | < 50 U | **< 500 U** | **< 15 U** |
| WELL | DEEP | 114-P1-IRM-41D | 114-P1-IRM-41D-20180126 | N | T | JC59838 | 1/26/2018 | 75200 | **< 250 U** | < 50 U | **1420** | **< 15 U** |
| WELL | DEEP | 114-P1-IRM-42D | 114-P1-IRM-42D-20180126 | N | D | JC59838 | 1/26/2018 | 225000 | **< 500 U** | 425 | **< 1000 U** | **< 600 U** |
| WELL | DEEP | 114-P1-IRM-42D | 114-P1-IRM-42D-20180126 | N | T | JC59838 | 1/26/2018 | 233000 | **< 500 U** | 443 | **< 1000 U** | **< 600 U** |
| WELL | DEEP | 114-P1-IRM-42D | 114-P1-IRM-42D-20180126-DUP | FD | D | JC59838 | 1/26/2018 | 229000 | **< 500 U** | 426 | **< 1000 U** | **< 600 U** |
| WELL | DEEP | 114-P1-IRM-42D | 114-P1-IRM-42D-20180126-DUP | FD | T | JC59838 | 1/26/2018 | 228000 | **< 500 U** | 432 | **< 1000 U** | **< 600 U** |
| WELL | DEEP | 114-P1-IRM-4D | 114-P1-IRM-4D-20180124 | N | D | JC59667 | 1/24/2018 | 156000 | **< 500 U** | < 100 U | **< 1000 U** | **< 150 U** |
| WELL | DEEP | 114-P1-IRM-4D | 114-P1-IRM-4D-20180124 | N | T | JC59667 | 1/24/2018 | 157000 | **< 500 U** | < 100 U | **1960** | **< 150 U** |
| WELL | DEEP | 114-P1-IRM-5D | 114-P1-IRM-5D-DUP-20180124 | FD | D | JC59667 | 1/24/2018 | 129000 | < 100 U | < 20 U | **< 1000 U** | **< 150 U** |
| WELL | DEEP | 114-P1-IRM-5D | 114-P1-IRM-5D-DUP-20180124 | FD | T | JC59667 | 1/24/2018 | 144000 | < 100 U | < 20 U | **< 1000 U** | **< 150 U** |
| WELL | DEEP | 114-P1-IRM-5D | 114-P1-MW-5I-20180124 | N | D | JC59556 | 1/24/2018 | 44300 | **< 250 U** | 655 | **< 500 U** | **117** |
| WELL | DEEP | 114-P1-IRM-5D | 114-P1-MW-5I-20180124 | N | T | JC59556 | 1/24/2018 | 57800 | **< 250 U** | 714 | **14700** | **101** |
| WELL | DEEP | 114-P1-MW-1D | 114-P1-MW-1D-20180129 | N | D | JC59916 | 1/29/2018 | 143000 | **< 500 U** | < 100 U | **< 1000 U** | **< 150 U** |
| WELL | DEEP | 114-P1-MW-1D | 114-P1-MW-1D-20180129 | N | T | JC59916 | 1/29/2018 | 140000 | **< 500 U** | < 100 U | **< 1000 U** | **< 150 U** |
| WELL | DEEP | 114-P1-MW-4D | 114-P1-MW-4D-20180126 | N | D | JC59838 | 1/26/2018 | 99200 | **< 250 U** | 85.5 | **< 500 U** | **< 30 U** |
| WELL | DEEP | 114-P1-MW-4D | 114-P1-MW-4D-20180126 | N | T | JC59838 | 1/26/2018 | 98600 | **< 250 U** | 93.0 | **< 500 U** | **< 30 U** |
| WELL | DEEP | 114-P1-MW-5D | 114-P1-MW-5D-20180123 | N | D | JC59667 | 1/24/2018 | 129000 | **< 500 U** | < 100 U | **< 1000 U** | **< 150 U** |
| WELL | DEEP | 114-P1-MW-5D | 114-P1-MW-5D-20180123 | N | T | JC59667 | 1/24/2018 | 133000 | **< 500 U** | < 100 U | **< 1000 U** | **< 150 U** |
| WELL | DEEP | 114-P1-MW-6D | 114-P1-MW-6D-20180119 | N | D | JC59431 | 1/19/2018 | 63000 | **< 250 U** | < 50 U | **< 500 U** | **< 15 U** |
| WELL | DEEP | 114-P1-MW-6D | 114-P1-MW-6D-20180119 | N | T | JC59431 | 1/19/2018 | 66200 | **< 250 U** | < 50 U | **611** | **< 15 U** |
| WELL | DEEP | 114-P1-MW-7D | 114-P1-MW7D-20180125 | N | D | JC59745 | 1/25/2018 | 56400 | < 100 U | < 20 U | < 200 U | **< 30 U** |
| WELL | DEEP | 114-P1-MW-7D | 114-P1-MW7D-20180125 | N | T | JC59745 | 1/25/2018 | 63100 | < 100 U | < 20 U | **736** | **< 30 U** |
| WELL | DEEP | 137-MW2C | 137-MW2C-20151214 | N | T | JC10597 | 12/14/2015 | 213000 | < 0.54 U | < 1.9 U | **991** | < 2.3 U |
| WELL | DEEP | MW6C | MC6C-20180129 | N | D | JC59916 | 1/29/2018 | 313000 | **< 250 U** | 112 | **< 500 U** | **< 15 U** |
| WELL | DEEP | MW6C | MC6C-20180129 | N | T | JC59916 | 1/29/2018 | 307000 | **< 250 U** | 106 | **733** | **< 15 U** |
| WELL | DEEP | MW6C | MW6C-57.0-20171220 | N | T | JC57752 | 12/20/2017 | 307000 | 49.1 J | 109 | **499** | **13.4 J** |
| WELL | DEEP | MW6C | MW6C-62.0-20171220 | N | T | JC57752 | 12/20/2017 | 319000 | 48.8 J | 113 | **961** | **20.9** |
| WELL | DEEP | MW6C | 114-MW6C-20160321 | N | T | JC16664 | 3/21/2016 | 139000 | 14.4 J | 45.9 | **1260** | 4.6 |
| WELL | DEEP | MW8F | MW8F-82.0-20151001 | N | T | JC5237A | 10/1/2015 | 155000 | 4.3 J | 14.5 J | **9600** | **18.5** |
| WELL | DEEP | MW8F | MW8F-79.5-20151001 | N | T | JC5237A | 10/1/2015 | 176000 | 1.0 J | < 1.9 U | **2860** | **5.2** |
| WELL | Bedrock | 114-MW16B | 114-MW16B-20151214 | N | T | JC10597 | 12/14/2015 | 36200 | < 0.54 U | 14.8 J | 97.2 J | < 2.3 U |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | MAGNESIUM | MANGANESE | MERCURY | POTASSIUM | SELENIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7439-95-4 | 7439-96-5 | 7439-97-6 | 7440-09-7 | 7782-49-2 |
| | | | | | | | **GWQS** | N/A | 50 | 2 | N/A | 40 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-MC-MW101S | 114-MC-MW101S-20160622 | N | T | JC22758 | 6/22/2016 | 43700 | **4340** | < 0.047 U | 35000 | **< 41 U** |
| WELL | SHALLOW | 114-MC-MW101S | 114-MC-MW101S-20160314X | FD | T | JC16175 | 3/14/2016 | 39700 | **3570** | < 0.047 U | 27400 | 9.3 J |
| WELL | SHALLOW | 114-MC-MW101S | 114-MC-MW101S-20160314 | N | T | JC16175 | 3/14/2016 | 39300 | **3270** | < 0.047 U | 27500 | 6.3 J |
| WELL | SHALLOW | 114-MC-MW101S | 114-MC-MW101S-20151209 | N | T | JC10220A | 12/9/2015 | 45100 | **5970** | < 0.069 U | 42800 | < 9.9 U |
| WELL | SHALLOW | 114-MC-MW101S | 114-MC-MW101S-20150921 | N | T | JC4371A | 9/21/2015 | 49300 | **7670** | < 0.069 U | 59800 | < 9.9 U |
| WELL | SHALLOW | 114-MC-MW102S | 114-MC-MW102S-20160624 | N | T | JC22939 | 6/24/2016 | 13700 | **2460** | < 0.047 U | 173000 | < 20 U |
| WELL | SHALLOW | 114-MC-MW102S | 114-MC-MW102S-20160314 | N | T | JC16175 | 3/14/2016 | 20100 | **8470** | < 0.047 U | 143000 | < 20 U |
| WELL | SHALLOW | 114-MC-MW102S | 114-MC-MW102S-20151210 | N | T | JC10380 | 12/10/2015 | 11800 J | **1870** | < 0.069 U | 202000 | < 16 U |
| WELL | SHALLOW | 114-MC-MW102S | 114-MC-MW102S-20150921 | N | T | JC4371A | 9/21/2015 | 24900 | **5350** | < 0.069 U | 215000 | < 16 U |
| WELL | SHALLOW | 114-MW15A | 114-MW15A-20180417 | N | D | JC64376 | 4/17/2018 | 4390 J | 5.0 JB | < 0.13 U | 7670 J | < 6.6 U |
| WELL | SHALLOW | 114-MW15A | 114-MW15A-20180417 | N | T | JC64376 | 4/17/2018 | 4770 J | 25.7 | < 0.13 U | 7710 J | < 6.6 U |
| WELL | SHALLOW | 114-MW16A | 114-MW16A-20151214-10.65 | N | T | JC10597 | 12/14/2015 | 7610 J | **95.8** | < 0.069 U | 6690 J | 4.3 J |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-8.0-20180420 | N | T | JC64643 | 4/20/2018 | 4210 J | **79.5** | < 0.27 U | 14400 | 7.8 J |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-11.0-20180420 | N | T | JC64643 | 4/20/2018 | 5770 | **115** | < 0.27 U | 12500 | < 6.6 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-12.5-20151001 | N | T | JC5237A | 10/1/2015 | 3580 J | 49.8 | < 0.069 U | 26300 | < 3.3 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-10.5-20151001 | N | T | JC5237A | 10/1/2015 | 4980 J | **92.8** | < 0.069 U | 21300 | < 3.3 U |
| WELL | SHALLOW | 114-MW22A | 114-MW22A-11.0-20180419 | N | T | JC64571 | 4/19/2018 | 31800 | **1720** | < 0.13 U | 14400 | < 6.6 U |
| WELL | SHALLOW | 114-MW22A | 114-MW22A-16.0-20180419 | N | T | JC64571 | 4/19/2018 | 30500 | **1750** | < 0.13 U | 14000 | < 6.6 U |
| WELL | SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | N | T | JC65325 | 5/2/2018 | 67900 | **3810** | < 0.13 U | 26600 | 8.2 J |
| WELL | SHALLOW | 114-MW25A | 114-MW25A-20170926 | N | T | JC51824 | 9/26/2017 | 27400 | **781** | < 0.083 U | 8180 J | < 6.6 U |
| WELL | SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | N | T | JC57565 | 12/18/2017 | 15000 | **4370** | < 0.083 U | 29100 | < 6.6 U |
| WELL | SHALLOW | 114-MW27A | 114-MW27A-20170926 | N | T | JC51824 | 9/26/2017 | 19500 | **1960** | < 0.083 U | 7980 J | < 6.6 U |
| WELL | SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | N | T | JC57565 | 12/18/2017 | 10500 | **321** | < 0.083 U | 7930 J | < 6.6 U |
| WELL | SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | N | T | JC56729A | 12/6/2017 | 35400 | **2350** | < 0.083 U | 6250 J | < 6.6 U |
| WELL | SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | N | T | JC56859A | 12/7/2017 | 10200 | **3650** | < 0.10 UB | 14200 | < 6.6 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927-X | FD | T | JC51890 | 9/27/2017 | 324 J | 10.2 J | < 0.083 U | 39800 | < 6.6 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927 | N | T | JC51890 | 9/27/2017 | 360 J | 9.9 J | < 0.083 U | 41800 | < 6.6 U |
| WELL | SHALLOW | 114-MW37A | 114-MW37A-20170928 | N | T | JC52029 | 9/28/2017 | 18800 | **5150** | < 0.083 U | 10300 | < 6.6 U |
| WELL | SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | N | T | JC56504A | 12/4/2017 | 19600 | **2700** | < 0.083 U | 11200 J | < 13 U |
| WELL | SHALLOW | 114-MW41A | 114-MW41A-20180420 | N | T | JC64643 | 4/20/2018 | < 320 U | 8.5 J | < 0.80 U | 10400 J | **< 66 U** |
| WELL | SHALLOW | 114-MW42A | 114-MW42A-20180417 | N | T | JC64376 | 4/17/2018 | 34600 | **1360** | < 0.13 U | 3550 J | < 6.6 U |
| WELL | SHALLOW | 114-MW43A | 114-MW43A-20180417 | N | T | JC64376 | 4/17/2018 | 55500 | **10700** | < 0.13 U | 13400 | < 13 U |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-20160916 | N | T | JC27812 | 9/16/2016 | < 85 U | < 0.39 U | < 0.047 U | 56700 | < 4.1 U |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-20160617 | N | T | JC22504 | 6/17/2016 | < 85 U | < 0.39 U | < 0.047 U | 58400 | 5.2 J |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-20160317 | N | T | JC16446 | 3/17/2016 | 261 J | 8.0 J | < 0.047 U | 84700 | 7.8 J |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-20151209 | N | T | JC10220A | 12/9/2015 | 20800 | **187** | < 0.069 U | 5980 J | < 3.3 U |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-20150921 | N | T | JC4371A | 9/21/2015 | 70.6 J | 7.0 J | < 0.069 U | 78200 | 3.6 J |
| WELL | SHALLOW | 114-P1B-MW101S | 114-P1B-MW101S-20160621 | N | T | JC22642 | 6/21/2016 | 394 J | 7.4 J | < 0.047 U | 24200 | 6.4 J |
| WELL | SHALLOW | 114-P1B-MW101S | 114-P1B-MW101S-20160314 | N | T | JC16175 | 3/14/2016 | 1070 J | 33.1 | < 0.047 U | 12800 | 4.7 J |
| WELL | SHALLOW | 114-P1B-MW101S | 114-P1B-MW101S-20151209 | N | T | JC10220A | 12/9/2015 | 117 J | 7.5 J | < 0.069 U | 27000 | < 3.3 U |
| WELL | SHALLOW | 114-P1B-MW101S | 114-P1B-MW101S-20150922 | N | T | JC4452A | 9/22/2015 | < 49 U | < 0.18 U | < 0.069 U | 26700 | 7.2 J |
| WELL | SHALLOW | 114-P1B-MW102S | 114-P1B-MW102S-20160916 | N | T | JC27812 | 9/16/2016 | 26500 | **247** | < 0.28 U | 73000 | 8.2 J |
| WELL | SHALLOW | 114-P1B-MW102S | 114-P1B-MW102S-20160314 | N | T | JC16175 | 3/14/2016 | 33200 | **264** | 0.074 J | 66900 | 14.9 |
| WELL | SHALLOW | 114-P1B-MW102S | 114-P1B-MW102S-20151210 | N | T | JC10380 | 12/10/2015 | 40200 J | **474** | < 0.42 U | 76600 | 11.9 |
| WELL | SHALLOW | 114-P1B-MW102S | 114-P1B-MW102S-20150922 | N | T | JC4452A | 9/22/2015 | 44100 | **381** | < 0.14 U | 91700 | 8.6 J |
| WELL | SHALLOW | 114-P1B-MW103S | 114-P1B-MW103S-20160622 | N | T | JC22758 | 6/22/2016 | < 85 U | < 0.39 U | < 0.047 U | 53700 | 20.7 |
| WELL | SHALLOW | 114-P1B-MW103S | 114-P1B-MW103S-20160318 | N | T | JC16549 | 3/18/2016 | 614 J | 6.6 J | < 0.047 U | 55500 | 6.5 J |
| WELL | SHALLOW | 114-P1B-MW103S | 114-P1B-MW103S-20151210 | N | T | JC10380 | 12/10/2015 | 1240 J | **113** | < 0.069 U | 68800 | < 3.3 U |
| WELL | SHALLOW | 114-P1B-MW103S | 114-P1B-MW103S-20150922 | N | T | JC4452A | 9/22/2015 | < 49 UB | 30.0 J | < 0.069 U | 76600 | < 16 U |

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**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | MAGNESIUM | MANGANESE | MERCURY | POTASSIUM | SELENIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7439-95-4 | 7439-96-5 | 7439-97-6 | 7440-09-7 | 7782-49-2 |
| | | | | | | | **GWQS** | N/A | 50 | 2 | N/A | 40 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-P1B-MW104S | 114-P1B-MW104S-20160621 | N | T | JC22642 | 6/21/2016 | < 85 U | < 0.39 U | < 0.047 U | 61700 | 11.1 |
| WELL | SHALLOW | 114-P1B-MW104S | 114-P1B-MW104S-20160322 | N | T | JC16738 | 3/22/2016 | < 85 U | 14.1 J | < 0.047 U | 69700 | 14.1 |
| WELL | SHALLOW | 114-P1B-MW104S | 114-P1B-MW104S-20151211 | N | T | JC10525 | 12/11/2015 | 73.1 J | 28.6 | < 0.069 U | 66200 | 12.3 |
| WELL | SHALLOW | 114-P1B-MW104S | 114-P1B-MW104S-20150922 | N | T | JC4452A | 9/22/2015 | < 49 UB | 32.5 J | < 0.069 U | 62700 | 10.6 |
| WELL | SHALLOW | 114-P1C-MW101S | 114-P1C-MW101S-20160620 | N | T | JC22555 | 6/20/2016 | 40300 | **3490** | < 0.047 U | 39100 | 6.3 J |
| WELL | SHALLOW | 114-P1C-MW101S | 114-P1C-MW101S-20160316 | N | T | JC16336 | 3/16/2016 | 40500 | **3330** | < 0.047 U | 34200 J | < 20 U |
| WELL | SHALLOW | 114-P1C-MW101S | 114-P1C-MW101S-20151211 | N | T | JC10525 | 12/11/2015 | 36200 | **3890** | < 0.069 U | 43000 | < 16 U |
| WELL | SHALLOW | 114-P1C-MW101S | 114-P1C-MW101S-20150923X | FD | T | JC4555A | 9/23/2015 | 44700 | **4530** | < 0.069 U | 50600 | < 33 U |
| WELL | SHALLOW | 114-P1C-MW101S | 114-P1C-MW101S-20150923 | N | T | JC4555A | 9/23/2015 | 44100 | **4560** | < 0.069 U | 50300 | < 33 U |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-20161212X | FD | T | JC33522 | 12/12/2016 | 277 J | 5.0 J | < 0.047 UB | 15200 | < 4.1 U |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-20161212 | N | T | JC33522 | 12/12/2016 | 362 J | 10.9 J | < 0.047 U | 15600 | < 4.1 U |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-20160914X | FD | T | JC27595 | 9/14/2016 | 467 J | 16.1 J | < 0.047 UB | 22900 | < 4.1 U |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-20160914 | N | T | JC27595 | 9/14/2016 | 373 J | 14.2 J | < 0.047 UB | 22200 | < 4.1 U |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-20160628 | N | T | JC23103 | 6/28/2016 | 61100 | **29100** | < 0.047 U | 18600 | < 20 U |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-20160324 | N | T | JC16953 | 3/24/2016 | 897 J | 36.9 J | < 0.047 U | 26800 J | < 20 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-20161212 | N | T | JC33522 | 12/12/2016 | 2460 J | **82.0** | < 0.047 UB | 41100 | < 4.1 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-20160914 | N | T | JC27595 | 9/14/2016 | 1520 J | **67.8** | < 0.047 UB | 48800 | 5.7 J |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-20160628 | N | T | JC23103 | 6/28/2016 | 6370 | **180** | < 0.047 U | 52700 | 7.1 J |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-20160324 | N | T | JC16953 | 3/24/2016 | 1410 J | 41.2 J | < 0.047 U | 46100 J | < 20 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-20161213 | N | T | JC33573 | 12/13/2016 | 207000 | **38500** | 0.064 J | 97500 | < 20 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-20160915 | N | T | JC27716 | 9/15/2016 | 246000 | **44400** | < 0.047 U | 116000 | **< 41 U** |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-20160627 | N | T | JC23029 | 6/27/2016 | 257000 | **43400** | < 0.047 U | 109000 | < 20 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-20160325 | N | T | JC17059 | 3/25/2016 | 194000 | **35100 J** | < 0.047 U | 87800 | < 20 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-20161214 | N | T | JC33691 | 12/14/2016 | 1720 J | 32.0 | < 0.047 U | 27600 | < 4.1 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-20160915 | N | T | JC27716 | 9/15/2016 | 321 J | 8.7 J | < 0.047 U | 24400 | < 4.1 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-20160629 | N | T | JC23208 | 6/29/2016 | 3450 J | **145** | < 0.047 U | 26100 | 10.6 |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-20160325 | N | T | JC17059 | 3/25/2016 | 2920 J | **104 J** | < 0.047 U | 25200 J | < 20 U |
| WELL | SHALLOW | 114-P2B1-MW101S | 114-P2B1-MW101S-20160620 | N | T | JC22555 | 6/20/2016 | 40500 | **5050** | < 0.047 U | 20100 | < 12 U |
| WELL | SHALLOW | 114-P2B1-MW101S | 114-P2B1-MW101S-20160315 | N | T | JC16239 | 3/15/2016 | 61900 | **197** | < 0.047 U | 21000 | < 12 U |
| WELL | SHALLOW | 114-P2B1-MW101S | 114-P2B1-MW101S-20151210X | FD | T | JC10380 | 12/10/2015 | 62700 J | **16600** | < 0.069 U | 32500 | < 33 U |
| WELL | SHALLOW | 114-P2B1-MW101S | 114-P2B1-MW101S-20151210 | N | T | JC10380 | 12/10/2015 | 63300 J | **17200** | < 0.069 U | 33100 | < 33 U |
| WELL | SHALLOW | 114-P2B1-MW101S | 114-P2B1-MW101S-20150922 | N | T | JC4452A | 9/22/2015 | 59600 | **17100** | < 0.069 U | 52400 | < 33 U |
| WELL | SHALLOW | 114-P2B1-MW102S | 114-P2B1-MW102S-20160623 | N | T | JC22854 | 6/23/2016 | 70000 | **10100** | 0.051 J | 31700 | < 20 U |
| WELL | SHALLOW | 114-P2B1-MW102S | 114-P2B1-MW102S-20160316 | N | T | JC16336 | 3/16/2016 | 58700 | **9680** | < 0.047 U | 49400 J | < 20 U |
| WELL | SHALLOW | 114-P2B1-MW102S | 114-P2B1-MW102S-20151211 | N | T | JC10525 | 12/11/2015 | 59400 | **14400** | < 0.069 U | 46000 | < 16 U |
| WELL | SHALLOW | 114-P2B1-MW102S | 114-P2B1-MW102S-20150923 | N | T | JC4555A | 9/23/2015 | 66000 | **14600** | < 0.069 U | 59000 | < 16 U |
| WELL | SHALLOW | 114-P2B1-MW103S | 114-P2B1-MW103S-20160623 | N | T | JC22854 | 6/23/2016 | 53600 | **7740** | < 0.047 U | 50700 | < 20 U |
| WELL | SHALLOW | 114-P2B1-MW103S | 114-P2B1-MW103S-20160316 | N | T | JC16336 | 3/16/2016 | 69800 | **10900** | < 0.047 U | 28900 J | < 20 U |
| WELL | SHALLOW | 114-P2B1-MW103S | 114-P2B1-MW103S-20151211 | N | T | JC10525 | 12/11/2015 | 50000 | **8790** | < 0.069 U | 57900 | < 16 U |
| WELL | SHALLOW | 114-P2B1-MW103S | 114-P2B1-MW103S-20150923 | N | T | JC4555A | 9/23/2015 | 58900 | **13100** | < 0.069 U | 65900 | 22.9 J |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20160620 | N | T | JC22555 | 6/20/2016 | 48300 | **8260** | < 0.047 U | 25600 | 6.7 J |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20160315 | N | T | JC16239 | 3/15/2016 | 55000 | **10500** | 0.063 J | 25900 | < 12 U |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20151209 | N | T | JC10220A | 12/9/2015 | 71400 | **15900** | < 0.069 U | 40700 | < 9.9 U |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20150921 | N | T | JC4371A | 9/21/2015 | 80400 | **16100** | < 0.069 U | 51700 | < 33 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-20160622 | N | T | JC22758 | 6/22/2016 | 53600 | **16500** | < 0.047 U | 35100 | **< 41 U** |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-20160315 | N | T | JC16239 | 3/15/2016 | 27800 | **8460** | < 0.047 U | 19800 | 6.8 J |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-20151210 | N | T | JC10380 | 12/10/2015 | 43800 J | **12000** | < 0.069 U | 43700 | < 33 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-20150925 | N | T | JC4798A | 9/25/2015 | 54400 | **16300** | < 0.069 U | 50600 | 19.2 J |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-20160621 | N | T | JC22642 | 6/21/2016 | 243000 | **51100** | < 0.047 U | 73200 | < 20 U |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | MAGNESIUM | MANGANESE | MERCURY | POTASSIUM | SELENIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7439-95-4 | 7439-96-5 | 7439-97-6 | 7440-09-7 | 7782-49-2 |
| | | | | | | | **GWQS** | N/A | 50 | 2 | N/A | 40 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-20160316 | N | T | JC16336 | 3/16/2016 | 329000 | **62600** | < 0.047 U | 89200 | < 20 U |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-20151210 | N | T | JC10380 | 12/10/2015 | 338000 J | **77300** | < 0.069 U | 112000 | 17.1 J |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-20150928 | N | T | JC4872A | 9/28/2015 | 408000 | **103000** | < 0.069 U | 143000 | **< 160 U** |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-20160621 | N | T | JC22642 | 6/21/2016 | 91600 | **30700** | < 0.047 U | 112000 | < 20 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-20160322 | N | T | JC16738 | 3/22/2016 | 77000 | **31900** | < 0.047 U | 95700 | < 20 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-20151211 | N | T | JC10525 | 12/11/2015 | 81800 | **34600** | < 0.069 U | 146000 | 26.5 J |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-20150925 | N | T | JC4798A | 9/25/2015 | 85300 | **30300** | < 0.069 U | 245000 | 38.1 J |
| WELL | SHALLOW | 114-P2B4-MW103S | 114-P2B4-MW103S-20160622 | N | T | JC22758 | 6/22/2016 | 122000 | **56400** | < 0.047 U | 76900 | < 20 U |
| WELL | SHALLOW | 114-P2B4-MW103S | 114-P2B4-MW103S-20160316 | N | T | JC16336 | 3/16/2016 | 136000 | **50400** | < 0.047 U | 70900 | < 20 U |
| WELL | SHALLOW | 114-P2B4-MW103S | 114-P2B4-MW103S-20151210 | N | T | JC10380 | 12/10/2015 | 203000 J | **80700** | < 0.069 U | 112000 | 20.7 J |
| WELL | SHALLOW | 114-P2B4-MW103S | 114-P2B4-MW103S-20150928 | N | T | JC4872A | 9/28/2015 | 145000 | **52200** | < 0.069 U | 108000 | 30.2 J |
| WELL | SHALLOW | 132-P3A-MW102S | 132-P3A-MW102S-20160617 | N | T | JC22504 | 6/17/2016 | 39600 | **883** | < 0.047 U | 10700 | 4.6 J |
| WELL | SHALLOW | 132-P3A-MW102S | 132-P3A-MW102S-20160317 | N | T | JC16446 | 3/17/2016 | 36300 | **756** | 0.069 J | 7510 J | 4.7 J |
| WELL | SHALLOW | 132-P3A-MW102S | 132-P3A-MW102S-20151215 | N | T | JC10723 | 12/15/2015 | 53500 | **2550** | < 0.069 U | 19200 | 6.2 J |
| WELL | SHALLOW | 132-P3A-MW102S | 132-P3A-MW102S-20150929 | N | T | JC4978A | 9/29/2015 | 53900 | **2860** | < 0.069 U | 20000 | 15.2 |
| WELL | SHALLOW | 132-P3A-MW103S | 132-P3A-MW103S-20160616 | N | T | JC22356 | 6/16/2016 | 111000 | **41900** | < 0.047 U | 61200 | < 4.1 U |
| WELL | SHALLOW | 132-P3A-MW103S | 132-P3A-MW103S-20160318 | N | T | JC16549 | 3/18/2016 | 18700 | **454** | < 0.047 U | 9610 J | < 4.1 U |
| WELL | SHALLOW | 132-P3A-MW103S | 132-P3A-MW103S-20151215 | N | T | JC10723 | 12/15/2015 | 12400 | **575** | < 0.069 U | 14800 | < 16 U |
| WELL | SHALLOW | 132-P3A-MW103S | 132-P3A-MW103S-20150930 | N | T | JC5099A | 9/30/2015 | 174000 | **85300** | < 0.069 U | 135000 | < 33 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-20160616 | N | T | JC22356 | 6/16/2016 | 3370 J | **69.5** | < 0.047 U | 5350 J | < 4.1 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-20160318 | N | T | JC16549 | 3/18/2016 | 11000 | **398** | 0.14 J | 11400 | < 4.1 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-20151215 | N | T | JC10723 | 12/15/2015 | 16200 | **242** | < 0.069 U | 10200 | < 9.9 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-20150929X | FD | T | JC4978A | 9/29/2015 | 16600 | **583** | < 0.069 U | 19200 | < 3.3 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-20150929 | N | T | JC4978A | 9/29/2015 | 17300 | **609** | < 0.069 U | 20000 | < 3.3 U |
| WELL | SHALLOW | 132-P3A-MW3 | 132-P3A-MW3-15.0-20180424 | N | T | JC64822 | 4/24/2018 | - | - | 0.19 J | - | - |
| WELL | SHALLOW | 132-P3A-MW3 | 132-P3A-MW3-11.0-20180424 | N | T | JC64822 | 4/24/2018 | - | - | < 0.13 U | - | - |
| WELL | SHALLOW | 132-P3A-MW4 | 132-P3A-MW4-13.0-20180424 | N | T | JC64822 | 4/24/2018 | - | - | < 0.27 U | - | - |
| WELL | SHALLOW | 132-P3A-MW4 | 132-P3A-MW4-17.0-20180424X | FD | T | JC64822 | 4/24/2018 | - | - | 0.33 J | - | - |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-20161216 | N | T | JC33887 | 12/16/2016 | 62600 | **5320** | < 0.047 U | 56800 | **< 41 U** |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-20160913X | FD | T | JC27486 | 9/13/2016 | 72000 | **9550** | < 0.047 U | 60900 J | 10.2 J |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-20160913 | N | T | JC27486 | 9/13/2016 | 73900 | **8790** | < 0.047 U | 62400 J | 9.6 J |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-20160616 | N | T | JC22356 | 6/16/2016 | 48300 | **6180** | < 0.047 U | 46200 | 5.2 J |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-20160324 | N | T | JC16937 | 3/24/2016 | 72100 J | **7420** | < 0.047 U | 53000 J | < 20 U |
| WELL | SHALLOW | 133-P3C-MW102S | 133-P3C-MW102S-20161216X | FD | T | JC33887 | 12/16/2016 | 34600 | **1510** | < 0.047 UB | 42200 | < 20 U |
| WELL | SHALLOW | 133-P3C-MW102S | 133-P3C-MW102S-20161216 | N | T | JC33887 | 12/16/2016 | 35900 | **1520** | < 0.047 UB | 43600 | < 20 U |
| WELL | SHALLOW | 133-P3C-MW102S | 133-P3C-MW102S-20160913 | N | T | JC27486 | 9/13/2016 | 37600 | **4590** | 0.055 J | 36700 J | < 4.1 U |
| WELL | SHALLOW | 133-P3C-MW102S | 133-P3C-MW102S-20160615 | N | T | JC22273 | 6/15/2016 | 30700 J | **4020** | < 0.047 U | 38200 J | < 4.1 U |
| WELL | SHALLOW | 133-P3C-MW102S | 133-P3C-MW102S-20160324 | N | T | JC16937 | 3/24/2016 | 43100 J | **5230** | < 0.047 U | 34500 J | < 20 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | N | T | JC64763 | 4/23/2018 | 72400 | **3470** | < 0.13 U | 46400 | < 6.6 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | N | T | JC64763 | 4/23/2018 | 63800 | **2510** | < 0.13 U | 38300 | < 6.6 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | N | T | JC64763 | 4/23/2018 | 58000 | **1030** | < 0.13 U | 32000 | < 6.6 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.7 | N | T | JC5499 | 10/6/2015 | 48500 | **775** | < 0.069 U | 30300 | < 3.3 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-12.5 | N | T | JC5499 | 10/6/2015 | 24100 | **648** | < 0.069 U | 18300 | < 3.3 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-8.5 | N | T | JC5499 | 10/6/2015 | 20700 | **735** | < 0.069 U | 17200 | < 3.3 U |
| WELL | SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | N | T | JC64763 | 4/23/2018 | 37600 | **1640** | < 0.13 U | 28000 | < 6.6 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-20160615 | N | T | JC22273 | 6/15/2016 | 99200 J | **38200** | < 0.047 U | 97600 J | 16.4 J |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-20160321 | N | T | JC16664 | 3/21/2016 | 66800 | **21100** | < 0.047 U | 88200 | < 20 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-20151216 | N | T | JC10831 | 12/16/2015 | 124000 | **67900** | < 0.069 U | 87600 | 36.8 J |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-20150930 | N | T | JC5099A | 9/30/2015 | 95200 | **40500** | < 0.069 U | 100000 | 29.2 J |

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**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | MAGNESIUM | MANGANESE | MERCURY | POTASSIUM | SELENIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7439-95-4 | 7439-96-5 | 7439-97-6 | 7440-09-7 | 7782-49-2 |
| | | | | | | | **GWQS** | N/A | 50 | 2 | N/A | 40 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-20160615X | FD | T | JC22273 | 6/15/2016 | 113000 J | **26000** | < 0.047 U | 82300 J | **< 81 U** |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-20160615 | N | T | JC22273 | 6/15/2016 | 151000 J | **28500** | < 0.047 U | 115000 J | **< 81 U** |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-20160321 | N | T | JC16664 | 3/21/2016 | 196000 | **38100** | < 0.047 U | 130000 | **40.2 J** |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-20151216 | N | T | JC10831 | 12/16/2015 | 142000 | **35800** | < 0.069 U | 88700 | 19.0 J |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-20150930 | N | T | JC5099A | 9/30/2015 | 262000 | **70100** | < 0.069 U | 154000 | 33.2 J |
| WELL | SHALLOW | 143-P3A-MW101S | 143-P3A-MW101S-20160620 | N | T | JC22555 | 6/20/2016 | 33000 | **609** | < 0.047 U | 13600 | 5.2 J |
| WELL | SHALLOW | 143-P3A-MW101S | 143-P3A-MW101S-20160318X | FD | T | JC16549 | 3/18/2016 | 23300 | **364** | 0.068 J | 8380 J | < 4.1 U |
| WELL | SHALLOW | 143-P3A-MW101S | 143-P3A-MW101S-20160318 | N | T | JC16549 | 3/18/2016 | 23800 | **356** | < 0.047 U | 8680 J | 4.1 J |
| WELL | SHALLOW | 143-P3A-MW101S | 143-P3A-MW101S-20151214 | N | T | JC10593 | 12/14/2015 | 44000 | **751** | < 0.069 U | 18700 | < 3.3 U |
| WELL | SHALLOW | 143-P3A-MW101S | 143-P3A-MW101S-20150928 | N | T | JC4872A | 9/28/2015 | 50300 | **1140** | < 0.069 U | 22700 | 4.1 J |
| WELL | SHALLOW | GPS-EW1S | GPS-EW1S-083016 | N | T | JC26754 | 8/30/2016 | < 85 U | < 0.39 U | < 0.047 U | 108000 | 7.5 J |
| WELL | SHALLOW | GPS-EW1S | GPS-EW1S-060316 | N | T | JC21504 | 6/3/2016 | < 85 U | < 0.39 U | < 0.047 U | 91700 | 12.4 J |
| WELL | SHALLOW | GPS-EW1S | GPS-EW1S-022516 | N | T | JC14874 | 2/25/2016 | < 49 U | < 0.18 U | < 0.069 U | 106000 | 9.3 J |
| WELL | SHALLOW | GPS-EW1S | GPS-EW1S-111715 | N | T | JC8703 | 11/17/2015 | < 49 U | < 0.18 U | < 0.069 U | 87100 | 9.8 J |
| WELL | SHALLOW | GPS-EW2S | GPS-EW2S-083016 | N | T | JC26754 | 8/30/2016 | < 85 U | < 0.39 U | < 0.047 U | 64600 | 5.3 J |
| WELL | SHALLOW | GPS-EW2S | GPS-EW2S-060316 | N | T | JC21504 | 6/3/2016 | < 85 U | < 0.39 U | < 0.047 U | 56200 | 10.9 |
| WELL | SHALLOW | GPS-EW2S | GPS-EW2S-022516 | N | T | JC14874 | 2/25/2016 | < 49 U | < 0.18 U | < 0.069 U | 65700 | 7.4 J |
| WELL | SHALLOW | GPS-EW2S | GPS-EW2S-111715 | N | T | JC8703 | 11/17/2015 | < 49 U | < 0.18 U | < 0.069 U | 89300 | 8.3 J |
| WELL | SHALLOW | GPS-EW3S | GPS-EW3S-083016 | N | T | JC26754 | 8/30/2016 | < 85 U | < 0.39 U | < 0.047 U | 63900 | 5.1 J |
| WELL | SHALLOW | GPS-EW3S | GPS-EW3S-060316 | N | T | JC21504 | 6/3/2016 | < 85 U | < 0.39 U | < 0.047 U | 65500 | 10.1 |
| WELL | SHALLOW | GPS-EW3S | GPS-EW3S-022516 | N | T | JC14874 | 2/25/2016 | 110 J | < 0.18 U | < 0.069 U | 68900 | 8.6 J |
| WELL | SHALLOW | GPS-EW3S | GPS-EW3S-111715 | N | T | JC8703 | 11/17/2015 | 121 J | < 0.18 U | < 0.069 U | 65100 | 4.8 J |
| WELL | SHALLOW | GPS-MW1S | GPS-MW1S-20171221 | N | D | JC57864 | 12/21/2017 | < 5000 U | < 15 U | < 0.20 U | 59900 | < 10 U |
| WELL | SHALLOW | GPS-MW1S | GPS-MW1S-20171221 | N | T | JC57864 | 12/21/2017 | < 5000 U | < 15 U | < 0.20 U | 57600 | < 10 U |
| WELL | SHALLOW | GPS-MW1S | GPS-MW1S-083016 | N | T | JC26754 | 8/30/2016 | 729 J | 6.1 J | 0.32 J | 74300 | 6.6 J |
| WELL | SHALLOW | GPS-MW1S | GPS-MW1S-060316 | N | T | JC21504 | 6/3/2016 | 988 J | 15.8 J | 0.36 J | 95900 | 16.4 J |
| WELL | SHALLOW | GPS-MW1S | GPS-MW1S-022516 | N | T | JC14874 | 2/25/2016 | 874 J | 9.4 J | 0.21 J | 99600 | 8.6 J |
| WELL | SHALLOW | GPS-MW1S | GPS-MW1S-111715 | N | T | JC8703 | 11/17/2015 | 465 J | 1.6 JB | < 0.069 U | 66700 | 7.4 J |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-20171221 | N | D | JC57859 | 12/21/2017 | < 5000 U | < 15 U | < 0.20 U | 23200 | < 10 U |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-20171221 | N | T | JC57859 | 12/21/2017 | < 5000 U | < 15 U | < 0.20 U | 23200 | < 10 U |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-DUP-20171221 | FD | D | JC57859 | 12/21/2017 | < 5000 U | < 15 U | < 0.20 U | 23200 | < 10 U |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-DUP-20171221 | FD | T | JC57859 | 12/21/2017 | < 5000 U | < 15 U | < 0.20 U | 23200 | < 10 U |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-083016 | N | T | JC26754 | 8/30/2016 | < 85 U | < 0.39 U | 0.64 | 49200 | 9.2 J |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-060316 | N | T | JC21504 | 6/3/2016 | < 85 U | < 0.39 U | 0.055 J | 38000 | 14.2 |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-022516 | N | T | JC14874 | 2/25/2016 | < 49 U | < 0.18 U | < 0.069 U | 22400 | 4.2 J |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-111715 | N | T | JC8703 | 11/17/2015 | 129 J | 2.2 JB | 0.30 | 72900 | 7.1 J |
| WELL | SHALLOW | GPS-MW3S | GPS-MW3S-20171221 | N | D | JC57864 | 12/21/2017 | < 5000 U | < 15 U | < 0.20 U | 55700 | < 10 U |
| WELL | SHALLOW | GPS-MW3S | GPS-MW3S-20171221 | N | T | JC57864 | 12/21/2017 | < 5000 U | < 15 U | < 0.20 U | 58600 | < 10 U |
| WELL | SHALLOW | GPS-MW3S | GPS-MW3S-083016 | N | T | JC26754 | 8/30/2016 | < 85 U | < 0.39 U | < 0.047 U | 83000 | 7.0 J |
| WELL | SHALLOW | GPS-MW3S | GPS-MW3S-060316 | N | T | JC21504 | 6/3/2016 | < 85 U | < 0.39 U | < 0.047 U | 84400 | < 20 U |
| WELL | SHALLOW | GPS-MW3S | GPS-MW3S-022516 | N | T | JC14874 | 2/25/2016 | 54.9 J | 0.90 J | < 0.069 U | 79800 | 8.1 J |
| WELL | SHALLOW | GPS-MW3S | GPS-MW3S-111715 | N | T | JC8703 | 11/17/2015 | 146 J | 3.5 J | < 0.069 U | 72800 | 8.5 J |
| WELL | SHALLOW | GPS-MW4S | GPS-MW4S-20171221 | N | D | JC57859 | 12/21/2017 | < 5000 U | < 15 U | < 0.20 U | 62400 | < 10 U |
| WELL | SHALLOW | GPS-MW4S | GPS-MW4S-20171221 | N | T | JC57859 | 12/21/2017 | < 5000 U | < 15 U | < 0.20 U | 63600 | < 10 U |
| WELL | SHALLOW | GPS-MW4S | GPS-MW4S-083016 | N | T | JC26754 | 8/30/2016 | < 85 U | < 0.39 U | < 0.047 U | 61900 | 6.3 J |
| WELL | SHALLOW | GPS-MW4S | GPS-MW4S-060316 | N | T | JC21504 | 6/3/2016 | < 85 U | < 0.39 U | < 0.047 U | 61000 | 4.7 J |
| WELL | SHALLOW | GPS-MW4S | GPS-MW4S-022516 | N | T | JC14874 | 2/25/2016 | < 49 U | < 0.18 U | < 0.069 U | 62800 | 6.2 J |
| WELL | SHALLOW | GPS-MW4S | GPS-MW4S-111715 | N | T | JC8703 | 11/17/2015 | 146 J | 4.5 J | < 0.069 U | 66500 | 4.8 J |
| WELL | SHALLOW | GPS-MW5S | GPS-MW5S-20180130 | N | D | JC59976 | 1/30/2018 | < 50000 U | **75.8** | < 0.20 U | < 100000 U | < 20 U |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | MAGNESIUM | MANGANESE | MERCURY | POTASSIUM | SELENIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7439-95-4 | 7439-96-5 | 7439-97-6 | 7440-09-7 | 7782-49-2 |
| | | | | | | | **GWQS** | N/A | 50 | 2 | N/A | 40 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | GPS-MW5S | GPS-MW5S-20180130 | N | T | JC59976 | 1/30/2018 | < 10000 U | **174** | < 0.40 U | 42700 | < 20 U |
| WELL | SHALLOW | GPS-MW7S | GPS-MW7S-20171221 | N | D | JC57864 | 12/21/2017 | < 5000 U | < 15 U | < 0.20 U | 45700 | < 10 U |
| WELL | SHALLOW | GPS-MW7S | GPS-MW7S-20171221 | N | T | JC57864 | 12/21/2017 | < 5000 U | 27.6 | < 0.20 U | 46600 | < 10 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-20161219 | N | T | JC33993 | 12/19/2016 | 49900 | **4870** | < 0.047 U | 40800 | **< 41 U** |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-20160617 | N | T | JC22504 | 6/17/2016 | 190000 | **27200** | < 0.047 U | 140000 | 21.0 |
| WELL | SHALLOW | HSS-P3C-MW2S | HSS-P3C-MW2S-20161215 | N | T | JC33793 | 12/15/2016 | 64200 | **3700** | < 0.047 UB | 68000 | **< 41 U** |
| WELL | SHALLOW | HSS-P3C-MW2S | HSS-P3C-MW2S-20160616 | N | T | JC22356 | 6/16/2016 | 20100 | **1010** | < 0.047 U | 32500 | 7.3 J |
| WELL | SHALLOW | MW-34 | MW34-20151214-15.5 | N | T | JC10597 | 12/14/2015 | 38400 J | **358** | < 0.069 U | 19600 | < 3.3 U |
| WELL | SHALLOW | MW-34 | MW34-20151214-10.5 | N | T | JC10597 | 12/14/2015 | 37500 J | **386** | < 0.069 U | 19100 | 3.9 J |
| WELL | SHALLOW | MW7S | MW7S-10.2-20150930 | N | T | JC5098A | 9/30/2015 | 56600 | **4930 J** | < 0.069 U | 46900 | 3.4 J |
| WELL | SHALLOW | MW7S | MW7S-7.2-20150930 | N | T | JC5098A | 9/30/2015 | 58100 | **4850 J** | < 0.069 U | 46000 | < 3.3 U |
| WELL | SHALLOW | MW8S | MW8S-9.5-20151001 | N | T | JC5237A | 10/1/2015 | 6850 | **495** | < 0.069 U | 15800 | < 3.3 U |
| WELL | SHALLOW | MW-Morris1A | 114-MW-MORRIS1A-20160321 | N | T | JC16664 | 3/21/2016 | 233 J | 20.2 J | < 0.047 U | 101000 | 22.2 |
| SOILBORE | N/A | 114-P1C-PZ1-S1 | 114-P1C-PZ1-W1-31.0-33.0 | N | T | JC29542 | 10/12/2016 | 66400 | **10200** | < 0.28 U | 38600 J | 36.0 J |
| SOILBORE | N/A | 114-P1C-PZ1-S1 | 114-P1C-PZ1-W1-24.0-26.0 | N | T | JC29542 | 10/12/2016 | 345000 | **18500** | 0.81 J | 183000 | **< 41 U** |
| SOILBORE | N/A | 114-P1C-PZ1-S2 | 114-P1C-PZ1-W2-27.0-29.0 | N | T | JC29754 | 10/14/2016 | 60300 | **14600** | 0.68 J | 41100 J | < 20 U |
| SOILBORE | N/A | 114-P1C-PZ1-S2 | 114-P1C-PZ1-W2-24.0-26.0 | N | T | JC29754 | 10/14/2016 | 23000 | **550** | < 0.070 U | 8670 J | < 4.1 U |
| SOILBORE | N/A | 114-P1C-PZ2-S1 | 114-P1C-PZ2-W1-25.0-27.0 | N | T | JC29434 | 10/11/2016 | 26000 | **2020** | 0.40 JB | 21500 J | < 20 U |
| SOILBORE | N/A | 114-P1C-PZ2-S1 | 114-P1C-PZ2-W1-16.5-17.5 | N | T | JC29434 | 10/11/2016 | 256000 | **8550** | **2.8** | 126000 | **< 41 U** |
| SOILBORE | N/A | 114-P1C-PZ2-S2 | 114-P1C-PZ2-W2-31.0-33.0 | N | T | JC29606 | 10/13/2016 | 67200 | **11600** | 0.51 J | 46400 J | **< 41 U** |
| SOILBORE | N/A | 114-P1C-PZ2-S2 | 114-P1C-PZ2-W2-25.0-27.0 | N | T | JC29606 | 10/13/2016 | 126000 | **12000** | 0.39 J | 77100 J | **< 41 U** |
| WELL | INTERMEDIATE | 10W-MW105I | 10W-MW105I-20180312 | N | T | JC62130 | 3/12/2018 | 9900 | 20.4 | < 0.083 U | 55500 | < 6.6 U |
| WELL | INTERMEDIATE | 114-MC-EW103 | 114-MC-EW103-20160623 | N | T | JC22854 | 6/23/2016 | 5290 | **73.7** | < 0.047 U | 42800 | < 20 U |
| WELL | INTERMEDIATE | 114-MC-EW103 | 114-MC-EW103-20160322 | N | T | JC16738 | 3/22/2016 | 8500 | **171** | < 0.047 U | 43000 | **< 41 U** |
| WELL | INTERMEDIATE | 114-MC-EW103 | 114-MC-EW103-20151214 | N | T | JC10593 | 12/14/2015 | 11800 | **244** | 0.092 J | 41400 | < 16 U |
| WELL | INTERMEDIATE | 114-MC-EW103 | 114-MC-EW103-20150924 | N | T | JC4675A | 9/24/2015 | 13000 | **273** | 0.10 J | 40900 | < 33 U |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-20180129 | N | D | JC59916 | 1/29/2018 | < 25000 U | **351** | < 0.40 U | 57500 | **< 50 U** |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-20180129 | N | T | JC59916 | 1/29/2018 | < 25000 U | **348** | < 0.40 U | < 50000 U | **< 50 U** |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-20160623 | N | T | JC22854 | 6/23/2016 | 13100 | **439** | < 0.047 U | 42900 | < 20 U |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-20160321 | N | T | JC16664 | 3/21/2016 | 12300 | **349** | < 0.047 U | 36000 | **< 41 U** |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-20151214 | N | T | JC10593 | 12/14/2015 | 15400 | **463** | < 0.069 U | 40100 | < 16 U |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-20150924 | N | T | JC4675A | 9/24/2015 | 18300 | **371** | < 0.069 U | 41200 | < 9.9 U |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-20180129 | N | D | JC59916 | 1/29/2018 | < 50000 U | **< 150 U** | < 0.60 U | < 100000 U | **< 100 U** |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-20180129 | N | T | JC59916 | 1/29/2018 | < 50000 U | **< 150 U** | < 0.60 U | < 100000 U | **< 100 U** |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-20160623 | N | T | JC22854 | 6/23/2016 | 26900 | **102 J** | < 0.093 U | 23300 | **< 41 U** |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-20160322 | N | T | JC16738 | 3/22/2016 | 25000 | **114** | < 0.28 U | 25900 | **< 81 U** |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-20151214 | N | T | JC10593 | 12/14/2015 | 21700 | 49.8 | < 0.21 U | 24800 | < 16 U |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-20150924 | N | T | JC4675A | 9/24/2015 | 19200 | 40.0 | < 0.42 U | 25000 | < 16 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | N | T | JC64571 | 4/19/2018 | 2970 J | < 42 U | < 0.40 U | 50300 | **< 660 U** |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-36.0-20151001 | N | T | JC5237A | 10/1/2015 | 1550 J | 12.5 J | < 0.14 U | 54500 | < 3.3 U |
| WELL | INTERMEDIATE | 114-MW22B | 114-MW22B-20180419 | N | D | JC64571 | 4/19/2018 | 32400 | 10.4 J | < 0.13 U | 7130 J | < 6.6 U |
| WELL | INTERMEDIATE | 114-MW22B | 114-MW22B-20180419 | N | T | JC64571 | 4/19/2018 | 33400 | 28.4 | < 0.13 U | 7340 J | < 6.6 U |
| WELL | INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | N | T | JC62130 | 3/12/2018 | 30100 | **1120** | < 0.083 U | 5720 J | < 6.6 U |
| WELL | INTERMEDIATE | 114-MW25B | 114-MW25B-20170928 | N | T | JC52029 | 9/28/2017 | 10900 | **150** | < 0.083 U | 3630 J | < 6.6 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | D | JC62228 | 3/13/2018 | 13400 | 38.8 | < 0.083 U | 7220 J | < 6.6 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | T | JC62228 | 3/13/2018 | 14100 J | **73.6 J** | < 0.083 U | 7320 J | < 6.6 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | D | JC62228 | 3/13/2018 | 13200 | 33.8 | < 0.083 U | 7280 J | < 6.6 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | T | JC62228 | 3/13/2018 | 22800 J | **438 J** | < 0.083 U | 6640 J | < 6.6 U |
| WELL | INTERMEDIATE | 114-MW27B | 114-MW27B-20170928 | N | T | JC52029 | 9/28/2017 | 18200 | **1420** | < 0.083 U | 4920 J | < 6.6 U |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | MAGNESIUM | MANGANESE | MERCURY | POTASSIUM | SELENIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7439-95-4 | 7439-96-5 | 7439-97-6 | 7440-09-7 | 7782-49-2 |
| | | | | | | | **GWQS** | N/A | 50 | 2 | N/A | 40 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | FD | T | JC56729A | 12/6/2017 | 57900 | **437** | 0.20 | 18300 | < 6.6 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | N | T | JC56729A | 12/6/2017 | 57500 | **425** | < 0.083 U | 18200 | < 6.6 U |
| WELL | INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | N | T | JC51890 | 9/27/2017 | 21700 | **889** | < 0.17 U | 10700 J | < 13 U |
| WELL | Intermediate | 114-MW37B | 114-MW37B-20170926 | N | T | JC51824 | 9/26/2017 | 28600 | **1230** | < 0.083 U | 6920 J | < 6.6 U |
| WELL | Intermediate | 114-MW38B | FORREST-114-MW38B-20171204 | N | T | JC56504A | 12/4/2017 | 10500 | **145** | < 0.083 U | 4350 J | < 6.6 U |
| WELL | INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | N | T | JC64643 | 4/20/2018 | 12900 J | **374 J** | < 0.80 U | 31500 J | **< 330 U** |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20180129 | N | D | JC59916 | 1/29/2018 | 26000 | **176** | < 0.20 U | < 50000 U | **< 50 U** |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20180129 | N | T | JC59916 | 1/29/2018 | 26200 | **181** | < 0.20 U | < 50000 U | **< 50 U** |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20160617X | FD | T | JC22504 | 6/17/2016 | 21800 | **175** | < 0.047 U | 5840 J | < 4.1 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20160617 | N | T | JC22504 | 6/17/2016 | 21400 | **173** | < 0.047 U | 5800 J | < 4.1 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20160317 | N | T | JC16446 | 3/17/2016 | 23700 | **232** | < 0.14 U | 6270 J | < 4.1 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20151211 | N | T | JC10525 | 12/11/2015 | 22100 | **276** | < 0.069 U | 6450 J | < 3.3 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20150921 | N | T | JC4371A | 9/21/2015 | 25500 | **292** | < 0.14 U | 7110 J | 5.8 J |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-ARC | N | D | JC59556 | 1/23/2018 | 43800 | **536** | < 0.60 U | < 50000 U | **< 50 U** |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-ARC | N | T | JC59556 | 1/23/2018 | 40600 | **499** | < 0.60 U | < 50000 U | **< 50 U** |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-20160621 | N | T | JC22642 | 6/21/2016 | 44700 | **388** | < 0.28 U | 6850 J | < 8.1 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-20160323 | N | T | JC16843 | 3/23/2016 | 39400 | **383** | < 0.28 U | 6990 J | **< 100 U** |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-20151216 | N | T | JC10831 | 12/16/2015 | 36600 | **406** | < 0.42 U | 7560 J | < 6.6 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-20150922 | N | T | JC4452A | 9/22/2015 | 36300 | **335** | < 0.42 U | 7310 J | < 33 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-ARC | N | D | JC59556 | 1/23/2018 | < 10000 U | < 30 U | < 0.60 U | 44100 | < 20 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-ARC | N | T | JC59556 | 1/23/2018 | < 10000 U | 42.0 | < 0.60 U | 44700 | < 20 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-20160916 | N | T | JC27812 | 9/16/2016 | 54200 | **309** | < 0.28 U | 15500 J | **< 200 U** |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-20160323 | N | T | JC16843 | 3/23/2016 | 47400 J | **319** | < 0.28 U | 16900 J | **< 200 U** |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-20151216 | N | T | JC10831 | 12/16/2015 | 39600 | **292** | < 0.42 U | 14000 | < 16 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-20150924 | N | T | JC4675A | 9/24/2015 | 41100 | **271** | < 0.42 U | 16500 | **< 160 U** |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I | N | D | JC59556 | 1/23/2018 | 16600 | **258** | < 0.20 U | 31900 | < 10 U |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I | N | T | JC59556 | 1/23/2018 | 14500 | **226** | < 0.20 U | 27000 | < 10 U |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20160620 | N | T | JC22555 | 6/20/2016 | 9630 | **195** | < 0.047 U | 22900 | 7.5 J |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20160316 | N | T | JC16336 | 3/16/2016 | 8890 J | **204** | < 0.047 U | 23200 J | < 20 U |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20151211 | N | T | JC10525 | 12/11/2015 | 3050 J | **133** | < 0.069 U | 20100 | 12.1 |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20150923 | N | T | JC4555A | 9/23/2015 | 8160 | **76.0** | < 0.069 U | 23200 | 7.9 J |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-ARC | N | D | JC59745 | 1/25/2018 | 50200 | **4230** | < 0.20 U | 21300 | < 10 U |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-ARC | N | T | JC59745 | 1/25/2018 | 49800 | **4600** | < 0.20 U | 21300 | < 10 U |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-20160912 | N | T | JC27433 | 9/12/2016 | 67400 | **1930** | < 0.047 U | 26400 | 4.3 J |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-20160624 | N | T | JC22933 | 6/24/2016 | 61000 | **1730** | < 0.047 U | 25300 | 5.3 J |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-20160325 | N | T | JC17054 | 3/25/2016 | 40600 | **303** | < 0.047 U | 32000 | < 4.1 U |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-20151211 | N | T | JC10525 | 12/11/2015 | 24500 | **1050** | < 0.069 U | 18900 | < 3.3 U |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-20150923 | N | T | JC4555A | 9/23/2015 | 24500 | **863** | < 0.069 U | 16700 | < 3.3 U |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-ARC | N | D | JC59745 | 1/25/2018 | 107000 | **2440** | < 0.20 U | 42600 | < 10 U |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-ARC | N | T | JC59745 | 1/25/2018 | 104000 | **2520** | < 0.20 U | 43300 | < 10 U |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-20160912 | N | T | JC27433 | 9/12/2016 | 36300 | **310** | < 0.047 U | 26100 | < 4.1 U |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-20160624 | N | T | JC22933 | 6/24/2016 | 38800 | **334** | < 0.047 U | 26900 | 4.2 J |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-20160325 | N | T | JC17054 | 3/25/2016 | 47900 | **1320** | < 0.047 U | 25800 | 4.6 J |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-20151211 | N | T | JC10525 | 12/11/2015 | 28100 | **193** | < 0.069 U | 28700 | < 3.3 U |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-20150923 | N | T | JC4555A | 9/23/2015 | 40800 | **194** | < 0.069 U | 37100 | 4.8 J |
| WELL | INTERMEDIATE | 114-P1-IRM-1 | 114-P1-IRM-1-20180116 | N | D | JC58932 | 1/16/2018 | 44400 | **< 750 U** | < 0.60 U | < 50000 U | **< 500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-1 | 114-P1-IRM-1-20180116 | N | T | JC58932 | 1/16/2018 | 40200 | **1080** | < 1.2 U | < 50000 U | **< 500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-10I | 114-P1-IRM-10I | N | D | JC59745 | 1/25/2018 | 44900 | **99.6** | < 0.40 U | < 20000 U | **< 400 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-10I | 114-P1-IRM-10I | N | T | JC59745 | 1/25/2018 | 45500 | **< 150 U** | < 0.40 U | < 20000 U | **< 100 U** |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | MAGNESIUM | MANGANESE | MERCURY | POTASSIUM | SELENIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7439-95-4 | 7439-96-5 | 7439-97-6 | 7440-09-7 | 7782-49-2 |
| | | | | | | | **GWQS** | N/A | 50 | 2 | N/A | 40 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P1-IRM-11 | 114-P1-IRM-11-20180118 | N | D | JC59349 | 1/18/2018 | 42900 | **352** | < 0.60 U | < 50000 U | **< 500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-11 | 114-P1-IRM-11-20180118 | N | T | JC59349 | 1/18/2018 | 42300 | **331** | < 0.60 U | < 50000 U | **< 500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-12 | 114-P1-IRM-12-20180118 | N | D | JC59349 | 1/18/2018 | 47700 | **157** | < 0.60 U | < 50000 U | **< 500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-12 | 114-P1-IRM-12-20180118 | N | T | JC59349 | 1/18/2018 | 51900 | **170** | < 0.60 U | < 50000 U | **< 500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-13 | 114-P1-IRM-13-20180116 | N | D | JC58932 | 1/16/2018 | 40700 | **< 1900 U** | < 1.2 U | < 50000 U | **< 1300 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-13 | 114-P1-IRM-13-20180116 | N | T | JC58932 | 1/16/2018 | 40500 | **< 1900 U** | < 1.2 U | < 50000 U | **< 1300 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-14 | 114-P1-IRM-14-20180116 | N | D | JC58932 | 1/16/2018 | 38300 | **< 750 U** | < 0.60 U | < 50000 U | **< 500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-14 | 114-P1-IRM-14-20180116 | N | T | JC58932 | 1/16/2018 | 35600 | **880** | < 1.2 U | < 50000 U | **< 500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-15 | 114-P1-IRM-15-20180122 | N | D | JC59495 | 1/22/2018 | 33100 | **89.4** | < 0.40 U | < 20000 U | < 20 U |
| WELL | INTERMEDIATE | 114-P1-IRM-15 | 114-P1-IRM-15-20180122 | N | T | JC59495 | 1/22/2018 | 34700 | **98.4** | < 0.40 U | < 20000 U | < 20 U |
| WELL | INTERMEDIATE | 114-P1-IRM-16 | 114-P1-IRM-16-20180116 | N | D | JC58932 | 1/16/2018 | 49000 | **1530** | < 1.2 U | < 50000 U | **< 1000 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-16 | 114-P1-IRM-16-20180116 | N | T | JC58932 | 1/16/2018 | 46700 | **< 1500 U** | < 1.2 U | < 50000 U | **< 1000 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-17 | 114-P1-IRM-17-20180122 | N | D | JC59495 | 1/22/2018 | 181000 | **417** | < 0.20 U | 167000 | **< 50 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-17 | 114-P1-IRM-17-20180122 | N | T | JC59495 | 1/22/2018 | 175000 | **425** | < 0.20 U | 158000 | **< 50 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-18I | 114-P1-IRM-18I-20180118 | N | D | JC59349 | 1/18/2018 | 59000 | **278** | < 0.60 U | < 50000 U | **< 50 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-18I | 114-P1-IRM-18I-20180118 | N | T | JC59349 | 1/18/2018 | 58300 | **239** | < 0.60 U | < 50000 U | **< 50 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-19I | 114-P1-IRM-19I-20180117 | N | D | JC59023 | 1/17/2018 | 59100 | **397** | < 0.40 U | < 50000 U | **< 100 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-19I | 114-P1-IRM-19I-20180117 | N | T | JC59023 | 1/17/2018 | 55400 | **367** | < 0.40 U | < 50000 U | **< 100 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-2 | 114-P1-IRM-2-20180116 | N | D | JC58932 | 1/16/2018 | 64400 | **< 1500 U** | < 1.2 U | < 50000 U | **< 1000 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-2 | 114-P1-IRM-2-20180116 | N | T | JC58932 | 1/16/2018 | 66800 | **< 1500 U** | < 1.2 U | < 50000 U | **< 1000 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-20I | 114-P1-IRM-20I-20180117 | N | D | JC59023 | 1/17/2018 | 73400 | **1290** | < 0.20 U | 43500 | < 10 U |
| WELL | INTERMEDIATE | 114-P1-IRM-20I | 114-P1-IRM-20I-20180117 | N | T | JC59023 | 1/17/2018 | 68700 | **1260** | < 0.20 U | 39200 | < 10 U |
| WELL | INTERMEDIATE | 114-P1-IRM-21I | 114-P1-IRM-21I-20180118 | N | D | JC59349 | 1/18/2018 | 199000 | **5210** | < 0.20 U | 68300 | **< 50 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-21I | 114-P1-IRM-21I-20180118 | N | T | JC59349 | 1/18/2018 | 198000 | **5190** | < 0.20 U | 63300 | **< 50 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-22I | 114-P1-IRM-22I-20180118 | N | D | JC59349 | 1/18/2018 | 73300 | **1120 J** | < 0.20 U | 32400 | < 10 U |
| WELL | INTERMEDIATE | 114-P1-IRM-22I | 114-P1-IRM-22I-20180118 | N | T | JC59349 | 1/18/2018 | 70000 | **886 J** | < 0.20 U | 28800 | < 20 U |
| WELL | INTERMEDIATE | 114-P1-IRM-24I | 114-P1-IRM-24I-20180118 | N | D | JC59349 | 1/18/2018 | 50200 | **95.4** | < 0.40 U | 38400 | < 20 U |
| WELL | INTERMEDIATE | 114-P1-IRM-24I | 114-P1-IRM-24I-20180118 | N | T | JC59349 | 1/18/2018 | 47900 | **107** | < 0.40 U | 36500 | < 20 U |
| WELL | INTERMEDIATE | 114-P1-IRM-25I | 114-P1-IRM-25I-20180118 | N | D | JC59349 | 1/18/2018 | 89800 | **1510** | < 0.20 U | 34500 | < 10 U |
| WELL | INTERMEDIATE | 114-P1-IRM-25I | 114-P1-IRM-25I-20180118 | N | T | JC59349 | 1/18/2018 | 88700 | **1480** | < 0.20 U | 30800 | < 10 U |
| WELL | INTERMEDIATE | 114-P1-IRM-26I | 114-P1-IRM-26I-20180118 | N | D | JC59349 | 1/18/2018 | 224000 | **1850** | < 0.20 U | 61100 | < 10 U |
| WELL | INTERMEDIATE | 114-P1-IRM-26I | 114-P1-IRM-26I-20180118 | N | T | JC59349 | 1/18/2018 | 220000 | **1840** | < 0.20 U | 61000 | < 10 U |
| WELL | INTERMEDIATE | 114-P1-IRM-27I | 114-P1-IRM-27I-20180122 | N | D | JC59495 | 1/22/2018 | < 25000 U | **< 1900 U** | < 0.60 U | < 50000 U | **< 1300 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-27I | 114-P1-IRM-27I-20180122 | N | T | JC59495 | 1/22/2018 | < 25000 U | **< 1900 U** | < 0.60 U | < 50000 U | **< 1300 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-28I | 114-P1-IRM-28I-20180118 | N | D | JC59349 | 1/18/2018 | 11200 | **433** | < 0.40 U | 23900 | **< 100 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-28I | 114-P1-IRM-28I-20180118 | N | T | JC59349 | 1/18/2018 | 11100 | **424** | < 0.40 U | 23000 | **< 100 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-29I | 114-P1-IRM-29I-20180118 | N | D | JC59349 | 1/18/2018 | 53800 | **2210** | < 0.20 U | 28100 | < 10 U |
| WELL | INTERMEDIATE | 114-P1-IRM-29I | 114-P1-IRM-29I-20180118 | N | T | JC59349 | 1/18/2018 | 47500 | **2130** | < 0.20 U | 25600 | < 10 U |
| WELL | INTERMEDIATE | 114-P1-IRM-3 | 114-P1-IRM-3-20180124 | N | D | JC59667 | 1/24/2018 | 70600 | **1090** | < 0.40 U | 37100 | < 10 U |
| WELL | INTERMEDIATE | 114-P1-IRM-3 | 114-P1-IRM-3-20180124 | N | T | JC59667 | 1/24/2018 | 65700 | **1040** | < 0.40 U | 34500 | < 10 U |
| WELL | INTERMEDIATE | 114-P1-IRM-30I | 114-P1-IRM-30I-20180122 | N | D | JC59495 | 1/22/2018 | < 25000 U | **< 750 U** | < 0.60 U | < 50000 U | **< 500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-30I | 114-P1-IRM-30I-20180122 | N | T | JC59495 | 1/22/2018 | < 25000 U | **< 750 U** | < 0.60 U | < 50000 U | **< 500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-30I | 114-P1-IRM-30I-DUP-20180122 | FD | D | JC59495 | 1/22/2018 | < 25000 U | **< 750 U** | < 0.60 U | < 50000 U | **< 50 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-30I | 114-P1-IRM-30I-DUP-20180122 | FD | T | JC59495 | 1/22/2018 | < 25000 U | **< 750 U** | < 0.60 U | < 50000 U | **< 500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-31I | 114-P1-IRM-31I-20180119 | N | D | JC59431 | 1/19/2018 | < 5000 U | **210** | < 0.20 U | 12100 | < 10 U |
| WELL | INTERMEDIATE | 114-P1-IRM-31I | 114-P1-IRM-31I-20180119 | N | T | JC59431 | 1/19/2018 | < 10000 UJ- | **338 J-** | < 0.40 U | < 20000 U | < 20 U |
| WELL | INTERMEDIATE | 114-P1-IRM-32I | 114-P1-IRM-32I-20180122 | N | D | JC59495 | 1/22/2018 | 36900 | **< 750 U** | < 0.60 U | < 50000 U | **< 500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-32I | 114-P1-IRM-32I-20180122 | N | T | JC59495 | 1/22/2018 | 44500 | **< 750 U** | < 0.60 U | < 50000 U | **< 500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-33I | 114-P1-IRM-33I-20180124 | N | D | JC59667 | 1/24/2018 | < 50000 U | **187** | < 0.60 U | < 100000 U | **< 100 U** |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | MAGNESIUM | MANGANESE | MERCURY | POTASSIUM | SELENIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7439-95-4 | 7439-96-5 | 7439-97-6 | 7440-09-7 | 7782-49-2 |
| | | | | | | | **GWQS** | N/A | 50 | 2 | N/A | 40 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P1-IRM-33I | 114-P1-IRM-33I-20180124 | N | T | JC59667 | 1/24/2018 | < 50000 U | **218** | < 0.60 U | < 100000 U | **< 100 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-34I | 114-P1-IRM-34I | N | D | JC59745 | 1/25/2018 | < 25000 U | **< 750 U** | < 0.60 U | < 50000 U | **< 500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-34I | 114-P1-IRM-34I | N | T | JC59745 | 1/25/2018 | < 25000 U | **< 750 U** | < 0.60 U | < 50000 U | **< 50 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-35I | 114-P1-IRM-35I-20180122 | N | D | JC59495 | 1/22/2018 | 38500 | **< 750 U** | < 0.60 U | < 50000 U | **< 50 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-35I | 114-P1-IRM-35I-20180122 | N | T | JC59495 | 1/22/2018 | 38200 | **< 1500 U** | < 0.60 U | < 50000 U | **< 50 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-36D | 114-P1-IRM-36D-20180124 | N | D | JC59667 | 1/24/2018 | < 25000 U | **104** | < 0.40 U | < 50000 U | **< 50 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-36D | 114-P1-IRM-36D-20180124 | N | T | JC59667 | 1/24/2018 | < 25000 U | **159** | < 0.40 U | < 50000 U | **< 50 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-36I | 114-P1-IRM-36I-20180124 | N | D | JC59667 | 1/24/2018 | < 25000 U | **203** | < 0.40 U | < 50000 U | **< 50 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-36I | 114-P1-IRM-36I-20180124 | N | T | JC59667 | 1/24/2018 | < 25000 U | **269** | < 0.40 U | < 50000 U | **< 50 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-37I | 114-P1-IRM-37I-20180117 | N | D | JC59023 | 1/17/2018 | < 5000 U | 31.5 | < 0.20 U | 20000 | < 10 U |
| WELL | INTERMEDIATE | 114-P1-IRM-37I | 114-P1-IRM-37I-20180117 | N | T | JC59023 | 1/17/2018 | < 5000 U | 28.5 | < 0.20 U | 19000 | < 10 U |
| WELL | INTERMEDIATE | 114-P1-IRM-38 | 114-P1-IRM-38-20180126 | N | D | JC59838 | 1/26/2018 | 32900 | **3470** | < 0.20 U | 20000 | < 10 U |
| WELL | INTERMEDIATE | 114-P1-IRM-38 | 114-P1-IRM-38-20180126 | N | T | JC59838 | 1/26/2018 | 32500 | **3410** | < 0.20 U | 19700 | < 10 U |
| WELL | INTERMEDIATE | 114-P1-IRM-39 | 114-P1-IRM-39-20180126 | N | D | JC59838 | 1/26/2018 | 64000 | **11700** | < 0.20 U | 51100 | **< 50 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-39 | 114-P1-IRM-39-20180126 | N | T | JC59838 | 1/26/2018 | 61100 | **11000** | < 0.20 U | 49000 | **< 50 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-40I | 114-P1-IRM-40I-20180117 | N | D | JC59023 | 1/17/2018 | 61200 | **< 380 U** | < 0.60 U | < 50000 U | **< 1300 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-40I | 114-P1-IRM-40I-20180117 | N | T | JC59023 | 1/17/2018 | 53800 | **< 380 U** | < 0.60 U | < 50000 U | **< 1300 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-41I | 114-P1-IRM-41I-20180126 | N | D | JC59838 | 1/26/2018 | < 25000 U | **< 750 U** | < 0.40 U | < 50000 U | **< 500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-41I | 114-P1-IRM-41I-20180126 | N | T | JC59838 | 1/26/2018 | < 25000 U | **< 750 U** | < 0.40 U | < 50000 U | **< 500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-42I | 114-P1-IRM-42I-20180126 | N | D | JC59838 | 1/26/2018 | 106000 | **236** | < 0.40 U | < 50000 U | **< 50 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-42I | 114-P1-IRM-42I-20180126 | N | T | JC59838 | 1/26/2018 | 106000 | **243** | < 0.40 U | < 50000 U | **< 50 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-4I | 114-P1-IRM-4I-20180124 | N | D | JC59667 | 1/24/2018 | 98200 | **804** | < 0.60 U | < 100000 U | **< 2000 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-4I | 114-P1-IRM-4I-20180124 | N | T | JC59667 | 1/24/2018 | 99500 | **848** | < 0.60 U | < 100000 U | **< 2000 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-20180123 | N | D | JC59556 | 1/23/2018 | 57400 | **292** | < 0.60 U | < 50000 U | **< 500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-20180123 | N | T | JC59556 | 1/23/2018 | 104000 | **4010** | < 1.2 U | < 50000 U | **< 500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | N | T | JC58073A | 12/27/2017 | 24700 | **2040** | < 0.17 U | 24500 | < 6.6 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | N | T | JC58073A | 12/27/2017 | 26400 | **2580** | < 0.17 U | 26800 | < 6.6 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | N | T | JC58028A | 12/26/2017 | 29100 | **2380** | < 0.17 U | 27200 | < 6.6 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | N | T | JC58028A | 12/26/2017 | 29200 | **2120** | < 0.17 U | 28300 | < 6.6 U |
| WELL | INTERMEDIATE | 114-P1-IRM-6 | 114-P1-IRM-6-20180116 | N | D | JC58932 | 1/16/2018 | 82300 | **< 1900 U** | < 1.2 U | < 50000 U | **< 1300 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-6 | 114-P1-IRM-6-20180116 | N | T | JC58932 | 1/16/2018 | 97100 | **2060** | < 1.2 U | < 50000 U | **< 1300 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-7 | 114-P1-IRM-7-20180124 | N | D | JC59667 | 1/24/2018 | 43100 | **306** | < 0.60 U | < 20000 U | **< 100 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-7 | 114-P1-IRM-7-20180124 | N | T | JC59667 | 1/24/2018 | 43700 | **377** | < 0.60 U | < 20000 U | **< 100 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-8 | 114-P1-IRM-8-20180116 | N | D | JC58932 | 1/16/2018 | 28600 | **< 1500 U** | < 1.2 U | < 50000 U | **< 1000 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-8 | 114-P1-IRM-8-20180116 | N | T | JC58932 | 1/16/2018 | 25100 | **< 1500 U** | < 1.2 U | < 50000 U | **< 1000 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-9 | 114-P1-IRM-9-20180116 | N | D | JC58932 | 1/16/2018 | 48400 | **< 1500 U** | < 0.60 U | < 50000 U | **< 1000 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-9 | 114-P1-IRM-9-20180116 | N | T | JC58932 | 1/16/2018 | 47100 | **< 1500 U** | < 0.60 U | < 50000 U | **< 1000 U** |
| WELL | INTERMEDIATE | 114-P1-MW-1I | 114-P1-MW-1I-20180129 | N | D | JC59916 | 1/29/2018 | 55500 | **881** | < 0.60 U | < 100000 U | **< 100 U** |
| WELL | INTERMEDIATE | 114-P1-MW-1I | 114-P1-MW-1I-20180129 | N | T | JC59916 | 1/29/2018 | 54800 | **911** | < 0.60 U | < 100000 U | **< 100 U** |
| WELL | INTERMEDIATE | 114-P1-MW-2D | 114-P1-MW2D-20180119 | N | D | JC59431 | 1/19/2018 | 90600 | **2970** | < 0.20 U | 21600 | < 10 U |
| WELL | INTERMEDIATE | 114-P1-MW-2D | 114-P1-MW2D-20180119 | N | T | JC59431 | 1/19/2018 | 94700 J- | **3050 J-** | < 0.20 U | 23300 | < 10 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | N | T | JC58942 | 1/16/2018 | 72300 | **2570** | < 0.083 U | 18100 | < 6.6 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | N | T | JC58942 | 1/16/2018 | 78500 | **2830** | < 0.083 U | 19200 | < 6.6 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | N | T | JC58942 | 1/16/2018 | 80100 | **2960** | < 0.083 U | 19500 | < 6.6 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | N | T | JC58942 | 1/16/2018 | 91300 | **3550** | < 0.083 U | 20700 | < 6.6 U |
| WELL | INTERMEDIATE | 114-P1-MW-3I | 114-P1-MW-3I-20180126 | N | D | JC59838 | 1/26/2018 | 37500 | **147** | < 0.20 U | < 20000 U | < 20 U |
| WELL | INTERMEDIATE | 114-P1-MW-3I | 114-P1-MW-3I-20180126 | N | T | JC59838 | 1/26/2018 | 37400 | **285** | < 0.20 U | < 20000 U | < 20 U |
| WELL | INTERMEDIATE | 114-P1-MW-4I | 114-P1-MW-4I-20180126 | N | D | JC59838 | 1/26/2018 | 77400 | **294** | < 0.40 U | < 50000 U | **< 50 U** |
| WELL | INTERMEDIATE | 114-P1-MW-4I | 114-P1-MW-4I-20180126 | N | T | JC59838 | 1/26/2018 | 75200 | **377** | < 0.40 U | < 50000 U | **< 50 U** |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | MAGNESIUM | MANGANESE | MERCURY | POTASSIUM | SELENIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7439-95-4 | 7439-96-5 | 7439-97-6 | 7440-09-7 | 7782-49-2 |
| | | | | | | | **GWQS** | N/A | 50 | 2 | N/A | 40 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P1-MW-5I | 114-P1-MW-5I-20180123 | N | D | JC59667 | 1/23/2018 | 25500 | **3280** | < 0.20 U | 22700 | < 10 U |
| WELL | INTERMEDIATE | 114-P1-MW-5I | 114-P1-MW-5I-20180123 | N | T | JC59667 | 1/23/2018 | 25600 | **3280** | < 0.20 U | 22700 | < 10 U |
| WELL | INTERMEDIATE | 114-P1-MW-6I | 114-P1-MW6I-20180119 | N | D | JC59431 | 1/19/2018 | < 25000 U | **< 75 U** | < 0.60 U | < 50000 U | **< 1000 U** |
| WELL | INTERMEDIATE | 114-P1-MW-6I | 114-P1-MW6I-20180119 | N | T | JC59431 | 1/19/2018 | < 50000 UJ- | **776 J-** | < 0.60 U | < 100000 U | **< 100 U** |
| WELL | INTERMEDIATE | 114-P1-MW-7I | 114-P1-MW7I-20180125 | N | D | JC59745 | 1/25/2018 | < 10000 U | 33.2 | < 0.60 U | < 20000 U | **< 100 U** |
| WELL | INTERMEDIATE | 114-P1-MW-7I | 114-P1-MW7I-20180125 | N | T | JC59745 | 1/25/2018 | < 10000 U | **< 750 U** | < 0.60 U | < 20000 U | **< 500 U** |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-20180130 | N | D | JC59976 | 1/30/2018 | 44100 | **13500** | < 0.20 U | 31300 | **< 50 U** |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-20180130 | N | T | JC59976 | 1/30/2018 | 42500 | **12500** | < 0.20 U | 29400 | **< 50 U** |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-20161212 | N | T | JC33522 | 12/12/2016 | 8380 | **50.3** | < 0.047 U | 66400 | < 4.1 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-20160914 | N | T | JC27595 | 9/14/2016 | 11200 | **275** | < 0.047 U | 8780 J | < 4.1 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-20160628 | N | T | JC23103 | 6/28/2016 | 7770 | **56.9** | < 0.047 U | 7010 J | < 4.1 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-20160324 | N | T | JC16953 | 3/24/2016 | 7220 J | 45.0 J | < 0.047 U | 9050 J | < 20 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-20161219 | N | T | JC33991 | 12/19/2016 | 68300 | **34000** | 0.059 J | 19100 | **< 41 U** |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-20160914 | N | T | JC27595 | 9/14/2016 | 68200 | **28100** | < 0.047 UB | 17800 | 8.7 J |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-20160628 | N | T | JC23103 | 6/28/2016 | 404 J | 16.8 J | < 0.047 U | 25400 | 4.5 J |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-20160324 | N | T | JC16953 | 3/24/2016 | 51800 | **23000** | < 0.047 U | 13100 J | < 20 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-20161214 | N | T | JC33691 | 12/14/2016 | 30900 | **418** | < 0.093 UB | 9600 J | < 8.1 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-20160915 | N | T | JC27716 | 9/15/2016 | 25300 | **220** | 0.14 J | 5410 J | < 4.1 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-20160627 | N | T | JC23029 | 6/27/2016 | 19900 | **106** | < 0.047 U | 30100 | < 4.1 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-20160325X | FD | T | JC17059 | 3/25/2016 | 27400 | **928 J** | 0.062 J | 9790 J | 6.9 J |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-20160325 | N | T | JC17059 | 3/25/2016 | 23300 | **641 J** | < 0.047 U | 8020 J | 5.9 J |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-20161219 | N | T | JC33991 | 12/19/2016 | 36200 | **1890** | 0.050 J | 77300 | < 20 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-20160915 | N | T | JC27716 | 9/15/2016 | 53900 | **2290** | < 0.047 U | 63600 | < 4.1 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-20160629X | FD | T | JC23208 | 6/29/2016 | 62600 | **2200** | < 0.047 U | 45700 | 10.9 |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-20160629 | N | T | JC23208 | 6/29/2016 | 64700 | **2340** | < 0.047 U | 47400 | 11.5 |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-20160325 | N | T | JC17059 | 3/25/2016 | 59100 | **2030 J** | < 0.047 U | 37100 J | 20.8 J |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-ARC | N | D | JC59556 | 1/23/2018 | 160000 | **21200** | < 0.20 U | 116000 | **< 50 U** |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-ARC | N | T | JC59556 | 1/23/2018 | 158000 | **20900** | < 0.20 U | 115000 | **< 50 U** |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-20160620 | N | T | JC22555 | 6/20/2016 | 44300 | **96.4** | < 0.28 U | 27400 | **< 410 U** |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-20160322 | N | T | JC16738 | 3/22/2016 | 49200 J | **85.0 J** | < 0.28 U | 33300 J | **< 1000 U** |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-20151216X | FD | T | JC10831 | 12/16/2015 | 45000 | 47.4 | < 0.42 U | 30400 | **< 330 U** |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-20151216 | N | T | JC10831 | 12/16/2015 | 46000 | **50.1** | < 0.42 U | 30800 | **< 330 U** |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-20150925 | N | T | JC4798A | 9/25/2015 | 36100 | **78.0** | < 0.42 U | 18100 | **< 330 U** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20180130 | N | D | JC59976 | 1/30/2018 | < 250000 U | **< 3800 U** | < 1.2 U | < 500000 U | **< 2500 U** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20180130 | N | T | JC59976 | 1/30/2018 | 129000 | **< 750 U** | < 1.2 U | < 100000 U | **< 2500 U** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20160620 | N | T | JC22555 | 6/20/2016 | 39800 | **189** | < 0.047 U | 9020 J | **< 41 U** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20160323X | FD | T | JC16843 | 3/23/2016 | 36000 J | **212** | < 0.28 U | 10400 J | **< 200 U** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20160323 | N | T | JC16843 | 3/23/2016 | 33600 J | **210** | < 0.28 U | 9550 J | **< 200 U** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20151216 | N | T | JC10831 | 12/16/2015 | 41600 | **241** | < 0.42 U | 9810 J | < 16 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20150925 | N | T | JC4798A | 9/25/2015 | 33000 | **200** | < 0.42 U | 10900 | **< 330 U** |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW-101I-20180119 | N | D | JC59431 | 1/19/2018 | < 25000 U | **< 75 U** | < 0.60 U | < 50000 U | **< 50 U** |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW-101I-20180119 | N | T | JC59431 | 1/19/2018 | < 25000 UJ- | **< 75 UJ-** | < 0.60 U | < 50000 U | **< 50 U** |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-20160622 | N | T | JC22758 | 6/22/2016 | 2880 J | 19.4 J | < 0.070 U | 10600 J | **< 81 U** |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-20160323 | N | T | JC16843 | 3/23/2016 | 2010 J | 36.0 J | < 0.28 U | 17700 J | **< 200 U** |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-20151216 | N | T | JC10831 | 12/16/2015 | 2430 J | 19.7 | < 0.069 U | 22700 | **< 160 UJB** |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-20150925 | N | T | JC4798A | 9/25/2015 | 2580 J | **61.4** | < 0.42 U | 25400 | **< 330 U** |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I | N | D | JC59556 | 1/23/2018 | < 25000 U | **< 750 U** | < 0.60 U | < 50000 U | **< 50 U** |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I | N | T | JC59556 | 1/23/2018 | < 25000 U | **< 750 U** | < 0.60 U | < 50000 U | **< 50 U** |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-20160621X | FD | T | JC22642 | 6/21/2016 | 20800 | **168** | < 0.28 U | 32200 | < 8.1 U |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | MAGNESIUM | MANGANESE | MERCURY | POTASSIUM | SELENIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7439-95-4 | 7439-96-5 | 7439-97-6 | 7440-09-7 | 7782-49-2 |
| | | | | | | | **GWQS** | N/A | 50 | 2 | N/A | 40 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-20160621 | N | T | JC22642 | 6/21/2016 | 19800 | **175** | < 0.28 U | 29200 | 9.0 J |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-20160323 | N | T | JC16843 | 3/23/2016 | 27400 J | **396** | < 0.28 U | 36200 J | **< 200 U** |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-20151216 | N | T | JC10831 | 12/16/2015 | 37300 | **309** | < 0.42 U | 47400 | **< 160 U** |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-20150928 | N | T | JC4872A | 9/28/2015 | 39000 | **609** | < 0.42 U | 46100 J | **200 J** |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I | N | D | JC59745 | 1/25/2018 | 50000 | **90.3** | < 0.20 U | 45400 | < 10 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I | N | T | JC59745 | 1/25/2018 | 49200 | **97.1** | < 0.20 U | 45200 | < 10 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-20160621 | N | T | JC22642 | 6/21/2016 | 44500 | **89.5** | < 0.047 U | 44300 | 5.4 J |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-20160322 | N | T | JC16738 | 3/22/2016 | 33600 | **88.4** | < 0.28 U | 48500 | < 4.1 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-20151216 | N | T | JC10831 | 12/16/2015 | 36500 | **114** | < 0.42 U | 43800 | < 16 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-20150925 | N | T | JC4798A | 9/25/2015 | 41600 | **94.5** | < 0.42 U | 58000 | < 33 U |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I | N | D | JC59556 | 1/23/2018 | 47900 | **4320** | < 0.20 U | 20200 | < 10 U |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I | N | T | JC59556 | 1/23/2018 | 48600 | **4380** | < 0.20 U | 20200 | < 10 U |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I-20160622 | N | T | JC22758 | 6/22/2016 | 35200 | **4410** | < 0.047 U | 14600 | < 4.1 U |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I-20160622X | FD | T | JC22758 | 6/22/2016 | 35500 | **4800** | < 0.047 U | 15400 | 5.0 J |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I-20160316 | N | T | JC16336 | 3/16/2016 | 61600 | **5850** | < 0.047 U | 19700 J | < 20 U |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I-20151210 | N | T | JC10380 | 12/10/2015 | 66000 J | **7360** | 0.26 | 22800 | < 3.3 U |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I-20150928 | N | T | JC4872A | 9/28/2015 | 57200 | **9350** | < 0.069 U | 25600 | 8.6 J |
| WELL | INTERMEDIATE | 132-P3A-MW102I | 132-P3A-MW102I-20160617 | N | T | JC22504 | 6/17/2016 | 41900 | **14600** | < 0.047 U | 10300 | < 8.1 U |
| WELL | INTERMEDIATE | 132-P3A-MW102I | 132-P3A-MW102I-20160317 | N | T | JC16446 | 3/17/2016 | 36400 | **12100** | < 0.047 U | 19600 | < 20 U |
| WELL | INTERMEDIATE | 132-P3A-MW102I | 132-P3A-MW102I-20151215 | N | T | JC10723 | 12/15/2015 | 47500 | **8010** | < 0.069 U | 12400 | < 3.3 U |
| WELL | INTERMEDIATE | 132-P3A-MW102I | 132-P3A-MW102I-20150929 | N | T | JC4978A | 9/29/2015 | 38300 | **830** | < 0.069 U | 7430 J | < 3.3 U |
| WELL | INTERMEDIATE | 132-P3A-MW103I | 132-P3A-MW103I-20160616 | N | T | JC22356 | 6/16/2016 | 59500 | **51.3** | < 0.047 U | 240000 | < 4.1 U |
| WELL | INTERMEDIATE | 132-P3A-MW103I | 132-P3A-MW103I-20160318 | N | T | JC16549 | 3/18/2016 | 59500 | **894** | < 0.14 U | 16100 | < 4.1 U |
| WELL | INTERMEDIATE | 132-P3A-MW103I | 132-P3A-MW103I-20151215 | N | T | JC10723 | 12/15/2015 | 54900 | **808** | < 0.14 U | 11500 | < 16 U |
| WELL | INTERMEDIATE | 132-P3A-MW103I | 132-P3A-MW103I-20150930 | N | T | JC5099A | 9/30/2015 | 38000 | **563** | < 0.14 U | 10500 | < 16 U |
| WELL | INTERMEDIATE | 132-P3A-MW104I | 132-P3A-MW104I-20160616 | N | T | JC22356 | 6/16/2016 | 34600 | **1940** | < 0.047 U | 13000 | < 4.1 U |
| WELL | INTERMEDIATE | 132-P3A-MW104I | 132-P3A-MW104I-20160318 | N | T | JC16549 | 3/18/2016 | 27900 | **1280** | < 0.047 U | 23000 | 4.9 J |
| WELL | INTERMEDIATE | 132-P3A-MW104I | 132-P3A-MW104I-20151215-X | FD | T | JC10723 | 12/15/2015 | 44400 | **2620** | < 0.069 U | 9780 J | < 3.3 U |
| WELL | INTERMEDIATE | 132-P3A-MW104I | 132-P3A-MW104I-20151215 | N | T | JC10723 | 12/15/2015 | 47000 | **2780** | < 0.069 U | 10900 | 4.6 J |
| WELL | INTERMEDIATE | 132-P3A-MW104I | 132-P3A-MW104I-20150929 | N | T | JC4978A | 9/29/2015 | 34900 | **1540** | < 0.069 U | 9660 J | < 3.3 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-20161215 | N | T | JC33793 | 12/15/2016 | 233000 | **144** | < 0.047 UB | 85600 | < 4.1 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-20160913 | N | T | JC27486 | 9/13/2016 | 249000 | **180** | < 0.047 U | 79900 J | < 4.1 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-20160616 | N | T | JC22356 | 6/16/2016 | 256000 | **175** | < 0.047 U | 87000 | 9.6 J |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-20160324 | N | T | JC16937 | 3/24/2016 | 227000 J | **220** | < 0.047 U | 65700 J | < 20 U |
| WELL | INTERMEDIATE | 133-P3C-MW102I | 133-P3C-MW102I-20161216 | N | T | JC33887 | 12/16/2016 | 75600 J | **647** | < 0.070 U | 46300 | < 4.1 U |
| WELL | INTERMEDIATE | 133-P3C-MW102I | 133-P3C-MW102I-20160913 | N | T | JC27486 | 9/13/2016 | 77200 | **710** | 0.051 J | 46300 J | < 4.1 U |
| WELL | INTERMEDIATE | 133-P3C-MW102I | 133-P3C-MW102I-20160615 | N | T | JC22273 | 6/15/2016 | 75300 J | **606** | < 0.047 U | 48700 J | < 4.1 U |
| WELL | INTERMEDIATE | 133-P3C-MW102I | 133-P3C-MW102I-20160324 | N | T | JC16937 | 3/24/2016 | 58700 J | **616** | < 0.047 U | 35900 J | < 20 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-30.5 | N | T | JC5499 | 10/6/2015 | 132000 | **104** | < 0.069 U | 69100 | 3.9 J |
| WELL | INTERMEDIATE | 137-P3B-MW101I | 137-P3B-MW101I-20160624 | N | T | JC22939 | 6/24/2016 | 35500 | **321** | < 0.047 U | 43100 | < 4.1 U |
| WELL | INTERMEDIATE | 137-P3B-MW101I | 137-P3B-MW101I-20160323 | N | T | JC16843 | 3/23/2016 | 72200 | **437** | < 0.047 U | 29800 | 5.5 J |
| WELL | INTERMEDIATE | 137-P3B-MW101I | 137-P3B-MW101I-20151218 | N | T | JC11088 | 12/18/2015 | 61200 | **699** | < 0.069 U | 33400 | 3.7 J |
| WELL | INTERMEDIATE | 137-P3B-MW101I | 137-P3B-MW101I-20150930 | N | T | JC5099A | 9/30/2015 | 84700 | **781** | < 0.069 U | 35600 | 4.6 J |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-20160615 | N | T | JC22273 | 6/15/2016 | 77600 J | **583** | < 0.047 U | 47600 J | 4.1 J |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-20160321 | N | T | JC16664 | 3/21/2016 | 103000 | **709** | < 0.047 U | 50200 | 4.1 J |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-20151216 | N | T | JC10831 | 12/16/2015 | 104000 | **784** | < 0.069 U | 59400 | 10.3 J |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-20150930X | FD | T | JC5099A | 9/30/2015 | 96200 | **698** | < 0.069 U | 50900 | < 3.3 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-20150930 | N | T | JC5099A | 9/30/2015 | 105000 | **645** | < 0.069 U | 49200 | < 3.3 U |
| WELL | INTERMEDIATE | 143-P3A-MW101I | 143-P3A-MW101I-20160620 | N | T | JC22555 | 6/20/2016 | 26700 | **158** | < 0.047 U | 4050 J | < 4.1 U |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | MAGNESIUM | MANGANESE | MERCURY | POTASSIUM | SELENIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7439-95-4 | 7439-96-5 | 7439-97-6 | 7440-09-7 | 7782-49-2 |
| | | | | | | | **GWQS** | N/A | 50 | 2 | N/A | 40 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 143-P3A-MW101I | 143-P3A-MW101I-20160318 | N | T | JC16549 | 3/18/2016 | 24300 | 23.0 | < 0.14 U | 10600 | < 4.1 U |
| WELL | INTERMEDIATE | 143-P3A-MW101I | 143-P3A-MW101I-20151214 | N | T | JC10593 | 12/14/2015 | 25500 | **82.8** | < 0.069 U | 3090 J | < 3.3 U |
| WELL | INTERMEDIATE | 143-P3A-MW101I | 143-P3A-MW101I-20150928 | N | T | JC4872A | 9/28/2015 | 23000 | **70.1** | < 0.069 U | 2520 J | < 16 U |
| WELL | INTERMEDIATE | GPS-EW1I | GPS-EW1I-100616 | N | T | JC29150 | 10/6/2016 | 56900 | **1890** | < 0.047 U | 9290 J | 5.7 J |
| WELL | INTERMEDIATE | GPS-EW1I | GPS-EW1I-071216 | N | T | JC23920 | 7/12/2016 | 61300 | **1190** | 0.14 J | 9520 J | < 4.1 U |
| WELL | INTERMEDIATE | GPS-EW1I | GPS-EW1I-040616 | N | T | JC17755 | 4/6/2016 | 60200 J | **1160** | < 0.047 U | 10400 | 7.2 J |
| WELL | INTERMEDIATE | GPS-EW1I | GPS-EW1I-010616 | N | T | JC12114 | 1/6/2016 | 59700 | **341** | < 0.069 U | 11300 | 10.7 |
| WELL | INTERMEDIATE | GPS-EW2I | GPS-EW2I-100616 | N | T | JC29150 | 10/6/2016 | 33800 | **155** | < 0.047 U | 12100 | 6.4 J |
| WELL | INTERMEDIATE | GPS-EW2I | GPS-EW2I-071216 | N | T | JC23920 | 7/12/2016 | 46800 | **216** | < 0.047 U | 12900 | < 4.1 U |
| WELL | INTERMEDIATE | GPS-EW2I | GPS-EW2I-040616 | N | T | JC17755 | 4/6/2016 | 47100 J | **220** | 0.086 J | 13100 | 6.2 J |
| WELL | INTERMEDIATE | GPS-EW2I | GPS-EW2I-010616 | N | T | JC12114 | 1/6/2016 | 36800 | **231** | 0.22 | 14800 | 7.3 J |
| WELL | INTERMEDIATE | GPS-IW12I | GPS-IW12I-100616 | N | T | JC29150 | 10/6/2016 | 26200 | **657** | < 0.047 UB | 6400 J | 7.8 J |
| WELL | INTERMEDIATE | GPS-IW12I | GPS-IW12I-071216 | N | T | JC23920 | 7/12/2016 | 17200 | **252** | 0.083 J | 1280 J | < 4.1 U |
| WELL | INTERMEDIATE | GPS-IW12I | GPS-IW12I-040616 | N | T | JC17755 | 4/6/2016 | 11800 J | **172** | < 0.047 U | 2800 J | < 4.1 U |
| WELL | INTERMEDIATE | GPS-IW12I | GPS-IW12I-010616 | N | T | JC12114 | 1/6/2016 | 17300 | **265** | < 0.069 U | 3900 J | 6.7 J |
| WELL | INTERMEDIATE | GPS-IW3I | GPS-IW3I-100616 | N | T | JC29150 | 10/6/2016 | 93800 | **6510 J** | < 0.047 U | 11600 | **< 41 U** |
| WELL | INTERMEDIATE | GPS-IW3I | GPS-IW3I-071216 | N | T | JC23920 | 7/12/2016 | 20200 | **364** | < 0.047 U | 1170 J | < 4.1 U |
| WELL | INTERMEDIATE | GPS-IW3I | GPS-IW3I-040616 | N | T | JC17755 | 4/6/2016 | 81800 J | **7900** | < 0.047 U | 7390 J | 38.4 J |
| WELL | INTERMEDIATE | GPS-IW3I | GPS-IW3I-010616 | N | T | JC12114 | 1/6/2016 | 55300 | **2640** | < 0.069 U | 4770 J | < 33 U |
| WELL | INTERMEDIATE | GPS-IW4I | GPS-IW4I-100616 | N | T | JC29150 | 10/6/2016 | 19300 J | **712** | < 0.070 UB | 4090 J | < 20 U |
| WELL | INTERMEDIATE | GPS-IW4I | GPS-IW4I-071216 | N | T | JC23920 | 7/12/2016 | 20100 | **352** | 0.098 J | 232 J | < 8.1 U |
| WELL | INTERMEDIATE | GPS-IW4I | GPS-IW4I-040616 | N | T | JC17755 | 4/6/2016 | 13900 J | **279** | < 0.14 U | 1420 J | < 8.1 U |
| WELL | INTERMEDIATE | GPS-IW4I | GPS-IW4I-010616 | N | T | JC12114 | 1/6/2016 | 13500 | **341** | < 0.069 U | 2390 J | < 16 U |
| WELL | INTERMEDIATE | GPS-IW6I | GPS-IW6I-100616 | N | T | JC29150 | 10/6/2016 | 29000 | **1810** | < 0.047 U | 4390 J | 8.4 J |
| WELL | INTERMEDIATE | GPS-IW6I | GPS-IW6I-071216 | N | T | JC23920 | 7/12/2016 | 30600 | **848** | 0.062 J | < 120 U | < 4.1 U |
| WELL | INTERMEDIATE | GPS-IW6I | GPS-IW6I-040616 | N | T | JC17755 | 4/6/2016 | 11700 J | **581** | < 0.047 U | 1650 J | 5.5 J |
| WELL | INTERMEDIATE | GPS-IW6I | GPS-IW6I-010616 | N | T | JC12114 | 1/6/2016 | 16500 | **426** | < 0.069 U | 2590 J | 8.8 J |
| WELL | INTERMEDIATE | GPS-IW9I | GPS-IW9I-100616 | N | T | JC29150 | 10/6/2016 | 17900 | **390** | < 0.047 U | 4510 J | 7.3 J |
| WELL | INTERMEDIATE | GPS-IW9I | GPS-IW9I-071216 | N | T | JC23920 | 7/12/2016 | 105000 | **7280** | < 0.047 U | 7900 J | < 20 U |
| WELL | INTERMEDIATE | GPS-IW9I | GPS-IW9I-040616 | N | T | JC17755 | 4/6/2016 | 16600 J | **336** | < 0.047 U | 2490 J | < 4.1 U |
| WELL | INTERMEDIATE | GPS-IW9I | GPS-IW9I-010616 | N | T | JC12114 | 1/6/2016 | 15900 | **228** | < 0.069 U | 3480 J | < 3.3 U |
| WELL | INTERMEDIATE | GPS-MW2I | GPS-MW2I-20180131 | N | D | JC60035 | 1/31/2018 | 32600 | **374** | < 0.40 U | < 50000 U | **< 50 U** |
| WELL | INTERMEDIATE | GPS-MW2I | GPS-MW2I-20180131 | N | T | JC60035 | 1/31/2018 | 32600 | **370** | < 0.40 U | < 50000 U | **< 50 U** |
| WELL | INTERMEDIATE | GPS-MW3I | GPS-MW3I-20180131 | N | D | JC60035 | 1/31/2018 | 37300 | **495** | < 0.20 U | < 20000 U | < 20 U |
| WELL | INTERMEDIATE | GPS-MW3I | GPS-MW3I-20180131 | N | T | JC60035 | 1/31/2018 | 37500 | **506** | < 0.20 U | < 20000 U | < 20 U |
| WELL | INTERMEDIATE | GPS-MW3I | GPS-MW3I-20180131-DUP | FD | D | JC60035 | 1/31/2018 | 37400 | **498** | < 0.20 U | < 20000 U | < 20 U |
| WELL | INTERMEDIATE | GPS-MW3I | GPS-MW3I-20180131-DUP | FD | T | JC60035 | 1/31/2018 | 38400 | **514** | < 0.20 U | < 20000 U | < 20 U |
| WELL | INTERMEDIATE | GPS-MW5I | GPS-MW5I-20180131 | N | D | JC60035 | 1/31/2018 | 46000 | **436** | < 0.20 U | < 10000 U | **< 100 U** |
| WELL | INTERMEDIATE | GPS-MW5I | GPS-MW5I-20180131 | N | T | JC60035 | 1/31/2018 | 54300 | **2230** | < 0.40 U | < 50000 U | **< 50 U** |
| WELL | INTERMEDIATE | GPS-MW5I | GPS-MW5I-100616 | N | T | JC29150 | 10/6/2016 | 29600 | **472** | < 0.047 UB | 5080 J | 7.5 J |
| WELL | INTERMEDIATE | GPS-MW5I | GPS-MW5I-071216 | N | T | JC23920 | 7/12/2016 | 38500 | **605** | 0.090 J | 2640 J | < 8.1 U |
| WELL | INTERMEDIATE | GPS-MW5I | GPS-MW5I-040616 | N | T | JC17755 | 4/6/2016 | 57700 J | **3500** | < 0.28 U | 12900 J | 9.8 J |
| WELL | INTERMEDIATE | GPS-MW5I | GPS-MW5I-010616 | N | T | JC12114 | 1/6/2016 | 28900 | **1640** | < 0.069 U | 5570 J | 13.9 |
| WELL | INTERMEDIATE | GPS-MW6I | GPS-MW6I-20180130 | N | D | JC59976 | 1/30/2018 | < 10000 U | 44.6 | < 1.2 U | 24100 | < 20 U |
| WELL | INTERMEDIATE | GPS-MW6I | GPS-MW6I-20180130 | N | T | JC59976 | 1/30/2018 | < 25000 U | **98.0** | < 1.2 U | < 50000 U | **< 50 U** |
| WELL | INTERMEDIATE | GPS-MW6I | GPS-MW6I-100616 | N | T | JC29150 | 10/6/2016 | < 420 U | 5.0 J | 0.40 JB | 20800 J | **< 41 U** |
| WELL | INTERMEDIATE | GPS-MW6I | GPS-MW6I-071216 | N | T | JC23920 | 7/12/2016 | < 420 U | 4.5 J | 0.22 J | 16700 J | < 20 U |
| WELL | INTERMEDIATE | GPS-MW6I | GPS-MW6I-040616 | N | T | JC17755 | 4/6/2016 | < 170 UJ | < 0.78 U | < 0.28 U | 19900 J | 11.4 J |
| WELL | INTERMEDIATE | GPS-MW6I | GPS-MW6I-010616 | N | T | JC12114 | 1/6/2016 | 218 J | 0.80 J | < 0.069 U | 22400 | **54.4 J** |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | MAGNESIUM | MANGANESE | MERCURY | POTASSIUM | SELENIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7439-95-4 | 7439-96-5 | 7439-97-6 | 7440-09-7 | 7782-49-2 |
| | | | | | | | **GWQS** | N/A | 50 | 2 | N/A | 40 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | GPS-MW7I | GPS-MW7I-100616 | N | T | JC29150 | 10/6/2016 | 20100 | 32.4 | < 0.093 UB | 10200 | 8.9 J |
| WELL | INTERMEDIATE | GPS-MW7I | GPS-MW7I-071216 | N | T | JC23920 | 7/12/2016 | 20100 | 25.5 | < 0.047 U | 10300 | < 4.1 U |
| WELL | INTERMEDIATE | GPS-MW7I | GPS-MW7I-040616 | N | T | JC17755 | 4/6/2016 | 11000 J | 9.2 J | < 0.047 U | 11900 | 6.0 J |
| WELL | INTERMEDIATE | GPS-MW7I | GPS-MW7I-010616 | N | T | JC12114 | 1/6/2016 | 23600 | 34.7 | 0.21 | 15600 | 14.3 |
| WELL | INTERMEDIATE | MW7D | MW7D-45.0-20180423 | N | T | JC64763 | 4/23/2018 | 25700 | **7300** | < 0.13 U | 5300 J | < 6.6 U |
| WELL | INTERMEDIATE | MW7D | MW7D-41.0-20180423 | N | T | JC64763 | 4/23/2018 | 25300 | **8460** | < 0.13 U | 5370 J | < 6.6 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930X | FD | T | JC5098A | 9/30/2015 | 27600 | **7150 J** | < 0.069 U | 7820 J | < 3.3 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930 | N | T | JC5098A | 9/30/2015 | 26400 | **6740 J** | < 0.069 U | 7810 J | 4.2 J |
| WELL | INTERMEDIATE | MW7D | MW7D-40.5-20150930 | N | T | JC5098A | 9/30/2015 | 25100 | **7680 J** | < 0.069 U | 6500 J | < 3.3 U |
| WELL | INTERMEDIATE | MW8D | MW8D-46.5-20150929 | N | T | JC4976A | 9/29/2015 | 619000 | **695** | < 0.069 U | 128000 | 14.0 |
| WELL | INTERMEDIATE | MW8D | MW8D-41.5-20150929 | N | T | JC4976A | 9/29/2015 | 456000 | **389** | < 0.21 U | 115000 | 7.5 J |
| WELL | DEEP | 114-MW20C | 114-MW20C-20180419 | N | T | JC64571 | 4/19/2018 | 21200 | **506** | < 0.13 U | 7060 J | < 6.6 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-78.5-20151001 | N | T | JC5237A | 10/1/2015 | 30200 | **541** | < 0.069 U | 7090 J | < 3.3 U |
| WELL | DEEP | 114-MW25C-2 | 114-MW25C-20180313 | N | D | JC62228 | 3/13/2018 | 18600 | **1360** | < 0.083 U | 5740 J | < 6.6 U |
| WELL | DEEP | 114-MW25C-2 | 114-MW25C-20180313 | N | T | JC62228 | 3/13/2018 | 34500 | **2460** | < 0.25 U | 15400 J | < 33 U |
| WELL | DEEP | 114-P1B-MW103D | 114-P1B-MW103D-20171214X | FD | T | JC57385 | 12/14/2017 | 16400 J | **175** | 0.46 J | 12300 J | < 33 U |
| WELL | DEEP | 114-P1B-MW103D | 114-P1B-MW103D-20171214 | N | T | JC57385 | 12/14/2017 | 15600 J | **153** | < 0.25 U | 12900 J | < 33 U |
| WELL | DEEP | 114-P1-IRM-10D | 114-P1-IRM-10D | N | D | JC59745 | 1/25/2018 | 34500 | **< 300 U** | < 0.40 U | < 20000 U | < 20 U |
| WELL | DEEP | 114-P1-IRM-10D | 114-P1-IRM-10D | N | T | JC59745 | 1/25/2018 | 32800 | **< 300 U** | < 0.40 U | < 20000 U | 24.6 |
| WELL | DEEP | 114-P1-IRM-18D | 114-P1-IRM-18D-20180118 | N | D | JC59349 | 1/18/2018 | 46900 | **248** | < 0.60 U | < 50000 U | **< 50 U** |
| WELL | DEEP | 114-P1-IRM-18D | 114-P1-IRM-18D-20180118 | N | T | JC59349 | 1/18/2018 | 45100 | **247** | < 0.60 U | < 50000 U | **< 50 U** |
| WELL | DEEP | 114-P1-IRM-19D | 114-P1-IRM-19D-20180117 | N | D | JC59023 | 1/17/2018 | 15600 | 34.8 | < 0.40 U | < 20000 U | < 40 U |
| WELL | DEEP | 114-P1-IRM-19D | 114-P1-IRM-19D-20180117 | N | T | JC59023 | 1/17/2018 | 15300 | 47.0 | < 0.40 U | < 20000 U | < 40 U |
| WELL | DEEP | 114-P1-IRM-20D | 114-P1-IRM-20D-20180117 | N | D | JC59023 | 1/17/2018 | 103000 | **212** | < 0.20 U | 45300 | < 10 U |
| WELL | DEEP | 114-P1-IRM-20D | 114-P1-IRM-20D-20180117 | N | T | JC59023 | 1/17/2018 | 102000 | **226** | < 0.20 U | 43400 | < 10 U |
| WELL | DEEP | 114-P1-IRM-20D | 114-P1-IRM-20B-20180117-DUP | FD | D | JC59023 | 1/17/2018 | 104000 | **213** | < 0.20 U | 43700 | < 10 U |
| WELL | DEEP | 114-P1-IRM-20D | 114-P1-IRM-20B-20180117-DUP | FD | T | JC59023 | 1/17/2018 | 104000 | **252** | < 0.20 U | 44900 | < 10 U |
| WELL | DEEP | 114-P1-IRM-21D | 114-P1-IRM-21D-20180118 | N | D | JC59349 | 1/18/2018 | 48000 | **< 75 U** | < 0.40 U | < 50000 U | **< 50 U** |
| WELL | DEEP | 114-P1-IRM-21D | 114-P1-IRM-21D-20180118 | N | T | JC59349 | 1/18/2018 | 45000 | **< 75 U** | < 0.40 U | < 50000 U | **< 50 U** |
| WELL | DEEP | 114-P1-IRM-22D | 114-P1-IRM-22D-20180118 | N | D | JC59349 | 1/18/2018 | 140000 | **206** | < 0.40 U | 45800 | **< 100 U** |
| WELL | DEEP | 114-P1-IRM-22D | 114-P1-IRM-22D-20180118 | N | T | JC59349 | 1/18/2018 | 144000 | **230** | < 0.40 U | 44300 | **< 100 U** |
| WELL | DEEP | 114-P1-IRM-23D | 114-P1-IRM-23D-20180124 | N | D | JC59667 | 1/24/2018 | < 50000 U | **459** | < 0.60 U | < 100000 U | **< 2000 U** |
| WELL | DEEP | 114-P1-IRM-23D | 114-P1-IRM-23D-20180124 | N | T | JC59667 | 1/24/2018 | < 50000 U | **465** | < 0.60 U | < 100000 U | **< 2000 U** |
| WELL | DEEP | 114-P1-IRM-24D | 114-P1-IRM-24D-20180119 | N | D | JC59431 | 1/19/2018 | < 25000 U | **< 75 U** | < 0.40 U | < 50000 U | **< 50 U** |
| WELL | DEEP | 114-P1-IRM-24D | 114-P1-IRM-24D-20180119 | N | T | JC59431 | 1/19/2018 | < 25000 UJ- | **< 75 UJ-** | < 0.40 U | < 50000 U | **< 50 U** |
| WELL | DEEP | 114-P1-IRM-25D | 114-P1-IRM-25D-20180118 | N | D | JC59349 | 1/18/2018 | 76200 | **316** | < 0.60 U | < 50000 U | **< 50 U** |
| WELL | DEEP | 114-P1-IRM-25D | 114-P1-IRM-25D-20180118 | N | T | JC59349 | 1/18/2018 | 66800 | **289** | < 0.60 U | < 50000 U | **< 50 U** |
| WELL | DEEP | 114-P1-IRM-26D | 114-P1-IRM-26D-20180119 | N | D | JC59431 | 1/19/2018 | 35200 | **268** | < 0.60 U | < 50000 U | **< 1000 U** |
| WELL | DEEP | 114-P1-IRM-26D | 114-P1-IRM-26D-20180119 | N | T | JC59431 | 1/19/2018 | 39800 J- | **279 J-** | < 0.60 U | < 50000 U | **< 1000 U** |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-20180122 | N | D | JC59495 | 1/22/2018 | 12300 | **149** | < 0.40 U | < 20000 U | < 20 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-20180122 | N | T | JC59495 | 1/22/2018 | 13600 | **183** | < 0.40 U | < 20000 U | < 20 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | N | T | JC57943A | 12/22/2017 | 12000 | **207** | < 0.17 U | 13500 J | < 13 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | N | T | JC57943A | 12/22/2017 | 11700 | **214** | < 0.17 U | 13100 J | < 13 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | N | T | JC57820 | 12/21/2017 | 12900 | **240** | < 0.25 U | 14800 | **< 66 U** |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | N | T | JC57820 | 12/21/2017 | 12500 | **233** | < 0.25 U | 14300 | **< 66 U** |
| WELL | DEEP | 114-P1-IRM-28D | 114-P1-IRM-28D-20180124 | N | D | JC59667 | 1/24/2018 | 13400 | **109** | < 0.20 U | 15900 | < 10 U |
| WELL | DEEP | 114-P1-IRM-28D | 114-P1-IRM-28D-20180124 | N | T | JC59667 | 1/24/2018 | 13200 | **108** | < 0.20 U | 15700 | < 10 U |
| WELL | DEEP | 114-P1-IRM-29D | 114-P1-IRM-29D-20180118 | N | D | JC59349 | 1/18/2018 | < 25000 U | **< 1500 U** | < 0.60 U | < 50000 U | **< 1000 U** |
| WELL | DEEP | 114-P1-IRM-29D | 114-P1-IRM-29D-20180118 | N | T | JC59349 | 1/18/2018 | < 25000 U | **< 1500 U** | < 0.60 U | < 50000 U | **< 1000 U** |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | MAGNESIUM | MANGANESE | MERCURY | POTASSIUM | SELENIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7439-95-4 | 7439-96-5 | 7439-97-6 | 7440-09-7 | 7782-49-2 |
| | | | | | | | **GWQS** | N/A | 50 | 2 | N/A | 40 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | DEEP | 114-P1-IRM-30D | 114-P1-IRM-30D-20180122 | N | D | JC59495 | 1/22/2018 | 5870 | **88.7** | < 0.20 U | < 10000 U | < 10 U |
| WELL | DEEP | 114-P1-IRM-30D | 114-P1-IRM-30D-20180122 | N | T | JC59495 | 1/22/2018 | 6190 | **108** | < 0.20 U | < 10000 U | < 10 U |
| WELL | DEEP | 114-P1-IRM-31D | 114-P1-IRM-31D-20180119 | N | D | JC59431 | 1/19/2018 | < 25000 U | **< 75 U** | < 0.60 U | < 50000 U | **< 50 U** |
| WELL | DEEP | 114-P1-IRM-31D | 114-P1-IRM-31D-20180119 | N | T | JC59431 | 1/19/2018 | < 25000 UJ- | **294 J-** | < 0.60 U | < 50000 U | **< 50 U** |
| WELL | DEEP | 114-P1-IRM-32D | 114-P1-IRM-32D-20180122 | N | D | JC59495 | 1/22/2018 | < 5000 U | 33.4 | < 0.40 U | < 10000 U | < 10 U |
| WELL | DEEP | 114-P1-IRM-32D | 114-P1-IRM-32D-20180122 | N | T | JC59495 | 1/22/2018 | < 10000 U | **69.0** | < 0.40 U | < 20000 U | < 20 U |
| WELL | DEEP | 114-P1-IRM-33D | 114-P1-IRM-33D-20180124 | N | D | JC59667 | 1/24/2018 | < 50000 U | **< 150 U** | < 0.60 U | < 100000 U | **< 100 U** |
| WELL | DEEP | 114-P1-IRM-33D | 114-P1-IRM-33D-20180124 | N | T | JC59667 | 1/24/2018 | < 50000 U | **210** | < 0.60 U | < 100000 U | **< 100 U** |
| WELL | DEEP | 114-P1-IRM-34D | 114-P1-IRM-34D | N | D | JC59745 | 1/25/2018 | 23900 | **51.9** | < 0.20 U | 10500 | < 10 U |
| WELL | DEEP | 114-P1-IRM-34D | 114-P1-IRM-34D | N | T | JC59745 | 1/25/2018 | 23500 | **67.0** | < 0.20 U | 10600 | < 10 U |
| WELL | DEEP | 114-P1-IRM-35D | 114-P1-IRM-35D-20180122 | N | D | JC59495 | 1/22/2018 | 52900 | **< 1900 U** | < 0.60 U | < 50000 U | **< 1300 U** |
| WELL | DEEP | 114-P1-IRM-35D | 114-P1-IRM-35D-20180122 | N | T | JC59495 | 1/22/2018 | 51700 | **< 1900 U** | < 0.60 U | < 50000 U | **< 1300 U** |
| WELL | DEEP | 114-P1-IRM-37D | 114-P1-IRM-37D-20180117 | N | D | JC59023 | 1/17/2018 | 38200 | **546** | < 0.40 U | < 50000 U | **< 50 U** |
| WELL | DEEP | 114-P1-IRM-37D | 114-P1-IRM-37D-20180117 | N | T | JC59023 | 1/17/2018 | 78900 | **289** | < 0.40 U | < 50000 U | **< 50 U** |
| WELL | DEEP | 114-P1-IRM-40D | 114-P1-IRM-40D-20180118 | N | D | JC59349 | 1/18/2018 | 33400 | **< 750 U** | < 0.60 U | < 50000 U | **< 500 U** |
| WELL | DEEP | 114-P1-IRM-40D | 114-P1-IRM-40D-20180118 | N | T | JC59349 | 1/18/2018 | 38100 | **< 750 U** | < 0.60 U | < 50000 U | **< 500 U** |
| WELL | DEEP | 114-P1-IRM-41D | 114-P1-IRM-41D-20180126 | N | D | JC59838 | 1/26/2018 | < 25000 U | **151** | < 0.40 U | < 50000 U | **< 50 U** |
| WELL | DEEP | 114-P1-IRM-41D | 114-P1-IRM-41D-20180126 | N | T | JC59838 | 1/26/2018 | < 25000 U | **178** | < 0.40 U | < 50000 U | **< 50 U** |
| WELL | DEEP | 114-P1-IRM-42D | 114-P1-IRM-42D-20180126 | N | D | JC59838 | 1/26/2018 | 90300 | **< 3000 U** | < 0.60 U | < 100000 U | **< 2000 U** |
| WELL | DEEP | 114-P1-IRM-42D | 114-P1-IRM-42D-20180126 | N | T | JC59838 | 1/26/2018 | 93900 | **< 3000 U** | < 0.60 U | < 100000 U | **< 2000 U** |
| WELL | DEEP | 114-P1-IRM-42D | 114-P1-IRM-42D-20180126-DUP | FD | D | JC59838 | 1/26/2018 | 92900 | **< 3000 U** | < 0.60 U | < 100000 U | **< 2000 U** |
| WELL | DEEP | 114-P1-IRM-42D | 114-P1-IRM-42D-20180126-DUP | FD | T | JC59838 | 1/26/2018 | 92200 | **< 3000 U** | < 0.60 U | < 100000 U | **< 2000 U** |
| WELL | DEEP | 114-P1-IRM-4D | 114-P1-IRM-4D-20180124 | N | D | JC59667 | 1/24/2018 | 54800 | **347** | < 0.60 U | < 100000 U | **< 100 U** |
| WELL | DEEP | 114-P1-IRM-4D | 114-P1-IRM-4D-20180124 | N | T | JC59667 | 1/24/2018 | 56500 | **417** | < 0.60 U | < 100000 U | **< 100 U** |
| WELL | DEEP | 114-P1-IRM-5D | 114-P1-IRM-5D-DUP-20180124 | FD | D | JC59667 | 1/24/2018 | 50200 | **195** | < 0.60 U | < 20000 U | **< 100 U** |
| WELL | DEEP | 114-P1-IRM-5D | 114-P1-IRM-5D-DUP-20180124 | FD | T | JC59667 | 1/24/2018 | 59200 | **252** | < 0.60 U | < 20000 U | **< 100 U** |
| WELL | DEEP | 114-P1-IRM-5D | 114-P1-MW-5I-20180124 | N | D | JC59556 | 1/24/2018 | 33100 | **158** | < 0.60 U | < 50000 U | **< 50 U** |
| WELL | DEEP | 114-P1-IRM-5D | 114-P1-MW-5I-20180124 | N | T | JC59556 | 1/24/2018 | 39800 | **657** | < 0.60 U | < 50000 U | **< 50 U** |
| WELL | DEEP | 114-P1-MW-1D | 114-P1-MW-1D-20180129 | N | D | JC59916 | 1/29/2018 | < 50000 U | **< 150 U** | < 0.60 U | < 100000 U | **< 100 U** |
| WELL | DEEP | 114-P1-MW-1D | 114-P1-MW-1D-20180129 | N | T | JC59916 | 1/29/2018 | < 50000 U | **< 150 U** | < 0.60 U | < 100000 U | **< 100 U** |
| WELL | DEEP | 114-P1-MW-4D | 114-P1-MW-4D-20180126 | N | D | JC59838 | 1/26/2018 | 155000 | **239** | < 0.40 U | < 50000 U | **< 50 U** |
| WELL | DEEP | 114-P1-MW-4D | 114-P1-MW-4D-20180126 | N | T | JC59838 | 1/26/2018 | 154000 | **212** | < 0.40 U | < 50000 U | **< 50 U** |
| WELL | DEEP | 114-P1-MW-5D | 114-P1-MW-5D-20180123 | N | D | JC59667 | 1/24/2018 | 52600 | **205** | < 0.60 U | < 100000 U | **< 100 U** |
| WELL | DEEP | 114-P1-MW-5D | 114-P1-MW-5D-20180123 | N | T | JC59667 | 1/24/2018 | 56300 | **237** | < 0.60 U | < 100000 U | **< 100 U** |
| WELL | DEEP | 114-P1-MW-6D | 114-P1-MW-6D-20180119 | N | D | JC59431 | 1/19/2018 | < 25000 U | **< 75 U** | < 0.40 U | < 50000 U | **< 50 U** |
| WELL | DEEP | 114-P1-MW-6D | 114-P1-MW-6D-20180119 | N | T | JC59431 | 1/19/2018 | 25000 J- | **80.5 J-** | < 0.40 U | < 50000 U | **< 50 U** |
| WELL | DEEP | 114-P1-MW-7D | 114-P1-MW7D-20180125 | N | D | JC59745 | 1/25/2018 | 25300 | **< 150 U** | < 0.40 U | < 20000 U | < 20 U |
| WELL | DEEP | 114-P1-MW-7D | 114-P1-MW7D-20180125 | N | T | JC59745 | 1/25/2018 | 27300 | **< 150 U** | < 0.40 U | < 20000 U | < 20 U |
| WELL | DEEP | 137-MW2C | 137-MW2C-20151214 | N | T | JC10597 | 12/14/2015 | 42900 J | **168** | < 0.069 U | 6160 J | 3.3 J |
| WELL | DEEP | MW6C | MC6C-20180129 | N | D | JC59916 | 1/29/2018 | 75200 | **1000** | < 0.20 U | < 50000 U | **< 50 U** |
| WELL | DEEP | MW6C | MC6C-20180129 | N | T | JC59916 | 1/29/2018 | 74100 | **1000** | < 0.20 U | < 50000 U | **< 50 U** |
| WELL | DEEP | MW6C | MW6C-57.0-20171220 | N | T | JC57752 | 12/20/2017 | 70600 | **889** | < 0.12 U | 10300 | < 6.6 U |
| WELL | DEEP | MW6C | MW6C-62.0-20171220 | N | T | JC57752 | 12/20/2017 | 70500 | **892** | < 0.12 U | 10600 | < 6.6 U |
| WELL | DEEP | MW6C | 114-MW6C-20160321 | N | T | JC16664 | 3/21/2016 | 33400 | **497** | < 0.047 U | 7350 J | 6.4 J |
| WELL | DEEP | MW8F | MW8F-82.0-20151001 | N | T | JC5237A | 10/1/2015 | 26900 | **559** | < 0.069 U | 6980 J | < 3.3 U |
| WELL | DEEP | MW8F | MW8F-79.5-20151001 | N | T | JC5237A | 10/1/2015 | 29400 | **458** | < 0.069 U | 7180 J | < 3.3 U |
| WELL | Bedrock | 114-MW16B | 114-MW16B-20151214 | N | T | JC10597 | 12/14/2015 | 2300 J | 8.3 J | < 0.069 U | 19200 | < 3.3 U |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | SILVER | SODIUM | STRONTIUM | ZINC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-22-4 | 7440-23-5 | 7440-24-6 | 7440-66-6 |
| | | | | | | | **GWQS** | 40 | 50000 | 2000 | 2000 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-MC-MW101S | 114-MC-MW101S-20160622 | N | T | JC22758 | 6/22/2016 | 1.8 J | **702000** | - | < 1.3 UB |
| WELL | SHALLOW | 114-MC-MW101S | 114-MC-MW101S-20160314X | FD | T | JC16175 | 3/14/2016 | < 0.88 U | **474000** | - | < 1.3 UB |
| WELL | SHALLOW | 114-MC-MW101S | 114-MC-MW101S-20160314 | N | T | JC16175 | 3/14/2016 | < 0.88 U | **470000** | - | < 1.3 UB |
| WELL | SHALLOW | 114-MC-MW101S | 114-MC-MW101S-20151209 | N | T | JC10220A | 12/9/2015 | < 1.3 U | **761000** | - | < 4.9 UB |
| WELL | SHALLOW | 114-MC-MW101S | 114-MC-MW101S-20150921 | N | T | JC4371A | 9/21/2015 | 4.1 J | **1270000** | - | 6.8 J |
| WELL | SHALLOW | 114-MC-MW102S | 114-MC-MW102S-20160624 | N | T | JC22939 | 6/24/2016 | < 4.4 U | **7030000** | - | < 6.6 U |
| WELL | SHALLOW | 114-MC-MW102S | 114-MC-MW102S-20160314 | N | T | JC16175 | 3/14/2016 | < 4.4 U | **5980000** | - | < 1.3 UB |
| WELL | SHALLOW | 114-MC-MW102S | 114-MC-MW102S-20151210 | N | T | JC10380 | 12/10/2015 | < 6.6 U | **8300000** | - | < 24 U |
| WELL | SHALLOW | 114-MC-MW102S | 114-MC-MW102S-20150921 | N | T | JC4371A | 9/21/2015 | < 6.6 U | **8880000** | - | < 24 U |
| WELL | SHALLOW | 114-MW15A | 114-MW15A-20180417 | N | D | JC64376 | 4/17/2018 | < 3.1 U | 40600 | - | < 4.0 U |
| WELL | SHALLOW | 114-MW15A | 114-MW15A-20180417 | N | T | JC64376 | 4/17/2018 | < 3.1 U | 40700 | - | 9.9 J |
| WELL | SHALLOW | 114-MW16A | 114-MW16A-20151214-10.65 | N | T | JC10597 | 12/14/2015 | < 1.3 U | 27400 | - | < 4.9 UB |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-8.0-20180420 | N | T | JC64643 | 4/20/2018 | < 3.1 U | **393000** | 323 | 68.2 |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-11.0-20180420 | N | T | JC64643 | 4/20/2018 | < 3.1 U | **356000** | 319 | 34.6 |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-12.5-20151001 | N | T | JC5237A | 10/1/2015 | < 1.3 U | **519000** | - | 24.8 JB |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-10.5-20151001 | N | T | JC5237A | 10/1/2015 | < 1.3 U | **436000** | - | 18.8 JB |
| WELL | SHALLOW | 114-MW22A | 114-MW22A-11.0-20180419 | N | T | JC64571 | 4/19/2018 | < 3.1 U | **332000** | 849 | < 4.0 U |
| WELL | SHALLOW | 114-MW22A | 114-MW22A-16.0-20180419 | N | T | JC64571 | 4/19/2018 | < 3.1 U | **321000** | 828 | 6.0 J |
| WELL | SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | N | T | JC65325 | 5/2/2018 | < 3.1 U | **126000** | 683 | 15.5 J |
| WELL | SHALLOW | 114-MW25A | 114-MW25A-20170926 | N | T | JC51824 | 9/26/2017 | < 3.1 U | **78600** | - | 13.9 J |
| WELL | SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | N | T | JC57565 | 12/18/2017 | < 3.1 U | **117000** | 501 | 11.7 J |
| WELL | SHALLOW | 114-MW27A | 114-MW27A-20170926 | N | T | JC51824 | 9/26/2017 | < 3.1 U | 48700 | - | 21.5 |
| WELL | SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | N | T | JC57565 | 12/18/2017 | < 3.1 U | **85900** | 211 | 168 |
| WELL | SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | N | T | JC56729A | 12/6/2017 | < 3.1 U | 48200 | 295 | < 4.0 U |
| WELL | SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | N | T | JC56859A | 12/7/2017 | < 3.1 U | 15100 | 314 | 5.4 J |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927-X | FD | T | JC51890 | 9/27/2017 | < 3.1 U | **419000** | - | < 4.0 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927 | N | T | JC51890 | 9/27/2017 | < 3.1 U | **425000** | - | < 4.0 U |
| WELL | SHALLOW | 114-MW37A | 114-MW37A-20170928 | N | T | JC52029 | 9/28/2017 | < 3.1 U | 23600 | - | 5.5 J |
| WELL | SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | N | T | JC56504A | 12/4/2017 | < 6.3 U | 49600 | 297 | 28.2 J |
| WELL | SHALLOW | 114-MW41A | 114-MW41A-20180420 | N | T | JC64643 | 4/20/2018 | < 16 U | **127000** | 579 | < 40 U |
| WELL | SHALLOW | 114-MW42A | 114-MW42A-20180417 | N | T | JC64376 | 4/17/2018 | < 3.1 U | **96800** | - | 30.2 |
| WELL | SHALLOW | 114-MW43A | 114-MW43A-20180417 | N | T | JC64376 | 4/17/2018 | < 3.1 U | **81900** | - | 5.2 J |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-20160916 | N | T | JC27812 | 9/16/2016 | 1.4 J | **370000** | - | < 1.3 U |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-20160617 | N | T | JC22504 | 6/17/2016 | < 0.88 U | **388000** | - | < 1.3 U |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-20160317 | N | T | JC16446 | 3/17/2016 | < 0.88 U | **473000** | - | 6.3 J |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-20151209 | N | T | JC10220A | 12/9/2015 | < 1.3 U | **150000** | - | 26.9 JB |
| WELL | SHALLOW | 114-P1A-MW101S | 114-P1A-MW101S-20150921 | N | T | JC4371A | 9/21/2015 | < 1.3 U | **487000** | - | < 4.9 U |
| WELL | SHALLOW | 114-P1B-MW101S | 114-P1B-MW101S-20160621 | N | T | JC22642 | 6/21/2016 | < 0.88 U | **131000** | - | < 1.3 U |
| WELL | SHALLOW | 114-P1B-MW101S | 114-P1B-MW101S-20160314 | N | T | JC16175 | 3/14/2016 | < 0.88 U | **58200** | - | < 1.3 UB |
| WELL | SHALLOW | 114-P1B-MW101S | 114-P1B-MW101S-20151209 | N | T | JC10220A | 12/9/2015 | < 1.3 U | **127000** | - | < 4.9 UB |
| WELL | SHALLOW | 114-P1B-MW101S | 114-P1B-MW101S-20150922 | N | T | JC4452A | 9/22/2015 | 1.3 J | **125000** | - | < 4.9 U |
| WELL | SHALLOW | 114-P1B-MW102S | 114-P1B-MW102S-20160916 | N | T | JC27812 | 9/16/2016 | 2.2 J | **1740000** | - | 13.8 JB |
| WELL | SHALLOW | 114-P1B-MW102S | 114-P1B-MW102S-20160314 | N | T | JC16175 | 3/14/2016 | 1.1 J | **1670000** | - | < 1.3 UB |
| WELL | SHALLOW | 114-P1B-MW102S | 114-P1B-MW102S-20151210 | N | T | JC10380 | 12/10/2015 | < 1.3 U | **1460000** | - | 38.3 JB |
| WELL | SHALLOW | 114-P1B-MW102S | 114-P1B-MW102S-20150922 | N | T | JC4452A | 9/22/2015 | < 1.3 U | **1620000** | - | 27.9 |
| WELL | SHALLOW | 114-P1B-MW103S | 114-P1B-MW103S-20160622 | N | T | JC22758 | 6/22/2016 | 1.8 J | **303000** | - | < 1.3 U |
| WELL | SHALLOW | 114-P1B-MW103S | 114-P1B-MW103S-20160318 | N | T | JC16549 | 3/18/2016 | < 0.88 U | **331000** | - | < 1.3 U |
| WELL | SHALLOW | 114-P1B-MW103S | 114-P1B-MW103S-20151210 | N | T | JC10380 | 12/10/2015 | < 1.3 U | **457000** | - | < 4.9 UB |
| WELL | SHALLOW | 114-P1B-MW103S | 114-P1B-MW103S-20150922 | N | T | JC4452A | 9/22/2015 | 4.0 J | **604000** | - | < 4.9 U |

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**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | SILVER | SODIUM | STRONTIUM | ZINC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-22-4 | 7440-23-5 | 7440-24-6 | 7440-66-6 |
| | | | | | | | **GWQS** | 40 | 50000 | 2000 | 2000 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-P1B-MW104S | 114-P1B-MW104S-20160621 | N | T | JC22642 | 6/21/2016 | < 0.88 U | **253000** | - | < 1.3 U |
| WELL | SHALLOW | 114-P1B-MW104S | 114-P1B-MW104S-20160322 | N | T | JC16738 | 3/22/2016 | < 0.88 U | **261000** | - | 5.5 J |
| WELL | SHALLOW | 114-P1B-MW104S | 114-P1B-MW104S-20151211 | N | T | JC10525 | 12/11/2015 | < 1.3 U | **252000** | - | < 4.9 UB |
| WELL | SHALLOW | 114-P1B-MW104S | 114-P1B-MW104S-20150922 | N | T | JC4452A | 9/22/2015 | < 1.3 U | **243000** | - | < 4.9 U |
| WELL | SHALLOW | 114-P1C-MW101S | 114-P1C-MW101S-20160620 | N | T | JC22555 | 6/20/2016 | < 0.88 UB | **1540000** | - | 22.6 |
| WELL | SHALLOW | 114-P1C-MW101S | 114-P1C-MW101S-20160316 | N | T | JC16336 | 3/16/2016 | < 4.4 U | **1280000** | - | 57.5 J |
| WELL | SHALLOW | 114-P1C-MW101S | 114-P1C-MW101S-20151211 | N | T | JC10525 | 12/11/2015 | < 1.3 U | **1550000** | - | < 4.9 UB |
| WELL | SHALLOW | 114-P1C-MW101S | 114-P1C-MW101S-20150923X | FD | T | JC4555A | 9/23/2015 | 2.3 J | **1850000** | - | < 4.9 U |
| WELL | SHALLOW | 114-P1C-MW101S | 114-P1C-MW101S-20150923 | N | T | JC4555A | 9/23/2015 | 1.9 J | **1790000** | - | < 4.9 U |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-20161212X | FD | T | JC33522 | 12/12/2016 | 1.1 J | 32300 | - | < 1.3 UB |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-20161212 | N | T | JC33522 | 12/12/2016 | 1.3 J | 32500 | - | 10.7 JB |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-20160914X | FD | T | JC27595 | 9/14/2016 | < 0.88 U | **71000** | - | < 1.3 U |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-20160914 | N | T | JC27595 | 9/14/2016 | < 0.88 U | **69100** | - | < 1.3 U |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-20160628 | N | T | JC23103 | 6/28/2016 | < 0.88 U | **423000** | - | 4.1 JB |
| WELL | SHALLOW | 114-P2A-MW101S | 114-P2A-MW101S-20160324 | N | T | JC16953 | 3/24/2016 | < 4.4 UJ | **109000** | - | 9.4 J |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-20161212 | N | T | JC33522 | 12/12/2016 | 1.7 J | **299000** | - | 46.8 |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-20160914 | N | T | JC27595 | 9/14/2016 | < 0.88 U | **332000** | - | < 1.3 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-20160628 | N | T | JC23103 | 6/28/2016 | 1.3 J | **384000** | - | 39.8 |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-20160324 | N | T | JC16953 | 3/24/2016 | < 4.4 UJ | **390000** | - | 8.2 J |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-20161213 | N | T | JC33573 | 12/13/2016 | 6.1 J | **546000** | - | 480 |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-20160915 | N | T | JC27716 | 9/15/2016 | 11.2 J | **666000** | - | 22.2 J |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-20160627 | N | T | JC23029 | 6/27/2016 | 10.7 | **642000** | - | 35.7 |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-20160325 | N | T | JC17059 | 3/25/2016 | 4.5 J | **449000** | - | 51.3 J |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-20161214 | N | T | JC33691 | 12/14/2016 | 2.6 J | **549000** | - | 58.0 |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-20160915 | N | T | JC27716 | 9/15/2016 | 1.3 J | **519000** | - | < 1.3 UB |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-20160629 | N | T | JC23208 | 6/29/2016 | < 0.88 U | **532000** | - | < 1.3 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-20160325 | N | T | JC17059 | 3/25/2016 | < 4.4 U | **521000** | - | 23.3 J |
| WELL | SHALLOW | 114-P2B1-MW101S | 114-P2B1-MW101S-20160620 | N | T | JC22555 | 6/20/2016 | < 0.88 UB | **197000** | - | 13.4 J |
| WELL | SHALLOW | 114-P2B1-MW101S | 114-P2B1-MW101S-20160315 | N | T | JC16239 | 3/15/2016 | 4.2 J | **319000** | - | 30.6 JB |
| WELL | SHALLOW | 114-P2B1-MW101S | 114-P2B1-MW101S-20151210X | FD | T | JC10380 | 12/10/2015 | < 1.3 U | **553000** | - | < 4.9 UB |
| WELL | SHALLOW | 114-P2B1-MW101S | 114-P2B1-MW101S-20151210 | N | T | JC10380 | 12/10/2015 | < 1.3 U | **567000** | - | < 4.9 UB |
| WELL | SHALLOW | 114-P2B1-MW101S | 114-P2B1-MW101S-20150922 | N | T | JC4452A | 9/22/2015 | 6.2 J | **1190000** | - | 18.8 J |
| WELL | SHALLOW | 114-P2B1-MW102S | 114-P2B1-MW102S-20160623 | N | T | JC22854 | 6/23/2016 | 3.6 J | **1090000** | - | 9.2 J |
| WELL | SHALLOW | 114-P2B1-MW102S | 114-P2B1-MW102S-20160316 | N | T | JC16336 | 3/16/2016 | < 4.4 U | **1900000** | - | < 6.6 U |
| WELL | SHALLOW | 114-P2B1-MW102S | 114-P2B1-MW102S-20151211 | N | T | JC10525 | 12/11/2015 | < 1.3 U | **1860000** | - | < 4.9 UB |
| WELL | SHALLOW | 114-P2B1-MW102S | 114-P2B1-MW102S-20150923 | N | T | JC4555A | 9/23/2015 | 4.7 J | **2720000** | - | < 4.9 U |
| WELL | SHALLOW | 114-P2B1-MW103S | 114-P2B1-MW103S-20160623 | N | T | JC22854 | 6/23/2016 | 2.0 J | **1700000** | - | 6.8 J |
| WELL | SHALLOW | 114-P2B1-MW103S | 114-P2B1-MW103S-20160316 | N | T | JC16336 | 3/16/2016 | < 4.4 U | **1200000** | - | < 6.6 UB |
| WELL | SHALLOW | 114-P2B1-MW103S | 114-P2B1-MW103S-20151211 | N | T | JC10525 | 12/11/2015 | < 1.3 U | **2050000** | - | < 4.9 UB |
| WELL | SHALLOW | 114-P2B1-MW103S | 114-P2B1-MW103S-20150923 | N | T | JC4555A | 9/23/2015 | 2.5 J | **2310000** | - | < 4.9 U |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20160620 | N | T | JC22555 | 6/20/2016 | < 0.88 UB | **504000** | - | < 1.3 U |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20160315 | N | T | JC16239 | 3/15/2016 | < 0.88 U | **630000** | - | < 1.3 UB |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20151209 | N | T | JC10220A | 12/9/2015 | 1.3 J | **1060000** | - | < 4.9 UB |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20150921 | N | T | JC4371A | 9/21/2015 | 4.6 J | **1290000** | - | < 4.9 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-20160622 | N | T | JC22758 | 6/22/2016 | 3.6 J | **1010000** | - | < 1.3 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-20160315 | N | T | JC16239 | 3/15/2016 | < 0.88 U | **526000** | - | < 1.3 UB |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-20151210 | N | T | JC10380 | 12/10/2015 | < 1.3 U | **1190000** | - | < 4.9 UB |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-20150925 | N | T | JC4798A | 9/25/2015 | 7.8 J | **1030000** | - | < 4.9 U |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-20160621 | N | T | JC22642 | 6/21/2016 | < 4.4 U | **2990000** | - | 25.3 |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | SILVER | SODIUM | STRONTIUM | ZINC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-22-4 | 7440-23-5 | 7440-24-6 | 7440-66-6 |
| | | | | | | | **GWQS** | 40 | 50000 | 2000 | 2000 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-20160316 | N | T | JC16336 | 3/16/2016 | < 4.4 U | **3960000** | - | < 6.6 U |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-20151210 | N | T | JC10380 | 12/10/2015 | < 6.6 U | **4320000** | - | < 24 U |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-20150928 | N | T | JC4872A | 9/28/2015 | 23.5 | **5840000** | - | < 240 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-20160621 | N | T | JC22642 | 6/21/2016 | < 4.4 U | **7600000** | - | < 6.6 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-20160322 | N | T | JC16738 | 3/22/2016 | < 4.4 U | **6130000** | - | < 1.3 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-20151211 | N | T | JC10525 | 12/11/2015 | < 6.6 U | **9060000** | - | < 24 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-20150925 | N | T | JC4798A | 9/25/2015 | 13.2 J | **11200000** | - | < 24 U |
| WELL | SHALLOW | 114-P2B4-MW103S | 114-P2B4-MW103S-20160622 | N | T | JC22758 | 6/22/2016 | 6.1 J | **3610000** | - | 16.9 JB |
| WELL | SHALLOW | 114-P2B4-MW103S | 114-P2B4-MW103S-20160316 | N | T | JC16336 | 3/16/2016 | < 4.4 U | **3470000** | - | < 6.6 UB |
| WELL | SHALLOW | 114-P2B4-MW103S | 114-P2B4-MW103S-20151210 | N | T | JC10380 | 12/10/2015 | < 6.6 U | **4680000** | - | 36.0 JB |
| WELL | SHALLOW | 114-P2B4-MW103S | 114-P2B4-MW103S-20150928 | N | T | JC4872A | 9/28/2015 | 15.9 | **4450000** | - | < 24 U |
| WELL | SHALLOW | 132-P3A-MW102S | 132-P3A-MW102S-20160617 | N | T | JC22504 | 6/17/2016 | < 0.88 U | **86100** | - | 724 |
| WELL | SHALLOW | 132-P3A-MW102S | 132-P3A-MW102S-20160317 | N | T | JC16446 | 3/17/2016 | < 0.88 U | 45900 | - | 1600 |
| WELL | SHALLOW | 132-P3A-MW102S | 132-P3A-MW102S-20151215 | N | T | JC10723 | 12/15/2015 | 3.9 J | **117000** | - | 933 |
| WELL | SHALLOW | 132-P3A-MW102S | 132-P3A-MW102S-20150929 | N | T | JC4978A | 9/29/2015 | 6.7 J | **70800** | - | **2630** |
| WELL | SHALLOW | 132-P3A-MW103S | 132-P3A-MW103S-20160616 | N | T | JC22356 | 6/16/2016 | 10.3 J | **2560000** | - | 46.6 |
| WELL | SHALLOW | 132-P3A-MW103S | 132-P3A-MW103S-20160318 | N | T | JC16549 | 3/18/2016 | < 0.88 U | **132000** | - | 14.3 J |
| WELL | SHALLOW | 132-P3A-MW103S | 132-P3A-MW103S-20151215 | N | T | JC10723 | 12/15/2015 | 2.4 J | **267000** | - | 76.2 J |
| WELL | SHALLOW | 132-P3A-MW103S | 132-P3A-MW103S-20150930 | N | T | JC5099A | 9/30/2015 | 8.8 J | **5470000** | - | 29.3 |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-20160616 | N | T | JC22356 | 6/16/2016 | < 0.88 UJ | 18800 | - | 25.8 |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-20160318 | N | T | JC16549 | 3/18/2016 | < 0.88 U | **191000** | - | 48.9 |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-20151215 | N | T | JC10723 | 12/15/2015 | 2.8 J | **69100** | - | 40.7 JB |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-20150929X | FD | T | JC4978A | 9/29/2015 | 1.3 J | **216000** | - | 10.3 J |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-20150929 | N | T | JC4978A | 9/29/2015 | < 1.3 U | **225000** | - | 10.8 J |
| WELL | SHALLOW | 132-P3A-MW3 | 132-P3A-MW3-15.0-20180424 | N | T | JC64822 | 4/24/2018 | - | - | - | - |
| WELL | SHALLOW | 132-P3A-MW3 | 132-P3A-MW3-11.0-20180424 | N | T | JC64822 | 4/24/2018 | - | - | - | - |
| WELL | SHALLOW | 132-P3A-MW4 | 132-P3A-MW4-13.0-20180424 | N | T | JC64822 | 4/24/2018 | - | - | - | - |
| WELL | SHALLOW | 132-P3A-MW4 | 132-P3A-MW4-17.0-20180424X | FD | T | JC64822 | 4/24/2018 | - | - | - | - |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-20161216 | N | T | JC33887 | 12/16/2016 | 4.0 J | **1420000** | - | 401 |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-20160913X | FD | T | JC27486 | 9/13/2016 | 3.0 JB | **1960000** | - | < 1.3 UB |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-20160913 | N | T | JC27486 | 9/13/2016 | 2.8 JB | **1950000** | - | < 1.3 UB |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-20160616 | N | T | JC22356 | 6/16/2016 | < 0.88 UJ | **1030000** | - | 50.1 |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-20160324 | N | T | JC16937 | 3/24/2016 | < 4.4 UJ | **1210000** | - | 25.6 J |
| WELL | SHALLOW | 133-P3C-MW102S | 133-P3C-MW102S-20161216X | FD | T | JC33887 | 12/16/2016 | 3.4 J | **506000** | - | 515 J |
| WELL | SHALLOW | 133-P3C-MW102S | 133-P3C-MW102S-20161216 | N | T | JC33887 | 12/16/2016 | 3.1 J | **514000** | - | 372 J |
| WELL | SHALLOW | 133-P3C-MW102S | 133-P3C-MW102S-20160913 | N | T | JC27486 | 9/13/2016 | < 0.88 UB | **337000** | - | < 1.3 UB |
| WELL | SHALLOW | 133-P3C-MW102S | 133-P3C-MW102S-20160615 | N | T | JC22273 | 6/15/2016 | 1.6 J | **429000 J** | - | 23.6 |
| WELL | SHALLOW | 133-P3C-MW102S | 133-P3C-MW102S-20160324 | N | T | JC16937 | 3/24/2016 | < 4.4 UJ | **830000** | - | < 6.6 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | N | T | JC64763 | 4/23/2018 | < 3.1 U | - | 1550 | 50.0 |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | N | T | JC64763 | 4/23/2018 | < 3.1 U | - | 1460 | 79.5 |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | N | T | JC64763 | 4/23/2018 | < 3.1 U | - | 1290 | 73.7 |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.7 | N | T | JC5499 | 10/6/2015 | < 1.3 U | **747000** | - | 24.2 |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-12.5 | N | T | JC5499 | 10/6/2015 | < 1.3 U | **473000** | - | 21.7 |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-8.5 | N | T | JC5499 | 10/6/2015 | < 1.3 U | **431000** | - | 34.5 |
| WELL | SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | N | T | JC64763 | 4/23/2018 | < 3.1 U | - | 807 | 23.3 |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-20160615 | N | T | JC22273 | 6/15/2016 | **83.2** | **4000000 J** | - | < 2.6 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-20160321 | N | T | JC16664 | 3/21/2016 | < 0.88 U | **3620000** | - | < 1.3 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-20151216 | N | T | JC10831 | 12/16/2015 | < 6.6 U | **4210000** | - | < 24 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-20150930 | N | T | JC5099A | 9/30/2015 | 13.7 | **3590000** | - | < 4.9 U |

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**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | SILVER | SODIUM | STRONTIUM | ZINC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-22-4 | 7440-23-5 | 7440-24-6 | 7440-66-6 |
| | | | | | | | **GWQS** | 40 | 50000 | 2000 | 2000 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-20160615X | FD | T | JC22273 | 6/15/2016 | < 18 U | **3650000 J** | - | < 1.3 U |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-20160615 | N | T | JC22273 | 6/15/2016 | 18.3 J | **5720000 J** | - | 14.7 J |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-20160321 | N | T | JC16664 | 3/21/2016 | < 4.4 U | **8040000** | - | < 6.6 U |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-20151216 | N | T | JC10831 | 12/16/2015 | < 6.6 U | **3390000** | - | < 24 U |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-20150930 | N | T | JC5099A | 9/30/2015 | 22.2 J | **6530000** | - | < 24 U |
| WELL | SHALLOW | 143-P3A-MW101S | 143-P3A-MW101S-20160620 | N | T | JC22555 | 6/20/2016 | < 0.88 UB | **126000** | - | 49.0 |
| WELL | SHALLOW | 143-P3A-MW101S | 143-P3A-MW101S-20160318X | FD | T | JC16549 | 3/18/2016 | 1.1 J | **84800** | - | 75.2 |
| WELL | SHALLOW | 143-P3A-MW101S | 143-P3A-MW101S-20160318 | N | T | JC16549 | 3/18/2016 | 0.90 J | **88700** | - | 73.7 |
| WELL | SHALLOW | 143-P3A-MW101S | 143-P3A-MW101S-20151214 | N | T | JC10593 | 12/14/2015 | 2.6 J | **246000** | - | < 4.9 UB |
| WELL | SHALLOW | 143-P3A-MW101S | 143-P3A-MW101S-20150928 | N | T | JC4872A | 9/28/2015 | < 1.3 U | **248000** | - | 5.0 J |
| WELL | SHALLOW | GPS-EW1S | GPS-EW1S-083016 | N | T | JC26754 | 8/30/2016 | 1.6 J | **419000** | - | < 1.3 U |
| WELL | SHALLOW | GPS-EW1S | GPS-EW1S-060316 | N | T | JC21504 | 6/3/2016 | < 0.88 U | **360000** | - | < 1.3 U |
| WELL | SHALLOW | GPS-EW1S | GPS-EW1S-022516 | N | T | JC14874 | 2/25/2016 | < 1.3 U | **489000** | - | < 4.9 U |
| WELL | SHALLOW | GPS-EW1S | GPS-EW1S-111715 | N | T | JC8703 | 11/17/2015 | < 1.3 U | **334000** | - | < 4.9 U |
| WELL | SHALLOW | GPS-EW2S | GPS-EW2S-083016 | N | T | JC26754 | 8/30/2016 | 1.0 J | **250000** | - | < 1.3 U |
| WELL | SHALLOW | GPS-EW2S | GPS-EW2S-060316 | N | T | JC21504 | 6/3/2016 | < 0.88 U | **284000** | - | 5.0 J |
| WELL | SHALLOW | GPS-EW2S | GPS-EW2S-022516 | N | T | JC14874 | 2/25/2016 | < 1.3 U | **229000** | - | < 4.9 U |
| WELL | SHALLOW | GPS-EW2S | GPS-EW2S-111715 | N | T | JC8703 | 11/17/2015 | < 1.3 U | **390000** | - | < 4.9 U |
| WELL | SHALLOW | GPS-EW3S | GPS-EW3S-083016 | N | T | JC26754 | 8/30/2016 | < 0.88 U | **298000** | - | < 1.3 U |
| WELL | SHALLOW | GPS-EW3S | GPS-EW3S-060316 | N | T | JC21504 | 6/3/2016 | < 0.88 U | **265000** | - | < 1.3 U |
| WELL | SHALLOW | GPS-EW3S | GPS-EW3S-022516 | N | T | JC14874 | 2/25/2016 | < 1.3 U | **365000** | - | < 4.9 U |
| WELL | SHALLOW | GPS-EW3S | GPS-EW3S-111715 | N | T | JC8703 | 11/17/2015 | < 1.3 U | **342000** | - | < 4.9 U |
| WELL | SHALLOW | GPS-MW1S | GPS-MW1S-20171221 | N | D | JC57864 | 12/21/2017 | < 10 U | **402000 J** | - | < 20 U |
| WELL | SHALLOW | GPS-MW1S | GPS-MW1S-20171221 | N | T | JC57864 | 12/21/2017 | < 10 U | **324000 J** | - | < 20 U |
| WELL | SHALLOW | GPS-MW1S | GPS-MW1S-083016 | N | T | JC26754 | 8/30/2016 | 1.4 J | **1020000** | - | 7.1 J |
| WELL | SHALLOW | GPS-MW1S | GPS-MW1S-060316 | N | T | JC21504 | 6/3/2016 | < 1.8 U | **1480000** | - | 5.2 J |
| WELL | SHALLOW | GPS-MW1S | GPS-MW1S-022516 | N | T | JC14874 | 2/25/2016 | < 2.6 U | **1480000** | - | < 9.8 U |
| WELL | SHALLOW | GPS-MW1S | GPS-MW1S-111715 | N | T | JC8703 | 11/17/2015 | < 1.3 U | **611000** | - | < 4.9 U |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-20171221 | N | D | JC57859 | 12/21/2017 | < 10 U | **112000** | - | < 20 U |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-20171221 | N | T | JC57859 | 12/21/2017 | < 10 U | **109000** | - | < 20 U |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-DUP-20171221 | FD | D | JC57859 | 12/21/2017 | < 10 U | **113000** | - | < 20 U |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-DUP-20171221 | FD | T | JC57859 | 12/21/2017 | < 10 U | **105000** | - | < 20 U |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-083016 | N | T | JC26754 | 8/30/2016 | 1.5 J | **329000** | - | < 1.3 U |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-060316 | N | T | JC21504 | 6/3/2016 | < 0.88 U | **335000** | - | < 1.3 U |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-022516 | N | T | JC14874 | 2/25/2016 | < 1.3 U | **239000** | - | < 4.9 U |
| WELL | SHALLOW | GPS-MW2S | GPS-MW2S-111715 | N | T | JC8703 | 11/17/2015 | < 1.3 U | **798000** | - | < 4.9 U |
| WELL | SHALLOW | GPS-MW3S | GPS-MW3S-20171221 | N | D | JC57864 | 12/21/2017 | < 10 U | **412000** | - | < 20 U |
| WELL | SHALLOW | GPS-MW3S | GPS-MW3S-20171221 | N | T | JC57864 | 12/21/2017 | < 10 U | **384000** | - | < 20 U |
| WELL | SHALLOW | GPS-MW3S | GPS-MW3S-083016 | N | T | JC26754 | 8/30/2016 | 1.4 J | **608000** | - | < 1.3 U |
| WELL | SHALLOW | GPS-MW3S | GPS-MW3S-060316 | N | T | JC21504 | 6/3/2016 | < 0.88 U | **535000** | - | < 1.3 U |
| WELL | SHALLOW | GPS-MW3S | GPS-MW3S-022516 | N | T | JC14874 | 2/25/2016 | < 1.3 U | **586000** | - | < 4.9 U |
| WELL | SHALLOW | GPS-MW3S | GPS-MW3S-111715 | N | T | JC8703 | 11/17/2015 | < 1.3 U | **462000** | - | < 4.9 U |
| WELL | SHALLOW | GPS-MW4S | GPS-MW4S-20171221 | N | D | JC57859 | 12/21/2017 | < 10 U | **344000** | - | < 20 U |
| WELL | SHALLOW | GPS-MW4S | GPS-MW4S-20171221 | N | T | JC57859 | 12/21/2017 | < 10 U | **326000** | - | < 20 U |
| WELL | SHALLOW | GPS-MW4S | GPS-MW4S-083016 | N | T | JC26754 | 8/30/2016 | < 0.88 U | **245000** | - | < 1.3 U |
| WELL | SHALLOW | GPS-MW4S | GPS-MW4S-060316 | N | T | JC21504 | 6/3/2016 | < 0.88 U | **278000** | - | < 1.3 U |
| WELL | SHALLOW | GPS-MW4S | GPS-MW4S-022516 | N | T | JC14874 | 2/25/2016 | < 1.3 U | **259000** | - | < 4.9 U |
| WELL | SHALLOW | GPS-MW4S | GPS-MW4S-111715 | N | T | JC8703 | 11/17/2015 | < 1.3 U | **229000** | - | < 4.9 U |
| WELL | SHALLOW | GPS-MW5S | GPS-MW5S-20180130 | N | D | JC59976 | 1/30/2018 | < 20 U | **767000** | - | < 40 U |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | SILVER | SODIUM | STRONTIUM | ZINC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-22-4 | 7440-23-5 | 7440-24-6 | 7440-66-6 |
| | | | | | | | **GWQS** | 40 | 50000 | 2000 | 2000 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | GPS-MW5S | GPS-MW5S-20180130 | N | T | JC59976 | 1/30/2018 | < 20 U | **744000** | - | 137 |
| WELL | SHALLOW | GPS-MW7S | GPS-MW7S-20171221 | N | D | JC57864 | 12/21/2017 | < 10 U | **205000** | - | < 20 U |
| WELL | SHALLOW | GPS-MW7S | GPS-MW7S-20171221 | N | T | JC57864 | 12/21/2017 | < 10 U | **212000** | - | 29.2 |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-20161219 | N | T | JC33993 | 12/19/2016 | < 0.88 U | **1630000** | - | 325 |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-20160617 | N | T | JC22504 | 6/17/2016 | 5.4 J | **4180000** | - | 957 |
| WELL | SHALLOW | HSS-P3C-MW2S | HSS-P3C-MW2S-20161215 | N | T | JC33793 | 12/15/2016 | 12.0 J | **970000** | - | 1030 |
| WELL | SHALLOW | HSS-P3C-MW2S | HSS-P3C-MW2S-20160616 | N | T | JC22356 | 6/16/2016 | < 0.88 UJ | **592000** | - | < 1.3 U |
| WELL | SHALLOW | MW-34 | MW34-20151214-15.5 | N | T | JC10597 | 12/14/2015 | < 1.3 U | **122000** | - | 37.6 JB |
| WELL | SHALLOW | MW-34 | MW34-20151214-10.5 | N | T | JC10597 | 12/14/2015 | < 1.3 U | **117000** | - | 38.5 JB |
| WELL | SHALLOW | MW7S | MW7S-10.2-20150930 | N | T | JC5098A | 9/30/2015 | 8.3 J | **350000** | - | 639 |
| WELL | SHALLOW | MW7S | MW7S-7.2-20150930 | N | T | JC5098A | 9/30/2015 | 8.4 J | **320000** | - | 549 |
| WELL | SHALLOW | MW8S | MW8S-9.5-20151001 | N | T | JC5237A | 10/1/2015 | < 1.3 U | **455000** | - | 46.0 JB |
| WELL | SHALLOW | MW-Morris1A | 114-MW-MORRIS1A-20160321 | N | T | JC16664 | 3/21/2016 | < 0.88 U | **2360000** | - | 15.3 J |
| SOILBORE | N/A | 114-P1C-PZ1-S1 | 114-P1C-PZ1-W1-31.0-33.0 | N | T | JC29542 | 10/12/2016 | 25.0 J | **199000** | - | 1210 |
| SOILBORE | N/A | 114-P1C-PZ1-S1 | 114-P1C-PZ1-W1-24.0-26.0 | N | T | JC29542 | 10/12/2016 | < 8.8 U | **213000** | - | **9470** |
| SOILBORE | N/A | 114-P1C-PZ1-S2 | 114-P1C-PZ1-W2-27.0-29.0 | N | T | JC29754 | 10/14/2016 | 13.5 J | **1140000** | - | 759 |
| SOILBORE | N/A | 114-P1C-PZ1-S2 | 114-P1C-PZ1-W2-24.0-26.0 | N | T | JC29754 | 10/14/2016 | 1.3 J | **626000** | - | 78.4 |
| SOILBORE | N/A | 114-P1C-PZ2-S1 | 114-P1C-PZ2-W1-25.0-27.0 | N | T | JC29434 | 10/11/2016 | 7.0 J | **843000** | - | 908 |
| SOILBORE | N/A | 114-P1C-PZ2-S1 | 114-P1C-PZ2-W1-16.5-17.5 | N | T | JC29434 | 10/11/2016 | 31.0 J | **739000** | - | **13300** |
| SOILBORE | N/A | 114-P1C-PZ2-S2 | 114-P1C-PZ2-W2-31.0-33.0 | N | T | JC29606 | 10/13/2016 | < 8.8 U | **790000** | - | 952 |
| SOILBORE | N/A | 114-P1C-PZ2-S2 | 114-P1C-PZ2-W2-25.0-27.0 | N | T | JC29606 | 10/13/2016 | 14.0 J | **1110000** | - | **2410** |
| WELL | INTERMEDIATE | 10W-MW105I | 10W-MW105I-20180312 | N | T | JC62130 | 3/12/2018 | < 3.1 U | **115000** | - | 10.3 J |
| WELL | INTERMEDIATE | 114-MC-EW103 | 114-MC-EW103-20160623 | N | T | JC22854 | 6/23/2016 | 1.2 J | **1730000** | - | 26.4 |
| WELL | INTERMEDIATE | 114-MC-EW103 | 114-MC-EW103-20160322 | N | T | JC16738 | 3/22/2016 | 3.7 J | **2190000** | - | 18.6 J |
| WELL | INTERMEDIATE | 114-MC-EW103 | 114-MC-EW103-20151214 | N | T | JC10593 | 12/14/2015 | 3.1 J | **2910000** | - | < 4.9 UB |
| WELL | INTERMEDIATE | 114-MC-EW103 | 114-MC-EW103-20150924 | N | T | JC4675A | 9/24/2015 | < 1.3 U | **2890000** | - | 6.9 J |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-20180129 | N | D | JC59916 | 1/29/2018 | **< 50 U** | **3310000** | - | < 100 U |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-20180129 | N | T | JC59916 | 1/29/2018 | **< 50 U** | **2970000** | - | < 100 U |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-20160623 | N | T | JC22854 | 6/23/2016 | < 0.88 U | **3040000** | - | 16.2 J |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-20160321 | N | T | JC16664 | 3/21/2016 | < 0.88 U | **3100000** | - | < 1.3 U |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-20151214 | N | T | JC10593 | 12/14/2015 | 8.8 J | **3400000** | - | 31.1 JB |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-20150924 | N | T | JC4675A | 9/24/2015 | < 1.3 U | **3500000** | - | < 15 U |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-20180129 | N | D | JC59916 | 1/29/2018 | **< 100 U** | **1040000** | - | < 600 U |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-20180129 | N | T | JC59916 | 1/29/2018 | **< 100 U** | **1000000** | - | < 600 U |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-20160623 | N | T | JC22854 | 6/23/2016 | 17.4 J | **765000** | - | < 52 U |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-20160322 | N | T | JC16738 | 3/22/2016 | 4.8 J | **963000** | - | < 26 U |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-20151214 | N | T | JC10593 | 12/14/2015 | 16.9 J | **1260000** | - | 140 J |
| WELL | INTERMEDIATE | 114-MC-PZ203 | 114-MC-PZ203-20150924 | N | T | JC4675A | 9/24/2015 | 4.4 J | **1080000** | - | < 24 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | N | T | JC64571 | 4/19/2018 | < 16 U | **849000** | 1150 | < 400 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-36.0-20151001 | N | T | JC5237A | 10/1/2015 | < 1.3 U | **436000** | - | 25.0 JB |
| WELL | INTERMEDIATE | 114-MW22B | 114-MW22B-20180419 | N | D | JC64571 | 4/19/2018 | < 3.1 U | **74200** | **2090** | < 4.0 U |
| WELL | INTERMEDIATE | 114-MW22B | 114-MW22B-20180419 | N | T | JC64571 | 4/19/2018 | < 3.1 U | **75100** | **2310** | < 4.0 U |
| WELL | INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | N | T | JC62130 | 3/12/2018 | < 3.1 U | **64100** | - | 103 |
| WELL | INTERMEDIATE | 114-MW25B | 114-MW25B-20170928 | N | T | JC52029 | 9/28/2017 | < 3.1 U | 12000 | - | < 4.0 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | D | JC62228 | 3/13/2018 | < 3.1 U | 47700 | - | < 24.4 UB |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | T | JC62228 | 3/13/2018 | < 3.1 U | 47400 | - | 82.5 |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | D | JC62228 | 3/13/2018 | < 3.1 U | 47800 | - | < 28.8 UB |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | T | JC62228 | 3/13/2018 | < 3.1 U | 47500 | - | 74.3 |
| WELL | INTERMEDIATE | 114-MW27B | 114-MW27B-20170928 | N | T | JC52029 | 9/28/2017 | < 3.1 U | 17400 | - | 17.8 J |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | SILVER | SODIUM | STRONTIUM | ZINC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-22-4 | 7440-23-5 | 7440-24-6 | 7440-66-6 |
| | | | | | | | **GWQS** | 40 | 50000 | 2000 | 2000 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | FD | T | JC56729A | 12/6/2017 | < 3.1 U | **538000** | 1060 | 24.6 |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | N | T | JC56729A | 12/6/2017 | < 3.1 U | **535000** | 1060 | 30.9 |
| WELL | INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | N | T | JC51890 | 9/27/2017 | < 6.3 U | 17100 J | - | 114 |
| WELL | Intermediate | 114-MW37B | 114-MW37B-20170926 | N | T | JC51824 | 9/26/2017 | < 3.1 U | 31500 | - | 5.9 J |
| WELL | Intermediate | 114-MW38B | FORREST-114-MW38B-20171204 | N | T | JC56504A | 12/4/2017 | < 3.1 U | 13700 | 162 | 44.9 |
| WELL | INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | N | T | JC64643 | 4/20/2018 | < 16 U | **641000** | 180 | < 200 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20180129 | N | D | JC59916 | 1/29/2018 | **< 50 U** | **129000** | - | < 100 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20180129 | N | T | JC59916 | 1/29/2018 | **< 50 U** | **132000** | - | < 100 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20160617X | FD | T | JC22504 | 6/17/2016 | < 0.88 U | **156000** | - | 24.9 |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20160617 | N | T | JC22504 | 6/17/2016 | 1.1 J | **151000** | - | 27.2 |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20160317 | N | T | JC16446 | 3/17/2016 | < 0.88 U | **165000** | - | 19.3 J |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20151211 | N | T | JC10525 | 12/11/2015 | 1.6 J | **175000** | - | < 4.9 UB |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-20150921 | N | T | JC4371A | 9/21/2015 | < 1.3 U | **170000** | - | 24.1 |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-ARC | N | D | JC59556 | 1/23/2018 | **< 50 U** | **443000** | - | < 500 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-ARC | N | T | JC59556 | 1/23/2018 | **< 50 U** | **425000** | - | < 500 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-20160621 | N | T | JC22642 | 6/21/2016 | 7.2 J | **402000** | - | < 26 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-20160323 | N | T | JC16843 | 3/23/2016 | 9.3 J | **415000** | - | 53.4 J |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-20151216 | N | T | JC10831 | 12/16/2015 | 3.4 J | **390000** | - | 105 J |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-20150922 | N | T | JC4452A | 9/22/2015 | < 1.3 U | **384000** | - | 689 |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-ARC | N | D | JC59556 | 1/23/2018 | < 20 U | **309000** | - | 48.6 |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-ARC | N | T | JC59556 | 1/23/2018 | < 20 U | **308000** | - | < 40 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-20160916 | N | T | JC27812 | 9/16/2016 | < 8.8 U | **715000** | - | 232 J |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-20160323 | N | T | JC16843 | 3/23/2016 | 22.0 J | **597000** | - | 105 J |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-20151216 | N | T | JC10831 | 12/16/2015 | 11.0 J | **527000** | - | < 240 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-P1B-MW102I-20150924 | N | T | JC4675A | 9/24/2015 | 9.0 J | **512000** | - | < 240 U |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I | N | D | JC59556 | 1/23/2018 | < 10 U | **789000** | - | 178 |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I | N | T | JC59556 | 1/23/2018 | < 10 U | **715000** | - | 161 |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20160620 | N | T | JC22555 | 6/20/2016 | < 0.88 UB | **709000** | - | 130 |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20160316 | N | T | JC16336 | 3/16/2016 | < 4.4 U | **574000** | - | 103 |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20151211 | N | T | JC10525 | 12/11/2015 | < 1.3 U | **595000** | - | 64.9 JB |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20150923 | N | T | JC4555A | 9/23/2015 | < 1.3 U | **594000** | - | 21.5 JB |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-ARC | N | D | JC59745 | 1/25/2018 | < 10 U | **449000** | - | < 20 U |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-ARC | N | T | JC59745 | 1/25/2018 | < 10 U | **467000** | - | < 20 U |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-20160912 | N | T | JC27433 | 9/12/2016 | < 0.88 UB | **414000** | - | 45.4 |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-20160624 | N | T | JC22933 | 6/24/2016 | 1.1 J | **399000** | - | 45.0 |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-20160325 | N | T | JC17054 | 3/25/2016 | 1.4 J | **556000** | - | 33.9 |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-20151211 | N | T | JC10525 | 12/11/2015 | < 1.3 U | **276000** | - | 40.3 JB |
| WELL | INTERMEDIATE | 114-P1C-PZ1 | 114-P1C-PZ1-20150923 | N | T | JC4555A | 9/23/2015 | < 1.3 U | **229000** | - | < 4.9 UB |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-ARC | N | D | JC59745 | 1/25/2018 | < 10 U | **956000** | - | < 20 U |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-ARC | N | T | JC59745 | 1/25/2018 | < 10 U | **971000** | - | < 20 U |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-20160912 | N | T | JC27433 | 9/12/2016 | < 0.88 UB | **384000** | - | < 1.3 UB |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-20160624 | N | T | JC22933 | 6/24/2016 | 1.0 J | **459000** | - | 13.3 J |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-20160325 | N | T | JC17054 | 3/25/2016 | 2.6 J | **424000** | - | 48.5 |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-20151211 | N | T | JC10525 | 12/11/2015 | < 1.3 U | **438000** | - | < 4.9 UB |
| WELL | INTERMEDIATE | 114-P1C-PZ2 | 114-P1C-PZ2-20150923 | N | T | JC4555A | 9/23/2015 | < 1.3 U | **756000** | - | 18.6 JB |
| WELL | INTERMEDIATE | 114-P1-IRM-1 | 114-P1-IRM-1-20180116 | N | D | JC58932 | 1/16/2018 | **< 500 U** | **788000 J** | - | < 1000 U |
| WELL | INTERMEDIATE | 114-P1-IRM-1 | 114-P1-IRM-1-20180116 | N | T | JC58932 | 1/16/2018 | **< 500 U** | **562000 J** | - | < 1000 U |
| WELL | INTERMEDIATE | 114-P1-IRM-10I | 114-P1-IRM-10I | N | D | JC59745 | 1/25/2018 | < 20 U | **574000** | - | < 800 U |
| WELL | INTERMEDIATE | 114-P1-IRM-10I | 114-P1-IRM-10I | N | T | JC59745 | 1/25/2018 | < 20 U | **530000** | - | < 1000 U |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | SILVER | SODIUM | STRONTIUM | ZINC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-22-4 | 7440-23-5 | 7440-24-6 | 7440-66-6 |
| | | | | | | | **GWQS** | 40 | 50000 | 2000 | 2000 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P1-IRM-11 | 114-P1-IRM-11-20180118 | N | D | JC59349 | 1/18/2018 | **< 50 U** | **694000** | - | < 1000 U |
| WELL | INTERMEDIATE | 114-P1-IRM-11 | 114-P1-IRM-11-20180118 | N | T | JC59349 | 1/18/2018 | **< 50 U** | **727000** | - | < 1000 U |
| WELL | INTERMEDIATE | 114-P1-IRM-12 | 114-P1-IRM-12-20180118 | N | D | JC59349 | 1/18/2018 | **< 50 U** | **504000** | - | < 1000 U |
| WELL | INTERMEDIATE | 114-P1-IRM-12 | 114-P1-IRM-12-20180118 | N | T | JC59349 | 1/18/2018 | **< 50 U** | **544000** | - | < 1000 U |
| WELL | INTERMEDIATE | 114-P1-IRM-13 | 114-P1-IRM-13-20180116 | N | D | JC58932 | 1/16/2018 | **< 1300 U** | **1420000** | - | **< 2500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-13 | 114-P1-IRM-13-20180116 | N | T | JC58932 | 1/16/2018 | **< 1300 U** | **1390000** | - | **< 2500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-14 | 114-P1-IRM-14-20180116 | N | D | JC58932 | 1/16/2018 | **< 500 U** | **915000 J** | - | < 1000 U |
| WELL | INTERMEDIATE | 114-P1-IRM-14 | 114-P1-IRM-14-20180116 | N | T | JC58932 | 1/16/2018 | **< 500 U** | **718000 J** | - | < 1000 U |
| WELL | INTERMEDIATE | 114-P1-IRM-15 | 114-P1-IRM-15-20180122 | N | D | JC59495 | 1/22/2018 | < 20 U | **298000** | - | < 200 U |
| WELL | INTERMEDIATE | 114-P1-IRM-15 | 114-P1-IRM-15-20180122 | N | T | JC59495 | 1/22/2018 | < 20 U | **313000** | - | < 200 U |
| WELL | INTERMEDIATE | 114-P1-IRM-16 | 114-P1-IRM-16-20180116 | N | D | JC58932 | 1/16/2018 | **< 1000 U** | **1210000** | - | < 2000 U |
| WELL | INTERMEDIATE | 114-P1-IRM-16 | 114-P1-IRM-16-20180116 | N | T | JC58932 | 1/16/2018 | **< 1000 U** | **1130000** | - | < 2000 U |
| WELL | INTERMEDIATE | 114-P1-IRM-17 | 114-P1-IRM-17-20180122 | N | D | JC59495 | 1/22/2018 | **< 50 U** | **6200000** | - | < 100 U |
| WELL | INTERMEDIATE | 114-P1-IRM-17 | 114-P1-IRM-17-20180122 | N | T | JC59495 | 1/22/2018 | **< 50 U** | **6330000** | - | < 100 U |
| WELL | INTERMEDIATE | 114-P1-IRM-18I | 114-P1-IRM-18I-20180118 | N | D | JC59349 | 1/18/2018 | **< 50 U** | **538000** | - | < 500 U |
| WELL | INTERMEDIATE | 114-P1-IRM-18I | 114-P1-IRM-18I-20180118 | N | T | JC59349 | 1/18/2018 | **< 50 U** | **544000** | - | < 500 U |
| WELL | INTERMEDIATE | 114-P1-IRM-19I | 114-P1-IRM-19I-20180117 | N | D | JC59023 | 1/17/2018 | **< 50 U** | **634000** | - | < 100 U |
| WELL | INTERMEDIATE | 114-P1-IRM-19I | 114-P1-IRM-19I-20180117 | N | T | JC59023 | 1/17/2018 | **< 50 U** | **603000** | - | < 100 U |
| WELL | INTERMEDIATE | 114-P1-IRM-2 | 114-P1-IRM-2-20180116 | N | D | JC58932 | 1/16/2018 | **< 1000 U** | **677000** | - | < 2000 U |
| WELL | INTERMEDIATE | 114-P1-IRM-2 | 114-P1-IRM-2-20180116 | N | T | JC58932 | 1/16/2018 | **< 1000 U** | **695000** | - | < 2000 U |
| WELL | INTERMEDIATE | 114-P1-IRM-20I | 114-P1-IRM-20I-20180117 | N | D | JC59023 | 1/17/2018 | < 10 U | **630000** | - | < 20 U |
| WELL | INTERMEDIATE | 114-P1-IRM-20I | 114-P1-IRM-20I-20180117 | N | T | JC59023 | 1/17/2018 | < 10 U | **631000** | - | < 20 U |
| WELL | INTERMEDIATE | 114-P1-IRM-21I | 114-P1-IRM-21I-20180118 | N | D | JC59349 | 1/18/2018 | < 10 U | **3020000** | - | < 20 U |
| WELL | INTERMEDIATE | 114-P1-IRM-21I | 114-P1-IRM-21I-20180118 | N | T | JC59349 | 1/18/2018 | < 10 U | **3130000** | - | < 20 U |
| WELL | INTERMEDIATE | 114-P1-IRM-22I | 114-P1-IRM-22I-20180118 | N | D | JC59349 | 1/18/2018 | < 10 U | **607000** | - | < 40 U |
| WELL | INTERMEDIATE | 114-P1-IRM-22I | 114-P1-IRM-22I-20180118 | N | T | JC59349 | 1/18/2018 | < 20 U | **601000** | - | < 80 U |
| WELL | INTERMEDIATE | 114-P1-IRM-24I | 114-P1-IRM-24I-20180118 | N | D | JC59349 | 1/18/2018 | < 20 U | **812000** | - | < 200 U |
| WELL | INTERMEDIATE | 114-P1-IRM-24I | 114-P1-IRM-24I-20180118 | N | T | JC59349 | 1/18/2018 | < 20 U | **767000** | - | < 200 U |
| WELL | INTERMEDIATE | 114-P1-IRM-25I | 114-P1-IRM-25I-20180118 | N | D | JC59349 | 1/18/2018 | < 10 U | **864000** | - | 20.1 |
| WELL | INTERMEDIATE | 114-P1-IRM-25I | 114-P1-IRM-25I-20180118 | N | T | JC59349 | 1/18/2018 | < 10 U | **796000** | - | 21.7 |
| WELL | INTERMEDIATE | 114-P1-IRM-26I | 114-P1-IRM-26I-20180118 | N | D | JC59349 | 1/18/2018 | < 10 U | **1110000** | - | < 20 U |
| WELL | INTERMEDIATE | 114-P1-IRM-26I | 114-P1-IRM-26I-20180118 | N | T | JC59349 | 1/18/2018 | < 10 U | **1120000** | - | 37.7 |
| WELL | INTERMEDIATE | 114-P1-IRM-27I | 114-P1-IRM-27I-20180122 | N | D | JC59495 | 1/22/2018 | **< 50 U** | **1140000** | - | **< 2500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-27I | 114-P1-IRM-27I-20180122 | N | T | JC59495 | 1/22/2018 | **< 50 U** | **1310000** | - | **< 2500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-28I | 114-P1-IRM-28I-20180118 | N | D | JC59349 | 1/18/2018 | < 10 U | **1010000** | - | < 200 U |
| WELL | INTERMEDIATE | 114-P1-IRM-28I | 114-P1-IRM-28I-20180118 | N | T | JC59349 | 1/18/2018 | < 10 U | **977000** | - | < 200 U |
| WELL | INTERMEDIATE | 114-P1-IRM-29I | 114-P1-IRM-29I-20180118 | N | D | JC59349 | 1/18/2018 | < 10 U | **1130000** | - | < 40 U |
| WELL | INTERMEDIATE | 114-P1-IRM-29I | 114-P1-IRM-29I-20180118 | N | T | JC59349 | 1/18/2018 | < 10 U | **1080000** | - | < 40 U |
| WELL | INTERMEDIATE | 114-P1-IRM-3 | 114-P1-IRM-3-20180124 | N | D | JC59667 | 1/24/2018 | < 10 U | **855000** | - | < 20 U |
| WELL | INTERMEDIATE | 114-P1-IRM-3 | 114-P1-IRM-3-20180124 | N | T | JC59667 | 1/24/2018 | < 10 U | **789000** | - | < 20 U |
| WELL | INTERMEDIATE | 114-P1-IRM-30I | 114-P1-IRM-30I-20180122 | N | D | JC59495 | 1/22/2018 | **< 50 U** | **753000** | - | < 1000 U |
| WELL | INTERMEDIATE | 114-P1-IRM-30I | 114-P1-IRM-30I-20180122 | N | T | JC59495 | 1/22/2018 | **< 50 U** | **900000** | - | < 1000 U |
| WELL | INTERMEDIATE | 114-P1-IRM-30I | 114-P1-IRM-30I-DUP-20180122 | FD | D | JC59495 | 1/22/2018 | **< 50 U** | **830000** | - | < 1000 U |
| WELL | INTERMEDIATE | 114-P1-IRM-30I | 114-P1-IRM-30I-DUP-20180122 | FD | T | JC59495 | 1/22/2018 | **< 50 U** | **882000** | - | < 1000 U |
| WELL | INTERMEDIATE | 114-P1-IRM-31I | 114-P1-IRM-31I-20180119 | N | D | JC59431 | 1/19/2018 | < 10 U | **648000 J** | - | < 20 U |
| WELL | INTERMEDIATE | 114-P1-IRM-31I | 114-P1-IRM-31I-20180119 | N | T | JC59431 | 1/19/2018 | < 20 U | **511000 J** | - | 51.2 |
| WELL | INTERMEDIATE | 114-P1-IRM-32I | 114-P1-IRM-32I-20180122 | N | D | JC59495 | 1/22/2018 | **< 50 U** | **700000** | - | < 1000 U |
| WELL | INTERMEDIATE | 114-P1-IRM-32I | 114-P1-IRM-32I-20180122 | N | T | JC59495 | 1/22/2018 | **< 50 U** | **777000** | - | < 1000 U |
| WELL | INTERMEDIATE | 114-P1-IRM-33I | 114-P1-IRM-33I-20180124 | N | D | JC59667 | 1/24/2018 | **< 100 U** | **876000** | - | < 400 U |

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**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | SILVER | SODIUM | STRONTIUM | ZINC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-22-4 | 7440-23-5 | 7440-24-6 | 7440-66-6 |
| | | | | | | | **GWQS** | 40 | 50000 | 2000 | 2000 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P1-IRM-33I | 114-P1-IRM-33I-20180124 | N | T | JC59667 | 1/24/2018 | **< 100 U** | **883000** | - | < 400 U |
| WELL | INTERMEDIATE | 114-P1-IRM-34I | 114-P1-IRM-34I | N | D | JC59745 | 1/25/2018 | **< 50 U** | **736000** | - | < 1000 U |
| WELL | INTERMEDIATE | 114-P1-IRM-34I | 114-P1-IRM-34I | N | T | JC59745 | 1/25/2018 | **< 50 U** | **772000** | - | < 1000 U |
| WELL | INTERMEDIATE | 114-P1-IRM-35I | 114-P1-IRM-35I-20180122 | N | D | JC59495 | 1/22/2018 | **< 50 U** | **748000** | - | < 1000 U |
| WELL | INTERMEDIATE | 114-P1-IRM-35I | 114-P1-IRM-35I-20180122 | N | T | JC59495 | 1/22/2018 | **< 50 U** | **879000** | - | < 2000 U |
| WELL | INTERMEDIATE | 114-P1-IRM-36D | 114-P1-IRM-36D-20180124 | N | D | JC59667 | 1/24/2018 | **< 50 U** | **235000** | - | < 100 U |
| WELL | INTERMEDIATE | 114-P1-IRM-36D | 114-P1-IRM-36D-20180124 | N | T | JC59667 | 1/24/2018 | **< 50 U** | **236000** | - | < 100 U |
| WELL | INTERMEDIATE | 114-P1-IRM-36I | 114-P1-IRM-36I-20180124 | N | D | JC59667 | 1/24/2018 | **< 50 U** | **268000** | - | < 100 U |
| WELL | INTERMEDIATE | 114-P1-IRM-36I | 114-P1-IRM-36I-20180124 | N | T | JC59667 | 1/24/2018 | **< 50 U** | **268000** | - | < 100 U |
| WELL | INTERMEDIATE | 114-P1-IRM-37I | 114-P1-IRM-37I-20180117 | N | D | JC59023 | 1/17/2018 | < 10 U | **1030000** | - | < 20 U |
| WELL | INTERMEDIATE | 114-P1-IRM-37I | 114-P1-IRM-37I-20180117 | N | T | JC59023 | 1/17/2018 | < 10 U | **1060000** | - | < 20 U |
| WELL | INTERMEDIATE | 114-P1-IRM-38 | 114-P1-IRM-38-20180126 | N | D | JC59838 | 1/26/2018 | < 10 U | **577000** | - | < 20 U |
| WELL | INTERMEDIATE | 114-P1-IRM-38 | 114-P1-IRM-38-20180126 | N | T | JC59838 | 1/26/2018 | < 10 U | **567000** | - | 59.4 |
| WELL | INTERMEDIATE | 114-P1-IRM-39 | 114-P1-IRM-39-20180126 | N | D | JC59838 | 1/26/2018 | < 10 U | **2890000** | - | < 20 U |
| WELL | INTERMEDIATE | 114-P1-IRM-39 | 114-P1-IRM-39-20180126 | N | T | JC59838 | 1/26/2018 | < 10 U | **3070000** | - | 38.0 |
| WELL | INTERMEDIATE | 114-P1-IRM-40I | 114-P1-IRM-40I-20180117 | N | D | JC59023 | 1/17/2018 | **< 250 U** | **1520000 J** | - | **< 2500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-40I | 114-P1-IRM-40I-20180117 | N | T | JC59023 | 1/17/2018 | **< 250 U** | **1210000 J** | - | **< 2500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-41I | 114-P1-IRM-41I-20180126 | N | D | JC59838 | 1/26/2018 | **< 50 U** | **578000** | - | < 1000 U |
| WELL | INTERMEDIATE | 114-P1-IRM-41I | 114-P1-IRM-41I-20180126 | N | T | JC59838 | 1/26/2018 | **< 50 U** | **639000** | - | < 1000 U |
| WELL | INTERMEDIATE | 114-P1-IRM-42I | 114-P1-IRM-42I-20180126 | N | D | JC59838 | 1/26/2018 | **< 50 U** | **876000** | - | < 500 U |
| WELL | INTERMEDIATE | 114-P1-IRM-42I | 114-P1-IRM-42I-20180126 | N | T | JC59838 | 1/26/2018 | **< 50 U** | **879000** | - | < 500 U |
| WELL | INTERMEDIATE | 114-P1-IRM-42I | 114-P1-IRM-42I-20180126 | N | T | JC59838 | 1/26/2018 | **< 50 U** | **879000** | - | < 500 U |
| WELL | INTERMEDIATE | 114-P1-IRM-4I | 114-P1-IRM-4I-20180124 | N | D | JC59667 | 1/24/2018 | **< 100 U** | **775000** | - | **< 4000 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-4I | 114-P1-IRM-4I-20180124 | N | T | JC59667 | 1/24/2018 | **< 100 U** | **783000** | - | **< 4000 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-20180123 | N | D | JC59556 | 1/23/2018 | **< 50 U** | **1110000** | - | < 1000 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-20180123 | N | T | JC59556 | 1/23/2018 | **< 50 U** | **1050000** | - | < 1000 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | N | T | JC58073A | 12/27/2017 | < 3.1 U | **422000** | 314 | 4.3 J |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | N | T | JC58073A | 12/27/2017 | < 3.1 U | **437000** | 343 | 4.3 J |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | N | T | JC58028A | 12/26/2017 | < 3.1 U | **483000** | 364 | < 4.0 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | N | T | JC58028A | 12/26/2017 | < 3.1 U | **501000** | 364 | 4.2 J |
| WELL | INTERMEDIATE | 114-P1-IRM-6 | 114-P1-IRM-6-20180116 | N | D | JC58932 | 1/16/2018 | **< 1300 U** | **810000** | - | **< 2500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-6 | 114-P1-IRM-6-20180116 | N | T | JC58932 | 1/16/2018 | **< 1300 U** | **953000** | - | **< 2500 U** |
| WELL | INTERMEDIATE | 114-P1-IRM-7 | 114-P1-IRM-7-20180124 | N | D | JC59667 | 1/24/2018 | **< 100 U** | **678000** | - | < 1000 U |
| WELL | INTERMEDIATE | 114-P1-IRM-7 | 114-P1-IRM-7-20180124 | N | T | JC59667 | 1/24/2018 | **< 100 U** | **632000** | - | < 1000 U |
| WELL | INTERMEDIATE | 114-P1-IRM-8 | 114-P1-IRM-8-20180116 | N | D | JC58932 | 1/16/2018 | **< 1000 U** | **1060000** | - | < 2000 U |
| WELL | INTERMEDIATE | 114-P1-IRM-8 | 114-P1-IRM-8-20180116 | N | T | JC58932 | 1/16/2018 | **< 1000 U** | **919000** | - | < 2000 U |
| WELL | INTERMEDIATE | 114-P1-IRM-9 | 114-P1-IRM-9-20180116 | N | D | JC58932 | 1/16/2018 | **< 1000 U** | **850000** | - | < 2000 U |
| WELL | INTERMEDIATE | 114-P1-IRM-9 | 114-P1-IRM-9-20180116 | N | T | JC58932 | 1/16/2018 | **< 1000 U** | **809000** | - | < 2000 U |
| WELL | INTERMEDIATE | 114-P1-MW-1I | 114-P1-MW-1I-20180129 | N | D | JC59916 | 1/29/2018 | **< 100 U** | **568000** | - | < 600 U |
| WELL | INTERMEDIATE | 114-P1-MW-1I | 114-P1-MW-1I-20180129 | N | T | JC59916 | 1/29/2018 | **< 100 U** | **552000** | - | < 600 U |
| WELL | INTERMEDIATE | 114-P1-MW-2D | 114-P1-MW2D-20180119 | N | D | JC59431 | 1/19/2018 | < 10 U | **528000** | - | < 20 U |
| WELL | INTERMEDIATE | 114-P1-MW-2D | 114-P1-MW2D-20180119 | N | T | JC59431 | 1/19/2018 | < 10 U | **506000** | - | 22.6 |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | N | T | JC58942 | 1/16/2018 | < 3.1 U | **422000** | 717 | 16.3 J |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | N | T | JC58942 | 1/16/2018 | < 3.1 U | **472000** | 761 | 13.6 J |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | N | T | JC58942 | 1/16/2018 | < 3.1 U | **490000** | 768 | 14.5 J |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | N | T | JC58942 | 1/16/2018 | < 3.1 U | **511000** | 852 | 9.4 J |
| WELL | INTERMEDIATE | 114-P1-MW-3I | 114-P1-MW-3I-20180126 | N | D | JC59838 | 1/26/2018 | < 20 U | **416000** | - | 49.6 |
| WELL | INTERMEDIATE | 114-P1-MW-3I | 114-P1-MW-3I-20180126 | N | T | JC59838 | 1/26/2018 | < 20 U | **401000** | - | 80.0 |
| WELL | INTERMEDIATE | 114-P1-MW-4I | 114-P1-MW-4I-20180126 | N | D | JC59838 | 1/26/2018 | **< 50 U** | **688000** | - | < 500 U |
| WELL | INTERMEDIATE | 114-P1-MW-4I | 114-P1-MW-4I-20180126 | N | T | JC59838 | 1/26/2018 | **< 50 U** | **686000** | - | < 500 U |

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**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | SILVER | SODIUM | STRONTIUM | ZINC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-22-4 | 7440-23-5 | 7440-24-6 | 7440-66-6 |
| | | | | | | | **GWQS** | 40 | 50000 | 2000 | 2000 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P1-MW-5I | 114-P1-MW-5I-20180123 | N | D | JC59667 | 1/23/2018 | < 10 U | **326000** | - | < 20 U |
| WELL | INTERMEDIATE | 114-P1-MW-5I | 114-P1-MW-5I-20180123 | N | T | JC59667 | 1/23/2018 | < 10 U | **339000** | - | < 20 U |
| WELL | INTERMEDIATE | 114-P1-MW-6I | 114-P1-MW6I-20180119 | N | D | JC59431 | 1/19/2018 | **< 50 U** | **1150000** | - | < 2000 U |
| WELL | INTERMEDIATE | 114-P1-MW-6I | 114-P1-MW6I-20180119 | N | T | JC59431 | 1/19/2018 | **< 100 U** | **991000** | - | < 2000 U |
| WELL | INTERMEDIATE | 114-P1-MW-7I | 114-P1-MW7I-20180125 | N | D | JC59745 | 1/25/2018 | **< 100 U** | **948000** | - | < 1000 U |
| WELL | INTERMEDIATE | 114-P1-MW-7I | 114-P1-MW7I-20180125 | N | T | JC59745 | 1/25/2018 | < 20 U | **1010000** | - | < 1000 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-20180130 | N | D | JC59976 | 1/30/2018 | < 10 U | **821000** | - | < 20 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-20180130 | N | T | JC59976 | 1/30/2018 | < 10 U | **751000** | - | < 20 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-20161212 | N | T | JC33522 | 12/12/2016 | < 0.88 U | **238000** | - | 68.0 |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-20160914 | N | T | JC27595 | 9/14/2016 | < 0.88 U | **206000** | - | 33.0 J |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-20160628 | N | T | JC23103 | 6/28/2016 | < 0.88 U | **210000** | - | 5.7 JB |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-20160324 | N | T | JC16953 | 3/24/2016 | < 4.4 UJ | **212000** | - | 54.8 J |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-20161219 | N | T | JC33991 | 12/19/2016 | 5.4 J | **500000** | - | 270 |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-20160914 | N | T | JC27595 | 9/14/2016 | < 0.88 U | **422000** | - | < 1.3 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-20160628 | N | T | JC23103 | 6/28/2016 | < 0.88 U | **59400** | - | < 1.3 UB |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-20160324 | N | T | JC16953 | 3/24/2016 | < 4.4 UJ | **336000** | - | 8.0 J |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-20161214 | N | T | JC33691 | 12/14/2016 | 5.0 J | 28700 | - | 142 |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-20160915 | N | T | JC27716 | 9/15/2016 | 2.2 J | 25500 | - | 17.5 J |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-20160627 | N | T | JC23029 | 6/27/2016 | 1.1 J | 37100 | - | 18.3 J |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-20160325X | FD | T | JC17059 | 3/25/2016 | 0.90 J | 26600 | - | 102 J |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-20160325 | N | T | JC17059 | 3/25/2016 | < 0.88 U | 27000 | - | 54.1 J |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-20161219 | N | T | JC33991 | 12/19/2016 | < 0.88 U | **1980000** | - | 134 |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-20160915 | N | T | JC27716 | 9/15/2016 | 2.2 J | **1810000** | - | 9.2 JB |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-20160629X | FD | T | JC23208 | 6/29/2016 | < 0.88 U | **1400000** | - | < 1.3 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-20160629 | N | T | JC23208 | 6/29/2016 | < 0.88 U | **1450000** | - | < 1.3 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-20160325 | N | T | JC17059 | 3/25/2016 | < 4.4 U | **1200000** | - | 34.5 J |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-ARC | N | D | JC59556 | 1/23/2018 | **< 50 U** | **6240000** | - | 188 |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-ARC | N | T | JC59556 | 1/23/2018 | **< 50 U** | **6200000** | - | 173 |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-20160620 | N | T | JC22555 | 6/20/2016 | **< 180 U** | **1480000** | - | 1170 J |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-20160322 | N | T | JC16738 | 3/22/2016 | 23.5 J | **1570000** | - | 1160 J |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-20151216X | FD | T | JC10831 | 12/16/2015 | **< 130 UJ** | **1730000** | - | **< 2400 U** |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-20151216 | N | T | JC10831 | 12/16/2015 | 16.6 J | **1760000** | - | **< 2400 U** |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-20150925 | N | T | JC4798A | 9/25/2015 | **< 130 U** | **529000** | - | < 490 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20180130 | N | D | JC59976 | 1/30/2018 | **< 2500 U** | **2350000** | - | **< 5000 U** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20180130 | N | T | JC59976 | 1/30/2018 | **< 2500 U** | **2290000** | - | **< 5000 U** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20160620 | N | T | JC22555 | 6/20/2016 | 13.8 J | **441000** | - | < 130 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20160323X | FD | T | JC16843 | 3/23/2016 | 22.8 J | **482000** | - | < 66 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20160323 | N | T | JC16843 | 3/23/2016 | 25.6 J | **435000** | - | < 66 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20151216 | N | T | JC10831 | 12/16/2015 | 16.9 J | **486000** | - | < 490 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-20150925 | N | T | JC4798A | 9/25/2015 | **< 130 U** | **450000** | - | < 490 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW-101I-20180119 | N | D | JC59431 | 1/19/2018 | **< 50 U** | **672000** | - | < 1000 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW-101I-20180119 | N | T | JC59431 | 1/19/2018 | **< 50 U** | **735000** | - | < 1000 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-20160622 | N | T | JC22758 | 6/22/2016 | 18.4 J | **486000** | - | 152 J |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-20160323 | N | T | JC16843 | 3/23/2016 | 20.2 J | **945000** | - | < 66 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-20151216 | N | T | JC10831 | 12/16/2015 | < 33 U | **967000** | - | < 240 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-20150925 | N | T | JC4798A | 9/25/2015 | < 1.3 U | **990000** | - | < 490 U |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I | N | D | JC59556 | 1/23/2018 | **< 50 U** | **1250000** | - | < 1000 U |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I | N | T | JC59556 | 1/23/2018 | **< 50 U** | **1290000** | - | < 1000 U |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-20160621X | FD | T | JC22642 | 6/21/2016 | 9.0 J | **839000** | - | 92.2 J |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | SILVER | SODIUM | STRONTIUM | ZINC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-22-4 | 7440-23-5 | 7440-24-6 | 7440-66-6 |
| | | | | | | | **GWQS** | 40 | 50000 | 2000 | 2000 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-20160621 | N | T | JC22642 | 6/21/2016 | 8.0 J | **809000** | - | 76.4 J |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-20160323 | N | T | JC16843 | 3/23/2016 | 28.6 J | **1350000** | - | 79.0 J |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-20151216 | N | T | JC10831 | 12/16/2015 | 23.3 J | **1610000** | - | < 490 U |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-20150928 | N | T | JC4872A | 9/28/2015 | **< 66 U** | **1480000** | - | < 240 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I | N | D | JC59745 | 1/25/2018 | < 10 U | **675000** | - | < 20 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I | N | T | JC59745 | 1/25/2018 | < 10 U | **639000** | - | < 20 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-20160621 | N | T | JC22642 | 6/21/2016 | < 0.88 U | **639000** | - | 7.4 J |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-20160322 | N | T | JC16738 | 3/22/2016 | 2.7 J | **735000** | - | < 13 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-20151216 | N | T | JC10831 | 12/16/2015 | 8.6 J | **923000** | - | < 98 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-20150925 | N | T | JC4798A | 9/25/2015 | 2.7 J | **916000** | - | < 49 U |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I | N | D | JC59556 | 1/23/2018 | < 10 U | **672000** | - | < 20 U |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I | N | T | JC59556 | 1/23/2018 | < 10 U | **741000** | - | < 20 U |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I-20160622 | N | T | JC22758 | 6/22/2016 | 1.5 J | **753000** | - | < 1.3 U |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I-20160622X | FD | T | JC22758 | 6/22/2016 | 1.7 J | **818000** | - | < 1.3 U |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I-20160316 | N | T | JC16336 | 3/16/2016 | < 4.4 U | **1010000** | - | < 6.6 U |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I-20151210 | N | T | JC10380 | 12/10/2015 | < 1.3 U | **1210000** | - | < 4.9 UB |
| WELL | INTERMEDIATE | 114-P2B4-MW103I | 114-P2B4-MW103I-20150928 | N | T | JC4872A | 9/28/2015 | 5.0 J | **1610000** | - | < 4.9 U |
| WELL | INTERMEDIATE | 132-P3A-MW102I | 132-P3A-MW102I-20160617 | N | T | JC22504 | 6/17/2016 | 1.4 J | **83400** | - | < 1.3 U |
| WELL | INTERMEDIATE | 132-P3A-MW102I | 132-P3A-MW102I-20160317 | N | T | JC16446 | 3/17/2016 | < 0.88 U | **73200** | - | 17.1 J |
| WELL | INTERMEDIATE | 132-P3A-MW102I | 132-P3A-MW102I-20151215 | N | T | JC10723 | 12/15/2015 | 3.1 J | **84100** | - | < 4.9 UB |
| WELL | INTERMEDIATE | 132-P3A-MW102I | 132-P3A-MW102I-20150929 | N | T | JC4978A | 9/29/2015 | < 1.3 U | 45200 | - | 10.7 J |
| WELL | INTERMEDIATE | 132-P3A-MW103I | 132-P3A-MW103I-20160616 | N | T | JC22356 | 6/16/2016 | < 0.88 UJ | **320000** | - | 15.6 J |
| WELL | INTERMEDIATE | 132-P3A-MW103I | 132-P3A-MW103I-20160318 | N | T | JC16549 | 3/18/2016 | 0.90 J | **425000** | - | 4.7 J |
| WELL | INTERMEDIATE | 132-P3A-MW103I | 132-P3A-MW103I-20151215 | N | T | JC10723 | 12/15/2015 | < 6.6 U | **447000** | - | 39.9 JB |
| WELL | INTERMEDIATE | 132-P3A-MW103I | 132-P3A-MW103I-20150930 | N | T | JC5099A | 9/30/2015 | 1.3 J | **362000** | - | 95.9 |
| WELL | INTERMEDIATE | 132-P3A-MW104I | 132-P3A-MW104I-20160616 | N | T | JC22356 | 6/16/2016 | < 0.88 UJ | **98000** | - | 12.2 J |
| WELL | INTERMEDIATE | 132-P3A-MW104I | 132-P3A-MW104I-20160318 | N | T | JC16549 | 3/18/2016 | < 0.88 U | **108000** | - | 14.8 J |
| WELL | INTERMEDIATE | 132-P3A-MW104I | 132-P3A-MW104I-20151215-X | FD | T | JC10723 | 12/15/2015 | 1.9 J | **257000** | - | < 4.9 UB |
| WELL | INTERMEDIATE | 132-P3A-MW104I | 132-P3A-MW104I-20151215 | N | T | JC10723 | 12/15/2015 | < 1.3 U | **313000** | - | < 4.9 UB |
| WELL | INTERMEDIATE | 132-P3A-MW104I | 132-P3A-MW104I-20150929 | N | T | JC4978A | 9/29/2015 | 1.9 J | **229000** | - | 20.1 |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-20161215 | N | T | JC33793 | 12/15/2016 | 1.2 J | **2100000** | - | 226 |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-20160913 | N | T | JC27486 | 9/13/2016 | < 0.88 U | **2380000** | - | < 1.3 UB |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-20160616 | N | T | JC22356 | 6/16/2016 | < 0.88 UJ | **2150000** | - | 3.8 J |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-20160324 | N | T | JC16937 | 3/24/2016 | < 4.4 UJ | **2250000** | - | < 6.6 U |
| WELL | INTERMEDIATE | 133-P3C-MW102I | 133-P3C-MW102I-20161216 | N | T | JC33887 | 12/16/2016 | 1.9 J | **754000** | - | 365 |
| WELL | INTERMEDIATE | 133-P3C-MW102I | 133-P3C-MW102I-20160913 | N | T | JC27486 | 9/13/2016 | < 0.88 UB | **797000** | - | < 1.3 UB |
| WELL | INTERMEDIATE | 133-P3C-MW102I | 133-P3C-MW102I-20160615 | N | T | JC22273 | 6/15/2016 | 1.6 J | **931000 J** | - | 5.7 J |
| WELL | INTERMEDIATE | 133-P3C-MW102I | 133-P3C-MW102I-20160324 | N | T | JC16937 | 3/24/2016 | < 4.4 UJ | **824000** | - | < 6.6 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-30.5 | N | T | JC5499 | 10/6/2015 | < 1.3 U | **886000** | - | 21.9 |
| WELL | INTERMEDIATE | 137-P3B-MW101I | 137-P3B-MW101I-20160624 | N | T | JC22939 | 6/24/2016 | < 0.88 U | **438000** | - | < 1.3 U |
| WELL | INTERMEDIATE | 137-P3B-MW101I | 137-P3B-MW101I-20160323 | N | T | JC16843 | 3/23/2016 | < 0.88 U | **800000** | - | < 1.3 UB |
| WELL | INTERMEDIATE | 137-P3B-MW101I | 137-P3B-MW101I-20151218 | N | T | JC11088 | 12/18/2015 | < 1.3 U | **827000** | - | 136 |
| WELL | INTERMEDIATE | 137-P3B-MW101I | 137-P3B-MW101I-20150930 | N | T | JC5099A | 9/30/2015 | 1.4 J | **1020000** | - | < 4.9 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-20160615 | N | T | JC22273 | 6/15/2016 | 1.4 J | **774000 J** | - | 3.5 J |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-20160321 | N | T | JC16664 | 3/21/2016 | < 0.88 U | **869000** | - | < 1.3 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-20151216 | N | T | JC10831 | 12/16/2015 | < 1.3 U | **998000** | - | < 4.9 UB |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-20150930X | FD | T | JC5099A | 9/30/2015 | < 1.3 U | **889000** | - | 9.2 J |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-20150930 | N | T | JC5099A | 9/30/2015 | < 1.3 U | **983000** | - | 13.4 J |
| WELL | INTERMEDIATE | 143-P3A-MW101I | 143-P3A-MW101I-20160620 | N | T | JC22555 | 6/20/2016 | < 0.88 UB | **84300** | - | 4.1 J |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | SILVER | SODIUM | STRONTIUM | ZINC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-22-4 | 7440-23-5 | 7440-24-6 | 7440-66-6 |
| | | | | | | | **GWQS** | 40 | 50000 | 2000 | 2000 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 143-P3A-MW101I | 143-P3A-MW101I-20160318 | N | T | JC16549 | 3/18/2016 | 1.0 J | 36100 | - | 8.4 J |
| WELL | INTERMEDIATE | 143-P3A-MW101I | 143-P3A-MW101I-20151214 | N | T | JC10593 | 12/14/2015 | < 1.3 U | 32300 | - | 34.8 JB |
| WELL | INTERMEDIATE | 143-P3A-MW101I | 143-P3A-MW101I-20150928 | N | T | JC4872A | 9/28/2015 | < 1.3 U | 33900 | - | < 24 U |
| WELL | INTERMEDIATE | GPS-EW1I | GPS-EW1I-100616 | N | T | JC29150 | 10/6/2016 | 7.2 JB | **238000** | - | 2.0 J |
| WELL | INTERMEDIATE | GPS-EW1I | GPS-EW1I-071216 | N | T | JC23920 | 7/12/2016 | 1.2 J | **213000** | - | < 1.3 UB |
| WELL | INTERMEDIATE | GPS-EW1I | GPS-EW1I-040616 | N | T | JC17755 | 4/6/2016 | < 0.88 U | **194000** | - | 14.8 J |
| WELL | INTERMEDIATE | GPS-EW1I | GPS-EW1I-010616 | N | T | JC12114 | 1/6/2016 | < 1.3 U | **137000** | - | 38.5 JB |
| WELL | INTERMEDIATE | GPS-EW2I | GPS-EW2I-100616 | N | T | JC29150 | 10/6/2016 | 5.7 JB | **233000** | - | 12.9 J |
| WELL | INTERMEDIATE | GPS-EW2I | GPS-EW2I-071216 | N | T | JC23920 | 7/12/2016 | < 0.88 U | **287000** | - | 76.8 |
| WELL | INTERMEDIATE | GPS-EW2I | GPS-EW2I-040616 | N | T | JC17755 | 4/6/2016 | < 0.88 U | **286000** | - | 145 |
| WELL | INTERMEDIATE | GPS-EW2I | GPS-EW2I-010616 | N | T | JC12114 | 1/6/2016 | 1.3 J | **377000** | - | 242 |
| WELL | INTERMEDIATE | GPS-IW12I | GPS-IW12I-100616 | N | T | JC29150 | 10/6/2016 | 10.9 JB | **1580000** | - | 4.6 J |
| WELL | INTERMEDIATE | GPS-IW12I | GPS-IW12I-071216 | N | T | JC23920 | 7/12/2016 | < 0.88 U | **1680000** | - | < 1.3 UB |
| WELL | INTERMEDIATE | GPS-IW12I | GPS-IW12I-040616 | N | T | JC17755 | 4/6/2016 | < 0.88 U | **1790000** | - | 39.5 |
| WELL | INTERMEDIATE | GPS-IW12I | GPS-IW12I-010616 | N | T | JC12114 | 1/6/2016 | < 1.3 U | **1680000** | - | 32.3 JB |
| WELL | INTERMEDIATE | GPS-IW3I | GPS-IW3I-100616 | N | T | JC29150 | 10/6/2016 | 15.4 JB | **1050000** | - | < 1.3 U |
| WELL | INTERMEDIATE | GPS-IW3I | GPS-IW3I-071216 | N | T | JC23920 | 7/12/2016 | < 0.88 U | **1490000** | - | < 1.3 U |
| WELL | INTERMEDIATE | GPS-IW3I | GPS-IW3I-040616 | N | T | JC17755 | 4/6/2016 | < 0.88 U | **1670000** | - | 12.4 J |
| WELL | INTERMEDIATE | GPS-IW3I | GPS-IW3I-010616 | N | T | JC12114 | 1/6/2016 | 1.5 J | **1590000** | - | 24.2 JB |
| WELL | INTERMEDIATE | GPS-IW4I | GPS-IW4I-100616 | N | T | JC29150 | 10/6/2016 | 20.5 J | **1020000** | - | 42.5 J |
| WELL | INTERMEDIATE | GPS-IW4I | GPS-IW4I-071216 | N | T | JC23920 | 7/12/2016 | < 1.8 U | **1060000** | - | 45.8 |
| WELL | INTERMEDIATE | GPS-IW4I | GPS-IW4I-040616 | N | T | JC17755 | 4/6/2016 | < 1.8 U | **1460000** | - | 35.0 J |
| WELL | INTERMEDIATE | GPS-IW4I | GPS-IW4I-010616 | N | T | JC12114 | 1/6/2016 | < 1.3 U | **1640000** | - | < 4.9 UB |
| WELL | INTERMEDIATE | GPS-IW6I | GPS-IW6I-100616 | N | T | JC29150 | 10/6/2016 | 9.1 JB | **1480000** | - | < 1.3 U |
| WELL | INTERMEDIATE | GPS-IW6I | GPS-IW6I-071216 | N | T | JC23920 | 7/12/2016 | < 0.88 U | **1580000** | - | < 1.3 U |
| WELL | INTERMEDIATE | GPS-IW6I | GPS-IW6I-040616 | N | T | JC17755 | 4/6/2016 | < 0.88 U | **1800000** | - | 9.5 J |
| WELL | INTERMEDIATE | GPS-IW6I | GPS-IW6I-010616 | N | T | JC12114 | 1/6/2016 | < 1.3 U | **1490000** | - | 35.5 JB |
| WELL | INTERMEDIATE | GPS-IW9I | GPS-IW9I-100616 | N | T | JC29150 | 10/6/2016 | 7.8 JB | **1280000** | - | < 1.3 U |
| WELL | INTERMEDIATE | GPS-IW9I | GPS-IW9I-071216 | N | T | JC23920 | 7/12/2016 | 3.5 J | **1160000** | - | < 1.3 U |
| WELL | INTERMEDIATE | GPS-IW9I | GPS-IW9I-040616 | N | T | JC17755 | 4/6/2016 | < 0.88 U | **1610000** | - | 4.3 J |
| WELL | INTERMEDIATE | GPS-IW9I | GPS-IW9I-010616 | N | T | JC12114 | 1/6/2016 | < 1.3 U | **1830000** | - | 40.0 JB |
| WELL | INTERMEDIATE | GPS-MW2I | GPS-MW2I-20180131 | N | D | JC60035 | 1/31/2018 | **< 50 U** | **332000** | - | 169 |
| WELL | INTERMEDIATE | GPS-MW2I | GPS-MW2I-20180131 | N | T | JC60035 | 1/31/2018 | **< 50 U** | **329000** | - | 169 |
| WELL | INTERMEDIATE | GPS-MW3I | GPS-MW3I-20180131 | N | D | JC60035 | 1/31/2018 | < 20 U | **101000** | - | < 40 U |
| WELL | INTERMEDIATE | GPS-MW3I | GPS-MW3I-20180131 | N | T | JC60035 | 1/31/2018 | < 20 U | **103000** | - | < 40 U |
| WELL | INTERMEDIATE | GPS-MW3I | GPS-MW3I-20180131-DUP | FD | D | JC60035 | 1/31/2018 | < 20 U | **101000** | - | < 40 U |
| WELL | INTERMEDIATE | GPS-MW3I | GPS-MW3I-20180131-DUP | FD | T | JC60035 | 1/31/2018 | < 20 U | **106000** | - | < 40 U |
| WELL | INTERMEDIATE | GPS-MW5I | GPS-MW5I-20180131 | N | D | JC60035 | 1/31/2018 | < 10 U | **835000 J** | - | < 20 U |
| WELL | INTERMEDIATE | GPS-MW5I | GPS-MW5I-20180131 | N | T | JC60035 | 1/31/2018 | **< 50 U** | **689000 J** | - | 152 |
| WELL | INTERMEDIATE | GPS-MW5I | GPS-MW5I-100616 | N | T | JC29150 | 10/6/2016 | 10.0 JB | **994000** | - | 32.1 |
| WELL | INTERMEDIATE | GPS-MW5I | GPS-MW5I-071216 | N | T | JC23920 | 7/12/2016 | < 1.8 U | **1210000** | - | 54.6 |
| WELL | INTERMEDIATE | GPS-MW5I | GPS-MW5I-040616 | N | T | JC17755 | 4/6/2016 | 6.6 J | **1300000** | - | 305 |
| WELL | INTERMEDIATE | GPS-MW5I | GPS-MW5I-010616 | N | T | JC12114 | 1/6/2016 | **52.1** | **1170000** | - | 64.0 JB |
| WELL | INTERMEDIATE | GPS-MW6I | GPS-MW6I-20180130 | N | D | JC59976 | 1/30/2018 | < 20 U | **1300000** | - | < 400 U |
| WELL | INTERMEDIATE | GPS-MW6I | GPS-MW6I-20180130 | N | T | JC59976 | 1/30/2018 | **< 50 U** | **1110000** | - | < 500 U |
| WELL | INTERMEDIATE | GPS-MW6I | GPS-MW6I-100616 | N | T | JC29150 | 10/6/2016 | 32.0 J | **990000** | - | 154 |
| WELL | INTERMEDIATE | GPS-MW6I | GPS-MW6I-071216 | N | T | JC23920 | 7/12/2016 | < 4.4 U | **1000000** | - | 227 |
| WELL | INTERMEDIATE | GPS-MW6I | GPS-MW6I-040616 | N | T | JC17755 | 4/6/2016 | < 1.8 U | **853000** | - | 367 |
| WELL | INTERMEDIATE | GPS-MW6I | GPS-MW6I-010616 | N | T | JC12114 | 1/6/2016 | 4.2 J | **625000** | - | 168 |

**Appendix L.2**
**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | SILVER | SODIUM | STRONTIUM | ZINC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-22-4 | 7440-23-5 | 7440-24-6 | 7440-66-6 |
| | | | | | | | **GWQS** | 40 | 50000 | 2000 | 2000 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | GPS-MW7I | GPS-MW7I-100616 | N | T | JC29150 | 10/6/2016 | 9.0 JB | **385000** | - | 39.8 |
| WELL | INTERMEDIATE | GPS-MW7I | GPS-MW7I-071216 | N | T | JC23920 | 7/12/2016 | < 0.88 U | **330000** | - | 53.9 |
| WELL | INTERMEDIATE | GPS-MW7I | GPS-MW7I-040616 | N | T | JC17755 | 4/6/2016 | < 0.88 U | **268000** | - | 116 |
| WELL | INTERMEDIATE | GPS-MW7I | GPS-MW7I-010616 | N | T | JC12114 | 1/6/2016 | 3.4 J | **198000** | - | 327 |
| WELL | INTERMEDIATE | MW7D | MW7D-45.0-20180423 | N | T | JC64763 | 4/23/2018 | < 3.1 U | - | 395 | < 4.0 U |
| WELL | INTERMEDIATE | MW7D | MW7D-41.0-20180423 | N | T | JC64763 | 4/23/2018 | < 3.1 U | - | 399 | 5.4 J |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930X | FD | T | JC5098A | 9/30/2015 | 8.2 J | **52500** | - | 30.6 |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930 | N | T | JC5098A | 9/30/2015 | 8.0 J | 49600 | - | 32.3 |
| WELL | INTERMEDIATE | MW7D | MW7D-40.5-20150930 | N | T | JC5098A | 9/30/2015 | 7.5 J | **56600** | - | 9.8 J |
| WELL | INTERMEDIATE | MW8D | MW8D-46.5-20150929 | N | T | JC4976A | 9/29/2015 | 4.8 J | **4570000** | - | 30.6 |
| WELL | INTERMEDIATE | MW8D | MW8D-41.5-20150929 | N | T | JC4976A | 9/29/2015 | < 33 U | **3640000** | - | < 120 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-20180419 | N | T | JC64571 | 4/19/2018 | < 3.1 U | **204000** | 442 | 21.6 |
| WELL | DEEP | 114-MW20C | 114-MW20C-78.5-20151001 | N | T | JC5237A | 10/1/2015 | < 1.3 U | **206000** | - | 6.1 JB |
| WELL | DEEP | 114-MW25C-2 | 114-MW25C-20180313 | N | D | JC62228 | 3/13/2018 | < 3.1 U | 21700 | - | < 4.0 U |
| WELL | DEEP | 114-MW25C-2 | 114-MW25C-20180313 | N | T | JC62228 | 3/13/2018 | < 16 U | 25100 J | - | 95.5 J |
| WELL | DEEP | 114-P1B-MW103D | 114-P1B-MW103D-20171214X | FD | T | JC57385 | 12/14/2017 | < 16 U | **98800** | 321 | < 100 U |
| WELL | DEEP | 114-P1B-MW103D | 114-P1B-MW103D-20171214 | N | T | JC57385 | 12/14/2017 | < 16 U | **95700** | 312 | < 100 U |
| WELL | DEEP | 114-P1-IRM-10D | 114-P1-IRM-10D | N | D | JC59745 | 1/25/2018 | < 20 U | **245000** | - | < 400 U |
| WELL | DEEP | 114-P1-IRM-10D | 114-P1-IRM-10D | N | T | JC59745 | 1/25/2018 | < 20 U | **253000** | - | < 400 U |
| WELL | DEEP | 114-P1-IRM-18D | 114-P1-IRM-18D-20180118 | N | D | JC59349 | 1/18/2018 | **< 50 U** | **594000** | - | < 500 U |
| WELL | DEEP | 114-P1-IRM-18D | 114-P1-IRM-18D-20180118 | N | T | JC59349 | 1/18/2018 | **< 50 U** | **557000** | - | < 500 U |
| WELL | DEEP | 114-P1-IRM-19D | 114-P1-IRM-19D-20180117 | N | D | JC59023 | 1/17/2018 | < 20 U | **482000** | - | < 40 U |
| WELL | DEEP | 114-P1-IRM-19D | 114-P1-IRM-19D-20180117 | N | T | JC59023 | 1/17/2018 | < 20 U | **474000** | - | < 40 U |
| WELL | DEEP | 114-P1-IRM-20D | 114-P1-IRM-20D-20180117 | N | D | JC59023 | 1/17/2018 | < 10 U | **1590000** | - | < 20 U |
| WELL | DEEP | 114-P1-IRM-20D | 114-P1-IRM-20D-20180117 | N | T | JC59023 | 1/17/2018 | < 10 U | **1580000** | - | < 20 U |
| WELL | DEEP | 114-P1-IRM-20D | 114-P1-IRM-20B-20180117-DUP | FD | D | JC59023 | 1/17/2018 | < 10 U | **1750000** | - | < 20 U |
| WELL | DEEP | 114-P1-IRM-20D | 114-P1-IRM-20B-20180117-DUP | FD | T | JC59023 | 1/17/2018 | < 10 U | **1640000** | - | < 20 U |
| WELL | DEEP | 114-P1-IRM-21D | 114-P1-IRM-21D-20180118 | N | D | JC59349 | 1/18/2018 | **< 50 U** | **690000** | - | < 300 U |
| WELL | DEEP | 114-P1-IRM-21D | 114-P1-IRM-21D-20180118 | N | T | JC59349 | 1/18/2018 | **< 50 U** | **647000** | - | < 300 U |
| WELL | DEEP | 114-P1-IRM-22D | 114-P1-IRM-22D-20180118 | N | D | JC59349 | 1/18/2018 | < 20 U | **1360000** | - | < 200 U |
| WELL | DEEP | 114-P1-IRM-22D | 114-P1-IRM-22D-20180118 | N | T | JC59349 | 1/18/2018 | < 20 U | **1340000** | - | < 200 U |
| WELL | DEEP | 114-P1-IRM-23D | 114-P1-IRM-23D-20180124 | N | D | JC59667 | 1/24/2018 | **< 100 U** | **1750000** | - | **< 4000 U** |
| WELL | DEEP | 114-P1-IRM-23D | 114-P1-IRM-23D-20180124 | N | T | JC59667 | 1/24/2018 | **< 100 U** | **1710000** | - | **< 4000 U** |
| WELL | DEEP | 114-P1-IRM-24D | 114-P1-IRM-24D-20180119 | N | D | JC59431 | 1/19/2018 | **< 50 U** | **377000** | - | < 500 U |
| WELL | DEEP | 114-P1-IRM-24D | 114-P1-IRM-24D-20180119 | N | T | JC59431 | 1/19/2018 | **< 50 U** | **373000** | - | < 500 U |
| WELL | DEEP | 114-P1-IRM-25D | 114-P1-IRM-25D-20180118 | N | D | JC59349 | 1/18/2018 | **< 50 U** | **1550000 J** | - | < 500 U |
| WELL | DEEP | 114-P1-IRM-25D | 114-P1-IRM-25D-20180118 | N | T | JC59349 | 1/18/2018 | **< 50 U** | **1240000 J** | - | < 500 U |
| WELL | DEEP | 114-P1-IRM-26D | 114-P1-IRM-26D-20180119 | N | D | JC59431 | 1/19/2018 | **< 1000 U** | **1760000** | - | < 2000 U |
| WELL | DEEP | 114-P1-IRM-26D | 114-P1-IRM-26D-20180119 | N | T | JC59431 | 1/19/2018 | **< 1000 U** | **1850000** | - | < 2000 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-20180122 | N | D | JC59495 | 1/22/2018 | < 20 U | **349000** | - | < 200 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-20180122 | N | T | JC59495 | 1/22/2018 | < 20 U | **371000** | - | < 200 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | N | T | JC57943A | 12/22/2017 | < 6.3 U | **365000** | 232 | < 40 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | N | T | JC57943A | 12/22/2017 | < 6.3 U | **382000** | 232 | < 40 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | N | T | JC57820 | 12/21/2017 | 3.1 J | **414000** | 255 | < 4.0 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | N | T | JC57820 | 12/21/2017 | 3.2 J | **403000** | 247 | < 4.0 U |
| WELL | DEEP | 114-P1-IRM-28D | 114-P1-IRM-28D-20180124 | N | D | JC59667 | 1/24/2018 | < 10 U | **402000** | - | 24.5 |
| WELL | DEEP | 114-P1-IRM-28D | 114-P1-IRM-28D-20180124 | N | T | JC59667 | 1/24/2018 | < 10 U | **398000** | - | 24.4 |
| WELL | DEEP | 114-P1-IRM-29D | 114-P1-IRM-29D-20180118 | N | D | JC59349 | 1/18/2018 | **< 50 U** | **1110000** | - | < 2000 U |
| WELL | DEEP | 114-P1-IRM-29D | 114-P1-IRM-29D-20180118 | N | T | JC59349 | 1/18/2018 | **< 50 U** | **1070000** | - | < 2000 U |

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**Historical Groundwater Analytical Data - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | SILVER | SODIUM | STRONTIUM | ZINC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7440-22-4 | 7440-23-5 | 7440-24-6 | 7440-66-6 |
| | | | | | | | **GWQS** | 40 | 50000 | 2000 | 2000 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** |
| WELL | DEEP | 114-P1-IRM-30D | 114-P1-IRM-30D-20180122 | N | D | JC59495 | 1/22/2018 | < 10 U | **214000** | - | < 20 U |
| WELL | DEEP | 114-P1-IRM-30D | 114-P1-IRM-30D-20180122 | N | T | JC59495 | 1/22/2018 | < 10 U | **219000** | - | < 20 U |
| WELL | DEEP | 114-P1-IRM-31D | 114-P1-IRM-31D-20180119 | N | D | JC59431 | 1/19/2018 | **< 50 U** | **396000 J** | - | < 100 U |
| WELL | DEEP | 114-P1-IRM-31D | 114-P1-IRM-31D-20180119 | N | T | JC59431 | 1/19/2018 | **< 50 U** | **307000 J** | - | < 100 U |
| WELL | DEEP | 114-P1-IRM-32D | 114-P1-IRM-32D-20180122 | N | D | JC59495 | 1/22/2018 | < 10 U | **215000** | - | < 60 U |
| WELL | DEEP | 114-P1-IRM-32D | 114-P1-IRM-32D-20180122 | N | T | JC59495 | 1/22/2018 | < 20 U | **443000** | - | < 200 U |
| WELL | DEEP | 114-P1-IRM-33D | 114-P1-IRM-33D-20180124 | N | D | JC59667 | 1/24/2018 | **< 100 U** | **530000** | - | < 400 U |
| WELL | DEEP | 114-P1-IRM-33D | 114-P1-IRM-33D-20180124 | N | T | JC59667 | 1/24/2018 | **< 100 U** | **519000** | - | < 400 U |
| WELL | DEEP | 114-P1-IRM-34D | 114-P1-IRM-34D | N | D | JC59745 | 1/25/2018 | < 10 U | **171000** | - | < 20 U |
| WELL | DEEP | 114-P1-IRM-34D | 114-P1-IRM-34D | N | T | JC59745 | 1/25/2018 | < 10 U | **178000** | - | < 20 U |
| WELL | DEEP | 114-P1-IRM-35D | 114-P1-IRM-35D-20180122 | N | D | JC59495 | 1/22/2018 | **< 50 U** | **1050000** | - | **< 2500 U** |
| WELL | DEEP | 114-P1-IRM-35D | 114-P1-IRM-35D-20180122 | N | T | JC59495 | 1/22/2018 | **< 50 U** | **969000** | - | **< 2500 U** |
| WELL | DEEP | 114-P1-IRM-37D | 114-P1-IRM-37D-20180117 | N | D | JC59023 | 1/17/2018 | **< 50 U** | **711000** | - | < 300 U |
| WELL | DEEP | 114-P1-IRM-37D | 114-P1-IRM-37D-20180117 | N | T | JC59023 | 1/17/2018 | **< 50 U** | **639000** | - | < 300 U |
| WELL | DEEP | 114-P1-IRM-40D | 114-P1-IRM-40D-20180118 | N | D | JC59349 | 1/18/2018 | **< 50 U** | **344000** | - | < 1000 U |
| WELL | DEEP | 114-P1-IRM-40D | 114-P1-IRM-40D-20180118 | N | T | JC59349 | 1/18/2018 | **< 50 U** | **397000** | - | < 1000 U |
| WELL | DEEP | 114-P1-IRM-41D | 114-P1-IRM-41D-20180126 | N | D | JC59838 | 1/26/2018 | **< 50 U** | **134000** | - | < 100 U |
| WELL | DEEP | 114-P1-IRM-41D | 114-P1-IRM-41D-20180126 | N | T | JC59838 | 1/26/2018 | **< 50 U** | **137000** | - | < 100 U |
| WELL | DEEP | 114-P1-IRM-42D | 114-P1-IRM-42D-20180126 | N | D | JC59838 | 1/26/2018 | **< 100 U** | **1260000** | - | **< 4000 U** |
| WELL | DEEP | 114-P1-IRM-42D | 114-P1-IRM-42D-20180126 | N | T | JC59838 | 1/26/2018 | **< 100 U** | **1300000** | - | **< 4000 U** |
| WELL | DEEP | 114-P1-IRM-42D | 114-P1-IRM-42D-20180126-DUP | FD | D | JC59838 | 1/26/2018 | **< 100 U** | **1260000** | - | **< 4000 U** |
| WELL | DEEP | 114-P1-IRM-42D | 114-P1-IRM-42D-20180126-DUP | FD | T | JC59838 | 1/26/2018 | **< 100 U** | **1250000** | - | **< 4000 U** |
| WELL | DEEP | 114-P1-IRM-4D | 114-P1-IRM-4D-20180124 | N | D | JC59667 | 1/24/2018 | **< 100 U** | **446000** | - | < 1000 U |
| WELL | DEEP | 114-P1-IRM-4D | 114-P1-IRM-4D-20180124 | N | T | JC59667 | 1/24/2018 | **< 100 U** | **465000** | - | < 1000 U |
| WELL | DEEP | 114-P1-IRM-5D | 114-P1-IRM-5D-DUP-20180124 | FD | D | JC59667 | 1/24/2018 | **< 100 U** | **298000** | - | < 1000 U |
| WELL | DEEP | 114-P1-IRM-5D | 114-P1-IRM-5D-DUP-20180124 | FD | T | JC59667 | 1/24/2018 | **< 100 U** | **340000** | - | < 1000 U |
| WELL | DEEP | 114-P1-IRM-5D | 114-P1-MW-5I-20180124 | N | D | JC59556 | 1/24/2018 | **< 50 U** | **637000** | - | < 500 U |
| WELL | DEEP | 114-P1-IRM-5D | 114-P1-MW-5I-20180124 | N | T | JC59556 | 1/24/2018 | **< 50 U** | **613000** | - | < 500 U |
| WELL | DEEP | 114-P1-MW-1D | 114-P1-MW-1D-20180129 | N | D | JC59916 | 1/29/2018 | **< 100 U** | **377000** | - | < 1000 U |
| WELL | DEEP | 114-P1-MW-1D | 114-P1-MW-1D-20180129 | N | T | JC59916 | 1/29/2018 | **< 100 U** | **374000** | - | < 1000 U |
| WELL | DEEP | 114-P1-MW-4D | 114-P1-MW-4D-20180126 | N | D | JC59838 | 1/26/2018 | **< 50 U** | **1290000** | - | < 200 U |
| WELL | DEEP | 114-P1-MW-4D | 114-P1-MW-4D-20180126 | N | T | JC59838 | 1/26/2018 | **< 50 U** | **1290000** | - | < 200 U |
| WELL | DEEP | 114-P1-MW-5D | 114-P1-MW-5D-20180123 | N | D | JC59667 | 1/24/2018 | **< 100 U** | **327000** | - | < 1000 U |
| WELL | DEEP | 114-P1-MW-5D | 114-P1-MW-5D-20180123 | N | T | JC59667 | 1/24/2018 | **< 100 U** | **344000** | - | < 1000 U |
| WELL | DEEP | 114-P1-MW-6D | 114-P1-MW-6D-20180119 | N | D | JC59431 | 1/19/2018 | **< 50 U** | **173000** | - | < 100 U |
| WELL | DEEP | 114-P1-MW-6D | 114-P1-MW-6D-20180119 | N | T | JC59431 | 1/19/2018 | **< 50 U** | **171000** | - | < 100 U |
| WELL | DEEP | 114-P1-MW-7D | 114-P1-MW7D-20180125 | N | D | JC59745 | 1/25/2018 | < 20 U | **142000** | - | < 200 U |
| WELL | DEEP | 114-P1-MW-7D | 114-P1-MW7D-20180125 | N | T | JC59745 | 1/25/2018 | < 20 U | **150000** | - | < 200 U |
| WELL | DEEP | 137-MW2C | 137-MW2C-20151214 | N | T | JC10597 | 12/14/2015 | < 1.3 U | **842000** | - | < 4.9 UB |
| WELL | DEEP | MW6C | MC6C-20180129 | N | D | JC59916 | 1/29/2018 | **< 50 U** | **164000** | - | < 100 U |
| WELL | DEEP | MW6C | MC6C-20180129 | N | T | JC59916 | 1/29/2018 | **< 50 U** | **163000** | - | < 100 U |
| WELL | DEEP | MW6C | MW6C-57.0-20171220 | N | T | JC57752 | 12/20/2017 | < 3.1 U | **173000** | 812 | 22.6 |
| WELL | DEEP | MW6C | MW6C-62.0-20171220 | N | T | JC57752 | 12/20/2017 | < 3.1 U | **185000** | 822 | 20.0 |
| WELL | DEEP | MW6C | 114-MW6C-20160321 | N | T | JC16664 | 3/21/2016 | < 0.88 U | **124000** | - | 15.3 J |
| WELL | DEEP | MW8F | MW8F-82.0-20151001 | N | T | JC5237A | 10/1/2015 | 1.3 J | **361000** | - | 52.4 JB |
| WELL | DEEP | MW8F | MW8F-79.5-20151001 | N | T | JC5237A | 10/1/2015 | < 1.3 U | **454000** | - | 6.8 JB |
| WELL | Bedrock | 114-MW16B | 114-MW16B-20151214 | N | T | JC10597 | 12/14/2015 | < 1.3 U | **74300** | - | < 4.9 UB |

**NOTES:**

1. The reporting convention for non-detects in environmental analytical chemistry is that non-detects be reported as less than the RL. Outputs from the database default to reporting non-detects as less than the MDL.

2. Results may be reporting as less than the MDL or RL, but above the associated regulatory standard when dilution is required due to the presence of a significant quantity of a target or non-target analyte, or an interference from a target or non-target analyte. The presence of other substances, or combinations of other substances in a sample can impact whether an analytical method can be used to achieve the lowest possible RL.

3. **Bold** - Indicates an exceedance of the NJDEP's GWQS.

4. A "-" indicates that the sample was not tested for the analyte.

**ABBREVIATIONS:**

CAS RN - Chemical Abstracts Service Registry Number

CCPW - Chromate Chemical Production Waste

Fractions:

D - dissolved/filtered

T - total/unfiltered

GWQS - Groundwater Quality Standard

MDL - method detection limit

N/A - not applicable

NJDEP - New Jersey Department of Environmental Protection

RL - reporting limit

Sample Types:

N - normal environmental sample

FD - field duplicate sample

SDG - sample delivery group

ug/L - micrograms per liter

**QUALIFIERS:**

J - Indicates the result was an estimated value; the associated numerical value was an approximate concentration of the analyte in the sample. J+ or J - is used when the direction of bias can be determined.

JB - The analyte concentration is greater than three (3) times, but less than or equal to ten (10) times the concentration in the associated method/preparation blank. The presence of that analyte in the sample is considered “real” but the concentration is quantitatively qualified due to method blank contamination.

U - Indicates the analyte was not detected in the sample above the sample RL.

UB - The analyte concentration is less than or equal to three (3) times the concentration in the associated method/preparation blank. The presence of the analyte in the sample is negated due to laboratory blank contamination.

UJ - Indicates the analyte was not detected above the reporting limit and the reporting limit was approximate.

UJB - Indicates the result was estimated as a result of negative instrument drift in the associated method blank. Results that were less than 10 times the negative drift were estimated (JB), and non-detect results were qualified (UJB).

# Appendix L.3

# Historical Groundwater Analytical Data - VOCs

**Appendix L.3**
**Historical Groundwater Analytical Data - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | 1,1,1-TRICHLOROETHANE | 1,1,2,2-TETRACHLOROETHANE | 1,1,2-TRICHLOROETHANE | 1,1,2-TRICHLOROTRIFLUOROETHANE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 71-55-6 | 79-34-5 | 79-00-5 | 76-13-1 |
| | | | | | | | **GWQS** | 30 | 1 | 3 | 20000 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-8.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-12.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.25 U | < 0.21 U | < 0.21 U | < 0.52 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-10.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.25 U | < 0.21 U | < 0.21 U | < 0.52 U |
| WELL | SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | N | N | JC65325 | 5/2/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 114-MW25A | 114-MW25A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | N | N | JC57565 | 12/18/2017 | < 2.5 U | **< 1.7 U** | < 2.4 U | < 12 U |
| WELL | SHALLOW | 114-MW27A | 114-MW27A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | N | N | JC57565 | 12/18/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | N | N | JC56729A | 12/6/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | N | N | JC56859A | 12/7/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927-X | FD | N | JC51890 | 9/27/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927 | N | N | JC51890 | 9/27/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 114-MW37A | 114-MW37A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | N | N | JC56504A | 12/4/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 114-MW41A | 114-MW41A-20180420 | N | N | JC64643 | 4/20/2018 | 0.40 J | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | N | N | JC51736 | 9/25/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.7 | N | N | JC5499 | 10/6/2015 | < 0.25 U | < 0.21 U | < 0.21 U | < 0.52 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-12.5 | N | N | JC5499 | 10/6/2015 | < 0.25 U | < 0.21 U | < 0.21 U | < 0.52 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-8.5 | N | N | JC5499 | 10/6/2015 | < 0.25 U | < 0.21 U | < 0.21 U | < 0.52 U |
| WELL | SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | MW7S | MW7S-10.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | MW7S | MW7S-10.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.25 U | < 0.21 U | < 0.21 U | < 0.52 U |

**Appendix L.3**
**Historical Groundwater Analytical Data - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | 1,1,1-TRICHLOROETHANE | 1,1,2,2-TETRACHLOROETHANE | 1,1,2-TRICHLOROETHANE | 1,1,2-TRICHLOROTRIFLUOROETHANE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 71-55-6 | 79-34-5 | 79-00-5 | 76-13-1 |
| | | | | | | | **GWQS** | 30 | 1 | 3 | 20000 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | MW7S | MW7S-7.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.25 U | < 0.21 U | < 0.21 U | < 0.52 U |
| WELL | SHALLOW | MW8S | MW8S-20180427 | N | N | JC65066 | 4/27/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | MW8S | MW8S-9.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.25 U | < 0.21 U | < 0.21 U | < 0.52 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | N | N | JC57752 | 12/20/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | N | N | JC64444 | 4/18/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | N | N | JC65255 | 5/1/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | N | N | JC64571 | 4/19/2018 | < 5.0 U | **< 3.4 U** | **< 4.8 U** | < 25 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-36.0-20151001 | N | N | JC5237A | 10/1/2015 | < 2.5 U | **< 2.1 U** | < 2.1 U | < 5.2 U |
| WELL | INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | N | N | JC62130 | 3/12/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | N | JC62228 | 3/13/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | N | JC62228 | 3/13/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | FD | N | JC56729A | 12/6/2017 | 2.5 | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | N | N | JC56729A | 12/6/2017 | 2.5 | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | N | N | JC51890 | 9/27/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | FD | N | JC60652 | 2/12/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | N | N | JC60652 | 2/12/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | N | N | JC65066 | 4/27/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | N | N | JC64643 | 4/20/2018 | 0.38 J | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | N | N | JC57638 | 12/19/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | N | N | JC57501A | 12/15/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | N | N | JC58670 | 1/11/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.50 U | < 0.34 U | < 0.48 U | < 2.5 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | FD | N | JC67069 | 5/31/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |

**Appendix L.3**
**Historical Groundwater Analytical Data - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | 1,1,1-TRICHLOROETHANE | 1,1,2,2-TETRACHLOROETHANE | 1,1,2-TRICHLOROETHANE | 1,1,2-TRICHLOROTRIFLUOROETHANE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 71-55-6 | 79-34-5 | 79-00-5 | 76-13-1 |
| | | | | | | | **GWQS** | 30 | 1 | 3 | 20000 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | N | N | JC57276 | 12/13/2017 | 3.8 | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | N | N | JC57276 | 12/13/2017 | 6.5 | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | N | N | JC57169 | 12/12/2017 | < 2.5 U | **< 1.7 U** | < 2.4 U | < 12 U |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | N | N | JC57169 | 12/12/2017 | < 6.3 U | **< 4.2 U** | **< 6.0 U** | < 31 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | N | N | JC64571 | 4/19/2018 | < 1.3 U | < 0.84 U | < 1.2 U | < 6.2 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | N | N | JC64901 | 4/25/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-30.5 | N | N | JC5499 | 10/6/2015 | < 0.25 U | < 0.21 U | < 0.21 U | < 0.52 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | MW7D | MW7D-41.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930X | FD | N | JC5098A | 9/30/2015 | < 0.25 U | < 0.21 U | < 0.21 U | < 0.52 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.25 U | < 0.21 U | < 0.21 U | < 0.52 U |
| WELL | INTERMEDIATE | MW7D | MW7D-40.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.25 U | < 0.21 U | < 0.21 U | < 0.52 U |
| WELL | INTERMEDIATE | MW8D | MW8D-45.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425X | FD | N | JC64901 | 4/25/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | INTERMEDIATE | MW8D | MW8D-46.5-20150929 | N | N | JC4976A | 9/29/2015 | < 0.25 U | < 0.21 U | < 0.21 U | < 0.52 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.5-20150929 | N | N | JC4976A | 9/29/2015 | < 1.3 U | < 1.0 U | < 1.1 U | < 2.6 U |
| WELL | DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | N | N | JC65066 | 4/27/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-20180419 | N | N | JC64571 | 4/19/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-78.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.25 U | < 0.21 U | < 0.21 U | < 0.52 U |
| WELL | DEEP | 114-MW25C-2 | 114-MW25C-20180313 | N | N | JC62228 | 3/13/2018 | < 2.5 U | **< 1.7 U** | < 2.4 U | < 12 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | N | N | JC57943A | 12/22/2017 | 2.5 | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | N | N | JC57943A | 12/22/2017 | 3.0 | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | N | N | JC57820 | 12/21/2017 | 2.6 | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | N | N | JC57820 | 12/21/2017 | 3.1 | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | DEEP | MW8F | MW8F-20180425 | N | N | JC64901 | 4/25/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| WELL | DEEP | MW8F | MW8F-82.0-20151001 | N | N | JC5237A | 10/1/2015 | < 0.25 U | < 0.21 U | < 0.21 U | < 0.52 U |
| WELL | DEEP | MW8F | MW8F-79.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.25 U | < 0.21 U | < 0.21 U | < 0.52 U |
| WELL | DEEP | MW-CR-3D | MW-CR-3D-20180418 | N | N | JC64444 | 4/18/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-46.0-49.5 | N | N | JC53234 | 10/16/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-40.0-44.0 | N | N | JC53234 | 10/16/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-32.0-36.0 | N | N | JC53234 | 10/16/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-24.0-28.0 | N | N | JC53234 | 10/16/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-36.0-40.0 | N | N | JC54569A | 11/2/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-30.0-34.0 | N | N | JC54569A | 11/2/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-22.0-26.0 | N | N | JC54569A | 11/2/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| SOILBORE | N/A | DNAPL-S1 | 137-S1-GW | N | N | JC55721 | 11/17/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U |
| SOILBORE | N/A | DNAPL-W1 | 137-W1-GW | N | N | JC55721 | 11/17/2017 | < 0.63 U | < 0.42 U | < 0.60 U | < 3.1 U |

**Appendix L.3**
**Historical Groundwater Analytical Data - VOCs**
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**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | 1,1-DICHLOROETHANE | 1,1-DICHLOROETHYLENE | 1,2,3-TRICHLOROBENZENE | 1,2,4-TRICHLOROBENZENE | 1,2,4-TRIMETHYLBENZENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 75-34-3 | 75-35-4 | 87-61-6 | 120-82-1 | 95-63-6 |
| | | | | | | | **GWQS** | 50 | 1 | N/A | 9 | 100 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-8.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | 28.5 |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | 17.3 |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-12.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.17 U | < 0.51 U | < 0.23 U | < 0.21 U | - |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-10.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.17 U | < 0.51 U | < 0.23 U | < 0.21 U | - |
| WELL | SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | N | N | JC65325 | 5/2/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | SHALLOW | 114-MW25A | 114-MW25A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.21 U | < 0.47 U | < 0.50 U | 0.90 J | - |
| WELL | SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | N | N | JC57565 | 12/18/2017 | < 2.1 U | **< 4.7 U** | < 5.0 U | **140** | - |
| WELL | SHALLOW | 114-MW27A | 114-MW27A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.21 U | < 0.47 U | < 0.50 U | 0.72 J | - |
| WELL | SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | N | N | JC57565 | 12/18/2017 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| WELL | SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | N | N | JC56729A | 12/6/2017 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| WELL | SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | N | N | JC56859A | 12/7/2017 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927-X | FD | N | JC51890 | 9/27/2017 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927 | N | N | JC51890 | 9/27/2017 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| WELL | SHALLOW | 114-MW37A | 114-MW37A-20170926 | N | N | JC51824 | 9/26/2017 | 0.34 J | < 0.47 U | < 0.50 U | 0.72 J | - |
| WELL | SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | N | N | JC56504A | 12/4/2017 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| WELL | SHALLOW | 114-MW41A | 114-MW41A-20180420 | N | N | JC64643 | 4/20/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | 3.7 |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | 1.8 J |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | 1.8 J |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | 33.3 |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | 38.7 |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | N | N | JC51736 | 9/25/2017 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | 4.1 |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | 3.4 |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.7 | N | N | JC5499 | 10/6/2015 | < 0.17 U | < 0.51 U | < 0.23 U | < 0.21 U | - |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-12.5 | N | N | JC5499 | 10/6/2015 | < 0.17 U | < 0.51 U | < 0.23 U | < 0.21 U | - |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-8.5 | N | N | JC5499 | 10/6/2015 | < 0.17 U | < 0.51 U | < 0.23 U | < 0.21 U | - |
| WELL | SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | SHALLOW | MW7S | MW7S-10.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | SHALLOW | MW7S | MW7S-10.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.17 U | < 0.51 U | < 0.23 U | < 0.21 U | - |

**Appendix L.3**
**Historical Groundwater Analytical Data - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | 1,1-DICHLOROETHANE | 1,1-DICHLOROETHYLENE | 1,2,3-TRICHLOROBENZENE | 1,2,4-TRICHLOROBENZENE | 1,2,4-TRIMETHYLBENZENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 75-34-3 | 75-35-4 | 87-61-6 | 120-82-1 | 95-63-6 |
| | | | | | | | **GWQS** | 50 | 1 | N/A | 9 | 100 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | MW7S | MW7S-7.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.17 U | < 0.51 U | < 0.23 U | < 0.21 U | - |
| WELL | SHALLOW | MW8S | MW8S-20180427 | N | N | JC65066 | 4/27/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | SHALLOW | MW8S | MW8S-9.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.17 U | < 0.51 U | < 0.23 U | < 0.21 U | - |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | 2.0 |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | 2.0 |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | 1.8 J |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | N | N | JC57752 | 12/20/2017 | 0.63 J | **1.7** | < 0.50 U | < 0.50 U | - |
| WELL | INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | N | N | JC64444 | 4/18/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | N | N | JC65255 | 5/1/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | N | N | JC64571 | 4/19/2018 | < 4.1 U | **< 9.5 U** | < 10 U | **< 10 U** | **552** |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-36.0-20151001 | N | N | JC5237A | 10/1/2015 | < 1.7 U | **< 5.1 U** | < 2.3 U | < 2.1 U | - |
| WELL | INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | N | N | JC62130 | 3/12/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | N | JC62228 | 3/13/2018 | 2.5 | **1.6** | < 0.50 U | < 0.50 U | - |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | N | JC62228 | 3/13/2018 | 2.5 | **1.6** | < 0.50 U | < 0.50 U | - |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | FD | N | JC56729A | 12/6/2017 | 0.72 J | < 0.47 U | < 0.50 U | < 0.50 U | - |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | N | N | JC56729A | 12/6/2017 | 0.80 J | < 0.47 U | < 0.50 U | < 0.50 U | - |
| WELL | INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | N | N | JC51890 | 9/27/2017 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | FD | N | JC60652 | 2/12/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | N | N | JC60652 | 2/12/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| WELL | INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | N | N | JC65066 | 4/27/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | N | N | JC64643 | 4/20/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | N | N | JC57638 | 12/19/2017 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | N | N | JC57501A | 12/15/2017 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | N | N | JC58670 | 1/11/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.41 U | < 0.95 U | < 1.0 U | < 1.0 U | **173** |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | **195** |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | 20.1 |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | 15.5 |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.21 U | < 0.47 U | 1.1 | 5.5 | < 0.24 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.21 U | < 0.47 U | 1.1 | 5.0 | < 0.24 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | 49.3 |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | 43.4 |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | FD | N | JC67069 | 5/31/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |

**Appendix L.3**
**Historical Groundwater Analytical Data - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | 1,1-DICHLOROETHANE | 1,1-DICHLOROETHYLENE | 1,2,3-TRICHLOROBENZENE | 1,2,4-TRICHLOROBENZENE | 1,2,4-TRIMETHYLBENZENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 75-34-3 | 75-35-4 | 87-61-6 | 120-82-1 | 95-63-6 |
| | | | | | | | **GWQS** | 50 | 1 | N/A | 9 | 100 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | N | N | JC57276 | 12/13/2017 | 3.0 | **9.3** | < 0.50 U | < 0.50 U | - |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | N | N | JC57276 | 12/13/2017 | 10.8 | **24.4** | < 0.50 U | < 0.50 U | - |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | N | N | JC57169 | 12/12/2017 | 8.4 J | **30.4** | < 5.0 U | < 5.0 U | - |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | N | N | JC57169 | 12/12/2017 | 7.5 J | **26.4** | < 13 U | **< 13 U** | - |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | N | N | JC64571 | 4/19/2018 | 1.8 J | **15.7** | < 2.5 U | < 2.5 U | **140** |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | N | N | JC64571 | 4/19/2018 | 0.74 J | **4.4** | < 0.50 U | < 0.50 U | 9.4 |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | N | N | JC64901 | 4/25/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-30.5 | N | N | JC5499 | 10/6/2015 | < 0.17 U | < 0.51 U | < 0.23 U | < 0.21 U | - |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.0-20180423 | N | N | JC64763 | 4/23/2018 | 0.28 J | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | INTERMEDIATE | MW7D | MW7D-41.0-20180423 | N | N | JC64763 | 4/23/2018 | 0.22 J | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930X | FD | N | JC5098A | 9/30/2015 | 0.21 J | < 0.51 U | < 0.23 U | < 0.21 U | - |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930 | N | N | JC5098A | 9/30/2015 | 0.29 J | < 0.51 U | < 0.23 U | < 0.21 U | - |
| WELL | INTERMEDIATE | MW7D | MW7D-40.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.17 U | < 0.51 U | < 0.23 U | < 0.21 U | - |
| WELL | INTERMEDIATE | MW8D | MW8D-45.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | 0.29 J |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425X | FD | N | JC64901 | 4/25/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | 15.2 J |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | 10.9 J |
| WELL | INTERMEDIATE | MW8D | MW8D-46.5-20150929 | N | N | JC4976A | 9/29/2015 | < 0.17 U | < 0.51 U | < 0.23 U | < 0.21 U | - |
| WELL | INTERMEDIATE | MW8D | MW8D-41.5-20150929 | N | N | JC4976A | 9/29/2015 | < 0.86 U | **< 2.6 U** | < 1.1 U | < 1.0 U | - |
| WELL | DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | N | N | JC65066 | 4/27/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-20180419 | N | N | JC64571 | 4/19/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-78.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.17 U | < 0.51 U | < 0.23 U | < 0.21 U | - |
| WELL | DEEP | 114-MW25C-2 | 114-MW25C-20180313 | N | N | JC62228 | 3/13/2018 | < 2.1 U | **< 4.7 U** | < 5.0 U | < 5.0 U | - |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | N | N | JC57943A | 12/22/2017 | 4.9 | **5.4** | < 0.50 U | < 0.50 U | - |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | N | N | JC57943A | 12/22/2017 | 5.5 | **6.4** | < 0.50 U | < 0.50 U | - |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | N | N | JC57820 | 12/21/2017 | 4.9 | **5.6** | < 0.50 U | < 0.50 U | - |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | N | N | JC57820 | 12/21/2017 | 5.5 | **6.7** | < 0.50 U | < 0.50 U | - |
| WELL | DEEP | MW8F | MW8F-20180425 | N | N | JC64901 | 4/25/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U |
| WELL | DEEP | MW8F | MW8F-82.0-20151001 | N | N | JC5237A | 10/1/2015 | < 0.17 U | < 0.51 U | < 0.23 U | < 0.21 U | - |
| WELL | DEEP | MW8F | MW8F-79.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.17 U | < 0.51 U | < 0.23 U | < 0.21 U | - |
| WELL | DEEP | MW-CR-3D | MW-CR-3D-20180418 | N | N | JC64444 | 4/18/2018 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | 0.50 J |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-46.0-49.5 | N | N | JC53234 | 10/16/2017 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-40.0-44.0 | N | N | JC53234 | 10/16/2017 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-32.0-36.0 | N | N | JC53234 | 10/16/2017 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-24.0-28.0 | N | N | JC53234 | 10/16/2017 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-36.0-40.0 | N | N | JC54569A | 11/2/2017 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-30.0-34.0 | N | N | JC54569A | 11/2/2017 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-22.0-26.0 | N | N | JC54569A | 11/2/2017 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| SOILBORE | N/A | DNAPL-S1 | 137-S1-GW | N | N | JC55721 | 11/17/2017 | < 0.21 U | < 0.47 U | < 0.50 U | < 0.50 U | - |
| SOILBORE | N/A | DNAPL-W1 | 137-W1-GW | N | N | JC55721 | 11/17/2017 | < 0.52 U | **< 1.2 U** | < 1.3 U | < 1.3 U | - |

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**Historical Groundwater Analytical Data - VOCs**
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**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 1,2-DIBROMOETHANE(EDB) | 1,2-DICHLOROBENZENE | 1,2-DICHLOROETHANE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 96-12-8 | 106-93-4 | 95-50-1 | 107-06-2 |
| | | | | | | | **GWQS** | 0.02 | 0.03 | 600 | 2 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-8.0-20180420 | N | N | JC64643 | 4/20/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-11.0-20180420 | N | N | JC64643 | 4/20/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-12.5-20151001 | N | N | JC5237A | 10/1/2015 | **< 0.99 U** | **< 0.23 U** | < 0.19 U | < 0.18 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-10.5-20151001 | N | N | JC5237A | 10/1/2015 | **< 0.99 U** | **< 0.23 U** | < 0.19 U | < 0.18 U |
| WELL | SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | N | N | JC65325 | 5/2/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | 114-MW25A | 114-MW25A-20170926 | N | N | JC51824 | 9/26/2017 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | N | N | JC57565 | 12/18/2017 | **< 6.9 U** | **< 2.1 U** | **650** | < 2.0 U |
| WELL | SHALLOW | 114-MW27A | 114-MW27A-20170926 | N | N | JC51824 | 9/26/2017 | **< 0.69 U** | **< 0.21 U** | 1.2 | < 0.20 U |
| WELL | SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | N | N | JC57565 | 12/18/2017 | **< 0.69 U** | **< 0.21 U** | 1.8 | < 0.20 U |
| WELL | SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | N | N | JC56729A | 12/6/2017 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | N | N | JC56859A | 12/7/2017 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927-X | FD | N | JC51890 | 9/27/2017 | **< 0.69 U** | **< 0.21 U** | 4.5 | < 0.20 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927 | N | N | JC51890 | 9/27/2017 | **< 0.69 U** | **< 0.21 U** | 4.4 | < 0.20 U |
| WELL | SHALLOW | 114-MW37A | 114-MW37A-20170926 | N | N | JC51824 | 9/26/2017 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | N | N | JC56504A | 12/4/2017 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | 114-MW41A | 114-MW41A-20180420 | N | N | JC64643 | 4/20/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | N | N | JC65178 | 4/30/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | N | N | JC65178 | 4/30/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | N | N | JC64444 | 4/18/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | N | N | JC64444 | 4/18/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | N | N | JC64643 | 4/20/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | N | N | JC64643 | 4/20/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | N | N | JC51736 | 9/25/2017 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | N | N | JC57276 | 12/13/2017 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | N | N | JC57276 | 12/13/2017 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | N | N | JC57169 | 12/12/2017 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | N | N | JC64571 | 4/19/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | N | N | JC64571 | 4/19/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | N | N | JC64986 | 4/26/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | N | N | JC64986 | 4/26/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | N | N | JC67069 | 5/31/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | N | N | JC67069 | 5/31/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | N | N | JC64763 | 4/23/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | N | N | JC64763 | 4/23/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | N | N | JC64763 | 4/23/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | N | N | JC64763 | 4/23/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.7 | N | N | JC5499 | 10/6/2015 | **< 0.99 U** | **< 0.23 U** | < 0.19 U | < 0.18 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-12.5 | N | N | JC5499 | 10/6/2015 | **< 0.99 U** | **< 0.23 U** | < 0.19 U | < 0.18 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-8.5 | N | N | JC5499 | 10/6/2015 | **< 0.99 U** | **< 0.23 U** | < 0.19 U | < 0.18 U |
| WELL | SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | N | N | JC64822 | 4/24/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | N | N | JC65255 | 5/1/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | N | N | JC65255 | 5/1/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | MW7S | MW7S-10.0-20180430 | N | N | JC65178 | 4/30/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | MW7S | MW7S-10.2-20150930 | N | N | JC5098A | 9/30/2015 | **< 0.99 U** | **< 0.23 U** | < 0.19 U | < 0.18 U |

**Appendix L.3**
**Historical Groundwater Analytical Data - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 1,2-DIBROMOETHANE(EDB) | 1,2-DICHLOROBENZENE | 1,2-DICHLOROETHANE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 96-12-8 | 106-93-4 | 95-50-1 | 107-06-2 |
| | | | | | | | **GWQS** | 0.02 | 0.03 | 600 | 2 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | MW7S | MW7S-7.2-20150930 | N | N | JC5098A | 9/30/2015 | **< 0.99 U** | **< 0.23 U** | < 0.19 U | < 0.18 U |
| WELL | SHALLOW | MW8S | MW8S-20180427 | N | N | JC65066 | 4/27/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | MW8S | MW8S-9.5-20151001 | N | N | JC5237A | 10/1/2015 | **< 0.99 U** | **< 0.23 U** | < 0.19 U | < 0.18 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | N | N | JC64444 | 4/18/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | N | N | JC64444 | 4/18/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | N | N | JC64444 | 4/18/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | N | N | JC57752 | 12/20/2017 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | N | N | JC64444 | 4/18/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | N | N | JC65255 | 5/1/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | N | N | JC64571 | 4/19/2018 | **< 14 U** | **< 4.2 U** | < 10 U | **< 4.0 U** |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-36.0-20151001 | N | N | JC5237A | 10/1/2015 | **< 9.9 U** | **< 2.3 U** | < 1.9 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | N | N | JC62130 | 3/12/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | 1.1 |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | N | JC62228 | 3/13/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | **10.5** |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | N | JC62228 | 3/13/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | **10.2** |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | FD | N | JC56729A | 12/6/2017 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | N | N | JC56729A | 12/6/2017 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | N | N | JC51890 | 9/27/2017 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | **46.1** |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | FD | N | JC60652 | 2/12/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | N | N | JC60652 | 2/12/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | N | N | JC65066 | 4/27/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | N | N | JC64643 | 4/20/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | N | N | JC57820 | 12/21/2017 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | N | N | JC57820 | 12/21/2017 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | N | N | JC57638 | 12/19/2017 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | N | N | JC57501A | 12/15/2017 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | N | N | JC58745 | 1/12/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | N | N | JC58745 | 1/12/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | N | N | JC58670 | 1/11/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | N | N | JC58073A | 12/27/2017 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | N | N | JC58073A | 12/27/2017 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | N | N | JC58028A | 12/26/2017 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | N | N | JC58028A | 12/26/2017 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | N | N | JC58942 | 1/16/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | N | N | JC58942 | 1/16/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | N | N | JC58942 | 1/16/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | N | N | JC58942 | 1/16/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | N | N | JC67069 | 5/31/2018 | **< 1.4 U** | **< 0.42 U** | < 1.0 U | < 0.40 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | N | N | JC67069 | 5/31/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | N | N | JC65178 | 4/30/2018 | **< 0.69 U** | **< 0.21 U** | 2.8 | < 0.20 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | N | N | JC65178 | 4/30/2018 | **< 0.69 U** | **< 0.21 U** | 2.1 | < 0.20 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | N | N | JC64444 | 4/18/2018 | **< 0.69 U** | **< 0.21 U** | 11.4 | **13.7** |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | N | N | JC64444 | 4/18/2018 | **< 0.69 U** | **< 0.21 U** | 10.6 | **14.5** |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | N | N | JC64643 | 4/20/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | N | N | JC64643 | 4/20/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | N | N | JC58670 | 1/11/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | N | N | JC58670 | 1/11/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | N | N | JC67069 | 5/31/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | FD | N | JC67069 | 5/31/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |

**Appendix L.3**
**Historical Groundwater Analytical Data - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 1,2-DIBROMOETHANE(EDB) | 1,2-DICHLOROBENZENE | 1,2-DICHLOROETHANE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 96-12-8 | 106-93-4 | 95-50-1 | 107-06-2 |
| | | | | | | | **GWQS** | 0.02 | 0.03 | 600 | 2 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | N | N | JC67069 | 5/31/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | N | N | JC57276 | 12/13/2017 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | N | N | JC57276 | 12/13/2017 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | N | N | JC57169 | 12/12/2017 | **< 6.9 U** | **< 2.1 U** | < 5.0 U | < 2.0 U |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | N | N | JC57169 | 12/12/2017 | **< 17 U** | **< 5.3 U** | < 13 U | **< 5.0 U** |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | N | N | JC64571 | 4/19/2018 | **< 3.4 U** | **< 1.1 U** | < 2.5 U | < 1.0 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | N | N | JC64571 | 4/19/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | N | N | JC64763 | 4/23/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | N | N | JC64763 | 4/23/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | N | N | JC64901 | 4/25/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-30.5 | N | N | JC5499 | 10/6/2015 | **< 0.99 U** | **< 0.23 U** | < 0.19 U | < 0.18 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | N | N | JC67069 | 5/31/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | N | N | JC67069 | 5/31/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.0-20180423 | N | N | JC64763 | 4/23/2018 | **< 0.69 U** | **< 0.21 U** | 0.73 J | < 0.20 U |
| WELL | INTERMEDIATE | MW7D | MW7D-41.0-20180423 | N | N | JC64763 | 4/23/2018 | **< 0.69 U** | **< 0.21 U** | 0.59 J | < 0.20 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930X | FD | N | JC5098A | 9/30/2015 | **< 0.99 U** | **< 0.23 U** | 0.35 J | 1.0 |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930 | N | N | JC5098A | 9/30/2015 | **< 0.99 U** | **< 0.23 U** | 0.42 J | 1.3 |
| WELL | INTERMEDIATE | MW7D | MW7D-40.5-20150930 | N | N | JC5098A | 9/30/2015 | **< 0.99 U** | **< 0.23 U** | 0.39 J | 0.93 J |
| WELL | INTERMEDIATE | MW8D | MW8D-45.0-20180425 | N | N | JC64901 | 4/25/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425X | FD | N | JC64901 | 4/25/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425 | N | N | JC64901 | 4/25/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | INTERMEDIATE | MW8D | MW8D-46.5-20150929 | N | N | JC4976A | 9/29/2015 | **< 0.99 U** | **< 0.23 U** | < 0.19 U | < 0.18 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.5-20150929 | N | N | JC4976A | 9/29/2015 | **< 5.0 U** | **< 1.2 U** | < 0.93 U | < 0.90 U |
| WELL | DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | N | N | JC65066 | 4/27/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-20180419 | N | N | JC64571 | 4/19/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-78.5-20151001 | N | N | JC5237A | 10/1/2015 | **< 0.99 U** | **< 0.23 U** | < 0.19 U | < 0.18 U |
| WELL | DEEP | 114-MW25C-2 | 114-MW25C-20180313 | N | N | JC62228 | 3/13/2018 | **< 6.9 U** | **< 2.1 U** | < 5.0 U | **73.3** |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | N | N | JC57943A | 12/22/2017 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | N | N | JC57943A | 12/22/2017 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | N | N | JC57820 | 12/21/2017 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | N | N | JC57820 | 12/21/2017 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | DEEP | MW8F | MW8F-20180425 | N | N | JC64901 | 4/25/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| WELL | DEEP | MW8F | MW8F-82.0-20151001 | N | N | JC5237A | 10/1/2015 | **< 0.99 U** | **< 0.23 U** | < 0.19 U | < 0.18 U |
| WELL | DEEP | MW8F | MW8F-79.5-20151001 | N | N | JC5237A | 10/1/2015 | **< 0.99 U** | **< 0.23 U** | < 0.19 U | < 0.18 U |
| WELL | DEEP | MW-CR-3D | MW-CR-3D-20180418 | N | N | JC64444 | 4/18/2018 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-46.0-49.5 | N | N | JC53234 | 10/16/2017 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-40.0-44.0 | N | N | JC53234 | 10/16/2017 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-32.0-36.0 | N | N | JC53234 | 10/16/2017 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-24.0-28.0 | N | N | JC53234 | 10/16/2017 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-36.0-40.0 | N | N | JC54569A | 11/2/2017 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-30.0-34.0 | N | N | JC54569A | 11/2/2017 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-22.0-26.0 | N | N | JC54569A | 11/2/2017 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| SOILBORE | N/A | DNAPL-S1 | 137-S1-GW | N | N | JC55721 | 11/17/2017 | **< 0.69 U** | **< 0.21 U** | < 0.50 U | < 0.20 U |
| SOILBORE | N/A | DNAPL-W1 | 137-W1-GW | N | N | JC55721 | 11/17/2017 | **< 1.7 U** | **< 0.53 U** | < 1.3 U | < 0.50 U |

**Appendix L.3**
**Historical Groundwater Analytical Data - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | 1,2-DICHLOROPROPANE | 1,4-DICHLOROBENZENE | 2-BUTANONE (MEK) | 4-METHYL-2-PENTANONE (MIBK) | ACETONE | BENZENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 78-87-5 | 106-46-7 | 78-93-3 | 108-10-1 | 67-64-1 | 71-43-2 |
| | | | | | | | **GWQS** | 1 | 75 | 300 | N/A | 6000 | 1 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-8.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **34.0** |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **34.0** |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-12.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.39 U | < 0.27 U | < 5.6 U | 1.1 J | 32.7 | **36.8** |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-10.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.39 U | < 0.27 U | < 5.6 U | < 1.0 U | 26.5 | **32.6** |
| WELL | SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | N | N | JC65325 | 5/2/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **1.8** |
| WELL | SHALLOW | 114-MW25A | 114-MW25A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | N | N | JC57565 | 12/18/2017 | **< 2.4 U** | **743** | < 48 U | < 30 U | < 50 U | **24.9** |
| WELL | SHALLOW | 114-MW27A | 114-MW27A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.24 U | 0.96 J | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | N | N | JC57565 | 12/18/2017 | < 0.24 U | 2.7 | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | N | N | JC56729A | 12/6/2017 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | N | N | JC56859A | 12/7/2017 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927-X | FD | N | JC51890 | 9/27/2017 | < 0.24 U | 17.0 | < 4.8 U | < 3.0 U | 6.6 J | 0.80 |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927 | N | N | JC51890 | 9/27/2017 | < 0.24 U | 16.3 | < 4.8 U | < 3.0 U | 7.1 J | 0.77 |
| WELL | SHALLOW | 114-MW37A | 114-MW37A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | N | N | JC56504A | 12/4/2017 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | SHALLOW | 114-MW41A | 114-MW41A-20180420 | N | N | JC64643 | 4/20/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | 23.7 | 0.29 J |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.21 J |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.20 J |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **49.0** |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **48.2** |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | N | N | JC51736 | 9/25/2017 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **6.1** |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **36.0** |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **34.9** |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **111** |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **35.0** |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **21.6** |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | 57.1 | < 0.17 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.22 J |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **7.4** |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.7 | N | N | JC5499 | 10/6/2015 | < 0.39 U | < 0.27 U | < 5.6 U | < 1.0 U | < 3.3 U | **182** |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-12.5 | N | N | JC5499 | 10/6/2015 | < 0.39 U | < 0.27 U | < 5.6 U | < 1.0 U | < 3.3 U | **29.6** |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-8.5 | N | N | JC5499 | 10/6/2015 | < 0.39 U | < 0.27 U | < 5.6 U | < 1.0 U | < 3.3 U | **14.9** |
| WELL | SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | 6.3 J | < 0.17 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **2.8** |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **2.9** |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.26 J |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **4.2** |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | SHALLOW | MW7S | MW7S-10.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | SHALLOW | MW7S | MW7S-10.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.39 U | < 0.27 U | < 5.6 U | < 1.0 U | 6.6 J | **1.6** |

**Appendix L.3**
**Historical Groundwater Analytical Data - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | **Analyte** | 1,2-DICHLOROPROPANE | 1,4-DICHLOROBENZENE | 2-BUTANONE (MEK) | 4-METHYL-2-PENTANONE (MIBK) | ACETONE | BENZENE |
| | | | | | | **CAS RN** | 78-87-5 | 106-46-7 | 78-93-3 | 108-10-1 | 67-64-1 | 71-43-2 |
| | | | | | | **GWQS** | 1 | 75 | 300 | N/A | 6000 | 1 |
| | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | MW7S | MW7S-7.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.39 U | < 0.27 U | < 5.6 U | < 1.0 U | 10.7 | **1.2** |
| WELL | SHALLOW | MW8S | MW8S-20180427 | N | N | JC65066 | 4/27/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | SHALLOW | MW8S | MW8S-9.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.39 U | < 0.27 U | < 5.6 U | < 1.0 U | 3.9 J | < 0.24 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.24 U | < 0.50 U | < 4.8 U | 3.1 J | 8.1 J | **1.3** |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.24 U | < 0.50 U | < 4.8 U | 3.5 J | 9.4 J | **1.4** |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.24 U | < 0.50 U | < 4.8 U | 3.9 J | 11.9 | **1.5** |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | N | N | JC57752 | 12/20/2017 | < 0.24 U | < 0.50 U | 6.5 J | 3.4 J | 58.3 | 0.41 J |
| WELL | INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | N | N | JC64444 | 4/18/2018 | < 0.24 U | < 0.50 U | < 4.8 U | 17.1 | 23.2 | < 0.17 U |
| WELL | INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | N | N | JC65255 | 5/1/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | N | N | JC64571 | 4/19/2018 | **< 4.7 U** | < 10 U | < 95 U | < 60 U | < 100 U | **7770** |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-36.0-20151001 | N | N | JC5237A | 10/1/2015 | **< 3.9 U** | < 2.7 U | < 56 U | < 10 U | < 33 U | **1170** |
| WELL | INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | N | N | JC62130 | 3/12/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | N | JC62228 | 3/13/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **2.9** |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | N | JC62228 | 3/13/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **3.0** |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | FD | N | JC56729A | 12/6/2017 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | N | N | JC56729A | 12/6/2017 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | N | N | JC51890 | 9/27/2017 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | FD | N | JC60652 | 2/12/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.24 J |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | N | N | JC60652 | 2/12/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.23 J |
| WELL | INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | N | N | JC65066 | 4/27/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | N | N | JC64643 | 4/20/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | 5.5 J | 0.29 J |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | N | N | JC57638 | 12/19/2017 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | N | N | JC57501A | 12/15/2017 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | 5.9 J | 0.26 J |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.17 J |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | N | N | JC58670 | 1/11/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.19 J |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | 5.5 J | 0.21 J |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.47 U | < 1.0 U | < 9.5 U | < 6.0 U | < 10 U | **12.4** |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **14.4** |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **500** |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **311** |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.24 U | 5.7 | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.24 U | 5.3 | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **83.1** |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | 7.8 J | **85.2** |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.20 J |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.17 J |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.74 |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | FD | N | JC67069 | 5/31/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.48 J |

**Appendix L.3**
**Historical Groundwater Analytical Data - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **Analyte** | 1,2-DICHLOROPROPANE | 1,4-DICHLOROBENZENE | 2-BUTANONE (MEK) | 4-METHYL-2-PENTANONE (MIBK) | ACETONE | BENZENE |
| | | | | | | | **CAS RN** | 78-87-5 | 106-46-7 | 78-93-3 | 108-10-1 | 67-64-1 | 71-43-2 |
| | | | | | | | **GWQS** | 1 | 75 | 300 | N/A | 6000 | 1 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.53 |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | 6.0 J | **97.4** |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | 5.9 J | **171** |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | N | N | JC57169 | 12/12/2017 | **< 2.4 U** | < 5.0 U | < 48 U | < 30 U | < 50 U | **1480** |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | N | N | JC57169 | 12/12/2017 | **< 5.9 U** | < 13 U | < 120 U | < 75 U | < 130 U | **3110** |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | N | N | JC64571 | 4/19/2018 | **< 1.2 U** | < 2.5 U | < 24 U | < 15 U | < 25 U | **2070** |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **320** |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | N | N | JC64901 | 4/25/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-30.5 | N | N | JC5499 | 10/6/2015 | < 0.39 U | < 0.27 U | < 5.6 U | < 1.0 U | < 3.3 U | < 0.24 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | 55.0 | < 0.17 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **16.7** |
| WELL | INTERMEDIATE | MW7D | MW7D-41.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **22.3** |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930X | FD | N | JC5098A | 9/30/2015 | < 0.39 U | < 0.27 U | < 5.6 U | < 1.0 U | < 3.3 U | 0.42 J |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.39 U | 0.28 J | < 5.6 U | < 1.0 U | < 3.3 U | 0.52 |
| WELL | INTERMEDIATE | MW7D | MW7D-40.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.39 U | 0.30 J | < 5.6 U | < 1.0 U | < 3.3 U | 0.48 J |
| WELL | INTERMEDIATE | MW8D | MW8D-45.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **9.7** |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425X | FD | N | JC64901 | 4/25/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **583 J** |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **423 J** |
| WELL | INTERMEDIATE | MW8D | MW8D-46.5-20150929 | N | N | JC4976A | 9/29/2015 | < 0.39 U | < 0.27 U | < 5.6 U | < 1.0 U | 4.5 J | **68.3** |
| WELL | INTERMEDIATE | MW8D | MW8D-41.5-20150929 | N | N | JC4976A | 9/29/2015 | **< 2.0 U** | < 1.4 U | < 28 U | < 5.1 U | < 17 U | **945 J** |
| WELL | DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | N | N | JC65066 | 4/27/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-20180419 | N | N | JC64571 | 4/19/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **2.0** |
| WELL | DEEP | 114-MW20C | 114-MW20C-78.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.39 U | < 0.27 U | < 5.6 U | < 1.0 U | < 3.3 U | **44.7** |
| WELL | DEEP | 114-MW25C-2 | 114-MW25C-20180313 | N | N | JC62228 | 3/13/2018 | **< 2.4 U** | < 5.0 U | < 48 U | < 30 U | < 50 U | **1190** |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | N | N | JC57943A | 12/22/2017 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.42 J |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | N | N | JC57943A | 12/22/2017 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.41 J |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.38 J |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.45 J |
| WELL | DEEP | MW8F | MW8F-20180425 | N | N | JC64901 | 4/25/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| WELL | DEEP | MW8F | MW8F-82.0-20151001 | N | N | JC5237A | 10/1/2015 | < 0.39 U | < 0.27 U | < 5.6 U | < 1.0 U | < 3.3 U | < 0.24 U |
| WELL | DEEP | MW8F | MW8F-79.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.39 U | < 0.27 U | < 5.6 U | < 1.0 U | < 3.3 U | < 0.24 U |
| WELL | DEEP | MW-CR-3D | MW-CR-3D-20180418 | N | N | JC64444 | 4/18/2018 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-46.0-49.5 | N | N | JC53234 | 10/16/2017 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.29 J |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-40.0-44.0 | N | N | JC53234 | 10/16/2017 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-32.0-36.0 | N | N | JC53234 | 10/16/2017 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.37 J |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-24.0-28.0 | N | N | JC53234 | 10/16/2017 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **8.1** |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-36.0-40.0 | N | N | JC54569A | 11/2/2017 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | 9.3 J | **7.1** |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-30.0-34.0 | N | N | JC54569A | 11/2/2017 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **2.2** |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-22.0-26.0 | N | N | JC54569A | 11/2/2017 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | 23.5 | **1380** |
| SOILBORE | N/A | DNAPL-S1 | 137-S1-GW | N | N | JC55721 | 11/17/2017 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.57 |
| SOILBORE | N/A | DNAPL-W1 | 137-W1-GW | N | N | JC55721 | 11/17/2017 | < 0.59 U | < 1.3 U | < 12 U | < 7.5 U | < 13 U | **118** |

**Appendix L.3**
**Historical Groundwater Analytical Data - VOCs**
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**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | BROMODICHLOROMETHANE | BROMOMETHANE | CARBON DISULFIDE | CARBON TETRACHLORIDE | CHLOROBENZENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 75-27-4 | 74-83-9 | 75-15-0 | 56-23-5 | 108-90-7 |
| | | | | | | | **GWQS** | 1 | 10 | 700 | 1 | 50 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-8.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-12.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.23 U | < 0.42 U | 0.37 J | < 0.22 U | < 0.19 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-10.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.23 U | < 0.42 U | 0.33 J | < 0.22 U | < 0.19 U |
| WELL | SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | N | N | JC65325 | 5/2/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | 0.63 J |
| WELL | SHALLOW | 114-MW25A | 114-MW25A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.22 U | < 1.4 U | < 0.23 U | < 0.34 U | 0.33 J |
| WELL | SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | N | N | JC57565 | 12/18/2017 | **< 2.2 U** | **< 14 U** | < 5.0 U | **< 3.4 U** | **1520** |
| WELL | SHALLOW | 114-MW27A | 114-MW27A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.22 U | < 1.4 U | < 0.23 U | < 0.34 U | 0.84 J |
| WELL | SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | N | N | JC57565 | 12/18/2017 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | 2.1 |
| WELL | SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | N | N | JC56729A | 12/6/2017 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | N | N | JC56859A | 12/7/2017 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927-X | FD | N | JC51890 | 9/27/2017 | < 0.22 U | < 1.4 U | 0.99 J | < 0.34 U | 13.8 |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927 | N | N | JC51890 | 9/27/2017 | < 0.22 U | < 1.4 U | 0.81 J | < 0.34 U | 13.6 |
| WELL | SHALLOW | 114-MW37A | 114-MW37A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.22 U | < 1.4 U | < 0.23 U | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | N | N | JC56504A | 12/4/2017 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | 114-MW41A | 114-MW41A-20180420 | N | N | JC64643 | 4/20/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | N | N | JC51736 | 9/25/2017 | < 0.22 U | < 1.4 U | < 0.23 U | < 0.34 U | 2.6 |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.7 | N | N | JC5499 | 10/6/2015 | < 0.23 U | < 0.42 U | 1.4 J | < 0.22 U | < 0.19 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-12.5 | N | N | JC5499 | 10/6/2015 | < 0.23 U | < 0.42 U | 0.44 J | < 0.22 U | < 0.19 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-8.5 | N | N | JC5499 | 10/6/2015 | < 0.23 U | < 0.42 U | 0.29 J | < 0.22 U | < 0.19 U |
| WELL | SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | MW7S | MW7S-10.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | MW7S | MW7S-10.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.23 U | < 0.42 U | < 0.25 U | < 0.22 U | < 0.19 U |

**Appendix L.3**
**Historical Groundwater Analytical Data - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | Analyte | BROMODICHLOROMETHANE | BROMOMETHANE | CARBON DISULFIDE | CARBON TETRACHLORIDE | CHLOROBENZENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 75-27-4 | 74-83-9 | 75-15-0 | 56-23-5 | 108-90-7 |
| | | | | | | | GWQS | 1 | 10 | 700 | 1 | 50 |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L |
| Location Type | Water-Bearing Zone | Location ID | Sample ID | Sample Type | Fraction | Lab SDG | Date Collected | Result | Result | Result | Result | Result |
| WELL | SHALLOW | MW7S | MW7S-7.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.23 U | < 0.42 U | < 0.25 U | < 0.22 U | < 0.19 U |
| WELL | SHALLOW | MW8S | MW8S-20180427 | N | N | JC65066 | 4/27/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | MW8S | MW8S-9.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.23 U | < 0.42 U | < 0.25 U | < 0.22 U | < 0.19 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.22 U | < 1.4 U | 1.0 J | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.22 U | < 1.4 U | 1.2 J | < 0.34 U | < 0.24 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.22 U | < 1.4 U | 1.4 J | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | N | N | JC57752 | 12/20/2017 | < 0.22 U | < 1.4 U | 18.2 | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | N | N | JC64444 | 4/18/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | N | N | JC65255 | 5/1/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | N | N | JC64571 | 4/19/2018 | **< 4.3 U** | **< 27 U** | < 10 U | **< 6.7 U** | < 4.8 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-36.0-20151001 | N | N | JC5237A | 10/1/2015 | **< 2.3 U** | < 4.2 U | < 2.5 U | **< 2.2 U** | < 1.9 U |
| WELL | INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | N | N | JC62130 | 3/12/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | N | JC62228 | 3/13/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | 0.31 J |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | N | JC62228 | 3/13/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | 0.29 J |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | FD | N | JC56729A | 12/6/2017 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | N | N | JC56729A | 12/6/2017 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | N | N | JC51890 | 9/27/2017 | < 0.22 U | < 1.4 U | < 0.23 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | FD | N | JC60652 | 2/12/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | N | N | JC60652 | 2/12/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | N | N | JC65066 | 4/27/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | N | N | JC64643 | 4/20/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | N | N | JC57638 | 12/19/2017 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | N | N | JC57501A | 12/15/2017 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | N | N | JC58670 | 1/11/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.43 U | < 2.7 U | < 1.0 U | < 0.67 U | < 0.48 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | 7.3 |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | 5.1 |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | 3.9 |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | 3.7 |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | FD | N | JC67069 | 5/31/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |

**Appendix L.3**
**Historical Groundwater Analytical Data - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **Analyte** | BROMODICHLOROMETHANE | BROMOMETHANE | CARBON DISULFIDE | CARBON TETRACHLORIDE | CHLOROBENZENE |
| | | | | | | | **CAS RN** | 75-27-4 | 74-83-9 | 75-15-0 | 56-23-5 | 108-90-7 |
| | | | | | | | **GWQS** | 1 | 10 | 700 | 1 | 50 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.22 U | < 1.4 U | 1.1 J | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | N | N | JC57169 | 12/12/2017 | **< 2.2 U** | **< 14 U** | < 5.0 U | **< 3.4 U** | < 2.4 U |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | N | N | JC57169 | 12/12/2017 | **< 5.4 U** | **< 34 U** | < 13 U | **< 8.4 U** | < 6.0 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | N | N | JC64571 | 4/19/2018 | **< 1.1 U** | < 6.9 U | < 2.5 U | **< 1.7 U** | < 1.2 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | N | N | JC64901 | 4/25/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-30.5 | N | N | JC5499 | 10/6/2015 | < 0.23 U | < 0.42 U | < 0.25 U | < 0.22 U | < 0.19 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | 0.43 J |
| WELL | INTERMEDIATE | MW7D | MW7D-41.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | 0.37 J |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930X | FD | N | JC5098A | 9/30/2015 | < 0.23 U | < 0.42 U | < 0.25 U | < 0.22 U | < 0.19 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.23 U | < 0.42 U | < 0.25 U | < 0.22 U | 0.27 J |
| WELL | INTERMEDIATE | MW7D | MW7D-40.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.23 U | < 0.42 U | < 0.25 U | < 0.22 U | 0.21 J |
| WELL | INTERMEDIATE | MW8D | MW8D-45.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425X | FD | N | JC64901 | 4/25/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | INTERMEDIATE | MW8D | MW8D-46.5-20150929 | N | N | JC4976A | 9/29/2015 | < 0.23 U | < 0.42 U | < 0.25 U | < 0.22 U | < 0.19 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.5-20150929 | N | N | JC4976A | 9/29/2015 | **< 1.1 U** | < 2.1 U | < 1.3 U | **< 1.1 U** | < 0.93 U |
| WELL | DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | N | N | JC65066 | 4/27/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-20180419 | N | N | JC64571 | 4/19/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-78.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.23 U | < 0.42 U | < 0.25 U | < 0.22 U | < 0.19 U |
| WELL | DEEP | 114-MW25C-2 | 114-MW25C-20180313 | N | N | JC62228 | 3/13/2018 | **< 2.2 U** | **< 14 U** | < 5.0 U | **< 3.4 U** | < 2.4 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | N | N | JC57943A | 12/22/2017 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | N | N | JC57943A | 12/22/2017 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | DEEP | MW8F | MW8F-20180425 | N | N | JC64901 | 4/25/2018 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U |
| WELL | DEEP | MW8F | MW8F-82.0-20151001 | N | N | JC5237A | 10/1/2015 | < 0.23 U | < 0.42 U | < 0.25 U | < 0.22 U | < 0.19 U |
| WELL | DEEP | MW8F | MW8F-79.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.23 U | < 0.42 U | < 0.25 U | < 0.22 U | < 0.19 U |
| WELL | DEEP | MW-CR-3D | MW-CR-3D-20180418 | N | N | JC64444 | 4/18/2018 | < 0.22 U | < 1.4 U | 0.83 J | < 0.34 U | < 0.24 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-46.0-49.5 | N | N | JC53234 | 10/16/2017 | < 0.22 U | < 1.4 U | < 0.23 U | < 0.34 U | < 0.24 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-40.0-44.0 | N | N | JC53234 | 10/16/2017 | < 0.22 U | < 1.4 U | 0.29 J | < 0.34 U | < 0.24 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-32.0-36.0 | N | N | JC53234 | 10/16/2017 | < 0.22 U | < 1.4 U | 0.60 J | < 0.34 U | < 0.24 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-24.0-28.0 | N | N | JC53234 | 10/16/2017 | < 0.22 U | < 1.4 U | < 0.23 U | < 0.34 U | < 0.24 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-36.0-40.0 | N | N | JC54569A | 11/2/2017 | < 0.22 U | < 1.4 U | 0.45 J | < 0.34 U | < 0.24 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-30.0-34.0 | N | N | JC54569A | 11/2/2017 | < 0.22 U | < 1.4 U | 0.38 J | < 0.34 U | < 0.24 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-22.0-26.0 | N | N | JC54569A | 11/2/2017 | < 0.22 U | < 1.4 U | 0.68 J | < 0.34 U | < 0.24 U |
| SOILBORE | N/A | DNAPL-S1 | 137-S1-GW | N | N | JC55721 | 11/17/2017 | **4.8** | < 1.4 U | 1.2 J | < 0.34 U | < 0.24 U |
| SOILBORE | N/A | DNAPL-W1 | 137-W1-GW | N | N | JC55721 | 11/17/2017 | **2.9** | < 3.4 U | < 1.3 U | < 0.84 U | < 0.60 U |

**Appendix L.3**
**Historical Groundwater Analytical Data - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | CHLOROBROMOMETHANE | CHLORODIBROMOMETHANE | CHLOROETHANE | CHLOROFORM | CHLOROMETHANE | CIS-1,2-DICHLOROETHENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 74-97-5 | 124-48-1 | 75-00-3 | 67-66-3 | 74-87-3 | 156-59-2 |
| | | | | | | | **GWQS** | N/A | 1 | 5 | 70 | N/A | 70 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-8.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-12.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.37 U | < 0.15 U | < 0.34 U | < 0.19 U | < 0.41 U | < 0.27 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-10.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.37 U | < 0.15 U | < 0.34 U | < 0.19 U | < 0.41 U | < 0.27 U |
| WELL | SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | N | N | JC65325 | 5/2/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | 114-MW25A | 114-MW25A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | 3.6 |
| WELL | SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | N | N | JC57565 | 12/18/2017 | < 3.8 U | **< 1.6 U** | **< 5.9 U** | < 2.9 U | < 5.3 U | 7.4 J |
| WELL | SHALLOW | 114-MW27A | 114-MW27A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | 6.5 |
| WELL | SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | N | N | JC57565 | 12/18/2017 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | N | N | JC56729A | 12/6/2017 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | N | N | JC56859A | 12/7/2017 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927-X | FD | N | JC51890 | 9/27/2017 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927 | N | N | JC51890 | 9/27/2017 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | 114-MW37A | 114-MW37A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | 4.3 |
| WELL | SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | N | N | JC56504A | 12/4/2017 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | 114-MW41A | 114-MW41A-20180420 | N | N | JC64643 | 4/20/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | N | N | JC51736 | 9/25/2017 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.38 U | < 0.16 U | < 0.59 U | 0.45 J | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.38 U | < 0.16 U | < 0.59 U | 0.40 J | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.7 | N | N | JC5499 | 10/6/2015 | < 0.37 U | < 0.15 U | < 0.34 U | < 0.19 U | < 0.41 U | < 0.27 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-12.5 | N | N | JC5499 | 10/6/2015 | < 0.37 U | < 0.15 U | < 0.34 U | < 0.19 U | < 0.41 U | < 0.27 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-8.5 | N | N | JC5499 | 10/6/2015 | < 0.37 U | < 0.15 U | < 0.34 U | < 0.19 U | < 0.41 U | < 0.27 U |
| WELL | SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.38 U | < 0.16 U | < 0.59 U | 0.82 J | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | MW7S | MW7S-10.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | MW7S | MW7S-10.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.37 U | < 0.15 U | < 0.34 U | < 0.19 U | < 0.41 U | < 0.27 U |

**Appendix L.3**
**Historical Groundwater Analytical Data - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | CHLOROBROMOMETHANE | CHLORODIBROMOMETHANE | CHLOROETHANE | CHLOROFORM | CHLOROMETHANE | CIS-1,2-DICHLOROETHENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 74-97-5 | 124-48-1 | 75-00-3 | 67-66-3 | 74-87-3 | 156-59-2 |
| | | | | | | | **GWQS** | N/A | 1 | 5 | 70 | N/A | 70 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | MW7S | MW7S-7.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.37 U | < 0.15 U | < 0.34 U | < 0.19 U | < 0.41 U | < 0.27 U |
| WELL | SHALLOW | MW8S | MW8S-20180427 | N | N | JC65066 | 4/27/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | MW8S | MW8S-9.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.37 U | < 0.15 U | < 0.34 U | < 0.19 U | < 0.41 U | < 0.27 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | N | N | JC57752 | 12/20/2017 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | N | N | JC64444 | 4/18/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | N | N | JC65255 | 5/1/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | N | N | JC64571 | 4/19/2018 | < 7.7 U | **< 3.3 U** | **< 12 U** | < 5.7 U | < 11 U | < 10 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-36.0-20151001 | N | N | JC5237A | 10/1/2015 | < 3.7 U | **< 1.5 U** | < 3.4 U | < 1.9 U | < 4.1 U | < 2.7 U |
| WELL | INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | N | N | JC62130 | 3/12/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | 0.88 J |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | N | JC62228 | 3/13/2018 | < 0.38 U | < 0.16 U | < 0.59 U | 0.44 J | < 0.53 U | **174** |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | N | JC62228 | 3/13/2018 | < 0.38 U | < 0.16 U | < 0.59 U | 0.41 J | < 0.53 U | **169** |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | FD | N | JC56729A | 12/6/2017 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | N | N | JC56729A | 12/6/2017 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | N | N | JC51890 | 9/27/2017 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | FD | N | JC60652 | 2/12/2018 | < 0.38 U | < 0.16 U | < 0.59 U | 0.42 J | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | N | N | JC60652 | 2/12/2018 | < 0.38 U | < 0.16 U | < 0.59 U | 0.42 J | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | N | N | JC65066 | 4/27/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | N | N | JC64643 | 4/20/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | N | N | JC57638 | 12/19/2017 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | N | N | JC57501A | 12/15/2017 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | N | N | JC58670 | 1/11/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.38 U | < 0.16 U | < 0.59 U | 0.71 J | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.38 U | < 0.16 U | < 0.59 U | 0.37 J | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.38 U | < 0.16 U | < 0.59 U | 0.43 J | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.38 U | < 0.16 U | < 0.59 U | 0.55 J | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.38 U | < 0.16 U | < 0.59 U | 1.1 | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.38 U | < 0.16 U | < 0.59 U | 1.1 | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.38 U | < 0.16 U | < 0.59 U | 1.3 | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.38 U | < 0.16 U | < 0.59 U | 0.88 J | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.77 U | < 0.33 U | < 1.2 U | < 0.57 U | < 1.1 U | < 1.0 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | 2.2 |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | 1.7 |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | 2.7 |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | 2.4 |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | FD | N | JC67069 | 5/31/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |

**Appendix L.3**
**Historical Groundwater Analytical Data - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **Analyte** | CHLOROBROMOMETHANE | CHLORODIBROMOMETHANE | CHLOROETHANE | CHLOROFORM | CHLOROMETHANE | CIS-1,2-DICHLOROETHENE |
| | | | | | | | **CAS RN** | 74-97-5 | 124-48-1 | 75-00-3 | 67-66-3 | 74-87-3 | 156-59-2 |
| | | | | | | | **GWQS** | N/A | 1 | 5 | 70 | N/A | 70 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | 0.88 J |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | 1.3 |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | N | N | JC57169 | 12/12/2017 | < 3.8 U | **< 1.6 U** | **< 5.9 U** | < 2.9 U | < 5.3 U | < 5.0 U |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | N | N | JC57169 | 12/12/2017 | < 9.6 U | **< 4.1 U** | **< 15 U** | < 7.2 U | < 13 U | < 12 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | N | N | JC64571 | 4/19/2018 | < 1.9 U | < 0.82 U | < 3.0 U | < 1.4 U | < 2.7 U | < 2.5 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | N | N | JC64901 | 4/25/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-30.5 | N | N | JC5499 | 10/6/2015 | < 0.37 U | < 0.15 U | < 0.34 U | < 0.19 U | < 0.41 U | < 0.27 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | 3.5 |
| WELL | INTERMEDIATE | MW7D | MW7D-41.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | 3.4 |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930X | FD | N | JC5098A | 9/30/2015 | < 0.37 U | < 0.15 U | < 0.34 U | < 0.19 U | < 0.41 U | 1.5 |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.37 U | < 0.15 U | < 0.34 U | < 0.19 U | < 0.41 U | 1.8 |
| WELL | INTERMEDIATE | MW7D | MW7D-40.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.37 U | < 0.15 U | < 0.34 U | < 0.19 U | < 0.41 U | 1.4 |
| WELL | INTERMEDIATE | MW8D | MW8D-45.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425X | FD | N | JC64901 | 4/25/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | INTERMEDIATE | MW8D | MW8D-46.5-20150929 | N | N | JC4976A | 9/29/2015 | < 0.37 U | < 0.15 U | < 0.34 U | < 0.19 U | < 0.41 U | < 0.27 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.5-20150929 | N | N | JC4976A | 9/29/2015 | < 1.9 U | < 0.77 U | < 1.7 U | < 0.94 U | < 2.0 U | < 1.4 U |
| WELL | DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | N | N | JC65066 | 4/27/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-20180419 | N | N | JC64571 | 4/19/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-78.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.37 U | < 0.15 U | < 0.34 U | < 0.19 U | < 0.41 U | < 0.27 U |
| WELL | DEEP | 114-MW25C-2 | 114-MW25C-20180313 | N | N | JC62228 | 3/13/2018 | < 3.8 U | **< 1.6 U** | **< 5.9 UJ** | < 2.9 U | < 5.3 U | **100** |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | N | N | JC57943A | 12/22/2017 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | N | N | JC57943A | 12/22/2017 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| WELL | DEEP | MW8F | MW8F-20180425 | N | N | JC64901 | 4/25/2018 | < 0.38 U | < 0.16 U | < 0.59 U | 0.44 J | < 0.53 U | < 0.50 U |
| WELL | DEEP | MW8F | MW8F-82.0-20151001 | N | N | JC5237A | 10/1/2015 | < 0.37 U | < 0.15 U | < 0.34 U | < 0.19 U | < 0.41 U | < 0.27 U |
| WELL | DEEP | MW8F | MW8F-79.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.37 U | < 0.15 U | < 0.34 U | < 0.19 U | < 0.41 U | < 0.27 U |
| WELL | DEEP | MW-CR-3D | MW-CR-3D-20180418 | N | N | JC64444 | 4/18/2018 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-46.0-49.5 | N | N | JC53234 | 10/16/2017 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-40.0-44.0 | N | N | JC53234 | 10/16/2017 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-32.0-36.0 | N | N | JC53234 | 10/16/2017 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-24.0-28.0 | N | N | JC53234 | 10/16/2017 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-36.0-40.0 | N | N | JC54569A | 11/2/2017 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-30.0-34.0 | N | N | JC54569A | 11/2/2017 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-22.0-26.0 | N | N | JC54569A | 11/2/2017 | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| SOILBORE | N/A | DNAPL-S1 | 137-S1-GW | N | N | JC55721 | 11/17/2017 | < 0.38 U | 1.0 | < 0.59 U | 24.0 | < 0.53 U | < 0.50 U |
| SOILBORE | N/A | DNAPL-W1 | 137-W1-GW | N | N | JC55721 | 11/17/2017 | < 0.96 U | < 0.41 U | < 1.5 U | 23.4 | < 1.3 U | < 1.2 U |

**Appendix L.3**
**Historical Groundwater Analytical Data - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **Analyte** | CIS-1,3-DICHLOROPROPENE | CYCLOHEXANE | DICHLORODIFLUOROMETHANE | DICHLOROMETHANE | ETHYLBENZENE | ISOPROPYLBENZENE |
| | | | | | | | **CAS RN** | 10061-01-5 | 110-82-7 | 75-71-8 | 75-09-2 | 100-41-4 | 98-82-8 |
| | | | | | | | **GWQS** | N/A | N/A | 1000 | 3 | 700 | 700 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-8.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | 80.6 | 8.9 |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | 54.5 | 6.8 |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-12.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.21 U | < 0.28 U | < 0.90 U | < 0.73 U | 59.0 | 7.4 |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-10.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.21 U | < 0.28 U | < 0.90 U | < 0.73 U | 50.5 | 6.3 |
| WELL | SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | N | N | JC65325 | 5/2/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | SHALLOW | 114-MW25A | 114-MW25A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | N | N | JC57565 | 12/18/2017 | < 2.5 U | < 6.3 U | < 19 U | **< 10 U** | < 2.2 U | 2.6 J |
| WELL | SHALLOW | 114-MW27A | 114-MW27A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | N | N | JC57565 | 12/18/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | N | N | JC56729A | 12/6/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | N | N | JC56859A | 12/7/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927-X | FD | N | JC51890 | 9/27/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927 | N | N | JC51890 | 9/27/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | SHALLOW | 114-MW37A | 114-MW37A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | N | N | JC56504A | 12/4/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | SHALLOW | 114-MW41A | 114-MW41A-20180420 | N | N | JC64643 | 4/20/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | 2.1 | 0.41 J |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | 2.1 | 0.37 J |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | 1.9 | 0.40 J |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | 395 | 10 |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | 433 | 11.2 |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | N | N | JC51736 | 9/25/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | 0.43 J |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | 2.8 | 1.9 |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | 1.6 | 1.6 |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | 14.5 | 1.4 |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | 10.5 | 0.95 J |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | 5.9 | 0.79 J |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.7 | N | N | JC5499 | 10/6/2015 | < 0.21 U | < 0.28 U | < 0.90 U | < 0.73 U | 0.27 J | < 0.23 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-12.5 | N | N | JC5499 | 10/6/2015 | < 0.21 U | < 0.28 U | < 0.90 U | < 0.73 U | < 0.27 U | < 0.23 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-8.5 | N | N | JC5499 | 10/6/2015 | < 0.21 U | < 0.28 U | < 0.90 U | < 0.73 U | < 0.27 U | < 0.23 U |
| WELL | SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | 0.31 J | < 0.25 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | 0.38 J | < 0.25 U |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | SHALLOW | MW7S | MW7S-10.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | SHALLOW | MW7S | MW7S-10.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.21 U | < 0.28 U | < 0.90 U | < 0.73 U | < 0.27 U | < 0.23 U |

**Appendix L.3**
**Historical Groundwater Analytical Data - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | **Analyte** | CIS-1,3-DICHLOROPROPENE | CYCLOHEXANE | DICHLORODIFLUOROMETHANE | DICHLOROMETHANE | ETHYLBENZENE | ISOPROPYLBENZENE |
| | | | | | | **CAS RN** | 10061-01-5 | 110-82-7 | 75-71-8 | 75-09-2 | 100-41-4 | 98-82-8 |
| | | | | | | **GWQS** | N/A | N/A | 1000 | 3 | 700 | 700 |
| | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | MW7S | MW7S-7.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.21 U | < 0.28 U | < 0.90 U | < 0.73 U | < 0.27 U | < 0.23 U |
| WELL | SHALLOW | MW8S | MW8S-20180427 | N | N | JC65066 | 4/27/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | SHALLOW | MW8S | MW8S-9.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.21 U | < 0.28 U | < 0.90 U | < 0.73 U | < 0.27 U | < 0.23 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | 21.4 | < 0.25 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | 20.6 | < 0.25 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | 17.2 | < 0.25 U |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | N | N | JC57752 | 12/20/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | 1.4 | < 0.25 U |
| WELL | INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | N | N | JC64444 | 4/18/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | N | N | JC65255 | 5/1/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | N | N | JC64571 | 4/19/2018 | < 5.0 U | < 13 U | < 37 U | **< 20 U** | **1760** | 117 |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-36.0-20151001 | N | N | JC5237A | 10/1/2015 | < 2.1 U | 3.7 J | < 9.0 U | **< 7.3 U** | **1990** | 108 |
| WELL | INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | N | N | JC62130 | 3/12/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | N | JC62228 | 3/13/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | N | JC62228 | 3/13/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | FD | N | JC56729A | 12/6/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | N | N | JC56729A | 12/6/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | N | N | JC51890 | 9/27/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | FD | N | JC60652 | 2/12/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | N | N | JC60652 | 2/12/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | N | N | JC65066 | 4/27/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | N | N | JC64643 | 4/20/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | N | N | JC57638 | 12/19/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | N | N | JC57501A | 12/15/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | N | N | JC58670 | 1/11/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | 0.37 J | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | 0.41 J | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | 0.60 J | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | 0.70 J | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.50 U | < 1.3 U | < 3.7 U | < 2.0 U | 47.4 | 4.1 |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | 59.8 | 5.6 |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.25 U | 3.1 J | < 1.9 U | < 1.0 U | 159 | 49.6 |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.25 U | 2.8 J | < 1.9 U | < 1.0 U | 127 | 47.8 |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.25 U | 0.66 J | < 1.9 U | < 1.0 U | 39.1 | 14.0 |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.25 U | 0.65 J | < 1.9 U | < 1.0 U | 39.9 | 13.9 |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | FD | N | JC67069 | 5/31/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |

**Appendix L.3**
**Historical Groundwater Analytical Data - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **Analyte** | CIS-1,3-DICHLOROPROPENE | CYCLOHEXANE | DICHLORODIFLUOROMETHANE | DICHLOROMETHANE | ETHYLBENZENE | ISOPROPYLBENZENE |
| | | | | | | | **CAS RN** | 10061-01-5 | 110-82-7 | 75-71-8 | 75-09-2 | 100-41-4 | 98-82-8 |
| | | | | | | | **GWQS** | N/A | N/A | 1000 | 3 | 700 | 700 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | 40.6 | 55.4 |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.25 U | 0.65 J | < 1.9 U | < 1.0 U | 57.7 | 67.9 |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | N | N | JC57169 | 12/12/2017 | < 2.5 U | < 6.3 U | < 19 U | **< 10 U** | 90.2 | 30.2 |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | N | N | JC57169 | 12/12/2017 | < 6.3 UJ | < 16 U | < 47 U | **< 25 U** | 85.8 | 32.5 |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | N | N | JC64571 | 4/19/2018 | < 1.3 U | < 3.2 U | < 9.3 U | **< 5.0 U** | 108 | 52.9 |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | 146 | 15.6 |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | N | N | JC64901 | 4/25/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-30.5 | N | N | JC5499 | 10/6/2015 | < 0.21 U | < 0.28 U | < 0.90 U | < 0.73 U | < 0.27 U | < 0.23 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | MW7D | MW7D-41.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930X | FD | N | JC5098A | 9/30/2015 | < 0.21 U | < 0.28 U | < 0.90 U | < 0.73 U | < 0.27 U | < 0.23 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.21 U | < 0.28 U | < 0.90 U | < 0.73 U | < 0.27 U | < 0.23 U |
| WELL | INTERMEDIATE | MW7D | MW7D-40.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.21 U | < 0.28 U | < 0.90 U | < 0.73 U | < 0.27 U | < 0.23 U |
| WELL | INTERMEDIATE | MW8D | MW8D-45.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | 0.86 J | < 0.25 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425X | FD | N | JC64901 | 4/25/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | 33.0 J | 3.2 J |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | 21.2 J | 2.2 J |
| WELL | INTERMEDIATE | MW8D | MW8D-46.5-20150929 | N | N | JC4976A | 9/29/2015 | < 0.21 U | < 0.28 U | < 0.90 U | < 0.73 U | 17.4 | 0.93 J |
| WELL | INTERMEDIATE | MW8D | MW8D-41.5-20150929 | N | N | JC4976A | 9/29/2015 | < 1.0 U | < 1.4 U | < 4.5 U | **< 3.6 U** | 122 | 5.7 |
| WELL | DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | N | N | JC65066 | 4/27/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-20180419 | N | N | JC64571 | 4/19/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | 0.31 J | < 0.25 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-78.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.21 U | < 0.28 U | < 0.90 U | < 0.73 U | 0.45 J | < 0.23 U |
| WELL | DEEP | 114-MW25C-2 | 114-MW25C-20180313 | N | N | JC62228 | 3/13/2018 | < 2.5 U | < 6.3 U | < 19 U | **< 10 U** | 165 | 12.7 |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | N | N | JC57943A | 12/22/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | 0.65 J | < 0.25 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | N | N | JC57943A | 12/22/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | 0.66 J | < 0.25 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | 0.61 J | < 0.25 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | 0.70 J | < 0.25 U |
| WELL | DEEP | MW8F | MW8F-20180425 | N | N | JC64901 | 4/25/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| WELL | DEEP | MW8F | MW8F-82.0-20151001 | N | N | JC5237A | 10/1/2015 | < 0.21 U | < 0.28 U | < 0.90 U | < 0.73 U | < 0.27 U | < 0.23 U |
| WELL | DEEP | MW8F | MW8F-79.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.21 U | < 0.28 U | < 0.90 U | < 0.73 U | < 0.27 U | < 0.23 U |
| WELL | DEEP | MW-CR-3D | MW-CR-3D-20180418 | N | N | JC64444 | 4/18/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-46.0-49.5 | N | N | JC53234 | 10/16/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-40.0-44.0 | N | N | JC53234 | 10/16/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-32.0-36.0 | N | N | JC53234 | 10/16/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-24.0-28.0 | N | N | JC53234 | 10/16/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | 3.1 |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-36.0-40.0 | N | N | JC54569A | 11/2/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-30.0-34.0 | N | N | JC54569A | 11/2/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-22.0-26.0 | N | N | JC54569A | 11/2/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | 51.0 | 14.8 |
| SOILBORE | N/A | DNAPL-S1 | 137-S1-GW | N | N | JC55721 | 11/17/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | 0.63 J | < 0.25 U |
| SOILBORE | N/A | DNAPL-W1 | 137-W1-GW | N | N | JC55721 | 11/17/2017 | < 0.63 U | < 1.6 U | < 4.7 U | < 2.5 U | 427 | 33.8 |

**Appendix L.3**
**Historical Groundwater Analytical Data - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | M+P-XYLENE | M-DICHLOROBENZENE | METHYL ACETATE | METHYL N-BUTYL KETONE | METHYLCYCLOHEXANE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | M+P-XYLENE | 541-73-1 | 79-20-9 | 591-78-6 | 108-87-2 |
| | | | | | | | **GWQS** | N/A | 600 | 7000 | 300 | N/A |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-8.0-20180420 | N | N | JC64643 | 4/20/2018 | 46.1 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-11.0-20180420 | N | N | JC64643 | 4/20/2018 | 30.5 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-12.5-20151001 | N | N | JC5237A | 10/1/2015 | 43.2 | < 0.23 U | < 1.9 U | < 1.7 U | < 0.22 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-10.5-20151001 | N | N | JC5237A | 10/1/2015 | 36.7 | < 0.23 U | < 1.9 U | < 1.7 U | < 0.22 U |
| WELL | SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | N | N | JC65325 | 5/2/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 114-MW25A | 114-MW25A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | N | N | JC57565 | 12/18/2017 | < 4.3 U | 418 | < 31 U | < 33 U | < 18 U |
| WELL | SHALLOW | 114-MW27A | 114-MW27A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | N | N | JC57565 | 12/18/2017 | < 0.43 U | 1.4 | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | N | N | JC56729A | 12/6/2017 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | N | N | JC56859A | 12/7/2017 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927-X | FD | N | JC51890 | 9/27/2017 | < 0.43 U | 5.3 | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927 | N | N | JC51890 | 9/27/2017 | < 0.43 U | 5.0 | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 114-MW37A | 114-MW37A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | N | N | JC56504A | 12/4/2017 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 114-MW41A | 114-MW41A-20180420 | N | N | JC64643 | 4/20/2018 | 4.2 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | N | N | JC65178 | 4/30/2018 | 0.57 J | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | N | N | JC65178 | 4/30/2018 | 0.57 J | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.43 U | 0.58 J | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | N | N | JC64643 | 4/20/2018 | 432 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | N | N | JC64643 | 4/20/2018 | 482 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | N | N | JC51736 | 9/25/2017 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | N | N | JC57169 | 12/12/2017 | 1.3 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | N | N | JC64571 | 4/19/2018 | 3.0 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | N | N | JC64571 | 4/19/2018 | 1.2 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.7 | N | N | JC5499 | 10/6/2015 | < 0.38 U | < 0.23 U | < 1.9 U | < 1.7 U | < 0.22 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-12.5 | N | N | JC5499 | 10/6/2015 | < 0.38 U | < 0.23 U | < 1.9 U | < 1.7 U | < 0.22 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-8.5 | N | N | JC5499 | 10/6/2015 | < 0.38 U | < 0.23 U | < 1.9 U | < 1.7 U | < 0.22 U |
| WELL | SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | MW7S | MW7S-10.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | MW7S | MW7S-10.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.38 U | < 0.23 U | < 1.9 U | < 1.7 U | < 0.22 U |

**Appendix L.3**
**Historical Groundwater Analytical Data - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | M+P-XYLENE | M-DICHLOROBENZENE | METHYL ACETATE | METHYL N-BUTYL KETONE | METHYLCYCLOHEXANE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | M+P-XYLENE | 541-73-1 | 79-20-9 | 591-78-6 | 108-87-2 |
| | | | | | | | **GWQS** | N/A | 600 | 7000 | 300 | N/A |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | MW7S | MW7S-7.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.38 U | < 0.23 U | < 1.9 U | < 1.7 U | < 0.22 U |
| WELL | SHALLOW | MW8S | MW8S-20180427 | N | N | JC65066 | 4/27/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | MW8S | MW8S-9.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.38 U | < 0.23 U | < 1.9 U | < 1.7 U | < 0.22 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | N | N | JC64444 | 4/18/2018 | 1.3 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | N | N | JC64444 | 4/18/2018 | 1.3 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | N | N | JC64444 | 4/18/2018 | 1.4 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | N | N | JC57752 | 12/20/2017 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | N | N | JC64444 | 4/18/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | N | N | JC65255 | 5/1/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | N | N | JC64571 | 4/19/2018 | 1620 | < 10 U | < 61 U | < 65 U | < 37 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-36.0-20151001 | N | N | JC5237A | 10/1/2015 | 253 | < 2.3 U | < 19 U | < 17 U | 2.6 J |
| WELL | INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | N | N | JC62130 | 3/12/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | N | JC62228 | 3/13/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | N | JC62228 | 3/13/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | FD | N | JC56729A | 12/6/2017 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | N | N | JC56729A | 12/6/2017 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | N | N | JC51890 | 9/27/2017 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | FD | N | JC60652 | 2/12/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | N | N | JC60652 | 2/12/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | N | N | JC65066 | 4/27/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | N | N | JC64643 | 4/20/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | N | N | JC57638 | 12/19/2017 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | N | N | JC57501A | 12/15/2017 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | N | N | JC58670 | 1/11/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | N | N | JC58028A | 12/26/2017 | 0.47 J | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | N | N | JC58028A | 12/26/2017 | 0.60 J | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | N | N | JC67069 | 5/31/2018 | 314 | < 1.0 U | < 6.1 U | < 6.5 U | < 3.7 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | N | N | JC67069 | 5/31/2018 | 379 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | N | N | JC65178 | 4/30/2018 | 3.5 | 0.56 J | < 3.1 U | < 3.3 U | 4.8 J |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | N | N | JC65178 | 4/30/2018 | 2.3 | < 0.50 U | < 3.1 U | < 3.3 U | 4.4 J |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.43 U | 2.8 | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.43 U | 2.6 | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | N | N | JC64643 | 4/20/2018 | 1.0 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | N | N | JC64643 | 4/20/2018 | 1.2 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | FD | N | JC67069 | 5/31/2018 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |

**Appendix L.3**
**Historical Groundwater Analytical Data - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Analyte | M+P-XYLENE | M-DICHLOROBENZENE | METHYL ACETATE | METHYL N-BUTYL KETONE | METHYLCYCLOHEXANE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | CAS RN | M+P-XYLENE | 541-73-1 | 79-20-9 | 591-78-6 | 108-87-2 |
| | | | | | | | | GWQS | N/A | 600 | 7000 | 300 | N/A |
| | | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | N | N | JC67069 | 5/31/2018 | | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | N | N | JC57276 | 12/13/2017 | | 94.4 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | N | N | JC57276 | 12/13/2017 | | 157 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | N | N | JC57169 | 12/12/2017 | | 344 | < 5.0 U | < 31 U | < 33 U | < 18 U |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | N | N | JC57169 | 12/12/2017 | | 424 | < 13 U | < 77 U | < 81 U | < 46 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | N | N | JC64571 | 4/19/2018 | | 77.1 | < 2.5 U | < 15 U | < 16 U | < 9.2 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | N | N | JC64571 | 4/19/2018 | | 6.7 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | N | N | JC64763 | 4/23/2018 | | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | N | N | JC64763 | 4/23/2018 | | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | N | N | JC64901 | 4/25/2018 | | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-30.5 | N | N | JC5499 | 10/6/2015 | | < 0.38 U | < 0.23 U | < 1.9 U | < 1.7 U | < 0.22 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | N | N | JC67069 | 5/31/2018 | | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | N | N | JC67069 | 5/31/2018 | | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.0-20180423 | N | N | JC64763 | 4/23/2018 | | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | MW7D | MW7D-41.0-20180423 | N | N | JC64763 | 4/23/2018 | | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930X | FD | N | JC5098A | 9/30/2015 | | < 0.38 U | < 0.23 U | < 1.9 U | < 1.7 U | < 0.22 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930 | N | N | JC5098A | 9/30/2015 | | < 0.38 U | < 0.23 U | < 1.9 U | < 1.7 U | < 0.22 U |
| WELL | INTERMEDIATE | MW7D | MW7D-40.5-20150930 | N | N | JC5098A | 9/30/2015 | | < 0.38 U | < 0.23 U | < 1.9 U | < 1.7 U | < 0.22 U |
| WELL | INTERMEDIATE | MW8D | MW8D-45.0-20180425 | N | N | JC64901 | 4/25/2018 | | 1.4 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425X | FD | N | JC64901 | 4/25/2018 | | 78.5 J | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425 | N | N | JC64901 | 4/25/2018 | | 55.9 J | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | INTERMEDIATE | MW8D | MW8D-46.5-20150929 | N | N | JC4976A | 9/29/2015 | | 8.5 | < 0.23 U | < 1.9 U | < 1.7 U | < 0.22 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.5-20150929 | N | N | JC4976A | 9/29/2015 | | 116 | < 1.1 U | < 9.4 U | < 8.7 U | < 1.1 U |
| WELL | DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | N | N | JC65066 | 4/27/2018 | | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-20180419 | N | N | JC64571 | 4/19/2018 | | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-78.5-20151001 | N | N | JC5237A | 10/1/2015 | | < 0.38 U | < 0.23 U | < 1.9 U | < 1.7 U | < 0.22 U |
| WELL | DEEP | 114-MW25C-2 | 114-MW25C-20180313 | N | N | JC62228 | 3/13/2018 | | 226 | < 5.0 U | < 31 U | < 33 U | < 18 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | N | N | JC57943A | 12/22/2017 | | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | N | N | JC57943A | 12/22/2017 | | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | N | N | JC57820 | 12/21/2017 | | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | N | N | JC57820 | 12/21/2017 | | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | DEEP | MW8F | MW8F-20180425 | N | N | JC64901 | 4/25/2018 | | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| WELL | DEEP | MW8F | MW8F-82.0-20151001 | N | N | JC5237A | 10/1/2015 | | < 0.38 U | < 0.23 U | < 1.9 U | < 1.7 U | < 0.22 U |
| WELL | DEEP | MW8F | MW8F-79.5-20151001 | N | N | JC5237A | 10/1/2015 | | < 0.38 U | < 0.23 U | < 1.9 U | < 1.7 U | < 0.22 U |
| WELL | DEEP | MW-CR-3D | MW-CR-3D-20180418 | N | N | JC64444 | 4/18/2018 | | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-46.0-49.5 | N | N | JC53234 | 10/16/2017 | | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-40.0-44.0 | N | N | JC53234 | 10/16/2017 | | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-32.0-36.0 | N | N | JC53234 | 10/16/2017 | | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-24.0-28.0 | N | N | JC53234 | 10/16/2017 | | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-36.0-40.0 | N | N | JC54569A | 11/2/2017 | | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-30.0-34.0 | N | N | JC54569A | 11/2/2017 | | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-22.0-26.0 | N | N | JC54569A | 11/2/2017 | | 6.0 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SOILBORE | N/A | DNAPL-S1 | 137-S1-GW | N | N | JC55721 | 11/17/2017 | | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SOILBORE | N/A | DNAPL-W1 | 137-W1-GW | N | N | JC55721 | 11/17/2017 | | 351 | < 1.3 U | < 7.7 U | < 8.1 U | < 4.6 U |

**Appendix L.3**
**Historical Groundwater Analytical Data - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | METHYL-TERT-BUTYL ETHER | O-XYLENE | STYRENE (MONOMER) | TETRACHLOROETHENE | TOLUENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 1634-04-4 | 95-47-6 | 100-42-5 | 127-18-4 | 108-88-3 |
| | | | | | | | **GWQS** | 70 | N/A | 100 | 1 | 600 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-8.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.25 U | 47.6 | < 0.24 U | < 0.50 U | 12.8 |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.25 U | 32.5 | < 0.24 U | < 0.50 U | 9.0 |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-12.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.24 U | 37.5 | < 0.27 U | < 0.40 U | 18.7 |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-10.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.24 U | 32.4 | < 0.27 U | < 0.40 U | 15.4 |
| WELL | SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | N | N | JC65325 | 5/2/2018 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | SHALLOW | 114-MW25A | 114-MW25A-20170926 | N | N | JC51824 | 9/26/2017 | 4.9 | < 0.22 U | < 0.24 U | **5.1** | < 0.25 U |
| WELL | SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | N | N | JC57565 | 12/18/2017 | < 2.5 U | < 2.2 U | < 2.4 U | **< 5.0 U** | < 2.5 U |
| WELL | SHALLOW | 114-MW27A | 114-MW27A-20170926 | N | N | JC51824 | 9/26/2017 | 5.4 | < 0.22 U | < 0.24 U | **4.6** | < 0.25 U |
| WELL | SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | N | N | JC57565 | 12/18/2017 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | N | N | JC56729A | 12/6/2017 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | N | N | JC56859A | 12/7/2017 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927-X | FD | N | JC51890 | 9/27/2017 | 0.48 J | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927 | N | N | JC51890 | 9/27/2017 | 0.41 J | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | SHALLOW | 114-MW37A | 114-MW37A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | N | N | JC56504A | 12/4/2017 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | SHALLOW | 114-MW41A | 114-MW41A-20180420 | N | N | JC64643 | 4/20/2018 | < 0.25 U | 1.6 | 0.34 J | **6.5** | 1.3 |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.25 U | 0.53 J | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.25 U | 0.40 J | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.25 U | 291 | < 0.24 U | < 0.50 U | 13.4 |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.25 U | 320 | < 0.24 U | < 0.50 U | 14.4 |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | N | N | JC51736 | 9/25/2017 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.25 U | 7.9 | < 0.24 U | < 0.50 U | 1.1 |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.25 U | 3.7 | < 0.24 U | < 0.50 U | 1.2 |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.25 U | 1.5 | < 0.24 U | < 0.50 U | 0.53 J |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | N | N | JC64986 | 4/26/2018 | 0.71 J | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | N | N | JC64986 | 4/26/2018 | 0.69 J | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | N | N | JC67069 | 5/31/2018 | 2.3 | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.7 | N | N | JC5499 | 10/6/2015 | < 0.24 U | 0.25 J | < 0.27 U | < 0.40 U | 0.34 J |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-12.5 | N | N | JC5499 | 10/6/2015 | < 0.24 U | < 0.17 U | < 0.27 U | < 0.40 U | < 0.16 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-8.5 | N | N | JC5499 | 10/6/2015 | < 0.24 U | < 0.17 U | < 0.27 U | < 0.40 U | < 0.16 U |
| WELL | SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | 0.54 J | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | SHALLOW | MW7S | MW7S-10.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | SHALLOW | MW7S | MW7S-10.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.24 U | < 0.17 U | < 0.27 U | < 0.40 U | 0.25 J |

**Appendix L.3**
**Historical Groundwater Analytical Data - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | METHYL-TERT-BUTYL ETHER | O-XYLENE | STYRENE (MONOMER) | TETRACHLOROETHENE | TOLUENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 1634-04-4 | 95-47-6 | 100-42-5 | 127-18-4 | 108-88-3 |
| | | | | | | | **GWQS** | 70 | N/A | 100 | 1 | 600 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | MW7S | MW7S-7.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.24 U | < 0.17 U | < 0.27 U | < 0.40 U | 0.22 J |
| WELL | SHALLOW | MW8S | MW8S-20180427 | N | N | JC65066 | 4/27/2018 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | SHALLOW | MW8S | MW8S-9.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.24 U | < 0.17 U | < 0.27 U | < 0.40 U | < 0.16 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | N | N | JC64444 | 4/18/2018 | 0.95 J | 1.5 | **132** | < 0.50 U | 5.0 |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | N | N | JC64444 | 4/18/2018 | 1.0 | 1.5 | **135** | < 0.50 U | 5.1 |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | N | N | JC64444 | 4/18/2018 | 1.0 | 1.7 | **144** | < 0.50 U | 5.2 |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | N | N | JC57752 | 12/20/2017 | 0.26 J | < 0.22 U | 1.4 | < 0.50 U | 0.36 J |
| WELL | INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | N | N | JC64444 | 4/18/2018 | 1.5 | < 0.22 U | < 0.24 U | **3.9** | < 0.25 U |
| WELL | INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | N | N | JC65255 | 5/1/2018 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | N | N | JC64571 | 4/19/2018 | < 5.0 U | 1130 | < 4.8 U | **< 10 U** | **2540** |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-36.0-20151001 | N | N | JC5237A | 10/1/2015 | < 2.4 U | 258 | < 2.7 U | **< 4.0 U** | 62.5 |
| WELL | INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | N | N | JC62130 | 3/12/2018 | 2.9 | < 0.22 U | < 0.24 U | **1.4** | < 0.25 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | N | JC62228 | 3/13/2018 | < 0.25 U | < 0.22 U | < 0.24 U | **34.2** | < 0.25 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | N | JC62228 | 3/13/2018 | < 0.25 U | < 0.22 U | < 0.24 U | **30.8** | < 0.25 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | FD | N | JC56729A | 12/6/2017 | 0.44 J | < 0.22 U | < 0.24 U | **3.7** | < 0.25 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | N | N | JC56729A | 12/6/2017 | 0.49 J | < 0.22 U | < 0.24 U | **3.6** | < 0.25 U |
| WELL | INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | N | N | JC51890 | 9/27/2017 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | FD | N | JC60652 | 2/12/2018 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | N | N | JC60652 | 2/12/2018 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | N | N | JC65066 | 4/27/2018 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | N | N | JC64643 | 4/20/2018 | 0.31 J | < 0.22 U | < 0.24 U | 0.67 J | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | N | N | JC57820 | 12/21/2017 | 2.4 | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | N | N | JC57820 | 12/21/2017 | 2.3 | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | N | N | JC57638 | 12/19/2017 | 1.9 | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | N | N | JC57501A | 12/15/2017 | 2.5 | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | N | N | JC58745 | 1/12/2018 | 1.6 | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | N | N | JC58745 | 1/12/2018 | 2.3 | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | N | N | JC58670 | 1/11/2018 | 16.5 | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | N | N | JC58073A | 12/27/2017 | 0.41 J | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.25 U | 0.36 J | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | N | N | JC58028A | 12/26/2017 | 0.36 J | 0.40 J | < 0.24 U | < 0.50 U | 0.29 J |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | N | N | JC58942 | 1/16/2018 | 1.5 | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | N | N | JC58942 | 1/16/2018 | 1.4 | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | N | N | JC58942 | 1/16/2018 | 1.3 | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | N | N | JC58942 | 1/16/2018 | 0.91 J | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.50 U | 187 | **198** | < 1.0 U | 63.6 |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.25 U | 220 | **231** | < 0.50 U | 75.7 |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | N | N | JC65178 | 4/30/2018 | 3.4 | 11.7 | < 0.24 U | < 0.50 U | 3.9 |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | N | N | JC65178 | 4/30/2018 | 2.7 | 6.9 | < 0.24 U | < 0.50 U | 2.8 |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.25 U | < 0.22 U | < 0.24 U | 0.70 J | < 0.25 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.25 U | < 0.22 U | < 0.24 U | 0.74 J | < 0.25 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.25 U | 3.5 | < 0.24 U | < 0.50 U | 3.4 |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.25 U | 3.7 | < 0.24 U | < 0.50 U | 3.7 |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | N | N | JC58670 | 1/11/2018 | 7.3 | < 0.22 U | < 0.24 U | 0.78 J | < 0.25 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | N | N | JC58670 | 1/11/2018 | 5.2 | < 0.22 U | < 0.24 U | 0.70 J | < 0.25 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | N | N | JC67069 | 5/31/2018 | 1.1 | < 0.22 U | < 0.24 U | 1.0 | < 0.25 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | FD | N | JC67069 | 5/31/2018 | 0.84 J | < 0.22 U | < 0.24 U | 0.82 J | < 0.25 U |

**Appendix L.3**
**Historical Groundwater Analytical Data - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **Analyte** | METHYL-TERT-BUTYL ETHER | O-XYLENE | STYRENE (MONOMER) | TETRACHLOROETHENE | TOLUENE |
| | | | | | | | **CAS RN** | 1634-04-4 | 95-47-6 | 100-42-5 | 127-18-4 | 108-88-3 |
| | | | | | | | **GWQS** | 70 | N/A | 100 | 1 | 600 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | N | N | JC67069 | 5/31/2018 | 0.90 J | < 0.22 U | < 0.24 U | 0.82 J | < 0.25 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | N | N | JC57276 | 12/13/2017 | 6.3 | 221 | < 0.24 U | < 0.50 U | 34.6 |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | N | N | JC57276 | 12/13/2017 | 7.5 | 286 | < 0.24 U | < 0.50 U | 41.2 |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | N | N | JC57169 | 12/12/2017 | < 2.5 U | 283 | < 2.4 U | **< 5.0 U** | 35.3 |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | N | N | JC57169 | 12/12/2017 | < 6.3 U | 388 | < 6.1 U | **< 13 U** | 43.5 |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | N | N | JC64571 | 4/19/2018 | < 1.3 U | 95.3 | < 1.2 U | **< 2.5 U** | 22.0 |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.25 U | 11.5 | < 0.24 U | < 0.50 U | 3.4 |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | N | N | JC64901 | 4/25/2018 | 2.9 | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-30.5 | N | N | JC5499 | 10/6/2015 | < 0.24 U | < 0.17 U | < 0.27 U | < 0.40 U | < 0.16 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | N | N | JC67069 | 5/31/2018 | 2.3 | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.0-20180423 | N | N | JC64763 | 4/23/2018 | 8.4 | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | INTERMEDIATE | MW7D | MW7D-41.0-20180423 | N | N | JC64763 | 4/23/2018 | 8.0 | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930X | FD | N | JC5098A | 9/30/2015 | 5.7 | < 0.17 U | < 0.27 U | < 0.40 U | < 0.16 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930 | N | N | JC5098A | 9/30/2015 | 7.3 | < 0.17 U | < 0.27 U | < 0.40 U | < 0.16 U |
| WELL | INTERMEDIATE | MW7D | MW7D-40.5-20150930 | N | N | JC5098A | 9/30/2015 | 6.1 | < 0.17 U | < 0.27 U | < 0.40 U | < 0.16 U |
| WELL | INTERMEDIATE | MW8D | MW8D-45.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.25 U | 0.64 J | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425X | FD | N | JC64901 | 4/25/2018 | < 0.25 U | 37.2 J | < 0.24 U | < 0.50 U | 6.3 J |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.25 U | 26.7 J | < 0.24 U | < 0.50 U | 4.2 J |
| WELL | INTERMEDIATE | MW8D | MW8D-46.5-20150929 | N | N | JC4976A | 9/29/2015 | < 0.24 U | 3.9 | < 0.27 U | < 0.40 U | 2.3 |
| WELL | INTERMEDIATE | MW8D | MW8D-41.5-20150929 | N | N | JC4976A | 9/29/2015 | < 1.2 U | 51.7 | < 1.4 U | **< 2.0 U** | 29.2 |
| WELL | DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | N | N | JC65066 | 4/27/2018 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-20180419 | N | N | JC64571 | 4/19/2018 | < 0.25 U | 0.52 J | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-78.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.24 U | < 0.17 U | < 0.27 U | < 0.40 U | < 0.16 U |
| WELL | DEEP | 114-MW25C-2 | 114-MW25C-20180313 | N | N | JC62228 | 3/13/2018 | < 2.5 U | 159 J- | 80.9 | **41.5** | 153 |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | N | N | JC57943A | 12/22/2017 | 3.7 | 0.49 J | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | N | N | JC57943A | 12/22/2017 | 3.4 | 0.52 J | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | N | N | JC57820 | 12/21/2017 | 3.3 | 0.53 J | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | N | N | JC57820 | 12/21/2017 | 3.3 | 0.57 J | < 0.24 U | < 0.50 U | 0.26 J |
| WELL | DEEP | MW8F | MW8F-20180425 | N | N | JC64901 | 4/25/2018 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| WELL | DEEP | MW8F | MW8F-82.0-20151001 | N | N | JC5237A | 10/1/2015 | < 0.24 U | < 0.17 U | < 0.27 U | < 0.40 U | < 0.16 U |
| WELL | DEEP | MW8F | MW8F-79.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.24 U | < 0.17 U | < 0.27 U | < 0.40 U | < 0.16 U |
| WELL | DEEP | MW-CR-3D | MW-CR-3D-20180418 | N | N | JC64444 | 4/18/2018 | 0.82 J | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-46.0-49.5 | N | N | JC53234 | 10/16/2017 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-40.0-44.0 | N | N | JC53234 | 10/16/2017 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-32.0-36.0 | N | N | JC53234 | 10/16/2017 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-24.0-28.0 | N | N | JC53234 | 10/16/2017 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-36.0-40.0 | N | N | JC54569A | 11/2/2017 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-30.0-34.0 | N | N | JC54569A | 11/2/2017 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-22.0-26.0 | N | N | JC54569A | 11/2/2017 | < 0.25 U | 31.0 | < 0.24 U | < 0.50 U | 3.7 |
| SOILBORE | N/A | DNAPL-S1 | 137-S1-GW | N | N | JC55721 | 11/17/2017 | < 0.25 U | 0.28 J | < 0.24 U | < 0.50 U | 1.4 |
| SOILBORE | N/A | DNAPL-W1 | 137-W1-GW | N | N | JC55721 | 11/17/2017 | < 0.63 U | 208 | 13.0 | **< 1.3 U** | 353 |

**Appendix L.3**
**Historical Groundwater Analytical Data - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | TRANS-1,2-DICHLOROETHENE | TRANS-1,3-DICHLOROPROPENE | TRIBROMOMETHANE | TRICHLOROETHYLENE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 156-60-5 | 10061-02-6 | 75-25-2 | 79-01-6 |
| | | | | | | | **GWQS** | 100 | N/A | 4 | 1 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-8.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-12.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.65 U | < 0.19 U | < 0.23 U | < 0.22 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-10.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.65 U | < 0.19 U | < 0.23 U | < 0.22 U |
| WELL | SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | N | N | JC65325 | 5/2/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | 114-MW25A | 114-MW25A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.40 U | < 0.22 U | < 0.42 U | **2.6** |
| WELL | SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | N | N | JC57565 | 12/18/2017 | < 4.0 U | < 2.2 U | **< 4.2 U** | **< 2.7 U** |
| WELL | SHALLOW | 114-MW27A | 114-MW27A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.40 U | < 0.22 U | < 0.42 U | **2.4** |
| WELL | SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | N | N | JC57565 | 12/18/2017 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | N | N | JC56729A | 12/6/2017 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | N | N | JC56859A | 12/7/2017 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927-X | FD | N | JC51890 | 9/27/2017 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927 | N | N | JC51890 | 9/27/2017 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | 114-MW37A | 114-MW37A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | N | N | JC56504A | 12/4/2017 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | 114-MW41A | 114-MW41A-20180420 | N | N | JC64643 | 4/20/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | N | N | JC51736 | 9/25/2017 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.7 | N | N | JC5499 | 10/6/2015 | < 0.65 U | < 0.19 U | < 0.23 U | < 0.22 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-12.5 | N | N | JC5499 | 10/6/2015 | < 0.65 U | < 0.19 U | < 0.23 U | < 0.22 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-8.5 | N | N | JC5499 | 10/6/2015 | < 0.65 U | < 0.19 U | < 0.23 U | < 0.22 U |
| WELL | SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | MW7S | MW7S-10.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | MW7S | MW7S-10.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.65 U | < 0.19 U | < 0.23 U | < 0.22 U |

**Appendix L.3**
**Historical Groundwater Analytical Data - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | TRANS-1,2-DICHLOROETHENE | TRANS-1,3-DICHLOROPROPENE | TRIBROMOMETHANE | TRICHLOROETHYLENE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 156-60-5 | 10061-02-6 | 75-25-2 | 79-01-6 |
| | | | | | | | **GWQS** | 100 | N/A | 4 | 1 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | MW7S | MW7S-7.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.65 U | < 0.19 U | < 0.23 U | < 0.22 U |
| WELL | SHALLOW | MW8S | MW8S-20180427 | N | N | JC65066 | 4/27/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | SHALLOW | MW8S | MW8S-9.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.65 U | < 0.19 U | < 0.23 U | < 0.22 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.40 U | < 0.22 U | < 0.42 U | 0.38 J |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.40 U | < 0.22 U | < 0.42 U | 0.42 J |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.40 U | < 0.22 U | < 0.42 U | 0.54 J |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | N | N | JC57752 | 12/20/2017 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | N | N | JC64444 | 4/18/2018 | < 0.40 U | < 0.22 U | < 0.42 U | 0.75 J |
| WELL | INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | N | N | JC65255 | 5/1/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | N | N | JC64571 | 4/19/2018 | < 8.0 U | < 4.3 U | **< 8.5 U** | **< 5.3 U** |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-36.0-20151001 | N | N | JC5237A | 10/1/2015 | < 6.5 U | < 1.9 U | < 2.3 U | **< 2.2 U** |
| WELL | INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | N | N | JC62130 | 3/12/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | N | JC62228 | 3/13/2018 | 1.3 | < 0.22 U | < 0.42 U | **20.0** |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | N | JC62228 | 3/13/2018 | 1.3 | < 0.22 U | < 0.42 U | **19.5** |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | FD | N | JC56729A | 12/6/2017 | < 0.40 U | < 0.22 U | < 0.42 U | 0.62 J |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | N | N | JC56729A | 12/6/2017 | < 0.40 U | < 0.22 U | < 0.42 U | 0.57 J |
| WELL | INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | N | N | JC51890 | 9/27/2017 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | FD | N | JC60652 | 2/12/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | N | N | JC60652 | 2/12/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | N | N | JC65066 | 4/27/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | N | N | JC64643 | 4/20/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | N | N | JC57638 | 12/19/2017 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | N | N | JC57501A | 12/15/2017 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | N | N | JC58670 | 1/11/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.80 U | < 0.43 U | < 0.85 U | < 0.53 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | N | N | JC65178 | 4/30/2018 | 0.51 J | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | N | N | JC65178 | 4/30/2018 | 0.48 J | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.40 U | < 0.22 U | < 0.42 U | **3.3** |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.40 U | < 0.22 U | < 0.42 U | **3.4** |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | FD | N | JC67069 | 5/31/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |

# Appendix L.3

# Historical Groundwater Analytical Data - VOCs

**Appendix L.3**
**Historical Groundwater Analytical Data - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | TRANS-1,2-DICHLOROETHENE | TRANS-1,3-DICHLOROPROPENE | TRIBROMOMETHANE | TRICHLOROETHYLENE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 156-60-5 | 10061-02-6 | 75-25-2 | 79-01-6 |
| | | | | | | | **GWQS** | 100 | N/A | 4 | 1 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.40 U | < 0.22 U | < 0.42 U | 0.28 J |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | N | N | JC57169 | 12/12/2017 | < 4.0 U | < 2.2 U | **< 4.2 U** | **< 2.7 U** |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | N | N | JC57169 | 12/12/2017 | < 10 U | < 5.4 U | **< 11 U** | **< 6.7 U** |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | N | N | JC64571 | 4/19/2018 | < 2.0 U | < 1.1 U | < 2.1 U | **< 1.3 U** |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | N | N | JC64901 | 4/25/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-30.5 | N | N | JC5499 | 10/6/2015 | < 0.65 U | < 0.19 U | < 0.23 U | < 0.22 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.0-20180423 | N | N | JC64763 | 4/23/2018 | 2.3 | < 0.22 U | < 0.42 U | **2.5** |
| WELL | INTERMEDIATE | MW7D | MW7D-41.0-20180423 | N | N | JC64763 | 4/23/2018 | 1.9 | < 0.22 U | < 0.42 U | **2.4** |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930X | FD | N | JC5098A | 9/30/2015 | 1.1 | < 0.19 U | < 0.23 U | **3.1** |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930 | N | N | JC5098A | 9/30/2015 | 1.3 | < 0.19 U | < 0.23 U | **3.6** |
| WELL | INTERMEDIATE | MW7D | MW7D-40.5-20150930 | N | N | JC5098A | 9/30/2015 | 0.99 J | < 0.19 U | < 0.23 U | **3.3** |
| WELL | INTERMEDIATE | MW8D | MW8D-45.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425X | FD | N | JC64901 | 4/25/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | INTERMEDIATE | MW8D | MW8D-46.5-20150929 | N | N | JC4976A | 9/29/2015 | < 0.65 U | < 0.19 U | < 0.23 U | < 0.22 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.5-20150929 | N | N | JC4976A | 9/29/2015 | < 3.2 U | < 0.93 U | < 1.2 U | **< 1.1 U** |
| WELL | DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | N | N | JC65066 | 4/27/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-20180419 | N | N | JC64571 | 4/19/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-78.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.65 U | < 0.19 U | < 0.23 U | < 0.22 U |
| WELL | DEEP | 114-MW25C-2 | 114-MW25C-20180313 | N | N | JC62228 | 3/13/2018 | 5.8 J | < 2.2 U | **< 4.2 U** | **21.7** |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | N | N | JC57943A | 12/22/2017 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | N | N | JC57943A | 12/22/2017 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | DEEP | MW8F | MW8F-20180425 | N | N | JC64901 | 4/25/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| WELL | DEEP | MW8F | MW8F-82.0-20151001 | N | N | JC5237A | 10/1/2015 | < 0.65 U | < 0.19 U | < 0.23 U | < 0.22 U |
| WELL | DEEP | MW8F | MW8F-79.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.65 U | < 0.19 U | < 0.23 U | < 0.22 U |
| WELL | DEEP | MW-CR-3D | MW-CR-3D-20180418 | N | N | JC64444 | 4/18/2018 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-46.0-49.5 | N | N | JC53234 | 10/16/2017 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-40.0-44.0 | N | N | JC53234 | 10/16/2017 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-32.0-36.0 | N | N | JC53234 | 10/16/2017 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-24.0-28.0 | N | N | JC53234 | 10/16/2017 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-36.0-40.0 | N | N | JC54569A | 11/2/2017 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-30.0-34.0 | N | N | JC54569A | 11/2/2017 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-22.0-26.0 | N | N | JC54569A | 11/2/2017 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| SOILBORE | N/A | DNAPL-S1 | 137-S1-GW | N | N | JC55721 | 11/17/2017 | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| SOILBORE | N/A | DNAPL-W1 | 137-W1-GW | N | N | JC55721 | 11/17/2017 | < 1.0 U | < 0.54 U | < 1.1 U | < 0.67 U |

**Appendix L.3**
**Historical Groundwater Analytical Data - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | TRICHLOROFLUOROMETHANE | VINYL CHLORIDE | XYLENES |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 75-69-4 | 75-01-4 | 1330-20-7 |
| | | | | | | | **GWQS** | 2000 | 1 | 1000 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-8.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.60 U | < 0.62 U | 93.7 |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.60 U | < 0.62 U | 63.0 |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-12.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.43 U | < 0.15 U | 80.7 |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-10.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.43 U | < 0.15 U | 69.1 |
| WELL | SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | N | N | JC65325 | 5/2/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | SHALLOW | 114-MW25A | 114-MW25A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | N | N | JC57565 | 12/18/2017 | < 6.0 U | **< 6.2 U** | < 2.2 U |
| WELL | SHALLOW | 114-MW27A | 114-MW27A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | N | N | JC57565 | 12/18/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | N | N | JC56729A | 12/6/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | N | N | JC56859A | 12/7/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927-X | FD | N | JC51890 | 9/27/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927 | N | N | JC51890 | 9/27/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | SHALLOW | 114-MW37A | 114-MW37A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | N | N | JC56504A | 12/4/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | SHALLOW | 114-MW41A | 114-MW41A-20180420 | N | N | JC64643 | 4/20/2018 | < 0.60 U | < 0.62 U | 5.8 |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.60 U | < 0.62 U | 1.1 |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.60 U | < 0.62 U | 0.98 J |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.60 U | < 0.62 U | 723 |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.60 U | < 0.62 U | 802 |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | N | N | JC51736 | 9/25/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.60 U | < 0.62 U | 9.2 |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.60 U | < 0.62 U | 6.7 |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.60 U | < 0.62 U | 2.7 |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.7 | N | N | JC5499 | 10/6/2015 | < 0.43 U | < 0.15 U | 0.45 J |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-12.5 | N | N | JC5499 | 10/6/2015 | < 0.43 U | < 0.15 U | 0.21 J |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-8.5 | N | N | JC5499 | 10/6/2015 | < 0.43 U | < 0.15 U | < 0.17 U |
| WELL | SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | SHALLOW | MW7S | MW7S-10.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | SHALLOW | MW7S | MW7S-10.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.43 U | < 0.15 U | < 0.17 U |

**Appendix L.3**
**Historical Groundwater Analytical Data - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | TRICHLOROFLUOROMETHANE | VINYL CHLORIDE | XYLENES |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 75-69-4 | 75-01-4 | 1330-20-7 |
| | | | | | | | **GWQS** | 2000 | 1 | 1000 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | MW7S | MW7S-7.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.43 U | < 0.15 U | < 0.17 U |
| WELL | SHALLOW | MW8S | MW8S-20180427 | N | N | JC65066 | 4/27/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | SHALLOW | MW8S | MW8S-9.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.43 U | < 0.15 U | < 0.17 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.60 U | < 0.62 U | 2.8 |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.60 U | < 0.62 U | 2.8 |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.60 U | < 0.62 U | 3.1 |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | N | N | JC57752 | 12/20/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | N | N | JC64444 | 4/18/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | N | N | JC65255 | 5/1/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | N | N | JC64571 | 4/19/2018 | < 12 U | **< 12 U** | **2750** |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-36.0-20151001 | N | N | JC5237A | 10/1/2015 | < 4.3 U | **< 1.5 U** | 510 |
| WELL | INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | N | N | JC62130 | 3/12/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | N | JC62228 | 3/13/2018 | < 0.60 U | **2.2** | < 0.22 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | N | JC62228 | 3/13/2018 | < 0.60 U | **2.2** | < 0.22 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | FD | N | JC56729A | 12/6/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | N | N | JC56729A | 12/6/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | N | N | JC51890 | 9/27/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | FD | N | JC60652 | 2/12/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | N | N | JC60652 | 2/12/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | N | N | JC65066 | 4/27/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | N | N | JC64643 | 4/20/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | N | N | JC57638 | 12/19/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | N | N | JC57501A | 12/15/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | N | N | JC58670 | 1/11/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.60 U | < 0.62 U | 0.54 J |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.60 U | < 0.62 U | 0.83 J |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.60 U | < 0.62 U | 1.0 |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | N | N | JC67069 | 5/31/2018 | < 1.2 U | **< 1.2 U** | 501 |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.60 U | < 0.62 U | 599 |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.60 U | < 0.62 U | 15.2 |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.60 U | < 0.62 U | 9.2 |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.60 U | < 0.62 U | 4.5 |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.60 U | < 0.62 U | 4.9 |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | FD | N | JC67069 | 5/31/2018 | < 0.60 U | < 0.62 U | < 0.22 U |

**Appendix L.3**
**Historical Groundwater Analytical Data - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | TRICHLOROFLUOROMETHANE | VINYL CHLORIDE | XYLENES |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 75-69-4 | 75-01-4 | 1330-20-7 |
| | | | | | | | **GWQS** | 2000 | 1 | 1000 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.60 U | < 0.62 U | 315 |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.60 U | < 0.62 U | 443 |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | N | N | JC57169 | 12/12/2017 | < 6.0 U | **< 6.2 U** | 627 |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | N | N | JC57169 | 12/12/2017 | < 15 U | **< 16 U** | 812 |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | N | N | JC64571 | 4/19/2018 | < 3.0 U | **< 3.1 U** | 172 |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.60 U | < 0.62 U | 18.2 |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | N | N | JC64901 | 4/25/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-30.5 | N | N | JC5499 | 10/6/2015 | < 0.43 U | < 0.15 U | < 0.17 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | MW7D | MW7D-41.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930X | FD | N | JC5098A | 9/30/2015 | < 0.43 U | < 0.15 U | < 0.17 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.43 U | < 0.15 U | < 0.17 U |
| WELL | INTERMEDIATE | MW7D | MW7D-40.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.43 U | < 0.15 U | < 0.17 U |
| WELL | INTERMEDIATE | MW8D | MW8D-45.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.60 U | < 0.62 U | 2.0 |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425X | FD | N | JC64901 | 4/25/2018 | < 0.60 U | < 0.62 U | 116 J |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.60 U | < 0.62 U | 82.6 J |
| WELL | INTERMEDIATE | MW8D | MW8D-46.5-20150929 | N | N | JC4976A | 9/29/2015 | < 0.43 U | < 0.15 U | 12.4 |
| WELL | INTERMEDIATE | MW8D | MW8D-41.5-20150929 | N | N | JC4976A | 9/29/2015 | < 2.1 U | < 0.74 U | 168 |
| WELL | DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | N | N | JC65066 | 4/27/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-20180419 | N | N | JC64571 | 4/19/2018 | < 0.60 U | < 0.62 U | 0.52 J |
| WELL | DEEP | 114-MW20C | 114-MW20C-78.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.43 U | < 0.15 U | 0.21 J |
| WELL | DEEP | 114-MW25C-2 | 114-MW25C-20180313 | N | N | JC62228 | 3/13/2018 | < 6.0 U | **< 6.2 U** | 385 |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | N | N | JC57943A | 12/22/2017 | < 0.60 U | < 0.62 U | 0.49 J |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | N | N | JC57943A | 12/22/2017 | < 0.60 U | < 0.62 U | 0.52 J |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.60 U | < 0.62 U | 0.53 J |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.60 U | < 0.62 U | 0.57 J |
| WELL | DEEP | MW8F | MW8F-20180425 | N | N | JC64901 | 4/25/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| WELL | DEEP | MW8F | MW8F-82.0-20151001 | N | N | JC5237A | 10/1/2015 | < 0.43 U | < 0.15 U | < 0.17 U |
| WELL | DEEP | MW8F | MW8F-79.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.43 U | < 0.15 U | < 0.17 U |
| WELL | DEEP | MW-CR-3D | MW-CR-3D-20180418 | N | N | JC64444 | 4/18/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-46.0-49.5 | N | N | JC53234 | 10/16/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-40.0-44.0 | N | N | JC53234 | 10/16/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-32.0-36.0 | N | N | JC53234 | 10/16/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-24.0-28.0 | N | N | JC53234 | 10/16/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-36.0-40.0 | N | N | JC54569A | 11/2/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-30.0-34.0 | N | N | JC54569A | 11/2/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-22.0-26.0 | N | N | JC54569A | 11/2/2017 | < 0.60 U | < 0.62 U | 37.0 |
| SOILBORE | N/A | DNAPL-S1 | 137-S1-GW | N | N | JC55721 | 11/17/2017 | < 0.60 U | < 0.62 U | 0.28 J |
| SOILBORE | N/A | DNAPL-W1 | 137-W1-GW | N | N | JC55721 | 11/17/2017 | < 1.5 U | **< 1.6 U** | 559 |

**NOTES:**

1. The reporting convention for non-detects in environmental analytical chemistry is that non-detects be reported as less than the RL. Outputs from the database default to reporting non-detects as less than the MDL.

2. Results may be reporting as less than the MDL or RL, but above the associated regulatory standard when dilution is required due to the presence of a significant quantity of a target or non-target analyte, or an interference from a target or non-target analyte. The presence of other substances, or combinations of other substances in a sample can impact whether an analytical method can be used to achieve the lowest possible RL.

3. **Bold** - Indicates an exceedance of the NJDEP's GWQS.

4. A "-" indicates that the sample was not tested for the analyte.

**ABBREVIATIONS:**

CAS RN - Chemical Abstracts Service Registry Number
Fraction:
N - total/unfiltered
GWQS - Groundwater Quality Standard
MDL - method detection limit
N/A - not applicable
NJDEP - New Jersey Department of Environmental Protection
RL - reporting limit
Sample Types:
N - normal environmental sample
FD - field duplicate sample
SDG - sample delivery group
ug/L - micrograms per liter
VOC - volatile organic compound

**QUALIFIERS:**

J - Indicates the result was an estimated value; the associated numerical value was an approximate concentration of the analyte in the sample. J+ or J - is used when the direction of bias can be determined.

U - Indicates the analyte was not detected in the sample above the sample RL.
UJ - Indicates the analyte was not detected above the RL and the RL was approximate.

# Appendix L.4

# Historical Groundwater Analytical Data - SVOCs

**Appendix L.4**
**Historical Groundwater Analytical Data - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | 1,2,4,5-TETRACHLOROBENZENE | 1,4-DIOXANE | 1-1'-BIPHENYL | 2,2'-OXYBIS(1-CHLOROPROPANE) | 2,3,4,6-TETRACHLOROPHENOL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 95-94-3 | 123-91-1 | 92-52-4 | 108-60-1 | 58-90-2 |
| | | | | | | | **GWQS** | N/A | 0.4 | 400 | N/A | 200 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-8.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.37 U | < 0.049 U | 0.97 J | < 0.41 U | < 1.5 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.36 U | < 0.048 U | 0.49 J | < 0.40 U | < 1.4 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-12.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.44 U | **< 0.72** | 1.2 | < 0.41 U | < 1.4 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-10.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.45 U | **< 0.72** | 0.78 J | < 0.41 U | < 1.4 U |
| WELL | SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | N | N | JC65325 | 5/2/2018 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | SHALLOW | 114-MW25A | 114-MW25A-20170927 | N | N | JC51824 | 9/27/2017 | < 0.37 U | < 0.049 U | 0.41 J | < 0.40 U | < 1.5 U |
| WELL | SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | N | N | JC57565 | 12/18/2017 | < 0.39 U | < 0.051 U | < 0.22 U | < 0.42 U | < 1.5 U |
| WELL | SHALLOW | 114-MW27A | 114-MW27A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.40 U | < 0.053 U | < 0.23 U | < 0.44 U | < 1.6 U |
| WELL | SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | N | N | JC57565 | 12/18/2017 | < 0.41 U | < 0.054 U | < 0.24 U | < 0.45 U | < 1.6 U |
| WELL | SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | N | N | JC56729A | 12/6/2017 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | N | N | JC56859A | 12/7/2017 | < 0.35 U | < 0.046 U | < 0.20 U | < 0.38 U | < 1.4 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927-X | FD | N | JC51890 | 9/27/2017 | < 0.39 U | < 0.051 U | < 0.22 U | < 0.42 U | < 1.5 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927 | N | N | JC51890 | 9/27/2017 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | SHALLOW | 114-MW37A | 114-MW37A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | N | N | JC56504A | 12/4/2017 | < 0.41 U | < 0.054 U | < 0.24 U | < 0.45 U | < 1.6 U |
| WELL | SHALLOW | 114-MW41A | 114-MW41A-20180420 | N | N | JC64643 | 4/20/2018 | < 0.37 U | < 0.049 U | 12.5 | < 0.40 U | < 1.5 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.41 U | < 0.053 U | 0.91 J | < 0.44 U | < 1.6 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.37 U | < 0.049 U | 1.2 | < 0.40 U | < 1.5 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.35 U | < 0.046 U | < 0.20 U | < 0.38 U | < 1.4 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.35 U | < 0.046 U | < 0.20 U | < 0.38 U | < 1.4 U |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | N | N | JC51736 | 9/25/2017 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.37 U | < 0.049 U | 0.88 J | < 0.40 U | < 1.5 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.38 U | < 0.050 U | 0.49 J | < 0.41 U | < 1.5 U |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.38 U | < 0.050 U | 8.5 | < 0.41 U | < 1.5 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.41 U | 0.0685 J | 1.6 | < 0.45 U | < 1.6 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.37 U | < 0.049 U | 1.3 | < 0.41 U | < 1.5 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.40 U | 0.101 J | < 0.23 U | < 0.43 U | < 1.6 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.39 U | < 0.052 U | < 0.23 U | < 0.43 U | < 1.6 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | R |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | R |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.36 U | 0.0821 J | < 0.21 U | < 0.40 U | < 1.4 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.37 U | 0.136 | < 0.21 U | < 0.41 U | < 1.5 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.37 U | 0.0985 J | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.7 | N | N | JC5499 | 10/6/2015 | < 0.48 U | **< 0.78 U** | < 0.30 U | < 0.44 U | < 1.5 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-12.5 | N | N | JC5499 | 10/6/2015 | < 0.48 U | **< 0.78 U** | < 0.30 U | < 0.44 U | < 1.5 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-8.5 | N | N | JC5499 | 10/6/2015 | < 0.44 U | **< 0.72 U** | < 0.27 U | < 0.41 U | < 1.4 U |
| WELL | SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.37 U | 0.394 | < 0.21 U | < 0.40 U | < 1.4 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.37 U | 0.232 JB | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.38 U | < 0.050 U | < 0.22 U | < 0.41 U | < 1.5 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.37 U | < 0.222 UB | < 0.21 U | < 0.41 U | < 1.5 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.37 U | < 0.110 UB | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | SHALLOW | MW7S | MW7S-10.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.38 U | < 0.050 U | < 0.22 U | < 0.41 U | < 1.5 U |
| WELL | SHALLOW | MW7S | MW7S-10.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.46 U | **< 0.74** | < 0.29 U | < 0.42 U | < 1.5 U |

**Appendix L.4**
**Historical Groundwater Analytical Data - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | 1,2,4,5-TETRACHLOROBENZENE | 1,4-DIOXANE | 1-1'-BIPHENYL | 2,2'-OXYBIS(1-CHLOROPROPANE) | 2,3,4,6-TETRACHLOROPHENOL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 95-94-3 | 123-91-1 | 92-52-4 | 108-60-1 | 58-90-2 |
| | | | | | | | **GWQS** | N/A | 0.4 | 400 | N/A | 200 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | MW7S | MW7S-7.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.45 U | **< 0.73** | < 0.28 U | < 0.41 U | < 1.4 U |
| WELL | SHALLOW | MW8S | MW8S-20180427 | N | N | JC65066 | 4/27/2018 | < 0.40 U | < 0.053 U | < 0.23 U | < 0.44 U | < 1.6 U |
| WELL | SHALLOW | MW8S | MW8S-9.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.44 U | **< 0.72** | < 0.27 U | < 0.41 U | < 1.4 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.37 U | 0.316 | 0.36 J | < 0.40 U | < 1.5 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.37 U | 0.255 | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.39 U | 0.333 | < 0.22 U | < 0.42 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | N | N | JC57752 | 12/20/2017 | < 0.39 U | **4.17** | < 0.22 U | < 0.42 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | N | N | JC64444 | 4/18/2018 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | N | N | JC65255 | 5/1/2018 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | N | N | JC64571 | 4/19/2018 | < 0.38 U | 0.225 | 36.4 | < 0.41 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-36.0-20151001 | N | N | JC5237A | 10/1/2015 | < 0.45 U | **< 0.72** | 23.5 | < 0.41 U | < 1.4 U |
| WELL | INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | N | N | JC62130 | 3/12/2018 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | N | JC62228 | 3/13/2018 | < 0.37 U | **7.6** | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | N | JC62228 | 3/13/2018 | < 0.37 U | **8.1** | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | FD | N | JC56729A | 12/6/2017 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | N | N | JC56729A | 12/6/2017 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | N | N | JC51890 | 9/27/2017 | < 0.39 U | < 0.051 U | < 0.22 U | < 0.42 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-MW37B | 114-MW37B-20170926 | N | N | JC51824 | 9/26/2017 | < 0.39 U | **12.6 J** | < 0.22 U | < 0.42 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | FD | N | JC60652 | 2/12/2018 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | N | N | JC60652 | 2/12/2018 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | N | N | JC65066 | 4/27/2018 | < 0.38 U | < 0.050 U | < 0.22 U | < 0.42 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | N | N | JC64643 | 4/20/2018 | < 0.37 U | < 0.047 U | 1.9 | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.39 U | < 0.051 U | < 0.22 U | < 0.42 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | N | N | JC57638 | 12/19/2017 | < 0.41 U | 0.170 | < 0.24 U | < 0.45 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | N | N | JC57501A | 12/15/2017 | < 0.37 U | < 0.182 UB | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | N | N | JC58670 | 1/11/2018 | < 0.37 U | 0.228 | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.37 U | < 0.199 UB | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.37 U | < 0.049 U | 0.56 J | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.37 U | < 0.049 U | 0.53 J | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.37 U | 0.164 J | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.37 U | 0.152 J | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.37 U | 0.0558 J | 3.3 | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.37 U | 0.0846 J | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.37 U | 0.0696 J | 2.8 | < 0.41 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.37 U | 0.0665 J | 4.4 | < 0.41 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.38 U | **0.445** | < 0.22 U | < 0.41 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.37 U | 0.289 | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.37 U | < 0.049 U | 4.6 | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.35 U | < 0.046 U | 4.6 | < 0.38 U | < 1.4 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.37 U | < 0.049 U | 0.51 J | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.37 U | < 0.049 U | 0.55 J | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U |

**Appendix L.4**
**Historical Groundwater Analytical Data - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | 1,2,4,5-TETRACHLOROBENZENE | 1,4-DIOXANE | 1-1'-BIPHENYL | 2,2'-OXYBIS(1-CHLOROPROPANE) | 2,3,4,6-TETRACHLOROPHENOL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 95-94-3 | 123-91-1 | 92-52-4 | 108-60-1 | 58-90-2 |
| | | | | | | | **GWQS** | N/A | 0.4 | 400 | N/A | 200 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | FD | N | JC67069 | 5/31/2018 | < 0.37 U | < 0.046 U | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.38 U | 0.334 | 42.8 | < 0.41 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.37 U | **0.634** | 55.4 | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.38 U | **3.82** | 42.8 | < 0.41 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.38 U | **8.0** | 40.8 | < 0.41 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.37 U | **4.03** | 27.5 | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.37 U | **2.77** | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.37 U | < 0.048 U | < 0.21 U | < 0.40 U | < 1.4 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.41 U | < 1.5 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | N | N | JC64901 | 4/25/2018 | < 0.36 U | - | < 0.21 U | < 0.39 U | < 1.4 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-30.5 | N | N | JC5499 | 10/6/2015 | < 0.47 U | **< 0.76 U** | < 0.29 U | < 0.43 U | < 1.5 U |
| WELL | INTERMEDIATE | 135-MW3BR | 135-MW3B-30.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.36 U | 0.201 | < 0.20 U | < 0.39 U | < 1.4 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.37 U | 0.130 | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.37 U | 0.122 | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.36 U | 0.254 | < 0.20 U | < 0.39 U | < 1.4 U |
| WELL | INTERMEDIATE | MW7D | MW7D-41.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.36 U | 0.181 | < 0.20 U | < 0.39 U | < 1.4 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930X | FD | N | JC5098A | 9/30/2015 | < 0.45 U | **< 0.73** | < 0.28 U | < 0.41 U | < 1.4 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.49 U | **< 0.79** | < 0.30 U | < 0.45 U | < 1.6 U |
| WELL | INTERMEDIATE | MW7D | MW7D-40.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.48 U | **< 0.77** | < 0.29 U | < 0.44 U | < 1.5 U |
| WELL | INTERMEDIATE | MW8D | MW8D-45.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.41 U | < 0.054 U | < 0.24 U | < 0.45 U | < 1.6 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425X | FD | N | JC64901 | 4/25/2018 | < 0.38 U | 0.108 | 1.4 | < 0.41 U | < 1.5 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.42 U | 0.133 | 0.92 J | < 0.46 U | < 1.7 U |
| WELL | INTERMEDIATE | MW8D | MW8D-46.5-20150929 | N | N | JC4976A | 9/29/2015 | < 0.49 U | **< 0.79** | < 0.30 U | < 0.45 U | < 1.6 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.5-20150929 | N | N | JC4976A | 9/29/2015 | < 0.46 U | **< 0.74** | 2.5 | < 0.42 U | < 1.5 U |
| WELL | DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | N | N | JC65066 | 4/27/2018 | < 0.35 U | < 0.046 U | < 0.20 U | < 0.38 U | < 1.4 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-20180419 | N | N | JC64571 | 4/19/2018 | < 0.41 U | 0.0541 J | 0.26 J | < 0.45 U | < 1.6 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-78.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.44 U | **< 0.72** | < 0.27 U | < 0.41 U | < 1.4 U |
| WELL | DEEP | 114-MW25C-2 | 114-MW25C-20180313 | N | N | JC62228 | 3/13/2018 | < 0.37 U | **1.30** | 0.53 J | < 0.40 U | < 1.5 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | N | N | JC57943A | 12/22/2017 | < 0.41 U | **0.417** | < 0.24 U | < 0.45 U | < 1.6 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | N | N | JC57943A | 12/22/2017 | < 0.41 U | **0.597** | 0.52 J | < 0.44 U | < 1.6 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.43 U | **0.410** | 0.63 J | < 0.46 U | < 1.7 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.41 U | **0.419** | 0.72 J | < 0.45 U | < 1.6 U |
| WELL | DEEP | MW8F | MW8F-20180425 | N | N | JC64901 | 4/25/2018 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U |
| WELL | DEEP | MW8F | MW8F-82.0-20151001 | N | N | JC5237A | 10/1/2015 | < 0.45 U | **< 0.73** | < 0.28 U | < 0.41 U | < 1.4 U |
| WELL | DEEP | MW8F | MW8F-79.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.49 U | **< 0.79** | < 0.30 U | < 0.45 U | < 1.6 U |
| WELL | DEEP | MW-CR-3D | MW-CR-3D-20180418 | N | N | JC64444 | 4/18/2018 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-46.0-49.5 | N | N | JC53234 | 10/16/2017 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-40.0-44.0 | N | N | JC53234 | 10/16/2017 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-32.0-36.0 | N | N | JC53234 | 10/16/2017 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-24.0-28.0 | N | N | JC53234 | 10/16/2017 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-36.0-40.0 | N | N | JC54569A | 11/2/2017 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-30.0-34.0 | N | N | JC54569A | 11/2/2017 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-22.0-26.0 | N | N | JC54569A | 11/2/2017 | < 0.37 UJ | < 0.049 U | 0.98 J- | < 0.40 UJ | < 1.5 UJ |
| SOILBORE | N/A | DNAPL-S1 | 137-S1-GW | N | N | JC55721 | 11/17/2017 | < 0.42 U | < 0.055 U | < 0.24 U | < 0.45 U | < 1.6 U |
| SOILBORE | N/A | DNAPL-W1 | 137-W1-GW | N | N | JC55721 | 11/17/2017 | < 0.41 U | < 0.054 U | 29.4 | < 0.45 U | < 1.6 U |

**Appendix L.4**
**Historical Groundwater Analytical Data - SVOCs**
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**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | 2,4,5-TRICHLOROPHENOL | 2,4,6-TRICHLOROPHENOL | 2,4-DICHLOROPHENOL | 2,4-DIMETHYLPHENOL | 2,4-DINITROPHENOL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 95-95-4 | 88-06-2 | 120-83-2 | 105-67-9 | 51-28-5 |
| | | | | | | | **GWQS** | 700 | 20 | 20 | 100 | 40 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-8.0-20180420 | N | N | JC64643 | 4/20/2018 | < 1.3 U | < 0.93 U | < 1.3 U | < 2.5 U | < 1.6 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 1.3 U | < 0.91 U | < 1.2 U | < 2.4 U | < 1.5 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-12.5-20151001 | N | N | JC5237A | 10/1/2015 | < 1.7 U | < 1.5 U | < 1.6 U | < 1.8 U | < 6.5 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-10.5-20151001 | N | N | JC5237A | 10/1/2015 | < 1.7 U | < 1.6 U | < 1.6 U | < 1.9 U | < 6.6 U |
| WELL | SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | N | N | JC65325 | 5/2/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | SHALLOW | 114-MW25A | 114-MW25A-20170927 | N | N | JC51824 | 9/27/2017 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | N | N | JC57565 | 12/18/2017 | < 1.4 U | < 0.96 U | 1.9 J | < 2.5 U | < 1.6 U |
| WELL | SHALLOW | 114-MW27A | 114-MW27A-20170926 | N | N | JC51824 | 9/26/2017 | < 1.4 U | < 1.0 U | < 1.4 U | < 2.7 U | < 1.7 U |
| WELL | SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | N | N | JC57565 | 12/18/2017 | < 1.5 U | < 1.0 U | < 1.4 U | < 2.7 U | < 1.7 U |
| WELL | SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | N | N | JC56729A | 12/6/2017 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | N | N | JC56859A | 12/7/2017 | < 1.3 U | < 0.88 U | < 1.2 U | < 2.3 U | < 1.5 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927-X | FD | N | JC51890 | 9/27/2017 | < 1.4 U | < 0.97 U | < 1.3 U | < 2.6 U | < 1.6 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927 | N | N | JC51890 | 9/27/2017 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | SHALLOW | 114-MW37A | 114-MW37A-20170926 | N | N | JC51824 | 9/26/2017 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | N | N | JC56504A | 12/4/2017 | < 1.5 U | < 1.0 U | < 1.4 U | < 2.7 U | < 1.7 U |
| WELL | SHALLOW | 114-MW41A | 114-MW41A-20180420 | N | N | JC64643 | 4/20/2018 | < 1.3 U | < 0.92 U | < 1.3 U | 2.6 J | < 1.6 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | N | N | JC65178 | 4/30/2018 | < 1.5 U | < 1.0 U | < 1.4 U | < 2.7 U | < 1.7 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | N | N | JC65178 | 4/30/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 1.3 U | < 0.88 U | < 1.2 U | < 2.3 U | < 1.5 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | N | N | JC64643 | 4/20/2018 | < 1.3 U | < 0.88 U | < 1.2 U | < 2.3 U | < 1.5 U |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | N | N | JC51736 | 9/25/2017 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | N | N | JC57276 | 12/13/2017 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | N | N | JC57276 | 12/13/2017 | < 1.4 U | < 0.94 U | < 1.3 U | < 2.5 U | < 1.6 U |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | N | N | JC57169 | 12/12/2017 | < 1.4 U | < 0.94 U | < 1.3 U | < 2.5 U | < 1.6 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | N | N | JC64571 | 4/19/2018 | < 1.5 U | < 1.0 U | < 1.4 U | < 2.7 U | < 1.7 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | N | N | JC64571 | 4/19/2018 | < 1.3 U | < 0.93 U | < 1.3 U | < 2.5 U | < 1.6 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | N | N | JC64986 | 4/26/2018 | < 1.4 U | < 0.99 U | < 1.4 U | < 2.6 U | < 1.7 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | N | N | JC64986 | 4/26/2018 | < 1.4 U | < 0.98 U | < 1.4 U | < 2.6 U | < 1.6 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | N | N | JC67069 | 5/31/2018 | R | R | R | R | R |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | N | N | JC67069 | 5/31/2018 | R | R | R | R | R |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | N | N | JC64763 | 4/23/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | N | N | JC64763 | 4/23/2018 | < 1.3 U | < 0.91 U | < 1.2 U | < 2.4 U | < 1.5 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | N | N | JC64763 | 4/23/2018 | < 1.3 U | < 0.93 U | < 1.3 U | < 2.5 U | < 1.6 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | N | N | JC64763 | 4/23/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.7 | N | N | JC5499 | 10/6/2015 | < 1.9 U | < 1.7 U | < 1.8 U | < 2.0 U | < 7.1 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-12.5 | N | N | JC5499 | 10/6/2015 | < 1.9 U | < 1.7 U | < 1.8 U | < 2.0 U | < 7.1 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-8.5 | N | N | JC5499 | 10/6/2015 | < 1.7 U | < 1.5 U | < 1.6 U | < 1.8 U | < 6.5 U |
| WELL | SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | N | N | JC64822 | 4/24/2018 | < 1.3 U | < 0.91 U | < 1.3 U | < 2.4 U | < 1.5 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 1.4 U | < 0.94 U | < 1.3 U | < 2.5 U | < 1.6 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | N | N | JC65255 | 5/1/2018 | < 1.3 U | < 0.93 U | < 1.3 U | < 2.5 U | < 1.6 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | N | N | JC65255 | 5/1/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | SHALLOW | MW7S | MW7S-10.0-20180430 | N | N | JC65178 | 4/30/2018 | < 1.4 U | < 0.94 U | < 1.3 U | < 2.5 U | < 1.6 U |
| WELL | SHALLOW | MW7S | MW7S-10.2-20150930 | N | N | JC5098A | 9/30/2015 | < 1.8 U | < 1.6 U | < 1.7 U | < 1.9 U | < 6.8 U |

**Appendix L.4**
**Historical Groundwater Analytical Data - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

AECOM

| | | | | | | | **Analyte** | 2,4,5-TRICHLOROPHENOL | 2,4,6-TRICHLOROPHENOL | 2,4-DICHLOROPHENOL | 2,4-DIMETHYLPHENOL | 2,4-DINITROPHENOL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 95-95-4 | 88-06-2 | 120-83-2 | 105-67-9 | 51-28-5 |
| | | | | | | | **GWQS** | 700 | 20 | 20 | 100 | 40 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | MW7S | MW7S-7.2-20150930 | N | N | JC5098A | 9/30/2015 | < 1.7 U | < 1.6 U | < 1.7 U | < 1.9 U | < 6.6 U |
| WELL | SHALLOW | MW8S | MW8S-20180427 | N | N | JC65066 | 4/27/2018 | < 1.4 U | < 1.0 U | < 1.4 U | < 2.7 U | < 1.7 U |
| WELL | SHALLOW | MW8S | MW8S-9.5-20151001 | N | N | JC5237A | 10/1/2015 | < 1.7 U | < 1.5 U | < 1.6 U | < 1.8 U | < 6.5 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | N | N | JC64444 | 4/18/2018 | < 1.4 U | < 0.97 U | < 1.3 U | < 2.6 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | N | N | JC57752 | 12/20/2017 | < 1.4 U | < 0.97 U | < 1.3 U | < 2.6 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | N | N | JC64444 | 4/18/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | N | N | JC65255 | 5/1/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | N | N | JC64571 | 4/19/2018 | < 1.4 U | < 0.94 U | < 1.3 U | < 2.5 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-36.0-20151001 | N | N | JC5237A | 10/1/2015 | < 1.7 U | < 1.6 U | < 1.6 U | < 1.9 U | < 6.6 U |
| WELL | INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | N | N | JC62130 | 3/12/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | N | JC62228 | 3/13/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | N | JC62228 | 3/13/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | FD | N | JC56729A | 12/6/2017 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | N | N | JC56729A | 12/6/2017 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | N | N | JC51890 | 9/27/2017 | < 1.4 U | < 0.97 U | < 1.3 U | < 2.6 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-MW37B | 114-MW37B-20170926 | N | N | JC51824 | 9/26/2017 | < 1.4 U | < 0.97 U | < 1.3 U | < 2.6 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | FD | N | JC60652 | 2/12/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | N | N | JC60652 | 2/12/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | N | N | JC65066 | 4/27/2018 | < 1.4 U | < 0.95 U | < 1.3 U | < 2.5 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | N | N | JC64643 | 4/20/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | N | N | JC57820 | 12/21/2017 | < 1.4 U | < 0.96 U | < 1.3 U | < 2.5 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | N | N | JC57820 | 12/21/2017 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | N | N | JC57638 | 12/19/2017 | < 1.5 U | < 1.0 U | < 1.4 U | < 2.7 U | < 1.7 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | N | N | JC57501A | 12/15/2017 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | N | N | JC58745 | 1/12/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | N | N | JC58745 | 1/12/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | N | N | JC58670 | 1/11/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | N | N | JC58073A | 12/27/2017 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | N | N | JC58073A | 12/27/2017 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | N | N | JC58028A | 12/26/2017 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | N | N | JC58028A | 12/26/2017 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | N | N | JC58942 | 1/16/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | N | N | JC58942 | 1/16/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | N | N | JC58942 | 1/16/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | N | N | JC58942 | 1/16/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | N | N | JC67069 | 5/31/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | N | N | JC67069 | 5/31/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | N | N | JC65178 | 4/30/2018 | < 1.3 U | < 0.93 U | < 1.3 U | < 2.5 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | N | N | JC65178 | 4/30/2018 | < 1.3 U | < 0.93 U | < 1.3 U | < 2.5 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | N | N | JC64444 | 4/18/2018 | < 1.4 U | < 0.95 U | < 1.3 U | < 2.5 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | N | N | JC64444 | 4/18/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | N | N | JC64643 | 4/20/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | N | N | JC64643 | 4/20/2018 | < 1.3 U | < 0.88 U | < 1.2 U | < 2.3 U | < 1.5 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | N | N | JC58670 | 1/11/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | N | N | JC58670 | 1/11/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | N | N | JC67069 | 5/31/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |

**Appendix L.4**
**Historical Groundwater Analytical Data - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | 2,4,5-TRICHLOROPHENOL | 2,4,6-TRICHLOROPHENOL | 2,4-DICHLOROPHENOL | 2,4-DIMETHYLPHENOL | 2,4-DINITROPHENOL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 95-95-4 | 88-06-2 | 120-83-2 | 105-67-9 | 51-28-5 |
| | | | | | | | **GWQS** | 700 | 20 | 20 | 100 | 40 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | FD | N | JC67069 | 5/31/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | N | N | JC67069 | 5/31/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | N | N | JC57276 | 12/13/2017 | < 1.4 U | < 0.94 U | < 1.3 U | < 2.5 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | N | N | JC57276 | 12/13/2017 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | N | N | JC57169 | 12/12/2017 | < 1.4 U | < 0.94 U | < 1.3 U | 5.4 | < 1.6 U |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | N | N | JC57169 | 12/12/2017 | < 1.4 U | < 0.94 U | < 1.3 U | 3.8 J | < 1.6 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | N | N | JC64571 | 4/19/2018 | < 1.3 U | < 0.92 U | < 1.3 U | 3.1 J | < 1.6 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | N | N | JC64571 | 4/19/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | N | N | JC64763 | 4/23/2018 | < 1.3 U | < 0.91 U | < 1.3 U | < 2.4 U | < 1.5 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | N | N | JC64763 | 4/23/2018 | < 1.3 U | < 0.93 U | < 1.3 U | < 2.5 U | < 1.6 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | N | N | JC64901 | 4/25/2018 | < 1.3 U | < 0.90 U | < 1.2 U | < 2.4 U | < 1.5 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-30.5 | N | N | JC5499 | 10/6/2015 | < 1.8 U | < 1.6 U | < 1.7 U | < 2.0 U | < 6.9 U |
| WELL | INTERMEDIATE | 135-MW3BR | 135-MW3B-30.0-20180501 | N | N | JC65255 | 5/1/2018 | < 1.3 U | < 0.89 U | < 1.2 U | < 2.3 U | < 1.5 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | N | N | JC67069 | 5/31/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | N | N | JC67069 | 5/31/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.0-20180423 | N | N | JC64763 | 4/23/2018 | < 1.3 U | < 0.89 U | < 1.2 U | < 2.3 U | < 1.5 U |
| WELL | INTERMEDIATE | MW7D | MW7D-41.0-20180423 | N | N | JC64763 | 4/23/2018 | < 1.3 U | < 0.89 U | < 1.2 U | < 2.4 U | < 1.5 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930X | FD | N | JC5098A | 9/30/2015 | < 1.7 U | < 1.6 U | < 1.7 U | < 1.9 U | < 6.6 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930 | N | N | JC5098A | 9/30/2015 | < 1.9 U | < 1.7 U | < 1.8 U | < 2.0 U | < 7.2 U |
| WELL | INTERMEDIATE | MW7D | MW7D-40.5-20150930 | N | N | JC5098A | 9/30/2015 | < 1.8 U | < 1.7 U | < 1.7 U | < 2.0 U | < 7.0 U |
| WELL | INTERMEDIATE | MW8D | MW8D-45.0-20180425 | N | N | JC64901 | 4/25/2018 | < 1.5 U | < 1.0 U | < 1.4 U | < 2.7 U | < 1.7 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425X | FD | N | JC64901 | 4/25/2018 | < 1.4 U | < 0.94 U | < 1.3 U | < 2.5 U | < 1.6 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425 | N | N | JC64901 | 4/25/2018 | < 1.5 U | < 1.0 U | < 1.4 U | < 2.8 U | < 1.8 U |
| WELL | INTERMEDIATE | MW8D | MW8D-46.5-20150929 | N | N | JC4976A | 9/29/2015 | < 1.9 U | < 1.7 U | < 1.8 U | < 2.0 U | < 7.2 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.5-20150929 | N | N | JC4976A | 9/29/2015 | < 1.8 U | < 1.6 U | < 1.7 U | < 1.9 U | < 6.8 U |
| WELL | DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | N | N | JC65066 | 4/27/2018 | < 1.3 U | < 0.88 U | < 1.2 U | < 2.3 U | < 1.5 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-20180419 | N | N | JC64571 | 4/19/2018 | < 1.5 U | < 1.0 U | < 1.4 U | < 2.7 U | < 1.7 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-78.5-20151001 | N | N | JC5237A | 10/1/2015 | < 1.7 U | < 1.5 U | < 1.6 U | < 1.8 U | < 6.5 U |
| WELL | DEEP | 114-MW25C-2 | 114-MW25C-20180313 | N | N | JC62228 | 3/13/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | N | N | JC57943A | 12/22/2017 | < 1.5 U | < 1.0 U | < 1.4 U | < 2.7 U | < 1.7 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | N | N | JC57943A | 12/22/2017 | < 1.5 U | < 1.0 U | < 1.4 U | < 2.7 U | < 1.7 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | N | N | JC57820 | 12/21/2017 | < 1.5 U | < 1.1 U | < 1.5 U | < 2.8 U | < 1.8 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | N | N | JC57820 | 12/21/2017 | < 1.5 U | < 1.0 U | < 1.4 U | < 2.7 U | < 1.7 U |
| WELL | DEEP | MW8F | MW8F-20180425 | N | N | JC64901 | 4/25/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| WELL | DEEP | MW8F | MW8F-82.0-20151001 | N | N | JC5237A | 10/1/2015 | < 1.7 U | < 1.6 U | < 1.7 U | < 1.9 U | < 6.6 U |
| WELL | DEEP | MW8F | MW8F-79.5-20151001 | N | N | JC5237A | 10/1/2015 | < 1.9 U | < 1.7 U | < 1.8 U | < 2.0 U | < 7.2 U |
| WELL | DEEP | MW-CR-3D | MW-CR-3D-20180418 | N | N | JC64444 | 4/18/2018 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-46.0-49.5 | N | N | JC53234 | 10/16/2017 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-40.0-44.0 | N | N | JC53234 | 10/16/2017 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-32.0-36.0 | N | N | JC53234 | 10/16/2017 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-24.0-28.0 | N | N | JC53234 | 10/16/2017 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-36.0-40.0 | N | N | JC54569A | 11/2/2017 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-30.0-34.0 | N | N | JC54569A | 11/2/2017 | < 1.3 U | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-22.0-26.0 | N | N | JC54569A | 11/2/2017 | < 1.3 UJ | < 0.92 UJ | < 1.3 UJ | < 2.4 UJ | < 1.6 UJ |
| SOILBORE | N/A | DNAPL-S1 | 137-S1-GW | N | N | JC55721 | 11/17/2017 | < 1.5 U | < 1.0 U | < 1.4 U | < 2.7 U | < 1.7 U |
| SOILBORE | N/A | DNAPL-W1 | 137-W1-GW | N | N | JC55721 | 11/17/2017 | < 1.5 U | < 1.0 U | < 1.4 U | < 2.7 U | < 1.7 U |

**Appendix L.4**
**Historical Groundwater Analytical Data - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

AECOM

| | | | | | | | **Analyte** | 2,4-DINITROTOLUENE | 2,6-DINITROTOLUENE | 2-CHLORONAPHTHALENE | 2-CHLOROPHENOL | 2-METHYLNAPHTHALENE | 2-METHYLPHENOL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 121-14-2 | 606-20-2 | 91-58-7 | 95-57-8 | 91-57-6 | 95-48-7 |
| | | | | | | | **GWQS** | N/A | N/A | 600 | 40 | 30 | 50 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-8.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.56 U | < 0.48 U | < 0.24 U | < 0.83 U | 20.8 | < 0.90 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.54 U | < 0.47 U | < 0.23 U | < 0.80 U | 10.0 | < 0.87 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-12.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.32 U | < 0.26 U | < 0.34 U | < 1.3 U | 22.5 | < 1.3 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-10.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.32 U | < 0.26 U | < 0.35 U | < 1.3 U | 15.2 | < 1.3 U |
| WELL | SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | N | N | JC65325 | 5/2/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | SHALLOW | 114-MW25A | 114-MW25A-20170927 | N | N | JC51824 | 9/27/2017 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | N | N | JC57565 | 12/18/2017 | < 0.58 U | < 0.50 U | < 0.25 U | 3.4 J | < 0.22 U | < 0.93 U |
| WELL | SHALLOW | 114-MW27A | 114-MW27A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.60 U | < 0.52 U | < 0.26 U | < 0.89 U | < 0.23 U | < 0.97 U |
| WELL | SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | N | N | JC57565 | 12/18/2017 | < 0.61 U | < 0.53 U | < 0.26 U | < 0.91 U | < 0.23 U | < 0.99 U |
| WELL | SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | N | N | JC56729A | 12/6/2017 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | N | N | JC56859A | 12/7/2017 | < 0.53 U | < 0.45 U | < 0.22 U | < 0.78 U | < 0.20 U | < 0.85 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927-X | FD | N | JC51890 | 9/27/2017 | < 0.58 U | < 0.50 U | < 0.25 U | 7.0 | < 0.22 U | < 0.93 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927 | N | N | JC51890 | 9/27/2017 | < 0.55 U | < 0.48 U | < 0.24 U | 6.5 | < 0.21 U | < 0.89 U |
| WELL | SHALLOW | 114-MW37A | 114-MW37A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | N | N | JC56504A | 12/4/2017 | < 0.61 U | < 0.53 U | < 0.26 U | < 0.91 U | < 0.23 U | < 0.99 U |
| WELL | SHALLOW | 114-MW41A | 114-MW41A-20180420 | N | N | JC64643 | 4/20/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | **63.6** | < 0.89 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.60 U | < 0.52 U | < 0.26 U | < 0.90 U | 2.8 | < 0.97 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | 3.5 | < 0.89 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.53 U | < 0.45 U | < 0.22 U | < 0.78 U | < 0.20 U | < 0.85 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.53 U | < 0.45 U | < 0.22 U | < 0.78 U | < 0.20 U | < 0.85 U |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | N | N | JC51736 | 9/25/2017 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.56 U | < 0.49 U | < 0.24 U | < 0.84 U | < 0.21 U | < 0.91 U |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.56 U | < 0.49 U | < 0.24 U | < 0.84 U | < 0.21 U | < 0.91 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.61 U | < 0.53 U | < 0.26 U | < 0.91 U | 0.85 J | < 0.98 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.59 U | < 0.51 U | < 0.25 U | < 0.88 U | < 0.23 U | < 0.95 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.59 U | < 0.51 U | < 0.25 U | < 0.87 U | < 0.22 U | < 0.94 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.55 U | < 0.48 U | < 0.24 U | R | < 0.21 U | R |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.55 U | < 0.48 U | < 0.24 U | R | < 0.21 U | R |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.54 U | < 0.47 U | < 0.23 U | < 0.80 U | < 0.21 U | < 0.87 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.7 | N | N | JC5499 | 10/6/2015 | < 0.35 U | < 0.28 U | < 0.37 U | < 1.4 U | < 0.32 U | < 1.4 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-12.5 | N | N | JC5499 | 10/6/2015 | < 0.35 U | < 0.28 U | < 0.37 U | < 1.4 U | < 0.32 U | < 1.4 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-8.5 | N | N | JC5499 | 10/6/2015 | < 0.32 U | < 0.26 U | < 0.34 U | < 1.3 U | < 0.29 U | < 1.3 U |
| WELL | SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.55 U | < 0.47 U | < 0.23 U | < 0.81 U | < 0.21 U | < 0.88 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.56 U | < 0.49 U | < 0.24 U | < 0.84 U | < 0.21 U | < 0.91 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.56 U | < 0.48 U | < 0.24 U | < 0.83 U | < 0.21 U | < 0.90 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | SHALLOW | MW7S | MW7S-10.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.56 U | < 0.49 U | < 0.24 U | < 0.84 U | < 0.21 U | < 0.91 U |
| WELL | SHALLOW | MW7S | MW7S-10.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.33 U | < 0.27 U | < 0.36 U | < 1.3 U | < 0.30 U | < 1.3 U |

**Appendix L.4**
**Historical Groundwater Analytical Data - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

AECOM

| | | | | | | | **Analyte** | 2,4-DINITROTOLUENE | 2,6-DINITROTOLUENE | 2-CHLORONAPHTHALENE | 2-CHLOROPHENOL | 2-METHYLNAPHTHALENE | 2-METHYLPHENOL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 121-14-2 | 606-20-2 | 91-58-7 | 95-57-8 | 91-57-6 | 95-48-7 |
| | | | | | | | **GWQS** | N/A | N/A | 600 | 40 | 30 | 50 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | MW7S | MW7S-7.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.33 U | < 0.26 U | < 0.35 U | < 1.3 U | < 0.30 U | < 1.3 U |
| WELL | SHALLOW | MW8S | MW8S-20180427 | N | N | JC65066 | 4/27/2018 | < 0.60 U | < 0.52 U | < 0.26 U | < 0.89 U | < 0.23 U | < 0.97 U |
| WELL | SHALLOW | MW8S | MW8S-9.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.32 U | < 0.26 U | < 0.34 U | < 1.3 U | < 0.29 U | < 1.3 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | 0.93 J | 1.0 J |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | 0.53 J | < 0.89 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.58 U | < 0.50 U | < 0.25 U | < 0.86 U | 0.77 J | < 0.93 U |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | N | N | JC57752 | 12/20/2017 | < 0.58 U | < 0.50 U | < 0.25 U | < 0.86 U | 0.48 J | < 0.93 U |
| WELL | INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | N | N | JC64444 | 4/18/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | N | N | JC65255 | 5/1/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | N | N | JC64571 | 4/19/2018 | < 0.56 U | < 0.48 U | < 0.24 U | < 0.83 U | **538** | < 0.90 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-36.0-20151001 | N | N | JC5237A | 10/1/2015 | < 0.32 U | < 0.26 U | < 0.35 U | < 1.3 U | **58.7** | < 1.3 U |
| WELL | INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | N | N | JC62130 | 3/12/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | N | JC62228 | 3/13/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | N | JC62228 | 3/13/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | FD | N | JC56729A | 12/6/2017 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | N | N | JC56729A | 12/6/2017 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | N | N | JC51890 | 9/27/2017 | < 0.58 U | < 0.50 U | < 0.25 U | < 0.86 U | < 0.22 U | < 0.93 U |
| WELL | INTERMEDIATE | 114-MW37B | 114-MW37B-20170926 | N | N | JC51824 | 9/26/2017 | < 0.58 U | < 0.50 U | < 0.25 U | < 0.86 U | < 0.22 U | < 0.93 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | FD | N | JC60652 | 2/12/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | N | N | JC60652 | 2/12/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | N | N | JC65066 | 4/27/2018 | < 0.57 U | < 0.49 U | < 0.24 U | < 0.85 U | < 0.22 U | < 0.92 U |
| WELL | INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | N | N | JC64643 | 4/20/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | 2.6 | < 0.89 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.58 U | < 0.50 U | < 0.25 U | < 0.85 U | < 0.22 U | < 0.93 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | N | N | JC57638 | 12/19/2017 | < 0.61 U | < 0.53 U | < 0.26 U | < 0.91 U | < 0.23 U | < 0.99 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | N | N | JC57501A | 12/15/2017 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | N | N | JC58670 | 1/11/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | 1.5 | < 0.89 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | 2.1 | < 0.89 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | 3.3 | < 0.89 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | 3.1 | < 0.89 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | 0.92 J | < 0.89 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | 0.86 J | < 0.89 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | 0.99 J | < 0.89 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | 0.74 J | < 0.89 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | **125** | < 0.89 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.55 U | < 0.48 UJ | < 0.24 U | < 0.82 U | **170** | < 0.89 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.56 U | < 0.48 U | < 0.24 U | < 0.83 U | < 0.21 U | < 0.90 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.57 U | < 0.49 U | < 0.24 U | < 0.84 U | < 0.22 U | < 0.91 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | 1.6 | < 0.89 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.53 U | < 0.45 U | < 0.22 U | < 0.78 U | 1.7 | < 0.85 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | 2.2 | < 0.89 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | 1.6 | < 0.89 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |

**Appendix L.4**
**Historical Groundwater Analytical Data - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | 2,4-DINITROTOLUENE | 2,6-DINITROTOLUENE | 2-CHLORONAPHTHALENE | 2-CHLOROPHENOL | 2-METHYLNAPHTHALENE | 2-METHYLPHENOL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 121-14-2 | 606-20-2 | 91-58-7 | 95-57-8 | 91-57-6 | 95-48-7 |
| | | | | | | | **GWQS** | N/A | N/A | 600 | 40 | 30 | 50 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | FD | N | JC67069 | 5/31/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.56 U | < 0.49 U | < 0.24 U | < 0.84 U | **37.7** | < 0.91 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | **93.1** | < 0.89 U |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.56 U | < 0.48 U | < 0.24 U | < 0.83 U | **700** | < 0.90 U |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.56 U | < 0.49 U | < 0.24 U | < 0.84 U | **682** | < 0.91 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | 9.8 | < 0.89 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.55 U | < 0.47 U | < 0.23 U | < 0.81 U | < 0.21 U | < 0.88 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.56 U | < 0.48 U | < 0.24 U | < 0.83 U | < 0.21 U | < 0.90 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | N | N | JC64901 | 4/25/2018 | < 0.54 U | < 0.46 U | < 0.23 U | < 0.80 U | < 0.20 U | < 0.86 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-30.5 | N | N | JC5499 | 10/6/2015 | < 0.34 U | < 0.27 U | < 0.36 U | < 1.3 U | < 0.31 U | < 1.4 U |
| WELL | INTERMEDIATE | 135-MW3BR | 135-MW3B-30.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.53 U | < 0.46 U | < 0.23 U | < 0.79 U | < 0.20 U | < 0.85 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.53 U | < 0.46 U | < 0.23 U | < 0.79 U | < 0.20 U | < 0.85 U |
| WELL | INTERMEDIATE | MW7D | MW7D-41.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.53 U | < 0.46 U | < 0.23 U | < 0.79 U | < 0.20 U | < 0.86 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930X | FD | N | JC5098A | 9/30/2015 | < 0.33 U | < 0.26 U | < 0.35 U | < 1.3 U | < 0.30 U | < 1.3 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.36 U | < 0.28 U | < 0.38 U | < 1.4 U | < 0.32 U | < 1.4 U |
| WELL | INTERMEDIATE | MW7D | MW7D-40.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.35 U | < 0.27 U | < 0.37 U | < 1.3 U | < 0.31 U | < 1.4 U |
| WELL | INTERMEDIATE | MW8D | MW8D-45.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.61 U | < 0.53 U | < 0.26 U | < 0.91 U | 0.68 J | < 0.99 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425X | FD | N | JC64901 | 4/25/2018 | < 0.56 U | < 0.49 U | < 0.24 U | < 0.84 U | 21.8 J | < 0.91 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.63 U | < 0.54 U | < 0.27 U | < 0.93 U | 14.3 J | < 1.0 U |
| WELL | INTERMEDIATE | MW8D | MW8D-46.5-20150929 | N | N | JC4976A | 9/29/2015 | < 0.36 U | < 0.28 U | < 0.38 U | < 1.4 U | 1.6 | < 1.4 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.5-20150929 | N | N | JC4976A | 9/29/2015 | < 0.33 U | < 0.27 U | < 0.36 U | < 1.3 U | **34.4** | < 1.3 U |
| WELL | DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | N | N | JC65066 | 4/27/2018 | < 0.53 U | < 0.45 U | < 0.22 U | < 0.78 U | < 0.20 U | < 0.85 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-20180419 | N | N | JC64571 | 4/19/2018 | < 0.61 U | < 0.53 U | < 0.26 U | < 0.91 U | < 0.23 U | < 0.99 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-78.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.32 U | < 0.26 U | < 0.34 U | < 1.3 U | < 0.29 U | < 1.3 U |
| WELL | DEEP | 114-MW25C-2 | 114-MW25C-20180313 | N | N | JC62228 | 3/13/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | 11.8 | < 0.89 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | N | N | JC57943A | 12/22/2017 | < 0.61 U | < 0.53 U | < 0.26 U | < 0.91 U | 1.4 | < 0.99 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | N | N | JC57943A | 12/22/2017 | < 0.61 U | < 0.52 U | < 0.26 U | < 0.90 U | 2.1 | < 0.98 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.63 U | < 0.55 U | < 0.27 U | < 0.94 U | 2.2 | < 1.0 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.61 U | < 0.53 U | < 0.26 U | < 0.91 U | 2.8 | < 0.99 U |
| WELL | DEEP | MW8F | MW8F-20180425 | N | N | JC64901 | 4/25/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| WELL | DEEP | MW8F | MW8F-82.0-20151001 | N | N | JC5237A | 10/1/2015 | < 0.33 U | < 0.26 U | < 0.35 U | < 1.3 U | < 0.30 U | < 1.3 U |
| WELL | DEEP | MW8F | MW8F-79.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.36 U | < 0.28 U | < 0.38 U | < 1.4 U | < 0.32 U | < 1.4 U |
| WELL | DEEP | MW-CR-3D | MW-CR-3D-20180418 | N | N | JC64444 | 4/18/2018 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-46.0-49.5 | N | N | JC53234 | 10/16/2017 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-40.0-44.0 | N | N | JC53234 | 10/16/2017 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-32.0-36.0 | N | N | JC53234 | 10/16/2017 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-24.0-28.0 | N | N | JC53234 | 10/16/2017 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-36.0-40.0 | N | N | JC54569A | 11/2/2017 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | 0.48 J | < 0.89 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-30.0-34.0 | N | N | JC54569A | 11/2/2017 | < 0.55 U | < 0.48 U | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-22.0-26.0 | N | N | JC54569A | 11/2/2017 | < 0.55 UJ | < 0.48 UJ | < 0.24 UJ | < 0.82 UJ | 15.6 J- | < 0.89 UJ |
| SOILBORE | N/A | DNAPL-S1 | 137-S1-GW | N | N | JC55721 | 11/17/2017 | < 0.62 U | < 0.53 U | < 0.27 U | < 0.92 U | < 0.24 U | < 1.0 U |
| SOILBORE | N/A | DNAPL-W1 | 137-W1-GW | N | N | JC55721 | 11/17/2017 | < 0.61 U | < 0.53 U | < 0.26 U | < 0.91 U | **382** | < 0.99 U |

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| | | | | | | | **Analyte** | 2-NITROANILINE | 2-NITROPHENOL | 3,3'-DICHLOROBENZIDINE | 3,5,5-TRIMETHYL-2-CYCLOHEXENE-1-ONE | 3+4-METHYLPHENOL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 88-74-4 | 88-75-5 | 91-94-1 | 78-59-1 | 106-44-5 |
| | | | | | | | **GWQS** | N/A | N/A | 30 | 40 | 50 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-8.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.28 U | < 0.97 U | < 0.51 U | < 0.28 U | < 0.89 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.27 U | < 0.94 U | < 0.50 U | < 0.27 U | < 0.86 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-12.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.32 U | < 1.9 U | < 0.56 U | < 0.34 U | 5.8 |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-10.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.32 U | < 1.9 U | < 0.57 U | < 0.34 U | 4.7 |
| WELL | SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | N | N | JC65325 | 5/2/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | SHALLOW | 114-MW25A | 114-MW25A-20170927 | N | N | JC51824 | 9/27/2017 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | N | N | JC57565 | 12/18/2017 | < 0.29 U | < 1.0 U | < 0.53 U | < 0.29 U | < 0.92 U |
| WELL | SHALLOW | 114-MW27A | 114-MW27A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.30 U | < 1.0 U | < 0.55 U | < 0.30 U | < 0.96 U |
| WELL | SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | N | N | JC57565 | 12/18/2017 | < 0.31 U | < 1.1 U | < 0.56 U | < 0.31 U | < 0.98 U |
| WELL | SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | N | N | JC56729A | 12/6/2017 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | N | N | JC56859A | 12/7/2017 | < 0.26 U | < 0.91 U | < 0.48 U | < 0.26 U | < 0.84 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927-X | FD | N | JC51890 | 9/27/2017 | < 0.29 U | < 1.0 U | < 0.53 U | < 0.29 U | < 0.93 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927 | N | N | JC51890 | 9/27/2017 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | SHALLOW | 114-MW37A | 114-MW37A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | N | N | JC56504A | 12/4/2017 | < 0.31 U | < 1.1 U | < 0.56 U | < 0.31 U | < 0.98 U |
| WELL | SHALLOW | 114-MW41A | 114-MW41A-20180420 | N | N | JC64643 | 4/20/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.30 U | < 1.0 U | < 0.55 U | < 0.30 U | < 0.96 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.26 U | < 0.91 U | < 0.48 U | < 0.26 U | < 0.84 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.26 U | < 0.91 U | < 0.48 U | < 0.26 U | < 0.84 U |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | N | N | JC51736 | 9/25/2017 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.28 U | < 0.98 U | < 0.52 U | < 0.28 U | < 0.90 U |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.28 U | < 0.98 U | < 0.52 U | < 0.28 U | < 0.90 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.31 U | < 1.1 U | < 0.56 U | < 0.31 U | < 0.97 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.30 U | < 1.0 U | < 0.55 U | < 0.30 U | < 0.95 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.29 U | < 1.0 U | < 0.54 U | < 0.29 U | < 0.94 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.28 U | R | < 0.51 U | < 0.28 U | 1.3 J- |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.28 U | R | < 0.51 U | < 0.28 U | R |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.27 U | < 0.94 U | < 0.50 U | < 0.27 U | < 0.86 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.7 | N | N | JC5499 | 10/6/2015 | < 0.34 U | < 2.0 U | < 0.61 U | < 0.37 U | < 1.2 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-12.5 | N | N | JC5499 | 10/6/2015 | < 0.34 U | < 2.0 U | < 0.61 U | < 0.37 U | < 1.2 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-8.5 | N | N | JC5499 | 10/6/2015 | < 0.32 U | < 1.9 U | < 0.56 U | < 0.34 U | < 1.1 U |
| WELL | SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.27 U | < 0.95 U | < 0.50 U | < 0.27 U | < 0.87 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.28 U | < 0.98 U | < 0.52 U | < 0.28 U | < 0.90 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.28 U | < 0.97 U | < 0.51 U | < 0.28 U | < 0.89 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | SHALLOW | MW7S | MW7S-10.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.28 U | < 0.98 U | < 0.52 U | < 0.28 U | < 0.90 U |
| WELL | SHALLOW | MW7S | MW7S-10.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.33 U | < 1.9 U | < 0.58 U | < 0.35 U | < 1.1 U |

**Appendix L.4**
**Historical Groundwater Analytical Data - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | 2-NITROANILINE | 2-NITROPHENOL | 3,3'-DICHLOROBENZIDINE | 3,5,5-TRIMETHYL-2-CYCLOHEXENE-1-ONE | 3+4-METHYLPHENOL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 88-74-4 | 88-75-5 | 91-94-1 | 78-59-1 | 106-44-5 |
| | | | | | | | **GWQS** | N/A | N/A | 30 | 40 | 50 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | MW7S | MW7S-7.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.32 U | < 1.9 U | < 0.57 U | < 0.35 U | < 1.1 U |
| WELL | SHALLOW | MW8S | MW8S-20180427 | N | N | JC65066 | 4/27/2018 | < 0.30 U | < 1.0 U | < 0.55 U | < 0.30 U | < 0.96 U |
| WELL | SHALLOW | MW8S | MW8S-9.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.32 U | < 1.9 U | R | < 0.34 U | < 1.1 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | 13.4 |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | 10.1 |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.29 U | < 1.0 U | < 0.53 U | < 0.29 U | 11.5 |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | N | N | JC57752 | 12/20/2017 | < 0.29 U | < 1.0 U | < 0.53 U | < 0.29 U | 5.7 |
| WELL | INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | N | N | JC64444 | 4/18/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | N | N | JC65255 | 5/1/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | N | N | JC64571 | 4/19/2018 | < 0.28 U | < 0.97 U | < 0.51 U | < 0.28 U | 2.8 |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-36.0-20151001 | N | N | JC5237A | 10/1/2015 | < 0.32 U | < 1.9 U | < 0.57 U | < 0.34 U | < 1.1 U |
| WELL | INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | N | N | JC62130 | 3/12/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | N | JC62228 | 3/13/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | N | JC62228 | 3/13/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | FD | N | JC56729A | 12/6/2017 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | N | N | JC56729A | 12/6/2017 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | N | N | JC51890 | 9/27/2017 | < 0.29 U | < 1.0 U | < 0.53 U | < 0.29 U | < 0.93 U |
| WELL | INTERMEDIATE | 114-MW37B | 114-MW37B-20170926 | N | N | JC51824 | 9/26/2017 | < 0.29 U | < 1.0 U | < 0.53 U | < 0.29 U | < 0.93 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | FD | N | JC60652 | 2/12/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | N | N | JC60652 | 2/12/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | N | N | JC65066 | 4/27/2018 | < 0.29 U | < 0.99 U | < 0.52 U | < 0.29 U | < 0.91 U |
| WELL | INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | N | N | JC64643 | 4/20/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.29 U | < 1.0 U | < 0.53 U | < 0.29 U | < 0.92 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | N | N | JC57638 | 12/19/2017 | < 0.31 U | < 1.1 U | < 0.56 U | < 0.31 U | < 0.98 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | N | N | JC57501A | 12/15/2017 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | N | N | JC58670 | 1/11/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.28 U | < 0.96 U | R | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.28 U | < 0.97 U | < 0.51 U | < 0.28 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.28 U | < 0.98 U | < 0.52 U | < 0.28 U | < 0.90 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.26 U | < 0.91 U | < 0.48 U | < 0.26 U | < 0.84 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |

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**Historical Groundwater Analytical Data - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | 2-NITROANILINE | 2-NITROPHENOL | 3,3'-DICHLOROBENZIDINE | 3,5,5-TRIMETHYL-2-CYCLOHEXENE-1-ONE | 3+4-METHYLPHENOL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 88-74-4 | 88-75-5 | 91-94-1 | 78-59-1 | 106-44-5 |
| | | | | | | | **GWQS** | N/A | N/A | 30 | 40 | 50 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | FD | N | JC67069 | 5/31/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.28 U | < 0.98 U | < 0.52 U | < 0.28 U | < 0.90 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.28 U | < 0.97 U | < 0.51 U | < 0.28 U | 2.7 |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.28 U | < 0.98 U | < 0.52 U | < 0.28 U | 2.5 |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.27 U | < 0.95 U | < 0.50 U | < 0.27 U | < 0.87 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.28 U | < 0.97 U | < 0.51 U | < 0.28 U | < 0.89 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | N | N | JC64901 | 4/25/2018 | < 0.27 U | < 0.93 U | R | < 0.27 U | < 0.85 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-30.5 | N | N | JC5499 | 10/6/2015 | < 0.34 U | < 2.0 U | < 0.60 U | < 0.36 U | < 1.1 U |
| WELL | INTERMEDIATE | 135-MW3BR | 135-MW3B-30.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.27 U | < 0.92 U | < 0.49 U | < 0.27 U | < 0.85 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.27 U | < 0.92 U | < 0.49 U | < 0.27 U | < 0.85 U |
| WELL | INTERMEDIATE | MW7D | MW7D-41.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.27 U | < 0.93 U | < 0.49 U | < 0.27 U | < 0.85 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930X | FD | N | JC5098A | 9/30/2015 | < 0.32 U | < 1.9 U | < 0.57 U | < 0.35 U | < 1.1 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.35 U | < 2.1 U | < 0.62 U | < 0.38 U | < 1.2 U |
| WELL | INTERMEDIATE | MW7D | MW7D-40.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.34 U | < 2.0 U | < 0.60 U | < 0.36 U | < 1.2 U |
| WELL | INTERMEDIATE | MW8D | MW8D-45.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.31 U | < 1.1 U | < 0.56 U | < 0.31 U | < 0.98 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425X | FD | N | JC64901 | 4/25/2018 | < 0.28 U | < 0.98 U | < 0.52 U | < 0.28 U | < 0.90 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.31 U | < 1.1 U | < 0.58 U | < 0.31 U | < 1.0 U |
| WELL | INTERMEDIATE | MW8D | MW8D-46.5-20150929 | N | N | JC4976A | 9/29/2015 | < 0.35 U | < 2.1 U | < 0.62 U | < 0.38 U | < 1.2 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.5-20150929 | N | N | JC4976A | 9/29/2015 | < 0.33 U | < 1.9 U | < 0.58 U | < 0.35 U | < 1.1 U |
| WELL | DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | N | N | JC65066 | 4/27/2018 | < 0.26 U | < 0.91 U | < 0.48 U | < 0.26 U | < 0.84 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-20180419 | N | N | JC64571 | 4/19/2018 | < 0.31 U | < 1.1 U | < 0.56 U | < 0.31 U | < 0.98 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-78.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.32 U | < 1.9 U | < 0.56 U | < 0.34 U | < 1.1 U |
| WELL | DEEP | 114-MW25C-2 | 114-MW25C-20180313 | N | N | JC62228 | 3/13/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | N | N | JC57943A | 12/22/2017 | < 0.31 U | < 1.1 U | < 0.56 U | < 0.31 U | < 0.98 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | N | N | JC57943A | 12/22/2017 | < 0.30 U | < 1.1 U | < 0.56 U | < 0.30 U | < 0.97 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.32 U | < 1.1 U | < 0.58 U | < 0.32 U | < 1.0 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.31 U | < 1.1 U | < 0.56 U | < 0.31 U | < 0.98 U |
| WELL | DEEP | MW8F | MW8F-20180425 | N | N | JC64901 | 4/25/2018 | < 0.28 U | < 0.96 U | R | < 0.28 U | < 0.88 U |
| WELL | DEEP | MW8F | MW8F-82.0-20151001 | N | N | JC5237A | 10/1/2015 | < 0.32 U | < 1.9 U | < 0.57 U | < 0.35 U | < 1.1 U |
| WELL | DEEP | MW8F | MW8F-79.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.35 U | < 2.1 U | < 0.62 U | < 0.38 U | < 1.2 U |
| WELL | DEEP | MW-CR-3D | MW-CR-3D-20180418 | N | N | JC64444 | 4/18/2018 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-46.0-49.5 | N | N | JC53234 | 10/16/2017 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-40.0-44.0 | N | N | JC53234 | 10/16/2017 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-32.0-36.0 | N | N | JC53234 | 10/16/2017 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-24.0-28.0 | N | N | JC53234 | 10/16/2017 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-36.0-40.0 | N | N | JC54569A | 11/2/2017 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-30.0-34.0 | N | N | JC54569A | 11/2/2017 | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U | < 0.88 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-22.0-26.0 | N | N | JC54569A | 11/2/2017 | < 0.28 UJ | < 0.96 UJ | < 0.51 UJ | < 0.28 UJ | < 0.88 UJ |
| SOILBORE | N/A | DNAPL-S1 | 137-S1-GW | N | N | JC55721 | 11/17/2017 | < 0.31 U | < 1.1 U | < 0.57 U | < 0.31 U | 17.1 |
| SOILBORE | N/A | DNAPL-W1 | 137-W1-GW | N | N | JC55721 | 11/17/2017 | < 0.31 U | < 1.1 U | < 0.56 U | < 0.31 U | 12.5 |

**Appendix L.4**
**Historical Groundwater Analytical Data - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | 3-NITROANILINE | 4,6-DINITRO-2-METHYLPHENOL | 4-BROMOPHENYL PHENYL ETHER | 4-CHLORO-3-METHYLPHENOL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 99-09-2 | 534-52-1 | 101-55-3 | 59-50-7 |
| | | | | | | | **GWQS** | N/A | 7 | N/A | 100 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-8.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.39 U | < 0.15 U | < 0.41 U | < 0.90 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.38 U | < 0.15 U | < 0.40 U | < 0.87 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-12.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.26 U | < 0.090 U | < 0.25 U | < 1.3 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-10.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.26 U | < 0.090 U | < 0.25 U | < 1.3 U |
| WELL | SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | N | N | JC65325 | 5/2/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | SHALLOW | 114-MW25A | 114-MW25A-20170927 | N | N | JC51824 | 9/27/2017 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | N | N | JC57565 | 12/18/2017 | < 0.40 U | < 0.16 U | < 0.42 U | < 0.93 U |
| WELL | SHALLOW | 114-MW27A | 114-MW27A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.42 U | < 0.17 U | < 0.44 U | < 0.97 U |
| WELL | SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | N | N | JC57565 | 12/18/2017 | < 0.43 U | < 0.17 U | < 0.45 U | < 0.99 U |
| WELL | SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | N | N | JC56729A | 12/6/2017 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | N | N | JC56859A | 12/7/2017 | < 0.37 U | < 0.15 U | < 0.38 U | < 0.85 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927-X | FD | N | JC51890 | 9/27/2017 | < 0.41 U | < 0.16 U | < 0.43 U | < 0.94 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927 | N | N | JC51890 | 9/27/2017 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | SHALLOW | 114-MW37A | 114-MW37A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | N | N | JC56504A | 12/4/2017 | < 0.43 U | < 0.17 U | < 0.45 U | < 0.99 U |
| WELL | SHALLOW | 114-MW41A | 114-MW41A-20180420 | N | N | JC64643 | 4/20/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.42 U | < 0.17 U | < 0.44 U | < 0.97 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.37 U | < 0.15 U | < 0.38 U | < 0.85 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.37 U | < 0.15 U | < 0.38 U | < 0.85 U |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | N | N | JC51736 | 9/25/2017 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.39 U | < 0.16 U | < 0.41 U | < 0.91 U |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.39 U | < 0.16 U | < 0.41 U | < 0.91 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.43 U | < 0.17 U | < 0.45 U | < 0.99 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.39 U | < 0.15 U | < 0.41 U | < 0.90 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.42 U | < 0.16 U | < 0.43 U | < 0.96 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.41 U | < 0.16 U | < 0.43 U | < 0.95 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.39 U | R | < 0.40 U | R |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.39 U | R | < 0.40 U | R |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.38 U | < 0.15 U | < 0.40 U | < 0.87 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.39 U | < 0.15 U | < 0.41 U | < 0.90 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.7 | N | N | JC5499 | 10/6/2015 | < 0.28 U | < 0.097 U | < 0.27 U | < 1.4 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-12.5 | N | N | JC5499 | 10/6/2015 | < 0.28 U | < 0.097 U | < 0.27 U | < 1.4 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-8.5 | N | N | JC5499 | 10/6/2015 | < 0.26 U | < 0.090 U | < 0.25 U | < 1.3 U |
| WELL | SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.38 U | < 0.15 U | < 0.40 U | < 0.88 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.39 U | < 0.16 U | < 0.41 U | < 0.91 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.39 U | < 0.15 U | < 0.41 U | < 0.90 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | SHALLOW | MW7S | MW7S-10.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.39 U | < 0.16 U | < 0.41 U | < 0.91 U |
| WELL | SHALLOW | MW7S | MW7S-10.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.27 U | < 0.093 U | < 0.26 U | < 1.4 U |

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**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | Analyte | 3-NITROANILINE | 4,6-DINITRO-2-METHYLPHENOL | 4-BROMOPHENYL PHENYL ETHER | 4-CHLORO-3-METHYLPHENOL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 99-09-2 | 534-52-1 | 101-55-3 | 59-50-7 |
| | | | | | | | GWQS | N/A | 7 | N/A | 100 |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L |
| Location Type | Water-Bearing Zone | Location ID | Sample ID | Sample Type | Fraction | Lab SDG | Date Collected | Result | Result | Result | Result |
| WELL | SHALLOW | MW7S | MW7S-7.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.27 U | < 0.091 U | < 0.25 U | < 1.3 U |
| WELL | SHALLOW | MW8S | MW8S-20180427 | N | N | JC65066 | 4/27/2018 | < 0.42 U | < 0.17 U | < 0.44 U | < 0.97 U |
| WELL | SHALLOW | MW8S | MW8S-9.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.26 U | < 0.090 U | < 0.25 U | < 1.3 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.41 U | < 0.16 U | < 0.43 U | < 0.94 U |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | N | N | JC57752 | 12/20/2017 | < 0.41 U | R | < 0.43 U | < 0.94 U |
| WELL | INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | N | N | JC64444 | 4/18/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | N | N | JC65255 | 5/1/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | N | N | JC64571 | 4/19/2018 | < 0.39 U | < 0.16 U | < 0.41 U | < 0.91 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-36.0-20151001 | N | N | JC5237A | 10/1/2015 | < 0.26 U | < 0.090 U | < 0.25 U | < 1.3 U |
| WELL | INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | N | N | JC62130 | 3/12/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | N | JC62228 | 3/13/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | N | JC62228 | 3/13/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | FD | N | JC56729A | 12/6/2017 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | N | N | JC56729A | 12/6/2017 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | N | N | JC51890 | 9/27/2017 | < 0.41 U | < 0.16 U | < 0.43 U | < 0.94 U |
| WELL | INTERMEDIATE | 114-MW37B | 114-MW37B-20170926 | N | N | JC51824 | 9/26/2017 | < 0.41 U | < 0.16 U | < 0.43 U | < 0.94 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | FD | N | JC60652 | 2/12/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | N | N | JC60652 | 2/12/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | N | N | JC65066 | 4/27/2018 | < 0.40 U | < 0.16 U | < 0.42 U | < 0.92 U |
| WELL | INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | N | N | JC64643 | 4/20/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.40 U | < 0.16 U | < 0.42 U | < 0.93 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | N | N | JC57638 | 12/19/2017 | < 0.43 U | < 0.17 U | < 0.45 U | < 0.99 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | N | N | JC57501A | 12/15/2017 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | N | N | JC58670 | 1/11/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.39 U | < 0.15 U | < 0.41 U | < 0.90 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.39 U | < 0.15 U | < 0.41 U | < 0.90 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.40 U | < 0.16 U | < 0.41 U | < 0.91 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.37 U | < 0.15 U | < 0.38 U | < 0.85 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |

**Appendix L.4**
**Historical Groundwater Analytical Data - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | 3-NITROANILINE | 4,6-DINITRO-2-METHYLPHENOL | 4-BROMOPHENYL PHENYL ETHER | 4-CHLORO-3-METHYLPHENOL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 99-09-2 | 534-52-1 | 101-55-3 | 59-50-7 |
| | | | | | | | **GWQS** | N/A | 7 | N/A | 100 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | FD | N | JC67069 | 5/31/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.39 U | < 0.16 U | < 0.41 U | < 0.91 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.39 U | < 0.16 U | < 0.41 U | < 0.91 U |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.39 U | < 0.16 U | < 0.41 U | < 0.91 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.38 U | < 0.15 U | < 0.40 U | < 0.88 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.39 U | < 0.15 U | < 0.41 U | < 0.90 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | N | N | JC64901 | 4/25/2018 | R | < 0.15 U | < 0.39 U | < 0.87 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-30.5 | N | N | JC5499 | 10/6/2015 | < 0.28 U | < 0.095 U | < 0.26 U | < 1.4 U |
| WELL | INTERMEDIATE | 135-MW3BR | 135-MW3B-30.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.37 U | < 0.15 U | < 0.39 U | < 0.86 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.37 U | < 0.15 U | < 0.39 U | < 0.86 U |
| WELL | INTERMEDIATE | MW7D | MW7D-41.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.37 U | < 0.15 U | < 0.39 U | < 0.86 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930X | FD | N | JC5098A | 9/30/2015 | < 0.27 U | < 0.091 U | < 0.25 U | < 1.3 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.29 U | < 0.099 U | < 0.28 U | < 1.4 U |
| WELL | INTERMEDIATE | MW7D | MW7D-40.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.28 UJ | < 0.096 U | < 0.27 U | < 1.4 U |
| WELL | INTERMEDIATE | MW8D | MW8D-45.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.43 U | < 0.17 U | < 0.45 U | < 0.99 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425X | FD | N | JC64901 | 4/25/2018 | < 0.39 U | < 0.16 U | < 0.41 U | < 0.91 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.44 U | < 0.17 U | < 0.46 U | < 1.0 U |
| WELL | INTERMEDIATE | MW8D | MW8D-46.5-20150929 | N | N | JC4976A | 9/29/2015 | < 0.29 U | < 0.099 U | < 0.28 U | < 1.4 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.5-20150929 | N | N | JC4976A | 9/29/2015 | < 0.27 U | < 0.093 U | < 0.26 U | < 1.4 U |
| WELL | DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | N | N | JC65066 | 4/27/2018 | < 0.37 U | < 0.15 U | < 0.38 U | < 0.85 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-20180419 | N | N | JC64571 | 4/19/2018 | < 0.43 U | < 0.17 U | < 0.45 U | < 0.99 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-78.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.26 U | < 0.090 U | < 0.25 U | < 1.3 U |
| WELL | DEEP | 114-MW25C-2 | 114-MW25C-20180313 | N | N | JC62228 | 3/13/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | N | N | JC57943A | 12/22/2017 | < 0.43 U | < 0.17 U | < 0.45 U | < 0.99 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | N | N | JC57943A | 12/22/2017 | < 0.43 U | < 0.17 U | < 0.44 U | < 0.98 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.44 U | < 0.18 U | < 0.46 U | < 1.0 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.43 U | < 0.17 U | < 0.45 U | < 0.99 U |
| WELL | DEEP | MW8F | MW8F-20180425 | N | N | JC64901 | 4/25/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| WELL | DEEP | MW8F | MW8F-82.0-20151001 | N | N | JC5237A | 10/1/2015 | < 0.27 U | < 0.091 U | < 0.25 U | < 1.3 U |
| WELL | DEEP | MW8F | MW8F-79.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.29 U | < 0.099 U | < 0.28 U | < 1.4 U |
| WELL | DEEP | MW-CR-3D | MW-CR-3D-20180418 | N | N | JC64444 | 4/18/2018 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-46.0-49.5 | N | N | JC53234 | 10/16/2017 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-40.0-44.0 | N | N | JC53234 | 10/16/2017 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-32.0-36.0 | N | N | JC53234 | 10/16/2017 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-24.0-28.0 | N | N | JC53234 | 10/16/2017 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-36.0-40.0 | N | N | JC54569A | 11/2/2017 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-30.0-34.0 | N | N | JC54569A | 11/2/2017 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-22.0-26.0 | N | N | JC54569A | 11/2/2017 | < 0.39 UJ | < 0.15 UJ | < 0.40 UJ | < 0.89 UJ |
| SOILBORE | N/A | DNAPL-S1 | 137-S1-GW | N | N | JC55721 | 11/17/2017 | < 0.43 U | < 0.17 U | < 0.45 U | < 1.0 U |
| SOILBORE | N/A | DNAPL-W1 | 137-W1-GW | N | N | JC55721 | 11/17/2017 | < 0.43 U | < 0.17 U | < 0.45 U | < 0.99 U |

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**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | 4-CHLOROPHENYL PHENYL ETHER | 4-NITROPHENOL | ACENAPHTHENE | ACENAPHTHYLENE | ACETOPHENONE | ANTHRACENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7005-72-3 | 100-02-7 | 83-32-9 | 208-96-8 | 98-86-2 | 120-12-7 |
| | | | | | | | **GWQS** | N/A | N/A | 400 | 100 | 700 | 2000 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-8.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.37 U | < 1.2 U | 5.6 | 0.51 J | < 0.21 U | < 0.21 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.36 U | < 1.1 U | 4.2 | < 0.13 U | < 0.20 U | < 0.21 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-12.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.38 U | < 0.91 U | 7.1 | 0.54 J | < 0.36 U | < 0.19 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-10.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.38 U | < 0.92 U | 4.6 | 0.45 J | < 0.37 U | < 0.19 U |
| WELL | SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | N | N | JC65325 | 5/2/2018 | < 0.37 U | < 1.2 U | 3.1 | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | SHALLOW | 114-MW25A | 114-MW25A-20170927 | N | N | JC51824 | 9/27/2017 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | 0.73 J |
| WELL | SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | N | N | JC57565 | 12/18/2017 | < 0.38 U | < 1.2 U | 1.1 | < 0.14 U | < 0.22 U | < 0.22 U |
| WELL | SHALLOW | 114-MW27A | 114-MW27A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.40 U | < 1.3 U | < 0.21 U | < 0.15 U | < 0.23 U | < 0.23 U |
| WELL | SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | N | N | JC57565 | 12/18/2017 | < 0.41 U | < 1.3 U | < 0.21 U | < 0.15 U | < 0.23 U | < 0.23 U |
| WELL | SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | N | N | JC56729A | 12/6/2017 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | N | N | JC56859A | 12/7/2017 | < 0.35 U | < 1.1 U | < 0.18 U | < 0.13 U | < 0.20 U | < 0.20 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927-X | FD | N | JC51890 | 9/27/2017 | < 0.39 U | < 1.2 U | < 0.20 U | < 0.14 U | < 0.22 U | < 0.22 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927 | N | N | JC51890 | 9/27/2017 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | SHALLOW | 114-MW37A | 114-MW37A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | N | N | JC56504A | 12/4/2017 | < 0.41 U | < 1.3 U | < 0.21 U | < 0.15 U | < 0.23 U | < 0.23 U |
| WELL | SHALLOW | 114-MW41A | 114-MW41A-20180420 | N | N | JC64643 | 4/20/2018 | < 0.37 U | < 1.2 U | 76.2 | 1.3 | 0.71 J | 10.3 |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.40 U | < 1.3 U | 7.2 | < 0.15 U | < 0.23 U | 2.0 |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.37 U | < 1.2 U | 9.1 | < 0.14 U | < 0.21 U | 2.0 |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.35 U | < 1.1 U | < 0.18 U | < 0.13 U | 2.3 | < 0.20 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.35 U | < 1.1 U | < 0.18 U | < 0.13 U | < 0.20 U | < 0.20 U |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | N | N | JC51736 | 9/25/2017 | < 0.37 U | < 1.2 U | 15.2 | 2.6 | < 0.21 U | < 0.21 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.37 U | < 1.2 U | 34.7 | 2.8 | < 0.21 U | 3.3 |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.37 U | < 1.2 U | 30.1 | 2.6 | < 0.21 U | 3.1 |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.37 U | < 1.2 U | 64.7 | 3.9 | < 0.21 U | 6.1 |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.40 U | < 1.3 U | 5.6 | 3.2 | < 0.23 U | 2.5 |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.37 U | < 1.2 U | 4.9 | 2.9 | < 0.21 U | 2.1 |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.39 U | < 1.2 U | < 0.21 U | < 0.15 U | < 0.22 U | < 0.23 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.39 U | < 1.2 U | < 0.20 U | < 0.14 U | < 0.22 U | < 0.22 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.37 U | R | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.37 U | R | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.36 U | < 1.1 U | < 0.19 U | < 0.13 U | < 0.20 U | < 0.21 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.7 | N | N | JC5499 | 10/6/2015 | < 0.41 U | < 0.99 U | < 0.32 U | < 0.22 U | < 0.40 U | < 0.21 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-12.5 | N | N | JC5499 | 10/6/2015 | < 0.41 U | < 0.99 U | < 0.32 U | < 0.22 U | < 0.40 U | < 0.21 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-8.5 | N | N | JC5499 | 10/6/2015 | < 0.38 U | < 0.91 U | < 0.30 U | < 0.20 U | < 0.36 U | < 0.19 U |
| WELL | SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.36 U | < 1.1 U | < 0.19 U | < 0.13 U | < 0.21 U | < 0.21 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.37 U | < 1.2 U | 0.49 J | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.22 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.37 U | < 1.2 U | 0.47 J | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | SHALLOW | MW7S | MW7S-10.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.22 U |
| WELL | SHALLOW | MW7S | MW7S-10.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.40 U | < 0.94 U | < 0.31 U | < 0.21 U | < 0.38 U | < 0.20 U |

**Appendix L.4**
**Historical Groundwater Analytical Data - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | 4-CHLOROPHENYL PHENYL ETHER | 4-NITROPHENOL | ACENAPHTHENE | ACENAPHTHYLENE | ACETOPHENONE | ANTHRACENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7005-72-3 | 100-02-7 | 83-32-9 | 208-96-8 | 98-86-2 | 120-12-7 |
| | | | | | | | **GWQS** | N/A | N/A | 400 | 100 | 700 | 2000 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | MW7S | MW7S-7.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.39 U | < 0.93 U | < 0.30 U | < 0.20 U | < 0.37 U | < 0.19 U |
| WELL | SHALLOW | MW8S | MW8S-20180427 | N | N | JC65066 | 4/27/2018 | < 0.40 U | < 1.3 U | < 0.21 U | < 0.15 U | < 0.23 U | < 0.23 U |
| WELL | SHALLOW | MW8S | MW8S-9.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.38 U | < 0.91 U | < 0.30 U | < 0.20 U | < 0.36 U | < 0.19 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | 2.0 | < 0.21 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.37 U | < 1.2 U | 0.36 J | < 0.14 U | 1.5 J | < 0.21 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.39 U | < 1.2 U | < 0.20 U | < 0.14 U | < 0.22 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | N | N | JC57752 | 12/20/2017 | < 0.39 U | < 1.2 U | < 0.20 U | < 0.14 U | 2.0 J | < 0.22 U |
| WELL | INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | N | N | JC64444 | 4/18/2018 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | N | N | JC65255 | 5/1/2018 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | N | N | JC64571 | 4/19/2018 | < 0.37 U | < 1.2 U | 213 | 13.5 | 73.7 | 3.4 |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-36.0-20151001 | N | N | JC5237A | 10/1/2015 | < 0.38 U | < 0.92 U | 107 | 5.2 | 37.3 | 2.2 |
| WELL | INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | N | N | JC62130 | 3/12/2018 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | N | JC62228 | 3/13/2018 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | N | JC62228 | 3/13/2018 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | FD | N | JC56729A | 12/6/2017 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | N | N | JC56729A | 12/6/2017 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | N | N | JC51890 | 9/27/2017 | < 0.39 U | < 1.2 U | < 0.20 U | < 0.14 U | < 0.22 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-MW37B | 114-MW37B-20170926 | N | N | JC51824 | 9/26/2017 | < 0.39 U | < 1.2 U | < 0.20 U | < 0.14 U | < 0.22 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | FD | N | JC60652 | 2/12/2018 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | N | N | JC60652 | 2/12/2018 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | N | N | JC65066 | 4/27/2018 | < 0.38 U | < 1.2 U | < 0.20 U | < 0.14 U | < 0.21 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | N | N | JC64643 | 4/20/2018 | < 0.37 U | < 1.2 U | 4.7 | < 0.14 U | < 0.21 U | 0.83 J |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.38 U | < 1.2 U | < 0.20 U | < 0.14 U | < 0.22 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | N | N | JC57638 | 12/19/2017 | < 0.41 U | < 1.3 U | < 0.21 U | < 0.15 U | < 0.23 U | < 0.23 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | N | N | JC57501A | 12/15/2017 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | N | N | JC58670 | 1/11/2018 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.37 U | < 1.2 U | 1.5 | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.37 U | < 1.2 U | 1.9 | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.37 U | < 1.2 U | 3.0 | 0.20 J | < 0.21 U | < 0.21 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.37 U | < 1.2 U | 2.9 | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.37 U | < 1.2 U | 0.41 J | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.37 U | < 1.2 U | 0.40 J | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.37 U | < 1.2 U | 0.40 J | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.37 U | < 1.2 U | 5.6 | 37.7 | < 0.21 U | < 0.21 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.37 U | < 1.2 U | 5.3 | 36.6 | < 0.21 U | < 0.21 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.37 U | < 1.2 U | 190 | 4.1 | < 0.21 U | 6.3 |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.37 U | < 1.2 U | 198 | 3.9 | < 0.21 U | 7.1 |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.38 U | < 1.2 U | < 0.20 U | < 0.14 U | < 0.21 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.37 U | < 1.2 U | 35.2 | 1.6 | < 0.21 U | 2.2 |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.35 U | < 1.1 U | 34.8 | 1.6 | < 0.20 U | 2.4 |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |

**Appendix L.4**
**Historical Groundwater Analytical Data - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | 4-CHLOROPHENYL PHENYL ETHER | 4-NITROPHENOL | ACENAPHTHENE | ACENAPHTHYLENE | ACETOPHENONE | ANTHRACENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 7005-72-3 | 100-02-7 | 83-32-9 | 208-96-8 | 98-86-2 | 120-12-7 |
| | | | | | | | **GWQS** | N/A | N/A | 400 | 100 | 700 | 2000 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | FD | N | JC67069 | 5/31/2018 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.37 U | < 1.2 U | 208 | 18.4 | < 0.21 U | 8.4 |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.37 U | < 1.2 U | 248 | 25.5 | < 0.21 U | 10.8 |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.37 U | < 1.2 U | 191 | 48.1 | 5.5 | 11.0 |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.37 U | < 1.2 U | 184 | 47.1 | < 0.21 U | 9.7 |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.37 U | < 1.2 U | 204 | 6.5 | < 0.21 U | 6.1 |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.37 U | < 1.2 U | 38.3 | 3.1 | 6.8 | 0.69 J |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.36 U | < 1.1 U | < 0.19 U | < 0.13 U | < 0.21 U | < 0.21 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | N | N | JC64901 | 4/25/2018 | < 0.36 U | < 1.1 U | < 0.19 U | < 0.13 U | < 0.20 U | < 0.20 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-30.5 | N | N | JC5499 | 10/6/2015 | < 0.41 U | < 0.96 U | 3.2 | < 0.21 U | < 0.39 U | < 0.20 U |
| WELL | INTERMEDIATE | 135-MW3BR | 135-MW3B-30.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.35 U | < 1.1 U | 18.5 | < 0.13 U | < 0.20 U | < 0.20 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.35 U | < 1.1 U | < 0.18 U | < 0.13 U | < 0.20 U | < 0.20 U |
| WELL | INTERMEDIATE | MW7D | MW7D-41.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.35 U | < 1.1 U | < 0.18 U | < 0.13 U | < 0.20 U | < 0.20 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930X | FD | N | JC5098A | 9/30/2015 | < 0.39 U | < 0.93 U | < 0.30 U | < 0.20 U | < 0.37 U | < 0.19 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.42 U | < 1.0 U | < 0.33 U | < 0.22 U | < 0.40 U | < 0.21 U |
| WELL | INTERMEDIATE | MW7D | MW7D-40.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.41 U | < 0.98 U | < 0.32 U | < 0.22 U | < 0.39 U | < 0.20 U |
| WELL | INTERMEDIATE | MW8D | MW8D-45.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.41 U | < 1.3 U | < 0.21 U | < 0.15 U | < 0.23 U | < 0.23 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425X | FD | N | JC64901 | 4/25/2018 | < 0.37 U | < 1.2 U | 4.1 J | 0.57 J | < 0.21 U | 0.45 J |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.42 U | < 1.3 U | 2.5 J | 0.34 J | < 0.24 U | 0.30 J |
| WELL | INTERMEDIATE | MW8D | MW8D-46.5-20150929 | N | N | JC4976A | 9/29/2015 | < 0.42 U | < 1.0 U | 1.0 J | < 0.22 U | < 0.40 U | < 0.21 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.5-20150929 | N | N | JC4976A | 9/29/2015 | < 0.40 U | < 0.94 U | 7.3 | 0.57 J | < 0.38 U | < 0.20 U |
| WELL | DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | N | N | JC65066 | 4/27/2018 | < 0.35 U | < 1.1 U | < 0.18 U | < 0.13 U | < 0.20 U | < 0.20 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-20180419 | N | N | JC64571 | 4/19/2018 | < 0.41 U | < 1.3 U | < 0.21 U | < 0.15 U | < 0.23 U | < 0.23 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-78.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.38 U | < 0.91 U | 0.53 J | < 0.20 U | < 0.36 U | < 0.19 U |
| WELL | DEEP | 114-MW25C-2 | 114-MW25C-20180313 | N | N | JC62228 | 3/13/2018 | < 0.37 U | < 1.2 U | 0.99 J | 4.4 | < 0.21 U | < 0.21 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | N | N | JC57943A | 12/22/2017 | < 0.41 U | < 1.3 U | 4.3 | < 0.15 U | < 0.23 U | 0.55 J |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | N | N | JC57943A | 12/22/2017 | < 0.40 U | < 1.3 U | 5.6 | < 0.15 U | < 0.23 U | 0.67 J |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.42 U | < 1.3 U | 5.9 | < 0.16 U | < 0.24 U | 0.56 J |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.41 U | < 1.3 U | 6.9 | < 0.15 U | < 0.23 U | 0.74 J |
| WELL | DEEP | MW8F | MW8F-20180425 | N | N | JC64901 | 4/25/2018 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| WELL | DEEP | MW8F | MW8F-82.0-20151001 | N | N | JC5237A | 10/1/2015 | < 0.39 U | < 0.93 U | < 0.30 U | < 0.20 U | < 0.37 U | < 0.19 U |
| WELL | DEEP | MW8F | MW8F-79.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.42 U | < 1.0 U | < 0.33 U | < 0.22 U | < 0.40 U | < 0.21 U |
| WELL | DEEP | MW-CR-3D | MW-CR-3D-20180418 | N | N | JC64444 | 4/18/2018 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-46.0-49.5 | N | N | JC53234 | 10/16/2017 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-40.0-44.0 | N | N | JC53234 | 10/16/2017 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-32.0-36.0 | N | N | JC53234 | 10/16/2017 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-24.0-28.0 | N | N | JC53234 | 10/16/2017 | < 0.37 U | < 1.2 U | < 0.19 U | 1.3 | < 0.21 U | < 0.21 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-36.0-40.0 | N | N | JC54569A | 11/2/2017 | < 0.37 U | < 1.2 U | 0.56 J | < 0.14 U | < 0.21 U | < 0.21 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-30.0-34.0 | N | N | JC54569A | 11/2/2017 | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-22.0-26.0 | N | N | JC54569A | 11/2/2017 | < 0.37 UJ | < 1.2 UJ | 12.6 J- | 0.48 J- | < 0.21 UJ | 0.74 J- |
| SOILBORE | N/A | DNAPL-S1 | 137-S1-GW | N | N | JC55721 | 11/17/2017 | < 0.41 U | < 1.3 U | < 0.21 U | < 0.15 U | < 0.23 U | < 0.24 U |
| SOILBORE | N/A | DNAPL-W1 | 137-W1-GW | N | N | JC55721 | 11/17/2017 | < 0.41 U | < 1.3 U | 101 | 20.2 | < 0.23 U | 24.0 |

**Appendix L.4**
**Historical Groundwater Analytical Data - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ATRAZINE | BENZALDEHYDE | BENZO(A)ANTHRACENE | BENZO(A)PYRENE | BENZO(B)FLUORANTHENE | BENZO(G,H,I)PERYLENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 1912-24-9 | 100-52-7 | 56-55-3 | 50-32-8 | 205-99-2 | 191-24-2 |
| | | | | | | | **GWQS** | 3 | N/A | 0.1 | 0.1 | 0.2 | 100 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-8.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.034 U | < 0.044 U | < 0.34 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.44 U | < 0.28 U | < 0.022 U | < 0.033 U | < 0.043 U | < 0.33 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-12.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.42 U | < 0.67 U | < 0.019 U | < 0.030 U | < 0.021 U | < 0.31 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-10.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.43 U | < 0.68 U | < 0.019 U | < 0.030 U | < 0.021 U | < 0.31 U |
| WELL | SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | N | N | JC65325 | 5/2/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | SHALLOW | 114-MW25A | 114-MW25A-20170927 | N | N | JC51824 | 9/27/2017 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | N | N | JC57565 | 12/18/2017 | < 0.47 U | < 0.30 U | < 0.024 U | < 0.035 U | < 0.045 U | < 0.36 U |
| WELL | SHALLOW | 114-MW27A | 114-MW27A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.49 U | < 0.31 U | < 0.025 U | < 0.036 U | < 0.047 U | < 0.37 U |
| WELL | SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | N | N | JC57565 | 12/18/2017 | < 0.50 U | < 0.32 U | < 0.025 U | < 0.037 U | < 0.048 U | < 0.38 U |
| WELL | SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | N | N | JC56729A | 12/6/2017 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | N | N | JC56859A | 12/7/2017 | < 0.43 U | < 0.28 U | < 0.022 U | < 0.032 U | < 0.041 U | < 0.32 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927-X | FD | N | JC51890 | 9/27/2017 | < 0.47 U | < 0.30 U | < 0.024 U | < 0.035 U | < 0.046 U | < 0.36 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927 | N | N | JC51890 | 9/27/2017 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | SHALLOW | 114-MW37A | 114-MW37A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | N | N | JC56504A | 12/4/2017 | < 0.50 U | < 0.32 U | < 0.025 U | < 0.037 U | < 0.048 U | < 0.38 U |
| WELL | SHALLOW | 114-MW41A | 114-MW41A-20180420 | N | N | JC64643 | 4/20/2018 | < 0.45 U | < 0.29 U | **0.161** | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.49 U | < 0.32 U | **0.392** | **0.112** | 0.0964 J | < 0.37 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.45 U | < 0.29 U | **0.264** | 0.0455 J | < 0.043 U | < 0.34 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.43 U | < 0.28 U | < 0.022 U | < 0.032 U | < 0.041 U | < 0.32 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.43 U | < 0.28 U | < 0.022 U | < 0.032 U | < 0.041 U | < 0.32 U |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | N | N | JC51736 | 9/25/2017 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.45 U | < 0.29 U | **0.371** | 0.0854 | < 0.043 U | < 0.34 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.46 U | < 0.29 U | **0.592** | **0.298** | **0.252** | < 0.35 U |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.46 U | < 0.29 U | **0.206** | < 0.034 U | < 0.044 U | < 0.35 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.49 U | < 0.32 U | **0.312** | < 0.037 U | < 0.048 U | < 0.38 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.45 U | < 0.29 U | **0.312** | 0.0375 J | < 0.044 U | < 0.34 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.48 U | < 0.31 U | < 0.025 U | < 0.036 U | < 0.047 U | < 0.37 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.48 U | < 0.31 U | < 0.024 U | < 0.035 U | < 0.046 U | < 0.36 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.44 U | < 0.28 U | < 0.022 U | < 0.033 U | < 0.043 U | < 0.33 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.044 U | < 0.34 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.7 | N | N | JC5499 | 10/6/2015 | < 0.46 U | < 0.73 U | < 0.020 U | < 0.032 U | < 0.023 U | < 0.34 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-12.5 | N | N | JC5499 | 10/6/2015 | < 0.46 U | < 0.73 U | < 0.020 U | < 0.032 U | < 0.023 U | < 0.34 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-8.5 | N | N | JC5499 | 10/6/2015 | < 0.42 U | < 0.67 U | < 0.019 U | < 0.030 U | < 0.021 U | < 0.31 U |
| WELL | SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.44 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.46 U | < 0.29 U | < 0.023 U | < 0.034 U | < 0.044 U | < 0.35 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.034 U | < 0.044 U | < 0.34 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | SHALLOW | MW7S | MW7S-10.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.46 U | < 0.29 U | < 0.023 U | < 0.034 U | < 0.044 U | < 0.35 U |
| WELL | SHALLOW | MW7S | MW7S-10.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.44 U | < 0.70 U | < 0.019 U | < 0.031 U | < 0.022 U | < 0.32 U |

**Appendix L.4**
**Historical Groundwater Analytical Data - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ATRAZINE | BENZALDEHYDE | BENZO(A)ANTHRACENE | BENZO(A)PYRENE | BENZO(B)FLUORANTHENE | BENZO(G,H,I)PERYLENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 1912-24-9 | 100-52-7 | 56-55-3 | 50-32-8 | 205-99-2 | 191-24-2 |
| | | | | | | | **GWQS** | 3 | N/A | 0.1 | 0.1 | 0.2 | 100 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | MW7S | MW7S-7.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.43 U | < 0.69 U | < 0.019 U | < 0.030 U | < 0.022 U | < 0.32 U |
| WELL | SHALLOW | MW8S | MW8S-20180427 | N | N | JC65066 | 4/27/2018 | < 0.49 U | < 0.31 U | **0.109** | 0.0769 | 0.137 | < 0.37 U |
| WELL | SHALLOW | MW8S | MW8S-9.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.42 U | < 0.67 U | < 0.019 U | < 0.030 U | < 0.021 U | < 0.31 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.47 U | 3.8 J | < 0.024 U | < 0.035 U | < 0.046 U | < 0.36 U |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | N | N | JC57752 | 12/20/2017 | < 0.47 U | < 0.30 U | **0.153** | < 0.035 U | 0.161 | < 0.36 U |
| WELL | INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | N | N | JC64444 | 4/18/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | N | N | JC65255 | 5/1/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | N | N | JC64571 | 4/19/2018 | < 0.45 U | < 0.29 U | **0.188** | < 0.034 U | < 0.044 U | < 0.35 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-36.0-20151001 | N | N | JC5237A | 10/1/2015 | < 0.43 U | < 0.68 U | < 0.019 U | < 0.030 U | < 0.021 U | < 0.31 U |
| WELL | INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | N | N | JC62130 | 3/12/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | N | JC62228 | 3/13/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | N | JC62228 | 3/13/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | FD | N | JC56729A | 12/6/2017 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | N | N | JC56729A | 12/6/2017 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | N | N | JC51890 | 9/27/2017 | < 0.47 U | < 0.30 U | < 0.024 U | < 0.035 U | < 0.046 U | < 0.36 U |
| WELL | INTERMEDIATE | 114-MW37B | 114-MW37B-20170926 | N | N | JC51824 | 9/26/2017 | < 0.47 U | < 0.30 U | < 0.024 U | < 0.035 U | < 0.046 U | < 0.36 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | FD | N | JC60652 | 2/12/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | N | N | JC60652 | 2/12/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | N | N | JC65066 | 4/27/2018 | < 0.46 U | < 0.30 U | < 0.024 U | < 0.034 U | < 0.045 U | < 0.35 U |
| WELL | INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | N | N | JC64643 | 4/20/2018 | < 0.45 U | < 0.29 U | **0.117** | < 0.032 U | < 0.042 U | < 0.34 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.47 U | < 0.30 U | **0.132** | < 0.035 U | < 0.045 U | < 0.36 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | N | N | JC57638 | 12/19/2017 | < 0.50 U | < 0.32 U | < 0.025 U | < 0.037 U | < 0.048 U | < 0.38 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | N | N | JC57501A | 12/15/2017 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | N | N | JC58670 | 1/11/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.45 U | < 0.29 U | **0.189** | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.45 U | < 0.29 U | **0.121** | < 0.033 U | < 0.044 U | < 0.34 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.45 U | < 0.29 U | **0.114** | < 0.034 U | < 0.044 U | < 0.34 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.46 U | < 0.30 U | < 0.023 U | < 0.034 U | < 0.045 U | < 0.35 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.43 U | < 0.28 U | < 0.022 U | < 0.032 U | < 0.041 U | < 0.32 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |

**Appendix L.4**
**Historical Groundwater Analytical Data - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | ATRAZINE | BENZALDEHYDE | BENZO(A)ANTHRACENE | BENZO(A)PYRENE | BENZO(B)FLUORANTHENE | BENZO(G,H,I)PERYLENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 1912-24-9 | 100-52-7 | 56-55-3 | 50-32-8 | 205-99-2 | 191-24-2 |
| | | | | | | | **GWQS** | 3 | N/A | 0.1 | 0.1 | 0.2 | 100 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | FD | N | JC67069 | 5/31/2018 | < 0.45 U | < 0.29 U | < 0.022 U | < 0.032 U | < 0.041 U | < 0.34 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.46 U | < 0.29 U | **0.175** | < 0.034 U | < 0.044 U | < 0.35 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.45 U | < 0.29 U | **0.223** | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.45 U | < 0.29 U | **0.799** | **0.312** | **0.258** | < 0.35 U |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.46 U | < 0.29 U | **0.666** | **0.271** | **0.229** | < 0.35 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.45 U | < 0.29 U | **0.166** | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.44 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.034 U | < 0.044 U | < 0.34 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | N | N | JC64901 | 4/25/2018 | < 0.43 U | < 0.28 U | **0.149** | 0.0574 | 0.0937 J | < 0.33 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-30.5 | N | N | JC5499 | 10/6/2015 | < 0.45 U | < 0.71 U | < 0.020 U | < 0.031 U | < 0.022 U | < 0.33 U |
| WELL | INTERMEDIATE | 135-MW3BR | 135-MW3B-30.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.43 U | < 0.28 U | < 0.022 U | < 0.032 U | < 0.042 U | < 0.33 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.45 U | < 0.29 U | 0.0264 J | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.43 U | < 0.28 U | < 0.022 U | < 0.032 U | < 0.042 U | < 0.33 U |
| WELL | INTERMEDIATE | MW7D | MW7D-41.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.43 U | < 0.28 U | < 0.022 U | < 0.032 U | < 0.042 U | < 0.33 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930X | FD | N | JC5098A | 9/30/2015 | < 0.43 U | < 0.69 U | < 0.019 U | < 0.030 U | < 0.022 U | < 0.32 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.47 U | < 0.75 U | < 0.021 U | < 0.033 U | < 0.023 U | < 0.34 U |
| WELL | INTERMEDIATE | MW7D | MW7D-40.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.45 U | < 0.72 U | < 0.020 U | < 0.032 U | < 0.023 U | < 0.33 U |
| WELL | INTERMEDIATE | MW8D | MW8D-45.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.50 U | < 0.32 U | **1.44** | **1.17** | **1.8** | 0.87 J |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425X | FD | N | JC64901 | 4/25/2018 | < 0.46 U | < 0.29 U | **2.11 J** | **1.65 J** | **3.2 J** | 1.6 |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.51 U | < 0.33 U | **1.54 J** | **1.17 J** | **1.9 J** | 0.85 J |
| WELL | INTERMEDIATE | MW8D | MW8D-46.5-20150929 | N | N | JC4976A | 9/29/2015 | < 0.47 U | < 0.75 U | **0.545** | **0.419** | **0.565** | < 0.34 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.5-20150929 | N | N | JC4976A | 9/29/2015 | < 0.44 U | < 0.70 U | **0.446** | **0.297** | **0.448** | < 0.32 U |
| WELL | DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | N | N | JC65066 | 4/27/2018 | < 0.43 U | < 0.28 U | < 0.022 U | < 0.032 U | < 0.041 U | < 0.32 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-20180419 | N | N | JC64571 | 4/19/2018 | < 0.50 U | < 0.32 U | < 0.025 U | < 0.037 U | < 0.048 U | < 0.38 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-78.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.42 U | < 0.67 U | < 0.019 U | < 0.030 U | < 0.021 U | < 0.31 U |
| WELL | DEEP | 114-MW25C-2 | 114-MW25C-20180313 | N | N | JC62228 | 3/13/2018 | < 0.45 U | < 0.29 U | **0.104** | < 0.033 U | < 0.043 U | < 0.34 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | N | N | JC57943A | 12/22/2017 | < 0.50 U | < 0.32 U | < 0.025 U | < 0.037 U | < 0.048 U | < 0.38 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | N | N | JC57943A | 12/22/2017 | < 0.49 U | < 0.32 U | < 0.025 U | < 0.037 U | < 0.048 U | < 0.37 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.51 U | < 0.33 U | **0.161** | < 0.038 U | < 0.050 U | < 0.39 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.50 U | < 0.32 U | **0.129** | < 0.037 U | < 0.048 U | < 0.38 U |
| WELL | DEEP | MW8F | MW8F-20180425 | N | N | JC64901 | 4/25/2018 | < 0.45 U | < 0.29 U | **0.213** | 0.0625 | 0.0978 J | < 0.34 U |
| WELL | DEEP | MW8F | MW8F-82.0-20151001 | N | N | JC5237A | 10/1/2015 | < 0.43 U | < 0.69 U | < 0.019 U | < 0.030 U | < 0.022 U | < 0.32 U |
| WELL | DEEP | MW8F | MW8F-79.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.47 U | < 0.75 U | < 0.021 U | < 0.033 U | < 0.023 U | < 0.34 U |
| WELL | DEEP | MW-CR-3D | MW-CR-3D-20180418 | N | N | JC64444 | 4/18/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-46.0-49.5 | N | N | JC53234 | 10/16/2017 | < 0.45 U | < 0.29 UJ | **0.563** | **0.277** | **0.304** | < 0.34 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-40.0-44.0 | N | N | JC53234 | 10/16/2017 | < 0.45 U | < 0.29 UJ | **0.315** | 0.0981 | 0.141 | < 0.34 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-32.0-36.0 | N | N | JC53234 | 10/16/2017 | < 0.45 U | < 0.29 UJ | **0.600** | **0.442** | **0.508** | < 0.34 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-24.0-28.0 | N | N | JC53234 | 10/16/2017 | < 0.45 U | < 0.29 UJ | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-36.0-40.0 | N | N | JC54569A | 11/2/2017 | < 0.45 U | < 0.29 U | **0.332** | < 0.033 U | 0.112 | < 0.34 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-30.0-34.0 | N | N | JC54569A | 11/2/2017 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-22.0-26.0 | N | N | JC54569A | 11/2/2017 | < 0.45 UJ | < 0.29 UJ | **0.638 J** | **0.236 J** | **0.282 J** | < 0.34 UJ |
| SOILBORE | N/A | DNAPL-S1 | 137-S1-GW | N | N | JC55721 | 11/17/2017 | < 0.50 U | < 0.32 U | < 0.026 U | < 0.037 U | < 0.049 U | < 0.38 U |
| SOILBORE | N/A | DNAPL-W1 | 137-W1-GW | N | N | JC55721 | 11/17/2017 | < 0.50 U | < 0.32 U | **4.69** | **1.57** | **1.24** | < 0.38 U |

**Appendix L.4**
**Historical Groundwater Analytical Data - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | Analyte | BENZO(K)FLUORANTHENE | BENZYL BUTYL PHTHALATE | BIS(-2-CHLOROETHOXY)METHANE | BIS(2-CHLOROETHYL)ETHER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 207-08-9 | 85-68-7 | 111-91-1 | 111-44-4 |
| | | | | | | | GWQS | 0.5 | 100 | N/A | 7 |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L |
| Location Type | Water-Bearing Zone | Location ID | Sample ID | Sample Type | Fraction | Lab SDG | Date Collected | Result | Result | Result | Result |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-8.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.032 U | < 0.45 U | < 0.27 U | < 0.24 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-12.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.019 U | < 0.22 U | < 0.42 U | < 0.43 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-10.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.019 U | < 0.22 U | < 0.42 U | < 0.44 U |
| WELL | SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | N | N | JC65325 | 5/2/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | SHALLOW | 114-MW25A | 114-MW25A-20170927 | N | N | JC51824 | 9/27/2017 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | N | N | JC57565 | 12/18/2017 | < 0.034 U | < 0.48 U | < 0.29 U | < 0.26 U |
| WELL | SHALLOW | 114-MW27A | 114-MW27A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.036 U | < 0.50 U | < 0.30 U | < 0.27 U |
| WELL | SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | N | N | JC57565 | 12/18/2017 | < 0.037 U | < 0.51 U | < 0.31 U | < 0.28 U |
| WELL | SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | N | N | JC56729A | 12/6/2017 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | N | N | JC56859A | 12/7/2017 | < 0.032 U | < 0.44 U | < 0.26 U | < 0.24 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927-X | FD | N | JC51890 | 9/27/2017 | < 0.035 U | < 0.48 U | < 0.29 U | < 0.26 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927 | N | N | JC51890 | 9/27/2017 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | SHALLOW | 114-MW37A | 114-MW37A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | N | N | JC56504A | 12/4/2017 | < 0.037 U | < 0.51 U | < 0.31 U | < 0.28 U |
| WELL | SHALLOW | 114-MW41A | 114-MW41A-20180420 | N | N | JC64643 | 4/20/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.036 U | < 0.50 U | < 0.30 U | < 0.27 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.032 U | < 0.44 U | < 0.26 U | < 0.24 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.032 U | < 0.44 U | < 0.26 U | < 0.24 U |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | N | N | JC51736 | 9/25/2017 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | N | N | JC57276 | 12/13/2017 | 0.0730 J | < 0.47 U | < 0.28 U | < 0.25 U |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.034 U | < 0.47 U | < 0.28 U | < 0.25 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.037 U | < 0.50 U | < 0.31 U | < 0.27 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.036 U | < 0.49 U | < 0.30 U | < 0.27 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.035 U | < 0.49 U | < 0.30 U | < 0.26 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.032 U | < 0.45 U | < 0.27 U | < 0.24 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.7 | N | N | JC5499 | 10/6/2015 | < 0.021 U | < 0.24 U | < 0.46 U | < 0.47 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-12.5 | N | N | JC5499 | 10/6/2015 | < 0.021 U | < 0.24 U | < 0.46 U | < 0.47 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-8.5 | N | N | JC5499 | 10/6/2015 | < 0.019 U | < 0.22 U | < 0.42 U | < 0.43 U |
| WELL | SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.033 U | < 0.45 U | < 0.28 U | < 0.25 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.034 U | < 0.47 U | < 0.28 U | < 0.25 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | SHALLOW | MW7S | MW7S-10.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.034 U | < 0.47 U | < 0.28 U | < 0.25 U |
| WELL | SHALLOW | MW7S | MW7S-10.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.020 U | < 0.23 U | < 0.44 U | < 0.45 U |

**Appendix L.4**
**Historical Groundwater Analytical Data - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

AECOM

| | | | | | | | **Analyte** | BENZO(K)FLUORANTHENE | BENZYL BUTYL PHTHALATE | BIS(-2-CHLOROETHOXY)METHANE | BIS(2-CHLOROETHYL)ETHER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 207-08-9 | 85-68-7 | 111-91-1 | 111-44-4 |
| | | | | | | | **GWQS** | 0.5 | 100 | N/A | 7 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | MW7S | MW7S-7.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.020 U | < 0.23 U | < 0.43 U | < 0.44 U |
| WELL | SHALLOW | MW8S | MW8S-20180427 | N | N | JC65066 | 4/27/2018 | < 0.036 U | < 0.50 U | < 0.30 U | < 0.27 U |
| WELL | SHALLOW | MW8S | MW8S-9.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.019 U | < 0.22 U | < 0.42 U | < 0.43 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.035 U | < 0.48 U | < 0.29 U | < 0.26 U |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | N | N | JC57752 | 12/20/2017 | < 0.035 U | < 0.48 U | < 0.29 U | < 0.26 U |
| WELL | INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | N | N | JC64444 | 4/18/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | N | N | JC65255 | 5/1/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | N | N | JC64571 | 4/19/2018 | < 0.034 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-36.0-20151001 | N | N | JC5237A | 10/1/2015 | < 0.019 U | < 0.22 U | < 0.42 U | < 0.44 U |
| WELL | INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | N | N | JC62130 | 3/12/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | N | JC62228 | 3/13/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | N | JC62228 | 3/13/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | FD | N | JC56729A | 12/6/2017 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | N | N | JC56729A | 12/6/2017 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | N | N | JC51890 | 9/27/2017 | < 0.035 U | < 0.48 U | < 0.29 U | < 0.26 U |
| WELL | INTERMEDIATE | 114-MW37B | 114-MW37B-20170926 | N | N | JC51824 | 9/26/2017 | < 0.035 U | < 0.48 U | < 0.29 U | < 0.26 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | FD | N | JC60652 | 2/12/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | N | N | JC60652 | 2/12/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | N | N | JC65066 | 4/27/2018 | < 0.034 U | < 0.47 U | < 0.29 U | < 0.26 U |
| WELL | INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | N | N | JC64643 | 4/20/2018 | < 0.032 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.034 U | < 0.48 U | < 0.29 U | < 0.26 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | N | N | JC57638 | 12/19/2017 | < 0.037 U | < 0.51 U | < 0.31 U | < 0.28 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | N | N | JC57501A | 12/15/2017 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | N | N | JC58670 | 1/11/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.034 U | < 0.47 U | < 0.29 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.032 U | < 0.44 U | < 0.26 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |

**Appendix L.4**
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**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | Analyte | BENZO(K)FLUORANTHENE | BENZYL BUTYL PHTHALATE | BIS(-2-CHLOROETHOXY)METHANE | BIS(2-CHLOROETHYL)ETHER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 207-08-9 | 85-68-7 | 111-91-1 | 111-44-4 |
| | | | | | | | GWQS | 0.5 | 100 | N/A | 7 |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L |
| Location Type | Water-Bearing Zone | Location ID | Sample ID | Sample Type | Fraction | Lab SDG | Date Collected | Result | Result | Result | Result |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | FD | N | JC67069 | 5/31/2018 | < 0.032 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.034 U | < 0.47 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.034 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.034 U | < 0.47 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.033 U | < 0.45 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | N | N | JC64901 | 4/25/2018 | < 0.032 U | < 0.44 U | < 0.27 U | < 0.24 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-30.5 | N | N | JC5499 | 10/6/2015 | < 0.021 U | < 0.24 U | < 0.45 U | < 0.46 U |
| WELL | INTERMEDIATE | 135-MW3BR | 135-MW3B-30.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.032 U | < 0.44 U | < 0.27 U | < 0.24 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.032 U | < 0.44 U | < 0.27 U | < 0.24 U |
| WELL | INTERMEDIATE | MW7D | MW7D-41.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.032 U | < 0.44 U | < 0.27 U | < 0.24 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930X | FD | N | JC5098A | 9/30/2015 | < 0.020 U | < 0.23 U | < 0.43 U | < 0.44 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.021 U | < 0.25 U | < 0.47 U | < 0.48 U |
| WELL | INTERMEDIATE | MW7D | MW7D-40.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.021 U | < 0.24 U | < 0.45 U | < 0.47 U |
| WELL | INTERMEDIATE | MW8D | MW8D-45.0-20180425 | N | N | JC64901 | 4/25/2018 | **0.660** | < 0.51 U | < 0.31 U | < 0.28 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425X | FD | N | JC64901 | 4/25/2018 | **0.986 J** | < 0.47 U | < 0.28 U | < 0.25 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425 | N | N | JC64901 | 4/25/2018 | **0.683 J** | < 0.52 U | < 0.32 U | < 0.28 U |
| WELL | INTERMEDIATE | MW8D | MW8D-46.5-20150929 | N | N | JC4976A | 9/29/2015 | 0.287 | < 0.25 U | < 0.47 U | < 0.48 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.5-20150929 | N | N | JC4976A | 9/29/2015 | 0.134 | < 0.23 U | < 0.44 U | < 0.45 U |
| WELL | DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | N | N | JC65066 | 4/27/2018 | < 0.032 U | < 0.44 U | < 0.26 U | < 0.24 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-20180419 | N | N | JC64571 | 4/19/2018 | < 0.037 U | < 0.51 U | < 0.31 U | < 0.28 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-78.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.019 U | < 0.22 U | < 0.42 U | < 0.43 U |
| WELL | DEEP | 114-MW25C-2 | 114-MW25C-20180313 | N | N | JC62228 | 3/13/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | N | N | JC57943A | 12/22/2017 | < 0.037 U | < 0.51 U | < 0.31 U | < 0.28 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | N | N | JC57943A | 12/22/2017 | < 0.036 U | < 0.50 U | < 0.31 U | < 0.27 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.038 U | < 0.53 U | < 0.32 U | < 0.29 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.037 U | < 0.51 U | < 0.31 U | < 0.28 U |
| WELL | DEEP | MW8F | MW8F-20180425 | N | N | JC64901 | 4/25/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| WELL | DEEP | MW8F | MW8F-82.0-20151001 | N | N | JC5237A | 10/1/2015 | < 0.020 U | < 0.23 U | < 0.43 U | < 0.44 U |
| WELL | DEEP | MW8F | MW8F-79.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.021 U | < 0.25 U | < 0.47 U | < 0.48 U |
| WELL | DEEP | MW-CR-3D | MW-CR-3D-20180418 | N | N | JC64444 | 4/18/2018 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-46.0-49.5 | N | N | JC53234 | 10/16/2017 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-40.0-44.0 | N | N | JC53234 | 10/16/2017 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-32.0-36.0 | N | N | JC53234 | 10/16/2017 | 0.0868 J | < 0.46 U | < 0.28 U | < 0.25 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-24.0-28.0 | N | N | JC53234 | 10/16/2017 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-36.0-40.0 | N | N | JC54569A | 11/2/2017 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-30.0-34.0 | N | N | JC54569A | 11/2/2017 | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-22.0-26.0 | N | N | JC54569A | 11/2/2017 | < 0.033 UJ | < 0.46 UJ | < 0.28 UJ | < 0.25 UJ |
| SOILBORE | N/A | DNAPL-S1 | 137-S1-GW | N | N | JC55721 | 11/17/2017 | < 0.037 U | < 0.51 U | < 0.31 U | < 0.28 U |
| SOILBORE | N/A | DNAPL-W1 | 137-W1-GW | N | N | JC55721 | 11/17/2017 | **0.511** | < 0.51 U | < 0.31 U | < 0.28 U |

**Appendix L.4**
**Historical Groundwater Analytical Data - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | BIS(2-ETHYLHEXYL)PHTHALATE | CAPROLACTAM | CARBAZOLE | CHRYSENE | DIBENZO(A,H)ANTHRACENE | DIBENZOFURAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 117-81-7 | 105-60-2 | 86-74-8 | 218-01-9 | 53-70-3 | 132-64-9 |
| | | | | | | | **GWQS** | 3 | 5000 | N/A | 5 | 0.3 | N/A |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-8.0-20180420 | N | N | JC64643 | 4/20/2018 | < 1.7 U | < 0.66 U | < 0.23 U | < 0.18 U | < 0.037 U | < 0.22 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 1.6 U | < 0.64 U | < 0.22 U | < 0.17 U | < 0.035 U | < 0.22 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-12.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.55 U | < 0.41 U | < 0.17 U | < 0.16 U | < 0.035 U | < 0.23 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-10.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.56 U | < 0.41 U | < 0.17 U | < 0.16 U | < 0.036 U | < 0.23 U |
| WELL | SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | N | N | JC65325 | 5/2/2018 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | SHALLOW | 114-MW25A | 114-MW25A-20170927 | N | N | JC51824 | 9/27/2017 | **4.3** | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | N | N | JC57565 | 12/18/2017 | < 1.7 U | < 0.68 U | 0.83 J | < 0.18 U | < 0.038 U | 0.73 J |
| WELL | SHALLOW | 114-MW27A | 114-MW27A-20170926 | N | N | JC51824 | 9/26/2017 | < 1.8 U | < 0.71 U | < 0.25 U | < 0.19 U | < 0.039 U | < 0.24 U |
| WELL | SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | N | N | JC57565 | 12/18/2017 | < 1.8 U | < 0.72 U | < 0.25 U | < 0.20 U | < 0.040 U | < 0.24 U |
| WELL | SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | N | N | JC56729A | 12/6/2017 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | N | N | JC56859A | 12/7/2017 | < 1.6 U | < 0.62 U | < 0.22 U | < 0.17 U | < 0.034 U | < 0.21 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927-X | FD | N | JC51890 | 9/27/2017 | < 1.7 U | 4.8 | < 0.24 U | < 0.19 U | < 0.038 U | < 0.23 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927 | N | N | JC51890 | 9/27/2017 | < 1.7 U | 4.8 | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | SHALLOW | 114-MW37A | 114-MW37A-20170926 | N | N | JC51824 | 9/26/2017 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | N | N | JC56504A | 12/4/2017 | < 1.8 U | < 0.72 U | < 0.25 U | < 0.20 U | < 0.040 U | < 0.24 U |
| WELL | SHALLOW | 114-MW41A | 114-MW41A-20180420 | N | N | JC64643 | 4/20/2018 | < 1.7 U | < 0.65 U | 26.0 | < 0.18 U | < 0.036 U | 60.9 |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | N | N | JC65178 | 4/30/2018 | < 1.8 U | 2.7 | < 0.25 U | < 0.19 U | < 0.040 U | < 0.24 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | N | N | JC65178 | 4/30/2018 | < 1.7 U | 11.8 | < 0.23 U | < 0.18 U | < 0.036 U | 0.41 J |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 1.6 U | < 0.62 U | < 0.22 U | < 0.17 U | < 0.034 U | < 0.21 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | N | N | JC64643 | 4/20/2018 | < 1.6 U | < 0.62 U | < 0.22 U | < 0.17 U | < 0.034 U | < 0.21 U |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | N | N | JC51736 | 9/25/2017 | < 1.7 U | < 0.65 U | 0.40 J | < 0.18 U | < 0.036 U | 0.78 J |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | N | N | JC57276 | 12/13/2017 | < 1.7 U | < 0.65 U | 1.1 | < 0.18 U | < 0.036 U | 1.6 J |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | N | N | JC57276 | 12/13/2017 | < 1.7 U | < 0.66 U | 1.0 | 0.56 J | < 0.037 U | 1.4 J |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | N | N | JC57169 | 12/12/2017 | < 1.7 U | < 0.66 U | 0.60 J | < 0.18 U | < 0.037 U | 2.7 J |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | N | N | JC64571 | 4/19/2018 | < 1.8 U | < 0.72 U | < 0.25 U | < 0.19 U | < 0.040 U | 0.57 J |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | N | N | JC64571 | 4/19/2018 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | 0.49 J |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | N | N | JC64986 | 4/26/2018 | < 1.8 U | 44.6 | < 0.25 U | < 0.19 U | < 0.039 U | < 0.24 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | N | N | JC64986 | 4/26/2018 | < 1.8 U | 40.1 | < 0.24 U | < 0.19 U | < 0.039 U | < 0.23 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | N | N | JC67069 | 5/31/2018 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | N | N | JC67069 | 5/31/2018 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | N | N | JC64763 | 4/23/2018 | < 1.7 U | 15.7 | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | N | N | JC64763 | 4/23/2018 | < 1.6 U | 2.2 | < 0.22 U | < 0.17 U | < 0.035 U | < 0.22 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | N | N | JC64763 | 4/23/2018 | < 1.7 U | 12.3 | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | N | N | JC64763 | 4/23/2018 | < 1.7 U | 26.4 | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.7 | N | N | JC5499 | 10/6/2015 | < 0.60 U | < 0.44 U | < 0.18 U | < 0.18 U | < 0.038 U | < 0.25 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-12.5 | N | N | JC5499 | 10/6/2015 | < 0.60 U | < 0.44 U | < 0.18 U | < 0.18 U | < 0.038 U | < 0.25 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-8.5 | N | N | JC5499 | 10/6/2015 | < 0.55 U | < 0.41 U | < 0.17 U | < 0.16 U | < 0.035 U | < 0.23 U |
| WELL | SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 1.7 U | 30.1 | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | N | N | JC64822 | 4/24/2018 | < 1.6 U | 0.79 J | < 0.23 U | < 0.17 U | < 0.036 U | < 0.22 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 1.7 U | < 0.66 U | < 0.23 U | < 0.18 U | < 0.037 U | < 0.22 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | N | N | JC65255 | 5/1/2018 | < 1.7 U | < 0.66 U | < 0.23 U | < 0.18 U | < 0.037 U | < 0.22 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | N | N | JC65255 | 5/1/2018 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | SHALLOW | MW7S | MW7S-10.0-20180430 | N | N | JC65178 | 4/30/2018 | < 1.7 U | 68.8 | < 0.23 U | < 0.18 U | < 0.037 U | < 0.22 U |
| WELL | SHALLOW | MW7S | MW7S-10.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.58 U | < 0.42 U | < 0.18 U | < 0.17 U | < 0.037 U | < 0.24 U |

**Appendix L.4**
**Historical Groundwater Analytical Data - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

AECOM

| | | | | | | | **Analyte** | BIS(2-ETHYLHEXYL)PHTHALATE | CAPROLACTAM | CARBAZOLE | CHRYSENE | DIBENZO(A,H)ANTHRACENE | DIBENZOFURAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 117-81-7 | 105-60-2 | 86-74-8 | 218-01-9 | 53-70-3 | 132-64-9 |
| | | | | | | | **GWQS** | 3 | 5000 | N/A | 5 | 0.3 | N/A |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | MW7S | MW7S-7.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.57 U | < 0.42 U | < 0.17 U | < 0.17 U | < 0.036 U | < 0.23 U |
| WELL | SHALLOW | MW8S | MW8S-20180427 | N | N | JC65066 | 4/27/2018 | < 1.8 U | 13.9 | < 0.25 U | < 0.19 U | < 0.039 U | < 0.24 U |
| WELL | SHALLOW | MW8S | MW8S-9.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.55 U | < 0.41 U | < 0.17 U | < 0.16 U | < 0.035 U | < 0.23 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 1.7 U | < 0.65 U | 0.67 J | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 1.7 U | < 0.65 U | 0.37 J | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | N | N | JC64444 | 4/18/2018 | < 1.7 U | < 0.68 U | 0.55 J | < 0.19 U | < 0.038 U | < 0.23 U |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | N | N | JC57752 | 12/20/2017 | < 1.7 U | < 0.68 U | 0.93 J | < 0.19 U | < 0.038 U | < 0.23 U |
| WELL | INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | N | N | JC64444 | 4/18/2018 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | N | N | JC65255 | 5/1/2018 | < 1.7 U | 45.6 | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | N | N | JC64571 | 4/19/2018 | < 1.7 U | < 0.66 U | 4.9 | 0.21 J | < 0.037 U | 5.6 |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-36.0-20151001 | N | N | JC5237A | 10/1/2015 | < 0.56 U | < 0.41 U | 3.5 | < 0.16 U | < 0.036 U | 3.3 J |
| WELL | INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | N | N | JC62130 | 3/12/2018 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | N | JC62228 | 3/13/2018 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | N | JC62228 | 3/13/2018 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | FD | N | JC56729A | 12/6/2017 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | N | N | JC56729A | 12/6/2017 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | N | N | JC51890 | 9/27/2017 | **3.2** | < 0.68 U | < 0.24 U | < 0.19 U | < 0.038 U | < 0.23 U |
| WELL | INTERMEDIATE | 114-MW37B | 114-MW37B-20170926 | N | N | JC51824 | 9/26/2017 | < 1.7 U | < 0.68 U | < 0.24 U | < 0.19 U | < 0.038 U | < 0.23 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | FD | N | JC60652 | 2/12/2018 | < 1.7 U | 1.2 J | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | N | N | JC60652 | 2/12/2018 | < 1.7 U | 1.5 J | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | N | N | JC65066 | 4/27/2018 | < 1.7 U | 1.6 J | < 0.24 U | < 0.18 U | < 0.037 U | < 0.23 U |
| WELL | INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | N | N | JC64643 | 4/20/2018 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.035 U | 0.31 J |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | N | N | JC57820 | 12/21/2017 | < 1.7 U | < 0.68 U | < 0.24 U | < 0.18 U | < 0.038 U | < 0.23 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | N | N | JC57820 | 12/21/2017 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | N | N | JC57638 | 12/19/2017 | < 1.8 U | < 0.72 U | < 0.25 U | < 0.20 U | < 0.040 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | N | N | JC57501A | 12/15/2017 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | N | N | JC58745 | 1/12/2018 | < 1.7 U | 13.0 | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | N | N | JC58745 | 1/12/2018 | < 1.7 U | 4.8 | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | N | N | JC58670 | 1/11/2018 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | N | N | JC58073A | 12/27/2017 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | N | N | JC58073A | 12/27/2017 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | 0.49 J |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | N | N | JC58028A | 12/26/2017 | < 1.7 U | < 0.65 U | 0.47 J | < 0.18 U | < 0.036 U | 0.72 J |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | N | N | JC58028A | 12/26/2017 | < 1.7 U | < 0.65 U | 0.50 J | < 0.18 U | < 0.036 U | 0.65 J |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | N | N | JC58942 | 1/16/2018 | < 1.7 U | 12.1 | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | N | N | JC58942 | 1/16/2018 | < 1.7 U | 5.0 | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | N | N | JC58942 | 1/16/2018 | < 1.7 U | 6.5 | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | N | N | JC58942 | 1/16/2018 | < 1.7 U | 1.8 J | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | N | N | JC67069 | 5/31/2018 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | N | N | JC67069 | 5/31/2018 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | N | N | JC65178 | 4/30/2018 | < 1.7 U | 12.3 | 8.8 | < 0.18 U | < 0.036 U | 13.1 |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | N | N | JC65178 | 4/30/2018 | < 1.7 U | 3.0 | 7.9 | < 0.18 U | < 0.037 U | 12.2 |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | N | N | JC64444 | 4/18/2018 | < 1.7 U | < 0.67 U | < 0.23 U | < 0.18 U | < 0.037 U | < 0.23 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | N | N | JC64444 | 4/18/2018 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | N | N | JC64643 | 4/20/2018 | < 1.7 U | < 0.65 U | 0.58 J | < 0.18 U | < 0.036 U | 0.76 J |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | N | N | JC64643 | 4/20/2018 | < 1.6 U | < 0.62 U | 0.57 J | < 0.17 U | < 0.034 U | 0.67 J |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | N | N | JC58670 | 1/11/2018 | < 1.7 U | 6.6 | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | N | N | JC58670 | 1/11/2018 | < 1.7 U | 4.9 | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | N | N | JC67069 | 5/31/2018 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |

**Appendix L.4**
**Historical Groundwater Analytical Data - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | BIS(2-ETHYLHEXYL)PHTHALATE | CAPROLACTAM | CARBAZOLE | CHRYSENE | DIBENZO(A,H)ANTHRACENE | DIBENZOFURAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 117-81-7 | 105-60-2 | 86-74-8 | 218-01-9 | 53-70-3 | 132-64-9 |
| | | | | | | | **GWQS** | 3 | 5000 | N/A | 5 | 0.3 | N/A |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | FD | N | JC67069 | 5/31/2018 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | 0.0438 J | < 0.22 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | N | N | JC67069 | 5/31/2018 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | N | N | JC57276 | 12/13/2017 | < 1.7 U | < 0.66 U | 6.0 | < 0.18 U | < 0.037 U | 10.2 |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | N | N | JC57276 | 12/13/2017 | < 1.7 U | < 0.65 U | 8.4 | < 0.18 U | < 0.036 U | 12.1 |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | N | N | JC57169 | 12/12/2017 | < 1.7 U | < 0.66 U | 21.6 | 0.85 J | < 0.037 U | 8.4 |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | N | N | JC57169 | 12/12/2017 | < 1.7 U | < 0.66 U | 11.4 | 0.71 J | < 0.037 U | 7.4 |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | N | N | JC64571 | 4/19/2018 | < 1.7 U | < 0.65 U | 4.8 | < 0.18 U | < 0.036 U | 6.4 |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | N | N | JC64571 | 4/19/2018 | < 1.7 U | < 0.65 U | 1.0 | < 0.18 U | < 0.036 U | 0.76 J |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | N | N | JC64763 | 4/23/2018 | < 1.6 U | < 0.64 U | < 0.23 U | < 0.17 U | < 0.036 U | < 0.22 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | N | N | JC64763 | 4/23/2018 | < 1.7 U | < 0.66 U | < 0.23 U | < 0.18 U | < 0.037 U | < 0.22 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | N | N | JC64901 | 4/25/2018 | < 1.6 U | 18.0 | < 0.22 U | < 0.17 U | < 0.035 U | 0.56 J |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-30.5 | N | N | JC5499 | 10/6/2015 | < 0.59 U | < 0.43 U | < 0.18 U | < 0.17 U | < 0.038 U | 2.5 J |
| WELL | INTERMEDIATE | 135-MW3BR | 135-MW3B-30.0-20180501 | N | N | JC65255 | 5/1/2018 | < 1.6 U | < 0.62 U | < 0.22 U | < 0.17 U | < 0.035 U | < 0.21 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | N | N | JC67069 | 5/31/2018 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | N | N | JC67069 | 5/31/2018 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.0-20180423 | N | N | JC64763 | 4/23/2018 | < 1.6 U | < 0.62 U | < 0.22 U | < 0.17 U | < 0.035 U | < 0.21 U |
| WELL | INTERMEDIATE | MW7D | MW7D-41.0-20180423 | N | N | JC64763 | 4/23/2018 | < 1.6 U | < 0.63 U | < 0.22 U | < 0.17 U | < 0.035 U | < 0.21 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930X | FD | N | JC5098A | 9/30/2015 | < 0.57 U | < 0.42 U | < 0.17 U | < 0.17 U | < 0.036 U | < 0.23 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.62 U | < 0.45 U | < 0.19 U | < 0.18 U | < 0.039 U | < 0.25 U |
| WELL | INTERMEDIATE | MW7D | MW7D-40.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.60 U | < 0.44 U | < 0.18 U | < 0.18 U | < 0.038 U | < 0.25 U |
| WELL | INTERMEDIATE | MW8D | MW8D-45.0-20180425 | N | N | JC64901 | 4/25/2018 | < 1.8 U | < 0.72 U | < 0.25 U | 1.3 | 0.193 | < 0.24 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425X | FD | N | JC64901 | 4/25/2018 | < 1.7 U | < 0.66 U | 0.45 J | 2.2 | 0.283 | 0.35 J |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425 | N | N | JC64901 | 4/25/2018 | < 1.9 U | < 0.74 U | 0.27 J | 1.4 | 0.185 | < 0.25 U |
| WELL | INTERMEDIATE | MW8D | MW8D-46.5-20150929 | N | N | JC4976A | 9/29/2015 | **3.8** | < 0.45 U | < 0.19 U | < 0.18 U | < 0.039 U | < 0.25 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.5-20150929 | N | N | JC4976A | 9/29/2015 | < 0.58 U | < 0.42 U | < 0.18 U | < 0.17 U | < 0.037 U | 0.51 J |
| WELL | DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | N | N | JC65066 | 4/27/2018 | < 1.6 U | < 0.62 U | < 0.22 U | < 0.17 U | < 0.034 U | < 0.21 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-20180419 | N | N | JC64571 | 4/19/2018 | < 1.8 U | < 0.72 U | < 0.25 U | < 0.20 U | < 0.040 U | < 0.24 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-78.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.55 U | < 0.41 U | < 0.17 U | < 0.16 U | < 0.035 U | < 0.23 U |
| WELL | DEEP | 114-MW25C-2 | 114-MW25C-20180313 | N | N | JC62228 | 3/13/2018 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | N | N | JC57943A | 12/22/2017 | < 1.8 U | 11.5 | < 0.25 U | < 0.20 U | < 0.040 U | < 0.24 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | N | N | JC57943A | 12/22/2017 | < 1.8 U | 5.2 | < 0.25 U | < 0.19 U | < 0.040 U | < 0.24 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | N | N | JC57820 | 12/21/2017 | < 1.9 U | < 0.75 U | < 0.26 U | < 0.20 U | < 0.042 U | < 0.25 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | N | N | JC57820 | 12/21/2017 | < 1.8 U | < 0.72 U | < 0.25 U | < 0.20 U | < 0.040 U | < 0.24 U |
| WELL | DEEP | MW8F | MW8F-20180425 | N | N | JC64901 | 4/25/2018 | < 1.7 U | 13.5 | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| WELL | DEEP | MW8F | MW8F-82.0-20151001 | N | N | JC5237A | 10/1/2015 | < 0.57 U | < 0.42 U | < 0.17 U | < 0.17 U | < 0.036 U | < 0.23 U |
| WELL | DEEP | MW8F | MW8F-79.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.62 U | < 0.45 U | < 0.19 U | < 0.18 U | < 0.039 U | < 0.25 U |
| WELL | DEEP | MW-CR-3D | MW-CR-3D-20180418 | N | N | JC64444 | 4/18/2018 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-46.0-49.5 | N | N | JC53234 | 10/16/2017 | < 1.7 U | < 0.65 U | < 0.23 U | 0.31 J | < 0.036 U | < 0.22 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-40.0-44.0 | N | N | JC53234 | 10/16/2017 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-32.0-36.0 | N | N | JC53234 | 10/16/2017 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-24.0-28.0 | N | N | JC53234 | 10/16/2017 | < 1.7 U | < 0.65 U | 0.68 J | < 0.18 U | < 0.036 U | 0.51 J |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-36.0-40.0 | N | N | JC54569A | 11/2/2017 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-30.0-34.0 | N | N | JC54569A | 11/2/2017 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-22.0-26.0 | N | N | JC54569A | 11/2/2017 | < 1.7 UJ | < 0.65 UJ | 10.0 J- | 0.42 J- | < 0.036 UJ | 2.3 J- |
| SOILBORE | N/A | DNAPL-S1 | 137-S1-GW | N | N | JC55721 | 11/17/2017 | < 1.9 U | < 0.73 U | < 0.26 U | < 0.20 U | < 0.041 U | < 0.25 U |
| SOILBORE | N/A | DNAPL-W1 | 137-W1-GW | N | N | JC55721 | 11/17/2017 | < 1.8 U | < 0.72 U | 2.4 | 5.0 | 0.108 J | 7.0 |

**Appendix L.4**
**Historical Groundwater Analytical Data - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | DIETHYL PHTHALATE | DIMETHYL PHTHALATE | DI-N-BUTYLPHTHALATE | DI-N-OCTYL PHTHALATE | FLUORANTHENE | FLUORENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 84-66-2 | 131-11-3 | 84-74-2 | 117-84-0 | 206-44-0 | 86-73-7 |
| | | | | | | | **GWQS** | 6000 | 100 | 700 | 100 | 300 | 300 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-8.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.26 U | < 0.22 U | 2.4 | < 0.24 U | < 0.17 U | 0.75 J |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.26 U | < 0.21 U | 10.6 JB | < 0.23 U | < 0.17 U | 0.55 J |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-12.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.23 U | < 0.26 U | < 0.58 U | < 0.25 U | < 0.16 U | 1.4 |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-10.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.24 U | < 0.26 U | < 0.59 U | < 0.25 U | < 0.16 U | 1.0 |
| WELL | SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | N | N | JC65325 | 5/2/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | 0.83 J |
| WELL | SHALLOW | 114-MW25A | 114-MW25A-20170927 | N | N | JC51824 | 9/27/2017 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | 0.73 J | < 0.17 U |
| WELL | SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | N | N | JC57565 | 12/18/2017 | < 0.27 U | < 0.23 U | < 0.52 U | < 0.24 U | < 0.18 U | 2.0 |
| WELL | SHALLOW | 114-MW27A | 114-MW27A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.28 U | < 0.24 U | < 0.54 U | < 0.25 U | < 0.18 U | < 0.19 U |
| WELL | SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | N | N | JC57565 | 12/18/2017 | < 0.29 U | < 0.24 U | < 0.55 U | < 0.26 U | < 0.19 U | < 0.19 U |
| WELL | SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | N | N | JC56729A | 12/6/2017 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | N | N | JC56859A | 12/7/2017 | < 0.25 U | < 0.21 U | < 0.47 U | < 0.22 U | < 0.16 U | < 0.16 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927-X | FD | N | JC51890 | 9/27/2017 | < 0.28 U | < 0.23 U | < 0.52 U | < 0.25 U | < 0.18 U | < 0.18 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927 | N | N | JC51890 | 9/27/2017 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | SHALLOW | 114-MW37A | 114-MW37A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | N | N | JC56504A | 12/4/2017 | < 0.29 U | < 0.24 U | < 0.55 U | < 0.26 U | < 0.19 U | < 0.19 U |
| WELL | SHALLOW | 114-MW41A | 114-MW41A-20180420 | N | N | JC64643 | 4/20/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | 10.7 | 65.4 |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.29 U | < 0.24 U | < 0.54 U | < 0.26 U | 1.6 | 3.8 |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | 1.3 | 4.4 |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.25 U | < 0.21 U | 1.9 | < 0.22 U | < 0.16 U | < 0.16 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.25 U | < 0.21 U | 2.4 | < 0.22 U | < 0.16 U | < 0.16 U |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | N | N | JC51736 | 9/25/2017 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | 0.82 J | < 0.17 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | 1.6 | 5.5 |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.27 U | < 0.22 U | < 1.0 UB | < 0.24 U | 1.8 | 4.5 |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.27 U | < 0.22 U | < 0.51 U | < 0.24 U | 1.8 | 22.7 |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.29 U | < 0.24 U | < 0.55 U | < 0.26 U | 1.4 | 5.1 |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.24 U | 1.2 | 4.9 |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | N | N | JC64986 | 4/26/2018 | 0.49 J | < 0.23 U | < 0.53 U | < 0.25 U | < 0.18 U | < 0.18 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | N | N | JC64986 | 4/26/2018 | 0.36 J | < 0.23 U | < 0.53 U | < 0.25 U | < 0.18 U | < 0.18 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.26 U | < 0.21 U | 1.0 J | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.24 U | < 0.17 U | < 0.17 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.7 | N | N | JC5499 | 10/6/2015 | < 0.25 U | < 0.28 U | < 0.63 U | < 0.27 U | < 0.18 U | < 0.30 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-12.5 | N | N | JC5499 | 10/6/2015 | < 0.25 U | < 0.28 U | < 0.63 U | < 0.27 U | < 0.18 U | < 0.30 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-8.5 | N | N | JC5499 | 10/6/2015 | < 0.23 U | < 0.26 U | < 0.58 U | < 0.25 U | < 0.16 U | < 0.27 U |
| WELL | SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.26 U | < 0.22 U | < 0.49 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.27 U | < 0.22 U | < 0.51 U | < 0.24 U | < 0.17 U | < 0.17 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.24 U | < 0.17 U | < 0.17 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | SHALLOW | MW7S | MW7S-10.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.27 U | < 0.22 U | < 0.51 U | < 0.24 U | < 0.17 U | < 0.17 U |
| WELL | SHALLOW | MW7S | MW7S-10.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.24 U | < 0.27 U | < 0.61 U | < 0.26 U | < 0.17 U | < 0.28 U |

**Appendix L.4**
**Historical Groundwater Analytical Data - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | DIETHYL PHTHALATE | DIMETHYL PHTHALATE | DI-N-BUTYLPHTHALATE | DI-N-OCTYL PHTHALATE | FLUORANTHENE | FLUORENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 84-66-2 | 131-11-3 | 84-74-2 | 117-84-0 | 206-44-0 | 86-73-7 |
| | | | | | | | **GWQS** | 6000 | 100 | 700 | 100 | 300 | 300 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | MW7S | MW7S-7.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.24 U | < 0.27 U | < 0.59 U | < 0.26 U | < 0.16 U | < 0.28 U |
| WELL | SHALLOW | MW8S | MW8S-20180427 | N | N | JC65066 | 4/27/2018 | < 0.28 U | < 0.24 U | < 0.54 U | < 0.25 U | < 0.18 U | < 0.19 U |
| WELL | SHALLOW | MW8S | MW8S-9.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.23 U | < 0.26 U | < 0.58 U | < 0.25 U | < 0.16 U | < 0.27 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.28 U | < 0.23 U | < 0.52 U | < 0.25 U | < 0.18 U | < 0.18 U |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | N | N | JC57752 | 12/20/2017 | < 0.28 U | < 0.23 U | < 0.52 U | < 0.25 U | < 0.18 U | 0.75 J |
| WELL | INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | N | N | JC64444 | 4/18/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | N | N | JC65255 | 5/1/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | N | N | JC64571 | 4/19/2018 | < 0.27 U | < 0.22 U | < 0.50 U | < 0.24 U | 1.2 | 48.6 |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-36.0-20151001 | N | N | JC5237A | 10/1/2015 | < 0.24 U | < 0.26 U | < 0.59 U | < 0.25 U | 1.1 | 32.0 |
| WELL | INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | N | N | JC62130 | 3/12/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | N | JC62228 | 3/13/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | N | JC62228 | 3/13/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | FD | N | JC56729A | 12/6/2017 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | N | N | JC56729A | 12/6/2017 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | N | N | JC51890 | 9/27/2017 | < 0.28 U | < 0.23 U | < 0.52 U | < 0.25 U | < 0.18 U | < 0.18 U |
| WELL | INTERMEDIATE | 114-MW37B | 114-MW37B-20170926 | N | N | JC51824 | 9/26/2017 | < 0.28 U | < 0.23 U | < 0.52 U | < 0.25 U | < 0.18 U | < 0.18 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | FD | N | JC60652 | 2/12/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | N | N | JC60652 | 2/12/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | N | N | JC65066 | 4/27/2018 | < 0.27 U | < 0.22 U | < 0.51 U | < 0.24 U | < 0.18 U | < 0.18 U |
| WELL | INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | N | N | JC64643 | 4/20/2018 | < 0.26 U | < 0.22 U | < 1.9 UB | < 0.23 U | 0.60 J | 1.6 |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.27 U | < 0.23 U | < 0.52 U | < 0.24 U | < 0.18 U | < 0.18 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | N | N | JC57638 | 12/19/2017 | < 0.29 U | < 0.24 U | < 0.55 U | < 0.26 U | < 0.19 U | < 0.19 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | N | N | JC57501A | 12/15/2017 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | N | N | JC58670 | 1/11/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.26 U | < 0.22 U | < 1.2 UB | < 0.23 U | < 0.17 U | 0.72 J |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | 0.95 J |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | 1.3 |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | 1.2 |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.26 U | < 0.22 U | 1.0 J | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | 0.52 J |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | 0.81 J |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.24 U | 3.7 | 73.9 |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.24 U | 3.8 | 73.1 |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.27 U | < 0.22 U | < 0.51 U | < 0.24 U | < 0.17 U | < 0.18 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.26 U | < 0.22 U | < 3.9 UB | < 0.23 U | 0.63 J | 9.4 |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.25 U | < 0.21 U | < 6.0 UB | < 0.22 U | 0.63 J | 9.1 |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |

**Appendix L.4**
**Historical Groundwater Analytical Data - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | DIETHYL PHTHALATE | DIMETHYL PHTHALATE | DI-N-BUTYLPHTHALATE | DI-N-OCTYL PHTHALATE | FLUORANTHENE | FLUORENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 84-66-2 | 131-11-3 | 84-74-2 | 117-84-0 | 206-44-0 | 86-73-7 |
| | | | | | | | **GWQS** | 6000 | 100 | 700 | 100 | 300 | 300 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | FD | N | JC67069 | 5/31/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.27 U | < 0.22 U | < 0.51 U | < 0.24 U | 1.3 | 58.8 |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.26 U | < 0.22 U | < 1.4 UB | < 0.23 U | 1.5 | 73.6 |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.27 U | < 0.22 U | < 0.50 U | < 0.24 U | 3.8 | 54.3 |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.27 U | < 0.22 U | < 0.51 U | < 0.24 U | 3.4 | 50.6 |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | 0.78 J | 45.4 |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | 4.5 |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.26 U | < 0.22 U | 1.4 J | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.26 U | < 0.22 U | 1.8 J | < 0.24 U | < 0.17 U | < 0.17 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | N | N | JC64901 | 4/25/2018 | < 0.25 U | < 0.21 U | < 0.48 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-30.5 | N | N | JC5499 | 10/6/2015 | < 0.25 U | < 0.28 U | < 0.62 U | < 0.27 U | < 0.17 U | < 0.29 U |
| WELL | INTERMEDIATE | 135-MW3BR | 135-MW3B-30.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.25 U | < 0.21 U | < 0.48 U | < 0.22 U | < 0.16 U | 0.43 J |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.25 U | < 0.21 U | < 0.48 U | < 0.22 U | < 0.16 U | < 0.16 U |
| WELL | INTERMEDIATE | MW7D | MW7D-41.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.25 U | < 0.21 U | < 0.48 U | < 0.23 U | < 0.16 U | < 0.17 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930X | FD | N | JC5098A | 9/30/2015 | < 0.24 U | < 0.27 U | < 0.59 U | < 0.26 U | < 0.16 U | < 0.28 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.26 U | < 0.29 U | < 0.65 U | < 0.28 U | < 0.18 U | < 0.30 U |
| WELL | INTERMEDIATE | MW7D | MW7D-40.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.25 U | < 0.28 U | < 0.62 U | < 0.27 U | < 0.17 U | < 0.29 U |
| WELL | INTERMEDIATE | MW8D | MW8D-45.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.29 U | < 0.24 U | < 0.55 U | < 0.26 U | 2.4 | < 0.19 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425X | FD | N | JC64901 | 4/25/2018 | < 0.27 U | < 0.22 U | < 0.51 U | < 0.24 U | 4.7 J | 1.1 |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.30 U | < 0.25 U | < 0.56 U | < 0.27 U | 2.7 J | 0.60 J |
| WELL | INTERMEDIATE | MW8D | MW8D-46.5-20150929 | N | N | JC4976A | 9/29/2015 | < 0.26 U | < 0.29 U | < 0.65 U | < 0.28 U | 0.73 J | < 0.30 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.5-20150929 | N | N | JC4976A | 9/29/2015 | < 0.24 U | < 0.27 U | < 0.61 U | < 0.26 U | 0.53 J | 2.0 |
| WELL | DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | N | N | JC65066 | 4/27/2018 | < 0.25 U | < 0.21 U | < 0.47 U | < 0.22 U | < 0.16 U | < 0.16 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-20180419 | N | N | JC64571 | 4/19/2018 | < 0.29 U | < 0.24 U | < 0.55 U | < 0.26 U | < 0.19 U | < 0.19 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-78.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.23 U | < 0.26 U | < 0.58 U | < 0.25 U | < 0.16 U | < 0.27 U |
| WELL | DEEP | 114-MW25C-2 | 114-MW25C-20180313 | N | N | JC62228 | 3/13/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | N | N | JC57943A | 12/22/2017 | < 0.29 U | < 0.24 U | < 0.55 U | < 0.26 U | < 0.19 U | 1.6 |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | N | N | JC57943A | 12/22/2017 | < 0.29 U | < 0.24 U | < 0.55 U | < 0.26 U | < 0.19 U | 2.1 |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.30 U | < 0.25 U | < 0.57 U | < 0.27 U | < 0.20 U | 2.2 |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.29 U | < 0.24 U | < 0.55 U | < 0.26 U | < 0.19 U | 2.7 |
| WELL | DEEP | MW8F | MW8F-20180425 | N | N | JC64901 | 4/25/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| WELL | DEEP | MW8F | MW8F-82.0-20151001 | N | N | JC5237A | 10/1/2015 | < 0.24 U | < 0.27 U | < 0.59 U | < 0.26 U | < 0.16 U | < 0.28 U |
| WELL | DEEP | MW8F | MW8F-79.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.26 U | < 0.29 U | < 0.65 U | < 0.28 U | < 0.18 U | < 0.30 U |
| WELL | DEEP | MW-CR-3D | MW-CR-3D-20180418 | N | N | JC64444 | 4/18/2018 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-46.0-49.5 | N | N | JC53234 | 10/16/2017 | 3.3 | < 0.22 U | < 0.50 U | < 0.23 U | 0.57 J | < 0.17 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-40.0-44.0 | N | N | JC53234 | 10/16/2017 | 3.2 | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-32.0-36.0 | N | N | JC53234 | 10/16/2017 | 4.8 | < 0.22 U | < 0.50 U | < 0.23 U | 0.77 J | < 0.17 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-24.0-28.0 | N | N | JC53234 | 10/16/2017 | 11.6 | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | 0.52 J |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-36.0-40.0 | N | N | JC54569A | 11/2/2017 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-30.0-34.0 | N | N | JC54569A | 11/2/2017 | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-22.0-26.0 | N | N | JC54569A | 11/2/2017 | < 0.26 UJ | < 0.22 UJ | < 0.50 UJ | < 0.23 UJ | 0.97 J- | 3.8 J- |
| SOILBORE | N/A | DNAPL-S1 | 137-S1-GW | N | N | JC55721 | 11/17/2017 | < 0.29 U | < 0.24 U | < 0.56 U | < 0.26 U | < 0.19 U | < 0.19 U |
| SOILBORE | N/A | DNAPL-W1 | 137-W1-GW | N | N | JC55721 | 11/17/2017 | < 0.29 U | < 0.24 U | < 0.55 U | < 0.26 U | 15.6 | 53.1 |

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**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | HEXACHLORO-1,3-BUTADIENE | HEXACHLOROBENZENE | HEXACHLOROCYCLOPENTADIENE | HEXACHLOROETHANE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 87-68-3 | 118-74-1 | 77-47-4 | 67-72-1 |
| | | | | | | | **GWQS** | 1 | 0.02 | 40 | 7 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-8.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.017 U | < 0.011 U | < 2.7 U | < 0.38 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-12.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.39 U | < 0.015 U | < 0.48 U | < 0.29 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-10.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.39 U | < 0.015 U | < 0.49 U | < 0.29 U |
| WELL | SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | N | N | JC65325 | 5/2/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | SHALLOW | 114-MW25A | 114-MW25A-20170927 | N | N | JC51824 | 9/27/2017 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | N | N | JC57565 | 12/18/2017 | < 0.019 U | < 0.012 U | < 2.9 U | < 0.41 U |
| WELL | SHALLOW | 114-MW27A | 114-MW27A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.019 U | < 0.012 U | < 3.0 U | < 0.42 U |
| WELL | SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | N | N | JC57565 | 12/18/2017 | < 0.020 U | < 0.012 U | < 3.1 U | < 0.43 U |
| WELL | SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | N | N | JC56729A | 12/6/2017 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | N | N | JC56859A | 12/7/2017 | < 0.017 U | < 0.011 U | < 2.6 U | < 0.37 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927-X | FD | N | JC51890 | 9/27/2017 | < 0.019 U | < 0.012 U | < 2.9 U | < 0.41 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927 | N | N | JC51890 | 9/27/2017 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | SHALLOW | 114-MW37A | 114-MW37A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | N | N | JC56504A | 12/4/2017 | < 0.020 U | < 0.012 U | < 3.1 U | < 0.43 U |
| WELL | SHALLOW | 114-MW41A | 114-MW41A-20180420 | N | N | JC64643 | 4/20/2018 | < 0.018 U | 0.0169 | < 2.8 U | < 0.39 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.019 U | < 0.012 U | < 3.0 U | < 0.43 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.017 U | < 0.011 U | < 2.6 U | < 0.37 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.017 U | < 0.011 U | < 2.6 U | < 0.37 U |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | N | N | JC51736 | 9/25/2017 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.40 U |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.40 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.020 U | < 0.012 U | < 3.1 U | < 0.43 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.019 U | < 0.012 U | < 3.0 U | < 0.42 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.019 U | < 0.012 U | < 3.0 U | < 0.41 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.017 U | < 0.011 U | < 2.7 U | < 0.38 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.018 U | 0.0200 | < 2.8 U | < 0.39 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.7 | N | N | JC5499 | 10/6/2015 | < 0.42 U | < 0.016 U | < 0.52 U | < 0.31 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-12.5 | N | N | JC5499 | 10/6/2015 | < 0.42 U | < 0.016 U | < 0.52 U | < 0.31 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-8.5 | N | N | JC5499 | 10/6/2015 | < 0.39 U | < 0.015 U | < 0.48 U | < 0.29 U |
| WELL | SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.40 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | SHALLOW | MW7S | MW7S-10.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.40 U |
| WELL | SHALLOW | MW7S | MW7S-10.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.40 U | < 0.015 U | < 0.50 U | < 0.30 U |

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**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | HEXACHLORO-1,3-BUTADIENE | HEXACHLOROBENZENE | HEXACHLOROCYCLOPENTADIENE | HEXACHLOROETHANE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 87-68-3 | 118-74-1 | 77-47-4 | 67-72-1 |
| | | | | | | | **GWQS** | 1 | 0.02 | 40 | 7 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | MW7S | MW7S-7.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.40 U | < 0.015 U | < 0.49 U | < 0.29 U |
| WELL | SHALLOW | MW8S | MW8S-20180427 | N | N | JC65066 | 4/27/2018 | < 0.019 U | < 0.012 U | < 3.0 U | < 0.42 U |
| WELL | SHALLOW | MW8S | MW8S-9.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.39 U | < 0.015 U | < 0.48 U | < 0.29 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.019 U | < 0.012 U | < 2.9 U | < 0.41 U |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | N | N | JC57752 | 12/20/2017 | < 0.019 U | < 0.012 U | < 2.9 U | < 0.41 U |
| WELL | INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | N | N | JC64444 | 4/18/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | N | N | JC65255 | 5/1/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | N | N | JC64571 | 4/19/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.40 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-36.0-20151001 | N | N | JC5237A | 10/1/2015 | < 0.39 U | < 0.015 U | < 0.49 U | < 0.29 U |
| WELL | INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | N | N | JC62130 | 3/12/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | N | JC62228 | 3/13/2018 | < 0.018 U | **0.0832 J** | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | N | JC62228 | 3/13/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | FD | N | JC56729A | 12/6/2017 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | N | N | JC56729A | 12/6/2017 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | N | N | JC51890 | 9/27/2017 | < 0.019 U | < 0.012 U | < 2.9 U | < 0.41 U |
| WELL | INTERMEDIATE | 114-MW37B | 114-MW37B-20170926 | N | N | JC51824 | 9/26/2017 | < 0.019 U | < 0.012 U | < 2.9 U | < 0.41 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | FD | N | JC60652 | 2/12/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | N | N | JC60652 | 2/12/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | N | N | JC65066 | 4/27/2018 | < 0.018 U | < 0.011 U | < 2.9 U | < 0.40 U |
| WELL | INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | N | N | JC64643 | 4/20/2018 | < 0.017 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.019 U | < 0.012 U | < 2.9 U | < 0.41 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | N | N | JC57638 | 12/19/2017 | < 0.020 U | < 0.012 U | < 3.1 U | < 0.43 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | N | N | JC57501A | 12/15/2017 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | N | N | JC58670 | 1/11/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.018 U | < 0.011 U | < 2.9 U | < 0.40 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.017 U | < 0.011 U | < 2.6 U | < 0.37 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |

**Appendix L.4**
**Historical Groundwater Analytical Data - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | HEXACHLORO-1,3-BUTADIENE | HEXACHLOROBENZENE | HEXACHLOROCYCLOPENTADIENE | HEXACHLOROETHANE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 87-68-3 | 118-74-1 | 77-47-4 | 67-72-1 |
| | | | | | | | **GWQS** | 1 | 0.02 | 40 | 7 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | FD | N | JC67069 | 5/31/2018 | < 0.017 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.40 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.40 U |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.40 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | N | N | JC64901 | 4/25/2018 | < 0.017 U | < 0.011 U | < 2.7 U | < 0.38 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-30.5 | N | N | JC5499 | 10/6/2015 | < 0.41 U | < 0.016 U | < 0.51 U | < 0.31 U |
| WELL | INTERMEDIATE | 135-MW3BR | 135-MW3B-30.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.017 U | < 0.011 U | < 2.7 U | < 0.37 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.017 U | < 0.011 U | < 2.7 U | < 0.37 U |
| WELL | INTERMEDIATE | MW7D | MW7D-41.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.017 U | < 0.011 U | < 2.7 U | < 0.38 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930X | FD | N | JC5098A | 9/30/2015 | < 0.40 U | < 0.015 U | < 0.49 U | < 0.29 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.43 U | < 0.016 U | < 0.54 U | < 0.32 U |
| WELL | INTERMEDIATE | MW7D | MW7D-40.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.42 U | < 0.016 U | < 0.52 U | < 0.31 U |
| WELL | INTERMEDIATE | MW8D | MW8D-45.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.020 U | < 0.012 U | < 3.1 U | < 0.43 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425X | FD | N | JC64901 | 4/25/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.40 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.020 U | < 0.013 U | < 3.2 U | < 0.44 U |
| WELL | INTERMEDIATE | MW8D | MW8D-46.5-20150929 | N | N | JC4976A | 9/29/2015 | < 0.43 U | < 0.016 U | < 0.54 U | < 0.32 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.5-20150929 | N | N | JC4976A | 9/29/2015 | < 0.40 U | < 0.015 U | < 0.50 U | < 0.30 U |
| WELL | DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | N | N | JC65066 | 4/27/2018 | < 0.017 U | < 0.011 U | < 2.6 U | < 0.37 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-20180419 | N | N | JC64571 | 4/19/2018 | < 0.020 U | < 0.012 U | < 3.1 U | < 0.43 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-78.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.39 U | < 0.015 U | < 0.48 U | < 0.29 U |
| WELL | DEEP | 114-MW25C-2 | 114-MW25C-20180313 | N | N | JC62228 | 3/13/2018 | < 0.018 U | **0.0228** | < 2.8 U | < 0.39 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | N | N | JC57943A | 12/22/2017 | < 0.020 U | < 0.012 U | < 3.1 U | < 0.43 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | N | N | JC57943A | 12/22/2017 | < 0.020 U | < 0.012 U | < 3.1 U | < 0.43 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.020 U | < 0.013 U | < 3.2 U | < 0.45 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.020 U | < 0.012 U | < 3.1 U | < 0.43 U |
| WELL | DEEP | MW8F | MW8F-20180425 | N | N | JC64901 | 4/25/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| WELL | DEEP | MW8F | MW8F-82.0-20151001 | N | N | JC5237A | 10/1/2015 | < 0.40 U | < 0.015 U | < 0.49 U | < 0.29 U |
| WELL | DEEP | MW8F | MW8F-79.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.43 U | < 0.016 U | < 0.54 U | < 0.32 U |
| WELL | DEEP | MW-CR-3D | MW-CR-3D-20180418 | N | N | JC64444 | 4/18/2018 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-46.0-49.5 | N | N | JC53234 | 10/16/2017 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-40.0-44.0 | N | N | JC53234 | 10/16/2017 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-32.0-36.0 | N | N | JC53234 | 10/16/2017 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-24.0-28.0 | N | N | JC53234 | 10/16/2017 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-36.0-40.0 | N | N | JC54569A | 11/2/2017 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-30.0-34.0 | N | N | JC54569A | 11/2/2017 | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-22.0-26.0 | N | N | JC54569A | 11/2/2017 | < 0.018 UJ | < 0.011 UJ | < 2.8 UJ | < 0.39 UJ |
| SOILBORE | N/A | DNAPL-S1 | 137-S1-GW | N | N | JC55721 | 11/17/2017 | < 0.020 U | < 0.012 U | < 3.1 U | < 0.44 U |
| SOILBORE | N/A | DNAPL-W1 | 137-W1-GW | N | N | JC55721 | 11/17/2017 | < 0.020 U | < 0.012 U | < 3.1 U | < 0.43 U |

**Appendix L.4**
**Historical Groundwater Analytical Data - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | INDENO(1,2,3-CD)PYRENE | NAPHTHALENE | 1-METHYLNAPHTHALENE | NITROBENZENE | N-NITROSO-DI-N-PROPYLAMINE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 193-39-5 | 91-20-3 | 90-12-0 | 98-95-3 | 621-64-7 |
| | | | | | | | **GWQS** | 0.2 | 300 | 5 | 6 | 10 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-8.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.038 U | 203 | **28.0** | < 0.65 U | < 0.49 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.037 U | 118 | **19.4** | < 0.63 U | < 0.47 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-12.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.031 U | 165 | - | < 0.52 U | < 0.38 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-10.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.031 U | 126 | - | < 0.52 U | < 0.38 U |
| WELL | SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | N | N | JC65325 | 5/2/2018 | < 0.038 U | 0.84 J | 2.7 | < 0.64 U | < 0.48 U |
| WELL | SHALLOW | 114-MW25A | 114-MW25A-20170927 | N | N | JC51824 | 9/27/2017 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U |
| WELL | SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | N | N | JC57565 | 12/18/2017 | < 0.040 U | 2.9 | - | < 0.67 U | < 0.50 U |
| WELL | SHALLOW | 114-MW27A | 114-MW27A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.041 U | < 0.25 U | - | < 0.70 U | < 0.52 U |
| WELL | SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | N | N | JC57565 | 12/18/2017 | < 0.042 U | < 0.26 U | - | < 0.71 U | < 0.53 U |
| WELL | SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | N | N | JC56729A | 12/6/2017 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U |
| WELL | SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | N | N | JC56859A | 12/7/2017 | < 0.036 U | < 0.22 U | - | < 0.61 U | < 0.46 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927-X | FD | N | JC51890 | 9/27/2017 | < 0.040 U | < 0.24 U | - | < 0.68 U | < 0.51 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927 | N | N | JC51890 | 9/27/2017 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U |
| WELL | SHALLOW | 114-MW37A | 114-MW37A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U |
| WELL | SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | N | N | JC56504A | 12/4/2017 | < 0.042 U | < 0.26 U | - | < 0.71 U | < 0.53 U |
| WELL | SHALLOW | 114-MW41A | 114-MW41A-20180420 | N | N | JC64643 | 4/20/2018 | < 0.038 U | 177 | **37.8** | < 0.64 U | < 0.48 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | N | N | JC65178 | 4/30/2018 | 0.0449 J | 4.8 | **7.1** | < 0.70 U | < 0.53 U |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.038 U | 5.7 | **9.0** | < 0.64 U | < 0.48 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.038 U | < 0.23 U | < 0.26 U | < 0.64 U | < 0.48 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.038 U | < 0.23 U | < 0.26 U | < 0.64 U | < 0.48 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.036 U | 70.2 | < 0.25 U | < 0.61 U | < 0.46 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.036 U | 57.9 | < 0.25 U | < 0.61 U | < 0.46 U |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | N | N | JC51736 | 9/25/2017 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | N | N | JC57276 | 12/13/2017 | 0.0887 J | < 0.24 U | - | < 0.66 U | < 0.49 U |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.039 U | 19.1 | - | < 0.66 U | < 0.49 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.042 U | 20.9 | **19.1** | < 0.71 U | < 0.53 U |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.038 U | 5.2 | **15.1** | < 0.65 U | < 0.48 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.041 U | < 0.25 U | < 0.28 U | < 0.69 U | < 0.52 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.040 U | < 0.25 U | < 0.28 U | < 0.68 U | < 0.51 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.038 U | < 0.23 U | < 0.26 U | < 0.64 U | < 0.48 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.038 U | < 0.23 U | < 0.26 U | < 0.64 U | < 0.48 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.037 U | < 0.23 U | - | < 0.63 U | < 0.47 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.038 U | < 0.23 U | - | < 0.65 U | < 0.48 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.7 | N | N | JC5499 | 10/6/2015 | < 0.034 U | < 0.29 U | - | < 0.56 U | < 0.41 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-12.5 | N | N | JC5499 | 10/6/2015 | < 0.034 U | < 0.29 U | - | < 0.56 U | < 0.41 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-8.5 | N | N | JC5499 | 10/6/2015 | < 0.031 U | < 0.27 U | - | < 0.52 U | < 0.38 U |
| WELL | SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.038 U | < 0.23 U | < 0.26 U | < 0.64 U | < 0.48 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.038 U | < 0.23 U | < 0.26 U | < 0.64 U | < 0.48 U |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.039 U | < 0.24 U | < 0.27 U | < 0.66 U | < 0.49 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.038 U | < 0.23 U | < 0.27 U | < 0.65 U | < 0.49 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.038 U | < 0.23 U | < 0.26 U | < 0.64 U | < 0.48 U |
| WELL | SHALLOW | MW7S | MW7S-10.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.039 U | < 0.24 U | < 0.27 U | < 0.66 U | < 0.49 U |
| WELL | SHALLOW | MW7S | MW7S-10.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.032 U | < 0.28 U | - | < 0.54 U | < 0.39 U |

**Appendix L.4**
**Historical Groundwater Analytical Data - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | INDENO(1,2,3-CD)PYRENE | NAPHTHALENE | 1-METHYLNAPHTHALENE | NITROBENZENE | N-NITROSO-DI-N-PROPYLAMINE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 193-39-5 | 91-20-3 | 90-12-0 | 98-95-3 | 621-64-7 |
| | | | | | | | **GWQS** | 0.2 | 300 | 5 | 6 | 10 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | MW7S | MW7S-7.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.032 U | < 0.27 U | - | < 0.53 U | < 0.38 U |
| WELL | SHALLOW | MW8S | MW8S-20180427 | N | N | JC65066 | 4/27/2018 | < 0.041 U | < 0.25 U | < 0.29 U | < 0.70 U | < 0.52 U |
| WELL | SHALLOW | MW8S | MW8S-9.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.031 U | < 0.27 U | - | < 0.52 U | < 0.38 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.038 U | 3.0 | 0.84 J | < 0.64 U | < 0.48 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.038 U | 1.8 | 0.52 J | < 0.64 U | < 0.48 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.040 U | 2.9 | 0.74 J | < 0.68 U | < 0.51 U |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | N | N | JC57752 | 12/20/2017 | < 0.040 U | 1.3 JB | - | < 0.68 U | < 0.51 U |
| WELL | INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | N | N | JC64444 | 4/18/2018 | < 0.038 U | < 0.23 U | < 0.26 U | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | N | N | JC65255 | 5/1/2018 | < 0.038 U | < 0.23 U | < 0.26 U | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | N | N | JC64571 | 4/19/2018 | < 0.039 U | **4640** | **709** | < 0.65 U | < 0.49 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-36.0-20151001 | N | N | JC5237A | 10/1/2015 | < 0.031 U | **1070 J** | - | < 0.52 U | < 0.38 U |
| WELL | INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | N | N | JC62130 | 3/12/2018 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | N | JC62228 | 3/13/2018 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | N | JC62228 | 3/13/2018 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | FD | N | JC56729A | 12/6/2017 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | N | N | JC56729A | 12/6/2017 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | N | N | JC51890 | 9/27/2017 | < 0.040 U | < 0.24 U | - | < 0.68 U | < 0.51 U |
| WELL | INTERMEDIATE | 114-MW37B | 114-MW37B-20170926 | N | N | JC51824 | 9/26/2017 | < 0.040 U | < 0.24 U | - | < 0.68 U | < 0.51 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | FD | N | JC60652 | 2/12/2018 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | N | N | JC60652 | 2/12/2018 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | N | N | JC65066 | 4/27/2018 | < 0.039 U | < 0.24 U | < 0.27 U | < 0.66 U | < 0.50 U |
| WELL | INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | N | N | JC64643 | 4/20/2018 | < 0.037 U | 16.0 | **17.2** | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.040 U | < 0.24 U | - | < 0.67 U | < 0.50 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | N | N | JC57638 | 12/19/2017 | < 0.042 U | < 0.26 U | - | < 0.71 U | < 0.53 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | N | N | JC57501A | 12/15/2017 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | N | N | JC58670 | 1/11/2018 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.038 U | 3.9 | - | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.038 U | 6.0 | - | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.038 U | 8.6 | - | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.038 U | 9.1 | - | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.038 U | 4.6 | - | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.038 U | 4.3 | - | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.038 U | 4.9 | - | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.038 U | 4.0 | - | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.038 U | **1320** | **115** | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.038 U | **1700** | **163** | < 0.64 UJ | < 0.48 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.038 U | 59.8 | **392** | < 0.65 U | < 0.48 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.038 U | 34.8 | **396** | < 0.65 U | < 0.49 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.039 U | < 0.24 U | < 0.27 U | < 0.66 U | < 0.49 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.038 U | < 0.23 U | < 0.26 U | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.038 U | 38.5 | **90.3** | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.036 U | 39.1 | **88.9** | < 0.61 U | < 0.46 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.038 U | 8.4 | - | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.038 U | 8.5 | - | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.038 U | 4.8 | 0.76 J | < 0.64 U | < 0.48 U |

**Appendix L.4**
**Historical Groundwater Analytical Data - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | INDENO(1,2,3-CD)PYRENE | NAPHTHALENE | 1-METHYLNAPHTHALENE | NITROBENZENE | N-NITROSO-DI-N-PROPYLAMINE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 193-39-5 | 91-20-3 | 90-12-0 | 98-95-3 | 621-64-7 |
| | | | | | | | **GWQS** | 0.2 | 300 | 5 | 6 | 10 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | FD | N | JC67069 | 5/31/2018 | 0.0380 J | 2.6 | < 0.26 U | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.038 U | 1.6 | < 0.26 U | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.039 U | **673** | - | < 0.66 U | < 0.49 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.038 U | **1240** | - | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.039 U | **3820** | - | < 0.65 U | < 0.49 U |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.039 U | **4300** | - | < 0.66 U | < 0.49 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.038 U | 130 | **447** | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.038 U | 0.99 J | **17.3** | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.038 U | < 0.23 U | - | < 0.65 U | < 0.49 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | N | N | JC64901 | 4/25/2018 | 0.0393 J | < 0.23 U | - | < 0.62 U | < 0.47 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-30.5 | N | N | JC5499 | 10/6/2015 | < 0.033 U | < 0.28 U | - | < 0.55 U | < 0.40 U |
| WELL | INTERMEDIATE | 135-MW3BR | 135-MW3B-30.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.037 U | < 0.22 U | < 0.25 U | < 0.62 U | < 0.46 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.038 U | < 0.23 U | < 0.26 U | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.038 U | < 0.23 U | < 0.26 U | < 0.64 U | < 0.48 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.037 U | < 0.22 U | - | < 0.62 U | < 0.46 U |
| WELL | INTERMEDIATE | MW7D | MW7D-41.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.037 U | < 0.22 U | - | < 0.62 U | < 0.46 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930X | FD | N | JC5098A | 9/30/2015 | < 0.032 U | < 0.27 U | - | < 0.53 U | < 0.38 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.035 U | < 0.29 U | - | < 0.58 U | < 0.42 U |
| WELL | INTERMEDIATE | MW7D | MW7D-40.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.033 U | < 0.28 U | - | < 0.56 U | < 0.41 U |
| WELL | INTERMEDIATE | MW8D | MW8D-45.0-20180425 | N | N | JC64901 | 4/25/2018 | **0.889** | 4.2 | 0.62 J | < 0.71 U | < 0.53 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425X | FD | N | JC64901 | 4/25/2018 | **1.25 J** | 187 | **21.1 J** | < 0.66 U | < 0.49 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425 | N | N | JC64901 | 4/25/2018 | **0.909 J** | 168 | **15.5 J** | < 0.73 U | < 0.55 U |
| WELL | INTERMEDIATE | MW8D | MW8D-46.5-20150929 | N | N | JC4976A | 9/29/2015 | **0.241** | 11.7 | - | < 0.58 U | < 0.42 U |
| WELL | INTERMEDIATE | MW8D | MW8D-41.5-20150929 | N | N | JC4976A | 9/29/2015 | 0.169 | 298 | - | < 0.54 U | < 0.39 U |
| WELL | DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | N | N | JC65066 | 4/27/2018 | < 0.036 U | < 0.22 U | < 0.25 U | < 0.61 U | < 0.46 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-20180419 | N | N | JC64571 | 4/19/2018 | < 0.042 U | < 0.26 U | < 0.29 U | < 0.71 U | < 0.53 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-78.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.031 U | < 0.27 U | - | < 0.52 U | < 0.38 U |
| WELL | DEEP | 114-MW25C-2 | 114-MW25C-20180313 | N | N | JC62228 | 3/13/2018 | < 0.038 U | 248 | - | < 0.64 U | < 0.48 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | N | N | JC57943A | 12/22/2017 | < 0.042 U | 2.3 | - | < 0.71 U | < 0.53 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | N | N | JC57943A | 12/22/2017 | < 0.042 U | 4.6 | - | < 0.71 U | < 0.53 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.044 U | 5.8 | - | < 0.74 U | < 0.55 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.042 U | 6.6 | - | < 0.71 U | < 0.53 U |
| WELL | DEEP | MW8F | MW8F-20180425 | N | N | JC64901 | 4/25/2018 | < 0.038 U | < 0.23 U | < 0.26 U | < 0.64 U | < 0.48 U |
| WELL | DEEP | MW8F | MW8F-82.0-20151001 | N | N | JC5237A | 10/1/2015 | < 0.032 U | < 0.27 U | - | < 0.53 U | < 0.38 U |
| WELL | DEEP | MW8F | MW8F-79.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.035 U | < 0.29 U | - | < 0.58 U | < 0.42 U |
| WELL | DEEP | MW-CR-3D | MW-CR-3D-20180418 | N | N | JC64444 | 4/18/2018 | < 0.038 U | < 0.23 U | < 0.26 U | < 0.64 U | < 0.48 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-46.0-49.5 | N | N | JC53234 | 10/16/2017 | 0.134 | < 0.23 U | - | < 0.64 U | < 0.48 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-40.0-44.0 | N | N | JC53234 | 10/16/2017 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-32.0-36.0 | N | N | JC53234 | 10/16/2017 | **0.243** | < 0.23 U | - | < 0.64 U | < 0.48 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-24.0-28.0 | N | N | JC53234 | 10/16/2017 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-36.0-40.0 | N | N | JC54569A | 11/2/2017 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-30.0-34.0 | N | N | JC54569A | 11/2/2017 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-22.0-26.0 | N | N | JC54569A | 11/2/2017 | 0.134 J | 6.4 J- | - | < 0.64 UJ | < 0.48 UJ |
| SOILBORE | N/A | DNAPL-S1 | 137-S1-GW | N | N | JC55721 | 11/17/2017 | < 0.043 U | 1.2 | - | < 0.72 U | < 0.54 U |
| SOILBORE | N/A | DNAPL-W1 | 137-W1-GW | N | N | JC55721 | 11/17/2017 | **0.282** | **1290** | - | < 0.71 U | < 0.53 U |

**Appendix L.4**
**Historical Groundwater Analytical Data - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

AECOM

| | | | | | | | **Analyte** | N-NITROSODIPHENYLAMINE | P-CHLOROANILINE | PENTACHLOROPHENOL | PHENANTHRENE | PHENOL | P-NITROANILINE | PYRENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 86-30-6 | 106-47-8 | 87-86-5 | 85-01-8 | 108-95-2 | 100-01-6 | 129-00-0 |
| | | | | | | | **GWQS** | 10 | N/A | 0.3 | 100 | 2000 | N/A | 200 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-8.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.40 U | < 0.44 U | < 0.22 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.22 U | < 0.33 U | < 0.13 U | < 0.17 U | < 0.38 U | < 0.43 U | < 0.21 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-12.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.21 U | < 0.30 U | < 0.11 U | 0.57 J | 8.3 | < 0.30 U | < 0.19 U |
| WELL | SHALLOW | 114-MW20A | 114-MW20A-10.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.21 U | < 0.30 U | < 0.11 U | 0.51 J | 6.4 | < 0.30 U | < 0.19 U |
| WELL | SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | N | N | JC65325 | 5/2/2018 | < 0.22 U | < 0.34 U | < 0.13 U | 0.69 J | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | SHALLOW | 114-MW25A | 114-MW25A-20170927 | N | N | JC51824 | 9/27/2017 | < 0.22 U | < 0.34 U | < 0.13 U | 0.69 J | < 0.39 U | < 0.44 U | 1.3 |
| WELL | SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | N | N | JC57565 | 12/18/2017 | 1.1 J | < 0.35 U | < 0.13 U | < 0.18 U | < 0.41 U | < 0.46 U | < 0.23 U |
| WELL | SHALLOW | 114-MW27A | 114-MW27A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.24 U | < 0.37 U | < 0.14 U | < 0.19 U | < 0.43 U | < 0.48 U | < 0.24 U |
| WELL | SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | N | N | JC57565 | 12/18/2017 | < 0.25 U | < 0.38 U | < 0.14 U | < 0.19 U | < 0.44 U | < 0.49 U | < 0.24 U |
| WELL | SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | N | N | JC56729A | 12/6/2017 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | N | N | JC56859A | 12/7/2017 | < 0.21 U | < 0.32 U | < 0.12 U | < 0.17 U | < 0.37 U | < 0.42 U | < 0.21 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927-X | FD | N | JC51890 | 9/27/2017 | < 0.23 U | < 0.36 U | < 0.14 U | 0.49 J | 14.2 | < 0.46 U | < 0.23 U |
| WELL | SHALLOW | 114-MW36A | 114-MW36A-20170927 | N | N | JC51890 | 9/27/2017 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | 13.3 | < 0.44 U | < 0.22 U |
| WELL | SHALLOW | 114-MW37A | 114-MW37A-20170926 | N | N | JC51824 | 9/26/2017 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | N | N | JC56504A | 12/4/2017 | < 0.25 U | < 0.38 U | < 0.14 U | < 0.19 U | < 0.44 U | < 0.49 U | < 0.24 U |
| WELL | SHALLOW | 114-MW41A | 114-MW41A-20180420 | N | N | JC64643 | 4/20/2018 | < 0.22 U | < 0.34 U | < 0.13 U | 80.4 | < 0.39 U | < 0.44 U | 4.9 |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.24 U | < 0.37 U | < 0.14 U | 7.6 | < 0.43 U | < 0.48 U | 1.9 |
| WELL | SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.22 U | < 0.34 U | < 0.13 U | 7.0 | < 0.39 U | < 0.44 U | 1.7 |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.21 U | < 0.32 U | < 0.12 U | < 0.17 U | < 0.37 U | < 0.42 U | < 0.21 U |
| WELL | SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.21 U | < 0.32 U | < 0.12 U | < 0.17 U | < 0.37 U | < 0.42 U | < 0.21 U |
| WELL | SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | N | N | JC51736 | 9/25/2017 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | 1.2 |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.22 U | < 0.34 U | < 0.13 U | 12.1 | < 0.39 U | < 0.44 U | 2.2 |
| WELL | SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.23 U | < 0.35 U | < 0.13 U | 9.9 | < 0.40 U | < 0.45 U | 2.9 |
| WELL | SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.23 U | < 0.35 U | < 0.13 U | 28.7 | < 0.40 U | < 0.45 U | 2.4 |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.25 U | < 0.38 U | < 0.14 U | 9.7 | < 0.43 U | < 0.49 U | 2.1 |
| WELL | SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.22 U | < 0.34 U | < 0.13 U | 6.3 | < 0.39 U | < 0.44 U | 1.9 |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.24 U | < 0.37 U | < 0.14 U | < 0.19 U | < 0.42 U | < 0.47 U | < 0.24 U |
| WELL | SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | N | N | JC64986 | 4/26/2018 | < 0.24 U | < 0.36 U | < 0.14 U | < 0.19 U | < 0.42 U | < 0.47 U | < 0.23 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.22 U | < 0.34 U | R | < 0.18 U | 3.7 J- | < 0.44 U | < 0.22 U |
| WELL | SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.22 U | < 0.34 U | R | < 0.18 U | R | < 0.44 U | < 0.22 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.22 U | < 0.33 U | < 0.13 U | < 0.17 U | < 0.38 U | < 0.43 U | < 0.21 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-14.7 | N | N | JC5499 | 10/6/2015 | < 0.22 U | < 0.33 U | < 0.12 U | < 0.20 U | < 0.59 U | < 0.33 U | < 0.21 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-12.5 | N | N | JC5499 | 10/6/2015 | < 0.22 U | < 0.33 U | < 0.12 U | < 0.20 U | < 0.59 U | < 0.33 U | < 0.21 U |
| WELL | SHALLOW | 135-MW2A | 135-MW2A-8.5 | N | N | JC5499 | 10/6/2015 | < 0.21 U | < 0.30 U | < 0.11 U | < 0.19 U | < 0.55 U | < 0.30 U | < 0.19 U |
| WELL | SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.17 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | N | N | JC64822 | 4/24/2018 | < 0.23 U | < 0.35 U | < 0.13 U | < 0.18 U | < 0.40 U | < 0.45 U | < 0.22 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.40 U | < 0.44 U | < 0.22 U |
| WELL | SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | SHALLOW | MW7S | MW7S-10.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.23 U | < 0.35 U | < 0.13 U | < 0.18 U | < 0.40 U | < 0.45 U | < 0.22 U |
| WELL | SHALLOW | MW7S | MW7S-10.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.21 U | < 0.31 U | < 0.12 U | < 0.19 U | < 0.57 U | < 0.31 U | < 0.20 U |

**Appendix L.4**
**Historical Groundwater Analytical Data - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | N-NITROSODIPHENYLAMINE | P-CHLOROANILINE | PENTACHLOROPHENOL | PHENANTHRENE | PHENOL | P-NITROANILINE | PYRENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 86-30-6 | 106-47-8 | 87-86-5 | 85-01-8 | 108-95-2 | 100-01-6 | 129-00-0 |
| | | | | | | | **GWQS** | 10 | N/A | 0.3 | 100 | 2000 | N/A | 200 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | SHALLOW | MW7S | MW7S-7.2-20150930 | N | N | JC5098A | 9/30/2015 | < 0.21 U | < 0.31 U | < 0.11 U | < 0.19 U | < 0.56 U | < 0.31 U | < 0.19 U |
| WELL | SHALLOW | MW8S | MW8S-20180427 | N | N | JC65066 | 4/27/2018 | < 0.24 U | < 0.37 U | < 0.14 U | < 0.19 U | < 0.43 U | < 0.48 U | < 0.24 U |
| WELL | SHALLOW | MW8S | MW8S-9.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.21 U | < 0.30 U | < 0.11 U | < 0.19 U | < 0.55 U | < 0.30 U | < 0.19 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.22 U | < 0.34 U | **0.391** | 0.73 J | 162 | < 0.44 U | < 0.22 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | 144 | < 0.44 U | < 0.22 U |
| WELL | SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | N | N | JC64444 | 4/18/2018 | < 0.23 U | < 0.36 U | **0.404** | < 0.18 U | 122 | < 0.46 U | < 0.23 U |
| WELL | INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | N | N | JC57752 | 12/20/2017 | < 0.23 U | < 0.36 U | R | < 0.18 U | 11.5 | < 0.46 U | < 0.23 U |
| WELL | INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | N | N | JC64444 | 4/18/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | N | N | JC65255 | 5/1/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | N | N | JC64571 | 4/19/2018 | < 0.23 U | < 0.35 U | < 0.13 U | 44.2 | < 0.40 U | < 0.45 U | 1.5 |
| WELL | INTERMEDIATE | 114-MW20B | 114-MW20B-36.0-20151001 | N | N | JC5237A | 10/1/2015 | < 0.21 U | < 0.30 U | < 0.11 U | 28.6 | < 0.55 U | < 0.30 U | 1.1 |
| WELL | INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | N | N | JC62130 | 3/12/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | N | JC62228 | 3/13/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | N | JC62228 | 3/13/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | FD | N | JC56729A | 12/6/2017 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | N | N | JC56729A | 12/6/2017 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | N | N | JC51890 | 9/27/2017 | < 0.23 U | < 0.36 U | < 0.14 U | < 0.18 U | < 0.41 U | < 0.46 U | < 0.23 U |
| WELL | INTERMEDIATE | 114-MW37B | 114-MW37B-20170926 | N | N | JC51824 | 9/26/2017 | < 0.23 U | < 0.36 U | < 0.14 U | < 0.18 U | < 0.41 U | < 0.46 U | < 0.23 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | FD | N | JC60652 | 2/12/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | N | N | JC60652 | 2/12/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | N | N | JC65066 | 4/27/2018 | < 0.23 U | < 0.35 U | < 0.13 U | < 0.18 U | < 0.40 U | < 0.45 U | < 0.23 U |
| WELL | INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | N | N | JC64643 | 4/20/2018 | < 0.22 U | < 0.34 U | < 0.12 U | 5.2 | < 0.39 U | < 0.44 U | 0.76 J |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.23 U | < 0.35 U | < 0.13 U | < 0.18 U | < 0.41 U | < 0.46 U | < 0.23 U |
| WELL | INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | N | N | JC57638 | 12/19/2017 | < 0.25 U | < 0.38 U | < 0.14 U | < 0.19 U | < 0.44 U | < 0.49 U | < 0.24 U |
| WELL | INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | N | N | JC57501A | 12/15/2017 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | N | N | JC58745 | 1/12/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | N | N | JC58670 | 1/11/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.22 U | < 0.34 U | < 0.13 U | 0.85 J | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | N | N | JC58073A | 12/27/2017 | < 0.22 U | < 0.34 U | < 0.13 U | 1.4 | 0.84 J | < 0.44 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.22 U | < 0.34 U | < 0.13 U | 1.1 | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | N | N | JC58028A | 12/26/2017 | < 0.22 U | < 0.34 U | < 0.13 U | 1.1 | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | N | N | JC58942 | 1/16/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.22 U | < 0.34 U | < 0.13 U | 76.2 | 1.6 J | < 0.44 U | 3.9 |
| WELL | INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | N | N | JC65178 | 4/30/2018 | < 0.22 U | < 0.34 U | < 0.13 U | 75.9 | 1.3 J | < 0.44 U | 4.6 |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.23 U | < 0.35 U | < 0.13 U | < 0.18 U | < 0.40 U | < 0.45 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | N | N | JC64444 | 4/18/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.22 U | < 0.34 U | < 0.13 U | 10.8 | < 0.39 U | < 0.44 U | 0.87 J |
| WELL | INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | N | N | JC64643 | 4/20/2018 | < 0.21 U | < 0.32 U | < 0.12 U | 10.6 | < 0.37 U | < 0.42 U | 0.89 J |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | N | N | JC58670 | 1/11/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |

**Appendix L.4**
**Historical Groundwater Analytical Data - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | **Analyte** | N-NITROSODIPHENYLAMINE | P-CHLOROANILINE | PENTACHLOROPHENOL | PHENANTHRENE | PHENOL | P-NITROANILINE | PYRENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **CAS RN** | 86-30-6 | 106-47-8 | 87-86-5 | 85-01-8 | 108-95-2 | 100-01-6 | 129-00-0 |
| | | | | | | | **GWQS** | 10 | N/A | 0.3 | 100 | 2000 | N/A | 200 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Location Type** | **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | FD | N | JC67069 | 5/31/2018 | < 0.22 U | < 0.34 U | < 0.12 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.23 U | < 0.35 U | < 0.13 U | 44.1 | < 0.40 U | < 0.45 U | 2.0 |
| WELL | INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | N | N | JC57276 | 12/13/2017 | < 0.22 U | < 0.34 U | < 0.13 U | 59.0 | < 0.39 U | < 0.44 U | 2.1 |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.23 U | < 0.35 U | < 0.13 U | 52.6 | < 0.40 U | < 0.45 U | 6.2 |
| WELL | INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | N | N | JC57169 | 12/12/2017 | < 0.23 U | < 0.35 U | < 0.13 U | 48.2 | < 0.40 U | < 0.45 U | 5.2 |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.22 U | < 0.34 U | < 0.13 U | 31.2 | 6.1 | < 0.44 U | 1.1 |
| WELL | INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | N | N | JC64571 | 4/19/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | 0.33 J |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.17 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.40 U | < 0.44 U | < 0.22 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | N | N | JC64901 | 4/25/2018 | < 0.22 U | < 0.33 UJ | < 0.13 U | < 0.17 U | < 0.38 U | < 0.43 UJ | < 0.21 U |
| WELL | INTERMEDIATE | 135-MW2B | 135-MW2B-30.5 | N | N | JC5499 | 10/6/2015 | < 0.22 U | < 0.32 U | < 0.12 U | < 0.20 U | < 0.58 U | < 0.32 U | < 0.20 U |
| WELL | INTERMEDIATE | 135-MW3BR | 135-MW3B-30.0-20180501 | N | N | JC65255 | 5/1/2018 | < 0.21 U | < 0.33 U | < 0.12 U | < 0.17 U | < 0.38 U | < 0.42 U | < 0.21 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | N | N | JC67069 | 5/31/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.21 U | < 0.33 U | < 0.12 U | < 0.17 U | < 0.38 U | < 0.42 U | < 0.21 U |
| WELL | INTERMEDIATE | MW7D | MW7D-41.0-20180423 | N | N | JC64763 | 4/23/2018 | < 0.21 U | < 0.33 U | < 0.12 U | < 0.17 U | < 0.38 U | < 0.43 U | < 0.21 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930X | FD | N | JC5098A | 9/30/2015 | < 0.21 U | < 0.31 U | < 0.11 U | < 0.19 U | < 0.56 U | < 0.31 U | < 0.19 U |
| WELL | INTERMEDIATE | MW7D | MW7D-45.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.23 U | < 0.33 U | < 0.12 U | < 0.21 U | < 0.61 U | < 0.33 U | < 0.21 U |
| WELL | INTERMEDIATE | MW7D | MW7D-40.5-20150930 | N | N | JC5098A | 9/30/2015 | < 0.22 U | < 0.32 UJ | < 0.12 U | < 0.20 U | < 0.59 U | < 0.32 U | < 0.21 U |
| WELL | INTERMEDIATE | MW8D | MW8D-45.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.25 U | < 0.38 U | < 0.14 U | 0.85 J | < 0.44 U | < 0.49 U | 2.1 |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425X | FD | N | JC64901 | 4/25/2018 | < 0.23 U | < 0.35 U | < 0.13 U | 2.2 | 3.1 | < 0.45 U | 3.8 J |
| WELL | INTERMEDIATE | MW8D | MW8D-41.0-20180425 | N | N | JC64901 | 4/25/2018 | < 0.25 U | < 0.39 U | < 0.15 U | 1.3 | 2.6 | < 0.50 U | 2.2 J |
| WELL | INTERMEDIATE | MW8D | MW8D-46.5-20150929 | N | N | JC4976A | 9/29/2015 | < 0.23 U | < 0.33 U | < 0.12 U | 0.45 J | < 0.61 U | < 0.33 U | 0.61 J |
| WELL | INTERMEDIATE | MW8D | MW8D-41.5-20150929 | N | N | JC4976A | 9/29/2015 | < 0.21 U | < 0.31 U | < 0.12 U | 1.8 | < 0.57 U | < 0.31 U | 0.46 J |
| WELL | DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | N | N | JC65066 | 4/27/2018 | < 0.21 U | < 0.32 U | < 0.12 U | < 0.17 U | < 0.37 U | < 0.42 U | < 0.21 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-20180419 | N | N | JC64571 | 4/19/2018 | < 0.25 U | < 0.38 U | < 0.14 U | < 0.19 U | < 0.44 U | < 0.49 U | < 0.24 U |
| WELL | DEEP | 114-MW20C | 114-MW20C-78.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.21 U | < 0.30 U | < 0.11 U | < 0.19 U | < 0.55 U | < 0.30 U | < 0.19 U |
| WELL | DEEP | 114-MW25C-2 | 114-MW25C-20180313 | N | N | JC62228 | 3/13/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | N | N | JC57943A | 12/22/2017 | < 0.25 U | < 0.38 U | < 0.14 U | 1.8 | < 0.44 U | < 0.49 U | < 0.24 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | N | N | JC57943A | 12/22/2017 | < 0.24 U | < 0.37 U | < 0.14 U | 2.5 | < 0.43 U | < 0.48 U | < 0.24 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.26 U | < 0.39 U | < 0.15 U | 2.4 | < 0.45 U | < 0.51 U | < 0.25 U |
| WELL | DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | N | N | JC57820 | 12/21/2017 | < 0.25 U | < 0.38 U | < 0.14 U | 3.3 | < 0.44 U | < 0.49 U | < 0.24 U |
| WELL | DEEP | MW8F | MW8F-20180425 | N | N | JC64901 | 4/25/2018 | < 0.22 U | R | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| WELL | DEEP | MW8F | MW8F-82.0-20151001 | N | N | JC5237A | 10/1/2015 | < 0.21 U | < 0.31 U | < 0.11 U | < 0.19 U | < 0.56 U | < 0.31 U | < 0.19 U |
| WELL | DEEP | MW8F | MW8F-79.5-20151001 | N | N | JC5237A | 10/1/2015 | < 0.23 U | < 0.33 U | < 0.12 U | < 0.21 U | < 0.61 U | < 0.33 U | < 0.21 U |
| WELL | DEEP | MW-CR-3D | MW-CR-3D-20180418 | N | N | JC64444 | 4/18/2018 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-46.0-49.5 | N | N | JC53234 | 10/16/2017 | < 0.22 U | < 0.34 U | < 0.13 U | 0.57 J | < 0.39 U | < 0.44 U | 0.66 J |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-40.0-44.0 | N | N | JC53234 | 10/16/2017 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-32.0-36.0 | N | N | JC53234 | 10/16/2017 | < 0.22 U | < 0.34 U | < 0.13 U | 0.44 J | < 0.39 U | < 0.44 U | 0.86 J |
| SOILBORE | N/A | 114-SS-39B | 114-SS-39B-24.0-28.0 | N | N | JC53234 | 10/16/2017 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-36.0-40.0 | N | N | JC54569A | 11/2/2017 | < 0.22 U | < 0.34 U | < 0.13 U | 0.77 J | < 0.39 U | < 0.44 U | < 0.22 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-30.0-34.0 | N | N | JC54569A | 11/2/2017 | < 0.22 U | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| SOILBORE | N/A | 114-SS-40B | 114-SS-40B-22.0-26.0 | N | N | JC54569A | 11/2/2017 | < 0.22 UJ | < 0.34 UJ | < 0.13 UJ | 5.2 J- | 3.0 J- | < 0.44 UJ | 1.1 J- |
| SOILBORE | N/A | DNAPL-S1 | 137-S1-GW | N | N | JC55721 | 11/17/2017 | < 0.25 U | < 0.38 U | < 0.14 U | < 0.20 U | < 0.44 U | < 0.49 U | < 0.25 U |
| SOILBORE | N/A | DNAPL-W1 | 137-W1-GW | N | N | JC55721 | 11/17/2017 | < 0.25 U | < 0.38 U | < 0.14 U | 98.4 | 5.6 | < 0.49 U | 21.4 |

**NOTES:**

1. The reporting convention for non-detects in environmental analytical chemistry is that non-detects be reported as less than the RL. Outputs from the database default to reporting non-detects as less than the MDL.

2. Results may be reporting as less than the MDL or RL, but above the associated regulatory standard when dilution is required due to the presence of a significant quantity of a target or non-target analyte, or an interference from a target or non-target analyte. The presence of other substances, or combinations of other substances in a sample can impact whether an analytical method can be used to achieve the lowest possible RL.

3. **Bold** - Indicates an exceedance of the NJDEP's GWQS.

4. A "-" indicates that the sample was not tested for the analyte.

**ABBREVIATIONS:**

CAS RN - Chemical Abstracts Service Registry Number

Fraction:

N - total/unfiltered

GWQS - Groundwater Quality Standard

MDL - method detection limit

N/A - not applicable

NJDEP - New Jersey Department of Environmental Protection

RL - reporting limit

Sample Types:

N - normal environmental sample

FD - field duplicate sample

SDG - sample delivery group

SVOC - semi-volatile organic compound

ug/L - micrograms per liter

**QUALIFIERS:**

J - Indicates the result was an estimated value; the associated numerical value was an approximate concentration of the analyte in the sample. J+ or J - is used when the direction of bias can be determined.

JB - The analyte concentration is greater than three (3) times, but less than or equal to ten (10) times the concentration in the associated method/preparation blank. The presence of that analyte in the sample is considered “real” but the concentration is quantitatively qualified due to method blank contamination.

R - The sample result was rejected due to serious deficiencies; the presence or absence of the analyte could not be confirmed.

U - Indicates the analyte was not detected in the sample above the sample RL.

UB - The analyte concentration is less than or equal to three (3) times the concentration in the associated method/preparation blank. The presence of the analyte in the sample is negated due to laboratory blank contamination.

UJ - Indicates the analyte was not detected above the RL and the RL was approximate.

# Appendix M

# Laboratory Reports

## (Submitted Separately)

# Appendix N

# Data Validation Memoranda

**(Submitted Separately)**

# Appendix O

# HAZSITE Electronic Data Deliverables (EDDs)

# Appendix O
# HAZSITE Electronic Data Deliverables
# Groundwater Remedial Investigation Report
# Garfield Avenue Group Sites
# PPG, Jersey City, New Jersey

| Lab SDG | Date |
|---|---|
| JC33474 | 12/11/2016 |
| JC33969 | 12/18/2016 |
| JC46649 | 7/10/2017 |
| JC46746 | 7/11/2017 |
| JC46901 | 7/13/2017 |
| JC51716 | 9/25/2017 |
| JC51736 | 9/25/2017 |
| JC51802 | 9/26/2017 |
| JC51824 | 9/26/2017 |
| JC51824 | 9/27/2017 |
| JC51874 | 9/27/2017 |
| JC51890 | 9/27/2017 |
| JC52007 | 9/28/2017 |
| JC52007A | 9/28/2017 |
| JC52029 | 9/28/2017 |
| JC53234 | 10/16/2017 |
| JC53234A | 10/16/2017 |
| JC54328 | 10/31/2017 |
| JC54328A | 10/31/2017 |
| JC54569 | 11/2/2017 |
| JC54569A | 11/2/2017 |
| JC55349 | 11/13/2017 |
| JC55349A | 11/13/2017 |
| JC55607 | 11/16/2017 |
| JC55721 | 11/17/2017 |
| JC56504 | 12/4/2017 |
| JC56504A | 12/4/2017 |
| JC56729 | 12/6/2017 |
| JC56729A | 12/6/2017 |
| JC56859 | 12/7/2017 |
| JC56859A | 12/7/2017 |
| JC57169 | 12/12/2017 |
| JC57276 | 12/13/2017 |
| JC57385 | 12/14/2017 |
| JC57501 | 12/15/2017 |
| JC57501A | 12/15/2017 |
| JC57565 | 12/18/2017 |
| JC57638 | 12/19/2017 |
| JC57752 | 12/20/2017 |
| JC57820 | 12/21/2017 |
| JC57943 | 12/22/2017 |
| JC57943A | 12/22/2017 |
| JC58028 | 12/26/2017 |
| JC58028A | 12/26/2017 |
| JC58073 | 12/27/2017 |
| JC58073A | 12/27/2017 |

| Lab SDG | Date |
|---|---|
| JC58670 | 1/11/2018 |
| JC58745 | 1/12/2018 |
| JC58942 | 1/16/2018 |
| JC60477 | 2/8/2018 |
| JC60563 | 2/9/2018 |
| JC60564 | 2/9/2018 |
| JC60652 | 2/12/2018 |
| JC60652R | 2/12/2018 |
| JC62130 | 3/12/2018 |
| JC62228 | 3/13/2018 |
| JC64376 | 4/17/2018 |
| JC64444 | 4/18/2018 |
| JC64571 | 4/19/2018 |
| JC64643 | 4/20/2018 |
| JC64763 | 4/23/2018 |
| JC64822 | 4/24/2018 |
| JC64901 | 4/25/2018 |
| JC64986 | 4/26/2018 |
| JC65066 | 4/27/2018 |
| JC65178 | 4/30/2018 |
| JC65255 | 5/1/2018 |
| JC65325 | 5/2/2018 |
| JC67069 | 5/31/2018 |
| JC88938 | 5/30/2019 |
| JC89029 | 5/31/2019 |
| JC97157 | 10/21/2019 |
| JD11956 | 8/19/2020 |
| JD12022 | 8/20/2020 |
| JD12104 | 8/21/2020 |
| JD12104R | 8/21/2020 |
| JD12146 | 8/24/2020 |
| JD12215 | 8/25/2020 |
| JD12249 | 8/26/2020 |
| JD12322 | 8/27/2020 |
| JD12393 | 8/28/2020 |
| JD12474 | 8/31/2020 |
| JD12508 | 9/1/2020 |
| JD12593 | 9/2/2020 |
| JD20125 | 2/9/2021 |
| JD20166 | 2/10/2021 |
| JD20260 | 2/11/2021 |
| JD20313 | 2/12/2021 |
| JD20380 | 2/15/2021 |
| 460-237317-1 | 6/24/2021 |

**Notes**:
SDG - sample delivery group

Gleason, Shannon

| | |
|---|---|
| From: | DEP SRPEDD [DEP] <SRPEDD@dep.nj.gov> |
| Sent: | Friday, January 21, 2022 12:07 PM |
| To: | Kindervatter, Henry [DEP] |
| Subject: | G000044581, RPC000001, G000044581, HB275121, (Directory: 20211213) - Passed |
| Attachments: | DTST.TXT; EDSA_Error_Log.html; erdtst-7-1-8.txt; erresult-7-1-8.txt; ersample-7-1-8.txt; HZRESULT.TXT; HZSAMPLE.TXT; rstp-7-1-8.txt; SampleLoc-7-1-8.KML |

The EDD submission via email from (/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=2FC0A8EC67CE47AFBD32F14F7086A84A-HENRY KINDE) on (1/21/2022 11:48:25 AM) with the subjectline "G000044581, RPC000001, G000044581"

The following identifiers were in the DTST file:

- Directory: 20211213
- DESC: GW RIR -SITE 199
- SRPID: G000044581
- Submit Date: 12/13/2021

This submission has been issued an SRP Catalog ID: HB275121

Submission status: Passed.

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*Email ID: OEM_71558*
*Sub ID:SUB_584990*

## Ravi, Shree

| | |
|---|---|
| From: | Kindervatter, Henry [DEP] <Henry.Kindervatter@dep.nj.gov> |
| Sent: | January 4, 2022 3:17 PM |
| To: | Ravi, Shree |
| Cc: | DEP HAZSITE [DEP] |
| Subject: | [EXTERNAL] FW: 568229, LSR140001, 568229, HB274152, (Directory: 20211213) - Passed |
| Attachments: | DTST.TXT; EDSA_Error_Log.html; erdtst-7-1-8.txt; erresult-7-1-8.txt; ersample-7-1-8.txt; HZRESULT.TXT; HZSAMPLE.TXT; rstp-7-1-8.txt; SampleLoc-7-1-8.KML |

From: DEP SRPEDD [DEP] <SRPEDD@dep.nj.gov>
Sent: Friday, December 17, 2021 3:30 PM
To: Kindervatter, Henry [DEP] <Henry.Kindervatter@dep.nj.gov>
Subject: 568229, LSR140001, 568229, HB274152, (Directory: 20211213) - Passed

The EDD submission via email from (/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=2FC0A8EC67CE47AFBD32F14F7086A84A-HENRY KINDE) on (12/17/2021 12:18:41 PM) with the subjectline "568229, LSR140001, 568229 split of multi-PI EDD_105108 (1 of 4)"

The following identifiers were in the DTST file:

- Directory: 20211213
- DESC: GW RIR-BERRY LANE PARK
- SRPID: 568229
- Submit Date: 2021/12/13

This submission has been issued an SRP Catalog ID: HB274152

Submission status: Passed.

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*Email ID: OEM_70418*
*Sub ID:SUB_578502*

## Ravi, Shree

| | |
|---|---|
| From: | Kindervatter, Henry [DEP] <Henry.Kindervatter@dep.nj.gov> |
| Sent: | January 4, 2022 3:16 PM |
| To: | Ravi, Shree |
| Cc: | DEP HAZSITE [DEP] |
| Subject: | [EXTERNAL] FW: 629388, LSR140001, 14-02-14-1736-00, HB274146, (Directory: 20211213) - Passed |
| Attachments: | DTST.TXT; EDSA_Error_Log.html; erdtst-7-1-8.txt; erresult-7-1-8.txt; ersample-7-1-8.txt; HZRESULT.TXT; HZSAMPLE.TXT; SampleLoc-7-1-8.KML |

From: DEP SRPEDD [DEP] <SRPEDD@dep.nj.gov>
Sent: Friday, December 17, 2021 3:28 PM
To: Kindervatter, Henry [DEP] <Henry.Kindervatter@dep.nj.gov>
Subject: 629388, LSR140001, 14-02-14-1736-00, HB274146, (Directory: 20211213) - Passed

The EDD submission via email from (/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=2FC0A8EC67CE47AFBD32F14F7086A84A-HENRY KINDE) on (12/17/2021 12:20:25 PM) with the subjectline "629388, LSR140001, 629388 split of multi-PI EDD_105108 (2 of 4)"

The following identifiers were in the DTST file:

- Directory: 20211213
- DESC: GW RIR-FBP
- SRPID: 629388
- Submit Date: 2021/12/13

This submission has been issued an SRP Catalog ID: HB274146

Submission status: Passed.

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*Email ID: OEM_70412*
*Sub ID:SUB_578498*

## Ravi, Shree

| | |
|---|---|
| From: | Kindervatter, Henry [DEP] <Henry.Kindervatter@dep.nj.gov> |
| Sent: | January 4, 2022 3:16 PM |
| To: | Ravi, Shree |
| Cc: | DEP HAZSITE [DEP] |
| Subject: | [EXTERNAL] FW: G000011477, RPC110001, G000011477, HB274178, (Directory: 20211213) - Passed |
| Attachments: | DTST.TXT; EDSA_Error_Log.html; erdtst-7-1-8.txt; erresult-7-1-8.txt; ersample-7-1-8.txt; HZRESULT.TXT; HZSAMPLE.TXT; SampleLoc-7-1-8.KML |

From: DEP SRPEDD [DEP] <SRPEDD@dep.nj.gov>
Sent: Friday, December 17, 2021 3:40 PM
To: Kindervatter, Henry [DEP] <Henry.Kindervatter@dep.nj.gov>
Subject: G000011477, RPC110001, G000011477, HB274178, (Directory: 20211213) - Passed

The EDD submission via email from (/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=2FC0A8EC67CE47AFBD32F14F7086A84A-HENRY KINDE) on (12/17/2021 11:10:42 AM) with the subjectline "G000011477, RPC110001, G000011477 split of multi-PI EDD_105109 (3of 4)"

The following identifiers were in the DTST file:

- Directory: 20211213
- DESC: GW RIR -SITE 186
- SRPID: G000011477
- Submit Date: 2021/12/13

This submission has been issued an SRP Catalog ID: HB274178

Submission status: Passed.

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*Email ID: OEM_70444*
*Sub ID:SUB_578556*

## Ravi, Shree

| | |
|---|---|
| From: | Kindervatter, Henry [DEP] <Henry.Kindervatter@dep.nj.gov> |
| Sent: | January 4, 2022 3:16 PM |
| To: | Ravi, Shree |
| Cc: | DEP HAZSITE [DEP] |
| Subject: | [EXTERNAL] FW: G000044581, RPC000001, G000044581, HB274175, (Directory: 20211213) - Passed |
| Attachments: | DTST.TXT; EDSA_Error_Log.html; erdtst-7-1-8.txt; erresult-7-1-8.txt; ersample-7-1-8.txt; HZRESULT.TXT; HZSAMPLE.TXT; rstp-7-1-8.txt; SampleLoc-7-1-8.KML |

From: DEP SRPEDD [DEP] <SRPEDD@dep.nj.gov>
Sent: Friday, December 17, 2021 3:39 PM
To: Kindervatter, Henry [DEP] <Henry.Kindervatter@dep.nj.gov>
Subject: G000044581, RPC000001, G000044581, HB274175, (Directory: 20211213) - Passed

The EDD submission via email from (/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=2FC0A8EC67CE47AFBD32F14F7086A84A-HENRY KINDE) on (12/17/2021 11:12:57 AM) with the subjectline "G000044581, RPC000001, G000044581 split of multi-PI EDD_105109 (4of 4)"

The following identifiers were in the DTST file:

- Directory: 20211213
- DESC: GW RIR -SITE 199
- SRPID: G000044581
- Submit Date: 2021/12/13

This submission has been issued an SRP Catalog ID: HB274175

Submission status: Passed.

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*Email ID: OEM_70441*
*Sub ID:SUB_578552*

Ravi, Shree

| | |
|---|---|
| From: | DEP SRPEDD [DEP] <SRPEDD@dep.nj.gov> |
| Sent: | December 14, 2021 6:03 PM |
| To: | Ravi, Shree |
| Subject: | [EXTERNAL] G000005480, RPC000051, G000005480, HB274057, (Directory: 20211213) - Passed |
| Attachments: | DTST.TXT; EDSA_Error_Log.html; erdtst-7-1-8.txt; erresult-7-1-8.txt; ersample-7-1-8.txt; HZRESULT.TXT; HZSAMPLE.TXT; rstp-7-1-8.txt; SampleLoc-7-1-8.KML |
| Follow Up Flag: | Flag for follow up |
| Flag Status: | Flagged |

The EDD submission via email from (Shree.Ravi@aecom.com) on (12/13/2021 4:34:38 PM) with the subjectline "[EXTERNAL] G000005480, RPC000051"

The following identifiers were in the DTST file:

- Directory: 20211213
- DESC: GW RIR -114
- SRPID: G000005480
- Submit Date: 2021/12/13

This submission has been issued an SRP Catalog ID: HB274057

Submission status: Passed.

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*Email ID: OEM_70285*
*Sub ID:SUB_577022*

## Gleason, Shannon

| | |
|---|---|
| From: | DEP SRPEDD [DEP] <SRPEDD@dep.nj.gov> |
| Sent: | Friday, January 21, 2022 12:04 PM |
| To: | Kindervatter, Henry [DEP] |
| Subject: | G000008753, RPC900001, G000008753, HB275114, (Directory: 20211213) - Passed |
| Attachments: | DTST.TXT; EDSA_Error_Log.html; erdtst-7-1-8.txt; erresult-7-1-8.txt; ersample-7-1-8.txt; HZRESULT.TXT; HZSAMPLE.TXT; rstp-7-1-8.txt; SampleLoc-7-1-8.KML |

The EDD submission via email from (/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=2FC0A8EC67CE47AFBD32F14F7086A84A-HENRY KINDE) on (1/21/2022 11:55:55 AM) with the subjectline "G000008753, RPC900001, G000008753"

The following identifiers were in the DTST file:

- Directory: 20211213
- DESC: GW RIR -SITE 137
- SRPID: G000008753
- Submit Date: 12/13/2021

This submission has been issued an SRP Catalog ID: HB275114

Submission status: Passed.

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*Email ID: OEM_71551*
*Sub ID:SUB_584982*

## Gleason, Shannon

| | |
|---|---|
| From: | DEP SRPEDD [DEP] <SRPEDD@dep.nj.gov> |
| Sent: | Friday, January 21, 2022 12:05 PM |
| To: | Kindervatter, Henry [DEP] |
| Subject: | G000011477, RPC110001, G000011477, HB275117, (Directory: 20211213) - Passed |
| Attachments: | DTST.TXT; EDSA_Error_Log.html; erdtst-7-1-8.txt; erresult-7-1-8.txt; ersample-7-1-8.txt; HZRESULT.TXT; HZSAMPLE.TXT; SampleLoc-7-1-8.KML |

The EDD submission via email from (/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=2FC0A8EC67CE47AFBD32F14F7086A84A-HENRY KINDE) on (1/21/2022 11:51:14 AM) with the subjectline "G000011477, RPC110001, G000011477"

The following identifiers were in the DTST file:

- Directory: 20211213
- DESC: GW RIR -SITE 186
- SRPID: G000011477
- Submit Date: 12/13/2021

This submission has been issued an SRP Catalog ID: HB275117

Submission status: Passed.

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EDD data deliverable must be submitted only once.
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*Email ID: OEM_71554*
*Sub ID:SUB_584986*

# Appendix P

# Figures Depicting Groundwater RI Results for CCPW Metals, Non-CCPW Metals, VOCs, and SVOCs

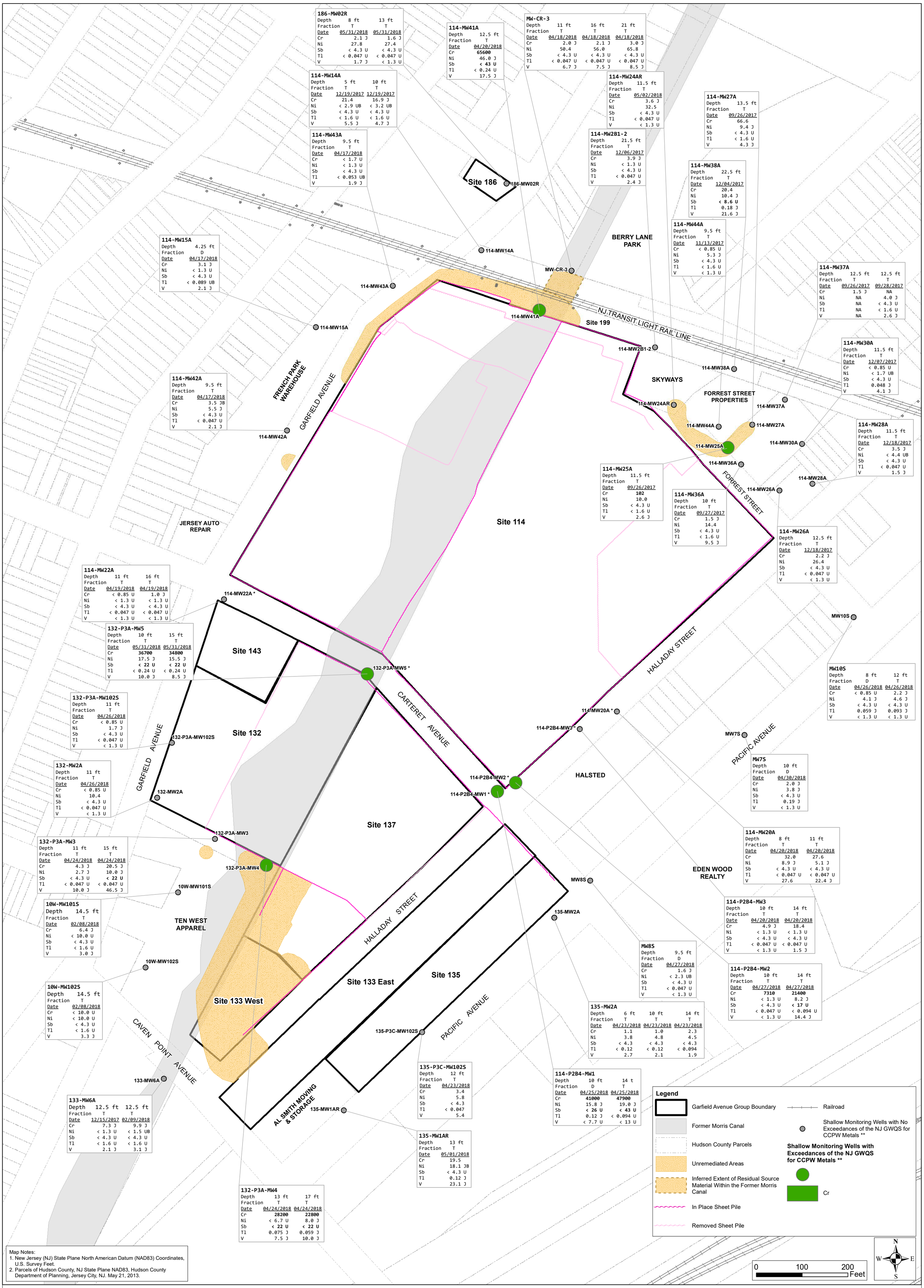


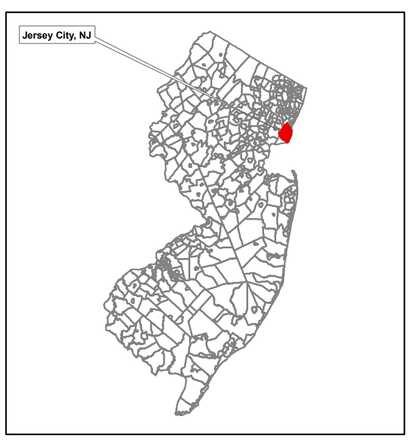


| Analyte | Analyte Short Name | NJDEP GWQS (ug/L) |
|---|---|---|
| ANTIMONY | Sb | 6 |
| CHROMIUM | Cr | 70 |
| NICKEL | Ni | 100 |
| THALLIUM | Tl | 2 |
| VANADIUM | V | 60 |

**Notes:**
1. All concentrations are presented in units of micrograms per liter (ug/L).
2. **Bold** - Indicates the concentration is greater than the NJDEP GWQS for the analyte.
3. Where samples were collected from multiple depths within the same well, sample depths are indicated next to the concentration.
4. Results presented on this map are from RI samples collected between September 26, 2017 and May 31, 2018.
5. Refer to the analytical data tables for qualifier definitions.
6. * - indicates that the well was sampled during the RI field program between 2017-2018, but has since been decommissioned during soil remedial activities.
7. ** - only detected parameters present above their respective GWQS are shown as exceedances.
8. Sample depths are measured from the top of inner well casing.

CCPW - Chromate Chemical Production Waste
D - dissolved fraction
ft - feet
GWQS - Groundwater Quality Standard
NJDEP = New Jersey Department of Environmental Protection
NJ = New Jersey
RI = Remedial Investigation
T = total fraction

AECOM

PPG
GARFIELD AVENUE GROUP
JERSEY CITY, NEW JERSEY
60550261

DATE: 2021-08-12 | DRAWN BY: SR | CHECKED BY: SG

# FIGURE P-1
# GROUNDWATER RI ANALYTICAL RESULTS - CCPW METALS IN THE SHALLOW WATER-BEARING ZONE

Last saved by: ravis
Document Path: Q:\920 GIS\MXD\Groundwater RI\R\Appendix P - RIR Result Maps\FIG P-1-SHALLOW-GW-CCPW-RI-RESULTS.mxd

**114-MW14B**

| | |
|---|---|
| Depth | 30.5 ft |
| Fraction | T |
| Date | 12/19/2017 |
| Cr | 5.9 J |
| Ni | 6.3 JB |
| Sb | < 4.3 U |
| Tl | < 1.6 U |
| V | 14.3 J |

**114-MW41B**

| | |
|---|---|
| Depth | 24.5 ft |
| Fraction | T |
| Date | 04/20/2018 |
| Cr | **282000** |
| Ni | **227** |
| Sb | < 220 U |
| Tl | < 0.24 U |
| V | **68.5 J** |

**114-MW17B**

| | |
|---|---|
| Depth | 27.5 ft |
| Fraction | T |
| Date | 04/18/2018 |
| Cr | 7.4 J |
| Ni | 25.0 |
| Sb | < 4.3 U |
| Tl | < 0.047 U |
| V | 1.9 J |

**114-MW24B**

| | |
|---|---|
| Depth | 33 ft |
| Fraction | T |
| Date | 03/12/2018 |
| Cr | 3.5 J |
| Ni | 12.6 |
| Sb | < 4.3 U |
| Tl | < 0.047 U |
| V | 2.6 J |

**114-MW2B1-2I**

| | |
|---|---|
| Fraction | T |
| Date | 12/06/2017 |
| Cr | **9940** |
| Ni | 34.0 |
| Sb | < 22 U |
| Tl | 0.062 J |
| V | 8.4 J |

**114-MW38B**

| | |
|---|---|
| Depth | 39.5 ft |
| Fraction | T |
| Date | 12/04/2017 |
| Cr | 5.9 J |
| Ni | < 1.6 UB |
| Sb | < 4.3 U |
| Tl | 0.089 J |
| V | 5.5 J |

**114-MW37B**

| | |
|---|---|
| Depth | 32.5 ft |
| Fraction | T |
| Date | 09/26/2017 |
| Cr | 1.8 J |
| Ni | 20.6 |
| Sb | < 4.3 U |
| Tl | < 1.6 U |
| V | 2.2 J |

**114-MW27B**

| | |
|---|---|
| Depth | 32.5 ft |
| Fraction | T |
| Date | 09/28/2017 |
| Cr | 5.1 J |
| Ni | 4.6 J |
| Sb | < 4.3 U |
| Tl | < 1.6 U |
| V | 6.1 J |

**114-MW25B**

| | |
|---|---|
| Depth | 32.5 ft |
| Fraction | T |
| Date | 09/28/2017 |
| Cr | 6.2 J |
| Ni | < 1.3 U |
| Sb | < 4.3 U |
| Tl | < 1.6 U |
| V | 2.6 J |

**114-MW36B**

| | |
|---|---|
| Depth | 32.5 ft |
| Fraction | T |
| Date | 09/27/2017 |
| Cr | 42.2 |
| Ni | 17.4 J |
| Sb | < 8.6 U |
| Tl | < 3.3 U |
| V | 27.0 J |

**114-MW26B**

| | | |
|---|---|---|
| Depth | 35.5 ft | 35.5 ft |
| Fraction | D | T |
| Date | 03/13/2018 | 03/13/2018 |
| Cr | < 0.85 U | 2.4 J |
| Ni | 8.5 J | 9.8 J |
| Sb | < 4.3 U | < 4.3 U |
| Tl | < 0.047 U | < 0.047 U |
| V | 8.0 J | 8.5 J |

**114-P1-MW-2I**

| | | | | |
|---|---|---|---|---|
| Depth | 22.5 ft | 27.5 ft | 32.5 ft | 37.5 ft |
| Fraction | T | T | T | T |
| Date | 01/16/2018 | 01/16/2018 | 01/16/2018 | 01/16/2018 |
| Cr | **230** | **1370** | **2040** | **2880** |
| Ni | 32.7 | 54.9 | 63.2 | 71.6 |
| Sb | < 4.3 U | < 4.3 U | < 4.3 U | < 4.3 U |
| Tl | 0.11 J | < 0.047 U | < 0.047 U | < 0.047 U |
| V | 5.6 J | 7.4 J | 7.4 J | 7.5 J |

**114-MW22B**

| | | |
|---|---|---|
| Depth | 30.5 ft | 30.5 ft |
| Fraction | D | T |
| Date | 04/19/2018 | 04/19/2018 |
| Cr | **4590** | **4680** |
| Ni | 1.4 J | 2.6 J |
| Sb | < 4.3 U | < 4.3 U |
| Tl | < 0.047 U | < 0.047 U |
| V | 1.5 J | 3.1 J |

**114-P1-IRM-5I**

| | | | | |
|---|---|---|---|---|
| Depth | 22.5 ft | 27.5 ft | 32.5 ft | 37.5 ft |
| Fraction | T | T | T | T |
| Date | 12/27/2017 | 12/27/2017 | 12/26/2017 | 12/26/2017 |
| Cr | **3270** | **542** | **644** | **4430** |
| Ni | 7.5 J | 7.8 J | 11.5 | 20.3 |
| Sb | < 4.3 U | < 4.3 U | < 4.3 U | < 4.3 U |
| Tl | < 0.047 U | < 0.047 U | < 0.047 U | < 0.047 U |
| V | 10.0 J | 6.1 J | 5.7 J | 6.1 J |

**MW7D**

| | | |
|---|---|---|
| Depth | 41 ft | 45 ft |
| Fraction | T | T |
| Date | 04/23/2018 | 04/23/2018 |
| Cr | < 0.85 U | < 0.85 U |
| Ni | 4.6 | 4.0 |
| Sb | < 4.3 | < 4.3 |
| Tl | < 0.047 | < 0.047 |
| V | < 1.3 | < 1.3 |

**132-P3A-MW105I**

| | |
|---|---|
| Depth | 39.5 ft |
| Fraction | T |
| Date | 02/08/2018 |
| Cr | 30.8 |
| Ni | < 10.0 U |
| Sb | < 4.3 U |
| Tl | < 3.3 U |
| V | 33.7 J |

**114-MW20B**

| | |
|---|---|
| Depth | 37.5 ft |
| Fraction | T |
| Date | 04/19/2018 |
| Cr | **412000** |
| Ni | < 6.7 U |
| Sb | < 430 U |
| Tl | < 0.24 U |
| V | < 130 U |

**114-MW40B**

| | | |
|---|---|---|
| Depth | 40.5 ft | 40.5 ft |
| Fraction | D | T |
| Date | 04/27/2018 | 04/27/2018 |
| Cr | < 0.85 U | 1.3 J |
| Ni | < 1.3 U | < 1.3 U |
| Sb | < 4.3 U | < 4.3 U |
| Tl | < 0.047 U | < 0.047 U |
| V | 1.4 J | 1.9 J |

**114-MW39B**

| | |
|---|---|
| Depth | 42.5 ft |
| Fraction | T |
| Date | 02/12/2018 |
| Cr | 6.3 J |
| Ni | < 6.7 U |
| Sb | < 18 U |
| Tl | 0.49 J |
| V | < 6.4 U |

**MW8D**

| | | |
|---|---|---|
| Depth | 41 ft | 45 ft |
| Fraction | T | D |
| Date | 04/25/2018 | 04/25/2018 |
| Cr | **70800** | **398** |
| Ni | < 2.7 U | < 6.7 U |
| Sb | < 43 U | < 22 U |
| Tl | < 0.094 U | < 0.12 U |
| V | < 13 U | < 6.4 U |

**135-MW2B**

| | |
|---|---|
| Depth | 30.5 ft |
| Fraction | T |
| Date | 04/25/2018 |
| Cr | 5.5 J |
| Ni | 19.6 |
| Sb | < 4.3 U |
| Tl | < 0.047 U |
| V | 14.1 J |

**114-MW19B**

| | |
|---|---|
| Depth | 47.5 ft |
| Fraction | T |
| Date | 05/01/2018 |
| Cr | **168** |
| Ni | < 2.6 UB |
| Sb | < 4.3 U |
| Tl | 0.12 J |
| V | 2.6 J |

**10W-MW105I**

| | |
|---|---|
| Depth | 37.5 ft |
| Fraction | T |
| Date | 03/12/2018 |
| Cr | 23.3 |
| Ni | 6.0 J |
| Sb | < 4.3 U |
| Tl | 0.12 J |
| V | 6.3 J |

**135-MW3BR**

| | |
|---|---|
| Depth | 30 ft |
| Fraction | T |
| Date | 05/01/2018 |
| Cr | 1.2 J |
| Ni | < 2.6 UB |
| Sb | < 4.3 U |
| Tl | < 0.047 U |
| V | 1.6 J |

**135-MW1B**

| | |
|---|---|
| Depth | 31 ft |
| Fraction | T |
| Date | 05/01/2018 |
| Cr | 9.9 J |
| Ni | < 2.7 UB |
| Sb | < 4.3 U |
| Tl | 0.057 J |
| V | 13.6 J |

Site 186
Site 199
Site 114
Site 143
Site 132
Site 137
Site 133 East
Site 133 West
Site 135

BERRY LANE PARK
NJ TRANSIT LIGHT RAIL LINE
FRENCH PARK WAREHOUSE
GARFIELD AVENUE
JERSEY AUTO REPAIR
SKYWAYS
FORREST STREET PROPERTIES
FORRST STREET
HALLADAY STREET
CARTERET AVENUE
PACIFIC AVENUE
CAVEN POINT AVENUE
TEN WEST APPAREL
AL SMITH MOVING & STORAGE
EDEN WOOD REALTY
HALSTED

Map Notes:
1. New Jersey (NJ) State Plane North American Datum (NAD83) Coordinates, U.S. Survey Feet.
2. Parcels of Hudson County, NJ State Plane NAD83, Hudson County Department of Planning, Jersey City, NJ. May 21, 2013.

**Legend**

- Garfield Avenue Group Boundary
- Former Morris Canal
- Hudson County Parcels
- In Place Sheet Pile
- Removed Sheet Pile
- Railroad
- Intermediate Monitoring Wells with No Exceedances of the NJ GWQS for CCPW Metals **
- **Intermediate Monitoring Wells One or More Exceedances of the NJ GWQS for CCPW Metals ****
  - Cr
  - Ni
  - V

0 100 200 Feet

N W E S




| Analyte | Analyte Short Name | NJDEP GWQS (ug/L) |
|---|---|---|
| ANTIMONY | Sb | 6 |
| CHROMIUM | Cr | 70 |
| NICKEL | Ni | 100 |
| THALLIUM | Tl | 2 |
| VANADIUM | V | 60 |

**Notes:**
1. All concentrations are presented in units of micrograms per liter (ug/L).
2. **Bold** - Indicates the concentration is greater than the NJDEP GWQS for the analyte.
3. Where samples were collected from multiple depths within the same well, sample depths are indicated next to the concentration.
4. Results presented on this map are from RI samples collected between September 26, 2017 and May 31, 2018.
5. Refer to the analytical data tables for qualifier definitions.
6. * - indicates that the well was sampled during the RI field program between 2017-2018, but has since been decommissioned during soil remedial activities.
7. ** - only detected parameters present above their respective GWQS are shown as exceedances.
8. Sample depths are measured from the top of inner well casing.

CCPW - Chromate Chemical Production Waste
D - dissolved fraction
ft - feet
GWQS - Groundwater Quality Standard
NJDEP = New Jersey Department of Environmental Protection
NJ = New Jersey
RI = Remedial Investigation
T = total fraction

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60550261

DATE: 2021-08-12 | DRAWN BY: SR | CHECKED BY: SG

# FIGURE P-2
# GROUNDWATER RI ANALYTICAL RESULTS - CCPW METALS IN THE INTERMEDIATE WATER-BEARING ZONE

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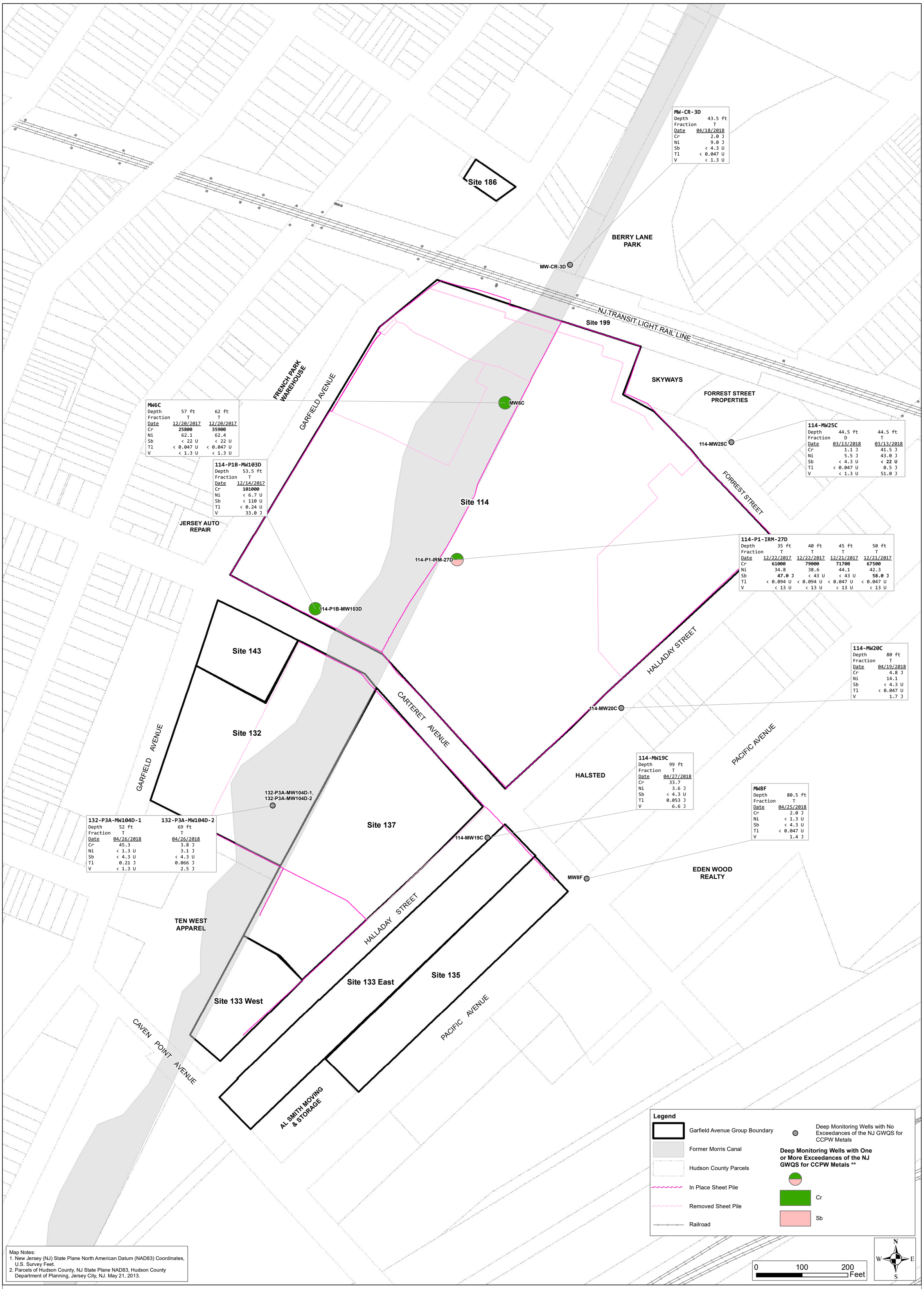


Map Notes:
1. New Jersey (NJ) State Plane North American Datum (NAD83) Coordinates, U.S. Survey Feet.
2. Parcels of Hudson County, NJ State Plane NAD83, Hudson County Department of Planning, Jersey City, NJ. May 21, 2013.

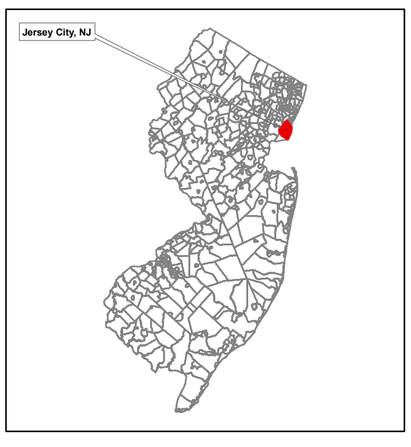


| Analyte | Analyte Short Name | NJDEP GWQS (ug/L) |
|---|---|---|
| ANTIMONY | Sb | 6 |
| CHROMIUM | Cr | 70 |
| NICKEL | Ni | 100 |
| THALLIUM | Tl | 2 |
| VANADIUM | V | 60 |

**Notes:**
1. All concentrations are presented in units of micrograms per liter (ug/L).
2. **Bold** - Indicates the concentration is greater than the NJDEP GWQS for the analyte.
3. Where samples were collected from multiple depths within the same well, sample depths are indicated next to the concentration.
4. Results presented on this map are from RI samples collected between September 26, 2017 and May 31, 2018.
5. Refer to the analytical data tables for qualifier definitions.
6. * - indicates that the well was sampled during the RI field program between 2017-2018, but has since been decommissioned during soil remedial activities.
7. ** - only detected parameters present above their respective GWQS are shown as exceedances.
8. Sample depths are measured from the top of inner well casing.

CCPW - Chromate Chemical Production Waste
D - dissolved fraction
ft - feet
GWQS - Groundwater Quality Standard
NJDEP = New Jersey Department of Environmental Protection
NJ = New Jersey
RI = Remedial Investigation
T = total fraction

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# FIGURE P-3
# GROUNDWATER RI ANALYTICAL RESULTS - CCPW METALS IN THE DEEP WATER-BEARING ZONE

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**114-MW48C**
Depth 56.2 ft
Fraction T
Date 08/19/2020
Cr 11.3 JB
Ni < 1.7 UB
Sb < 4.7 U
Tl < 0.17 U
V < 1.8 U

**114-MW65C**
Depth 62.5 ft
Fraction T
Date 08/24/2020
Cr **26800**
Ni 33.9
Sb **33.8**
Tl < 0.17 U
V 11.0 J

**114-MW49C**
Depth 69 ft
Fraction T
Date 08/19/2020
Cr 15.2 JB
Ni 14.0 JB
Sb < 4.7 U
Tl < 0.17 U
V 9.8 J

**114-MW62C**
Depth 73 ft
Fraction T
Date 08/24/2020
Cr < 2.0 U
Ni 6.4 J
Sb < 4.7 U
Tl < 0.17 U
V 3.5 J

**114-MW63C**
Depth 67 ft
Fraction T
Date 08/27/2020
Cr **167**
Ni 2.9 J
Sb < 4.7 U
Tl < 0.17 U
V < 1.8 U

**114-MW50C**
Depth 61.5 ft
Fraction T
Date 08/20/2020
Cr 2.1 J
Ni 10.3
Sb < 4.7 U
Tl < 0.17 U
V 4.5 J

**114-MW45C**
Depth 71 ft
Fraction T
Date 08/20/2020
Cr 7.9 J
Ni 25.7
Sb < 4.7 U
Tl < 0.17 U
V < 1.8 U

**114-MW51C**
Depth 76 ft
Fraction T
Date 08/28/2020
Cr 3.3 J
Ni 4.4 J
Sb < 4.7 U
Tl < 0.17 U
V 1.8 J

**114-MW52C**
Depth 72.5 ft
Fraction T
Date 08/24/2020
Cr **989**
Ni 10.2
Sb < 4.7 U
Tl < 0.17 U
V 3.7 J

**114-MW61C**
Depth 67.5 ft
Fraction T
Date 08/25/2020
Cr **94100**
Ni 7.0 J
Sb **< 94 U**
Tl < 0.17 U
V 51.1 J

**114-MW55C**
Depth 70.5 ft
Fraction T
Date 09/01/2020
Cr 6.8 J
Ni 25.1
Sb < 4.7 U
Tl < 0.17 U
V < 1.8 U

**114-MW53C**
Depth 47 ft
Fraction T
Date 08/25/2020
Cr **55000**
Ni 40.4
Sb **< 47 U**
Tl < 0.17 U
V 29.2 J

**114-MW56C**
Depth 72 ft
Fraction T
Date 08/21/2020
Cr **1930**
Ni 2.3 J
Sb < 4.7 U
Tl < 0.17 U
V 7.1 J

**114-MW54C**
Depth 76.5 ft
Fraction T
Date 08/27/2020
Cr < 2.0 U
Ni 6.5 J
Sb < 4.7 U
Tl < 0.17 U
V < 1.8 U

**114-MW57C**
Depth 70 ft
Fraction T
Date 08/25/2020
Cr **32100**
Ni 7.2 J
Sb **< 24 U**
Tl < 0.17 U
V 19.4 J

**114-MW59C**
Depth 92.5 ft
Fraction T
Date 09/02/2020
Cr 22.7
Ni 25.5
Sb < 4.7 U
Tl 0.27 J
V 29.0 J

**114-MW58C**
Depth 76 ft
Fraction T
Date 08/31/2020
Cr 4.4 J
Ni 2.1 J
Sb < 4.7 U
Tl < 0.17 U
V 2.0 J

**114-MW64C**
Depth 96.5 ft
Fraction T
Date 09/01/2020
Cr 5.7 J
Ni < 1.7 U
Sb < 4.7 U
Tl < 0.17 U
V < 1.8 U

**114-MW60C**
Depth 121 ft
Fraction T
Date 08/28/2020
Cr < 2.0 U
Ni < 1.7 U
Sb < 4.7 U
Tl < 0.17 U
V < 1.8 U

**132-P3-MW001D**

| | | |
|---|---|---|
| Depth | 80.5 ft | 85.5 ft |
| Fraction | T | T |
| Date | 06/24/2021 | 06/24/2021 |
| Cr | < 2.5 U | < 2.5 U |
| Ni | 2.1 J | 1.9 J |
| Sb | 1.2 J | 1.0 J |
| Tl | < 0.21 U | < 0.21 U |
| V | 2.6 J | 2.7 J |

Site 186
Site 199
Site 114
Site 143
Site 132
Site 137
Site 133 West
Site 133 East
Site 135

BERRY LANE PARK
NJ TRANSIT LIGHT RAIL LINE
FRENCH PARK WAREHOUSE
GARFIELD AVENUE
JERSEY AUTO REPAIR
SKYWAYS
FORREST STREET PROPERTIES
FORREST STREET
HALLADAY STREET
CARTERET AVENUE
PACIFIC AVENUE
HALSTED
EDEN WOOD REALTY
TEN WEST APPAREL
CAVEN POINT AVENUE
AL SMITH MOVING & STORAGE

Map Notes:
1. New Jersey (NJ) State Plane North American Datum (NAD83) Coordinates, U.S. Survey Feet.
2. Parcels of Hudson County, NJ State Plane NAD83, Hudson County Department of Planning, Jersey City, NJ. May 21, 2013.

**Legend**
- Garfield Avenue Group
- Former Morris Canal
- Hudson County Parcels
- In Place Sheet Pile
- Removed Sheet Pile
- Railroad
- Till Monitoring Wells with No Exceedances of the NJ GWQS for CCPW Metals
- **Till Monitoring Wells with One or More Exceedances of the NJ GWQS for CCPW Metals ****
  - Cr
  - Sb

N W E S

0 100 200 Feet




| Analyte | Analyte Short Name | NJDEP GWQS (ug/L) |
|---|---|---|
| ANTIMONY | Sb | 6 |
| CHROMIUM | Cr | 70 |
| NICKEL | Ni | 100 |
| THALLIUM | Tl | 2 |
| VANADIUM | V | 60 |

**Notes:**
1. All concentrations are presented in units of micrograms per liter (ug/L).
2. **Bold** - Indicates the concentration is greater than the NJDEP GWQS for the analyte.
3. Where samples were collected from multiple depths within the same well, sample depths are indicated next to the concentration.
4. Results presented on this map are from RI samples collected between August 19 and September 2, 2020.
5. Refer to the analytical data tables for qualifier definitions.
6. * - indicates that the well was sampled during the RI field program between 2017-2018, but has since been decommissioned during soil remedial activities.
7. ** - only detected parameters present above their respective GWQS are shown as exceedances.
8. Sample depths are measured from the top of inner well casing.

CCPW - Chromate Chemical Production Waste
ft - feet
GWQS - Groundwater Quality Standard
NJDEP = New Jersey Department of Environmental Protection
NJ = New Jersey
RI = Remedial Investigation
T = total fraction

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# FIGURE P-4
# GROUNDWATER RI ANALYTICAL RESULTS - CCPW METALS IN THE BASAL TILL/WEATHERED BEDROCK

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**114-MW6D**

| Depth | 88.5 ft | 93.5 ft | 98.5 ft | 103.5 ft | 108.5 ft |
|---|---|---|---|---|---|
| Fraction | T | T | T | T | T |
| Date | 08/27/2020 | 08/27/2020 | 08/27/2020 | 08/27/2020 | 08/27/2020 |
| Cr | < 2.0 U | < 2.0 U | < 2.0 U | < 2.0 U | 3.4 J |
| Ni | 5.3 J | 5.3 J | 6.1 J | 6.8 J | 8.6 J |
| Sb | < 4.7 U | < 4.7 U | < 4.7 U | < 4.7 U | < 4.7 U |
| Tl | < 0.17 U | < 0.17 U | < 0.17 U | < 0.17 U | < 0.17 U |
| V | < 1.8 U | < 1.8 U | < 1.8 U | < 1.8 U | 1.8 J |

**114-MW52D**

| Depth | 81 ft | 83.5 ft | 88 ft | 102 ft | 105 ft |
|---|---|---|---|---|---|
| Fraction | T | T | T | T | T |
| Date | 02/11/2021 | 02/11/2021 | 02/11/2021 | 02/11/2021 | 02/11/2021 |
| Cr | **44000** | **43000** | **44100** | **42200** | **46500** |
| Ni | 36 J | 34 J | 34 J | 29 J | 37 J |
| Sb | **< 47 U** | **< 47 U** | **< 47 U** | **< 47 U** | **< 47 U** |
| Tl | < 1.7 U | < 1.7 U | < 1.7 U | < 1.7 U | < 1.7 U |
| V | < 18 U | < 18 U | < 18 U | < 18 U | < 18 U |

**114-MW61D**

| Depth | 88 ft | 91 ft | 93.5 ft | 102 ft | 106.5 ft | 110 ft |
|---|---|---|---|---|---|---|
| Fraction | T | T | T | T | T | T |
| Date | 02/12/2021 | 02/12/2021 | 02/12/2021 | 02/12/2021 | 02/15/2021 | 02/15/2021 |
| Cr | 4.5 J | 2.7 J | 2.3 J | 3.2 J | < 2.0 U | < 2.0 U |
| Ni | < 1.7 U | < 1.7 U | < 1.7 U | 2.0 J | < 1.7 U | < 1.7 U |
| Sb | < 4.7 U | < 4.7 U | < 4.7 U | < 4.7 U | < 4.7 U | < 4.7 U |
| Tl | < 0.17 U | < 0.17 U | < 0.17 U | < 0.17 U | < 0.17 U | < 0.17 U |
| V | 2.4 J | 2.6 J | 2.9 J | 2.6 J | < 1.8 U | < 1.8 U |

**114-MW16B**

| Depth | 33 ft |
|---|---|
| Fraction | T |
| Date | 08/21/2020 |
| Cr | 2.8 J |
| Ni | 1.8 J |
| Sb | < 4.7 U |
| Tl | < 0.17 U |
| V | 7.9 J |

**114-MW66D**

| Depth | 92 ft | 94 ft | 110 ft | 114 ft |
|---|---|---|---|---|
| Fraction | T | T | T | T |
| Date | 02/10/2021 | 02/10/2021 | 02/10/2021 | 02/10/2021 |
| Cr | **6450** | **6350** | **596** | **393** |
| Ni | 5.1 J | 5.5 J | 2.8 J | 2.7 J |
| Sb | < 4.7 U | < 4.7 U | < 4.7 U | < 4.7 U |
| Tl | < 0.17 U | < 0.17 U | < 0.17 U | < 0.17 U |
| V | 4.9 J | 4.8 J | < 1.8 U | < 1.8 U |

**114-MW4D**

| Depth | 85 ft | 90 ft | 95 ft | 100 ft |
|---|---|---|---|---|
| Fraction | T | T | T | T |
| Date | 08/26/2020 | 08/26/2020 | 08/26/2020 | 08/26/2020 |
| Cr | 2.0 J | < 2.0 U | < 2.0 U | < 2.0 U |
| Ni | 4.3 J | < 1.7 U | < 1.7 U | < 1.7 U |
| Sb | < 4.7 U | < 4.7 U | < 4.7 U | < 4.7 U |
| Tl | < 0.17 U | < 0.17 U | < 0.17 U | < 0.17 U |
| V | < 1.8 U | < 1.8 U | < 1.8 U | < 1.8 U |

**114-MW7D**

| Depth | 87.5 ft |
|---|---|
| Fraction | T |
| Date | 08/31/2020 |
| Cr | 3.6 J |
| Ni | < 1.7 U |
| Sb | < 4.7 U |
| Tl | < 0.17 U |
| V | < 1.8 U |

**114-MW57D**

| Depth | 87.25 ft | 90 ft | 98 ft | 102 ft |
|---|---|---|---|---|
| Fraction | T | T | T | T |
| Date | 02/09/2021 | 02/09/2021 | 02/10/2021 | 02/10/2021 |
| Cr | **108** | **82.4** | **114** | 69.3 |
| Ni | 4.4 J | 4.2 J | 4.7 J | 4.3 J |
| Sb | < 4.7 U | < 4.7 U | < 4.7 U | < 4.7 U |
| Tl | < 0.17 U | < 0.17 U | < 0.17 U | < 0.17 U |
| V | < 1.8 U | < 1.8 U | < 1.8 U | < 1.8 U |

Site 186
Site 199
Site 114
Site 143
Site 132
Site 137
Site 133 West
Site 133 East
Site 135
BERRY LANE PARK
NJ TRANSIT LIGHT RAIL LINE
SKYWAYS
FORREST STREET PROPERTIES
FRENCH PARK WAREHOUSE
JERSEY AUTO REPAIR
TEN WEST APPAREL
AL SMITH MOVING & STORAGE
EDEN WOOD REALTY
HALSTED
GARFIELD AVENUE
FORREST STREET
HALLADAY STREET
CARTERET AVENUE
PACIFIC AVENUE
CAVEN POINT AVENUE
114-MW6D
114-MW52D
114-MW61D
114-MW66D
114-MW16B
114-MW7D
114-MW4D
114-MW57D

**Legend**

- Garfield Avenue Group Boundary
- Former Morris Canal
- Hudson County Parcels
- In Place Sheet Pile
- Removed Sheet Pile
- Railroad
- Bedrock Monitoring Wells with No Detected Exceedances of the NJ GWQS for CCPW Metals
- **Bedrock Monitoring Wells with One or More Exceedances of the NJ GWQS for CCPW Metals ***
  - Cr

Map Notes:
1. New Jersey (NJ) State Plane North American Datum (NAD83) Coordinates, U.S. Survey Feet.
2. Parcels of Hudson County, NJ State Plane NAD83, Hudson County Department of Planning, Jersey City, NJ. May 21, 2013.

0 100 200 Feet

N W E S

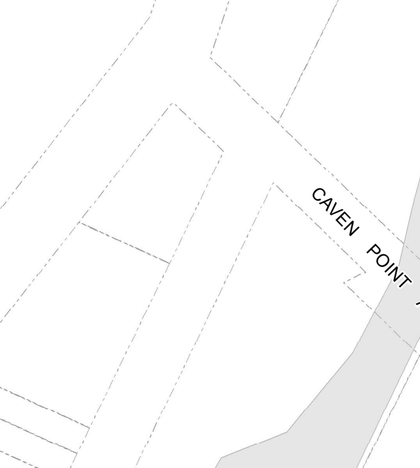


| Analyte | Analyte Short Name | NJDEP GWQS (ug/L) |
|---|---|---|
| ANTIMONY | Sb | 6 |
| CHROMIUM | Cr | 70 |
| NICKEL | Ni | 100 |
| THALLIUM | Tl | 2 |
| VANADIUM | V | 60 |

**Notes:**
1. All concentrations are presented in units of micrograms per liter (ug/L).
2. **Bold** - Indicates the concentration is greater than the NJDEP GWQS for the analyte.
3. Where samples were collected from multiple depths within the same well, sample depths are indicated next to the concentration.
4. Results presented on this map are from RI samples collected between August 19, 2020 and February 15, 2021.
5. Refer to the analytical data tables for qualifier definitions.
6. * - only detected parameters present above their respective 7. Sample depths are measured relative to top of inner well casing. GWQS are shown as exceedances.

CCPW - Chromate Chemical Production Waste
ft - feet
GWQS - Groundwater Quality Standard
NJDEP = New Jersey Department of Environmental Protection
NJ = New Jersey
RI = Remedial Investigation
T = total fraction

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# FIGURE P-5
# GROUNDWATER RI ANALYTICAL RESULTS - CCPW METALS IN THE BEDROCK WATER-BEARING ZONE

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Site 186
Site 199
Site 114
Site 143
Site 132
Site 137
Site 133 East
Site 135
Site 133 West
BERRY LANE PARK
FRENCH PARK WAREHOUSE
JERSEY AUTO REPAIR
SKYWAYS
FORREST STREET PROPERTIES
HALSTED
EDEN WOOD REALTY
TEN WEST APPAREL
AL SMITH MOVING & STORAGE
NJ TRANSIT LIGHT RAIL LINE
GARFIELD AVENUE
FORREST STREET
HALLADAY STREET
CARTERET AVENUE
PACIFIC AVENUE
CAVEN POINT AVENUE

114-MW43A
114-MW41A
114-MW15A
114-MW42A
114-MW24AR
114-MW27A
114-MW25A
114-MW36A
114-MW28A
114-MW26A
114-MW22A *
114-MW20A *
132-P3A-MW3
132-P3A-MW4
135-MW2A
135-P3C-MW102S

114-MW2B1-2
Depth 21 ft
Fraction T
Date 12/06/2017
As 4.7

114-MW38A
Depth 22.5 ft
Fraction T
Date 12/04/2017
As 22.4
Pb 12.2

114-MW37A
Depth 12.5 ft
Fraction T
Date 09/28/2017
As 6.7

114-MW30A
Depth 11.5 ft
Fraction T
Date 12/07/2017
As 20.5

114-MW36A
Depth 10 ft
Fraction T
Date 09/27/2017
As 3.4

114-MW28A
Depth 11.5 ft
Fraction T
Date 12/18/2017
Pb 11.0

114-MW26A
Depth 12.5 ft
Fraction T
Date 12/18/2017
As 23.9

114-MW22A
| | | |
|---|---|---|
| Depth | 11 ft | 16 ft |
| Fraction | T | T |
| Date | 04/19/2018 | 04/19/2018 |
| As | 44.3 | 44.0 |

114-MW20A
| | | |
|---|---|---|
| Depth | 8 ft | 11 ft |
| Fraction | T | T |
| Date | 04/20/2018 | 04/20/2018 |
| As | 10.6 | 11.6 |
| Pb | 24.6 | 20.5 |

**Legend**

- Garfield Avenue Group Boundary
- Former Morris Canal
- Hudson County Parcels
- In Place Sheet Pile
- Removed Sheet Pile
- Railroad
- Shallow Zone Monitoring Wells with No Detected Exceedances of the NJ GWQS for Non-CCPW Metals

**Shallow Zone Monitoring Wells with One or More Exceedances of the NJ GWQS ****

- ARSENIC
- LEAD

Map Notes:
1. New Jersey (NJ) State Plane North American Datum (NAD83) Coordinates, U.S. Survey Feet.
2. Parcels of Hudson County, NJ State Plane NAD83, Hudson County Department of Planning, Jersey City, NJ. May 21, 2013.

0 100 200 Feet

N W E S

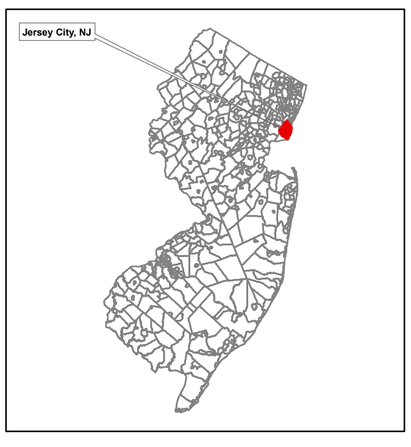


| Analyte | Analyte Short Name | NJDEP GWQS (ug/L) |
|---|---|---|
| ARSENIC | As | 3 |
| LEAD | Pb | 5 |

**Notes:**
1. All concentrations are presented in units of micrograms per liter (ug/L).
2. **Bold** - Indicates the concentration is greater than the NJDEP GWQS for the analyte.
3. Where samples were collected from multiple depths within the same well, sample depths are indicated next to the concentration.
4. Results presented on this map are from RI samples collected between September 26, 2017 and May 31, 2018.
5. Refer to the analytical data tables for qualifier definitions.
6. * - indicates that the well was sampled during the RI field program between 2017-2018, but has since been decommissioned during soil remedial activities.
7. ** - only detected parameters present above their respective GWQS are shown as exceedances.
8. Sample depths are measured from the top of inner well casing.

CCPW - Chromate Chemical Production Waste
D - dissolved fraction
ft - feet
GWQS - Groundwater Quality Standard
MGP = manufactured gas plant
NJDEP = New Jersey Department of Environmental Protection
NJ = New Jersey
RI = Remedial Investigation

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# FIGURE P-6
# GROUNDWATER RI ANALYTICAL RESULTS - NON-CCPW METALS IN THE SHALLOW WATER-BEARING ZONE

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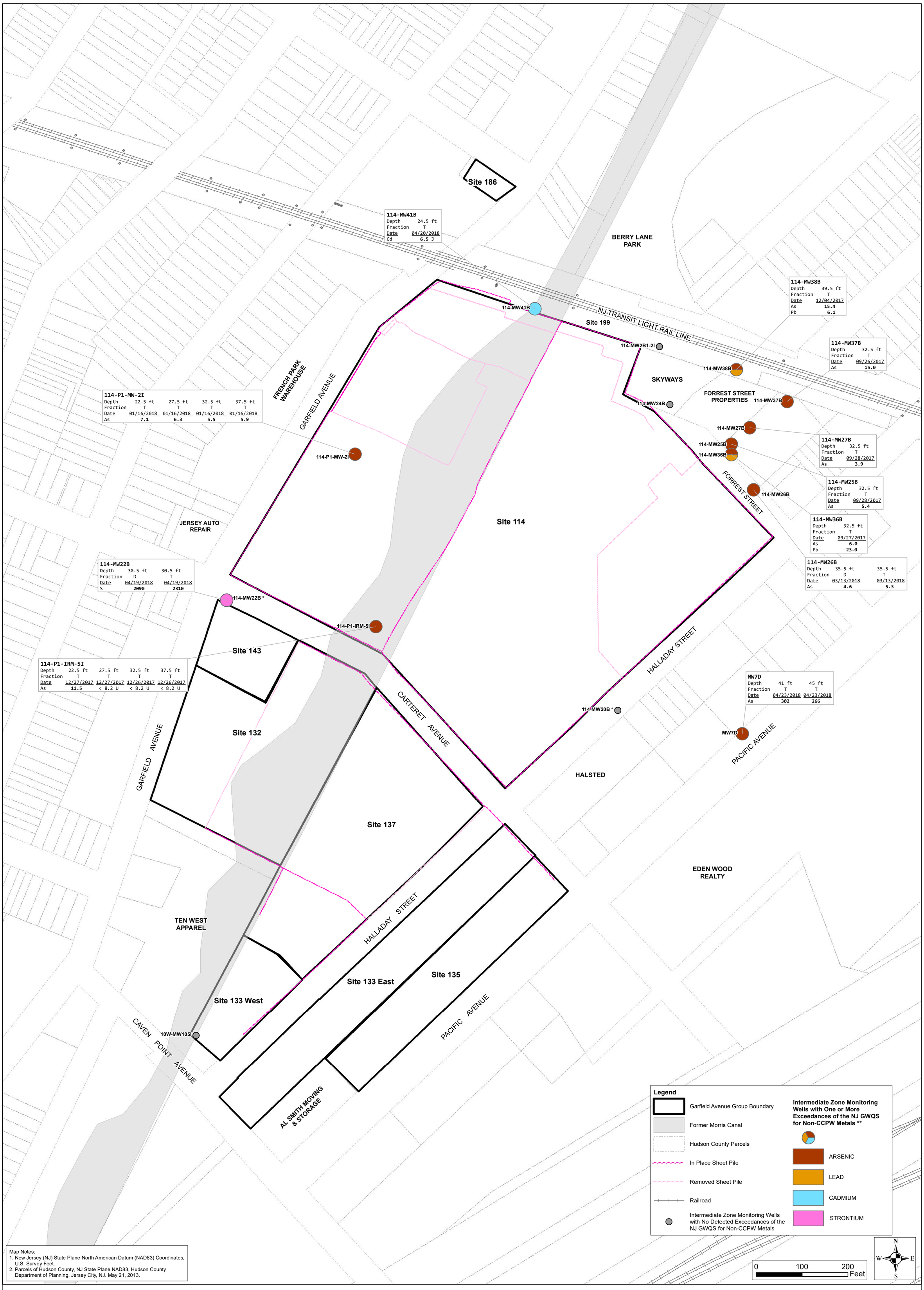


Map Notes:
1. New Jersey (NJ) State Plane North American Datum (NAD83) Coordinates, U.S. Survey Feet.
2. Parcels of Hudson County, NJ State Plane NAD83, Hudson County Department of Planning, Jersey City, NJ. May 21, 2013.

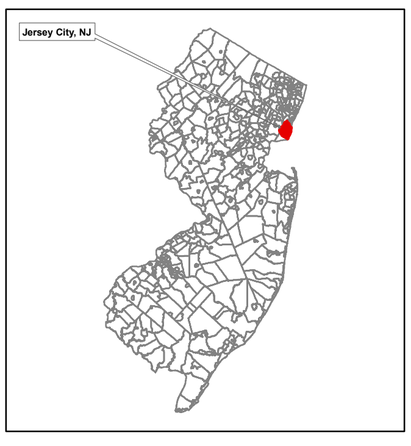


| Analyte | Analyte Short Name | NJDEP GWQS (ug/L) |
|---|---|---|
| ARSENIC | As | 3 |
| CADMIUM | Cd | 4 |
| LEAD | Pb | 5 |

**Notes:**
1. All concentrations are presented in units of micrograms per liter (ug/L).
2. **Bold** - Indicates the concentration is greater than the NJDEP GWQS for the analyte.
3. Where samples were collected from multiple depths within the same well, sample depths are indicated next to the concentration.
4. Results presented on this map are from RI samples collected between September 26, 2017 and May 31, 2018.
5. Refer to the analytical data tables for qualifier definitions.
6. * - indicates that the well was sampled during the RI field program between 2017-2018, but has since been decommissioned during soil remedial activities.
7. ** - only detected parameters present above their respective GWQS are shown as exceedances.
8. Sample depths are measured from the top of inner well casing.

CCPW - Chromate Chemical Production Waste
D - dissolved fraction
ft - feet
GWQS - Groundwater Quality Standard
MGP = manufactured gas plant
NJDEP = New Jersey Department of Environmental Protection
NJ = New Jersey
RI = Remedial Investigation

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DATE: 2021-08-12 | DRAWN BY: SR | CHECKED BY: SG

# FIGURE P-7
# GROUNDWATER RI ANALYTICAL RESULTS - NON-CCPW METALS IN THE INTERMEDIATE WATER-BEARING ZONE

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Document Path: Q:\920 GIS\MXD\Groundwater RIR\Appendix P - RIR Result Maps\FIG P-7-INTERMEDIATE-GW-NON-CCPW-RI-RESULTS.mxd

Site 186

BERRY LANE PARK

NJ TRANSIT LIGHT RAIL LINE

Site 199

FRENCH PARK WAREHOUSE

GARFIELD AVENUE

SKYWAYS

FORREST STREET PROPERTIES

MW6C

| MW6C | | |
|---|---|---|
| Depth | 57 ft | 62 ft |
| Fraction | T | T |
| Date | 12/20/2017 | 12/20/2017 |
| Cd | 6.1 | 6.6 |
| Pb | 13.4 J | 20.9 |

114-MW25C

| 114-MW25C | | |
|---|---|---|
| Depth | 44.5 ft | 44.5 ft |
| Fraction | D | T |
| Date | 03/13/2018 | 03/13/2018 |
| As | 16.5 | 27.0 |
| Pb | < 2.6 U | 22.0 |

FORREST STREET

JERSEY AUTO REPAIR

Site 114

| 114-P1-IRM-27D | | |
|---|---|---|
| Depth | 40 ft | 50 ft |
| Fraction | T | T |
| Date | 12/22/2017 | 12/21/2017 |
| As | 28.2 J | 32.3 |

114-P1-IRM-27D

114-P1B-MW103D

Site 143

Site 132

GARFIELD AVENUE

CARTERET AVENUE

HALLADAY STREET

114-MW20C *

PACIFIC AVENUE

HALSTED

Site 137

EDEN WOOD REALTY

TEN WEST APPAREL

HALLADAY STREET

Site 133 East

Site 135

Site 133 West

PACIFIC AVENUE

CAVEN POINT AVENUE

AL SMITH MOVING & STORAGE

**Legend**

- Garfield Avenue Group Boundary
- Former Morris Canal
- Hudson County Parcels
- In Place Sheet Pile
- Removed Sheet Pile
- Railroad
- Deep Zone Monitoring Wells with No Detected Exceedances of the NJ GWQS for Non-CCPW Metals
- **Deep Zone Monitoring Wells with One or More Exceedances of the NJ GWQS for Non-CCPW Metals ****
  - ARSENIC
  - LEAD
  - CADMIUM

0 100 200 Feet

N W E S

Map Notes:
1. New Jersey (NJ) State Plane North American Datum (NAD83) Coordinates, U.S. Survey Feet.
2. Parcels of Hudson County, NJ State Plane NAD83, Hudson County Department of Planning, Jersey City, NJ. May 21, 2013.




| Analyte | Analyte Short Name | NJDEP GWQS (ug/L) |
|---|---|---|
| ARSENIC | As | 3 |
| CADMIUM | Cd | 4 |
| LEAD | Pb | 5 |

**Notes:**
1. All concentrations are presented in units of micrograms per liter (ug/L).
2. **Bold** - Indicates the concentration is greater than the NJDEP GWQS for the analyte.
3. Where samples were collected from multiple depths within the same well, sample depths are indicated next to the concentration.
4. Results presented on this map are from RI samples collected between September 26, 2017 and May 31, 2018.
5. Refer to the analytical data tables for qualifier definitions.
6. * - indicates that the well was sampled during the RI field program between 2017-2018, but has since been decommissioned during soil remedial activities.
7. ** - only detected parameters present above their respective GWQS are shown as exceedances.
8. Sample depths are measured from the top of inner well casing.

CCPW - Chromate Chemical Production Waste
D - dissolved fraction
ft - feet
GWQS - Groundwater Quality Standard
MGP = manufactured gas plant
NJDEP = New Jersey Department of Environmental Protection
NJ = New Jersey
RI = Remedial Investigation

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DATE: 2021-08-12 | DRAWN BY: SR | CHECKED BY: SG

# FIGURE P-8
# GROUNDWATER RI ANALYTICAL RESULTS - NON-CCPW METALS IN THE DEEP WATER-BEARING ZONE

Last saved by: ravis
Document Path: Q:\920 GIS\MXD\Groundwater RI\RI\Appendix P - RIR Result Maps\FIG P-8-DEEP-GW-NON-CCPW-RI-RESULTS.mxd

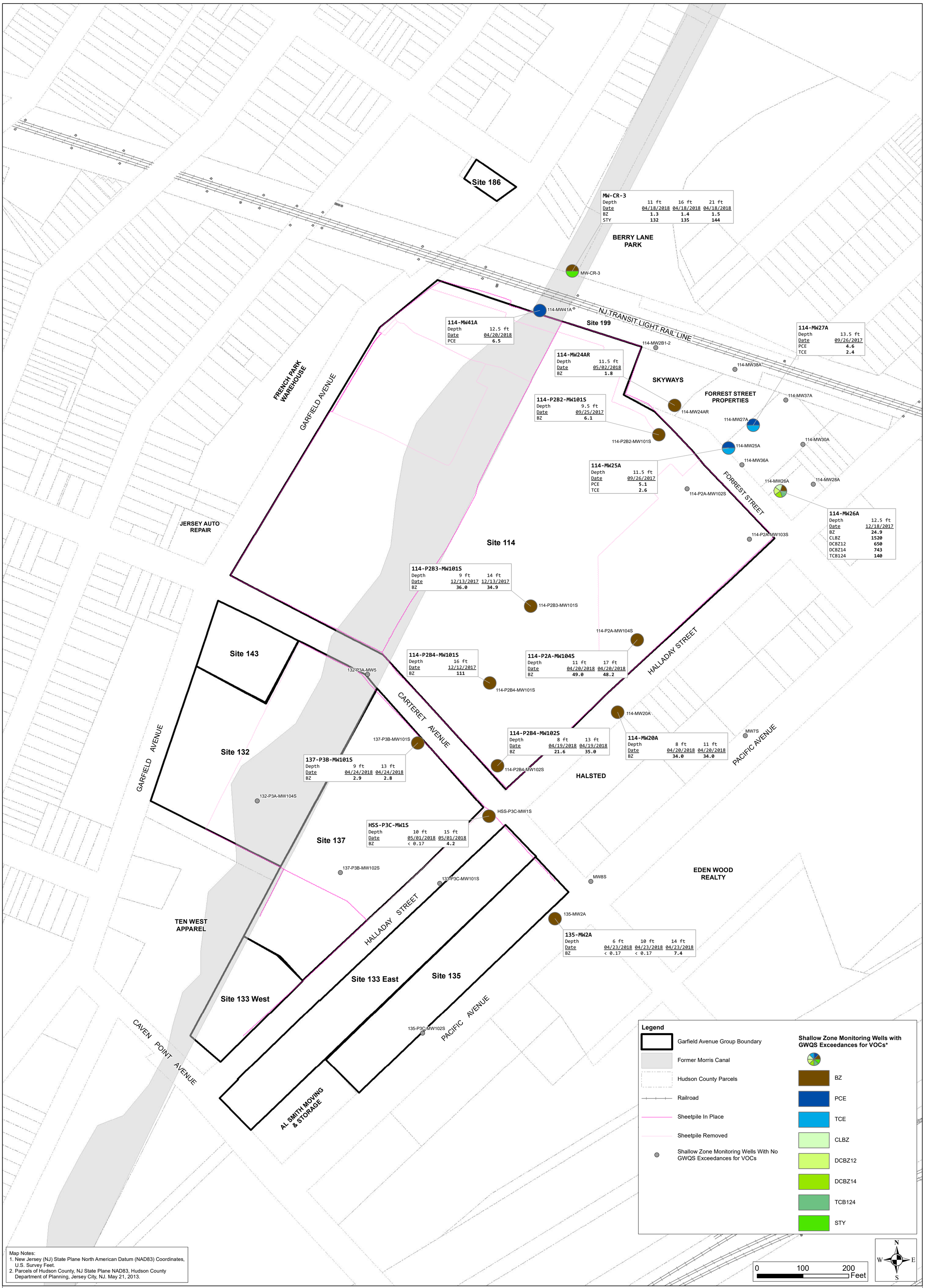


Map Notes:
1. New Jersey (NJ) State Plane North American Datum (NAD83) Coordinates, U.S. Survey Feet.
2. Parcels of Hudson County, NJ State Plane NAD83, Hudson County Department of Planning, Jersey City, NJ. May 21, 2013.




| Analyte | Analyte Short Name | NJDEP GWQS (ug/L) |
|---|---|---|
| BENZENE | BZ | 1 |
| TETRACHLOROETHENE | PCE | 1 |
| TRICHLOROETHYLENE | TCE | 1 |
| CHLOROBENZENE | CLBZ | 50 |
| 1,2-DICHLOROBENZENE | DCBZ12 | 600 |
| 1,4-DICHLOROBENZENE | DCBZ14 | 75 |
| 1,2,4-TRICHLOROBENZENE | TCB124 | 9 |
| STYRENE (MONOMER) | STY | 100 |

**Notes:**
1. **Bold** - Indicates the concentration is greater than the NJDEP GWQS for the analyte.
2. Refer to the analytical data tables for qualifier definitions.
3. Analytical results shown on this figure are from samples collected during the groundwater RI, from September 26, 2017 to May 31, 2018.
4. All results are reported in units of micrograms per liter (ug/L).
5. Data boxes only present results for detected parameters that exceed their respective GWQS.
6. * - only detected parameters present above their respective GWQS are shown as exceedances.
7. Sample depths are measured from the top of inner well casing.

ft - feet
GWQS - Groundwater Quality Standard
NJDEP - New Jersey Department of Environmental Protection
RI - Remedial Investigation
VOC - volatile organic compound

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DATE: 2021-08-13 | DRAWN BY: SR | CHECKED BY: SG

# FIGURE P-9
# GROUNDWATER RI ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS IN THE SHALLOW WATER-BEARING ZONE

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Site 186
Site 199
Site 114
Site 143
Site 132
Site 137
Site 133 East
Site 133 West
Site 135
BERRY LANE PARK
NJ TRANSIT LIGHT RAIL LINE
FRENCH PARK WAREHOUSE
GARFIELD AVENUE
JERSEY AUTO REPAIR
SKYWAYS
FORREST STREET PROPERTIES
FORREST STREET
HALLADAY STREET
CARTERET AVENUE
PACIFIC AVENUE
HALSTED
TEN WEST APPAREL
AL SMITH MOVING & STORAGE
EDEN WOOD REALTY
CAVEN POINT AVENUE

**114-MW17B**
Depth 27.5 ft
Date 04/18/2018
PCE 3.9

**114-MW2B1-2I**
Depth 35.5 ft
Date 12/06/2017
PCE 3.7

**114-MW24B**
Depth 33 ft
Date 03/12/2018
PCE 1.4

**114-MC-PZ103**
Depth 39.5 ft
Date 12/20/2017
1,1-DCE 1.7

**114-MW36B**
Depth 32.5 ft
Date 09/27/2017
1,2-EDC 46.1

**114-P2A-MW102I**
Depth 30 ft 35 ft
Date 04/30/2018 04/30/2018
BZ 311 500

**114-MW26B**
Depth 35.5 ft
Date 03/13/2018
1,1-DCE 1.6
1,2-EDC 10.5
BZ 3.0
PCE 34.2
TCE 20.0
VC 2.2
cis-1,2-DCE 174

**114-P2A-MW104I**
Depth 33 ft 37 ft
Date 04/20/2018 04/20/2018
BZ 85.2 83.1

**114-P2B3-MW101I**
Depth 28 ft 33 ft
Date 12/13/2017 12/13/2017
1,1-DCE 9.3 24.4
BZ 97.4 171

**114-P2A-MW101I**
Depth 33 ft 38 ft
Date 05/31/2018 05/31/2018
BZ 12.4 14.4
STY 198 231
TMB124 173 195

**114-P2A-MW103I**
Depth 34.5 ft 39.5 ft
Date 04/18/2018 04/18/2018
1,2-EDC 14.5 13.7
TCE 3.4 3.3

**114-P2B4-MW101I**
Depth 47 ft 42 ft
Date 12/12/2017 12/12/2017
1,1-DCE 26.4 30.4
BZ 3110 1480

**MW7D**
Depth 41 ft 45 ft
Date 04/23/2018 04/23/2018
BZ 22.3 16.7
TCE 2.4 2.5

**114-P2B4-MW102I**
Depth 28 ft 33 ft
Date 04/19/2018 04/19/2018
1,1-DCE 4.4 15.7
BZ 320 2070
TMB124 9.4 140

**114-MW20B**
Depth 37.5 ft
Date 04/19/2018
BZ 7770
EBZ 1760
TMB124 552
TOL 2540
XYL 2750

**MW8D**
Depth 41 ft 45 ft
Date 04/25/2018 04/25/2018
BZ 583 J 9.7

114-P1C-MW101I
114-MW41B
114-MW17B
114-MW2B1-2I
114-P1A-MW101I
114-P2B1-MW101I
114-MW24B
114-MC-PZ103
114-P2B2-MW101I
114-MW36B
114-P1-MW-2I
114-MW26B
114-P1B-MW101I
114-P2A-MW102I
114-P2A-MW101I
114-P2A-MW103I
114-P1B-MW102I
114-P2B3-MW101I
114-P2A-MW104I
114-P1-IRM-5I
114-P2B4-MW101I
114-MW20B
114-P2B4-MW102I
MW7D
114-MW40B
114-MW19B
137-P3B-MW102I
133-P3C-MW101I
MW8D
135-MW2B
114-MW39B

**Legend**

- Garfield Avenue Group Boundary
- Former Morris Canal
- Hudson County Parcels
- In Place Sheet Pile
- Removed Sheet Pile
- Railroad
- Intermediate Zone Monitoring Wells With No GWQS Exceedances for VOCs

**Intermediate Zone Monitoring Wells With GWQS Exceedances for VOCs***

- BZ
- EBZ
- TOL
- XYL
- PCE
- TCE
- cis-1,2-DCE
- VC
- 1,1-DCE
- 1,2-EDC
- STY
- TMB124

Map Notes:
1. New Jersey (NJ) State Plane North American Datum (NAD83) Coordinates, U.S. Survey Feet.
2. Parcels of Hudson County, NJ State Plane NAD83, Hudson County Department of Planning, Jersey City, NJ. May 21, 2013.

0 100 200 Feet

N W E S

Jersey City, NJ

| Analyte | Analyte Short Name | NJDEP GWQS (ug/L) |
|---|---|---|
| BENZENE | BZ | 1 |
| ETHYLBENZENE | EBZ | 700 |
| TOLUENE | TOL | 600 |
| XYLENES | XYL | 1000 |
| TETRACHLOROETHENE | PCE | 1 |
| TRICHLOROETHYLENE | TCE | 1 |
| CIS-1,2-DICHLOROETHENE | cis-1,2-DCE | 70 |
| VINYL CHLORIDE | VC | 1 |
| 1,1-DICHLOROETHYLENE | 1,1-DCE | 1 |
| 1,2-DICHLOROETHANE | 1,2-EDC | 2 |
| STYRENE (MONOMER) | STY | 100 |
| 1,2,4-TRIMETHYLBENZENE | TMB124 | 100 |

**Notes:**
1. **Bold** - Indicates the concentration is greater than the NJDEP GWQS for the analyte.
2. Refer to the analytical data tables for qualifier definitions.
3. Analytical results shown on this figure are from samples collected during the groundwater RI, from September 26, 2017 to May 31, 2018.
4. All results are reported in units of micrograms per liter (ug/L).
5. Data boxes only present results for detected parameters that exceed their respective GWQS.
6. * - only detected parameters present above their respective GWQS are shown as exceedances.
7. Sample depths are measured from the top of inner well casing.

ft - feet
GWQS - Groundwater Quality Standard
NJDEP - New Jersey Department of Environmental Protection
RI - Remedial Investigation
VOC - volatile organic compound

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# FIGURE P-10
# GROUNDWATER RI ANALYTICAL RESULTS VOLATILE ORGANIC COMPOUNDS IN THE INTERMEDIATE WATER-BEARING ZONE

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Site 186

BERRY LANE PARK

MW-CR-3D

NJ TRANSIT LIGHT RAIL LINE

Site 199

FRENCH PARK WAREHOUSE

GARFIELD AVENUE

SKYWAYS

FORREST STREET PROPERTIES

114-MW25C

**114-MW25C**

| | |
|---|---|
| Depth | 44.5 ft |
| Date | 03/13/2018 |
| BZ | **1190** |
| PCE | **41.5** |
| TCE | **21.7** |
| cis-1,2-DCE | **100** |
| 1,2-EDC | **73.3** |

FORREST STREET

JERSEY AUTO REPAIR

Site 114

114-P1-IRM-27D

**114-P1-IRM-27D**

| Depth | 35 ft | 40 ft | 45 ft | 50 ft |
|---|---|---|---|---|
| Date | 12/22/2017 | 12/22/2017 | 12/21/2017 | 12/21/2017 |
| 1,1-DCE | **5.4** | **6.4** | **5.6** | **6.7** |

HALLADAY STREET

Site 143

**114-MW20C**

| | |
|---|---|
| Depth | 80.5 ft |
| Date | 04/19/2018 |
| BZ | **2.0** |

114-MW20C

CARTERET AVENUE

GARFIELD AVENUE

Site 132

PACIFIC AVENUE

HALSTED

Site 137

114-MW19C

MW8F

EDEN WOOD REALTY

TEN WEST APPAREL

HALLADAY STREET

Site 133 East

Site 135

Site 133 West

PACIFIC AVENUE

CAVEN POINT AVENUE

AL SMITH MOVING & STORAGE

**Legend**

- Garfield Avenue Group Boundary
- Former Morris Canal
- Hudson County Parcels
- In Place Sheet Pile
- Removed Sheet Pile
- Railroad
- Deep Zone Monitoring Wells With No GWQS Exceedances for VOCs

**Deep Zone Monitoring Wells With GWQS Exceedances for VOCs***

- BZ
- PCE
- TCE
- cis-1,2-DCE
- 1,1-DCE
- 1,2-EDC

0 100 200 Feet

N W E S

Map Notes:
1. New Jersey (NJ) State Plane North American Datum (NAD83) Coordinates, U.S. Survey Feet.
2. Parcels of Hudson County, NJ State Plane NAD83, Hudson County Department of Planning, Jersey City, NJ. May 21, 2013.

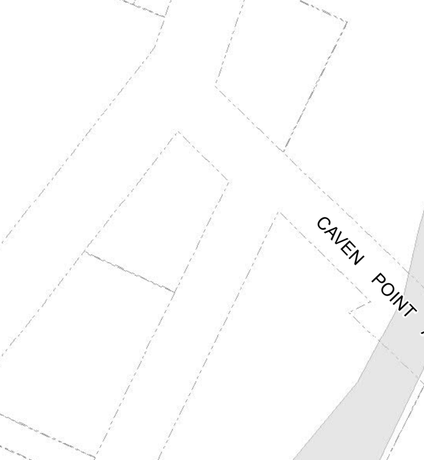


| Analyte | Analyte Short Name | NJDEP GWQS (ug/L) |
|---|---|---|
| BENZENE | BZ | 1 |
| TETRACHLOROETHENE | PCE | 1 |
| TRICHLOROETHYLENE | TCE | 1 |
| CIS-1,2-DICHLOROETHENE | cis-1,2-DCE | 70 |
| 1,1-DICHLOROETHYLENE | 1,1-DCE | 1 |
| 1,2-DICHLOROETHANE | 1,2-EDC | 2 |

**Notes:**
1. **Bold** - Indicates the concentration is greater than the NJDEP GWQS for the analyte.
2. Refer to the analytical data tables for qualifier definitions.
3. Analytical results shown on this figure are from samples collected during the groundwater RI, from September 26, 2017 to May 31, 2018.
4. All results are reported in units of micrograms per liter (ug/L).
5. Data boxes only present results for detected parameters that exceed their respective GWQS.
6. * - only detected parameters present above their respective GWQS are shown as exceedances.
7. Sample depths are measured from the top of inner well casing.

ft - feet
GWQS - Groundwater Quality Standard
NJDEP - New Jersey Department of Environmental Protection
RI - Remedial Investigation
VOC - volatile organic compound

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| DATE: 2021-08-13 | DRAWN BY: SR | CHECKED BY: SG |
|---|---|---|

# FIGURE P-11
# GROUNDWATER RI ANALYTICAL RESULTS VOLATILE ORGANIC COMPOUNDS IN THE DEEP WATER-BEARING ZONE

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Document Path: Q:\920 GIS\MXD\Groundwater RIR\Appendix P - RIR Result Maps\FIG P-11-DEEP-GW-VOC-RI-RESULTS.mxd

Site 186

Site 199

Site 114

Site 143

Site 132

Site 137

Site 133 East

Site 135

Site 133 West

BERRY LANE PARK

FRENCH PARK WAREHOUSE

JERSEY AUTO REPAIR

SKYWAYS

FORREST STREET PROPERTIES

TEN WEST APPAREL

AL SMITH MOVING & STORAGE

HALSTED

EDEN WOOD REALTY

GARFIELD AVENUE

NJ TRANSIT LIGHT RAIL LINE

FORREST STREET

HALLADAY STREET

CARTERET AVENUE

PACIFIC AVENUE

CAVEN POINT AVENUE

MW-CR-3

| MW-CR-3 | | | |
|---|---|---|---|
| Depth | 11 ft | 16 ft | 21 ft |
| Date | 04/18/2018 | 04/18/2018 | 04/18/2018 |
| PCP | **0.391** | < 0.13 U | **0.404** |

114-MW41A

| 114-MW41A | |
|---|---|
| Depth | 12.5 ft |
| Date | 04/20/2018 |
| 1NAPH | **37.8** |
| 2NAPH | **63.6** |
| BAA | **0.161** |

114-MW2B1-2

114-MW38A

114-MW24AR

114-MW37A

114-MW27A

114-P2B2-MW101S

114-MW25A

| 114-MW25A | |
|---|---|
| Depth | 11.5 ft |
| Date | 09/27/2017 |
| B2EP | **4.3** |

114-MW30A

114-MW36A

114-MW28A

114-MW26A

114-P2A-MW102S

| 114-P2A-MW102S | | |
|---|---|---|
| Depth | 11 ft | 16 ft |
| Date | 04/30/2018 | 04/30/2018 |
| 1NAPH | **9.0** | **7.1** |
| BAA | **0.264** | **0.392** |
| BAP | 0.0455 J | **0.112** |

114-P2A-MW103S

| 114-P2B3-MW101S | | |
|---|---|---|
| Depth | 9 ft | 14 ft |
| Date | 12/13/2017 | 12/13/2017 |
| BAA | **0.371** | **0.592** |
| BAP | 0.0854 | **0.298** |
| BBF | < 0.043 U | **0.252** |

114-P2B3-MW101S

114-P2A-MW104S

| 114-P2B4-MW101S | |
|---|---|
| Depth | 16 ft |
| Date | 12/12/2017 |
| BAA | **0.206** |

114-P2B4-MW101S

132-P3A-MW5

| 114-MW20A | | |
|---|---|---|
| Depth | 8 ft | 11 ft |
| Date | 04/20/2018 | 04/20/2018 |
| 1NAPH | **28.0** | **19.4** |

114-MW20A

| 114-P2B4-MW102S | | |
|---|---|---|
| Depth | 8 ft | 13 ft |
| Date | 04/19/2018 | 04/19/2018 |
| 1NAPH | **15.1** | **19.1** |
| BAA | **0.312** | **0.312** |

114-P2B4-MW102S

137-P3B-MW101S

MW7S

132-P3A-MW104S

HSS-P3C-MW1S

137-P3B-MW102S

133-P3C-MW101S

MW8S

| MW8S | |
|---|---|
| Depth | 9.5 ft |
| Date | 04/27/2018 |
| BAA | **0.109** |

135-MW2A

135-P3C-MW102S

**Legend**

- Garfield Avenue Group Boundary
- Former Morris Canal
- Hudson County Parcels
- In Place Sheet Pile
- Removed Sheet Pile
- Railroad
- Shallow Zone Monitoring Wells With No GWQS Exceedances for SVOCs

**Shallow Zone Monitoring Wells With GWQS Exceedances for SVOCs***

- 2NAPH
- BAA
- BAP
- BBF
- 1NAPH
- B2EP
- PCP

Map Notes:
1. New Jersey (NJ) State Plane North American Datum (NAD83) Coordinates, U.S. Survey Feet.
2. Parcels of Hudson County, NJ State Plane NAD83, Hudson County Department of Planning, Jersey City, NJ. May 21, 2013.

0 100 200 Feet

N W E S

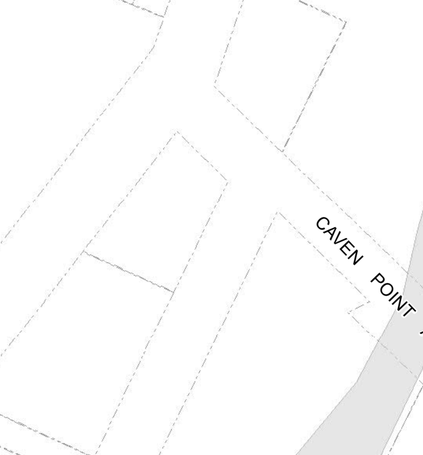


| Analyte | Analyte Short Name | NJDEP GWQS (ug/L) |
|---|---|---|
| 2-METHYLNAPHTHALENE | 2NAPH | 30 |
| BENZO(A)ANTHRACENE | BAA | 0.1 |
| BENZO(A)PYRENE | BAP | 0.1 |
| BENZO(B)FLUORANTHENE | BBF | 0.2 |
| 1-METHYLNAPHTHALENE | 1NAPH | 5 |
| BIS(2-ETHYLHEXYL)PHTHALATE | B2EP | 3 |
| PENTACHLOROPHENOL | PCP | 0.3 |

**Notes:**
1. **Bold** - Indicates the concentration is greater than the NJDEP GWQS for the analyte.
2. Refer to the analytical data tables for qualifier definitions.
3. Analytical results shown on this figure are from samples collected during the groundwater RI, from September 26, 2017 to May 31, 2018.
4. All results are reported in units of micrograms per liter (ug/L).
5. Data boxes only present results for detected parameters that exceed their respective GWQS.
6. * - only detected parameters present above their respective GWQS are shown as exceedances.
7. Sample depths are measured from the top of inner well casing.

ft - feet
GWQS - Groundwater Quality Standard
NJDEP - New Jersey Department of Environmental Protection
RI - Remedial Investigation
SVOC - semi-volatile organic compound

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DATE: 2021-08-13 | DRAWN BY: SR | CHECKED BY: SG

# FIGURE P-12
# GROUNDWATER RI ANALYTICAL RESULTS SEMI-VOLATILE ORGANIC COMPOUNDS IN THE SHALLOW WATER-BEARING ZONE

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Site 186

**114-MW41B**
Depth 24.5 ft
Date 04/20/2018
1NAPH 17.2
BAA 0.117

BERRY LANE PARK

114-MW17B

114-P1C-MW101I

114-MW41B

Site 199

NJ TRANSIT LIGHT RAIL LINE

**114-P1A-MW101I**
Depth 27 ft 32 ft
Date 12/21/2017 12/21/2017
BAA 0.132 < 0.023 U

114-P1A-MW101I

FRENCH PARK WAREHOUSE

GARFIELD AVENUE

114-MW2B1-2I

114-P2B1-MW101I

**114-MW37B**
Depth 32.5 ft
Date 09/26/2017
1,4-D 12.6 J

SKYWAYS

FORREST STREET PROPERTIES

114-MW24B

114-MW37B

**114-MC-PZ103**
Depth 39.5 ft
Date 12/20/2017
1,4-D 4.17
BAA 0.153

114-MC-PZ103

114-P1-MW-2I

114-P2B2-MW101I

**114-MW36B**
Depth 32.5 ft
Date 09/27/2017
B2EP 3.2

114-MW36B

**114-P2A-MW102I**
Depth 30 ft 35 ft
Date 04/30/2018 04/30/2018
1NAPH 396 392
BAA 0.114 0.121

114-P2A-MW102I

FORREST STREET

114-MW26B

**114-P2A-MW101I**
Depth 33 ft 38 ft
Date 05/31/2018 05/31/2018
1NAPH 115 163
2NAPH 125 170
NAPH 1320 1700

**114-MW26B**
Depth 35.5 ft
Date 03/13/2018
1,4-D 8.1
HCLBZ 0.0832 J

114-P1B-MW101I

JERSEY AUTO REPAIR

Site 114

**114-P2B3-MW101I**
Depth 28 ft 33 ft
Date 12/13/2017 12/13/2017
1,4-D 0.334 0.634
2NAPH 37.7 93.1
BAA 0.175 0.223
NAPH 673 1240

114-P2A-MW101I

114-P2A-MW103I

**114-P2A-MW103I**
Depth 34.5 ft 39.5 ft
Date 04/18/2018 04/18/2018
1,4-D 0.289 0.445

114-P1B-MW102I

114-P2B3-MW101I

114-P1-IRM-5I

**114-P1-IRM-5I**
Depth 22.5 ft 27.5 ft 32.5 ft 37.5 ft
Date 12/27/2017 12/27/2017 12/26/2017 12/26/2017
BAA < 0.023 U 0.189 < 0.023 U < 0.023 U

Site 143

114-P2A-MW104I

HALLADAY STREET

**114-P2A-MW104I**
Depth 33 ft 37 ft
Date 04/20/2018 04/20/2018
1NAPH 88.9 90.3

**114-P2B4-MW101I**
Depth 47 ft 42 ft
Date 12/12/2017 12/12/2017
1,4-D 8.0 3.82
2NAPH 682 700
BAA 0.666 0.799
BAP 0.271 0.312
BBF 0.229 0.258
NAPH 4300 3820

114-P2B4-MW101I

CARTERET AVENUE

114-MW20B

MW7D

PACIFIC AVENUE

GARFIELD AVENUE

Site 132

114-P2B4-MW102I

HALSTED

**114-MW20B**
Depth 37.5 ft
Date 04/19/2018
1NAPH 709
2NAPH 538
BAA 0.188
NAPH 4640

**114-P2B4-MW102I**
Depth 28 ft 33 ft
Date 04/19/2018 04/19/2018
1,4-D 2.77 4.03
1NAPH 17.3 447
BAA < 0.023 U 0.166

Site 137

114-MW19B

114-MW40B

137-P3B-MW102I

133-P3C-MW101I

MW8D

EDEN WOOD REALTY

**MW8D**
Depth 41 ft 45 ft
Date 04/25/2018 04/25/2018
1NAPH 21.1 J 0.62 J
BAA 2.11 J 1.44
BAP 1.65 J 1.17
BBF 3.2 J 1.8
BKF 0.986 J 0.660
I123CDP 1.25 J 0.889

HALLADAY STREET

TEN WEST APPAREL

135-MW2B

**135-MW2B**
Depth 30.5 ft
Date 04/25/2018
BAA 0.149

114-MW39B

Site 133 East

Site 135

Site 133 West

135-MW3BR

PACIFIC AVENUE

CAVEN POINT AVENUE

AL SMITH MOVING & STORAGE

**Legend**

- Garfield Avenue Group Boundary
- Former Morris Canal
- Hudson County Parcels
- In Place Sheet Pile
- Removed Sheet Pile
- Railroad
- Intermediate Zone Monitoring Wells With No GWQS Exceedances for SVOCs

**Intermediate Zone Monitoring Wells With GWQS Exceedances for SVOCs***

- NAPH
- 2NAPH
- BAA
- BAP
- BBF
- BKF
- I123CDP
- 1NAPH
- HCLBZ
- B2EP
- 1,4-D

Map Notes:
1. New Jersey (NJ) State Plane North American Datum (NAD83) Coordinates, U.S. Survey Feet.
2. Parcels of Hudson County, NJ State Plane NAD83, Hudson County Department of Planning, Jersey City, NJ. May 21, 2013.

0 100 200 Feet

N W E S

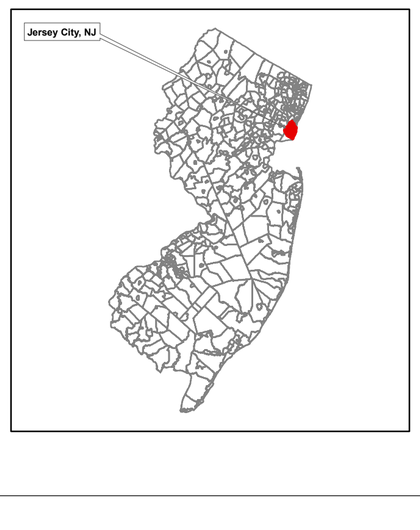


| Analyte | Analyte Short Name | NJDEP GWQS (ug/L) |
|---|---|---|
| NAPHTHALENE | NAPH | 300 |
| 2-METHYLNAPHTHALENE | 2NAPH | 30 |
| BENZO(A)ANTHRACENE | BAA | 0.1 |
| BENZO(A)PYRENE | BAP | 0.1 |
| BENZO(B)FLUORANTHENE | BBF | 0.2 |
| BENZO(K)FLUORANTHENE | BKF | 0.5 |
| INDENO(1,2,3-CD)PYRENE | I123CDP | 0.2 |
| 1-METHYLNAPHTHALENE | 1NAPH | 5 |
| HEXACHLOROBENZENE | HCLBZ | 0.02 |
| BIS(2-ETHYLHEXYL)PHTHALATE | B2EP | 3 |
| 1,4-DIOXANE | 1,4-D | 0.4 |

**Notes:**
1. **Bold** - Indicates the concentration is greater than the NJDEP GWQS for the analyte.
2. Refer to the analytical data tables for qualifier definitions.
3. Analytical results shown on this figure are from samples collected during the groundwater RI, from September 26, 2017 to May 31, 2018.
4. All results are reported in units of micrograms per liter (ug/L).
5. Data boxes only present results for detected parameters that exceed their respective GWQS.
6. * - only detected parameters present above their respective GWQS are shown as exceedances.
7. Sample depths are measured from the top of inner well casing.

ft - feet
GWQS - Groundwater Quality Standard
NJDEP - New Jersey Department of Environmental Protection
RI - Remedial Investigation
SVOC - semi-volatile organic compound

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# FIGURE P-13
# GROUNDWATER RI ANALYTICAL RESULTS
# SEMI-VOLATILE ORGANIC COMPOUNDS
# IN THE INTERMEDIATE WATER-BEARING ZONE

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Site 186

BERRY LANE PARK

MW-CR-3D

NJ TRANSIT LIGHT RAIL LINE

Site 199

FRENCH PARK WAREHOUSE

GARFIELD AVENUE

SKYWAYS

FORREST STREET PROPERTIES

114-MW25C

**114-MW25C**

| Depth | 44.5 ft |
|---|---|
| Date | 03/13/2018 |
| 1,4-D | **1.30** |
| BAA | **0.104** |
| HCLBZ | **0.0228** |

**114-P1-IRM-27D**

| Depth | 35 ft | 40 ft | 45 ft | 50 ft |
|---|---|---|---|---|
| Date | 12/22/2017 | 12/22/2017 | 12/21/2017 | 12/21/2017 |
| 1,4-D | **0.417** | **0.597** | **0.410** | **0.419** |
| BAA | < 0.025 U | < 0.025 U | **0.161** | **0.129** |

114-P1-IRM-40D

FORREST STREET

Site 114

JERSEY AUTO REPAIR

114-P1-IRM-27D

Site 143

HALLADAY STREET

CARTERET AVENUE

GARFIELD AVENUE

Site 132

114-MW20C

PACIFIC AVENUE

HALSTED

**MW8F**

| Depth | 80.5 ft |
|---|---|
| Date | 04/25/2018 |
| BAA | **0.213** |

Site 137

114-MW19C

MW8F

EDEN WOOD REALTY

TEN WEST APPAREL

HALLADAY STREET

Site 133 East

Site 135

Site 133 West

PACIFIC AVENUE

CAVEN POINT AVENUE

AL SMITH MOVING & STORAGE

**Legend**

- Former Morris Canal
- Hudson County Parcels
- Railroad
- Sheetpile In Place
- Sheetpile Removed
- Deep Zone Monitoring Wells With No GWQS Exceedances for SVOCs

**Deep Zone Monitoring Wells With GWQS Exceedances for SVOCs***

- BAA
- HCLBZ
- 1,4-D

0 100 200 Feet

N W E S

Map Notes:
1. New Jersey (NJ) State Plane North American Datum (NAD83) Coordinates, U.S. Survey Feet.
2. Parcels of Hudson County, NJ State Plane NAD83, Hudson County Department of Planning, Jersey City, NJ. May 21, 2013.

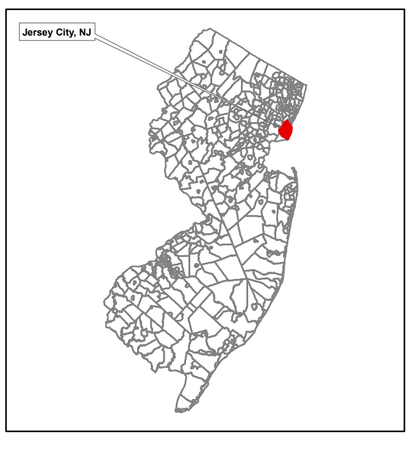


| Analyte | Analyte Short Name | NJDEP GWQS (ug/L) |
|---|---|---|
| BENZO(A)ANTHRACENE | BAA | 0.1 |
| HEXACHLOROBENZENE | HCLBZ | 0.02 |
| 1,4-DIOXANE | 1,4-D | 0.4 |

**Notes:**
1. **Bold** - Indicates the concentration is greater than the NJDEP GWQS for the analyte.
2. Refer to the analytical data tables for qualifier definitions.
3. Analytical results shown on this figure are from samples collected during the groundwater RI, from September 26, 2017 to May 31, 2018.
4. All results are reported in units of micrograms per liter (ug/L).
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6. * - only detected parameters present above their respective GWQS are shown as exceedances.
7. Sample depths are measured from the top of inner well casing.

ft - feet
GWQS - Groundwater Quality Standard
NJDEP - New Jersey Department of Environmental Protection
RI - Remedial Investigation
SVOC - semi-volatile organic compound

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# FIGURE P-14
# GROUNDWATER RI ANALYTICAL RESULTS SEMI-VOLATILE ORGANIC COMPOUNDS IN THE DEEP WATER-BEARING ZONE

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# Appendix Q

# Analytical Data, Supporting Figures, and Communications Related to MGP-Related DNAPL

# Table of Contents, Appendix Q

1. Figure 5-10 from PSE&G's 2007 Remedial Investigation Report – Former Halladay Street Gas Works, Jersey City, New Jersey.

2. Figure 5 from PSE&G's 2012 Remedial Action Work Plan Addendum – Former Halladay Street Gas Works, Jersey City, New Jersey.

3. December 3, 2020 letter of transmittal from AECOM (Carey Letts) transmitting groundwater investigation locations at PPG's Garfield Avenue Group Site 114 and to the northeast/south/southeast of GA Group Site 114 where DNAPL have been observed.

4. September 12, 2016 email from PSE&G (Lou Hahn) to PPG (Richard Feinberg) re DNAPL Fingerprint Analysis from Site 137N, 45 Halladay Street

5. June 21, 2016 Laboratory Analytical Report from SGS Accutest for DNAPL sample collected from Site 137N, 45 Halladay Street




## LEGEND

- LOT BOUNDARY LINE
- FENCE
- MANHOLE
- EXISTING CURB
- CONRAIL
- FIREHYDRANT
- T — UNDERGROUND UTILITY LINE (TELECOMMUNICATIONS)
- W — UNDERGROUND UTILITY LINE (WATER)
- G — UNDERGROUND UTILITY LINE (GAS)
- E — UNDERGROUND UTILITY LINE (ELECTRIC)
- S — UNDERGROUND UTILITY LINE (SANITARY)
- EXISTING BUILDINGS
- OR STORM INLET
- EXISTING WALLS
- OR G GAS VALVE
- OR W WATER VALVE
- MW-1S MONITORING WELL
- SB-1/B201 SOIL BORING LOCATION
- TT-01 TEST TRENCH LOCATION
- HORIZONTAL LIMIT OF OM NOT DELINEATED
- MGP SITE BOUNDARY
- BOUNDARY OF OM/TM DELINEATION

## KEY

| TOP OF OM/TM |
|---|
| THICKNESS OF ZONE CONTAINING LENSES OF OM AND/OR TM |
| TOTAL DEPTH OF BORING LOGGED |

NE – NOT ENCOUNTERED

OSB-20* – BORING DATA BASED ON INFORMATION PROVIDED BY ENSR

SOURCES: BASEMAP INCLUDING UTILITIES, BUILDINGS, AND LOT BOUNDARIES ADAPTED FROM "NON RESIDENTIAL SITES CHROMIUM REMEDIATION PROJECT HUDSON COUNTY, NEW JERSEY. REVISED DRAFT REMEDIAL INVESTIGATION WORK PLAN GROUP 7 SITE 114–GARFIELD AVENUE SITE" PREPARED BY IT CORPORATION OCTOBER 1991.

- LOCATIONS OF MONITORING WELLS PPG114–MW1A THROUGH PPG114–MW8B PROVIDED BY ENSR CORPORATION FOR PPG. NOT ALL WELLS INCLUDED ON THIS DRAWING.
- LOCATIONS OF MONITORING WELLS MW–1D/MW–1S THROUGH MW–9D AND LOCATION OF PACIFIC AVENUE SURVEYED BY SCHOOR DEPALMA.
- LOCATIONS OF BORINGS WITH "OSB" PREFIX AND MONITORING WELLS WITH "PPG114" –PREFIX HAVE BEEN SURVEYED BY PPG.

**NOT FOR BID OR CONSTRUCTION**

| REVISION NO. | DATE | REVISION |
|---|---|---|
| | | |


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MANALAPAN, NJ 07726
TEL (732)577–9000
FAX (732)577–9888


**FIGURE 5-10**
# OIL MATERIAL/TAR MATERIAL DELINEATION FORMER HALLADAY STREET GAS WORKS

JERSEY CITY HUDSON COUNTY NEW JERSEY

| PROJECT NO. | DATE |
|---|---|
| 020667601 | 11/27/2007 |
| DRAWN BY: JCC | DESIGNED BY: JMS |
| SCALE: 1" = 50' | CHECKED BY: JMS |
| CMX | |
| SHEET NO. 1 of 1 | |


F:\ECSWIN7\Projects\020667601\Fig 5-10.dgn 11/27/2007 09:01:23 AM jcc

| SAMPLE ID | NORTHING | EASTING |
|---|---|---|
| WC-1 | 683145.04 | 611582.08 |
| WC-1R/WC-66 | 683113.77 | 611546.73 |
| WC-2 | 683180.85 | 611612.21 |
| WC-2R/WC-65 | 683097.73 | 611630.20 |
| WC-3 | 683211.68 | 611659.94 |
| WC-3R | 683213.31 | 611662.90 |
| WC-4 | 683288.02 | 611712.97 |
| WC-4R/WC-67 | 683292.28 | 611756.08 |
| WC-5 | 683311.91 | 611755.21 |
| WC-6 | 683373.47 | 611823.26 |
| WC-7 | 683393.65 | 611844.15 |
| WC-8 | 683426.17 | 611843.53 |
| WC-9 | 683394.85 | 611801.73 |
| WC-10 | 683354.36 | 611758.15 |
| WC-11 | 683312.99 | 611716.23 |
| WC-11R/WC-68 | 683347.83 | 611722.16 |
| WC-12 | 683261.95 | 611676.61 |
| WC-12R | 683285.32 | 611617.95 |
| WC-13 | 683224.46 | 611633.06 |
| WC-14 | 683187.94 | 611582.56 |
| WC-15 | 683153.48 | 611537.81 |
| WC-16 | 683190.31 | 611540.67 |
| WC-16R/WC-64 | 683184.67 | 611500.04 |
| WC-17 | 683225.01 | 611591.13 |
| WC-17R | 683237.43 | 611597.31 |
| WC-18 | 683272.70 | 611626.78 |
| WC-19 | 683310.49 | 611674.42 |
| WC-19R | 683357.89 | 611701.54 |
| WC-20 | 683355.70 | 611714.16 |
| WC-21 | 683396.46 | 611759.20 |
| WC-22 | 683437.40 | 611807.04 |
| WC-23 | 683471.56 | 611795.63 |
| WC-24 | 683438.18 | 611757.86 |
| WC-25 | 683397.66 | 611718.22 |
| WC-26 | 683312.94 | 611628.27 |
| WC-27 | 683273.65 | 611589.78 |
| WC-28 | 683232.40 | 611546.30 |
| WC-28R | 683240.75 | 611523.19 |
| WC-29 | 683479.36 | 611761.62 |
| WC-30 | 683439.50 | 611722.01 |
| WC-31 | 683395.16 | 611683.24 |
| WC-32 | 683341.39 | 611640.05 |
| WC-33 | 683306.42 | 611602.78 |
| WC-34 | 683262.96 | 611560.07 |
| WC-35 | 683509.06 | 611742.82 |
| WC-36 | 683485.22 | 611717.77 |
| WC-37 | 683454.07 | 611685.11 |
| WC-38 | 683398.13 | 611641.73 |
| WC-39 | 683330.47 | 611594.60 |
| WC-40 | 683315.85 | 611547.79 |
| WC-41 | 683527.23 | 611721.40 |
| WC-42 | 683483.46 | 611681.02 |
| WC-43 | 683432.31 | 611643.20 |
| WC-44 | 683380.77 | 611584.66 |
| WC-45 | 683342.39 | 611551.34 |
| WC-46 | 683530.09 | 611634.49 |
| WC-46N | 683553.88 | 611655.42 |
| WC-46S | 683523.52 | 611621.01 |
| WC-47 | 683539.99 | 611703.77 |
| WC-48 | 683508.05 | 611653.62 |
| WC-49 | 683476.74 | 611640.69 |
| WC-50 | 683430.16 | 611604.10 |
| WC-51 | 683381.50 | 611558.78 |
| WC-52 | 683340.30 | 611514.81 |
| WC-53 | 683279.66 | 611506.81 |
| WC-54 | 683201.40 | 611511.96 |
| WC-54R | 683221.53 | 611505.75 |
| WC-55 | 683109.42 | 611577.47 |
| WC-56 | 683149.80 | 611622.45 |
| WC-56R/WC-63 | 683112.72 | 611585.05 |
| WC-57 | 683190.44 | 611646.86 |
| WC-58 | 683231.02 | 611709.56 |
| WC-59 | 683269.43 | 611753.35 |
| WC-60 | 683313.96 | 611797.35 |
| WC-61 | 683354.52 | 611840.53 |
| WC-62 | 683239.13 | 611521.42 |
| WC-63 | 683223.43 | 611557.97 |
| WC-71 | 683197.22 | 611594.83 |
| WC-72 | 683154.79 | 611583.57 |
| WC-73 | 683139.73 | 611564.98 |
| WC-74 | 683258.59 | 611702.10 |
| WC-75 | 683274.99 | 611729.88 |
| WC-76 | 683295.94 | 611654.94 |
| WC-77 | 683218.26 | 611655.02 |
| WC-78 | 683218.47 | 611666.32 |
| WC-79 | 683205.75 | 611666.68 |
| GB-01 | 683392.68 | 611863.59 |
| GB-02 | 683273.25 | 611729.75 |
| GB-03 | 683126.23 | 611583.59 |
| GB-04 | 683003.10 | 611466.10 |
| GB-05 | 682885.94 | 611314.34 |
| GB-06 | 682950.87 | 611246.02 |
| GB-13 | 683122.46 | 611308.58 |
| GB-14 | 683234.04 | 611731.03 |
| GB-15 | 683350.16 | 611659.54 |
| GB-16 | 683412.83 | 611585.70 |
| GB-17 | 683378.71 | 611473.34 |
| GB-18 | 683142.04 | 611512.32 |
| GB-20 | 683393.24 | 611653.18 |
| CB-1 | 682900.47 | 611340.62 |
| CB-2 | 683013.48 | 611384.15 |
| CB-3 | 683047.11 | 611310.74 |
| CB-4 | 683104.40 | 611381.81 |
| CB-5 | 683125.99 | 611383.05 |
| CB-6 | 683134.25 | 611238.11 |
| CB-7 | 683257.65 | 611374.84 |
| CB-8 | 683247.76 | 611502.94 |
| CB-9 | 683128.87 | 611499.08 |
| CB-10 | 683107.69 | 611559.02 |
| CB-11 | 683213.87 | 611670.35 |
| CB-12 | 683224.03 | 611701.67 |
| CB-13 | 683245.62 | 611214.86 |
| CB-14 | 683132.89 | 611173.06 |
| CB-15 | 683200.62 | 611160.03 |
| CB-16 | 683225.18 | 611303.40 |
| CB-17 | 683321.78 | 611372.24 |
| CB-18 | 683433.48 | 611300.46 |
| CB-19 | 683300.65 | 611456.96 |
| CB-21 | 683489.32 | 611547.75 |
| CB-24 | 683573.17 | 611634.74 |
| CB26 | 683784.55 | 611454.32 |
| CB-27 | 682970.00 | 611428.00 |
| CB-28 | 683065.06 | 611282.41 |
| CB-29 | 683146.00 | 611408.00 |
| CB-30 | 683186.13 | 611338.24 |
| CB-31 | 683262.53 | 611308.59 |
| CB-32 | 683723.56 | 611523.22 |
| PZ-2 | 683113.76 | 611566.98 |
| PZ-1 | 683348.88 | 611643.84 |
| CORNER TAR STRUCTURE FOUND | 683502.89 | 611661.95 |
| CORNER WALL FOUND | 683294.26 | 611622.09 |
| EDGE HOLDER FOUND | 683255.66 | 611564.65 |

## ABBREVIATIONS

| | |
|---|---|
| OM/TM | OIL MATERIAL/TAR MATERIAL |
| NE | NOT ENCOUNTERED |
| COPR | CHROMITE ORE PROCESSING RESIDUE |
| FT BGS | FEET BELOW GROUND SURFACE |
| PDI | PRE-DESIGN INVESTIGATION |
| RI | REMEDIAL INVESTIGATION |

## LEGEND

- 29' BGS — LOCATION AND MAXIMUM DEPTH OF OIL MATERIAL/TAR MATERIAL AND/OR SHEENS YIELDING POSITIVE DYE TEST RESULTS IN SOILS BELOW PROPOSED EXCAVATION DEPTH
- WC-1 — WASTE CLASSIFICATION SAMPLE LOCATION
- CB-1 — BORING – PDI DELINEATION LOCATION
- GB-1 — BORING – PDI GEOTECHNICAL LOCATION
- SB-1 — BORING – RI SOIL LOCATION
- MW-1C — WELL – MONITORING LOCATION
- TEST TRENCH/TEST PIT
- PROPOSED EXCAVATION (20' BGS DEPTH)
- PROPOSED EXCAVATION (30' BGS DEPTH)
- 100 YEAR FLOOD ELEVATION LINE (EL. 12.00)
- LIMITS OF AREAS A & B
- LIMITS OF FORMER MGP
- PROPERTY BOUNDARY
- SUBGRADE STRUCTURE
- SUBGRADE PIPING

## NOTES

1. LOCATIONS OF BORINGS WC-12R, WC-17R & WC-19R AND TEST TRENCHES/TEST PITS ARE APPROXIMATE.
2. THIS FIGURE SHOWS EXTENT OF OM/TM IN SOILS NOT PROPOSED FOR EXCAVATION. OM/TM IN SOILS TO BE REMOVED BY EXCAVATION ARE NOT SHOWN. REFER TO TABLE 1A AND TABLE 1B FOR COMPLETE SUMMARY OF OBSERVATIONS.
3. BASED ON THE SOIL SAMPLING DATA AND VISUAL OBSERVATION OF OM/TM IN SOILS, THE PROPOSED DEPTH OF THE EXCAVATION IN AREA A IS 20 TO 30 FT. BGS. THE SOUTHERN PORTION OF AREA A WILL BE EXCAVATED TO A DEPTH OF 30 FT. BGS. THE EXCAVATION MAY BE DEEPENED IN LIMITED AREAS TO 35 FT. BGS (IN THE SOUTHERN PORTION OF AREA A) BASED ON FIELD OBSERVATIONS DURING CONSTRUCTION. THE NORTHERN PORTION OF AREA A WILL BE EXCAVATED TO A MINIMUM DEPTH OF 20 FT. BGS. THE EXCAVATION MAY BE DEEPENED IN LIMITED AREAS TO 25 FT. BGS (IN THE NORTHERN PORTION OF AREA A) BASED ON FIELD OBSERVATIONS DURING CONSTRUCTION.

EXCAVATION AREA B

AREA = 337,200 S.F.
EXCAVATION DEPTH: TO TOP OF PEAT STRATUM AT 10 TO 19 FT BGS (AVERAGE 15 FT BGS)
VOLUME: 187,300 C.Y. (APPROX.)

EXCAVATION AREA A

AREA = 95,000 S.F.
VOLUME: 88,700 C.Y. (APPROX.)

AREA B (APPROX. 8 ACRES)

AREA A (APPROX. 2 ACRES)

FORMER MGP SITE (8.5 ACRES)

DAKOTA AVE. (VACATED)

CARTERET AVENUE

HALLADAY STREET

FORREST STREET

FORMER MORRIS CANAL

CORNER WALL FOUND

EDGE HOLDER FOUND

TT-A

TT-B

TT-C

MAG NAIL 1 — LOCAL: N: 683487.82 E: 611474.10 GRID: N: 683487.78 E: 611474.08 ELEV. 16.43

MAG NAIL 2 — N: 683104.91 E: 611403.73 ELEV. 12.44

MAG NAIL 3 — N: 683193.28 E: 611726.10 ELEV. 14.07

MAG NAIL 4 — N: 683112.18 E: 611606.98 ELEV. 12.95

MAG NAIL 5 — LOCAL: N: 682845.09 E: 611304.22 GRID: N: 682845.10 E: 611304.21

| Boring | Depth of Peat (ft bgs) |
|---|---|
| PPG114-MW7D | 16-20 |
| CB-13 | 14.0'-19.0' |
| CB-15 | 16.5'-20.5' |
| SB-4 | 10.5-20 |
| CB-16 | 14.0'-17.25' |
| CB-14 | 12.5'-21.75' |
| CB-7 | 11.0'-12.5' |
| F-4 | 12.5-13 |
| CB-6 | 16.0-19.0 |
| E-3 | 15.5-16 |
| D- 2 | 13-20 |
| CB-30 | 10.0'-14.75' |
| GB-13 | 15.0-18.0 |
| CB-28 | 15.25'-18.0' |
| SB- 3 | 17-19.75 |
| SB- 2 | 16-19 |
| CB-3 | 18.25'-22.0' |
| GB-06 | 17.0-21.0 |
| F-3 | 17-18 |
| F-2 | 21-22.25 |
| CB-31 | 16.0'-18.75' |
| G-4A | 12-14 |
| CB-17 | 16.5'-17.5' |
| CB-19 | 13.0'-14.5' |
| CB-18 | 14.0'-18.0' |
| E-6 | 15-NK |
| SB-6 | 12.7-15 |
| SB-17 | 17-19.5 |
| F-6 | 16-20 |
| B-1304A | 18.8-19.7 |
| B-1304B | 17.8-19.7 |
| SB-21 | 17.6-19 |
| F-7 | 18-20 |
| G-8/G-8V | 16-17 |
| B-1402 | 17.5-19 |
| CB-26 | 12.0'-17.25' |
| SB-37 | 18-27 |
| SB-36 | 18.5-24.5 |
| CB-32 | NE |
| SB-20 | 16.5-18 |
| SB-15 | 15-17 |
| B-1201 | 13-14.6 |
| SB-24 | 12.5-13.5 |
| B-1301 | NE |
| CB-24 | 13.0'-15.5' |
| CB-21 | 16.0'-18.75' |
| GB-15 | 12.0-17.0 |
| GB-16 | NE |
| GB-14 | NE |
| GB-01 | NE |
| GB-05 | 17-25.5 |
| CB-1 | 20.0'-21.5' |
| PPG114-MW8B | 17.5-20 |
| CB-2 | 20.8'-22.0' |
| CB-27 | 16.4'-19.5' |
| SB-23 | 18-20 |
| CB-4 | NE |
| CB-29 | 14.0'-16.5' |
| CB-5 | 16.0'-19.0' |
| GB-04 | 15.5-23.0 |
| CB-9 | 16.0'-17.0' |
| G-3 | 15-19 |
| GB-03 | 15.0-18.0 |
| CB-10 | 14.0'-17.0' |
| GB-19 | 11.0-16.0 |
| GB-18 | 15.0-18.0 |
| GB-17 | 10.6-13.5 |
| G-4 | 10-13 |
| CB-8 | NE |
| B-104 | NE |
| GB-02 | NE |
| SB-20 | NE |
| CB-12 | NE |
| CB-11 | 16.0-17.0 |

0 20 40 80
SCALE IN FEET

REFERENCE:
"CATCH BASIN RECEPTOR EVALUATION SURVEY PPG SITE 114", PREPARED BY BORBAS SURVEYING & MAPPING, LLC, 402 MAIN ST. BOONTON, NEW JERSEY 07005. DATED JUNE 1, 2011, TOPOGRAPHY BASED ON HORIZONTAL DATUM: NAD 83 NJ STATE PLANE COORDINATE SYSTEM, AND NORTH AMERICAN VERTICAL DATUM: NAVD 88

| REV. | DATE | STATUS | PRPD BY | CHKD BY |
|---|---|---|---|---|
| | | | | |

AMEC PROJECT No. 3480110297
DRAWING: 3480110297-15001-EXT-OM-TM-0000

PREPARED/DATE: DL 08/17/12
CHECKED/DATE: AA 08/17/12

amec
ENVIRONMENT & INFRASTRUCTURE
200 AMERICAN METRO BLVD, SUITE 113
HAMILTON, NEW JERSEY 08619

**FIGURE 5**
EXTENT OF OIL MATERIAL□TAR MATERIAL IN SOILS BELOW MINIMUM EXCAVATION DEPT□
PUBLIC SERVICE ELECTRIC □ GAS COMPANY
FORMER □ALLADAY STREET GAS WORKS
JERSEY CITY, NEW JERSEY

P:\CADD\FSIC\HALLADAY STREET\3480110297\15001\EAWP\3480110297-15001-EXT-OM-TM-0000.dwg Tue, 28 Aug 2012 - 1:50pm david.leech Layout: Layout1

AECOM

30 Knightsbridge Road, Suite 520
Piscataway, New Jersey 08854
www.aecom.com

# Letter of Transmittal

| | |
|---|---|
| **To:** | Dave Doyle, NJDEP |
| **Cc:** | Dave VanEck, NJDEP<br>Mark Terril, PPG<br>Jody Overmyer, PPG<br>Richard Feinberg, PPG<br>Dorothy Laguzza, PPG Counsel – K&L Gates<br>Joe Lagrotteria, PPG Counsel – K&L Gates<br>Chris Daggett, Hampshire Counsel<br>Peter Sorge, JM Sorge<br>Dave Spader, Jersey City Consultant – ERFS<br>Nick Strasser, Jersey City Counsel<br>Chris Fiore, Jersey City Redevelopment Agency<br>Jim Ray, Site Administrator<br>Nancy Colson, Site Administrator<br>Ronald Riccio, Site Administrator<br>Prabal Amin, Site Administrator Consultant – WESTON Solutions, Inc.<br>Ralph Costa, Site Administrator Consultant – WESTON Solutions, Inc.<br>Laura Amend-Babcock, Site Administrator Consultant – WESTON Solutions, Inc.<br>Trevor King, AECOM<br>Bill Spronz, AECOM<br>Matthew Schnobrich, Arcadis |
| **From:** | Carey Letts, AECOM |
| **Date:** | December 3, 2020 |
| **Project Number:** | 60624321 |
| **Project Reference:** | PPG Phase II GW IRM |

Attached for your information is a figure that identifies groundwater investigation locations at PPG's Garfield Avenue (GA) Group Site 114 and to the northeast/south/southeast of GA Group Site 114 where dense non-aqueous phase liquids (DNAPL) have been observed and documented by PPG.

The attached table provides a summary of DNAPL measurements taken on select dates at GA Group Site 114 for the Phase II Interim Remedial Measure (IRM):

- DNAPL gauging was conducted in October 2019 for a subset (56) of the Phase II IRM wells and DNAPL was observed in 12 injection wells and 2 monitoring wells.

AECOM

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- DNAPL gauging was conducted in March 2020 during the baseline monitoring event for the Phase II IRM and DNAPL was observed in 11 injection wells and 3 monitoring wells.

- A DNAPL removal event was conducted in August 2020 to assess the feasibility of DNAPL removal in select Phase II IRM wells and conduct follow-up gauging to observe the amount of DNAPL recovery; the approximate volume of DNAPL removed from each Phase II IRM well is provided on the attached table.

N
W E
S

BERRY LANE PARK

NJ TRANSIT LIGHT RAIL

GARFIELD AVENUE

CARTERET AVENUE

FORREST STREET

HALLADAY STREET

PACIFIC AVENUE

SITE 114

SITE 143

SITE 132

SITE 137

**FSP-VAP-10 (9/21/2020)**
5-9 ft bgs: strong MGP odor, sheen
22-26 ft bgs: MGP odor
32-36 ft bgs: strong MGP odor
41-45 ft bgs: MGP odor
54-58 ft bgs: slight MGP odor
59-63 ft bgs: slight MGP odor

**FSP-VAP-01 (3/31/2020)**
34-38 ft bgs: MGP odor and DNAPL present
47-51 ft bgs: MGP odor and sheen
57-61 ft bgs: MGP odor and sheen

**FSP-VAP-12 (9/21/2020)**
4-8 ft bgs: strong MGP odor
17-21 ft bgs: slight MGP odor
23-27 ft bgs: slight MGP odor
31-35 ft bgs: slight MGP odor
40-44 ft bgs: MGP odor
48-52 ft bgs: MGP odor

**FSP-VAP-06 (4/3/2020)**
5-9 ft bgs: MGP odor
17-21 ft bgs: MGP odor and blebs
25-29 ft bgs: slight MGP odor, trace sheen

**114-P2-IRM-19I (9/2020)**
Max DNAPL thickness 17.35 ft

**114-P2-IRM-57D (10/2020)**
Max DNAPL thickness 14.75 ft

**114-P2-IRM-31D (10/2020)**
Max DNAPL thickness 14.85 ft

**114-P2-MW-10I (3/2020)**
Max DNAPL thickness 1.00 ft

**114-P2-IRM-23D (10/2019)**
Max DNAPL thickness 2.50 ft

**114-P2-IRM-23I (3/2020)**
Max DNAPL thickness 0.49 ft

**114-P2-MW-10D (3/2020)**
Max DNAPL thickness 7.00 ft

**114-P2-IRM-30D (8/2020 and 10/2020)**
Max DNAPL thickness 15.60 ft

**114-P2-IRM-22I (10/2020)**
Max DNAPL thickness 4.15 ft

**114-P2-IRM-29D (3/2020)**
Max DNAPL thickness 13.25 ft

**DNAPL-W1 (11/16/2017) - Soil boring observations:**
16-18 ft bgs: strong organic odor
18-20 ft bgs: PID = 20 ppm
23-28 ft bgs: PID = 230 ppm at 25 ft
28-31.5 ft bgs: petroleum sheen
31.5-33.5 ft bgs: petroleum stained, free product

Note: No DNAPL measured in temporary well installed at this location.

**137-P3B-MW101I (11/17/2017)**
DNAPL from 43.47 to 47.66 ft bTOIC

**P3-IRM-VAP08 (9/24/2020)**
7-11 ft bgs: light sheen, no odor
14-18 ft bgs: light sheen, no odor
29-33 ft bgs: light sheen, no odor
38-42 ft bgs: light sheen, no odor

**DNAPL-S1 (11/16/2017) - Soil boring observations:**
16-18 ft bgs: strong organic odor
26-27 ft bgs: PID = 25 ppm
27-28 ft bgs: PID = 67 ppm
32-34 ft bgs: petroleum staining (PID = 148 ppm)
42 ft bgs: PID = 122 ppm
46 ft bgs: PID = 67 ppm

Note: No DNAPL measured in temporary well installed at this location.

**114-P2-IRM-24D (9/2020)**
Max DNAPL thickness 16.6 ft

**114-P2-IRM-25I (10/2019)**
Max DNAPL thickness 1.10 ft

**114-P2-IRM-26D (1/2019)**
Max DNAPL thickness 1.10 ft

**114-P2-IRM-24I (8/2020)**
Max DNAPL thickness 1.91 ft

**114-P2-IRM-64D (8/2020)**
Max DNAPL thickness 6.90 ft

**114-P2-MW-12D (2/2020)**
Max DNAPL thickness 6.40 ft

**114-P2-IRM-56I (2/2020)**
Max DNAPL thickness 2.00 ft

**114-P2-IRM-56D (8/2020)**
Max DNAPL thickness 13.60 ft

**114-P2-IRM-96I (10/2019)**
Max DNAPL thickness 1.20 ft

**114-P2-IRM-55I (8/2020)**
Max DNAPL thickness 1.30 ft

**P3-IRM-VAP16 (9/25/2020)**
8-12 ft bgs: MGP odor
18-22 ft bgs: strong MGP odor, sheen, slight MGP in sample
25-29 ft bgs: strong MGP odor, sheen, slight MGP in sample
33-37 ft bgs: strong MGP odor
40-44 ft bgs: slight MGP odor

**P3-IRM-VAP14 (9/28/2020)**
8-12 ft bgs: MGP odor
20-24 ft bgs: MGP odor
28-32 ft bgs: MGP odor
35-39 ft bgs: MGP odor
43-47 ft bgs: sheen
50-54 ft bgs: light sheen, no odor
67-71 ft bgs: light sheen, no odor

114-P2-IRM-2I
114-P1C-MW101I
114-P1C-PZ1
114-P2-IRM-5I
114-P2-IRM-1I
114-P1C-PZ2
114-P2-IRM-3I
114-P2-IRM-6I
114-P2-IRM-8D
114-P2-IRM-8I
114-P2-IRM-34I
114-P1-IRM-38
114-P2-MW-1I
114-P2-IRM-4I
114-P2-MW-2D
114-P2-IRM-9D
114-P2-IRM-35I
114-P2-MW-1D
114-P2-MW-2I
114-P2-IRM-9I
114-P2-IRM-11D
114-P2-IRM-11I
114-P1-IRM-39
114-P2-IRM-13I
114-P2-IRM-13D
114-P1-IRM-36D**
114-P1-IRM-36I
114-P2-IRM-7I
114-P2-IRM-7D
114-P2-IRM-38I
114-P1A-MW101I
114-P2-IRM-40D
114-P2-IRM-10I
114-P2-IRM-10D
114-P2-IRM-37I
114-P2-MW-4I
114-P2-IRM-40I
114-P2-IRM-12I
114-P2-IRM-36I
114-P2-MW-4D
114-P2-IRM-12D
114-P2-IRM-15I
114-P2-IRM-67I
114-P2-IRM-39D
114-P2-IRM-39I
114-P2B1-MW101I
114-P2-IRM-15D
114-P2-IRM-14I
114-P2-IRM-14D
114-P2-IRM-71I
114-P1-IRM-37I
114-P2-IRM-43D
114-P2-IRM-70I
GPS-MW5I
114-P2-IRM-41I
114-P1-IRM-37D
114-P2-IRM-43I
114-P2-IRM-74I
114-P2-IRM-41D
114-P2-IRM-47D
114-P2-IRM-16I
114-P2-IRM-45I
114-P2-IRM-47I
114-P2-IRM-16D
114-P2-IRM-69I
114-P2-IRM-42D
114-P2-IRM-45D
114-P2-MW-3D
114-P2-IRM-42I
GPS-MW6I
MW6C
114-P2-IRM-44D
114-P2-IRM-48D
114-P2-MW-3I
114-P2-IRM-68I
114-P2-IRM-75I
114-P2-IRM-44I
114-P2-IRM-17I
114-P2-IRM-17D
114-P2-IRM-72I
114-P2-IRM-78D
114-P2-MW-5D
114-P1-IRM-42D
114-P2-IRM-48I
114-P2-IRM-73I
114-P2-IRM-78I
114-MC-PZ103
114-P2-MW-5I
114-P1-IRM-42I
114-P2-IRM-46I
114-P2-IRM-50D
114-P2-IRM-50I
114-P2-IRM-76I
114-P2-IRM-79I
114-P2-IRM-46D
114-P2-MW-6D
114-P2-IRM-79D
114-P2-IRM-18D
114-P2-IRM-77D
114-P2-IRM-81D
114-P2-IRM-49I
114-P2-IRM-18I
114-P2-IRM-19I
114-MC-EW103***
114-P2-MW-6I
114-P2-IRM-77I
114-MC-PZ203
114-P2-IRM-81I
114-P2-IRM-49D
114-P2-IRM-51D
114-P2-IRM-51I
114-P2-IRM-80D
114-P1-IRM-41I
114-P2-IRM-82D
114-P1-MW-7D
114-P1-MW-7I
114-P2-IRM-80I
114-P1-IRM-41D
114-P2-IRM-82I
114-P2-IRM-84D
114-P2-IRM-91I
114-P2-IRM-52I
114-P2-IRM-53D
114-P2-IRM-89D
114-P2-MW-7D
114-P2-MW-7I
114-P2-IRM-84I
114-P2-IRM-83D
114-P2-IRM-52D
114-P2-IRM-53I
114-P2-IRM-90I
114-P2-IRM-89I
114-P2-IRM-83I
114-P2-IRM-85D
114-P2-IRM-85I
114-P2-MW-8D
114-P2-MW-8I
114-P2-IRM-92I
114-P1-IRM-40D*
114-P2-IRM-86I
114-P2-IRM-87I
114-P1-IRM-40I
114-P2-IRM-86D
114-P2-IRM-87D
114-P2-IRM-93D
114-P2-IRM-93I
114-P2-IRM-88I
114-P2-IRM-88D
114-P2-IRM-94I
114-P2-IRM-94D
114-P2A-MW101I
114-P2B3-MW101I
114-P2-IRM-25I
114-P2-IRM-26D
114-P2-IRM-25D
114-P2-IRM-26I
114-P2-IRM-33D
114-P2-MW-9D
114-P2-MW-9I
114-P2-IRM-32D
114-P2-IRM-60D
114-P2-IRM-59I
114-P2-IRM-60I
114-P2-IRM-59D
114-P2B4-MW103I
114-P2-IRM-24I
114-P2-IRM-23D
114-P2-IRM-23I
114-P2-IRM-24D
114-P2-IRM-31D
114-P2-IRM-66D
114-P2-MW-10I
114-P2-IRM-65D
114-P2-IRM-30D
114-P2-MW-10D
114-P2-IRM-57I
114-P2-IRM-57D
114-P2-IRM-58D
114-P2-IRM-98I
114-P2-IRM-58I
114-P2-IRM-98D
114-P2B4-MW101I
114-P2-IRM-64D
114-P2-IRM-21I
114-P2-IRM-22D
114-P2-IRM-22I
114-P2-IRM-63D
114-P2-IRM-21D
114-P2-MW-12D
114-P2-IRM-29D
114-P2-IRM-27D
114-P2-MW-12I
114-P2-IRM-97I
114-P2-IRM-28D
114-P2-IRM-54I
114-P2-IRM-56I
114-P2-IRM-97D
114-P2-IRM-20D
114-P2-IRM-54D
114-P2-IRM-62D
114-P2-IRM-56D
114-P2-MW-11I
114-P2-MW-11D
114-P2-IRM-20I
114-P2-IRM-61D
114-P2-IRM-96I
114-P2-IRM-96D
114-P2-IRM-55I
114-P2-IRM-55D
114-P2B4-MW102S
114-P2-IRM-95I
114-P2-IRM-95D
114-P2B4-MW102I

FSP-VAP-10
FSP-VAP-09
FSP-VAP-12
FSP-VAP-01
FSP-VAP-06
FSP-VAP-08
FSP-VAP-07
FSP-VAP-02
FSP-VAP-05
FSP-VAP-03
FSP-VAP-04
FSP-VAP-11

P3-IRM-VAP01
P3-IRM-VAP06
P3-IRM-VAP02
P3-IRM-VAP03
P3-IRM-VAP07
P3-IRM-VAP05
P3-IRM-VAP09
P3-IRM-VAP04
P3-IRM-VAP08
P3-IRM-VAP10
P3-IRM-VAP14
P3-IRM-VAP15
P3-IRM-VAP16
P3-IRM-VAP11
P3-IRM-VAP12
P3-IRM-VAP13

DNAPL-W1
137-P3B-MW101I
DNAPL-S1

Jersey City, NJ

## LEGEND

- SITE 114 BOUNDARY
- HUDSON COUNTY
- FORMER MORRIS
- RAILROAD
- IN-PLACE SHEETPILE
- MEASURABLE DNAPL IDENTIFIED
- MONITORING WELLS
- DNAPL INVESTIGATION - COMPLETED NOVEMBER 2017

**PHASE II GW IRM INJECTION**

- STEP 1
- STEP 2
- STEP 3
- EXTRACTION WELLS

**HPT/VAP LOCATIONS**

- FORREST ST. - COMPLETED IN MARCH-APRIL 2020
- FORREST ST. - COMPLETED IN SEPTEMBER 2020
- PHASE III IRM - COMPLETED IN SEPTEMBER 2020

**Map Notes:**
1. New Jersey State Plane North American Datum 1983 Coordinates (NAD83), U.S. Survey Feet.
2. Parcels of Hudson County, New Jersey State Plane NAD83, Hudson County Department of Planning, Jersey City, New Jersey, May 21, 2013.

**Abbreviations:**
bgs = below ground surface
bTOC = below top of inner casing
DNAPL = dense non-aqueous phase liquid
ft = feet
GW = Groundwater
HPT = hydraulic profiling tool
IRM = interim remedial measures
MGP = manufactured gas plant
PID = Photoionization Detector
ppm = parts per million
VAP = vertical aquifer profile

*** Well 114-MC-EW103 was reportedly damaged during site activities after the completion of the groundwater RI

0 30 60 Feet

AECOM

PPG
GARFIELD AVENUE GROUP SITE 114
JERSEY CITY, NEW JERSEY
60624321

DATE: 12/2/2020 | DRAWN BY: JM | CHECKED BY: SR

# SUMMARY OF DNAPL OBSERVATIONS

Last Saved By: MeuseJ
Path: C:\Work\HampshireBoraie\60624321PPG\MXD\DNAPL_Summary.mxd

**DNAPL Observations**

**Phase II Interim Remedial Measure**
**Garfield Avenue Group**
**PPG, Jersey City, New Jersey**

| Location ID | Date | Well Depth (ft bgs) | Screened Interval (ft bgs) | Depth to Water (ft bTOR) | Depth to DNAPL (ft bTOR) | Estimated DNAPL Thickness (ft) | DNAPL Recovered (gallons) |
|---|---|---|---|---|---|---|---|
| 114-P2-IRM-19I | 3/18/20 | 42 | 22-42 | 7.97 | 38.61 | 6.14 | -- |
| | 8/18/20 | | | 6.10 | 38.45 | 6.30 | 4.0 |
| | 9/16/20 | | | -- | -- | 5.80 | -- |
| | 9/25/20 | | | -- | -- | 17.35 | -- |
| | 10/13/20 | | | -- | -- | 15.05 | -- |
| 114-P2-IRM-22I | 10/22/19 | 42 | 22-42 | 6.22 | 42.00 | 2.00 | -- |
| | 3/17/20 | | | 5.20 | 42.22 | 1.53 | -- |
| | 8/17/20 | | | 5.70 | 40.85 | 2.90 | 2.0 |
| | 9/17/20 | | | -- | -- | 2.50 | -- |
| | 9/25/20 | | | -- | -- | 3.05 | -- |
| | 10/13/20 | | | -- | -- | 4.15 | -- |
| 114-P2-IRM-23I | 3/17/20 | 41 | 21-41 | 6.50 | 43.10 | 0.49 | -- |
| | 8/17/20 | | | 7.00 | -- | 0 | 0.0 |
| | 9/17/20 | | | -- | -- | 0 | -- |
| | 9/25/20 | | | -- | -- | 0.20 | -- |
| | 10/13/20 | | | -- | -- | 0.20 | -- |
| 114-P2-IRM-23D | 10/22/19 | 62 | 42-62 | 7.71 | 60.00 | 2.50 | -- |
| | 3/17/20 | | | 6.35 | -- | 0.00 | -- |
| 114-P2-IRM-24D | 10/22/19 | 65 | 45-65 | 6.31 | 53.00 | 13.00 | -- |
| | 3/17/20 | | | 5.02 | 61.59 | 4.00 | -- |
| | 8/17/20 | | | 5.40 | 49.49 | 16.10 | 9.5 |
| | 9/16/20 | | | -- | -- | 16.60 | -- |
| | 9/25/20 | | | -- | -- | 15.80 | -- |
| | 10/13/20 | | | -- | -- | 16.45 | -- |
| 114-P2-IRM-24I | 3/17/20 | 45 | 25-45 | 4.75 | 45.85 | 0 | -- |
| | 8/17/20 | | | 5.15 | 43.94 | 1.91 | 1.0 |
| | 9/17/20 | | | -- | -- | 1.13 | -- |
| | 9/25/20 | | | -- | -- | 1.05 | -- |
| | 10/13/20 | | | -- | -- | 1.15 | -- |
| 114-P2-IRM-25I | 10/22/19 | 37 | 17-37 | 6.39 | 38.50 | 1.10 | -- |
| | 3/17/20 | | | 5.79 | -- | 0.00 | -- |
| 114-P2-IRM-26D | 10/22/19 | 57 | 37-57 | 7.53 | 58.00 | 1.10 | -- |
| | 3/17/20 | | | 6.32 | -- | 0.00 | -- |

**DNAPL Observations**

**Phase II Interim Remedial Measure**
**Garfield Avenue Group**
**PPG, Jersey City, New Jersey**

| Location ID | Date | Well Depth (ft bgs) | Screened Interval (ft bgs) | Depth to Water (ft bTOR) | Depth to DNAPL (ft bTOR) | Estimated DNAPL Thickness (ft) | DNAPL Recovered (gallons) |
|---|---|---|---|---|---|---|---|
| 114-P2-IRM-29D | 10/22/19 | 55 | 35-55 | 6.18 | 53.50 | 3.00 | -- |
| | 3/18/20 | | | 4.71 | 43.86 | 13.25 | -- |
| | 8/17/20 | | | 5.20 | 49.31 | 7.80 | 10.5 |
| | 9/17/20 | | | -- | -- | 7.75 | -- |
| | 9/25/20 | | | -- | -- | 7.79 | -- |
| | 10/13/20 | | | -- | -- | 8.50 | -- |
| 114-P2-IRM-30D | 10/22/19 | 63 | 43-63 | 6.37 | 60.00 | 4.90 | -- |
| | 3/17/20 | | | 5.31 | 62.02 | 2.00 | -- |
| | 8/17/20 | | | 5.40 | 48.42 | 15.60 | 10.0 |
| | 9/18/20 | | | -- | -- | 14.60 | -- |
| | 9/25/20 | | | -- | -- | 15.15 | -- |
| | 10/13/20 | | | -- | -- | 15.60 | -- |
| 114-P2-IRM-31D | 10/22/19 | 62 | 42-62 | 6.12 | 58.00 | 6.10 | -- |
| | 3/17/20 | | | 4.78 | 63.55 | 2.00 | -- |
| | 8/17/20 | | | 5.10 | 62.15 | 3.40 | 2.0 |
| | 9/18/20 | | | -- | -- | 14.15 | -- |
| | 9/25/20 | | | -- | -- | 14.80 | -- |
| | 10/13/20 | | | -- | -- | 14.85 | -- |
| 114-P2-IRM-55I | 3/17/20 | 42 | 22-42 | 5.16 | 44.69 | 0.60 | -- |
| | 8/17/20 | | | 5.50 | 43.99 | 1.30 | 1.0 |
| | 9/17/20 | | | -- | -- | 0.53 | -- |
| | 9/25/20 | | | -- | -- | 0.80 | -- |
| | 10/13/20 | | | -- | -- | 0.95 | -- |
| 114-P2-IRM-56D | 10/22/19 | 63 | 43-63 | 6.38 | 51.00 | 12.90 | -- |
| | 3/17/20 | | | 5.19 | 51.34 | 10.50 | -- |
| | 8/17/20 | | | 5.50 | 48.24 | 13.60 | 8.0 |
| | 9/16/20 | | | -- | -- | 5.00 | -- |
| | 9/25/20 | | | -- | -- | 12.85 | -- |
| | 10/13/20 | | | -- | -- | 13.10 | -- |
| 114-P2-IRM-56I | 10/22/19 | 42 | 22-42 | 6.32 | 42.00 | 1.90 | -- |
| | 3/17/20 | | | 5.17 | 42.43 | 2.00 | -- |
| | 8/17/20 | | | 5.34 | 42.62 | 1.81 | 2.0 |
| | 9/16/20 | | | -- | -- | 1.30 | -- |
| | 9/25/20 | | | -- | -- | 1.30 | -- |
| | 10/13/20 | | | -- | -- | 1.90 | -- |
| 114-P2-IRM-57D | 10/22/19 | 63 | 43-63 | 6.00 | 57.00 | 7.80 | -- |
| | 3/17/20 | | | 4.89 | 63.33 | 1.00 | -- |
| | 8/17/20 | | | 5.20 | 51.23 | 13.10 | 12.0 |
| | 9/16/20 | | | -- | -- | 13.45 | -- |
| | 9/25/20 | | | -- | -- | 13.80 | -- |
| | 10/13/20 | | | -- | -- | 14.75 | -- |

## DNAPL Observations

## Phase II Interim Remedial Measure
## Garfield Avenue Group
## PPG, Jersey City, New Jersey

| Location ID | Date | Well Depth (ft bgs) | Screened Interval (ft bgs) | Depth to Water (ft bTOR) | Depth to DNAPL (ft bTOR) | Estimated DNAPL Thickness (ft) | DNAPL Recovered (gallons) |
|---|---|---|---|---|---|---|---|
| 114-P2-IRM-64D | 10/22/19 | 62 | 42-62 | 6.36 | 62.00 | 2.00 | -- |
| | 3/17/20 | | | 5.31 | 64.30 | -0.40[a] | -- |
| | 8/17/20 | | | 5.55 | 57.00 | 6.90 | 3.5 |
| | 9/16/20 | | | -- | -- | 3.32 | -- |
| | 9/25/20 | | | -- | -- | 5.05 | -- |
| | 10/13/20 | | | -- | -- | 6.40 | -- |
| 114-P2-IRM-96I | 10/22/19 | 41 | 21-41 | 5.91 | 41.00 | 1.20 | -- |
| | 3/17/20 | | | 4.18 | -- | 0.00 | -- |
| 114-P2-MW-10D | 10/22/19 | 55 | 50-55 | 6.05 | 52.00 | 4.80 | -- |
| | 3/17/20 | | | 5.09 | 47.84 | 7.00 | -- |
| | 8/17/20 | | | 5.30 | 49.44 | 5.40 | -- |
| | 9/16/20 | | | -- | -- | 0.20 | -- |
| | 9/25/20 | | | -- | -- | 3.55 | -- |
| | 10/13/20 | | | -- | -- | 5.45 | -- |
| 114-P2-MW-10I | 3/17/20 | 35 | 30-35 | 4.94 | 35.48 | 1.00 | -- |
| | 8/17/20 | | | 5.34 | 35.98 | 0.50 | -- |
| | 9/16/20 | | | -- | -- | 0 | -- |
| | 9/25/20 | | | -- | -- | 0.20 | -- |
| | 10/13/20 | | | -- | -- | 0.20 | -- |
| 114-P2-MW-12D | 10/22/19 | 56 | 51-56 | 6.27 | 52.50 | 5.60 | -- |
| | 3/17/20 | | | 5.15 | 53.02 | 4.00 | -- |
| | 8/17/20 | | | 5.50 | 50.62 | 6.40 | -- |
| | 9/16/20 | | | -- | -- | 4.80 | -- |
| | 9/25/20 | | | -- | -- | 4.70 | -- |
| | 10/13/20 | | | -- | -- | 5.65 | -- |

**Notes:**
a. Determined to be a gauging error. DNAPL presence confirmed during subsequent gauging events.
-- : no data recorded
DNAPL : dense non-aqueous phase liquids
ft : feet
ft bgs : feet below ground surface
ID : identification
ft bTOR : feet below top of PVC rim

Schuele, Frederik

From: LoPilato, Alfred
Sent: Monday, September 12, 2016 1:01 PM
To: Hunt, Claire; Whooley, Kathy
Subject: FW: Site 137N 45 Halladay - DNAPL Fingerprint Analysis

FYI

---

From: Mikaelian, Scott
Sent: Monday, September 12, 2016 12:56 PM
To: Spronz, Bill; Gleason, Shannon
Cc: Conrey, Nanette; Hellerich, Lucas; Ruiter, Aimee; LoPilato, Alfred
Subject: FW: Site 137N 45 Halladay - DNAPL Fingerprint Analysis

fyi

---

From: Feinberg, Richard [C] [mailto:feinberg@ppg.com]
Sent: Monday, September 12, 2016 12:51 PM
To: Conrey, Nanette; Hellerich, Lucas
Cc: Mikaelian, Scott; Overmyer, Jody
Subject: FW: Site 137N 45 Halladay - DNAPL Fingerprint Analysis

FYI

---

From: Hahn, Louis [mailto:Louis.Hahn@pseg.com]
Sent: Monday, September 12, 2016 12:02 PM
To: Feinberg, Richard [C]
Cc: Overmyer, Jody
Subject: RE: Site 137N 45 Halladay - DNAPL Fingerprint Analysis

Rich:

Our team reviewed the results of the fingerprint sample collected from PPG MW 137-P3B-MW101I and concur that the subject DNAPL appears to be MGP-related, which is consistent with our observations of OM/TM at 34.5 to 38 feet bgs in our soil boring SB-28 in the same general area along Carteret Avenue.

Thanks,

Lou Hahn

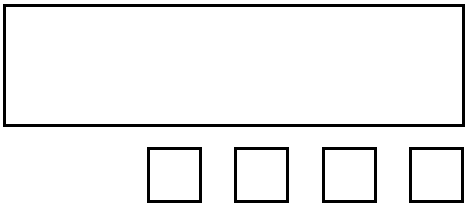

---

From: Feinberg, Richard [C] [mailto:feinberg@ppg.com]
Sent: Sunday, September 11, 2016 6:14 PM
To: Hahn, Louis

Cc: Overmyer, Jody
Subject: RE: Site 137N 45 Halladay - DNAPL Fingerprint Analysis

**Email sent from outside of PSEG. Use caution before using links/attachments.**

---

Lou,

Did your folks have any thoughts on this?

Would you like to have a call to discuss?

Rich

---

From: Feinberg, Richard [C]
Sent: Wednesday, August 10, 2016 3:31 PM
To: Louis.Hahn@pseg.com
Subject: FW: Site 137N 45 Halladay - DNAPL Fingerprint Analysis

Lou,

Per our conversation, here is the analysis on the DNAPL sample. I think the best thing to do is have a call with our technical folks and yours (after they review) and to discuss our thoughts.

Rich

---

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*e-Hardcopy 2.0*
*Automated Report*

Technical Report for

AECOM, INC.

PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

60506516.GA.LSRP.DNAPL.LAB-DV

SGS Accutest Job Number: MC46549



Sampling Date: 06/21/16

Report to:

AECOM, Inc.
30 Knightsbridge Road Suite 520
Piscataway, NJ 08854
NJlabdata@aecom.com

ATTN: Mary O'Connell Kozik

Total number of pages in report: 315

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

H. (Brad) Madadian
Lab Director

Client Service contact: Jeremy Vienneau 508-481-6200

Certifications: MA (M-MA136,SW846 NELAC) CT (PH-0109) NH (250210) RI (00071) ME (MA00136) FL (E87579) NY (11791) NJ (MA926) PA (6801121) ND (R-188) CO MN (11546AA) NC (653) IL (002337) WI (399080220) DoD ELAP (L-A-B L2235)

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Test results relate only to samples analyzed.



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# Sample Summary

AECOM, INC.

**Job No:** MC46549

PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ
Project No: 60506516.GA.LSRP.DNAPL.LAB-DV

| Sample Number | Collected Date | Time | By | Received | Matrix Code | Type | Client Sample ID |
|---|---|---|---|---|---|---|---|
| MC46549-1 | 06/21/16 | 07:45 | | 06/23/16 | SO | Oil | 137-P3B-MW101I-20160621 |

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

# SAMPLE DELIVERY GROUP CASE NARRATIVE

**Client:** AECOM, INC. **Job No** MC46549

**Site:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, **Report Date** 7/15/2016 1:27:45 PM

1 Sample was collected on 06/21/2016 and were received at SGS Accutest New England on 06/23/2016 properly preserved, at 0.5 Deg. C and intact. These Samples received a job number of MC46549. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

## Extractables by GCMS By Method D5739-06/8270M SIM

**Matrix:** SO **Batch ID:** OP47956

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC46549-1DUP were used as the QC samples indicated.

## Extractables by GC By Method ASTM D3328-06

**Matrix:** SO **Batch ID:** OP47955

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) MC46549-1DUP were used as the QC samples indicated.
- Calibration standard GGR206-CC173 not associate with this job.

SGS Accutest New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety.The Laboratory Director for SGS Accutest New England or assignee as verified by the signature on the cover page has authorized the release of this report(MC46549).

# Summary of Hits

**Job Number:** MC46549
**Account:** AECOM, INC.
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ
**Collected:** 06/21/16



| Lab Sample ID / Analyte | Client Sample ID | Result/ Qual | RL | MDL | Units | Method |
|---|---|---|---|---|---|---|
| **MC46549-1** | **137-P3B-MW101I-20160621** | | | | | |
| Benzene | | 846000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| C1-Benzene | | 873000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| C2-Benzenes | | 4660000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| C3-Benzenes | | 4880000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| C4-Benzenes | | 2480000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| C5-Benzenes | | 691000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| Toluene | | 1190000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| Ethylbenzene | | 4840000 | 66000 | 33000 | ug/kg | D5739-06/8270M SIM |
| m,p-Xylene | | 3830000 | 66000 | 33000 | ug/kg | D5739-06/8270M SIM |
| Styrene | | 190000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| o-Xylene | | 2020000 | 66000 | 33000 | ug/kg | D5739-06/8270M SIM |
| Isopropylbenzene | | 512000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| n-Propylbenzene | | 221000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| 1,3,5-Trimethylbenzene | | 940000 | 66000 | 33000 | ug/kg | D5739-06/8270M SIM |
| 1,2,3-Trimethylbenzene | | 887000 | 66000 | 33000 | ug/kg | D5739-06/8270M SIM |
| 1,2,4-Trimethylbenzene | | 2760000 | 66000 | 33000 | ug/kg | D5739-06/8270M SIM |
| sec-Butylbenzene | | 17400 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| p-Isopropyltoluene | | 345000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| n-Butylbenzene | | 174000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| trans-Decalin | | 27700 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| cis-Decalin | | 11300 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| Benzo(b)thiophene | | 777000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| Naphthalene | | 63200000 | 66000 | 33000 | ug/kg | D5739-06/8270M SIM |
| 2-Methylnaphthalene | | 33300000 | 66000 | 33000 | ug/kg | D5739-06/8270M SIM |
| 1-Methylnaphthalene | | 24700000 | 66000 | 33000 | ug/kg | D5739-06/8270M SIM |
| C1-Naphthalenes | | 36000000 | 66000 | 33000 | ug/kg | D5739-06/8270M SIM |
| C2-Naphthalenes | | 20600000 | 66000 | 33000 | ug/kg | D5739-06/8270M SIM |
| C3-Naphthalenes | | 6250000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| C4-Naphthalenes | | 1790000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| Biphenyl | | 3530000 | 66000 | 33000 | ug/kg | D5739-06/8270M SIM |
| Acenaphthylene | | 5520000 | 66000 | 33000 | ug/kg | D5739-06/8270M SIM |
| Acenaphthene | | 17200000 | 66000 | 33000 | ug/kg | D5739-06/8270M SIM |
| Dibenzofuran | | 653000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| Fluorene | | 7690000 | 66000 | 33000 | ug/kg | D5739-06/8270M SIM |
| C1-Fluorenes | | 5080000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| C2-Fluorenes | | 2990000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| C3-Fluorenes | | 1060000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| Dibenzothiophene | | 1180000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| C1-Dibenzothiophenes | | 1420000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| C2-Dibenzothiophenes | | 1000000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| C3-Dibenzothiophenes | | 455000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| C4-Dibenzothiophenes | | 138000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| Phenanthrene | | 26000000 | 66000 | 33000 | ug/kg | D5739-06/8270M SIM |

# Summary of Hits

**Job Number:** MC46549
**Account:** AECOM, INC.
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ
**Collected:** 06/21/16



| Lab Sample ID / Client Sample ID / Analyte | Result/ Qual | RL | MDL | Units | Method |
|---|---|---|---|---|---|
| Anthracene | 8820000 | 66000 | 33000 | ug/kg | D5739-06/8270M SIM |
| C1-Phenanthrenes/Anthracenes | 16600000 | 66000 | 33000 | ug/kg | D5739-06/8270M SIM |
| C2-Phenanthrenes/Anthracenes | 6270000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| C3-Phenanthrenes/Anthracenes | 1640000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| C4-Phenanthrenes/Anthracenes | 401000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| Benzo(b)naphtho(2,1-d)thiophene | 434000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| Fluoranthene | 6580000 | 66000 | 33000 | ug/kg | D5739-06/8270M SIM |
| Pyrene | 10800000 | 66000 | 33000 | ug/kg | D5739-06/8270M SIM |
| C1-Fluoranthenes/Pyrenes | 9750000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| C2-Fluoranthenes/Pyrenes | 3210000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| C3-Fluoranthenes/Pyrenes | 991000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| Benzo(b)fluorene | 981000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| Benzo(c)fluorene | 430000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| 2-Methylpyrene | 1200000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| 4-Methylpyrene | 1070000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| 1-Methylpyrene | 1500000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| Benz(a)anthracene | 2380000 | 66000 | 33000 | ug/kg | D5739-06/8270M SIM |
| Chrysene/triphenylene | 3540000 | 66000 | 33000 | ug/kg | D5739-06/8270M SIM |
| C1-Benzo(a)anthracenes/Chrysenes | 3120000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| C2-Benzo(a)anthracenes/Chrysenes | 1180000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| C3-Benzo(a)anthracenes/Chrysenes | 414000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| C4-Benzo(a)anthracenes/Chrysenes | 103000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| Benzo(b)fluoranthene | 1140000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| Benzo(j/k)fluoranthene | 1390000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| Benzo(e)pyrene | 1310000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| Benzo(a)pyrene | 2560000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| Perylene | 355000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| Indeno(1,2,3-cd)pyrene | 715000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| Dibenzo(a,h)anthracene | 304000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| Benzo(g,h,i)perylene | 834000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| Coronene | 177000 | 1300 | 660 | ug/kg | D5739-06/8270M SIM |
| TPH (C8-C40) | 857000 | 66000 | 33000 | mg/kg | ASTM D3328-06 |

## Sample Results

Report of Analysis

SGS Accutest

# Report of Analysis





**Client Sample ID:** 137-P3B-MW101I-20160621
**Lab Sample ID:** MC46549-1 **Date Sampled:** 06/21/16
**Matrix:** SO - Oil **Date Received:** 06/23/16
**Method:** D5739-06/8270M SIM SW846 3580A **Percent Solids:** n/a
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | S39591.D | 1 | 07/05/16 | SZ | 06/23/16 | OP47956 | MSS1964 |
| Run #2 | S39592.D | 50 | 07/05/16 | SZ | 06/23/16 | OP47956 | MSS1964 |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 0.015 g | 2.0 ml |
| Run #2 | 0.015 g | 2.0 ml |

**Alkylated PAHs**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 71-43-2 | Benzene | 846000 | 1300 | 660 | ug/kg | |
| | C1-Benzene | 873000 | 1300 | 660 | ug/kg | |
| | C2-Benzenes | 4660000 | 1300 | 660 | ug/kg | |
| | C3-Benzenes | 4880000 | 1300 | 660 | ug/kg | |
| | C4-Benzenes | 2480000 | 1300 | 660 | ug/kg | |
| | C5-Benzenes | 691000 | 1300 | 660 | ug/kg | |
| 108-88-3 | Toluene | 1190000 | 1300 | 660 | ug/kg | |
| 100-41-4 | Ethylbenzene | 4840000 [a] | 66000 | 33000 | ug/kg | |
| | m,p-Xylene | 3830000 [a] | 66000 | 33000 | ug/kg | |
| 100-42-5 | Styrene | 190000 | 1300 | 660 | ug/kg | |
| 95-47-6 | o-Xylene | 2020000 [a] | 66000 | 33000 | ug/kg | |
| 98-82-8 | Isopropylbenzene | 512000 | 1300 | 660 | ug/kg | |
| 103-65-1 | n-Propylbenzene | 221000 | 1300 | 660 | ug/kg | |
| 108-67-8 | 1,3,5-Trimethylbenzene | 940000 [a] | 66000 | 33000 | ug/kg | |
| 526-73-8 | 1,2,3-Trimethylbenzene | 887000 [a] | 66000 | 33000 | ug/kg | |
| 95-63-6 | 1,2,4-Trimethylbenzene | 2760000 [a] | 66000 | 33000 | ug/kg | |
| 98-06-6 | t-Butylbenzene | ND | 1300 | 660 | ug/kg | |
| 135-98-8 | sec-Butylbenzene | 17400 | 1300 | 660 | ug/kg | |
| 99-87-6 | p-Isopropyltoluene | 345000 | 1300 | 660 | ug/kg | |
| 104-51-8 | n-Butylbenzene | 174000 | 1300 | 660 | ug/kg | |
| 493-02-7 | trans-Decalin | 27700 | 1300 | 660 | ug/kg | |
| 493-01-6 | cis-Decalin | 11300 | 1300 | 660 | ug/kg | |
| 11095-43-5 | Benzo(b)thiophene | 777000 | 1300 | 660 | ug/kg | |
| 91-20-3 | Naphthalene | 63200000 [a] | 66000 | 33000 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | 33300000 [a] | 66000 | 33000 | ug/kg | |
| 90-12-0 | 1-Methylnaphthalene | 24700000 [a] | 66000 | 33000 | ug/kg | |
| | C1-Naphthalenes | 36000000 [a] | 66000 | 33000 | ug/kg | |
| | C2-Naphthalenes | 20600000 [a] | 66000 | 33000 | ug/kg | |
| | C3-Naphthalenes | 6250000 | 1300 | 660 | ug/kg | |
| | C4-Naphthalenes | 1790000 | 1300 | 660 | ug/kg | |
| 92-52-4 | Biphenyl | 3530000 [a] | 66000 | 33000 | ug/kg | |
| 208-96-8 | Acenaphthylene | 5520000 [a] | 66000 | 33000 | ug/kg | |

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





**Client Sample ID:** 137-P3B-MW101I-20160621
**Lab Sample ID:** MC46549-1 **Date Sampled:** 06/21/16
**Matrix:** SO - Oil **Date Received:** 06/23/16
**Method:** D5739-06/8270M SIM SW846 3580A **Percent Solids:** n/a
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

**Alkylated PAHs**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | 17200000 [a] | 66000 | 33000 | ug/kg | |
| 132-64-9 | Dibenzofuran | 653000 | 1300 | 660 | ug/kg | |
| 86-73-7 | Fluorene | 7690000 [a] | 66000 | 33000 | ug/kg | |
| | C1-Fluorenes | 5080000 | 1300 | 660 | ug/kg | |
| | C2-Fluorenes | 2990000 | 1300 | 660 | ug/kg | |
| | C3-Fluorenes | 1060000 | 1300 | 660 | ug/kg | |
| 132-65-0 | Dibenzothiophene | 1180000 | 1300 | 660 | ug/kg | |
| | C1-Dibenzothiophenes | 1420000 | 1300 | 660 | ug/kg | |
| | C2-Dibenzothiophenes | 1000000 | 1300 | 660 | ug/kg | |
| | C3-Dibenzothiophenes | 455000 | 1300 | 660 | ug/kg | |
| | C4-Dibenzothiophenes | 138000 | 1300 | 660 | ug/kg | |
| 85-01-8 | Phenanthrene | 26000000 [a] | 66000 | 33000 | ug/kg | |
| 120-12-7 | Anthracene | 8820000 [a] | 66000 | 33000 | ug/kg | |
| | C1-Phenanthrenes/Anthracene | 16600000 [a] | 66000 | 33000 | ug/kg | |
| | C2-Phenanthrenes/Anthracene | 6270000 | 1300 | 660 | ug/kg | |
| | C3-Phenanthrenes/Anthracene | 1640000 | 1300 | 660 | ug/kg | |
| | C4-Phenanthrenes/Anthracene | 401000 | 1300 | 660 | ug/kg | |
| 483-65-8 | Retene | ND | 1300 | 660 | ug/kg | |
| 239-35-0 | Benzo(b)naphtho(2,1-d)thioph | 434000 | 1300 | 660 | ug/kg | |
| 206-44-0 | Fluoranthene | 6580000 [a] | 66000 | 33000 | ug/kg | |
| 129-00-0 | Pyrene | 10800000 [a] | 66000 | 33000 | ug/kg | |
| | C1-Fluoranthenes/Pyrenes | 9750000 | 1300 | 660 | ug/kg | |
| | C2-Fluoranthenes/Pyrenes | 3210000 | 1300 | 660 | ug/kg | |
| | C3-Fluoranthenes/Pyrenes | 991000 | 1300 | 660 | ug/kg | |
| 243-17-4 | Benzo(b)fluorene | 981000 | 1300 | 660 | ug/kg | |
| 205-12-9 | Benzo(c)fluorene | 430000 | 1300 | 660 | ug/kg | |
| 3442-78-2 | 2-Methylpyrene | 1200000 | 1300 | 660 | ug/kg | |
| 3353-12-6 | 4-Methylpyrene | 1070000 | 1300 | 660 | ug/kg | |
| 2381-21-7 | 1-Methylpyrene | 1500000 | 1300 | 660 | ug/kg | |
| 56-55-3 | Benz(a)anthracene | 2380000 [a] | 66000 | 33000 | ug/kg | |
| | Chrysene/triphenylene | 3540000 [a] | 66000 | 33000 | ug/kg | |
| | C1-Benzo(a)anthracenes/Chrys | 3120000 | 1300 | 660 | ug/kg | |
| | C2-Benzo(a)anthracenes/Chrys | 1180000 | 1300 | 660 | ug/kg | |
| | C3-Benzo(a)anthracenes/Chrys | 414000 | 1300 | 660 | ug/kg | |
| | C4-Benzo(a)anthracenes/Chrys | 103000 | 1300 | 660 | ug/kg | |
| 205-99-2 | Benzo(b)fluoranthene | 1140000 | 1300 | 660 | ug/kg | |
| | Benzo(j/k)fluoranthene | 1390000 | 1300 | 660 | ug/kg | |
| 192-97-2 | Benzo(e)pyrene | 1310000 | 1300 | 660 | ug/kg | |
| 50-32-8 | Benzo(a)pyrene | 2560000 | 1300 | 660 | ug/kg | |
| 198-55-0 | Perylene | 355000 | 1300 | 660 | ug/kg | |

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | 137-P3B-MW101I-20160621 | | |
| **Lab Sample ID:** | MC46549-1 | **Date Sampled:** | 06/21/16 |
| **Matrix:** | SO - Oil | **Date Received:** | 06/23/16 |
| **Method:** | D5739-06/8270M SIM SW846 3580A | **Percent Solids:** | n/a |
| **Project:** | PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ | | |

**Alkylated PAHs**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 715000 | 1300 | 660 | ug/kg | |
| 53-70-3 | Dibenzo(a,h)anthracene | 304000 | 1300 | 660 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | 834000 | 1300 | 660 | ug/kg | |
| 191-07-1 | Coronene | 177000 | 1300 | 660 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 2037-26-5 | Toluene-D8 | 93% | 107% | 40-140% |
| 1146-65-2 | Naphthalene-d8 | 94% | 99% | 40-140% |
| 1517-22-2 | Phenanthrene-d10 | 93% | 96% | 40-140% |
| | Perylene-d12 | 96% | 93% | 40-140% |

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

# Report of Analysis





**Client Sample ID:** 137-P3B-MW101I-20160621
**Lab Sample ID:** MC46549-1 **Date Sampled:** 06/21/16
**Matrix:** SO - Oil **Date Received:** 06/23/16
**Method:** ASTM D3328-06 SW846 3580A **Percent Solids:** n/a
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | GR6347.D | 5 | 07/01/16 | MEW | 06/23/16 | OP47955 | GGR207 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 0.015 g | 2.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | C-8 | ND | 660 | 330 | mg/kg | |
| | C-9 | ND | 660 | 330 | mg/kg | |
| | C-10 | ND | 660 | 330 | mg/kg | |
| | C-11 | ND | 660 | 330 | mg/kg | |
| | C-12 | ND | 660 | 330 | mg/kg | |
| | C-13 | ND | 660 | 330 | mg/kg | |
| 3891-98-3 | 2,6,10-trimethyldodecane (138 | ND | 660 | 330 | mg/kg | |
| | C-14 | ND | 660 | 330 | mg/kg | |
| 3891-99-4 | 2,6,10-trimethyltridecane (147 | ND | 660 | 330 | mg/kg | |
| | C-15 | ND | 660 | 330 | mg/kg | |
| | C-16 | ND | 660 | 330 | mg/kg | |
| 3892-00-0 | 2,6,10-trimethylpentadecane (1 | ND | 660 | 330 | mg/kg | |
| | C-17 | ND | 660 | 330 | mg/kg | |
| 1921-70-6 | Pristane | ND | 660 | 330 | mg/kg | |
| | C-18 | ND | 660 | 330 | mg/kg | |
| 638-36-8 | Phytane | ND | 660 | 330 | mg/kg | |
| | C-19 | ND | 660 | 330 | mg/kg | |
| | C-20 | ND | 660 | 330 | mg/kg | |
| | C-21 | ND | 660 | 330 | mg/kg | |
| | C-22 | ND | 660 | 330 | mg/kg | |
| | C-23 | ND | 660 | 330 | mg/kg | |
| | C-24 | ND | 660 | 330 | mg/kg | |
| | C-25 | ND | 660 | 330 | mg/kg | |
| | C-26 | ND | 660 | 330 | mg/kg | |
| | C-27 | ND | 660 | 330 | mg/kg | |
| | C-28 | ND | 660 | 330 | mg/kg | |
| | C-29 | ND | 660 | 330 | mg/kg | |
| | C-30 | ND | 660 | 330 | mg/kg | |
| | C-31 | ND | 660 | 330 | mg/kg | |
| | C-32 | ND | 660 | 330 | mg/kg | |
| | C-33 | ND | 660 | 330 | mg/kg | |
| | C-34 | ND | 660 | 330 | mg/kg | |

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





**Client Sample ID:** 137-P3B-MW101I-20160621
**Lab Sample ID:** MC46549-1 **Date Sampled:** 06/21/16
**Matrix:** SO - Oil **Date Received:** 06/23/16
**Method:** ASTM D3328-06 SW846 3580A **Percent Solids:** n/a
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | C-35 | ND | 660 | 330 | mg/kg | |
| | C-36 | ND | 660 | 330 | mg/kg | |
| | C-37 | ND | 660 | 330 | mg/kg | |
| | C-38 | ND | 660 | 330 | mg/kg | |
| | C-39 | ND | 660 | 330 | mg/kg | |
| | C-40 | ND | 660 | 330 | mg/kg | |
| | TPH (C8-C40) | 857000 | 66000 | 33000 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 84-15-1 | o-Terphenyl | 103% | | 40-140% |

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

## Misc. Forms

# Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- FDI Form: Forensic Data Interpretation
- Sample Tracking Chronicle
- Internal Chain of Custody

AECOM

OIL

**CHAIN-OF-CUSTODY / Analytical Request Document**

2016-06-21-SITE 137-LSRP-DNAPL-FP-COC

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.



| | |
|---|---|
| Task: | Site 137 LSRP DNAPL Sampling |
| Total # of Samples: | 1 |
| TAT | see Spec. Instructions |

Notes: F= Field Filtered , H= Hold

| Lab Information: | | Project Information: | | Other Information: | |
|---|---|---|---|---|---|
| Lab: | ACCUTEST | Site ID #: | PPG Garfield Ave | Send Invoice to: | Mary.OConnellKozik@aecom.com |
| Address: | 2235 Route 130 , Dayton NJ 08810 | Project #: | 60506516.GA.LSRP.DNAPL.LAB-DV | Address: | 250 Apollo Drive |
| | | Site Address: | 70 Carteret Avenue | City/State. | Chelmsford, MA 01824 Phone #: 978-905-2278 |
| Lab PM: | Matt Cordova | City | Jersey City State, Zip NJ 07304 | PO #: | 76939ACM |
| Phone/Fax: | 732-329-0200 | PM Name: | Nan Conrey/Kathy Whooley | Send EDD to: | NJLABDATA@aecom.com |
| PM email: | | Phone/Fax: | Nan: 978-905-2277 | CC Hardcopy to | No Hardcopy Needed |
| Lab Quote #: | 46011607 | PM Email: | Nanette.Conrey@aecom.com kathy.whooley@aecom.com | CC Hardcopy to | |

Lab Notes: MC46549 ~~JC22624~~ MC

| ITEM # | Field Sample No. /Identification | MATRIX CODE | G=GRAB C=COMP | SAMPLE DATE | #OF CONTAINERS | Comment | Analysis: ASTM D3328: N-alkanes, Isoprenoids, TPH, Fingerprinting | Additional parameters | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 137-P3B-MW101I-20160621 —1 | OL | G | 06/21/2016 07:45 | 1 | (1) 8 oz jar | X | X | | | | | | |
| | | | | | | | | | | | | | | S3I |
| | | | | | | | | | | | | | | SUB |
| | | | | | | | | | | | | | | 2A |
| | | | | | | | | | | | | | | REC - TEMP |
| | | | | | | | | | | | | | | 0.5C |

INITIAL ASESSMENT N/

LABEL VERIFICATION N/

**Additional Comments/Special Instructions:**
**Additional Parameters: Monoaromatics(BTEX, alkylated benzenes), PAHs, Alkylated PAHs, Sulfur& Nitrogen heterocyclics:ASTM D5739 Standard TAT**
**H=HOLD**
**Deliverable Package: NJ Data of Known Quality Protocols Reporting; Full Deliverables package (PDF and EDDS); NJ HAZSITE, Equis 4-file**

| RELINQUISHED BY / AFFILIATION | DATE | TIME | ACCEPTED BY / AFFILIATION | DATE | TIME |
|---|---|---|---|---|---|
| [signature] | 6/21/16 | 1500 | [signature] | 6-21 | 1500 |
| [signature] | 6-21 | 1710 | [signature] | 6-21 | 1710 |
| [signature] | | | [signature] | 6/23/16 | 9:30 |

Sample Receipt Conditions

| Temp in 0C | Samples on Ice? | Sample intact? | Trip Blank? |
|---|---|---|---|
| | Y/N | Y/N | Y/N |
| | Y/N | Y/N | Y/N |
| | Y/N | Y/N | Y/N |
| | Y/N | Y/N | Y/N |

| | | | |
|---|---|---|---|
| Shipper: | | DATE/TIME: | |
| Tracking #: | | Custody Seal(s): | |

INITIAL ASESSMENT Wood Jr

LABEL VERIFICATION JK

04.4 ~~EP~~ CIP

5.1

5

**MC46549: Chain of Custody**
**Page 1 of 2**

# SGS Accutest Sample Receipt Summary

**Job Number:** MC46549 **Client:** AECOM **Project:** 60506516GA.LSRP.DNAPL.LAB-DV

**Date / Time Received:** 6/23/2016 9:30:00 AM **Delivery Method:** FedEx **Airbill #'s:** 5633 9349 2749

**Cooler Temps (Initial/Adjusted):** #1: (0.5/0.5);

| Cooler Security | Y | or | N | | Y | or | N |
|---|---|---|---|---|---|---|---|
| 1. Custody Seals Present: | ☑ | | ☐ | 3. COC Present: | ☑ | | ☐ |
| 2. Custody Seals Intact: | ☑ | | ☐ | 4. Smpl Dates/Time OK | ☑ | | ☐ |

| Cooler Temperature | Y | or | N |
|---|---|---|---|
| 1. Temp criteria achieved: | ☑ | | ☐ |
| 2. Thermometer ID: | IRGUN1; | | |
| 3. Cooler media: | Ice (Bag) | | |
| 4. No. Coolers: | 1 | | |

| Quality Control _Preservation | Y | or | N | N/A |
|---|---|---|---|---|
| 1. Trip Blank present / cooler: | ☐ | | ☐ | ☑ |
| 2. Trip Blank listed on COC: | ☐ | | ☐ | ☑ |
| 3. Samples preserved properly: | ☑ | | ☐ | |
| 4. VOCs headspace free: | ☐ | | ☐ | ☑ |

| Sample Integrity - Documentation | Y | or | N |
|---|---|---|---|
| 1. Sample labels present on bottles: | ☑ | | ☐ |
| 2. Container labeling complete: | ☑ | | ☐ |
| 3. Sample container label / COC agree: | ☑ | | ☐ |

| Sample Integrity - Condition | Y | or | N |
|---|---|---|---|
| 1. Sample recvd within HT: | ☑ | | ☐ |
| 2. All containers accounted for: | ☑ | | ☐ |
| 3. Condition of sample: | Intact | | |

| Sample Integrity - Instructions | Y | or | N | N/A |
|---|---|---|---|---|
| 1. Analysis requested is clear: | ☑ | | ☐ | |
| 2. Bottles received for unspecified tests | ☐ | | ☑ | |
| 3. Sufficient volume recvd for analysis: | ☑ | | ☐ | |
| 4. Compositing instructions clear: | ☐ | | ☐ | ☑ |
| 5. Filtering instructions clear: | ☐ | | ☐ | ☑ |

Comments

**MC46549: Chain of Custody**
**Page 2 of 2**

## Forensic Data Interpretation

Scope

One (1) sample of non-aqueous phase liquid (NAPL) was provided to SGS Accutest by AECOM from the PPG Garfield Ave site located at 70 Carteret Ave, in Jersey City, NJ on June 23rd, 2016 for hydrocarbon characterization. The sample was analyzed to determine, if possible, the types of hydrocarbon impacts present and the level of degradation of any identified material(s).

Methods

The sample was processed in duplicate by solvent dilution (EPA 3580) using dichloromethane. The sample extracts were analyzed by gas chromatography with flame ionization detection (GC/FID; EPA 8015M) for normal alkanes, isoprenoid hydrocarbons, total petroleum hydrocarbons (TPH), and a qualitative hydrocarbon fingerprint; and by gas chromatography with mass spectrometric detection in the selective ion monitoring and full scan mode (GC/MS/SIM/SCAN; EPA 8270M) for mono- and polycyclic aromatic hydrocarbons, MAH and PAH homologues, heterocyclic aromatics, and other selected compounds.

This narrative describes the results.

Sample Specific Comments

**137-P3B-MW101I-20160621** – (MC46549-1)

Sample 137-P3B-MW101I-20160621 primarily contained a pyrogenic material.

The pyrogenic material was indicated by a high concentration, wide range distribution of primarily unsubstituted polycyclic aromatic hydrocarbons (PAHs) visible in the GC/FID chromatogram (Appendix A). Naphthalene appeared as the most abundant resolved aromatic hydrocarbons with other 2-, 3-, and 4-ring PAHs also present at high concentrations. Alkylated PAH homologues were present but at decreasing relative concentrations with increasing alkylation; a pyrogenic characteristic visible in the histograms presented in Appendix B (See Figure 1 for example). The high relative abundance of naphthalene to the higher molecular weight parent PAHs indicates this material had not been subjected to a substantial level of environmentally induced degradation or weathering.

The ratio of fluoranthene to pyrene of about 0.61 (Table 1) in conjunction with the sample clustering in Chart 1 and a very high total priority pollutant PAH (PAH16) concentration of about 159,000 mg/kg indicates that this material is consistent with tars or tarry residues in Accutest's reference library produced from MGPs utilizing the carbureted water gas (CWG) process.

In addition to the above characteristics a regular distribution of normal alkanes (paraffins) present in a Gaussian distribution was noted and visible from about 14 minutes to about 45 minutes in the GC/MS Extracted Ion Current Profiles (EICPs; Appendix C). This corresponds to a paraffin range of n-nonadecane

(n-C9) to n-pentacosane (n-C25). Alkyl-cyclohexanes and sesquiterpane petroleum biomarkers were also present in this range and confirm the petrogenic nature of this portion of the material.

Materials with these characteristics are consistent with middle petroleum distillates including diesel fuels and No. 2 fuel oils. The identification could not differentiate between those two fuel types. Furthermore, the presence of petroleum distillates in this range, are not uncommon in samples of coal tar as petroleum distillates were used as feedstock during manufacturing gas plant operations; however, this could not be confirmed with the available data.

The laboratory duplicate analysis displayed similar characteristics.



**Figure 1. Example of Pyrogenic vs. Petrogenic Histograms of Naphthalene Series**

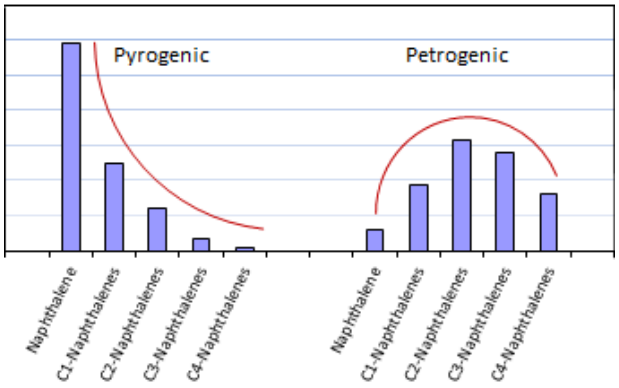


Disclaimer: SGS Accutest was not provided with any site specific information by the investigative parties and no site specific documents (boring logs, site maps, historical site usage documents, etc.) were provided for review by SGS Accutest staff. As such, this information could not be considered in the interpretive report. Sample data interpretation, weathering information, and source assignment, among other details, was only based on chemical data derived from the field samples as received at the laboratory.

Please contact me at 508-481-6200 or rubenp@accutest.com if you have any questions regarding the results.

Sincerely,

Ruben Parrilla, Technical Supervisor

Attachments

Appendix A – GC/FID Fingerprints
Appendix B – MAH/PAH Histograms
Appendix C – GC/MS Extracted Ion Current Profiles (EICPs)

References


1. Mauro, D.M., and Roush, J.A., "Examination of the sources of Polycyclic Aromatic Hydrocarbon (PAH) in Urban Background Soil," EPRI Report 1015888, December 2008.

2. Douglas G.S., Emsbo-Mattingly S.D., Stout S.A., Uhler A.D., McCarthy K.J. (2015), Hydrocarbon Fingerprinting Methods. In: B.L. Murphy & R.D Morrison (Eds.), Introduction to *Environmental Forensics*. (3rd Edition, pp. 201-309). San Diego, CA: Academic Press.

3. Douglas, G.S., Emsbo-Mattingly, S.D., Stout, S.A., Uhler, A.D., & McCarthy, K.J., (2007), Chemical Fingerprinting Methods. In B.L. Murphy & R.D. Morrison (Eds.), Introduction to *Environmental Forensics*. (2nd Edition, pp. 312-454). San Diego, CA: Academic Press.




Definitions

**Pyrogenic** – Pyrogenic materials are produced from organic matter subjected to intense heat but with insufficient oxygen for complete combustion. Pyrogenic materials are produced by fires, internal combustion engines, and furnaces. They also are formed when coke or gas are produced from coal or petroleum. Coal-tar based products, such as some roofing materials, pavement sealers, waterproofing materials, pesticides, and some shampoos contain pyrogenic materials.

**Petrogenic** – Petrogenic materials are produced from within rock formations under high pressure and low temperature. Crude oil, coal, and kerogen are some examples of raw petrogenic materials. Petrogenic materials also include refined or processed materials derived from raw products including gasoline, diesel fuel, motor oil, and asphalt, among many others.

**Table 1. Diagnostic Ratios**

| Lab ID | OP47956-DUP1 | MC46549-1 |
|---|---|---|
| **Field ID** | **Duplicate of 137-P3B-MW10I-20160621** | **137-P3B-MW10I-20160621** |
| **Analyte Pairs** | | |
| Fl/Py | 0.60 | 0.61 |
| D/F | 0.08 | 0.08 |
| C3D/C3PA | 0.29 | 0.28 |
| C2D/C2PA | 0.16 | 0.16 |
| BF/MP | 0.37 | 0.37 |
| BaA/Chr | 0.71 | 0.67 |
| BaA/BaP | 1.12 | 0.93 |
| BbF/BkF | 0.84 | 0.82 |
| C/BaP | 1.59 | 1.38 |
| P/BaP | 0.14 | 0.14 |
| BeP/BaP | 0.51 | 0.51 |
| Total PP PAH | 158670.00 | 158673.00 |
| Total 2-,3-ringPAH | 127750.00 | 128430.00 |
| Total 4-,5-,6-ringPAH | 30920.00 | 30243.00 |
| 2-,3-ringPAH/TPAH | 0.81 | 0.81 |
| 4-,5-,6-ring PAH/TPAH | 0.19 | 0.19 |
| Total PAH41 | 277760000.00 | 281980000.00 |

Fl – Fluoranthene
Py – Pyrene
D – Dibenzofuran
F – Fluorene
C2D – C2-Dibenzothiophenes
C3D – C3-Dibenzothiophenes
C2D – C2-Phenanthrene & Anthracenes
C3D – C3-Phenanthrene & Anthracenes
BF – Benzofluorenes
MP – Methylpyrenes
BaA – Benzo(a)Anthracene
BaP – Benzo(a)Pyrene
BbF – Benzo(b)Fluorene
BkF – Benzo(k)Fluorene
BeP – Benzo(e)Pyrene
BaP – Benzo(a)Pyrene
C/Cry – Chrysene
P - Perylene

**Chart 1. Double Ratio Plot: Fluoranthene/Pyrene vs. Dibenzofuran/Fluorene**

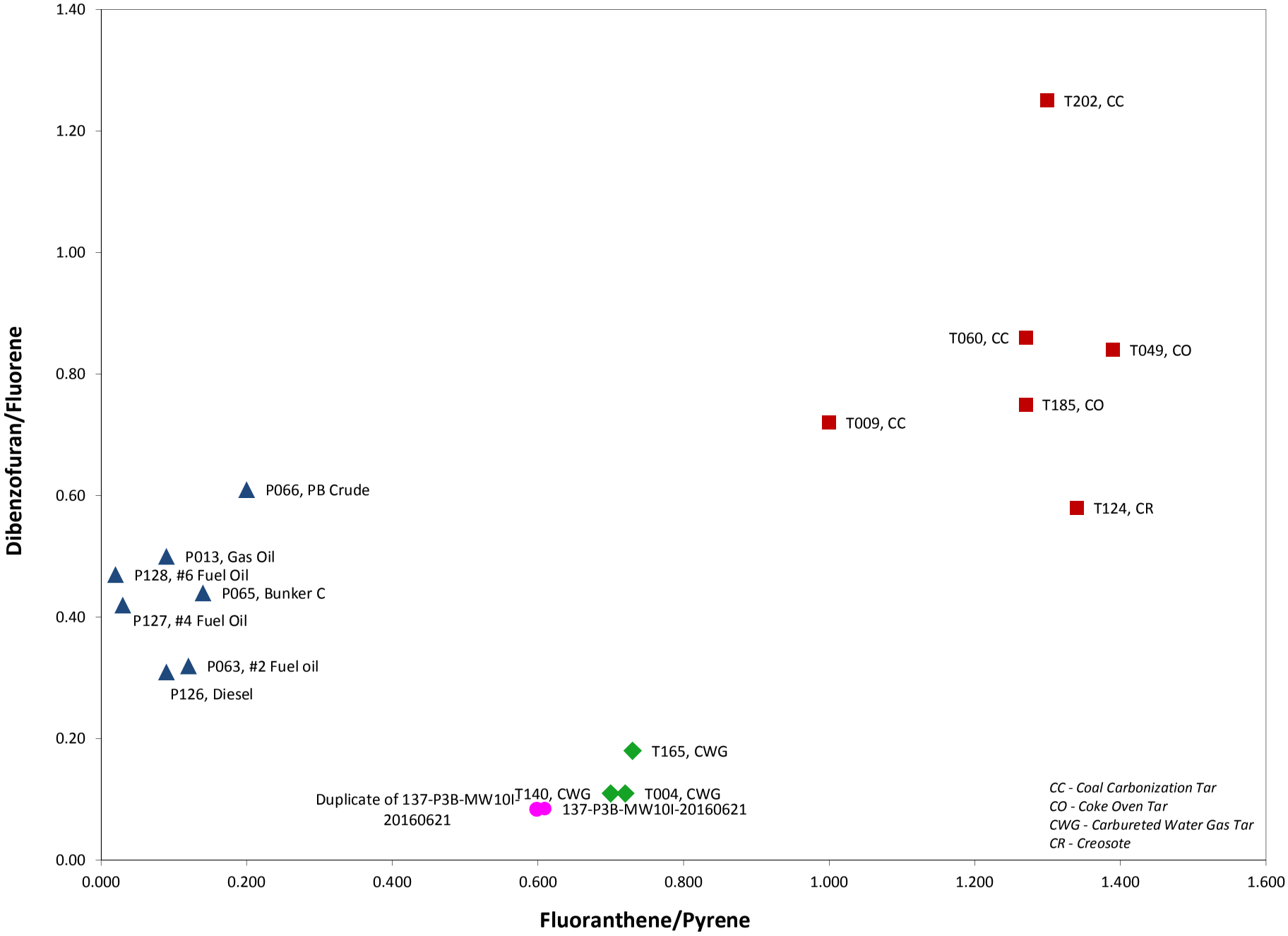

# APPENDIX A

## GC/FID FINGERPRINTS

SGS ACCUTEST

GC/FID CHROMATOGRAM

File: X:\1\data\G160630\GR6347.d
Date Acquired: 1 Jul 2016 2:11 am
Sample Name: MC46549-1, 137-P3B-MW101I-20160621

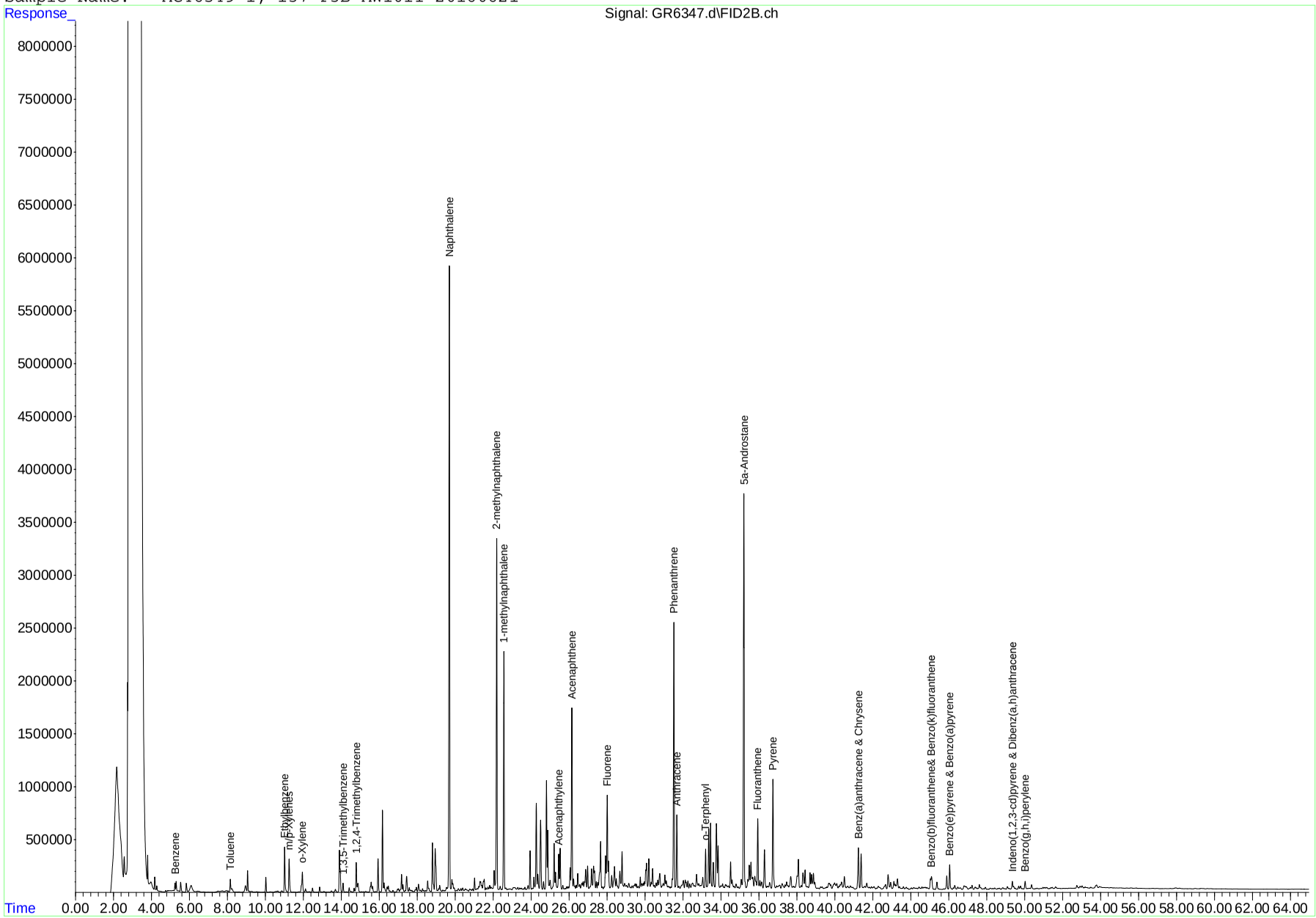

SGS ACCUTEST

GC/FID CHROMATOGRAM

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Date Acquired: 1 Jul 2016 12:52 am
Sample Name: OP47955-DUP1, MC46549-1, 137-P3B-MW101I-20160621

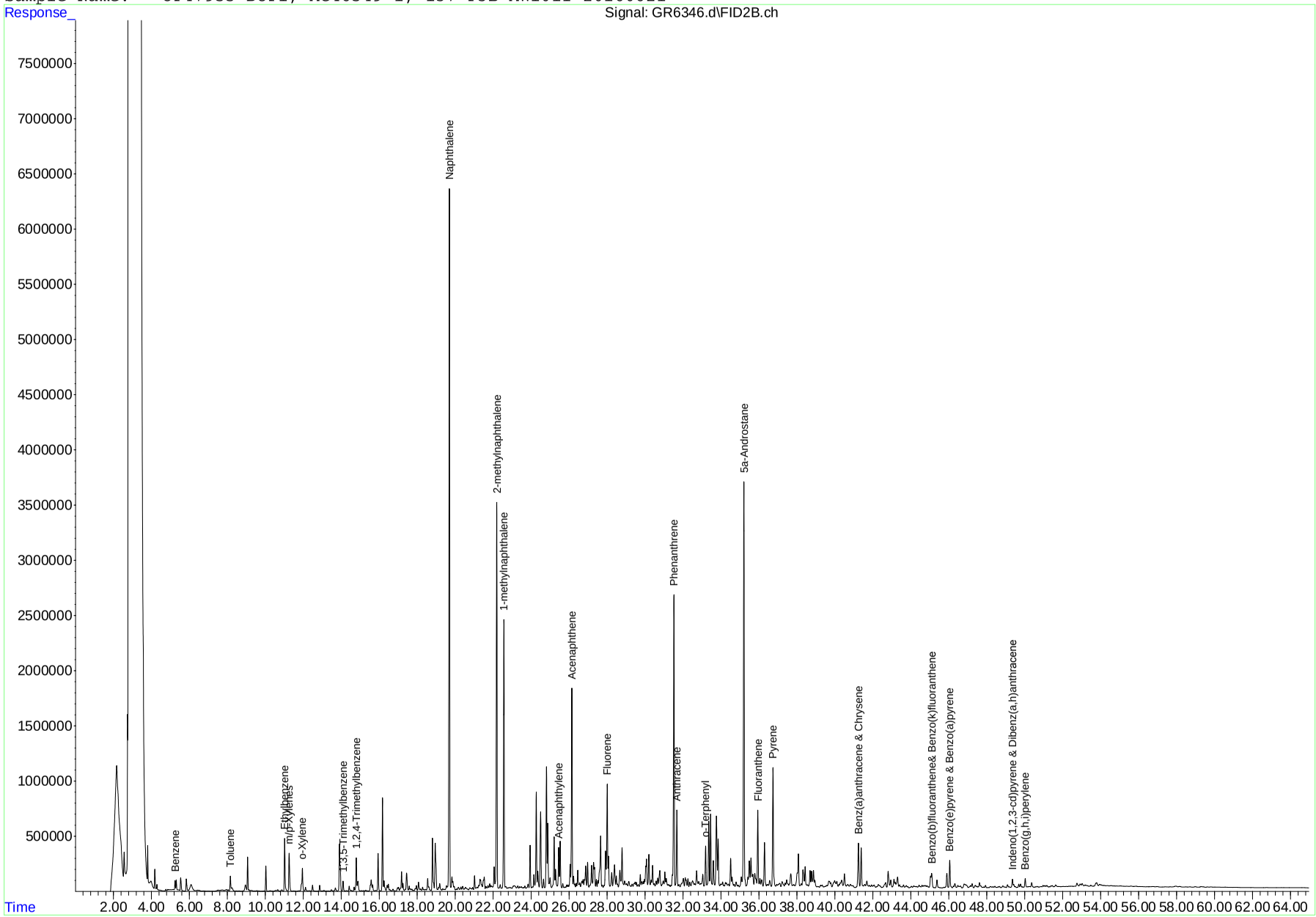

SGS ACCUTEST

GC/FID CHROMATOGRAM

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Date Acquired: 30 Jun 2016 2:27 pm
Sample Name: OP47955-MB, Method Blank

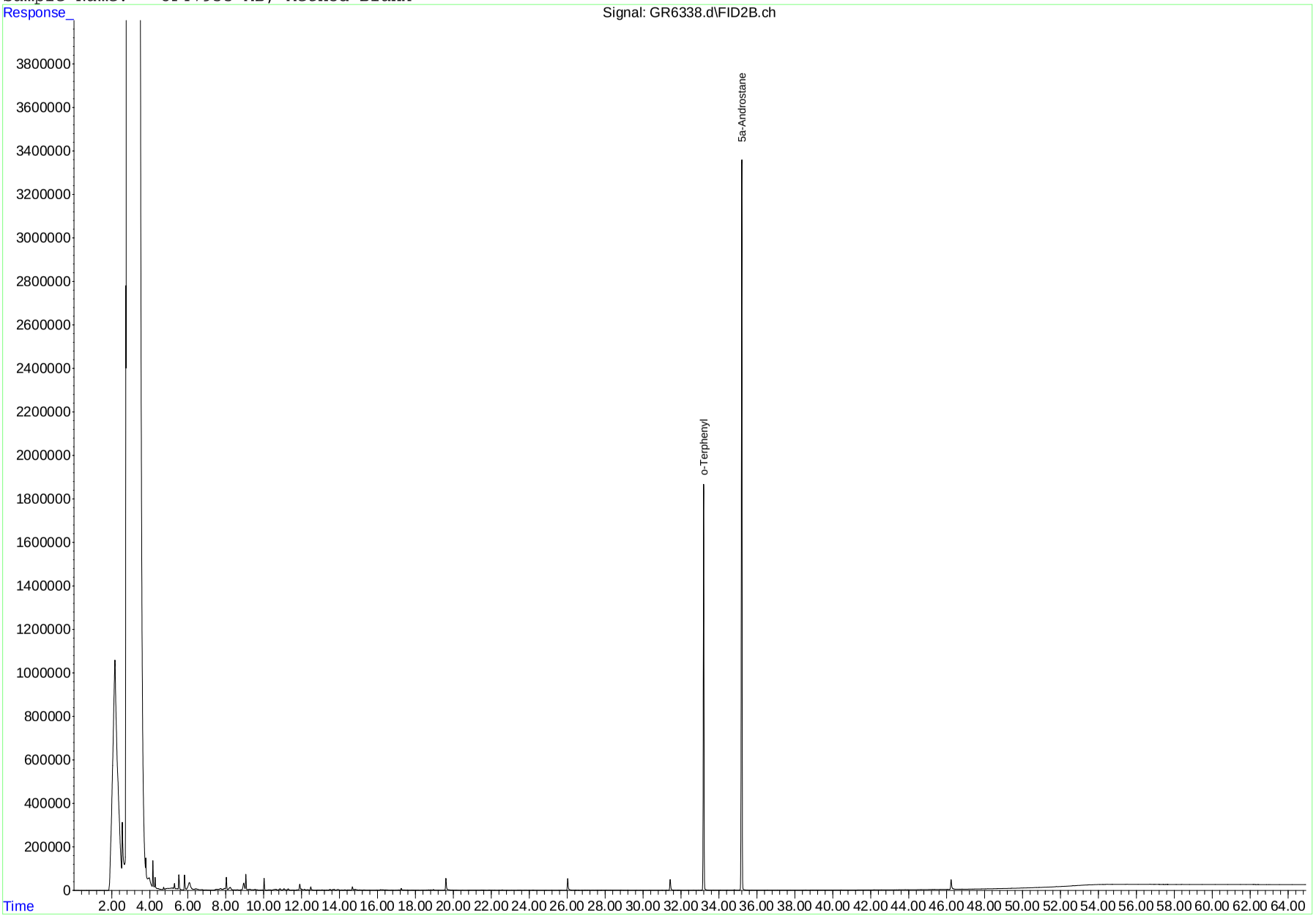

SGS ACCUTEST

GC/FID CHROMATOGRAM

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Date Acquired: 30 Jun 2016 3:45 pm
Sample Name: OP47955-BS1

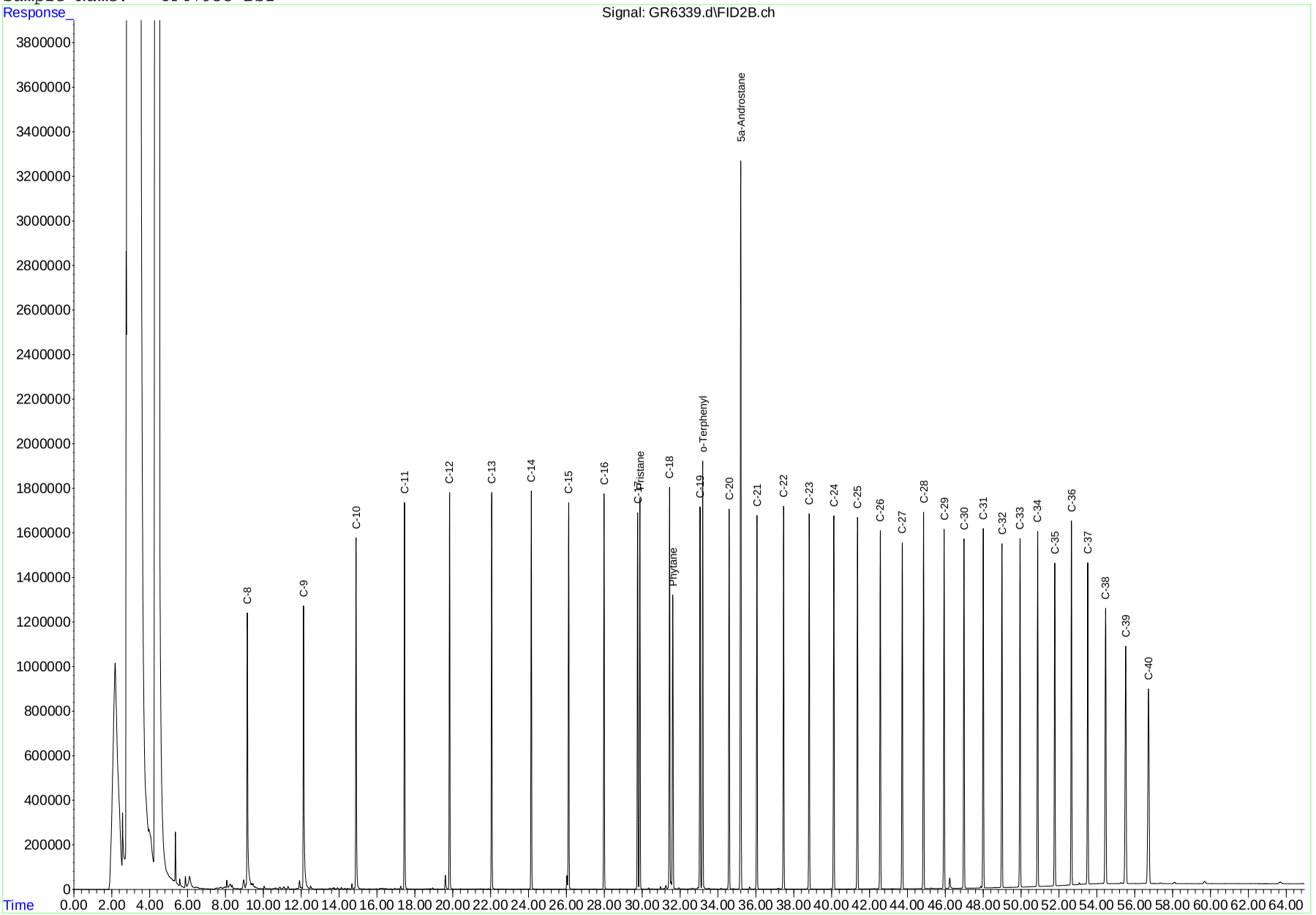

# APPENDIX B

## MAH AND PAH HISTOGRAMS

# 137-P3B-MW10I-20160621

MC46549-1

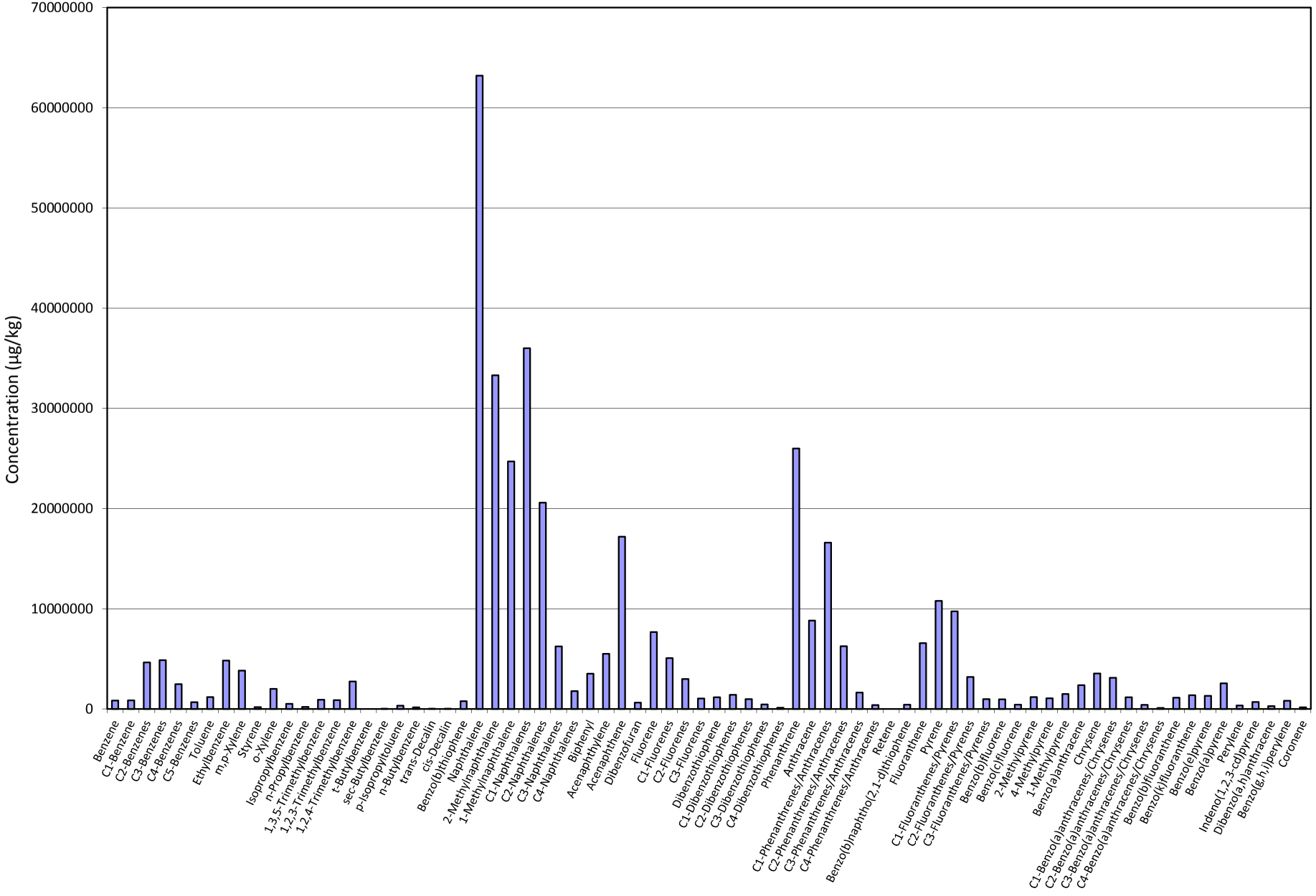

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OP47956-DUP1

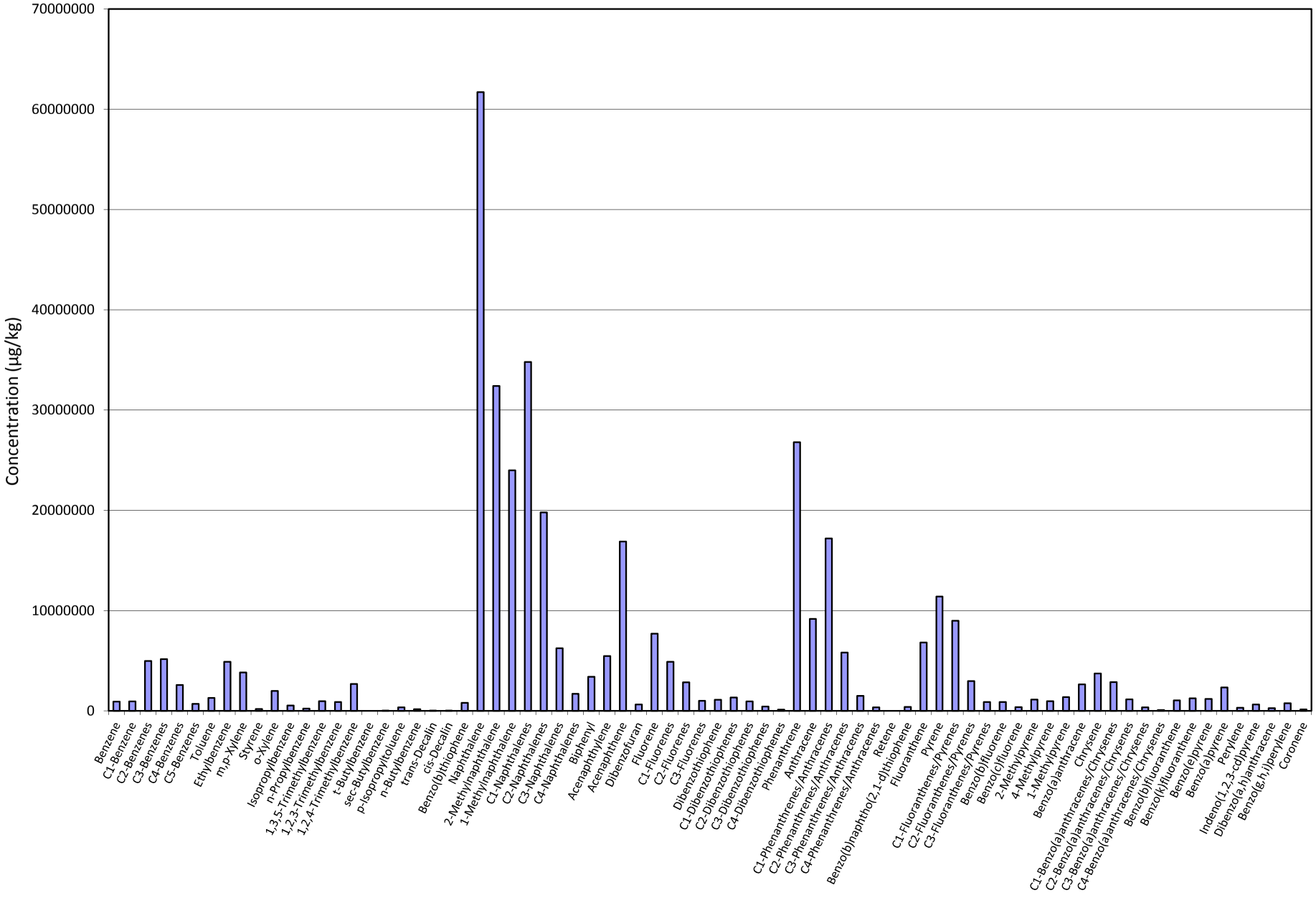

# APPENDIX C

## EXTRACTED ION CURRENT PROFILES (EICPs)

GC/MS EXTRACTED ION CHROMATOGRAM

File: S:\1\data\S160705\S39591.D
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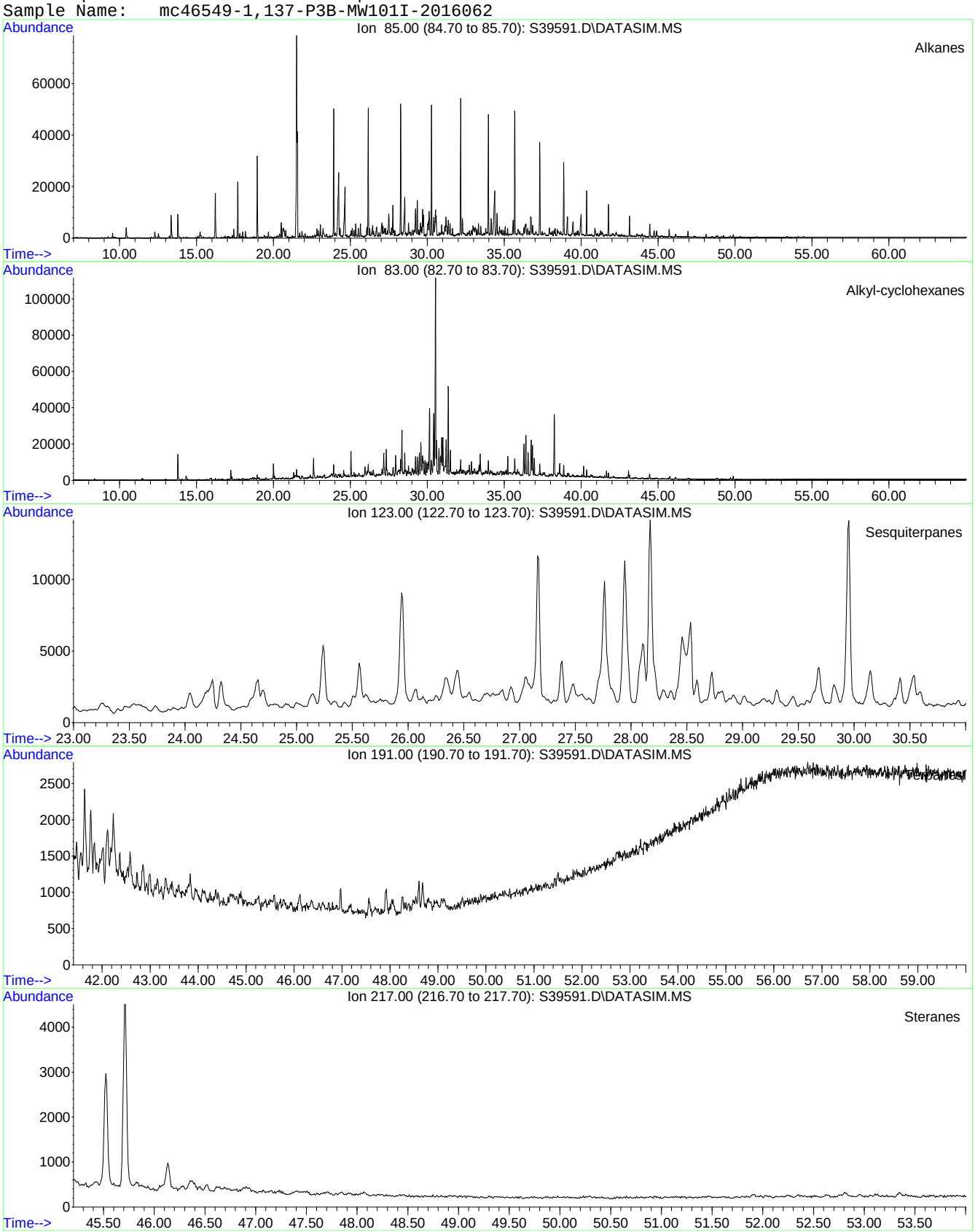

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Date Acquired: 5 Jul 2016 7:07 pm
Sample Name: mc46549-1,137-P3B-MW101I-2016062

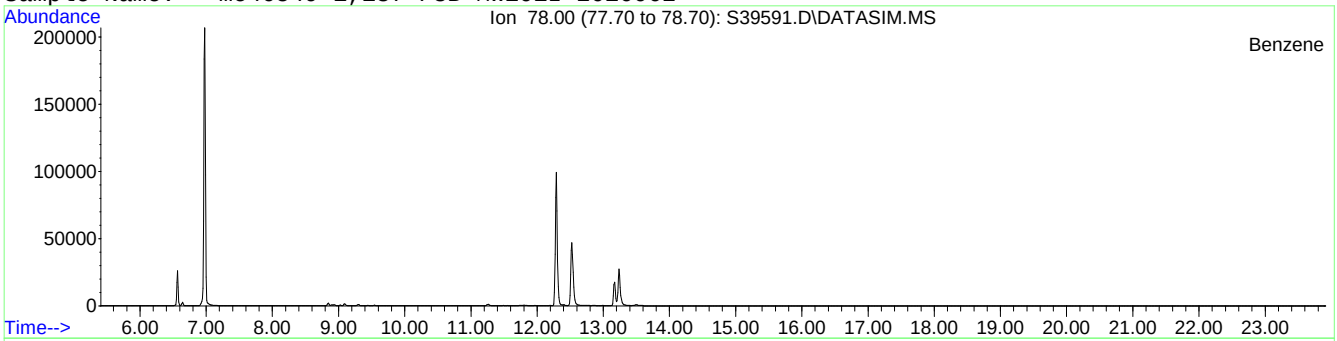


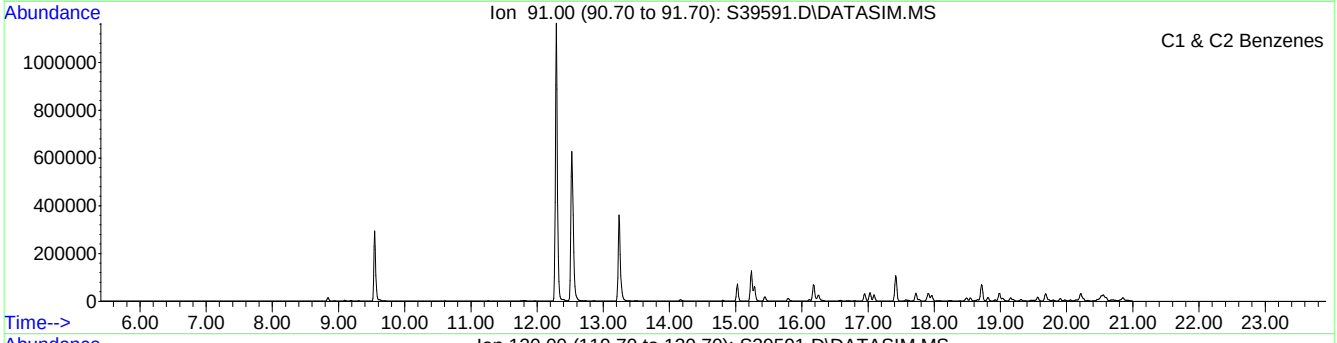


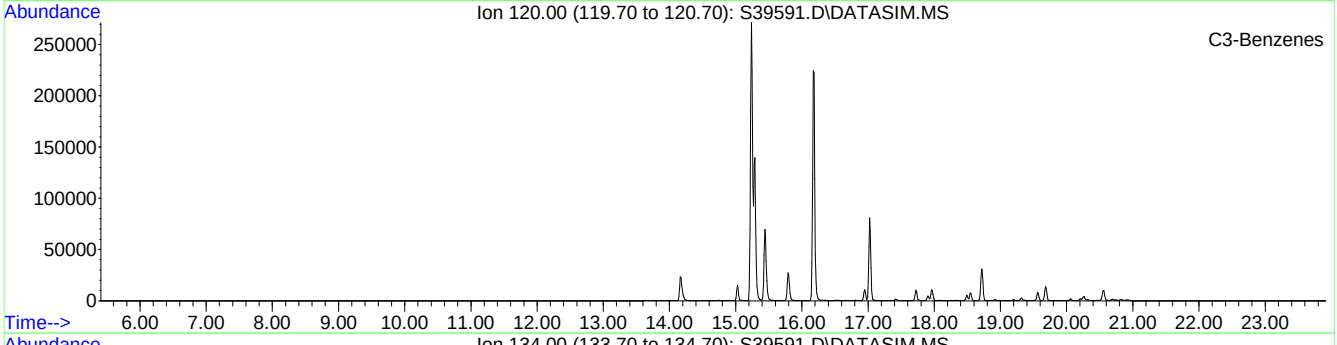


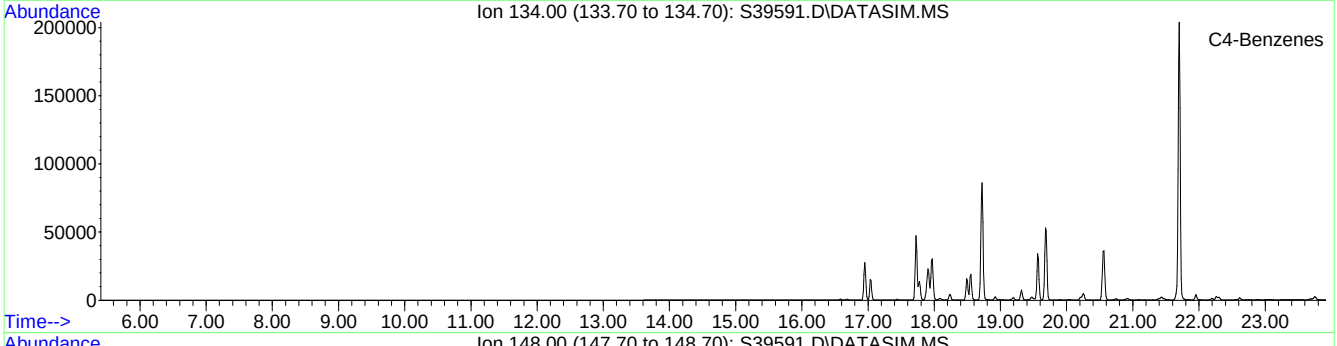


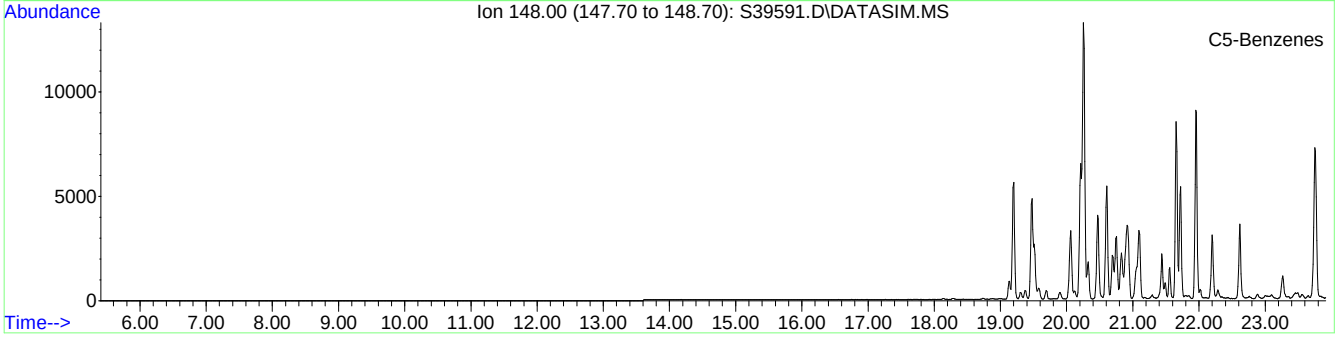

GC/MS EXTRACTED ION CHROMATOGRAM

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Date Acquired: 5 Jul 2016 7:07 pm
Sample Name: mc46549-1,137-P3B-MW101I-2016062

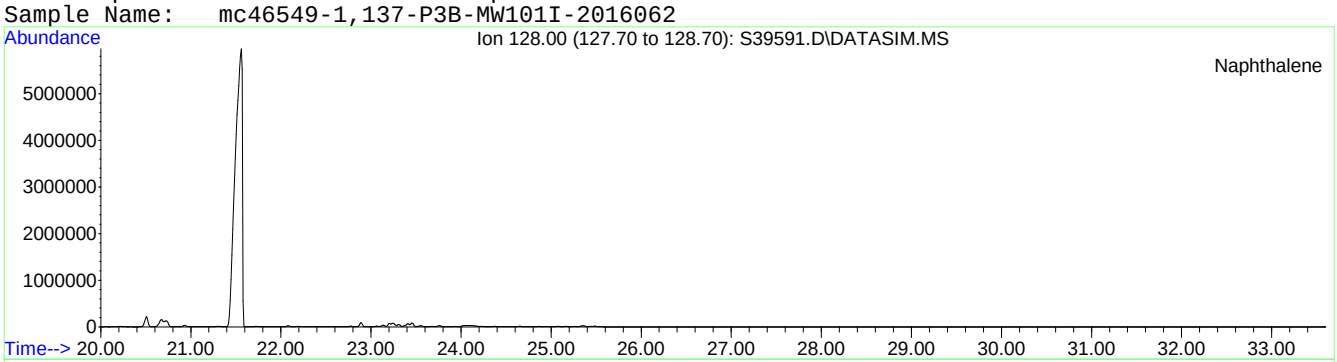


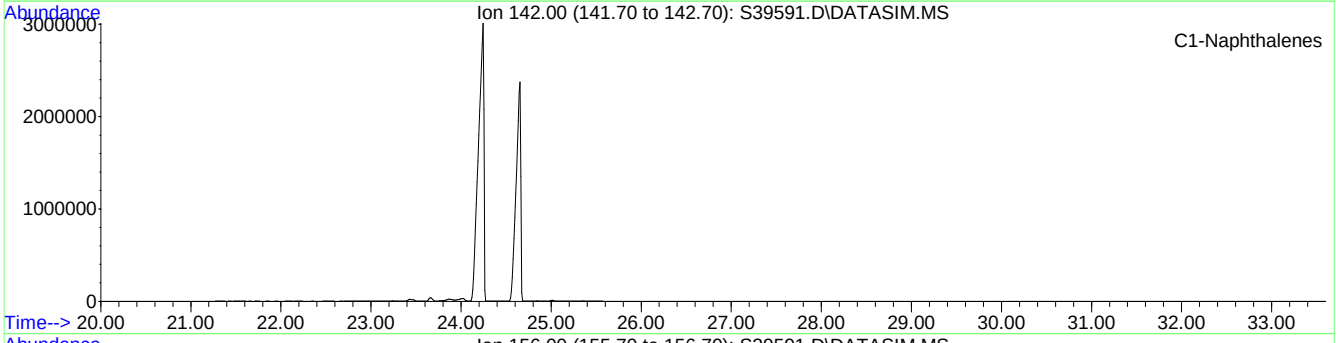


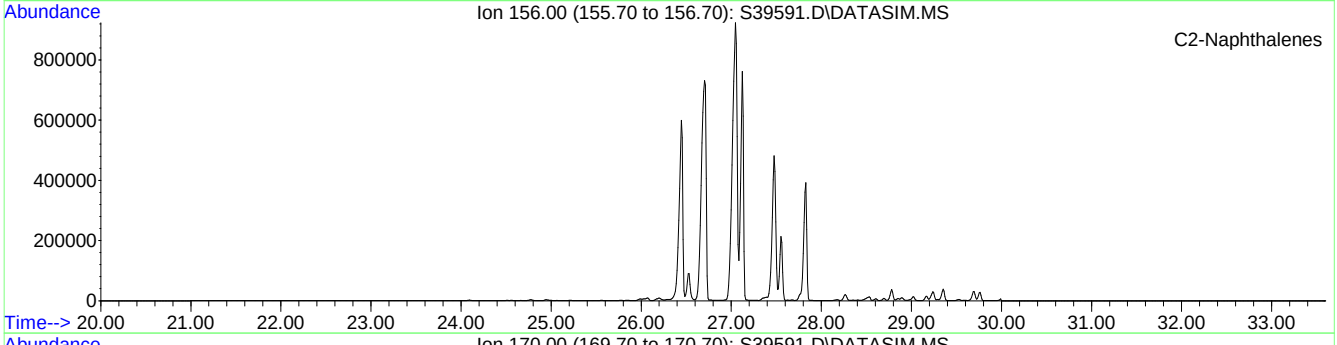


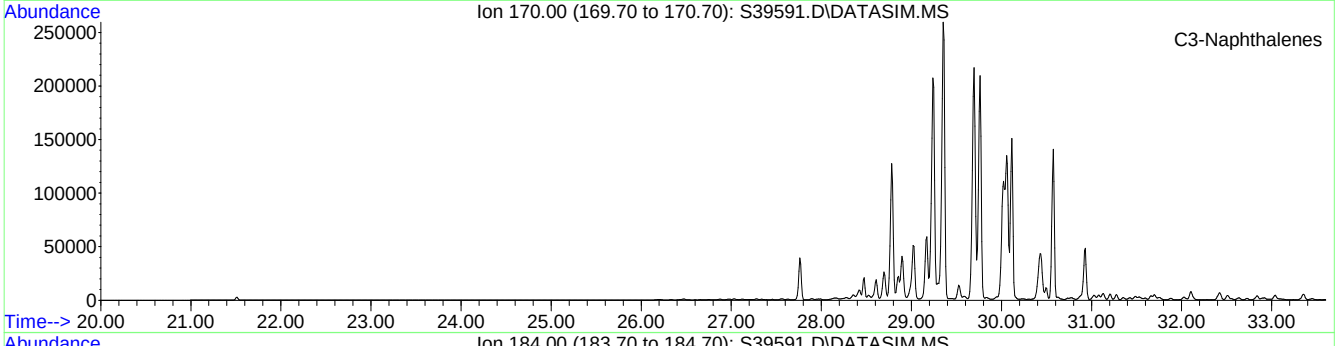


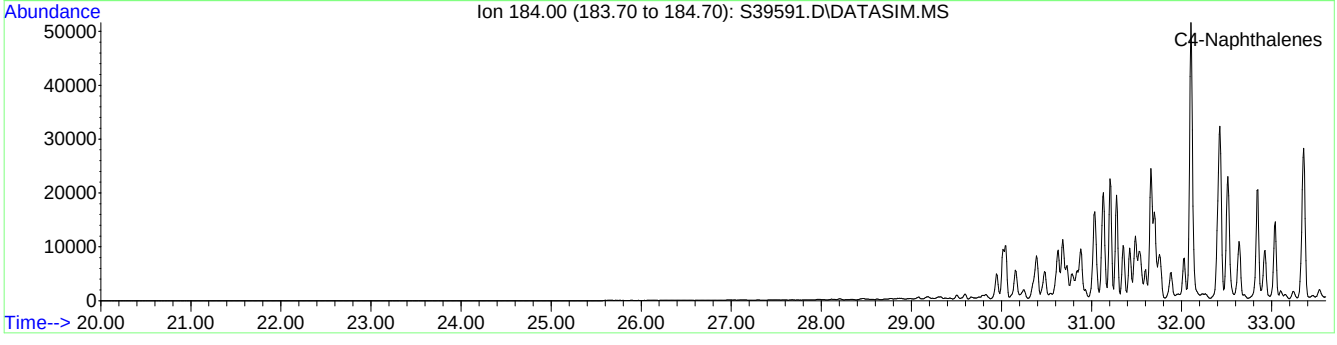

SGS ACCUTEST

GC/MS EXTRACTED ION CHROMATOGRAM

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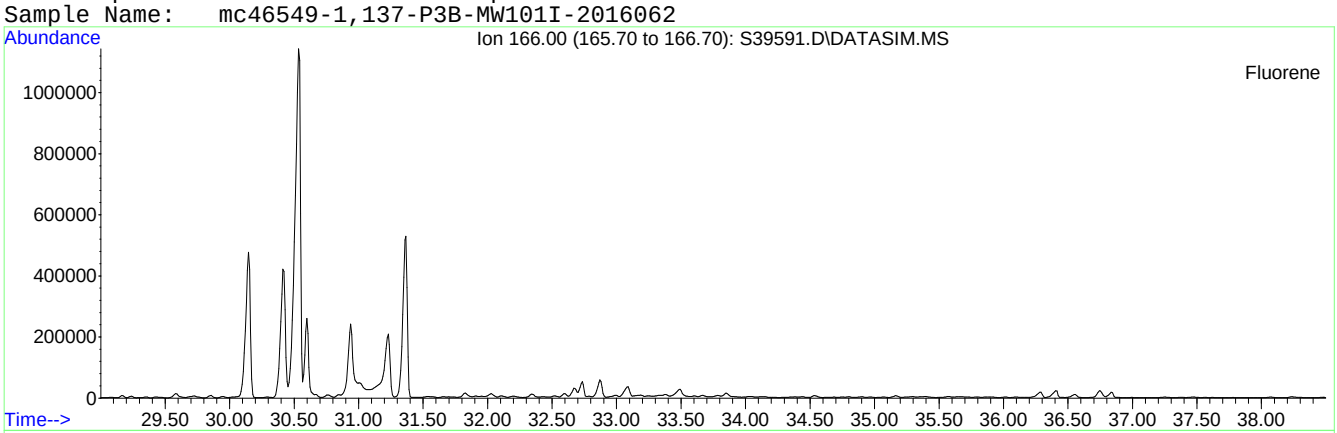


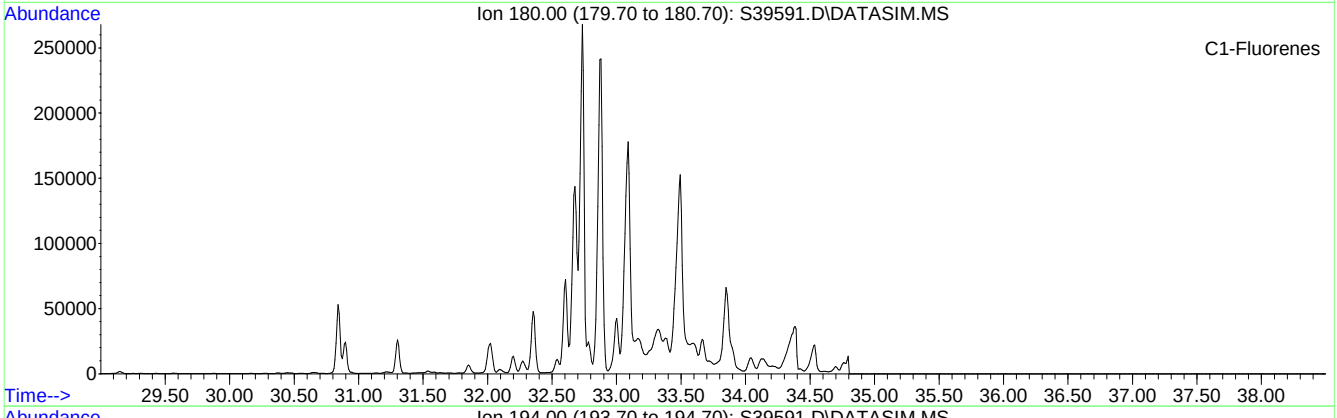


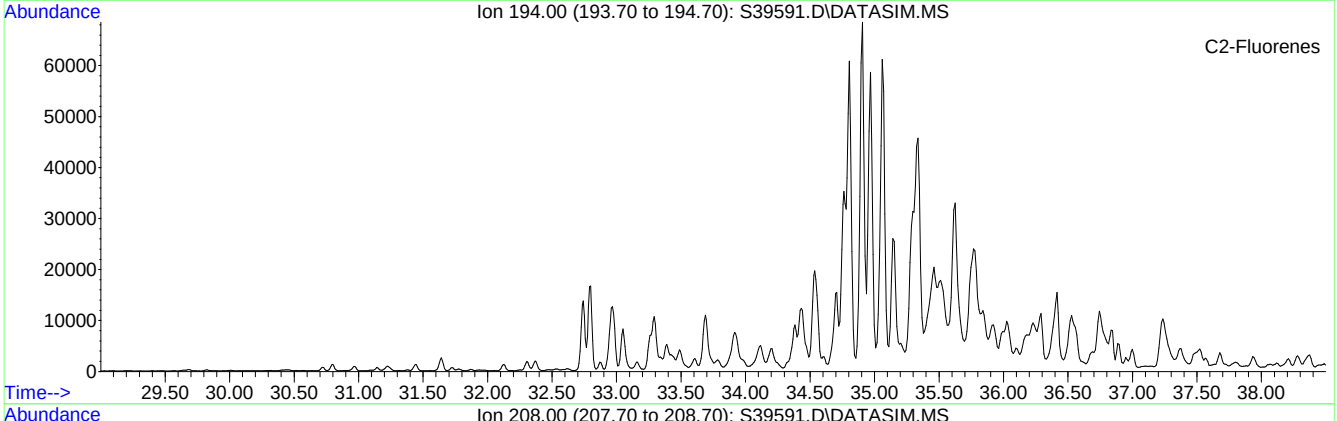


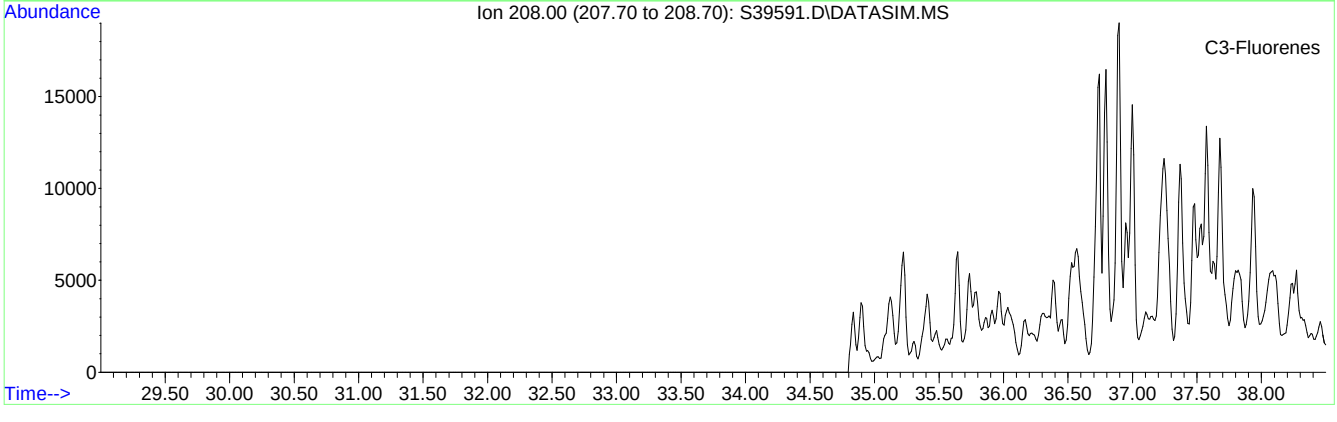

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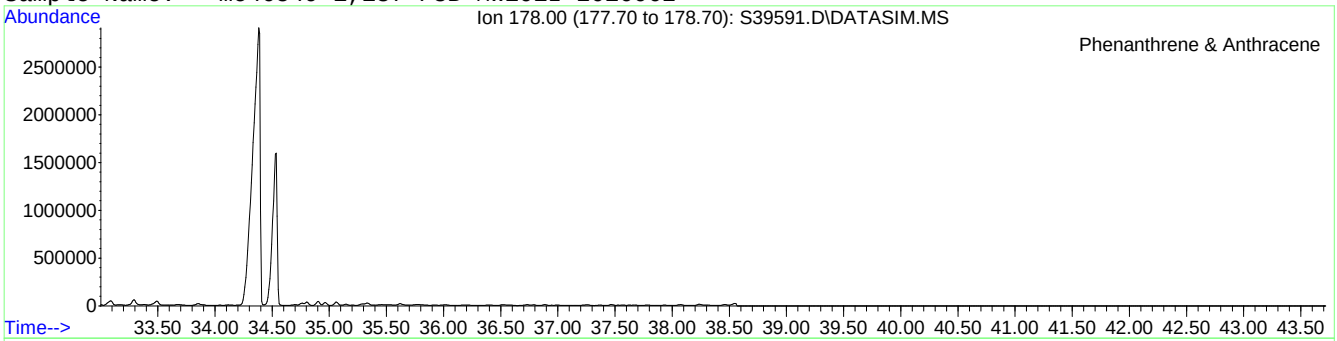


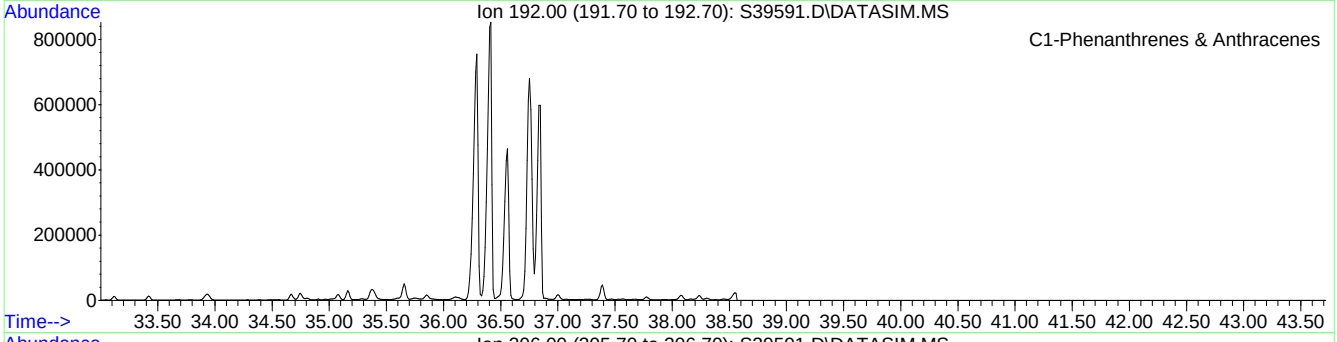


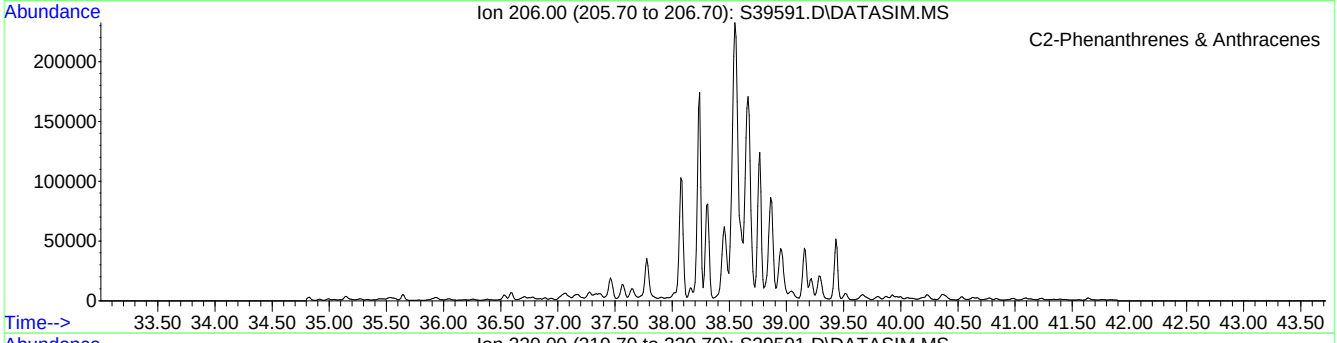


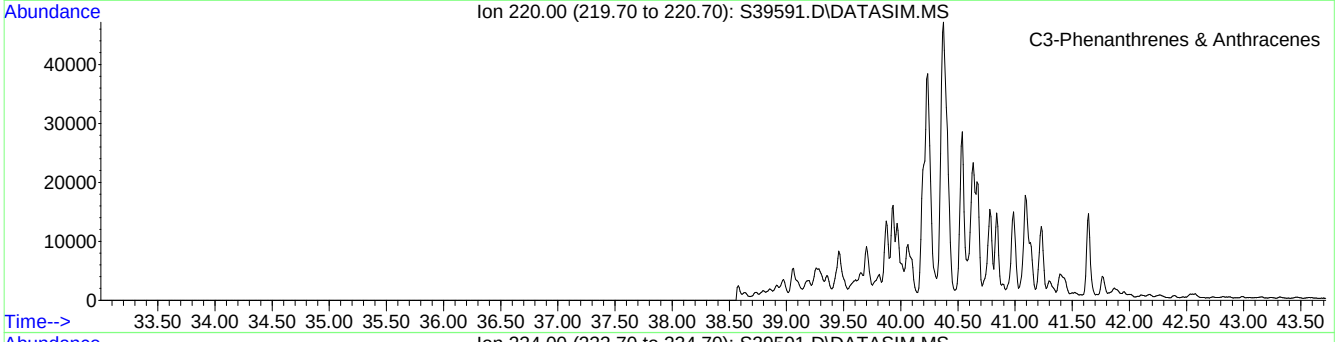


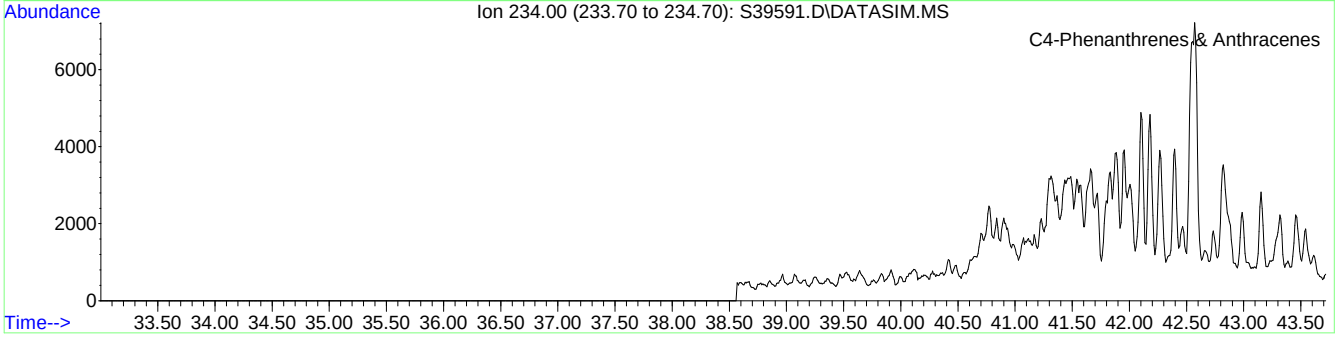

GC/MS EXTRACTED ION CHROMATOGRAM

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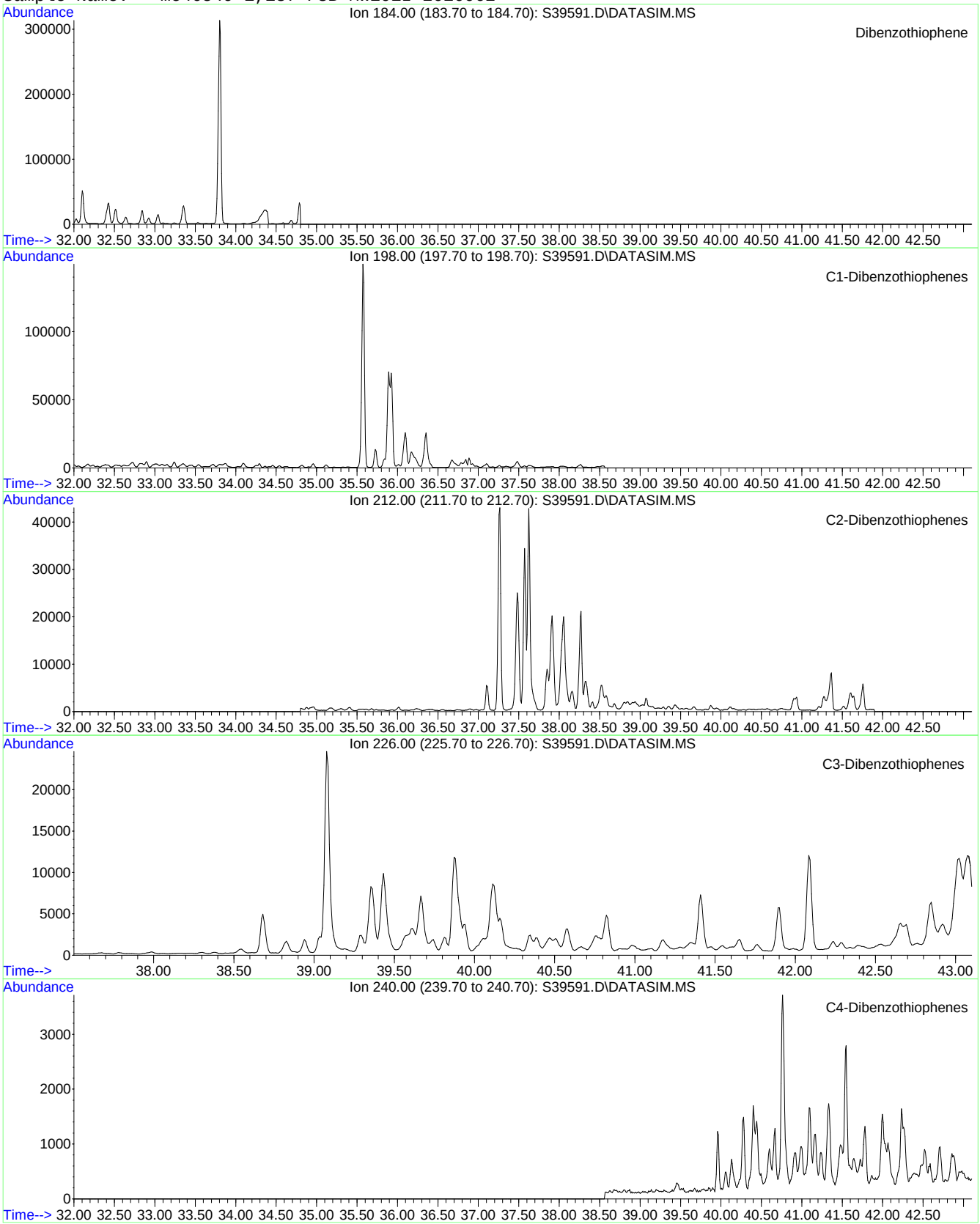

GC/MS EXTRACTED ION CHROMATOGRAM

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Sample Name: mc46549-1,137-P3B-MW101I-2016062

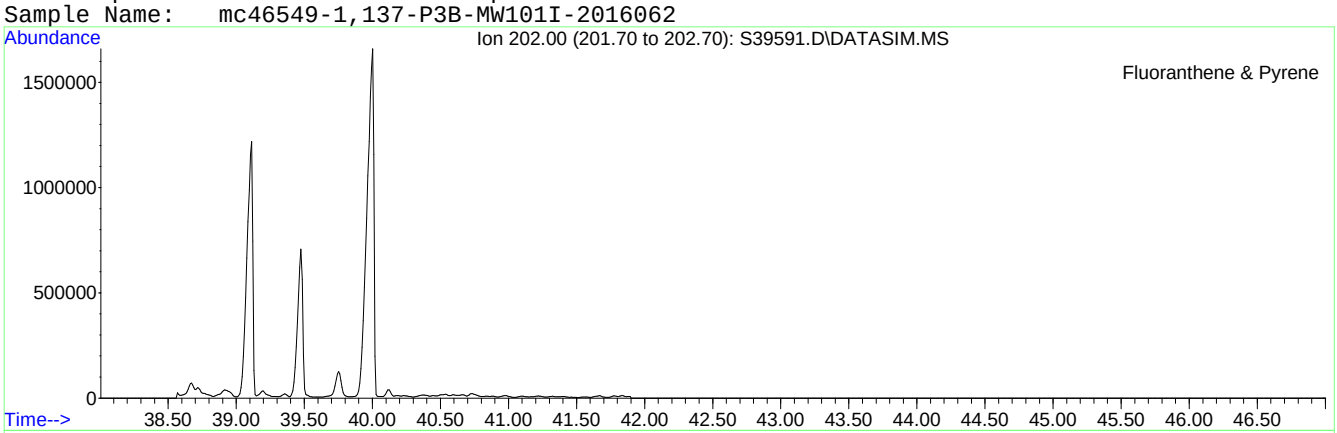


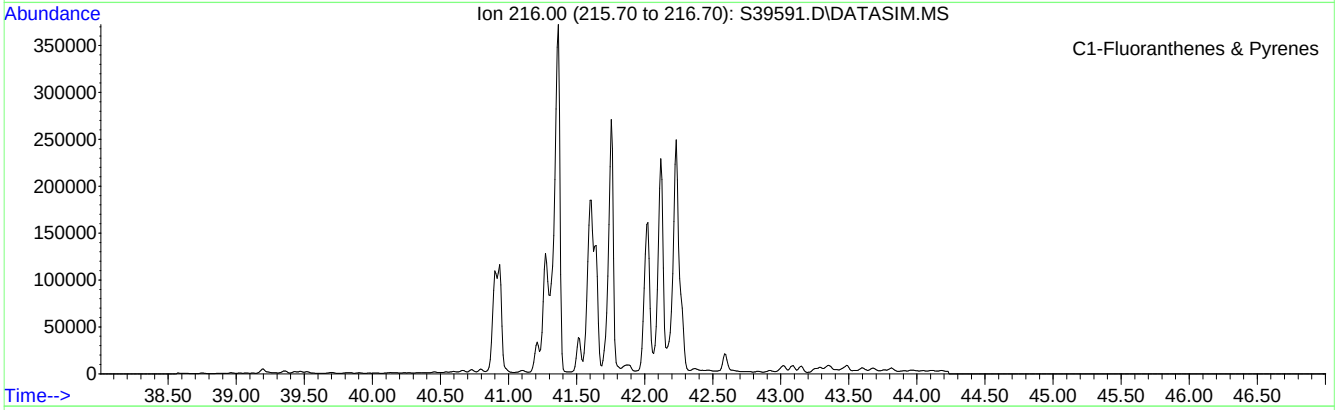


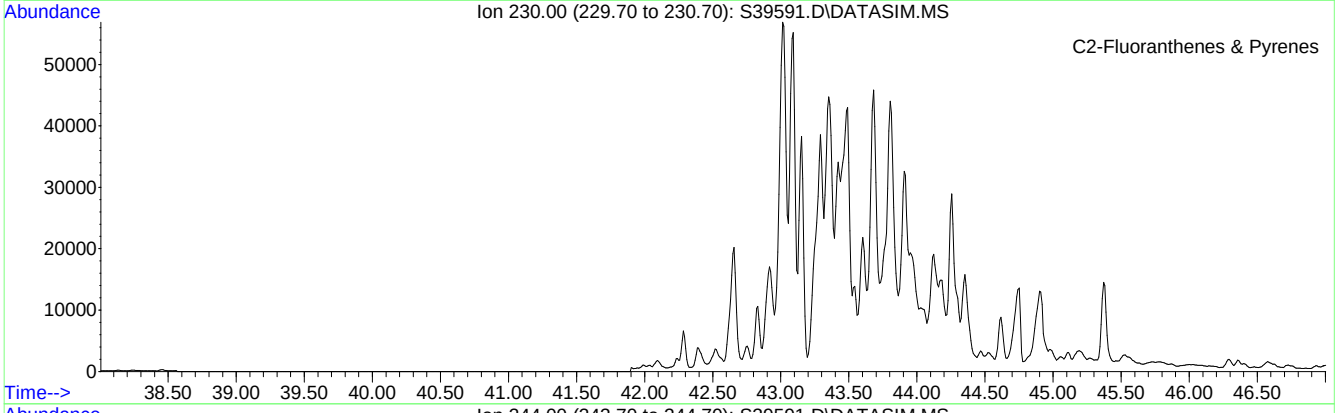


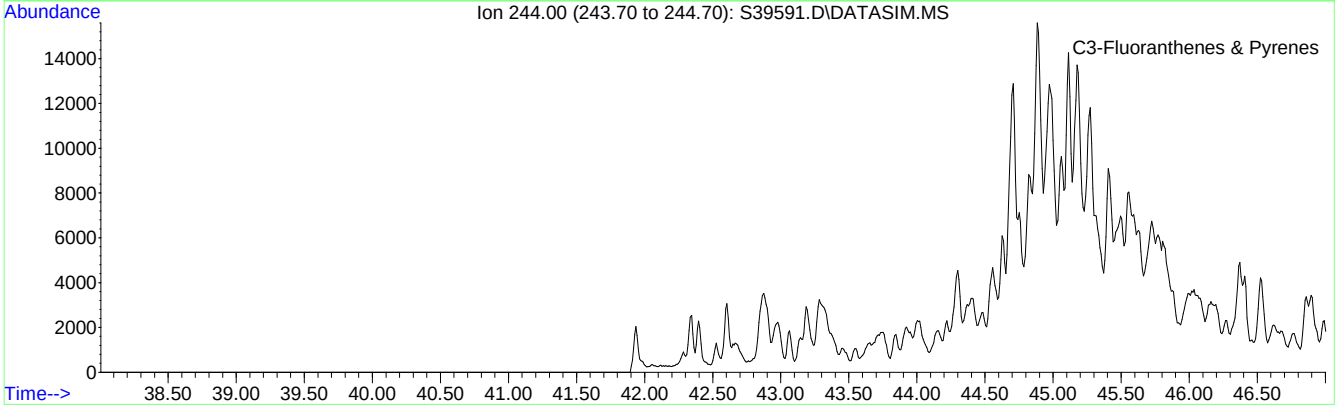

GC/MS EXTRACTED ION CHROMATOGRAM

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Date Acquired: 5 Jul 2016 7:07 pm
Sample Name: mc46549-1,137-P3B-MW101I-2016062

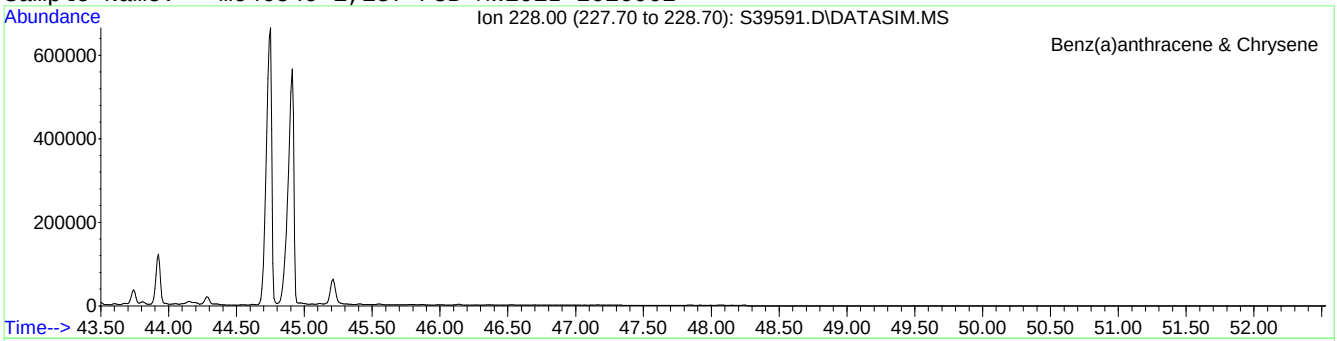


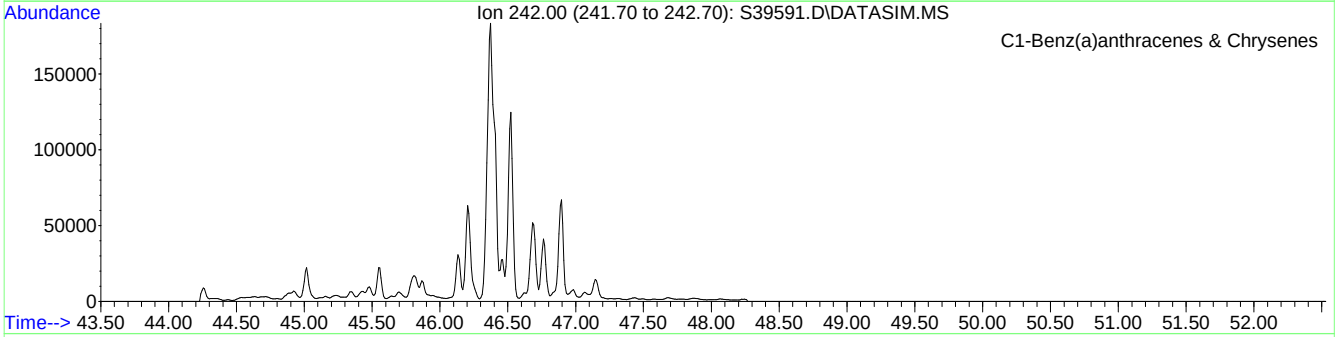


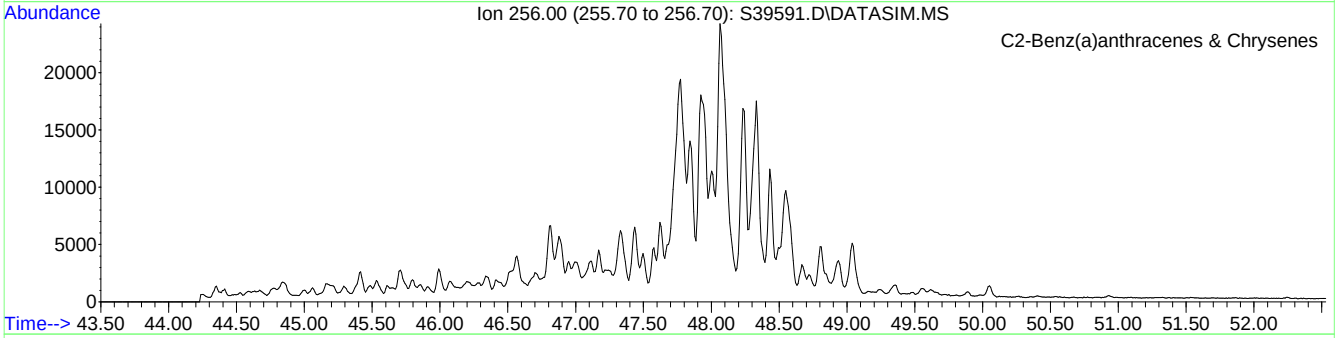


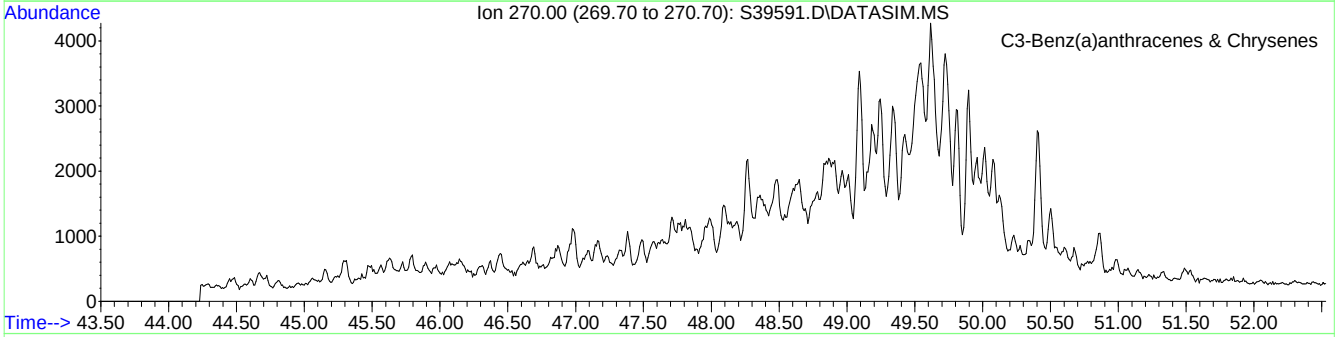


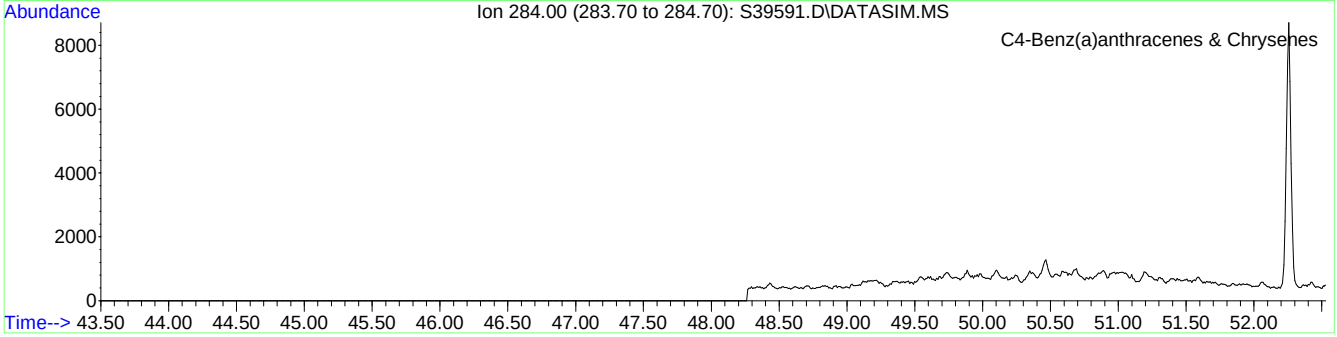

SGS ACCUTEST

GC/MS TOTAL ION CHROMATOGRAM

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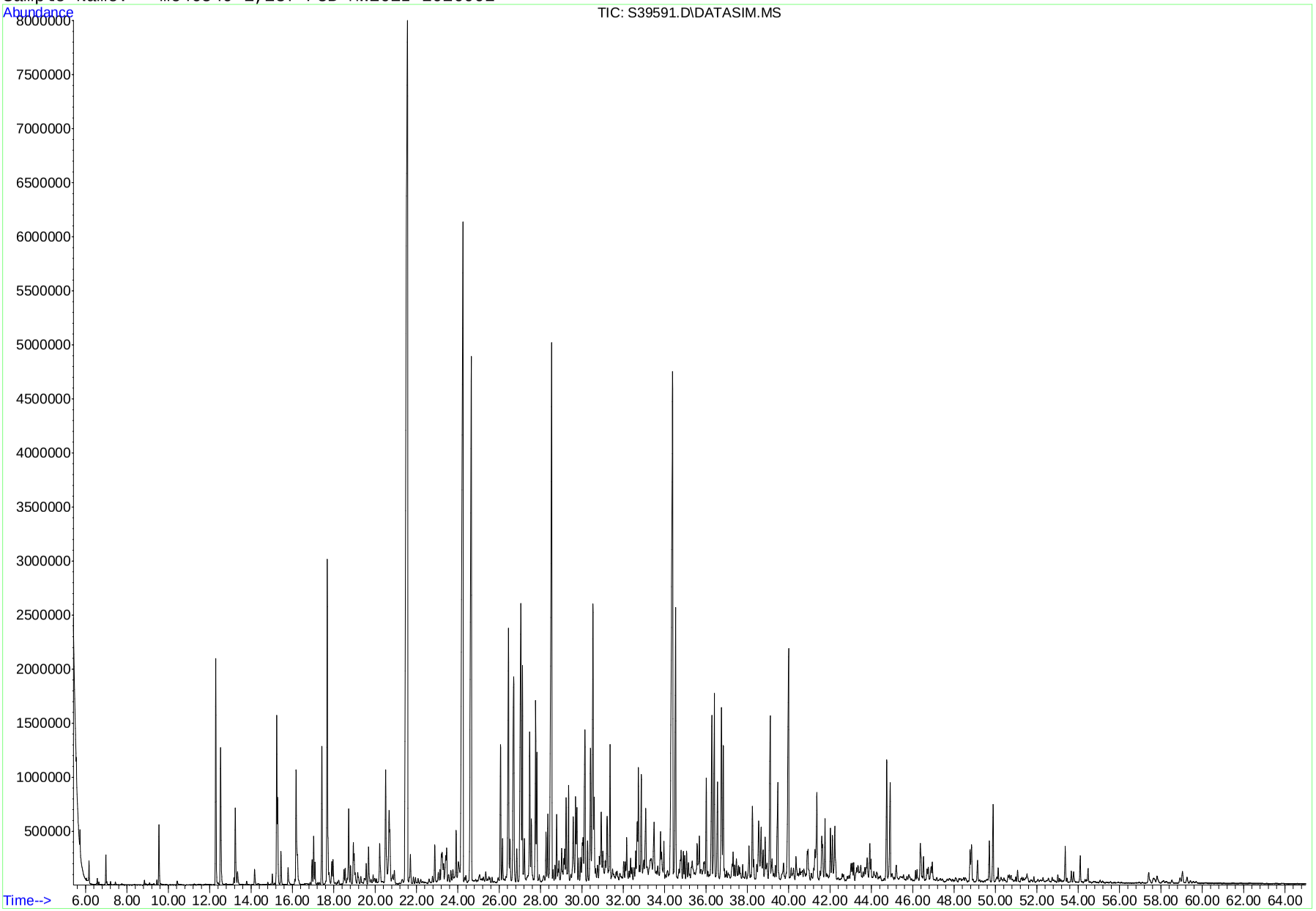

GC/MS EXTRACTED ION CHROMATOGRAM

File: S:\1\data\S160705\S39589.D
Date Acquired: 5 Jul 2016 4:38 pm
Sample Name: op47956-dup1,mc46549-1,137-P3B-MW101I-2016062

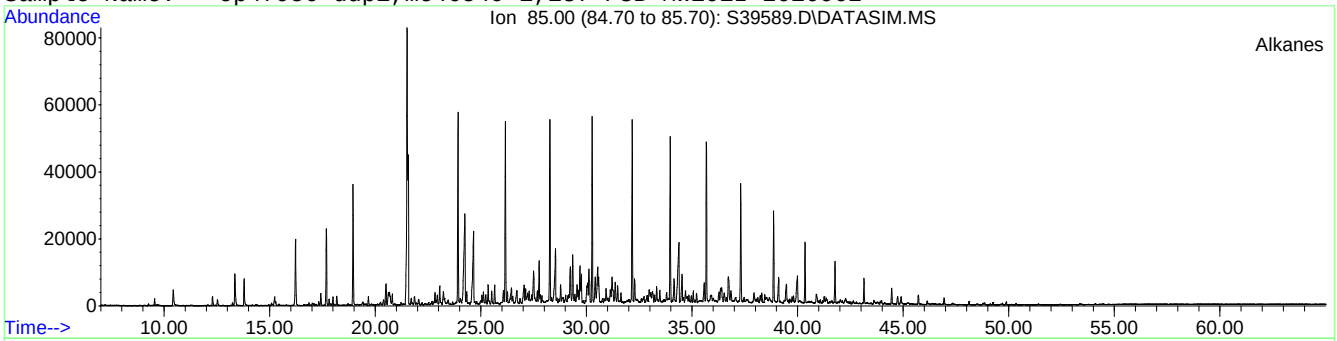


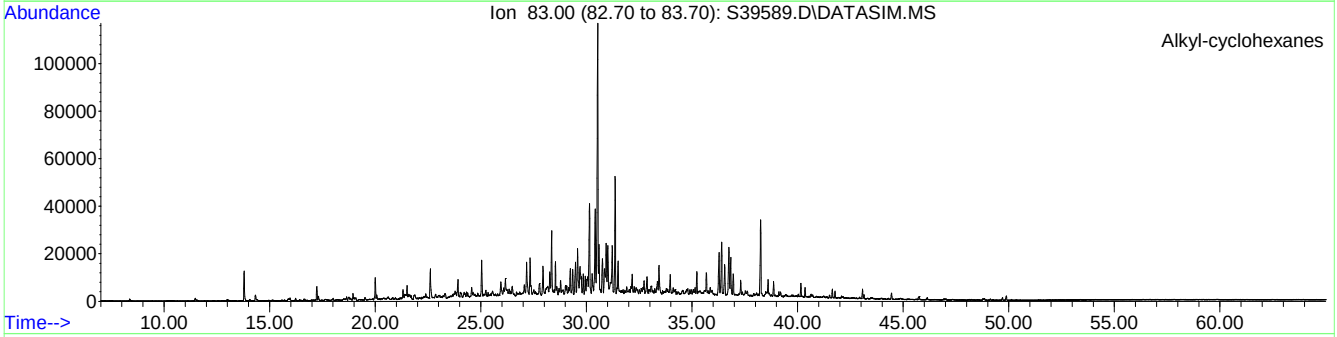


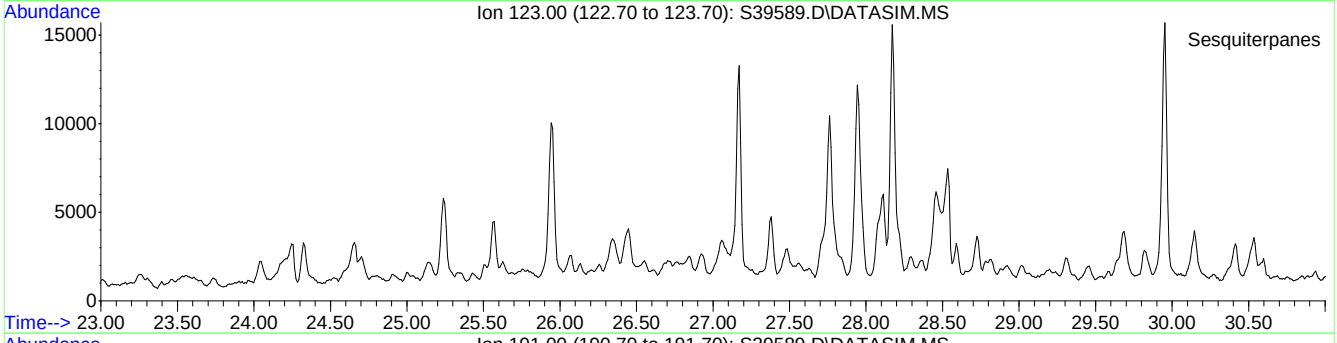


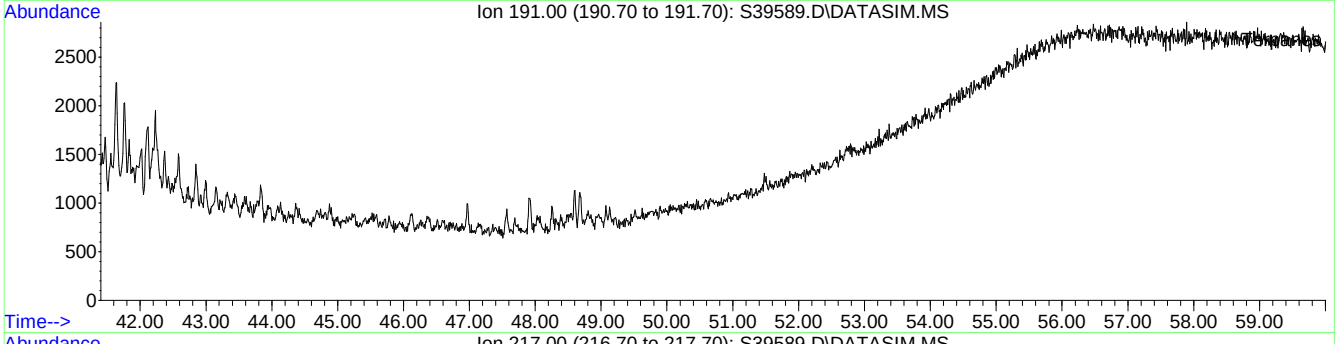


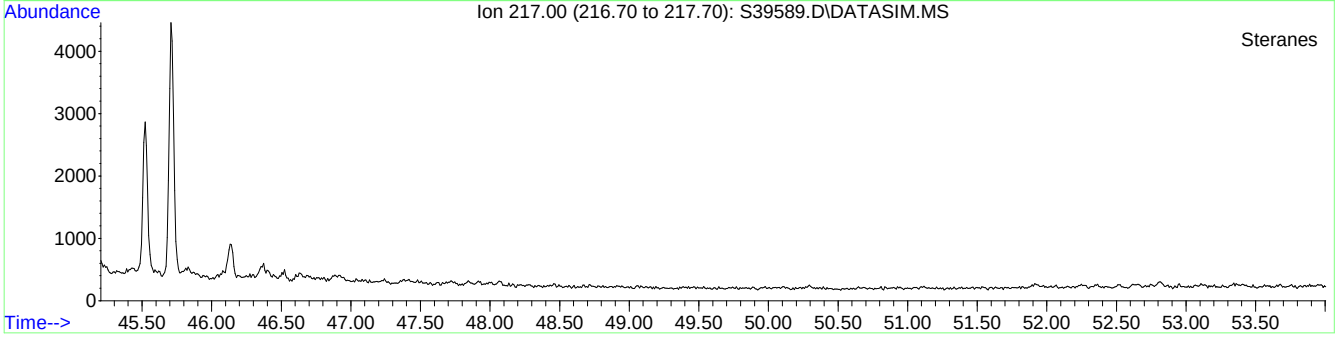

SGS ACCUTEST

GC/MS EXTRACTED ION CHROMATOGRAM

File: S:\1\data\S160705\S39589.D
Date Acquired: 5 Jul 2016 4:38 pm
Sample Name: op47956-dup1,mc46549-1,137-P3B-MW101I-2016062

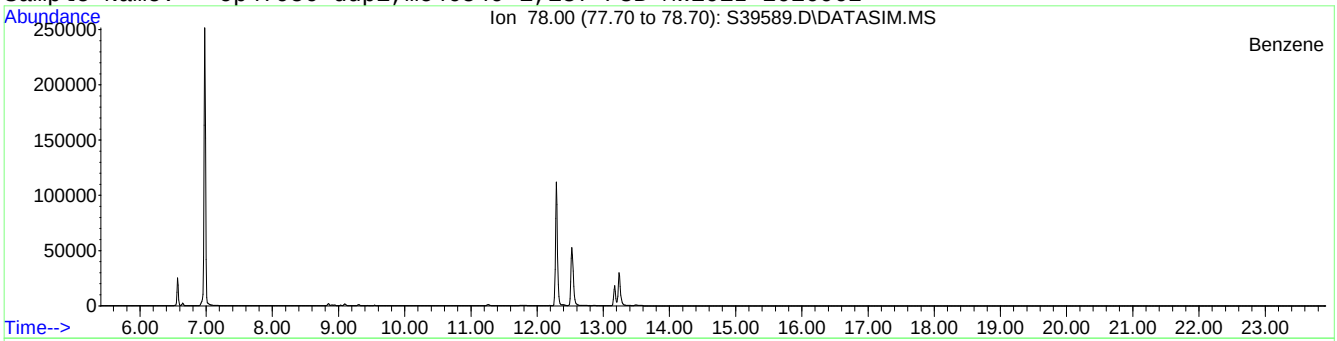


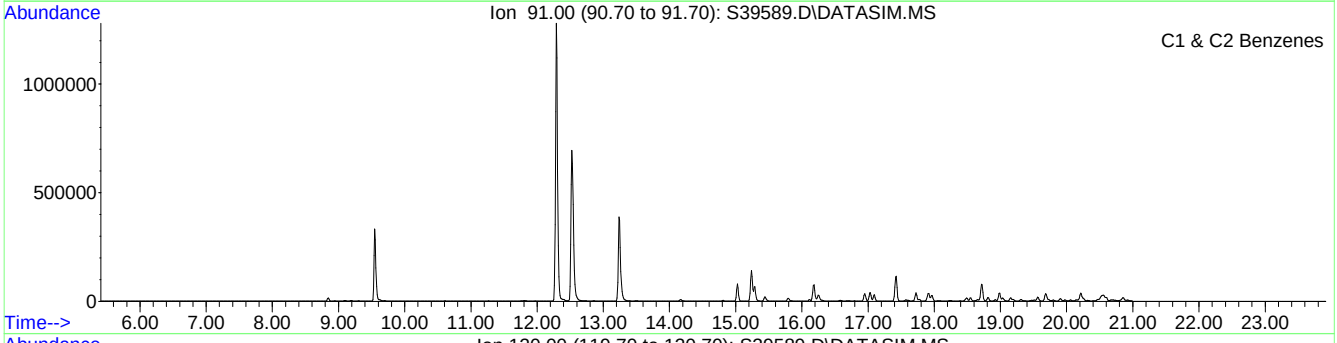


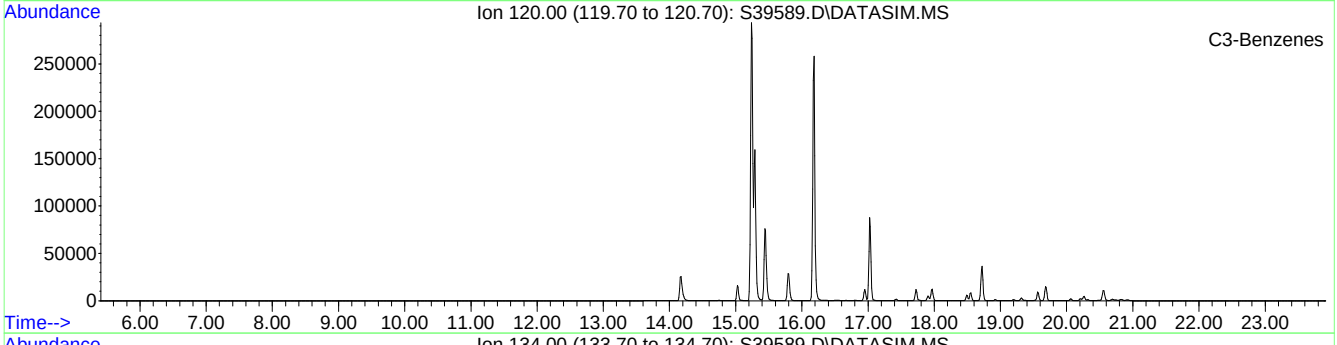


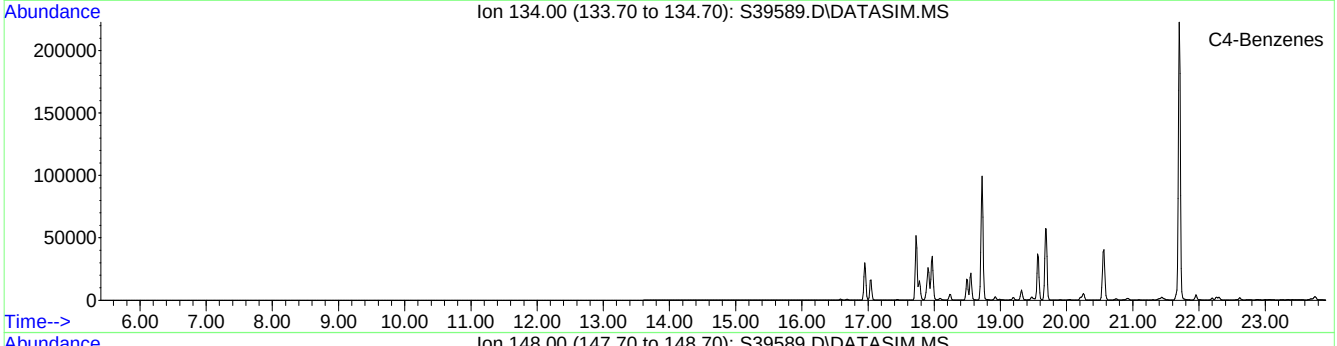


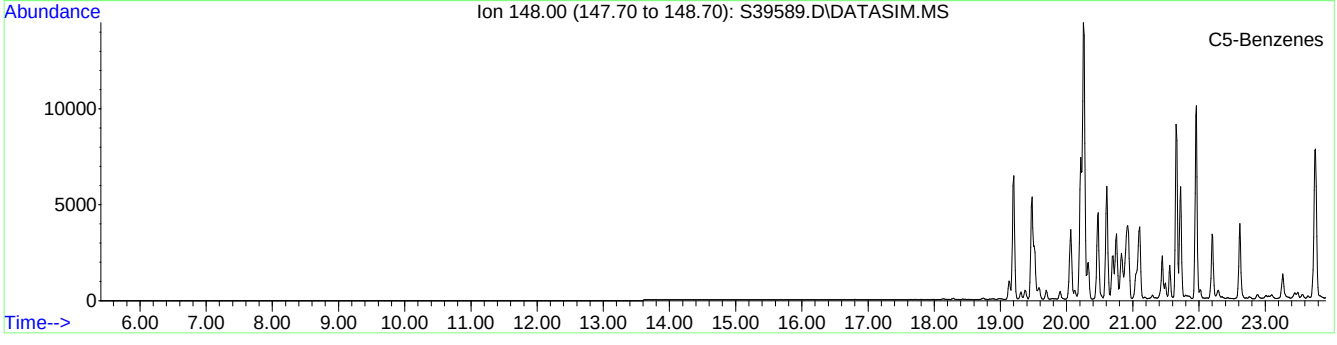

GC/MS EXTRACTED ION CHROMATOGRAM

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Date Acquired: 5 Jul 2016 4:38 pm
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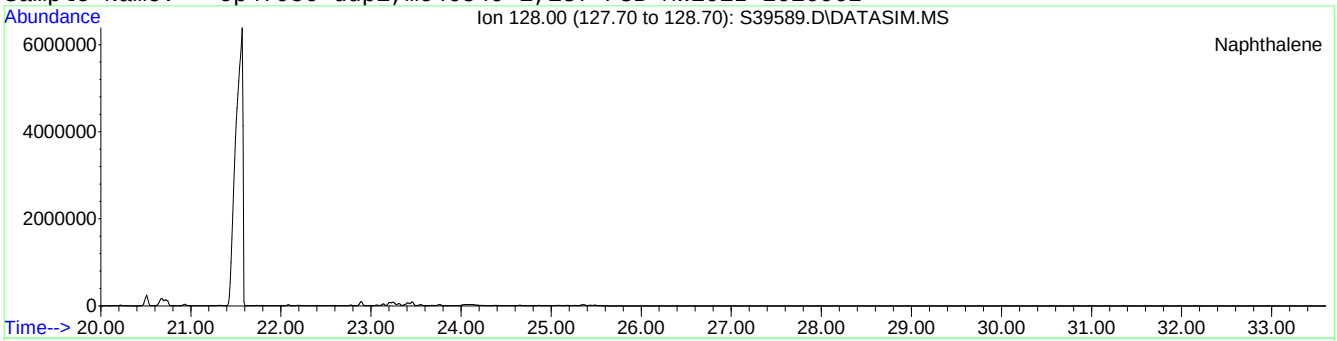


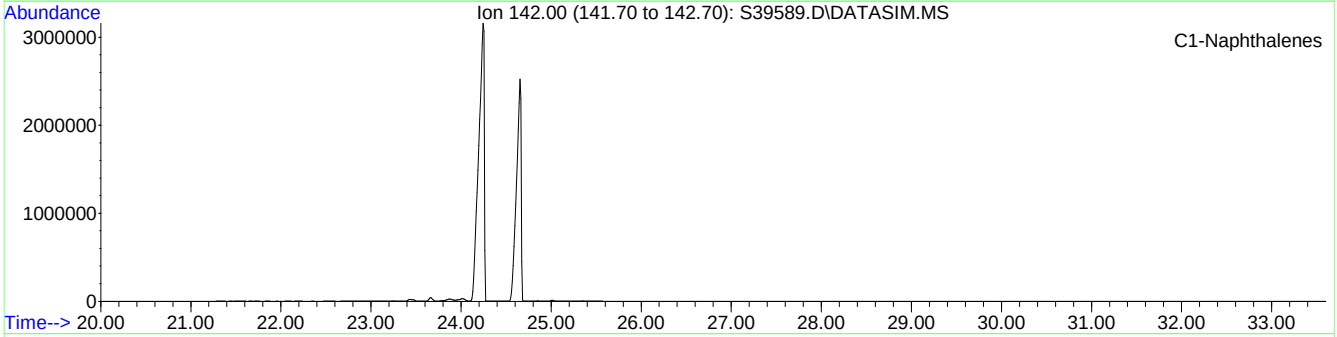


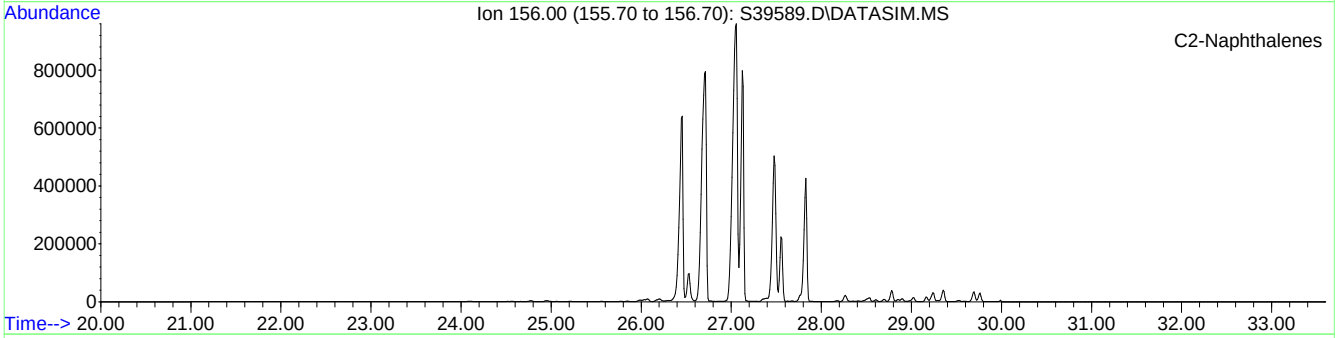


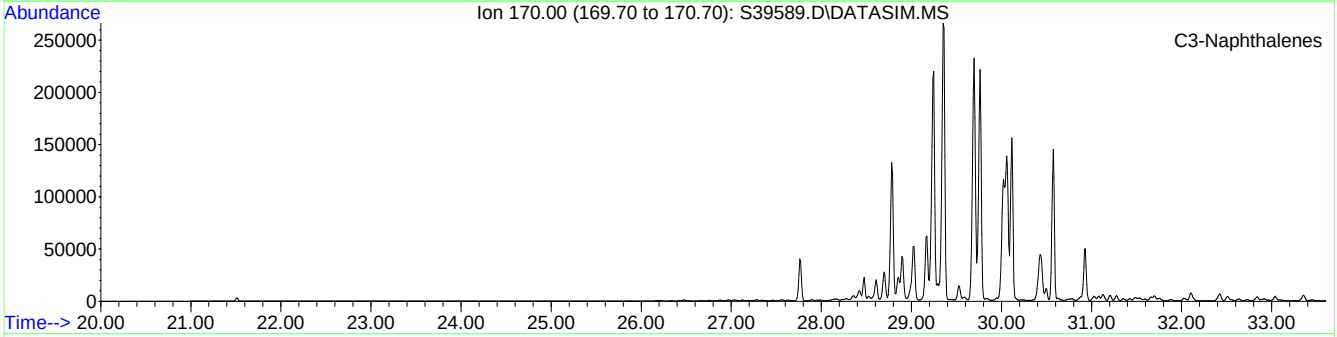


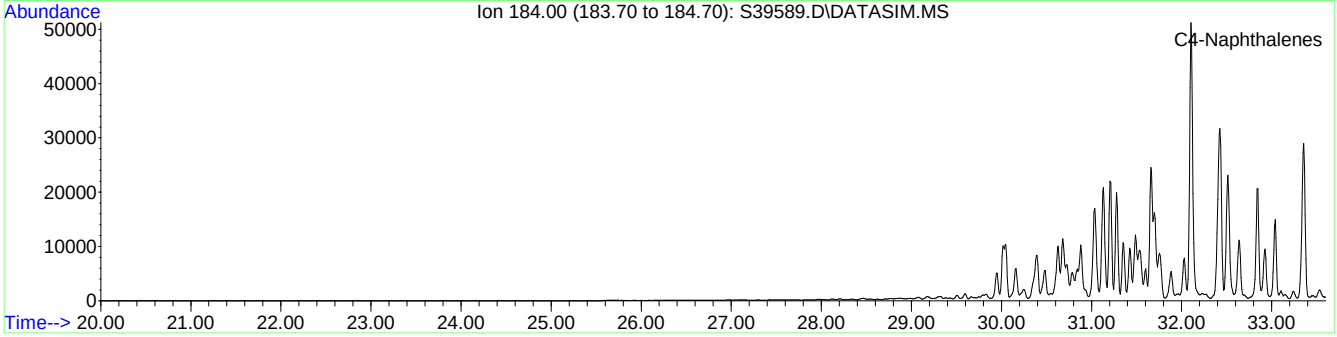

SGS ACCUTEST

GC/MS EXTRACTED ION CHROMATOGRAM

File: S:\1\data\S160705\S39589.D
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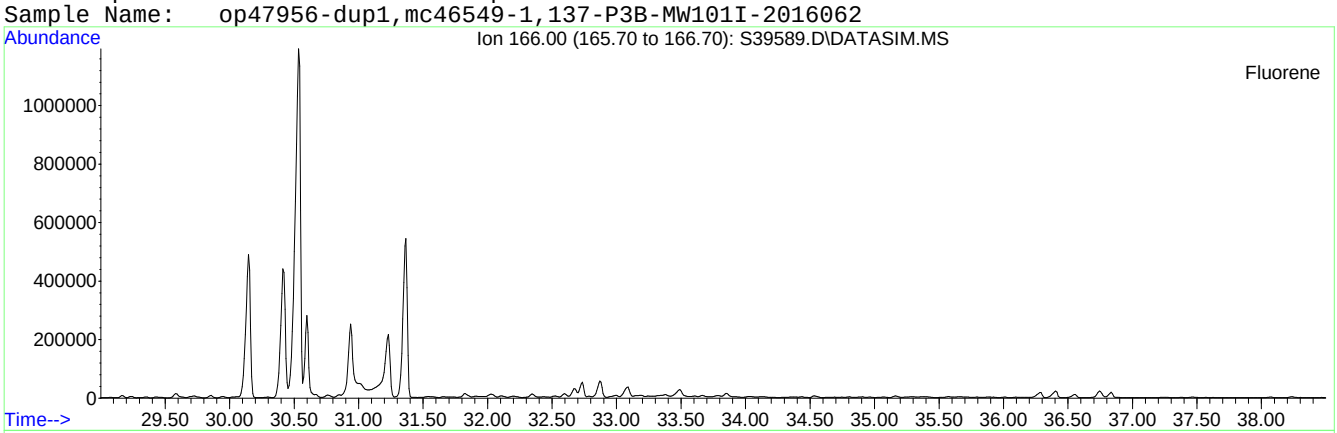


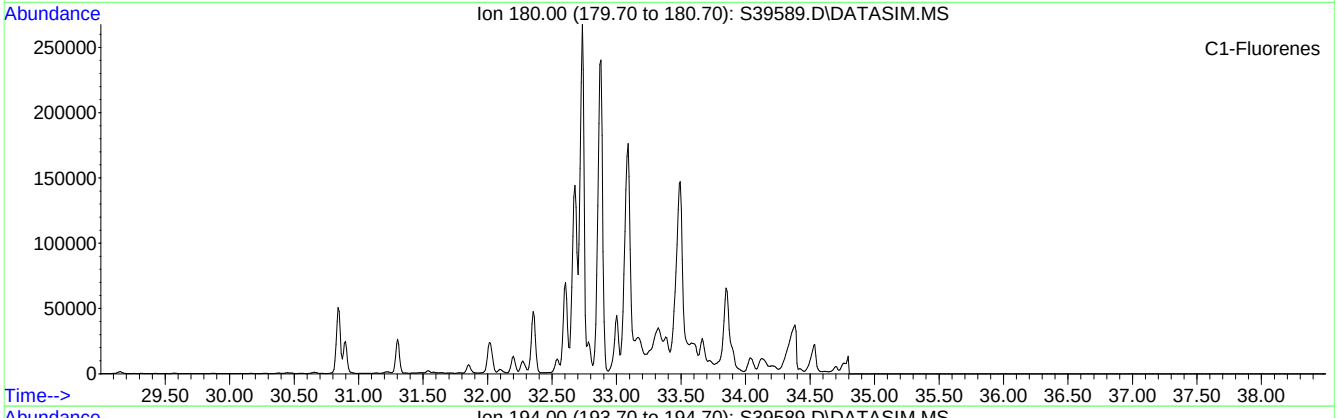


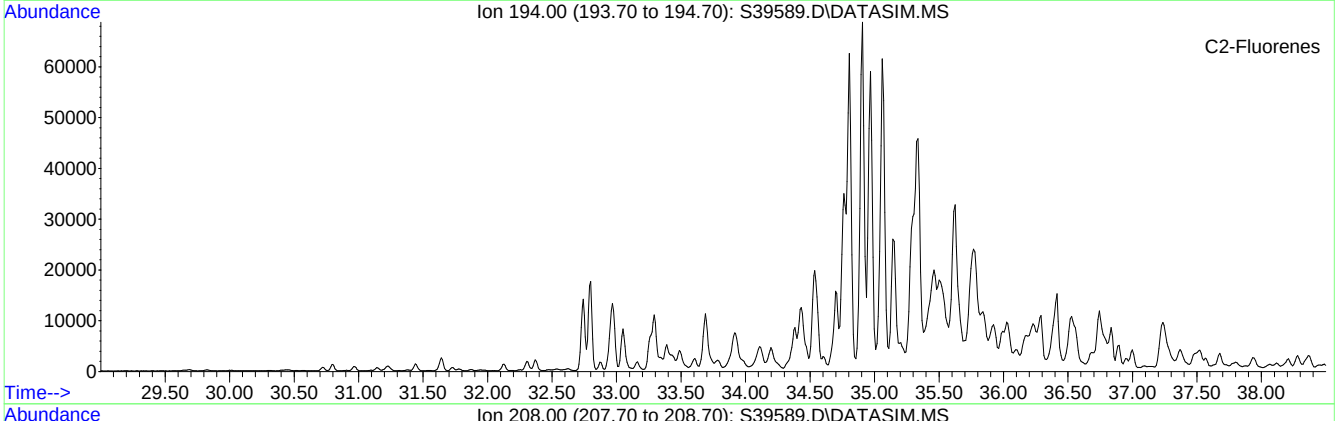


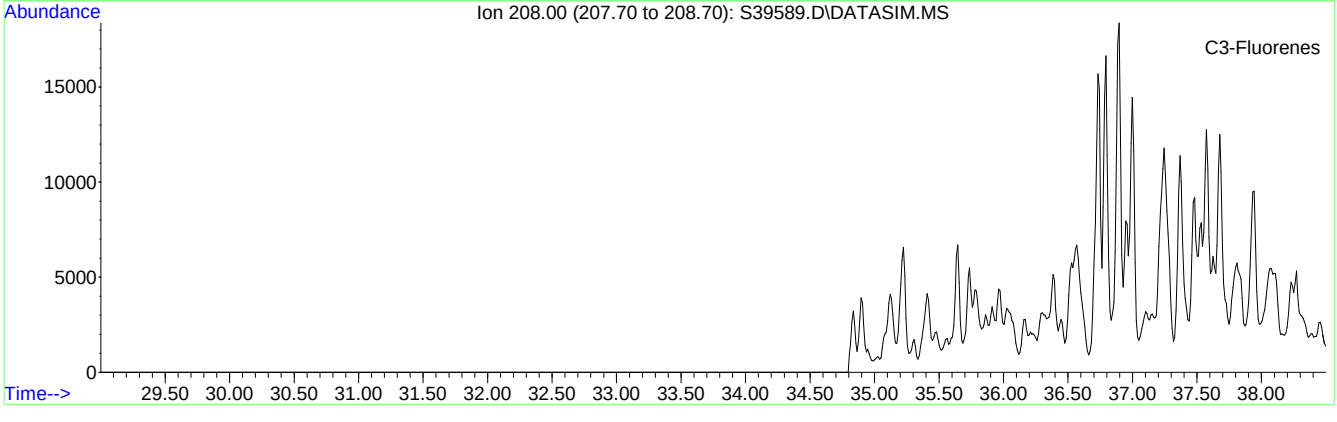

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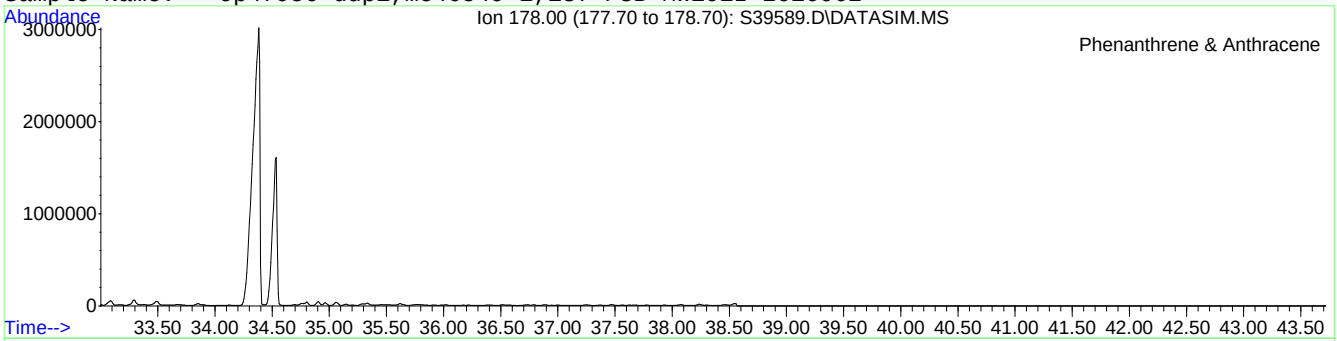


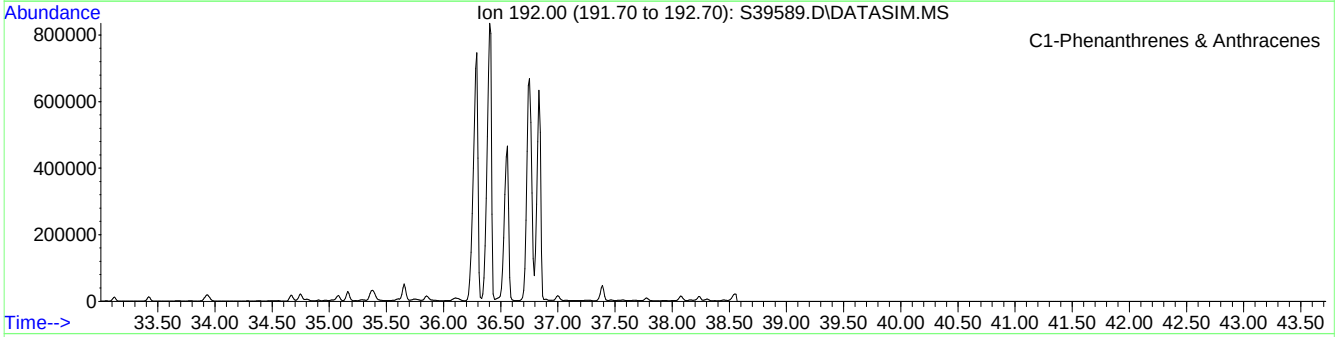


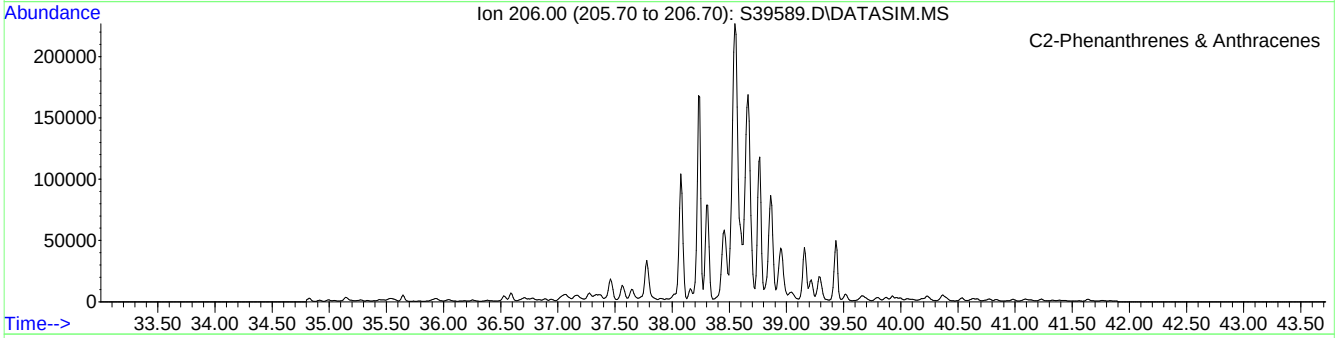


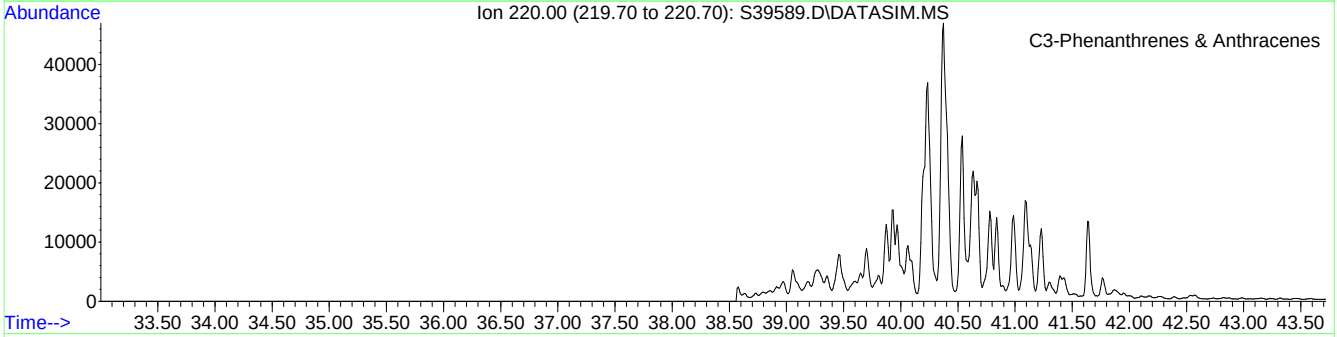


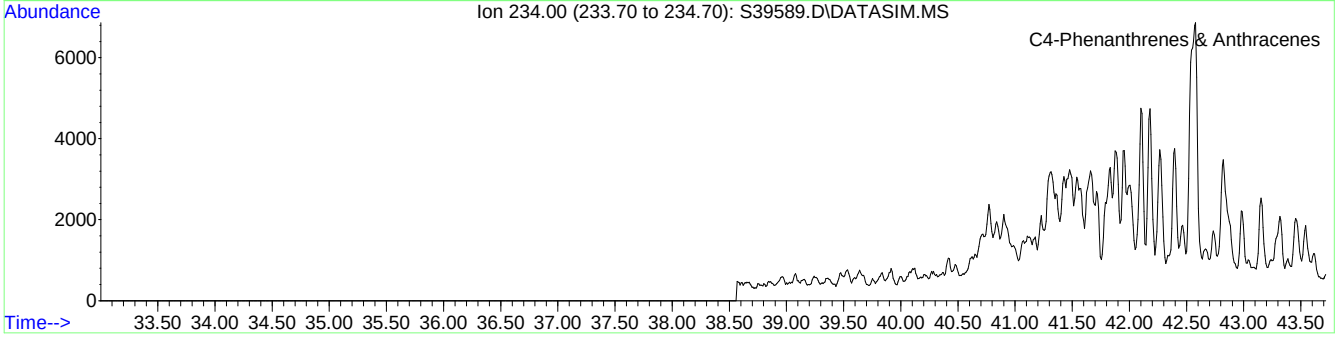

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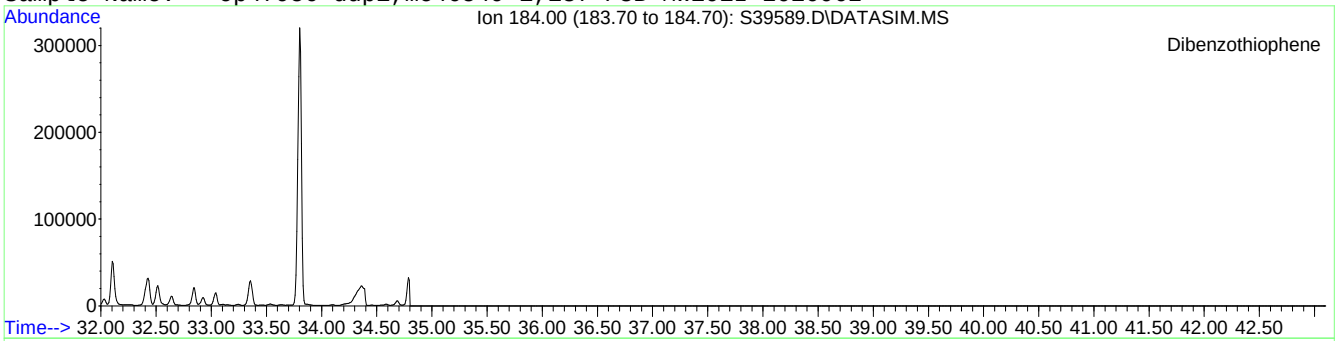


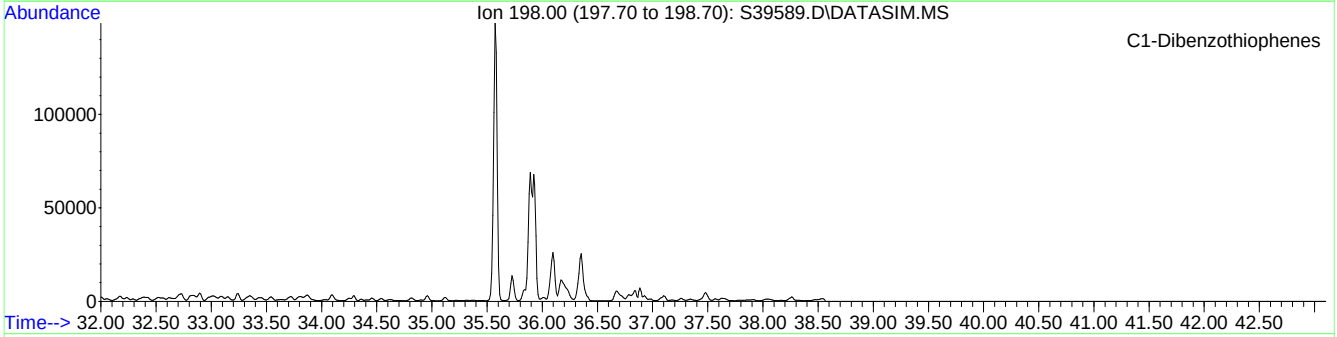


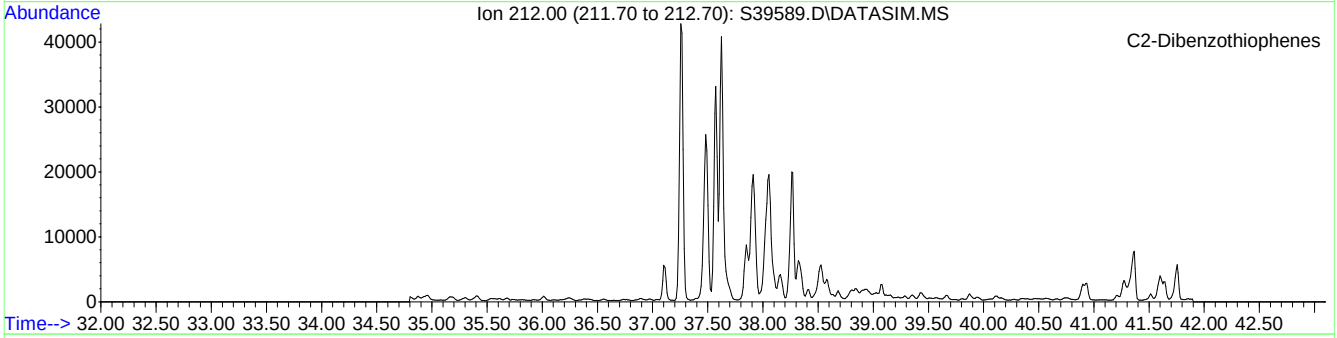


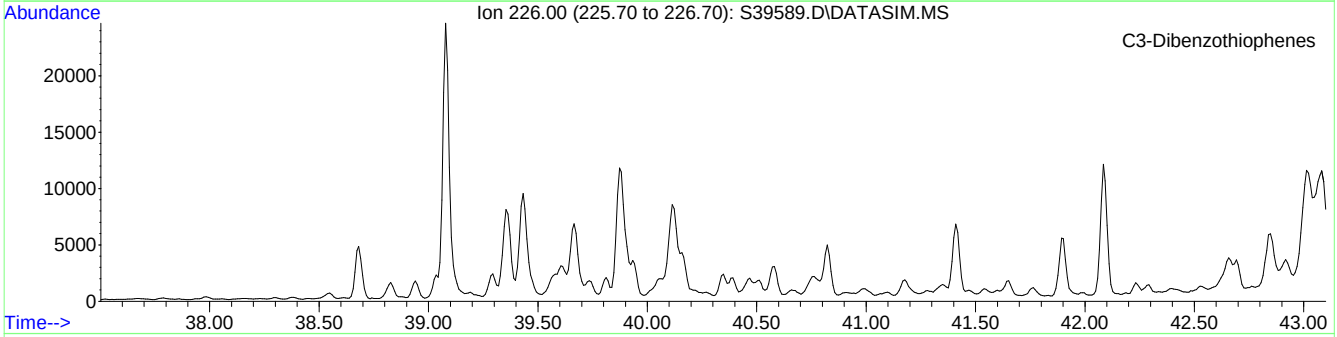


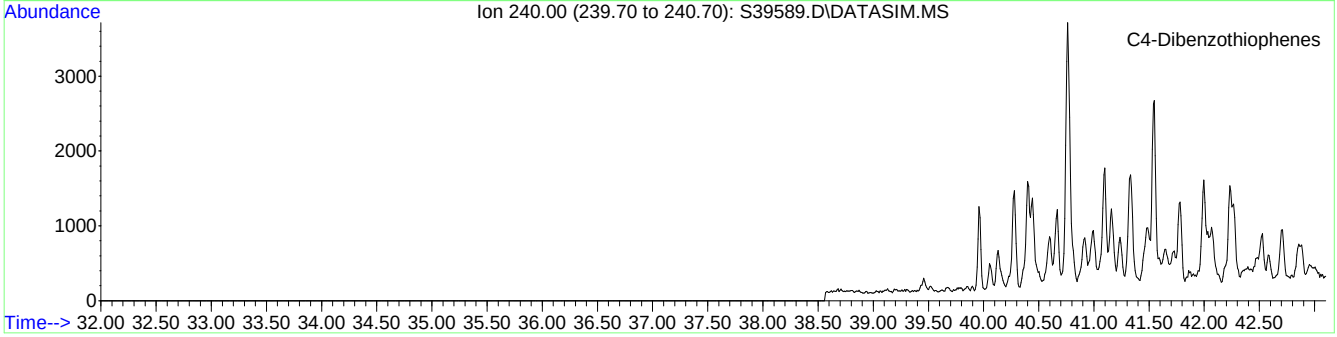

SGS ACCUTEST

GC/MS EXTRACTED ION CHROMATOGRAM

File: S:\1\data\S160705\S39589.D
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Sample Name: op47956-dup1,mc46549-1,137-P3B-MW101I-2016062

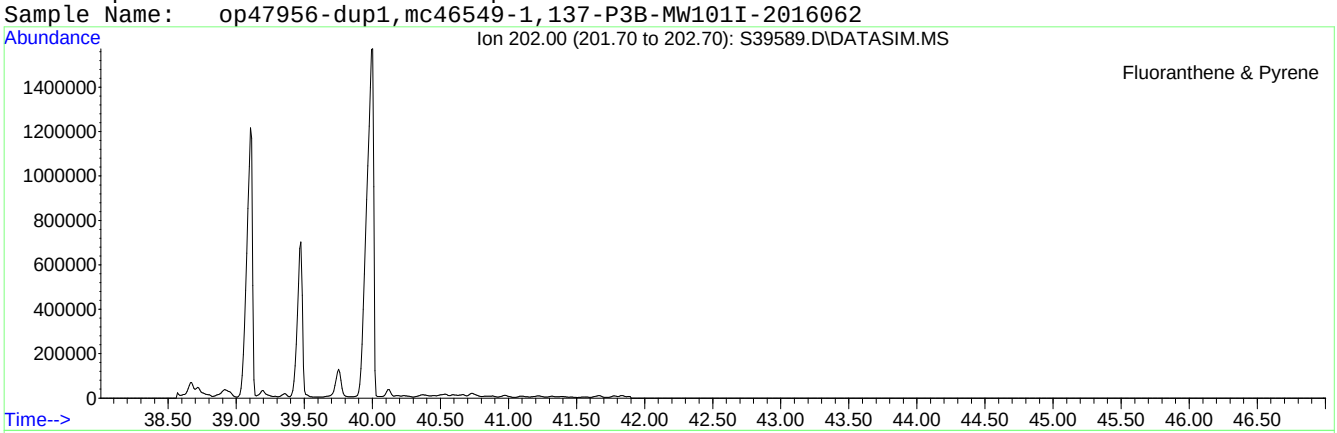


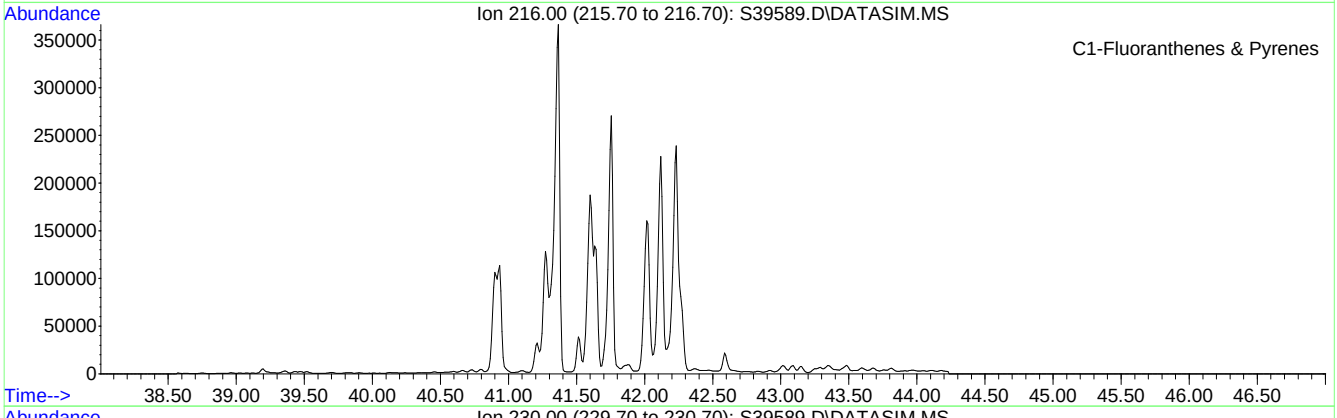


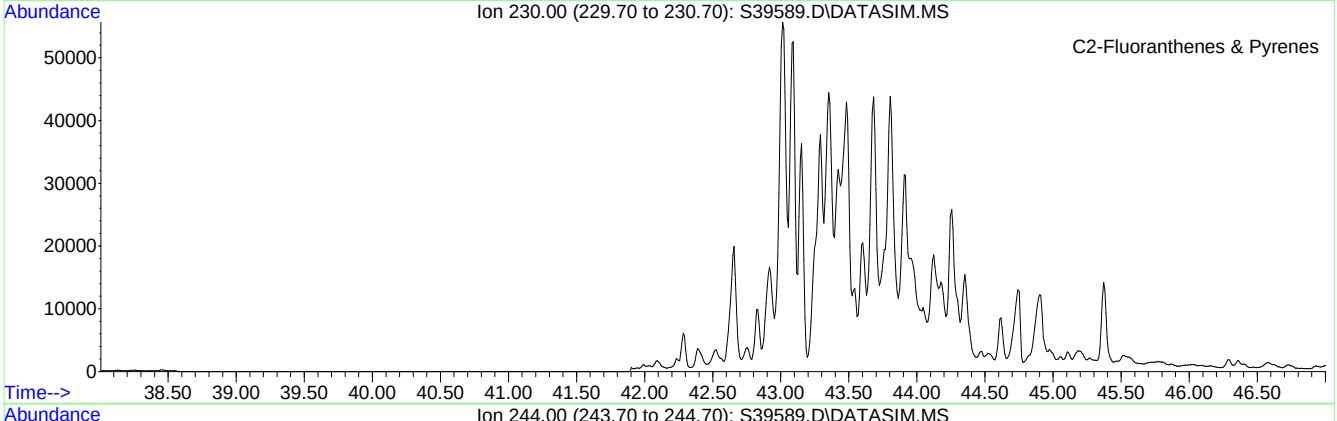


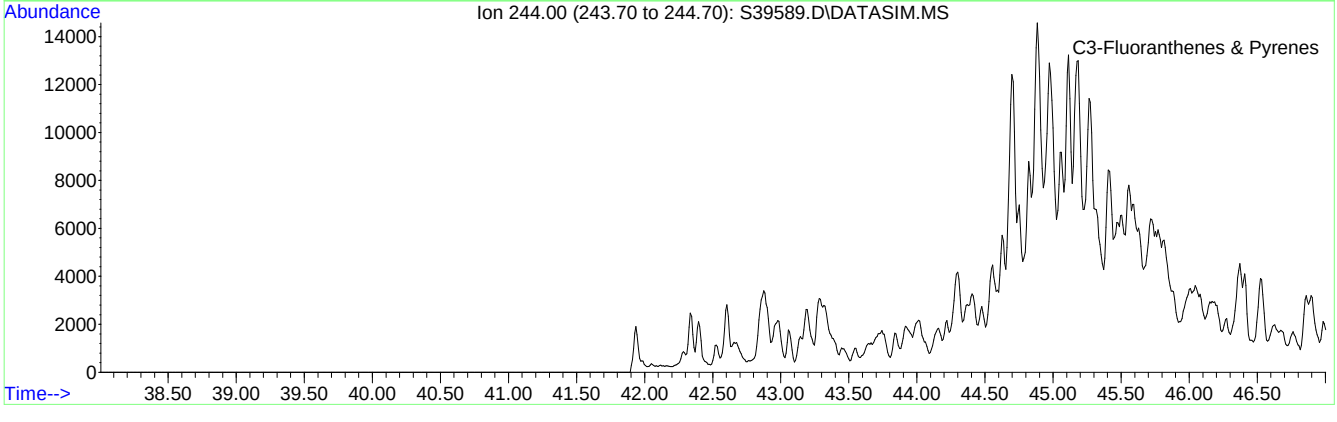

GC/MS EXTRACTED ION CHROMATOGRAM

File: S:\1\data\S160705\S39589.D
Date Acquired: 5 Jul 2016 4:38 pm
Sample Name: op47956-dup1,mc46549-1,137-P3B-MW101I-2016062

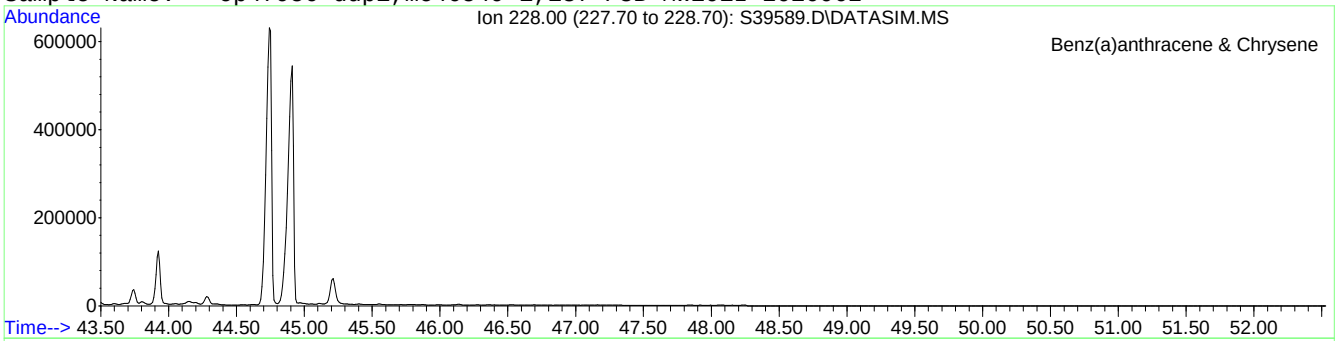


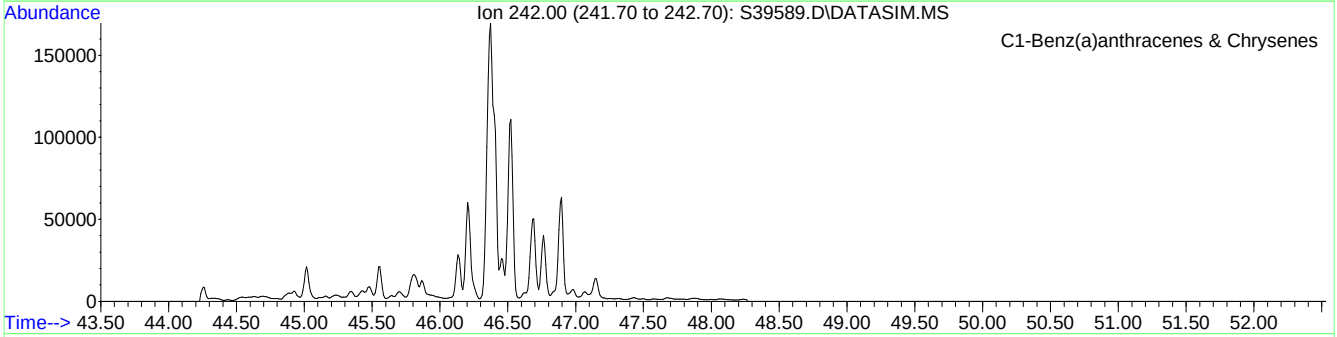


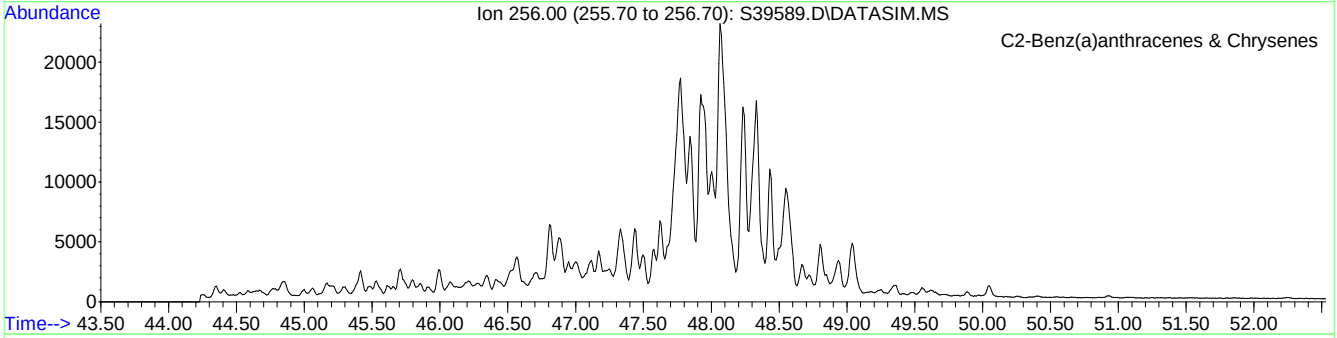


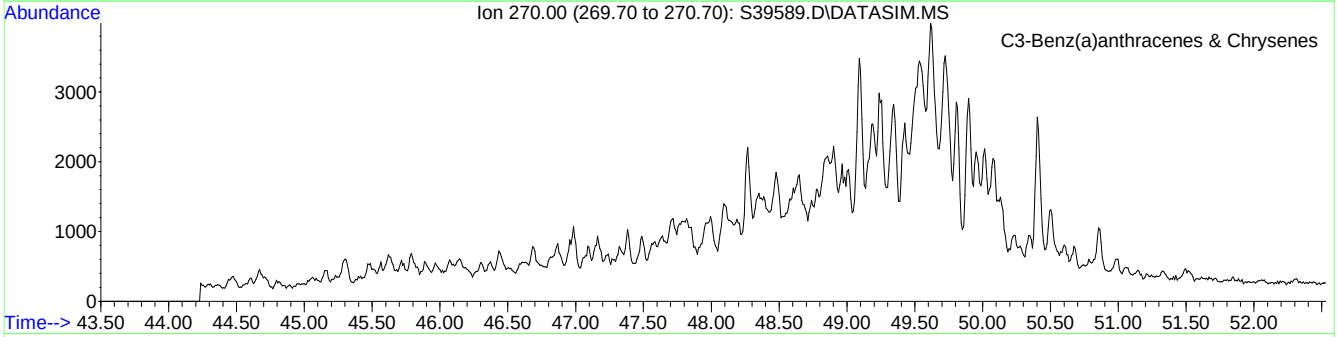


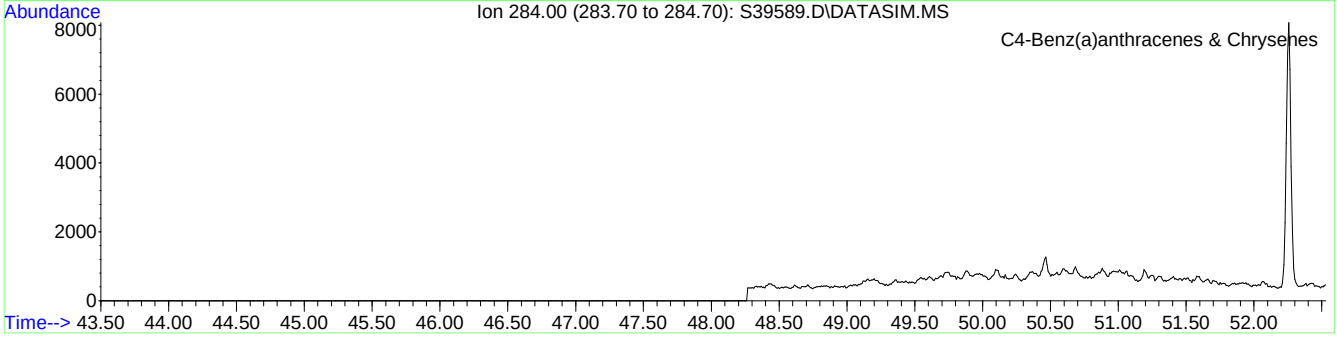

SGS ACCUTEST

GC/MS TOTAL ION CHROMATOGRAM

File: S:\1\data\S160705\S39589.D
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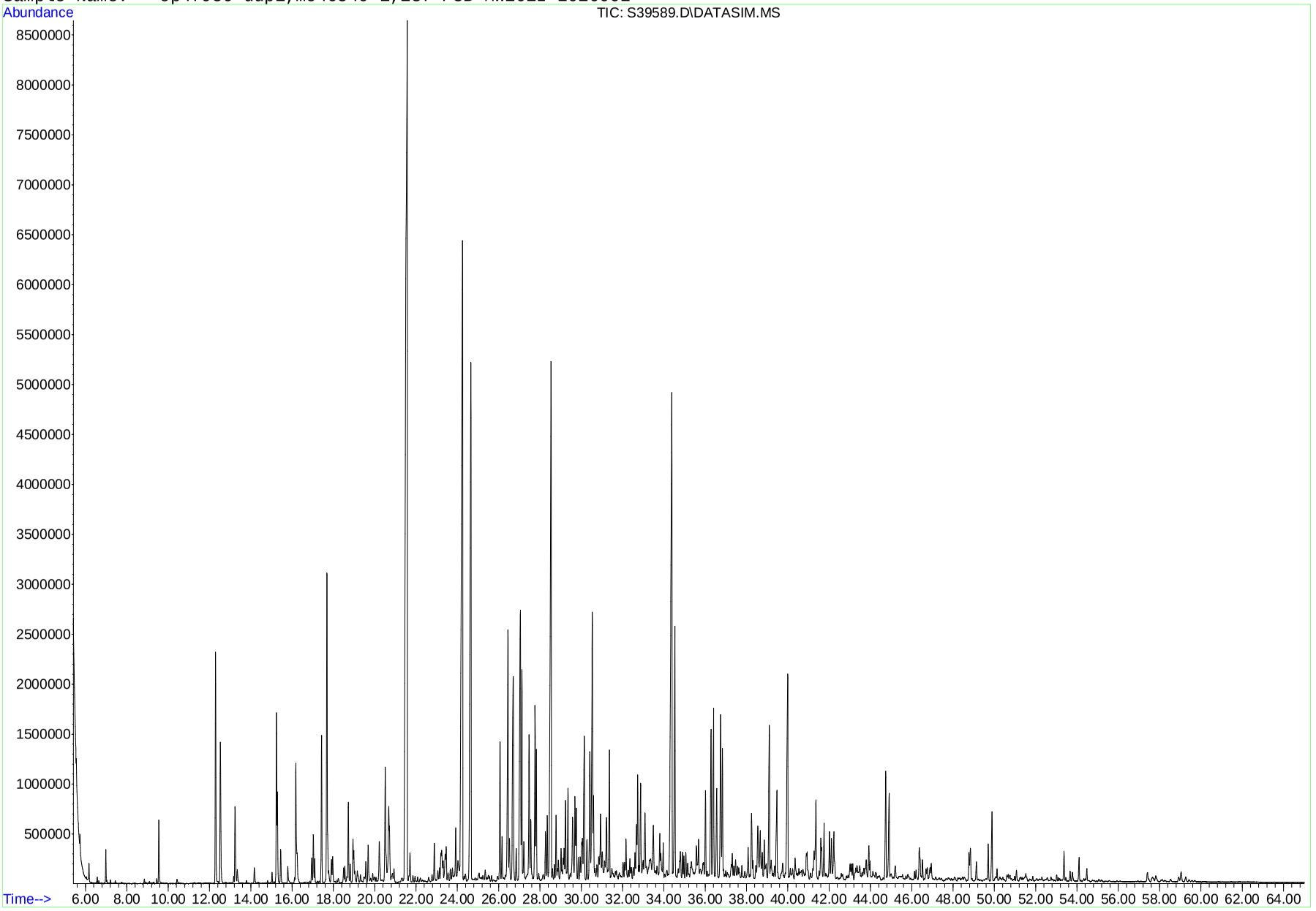

GC/MS EXTRACTED ION CHROMATOGRAM

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Date Acquired: 24 Jun 2016 8:13 am
Sample Name: op47956-mb, Method Blank

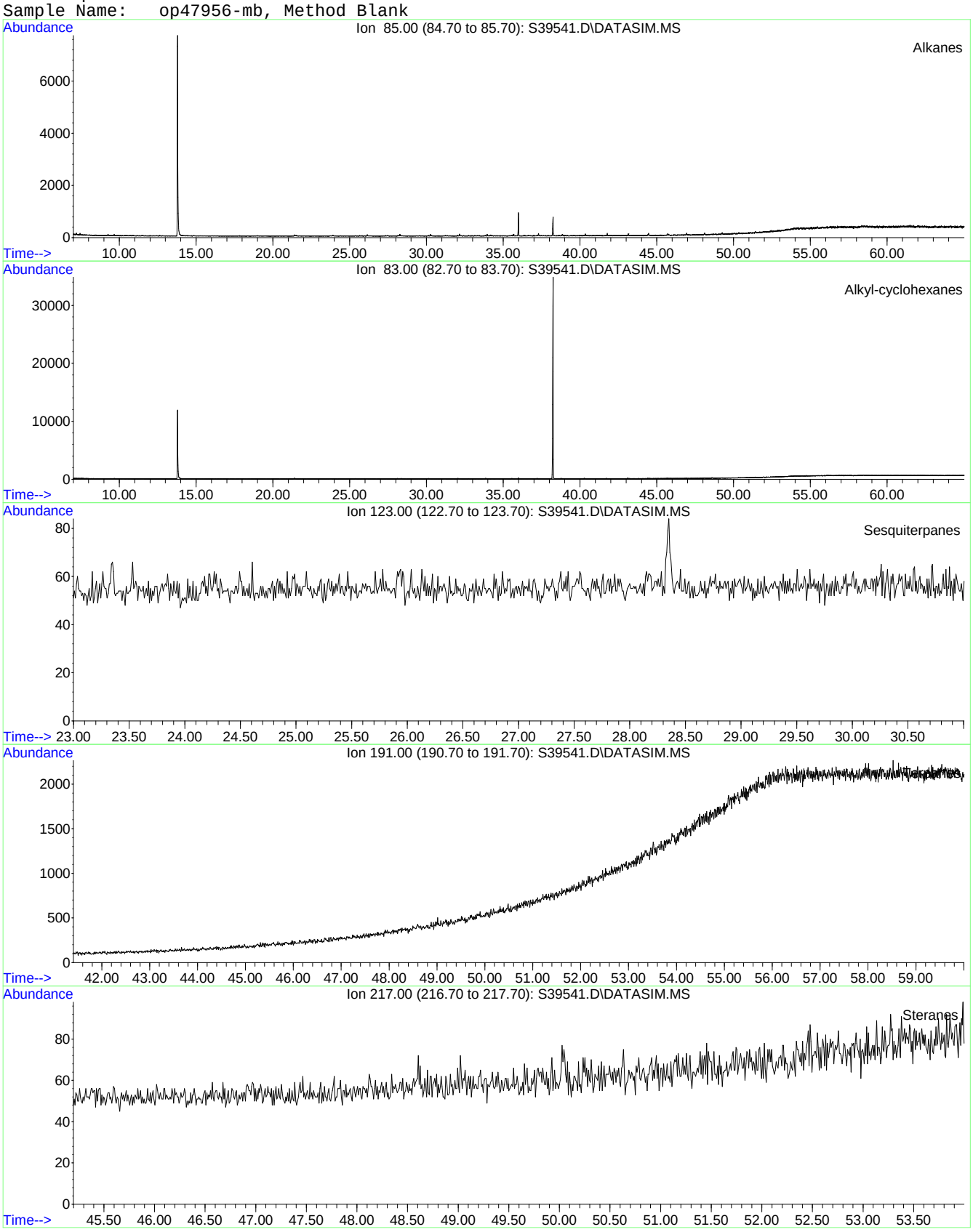

SGS ACCUTEST

GC/MS EXTRACTED ION CHROMATOGRAM

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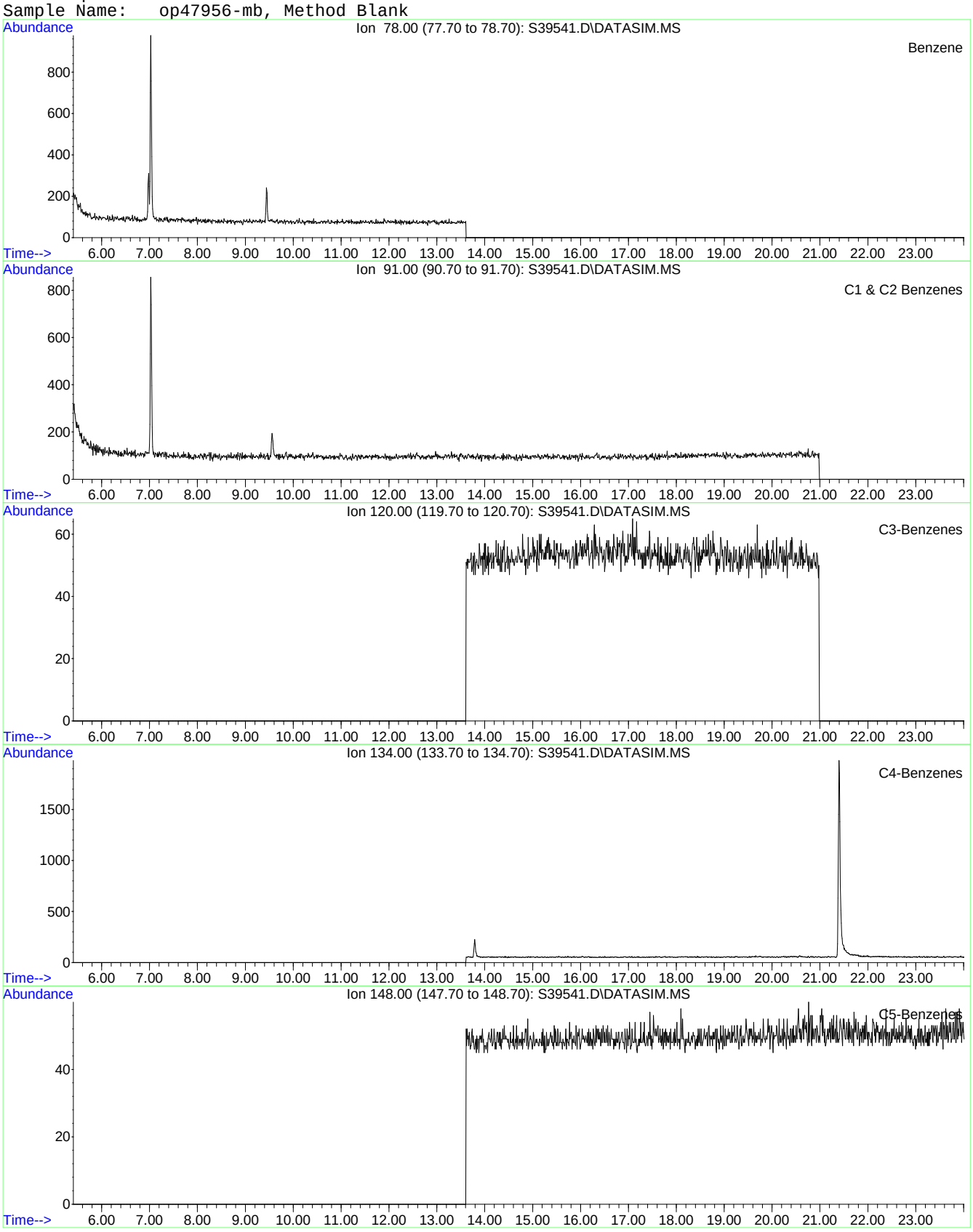

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Date Acquired: 24 Jun 2016 8:13 am
Sample Name: op47956-mb, Method Blank

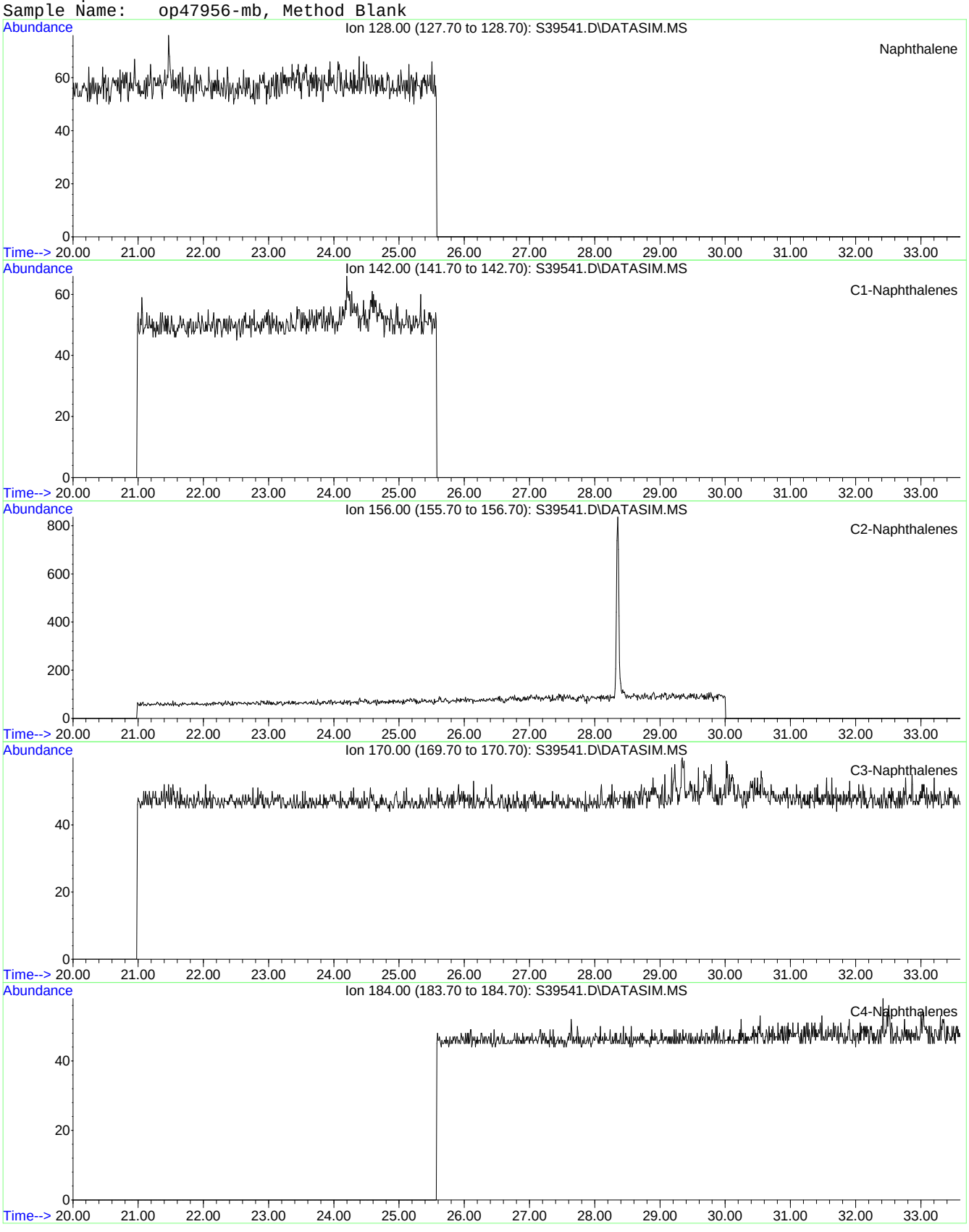

SGS ACCUTEST

GC/MS EXTRACTED ION CHROMATOGRAM

File: S:\1\data\S160623\S39541.D
Date Acquired: 24 Jun 2016 8:13 am
Sample Name: op47956-mb, Method Blank

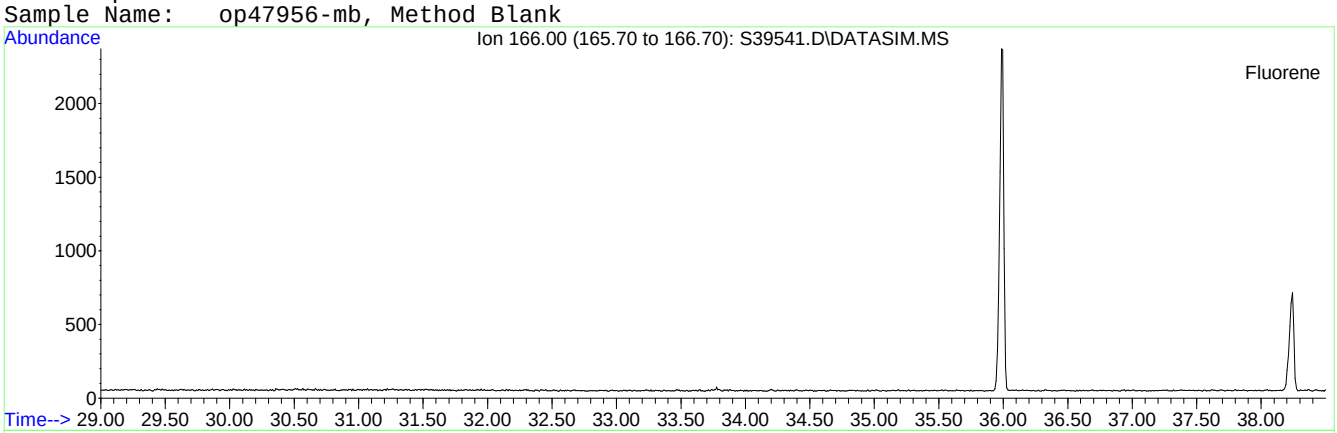


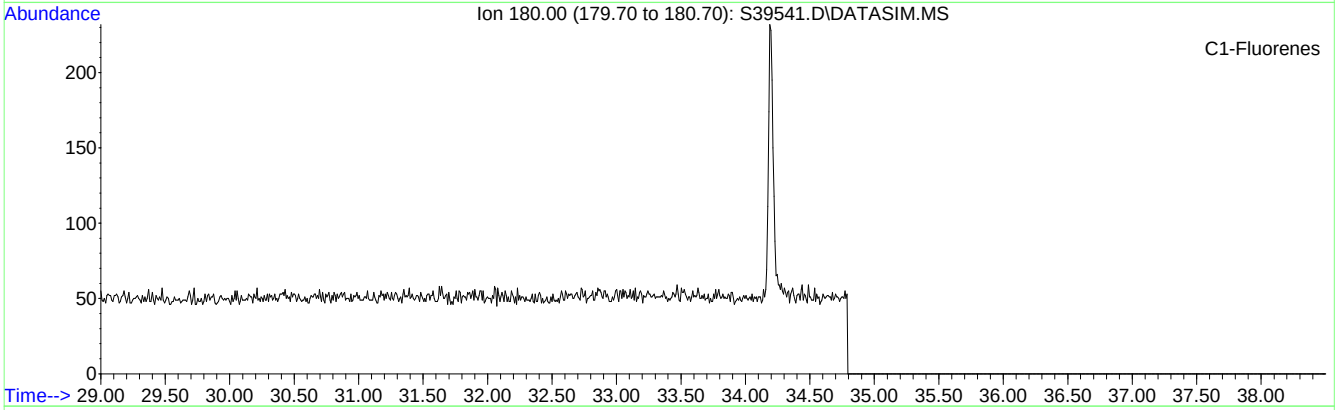


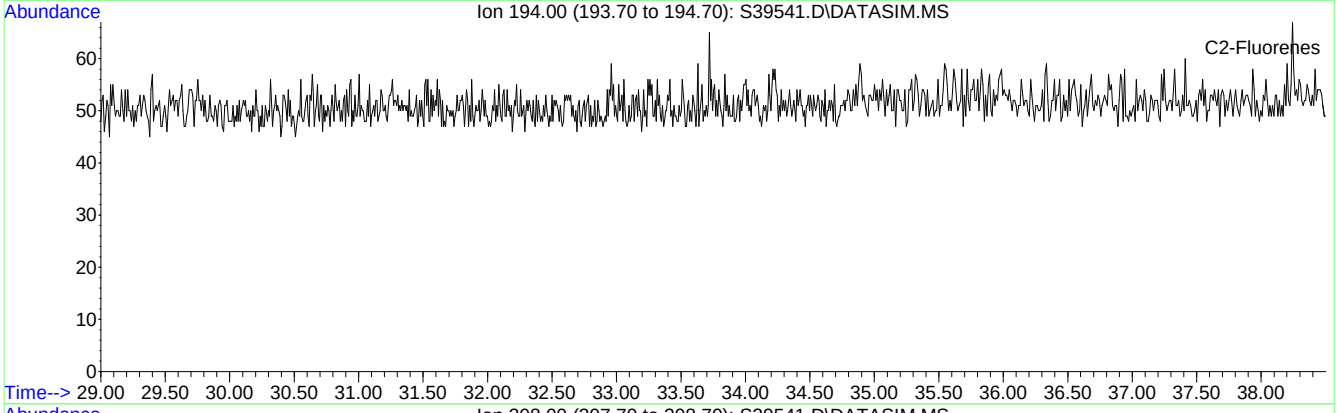


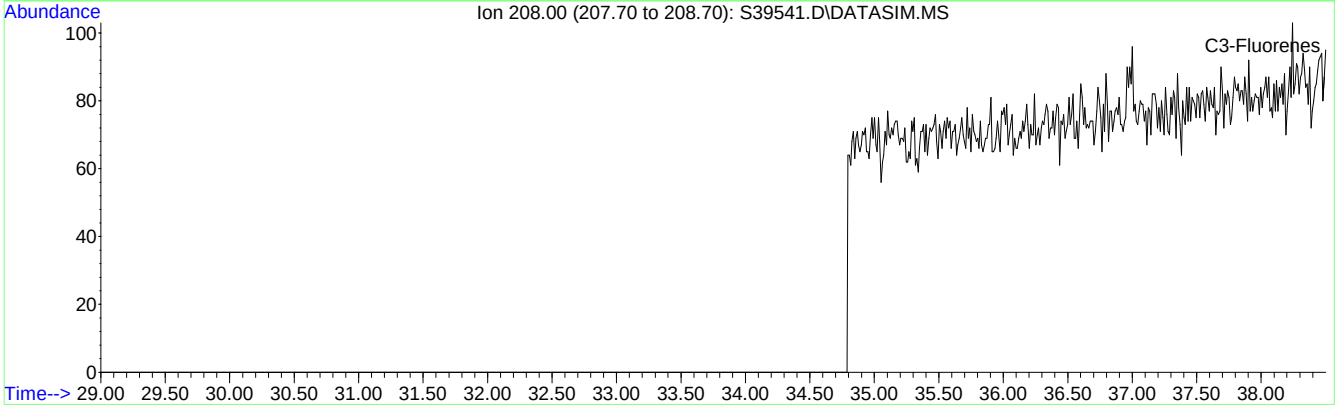

GC/MS EXTRACTED ION CHROMATOGRAM

File: S:\1\data\S160623\S39541.D
Date Acquired: 24 Jun 2016 8:13 am
Sample Name: op47956-mb, Method Blank

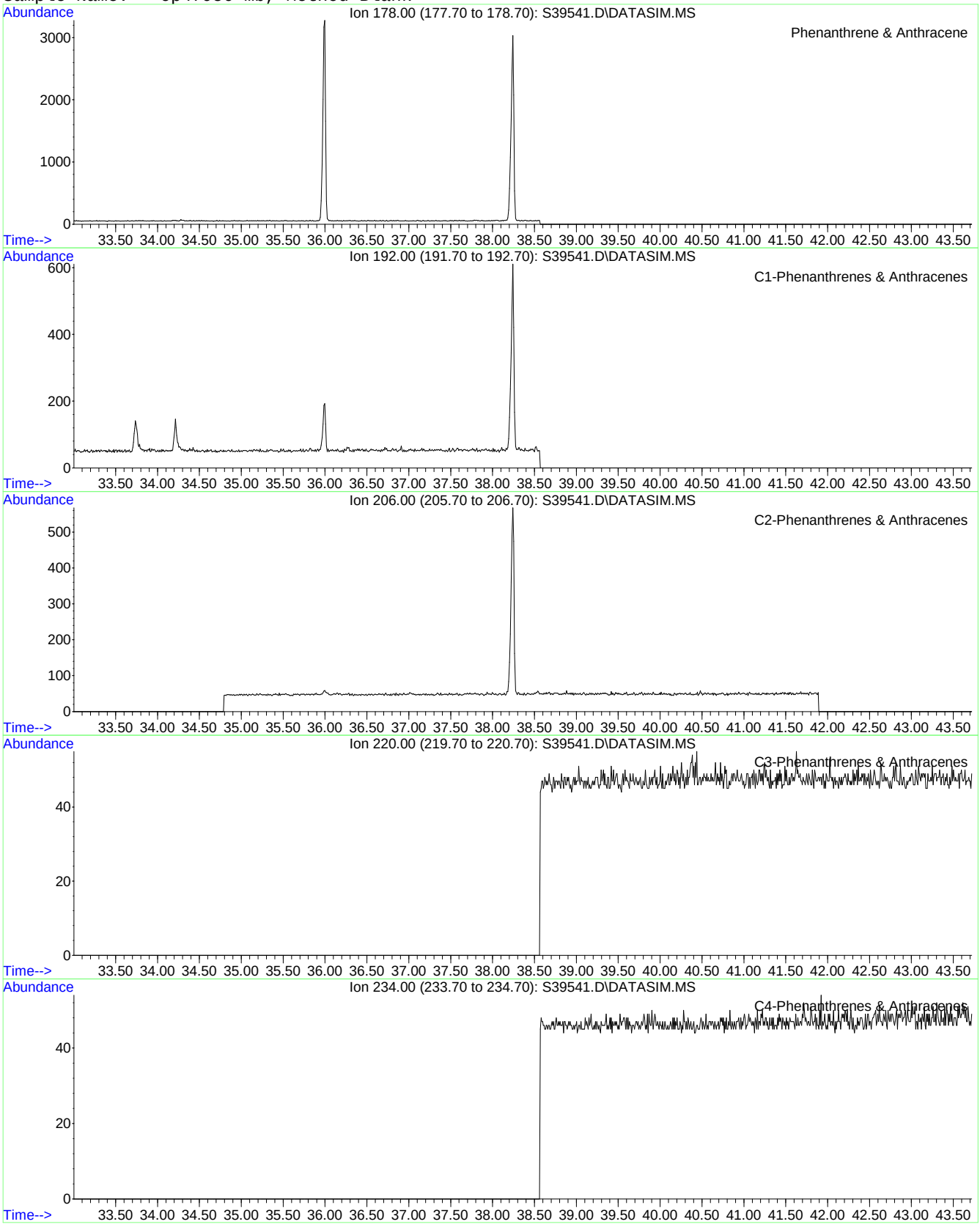

GC/MS EXTRACTED ION CHROMATOGRAM

File: S:\1\data\S160623\S39541.D
Date Acquired: 24 Jun 2016 8:13 am
Sample Name: op47956-mb, Method Blank

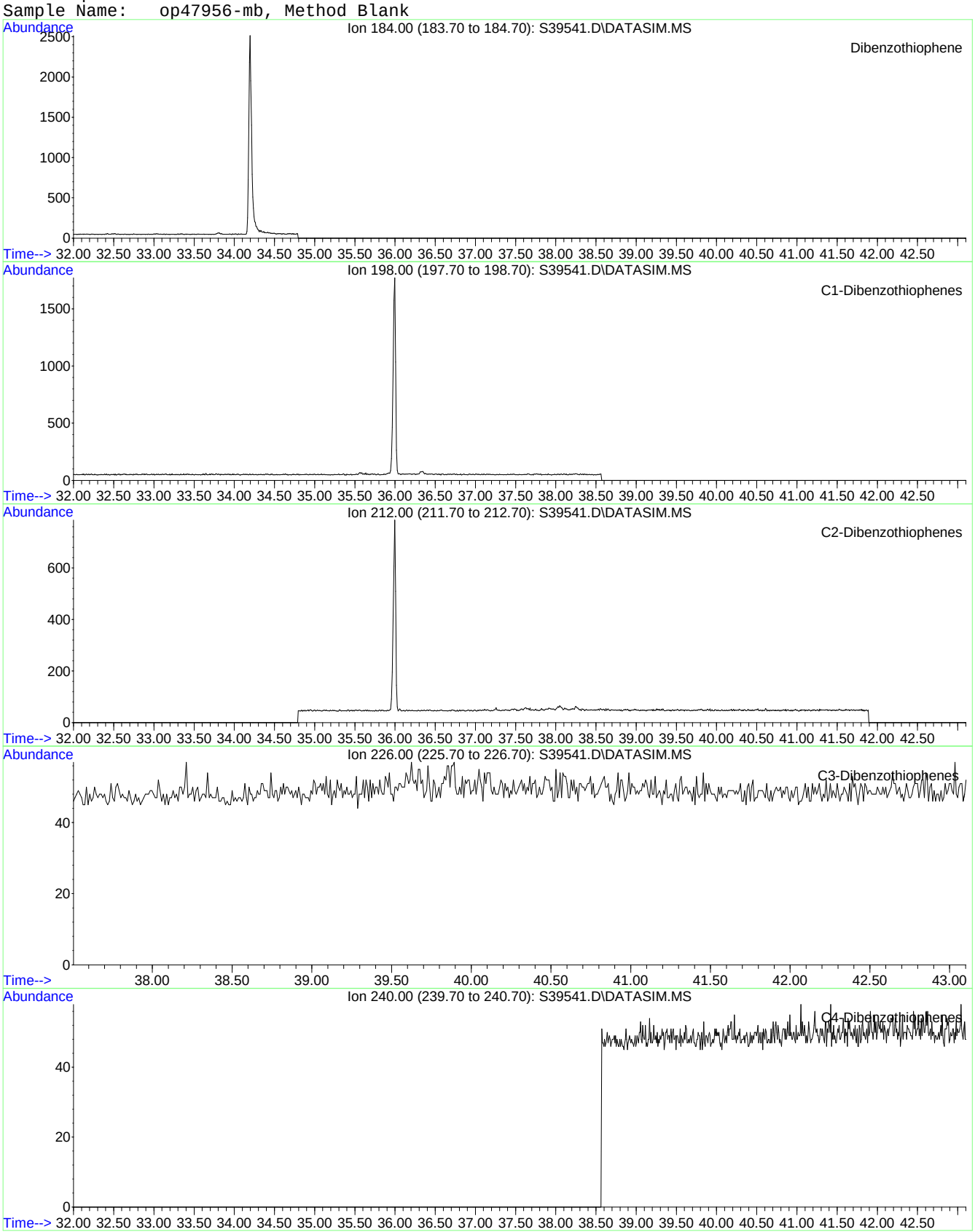

GC/MS EXTRACTED ION CHROMATOGRAM

File: S:\1\data\S160623\S39541.D
Date Acquired: 24 Jun 2016 8:13 am
Sample Name: op47956-mb, Method Blank

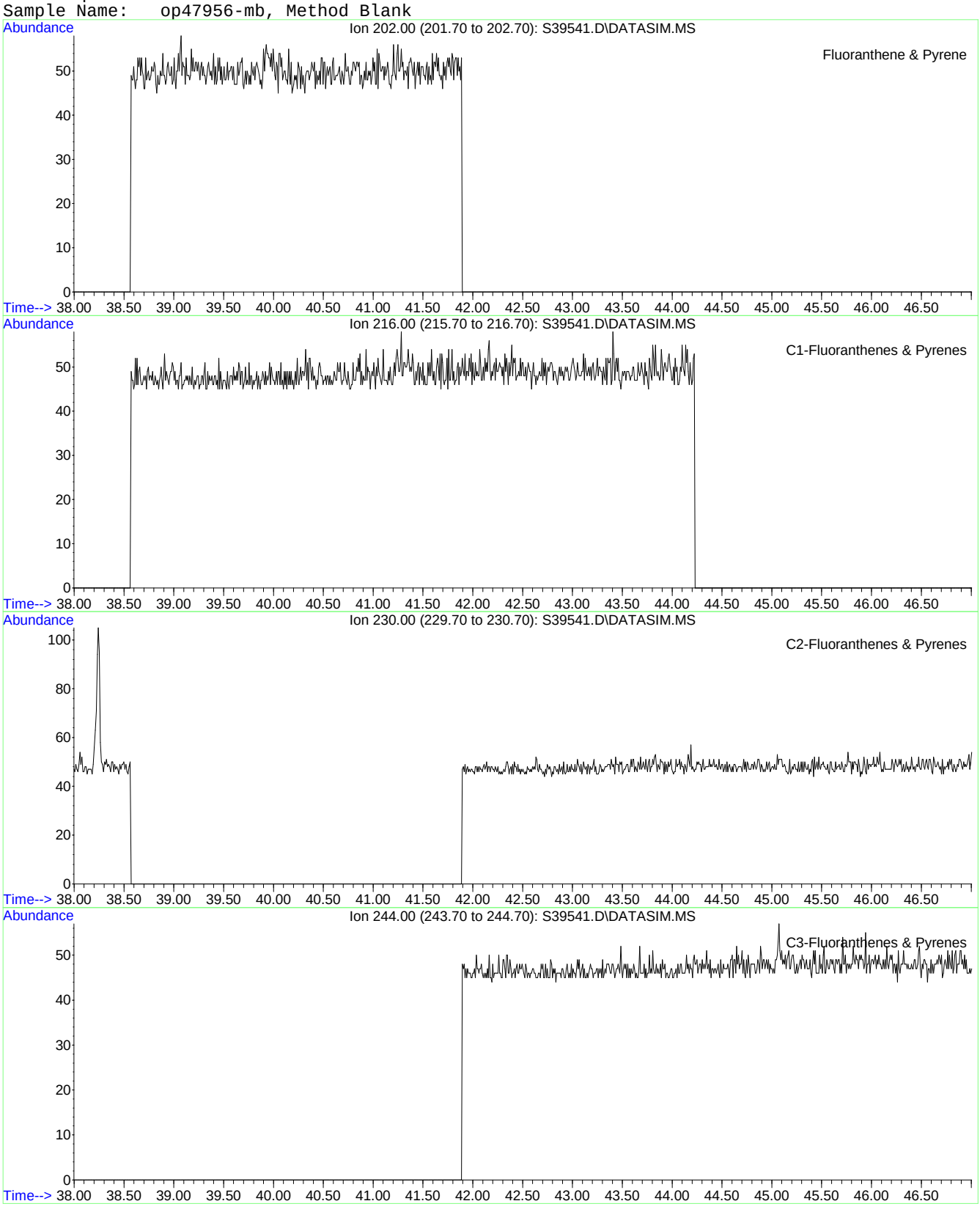

GC/MS EXTRACTED ION CHROMATOGRAM

File: S:\1\data\S160623\S39541.D
Date Acquired: 24 Jun 2016 8:13 am
Sample Name: op47956-mb, Method Blank

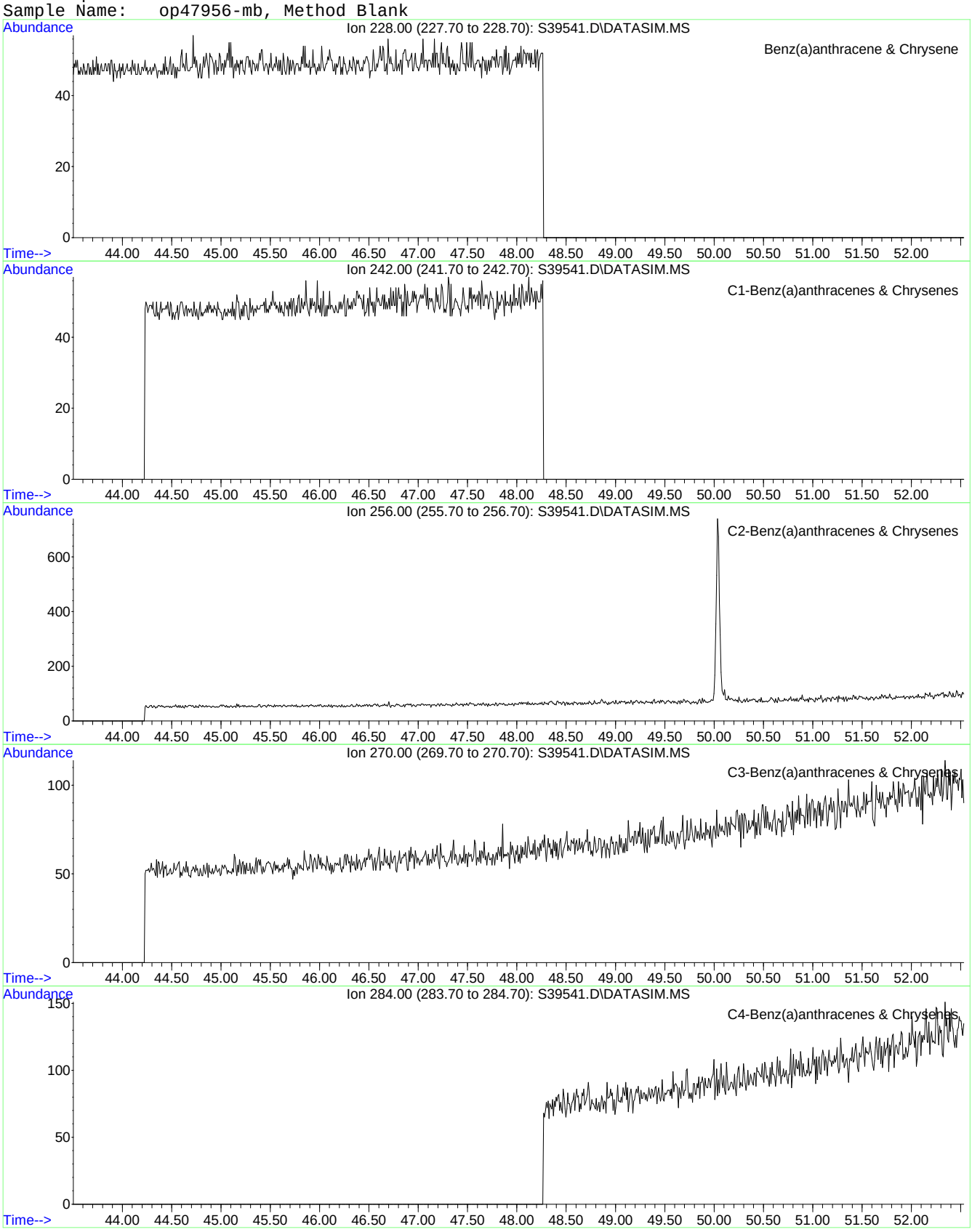

SGS ACCUTEST

GC/MS TOTAL ION CHROMATOGRAM

File: S:\1\data\S160623\S39541.D
Date Acquired: 24 Jun 2016 8:13 am
Sample Name: op47956-mb, Method Blank

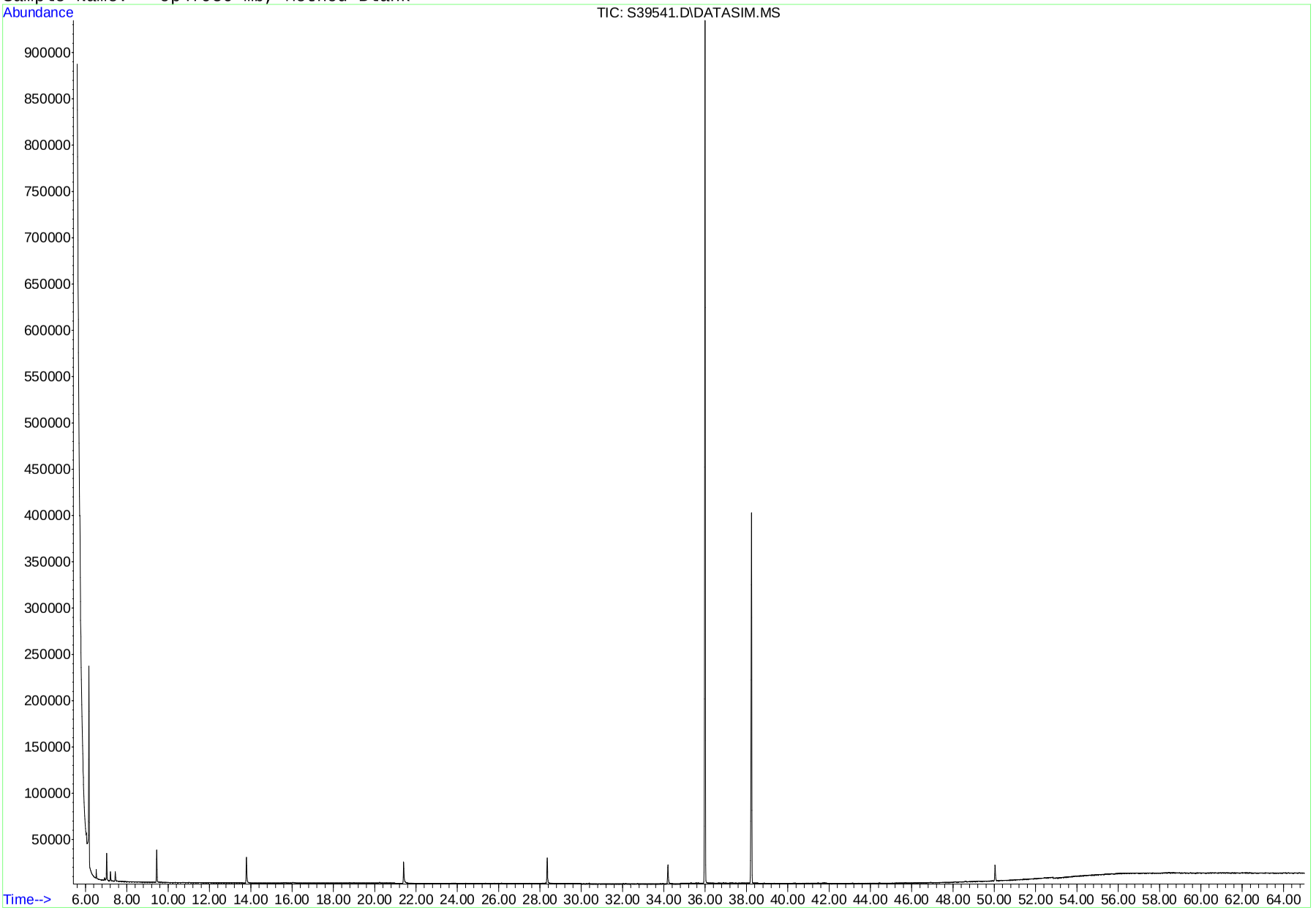

# Internal Sample Tracking Chronicle

AECOM, INC.

**Job No:** MC46549

PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ
Project No: 60506516.GA.LSRP.DNAPL.LAB-DV

| Sample Number | Method | Analyzed | By | Prepped | By | Test Codes |
|---|---|---|---|---|---|---|
| MC46549-1 Collected: 21-JUN-16 07:45 By: 137-P3B-MW101I-20160621 | | | | Received: 23-JUN-16 | By: NT | |
| MC46549-1 | ASTM D3328-06 | 01-JUL-16 02:11 | MEW | 23-JUN-16 | MEW | B3328FINGHR |
| MC46549-1 | D5739-06/8270M SIM | 05-JUL-16 19:07 | SZ | 23-JUN-16 | MEW | B5739ALKPAH |
| MC46549-1 | D5739-06/8270M SIM | 05-JUL-16 20:21 | SZ | 23-JUN-16 | MEW | B5739ALKPAH |

# SGS Accutest Internal Chain of Custody



**Job Number:** MC46549
**Account:** ENSRNJ AECOM, INC.
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ
**Received:** 06/23/16

| Sample.Bottle Number | Transfer FROM | Transfer TO | Date/Time | Reason |
|---|---|---|---|---|
| MC46549-1.1 | Walk In Ref #22 | Michael Widuta | 06/23/16 14:01 | Retrieve from Storage |
| MC46549-1.1 | Michael Widuta | Walk In Ref #22 | 06/23/16 16:50 | Return to Storage |

## GC/MS Semi-volatiles



### QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries

# Method Blank Summary



**Job Number:** MC46549
**Account:** ENSRNJ AECOM, INC.
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP47956-MB | S39541.D | 1 | 06/24/16 | SZ | 06/23/16 | OP47956 | MSS1961 |

**The QC reported here applies to the following samples:** **Method:** D5739-06/8270M SIM

MC46549-1

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 71-43-2 | Benzene | 1790 | 2000 | 1000 | ug/kg | J |
| | C1-Benzene | ND | 2000 | 1000 | ug/kg | |
| | C2-Benzenes | ND | 2000 | 1000 | ug/kg | |
| | C3-Benzenes | ND | 2000 | 1000 | ug/kg | |
| | C4-Benzenes | ND | 2000 | 1000 | ug/kg | |
| | C5-Benzenes | ND | 2000 | 1000 | ug/kg | |
| 108-88-3 | Toluene | 1180 | 2000 | 1000 | ug/kg | J |
| 100-41-4 | Ethylbenzene | ND | 2000 | 1000 | ug/kg | |
| | m,p-Xylene | ND | 2000 | 1000 | ug/kg | |
| 100-42-5 | Styrene | ND | 2000 | 1000 | ug/kg | |
| 95-47-6 | o-Xylene | ND | 2000 | 1000 | ug/kg | |
| 98-82-8 | Isopropylbenzene | ND | 2000 | 1000 | ug/kg | |
| 103-65-1 | n-Propylbenzene | ND | 2000 | 1000 | ug/kg | |
| 108-67-8 | 1,3,5-Trimethylbenzene | ND | 2000 | 1000 | ug/kg | |
| 526-73-8 | 1,2,3-Trimethylbenzene | ND | 2000 | 1000 | ug/kg | |
| 95-63-6 | 1,2,4-Trimethylbenzene | ND | 2000 | 1000 | ug/kg | |
| 98-06-6 | t-Butylbenzene | ND | 2000 | 1000 | ug/kg | |
| 135-98-8 | sec-Butylbenzene | ND | 2000 | 1000 | ug/kg | |
| 99-87-6 | p-Isopropyltoluene | ND | 2000 | 1000 | ug/kg | |
| 104-51-8 | n-Butylbenzene | ND | 2000 | 1000 | ug/kg | |
| 493-02-7 | trans-Decalin | ND | 2000 | 1000 | ug/kg | |
| 493-01-6 | cis-Decalin | ND | 2000 | 1000 | ug/kg | |
| 11095-43-5 | Benzo(b)thiophene | ND | 2000 | 1000 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 2000 | 1000 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | ND | 2000 | 1000 | ug/kg | |
| 90-12-0 | 1-Methylnaphthalene | ND | 2000 | 1000 | ug/kg | |
| | C1-Naphthalenes | ND | 2000 | 1000 | ug/kg | |
| | C2-Naphthalenes | ND | 2000 | 1000 | ug/kg | |
| | C3-Naphthalenes | ND | 2000 | 1000 | ug/kg | |
| | C4-Naphthalenes | ND | 2000 | 1000 | ug/kg | |
| 92-52-4 | Biphenyl | ND | 2000 | 1000 | ug/kg | |
| 208-96-8 | Acenaphthylene | ND | 2000 | 1000 | ug/kg | |
| 83-32-9 | Acenaphthene | ND | 2000 | 1000 | ug/kg | |
| 132-64-9 | Dibenzofuran | ND | 2000 | 1000 | ug/kg | |
| 86-73-7 | Fluorene | ND | 2000 | 1000 | ug/kg | |
| | C1-Fluorenes | ND | 2000 | 1000 | ug/kg | |

# Method Blank Summary

**Job Number:** MC46549
**Account:** ENSRNJ AECOM, INC.
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP47956-MB | S39541.D | 1 | 06/24/16 | SZ | 06/23/16 | OP47956 | MSS1961 |

**The QC reported here applies to the following samples:** **Method:** D5739-06/8270M SIM

MC46549-1

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | C2-Fluorenes | ND | 2000 | 1000 | ug/kg | |
| | C3-Fluorenes | ND | 2000 | 1000 | ug/kg | |
| 132-65-0 | Dibenzothiophene | ND | 2000 | 1000 | ug/kg | |
| | C1-Dibenzothiophenes | ND | 2000 | 1000 | ug/kg | |
| | C2-Dibenzothiophenes | ND | 2000 | 1000 | ug/kg | |
| | C3-Dibenzothiophenes | ND | 2000 | 1000 | ug/kg | |
| | C4-Dibenzothiophenes | ND | 2000 | 1000 | ug/kg | |
| 85-01-8 | Phenanthrene | ND | 2000 | 1000 | ug/kg | |
| 120-12-7 | Anthracene | ND | 2000 | 1000 | ug/kg | |
| | C1-Phenanthrenes/Anthracene | ND | 2000 | 1000 | ug/kg | |
| | C2-Phenanthrenes/Anthracene | ND | 2000 | 1000 | ug/kg | |
| | C3-Phenanthrenes/Anthracene | ND | 2000 | 1000 | ug/kg | |
| | C4-Phenanthrenes/Anthracene | ND | 2000 | 1000 | ug/kg | |
| 483-65-8 | Retene | ND | 2000 | 1000 | ug/kg | |
| 239-35-0 | Benzo(b)naphtho(2,1-d)thioph | ND | 2000 | 1000 | ug/kg | |
| 206-44-0 | Fluoranthene | ND | 2000 | 1000 | ug/kg | |
| 129-00-0 | Pyrene | ND | 2000 | 1000 | ug/kg | |
| | C1-Fluoranthenes/Pyrenes | ND | 2000 | 1000 | ug/kg | |
| | C2-Fluoranthenes/Pyrenes | ND | 2000 | 1000 | ug/kg | |
| | C3-Fluoranthenes/Pyrenes | ND | 2000 | 1000 | ug/kg | |
| 243-17-4 | Benzo(b)fluorene | ND | 2000 | 1000 | ug/kg | |
| 205-12-9 | Benzo(c)fluorene | ND | 2000 | 1000 | ug/kg | |
| 3442-78-2 | 2-Methylpyrene | ND | 2000 | 1000 | ug/kg | |
| 3353-12-6 | 4-Methylpyrene | ND | 2000 | 1000 | ug/kg | |
| 2381-21-7 | 1-Methylpyrene | ND | 2000 | 1000 | ug/kg | |
| 56-55-3 | Benz(a)anthracene | ND | 2000 | 1000 | ug/kg | |
| | Chrysene/triphenylene | ND | 2000 | 1000 | ug/kg | |
| | C1-Benzo(a)anthracenes/Chrys | ND | 2000 | 1000 | ug/kg | |
| | C2-Benzo(a)anthracenes/Chrys | ND | 2000 | 1000 | ug/kg | |
| | C3-Benzo(a)anthracenes/Chrys | ND | 2000 | 1000 | ug/kg | |
| | C4-Benzo(a)anthracenes/Chrys | ND | 2000 | 1000 | ug/kg | |
| 205-99-2 | Benzo(b)fluoranthene | ND | 2000 | 1000 | ug/kg | |
| | Benzo(j/k)fluoranthene | ND | 2000 | 1000 | ug/kg | |
| 192-97-2 | Benzo(e)pyrene | ND | 2000 | 1000 | ug/kg | |
| 50-32-8 | Benzo(a)pyrene | ND | 2000 | 1000 | ug/kg | |
| 198-55-0 | Perylene | ND | 2000 | 1000 | ug/kg | |

# Method Blank Summary

**Job Number:** MC46549
**Account:** ENSRNJ AECOM, INC.
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP47956-MB | S39541.D | 1 | 06/24/16 | SZ | 06/23/16 | OP47956 | MSS1961 |

**The QC reported here applies to the following samples:** **Method:** D5739-06/8270M SIM

MC46549-1

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 193-39-5 | Indeno(1,2,3-cd)pyrene | ND | 2000 | 1000 | ug/kg | |
| 53-70-3 | Dibenzo(a,h)anthracene | ND | 2000 | 1000 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | ND | 2000 | 1000 | ug/kg | |
| 191-07-1 | Coronene | ND | 2000 | 1000 | ug/kg | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 2037-26-5 | Toluene-D8 | 105% | 40-140% |
| 1146-65-2 | Naphthalene-d8 | 91% | 40-140% |
| 1517-22-2 | Phenanthrene-d10 | 90% | 40-140% |
| | Perylene-d12 | 80% | 40-140% |

# Blank Spike Summary



**Job Number:** MC46549
**Account:** ENSRNJ AECOM, INC.
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP47956-BS2 | S39542.D | 1 | 06/24/16 | SZ | 06/23/16 | OP47956 | MSS1961 |

**The QC reported here applies to the following samples:** **Method:** D5739-06/8270M SIM

MC46549-1

| CAS No. | Compound | Spike ug/kg | BSP ug/kg | BSP % | Limits |
|---|---|---|---|---|---|
| 71-43-2 | Benzene | 1000000 | 1110000 | 111 | 50-150 |
| | C1-Benzene | | ND | | 50-150 [a] |
| | C2-Benzenes | | ND | | 50-150 [a] |
| | C3-Benzenes | | ND | | 50-150 [a] |
| | C4-Benzenes | | ND | | 50-150 [a] |
| | C5-Benzenes | | ND | | 50-150 [a] |
| 108-88-3 | Toluene | 1000000 | 967000 | 97 | 50-150 |
| 100-41-4 | Ethylbenzene | 1000000 | 1020000 | 102 | 50-150 |
| | m,p-Xylene | 1000000 | 1010000 | 101 | 50-150 |
| 100-42-5 | Styrene | 1000000 | 874000 | 87 | 50-150 |
| 95-47-6 | o-Xylene | 1000000 | 989000 | 99 | 50-150 |
| 98-82-8 | Isopropylbenzene | 1000000 | 1060000 | 106 | 50-150 |
| 103-65-1 | n-Propylbenzene | 1000000 | 1040000 | 104 | 50-150 |
| 108-67-8 | 1,3,5-Trimethylbenzene | 1000000 | 1030000 | 103 | 50-150 |
| 526-73-8 | 1,2,3-Trimethylbenzene | 1000000 | 1020000 | 102 | 50-150 |
| 95-63-6 | 1,2,4-Trimethylbenzene | 1000000 | 1000000 | 100 | 50-150 |
| 98-06-6 | t-Butylbenzene | 1000000 | 1060000 | 106 | 50-150 |
| 135-98-8 | sec-Butylbenzene | 1000000 | 1040000 | 104 | 50-150 |
| 99-87-6 | p-Isopropyltoluene | 1000000 | 1090000 | 109 | 50-150 |
| 104-51-8 | n-Butylbenzene | 1000000 | 1020000 | 102 | 50-150 |
| 493-02-7 | trans-Decalin | 1000000 | 923000 | 92 | 50-150 |
| 493-01-6 | cis-Decalin | 1000000 | 896000 | 90 | 50-150 |
| 11095-43-5 | Benzo(b)thiophene | 1000000 | 972000 | 97 | 50-150 |
| 91-20-3 | Naphthalene | 1000000 | 985000 | 99 | 50-150 |
| 91-57-6 | 2-Methylnaphthalene | 1000000 | 917000 | 92 | 50-150 |
| 90-12-0 | 1-Methylnaphthalene | 1000000 | 1010000 | 101 | 50-150 |
| | C1-Naphthalenes | | ND | | 50-150 [a] |
| | C2-Naphthalenes | | ND | | 50-150 [a] |
| | C3-Naphthalenes | | ND | | 50-150 [a] |
| | C4-Naphthalenes | | ND | | 50-150 [a] |
| 92-52-4 | Biphenyl | 1000000 | 953000 | 95 | 50-150 |
| 208-96-8 | Acenaphthylene | 1000000 | 968000 | 97 | 50-150 |
| 83-32-9 | Acenaphthene | 1000000 | 999000 | 100 | 50-150 |
| 132-64-9 | Dibenzofuran | 1000000 | 1020000 | 102 | 50-150 |
| 86-73-7 | Fluorene | 1000000 | 969000 | 97 | 50-150 |
| | C1-Fluorenes | | ND | | 50-150 [a] |

* = Outside of Control Limits.

# Blank Spike Summary



**Job Number:** MC46549
**Account:** ENSRNJ AECOM, INC.
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP47956-BS2 | S39542.D | 1 | 06/24/16 | SZ | 06/23/16 | OP47956 | MSS1961 |

**The QC reported here applies to the following samples:** **Method:** D5739-06/8270M SIM

MC46549-1

| CAS No. | Compound | Spike ug/kg | BSP ug/kg | BSP % | Limits |
|---|---|---|---|---|---|
| | C2-Fluorenes | | ND | | 50-150 [a] |
| | C3-Fluorenes | | ND | | 50-150 [a] |
| 132-65-0 | Dibenzothiophene | 1000000 | 915000 | 92 | 50-150 |
| | C1-Dibenzothiophenes | | ND | | 50-150 [a] |
| | C2-Dibenzothiophenes | | ND | | 50-150 [a] |
| | C3-Dibenzothiophenes | | ND | | 50-150 [a] |
| | C4-Dibenzothiophenes | | ND | | 50-150 [a] |
| 85-01-8 | Phenanthrene | 1000000 | 984000 | 98 | 50-150 |
| 120-12-7 | Anthracene | 1000000 | 1020000 | 102 | 50-150 |
| | C1-Phenanthrenes/Anthracene | | ND | | 50-150 [a] |
| | C2-Phenanthrenes/Anthracene | | ND | | 50-150 [a] |
| | C3-Phenanthrenes/Anthracene | | ND | | 50-150 [a] |
| | C4-Phenanthrenes/Anthracene | | ND | | 50-150 [a] |
| 483-65-8 | Retene | 1000000 | 794000 | 79 | 50-150 |
| 239-35-0 | Benzo(b)naphtho(2,1-d)thioph | 1000000 | 979000 | 98 | 50-150 |
| 206-44-0 | Fluoranthene | 1000000 | 1000000 | 100 | 50-150 |
| 129-00-0 | Pyrene | 1000000 | 1030000 | 103 | 50-150 |
| | C1-Fluoranthenes/Pyrenes | | ND | | 50-150 [a] |
| | C2-Fluoranthenes/Pyrenes | | ND | | 50-150 [a] |
| | C3-Fluoranthenes/Pyrenes | | ND | | 50-150 [a] |
| 243-17-4 | Benzo(b)fluorene | | ND | | 50-150 [a] |
| 205-12-9 | Benzo(c)fluorene | | ND | | 50-150 [a] |
| 3442-78-2 | 2-Methylpyrene | | ND | | 50-150 [a] |
| 3353-12-6 | 4-Methylpyrene | | ND | | 50-150 [a] |
| 2381-21-7 | 1-Methylpyrene | | ND | | 50-150 [a] |
| 56-55-3 | Benz(a)anthracene | 1000000 | 959000 | 96 | 50-150 |
| | Chrysene/triphenylene | 1000000 | 965000 | 97 | 50-150 |
| | C1-Benzo(a)anthracenes/Chrys | | ND | | 50-150 [a] |
| | C2-Benzo(a)anthracenes/Chrys | | ND | | 50-150 [a] |
| | C3-Benzo(a)anthracenes/Chrys | | ND | | 50-150 [a] |
| | C4-Benzo(a)anthracenes/Chrys | | ND | | 50-150 [a] |
| 205-99-2 | Benzo(b)fluoranthene | 1000000 | 935000 | 94 | 50-150 |
| | Benzo(j/k)fluoranthene | 1000000 | 913000 | 91 | 50-150 |
| 192-97-2 | Benzo(e)pyrene | 1000000 | 907000 | 91 | 50-150 |
| 50-32-8 | Benzo(a)pyrene | 1000000 | 928000 | 93 | 50-150 |
| 198-55-0 | Perylene | 1000000 | 849000 | 85 | 50-150 |

* = Outside of Control Limits.

# Blank Spike Summary



**Job Number:** MC46549
**Account:** ENSRNJ AECOM, INC.
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP47956-BS2 | S39542.D | 1 | 06/24/16 | SZ | 06/23/16 | OP47956 | MSS1961 |

**The QC reported here applies to the following samples:** **Method:** D5739-06/8270M SIM

MC46549-1

| CAS No. | Compound | Spike ug/kg | BSP ug/kg | BSP % | Limits |
|---|---|---|---|---|---|
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 1000000 | 912000 | 91 | 50-150 |
| 53-70-3 | Dibenzo(a,h)anthracene | 1000000 | 917000 | 92 | 50-150 |
| 191-24-2 | Benzo(g,h,i)perylene | 1000000 | 873000 | 87 | 50-150 |
| 191-07-1 | Coronene | 1000000 | 829000 | 83 | 50-150 [a] |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 2037-26-5 | Toluene-D8 | 97% | 40-140% |
| 1146-65-2 | Naphthalene-d8 | 97% | 40-140% |
| 1517-22-2 | Phenanthrene-d10 | 97% | 40-140% |
| | Perylene-d12 | 86% | 40-140% |

(a) Advisory control limits.

* = Outside of Control Limits.

# Duplicate Summary



**Job Number:** MC46549
**Account:** ENSRNJ AECOM, INC.
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP47956-DUP1 | S39589.D | 1 | 07/05/16 | SZ | 06/23/16 | OP47956 | MSS1964 |
| MC46549-1 | S39591.D | 1 | 07/05/16 | SZ | 06/23/16 | OP47956 | MSS1964 |

**The QC reported here applies to the following samples:** **Method:** D5739-06/8270M SIM

MC46549-1

| CAS No. | Compound | MC46549-1 ug/kg | Q | DUP ug/kg | Q | RPD | Limits |
|---|---|---|---|---|---|---|---|
| 71-43-2 | Benzene | 846000 | | 922000 | | 9 | 30 |
| | C1-Benzene | 873000 | | 954000 | | 9 | 30 [a] |
| | C2-Benzenes | 4660000 | | 4990000 | | 7 | 30 [a] |
| | C3-Benzenes | 4880000 | | 5170000 | | 6 | 30 [a] |
| | C4-Benzenes | 2480000 | | 2580000 | | 4 | 30 [a] |
| | C5-Benzenes | 691000 | | 705000 | | 2 | 30 [a] |
| 108-88-3 | Toluene | 1190000 | | 1290000 | | 8 | 30 |
| 100-42-5 | Styrene | 190000 | | 191000 | | 1 | 30 |
| 98-82-8 | Isopropylbenzene | 512000 | | 546000 | | 6 | 30 |
| 103-65-1 | n-Propylbenzene | 221000 | | 234000 | | 6 | 30 |
| 98-06-6 | t-Butylbenzene | ND | | ND | | nc | 30 |
| 135-98-8 | sec-Butylbenzene | 17400 | | 18300 | | 5 | 30 |
| 99-87-6 | p-Isopropyltoluene | 345000 | | 364000 | | 5 | 30 |
| 104-51-8 | n-Butylbenzene | 174000 | | 182000 | | 4 | 30 |
| 493-02-7 | trans-Decalin | 27700 | | 30000 | | 8 | 30 |
| 493-01-6 | cis-Decalin | 11300 | | 14100 | | 22 | 30 |
| 11095-43-5 | Benzo(b)thiophene | 777000 | | 808000 | | 4 | 30 |
| | C3-Naphthalenes | 6250000 | | 6260000 | | 0 | 30 [a] |
| | C4-Naphthalenes | 1790000 | | 1710000 | | 5 | 30 [a] |
| 132-64-9 | Dibenzofuran | 653000 | | 648000 | | 1 | 30 |
| | C1-Fluorenes | 5080000 | | 4900000 | | 4 | 30 [a] |
| | C2-Fluorenes | 2990000 | | 2850000 | | 5 | 30 [a] |
| | C3-Fluorenes | 1060000 | | 1020000 | | 4 | 30 [a] |
| 132-65-0 | Dibenzothiophene | 1180000 | | 1110000 | | 6 | 30 |
| | C1-Dibenzothiophenes | 1420000 | | 1340000 | | 6 | 30 [a] |
| | C2-Dibenzothiophenes | 1000000 | | 949000 | | 5 | 30 [a] |
| | C3-Dibenzothiophenes | 455000 | | 437000 | | 4 | 30 [a] |
| | C4-Dibenzothiophenes | 138000 | | 131000 | | 5 | 30 [a] |
| | C2-Phenanthrenes/Anthracene | 6270000 | | 5830000 | | 7 | 30 [a] |
| | C3-Phenanthrenes/Anthracene | 1640000 | | 1510000 | | 8 | 30 [a] |
| | C4-Phenanthrenes/Anthracene | 401000 | | 357000 | | 12 | 30 [a] |
| 483-65-8 | Retene | ND | | ND | | nc | 30 |
| 239-35-0 | Benzo(b)naphtho(2,1-d)thioph | 434000 | | 396000 | | 9 | 30 |
| | C1-Fluoranthenes/Pyrenes | 9750000 | | 9000000 | | 8 | 30 [a] |
| | C2-Fluoranthenes/Pyrenes | 3210000 | | 2970000 | | 8 | 30 [a] |
| | C3-Fluoranthenes/Pyrenes | 991000 | | 897000 | | 10 | 30 [a] |

* = Outside of Control Limits.

# Duplicate Summary

**Job Number:** MC46549
**Account:** ENSRNJ AECOM, INC.
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP47956-DUP1 | S39589.D | 1 | 07/05/16 | SZ | 06/23/16 | OP47956 | MSS1964 |
| MC46549-1 | S39591.D | 1 | 07/05/16 | SZ | 06/23/16 | OP47956 | MSS1964 |

**The QC reported here applies to the following samples:** **Method:** D5739-06/8270M SIM

MC46549-1

| CAS No. | Compound | MC46549-1 ug/kg | Q | DUP ug/kg | Q | RPD | Limits |
|---|---|---|---|---|---|---|---|
| 243-17-4 | Benzo(b)fluorene | 981000 | | 898000 | | 9 | 30 [a] |
| 205-12-9 | Benzo(c)fluorene | 430000 | | 369000 | | 15 | 30 [a] |
| 3442-78-2 | 2-Methylpyrene | 1200000 | | 1130000 | | 6 | 30 [a] |
| 3353-12-6 | 4-Methylpyrene | 1070000 | | 968000 | | 10 | 30 [a] |
| 2381-21-7 | 1-Methylpyrene | 1500000 | | 1370000 | | 9 | 30 [a] |
| | C1-Benzo(a)anthracenes/Chrys | 3120000 | | 2880000 | | 8 | 30 [a] |
| | C2-Benzo(a)anthracenes/Chrys | 1180000 | | 1160000 | | 2 | 30 [a] |
| | C3-Benzo(a)anthracenes/Chrys | 414000 | | 362000 | | 13 | 30 [a] |
| | C4-Benzo(a)anthracenes/Chrys | 103000 | | 94000 | | 9 | 30 [a] |
| 205-99-2 | Benzo(b)fluoranthene | 1140000 | | 1050000 | | 8 | 30 |
| | Benzo(j/k)fluoranthene | 1390000 | | 1250000 | | 11 | 30 |
| 192-97-2 | Benzo(e)pyrene | 1310000 | | 1200000 | | 9 | 30 |
| 50-32-8 | Benzo(a)pyrene | 2560000 | | 2350000 | | 9 | 30 |
| 198-55-0 | Perylene | 355000 | | 323000 | | 9 | 30 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 715000 | | 640000 | | 11 | 30 |
| 53-70-3 | Dibenzo(a,h)anthracene | 304000 | | 277000 | | 9 | 30 |
| 191-24-2 | Benzo(g,h,i)perylene | 834000 | | 763000 | | 9 | 30 |
| 191-07-1 | Coronene | 177000 | | 159000 | | 11 | 30 [a] |

| CAS No. | Surrogate Recoveries | DUP | MC46549-1 | Limits |
|---|---|---|---|---|
| 2037-26-5 | Toluene-D8 | 99% | 93% | 40-140% |
| 1146-65-2 | Naphthalene-d8 | 99% | 94% | 40-140% |
| 1517-22-2 | Phenanthrene-d10 | 89% | 93% | 40-140% |
| | Perylene-d12 | 89% | 96% | 40-140% |

(a) Advisory control limits.

* = Outside of Control Limits.

# Duplicate Summary



**Job Number:** MC46549
**Account:** ENSRNJ AECOM, INC.
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP47956-DUP1 | S39590.D | 50 | 07/05/16 | SZ | 06/23/16 | OP47956 | MSS1964 |
| MC46549-1 | S39592.D | 50 | 07/05/16 | SZ | 06/23/16 | OP47956 | MSS1964 |

**The QC reported here applies to the following samples:** **Method:** D5739-06/8270M SIM

MC46549-1

| CAS No. | Compound | MC46549-1 ug/kg | Q | DUP ug/kg | Q | RPD | Limits |
|---|---|---|---|---|---|---|---|
| 100-41-4 | Ethylbenzene | 4840000 | | 4900000 | | 1 | 30 |
| | m,p-Xylene | 3830000 | | 3840000 | | 0 | 30 |
| 95-47-6 | o-Xylene | 2020000 | | 1990000 | | 1 | 30 |
| 108-67-8 | 1,3,5-Trimethylbenzene | 940000 | | 979000 | | 4 | 30 |
| 526-73-8 | 1,2,3-Trimethylbenzene | 887000 | | 896000 | | 1 | 30 |
| 95-63-6 | 1,2,4-Trimethylbenzene | 2760000 | | 2700000 | | 2 | 30 |
| 91-20-3 | Naphthalene | 63200000 | | 61700000 | | 2 | 30 |
| 91-57-6 | 2-Methylnaphthalene | 33300000 | | 32400000 | | 3 | 30 |
| 90-12-0 | 1-Methylnaphthalene | 24700000 | | 24000000 | | 3 | 30 |
| | C1-Naphthalenes | 36000000 | | 34800000 | | 3 | 30 [a] |
| | C2-Naphthalenes | 20600000 | | 19800000 | | 4 | 30 [a] |
| 92-52-4 | Biphenyl | 3530000 | | 3410000 | | 3 | 30 |
| 208-96-8 | Acenaphthylene | 5520000 | | 5480000 | | 1 | 30 |
| 83-32-9 | Acenaphthene | 17200000 | | 16900000 | | 2 | 30 |
| 86-73-7 | Fluorene | 7690000 | | 7700000 | | 0 | 30 |
| 85-01-8 | Phenanthrene | 26000000 | | 26800000 | | 3 | 30 |
| 120-12-7 | Anthracene | 8820000 | | 9170000 | | 4 | 30 |
| | C1-Phenanthrenes/Anthracene | 16600000 | | 17200000 | | 4 | 30 [a] |
| 206-44-0 | Fluoranthene | 6580000 | | 6820000 | | 4 | 30 |
| 129-00-0 | Pyrene | 10800000 | | 11400000 | | 5 | 30 |
| 56-55-3 | Benz(a)anthracene | 2380000 | | 2640000 | | 10 | 30 |
| | Chrysene/triphenylene | 3540000 | | 3730000 | | 5 | 30 |

| CAS No. | Surrogate Recoveries | DUP | MC46549-1 | Limits |
|---|---|---|---|---|
| 2037-26-5 | Toluene-D8 | 107% | 107% | 40-140% |
| 1146-65-2 | Naphthalene-d8 | 103% | 99% | 40-140% |
| 1517-22-2 | Phenanthrene-d10 | 97% | 96% | 40-140% |
| | Perylene-d12 | 103% | 93% | 40-140% |

(a) Advisory control limits.

* = Outside of Control Limits.

# Semivolatile Internal Standard Area Summary



**Job Number:** MC46549
**Account:** ENSRNJ AECOM, INC.
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| | | | |
|---|---|---|---|
| **Check Std:** | MSS1961-CC1950 | **Injection Date:** | 06/24/16 |
| **Lab File ID:** | S39537.D | **Injection Time:** | 03:03 |
| **Instrument ID:** | GCMSS | **Method:** | D5739-06/8270M SIM |

| | IS 1 AREA | RT |
|---|---|---|
| Check Std | 32278 | 28.35 |
| Upper Limit [a] | 64556 | 28.85 |
| Lower Limit [b] | 16139 | 27.85 |

| Lab Sample ID | IS 1 AREA | RT |
|---|---|---|
| OP47956-MB | 29481 | 28.35 |
| OP47956-BS2 | 27941 | 28.35 |
| OP47956-DUP2 | 31773 | 28.36 |
| MC46563-1 | 30198 | 28.36 |
| MSS1961-ECC1950 | 28398 | 28.34 |

**IS 1** = Acenaphthene-d10

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

# Semivolatile Internal Standard Area Summary



**Job Number:** MC46549
**Account:** ENSRNJ AECOM, INC.
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| | | | |
|---|---|---|---|
| **Check Std:** | MSS1964-CC1950 | **Injection Date:** | 07/05/16 |
| **Lab File ID:** | S39583.D | **Injection Time:** | 09:14 |
| **Instrument ID:** | GCMSS | **Method:** | D5739-06/8270M SIM |

| | IS 1 AREA | RT |
|---|---|---|
| Check Std | 28535 | 28.34 |
| Upper Limit [a] | 57070 | 28.84 |
| Lower Limit [b] | 14268 | 27.84 |

| Lab Sample ID | IS 1 AREA | RT |
|---|---|---|
| OP48022-DUP1 | 25985 | 28.35 |
| MC46305-1A | 26153 | 28.35 |
| OP48022-DUP2 | 29272 | 28.35 |
| MC46305-2A | 27624 | 28.35 |
| OP47956-DUP1 | 33557 | 28.35 |
| OP47956-DUP1 | 29843 | 28.34 |
| MC46549-1 | 34024 | 28.35 |
| MC46549-1 | 29890 | 28.34 |
| MSS1964-ECC1950 | 30612 | 28.34 |

**IS 1** = Acenaphthene-d10

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

# Semivolatile Surrogate Recovery Summary



**Job Number:** MC46549
**Account:** ENSRNJ AECOM, INC.
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

**Method:** D5739-06/8270M SIM **Matrix:** SO

**Samples and QC shown here apply to the above method**

| Lab Sample ID | Lab File ID | S1 | S2 | S3 | S4 |
|---|---|---|---|---|---|
| MC46549-1 | S39592.D | 107 | 99 | 96 | 93 |
| MC46549-1 | S39591.D | 93 | 94 | 93 | 96 |
| OP47956-BS2 | S39542.D | 97 | 97 | 97 | 86 |
| OP47956-DUP1 | S39590.D | 107 | 103 | 97 | 103 |
| OP47956-DUP1 | S39589.D | 99 | 99 | 89 | 89 |
| OP47956-MB | S39541.D | 105 | 91 | 90 | 80 |

| Surrogate Compounds | Recovery Limits |
|---|---|
| **S1** = Toluene-D8 | 40-140% |
| **S2** = Naphthalene-d8 | 40-140% |
| **S3** = Phenanthrene-d10 | 40-140% |
| **S4** = Perylene-d12 | 40-140% |

# Initial Calibration Summary



**Job Number:** MC46549 **Sample:** MSS1950-ICC1950
**Account:** ENSRNJ AECOM, INC. **Lab FileID:** S39335.D
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Response Factor Report MSS

Method : S:\1\methods\S160601-MAHPAH-A.M (RTE Integrator)
Title : PAHs & Alkylated PAHs by GC/MS/SIM
Last Update : Thu Jun 02 12:08:50 2016
Response via : Initial Calibration

Calibration Files
0.01=S39332.D 0.05=S39333.D 0.25=S39334.D 1.00=S39335.D
5.00 =S39336.D 20.0 =S39337.D

| | | Compound | 0.01 | 0.05 | 0.25 | 1.00 | 5.00 | 20.0 | Avg | %RSD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1) | I | Acenaphthene-d10 | ISTD | | | | | | | |
| 2) | S | Toluene-d8 | 1.718 | 1.405 | 1.512 | 1.487 | 1.431 | 1.414 | 1.495 | 7.86 |
| 3) | S | Naphthalene-d8 | 2.209 | 2.103 | 2.122 | 2.086 | 2.129 | 2.037 | 2.114 | 2.69 |
| 4) | S | Phenanthrene-d10 | 1.534 | 1.449 | 1.582 | 1.509 | 1.520 | 1.445 | 1.506 | 3.47 |
| 5) | S | Perylene-d12 | 1.326 | 1.195 | 1.267 | 1.219 | 1.205 | 1.152 | 1.227 | 4.96 |
| 6) | | MTBE | 1.030 | 1.052 | 1.646 | 1.185 | 0.881 | 0.850 | 1.107 | 26.25 |
| | | ---- Linear regr., Force(0,0) ---- Coefficient = 0.9996 | | | | | | | | |
| | | Response Ratio = 0.00000 + 0.85243 *A | | | | | | | | |
| 7) | J1 | Benzene | 2.946 | 1.786 | 1.721 | 1.686 | 1.603 | 1.545 | 1.881 | 28.09 |
| | | ---- Linear regr., Force(0,0) ---- Coefficient = 0.9999 | | | | | | | | |
| | | Response Ratio = 0.00000 + 1.54882 *A | | | | | | | | |
| 8) | J2 | C1-Benzene | 2.946 | 1.786 | 1.721 | 1.686 | 1.603 | 1.545 | 1.881 | 28.09 |
| | | ---- Linear regr., Force(0,0) ---- Coefficient = 0.9999 | | | | | | | | |
| | | Response Ratio = 0.00000 + 1.54882 *A | | | | | | | | |
| 9) | J2 | C2-Benzenes | 2.946 | 1.786 | 1.721 | 1.686 | 1.603 | 1.545 | 1.881 | 28.09 |
| | | ---- Linear regr., Force(0,0) ---- Coefficient = 0.9999 | | | | | | | | |
| | | Response Ratio = 0.00000 + 1.54882 *A | | | | | | | | |
| 10) | J2 | C3-Benzenes | 2.946 | 1.786 | 1.721 | 1.686 | 1.603 | 1.545 | 1.881 | 28.09 |
| | | ---- Linear regr., Force(0,0) ---- Coefficient = 0.9999 | | | | | | | | |
| | | Response Ratio = 0.00000 + 1.54882 *A | | | | | | | | |
| 11) | J2 | C4-Benzenes | 2.946 | 1.786 | 1.721 | 1.686 | 1.603 | 1.545 | 1.881 | 28.09 |
| | | ---- Linear regr., Force(0,0) ---- Coefficient = 0.9999 | | | | | | | | |
| | | Response Ratio = 0.00000 + 1.54882 *A | | | | | | | | |
| 12) | J2 | C5-Benzenes | 2.946 | 1.786 | 1.721 | 1.686 | 1.603 | 1.545 | 1.881 | 28.09 |
| | | ---- Linear regr., Force(0,0) ---- Coefficient = 0.9999 | | | | | | | | |
| | | Response Ratio = 0.00000 + 1.54882 *A | | | | | | | | |
| 13) | | 2,2,4-trimethylpent | 3.366 | 5.878 | 1.808 | 1.750 | 1.641 | 1.564 | 2.668 | 64.15 |
| | | ---- Linear regr., Force(0,0) ---- Coefficient = 0.9999 | | | | | | | | |
| | | Response Ratio = 0.00000 + 1.56942 *A | | | | | | | | |
| 14) | | n-Heptane | 0.914 | 0.879 | 0.914 | 0.860 | 0.838 | 0.802 | 0.868 | 5.06 |
| 15) | | Methylcyclohexane | 0.919 | 0.648 | 0.738 | 0.713 | 0.698 | 0.679 | 0.733 | 13.12 |
| 16) | | Toluene | 2.374 | 2.008 | 1.895 | 1.826 | 1.753 | 1.728 | 1.931 | 12.41 |
| 17) | | n-Octane | 1.531 | 1.097 | 1.137 | 1.076 | 1.043 | 1.033 | 1.153 | 16.40 |
| 18) | | Ethylbenzene | 2.594 | 2.092 | 2.135 | 2.074 | 2.018 | 1.966 | 2.146 | 10.57 |
| 19) | | m,p-xylene | 1.936 | 1.749 | 1.780 | 1.718 | 1.675 | 1.638 | 1.749 | 5.98 |
| 20) | | Styrene | 2.062 | 1.728 | 1.260 | 1.236 | 1.237 | 1.212 | 1.456 | 24.49 |
| 21) | | o-Xylene | 2.229 | 1.733 | 1.784 | 1.704 | 1.672 | 1.623 | 1.791 | 12.38 |
| 22) | | Isopropylbenzene | 2.237 | 1.972 | 2.027 | 1.971 | 1.971 | 1.887 | 2.011 | 5.94 |

# Initial Calibration Summary

**Job Number:** MC46549 **Sample:** MSS1950-ICC1950
**Account:** ENSRNJ AECOM, INC. **Lab FileID:** S39335.D
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 23) | | n-Propylbenzene | 2.910 | 2.490 | 2.535 | 2.475 | 2.487 | 2.348 | 2.541 | 7.54 |
| 24) | | 1,3,5-Trimethylbenz | 1.906 | 1.755 | 1.844 | 1.803 | 1.847 | 1.743 | 1.816 | 3.38 |
| 25) | | Phenol | 1.511 | 0.951 | 0.919 | 0.963 | 1.069 | 1.085 | 1.083 | 20.32 |
| 26) | | t-Butylbenzene | 1.832 | 1.552 | 1.613 | 1.553 | 1.609 | 1.534 | 1.616 | 6.87 |
| 27) | | 1,2,4-Trimethylbenz | 2.166 | 1.811 | 1.868 | 1.818 | 1.882 | 1.784 | 1.888 | 7.47 |
| 28) | | sec-Butylbenzene | 2.647 | 2.217 | 2.183 | 2.140 | 2.200 | 2.082 | 2.245 | 9.04 |
| 29) | | 1,2,3-Trimethylbenz | 2.189 | 1.826 | 1.850 | 1.795 | 1.903 | 1.806 | 1.895 | 7.87 |
| 30) | | p-Isopropyltoluene | 2.113 | 1.883 | 1.929 | 1.886 | 1.996 | 1.892 | 1.950 | 4.65 |
| 31) | | Indane | 1.827 | 1.668 | 1.692 | 1.665 | 1.745 | 1.634 | 1.705 | 4.12 |
| 32) | | Indene | 1.703 | 1.625 | 1.674 | 1.647 | 1.740 | 1.623 | 1.669 | 2.78 |
| 33) | | n-Butylbenzene | 2.389 | 1.852 | 1.839 | 1.851 | 1.969 | 1.849 | 1.958 | 11.07 |
| 34) | J1 | trans-Decalin | 0.445 | 0.338 | 0.360 | 0.352 | 0.368 | 0.354 | 0.370 | 10.40 |
| 35) | | cis-Decalin | 0.663 | 0.488 | 0.484 | 0.466 | 0.486 | 0.464 | 0.509 | 15.01 |
| 36) | J2 | C1-Decalins | 0.445 | 0.338 | 0.360 | 0.352 | 0.368 | 0.354 | 0.370 | 10.40 |
| 37) | J2 | C2-Decalins | 0.445 | 0.338 | 0.360 | 0.352 | 0.368 | 0.354 | 0.370 | 10.40 |
| 38) | J2 | C3-Decalins | 0.445 | 0.338 | 0.360 | 0.352 | 0.368 | 0.354 | 0.370 | 10.40 |
| 39) | J2 | C4-Decalins | 0.445 | 0.338 | 0.360 | 0.352 | 0.368 | 0.354 | 0.370 | 10.40 |
| 40) | J1 | Benzo(b)thiophene | 2.351 | 2.120 | 2.125 | 2.088 | 2.153 | 2.050 | 2.148 | 4.91 |
| 41) | J2 | C1-Benzo(b)thiophen | 2.351 | 2.120 | 2.125 | 2.088 | 2.153 | 2.050 | 2.148 | 4.91 |
| 42) | J2 | C2-Benzo(b)thiophen | 2.351 | 2.120 | 2.125 | 2.088 | 2.153 | 2.050 | 2.148 | 4.91 |
| 43) | J2 | C3-Benzo(b)thiophen | 2.351 | 2.120 | 2.125 | 2.088 | 2.153 | 2.050 | 2.148 | 4.91 |
| 44) | J2 | C4-Benzo(b)thiophen | 2.351 | 2.120 | 2.125 | 2.088 | 2.153 | 2.050 | 2.148 | 4.91 |
| 45) | J1 | Tetraethyl lead | 0.180 | 0.181 | 0.159 | 0.150 | 0.154 | 0.155 | 0.163 | 8.42 |
| 46) | J2 | Tetramethyl lead | 0.180 | 0.181 | 0.159 | 0.150 | 0.154 | 0.155 | 0.163 | 8.42 |
| 47) | J2 | Trimethylethyl lead | 0.180 | 0.181 | 0.159 | 0.150 | 0.154 | 0.155 | 0.163 | 8.42 |
| 48) | J2 | Dimethyldiethyl lea | 0.180 | 0.181 | 0.159 | 0.150 | 0.154 | 0.155 | 0.163 | 8.42 |
| 49) | J2 | Methyltriethyl lead | 0.180 | 0.181 | 0.159 | 0.150 | 0.154 | 0.155 | 0.163 | 8.42 |
| 50) | | MMT | 0.908 | 0.810 | 0.800 | 0.757 | 0.774 | 0.765 | 0.803 | 6.94 |
| 51) | J1 | Naphthalene | 2.806 | 2.656 | 2.616 | 2.560 | 2.605 | 2.486 | 2.622 | 4.10 |
| 52) | | 2-Methylnaphthalene | 1.951 | 1.647 | 1.642 | 1.618 | 1.674 | 1.629 | 1.693 | 7.54 |
| 53) | | 1-Methylnaphthalene | 1.668 | 1.495 | 1.480 | 1.438 | 1.482 | 1.431 | 1.499 | 5.77 |
| 54) | J2 | C1-Naphthalenes | 2.806 | 2.656 | 2.616 | 2.560 | 2.605 | 2.486 | 2.622 | 4.10 |
| 55) | J2 | C2-Naphthalenes | 2.806 | 2.656 | 2.616 | 2.560 | 2.605 | 2.486 | 2.622 | 4.10 |
| 56) | J2 | C3-Naphthalenes | 2.806 | 2.656 | 2.616 | 2.560 | 2.605 | 2.486 | 2.622 | 4.10 |
| 57) | J2 | C4-Naphthalenes | 2.806 | 2.656 | 2.616 | 2.560 | 2.605 | 2.486 | 2.622 | 4.10 |
| 58) | | Biphenyl | 2.356 | 1.896 | 1.930 | 1.892 | 1.884 | 1.888 | 1.974 | 9.51 |
| 59) | | Acenaphthylene | 2.533 | 2.487 | 2.531 | 2.515 | 2.470 | 2.494 | 2.505 | 1.01 |
| 60) | | Acenaphthene | 1.511 | 1.412 | 1.434 | 1.410 | 1.409 | 1.408 | 1.431 | 2.83 |
| 61) | | Dibenzofuran | 2.065 | 2.015 | 2.111 | 2.049 | 2.039 | 2.032 | 2.052 | 1.64 |
| 62) | J1 | Fluorene | 1.817 | 1.653 | 1.733 | 1.656 | 1.729 | 1.673 | 1.710 | 3.69 |
| 63) | J2 | C1-Fluorenes | 1.817 | 1.653 | 1.733 | 1.656 | 1.729 | 1.673 | 1.710 | 3.69 |
| 64) | J2 | C2-Fluorenes | 1.817 | 1.653 | 1.733 | 1.656 | 1.729 | 1.673 | 1.710 | 3.69 |
| 65) | J2 | C3-Fluorenes | 1.817 | 1.653 | 1.733 | 1.656 | 1.729 | 1.673 | 1.710 | 3.69 |
| 66) | J1 | Dibenzothiophene | 2.450 | 2.315 | 2.482 | 2.357 | 2.449 | 2.286 | 2.390 | 3.40 |
| 67) | J2 | C1-Dibenzothiophene | 2.450 | 2.315 | 2.482 | 2.357 | 2.449 | 2.286 | 2.390 | 3.40 |
| 68) | J2 | C1-Dibenzothiophene | 2.450 | 2.315 | 2.482 | 2.357 | 2.449 | 2.286 | 2.390 | 3.40 |
| 69) | J2 | C2-Dibenzothiophene | 2.450 | 2.315 | 2.482 | 2.357 | 2.449 | 2.286 | 2.390 | 3.40 |
| 70) | J2 | C3-Dibenzothiophene | 2.450 | 2.315 | 2.482 | 2.357 | 2.449 | 2.286 | 2.390 | 3.40 |
| 71) | J2 | C4-Dibenzothiophene | 2.450 | 2.315 | 2.482 | 2.357 | 2.449 | 2.286 | 2.390 | 3.40 |
| 72) | J1 | Phenanthrene | 2.389 | 2.154 | 2.287 | 2.185 | 2.190 | 2.106 | 2.218 | 4.62 |
| 73) | | Anthracene | 1.987 | 1.969 | 2.174 | 2.115 | 2.152 | 2.068 | 2.077 | 4.11 |
| 74) | J2 | C1-Phenanthrenes/an | 2.389 | 2.154 | 2.287 | 2.185 | 2.190 | 2.106 | 2.218 | 4.62 |
| 75) | J2 | C2-Phenanthrenes/an | 2.389 | 2.154 | 2.287 | 2.185 | 2.190 | 2.106 | 2.218 | 4.62 |
| 76) | J2 | C2-Phenanthrenes/an | 2.389 | 2.154 | 2.287 | 2.185 | 2.190 | 2.106 | 2.218 | 4.62 |
| 77) | J2 | C3-Phenanthrenes/an | 2.389 | 2.154 | 2.287 | 2.185 | 2.190 | 2.106 | 2.218 | 4.62 |
| 78) | J2 | C4-Phenanthrenes/an | 2.389 | 2.154 | 2.287 | 2.185 | 2.190 | 2.106 | 2.218 | 4.62 |
| 79) | | Carbazole | 2.285 | 1.979 | 2.240 | 2.171 | 2.182 | 2.168 | 2.171 | 4.82 |
| 80) | | Retene | 0.633 | 0.484 | 0.518 | 0.503 | 0.516 | 0.507 | 0.527 | 10.12 |
| 81) | J1 | Benzo(b)naphtho(2,1 | 2.131 | 1.943 | 2.161 | 2.083 | 2.083 | 1.998 | 2.066 | 3.96 |
| 82) | J2 | C1-Benzonaphthothio | 2.131 | 1.943 | 2.161 | 2.083 | 2.083 | 1.998 | 2.066 | 3.96 |

# Initial Calibration Summary

**Job Number:** MC46549 **Sample:** MSS1950-ICC1950
**Account:** ENSRNJ AECOM, INC. **Lab FileID:** S39335.D
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 83) | J2 | C2-Benzonaphthothio | 2.131 | 1.943 | 2.161 | 2.083 | 2.083 | 1.998 | 2.066 | 3.96 |
| 84) | J2 | C3-Benzonaphthothio | 2.131 | 1.943 | 2.161 | 2.083 | 2.083 | 1.998 | 2.066 | 3.96 |
| 85) | J2 | C4-Benzonaphthothio | 2.131 | 1.943 | 2.161 | 2.083 | 2.083 | 1.998 | 2.066 | 3.96 |
| 86) | | Fluoranthene | 2.283 | 2.089 | 2.304 | 2.199 | 2.227 | 2.133 | 2.206 | 3.80 |
| 87) | J1 | Pyrene | 2.293 | 2.093 | 2.283 | 2.189 | 2.194 | 2.108 | 2.193 | 3.82 |
| 88) | J2 | C1-Fluoranthenes/py | 2.293 | 2.093 | 2.283 | 2.189 | 2.194 | 2.108 | 2.193 | 3.82 |
| 89) | J2 | Benzo(b)fluorene | 2.293 | 2.093 | 2.283 | 2.189 | 2.194 | 2.108 | 2.193 | 3.82 |
| 90) | J2 | Benzo(c)fluorene | 2.293 | 2.093 | 2.283 | 2.189 | 2.194 | 2.108 | 2.193 | 3.82 |
| 91) | J2 | 2-Methylpyrene | 2.293 | 2.093 | 2.283 | 2.189 | 2.194 | 2.108 | 2.193 | 3.82 |
| 92) | J2 | 4-Methylpyrene | 2.293 | 2.093 | 2.283 | 2.189 | 2.194 | 2.108 | 2.193 | 3.82 |
| 93) | J2 | 1-Methylpyrene | 2.293 | 2.093 | 2.283 | 2.189 | 2.194 | 2.108 | 2.193 | 3.82 |
| 94) | J2 | C2-Fluoranthenes/py | 2.293 | 2.093 | 2.283 | 2.189 | 2.194 | 2.108 | 2.193 | 3.82 |
| 95) | J2 | C3-Fluoranthenes/py | 2.293 | 2.093 | 2.283 | 2.189 | 2.194 | 2.108 | 2.193 | 3.82 |
| 96) | J2 | C4-Fluoranthenes/py | 2.293 | 2.093 | 2.283 | 2.189 | 2.194 | 2.108 | 2.193 | 3.82 |
| 97) | | Benz(a)anthracene | 2.035 | 1.768 | 1.934 | 1.882 | 1.909 | 1.824 | 1.892 | 4.87 |
| 98) | J1 | Chrysene/triphenyle | 1.809 | 1.743 | 1.899 | 1.839 | 1.850 | 1.723 | 1.811 | 3.70 |
| 99) | J2 | C1-Benz(a)anthracen | 1.809 | 1.743 | 1.899 | 1.839 | 1.850 | 1.723 | 1.811 | 3.70 |
| 100) | J2 | C2-Benz(a)anthracen | 1.809 | 1.743 | 1.899 | 1.839 | 1.850 | 1.723 | 1.811 | 3.70 |
| 101) | J2 | C3-Benz(a)anthracen | 1.809 | 1.743 | 1.899 | 1.839 | 1.850 | 1.723 | 1.811 | 3.70 |
| 102) | J2 | C4-Benz(a)anthracen | 1.809 | 1.743 | 1.899 | 1.839 | 1.850 | 1.723 | 1.811 | 3.70 |
| 103) | | Benzo(b)fluoranthen | 2.245 | 1.975 | 2.139 | 2.108 | 2.009 | 2.035 | 2.085 | 4.77 |
| 104) | | Benzo(j/k)fluoranth | 2.293 | 2.058 | 2.211 | 2.122 | 2.077 | 1.917 | 2.113 | 6.15 |
| 105) | | Benzo(e)pyrene | 2.136 | 1.991 | 2.075 | 2.026 | 1.912 | 1.868 | 2.001 | 5.00 |
| 106) | | Benzo(a)pyrene | 2.192 | 1.891 | 2.011 | 1.970 | 1.926 | 1.851 | 1.973 | 6.13 |
| 107) | | Perylene | 2.280 | 1.993 | 2.110 | 2.069 | 2.016 | 1.911 | 2.063 | 6.12 |
| 108) | | Indeno(1,2,3-cd)pyr | 2.827 | 2.410 | 2.627 | 2.542 | 2.443 | 2.469 | 2.553 | 6.07 |
| 109) | | Dibenz(a,h)anthrace | 2.116 | 2.029 | 2.179 | 2.138 | 2.058 | 2.012 | 2.089 | 3.16 |
| 110) | | Benzo(g,h,i)perylen | 2.450 | 2.293 | 2.404 | 2.328 | 2.259 | 2.157 | 2.315 | 4.52 |
| 111) | | Coronene | 2.667 | 2.442 | 2.523 | 2.432 | 2.346 | 2.300 | 2.452 | 5.35 |
| 112) | | C-17 | 1.076 | 0.549 | 0.535 | 0.525 | 0.558 | 0.543 | 0.631 | 34.56 |
| | | ---- Linear regr., Force(0,0) ---- Coefficient = 0.9999 | | | | | | | | |
| | | Response Ratio = 0.00000 + 0.54386 *A | | | | | | | | |
| 113) | | Pristane | 0.486 | 0.411 | 0.417 | 0.408 | 0.431 | 0.415 | 0.428 | 6.92 |
| 114) | | C-18 | 1.007 | 0.557 | 0.544 | 0.539 | 0.565 | 0.552 | 0.627 | 29.70 |
| | | ---- Linear regr., Force(0,0) ---- Coefficient = 1.0000 | | | | | | | | |
| | | Response Ratio = 0.00000 + 0.55238 *A | | | | | | | | |
| 115) | J1 | Phytane | 0.706 | 0.540 | 0.581 | 0.564 | 0.589 | 0.576 | 0.593 | 9.80 |
| 116) | J2 | TPH (C8-C40) | 0.706 | 0.540 | 0.581 | 0.564 | 0.589 | 0.576 | 0.593 | 9.80 |
| 117) | J2 | 2,6,10-Trimethyldod | 0.706 | 0.540 | 0.581 | 0.564 | 0.589 | 0.576 | 0.593 | 9.80 |
| 118) | J2 | 2,6,10-Trimethyltri | 0.706 | 0.540 | 0.581 | 0.564 | 0.589 | 0.576 | 0.593 | 9.80 |
| 119) | J2 | 2,6,10-Trimethylpen | 0.706 | 0.540 | 0.581 | 0.564 | 0.589 | 0.576 | 0.593 | 9.80 |

(#) = Out of Range

S160601-MAHPAH-A.M Mon Jun 06 09:27:20 2016

# Initial Calibration Verification



**Job Number:** MC46549 **Sample:** MSS1950-ICV1950
**Account:** ENSRNJ AECOM, INC. **Lab FileID:** S39345.D
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Evaluate Continuing Calibration Report

Data File : S:\1\data\S160601\S39345.D Vial: 10
Acq On : 2 Jun 2016 9:49 am Operator: sofyaz
Sample : icv1950-1.0,fs238 Inst : MSS
Misc : OP47644,MSS1950,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p GC Integration Params: rteint2.p

Method : S:\1\methods\S160601-MAHPAH-A.M (RTE Integrator)
Title : PAHs & Alkylated PAHs by GC/MS/SIM
Last Update : Thu Jun 02 12:08:50 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

| | | Compound | AvgRF | CCRF | %Dev | Area% | Dev(min) | R.T. |
|---|---|---|---|---|---|---|---|---|
| 1 | I | Acenaphthene-d10 | 1.000 | 1.000 | 0.0 | 103 | 0.05 | 28.72 |
| 2 | S | Toluene-d8 | 1.495 | 1.464 | 2.1 | 102 | 0.04 | 9.75 |
| 3 | S | Naphthalene-d8 | 2.114 | 2.132 | -0.9 | 106 | 0.06 | 21.76 |
| 4 | S | Phenanthrene-d10 | 1.506 | 1.585 | -5.2 | 109 | 0.05 | 34.58 |
| 5 | S | Perylene-d12 | 1.227 | 1.291 | -5.2 | 109 | 0.05 | 50.41 |
| | | | Amount | Calc. | %Drift | | | |
| 6 | | MTBE | 1000.000 | 1783.755 | -78.4# | 133 | 0.03 | 5.80 |
| 7 | J1 | Benzene | 1000.000 | 1111.472 | -11.1 | 106 | 0.03 | 7.26 |
| 8 | J2 | C1-Benzene | | ----------NA---------- | | | | |
| 9 | J2 | C2-Benzenes | | ----------NA---------- | | | | |
| 10 | J2 | C3-Benzenes | | ----------NA---------- | | | | |
| 11 | J2 | C4-Benzenes | | ----------NA---------- | | | | |
| 12 | J2 | C5-Benzenes | | ----------NA---------- | | | | |
| 13 | | 2,2,4-trimethylpentane | 1000.000 | 1149.090 | -14.9 | 107 | 0.03 | 7.76 |
| | | | AvgRF | CCRF | %Dev | | | |
| 14 | | n-Heptane | 0.868 | 0.820 | 5.5 | 99 | 0.03 | 8.03 |
| 15 | | Methylcyclohexane | 0.733 | 0.770 | -5.0 | 112 | 0.04 | 8.67 |
| 16 | | Toluene | 1.931 | 1.930 | 0.1 | 109 | 0.03 | 9.85 |
| 17 | | n-Octane | 1.153 | 1.075 | 6.8 | 103 | 0.04 | 10.72 |
| 18 | | Ethylbenzene | 2.146 | 2.313 | -7.8 | 115 | 0.04 | 12.63 |
| 19 | | m,p-xylene | 1.749 | 1.884 | -7.7 | 113 | 0.04 | 12.86 |
| 20 | | Styrene | 1.456 | 1.322 | 9.2 | 111 | 0.04 | 13.51 |
| 21 | | o-Xylene | 1.791 | 1.902 | -6.2 | 115 | 0.04 | 13.58 |
| 22 | | Isopropylbenzene | 2.011 | 2.202 | -9.5 | 116 | 0.03 | 14.50 |
| 23 | | n-Propylbenzene | 2.541 | 2.759 | -8.6 | 115 | 0.04 | 15.36 |
| 24 | | 1,3,5-Trimethylbenzene | 1.816 | 1.913 | -5.3 | 110 | 0.04 | 15.78 |
| 25 | | Phenol | 1.083 | 0.919 | 15.1 | 99 | 0.04 | 15.97 |
| 26 | | t-Butylbenzene | 1.616 | 1.698 | -5.1 | 113 | 0.04 | 16.50 |
| 27 | | 1,2,4-Trimethylbenzene | 1.888 | 1.923 | -1.9 | 109 | 0.03 | 16.52 |
| 28 | | sec-Butylbenzene | 2.245 | 2.357 | -5.0 | 114 | 0.04 | 17.02 |
| 29 | | 1,2,3-Trimethylbenzene | 1.895 | 1.962 | -3.5 | 113 | 0.06 | 17.38 |
| 30 | | p-Isopropyltoluene | 1.950 | 2.073 | -6.3 | 114 | 0.06 | 17.39 |
| 31 | | Indane | 1.705 | 1.639 | 3.9 | 102 | 0.06 | 17.78 |
| 32 | | Indene | 1.669 | 1.630 | 2.3 | 102 | 0.04 | 18.03 |
| 33 | | n-Butylbenzene | 1.958 | 2.088 | -6.6 | 117 | 0.06 | 18.27 |
| 34 | J1 | trans-Decalin | 0.370 | 0.335 | 9.5 | 98 | 0.04 | 18.36 |
| 35 | | cis-Decalin | 0.509 | 0.467 | 8.3 | 103 | 0.04 | 19.59 |
| 36 | J2 | C1-Decalins | | ----------NA---------- | | | | |
| 37 | J2 | C2-Decalins | | ----------NA---------- | | | | |
| 38 | J2 | C3-Decalins | | ----------NA---------- | | | | |

# Initial Calibration Verification

**Job Number:** MC46549 **Sample:** MSS1950-ICV1950
**Account:** ENSRNJ AECOM, INC. **Lab FileID:** S39345.D
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 39 | J2 | C4-Decalins | | ----------NA---------- | | | | |
| 40 | J1 | Benzo(b)thiophene | 2.148 | 2.172 | -1.1 | 108 | 0.06 | 22.06 |
| 41 | J2 | C1-Benzo(b)thiophenes | | ----------NA---------- | | | | |
| 42 | J2 | C2-Benzo(b)thiophenes | | ----------NA---------- | | | | |
| 43 | J2 | C3-Benzo(b)thiophenes | | ----------NA---------- | | | | |
| 44 | J2 | C4-Benzo(b)thiophenes | | ----------NA---------- | | | | |
| 45 | J1 | Tetraethyl lead | 0.163 | 0.144 | 11.7 | 100 | 0.06 | 20.89 |
| 46 | J2 | Tetramethyl lead | | ----------NA---------- | | | | |
| 47 | J2 | Trimethylethyl lead | | ----------NA---------- | | | | |
| 48 | J2 | Dimethyldiethyl lead | | ----------NA---------- | | | | |
| 49 | J2 | Methyltriethyl lead | | ----------NA---------- | | | | |
| 50 | | MMT | 0.803 | 0.844 | -5.1 | 115 | 0.05 | 23.64 |
| 51 | J1 | Naphthalene | 2.622 | 2.761 | -5.3 | 112 | 0.06 | 21.84 |
| 52 | | 2-Methylnaphthalene | 1.693 | 1.667 | 1.5 | 107 | 0.06 | 24.54 |
| 53 | | 1-Methylnaphthalene | 1.499 | 1.629 | -8.7 | 117 | 0.05 | 24.96 |
| 54 | J2 | C1-Naphthalenes | | ----------NA---------- | | | | |
| 55 | J2 | C2-Naphthalenes | | ----------NA---------- | | | | |
| 56 | J2 | C3-Naphthalenes | | ----------NA---------- | | | | |
| 57 | J2 | C4-Naphthalenes | | ----------NA---------- | | | | |
| 58 | | Biphenyl | 1.974 | 2.010 | -1.8 | 110 | 0.06 | 26.44 |
| 59 | | Acenaphthylene | 2.505 | 2.660 | -6.2 | 109 | 0.06 | 28.11 |
| 60 | | Acenaphthene | 1.431 | 1.530 | -6.9 | 112 | 0.05 | 28.85 |
| 61 | | Dibenzofuran | 2.052 | 2.216 | -8.0 | 112 | 0.06 | 29.50 |
| 62 | J1 | Fluorene | 1.710 | 1.778 | -4.0 | 111 | 0.06 | 30.87 |
| 63 | J2 | C1-Fluorenes | | ----------NA---------- | | | | |
| 64 | J2 | C2-Fluorenes | | ----------NA---------- | | | | |
| 65 | J2 | C3-Fluorenes | | ----------NA---------- | | | | |
| 66 | J1 | Dibenzothiophene | 2.390 | 2.323 | 2.8 | 102 | 0.06 | 34.17 |
| 67 | J2 | C1-Dibenzothiophenes (una | | ----------NA---------- | | | | |
| 68 | J2 | C1-Dibenzothiophenes (OTP | | ----------NA---------- | | | | |
| 69 | J2 | C2-Dibenzothiophenes | | ----------NA---------- | | | | |
| 70 | J2 | C3-Dibenzothiophenes | | ----------NA---------- | | | | |
| 71 | J2 | C4-Dibenzothiophenes | | ----------NA---------- | | | | |
| 72 | J1 | Phenanthrene | 2.218 | 2.382 | -7.4 | 113 | 0.06 | 34.66 |
| 73 | | Anthracene | 2.077 | 2.397 | -15.4 | 117 | 0.06 | 34.85 |
| 74 | J2 | C1-Phenanthrenes/anthrace | | ----------NA---------- | | | | |
| 75 | J2 | C2-Phenanthrenes/anthrace | | ----------NA---------- | | | | |
| 76 | J2 | C2-Phenanthrenes/anthrace | | ----------NA---------- | | | | |
| 77 | J2 | C3-Phenanthrenes/anthrace | | ----------NA---------- | | | | |
| 78 | J2 | C4-Phenanthrenes/anthrace | | ----------NA---------- | | | | |
| 79 | | Carbazole | 2.171 | 2.271 | -4.6 | 108 | 0.06 | 35.54 |
| 80 | | Retene | 0.527 | 0.269 | 49.0# | 55 | 0.05 | 41.65 |
| 81 | J1 | Benzo(b)naphtho(2,1-d)thi | 2.066 | 2.265 | -9.6 | 112 | 0.04 | 44.15 |
| 82 | J2 | C1-Benzonaphthothiophenes | | ----------NA---------- | | | | |
| 83 | J2 | C2-Benzonaphthothiophenes | | ----------NA---------- | | | | |
| 84 | J2 | C3-Benzonaphthothiophenes | | ----------NA---------- | | | | |
| 85 | J2 | C4-Benzonaphthothiophenes | | ----------NA---------- | | | | |
| 86 | | Fluoranthene | 2.206 | 2.445 | -10.8 | 115 | 0.05 | 39.43 |
| 87 | J1 | Pyrene | 2.193 | 2.514 | -14.6 | 119 | 0.05 | 40.31 |
| 88 | J2 | C1-Fluoranthenes/pyrenes | | ----------NA---------- | | | | |
| 89 | J2 | Benzo(b)fluorene | | ----------NA---------- | | | | |
| 90 | J2 | Benzo(c)fluorene | | ----------NA---------- | | | | |
| 91 | J2 | 2-Methylpyrene | | ----------NA---------- | | | | |
| 92 | J2 | 4-Methylpyrene | | ----------NA---------- | | | | |
| 93 | J2 | 1-Methylpyrene | | ----------NA---------- | | | | |
| 94 | J2 | C2-Fluoranthenes/pyrenes | | ----------NA---------- | | | | |
| 95 | J2 | C3-Fluoranthenes/pyrenes | | ----------NA---------- | | | | |
| 96 | J2 | C4-Fluoranthenes/pyrenes | | ----------NA---------- | | | | |
| 97 | | Benz(a)anthracene | 1.892 | 2.090 | -10.5 | 115 | 0.04 | 45.08 |
| 98 | J1 | Chrysene/triphenylene | 1.811 | 2.007 | -10.8 | 113 | 0.04 | 45.24 |

# Initial Calibration Verification

**Job Number:** MC46549 **Sample:** MSS1950-ICV1950
**Account:** ENSRNJ AECOM, INC. **Lab FileID:** S39345.D
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 99 | J2 | C1-Benz(a)anthracenes/chr | | ----------NA---------- | | | | | |
| 100 | J2 | C2-Benz(a)anthracenes/chr | | ----------NA---------- | | | | | |
| 101 | J2 | C3-Benz(a)anthracenes/chr | | ----------NA---------- | | | | | |
| 102 | J2 | C4-Benz(a)anthracenes/chr | | ----------NA---------- | | | | | |
| 103 | | Benzo(b)fluoranthene | 2.085 | 2.306 | -10.6 | 113 | 0.04 | 49.12 | |
| 104 | | Benzo(j/k)fluoranthene | 2.113 | 2.291 | -8.4 | 112 | 0.04 | 49.20 | |
| 105 | | Benzo(e)pyrene | 2.001 | 2.146 | -7.2 | 110 | 0.04 | 50.05 | |
| 106 | | Benzo(a)pyrene | 1.973 | 2.221 | -12.6 | 117 | 0.04 | 50.22 | |
| 107 | | Perylene | 2.063 | 2.123 | -2.9 | 106 | 0.04 | 50.49 | |
| 108 | | Indeno(1,2,3-cd)pyrene | 2.553 | 2.673 | -4.7 | 109 | 0.04 | 53.71 | |
| 109 | | Dibenz(a,h)anthracene | 2.089 | 2.293 | -9.8 | 111 | 0.04 | 53.74 | |
| 110 | | Benzo(g,h,i)perylene | 2.315 | 2.425 | -4.8 | 108 | 0.04 | 54.45 | |
| 111 | | Coronene | 2.452 | 2.431 | 0.9 | 103 | 0.06 | 59.57 | |
| | | ---------- | Amount | Calc. | %Drift | ---------- | | | |
| 112 | | C-17 | 1000.000 | 1033.332 | -3.3 | 111 | 0.05 | 32.51 | |
| | | ---------- | AvgRF | CCRF | %Dev | ---------- | | | |
| 113 | | Pristane | 0.428 | 0.441 | -3.0 | 112 | 0.04 | 32.64 | |
| | | ---------- | Amount | Calc. | %Drift | ---------- | | | |
| 114 | | C-18 | 1000.000 | 1030.520 | -3.1 | 109 | 0.04 | 34.31 | |
| | | ---------- | AvgRF | CCRF | %Dev | ---------- | | | |
| 115 | J1 | Phytane | 0.593 | 0.544 | 8.3 | 100 | 0.05 | 34.50 | |
| 116 | J2 | TPH (C8-C40) | | ----------NA---------- | | | | | |
| 117 | J2 | 2,6,10-Trimethyldodecane | | ----------NA---------- | | | | | |
| 118 | J2 | 2,6,10-Trimethyltridecane | | ----------NA---------- | | | | | |
| 119 | J2 | 2,6,10-Trimethylpentadeca | | ----------NA---------- | | | | | |

(#) = Out of Range SPCC's out = 0 CCC's out = 0
S39335.D S160601-MAHPAH-A.M Mon Jun 06 09:27:18 2016

# Initial Calibration Verification



**Job Number:** MC46549 **Sample:** MSS1955-ICV1950
**Account:** ENSRNJ AECOM, INC. **Lab FileID:** S39397A.D
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Evaluate Continuing Calibration Report

Data File : S:\1\data\S160607\S39397A.D Vial: 94
Acq On : 7 Jun 2016 11:06 am Operator: sofyaz
Sample : ICV1950-1.0, FS247 Inst : MSS
Misc : OP47644,MSS1955,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p GC Integration Params: rteint2.p

Method : S:\1\methods\S160601-MAHPAH-A.M (RTE Integrator)
Title : PAHs & Alkylated PAHs by GC/MS/SIM
Last Update : Thu Jun 02 12:08:50 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

| | | Compound | AvgRF | CCRF | %Dev | Area% | Dev(min) | R.T. |
|---|---|---|---|---|---|---|---|---|
| 1 | I | Acenaphthene-d10 | 1.000 | 1.000 | 0.0 | 71 | 0.31 | 28.61 |
| 2 | S | Toluene-d8 | 1.495 | 1.478 | 1.1 | 71 | 0.23 | 9.65 |
| 3 | S | Naphthalene-d8 | 2.114 | 2.115 | -0.0 | 72 | 0.30 | 21.65 |
| 4 | S | Phenanthrene-d10 | 1.506 | 1.531 | -1.7 | 72 | 0.32 | 34.46 |
| 5 | S | Perylene-d12 | 1.227 | 1.199 | 2.3 | 70 | 0.31 | 50.30 |
| | | | Amount | Calc. | %Drift | | | |
| 6 | | MTBE | 1000.000 | 1722.570 | -72.3# | 88 | 0.18 | 5.71 |
| 7 | J1 | Benzene | 1000.000 | 1193.987 | -19.4 | 78 | 0.22 | 7.16 |
| 8 | J2 | C1-Benzene | | ----------NA---------- | | | | |
| 9 | J2 | C2-Benzenes | | ----------NA---------- | | | | |
| 10 | J2 | C3-Benzenes | | ----------NA---------- | | | | |
| 11 | J2 | C4-Benzenes | | ----------NA---------- | | | | |
| 12 | J2 | C5-Benzenes | | ----------NA---------- | | | | |
| 13 | | 2,2,4-trimethylpentane | 1000.000 | 1148.410 | -14.8 | 73 | 0.22 | 7.67 |
| | | | AvgRF | CCRF | %Dev | | | |
| 14 | | n-Heptane | 0.868 | 0.825 | 5.0 | 68 | 0.22 | 7.94 |
| 15 | | Methylcyclohexane | 0.733 | 0.780 | -6.4 | 78 | 0.24 | 8.58 |
| 16 | | Toluene | 1.931 | 1.991 | -3.1 | 78 | 0.23 | 9.76 |
| 17 | | n-Octane | 1.153 | 1.051 | 8.8 | 69 | 0.23 | 10.63 |
| 18 | | Ethylbenzene | 2.146 | 2.350 | -9.5 | 81 | 0.24 | 12.53 |
| 19 | | m,p-xylene | 1.749 | 1.899 | -8.6 | 79 | 0.24 | 12.76 |
| 20 | | Styrene | 1.456 | 1.377 | 5.4 | 79 | 0.25 | 13.41 |
| 21 | | o-Xylene | 1.791 | 1.916 | -7.0 | 80 | 0.25 | 13.48 |
| 22 | | Isopropylbenzene | 2.011 | 2.327 | -15.7 | 84 | 0.25 | 14.40 |
| 23 | | n-Propylbenzene | 2.541 | 2.910 | -14.5 | 84 | 0.25 | 15.26 |
| 24 | | 1,3,5-Trimethylbenzene | 1.816 | 2.026 | -11.6 | 80 | 0.25 | 15.68 |
| 25 | | Phenol | 1.083 | 0.883 | 18.5 | 65 | 0.23 | 15.88 |
| 26 | | t-Butylbenzene | 1.616 | 1.830 | -13.2 | 84 | 0.28 | 16.39 |
| 27 | | 1,2,4-Trimethylbenzene | 1.888 | 2.051 | -8.6 | 80 | 0.26 | 16.42 |
| 28 | | sec-Butylbenzene | 2.245 | 2.567 | -14.3 | 85 | 0.28 | 16.91 |
| 29 | | 1,2,3-Trimethylbenzene | 1.895 | 2.116 | -11.7 | 84 | 0.29 | 17.27 |
| 30 | | p-Isopropyltoluene | 1.950 | 2.294 | -17.6 | 87 | 0.28 | 17.28 |
| 31 | | Indane | 1.705 | 1.744 | -2.3 | 74 | 0.29 | 17.68 |
| 32 | | Indene | 1.669 | 1.705 | -2.2 | 74 | 0.29 | 17.93 |
| 33 | | n-Butylbenzene | 1.958 | 2.140 | -9.3 | 82 | 0.26 | 18.17 |
| 34 | J1 | trans-Decalin | 0.370 | 0.371 | -0.3 | 75 | 0.30 | 18.25 |
| 35 | | cis-Decalin | 0.509 | 0.498 | 2.2 | 76 | 0.30 | 19.48 |
| 36 | J2 | C1-Decalins | | ----------NA---------- | | | | |
| 37 | J2 | C2-Decalins | | ----------NA---------- | | | | |
| 38 | J2 | C3-Decalins | | ----------NA---------- | | | | |

# Initial Calibration Verification

**Job Number:** MC46549 **Sample:** MSS1955-ICV1950
**Account:** ENSRNJ AECOM, INC. **Lab FileID:** S39397A.D
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 39 | J2 | C4-Decalins | | ----------NA---------- | | | | |
| 40 | J1 | Benzo(b)thiophene | 2.148 | 2.210 | -2.9 | 75 | 0.30 | 21.94 |
| 41 | J2 | C1-Benzo(b)thiophenes | | ----------NA---------- | | | | |
| 42 | J2 | C2-Benzo(b)thiophenes | | ----------NA---------- | | | | |
| 43 | J2 | C3-Benzo(b)thiophenes | | ----------NA---------- | | | | |
| 44 | J2 | C4-Benzo(b)thiophenes | | ----------NA---------- | | | | |
| 45 | J1 | Tetraethyl lead | 0.163 | 0.146 | 10.4 | 69 | 0.31 | 20.78 |
| 46 | J2 | Tetramethyl lead | | ----------NA---------- | | | | |
| 47 | J2 | Trimethylethyl lead | | ----------NA---------- | | | | |
| 48 | J2 | Dimethyldiethyl lead | | ----------NA---------- | | | | |
| 49 | J2 | Methyltriethyl lead | | ----------NA---------- | | | | |
| 50 | | MMT | 0.803 | 0.706 | 12.1 | 66 | 0.30 | 23.52 |
| 51 | J1 | Naphthalene | 2.622 | 2.770 | -5.6 | 77 | 0.30 | 21.72 |
| 52 | | 2-Methylnaphthalene | 1.693 | 1.593 | 5.9 | 70 | 0.31 | 24.43 |
| 53 | | 1-Methylnaphthalene | 1.499 | 1.553 | -3.6 | 77 | 0.31 | 24.85 |
| 54 | J2 | C1-Naphthalenes | | ----------NA---------- | | | | |
| 55 | J2 | C2-Naphthalenes | | ----------NA---------- | | | | |
| 56 | J2 | C3-Naphthalenes | | ----------NA---------- | | | | |
| 57 | J2 | C4-Naphthalenes | | ----------NA---------- | | | | |
| 58 | | Biphenyl | 1.974 | 1.965 | 0.5 | 74 | 0.30 | 26.31 |
| 59 | | Acenaphthylene | 2.505 | 2.514 | -0.4 | 71 | 0.31 | 28.00 |
| 60 | | Acenaphthene | 1.431 | 1.470 | -2.7 | 74 | 0.31 | 28.73 |
| 61 | | Dibenzofuran | 2.052 | 2.185 | -6.5 | 76 | 0.31 | 29.38 |
| 62 | J1 | Fluorene | 1.710 | 1.753 | -2.5 | 75 | 0.31 | 30.75 |
| 63 | J2 | C1-Fluorenes | | ----------NA---------- | | | | |
| 64 | J2 | C2-Fluorenes | | ----------NA---------- | | | | |
| 65 | J2 | C3-Fluorenes | | ----------NA---------- | | | | |
| 66 | J1 | Dibenzothiophene | 2.390 | 2.313 | 3.2 | 70 | 0.32 | 34.06 |
| 67 | J2 | C1-Dibenzothiophenes (una | | ----------NA---------- | | | | |
| 68 | J2 | C1-Dibenzothiophenes (OTP | | ----------NA---------- | | | | |
| 69 | J2 | C2-Dibenzothiophenes | | ----------NA---------- | | | | |
| 70 | J2 | C3-Dibenzothiophenes | | ----------NA---------- | | | | |
| 71 | J2 | C4-Dibenzothiophenes | | ----------NA---------- | | | | |
| 72 | J1 | Phenanthrene | 2.218 | 2.365 | -6.6 | 77 | 0.32 | 34.55 |
| 73 | | Anthracene | 2.077 | 2.346 | -13.0 | 79 | 0.31 | 34.73 |
| 74 | J2 | C1-Phenanthrenes/anthrace | | ----------NA---------- | | | | |
| 75 | J2 | C2-Phenanthrenes/anthrace | | ----------NA---------- | | | | |
| 76 | J2 | C2-Phenanthrenes/anthrace | | ----------NA---------- | | | | |
| 77 | J2 | C3-Phenanthrenes/anthrace | | ----------NA---------- | | | | |
| 78 | J2 | C4-Phenanthrenes/anthrace | | ----------NA---------- | | | | |
| 79 | | Carbazole | 2.171 | 2.270 | -4.6 | 74 | 0.31 | 35.43 |
| 80 | | Retene | 0.527 | 0.480 | 8.9 | 68 | 0.33 | 41.55 |
| 81 | J1 | Benzo(b)naphtho(2,1-d)thi | 2.066 | 2.202 | -6.6 | 75 | 0.31 | 44.04 |
| 82 | J2 | C1-Benzonaphthothiophenes | | ----------NA---------- | | | | |
| 83 | J2 | C2-Benzonaphthothiophenes | | ----------NA---------- | | | | |
| 84 | J2 | C3-Benzonaphthothiophenes | | ----------NA---------- | | | | |
| 85 | J2 | C4-Benzonaphthothiophenes | | ----------NA---------- | | | | |
| 86 | | Fluoranthene | 2.206 | 2.388 | -8.3 | 77 | 0.31 | 39.31 |
| 87 | J1 | Pyrene | 2.193 | 2.459 | -12.1 | 80 | 0.32 | 40.19 |
| 88 | J2 | C1-Fluoranthenes/pyrenes | | ----------NA---------- | | | | |
| 89 | J2 | Benzo(b)fluorene | | ----------NA---------- | | | | |
| 90 | J2 | Benzo(c)fluorene | | ----------NA---------- | | | | |
| 91 | J2 | 2-Methylpyrene | | ----------NA---------- | | | | |
| 92 | J2 | 4-Methylpyrene | | ----------NA---------- | | | | |
| 93 | J2 | 1-Methylpyrene | | ----------NA---------- | | | | |
| 94 | J2 | C2-Fluoranthenes/pyrenes | | ----------NA---------- | | | | |
| 95 | J2 | C3-Fluoranthenes/pyrenes | | ----------NA---------- | | | | |
| 96 | J2 | C4-Fluoranthenes/pyrenes | | ----------NA---------- | | | | |
| 97 | | Benz(a)anthracene | 1.892 | 2.033 | -7.5 | 77 | 0.32 | 44.97 |
| 98 | J1 | Chrysene/triphenylene | 1.811 | 1.975 | -9.1 | 76 | 0.31 | 45.13 |

# Initial Calibration Verification

**Job Number:** MC46549 **Sample:** MSS1955-ICV1950
**Account:** ENSRNJ AECOM, INC. **Lab FileID:** S39397A.D
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 99 | J2 | C1-Benz(a)anthracenes/chr | | ----------NA---------- | | | | | |
| 100 | J2 | C2-Benz(a)anthracenes/chr | | ----------NA---------- | | | | | |
| 101 | J2 | C3-Benz(a)anthracenes/chr | | ----------NA---------- | | | | | |
| 102 | J2 | C4-Benz(a)anthracenes/chr | | ----------NA---------- | | | | | |
| 103 | | Benzo(b)fluoranthene | 2.085 | 2.218 | -6.4 | 75 | 0.31 | 49.01 | |
| 104 | | Benzo(j/k)fluoranthene | 2.113 | 2.215 | -4.8 | 74 | 0.31 | 49.10 | |
| 105 | | Benzo(e)pyrene | 2.001 | 2.082 | -4.0 | 73 | 0.32 | 49.95 | |
| 106 | | Benzo(a)pyrene | 1.973 | 2.136 | -8.3 | 77 | 0.31 | 50.11 | |
| 107 | | Perylene | 2.063 | 2.080 | -0.8 | 71 | 0.32 | 50.39 | |
| 108 | | Indeno(1,2,3-cd)pyrene | 2.553 | 2.656 | -4.0 | 74 | 0.30 | 53.61 | |
| 109 | | Dibenz(a,h)anthracene | 2.089 | 2.229 | -6.7 | 74 | 0.30 | 53.63 | |
| 110 | | Benzo(g,h,i)perylene | 2.315 | 2.365 | -2.2 | 72 | 0.31 | 54.35 | |
| 111 | | Coronene | 2.452 | 2.441 | 0.4 | 71 | 0.43 | 59.41 | |
| | | ---------- | Amount | Calc. | %Drift | ---------- | | | |
| 112 | | C-17 | 1000.000 | 1016.960 | -1.7 | 75 | 0.31 | 32.40 | |
| | | ---------- | AvgRF | CCRF | %Dev | ---------- | | | |
| 113 | | Pristane | 0.428 | 0.418 | 2.3 | 73 | 0.31 | 32.53 | |
| | | ---------- | Amount | Calc. | %Drift | ---------- | | | |
| 114 | | C-18 | 1000.000 | 1023.142 | -2.3 | 75 | 0.31 | 34.21 | |
| | | ---------- | AvgRF | CCRF | %Dev | ---------- | | | |
| 115 | J1 | Phytane | 0.593 | 0.545 | 8.1 | 69 | 0.31 | 34.39 | |
| 116 | J2 | TPH (C8-C40) | | ----------NA---------- | | | | | |
| 117 | J2 | 2,6,10-Trimethyldodecane | | ----------NA---------- | | | | | |
| 118 | J2 | 2,6,10-Trimethyltridecane | | ----------NA---------- | | | | | |
| 119 | J2 | 2,6,10-Trimethylpentadeca | | ----------NA---------- | | | | | |

(#) = Out of Range SPCC's out = 0 CCC's out = 0
S39335.D S160601-MAHPAH-A.M Thu Jul 14 15:45:30 2016

# Continuing Calibration Summary



**Job Number:** MC46549 **Sample:** MSS1961-CC1950
**Account:** ENSRNJ AECOM, INC. **Lab FileID:** S39537.D
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Evaluate Continuing Calibration Report

Data File : S:\1\data\S160623\S39537.D Vial: 96
Acq On : 24 Jun 2016 3:03 am Operator: sofyaz
Sample : cc1950-1.0,fs231 Inst : MSS
Misc : OP47644,MSS1961,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p GC Integration Params: rteint2.p

Method : S:\1\methods\S160601-MAHPAH-A.M (RTE Integrator)
Title : PAHs & Alkylated PAHs by GC/MS/SIM
Last Update : Thu Jun 02 12:08:50 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

| | | Compound | AvgRF | CCRF | %Dev | Area% | Dev(min) | R.T. |
|---|---|---|---|---|---|---|---|---|
| 1 | I | Acenaphthene-d10 | 1.000 | 1.000 | 0.0 | 73 | 0.00 | 28.35 |
| 2 | S | Toluene-d8 | 1.495 | 1.526 | -2.1 | 75 | -0.03 | 9.42 |
| 3 | S | Naphthalene-d8 | 2.114 | 2.065 | 2.3 | 73 | 0.00 | 21.40 |
| 4 | S | Phenanthrene-d10 | 1.506 | 1.464 | 2.8 | 71 | 0.00 | 34.20 |
| 5 | S | Perylene-d12 | 1.227 | 1.105 | 9.9 | 67 | 0.00 | 50.03 |
| | | | Amount | Calc. | %Drift | | | |
| 6 | | MTBE | 1000.000 | 1904.838 | -90.5# | 101 | -0.06 | 5.51 |
| 7 | J1 | Benzene | 1000.000 | 1074.776 | -7.5 | 72 | -0.05 | 6.94 |
| 8 | J2 | C1-Benzene | | ----------NA---------- | | | | |
| 9 | J2 | C2-Benzenes | | ----------NA---------- | | | | |
| 10 | J2 | C3-Benzenes | | ----------NA---------- | | | | |
| 11 | J2 | C4-Benzenes | | ----------NA---------- | | | | |
| 12 | J2 | C5-Benzenes | | ----------NA---------- | | | | |
| 13 | | 2,2,4-trimethylpentane | 1000.000 | 1006.893 | -0.7 | 66 | -0.05 | 7.44 |
| | | | AvgRF | CCRF | %Dev | | | |
| 14 | | n-Heptane | 0.868 | 0.799 | 7.9 | 68 | -0.05 | 7.71 |
| 15 | | Methylcyclohexane | 0.733 | 0.718 | 2.0 | 74 | -0.05 | 8.34 |
| 16 | | Toluene | 1.931 | 1.850 | 4.2 | 74 | -0.03 | 9.54 |
| 17 | | n-Octane | 1.153 | 0.999 | 13.4 | 68 | -0.03 | 10.40 |
| 18 | | Ethylbenzene | 2.146 | 2.066 | 3.7 | 73 | 0.00 | 12.31 |
| 19 | | m,p-xylene | 1.749 | 1.700 | 2.8 | 73 | -0.02 | 12.54 |
| 20 | | Styrene | 1.456 | 1.177 | 19.2 | 70 | 0.00 | 13.18 |
| 21 | | o-Xylene | 1.791 | 1.682 | 6.1 | 72 | 0.00 | 13.25 |
| 22 | | Isopropylbenzene | 2.011 | 2.007 | 0.2 | 75 | -0.01 | 14.17 |
| 23 | | n-Propylbenzene | 2.541 | 2.411 | 5.1 | 71 | 0.00 | 15.04 |
| 24 | | 1,3,5-Trimethylbenzene | 1.816 | 1.821 | -0.3 | 74 | 0.00 | 15.46 |
| 25 | | Phenol | 1.083 | 0.852 | 21.3 | 65 | 0.00 | 15.67 |
| 26 | | t-Butylbenzene | 1.616 | 1.613 | 0.2 | 76 | 0.00 | 16.16 |
| 27 | | 1,2,4-Trimethylbenzene | 1.888 | 1.842 | 2.4 | 74 | 0.00 | 16.19 |
| 28 | | sec-Butylbenzene | 2.245 | 2.211 | 1.5 | 76 | 0.00 | 16.68 |
| 29 | | 1,2,3-Trimethylbenzene | 1.895 | 1.839 | 3.0 | 75 | 0.00 | 17.03 |
| 30 | | p-Isopropyltoluene | 1.950 | 1.966 | -0.8 | 76 | 0.00 | 17.06 |
| 31 | | Indane | 1.705 | 1.719 | -0.8 | 76 | 0.00 | 17.44 |
| 32 | | Indene | 1.669 | 1.657 | 0.7 | 74 | -0.01 | 17.68 |
| 33 | | n-Butylbenzene | 1.958 | 1.904 | 2.8 | 75 | -0.01 | 17.93 |
| 34 | J1 | trans-Decalin | 0.370 | 0.363 | 1.9 | 76 | 0.00 | 18.01 |
| 35 | | cis-Decalin | 0.509 | 0.476 | 6.5 | 75 | 0.00 | 19.23 |
| 36 | J2 | C1-Decalins | | ----------NA---------- | | | | |
| 37 | J2 | C2-Decalins | | ----------NA---------- | | | | |
| 38 | J2 | C3-Decalins | | ----------NA---------- | | | | |

# Continuing Calibration Summary

**Job Number:** MC46549 **Sample:** MSS1961-CC1950
**Account:** ENSRNJ AECOM, INC. **Lab FileID:** S39537.D
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 39 | J2 | C4-Decalins | | ----------NA---------- | | | | |
| 40 | J1 | Benzo(b)thiophene | 2.148 | 2.089 | 2.7 | 73 | 0.00 | 21.69 |
| 41 | J2 | C1-Benzo(b)thiophenes | | ----------NA---------- | | | | |
| 42 | J2 | C2-Benzo(b)thiophenes | | ----------NA---------- | | | | |
| 43 | J2 | C3-Benzo(b)thiophenes | | ----------NA---------- | | | | |
| 44 | J2 | C4-Benzo(b)thiophenes | | ----------NA---------- | | | | |
| 45 | J1 | Tetraethyl lead | 0.163 | 0.133 | 18.4 | 65 | 0.00 | 20.53 |
| 46 | J2 | Tetramethyl lead | | ----------NA---------- | | | | |
| 47 | J2 | Trimethylethyl lead | | ----------NA---------- | | | | |
| 48 | J2 | Dimethyldiethyl lead | | ----------NA---------- | | | | |
| 49 | J2 | Methyltriethyl lead | | ----------NA---------- | | | | |
| 50 | | MMT | 0.803 | 0.701 | 12.7 | 68 | 0.00 | 23.28 |
| 51 | J1 | Naphthalene | 2.622 | 2.570 | 2.0 | 74 | 0.00 | 21.47 |
| 52 | | 2-Methylnaphthalene | 1.693 | 1.626 | 4.0 | 74 | 0.00 | 24.17 |
| 53 | | 1-Methylnaphthalene | 1.499 | 1.444 | 3.7 | 74 | 0.00 | 24.59 |
| 54 | J2 | C1-Naphthalenes | | ----------NA---------- | | | | |
| 55 | J2 | C2-Naphthalenes | | ----------NA---------- | | | | |
| 56 | J2 | C3-Naphthalenes | | ----------NA---------- | | | | |
| 57 | J2 | C4-Naphthalenes | | ----------NA---------- | | | | |
| 58 | | Biphenyl | 1.974 | 1.893 | 4.1 | 73 | 0.00 | 26.06 |
| 59 | | Acenaphthylene | 2.505 | 2.568 | -2.5 | 75 | 0.00 | 27.73 |
| 60 | | Acenaphthene | 1.431 | 1.437 | -0.4 | 75 | 0.00 | 28.47 |
| 61 | | Dibenzofuran | 2.052 | 2.080 | -1.4 | 74 | 0.00 | 29.12 |
| 62 | J1 | Fluorene | 1.710 | 1.706 | 0.2 | 76 | 0.00 | 30.49 |
| 63 | J2 | C1-Fluorenes | | ----------NA---------- | | | | |
| 64 | J2 | C2-Fluorenes | | ----------NA---------- | | | | |
| 65 | J2 | C3-Fluorenes | | ----------NA---------- | | | | |
| 66 | J1 | Dibenzothiophene | 2.390 | 2.440 | -2.1 | 76 | 0.00 | 33.78 |
| 67 | J2 | C1-Dibenzothiophenes (una | | ----------NA---------- | | | | |
| 68 | J2 | C1-Dibenzothiophenes (OTP | | ----------NA---------- | | | | |
| 69 | J2 | C2-Dibenzothiophenes | | ----------NA---------- | | | | |
| 70 | J2 | C3-Dibenzothiophenes | | ----------NA---------- | | | | |
| 71 | J2 | C4-Dibenzothiophenes | | ----------NA---------- | | | | |
| 72 | J1 | Phenanthrene | 2.218 | 2.245 | -1.2 | 75 | 0.00 | 34.28 |
| 73 | | Anthracene | 2.077 | 2.144 | -3.2 | 74 | 0.00 | 34.46 |
| 74 | J2 | C1-Phenanthrenes/anthrace | | ----------NA---------- | | | | |
| 75 | J2 | C2-Phenanthrenes/anthrace | | ----------NA---------- | | | | |
| 76 | J2 | C2-Phenanthrenes/anthrace | | ----------NA---------- | | | | |
| 77 | J2 | C3-Phenanthrenes/anthrace | | ----------NA---------- | | | | |
| 78 | J2 | C4-Phenanthrenes/anthrace | | ----------NA---------- | | | | |
| 79 | | Carbazole | 2.171 | 2.197 | -1.2 | 74 | 0.00 | 35.16 |
| 80 | | Retene | 0.527 | 0.500 | 5.1 | 73 | 0.00 | 41.27 |
| 81 | J1 | Benzo(b)naphtho(2,1-d)thi | 2.066 | 2.080 | -0.7 | 73 | 0.00 | 43.77 |
| 82 | J2 | C1-Benzonaphthothiophenes | | ----------NA---------- | | | | |
| 83 | J2 | C2-Benzonaphthothiophenes | | ----------NA---------- | | | | |
| 84 | J2 | C3-Benzonaphthothiophenes | | ----------NA---------- | | | | |
| 85 | J2 | C4-Benzonaphthothiophenes | | ----------NA---------- | | | | |
| 86 | | Fluoranthene | 2.206 | 2.237 | -1.4 | 75 | 0.00 | 39.05 |
| 87 | J1 | Pyrene | 2.193 | 2.215 | -1.0 | 74 | 0.00 | 39.92 |
| 88 | J2 | C1-Fluoranthenes/pyrenes | | ----------NA---------- | | | | |
| 89 | J2 | Benzo(b)fluorene | | ----------NA---------- | | | | |
| 90 | J2 | Benzo(c)fluorene | | ----------NA---------- | | | | |
| 91 | J2 | 2-Methylpyrene | | ----------NA---------- | | | | |
| 92 | J2 | 4-Methylpyrene | | ----------NA---------- | | | | |
| 93 | J2 | 1-Methylpyrene | | ----------NA---------- | | | | |
| 94 | J2 | C2-Fluoranthenes/pyrenes | | ----------NA---------- | | | | |
| 95 | J2 | C3-Fluoranthenes/pyrenes | | ----------NA---------- | | | | |
| 96 | J2 | C4-Fluoranthenes/pyrenes | | ----------NA---------- | | | | |
| 97 | | Benz(a)anthracene | 1.892 | 1.865 | 1.4 | 73 | 0.00 | 44.70 |
| 98 | J1 | Chrysene/triphenylene | 1.811 | 1.765 | 2.5 | 70 | 0.00 | 44.87 |

# Continuing Calibration Summary

**Job Number:** MC46549 **Sample:** MSS1961-CC1950
**Account:** ENSRNJ AECOM, INC. **Lab FileID:** S39537.D
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 99 | J2 | C1-Benz(a)anthracenes/chr | | ----------NA---------- | | | | |
| 100 | J2 | C2-Benz(a)anthracenes/chr | | ----------NA---------- | | | | |
| 101 | J2 | C3-Benz(a)anthracenes/chr | | ----------NA---------- | | | | |
| 102 | J2 | C4-Benz(a)anthracenes/chr | | ----------NA---------- | | | | |
| 103 | | Benzo(b)fluoranthene | 2.085 | 1.980 | 5.0 | 69 | 0.00 | 48.75 |
| 104 | | Benzo(j/k)fluoranthene | 2.113 | 2.058 | 2.6 | 71 | 0.00 | 48.82 |
| 105 | | Benzo(e)pyrene | 2.001 | 1.906 | 4.7 | 69 | 0.00 | 49.68 |
| 106 | | Benzo(a)pyrene | 1.973 | 1.870 | 5.2 | 70 | 0.00 | 49.84 |
| 107 | | Perylene | 2.063 | 1.955 | 5.2 | 69 | 0.00 | 50.12 |
| 108 | | Indeno(1,2,3-cd)pyrene | 2.553 | 2.403 | 5.9 | 69 | 0.00 | 53.35 |
| 109 | | Dibenz(a,h)anthracene | 2.089 | 1.969 | 5.7 | 68 | 0.00 | 53.38 |
| 110 | | Benzo(g,h,i)perylene | 2.315 | 2.164 | 6.5 | 68 | 0.00 | 54.08 |
| 111 | | Coronene | 2.452 | 2.239 | 8.7 | 68 | 0.00 | 59.03 |
| | | ---------- | Amount | Calc. | %Drift | ---------- | | |
| 112 | | C-17 | 1000.000 | 962.876 | 3.7 | 73 | 0.00 | 32.16 |
| | | ---------- | AvgRF | CCRF | %Dev | ---------- | | |
| 113 | | Pristane | 0.428 | 0.403 | 5.8 | 73 | 0.00 | 32.29 |
| | | ---------- | Amount | Calc. | %Drift | ---------- | | |
| 114 | | C-18 | 1000.000 | 971.909 | 2.8 | 73 | 0.00 | 33.96 |
| | | ---------- | AvgRF | CCRF | %Dev | ---------- | | |
| 115 | J1 | Phytane | 0.593 | 0.560 | 5.6 | 73 | 0.00 | 34.15 |
| 116 | J2 | TPH (C8-C40) | | ----------NA---------- | | | | |
| 117 | J2 | 2,6,10-Trimethyldodecane | | ----------NA---------- | | | | |
| 118 | J2 | 2,6,10-Trimethyltridecane | | ----------NA---------- | | | | |
| 119 | J2 | 2,6,10-Trimethylpentadeca | | ----------NA---------- | | | | |

(#) = Out of Range SPCC's out = 0 CCC's out = 0
S39335.D S160601-MAHPAH-A.M Wed Jun 29 15:00:23 2016

# Continuing Calibration Summary



**Job Number:** MC46549 **Sample:** MSS1961-ECC1950
**Account:** ENSRNJ AECOM, INC. **Lab FileID:** S39552.D
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Evaluate Continuing Calibration Report

Data File : S:\1\data\S160623\S39552.D Vial: 96
Acq On : 24 Jun 2016 9:42 pm Operator: sofyaz
Sample : cc1950-1.0,fs231 Inst : MSS
Misc : OP47644,MSS1961,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p GC Integration Params: rteint2.p

Method : S:\1\methods\S160601-MAHPAH-A.M (RTE Integrator)
Title : PAHs & Alkylated PAHs by GC/MS/SIM
Last Update : Thu Jun 02 12:08:50 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

| | | Compound | AvgRF | CCRF | %Dev | Area% | Dev(min) | R.T. |
|---|---|---|---|---|---|---|---|---|
| 1 | I | Acenaphthene-d10 | 1.000 | 1.000 | 0.0 | 65 | 0.00 | 28.34 |
| 2 | S | Toluene-d8 | 1.495 | 1.479 | 1.1 | 64 | -0.03 | 9.42 |
| 3 | S | Naphthalene-d8 | 2.114 | 2.069 | 2.1 | 64 | 0.00 | 21.40 |
| 4 | S | Phenanthrene-d10 | 1.506 | 1.477 | 1.9 | 63 | 0.00 | 34.19 |
| 5 | S | Perylene-d12 | 1.227 | 1.106 | 9.9 | 59 | 0.00 | 50.03 |
| | | | Amount | Calc. | %Drift | | | |
| 6 | | MTBE | 1000.000 | 1749.475 | -74.9# | 81 | -0.06 | 5.51 |
| 7 | J1 | Benzene | 1000.000 | 995.650 | 0.4 | 59 | -0.05 | 6.94 |
| 8 | J2 | C1-Benzene | | ----------NA---------- | | | | |
| 9 | J2 | C2-Benzenes | | ----------NA---------- | | | | |
| 10 | J2 | C3-Benzenes | | ----------NA---------- | | | | |
| 11 | J2 | C4-Benzenes | | ----------NA---------- | | | | |
| 12 | J2 | C5-Benzenes | | ----------NA---------- | | | | |
| 13 | | 2,2,4-trimethylpentane | 1000.000 | 925.520 | 7.4 | 54 | -0.05 | 7.44 |
| | | | AvgRF | CCRF | %Dev | | | |
| 14 | | n-Heptane | 0.868 | 0.715 | 17.6 | 54 | -0.05 | 7.71 |
| 15 | | Methylcyclohexane | 0.733 | 0.657 | 10.4 | 59 | -0.05 | 8.34 |
| 16 | | Toluene | 1.931 | 1.821 | 5.7 | 64 | -0.03 | 9.54 |
| 17 | | n-Octane | 1.153 | 0.955 | 17.2 | 57 | -0.02 | 10.41 |
| 18 | | Ethylbenzene | 2.146 | 2.067 | 3.7 | 64 | 0.00 | 12.31 |
| 19 | | m,p-xylene | 1.749 | 1.686 | 3.6 | 63 | -0.02 | 12.54 |
| 20 | | Styrene | 1.456 | 1.192 | 18.1 | 62 | 0.00 | 13.18 |
| 21 | | o-Xylene | 1.791 | 1.705 | 4.8 | 65 | 0.00 | 13.25 |
| 22 | | Isopropylbenzene | 2.011 | 1.997 | 0.7 | 65 | -0.01 | 14.17 |
| 23 | | n-Propylbenzene | 2.541 | 2.433 | 4.3 | 63 | 0.00 | 15.04 |
| 24 | | 1,3,5-Trimethylbenzene | 1.816 | 1.828 | -0.7 | 65 | -0.01 | 15.45 |
| 25 | | Phenol | 1.083 | 0.831 | 23.3 | 56 | 0.00 | 15.67 |
| 26 | | t-Butylbenzene | 1.616 | 1.621 | -0.3 | 67 | 0.00 | 16.16 |
| 27 | | 1,2,4-Trimethylbenzene | 1.888 | 1.854 | 1.8 | 66 | 0.00 | 16.19 |
| 28 | | sec-Butylbenzene | 2.245 | 2.216 | 1.3 | 67 | 0.00 | 16.68 |
| 29 | | 1,2,3-Trimethylbenzene | 1.895 | 1.843 | 2.7 | 66 | 0.00 | 17.03 |
| 30 | | p-Isopropyltoluene | 1.950 | 1.936 | 0.7 | 66 | -0.01 | 17.04 |
| 31 | | Indane | 1.705 | 1.724 | -1.1 | 67 | -0.01 | 17.43 |
| 32 | | Indene | 1.669 | 1.667 | 0.1 | 65 | -0.01 | 17.68 |
| 33 | | n-Butylbenzene | 1.958 | 1.884 | 3.8 | 66 | -0.01 | 17.93 |
| 34 | J1 | trans-Decalin | 0.370 | 0.365 | 1.4 | 67 | -0.01 | 18.00 |
| 35 | | cis-Decalin | 0.509 | 0.476 | 6.5 | 66 | 0.00 | 19.23 |
| 36 | J2 | C1-Decalins | | ----------NA---------- | | | | |
| 37 | J2 | C2-Decalins | | ----------NA---------- | | | | |
| 38 | J2 | C3-Decalins | | ----------NA---------- | | | | |

# Continuing Calibration Summary

**Job Number:** MC46549 **Sample:** MSS1961-ECC1950
**Account:** ENSRNJ AECOM, INC. **Lab FileID:** S39552.D
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 39 | J2 | C4-Decalins | | ----------NA---------- | | | | |
| 40 | J1 | Benzo(b)thiophene | 2.148 | 2.092 | 2.6 | 65 | 0.00 | 21.69 |
| 41 | J2 | C1-Benzo(b)thiophenes | | ----------NA---------- | | | | |
| 42 | J2 | C2-Benzo(b)thiophenes | | ----------NA---------- | | | | |
| 43 | J2 | C3-Benzo(b)thiophenes | | ----------NA---------- | | | | |
| 44 | J2 | C4-Benzo(b)thiophenes | | ----------NA---------- | | | | |
| 45 | J1 | Tetraethyl lead | 0.163 | 0.132 | 19.0 | 57 | 0.00 | 20.53 |
| 46 | J2 | Tetramethyl lead | | ----------NA---------- | | | | |
| 47 | J2 | Trimethylethyl lead | | ----------NA---------- | | | | |
| 48 | J2 | Dimethyldiethyl lead | | ----------NA---------- | | | | |
| 49 | J2 | Methyltriethyl lead | | ----------NA---------- | | | | |
| 50 | | MMT | 0.803 | 0.682 | 15.1 | 58 | 0.00 | 23.28 |
| 51 | J1 | Naphthalene | 2.622 | 2.562 | 2.3 | 65 | 0.00 | 21.47 |
| 52 | | 2-Methylnaphthalene | 1.693 | 1.639 | 3.2 | 65 | 0.00 | 24.17 |
| 53 | | 1-Methylnaphthalene | 1.499 | 1.474 | 1.7 | 66 | 0.00 | 24.59 |
| 54 | J2 | C1-Naphthalenes | | ----------NA---------- | | | | |
| 55 | J2 | C2-Naphthalenes | | ----------NA---------- | | | | |
| 56 | J2 | C3-Naphthalenes | | ----------NA---------- | | | | |
| 57 | J2 | C4-Naphthalenes | | ----------NA---------- | | | | |
| 58 | | Biphenyl | 1.974 | 1.911 | 3.2 | 65 | 0.00 | 26.07 |
| 59 | | Acenaphthylene | 2.505 | 2.618 | -4.5 | 67 | 0.00 | 27.73 |
| 60 | | Acenaphthene | 1.431 | 1.471 | -2.8 | 67 | 0.00 | 28.47 |
| 61 | | Dibenzofuran | 2.052 | 2.105 | -2.6 | 66 | 0.00 | 29.12 |
| 62 | J1 | Fluorene | 1.710 | 1.708 | 0.1 | 67 | 0.00 | 30.49 |
| 63 | J2 | C1-Fluorenes | | ----------NA---------- | | | | |
| 64 | J2 | C2-Fluorenes | | ----------NA---------- | | | | |
| 65 | J2 | C3-Fluorenes | | ----------NA---------- | | | | |
| 66 | J1 | Dibenzothiophene | 2.390 | 2.493 | -4.3 | 68 | 0.00 | 33.78 |
| 67 | J2 | C1-Dibenzothiophenes (una | | ----------NA---------- | | | | |
| 68 | J2 | C1-Dibenzothiophenes (OTP | | ----------NA---------- | | | | |
| 69 | J2 | C2-Dibenzothiophenes | | ----------NA---------- | | | | |
| 70 | J2 | C3-Dibenzothiophenes | | ----------NA---------- | | | | |
| 71 | J2 | C4-Dibenzothiophenes | | ----------NA---------- | | | | |
| 72 | J1 | Phenanthrene | 2.218 | 2.281 | -2.8 | 67 | 0.00 | 34.28 |
| 73 | | Anthracene | 2.077 | 2.139 | -3.0 | 65 | 0.00 | 34.46 |
| 74 | J2 | C1-Phenanthrenes/anthrace | | ----------NA---------- | | | | |
| 75 | J2 | C2-Phenanthrenes/anthrace | | ----------NA---------- | | | | |
| 76 | J2 | C2-Phenanthrenes/anthrace | | ----------NA---------- | | | | |
| 77 | J2 | C3-Phenanthrenes/anthrace | | ----------NA---------- | | | | |
| 78 | J2 | C4-Phenanthrenes/anthrace | | ----------NA---------- | | | | |
| 79 | | Carbazole | 2.171 | 2.248 | -3.5 | 67 | 0.00 | 35.16 |
| 80 | | Retene | 0.527 | 0.500 | 5.1 | 64 | 0.00 | 41.27 |
| 81 | J1 | Benzo(b)naphtho(2,1-d)thi | 2.066 | 2.146 | -3.9 | 66 | 0.00 | 43.77 |
| 82 | J2 | C1-Benzonaphthothiophenes | | ----------NA---------- | | | | |
| 83 | J2 | C2-Benzonaphthothiophenes | | ----------NA---------- | | | | |
| 84 | J2 | C3-Benzonaphthothiophenes | | ----------NA---------- | | | | |
| 85 | J2 | C4-Benzonaphthothiophenes | | ----------NA---------- | | | | |
| 86 | | Fluoranthene | 2.206 | 2.299 | -4.2 | 67 | 0.00 | 39.04 |
| 87 | J1 | Pyrene | 2.193 | 2.289 | -4.4 | 67 | 0.00 | 39.92 |
| 88 | J2 | C1-Fluoranthenes/pyrenes | | ----------NA---------- | | | | |
| 89 | J2 | Benzo(b)fluorene | | ----------NA---------- | | | | |
| 90 | J2 | Benzo(c)fluorene | | ----------NA---------- | | | | |
| 91 | J2 | 2-Methylpyrene | | ----------NA---------- | | | | |
| 92 | J2 | 4-Methylpyrene | | ----------NA---------- | | | | |
| 93 | J2 | 1-Methylpyrene | | ----------NA---------- | | | | |
| 94 | J2 | C2-Fluoranthenes/pyrenes | | ----------NA---------- | | | | |
| 95 | J2 | C3-Fluoranthenes/pyrenes | | ----------NA---------- | | | | |
| 96 | J2 | C4-Fluoranthenes/pyrenes | | ----------NA---------- | | | | |
| 97 | | Benz(a)anthracene | 1.892 | 1.922 | -1.6 | 66 | -0.01 | 44.70 |
| 98 | J1 | Chrysene/triphenylene | 1.811 | 1.818 | -0.4 | 64 | 0.00 | 44.87 |

# Continuing Calibration Summary

**Job Number:** MC46549 **Sample:** MSS1961-ECC1950
**Account:** ENSRNJ AECOM, INC. **Lab FileID:** S39552.D
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 99 | J2 | C1-Benz(a)anthracenes/chr | | ----------NA---------- | | | | | |
| 100 | J2 | C2-Benz(a)anthracenes/chr | | ----------NA---------- | | | | | |
| 101 | J2 | C3-Benz(a)anthracenes/chr | | ----------NA---------- | | | | | |
| 102 | J2 | C4-Benz(a)anthracenes/chr | | ----------NA---------- | | | | | |
| 103 | | Benzo(b)fluoranthene | 2.085 | 2.028 | 2.7 | 62 | -0.01 | 48.74 | |
| 104 | | Benzo(j/k)fluoranthene | 2.113 | 2.091 | 1.0 | 64 | -0.01 | 48.82 | |
| 105 | | Benzo(e)pyrene | 2.001 | 1.947 | 2.7 | 62 | -0.01 | 49.67 | |
| 106 | | Benzo(a)pyrene | 1.973 | 1.890 | 4.2 | 62 | 0.00 | 49.84 | |
| 107 | | Perylene | 2.063 | 1.979 | 4.1 | 62 | 0.00 | 50.11 | |
| 108 | | Indeno(1,2,3-cd)pyrene | 2.553 | 2.430 | 4.8 | 62 | 0.00 | 53.34 | |
| 109 | | Dibenz(a,h)anthracene | 2.089 | 1.998 | 4.4 | 60 | 0.00 | 53.38 | |
| 110 | | Benzo(g,h,i)perylene | 2.315 | 2.177 | 6.0 | 60 | 0.00 | 54.08 | |
| 111 | | Coronene | 2.452 | 2.204 | 10.1 | 58 | 0.00 | 59.02 | |
| | | ---------- | Amount | Calc. | %Drift | ---------- | | | |
| 112 | | C-17 | 1000.000 | 974.844 | 2.5 | 65 | 0.00 | 32.16 | |
| | | ---------- | AvgRF | CCRF | %Dev | ---------- | | | |
| 113 | | Pristane | 0.428 | 0.407 | 4.9 | 64 | 0.00 | 32.29 | |
| | | ---------- | Amount | Calc. | %Drift | ---------- | | | |
| 114 | | C-18 | 1000.000 | 990.527 | 0.9 | 65 | 0.00 | 33.95 | |
| | | ---------- | AvgRF | CCRF | %Dev | ---------- | | | |
| 115 | J1 | Phytane | 0.593 | 0.561 | 5.4 | 64 | 0.00 | 34.14 | |
| 116 | J2 | TPH (C8-C40) | | ----------NA---------- | | | | | |
| 117 | J2 | 2,6,10-Trimethyldodecane | | ----------NA---------- | | | | | |
| 118 | J2 | 2,6,10-Trimethyltridecane | | ----------NA---------- | | | | | |
| 119 | J2 | 2,6,10-Trimethylpentadeca | | ----------NA---------- | | | | | |

(#) = Out of Range SPCC's out = 0 CCC's out = 0
S39335.D S160601-MAHPAH-A.M Wed Jun 29 16:33:37 2016

# Continuing Calibration Summary



**Job Number:** MC46549 **Sample:** MSS1964-CC1950
**Account:** ENSRNJ AECOM, INC. **Lab FileID:** S39583.D
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Evaluate Continuing Calibration Report

Data File : S:\1\data\S160705\S39583.D Vial: 96
Acq On : 5 Jul 2016 9:14 am Operator: sofyaz
Sample : cc1950-1.0,fs231 Inst : MSS
Misc : OP47644,MSS1964,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p GC Integration Params: rteint2.p

Method : S:\1\methods\S160601-MAHPAH-A.M (RTE Integrator)
Title : PAHs & Alkylated PAHs by GC/MS/SIM
Last Update : Thu Jun 02 12:08:50 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

| | | Compound | AvgRF | CCRF | %Dev | Area% | Dev(min) | R.T. |
|---|---|---|---|---|---|---|---|---|
| 1 | I | Acenaphthene-d10 | 1.000 | 1.000 | 0.0 | 65 | 0.00 | 28.34 |
| 2 | S | Toluene-d8 | 1.495 | 1.549 | -3.6 | 68 | 0.00 | 9.44 |
| 3 | S | Naphthalene-d8 | 2.114 | 2.019 | 4.5 | 63 | 0.00 | 21.40 |
| 4 | S | Phenanthrene-d10 | 1.506 | 1.425 | 5.4 | 61 | 0.00 | 34.20 |
| 5 | S | Perylene-d12 | 1.227 | 1.065 | 13.2 | 57 | 0.00 | 50.04 |
| | | | Amount | Calc. | %Drift | | | |
| 6 | | MTBE | 1000.000 | 1934.506 | -93.5# | 90 | -0.04 | 5.52 |
| 7 | J1 | Benzene | 1000.000 | 1120.792 | -12.1 | 67 | -0.02 | 6.96 |
| 8 | J2 | C1-Benzene | | ----------NA---------- | | | | |
| 9 | J2 | C2-Benzenes | | ----------NA---------- | | | | |
| 10 | J2 | C3-Benzenes | | ----------NA---------- | | | | |
| 11 | J2 | C4-Benzenes | | ----------NA---------- | | | | |
| 12 | J2 | C5-Benzenes | | ----------NA---------- | | | | |
| 13 | | 2,2,4-trimethylpentane | 1000.000 | 1054.608 | -5.5 | 61 | -0.03 | 7.45 |
| | | | AvgRF | CCRF | %Dev | | | |
| 14 | | n-Heptane | 0.868 | 0.835 | 3.8 | 63 | -0.02 | 7.73 |
| 15 | | Methylcyclohexane | 0.733 | 0.747 | -1.9 | 68 | -0.03 | 8.35 |
| 16 | | Toluene | 1.931 | 1.915 | 0.8 | 68 | 0.00 | 9.56 |
| 17 | | n-Octane | 1.153 | 1.021 | 11.4 | 62 | 0.00 | 10.42 |
| 18 | | Ethylbenzene | 2.146 | 2.084 | 2.9 | 65 | 0.00 | 12.32 |
| 19 | | m,p-xylene | 1.749 | 1.671 | 4.5 | 63 | 0.00 | 12.55 |
| 20 | | Styrene | 1.456 | 1.151 | 20.9 | 60 | 0.00 | 13.19 |
| 21 | | o-Xylene | 1.791 | 1.698 | 5.2 | 65 | 0.00 | 13.26 |
| 22 | | Isopropylbenzene | 2.011 | 2.007 | 0.2 | 66 | 0.01 | 14.19 |
| 23 | | n-Propylbenzene | 2.541 | 2.395 | 5.7 | 63 | 0.01 | 15.05 |
| 24 | | 1,3,5-Trimethylbenzene | 1.816 | 1.807 | 0.5 | 65 | 0.01 | 15.46 |
| 25 | | Phenol | 1.083 | 0.749 | 30.8# | 50 | 0.02 | 15.69 |
| 26 | | t-Butylbenzene | 1.616 | 1.597 | 1.2 | 67 | 0.00 | 16.16 |
| 27 | | 1,2,4-Trimethylbenzene | 1.888 | 1.814 | 3.9 | 65 | 0.00 | 16.19 |
| 28 | | sec-Butylbenzene | 2.245 | 2.168 | 3.4 | 66 | 0.01 | 16.68 |
| 29 | | 1,2,3-Trimethylbenzene | 1.895 | 1.800 | 5.0 | 65 | 0.00 | 17.03 |
| 30 | | p-Isopropyltoluene | 1.950 | 1.893 | 2.9 | 65 | 0.01 | 17.06 |
| 31 | | Indane | 1.705 | 1.697 | 0.5 | 66 | 0.00 | 17.43 |
| 32 | | Indene | 1.669 | 1.606 | 3.8 | 63 | 0.01 | 17.69 |
| 33 | | n-Butylbenzene | 1.958 | 1.792 | 8.5 | 63 | 0.01 | 17.94 |
| 34 | J1 | trans-Decalin | 0.370 | 0.361 | 2.4 | 67 | 0.00 | 18.00 |
| 35 | | cis-Decalin | 0.509 | 0.483 | 5.1 | 67 | 0.00 | 19.23 |
| 36 | J2 | C1-Decalins | | ----------NA---------- | | | | |
| 37 | J2 | C2-Decalins | | ----------NA---------- | | | | |
| 38 | J2 | C3-Decalins | | ----------NA---------- | | | | |

# Continuing Calibration Summary

**Job Number:** MC46549 **Sample:** MSS1964-CC1950
**Account:** ENSRNJ AECOM, INC. **Lab FileID:** S39583.D
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 39 | J2 | C4-Decalins | | ----------NA---------- | | | | | |
| 40 | J1 | Benzo(b)thiophene | 2.148 | 2.020 | 6.0 | 63 | 0.00 | 21.69 | |
| 41 | J2 | C1-Benzo(b)thiophenes | | ----------NA---------- | | | | | |
| 42 | J2 | C2-Benzo(b)thiophenes | | ----------NA---------- | | | | | |
| 43 | J2 | C3-Benzo(b)thiophenes | | ----------NA---------- | | | | | |
| 44 | J2 | C4-Benzo(b)thiophenes | | ----------NA---------- | | | | | |
| 45 | J1 | Tetraethyl lead | 0.163 | 0.133 | 18.4 | 57 | 0.00 | 20.53 | |
| 46 | J2 | Tetramethyl lead | | ----------NA---------- | | | | | |
| 47 | J2 | Trimethylethyl lead | | ----------NA---------- | | | | | |
| 48 | J2 | Dimethyldiethyl lead | | ----------NA---------- | | | | | |
| 49 | J2 | Methyltriethyl lead | | ----------NA---------- | | | | | |
| 50 | | MMT | 0.803 | 0.729 | 9.2 | 62 | 0.00 | 23.27 | |
| 51 | J1 | Naphthalene | 2.622 | 2.500 | 4.7 | 63 | 0.00 | 21.47 | |
| 52 | | 2-Methylnaphthalene | 1.693 | 1.586 | 6.3 | 64 | 0.00 | 24.18 | |
| 53 | | 1-Methylnaphthalene | 1.499 | 1.430 | 4.6 | 64 | 0.00 | 24.59 | |
| 54 | J2 | C1-Naphthalenes | | ----------NA---------- | | | | | |
| 55 | J2 | C2-Naphthalenes | | ----------NA---------- | | | | | |
| 56 | J2 | C3-Naphthalenes | | ----------NA---------- | | | | | |
| 57 | J2 | C4-Naphthalenes | | ----------NA---------- | | | | | |
| 58 | | Biphenyl | 1.974 | 1.846 | 6.5 | 63 | 0.00 | 26.07 | |
| 59 | | Acenaphthylene | 2.505 | 2.544 | -1.6 | 66 | 0.00 | 27.73 | |
| 60 | | Acenaphthene | 1.431 | 1.430 | 0.1 | 66 | 0.00 | 28.47 | |
| 61 | | Dibenzofuran | 2.052 | 2.017 | 1.7 | 64 | 0.00 | 29.12 | |
| 62 | J1 | Fluorene | 1.710 | 1.645 | 3.8 | 64 | 0.00 | 30.49 | |
| 63 | J2 | C1-Fluorenes | | ----------NA---------- | | | | | |
| 64 | J2 | C2-Fluorenes | | ----------NA---------- | | | | | |
| 65 | J2 | C3-Fluorenes | | ----------NA---------- | | | | | |
| 66 | J1 | Dibenzothiophene | 2.390 | 2.387 | 0.1 | 66 | 0.00 | 33.78 | |
| 67 | J2 | C1-Dibenzothiophenes (una | | ----------NA---------- | | | | | |
| 68 | J2 | C1-Dibenzothiophenes (OTP | | ----------NA---------- | | | | | |
| 69 | J2 | C2-Dibenzothiophenes | | ----------NA---------- | | | | | |
| 70 | J2 | C3-Dibenzothiophenes | | ----------NA---------- | | | | | |
| 71 | J2 | C4-Dibenzothiophenes | | ----------NA---------- | | | | | |
| 72 | J1 | Phenanthrene | 2.218 | 2.172 | 2.1 | 64 | 0.00 | 34.29 | |
| 73 | | Anthracene | 2.077 | 2.087 | -0.5 | 64 | 0.00 | 34.47 | |
| 74 | J2 | C1-Phenanthrenes/anthrace | | ----------NA---------- | | | | | |
| 75 | J2 | C2-Phenanthrenes/anthrace | | ----------NA---------- | | | | | |
| 76 | J2 | C2-Phenanthrenes/anthrace | | ----------NA---------- | | | | | |
| 77 | J2 | C3-Phenanthrenes/anthrace | | ----------NA---------- | | | | | |
| 78 | J2 | C4-Phenanthrenes/anthrace | | ----------NA---------- | | | | | |
| 79 | | Carbazole | 2.171 | 1.918 | 11.7 | 57 | 0.01 | 35.17 | |
| 80 | | Retene | 0.527 | 0.481 | 8.7 | 62 | 0.00 | 41.27 | |
| 81 | J1 | Benzo(b)naphtho(2,1-d)thi | 2.066 | 1.992 | 3.6 | 62 | 0.00 | 43.78 | |
| 82 | J2 | C1-Benzonaphthothiophenes | | ----------NA---------- | | | | | |
| 83 | J2 | C2-Benzonaphthothiophenes | | ----------NA---------- | | | | | |
| 84 | J2 | C3-Benzonaphthothiophenes | | ----------NA---------- | | | | | |
| 85 | J2 | C4-Benzonaphthothiophenes | | ----------NA---------- | | | | | |
| 86 | | Fluoranthene | 2.206 | 2.185 | 1.0 | 64 | 0.00 | 39.05 | |
| 87 | J1 | Pyrene | 2.193 | 2.184 | 0.4 | 65 | 0.00 | 39.92 | |
| 88 | J2 | C1-Fluoranthenes/pyrenes | | ----------NA---------- | | | | | |
| 89 | J2 | Benzo(b)fluorene | | ----------NA---------- | | | | | |
| 90 | J2 | Benzo(c)fluorene | | ----------NA---------- | | | | | |
| 91 | J2 | 2-Methylpyrene | | ----------NA---------- | | | | | |
| 92 | J2 | 4-Methylpyrene | | ----------NA---------- | | | | | |
| 93 | J2 | 1-Methylpyrene | | ----------NA---------- | | | | | |
| 94 | J2 | C2-Fluoranthenes/pyrenes | | ----------NA---------- | | | | | |
| 95 | J2 | C3-Fluoranthenes/pyrenes | | ----------NA---------- | | | | | |
| 96 | J2 | C4-Fluoranthenes/pyrenes | | ----------NA---------- | | | | | |
| 97 | | Benz(a)anthracene | 1.892 | 1.764 | 6.8 | 61 | 0.00 | 44.71 | |
| 98 | J1 | Chrysene/triphenylene | 1.811 | 1.681 | 7.2 | 59 | 0.00 | 44.87 | |

# Continuing Calibration Summary

**Job Number:** MC46549 **Sample:** MSS1964-CC1950
**Account:** ENSRNJ AECOM, INC. **Lab FileID:** S39583.D
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 99 | J2 | C1-Benz(a)anthracenes/chr | ----------NA---------- | | | | | |
| 100 | J2 | C2-Benz(a)anthracenes/chr | ----------NA---------- | | | | | |
| 101 | J2 | C3-Benz(a)anthracenes/chr | ----------NA---------- | | | | | |
| 102 | J2 | C4-Benz(a)anthracenes/chr | ----------NA---------- | | | | | |
| 103 | | Benzo(b)fluoranthene | 2.085 | 1.914 | 8.2 | 59 | 0.00 | 48.75 |
| 104 | | Benzo(j/k)fluoranthene | 2.113 | 1.963 | 7.1 | 60 | 0.00 | 48.83 |
| 105 | | Benzo(e)pyrene | 2.001 | 1.886 | 5.7 | 60 | 0.00 | 49.68 |
| 106 | | Benzo(a)pyrene | 1.973 | 1.754 | 11.1 | 58 | 0.00 | 49.85 |
| 107 | | Perylene | 2.063 | 1.867 | 9.5 | 59 | 0.00 | 50.12 |
| 108 | | Indeno(1,2,3-cd)pyrene | 2.553 | 2.235 | 12.5 | 57 | 0.00 | 53.36 |
| 109 | | Dibenz(a,h)anthracene | 2.089 | 1.740 | 16.7 | 53 | 0.00 | 53.38 |
| 110 | | Benzo(g,h,i)perylene | 2.315 | 2.108 | 8.9 | 59 | 0.00 | 54.09 |
| 111 | | Coronene | 2.452 | 2.237 | 8.8 | 60 | 0.00 | 59.05 |
| | | ---------- | Amount | Calc. | %Drift | ---------- | | |
| 112 | | C-17 | 1000.000 | 979.507 | 2.0 | 66 | 0.00 | 32.15 |
| | | ---------- | AvgRF | CCRF | %Dev | ---------- | | |
| 113 | | Pristane | 0.428 | 0.409 | 4.4 | 65 | 0.00 | 32.28 |
| | | ---------- | Amount | Calc. | %Drift | ---------- | | |
| 114 | | C-18 | 1000.000 | 982.282 | 1.8 | 65 | 0.00 | 33.95 |
| | | ---------- | AvgRF | CCRF | %Dev | ---------- | | |
| 115 | J1 | Phytane | 0.593 | 0.568 | 4.2 | 65 | 0.00 | 34.14 |
| 116 | J2 | TPH (C8-C40) | ----------NA---------- | | | | | |
| 117 | J2 | 2,6,10-Trimethyldodecane | ----------NA---------- | | | | | |
| 118 | J2 | 2,6,10-Trimethyltridecane | ----------NA---------- | | | | | |
| 119 | J2 | 2,6,10-Trimethylpentadeca | ----------NA---------- | | | | | |

(#) = Out of Range SPCC's out = 0 CCC's out = 0
S39335.D S160601-MAHPAH-A.M Wed Jul 06 10:56:31 2016

# Continuing Calibration Summary



**Job Number:** MC46549 **Sample:** MSS1964-ECC1950
**Account:** ENSRNJ AECOM, INC. **Lab FileID:** S39594.D
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Evaluate Continuing Calibration Report

Data File : S:\1\data\S160705\S39594.D Vial: 96
Acq On : 5 Jul 2016 10:49 pm Operator: sofyaz
Sample : cc1950-1.0,fs231 Inst : MSS
Misc : OP47644,MSS1964,,,1,1 Multiplr: 1.00
MS Integration Params: rteint.p GC Integration Params: rteint2.p

Method : S:\1\methods\S160601-MAHPAH-A.M (RTE Integrator)
Title : PAHs & Alkylated PAHs by GC/MS/SIM
Last Update : Thu Jun 02 12:08:50 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

| | | Compound | AvgRF | CCRF | %Dev | Area% | Dev(min) | R.T. |
|---|---|---|---|---|---|---|---|---|
| 1 | I | Acenaphthene-d10 | 1.000 | 1.000 | 0.0 | 70 | 0.00 | 28.34 |
| 2 | S | Toluene-d8 | 1.495 | 1.508 | -0.9 | 71 | -0.02 | 9.43 |
| 3 | S | Naphthalene-d8 | 2.114 | 2.035 | 3.7 | 68 | 0.00 | 21.40 |
| 4 | S | Phenanthrene-d10 | 1.506 | 1.447 | 3.9 | 67 | 0.00 | 34.20 |
| 5 | S | Perylene-d12 | 1.227 | 1.127 | 8.1 | 64 | 0.00 | 50.04 |
| | | | Amount | Calc. | %Drift | | | |
| 6 | | MTBE | 1000.000 | 1781.752 | -78.2# | 89 | -0.05 | 5.51 |
| 7 | J1 | Benzene | 1000.000 | 1017.919 | -1.8 | 65 | -0.03 | 6.95 |
| 8 | J2 | C1-Benzene | | ----------NA---------- | | | | |
| 9 | J2 | C2-Benzenes | | ----------NA---------- | | | | |
| 10 | J2 | C3-Benzenes | | ----------NA---------- | | | | |
| 11 | J2 | C4-Benzenes | | ----------NA---------- | | | | |
| 12 | J2 | C5-Benzenes | | ----------NA---------- | | | | |
| 13 | | 2,2,4-trimethylpentane | 1000.000 | 927.270 | 7.3 | 58 | -0.04 | 7.44 |
| | | | AvgRF | CCRF | %Dev | | | |
| 14 | | n-Heptane | 0.868 | 0.718 | 17.3 | 58 | -0.03 | 7.72 |
| 15 | | Methylcyclohexane | 0.733 | 0.654 | 10.8 | 64 | -0.04 | 8.34 |
| 16 | | Toluene | 1.931 | 1.848 | 4.3 | 70 | 0.00 | 9.55 |
| 17 | | n-Octane | 1.153 | 0.953 | 17.3 | 62 | 0.00 | 10.42 |
| 18 | | Ethylbenzene | 2.146 | 2.066 | 3.7 | 69 | 0.00 | 12.31 |
| 19 | | m,p-xylene | 1.749 | 1.663 | 4.9 | 67 | 0.00 | 12.55 |
| 20 | | Styrene | 1.456 | 1.148 | 21.2 | 65 | 0.00 | 13.19 |
| 21 | | o-Xylene | 1.791 | 1.697 | 5.2 | 69 | 0.00 | 13.26 |
| 22 | | Isopropylbenzene | 2.011 | 2.004 | 0.3 | 71 | 0.01 | 14.19 |
| 23 | | n-Propylbenzene | 2.541 | 2.397 | 5.7 | 67 | 0.00 | 15.04 |
| 24 | | 1,3,5-Trimethylbenzene | 1.816 | 1.804 | 0.7 | 70 | 0.01 | 15.46 |
| 25 | | Phenol | 1.083 | 0.617 | 43.0# | 45# | 0.02 | 15.69 |
| 26 | | t-Butylbenzene | 1.616 | 1.603 | 0.8 | 72 | -0.01 | 16.15 |
| 27 | | 1,2,4-Trimethylbenzene | 1.888 | 1.809 | 4.2 | 69 | 0.00 | 16.19 |
| 28 | | sec-Butylbenzene | 2.245 | 2.162 | 3.7 | 70 | 0.01 | 16.68 |
| 29 | | 1,2,3-Trimethylbenzene | 1.895 | 1.817 | 4.1 | 70 | 0.00 | 17.03 |
| 30 | | p-Isopropyltoluene | 1.950 | 1.885 | 3.3 | 70 | 0.00 | 17.04 |
| 31 | | Indane | 1.705 | 1.709 | -0.2 | 71 | 0.00 | 17.43 |
| 32 | | Indene | 1.669 | 1.616 | 3.2 | 68 | 0.00 | 17.68 |
| 33 | | n-Butylbenzene | 1.958 | 1.764 | 9.9 | 66 | 0.01 | 17.94 |
| 34 | J1 | trans-Decalin | 0.370 | 0.359 | 3.0 | 71 | 0.00 | 18.00 |
| 35 | | cis-Decalin | 0.509 | 0.477 | 6.3 | 71 | 0.00 | 19.23 |
| 36 | J2 | C1-Decalins | | ----------NA---------- | | | | |
| 37 | J2 | C2-Decalins | | ----------NA---------- | | | | |
| 38 | J2 | C3-Decalins | | ----------NA---------- | | | | |

# Continuing Calibration Summary

**Job Number:** MC46549 **Sample:** MSS1964-ECC1950
**Account:** ENSRNJ AECOM, INC. **Lab FileID:** S39594.D
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 39 | J2 | C4-Decalins | | ----------NA---------- | | | | |
| 40 | J1 | Benzo(b)thiophene | 2.148 | 2.023 | 5.8 | 67 | 0.00 | 21.69 |
| 41 | J2 | C1-Benzo(b)thiophenes | | ----------NA---------- | | | | |
| 42 | J2 | C2-Benzo(b)thiophenes | | ----------NA---------- | | | | |
| 43 | J2 | C3-Benzo(b)thiophenes | | ----------NA---------- | | | | |
| 44 | J2 | C4-Benzo(b)thiophenes | | ----------NA---------- | | | | |
| 45 | J1 | Tetraethyl lead | 0.163 | 0.133 | 18.4 | 62 | -0.01 | 20.52 |
| 46 | J2 | Tetramethyl lead | | ----------NA---------- | | | | |
| 47 | J2 | Trimethylethyl lead | | ----------NA---------- | | | | |
| 48 | J2 | Dimethyldiethyl lead | | ----------NA---------- | | | | |
| 49 | J2 | Methyltriethyl lead | | ----------NA---------- | | | | |
| 50 | | MMT | 0.803 | 0.672 | 16.3 | 62 | 0.00 | 23.27 |
| 51 | J1 | Naphthalene | 2.622 | 2.506 | 4.4 | 68 | 0.00 | 21.47 |
| 52 | | 2-Methylnaphthalene | 1.693 | 1.609 | 5.0 | 69 | 0.00 | 24.18 |
| 53 | | 1-Methylnaphthalene | 1.499 | 1.440 | 3.9 | 70 | 0.00 | 24.59 |
| 54 | J2 | C1-Naphthalenes | | ----------NA---------- | | | | |
| 55 | J2 | C2-Naphthalenes | | ----------NA---------- | | | | |
| 56 | J2 | C3-Naphthalenes | | ----------NA---------- | | | | |
| 57 | J2 | C4-Naphthalenes | | ----------NA---------- | | | | |
| 58 | | Biphenyl | 1.974 | 1.842 | 6.7 | 68 | 0.00 | 26.07 |
| 59 | | Acenaphthylene | 2.505 | 2.652 | -5.9 | 73 | 0.00 | 27.73 |
| 60 | | Acenaphthene | 1.431 | 1.459 | -2.0 | 72 | 0.00 | 28.47 |
| 61 | | Dibenzofuran | 2.052 | 2.028 | 1.2 | 69 | 0.00 | 29.12 |
| 62 | J1 | Fluorene | 1.710 | 1.663 | 2.7 | 70 | 0.00 | 30.49 |
| 63 | J2 | C1-Fluorenes | | ----------NA---------- | | | | |
| 64 | J2 | C2-Fluorenes | | ----------NA---------- | | | | |
| 65 | J2 | C3-Fluorenes | | ----------NA---------- | | | | |
| 66 | J1 | Dibenzothiophene | 2.390 | 2.401 | -0.5 | 71 | 0.00 | 33.79 |
| 67 | J2 | C1-Dibenzothiophenes (una | | ----------NA---------- | | | | |
| 68 | J2 | C1-Dibenzothiophenes (OTP | | ----------NA---------- | | | | |
| 69 | J2 | C2-Dibenzothiophenes | | ----------NA---------- | | | | |
| 70 | J2 | C3-Dibenzothiophenes | | ----------NA---------- | | | | |
| 71 | J2 | C4-Dibenzothiophenes | | ----------NA---------- | | | | |
| 72 | J1 | Phenanthrene | 2.218 | 2.196 | 1.0 | 70 | 0.00 | 34.29 |
| 73 | | Anthracene | 2.077 | 2.025 | 2.5 | 67 | 0.00 | 34.47 |
| 74 | J2 | C1-Phenanthrenes/anthrace | | ----------NA---------- | | | | |
| 75 | J2 | C2-Phenanthrenes/anthrace | | ----------NA---------- | | | | |
| 76 | J2 | C2-Phenanthrenes/anthrace | | ----------NA---------- | | | | |
| 77 | J2 | C3-Phenanthrenes/anthrace | | ----------NA---------- | | | | |
| 78 | J2 | C4-Phenanthrenes/anthrace | | ----------NA---------- | | | | |
| 79 | | Carbazole | 2.171 | 2.111 | 2.8 | 68 | 0.01 | 35.17 |
| 80 | | Retene | 0.527 | 0.499 | 5.3 | 69 | 0.00 | 41.27 |
| 81 | J1 | Benzo(b)naphtho(2,1-d)thi | 2.066 | 2.070 | -0.2 | 69 | 0.00 | 43.78 |
| 82 | J2 | C1-Benzonaphthothiophenes | | ----------NA---------- | | | | |
| 83 | J2 | C2-Benzonaphthothiophenes | | ----------NA---------- | | | | |
| 84 | J2 | C3-Benzonaphthothiophenes | | ----------NA---------- | | | | |
| 85 | J2 | C4-Benzonaphthothiophenes | | ----------NA---------- | | | | |
| 86 | | Fluoranthene | 2.206 | 2.247 | -1.9 | 71 | 0.00 | 39.05 |
| 87 | J1 | Pyrene | 2.193 | 2.242 | -2.2 | 71 | 0.00 | 39.92 |
| 88 | J2 | C1-Fluoranthenes/pyrenes | | ----------NA---------- | | | | |
| 89 | J2 | Benzo(b)fluorene | | ----------NA---------- | | | | |
| 90 | J2 | Benzo(c)fluorene | | ----------NA---------- | | | | |
| 91 | J2 | 2-Methylpyrene | | ----------NA---------- | | | | |
| 92 | J2 | 4-Methylpyrene | | ----------NA---------- | | | | |
| 93 | J2 | 1-Methylpyrene | | ----------NA---------- | | | | |
| 94 | J2 | C2-Fluoranthenes/pyrenes | | ----------NA---------- | | | | |
| 95 | J2 | C3-Fluoranthenes/pyrenes | | ----------NA---------- | | | | |
| 96 | J2 | C4-Fluoranthenes/pyrenes | | ----------NA---------- | | | | |
| 97 | | Benz(a)anthracene | 1.892 | 1.876 | 0.8 | 69 | 0.00 | 44.71 |
| 98 | J1 | Chrysene/triphenylene | 1.811 | 1.788 | 1.3 | 68 | 0.00 | 44.87 |

# Continuing Calibration Summary

**Job Number:** MC46549 **Sample:** MSS1964-ECC1950
**Account:** ENSRNJ AECOM, INC. **Lab FileID:** S39594.D
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 99 | J2 | C1-Benz(a)anthracenes/chr | | ----------NA---------- | | | | | |
| 100 | J2 | C2-Benz(a)anthracenes/chr | | ----------NA---------- | | | | | |
| 101 | J2 | C3-Benz(a)anthracenes/chr | | ----------NA---------- | | | | | |
| 102 | J2 | C4-Benz(a)anthracenes/chr | | ----------NA---------- | | | | | |
| 103 | | Benzo(b)fluoranthene | 2.085 | 1.993 | 4.4 | 66 | 0.00 | 48.76 | |
| 104 | | Benzo(j/k)fluoranthene | 2.113 | 2.110 | 0.1 | 69 | 0.00 | 48.83 | |
| 105 | | Benzo(e)pyrene | 2.001 | 1.966 | 1.7 | 68 | 0.00 | 49.69 | |
| 106 | | Benzo(a)pyrene | 1.973 | 1.859 | 5.8 | 66 | 0.00 | 49.85 | |
| 107 | | Perylene | 2.063 | 1.971 | 4.5 | 66 | 0.00 | 50.13 | |
| 108 | | Indeno(1,2,3-cd)pyrene | 2.553 | 2.441 | 4.4 | 67 | 0.00 | 53.36 | |
| 109 | | Dibenz(a,h)anthracene | 2.089 | 2.005 | 4.0 | 65 | 0.00 | 53.38 | |
| 110 | | Benzo(g,h,i)perylene | 2.315 | 2.212 | 4.4 | 66 | 0.00 | 54.09 | |
| 111 | | Coronene | 2.452 | 2.320 | 5.4 | 66 | 0.02 | 59.06 | |
| | | ---------- | Amount | Calc. | %Drift | ---------- | | | |
| 112 | | C-17 | 1000.000 | 962.061 | 3.8 | 69 | 0.00 | 32.15 | |
| | | ---------- | AvgRF | CCRF | %Dev | ---------- | | | |
| 113 | | Pristane | 0.428 | 0.409 | 4.4 | 70 | 0.00 | 32.28 | |
| | | ---------- | Amount | Calc. | %Drift | ---------- | | | |
| 114 | | C-18 | 1000.000 | 981.101 | 1.9 | 70 | 0.00 | 33.95 | |
| | | ---------- | AvgRF | CCRF | %Dev | ---------- | | | |
| 115 | J1 | Phytane | 0.593 | 0.564 | 4.9 | 70 | 0.00 | 34.14 | |
| 116 | J2 | TPH (C8-C40) | | ----------NA---------- | | | | | |
| 117 | J2 | 2,6,10-Trimethyldodecane | | ----------NA---------- | | | | | |
| 118 | J2 | 2,6,10-Trimethyltridecane | | ----------NA---------- | | | | | |
| 119 | J2 | 2,6,10-Trimethylpentadeca | | ----------NA---------- | | | | | |

(#) = Out of Range SPCC's out = 0 CCC's out = 0
S39335.D S160601-MAHPAH-A.M Wed Jul 06 10:56:44 2016

GC/MS Semi-volatiles

Raw Data

Manual Integrations APPROVED (compounds with "m" flag)
Ruben Parrilla 07/13/16 11:23

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160705\S39591.D
Sample : mc46549-1,137-P3B-MW101I-2016062
Misc : OP47956,MSS1964,0.0152,,,2,1
ALS Vial : 7 Sample Multiplier: 1
Acq On : 5 Jul 2016 7:07 pm Operator: sofyaz

Quant Time: Jul 06 11:55:09 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Acenaphthene-d10 | 28.352 | 162 | 34024 | 1000.00 | ng/mL | 0.00 |
| System Monitoring Compounds | | | | | | |
| 2) Toluene-d8 | 9.443 | 98 | 47470 | 933.45 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = | 93.34% | | |
| 3) Naphthalene-d8 | 21.418 | 136 | 67548 | 938.94 | ng/mL | 0.02 |
| Spiked Amount 1000.000 | | | Recovery = | 93.89% | | |
| 4) Phenanthrene-d10 | 34.213 | 188 | 47740 | 931.41 | ng/mL | 0.02 |
| Spiked Amount 1000.000 | | | Recovery = | 93.14% | | |
| 5) Perylene-d12 | 50.050 | 264 | 40258 | 963.93 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = | 96.39% | | |
| Target Compounds | | | | | | Qvalue |
| 7] Benzene | 6.980 | 78 | 338923m | 6431.543 | ng/mL | |
| 8] C1-Benzene | 9.546 | 92 | 349436 | 6631.042 | ng/mL | 100 |
| 9] C2-Benzenes | 12.291 | 106 | 1864846m | 35388.090 | ng/mL | |
| 10] C3-Benzenes | 15.238 | 120 | 1954372m | 37086.972 | ng/mL | |
| 11] C4-Benzenes | 18.724 | 134 | 991948m | 18823.616 | ng/mL | |
| 12] C5-Benzenes | 20.255 | 148 | 276660m | 5250.015 | ng/mL | |
| 16] Toluene | 9.546 | 91 | 592267 | 9015.871 | ng/mL | 99 |
| 18] Ethylbenzene | 12.291 | 91 | 2428355 | 33250.429 | ng/mL | 96 |
| 19] m,p-xylene | 12.525 | 91 | 1627474 | 27344.055 | ng/mL | 98 |
| 20] Styrene | 13.171 | 104 | 71441 | 1442.160 | ng/mL | 97 |
| 21] o-Xylene | 13.237 | 91 | 853994 | 14015.649 | ng/mL | 99 |
| 22] Isopropylbenzene | 14.164 | 105 | 266157 | 3890.048 | ng/mL | 100 |
| 23] n-Propylbenzene | 15.025 | 91 | 145063 | 1678.033 | ng/mL | 100 |
| 24] 1,3,5-Trimethylbenzene | 15.440 | 105 | 393396 | 6365.468 | ng/mL | 97 |
| 27] 1,2,4-Trimethylbenzene | 16.173 | 105 | 1242644 | 19342.269 | ng/mL | 96 |
| 28] sec-Butylbenzene | 16.683 | 105 | 10091 | 132.122 | ng/mL | 98 |
| 29] 1,2,3-Trimethylbenzene | 17.023 | 105 | 415431 | 6443.692 | ng/mL | 96 |
| 30] p-Isopropyltoluene | 17.034 | 119 | 174085m | 2624.090 | ng/mL | |
| 33] n-Butylbenzene | 17.906 | 91 | 88291 | 1325.318 | ng/mL# | 1 |
| 34] trans-Decalin | 18.001 | 96 | 2650m | 210.780 | ng/mL | |
| 35] cis-Decalin | 19.234 | 96 | 1490m | 86.107 | ng/mL | |
| 40] Benzo(b)thiophene | 21.703 | 134 | 431541 | 5905.112 | ng/mL | 98 |
| 51] Naphthalene | 21.560 | 128 | 32598143 | 365440.592 | ng/mL# | 92 |
| 52] 2-Methylnaphthalene | 24.246 | 142 | 12744878 | 221198.516 | ng/mL | 99 |
| 53] 1-Methylnaphthalene | 24.656 | 142 | 8428662 | 165265.162 | ng/mL | 100 |
| 54] C1-Naphthalenes | 24.246 | 142 | 21191500m | 237566.732 | ng/mL | |
| 55] C2-Naphthalenes | 27.047 | 156 | 12393963m | 138942.184 | ng/mL | |
| 56] C3-Naphthalenes | 29.353 | 170 | 4235239m | 47479.031 | ng/mL | |
| 57] C4-Naphthalenes | 32.103 | 184 | 1211361m | 13579.929 | ng/mL | |
| 58] Biphenyl | 26.066 | 154 | 1627974 | 24236.129 | ng/mL | 98 |
| 59] Acenaphthylene | 27.761 | 152 | 2741911 | 32169.482 | ng/mL# | 86 |
| 60] Acenaphthene | 28.533 | 154 | 5716131 | 117427.278 | ng/mL | 99 |
| 61] Dibenzofuran | 29.124 | 168 | 346348m | 4961.586 | ng/mL | |
| 62] Fluorene | 30.534 | 166 | 3284076 | 56437.377 | ng/mL | 98 |
| 63] C1-Fluorenes | 32.733 | 180 | 2248655m | 38643.499 | ng/mL | |
| 64] C2-Fluorenes | 34.906 | 194 | 1320632m | 22695.274 | ng/mL | |
| 65] C3-Fluorenes | 36.896 | 208 | 467095m | 8027.103 | ng/mL | |
| 66] Dibenzothiophene | 33.801 | 184 | 726212 | 8932.127 | ng/mL# | 94 |
| 67] C1-Dibenzothiophenes (... | 35.573 | 198 | 878399m | 10803.968 | ng/mL | |
| 68] C1-Dibenzothiophenes (... | 36.014 | 198 | 2181m | 26.825 | ng/mL | |
| 69] C2-Dibenzothiophenes | 37.266 | 212 | 620290m | 7629.327 | ng/mL | |
| 70] C3-Dibenzothiophenes | 39.078 | 226 | 280979m | 3455.933 | ng/mL | |
| 71] C4-Dibenzothiophenes | 40.762 | 240 | 85187m | 1047.767 | ng/mL | |
| 72] Phenanthrene | 34.383 | 178 | 13164049 | 174402.352 | ng/mL | 96 |
| 73] Anthracene | 34.537 | 178 | 4524364 | 64011.959 | ng/mL | 95 |
| 74] C1-Phenanthrenes/anthr... | 36.414 | 192 | 9091542m | 120448.223 | ng/mL | |
| 75] C2-Phenanthrenes/anthr... | 38.548 | 206 | 3599105m | 47682.319 | ng/mL | |
| 77] C3-Phenanthrenes/anthr... | 40.373 | 220 | 938805m | 12437.647 | ng/mL | |

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160705\S39591.D
Sample : mc46549-1,137-P3B-MW101I-2016062
Misc : OP47956,MSS1964,0.0152,,,2,1
ALS Vial : 7 Sample Multiplier: 1
Acq On : 5 Jul 2016 7:07 pm Operator: sofyaz

Quant Time: Jul 06 11:55:09 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

| | Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 78] | C4-Phenanthrenes/anthr... | 42.570 | 234 | 229832m | 3044.902 ng/mL | |
| 81] | Benzo(b)naphtho(2,1-d)... | 43.785 | 234 | 231674 | 3295.013 ng/mL | 96 |
| 86] | Fluoranthene | 39.113 | 202 | 3557668 | 47401.623 ng/mL | 97 |
| 87] | Pyrene | 40.002 | 202 | 5788109 | 77557.098 ng/mL# | 91 |
| 88] | C1-Fluoranthenes/pyrenes | 41.366 | 216 | 5531638m | 74120.545 ng/mL | |
| 89] | Benzo(b)fluorene | 41.600 | 216 | 556617m | 7458.325 ng/mL | |
| 90] | Benzo(c)fluorene | 41.643 | 216 | 243692m | 3265.323 ng/mL | |
| 91] | 2-Methylpyrene | 41.755 | 216 | 682754m | 9148.483 ng/mL | |
| 92] | 4-Methylpyrene | 42.119 | 216 | 605516m | 8113.542 ng/mL | |
| 93] | 1-Methylpyrene | 42.232 | 216 | 851215m | 11405.757 ng/mL | |
| 94] | C2-Fluoranthenes/pyrenes | 43.013 | 230 | 1820255m | 24390.297 ng/mL | |
| 95] | C3-Fluoranthenes/pyrenes | 44.884 | 244 | 562275m | 7534.139 ng/mL | |
| 97] | Benz(a)anthracene | 44.751 | 228 | 1827839 | 28395.732 ng/mL# | 48 |
| 98] | Chrysene/triphenylene | 44.910 | 228 | 1636759 | 26569.843 ng/mL | 98 |
| 99] | C1-Benz(a)anthracenes/... | 46.372 | 242 | 1459513m | 23692.573 ng/mL | |
| 100] | C2-Benz(a)anthracenes/... | 48.065 | 256 | 551405m | 8951.070 ng/mL | |
| 101] | C3-Benz(a)anthracenes/... | 49.616 | 270 | 193817m | 3146.271 ng/mL | |
| 102] | C4-Benz(a)anthracenes/... | 50.466 | 284 | 48083m | 780.541 ng/mL | |
| 103] | Benzo(b)fluoranthene | 48.775 | 252 | 613235 | 8643.741 ng/mL | 99 |
| 104] | Benzo(j/k)fluoranthene | 48.847 | 252 | 757501 | 10536.364 ng/mL | 98 |
| 105] | Benzo(e)pyrene | 49.706 | 252 | 679107 | 9973.641 ng/mL | 98 |
| 106] | Benzo(a)pyrene | 49.887 | 252 | 1307224 | 19469.835 ng/mL | 96 |
| 107] | Perylene | 50.131 | 252 | 189649 | 2701.720 ng/mL | 95 |
| 108] | Indeno(1,2,3-cd)pyrene | 53.376 | 276 | 471945m | 5433.145 ng/mL | |
| 109] | Dibenz(a,h)anthracene | 53.376 | 278 | 164393m | 2313.430 ng/mL | |
| 110] | Benzo(g,h,i)perylene | 54.100 | 276 | 499430 | 6340.100 ng/mL | 99 |
| 111] | Coronene | 59.049 | 300 | 112282 | 1346.066 ng/mL | 99 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160705\S39591.D
Sample : mc46549-1,137-P3B-MW101I-2016062
Misc : OP47956,MSS1964,0.0152,,,2,1
ALS Vial : 7 Sample Multiplier: 1
Acq On : 5 Jul 2016 7:07 pm Operator: sofyaz

Quant Time: Jul 06 11:55:09 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

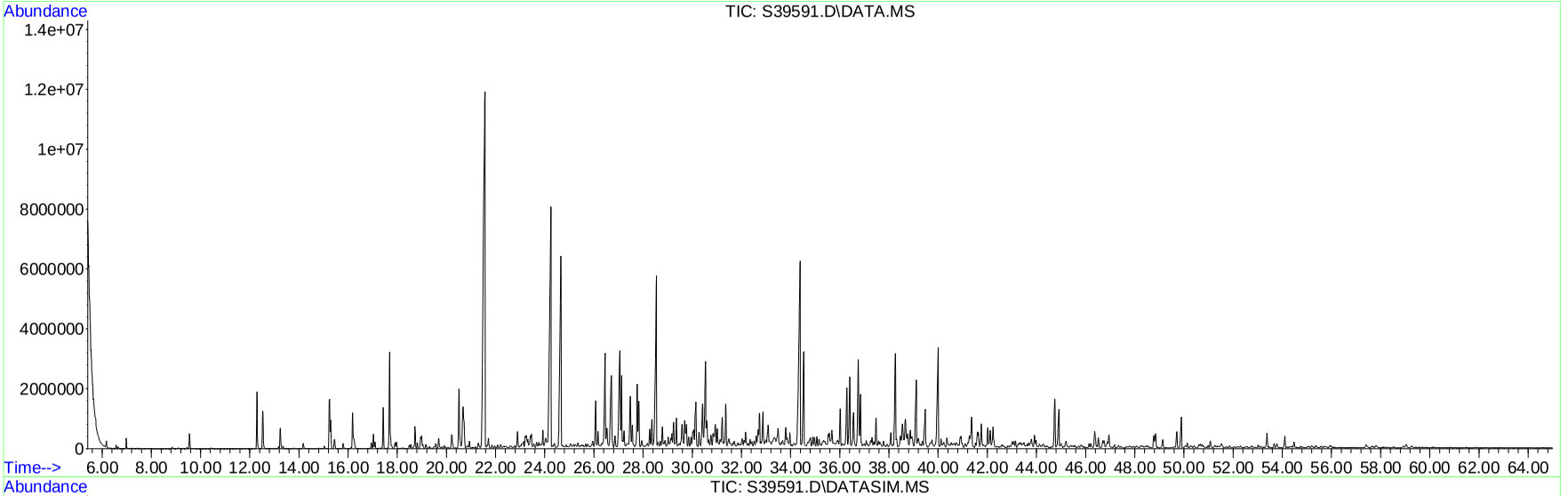


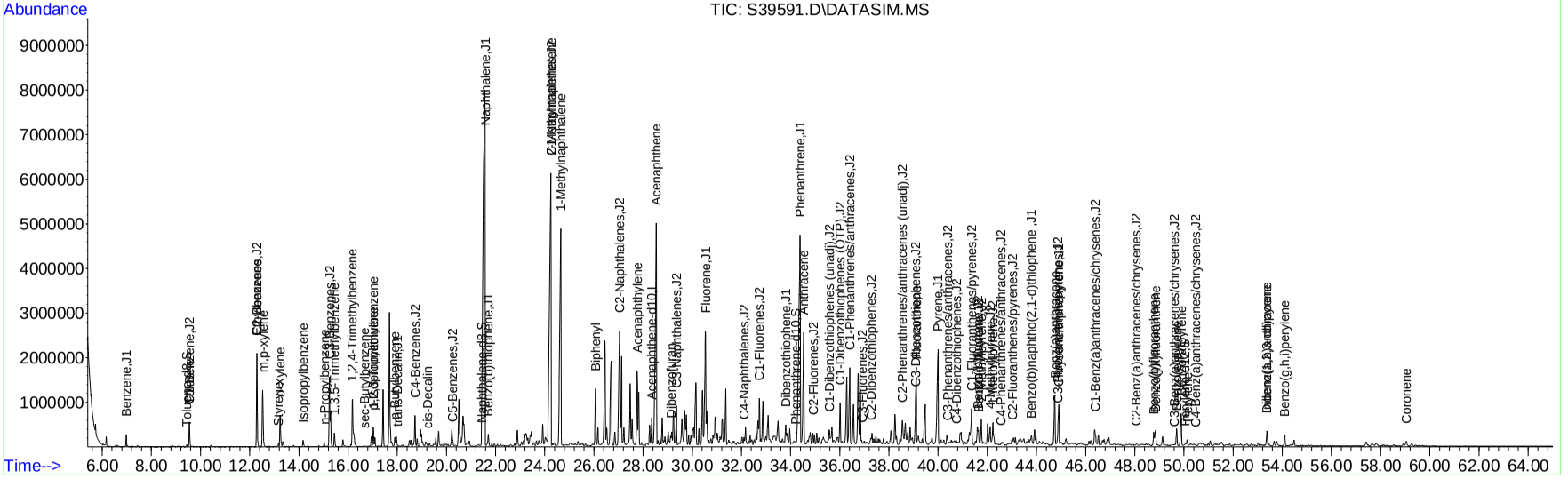




96 of 315 ACCUTEST MC46549
SGS
Sample Results: S39591.D
S39591.D: MC46549-1 137-P3B-MW101I-20160621 page 3 of 41

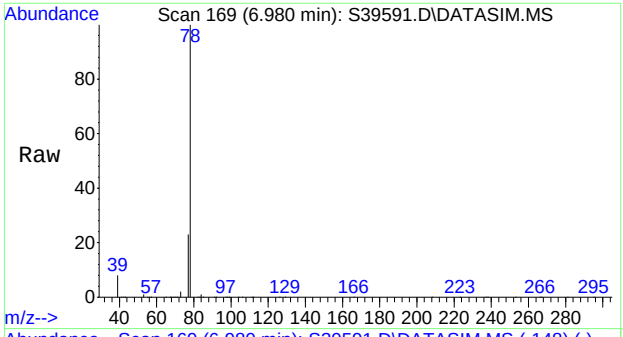


#7
Benzene
Concen: 6431.543 ng/mL m
RT: 6.980 min Scan# 169
Delta R.T. -0.000 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion: 78 Resp: 338923

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 78 | 100 | | |
| 77 | 23.2 | 18.4 | 27.6 |

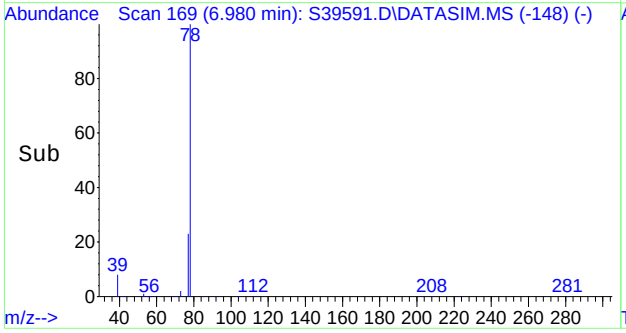


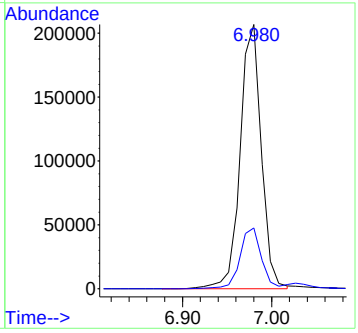


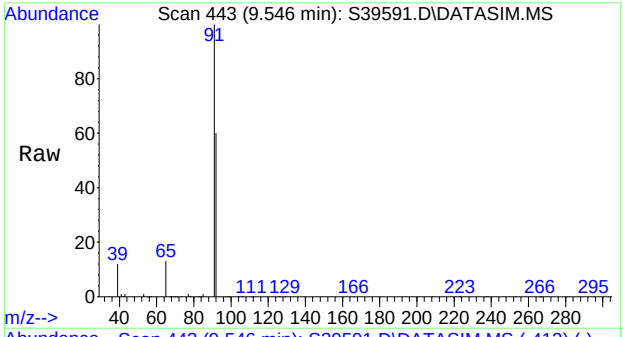


#8
C1-Benzene
Concen: 6631.042 ng/mL
RT: 9.546 min Scan# 443
Delta R.T. -0.006 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion: 92 Resp: 349436

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 92 | 100 | | |
| 91 | 169.5 | 135.2 | 202.8 |

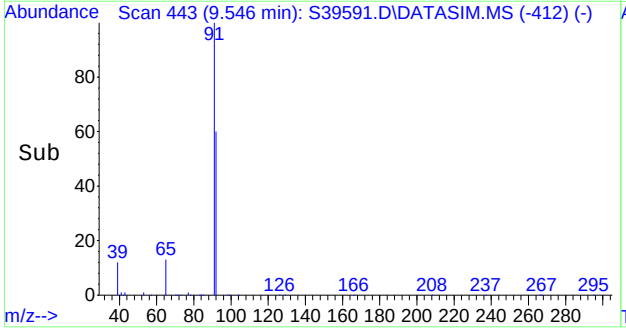


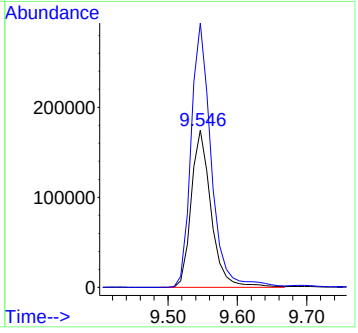

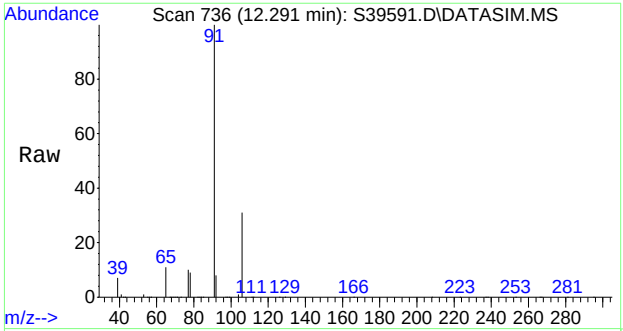


#9
C2-Benzenes
Concen: 35388.090 ng/mL m
RT: 12.291 min Scan# 736
Delta R.T. -0.240 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:106 Resp: 1864846

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 106 | 100 | | |
| 91 | 264.9 | 173.4 | 260.0# |

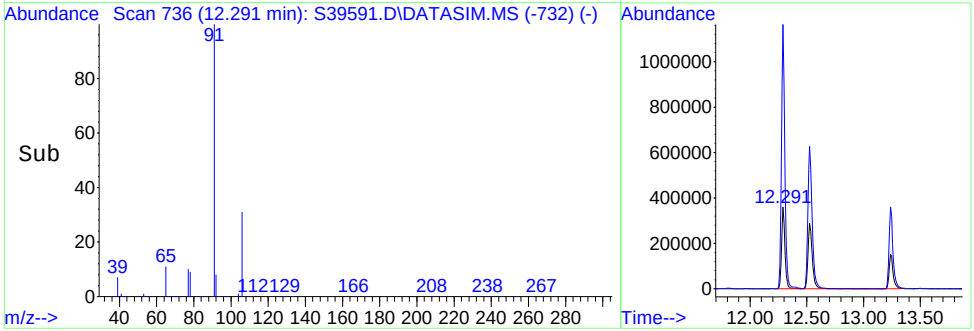





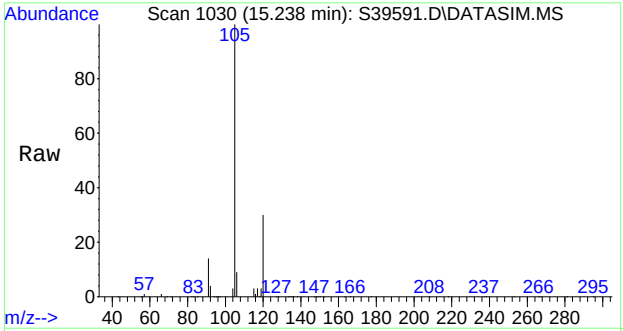


#10
C3-Benzenes
Concen: 37086.972 ng/mL m
RT: 15.238 min Scan# 1030
Delta R.T. -0.941 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:120 Resp: 1954372

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 120 | 100 | | |
| 105 | 289.9 | 197.2 | 295.8 |

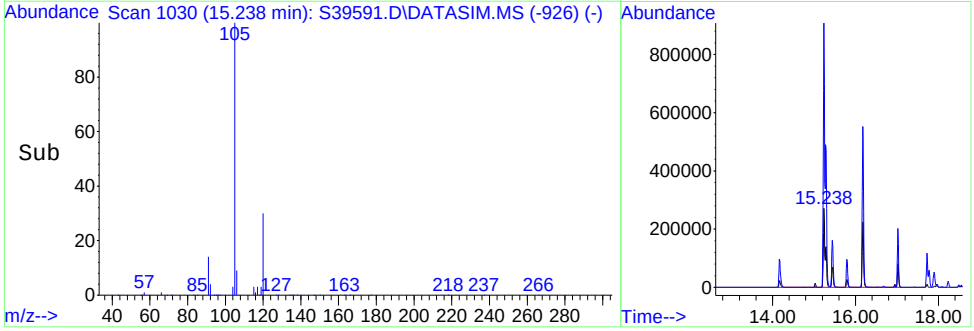

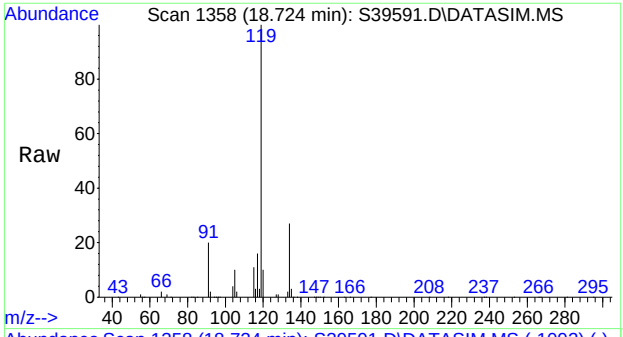


#11
C4-Benzenes
Concen: 18823.616 ng/mL m
RT: 18.724 min Scan# 1358
Delta R.T. -1.833 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:134 Resp: 991948

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 134 | 100 | | |
| 91 | 213.9 | 42.2 | 63.4# |

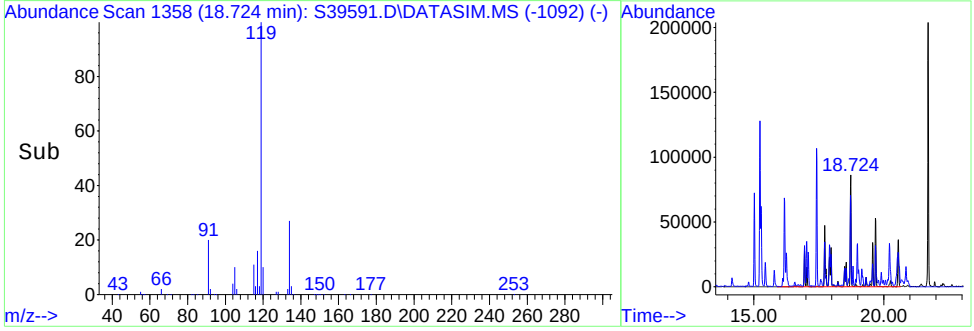


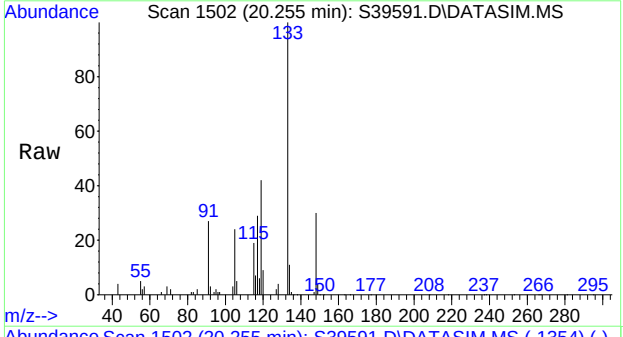


#12
C5-Benzenes
Concen: 5250.015 ng/mL m
RT: 20.255 min Scan# 1502
Delta R.T. -0.004 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:148 Resp: 276660

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 148 | 100 | | |
| 133 | 357.2 | 139.4 | 209.2# |

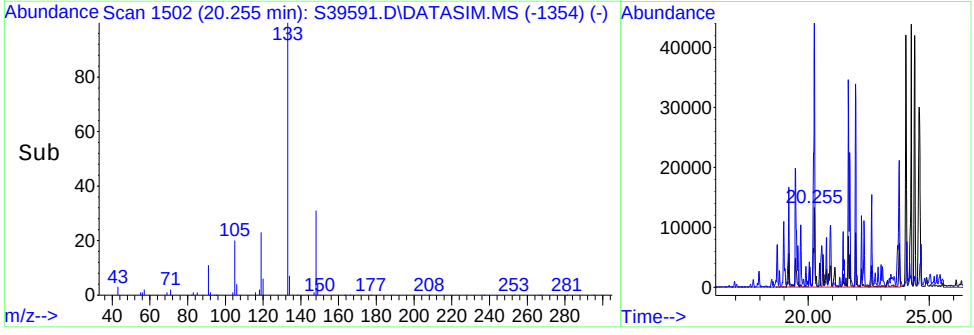








SGS ACCUTEST MC46549

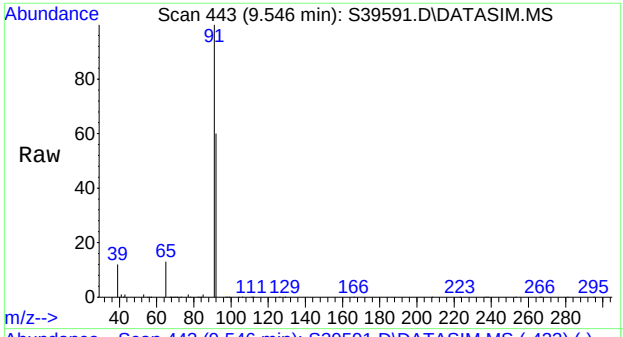


#16
Toluene
Concen: 9015.871 ng/mL
RT: 9.546 min Scan# 443
Delta R.T. -0.009 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion: 91 Resp: 592267

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 91 | 100 | | |
| 92 | 59.0 | 46.6 | 70.0 |

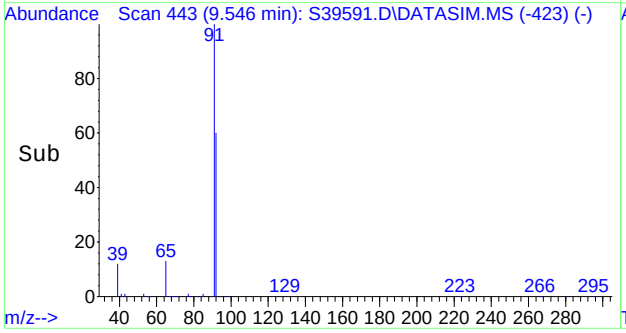


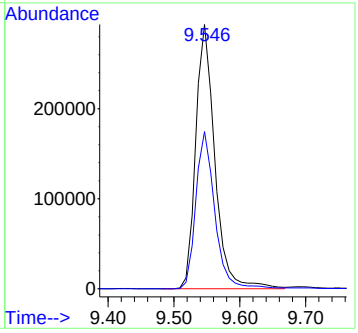


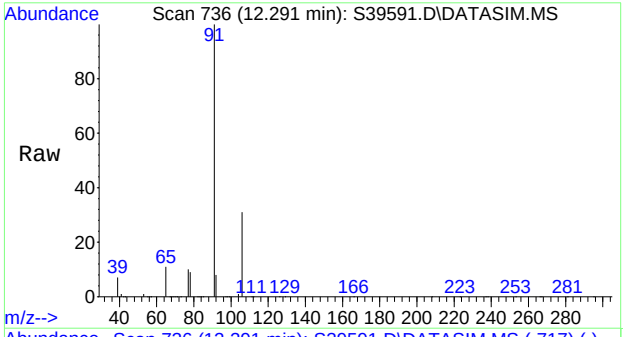


#18
Ethylbenzene
Concen: 33250.429 ng/mL
RT: 12.291 min Scan# 736
Delta R.T. -0.019 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion: 91 Resp: 2428355

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 91 | 100 | | |
| 106 | 30.6 | 23.0 | 34.4 |

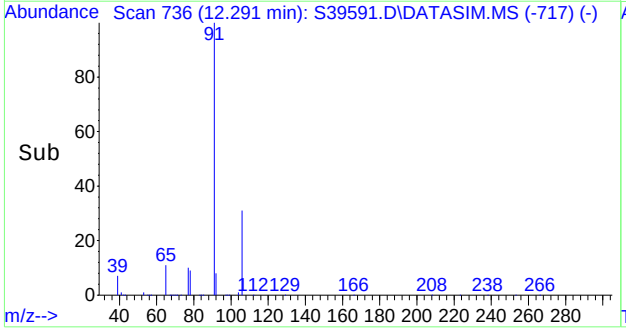


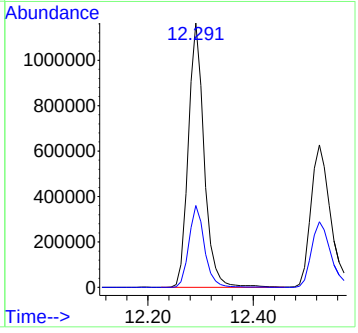






SGS ACCUTEST MC46549

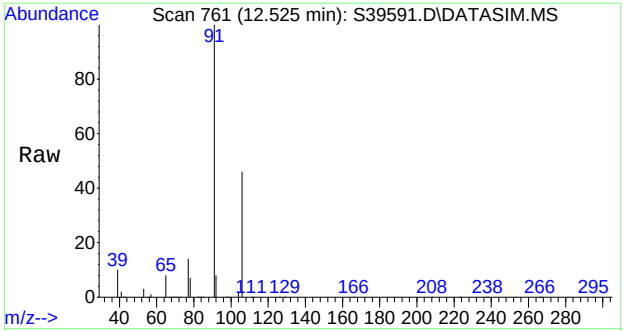


#19
m,p-xylene
Concen: 27344.055 ng/mL
RT: 12.525 min Scan# 761
Delta R.T. -0.028 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion: 91 Resp: 1627474

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 91 | 100 | | |
| 106 | 46.0 | 35.8 | 53.6 |

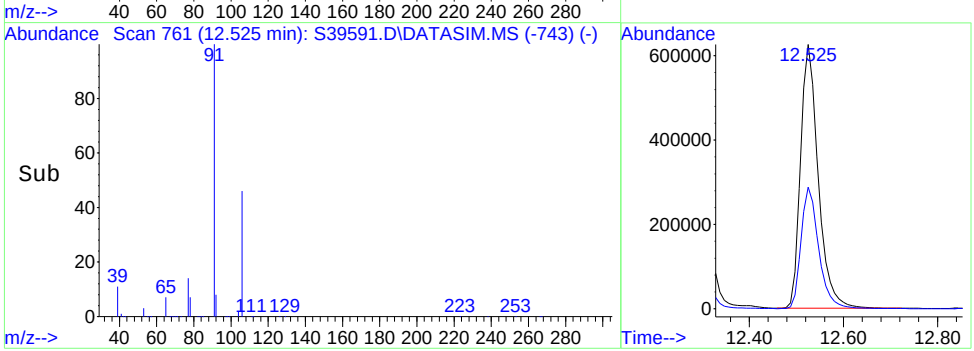


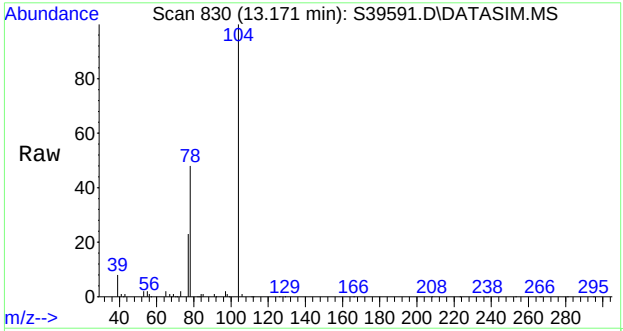


#20
Styrene
Concen: 1442.160 ng/mL
RT: 13.171 min Scan# 830
Delta R.T. -0.009 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:104 Resp: 71441

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 104 | 100 | | |
| 78 | 48.6 | 40.3 | 60.5 |

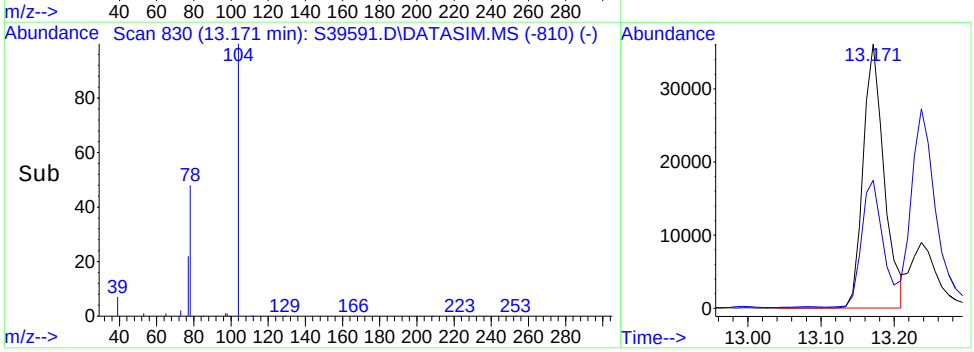

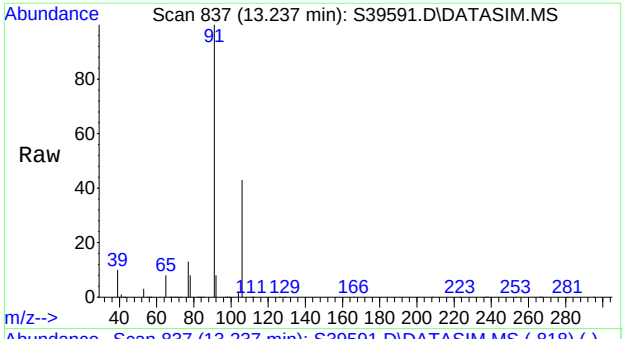


#21
o-Xylene
Concen: 14015.649 ng/mL
RT: 13.237 min Scan# 837
Delta R.T. -0.019 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion: 91 Resp: 853994

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 91 | 100 | | |
| 106 | 42.8 | 34.5 | 51.7 |

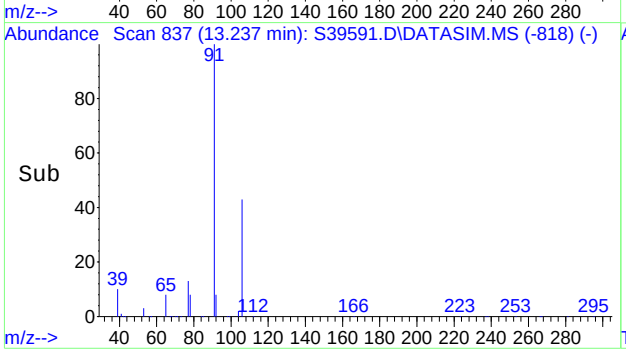


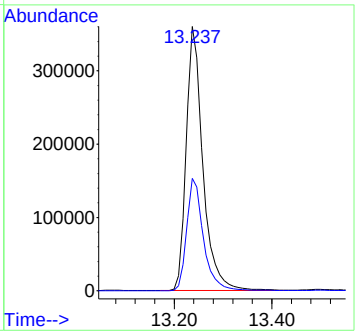


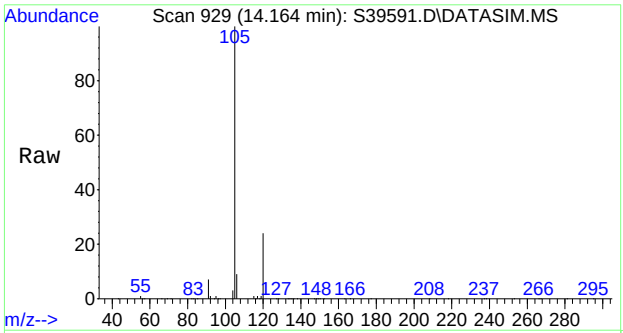


#22
Isopropylbenzene
Concen: 3890.048 ng/mL
RT: 14.164 min Scan# 929
Delta R.T. -0.011 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:105 Resp: 266157

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 105 | 100 | | |
| 120 | 24.1 | 19.2 | 28.8 |

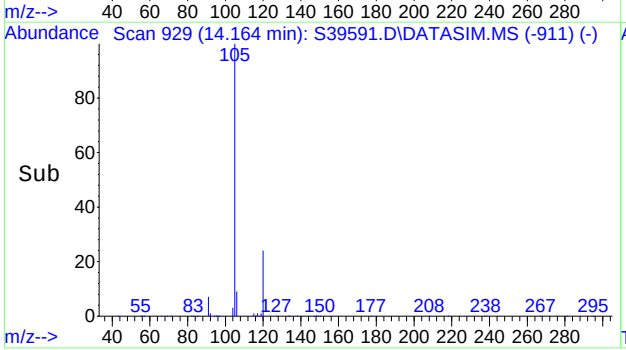


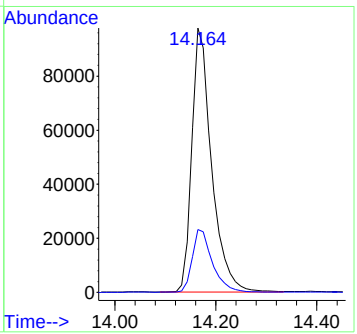

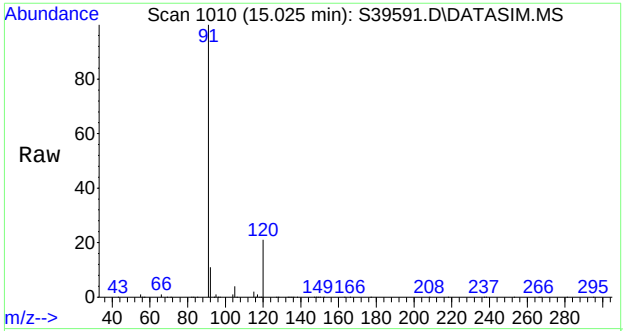


#23
n-Propylbenzene
Concen: 1678.033 ng/mL
RT: 15.025 min Scan# 1010
Delta R.T. -0.011 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion: 91 Resp: 145063

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 91 | 100 | | |
| 120 | 20.9 | 16.8 | 25.2 |

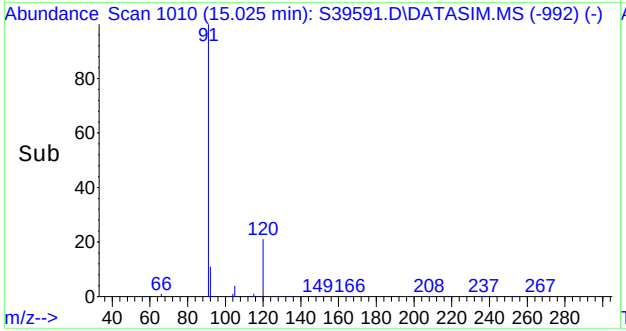


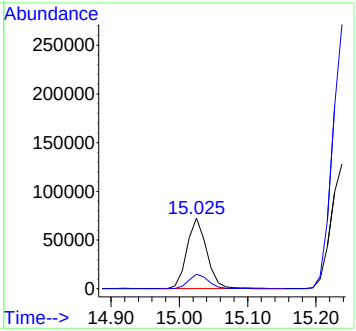


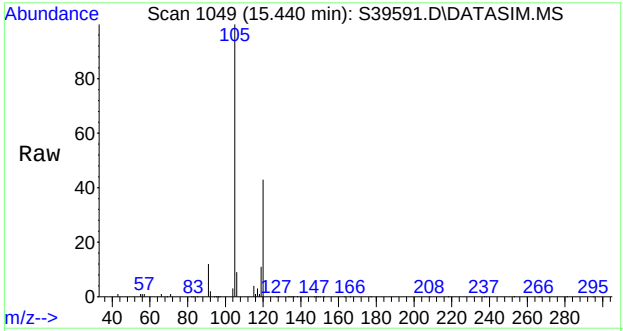


#24
1,3,5-Trimethylbenzene
Concen: 6365.468 ng/mL
RT: 15.440 min Scan# 1049
Delta R.T. -0.011 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:105 Resp: 393396

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 105 | 100 | | |
| 120 | 43.7 | 33.5 | 50.3 |

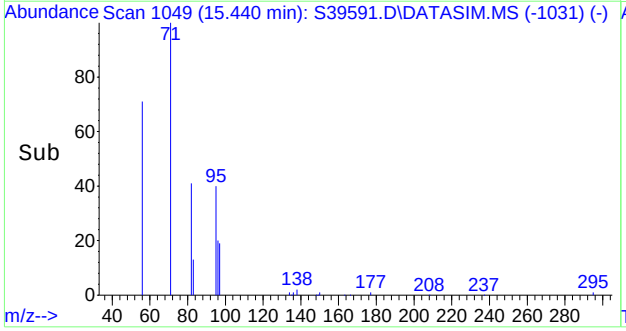


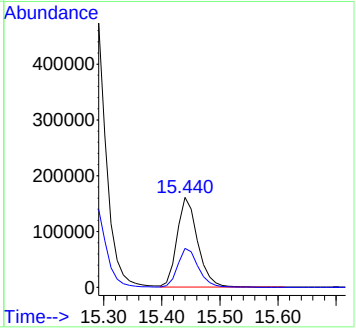

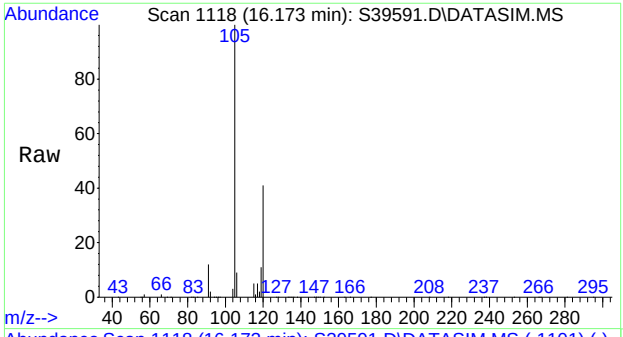


#27
1,2,4-Trimethylbenzene
Concen: 19342.269 ng/mL
RT: 16.173 min Scan# 1118
Delta R.T. -0.021 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:105 Resp: 1242644

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 105 | 100 | | |
| 120 | 41.5 | 35.3 | 52.9 |

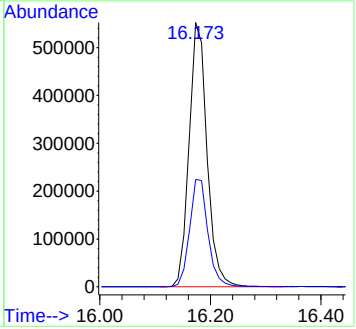


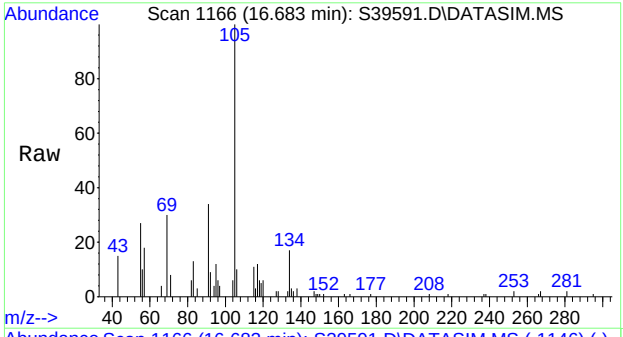


#28
sec-Butylbenzene
Concen: 132.122 ng/mL
RT: 16.683 min Scan# 1166
Delta R.T. 0.011 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:105 Resp: 10091

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 105 | 100 | | |
| 134 | 16.9 | 13.0 | 19.4 |

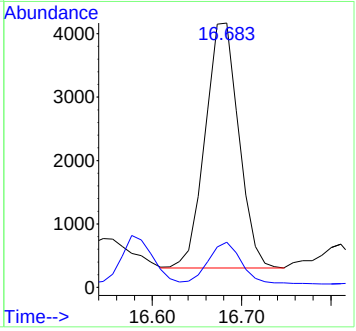

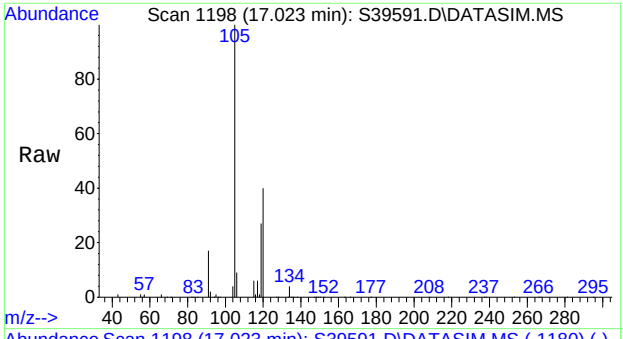


#29
1,2,3-Trimethylbenzene
Concen: 6443.692 ng/mL
RT: 17.023 min Scan# 1198
Delta R.T. -0.011 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:105 Resp: 415431

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 105 | 100 | | |
| 120 | 41.2 | 34.8 | 52.2 |

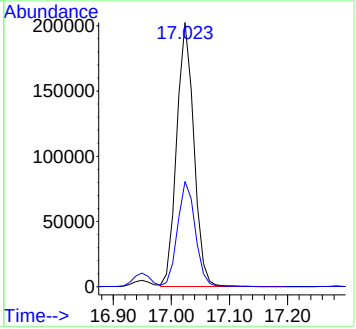


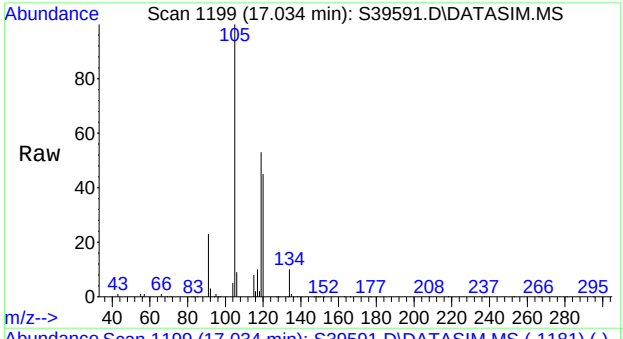


#30
p-Isopropyltoluene
Concen: 2624.090 ng/mL m
RT: 17.034 min Scan# 1199
Delta R.T. -0.011 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:119 Resp: 174085

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 119 | 100 | | |
| 134 | 18.4 | 17.4 | 26.0 |

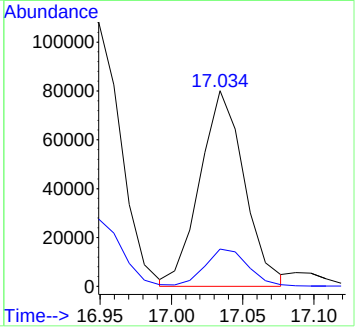

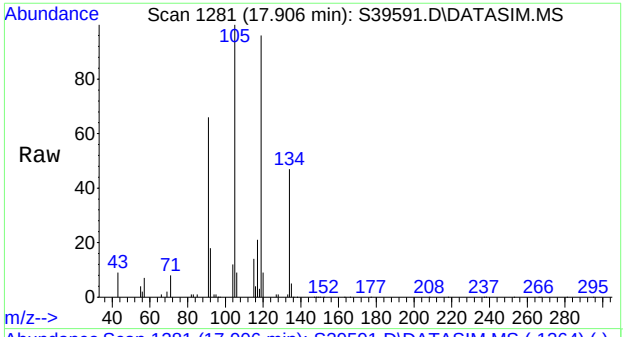


#33
n-Butylbenzene
Concen: 1325.318 ng/mL
RT: 17.906 min Scan# 1281
Delta R.T. -0.021 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion: 91 Resp: 88291

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 91 | 100 | | |
| 134 | 71.4 | 16.7 | 25.1# |

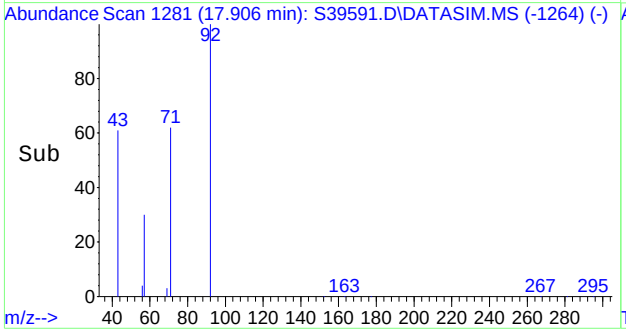


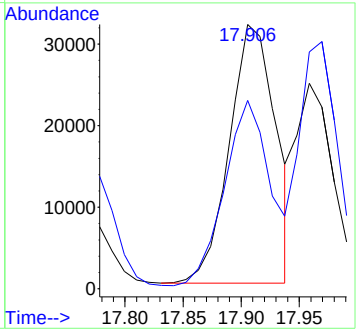


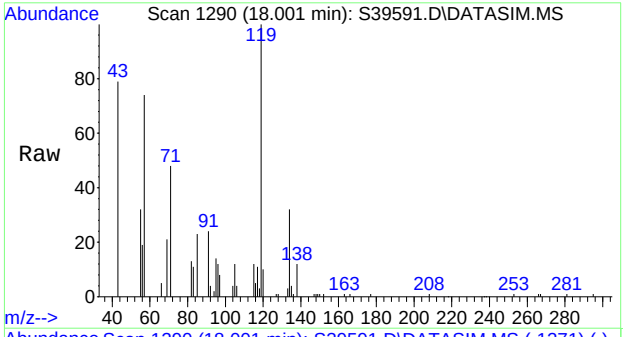


#34
trans-Decalin
Concen: 210.780 ng/mL m
RT: 18.001 min Scan# 1290
Delta R.T. -0.000 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion: 96 Resp: 2650

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 96 | 100 | | |
| 138 | 110.9 | 91.8 | 137.6 |

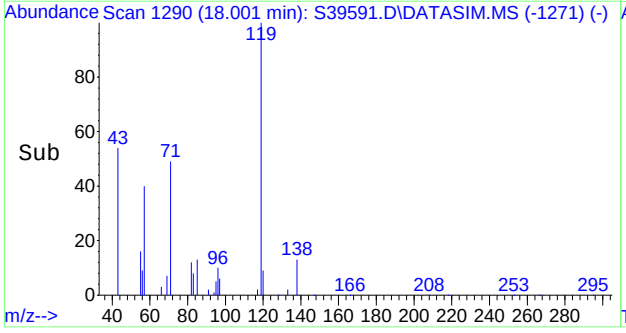


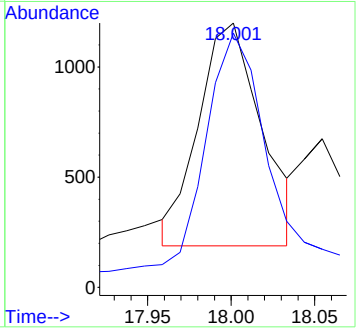

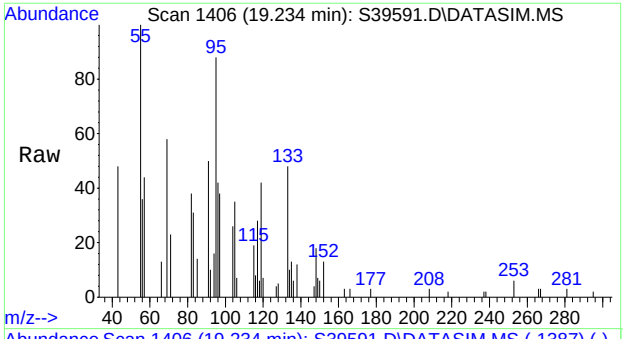


#35
cis-Decalin
Concen: 86.107 ng/mL m
RT: 19.234 min Scan# 1406
Delta R.T. -0.000 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion: 96 Resp: 1490

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 96 | 100 | | |
| 138 | 30.7 | 54.1 | 81.1# |

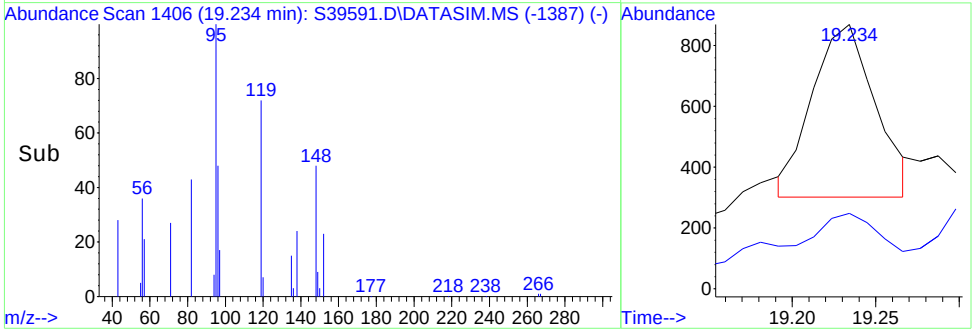





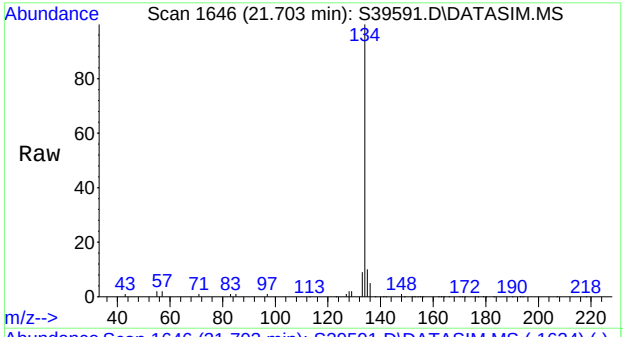


#40
Benzo(b)thiophene
Concen: 5905.112 ng/mL
RT: 21.703 min Scan# 1646
Delta R.T. 0.009 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:134 Resp: 431541

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 134 | 100 | | |
| 136 | 4.7 | 4.4 | 6.6 |

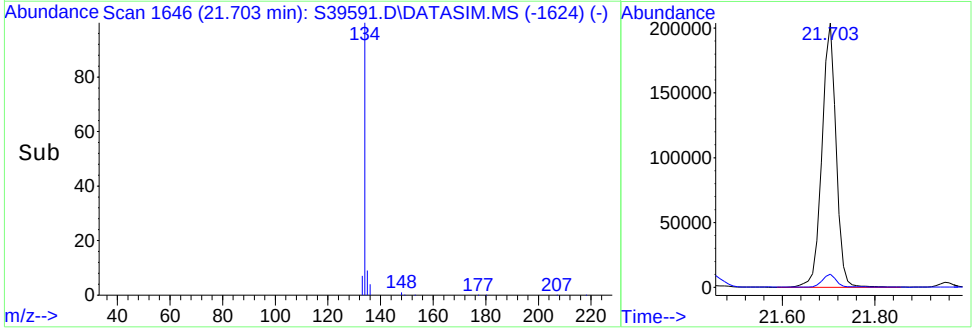

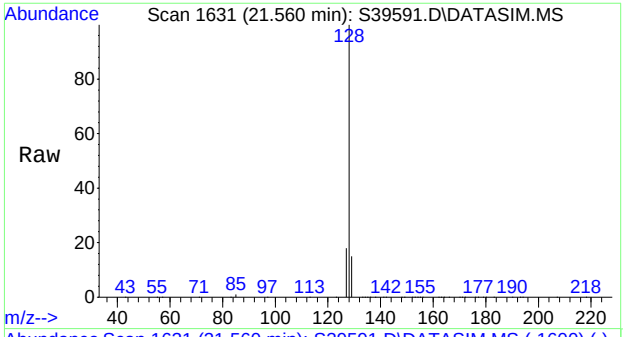


#51
Naphthalene
Concen: 365440.592 ng/mL
RT: 21.560 min Scan# 1631
Delta R.T. 0.095 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:128 Resp:32598143

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 128 | 100 | | |
| 127 | 15.9 | 10.2 | 15.2# |

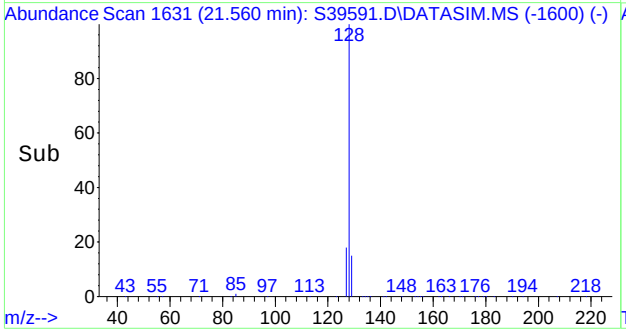


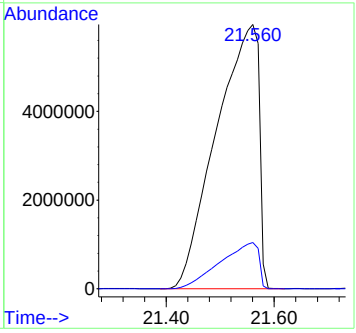


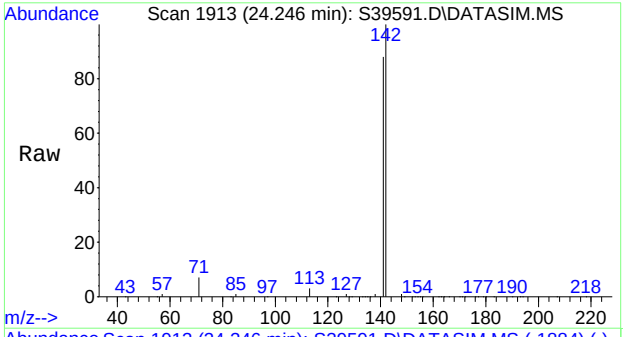


#52
2-Methylnaphthalene
Concen: 221198.516 ng/mL
RT: 24.246 min Scan# 1913
Delta R.T. 0.076 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:142 Resp:12744878

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 142 | 100 | | |
| 141 | 86.7 | 68.6 | 102.8 |

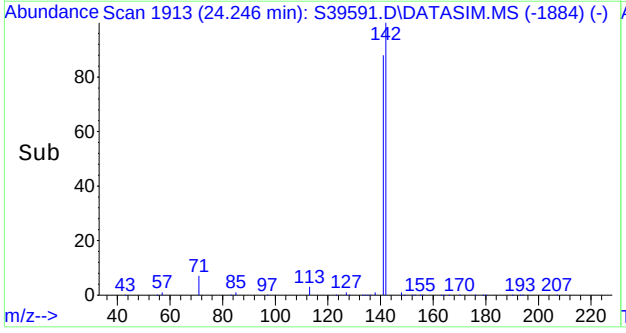


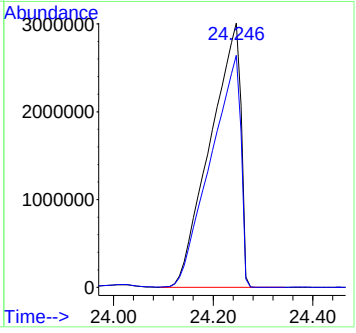

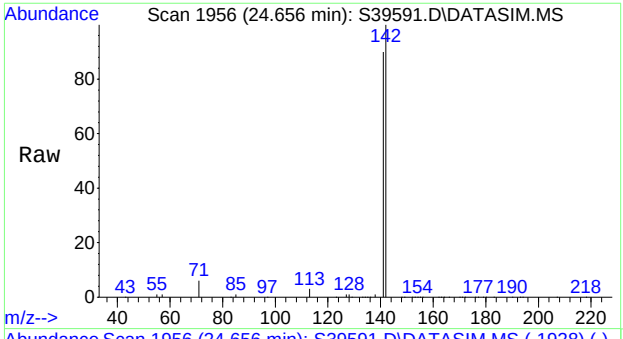


#53
1-Methylnaphthalene
Concen: 165265.162 ng/mL
RT: 24.656 min Scan# 1956
Delta R.T. 0.067 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:142 Resp: 8428662

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 142 | 100 | | |
| 141 | 89.5 | 71.6 | 107.4 |

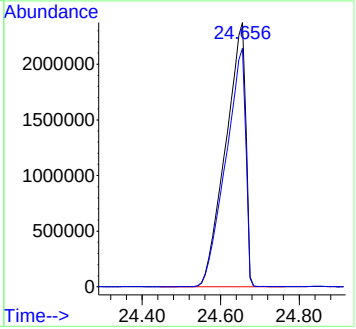


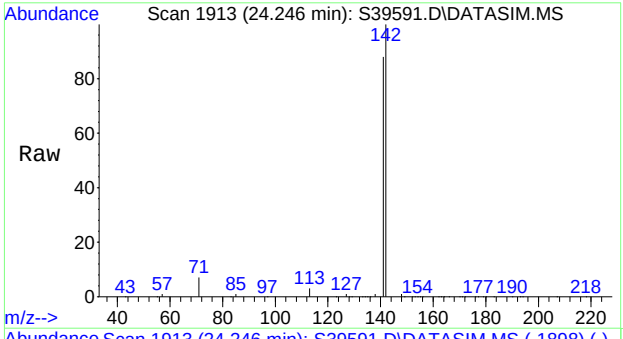


#54
C1-Naphthalenes
Concen: 237566.732 ng/mL m
RT: 24.246 min Scan# 1913
Delta R.T. 0.083 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:142 Resp:21191500

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 142 | 100 | | |
| 141 | 87.8 | 68.8 | 103.2 |

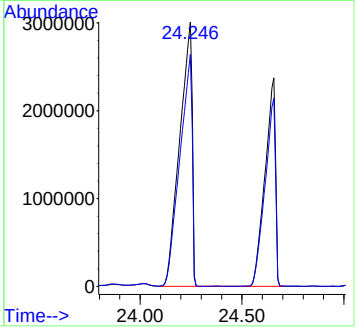

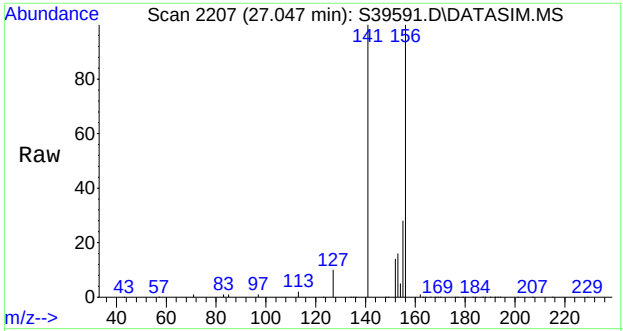


#55
C2-Naphthalenes
Concen: 138942.184 ng/mL m
RT: 27.047 min Scan# 2207
Delta R.T. -0.039 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:156 Resp:12393963

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 156 | 100 | | |
| 141 | 114.5 | 65.8 | 98.8# |

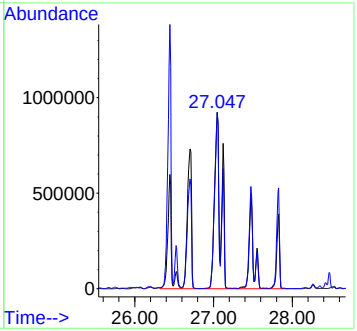


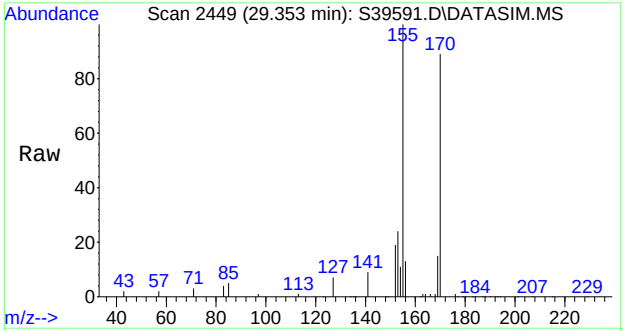


#56
C3-Naphthalenes
Concen: 47479.031 ng/mL m
RT: 29.353 min Scan# 2449
Delta R.T. 0.009 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:170 Resp: 4235239

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 170 | 100 | | |
| 155 | 151.9 | 87.4 | 131.0# |

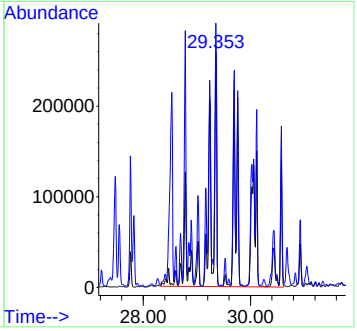

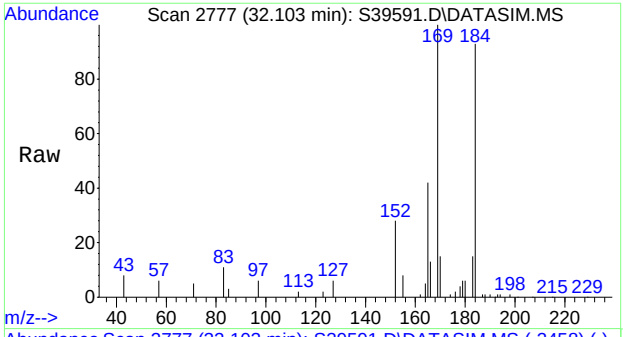


#57
C4-Naphthalenes
Concen: 13579.929 ng/mL m
RT: 32.103 min Scan# 2777
Delta R.T. 0.023 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:184 Resp: 1211361

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 184 | 100 | | |
| 169 | 213.9 | 85.9 | 128.9# |

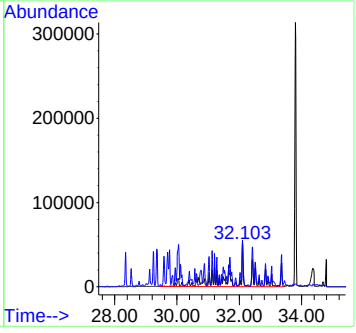


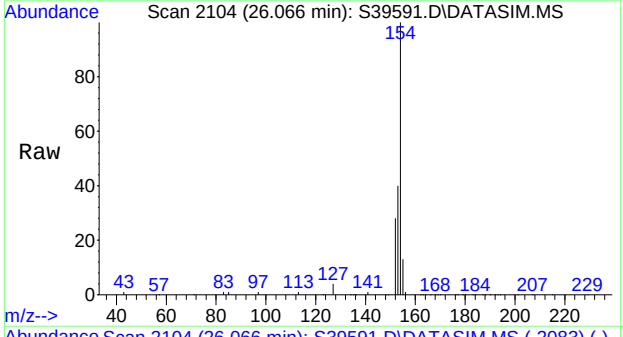


#58
Biphenyl
Concen: 24236.129 ng/mL
RT: 26.066 min Scan# 2104
Delta R.T. -0.000 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:154 Resp: 1627974

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 154 | 100 | | |
| 153 | 39.9 | 31.0 | 46.6 |

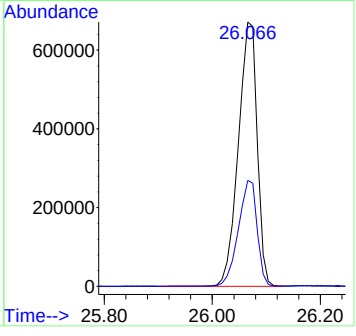

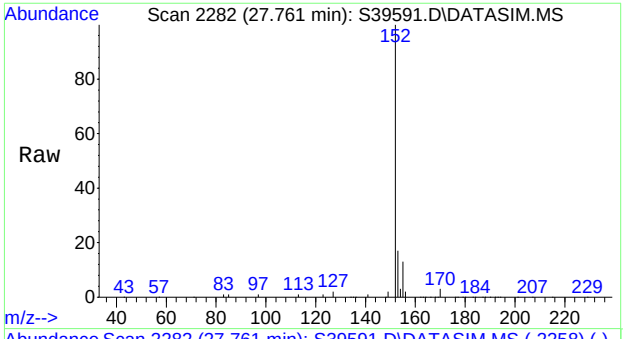


#59
Acenaphthylene
Concen: 32169.482 ng/mL
RT: 27.761 min Scan# 2282
Delta R.T. 0.029 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:152 Resp: 2741911

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 152 | 100 | | |
| 153 | 18.3 | 10.3 | 15.5# |

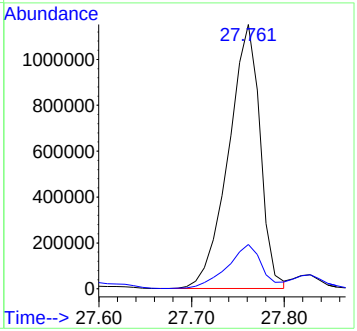


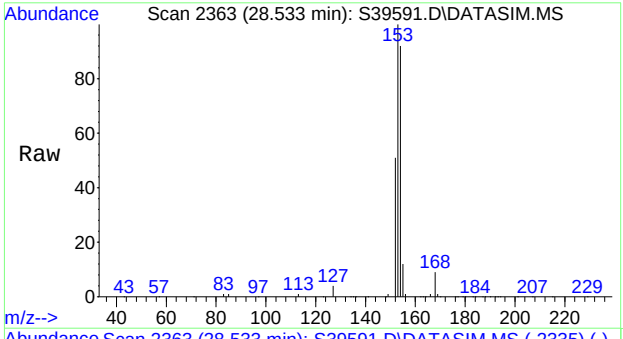


#60
Acenaphthene
Concen: 117427.278 ng/mL
RT: 28.533 min Scan# 2363
Delta R.T. 0.067 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:154 Resp: 5716131

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 154 | 100 | | |
| 153 | 107.6 | 86.6 | 129.8 |

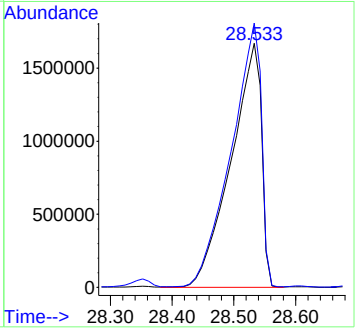

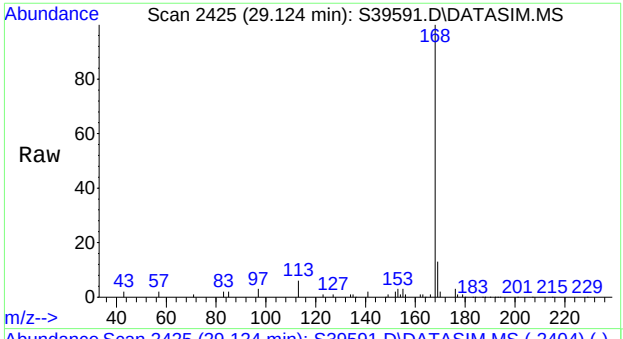


#61
Dibenzofuran
Concen: 4961.586 ng/mL m
RT: 29.124 min Scan# 2425
Delta R.T. -0.000 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:168 Resp: 346348

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 168 | 100 | | |
| 169 | 15.0 | 10.4 | 15.6 |

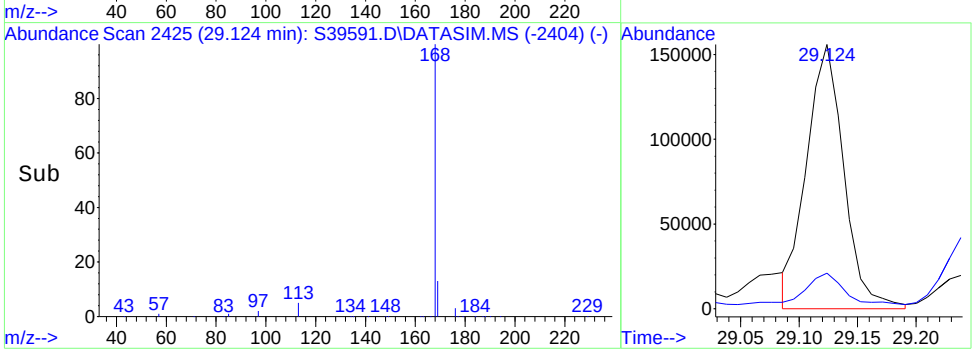


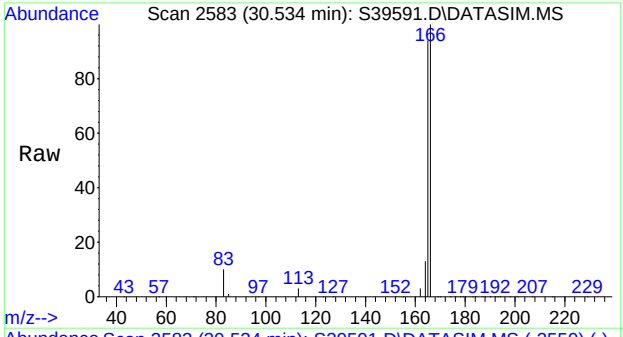


#62
Fluorene
Concen: 56437.377 ng/mL
RT: 30.534 min Scan# 2583
Delta R.T. 0.040 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:166 Resp: 3284076

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 166 | 100 | | |
| 165 | 92.7 | 75.8 | 113.6 |

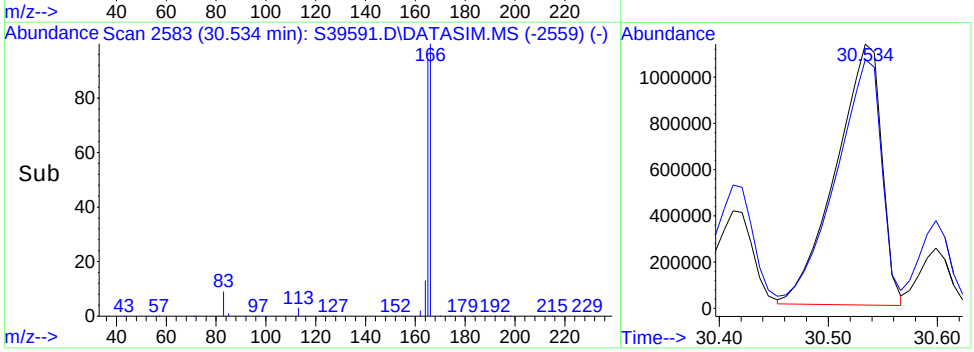

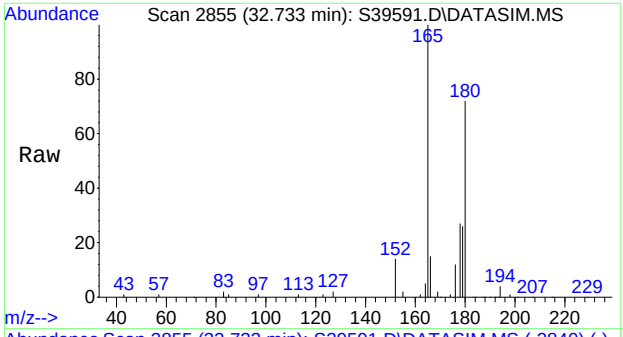


#63
C1-Fluorenes
Concen: 38643.499 ng/mL m
RT: 32.733 min Scan# 2855
Delta R.T. -0.120 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:180 Resp: 2248655

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 180 | 100 | | |
| 165 | 143.7 | 139.8 | 209.6 |

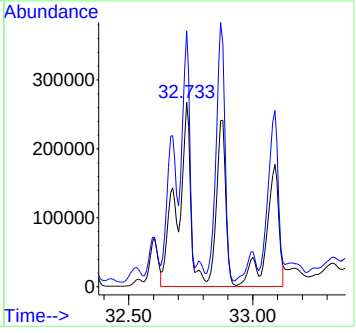


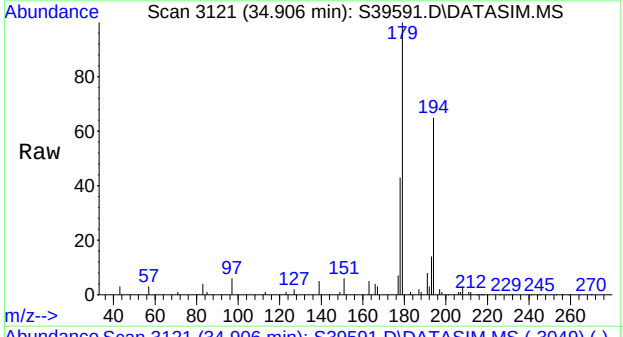


#64
C2-Fluorenes
Concen: 22695.274 ng/mL m
RT: 34.906 min Scan# 3121
Delta R.T. -0.143 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:194 Resp: 1320632

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 194 | 100 | | |
| 179 | 386.2 | 127.9 | 191.9# |

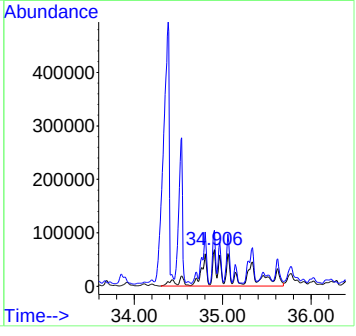





SGS ACCUTEST MC46549

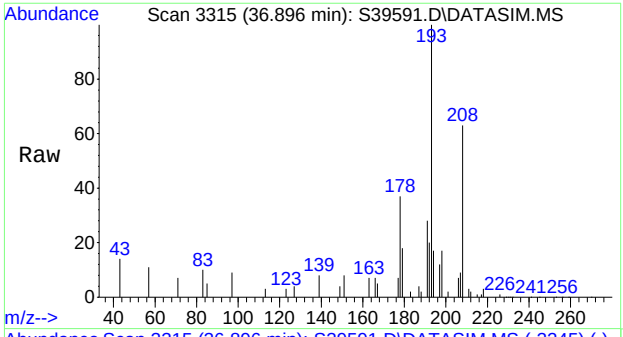


#65
C3-Fluorenes
Concen: 8027.103 ng/mL m
RT: 36.896 min Scan# 3315
Delta R.T. 0.011 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:208 Resp: 467095

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 208 | 100 | | |
| 178 | 72.4 | 59.4 | 89.2 |

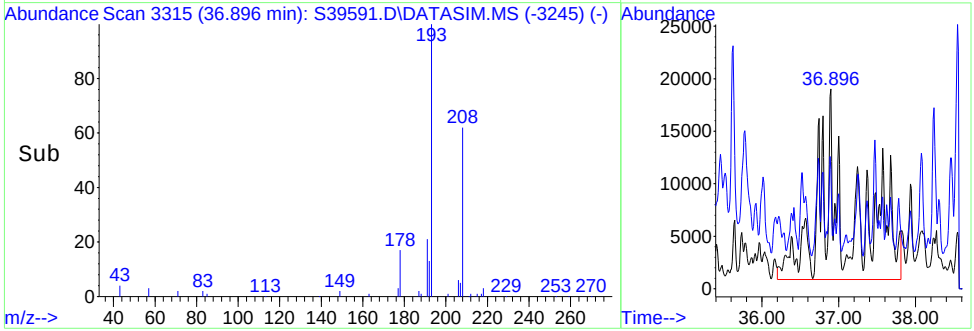





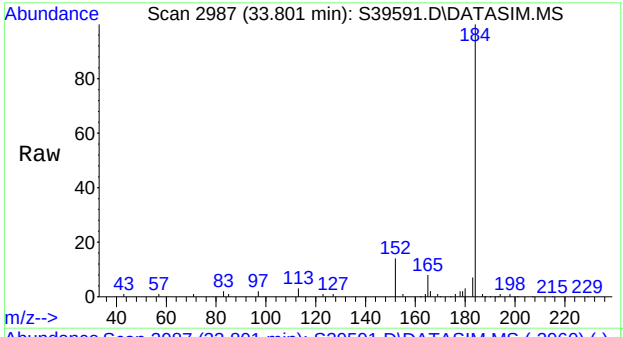


#66
Dibenzothiophene
Concen: 8932.127 ng/mL
RT: 33.801 min Scan# 2987
Delta R.T. 0.016 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:184 Resp: 726212

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 184 | 100 | | |
| 152 | 12.8 | 8.4 | 12.6# |

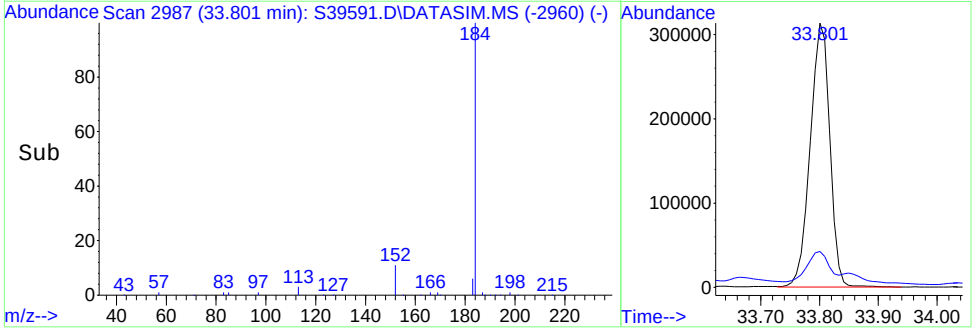

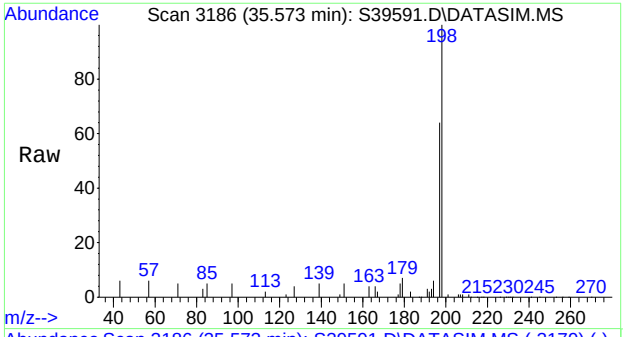


#67
C1-Dibenzothiophenes (unadj)
Concen: 10803.968 ng/mL m
RT: 35.573 min Scan# 3186
Delta R.T. 0.011 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:198 Resp: 878399

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 198 | 100 | | |
| 197 | 70.3 | 51.9 | 77.9 |

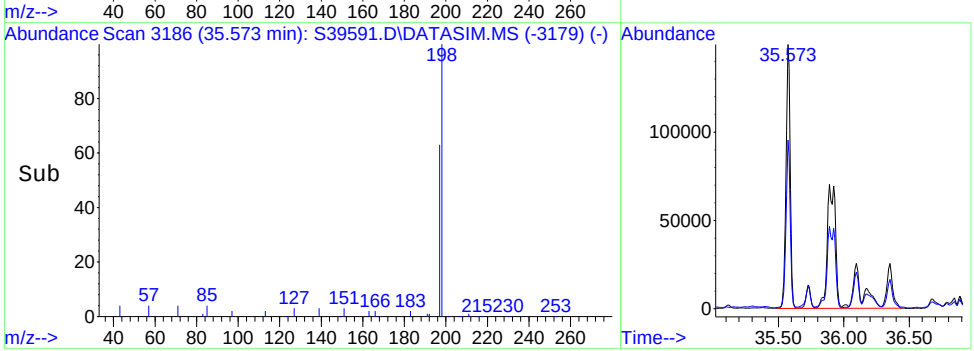





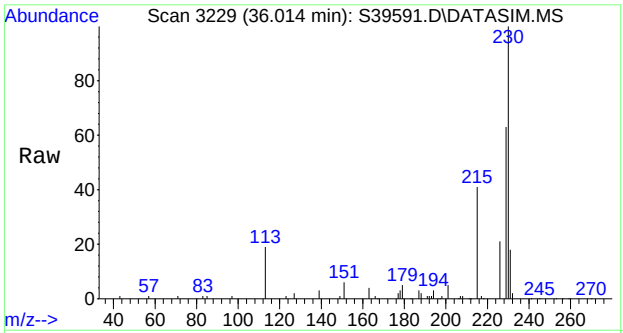


#68
C1-Dibenzothiophenes (OTP)
Concen: 26.825 ng/mL m
RT: 36.014 min Scan# 3229
Delta R.T. 0.029 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:198 Resp: 2181

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 198 | 100 | | |
| 197 | 11.7 | 10.6 | 15.8 |

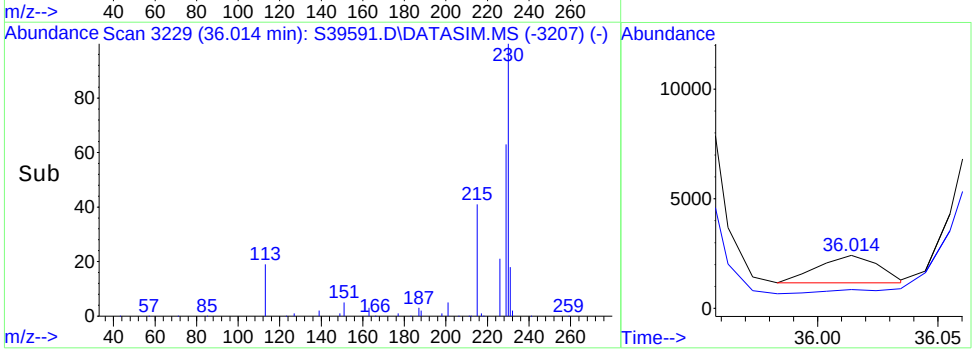

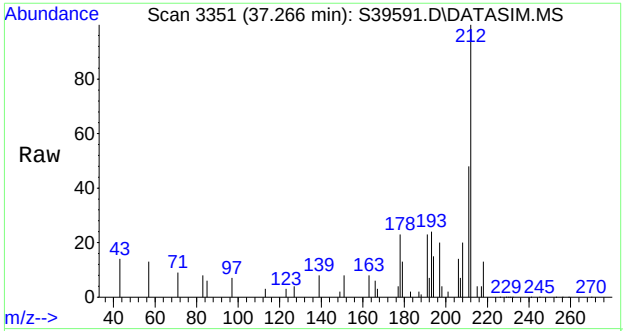


#69
C2-Dibenzothiophenes
Concen: 7629.327 ng/mL m
RT: 37.266 min Scan# 3351
Delta R.T. -0.348 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:212 Resp: 620290

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 212 | 100 | | |
| 197 | 42.6 | 20.1 | 30.1# |

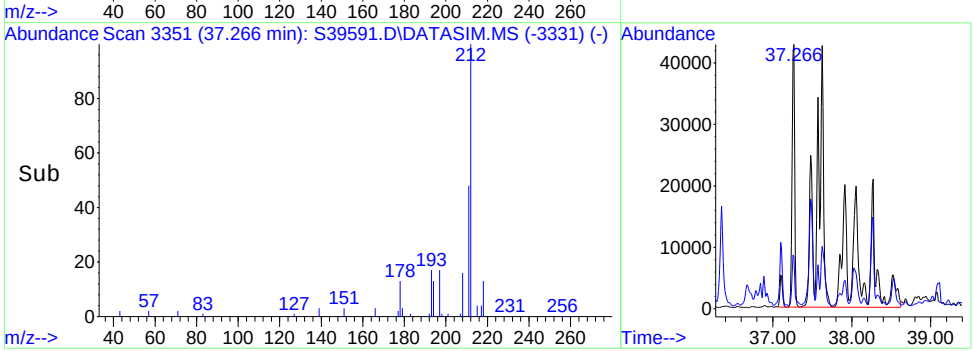





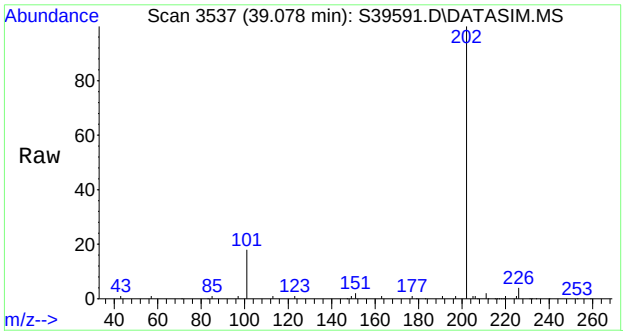


#70
C3-Dibenzothiophenes
Concen: 3455.933 ng/mL m
RT: 39.078 min Scan# 3537
Delta R.T. 0.020 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:226 Resp: 280979

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 226 | 100 | | |
| 211 | 77.6 | 51.8 | 77.6 |

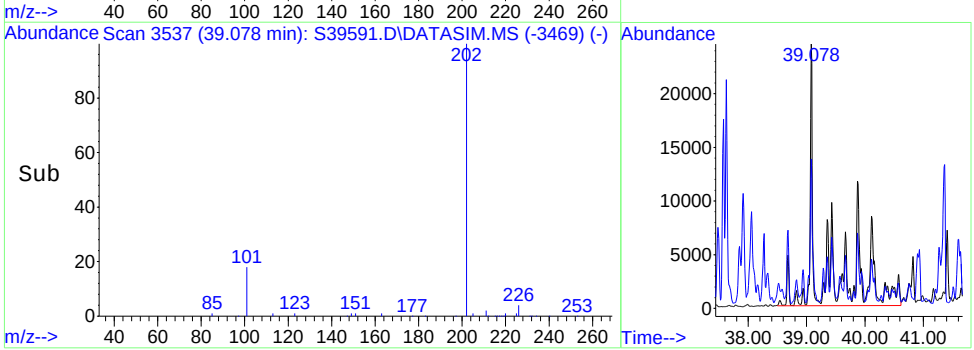

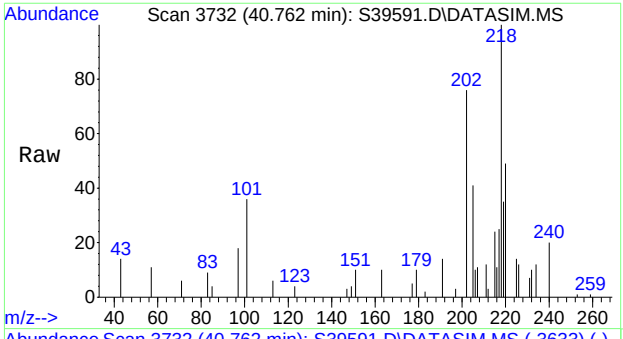


#71
C4-Dibenzothiophenes
Concen: 1047.767 ng/mL m
RT: 40.762 min Scan# 3732
Delta R.T. 0.004 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:240 Resp: 85187

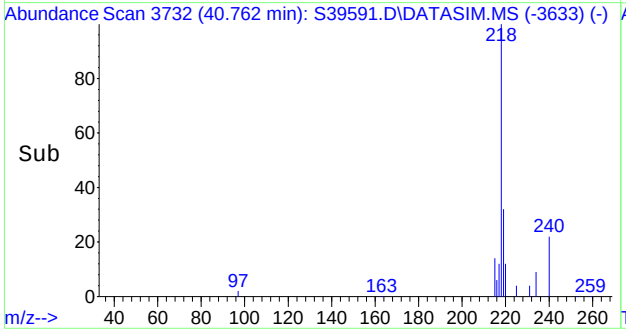


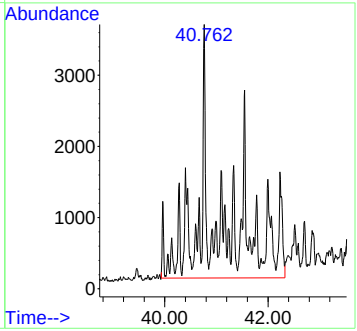


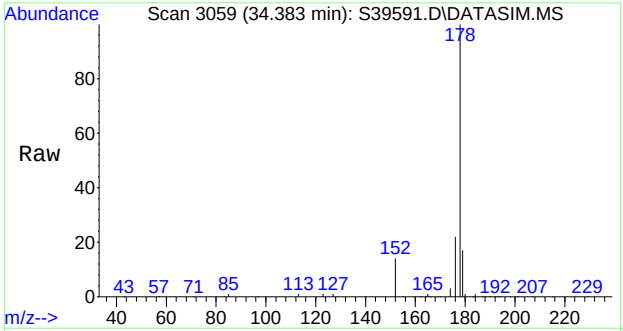


#72
Phenanthrene
Concen: 174402.352 ng/mL
RT: 34.383 min Scan# 3059
Delta R.T. 0.097 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:178 Resp:13164049

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 178 | 100 | | |
| 179 | 16.5 | 11.9 | 17.9 |

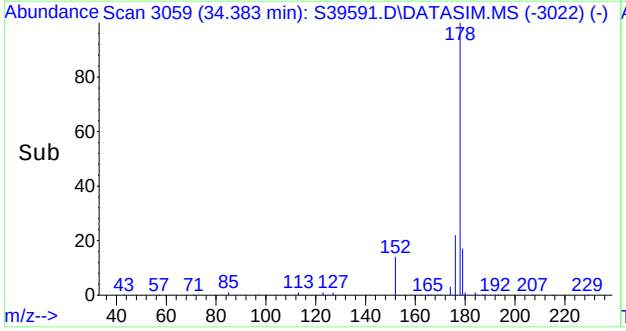


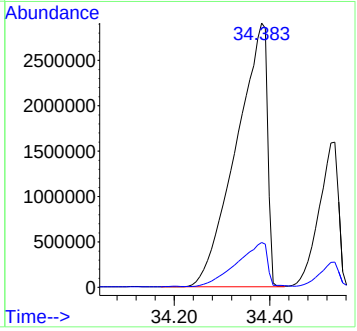

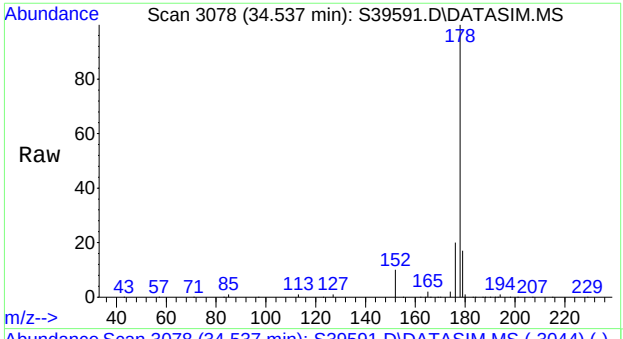


#73
Anthracene
Concen: 64011.959 ng/mL
RT: 34.537 min Scan# 3078
Delta R.T. 0.073 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:178 Resp: 4524364

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 178 | 100 | | |
| 179 | 16.9 | 12.0 | 18.0 |

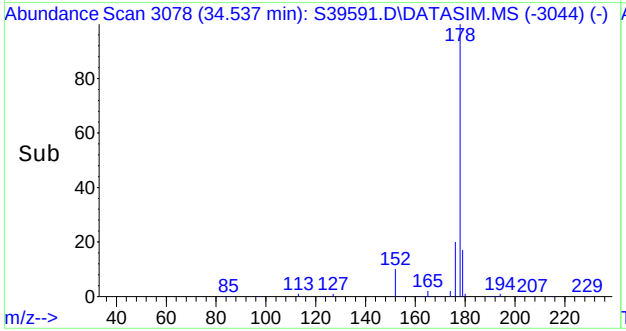


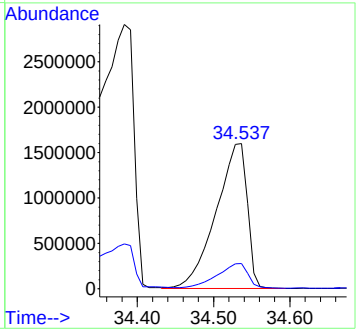


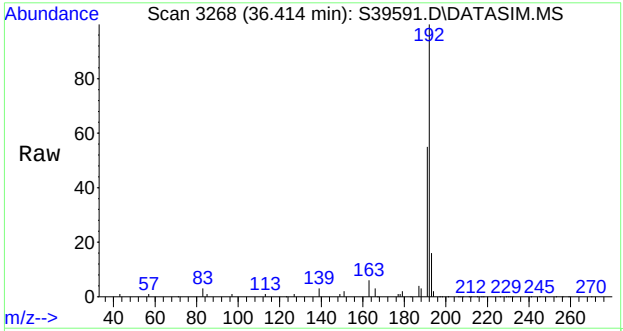


#74
C1-Phenanthrenes/anthracenes
Concen: 120448.223 ng/mL m
RT: 36.414 min Scan# 3268
Delta R.T. -0.287 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:192 Resp: 9091542

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 192 | 100 | | |
| 191 | 57.0 | 45.0 | 67.4 |

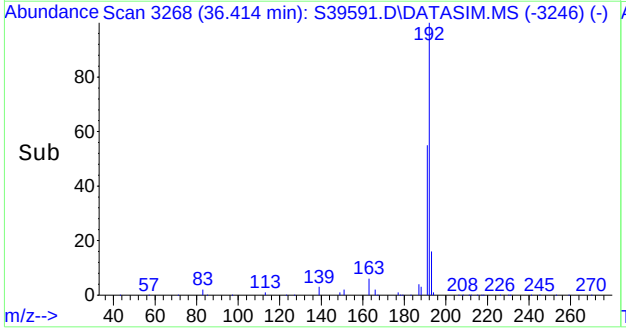


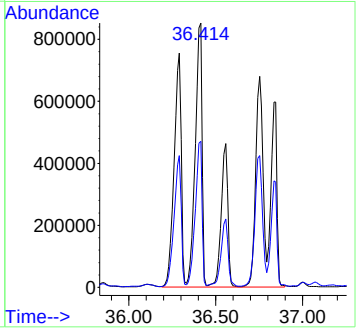

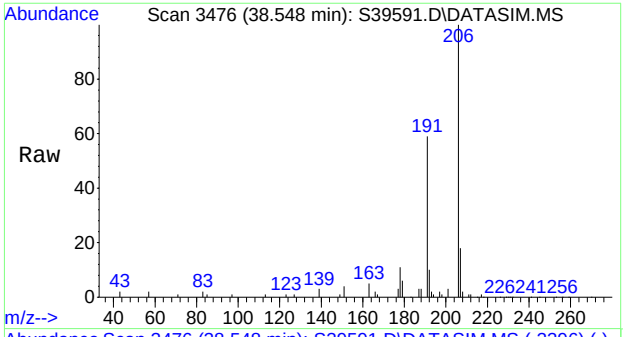


#75
C2-Phenanthrenes/anthracenes (unadj)
Concen: 47682.319 ng/mL m
RT: 38.548 min Scan# 3476
Delta R.T. 0.022 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:206 Resp: 3599105

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 206 | 100 | | |
| 191 | 59.6 | 47.0 | 70.4 |

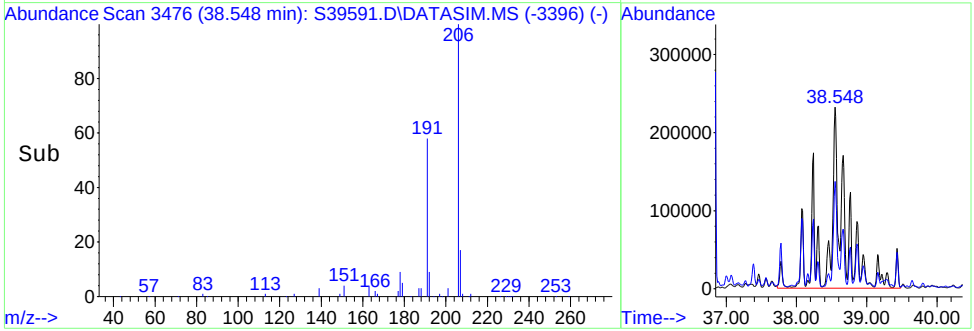





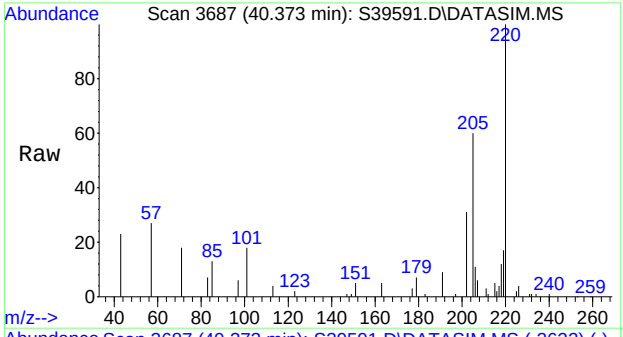


#77
C3-Phenanthrenes/anthracenes
Concen: 12437.647 ng/mL m
RT: 40.373 min Scan# 3687
Delta R.T. 0.012 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:220 Resp: 938805

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 220 | 100 | | |
| 205 | 85.4 | 49.8 | 74.6# |

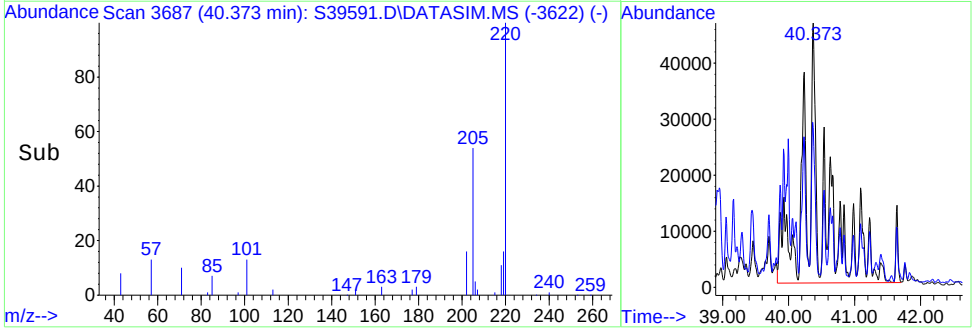

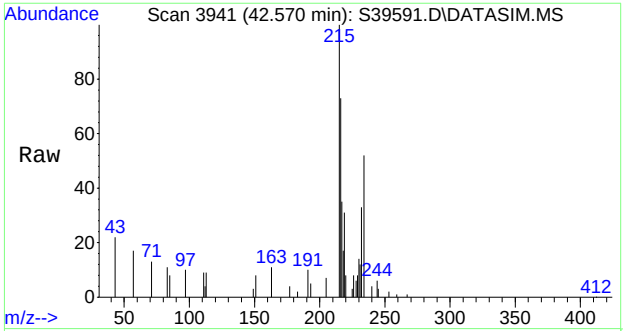


#78
C4-Phenanthrenes/anthracenes
Concen: 3044.902 ng/mL m
RT: 42.570 min Scan# 3941
Delta R.T. 0.030 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:234 Resp: 229832

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 234 | 100 | | |
| 219 | 105.5 | 52.1 | 78.1# |

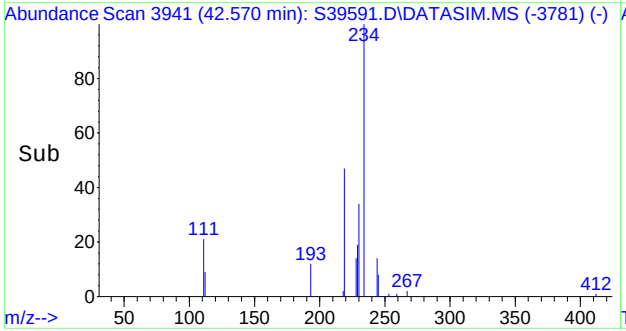


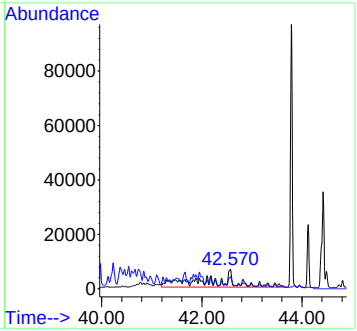


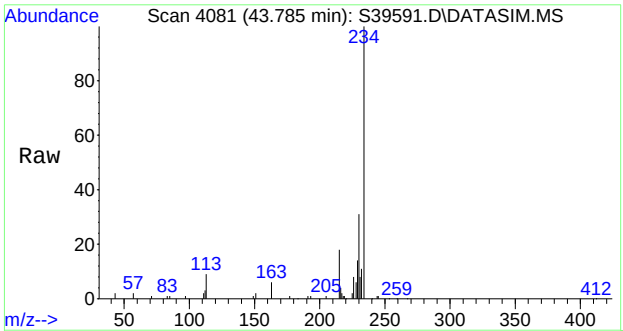


#81
Benzo(b)naphtho(2,1-d)thiophene
Concen: 3295.013 ng/mL
RT: 43.785 min Scan# 4081
Delta R.T. 0.017 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:234 Resp: 231674

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 234 | 100 | | |
| 232 | 11.0 | 7.6 | 11.4 |

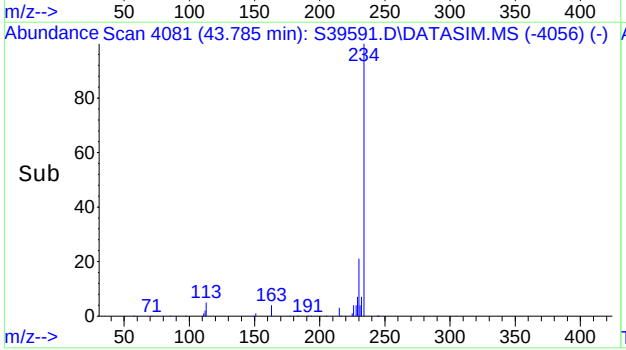


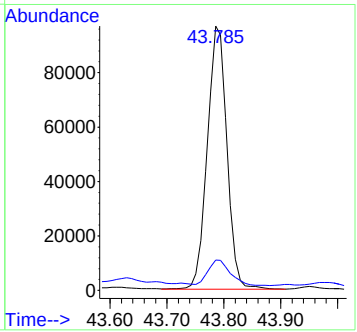

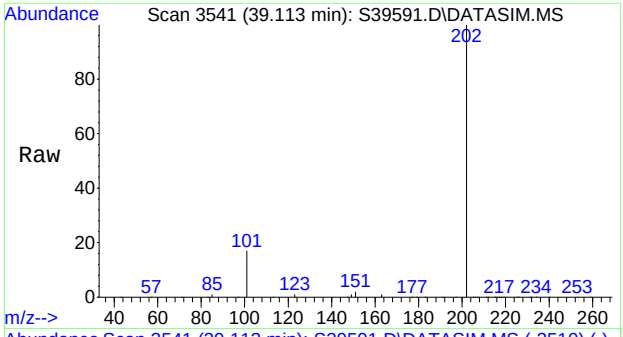


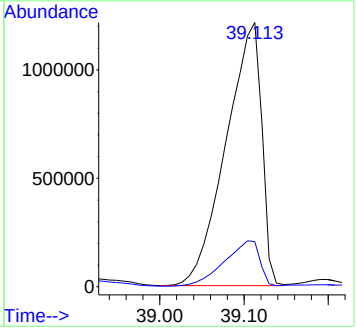


#86
Fluoranthene
Concen: 47401.623 ng/mL
RT: 39.113 min Scan# 3541
Delta R.T. 0.069 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:202 Resp: 3557668

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 202 | 100 | | |
| 101 | 17.1 | 12.6 | 19.0 |

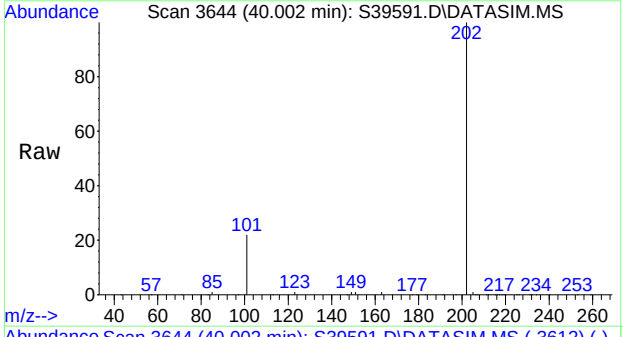


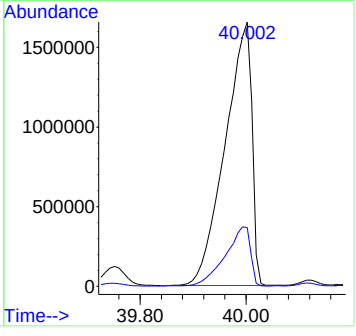


#87
Pyrene
Concen: 77557.098 ng/mL
RT: 40.002 min Scan# 3644
Delta R.T. 0.078 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:202 Resp: 5788109

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 202 | 100 | | |
| 101 | 21.3 | 13.8 | 20.8# |

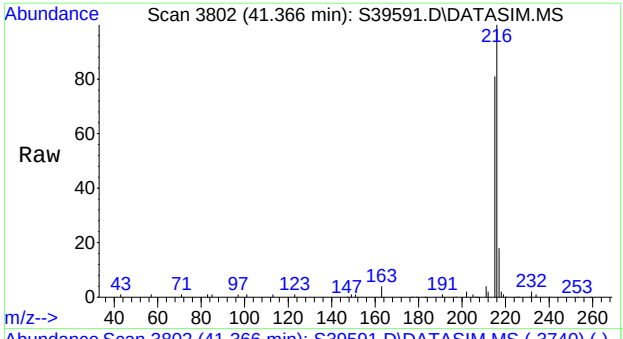


#88
C1-Fluoranthenes/pyrenes
Concen: 74120.545 ng/mL m
RT: 41.366 min Scan# 3802
Delta R.T. 0.038 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:216 Resp: 5531638

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 216 | 100 | | |
| 215 | 87.6 | 74.9 | 112.3 |

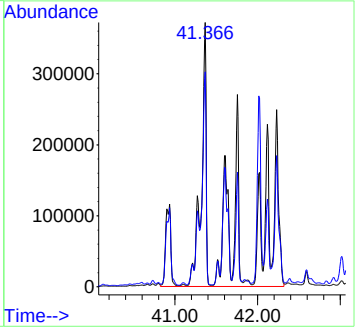


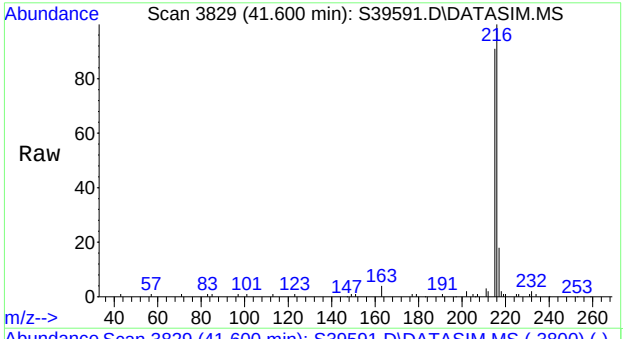


#89
Benzo(b)fluorene
Concen: 7458.325 ng/mL m
RT: 41.600 min Scan# 3829
Delta R.T. 0.030 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:216 Resp: 556617

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 216 | 100 | | |
| 215 | 90.8 | 106.9 | 160.3# |

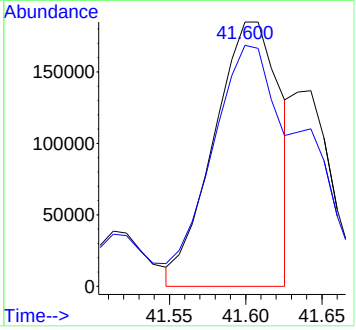

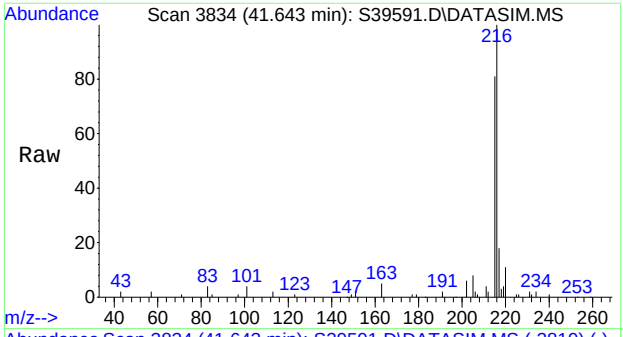


#90
Benzo(c)fluorene
Concen: 3265.323 ng/mL m
RT: 41.643 min Scan# 3834
Delta R.T. 0.030 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:216 Resp: 243692

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 216 | 100 | | |
| 215 | 80.0 | 123.7 | 185.5# |

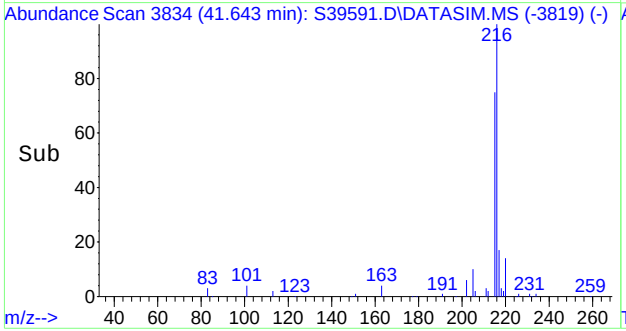


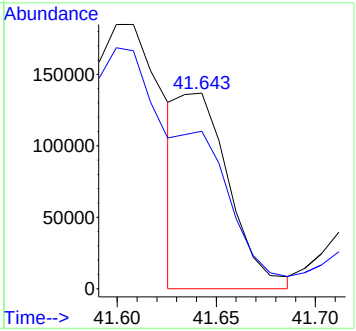


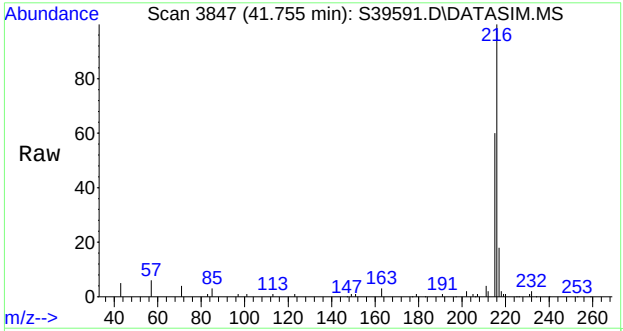


#91
2-Methylpyrene
Concen: 9148.483 ng/mL m
RT: 41.755 min Scan# 3847
Delta R.T. 0.030 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:216 Resp: 682754

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 216 | 100 | | |
| 215 | 53.1 | 84.5 | 126.7# |

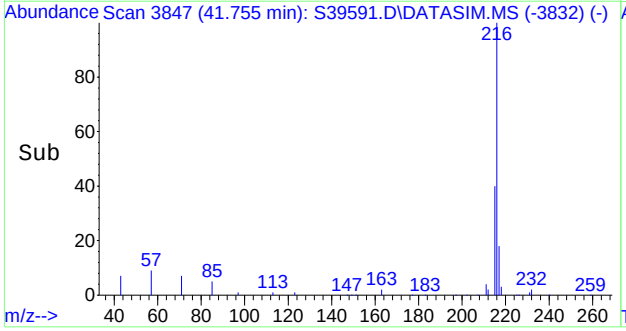


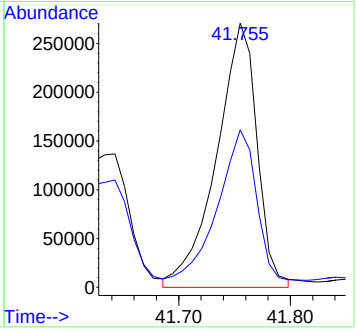

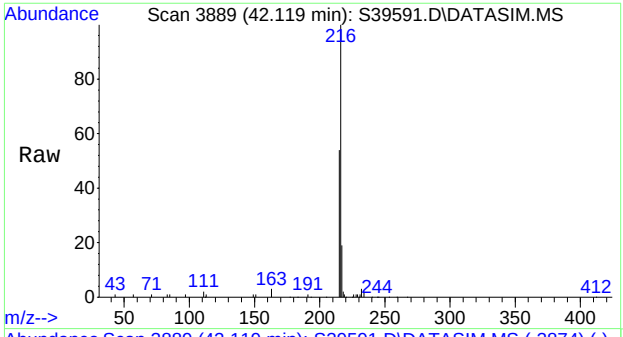


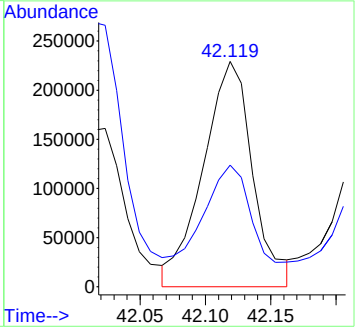


#92
4-Methylpyrene
Concen: 8113.542 ng/mL m
RT: 42.119 min Scan# 3889
Delta R.T. 0.030 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:216 Resp: 605516

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 216 | 100 | | |
| 215 | 54.1 | 57.4 | 86.0# |

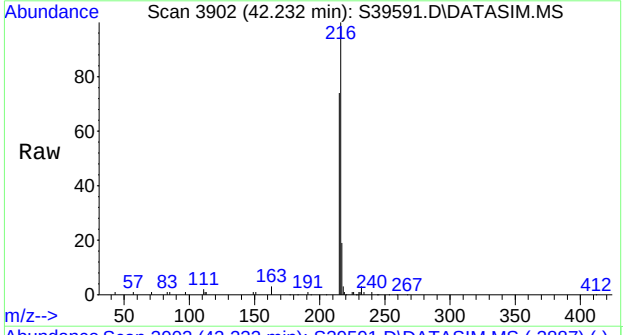


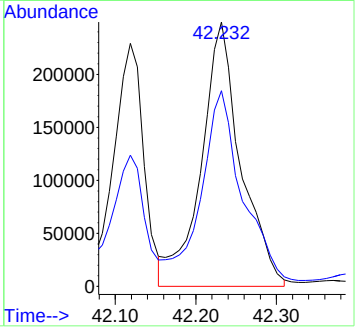


#93
1-Methylpyrene
Concen: 11405.757 ng/mL m
RT: 42.232 min Scan# 3902
Delta R.T. 0.030 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:216 Resp: 851215

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 216 | 100 | | |
| 215 | 72.3 | 76.0 | 114.0# |




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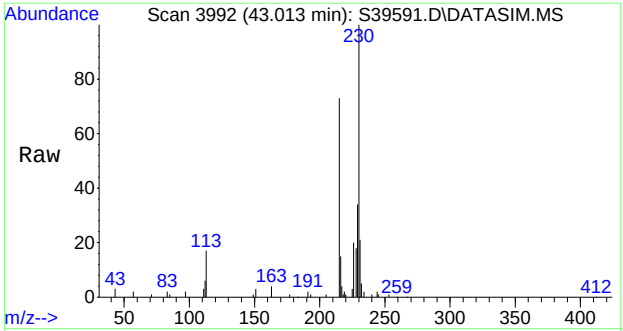


#94
C2-Fluoranthenes/pyrenes
Concen: 24390.297 ng/mL m
RT: 43.013 min Scan# 3992
Delta R.T. -0.126 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:230 Resp: 1820255

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 230 | 100 | | |
| 215 | 79.8 | 103.6 | 155.4# |

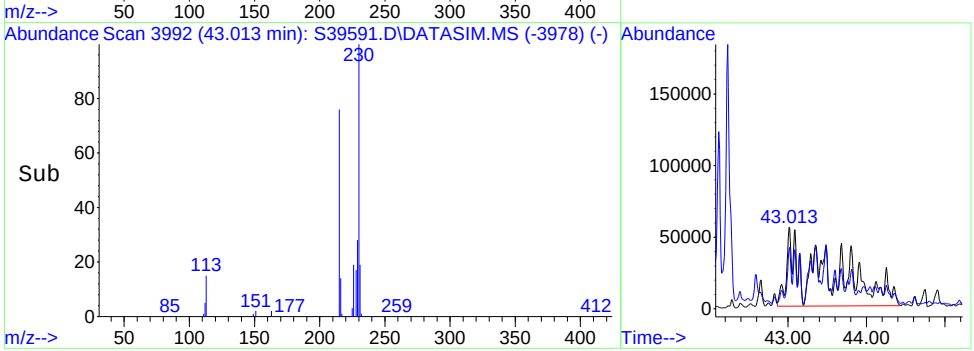


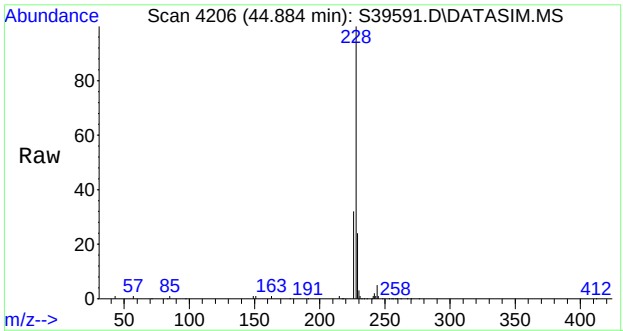


#95
C3-Fluoranthenes/pyrenes
Concen: 7534.139 ng/mL m
RT: 44.884 min Scan# 4206
Delta R.T. -0.270 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:244 Resp: 562275

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 244 | 100 | | |
| 229 | 251.2 | 85.9 | 128.9# |

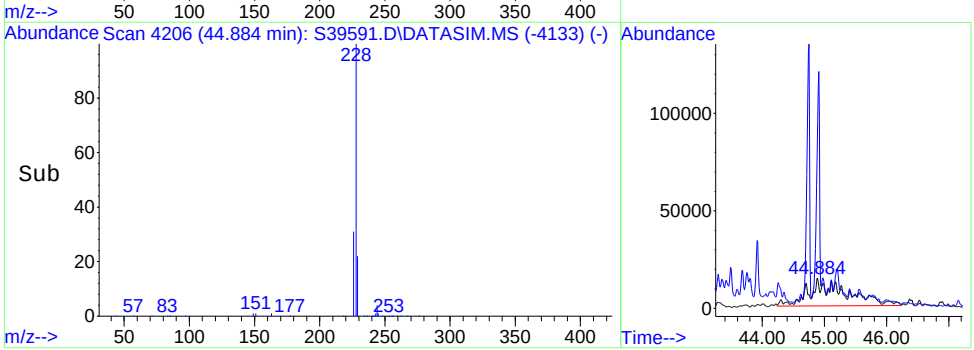

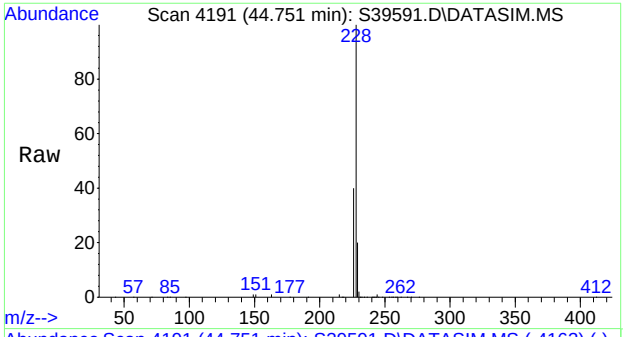


#97
Benz(a)anthracene
Concen: 28395.732 ng/mL
RT: 44.751 min Scan# 4191
Delta R.T. 0.044 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:228 Resp: 1827839

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 228 | 100 | | |
| 226 | 53.2 | 21.1 | 31.7# |

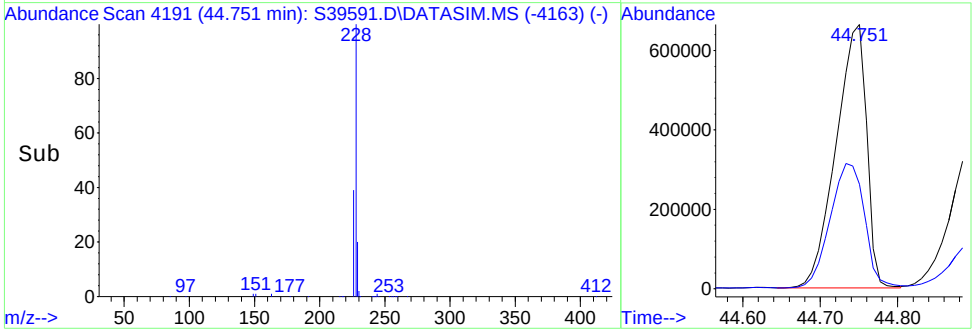





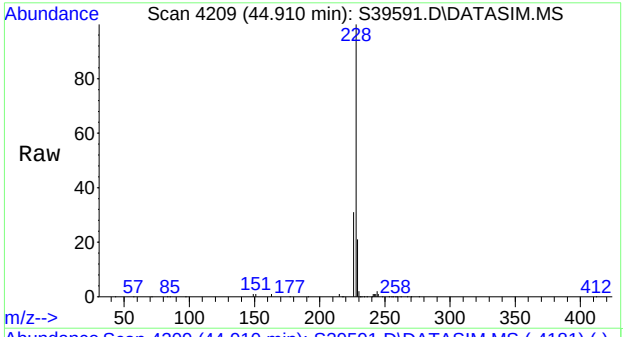


#98
Chrysene/triphenylene
Concen: 26569.843 ng/mL
RT: 44.910 min Scan# 4209
Delta R.T. 0.044 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:228 Resp: 1636759

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 228 | 100 | | |
| 226 | 30.4 | 23.4 | 35.0 |

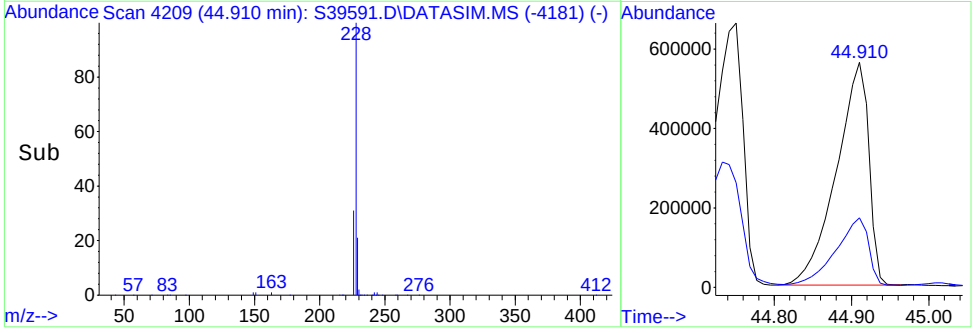








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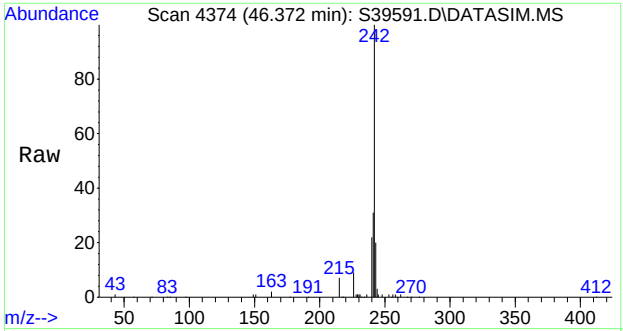


#99
C1-Benz(a)anthracenes/chrysenes
Concen: 23692.573 ng/mL m
RT: 46.372 min Scan# 4374
Delta R.T. 0.023 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:242 Resp: 1459513

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 242 | 100 | | |
| 241 | 39.0 | 34.2 | 51.2 |

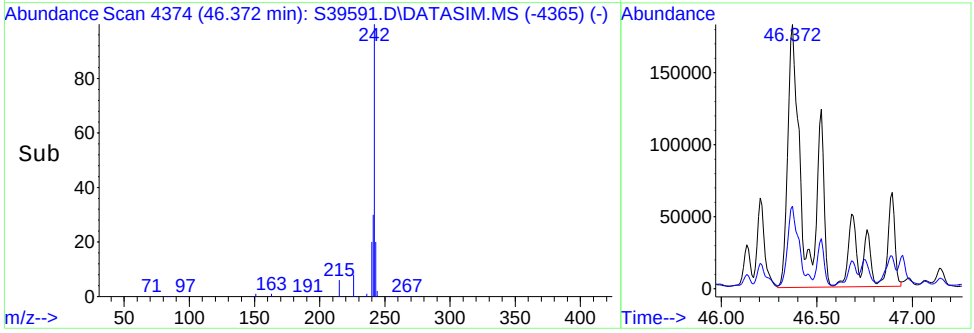





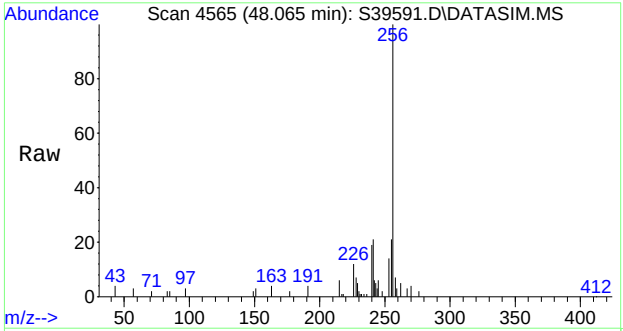


#100
C2-Benz(a)anthracenes/chrysenes
Concen: 8951.070 ng/mL m
RT: 48.065 min Scan# 4565
Delta R.T. -0.361 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:256 Resp: 551405

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 256 | 100 | | |
| 241 | 34.5 | 27.4 | 41.2 |

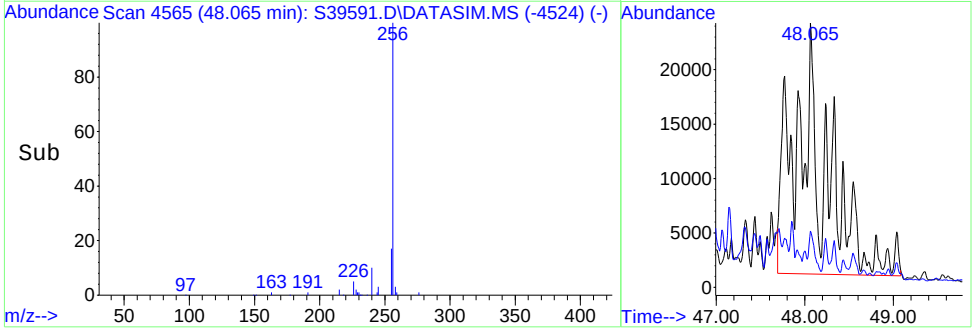

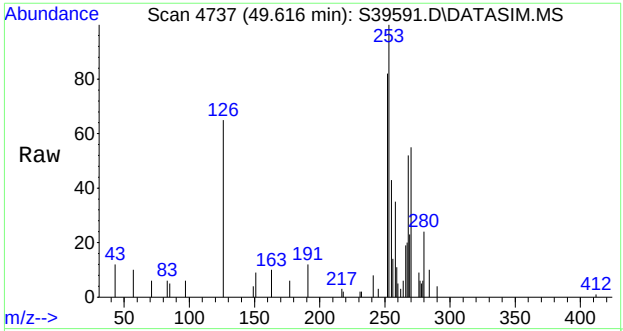


#101
C3-Benz(a)anthracenes/chrysenes
Concen: 3146.271 ng/mL m
RT: 49.616 min Scan# 4737
Delta R.T. -1.242 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:270 Resp: 193817

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 270 | 100 | | |
| 255 | 77.8 | 37.6 | 56.4# |

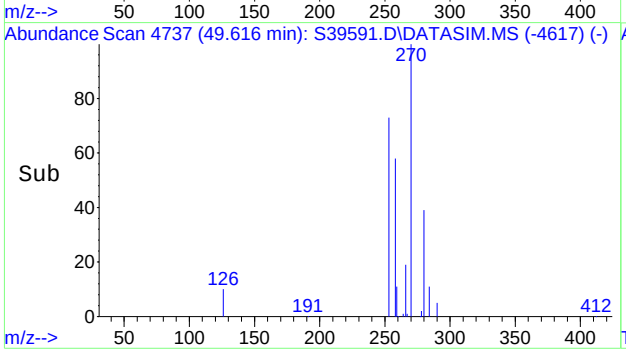


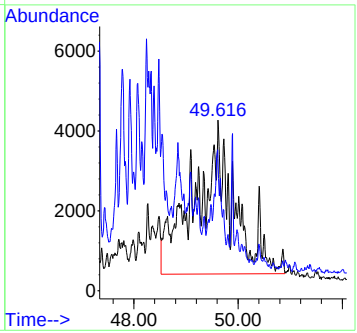


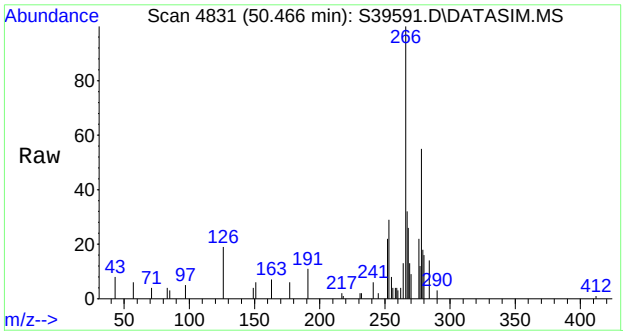


#102
C4-Benz(a)anthracenes/chrysenes
Concen: 780.541 ng/mL m
RT: 50.466 min Scan# 4831
Delta R.T. -0.482 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:284 Resp: 48083

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 284 | 100 | | |
| 269 | 227.9 | 66.3 | 99.5# |

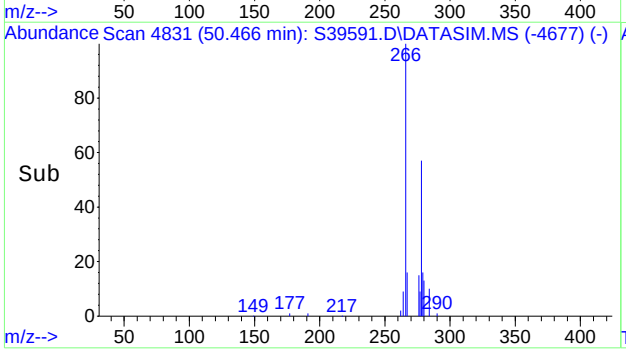


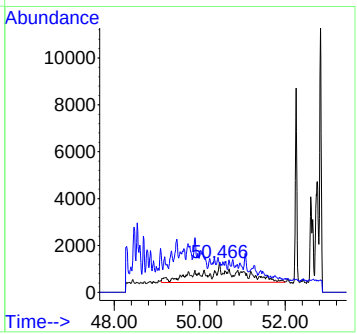

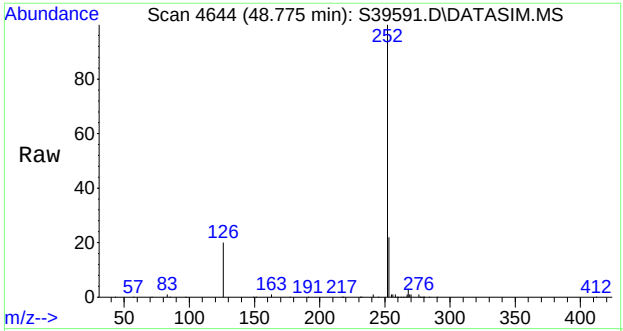


#103
Benzo(b)fluoranthene
Concen: 8643.741 ng/mL
RT: 48.775 min Scan# 4644
Delta R.T. 0.027 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:252 Resp: 613235

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 252 | 100 | | |
| 126 | 20.0 | 15.5 | 23.3 |

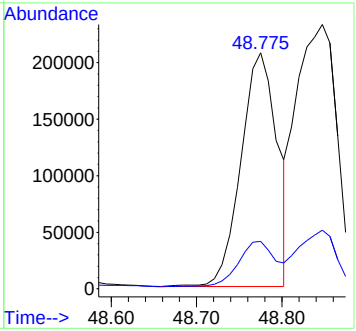


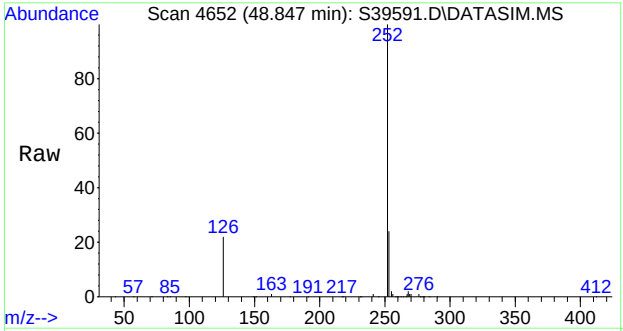


#104
Benzo(j/k)fluoranthene
Concen: 10536.364 ng/mL
RT: 48.847 min Scan# 4652
Delta R.T. 0.018 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:252 Resp: 757501

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 252 | 100 | | |
| 126 | 20.0 | 16.6 | 25.0 |

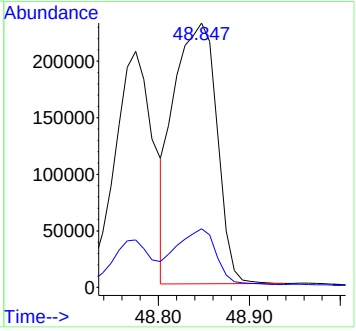





SGS ACCUTEST MC46549

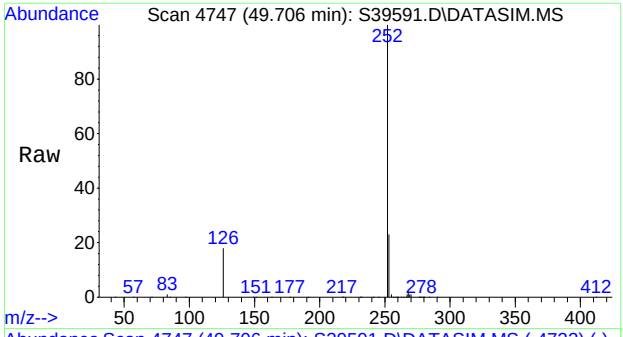


#105
Benzo(e)pyrene
Concen: 9973.641 ng/mL
RT: 49.706 min Scan# 4747
Delta R.T. 0.027 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:252 Resp: 679107

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 252 | 100 | | |
| 126 | 18.3 | 14.0 | 21.0 |

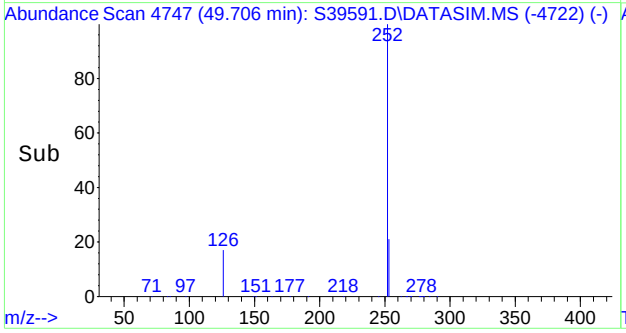


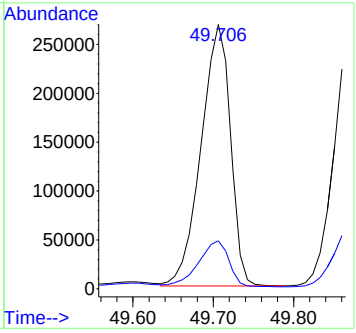


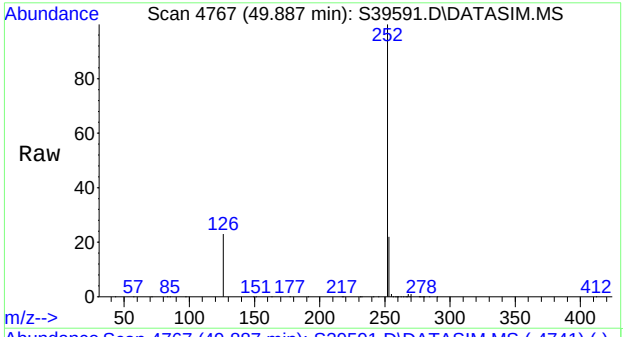


#106
Benzo(a)pyrene
Concen: 19469.835 ng/mL
RT: 49.887 min Scan# 4767
Delta R.T. 0.036 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:252 Resp: 1307224

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 252 | 100 | | |
| 126 | 21.8 | 16.0 | 24.0 |

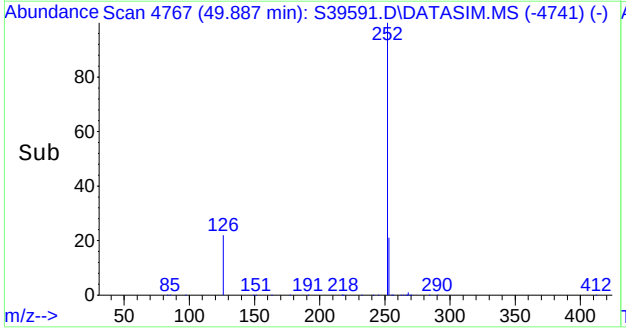


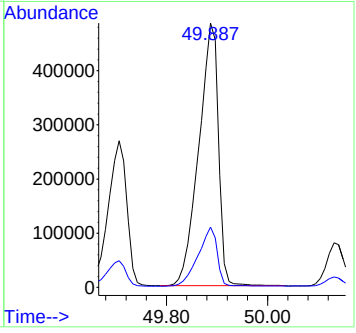

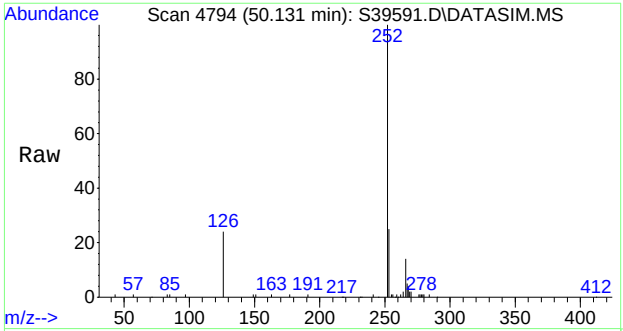


#107
Perylene
Concen: 2701.720 ng/mL
RT: 50.131 min Scan# 4794
Delta R.T. 0.009 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:252 Resp: 189649

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 252 | 100 | | |
| 126 | 23.3 | 16.6 | 25.0 |

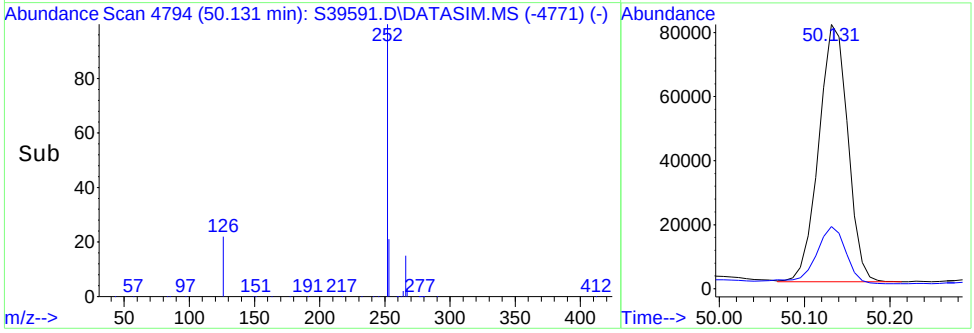


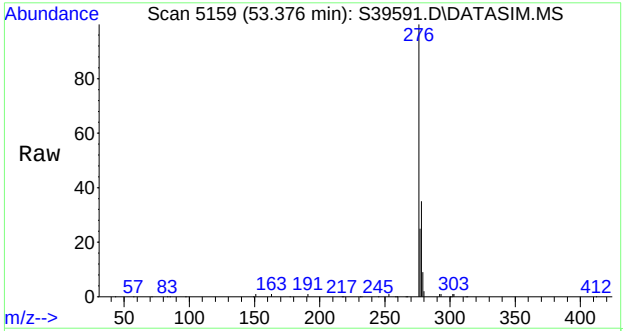


#108
Indeno(1,2,3-cd)pyrene
Concen: 5433.145 ng/mL m
RT: 53.376 min Scan# 5159
Delta R.T. 0.024 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:276 Resp: 471945

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 276 | 100 | | |
| 277 | 27.3 | 19.7 | 29.5 |
| 278 | 37.3 | 17.5 | 26.3# |

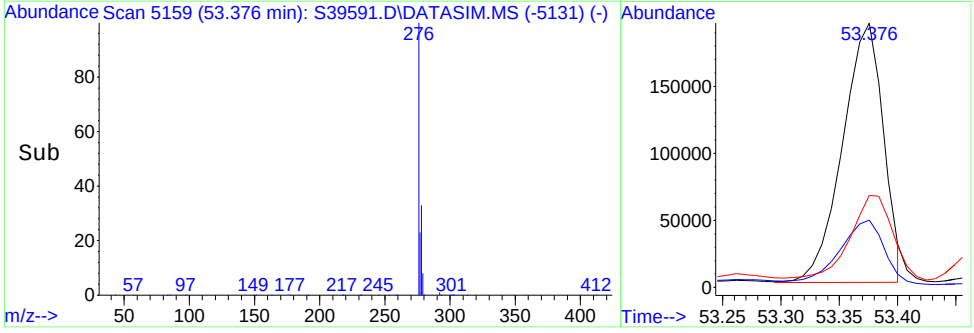

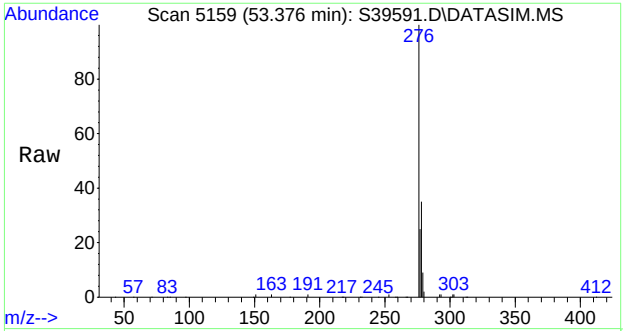


#109
Dibenz(a,h)anthracene
Concen: 2313.430 ng/mL m
RT: 53.376 min Scan# 5159
Delta R.T. -0.000 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:278 Resp: 164393

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 278 | 100 | | |
| 279 | 24.9 | 19.8 | 29.8 |
| 276 | 294.1 | 50.6 | 76.0# |

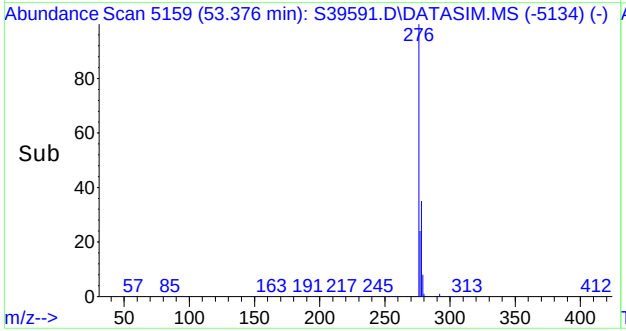


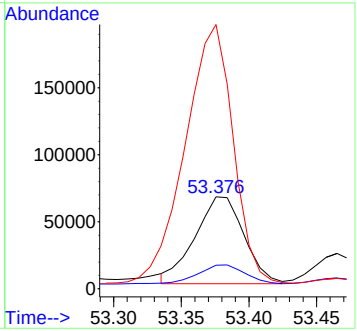


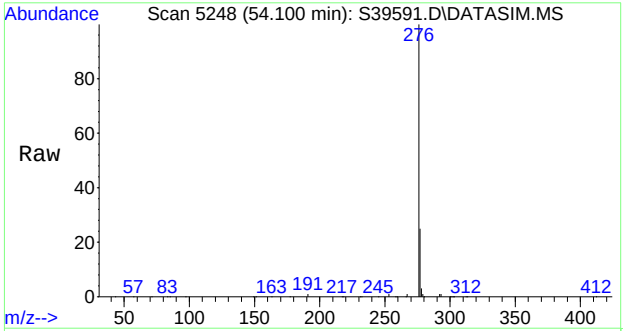


#110
Benzo(g,h,i)perylene
Concen: 6340.100 ng/mL
RT: 54.100 min Scan# 5248
Delta R.T. 0.016 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:276 Resp: 499430

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 276 | 100 | | |
| 277 | 24.3 | 19.3 | 28.9 |

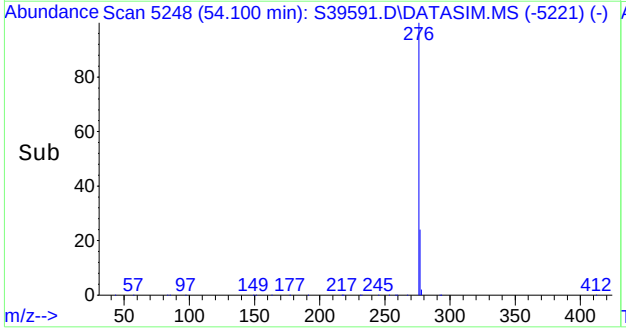


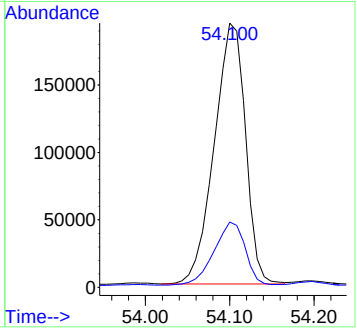

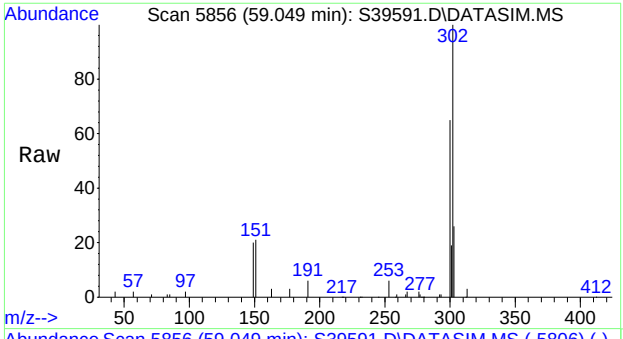


#111
Coronene
Concen: 1346.066 ng/mL
RT: 59.049 min Scan# 5856
Delta R.T. 0.008 min
Lab File: S39591.D
Acq: 5 Jul 2016 7:07 pm

Tgt Ion:300 Resp: 112282

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 300 | 100 | | |
| 301 | 26.9 | 21.0 | 31.4 |

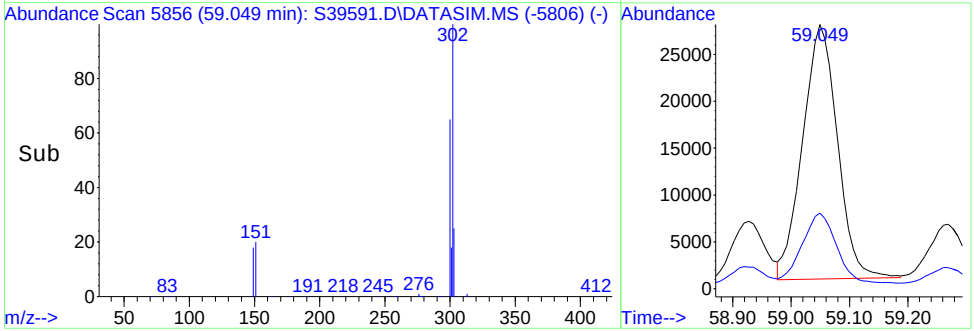

Manual Integrations APPROVED (compounds with "m" flag)
Ruben Parrilla
07/13/16 11:23

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160705\S39592.D
Sample : mc46549-1,50x,137-P3B-MW101I-2016062
Misc : OP47956,MSS1964,0.0152,,,2,50
ALS Vial : 8 Sample Multiplier: 1
Acq On : 5 Jul 2016 8:21 pm Operator: sofyaz

Quant Time: Jul 06 14:43:54 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Acenaphthene-d10 | 28.342 | 162 | 29890 | 1020.00 | ng/mL | 0.00 |
| System Monitoring Compounds | | | | | | |
| 2) Toluene-d8 | 9.462 | 98 | 936 | 21.37 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = | 2.14% | | |
| 3) Naphthalene-d8 | 21.389 | 136 | 1230 | 19.85 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = | 1.99% | | |
| 4) Phenanthrene-d10 | 34.189 | 188 | 845 | 19.14 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = | 1.91% | | |
| 5) Perylene-d12 | 50.050 | 264 | 667 | 18.54 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = | 1.85% | | |
| Target Compounds | | | | | | Qvalue |
| 18] Ethylbenzene | 12.319 | 91 | 46303 | 736.129 | ng/mL | 99 |
| 19] m,p-xylene | 12.553 | 91 | 29861 | 582.523 | ng/mL | 99 |
| 21] o-Xylene | 13.274 | 91 | 16150 | 307.745 | ng/mL | 98 |
| 24] 1,3,5-Trimethylbenzene | 15.461 | 105 | 7607 | 142.914 | ng/mL | 97 |
| 27] 1,2,4-Trimethylbenzene | 16.205 | 105 | 23208 | 419.429 | ng/mL | 94 |
| 29] 1,2,3-Trimethylbenzene | 17.045 | 105 | 7488 | 134.853 | ng/mL | 98 |
| 51] Naphthalene | 21.465 | 128 | 737944 | 9605.212 | ng/mL | 100 |
| 52] 2-Methylnaphthalene | 24.160 | 142 | 251485 | 5067.786 | ng/mL | 100 |
| 53] 1-Methylnaphthalene | 24.589 | 142 | 164637 | 3748.088 | ng/mL | 100 |
| 54] C1-Naphthalenes | 24.160 | 142 | 419948m | 5466.119 | ng/mL | |
| 55] C2-Naphthalenes | 26.999 | 156 | 240082m | 3124.951 | ng/mL | |
| 58] Biphenyl | 26.056 | 154 | 31002 | 535.877 | ng/mL | 99 |
| 59] Acenaphthylene | 27.733 | 152 | 61635 | 839.610 | ng/mL | 94 |
| 60] Acenaphthene | 28.466 | 154 | 109684 | 2616.193 | ng/mL | 99 |
| 62] Fluorene | 30.485 | 166 | 58594 | 1169.140 | ng/mL | 96 |
| 72] Phenanthrene | 34.278 | 178 | 256843 | 3950.847 | ng/mL | 99 |
| 73] Anthracene | 34.464 | 178 | 81620 | 1340.787 | ng/mL | 96 |
| 74] C1-Phenanthrenes/anthr... | 36.352 | 192 | 164116m | 2524.489 | ng/mL | |
| 86] Fluoranthene | 39.043 | 202 | 64677 | 1000.547 | ng/mL | 100 |
| 87] Pyrene | 39.916 | 202 | 105690 | 1644.290 | ng/mL | 95 |
| 97] Benz(a)anthracene | 44.866 | 228 | 20061 | 361.849 | ng/mL | 96 |
| 98] Chrysene/triphenylene | 44.866 | 228 | 28541 | 537.939 | ng/mL | 97 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160705\S39592.D
Sample : mc46549-1,50x,137-P3B-MW101I-2016062
Misc : OP47956,MSS1964,0.0152,,,2,50
ALS Vial : 8 Sample Multiplier: 1
Acq On : 5 Jul 2016 8:21 pm Operator: sofyaz

Quant Time: Jul 06 14:43:54 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

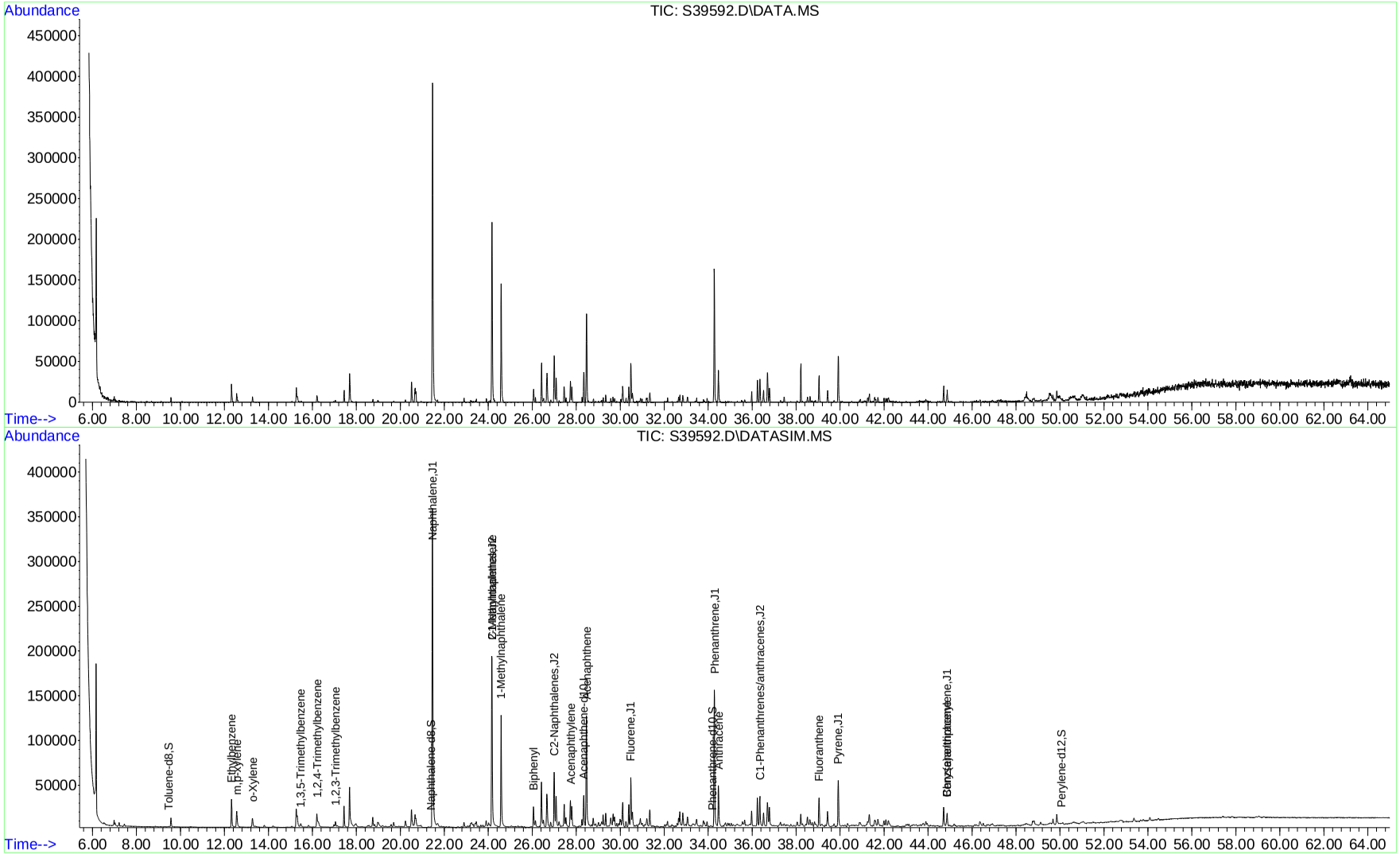

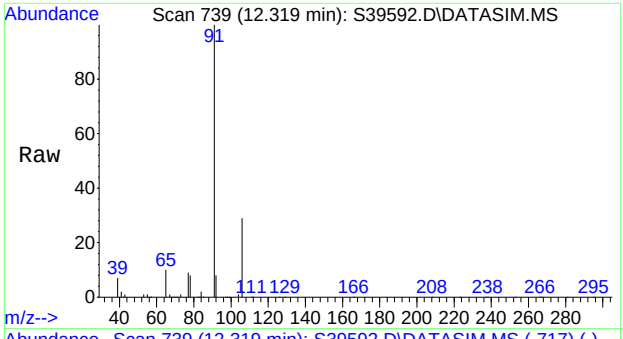


#18
Ethylbenzene
Concen: 736.129 ng/mL
RT: 12.319 min Scan# 739
Delta R.T. 0.009 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

Tgt Ion: 91 Resp: 46303

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 91 | 100 | | |
| 106 | 29.4 | 23.0 | 34.4 |

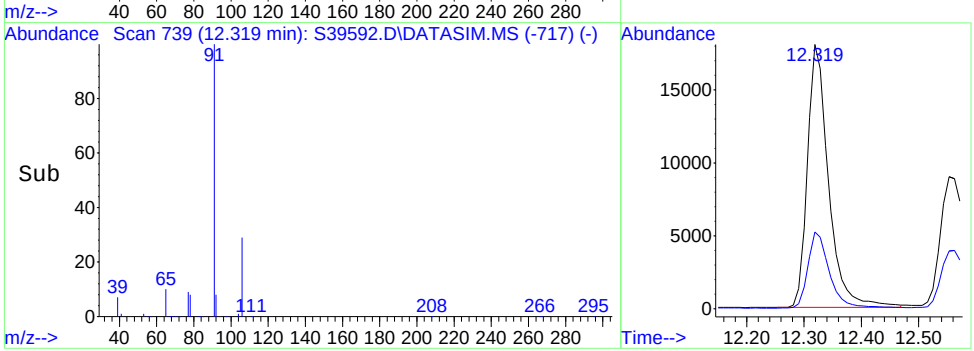


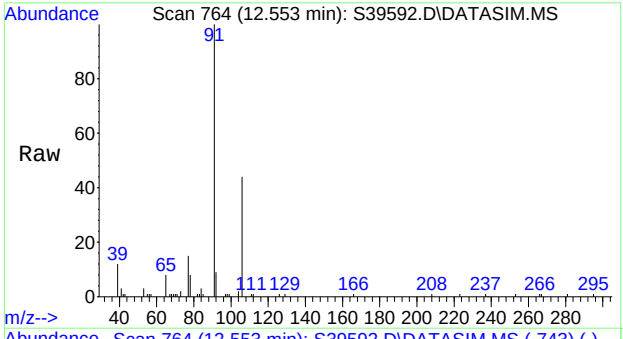


#19
m,p-xylene
Concen: 582.523 ng/mL
RT: 12.553 min Scan# 764
Delta R.T. -0.000 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

Tgt Ion: 91 Resp: 29861

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 91 | 100 | | |
| 106 | 45.1 | 35.8 | 53.6 |

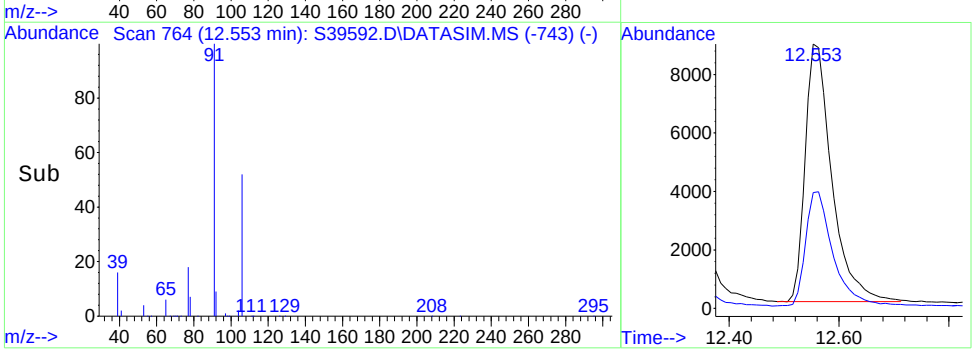

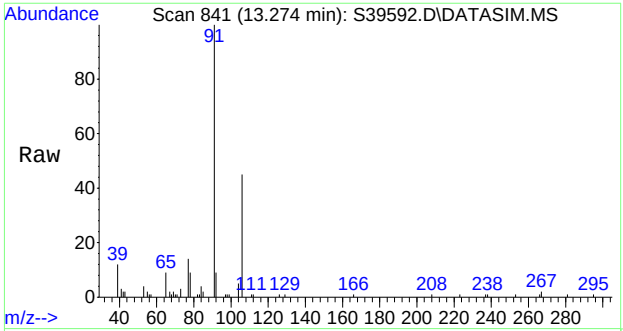


#21
o-Xylene
Concen: 307.745 ng/mL
RT: 13.274 min Scan# 841
Delta R.T. 0.019 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

Tgt Ion: 91 Resp: 16150

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 91 | 100 | | |
| 106 | 41.7 | 34.5 | 51.7 |

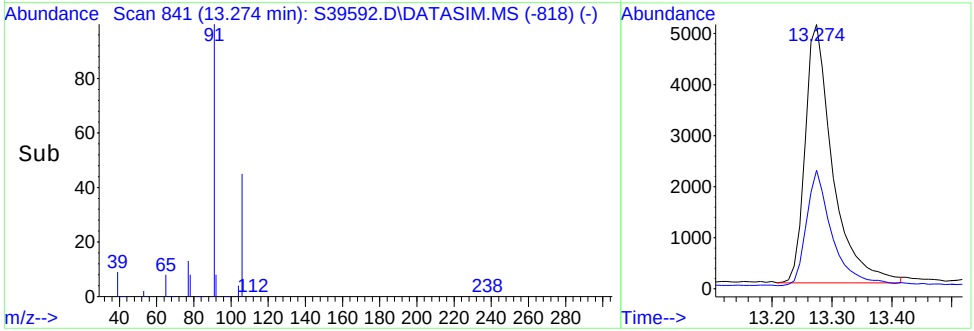


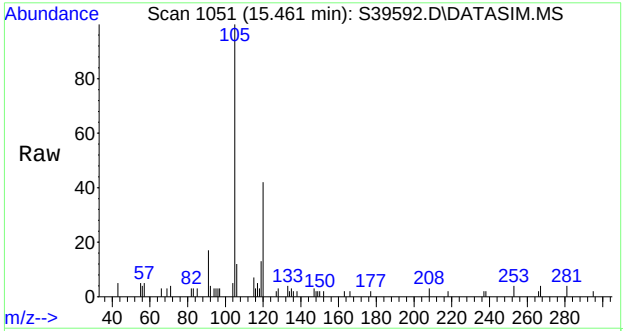


#24
1,3,5-Trimethylbenzene
Concen: 142.914 ng/mL
RT: 15.461 min Scan# 1051
Delta R.T. 0.010 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

Tgt Ion:105 Resp: 7607

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 105 | 100 | | |
| 120 | 43.6 | 33.5 | 50.3 |

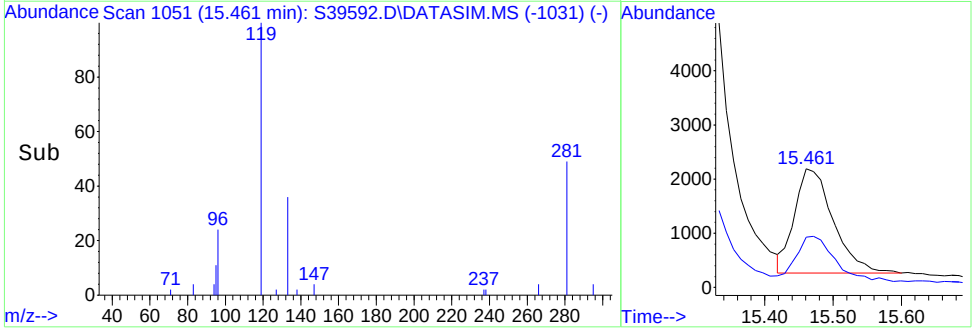

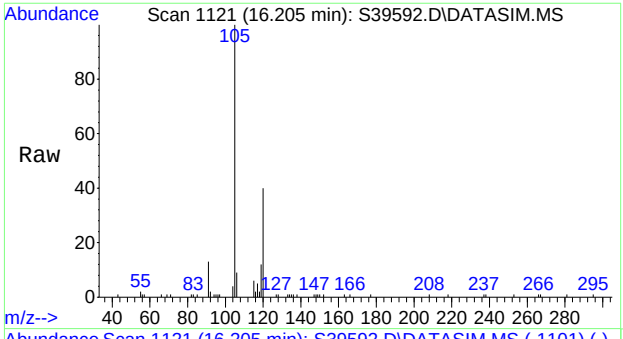


#27
1,2,4-Trimethylbenzene
Concen: 419.429 ng/mL
RT: 16.205 min Scan# 1121
Delta R.T. 0.010 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

Tgt Ion:105 Resp: 23208

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 105 | 100 | | |
| 120 | 40.5 | 35.3 | 52.9 |

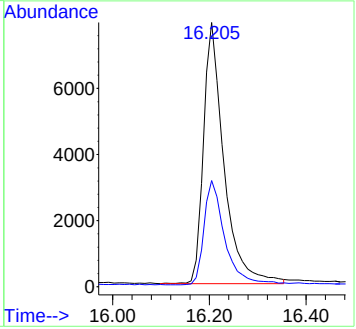


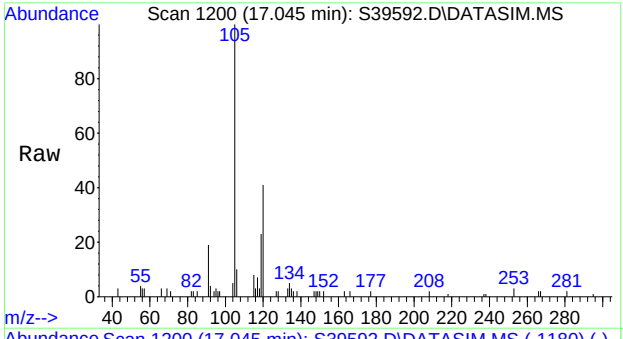


#29
1,2,3-Trimethylbenzene
Concen: 134.853 ng/mL
RT: 17.045 min Scan# 1200
Delta R.T. 0.010 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

Tgt Ion:105 Resp: 7488

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 105 | 100 | | |
| 120 | 42.3 | 34.8 | 52.2 |

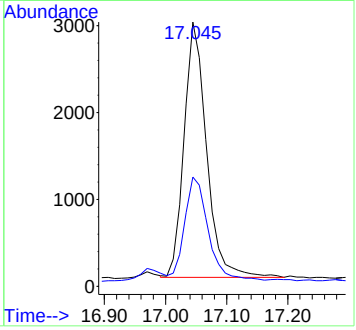

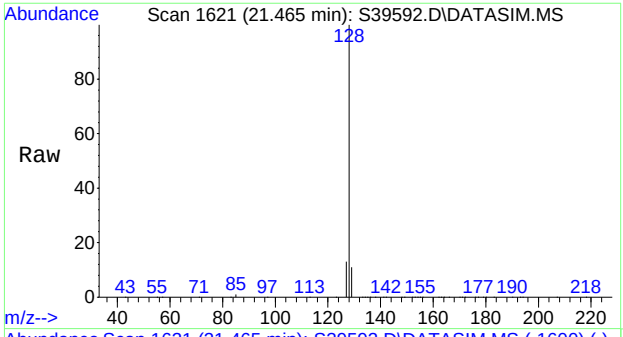


#51
Naphthalene
Concen: 9605.212 ng/mL
RT: 21.465 min Scan# 1621
Delta R.T. -0.000 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

Tgt Ion:128 Resp: 737944

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 128 | 100 | | |
| 127 | 12.6 | 10.2 | 15.2 |

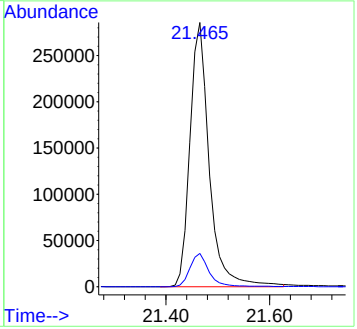


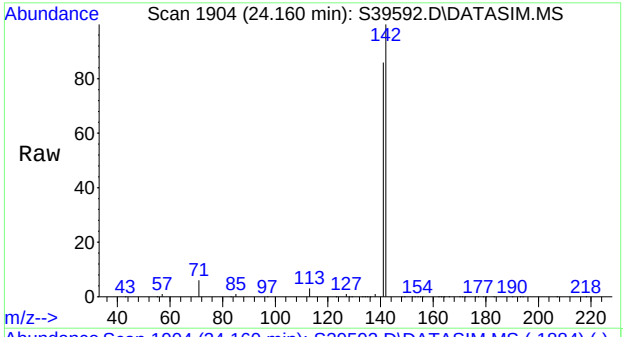


#52
2-Methylnaphthalene
Concen: 5067.786 ng/mL
RT: 24.160 min Scan# 1904
Delta R.T. -0.010 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

Tgt Ion:142 Resp: 251485

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 142 | 100 | | |
| 141 | 85.6 | 68.6 | 102.8 |

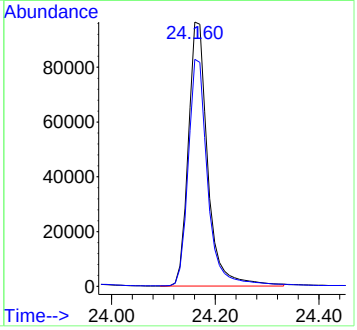



SGS ACCUTEST MC46549

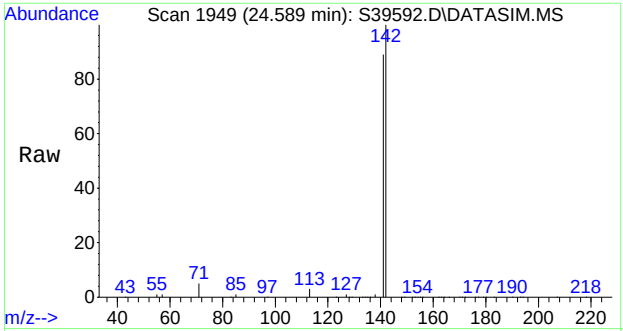


#53
1-Methylnaphthalene
Concen: 3748.088 ng/mL
RT: 24.589 min Scan# 1949
Delta R.T. -0.000 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

Tgt Ion:142 Resp: 164637

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 142 | 100 | | |
| 141 | 89.2 | 71.6 | 107.4 |

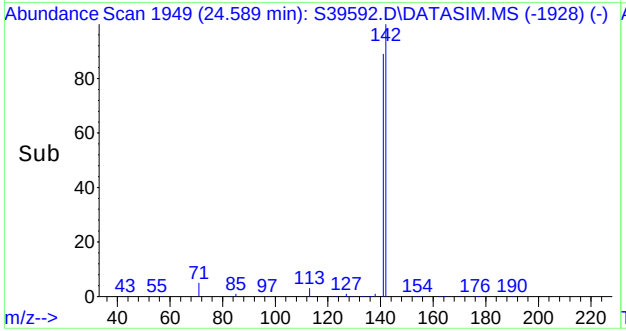


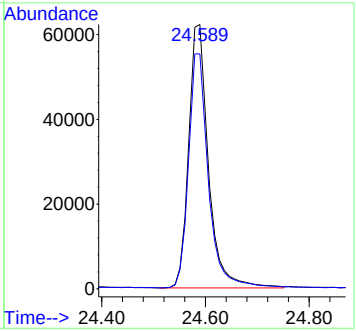


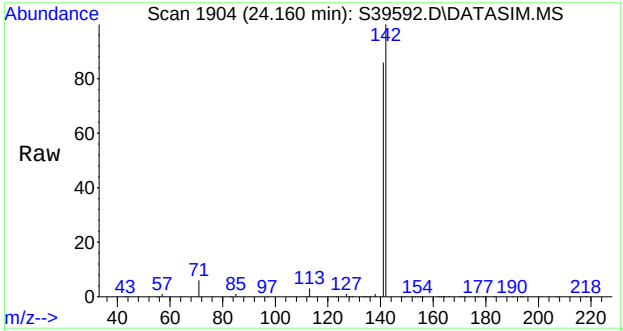


#54
C1-Naphthalenes
Concen: 5466.119 ng/mL m
RT: 24.160 min Scan# 1904
Delta R.T. -0.002 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

Tgt Ion:142 Resp: 419948

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 142 | 100 | | |
| 141 | 87.4 | 68.8 | 103.2 |

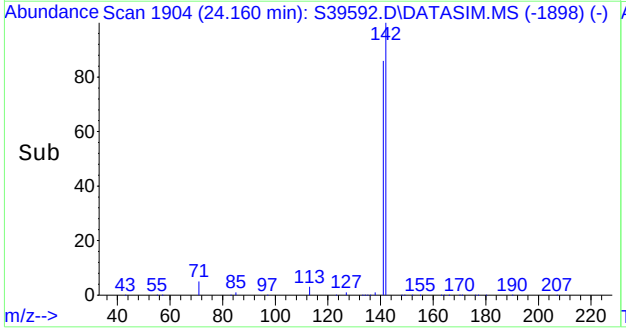


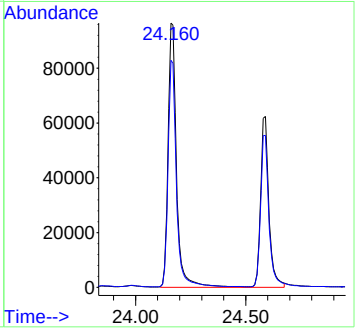

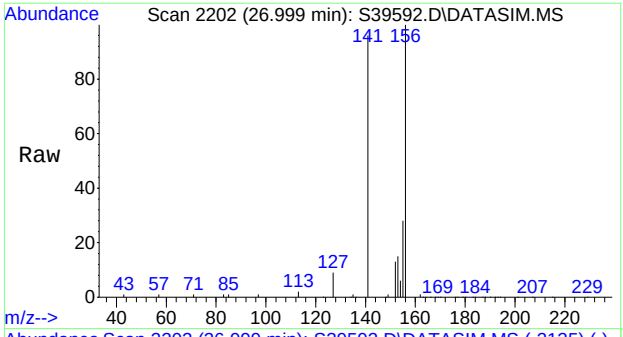


#55
C2-Naphthalenes
Concen: 3124.951 ng/mL m
RT: 26.999 min Scan# 2202
Delta R.T. -0.087 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

Tgt Ion:156 Resp: 240082

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 156 | 100 | | |
| 141 | 113.9 | 65.8 | 98.8# |

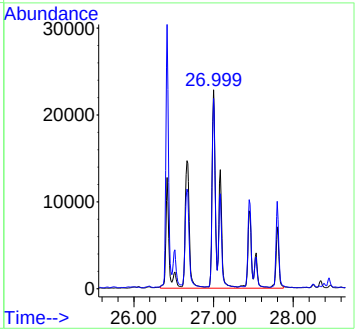


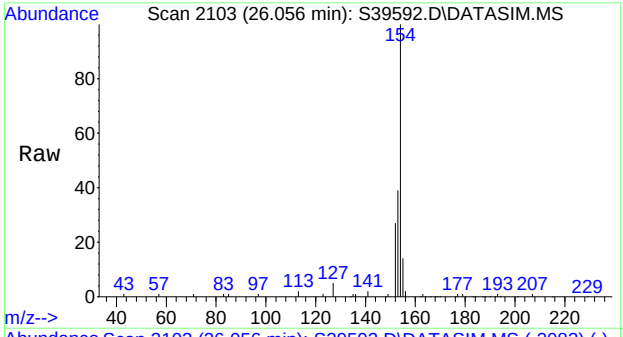


#58
Biphenyl
Concen: 535.877 ng/mL
RT: 26.056 min Scan# 2103
Delta R.T. -0.010 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

Tgt Ion:154 Resp: 31002

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 154 | 100 | | |
| 153 | 39.7 | 31.0 | 46.6 |

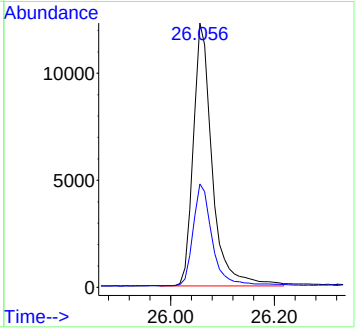

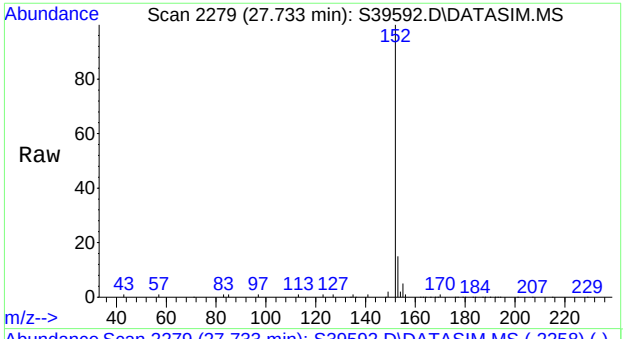


#59
Acenaphthylene
Concen: 839.610 ng/mL
RT: 27.733 min Scan# 2279
Delta R.T. -0.000 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

Tgt Ion:152 Resp: 61635

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 152 | 100 | | |
| 153 | 15.2 | 10.3 | 15.5 |

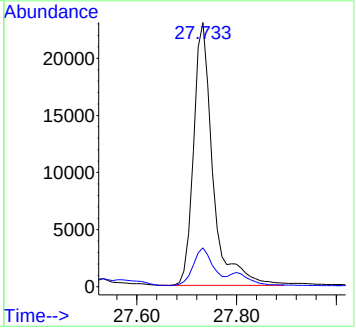


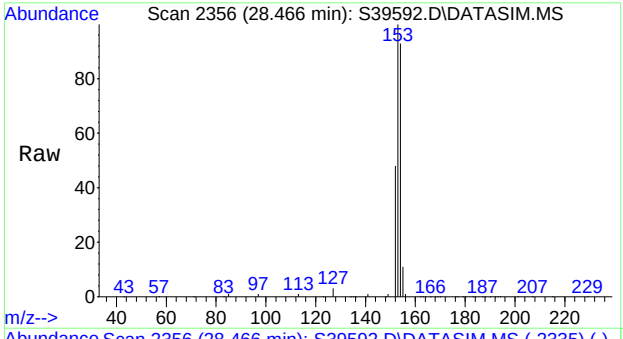


#60
Acenaphthene
Concen: 2616.193 ng/mL
RT: 28.466 min Scan# 2356
Delta R.T. -0.000 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

Tgt Ion:154 Resp: 109684

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 154 | 100 | | |
| 153 | 109.0 | 86.6 | 129.8 |

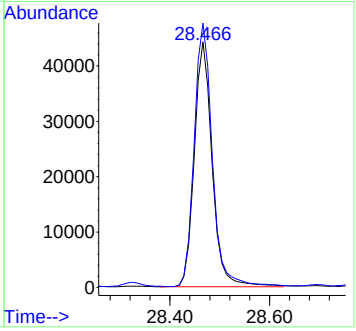

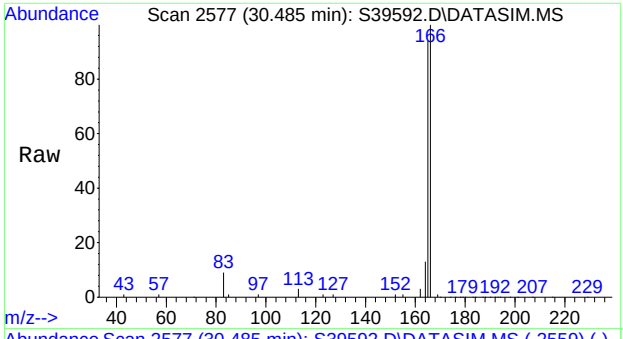


#62
Fluorene
Concen: 1169.140 ng/mL
RT: 30.485 min Scan# 2577
Delta R.T. -0.008 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

Tgt Ion:166 Resp: 58594

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 166 | 100 | | |
| 165 | 90.9 | 75.8 | 113.6 |

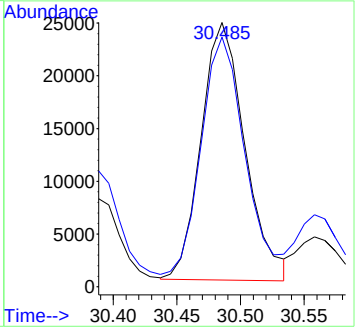


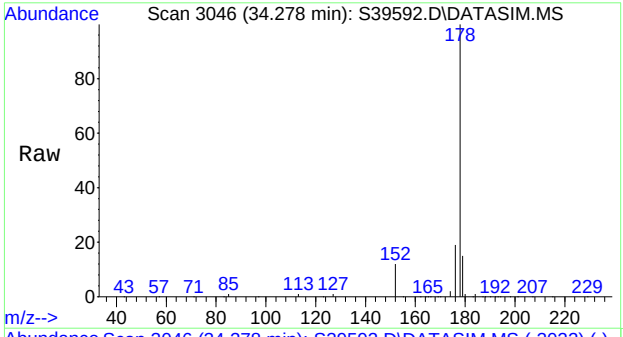


#72
Phenanthrene
Concen: 3950.847 ng/mL
RT: 34.278 min Scan# 3046
Delta R.T. -0.008 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

Tgt Ion:178 Resp: 256843

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 178 | 100 | | |
| 179 | 15.4 | 11.9 | 17.9 |

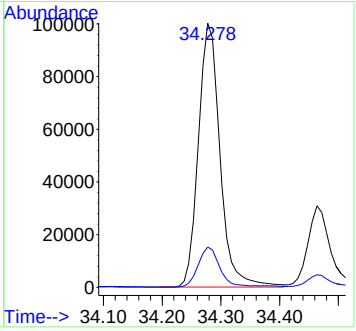

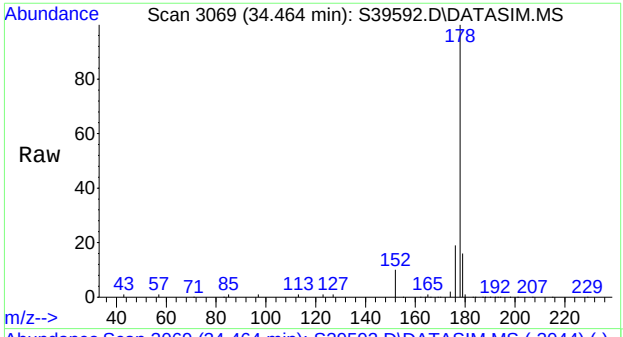


#73
Anthracene
Concen: 1340.787 ng/mL
RT: 34.464 min Scan# 3069
Delta R.T. -0.000 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

Tgt Ion:178 Resp: 81620

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 178 | 100 | | |
| 179 | 16.5 | 12.0 | 18.0 |

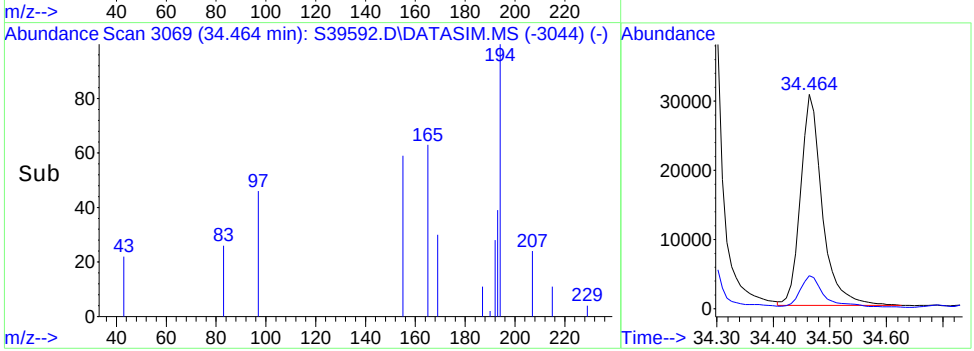


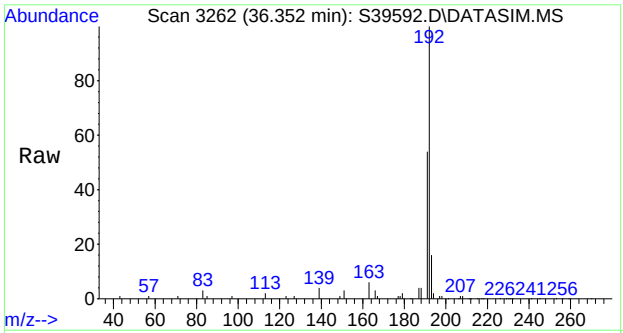


#74
C1-Phenanthrenes/anthracenes
Concen: 2524.489 ng/mL m
RT: 36.352 min Scan# 3262
Delta R.T. -0.348 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

Tgt Ion:192 Resp: 164116

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 192 | 100 | | |
| 191 | 56.9 | 45.0 | 67.4 |

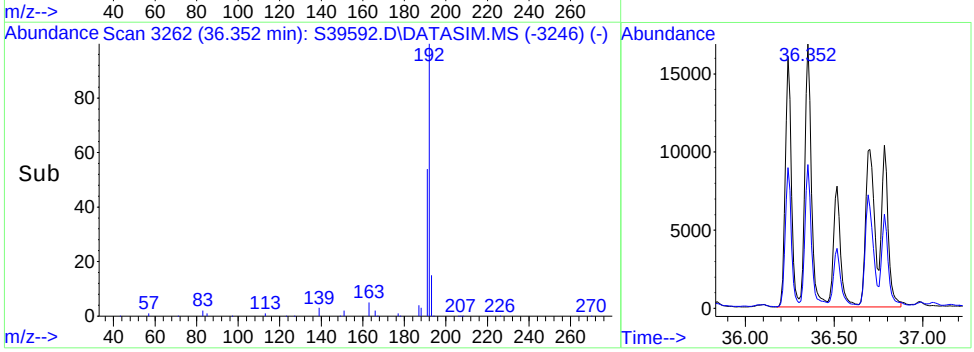

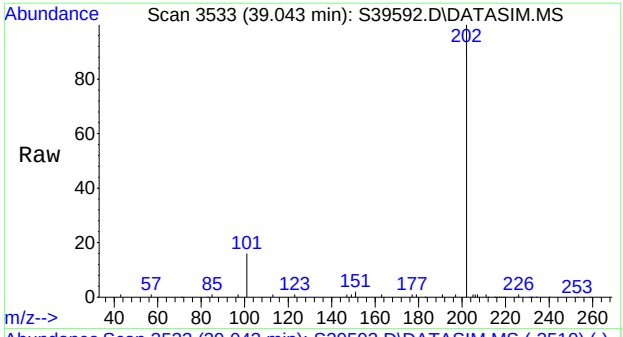


#86
Fluoranthene
Concen: 1000.547 ng/mL
RT: 39.043 min Scan# 3533
Delta R.T. -0.000 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

Tgt Ion:202 Resp: 64677

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 202 | 100 | | |
| 101 | 15.7 | 12.6 | 19.0 |

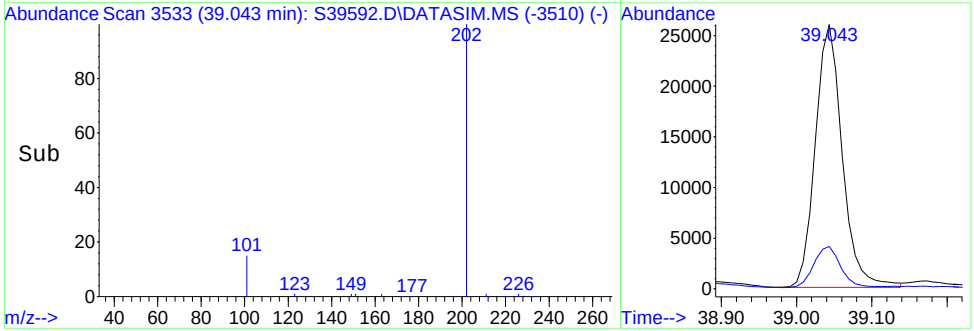





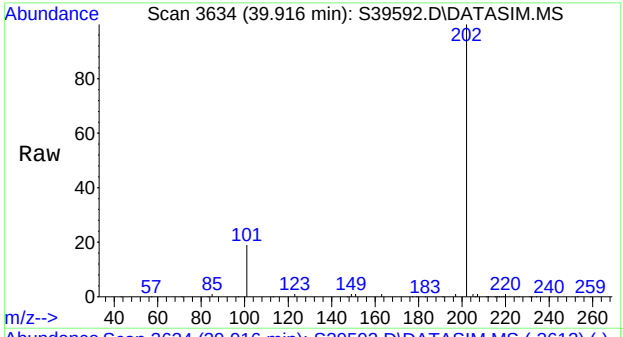


#87
Pyrene
Concen: 1644.290 ng/mL
RT: 39.916 min Scan# 3634
Delta R.T. -0.009 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

Tgt Ion:202 Resp: 105690

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 202 | 100 | | |
| 101 | 19.4 | 13.8 | 20.8 |

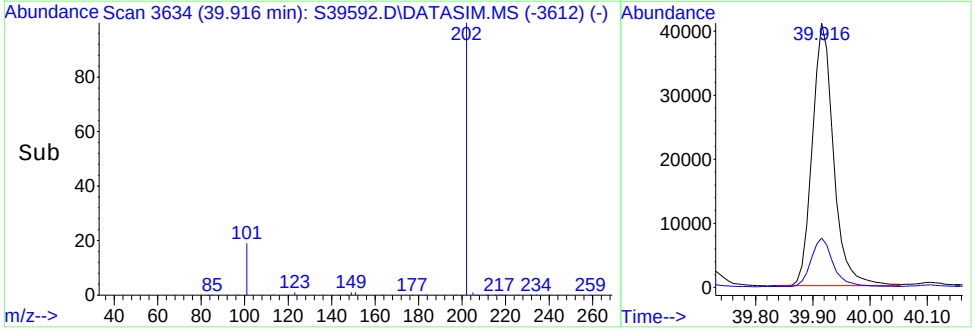

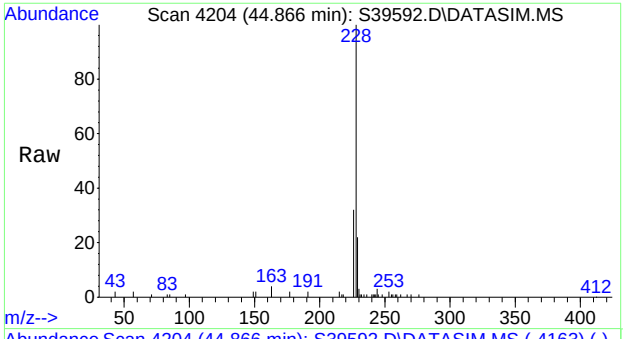


#97
Benz(a)anthracene
Concen: 361.849 ng/mL
RT: 44.866 min Scan# 4204
Delta R.T. 0.159 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

Tgt Ion:228 Resp: 20061

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 228 | 100 | | |
| 226 | 28.6 | 21.1 | 31.7 |

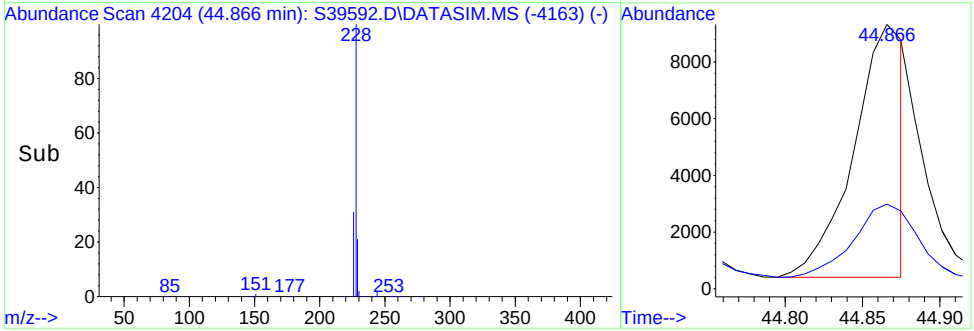





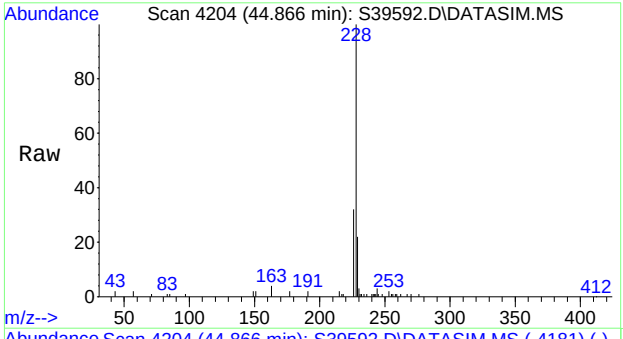


#98
Chrysene/triphenylene
Concen: 537.939 ng/mL
RT: 44.866 min Scan# 4204
Delta R.T. -0.000 min
Lab File: S39592.D
Acq: 5 Jul 2016 8:21 pm

Tgt Ion:228 Resp: 28541

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 228 | 100 | | |
| 226 | 30.6 | 23.4 | 35.0 |

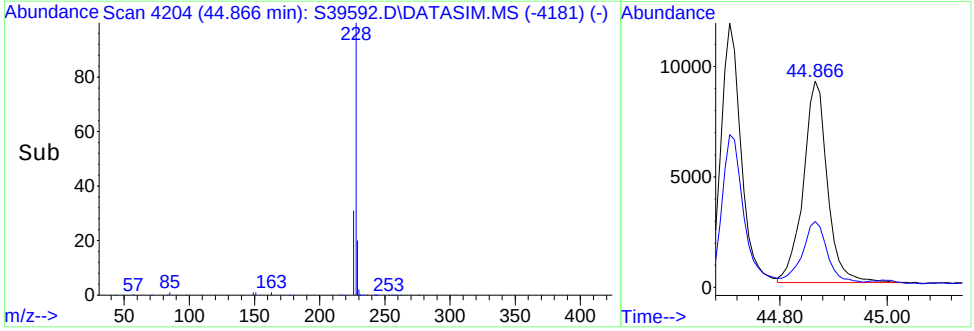

Manual Integrations APPROVED (compounds with "m" flag)
Ruben Parrilla
07/11/16 12:35

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160623\S39541.D
Sample : op47956-mb, Method Blank
Misc : OP47956,MSS1961,0.0100,,,2,1
ALS Vial : 5 Sample Multiplier: 1
Acq On : 24 Jun 2016 8:13 am Operator: sofyaz

Quant Time: Jun 29 16:36:00 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Acenaphthene-d10 | 28.351 | 162 | 29481 | 1000.00 | ng/mL | 0.00 |
| System Monitoring Compounds | | | | | | |
| 2) Toluene-d8 | 9.444 | 98 | 46222 | 1048.97 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = 104.90% | | | |
| 3) Naphthalene-d8 | 21.398 | 136 | 56989 | 914.24 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = 91.42% | | | |
| 4) Phenanthrene-d10 | 34.197 | 188 | 39952 | 899.58 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = 89.96% | | | |
| 5) Perylene-d12 | 50.035 | 264 | 28830 | 796.68 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = 79.67% | | | |
| Target Compounds | | | | | | Qvalue |
| 7] Benzene | 6.980 | 78 | 409m | 8.957 | ng/mL | |
| 16] Toluene | 9.556 | 91 | 337 | 5.921 | ng/mL# | 22 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

7.2.1
7

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160623\S39541.D
Sample : op47956-mb, Method Blank
Misc : OP47956,MSS1961,0.0100,,,2,1
ALS Vial : 5 Sample Multiplier: 1
Acq On : 24 Jun 2016 8:13 am Operator: sofyaz

Quant Time: Jun 29 16:36:00 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

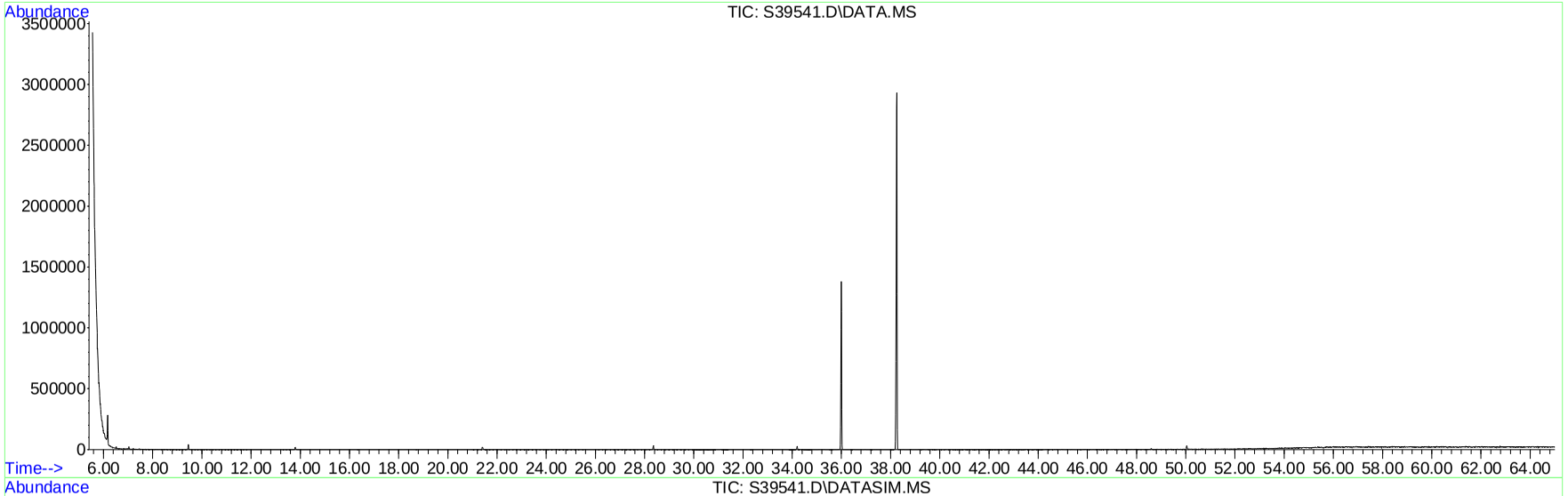


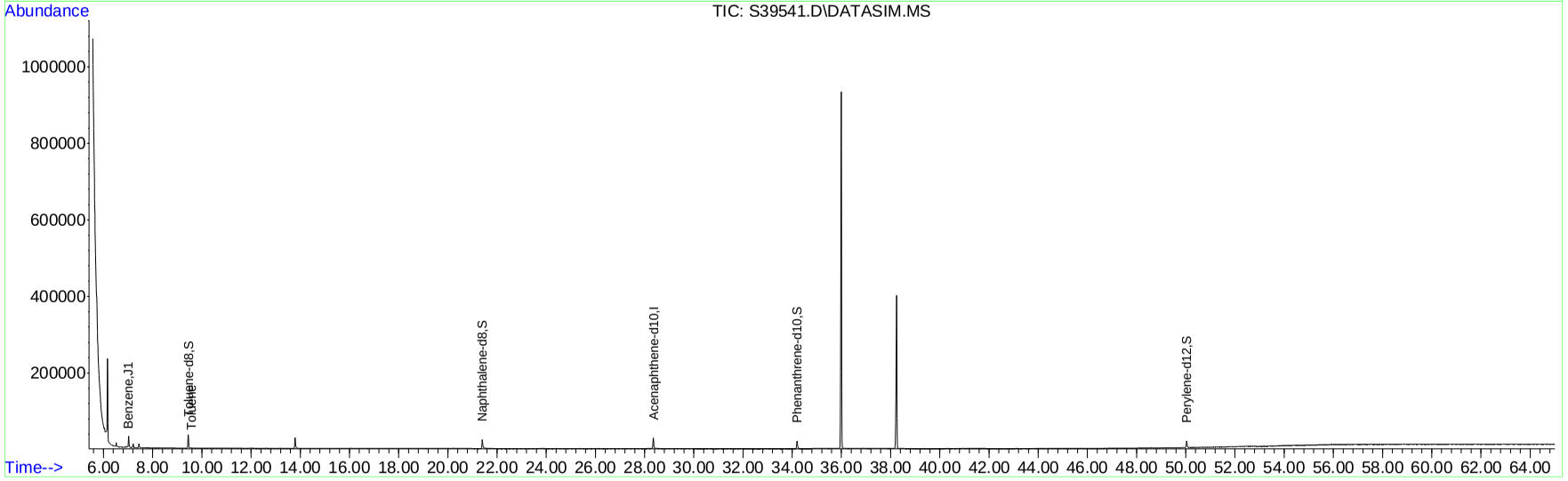

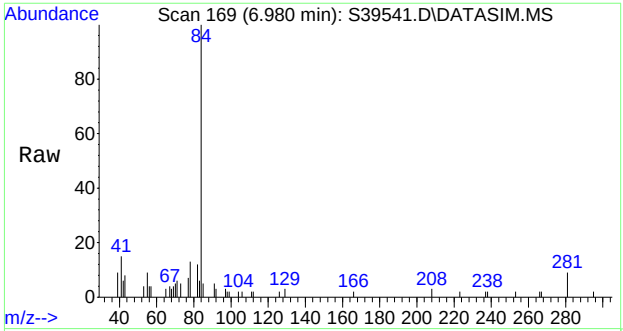


#7
Benzene
Concen: 8.957 ng/mL m
RT: 6.980 min Scan# 169
Delta R.T. -0.009 min
Lab File: S39541.D
Acq: 24 Jun 2016 8:13 am

Tgt Ion: 78 Resp: 409

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 78 | 100 | | |
| 77 | 72.4 | 18.4 | 27.6# |

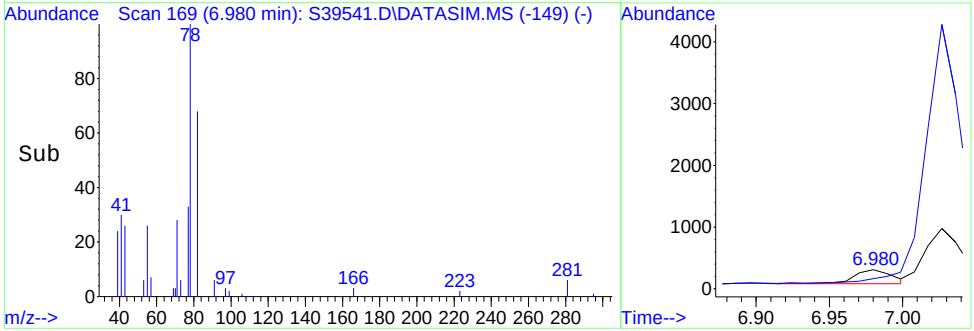





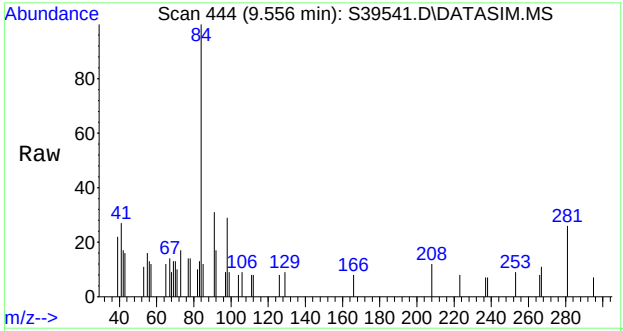


#16
Toluene
Concen: 5.921 ng/mL
RT: 9.556 min Scan# 444
Delta R.T. -0.009 min
Lab File: S39541.D
Acq: 24 Jun 2016 8:13 am

Tgt Ion: 91 Resp: 337

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 91 | 100 | | |
| 92 | 0.0 | 46.6 | 69.8# |

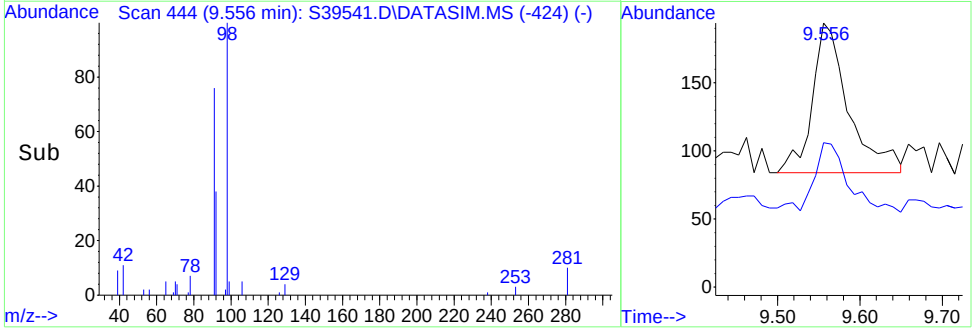

Manual Integrations APPROVED (compounds with "m" flag)
Ruben Parrilla
07/11/16 12:35

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160623\S39542.D
Sample : op47956-bs2
Misc : OP47956,MSS1961,0.0100,,,2,1
ALS Vial : 6 Sample Multiplier: 1
Acq On : 24 Jun 2016 9:27 am Operator: sofyaz

Quant Time: Jun 30 16:10:08 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Acenaphthene-d10 | 28.351 | 162 | 27941 | 1000.00 | ng/mL | 0.00 |
| System Monitoring Compounds | | | | | | |
| 2) Toluene-d8 | 9.425 | 98 | 40481 | 969.32 | ng/mL | -0.03 |
| Spiked Amount 1000.000 | | | Recovery = | 96.93% | | |
| 3) Naphthalene-d8 | 21.388 | 136 | 57203 | 968.25 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = | 96.83% | | |
| 4) Phenanthrene-d10 | 34.189 | 188 | 40826 | 969.93 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = | 96.99% | | |
| 5) Perylene-d12 | 50.034 | 264 | 29348 | 855.69 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = | 85.57% | | |
| Target Compounds | | | | | | Qvalue |
| 6] MTBE | 5.490 | 73 | 208737m | 8763.945 | ng/mL | |
| 7] Benzene | 6.933 | 78 | 241007m | 5569.128 | ng/mL | |
| 13] 2,2,4-trimethylpentane | 7.429 | 57 | 230714 | 5261.289 | µg/mL | 98 |
| 14] n-Heptane | 7.701 | 43 | 106083 | 4376.376 | µg/mL | 96 |
| 15] Methylcyclohexane | 8.329 | 83 | 105324 | 5146.041 | ng/mL | 96 |
| 16] Toluene | 9.528 | 91 | 260755 | 4833.550 | ng/mL | 99 |
| 17] n-Octane | 10.389 | 43 | 131520 | 4083.056 | µg/mL | 99 |
| 18] Ethylbenzene | 12.291 | 91 | 304698 | 5080.402 | ng/mL | 100 |
| 19] m,p-xylene | 12.534 | 91 | 246688 | 5047.081 | ng/mL | 99 |
| 20] Styrene | 13.171 | 104 | 177748m | 4369.322 | ng/mL | |
| 21] o-Xylene | 13.237 | 91 | 247424 | 4944.742 | ng/mL | 98 |
| 22] Isopropylbenzene | 14.164 | 105 | 298986 | 5321.222 | ng/mL | 99 |
| 23] n-Propylbenzene | 15.025 | 91 | 369380 | 5203.081 | ng/mL | 96 |
| 24] 1,3,5-Trimethylbenzene | 15.450 | 105 | 260301 | 5128.846 | ng/mL | 100 |
| 25] Phenol | 15.652 | 94 | 138225 | 4568.298 | µg/mL# | 98 |
| 26] t-Butylbenzene | 16.152 | 119 | 238114 | 5275.002 | ng/mL | 94 |
| 27] 1,2,4-Trimethylbenzene | 16.184 | 105 | 264052 | 5004.879 | ng/mL | 91 |
| 28] sec-Butylbenzene | 16.673 | 105 | 326876 | 5211.556 | ng/mL | 99 |
| 29] 1,2,3-Trimethylbenzene | 17.023 | 105 | 270928 | 5117.209 | ng/mL | 90 |
| 30] p-Isopropyltoluene | 17.045 | 119 | 295746 | 5428.497 | ng/mL | 98 |
| 31] Indane | 17.427 | 117 | 223348 | 4687.859 | µg/mL | 99 |
| 32] Indene | 17.682 | 115 | 217635 | 4667.570 | µg/mL | 99 |
| 33] n-Butylbenzene | 17.927 | 91 | 280262 | 5122.848 | ng/mL | 100 |
| 34] trans-Decalin | 18.001 | 96 | 47638 | 4614.035 | ng/mL | 97 |
| 35] cis-Decalin | 19.234 | 96 | 63691 | 4482.019 | ng/mL | 95 |
| 40] Benzo(b)thiophene | 21.683 | 134 | 291576 | 4858.490 | ng/mL | 99 |
| 45] Tetraethyl lead | 20.531 | 208 | 17487 | 3839.930 | ng/mL | 93 |
| 50] MMT | 23.274 | 134 | 86715 | 3866.966 | µg/mL | 98 |
| 51] Naphthalene | 21.464 | 128 | 360910 | 4926.815 | ng/mL | 100 |
| 52] 2-Methylnaphthalene | 24.169 | 142 | 216991 | 4585.975 | ng/mL | 99 |
| 53] 1-Methylnaphthalene | 24.588 | 142 | 210708 | 5030.917 | ng/mL | 99 |
| 58] Biphenyl | 26.055 | 154 | 262932 | 4766.534 | ng/mL | 100 |
| 59] Acenaphthylene | 27.732 | 152 | 338914 | 4841.987 | ng/mL | 100 |
| 60] Acenaphthene | 28.465 | 154 | 199666 | 4994.757 | ng/mL | 99 |
| 61] Dibenzofuran | 29.113 | 168 | 292052 | 5094.616 | ng/mL | 100 |
| 62] Fluorene | 30.486 | 166 | 231564 | 4845.829 | ng/mL | 99 |
| 66] Dibenzothiophene | 33.785 | 184 | 305566 | 4576.568 | ng/mL | 99 |
| 72] Phenanthrene | 34.278 | 178 | 304970 | 4919.981 | ng/mL | 100 |
| 73] Anthracene | 34.464 | 178 | 294683 | 5076.941 | ng/mL | 99 |
| 79] Carbazole | 35.155 | 167 | 293520 | 4839.402 | µg/mL | 99 |
| 80] Retene | 41.274 | 234 | 58448 | 3970.958 | ng/mL | 98 |
| 81] Benzo(b)naphtho(2,1-d)... | 43.771 | 234 | 282629 | 4894.856 | ng/mL | 100 |
| 86] Fluoranthene | 39.046 | 202 | 309466 | 5020.930 | ng/mL | 99 |
| 87] Pyrene | 39.918 | 202 | 314592 | 5133.055 | ng/mL | 99 |
| 97] Benz(a)anthracene | 44.700 | 228 | 253361 | 4792.900 | ng/mL | 99 |
| 98] Chrysene/triphenylene | 44.860 | 228 | 244200 | 4827.178 | ng/mL | 99 |
| 103] Benzo(b)fluoranthene | 48.750 | 252 | 272340 | 4674.441 | ng/mL | 99 |
| 104] Benzo(j/k)fluoranthene | 48.832 | 252 | 269507 | 4564.792 | ng/mL | 99 |

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160623\S39542.D
Sample : op47956-bs2
Misc : OP47956,MSS1961,0.0100,,,2,1
ALS Vial : 6 Sample Multiplier: 1
Acq On : 24 Jun 2016 9:27 am Operator: sofyaz

Quant Time: Jun 30 16:10:08 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 105] Benzo(e)pyrene | 49.673 | 252 | 253643 | 4536.092 | ng/mL | 98 |
| 106] Benzo(a)pyrene | 49.845 | 252 | 255893 | 4641.027 | ng/mL | 98 |
| 107] Perylene | 50.116 | 252 | 244806 | 4246.736 | ng/mL | 97 |
| 108] Indeno(1,2,3-cd)pyrene | 53.345 | 276 | 325403m | 4561.680 | ng/mL | |
| 109] Dibenz(a,h)anthracene | 53.377 | 278 | 267567m | 4585.102 | ng/mL | |
| 110] Benzo(g,h,i)perylene | 54.077 | 276 | 282227 | 4362.782 | ng/mL | 100 |
| 111] Coronene | 59.035 | 300 | 284074 | 4146.972 | ng/mL | 100 |
| 112] C-17 | 32.160 | 85 | 71431 | 4700.650 | ng/mL | 99 |
| 113] Pristane | 32.289 | 85 | 54104 | 4526.358 | ng/mL | 100 |
| 114] C-18 | 33.955 | 85 | 73816 | 4782.637 | ng/mL | 99 |
| 115] Phytane | 34.141 | 85 | 70453 | 4254.195 | ng/mL | 100 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160623\S39542.D
Sample : op47956-bs2
Misc : OP47956,MSS1961,0.0100,,,2,1
ALS Vial : 6 Sample Multiplier: 1
Acq On : 24 Jun 2016 9:27 am Operator: sofyaz

Quant Time: Jun 30 16:10:08 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

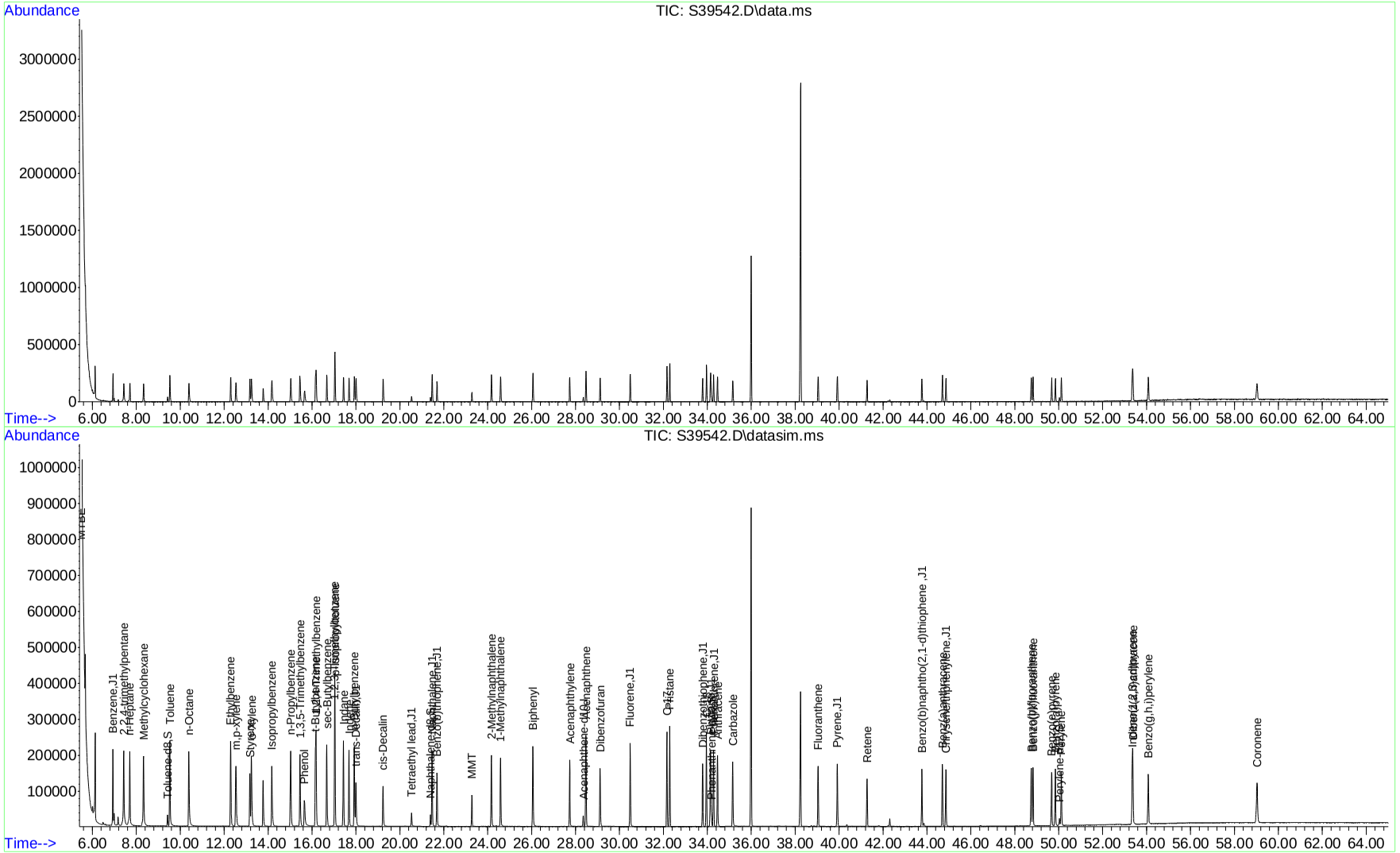

Manual Integrations APPROVED (compounds with "m" flag)
Ruben Parrilla
07/13/16 11:23

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160705\S39589.D
Sample : op47956-dup1,mc46549-1,137-P3B-MW101I-2016062
Misc : OP47956,MSS1964,0.0161,,,2,1
ALS Vial : 5 Sample Multiplier: 1
Acq On : 5 Jul 2016 4:38 pm Operator: sofyaz

Quant Time: Jul 06 11:16:19 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Acenaphthene-d10 | 28.352 | 162 | 33557 | 1000.00 | ng/mL | 0.00 |
| System Monitoring Compounds | | | | | | |
| 2) Toluene-d8 | 9.443 | 98 | 49524 | 987.40 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = | 98.74% | | |
| 3) Naphthalene-d8 | 21.418 | 136 | 70427 | 992.58 | ng/mL | 0.02 |
| Spiked Amount 1000.000 | | | Recovery = | 99.26% | | |
| 4) Phenanthrene-d10 | 34.213 | 188 | 44972 | 889.62 | ng/mL | 0.02 |
| Spiked Amount 1000.000 | | | Recovery = | 88.96% | | |
| 5) Perylene-d12 | 50.050 | 264 | 36835 | 894.25 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = | 89.42% | | |
| Target Compounds | | | | | | Qvalue |
| 7] Benzene | 6.980 | 78 | 385762m | 7422.254 | ng/mL | |
| 8] C1-Benzene | 9.546 | 92 | 398932 | 7675.652 | ng/mL | 100 |
| 9] C2-Benzenes | 12.291 | 106 | 2087873m | 40171.724 | ng/mL | |
| 10] C3-Benzenes | 15.238 | 120 | 2163124m | 41619.591 | ng/mL | |
| 11] C4-Benzenes | 18.724 | 134 | 1080942m | 20797.866 | ng/mL | |
| 12] C5-Benzenes | 20.255 | 148 | 294872m | 5673.485 | ng/mL | |
| 16] Toluene | 9.546 | 91 | 674295 | 10407.402 | ng/mL | 99 |
| 18] Ethylbenzene | 12.291 | 91 | 2716016 | 37706.797 | ng/mL | 96 |
| 19] m,p-xylene | 12.525 | 91 | 1821576 | 31031.188 | ng/mL | 98 |
| 20] Styrene | 13.171 | 104 | 75002 | 1535.115 | ng/mL | 99 |
| 21] o-Xylene | 13.237 | 91 | 953493 | 15866.391 | ng/mL | 99 |
| 22] Isopropylbenzene | 14.164 | 105 | 296388 | 4392.178 | ng/mL | 99 |
| 23] n-Propylbenzene | 15.025 | 91 | 160793 | 1885.876 | ng/mL | 100 |
| 24] 1,3,5-Trimethylbenzene | 15.440 | 105 | 434476 | 7128.013 | ng/mL | 97 |
| 27] 1,2,4-Trimethylbenzene | 16.184 | 105 | 1366366 | 21564.033 | ng/mL | 97 |
| 28] sec-Butylbenzene | 16.683 | 105 | 11096 | 147.302 | ng/mL | 99 |
| 29] 1,2,3-Trimethylbenzene | 17.023 | 105 | 458840 | 7216.047 | ng/mL | 97 |
| 30] p-Isopropyltoluene | 17.034 | 119 | 191618m | 2928.572 | ng/mL | |
| 33] n-Butylbenzene | 17.916 | 91 | 96330 | 1466.114 | ng/mL# | 1 |
| 34] trans-Decalin | 18.001 | 96 | 2995m | 241.537 | ng/mL | |
| 35] cis-Decalin | 19.234 | 96 | 1935m | 113.380 | ng/mL | |
| 40] Benzo(b)thiophene | 21.703 | 134 | 469021 | 6507.297 | ng/mL | 98 |
| 51] Naphthalene | 21.570 | 128 | 35232307 | 400467.474 | ng/mL# | 92 |
| 52] 2-Methylnaphthalene | 24.246 | 142 | 13620909 | 239692.728 | ng/mL | 99 |
| 53] 1-Methylnaphthalene | 24.656 | 142 | 9054777 | 180012.505 | ng/mL | 100 |
| 54] C1-Naphthalenes | 24.246 | 142 | 22692126m | 257929.700 | ng/mL | |
| 55] C2-Naphthalenes | 27.056 | 156 | 13083596m | 148714.492 | ng/mL | |
| 56] C3-Naphthalenes | 29.353 | 170 | 4430928m | 50364.075 | ng/mL | |
| 57] C4-Naphthalenes | 32.103 | 184 | 1213940m | 13798.230 | ng/mL | |
| 58] Biphenyl | 26.066 | 154 | 1732006 | 26143.722 | ng/mL | 98 |
| 59] Acenaphthylene | 27.761 | 152 | 2765813 | 32901.505 | ng/mL# | 86 |
| 60] Acenaphthene | 28.533 | 154 | 5933529 | 123589.659 | ng/mL | 99 |
| 61] Dibenzofuran | 29.124 | 168 | 359117m | 5216.102 | ng/mL | |
| 62] Fluorene | 30.534 | 166 | 3352114 | 58408.310 | ng/mL | 98 |
| 63] C1-Fluorenes | 32.733 | 180 | 2263146m | 39433.782 | ng/mL | |
| 64] C2-Fluorenes | 34.906 | 194 | 1317761m | 22961.091 | ng/mL | |
| 65] C3-Fluorenes | 36.896 | 208 | 473282m | 8246.617 | ng/mL | |
| 66] Dibenzothiophene | 33.801 | 184 | 718334 | 8958.187 | ng/mL# | 94 |
| 67] C1-Dibenzothiophenes (... | 35.573 | 198 | 864817m | 10784.945 | ng/mL | |
| 68] C1-Dibenzothiophenes (... | 36.014 | 198 | 1786m | 22.273 | ng/mL | |
| 69] C2-Dibenzothiophenes | 37.255 | 212 | 612541m | 7638.866 | ng/mL | |
| 70] C3-Dibenzothiophenes | 39.078 | 226 | 281789m | 3514.129 | ng/mL | |
| 71] C4-Dibenzothiophenes | 40.762 | 240 | 84768m | 1057.123 | ng/mL | |
| 72] Phenanthrene | 34.383 | 178 | 13024428 | 174953.949 | ng/mL | 96 |
| 73] Anthracene | 34.537 | 178 | 4454378 | 63898.828 | ng/mL | 95 |
| 74] C1-Phenanthrenes/anthr... | 36.404 | 192 | 8902079m | 119579.445 | ng/mL | |
| 75] C2-Phenanthrenes/anthr... | 38.548 | 206 | 3492743m | 46917.161 | ng/mL | |
| 77] C3-Phenanthrenes/anthr... | 40.373 | 220 | 905909m | 12168.854 | ng/mL | |

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160705\S39589.D
Sample : op47956-dup1,mc46549-1,137-P3B-MW101I-2016062
Misc : OP47956,MSS1964,0.0161,,,2,1
ALS Vial : 5 Sample Multiplier: 1
Acq On : 5 Jul 2016 4:38 pm Operator: sofyaz

Quant Time: Jul 06 11:16:19 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

| | Compound | R.T. | QIon | Response | Conc Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 78] | C4-Phenanthrenes/anthr... | 42.579 | 234 | 213739m | 2871.104 ng/mL | |
| 81] | Benzo(b)naphtho(2,1-d)... | 43.785 | 234 | 221217 | 3190.072 ng/mL | 96 |
| 86] | Fluoranthene | 39.104 | 202 | 3445673 | 46548.329 ng/mL | 97 |
| 87] | Pyrene | 40.002 | 202 | 5634466 | 76549.059 ng/mL# | 91 |
| 88] | C1-Fluoranthenes/pyrenes | 41.366 | 216 | 5332585m | 72447.746 ng/mL | |
| 89] | Benzo(b)fluorene | 41.600 | 216 | 531803m | 7225.000 ng/mL | |
| 90] | Benzo(c)fluorene | 41.634 | 216 | 218937m | 2974.447 ng/mL | |
| 91] | 2-Methylpyrene | 41.755 | 216 | 667688m | 9071.115 ng/mL | |
| 92] | 4-Methylpyrene | 42.119 | 216 | 573342m | 7789.343 ng/mL | |
| 93] | 1-Methylpyrene | 42.232 | 216 | 811860m | 11029.815 ng/mL | |
| 94] | C2-Fluoranthenes/pyrenes | 43.013 | 230 | 1760785m | 23921.776 ng/mL | |
| 95] | C3-Fluoranthenes/pyrenes | 44.884 | 244 | 531733m | 7224.049 ng/mL | |
| 97] | Benz(a)anthracene | 44.742 | 228 | 1751120 | 27582.478 ng/mL# | 47 |
| 98] | Chrysene/triphenylene | 44.910 | 228 | 1561611 | 25702.736 ng/mL | 97 |
| 99] | C1-Benz(a)anthracenes/... | 46.372 | 242 | 1409722m | 23202.778 ng/mL | |
| 100] | C2-Benz(a)anthracenes/... | 48.065 | 256 | 565247m | 9303.466 ng/mL | |
| 101] | C3-Benz(a)anthracenes/... | 49.616 | 270 | 177156m | 2915.831 ng/mL | |
| 102] | C4-Benz(a)anthracenes/... | 50.466 | 284 | 45960m | 756.461 ng/mL | |
| 103] | Benzo(b)fluoranthene | 48.775 | 252 | 590727 | 8442.360 ng/mL | 97 |
| 104] | Benzo(j/k)fluoranthene | 48.847 | 252 | 714797 | 10080.742 ng/mL | 98 |
| 105] | Benzo(e)pyrene | 49.706 | 252 | 650678 | 9689.110 ng/mL | 98 |
| 106] | Benzo(a)pyrene | 49.887 | 252 | 1251323 | 18896.611 ng/mL | 97 |
| 107] | Perylene | 50.131 | 252 | 179967 | 2599.471 ng/mL | 95 |
| 108] | Indeno(1,2,3-cd)pyrene | 53.376 | 276 | 441697m | 5155.687 ng/mL | |
| 109] | Dibenz(a,h)anthracene | 53.376 | 278 | 156324m | 2230.493 ng/mL | |
| 110] | Benzo(g,h,i)perylene | 54.100 | 276 | 477407 | 6144.868 ng/mL | 100 |
| 111] | Coronene | 59.049 | 300 | 105194 | 1278.643 ng/mL | 99 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160705\S39589.D
Sample : op47956-dup1,mc46549-1,137-P3B-MW101I-2016062
Misc : OP47956,MSS1964,0.0161,,,2,1
ALS Vial : 5 Sample Multiplier: 1
Acq On : 5 Jul 2016 4:38 pm Operator: sofyaz

Quant Time: Jul 06 11:16:19 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

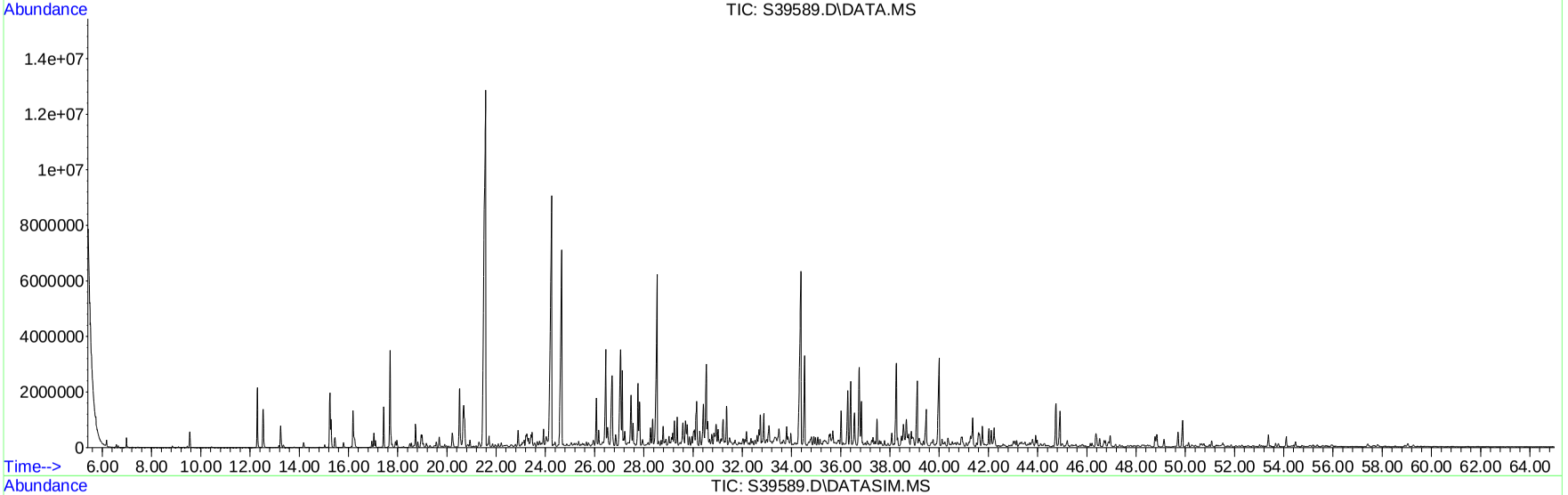


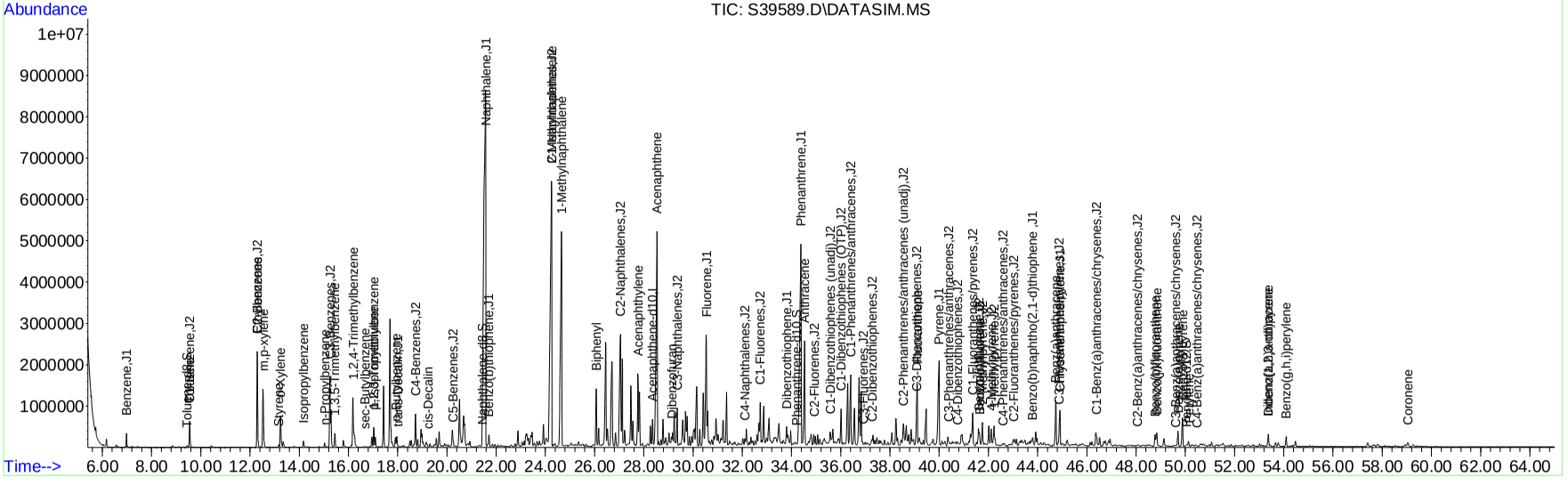




156 of 315 ACCUTEST MC46549
SGS
QC Report: S39589.D
S39589.D: OP47956-DUP1 Duplicate page 3 of 41

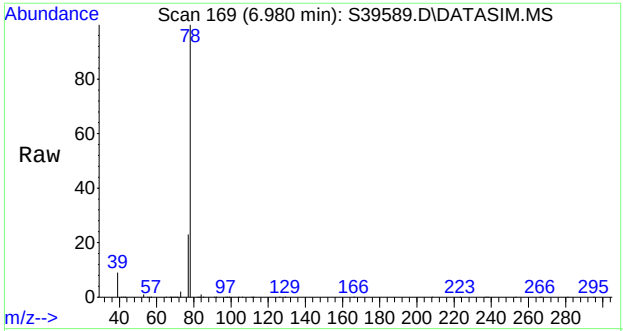


#7
Benzene
Concen: 7422.254 ng/mL m
RT: 6.980 min Scan# 169
Delta R.T. -0.000 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion: 78 Resp: 385762

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 78 | 100 | | |
| 77 | 23.5 | 18.4 | 27.6 |

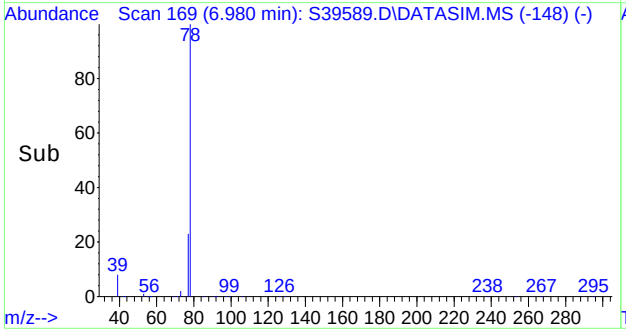


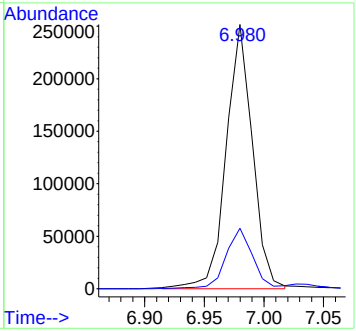


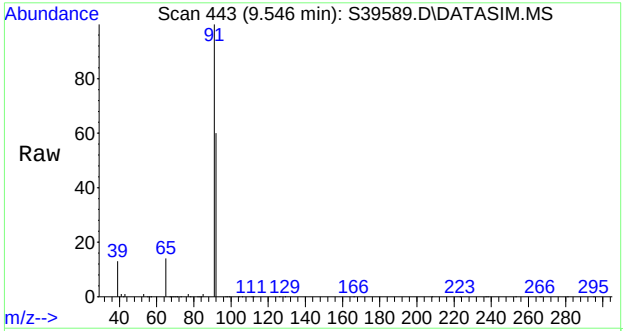


#8
C1-Benzene
Concen: 7675.652 ng/mL
RT: 9.546 min Scan# 443
Delta R.T. -0.006 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion: 92 Resp: 398932

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 92 | 100 | | |
| 91 | 169.0 | 135.2 | 202.8 |

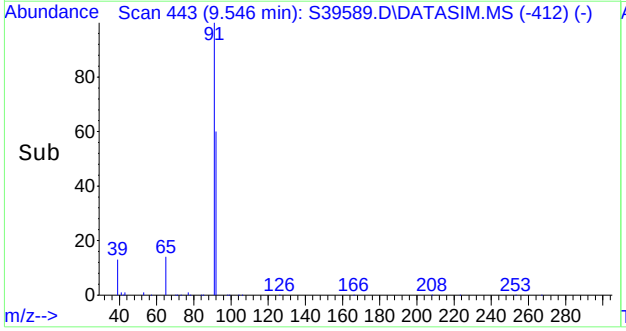


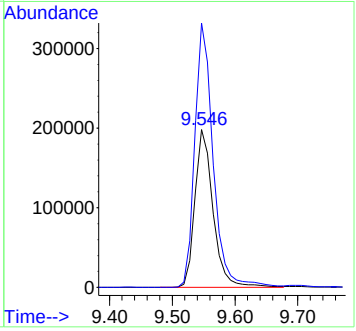

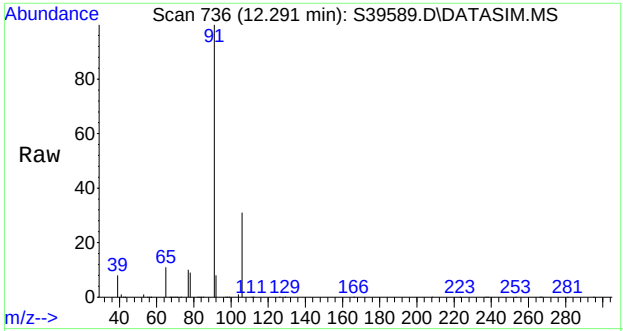


#9
C2-Benzenes
Concen: 40171.724 ng/mL m
RT: 12.291 min Scan# 736
Delta R.T. -0.240 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:106 Resp: 2087873

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 106 | 100 | | |
| 91 | 264.4 | 173.4 | 260.0# |

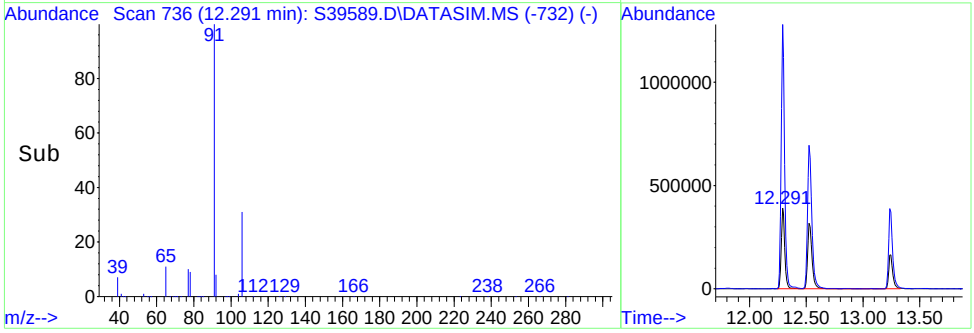


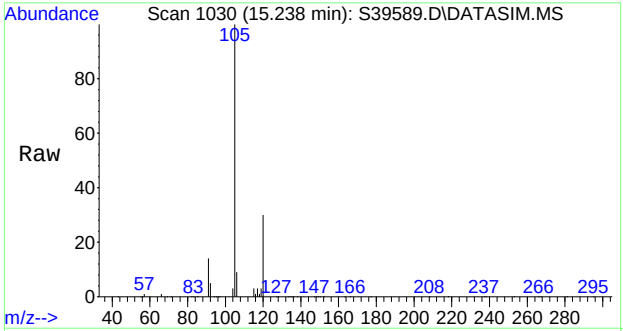


#10
C3-Benzenes
Concen: 41619.591 ng/mL m
RT: 15.238 min Scan# 1030
Delta R.T. -0.941 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:120 Resp: 2163124

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 120 | 100 | | |
| 105 | 288.5 | 197.2 | 295.8 |

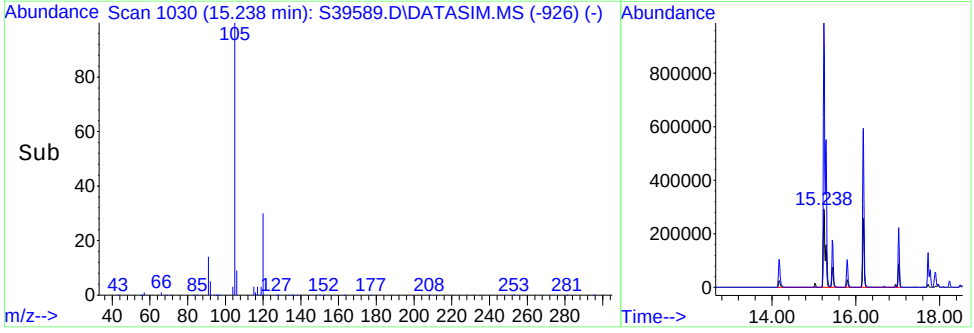

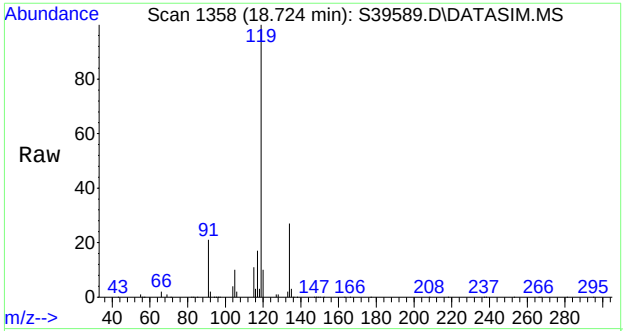


#11
C4-Benzenes
Concen: 20797.866 ng/mL m
RT: 18.724 min Scan# 1358
Delta R.T. -1.833 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:134 Resp: 1080942

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 134 | 100 | | |
| 91 | 214.9 | 42.2 | 63.4# |

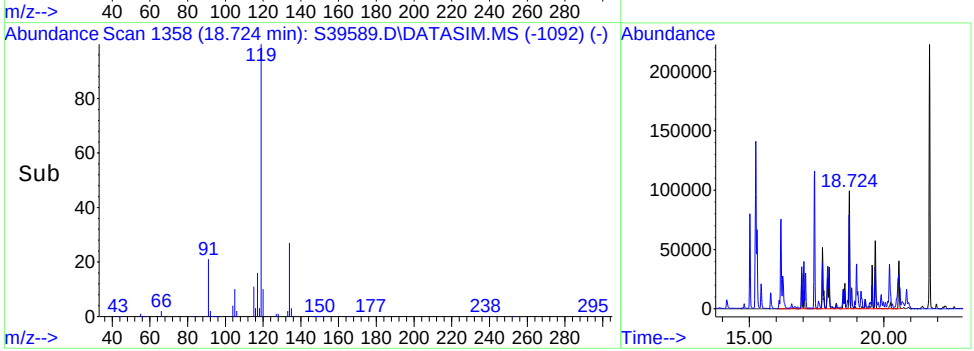


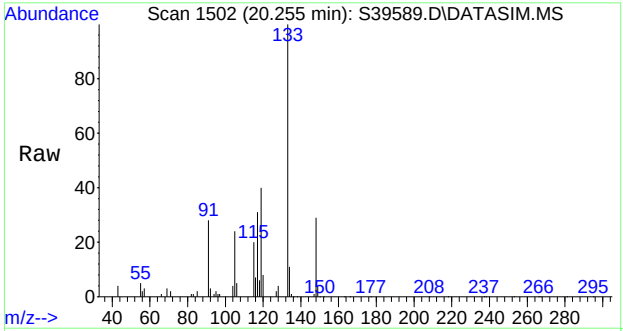


#12
C5-Benzenes
Concen: 5673.485 ng/mL m
RT: 20.255 min Scan# 1502
Delta R.T. -0.004 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:148 Resp: 294872

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 148 | 100 | | |
| 133 | 366.3 | 139.4 | 209.2# |

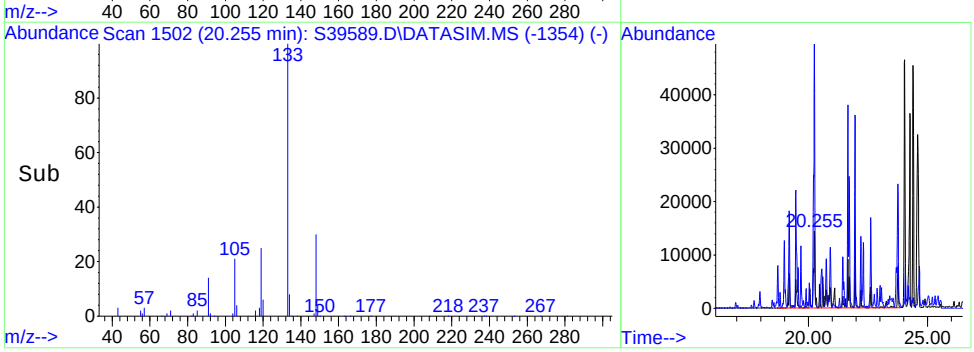

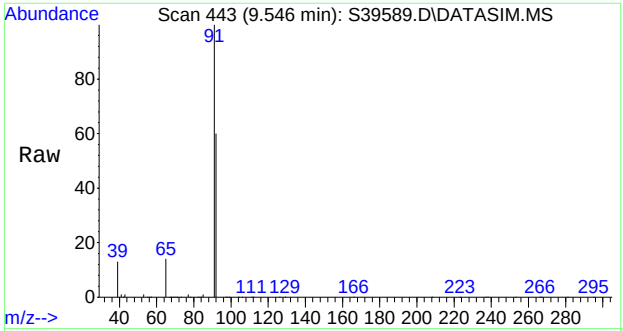


#16
Toluene
Concen: 10407.402 ng/mL
RT: 9.546 min Scan# 443
Delta R.T. -0.009 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion: 91 Resp: 674295

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 91 | 100 | | |
| 92 | 59.2 | 46.6 | 70.0 |

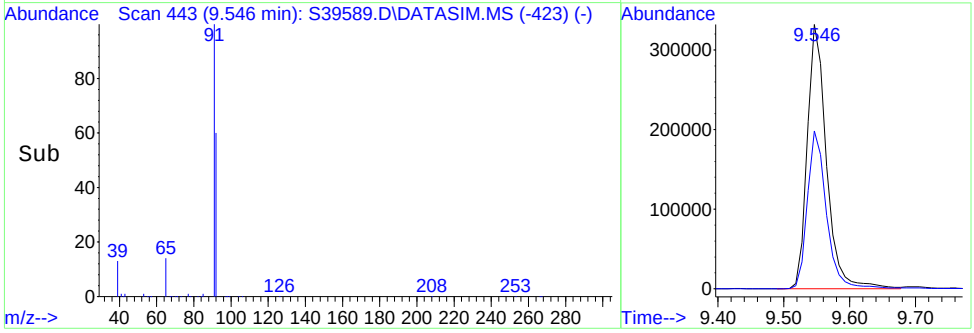


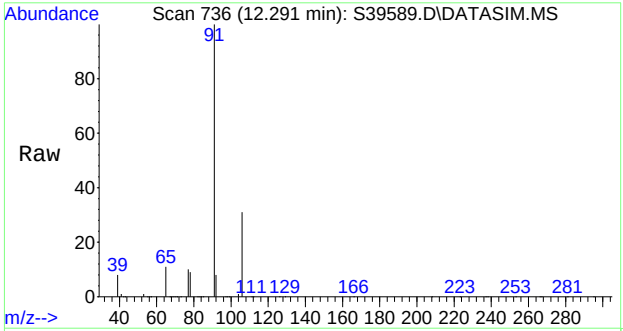


#18
Ethylbenzene
Concen: 37706.797 ng/mL
RT: 12.291 min Scan# 736
Delta R.T. -0.019 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion: 91 Resp: 2716016

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 91 | 100 | | |
| 106 | 30.7 | 23.0 | 34.4 |

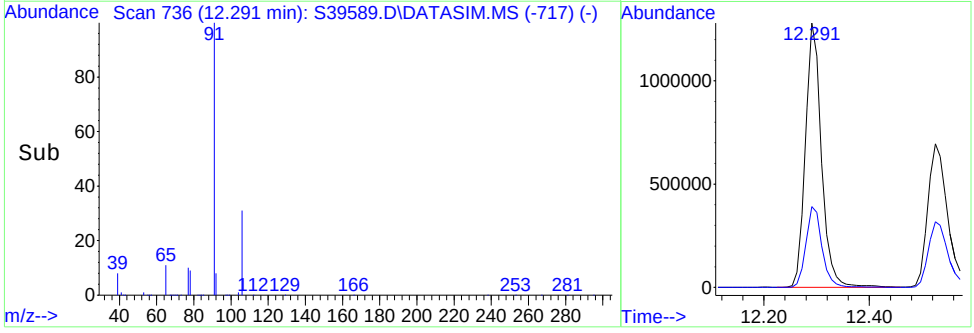

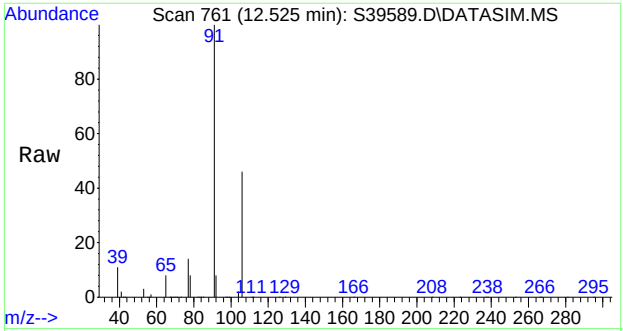


#19
m,p-xylene
Concen: 31031.188 ng/mL
RT: 12.525 min Scan# 761
Delta R.T. -0.028 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion: 91 Resp: 1821576

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 91 | 100 | | |
| 106 | 45.9 | 35.8 | 53.6 |

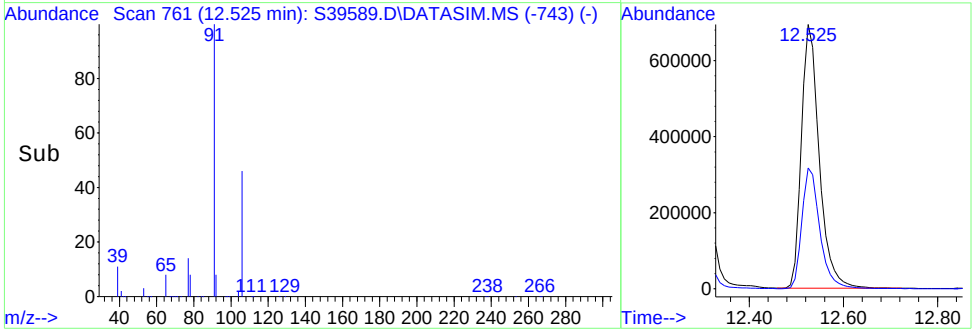





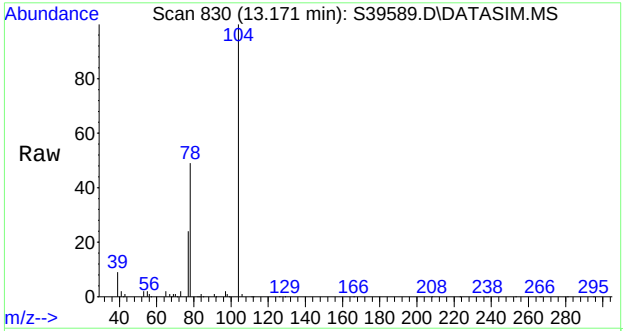


#20
Styrene
Concen: 1535.115 ng/mL
RT: 13.171 min Scan# 830
Delta R.T. -0.009 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:104 Resp: 75002

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 104 | 100 | | |
| 78 | 49.5 | 40.3 | 60.5 |

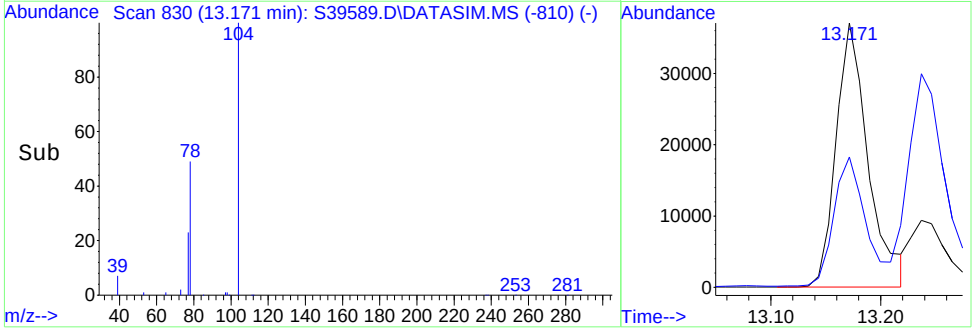

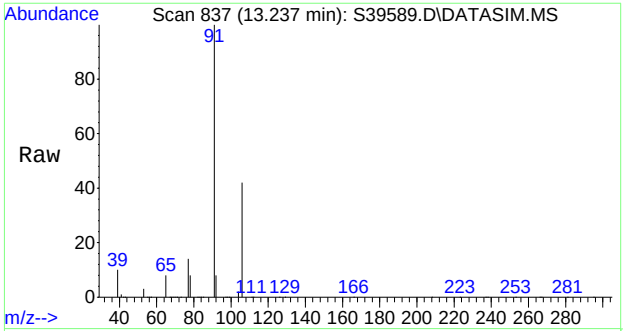


#21
o-Xylene
Concen: 15866.391 ng/mL
RT: 13.237 min Scan# 837
Delta R.T. -0.019 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion: 91 Resp: 953493

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 91 | 100 | | |
| 106 | 42.7 | 34.5 | 51.7 |

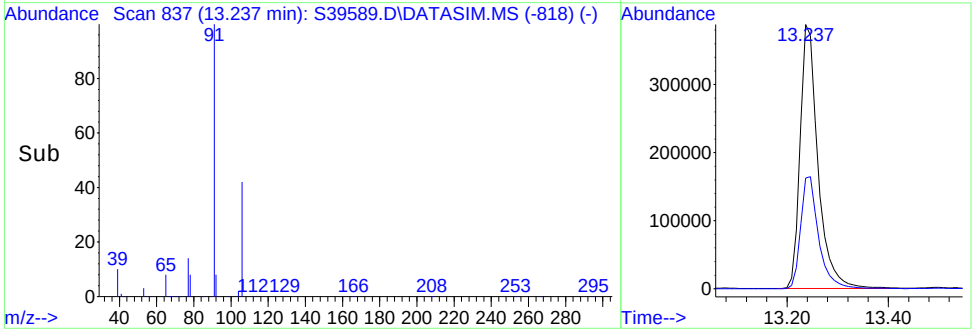





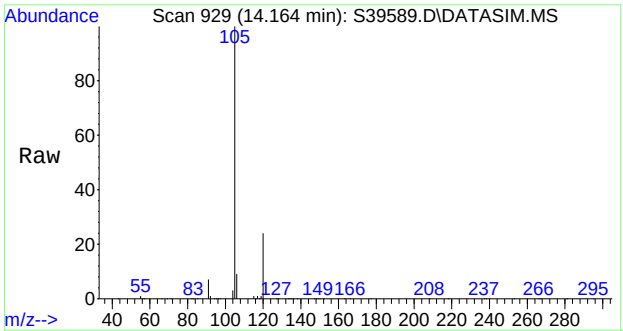


#22
Isopropylbenzene
Concen: 4392.178 ng/mL
RT: 14.164 min Scan# 929
Delta R.T. -0.011 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:105 Resp: 296388

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 105 | 100 | | |
| 120 | 24.3 | 19.2 | 28.8 |

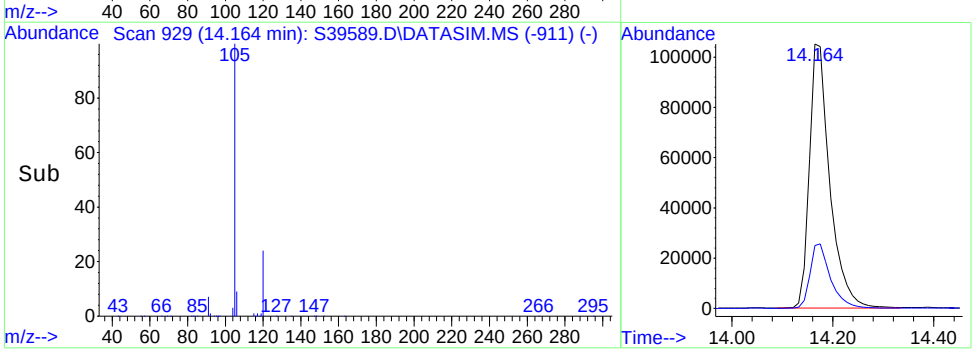

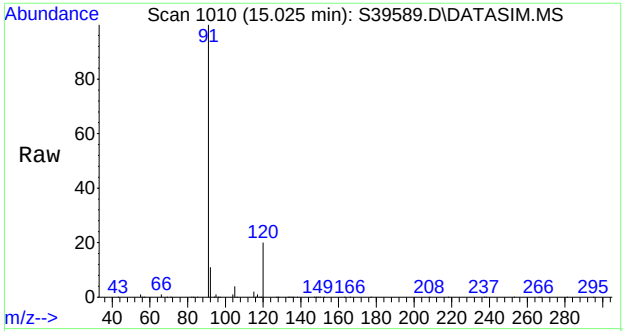


#23
n-Propylbenzene
Concen: 1885.876 ng/mL
RT: 15.025 min Scan# 1010
Delta R.T. -0.011 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion: 91 Resp: 160793

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 91 | 100 | | |
| 120 | 21.0 | 16.8 | 25.2 |

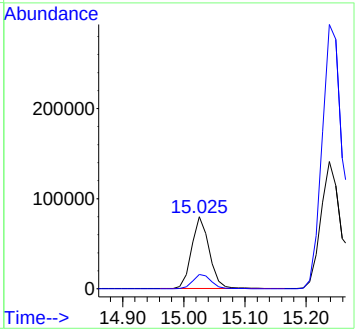


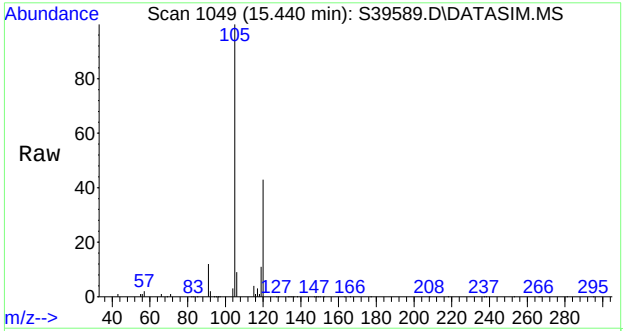


#24
1,3,5-Trimethylbenzene
Concen: 7128.013 ng/mL
RT: 15.440 min Scan# 1049
Delta R.T. -0.011 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:105 Resp: 434476

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 105 | 100 | | |
| 120 | 43.7 | 33.5 | 50.3 |

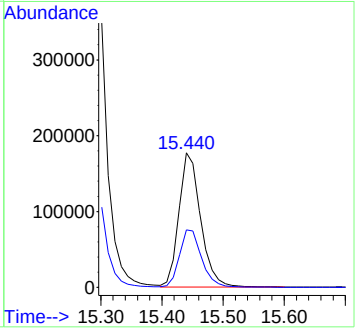

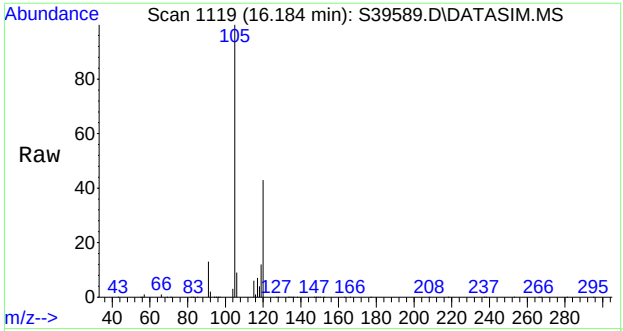


#27
1,2,4-Trimethylbenzene
Concen: 21564.033 ng/mL
RT: 16.184 min Scan# 1119
Delta R.T. -0.011 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:105 Resp: 1366366

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 105 | 100 | | |
| 120 | 41.9 | 35.3 | 52.9 |

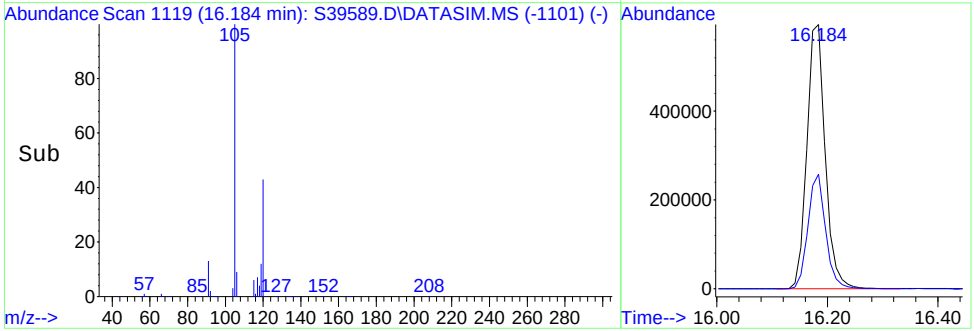





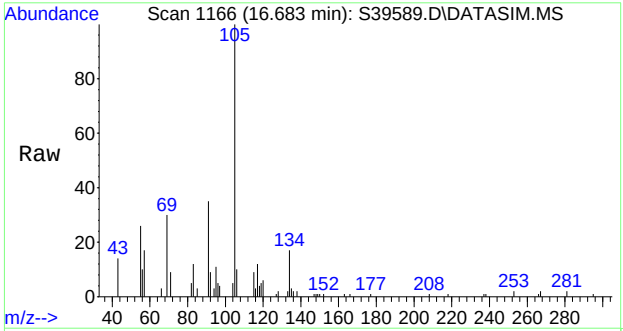


#28
sec-Butylbenzene
Concen: 147.302 ng/mL
RT: 16.683 min Scan# 1166
Delta R.T. 0.011 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:105 Resp: 11096

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 105 | 100 | | |
| 134 | 16.6 | 13.0 | 19.4 |

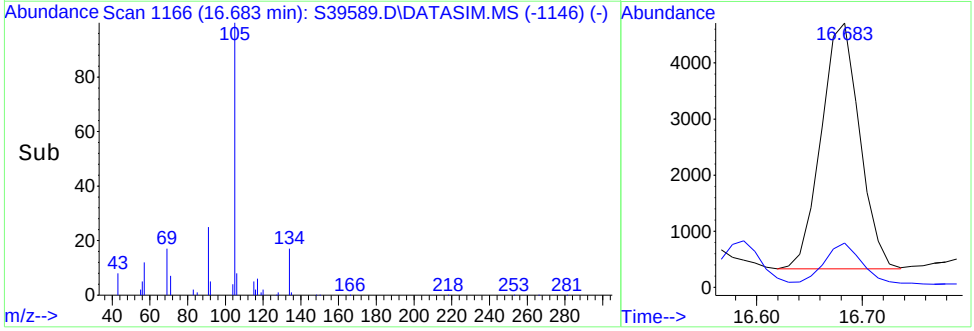

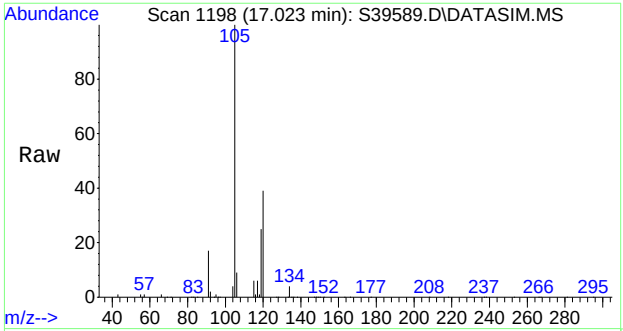


#29
1,2,3-Trimethylbenzene
Concen: 7216.047 ng/mL
RT: 17.023 min Scan# 1198
Delta R.T. -0.011 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:105 Resp: 458840

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 105 | 100 | | |
| 120 | 41.3 | 34.8 | 52.2 |

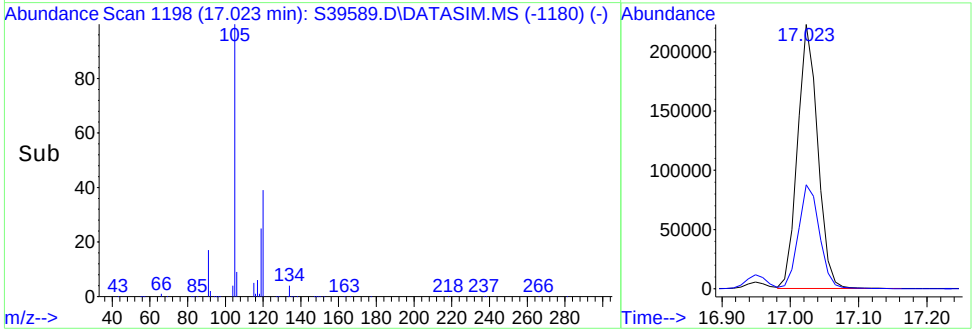


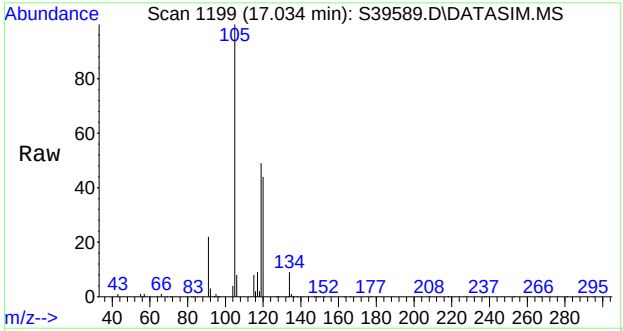


#30
p-Isopropyltoluene
Concen: 2928.572 ng/mL m
RT: 17.034 min Scan# 1199
Delta R.T. -0.011 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:119 Resp: 191618

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 119 | 100 | | |
| 134 | 18.4 | 17.4 | 26.0 |

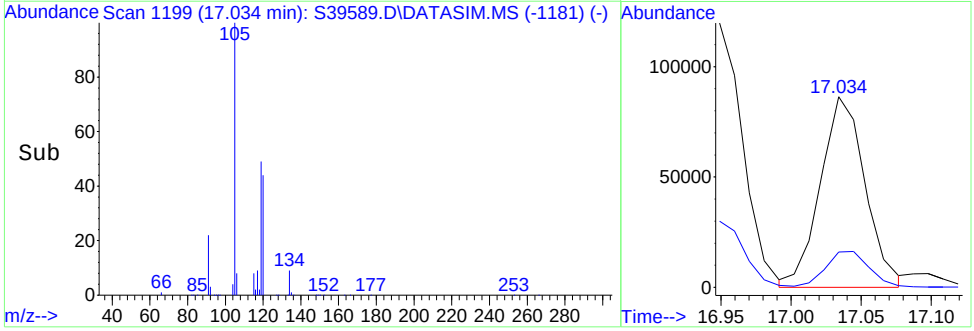

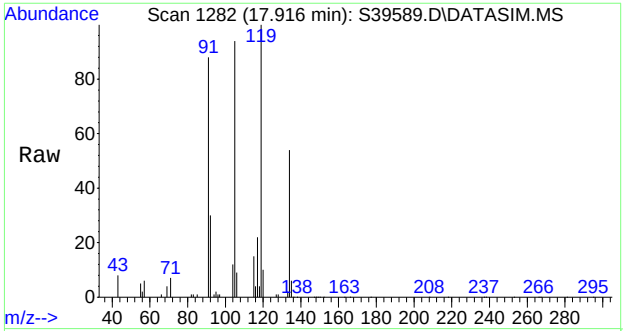


#33
n-Butylbenzene
Concen: 1466.114 ng/mL
RT: 17.916 min Scan# 1282
Delta R.T. -0.011 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion: 91 Resp: 96330

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 91 | 100 | | |
| 134 | 71.8 | 16.7 | 25.1# |

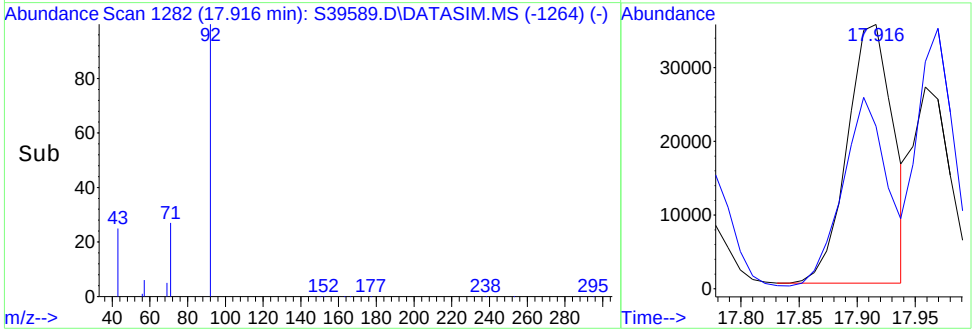


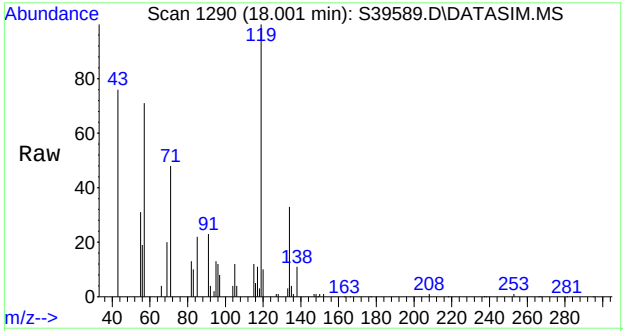


#34
trans-Decalin
Concen: 241.537 ng/mL m
RT: 18.001 min Scan# 1290
Delta R.T. -0.000 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion: 96 Resp: 2995

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 96 | 100 | | |
| 138 | 106.9 | 91.8 | 137.6 |

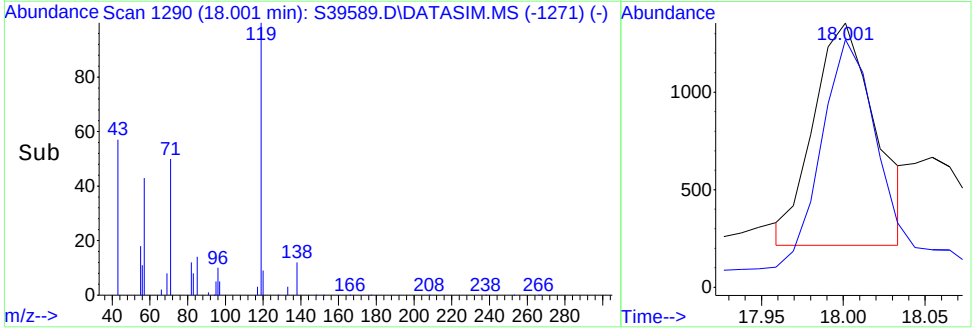

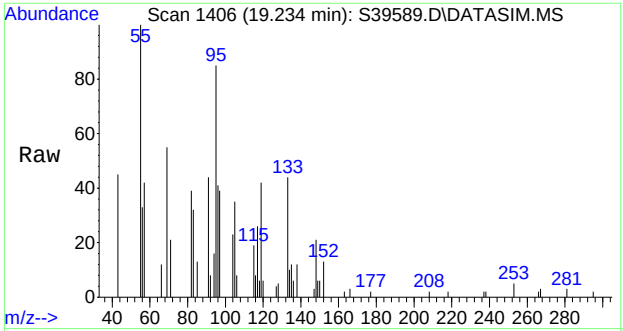


#35
cis-Decalin
Concen: 113.380 ng/mL m
RT: 19.234 min Scan# 1406
Delta R.T. -0.000 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion: 96 Resp: 1935

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 96 | 100 | | |
| 138 | 29.2 | 54.1 | 81.1# |

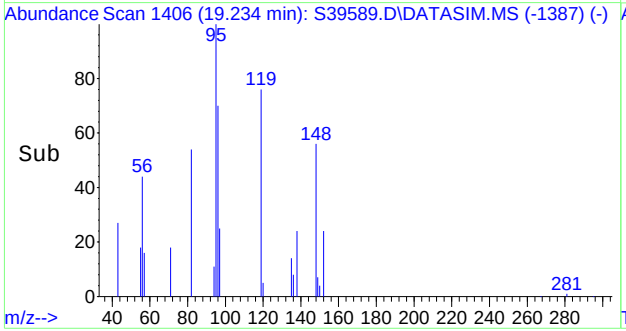


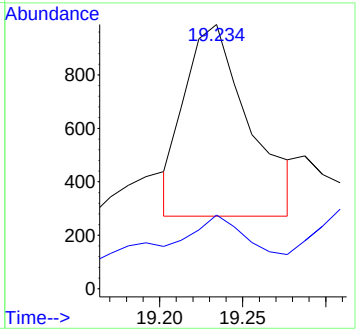


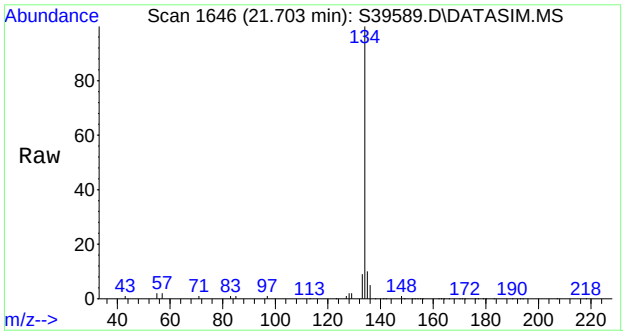


#40
Benzo(b)thiophene
Concen: 6507.297 ng/mL
RT: 21.703 min Scan# 1646
Delta R.T. 0.009 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:134 Resp: 469021

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 134 | 100 | | |
| 136 | 4.8 | 4.4 | 6.6 |

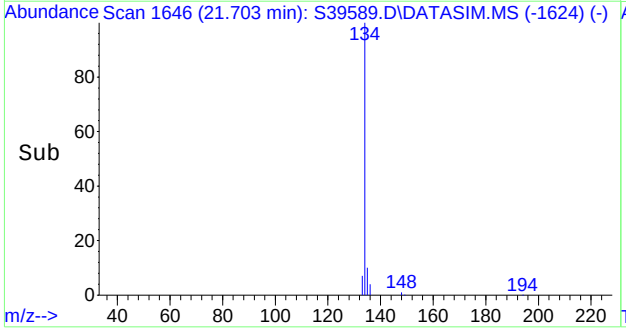


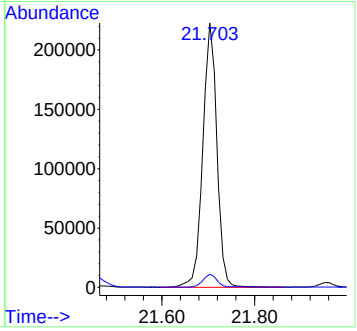

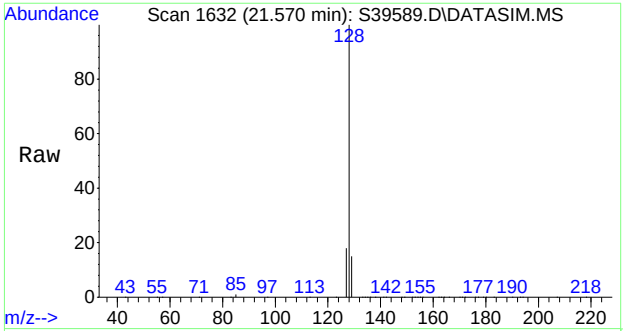


#51
Naphthalene
Concen: 400467.474 ng/mL
RT: 21.570 min Scan# 1632
Delta R.T. 0.105 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:128 Resp:35232307

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 128 | 100 | | |
| 127 | 16.0 | 10.2 | 15.2# |

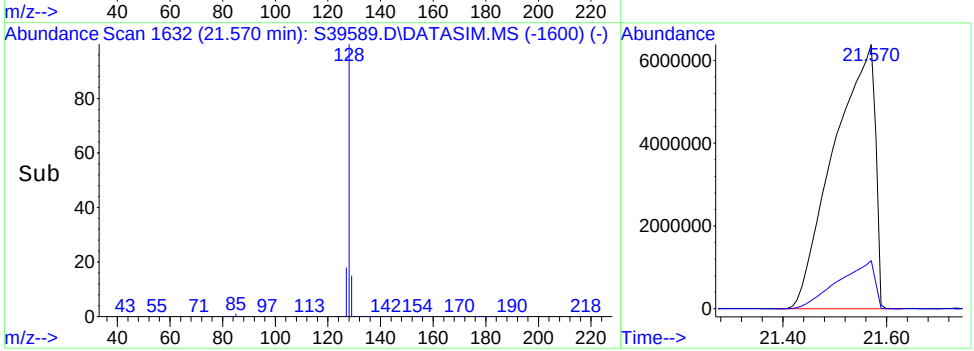





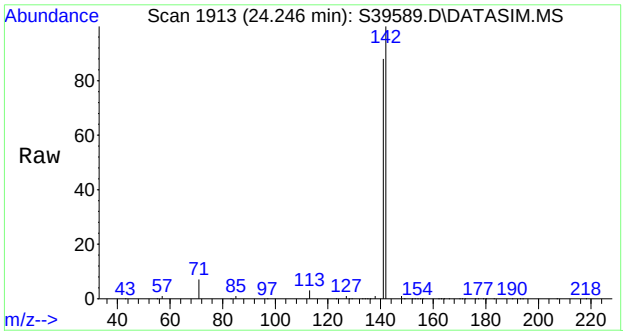


#52
2-Methylnaphthalene
Concen: 239692.728 ng/mL
RT: 24.246 min Scan# 1913
Delta R.T. 0.076 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:142 Resp:13620909

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 142 | 100 | | |
| 141 | 86.9 | 68.6 | 102.8 |

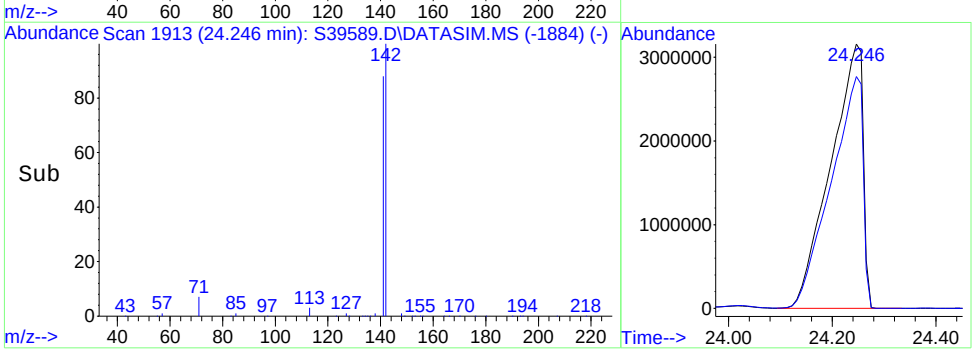

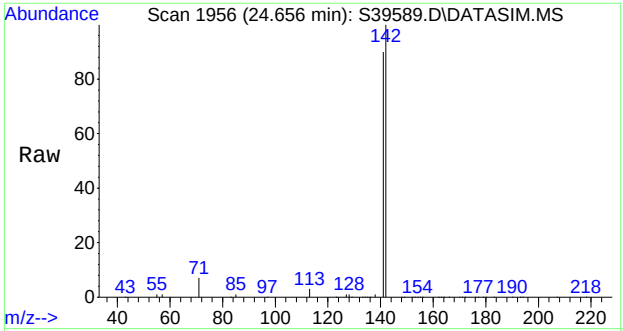


#53
1-Methylnaphthalene
Concen: 180012.505 ng/mL
RT: 24.656 min Scan# 1956
Delta R.T. 0.067 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:142 Resp: 9054777

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 142 | 100 | | |
| 141 | 89.6 | 71.6 | 107.4 |

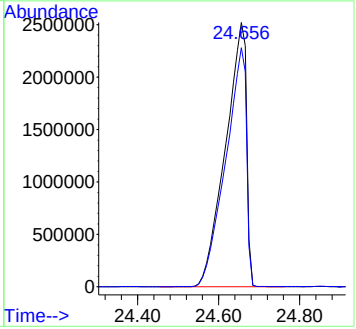


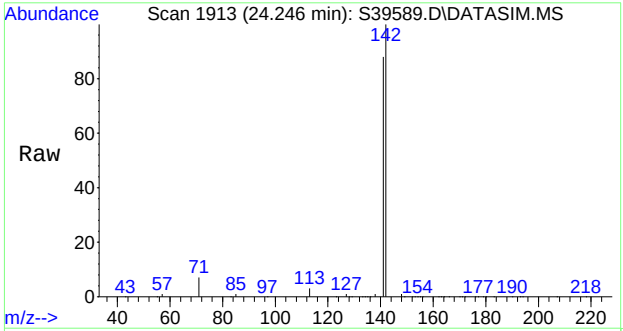


#54
C1-Naphthalenes
Concen: 257929.700 ng/mL m
RT: 24.246 min Scan# 1913
Delta R.T. 0.084 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:142 Resp:22692126

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 142 | 100 | | |
| 141 | 88.0 | 68.8 | 103.2 |

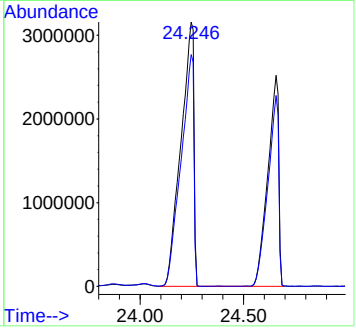

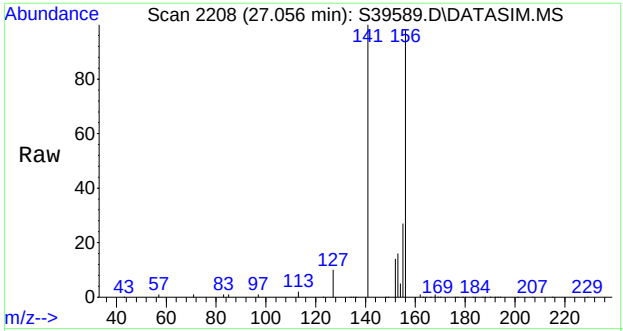


#55
C2-Naphthalenes
Concen: 148714.492 ng/mL m
RT: 27.056 min Scan# 2208
Delta R.T. -0.030 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:156 Resp:13083596

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 156 | 100 | | |
| 141 | 114.8 | 65.8 | 98.8# |

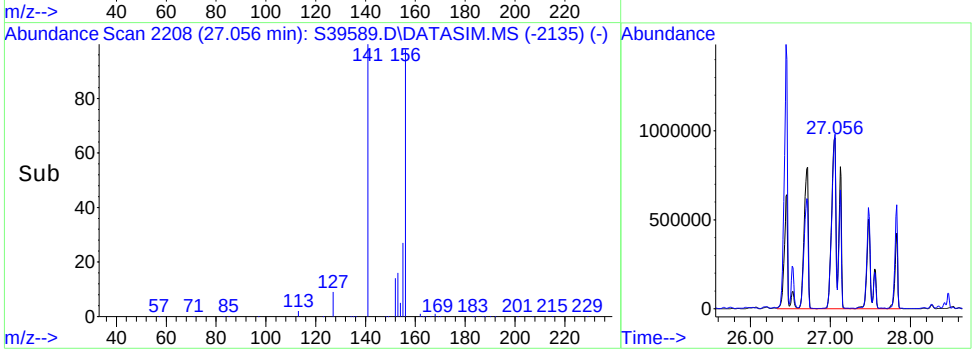





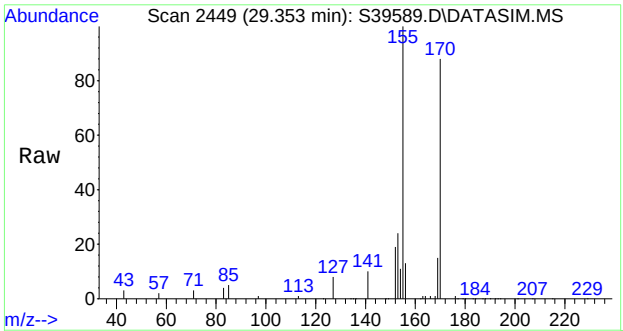


#56
C3-Naphthalenes
Concen: 50364.075 ng/mL m
RT: 29.353 min Scan# 2449
Delta R.T. 0.009 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:170 Resp: 4430928

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 170 | 100 | | |
| 155 | 149.9 | 87.4 | 131.0# |

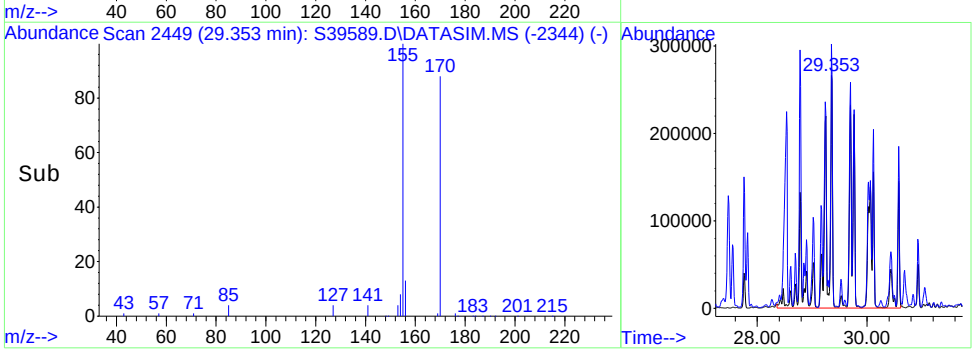

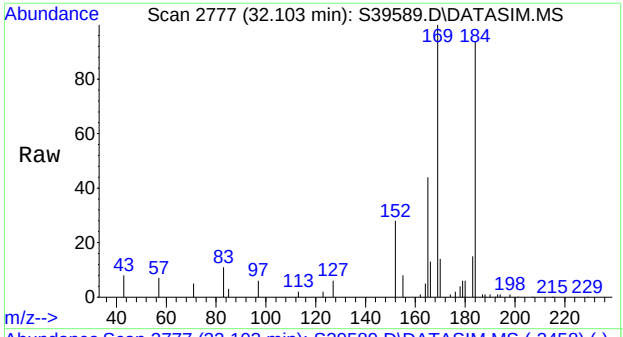


#57
C4-Naphthalenes
Concen: 13798.230 ng/mL m
RT: 32.103 min Scan# 2777
Delta R.T. 0.023 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:184 Resp: 1213940

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 184 | 100 | | |
| 169 | 217.6 | 85.9 | 128.9# |

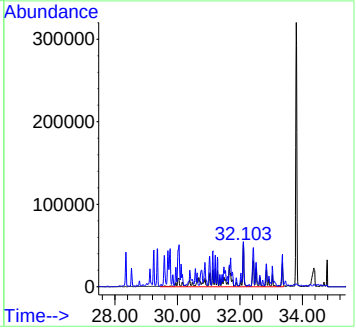


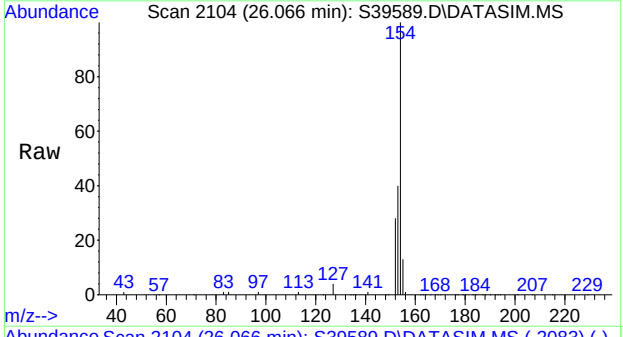


#58
Biphenyl
Concen: 26143.722 ng/mL
RT: 26.066 min Scan# 2104
Delta R.T. -0.000 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:154 Resp: 1732006

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 154 | 100 | | |
| 153 | 40.1 | 31.0 | 46.6 |

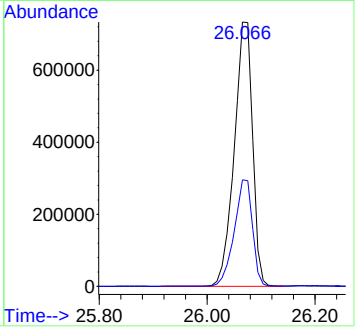

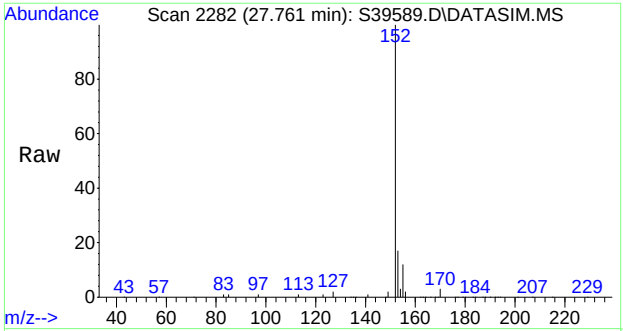


#59
Acenaphthylene
Concen: 32901.505 ng/mL
RT: 27.761 min Scan# 2282
Delta R.T. 0.029 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:152 Resp: 2765813

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 152 | 100 | | |
| 153 | 18.5 | 10.3 | 15.5# |

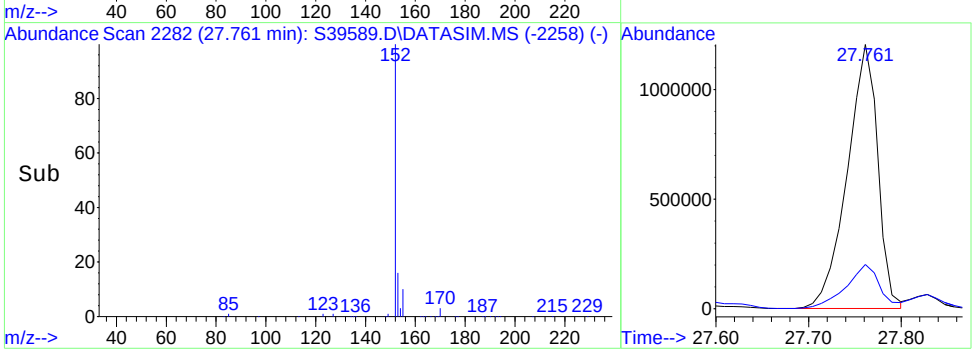


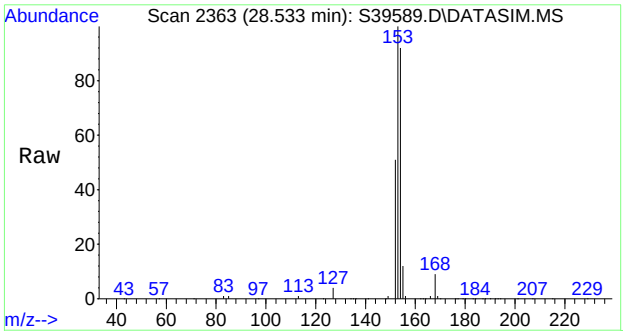


#60
Acenaphthene
Concen: 123589.659 ng/mL
RT: 28.533 min Scan# 2363
Delta R.T. 0.067 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:154 Resp: 5933529

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 154 | 100 | | |
| 153 | 107.6 | 86.6 | 129.8 |

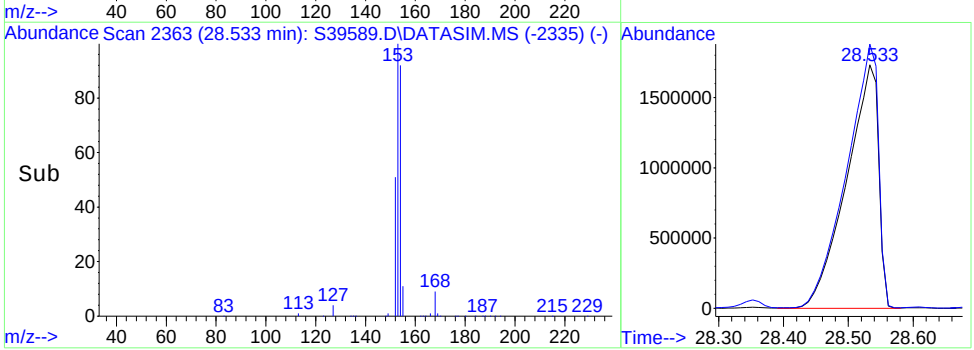

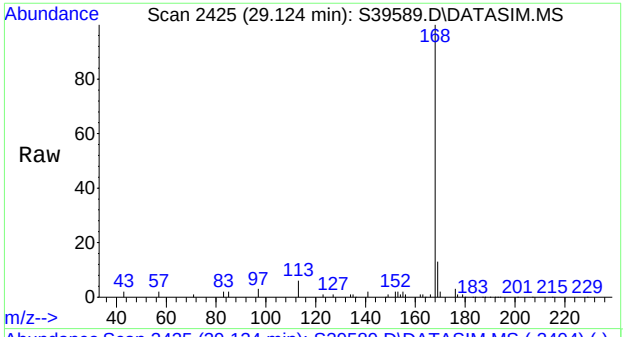


#61
Dibenzofuran
Concen: 5216.102 ng/mL m
RT: 29.124 min Scan# 2425
Delta R.T. -0.000 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:168 Resp: 359117

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 168 | 100 | | |
| 169 | 15.1 | 10.4 | 15.6 |

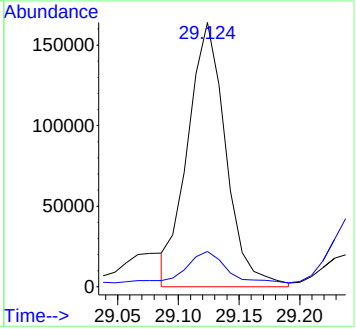


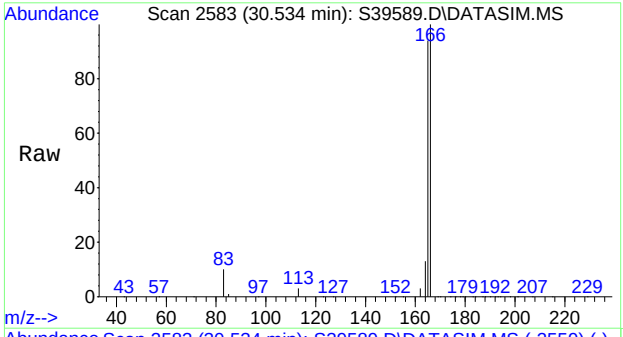


#62
Fluorene
Concen: 58408.310 ng/mL
RT: 30.534 min Scan# 2583
Delta R.T. 0.040 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:166 Resp: 3352114

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 166 | 100 | | |
| 165 | 92.9 | 75.8 | 113.6 |

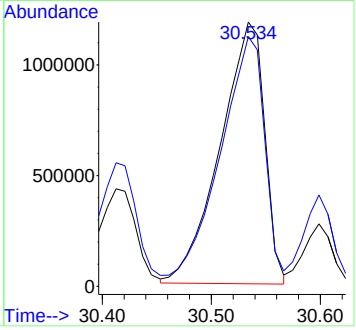

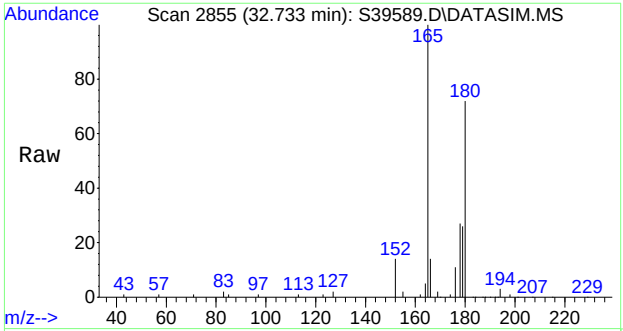


#63
C1-Fluorenes
Concen: 39433.782 ng/mL m
RT: 32.733 min Scan# 2855
Delta R.T. -0.120 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:180 Resp: 2263146

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 180 | 100 | | |
| 165 | 142.7 | 139.8 | 209.6 |

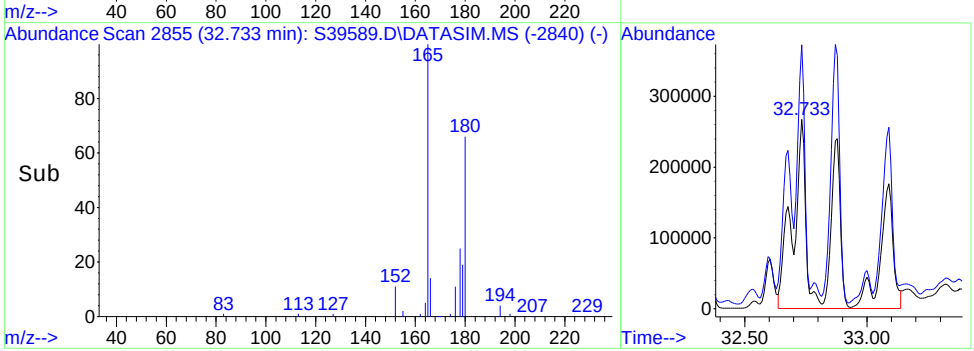


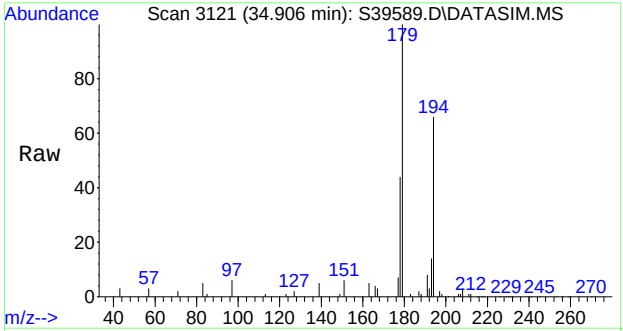


#64
C2-Fluorenes
Concen: 22961.091 ng/mL m
RT: 34.906 min Scan# 3121
Delta R.T. -0.143 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:194 Resp: 1317761

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 194 | 100 | | |
| 179 | 383.4 | 127.9 | 191.9# |

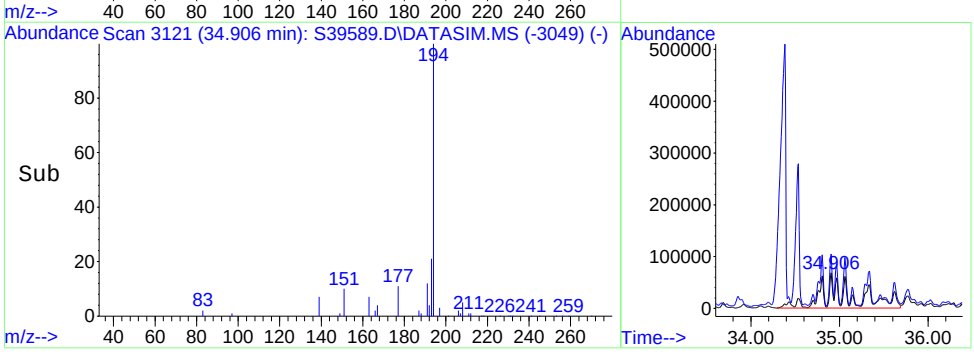



SGS ACCUTEST MC46549

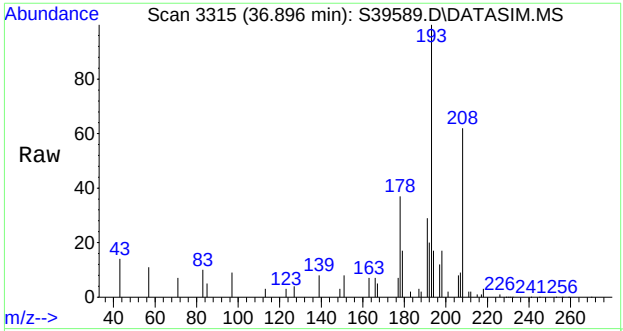


#65
C3-Fluorenes
Concen: 8246.617 ng/mL m
RT: 36.896 min Scan# 3315
Delta R.T. 0.011 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:208 Resp: 473282

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 208 | 100 | | |
| 178 | 72.9 | 59.4 | 89.2 |

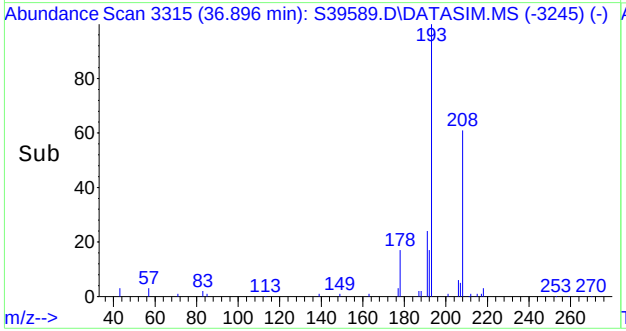


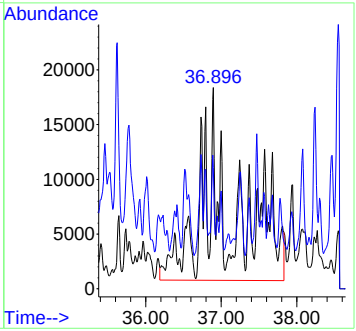


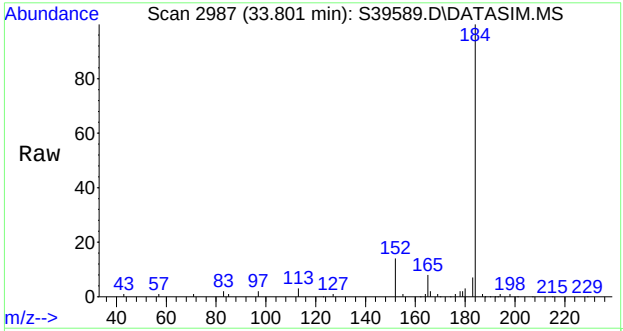


#66
Dibenzothiophene
Concen: 8958.187 ng/mL
RT: 33.801 min Scan# 2987
Delta R.T. 0.016 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:184 Resp: 718334

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 184 | 100 | | |
| 152 | 12.9 | 8.4 | 12.6# |

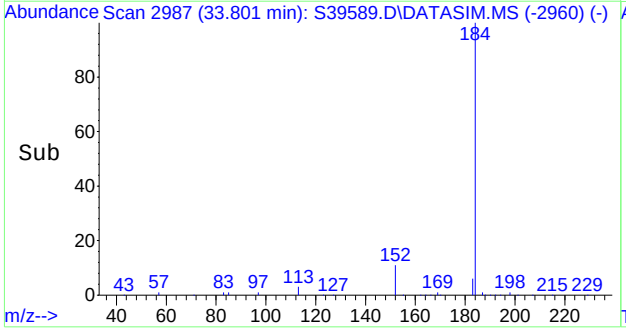


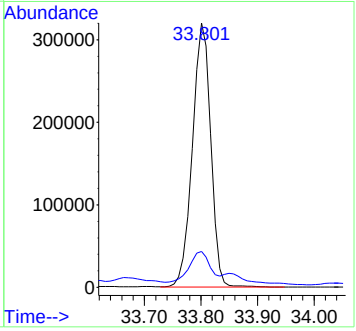

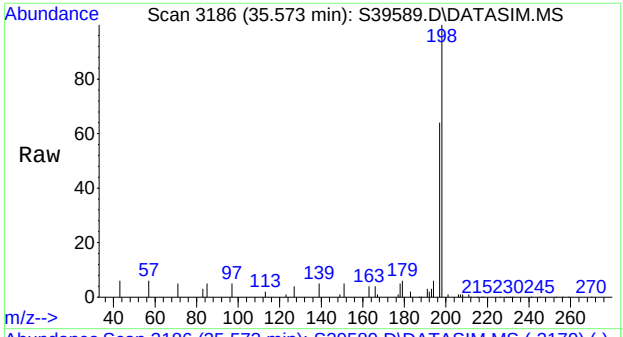


#67
C1-Dibenzothiophenes (unadj)
Concen: 10784.945 ng/mL m
RT: 35.573 min Scan# 3186
Delta R.T. 0.011 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:198 Resp: 864817

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 198 | 100 | | |
| 197 | 70.0 | 51.9 | 77.9 |

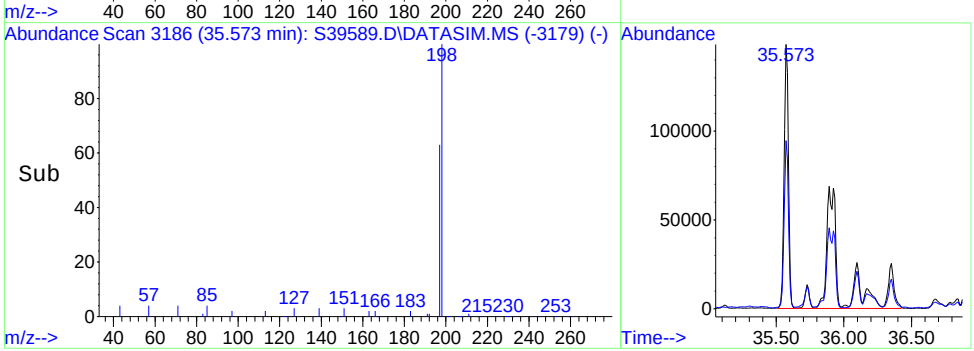


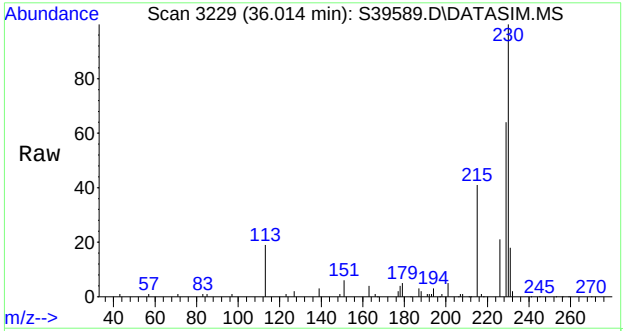


#68
C1-Dibenzothiophenes (OTP)
Concen: 22.273 ng/mL m
RT: 36.014 min Scan# 3229
Delta R.T. 0.029 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:198 Resp: 1786

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 198 | 100 | | |
| 197 | 12.3 | 10.6 | 15.8 |

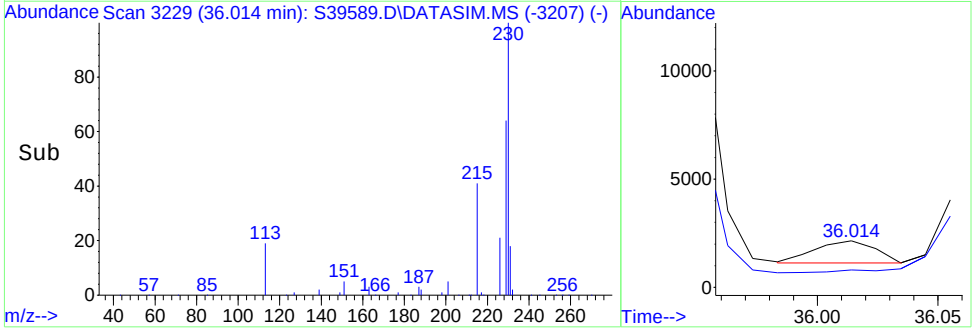

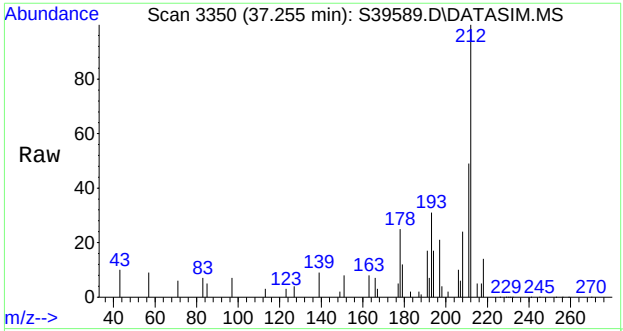


#69
C2-Dibenzothiophenes
Concen: 7638.866 ng/mL m
RT: 37.255 min Scan# 3350
Delta R.T. -0.358 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:212 Resp: 612541

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 212 | 100 | | |
| 197 | 42.0 | 20.1 | 30.1# |

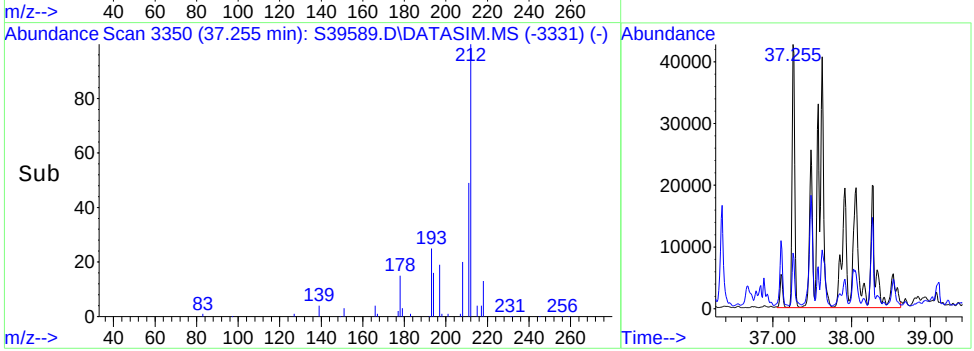





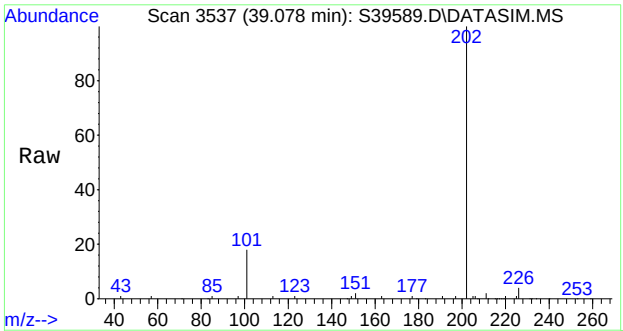


#70
C3-Dibenzothiophenes
Concen: 3514.129 ng/mL m
RT: 39.078 min Scan# 3537
Delta R.T. 0.020 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:226 Resp: 281789

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 226 | 100 | | |
| 211 | 75.6 | 51.8 | 77.6 |

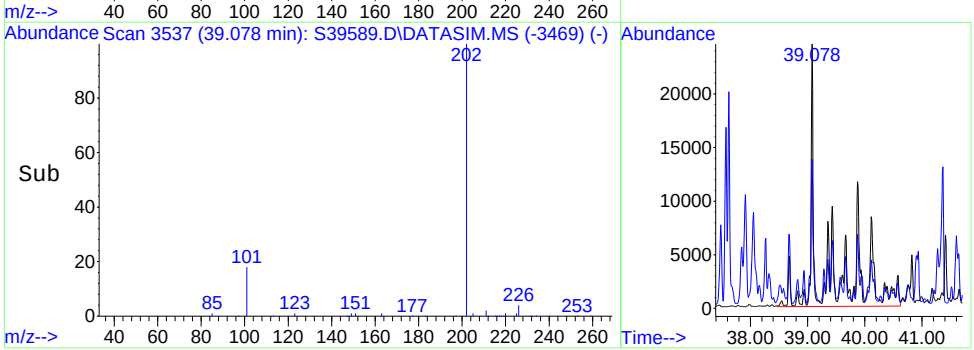








SGS ACCUTEST MC46549

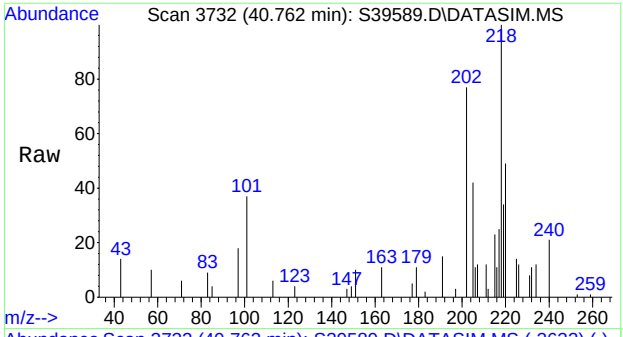


#71
C4-Dibenzothiophenes
Concen: 1057.123 ng/mL m
RT: 40.762 min Scan# 3732
Delta R.T. 0.004 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:240 Resp: 84768

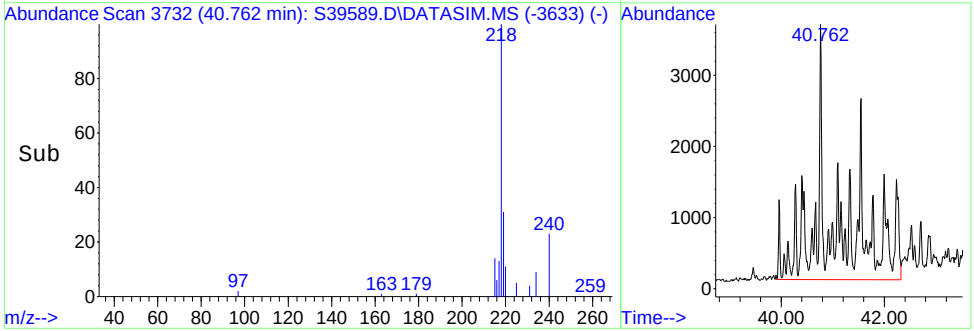


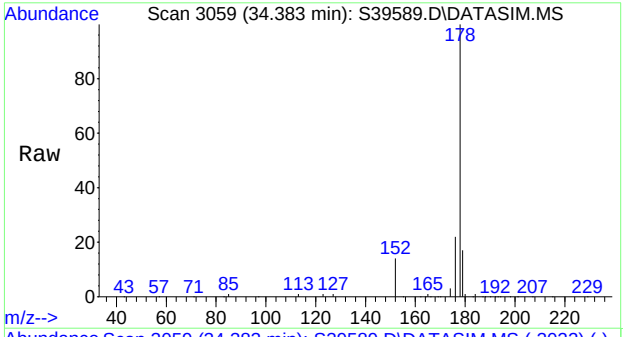


#72
Phenanthrene
Concen: 174953.949 ng/mL
RT: 34.383 min Scan# 3059
Delta R.T. 0.097 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:178 Resp:13024428

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 178 | 100 | | |
| 179 | 16.4 | 11.9 | 17.9 |

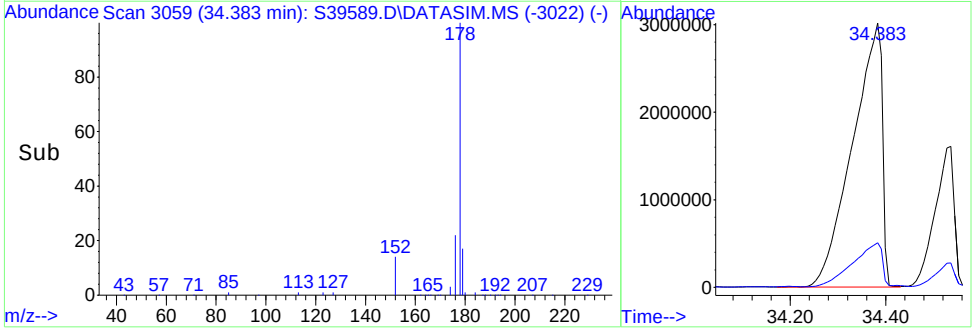

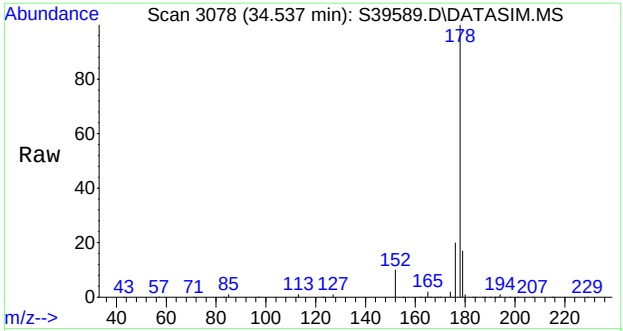


#73
Anthracene
Concen: 63898.828 ng/mL
RT: 34.537 min Scan# 3078
Delta R.T. 0.073 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:178 Resp: 4454378

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 178 | 100 | | |
| 179 | 16.9 | 12.0 | 18.0 |

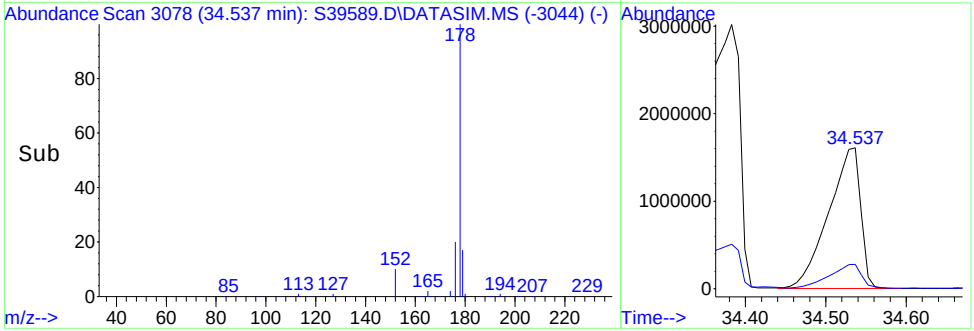


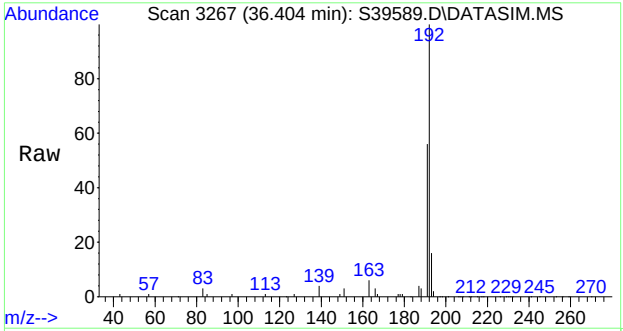


#74
C1-Phenanthrenes/anthracenes
Concen: 119579.445 ng/mL m
RT: 36.404 min Scan# 3267
Delta R.T. -0.297 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:192 Resp: 8902079

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 192 | 100 | | |
| 191 | 57.0 | 45.0 | 67.4 |

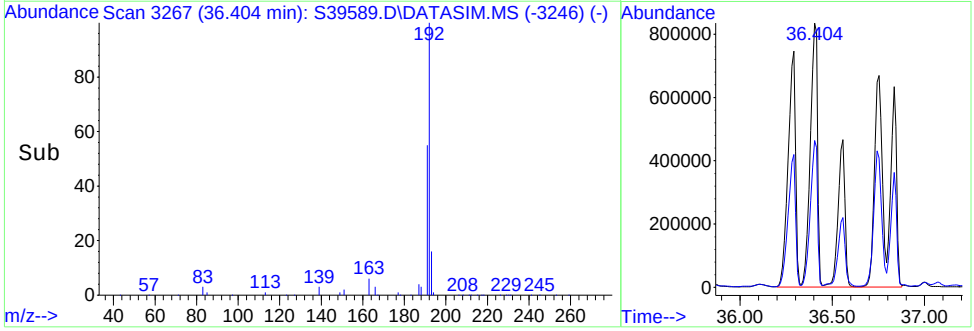

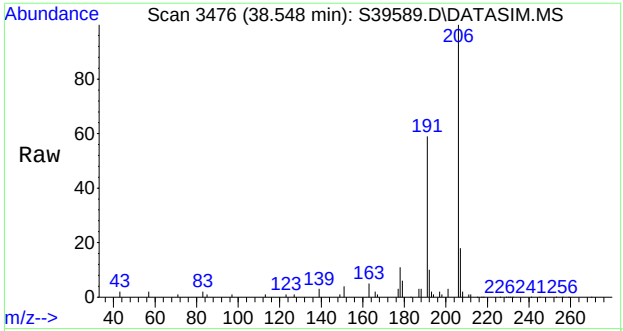


#75
C2-Phenanthrenes/anthracenes (unadj)
Concen: 46917.161 ng/mL m
RT: 38.548 min Scan# 3476
Delta R.T. 0.022 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:206 Resp: 3492743

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 206 | 100 | | |
| 191 | 59.6 | 47.0 | 70.4 |

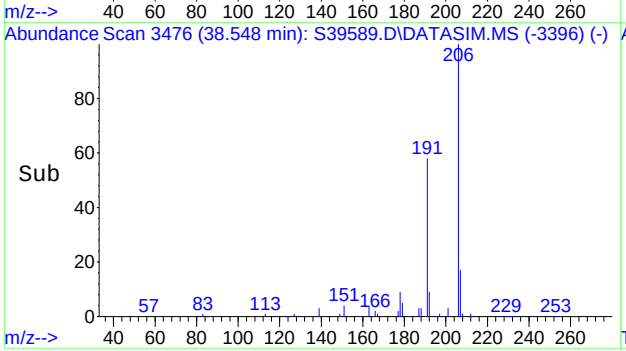


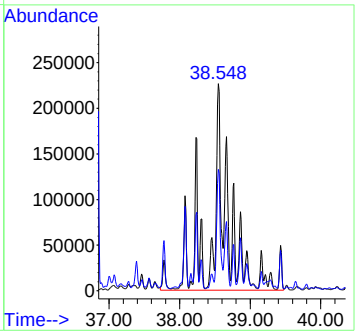


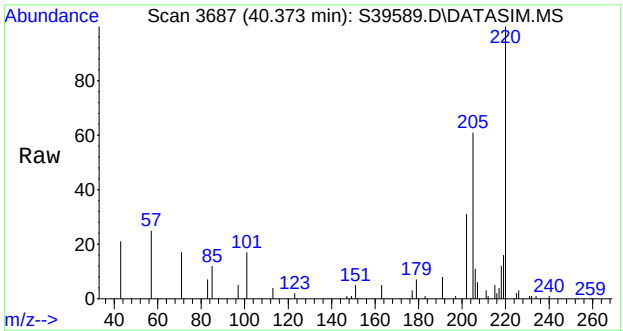


#77
C3-Phenanthrenes/anthracenes
Concen: 12168.854 ng/mL m
RT: 40.373 min Scan# 3687
Delta R.T. 0.012 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:220 Resp: 905909

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 220 | 100 | | |
| 205 | 85.6 | 49.8 | 74.6# |

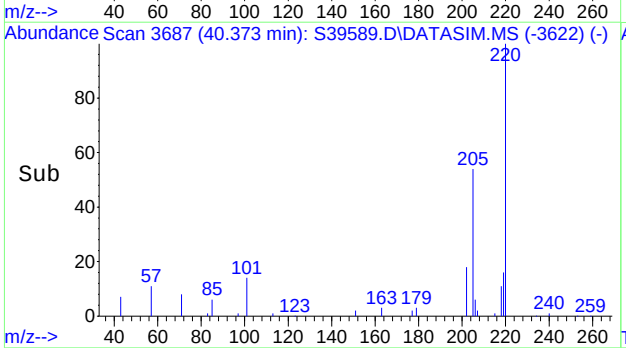


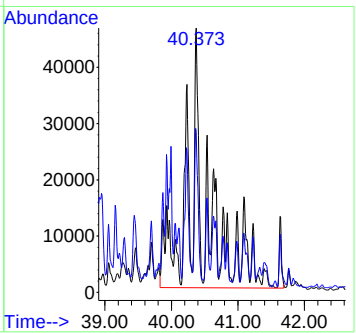





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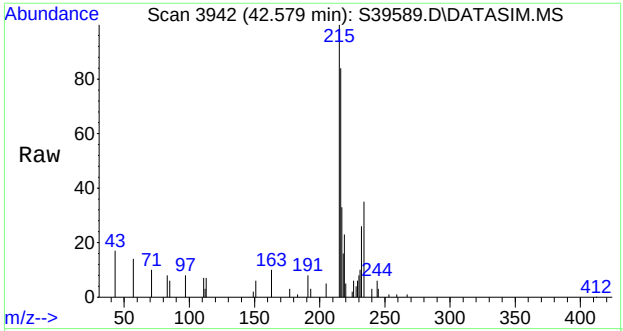


#78
C4-Phenanthrenes/anthracenes
Concen: 2871.104 ng/mL m
RT: 42.579 min Scan# 3942
Delta R.T. 0.039 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:234 Resp: 213739

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 234 | 100 | | |
| 219 | 120.8 | 52.1 | 78.1# |

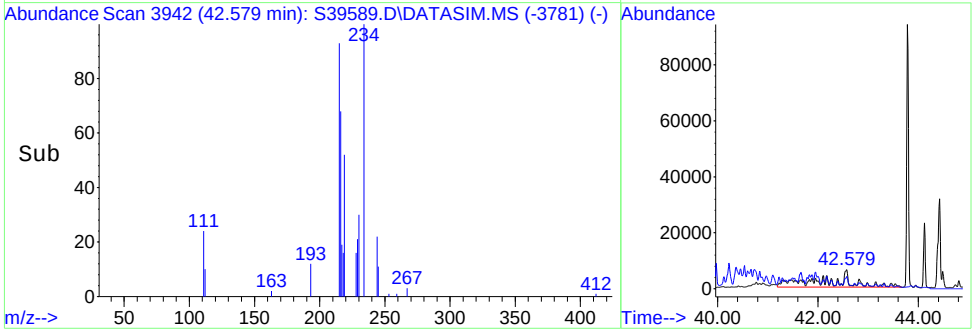


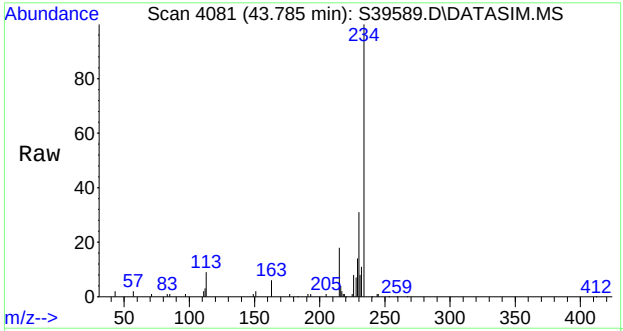


#81
Benzo(b)naphtho(2,1-d)thiophene
Concen: 3190.072 ng/mL
RT: 43.785 min Scan# 4081
Delta R.T. 0.017 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:234 Resp: 221217

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 234 | 100 | | |
| 232 | 11.0 | 7.6 | 11.4 |

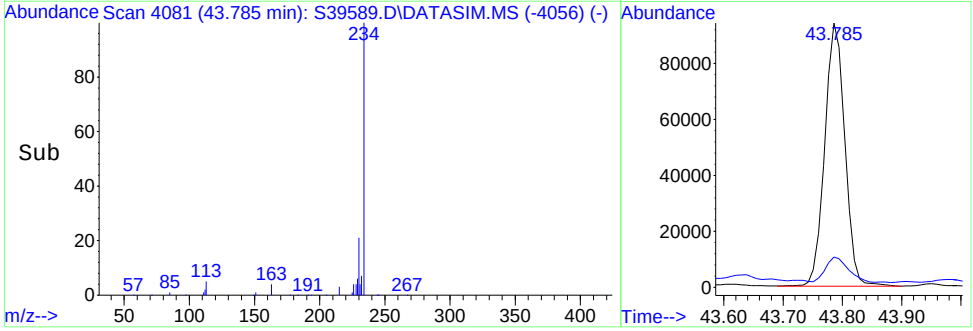

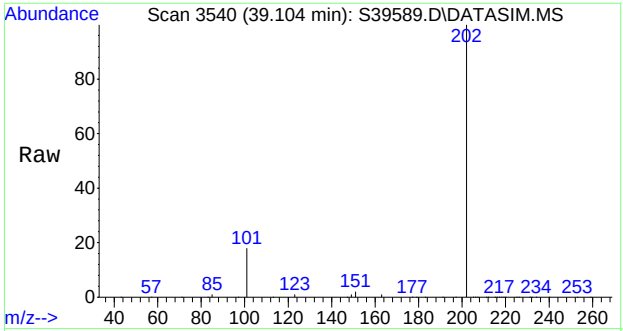


#86
Fluoranthene
Concen: 46548.329 ng/mL
RT: 39.104 min Scan# 3540
Delta R.T. 0.060 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:202 Resp: 3445673

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 202 | 100 | | |
| 101 | 17.1 | 12.6 | 19.0 |

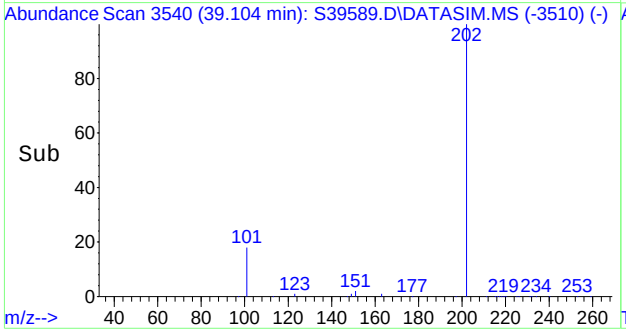


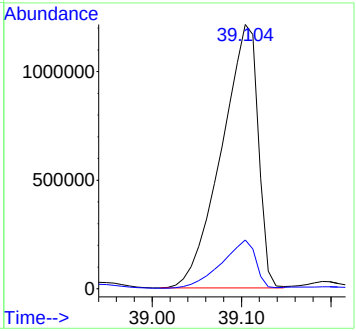


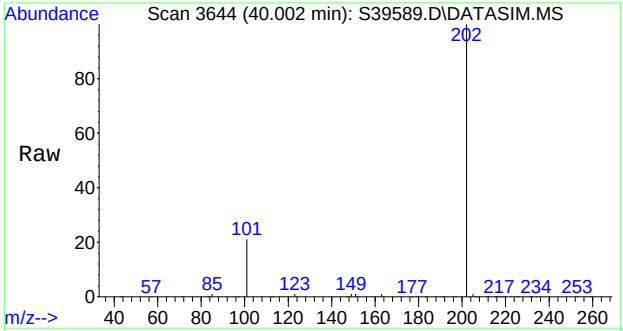


#87
Pyrene
Concen: 76549.059 ng/mL
RT: 40.002 min Scan# 3644
Delta R.T. 0.078 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:202 Resp: 5634466

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 202 | 100 | | |
| 101 | 21.1 | 13.8 | 20.8# |

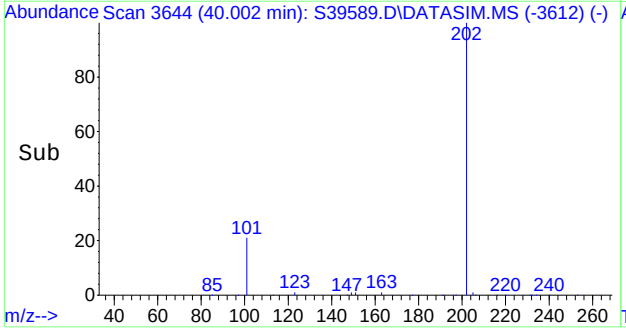


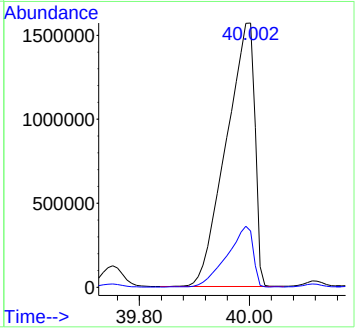

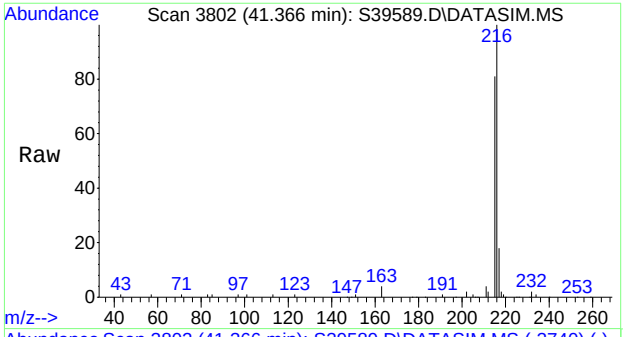


#88
C1-Fluoranthenes/pyrenes
Concen: 72447.746 ng/mL m
RT: 41.366 min Scan# 3802
Delta R.T. 0.038 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:216 Resp: 5332585

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 216 | 100 | | |
| 215 | 87.5 | 74.9 | 112.3 |

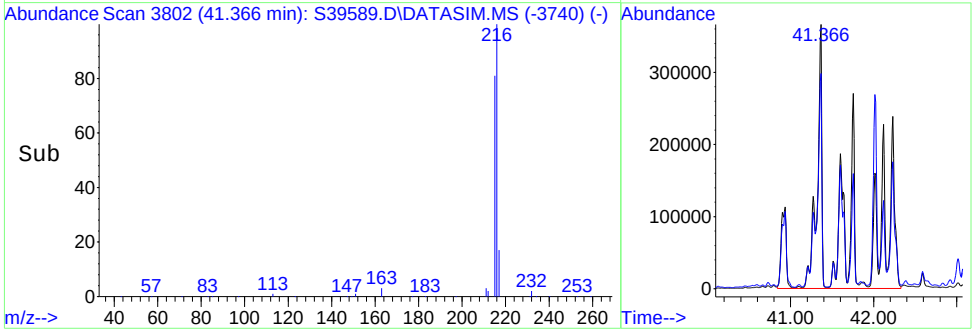


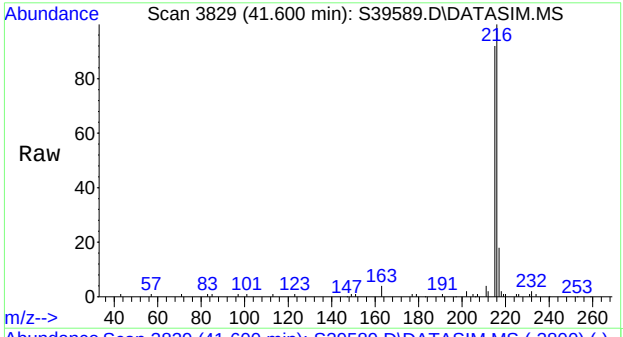


#89
Benzo(b)fluorene
Concen: 7225.000 ng/mL m
RT: 41.600 min Scan# 3829
Delta R.T. 0.030 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:216 Resp: 531803

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 216 | 100 | | |
| 215 | 90.2 | 106.9 | 160.3# |

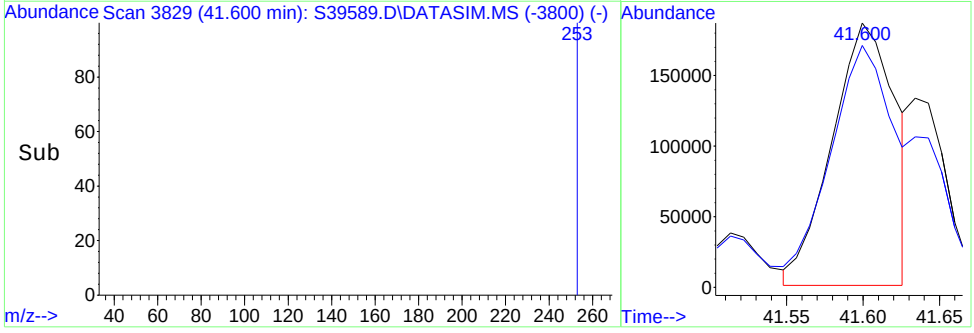

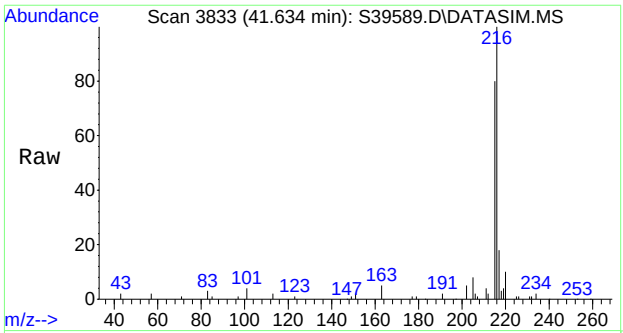


#90
Benzo(c)fluorene
Concen: 2974.447 ng/mL m
RT: 41.634 min Scan# 3833
Delta R.T. 0.021 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:216 Resp: 218937

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 216 | 100 | | |
| 215 | 84.7 | 123.7 | 185.5# |

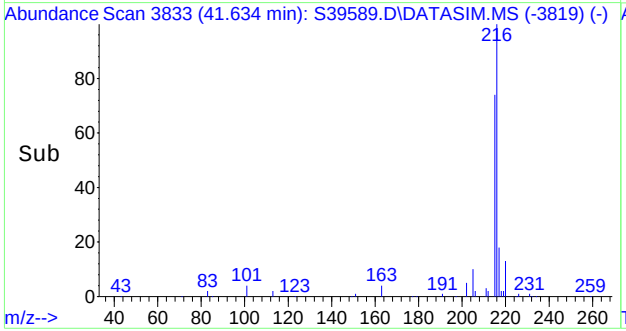


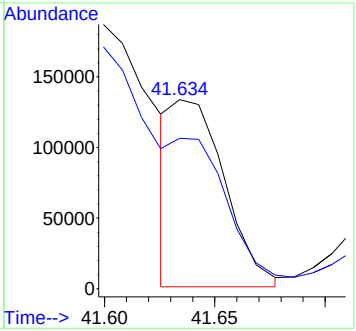


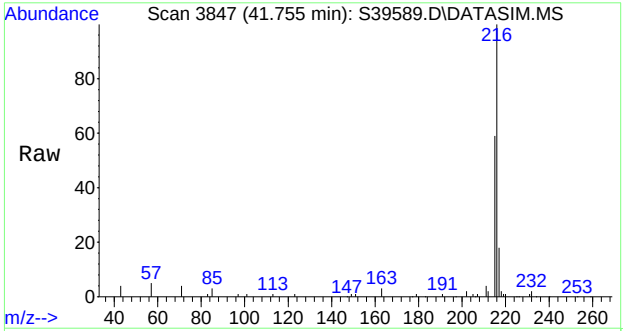


#91
2-Methylpyrene
Concen: 9071.115 ng/mL m
RT: 41.755 min Scan# 3847
Delta R.T. 0.030 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:216 Resp: 667688

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 216 | 100 | | |
| 215 | 52.9 | 84.5 | 126.7# |

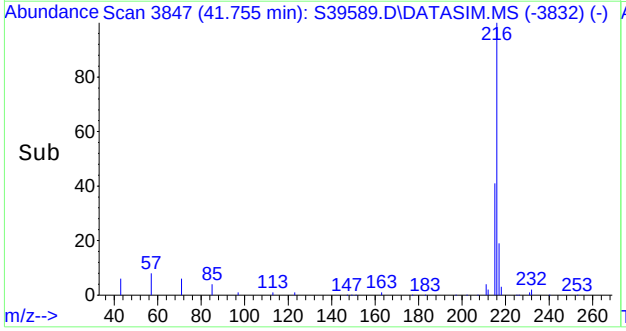


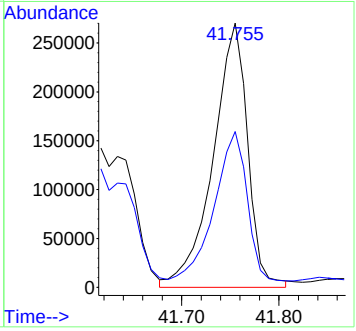

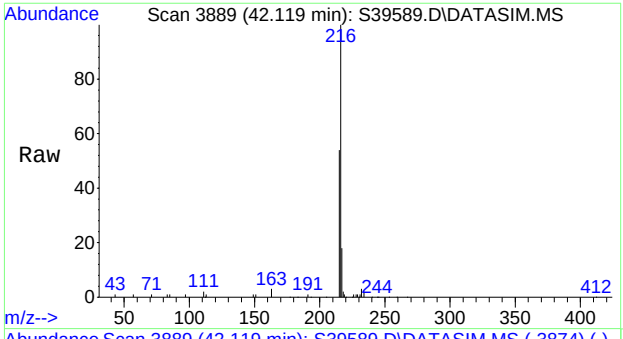


#92
4-Methylpyrene
Concen: 7789.343 ng/mL m
RT: 42.119 min Scan# 3889
Delta R.T. 0.030 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:216 Resp: 573342

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 216 | 100 | | |
| 215 | 59.2 | 57.4 | 86.0 |

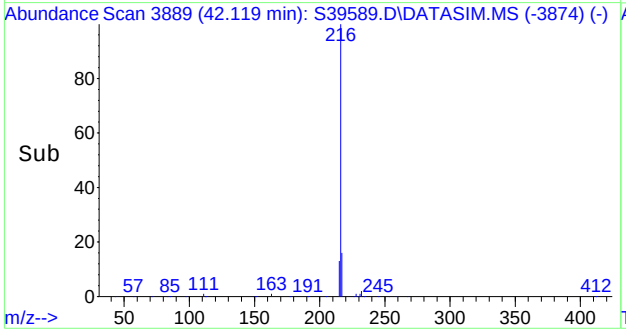


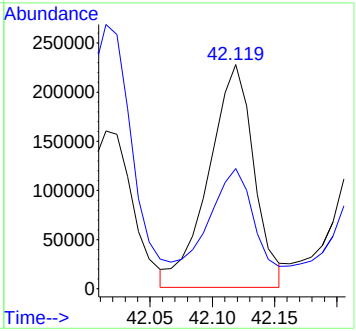


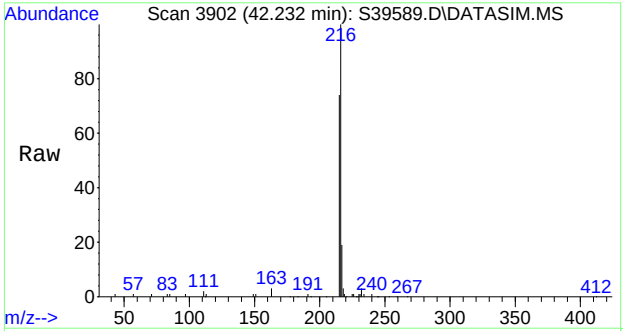


#93
1-Methylpyrene
Concen: 11029.815 ng/mL m
RT: 42.232 min Scan# 3902
Delta R.T. 0.030 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:216 Resp: 811860

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 216 | 100 | | |
| 215 | 53.9 | 76.0 | 114.0# |

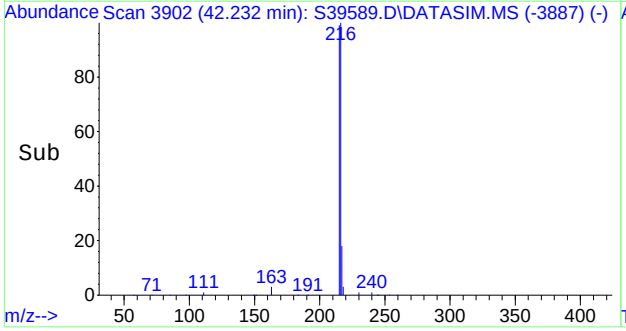


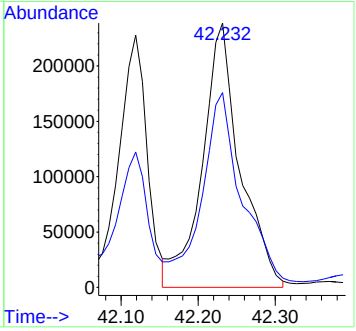

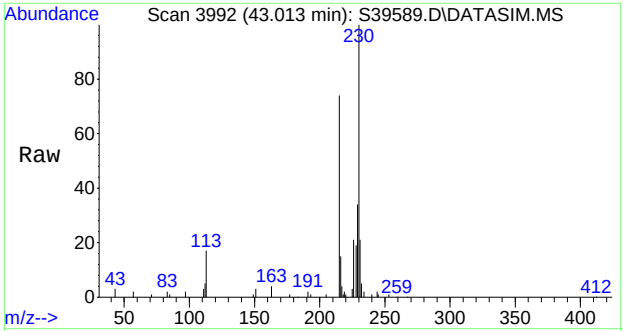


#94
C2-Fluoranthenes/pyrenes
Concen: 23921.776 ng/mL m
RT: 43.013 min Scan# 3992
Delta R.T. -0.126 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:230 Resp: 1760785

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 230 | 100 | | |
| 215 | 79.4 | 103.6 | 155.4# |

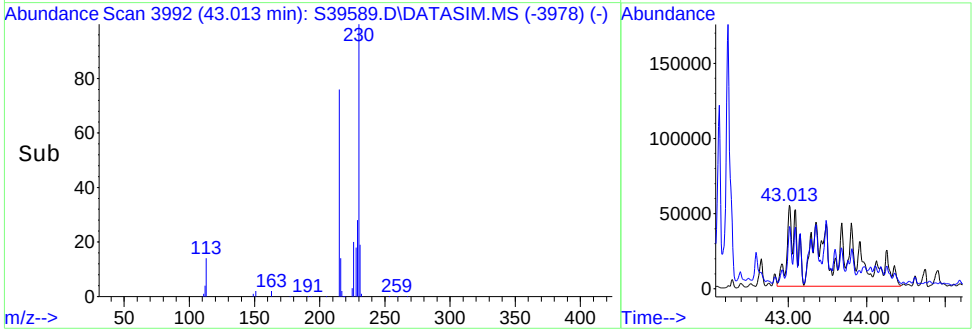


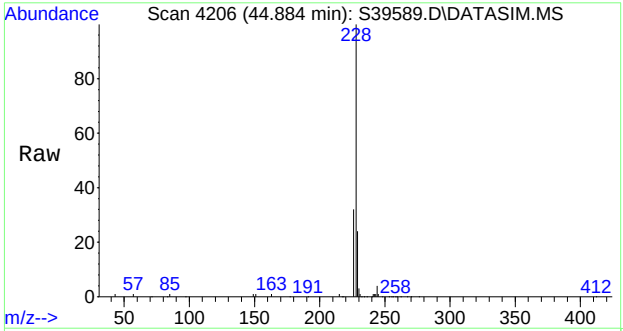


#95
C3-Fluoranthenes/pyrenes
Concen: 7224.049 ng/mL m
RT: 44.884 min Scan# 4206
Delta R.T. -0.270 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:244 Resp: 531733

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 244 | 100 | | |
| 229 | 253.5 | 85.9 | 128.9# |

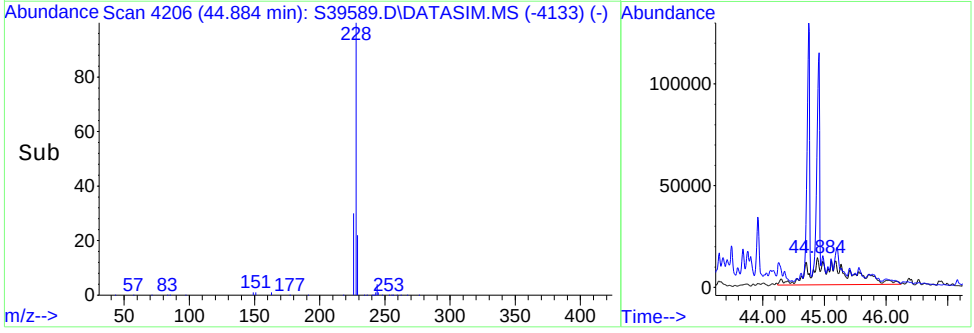

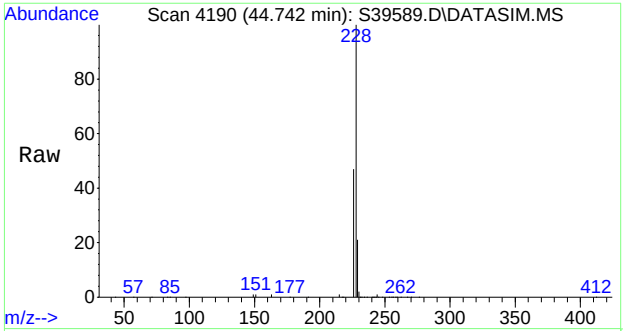


#97
Benz(a)anthracene
Concen: 27582.478 ng/mL
RT: 44.742 min Scan# 4190
Delta R.T. 0.035 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:228 Resp: 1751120

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 228 | 100 | | |
| 226 | 53.5 | 21.1 | 31.7# |

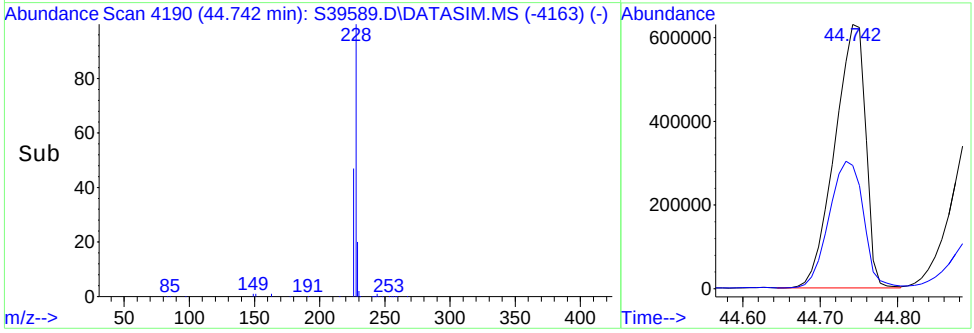





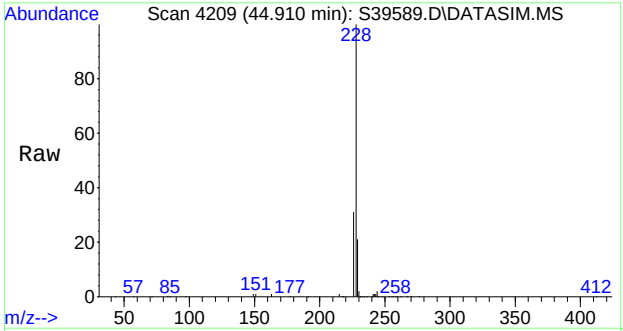


#98
Chrysene/triphenylene
Concen: 25702.736 ng/mL
RT: 44.910 min Scan# 4209
Delta R.T. 0.044 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:228 Resp: 1561611

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 228 | 100 | | |
| 226 | 30.5 | 23.4 | 35.0 |

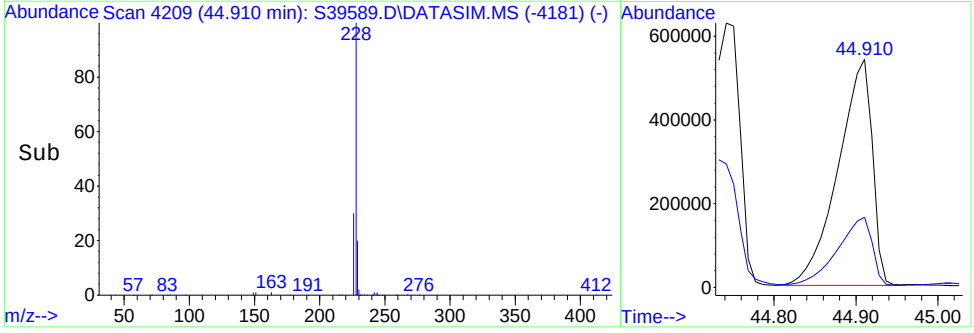

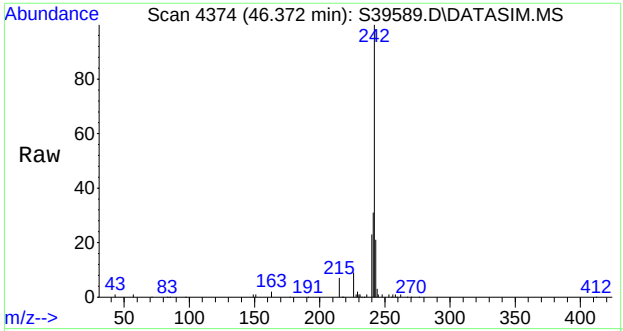


#99
C1-Benz(a)anthracenes/chrysenes
Concen: 23202.778 ng/mL m
RT: 46.372 min Scan# 4374
Delta R.T. 0.023 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:242 Resp: 1409722

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 242 | 100 | | |
| 241 | 40.7 | 34.2 | 51.2 |

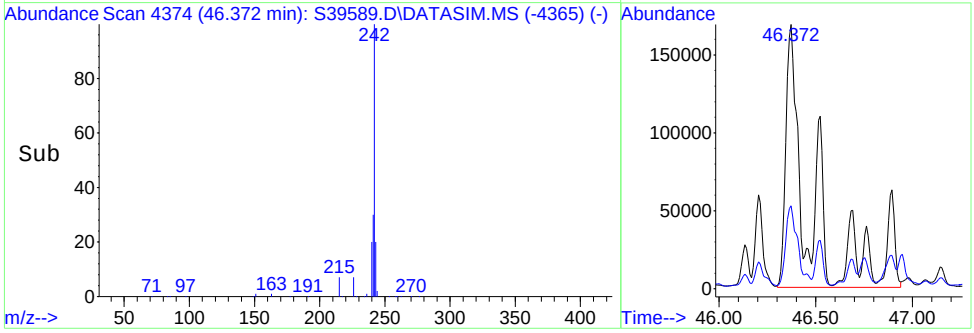


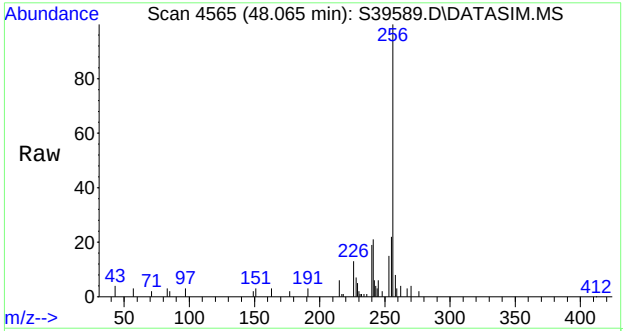


#100
C2-Benz(a)anthracenes/chrysenes
Concen: 9303.466 ng/mL m
RT: 48.065 min Scan# 4565
Delta R.T. -0.361 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:256 Resp: 565247

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 256 | 100 | | |
| 241 | 29.5 | 27.4 | 41.2 |

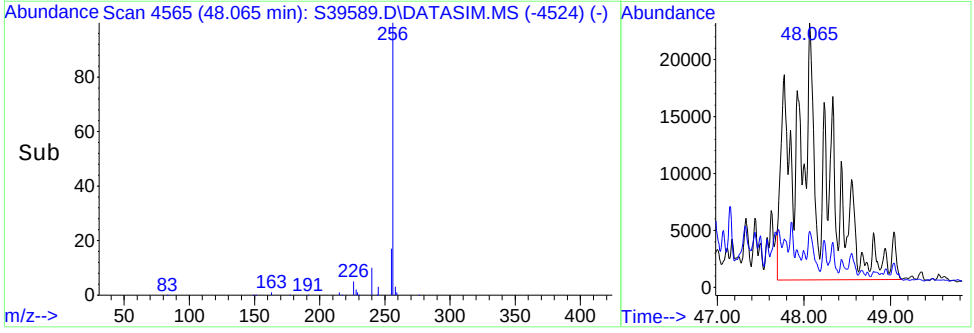

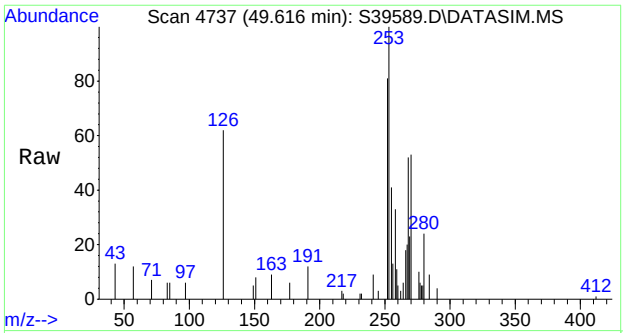


#101
C3-Benz(a)anthracenes/chrysenes
Concen: 2915.831 ng/mL m
RT: 49.616 min Scan# 4737
Delta R.T. -1.242 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:270 Resp: 177156

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 270 | 100 | | |
| 255 | 65.3 | 37.6 | 56.4# |

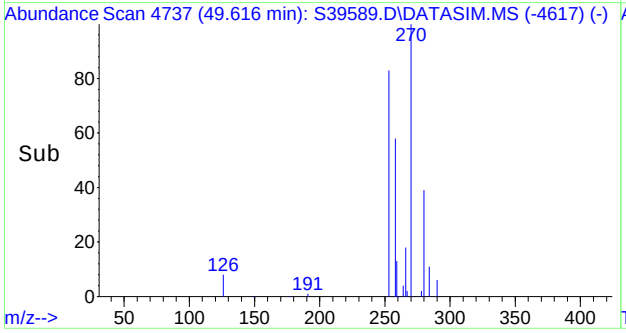


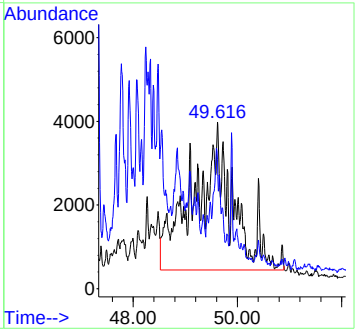


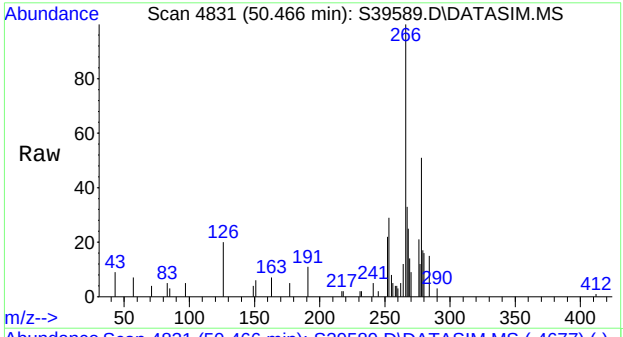


#102
C4-Benz(a)anthracenes/chrysenes
Concen: 756.461 ng/mL m
RT: 50.466 min Scan# 4831
Delta R.T. -0.482 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:284 Resp: 45960

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 284 | 100 | | |
| 269 | 243.8 | 66.3 | 99.5# |

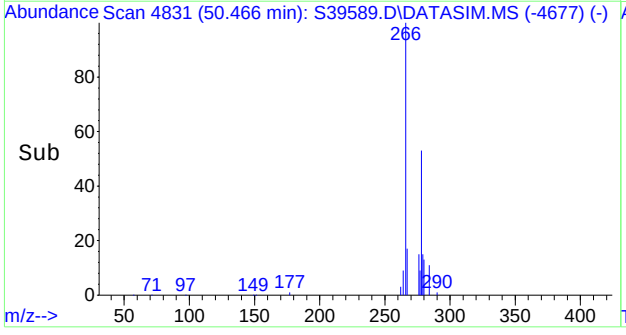


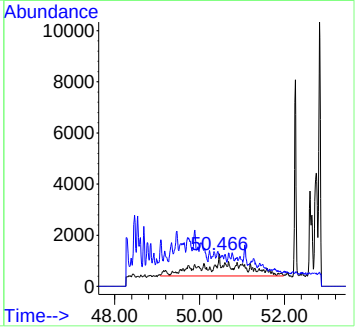

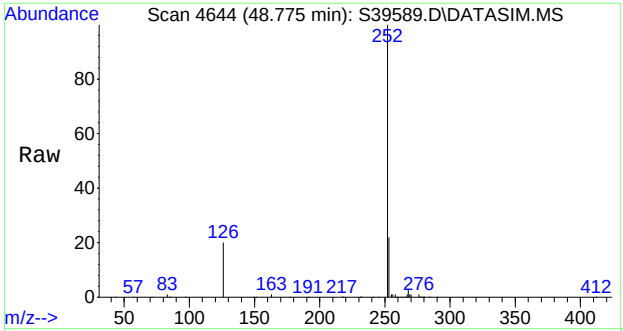


#103
Benzo(b)fluoranthene
Concen: 8442.360 ng/mL
RT: 48.775 min Scan# 4644
Delta R.T. 0.027 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:252 Resp: 590727

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 252 | 100 | | |
| 126 | 18.2 | 15.5 | 23.3 |

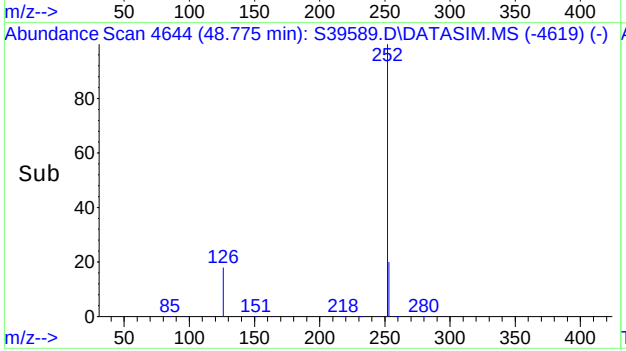


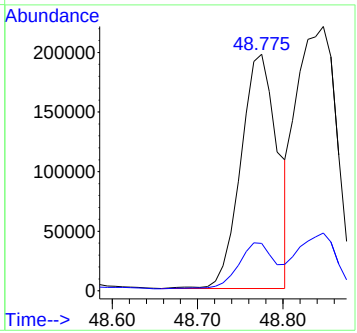


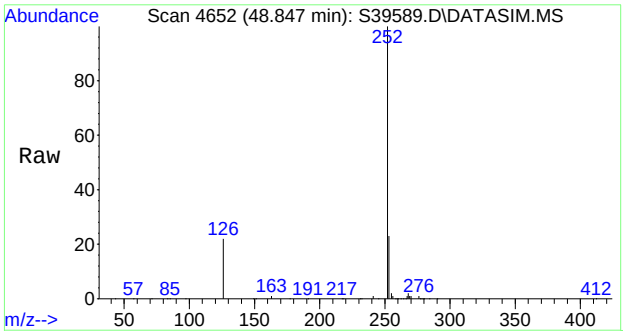


#104
Benzo(j/k)fluoranthene
Concen: 10080.742 ng/mL
RT: 48.847 min Scan# 4652
Delta R.T. 0.018 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:252 Resp: 714797

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 252 | 100 | | |
| 126 | 19.8 | 16.6 | 25.0 |

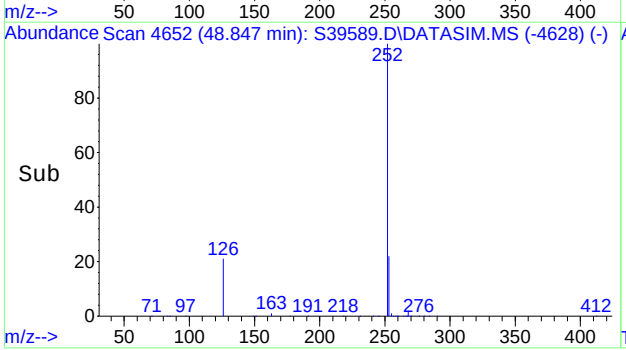


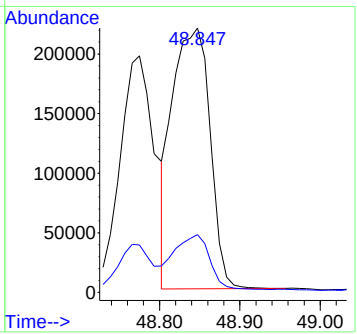

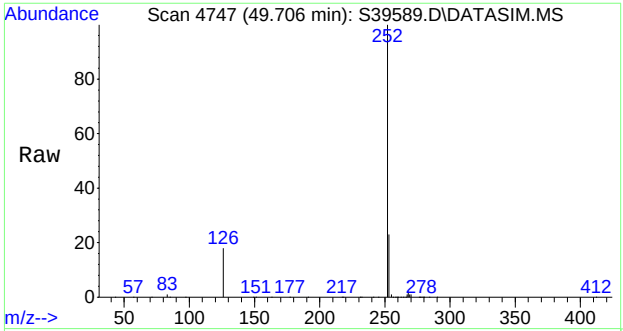


#105
Benzo(e)pyrene
Concen: 9689.110 ng/mL
RT: 49.706 min Scan# 4747
Delta R.T. 0.027 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:252 Resp: 650678

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 252 | 100 | | |
| 126 | 18.3 | 14.0 | 21.0 |

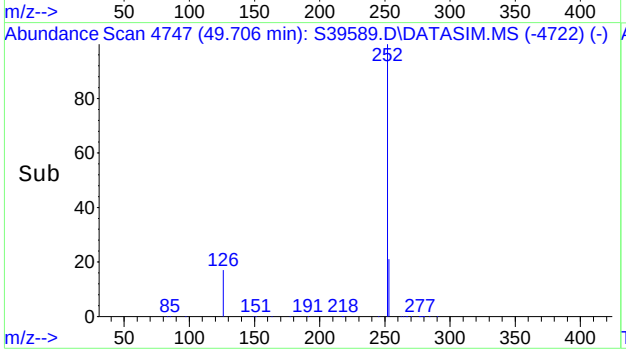


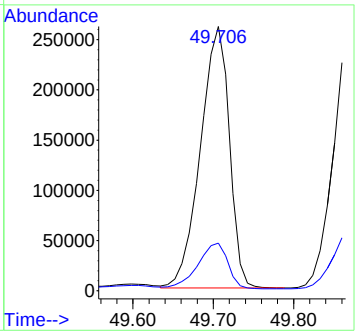


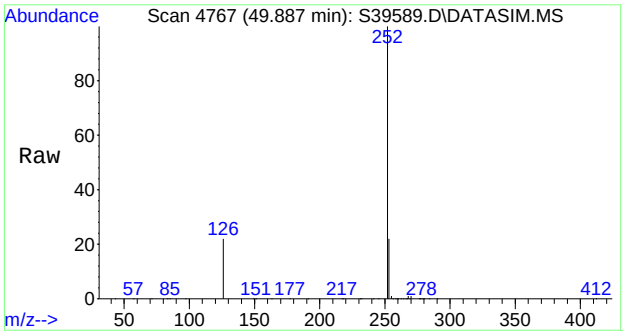


#106
Benzo(a)pyrene
Concen: 18896.611 ng/mL
RT: 49.887 min Scan# 4767
Delta R.T. 0.036 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:252 Resp: 1251323

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 252 | 100 | | |
| 126 | 21.5 | 16.0 | 24.0 |

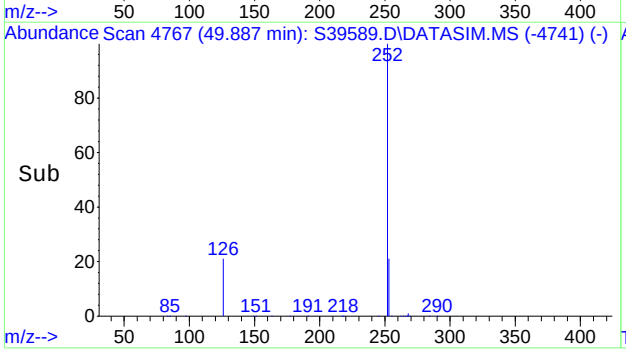


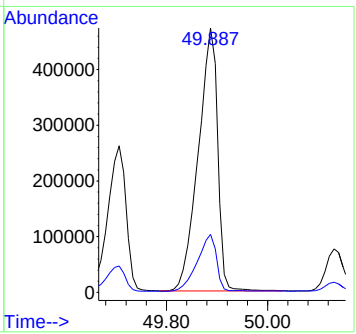

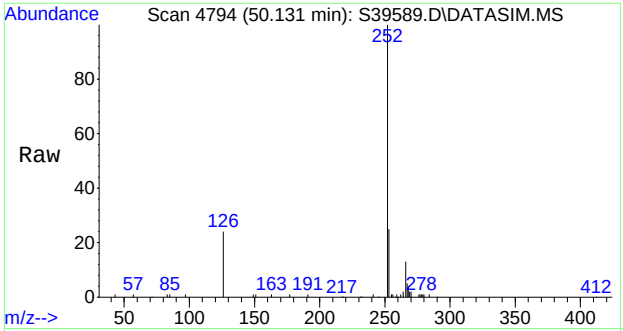


#107
Perylene
Concen: 2599.471 ng/mL
RT: 50.131 min Scan# 4794
Delta R.T. 0.009 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:252 Resp: 179967

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 252 | 100 | | |
| 126 | 23.2 | 16.6 | 25.0 |

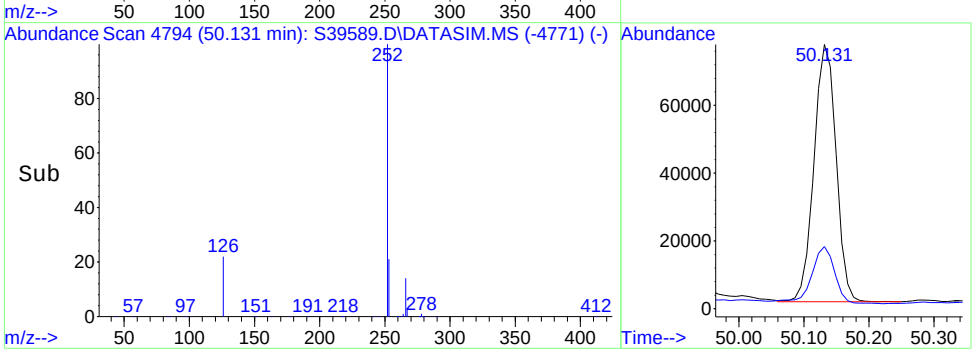





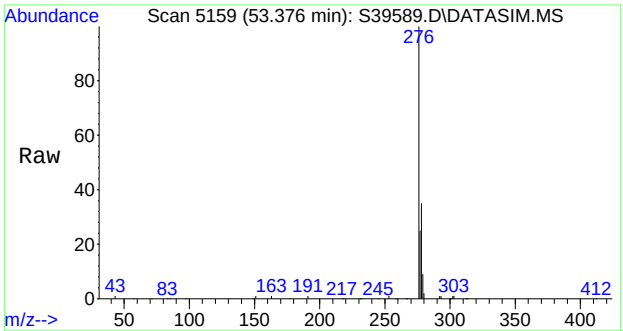


#108
Indeno(1,2,3-cd)pyrene
Concen: 5155.687 ng/mL m
RT: 53.376 min Scan# 5159
Delta R.T. 0.024 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:276 Resp: 441697

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 276 | 100 | | |
| 277 | 27.4 | 19.7 | 29.5 |
| 278 | 36.9 | 17.5 | 26.3# |

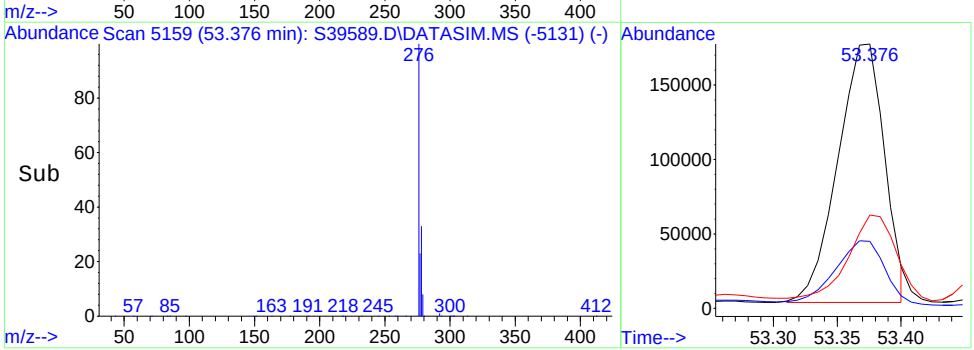

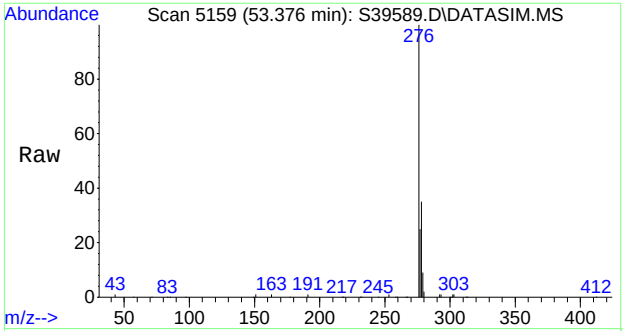


#109
Dibenz(a,h)anthracene
Concen: 2230.493 ng/mL m
RT: 53.376 min Scan# 5159
Delta R.T. -0.000 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:278 Resp: 156324

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 278 | 100 | | |
| 279 | 23.9 | 19.8 | 29.8 |
| 276 | 291.1 | 50.6 | 76.0# |

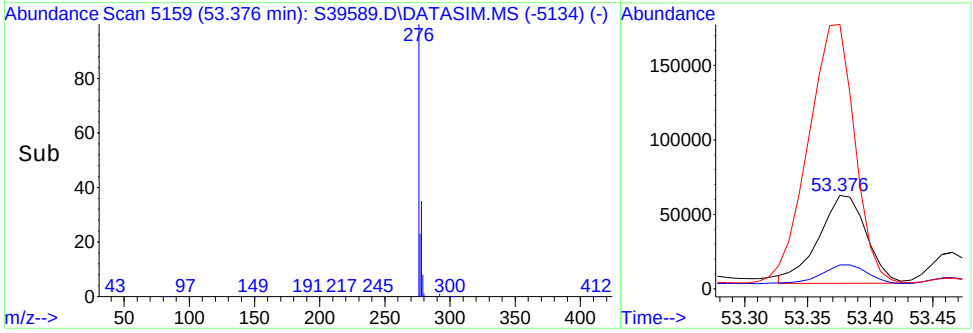





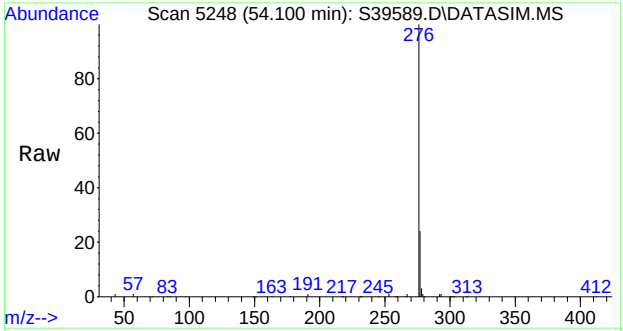


#110
Benzo(g,h,i)perylene
Concen: 6144.868 ng/mL
RT: 54.100 min Scan# 5248
Delta R.T. 0.016 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:276 Resp: 477407

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 276 | 100 | | |
| 277 | 24.3 | 19.3 | 28.9 |

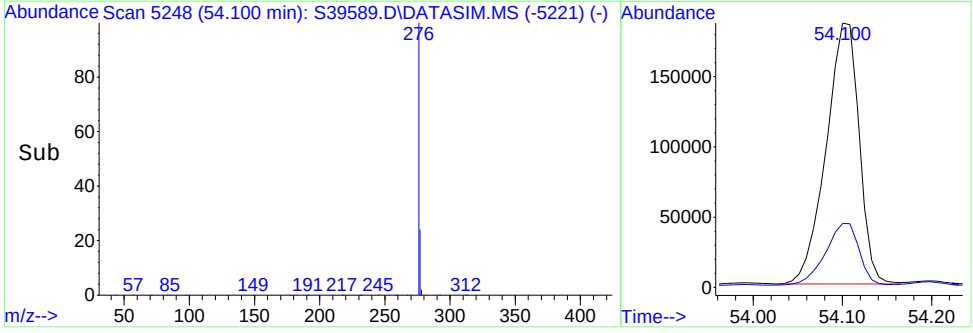

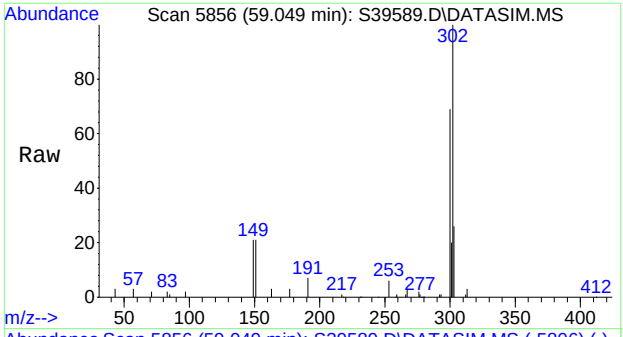


#111
Coronene
Concen: 1278.643 ng/mL
RT: 59.049 min Scan# 5856
Delta R.T. 0.008 min
Lab File: S39589.D
Acq: 5 Jul 2016 4:38 pm

Tgt Ion:300 Resp: 105194

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 300 | 100 | | |
| 301 | 26.7 | 21.0 | 31.4 |

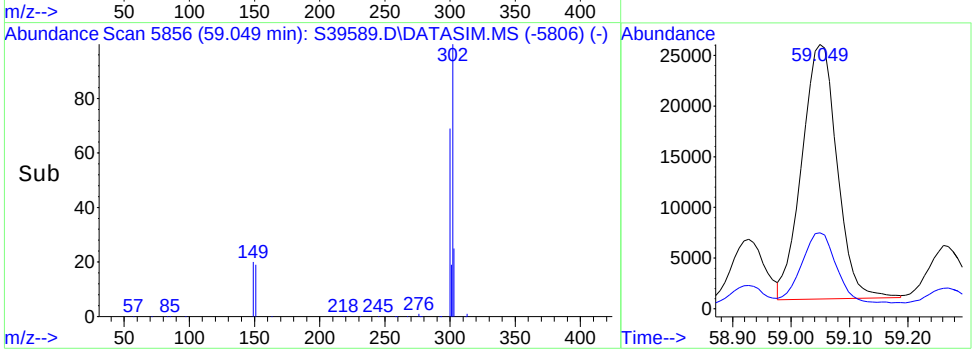

Manual Integrations APPROVED (compounds with "m" flag)
Ruben Parrilla
07/13/16 11:23

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160705\S39590.D
Sample : op47956-dup1,50x,mc46549-1,137-P3B-MW101I-201
Misc : OP47956,MSS1964,0.0161,,,2,50
ALS Vial : 6 Sample Multiplier: 1
Acq On : 5 Jul 2016 5:53 pm Operator: sofyaz

Quant Time: Jul 06 14:32:57 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Acenaphthene-d10 | 28.343 | 162 | 29843 | 1020.00 | ng/mL | 0.00 |
| System Monitoring Compounds | | | | | | |
| 2) Toluene-d8 | 9.462 | 98 | 933 | 21.34 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = | 2.13% | | |
| 3) Naphthalene-d8 | 21.389 | 136 | 1273 | 20.58 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = | 2.06% | | |
| 4) Phenanthrene-d10 | 34.189 | 188 | 852 | 19.33 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = | 1.93% | | |
| 5) Perylene-d12 | 50.050 | 264 | 740 | 20.60 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = | 2.06% | | |
| Target Compounds | | | | | | Qvalue |
| 18] Ethylbenzene | 12.319 | 91 | 49580 | 789.468 | ng/mL | 98 |
| 19] m,p-xylene | 12.553 | 91 | 31615 | 617.711 | ng/mL | 98 |
| 21] o-Xylene | 13.274 | 91 | 16815 | 320.921 | ng/mL | 100 |
| 24] 1,3,5-Trimethylbenzene | 15.472 | 105 | 8373 | 157.552 | ng/mL | 96 |
| 27] 1,2,4-Trimethylbenzene | 16.205 | 105 | 24035 | 435.059 | ng/mL | 95 |
| 29] 1,2,3-Trimethylbenzene | 17.045 | 105 | 7995 | 144.211 | ng/mL | 96 |
| 51] Naphthalene | 21.465 | 128 | 761480 | 9927.171 | ng/mL | 100 |
| 52] 2-Methylnaphthalene | 24.160 | 142 | 258375 | 5214.829 | ng/mL | 100 |
| 53] 1-Methylnaphthalene | 24.580 | 142 | 169583 | 3866.767 | ng/mL | 100 |
| 54] C1-Naphthalenes | 24.160 | 142 | 429574m | 5600.219 | ng/mL | |
| 55] C2-Naphthalenes | 26.999 | 156 | 245031m | 3194.391 | ng/mL | |
| 58] Biphenyl | 26.056 | 154 | 31706 | 548.909 | ng/mL | 99 |
| 59] Acenaphthylene | 27.733 | 152 | 64608 | 881.495 | ng/mL | 94 |
| 60] Acenaphthene | 28.466 | 154 | 114016 | 2723.803 | ng/mL | 100 |
| 62] Fluorene | 30.485 | 166 | 62066 | 1240.368 | ng/mL | 95 |
| 72] Phenanthrene | 34.278 | 178 | 280578 | 4322.744 | ng/mL | 100 |
| 73] Anthracene | 34.464 | 178 | 89732 | 1476.366 | ng/mL | 97 |
| 74] C1-Phenanthrenes/anthr... | 36.353 | 192 | 179246m | 2761.566 | ng/mL | |
| 86] Fluoranthene | 39.044 | 202 | 70874 | 1098.140 | ng/mL | 100 |
| 87] Pyrene | 39.916 | 202 | 117943 | 1837.808 | ng/mL | 97 |
| 97] Benz(a)anthracene | 44.866 | 228 | 23533 | 425.143 | ng/mL | 98 |
| 98] Chrysene/triphenylene | 44.866 | 228 | 31826 | 600.799 | ng/mL | 99 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

7.4.2
7

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160705\S39590.D
Sample : op47956-dup1,50x,mc46549-1,137-P3B-MW101I-201
Misc : OP47956,MSS1964,0.0161,,,2,50
ALS Vial : 6 Sample Multiplier: 1
Acq On : 5 Jul 2016 5:53 pm Operator: sofyaz

Quant Time: Jul 06 14:32:57 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

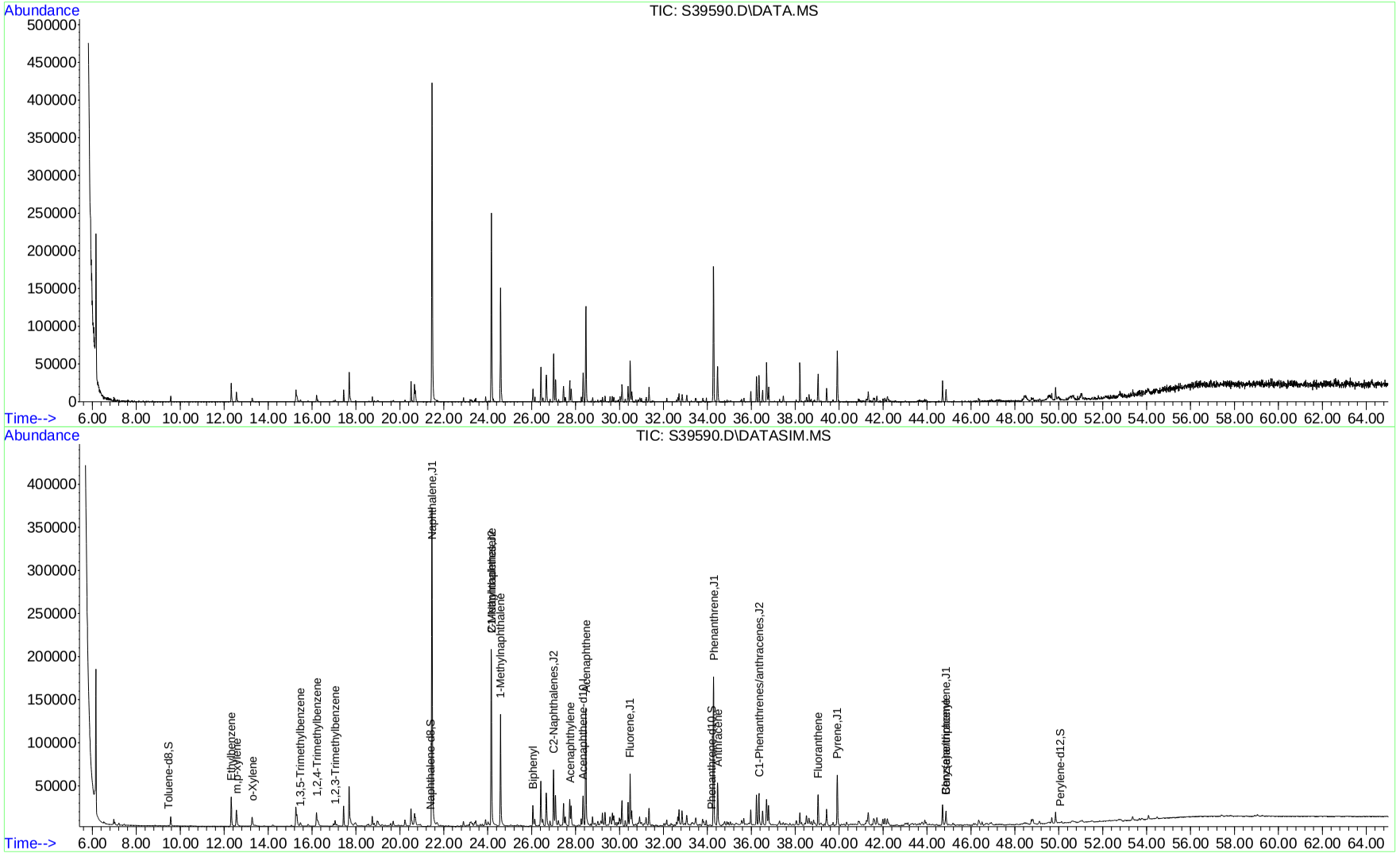

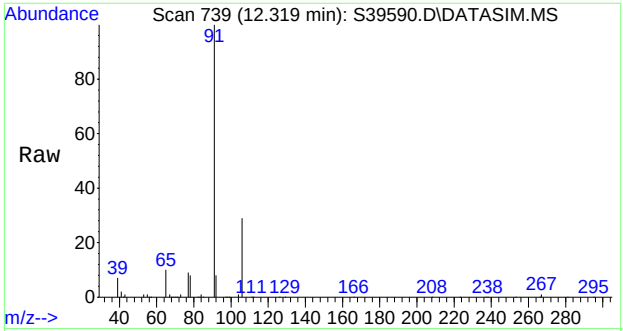


#18
Ethylbenzene
Concen: 789.468 ng/mL
RT: 12.319 min Scan# 739
Delta R.T. 0.009 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

Tgt Ion: 91 Resp: 49580

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 91 | 100 | | |
| 106 | 29.5 | 23.0 | 34.4 |

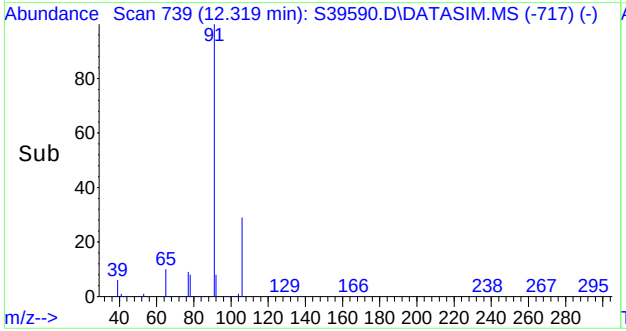


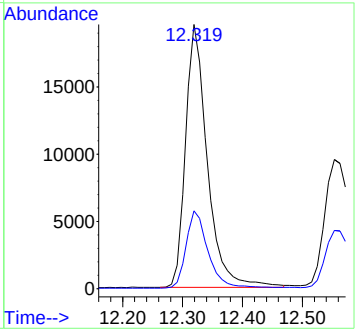


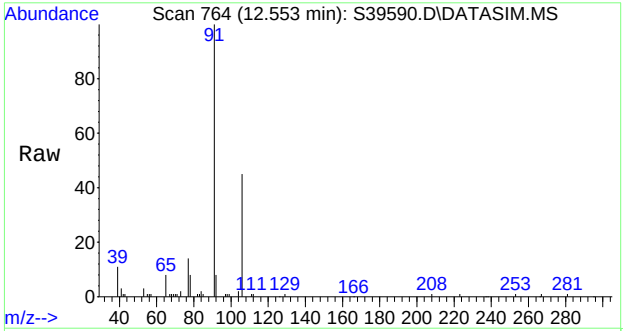


#19
m,p-xylene
Concen: 617.711 ng/mL
RT: 12.553 min Scan# 764
Delta R.T. -0.000 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

Tgt Ion: 91 Resp: 31615

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 91 | 100 | | |
| 106 | 45.8 | 35.8 | 53.6 |

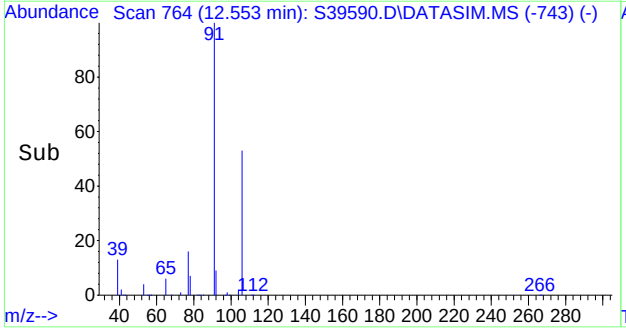


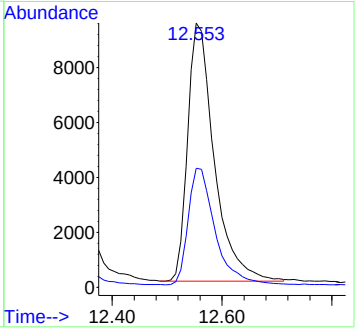





SGS ACCUTEST MC46549

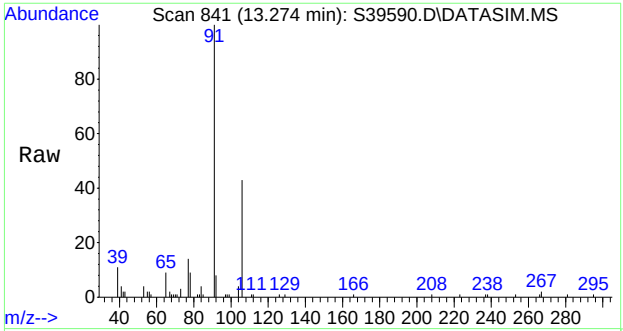


#21
o-Xylene
Concen: 320.921 ng/mL
RT: 13.274 min Scan# 841
Delta R.T. 0.019 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

Tgt Ion: 91 Resp: 16815

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 91 | 100 | | |
| 106 | 42.9 | 34.5 | 51.7 |

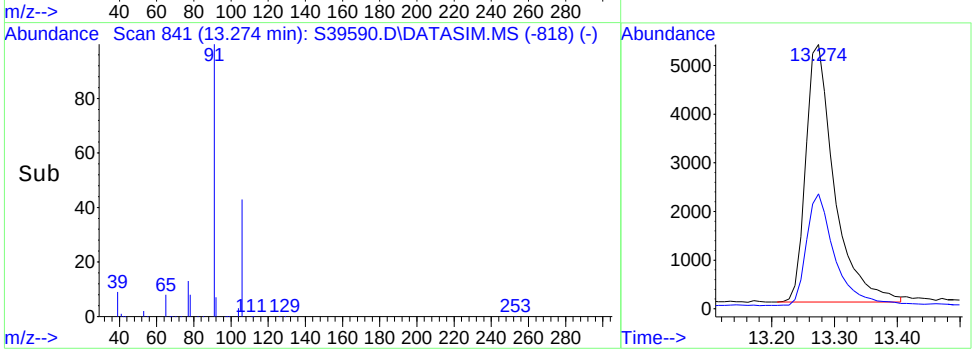


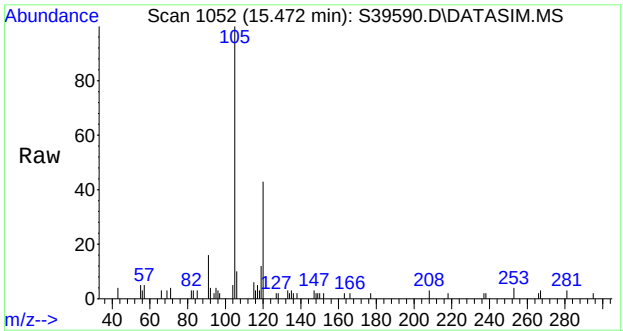


#24
1,3,5-Trimethylbenzene
Concen: 157.552 ng/mL
RT: 15.472 min Scan# 1052
Delta R.T. 0.021 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

Tgt Ion:105 Resp: 8373

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 105 | 100 | | |
| 120 | 39.4 | 33.5 | 50.3 |

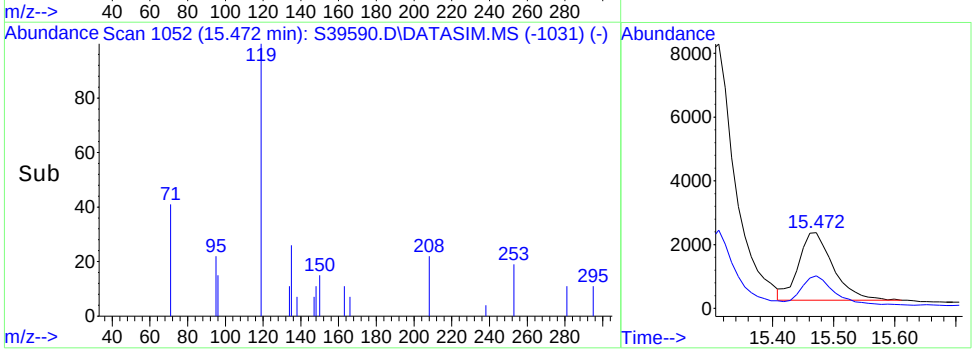

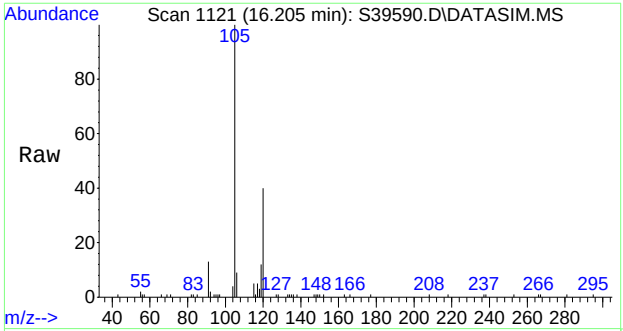


#27
1,2,4-Trimethylbenzene
Concen: 435.059 ng/mL
RT: 16.205 min Scan# 1121
Delta R.T. 0.011 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

Tgt Ion:105 Resp: 24035

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 105 | 100 | | |
| 120 | 40.6 | 35.3 | 52.9 |

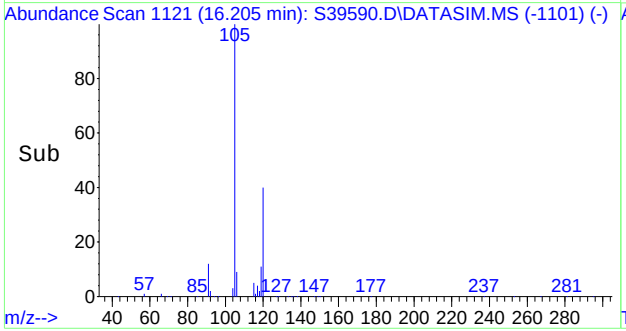


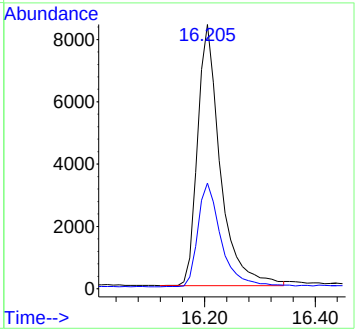


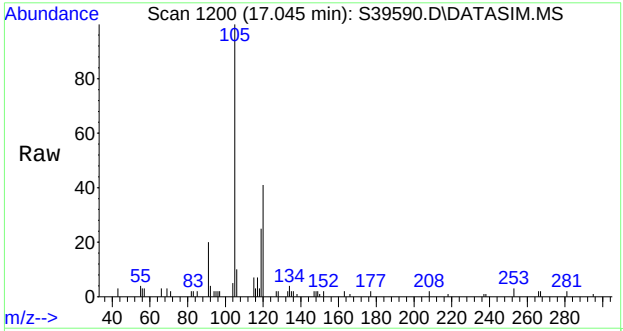


#29
1,2,3-Trimethylbenzene
Concen: 144.211 ng/mL
RT: 17.045 min Scan# 1200
Delta R.T. 0.011 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

Tgt Ion:105 Resp: 7995

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 105 | 100 | | |
| 120 | 41.0 | 34.8 | 52.2 |

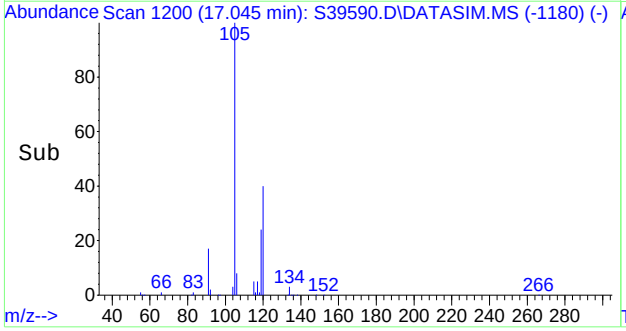


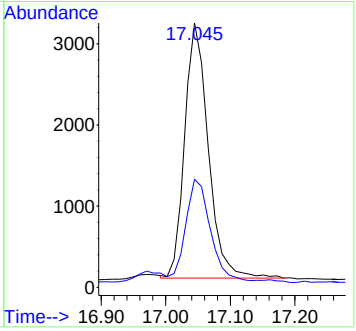

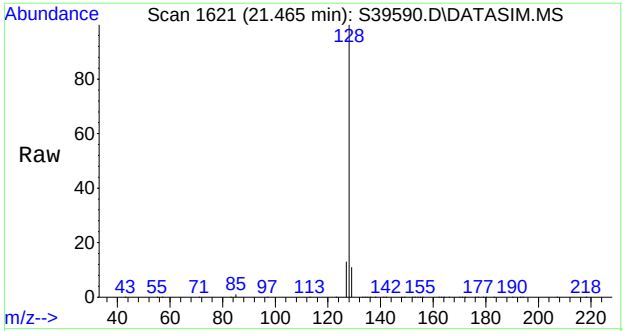


#51
Naphthalene
Concen: 9927.171 ng/mL
RT: 21.465 min Scan# 1621
Delta R.T. -0.000 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

Tgt Ion:128 Resp: 761480

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 128 | 100 | | |
| 127 | 12.6 | 10.2 | 15.2 |

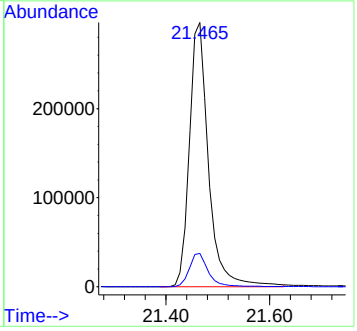


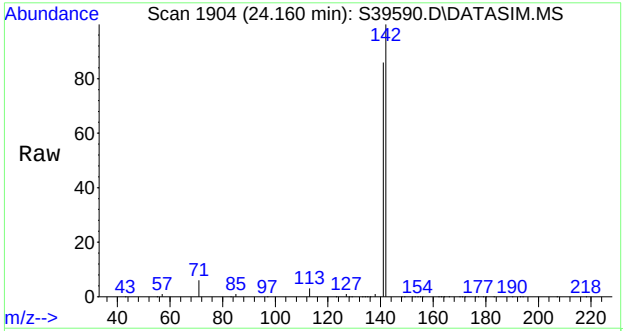


#52
2-Methylnaphthalene
Concen: 5214.829 ng/mL
RT: 24.160 min Scan# 1904
Delta R.T. -0.010 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

Tgt Ion:142 Resp: 258375

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 142 | 100 | | |
| 141 | 85.5 | 68.6 | 102.8 |

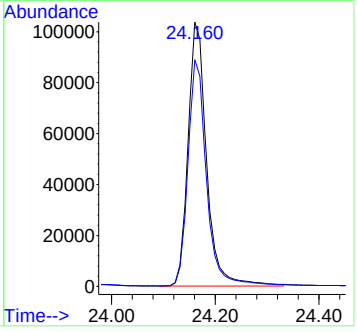

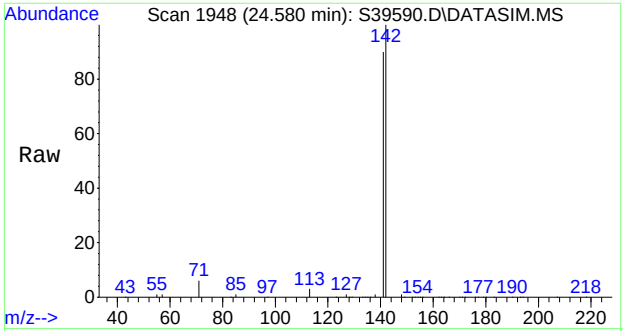


#53
1-Methylnaphthalene
Concen: 3866.767 ng/mL
RT: 24.580 min Scan# 1948
Delta R.T. -0.010 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

Tgt Ion:142 Resp: 169583

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 142 | 100 | | |
| 141 | 89.1 | 71.6 | 107.4 |

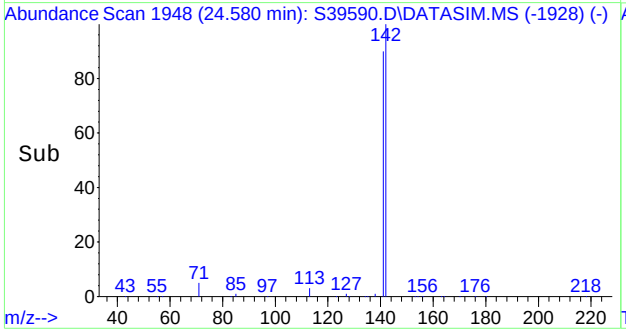


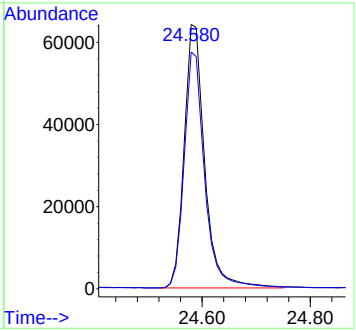


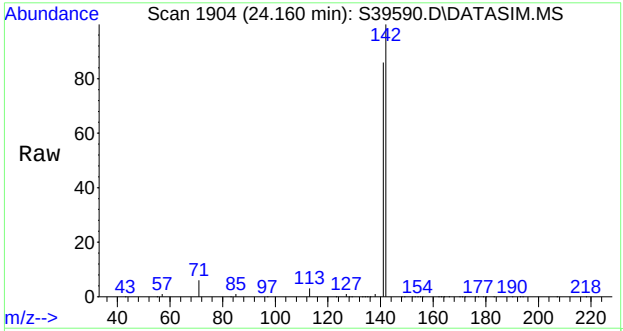


#54
C1-Naphthalenes
Concen: 5600.219 ng/mL m
RT: 24.160 min Scan# 1904
Delta R.T. -0.002 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

Tgt Ion:142 Resp: 429574

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 142 | 100 | | |
| 141 | 87.2 | 68.8 | 103.2 |

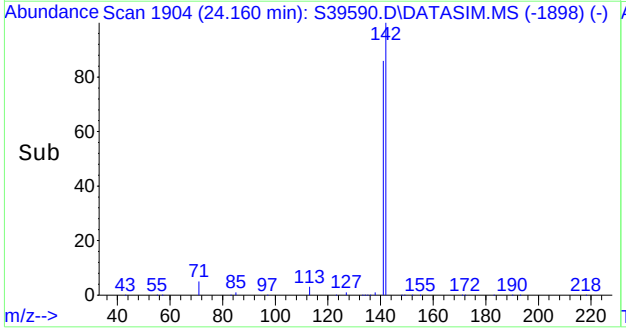


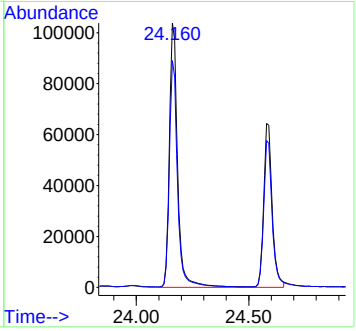

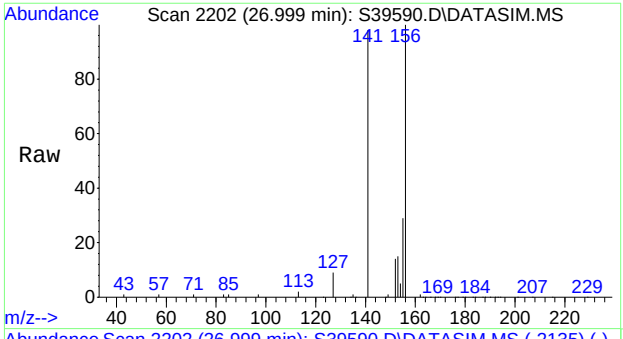


#55
C2-Naphthalenes
Concen: 3194.391 ng/mL m
RT: 26.999 min Scan# 2202
Delta R.T. -0.087 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

Tgt Ion:156 Resp: 245031

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 156 | 100 | | |
| 141 | 115.5 | 65.8 | 98.8# |

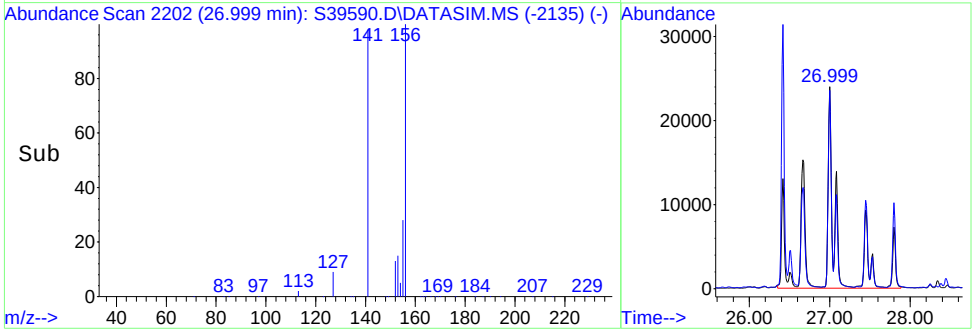


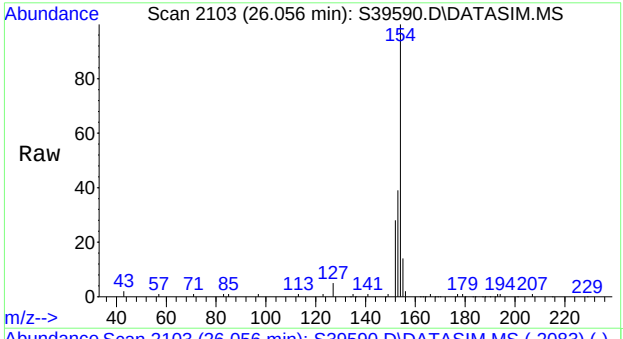


#58
Biphenyl
Concen: 548.909 ng/mL
RT: 26.056 min Scan# 2103
Delta R.T. -0.010 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

Tgt Ion:154 Resp: 31706

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 154 | 100 | | |
| 153 | 39.4 | 31.0 | 46.6 |

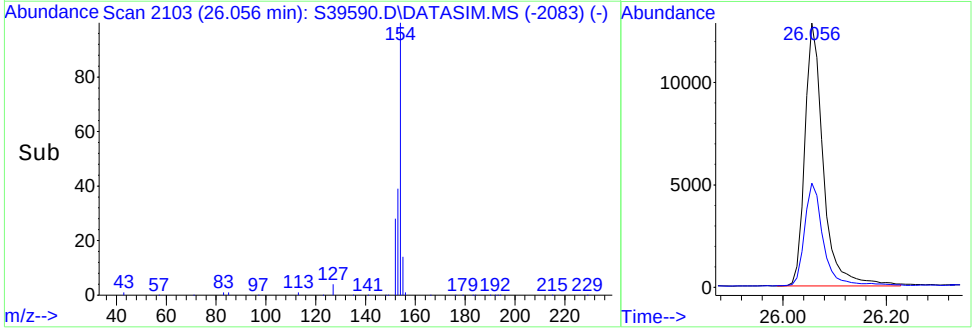

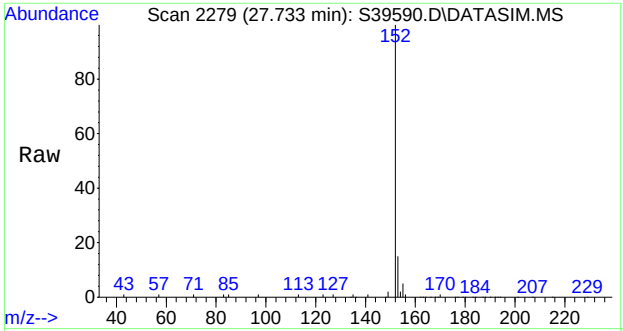


#59
Acenaphthylene
Concen: 881.495 ng/mL
RT: 27.733 min Scan# 2279
Delta R.T. -0.000 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

Tgt Ion:152 Resp: 64608

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 152 | 100 | | |
| 153 | 15.4 | 10.3 | 15.5 |

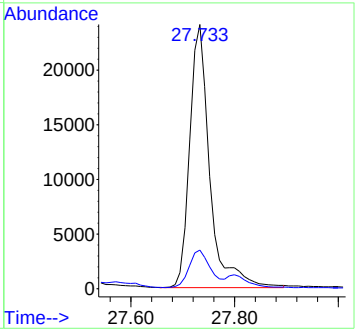


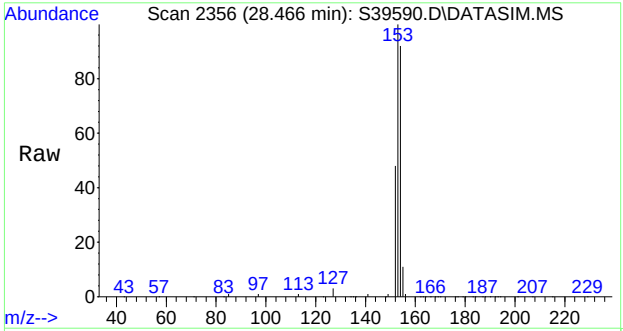


#60
Acenaphthene
Concen: 2723.803 ng/mL
RT: 28.466 min Scan# 2356
Delta R.T. -0.000 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

Tgt Ion:154 Resp: 114016

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 154 | 100 | | |
| 153 | 107.9 | 86.6 | 129.8 |

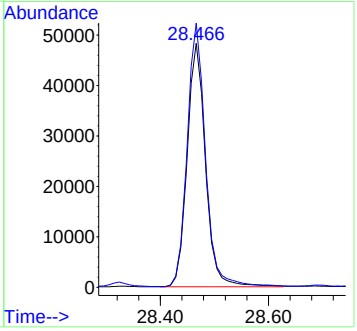

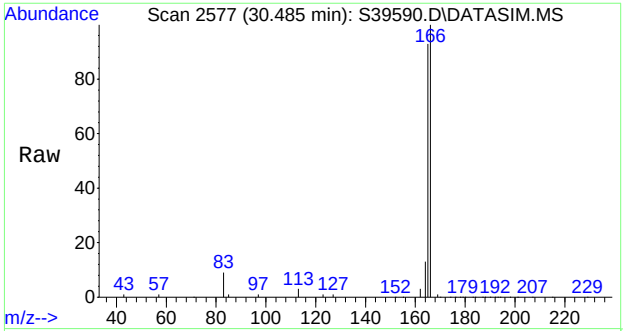


#62
Fluorene
Concen: 1240.368 ng/mL
RT: 30.485 min Scan# 2577
Delta R.T. -0.008 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

Tgt Ion:166 Resp: 62066

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 166 | 100 | | |
| 165 | 90.3 | 75.8 | 113.6 |

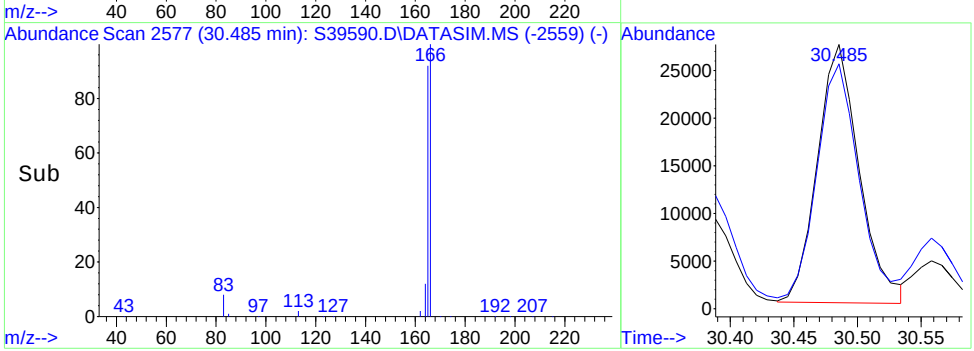


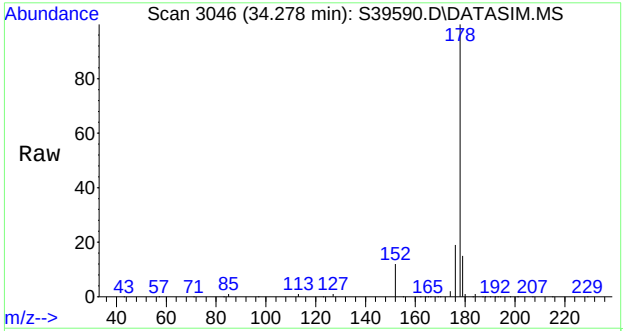


#72
Phenanthrene
Concen: 4322.744 ng/mL
RT: 34.278 min Scan# 3046
Delta R.T. -0.008 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

Tgt Ion:178 Resp: 280578

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 178 | 100 | | |
| 179 | 15.0 | 11.9 | 17.9 |

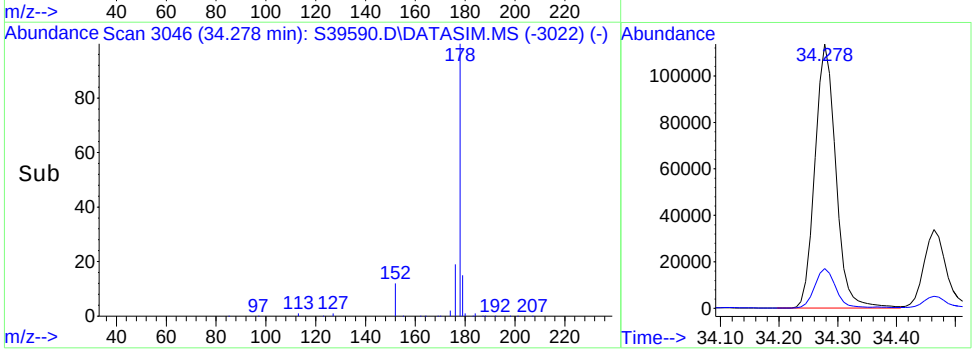

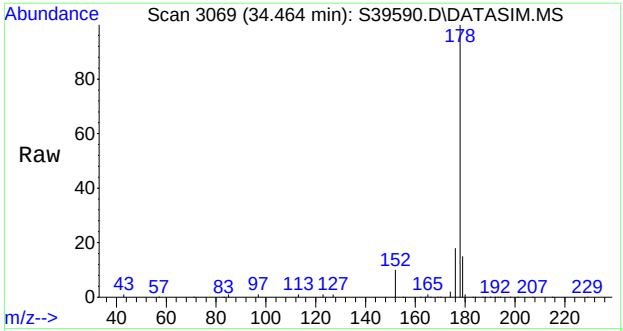


#73
Anthracene
Concen: 1476.366 ng/mL
RT: 34.464 min Scan# 3069
Delta R.T. -0.000 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

Tgt Ion:178 Resp: 89732

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 178 | 100 | | |
| 179 | 16.2 | 12.0 | 18.0 |

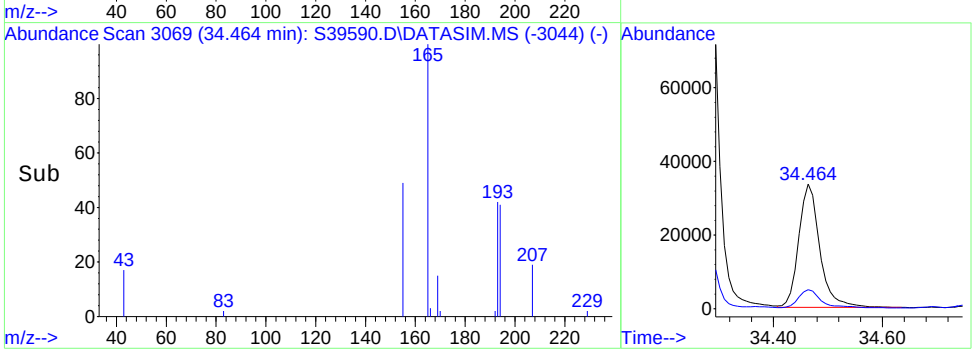


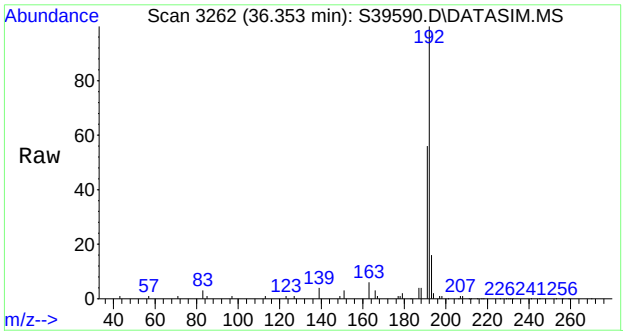


#74
C1-Phenanthrenes/anthracenes
Concen: 2761.566 ng/mL m
RT: 36.353 min Scan# 3262
Delta R.T. -0.348 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

Tgt Ion:192 Resp: 179246

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 192 | 100 | | |
| 191 | 56.8 | 45.0 | 67.4 |

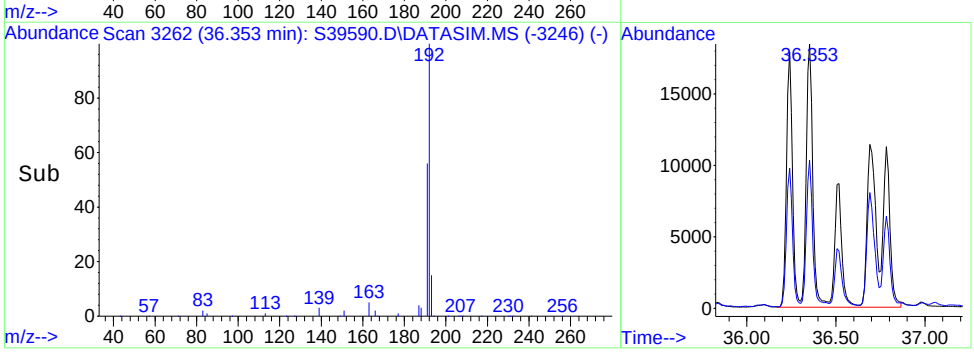

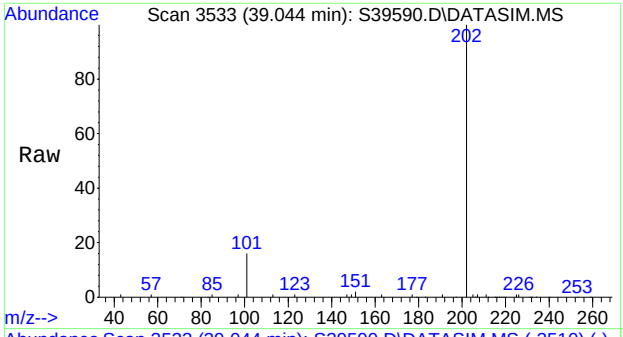


#86
Fluoranthene
Concen: 1098.140 ng/mL
RT: 39.044 min Scan# 3533
Delta R.T. -0.000 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

Tgt Ion:202 Resp: 70874

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 202 | 100 | | |
| 101 | 15.6 | 12.6 | 19.0 |

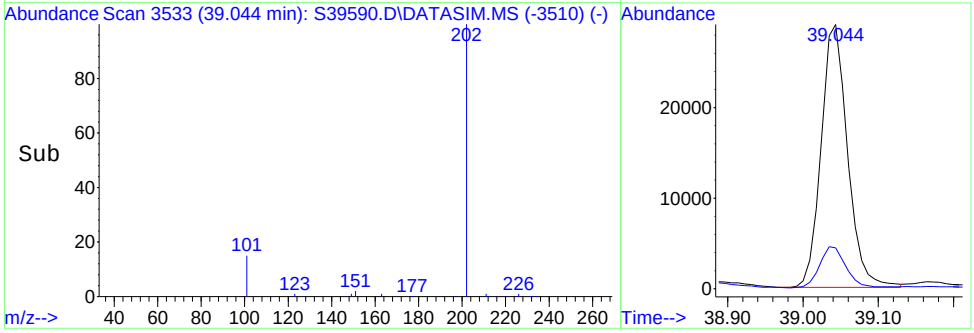





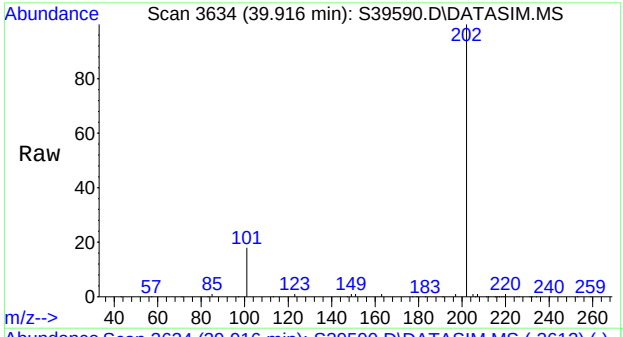


#87
Pyrene
Concen: 1837.808 ng/mL
RT: 39.916 min Scan# 3634
Delta R.T. -0.009 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

Tgt Ion:202 Resp: 117943

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 202 | 100 | | |
| 101 | 18.7 | 13.8 | 20.8 |

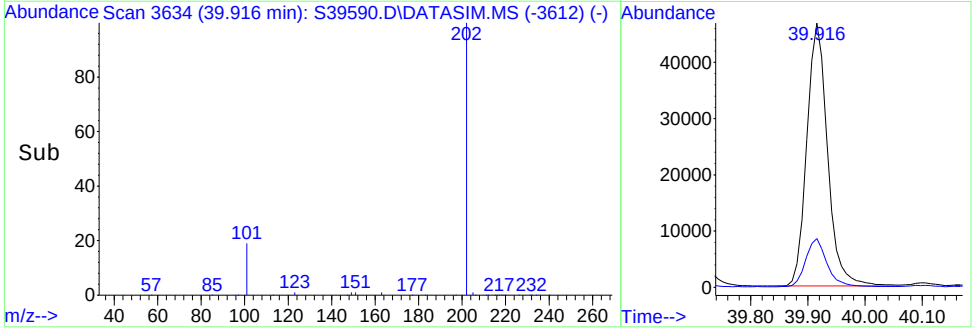

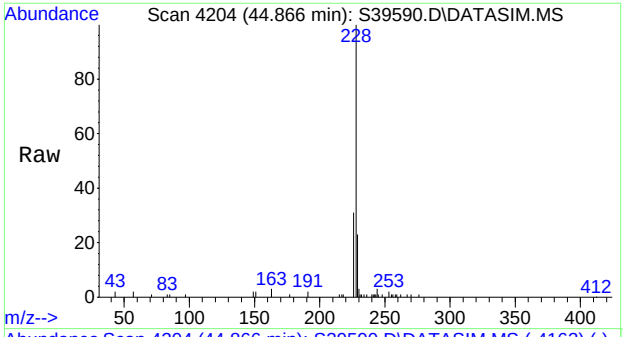


#97
Benz(a)anthracene
Concen: 425.143 ng/mL
RT: 44.866 min Scan# 4204
Delta R.T. 0.159 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

Tgt Ion:228 Resp: 23533

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 228 | 100 | | |
| 226 | 27.7 | 21.1 | 31.7 |

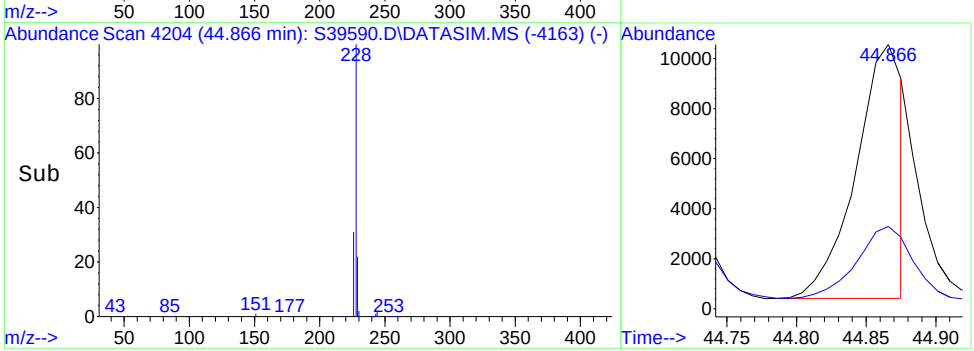


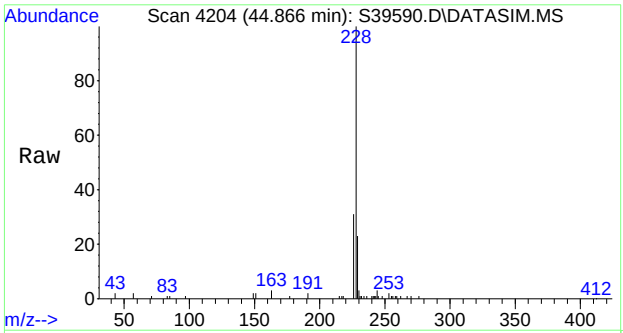


#98
Chrysene/triphenylene
Concen: 600.799 ng/mL
RT: 44.866 min Scan# 4204
Delta R.T. -0.000 min
Lab File: S39590.D
Acq: 5 Jul 2016 5:53 pm

Tgt Ion:228 Resp: 31826

| Ion | Ratio | Lower | Upper |
|---|---|---|---|
| 228 | 100 | | |
| 226 | 28.8 | 23.4 | 35.0 |

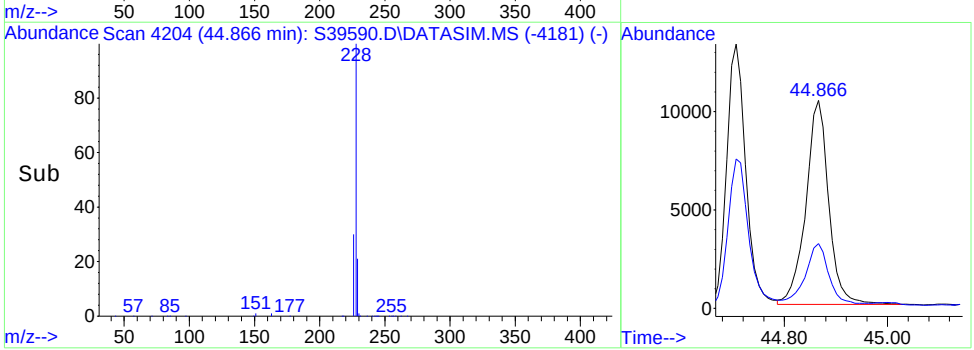

Manual Integrations APPROVED (compounds with "m" flag)
Ruben Parrilla
06/06/16 09:37

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39332.D
Sample : ic1950-0.01
Misc : OP47644,MSS1950,,,1,1
ALS Vial : 1 Sample Multiplier: 1
Acq On : 1 Jun 2016 5:23 pm Operator: sofyaz

Quant Time: Jun 02 12:08:31 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Acenaphthene-d10 | 28.724 | 162 | 39516 | 1000.00 | ng/mL | 0.00 |
| System Monitoring Compounds | | | | | | |
| 2) Toluene-d8 | 9.760 | 98 | 679 | 11.50 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = | 1.15% | | |
| 3) Naphthalene-d8 | 21.761 | 136 | 873 | 10.45 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = | 1.04% | | |
| 4) Phenanthrene-d10 | 34.576 | 188 | 606 | 10.18 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = | 1.02% | | |
| 5) Perylene-d12 | 50.406 | 264 | 524 | 10.80 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = | 1.08% | | |
| Target Compounds | | | | | | Qvalue |
| 6] MTBE | 5.807 | 73 | 407m | 12.083 | ng/mL | |
| 7] Benzene | 7.278 | 78 | 1164m | 19.019 | ng/mL | |
| 13] 2,2,4-trimethylpentane | 7.784 | 57 | 1330 | 21.446 | µg/mL# | 92 |
| 14] n-Heptane | 8.046 | 43 | 361 | 10.530 | µg/mL# | 40 |
| 15] Methylcyclohexane | 8.683 | 83 | 363 | 12.541 | ng/mL# | 35 |
| 16] Toluene | 9.872 | 91 | 938 | 12.294 | ng/mL | 99 |
| 17] n-Octane | 10.734 | 43 | 605 | 13.281 | µg/mL# | 70 |
| 18] Ethylbenzene | 12.636 | 91 | 1025 | 12.084 | ng/mL | 92 |
| 19] m,p-xylene | 12.870 | 91 | 765 | 11.067 | ng/mL | 89 |
| 20] Styrene | 13.507 | 104 | 815 | 14.374 | ng/mL | 97 |
| 21] o-Xylene | 13.582 | 91 | 881 | 12.449 | ng/mL | 93 |
| 22] Isopropylbenzene | 14.498 | 105 | 884 | 11.125 | ng/mL | 91 |
| 23] n-Propylbenzene | 15.359 | 91 | 1150 | 11.454 | ng/mL | 96 |
| 24] 1,3,5-Trimethylbenzene | 15.784 | 105 | 753m | 10.323 | ng/mL | |
| 25] Phenol | 15.976 | 94 | 597 | 14.446 | µg/mL# | 100 |
| 26] t-Butylbenzene | 16.497 | 119 | 724 | 11.341 | ng/mL# | 56 |
| 27] 1,2,4-Trimethylbenzene | 16.528 | 105 | 856 | 11.472 | ng/mL | 90 |
| 28] sec-Butylbenzene | 17.017 | 105 | 1046 | 11.792 | ng/mL# | 63 |
| 29] 1,2,3-Trimethylbenzene | 17.379 | 105 | 865 | 11.552 | ng/mL | 90 |
| 30] p-Isopropyltoluene | 17.389 | 119 | 835 | 10.837 | ng/mL# | 55 |
| 31] Indane | 17.783 | 117 | 722 | 10.715 | µg/mL | 92 |
| 32] Indene | 18.038 | 115 | 673 | 10.206 | µg/mL# | 94 |
| 33] n-Butylbenzene | 18.272 | 91 | 944 | 12.201 | ng/mL# | 57 |
| 34] trans-Decalin | 18.367 | 96 | 176m | 12.437 | ng/mL | |
| 35] cis-Decalin | 19.600 | 96 | 262 | 13.037 | ng/mL# | 20 |
| 40] Benzo(b)thiophene | 22.056 | 134 | 929 | 10.945 | ng/mL# | 85 |
| 45] Tetraethyl lead | 20.876 | 208 | 71m | 11.024 | ng/mL | |
| 50] MMT | 23.637 | 134 | 359 | 11.320 | µg/mL# | 75 |
| 51] Naphthalene | 21.837 | 128 | 1109 | 10.705 | ng/mL# | 69 |
| 52] 2-Methylnaphthalene | 24.542 | 142 | 771 | 11.522 | ng/mL | 96 |
| 53] 1-Methylnaphthalene | 24.961 | 142 | 659 | 11.126 | ng/mL# | 80 |
| 58] Biphenyl | 26.438 | 154 | 931 | 11.934 | ng/mL | 89 |
| 59] Acenaphthylene | 28.115 | 152 | 1001 | 10.112 | ng/mL# | 67 |
| 60] Acenaphthene | 28.848 | 154 | 597 | 10.560 | ng/mL | 91 |
| 61] Dibenzofuran | 29.496 | 168 | 816 | 10.065 | ng/mL# | 67 |
| 62] Fluorene | 30.872 | 166 | 718 | 10.624 | ng/mL | 98 |
| 66] Dibenzothiophene | 34.171 | 184 | 968 | 10.251 | ng/mL# | 56 |
| 72] Phenanthrene | 34.665 | 178 | 944 | 10.768 | ng/mL# | 64 |
| 73] Anthracene | 34.851 | 178 | 785 | 9.563 | ng/mL# | 64 |
| 79] Carbazole | 35.535 | 167 | 903 | 10.527 | µg/mL# | 59 |
| 80] Retene | 41.653 | 234 | 250 | 12.010 | ng/mL | 81 |
| 81] Benzo(b)naphtho(2,1-d)... | 44.150 | 234 | 842 | 10.311 | ng/mL | 100 |
| 86] Fluoranthene | 39.425 | 202 | 902 | 10.348 | ng/mL# | 64 |
| 87] Pyrene | 40.306 | 202 | 906 | 10.453 | ng/mL# | 87 |
| 97] Benz(a)anthracene | 45.080 | 228 | 804 | 10.754 | ng/mL | 94 |
| 98] Chrysene/triphenylene | 45.240 | 228 | 715 | 9.994 | ng/mL | 96 |
| 103] Benzo(b)fluoranthene | 49.113 | 252 | 887 | 10.765 | ng/mL# | 76 |
| 104] Benzo(j/k)fluoranthene | 49.203 | 252 | 906 | 10.850 | ng/mL# | 66 |

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39332.D
Sample : ic1950-0.01
Misc : OP47644,MSS1950,,,1,1
ALS Vial : 1 Sample Multiplier: 1
Acq On : 1 Jun 2016 5:23 pm Operator: sofyaz

Quant Time: Jun 02 12:08:31 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 105] Benzo(e)pyrene | 50.053 | 252 | 844 | 10.673 | ng/mL# | 64 |
| 106] Benzo(a)pyrene | 50.216 | 252 | 866 | 11.106 | ng/mL# | 59 |
| 107] Perylene | 50.487 | 252 | 901 | 11.052 | ng/mL | 92 |
| 108] Indeno(1,2,3-cd)pyrene | 53.706 | 276 | 1117 | 11.072 | ng/mL# | 67 |
| 109] Dibenz(a,h)anthracene | 53.747 | 278 | 836 | 10.130 | ng/mL# | 42 |
| 110] Benzo(g,h,i)perylene | 54.447 | 276 | 968 | 10.581 | ng/mL# | 79 |
| 111] Coronene | 59.551 | 300 | 1054 | 10.880 | ng/mL | 92 |
| 112] C-17 | 32.522 | 85 | 425 | 19.776 | ng/mL# | 64 |
| 113] Pristane | 32.643 | 85 | 192m | 11.302 | ng/mL | |
| 114] C-18 | 34.309 | 85 | 398 | 18.233 | ng/mL# | 60 |
| 115] Phytane | 34.503 | 85 | 279 | 11.912 | ng/mL# | 66 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

7.5.1
7


SGS ACCUTEST MC46549

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39332.D
Sample : ic1950-0.01
Misc : OP47644,MSS1950,,,1,1
ALS Vial : 1 Sample Multiplier: 1
Acq On : 1 Jun 2016 5:23 pm Operator: sofyaz

Quant Time: Jun 02 12:08:31 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

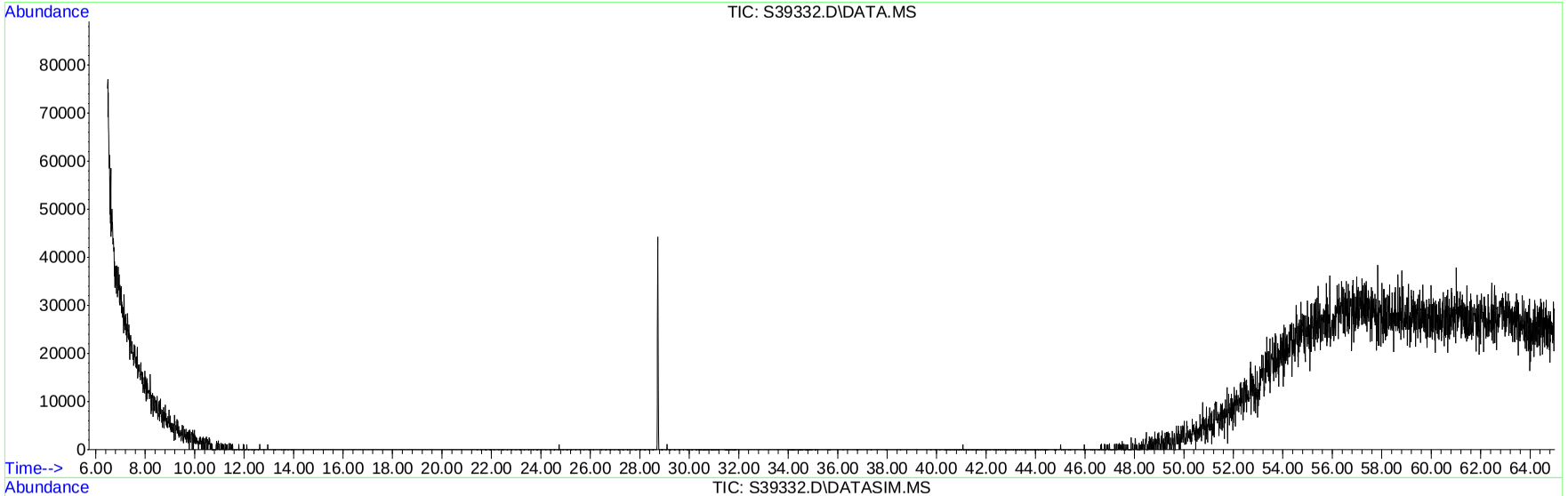






ACCUTEST MC46549

Manual Integrations APPROVED (compounds with "m" flag)
Ruben Parrilla
06/06/16 09:37

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39333.D
Sample : ic1950-0.05
Misc : OP47644,MSS1950,,,1,1
ALS Vial : 2 Sample Multiplier: 1
Acq On : 1 Jun 2016 6:38 pm Operator: sofyaz

Quant Time: Jun 02 08:25:26 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Acenaphthene-d10 | 28.724 | 162 | 55962 | 1000.00 | ng/mL | 0.00 |
| System Monitoring Compounds | | | | | | |
| 2) Toluene-d8 | 9.760 | 98 | 3931 | 48.07 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = | 4.81% | | |
| 3) Naphthalene-d8 | 21.761 | 136 | 5885 | 50.23 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = | 5.02% | | |
| 4) Phenanthrene-d10 | 34.576 | 188 | 4055 | 47.86 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = | 4.79% | | |
| 5) Perylene-d12 | 50.406 | 264 | 3345 | 49.36 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = | 4.94% | | |
| Target Compounds | | | | | | Qvalue |
| 6] MTBE | 5.817 | 73 | 2945 | 46.152 | ng/mL# | 21 |
| 7] Benzene | 7.278 | 78 | 4997m | 54.486 | ng/mL | |
| 13] 2,2,4-trimethylpentane | 7.784 | 57 | 16446 | 173.826 | µg/mL | 98 |
| 14] n-Heptane | 8.055 | 43 | 2459 | 51.500 | µg/mL | 98 |
| 15] Methylcyclohexane | 8.692 | 83 | 1814 | 45.846 | ng/mL | 94 |
| 16] Toluene | 9.873 | 91 | 5619 | 55.762 | ng/mL | 96 |
| 17] n-Octane | 10.734 | 43 | 3070 | 51.165 | µg/mL | 99 |
| 18] Ethylbenzene | 12.636 | 91 | 5853 | 51.061 | ng/mL | 100 |
| 19] m,p-xylene | 12.870 | 91 | 4893 | 51.347 | ng/mL | 99 |
| 20] Styrene | 13.507 | 104 | 4834 | 69.863 | ng/mL | 98 |
| 21] o-Xylene | 13.582 | 91 | 4849 | 51.100 | ng/mL | 97 |
| 22] Isopropylbenzene | 14.499 | 105 | 5518 | 50.202 | ng/mL | 98 |
| 23] n-Propylbenzene | 15.359 | 91 | 6968 | 50.593 | ng/mL | 96 |
| 24] 1,3,5-Trimethylbenzene | 15.785 | 105 | 4912 | 48.511 | ng/mL | 97 |
| 25] Phenol | 15.965 | 94 | 2661 | 47.130 | µg/mL# | 100 |
| 26] t-Butylbenzene | 16.497 | 119 | 4343 | 49.203 | ng/mL | 94 |
| 27] 1,2,4-Trimethylbenzene | 16.529 | 105 | 5067 | 49.260 | ng/mL | 87 |
| 28] sec-Butylbenzene | 17.018 | 105 | 6202 | 51.516 | ng/mL | 98 |
| 29] 1,2,3-Trimethylbenzene | 17.379 | 105 | 5109 | 49.655 | ng/mL | 93 |
| 30] p-Isopropyltoluene | 17.390 | 119 | 5269 | 48.893 | ng/mL | 98 |
| 31] Indane | 17.783 | 117 | 4667 | 49.523 | µg/mL | 99 |
| 32] Indene | 18.027 | 115 | 4548 | 48.634 | µg/mL | 97 |
| 33] n-Butylbenzene | 18.272 | 91 | 5181 | 49.327 | ng/mL | 95 |
| 34] trans-Decalin | 18.357 | 96 | 946 | 47.166 | ng/mL | 92 |
| 35] cis-Decalin | 19.590 | 96 | 1365 | 51.333 | ng/mL | 92 |
| 40] Benzo(b)thiophene | 22.057 | 134 | 5932 | 50.379 | ng/mL | 98 |
| 45] Tetraethyl lead | 20.886 | 208 | 506 | 58.580 | ng/mL | 83 |
| 50] MMT | 23.638 | 134 | 2266 | 52.297 | µg/mL | 96 |
| 51] Naphthalene | 21.837 | 128 | 7433 | 51.744 | ng/mL | 100 |
| 52] 2-Methylnaphthalene | 24.542 | 142 | 4609 | 50.202 | ng/mL | 99 |
| 53] 1-Methylnaphthalene | 24.961 | 142 | 4184 | 51.290 | ng/mL | 96 |
| 58] Biphenyl | 26.428 | 154 | 5305 | 49.936 | ng/mL | 97 |
| 59] Acenaphthylene | 28.105 | 152 | 6960 | 49.698 | ng/mL | 99 |
| 60] Acenaphthene | 28.848 | 154 | 3951 | 49.883 | ng/mL | 98 |
| 61] Dibenzofuran | 29.496 | 168 | 5637 | 48.954 | ng/mL | 99 |
| 62] Fluorene | 30.865 | 166 | 4625 | 48.675 | ng/mL | 99 |
| 66] Dibenzothiophene | 34.172 | 184 | 6478 | 48.369 | ng/mL | 96 |
| 72] Phenanthrene | 34.665 | 178 | 6028 | 49.143 | ng/mL | 97 |
| 73] Anthracene | 34.843 | 178 | 5509 | 46.278 | ng/mL | 99 |
| 79] Carbazole | 35.536 | 167 | 5537 | 45.177 | µg/mL | 99 |
| 80] Retene | 41.653 | 234 | 1354 | 47.345 | ng/mL | 100 |
| 81] Benzo(b)naphtho(2,1-d)... | 44.150 | 234 | 5437 | 46.681 | ng/mL | 100 |
| 86] Fluoranthene | 39.425 | 202 | 5846 | 47.143 | ng/mL | 98 |
| 87] Pyrene | 40.306 | 202 | 5857 | 47.709 | ng/mL | 99 |
| 97] Benz(a)anthracene | 45.080 | 228 | 4948 | 46.853 | ng/mL | 100 |
| 98] Chrysene/triphenylene | 45.240 | 228 | 4878 | 47.693 | ng/mL | 99 |
| 103] Benzo(b)fluoranthene | 49.113 | 252 | 5525 | 47.627 | ng/mL | 100 |
| 104] Benzo(j/k)fluoranthene | 49.194 | 252 | 5759 | 49.432 | ng/mL | 99 |

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39333.D
Sample : ic1950-0.05
Misc : OP47644,MSS1950,,,1,1
ALS Vial : 2 Sample Multiplier: 1
Acq On : 1 Jun 2016 6:38 pm Operator: sofyaz

Quant Time: Jun 02 08:25:26 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 105] Benzo(e)pyrene | 50.053 | 252 | 5571 | 50.529 | ng/mL | 96 |
| 106] Benzo(a)pyrene | 50.216 | 252 | 5290 | 48.739 | ng/mL | 98 |
| 107] Perylene | 50.487 | 252 | 5577 | 49.180 | ng/mL | 98 |
| 108] Indeno(1,2,3-cd)pyrene | 53.706 | 276 | 6744m | 47.816 | ng/mL | |
| 109] Dibenz(a,h)anthracene | 53.739 | 278 | 5677m | 48.383 | ng/mL | |
| 110] Benzo(g,h,i)perylene | 54.447 | 276 | 6417 | 50.137 | ng/mL | 100 |
| 111] Coronene | 59.543 | 300 | 6832 | 50.863 | ng/mL | 95 |
| 112] C-17 | 32.514 | 85 | 1537 | 50.830 | ng/mL | 93 |
| 113] Pristane | 32.635 | 85 | 1149m | 49.170 | ng/mL | |
| 114] C-18 | 34.309 | 85 | 1559 | 50.658 | ng/mL# | 90 |
| 115] Phytane | 34.495 | 85 | 1511 | 46.750 | ng/mL# | 91 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39333.D
Sample : ic1950-0.05
Misc : OP47644,MSS1950,,,1,1
ALS Vial : 2 Sample Multiplier: 1
Acq On : 1 Jun 2016 6:38 pm Operator: sofyaz

Quant Time: Jun 02 08:25:26 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

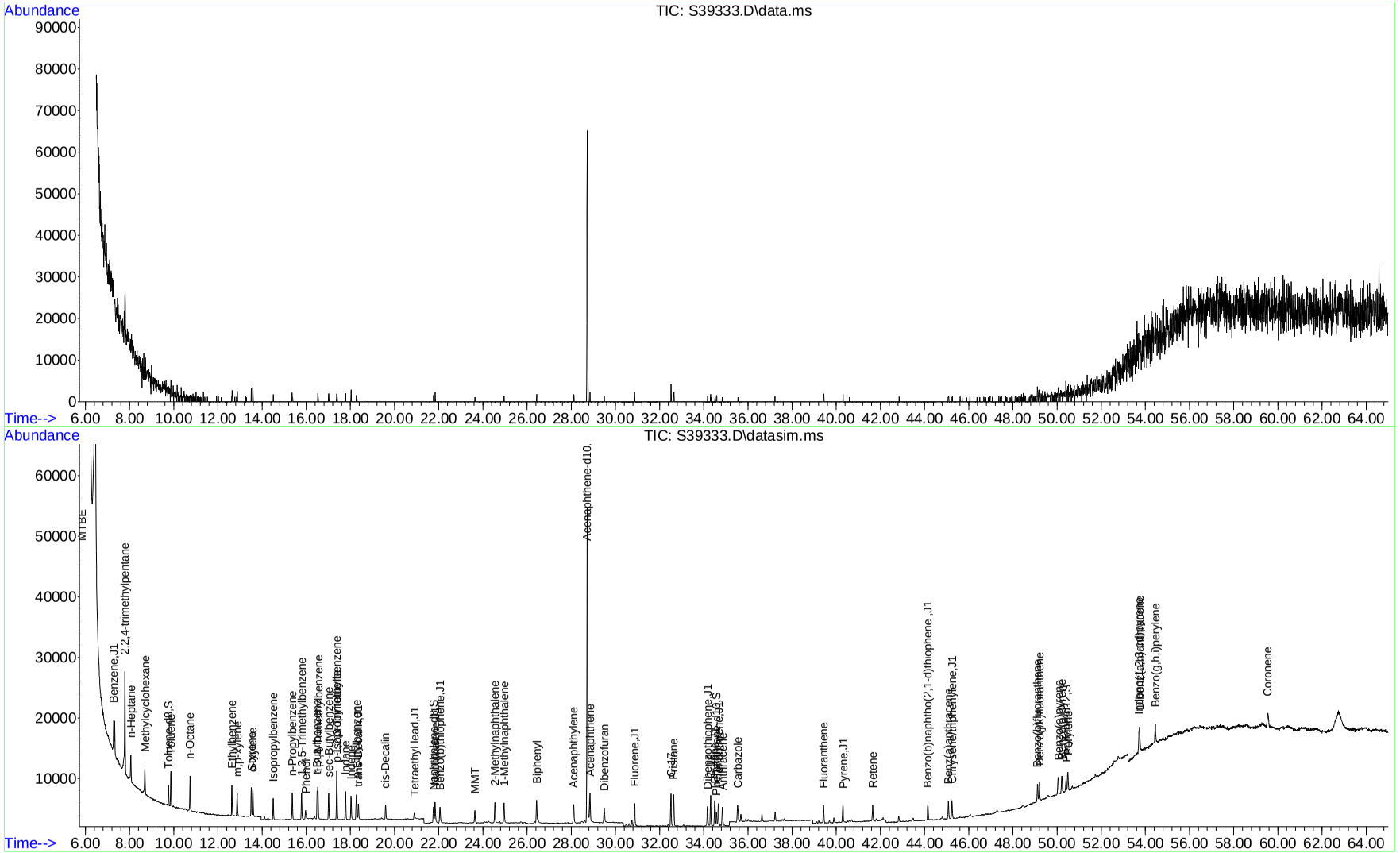

Manual Integrations APPROVED (compounds with "m" flag)
Ruben Parrilla
06/06/16 09:37

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39334.D
Sample : ic1950-0.25
Misc : OP47644,MSS1950,,,1,1
ALS Vial : 3 Sample Multiplier: 1
Acq On : 1 Jun 2016 7:53 pm Operator: sofyaz

Quant Time: Jun 02 08:22:30 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Acenaphthene-d10 | 28.725 | 162 | 40740 | 1000.00 | ng/mL | 0.00 |
| System Monitoring Compounds | | | | | | |
| 2) Toluene-d8 | 9.741 | 98 | 15400 | 261.73 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = | 26.17% | | |
| 3) Naphthalene-d8 | 21.753 | 136 | 21611 | 254.53 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = | 25.45% | | |
| 4) Phenanthrene-d10 | 34.570 | 188 | 16114 | 265.23 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = | 26.52% | | |
| 5) Perylene-d12 | 50.409 | 264 | 12905 | 265.71 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = | 26.57% | | |
| Target Compounds | | | | | | Qvalue |
| 6] MTBE | 5.788 | 73 | 16761 | 423.352 | ng/mL | 96 |
| 7] Benzene | 7.250 | 78 | 17528m | 266.992 | ng/mL | |
| 13] 2,2,4-trimethylpentane | 7.755 | 57 | 18412 | 273.637 | µg/mL | 98 |
| 14] n-Heptane | 8.027 | 43 | 9304 | 274.119 | µg/mL | 100 |
| 15] Methylcyclohexane | 8.664 | 83 | 7521 | 265.029 | ng/mL | 99 |
| 16] Toluene | 9.854 | 91 | 19304 | 267.841 | ng/mL | 98 |
| 17] n-Octane | 10.715 | 43 | 11576 | 270.424 | µg/mL | 99 |
| 18] Ethylbenzene | 12.626 | 91 | 21741 | 264.242 | ng/mL | 99 |
| 19] m,p-xylene | 12.860 | 91 | 18133 | 265.416 | ng/mL | 98 |
| 20] Styrene | 13.507 | 104 | 12830 | 256.314 | ng/mL | 99 |
| 21] o-Xylene | 13.582 | 91 | 18167 | 267.615 | ng/mL | 99 |
| 22] Isopropylbenzene | 14.498 | 105 | 20650 | 260.872 | ng/mL | 100 |
| 23] n-Propylbenzene | 15.359 | 91 | 25815 | 260.059 | ng/mL | 98 |
| 24] 1,3,5-Trimethylbenzene | 15.774 | 105 | 18785 | 256.494 | ng/mL | 97 |
| 25] Phenol | 15.954 | 94 | 9356 | 221.028 | µg/mL# | 98 |
| 26] t-Butylbenzene | 16.497 | 119 | 16429 | 257.625 | ng/mL | 95 |
| 27] 1,2,4-Trimethylbenzene | 16.518 | 105 | 19021 | 255.375 | ng/mL | 87 |
| 28] sec-Butylbenzene | 17.007 | 105 | 22229 | 254.864 | ng/mL | 98 |
| 29] 1,2,3-Trimethylbenzene | 17.368 | 105 | 18847 | 252.159 | ng/mL | 94 |
| 30] p-Isopropyltoluene | 17.379 | 119 | 19650 | 250.622 | ng/mL | 100 |
| 31] Indane | 17.772 | 117 | 17228 | 251.491 | µg/mL | 99 |
| 32] Indene | 18.027 | 115 | 17048 | 250.560 | µg/mL | 100 |
| 33] n-Butylbenzene | 18.261 | 91 | 18730m | 243.318 | ng/mL | |
| 34] trans-Decalin | 18.357 | 96 | 3664 | 251.251 | ng/mL | 97 |
| 35] cis-Decalin | 19.589 | 96 | 4931 | 256.340 | ng/mL | 94 |
| 40] Benzo(b)thiophene | 22.048 | 134 | 21641 | 253.294 | ng/mL | 99 |
| 45] Tetraethyl lead | 20.886 | 208 | 1620 | 260.268 | ng/mL | 98 |
| 50] MMT | 23.629 | 134 | 8152 | 261.374 | µg/mL | 98 |
| 51] Naphthalene | 21.829 | 128 | 26645 | 256.431 | ng/mL | 99 |
| 52] 2-Methylnaphthalene | 24.534 | 142 | 16721 | 250.234 | ng/mL | 100 |
| 53] 1-Methylnaphthalene | 24.953 | 142 | 15069 | 255.015 | ng/mL | 100 |
| 58] Biphenyl | 26.429 | 154 | 19653 | 255.515 | ng/mL | 100 |
| 59] Acenaphthylene | 28.106 | 152 | 25775 | 253.768 | ng/mL | 100 |
| 60] Acenaphthene | 28.849 | 154 | 14608 | 254.476 | ng/mL | 99 |
| 61] Dibenzofuran | 29.497 | 168 | 21503 | 258.765 | ng/mL | 99 |
| 62] Fluorene | 30.867 | 166 | 17653 | 256.983 | ng/mL | 100 |
| 66] Dibenzothiophene | 34.166 | 184 | 25279 | 262.523 | ng/mL | 99 |
| 72] Phenanthrene | 34.659 | 178 | 23296 | 264.722 | ng/mL | 99 |
| 73] Anthracene | 34.837 | 178 | 22142 | 257.386 | ng/mL | 99 |
| 79] Carbazole | 35.530 | 167 | 22812 | 257.619 | µg/mL | 99 |
| 80] Retene | 41.647 | 234 | 5277 | 254.638 | ng/mL | 99 |
| 81] Benzo(b)naphtho(2,1-d)... | 44.144 | 234 | 22006 | 262.873 | ng/mL | 100 |
| 86] Fluoranthene | 39.420 | 202 | 23470 | 263.490 | ng/mL | 100 |
| 87] Pyrene | 40.300 | 202 | 23253 | 263.765 | ng/mL | 100 |
| 97] Benz(a)anthracene | 45.074 | 228 | 19701 | 258.407 | ng/mL | 100 |
| 98] Chrysene/triphenylene | 45.234 | 228 | 19344 | 263.235 | ng/mL | 99 |
| 103] Benzo(b)fluoranthene | 49.116 | 252 | 21790 | 260.806 | ng/mL | 100 |
| 104] Benzo(j/k)fluoranthene | 49.197 | 252 | 22515 | 271.054 | ng/mL | 99 |

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39334.D
Sample : ic1950-0.25
Misc : OP47644,MSS1950,,,1,1
ALS Vial : 3 Sample Multiplier: 1
Acq On : 1 Jun 2016 7:53 pm Operator: sofyaz

Quant Time: Jun 02 08:22:30 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 105] Benzo(e)pyrene | 50.047 | 252 | 21135 | 268.079 | ng/mL | 98 |
| 106] Benzo(a)pyrene | 50.210 | 252 | 20479 | 262.390 | ng/mL | 99 |
| 107] Perylene | 50.481 | 252 | 21492 | 263.975 | ng/mL | 99 |
| 108] Indeno(1,2,3-cd)pyrene | 53.709 | 276 | 26753m | 264.273 | ng/mL | |
| 109] Dibenz(a,h)anthracene | 53.741 | 278 | 22197m | 263.323 | ng/mL | |
| 110] Benzo(g,h,i)perylene | 54.449 | 276 | 24482 | 267.294 | ng/mL | 99 |
| 111] Coronene | 59.545 | 300 | 25695 | 267.319 | ng/mL | 99 |
| 112] C-17 | 32.508 | 85 | 5451 | 246.844 | ng/mL | 96 |
| 113] Pristane | 32.638 | 85 | 4245 | 249.379 | ng/mL | 100 |
| 114] C-18 | 34.311 | 85 | 5542 | 246.501 | ng/mL | 96 |
| 115] Phytane | 34.497 | 85 | 5916 | 251.912 | ng/mL | 100 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39334.D
Sample : ic1950-0.25
Misc : OP47644,MSS1950,,,1,1
ALS Vial : 3 Sample Multiplier: 1
Acq On : 1 Jun 2016 7:53 pm Operator: sofyaz

Quant Time: Jun 02 08:22:30 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

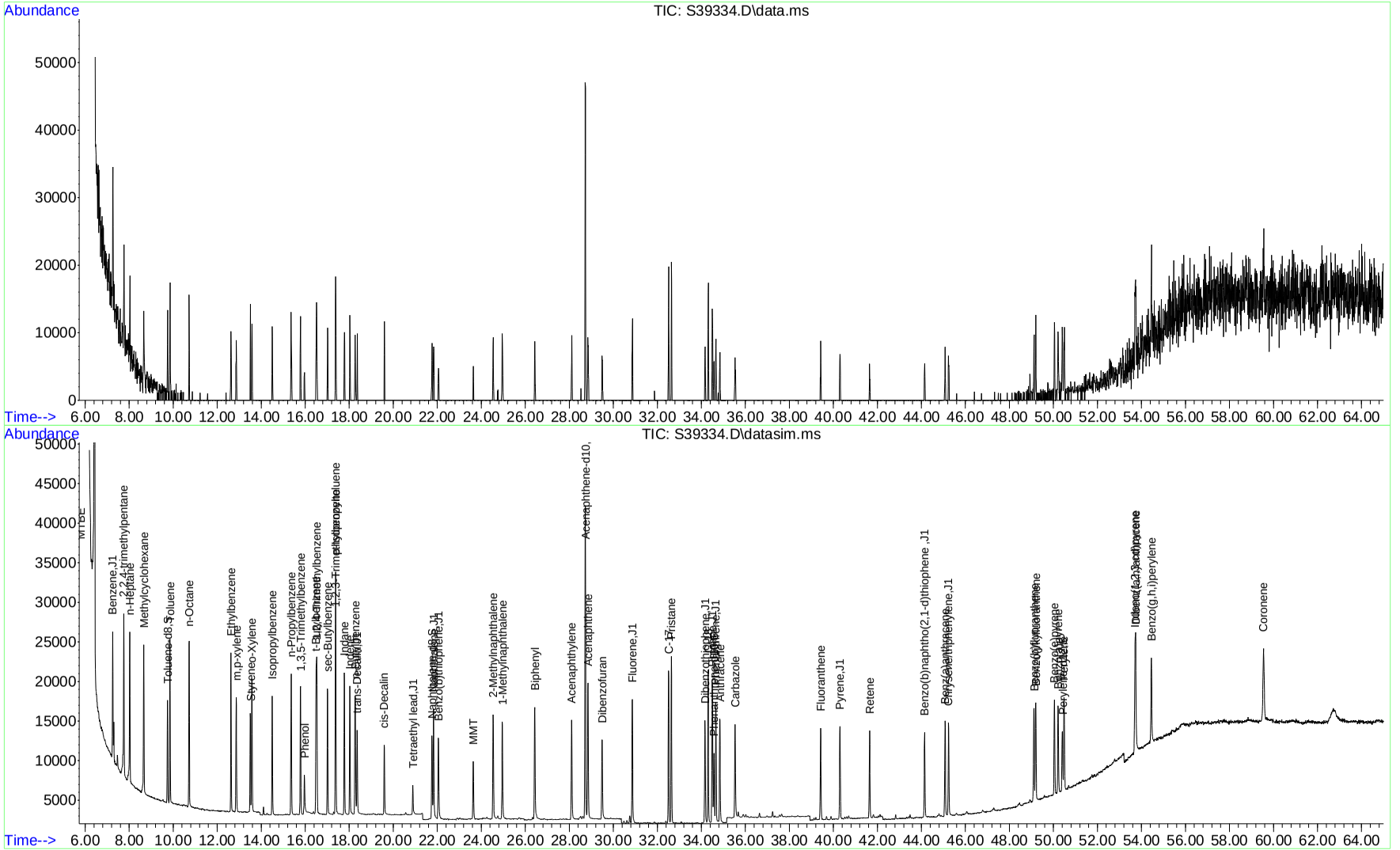






ACCUTEST MC46549

Manual Integrations APPROVED (compounds with "m" flag)
Ruben Parrilla 06/06/16 09:37

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39335.D
Sample : icc1950-1.0
Misc : OP47644,MSS1950,,,1,1
ALS Vial : 4 Sample Multiplier: 1
Acq On : 1 Jun 2016 9:12 pm Operator: sofyaz

Quant Time: Jun 02 08:14:59 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Acenaphthene-d10 | 28.725 | 162 | 43996 | 1000.00 | ng/mL | 0.00 |
| System Monitoring Compounds | | | | | | |
| 2) Toluene-d8 | 9.751 | 98 | 65441 | 1000.00 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = 100.00% | | | |
| 3) Naphthalene-d8 | 21.753 | 136 | 91757 | 1000.00 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = 100.00% | | | |
| 4) Phenanthrene-d10 | 34.570 | 188 | 66375 | 1000.00 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = 100.00% | | | |
| 5) Perylene-d12 | 50.400 | 264 | 53629 | 1000.00 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = 100.00% | | | |
| Target Compounds | | | | | | Qvalue |
| 6] MTBE | 5.807 | 73 | 52124 | 1000.000 | ng/mL | 95 |
| 7] Benzene | 7.259 | 78 | 74175 | 1000.000 | ng/mL | 99 |
| 13] 2,2,4-trimethylpentane | 7.765 | 57 | 76974 | 1000.000 | µg/mL | 98 |
| 14] n-Heptane | 8.037 | 43 | 37820 | 1000.000 | µg/mL | 98 |
| 15] Methylcyclohexane | 8.673 | 83 | 31363 | 1000.000 | ng/mL | 98 |
| 16] Toluene | 9.863 | 91 | 80339 | 1000.000 | ng/mL | 99 |
| 17] n-Octane | 10.725 | 43 | 47349 | 1000.000 | µg/mL | 99 |
| 18] Ethylbenzene | 12.626 | 91 | 91245 | 1000.000 | ng/mL | 99 |
| 19] m,p-xylene | 12.860 | 91 | 75590 | 1000.000 | ng/mL | 98 |
| 20] Styrene | 13.497 | 104 | 54389 | 1000.000 | ng/mL | 97 |
| 21] o-Xylene | 13.572 | 91 | 74966 | 1000.000 | ng/mL | 98 |
| 22] Isopropylbenzene | 14.498 | 105 | 86697 | 1000.000 | ng/mL | 100 |
| 23] n-Propylbenzene | 15.359 | 91 | 108882 | 1000.000 | ng/mL | 98 |
| 24] 1,3,5-Trimethylbenzene | 15.774 | 105 | 79309 | 1000.000 | ng/mL | 98 |
| 25] Phenol | 15.955 | 94 | 42359 | 1000.000 | µg/mL# | 97 |
| 26] t-Butylbenzene | 16.497 | 119 | 68334 | 1000.000 | ng/mL | 94 |
| 27] 1,2,4-Trimethylbenzene | 16.518 | 105 | 80005 | 1000.000 | ng/mL | 88 |
| 28] sec-Butylbenzene | 17.007 | 105 | 94167 | 1000.000 | ng/mL | 98 |
| 29] 1,2,3-Trimethylbenzene | 17.368 | 105 | 78954 | 1000.000 | ng/mL | 94 |
| 30] p-Isopropyltoluene | 17.379 | 119 | 82969 | 1000.000 | ng/mL | 100 |
| 31] Indane | 17.772 | 117 | 73262 | 1000.000 | µg/mL | 100 |
| 32] Indene | 18.027 | 115 | 72477 | 1000.000 | µg/mL | 100 |
| 33] n-Butylbenzene | 18.261 | 91 | 81433 | 1000.000 | ng/mL | 97 |
| 34] trans-Decalin | 18.357 | 96 | 15491 | 1000.000 | ng/mL | 97 |
| 35] cis-Decalin | 19.590 | 96 | 20519 | 1000.000 | ng/mL | 95 |
| 40] Benzo(b)thiophene | 22.048 | 134 | 91873 | 1000.000 | ng/mL | 100 |
| 45] Tetraethyl lead | 20.886 | 208 | 6580 | 1000.000 | ng/mL | 100 |
| 50] MMT | 23.629 | 134 | 33321 | 1000.000 | µg/mL | 98 |
| 51] Naphthalene | 21.829 | 128 | 112614 | 1000.000 | ng/mL | 99 |
| 52] 2-Methylnaphthalene | 24.534 | 142 | 71177 | 1000.000 | ng/mL | 100 |
| 53] 1-Methylnaphthalene | 24.953 | 142 | 63271 | 1000.000 | ng/mL | 100 |
| 58] Biphenyl | 26.420 | 154 | 83231 | 1000.000 | ng/mL | 100 |
| 59] Acenaphthylene | 28.106 | 152 | 110636 | 1000.000 | ng/mL | 100 |
| 60] Acenaphthene | 28.840 | 154 | 62036 | 1000.000 | ng/mL | 100 |
| 61] Dibenzofuran | 29.488 | 168 | 90139 | 1000.000 | ng/mL | 100 |
| 62] Fluorene | 30.859 | 166 | 72846 | 1000.000 | ng/mL | 100 |
| 66] Dibenzothiophene | 34.166 | 184 | 103679 | 1000.000 | ng/mL | 99 |
| 72] Phenanthrene | 34.659 | 178 | 96110 | 1000.000 | ng/mL | 100 |
| 73] Anthracene | 34.837 | 178 | 93046 | 1000.000 | ng/mL | 100 |
| 79] Carbazole | 35.520 | 167 | 95524 | 1000.000 | µg/mL | 99 |
| 80] Retene | 41.647 | 234 | 22132 | 1000.000 | ng/mL | 100 |
| 81] Benzo(b)naphtho(2,1-d)... | 44.144 | 234 | 91662 | 1000.000 | ng/mL | 100 |
| 86] Fluoranthene | 39.420 | 202 | 96769 | 1000.000 | ng/mL | 100 |
| 87] Pyrene | 40.292 | 202 | 96303 | 1000.000 | ng/mL | 99 |
| 97] Benz(a)anthracene | 45.075 | 228 | 82782 | 1000.000 | ng/mL | 99 |
| 98] Chrysene/triphenylene | 45.234 | 228 | 80912 | 1000.000 | ng/mL | 100 |
| 103] Benzo(b)fluoranthene | 49.107 | 252 | 92758 | 1000.000 | ng/mL | 98 |
| 104] Benzo(j/k)fluoranthene | 49.188 | 252 | 93363 | 1000.000 | ng/mL | 100 |

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39335.D
Sample : icc1950-1.0
Misc : OP47644,MSS1950,,,1,1
ALS Vial : 4 Sample Multiplier: 1
Acq On : 1 Jun 2016 9:12 pm Operator: sofyaz

Quant Time: Jun 02 08:14:59 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 105] Benzo(e)pyrene | 50.047 | 252 | 89124 | 1000.000 | ng/mL | 99 |
| 106] Benzo(a)pyrene | 50.210 | 252 | 86680 | 1000.000 | ng/mL | 99 |
| 107] Perylene | 50.481 | 252 | 91019 | 1000.000 | ng/mL | 98 |
| 108] Indeno(1,2,3-cd)pyrene | 53.700 | 276 | 111844m | 1000.528 | ng/mL | |
| 109] Dibenz(a,h)anthracene | 53.733 | 278 | 94046m | 1010.845 | ng/mL | |
| 110] Benzo(g,h,i)perylene | 54.449 | 276 | 102441 | 1000.000 | ng/mL | 99 |
| 111] Coronene | 59.545 | 300 | 106996 | 1000.000 | ng/mL | 99 |
| 112] C-17 | 32.508 | 85 | 23082 | 1000.000 | ng/mL | 98 |
| 113] Pristane | 32.638 | 85 | 17943 | 1000.000 | ng/mL | 100 |
| 114] C-18 | 34.312 | 85 | 23729 | 1000.000 | ng/mL | 98 |
| 115] Phytane | 34.497 | 85 | 24804 | 1000.000 | ng/mL | 100 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39335.D
Sample : icc1950-1.0
Misc : OP47644,MSS1950,,,1,1
ALS Vial : 4 Sample Multiplier: 1
Acq On : 1 Jun 2016 9:12 pm Operator: sofyaz

Quant Time: Jun 02 08:14:59 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

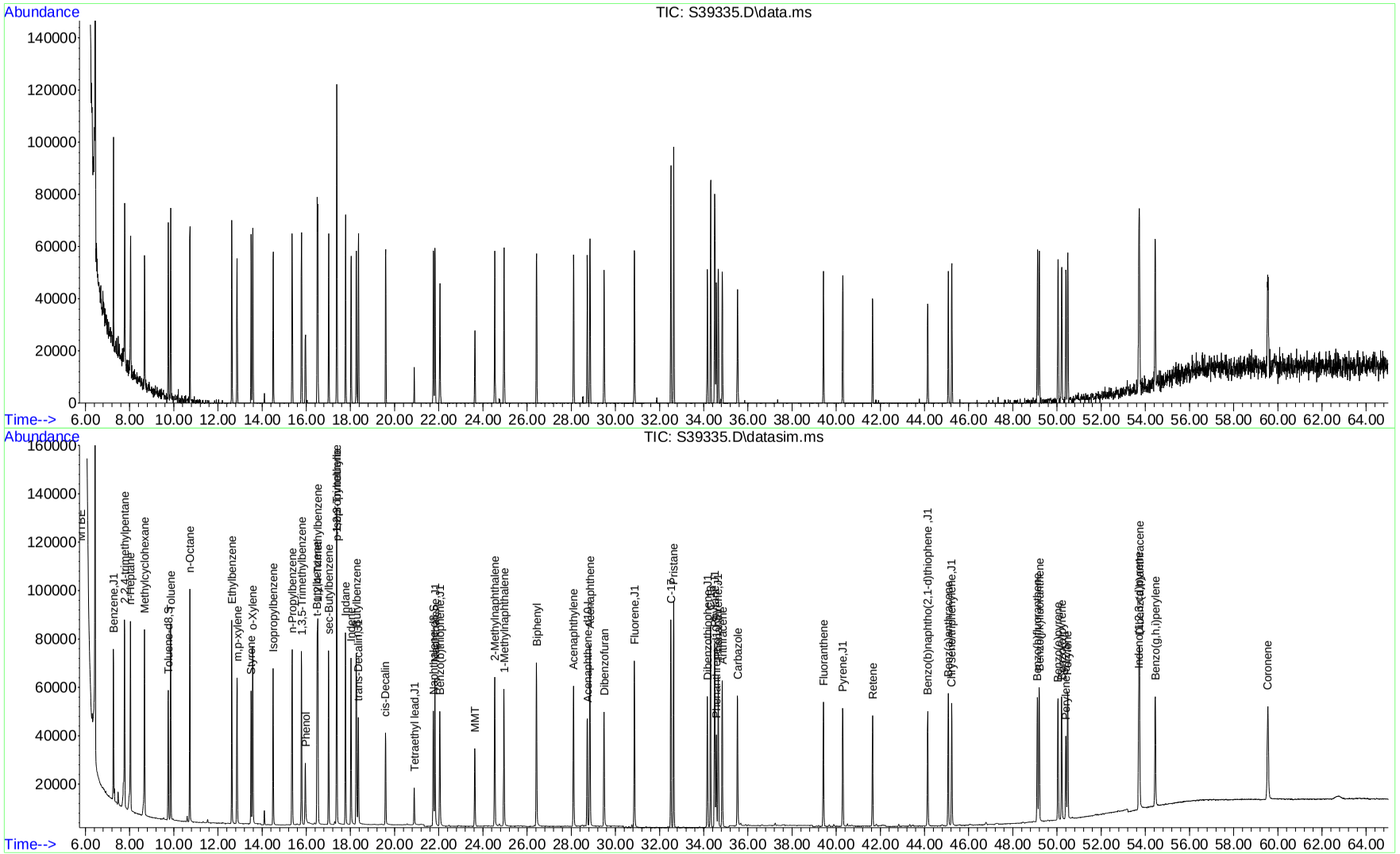






ACCUTEST MC46549

Manual Integrations APPROVED (compounds with "m" flag)
Ruben Parrilla
06/06/16 09:37

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39336.D
Sample : ic1950-5.0
Misc : OP47644,MSS1950,,,1,1
ALS Vial : 5 Sample Multiplier: 1
Acq On : 1 Jun 2016 10:32 pm Operator: sofyaz

Quant Time: Jun 02 08:17:13 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Acenaphthene-d10 | 28.716 | 162 | 45617 | 1000.00 | ng/mL | 0.00 |
| System Monitoring Compounds | | | | | | |
| 2) Toluene-d8 | 9.751 | 98 | 326443 | 4811.09 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = 481.11% | | | |
| 3) Naphthalene-d8 | 21.753 | 136 | 485622 | 5104.41 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = 510.44% | | | |
| 4) Phenanthrene-d10 | 34.570 | 188 | 346650 | 5037.01 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = 503.70% | | | |
| 5) Perylene-d12 | 50.409 | 264 | 274838 | 4942.69 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = 494.27% | | | |
| Target Compounds | | | | | | Qvalue |
| 6] MTBE | 5.816 | 73 | 200936 | 3717.975 | ng/mL | 96 |
| 7] Benzene | 7.268 | 78 | 365693 | 4754.946 | ng/mL | 99 |
| 13] 2,2,4-trimethylpentane | 7.774 | 57 | 374239 | 4689.121 | µg/mL | 98 |
| 14] n-Heptane | 8.046 | 43 | 191164 | 4874.960 | µg/mL | 97 |
| 15] Methylcyclohexane | 8.683 | 83 | 159122 | 4893.269 | ng/mL | 98 |
| 16] Toluene | 9.863 | 91 | 399862 | 4800.320 | ng/mL | 100 |
| 17] n-Octane | 10.725 | 43 | 237878 | 4845.403 | µg/mL | 99 |
| 18] Ethylbenzene | 12.626 | 91 | 460371 | 4866.148 | ng/mL | 100 |
| 19] m,p-xylene | 12.860 | 91 | 382073 | 4874.931 | ng/mL | 97 |
| 20] Styrene | 13.497 | 104 | 282249 | 5005.043 | ng/mL | 97 |
| 21] o-Xylene | 13.572 | 91 | 381264 | 4905.101 | ng/mL | 97 |
| 22] Isopropylbenzene | 14.498 | 105 | 449617 | 5001.786 | ng/mL | 100 |
| 23] n-Propylbenzene | 15.349 | 91 | 567189 | 5024.099 | ng/mL | 100 |
| 24] 1,3,5-Trimethylbenzene | 15.774 | 105 | 421257 | 5122.844 | ng/mL | 97 |
| 25] Phenol | 15.944 | 94 | 243930 | 5554.001 | µg/mL# | 98 |
| 26] t-Butylbenzene | 16.496 | 119 | 366948 | 5179.098 | ng/mL | 94 |
| 27] 1,2,4-Trimethylbenzene | 16.518 | 105 | 429256 | 5174.706 | ng/mL | 88 |
| 28] sec-Butylbenzene | 17.007 | 105 | 501884 | 5140.331 | ng/mL | 97 |
| 29] 1,2,3-Trimethylbenzene | 17.368 | 105 | 434135 | 5303.189 | ng/mL | 94 |
| 30] p-Isopropyltoluene | 17.379 | 119 | 455253 | 5292.044 | ng/mL | 99 |
| 31] Indane | 17.772 | 117 | 397981 | 5239.261 | µg/mL | 99 |
| 32] Indene | 18.027 | 115 | 396934 | 5282.075 | µg/mL | 99 |
| 33] n-Butylbenzene | 18.261 | 91 | 449058 | 5318.492 | ng/mL | 97 |
| 34] trans-Decalin | 18.356 | 96 | 83862 | 5221.223 | ng/mL | 95 |
| 35] cis-Decalin | 19.589 | 96 | 110767 | 5206.438 | ng/mL | 93 |
| 40] Benzo(b)thiophene | 22.048 | 134 | 491119 | 5155.672 | ng/mL | 100 |
| 45] Tetraethyl lead | 20.886 | 208 | 35051 | 5137.608 | ng/mL | 99 |
| 50] MMT | 23.629 | 134 | 176545 | 5110.035 | µg/mL | 97 |
| 51] Naphthalene | 21.829 | 128 | 594249 | 5089.353 | ng/mL | 99 |
| 52] 2-Methylnaphthalene | 24.534 | 142 | 381745 | 5172.734 | ng/mL | 100 |
| 53] 1-Methylnaphthalene | 24.953 | 142 | 337955 | 5151.582 | ng/mL | 100 |
| 58] Biphenyl | 26.420 | 154 | 429823 | 4980.707 | ng/mL | 100 |
| 59] Acenaphthylene | 28.106 | 152 | 563419 | 4911.583 | ng/mL | 100 |
| 60] Acenaphthene | 28.849 | 154 | 321417 | 4997.025 | ng/mL | 99 |
| 61] Dibenzofuran | 29.488 | 168 | 464977 | 4975.139 | ng/mL | 100 |
| 62] Fluorene | 30.859 | 166 | 394424 | 5222.087 | ng/mL | 99 |
| 66] Dibenzothiophene | 34.166 | 184 | 558504 | 5195.436 | ng/mL | 99 |
| 72] Phenanthrene | 34.659 | 178 | 499442 | 5011.906 | ng/mL | 99 |
| 73] Anthracene | 34.837 | 178 | 490782 | 5087.183 | ng/mL | 100 |
| 79] Carbazole | 35.519 | 167 | 497597 | 5024.024 | µg/mL | 99 |
| 80] Retene | 41.647 | 234 | 117785 | 5132.817 | ng/mL | 99 |
| 81] Benzo(b)naphtho(2,1-d)... | 44.153 | 234 | 475033 | 4998.284 | ng/mL | 100 |
| 86] Fluoranthene | 39.419 | 202 | 507965 | 5062.721 | ng/mL | 99 |
| 87] Pyrene | 40.300 | 202 | 500513 | 5012.588 | ng/mL | 99 |
| 97] Benz(a)anthracene | 45.074 | 228 | 435370 | 5072.348 | ng/mL | 100 |
| 98] Chrysene/triphenylene | 45.243 | 228 | 421869 | 5028.647 | ng/mL | 100 |
| 103] Benzo(b)fluoranthene | 49.116 | 252 | 458309 | 4765.336 | ng/mL | 99 |
| 104] Benzo(j/k)fluoranthene | 49.197 | 252 | 473825 | 4894.740 | ng/mL | 100 |

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39336.D
Sample : ic1950-5.0
Misc : OP47644,MSS1950,,,1,1
ALS Vial : 5 Sample Multiplier: 1
Acq On : 1 Jun 2016 10:32 pm Operator: sofyaz

Quant Time: Jun 02 08:17:13 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 105] Benzo(e)pyrene | 50.056 | 252 | 436095 | 4719.249 | ng/mL | 98 |
| 106] Benzo(a)pyrene | 50.219 | 252 | 439392 | 4888.996 | ng/mL | 99 |
| 107] Perylene | 50.490 | 252 | 459774 | 4871.905 | ng/mL | 99 |
| 108] Indeno(1,2,3-cd)pyrene | 53.717 | 276 | 557280m | 4805.596 | ng/mL | |
| 109] Dibenz(a,h)anthracene | 53.741 | 278 | 469431m | 4814.131 | ng/mL | |
| 110] Benzo(g,h,i)perylene | 54.457 | 276 | 515354 | 4851.972 | ng/mL | 99 |
| 111] Coronene | 59.569 | 300 | 535062 | 4823.064 | ng/mL | 99 |
| 112] C-17 | 32.516 | 85 | 127383 | 5322.608 | ng/mL | 99 |
| 113] Pristane | 32.638 | 85 | 98337 | 5285.771 | ng/mL | 97 |
| 114] C-18 | 34.311 | 85 | 128770 | 5233.856 | ng/mL | 98 |
| 115] Phytane | 34.497 | 85 | 134413 | 5226.441 | ng/mL | 99 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39336.D
Sample : ic1950-5.0
Misc : OP47644,MSS1950,,,1,1
ALS Vial : 5 Sample Multiplier: 1
Acq On : 1 Jun 2016 10:32 pm Operator: sofyaz

Quant Time: Jun 02 08:17:13 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

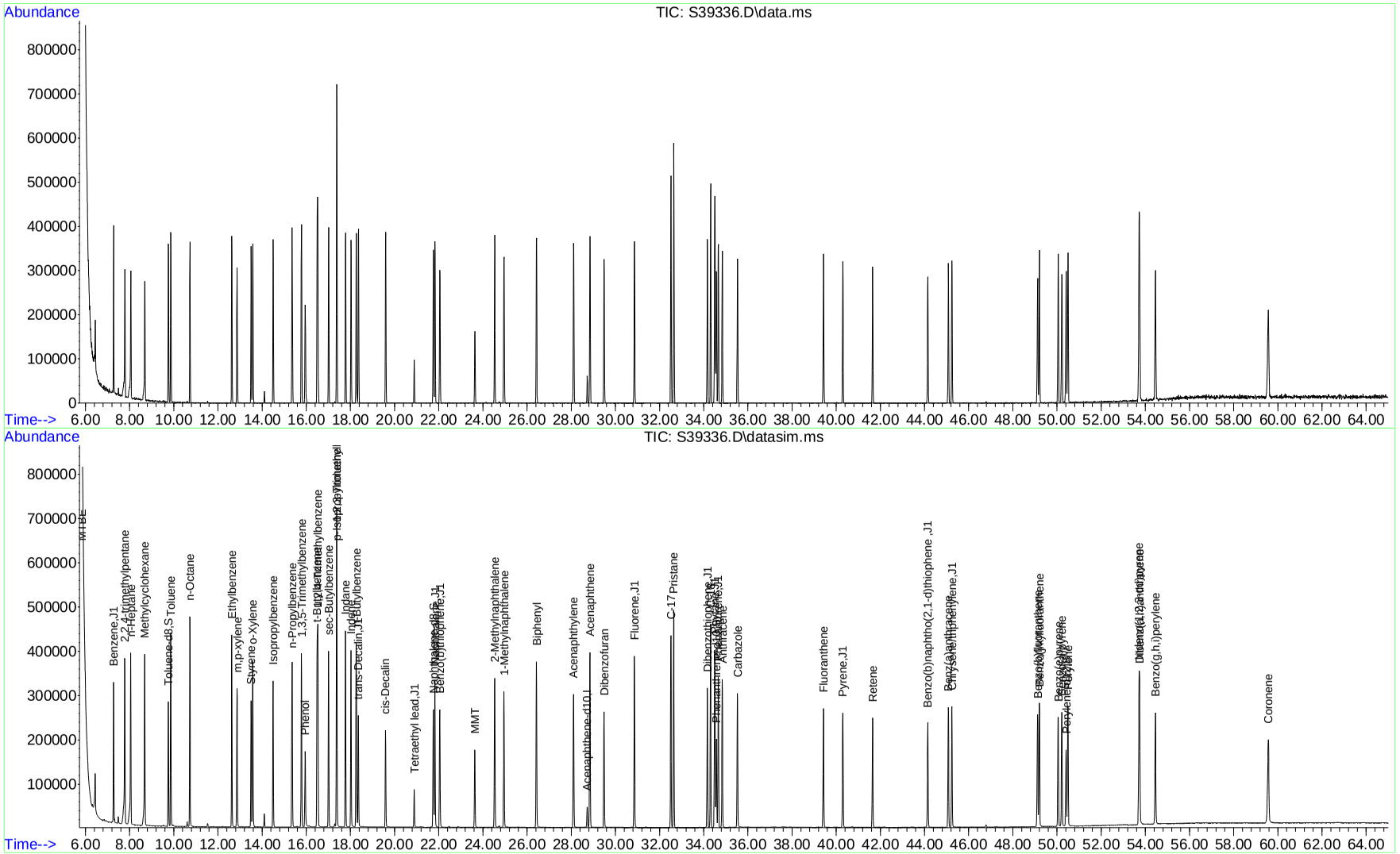

Manual Integrations APPROVED (compounds with "m" flag)
Ruben Parrilla 06/06/16 09:37

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39337.D
Sample : ic1950-20.0
Misc : OP47644,MSS1950,,,1,1
ALS Vial : 6 Sample Multiplier: 1
Acq On : 1 Jun 2016 11:49 pm Operator: sofyaz

Quant Time: Jun 02 08:20:09 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Acenaphthene-d10 | 28.715 | 162 | 49269 | 1000.00 | ng/mL | -0.01 |
| System Monitoring Compounds | | | | | | |
| 2) Toluene-d8 | 9.751 | 98 | 1393404 | 19379.79 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery | = 1937.98% | | |
| 3) Naphthalene-d8 | 21.752 | 136 | 2007663 | 19336.60 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery | = 1933.66% | | |
| 4) Phenanthrene-d10 | 34.584 | 188 | 1424189 | 19089.65 | ng/mL | 0.01 |
| Spiked Amount 1000.000 | | | Recovery | = 1908.97% | | |
| 5) Perylene-d12 | 50.442 | 264 | 1135646 | 19018.61 | ng/mL | 0.04 |
| Spiked Amount 1000.000 | | | Recovery | = 1901.86% | | |
| Target Compounds | | | | | | Qvalue |
| 6] MTBE | 5.807 | 73 | 837266 | 16453.168 | ng/mL | 95 |
| 7] Benzene | 7.268 | 78 | 1522452 | 18788.869 | ng/mL | 99 |
| 13] 2,2,4-trimethylpentane | 7.774 | 57 | 1541575 | 18457.618 | µg/mL | 98 |
| 14] n-Heptane | 8.046 | 43 | 789902 | 18886.687 | µg/mL | 96 |
| 15] Methylcyclohexane | 8.683 | 83 | 669261 | 19260.943 | ng/mL | 97 |
| 16] Toluene | 9.863 | 91 | 1702808 | 19312.498 | ng/mL | 100 |
| 17] n-Octane | 10.725 | 43 | 1017945 | 19499.318 | µg/mL | 99 |
| 18] Ethylbenzene | 12.626 | 91 | 1937583 | 19219.542 | ng/mL | 98 |
| 19] m,p-xylene | 12.860 | 91 | 1613674 | 19304.423 | ng/mL | 96 |
| 20] Styrene | 13.507 | 104 | 1194570 | 19602.931 | ng/mL | 97 |
| 21] o-Xylene | 13.582 | 91 | 1599638 | 19237.026 | ng/mL | 96 |
| 22] Isopropylbenzene | 14.498 | 105 | 1859558 | 19149.945 | ng/mL | 99 |
| 23] n-Propylbenzene | 15.359 | 91 | 2313837 | 18930.879 | ng/mL | 99 |
| 24] 1,3,5-Trimethylbenzene | 15.785 | 105 | 1717994 | 19108.917 | ng/mL | 96 |
| 25] Phenol | 15.955 | 94 | 1068918 | 21351.136 | µg/mL# | 98 |
| 26] t-Butylbenzene | 16.497 | 119 | 1511513 | 19404.622 | ng/mL | 95 |
| 27] 1,2,4-Trimethylbenzene | 16.529 | 105 | 1758175 | 19286.904 | ng/mL# | 86 |
| 28] sec-Butylbenzene | 17.007 | 105 | 2051406 | 19184.046 | ng/mL | 96 |
| 29] 1,2,3-Trimethylbenzene | 17.379 | 105 | 1779502 | 19534.042 | ng/mL | 92 |
| 30] p-Isopropyltoluene | 17.389 | 119 | 1864089 | 19493.445 | ng/mL | 97 |
| 31] Indane | 17.783 | 117 | 1610466 | 19170.949 | µg/mL | 99 |
| 32] Indene | 18.027 | 115 | 1598910 | 19159.426 | µg/mL | 99 |
| 33] n-Butylbenzene | 18.261 | 91 | 1821686 | 19359.597 | ng/mL | 95 |
| 34] trans-Decalin | 18.357 | 96 | 348907 | 19677.359 | ng/mL | 97 |
| 35] cis-Decalin | 19.600 | 96 | 457692 | 19515.622 | ng/mL | 93 |
| 40] Benzo(b)thiophene | 22.047 | 134 | 2020076 | 19333.504 | ng/mL | 100 |
| 45] Tetraethyl lead | 20.886 | 208 | 152845 | 20461.114 | ng/mL | 99 |
| 50] MMT | 23.628 | 134 | 754104 | 19989.411 | µg/mL | 97 |
| 51] Naphthalene | 21.828 | 128 | 2450096 | 19256.035 | ng/mL | 98 |
| 52] 2-Methylnaphthalene | 24.533 | 142 | 1605255 | 19797.306 | ng/mL | 99 |
| 53] 1-Methylnaphthalene | 24.961 | 142 | 1410549 | 19610.523 | ng/mL | 100 |
| 58] Biphenyl | 26.428 | 154 | 1860002 | 19994.310 | ng/mL | 99 |
| 59] Acenaphthylene | 28.115 | 152 | 2457958 | 20015.867 | ng/mL | 99 |
| 60] Acenaphthene | 28.848 | 154 | 1387290 | 19975.246 | ng/mL | 99 |
| 61] Dibenzofuran | 29.496 | 168 | 2002072 | 19883.254 | ng/mL | 99 |
| 62] Fluorene | 30.864 | 166 | 1648914 | 19773.893 | ng/mL | 99 |
| 66] Dibenzothiophene | 34.180 | 184 | 2252130 | 19025.510 | ng/mL | 98 |
| 72] Phenanthrene | 34.673 | 178 | 2075230 | 19258.405 | ng/mL | 98 |
| 73] Anthracene | 34.851 | 178 | 2037924 | 19389.196 | ng/mL | 99 |
| 79] Carbazole | 35.535 | 167 | 2136051 | 19920.327 | µg/mL | 100 |
| 80] Retene | 41.662 | 234 | 499173 | 19876.489 | ng/mL | 99 |
| 81] Benzo(b)naphtho(2,1-d)... | 44.167 | 234 | 1969134 | 19186.684 | ng/mL | 100 |
| 86] Fluoranthene | 39.434 | 202 | 2101407 | 19270.719 | ng/mL | 98 |
| 87] Pyrene | 40.315 | 202 | 2077607 | 19240.514 | ng/mL | 98 |
| 97] Benz(a)anthracene | 45.098 | 228 | 1797108 | 19246.288 | ng/mL | 100 |
| 98] Chrysene/triphenylene | 45.257 | 228 | 1697439 | 18680.063 | ng/mL | 99 |
| 103] Benzo(b)fluoranthene | 49.140 | 252 | 2004885 | 19764.706 | ng/mL | 100 |
| 104] Benzo(j/k)fluoranthene | 49.230 | 252 | 1889179m | 18261.370 | ng/mL | |



SGS ACCUTEST MC46549

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39337.D
Sample : ic1950-20.0
Misc : OP47644,MSS1950,,,1,1
ALS Vial : 6 Sample Multiplier: 1
Acq On : 1 Jun 2016 11:49 pm Operator: sofyaz

Quant Time: Jun 02 08:20:09 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 105] Benzo(e)pyrene | 50.080 | 252 | 1840469 | 18973.199 | ng/mL | 96 |
| 106] Benzo(a)pyrene | 50.243 | 252 | 1823589 | 18997.449 | ng/mL | 97 |
| 107] Perylene | 50.523 | 252 | 1882803 | 18711.616 | ng/mL | 96 |
| 108] Indeno(1,2,3-cd)pyrene | 53.747 | 276 | 2432985m | 19810.352 | ng/mL | |
| 109] Dibenz(a,h)anthracene | 53.771 | 278 | 1982194m | 19177.563 | ng/mL | |
| 110] Benzo(g,h,i)perylene | 54.496 | 276 | 2125204 | 18803.690 | ng/mL | 98 |
| 111] Coronene | 59.640 | 300 | 2266673 | 19258.116 | ng/mL | 100 |
| 112] C-17 | 32.522 | 85 | 535056 | 20052.836 | ng/mL | 99 |
| 113] Pristane | 32.651 | 85 | 408448 | 19762.610 | ng/mL | 97 |
| 114] C-18 | 34.325 | 85 | 543591 | 19989.088 | ng/mL | 98 |
| 115] Phytane | 34.511 | 85 | 567822 | 19989.661 | ng/mL | 99 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

7.5.6

7



SGS ACCUTEST MC46549

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39337.D
Sample : ic1950-20.0
Misc : OP47644,MSS1950,,,1,1
ALS Vial : 6 Sample Multiplier: 1
Acq On : 1 Jun 2016 11:49 pm Operator: sofyaz

Quant Time: Jun 02 08:20:09 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

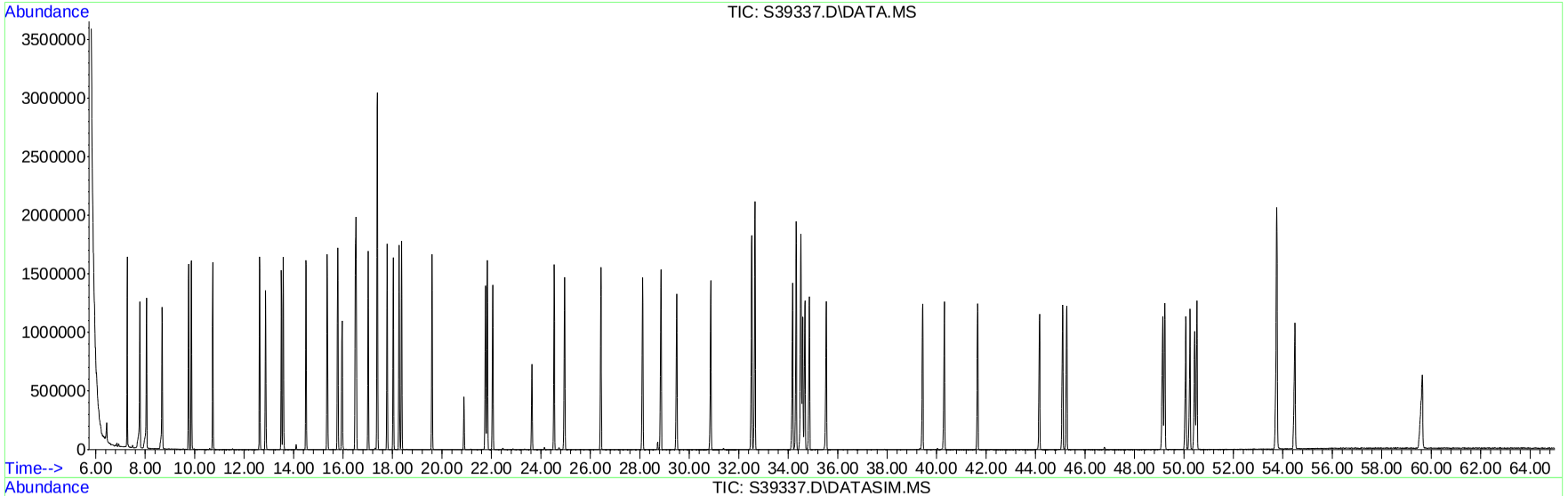










ACCUTEST MC46549

Manual Integrations APPROVED (compounds with "m" flag)
Ruben Parrilla
06/06/16 09:37

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39345.D
Sample : icv1950-1.0,fs238
Misc : OP47644,MSS1950,,,1,1
ALS Vial : 10 Sample Multiplier: 1
Acq On : 2 Jun 2016 9:49 am Operator: sofyaz

Quant Time: Jun 02 16:47:55 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Acenaphthene-d10 | 28.724 | 162 | 45485 | 1000.00 | ng/mL | 0.00 |
| System Monitoring Compounds | | | | | | |
| 2) Toluene-d8 | 9.751 | 98 | 66601 | 979.65 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = 97.97% | | | |
| 3) Naphthalene-d8 | 21.761 | 136 | 96967 | 1008.25 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = 100.83% | | | |
| 4) Phenanthrene-d10 | 34.576 | 188 | 72096 | 1052.18 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = 105.22% | | | |
| 5) Perylene-d12 | 50.415 | 264 | 58703 | 1051.41 | ng/mL | 0.01 |
| Spiked Amount 1000.000 | | | Recovery = 105.14% | | | |
| Target Compounds | | | | | | Qvalue |
| 6] MTBE | 5.798 | 73 | 69161 | 1783.755 | ng/mL | 96 |
| 7] Benzene | 7.259 | 78 | 78301m | 1111.472 | ng/mL | |
| 13] 2,2,4-trimethylpentane | 7.765 | 57 | 82028 | 1149.090 | µg/mL | 100 |
| 14] n-Heptane | 8.027 | 43 | 37285 | 944.880 | µg/mL | 96 |
| 15] Methylcyclohexane | 8.673 | 83 | 35014 | 1050.900 | ng/mL | 99 |
| 16] Toluene | 9.854 | 91 | 87772 | 999.455 | ng/mL | 99 |
| 17] n-Octane | 10.725 | 43 | 48909 | 932.730 | µg/mL | 99 |
| 18] Ethylbenzene | 12.626 | 91 | 105215 | 1077.655 | ng/mL | 99 |
| 19] m,p-xylene | 12.860 | 91 | 85671 | 1076.713 | ng/mL | 98 |
| 20] Styrene | 13.507 | 104 | 60140 | 908.127 | ng/mL | 97 |
| 21] o-Xylene | 13.582 | 91 | 86513 | 1062.079 | ng/mL | 98 |
| 22] Isopropylbenzene | 14.498 | 105 | 100152 | 1094.949 | ng/mL | 99 |
| 23] n-Propylbenzene | 15.359 | 91 | 125504 | 1085.972 | ng/mL | 98 |
| 24] 1,3,5-Trimethylbenzene | 15.784 | 105 | 86994 | 1052.948 | ng/mL | 98 |
| 25] Phenol | 15.965 | 94 | 41797 | 848.568 | µg/mL# | 98 |
| 26] t-Butylbenzene | 16.497 | 119 | 77211 | 1050.729 | ng/mL | 94 |
| 27] 1,2,4-Trimethylbenzene | 16.518 | 105 | 87474 | 1018.490 | ng/mL | 88 |
| 28] sec-Butylbenzene | 17.017 | 105 | 107206 | 1049.971 | ng/mL | 98 |
| 29] 1,2,3-Trimethylbenzene | 17.379 | 105 | 89263 | 1035.677 | ng/mL | 94 |
| 30] p-Isopropyltoluene | 17.389 | 119 | 94275 | 1062.994 | ng/mL | 99 |
| 31] Indane | 17.783 | 117 | 74539 | 961.058 | µg/mL | 100 |
| 32] Indene | 18.027 | 115 | 74149 | 976.880 | µg/mL | 99 |
| 33] n-Butylbenzene | 18.271 | 91 | 94967 | 1066.335 | ng/mL | 98 |
| 34] trans-Decalin | 18.357 | 96 | 15256 | 907.699 | ng/mL | 98 |
| 35] cis-Decalin | 19.589 | 96 | 21229 | 917.696 | ng/mL | 93 |
| 40] Benzo(b)thiophene | 22.056 | 134 | 98777 | 1011.065 | ng/mL | 100 |
| 45] Tetraethyl lead | 20.886 | 208 | 6555 | 884.208 | ng/mL | 96 |
| 50] MMT | 23.637 | 134 | 38412 | 1052.245 | µg/mL | 97 |
| 51] Naphthalene | 21.837 | 128 | 125575 | 1053.039 | ng/mL | 99 |
| 52] 2-Methylnaphthalene | 24.542 | 142 | 75818 | 984.319 | ng/mL | 99 |
| 53] 1-Methylnaphthalene | 24.961 | 142 | 74102 | 1086.850 | ng/mL | 100 |
| 58] Biphenyl | 26.438 | 154 | 91446 | 1018.351 | ng/mL | 100 |
| 59] Acenaphthylene | 28.114 | 152 | 120971 | 1061.669 | ng/mL | 100 |
| 60] Acenaphthene | 28.848 | 154 | 69572 | 1069.100 | ng/mL | 100 |
| 61] Dibenzofuran | 29.496 | 168 | 100790 | 1080.047 | ng/mL | 100 |
| 62] Fluorene | 30.872 | 166 | 80855 | 1039.388 | ng/mL | 100 |
| 66] Dibenzothiophene | 34.171 | 184 | 105639 | 971.925 | ng/mL | 99 |
| 72] Phenanthrene | 34.665 | 178 | 108361 | 1073.873 | ng/mL | 100 |
| 73] Anthracene | 34.851 | 178 | 109018 | 1153.769 | ng/mL | 100 |
| 79] Carbazole | 35.535 | 167 | 103291 | 1046.141 | µg/mL | 99 |
| 80] Retene | 41.653 | 234 | 12229 | 510.376 | ng/mL | 100 |
| 81] Benzo(b)naphtho(2,1-d)... | 44.150 | 234 | 103020 | 1096.020 | ng/mL | 100 |
| 86] Fluoranthene | 39.425 | 202 | 111217 | 1108.450 | ng/mL | 100 |
| 87] Pyrene | 40.306 | 202 | 114341 | 1146.051 | ng/mL | 99 |
| 97] Benz(a)anthracene | 45.080 | 228 | 95050 | 1104.548 | ng/mL | 99 |
| 98] Chrysene/triphenylene | 45.240 | 228 | 91283 | 1108.438 | ng/mL | 99 |
| 103] Benzo(b)fluoranthene | 49.122 | 252 | 104869 | 1105.705 | ng/mL | 99 |
| 104] Benzo(j/k)fluoranthene | 49.203 | 252 | 104223 | 1084.397 | ng/mL | 99 |

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39345.D
Sample : icv1950-1.0,fs238
Misc : OP47644,MSS1950,,,1,1
ALS Vial : 10 Sample Multiplier: 1
Acq On : 2 Jun 2016 9:49 am Operator: sofyaz

Quant Time: Jun 02 16:47:55 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 105] Benzo(e)pyrene | 50.053 | 252 | 97624 | 1072.480 | ng/mL | 99 |
| 106] Benzo(a)pyrene | 50.216 | 252 | 101004 | 1125.299 | ng/mL | 99 |
| 107] Perylene | 50.487 | 252 | 96561 | 1028.984 | ng/mL | 98 |
| 108] Indeno(1,2,3-cd)pyrene | 53.714 | 276 | 121560m | 1046.810 | ng/mL | |
| 109] Dibenz(a,h)anthracene | 53.739 | 278 | 104306m | 1097.993 | ng/mL | |
| 110] Benzo(g,h,i)perylene | 54.455 | 276 | 110316 | 1047.556 | ng/mL | 99 |
| 111] Coronene | 59.567 | 300 | 110563 | 991.478 | ng/mL | 99 |
| 112] C-17 | 32.514 | 85 | 25562 | 1033.332 | ng/mL | 98 |
| 113] Pristane | 32.635 | 85 | 20070 | 1031.432 | ng/mL | 98 |
| 114] C-18 | 34.309 | 85 | 25892 | 1030.520 | ng/mL | 97 |
| 115] Phytane | 34.503 | 85 | 24740 | 917.680 | ng/mL | 99 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed




SGS ACCUTEST MC46549

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160601\S39345.D
Sample : icv1950-1.0,fs238
Misc : OP47644,MSS1950,,,1,1
ALS Vial : 10 Sample Multiplier: 1
Acq On : 2 Jun 2016 9:49 am Operator: sofyaz

Quant Time: Jun 02 16:47:55 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

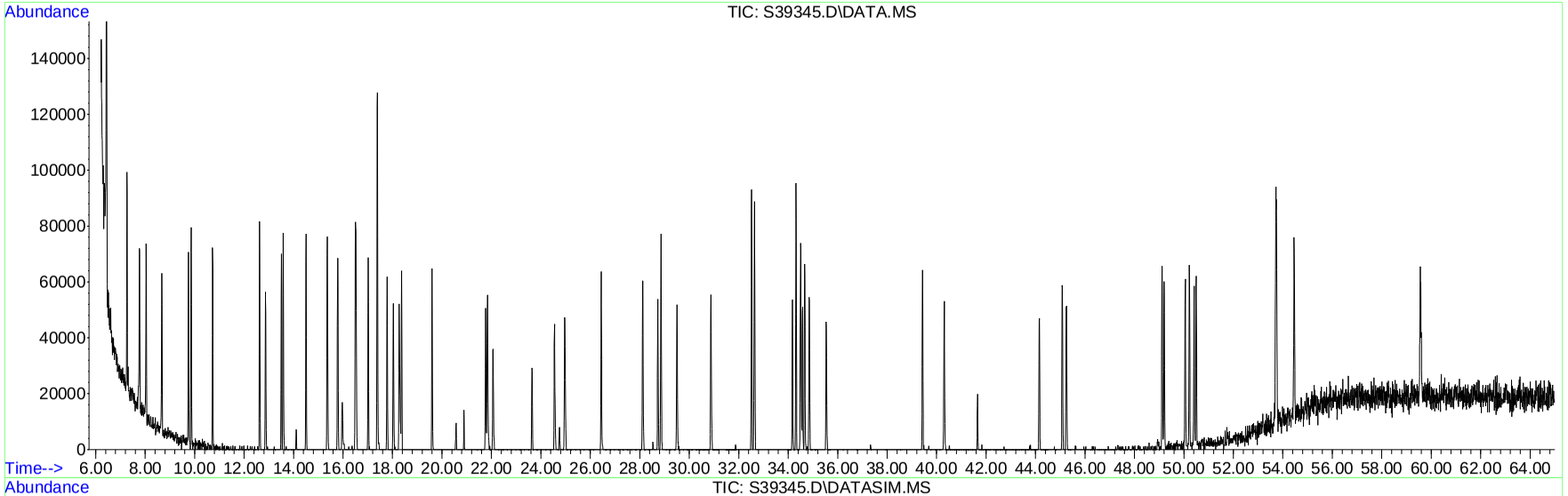


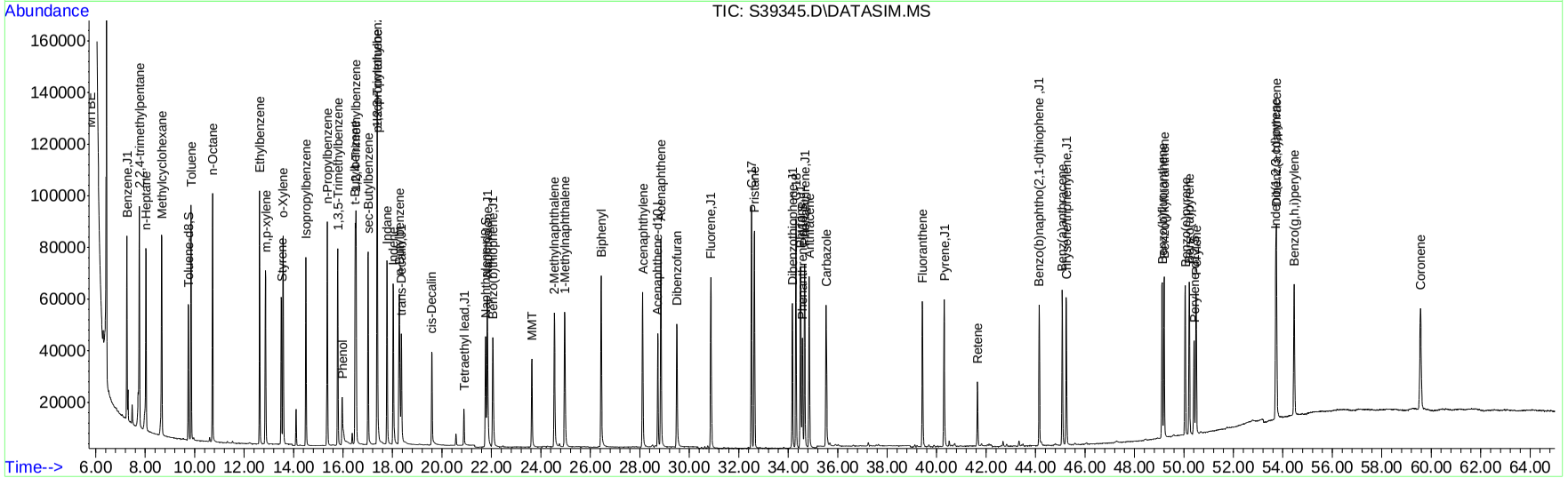






ACCUTEST MC46549

Manual Integrations APPROVED (compounds with "m" flag)
Ruben Parrilla
07/15/16 09:47

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160607\S39397A.D
Sample : ICV1950-1.0, FS247
Misc : OP47644,MSS1955,,,1,1
ALS Vial : 94 Sample Multiplier: 1
Acq On : 7 Jun 2016 11:06 am Operator: sofyaz

Quant Time: Jun 07 14:48:01 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Acenaphthene-d10 | 28.610 | 162 | 31281 | 1000.00 | ng/mL | 0.00 |
| System Monitoring Compounds | | | | | | |
| 2) Toluene-d8 | 9.654 | 98 | 46236 | 988.91 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = 98.89% | | | |
| 3) Naphthalene-d8 | 21.647 | 136 | 66172 | 1000.47 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = 100.05% | | | |
| 4) Phenanthrene-d10 | 34.464 | 188 | 47891 | 1016.29 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = 101.63% | | | |
| 5) Perylene-d12 | 50.300 | 264 | 37499 | 976.60 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = 97.66% | | | |
| Target Compounds | | | | | | Qvalue |
| 6] MTBE | 5.710 | 73 | 45932 | 1722.570 | ng/mL | 97 |
| 7] Benzene | 7.162 | 78 | 57847m | 1193.987 | ng/mL | |
| 13] 2,2,4-trimethylpentane | 7.668 | 57 | 56379 | 1148.410 | µg/mL | 99 |
| 14] n-Heptane | 7.940 | 43 | 25802 | 950.788 | µg/mL | 98 |
| 15] Methylcyclohexane | 8.577 | 83 | 24394 | 1064.609 | ng/mL | 98 |
| 16] Toluene | 9.757 | 91 | 62275 | 1031.119 | ng/mL | 100 |
| 17] n-Octane | 10.628 | 43 | 32862 | 911.274 | µg/mL | 99 |
| 18] Ethylbenzene | 12.529 | 91 | 73500 | 1094.655 | ng/mL | 100 |
| 19] m,p-xylene | 12.764 | 91 | 59393 | 1085.398 | ng/mL | 99 |
| 20] Styrene | 13.410 | 104 | 43089m | 946.100 | ng/mL | |
| 21] o-Xylene | 13.475 | 91 | 59945 | 1070.080 | ng/mL | 98 |
| 22] Isopropylbenzene | 14.403 | 105 | 72793 | 1157.208 | ng/mL | 100 |
| 23] n-Propylbenzene | 15.264 | 91 | 91034 | 1145.387 | ng/mL | 99 |
| 24] 1,3,5-Trimethylbenzene | 15.678 | 105 | 63381 | 1115.486 | ng/mL | 96 |
| 25] Phenol | 15.880 | 94 | 27622 | 815.425 | µg/mL# | 99 |
| 26] t-Butylbenzene | 16.390 | 119 | 57237 | 1132.598 | ng/mL | 96 |
| 27] 1,2,4-Trimethylbenzene | 16.422 | 105 | 64149 | 1086.064 | ng/mL | 89 |
| 28] sec-Butylbenzene | 16.911 | 105 | 80287 | 1143.381 | ng/mL | 100 |
| 29] 1,2,3-Trimethylbenzene | 17.273 | 105 | 66182 | 1116.556 | ng/mL | 96 |
| 30] p-Isopropyltoluene | 17.283 | 119 | 71770 | 1176.698 | ng/mL | 99 |
| 31] Indane | 17.676 | 117 | 54554 | 1022.776 | µg/mL | 100 |
| 32] Indene | 17.932 | 115 | 53341 | 1021.844 | µg/mL | 100 |
| 33] n-Butylbenzene | 18.165 | 91 | 66938m | 1092.902 | ng/mL | |
| 34] trans-Decalin | 18.250 | 96 | 11601 | 1003.654 | ng/mL | 90 |
| 35] cis-Decalin | 19.483 | 96 | 15593 | 980.137 | ng/mL | 94 |
| 40] Benzo(b)thiophene | 21.942 | 134 | 69134 | 1028.970 | ng/mL | 99 |
| 45] Tetraethyl lead | 20.780 | 208 | 4555 | 893.424 | ng/mL | 99 |
| 50] MMT | 23.523 | 134 | 22100 | 880.298 | µg/mL | 96 |
| 51] Naphthalene | 21.723 | 128 | 86660 | 1056.689 | ng/mL | 100 |
| 52] 2-Methylnaphthalene | 24.428 | 142 | 49836 | 940.794 | ng/mL | 100 |
| 53] 1-Methylnaphthalene | 24.847 | 142 | 48594 | 1036.359 | ng/mL | 100 |
| 58] Biphenyl | 26.314 | 154 | 61464 | 995.271 | ng/mL | 99 |
| 59] Acenaphthylene | 28.000 | 152 | 78628 | 1003.397 | ng/mL | 100 |
| 60] Acenaphthene | 28.734 | 154 | 45986 | 1027.536 | ng/mL | 99 |
| 61] Dibenzofuran | 29.381 | 168 | 68357 | 1065.113 | ng/mL | 100 |
| 62] Fluorene | 30.753 | 166 | 54851 | 1025.281 | ng/mL | 99 |
| 66] Dibenzothiophene | 34.060 | 184 | 72352 | 967.936 | ng/mL | 98 |
| 72] Phenanthrene | 34.553 | 178 | 73973 | 1065.960 | ng/mL | 100 |
| 73] Anthracene | 34.731 | 178 | 73386 | 1129.332 | ng/mL | 100 |
| 79] Carbazole | 35.430 | 167 | 71017 | 1045.870 | µg/mL | 99 |
| 80] Retene | 41.547 | 234 | 15018 | 911.379 | ng/mL | 97 |
| 81] Benzo(b)naphtho(2,1-d)... | 44.035 | 234 | 68880 | 1065.559 | ng/mL | 100 |
| 86] Fluoranthene | 39.311 | 202 | 74690 | 1082.418 | ng/mL | 98 |
| 87] Pyrene | 40.191 | 202 | 76914 | 1120.973 | ng/mL | 99 |
| 97] Benz(a)anthracene | 44.974 | 228 | 63594 | 1074.573 | ng/mL | 99 |
| 98] Chrysene/triphenylene | 45.134 | 228 | 61767 | 1090.600 | ng/mL | 99 |
| 103] Benzo(b)fluoranthene | 49.007 | 252 | 69384 | 1063.748 | ng/mL | 98 |
| 104] Benzo(j/k)fluoranthene | 49.097 | 252 | 69291 | 1048.309 | ng/mL | 96 |

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160607\S39397A.D
Sample : ICV1950-1.0, FS247
Misc : OP47644,MSS1955,,,1,1
ALS Vial : 94 Sample Multiplier: 1
Acq On : 7 Jun 2016 11:06 am Operator: sofyaz

Quant Time: Jun 07 14:48:01 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 105] Benzo(e)pyrene | 49.947 | 252 | 65113 | 1040.131 | ng/mL | 98 |
| 106] Benzo(a)pyrene | 50.110 | 252 | 66817 | 1082.440 | ng/mL | 100 |
| 107] Perylene | 50.390 | 252 | 65052 | 1007.988 | ng/mL | 97 |
| 108] Indeno(1,2,3-cd)pyrene | 53.610 | 276 | 83093m | 1040.469 | ng/mL | |
| 109] Dibenz(a,h)anthracene | 53.635 | 278 | 69713m | 1067.067 | ng/mL | |
| 110] Benzo(g,h,i)perylene | 54.351 | 276 | 73965 | 1021.298 | ng/mL | 99 |
| 111] Coronene | 59.414 | 300 | 76348 | 995.540 | ng/mL | 99 |
| 112] C-17 | 32.402 | 85 | 17301 | 1016.960 | ng/mL | 99 |
| 113] Pristane | 32.532 | 85 | 13086 | 977.885 | ng/mL | 96 |
| 114] C-18 | 34.205 | 85 | 17679 | 1023.142 | ng/mL | 98 |
| 115] Phytane | 34.391 | 85 | 17053 | 919.772 | ng/mL | 98 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160607\S39397A.D
Sample : ICV1950-1.0, FS247
Misc : OP47644,MSS1955,,,1,1
ALS Vial : 94 Sample Multiplier: 1
Acq On : 7 Jun 2016 11:06 am Operator: sofyaz

Quant Time: Jun 07 14:48:01 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

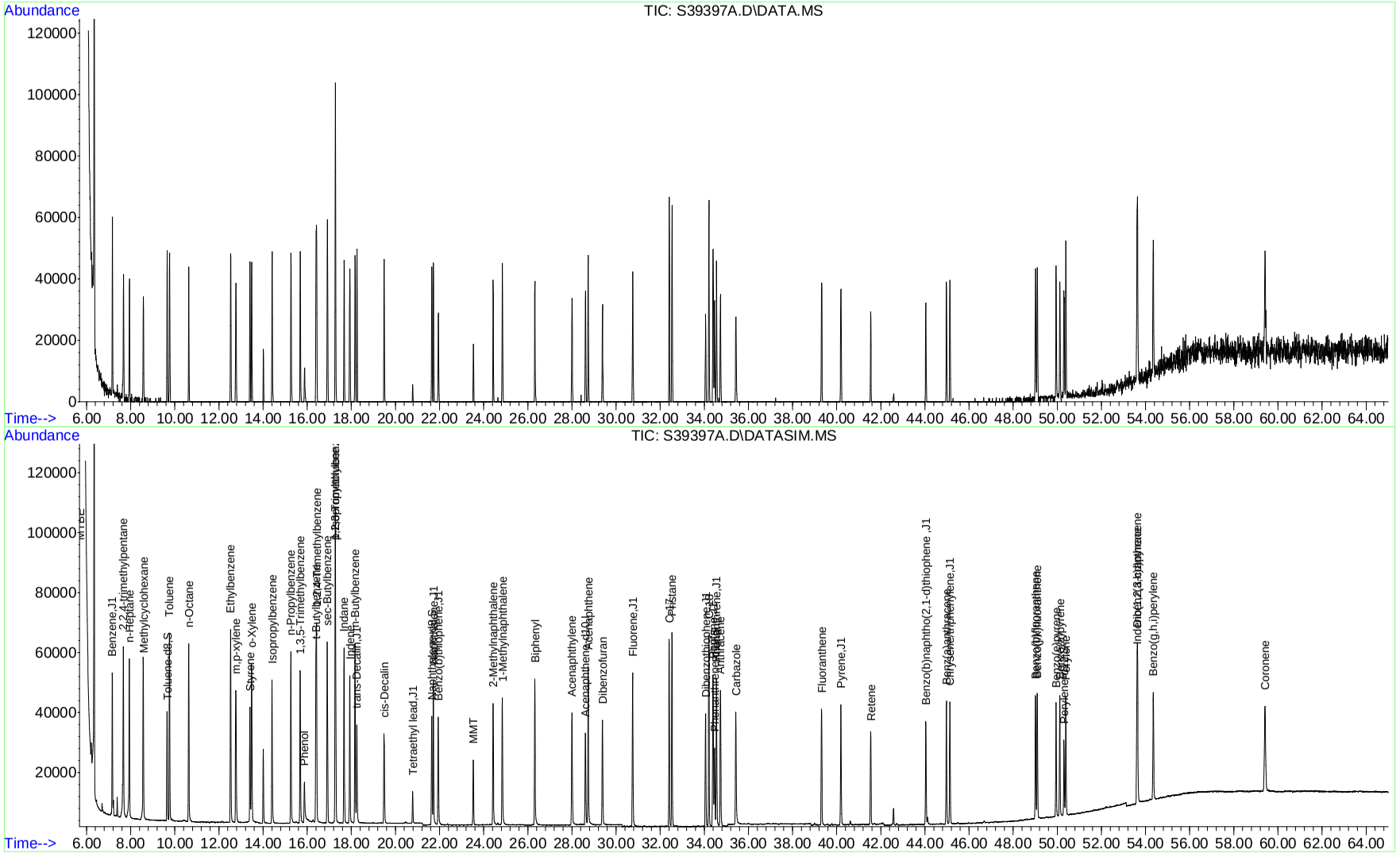






ACCUTEST MC46549

Manual Integrations APPROVED (compounds with "m" flag)
Ruben Parrilla
07/07/16 18:44

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160623\S39537.D
Sample : cc1950-1.0,fs231
Misc : OP47644,MSS1961,,,1,1
ALS Vial : 96 Sample Multiplier: 1
Acq On : 24 Jun 2016 3:03 am Operator: sofyaz

Quant Time: Jun 24 08:41:33 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Acenaphthene-d10 | 28.351 | 162 | 32278 | 1000.00 | ng/mL | 0.00 |
| System Monitoring Compounds | | | | | | |
| 2) Toluene-d8 | 9.425 | 98 | 49257 | 1020.99 | ng/mL | -0.03 |
| Spiked Amount 1000.000 | | | Recovery = 102.10% | | | |
| 3) Naphthalene-d8 | 21.397 | 136 | 66669 | 976.85 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = 97.69% | | | |
| 4) Phenanthrene-d10 | 34.197 | 188 | 47266 | 972.05 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = 97.20% | | | |
| 5) Perylene-d12 | 50.035 | 264 | 35679 | 900.50 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = 90.05% | | | |
| Target Compounds | | | | | | Qvalue |
| 6] MTBE | 5.509 | 73 | 52411 | 1904.838 | ng/mL | 96 |
| 7] Benzene | 6.942 | 78 | 53731m | 1074.776 | ng/mL | |
| 13] 2,2,4-trimethylpentane | 7.439 | 57 | 51007 | 1006.893 | µg/mL | 98 |
| 14] n-Heptane | 7.711 | 43 | 25801 | 921.384 | µg/mL | 96 |
| 15] Methylcyclohexane | 8.338 | 83 | 23191 | 980.846 | ng/mL | 97 |
| 16] Toluene | 9.537 | 91 | 59723 | 958.320 | ng/mL | 99 |
| 17] n-Octane | 10.399 | 43 | 32252 | 866.733 | µg/mL | 99 |
| 18] Ethylbenzene | 12.310 | 91 | 66671 | 962.279 | ng/mL | 99 |
| 19] m,p-xylene | 12.544 | 91 | 54888 | 972.087 | ng/mL | 99 |
| 20] Styrene | 13.181 | 104 | 37982m | 808.207 | ng/mL | |
| 21] o-Xylene | 13.246 | 91 | 54296 | 939.301 | ng/mL | 98 |
| 22] Isopropylbenzene | 14.175 | 105 | 64774 | 997.922 | ng/mL | 99 |
| 23] n-Propylbenzene | 15.036 | 91 | 77809 | 948.751 | ng/mL | 96 |
| 24] 1,3,5-Trimethylbenzene | 15.461 | 105 | 58771 | 1002.403 | ng/mL | 99 |
| 25] Phenol | 15.674 | 94 | 27489 | 786.434 | µg/mL# | 100 |
| 26] t-Butylbenzene | 16.163 | 119 | 52058 | 998.299 | ng/mL | 95 |
| 27] 1,2,4-Trimethylbenzene | 16.194 | 105 | 59466 | 975.682 | ng/mL | 91 |
| 28] sec-Butylbenzene | 16.683 | 105 | 71356 | 984.805 | ng/mL | 99 |
| 29] 1,2,3-Trimethylbenzene | 17.034 | 105 | 59369 | 970.676 | ng/mL | 91 |
| 30] p-Isopropyltoluene | 17.055 | 119 | 63470 | 1008.474 | ng/mL | 97 |
| 31] Indane | 17.438 | 117 | 55495 | 1008.281 | µg/mL | 100 |
| 32] Indene | 17.682 | 115 | 53493 | 993.103 | µg/mL | 100 |
| 33] n-Butylbenzene | 17.927 | 91 | 61446 | 972.246 | ng/mL | 100 |
| 34] trans-Decalin | 18.012 | 96 | 11732 | 983.637 | ng/mL | 98 |
| 35] cis-Decalin | 19.234 | 96 | 15359 | 935.608 | ng/mL | 94 |
| 40] Benzo(b)thiophene | 21.693 | 134 | 67432 | 972.637 | ng/mL | 100 |
| 45] Tetraethyl lead | 20.531 | 208 | 4303 | 817.927 | ng/mL | 94 |
| 50] MMT | 23.283 | 134 | 22632 | 873.644 | µg/mL | 97 |
| 51] Naphthalene | 21.474 | 128 | 82939 | 980.080 | ng/mL | 100 |
| 52] 2-Methylnaphthalene | 24.169 | 142 | 52472 | 959.959 | ng/mL | 97 |
| 53] 1-Methylnaphthalene | 24.588 | 142 | 46600 | 963.135 | ng/mL | 100 |
| 58] Biphenyl | 26.064 | 154 | 61097 | 958.770 | ng/mL | 100 |
| 59] Acenaphthylene | 27.732 | 152 | 82905 | 1025.298 | ng/mL | 100 |
| 60] Acenaphthene | 28.475 | 154 | 46380 | 1004.330 | ng/mL | 100 |
| 61] Dibenzofuran | 29.123 | 168 | 67142 | 1013.867 | ng/mL | 99 |
| 62] Fluorene | 30.486 | 166 | 55052 | 997.253 | ng/mL | 98 |
| 66] Dibenzothiophene | 33.785 | 184 | 78756 | 1021.066 | ng/mL | 98 |
| 72] Phenanthrene | 34.278 | 178 | 72449 | 1011.752 | ng/mL | 100 |
| 73] Anthracene | 34.464 | 178 | 69220 | 1032.319 | ng/mL | 99 |
| 79] Carbazole | 35.165 | 167 | 70903 | 1011.938 | µg/mL | 99 |
| 80] Retene | 41.274 | 234 | 16132 | 948.744 | ng/mL | 96 |
| 81] Benzo(b)naphtho(2,1-d)... | 43.771 | 234 | 67147 | 1006.665 | ng/mL | 100 |
| 86] Fluoranthene | 39.046 | 202 | 72217 | 1014.252 | ng/mL | 99 |
| 87] Pyrene | 39.918 | 202 | 71482 | 1009.625 | ng/mL | 99 |
| 97] Benz(a)anthracene | 44.700 | 228 | 60209 | 985.951 | ng/mL | 100 |
| 98] Chrysene/triphenylene | 44.869 | 228 | 56974 | 974.899 | ng/mL | 99 |
| 103] Benzo(b)fluoranthene | 48.751 | 252 | 63925 | 949.783 | ng/mL | 98 |
| 104] Benzo(j/k)fluoranthene | 48.823 | 252 | 66418 | 973.805 | ng/mL | 98 |

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160623\S39537.D
Sample : cc1950-1.0,fs231
Misc : OP47644,MSS1961,,,1,1
ALS Vial : 96 Sample Multiplier: 1
Acq On : 24 Jun 2016 3:03 am Operator: sofyaz

Quant Time: Jun 24 08:41:33 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 105] Benzo(e)pyrene | 49.682 | 252 | 61524 | 952.443 | ng/mL | 99 |
| 106] Benzo(a)pyrene | 49.845 | 252 | 60367 | 947.743 | ng/mL | 97 |
| 107] Perylene | 50.125 | 252 | 63097 | 947.496 | ng/mL | 94 |
| 108] Indeno(1,2,3-cd)pyrene | 53.353 | 276 | 77580m | 941.431 | ng/mL | |
| 109] Dibenz(a,h)anthracene | 53.377 | 278 | 63561m | 942.850 | ng/mL | |
| 110] Benzo(g,h,i)perylene | 54.078 | 276 | 69847 | 934.648 | ng/mL | 99 |
| 111] Coronene | 59.027 | 300 | 72265 | 913.194 | ng/mL | 100 |
| 112] C-17 | 32.160 | 85 | 16903 | 962.876 | ng/mL | 100 |
| 113] Pristane | 32.289 | 85 | 13021 | 942.973 | ng/mL | 98 |
| 114] C-18 | 33.963 | 85 | 17329 | 971.909 | ng/mL | 100 |
| 115] Phytane | 34.149 | 85 | 18089 | 945.514 | ng/mL | 99 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed




SGS ACCUTEST MC46549

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160623\S39537.D
Sample : cc1950-1.0,fs231
Misc : OP47644,MSS1961,,,1,1
ALS Vial : 96 Sample Multiplier: 1
Acq On : 24 Jun 2016 3:03 am Operator: sofyaz

Quant Time: Jun 24 08:41:33 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

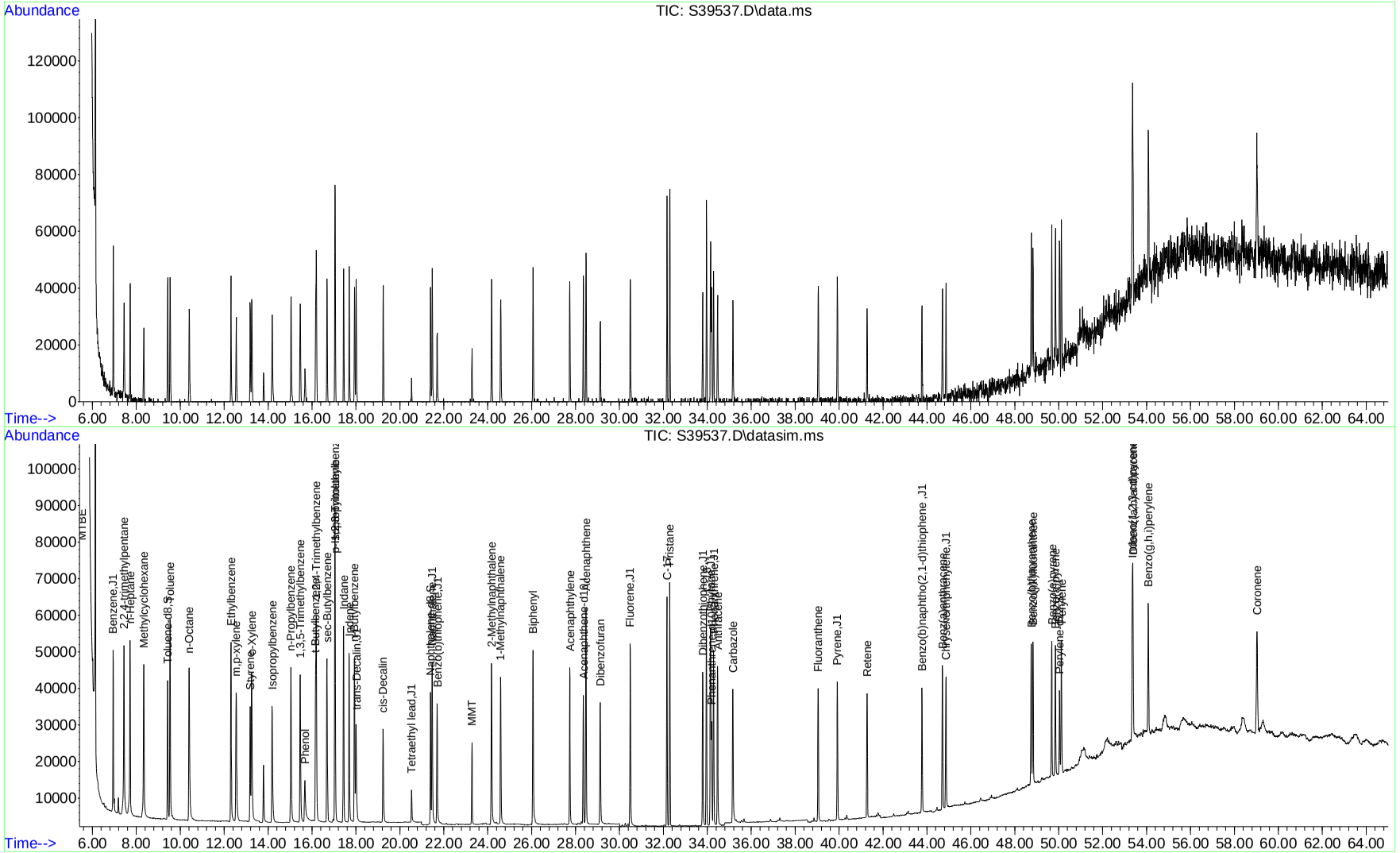






ACCUTEST MC46549

Manual Integrations APPROVED (compounds with "m" flag)
Ruben Parrilla
07/15/16 13:04

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160623\S39552.D
Sample : cc1950-1.0,fs231
Misc : OP47644,MSS1961,,,1,1
ALS Vial : 96 Sample Multiplier: 1
Acq On : 24 Jun 2016 9:42 pm Operator: sofyaz

Quant Time: Jun 27 09:16:07 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Acenaphthene-d10 | 28.342 | 162 | 28398 | 1000.00 | ng/mL | 0.00 |
| System Monitoring Compounds | | | | | | |
| 2) Toluene-d8 | 9.425 | 98 | 41990 | 989.27 | ng/mL | -0.03 |
| Spiked Amount 1000.000 | | | Recovery = | 98.93% | | |
| 3) Naphthalene-d8 | 21.398 | 136 | 58765 | 978.68 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = | 97.87% | | |
| 4) Phenanthrene-d10 | 34.189 | 188 | 41955 | 980.71 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = | 98.07% | | |
| 5) Perylene-d12 | 50.032 | 264 | 31414 | 901.19 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = | 90.12% | | |
| Target Compounds | | | | | | Qvalue |
| 6] MTBE | 5.509 | 73 | 42350 | 1749.475 | ng/mL | 96 |
| 7] Benzene | 6.942 | 78 | 43792m | 995.650 | ng/mL | |
| 13] 2,2,4-trimethylpentane | 7.439 | 57 | 41249 | 925.520 | µg/mL | 97 |
| 14] n-Heptane | 7.710 | 43 | 20305 | 824.188 | µg/mL | 95 |
| 15] Methylcyclohexane | 8.338 | 83 | 18648 | 896.463 | ng/mL | 96 |
| 16] Toluene | 9.537 | 91 | 51714 | 943.183 | ng/mL | 99 |
| 17] n-Octane | 10.408 | 43 | 27116 | 828.273 | µg/mL | 98 |
| 18] Ethylbenzene | 12.310 | 91 | 58694 | 962.889 | ng/mL | 99 |
| 19] m,p-xylene | 12.544 | 91 | 47890 | 964.032 | ng/mL | 99 |
| 20] Styrene | 13.181 | 104 | 33859m | 818.913 | ng/mL | |
| 21] o-Xylene | 13.246 | 91 | 48423 | 952.155 | ng/mL | 99 |
| 22] Isopropylbenzene | 14.175 | 105 | 56700 | 992.882 | ng/mL | 100 |
| 23] n-Propylbenzene | 15.036 | 91 | 69088 | 957.512 | ng/mL | 96 |
| 24] 1,3,5-Trimethylbenzene | 15.450 | 105 | 51902 | 1006.195 | ng/mL | 100 |
| 25] Phenol | 15.673 | 94 | 23606 | 767.617 | µg/mL# | 99 |
| 26] t-Butylbenzene | 16.162 | 119 | 46046 | 1003.653 | ng/mL | 94 |
| 27] 1,2,4-Trimethylbenzene | 16.194 | 105 | 52642 | 981.727 | ng/mL | 92 |
| 28] sec-Butylbenzene | 16.683 | 105 | 62930 | 987.180 | ng/mL | 100 |
| 29] 1,2,3-Trimethylbenzene | 17.034 | 105 | 52349 | 972.841 | ng/mL | 91 |
| 30] p-Isopropyltoluene | 17.045 | 119 | 54983 | 992.986 | ng/mL | 97 |
| 31] Indane | 17.427 | 117 | 48958 | 1011.045 | µg/mL | 100 |
| 32] Indene | 17.682 | 115 | 47341 | 998.973 | µg/mL | 99 |
| 33] n-Butylbenzene | 17.927 | 91 | 53514 | 962.429 | ng/mL | 99 |
| 34] trans-Decalin | 18.001 | 96 | 10356 | 986.901 | ng/mL | 98 |
| 35] cis-Decalin | 19.234 | 96 | 13526 | 936.525 | ng/mL | 95 |
| 40] Benzo(b)thiophene | 21.694 | 134 | 59415 | 974.092 | ng/mL | 100 |
| 45] Tetraethyl lead | 20.531 | 208 | 3756 | 811.499 | ng/mL | 95 |
| 50] MMT | 23.284 | 134 | 19359 | 849.402 | µg/mL | 98 |
| 51] Naphthalene | 21.465 | 128 | 72760 | 977.269 | ng/mL | 100 |
| 52] 2-Methylnaphthalene | 24.170 | 142 | 46557 | 968.120 | ng/mL | 98 |
| 53] 1-Methylnaphthalene | 24.589 | 142 | 41861 | 983.399 | ng/mL | 100 |
| 58] Biphenyl | 26.065 | 154 | 54261 | 967.835 | ng/mL | 100 |
| 59] Acenaphthylene | 27.733 | 152 | 74334 | 1044.903 | ng/mL | 100 |
| 60] Acenaphthene | 28.466 | 154 | 41785 | 1028.454 | ng/mL | 99 |
| 61] Dibenzofuran | 29.124 | 168 | 59777 | 1025.982 | ng/mL | 100 |
| 62] Fluorene | 30.485 | 166 | 48493 | 998.459 | ng/mL | 99 |
| 66] Dibenzothiophene | 33.784 | 184 | 70803 | 1043.376 | ng/mL | 98 |
| 72] Phenanthrene | 34.278 | 178 | 64775 | 1028.177 | ng/mL | 100 |
| 73] Anthracene | 34.464 | 178 | 60750 | 1029.787 | ng/mL | 99 |
| 79] Carbazole | 35.162 | 167 | 63838 | 1035.589 | µg/mL | 99 |
| 80] Retene | 41.271 | 234 | 14213 | 950.092 | ng/mL | 98 |
| 81] Benzo(b)naphtho(2,1-d)... | 43.768 | 234 | 60940 | 1038.436 | ng/mL | 99 |
| 86] Fluoranthene | 39.043 | 202 | 65288 | 1042.218 | ng/mL | 99 |
| 87] Pyrene | 39.916 | 202 | 64990 | 1043.348 | ng/mL | 100 |
| 97] Benz(a)anthracene | 44.697 | 228 | 54583 | 1015.945 | ng/mL | 98 |
| 98] Chrysene/triphenylene | 44.866 | 228 | 51625 | 1004.065 | ng/mL | 99 |
| 103] Benzo(b)fluoranthene | 48.739 | 252 | 57592 | 972.601 | ng/mL | 99 |
| 104] Benzo(j/k)fluoranthene | 48.820 | 252 | 59393 | 989.784 | ng/mL | 99 |

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160623\S39552.D
Sample : cc1950-1.0,fs231
Misc : OP47644,MSS1961,,,1,1
ALS Vial : 96 Sample Multiplier: 1
Acq On : 24 Jun 2016 9:42 pm Operator: sofyaz

Quant Time: Jun 27 09:16:07 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 105] Benzo(e)pyrene | 49.670 | 252 | 55298 | 973.022 | ng/mL | 100 |
| 106] Benzo(a)pyrene | 49.842 | 252 | 53682 | 957.941 | ng/mL | 96 |
| 107] Perylene | 50.113 | 252 | 56194 | 959.130 | ng/mL | 96 |
| 108] Indeno(1,2,3-cd)pyrene | 53.343 | 276 | 69013m | 951.894 | ng/mL | |
| 109] Dibenz(a,h)anthracene | 53.376 | 278 | 56739m | 956.648 | ng/mL | |
| 110] Benzo(g,h,i)perylene | 54.076 | 276 | 61832 | 940.443 | ng/mL | 100 |
| 111] Coronene | 59.025 | 300 | 62590 | 898.998 | ng/mL | 100 |
| 112] C-17 | 32.159 | 85 | 15056 | 974.844 | ng/mL | 98 |
| 113] Pristane | 32.289 | 85 | 11561 | 951.632 | ng/mL | 99 |
| 114] C-18 | 33.954 | 85 | 15538 | 990.527 | ng/mL | 98 |
| 115] Phytane | 34.140 | 85 | 15921 | 945.894 | ng/mL | 99 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160623\S39552.D
Sample : cc1950-1.0,fs231
Misc : OP47644,MSS1961,,,1,1
ALS Vial : 96 Sample Multiplier: 1
Acq On : 24 Jun 2016 9:42 pm Operator: sofyaz

Quant Time: Jun 27 09:16:07 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

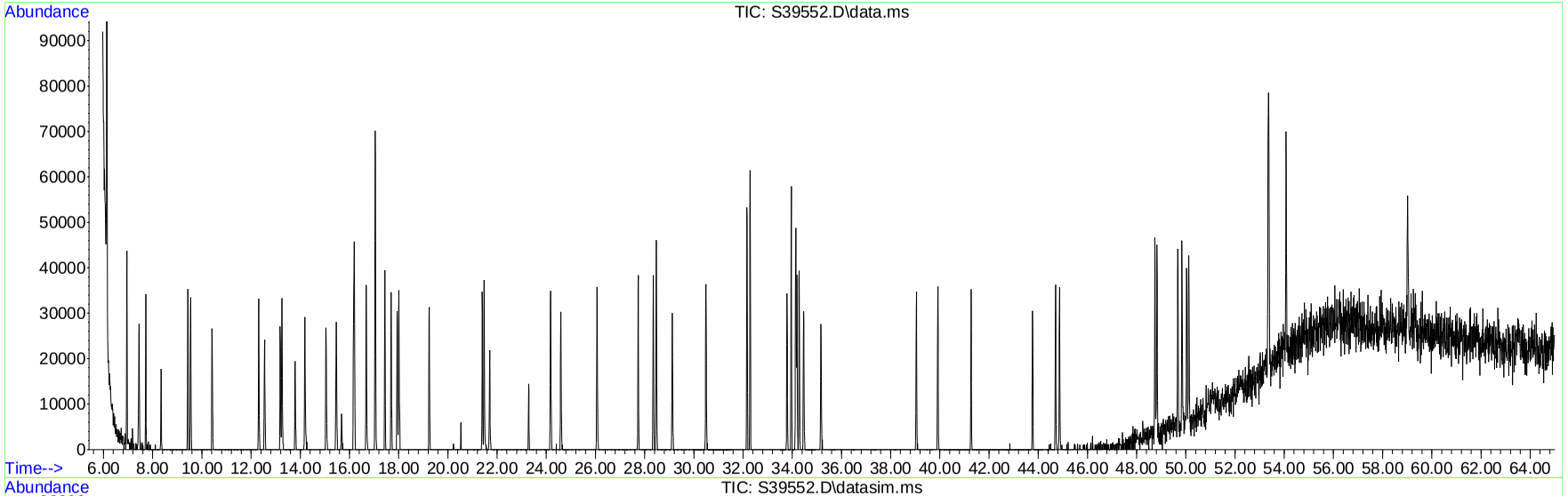


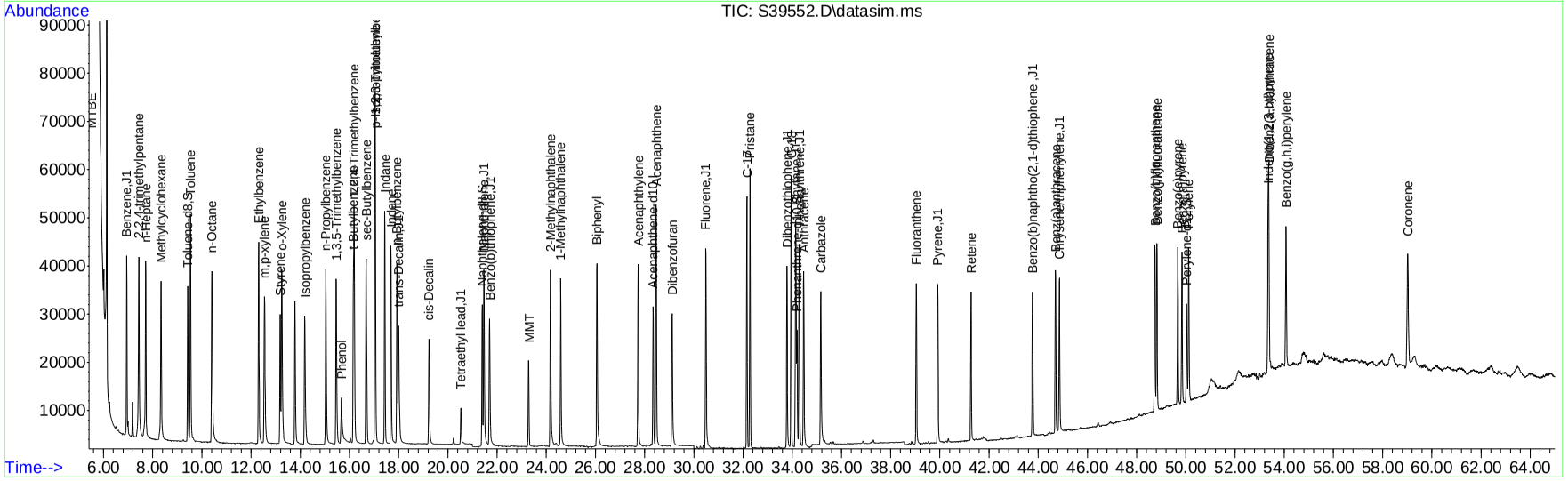

Manual Integrations APPROVED (compounds with "m" flag)
Ruben Parrilla
07/12/16 11:02

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160705\S39583.D
Sample : cc1950-1.0,fs231
Misc : OP47644,MSS1964,,,1,1
ALS Vial : 96 Sample Multiplier: 1
Acq On : 5 Jul 2016 9:14 am Operator: sofyaz

Quant Time: Jul 06 09:56:58 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Acenaphthene-d10 | 28.342 | 162 | 28535 | 1000.00 | ng/mL | 0.00 |
| System Monitoring Compounds | | | | | | |
| 2) Toluene-d8 | 9.443 | 98 | 44196 | 1036.25 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = 103.62% | | | |
| 3) Naphthalene-d8 | 21.398 | 136 | 57611 | 954.86 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = 95.49% | | | |
| 4) Phenanthrene-d10 | 34.197 | 188 | 40654 | 945.74 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = 94.57% | | | |
| 5) Perylene-d12 | 50.041 | 264 | 30403 | 868.00 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = 86.80% | | | |
| Target Compounds | | | | | | Qvalue |
| 6] MTBE | 5.519 | 73 | 47055 | 1934.506 | ng/mL | 94 |
| 7] Benzene | 6.961 | 78 | 49534m | 1120.792 | ng/mL | |
| 13] 2,2,4-trimethylpentane | 7.448 | 57 | 47229 | 1054.608 | µg/mL | 99 |
| 14] n-Heptane | 7.729 | 43 | 23836 | 962.867 | µg/mL | 95 |
| 15] Methylcyclohexane | 8.347 | 83 | 21316 | 1019.802 | ng/mL | 99 |
| 16] Toluene | 9.556 | 91 | 54656 | 992.054 | ng/mL | 99 |
| 17] n-Octane | 10.417 | 43 | 29135 | 885.672 | µg/mL | 98 |
| 18] Ethylbenzene | 12.319 | 91 | 59471 | 970.952 | ng/mL | 99 |
| 19] m,p-xylene | 12.553 | 91 | 47683 | 955.256 | ng/mL | 100 |
| 20] Styrene | 13.190 | 104 | 32835m | 790.334 | ng/mL | |
| 21] o-Xylene | 13.256 | 91 | 48456 | 948.229 | ng/mL | 98 |
| 22] Isopropylbenzene | 14.185 | 105 | 57283 | 998.275 | ng/mL | 100 |
| 23] n-Propylbenzene | 15.046 | 91 | 68354 | 942.791 | ng/mL | 100 |
| 24] 1,3,5-Trimethylbenzene | 15.461 | 105 | 51551 | 994.592 | ng/mL | 98 |
| 25] Phenol | 15.695 | 94 | 21380m | 691.894 | µg/mL | |
| 26] t-Butylbenzene | 16.162 | 119 | 45568 | 988.466 | ng/mL | 94 |
| 27] 1,2,4-Trimethylbenzene | 16.194 | 105 | 51750 | 960.458 | ng/mL | 95 |
| 28] sec-Butylbenzene | 16.683 | 105 | 61876 | 965.986 | ng/mL | 99 |
| 29] 1,2,3-Trimethylbenzene | 17.034 | 105 | 51363 | 949.935 | ng/mL | 96 |
| 30] p-Isopropyltoluene | 17.055 | 119 | 54017 | 970.857 | ng/mL | 99 |
| 31] Indane | 17.427 | 117 | 48417 | 995.072 | µg/mL | 99 |
| 32] Indene | 17.693 | 115 | 45822 | 962.277 | µg/mL | 99 |
| 33] n-Butylbenzene | 17.937 | 91 | 51136 | 915.246 | ng/mL | 99 |
| 34] trans-Decalin | 18.001 | 96 | 10304 | 977.231 | ng/mL | 99 |
| 35] cis-Decalin | 19.234 | 96 | 13777 | 949.324 | ng/mL | 95 |
| 40] Benzo(b)thiophene | 21.694 | 134 | 57632 | 940.323 | ng/mL | 98 |
| 45] Tetraethyl lead | 20.531 | 208 | 3782 | 813.193 | ng/mL | 98 |
| 50] MMT | 23.275 | 134 | 20801 | 908.290 | µg/mL | 98 |
| 51] Naphthalene | 21.475 | 128 | 71340 | 953.596 | ng/mL | 100 |
| 52] 2-Methylnaphthalene | 24.179 | 142 | 45243 | 936.279 | ng/mL | 100 |
| 53] 1-Methylnaphthalene | 24.589 | 142 | 40805 | 953.989 | ng/mL | 100 |
| 58] Biphenyl | 26.065 | 154 | 52682 | 935.159 | ng/mL | 99 |
| 59] Acenaphthylene | 27.733 | 152 | 72603 | 1015.670 | ng/mL | 99 |
| 60] Acenaphthene | 28.466 | 154 | 40799 | 999.364 | ng/mL | 99 |
| 61] Dibenzofuran | 29.124 | 168 | 57563 | 983.238 | ng/mL | 100 |
| 62] Fluorene | 30.493 | 166 | 46932 | 961.679 | ng/mL | 99 |
| 66] Dibenzothiophene | 33.784 | 184 | 68104 | 998.784 | ng/mL | 100 |
| 72] Phenanthrene | 34.286 | 178 | 61969 | 978.915 | ng/mL | 100 |
| 73] Anthracene | 34.472 | 178 | 59553m | 1004.650 | ng/mL | |
| 79] Carbazole | 35.173 | 167 | 54717 | 883.365 | µg/mL | 100 |
| 80] Retene | 41.271 | 234 | 13720 | 912.733 | ng/mL | 98 |
| 81] Benzo(b)naphtho(2,1-d)... | 43.777 | 234 | 56830 | 963.751 | ng/mL | 100 |
| 86] Fluoranthene | 39.052 | 202 | 62347 | 990.492 | ng/mL | 100 |
| 87] Pyrene | 39.924 | 202 | 62313 | 995.568 | ng/mL | 99 |
| 97] Benz(a)anthracene | 44.706 | 228 | 50347 | 932.602 | ng/mL | 100 |
| 98] Chrysene/triphenylene | 44.866 | 228 | 47955 | 928.209 | ng/mL | 99 |
| 103] Benzo(b)fluoranthene | 48.748 | 252 | 54613 | 917.864 | ng/mL | 97 |
| 104] Benzo(j/k)fluoranthene | 48.829 | 252 | 56025 | 929.174 | ng/mL | 98 |

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160705\S39583.D
Sample : cc1950-1.0,fs231
Misc : OP47644,MSS1964,,,1,1
ALS Vial : 96 Sample Multiplier: 1
Acq On : 5 Jul 2016 9:14 am Operator: sofyaz

Quant Time: Jul 06 09:56:58 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 105] Benzo(e)pyrene | 49.679 | 252 | 53804 | 942.188 | ng/mL | 97 |
| 106] Benzo(a)pyrene | 49.851 | 252 | 50056 | 888.947 | ng/mL | 99 |
| 107] Perylene | 50.122 | 252 | 53287 | 905.146 | ng/mL | 98 |
| 108] Indeno(1,2,3-cd)pyrene | 53.359 | 276 | 63774m | 875.409 | ng/mL | |
| 109] Dibenz(a,h)anthracene | 53.384 | 278 | 49660m | 833.273 | ng/mL | |
| 110] Benzo(g,h,i)perylene | 54.092 | 276 | 60144 | 910.377 | ng/mL | 98 |
| 111] Coronene | 59.049 | 300 | 63842 | 912.578 | ng/mL | 99 |
| 112] C-17 | 32.151 | 85 | 15201 | 979.507 | ng/mL | 99 |
| 113] Pristane | 32.280 | 85 | 11670 | 955.992 | ng/mL | 100 |
| 114] C-18 | 33.954 | 85 | 15483 | 982.282 | ng/mL | 97 |
| 115] Phytane | 34.140 | 85 | 16214 | 958.677 | ng/mL | 98 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160705\S39583.D
Sample : cc1950-1.0,fs231
Misc : OP47644,MSS1964,,,1,1
ALS Vial : 96 Sample Multiplier: 1
Acq On : 5 Jul 2016 9:14 am Operator: sofyaz

Quant Time: Jul 06 09:56:58 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

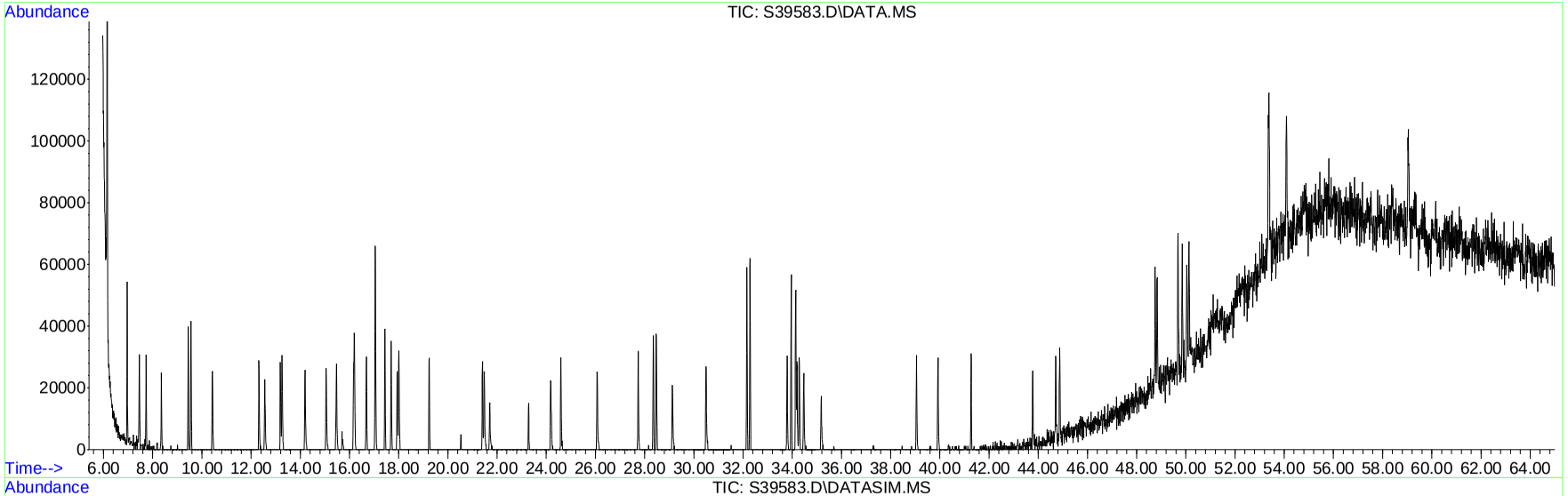


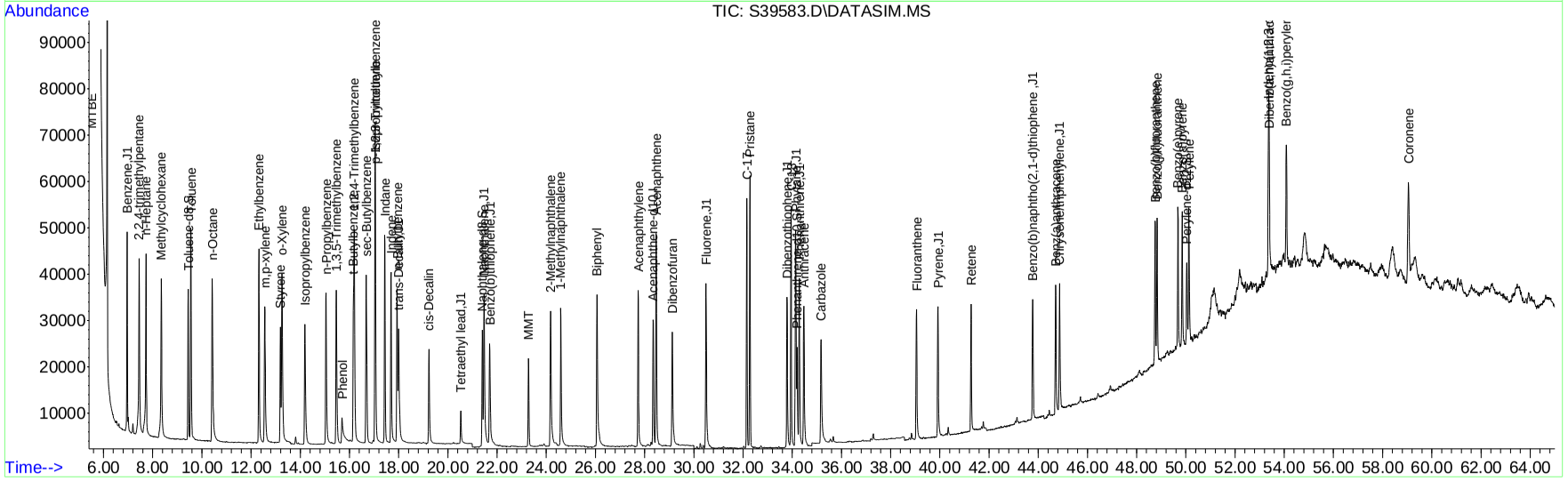






ACCUTEST MC46549

Manual Integrations APPROVED (compounds with "m" flag)
Ruben Parrilla
07/15/16 13:04

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160705\S39594.D
Sample : cc1950-1.0,fs231
Misc : OP47644,MSS1964,,,1,1
ALS Vial : 96 Sample Multiplier: 1
Acq On : 5 Jul 2016 10:49 pm Operator: sofyaz

Quant Time: Jul 06 07:38:33 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| Internal Standards | | | | | | |
| 1) Acenaphthene-d10 | 28.343 | 162 | 30612 | 1000.00 | ng/mL | 0.00 |
| System Monitoring Compounds | | | | | | |
| 2) Toluene-d8 | 9.434 | 98 | 46174 | 1009.17 | ng/mL | -0.02 |
| Spiked Amount 1000.000 | | | Recovery = 100.92% | | | |
| 3) Naphthalene-d8 | 21.399 | 136 | 62294 | 962.42 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = 96.24% | | | |
| 4) Phenanthrene-d10 | 34.197 | 188 | 44291 | 960.44 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = 96.04% | | | |
| 5) Perylene-d12 | 50.041 | 264 | 34497 | 918.06 | ng/mL | 0.00 |
| Spiked Amount 1000.000 | | | Recovery = 91.81% | | | |
| Target Compounds | | | | | | Qvalue |
| 6] MTBE | 5.509 | 73 | 46494 | 1781.752 | ng/mL | 94 |
| 7] Benzene | 6.952 | 78 | 48262m | 1017.919 | ng/mL | |
| 13] 2,2,4-trimethylpentane | 7.439 | 57 | 44549 | 927.270 | µg/mL | 95 |
| 14] n-Heptane | 7.720 | 43 | 21982 | 827.725 | µg/mL | 94 |
| 15] Methylcyclohexane | 8.338 | 83 | 20027 | 893.125 | ng/mL | 98 |
| 16] Toluene | 9.547 | 91 | 56580 | 957.297 | ng/mL | 100 |
| 17] n-Octane | 10.418 | 43 | 29173 | 826.656 | µg/mL | 98 |
| 18] Ethylbenzene | 12.310 | 91 | 63258 | 962.707 | ng/mL | 99 |
| 19] m,p-xylene | 12.553 | 91 | 50894 | 950.406 | ng/mL | 99 |
| 20] Styrene | 13.190 | 104 | 35136m | 788.337 | ng/mL | |
| 21] o-Xylene | 13.256 | 91 | 51953 | 947.682 | ng/mL | 100 |
| 22] Isopropylbenzene | 14.186 | 105 | 61356 | 996.708 | ng/mL | 99 |
| 23] n-Propylbenzene | 15.036 | 91 | 73384 | 943.493 | ng/mL | 99 |
| 24] 1,3,5-Trimethylbenzene | 15.461 | 105 | 55212 | 992.950 | ng/mL | 97 |
| 25] Phenol | 15.695 | 94 | 18874 | 569.354 | µg/mL# | 99 |
| 26] t-Butylbenzene | 16.152 | 119 | 49073 | 992.272 | ng/mL | 93 |
| 27] 1,2,4-Trimethylbenzene | 16.194 | 105 | 55367 | 957.867 | ng/mL | 94 |
| 28] sec-Butylbenzene | 16.683 | 105 | 66182 | 963.107 | ng/mL | 99 |
| 29] 1,2,3-Trimethylbenzene | 17.034 | 105 | 55634 | 959.113 | ng/mL | 97 |
| 30] p-Isopropyltoluene | 17.045 | 119 | 57695 | 966.605 | ng/mL | 99 |
| 31] Indane | 17.427 | 117 | 52308 | 1002.100 | µg/mL | 99 |
| 32] Indene | 17.682 | 115 | 49466 | 968.321 | µg/mL | 100 |
| 33] n-Butylbenzene | 17.938 | 91 | 54010 | 901.097 | ng/mL | 100 |
| 34] trans-Decalin | 18.001 | 96 | 10996 | 972.103 | ng/mL | 100 |
| 35] cis-Decalin | 19.234 | 96 | 14606 | 938.161 | ng/mL | 96 |
| 40] Benzo(b)thiophene | 21.694 | 134 | 61936 | 941.983 | ng/mL | 99 |
| 45] Tetraethyl lead | 20.520 | 208 | 4067 | 815.140 | ng/mL | 98 |
| 50] MMT | 23.275 | 134 | 20583 | 837.790 | µg/mL | 98 |
| 51] Naphthalene | 21.475 | 128 | 76715 | 955.868 | ng/mL | 100 |
| 52] 2-Methylnaphthalene | 24.180 | 142 | 49267 | 950.378 | ng/mL | 100 |
| 53] 1-Methylnaphthalene | 24.589 | 142 | 44076 | 960.547 | ng/mL | 100 |
| 58] Biphenyl | 26.066 | 154 | 56380 | 932.899 | ng/mL | 99 |
| 59] Acenaphthylene | 27.733 | 152 | 81191 | 1058.747 | ng/mL | 99 |
| 60] Acenaphthene | 28.467 | 154 | 44657 | 1019.647 | ng/mL | 100 |
| 61] Dibenzofuran | 29.124 | 168 | 62066 | 988.224 | ng/mL | 100 |
| 62] Fluorene | 30.494 | 166 | 50911 | 972.431 | ng/mL | 99 |
| 66] Dibenzothiophene | 33.793 | 184 | 73505 | 1004.852 | ng/mL | 99 |
| 72] Phenanthrene | 34.286 | 178 | 67211 | 989.685 | ng/mL | 100 |
| 73] Anthracene | 34.472 | 178 | 61993 | 974.855 | ng/mL | 99 |
| 79] Carbazole | 35.173 | 167 | 64628 | 972.579 | µg/mL | 100 |
| 80] Retene | 41.271 | 234 | 15268 | 946.799 | ng/mL | 100 |
| 81] Benzo(b)naphtho(2,1-d)... | 43.777 | 234 | 63369 | 1001.729 | ng/mL | 99 |
| 86] Fluoranthene | 39.052 | 202 | 68779 | 1018.538 | ng/mL | 100 |
| 87] Pyrene | 39.924 | 202 | 68618 | 1021.919 | ng/mL | 98 |
| 97] Benz(a)anthracene | 44.707 | 228 | 57431 | 991.643 | ng/mL | 95 |
| 98] Chrysene/triphenylene | 44.875 | 228 | 54736 | 987.577 | ng/mL | 99 |
| 103] Benzo(b)fluoranthene | 48.757 | 252 | 61025 | 956.040 | ng/mL | 98 |
| 104] Benzo(j/k)fluoranthene | 48.829 | 252 | 64603 | 998.743 | ng/mL | 99 |

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160705\S39594.D
Sample : cc1950-1.0,fs231
Misc : OP47644,MSS1964,,,1,1
ALS Vial : 96 Sample Multiplier: 1
Acq On : 5 Jul 2016 10:49 pm Operator: sofyaz

Quant Time: Jul 06 07:38:33 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

| Compound | R.T. | QIon | Response | Conc | Units | Dev(Min) |
|---|---|---|---|---|---|---|
| 105] Benzo(e)pyrene | 49.688 | 252 | 60181 | 982.355 | ng/mL | 99 |
| 106] Benzo(a)pyrene | 49.851 | 252 | 56902 | 941.962 | ng/mL | 100 |
| 107] Perylene | 50.131 | 252 | 60333 | 955.297 | ng/mL | 100 |
| 108] Indeno(1,2,3-cd)pyrene | 53.359 | 276 | 74733m | 956.238 | ng/mL | |
| 109] Dibenz(a,h)anthracene | 53.384 | 278 | 61392m | 960.237 | ng/mL | |
| 110] Benzo(g,h,i)perylene | 54.092 | 276 | 67720 | 955.503 | ng/mL | 99 |
| 111] Coronene | 59.058 | 300 | 71013 | 946.210 | ng/mL | 99 |
| 112] C-17 | 32.151 | 85 | 16017 | 962.061 | ng/mL | 99 |
| 113] Pristane | 32.281 | 85 | 12514 | 955.577 | ng/mL | 97 |
| 114] C-18 | 33.954 | 85 | 16590 | 981.101 | ng/mL | 96 |
| 115] Phytane | 34.140 | 85 | 17255 | 951.006 | ng/mL | 98 |

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: S:\1\data\S160705\S39594.D
Sample : cc1950-1.0,fs231
Misc : OP47644,MSS1964,,,1,1
ALS Vial : 96 Sample Multiplier: 1
Acq On : 5 Jul 2016 10:49 pm Operator: sofyaz

Quant Time: Jul 06 07:38:33 2016
Quant Method : S:\1\methods\S160601-MAHPAH-A.M
Quant Title : PAHs & Alkylated PAHs by GC/MS/SIM

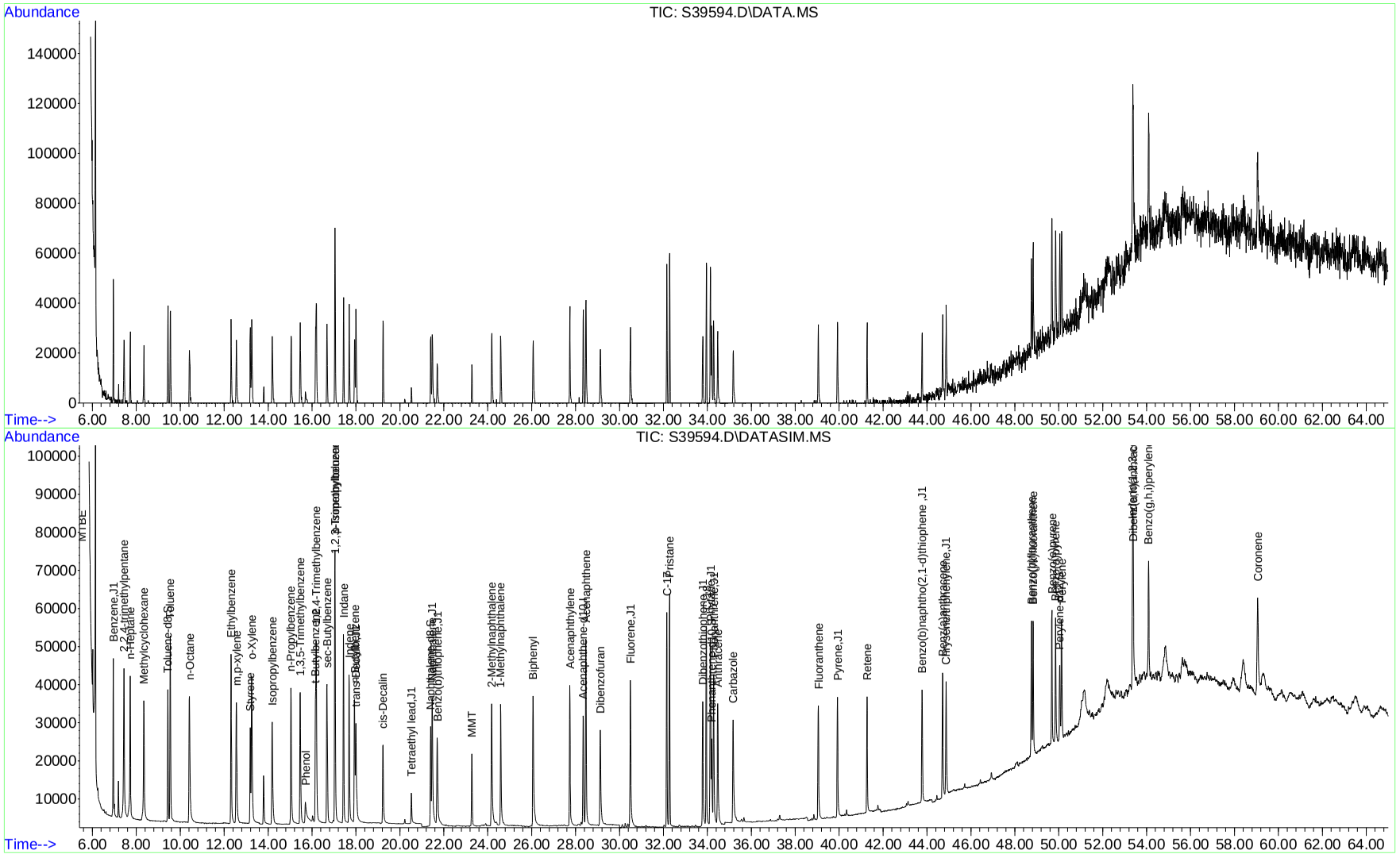

Ion 243 added to Run Method

Accutest Laboratories of New England, Inc.

Instrument: GCMS Z

## GCMS Analysis Log - Extractables

**Run Date:** 6/01/16 **Analyst Signature:** SZ

**Standard Data**

| Lot # | Description | Conc |
|---|---|---|
| FS189 | Leona Grade Oil | 8.76 mg/ml |
| FS231 | Forensic CCV | 1.0 ug/ml |

SZ 6/02/16

Column Information: Front / Rear

Sequence File: S160601.SEQ

Quantitation Methods: S160601 - MAHPAH

Instrument Run Batches: MSS 1950

Inj. Vol:

Data Acquisition Methods: SIOMS - SIMS CAN Inj. Vol: 1 µl

ICAL verified: ✓ Sequence verified: ✓

| Vial # | Data File ID | Sample ID | Ext.Batch | Analysis | Matrix | Dilution | Mult. | Comments |
|---|---|---|---|---|---|---|---|---|
| 96 | S39328 | CC1949-1.0 after | NA | MAHPAH ext | NA | NA | — | after M |
| 96 | S39329 | CC-1.0 | | | | | | adj, RT |
| 97 | -30 | Leona Grade Oil | | | | | | |
| 98 | -31 | DCM | | | | | | |
| 1 | -32 | IC 1950-0.01 | | | | | | FS 228 ICAL cus 59 from LGC |
| 2 | -33 | -0.05 | | | | | | -229 |
| 3 | -34 | -0.25 | | | | | | -230 |
| 4 | -35 | ICC -1.0 | | | | | | -231 |
| 5 | -36 | -5.0 | | | | | | -232 |
| 6 | -37 | IC950-20.0 | | | | | | FS 233 |
| 7 | -38 | ICV | | | | | | -Re-Run not used |
| 98 | -39-41 | DCM | | | | | | |
| 97 | -42 | Leona Grade Oil | | | | | | |
| 8 | -43 | CC1950-1.0 | | | | | | not used |
| 9 | -44 | CC1880-1.0 | | | | | | MTBE out Retene 50% conf. |
| 10 | S393 45 | ICV 1950-1.0 | NA | MAHPAH-59 | NA | NA | — | OK FS238 Ultra-cus59 |

SZ 6/02/16

MS002-04

Date: 8/29/06 Dilution Solvent: NA Lot: NA Review:

SGS Accutest

Instrument: GCMS S

## GCMS Analysis Log - Extractables

**Run Date:** 6/07/16

**Analyst Signature:** SZ

**Standard Data**

| Lot # | Description | Conc. |
|---|---|---|
| FS189 | Leona Crude Oil | 8.76 mg/ml |
| FS231 | Forensic CCV | 1.0 mg/ml |
| FS247 | Forensic CCV/ICV | 1.0 mg/ml |
| FS202 | Pb ref sol 2 | 5.47 mg/ml |
| | | |
| | SZ 6/8/16 | |
| | | |

Column Information: Front / Rear

Sequence File: S160607.SEQ

Quantitation Methods: S160601 - MAHPAH.A.M

Instrument Run Batches: MSS 1955 "S"

Data Acquisition Methods: SIOMS - SIMSCAN

Inj. Vol:

Inj. Vol: 1 µL

ICAL verified: ✓ Sequence loaded initial: SZ Sequence verified initial: SZ

| Vial # | Data File ID | Sample ID | Ext.Batch | Analysis | Matrix | Dilution | Multiplier | Data Process Initials | Comments |
|---|---|---|---|---|---|---|---|---|---|
| 96 | S39396 | CC1950-1.0 | NA | MAHPAH | NA | NA | — | SZ | after M |
| 96 | 97 | CC1950-1.0 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | FS247, OK, MTBE↑ MB=100.Pb |
| 98 | 98 | DCM | NA | ↓ | NA | ↓ | ↓ | ↓ | |
| 1 | S39399 | OP47693-MB | 47693 | Pb only | S | ↓ | ↓ | ↓ | Ben↑PL, OK |
| 2 | S39400 | ↓ -BS2 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ✓ |
| 3 | -01 | OP47693-Dup3 | ↓ | ↓ | ↓ | ↓ | ↓ | Pb | MC46126-1A Tol d8↑ |
| 4 | -02 | MC46126-1A | ↓ | ↓ | S | ↓ | ↓ | ↓ | ↓ |
| 98 | -03 | DCM | NA | ↓ | NA | ↓ | ↓ | ↓ | |
| 5 | -04 | MC46126-2A | 47693 | ↓ | S | ↓ | ↓ | ↓ | Pb↓↓ |
| 6 | -05 | ↓ -4A | ↓ | ↓ | S | ↓ | ↓ | ↓ | Pb |
| 98 | -06 | DCM | NA | ↓ | NA | ↓ | ↓ | ↓ | |
| 7 | -07 | MC46126-3A | 47693 | ↓ | S | ↓ | ↓ | ↓ | Pb |
| 98 | -08 | DCM | NA | ↓ | NA | ↓ | ↓ | ↓ | |
| 94 | -09 | Pb ref | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | wrong vial → re-run |
| 97 | -10 | Leona Crude Oil | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | |
| 96 | -11 | CC1950-1.0 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | Pb ok, Pb-25% OK |
| 95 | S39412 | Pb ref sol 2 | NA | MAHPAH | NA | NA | ↓ | SZ | |

6/8/16

SZ

MS002-05

Date: 4/7/16 Dilution Solvent: NA Lot: NA Review:

3

7.6.2

7

SGS Accutest

Instrument: GCMS S

## GCMS Analysis Log - Extractables

Run Date: 06/23/2016

Analyst Signature: SZ

Standard Data

| Lot # | Description | Conc |
|---|---|---|
| FS189 | Leona Crude Oil | 8.76mg/ml |
| FS231 | Forensic CCV | 1.0mg/ml |
| FS202 | PB ref sol 2 | 5.47mg/ml |
| | | |
| | SZ 6/27/16 | |
| | | |
| | | |
| | | |

Column Information: Front

Rear

Sequence File: S160623 SEQ

Quantitation Methods: S160601 - NAHPAH. A.M

Instrument Run Batches: MSS 1961 SA

Data Acquisition Methods: SIOMS - SIMSCAN

Inj. Vol:

Inj. Vol: 1µl

ICAL verified: ✓ Sequence loaded initial: SZ Sequence verified initial: SZ

| Vial # | Data File ID | Sample ID | Ext.Batch | Analysis | Matrix | Dilution | Multi plier | Data Process Initials | Comments |
|---|---|---|---|---|---|---|---|---|---|
| 96 | S39524 | CC-1.0 | NA | NAHPAH | NA | NA | — | SZ | |
| 97 | -25 | Leona Crude Oil | | | | | | | |
| 96 | -2627 | redo | | | | | | | all in, MB=91.3% |
| 96 | -28 | CC1950-1.0 | | | | | | | |
| 97 | -29 | Leona Crude Oil | | | | | | | |
| 98 | -30 | DCM | | | | | | | |
| 98 | -31 | DCM | NA | | NA | | | | |
| 1 | -32 | OP47922-MB | 47922 | | S | | | | Ben, Tol ↑ RL (3%L) |
| 2 | -33 | -BS2 | | | | | | | 3 naph M/p-OK |
| 3 | -34 | -Dup2 | | | | | | | MC 46486-1 |
| 4 | -35 | MC 46486-1 | 47922 | | S | | | | Perdis ↓ -OK (1ml) |
| 97 | -36 | Leona Crude Oil | NA | | NA | | | | |
| 96 | -37 | CC1950-1.0 | | | | | | | MTBE↑, M/p-OK MB OK |
| 95 | -38 | PB ref sol 2 | | | | | | | |
| 98 | -39-40 | DCM | NA | | NA | | | | |
| 5 | -41 | OP47956-MB | 47956 | | Oil | | | | Ben, Tol-J, M,p-OK |
| 6 | -42 | -BS2 | | | | | | | MTBE↑ |
| 7 | -43 | -Dup2 | | | | | | | MC46563-1 M/p/Ph Isopr only need BCS |
| 8 | -44 | MC46563-1 | | | | | | | |
| 9 | -45 | OP47956-Dup1 | | | | NA | | | need DL |
| 10 | -46 | Dup1 | | | | 50X | | | need Re-run |
| 11 | -47 | MC46544-1 | | | | NA | | | need DL |
| 12 | -48 | -1 | | | | 50X | | | need re-run |
| 13 | -49 | OP47956-Dup2 | | | | 10X | | | not needed Isopr only |
| 14 | -50 | MC46563-1 | 47956 | | Oil | 10X | | | |
| 97 | -51 | Leona Crude Oil | NA | | NA | NA | | | |
| 96 | -52 | CC1950-1.0 | | | | | | | MTBE↑, M/p, Ph-OK |
| 98 | S39553 | DCM | NA | NAHPAH | NA | NA | | SZ | |
| | | | | | | | | | |
| | | SZ 6/27/16 | | | | | | | |
| | | | | | | | | | |

MS002-05

Date: 4/7/16 Dilution Solvent: DCM Lot: 162272 Review:

9





SGS ACCUTEST MC46549

SGS Accutest

Instrument: GCMS S

## GCMS Analysis Log - Extractables

Run Date: 7/05/2016

Analyst Signature: SZ

**Standard Data**

| Lot # | Description | Conc |
|---|---|---|
| FS189 | Leona Crude Oil | 8.76mg/ml |
| FS231 | Forensic CCV | 1.0mg/ml |

SZ 7/6/16

Column Information: Front / Rear

Sequence File: S170605-SEQ

Quantitation Methods: S160601 - MAHPAH. A.M.

Instrument Run Batches: MSS 1964 "S"

Data Acquisition Methods: SIOMS-SIMSCAN Inj. Vol: Inj. Vol: 1mL

ICAL verified: ✓ Sequence loaded initial: SZ Sequence verified initial: SZ

| Vial # | Data File ID | Sample ID | Ext.Batch | Analysis | Matrix | Dilution | Multi plier | Data Process Initials | Comments |
|---|---|---|---|---|---|---|---|---|---|
| 97 | S39582 | Leona Crude Oil | NA | MAHPAH | NA | NA | — | SZ | |
| 96 | -83 | CC1950-1.0 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | MD=97.6%, M/POK MTBE↑ PH↓ |
| 98 | -84 | DCM | NA | | NA | | | | |
| 1 | -85 | OP48022-Dup1 | 48022 | | W | 20X SZ 7/6/16 | | | MC46305-1A |
| 2 | -86 | MC46305-1A | ↓ | | ↓ | 20X | | | |
| 3 | -87 | OP48022-Dup2 | ↓ | | ↓ | 20X | | | MC46305-2A |
| 4 | -88 | MC46305-2A | 48022 | | W | 20X | | | |
| 5 | -89 | OP47956-Dup1 | 47956 | | NAPL | NA | | | MC46549-1 need B |
| 6 | -90 | OP47956-Dup1 | ↓ | | ↓ | 50X | | | ↓ ✓ |
| 7 | -91 | MC46549-1 | ↓ | | ↓ | NA | | | need BL |
| 8 | -92 | -1 | 47956 | | ↓ | 50X | | | ✓ |
| 97 | -93 | Leona Crude Oil | NA | ↓ | NA | NA | | ↓ | |
| 96 | S39594 | CC1950-1.0 | NA | MAHPAH | NA | NA | ↓ | SZ | M/P-OK, MTBE↑, PH↓ |

SZ 7/6/16

MS002-05

Date: 4/7/16 Dilution Solvent: DCM Lot: 162272 Review:

12

# SGS ACCUTEST, Inc.

16:40

Method Name: EPA 3580 - Waste Dilution of NAPL Samples
Method SOP#: MOP265
Matrix: NAPL
Extraction Staff: MW
Extraction Batch: BS739AIKPAM OP47956 (BS3284Fmik OP47955)
Balance ID ACC-~~10~~ 12
Extract Tray: 6C-32

| Sample ID | Extract Weight (g) | Final Volume (mL) | Solvent | Surrogate | Matrix Spike | Extraction Date | Internal Standard | Comments |
|---|---|---|---|---|---|---|---|---|
| OP47955/KGMB | 0.01 | 2 | DCM | 100mL | — | 6/23/16 | 100uL | |
| OP47955-BS1 | ↓ | ↓ | ↓ | ↓ | 100mL | ↓ | ↓ | FID |
| OP47956-BSD | ↓ | ↓ | ↓ | ↓ | 50/100mL | ↓ | ↓ | MS/Pb |
| OP47955/SG-Dup1 | 0.0161 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | MC46549-1 Reduced Sample |
| MC46549-1 | 0.0152 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| OP47955/SG-Dup2 | 0.0089 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | MC46563-1 |
| MC46563-1 | 0.0097 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |

NOTES/COMMENTS:

Solvent: DCM
Solvent Lot: 162072

Extracts Released (Date & Inits):

| | | | | |
|---|---|---|---|---|
| FID Surr. @ | Various | µg/mL | Std. ID: FS-211 C | Analyst: MW |
| FID Spike @ | 500 | µg/mL | Std. ID: BS18159 | Analyst: |
| MS ~~18~~ @ | Various | µg/mL | Std. ID: FS-246 | Analyst: |
| Pb ~~18~~ @ | 100 | µg/mL | Std. ID: FS-197 | Analyst: |
| IS @ | Various | ↓ | ↓ FS-2104 | ↓ |

MOP016-01 (2/19/15)

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7.7.1

## GC Semi-volatiles

### QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- GC Surrogate Retention Time Summaries
- Initial and Continuing Calibration Summaries

# Method Blank Summary



**Job Number:** MC46549
**Account:** ENSRNJ AECOM, INC.
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP47955-MB | GR6338.D | 1 | 06/30/16 | MEW | 06/23/16 | OP47955 | GGR207 |

**The QC reported here applies to the following samples:** **Method:** ASTM D3328-06

MC46549-1

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | C-8 | ND | 200 | 100 | mg/kg | |
| | C-9 | ND | 200 | 100 | mg/kg | |
| | C-10 | ND | 200 | 100 | mg/kg | |
| | C-11 | ND | 200 | 100 | mg/kg | |
| | C-12 | ND | 200 | 100 | mg/kg | |
| | C-13 | ND | 200 | 100 | mg/kg | |
| 3891-98-3 | 2,6,10-trimethyldodecane (138 | ND | 200 | 100 | mg/kg | |
| | C-14 | ND | 200 | 100 | mg/kg | |
| 3891-99-4 | 2,6,10-trimethyltridecane (147 | ND | 200 | 100 | mg/kg | |
| | C-15 | ND | 200 | 100 | mg/kg | |
| | C-16 | ND | 200 | 100 | mg/kg | |
| 3892-00-0 | 2,6,10-trimethylpentadecane (1 | ND | 200 | 100 | mg/kg | |
| | C-17 | ND | 200 | 100 | mg/kg | |
| 1921-70-6 | Pristane | ND | 200 | 100 | mg/kg | |
| | C-18 | ND | 200 | 100 | mg/kg | |
| 638-36-8 | Phytane | ND | 200 | 100 | mg/kg | |
| | C-19 | ND | 200 | 100 | mg/kg | |
| | C-20 | ND | 200 | 100 | mg/kg | |
| | C-21 | ND | 200 | 100 | mg/kg | |
| | C-22 | ND | 200 | 100 | mg/kg | |
| | C-23 | ND | 200 | 100 | mg/kg | |
| | C-24 | ND | 200 | 100 | mg/kg | |
| | C-25 | ND | 200 | 100 | mg/kg | |
| | C-26 | ND | 200 | 100 | mg/kg | |
| | C-27 | ND | 200 | 100 | mg/kg | |
| | C-28 | ND | 200 | 100 | mg/kg | |
| | C-29 | ND | 200 | 100 | mg/kg | |
| | C-30 | ND | 200 | 100 | mg/kg | |
| | C-31 | ND | 200 | 100 | mg/kg | |
| | C-32 | ND | 200 | 100 | mg/kg | |
| | C-33 | ND | 200 | 100 | mg/kg | |
| | C-34 | ND | 200 | 100 | mg/kg | |
| | C-35 | ND | 200 | 100 | mg/kg | |
| | C-36 | ND | 200 | 100 | mg/kg | |
| | C-37 | ND | 200 | 100 | mg/kg | |
| | C-38 | ND | 200 | 100 | mg/kg | |

# Method Blank Summary



**Job Number:** MC46549
**Account:** ENSRNJ AECOM, INC.
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP47955-MB | GR6338.D | 1 | 06/30/16 | MEW | 06/23/16 | OP47955 | GGR207 |

**The QC reported here applies to the following samples:** **Method:** ASTM D3328-06

MC46549-1

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | C-39 | ND | 200 | 100 | mg/kg | |
| | C-40 | ND | 200 | 100 | mg/kg | |
| | TPH (C8-C40) | ND | 20000 | 10000 | mg/kg | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 84-15-1 | o-Terphenyl | 100% | 40-140% |

# Blank Spike Summary



**Job Number:** MC46549
**Account:** ENSRNJ AECOM, INC.
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP47955-BS1 | GR6339.D | 1 | 06/30/16 | MEW | 06/23/16 | OP47955 | GGR207 |

**The QC reported here applies to the following samples:** **Method:** ASTM D3328-06

MC46549-1

| CAS No. | Compound | Spike mg/kg | BSP mg/kg | BSP % | Limits |
|---|---|---|---|---|---|
| | C-8 | 5000 | 4490 | 90 | 40-140 |
| | C-9 | 5000 | 4450 | 89 | 40-140 |
| | C-10 | 5000 | 4660 | 93 | 40-140 |
| | C-11 | 5000 | 4820 | 96 | 40-140 |
| | C-12 | 5000 | 4820 | 96 | 40-140 |
| | C-13 | 5000 | 4850 | 97 | 40-140 |
| 3891-98-3 | 2,6,10-trimethyldodecane (138 | | ND | | 40-140 |
| | C-14 | 5000 | 4750 | 95 | 40-140 |
| 3891-99-4 | 2,6,10-trimethyltridecane (147 | | ND | | 40-140 |
| | C-15 | 5000 | 4750 | 95 | 40-140 |
| | C-16 | 5000 | 4770 | 95 | 40-140 |
| 3892-00-0 | 2,6,10-trimethylpentadecane (1 | | ND | | 40-140 |
| | C-17 | 5000 | 4660 | 93 | 40-140 |
| 1921-70-6 | Pristane | 5000 | 4750 | 95 | 40-140 |
| | C-18 | 5000 | 4800 | 96 | 40-140 |
| 638-36-8 | Phytane | 5000 | 4780 | 96 | 40-140 |
| | C-19 | 5000 | 4560 | 91 | 40-140 |
| | C-20 | 5000 | 4720 | 94 | 40-140 |
| | C-21 | 5000 | 4700 | 94 | 40-140 |
| | C-22 | 5000 | 4650 | 93 | 40-140 |
| | C-23 | 5000 | 4620 | 92 | 40-140 |
| | C-24 | 5000 | 4650 | 93 | 40-140 |
| | C-25 | 5000 | 4610 | 92 | 40-140 |
| | C-26 | 5000 | 4600 | 92 | 40-140 |
| | C-27 | 5000 | 4570 | 91 | 40-140 |
| | C-28 | 5000 | 4720 | 94 | 40-140 |
| | C-29 | 5000 | 4480 | 90 | 40-140 |
| | C-30 | 5000 | 4710 | 94 | 40-140 |
| | C-31 | 5000 | 4550 | 91 | 40-140 |
| | C-32 | 5000 | 4490 | 90 | 40-140 |
| | C-33 | 5000 | 4480 | 90 | 40-140 |
| | C-34 | 5000 | 4320 | 86 | 40-140 |
| | C-35 | 5000 | 4310 | 86 | 40-140 |
| | C-36 | 5000 | 4170 | 83 | 40-140 |
| | C-37 | 5000 | 4320 | 86 | 40-140 |
| | C-38 | 5000 | 4420 | 88 | 40-140 |

* = Outside of Control Limits.

# Blank Spike Summary



**Job Number:** MC46549
**Account:** ENSRNJ AECOM, INC.
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP47955-BS1 | GR6339.D | 1 | 06/30/16 | MEW | 06/23/16 | OP47955 | GGR207 |

**The QC reported here applies to the following samples:** **Method:** ASTM D3328-06

MC46549-1

| CAS No. | Compound | Spike mg/kg | BSP mg/kg | BSP % | Limits |
|---|---|---|---|---|---|
| | C-39 | 5000 | 4440 | 89 | 40-140 |
| | C-40 | 5000 | 4260 | 85 | 40-140 |
| | TPH (C8-C40) | | ND | | 40-140 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 84-15-1 | o-Terphenyl | 101% | 40-140% |

* = Outside of Control Limits.

# Duplicate Summary



**Job Number:** MC46549
**Account:** ENSRNJ AECOM, INC.
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP47955-DUP1 | GR6346.D | 5 | 07/01/16 | MEW | 06/23/16 | OP47955 | GGR207 |
| MC46549-1 | GR6347.D | 5 | 07/01/16 | MEW | 06/23/16 | OP47955 | GGR207 |

**The QC reported here applies to the following samples:** **Method:** ASTM D3328-06

MC46549-1

| CAS No. | Compound | MC46549-1 mg/kg | Q | DUP mg/kg | Q | RPD | Limits |
|---|---|---|---|---|---|---|---|
| | C-8 | ND | | ND | | nc | 30 |
| | C-9 | ND | | ND | | nc | 30 |
| | C-10 | ND | | ND | | nc | 30 |
| | C-11 | ND | | ND | | nc | 30 |
| | C-12 | ND | | ND | | nc | 30 |
| | C-13 | ND | | ND | | nc | 30 |
| 3891-98-3 | 2,6,10-trimethyldodecane (138 | ND | | ND | | nc | 30 |
| | C-14 | ND | | ND | | nc | 30 |
| 3891-99-4 | 2,6,10-trimethyltridecane (147 | ND | | ND | | nc | 30 |
| | C-15 | ND | | ND | | nc | 30 |
| | C-16 | ND | | ND | | nc | 30 |
| 3892-00-0 | 2,6,10-trimethylpentadecane (1 | ND | | ND | | nc | 30 |
| | C-17 | ND | | ND | | nc | 30 |
| 1921-70-6 | Pristane | ND | | ND | | nc | 30 |
| | C-18 | ND | | ND | | nc | 30 |
| 638-36-8 | Phytane | ND | | ND | | nc | 30 |
| | C-19 | ND | | ND | | nc | 30 |
| | C-20 | ND | | ND | | nc | 30 |
| | C-21 | ND | | ND | | nc | 30 |
| | C-22 | ND | | ND | | nc | 30 |
| | C-23 | ND | | ND | | nc | 30 |
| | C-24 | ND | | ND | | nc | 30 |
| | C-25 | ND | | ND | | nc | 30 |
| | C-26 | ND | | ND | | nc | 30 |
| | C-27 | ND | | ND | | nc | 30 |
| | C-28 | ND | | ND | | nc | 30 |
| | C-29 | ND | | ND | | nc | 30 |
| | C-30 | ND | | ND | | nc | 30 |
| | C-31 | ND | | ND | | nc | 30 |
| | C-32 | ND | | ND | | nc | 30 |
| | C-33 | ND | | ND | | nc | 30 |
| | C-34 | ND | | ND | | nc | 30 |
| | C-35 | ND | | ND | | nc | 30 |
| | C-36 | ND | | ND | | nc | 30 |
| | C-37 | ND | | ND | | nc | 30 |
| | C-38 | ND | | ND | | nc | 30 |

* = Outside of Control Limits.

# Duplicate Summary



**Job Number:** MC46549
**Account:** ENSRNJ AECOM, INC.
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP47955-DUP1 | GR6346.D | 5 | 07/01/16 | MEW | 06/23/16 | OP47955 | GGR207 |
| MC46549-1 | GR6347.D | 5 | 07/01/16 | MEW | 06/23/16 | OP47955 | GGR207 |

**The QC reported here applies to the following samples:** **Method:** ASTM D3328-06

MC46549-1

| CAS No. | Compound | MC46549-1 mg/kg | Q | DUP mg/kg | Q | RPD | Limits |
|---|---|---|---|---|---|---|---|
| | C-39 | ND | | ND | | nc | 30 |
| | C-40 | ND | | ND | | nc | 30 |
| | TPH (C8-C40) | 857000 | | 882000 | | 3 | 30 |

| CAS No. | Surrogate Recoveries | DUP | MC46549-1 | Limits |
|---|---|---|---|---|
| 84-15-1 | o-Terphenyl | 107% | 103% | 40-140% |

8.3.1

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* = Outside of Control Limits.

# Semivolatile Internal Standard Area Summary



**Job Number:** MC46549
**Account:** ENSRNJ AECOM, INC.
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| | | | |
|---|---|---|---|
| **Check Std:** | GGR206-CC173 | **Injection Date:** | 06/30/16 |
| **Lab File ID:** | GR6333.D | **Injection Time:** | 06:40 |
| **Instrument ID:** | GCGR | **Method:** | ASTM D3328-06 |

| | IS 1 AREA | RT |
|---|---|---|
| Check Std | 123245706 | 35.21 |
| Upper Limit [a] | 246491412 | 35.71 |
| Lower Limit [b] | 61622853 | 34.71 |

| Lab Sample ID | IS 1 AREA | RT |
|---|---|---|
| OP47955-MB | 92339577 | 35.20 |
| OP47955-BS1 | 94371287 | 35.20 |
| OP47955-DUP2 | 104374323 | 35.22 |
| MC46563-1 | 112083520 | 35.22 |
| OP47955-DUP1 | 105337501 | 35.21 |
| MC46549-1 | 106211071 | 35.21 |

**IS 1** = 5a-Androstane (Signal #1)

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

# Semivolatile Surrogate Recovery Summary



**Job Number:** MC46549
**Account:** ENSRNJ AECOM, INC.
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

**Method:** ASTM D3328-06 **Matrix:** SO

**Samples and QC shown here apply to the above method**

| Lab Sample ID | Lab File ID | S1 [a] |
|---|---|---|
| MC46549-1 | GR6347.D | 103 |
| OP47955-BS1 | GR6339.D | 101 |
| OP47955-DUP1 | GR6346.D | 107 |
| OP47955-MB | GR6338.D | 100 |

| Surrogate Compounds | Recovery Limits |
|---|---|
| **S1** = o-Terphenyl | 40-140% |

(a) Recovery from GC signal #1

# GC Surrogate Retention Time Summary



**Job Number:** MC46549
**Account:** ENSRNJ AECOM, INC.
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| | | | |
|---|---|---|---|
| **Check Std:** | GGR206-CC173 | **Injection Date:** | 06/30/16 |
| **Lab File ID:** | GR6333.D | **Injection Time:** | 06:40 |
| **Instrument ID:** | GCGR | **Method:** | ASTM D3328-06 |

| | **S1** [a] **RT** |
|---|---|
| Check Std | 33.20 |

| **Lab Sample ID** | **Lab File ID** | **Date Analyzed** | **Time Analyzed** | **S1** [a] **RT** |
|---|---|---|---|---|
| OP47955-MB | GR6338.D | 06/30/16 | 14:27 | 33.19 |
| OP47955-BS1 | GR6339.D | 06/30/16 | 15:45 | 33.19 |
| OP47955-DUP2 | GR6340.D | 06/30/16 | 17:03 | 33.20 |
| MC46563-1 | GR6341.D | 06/30/16 | 18:20 | 33.21 |
| OP47955-DUP1 | GR6346.D | 07/01/16 | 00:52 | 33.19 |
| MC46549-1 | GR6347.D | 07/01/16 | 02:11 | 33.19 |

**Surrogate Compounds**

**S1** = o-Terphenyl

(a) Retention time from GC signal #1

# Initial Calibration Summary



**Job Number:** MC46549 **Sample:** GGR173-ICC173
**Account:** ENSRNJ AECOM, INC. **Lab FileID:** GR5507.D
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Response Factor Report GCG

Method : X:\1\methods\GCGR160401ALK-Rear.m (ChemStation Integrator)
Title : n-C8 - n-C40 normal alkanes w/ isoprenoids
Last Update : Mon Apr 11 10:47:49 2016
Response via : Initial Calibration

Calibration Files
1.0 =GR5505.D 5.0 =GR5506.D 25 =GR5507.D 50 =GR5508.D
100 =GR5509.D 200 =GR5510.D

| | | Compound | 1.0 | 5.0 | 25 | 50 | 100 | 200 | Avg | %RSD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1) | I | 5a-Androstane | ISTD | | | | | | | |
| 2) | S | o-Terphenyl | 1.169 | 1.071 | 1.044 | 1.024 | 1.022 | 1.026 | 1.059 | 5.35 |
| 3) | S | 1-chlorooctadecane | 0.889 | 0.826 | 0.834 | 0.815 | 0.828 | 0.863 | 0.843 | 3.33 |
| 4) | | C-8 | 1.015 | 0.852 | 0.952 | 0.815 | 0.773 | 0.828 | 0.873 | 10.54 |
| 5) | | C-9 | 1.092 | 0.907 | 0.995 | 0.862 | 0.862 | 0.878 | 0.933 | 9.91 |
| 6) | | C-10 | 1.061 | 0.914 | 0.975 | 0.884 | 0.902 | 0.915 | 0.942 | 6.99 |
| 7) | | C-11 | 1.038 | 0.907 | 0.939 | 0.894 | 0.913 | 0.936 | 0.938 | 5.55 |
| 8) | | C-12 | 1.016 | 0.923 | 0.936 | 0.911 | 0.929 | 0.953 | 0.945 | 4.01 |
| 9) | J1 | C-13 | 1.015 | 0.926 | 0.929 | 0.911 | 0.930 | 0.965 | 0.946 | 4.03 |
| 10) | J2 | 2,6,10-trimethyldod | 1.015 | 0.926 | 0.929 | 0.911 | 0.930 | 0.965 | 0.946 | 4.03 |
| 11) | J1 | C-14 | 1.018 | 0.937 | 0.943 | 0.928 | 0.946 | 0.982 | 0.959 | 3.58 |
| 12) | J2 | 2,6,10-trimethyltri | 1.018 | 0.937 | 0.943 | 0.928 | 0.946 | 0.982 | 0.959 | 3.58 |
| 13) | | C-15 | 1.022 | 0.947 | 0.944 | 0.927 | 0.945 | 0.981 | 0.961 | 3.59 |
| 14) | J1 | C-16 | 1.037 | 0.956 | 0.955 | 0.933 | 0.951 | 0.987 | 0.970 | 3.85 |
| 15) | J2 | 2,6,10-trimethylpen | 1.037 | 0.956 | 0.955 | 0.933 | 0.951 | 0.987 | 0.970 | 3.85 |
| 16) | | C-17 | 1.020 | 0.944 | 0.953 | 0.929 | 0.963 | 1.004 | 0.969 | 3.66 |
| 17) | | Pristane | 1.061 | 0.975 | 0.954 | 0.944 | 0.944 | 0.977 | 0.976 | 4.54 |
| 18) | | C-18 | 1.048 | 0.971 | 0.987 | 0.957 | 0.977 | 1.016 | 0.993 | 3.39 |
| 19) | | Phytane | 0.926 | 0.851 | 0.841 | 0.835 | 0.845 | 0.877 | 0.862 | 3.97 |
| 20) | | C-19 | 1.057 | 0.982 | 1.012 | 0.987 | 1.007 | 1.092 | 1.023 | 4.21 |
| 21) | | C-20 | 1.046 | 0.968 | 0.972 | 0.939 | 0.954 | 0.989 | 0.978 | 3.83 |
| 22) | | C-21 | 1.057 | 0.975 | 0.978 | 0.942 | 0.953 | 0.993 | 0.983 | 4.13 |
| 23) | | C-22 | 1.070 | 0.990 | 0.993 | 0.957 | 0.971 | 1.017 | 1.000 | 3.99 |
| 24) | | C-23 | 1.112 | 0.997 | 1.011 | 0.952 | 0.966 | 1.008 | 1.008 | 5.58 |
| 25) | | C-24 | 1.068 | 0.986 | 1.032 | 0.949 | 0.963 | 1.012 | 1.002 | 4.46 |
| 26) | | C-25 | 1.076 | 0.993 | 1.067 | 0.959 | 0.972 | 1.017 | 1.014 | 4.81 |
| 27) | | C-26 | 1.077 | 0.996 | 1.094 | 0.962 | 0.973 | 1.020 | 1.020 | 5.35 |
| 28) | | C-27 | 1.046 | 0.964 | 1.079 | 0.932 | 0.944 | 0.988 | 0.992 | 5.91 |
| 29) | | C-28 | 1.050 | 0.971 | 1.092 | 0.936 | 0.947 | 0.993 | 0.998 | 6.12 |
| 30) | | C-29 | 1.069 | 0.989 | 1.117 | 0.954 | 0.964 | 1.012 | 1.018 | 6.27 |
| 31) | | C-30 | 1.038 | 0.962 | 1.092 | 0.930 | 0.941 | 0.986 | 0.991 | 6.30 |
| 32) | | C-31 | 1.089 | 1.008 | 1.146 | 0.973 | 0.984 | 1.029 | 1.038 | 6.44 |
| 33) | | C-32 | 1.077 | 0.995 | 1.136 | 0.961 | 0.971 | 1.016 | 1.026 | 6.62 |
| 34) | | C-33 | 1.057 | 0.979 | 1.118 | 0.946 | 0.955 | 0.999 | 1.009 | 6.61 |
| 35) | | C-34 | 1.097 | 1.016 | 1.165 | 0.983 | 0.991 | 1.037 | 1.048 | 6.70 |
| 36) | | C-35 | 1.065 | 0.989 | 1.131 | 0.955 | 0.964 | 1.009 | 1.019 | 6.61 |
| 37) | | C-36 | 1.182 | 1.090 | 1.256 | 1.062 | 1.069 | 1.120 | 1.130 | 6.70 |
| 38) | | C-37 | 1.057 | 0.980 | 1.125 | 0.951 | 0.956 | 1.002 | 1.012 | 6.66 |
| 39) | | C-38 | 1.096 | 1.009 | 1.153 | 0.977 | 0.982 | 1.032 | 1.041 | 6.70 |
| 40) | | C-39 | 1.033 | 0.969 | 1.111 | 0.939 | 0.948 | 0.995 | 0.999 | 6.46 |
| 41) | | C-40 | 1.038 | 0.975 | 1.134 | 0.959 | 0.967 | 1.018 | 1.015 | 6.48 |
| 42) | H | TPH (C8-C40) | 1.059 | 0.969 | 1.046 | 0.941 | 0.953 | 0.995 | 0.994 | 4.94 |
| 43) | H | Total aliphatics | 1.059 | 0.969 | 1.046 | 0.941 | 0.953 | 0.995 | 0.994 | 4.94 |
| 44) | H | Total aromatics | 1.059 | 0.969 | 1.046 | 0.941 | 0.953 | 0.995 | 0.994 | 4.94 |
| 45) | H | TPH-DRO (C10-C28) | 1.049 | 0.960 | 0.994 | 0.936 | 0.953 | 0.993 | 0.981 | 4.12 |
| 46) | H | TPH-ORO (>C28-C40) | 1.073 | 0.995 | 1.137 | 0.963 | 0.972 | 1.019 | 1.027 | 6.50 |

# Initial Calibration Summary

**Job Number:** MC46549 **Sample:** GGR173-ICC173
**Account:** ENSRNJ AECOM, INC. **Lab FileID:** GR5507.D
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

---

(#) = Out of Range

GCGR160401ALK-Rear.m Mon Apr 11 12:08:09 2016

# Initial Calibration Verification



**Job Number:** MC46549 **Sample:** GGR173-ICV173
**Account:** ENSRNJ AECOM, INC. **Lab FileID:** GR5511.D
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Evaluate Continuing Calibration Report

Data File: X:\1\data\G160401.SEC\GR5511.D
Sample : ICV173-25.0, FS-185
Misc : OP46636,GGR173,,,2,1
ALS Vial : 8 Sample Multiplier: 1
Acq On : 2 Apr 2016 1:40 am Operator: MIKEW

Quant Time: Apr 11 12:22:03 2016
Quant Method : G:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

| | | Compound | AvgRF | CCRF | %Dev | Area% | Dev(Min) |
|---|---|---|---|---|---|---|---|
| 1 | I | 5a-Androstane | 1.000 | 1.000 | 0.0 | 124 | 0.02 |
| 2 | S | o-Terphenyl | 1.059 | 1.000 | 5.6 | 119 | 0.01 |
| 3 | S | 1-chlorooctadecane | 0.843 | 0.791 | 6.2 | 118 | 0.00 |
| 4 | | C-8 | 0.873 | 0.802 | 8.1 | 105 | 0.04 |
| 5 | | C-9 | 0.933 | 0.855 | 8.4 | 107 | 0.03 |
| 6 | | C-10 | 0.942 | 0.876 | 7.0 | 112 | 0.03 |
| 7 | | C-11 | 0.938 | 0.884 | 5.8 | 117 | 0.02 |
| 8 | | C-12 | 0.945 | 0.899 | 4.9 | 119 | 0.02 |
| 9 | J1 | C-13 | 0.946 | 0.906 | 4.2 | 121 | 0.02 |
| 11 | J1 | C-14 | 0.959 | 0.914 | 4.7 | 121 | 0.01 |
| 13 | | C-15 | 0.961 | 0.914 | 4.9 | 121 | 0.01 |
| 14 | J1 | C-16 | 0.970 | 0.926 | 4.5 | 121 | 0.01 |
| 16 | | C-17 | 0.969 | 0.936 | 3.4 | 122 | 0.01 |
| 17 | | Pristane | 0.976 | 0.910 | 6.8 | 119 | 0.01 |
| 18 | | C-18 | 0.993 | 0.954 | 3.9 | 120 | 0.01 |
| 19 | | Phytane | 0.862 | 0.935 | -8.5 | 138 | 0.01 |
| 20 | | C-19 | 1.023 | 0.964 | 5.8 | 119 | 0.01 |
| 21 | | C-20 | 0.978 | 0.944 | 3.5 | 121 | 0.02 |
| 22 | | C-21 | 0.983 | 0.952 | 3.2 | 121 | 0.00 |
| 23 | | C-22 | 1.000 | 0.945 | 5.5 | 118 | 0.00 |
| 24 | | C-23 | 1.008 | 0.945 | 6.3 | 116 | 0.00 |
| 25 | | C-24 | 1.002 | 0.950 | 5.2 | 114 | 0.00 |
| 26 | | C-25 | 1.014 | 0.894 | 11.8 | 104 | 0.00 |
| 27 | | C-26 | 1.020 | 0.970 | 4.9 | 110 | 0.00 |
| 28 | | C-27 | 0.992 | 0.980 | 1.2 | 113 | 0.00 |
| 29 | | C-28 | 0.998 | 0.962 | 3.6 | 110 | 0.00 |
| 30 | | C-29 | 1.018 | 0.952 | 6.5 | 106 | 0.00 |
| 31 | | C-30 | 0.991 | 0.969 | 2.2 | 110 | 0.00 |
| 32 | | C-31 | 1.038 | 0.939 | 9.5 | 102 | 0.00 |
| 33 | | C-32 | 1.026 | 0.945 | 7.9 | 104 | 0.00 |
| 34 | | C-33 | 1.009 | 0.943 | 6.5 | 105 | 0.00 |
| 35 | | C-34 | 1.048 | 0.993 | 5.2 | 106 | 0.00 |
| 36 | | C-35 | 1.019 | 0.961 | 5.7 | 106 | 0.00 |
| 37 | | C-36 | 1.130 | 1.007 | 10.9 | 100 | 0.00 |
| 38 | | C-37 | 1.012 | 0.976 | 3.6 | 108 | 0.00 |
| 39 | | C-38 | 1.041 | 0.952 | 8.5 | 103 | 0.00 |
| 40 | | C-39 | 0.999 | 0.935 | 6.4 | 105 | 0.00 |
| 41 | | C-40 | 1.015 | 0.873 | 14.0 | 96 | 0.00 |

Evaluate Continuing Calibration Report - Not Founds

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 10 | J2 | 2,6,10-trimethyldodecane (1 | 0.019 | 0.000 | 100.0# | 0# | -23.68# |

# Initial Calibration Verification

**Job Number:** MC46549 **Sample:** GGR173-ICV173
**Account:** ENSRNJ AECOM, INC. **Lab FileID:** GR5511.D
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 12 | J2 | 2,6,10-trimethyltridecane ( | 0.019 | 0.000 | 100.0# | 0# | -25.38# |
| 15 | J2 | 2,6,10-trimethylpentadecane | 0.019 | 0.000 | 100.0# | 0# | -28.84# |
| 42 | H | TPH (C8-C40) | 0.020 | 0.000 | 100.0# | 0# | -5.59# |
| 43 | H | Total aliphatics | 0.020 | 0.000 | 100.0# | 0# | -5.59# |
| 44 | H | Total aromatics | 0.020 | 0.000 | 100.0# | 0# | -5.59# |
| 45 | H | TPH-DRO (C10-C28) | 0.020 | 0.000 | 100.0# | 0# | -38.87# |
| 46 | H | TPH-ORO (>C28-C40) | 0.021 | 0.000 | 100.0# | 0# | -22.58# |

(#) = Out of Range SPCC's out = 0 CCC's out = 0

GCGR160401ALK-Rear.m Mon Apr 11 12:22:45 2016

# Continuing Calibration Summary



**Job Number:** MC46549 **Sample:** GGR206-CC173
**Account:** ENSRNJ AECOM, INC. **Lab FileID:** GR6333.D
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Evaluate Continuing Calibration Report

Data File: X:\1\data\G160629\GR6333.d
Sample : CC173-25, FS-209
Misc : OP47904,GGR206,,,2,1
ALS Vial : 2 Sample Multiplier: 1
Acq On : 30 Jun 2016 6:40 am Operator: MIKEW

Quant Time: Jun 30 08:03:17 2016
Quant Method : X:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

| | | Compound | AvgRF | CCRF | %Dev | Area% | Dev(Min) |
|---|---|---|---|---|---|---|---|
| 1 | I | 5a-Androstane | 1.000 | 1.000 | 0.0 | 163 | 0.00 |
| 2 | S | o-Terphenyl | 1.059 | 1.045 | 1.3 | 163 | 0.00 |
| 4 | | C-8 | 0.873 | 0.751 | 14.0 | 128 | 0.02 |
| 5 | | C-9 | 0.933 | 0.847 | 9.2 | 138 | 0.00 |
| 6 | | C-10 | 0.942 | 0.900 | 4.5 | 150 | 0.00 |
| 7 | | C-11 | 0.938 | 0.928 | 1.1 | 161 | 0.00 |
| 8 | | C-12 | 0.945 | 0.940 | 0.5 | 163 | 0.00 |
| 9 | J1 | C-13 | 0.946 | 0.950 | -0.4 | 166 | 0.00 |
| 11 | J1 | C-14 | 0.959 | 0.945 | 1.5 | 163 | 0.00 |
| 13 | | C-15 | 0.961 | 0.946 | 1.6 | 163 | 0.00 |
| 14 | J1 | C-16 | 0.970 | 0.963 | 0.7 | 164 | 0.00 |
| 16 | | C-17 | 0.969 | 0.947 | 2.3 | 162 | 0.00 |
| 17 | | Pristane | 0.976 | 0.959 | 1.7 | 163 | 0.00 |
| 18 | | C-18 | 0.993 | 0.947 | 4.6 | 156 | 0.01 |
| 19 | | Phytane | 0.862 | 0.851 | 1.3 | 165 | 0.01 |
| 20 | | C-19 | 1.023 | 0.968 | 5.4 | 156 | 0.01 |
| 21 | | C-20 | 0.978 | 0.949 | 3.0 | 159 | 0.00 |
| 22 | | C-21 | 0.983 | 0.968 | 1.5 | 161 | 0.00 |
| 23 | | C-22 | 1.000 | 0.963 | 3.7 | 158 | 0.00 |
| 24 | | C-23 | 1.008 | 0.970 | 3.8 | 156 | 0.00 |
| 25 | | C-24 | 1.002 | 1.007 | -0.5 | 159 | 0.00 |
| 26 | | C-25 | 1.014 | 0.967 | 4.6 | 147 | 0.00 |
| 27 | | C-26 | 1.020 | 0.976 | 4.3 | 145 | 0.00 |
| 28 | | C-27 | 0.992 | 0.952 | 4.0 | 144 | 0.00 |
| 29 | | C-28 | 0.998 | 0.990 | 0.8 | 147 | 0.00 |
| 30 | | C-29 | 1.018 | 0.956 | 6.1 | 139 | 0.00 |
| 31 | | C-30 | 0.991 | 0.981 | 1.0 | 146 | 0.00 |
| 32 | | C-31 | 1.038 | 0.995 | 4.1 | 141 | 0.00 |
| 33 | | C-32 | 1.026 | 0.978 | 4.7 | 140 | 0.00 |
| 34 | | C-33 | 1.009 | 0.962 | 4.7 | 140 | 0.00 |
| 35 | | C-34 | 1.048 | 0.972 | 7.3 | 136 | 0.00 |
| 36 | | C-35 | 1.019 | 0.960 | 5.8 | 138 | 0.00 |
| 37 | | C-36 | 1.130 | 1.037 | 8.2 | 134 | 0.00 |
| 38 | | C-37 | 1.012 | 0.976 | 3.6 | 141 | 0.00 |
| 39 | | C-38 | 1.041 | 1.037 | 0.4 | 146 | 0.00 |
| 40 | | C-39 | 0.999 | 1.008 | -0.9 | 148 | 0.01 |
| 41 | | C-40 | 1.015 | 1.004 | 1.1 | 144 | 0.00 |

Evaluate Continuing Calibration Report - Not Founds

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 3 | S | 1-chlorooctadecane | 0.017 | 0.000 | 100.0# | 0# | -35.93# |
| 10 | J2 | 2,6,10-trimethyldodecane (1 | 0.019 | 0.000 | 100.0# | 0# | -23.67# |

# Continuing Calibration Summary

**Job Number:** MC46549 **Sample:** GGR206-CC173
**Account:** ENSRNJ AECOM, INC. **Lab FileID:** GR6333.D
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 12 | J2 | 2,6,10-trimethyltridecane ( | 0.019 | 0.000 | 100.0# | 0# | -25.39# |
| 15 | J2 | 2,6,10-trimethylpentadecane | 0.019 | 0.000 | 100.0# | 0# | -28.87# |
| 42 | H | TPH (C8-C40) | 0.020 | 0.000 | 100.0# | 0# | -5.62# |
| 43 | H | Total aliphatics | 0.020 | 0.000 | 100.0# | 0# | -5.62# |
| 44 | H | Total aromatics | 0.020 | 0.000 | 100.0# | 0# | -5.62# |
| 45 | H | TPH-DRO (C10-C28) | 0.020 | 0.000 | 100.0# | 0# | -39.09# |
| 46 | H | TPH-ORO (>C28-C40) | 0.021 | 0.000 | 100.0# | 0# | -22.72# |

(#) = Out of Range SPCC's out = 0 CCC's out = 0

GCGR160401ALK-Rear.m Thu Jun 30 08:34:40 2016

# Continuing Calibration Summary



**Job Number:** MC46549 **Sample:** GGR207-CC173
**Account:** ENSRNJ AECOM, INC. **Lab FileID:** GR6335.D
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Evaluate Continuing Calibration Report

Data File: X:\1\data\G160630\GR6335.d
Sample : CC173-25, FS-209
Misc : OP47904,GGR207,,,2,1
ALS Vial : 2 Sample Multiplier: 1
Acq On : 30 Jun 2016 10:33 am Operator: MIKEW

Quant Time: Jun 30 15:12:07 2016
Quant Method : X:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

| | | Compound | AvgRF | CCRF | %Dev | Area% | Dev(Min) |
|---|---|---|---|---|---|---|---|
| 1 | I | 5a-Androstane | 1.000 | 1.000 | 0.0 | 150 | 0.00 |
| 2 | S | o-Terphenyl | 1.059 | 1.050 | 0.8 | 151 | 0.00 |
| 4 | | C-8 | 0.873 | 0.732 | 16.2 | 115 | 0.00 |
| 5 | | C-9 | 0.933 | 0.841 | 9.9 | 127 | 0.00 |
| 6 | | C-10 | 0.942 | 0.893 | 5.2 | 137 | 0.00 |
| 7 | | C-11 | 0.938 | 0.926 | 1.3 | 148 | 0.00 |
| 8 | | C-12 | 0.945 | 0.939 | 0.6 | 150 | 0.00 |
| 9 | J1 | C-13 | 0.946 | 0.949 | -0.3 | 153 | 0.00 |
| 11 | J1 | C-14 | 0.959 | 0.944 | 1.6 | 150 | 0.00 |
| 13 | | C-15 | 0.961 | 0.946 | 1.6 | 150 | 0.00 |
| 14 | J1 | C-16 | 0.970 | 0.963 | 0.7 | 151 | 0.00 |
| 16 | | C-17 | 0.969 | 0.947 | 2.3 | 149 | 0.00 |
| 17 | | Pristane | 0.976 | 0.964 | 1.2 | 151 | 0.00 |
| 18 | | C-18 | 0.993 | 0.947 | 4.6 | 144 | 0.01 |
| 19 | | Phytane | 0.862 | 0.852 | 1.2 | 152 | 0.01 |
| 20 | | C-19 | 1.023 | 0.963 | 5.9 | 143 | 0.01 |
| 21 | | C-20 | 0.978 | 0.957 | 2.1 | 148 | 0.00 |
| 22 | | C-21 | 0.983 | 0.971 | 1.2 | 149 | 0.00 |
| 23 | | C-22 | 1.000 | 0.964 | 3.6 | 145 | 0.00 |
| 24 | | C-23 | 1.008 | 0.971 | 3.7 | 144 | 0.00 |
| 25 | | C-24 | 1.002 | 1.012 | -1.0 | 147 | 0.00 |
| 26 | | C-25 | 1.014 | 0.972 | 4.1 | 137 | 0.00 |
| 27 | | C-26 | 1.020 | 0.976 | 4.3 | 134 | 0.00 |
| 28 | | C-27 | 0.992 | 0.946 | 4.6 | 131 | 0.00 |
| 29 | | C-28 | 0.998 | 0.984 | 1.4 | 135 | 0.00 |
| 30 | | C-29 | 1.018 | 0.955 | 6.2 | 128 | 0.00 |
| 31 | | C-30 | 0.991 | 0.979 | 1.2 | 134 | 0.00 |
| 32 | | C-31 | 1.038 | 0.995 | 4.1 | 130 | 0.00 |
| 33 | | C-32 | 1.026 | 0.976 | 4.9 | 129 | 0.00 |
| 34 | | C-33 | 1.009 | 0.959 | 5.0 | 129 | 0.00 |
| 35 | | C-34 | 1.048 | 0.971 | 7.3 | 125 | 0.00 |
| 36 | | C-35 | 1.019 | 0.958 | 6.0 | 127 | 0.00 |
| 37 | | C-36 | 1.130 | 1.034 | 8.5 | 123 | 0.00 |
| 38 | | C-37 | 1.012 | 0.972 | 4.0 | 130 | 0.00 |
| 39 | | C-38 | 1.041 | 1.034 | 0.7 | 134 | 0.00 |
| 40 | | C-39 | 0.999 | 1.001 | -0.2 | 135 | 0.00 |
| 41 | | C-40 | 1.015 | 0.999 | 1.6 | 132 | 0.00 |

Evaluate Continuing Calibration Report - Not Founds

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 3 | S | 1-chlorooctadecane | 0.017 | 0.000 | 100.0# | 0# | -35.93# |
| 10 | J2 | 2,6,10-trimethyldodecane (1 | 0.019 | 0.000 | 100.0# | 0# | -23.67# |

8.7.4

8

# Continuing Calibration Summary

**Job Number:** MC46549 **Sample:** GGR207-CC173
**Account:** ENSRNJ AECOM, INC. **Lab FileID:** GR6335.D
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 12 | J2 | 2,6,10-trimethyltridecane ( | 0.019 | 0.000 | 100.0# | 0# | -25.39# |
| 15 | J2 | 2,6,10-trimethylpentadecane | 0.019 | 0.000 | 100.0# | 0# | -28.86# |
| 42 | H | TPH (C8-C40) | 0.020 | 0.000 | 100.0# | 0# | -5.62# |
| 43 | H | Total aliphatics | 0.020 | 0.000 | 100.0# | 0# | -5.62# |
| 44 | H | Total aromatics | 0.020 | 0.000 | 100.0# | 0# | -5.62# |
| 45 | H | TPH-DRO (C10-C28) | 0.020 | 0.000 | 100.0# | 0# | -39.09# |
| 46 | H | TPH-ORO (>C28-C40) | 0.021 | 0.000 | 100.0# | 0# | -22.72# |

(#) = Out of Range SPCC's out = 0 CCC's out = 0

GCGR160401ALK-Rear.m Fri Jul 01 07:55:40 2016

# Continuing Calibration Summary



**Job Number:** MC46549 **Sample:** GGR207-CC173
**Account:** ENSRNJ AECOM, INC. **Lab FileID:** GR6349.D
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

Evaluate Continuing Calibration Report

Data File: X:\1\data\G160630\GR6349.d
Sample : CC173-25, FS-209
Misc : OP47904,GGR207,,,2,1
ALS Vial : 99 Sample Multiplier: 1
Acq On : 1 Jul 2016 4:50 am Operator: MIKEW

Quant Time: Jul 01 07:33:44 2016
Quant Method : X:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

| | | Compound | AvgRF | CCRF | %Dev | Area% | Dev(Min) |
|---|---|---|---|---|---|---|---|
| 1 | I | 5a-Androstane | 1.000 | 1.000 | 0.0 | 180 | 0.00 |
| 2 | S | o-Terphenyl | 1.059 | 1.051 | 0.8 | 181 | 0.00 |
| 4 | | C-8 | 0.873 | 0.705 | 19.2 | 133 | 0.00 |
| 5 | | C-9 | 0.933 | 0.820 | 12.1 | 149 | 0.00 |
| 6 | | C-10 | 0.942 | 0.888 | 5.7 | 164 | 0.00 |
| 7 | | C-11 | 0.938 | 0.920 | 1.9 | 177 | 0.00 |
| 8 | | C-12 | 0.945 | 0.934 | 1.2 | 180 | 0.00 |
| 9 | J1 | C-13 | 0.946 | 0.946 | 0.0 | 183 | 0.00 |
| 11 | J1 | C-14 | 0.959 | 0.939 | 2.1 | 180 | 0.00 |
| 13 | | C-15 | 0.961 | 0.941 | 2.1 | 180 | 0.00 |
| 14 | J1 | C-16 | 0.970 | 0.959 | 1.1 | 181 | 0.00 |
| 16 | | C-17 | 0.969 | 0.938 | 3.2 | 177 | 0.00 |
| 17 | | Pristane | 0.976 | 0.963 | 1.3 | 182 | 0.00 |
| 18 | | C-18 | 0.993 | 0.945 | 4.8 | 172 | 0.01 |
| 19 | | Phytane | 0.862 | 0.847 | 1.7 | 182 | 0.01 |
| 20 | | C-19 | 1.023 | 0.959 | 6.3 | 171 | 0.01 |
| 21 | | C-20 | 0.978 | 0.971 | 0.7 | 180 | 0.00 |
| 22 | | C-21 | 0.983 | 0.974 | 0.9 | 179 | 0.00 |
| 23 | | C-22 | 1.000 | 0.966 | 3.4 | 175 | 0.00 |
| 24 | | C-23 | 1.008 | 0.977 | 3.1 | 174 | 0.00 |
| 25 | | C-24 | 1.002 | 1.017 | -1.5 | 177 | 0.00 |
| 26 | | C-25 | 1.014 | 0.973 | 4.0 | 164 | 0.00 |
| 27 | | C-26 | 1.020 | 0.975 | 4.4 | 161 | 0.00 |
| 28 | | C-27 | 0.992 | 0.954 | 3.8 | 159 | 0.00 |
| 29 | | C-28 | 0.998 | 0.986 | 1.2 | 163 | 0.00 |
| 30 | | C-29 | 1.018 | 0.954 | 6.3 | 154 | 0.00 |
| 31 | | C-30 | 0.991 | 0.977 | 1.4 | 161 | 0.00 |
| 32 | | C-31 | 1.038 | 0.994 | 4.2 | 156 | 0.00 |
| 33 | | C-32 | 1.026 | 0.975 | 5.0 | 155 | 0.00 |
| 34 | | C-33 | 1.009 | 0.958 | 5.1 | 154 | 0.00 |
| 35 | | C-34 | 1.048 | 0.970 | 7.4 | 150 | 0.00 |
| 36 | | C-35 | 1.019 | 0.956 | 6.2 | 152 | 0.00 |
| 37 | | C-36 | 1.130 | 1.038 | 8.1 | 149 | 0.00 |
| 38 | | C-37 | 1.012 | 0.980 | 3.2 | 157 | 0.00 |
| 39 | | C-38 | 1.041 | 1.035 | 0.6 | 162 | 0.00 |
| 40 | | C-39 | 0.999 | 0.999 | 0.0 | 162 | 0.00 |
| 41 | | C-40 | 1.015 | 0.994 | 2.1 | 158 | 0.00 |

Evaluate Continuing Calibration Report - Not Founds

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 3 | S | 1-chlorooctadecane | 0.017 | 0.000 | 100.0# | 0# | -35.93# |
| 10 | J2 | 2,6,10-trimethyldodecane (1 | 0.019 | 0.000 | 100.0# | 0# | -23.67# |

8.7.5

8

# Continuing Calibration Summary

**Job Number:** MC46549 **Sample:** GGR207-CC173
**Account:** ENSRNJ AECOM, INC. **Lab FileID:** GR6349.D
**Project:** PPG Garfield Avenue - Site 137 LSRP DNAPL, 70 Carteret Avenue, Jersey City, NJ

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 12 | J2 | 2,6,10-trimethyltridecane ( | 0.019 | 0.000 | 100.0# | 0# | -25.39# |
| 15 | J2 | 2,6,10-trimethylpentadecane | 0.019 | 0.000 | 100.0# | 0# | -28.86# |
| 42 | H | TPH (C8-C40) | 0.020 | 0.000 | 100.0# | 0# | -5.62# |
| 43 | H | Total aliphatics | 0.020 | 0.000 | 100.0# | 0# | -5.62# |
| 44 | H | Total aromatics | 0.020 | 0.000 | 100.0# | 0# | -5.62# |
| 45 | H | TPH-DRO (C10-C28) | 0.020 | 0.000 | 100.0# | 0# | -39.09# |
| 46 | H | TPH-ORO (>C28-C40) | 0.021 | 0.000 | 100.0# | 0# | -22.72# |

(#) = Out of Range SPCC's out = 0 CCC's out = 0

GCGR160401ALK-Rear.m Fri Jul 01 07:56:32 2016

8.7.5

8

## GC Semi-volatiles

Raw Data

Manual Integrations APPROVED (compounds with "m" flag)
Ruben Parrilla
07/13/16 11:34

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160630\GR6347.d
Sample : MC46549-1
Misc : OP47955,GGR207,0.0152,,,2,5
ALS Vial : 13 Sample Multiplier: 1
Acq On : 1 Jul 2016 2:11 am Operator: MIKEW

Quant Time: Jul 01 07:51:14 2016
Quant Method : X:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

| | Compound | R.T. | Response | Conc | Units |
|---|---|---|---|---|---|
| | Internal Standards | | | | |
| 1) I | 5a-Androstane | 35.208 | 106211071 | 60.000 | µg/mLm |
| | System Monitoring Compounds | | | | |
| 2) S | o-Terphenyl | 33.190 | 9680072 | 5.163 | µg/mLm |
| Spiked Amount | 25.000 | | Recovery = | 20.65% | |
| | Target Compounds | | | | |
| 42) H | TPH (C8-C40) | 5.624 | 2289956047 | 1301.885 | µg/mLm |
| | SemiQuant Compounds - Not Calibrated on this Instrument | | | | |

(f)=RT Delta > 1/2 Window (m)=manual int.

9.1.1
9

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160630\GR6347.d
Sample : MC46549-1
Misc : OP47955,GGR207,0.0152,,,2,5
ALS Vial : 13 Sample Multiplier: 1
Acq On : 1 Jul 2016 2:11 am Operator: MIKEW

Quant Time: Jul 01 07:51:14 2016
Quant Method : X:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

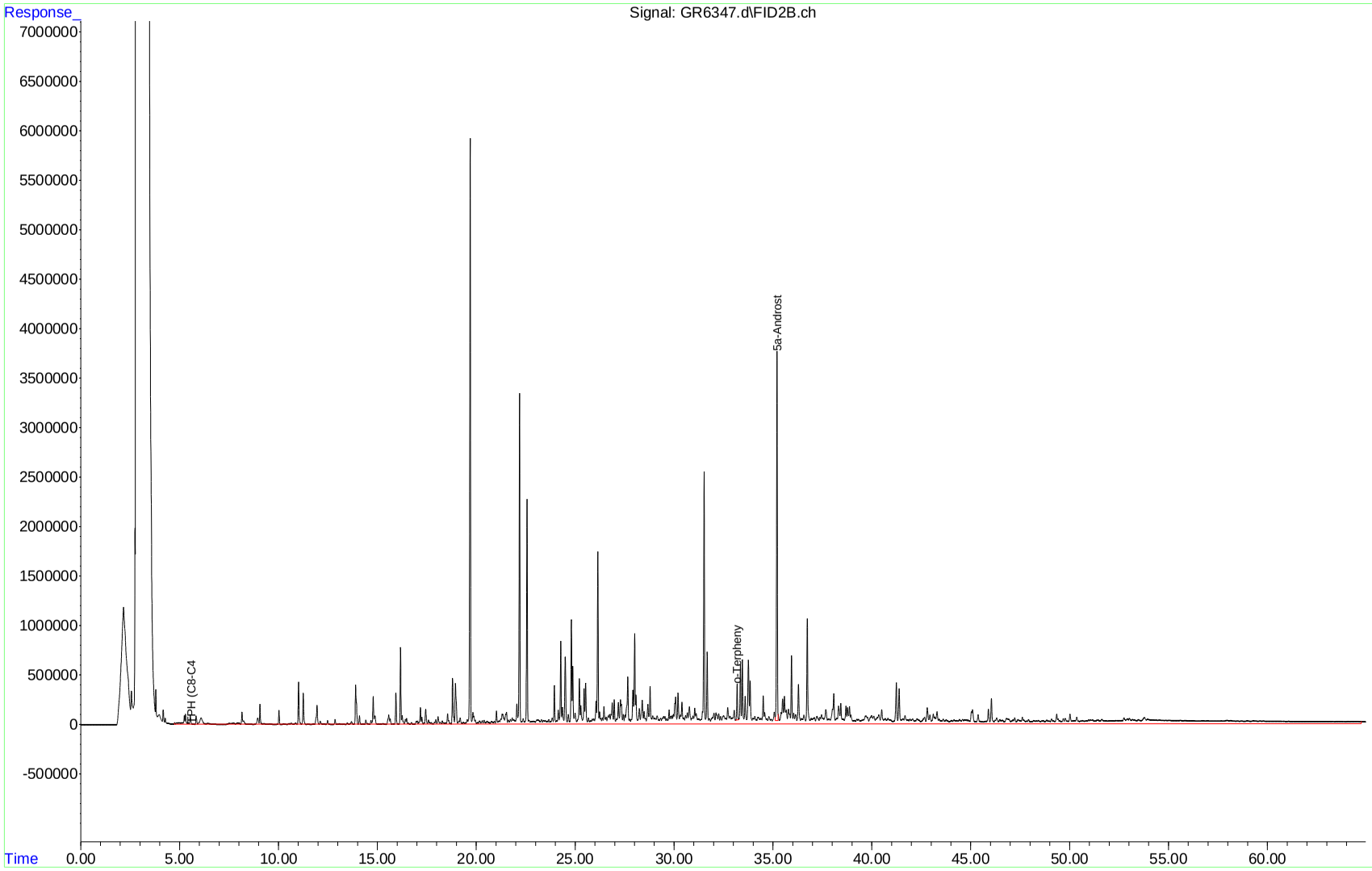

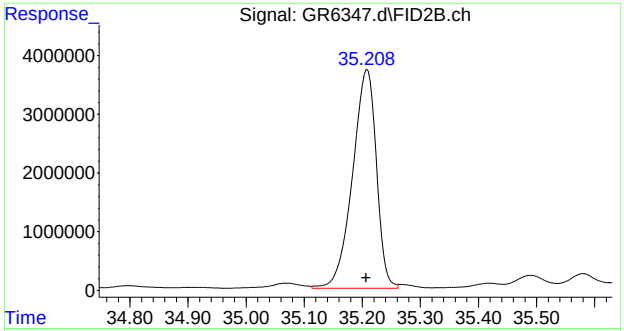


#1 5a-Androstane

R.T.: 35.208 min
Delta R.T.: 0.001 min
Response: 106211071
Conc: 60.00 µg/mL m

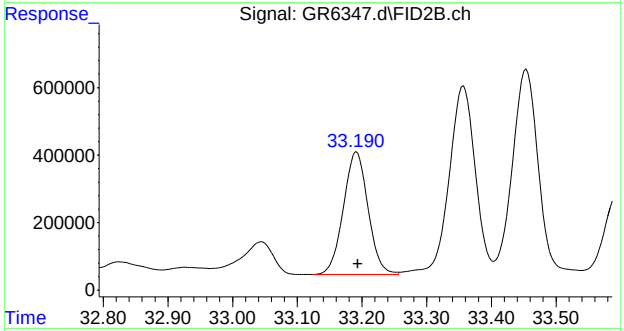


#2 o-Terphenyl

R.T.: 33.190 min
Delta R.T.: -0.003 min
Response: 9680072
Conc: 5.16 µg/mL m

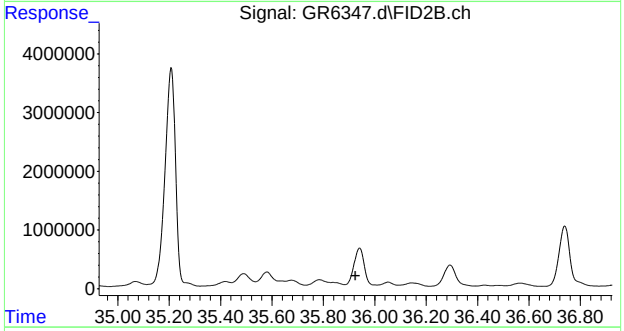


#3 1-chlorooctadecane

R.T.: 0.000 min
Exp R.T. : 35.925 min
Response: 0
Conc: N.D.

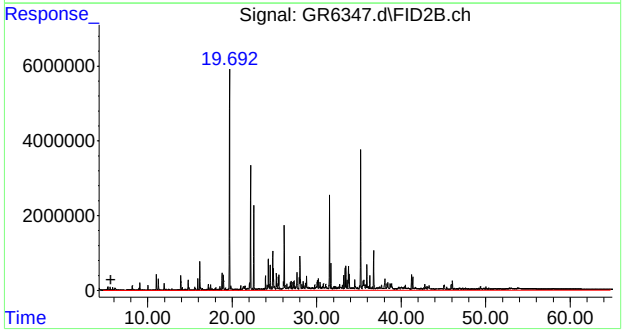


#42 TPH (C8-C40)

R.T.: 5.624 min
Delta R.T.: 0.000 min
Response: 2289956047
Conc: 1301.88 µg/mL m

Manual Integrations APPROVED (compounds with "m" flag)
Ruben Parrilla
07/11/16 12:31

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160630\GR6338.d
Sample : OP47955-MB, Method Blank
Misc : OP47955,GGR207,0.01,,,2,1
ALS Vial : 4 Sample Multiplier: 1
Acq On : 30 Jun 2016 2:27 pm Operator: MIKEW

Quant Time: Jun 30 16:13:03 2016
Quant Method : X:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

| Compound | R.T. | Response | Conc Units |
|---|---|---|---|
| Internal Standards | | | |
| 1) I 5a-Androstane | 35.202 | 92339577 | 50.000 µg/mLm |
| System Monitoring Compounds | | | |
| 2) S o-Terphenyl | 33.193 | 49022380 | 25.062 µg/mLm |
| Spiked Amount 25.000 | | Recovery = 100.25% | |
| Target Compounds | | | |
| SemiQuant Compounds - Not Calibrated on this Instrument | | | |

(f)=RT Delta > 1/2 Window (m)=manual int.

9.2.1
9


SGS ACCUTEST MC46549

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160630\GR6338.d
Sample : OP47955-MB, Method Blank
Misc : OP47955,GGR207,0.01,,,2,1
ALS Vial : 4 Sample Multiplier: 1
Acq On : 30 Jun 2016 2:27 pm Operator: MIKEW

Quant Time: Jun 30 16:13:03 2016
Quant Method : X:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

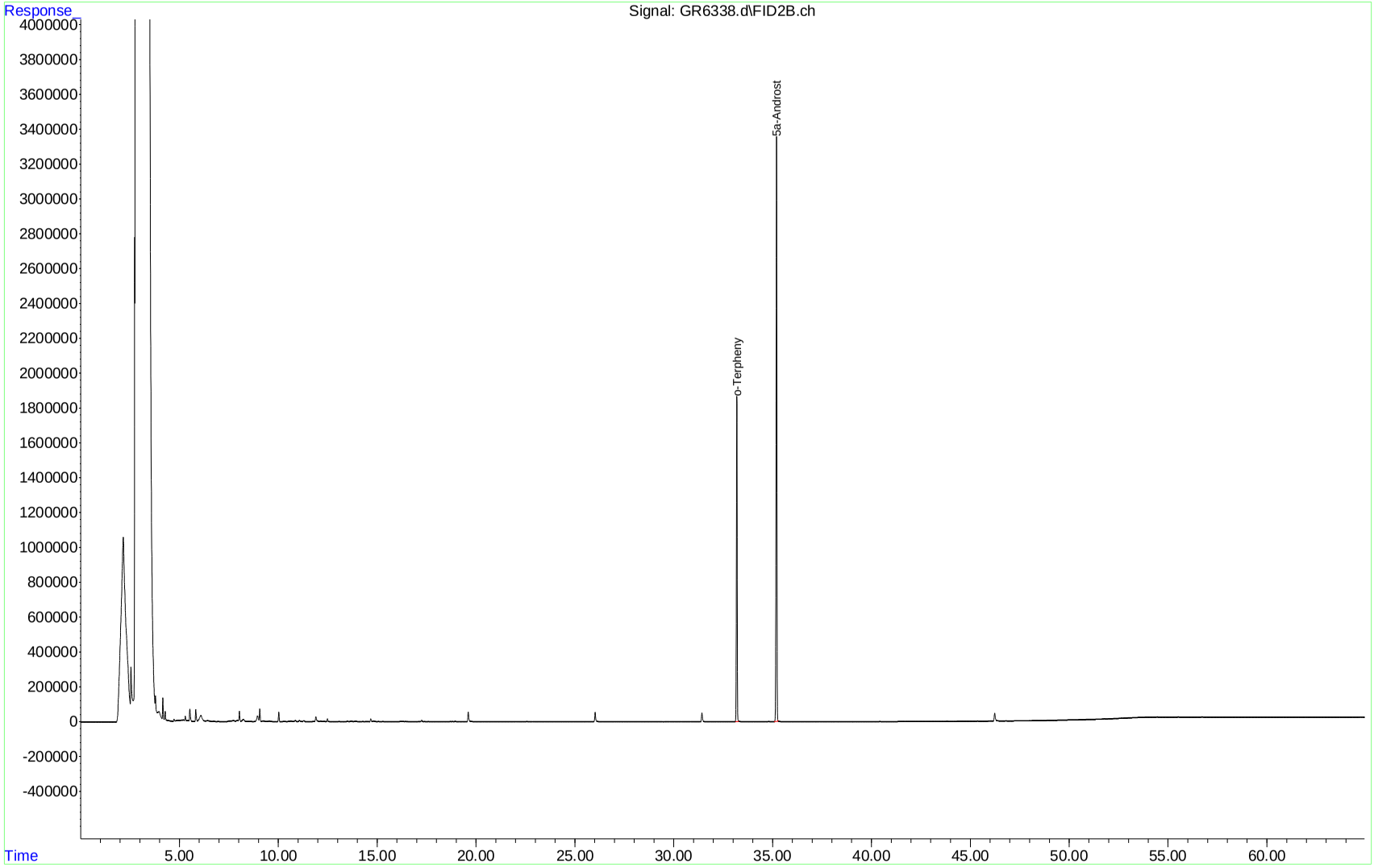

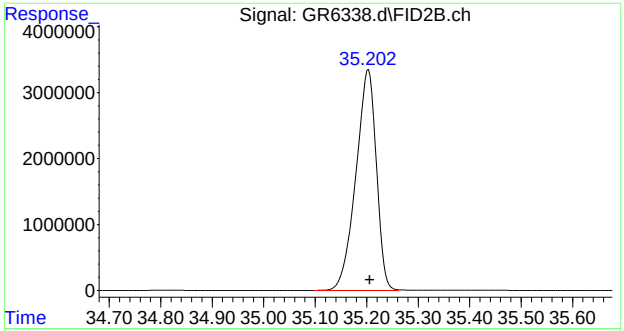


#1 5a-Androstane

R.T.: 35.202 min
Delta R.T.: -0.004 min
Response: 92339577
Conc: 50.00 µg/mL m

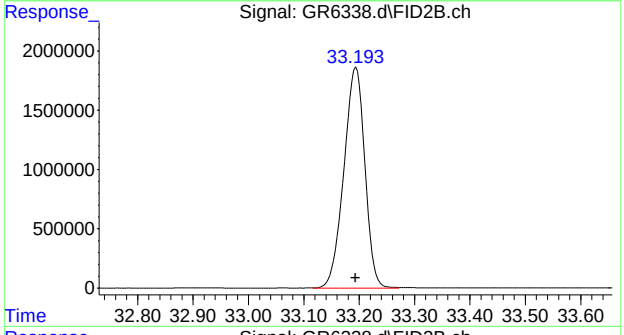


#2 o-Terphenyl

R.T.: 33.193 min
Delta R.T.: 0.000 min
Response: 49022380
Conc: 25.06 µg/mL m

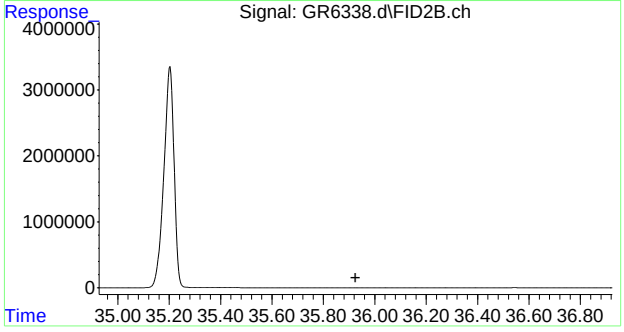


#3 1-chlorooctadecane

R.T.: 0.000 min
Exp R.T. : 35.925 min
Response: 0
Conc: N.D.

Manual Integrations APPROVED (compounds with "m" flag)
Ruben Parrilla
07/11/16 12:31

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160630\GR6339.d
Sample : OP47955-BS1
Misc : OP47955,GGR207,0.01,,,2,1
ALS Vial : 5 Sample Multiplier: 1
Acq On : 30 Jun 2016 3:45 pm Operator: MIKEW

Quant Time: Jul 01 07:12:20 2016
Quant Method : X:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

| | Compound | R.T. | Response | Conc Units |
|---|---|---|---|---|
| Internal Standards | | | | |
| 1) I | 5a-Androstane | 35.204 | 94371287 | 50.000 µg/mL |
| System Monitoring Compounds | | | | |
| 2) S | o-Terphenyl | 33.194 | 50305262 | 25.164 µg/mLm |
| Spiked Amount | 25.000 | | Recovery = | 100.66% |
| Target Compounds | | | | |
| 4) | C-8 | 9.154 | 37009299 | 22.473 µg/mLm |
| 5) | C-9 | 12.122 | 39172548 | 22.249 µg/mLm |
| 6) | C-10 | 14.893 | 41438491 | 23.311 µg/mLm |
| 7) | C-11 | 17.454 | 42630906 | 24.087 µg/mL |
| 8) | C-12 | 19.833 | 43000857 | 24.115 µg/mL |
| 9) J1 | C-13 | 22.057 | 43305921 | 24.256 µg/mL |
| 11) J1 | C-14 | 24.147 | 42958031 | 23.736 µg/mL |
| 13) | C-15 | 26.120 | 43071819 | 23.751 µg/mL |
| 14) J1 | C-16 | 27.987 | 43618701 | 23.827 µg/mL |
| 16) | C-17 | 29.759 | 42638304 | 23.318 µg/mLm |
| 17) | Pristane | 29.878 | 43774687 | 23.767 µg/mL |
| 18) | C-18 | 31.445 | 45017659 | 24.025 µg/mLm |
| 19) | Phytane | 31.614 | 38864222 | 23.878 µg/mLm |
| 20) | C-19 | 33.053 | 44014634 | 22.796 µg/mLm |
| 21) | C-20 | 34.590 | 43582235 | 23.613 µg/mL |
| 22) | C-21 | 36.059 | 43613151 | 23.514 µg/mL |
| 23) | C-22 | 37.466 | 43838838 | 23.238 µg/mL |
| 24) | C-23 | 38.817 | 43975507 | 23.122 µg/mL |
| 25) | C-24 | 40.117 | 43912784 | 23.228 µg/mL |
| 26) | C-25 | 41.367 | 44150784 | 23.068 µg/mL |
| 27) | C-26 | 42.571 | 44278099 | 22.988 µg/mL |
| 28) | C-27 | 43.731 | 42762964 | 22.838 µg/mL |
| 29) | C-28 | 44.855 | 44497751 | 23.621 µg/mL |
| 30) | C-29 | 45.939 | 43056695 | 22.416 µg/mL |
| 31) | C-30 | 46.987 | 44067580 | 23.552 µg/mL |
| 32) | C-31 | 48.006 | 44560631 | 22.739 µg/mL |
| 33) | C-32 | 48.992 | 43500184 | 22.465 µg/mL |
| 34) | C-33 | 49.948 | 42619273 | 22.379 µg/mL |
| 35) | C-34 | 50.878 | 42772106 | 21.623 µg/mL |
| 36) | C-35 | 51.780 | 41450307 | 21.556 µg/mLm |
| 37) | C-36 | 52.660 | 44409448 | 20.826 µg/mL |
| 38) | C-37 | 53.522 | 41260380 | 21.605 µg/mL |
| 39) | C-38 | 54.464 | 43399501 | 22.078 µg/mL |
| 40) | C-39 | 55.525 | 41828709 | 22.178 µg/mL |
| 41) | C-40 | 56.728 | 40795190 | 21.290 µg/mL |

SemiQuant Compounds - Not Calibrated on this Instrument

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160630\GR6339.d
Sample : OP47955-BS1
Misc : OP47955,GGR207,0.01,,,2,1
ALS Vial : 5 Sample Multiplier: 1
Acq On : 30 Jun 2016 3:45 pm Operator: MIKEW

Quant Time: Jul 01 07:12:20 2016
Quant Method : X:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

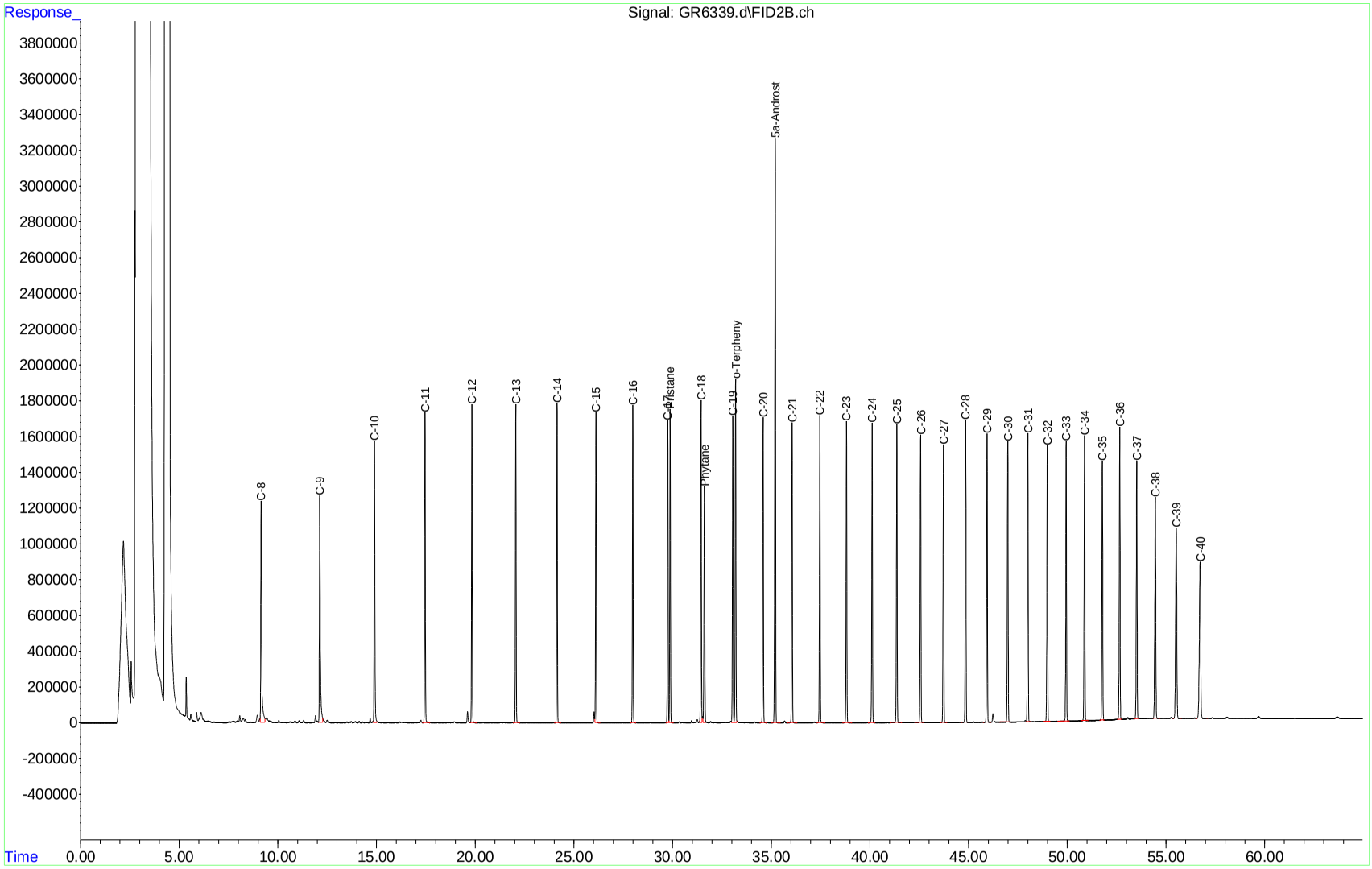

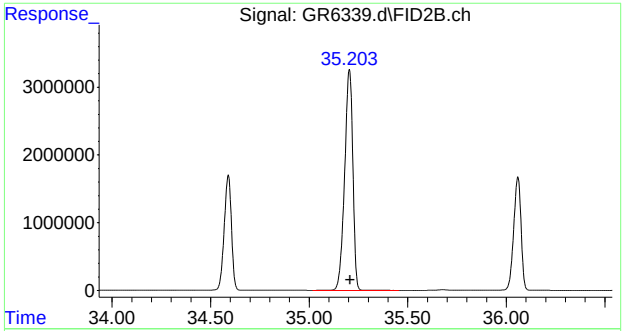


#1 5a-Androstane

R.T.: 35.204 min
Delta R.T.: -0.002 min
Response: 94371287
Conc: 50.00 µg/mL

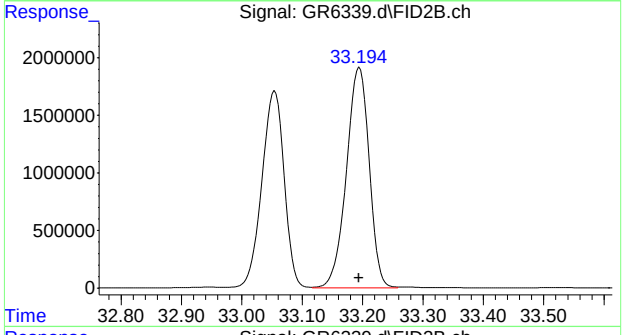


#2 o-Terphenyl

R.T.: 33.194 min
Delta R.T.: 0.000 min
Response: 50305262
Conc: 25.16 µg/mL m

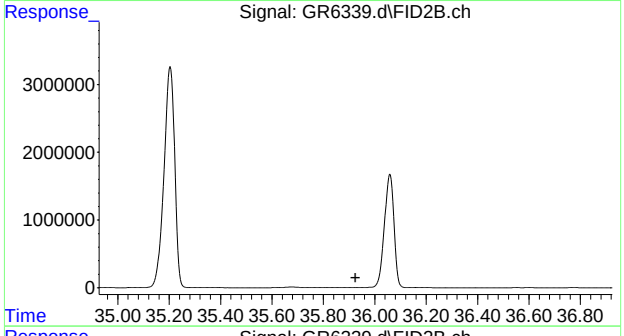


#3 1-chlorooctadecane

R.T.: 0.000 min
Exp R.T. : 35.925 min
Response: 0
Conc: N.D.

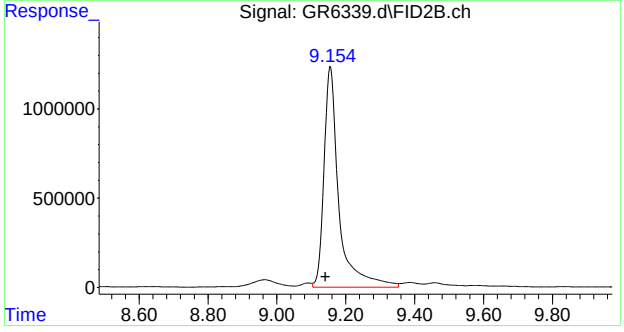


#4 C-8

R.T.: 9.154 min
Delta R.T.: 0.014 min
Response: 37009299
Conc: 22.47 µg/mL m





SGS ACCUTEST
MC46549

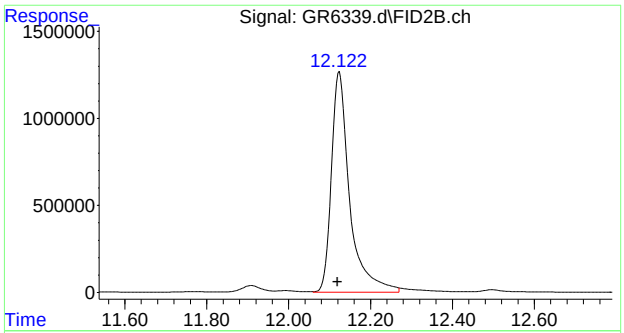


#5 C-9

R.T.: 12.122 min
Delta R.T.: 0.004 min
Response: 39172548
Conc: 22.25 µg/mL m

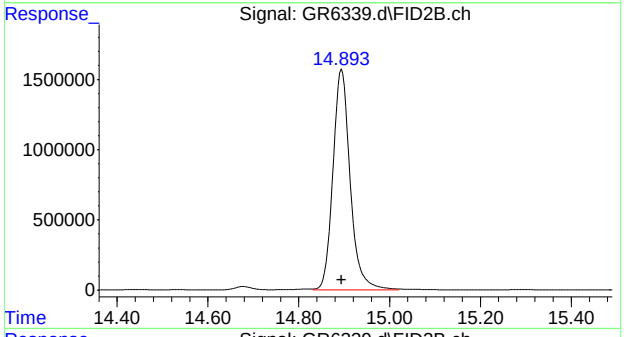


#6 C-10

R.T.: 14.893 min
Delta R.T.: 0.000 min
Response: 41438491
Conc: 23.31 µg/mL m

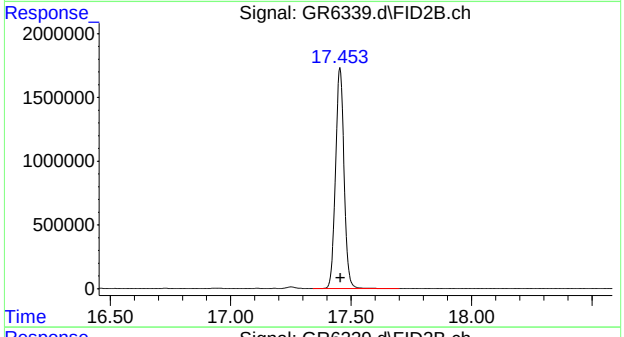


#7 C-11

R.T.: 17.454 min
Delta R.T.: -0.001 min
Response: 42630906
Conc: 24.09 µg/mL

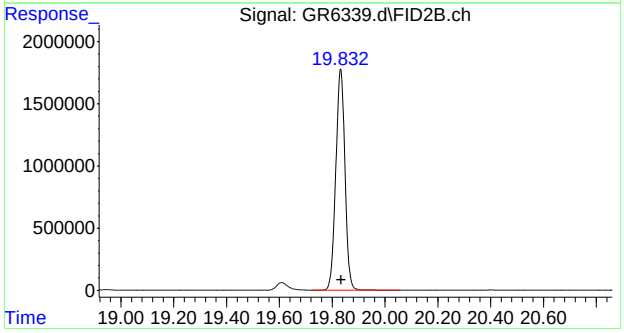


#8 C-12

R.T.: 19.833 min
Delta R.T.: 0.000 min
Response: 43000857
Conc: 24.12 µg/mL

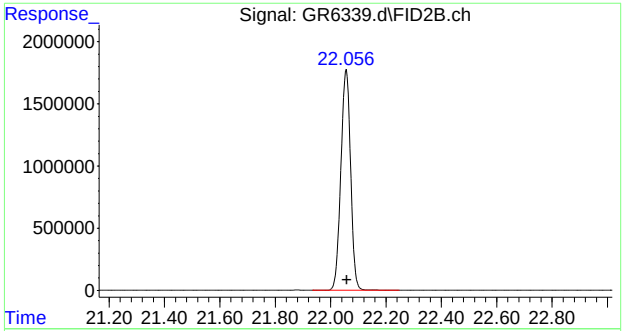


#9 C-13

R.T.: 22.057 min
Delta R.T.: -0.002 min
Response: 43305921
Conc: 24.26 µg/mL

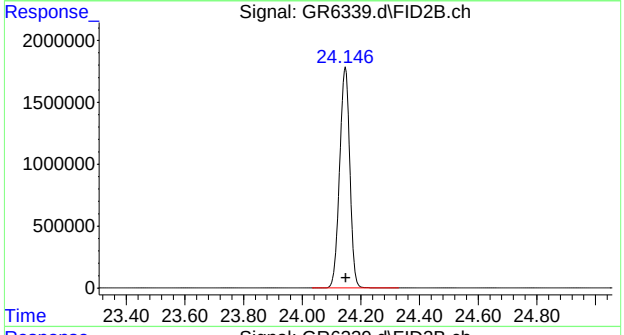


#11 C-14

R.T.: 24.147 min
Delta R.T.: -0.001 min
Response: 42958031
Conc: 23.74 µg/mL

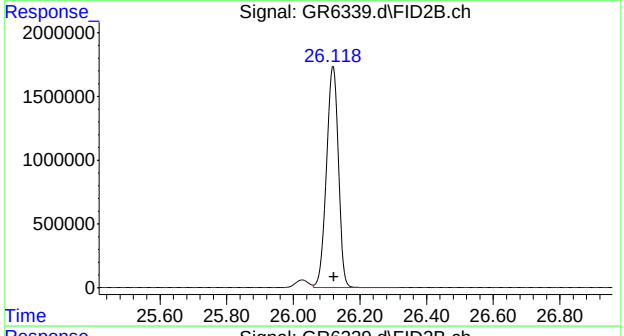


#13 C-15

R.T.: 26.120 min
Delta R.T.: -0.002 min
Response: 43071819
Conc: 23.75 µg/mL

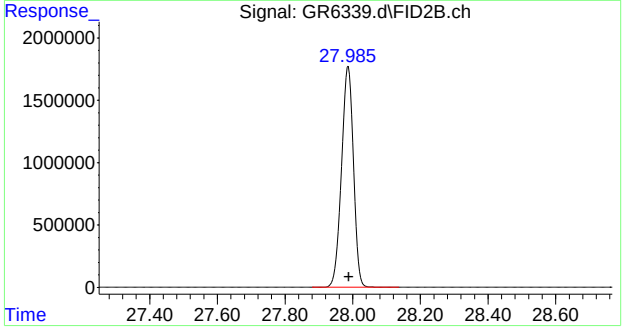


#14 C-16

R.T.: 27.987 min
Delta R.T.: -0.002 min
Response: 43618701
Conc: 23.83 µg/mL

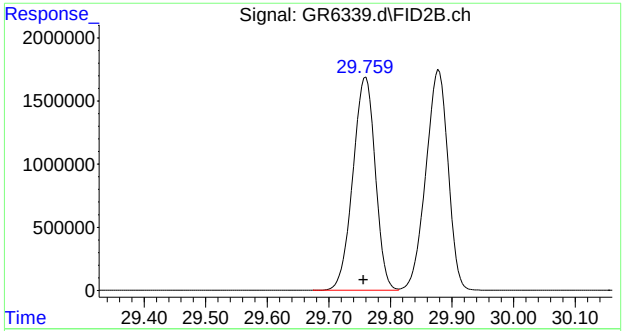


#16 C-17

R.T.: 29.759 min
Delta R.T.: 0.003 min
Response: 42638304
Conc: 23.32 µg/mL m

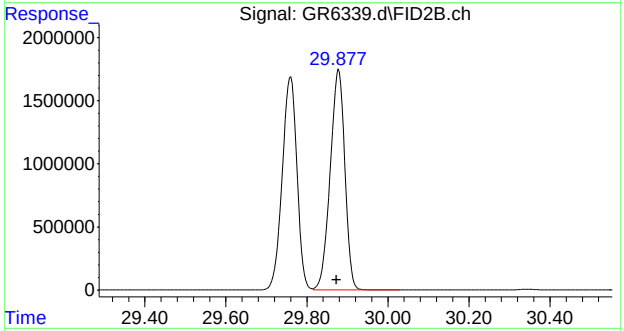


#17 Pristane

R.T.: 29.878 min
Delta R.T.: 0.005 min
Response: 43774687
Conc: 23.77 µg/mL

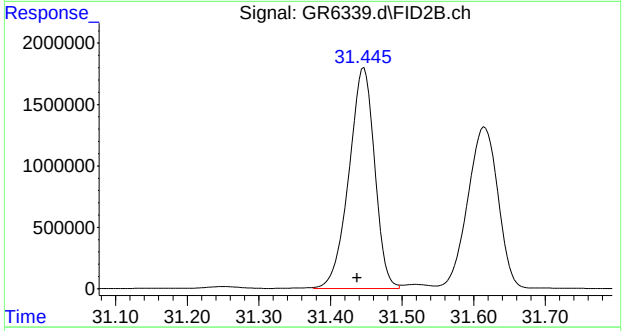


#18 C-18

R.T.: 31.445 min
Delta R.T.: 0.008 min
Response: 45017659
Conc: 24.02 µg/mL m

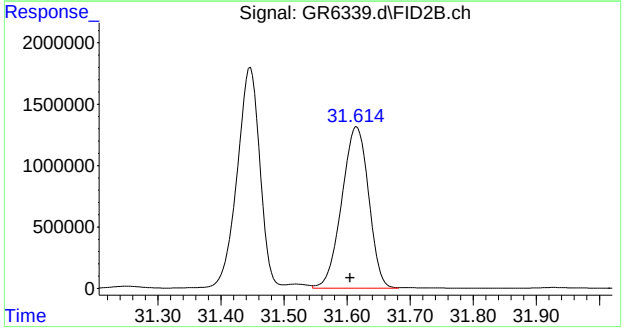


#19 Phytane

R.T.: 31.614 min
Delta R.T.: 0.009 min
Response: 38864222
Conc: 23.88 µg/mL m





SGS ACCUTEST
MC46549

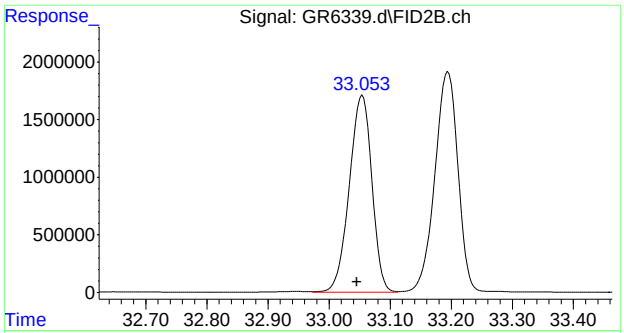


#20 C-19

R.T.: 33.053 min
Delta R.T.: 0.008 min
Response: 44014634
Conc: 22.80 µg/mL m

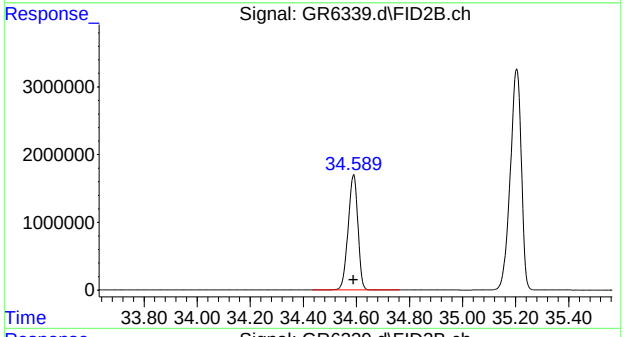


#21 C-20

R.T.: 34.590 min
Delta R.T.: 0.002 min
Response: 43582235
Conc: 23.61 µg/mL

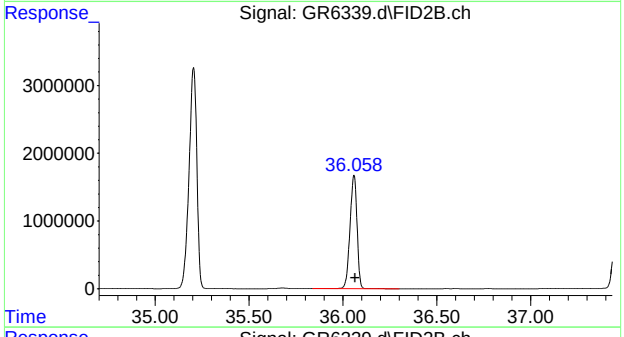


#22 C-21

R.T.: 36.059 min
Delta R.T.: -0.005 min
Response: 43613151
Conc: 23.51 µg/mL

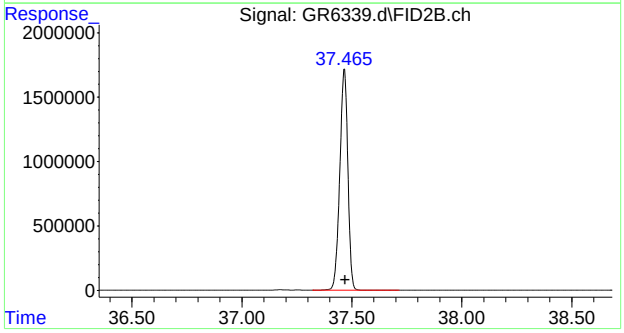


#23 C-22

R.T.: 37.466 min
Delta R.T.: -0.003 min
Response: 43838838
Conc: 23.24 µg/mL





SGS ACCUTEST
MC46549

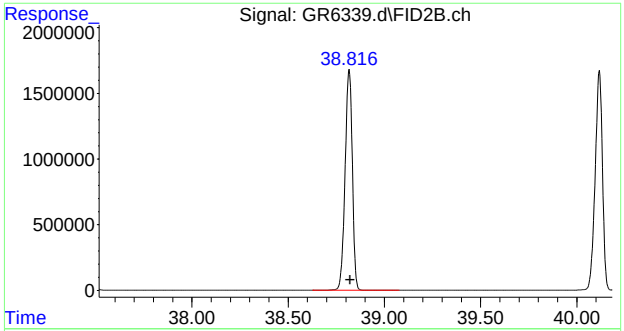


#24 C-23

R.T.: 38.817 min
Delta R.T.: -0.005 min
Response: 43975507
Conc: 23.12 µg/mL

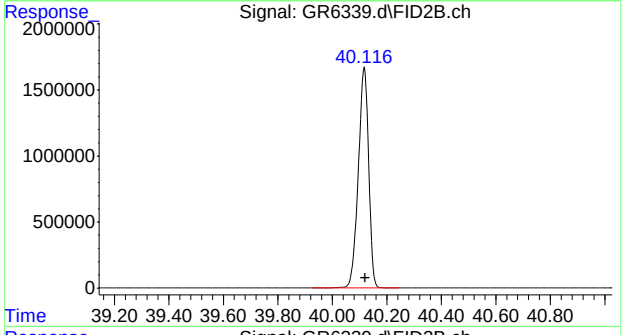


#25 C-24

R.T.: 40.117 min
Delta R.T.: -0.002 min
Response: 43912784
Conc: 23.23 µg/mL

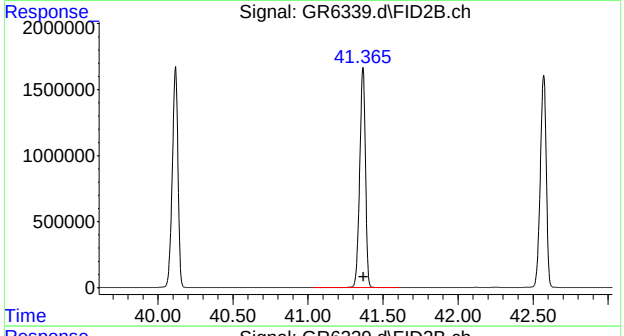


#26 C-25

R.T.: 41.367 min
Delta R.T.: -0.003 min
Response: 44150784
Conc: 23.07 µg/mL

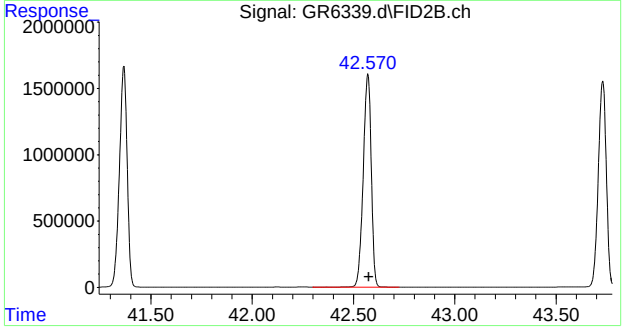


#27 C-26

R.T.: 42.571 min
Delta R.T.: -0.004 min
Response: 44278099
Conc: 22.99 µg/mL





SGS ACCUTEST MC46549

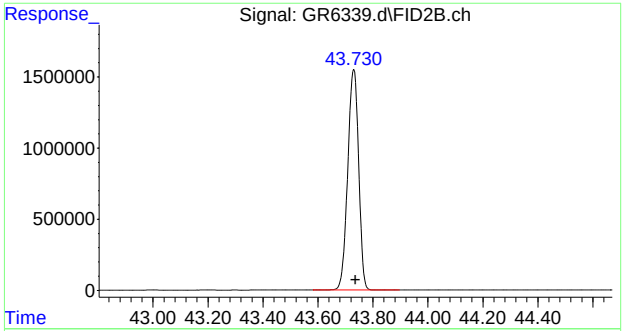


#28 C-27

R.T.: 43.731 min
Delta R.T.: -0.006 min
Response: 42762964
Conc: 22.84 µg/mL

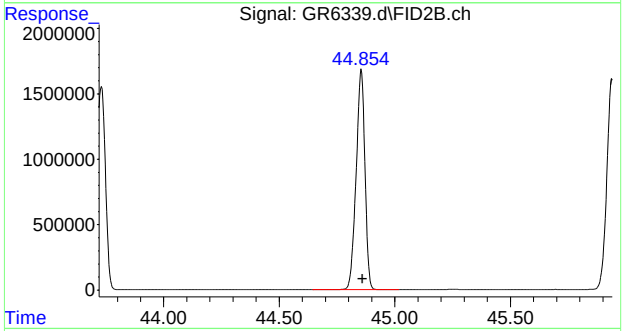


#29 C-28

R.T.: 44.855 min
Delta R.T.: -0.005 min
Response: 44497751
Conc: 23.62 µg/mL

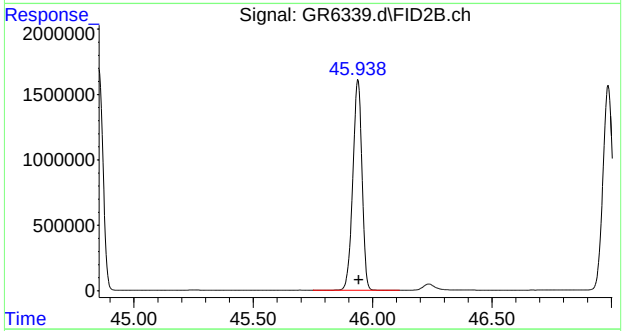


#30 C-29

R.T.: 45.939 min
Delta R.T.: -0.004 min
Response: 43056695
Conc: 22.42 µg/mL

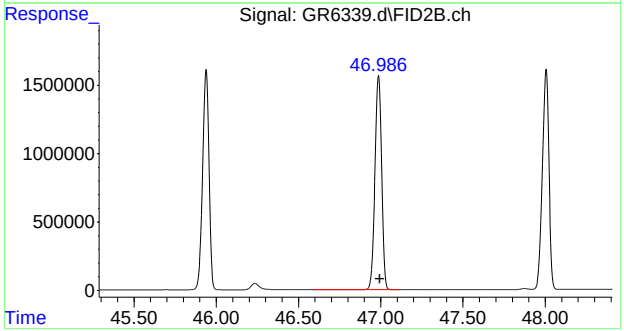


#31 C-30

R.T.: 46.987 min
Delta R.T.: -0.006 min
Response: 44067580
Conc: 23.55 µg/mL




SGS ACCUTEST MC46549

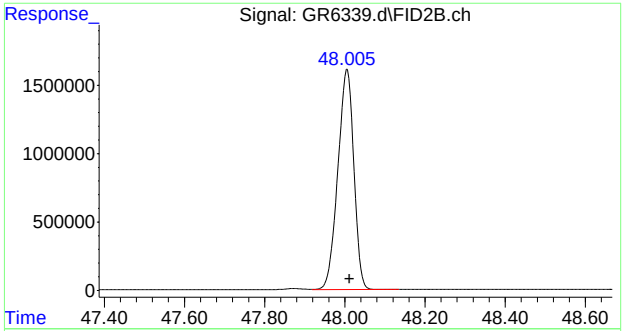


#32 C-31

R.T.: 48.006 min
Delta R.T.: -0.005 min
Response: 44560631
Conc: 22.74 µg/mL

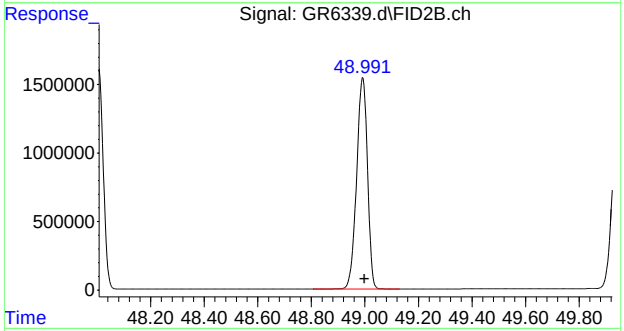


#33 C-32

R.T.: 48.992 min
Delta R.T.: -0.006 min
Response: 43500184
Conc: 22.47 µg/mL

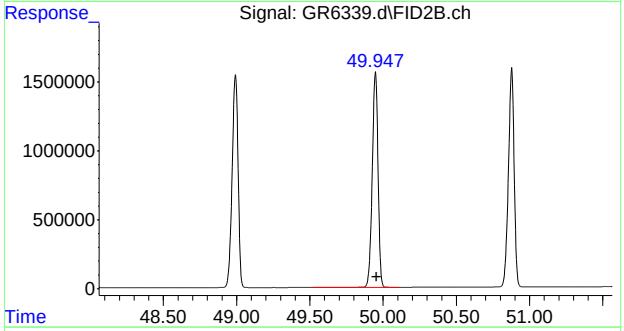


#34 C-33

R.T.: 49.948 min
Delta R.T.: -0.006 min
Response: 42619273
Conc: 22.38 µg/mL

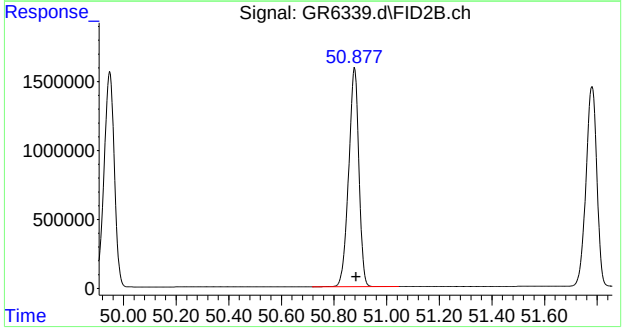


#35 C-34

R.T.: 50.878 min
Delta R.T.: -0.005 min
Response: 42772106
Conc: 21.62 µg/mL




SGS ACCUTEST MC46549

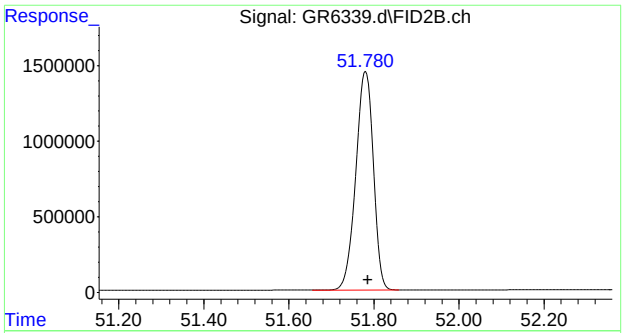


#36 C-35

R.T.: 51.780 min
Delta R.T.: -0.006 min
Response: 41450307
Conc: 21.56 µg/mL m

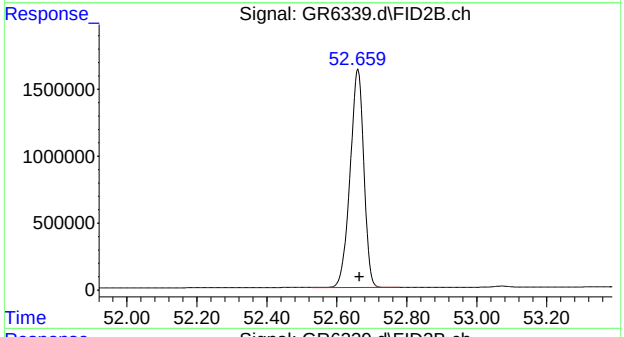


#37 C-36

R.T.: 52.660 min
Delta R.T.: -0.004 min
Response: 44409448
Conc: 20.83 µg/mL

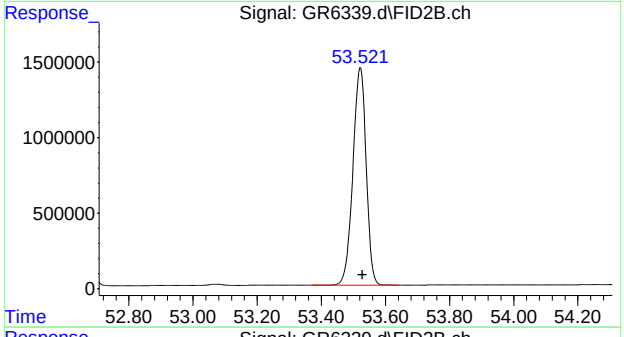


#38 C-37

R.T.: 53.522 min
Delta R.T.: -0.005 min
Response: 41260380
Conc: 21.60 µg/mL

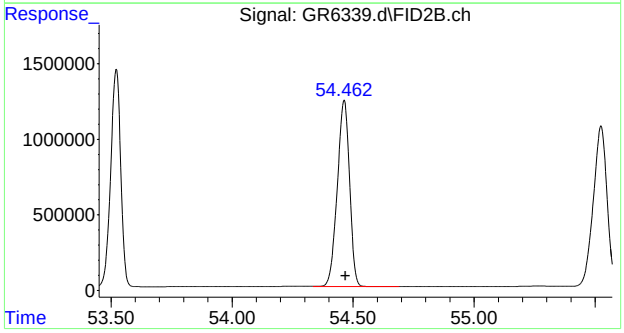


#39 C-38

R.T.: 54.464 min
Delta R.T.: -0.004 min
Response: 43399501
Conc: 22.08 µg/mL



SGS ACCUTEST MC46549

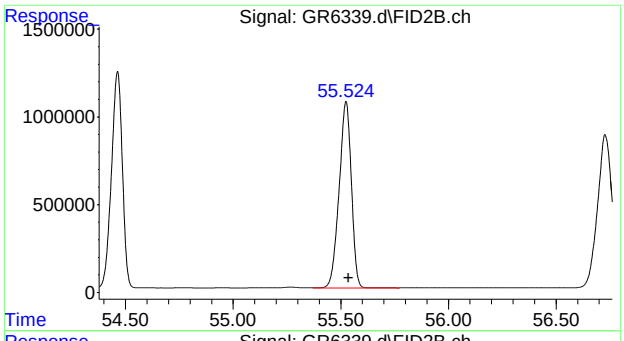


#40 C-39

R.T.: 55.525 min
Delta R.T.: -0.010 min
Response: 41828709
Conc: 22.18 µg/mL

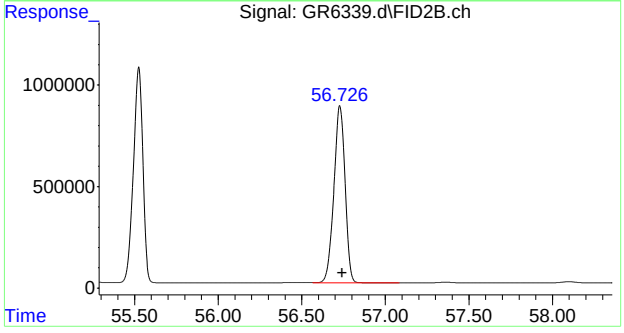


#41 C-40

R.T.: 56.728 min
Delta R.T.: -0.013 min
Response: 40795190
Conc: 21.29 µg/mL

Manual Integrations APPROVED (compounds with "m" flag)
Ruben Parrilla
07/13/16 11:34

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160630\GR6346.d
Sample : OP47955-DUP1, MC46549-1
Misc : OP47955,GGR207,0.0161,,,2,5
ALS Vial : 12 Sample Multiplier: 1
Acq On : 1 Jul 2016 12:52 am Operator: MIKEW

Quant Time: Jul 01 07:49:54 2016
Quant Method : X:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

| | Compound | R.T. | Response | Conc | Units |
|---|---|---|---|---|---|
| | Internal Standards | | | | |
| 1) I | 5a-Androstane | 35.208 | 105337501 | 60.000 | µg/mLm |
| | System Monitoring Compounds | | | | |
| 2) S | o-Terphenyl | 33.191 | 9974176 | 5.364 | µg/mLm |
| Spiked Amount | 25.000 | | Recovery = | 21.46% | |
| | Target Compounds | | | | |
| 42) H | TPH (C8-C40) | 5.624 | 2476492500 | 1419.610 | µg/mLm |
| | SemiQuant Compounds - Not Calibrated on this Instrument | | | | |

(f)=RT Delta > 1/2 Window (m)=manual int.

9.4.1
9

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160630\GR6346.d
Sample : OP47955-DUP1, MC46549-1
Misc : OP47955,GGR207,0.0161,,,2,5
ALS Vial : 12 Sample Multiplier: 1
Acq On : 1 Jul 2016 12:52 am Operator: MIKEW

Quant Time: Jul 01 07:49:54 2016
Quant Method : X:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

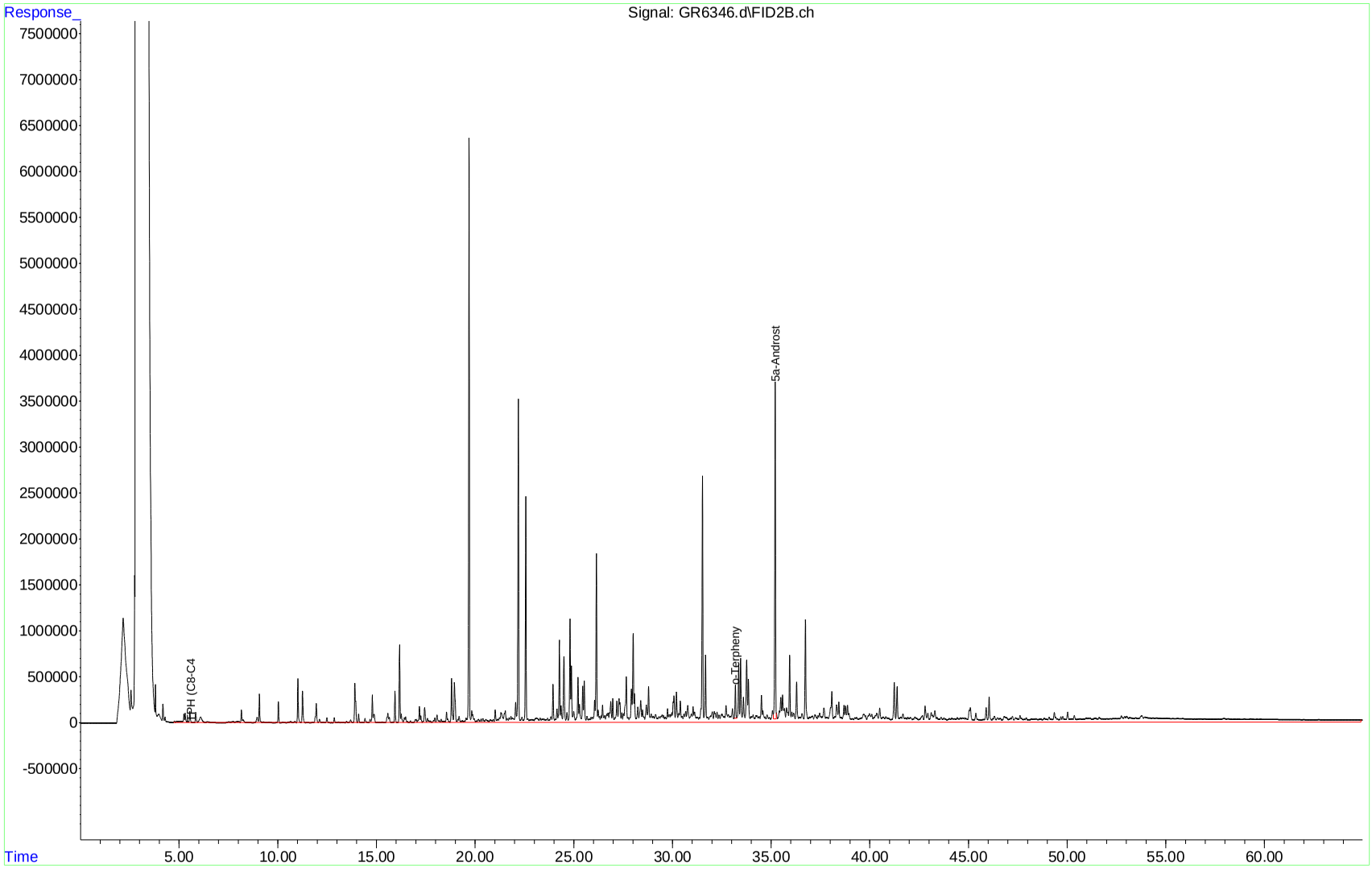

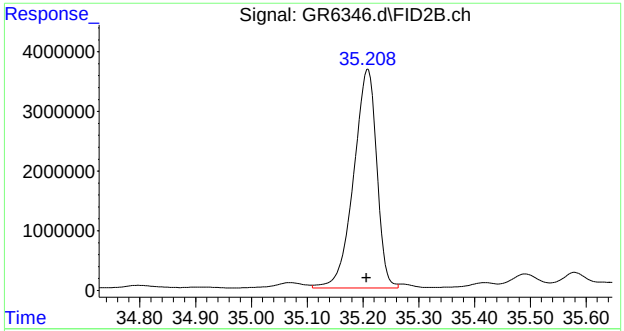


#1 5a-Androstane

R.T.: 35.208 min
Delta R.T.: 0.002 min
Response: 105337501
Conc: 60.00 µg/mL m

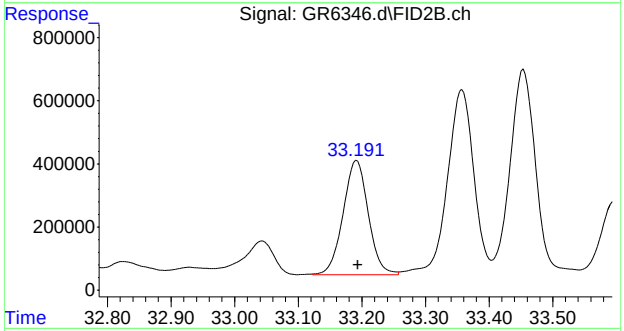


#2 o-Terphenyl

R.T.: 33.191 min
Delta R.T.: -0.003 min
Response: 9974176
Conc: 5.36 µg/mL m

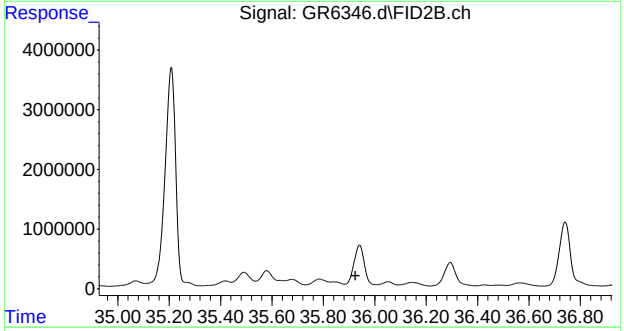


#3 1-chlorooctadecane

R.T.: 0.000 min
Exp R.T. : 35.925 min
Response: 0
Conc: N.D.

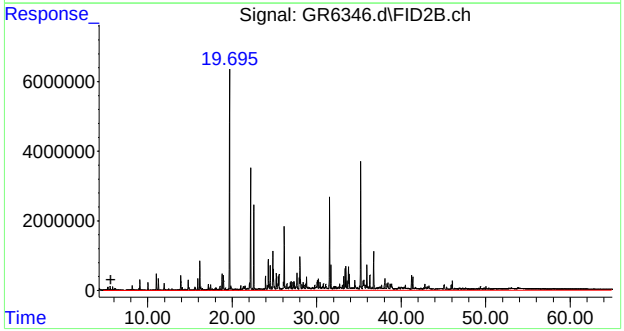


#42 TPH (C8-C40)

R.T.: 5.624 min
Delta R.T.: 0.000 min
Response: 2476492500
Conc: 1419.61 µg/mL m



SGS ACCUTEST MC46549

Manual Integrations APPROVED (compounds with "m" flag)
Ruben Parrilla
04/12/16 14:46

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160401.SEC\GR5505.D
Sample : IC173-1.0, FS-179
Misc : OP46636,GGR173,,,2,1
ALS Vial : 2 Sample Multiplier: 1
Acq On : 1 Apr 2016 5:42 pm Operator: MIKEW

Quant Time: Apr 05 12:13:13 2016
Quant Method : G:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

| | Compound | R.T. | Response | Conc Units |
|---|---|---|---|---|
| | Internal Standards | | | |
| 1) I | 5a-Androstane | 35.135 | 85340089 | 50.000 µg/mL |
| | System Monitoring Compounds | | | |
| 2) S | o-Terphenyl | 33.121 | 1994534 | 1.083 µg/mL |
| Spiked Amount | 25.000 | | Recovery = | 4.33% |
| 3) S | 1-chlorooctadecane | 35.845 | 1517671 | 1.061 µg/mL |
| | Target Compounds | | | |
| 4) | C-8 | 9.311 | 1732363 | 1.232 µg/mLm |
| 5) | C-9 | 12.239 | 1863438 | 1.246 µg/mLm |
| 6) | C-10 | 14.987 | 1811062 | 1.185 µg/mL |
| 7) | C-11 | 17.526 | 1771596 | 1.160 µg/mL |
| 8) | C-12 | 19.884 | 1734791 | 1.107 µg/mLm |
| 9) J1 | C-13 | 22.092 | 1732301 | 1.096 µg/mL |
| 11) J1 | C-14 | 24.166 | 1737537 | 1.077 µg/mLm |
| 13) | C-15 | 26.127 | 1743551 | 1.069 µg/mL |
| 14) J1 | C-16 | 27.980 | 1770606 | 1.075 µg/mLm |
| 16) | C-17 | 29.743 | 1740728 | 1.068 µg/mL |
| 17) | Pristane | 29.862 | 1811530 | 1.093 µg/mL |
| 18) | C-18 | 31.417 | 1789262 | 1.064 µg/mLm |
| 19) | Phytane | 31.589 | 1579765 | 1.084 µg/mL |
| 20) | C-19 | 33.020 | 1804161 | 1.059 µg/mL |
| 21) | C-20 | 34.545 | 1785284 | 1.071 µg/mLm |
| 22) | C-21 | 36.005 | 1803267 | 1.075 µg/mLm |
| 23) | C-22 | 37.407 | 1825802 | 1.066 µg/mLm |
| 24) | C-23 | 38.752 | 1897918 | 1.104 µg/mLm |
| 25) | C-24 | 40.046 | 1823018 | 1.075 µg/mLm |
| 26) | C-25 | 41.290 | 1836472 | 1.069 µg/mLm |
| 27) | C-26 | 42.489 | 1838142 | 1.075 µg/mLm |
| 28) | C-27 | 43.646 | 1785118 | 1.077 µg/mLm |
| 29) | C-28 | 44.767 | 1791315 | 1.077 µg/mLm |
| 30) | C-29 | 45.849 | 1825374 | 1.077 µg/mLm |
| 31) | C-30 | 46.896 | 1771729 | 1.073 µg/mLm |
| 32) | C-31 | 47.911 | 1858479 | 1.075 µg/mLm |
| 33) | C-32 | 48.896 | 1838260 | 1.078 µg/mLm |
| 34) | C-33 | 49.848 | 1804146 | 1.076 µg/mLm |
| 35) | C-34 | 50.777 | 1871970 | 1.079 µg/mLm |
| 36) | C-35 | 51.679 | 1816971 | 1.064 µg/mLm |
| 37) | C-36 | 52.558 | 2017482 | 1.086 µg/mLm |
| 38) | C-37 | 53.416 | 1804134 | 1.071 µg/mLm |
| 39) | C-38 | 54.344 | 1871074 | 1.090 µg/mLm |
| 40) | C-39 | 55.383 | 1762308 | 1.072 µg/mLm |
| 41) | C-40 | 56.568 | 1772400 | 1.056 µg/mLm |

SemiQuant Compounds - Not Calibrated on this Instrument

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160401.SEC\GR5505.D
Sample : IC173-1.0, FS-179
Misc : OP46636,GGR173,,,2,1
ALS Vial : 2 Sample Multiplier: 1
Acq On : 1 Apr 2016 5:42 pm Operator: MIKEW

Quant Time: Apr 05 12:13:13 2016
Quant Method : G:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

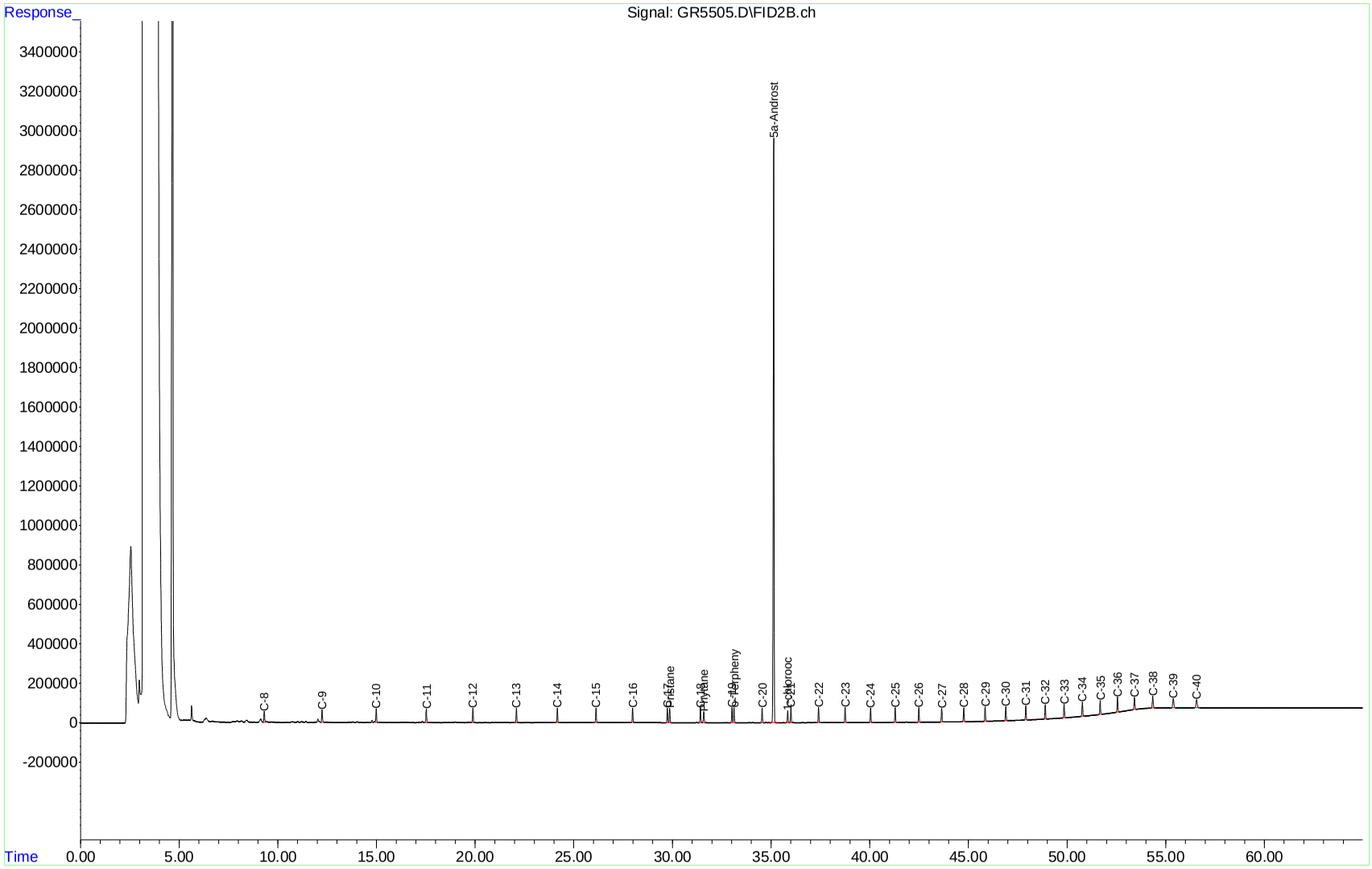

Manual Integrations APPROVED (compounds with "m" flag)
Ruben Parrilla
04/12/16 14:46

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160401.SEC\GR5506.D
Sample : IC173-5.0, FS-179
Misc : OP46636,GGR173,,,2,1
ALS Vial : 3 Sample Multiplier: 1
Acq On : 1 Apr 2016 7:02 pm Operator: MIKEW

Quant Time: Apr 05 12:19:23 2016
Quant Method : G:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

| | Compound | R.T. | Response | Conc Units |
|---|---|---|---|---|
| | Internal Standards | | | |
| 1) I | 5a-Androstane | 35.132 | 86598732 | 50.000 µg/mLm |
| | System Monitoring Compounds | | | |
| 2) S | o-Terphenyl | 33.120 | 9270780 | 4.965 µg/mL |
| Spiked Amount | 25.000 | | Recovery = | 19.86% |
| 3) S | 1-chlorooctadecane | 35.845 | 7149201 | 4.951 µg/mL |
| | Target Compounds | | | |
| 4) | C-8 | 9.310 | 7378112 | 5.165 µg/mL |
| 5) | C-9 | 12.237 | 7857789 | 5.143 µg/mL |
| 6) | C-10 | 14.984 | 7913162 | 5.072 µg/mL |
| 7) | C-11 | 17.523 | 7852265 | 5.000 µg/mL |
| 8) | C-12 | 19.882 | 7991275 | 4.999 µg/mLm |
| 9) J1 | C-13 | 22.090 | 8014985 | 4.985 µg/mL |
| 11) J1 | C-14 | 24.166 | 8111830 | 4.948 µg/mL |
| 13) | C-15 | 26.125 | 8203810 | 4.986 µg/mLm |
| 14) J1 | C-16 | 27.981 | 8277256 | 4.979 µg/mL |
| 16) | C-17 | 29.742 | 8174285 | 4.958 µg/mL |
| 17) | Pristane | 29.862 | 8445290 | 5.014 µg/mL |
| 18) | C-18 | 31.418 | 8408369 | 4.950 µg/mLm |
| 19) | Phytane | 31.588 | 7366886 | 4.977 µg/mLm |
| 20) | C-19 | 33.019 | 8503071 | 4.947 µg/mL |
| 21) | C-20 | 34.546 | 8382700 | 4.972 µg/mL |
| 22) | C-21 | 36.006 | 8440262 | 4.971 µg/mLm |
| 23) | C-22 | 37.407 | 8569292 | 4.972 µg/mLm |
| 24) | C-23 | 38.752 | 8634579 | 4.970 µg/mLm |
| 25) | C-24 | 40.045 | 8536213 | 4.974 µg/mLm |
| 26) | C-25 | 41.291 | 8596847 | 4.969 µg/mLm |
| 27) | C-26 | 42.491 | 8627047 | 4.981 µg/mLm |
| 28) | C-27 | 43.650 | 8350756 | 4.978 µg/mLm |
| 29) | C-28 | 44.766 | 8407167 | 4.991 µg/mLm |
| 30) | C-29 | 45.849 | 8565959 | 4.989 µg/mLm |
| 31) | C-30 | 46.896 | 8329739 | 4.983 µg/mL |
| 32) | C-31 | 47.910 | 8730888 | 4.992 µg/mLm |
| 33) | C-32 | 48.895 | 8612841 | 4.985 µg/mLm |
| 34) | C-33 | 49.852 | 8480574 | 4.997 µg/mLm |
| 35) | C-34 | 50.778 | 8799645 | 5.005 µg/mLm |
| 36) | C-35 | 51.680 | 8566614 | 5.005 µg/mLm |
| 37) | C-36 | 52.559 | 9439759 | 5.002 µg/mLm |
| 38) | C-37 | 53.417 | 8486937 | 5.021 µg/mLm |
| 39) | C-38 | 54.342 | 8737134 | 5.052 µg/mLm |
| 40) | C-39 | 55.386 | 8392375 | 5.077 µg/mLm |
| 41) | C-40 | 56.567 | 8444235 | 5.027 µg/mLm |

SemiQuant Compounds - Not Calibrated on this Instrument

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160401.SEC\GR5506.D
Sample : IC173-5.0, FS-179
Misc : OP46636,GGR173,,,2,1
ALS Vial : 3 Sample Multiplier: 1
Acq On : 1 Apr 2016 7:02 pm Operator: MIKEW

Quant Time: Apr 05 12:19:23 2016
Quant Method : G:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

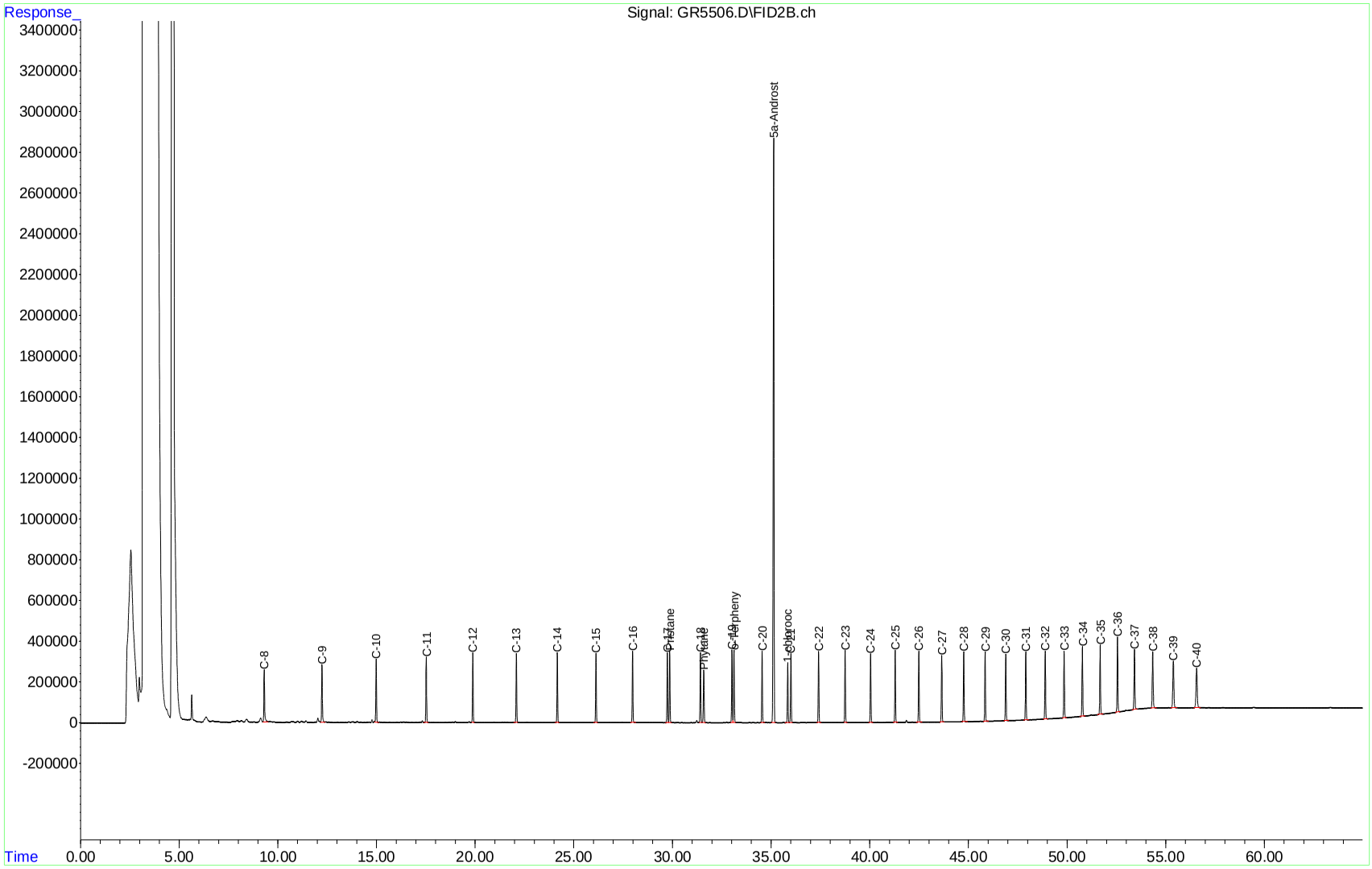

Manual Integrations APPROVED (compounds with "m" flag)
Ruben Parrilla
04/12/16 14:46

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160401.SEC\GR5507.D
Sample : ICC173-25.0, FS-179
Misc : OP46636,GGR173,,,2,1
ALS Vial : 4 Sample Multiplier: 1
Acq On : 1 Apr 2016 8:22 pm Operator: MIKEW

Quant Time: Apr 05 12:24:54 2016
Quant Method : G:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

| | Compound | R.T. | Response | Conc Units |
|---|---|---|---|---|
| | Internal Standards | | | |
| 1) I | 5a-Androstane | 35.130 | 75776222 | 50.000 µg/mL |
| | System Monitoring Compounds | | | |
| 2) S | o-Terphenyl | 33.128 | 39555096 | 24.198 µg/mL |
| Spiked Amount | 25.000 | | Recovery = | 96.79% |
| 3) S | 1-chlorooctadecane | 35.852 | 31591980 | 24.997 µg/mL |
| | Target Compounds | | | |
| 4) | C-8 | 9.322 | 36086122 | 28.609 µg/mL |
| 5) | C-9 | 12.244 | 37697241 | 27.902 µg/mL |
| 6) | C-10 | 14.988 | 36933687 | 26.835 µg/mL |
| 7) | C-11 | 17.525 | 35582564 | 25.701 µg/mLm |
| 8) | C-12 | 19.886 | 35456287 | 25.207 µg/mLm |
| 9) J1 | C-13 | 22.095 | 35214565 | 24.918 µg/mL |
| 11) J1 | C-14 | 24.169 | 35720028 | 24.853 µg/mLm |
| 13) | C-15 | 26.129 | 35751106 | 24.784 µg/mLm |
| 14) J1 | C-16 | 27.986 | 36197725 | 24.843 µg/mL |
| 16) | C-17 | 29.749 | 36099189 | 24.999 µg/mL |
| 17) | Pristane | 29.869 | 36155023 | 24.452 µg/mL |
| 18) | C-18 | 31.427 | 37402542 | 25.159 µg/mL |
| 19) | Phytane | 31.596 | 31864231 | 24.548 µg/mL |
| 20) | C-19 | 33.027 | 38355975 | 25.485 µg/mL |
| 21) | C-20 | 34.552 | 36839672 | 24.947 µg/mLm |
| 22) | C-21 | 36.016 | 37046894 | 24.935 µg/mLm |
| 23) | C-22 | 37.416 | 37620298 | 24.948 µg/mLm |
| 24) | C-23 | 38.762 | 38306917 | 25.190 µg/mLm |
| 25) | C-24 | 40.056 | 39113720 | 26.035 µg/mLm |
| 26) | C-25 | 41.303 | 40430559 | 26.719 µg/mLm |
| 27) | C-26 | 42.501 | 41460312 | 27.324 µg/mLm |
| 28) | C-27 | 43.660 | 40865573 | 27.812 µg/mLm |
| 29) | C-28 | 44.777 | 41367661 | 28.025 µg/mLm |
| 30) | C-29 | 45.859 | 42331719 | 28.140 µg/mLm |
| 31) | C-30 | 46.908 | 41361171 | 28.252 µg/mLm |
| 32) | C-31 | 47.923 | 43424904 | 28.337 µg/mLm |
| 33) | C-32 | 48.908 | 43040998 | 28.439 µg/mLm |
| 34) | C-33 | 49.863 | 42374746 | 28.499 µg/mLm |
| 35) | C-34 | 50.790 | 44131774 | 28.632 µg/mLm |
| 36) | C-35 | 51.694 | 42854231 | 28.616 µg/mLm |
| 37) | C-36 | 52.573 | 47584803 | 28.786 µg/mLm |
| 38) | C-37 | 53.430 | 42615493 | 28.844 µg/mLm |
| 39) | C-38 | 54.358 | 43693890 | 28.874 µg/mLm |
| 40) | C-39 | 55.404 | 42106176 | 29.113 µg/mLm |
| 41) | C-40 | 56.586 | 42950244 | 29.329 µg/mLm |

SemiQuant Compounds - Not Calibrated on this Instrument

(f)=RT Delta > 1/2 Window (m)=manual int.



SGS ACCUTEST MC46549

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160401.SEC\GR5507.D
Sample : ICC173-25.0, FS-179
Misc : OP46636,GGR173,,,2,1
ALS Vial : 4 Sample Multiplier: 1
Acq On : 1 Apr 2016 8:22 pm Operator: MIKEW

Quant Time: Apr 05 12:24:54 2016
Quant Method : G:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

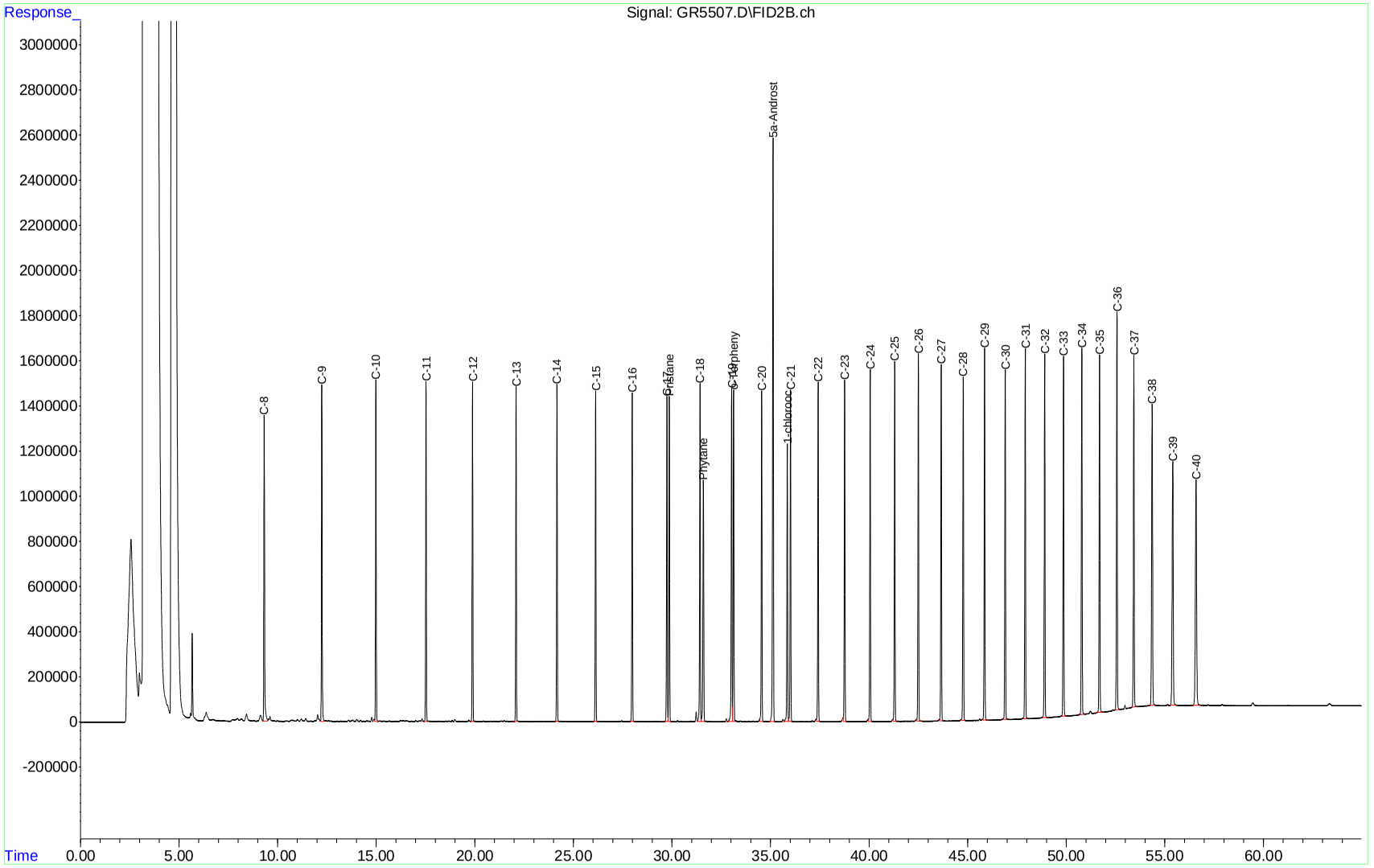

Manual Integrations APPROVED (compounds with "m" flag)
Ruben Parrilla
04/12/16 14:46

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160401.SEC\GR5508.D
Sample : IC173-50.0, FS-179
Misc : OP46636,GGR173,,,2,1
ALS Vial : 5 Sample Multiplier: 1
Acq On : 1 Apr 2016 9:43 pm Operator: MIKEW

Quant Time: Apr 05 12:28:34 2016
Quant Method : G:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

| | Compound | R.T. | Response | Conc Units |
|---|---|---|---|---|
| | Internal Standards | | | |
| 1) I | 5a-Androstane | 35.130 | 78025361 | 50.000 µg/mL |
| | System Monitoring Compounds | | | |
| 2) S | o-Terphenyl | 33.138 | 79899558 | 47.582 µg/mL |
| Spiked Amount | 25.000 | | Recovery = | 190.33% |
| 3) S | 1-chlorooctadecane | 35.860 | 63609889 | 48.727 µg/mL |
| | Target Compounds | | | |
| 4) | C-8 | 9.324 | 63554655 | 47.334 µg/mL |
| 5) | C-9 | 12.247 | 67271551 | 46.979 µg/mL |
| 6) | C-10 | 14.993 | 69001326 | 47.711 µg/mL |
| 7) | C-11 | 17.533 | 69749002 | 48.363 µg/mL |
| 8) | C-12 | 19.895 | 71046665 | 48.741 µg/mL |
| 9) J1 | C-13 | 22.103 | 71082163 | 48.645 µg/mL |
| 11) J1 | C-14 | 24.179 | 72407380 | 48.800 µg/mL |
| 13) | C-15 | 26.138 | 72313016 | 48.582 µg/mL |
| 14) J1 | C-16 | 27.994 | 72825962 | 48.415 µg/mL |
| 16) | C-17 | 29.757 | 72503408 | 48.596 µg/mL |
| 17) | Pristane | 29.878 | 73646959 | 48.357 µg/mL |
| 18) | C-18 | 31.435 | 74653591 | 48.559 µg/mL |
| 19) | Phytane | 31.603 | 65123494 | 48.671 µg/mL |
| 20) | C-19 | 33.037 | 77032598 | 49.374 µg/mL |
| 21) | C-20 | 34.562 | 73229659 | 48.025 µg/mLm |
| 22) | C-21 | 36.024 | 73463860 | 47.890 µg/mLm |
| 23) | C-22 | 37.427 | 74694336 | 47.965 µg/mLm |
| 24) | C-23 | 38.772 | 74294214 | 47.188 µg/mLm |
| 25) | C-24 | 40.064 | 74068997 | 47.418 µg/mLm |
| 26) | C-25 | 41.310 | 74800164 | 47.318 µg/mLm |
| 27) | C-26 | 42.511 | 75090490 | 47.177 µg/mLm |
| 28) | C-27 | 43.667 | 72682936 | 46.997 µg/mLm |
| 29) | C-28 | 44.787 | 73023890 | 46.936 µg/mLm |
| 30) | C-29 | 45.870 | 74440031 | 46.918 µg/mLm |
| 31) | C-30 | 46.918 | 72526064 | 46.948 µg/mLm |
| 32) | C-31 | 47.935 | 75953167 | 46.938 µg/mLm |
| 33) | C-32 | 48.918 | 74999093 | 46.898 µg/mLm |
| 34) | C-33 | 49.874 | 73777500 | 46.967 µg/mL |
| 35) | C-34 | 50.799 | 76704030 | 47.064 µg/mLm |
| 36) | C-35 | 51.702 | 74511311 | 47.080 µg/mLm |
| 37) | C-36 | 52.584 | 82843587 | 47.399 µg/mLm |
| 38) | C-37 | 53.442 | 74201331 | 47.525 µg/mLm |
| 39) | C-38 | 54.373 | 76226227 | 47.671 µg/mLm |
| 40) | C-39 | 55.418 | 73257104 | 47.947 µg/mLm |
| 41) | C-40 | 56.606 | 74828420 | 48.350 µg/mLm |

SemiQuant Compounds - Not Calibrated on this Instrument

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160401.SEC\GR5508.D
Sample : IC173-50.0, FS-179
Misc : OP46636,GGR173,,,2,1
ALS Vial : 5 Sample Multiplier: 1
Acq On : 1 Apr 2016 9:43 pm Operator: MIKEW

Quant Time: Apr 05 12:28:34 2016
Quant Method : G:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

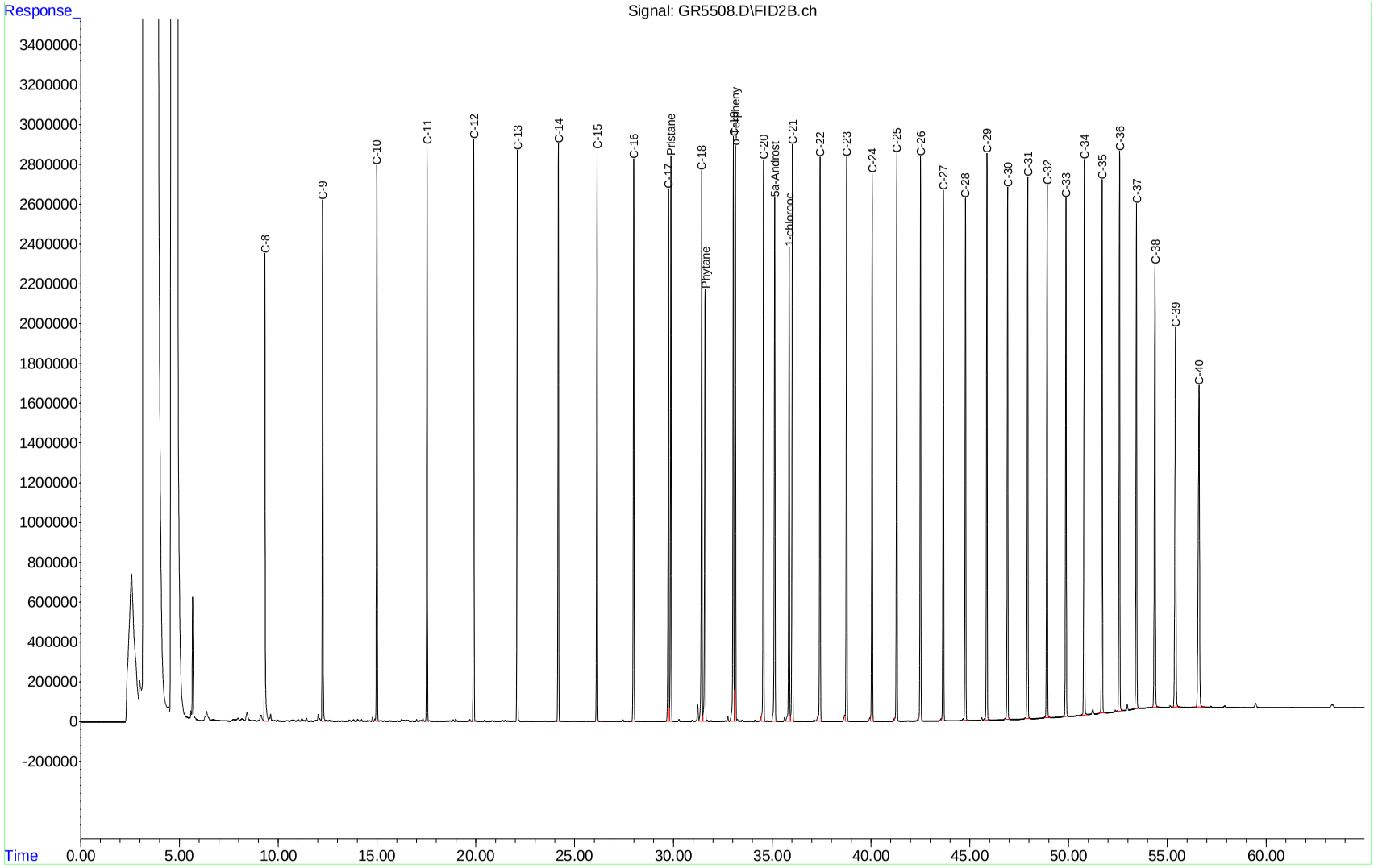

Manual Integrations APPROVED
(compounds with "m" flag)
Ruben Parrilla
04/12/16 14:46

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160401.SEC\GR5509.D
Sample : IC173-100.0, FS-179
Misc : OP46636,GGR173,,,2,1
ALS Vial : 6 Sample Multiplier: 1
Acq On : 1 Apr 2016 11:03 pm Operator: MIKEW

Quant Time: Apr 05 12:33:40 2016
Quant Method : G:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

| | Compound | R.T. | Response | Conc Units |
|---|---|---|---|---|
| | Internal Standards | | | |
| 1) I | 5a-Androstane | 35.134 | 83777778 | 50.000 µg/mLm |
| | System Monitoring Compounds | | | |
| 2) S | o-Terphenyl | 33.156 | 171300257 | 95.313 µg/mL |
| Spiked Amount | 25.000 | | Recovery = | 381.25% |
| 3) S | 1-chlorooctadecane | 35.874 | 138736750 | 98.873 µg/mLm |
| | Target Compounds | | | |
| 4) | C-8 | 9.372 | 129538509 | 88.875 µg/mL |
| 5) | C-9 | 12.268 | 144473972 | 93.181 µg/mLm |
| 6) | C-10 | 15.007 | 151203203 | 96.729 µg/mLm |
| 7) | C-11 | 17.544 | 152920389 | 98.215 µg/mLm |
| 8) | C-12 | 19.905 | 155738074 | 99.103 µg/mLm |
| 9) J1 | C-13 | 22.112 | 155858276 | 99.055 µg/mLm |
| 11) J1 | C-14 | 24.188 | 158543110 | 99.303 µg/mLm |
| 13) | C-15 | 26.149 | 158348927 | 98.938 µg/mLm |
| 14) J1 | C-16 | 28.007 | 159288935 | 98.534 µg/mL |
| 16) | C-17 | 29.771 | 161428873 | 100.639 µg/mL |
| 17) | Pristane | 29.893 | 158141783 | 96.667 µg/mL |
| 18) | C-18 | 31.450 | 163758606 | 99.106 µg/mL |
| 19) | Phytane | 31.619 | 141598380 | 98.398 µg/mL |
| 20) | C-19 | 33.053 | 168794302 | 100.318 µg/mLm |
| 21) | C-20 | 34.578 | 159765847 | 97.705 µg/mLm |
| 22) | C-21 | 36.043 | 159666264 | 97.118 µg/mL |
| 23) | C-22 | 37.444 | 162681967 | 97.488 µg/mLm |
| 24) | C-23 | 38.790 | 161884583 | 96.019 µg/mL |
| 25) | C-24 | 40.084 | 161323753 | 96.416 µg/mLm |
| 26) | C-25 | 41.331 | 162943205 | 96.185 µg/mLm |
| 27) | C-26 | 42.531 | 162981764 | 95.539 µg/mLm |
| 28) | C-27 | 43.690 | 158104095 | 95.382 µg/mLm |
| 29) | C-28 | 44.806 | 158743038 | 95.196 µg/mLm |
| 30) | C-29 | 45.891 | 161559515 | 94.996 µg/mLm |
| 31) | C-30 | 46.938 | 157682672 | 95.219 µg/mLm |
| 32) | C-31 | 47.955 | 164849546 | 95.035 µg/mLm |
| 33) | C-32 | 48.940 | 162676174 | 94.885 µg/mLm |
| 34) | C-33 | 49.895 | 159983303 | 94.984 µg/mLm |
| 35) | C-34 | 50.826 | 165972681 | 94.965 µg/mLm |
| 36) | C-35 | 51.727 | 161598469 | 95.281 µg/mLm |
| 37) | C-36 | 52.607 | 179126136 | 95.547 µg/mLm |
| 38) | C-37 | 53.468 | 160249071 | 95.721 µg/mLm |
| 39) | C-38 | 54.403 | 164557911 | 95.956 µg/mLm |
| 40) | C-39 | 55.453 | 158899538 | 97.017 µg/mLm |
| 41) | C-40 | 56.646 | 162063474 | 97.674 µg/mLm |

SemiQuant Compounds - Not Calibrated on this Instrument

(f)=RT Delta > 1/2 Window (m)=manual int.



SGS ACCUTEST MC46549

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160401.SEC\GR5509.D
Sample : IC173-100.0, FS-179
Misc : OP46636,GGR173,,,2,1
ALS Vial : 6 Sample Multiplier: 1
Acq On : 1 Apr 2016 11:03 pm Operator: MIKEW

Quant Time: Apr 05 12:33:40 2016
Quant Method : G:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

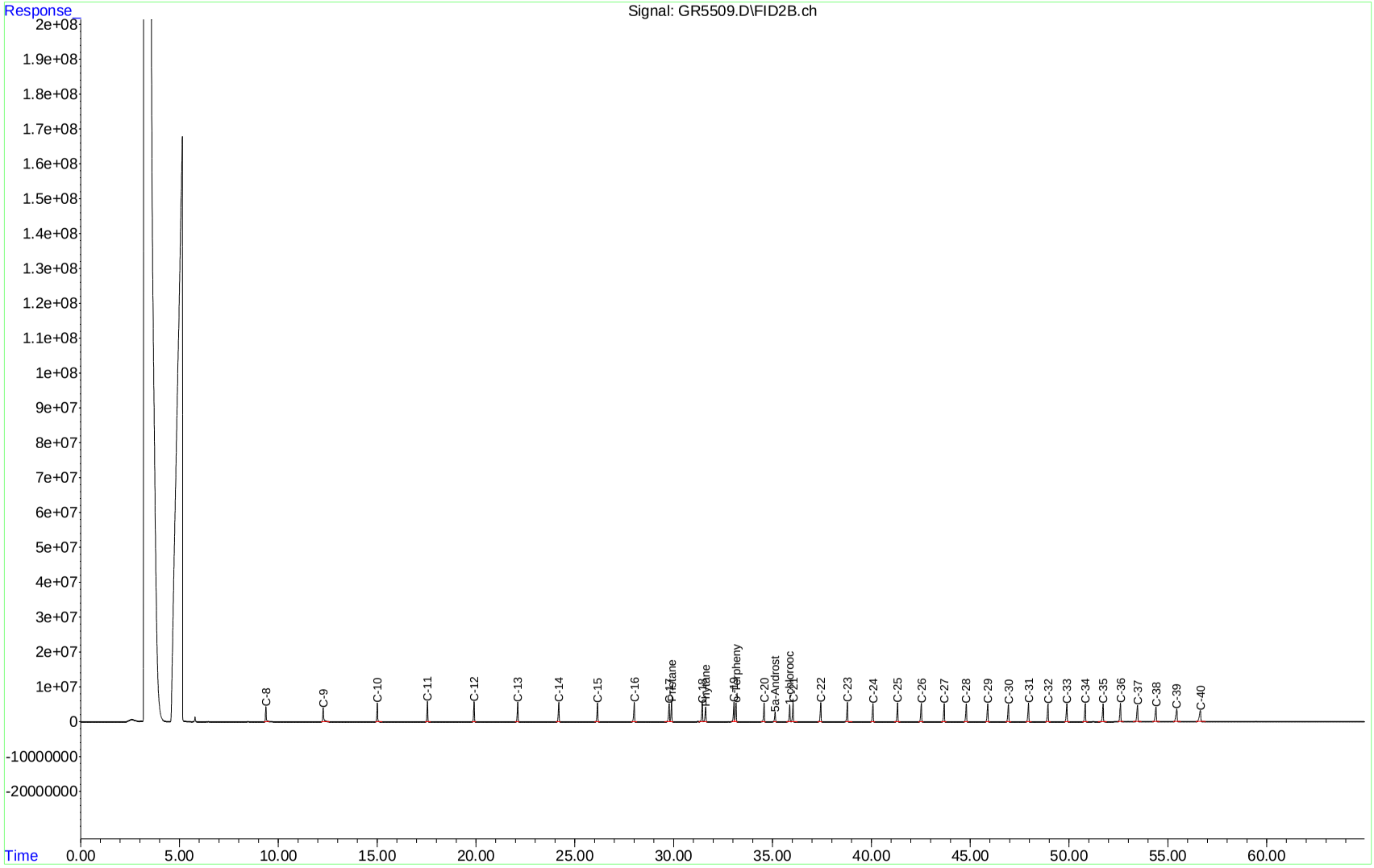

Manual Integrations APPROVED (compounds with "m" flag)
Ruben Parrilla
04/12/16 14:46

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160401.SEC\GR5510.D
Sample : IC173-200.0, FS179
Misc : OP46636,GGR173,,,2,1
ALS Vial : 7 Sample Multiplier: 1
Acq On : 2 Apr 2016 12:21 am Operator: MIKEW

Quant Time: Apr 05 12:37:46 2016
Quant Method : G:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

| | Compound | R.T. | Response | Conc | Units |
|---|---|---|---|---|---|
| | Internal Standards | | | | |
| 1) I | 5a-Androstane | 35.137 | 78813207 | 50.000 | µg/mL |
| | System Monitoring Compounds | | | | |
| 2) S | o-Terphenyl | 33.182 | 323309049 | 192.000 | µg/mLm |
| Spiked Amount | 25.000 | | Recovery = | 768.00% | |
| 3) S | 1-chlorooctadecane | 35.900 | 272129979 | 205.662 | µg/mL |
| | Target Compounds | | | | |
| 4) | C-8 | 9.420 | 261053953 | 190.613 | µg/mLm |
| 5) | C-9 | 12.298 | 276938187 | 188.953 | µg/mL |
| 6) | C-10 | 15.031 | 288324979 | 194.866 | µg/mL |
| 7) | C-11 | 17.565 | 295037003 | 200.382 | µg/mL |
| 8) | C-12 | 19.925 | 300592410 | 202.435 | µg/mL |
| 9) J1 | C-13 | 22.132 | 304078561 | 204.679 | µg/mL |
| 11) J1 | C-14 | 24.209 | 309447603 | 205.378 | µg/mLm |
| 13) | C-15 | 26.171 | 309121981 | 204.731 | µg/mL |
| 14) J1 | C-16 | 28.029 | 311110731 | 204.058 | µg/mL |
| 16) | C-17 | 29.796 | 316378860 | 208.464 | µg/mL |
| 17) | Pristane | 29.920 | 307862960 | 200.119 | µg/mL |
| 18) | C-18 | 31.475 | 320340578 | 205.420 | µg/mL |
| 19) | Phytane | 31.645 | 276504081 | 203.880 | µg/mL |
| 20) | C-19 | 33.080 | 344278206 | 216.215 | µg/mL |
| 21) | C-20 | 34.604 | 311777829 | 202.481 | µg/mLm |
| 22) | C-21 | 36.070 | 312989519 | 202.315 | µg/mLm |
| 23) | C-22 | 37.469 | 320524835 | 203.988 | µg/mL |
| 24) | C-23 | 38.816 | 317642466 | 200.250 | µg/mLm |
| 25) | C-24 | 40.109 | 318914875 | 202.554 | µg/mL |
| 26) | C-25 | 41.356 | 320760849 | 201.160 | µg/mL |
| 27) | C-26 | 42.558 | 321693007 | 200.463 | µg/mL |
| 28) | C-27 | 43.717 | 311609662 | 199.784 | µg/mL |
| 29) | C-28 | 44.836 | 313054191 | 199.513 | µg/mL |
| 30) | C-29 | 45.919 | 319031213 | 199.411 | µg/mL |
| 31) | C-30 | 46.967 | 310779240 | 199.450 | µg/mL |
| 32) | C-31 | 47.986 | 324398215 | 198.740 | µg/mLm |
| 33) | C-32 | 48.970 | 320249171 | 198.578 | µg/mLm |
| 34) | C-33 | 49.928 | 314894279 | 198.715 | µg/mLm |
| 35) | C-34 | 50.856 | 326910216 | 198.868 | µg/mLm |
| 36) | C-35 | 51.757 | 317984985 | 199.336 | µg/mLm |
| 37) | C-36 | 52.642 | 353109021 | 200.252 | µg/mLm |
| 38) | C-37 | 53.500 | 315855362 | 200.687 | µg/mLm |
| 39) | C-38 | 54.443 | 325187062 | 201.648 | µg/mLm |
| 40) | C-39 | 55.501 | 313825006 | 203.776 | µg/mLm |
| 41) | C-40 | 56.699 | 320876400 | 205.756 | µg/mLm |

SemiQuant Compounds - Not Calibrated on this Instrument

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160401.SEC\GR5510.D
Sample : IC173-200.0, FS179
Misc : OP46636,GGR173,,,2,1
ALS Vial : 7 Sample Multiplier: 1
Acq On : 2 Apr 2016 12:21 am Operator: MIKEW

Quant Time: Apr 05 12:37:46 2016
Quant Method : G:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

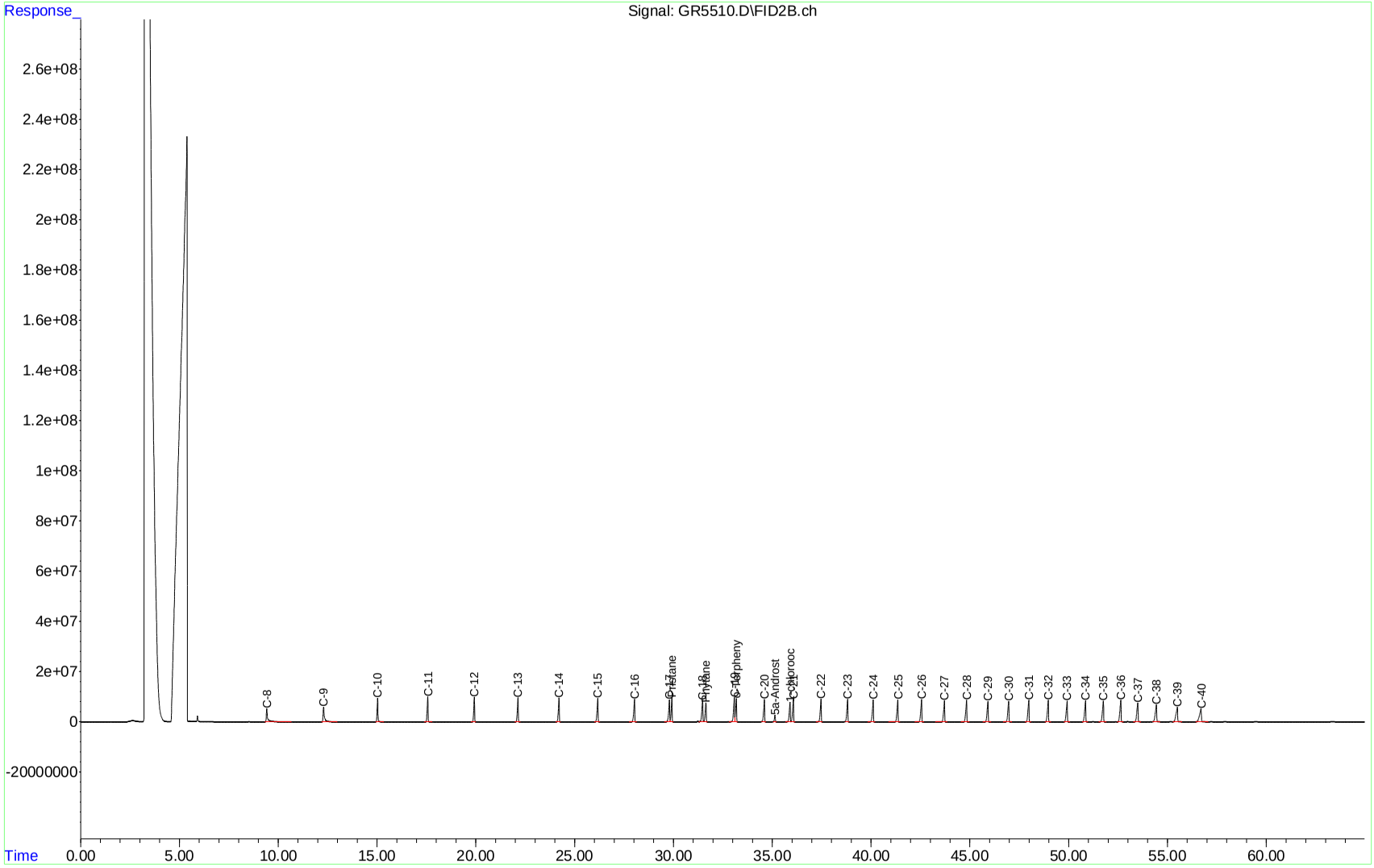

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160401.SEC\GR5511.D
Sample : ICV173-25.0, FS-185
Misc : OP46636,GGR173,,,2,1
ALS Vial : 8 Sample Multiplier: 1
Acq On : 2 Apr 2016 1:40 am Operator: MIKEW

Quant Time: Apr 11 12:22:03 2016
Quant Method : G:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

| | Compound | R.T. | Response | Conc Units |
|---|---|---|---|---|
| Internal Standards | | | | |
| 1) I | 5a-Androstane | 35.131 | 94249823 | 50.000 µg/mL |
| System Monitoring Compounds | | | | |
| 2) S | o-Terphenyl | 33.127 | 47105469 | 23.594 µg/mL |
| Spiked Amount | 25.000 | | Recovery = | 94.38% |
| 3) S | 1-chlorooctadecane | 35.850 | 37289628 | 23.480 µg/mL |
| Target Compounds | | | | |
| 4) | C-8 | 9.324 | 37786788 | 22.975 µg/mL |
| 5) | C-9 | 12.241 | 40284912 | 22.910 µg/mL |
| 6) | C-10 | 14.985 | 41298324 | 23.262 µg/mL |
| 7) | C-11 | 17.525 | 41678377 | 23.579 µg/mL |
| 8) | C-12 | 19.887 | 42349677 | 23.780 µg/mL |
| 9) J1 | C-13 | 22.094 | 42697808 | 23.946 µg/mL |
| 11) J1 | C-14 | 24.170 | 43074140 | 23.831 µg/mL |
| 13) | C-15 | 26.129 | 43094183 | 23.794 µg/mL |
| 14) J1 | C-16 | 27.984 | 43644923 | 23.872 µg/mL |
| 16) | C-17 | 29.748 | 44103259 | 24.150 µg/mL |
| 17) | Pristane | 29.868 | 42897965 | 23.321 µg/mL |
| 18) | C-18 | 31.426 | 44964581 | 24.027 µg/mL |
| 19) | Phytane | 31.595 | 44043783 | 27.095 µg/mL |
| 20) | C-19 | 33.027 | 45451858 | 23.570 µg/mL |
| 21) | C-20 | 34.553 | 44499411 | 24.141 µg/mL |
| 22) | C-21 | 36.016 | 44843260 | 24.208 µg/mL |
| 23) | C-22 | 37.417 | 44532683 | 23.636 µg/mL |
| 24) | C-23 | 38.761 | 44515723 | 23.436 µg/mL |
| 25) | C-24 | 40.056 | 44752579 | 23.702 µg/mL |
| 26) | C-25 | 41.300 | 42116920 | 22.033 µg/mL |
| 27) | C-26 | 42.502 | 45721890 | 23.769 µg/mL |
| 28) | C-27 | 43.659 | 46176397 | 24.693 µg/mL |
| 29) | C-28 | 44.778 | 45321536 | 24.089 µg/mL |
| 30) | C-29 | 45.859 | 44876282 | 23.393 µg/mL |
| 31) | C-30 | 46.906 | 45686329 | 24.449 µg/mL |
| 32) | C-31 | 47.922 | 44248615 | 22.609 µg/mL |
| 33) | C-32 | 48.906 | 44547819 | 23.036 µg/mL |
| 34) | C-33 | 49.862 | 44419079 | 23.354 µg/mL |
| 35) | C-34 | 50.792 | 46774052 | 23.676 µg/mL |
| 36) | C-35 | 51.692 | 45296820 | 23.586 µg/mL |
| 37) | C-36 | 52.570 | 47445539 | 22.278 µg/mL |
| 38) | C-37 | 53.429 | 46016479 | 24.126 µg/mL |
| 39) | C-38 | 54.358 | 44867421 | 22.854 µg/mL |
| 40) | C-39 | 55.401 | 44060738 | 23.391 µg/mL |
| 41) | C-40 | 56.583 | 41146905 | 21.502 µg/mL |

SemiQuant Compounds - Not Calibrated on this Instrument

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160401.SEC\GR5511.D
Sample : ICV173-25.0, FS-185
Misc : OP46636,GGR173,,,2,1
ALS Vial : 8 Sample Multiplier: 1
Acq On : 2 Apr 2016 1:40 am Operator: MIKEW

Quant Time: Apr 11 12:22:03 2016
Quant Method : G:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

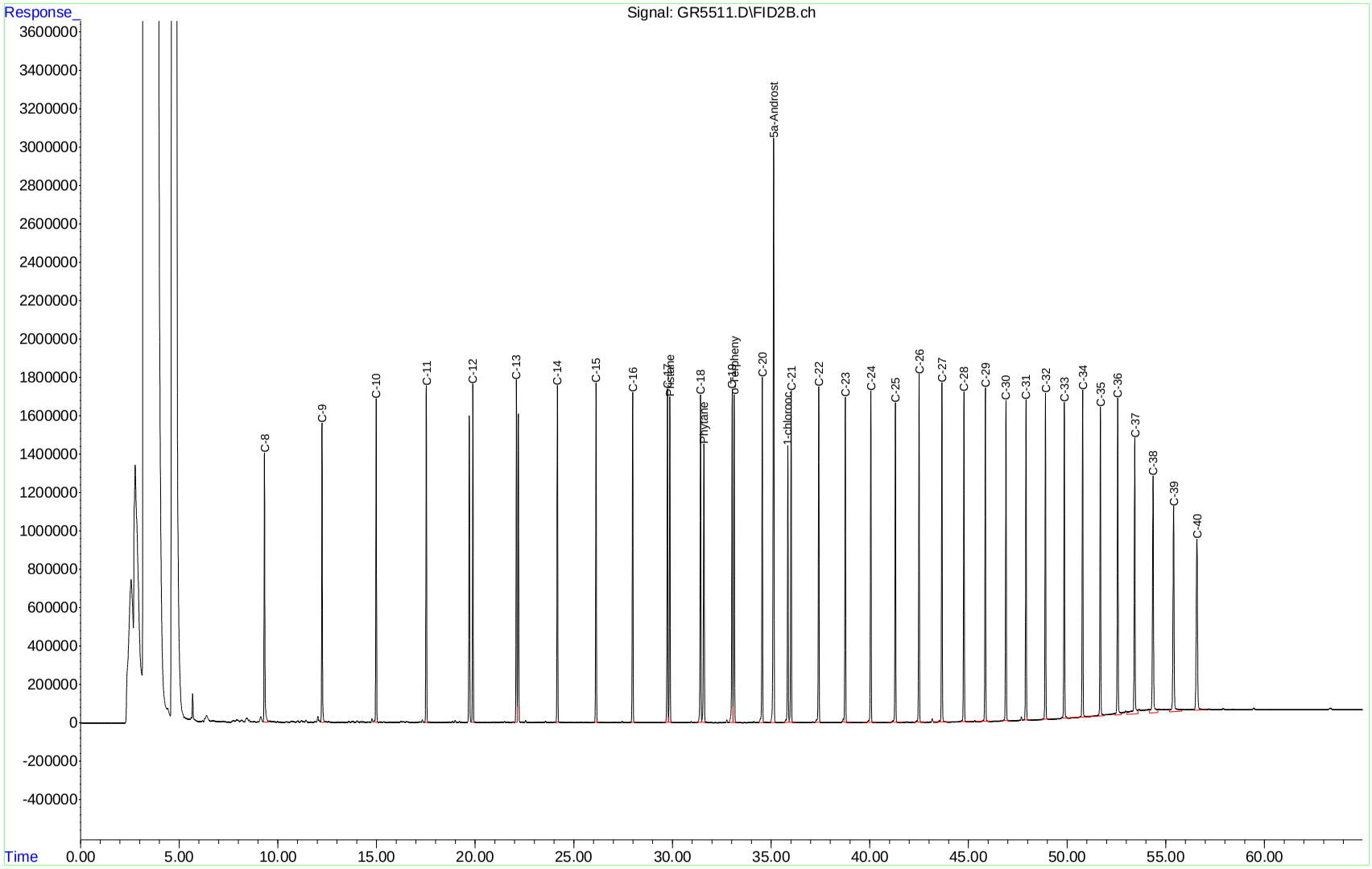

Manual Integrations APPROVED
(compounds with "m" flag)
Ruben Parrilla
07/07/16 14:43

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160629\GR6333.d
Sample : CC173-25, FS-209
Misc : OP47904,GGR206,,,2,1
ALS Vial : 2 Sample Multiplier: 1
Acq On : 30 Jun 2016 6:40 am Operator: MIKEW

Quant Time: Jun 30 08:03:17 2016
Quant Method : X:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

| | Compound | R.T. | Response | Conc Units |
|---|---|---|---|---|
| | Internal Standards | | | |
| 1) I | 5a-Androstane | 35.212 | 123245706 | 50.000 µg/mLm |
| | System Monitoring Compounds | | | |
| 2) S | o-Terphenyl | 33.200 | 64381491 | 24.660 µg/mLm |
| Spiked Amount | 25.000 | | Recovery = | 98.64% |
| | Target Compounds | | | |
| 4) | C-8 | 9.152 | 46307827 | 21.532 µg/mLm |
| 5) | C-9 | 12.123 | 52166056 | 22.687 µg/mLm |
| 6) | C-10 | 14.895 | 55470559 | 23.894 µg/mLm |
| 7) | C-11 | 17.457 | 57203255 | 24.748 µg/mL |
| 8) | C-12 | 19.836 | 57925744 | 24.874 µg/mL |
| 9) J1 | C-13 | 22.060 | 58536701 | 25.105 µg/mL |
| 11) J1 | C-14 | 24.151 | 58209643 | 24.628 µg/mL |
| 13) | C-15 | 26.122 | 58294772 | 24.614 µg/mL |
| 14) J1 | C-16 | 27.990 | 59356998 | 24.828 µg/mL |
| 16) | C-17 | 29.762 | 58331096 | 24.427 µg/mLm |
| 17) | Pristane | 29.882 | 59106956 | 24.573 µg/mLm |
| 18) | C-18 | 31.451 | 58376097 | 23.855 µg/mLm |
| 19) | Phytane | 31.620 | 52453582 | 24.677 µg/mL |
| 20) | C-19 | 33.059 | 59668637 | 23.663 µg/mLm |
| 21) | C-20 | 34.594 | 58503539 | 24.271 µg/mLm |
| 22) | C-21 | 36.064 | 59628278 | 24.617 µg/mLm |
| 23) | C-22 | 37.470 | 59338707 | 24.085 µg/mLm |
| 24) | C-23 | 38.821 | 59772614 | 24.065 µg/mLm |
| 25) | C-24 | 40.121 | 62031525 | 25.124 µg/mLm |
| 26) | C-25 | 41.372 | 59587588 | 23.839 µg/mLm |
| 27) | C-26 | 42.577 | 60172598 | 23.921 µg/mLm |
| 28) | C-27 | 43.740 | 58643024 | 23.982 µg/mL |
| 29) | C-28 | 44.861 | 60996239 | 24.793 µg/mL |
| 30) | C-29 | 45.947 | 58915674 | 23.486 µg/mL |
| 31) | C-30 | 46.998 | 60423879 | 24.728 µg/mL |
| 32) | C-31 | 48.012 | 61338294 | 23.968 µg/mL |
| 33) | C-32 | 49.000 | 60241657 | 23.822 µg/mL |
| 34) | C-33 | 49.958 | 59274085 | 23.833 µg/mL |
| 35) | C-34 | 50.886 | 59925389 | 23.197 µg/mL |
| 36) | C-35 | 51.788 | 59160829 | 23.558 µg/mL |
| 37) | C-36 | 52.667 | 63896159 | 22.944 µg/mLm |
| 38) | C-37 | 53.531 | 60114642 | 24.102 µg/mLm |
| 39) | C-38 | 54.475 | 63932102 | 24.903 µg/mLm |
| 40) | C-39 | 55.540 | 62125383 | 25.222 µg/mL |
| 41) | C-40 | 56.747 | 61869220 | 24.724 µg/mLm |

SemiQuant Compounds - Not Calibrated on this Instrument

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160629\GR6333.d
Sample : CC173-25, FS-209
Misc : OP47904,GGR206,,,2,1
ALS Vial : 2 Sample Multiplier: 1
Acq On : 30 Jun 2016 6:40 am Operator: MIKEW

Quant Time: Jun 30 08:03:17 2016
Quant Method : X:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

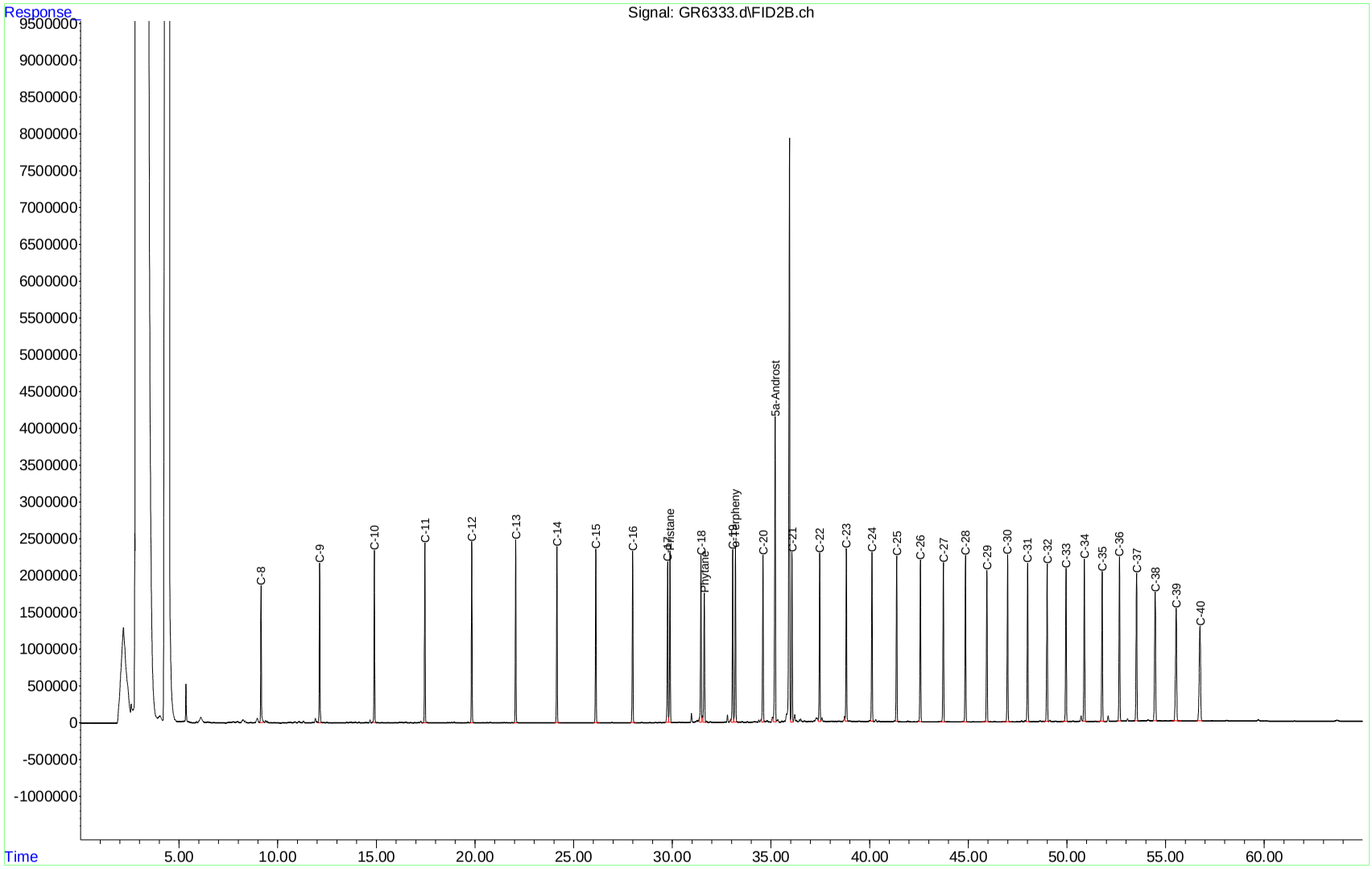






ACCUTEST MC46549

Manual Integrations APPROVED
(compounds with "m" flag)
Ruben Parrilla
07/11/16 12:31

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160630\GR6335.d
Sample : CC173-25, FS-209
Misc : OP47904,GGR207,,,2,1
ALS Vial : 2 Sample Multiplier: 1
Acq On : 30 Jun 2016 10:33 am Operator: MIKEW

Quant Time: Jun 30 15:12:07 2016
Quant Method : X:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

| | Compound | R.T. | Response | Conc Units |
|---|---|---|---|---|
| | Internal Standards | | | |
| 1) I | 5a-Androstane | 35.210 | 113534154 | 50.000 µg/mLm |
| | System Monitoring Compounds | | | |
| 2) S | o-Terphenyl | 33.197 | 59592533 | 24.778 µg/mLm |
| Spiked Amount | 25.000 | | Recovery = | 99.11% |
| | Target Compounds | | | |
| 4) | C-8 | 9.140 | 41543531 | 20.969 µg/mLm |
| 5) | C-9 | 12.119 | 47739310 | 22.538 µg/mLm |
| 6) | C-10 | 14.894 | 50692760 | 23.704 µg/mLm |
| 7) | C-11 | 17.457 | 52593626 | 24.700 µg/mL |
| 8) | C-12 | 19.835 | 53280426 | 24.837 µg/mL |
| 9) J1 | C-13 | 22.060 | 53866413 | 25.078 µg/mL |
| 11) J1 | C-14 | 24.150 | 53568572 | 24.603 µg/mL |
| 13) | C-15 | 26.122 | 53673577 | 24.602 µg/mL |
| 14) J1 | C-16 | 27.990 | 54647787 | 24.813 µg/mL |
| 16) | C-17 | 29.761 | 53766449 | 24.441 µg/mLm |
| 17) | Pristane | 29.882 | 54701350 | 24.686 µg/mL |
| 18) | C-18 | 31.449 | 53740586 | 23.839 µg/mLm |
| 19) | Phytane | 31.617 | 48362866 | 24.699 µg/mLm |
| 20) | C-19 | 33.058 | 54679160 | 23.539 µg/mLm |
| 21) | C-20 | 34.594 | 54341307 | 24.473 µg/mLm |
| 22) | C-21 | 36.064 | 55119077 | 24.701 µg/mLm |
| 23) | C-22 | 37.470 | 54715703 | 24.108 µg/mLm |
| 24) | C-23 | 38.822 | 55104068 | 24.083 µg/mLm |
| 25) | C-24 | 40.120 | 57457294 | 25.262 µg/mLm |
| 26) | C-25 | 41.370 | 55199101 | 23.972 µg/mLm |
| 27) | C-26 | 42.576 | 55421810 | 23.917 µg/mLm |
| 28) | C-27 | 43.737 | 53676030 | 23.828 µg/mLm |
| 29) | C-28 | 44.859 | 55877113 | 24.655 µg/mLm |
| 30) | C-29 | 45.944 | 54218871 | 23.463 µg/mL |
| 31) | C-30 | 46.994 | 55589181 | 24.695 µg/mL |
| 32) | C-31 | 48.012 | 56462621 | 23.950 µg/mL |
| 33) | C-32 | 48.999 | 55423430 | 23.792 µg/mL |
| 34) | C-33 | 49.955 | 54457543 | 23.769 µg/mL |
| 35) | C-34 | 50.884 | 55113054 | 23.159 µg/mL |
| 36) | C-35 | 51.787 | 54356468 | 23.496 µg/mL |
| 37) | C-36 | 52.665 | 58695573 | 22.879 µg/mLm |
| 38) | C-37 | 53.528 | 55198631 | 24.024 µg/mLm |
| 39) | C-38 | 54.468 | 58678024 | 24.812 µg/mLm |
| 40) | C-39 | 55.535 | 56807018 | 25.036 µg/mL |
| 41) | C-40 | 56.742 | 56711684 | 24.602 µg/mL |

SemiQuant Compounds - Not Calibrated on this Instrument

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160630\GR6335.d
Sample : CC173-25, FS-209
Misc : OP47904,GGR207,,,2,1
ALS Vial : 2 Sample Multiplier: 1
Acq On : 30 Jun 2016 10:33 am Operator: MIKEW

Quant Time: Jun 30 15:12:07 2016
Quant Method : X:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

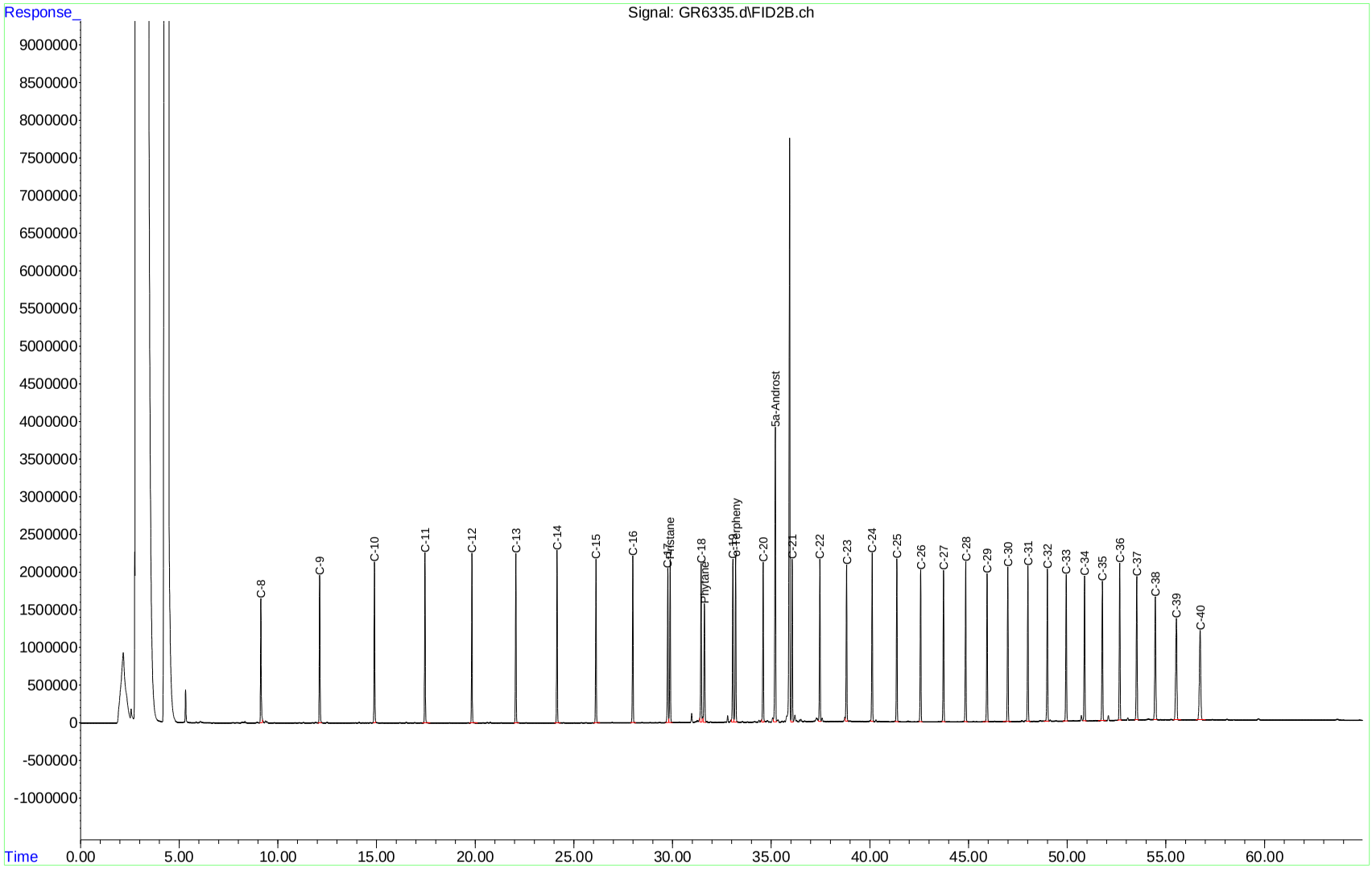

Manual Integrations APPROVED
(compounds with "m" flag)
Ruben Parrilla
07/11/16 12:31

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160630\GR6349.d
Sample : CC173-25, FS-209
Misc : OP47904,GGR207,,,2,1
ALS Vial : 99 Sample Multiplier: 1
Acq On : 1 Jul 2016 4:50 am Operator: MIKEW

Quant Time: Jul 01 07:33:44 2016
Quant Method : X:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

| | Compound | R.T. | Response | Conc Units |
|---|---|---|---|---|
| Internal Standards | | | | |
| 1) I | 5a-Androstane | 35.213 | 136564944 | 50.000 µg/mLm |
| System Monitoring Compounds | | | | |
| 2) S | o-Terphenyl | 33.199 | 71736158 | 24.797 µg/mLm |
| Spiked Amount | 25.000 | | Recovery = | 99.19% |
| Target Compounds | | | | |
| 4) | C-8 | 9.148 | 48171176 | 20.214 µg/mLm |
| 5) | C-9 | 12.120 | 56017083 | 21.986 µg/mLm |
| 6) | C-10 | 14.894 | 60607495 | 23.560 µg/mLm |
| 7) | C-11 | 17.455 | 62811856 | 24.524 µg/mLm |
| 8) | C-12 | 19.835 | 63755175 | 24.707 µg/mLm |
| 9) J1 | C-13 | 22.060 | 64614058 | 25.009 µg/mL |
| 11) J1 | C-14 | 24.151 | 64131815 | 24.487 µg/mL |
| 13) | C-15 | 26.123 | 64284445 | 24.496 µg/mL |
| 14) J1 | C-16 | 27.990 | 65482125 | 24.718 µg/mL |
| 16) | C-17 | 29.765 | 64023694 | 24.196 µg/mL |
| 17) | Pristane | 29.882 | 65742806 | 24.666 µg/mL |
| 18) | C-18 | 31.450 | 64508388 | 23.790 µg/mLm |
| 19) | Phytane | 31.619 | 57855590 | 24.564 µg/mLm |
| 20) | C-19 | 33.059 | 65508130 | 23.445 µg/mLm |
| 21) | C-20 | 34.595 | 66321946 | 24.831 µg/mLm |
| 22) | C-21 | 36.065 | 66479978 | 24.768 µg/mLm |
| 23) | C-22 | 37.470 | 65967134 | 24.164 µg/mLm |
| 24) | C-23 | 38.821 | 66682264 | 24.228 µg/mLm |
| 25) | C-24 | 40.118 | 69411471 | 25.372 µg/mLm |
| 26) | C-25 | 41.369 | 66443917 | 23.989 µg/mLm |
| 27) | C-26 | 42.573 | 66593258 | 23.892 µg/mLm |
| 28) | C-27 | 43.736 | 65166672 | 24.050 µg/mL |
| 29) | C-28 | 44.856 | 67337791 | 24.701 µg/mLm |
| 30) | C-29 | 45.944 | 65136618 | 23.434 µg/mL |
| 31) | C-30 | 46.992 | 66723193 | 24.643 µg/mL |
| 32) | C-31 | 48.010 | 67898663 | 23.944 µg/mL |
| 33) | C-32 | 48.995 | 66541577 | 23.747 µg/mL |
| 34) | C-33 | 49.953 | 65425913 | 23.741 µg/mL |
| 35) | C-34 | 50.881 | 66225220 | 23.135 µg/mL |
| 36) | C-35 | 51.786 | 65306264 | 23.469 µg/mL |
| 37) | C-36 | 52.664 | 70893137 | 22.973 µg/mL |
| 38) | C-37 | 53.527 | 66906197 | 24.209 µg/mL |
| 39) | C-38 | 54.467 | 70659106 | 24.839 µg/mL |
| 40) | C-39 | 55.532 | 68247368 | 25.005 µg/mL |
| 41) | C-40 | 56.737 | 67840053 | 24.466 µg/mL |

SemiQuant Compounds - Not Calibrated on this Instrument

(f)=RT Delta > 1/2 Window (m)=manual int.

9.5.10

9

Quantitation Report (QT Reviewed)

Data File: X:\1\data\G160630\GR6349.d
Sample : CC173-25, FS-209
Misc : OP47904,GGR207,,,2,1
ALS Vial : 99 Sample Multiplier: 1
Acq On : 1 Jul 2016 4:50 am Operator: MIKEW

Quant Time: Jul 01 07:33:44 2016
Quant Method : X:\1\methods\GCGR160401ALK-Rear.m
Quant Title : n-C8 - n-C40 normal alkanes w/ isoprenoids

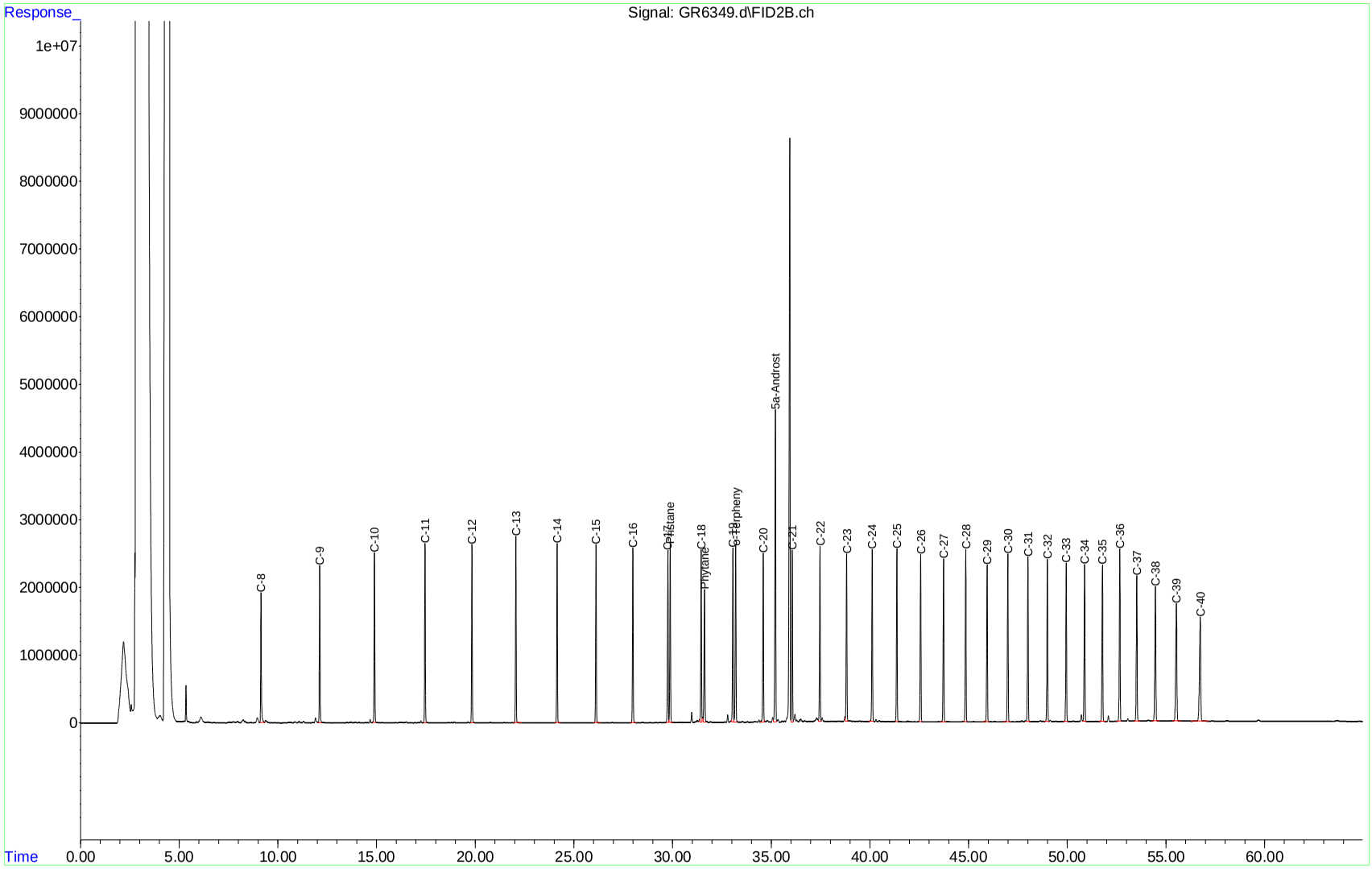






ACCUTEST MC46549

Accutest Laboratories of New England, Inc. Instrument: GC 27 (GCG)

## GC Analysis Log - Extractables

Run Date: 4/1/16 - SEC Analyst Signature: MW

**Standard Data**

| Lot # | Description | Conc |
|---|---|---|
| FS-179 | N-Alk Curve | 0.25 -> 200 mg/mL |
| FS-185 | Alk ICV | 25 mg/mL |
| | See page 42 | |

Column Information: Front: RTX-5 Alternate:
Rear: RTX-5 Alternate:
Sequence File: G160401.SEC
Quantitation Methods: GCGR160401Alk-Rear.M
Instrument Run Batches: ~~GGR173~~ MW 4/1/16 GGR173
Data Acquisition Methods: Forensic Dual Inj. Vol: 1
Inj. Vol:

Date of ICAL: 4/1/16 ICAL Verified ✓ Sample positions verified against sequence: ✓

| Vial # | Data File ID | Sample ID | Ext.Batch | Analysis | Matrix | Dilution | Comments |
|---|---|---|---|---|---|---|---|
| 100 | GR5502.D | DCM | N/A | N/A | NA | NA | |
| 1 | 5503 | IC173-~~0.25~~ MW 0.25, FS-179 | | n-alk | | | |
| 1 | 5504 | | | | | | |
| 2 | 5505 | IC173-1.0, FS-179 | | | | | |
| 3 | 5506 | IC173-5.0, | | | | | |
| 4 | 5507 | IC173-25.0 | | | | | |
| 5 | 5508 | IC173-50.0, | | | | | |
| 6 | 5509 | IC173-100.0, | | | | | |
| 7 | 5510 | IC173-200.0, | | | | | |
| 8 | 5511 | ICV173, 25.0, FS-185 | | | | | |

RPP 4/1/16

MTX = Matrix: Designate **W** for water, **S** for soil, **O** for oil. Dilution Solvent: N/A Lot#: NA

GC011-01
Date: 02/26/07

Review: RPP

G:\1\data\G160401.SEC\GR5511.D

Data File Name **GR5511.D**
Data File Path **G:\1\data\G160401.SEC**
Operator **MIKEW**
Date Acquired **4/2/2016 1:40**
Acq. Method File **FORENSICDUAL.M**
Sample Name **ICV173-25.0, FS-185**
Misc Info **OP46636,GGR173,,,2,1**
Vial Number **8**
Instrument Name **GCG**
Number of Compounds **46.**
Sample Multiplier **1**

| Name | Level 1 Response | Level 2 Response | Level 3 Response | Level 4 Response | Level 5 Response | Level 6 Response |
|---|---|---|---|---|---|---|
| 5a-Androstane | 85340089 | 86598732 | 75776222 | 78025361 | 83777778 | 78813207 |
| C-8 | 1732363 | 7378112 | 36086122 | 63554655 | 129538509 | 261053953 |
| C-9 | 1863438 | 7857789 | 37697241 | 67271551 | 144473972 | 276938187 |
| C-10 | 1811062 | 7913162 | 36933687 | 69001326 | 151203203 | 288324979 |
| C-11 | 1771596 | 7852265 | 35582564 | 69749002 | 152920389 | 295037003 |
| C-12 | 1734791 | 7991275 | 35456287 | 71046665 | 155738074 | 300592410 |
| C-13 | 1732301 | 8014985 | 35214565 | 71082163 | 155858276 | 304078561 |
| C-14 | 1737537 | 8111830 | 35720028 | 72407380 | 158543110 | 309447603 |
| C-15 | 1743551 | 8203810 | 35751106 | 72313016 | 158348927 | 309121981 |
| C-16 | 1770606 | 8277256 | 36197725 | 72825962 | 159288935 | 311110731 |
| C-17 | 1740728 | 8174285 | 36099189 | 72503408 | 161428873 | 316378860 |
| C-18 | 1789262 | 8408369 | 37402542 | 74653591 | 163758606 | 320340578 |
| C-19 | 1804161 | 8503071 | 38355975 | 77032598 | 168794302 | 344278206 |
| C-20 | 1785284 | 8382700 | 36839672 | 73229659 | 159765847 | 311777829 |
| C-21 | 1803267 | 8440262 | 37046894 | 73463860 | 159666264 | 312989519 |
| C-22 | 1825802 | 8569292 | 37620298 | 74694336 | 162681967 | 320524835 |
| C-23 | 1897918 | 8634579 | 38306917 | 74294214 | 161884583 | 317642466 |
| C-24 | 1823018 | 8536213 | 39113720 | 74068997 | 161323753 | 318914875 |
| C-25 | 1836472 | 8596847 | 40430559 | 74800164 | 162943205 | 320760849 |
| C-26 | 1838142 | 8627047 | 41460312 | 75090490 | 162981764 | 321693007 |
| C-27 | 1785118 | 8350756 | 40865573 | 72682936 | 158104095 | 311609662 |
| C-28 | 1791315 | 8407167 | 41367661 | 73023890 | 158743038 | 313054191 |
| C-29 | 1825374 | 8565959 | 42331719 | 74440031 | 161559515 | 319031213 |
| C-30 | 1771729 | 8329739 | 41361171 | 72526064 | 157682672 | 310779240 |
| C-31 | 1858479 | 8730888 | 43424904 | 75953167 | 164849546 | 324398215 |
| C-32 | 1838260 | 8612841 | 43040998 | 74999093 | 162676174 | 320249171 |
| C-33 | 1804146 | 8480574 | 42374746 | 73777500 | 159983303 | 314894279 |
| C-34 | 1871970 | 8799645 | 44131774 | 76704030 | 165972681 | 326910216 |
| C-35 | 1816971 | 8566614 | 42854231 | 74511311 | 161598469 | 317984985 |
| C-36 | 2017482 | 9439759 | 47584803 | 82843587 | 179126136 | 353109021 |
| C-37 | 1804134 | 8486937 | 42615493 | 74201331 | 160249071 | 315855362 |
| C-38 | 1871074 | 8737134 | 43693890 | 76226227 | 164557911 | 325187062 |
| C-39 | 1762308 | 8392375 | 42106176 | 73257104 | 158899538 | 313825006 |
| C-40 | 1772400 | 8444235 | 42950244 | 74828420 | 162063474 | 320876400 |
| **TPH (C8-C40)** | **1807032** | **8388417** | **39636933** | **73425992** | **159612369** | **313599105** |
| **DRO (C10-C28)** | **1790628** | **8315535** | **37671857** | **73050719** | **159683011** | **313035692** |
| **ORO (>C28-C40)** | **1831203** | **8614913** | **43064447** | **75176289** | **162920118** | **321242643** |

TPH (C8-C40) is calculated using the mean areas from all normal alkanes from C8 to C40.
DRO (C10-C28) is calculated using the mean areas from all normal alkanes from C10 to C28.
ORO (C28-C40) is calculated using the mean areas from all normal alkanes from C28 to C40.
**Enter Bold Value Responses into Calibration Table for TPH (C8-C40); DRO (C10-C28) and TPH ORO (>C28-C40) compounds.**

SGS Accutest

Instrument: GC 27 (GCG)

## GC Analysis Log - Extractables

Run Date: 6/29/16

Analyst Signature: MH

### Standard Data

| Lot # | Description | Conc |
|---|---|---|
| FS-191 | RT Test | 50ng/mL |
| FS-209 | CC173-25 | 25ng/mL |
| FS-186 | QuaTboa Crude | 10.55ng/mL |
| FS-248 | PAH STD | 25ng/mL |
| | | |
| | | |
| | | |
| | | |

Column Information: Front : RTX-5 Alternate:

Rear : RTX-5 Alternate:

Sequence File: G160629

Quantitation Methods: GCGR160701.M.C-Rear.M

Instrument Run Batches: GGR206

Data Acquisition Methods: Forensic Rear Inj. Vol: 1

Inj. Vol:

Date of ICAL: 4/11/16 ICAL Verified ✓ Sample positions verified against sequence: ✓

| Vial # | Data File ID | Sample ID | Ext.Batch | Analysis | Matrix | Dilution | Comments |
|---|---|---|---|---|---|---|---|
| 1 | GR6317.D | RT Test | NA | n-alk | NA | NA | FS-191 |
| 2 | 6318 | CC173-25 | | | | | FS-209 |
| | 6319 | | | | | | |
| | 6321 | | | | | | |
| 3 | 6322 | QuaTboa Crude | | | | | FS-186 |
| 4 | 6323 | PAH STD | | | | | FS-248 |
| 10e | 6324 | DCM | | | | | |
| 5 | 6325 | OPY7995,MD | OPY7995 | | S | | |
| 6 | 6326 | -BS1 | | | S | | |
| 7 | 6327 | -Dup | | | | | |
| 8 | 6328 | MCY6480-1 | | | | | |
| 9 | 6329 | OPY7980-Dup | OPY7980 | | | 5X | |
| 10 | 6330 | MCY6592-1 | | | | | |
| 11 | 6331 | -2 | | | | | |
| 100 | 6332 | DCM | NA | | NA | NA | |
| 12 | 6333 | CC173-25 | | | | | |

Matrix: Designate **W** for water, **S** for soil, **O** for oil. Dilution Solvent: DCM Lot#: 163412

Review:

48

9.6.2

9

SGS Accutest

Instrument: GC 27 (GCG)

## GC Analysis Log - Extractables

Run Date: 6/30/16

Analyst Signature: MW

**Standard Data**

| Lot # | Description | Conc |
|---|---|---|
| FS-186 | Qualboa Crude | 10.55 mg/mL |
| FS-209 | Mid Alk Check | 25 mg/mL |
| FS-248 | PAH STD | 25 mg/mL |
| | | |
| | | |
| | | |
| | | |
| | | |

Column Information: Front: RTX-5 Alternate:
Rear: RTX-5 Alternate:

Sequence File: G160630

Quantitation Methods: GCGR160401 Alk Rear.M

Instrument Run Batches: GGR207

Data Acquisition Methods: Forensic Rear Inj. Vol: 1
Inj. Vol:

Date of ICAL: 4/1/16 ICAL Verified ✓ Sample positions verified against sequence: ✓

| Vial # | Data File ID | Sample ID | Ext.Batch | Analysis | Matrix | Dilution | Comments |
|---|---|---|---|---|---|---|---|
| 1 | GCG334.D | Qualboa Crude | N.A | n-alk | N.A | N.A | FS-186 |
| 2 | 6335 | CC173-25 | | | | | FS-209 |
| 3 | 6336 | PAH STD | | | | | FS-248 |
| 100 | 6337 | DCM | | | | | |
| 4 | 6338 | OP47955-MB | OP47955 | | O | | |
| 5 | 6339 | -BS1 | | | | | |
| 6 | 6340 | -Dup2 | | | | | |
| 7 | 6341 | MC46563-1 | | | | | |
| 8 | 6342 | OP47955-Dup2 | | | | 5X | Pre-emptive Dilution, Not needed |
| 9 | 6343 | MC46563-1 | | | | | |
| 10 | 6344 | OP47955-Dup1 | | | | N.A | |
| 11 | 6345 | MC46549-1 | | | | | |
| 12 | 6346 | OP47955-Dup1 | | | | 5X | |
| 13 | 6347 | MC46549-1 | | | | | |
| 100 | 6348 | DCM | N.A | | N.A | N.A | |
| 99 | 6349 | CC173-25 | | | | | FS-209 |

MTX = Matrix: Designate **W** for water, **S** for soil, **O** for oil.

Dilution Solvent: DCM Lot#: 162272

GC011-01
Date: 02/26/07

Review:

Prep Log OP47955 page 1 of 1

# SGS ACCUTEST, Inc.

16:40
B3328F mgh
OP47955
B5739A1KPAH
OP47956

Method Name: EPA 3580 - Waste Dilution of NAPL Samples
Method SOP#: MOP265
Matrix: NAPL
Extraction Staff: MW
Extraction Batch:
Balance ID ACC-~~10~~ 12
Extract Tray: GC-32

| Sample ID | Extract Weight (g) | Final Volume (mL) | Solvent | Surrogate | Matrix Spike | Extraction Date | Internal Standard | Comments |
|---|---|---|---|---|---|---|---|---|
| OP47955/56-MB | 0.01 | 2 | DCM | 100mL | — | 6/23/16 | 100mL | |
| OP47955-BS1 | ↓ | ↓ | ↓ | ↓ | 100mL | ↓ | ↓ | FID |
| OP47956-BS2 | ↓ | ↓ | ↓ | ↓ | 50/100mL | ↓ | ↓ | MS/Pb |
| OP47955/56-Dup1 | 0.0161 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | MC46549-1 Petrol Smell |
| MC46549-1 | 0.0152 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| OP47955/56-Dup2 | 0.0089 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | MC46563-1 |
| MC46563-1 | 0.0097 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | |

NOTES/COMMENTS:

Solvent: DCM
Solvent Lot: 162272

Extracts Released (Date & Inits):

| | | | | |
|---|---|---|---|---|
| FID Surr. @ Various | µg/mL | Std. ID: FS-211 C | Analyst: MW |
| FID Spike @ 500 | µg/mL | Std. ID: GS18159 | Analyst: |
| MS ~~IS~~ @ Various | µg/mL | Std. ID: FS-246 | Analyst: |
| Pb ~~IS~~ @ 100 | µg/mL | Std. ID: FS-197 | Analyst: |
| IS @ Various | ↓ | ↓ FS-210A | ↓ |

MOP016-01 (2/19/15)

Prepared for:
PPG
Jersey City, NJ

Prepared by:
AECOM
Piscataway, NJ
60657238
January 2022

# Groundwater Remedial Investigation Report

## Final

**PPG Garfield Avenue Group**
**Hudson County Chromium Sites**
**Jersey City, New Jersey**

GW-077

# NJDEP Forms

- Case Inventory Document
- Cover Cert Form
- Public Notice Form
- CEA Revised
- CEA for historic fill

**Case Name:** HUDSON COUNTY CHROMATE - PPG (Garfield Avenue Group Sites)

**PI #:** 395, 246332, G000008753, G000008759, 777089, 722429, 775706, 775998, 629388, G000044581, G000011477

**Activity #:** RPC000051, RPC00001, PFR0000001

**Case Inventory Document Version 1.5.1 02/04/21**

***IMPORTANT:*** ***1) The CID must be FINALIZED prior to upload. After the CID has been populated, click the Validate for Upload button and follow the instructions.***

***2) You MUST SAVE after finalizing, and before upload. Click the Enable for Editing button after uploading to edit again.***

| AOC ID | AOC Type | AOC Description | Confirmed Contamination | Exclude AOC from Billing | AOC Status Achieved | Status Achieved Date | Incident Communication Center #s Managed in Case | NJDEP ID | Contaminated Media | Contaminants of Concern | Additional Contaminants of Concern | Additional Contaminants of Concern | Applicable Remediation Standard | Exposure Route | Additional Exposure Route | RA Type | Additional RA Type | Was an Order of Magnitude Evaluation Conducted? | Activity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Garfield Avenue Group-Ground Water | Environmental media - Media Ground water | Site wide groundwater impacted by Chromate Chemical Production Waste (CCPW) metals including Chromium and other contaminations of concern (COCs) on or emanating from Site 114 associated with historical operations at Site 114 | Yes | | RI | 03/24/2021 | | | Ground Water | Metals | VO | Other | Remediation Standards | Ground Water | | Bioremediation | Chemical Reduction | No | Total chromium (Cr) is the primary COC in the area. Other COCs reported at concentrations exceeding the NJDEP GWQS include CCPW metals, other TAL metals, VOCs and SVOCs. Concentrations of Cr and CCPW metals greater than the GWQS extend off of Site 114 across Garfield Avenue, Carteret Avenue, Halladay Street, Pacific Avenue, and Forrest Street. This AOC includes both on-site and off-site impacts.<br><br>Remedial Investigation of groundwater is documented in the 2021 Draft Groundwater Remedial Investigation Report (GW-077). Delineation of CCPW metals, which includes Cr, and other constituents identified to be on or emanating from Site 114 is complete in the shallow, intermediate, and deep water-bearing zones. Additional delineation of Cr in the bedrock water bearing zone is necessary in the southwest quadrant of Site 114.<br><br>Between 2010 and 2020, chromium-impacted soil was excavated from HCC Sites 114, 132, 133 East, 135, 137 North, 143, and 186, from adjacent properties (Al Smith Moving & Furniture Company, Forrest Street Properties, and the former Halsted Corporation property), and adjacent roadways (Carteret Avenue, Halladay Street, Pacific Avenue, Garfield Avenue, and Forrest Street). Excavated material was disposed of at licensed, off-site locations in accordance with applicable regulations. During restoration activities, groundwater engineering controls were installed and/or maintained, including a capillary break, amended backfill, competent meadow mat, and sheet pile.<br><br>Two in-situ treatment technologies, including a bioprecipitation approach and an abiotic chemical reduction process, were pilot tested at Site 114. Performance monitoring of these pilot tests have been completed, and both technologies were effective in reducing the concentration of Cr and $Cr^{+6}$ in groundwater in the study areas.<br><br>To expedite the treatment of groundwater associated with the portion of the GA Group Sites that is impacted with Cr and $Cr^{+6}$, a phased groundwater Interim Remedial Measure (IRM) approach was developed. Phase I has been implemented per the 2017 Discharge to Groundwater Permit-By-Rule Authorization Request. The Phase I IRM focused primarily on the intermediate and upper portion of the deep water-bearing zones in the southwest quadrant of Site 114 in areas where source removal in the shallow and intermediate zones has been completed and where elevated $Cr^{+6}$ is present in the groundwater. The Phase I IRM also included a small Cr-impacted area in the shallow water-bearing zone. Phase II was initiated in October 2020 in accordance with the 2019 Discharge to Groundwater Permit-By-Rule Request. The Phase II focuses on the intermediate and deep water bearing zones in the northwest and southeast quadrant of Site 114. The third phase of the groundwater IRMs (Phase III) is being planned to treat Cr-contaminated groundwater in the shallow, intermediate, and deep water-bearing zones in areas that are not targeted by the Phase I and II IRMs. Phase III IRM operations are expected to begin in September 2021. The three IRMs use a combination of demonstrated active remediation technologies including in situ anaerobic bioprecipitation (ISAB) and in situ chemical reduction (ISCR) to achieve the remediation objectives.<br><br>A CEA was established by PPG on June 11, 2018 for groundwater contamination related to historical operations at Site 114. A separate CEA was implemented by PSEG for this area that covers the former MGP located on the northeastern portion of Site 114. A revised CEA and a request for a Historic Fill virtual CEA was submitted with the groundwater RIR in March 2021. |

**New Jersey Department of Environmental Protection**
Site Remediation and Waste Management Program

# COVER/CERTIFICATION FORM

**(Submit with Remedial Phase Report, Receptor Evaluation, and CEA Forms)**

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE INFORMATION

Site Name: Hudson County Chromate Sites, Sites 114, 132, 133, 135, 137, 143, 186, 199, Ten West Apparel, Halstead E

AKAs: PPG Garfield Avenue Group Sites Forrest Street and Forrest Street Properties, Al Smith Moving and Storage, Fishbein, Roadways

Street Address: 800, 816, 824, 880-900, 846, 947 Garfield Ave; 15, 22, 25, 45, 78, 97, 98, 100, 102, 104 Halladay St. 2 Dakota St.; 70 Carteret Ave; 33, 51-99 Pacific Ave; 84, 86, 90, 98, 100 Forrest St

Municipality: Jersey City (*Township, Borough or City*)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): G000005480, G000008749, 629345, 025695, 246332, G000008753, G000008759

Case Tracking Number(s) for this submission: RPC000051, RPC00001, PFR0000001 777089, 722429, 775706, 775998, 629388, G000044581, G000011477

Date Remediation Initiated Pursuant to N.J.A.C. 7:26C-2: 07/19/1990

State Plane Coordinates for a central location at the site: Easting: 611210 Northing: 683537

List current Municipal Block and Lot Numbers of the Site:

| | | | |
|---|---|---|---|
| Block # 21501 | Lot #(s) 1, 10-12, 14-20 | Block # | Lot #(s) |
| Block # 21510 | Lot #(s) 1-5, 11, 39 | Block # | Lot #(s) |
| Block # 21509 | Lot #(s) 1-3 | Block # | Lot #(s) |
| Block # 21502 | Lot #(s) 12-17 | Block # | Lot #(s) |

## SECTION B. SUBMISSION STATUS

1. Indicate how the Electronic Data Deliverable (EDD) for this submission is being provided to the NJDEP:
   - ☒ Via Email at srpedd@dep.nj.gov (attach NJDEP confirmation email); or
   - ☐ CD (attach to this submission)
   - ☐ Not Applicable – No EDD
2. Complete the following Submission and Permit Status Table:

| **Remedial Phase Documents** | N/A | Included in this Submission | Previously Submitted | Date of Submission | Date of Revised Submission | Date of Previous NJDEP Approval | Date of Document Withdrawal |
|---|---|---|---|---|---|---|---|
| Preliminary Assessment Report | ☒ | ☐ | ☐ | | | | |
| Site Investigation Report | ☒ | ☐ | ☐ | | | | |
| Remedial Investigation Report | ☐ | ☒ | ☐ | 10/01/2018 | 08/31/2021 | | |
| Remedial Action Work Plan | ☐ | ☐ | ☒ | 03/31/2021 | | | |
| Remedial Action Report | ☒ | ☐ | ☐ | | | | |
| Response Action Outcome | ☒ | ☐ | ☐ | | | | |
| | | | | | | | |
| **Other Submissions** | | | | | | | |
| Alternative Soil Remediation Standard and/or Screening level Application Form | ☒ | ☐ | ☐ | | | | |
| Case Inventory Document | | ☒ | | | | | |
| Classification Exception Area / Well Restriction Area (CEA/WRA) | ☐ | ☒ | ☐ | 04/18/2018 | 03/24/2021 | 06/07/2018 | |
| Discharge to Ground Water Permit by Rule Authorization Request | ☒ | ☐ | ☐ | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| IEC Engineered System Response Action Report | ☒ | ☐ | ☐ | | | | |
| Immediate Environmental Concern Report | ☒ | ☐ | ☐ | | | | |
| LNAPL Interim Remedial Measure Report | ☒ | ☐ | ☐ | | | | |
| Public Notification | ☐ | ☒ | ☐ | | | | |
| Receptor Evaluation | ☐ | ☒ | ☐ | | | | |
| Technical Impracticability Determination | ☒ | ☐ | ☐ | | | | |
| Vapor Concern Mitigation Report | ☒ | ☐ | ☐ | | | | |
| Permit Application – list: | ☐ | | | | | | |
| | | ☐ | ☐ | | | | |
| | | ☐ | ☐ | | | | |
| | | ☐ | ☐ | | | | |
| | | ☐ | ☐ | | | | |
| Radionuclide Remedial Action Report | ☒ | ☐ | ☐ | | | | |
| Radionuclide Remedial Action Workplan | ☒ | ☐ | ☐ | | | | |
| Radionuclide Remedial Investigation Report | ☒ | ☐ | ☐ | | | | |
| Radionuclide Remedial Investigation Workplan | ☒ | ☐ | ☐ | | | | |

## SECTION C. SITE USE

**Current Site Use:** (*check all that apply*)

- ☐ Industrial
- ☐ Residential
- ☒ Commercial
- ☐ School or child care
- ☐ Agricultural
- ☐ Park or recreational use
- ☒ Vacant
- ☐ Government
- ☐ Other: Roadways

**Intended Future Site Use, if known:** (*check all that apply*)

- ☐ Industrial
- ☒ Residential
- ☒ Commercial
- ☐ School or child care
- ☒ Park or recreational use
- ☐ Vacant
- ☐ Government
- ☐ Future site use unknown
- ☒ Other: Canal Crossing Redevelopment **

## SECTION D. CASE TYPE: (*check all that apply*)

- ☒ Administrative Consent Order (ACO)
- ☐ Brownfield Development Area (BDA)
- ☐ Child Care Facility
- ☒ Chrome Site (Chromate chemical production waste)
- ☐ Coal Gas
- ☐ Due Diligence with RAO
- ☐ Hazardous Discharge Remediation Fund (HDSRF) Grant/Loan
- ☐ ISRA
- ☐ Landfill (SRP subject only)
- ☐ Regulated Underground Storage Tank (UST)
- ☐ Remediation Agreement (RA)/Remediation Certification
- ☐ School Development Authority (SDA)
- ☐ School facility
- ☐ Spill Act Defense – Government Entity
- ☐ Spill Act Discharge
- ☐ UST Grant/Loan
- ☐ Other: _____

**Federal Case** (*check all that apply*)

☐ RCRA GPRA 2020 ☐ CERCLA/NPL ☐ USDOD ☐ USDOE

1. Is the party conducting remediation a government entity? ..... ☐ Yes ☒ No

   If "Yes," check one: ☐ Federal ☐ State ☐ Municipal ☐ County

## SECTION E. PUBLIC FUNDS

Did the remediation utilize public funds? ..... ☐ Yes ☒ No

If "Yes," check applicable:

- ☐ UST Grant
- ☐ HDSRF Grant
- ☐ Spill Fund
- ☐ UST Loan
- ☐ HDSRF Loan
- ☐ Schools Development Authority
- ☐ Brownfield Reimbursement Program
- ☐ Landfill Reimbursement Program
- ☐ Environmental Infrastructure Trust



** Refer to http://www.tandmassociates.com/projects/planning-design-environmental-services-canal-crossing-redevelopment-area/

**SECTION F. LICENSED SITE REMEDIATION PROFESSIONAL INFORMATION AND STATEMENT**

LSRP ID Number: 573898

First Name: Mark Last Name: Pietrucha

Phone Numbers: (609) 436-5339 Ext.: _____ Fax: _____

Mailing Address: 2 Executive Campus Suite 125

Municipality: Cherry Hill State: New Jersey Zip Code: 08002

Email Address: mpietrucha@woodardcurran.com

This statement shall be signed by the LSRP who is submitting this notification in accordance with N.J.S.A. 58:10C-14, and N.J.S.A. 58:10B-1.3b(1) and (2).

*(1) I certify, as a Licensed Site Remediation Professional authorized pursuant to N.J.S.A. 58:10C-1 et seq. to conduct business in New Jersey, that for the remediation described in this submission, and all attachments included in this submission, I personally: Managed, supervised, or performed the remediation conducted at this site that is described in this submission, and all attachments included in this submission; and/or periodically reviewed and evaluated the work performed by other persons that forms the basis for the information in this submission; and/or completed the work of another site remediation professional, licensed or not, after having: (1) reviewed all available documentation on which I relied; (2) conducted a site visit and observed the then-current conditions and verified the status of as much of the work as was reasonably observable; and (3)concluded, in the exercise of my independent professional judgment, that there was sufficient information upon which to complete any additional phase of remediation and prepare workplans and reports related thereto.*

*(2) I certify:*

- *That I have read this submission and all attachments to this submission;*
- *That in performing the professional services as the licensed site remediation professional for the entire site or each area of concern, I adhered to the professional conduct standards and requirements governing licensed site remediation professionals provided in N.J.S.A. 58:10C-16;*
- *That the remediation conducted at the entire site or each area of concern, that is described in this submission and all attachments to this submission, was conducted pursuant to and in compliance with the remediation requirements in N.J.S.A. 58:10C-14.c;*
- *That the remediation described in this submission, and all attachments to this submission, was conducted pursuant to and in compliance with the regulations of the Site Remediation Professional Licensing Board at N.J.A.C. 7:26I; and*
- *That the information contained in this submission and all attachments to this submission is true, accurate, and complete.*

*(3) I certify, when this submission includes a response action outcome, that the entire site or each area of concern has been remediated in compliance with all applicable statutes, rules, and regulations and is protective of public health and safety and the environment.*

*(4) I certify that no other person is authorized or able to use any password, encryption method, or electronic signature that the Board or the Department have provided to me.*

*(5) I certify that I understand and acknowledge that:*

- *If I knowingly make a false statement, representation, or certification in any document or information I submit to the Department I may be subject to civil and administrative enforcement pursuant to N.J.S.A. 58:10C-17.a.1(a)through (f) by the Board, including but not limited to license suspension, revocation, or denial of renewal; and*
- *If I purposely, knowingly, or recklessly make a false statement, representation, or certification in any application, form, record, document or other information submitted to the Department or required to be maintained pursuant to the Site Remediation Reform Act, I shall be guilty, upon conviction, of a crime of the third degree and shall, notwithstanding the provisions of subsection b. of N.J.S.2C:43-3, be subject to a fine of not less than $5,000 nor more than $75,000 per day of violation, or by imprisonment, or both.*

*(6) I certify that I have read this certification prior to signing, certifying, and making this submission.*

LSRP Signature: 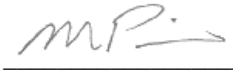 Date: 8/31/2021

LSRP Name: Mark Pietrucha, PE, LSRP

Company Name: Woodard & Curran

**SECTION G. PERSON RESPONSIBLE FOR CONDUCTING THE REMEDIATION INFORMATION AND CERTIFICATION**

Full Legal Name of the Person Responsible for Conducting the Remediation: PPG

Representative First Name: Jody Representative Last Name: Overmyer

Title: Senior Remediation Project Manager

Phone Number: (412) 235-8881 Ext.: FAX:

Mailing Address: 440 College Park Drive

Municipality: Monroeville State: PA Zip code: 15146

Email Address: overmyer@ppg.com

This certification shall be signed by the person responsible for conducting the remediation who is submitting this notification in accordance with Administrative Requirements for the Remediation of Contaminated Sites rule at N.J.A.C. 7:26C-1.5(a).

*I certify under penalty of law that I have personally examined and am familiar with the information submitted herein, including all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, to the best of my knowledge, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties.*

Signature: Date: 8/30/2021

Name/Title: Jody Overmyer, Senior Remediation Project Manager

**For CEA Submissions:**

☒ Check this box if the person above is also the property owner of the site or their representative. If this person is not the site property owner, please ensure the site property owner's name and address is in the first line of the table in Section E.2 of the Classification Exception Area / Well Restriction Area (CEA/WRA) Fact Sheet Form.

Completed forms should be sent to:

Bureau of Case Assignment & Initial Notice
Site Remediation Program
NJ Department of Environmental Protection
401-05H
PO Box 420
Trenton, NJ 08625-0420

# Public Notice

## Public Notification Form

## Notification Cover Letter

## Fact Sheet

## Site Description

## Display Advertisement

The attached public notice presented in this section was sent out on September 1, 2019 to satisfy biennial public notice requirements. A newspaper display advertisement was printed on September 18, 2019 in The Jersey Journal.

# Public Notification Form

**New Jersey Department of Environmental Protection**
Site Remediation and Waste Management Program

# PUBLIC NOTIFICATION AND OUTREACH

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE LOCATION

Forrest Street and Forrest Street Properties, Al Smith Moving and Storage, Fishbein, Roadways

Site Name: Hudson County Chromate Sites, Sites 114, 132, 133, 135, 137, 143, 186, 199, Ten West Apparel, Halstead Bldg

Program Interest (PI) Number(s): G000005480,G000008749, 629345, 025695, 246332, G000008753, G000008759

Case Tracking Number(s) for this submission: RPC000051, RPC00001, PFR0000001 777089, 722429, 775706, 775998, 629388, G000044581, G000011477

**This form must be submitted with the Authorization to Submit a Report/Form Through NJDEP Online Form**
**Completed form should be uploaded to NJDEP Online.**
**There are required fields on this form, see instructions for details.**

## SECTION B. NOTIFICATION INFORMATION

1. Indicate the type of Public Notification:

☐ Initial ☒ Update

2. Provide the date initial field activities associated with the remedial investigation will or have commenced pursuant to 7:26C-1.7 (h). Date: 07/19/1990

3. Has it been determined that contamination migrated off site? ☒ Yes ☐ No

If "Yes", provide the date off site migration was determined pursuant to 7:26C-1.7 (l): 10/01/2018

4. Public notification was provided via*: (Check all that apply)*

Sign ☐ Yes ☒ No

If "Yes", date posted: _____

Letter ☒ Yes ☐ No

If "Yes", date provided: 09/03/2019

Fact sheet ☒ Yes ☐ No

If "Yes", date provided: 09/03/2019

Newspaper Display Advertisement ☒ Yes ☐ No

If "Yes", date published: 09/18/2019

5. Were materials produced in a language other than English? ☒ Yes ☐ No

If "Yes", in what other language was notification prepared? Spanish

6. Were copies provided to municipal clerk, local/county health dept., and local health agency? ☒ Yes ☐ No

7. Was public notification conducted using an alternate plan and is the rationale for this plan included? ☐ Yes ☒ No

8. Was additional public outreach conducted due to the NJDEP's determination of substantial public interest? ☐ Yes ☒ No

9. Add any comments:

**NOTE: Do not scan this form or alter it in any way, and do not incorporate it into any other document prior to upload. Complete the form on your computer and save it with a unique file name prior to upload.**

**Completed form should be uploaded to NJDEP Online**

# Notification Cover Letter

PPG
440 College Park Drive
Monroeville, PA 15146

August 29, 2019

**Re: Chromium Cleanup Sites on Garfield Avenue**

Dear Sir or Madam,

This letter is to inform you that PPG is the party responsible for the investigation and/or remediation of chromium at the addresses referenced in the attached and to advise you of the status of the work at each site.

This notification is being sent to you in compliance with New Jersey's requirements for public notification in connection with contaminated site cleanups. These rules require that property owners and tenants within 200 feet of the site boundary of a contaminated site be notified before investigation or remediation work begins and every two years until the cleanup is complete. In addition, the law requires responsible parties to notify property owners and tenants within 200 feet of an impacted site when there is evidence of off-property contaminant migration from that site.

You are being notified by PPG because you are a property owner or tenant located within 200 feet of the boundary of one or more sites referenced in the atttached. In addition, you are being notified because contamination has migrated from one of these sites.

No action is required on your part. For your reference, however, we are enclosing a brief description of each site, summarizing conditions and activities to be taken. In addition, please find a fact sheet about groundwater contamination migration from Site No. 114.

Environmental reports about these sites submitted to the New Jersey Department of Environmental Protection are also being sent to the municipality for its review and comment. To learn more about New Jersey's public outreach requirements, visit: www.nj.gov/dep/srp/guidance/public_notification/.

If you have any questions concerning the sites referenced above, you can visit www.chromecleanup.com or contact the independent, court-appointed site administrator overseeing the investigation and cleanup of these sites. The administrator can be reached by:

- Calling 201-777-2099;
- Sending an email to info@chromecleanup.com; or
- Writing to Chromium Cleanup Partnership, One Hovchild Plaza, 4000 Route 66, 4th Floor (MCDC), Tinton, Falls, N.J. 07753.

You can also direct your questions and comments to Jeff Worden, a PPG community relations consultant. His telephone number is: 412.253.0816. His email address is: jeff@worden-pr.com.

Sincerely,
PPG

(Over for Spanish)
(Página de la vuelta para español)

PPG
440 College Park Drive
Monroeville, PA 15146

jueves, 29 de agosto de 2019

**Asunto: Sitios de limpieza de cromo en Garfield Avenue**

Estimado(a) Sr(a).:

Sirva esta carta para hacerle saber que PPG es la parte responsable de la investigación y/o del saneamiento de cromo en los domicilios señalados en el documento adjunto y para avisarle de la situación del trabajo en cada sitio.

Se le envía esta notificación en cumplimiento con los requisitos de Nueva Jersey de notificación pública en relación con las tareas de limpieza de lugares contaminados. Estas normas exigen que los propietarios e inquilinos dentro de un radio de 200 pies (61 m) del perímetro del sitio contaminado sean notificados antes de iniciar la investigación o las tareas de saneamiento, y cada dos años hasta que la limpieza haya concluido. Asimismo, la ley requiere que las partes responsables notifiquen a los propietarios e inquilinos dentro de un perímetro de 200 pies con respecto a un lugar afectado cuando exista evidencia de una migración contaminante fuera de la propiedad en dicho sitio.

Usted está siendo notificado por PPG debido a su condición de propietario o inquilino que se encuentra dentro de un perímetro de 200 pies respecto de los límites de uno o más lugares mencionados en el anexo. Además, se le está notificando debido que la contaminación migró de uno de estos sitios. No es necesario que tome ninguna medida. Sin embargo, para su referencia, adjuntamos una breve descripción de cada lugar y un resumen de las condiciones y actividades que se realizarán. Adicionalmente, sírvase encontrar una hoja informativa acerca de la migración de la contaminación en aguas subterráneas desde el sitio No. 114.

Los informes ambientales sobre este lugar presentados al Departamento de Protección de Medio Ambiente del Nueva Jersey también están siendo enviados a la municipalidad para su revisión y comentarios. Para obtener más información acerca de los requisitos de difusión al público de Nueva Jersey, visite: www.nj.gov/dep/srp/guidance/public_notification/.

Si tiene alguna pregunta acerca de los sitios mencionados anteriormente, puede visitar www.chromecleanup.com o comunicarse con el administrador del sitio designado por el tribunal para inspeccionar las tareas de investigación y limpieza de estos sitios. Puede comunicarse con el administrador de las siguientes formas:

- Llamar al 201-777-2099;
- Enviar un correo electrónico a info@chromecleanup.com; o
- Escribir a Chromium Cleanup Partnership, One Hovchild Plaza, 4000 Route 66, 4th Floor (MCDC), Tinton, Falls, N.J. 07753.

También puede enviar sus preguntas y comentarios a Jeff Worden, consultor de relaciones con la comunidad de PPG. Su número de teléfono es: 412.253.0816. Su dirección de correo electrónico es: jeff@worden-pr.com.

Atentamente,
PPG

(Over for English)
(Página de la vuelta para inglés)

# Fact Sheet

**Fact Sheet**

*In accordance with New Jersey Department of Environmental Protection (NJDEP) requirements for "Notification and Public Outreach," PPG is providing the following information relating to environmental conditions, remedial activities and off-site impacts in connection with the site described below.*

**Hudson County Chrome Site No. 114 – Garfield Avenue Site**
**880-900 Garfield Avenue, Jersey City, N.J. 07305**
**Block 21501, Lots 16, 17, 18, 19 and 20**
**NJDEP ID No. G000005480**

From 1905 to 1976, Hudson County was a center for chrome manufacturing, processing chromite ore imported into the United States. In the early 1900s, the Natural Products Refining Company opened a chrome plant at 880-900 Garfield Avenue. PPG purchased the plant in 1954 and ceased operations in 1963, selling the facility and property in 1964. The manufacturing process used at the facility produced a waste byproduct known as chromate chemical production waste, or CCPW. Over the years, the soil impacted with CCPW was used as fill material at residential, commercial and industrial construction sites.

PPG first detected hexavalent chromium at the Garfield Avenue Site (the Site) in the early 1980s. Concentrations of hexavalent chromium – a component of CCPW – were found to exceed soil cleanup criteria and total chromium concentrations in groundwater exceeded NJDEP groundwater quality standards (GWQS). As a result, PPG assumed responsibility for the remediation of 67 sites in Hudson County. In addition, PPG jointly accepted responsibility with Honeywell for 10 other sites. PPG is also responsible for addressing non-chromium contamination at Site 114, including volatile organics, semivolatile organics, non-CCPW metals, polychlorinated biphenyls and pesticides.

Before remediation was conducted, investigation activities identified that hexavalent chromium in soil was present throughout the Site with the majority above the meadow mat layer (approximately 15 feet below surface). Deeper soil impacts were found in the area of the former Morris Canal, which ran through the Site in a north-south direction.

CCPW in the soil was the source of hexavalent chromium in the groundwater at the Site. The highest concentrations of hexavalent chromium were found in the western portion of the Site, in the shallow (approximately 15 to 20 feet below ground surface) and intermediate (approximately 30 to 40 feet below ground surface) groundwater zones. Limited impacts have been observed at deeper depths. In 2005, PPG determined that chromium-impacted groundwater was migrating to the south and east of the Site and reported this information to the NJDEP in 2006. Investigations have since concluded that the southern boundary of the groundwater plume is at Caven Point Avenue, which is about 800 feet from the Garfield Avenue Site. The eastern boundary is along Pacific Avenue, which is approximately 200 feet away. The northern boundary is located at a commercial property located at 90 and 98 Forrest Street.

Interim remedial measures for soil were installed at the Garfield Avenue Site between 1990 and 1992. These measures, consisting of plastic covering, crushed gravel, and a perimeter fence, prevented direct contact with,

(Over)

or airborne exposure to, chrome residue at the Site until the cleanup began. Inspections of these measures were conducted quarterly and repairs were made as necessary.

Groundwater recovery sumps were installed at the Site between 2004 and 2005 to prevent water from migrating onto Garfield Avenue. Water generated by this system was collected on-site and transported to an offsite, permitted treatment facility until this procedure was replaced by the use of an onsite treatment facility to support excavation activities in 2011.

The excavation of chromium-impacted soil and debris at the Site was completed in November 2014. More than 530,000 tons of chromium-impacted soil were excavated, hauled off site, treated and disposed of at permitted disposal facilities.

The placement of clean backfill to near-final grade was completed in January 2015. Clean fill for a majority of the Site was amended with FerroBlack®-H. This water-based suspension of ferrous iron and sulfide is designed to prevent the backfill from being contaminated by chromium-impacted groundwater and to support groundwater remediation. Ongoing groundwater testing indicates that shallow groundwater (less than 20 feet deep) throughout most of the Site is already in compliance with the federal and New Jersey drinking water standard for total chromium.

The on-site groundwater treatment facility had treated approximately 100 million gallons of chromium-impacted groundwater. The on-site groundwater treatment facility continues operation to facilitate the cleanup of sites near Garfield Avenue and to assist with groundwater remediation pilot studies.

Since December 2017, PPG has been conducting a focused pumping-and-treating process designed to clean up groundwater immediately adjacent to the former chromate processing plant. PPG has extracted more than 10 million gallons of groundwater from depths ranging from 20 to 65 feet below ground surface. The water is then conveyed to a treatment plant south of Carteret Avenue. Once chromium and other contaminants are removed at the plant, the water, with the addition of molasses, is then injected below grade via a set of up to 68 wells.

The molasses continues the treatment of impacted groundwater through the stimulation of biological activity that converts hexavalent chromium to its much less toxic trivalent form. PPG is in the process of installing the infrastructure for a second phase of groundwater program, which calls for approximately 190 injection, extraction and monitoring wells, in addition to below ground and above ground conveyance piping. Based on the results of the interim remediation and other studies, PPG is scheduled to submit a remedial action work plan for groundwater in mid-2021.

It is important to note that groundwater is not used for drinking water purposes in Jersey City. Reservoirs in Boonton, N.J., supply Jersey City with its drinking water.

To learn more about hexavalent chromium, visit:

- New Jersey Department of Environmental Protection: http://www.state.nj.us/dep/dsr/chromium/
- Agency for Toxic Substances and Disease Registry: http://www.atsdr.cdc.gov/toxfaqs/tf.asp?id=61&tid=17

If you have questions about the Garfield Avenue Site and related off-site impacts, you can contact the independent, court-appointed site administrator overseeing the investigation and cleanup of the Site. The administrator can be reached by:

- Calling: 201-777-2099;
- Sending an email to: info@chromecleanup.com;
- Writing to: Chromium Cleanup Partnership, One Hovchild Plaza, 4000 Route 66, 4th Floor (MCDC), Tinton, Falls, N.J. 07753; or
- Visiting: www.chromecleanup.com.

You can also direct your questions and comments to:

- PPG's community relations consultant, Jeff Worden: 412.253.0816; or
- New Jersey Department of Environmental Protection, Office of Community Relations: 1-800-253-5647.

**Hoja de información básica**

*De conformidad con los requisitos del Departamento de Protección Ambiental de Nueva Jersey (NJDEP) en cuanto a "Notificación y divulgación al público", PPG suministra la siguiente información relacionada con las condiciones ambientales, actividades de saneamiento e impactos externos relacionados con el sitio que se describe a continuación.*

**Condado de Hudson, lugar contaminado con cromo N.º 114: sitio en Garfield Avenue**
**880-900 Garfield Avenue, Jersey City, N.J. 07305**
**Manzana 21501, Lotes 16, 17, 18, 19 y 20**
**No. de ID de NJDEP G000005480**

Entre 1905 y 1976, el condado de Hudson fue el centro de la fabricación de cromo, procesando cromita importada a los Estados Unidos. Natural Products Refining Company abrió una planta de cromo en 880-900 Garfield Avenue en la década de 1900. PPG adquirió la planta en 1954 y cesó sus operaciones en 1963, vendiendo la instalación y propiedad en 1964. El proceso de fabricación utilizado en la instalación produjo grandes cantidades de un subproducto de residuo conocido como residuos químicos de cromato, o CCPW. Con el transcurso de los años, el suelo afectado por CCPW se usó como material de relleno en sitios de construcción residenciales, comerciales e industriales.

PPG detectó cromo hexavalente por primera vez en el sitio de Garfield Avenue (el sitio) a principios de la década de 1980. Se detectó que las concentraciones de cromo hexavalente, un componente de los CCPW, exceden los criterios para limpieza del suelo y las concentraciones de cromo totales en las aguas subterráneas excedieron las normas de calidad para aguas subterráneas (GWQS) del NJDEP. Como resultado, PPG asumió la responsabilidad del saneamiento de 67 sitios en el Condado de Hudson. Además, PPG aceptó la responsabilidad conjunta con Honeywell para otros 10 sitios. PPG también es responsable de abordar la contaminación sin cromo en el sitio 114, incluidos compuestos orgánicos volátiles, compuestos orgánicos semivolátiles, metales sin CCPW, bifenilos policlorados y pesticidas.

Antes de la realización del saneamiento, las actividades de investigación identificaron que el cromo en el suelo estaba presente en el sitio, en su mayoría sobre la capa de turba (aproximadamente 15 pies bajo la superficie). Se encontraron impactos más profundos en el suelo en la zona del antiguo Morris Canal, que fluía por el sitio de norte a sur.

Los CCPW en el suelo eran la fuente de cromo hexavalente en las aguas subterráneas en el sitio. Las mayores concentraciones de cromo hexavalente se encontraron en la parte oeste del sitio, en las zonas de aguas subterráneas poco profundas (aproximadamente de 15 a 20 pies bajo la superficie del suelo) e intermedias (aproximadamente de 30 a 40 pies bajo la superficie del suelo). Se han observado impactos limitados a mayores profundidades. En 2005, PPG determinó que las aguas subterráneas afectadas por cromo estaban migrando hacia el sur y el este del sitio, e informó dicha situación al NJDEP en 2006. Desde entonces, las investigaciones han concluido que el límite sur de la pluma de aguas subterráneas es Caven Point Avenue, que se encuentra a aproximadamente 800 pies del sitio de Garfield Avenue. El límite oriental se encuentra a lo largo de Pacific Avenue, que está aproximadamente a 200 pies. El límite norte se encuentra en una propiedad comercial ubicada en 90 y 98 Forrest Street.

(Reverso)

Entre los años 1990 y 1992 se instauraron medidas de saneamiento provisionales en el sitio ubicado de Garfield Avenue. Estas medidas, que implicaban recubrimiento con plástico, grava triturada y una cerca perimetral, evitaban el contacto directo con residuos de cromo o la exposición en el aire a ellos en el sitio hasta el inicio de la limpieza. Se realizaron inspecciones trimestrales de estas medidas y se realizaron las reparaciones necesarias.

Entre los años 2004 y 2005 se instalaron sumideros para la recuperación de aguas subterráneas en el sitio a fin de evitar la migración del agua hacia Garfield Avenue. El agua generada por este sistema se recolectaba en el sitio y transportaba a una planta de tratamiento autorizada fuera del sitio hasta que este procedimiento fue reemplazado por el uso de una planta de tratamiento en el sitio para apoyar las actividades de excavación en 2011.

La excavación de suelo y desechos afectados por cromo en el sitio se concluyó en noviembre de 2014. Más de 530,000 toneladas de suelo afectado por cromo se excavaron, retiraron del sitio, se trataron y eliminaron en instalaciones de eliminación autorizadas.

La colocación del relleno limpio hasta la calificación casi final se completó en enero de 2015. El relleno limpio para la mayoría del sitio se modificó con FerroBlack®-H. Esta suspensión a base de agua de hierro ferroso y sulfuro está diseñada para evitar que el relleno se contamine con aguas subterráneas afectadas por cromo y para apoyar el saneamiento de las aguas subterráneas. Las pruebas continuas de aguas subterráneas indican que las aguas subterráneas poco profundas (de menos de 20 pies de profundidad) en la mayor parte del sitio ya cumplen con las normas federales y de Nueva Jersey de agua potable para cromo total.

La planta de tratamiento de aguas subterráneas en el sitio había tratado aproximadamente 100 millones de galones de aguas subterráneas afectadas. Esta planta sigue operando para facilitar la limpieza de los sitios cercanos a Garfield Avenue y para ayudar con los estudios piloto de saneamiento de aguas subterráneas.

Desde diciembre de 2017, PPG ha llevado a cabo un proceso enfocado de bombeo y tratamiento diseñado para limpiar las aguas subterráneas inmediatamente adyacentes a la antigua planta de procesamiento de cromato. PPG ha extraído más de 10 millones de galones de aguas subterráneas de profundidades que van desde 20 a 65 pies bajo la superficie de la tierra. Luego, el agua se transporta a una planta de tratamiento al sur de Carteret Avenue. Una vez que se retire el cromo y otros contaminantes de la planta, el agua, con la adición de melaza, luego se inyectará al subsuelo mediante 68 pozos.

Las aguas subterráneas contaminadas se siguen tratando con melaza mediante la estimulación de la actividad biológica que convierte el cromo hexavalente en su forma trivalente, que es mucho menos tóxica. PPG está en proceso de instalar la infraestructura para una segunda fase del programa de aguas subterráneas, que requiere aproximadamente 190 pozos de inyección, extracción y monitoreo, además de tuberías de transporte subterráneas y por encima del suelo. Según los resultados de los estudios de saneamiento provisionales y otros estudios, PPG debe presentar un plan de trabajo de medidas de saneamiento a mediados de 2021.

Es importante tener en cuenta que las aguas subterráneas no se utilizan con fines de agua potable en Jersey City. Las reservas en Boonton, N.J., suministran el agua potable a Jersey City.

Para conocer más sobre el cromo hexavalente, visite:

- Departamento de Protección Ambiental de Nueva Jersey: http://www.state.nj.us/dep/dsr/chromium/
- Agencia para Sustancias Tóxicas y el Registros de Enfermedades:

http://www.atsdr.cdc.gov/toxfaqs/tf.asp?id=61&tid=17

Si tiene alguna pregunta acerca del sitio de Garfield Avenue y los impactos fuera del sitio relacionados, puede comunicarse con el administrador del sitio designado por el tribunal para inspeccionar las tareas de investigación y limpieza del sitio. Puede comunicarse con el administrador de las siguientes formas:

- Por teléfono: 201-777-2099;
- Por correo electrónico: info@chromecleanup.com;
- Por carta: Chromium Cleanup Partnership, One Hovchild Plaza, 4000 Route 66, 4th Floor (MCDC), Tinton, Falls, N.J. 07753; o
- Sitio web: www.chromecleanup.com.

También puede dirigir sus preguntas y comentarios a:

- Jeff Worden, consultor de relaciones con la comunidad de PPG: 412.253.0816; o
- Departamento de Protección Ambiental de Nueva Jersey, Oficina de Relaciones con la Comunidad: 1-800-253-5647.

# Site Description

**Site Descriptions**

*PPG is responsible for the investigation of hexavalent chromium that exceeds New Jersey Department of Environmental Protection (NJDEP) requirements at the following sites. In addition, if the source of hexavalent chromium is chromate chemical production waste, otherwise known as CCPW, then PPG is responsible for its cleanup. Also, PPG is responsible for the investigation and cleanup of all contaminants of concern that exceed NJDEP requirements at Site No. 114 and at properties that the company owns. This document includes a series of site descriptions that indicate the contaminants of concern, work completed and additional work to be conducted at each of the sites.*

**Hudson County Chrome Site No. 114 – Garfield Avenue Site**
**880-900 Garfield Ave., Jersey City, N.J. 07305**
**Block 21501, Lots 16, 17, 18, 19 and 20**
**NJDEP ID No. G000005480**

Chromate chemical production waste, or CCPW, was the source of hexavalent chromium concentrations that exceeded soil cleanup criteria and total chromium concentrations that exceed groundwater quality standards. PPG is also responsible for addressing non-chromium contamination at Site 114, including volatile organics, semivolatile organics, non-CCPW metals, polychlorinated biphenyls and pesticides. Public Service Electric and Gas (PSEG) is taking the lead on addressing soil and groundwater impacts related to the former manufactured gas plant, including those emanating onto other sites.

The excavation of chromium-impacted soil was conducted between July 2010 and November 2014 with approximately 530,000 tons of material removed from the site. Excavated material was treated and disposed of at licensed, offsite locations in accordance with applicable regulations. The remedial action report for soil was submitted this month.

Most of the non-chromium contamination was removed during the chromium excavation. A soil cap has been installed to prevent direct contact or airborne exposure to the remaining impacted material.

The placement of clean backfill to near-final grade was completed in January 2015. Clean fill for a majority of the site was amended with FerroBlack®-H. This water-based suspension of ferrous iron and sulfide is designed to prevent the backfill from being contaminated by chromium-impacted groundwater and to support groundwater remediation. Ongoing testing indicates shallow groundwater (less than 20 feet deep) throughout most of the site is already in compliance with the NJDEP groundwater quality standard (GWQS) for total chromium.

The chromium-impacted soil at the site was the source of the chromium impacts in groundwater. To address these impacts, an interim groundwater remediation is under way. Since December 2017, PPG has been conducting a focused pumping-and-treating process designed to clean up groundwater immediately adjacent to the former chromate processing plant. PPG has extracted more than 10 million gallons of groundwater from depths ranging from 20 to 65 feet below ground surface. The water is then conveyed to a treatment plant south of Carteret Avenue. Once chromium and other contaminants are removed at the plant, the water, with the addition of molasses, is then injected below grade via a set of up to 68 wells.

The molasses continues the treatment of impacted groundwater through the stimulation of biological activity that converts hexavalent chromium to its much less toxic trivalent form.

PPG is installing the infrastructure for a second phase of the interim remediation, which calls for approximately 190 injection, extraction and monitoring wells, in addition to below-ground and above-ground conveyance piping. Based on the results of the interim remediation and possible other studies, PPG is scheduled to submit a remedial action work plan for groundwater in mid-2021.

For more details about groundwater impacts, please see the fact sheet included in this mailing. No groundwater in Jersey City is used for drinking purposes. Reservoirs in Boonton, N.J., supply Jersey City with its drinking water.

**Hudson County Chrome Site No. 121 – Garfield Auto Parts**
**NJDEP ID No. G000008738**
**and**
**Hudson County Chrome Site No. 207 – Garfield Avenue No. 2**
**NJDEP ID No. G000044579**
**1 Berry Road, Jersey City, N.J. 07304**
**Block 18901, Lot 1.01**

Chromate chemical production waste, or CCPW, was the source of hexavalent chromium concentrations that exceeded soil cleanup criteria and total chromium concentrations that exceeded the NJDEP groundwater quality standards.

PPG worked with the Jersey City Redevelopment Agency to complete the excavation of CCPW in the first quarter of 2013 at these two sites, which are part of Berry Lane Park. Excavated material was treated and disposed of at licensed, offsite locations in accordance with applicable regulations. A remedial action outcome letter was issued for soil in June 2016, indicating no further remedial action is required.

Wells were installed to monitor groundwater conditions in the shallow and intermediates zones following the completion of the excavation within the former Morris Canal and Site Nos. 121 and 207. No contaminants of concern related to CCPW were detected at concentrations exceeding the groundwater quality standards. As a result, a remedial action outcome letter was issued for groundwater in December 2018, indicating no further remedial action is required.

**Hudson County Chrome Site No. 132 – Town and Country Linen Warehouse**
**824 Garfield Ave., Jersey City, N.J. 07305**
**Block 21510, Lot 2**
**NJDEP ID No. G000008749**

Chromate chemical production waste, or CCPW, was the source of hexavalent chromium concentrations that exceeded soil cleanup criteria and total chromium concentrations that exceed the NJDEP GWQS in the intermediate zone.

In July 2013, the building on site was demolished and the building debris was properly disposed. Soil remediation was conducted between March 2014 and September 2014 with approximately 72,200 tons of chromium-contaminated waste being dug up and hauled away from this area. The excavated material

was treated and disposed of at licensed, offsite locations in accordance with applicable regulations. The remedial action report for soil was approved by NJDEP in June 2019

The placement of clean backfill to near-final grade was completed in May 2015. Clean fill for a portion of the site was amended with FerroBlack®-H. This water-based suspension of ferrous iron and sulfide is designed to prevent the backfill from being contaminated by chromium-impacted groundwater and to support groundwater remediation.

A groundwater investigation will determine whether further groundwater cleanup is required.

**Hudson County Chrome Site No. 133 – Ross Wax**
**15 and 22-68 Halladay St., Jersey City, N.J. 07304**
**Block 21510, Lot 5, and Block 21509, Lot 1**
**NJDEP ID No. 025695**

Chromate chemical production waste, or CCPW, is the source of hexavalent chromium concentrations that exceed soil cleanup criteria and total chromium concentrations that exceed the NJDEP GWQS in shallow groundwater beneath Halladay Street, which is adjacent to the site.

PPG purchased the western side of the site, 15 Halladay Street, in May 2013, and the eastern side of the site, 22-68 Halladay Street, in February 2014.

*15 Halladay St. (Site 133 West)*

A soil investigation was conducted and a report was submitted to NJDEP in 2012. Soil excavation began in August 2018 and will resume when the excavation commences at the Ten West Apparel property. Excavation and backfill are scheduled to be complete by June 2021.

*22-68 Halladay St. (Site 133 East)*

The building on this site was demolished in October 2014 and the debris was disposed of at a regulated facility. Soil remediation was conducted between April 2015 and October 2015 with approximately 88,500 tons of chromium-contaminated waste being dug up and hauled away from this area, including the adjacent eastern properties on Site 135, where remediation was conducted concurrently with this site. The excavated material was treated and disposed of at licensed, offsite locations in accordance with applicable regulations.

The placement of clean backfill to near-final grade was completed in July 2016. Clean fill for the northern portion of the site was amended with FerroBlack®-H. This water-based suspension of ferrous iron and sulfide is designed to prevent the backfill from being contaminated by chromium-impacted groundwater and to support groundwater remediation. Clean fill for the southern portion of the site was amended in the top two feet of the backfill.

PPG completed the excavation and backfill for the site except grids adjacent to the Ten West Apparel property. These grids will be excavated and backfilled concurrent with the remediation activities at the Ten West Apparel property.

A remedial action report for soil at Site 133 East and Site 135 was submitted to NJDEP in December 2018 and was resubmitted this month to address NJDEP comments.

At sites 133 West and East, PPG has retained a licensed site remediation professional (LSRP) to address non-chromium contamination from historic fill and prior site operations unrelated to PPG, including volatile organics, semivolatile organics, polychlorinated biphenyls or PCBs, non-CCPW metals and petroleum.

A remedial investigation report for the closure of an underground storage tank containing fuel oil was submitted to the NJDEP in August 2016. A remedial investigation to address non-chromium contamination is ongoing. These and other non-chromium contaminants that exceed soil remediation standards and groundwater screening levels will be addressed under the LSRP program. Al LoPilato of AECOM is the LSRP. His telephone number is: 845-425-4980. His email address is: alfred.lopilato@aecom.com.

A groundwater investigation will determine whether a groundwater cleanup is required at sites 133 West and 133 East.

**Hudson County Chrome Site No. 135 – Vitarroz**
**51-99 Pacific Ave., Jersey City, N.J. 07304**
**Block 21509, Lot 2**
**NJDEP ID No. 246332**

Chromate chemical production waste, or CCPW, is the source of hexavalent chromium concentrations that exceeded soil cleanup criteria and total chromium concentrations that exceed the NJDEP GWQS in the adjacent right-of-way.

Between January and November 2015, the buildings on site were demolished and the building debris was properly disposed. Soil remediation was conducted between February 2016 and August 2016 with approximately 88,500 tons of chromium-contaminated waste being dug up and hauled away from this area, including the adjacent western properties on Site 133 East, where remediation was conducted concurrently with this site. The excavated material was disposed of at licensed, offsite locations in accordance with applicable regulations. A remedial action report for sites 135 and 133 East was submitted to NJDEP in December 2018 and resubmitted this month to address NJDEP comments.

The placement of clean backfill to near-final grade was completed in December 2016. Clean fill for the northern portion of the site was amended with FerroBlack®-H. Clean fill for the southern portion of the site was amended in the top two feet of the backfill. This water-based suspension of ferrous iron and sulfide is designed to prevent the backfill from being contaminated by chromium-impacted groundwater and to support groundwater remediation.

PPG has retained an LSRP to address non-chromium contamination from historic fill and prior site operations unrelated to PPG, including volatile organics, semivolatile organics, non-CCPW metals, PCBs and petroleum.

A remedial action report for the closure of three separate underground storage tanks containing fuel oil was submitted to the NJDEP in July 2017. Mercury-impacted soil associated with Incident No. 16-04-13-1350-52 was removed during the chromium remediation.

A remedial investigation to address non-chromium contamination is ongoing. These and other non-chromium contaminants that exceed soil remediation standards and groundwater screening levels will be addressed under the LSRP program. Al LoPilato of AECOM is the LSRP. His telephone number is: 845-425-4980. His email address is: alfred.lopilato@aecom.com.

A groundwater investigation will determine whether a groundwater cleanup is required.

**Hudson County Chrome Site No. 137 – Rudolf Bass**
**25 and 45 Halladay St., Jersey City, N.J. 07304**
**Block 21510, Lots 3 and 4**
**NJDEP ID No. G000008753**

Chromate chemical production waste, or CCPW, was the source of hexavalent chromium concentrations that exceed soil cleanup criteria and total chromium concentrations that exceed the NJDEP GWQS in the intermediate groundwater zone (about 20 to 40 feet deep).

PPG purchased the southern portion of the site (TSI Carriers, 25 Halladay Street) in May 2013 and the northern portion of the site (Rudolf Bass, 45 Halladay Street) in December 2013. PPG then demolished the building at 25 Halladay Street in August and September 2013 and the building at 45 Halladay Street in March and April 2014. Debris from both buildings was disposed at a regulated facility.

*45 Halladay and the Northern Portion of 25 Halladay (Site 137 North)*

The chromium soil cleanup was conducted between July 2014 and May 2015 for 45 Halladay Street and a portion of 25 Halladay Street, resulting in approximately 107,000 tons of chromium-contaminated waste being dug up and hauled away from this area. The material was treated and disposed of at licensed, offsite locations in accordance with applicable regulations.

The placement of clean backfill to near-final grade was completed at 45 Halladay Street and the northern portion of 25 Halladay Street in August 2015. Clean fill for a majority of the site was amended with FerroBlack®-H. This water-based suspension of ferrous iron and sulfide is designed to prevent the backfill from being contaminated by chromium-impacted groundwater and to support groundwater remediation.

A remedial action report for sites 137 north and 143 was submitted to NJDEP last month.

*Southern Portion of 25 Halladay (Site 137 South)*

Soil excavation activities began in August 2018. Excavation will resume when the Ten West Apparel excavation commences. Excavation and backfill are scheduled to be complete by June 2021.

For sites 137 north and south, PPG has retained an LSRP to address non-chromium contamination from historic fill and prior site operations unrelated to PPG, including volatile organics, semivolatile organics, PCBs, pesticides, non-CCPW metals and petroleum.

A remedial investigation to address non-chromium contamination is ongoing. These and other non-chromium contaminants that exceed soil remediation standards and groundwater screening levels will

be addressed under the LSRP program. Al LoPilato of AECOM is the LSRP. His telephone number is: 845-425-4980. His email address is: alfred.lopilato@aecom.com.

A groundwater investigation will determine whether a groundwater cleanup is required.

**Hudson County Chrome Site No. 143 – F. Talarico Auto**
**846 Garfield Ave., Jersey City, N.J. 07305**
**Block 21510, Lot 1**
**NJDEP ID No. G000008759**

Chromate chemical production waste, or CCPW, was the source of hexavalent chromium concentrations in soil that exceeded cleanup criteria and total chromium concentrations that exceed NJDEP GWQS in the intermediate groundwater zone (about 20 to 40 feet deep).

PPG purchased the site in February 2013 and demolished the building in June 2013, disposing of the debris at a regulated facility. Soil remediation was conducted between March 2014 and September 2014. Approximately 20,400 tons of chromium-contaminated waste was dug up and hauled away from this area. The material was treated and disposed of at licensed, offsite locations in accordance with applicable regulations. A remedial action report for sites 137 north and 143 was submitted to NJDEP last month.

The placement of clean backfill to near-final grade was completed in May 2015. Clean fill for a portion of the site received clean backfill that was amended with FerroBlack®-H. This water-based suspension of ferrous sulfide is designed to prevent the backfill from being contaminated by chromium-impacted groundwater and to support groundwater remediation.

PPG has retained an LSRP to address non-chromium contamination from historic fill and prior site operations unrelated to PPG, including volatile organics, semivolatile organics, PCBs, pesticides, non-CCPW metals and petroleum. A remedial investigation to address non-chromium contamination is ongoing. These and other non-chromium contaminants that exceed soil remediation standards and groundwater screening levels will be addressed under the LSRP program. Al LoPilato of AECOM is the LSRP. His telephone number is: 845-425-4980. His email address is: alfred.lopilato@aecom.com.

An investigation will determine whether a groundwater cleanup is required.

**Hudson County Chrome Site No. 186 – Garfield Avenue No. 1**
**947 Garfield Ave., Jersey City, N.J. 07304**
**Block 19802, Lot 2**
**NJDEP ID No. G0000114777**

Chromate chemical production waste, or CCPW, was the source of hexavalent chromium concentrations that exceeded soil cleanup criteria and total chromium concentrations that exceed the NJDEP GWQS.

The soil cleanup was completed in November 2013. A remedial action report was submitted to the NJDEP in March 2014 and approved in April 2014. A consent judgment compliance letter documenting NJDEP's approval of the completion of the soil remediation was issued in July 2015.

An investigation will determine whether a groundwater cleanup is required.

**Former Fishbein Property**
**816 Garfield Ave., Jersey City, N.J. 07305**
**Block 21510, Lot 11**
**NJDEP ID No. 629388**

Hexavalent chromium concentrations exceed soil cleanup criteria and total chromium concentrations exceed the NJDEP GWQS at this location.

PPG purchased this property in December 2013. The results of a remedial investigation were submitted in 2012 and supplemented in 2018. Excavation of chromium-impacted material at this site will be conducted as part of the Ten West Apparel cleanup, which is scheduled to begin next year.

PPG has retained an LSRP to address non-chromium contamination from historic fill and prior site operations unrelated to PPG, including semivolatile organics, PCBs and non-CCPW metals. A remedial investigation to address non-chromium contamination is ongoing. These and other non-chromium contaminants that exceed soil remediation standards and groundwater screening levels will be addressed under the LSRP program. Al LoPilato of AECOM is the LSRP. His telephone number is: 845-425-4980. His email address is: alfred.lopilato@aecom.com.

An investigation will determine whether a groundwater cleanup is required.

**Former Halsted Bag Company Property**
**78 Halladay St., Jersey City, N.J. 07304**
**Block 21502, Lots 12 through 17**
**NJDEP ID No. 722429**

Hexavalent chromium concentrations exceeded soil cleanup criteria and total chromium concentrations exceed the NJDEP GWQS at this location.

PPG purchased the site in February 2016 and demolished the building between April 2018 and June 2018, disposing of the debris at a regulated facility. Soil remediation was conducted between May 2018 and August 2018. Approximately 16,500 tons of chromium-contaminated waste were dug up and hauled away from this area. The material was treated and disposed of at licensed, offsite locations in accordance with applicable regulations.

The placement of clean backfill to near-final grade was completed in August 2018.
PPG completed the excavation and backfill for the site except areas adjacent to Halladay Street. These areas will be excavated and backfilled concurrent with remediation of Halladay Street North, scheduled to begin in 2020. The delineation of soil impacts on the eastern boundary of this property is ongoing.

PPG, meanwhile, has retained an LSRP to address non-chromium contamination from historic fill and prior site operations unrelated to PPG, including volatile organics, semivolatile organics, non-CCPW metals, PCBs and pesticides. These and other non-chromium contaminants that exceed soil remediation standards and groundwater screening levels will be addressed under the LSRP program. A remedial investigation to address non-chromium contamination is ongoing. Jeff Hosterman of Tetra Tech is the LSRP. His telephone number is: 302.283.2289. His email address is: jeff.hosterman@tetratech.com.

An investigation will determine whether a groundwater cleanup is required.

**84, 86-90, 98-100, and 108 Forrest Street, Jersey City, N.J. 07304**
**Block 21501, Lots 11, 12, 14, and 15**

Hexavalent chromium concentrations exceed soil cleanup criteria and total chromium concentrations exceed the NJDEP GWQS at this location.

Excavation of chromium-impacted soil and the placement of clean backfill on 108 Forrest Street began in March 2017 and were completed in July 2017 with approximately 9,600 tons of chromium-contaminated waste being dug up and hauled away from this area. The excavated material was disposed of at licensed, offsite locations in accordance with applicable regulations.

The placement of clean backfill to near-final grade on 108 Forrest Street was completed in August 2017. Clean fill for the northern portion of the site was amended with FerroBlack®-H in areas where groundwater was encountered. This water-based suspension of ferrous iron and sulfide is designed to prevent the backfill from being contaminated by chromium-impacted groundwater and to support groundwater remediation. A remedial action report for 108 Forrest was submitted to NJDEP in January 2019 and resubmitted this month to address NJDEP comments.

In March 2019, PPG submitted a remedial action work plan to propose a restricted use remedy for these properties, taking into account the properties' current non-residential use and impacts that remain under and adjacent to the buildings. PPG will conduct remedial excavation of the impacts that remain under and adjacent to the buildings in conjunction with the properties' future residential development.

An investigation will determine whether further groundwater cleanup is required.

**Al Smith Moving Property**
**33 Pacific Avenue, Jersey City, N.J. 07304**
**Block 21509, Lot 3**

Hexavalent chromium concentrations exceeded soil cleanup criteria at this location.

Demolition of the Al Smith Moving building occurred in July and August 2017. Soil remediation was conducted between August 2017 and January 2018 with approximately 12,600 tons of chromium-contaminated waste being dug up and hauled away from this area.

The placement of clean backfill to near-final grade was completed in January 2018. A remedial action report was submitted to NJDEP in April 2019 and approved in May 2019.

**Ten West Apparel Property**
**800 Garfield, Jersey City, N.J. 07304**
**Block 21510, Lot 39**

Hexavalent chromium concentrations exceed soil cleanup criteria and total chromium concentrations exceed the NJDEP GWQS at this location.

PPG purchased this property in April 2017. Remedial excavation is anticipated to occur between 2020 and 2021, once the current tenant vacates the building. A groundwater investigation will follow.

PPG has retained an LSRP to address non-chromium contamination from historic fill and prior site operations unrelated to PPG. These and other non-chromium contaminants that exceed soil remediation standards and groundwater screening levels will be addressed under the LSRP program. A remedial investigation to address non-chromium contamination is ongoing. Crystal Leavey of APTIM is the LSRP. Her telephone number is (609) 588-6154. Her email address is crystal.leavey@aptim.com.

**Caven Point Avenue, Jersey City, N.J. 07305**
**NJDEP ID No. 708218**

Analytical results from one soil remedial investigation boring just south of Caven Point Avenue, located between the Valero Station and 20 Commercial Street properties, indicated a concentration of hexavalent chromium that exceeded cleanup criteria. PPG remediated this chromium-impacted area in May 2014. The results were documented in a remedial action report approved by NJDEP in August 2015. A response action outcome letter, indicating that no further remedial action is required, was issued in 2016 under the Site Remediation Program (Program Interest Number 708218).

**457 Communipaw Avenue, Jersey City, N.J. 07305**
**Block 18901 Lots 11, 13, 14 and 15**
**NJDEP ID No. 715149**

Chromate chemical production waste, or CCPW, was the source of hexavalent chromium concentrations that exceeded soil cleanup criteria. Chromium impacted soil was discovered at the intersection of Berry Lane and Communipaw Avenue.

The excavation of approximately 70 tons of chromium-impacted soil was conducted between February and March 2016 at the Communipaw Avenue Right-of-Way (Block 18901, Lot 1.01) adjacent to 457 Communipaw Avenue. Excavated material was transported and disposed of at licensed, offsite locations in accordance with applicable regulations. The portion of this impacted area that was accessible to PPG has been fully remediated.

During the excavation, and confirmed by post excavation analytical results, CCPW was observed on the western sidewall of the excavation indicating that soil impacts extend onto the adjacent property (457 Communipaw Ave, Block 18901, Lot 15). PPG is conducting an investigation that will inform the decision on a remedial approach.

**Roadways**

**Carteret Avenue** (Between Garfield and Pacific avenues) – Work is under way to excavate chromium-impacted soil and debris after PPG reached an agreement with the Jersey City Municipal Utilities Authority on a plan for digging up and hauling away impacted material on top of or beside a 96-inch sewer line buried more than 15 feet beneath the street. Excavation is expected to be complete by early next year.

**Forrest Street** (West of intersection with Carteret Avenue) – A section of Forrest Street and exterior portions of privately owned buildings on the north side of the roadway have been fully restored following PPG's excavation of chromium-impacted soil in 2017. Chromium-impacted soil and debris under and in the proximity of the buildings will be addressed when the property is redeveloped.

**Garfield Avenue** (Between Carteret Avenue and ligh-rail bridge) – A work plan to address the chromium-impacted soil beneath the street is under review by NJDEP and the city. Remediation activities will not commence until the street is widened or opened to repair or replace the utilities beneath it.

**Halladay Street North** (Between Carteret Avenue and Forrest Street) – PPG will dig up and haul away chromium-impacted soil and debris under portions of the street after the Jersey City Municipal Utilities Authority reroutes the sewer line serving properties on this stretch of Halladay Street. JCMUA officials say they expect to complete their work by next month. PPG will begin its excavation next March.

**Additional Investigations**

Based upon a request from the NJDEP to further delineate chromium contamination, the following properties were also investigated (the results were less than the soil remediation standards):

- Parness Trucking Corporation –181 Pacific Avenue (Block 19903, Lots 1, 4, 5, 8 & 9)
- Valero Station – 770 Garfield Avenue (Block 23305, Lots 1 & 2)
- East Cost Collision – 783 Garfield Avenue (Block 23304, Lot 13)
- Frenchpark Warehouse – 855 Garfield Avenue (Block 21404, Lots 3 & 5)
- Cypress Tavern – 784 Garfield Avenue (Block 21510, Lot 7)
- Garfield Avenue Scrap Metal – 802 Garfield Avenue (Block 21510, Lot 10)
- 20 Commercial Street (Block 24301, Lot 1)
- Former Northern Morris Canal Area (Block 18901, Lots 3 - 15)
- 851 Garfield Avenue, LLC - 851 Garfield Avenue (Block 21404, Lot 6) [The wells installed on this property may be used in the future groundwater remedial investigation.]

Total chromium concentrations of groundwater samples collected at wells on and near the Frenchpark Warehouse property last year did not exceed NJDEP's groundwater quality standards. Samples collected before the soil excavation began across the street at Site 114 in 2014 exceeded standards.

**Descripciones del lugar**

*PPG es responsable de la investigación de cromo hexavalente que excede los requisitos del Departamento de Protección Ambiental de Nueva Jersey (NJDEP) en los siguientes sitios. Además, si la fuente de cromo hexavalente son residuos químicos de cromato, también conocidos como CCPW, entonces PPG es responsable de su limpieza. Además, PPG es responsable de la investigación y limpieza de todos los contaminantes de interés que exceden los requisitos del NJDEP en el sitio No. 114 y en las propiedades que posee la empresa. Este documento incluye una serie de descripciones de sitios que indican los contaminantes de interés, el trabajo completado y el trabajo adicional que se realizará en cada uno de los sitios.*

**Condado de Hudson, lugar contaminado con cromo N.º 114: sitio en Garfield Avenue**
**880-900 Garfield Ave., Jersey City, N.J. 07305**
**Cuadra 21501, Lotes 16, 17, 18, 19 y 20**
**No. de ID de NJDEP G000005480**

Los residuos químicos de cromato, o CCPW, eran la fuente de concentraciones de cromo hexavalente que excedieron los criterios para limpieza de suelo y las concentraciones de cromo totales que exceden las normas de calidad para aguas subterráneas. PPG también es responsable de abordar la contaminación sin cromo en el sitio 114, incluidos compuestos orgánicos volátiles, compuestos orgánicos semivolátiles, metales sin CCPW, bifenilos policlorados y pesticidas. Public Service Electric and Gas (PSEG) está tomando la iniciativa para abordar los impactos del suelo y las aguas subterráneas relacionados con la antigua planta de gas manufacturado, incluidos los que emanan en otros sitios.

La excavación del suelo afectado por cromo se realizó entre julio de 2010 y noviembre de 2014 y se removieron aproximadamente 530,000 toneladas de material del sitio. El material excavado se trató y eliminó en ubicaciones autorizadas, fuera del sitio, de acuerdo con las reglamentaciones pertinentes. El informe de medidas de saneamiento para el suelo se presentó este mes.

La mayor parte de la contaminación sin cromo se eliminó durante la excavación de cromo. Se ha instalado una capa de tierra para evitar el contacto directo o la exposición en el aire al material afectado restante.

La colocación del relleno limpio hasta la calificación casi final se completó en enero de 2015. El relleno limpio para la mayoría del sitio se modificó con FerroBlack®-H. Esta suspensión a base de agua de hierro ferroso y sulfuro está diseñada para evitar que el relleno se contamine con aguas subterráneas afectadas por cromo y para apoyar el saneamiento de las aguas subterráneas. Las pruebas continuas indican que las aguas subterráneas poco profundas (de menos de 20 pies de profundidad) en la mayor parte del sitio ya cumplen con la norma de calidad para aguas subterráneas (GWQS) del NJDEP federales para cromo total.

El suelo afectado por cromo en el sitio era la fuente de los impactos de cromo en las aguas subterráneas. Para abordar estos impactos, se está llevando a cabo un saneamiento provisional de las aguas subterráneas. Desde diciembre de 2017, PPG ha llevado a cabo un proceso enfocado de bombeo y tratamiento diseñado para limpiar las aguas subterráneas inmediatamente adyacentes a la antigua

planta de procesamiento de cromato. PPG ha extraído más de 10 millones de galones de aguas subterráneas de profundidades que van desde 20 a 65 pies bajo la superficie de la tierra. Luego, el agua se transporta a una planta de tratamiento al sur de Carteret Avenue. Una vez que se retire el cromo y otros contaminantes de la planta, el agua, con la adición de melaza, luego se inyectará al subsuelo mediante 68 pozos.
Las aguas subterráneas contaminadas se siguen tratando con melaza mediante la estimulación de la actividad biológica que convierte el cromo hexavalente en su forma trivalente, que es mucho menos tóxica.

PPG está instalando la infraestructura para una segunda fase del saneamiento provisional, que requiere aproximadamente 190 pozos de inyección, extracción y monitoreo, además de tuberías de transporte subterráneas y por encima del suelo. Según los resultados de los estudios de saneamiento provisionales y otros estudios posibles, PPG debe presentar un plan de trabajo de medidas de saneamiento a mediados de 2021.

Para obtener más detalles sobre los impactos en las aguas subterráneas, consulte la hoja informativa incluida en este correo. En Jersey City no se utilizan aguas subterráneas como agua potable. Las reservas en Boonton, N.J., suministran el agua potable a Jersey City.

**Condado de Hudson, lugar contaminado con cromo N.º 121: Garfield Auto Parts**
**N.º de identificación del NJDEP G000008738**

**y**

**Condado de Hudson, lugar contaminado con cromo N.º 207: Garfield Avenue No. 2**
**No. de ID de NJDEP G000044579**
**1 Berry Road, Jersey City, N.J. 07304**
**Cuadra 18901, Lote 1.01**

Los residuos químicos de cromato, o CCPW, eran la fuente de concentraciones de cromo hexavalente que excedieron los criterios para limpieza de suelo y las concentraciones de cromo totales que exceden las normas de calidad para aguas subterráneas del NJDEP.

PPG trabajó con la Agencia de Reurbanización de Jersey City para completar la excavación de los CCPW en el primer trimestre de 2013 en estos dos sitios, que son parte del Parque Berry Lane. El material excavado se trató y eliminó en ubicaciones autorizadas, fuera del sitio, de acuerdo con las reglamentaciones pertinentes. Se emitió una carta de resultado de las medidas de saneamiento para el suelo en junio de 2016, que indicaba que no se requerían otras medidas de saneamiento.

Se instalaron pozos para monitorear las condiciones de las aguas subterráneas en las zonas poco profundas e intermedias luego de la finalización de la excavación dentro del antiguo Morris Canal y los sitios No. 121 y 207. No se detectaron contaminantes preocupantes relacionados con CCPW en concentraciones que exceden las normas de calidad para aguas subterráneas. Como resultado, se emitió una carta de resultado de las medidas de saneamiento para las aguas subterráneas en diciembre de 2018, que indicaba que no se requerían otras medidas de saneamiento.

**Condado de Hudson, lugar contaminado con cromo N.º 132 – Town and Country Linen Warehouse**
**824 Garfield Ave., Jersey City, N.J. 07305**
**Cuadra 21510, Lote 2**
**N.º de identificación del NJDEP G000008749**

Los residuos químicos de cromato, o CCPW, eran la fuente de concentraciones de cromo hexavalente que excedieron los criterios para limpieza de suelo y las concentraciones de cromo totales que exceden las GWQS del NJDEP en la zona intermedia.

En julio de 2013, el edificio en el sitio fue demolido y los escombros del edificio fueron eliminados adecuadamente. El saneamiento del suelo se realizó entre marzo de 2014 y septiembre de 2014, donde se extrajeron y retiraron de esta área aproximadamente 72,200 toneladas de desechos contaminados con cromo. El material excavado se trató y eliminó en ubicaciones autorizadas, fuera del sitio, de acuerdo con las reglamentaciones pertinentes. El informe de medidas de saneamiento para el suelo fue aprobado por el NJDEP en junio de 2019.

La colocación del relleno limpio hasta la calificación casi final se completó en mayo de 2015. El relleno limpio de una parte del sitio se modificó con FerroBlack®-H. Esta suspensión a base de agua de hierro ferroso y sulfuro está diseñada para evitar que el relleno se contamine con aguas subterráneas afectadas por cromo y para apoyar el saneamiento de las aguas subterráneas.

Se realizará una investigación de las aguas subterráneas para determinar si se necesita otra limpieza de las aguas subterráneas.

**Condado de Hudson, lugar contaminado con cromo N.º 133: Ross Wax**
**15 and 22-68 Halladay St., Jersey City, N.J. 07304**
**Cuadra 21510, Lote 5 y Cuadra 21509, Lote 1**
**Nº de identificación del NJDEP 025695**

Los residuos químicos de cromato, o CCPW, son la fuente de concentraciones de cromo hexavalente que exceden los criterios para limpieza de suelo y las concentraciones de cromo totales que exceden las GWQS del NJDEP en aguas subterráneas debajo de la calle Halladay, que está adyacente al sitio.

PPG compró el lado occidental del sitio, 15 Halladay Street, en mayo de 2013, y el lado oriental del sitio, 22-68 Halladay Street, en febrero de 2014.

*15 Halladay St. (sitio No. 133 oeste)*

Se llevó a cabo una investigación del sitio y se presentó un informe al NJDEP en 2012. La excavación del suelo comenzó en agosto de 2018 y se reanudará cuando comience la excavación en la propiedad de en West Apparel. La conclusión de la excavación y el relleno están programados para junio de 2021.

*22-68 Halladay St. (sitio No. 133 este)*

El edificio en este sitio fue demolido en octubre de 2014 y los escombros fueron eliminados en una instalación regulada. Se realizó el saneamiento del suelo entre abril de 2015 y octubre de 2015; se extrajeron y retiraron de esta área más de 88,500 toneladas de desechos contaminados con cromo, incluidas las propiedades adyacentes en el lado este en el sitio No. 135, donde el saneamiento se llevó a

cabo simultáneamente con este sitio. El material excavado se trató y eliminó en ubicaciones autorizadas, fuera del sitio, de acuerdo con las reglamentaciones pertinentes.

La colocación del relleno limpio hasta la calificación casi final se completó en julio de 2016. El relleno limpio de la parte norte del sitio se modificó con FerroBlack®-H. Esta suspensión a base de agua de hierro ferroso y sulfuro está diseñada para evitar que el relleno se contamine con aguas subterráneas afectadas por cromo y para apoyar el saneamiento de las aguas subterráneas. El relleno limpio de la parte sur del sitio se modificó en los dos pies superiores del relleno.

PPG realizó la excavación y el relleno del sitio con la excepción de las mallas adyacentes a la propiedad de Ten West Apparel. Estas mallas se excavarán y rellenarán simultáneamente con las actividades de saneamiento en la propiedad de Ten West Apparel.

Un informe de medidas de saneamiento para el suelo en el sitio No. 133 este y el sitio No. 135 se presentó al NJDEP en diciembre de 2018 y se volvió a presentar este mes para abordar las observaciones del NJDEP.

En los sitios No. 133 oeste y este, PPG ha contratado a un profesional de saneamiento de sitios con licencia (LSRP) para abordar la contaminación sin cromo del relleno histórico y las operaciones anteriores del sitio no relacionadas con PPG, incluidos compuestos orgánicos volátiles, compuestos orgánicos semivolátiles, bifenilos policlorados o PCB, metales que no son CCPW y petróleo.

En agosto de 2016 se presentó al NJDEP un informe de investigación de saneamiento para el cierre de un tanque de almacenamiento subterráneo que contiene combustible. Hay en curso una investigación de saneamiento para abordar la contaminación sin cromo. Estos y otros contaminantes que no contienen cromo que exceden las normas de saneamiento del suelo y los niveles de detección de aguas subterráneas se abordarán bajo el programa LSRP. Al LoPilato de AECOM es el LSRP. Su número de teléfono es: 845-425-4980. Su dirección de correo electrónico es: alfred.lopilato@aecom.com.

Una investigación de las aguas subterráneas determinará si se necesita otra limpieza de las aguas subterráneas en los sitios No. 133 oeste y 133 este.

**Condado de Hudson, lugar contaminado con N.° 135: Vitarroz**
**51-99 Pacific Ave., Jersey City, N.J. 07304**
**Cuadra 21509, Lote 2**
**Nº de identificación del NJDEP 246332**

Los residuos químicos de cromato, o CCPW, son la fuente de concentraciones de cromo hexavalente que excedieron los criterios para limpieza de suelo y las concentraciones de cromo totales que exceden las GWQS del NJDEP en el derecho de paso adyacente.

Entre enero y noviembre de 2015, el edificio en el sitio fue demolido y los escombros del edificio fueron eliminados adecuadamente. Se realizó el saneamiento del suelo entre febrero de 2016 y agosto de 2016; se extrajeron y retiraron de esta área más de 88,500 toneladas de desechos contaminados con cromo, incluidas las propiedades adyacentes en el lado este en el sitio No. 133 este, donde el saneamiento se llevó a cabo simultáneamente con este sitio. El material excavado se eliminó en ubicaciones autorizadas, fuera del sitio, de acuerdo con las reglamentaciones pertinentes. Un informe

de medidas de saneamiento para los sitios No. 135 y No. 133 este se presentó al NJDEP en diciembre de 2018 y se volvió a presentar este mes para abordar las observaciones del NJDEP.

La colocación del relleno limpio hasta la calificación casi final se completó en diciembre de 2016. El relleno limpio de la parte norte del sitio se modificó con FerroBlack®-H. El relleno limpio de la parte sur del sitio se modificó en los dos pies superiores del relleno. Esta suspensión a base de agua de hierro ferroso y sulfuro está diseñada para evitar que el relleno se contamine con aguas subterráneas afectadas por cromo y para apoyar el saneamiento de las aguas subterráneas.

PPG ha contratado a un LSRP para abordar la contaminación sin cromo del relleno histórico y las operaciones anteriores del sitio no relacionadas con PPG, incluidos compuestos orgánicos volátiles, compuestos orgánicos semivolátiles, metales que no son CCPW, PCB y petróleo.

En julio de 2017 se presentó al NJDEP un informe de medidas correctivas para el cierre de tres tanques de almacenamiento subterráneos que contienen combustible. El suelo afectado por mercurio asociado con el incidente No. 16-04-13-1350-52 se removió durante el saneamiento del cromo.

Hay en curso una investigación de saneamiento para abordar la contaminación sin cromo. Estos y otros contaminantes que no contienen cromo que exceden las normas de saneamiento del suelo y los niveles de detección de aguas subterráneas se abordarán bajo el programa LSRP. Al LoPilato de AECOM es el LSRP. Su número de teléfono es: 845-425-4980. Su dirección de correo electrónico es: alfred.lopilato@aecom.com.

Se realizará una investigación para determinar si se necesita una limpieza de las aguas subterráneas.

**Condado de Hudson, lugar contaminado con cromo N.º 137: Rudolf Bass**
**25 and 45 Halladay St., Jersey City, N.J. 07304**
**Cuadra 21510, Lotes 3 y 4**
**N.º de identificación del NJDEP G000008753**

Los residuos químicos de cromato, o CCPW, eran la fuente de concentraciones de cromo hexavalente que exceden los criterios para limpieza de suelo y las concentraciones de cromo totales que exceden las GWQS del NJDEP en la zona intermedia de aguas subterráneas (alrededor de 20 a 40 pies de profundidad).

PPG compró la parte sur del sitio (TSI Carriers, 25 Halladay Street) en mayo de 2013 y la parte norte del sitio (Rudolf Bass, 45 Halladay Street) en diciembre de 2013. PPG luego demolió el edificio en 25 Halladay Street en agosto y septiembre de 2013 y el edificio en 45 Halladay Street en marzo y abril de 2014. Los escombros de ambos edificios se eliminaron en una instalación regulada.

*45 Halladay y la parte norte de 25 Halladay (sitio No. 137 norte)*

La limpieza del suelo con cromo se realizó entre julio de 2014 y mayo de 2015 en 45 Halladay Street y una parte de 25 Halladay Street, donde se extrajeron y retiraron de esta área aproximadamente 107,000 toneladas de desechos contaminados con cromo. El material se trató y eliminó en ubicaciones autorizadas, fuera del sitio, de acuerdo con las reglamentaciones pertinentes.

Se realizó la colocación de relleno limpio en una calificación casi final en 45 Halladay Street y la parte norte de 25 Halladay Street en agosto de 2015. El relleno limpio para la mayoría del sitio se modificó con FerroBlack®-H. Esta suspensión a base de agua de hierro ferroso y sulfuro está diseñada para evitar que el relleno se contamine con aguas subterráneas afectadas por cromo y para apoyar el saneamiento de las aguas subterráneas.

El mes pasado se envió al NJDEP un informe de medidas de saneamiento de los sitios No. 137 norte y 143.

*Parte sur de 25 Halladay (sitio No. 137 sur)*

Las actividades de excavación del suelo comenzaron en agosto de 2018. La excavación se reanudará cuando comience la excavación de Ten West Apparel. La conclusión de la excavación y el relleno están programados para junio de 2021.

Para los sitios No. 137 norte y sur, PPG ha contratado a un LSRP para abordar la contaminación sin cromo del relleno histórico y las operaciones anteriores del sitio no relacionadas con PPG, incluidos compuestos orgánicos volátiles, compuestos orgánicos semivolátiles, PCB, pesticidas, metales que no son CCPW y petróleo.

Hay en curso una investigación de saneamiento para abordar la contaminación sin cromo. Estos y otros contaminantes que no contienen cromo que exceden las normas de saneamiento del suelo y los niveles de detección de aguas subterráneas se abordarán bajo el programa LSRP. Al LoPilato de AECOM es el LSRP. Su número de teléfono es: 845-425-4980. Su dirección de correo electrónico es: alfred.lopilato@aecom.com.

Se realizará una investigación para determinar si se necesita una limpieza de las aguas subterráneas.

**Sitio contaminado con cromo No. 143 del condado de Hudson, F. Talarico Auto**
**846 Garfield Ave., Jersey City, N.J. 07305**
**Cuadra 21510, Lote 1**
**Nº de identificación del NJDEP G000008759**

Los residuos químicos de cromato, o CCPW, eran la fuente de cromo hexavalente
que excedieron los criterios para limpieza de suelo y las concentraciones de cromo totales que exceden las GWQS del NJDEP en la zona intermedia de aguas subterráneas (alrededor de 20 a 40 pies de profundidad).

PPG compró el sitio en febrero de 2013 y demolió el edificio en junio de 2013, eliminando los escombros en una instalación regulada. El saneamiento del suelo se realizó entre marzo de 2014 y septiembre de 2014. Se extrajeron y retiraron de esta área aproximadamente 20,400 toneladas de desechos contaminados con cromo. El material se trató y eliminó en ubicaciones autorizadas, fuera del sitio, de acuerdo con las reglamentaciones pertinentes. El mes pasado se envió al NJDEP un informe de medidas de saneamiento de los sitios No. 137 norte y 143.

La colocación del relleno limpio hasta la calificación casi final se completó en mayo de 2015. El relleno limpio de una parte del sitio recibió relleno limpio que se modificó con FerroBlack®-H. Esta suspensión a

base de agua de sulfuro ferroso está diseñada para evitar que el relleno se contamine con aguas subterráneas afectadas por cromo y para apoyar el saneamiento de las aguas subterráneas.

PPG ha contratado a un LSRP para abordar la contaminación sin cromo del relleno histórico y las operaciones anteriores del sitio no relacionadas con PPG, incluidos compuestos orgánicos volátiles, compuestos orgánicos semivolátiles, PCB, pesticidas, metales que no son CCPW y petróleo. Hay en curso una investigación de saneamiento para abordar la contaminación sin cromo. Estos y otros contaminantes que no contienen cromo que exceden las normas de saneamiento del suelo y los niveles de detección de aguas subterráneas se abordarán bajo el programa LSRP. Al LoPilato de AECOM es el LSRP. Su número de teléfono es: 845-425-4980. Su dirección de correo electrónico es: alfred.lopilato@aecom.com.

Se realizará una investigación para determinar si se necesita una limpieza de las aguas subterráneas.

**Condado de Hudson, lugar contaminado con cromo N.º 186: Garfield Avenue No. 1**
**947 Garfield Ave., Jersey City, N.J. 07304**
**Cuadra 19802, Lote 2**
**No. de ID de NJDEP G0000114777**

Los residuos químicos de cromato, o CCPW, eran la fuente de concentraciones de cromo hexavalente que excedieron los criterios para limpieza de suelo y las concentraciones de cromo totales que exceden las GWQS del NJDEP.

La limpieza del suelo se realizó en noviembre de 2013. En marzo de 2014 se presentó un informe de medidas correctivas al NJDEP, el cual se aprobó en abril de 2014. En julio de 2015 se emitió una carta de cumplimiento de fallo por consentimiento que documenta la aprobación del NJDEP de la finalización del saneamiento del suelo.

Se realizará una investigación para determinar si se necesita una limpieza de las aguas subterráneas.

**Antigua propiedad de Fishbein**
**816 Garfield Ave., Jersey City, N.J. 07305**
**Cuadra 21510, Lote 11**
**Nº de identificación del NJDEP 629388**

Las concentraciones de cromo hexavalente exceden los criterios para limpieza del suelo y las concentraciones de cromo total exceden las GWQS del NJDEP en esta ubicación.

PPG compró esta propiedad en diciembre de 2013. Los resultados de una investigación de saneamiento se presentaron en 2012 y se complementaron en 2018. La excavación de material afectado por cromo en este sitio se llevará a cabo como parte de la limpieza de Ten West Apparel, que está programada para comenzar el próximo año.

PPG ha contratado a un LSRP para abordar la contaminación sin cromo del relleno histórico y las operaciones anteriores del sitio no relacionadas con PPG, incluidos compuestos orgánicos semivolátiles, PCB y metales que no son CCPW. Hay en curso una investigación de saneamiento para abordar la contaminación sin cromo. Estos y otros contaminantes que no contienen cromo que exceden las normas de saneamiento del suelo y los niveles de detección de aguas subterráneas se abordarán bajo el

programa LSRP. Al LoPilato de AECOM es el LSRP. Su número de teléfono es: 845-425-4980. Su dirección de correo electrónico es: alfred.lopilato@aecom.com.

Se realizará una investigación para determinar si se necesita una limpieza de las aguas subterráneas.

**Antigua propiedad de Halsted Bag Company**
**78 Halladay St., Jersey City, N.J. 07304**
**Cuadra 21502, Lotes 12 a 17**
**Nº de identificación del NJDEP 722429**

Las concentraciones de cromo hexavalente excedieron los criterios para limpieza del suelo y las concentraciones de cromo total exceden las GWQS del NJDEP en esta ubicación.

PPG compró el sitio en febrero de 2016 y demolió el edificio entre abril de 2018 y junio de 2018, y eliminó los escombros en una instalación regulada. El saneamiento del suelo se realizó entre mayo de 2018 y agosto de 2018. Se extrajeron y retiraron de esta área aproximadamente 16,500 toneladas de desechos contaminados con cromo. El material se trató y eliminó en ubicaciones autorizadas, fuera del sitio, de acuerdo con las reglamentaciones pertinentes.

La colocación del relleno limpio hasta la calificación casi final se completó en agosto de 2018.
PPG realizó la excavación y el relleno del sitio con la excepción de las áreas adyacentes a Halladay Street. Estas áreas se excavarán y rellenarán de forma simultánea con el saneamiento de Halladay Street North, programada para comenzar en 2020. La delimitación de los impactos del suelo en el límite oriental de esta propiedad está en curso.

Mientras tanto, PPG ha contratado a un LSRP para abordar la contaminación sin cromo del relleno histórico y las operaciones anteriores del sitio no relacionadas con PPG, incluidos compuestos orgánicos volátiles, compuestos orgánicos semivolátiles, metales que no son CCPW, PCB y pesticidas. Estos y otros contaminantes que no contienen cromo que exceden las normas de saneamiento del suelo y los niveles de detección de aguas subterráneas se abordarán bajo el programa LSRP. Hay en curso una investigación de saneamiento para abordar la contaminación sin cromo. Jeff Hosterman de Tetra Tech es el LSRP. Su número de teléfono es: 302.283.2289. Su dirección de correo electrónico es: jeff.hosterman@tetratech.com.

Se realizará una investigación para determinar si se necesita una limpieza de las aguas subterráneas.

**84, 86-90, 98-100 y 108 Forrest Street, Jersey City, N.J. 07304**
**Cuadra 21501, Lotes 11, 12, 14 y 15**

Las concentraciones de cromo hexavalente exceden los criterios para limpieza del suelo y las concentraciones de cromo total exceden las GWQS del NJDEP en esta ubicación.

La excavación del suelo afectado por cromo y la colocación de relleno limpio en 108 Forrest Street comenzaron en marzo de 2017 y finalizaron en julio de 2017; se extrajeron y retiraron de esta área aproximadamente 9,600 toneladas de desechos contaminados con cromo. El material excavado se eliminó en ubicaciones autorizadas, fuera del sitio, de acuerdo con las reglamentaciones pertinentes.

La colocación del relleno limpio hasta la calificación casi final en 108 Forrest Street se completó en agosto de 2017. El relleno limpio para la parte norte del sitio se modificó con FerroBlack®-H en áreas donde se encontró agua subterránea. Esta suspensión a base de agua de hierro ferroso y sulfuro está diseñada para evitar que el relleno se contamine con aguas subterráneas afectadas por cromo y para apoyar el saneamiento de las aguas subterráneas. Un informe de medidas de saneamiento para 108 Forrest se presentó al NJDEP en enero de 2019 y se volvió a presentar este mes para abordar las observaciones del NJDEP.

En marzo de 2019, PPG presentó un plan de trabajo de medidas de saneamiento para proponer un saneamiento de uso restringido para estas propiedades, considerando el uso no residencial actual de las propiedades y los impactos que quedan debajo y adyacentes a los edificios. PPG llevará a cabo una excavación de saneamiento de los impactos que permanecen debajo y adyacentes a los edificios junto con el futuro desarrollo residencial de las propiedades.

Luego, se realizará una investigación para determinar si se necesita una limpieza de las aguas subterráneas.

**Propiedad de Al Smith Moving**
**33 Pacific Avenue, Jersey City, N.J. 07304**
**Cuadra 21509, Lote 3**

Las concentraciones de cromo hexavalente excedieron los criterios para limpieza del suelo en este lugar.

La demolición del edificio de Al Smith Moving tuvo lugar en julio y agosto de 2017. El saneamiento del suelo se realizó entre agosto de 2017 y enero de 2018, donde se extrajeron y retiraron de esta área aproximadamente 12,600 toneladas de desechos contaminados con cromo.

La colocación del relleno limpio hasta la calificación casi final se completó en enero de 2018. En abril de 2019 se presentó un informe de medidas de saneamiento al NJDEP, el cual se aprobó en mayo de 2019.

**Propiedad de Ten West Apparel**
**800 Garfield, Jersey City, N.J. 07304**
**Cuadra 21510, Lote 39**

Las concentraciones de cromo hexavalente exceden los criterios para limpieza del suelo y las concentraciones de cromo total exceden las GWQS del NJDEP en esta ubicación.

PPG compró esta propiedad en abril de 2017. Se prevé que una excavación de saneamiento tendrá lugar entre los años 2020 y 2021, una vez que el inquilino actual desocupe el edificio. Luego se realizará una investigación sobre las aguas subterráneas.

PPG ha contratado a un LSRP para abordar la contaminación sin cromo del relleno histórico y las operaciones anteriores del sitio no relacionadas con PPG. Estos y otros contaminantes que no contienen cromo que exceden las normas de saneamiento del suelo y los niveles de detección de aguas subterráneas se abordarán bajo el programa LSRP. Hay en curso una investigación de saneamiento para abordar la contaminación sin cromo. Crystal Leavey de APTIM es la LSRP. Su número de teléfono es el (609) 588-6154. Su dirección de correo electrónico es crystal.leavey@aptim.com.

**Caven Point Avenue, Jersey City, N.J. 07305**
**Nº de identificación del NJDEP 708218**

Los resultados analíticos de una investigación de saneamiento del suelo justo al sur de Caven Point Avenue, ubicada entre la Estación Valero y propiedades de 20 Commercial Street, revelaron una concentración de cromo hexavalente que excedió los criterios para limpieza. PPG saneó esta zona afectada por cromo en mayo de 2014. Los resultados se documentaron en un informe de medidas de saneamiento aprobado por el NJDEP en agosto de 2015. En 2016, se emitió una carta de resultado de acción de respuesta que indica que no se requieren medidas de saneamiento adicionales para el Programa de saneamiento del sitio, (Número de interés del programa 708218).

**457 Communipaw Avenue, Jersey City, N.J. 07305**
**Cuadra 18901, Lotes 11, 13, 14 y 15**
**No. de ID de NJDEP 715149**

Los residuos químicos de cromato, o CCPW, eran la fuente de concentraciones de cromo hexavalente que excedieron los criterios para limpieza de suelo.

Se descubrió suelo afectado por cromo en la intersección de Berry Lane y Communipaw Avenue. La excavación de aproximadamente 70 toneladas de tierra afectada por cromo se realizó entre febrero y marzo de 2016 en el derecho de paso de Communipaw Avenue (cuadra 18901, lote 1.01) adyacente a 457 Communipaw Avenue. El material excavado se transportó y eliminó en ubicaciones autorizadas, fuera del sitio, de acuerdo con las reglamentaciones pertinentes. La parte de esta zona afectada que era accesible a PPG ha sido saneada por completo.

Durante la excavación, y confirmado por los resultados analíticos posteriores a la excavación, se observaron CCPW en la pared lateral occidental de la excavación, lo que indica que los impactos del suelo se extienden hacia la propiedad adyacente (457 Communipaw Ave, cuadra 18901, lote 15). PPG está llevando a cabo una investigación que informará la decisión sobre un enfoque de saneamiento.

**Carreteras**

**Carteret Avenue** (entre las avenidas Garfield y Pacific): se está trabajando para excavar el suelo y los desechos afectados por cromo después de que PPG llegara a un acuerdo con la Autoridad de Servicios Públicos Municipales de Jersey City sobre un plan para extraer y transportar el material afectado encima o al lado de una línea de alcantarillado de 96 pulgadas enterrada a más de 15 pies debajo de la calle. La finalización de la excavación está programada para principios del próximo año.

**Forrest Street** (oeste de la intersección con Carteret Avenue): una sección de Forrest Street y partes exteriores de edificios de propiedad privada situados en el lado norte de la carretera se han restaurado por completo después de la excavación de PPG del suelo contaminado con cromo en 2017. El suelo y los escombros contaminados con cromo que se encuentran debajo y en las proximidades de los edificios se tratarán cuando la propiedad se vuelva a reurbanizar.

**Garfield Avenue** (entre Carteret Avenue y el puente para el ferrocarril ligero): el NJDEP y la ciudad están revisando un plan de trabajo para tratar el suelo contaminado con cromo debajo de la calle. Las actividades de reparación no comenzarán hasta que la calle se ensanche o se abra para reparar o reemplazar los servicios públicos debajo de la misma.

**Halladay Street North** (entre Carteret Avenue y Forrest Street): PPG excavará y transportará el suelo y los escombros contaminados con cromo que se encuentran debajo de las partes de la calle después de que la Autoridad de Servicios Públicos Municipales de Jersey City desvíe la línea de alcantarillado que presta servicios a los predios de este tramo de Halladay Street. Los funcionarios de la Autoridad Municipal de Servicios Públicos de Jersey City (Jersey City Municipal Utilities Authority, JCMUA) dicen que esperan completar su trabajo el próximo mes. PPG comenzará su excavación el próximo mes de marzo.

**Investigaciones adicionales**

De acuerdo con una solicitud del NJDEP para delinear aún más la contaminación por cromo, también se investigaron las siguientes propiedades (los resultados fueron menores que las normas de saneamiento del suelo):

- Parness Trucking Corporation –181 Pacific Avenue (cuadra 19903, lotes 1, 4, 5, 8 & 9)
- Estación Valero – 770 Garfield Avenue (cuadra 23305, lotes 1 & 2)
- East Cost Collision – 783 Garfield Avenue (cuadra 23304, lote 13)
- Frenchpark Warehouse – 855 Garfield Avenue (cuadra 21404, lotes 3 & 5)
- Cypress Tavern – 784 Garfield Avenue (cuadra 21510, lote 7)
- Garfield Avenue Scrap Metal – 802 Garfield Avenue (cuadra 21510, lote 10)
- 20 Commercial Street (cuadra 24301, lote 1)
- Antigua zona de Northern Morris Canal (cuadra 18901, lotes 3 - 15)
- 851 Garfield Avenue, LLC - 851 Garfield Avenue (cuadra 21404, lote 6) [Los pozos instalados en esta propiedad pueden usarse en la futura investigación de saneamiento de aguas subterráneas].

Las concentraciones totales de cromo de las muestras de agua subterránea recolectadas en pozos en y cerca de la propiedad de Frenchpark Warehouse el año pasado no excedieron las normas de calidad para aguas subterráneas del NJDEP. Las muestras recolectadas antes de que comenzara la excavación del suelo al otro lado de la calle en el sitio No. 114 en 2014 excedieron las normas.

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**Notification of Environmental Investigation and Cleanup**
**Hudson County Chromate Site No. 114, Garfield Avenue Site**
**880-900 Garfield Ave., Jersey City, N.J. 07305**
**Block 21501, Lots 16, 17, 18, 19 and 20**
**NJDEP ID #G000005480**
**September 18, 2019**

In accordance with New Jersey Department of Environmental Protection (NJDEP) regulations for "Notification and Public Outreach," PPG is required to provide information relating to environmental conditions and remedial activities being conducted at the above-referenced site.

Former operations conducted at the Garfield Avenue Site (the Site) included a chromium ore processing plant. Groundwater at the Site is impacted with hexavalent chromium and other incidental metals that were associated with Site operations and were initially detected in the groundwater in 1983 and in the soil in 1990. PPG has determined that the contamination in groundwater has migrated from the Site and will continue to investigate until the extent of contamination is defined.

PPG continues to conduct investigative and/or remedial activities in accordance with the requirements of the NJDEP to address the chemical contaminants associated with former plant operations. The southern boundary of the groundwater contamination is located approximately at Caven Point Avenue, which is about 800 feet from the Site. The eastern boundary is near to and along Pacific Avenue, which is approximately 200 feet from the Site. The northern boundary is located proximate to a commercial property known as 90 and 98 Forrest Street.

The chromium-impacted groundwater is located beneath properties in and immediately around the Site. Water reservoirs in Boonton, N.J., supply Jersey City with its drinking water. No groundwater in Jersey City is used for drinking, household or commercial uses. Excavation of chromium-impacted soil at Site 114, which was the source of chromium in groundwater, was completed in November 2014. A groundwater cleanup, meanwhile, is under way.

For additional information or to obtain a copy of the complete fact sheet for this Site, please contact:

- The independent, court-appointed site administrator for PPG's cleanups via:
  - Telephone: 201-777-2099;
  - Email: Info@chromecleanup.com; or
  - Letter: Chromium Cleanup Partnership, One Hovchild Plaza, 4000 Route 66, 4th Floor (MDMC), Tinton, Falls, N.J. 07753; or
- * PPG's community relations consultant, Je Worden, via:
  - Telephone: 412-253-0816; or
  - Email: je@worden-pr.com.

PAID FOR BY PPG

**New Jersey Department of Environmental Protection**
Site Remediation and Waste Management Program

**CLASSIFICATION EXCEPTION AREA / WELL RESTRICTION AREA (CEA/WRA) FACT SHEET FORM**

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE INFORMATION

Site Name: Hudson County Chromate Site 114

Program Interest (PI) Number(s): G000005480, Activity # RPC000051

Case Tracking Number(s) for this submission: _____

**This form must be attached to the Cover / Certification Form if not submitted through the Remedial Phase Report Online Service**

1. Indicate the reason for submission of this form *(see instructions)*:

☐ New CEA ☒ Revise CEA ☐ Reestablish CEA ☐ Existing CEA with no changes
☐ CEA for historic fill ☐ CEA for Historically Applied Pesticides (HAP) ☐ CEA lift/removal

If you are submitting this form for an existing CEA provide the CEA Subject Item ID: CEA100000008

2. Indicate the type of ground water Remedial Action (RA):

☐ Natural ☐ Active ☒ Final RA not yet selected

3. Is this form being submitted with a Remedial Action Permit (RAP) Form (for Soil or Ground Water)?.... ☐ Yes ☒ No

## SECTION B. CEA COMPONENT AND VAPOR INTRUSION INFORMATION

Name of document that includes the CEA Fate and Transport Description: Groundwater Remedial Investigation Report

Date of document: 08/31/2021 - Final

**1. Ground Water Classification:** What is the ground water classification within the CEA as per N.J.A.C. 7:9C?

*(Check all that apply)*

☐ Class I-A
☐ Class I-PL Pinelands Protection Area
☐ Class I-PL Pinelands Preservation Area
☒ Class II-A
☐ Class III-A
☐ Class III-B

**2. Contaminant Data:** This CEA/WRA applies only to the contaminants listed below with concentrations above, or assumed to be above, numeric values established for the applicable classification area via the Ground Water Quality Standards (GWQS), N.J.A.C. 7:9C. Except for historic fill CEAs based on assumed ground water contamination, list the maximum contaminant value for all ground water data that could be representative of **current** conditions for any well or sampling point used to establish the CEA. See form instructions before entering data into the below table.

| Contaminant | Concentration (1) | GWQS (2) | SWQS(3) | GWSL(4) |
|---|---|---|---|---|
| See Attachment 1 | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Notes:
(1) Maximum concentration in Micrograms Per Liter
(2) New Jersey Ground Water Quality Standards, N.J.A.C. 7:9C-1.7 and 1.9(c)
(3) Surface Water Quality Standards, N.J.A.C. 7:9B - Applicable only where contaminants in the CEA may discharge to a surface water body.
(4) Current NJDEP Vapor Intrusion (VI) Ground Water Screening Levels (GWSL) available at http://www.nj.gov/dep/srp/guidance/vaporintrusion/

☒ Check if attaching the form Addendum to list additional contaminants and associated information.

**3. CEA Boundaries and VI Pathway Status:** Year of tax map used: 2013 See Note 1

Are there volatile contaminants in the CEA? ☒ Yes ☐ No

Is there LNAPL currently found in the CEA? ☐ Yes ☒ No

For CEA revisions only:

☒ Check if CEA Boundary has changed (*See instructions*)

☒ Check if Block and Lot numbers have changed (*See instructions*)

Note 1: Source of block/lot information: Parcels of Hudson County, NJ State Plane NAD83, Hudson County Dept. of Planning, May 21, 2013, with updates based on Sheet 215 of the Tax Map accessed at: http://hostedfiles.civilsolutions.biz/jerseycity/taxmaps/index.htm (revised 12/2020). Accessed March 2021.

Refer to Attachment 2 for VI statement.

**List the block(s) and lot(s) included in the areal extent of the CEA and check the appropriate boxes:**

| Block | Lot(s) | Check if off-site | Check if VI pathway was evaluated* | Check if VI pathway status is indeterminate* |
|---|---|---|---|---|
| 21404 | 1, 2, 3, 6 | ☒ | ☐ | ☐ |
| 21501 | 16, 17, 18.01, 18.02, 19.01, 19.02 | ☐ | ☐ | ☐ |
| 21502 | 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 | ☒ | ☐ | ☐ |
| 21502 | 18 | ☒ | ☐ | ☐ |
| 21503 | 23, 27 | ☒ | ☐ | ☐ |
| 21509 | 1, 2 | ☒ | ☐ | ☐ |
| 21510 | 1, 2, 3, 4, 5, 11, 39 | ☒ | ☐ | ☐ |

☒ Check if attaching an Addendum to list additional Blocks/Lots and associated information. *(see instructions)*

*Follow instructions for parcels where the vapor intrusion (VI) pathway was evaluated and the status is indeterminate.

Direction of ground water flow: multiple zones/ variable (*If multiple water bearing zones exist within the CEA and/or there is no predominant flow direction, see instructions.*) Figures 3-5, 3-6, 3-7 of RIR.

Vertical depth of CEA: 114 (ft bgs) **and** < -97.8 (msl). Based on deepest sample with contamination in bedrock (114-MW66D).

Horizontal extent of CEA: 35.1 Indicate units: ☒ acres or ☐ square feet Bedrock not delineated.

Name(s) of the affected Geologic Formation(s)/Unit(s) (*see instructions if multiple formations/units affected)*:

Artificial fill, estuarine & salt marsh deposits, lake bottom deposits, glacial till, bedrock.

Refer to Figures 3-2, 3-3, 5-1 through 5-9 of RIR.

Narrative description of proposed CEA boundaries:

The revised CEA boundary measures 35.1 acres, and encompasses the shallow, intermediate, deep and bedrock zones (Exhibit B-2). The boundary was updated based on the 70 ug/L chromium isopleth in these zones*, which is also inclusive of the other COCs that were determined to be on, or emanating from HCC Site 114**. The CEA extends a maximum distance of 490 ft beyond the Site 114 boundary.

**4. Projected Term of CEA:** *(Based on modeling/calculations in the fate and transport description)* * As depicted on Figures 5-10 through 5-13 of the August 2021 groundwater RIR.

Proposed Duration in Years: _____ Anticipated Expiration Date: _____

or ☒ Indeterminate (*Review instructions before selecting* "Indeterminate" *for the CEA duration.*)

**5. ATTACH AND/OR SUBMIT THE FOLLOWING:** (*see instructions for additional information/requirements*)

**Exhibit A: Site Location Maps** – Based on USGS Quadrangle Map;

**Exhibit B: CEA Map and Cross Section Figure** – See N.J.A.C 7:26C- 7.3(c)1 and 2 and instructions regarding what is required to be included on the map and the cross-section figure. See Exhibits B-1, B-2A and B-2B

**Exhibit C: GIS Deliverables** – CEA Boundary Extent Map. The CEA Boundary Extent Map shall be submitted via email to srpgis_cea@dep.nj.gov. (*See the instructions for detailed GIS deliverable requirements.)*

Identify format of CEA Boundary Extent Map being submitted: ..... ☒ Shape File ☐ CAD File ☐ N/A

If there is a CEA map already on NJ-GeoWeb, does it need to be revised? ..... ☒ Yes ☐ No ☐ N/A



** Based on the January 21, 2021 technical memorandum Constituents of Concern Emanating From Site 114 - Groundwater (Document No. GW-072A)

## SECTION C. CURRENT GROUND WATER USE DOCUMENTATION

Note: Well search is included in the Receptor Evaluation form prepared for the Remedial Investigation Report.

1. Indicate the year of the most recent well search completed per N.J.A.C. 7:26E-1.14: 2021

2. If this Fact Sheet form is for a revised CEA or an existing CEA with no changes, have new wells been installed since the CEA was established? ☒ Yes ☐ No ☐ N/A

3. Are there any pumping wells (e.g., potable, industrial, irrigation or recovery wells) within the foot print of the CEA? ☒ Yes ☐ No

   If "Yes" list/attach list of the type and status of any pumping well(s) within CEA:

   Refer to Receptor Evaluation, Attachment 2 (well search results), included with the RIR.

## SECTION D. WELL RESTRICTION INFORMATION

Certain well restrictions relevant to potable ground water use, such as "Double Case Wells", "Sample Potable Wells", and "Evaluate Production Wells", are consistently set within the boundaries of all CEAs established by the NJDEP in Class I and II-A areas (*see instructions*).

1. Are there any other site-specific well restrictions relevant to potable ground water use that should be set within or near the boundaries of the proposed CEA? ☐ Yes ☒ No

   If "Yes", describe below any such site-specific well restrictions proposed for this CEA:

## SECTION E. PUBLIC NOTIFICATION REQUIREMENTS

1. Indicate which of the following entities have been notified pursuant to N.J.A.C. 7:26C-7.3(d) and the dates each notification was sent. (*check all that apply*)

   ☒ Municipal and county clerk(s) ..... Dated mailed: _____

   ☒ Local, county or regional health department(s) ..... Dated mailed: _____

   ☒ Designated County Environmental Health Act agency (if applicable) ..... Dated mailed: _____

   ☒ County Planning Board ..... Dated mailed: _____

   ☐ Pinelands Commission (if applicable) ..... Dated mailed: _____

   ☒ Owners of real property overlying CEA foot print ..... Dated mailed: _____

(Notifications will be sent upon approval of the draft CEA)

2. **List of Names and Addresses** – List below and/or in an attachment, the names/addresses of all persons notified pursuant to N.J.A.C. 7:26C-7.3(d) based on the proposed CEA boundaries. If the site property owner differs from the person responsible for conducting the remediation, check here ☒ and enter the site owner's name and address first in the table below. *See instructions for more information regarding the address list.*

| **Entity or Owner Name** | **Notification Address Used** If owner address differs from property address overlying CEA, add an " * " after the address. | **Blocks/Lots overlying CEA owned by this person** Block | Lot(s) |
|---|---|---|---|
| See Attachment 3 | | | |
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# ADDENDUM
## Classification Exception Area / Well Restriction Area
## Fact Sheet Form

**Section B. CEA Component and Vapor Intrusion Information**

1. **Contaminant Data** (continued)**:** This CEA/WRA applies only to the contaminants listed on page 1 and in the table below with concentrations above, or assumed to be above, numeric values established for the applicable classification area via the GWQS, N.J.A.C. 7:9C. Except for historic fill CEAs based on assumed ground water contamination, list below the maximum contaminant value for all ground water data that could be representative of **current** conditions for any well or sampling point used to establish the CEA. See form Instructions before entering data into the tables below.

| Contaminant | Concentration (1) | GWQS (2) | SWQS(3) | VI GWSL(4) |
|---|---|---|---|---|
| See Attachment 1 | | | | |
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Notes: (1) Maximum concentration in Micrograms Per Liter
(2) New Jersey Ground Water Quality Standards, N.J.A.C. 7:9C-1.7 and 1.9(c)
(3) Surface Water Quality Standards, N.J.A.C. 7:9B - Applicable only where contaminants in the CEA may discharge to a surface water body.
(4) Current NJDEP Vapor Intrusion (VI) Ground Water Screening Levels (GWSL)

2. **CEA Boundaries and VI Pathway Status** (continued)**:** List additional parcels included in the CEA. Attach additional Addendum sheets if necessary to list all blocks and lots within the CEA.

For CEA revisions, check here if block and lot numbers have changed: ☒

| Block | Lot(s) | Check if off-site | Check if VI pathway was evaluated* | Check if VI pathway status is indeterminate* |
|---|---|---|---|---|
| 21501 | 1.01, 12, 14.01 | ☒ | ☐ | ☐ |
| 21501 | 20.01, 20.02 | ☐ | ☐ | ☐ |
| | | ☐ | ☐ | ☐ |
| | | ☐ | ☐ | ☐ |
| | | ☐ | ☐ | ☐ |
| | | ☐ | ☐ | ☐ |
| | | ☐ | ☐ | ☐ |
| | | ☐ | ☐ | ☐ |
| | | ☐ | ☐ | ☐ |

* Follow instructions for parcels where the vapor intrusion (VI) pathway was evaluated and status is indeterminate.

Attachment 1
Constituents of Concern for the Groundwater Classification Exception Area
PPG, Jersey City, New Jersey

| ANALYTE | MAXIMUM DETECTED RESULT [1] (ug/L) | NJ CLASS II-A GWQS [2] (ug/L) | SWQS (ug/L) | VI GWSL [3] (ug/L) |
|---|---|---|---|---|
| 1,1,2-TRICHLOROETHANE | 4.2 | 3 | N/A | 8 |
| 1,1-DICHLOROETHYLENE | 74.8 | 1 | N/A | 260 |
| 1,2-DICHLOROETHANE | 73.3 | 2 | N/A | 3 |
| 1,4-DIOXANE | 2.03 | 0.4 | N/A | N/A |
| ALUMINUM | 181000 | 200 | N/A | N/A |
| ANTIMONY | 912 | 6 | N/A | N/A |
| BIS(2-ETHYLHEXYL)PHTHALATE | 7.8 | 3 | N/A | N/A |
| CHLORIDE | 15400000 | 250000 | N/A | N/A |
| CHROMIUM | 13300000 | 70 | N/A | N/A |
| CHROMIUM (HEXAVALENT) | 7630000 | 70 | N/A | N/A |
| CIS-1,2-DICHLOROETHENE | 2800 | 70 | N/A | N/A |
| COPPER | 1820 | 1300 | N/A | N/A |
| IRON | 317000 | 300 | N/A | N/A |
| MANGANESE | 56400 | 50 | N/A | N/A |
| NICKEL | 863 | 100 | N/A | N/A |
| PENTACHLOROPHENOL | 2.1 | 0.3 | N/A | N/A |
| SODIUM | 7600000 | 50000 | N/A | N/A |
| STYRENE (MONOMER) | 128 | 100 | N/A | 180,000 |
| SULFATE | 3800000 | 250000 | N/A | N/A |
| TETRACHLOROETHENE | 1900 | 1 | N/A | 31 |
| THALLIUM | 8.7 | 2 | N/A | N/A |
| TRICHLOROETHYLENE | 650 | 1 | N/A | 2 |
| VANADIUM | 2800 | 60 | N/A | N/A |
| VINYL CHLORIDE | 38 | 1 | N/A | 1 |

Notes:

[1] - Analytes shown on this table are based on those parameters identified as being on, or emanating from Site 114, at concentrations greater than their respective GWQS, as noted on Table 2 of the January 21, 2021 technical memorandum Constituents of Concern Emanating From Site 114 - Groundwater , filtered down to display the maximum concentrations for each analyte (based on current conditions at each monitoring well within the CEA footprint, as of December 2020).

[2] - Groundwater Quality Standards (GWQS) sourced from N.J.A.C. 7:9C, last amended June 1, 2020.

[3] - Vapor Intrusion (VI) Groundwater Screening Levels (GWSL) based on March 2013 update to VISLs, accessed from:
http://www.nj.gov/dep/srp/guidance/vaporintrusion/

N/A = not applicable
NJ = New Jersey
SWQS = Surface Water Quality Standards
ug/L = micrograms per liter

# Attachment 2 - Vapor Intrusion Responsible Party Statement

**Attachment 2**

The following statement regarding vapor intrusion (VI) responsibility is unchanged from the original CEA application.

The eastern portion of Site 114 was the former location of a manufactured gas plant (MGP), which was investigated and remediated by Public Service Electric and Gas Company Services Corporation (PSEG SC), who has been named as the Responsible Party for MGP related contamination. PSEG SC maintains responsibility for MGP-related impacts on or emanating from Site 114.

Vapor Intrusion (VI) issues on and emanating from Site 114 are the result of former MGP operations. In 2012 and 2013, PSEG performed a VI investigation in accordance with a VI Investigation Work Plan submitted to the NJDEP in March 2010 (CMX) and preliminary results are included in PSEG SC's October 2015 *Interim Remedial Action Report for On-Site Soils – Area A and Area B* (AMEC).

Attachment 3
Property Owners List for Notification of Groundwater Classification Exception Area
Site 114
PPG, Jersey City, New Jersey

| PROPERTY OWNER LIST | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| BLOCK | LOT | PROPERTY CLASS | COUNTY | MUNICIPALITY | PROPERTY ADDRESS | OWNER NAME | OWNER STREET ADDRESS | OWNER CITY, STATE | OWNER ZIP CODE |
| 21404 | 1 | 15C - EXEMPT PUBLIC | HUDSON | JERSEY CITY | 207 RANDOLPH AVE. | JERSEY CITY SEWERAGE AUTHORITY | 555 ROUTE 440 | JERSEY CITY, NJ | 07305 |
| 21404 | 2 | 15C - EXEMPT PUBLIC | HUDSON | JERSEY CITY | 923 GARFIELD AVE. | NEW JERSEY TRANSIT | ONE PENN PLAZA EAST | NEWARK, NJ | 07105 |
| 21404 | 3 | 4B - INDUSTRIAL | HUDSON | JERSEY CITY | 855 GARFIELD AVE. | FRENCHPARK WAREHOUSE CO. | P.O BOX 280 | KENILWORTH, NJ | 07033 |
| 21404 | 6 | 4A - COMMERCIAL | HUDSON | JERSEY CITY | 851 GARFIELD AVE. | 851 GARFIELD AVENUE, LLC | 54 EDGEWATER RD. | CLIFFSIDE, NJ | 07010 |
| 21501 | 1.01 | 15C - EXEMPT PUBLIC | HUDSON | JERSEY CITY | 163 HALLADAY STREET | JERSEY CITY SEWERAGE AUTHORITY | 575 STATE HIGHWAY 440 | JERSEY CITY, N.J. | 07305 |
| 21501 | 12 | 4B - INDUSTRIAL | HUDSON | JERSEY CITY | 86 FORREST ST. | 90 FORREST ASSOCIATES, L.L.C. | 28 BROMLEIGH RD. | STEWART MANOR, NY | 11530 |
| 21501 | 14.01 | 4B - INDUSTRIAL | HUDSON | JERSEY CITY | 100 FORREST ST. | 100 FORREST ASSOCIATES, L.L.C. | 28 BROMLEIGH RD. | STEWART MANOR, NY | 11530 |
| 21501 | 16 | 15C - EXEMPT PUBLIC | HUDSON | JERSEY CITY | 2 DAKOTA ST. | JERSEY CITY REDEVELOPMENT AGENCY | 66 YORK ST. | JERSEY CITY, NJ | 07302 |
| 21501 | 17 | 15C - EXEMPT PUBLIC | HUDSON | JERSEY CITY | 70 CARTERET AVE. | JERSEY CITY REDEVELOPMENT AGENCY | 66 YORK ST. | JERSEY CITY, NJ | 07302 |
| 21501 | 18.01 | 15C - EXEMPT PUBLIC | HUDSON | JERSEY CITY | 880 GARFIELD AVE. | JERSEY CITY REDEVELOPMENT AGENCY | 66 YORK ST. | JERSEY CITY, NJ | 07302 |
| 21501 | 19.01 | 15C - EXEMPT PUBLIC | HUDSON | JERSEY CITY | 884 GARFIELD AVE. | JERSEY CITY REDEVELOPMENT AGENCY | 66 YORK ST. | JERSEY CITY, NJ | 07302 |
| 21501 | 20.01 | 1 - VACANT LAND | HUDSON | JERSEY CITY | 900 GARFIELD AVE | 900 GARFIELD AVE,% RYANN LLC | 1735 MARKET ST.,STE A-400 | PHILADELPHIA, PA. | 19103 |
| 21502 | 8 | 4B - INDUSTRIAL | HUDSON | JERSEY CITY | 133 PACIFIC AVE. | NINE LAWTON ST., INC. | 271 ROSLYN COURT | WEST NEW YORK, NJ | 07093 |
| 21502 | 9 | 4A - COMMERCIAL | HUDSON | JERSEY CITY | 131 PACIFIC AVE. | 107-123 & 127 PACIFIC AVE ASSO,LLC. | 130 NORTH MAIN ST.#ST201 | NEW CITY, NY. | 10956 |
| 21502 | 10 | 4A - COMMERCIAL | HUDSON | JERSEY CITY | 107 PACIFIC AVE. | 107-123 & 127 PACIFIC AVE.ASSOC,LLC | 130 NORTH MAIN ST.#ST 201 | NEW CITY, N.Y. | 10956 |
| 21502 | 11 | 4B - INDUSTRIAL | HUDSON | JERSEY CITY | 105-101 PACIFIC AVE. | ONE0ONE PACIFIC AVE, LLC | 415 NEWARK ST #6B | HOBOKEN, NJ | 07030 |
| 21502 | 12 | 4B - INDUSTRIAL | HUDSON | JERSEY CITY | 78 HALLADAY ST. | PPG INDUSTRIES, INC. | ONE PPG PLACE | PITTSBURGH, PA | 15272 |
| 21502 | 13 | 4B - INDUSTRIAL | HUDSON | JERSEY CITY | 94 HALLADAY ST. | PPG INDUSTRIES, INC. | ONE PPG PLACE | PITTSBURGH, PA | 15272 |
| 21502 | 14 | 1 - VACANT LAND | HUDSON | JERSEY CITY | 98 HALLADAY ST. | PPG INDUSTRIES, INC. | ONE PPG PLACE | PITTSBURGH, PA | 15272 |
| 21502 | 15 | 1 - VACANT LAND | HUDSON | JERSEY CITY | 100 HALLADAY ST. | PPG INDUSTRIES, INC. | ONE PPG PLACE | PITTSBURGH, PA | 15272 |
| 21502 | 16 | 1 - VACANT LAND | HUDSON | JERSEY CITY | 102 HALLADAY ST. | PPG INDUSTRIES, INC. | ONE PPG PLACE | PITTSBURGH, PA | 15272 |
| 21502 | 17 | 1 - VACANT LAND | HUDSON | JERSEY CITY | 104 HALLADAY ST. | PPG INDUSTRIES, INC. | ONE PPG PLACE | PITTSBURGH, PA | 15272 |
| 21502 | 18 | 4B - INDUSTRIAL | HUDSON | JERSEY CITY | 106-116 HALLADAY ST. | HALLADAY INVEST.INC. | 416 LIBERTY AVE. | JERSEY CITY, N.J. | 07307 |
| 21503 | 23 | 1 - VACANT LAND | HUDSON | JERSEY CITY | 33-47 CARTERET AVE. | EDEN WOOD REALTY, LLC | 47 PARSIPANNY ROAD | WHIPPANY, N.J. | 07981 |
| 21503 | 27 | 4B - INDUSTRIAL | HUDSON | JERSEY CITY | 150 PACIFIC AVE. | EDEN WOOD REALTY, LLC | 47 PARSIPANNY ROAD | WHIPPANY, N.J. | 07981 |
| 21509 | 1 | 4B - INDUSTRIAL | HUDSON | JERSEY CITY | 22 HALLADAY ST. | PPG INDUSTRIES, INC. | ONE PPG PLACE | PITTSBURGH, PA | 15272 |
| 21509 | 2 | 4A - COMMERCIAL | HUDSON | JERSEY CITY | 51-99 PACIFIC AVENUE | PPG INDUSTRIES, INC. | ONE PPG PLACE | PITTSBURGH, PA | 15272 |
| 21510 | 1 | 1 - VACANT LAND | HUDSON | JERSEY CITY | 846 GARFIELD AVE. | PPG INDUSTRIES, INC.%TAX ADMIN.DEPT | ONE PPG PLACE | PITTSBURGH, PA | 15272 |
| 21510 | 2 | 15C - EXEMPT PUBLIC | HUDSON | JERSEY CITY | 824 GARFIELD AVE. | JERSEY CITY REDEVELOPMENT AGENCY | 66 YORK ST. | JERSEY CITY, NJ | 07302 |
| 21510 | 3 | 1 - VACANT LAND | HUDSON | JERSEY CITY | 45 HALLADAY ST. | PPG INDUSTRIES, INC.%TAX ADMIN.DEPT | ONE PPG PLACE | PITTSBURGH, PA | 15272 |
| 21510 | 4 | 1 - VACANT LAND | HUDSON | JERSEY CITY | 25 HALLADAY ST. | PPG INDUSTRIES, INC.%TAX ADMIN.DEPT | ONE PPG PLACE | PITTSBURGH, PA | 15272 |
| 21510 | 5 | 4A - COMMERCIAL | HUDSON | JERSEY CITY | 15 HALLADAY ST. | PPG INDUSTRIES, INC.%TAX ADMIN.DEPT | ONE PPG PLACE | PITTSBURGH, PA | 15272 |
| 21510 | 11 | 4A - COMMERCIAL | HUDSON | JERSEY CITY | 816 GARFIELD AVE. | PPG INDUSTRIES, INC.%TAX ADMIN.DEPT | ONE PPG PLACE | PITTSBURGH, PA | 15272 |
| 21510 | 39 | 4B - INDUSTRIAL | HUDSON | JERSEY CITY | 800 GARFIELD AVE. | PPG INDUSTRIES INC. | ONE PPG PLACE | PITTSBURG, PA | 15272 |

| OTHER ENTITIES FOR CEA NOTIFICATION | |
|---|---|
| ENTITY NAME | MAILING ADDRESS (STREET) |
| 1) Office of the City Clerk | 280 Grove Street, Jersey City, NJ 07302 |
| 2) Register of Hudson County | 257 Cornelison Avenue, 2nd Floor, Jersey City, NJ 07302 |
| 3) Hudson Regional Health Commission | 595 County Avenue, Building 1, Secaucus NJ 07094 |
| 4) Department of Health and Human Services | City Hall Annex, 1 Jackson Square, Jersey City, NJ 07305 |
| 5) Jersey City Environmental Commission | 280 Grove Street, Jersey City, NJ 07302 |
| 6) Hudson County Division of Planning | Bergen Square Center, 830 Bergen Avenue Suite 6A, Jersey City, NJ 07306 |

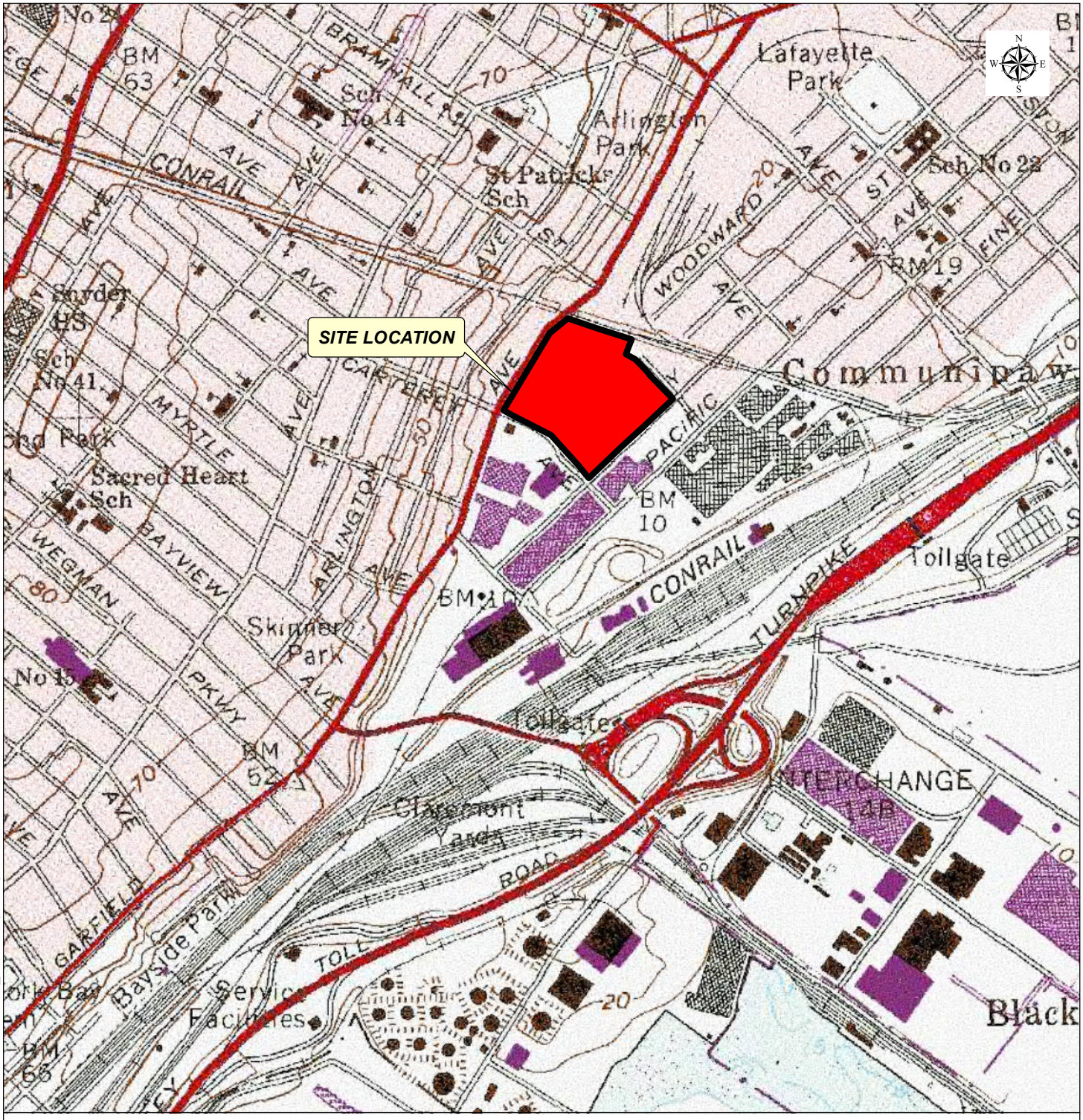


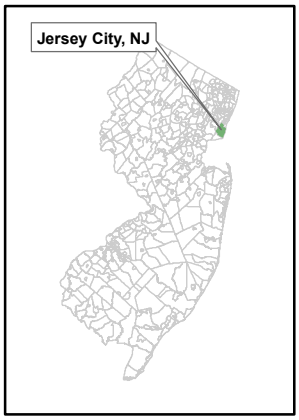


## Legend

SITE 114 (BLOCK 21501, LOTS 16, 17, 18, 19, 20)

Notes:
1. Image Source: USGS Topographic Quadrangle: Jersey City, NJ, 1967 - Photorevised 1981.
2. New Jersey State Plane North American Datum 1983 Coordinates, U.S. Survey Feet.
3. Source of Block/Lot Information: Jersey City Parcel Data from New Jersey Geographic Information Network, Last Updated December 14, 2018. Available at: https://data.jerseycitynj.gov/explore/dataset/jersey-city-parcels/information/

0 500 1,000 2,000 Feet

PPG GARFIELD AVENUE GROUP
SITE 114
JERSEY CITY, NEW JERSEY
PROJECT # 60550261

Date: 12/22/2020 | Drawn by: SR | Checked by:

AECOM

**EXHIBIT A**
**SITE LOCATION MAP**

Last saved by: ravis 2020-12-22
Filename: Q:\920 GIS\MXD\Groundwater RIR\CEA\Historic Fill CEA\Exhibit A_USGS Topo Map.mxd

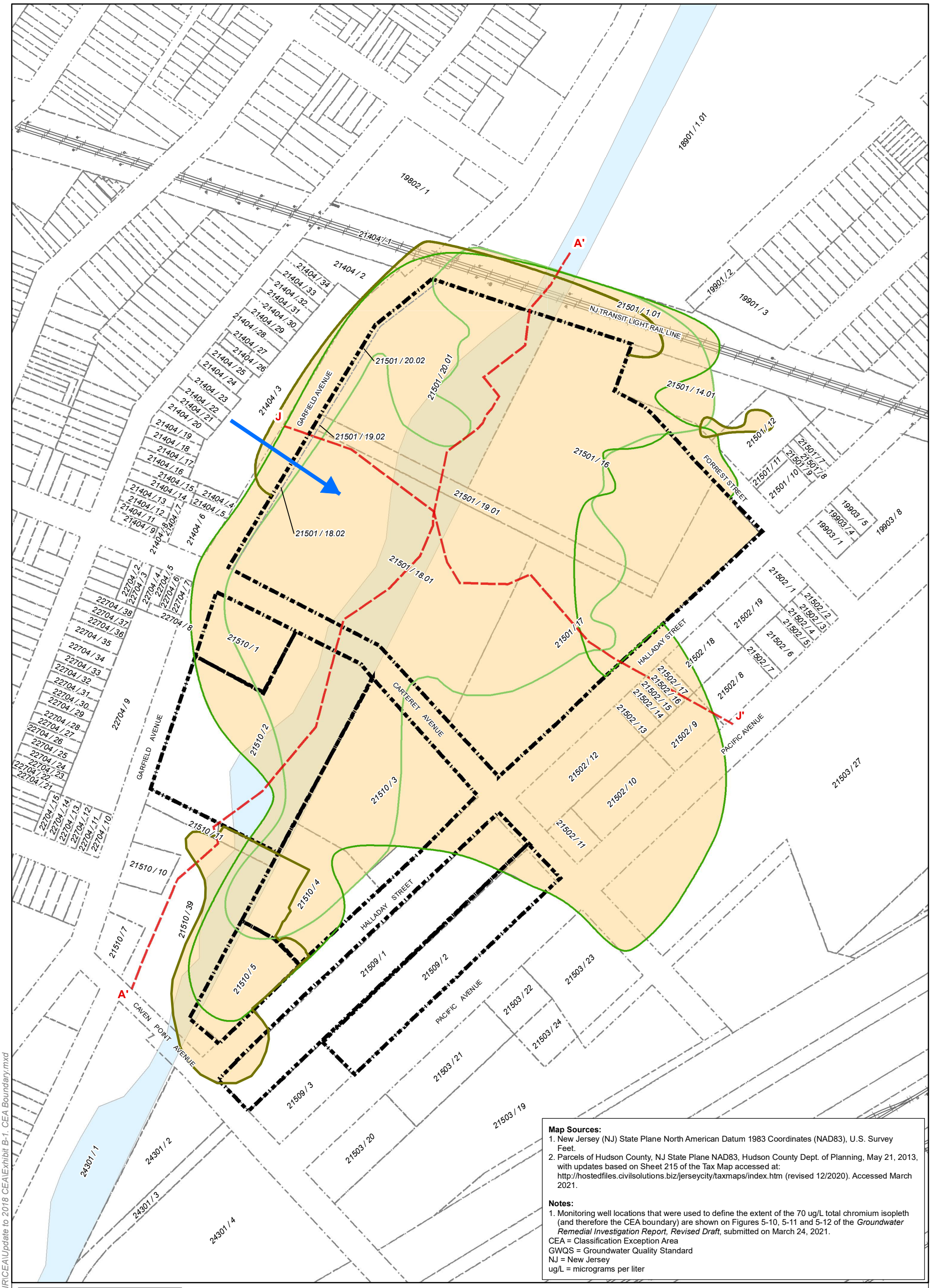


**Map Sources:**
1. New Jersey (NJ) State Plane North American Datum 1983 Coordinates (NAD83), U.S. Survey Feet.
2. Parcels of Hudson County, NJ State Plane NAD83, Hudson County Dept. of Planning, May 21, 2013, with updates based on Sheet 215 of the Tax Map accessed at: http://hostedfiles.civilsolutions.biz/jerseycity/taxmaps/index.htm (revised 12/2020). Accessed March 2021.

**Notes:**
1. Monitoring well locations that were used to define the extent of the 70 ug/L total chromium isopleth (and therefore the CEA boundary) are shown on Figures 5-10, 5-11 and 5-12 of the *Groundwater Remedial Investigation Report, Revised Draft*, submitted on March 24, 2021.

CEA = Classification Exception Area
GWQS = Groundwater Quality Standard
NJ = New Jersey
ug/L = micrograms per liter

## LEGEND

- GARFIELD AVENUE GROUP SITES
- HUDSON COUNTY PARCELS
- FORMER MORRIS CANAL
- REVISED EXTENT OF CEA
- RAILROAD TRACKS
- TOTAL CHROMIUM IN THE SHALLOW WATER-BEARING ZONE (GREATER THAN NJ GWQS OF 70 ug/L)
- TOTAL CHROMIUM IN THE INTERMEDIATE WATER-BEARING ZONE (GREATER THAN NJ GWQS OF 70 ug/L)
- TOTAL CHROMIUM IN THE DEEP WATER-BEARING ZONE (GREATER THAN NJ GWQS OF 70 ug/L)
- FENCE DIAGRAM ALIGNMENTS
- GROUNDWATER FLOW DIRECTION

N W E S

0 100 200 Feet

AECOM

PPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY

DATE: 2021-08-19 | DRAWN BY: SR | CHECKED BY: SG

EXHIBIT B-1
REVISED CEA BOUNDARY

Last Saved By: ravis
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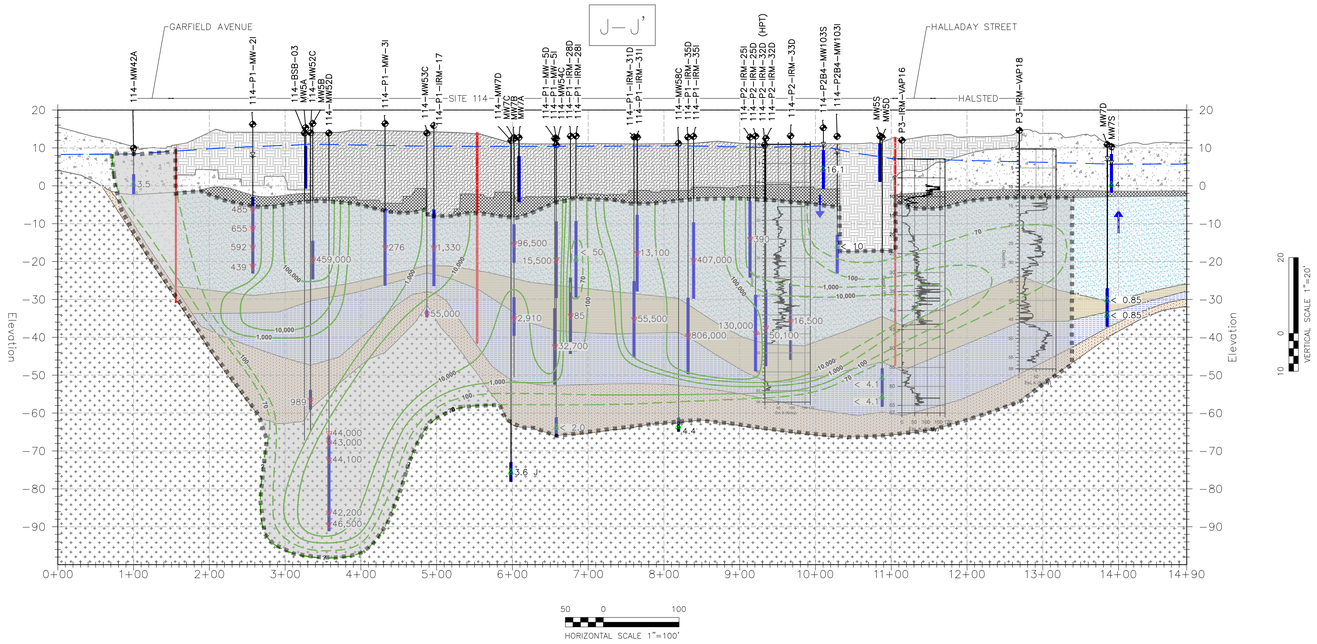


## LEGEND

- EXISTING GROUND SURFACE
- GROUNDWATER SURFACE, SHALLOW WELLS (MAY/JUNE 2018)
- STRUCTURE
- 114–MW25C — GROUNDWATER MONITORING WELL
- EXISTING SHEETPILE
- WELL RISER
- WELL SCREEN
- SHALLOW WATER-BEARING ZONE WELL POTENTIOMETRIC HEAD (MAY/JUNE 2018)
- INTERMEDIATE WATER-BEARING ZONE WELL POTENTIOMETRIC HEAD (MAY/JUNE 2018)
- DEEP WATER-BEARING ZONE WELL POTENTIOMETRIC HEAD (MAY/JUNE 2018)
- DIRECTION OF VERTICAL HYDRAULIC GRADIENT (MAY/JUNE 2018)

- 3.5 — Cr CONCENTRATION <70 ug/L
- 485 — Cr CONCENTRATION >70 ug/L
- 70 — Cr ISOCONTOUR 70 ug/L
- 100 — Cr ISCONTOUR 100 ug/L
- 1,000 — Cr ISOCONTOUR 1,000 ug/L
- 10,000 — Cr ISOCONTOUR 10,000 ug/L
- 100,000 — Cr ISOCONTOUR 100,000 ug/L
- 1,000,000 — Cr ISOCONTOUR 1,000,000 ug/L
- ? — INFERRED Cr ISOCONTOUR

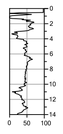


ESTIMATED HYDRAULIC CONDUCTIVITY LOG FROM HYDRAULIC PROFILE TOOL (HPT), FEET/DAY

CEA BOUNDARY FOR SHALLOW, INTERMEDIATE, DEEP, AND BEDROCK WATER-BEARING ZONES

## STRATIGRAPHY

SHALLOW WATER-BEARING ZONE
- FILL: FINE TO COARSE SAND WITH SILT AND GRAVEL, MAY INCLUDE VARIOUS MATERIALS ASSOCIATED WITH HISTORICAL FILL SUCH AS: CONSTRUCTION SPOILS, DEMOLITION DEBRIS, GARBAGE, INCINERATOR ASH, COAL ASH, SHIP BALLAST, AND INDUSTRIAL WASTE
- DENSE-GRADE AGGREGATE FILL: FINE TO COARSE SAND WITH FINE GRAVEL AND SILT
- FINE TO MEDIUM SAND WITH LENSES OF SILT, TRACE FINE GRAVEL

INTERMEDIATE WATER-BEARING ZONE
- MEADOW MAT: ESTUARINE AND SALT MARSH DEPOSITS
- SAND AND SILTY SAND WITH LENSES OF GRAVEL, SILT, OR CLAY
- TRANSITION ZONE: INTERBEDDED FINE TO VERY FINE SAND, SILT, AND CLAY

DEEP WATER-BEARING ZONE
- SAND WITH LENSES OF GRAVEL, SILT, OR CLAY
- SILT AND CLAY, WITH LENSES OF INTERBEDDED VERY FINE SAND
- BASAL TILL (LOWER FACIES OF RAHWAY TILL) REDDISH-BROWN SILTY CLAYS, SANDY SILTS, AND SILTY SANDS WITH SUBROUNDED TO SUBANGULAR FINE TO COARSE GRAVEL AND COBBLES, AND OCCASIONAL INTERBEDDED LENSES OF CLAY, SILT, OR FINE SAND, HARD, DENSE, COMPACT, AND TYPICALLY DRY.
- BEDROCK: STOCKTON FORMATION, LOCKATONG FORMATION, OR DIABASE
- AREA WITH VISUAL OBSERVATIONS OF CCPW, CONSISTING OF COPR, GREEN-GRAY MUD, OR FILL MIXED WITH COPR OR GREEN-GRAY MUD
- ? — DENOTES INFERRED STRATIGRAPHIC CONTACT
- FERROBLACK-H AMENDED BACKFILL AREA

NOTES:

1. ELEVATIONS ARE SHOWN IN FT NAVD88.
2. THE GWQS FOR Cr IS 70 ug/L.
3. DATA PRESENTED ON THIS FIGURE ARE FROM SAMPLES COLLECTED FROM MONITORING WELLS BETWEEN JUNE 15, 2011 AND FEBRUARY 2021, FOR VARIOUS GROUNDWATER PROGRAMS, INCLUDING BUT NOT LIMITED TO: GROUNDWATER RI (HISTORICAL AND RECENTLY COMPLETED), GROUNDWATER PILOT TESTING, AND INTERIM REMEDIAL MEASURES (IRM) ON SITE 114, CAPILLARY RISE GROUNDWATER MONITORING AND SITE-WIDE FERROBLACK-H PERMIT-BY-RULE (PBR) COMPLIANCE MONITORING.
4. DATA FROM SAMPLES COLLECTED FROM HISTORICAL MONITORING WELLS LOCATED IN REMEDIAL AREAS (E.G., SITE 114) ARE SUPERCEDED BY MORE RECENT DATA COLLECTION PROGRAMS THAT WERE IMPLEMENTED AFTER THE COMPLETION OF SOIL REMEDIATION ACTIVITIES.
5. RESULTS PRESENTED ARE FROM THE ANALYSIS OF UNFILTERED GROUNDWATER SAMPLES.
6. CHROMIUM CONCENTRATIONS ARE PRESENTED IN UNITS OF MICROGRAMS PER LITER.

QUALIFIERS:

| | |
|---|---|
| J | RESULT IS AN ESTIMATED VALUE |
| U | ANALYTE WAS NOT DETECTED ABOVE THE METHOD DETECTION LIMIT OR REPORTING LIMIT |

DEFINITIONS:

| | |
|---|---|
| CCPW | CHROMATE CHEMICAL PRODUCTION WASTE |
| COPR | CHROMITE ORE PROCESSING RESIDUE |
| Cr | TOTAL CHROMIUM |
| FT NAVD88 | FEET IN NORTH AMERICAN VERTICAL DATUM OF 1988 |
| GWQS | GROUNDWATER QUALITY STANDARD |
| RI | REMEDIAL INVESTIGATION |
| ug/L | MICROGRAMS PER LITER |

AECOM

PPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, HUDSON COUNTY NEW JERSEY

EXHIBIT B-2A

DATE: 8/13/2021 | DRWN: GDS

File: G:\910_CAD\29_SHEETS\Cad\2021 GW RAP Fence Diagrams_08-2021\29210303 Fence Diagram_J-J' dwg Layout: J-J' AND D User: frederik.schuele Plotted: Aug 13, 2021 - 2:18pm

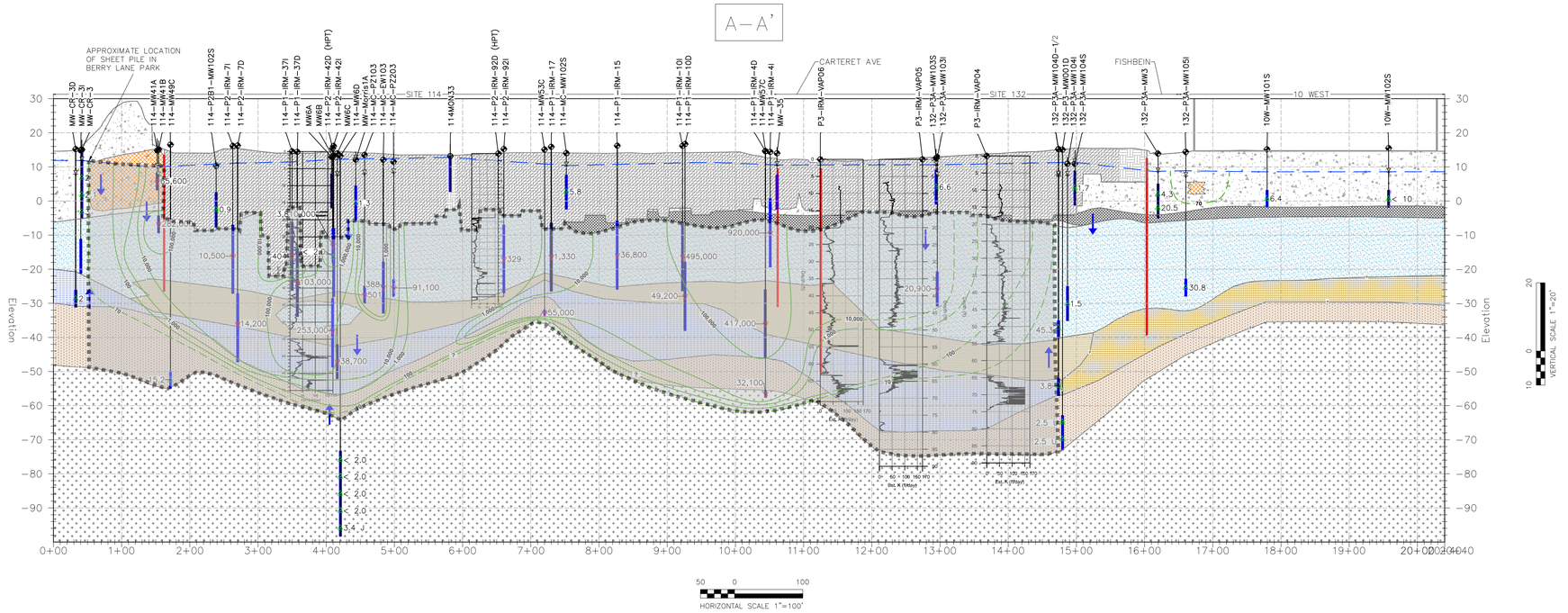


## LEGEND

- EXISTING GROUND SURFACE
- GROUNDWATER SURFACE, SHALLOW WELLS (MAY/JUNE 2018)
- STRUCTURE
- 114–MW25C GROUNDWATER MONITORING WELL
- EXISTING SHEETPILE
- WELL RISER
- WELL SCREEN
- SHALLOW WATER-BEARING ZONE WELL POTENTIOMETRIC HEAD (MAY/JUNE 2018)
- INTERMEDIATE WATER-BEARING ZONE WELL POTENTIOMETRIC HEAD (MAY/JUNE 2018)
- DEEP WATER-BEARING ZONE WELL POTENTIOMETRIC HEAD (MAY/JUNE 2018)
- DIRECTION OF VERTICAL HYDRAULIC GRADIENT (MAY/JUNE 2018)

- 2.1 Cr CONCENTRATION <70 ug/L
- 404 Cr CONCENTRATION >70 ug/L
- 70 Cr ISOCONTOUR 70 ug/L
- 100 Cr ISCONTOUR 100 ug/L
- 1,000 Cr ISOCONTOUR 1,000 ug/L
- 10,000 Cr ISOCONTOUR 10,000 ug/L
- 100,000 Cr ISOCONTOUR 100,000 ug/L
- 1,000,000 Cr ISOCONTOUR 1,000,000 ug/L
- ? INFERRED Cr ISOCONTOUR

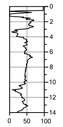


ESTIMATED HYDRAULIC CONDUCTIVITY LOG FROM HYDRAULIC PROFILE TOOL (HPT), FEET/DAY

CEA BOUNDARY FOR SHALLOW, INTERMEDIATE, DEEP, AND BEDROCK WATER-BEARING ZONES

## STRATIGRAPHY

SHALLOW WATER-BEARING ZONE

- FILL: FINE TO COARSE SAND WITH SILT AND GRAVEL; MAY INCLUDE VARIOUS MATERIALS ASSOCIATED WITH HISTORICAL FILL SUCH AS: CONSTRUCTION SPOILS, DEMOLITION DEBRIS, GARBAGE, INCINERATOR ASH, COAL ASH, SHIP BALLAST, AND INDUSTRIAL WASTE
- DENSE-GRADE AGGREGATE FILL: FINE TO COARSE SAND WITH FINE GRAVEL AND SILT
- FINE TO MEDIUM SAND WITH LENSES OF SILT, TRACE FINE GRAVEL

INTERMEDIATE WATER-BEARING ZONE

- MEADOW MAT: ESTUARINE AND SALT MARSH DEPOSITS
- SAND AND SILTY SAND WITH LENSES OF GRAVEL, SILT, OR CLAY
- TRANSITION ZONE: INTERBEDDED FINE TO VERY FINE SAND, SILT, AND CLAY

DEEP WATER-BEARING ZONE

- SAND WITH LENSES OF GRAVEL, SILT, OR CLAY
- SILT AND CLAY, WITH LENSES OF INTERBEDDED VERY FINE SAND
- BASAL TILL (LOWER FACIES OF RAHWAY TILL) REDDISH-BROWN SILTY CLAYS, SANDY SILTS, AND SILTY SANDS WITH SUBROUNDED TO SUBANGULAR FINE TO COARSE GRAVEL AND COBBLES, AND OCCASIONAL INTERBEDDED LENSES OF CLAY, SILT, OR FINE SAND. HARD, DENSE, COMPACT, AND TYPICALLY DRY.
- BEDROCK: STOCKTON FORMATION, LOCKATONG FORMATION, OR DIABASE
- AREA WITH VISUAL OBSERVATIONS OF CCPW, CONSISTING OF COPR, GREEN-GRAY MUD, OR FILL MIXED WITH COPR OR GREEN-GRAY MUD
- ? DENOTES INFERRED STRATIGRAPHIC CONTACT
- FERROBLACK-H AMENDED BACKFILL AREA

NOTES:

1. ELEVATIONS ARE SHOWN IN FT NAVD88.
2. THE GWQS FOR Cr IS 70 ug/L.
3. DATA PRESENTED ON THIS FIGURE ARE FROM SAMPLES COLLECTED FROM MONITORING WELLS BETWEEN JUNE 15, 2011 AND FEBRUARY 2021, FOR VARIOUS GROUNDWATER PROGRAMS, INCLUDING BUT NOT LIMITED TO: GROUNDWATER RI (HISTORICAL AND RECENTLY COMPLETED), GROUNDWATER PILOT TESTING AND INTERIM REMEDIAL MEASURES (IRM) ON SITE 114, CAPILLARY RISE GROUNDWATER MONITORING AND SITE-WIDE FERROBLACK-H PERMIT-BY-RULE (PBR) COMPLIANCE MONITORING.
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5. RESULTS PRESENTED ARE FROM THE ANALYSIS OF UNFILTERED GROUNDWATER SAMPLES.
6. CHROMIUM CONCENTRATIONS ARE PRESENTED IN UNITS OF MICROGRAMS PER LITER.

QUALIFIERS:

| | |
|---|---|
| J | RESULT IS AN ESTIMATED VALUE |
| U | ANALYTE WAS NOT DETECTED ABOVE THE METHOD DETECTION LIMIT OR REPORTING LIMIT |

DEFINITIONS:

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| CCPW | CHROMATE CHEMICAL PRODUCTION WASTE |
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| ug/L | MICROGRAMS PER LITER |

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PPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, HUDSON COUNTY NEW JERSEY

EXHIBIT B-2B

DATE: 8/16/2021 | DRWN: GDS

File: G:\PPG GROUP\GARFIELD SHEETS\GW\2021 GW RI\FT\Fence Diagrams_08-2021\20210303 Fence Diagram_A-A'.dgn Layout: A-A' (40') ID User: frederick.schaefe Plotted: Aug 17, 2021 - 12:53pm

**New Jersey Department of Environmental Protection**
Site Remediation and Waste Management Program

**CLASSIFICATION EXCEPTION AREA / WELL RESTRICTION AREA (CEA/WRA) FACT SHEET FORM**

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE INFORMATION

Site Name: Hudson County Chromate Site 114

Program Interest (PI) Number(s): G000005480, Activity # RPC000051

Case Tracking Number(s) for this submission: _____

**This form must be attached to the Cover / Certification Form if not submitted through the Remedial Phase Report Online Service**

1. Indicate the reason for submission of this form *(see instructions)*:

☐ New CEA ☐ Revise CEA ☐ Reestablish CEA ☐ Existing CEA with no changes
☒ CEA for historic fill ☐ CEA for Historically Applied Pesticides (HAP) ☐ CEA lift/removal

If you are submitting this form for an existing CEA provide the CEA Subject Item ID: _____

2. Indicate the type of ground water Remedial Action (RA):

☐ Natural ☐ Active ☒ Final RA not yet selected

3. Is this form being submitted with a Remedial Action Permit (RAP) Form (for Soil or Ground Water)?.... ☐ Yes ☒ No

## SECTION B. CEA COMPONENT AND VAPOR INTRUSION INFORMATION

Name of document that includes the CEA Fate and Transport Description: Not applicable - Historic fill

Date of document: 08/31/2021

**1. Ground Water Classification:** What is the ground water classification within the CEA as per N.J.A.C. 7:9C?

*(Check all that apply)*

☐ Class I-A
☐ Class I-PL Pinelands Protection Area
☐ Class I-PL Pinelands Preservation Area
☒ Class II-A
☐ Class III-A
☐ Class III-B

**2. Contaminant Data:** This CEA/WRA applies only to the contaminants listed below with concentrations above, or assumed to be above, numeric values established for the applicable classification area via the Ground Water Quality Standards (GWQS), N.J.A.C. 7:9C. Except for historic fill CEAs based on assumed ground water contamination, list the maximum contaminant value for all ground water data that could be representative of **current** conditions for any well or sampling point used to establish the CEA. See form instructions before entering data into the below table.

| Contaminant | Concentration (1) | GWQS (2) | SWQS(3) | GWSL(4) |
|---|---|---|---|---|
| Beryllium | 4.2 | 1 | - | - |
| Cadmium | 5 | 4 | - | - |
| 3+4-methylphenol | 223 | 50 | - | - |
| Cobalt | 189 | 100 | - | - |
| Mercury | 1.3 | 2 | - | - |

See Note 1

Notes:
(1) Maximum concentration in Micrograms Per Liter
(2) New Jersey Ground Water Quality Standards, N.J.A.C. 7:9C-1.7 and 1.9(c)
(3) Surface Water Quality Standards, N.J.A.C. 7:9B - Applicable only where contaminants in the CEA may discharge to a surface water body.
(4) Current NJDEP Vapor Intrusion (VI) Ground Water Screening Levels (GWSL) available at http://www.nj.gov/dep/srp/guidance/vaporintrusion/

☒ Check if attaching the form Addendum to list additional contaminants and associated information.



Note 1: The list of contaminants is based on Table 2 of the approved January 21, 2021 technical memorandum *Constituents of Concern Emanating From Site 114 - Groundwater*, included in Appendix A to the RIR.

**3. CEA Boundaries and VI Pathway Status:** Year of tax map used: 2013 See Note 2

Are there volatile contaminants in the CEA?..... ☐ Yes ☒ No

Is there LNAPL currently found in the CEA?..... ☐ Yes ☒ No

For CEA revisions only:

☐ Check if CEA Boundary has changed (*See instructions*)

☐ Check if Block and Lot numbers have changed (*See instructions*)

**Note 2**: Source of block/lot information: Parcels of Hudson County, NJ State Plane NAD83, Hudson County Dept. of Planning, May 21, 2013, with updates based on Sheet 215 of the Tax Map accessed at: http://hostedfiles.civilsolutions.biz/jerseycity/taxmaps/index.htm (revised 12/2020). Accessed March 2021.

**List the block(s) and lot(s) included in the areal extent of the CEA and check the appropriate boxes:**

| Block | Lot(s) | Check if off-site | Check if VI pathway was evaluated* | Check if VI pathway status is indeterminate* |
|---|---|---|---|---|
| 21501 | 16, 17, 18.01, 18.02, 19.01, 19.02 | ☐ | ☐ | ☐ |
| 21501 | 20.01, 20.02 | ☐ | ☐ | ☐ |
| | | ☐ | ☐ | ☐ |
| | | ☐ | ☐ | ☐ |
| | | ☐ | ☐ | ☐ |
| | | ☐ | ☐ | ☐ |
| | | ☐ | ☐ | ☐ |

☐ Check if attaching an Addendum to list additional Blocks/Lots and associated information. *(see instructions)*

*Follow instructions for parcels where the vapor intrusion (VI) pathway was evaluated and the status is indeterminate.

Direction of ground water flow: multiple zones/ variable (*If multiple water bearing zones exist within the CEA and/or there is no predominant flow direction, see instructions.*) * Refer to Figure 3-5 and Section 3 of the RIR.

Vertical depth of CEA: 26.6 (ft bgs) **and** -13.4 (msl). See Exhibit B-2

Horizontal extent of CEA: 16.2 Indicate units: ☒ acres or ☐ square feet

Name(s) of the affected Geologic Formation(s)/Unit(s) (*see instructions if multiple formations/units affected)*:

Non-native fill layer

Narrative description of proposed CEA boundaries:

The proposed CEA extends to the property boundaries of Block 21501, Lots 16-20.02, and measures approximately 16.2 acres, and extends to a depth of 26.6 ft below ground. The CEA is bounded by the NJ Transit Light Rail property and Forrest Street to the north, Halladay Street to the east, Carteret Avenue to the south, and Garfield Avenue to the west. The contamination is related to the presence of regional historic fill across the Site.

**4. Projected Term of CEA:** *(Based on modeling/calculations in the fate and transport description)*

Proposed Duration in Years: _____ Anticipated Expiration Date: _____

or ☒ Indeterminate (*Review instructions before selecting* "Indeterminate" *for the CEA duration.*)

**5. ATTACH AND/OR SUBMIT THE FOLLOWING:** (*see instructions for additional information/requirements*)

**Exhibit A: Site Location Maps** – Based on USGS Quadrangle Map;

**Exhibit B: CEA Map and Cross Section Figure** – See N.J.A.C 7:26C- 7.3(c)1 and 2 and instructions regarding what is required to be included on the map and the cross-section figure.

**Exhibit C: GIS Deliverables** – CEA Boundary Extent Map. The CEA Boundary Extent Map shall be submitted via email to srpgis_cea@dep.nj.gov. (*See the instructions for detailed GIS deliverable requirements.)*

Identify format of CEA Boundary Extent Map being submitted: ..... ☒ Shape File ☐ CAD File ☐ N/A

If there is a CEA map already on NJ-GeoWeb, does it need to be revised? ..... ☐ Yes ☐ No ☒ N/A

## SECTION C. CURRENT GROUND WATER USE DOCUMENTATION

Note: Well search is included in the Receptor Evaluation form prepared for the Remedial Investigation Report.

1. Indicate the year of the most recent well search completed per N.J.A.C. 7:26E-1.14: 2021

2. If this Fact Sheet form is for a revised CEA or an existing CEA with no changes, have new wells been installed since the CEA was established? ☐ Yes ☐ No ☒ N/A

3. Are there any pumping wells (e.g., potable, industrial, irrigation or recovery wells) within the foot print of the CEA? ☐ Yes ☒ No

   If "Yes" list/attach list of the type and status of any pumping well(s) within CEA:

## SECTION D. WELL RESTRICTION INFORMATION

Certain well restrictions relevant to potable ground water use, such as "Double Case Wells", "Sample Potable Wells", and "Evaluate Production Wells", are consistently set within the boundaries of all CEAs established by the NJDEP in Class I and II-A areas (*see instructions*).

1. Are there any other site-specific well restrictions relevant to potable ground water use that should be set within or near the boundaries of the proposed CEA? ☐ Yes ☒ No

   If "Yes", describe below any such site-specific well restrictions proposed for this CEA:

## SECTION E. PUBLIC NOTIFICATION REQUIREMENTS

1. Indicate which of the following entities have been notified pursuant to N.J.A.C. 7:26C-7.3(d) and the dates each notification was sent. (*check all that apply*)

   ☒ Municipal and county clerk(s) ..... Dated mailed: _____

   ☒ Local, county or regional health department(s) ..... Dated mailed: _____

   ☒ Designated County Environmental Health Act agency (if applicable) ..... Dated mailed: _____

   ☒ County Planning Board ..... Dated mailed: _____

   ☐ Pinelands Commission (if applicable) ..... Dated mailed: _____

   ☒ Owners of real property overlying CEA foot print ..... Dated mailed: _____

(Notifications will be sent upon approval of the draft CEA)

2. **List of Names and Addresses** – List below and/or in an attachment, the names/addresses of all persons notified pursuant to N.J.A.C. 7:26C-7.3(d) based on the proposed CEA boundaries. If the site property owner differs from the person responsible for conducting the remediation, check here ☒ and enter the site owner's name and address first in the table below. *See instructions for more information regarding the address list.*

| **Entity or Owner Name** | **Notification Address Used** If owner address differs from property address overlying CEA, add an " * " after the address. | **Blocks/Lots overlying CEA owned by this person** Block | Lot(s) |
|---|---|---|---|
| JERSEY CITY REDEVELOPMENT AGENCY | 66 York St., Jersey City, NJ 07302 * | B: 21501 | L: 16, 17, 18.01, 19.01 |
| 900 GARFIELD AVE,% RYANN LLC | 1735 Market St., Suite A-400, Philadelphia PA 19103 * | B: 21501 | L: 20.01 |
| City Clerk, Jersey City | 280 Grove Street, Jersey City, NJ 07302 | NA | NA |
| Hudson County Register | 257 Cornelison Ave., 2nd Floor, Jersey City, NJ 07302 | NA | NA |
| Hudson Regional Health Commission | 595 County Avenue, Building 1, Secaucus NJ 07094 | NA | NA |
| Jersey City Dept. of Health and Human Services | 1 Jackson Square, Jersey City NJ 07305 | NA | NA |
| Jersey City Environmental Commission | 280 Grove Street, Jersey City, NJ 07302 | NA | NA |
| Hudson County Division of Planning | 830 Bergen Avenue, Suite 6A, Jersey City NJ 07306 | NA | NA |
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# ADDENDUM
## Classification Exception Area / Well Restriction Area
## Fact Sheet Form

**Section B. CEA Component and Vapor Intrusion Information**

1. **Contaminant Data** (continued)**:** This CEA/WRA applies only to the contaminants listed on page 1 and in the table below with concentrations above, or assumed to be above, numeric values established for the applicable classification area via the GWQS, N.J.A.C. 7:9C. Except for historic fill CEAs based on assumed ground water contamination, list below the maximum contaminant value for all ground water data that could be representative of **current** conditions for any well or sampling point used to establish the CEA. See form Instructions before entering data into the tables below.

| Contaminant | Concentration (1) | GWQS (2) | SWQS(3) | VI GWSL(4) |
|---|---|---|---|---|
| Selenium | 33.4 | 40 | - | - |
| Silver | 138 | 40 | - | - |
| Zinc | 1,630 | 2,000 | - | - |
| | | | | |
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Notes: (1) Maximum concentration in Micrograms Per Liter
(2) New Jersey Ground Water Quality Standards, N.J.A.C. 7:9C-1.7 and 1.9(c)
(3) Surface Water Quality Standards, N.J.A.C. 7:9B - Applicable only where contaminants in the CEA may discharge to a surface water body.
(4) Current NJDEP Vapor Intrusion (VI) Ground Water Screening Levels (GWSL)

2. **CEA Boundaries and VI Pathway Status** (continued)**:** List additional parcels included in the CEA. Attach additional Addendum sheets if necessary to list all blocks and lots within the CEA.

For CEA revisions, check here if block and lot numbers have changed: ☐

| Block | Lot(s) | Check if off-site | Check if VI pathway was evaluated* | Check if VI pathway status is indeterminate* |
|---|---|---|---|---|
| | | ☐ | ☐ | ☐ |
| | | ☐ | ☐ | ☐ |
| | | ☐ | ☐ | ☐ |
| | | ☐ | ☐ | ☐ |
| | | ☐ | ☐ | ☐ |
| | | ☐ | ☐ | ☐ |
| | | ☐ | ☐ | ☐ |
| | | ☐ | ☐ | ☐ |
| | | ☐ | ☐ | ☐ |

* Follow instructions for parcels where the vapor intrusion (VI) pathway was evaluated and status is indeterminate.

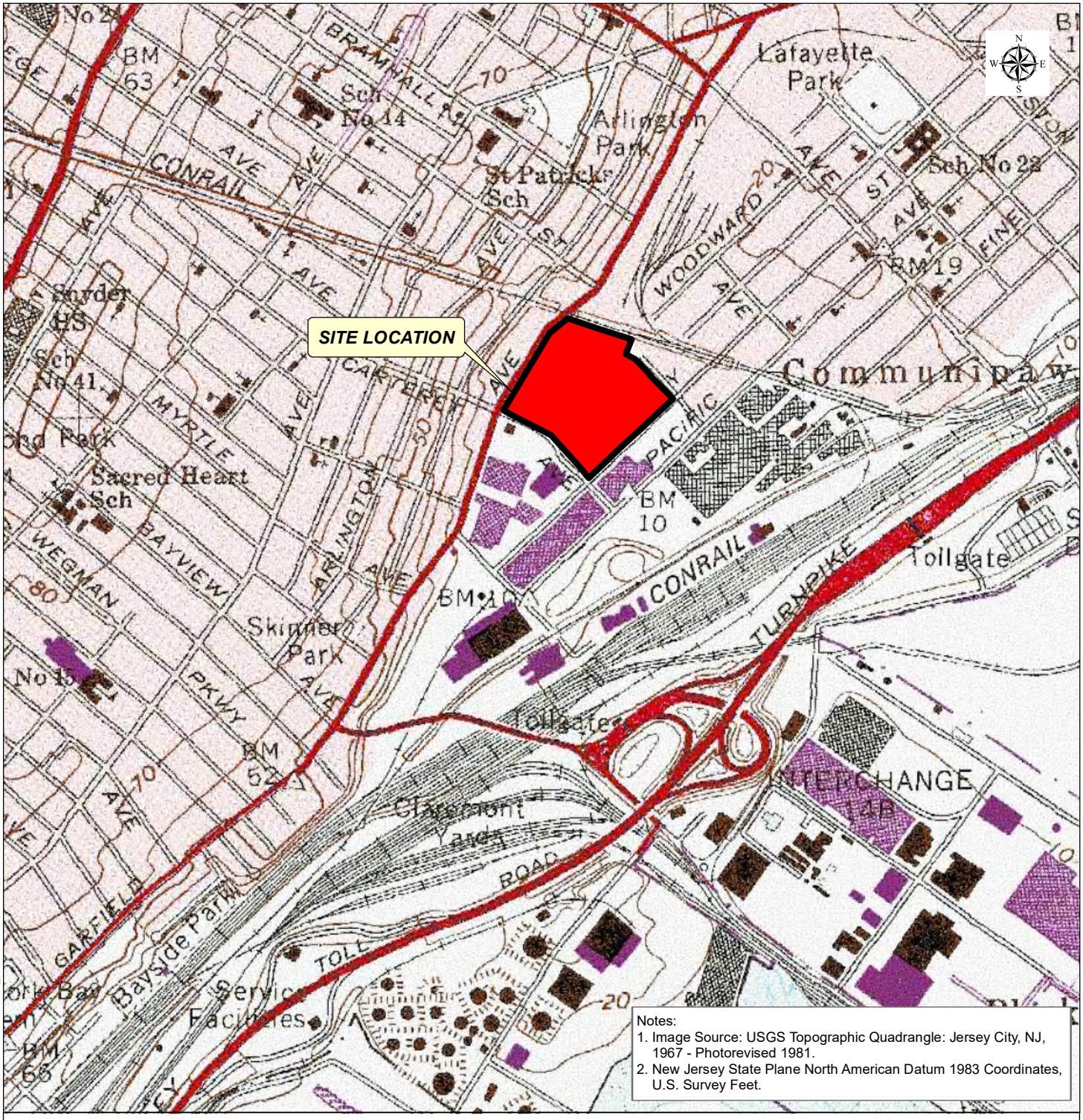


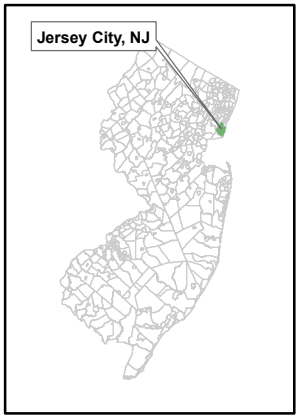


## Legend

HUDSON COUNTY CHROMATE SITE 114

0 500 1,000 2,000 Feet

PPG GARFIELD AVENUE GROUP
SITE 114
JERSEY CITY, NEW JERSEY
PROJECT # 60550261

Date: 12/22/2020 | Drawn by: SR | Checked by:SG

**EXHIBIT A**
**SITE LOCATION MAP**

AECOM

Last saved by: ravis 2020-12-22
Filename: Q:\920 GIS\MXD\Groundwater RIR\CEA\Historic Fill CEA\Exhibit A_USGS Topo Map.mxd




**Notes:**
1. New Jersey State Plane North American Datum 1983 Coordinates (NAD83), U.S. Survey Feet.
2. Parcels of Hudson County, NJ State Plane NAD83, Hudson County Dept. of Planning, May 21, 2013, with updates based on Sheet 215 of the Tax Map accessed at: http://hostedfiles.civilsolutions.biz/jerseycity/taxmaps/index.htm (revised 12/2020). Accessed March 2021.

CEA = Classification Exception Area

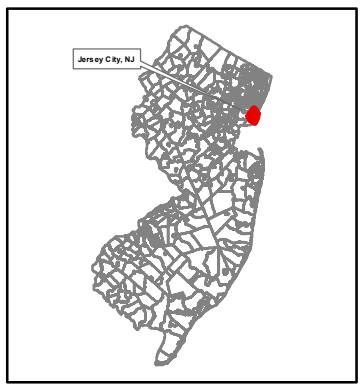


## LEGEND

- HUDSON COUNTY PARCELS
- RAILROAD TRACKS
- PROPERTY LINES
- HISTORIC FILL CEA BOUNDARY
- DIRECTION OF GROUNDWATER FLOW

N W E S

0 75 150 Feet

AECOM

| PPG<br>GARFIELD AVENUE GROUP<br>JERSEY CITY, NEW JERSEY<br>60550261 | | | EXHIBIT B-1<br>SITE PLAN AND<br>CEA BOUNDARY |
|---|---|---|---|
| DATE: 3/22/2021 | DRAWN BY: SR | CHECKED BY: | |

Last Saved By: ravis
Document Path: Q:\PPG - GDS\920 GIS\MXD\Groundwater RI\RICEA\Historic Fill CEA\Exhibit B-1 SitePlan_CEA Boundary.mxd

File: Q:\20 SHEETS\GW\2021 Site 114 GW RIR\CAD\2021-01-14 Site 114 GW RIR.dwg Layout: FIGURE 1 User: John.Angelone Plotted: Feb 04, 2021 - 12:31pm Xref's:

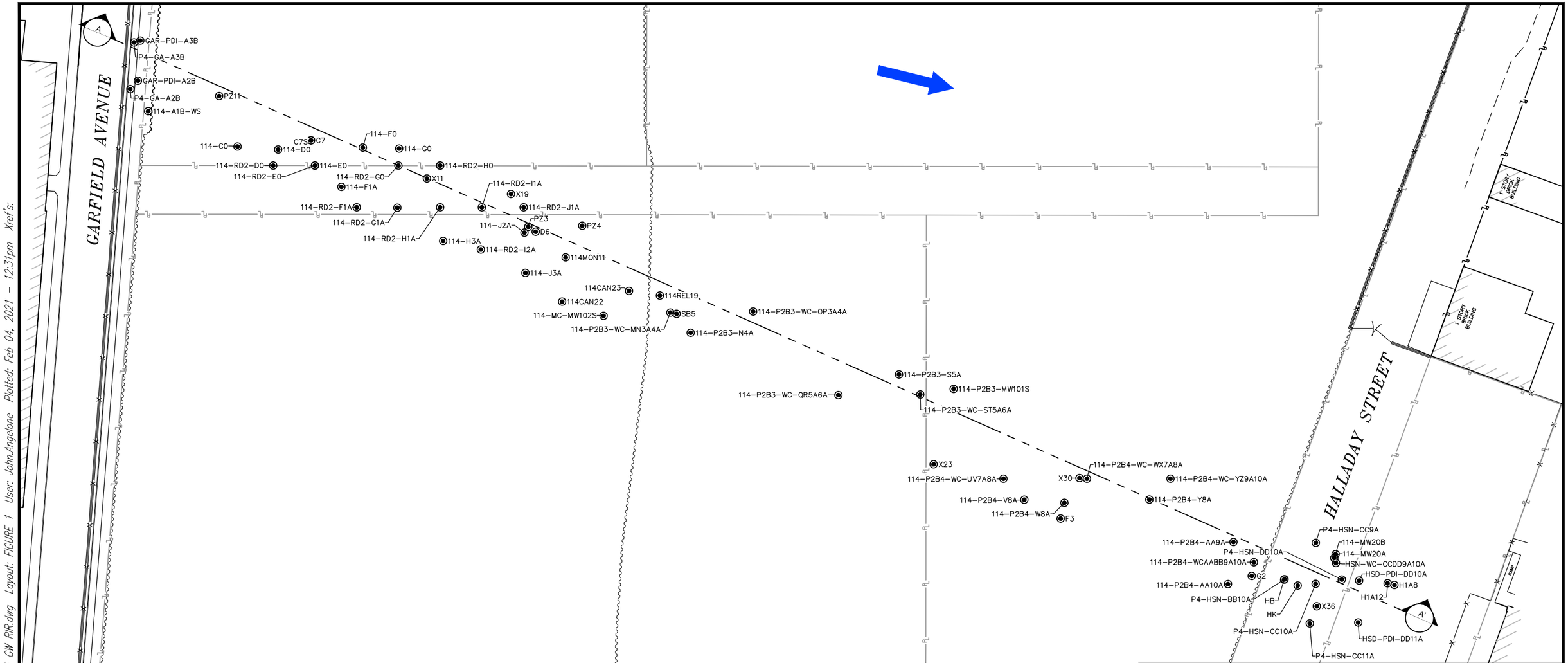


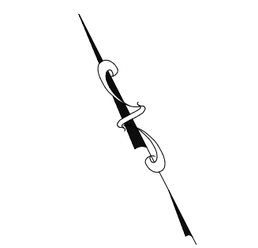

35 0 70

GRAPHIC SCALE IN FEET

AECOM

## LEGEND

- EXISTING PROPERTY LINE
- FENCE
- EDGE OF PAVEMENT
- EDGE OF CONCRETE
- EXISTING SHEET PILE
- CURB
- DEPRESSED CURB
- CONCRETE WALL
- EXISTING BUILDING
- PRE-CONSTRUCTION ELEVATION CONTOURS 1' INTERVAL 5' INDEX (16 / 15)
- BORING/MONITORING WELL/ TEST PIT/POST-EXCAVATION SAMPLE LOCATION (FBP-B31A)
- GROUNDWATER FLOW DIRECTION ARROW

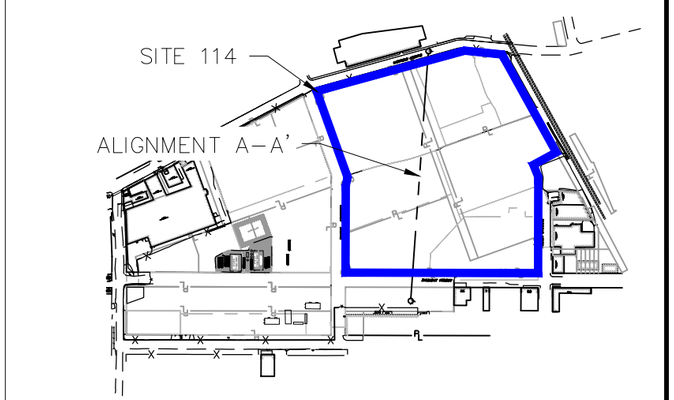


PPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY

**HISTORIC FILL - SITE 114**
**PLAN VIEW**

DATE: 02/04/2021 | DRWN: ASK | | **EXHIBIT B-2A**

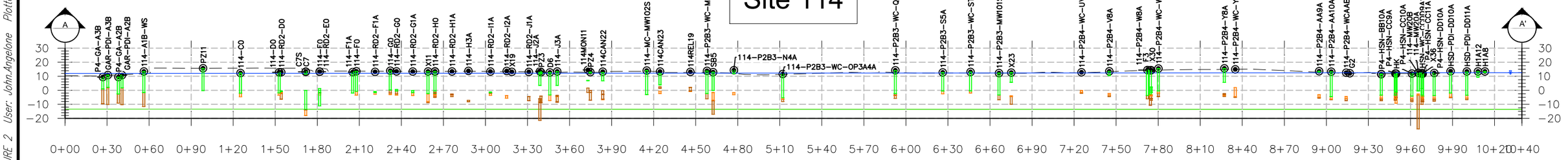


## LEGEND

- EXISTING GROUND SURFACE
- GROUNDWATER ELEVATION/ UPPER LIMIT OF CEA
- LOWER LIMIT OF CEA
- FILL OBSERVED IN BORING
- MM OBSERVED IN BORING
- UND OBSERVED IN BORING
- FBP−B31A — BORING/MONITORING WELL/ TEST PIT/POST-EXCAVATION SAMPLE LOCATION

NOTES:

1. ELEVATION VERTICAL DATUM IS NAVD88, IN US SURVEY FT.

| | |
|---|---|
| CEA | CLASSIFICATION EXCEPTION AREA |
| FT | FEET |
| MM | MEADOW MAT |
| NAVD88 | NORTH AMERICAN VERTICAL DATUM OF 1988 |
| UND | UNDISTURBED NATIVE DEPOSIT |

40 0 80

GRAPHIC SCALE IN FEET

AECOM

PPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY

**HISTORIC FILL - SITE 114**
**PROFILE VIEW**

DATE: 02/04/2021 | DRWN: ASK | **EXHIBIT B-2B**

File: Q:\20 SHEETS\GW\2021 Site 114 GW RIR\CAD\2021-01-14 Site 114 GW RIR.dwg Layout: FIGURE 2 User: John.Angelone Plotted: Feb 04, 2021 - 12:28pm Xref's:

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# List of Acronyms

| | |
|---|---|
| ACO | Administrative Consent Order |
| A-DGA | amended dense-graded aggregate |
| ADT | Aquifer Drilling and Testing |
| Ag | silver |
| Al | aluminum |
| AOC | Area of Concern |
| As | arsenic |
| Ba | barium |
| Be | beryllium |
| bgs | below ground surface |
| Ca | calcium |
| CCPW | chromate chemical production waste |
| Cd | cadmium |
| CEA | Classification Exception Area |
| Co | cobalt |
| COCs | contaminants of concern |
| COPR | Chromite Ore Processing Residue |
| Cr | total chromium |
| $Cr^{+3}$ | trivalent chromium |
| $Cr^{+6}$ | hexavalent chromium |
| CrSCC | Chromium Soil Cleanup Criteria |
| CSM | conceptual site model |
| Cu | copper |
| DO | dissolved oxygen |
| DGA | dense-graded aggregate |
| DNAPL | dense non-aqueous phase liquid |
| EDD | electronic data deliverable |
| El. | elevation |
| Fe | iron |
| FS | Forrest Street |
| FSP | Forrest Street Properties |
| FSPM | Field Sampling Procedures Manual |
| FSP-QAPP | Field Sampling Plan-Quality Assurance Program Plan |
| ft | feet |
| GA Group | Garfield Avenue Group |
| GGM | green-gray mud |
| GPS | global positioning system |
| GWQS | groundwater quality standard(s) |
| HASP | Health and Safety Plan |
| HCC | Hudson County Chromate |
| Hg | mercury |
| HPT | Hydraulic Profiling Tool |
| ICP-AES | inductively coupled plasma atomic emission spectroscopy |
| IDW | investigation-derived wastes |
| IRM | Interim Remedial Measure |

| | |
|---|---|
| ISAB | *in situ* anaerobic bioprecipitation |
| JCO | Judicial Consent Order |
| JCRA | Jersey City Redevelopment Agency |
| K | potassium |
| lbs | pounds |
| LCS | laboratory control sample |
| LDC | Laboratory Data Consultants, Inc. |
| Mg | magnesium |
| µg/L | micrograms per liter |
| mg/kg | milligrams per kilogram |
| mg/L | milligrams per liter |
| MFHN | Metropolitan Family Health Network |
| MGP | manufactured gas plant |
| Mn | manganese |
| MS/MSD | Matrix Spike/Matrix Spike Duplicate |
| N.J.A.C. | New Jersey Administrative Code |
| Na | sodium |
| NAD83 | North American Datum of 1983 |
| NAVD88 | North American Vertical Datum of 1988 |
| NFA | No Further Action |
| Ni | nickel |
| NJ | New Jersey |
| NJDEP | New Jersey Department of Environmental Protection |
| NJGS | New Jersey Geologic Survey |
| NTU | nephelometric turbidity units |
| OGS | open grade stone |
| ORP | oxidation-reduction potential |
| Pb | lead |
| PBR | Permit-By-Rule |
| PDI | preliminary design investigation |
| PFAS | Per- and polyfluoroalkyl substances |
| PFNA | perfluorononanoic acid |
| PPE | personal protective equipment |
| PSEG | Public Service Electric & Gas Company |
| PVC | polyvinyl chloride |
| QA | quality assurance |
| QC | quality control |
| RA | Remedial Action |
| RAP | Remedial Action Permit |
| RAWP | Remedial Action Report |
| RAP | Remedial Action Work Plan |
| RI | remedial investigation |
| RIR | Remedial Investigation Report |
| RIWP | Remedial Investigation Work Plan |
| ROW | right-of-way |
| RPD | relative percent difference |
| Sb | antimony |
| SDG | sample delivery group |

| | |
|---|---|
| Se | selenium |
| Site 133E | Site 133 East |
| Site 133W | Site 133 West |
| SOP | standard operating procedure |
| Sr | strontium |
| SVOCs | Semi-volatile organic compounds |
| TAL | Target Analyte List |
| TEP | Technical Execution Plan |
| Tl | thallium |
| TRSR | Technical Requirements for Site Remediation |
| USCS | Unified Soil Classification System |
| USEPA | United States Environmental Protection Agency |
| USGS | United States Geological Survey |
| V | vanadium |
| VAP | vertical aquifer profiling |
| VOCs | volatile organic compounds |
| WRA | Well Restriction Area |
| wt. | weight |
| Zn | zinc |

# List of Definitions

**Chromate Chemical Production Waste (CCPW):** A by-product generated from the production of sodium bichromate, including chromite ore processing residue, green-gray mud, and fill mixed with chromite ore processing residue or green-gray mud.

**Chromite Ore Processing Residue (COPR):** A specific type of CCPW generally characterized as a reddish brown, coarse to fine, gravel with varying amounts of sand and silt particles. The gravel portion of the matrix is typically defined as nodules from the chromate manufacturing process that range in size from ⅛- to ¾-inch in diameter. However, nodules have been infrequently detected at diameters of over an inch. Different sized nodules may be found cemented together to form larger clusters. The matrix of these clusters may consist of cement-like silt. These nodules can be disintegrated easily with a hammer. Occasionally when detected in the saturated zone, COPR nodules may appear as a fine-grained material that has been weathered. The permeability of this material is variable. The inner matrix of COPR nodules typically contains higher concentrations of hexavalent chromium than the surface of the nodules but lower concentrations than green-gray mud.

**Chromium:** An element found in nature that is commonly used in manufacturing activities. Chromium may be present in soil or water as trivalent chromium and hexavalent chromium. Trivalent chromium is an essential nutrient at trace concentrations. Hexavalent chromium can be present in many forms, some of which are carcinogenic at high concentrations. Total chromium, as measured in soil or groundwater, is the sum of trivalent and hexavalent chromium.

**Green-Gray Mud (GGM):** Generally lime green dense silt, with minor amounts of fine sand and clay. When found in the saturated zone, the grain size of this material may have been affected further due to weathering processes. This can give the material a wet, clayey silt or silty clay appearance with little or no physical or structural integrity. This material has a low permeability. The pH of this material is generally 11 to 12 standard units.

# Executive Summary

AECOM has prepared this Final Remedial Investigation Report (RIR) on behalf of PPG to present the results, findings, and recommendations associated with the groundwater Remedial Investigation (RI) for the Garfield Avenue Group (GA Group) part of the Hudson County Chromate (HCC) Sites in Jersey City, Hudson County, New Jersey. This revision incorporates additional data collected since the submission of the October 2018 Draft RIR to meet the RI delineation objectives.

This groundwater RI was conducted primarily to delineate the horizontal and vertical extent of chromate chemical production waste (CCPW)-related impacts (hexavalent chromium, antimony, nickel, thallium, vanadium, and total chromium [Cr]) to groundwater within the GA Group Project Area. The RI also addresses the extent of groundwater impacts related to non-CCPW Target Analyte List (TAL) metals, volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs) that are on or emanating from Site 114 due to PPG's brief ownership (i.e., ten years, from 1954 to 1964) of the Site 114 property.

The City of Jersey City receives its potable water from the Rockaway River, a tributary of the Passaic River, with water treatment at the Jersey City Water Treatment plant in Boonton, New Jersey prior to distribution to the municipality. Groundwater in this part of Jersey City is classified as Class II-A (potable ground water with conventional treatment at current water quality); however, the groundwater is slightly brackish and is not used for potable, industrial, commercial, or private use. Groundwater in the Project Area is found within four hydrostratigrapic units. These include the shallow zone (fill material), intermediate zone (estuarian "meadow mat" deposits underlain by fluvial sand, silt, and clay with lenses of gravel), the deep zone (sand and gravel with lenses of clay or silt underlain by basal glacial till), and bedrock (Lockatong Formation, Stockton Formation, and a diabase sill along the western boundary of the Project Area). The regional groundwater flow direction in the overburden is generally toward the southeast.

The source of chromium impacts to groundwater in the Project Area is chromium-impacted soil associated with historical use of Site 114 for chromite ore processing operations. Between 2010 and 2020, PPG completed excavation of chromium-impacted soil from the GA Group Sites and roadways. Excavations on adjacent properties are ongoing. As of September 30, 2020, a total of 861,729 tons of hazardous waste material, and 195,338 tons of non-hazardous waste material have been removed from these areas.

The Public Service Electric & Gas Company (PSEG) is responsible for investigating and remediating impacts related to the operation of the former manufactured gas plant (MGP) located within the Project Area due to their ownership and operation of the Halladay Street Gas Works formerly located on Site 114. Soil remediation was performed by PSEG on the former MGP location within Site 114 and a groundwater RIR for MGP constituents was submitted to NJDEP in May 2014. A Classification Exception Area (CEA) for MGP-related contamination was proposed by PSEG and established by NJDEP in June 2014.

A CEA for CCPW impacts in the intermediate and deep water-bearing zones was proposed by PPG and established by NJDEP in June 2018 for the GA Group Sites. The 2018 CEA applies to groundwater contamination related to historical operations at Site 114. An update to this CEA is included with this RIR to include the shallow, intermediate, and deep water-bearing zones, as well as a portion of the bedrock water-bearing zone. This RIR also includes a CEA/Well Restriction Area application for historic fill-related impacts to groundwater on Site 114.

Numerous groundwater investigation activities have been conducted in the Project Area since 2003. While the data from these investigations was used in the evaluation of groundwater impacts and the conclusions derived from the evaluation of these groundwater impacts, this RIR primarily focuses on the groundwater investigation work conducted from 2015 to the present.

A conceptual Site Model (CSM) was prepared for the Project Area and updated during the groundwater RI to provide the most current understanding of Project Area geology, hydrogeology, source areas, and nature and extent of CCPW-related impacts to groundwater. The CSM is a 'living' document that will be updated as necessary upon completion of subsequent investigation activities.

The RI determined that CCPW constituents have leached from historical source areas, infiltrated into the subsurface, and migrated downward through the unsaturated zone. Once within the saturated zone, migration occurs primarily along the prevailing direction of groundwater flow, either horizontally or vertically, depending on hydraulic conditions via either advection or diffusion based on soil type. Impacted groundwater spread laterally as low permeability zones were encountered and/or diffused into and through the lower permeability soil horizon. Back-diffusion of Cr from the lower-permeability soils into surrounding higher-permeability soils is expected to occur over time. The presence of natural (meadow mat) and anthropogenic (MGP residuals) organic matter within soils also impacts the mobility of Cr in groundwater via reduction and precipitation.

Based on the data collected to date, the following conclusions pertaining to the distribution of CCPW-related impacts to groundwater were reached for the Project Area:

- Horizontal delineation has been achieved for the shallow, intermediate, and deep water-bearing zones.
- Horizontal delineation within bedrock has been achieved on the eastern and northern portions of Site 114. Additional delineation is required in the southwestern portion of Site 114.
- Vertical delineation within the overburden has been achieved in several parts of the Project Area; however, additional vertical delineation is required in bedrock in the southwestern portion of Site 114.

Based on the data collected to date, the following conclusions pertaining to non-CCPW metals, VOCs, and SVOCs that are on or emanating from Site 114 are identified for the Project Area:

- The constituents emanating from Site 114 have been identified and the horizontal and vertical extents of these constituents have been delineated.

# 1.0 Introduction

AECOM has prepared this Final Remedial Investigation Report (RIR) on behalf of PPG to present the results, findings, and recommendations associated with the groundwater Remedial Investigation (RI) for the Garfield Avenue Group (GA Group) part of the Hudson County Chromate (HCC) Sites in Jersey City, Hudson County, New Jersey. The GA Group Sites include Sites 114, 132, 133, 135, 137, and 143, the Roadways (Carteret Avenue, Forrest Street, Garfield Avenue, Caven Point Avenue, Pacific Avenue, Halladay Street North, and Halladay Street South), and the Off-Site Properties (Al Smith Moving, Halsted Corporation, Fishbein, Forrest Street Properties, and Ten West Apparel). This RIR also presents the results, findings, and recommendations associated with the groundwater RI for HCC Site 186 and Site 199. Hereinafter, these sites, collectively, are referred to as "the Project Area" (**Figure 1-1** and **Figure 1-2**). The initial Draft Groundwater RIR was submitted to the New Jersey Department of Environmental Protection (NJDEP) on October 1, 2018 (AECOM, 2018b). This revision incorporates additional data collected since the submission of the October 2018 Draft RIR to meet the RI delineation objectives.

This groundwater RIR:

- Presents data collected as part of groundwater RI field activities conducted from 2017 to February 2021;
- Presents an updated Conceptual Site Model (CSM) that incorporates the current understanding of the geology, hydrogeology, source areas, and the horizontal and vertical extents of CCPW-related groundwater impacts in the Project Area including an evaluation of the fate and transport of chromium in groundwater;
- Presents historical groundwater data and other pertinent information collected across the Project Area to support the updated CSM;
- Provides an evaluation of non-CCPW metals, VOCs, and SVOCs that may or may not be emanating from Site 114; and
- Provides conclusions and recommendations based on the findings of groundwater RI activities completed to date.

## 1.1 Remedial Investigation Objectives

The primary objective of the groundwater RI for the Project Area was to delineate the horizontal and vertical extent of chromate chemical production waste (CCPW)-related impacts to groundwater within the Project Area. CCPW metals include antimony (Sb), nickel (Ni), thallium (Tl), vanadium (V), and total chromium (Cr). In addition, delineation of the extent of groundwater impacts related to non-CCPW Target Analyte List (TAL) metals (which include: silver [Ag], aluminum [Al], arsenic [As], barium [Ba], beryllium [Be], calcium [Ca], cadmium [Cd], cobalt [Co], copper [Cu], iron [Fe], mercury [Hg], potassium [K], magnesium [Mg], manganese [Mn], sodium [Na], strontium [Sr], lead [Pb], selenium [Se], and zinc [Zn]), volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs) that are on or emanating from Site 114 was also within the scope of the groundwater RI due to PPG's brief ownership of the Site 114 property (i.e., ten years, from 1954 to 1964).

The groundwater RI was implemented using a phased approach and was conducted in parallel with ongoing soil and groundwater remediation activities within the Project Area. The first phase of the RI, implemented in 2017 and 2018, focused primarily on the shallow and intermediate water-bearing zones with limited investigations in the deep water-bearing zone and was conducted in accordance with the July 2017 *Groundwater Remedial Investigation Work Plan - Rev. 1* (herein referred to as the Groundwater RIWP and included in **Appendix A***)* (AECOM, 2017b). Following submission of the October 2018 Draft Groundwater RIR, additional remedial investigation activities were implemented from 2019 to 2021 in accordance with scopes of work approved by NJDEP during various technical meetings, including the installation and sampling of basal till/weathered bedrock, and bedrock monitoring wells on Site 114.

## 1.2 Regulatory History

Investigation and remediation activities at the Project Area are regulated by the NJDEP and are administered by the Superior Court of New Jersey under an Administrative Consent Order (ACO) and a Partial Judicial Consent Order Concerning the PPG Sites (JCO).

PPG and the NJDEP entered into an ACO in 1990, requiring the investigation and remediation of locations where CCPW or CCPW-impacted materials related to former PPG operations may have been present. On June 26, 2009, NJDEP, PPG and the City of Jersey City entered into a JCO with the purpose of assessing and remediating sources of contamination and impacted soil and groundwater at PPG's HCC Sites. In accordance with the JCO, PPG is responsible for remediating CCPW, CCPW-impacted materials, and other contaminants of concern (COCs) that are on or have emanated from Site 114 onto adjacent parcels.

The Public Service Electric & Gas Company (PSEG) is responsible for investigating and remediating impacts related to the operation of the former manufactured gas plant (MGP) located within the Project Area (PSEG, 2007; PSEG, 2009; PSEG, 2014a). Soil remediation has been performed on the former MGP location within Site 114. A groundwater Classification Exception Area (CEA) was put in place by PSEG primarily for MGP constituents within the area impacted by the former MGP operations (PSEG, 2014b).

## 1.3 Remedial Investigation Requirements

This RI was implemented in accordance with the following requirements and guidance documents:

- New Jersey Administrative Code (N.J.A.C.) 7.26E: Technical Requirements for Site Remediation (NJDEP, 2012b);
- Groundwater Technical Guidance: Site Investigation, Remedial Investigation, Remedial Action Performance Monitoring, Site Remediation Program (NJDEP, 2012a);
- Appendix B of the 1990 NJDEP ACO (NJDEP, 1990); and
- June 26, 2009 JCO (Superior Court of New Jersey, 2009).

Groundwater analytical results are compared to the NJDEP Class II-A Groundwater Quality Standards (GWQS) in accordance with N.J.A.C. 7:9C (NJDEP, 2020c), and groundwater impacts are delineated to the appropriate GWQS. Currently there is no GWQS for $Cr^{+6}$; therefore, $Cr^{+6}$ impacts are evaluated in comparison to the GWQS for Cr of 70 micrograms per liter (µg/L).

## 1.4 Contaminants of Concern

Constituents of concern for the Project Area include $Cr^{+6}$ and CCPW metals. The RI also evaluated additional COCs including VOCs, SVOCs, and non-CCPW TAL metals on or emanating from Site 114 due to PPG's brief ownership of the Site 114 property or due to PSEG's former MGP operations.

## 1.5 Classification Exception Area

A CEA serves as an institutional control and provides notification to the public that COC concentrations remain greater than the GWQS. There are three CEAs either already established or proposed for the Project Area.

### 1.5.1 CEA for Project Area Groundwater

A CEA for the intermediate and deep water-bearing zones for Site 114 was established by the NJDEP on June 11, 2018. The 2018 CEA applies to groundwater contamination related to historical operations at Site 114 in the intermediate and deep water-bearing zones. A proposal to update this CEA is included with this RIR. The updated CEA encompasses an area of approximately 35 acres and extends vertically to a depth of approximately 114 feet (ft) below ground surface (bgs). The updated CEA includes the shallow, intermediate, and deep water-bearing zones, as well as a portion of the bedrock water-bearing zone where Cr-related contamination was observed during the recently completed bedrock investigation activities. The vertical extent of the CEA within bedrock will be updated in the future if additional information becomes available indicating that an update to the CEA is necessary. The following COCs are included in the CEA update:

- CCPW-related COCs:
  - Chromium
  - Hexavalent Chromium
  - Antimony
  - Nickel
  - Thallium
  - Vanadium

- Non-CCPW-related COCs:
  - 1,1,2-Trichloroethane
  - 1,1-Dichloroethylene
  - 1,2-Dichloroethane
  - 1,4-dioxane
  - Aluminum
  - Bis(2-ethylhexyl)phthalate
  - Chloride
  - cis-1,2-Dichloroethene
  - Copper
  - Iron
  - Manganese
  - Pentachlorophenol
  - Sodium
  - Styrene (monomer)
  - Sulfate
  - Tetrachloroethene
  - Trichloroethylene
  - Vinyl Chloride

### 1.5.2 CEA for Historic Fill-related COCs

The distribution of historic fill-related compounds in the Project Area groundwater was evaluated in PPG's Technical Memorandum *GW-072, Constituents of Concern Emanating from Site 114 – Groundwater* ("Emanating from Groundwater Technical Memorandum", included in **Appendix A**), as well as in PSEG's 2014 Groundwater RIR (PSEG, 2014a). These documents identified the constituents in groundwater associated with historic fill. NJDEP has concurred with this assessment. Therefore, a CEA and Well Restriction Area (CEA/WRA) application for historic fill-related impacts to groundwater is included with this revised Draft Groundwater RIR. The following historic fill-related COCs are included in the Historic Fill CEA:

- Beryllium
- Cadmium
- Cobalt
- Mercury
- Selenium
- Silver
- Zinc
- 3+4-Methylphenol

### 1.5.3 CEA for MGP-related Impacts

As stated in Section 1.2, PSEG is responsible for remediating impacts related to the operation of the former MGP on Site 114. Several MGP-related COCs remain in groundwater at concentrations greater than their respective GWQS. The COCs related to the former MGP are summarized in the Emanating from Groundwater Technical Memorandum (**Appendix A**).

On June 6, 2014, PSEG submitted an application for the establishment of a CEA for groundwater contamination relating to the operation of the former MGP on Site 114 (Block 21501, Lots 16, 17, 18 and 19) (PSEG, 2014b), which was approved by the NJDEP on July 25, 2014. The CEA encompasses an area of approximately 76 acres and extends vertically to a depth of 100 ft bgs.

## 1.6 NJDEP Forms

Per N.J.A.C. 7:26E-1.6, the following regulatory forms are included with this submission:

1) Cover/Certification Form;

2) Case Inventory Document (CID);

3) Updated Receptor Evaluation;

4) CEA/WRA for Project Area;

5) CEA/WRA for Historic Fill; and

6) Public Notification Form.

# 2.0 Background Information

## 2.1 Remedial Investigation Sites

A summary of the remedial investigation sites is provided in **Table 2-1**. Details of site locations, description, and historical site information are provided in the following sub-sections.

### 2.1.1 Location, Description, and History – Site 114

Site 114 is vacant land located in a commercial and residential area on Garfield Avenue in Jersey City, Hudson County, New Jersey. Site 114 is described in the ACO as Block 2026.A, Lots 1 and 3A and Block 2026.1, Lots 2A, 3B and 4A (current Block 21501, Lots 16, 17, 18, 19, and 20). Site 114 is bordered to the west by Garfield Avenue, to the south by Carteret Avenue, to the east by Halladay Street, and to the north by Forrest Street and an active railroad (Site 199) operated by New Jersey (NJ) Transit (referred to as NJ Transit Light Rail).

The total area encompassed by Site 114 is 16.6 acres. Site 114 is the former location of a chromite ore processing facility and an MGP. The Morris Canal, a man-made surface water body trending northeast/southwest, formerly bisected the GA Group Sites. The MGP facility operated on the portion of Site 114 located east of the former Morris Canal from about 1886 to the mid-1930s. The western half of Site 114 was the location of the former chromite ore processing facility that operated from about 1911 to 1963. The chromite ore processing operation included a large stockpile of CCPW, primarily consisting of chromite ore processing residue (COPR), extending from the eastern portion of Site 114 southward onto Site 137. The locations of the former processing facility and the CCPW storage pile were identified using historical aerial photographs (**Figure 2-1**), which were provided in the March 2011 Remedial Investigation Work Plan (March 2011 RIWP) (AECOM, 2011).

Following demolition of above-grade structures associated with the chromite ore processing facility and the MGP facility, the remaining foundations were buried, raising the ground surface elevation (El.) by several feet. Three warehouse structures were later constructed on the property during the late 1960s. These warehouses were demolished down to the concrete floor slabs between August and December 2002.

The areas adjacent to and across the surrounding streets from Site 114 are characterized as commercial and light industrial. An office furniture manufacturer/warehouse and an auto repair shop are located west of Site 114 across Garfield Avenue. Residential areas are present further to the west. A former auto body shop/used car dealer (Site 143), a former abandoned warehouse now a vacant lot (Site 132), and former light industrial machinery/box manufacturer/warehouses/packing and recycling (Site 137) are present to the south of Site 114. Other properties further to the south/southeast include three vacant lots formerly occupied by warehouses (Site 133, Site 135, and Al Smith Moving and Storage). East of the Site 114 across Halladay Street, a former bag manufacturer/ warehouse (the former Halsted Corporation) and a former auto/truck repair shop were present. Commercial, light industrial, railroad right-of-way (ROW), and material recycling facilities are located further to the east and southeast. The NJ Transit Light Rail ROW (Site 199) is located along the northern Site 114 boundary. A Light Rail Transit Station is present to the west-northwest of Site 114. Warehouse and light industrial buildings are present toward the northeast and across Forrest Street. Berry Lane Park and several commercial, light-industrial, and residential properties are located to the north beyond the

Light Rail ROW, including a former commercial property that is now a vacant lot (Site 186). The residential areas north and west of Site 114 have been identified as part of the Jersey City Redevelopment Agency (JCRA)-approved Morris Canal Redevelopment Plan (City of Jersey City, Division of City Planning, 2020). Final details of this redevelopment have not been established.

Prior to the completed soil remedial action at Site 114, there were approximately 4.0 acres of paved areas (roadways and parking), including Dakota Street, which bisected Site 114 in an east-west direction starting at Garfield Avenue. Dakota Street was not an active public ROW; it is currently enclosed within the fenced area of Site 114. Prior to soil remedial activities, approximately 1.8 acres of Site 114 consisted of landscaped and open areas surrounding the concrete slabs of the warehouses. The landscaped areas consisted primarily of long and narrow vegetated strips along the edges of the concrete slabs. There was a 4.0-acre area on Site 114 that was capped with stone overlying a polyethylene liner, which was constructed by PPG in 1992 as an Interim Remedial Measure (IRM (i.e., IRM #1).

Beginning in 2005, RI activities were conducted at Site 114 by PPG and PSEG relative to CCPW, CCPW-impacted materials, and MGP-impacted materials. PPG and PSEG developed a coordinated remedial approach in areas where both CCPW and MGP material was present. Separate Remedial Action Work Plans (RAWPs) were prepared by PPG and PSEG to address the CCPW and MGP material, respectively. Based on the findings of the RI, the recommended remedial action (RA) for the CCPW-impacted soils at Site 114 included the excavation and removal of visible CCPW and soils with concentrations of $Cr^{+6}$ greater than the Chromium Soil Cleanup Criteria (CrSCC) of 20 milligrams per kilogram (mg/kg). In the MGP-impacted areas, the recommended RA for the MGP-impacted soil at Site 114 was excavation of oily material/tar material to the underlying meadow mat layer, where it was present, along with engineering controls (clean fill soil cap) and institutional controls (deed notices) for soil remaining in place with contaminants at concentrations greater than unrestricted-use standards/criteria.

On behalf of PPG, AECOM submitted the *Remedial Action Report, Site 114 (AOC 114-1A, AOC 114-2, AOC 114-3, AOC 114-4A, AOC 114-4B, and AOC 114-5) Soil, Final*, August 2019 (Site 114 Soil RAR) (AECOM, 2019j) documenting the remedial action for CCPW, CCPW-impacted soil, and other impacted soil at Site 114. NJDEP approval of the Remedial Action Report (RAR) was issued on December 5, 2019 (NJDEP, 2019k). Deed notices were recorded for the affected blocks and lots on December 18 and 19, 2019. NJDEP issued the soil remedial action permits associated with the referenced Areas of Concern (AOCs) on Block 21501 Lots 18, 19, and 20 on February 7, 2020. NJDEP issued a Consent Judgment Compliance letter, concurring that remedial actions for soil for the referenced AOCs were complete, on June 1, 2020 (NJDEP, 2020b).

Groundwater RI activities were conducted at Site 114 from 2003 through 2007, 2011 and 2012, and 2015 to the present. Groundwater is being addressed as one AOC for the GA Group Sites (including Site 114). As described in Section 1.5, groundwater CEAs for select areas have been proposed by PPG and PSEG and established by NJDEP. In addition, in order to expedite treatment of Cr-impacted groundwater, PPG developed and implemented a phased groundwater IRM approach. The groundwater IRM is ongoing.

Site 114 is currently vacant land owned by JCRA and 900 Garfield Ave, % Ryann LLC (900 Garfield Avenue, LLC). At the present, Site 114 remains completely enclosed by a barrier fence for security purposes.

### 2.1.2 Location and Description of Other Garfield Avenue Group Sites

The remaining five sites that comprise the GA Group include Sites 132, 133, 135, 137, and 143. These Sites are proximate to each other and are located on abutting parcels, collectively bordered to the west by Garfield Avenue, to the south by Caven Point Avenue, to the east by Pacific Avenue, and to the north by Carteret Avenue (**Figure 1-2**).

#### 2.1.2.1 Site 132 – Former Town and Country

Site 132 is located in a commercial and residential area on Garfield Avenue in Jersey City, Hudson County, New Jersey. Site 132 is bordered to the west by Garfield Avenue; to the south by vacant land (816 Garfield Avenue [a.k.a. the Former Fishbein Property]), to the east by Site 137, and to the north by Site 143 and Carteret Avenue. Site 114 is located directly north across Carteret Avenue. The total area encompassed by Site 132 is 3.16 acres. A vacant warehouse, constructed circa 1971, was demolished and the grassy and paved areas were removed in July 2013. The building slab was subsequently removed. The warehouse was previously occupied by Town and Country Linen.

The *Final Remedial Action Report, Site 132 (AOC 132-1) Soil*, May 2019 (Site 132 Soil RAR) (AECOM, 2019d) documents the implementation and completion of the remedial action at Site 132. The remedial action included the excavation and removal of visible CCPW and soils with concentrations of $Cr^{+6}$ greater than the CrSCC of 20 mg/kg. The NJDEP issued an Approval, Consent Judgement Compliance Letter for Site 132 (AOC 132-1) on November 1, 2019 (NJDEP, 2019h), which serves as the functional equivalent of a No Further Action (NFA) letter. The NJDEP issued a Remediation Action Report Determination/Approval of the Site 132 Soil RAR on June 27, 2020 (NJDEP, 2020f).

#### 2.1.2.2 Site 133 – Former Ross Wax

Site 133 is located in a commercial and industrial area on Halladay Street in Jersey City, Hudson County, New Jersey. The western parcel of Site 133 (Site 133W) is bordered to the west and to the south by 800 Garfield Avenue (a.k.a. Ten West Apparel), to the east by Halladay Street, and to the north by Site 137. The eastern parcel of Site 133 (Site 133E) is bordered to the west by Halladay Street, to the south by Caven Point Avenue, to the east by commercial property (Al Smith Moving) and Site 135, and to the north by Carteret Avenue. The total area encompassed by Site 133 is 2.41 acres. Several contiguous warehouses were located on Site 133E, covering an area of approximately 1.7 acres. The warehouses were demolished from September through October 2014. Previous site uses included varnish and paint manufacturing.

The Final Remedial Action Report, Site 133E (AOC 133E-1A and AOC 133E-2A) and Site 135 (AOC 135-1) Soil, August 2019 (Site 133E & 135 Soil RAR) (AECOM, 2019k) documents the implementation and completion of the remedial action at Site 133E and Site 135. The remedial action included the excavation and removal of visible CCPW and soils with concentrations of $Cr^{+6}$ greater than the CrSCC of 20 mg/kg, along with engineering controls (clean fill soil cap) and institutional controls (deed notices) for soil remaining in place with contaminants at concentrations greater than unrestricted-use standards/criteria. The NJDEP issued a Remediation Action Report Determination/Approval of the Site 133 East (AOC 133E-1A and AOC 133E-2A) and Site 135 (AOC 135-1) Soil RAR on October 11, 2019 (NJDEP, 2019e). The NJDEP issued an Approval, Consent Judgement Compliance Letter for Site 133 (AOC 133E-1A) on March 24, 2020 (NJDEP, 2020a), which serves as the functional equivalent of an NFA letter.

#### 2.1.2.3 Site 135 – Former Vitarroz/Narula

Site 135 is located in a commercial and industrial area on Pacific Avenue in Jersey City, Hudson County, New Jersey. Site 135 is bordered to the west by Site 133E, to the south by commercial property (Al Smith Moving), to the east by Pacific Avenue, and to the north by Carteret Avenue. The total area encompassed by Site 135 is approximately 1.5 acres. Several contiguous warehouses were formerly located on the property, covering an area of approximately 1.2 of the 1.5 acres. These structures were demolished in January and February of 2016 prior to the initiation of soil remediation at Site 135. Previous site uses included general grocery warehousing, operations by the Clorox Chemical Co., and other manufacturing operations.

The *Final Remedial Action Report, Site 133E (AOC 133E-1A and AOC 133E-2A) and Site 135 (AOC 135-1) Soil*, August 2019 (Site 133E & 135 Soil RAR) (AECOM, 2019k) documents the implementation and completion of the remedial action at Site 133E and Site 135. The remedial action included the excavation and removal of visible CCPW and soils with concentrations of $Cr^{+6}$ greater than the CrSCC of 20 mg/kg, along with engineering controls (clean fill soil cap) and institutional controls (deed notices) for soil remaining in place with contaminants at concentrations greater than unrestricted-use standards/criteria. The NJDEP issued a Remediation Action Report Determination/Approval of the Site 133 East (AOC 133E-1A and AOC 133E-2A) and Site 135 (AOC 135-1) Soil RAR on October 11, 2019 (NJDEP, 2019e). A Remedial Action Permit (RAP) for Site 135 was issued on November 13, 2020.

#### 2.1.2.4 Site 137 – Former Rudolf Bass & Former TSI City Carriers

Site 137 is located in a commercial and industrial area on Carteret Avenue in Jersey City, Hudson County, New Jersey. Site 137 is bordered to the west by Site 132, 816 Garfield Avenue (a.k.a. the Former Fishbein Property), and 800 Garfield Avenue (a.k.a. Ten West Apparel), to the south by Site 133W, to the east by Halladay Street, and to the north by Carteret Avenue. Site 114 is located immediately north of Carteret Avenue. The total area encompassed by Site 137 is approximately 3.24 acres. Two warehouses and paved areas were formerly located on the property. The larger of these two warehouses located at 45 Halladay Street was owned and operated by Rudolf Bass and was utilized for the storage of used industrial machinery for resale and various businesses including but not limited to woodworking and storage. The smaller warehouse located at 25 Halladay Street was occupied by TSI City Carriers.

Prior to the construction of these warehouses, Site 137 was used to stockpile CCPW generated at the former PPG chromite ore processing facility. The CCPW was stockpiled at Site 137 until about 1958, when the property was cleared and leveled. The 45 Halladay Street building was demolished in March 2014 and the building at 25 Halladay Street was demolished from late August through early September 2013.

The *Final Remedial Action Report, Site 137 North (AOC 137-1A and AOC 137-2A) and Site 143 (AOC 143-1) Soil*, July 2019 (Site 137N & 143 Soil RAR) (AECOM, 2019g) documents the implementation and completion of the remedial action at Site 137 North and Site 143. The remedial action included the excavation and removal of visible CCPW and soils with concentrations of $Cr^{+6}$ greater than the CrSCC of 20 mg/kg. The NJDEP issued a Remediation Action Report Determination/Approval of the Site 137 North (AOC 137-1A and AOC 137-2A) and Site 143 (AOC 143-1) Soil RAR on September 30, 2019 (NJDEP, 2019c). The NJDEP issued an Approval, Consent Judgement Compliance Letter for Site 137 North (AOC 137-1A) on June 26, 2020 (NJDEP, 2020d), which serves as the functional equivalent of an NFA letter.

#### 2.1.2.5 Site 143 – Former F. Talarico Auto

Site 143 is located in a commercial and residential area on Garfield Avenue in Jersey City, Hudson County, New Jersey. Site 143 is bordered to the west by Garfield Avenue, to the south and east by Site 132, and to the north by Carteret Avenue. Residential properties are located west of Garfield Avenue. Site 114 is located immediately north of Carteret Avenue. The total area encompassed by Site 143 is approximately 0.72 acres. A building constructed between 1963 and 1966 and paved areas were present on the property. The property operated as Talarico Auto and was used for auto repair and sales. Previous site uses included vacant land, auto salvage, and residential. The building was demolished in July 2013 and the building slab was subsequently removed in preparation for soil remediation.

The *Final Remedial Action Report, Site 137 North (AOC 137-1A and AOC 137-2A) and Site 143 (AOC 143-1) Soil*, July 2019 (Site 137N & 143 Soil RAR) (AECOM, 2019g) documents the implementation and completion of the remedial action at Site 137 North and Site 143. The remedial action included the excavation and removal of visible CCPW and soils with concentrations of $Cr^{+6}$ greater than the CrSCC of 20 mg/kg. The NJDEP issued a Remediation Action Report Determination/Approval of the Site 137 North (AOC 137-1A and AOC 137-2A) and Site 143 (AOC 143-1) Soil RAR on September 30, 2019 (NJDEP, 2019c). The NJDEP issued an Approval, Consent Judgement Compliance Letter for Site 143 North (AOC 143-1A) on June 26, 2020 (NJDEP, 2020e), which serves as the functional equivalent of an NFA letter.

### 2.1.3 Roadways and Off-Site Properties

#### 2.1.3.1 Roadways

The Roadways that abut the GA Group Sites include Carteret Avenue, Caven Point Avenue and Pacific Avenue, Forrest Street, Garfield Avenue, Halladay Street North, and Halladay Street South (**Figure 1-2**).

**Carteret Avenue**

The Carteret Avenue property is located in Carteret Avenue between Garfield Avenue to northwest and Pacific Avenue to southeast in a commercial and residential area in Jersey City, Hudson County, New Jersey. Carteret Avenue is bordered to the south by Site 143, Site 132, Site 137 North, Site 133 East, Site 135, and Halladay Street South (the portion of Halladay Street located between Carteret Avenue and Caven Point Avenue). Carteret Avenue is bordered to the north by Site 114, Halladay Street North (the portion of Halladay Street located between Forrest Street and Carteret Avenue), and the Former Halsted Corporation property. The total area encompassed by Carteret Avenue Roadway is approximately 1.4 acres. Carteret Avenue Roadway is currently vacant land owned by the City of Jersey City. Prior to remedial activities, the property consisted of a two-lane asphalted roadway underlain by underground water, combined sewer, and gas utility lines.

The *Final Remedial Action Work Plan (Soil) – Carteret Avenue, Addendum to the Final Remedial Action Work Plan (Soil) Rev. 4, Garfield Avenue Group Sites, Jersey City, Hudson County, New Jersey* (Carteret RAWP) (AECOM, 2019f) describes the selected RA for $Cr^{+6}$ and CCPW-impacted soil in Carteret Avenue consisting of the following:

- Excavation of a clean corridor for utility workers to remove CCPW-related or historic fill-related impacts, where technically feasible;

- Excavation, where feasible, to remove soil with concentrations of $Cr^{+6}$ greater than the CrSCC to remove source material; and
- Implementation of engineering controls and institutional controls (notice in lieu of deed notice and implementation of the measures in the Utility Work Coordination Manual, Final [AECOM, 2020a]) with a corresponding RAP.

The excavation elements of the RA have been implemented. The *Final Carteret Avenue Remedial Action Report (RAR) Tables and Figures Submittal* (AECOM, 2020m) was approved by NJDEP on January 29, 2021 (Weston, 2021c). PPG submitted the draft RAR for Carteret Avenue on August 12, 2021 to document the implementation and completion of the RA (AECOM, 2021f). .

**Caven Point Avenue and Pacific Avenue Roadways**

Caven Point Avenue and Pacific Avenue Roadways is located in a commercial and residential area in Jersey City, Hudson County, New Jersey. These active urban roadways border the GA Group Sites located to the north, including (from west to east): Ten West Apparel (800 Garfield Avenue), Halladay Street South, Site 133 East, the Al Smith Moving property, and Site 135. The total area encompassed by the Site is approximately 2.4 acres. Caven Point Avenue and Pacific Avenue are active, two-lane, asphalt, municipal roadways underlain by underground water, combined sewer, and gas utility lines roadways, owned by the City of Jersey City.

The *Remedial Investigation Report/Remedial Action Work Plan (Soil) – Caven Point Avenue and Pacific Avenue Roadways (AOC CPA-1A), Final (Revision 1), Addendum to the Final Revision 1 Supplemental Soil Remedial Investigation Report – Soil and the Final Remedial Action Work Plan (Soil) Rev. 4 for Garfield Avenue Group Sites* (AECOM, 2020h) describes the selected RA for $Cr^{+6}$ and CCPW-impacted soil in Caven Point Avenue and Pacific Avenue Roadways consisting of the following:

- The existing asphalt roadway serves as a soil cap;
- Implementation of institutional controls (notice in lieu of deed notice); and
- Issuance of a RAP.

The *Final Caven Point and Pacific Avenue Roadways Remedial Action Report (RAR) Tables and Figures Submittal* (AECOM, 2020k) was approved by NJDEP on December 18, 2020 (Weston, 2020b). PPG is preparing the draft RAR for Caven Point and Pacific Avenue Roadways, pending the results of preliminary design investigation sampling in Phase 3B South (Ten West Apparel [800 Garfield Avenue], Halladay Street South, Site 133 East).

**Forrest Street Roadway**

Forrest Street Roadway is located in a commercial and residential area in Jersey City, Hudson County, New Jersey. Forrest Street Roadway is bordered to the south and west by Site 114. Forrest Street Roadway is bordered to the north by Forrest Street Properties (FSP). Forrest Street is bordered to the northeast by a Halladay Street residential property. The total area encompassed by Forrest Street Roadway is approximately 0.45 acres. Forrest Street Roadway is an active, two-lane asphalt roadway underlain by underground water, combined sewer, and gas utility lines.

The *Final Remedial Action Report, Forrest Street (AOC FS-1A, AOC FS-1B, AOC FS-1C, AOC FS-2A, AOC FS-2B, and AOC FS-2C) Soil*, September 2019 (AECOM, 2019l) documents the

implementation and completion of the remedial action at Forrest Street. The remedial action included the excavation and removal of accessible, visible CCPW and soils containing $Cr^{+6}$ to meet the requirements of the Chromium Policy (NJDEP, 2007) in accordance with the Method to Determine Compliance (NJDEP, 2013), as well as soils containing CCPW metals in accordance with the CRSCC or SRS, based on the current use scenario. Engineering controls and institutional controls (Notice in Lieu of Deed Notice) addressed remaining-in-place constituents. Prior to the future residential use of the adjacent FSP, PPG will conduct a remedial excavation within Forrest Street at AOC FS-1B and AOC FS-1C to address CCPW-impacted soil, which is currently inaccessible due to the current commercial use of the adjacent FSP. NJDEP approval of the RAR was issued on November 12, 2020 (NJDEP, 2020h), acknowledging property owner approval of the Notice in Lieu of Deed Notice and the NJDEP's issuance of a RAP.

**Garfield Avenue Roadway**

Garfield Avenue is located in a commercial and residential area in Jersey City, Hudson County, New Jersey. Garfield Avenue Roadway is bordered to the east by Site 114 and to the west by Frenchpark Warehouse Co., Jersey Auto Repair, and vacant land. The Garfield Avenue Roadway extends from Carteret Avenue to the New Jersey Transit Hudson-Bergen Light Rail. The total area encompassed by Garfield Avenue Roadway is approximately 0.9 acres. Garfield Avenue Roadway is a heavily traveled urban roadway that runs approximately north-south. Concrete sidewalks are present on both the east and west sides of the roadway.

The *Remedial Action Work Plan (Soil) – Garfield Avenue Roadway, Final, Addendum to the Final Remedial Action Work Plan (Soil) Rev. 4* (AECOM, 2019a) describes the selected RA including:

- For the current use of Garfield Avenue: engineering controls and institutional controls (notice in lieu of deed notice and implementation of the measures in the Utility Work Coordination Manual, Final [AECOM, 2020a]).
- For the future Canal Crossing Redevelopment (CCRD): limited excavation of shallow CCPW-related impacts and CCPW source material, where technically feasible, engineering controls and institutional controls ((notice in lieu of deed notice and implementation of the measures in the Utility Work Coordination Manual).

PPG is preparing the draft RAR for Garfield Avenue to document completion of soil remediation activities.

**Halladay Street North**

Halladay Street North is located in a commercial and residential area in Jersey City, Hudson County, New Jersey. The Halladay Street North property is located on Halladay Street between Forrest Street to the northeast and Carteret Avenue to the southwest. Halladay Street North is bordered to the northwest by Site 114 and to the southeast by the Former Halsted Corporation Property (Halsted). The total area encompassed by Halladay Street North is approximately 1.2 acres.

The excavation elements of the RA have been implemented, which included excavation and removal of visible CCPW and soils containing $Cr^{+6}$ to meet the requirements of the Chromium Policy (NJDEP, 2007) in accordance with the Method to Determine Compliance (NJDEP, 2013), as well as soils containing CCPW metals in accordance with the CrSCC or SRS. The *Final Halladay Street North Remedial Action Report (RAR) Tables and Figures Submittal* (AECOM, 2021d) was issued on February 15, 2021; NJDEP approval was received on April 1, 2021 (NJDEP, 2021). PPG submitted

the draft RAR for Halladay Street North and a portion of the Former Halsted Corporation Property on July 20, 2021 to document completion of soil remediation activities (AECOM, 2021e).

**Halladay Street South**

Halladay Street South is located in a commercial and residential area in Jersey City, Hudson County, New Jersey. Halladay Street South is located on Halladay Street between Carteret Avenue to the north and Caven Point Avenue to the south. The southernmost portion of Halladay Street South, immediately adjacent to Caven Point Avenue, is considered part of Phase 3B South and will be addressed in a separate submission from Halladay Street South. Halladay Street South is bordered to the west by Site 137A, Site 137B, and Site 133 West, and to the east by Site 133 East. Site 114 is located to the northwest across Carteret Avenue from Halladay Street South. The total area encompassed by Halladay Street South is approximately 0.8 acres.

The *Remedial Action Report Halladay Street South (AOC HSS-1A and AOC HSS-2A) Soil, Final* (AECOM, 2019b) documents the implementation and completion of the remedial action at Halladay Street South. The remedial action included excavation and removal of accessible, visible CCPW and soils containing $Cr^{+6}$ to meet the requirements of the Chromium Policy (NJDEP, 2007) in accordance with the Method to Determine Compliance (NJDEP, 2013), as well as soils containing CCPW metals in accordance with the CrSCC or SRS. Engineering controls and institutional controls (Notice in Lieu of Deed Notice) addressed remaining-in-place naphthalene. NJDEP approval of the RAR was issued on November 15, 2019 (NJDEP, 2019j). On June 30, 2020, NJDEP issued an Approval, Consent Judgement Compliance Letter specifically with respect to AOC HSS-1A (CCPW and CCPW-related metals) (NJDEP, 2020g).

### 2.1.3.2 Off-Site Properties

The Off-Site Properties that abut the GA Group Sites include Al Smith Moving, Halsted Corporation, Fishbein, Forrest Street Properties, and Ten West Apparel (**Figure 1-2**).

**Al Smith Moving & Furniture Company, Inc.**

The Al Smith Moving & Furniture Company, Inc. property (ASM) is located at 33 Pacific Avenue in a commercial and residential area in Jersey City, Hudson County, New Jersey. ASM is bordered to the northwest by Site 133 East, to the northeast by Site 135, to the southeast by Pacific Avenue, and to the southwest by Caven Point Avenue. The total area encompassed by ASM is approximately 0.5 acres. ASM is currently vacant land owned by GND PACIFIC HOLDINGS, LLC. Prior to remediation, the property was almost completely occupied by a commercial warehouse building operated by the Al Smith Moving & Furniture Company, Inc. The building was demolished as part of the RA at the Site in 2017.

The *Remedial Action Report Al Smith Moving & Furniture Company, Inc. (AOC ASM-1) Soil, Final* (AECOM, 2019c) documents the implementation and completion of the remedial action at ASM. The remedial action included excavation and removal of accessible, visible CCPW and soils containing $Cr^{+6}$ to meet the requirements of the Chromium Policy (NJDEP, 2007) in accordance with the Method to Determine Compliance (NJDEP, 2013). NJDEP approval of the RAR was issued on May 28, 2019 (NJDEP, 2019a). On October 11, 2019, NJDEP issued an Approval, Consent Judgement Compliance Letter with respect to AOC ASM-1 (CCPW and CCPW-related metals) (NJDEP, 2019f).

**Halsted**

The Former Halsted Corporation Property (Halsted) is located in a commercial and residential area in Jersey City, Hudson County, New Jersey. The total area encompassed by Halsted is approximately 1 acre. The excavation elements of the RA have been implemented, which included excavation and removal of visible CCPW and soils containing $Cr^{+6}$ to meet the requirements of the Chromium Policy (NJDEP, 2007) in accordance with the Method to Determine Compliance (NJDEP, 2013), as well as soils containing CCPW metals in accordance with the CrSCC or SRS. Engineering controls and institutional controls (Notice in Lieu of Deed Notice), once implemented, will address $Cr^{+6}$ remaining in soil at concentrations greater than the CrSCC in inaccessible soils. The *Final Former Halsted Corporation Property (Halsted) Remedial Action Report (RAR) Tables and Figures Submittal* (AECOM, 2020d) was approved by NJDEP on October 16, 2020 (Weston, 2020a). PPG submitted the draft RAR for Halladay Street North and a portion of the Former Halsted Corporation Property on July 20, 2021 to document completion of soil remediation activities (AECOM, 2021e).

**Former Fishbein Property**

The site identified as the Former Fishbein Property (Fishbein) is located at 816 Garfield Avenue in a commercial and residential area in Jersey City, Hudson County, New Jersey. The former Fishbein property is bordered to the north by Site 132; to the south by Ten West Apparel (800 Garfield Avenue); to the east by Site 137, and to the west by Garfield Avenue. The total area encompassed by Fishbein is approximately 0.26 acres. PPG purchased the property on December 9, 2013; at that time, it was a vacant, partially-paved lot, and is currently in that condition. Historically, the property was used as an automobile scrap yard and a parking area. Remediation of Fishbein is being conducted as part of Phase 3B South. Implementation of RA in Phase 3B South is anticipated to be complete in early 2022. Documentation of the RA at Fishbein will be provided in the RAR submittals for Phase 3B South.

**Forrest Street Properties**

The Forrest Street Properties (FSP) is located in a commercial and residential area in Jersey City, Hudson County, New Jersey. FSP is comprised of the properties located at 84, 86-90, 98-100, and 108 Forrest Street. FSP is bordered to the west by Site 114, to the south by Site 114 and Forrest Street, to the east by the Halladay Street residential properties, and to the north by Site 199 and the NJ Transit Light Rail Line. The total area encompassed by FSP is approximately 1.38 acres. FSP contains vacant, industrial, and/or commercial land owned by 90 Forrest Associates, LLC (Block 21501, Lots 11 and 12), and 100 Forrest Associates, LLC (Block 21501, Lots 14 and 15). Block 21501, Lot 15 is currently vacant land used for access to 100 Forrest Street. Prior to remediation, the Block 21501, Lot 15 property was vacant and undeveloped.

The *Remedial Action Report, Forrest Street Properties (AOC FSP-1A, AOC FSP-1B, AOC FSP-2A, and AOC FSP-2B) Soil, Final* (AECOM, 2019l) documents the implementation and completion of the remedial action at the Block 21501, Lot 15 portion of FSP. The remedial action included excavation and removal of accessible, visible CCPW and soils containing $Cr^{+6}$ to meet the requirements of the Chromium Policy (NJDEP, 2007) in accordance with the Method to Determine Compliance (NJDEP, 2013), as well as soils containing CCPW metals in accordance with the CRSCC or SRS, based on the current use scenario. Engineering controls and institutional controls (Deed Notice) address remaining-in-place constituents. NJDEP approval of the RAR for only AOC FSP-1A and AOC FSP-1B was issued on October 29, 2019 (NJDEP, 2019g). On November 15, 2019, NJDEP issued a Conditional Approval with respect to the RAR for FSP (AOC FSP-1A*, AOC FSP-1B, AOC FSP-2A, and AOC*

*FSP-2B)*, conditioned upon confirmation of property owner consent for the restricted-use remedy and recorded Deed Notice. (NJDEP, 2019i).

**Ten West Apparel (800 Garfield Avenue)**

The Ten West Apparel (800 Garfield Avenue) property is in a commercial and residential area in Jersey City, Hudson County, New Jersey. The property is bordered to the north by the former Fishbein property, to the east by Site 137 and Site 133, to the south by Caven Point Avenue, and to the west by Garfield Avenue. The total area encompassed by the property is approximately 2.1 acres. The property is occupied by a single-story concrete block warehouse building. Historical operations included warehousing and trucking. Remediation of 800 Garfield Avenue is being conducted as part of Phase 3B South. Implementation of RA in Phase 3B South is anticipated to be complete in early 2022. Documentation of the RA at 800 Garfield Avenue will be provided in the RAR submittals for Phase 3B South.

## 2.1.4 Other Properties Associated with the Groundwater Remedial Investigation

Additional properties associated with this groundwater RI include Site 186 and Site 199 (**Figure 1-2**).

### 2.1.4.1 Site 186

Site 186 is located at the corner of Union Street and Garfield Avenue in a light industrial and commercial area of Jersey City. Site 186 is comprised of Block 19802 Lot 2. Site 186 is bound to the north by Union Street, beyond which are other light industrial properties; to the south by grassy area and paved parking lot associated with the Metropolitan Family Health Network (MFHN) facility, beyond which is the NJ Transit Light Rail; to the east by Garfield Avenue, beyond which is light industrial property and HCC Site 207; and to the west by the MFHN, beyond which is residential-use properties. Site 186 is paved with asphalt and has recently been used as a parking lot for used cars. Historically, Site 186 was occupied by commercial businesses including a company that manufactured greenhouses, a machine shop, a retail store (pattern shop), and a dress making company. By 1961, the property was vacant of structures (AECOM, 2014).

The *Final Soil Remedial Action Report, Non-Residential Chromate Chemical Production Waste Site 186* (AECOM, 2014) documents the implementation and completion of the remedial action at Site 186. The remedial action included the excavation and removal of visible CCPW and soils with concentrations of $Cr^{+6}$ greater than the CrSCC of 20 mg/kg. The NJDEP issued a Remediation Action Report Determination/Approval of the Site 186 Soil RAR on April 16, 2014 (NJDEP, 2014). Groundwater quality at Site 186 has been evaluated and the data are presented in this RI report. No further action is required related to groundwater.

### 2.1.4.2 Site 199

Site 199 is designated by the NJDEP as an orphan sewer site and is located along the NJ Transit Hudson-Bergen Light Rail (HBLR) tracks between Garfield Avenue and Halladay Street in Jersey City, New Jersey. The Site covers approximately 2.4 acres (approximately 1,040 feet long by 100 feet wide) and is mostly owned by the Jersey City Municipal Utilities Authority (JCMUA), with smaller portions owned by the City of Jersey City and the JCRA. NJ Transit maintains a ROW extending approximately 50 feet on both sides of the light rail tracks, for operation of the light rail system. In accordance with the Consent Judgment between the NJDEP et al. and Honeywell International, Inc. et al., dated September 7, 2011, Honeywell and PPG share responsibility for addressing chromium-related impacts at the Site.

On January 7, 2021, Honeywell submitted to the NJDEP the *Remedial Investigation Report/Remedial Action Work Plan/Remedial Action Report Site 199 – Sludge Line 2* (Honeywell, 2021). This document only addressed the impacted fill materials related to and located along the two 6-inch diameter sludge lines that were installed in the 1950s and abandoned in the 1970s. The remedial action included the implementation of engineering controls (existing pavement caps, existing track ballast cap, and existing soil cap) and institutional controls (deed notices) for the sludge line corridor only. PPG has agreed to address CCPW-related groundwater impacts found away from the sludge lines (proximate to Site 114), as well as soil contamination found within the footprint of the Morris Canal on Site 199. Groundwater conditions at Site 199 are characterized in this RI report.

## 2.2 Previous and Ongoing Groundwater Investigations

This section summarizes groundwater investigation activities that were, or are being, implemented separately from the groundwater RI that will be referenced herein to meet RI objectives.

### 2.2.1 Historical Groundwater Investigations (2003-2007)

Historical groundwater sampling activities were conducted in the Project Area between 2003 and 2007. These investigations were conducted as part of other ongoing investigations and were generally evaluated as independent groundwater investigations. These investigations were not comprehensive, but rather were specific to particular areas within the Project Area. Details of these previously conducted investigations are summarized in the following reports that were submitted to the NJDEP:

- Remedial Investigation Report, PPG Site 114 – Garfield Avenue, Jersey City, New Jersey (ENSR, 2006); and
- Remedial Investigation Report – Non-Residential Chromate Chemical Production Waste Sites – Sites 114, 132, 133, 135, 137 and 143, Jersey City, New Jersey (AECOM, 2009).

### 2.2.2 Groundwater Investigations (2011-2012)

During 2011 and 2012, the following groundwater activities were conducted in the Project Area:

- May 2011: Inspection and gauging of accessible wells within the Project Area;
- June 2011: Comprehensive groundwater sampling within the Project Area;
- November 2011: Synoptic groundwater gauging of accessible wells within the Project Area;
- December 2011: Civil survey of accessible monitoring wells;
- November 2011 through February 2012: Groundwater investigation at the Forrest Street and Forrest Street Properties Sites, including well installation, water level measurements, and groundwater sampling; and
- March 2012: Limited groundwater sampling of wells that were inaccessible during the June 2011 comprehensive sampling event.

### 2.2.3 Groundwater Investigations - Former MGP Operations

Several groundwater RI activities relating to the delineation of MGP-related impacts resulting from PSEG's operations of the former MGP facility on Site 114 were completed and are summarized in the following reports previously submitted to the NJDEP:

- Remedial Investigation Report – Former Halladay Street Gas Works, Jersey City, New Jersey (PSEG, 2007);
- Remedial Investigation Progress Report – Groundwater Monitoring Well Gauging and Sampling, Former Halladay Street Gas Works, Jersey City, New Jersey (PSEG, 2009);
- Remedial Investigation Report – Former Halladay Street Gas Works, Jersey City, New Jersey (PSEG, 2014a) (included in **Appendix A**); and
- Notification of Groundwater Classification Exception Area – PSEG Former Halladay Street Gas Works (PSEG, 2014b).

### 2.2.4 Groundwater Investigations (2015-Present)

From 2015 to the present, the following groundwater-related investigations or evaluations were completed or are ongoing in the Project Area:

- Forrest Street (FS) and Forrest Street Properties (FSP) well installation, groundwater gauging, and groundwater sampling (AECOM, 2019e; AECOM, 2020b; AECOM, 2020g);
- Vertical Aquifer Profiling (VAP) and Hydraulic Profiling Tool (HPT) investigations:
    - Site-wide (AECOM, 2016b),
    - Site 199 (2020) (**Appendix L.1**), and
    - FS/FSP (AECOM, 2019e; AECOM, 2020b; AECOM, 2020g);
- Groundwater investigation in the Halsted Site (78 Halladay Street) (AECOM, 2016b);
- Sampling of Project Area-wide historical monitoring wells (December 2015) (Appendix L);
- Pilot studies, IRMs, and groundwater monitoring to support groundwater remedial action, including the following:
    - Bioprecipitation pilot test (ARCADIS, 2017a);
    - In-situ chemical reduction pilot test (AECOM, 2017d);
    - In-situ fracturing pilot test (AECOM, 2019m);
    - Site-wide FerroBlack®-H Permit-by-Rule (PBR) compliance and capillary break groundwater monitoring (ongoing) (AECOM, 2016b; AECOM, 2016c; AECOM, 2017a; AECOM, 2020e; AECOM, 2020i);
- Site 114 Phase I and Phase II IRM (ongoing) (ARCADIS, 2017; AECOM, 2020f);
- Phase III IRM preliminary design investigation (PDI), including VAP and HPT borings, and installation and sampling of three multi-purpose wells (114-MW67C, 114-MW68C, and 114-MW70C); and
- Evaluation of non-CCPW constituents in groundwater that may have emanated from Site 114 onto adjacent properties (AECOM, 2021b).

Results and findings from these investigations and sampling programs were previously communicated to the NJDEP in various data submittals, technical memoranda, and/or regulatory reports as referenced above.

## 2.3 Remedial Activities

The following sections provide a summary of remedial activities for the Project Area.

### 2.3.1 Soil Remedial Action

The source of chromium impacts to groundwater at the Project Area is chromium-impacted soil. Between 2010 and 2020, PPG completed excavation of chromium-impacted soil from HCC Sites 114, 132, 133 East, 135, 137 North, 143, and 186, from adjacent properties (Al Smith Moving & Furniture Company, Forrest Street Properties, and the former Halsted Corporation property), and adjacent roadways (Carteret Avenue, Halladay Street, and Forrest Street), in accordance with the *Final Remedial Action Work Plan (Soil) Rev. 3, Garfield Avenue Group – Sites 114, 132, 133, 135, 137 and 143, Jersey City, New Jersey* (Final Soil RAWP) (AECOM, 2018a). As of September 30, 2020, a total of 861,729 tons of hazardous waste material, and 195,338 tons of non-hazardous waste material have been removed from these areas (AECOM, 2020j). Excavated material was disposed of at licensed, off-site locations in accordance with applicable regulations. Additional excavation and backfilling activities are planned, or are ongoing, at additional areas, including at Site 133 West, Site 137 South, and certain adjacent properties (Ten West Apparel and the former Fishbein property). In adjacent Garfield Avenue, a restricted-use remedy has been agreed upon by the City of Jersey City, PPG, and NJDEP due to the numerous utilities located in this roadway and traffic issues.

Shoring (sheet pile) was installed by PPG around the perimeter of Site 114 and along some internal portions of Site 114 to facilitate implementation of remedial soil excavations. Sheet pile varied in depth depending on the required depth of excavation and proximity to features that needed to be protected. Details regarding the sheet pile installation are provided in the Site 114 Soil RAR (AECOM, 2019j). Additional sheet pile installation was conducted on Site 114 by PSEG during remedial activities associated with the former Halladay Street Gas Works MGP. Sheet pile was also installed in other areas outside of Site 114 (e.g., on Site 143, 132, 137, and 135 along Carteret Avenue), and along Halladay Street South.

A total of approximately 1,371,000 tons of imported fill material has been placed within the Project Area through September 30, 2020. Clean fill (dense graded aggregate [DGA]) for a portion of these sites was amended with FerroBlack®-H, a chemical reductant. FerroBlack®-H is a water-based suspension of ferrous iron and sulfide designed to prevent the clean backfill from being contaminated by chromium-impacted groundwater and to support groundwater remediation. Dosages of FerroBlack®-H applied to the clean fill ranged from 0.7% by weight (wt.) to 2.8% by wt. Placement of FerroBlack®-H-amended backfill has resulted in substantial improvement in groundwater quality within the shallow water-bearing zone across the Project Area, as is evident from the analytical data collected from shallow zone monitoring wells installed within these remediated areas. A capillary break was installed in select portions of the Project Area to prevent the formation of surficial $Cr^{+6}$ blooms (chromium blooms) due to capillary rise, as detailed in Section 3.7.3.

Soil RARs for Sites 114, 132, 133 East, 135, 137 North, 143, Al Smith Moving & Furniture Company, Forrest Street, Forrest Street Properties, and Halladay Street South have been submitted to the project stakeholders and have been approved, or conditionally approved, by the NJDEP.

### 2.3.2 Groundwater Interim Remedial Measures

To expedite the treatment of groundwater associated with the portion of the GA Group Sites that is impacted with Cr and $Cr^{+6}$, a phased groundwater IRM approach was developed and is currently being implemented.

#### 2.3.2.1 Phase I IRM

The Phase I IRM focused primarily on the intermediate water-bearing zone and the upper portion of the deep water-bearing zone, in areas where source removal in the shallow water-bearing zone was completed and where elevated $Cr^{+6}$ is present in the groundwater. The Phase I IRM also included a small Cr-impacted area in the shallow water-bearing zone.

The Phase I IRM was implemented between July 2017 and March 2020. In this Phase, groundwater was extracted from the areas of highest Cr and $Cr^{+6}$ concentrations in the northern portion of Site 114. The extracted groundwater was treated using the on-site water treatment plant. The Phase I IRM also included a small area in the shallow water-bearing zone on Site 114 where a carbon source was injected to treat elevated Cr and $Cr^{+6}$ concentrations.

The objectives of the Phase I IRM were to achieve the following:

- Meaningful reductions of Cr and $Cr^{+6}$ concentrations in groundwater:
  - In the northern portion of Site 114, reduction of $Cr^{+6}$ and Cr in the intermediate and deep water-bearing zones via groundwater extraction to make the area more suitable for *in situ* anaerobic bioprecipitation (ISAB) in a future IRM phase.
  - In the southern portion of Site 114, creation of an anaerobic reactive zone (via injection of amended water) in the intermediate and deep water-bearing zones to support ISAB reduction of both $Cr^{+6}$ and Cr concentration levels.
  - Achieve the same within a localized area of shallow groundwater in the northern portion of Site 114.
- Documentation of post-treatment trends showing continuing attenuation/reduction of Cr concentrations toward the GWQS.
- Capture of site-specific information on the remedial system operation to support optimization of subsequent IRM phases.

A monitoring program, as described in the *Groundwater Interim Remedial Measure: Phase I Design and Permit-by-Rule Authorization Request* (ARCADIS, 2017b), is being implemented and includes baseline sampling, operational monitoring, treatment monitoring, and post-treatment monitoring. Quarterly technical status reports, which provide a summary of activities performed, data collected, and optimization of treatment steps are prepared and submitted to the NJDEP.

As of March 2020, a total of approximately 14 million gallons of groundwater were extracted, and 9.4 million gallons of injection solution (dilute organic carbon and/or potable water) were injected into the target treatment zones. An estimated 32,327 pounds (lbs) of Cr and 29,544 lbs of $Cr^{+6}$ were removed as a result of Phase I IRM operations (ARCADIS, 2020). As of April 1, 2020, operation of the Phase I IRM system ceased and delivery of organic carbon substrate through the recirculation area is considered complete. Performance monitoring data collected through the fourth quarter of 2020 demonstrate that considerable reductions in the concentrations of Cr and $Cr^{+6}$ have been achieved since initiation of Phase I IRM operations in December 2017 (ARCADIS, 2021).

#### 2.3.2.2 Phase II IRM

As outlined in the Phase II PBR (ARCADIS, 2019), the objectives of the Phase II IRM program are as follows:

- Establish anaerobic reactive zones to support ISAB reduction of $Cr^{+6}$ and total Cr within:
  - The northern portion of Site 114 where Phase I groundwater extraction was used to reduce Cr.
  - The southeastern portion of Site 114.
- Document post-treatment trends showing continuing attenuation/reduction of total Cr toward achieving the Class II-A GWQS.
- Capture site-specific information on the system operation to support subsequent IRM phases.

Baseline sampling of the Phase II well network was completed in March 2020 and full-scale operation of the system began in September 2020. The Phase II IRM includes a combination of groundwater extraction and injection using pulsed organic carbon substrate delivery. An estimated 117,000 gallons to 138,000 gallons of reagent (organic carbon substrate and chemical reductant) and 11,000,000 to 15,000,000 gallons of potable water are planned to be injected into the treatment zones over a 12-month period.

#### 2.3.2.3 Phase III IRM

The third phase of the groundwater IRMs is being planned to treat Cr-contaminated groundwater in the shallow, intermediate, and deep water-bearing zones in areas that are not targeted by the Phase I and Phase II IRMs. A groundwater PDI in select areas to the south and east of Carteret Avenue was completed between September and December 2020 to support planning for the Phase III IRM. A total of 19 temporary groundwater screening points were advanced to perform HPT and VAP to collect data on high and low permeability zones and water quality with respect to concentrations of Cr and $Cr^{+6}$ in groundwater in these areas. In addition, three multi-purpose wells were installed on Site 114 to evaluate groundwater quality in the lower portion of the deep water-bearing zone.

# 3.0 Environmental Setting

## 3.1 Physical Setting

The Project Area is located in an urban area in Jersey City, Hudson County, New Jersey between Garfield Avenue, Caven Point Avenue, Pacific Avenue, and the NJ Transit Light Rail. The Project Area consists of former industrial and commercial properties and businesses located within the Canal Crossing Redevelopment Area, which encompasses 111 acres of planned redevelopment space in the southeastern section of Jersey City, NJ (City of Jersey City, 2020).

## 3.2 Historical Industrial and Regional Development

The Project Area is located in a section of Jersey City that experienced significant industrial development in the early 1900s. Based on soil borings, visual observations, analytical data (AECOM, 2012a), and published information from the New Jersey Geologic Survey (NJGS) (NJGS, 2004), much of the land along the present-day Jersey City shoreline was reclaimed from the Upper New York Bay. In the early 1900s, much of the Jersey City area was identified as viable for development to support the booming industry of this region. A review of historical mapping indicates that the majority of filling activities occurred between the late 1800s and 1947 (AECOM, 2012a). Looking for available land, developers filled the marshlands and estuarine areas to supply properties for development. Research indicates that fill included construction spoils, silts and sands, demolition debris, garbage from New York City, incinerator ash, coal ash, ship ballast, industrial waste, and other miscellaneous materials. The meadow mat was covered and/or removed for building foundations or other improvement projects (ENSR, 2006). The surface water features were buried under compacted surface soils and other impervious surface features that channeled local surface water flow to subsurface storm water drainage systems. Many parcels in this area changed ownership several times over the years and each owner used the land for different industrial purposes.

The NJDEP Technical Requirements for Site Remediation (TRSR) (NJDEP, 2017a) acknowledges that some environmental impacts in urban areas are due to the components of historic fill material. Based upon the boring logs and analytical data collected during the RIs conducted in the Project Area, several of the SVOC compounds and metals detected in soil at concentrations exceeding applicable standards are attributable to historic fill material and not PPG or PSEG site operations. As most of the Project Area was underlain by non-native fill material from the ground surface to the meadow mat prior to implementation of any soil remedial actions, it is expected that some of the non-CCPW-and SVOC-related impacts to groundwater are attributable to historic fill. In addition, the metals As, Pb, and Hg may be related to the former MGP operations but are also found in historic fill material placed throughout Site 114. Prior to soil remediation, additional metals related to the ash, cinders, and miscellaneous materials found in the fill were also identified on Site 114 (AECOM, 2018a).

## 3.3 Topography

The United States Geological Survey (USGS) Jersey City, NJ topographic quadrangle map presents the regional topography for the Project Area. Site 114 has little topographic relief, with ground surface ranging from El. 10 to 16 ft relative to the North American Vertical Datum of 1988 (NAVD88). However, just to the west of Garfield Avenue the topography rises approximately 30 to 40 ft in elevation within several hundred yards of the Project Area, and to approximately El. 100 ft NAVD88

within a half-mile west of the Project Area. The topography east of the Project Area is fairly flat, extending to the Hudson River and Upper New York Bay. In general, the former warehouse foundations at Site 114 were elevated 2 to 5 ft above the surrounding ground surface. The topography of the GA Group Sites south of Carteret Avenue range in elevation from about El. 9 to 15 ft NAVD88. The elevation of the Project Area following soil remediation and partial restoration presently ranges from El. 11 to 15 ft NAVD88.

## 3.4 Former Morris Canal

The former Morris Canal is situated along the western property boundary of Sites 133 and 137, bisects Site 114, and extends northeast and southwest beyond the GA Group Sites (**Figure 3-1**). Historical records indicate that the former canal was up to 40 feet wide and 25 feet deep. The canal was decommissioned in the 1920s and was subsequently backfilled by 1951. Fill used to abandon the former canal consisted of a variety of non-native materials, including CCPW.

## 3.5 Geology

A description the regional and Project Area geology is presented below.

### 3.5.1 Regional Surficial Geology

The regional surficial geology is described in the USGS *Surficial Geologic Map of Northern New Jersey* (Stone, et.al, 2002) and the NJGS *Surficial Geology of the Jersey City Quadrangle* (Stanford, 1995). Based on these sources, regional surficial materials overlying bedrock consist of unconsolidated sediments of Recent and Pleistocene age, including alluvial, estuarine, eolian (windblown), and glacial lacustrine deposits, as well as glacial till of late Wisconsin age. A cross-section illustrating the regional surficial geology for the Project Area is presented in **Figure 3-2**.

Each of the native regional surficial units present in the Project Area is described below (Stanford, 1995):

- **Estuarine and salt-marsh deposits**: Black, dark brown, and dark gray organic silt and clay, and salt-marsh peat, with some sand; contains shells; up to 40 ft thick, but generally less than 20 ft thick.
- **Lake bottom deposits**: Gray to reddish brown silt, clay, and fine sand; thinly layered to varved; well-sorted and stratified; up to 150 ft thick.
- **Rahway Till**: Reddish-brown to reddish-yellow silty sand to sandy silt, containing some to many subrounded and subangular pebbles and cobbles and few subrounded boulders; poorly sorted, non-stratified, generally compact below the soil zone; up to 50 ft thick.

The Rahway Till is further described as a glacial sediment deposited directly from glacial ice and consisting of two facies that are distinguished texturally and structurally (Stone, et.al, 2002). The lower facies consists of a compact, dense, massive basal till of lodgement and basal-meltout origin containing few lenses of sorted silt and fine sand. The upper facies consists of a noncompact ablation till of meltout origin, containing sand, gravel, boulders, and minor beds of sorted and stratified sand, silt, and clay. The Rahway Till forms a nearly continuous blanket on the bedrock surface, except on the steep eastern slope of the Palisades Ridge (Stanford, 1995).

Artificial fill, consisting of sand, gravel, silt, clay, and rock, as well as construction spoils, demolition debris, garbage from New York City, incinerator ash, coal ash, ship ballast, industrial waste, and other

miscellaneous materials overlie the native unconsolidated materials in areas where fill was used to reclaim the shoreline from the Upper New York Bay or to fill marshlands and estuarine areas.

### 3.5.2 Regional Bedrock Geology

Jersey City is located within the upper portion of the drainage basin for Newark Bay and lies within a glaciated section of the Triassic/Jurassic Basin. The bedrock is principally composed of Upper Triassic to Lower Jurassic age sedimentary rocks, known collectively as the Newark Supergroup (Drake, Jr. et al., 1997), and was formed from sediments deposited into a northeast-southwest trending structural basin known as the Newark Basin. In New Jersey, the sedimentary rocks of the Newark Supergroup are composed of reddish-brown arkosic sandstone, mudstone, siltstone, conglomerate, and dark gray argillite (Volkert, 2016). The Newark Supergroup has been divided into three formations on the basis of lithology, including a lower unit identified as the Stockton Formation, a middle unit identified as the Lockatong Formation, and an upper unit identified as the Passaic Formation. These sedimentary units have been intruded by igneous rock, principally diabase, in the form of sills and dikes, with the intrusions now generally forming ridges such as the Palisades and the Heights in Jersey City. More detailed descriptions of each of these bedrock units are provided in USGS Open File Map OFM-110 (Volkert, 2016).

Regional geologic mapping (Volkert, 2016) indicates that the Project Area is underlain by the Stockton Formation, the Lockatong Formation, and Diabase (**Figure 3-3**). A cross-section illustrating the shape of the regional bedrock surface in the Project Area is presented in **Figure 3-2**. West of the Project Area, bedrock surface rises abruptly creating a topographic high. A bedrock low occurs just east of Garfield Avenue. Further to the East, the bedrock surface rises gently to a large plateau that extends to the shoreline of New York Bay. The bedrock surface slopes downward again east of Ellis Island. In general, the bedrock surface slopes from west to east across the Project Area and is relatively shallow west of Garfield Avenue but fairly deep beneath Site 114.

Regionally, the beds of the Newark Supergroup in the Hackensack River basin generally strike to the northeast and dip at approximately 16 degrees to the west-northwest. A prominent set of vertical joints strikes north 45 degrees east, approximately parallel to the strike of the beds. A secondary set of nearly vertical joints strikes north 75 degrees west, subparallel to the dip of the bedding. Faults, where present, typically strike northeastward and are parallel to, or intersect, the strike of the beds at low angles.

Each of the regional bedrock units present in the Project Area is described below (Volkert, 2016):

- **Diabase**: Dark-greenish-gray to black, fine-grained, massive, hard diabase; composed mainly of calcic plagioclase, clinopyroxene and opaque oxide minerals; contacts are aphanitic and display chilled, sharp margins with enclosing sedimentary rocks.
- **Lockatong Formation**: Cyclically deposited sequences consisting of gray to greenish-gray and reddish-brown siltstone, silty argillite, dark-gray to black shale and mudstone, and white to buff arkosic sandstone; up to 10 ft of unit may be thermally metamorphosed along contact with diabase.
- **Stockton Formation**: Interbedded sequences of gray, grayish-brown, or slightly reddish-brown, medium to fine grained, thin to thick-bedded, poorly sorted to clast imbricated conglomerate, planar to trough cross-bedded, and ripple cross-laminated arkosic sandstone, and reddish-brown clayey fine-grained, sandstone, siltstone and mudstone.

### 3.5.3 Project Area Surficial Geology

The Project Area is located on miscellaneous fill material that was used to reclaim the salt marsh for construction of this portion of Jersey City. Native materials beneath the fill include an organic meadow mat layer and unconsolidated deposits of glacial origin. Unconsolidated native surficial deposits pinch out against the rising bedrock surface west of the Project Area, in the vicinity of Garfield Avenue where outcrops of the Diabase are mapped (Volkert, 2016).

The primary surficial geologic units within the Project Area, from top to bottom, include:

- Fill (**the shallow zone**), consisting of:
    - Non-native fill materials in areas where soil remediation is not needed or has not yet been implemented, and
    - Clean fill (unamended or amended with the FerroBlack®-H reductant) where the previously existing non-native fill materials and subsurface structures were excavated to remove sources of Cr.
- Underlying the fill, a discontinuous layer of estuarine organic-rich deposits (meadow mat);
- Underlying the meadow mat, or directly below the fill where the meadow mat is absent, native soils consisting of sands, silty sands, silts, and clays (**the intermediate zone**) generally separated from the underlying deep zone by a layer of interbedded lower permeability silts, clayey silts, silty sands, and clays (**the transition zone, part of the intermediate zone**); and
- Underlying the intermediate zone, sands with lenses of silt, clay, and gravel underlain by the basal facies of the Rahway Till (**the deep zone, includes the basal till and overlying sands**).

Fill within the Project Area includes miscellaneous debris, cinders and ash, and CCPW and/or CCPW-impacted materials. Extensive excavation of the impacted fill has been implemented from 2010 through the present and is ongoing. In areas where impacted fill has been removed, clean fill material, either un-amended or amended with FerroBlack®-H, was placed to grade within the excavated areas.

Estuarine organic-rich deposits (meadow mat) were identified at a number of boring locations underlying the fill. Observations indicate that the meadow mat is not continuous across the Project Area, particularly along the former Morris Canal. Within the limits of the former canal, meadow mat was notably absent from northern and north-central portions of Site 114. In addition, in the southern and central portions of Site 114, it is possible that the meadow mat was removed during construction of the former canal. Depths to the meadow mat range from approximately 10 to 25 ft bgs. Shallow soils (predominantly fill) within the Project Area extend from the ground surface to the top of the meadow mat, where the meadow mat is present, or to a similar depth where meadow mat is not present. In areas where the meadow mat is absent due to natural conditions (not excavated), undisturbed native materials (Und) consisting of organic silts and clays indicative of a marshland depositional environment are present. The northeastern portion of the Project Area (in the Forrest Street area) was historically a topographic high and not part of the salt marsh; therefore, the meadow mat is absent in this area. **Figure 3-1** illustrates the approximate extent of the meadow mat across the Project Area based on current information. Below the meadow mat, soils are unconsolidated and characterized by sands, silts, clays, and gravel typical of the Project Area geologic and depositional environment.

Soils of the intermediate zone are found below the meadow mat where the meadow mat is present, or at about the expected depth of the meadow mat where the meadow mat is absent. These soils range

from sandy silts, silty sands, silts, clays, and fine to coarse sand with lenses of gravel. Over most of the Project Area, the thickness of the intermediate zone ranges from approximately 20 to 40 ft, extending from the bottom of the meadow mat to approximately 55 ft bgs. In the southeastern portion of Site 114, the depth and thickness of the intermediate water-bearing zone increases with the drop in bedrock surface elevation (**Figure 3-4**). In the vicinity of 114-MW60C, the intermediate water-bearing zone extends to approximately 80 ft bgs and is up to 60 ft thick. This deeper and thicker segment of the intermediate water-bearing zone extends southeast from Site 114 onto Site 135.

The intermediate and deep zones are separated by a transition zone of low-permeability soils that are laterally extensive and encountered at depths ranging from 30 to 55 ft bgs. The transition zone is typified by sequences of laminated silts and clays with occasional stringers of sand and is variable in thickness across the Project Area.

Deep soils underlying the transition zone range in thickness from approximately 15 to 50 ft, extending from the bottom of the transition zone to a depth of 120 ft bgs at 114-MW60C and consist of silts, clays, sandy silts, silty sands, fine to coarse sands, gravel, and basal till. South of Carteret Avenue, deep zone soils transition to thicker sequences of massive silts and clays overlying the basal till. The bottom of the deep zone is typified by a layer of basal till atop bedrock. Consistent with the regional description for the Rahway Till, the basal till at the Project Area consists of silty clays, sandy silts, and silty sands with subrounded to subangular fine to coarse gravel and cobbles and occasional interbedded lenses of clay, silt, or fine sand. The thickness of the basal till (the compact, dense, massive facies of the Rahway Till) encountered within soil borings advanced at the Project Area ranges from 1 ft (114-MW55C) to 30 ft (114-MW66D), with the basal till continuous across the Project Area.

### 3.5.4 Project Area Bedrock Geology

Bedrock in the Project Area has been characterized by soil borings advanced using various drilling techniques, including sonic, mud rotary, air rotary, and water rotary. **Table 3-1** presents a summary of the borings in which bedrock was encountered and includes the inferred top of bedrock elevation and a determination of the bedrock type for each boring. Based on this information, **Figure 3-4** presents the inferred top of bedrock surface and spatial distribution of bedrock types within the Project Area. Development of the top of bedrock surface also took into consideration refusal depths of HPT probes advanced during implementation of the Phase II IRM drilling program and the Phase III IRM PDI. Although not indicative of bedrock elevation, HPT probe refusal depths provide a minimum depth to bedrock which can be used to refine the shape of the interpolated bedrock surface.

The bedrock surface in the Project Area was shaped by various factors, including weathering, erosion, and glacial activity. Weathered bedrock was observed above competent bedrock in the borings for 114-BSB-02, 114-MW49C, 114-MW52C, 114-MW52D, 114-MW53C, 114-MW55C, 114-MW57C, 114-MW58C, 114-MW60C, 114-MW61C, 114-MW61D, 114-MW62C, 114-MW64C, 114-MW66D, 114-MW67C, and 114-MW68C. For sedimentary formations, the thickness of the observed weathered bedrock ranged from 1 to 5.5 ft. For borings where diabase was encountered, the thickness of the observed weathered bedrock ranged from 1.5 to 11 ft, except at 114-MW61D where 46 ft of weathered diabase was observed and appeared to be near the contact between the Lockatong Formation and the Palisade Sill. Weathered bedrock forms via physical and chemical processes, which alter the structure of the rock, leaving residual materials derived from the original bedrock matrix. The permeability of the residual materials comprising the weathered rock depends on various factors, including the mineral composition of the parent rock, the type of weathering, and the duration of weathering processes. At several of the borings where weathered bedrock was encountered, the

weathered rock was typified by highly fractured rock with varying degrees of clay content in the fractures (e.g., 114-MW52D, 114-MW55C, 114-MW60C, 114-MW62C, 114-MW64C, 114-MW66D).

Depth to bedrock ranges from 6 ft bgs in the northwestern portion of the Project Area (114-MW15A) to 119.5 ft bgs in the southeastern portion of Site 114 (114-MW60C). Within the Project Area, the bedrock surface is characterized by two bedrock valleys (or channels) defined by low points at 114-MW4D, 114-MW66D, and 114-MW67C, as well as at 114-MW60C and 114-MW19C. A bedrock high is evident in the central portion of Site 114, defined by shallower depths to bedrock at 114-MW53C, 114-MW65C, GT-9C, and GT-10A. The bedrock surface rises to the north, east, and west of these features, resulting in a northwest-southeast trending trough with its highest elevations in the northwestern portion of the Project Area and its lowest elevations in the southeastern portion of the Project Area.

Borehole geophysical logging was conducted in the open bedrock portions of the boreholes for wells 114-MW4D and 114-MW6D on September 22, 2020 and at wells 114-MW52D, 114-MW57D, 114-MW61D, and 114-MW66D from January 14 to 15, 2021. Borehole geophysical logging was conducted by Hager-Richter Geoscience, an AECOM subcontractor. A technical memorandum presenting the results and findings of the borehole geophysical logging and the borehole geophysics reports are included in **Appendix B**. Key findings from the borehole geophysics include:

- Wells 114-MW6D, 114-MW52D, 114-MW57D, and 114-MW66D were installed in the sedimentary unit identified as the Lockatong Formation at the Project Area. In general, the bedding and primary fracture features have shallow dipping angles on the order of 10 to 20 degrees toward the northwest. A secondary set of fractures dip more steeply (60 to 80 degrees) to the southeast. Bedding dip azimuth is 299 degrees northwest. The majority of flow observed in these wells was observed within the top 10 ft of the borehole, but some minor fractures with very low flow were identified at greater depths based on smaller perturbations in the logs as described for each well.
- Wells 114-MW4D and 114-MW61D were installed in the Jurassic Diabase unit. Regional bedrock geology maps identify this unit west of the Project Area, but based on drill logs and borehole geophysical logging, the boundary of this unit is farther east than indicated on the NJGS maps. The Jurassic Diabase is highly fractured without coherent structure, and fracture dip angles tend to be steeper than the sedimentary unit with the majority of fractures dipping in an easterly direction. Active fractures were identified in shallow portions of the logged hole where minor flow was present. The diabase is highly fractured and weak rock in the wells that were logged.

## 3.6 Hydrology

### 3.6.1 Surface Water

The only surface water in the vicinity of the Project Area is the Upper New York Bay, which is located approximately 3,800 ft to the southeast. Surface water from precipitation infiltrates into Project Area fill materials, including native fill and the DGA, which was put in place during soil remediation activities. Excess surface water runoff is directed into storm sewers, which discharge to the city-owned sewers beneath and along the nearby roadways. In some locations of Jersey City, the storm sewer lines are tied into the sanitary sewer system (combined sewer system).

### 3.6.2 Wetlands

There are no mapped wetlands on or adjacent to the Project Area.

## 3.7 Hydrogeology

### 3.7.1 Regional Groundwater Flow

Groundwater occurs regionally in the following geologic formations: the fill, the unconsolidated overburden soils/meadow mat, and the bedrock. A summary of groundwater flow in these formations is provided below:

- **Fill**: Groundwater in the fill is unconfined and is typically encountered within 10 ft bgs. In general, the shallow zone groundwater flow patterns represent a subdued version of land surface topography. Variations in these flow patterns can be attributed to heterogeneities in the fill. For instance, tightly compacted dredged sediments would be expected to restrict water flow much more than construction debris. Subsurface infrastructure features (e.g., basements, drains, sewers, sheet pile, etc.) also affect shallow groundwater flow patterns. Groundwater elevations in the shallow fill are also influenced by recharge events.
- **Native Unconsolidated Overburden and Meadow Mat**: Groundwater flow in overburden materials is controlled by permeability or flow through the connected pore spaces in the soil matrix. In this zone, groundwater is mostly unconfined, but may be semi-confined to confined in areas with complex stratigraphy consisting of alternating layers of less and more permeable materials. Groundwater generally flows horizontally in these soils but may be influenced by local recharge and discharge zones. The meadow mat is a dense matrix of organic material and fine-grained soils, and this layer generally exhibits permeability that is three or more orders-of-magnitude less than surrounding materials.
- **Bedrock**: Groundwater within bedrock is stored and transmitted along fractures, bedding planes, and interconnected cracks or voids in the rock. In general, although highly fractured, the diabase has low permeability and is understood to be a no-flow boundary. For sedimentary formations (Lockatong and Stockton), groundwater flow occurs primarily along bedding plane fractures with the prevailing direction parallel to bedding strike, with secondary flow along steeply dipping fractures (joints) which are pathways for leakage between bedding fractures; the vertical extent of such leakage between bedding plane fractures is commonly inhibited by the termination of the majority of the joints at bedding plane boundaries. Regionally, bedrock well yields have been reported to range from several gallons to several hundred gallons per minute, with yields generally decreasing with depth.

### 3.7.2 Project Area Groundwater

#### 3.7.2.1 Hydrostratigraphic Units

Similar to the regional hydrogeology, groundwater in the Project Area occurs within distinct hydrostratigraphic units, as follows:

- **Shallow Water-Bearing Zone**: consists of fill material; includes groundwater present in the fill from the water table to the top of the meadow mat. Where the fill has been excavated during soil remedial action, the backfill is a more uniform DGA material or DGA amended with FerroBlack®-H. In the northeastern corner of Site 114, beyond Forrest Street, a native sandy unit underlies the fill above the intermediate water-bearing zone deposits.
- **Intermediate Water-Bearing Zone**: consists of sandy silts, silty sands, silts, clays, and fine to coarse sand with lenses of gravel extending from the bottom of the meadow mat down to a silt and clay unit of lower hydraulic conductivity; includes groundwater present in the meadow mat, the underlying sand unit, and the underlying silt and clay unit. Where present, the

meadow mat is the transition zone between the shallow and intermediate water-bearing zones and generally limits vertical groundwater movement between these zones. Where meadow mat is absent, the shallow and intermediate water-bearing zones are in direct contact. The silt and clay unit is the transition zone between the intermediate and the deep water-bearing zones and, where present, behaves like an aquitard due to its lower permeability. The intermediate water-bearing zone pinches out against the rising bedrock surface west of the Project Area (beyond Garfield Avenue).

- **Deep Water-Bearing Zone**: north of Carteret Avenue, the deep zone consists primarily of sand and gravel with lenses of clay or silt underlain by basal till, extending from the bottom of the overlying silt and clay unit to bedrock; includes groundwater present in the sand and gravel unit and the basal till. South of Carteret Avenue, the deep zone becomes more heterogeneous, consisting of sand and gravel with lenses of clay or silt (like north of Carteret Avenue) as well as thicker sequences of lower permeability materials such as silts, clays, and fine sands with silt and clay. Based on information published by the NJGS and Project Area data, the basal till is present on top of bedrock throughout the Project Area. The deep water-bearing zone pinches out against the rising bedrock surface on the western margin of the Project Area (near Garfield Avenue).
- **Bedrock Water-Bearing Zone**: consists primarily of the Lockatong Formation, with the Palisades Sill (diabase) along the western edge of the Project Area and a section of the Stockton Formation in the eastern portion of Site 114; includes groundwater within bedrock fractures, bedding planes, cracks, and voids. Flow within weathered bedrock immediately below overburden materials is similar to porous media flow due to the high degree of interconnectivity between the weathered bedrock elements, except in areas where the weathered rock has higher clay content within fractures which reduces the permeability of the weathered horizon. Flow in competent rock occurs only within interconnected fractures, bedding planes, cracks, or voids in the rock, and not within the rock matrix itself. Based on borehole geophysical logging measurements and observations during bedrock well development and sampling, yields from bedrock wells in the Project Area are low. Overall, groundwater flow in bedrock is a small fraction of the total groundwater flux through the Project Area.

#### 3.7.2.2 Groundwater Flow and Hydraulic Gradients

To characterize groundwater flow conditions across the Project Area, water level measurements were collected using a Solinst® 101 electronic water level meter:

- **In 2018**: A total of 133 monitoring wells located throughout the Project Area and in adjacent areas (i.e., roadways and private properties) were gauged during a synoptic water level monitoring event conducted within a 24-hour period on May 29, 2018. An additional five monitoring wells (114-MW41A, 114-MW41B, 114-MW7D, 132-P3A-MW5, and 133-MW1C) were gauged on June 1, 2018, due to access issues (could not be readily located or opened). Four monitoring wells situated within the Forrest Street Properties (114-MW37A, 114-MW37B, 114 MW38A, and 114-MW38B) were inaccessible during the initial mobilization and were gauged on June 11, 2018. Water level gauging data are presented on **Table 3-2**. The 2018 synoptic groundwater elevation dataset was also used to calculate vertical hydraulic gradients for nested monitoring well clusters across the Project Area (**Table 3-3**).
- **In 2020**: A synoptic round of groundwater elevation data was collected from the 19 basal till/weathered bedrock wells and four bedrock wells (114-MW4D, 114-MW6D, 114-MW7D,

114-MW16B) on August 21, 2020, providing information regarding vertical hydraulic gradients between the basal till and the underlying bedrock (**Table 3-4**).

- **In 2021**: A synoptic round of groundwater elevation data was collected from wells 114-MW45C, 114-MW6D, 114-MW52C, 114-MW52D, 114-MW61C, 114-MW61D, 114-MW57C, 114-MW57D, 114-MW54C, and 114-MW7D on February 8, 2021 to provide information regarding vertical hydraulic gradients between the basal till, weathered bedrock, and bedrock (**Table 3-4**).

Depth to groundwater data were compiled and groundwater elevations were calculated from these measurements using the most current monitoring well reference elevations. The depth to groundwater measurements and the water level elevations were then added to the existing database of historical groundwater gauging data for the Project Area. A summary of historical groundwater elevations collected across the Project Area from 2003 to 2020 is provided in **Appendix C**.

From June 2016 to June 2017, information regarding vertical hydraulic gradients across the Project Area was collected at select well clusters completed in the shallow and intermediate water-bearing zones during implementation of a water level monitoring program using downhole pressure transducers and data loggers. A statistical summary of the pressure transducer data is presented in **Appendix D**.

Groundwater elevation contour maps were developed using the 2018 synoptic water level gauging data for the shallow water-bearing zone (**Figure 3-5**), the intermediate water-bearing zone (**Figure 3-6**), and the deep water-bearing zone (**Figure 3-7**) to characterize horizontal groundwater flow conditions across the Project Area. Groundwater elevation contours were developed by interpolating a raster surface from the groundwater elevation point data using the natural neighbor technique, and subsequently adjusting the resulting contours using professional judgement and Project Area knowledge. A groundwater elevation contour map was not developed for the bedrock water-bearing zone due to the limited number of monitoring wells installed in this zone.

The 2018 synoptic groundwater elevation dataset was also used to calculate vertical hydraulic gradients for nested monitoring well clusters (**Table 3-3**) to ascertain the direction of vertical groundwater flow between the shallow, intermediate, deep, and bedrock water-bearing zones. Evident vertical groundwater flow directions based on these data are depicted on **Figure 3-8**, **Figure 3-9**, and **Figure 3-10**. The directions of vertical groundwater flow depicted on these figures are representative of hydraulic conditions prevailing at the time of the 2018 synoptic gauging event.

Evaluation of groundwater elevation data indicate the following regarding groundwater levels, horizontal groundwater flow, and vertical hydraulic gradients across the Project Area:

- Shallow groundwater flow across the Project Area is complex and is affected by various on- and off-site activities and features, including excavations, placement of clean and/or amended fill, sheet pile, subsurface utilities, implementation of groundwater IRMs , the sumps at the Forrest Street Properties, other subsurface infrastructure, and localized variability in recharge. Groundwater flow patterns within the shallow water-bearing zone are highly variable and no single dominant horizontal groundwater flow direction is discernible. Localized groundwater mounding within the areas enclosed by sheet pile is evident on Site 114. Vertical groundwater flow directions within the shallow water-bearing zone are dominated by downward hydraulic gradients across most of the Project Area.

- Intermediate groundwater flow across the Project Area is affected by regional recharge, activities in the overlying shallow water-bearing zone, sheet pile, subsurface utilities, implementation of groundwater IRMs, and the sumps at the Forrest Street Properties. Horizontal groundwater flow within the intermediate water-bearing zone occurs primarily from northwest to southeast. Downward vertical hydraulic gradients provide groundwater influx to the intermediate zone from the overlying shallow water-bearing zone and groundwater outflow from the intermediate zone into the underlying deep zone. Groundwater flow into the intermediate water-bearing zone may also occur along upward vertical hydraulic gradients from the underlying deep water-bearing zone, thereby recharging the intermediate zone. Where present, utility corridors may serve as a preferential pathway for groundwater flow (e.g., sewer in Carteret Avenue).

- Horizontal groundwater flow within the deep water-bearing zone occurs generally from northwest to southeast. Vertical groundwater flow directions in the deep water-bearing zone are dominated by upward hydraulic gradients into the overlying intermediate water-bearing zone. Groundwater flow in the deeper portions of the deep water-bearing zone is influenced by the shape of the underlying bedrock surface, with a bedrock high in the middle of Site 114 disrupting flow and creating two migration pathways in the deepest portion of the overburden: one from northwest to southeast around the bedrock high to the west and one from northwest to southeast around the bedrock high to the east. Groundwater flow at the basal till/bedrock interface occurs horizontally along this interface with upward vertical hydraulic gradients dominant from the underlying bedrock, except in the southwestern corner of Site 114 where downward gradients from the basal till/weathered bedrock into the bedrock were observed (i.e., at wells 114-MW61C/61D and 114-MW57C/57D).

- Water levels in shallow and intermediate water-bearing zone monitoring wells respond to precipitation events.

- Seasonal variability in vertical hydraulic gradient directions is evident within the shallow and intermediate water-bearing zones at certain locations, as indicated by occasional reversals in the direction of vertical hydraulic gradients.

#### 3.7.2.3 Hydraulic Conductivity

Aquifer testing was performed via slug tests and specific capacity tests across the Project Area to derive estimated values of hydraulic conductivity for the shallow, intermediate, deep, and bedrock (diabase) water-bearing zones. Estimated hydraulic conductivity values for each water-bearing zone are presented in **Table 3-5** and on **Figure 3-11** and are summarized below.

| Water-bearing Zone | Material | Range of Estimated Hydraulic Conductivity (feet/day) |
|---|---|---|
| Shallow | Historic Fill | 1.68 - 152.55 |
| Shallow | DGA Fill | 1.24 - 181.35 |
| Intermediate | Native Soils | 0.14 - 43.65 |
| Deep | Native Soils | 0.01 - 8.16 |
| Bedrock | Diabase | 0.06 |

VAP was conducted from May 6 to June 17, 2015, at 18 locations across the Project Area, including Site 114, Site 135, Site 137, Forrest Street, Carteret Avenue, and Halladay Street (AECOM, 2016b). Key findings of this investigation relative to the permeability of subsurface materials are as follows:

- Permeability measurements at the following locations confirm that the meadow mat is characterized by low permeability: 114-VAP-7, -10, -12, -13, -14, -15, -16, and -17; P4-VAP-1, -2, and -11; and 133-P3B-VAP-4.
- Low permeability lenses were identified within the intermediate water-bearing zone at locations: 114-VAP-5, -6, -7, -8, -9, -14, -16, and -17; and 133-P3B-VAP-4.
- Lower permeability values were identified in the transition zone between the intermediate and the deep water-bearing zones at locations 114-VAP-5, -6, -7, -9, -10, -12, and -16.

In 2019 and 2020, 2,824 vertical ft of HPT was conducted at 54 different locations during implementation of the Phase II IRM drilling program and the Phase III IRM PDI to obtain high-resolution hydraulic conductivity data within the Project Area and to assess variation in hydraulic conductivity through the vertical extent of each boring. The relative hydraulic conductivities from the collective data set for these HPT programs were evaluated. Evaluation of these findings indicate that approximately 73% of the intermediate and the deep water-bearing zone soils (not inclusive of the basal till) are permeable and 27% of these soils are characterized by low permeability. A more detailed discussion of this evaluation is presented in **Appendix E**.

In 2020, jar shake tests were performed in the field during implementation of the basal till/weathered bedrock well drilling program to estimate the percentage of fines (silts and clays) in select soil intervals. The jar shake tests were conducted in accordance with Section X4.1 of ASTM D2488-09a, *Suggested Procedures for Estimating the Percentages of Gravel, Sand, and Fines in a Soil Sample* (ASTM, 2009). Depth intervals selected for the field test targeted significant changes in soil types within the intermediate and deep water bearing zones based on visual observations of logged soils. Results of the jar shake tests are presented on the soil boring logs for wells 114-MW48C through 114-MW65C (**Appendix F**) and on **Table 3-6**. **Table 3-6** also includes estimated hydraulic conductivity ranges for each soil type from which a jar shake test sample was collected, based on the Unified Soil Classification System (USCS) code assigned to the sample interval and Table B-2 from *Materials Testing Field Manual 5-472 NAVFAC MO 330 AFJMAN 32-1221(I)* (Department of the Army, 2001). Based on these data, well- to poorly-graded sands are characterized by high permeability, and silts and clays are characterized by low permeability. Wide ranges of permeability were assigned to soils within the transition zone where varved sands, silts, and clays were observed. The basal till consisted of a wide range of materials typically exhibiting low permeability and low water content (damp to dry) but included discontinuous stringers or lenses of more permeable sands. The observed thickness of sand stringers or lenses within the basal till ranged from 0.2 to 6.5 ft. Of the approximately 390 ft of basal till logged within the Project Area, only 21 ft consisted of sand stringers or lenses, which equates to less than 6% of the basal till (**Appendix G**).

### 3.7.3 Capillary Rise and Capillary Break

Capillary action, or capillary rise, is the ability of a liquid to flow upward in narrow spaces due to the intermolecular forces between the liquid and the surrounding solid surfaces. Theoretically, continuous void spaces in soil can behave as bundles of capillary tubes with variable cross-sections. However, the comparison of soil to a bundle of capillary tubes is a simplified concept to help visualize capillarity in porous media. Unlike a bundle of capillary tubes, soil pores are often discontinuous and variable in size, resulting in a variable distribution of groundwater saturation in soils above the groundwater table (vadose zone soils).

The capillary fringe is the zone above the groundwater table where soil pores can be saturated, or nearly saturated, and hold water in tension. Due to these aqueous connections, soils within the capillary fringe may be hydraulically conductive. The hydraulic connections also allow for chemical conductance and the potential transport of dissolved ions within the capillary fringe. Above the capillary fringe, water-filled pores transition to mixtures of localized capillary water and water that coats particle surfaces in thin films, and upon further drying they transition to water that is held only in thin films. Eventually, soils dry completely and capillary rise ceases.

During 2015 and 2016, a capillary rise study was performed to support the design and use of a capillary break at the Project Area (AECOM, 2017e) to prevent potentially-impacted groundwater from reaching the surface through capillary action. The capillary rise evaluation included field study components and laboratory bench-scale tests and evaluated aspects of chromium bloom formation associated with capillary action including:

- The height of the capillary fringe in a range of backfill materials;
- The effectiveness of a capillary break layer at limiting the height of the capillary fringe; and
- The vertical rise of groundwater above the capillary fringe through capillary rise.

Key findings and conclusions of the capillary rise study are as follows:

- The height of the capillary fringe in topsoil was determined to be less than 2.7 ft.
- In DGA and DGA amended with FerroBlack®-H (amended DGA [A-DGA]), the height of the capillary fringe was determined to be less than 1.7 ft.
- When a layer of ¾-inch open-grade stone (OGS) was added to the DGA and A-DGA, the height of the capillary fringe was reduced to 1.1 ft, indicating that the OGS capillary break is effective.
- Studies performed to quantify the rise of capillary water above the capillary fringe indicate that the height of total capillary rise in OGS is generally less than 6 inches, whereas in DGA and A-DGA it can be as high as 2.8 ft. The height of total capillary rise was not clearly discernable in topsoil.

Remediation of soil impacted with $Cr^{+6}$ is being conducted at the Project Area in advance of groundwater remediation; therefore, a capillary break is required in some areas to prevent the formation of surficial $Cr^{+6}$ blooms (chromium blooms) due to capillary rise. Capillary breaks create a discontinuity in water-filled pores that inhibit hydraulic connectivity across the break, thereby preventing potentially-impacted groundwater from reaching the surface through capillary action. The capillary break prevents the contamination of clean backfill that was placed in the remediation/excavation area.

The design of the capillary break for Sites 114, 132, 133, 135, 137, and 143, the Phase 4 Roadways, and the Phase 5 Off-Site Properties was completed in 2017, as described in the December 2017 *Capillary Break Design Final Report (Revision 2)* ("Capillary Break Design Report") (AECOM, 2017e). Installation of the capillary break was complete in the target areas as part of restoration activities performed in 2017, with the exception of the washed stone capillary break in the Phase I IRM Area, which is pending completion of the shallow zone injection and sampling activities. Design of the capillary break for areas remediated since the December 2017 Capillary Break Design Report (i.e., Former Halsted Corporation Property, Carteret Avenue, and Halladay Street North) was described in an addendum to the Capillary Break Design Report submitted on February 3, 2021 (AECOM, 2021c).

### 3.7.4 Remediation Effects on Groundwater Flow

Remedial activities throughout the Project Area (i.e., excavation, placement of clean and/or amended fill, installation of sheet pile, groundwater injection/extraction via IRMs) have affected groundwater flow patterns, as follows:

- The replacement of heterogeneous, non-native, historic fill materials with clean, homogenous backfill (i.e., DGA) has resulted in greater uniformity in the groundwater flow field within the shallow water-bearing zone.
- The removal of impervious surfaces (e.g., buildings, roads) and the excavation and replacement of historic, low-permeability, fill has increased the rate of groundwater recharge to the shallow water-bearing zone due to direct infiltration of precipitation.
- Sheet pile was installed on Site 114 during soil remedial actions to assist in dewatering activities, shore up excavations, and to limit off-site migration of groundwater impacts and MGP residuals. In general, sheet pile begins at the ground surface, intersects the shallow and intermediate water-bearing zones, and terminates in the deep water-bearing zone. On the western margin of Site 114, along Garfield Avenue where bedrock is shallower, the sheet pile extends to the bedrock in some areas. On the eastern side of Site 114, along Halladay Street North where bedrock is deeper, the sheet pile is keyed into the low permeability soils of the transition zone (intermediate water-bearing zone). In some areas, there are vertical gaps below the sheet pile within the deep water-bearing zone which allow groundwater to flow beneath it; therefore, sheet pile has a less significant effect on groundwater flow in the deeper portions of the deep water-bearing zone.
    - The sheet pile contains groundwater on Site 114 and significantly limits off-site migration of Cr-related impacts within the intermediate water-bearing zone and the upper portions of the deep water-bearing zone.
    - In areas where the sheet pile has isolated the groundwater flow system, hydraulic heads fluctuate with precipitation events. Where there are sufficient hydraulic head differences between the shallow and intermediate water-bearing zones, the differences in head drive groundwater through gaps in the meadow mat. Localized groundwater mounding within the areas enclosed by sheet pile is evident on Site 114.
    - Since the installation of sheet pile, groundwater elevation measurements have been collected from outboard monitoring wells (i.e., monitoring wells located in areas not bounded by sheet pile) to evaluate the potential for mounding along the roadways. Data collected from these areas suggest that there is no mounding along the streets resulting from the placement of sheet pile.
- Operation of the Phase I and II IRMs has affected/continues to affect groundwater flow patterns on Site 114.
    - The Phase I IRM included delivery of remediation compounds to wells screened in the intermediate and deep water-bearing zones. Similarly, the Phase II IRM includes delivery of remediation compounds to wells screened in the intermediate and deep water-bearing zones. For both IRMs, remediation wells are screened to depths ranging from 48 bgs to 68 ft bgs. Therefore, the intermediate water-bearing zone and portions of the deep water-bearing zone that are shallower than 68 ft bgs (the Upper Deep Zone) are the vertical target areas of the Phase I and Phase II groundwater IRMs.

    - The deep water-bearing zone extends to depths greater than the bottom of existing Phase I and II IRM remediation wells in certain areas of Site 114, especially in the southeastern and southwestern portions of Site 114. This lower portion of the deep water-bearing zone (the Lower Deep Zone) includes overburden materials below the bottom of the transition zone, above the top of the basal till, and below the bottom of existing IRM remediation wells, and has not been the target of active groundwater remediation activities to date. The portions of the Lower Deep Zone warranting active remediation will be targeted during implementation of the Phase III IRM.
- Where present, the portion of the capillary break consisting of a high-density polyethylene liner reduces recharge to the underlying shallow water-bearing zone.

## 3.8 Receptor Evaluation

A receptor evaluation report for the GA Group Sites was initially submitted in March 2012 (AECOM, 2012b). **Appendix H** provides an update to this receptor evaluation and includes the following components:

- Receptor Evaluation Form
- Attachment A: Property Search:
  - Table A.1: Properties within 200 feet of Groundwater Impacts for the GA Group Sites
  - Figure A.1: Land Use
- Attachment B: Well Search
  - Table B.1: Well Search based on the impacted groundwater area for the GA Group Sites
  - Table B.2: Well Search Results

Conclusions from the receptor evaluation are summarized below:

- Groundwater beneath the Project Area is not used as a source of potable water, as the area is served by the municipal water supply system.
- Land use surrounding the Project Area includes predominantly commercial and industrial properties (e.g., warehouses, garages, etc.).
- Residential properties are located to the west of the Project Area, between Garfield Avenue and Randolph Avenue (upgradient of the groundwater plume).
- No schools or childcare centers are present within 200 feet of the Project Area.
- No sensitive receptors are present within 200 ft downgradient of the 70 µg/L Cr isopleth in the shallow, intermediate, or deep water-bearing zones. In addition, the results of the well search included in the updated receptor evaluation show that no irrigation or domestic supply wells are located within a half-mile of the Project Area.

# 4.0 Remedial Investigation Activities

## 4.1 Summary of Field Activities

The following subsections provide a description of the activities performed during the groundwater RI within the Project Area. Unless otherwise noted, field investigation procedures were consistent with the methods and procedures described in the following documents:

- Field Sampling Plan/Quality Assurance Project Plan (FSP-QAPP) (AECOM, 2010);
- Health and Safety Plan (HASP) (AECOM, 2017c and AECOM, 2020a);
- NJDEP Field Sampling Procedures Manual (FSPM) (NJDEP, 2005); and
- Groundwater RIWP (Rev. 1) (AECOM, 2017b).

### 4.1.1 Access Agreements and Permits

The Project Area is located in a commercial and light industrial area of Jersey City, bordered by residential neighborhoods to the west and northeast. For investigation locations on private properties, access agreements were negotiated with the property owners and secured prior to implementation of the RI.

### 4.1.2 Subcontractors

The following subcontractors provided services during the groundwater RI:

- TPI Environmental, Inc. of New Hope, Pennsylvania provided utility clearance for each boring location.
- SGS North America, Inc. of West Creek, New Jersey and Aquifer Drilling and Testing (ADT) of Mineola, New York provided drilling services including advancement of soil borings, monitoring well installation, and soft-dig utility clearance.
- Borbas Surveying and Mapping of Boonton, New Jersey provided surveying services (horizontal locations and vertical elevations) for boring and well locations.
- SGS North America of Dayton, New Jersey, a NJDEP-certified analytical laboratory, provided laboratory analytical services.
- Hager-Richter of Fords, New Jersey provide borehole geophysical services.
- Laboratory Data Consultants (LDC) of Carlsbad, California, provided data validation services for samples collected as part of the 2017 - 2018 groundwater RI.

### 4.1.3 Sample Control and Site Security

Analytical samples were bottled in sterile containers provided by the laboratory and clearly labeled with the sample identification, depth, date of collection, and analysis to be performed. Analytical samples were collected, handled, and shipped in accordance with chain-of-custody protocols described in the FSP-QAPP.

A field office was maintained within a secured portion of the Project Area to provide field instrumentation and sample storage. A private security company was on site 24 hours a day to secure the Project Area. Each boring location was restored to previously existing surface conditions (e.g., asphalt or concrete) upon completion of the boring to prevent direct contact with potentially impacted materials.

### 4.1.4 Utility Protection and Geophysical Survey

Prior to any intrusive field operations (i.e., drilling), available utility maps for the Project Area were reviewed and additional utility surveying was performed using an experienced geophysical contractor.

In addition, New Jersey One Call was notified by the drilling subcontractors a minimum of three business days prior to the start of drilling operations in each area. Based on the results of the utility surveys, some locations were adjusted to avoid underground or overhead utilities. As an added precaution, soft-dig techniques (i.e., air-knife or vacuum boring) were utilized to a depth of approximately 5 ft bgs at investigation locations. Geophysical survey reports, along with a map of known utilities across the Project Area, are included in **Appendix I**.

### 4.1.5 Health and Safety

#### 4.1.5.1 Investigation-Derived Waste Management

Investigation-derived waste (IDW) generated during field investigations was handled in accordance with Section 9.0 of the FSP-QAPP. IDW generated during the RI included drill cuttings and fluids, contaminated personal protective equipment (PPE), decontamination fluids, purge water from monitoring wells, and general refuse. Solids such as soil cuttings and decontamination fluids were placed in United States Department of Transportation-approved 55-gallon drums and staged in designated temporary waste storage areas on Site 137. Drums from the RI program were shipped off site with other drums from ongoing site activities to licensed disposal facilities within 90 days of generation. Purge water generated during well development and sampling activities was managed at the on-site treatment plant located on Site 137.

#### 4.1.5.2 Ambient Air Monitoring

Air monitoring was performed during drilling activities to provide real-time measurements of total VOCs and particulate (airborne dust) concentrations in air in the work zone and at the downwind perimeter of each designated work area when intrusive investigation activities were in progress. The procedures followed methods described in the HASP.

### 4.1.6 Temporary Screening Points

#### 4.1.6.1 Temporary Screening Points 2017 - 2018

Per the groundwater RIWP, temporary screening points were advanced in December 2016 and November 2017 to collect groundwater samples to determine the need for installation of permanent monitoring wells for the groundwater RI. **Figure 4-1** presents the locations of these sampling points. Boring logs are provided in **Appendix F**. A summary of screening points advanced for the groundwater RI is presented below:

| Screening Point ID | Location |
|---|---|
| 10W-SS101S | Ten West Apparel |
| 10W-SS102S | Ten West Apparel |
| 10W-SS105I | Ten West Apparel |
| 132-P3A-SSI | Ten West Apparel |
| 114-SS-39B | Eden Wood Realty |
| 114-SS-40B | Eden Wood Realty |
| 114-SS43A | Garfield Avenue |
| GAR-PDI-C13B | Garfield Avenue |
| GAR-PDI-D14B | Garfield Avenue |
| GAR-PDI-B`2A | Garfield Avenue |
| GAR-PDI-B`3A | Garfield Avenue |

A total of eight temporary screening point locations were originally proposed in the Ten West Apparel area; of these, the advancement of four locations (two shallow and two intermediate) were proposed to be contingent upon sampling results from the remaining screening points. Based on analytical data collected from the four screening samples (10W-SS101S, 10W-SS102S, 10W-SS105I and 132-P3A-SSI), the additional borings were not advanced.

#### 4.1.6.2 Temporary Screening Points for Dense Non-Aqueous Phase Liquid Delineation at Site 137

During previous work performed at Site 137, dense non-aqueous phase liquid (DNAPL) was observed in intermediate monitoring well 137-P3B-MW101I. A sample of this DNAPL was collected on June 21, 2016 and submitted for fingerprint analysis. The analytical data indicate that the DNAPL is related to MGP impacts. Delineation of the extents of the DNAPL in the vicinity of monitoring well 137-P3B-MW101I was proposed in the groundwater RIWP. Two of the four proposed temporary well points were completed in November 2017. The remaining temporary well points were not installed due to unsafe accessibility due to traffic activity occurring in Carteret Avenue. Locations of DNAPL delineation borings DNAPL-S1 and DNAPL-W1 are presented on **Figure 4-1**, and boring logs are provided in **Appendix F**. Both borings were completed as temporary monitoring wells and groundwater screening samples were collected from each location at a depth similar to the screened interval depth of monitoring well 137-P3B-MW101I.

#### 4.1.6.3 Temporary Screening Points Installed for Other Field Programs

Additional temporary screening points were installed during HPT/VAP conducted for the following field programs:

- Phase II IRM monitoring and remediation well installation;
- Phase III IRM PDI;
- Forrest Street and Forrest Street Properties groundwater investigation;
- Site 199 groundwater investigation; and
- Pre-RI groundwater investigations conducted in 2015.

### 4.1.7 Monitoring Well Network

A total of 46 permanent monitoring wells were installed as part of the groundwater RI, including nine shallow wells, nine intermediate wells, five deep wells, 19 basal till/weathered bedrock wells, and four bedrock wells. Three multi-purpose wells were installed during the Phase III IRM PDI. Well records (permits, construction records, NJDEP Form A, and NJDEP Form B) for the 49 wells are presented in **Appendix J.1**. A summary of the active site-wide monitoring wells is provided in **Table 4-1** and presented on **Figure 4-1**. Drilling and well installation activities were performed in accordance with N.J.A.C. 7:9D by a NJ-licensed driller. Upon installation, monitoring wells were developed in accordance with the FSP-QAPP.

#### 4.1.7.1 Installation of Contingent Monitoring Wells

In the groundwater RIWP, it was proposed that the installation of certain monitoring wells would be contingent upon the analytical data obtained from nearby sample locations and/or groundwater screening samples. Upon review of analytical data from nearby sample locations and/or screening samples, the following contingent monitoring wells were installed:

- 114-MW42A
- 114-MW43A[1]
- 114-MW17B
- 114-MW39B
- 114-MW40B
- 10W-MW101S
- 10W-MW102S
- 10W-MW105I
- 132-P3A-MW105I

The following contingent monitoring wells proposed in the groundwater RIWP were not installed:

- **114-MW17A:** Installation of a shallow well north of Site 114 in Berry Lane Park was proposed in the groundwater RIWP and was contingent upon sampling results from nearby shallow well 114-MW2B1-2, located south of the light rail. Concentrations of COCs (Cr, $Cr^{+6}$, VOCs, and SVOCs) from 114-MW2B1-2 were less than their respective GWQS; therefore, this well was not installed.
- **133-MW6B:** Installation of intermediate well 133-MW6B next to existing shallow well 133-MW6A located south of Site 133 was proposed for the horizontal and vertical delineation of Cr and $Cr^{+6}$ south of Sites 133 and 135. Analytical data obtained from shallow well 133-MW6A

[1] Shallow well 114-MW43A was not originally proposed per the groundwater RIWP. The need for the installation of this well was determined based on a review of analytical data from groundwater screening samples collected from nearby boring GAR-PDI-D14B. Prior to well installation, a groundwater screening sample was collected (114-SS-43A) to ensure a "clean" well would be installed for the purposes of horizontal delineation of Cr and $Cr^{+6}$.

and intermediate well 10W-MW105I indicated that the concentrations of Cr and $Cr^{+6}$ were less than the GWQS; therefore, this well was not installed.

#### 4.1.7.2 Installation of Basal Till and Bedrock Monitoring Wells

In accordance with scopes of work approved by NJDEP during technical discussions, installation of 19 basal till/weathered bedrock wells (114-MW45C, and 114-MW48C through 114-MW65C) was completed from October 1, 2019 to August 7, 2020, and installation of four bedrock wells (114-MW52D, 114-MW57D, 114-MW61D, and 114-MW66D) was completed from December 1, 2020 to January 4, 2021.

#### 4.1.7.3 Monitoring Wells Installed for Other Field Programs

During the course of the groundwater RI, monitoring wells were installed for use in other ongoing field programs to support groundwater remediation at the Project Area (**Figure 4-1**). These include:

1) Installation of one shallow groundwater monitoring well (114-MW44A) in the Forrest Street Properties area to support remedial design work. Although not originally part of the groundwater RIWP sampling plan, data collected at this location is included in this RIR to support horizontal delineation of Cr and $Cr^{+6}$ in groundwater within the Forrest Street Properties.
2) Installation of three shallow groundwater monitoring wells (two on Site 135 [135-MW1AR, 135-P3C-MW101S and 135-P3C-MW102S] and one on Forrest Street [FS-MW101S]) to support the Site-Wide FerroBlack®-H PBR compliance monitoring program. Of these, one shallow well (135-P3C-MW102S) was intended to be shared with the RI program. This well is considered to be a replacement for decommissioned shallow well 135-MW3A. Data collected for the purposes of the FerroBlack®-H PBR program is submitted to the NJDEP under a separate cover, per the reporting requirements of the PBR authorization.
3) Replacement of three shallow groundwater monitoring wells (114-MW22AR, 132-P3A-MW1R and 114-P2B3-MW2R) and one intermediate groundwater monitoring well on Carteret Avenue (114-MW22BR), and two shallow groundwater monitoring wells on Halladay Street North (114-MW20AR, 114-P2B4-MW2R), to support groundwater monitoring for the FerroBlack®-H PBR and the capillary break groundwater monitoring program.
4) The groundwater RIWP proposed installing two intermediate wells (114-P1B-MW105I and 114-P1B-MW106I) and two deep wells (114-P2B3-MW102D and 114-P2B1-MW103D) on Site 114; however, it was later decided to consolidate field efforts and use the wells installed for the Phase I IRM at Site 114. As a result, IRM wells 114-P1-IRM 27D, 114-P1-IRM-40D, 114-PI-IRM5I, and 114-P1-MW2I were used in lieu of the originally proposed wells. This proposed change was approved by the NJDEP in an email dated October 9, 2017 (NJDEP, 2017b). Data collected from these locations are included in this RIR. Well construction details for these wells were provided in the *Groundwater IRM Phase I Quarterly Report – Q1 2018* (Arcadis, 2018).
5) Installation of three multi-purpose wells (114-MW67C, 114-MW68C, and 114-MW70C) and one soil boring (114-MW69C) during the Phase III IRM PDI in January 2021.
6) Installation of remediation wells and monitoring wells for the Phase I and Phase II IRMs.

#### 4.1.7.4 Monitoring Well Survey

Upon completion of well installation, horizontal locations and vertical elevations were surveyed by a NJ-licensed surveyor. Horizontal locations were surveyed in both latitude and longitude and NJ State Plane Coordinate System (ft) in North American Datum of 1983 (NAD83). Elevations were surveyed to the NAVD88. NJDEP Form Bs (Location Certification) for each monitoring well installed as part of the RI are provided in **Appendix J.1.**

Due to ongoing site restoration activities, the inner well casing of several monitoring wells within Sites 114, 132, 133, 135, and 137 were modified by placing a temporary polyvinyl chloride (PVC) riser, to prevent the wells from being damaged during restoration. To confirm the temporary elevations of the top of the measuring point for water level elevation measurements and vertical gradient calculations, these wells were re-surveyed by a NJ-licensed surveyor between June 8 and June 13, 2018. A well chart with this information is provided in **Appendix J.1.**

#### 4.1.7.5 Well Decommissioning

Certain monitoring wells located in the Project Area were decommissioned on April 13, 2017 by a NJ-licensed driller in preparation for soil remediation (i.e., excavation). Well decommissioning reports are provided in **Appendix J.2**. Of these, the wells proposed to be sampled for the groundwater RI were subsequently replaced. Monitoring wells 135-MW3A and 135-MW3B were not formally decommissioned and are believed to have been excavated and removed during soil remediation activities. Both of these monitoring wells have been replaced.

The following monitoring wells were decommissioned after the proposed work under the groundwater RIWP was completed in these areas:

- Monitoring wells located on Halladay Street North (114-MW20A, 114-MW20B, 114-MW20C, 114-P2B4-MW1, 114-P2B4-MW2, and 114-P2B4-MW3) were decommissioned on June 21, 2018, after the completion of the RI field work, to prepare for soil remediation work in the Halsted property. Select wells were replaced to support the FerroBlack®-H PBR program and the capillary break groundwater monitoring program, as noted in Section 4.1.7.3.
- Monitoring well 114-MW14B, located on Site 199 adjacent to Berry Lane Park, was decommissioned on May 18, 2018, after groundwater sampling for the RI was completed at this location.

### 4.1.8 Groundwater Sampling

#### 4.1.8.1 Low-Flow Groundwater Sample Collection

Low-flow groundwater sampling of permanent monitoring wells and open borehole bedrock wells was conducted as indicated below:

- A total of 100 groundwater monitoring wells were sampled between September 25, 2017 and May 31, 2018 to support the groundwater RI program, including 49 shallow wells, 41 intermediate wells, and 10 deep wells.
- Additional groundwater monitoring events were performed at the basal till/weathered bedrock wells on October 21, 2019 (114-MW45C only) and from August 19 to September 2, 2020 (the 19 basal till/weathered bedrock wells).

- Sampling of existing bedrock monitoring wells was performed in May 2019 at 114-MW4D, 114-MW6D, 114-MW7D, and in August 2020 at 114-MW4D, 114-MW6D, 114-MW7D, and 114-MW16B.
- Sampling of newly installed bedrock wells (114-MW52D, 114-MW57D, 114-MW61D, and 114-MW66D) was performed from February 9 to 15, 2021.

Low-flow groundwater sampling of permanent monitoring wells and open borehole bedrock wells was conducted in accordance with the FSP-QAPP and the NJDEP FSPM. Field parameters (pH, oxidation-reduction potential [ORP], dissolved oxygen [DO], specific conductivity, turbidity, temperature, and depth to water) were recorded and monitored to determine stabilization. Groundwater low-flow sample collection records are provided in **Appendix K**. **Table 4-2** provides a summary of the analyses performed on the collected groundwater samples.

Each well sampled was purged with a bladder pump, with dedicated tubing attached to the pump outlet using a stainless-steel hose clamp. Teflon-lined tubing was used for wells where VOC and SVOC samples were collected. One low-flow groundwater sample was collected per 5 ft of saturated well screen or open borehole interval (for the May 2019 and August 2020 bedrock well sampling events), with the following exceptions:

- MW7S: This shallow well has a history of poor recharge during low-flow purging and sampling. This well has a 10-ft screen and was initially attempted to be sampled on April 23, 2018. However, stabilization could not be achieved as the drawdown exceeded the depth at which the pump was set. A second attempt was made to sample this well on April 30, 2018. To avoid having the drawdown exceed the depth of the pump, only one sample was collected from the deeper of the two proposed sampling intervals (i.e., at 10 ft).
- 132-P3A-MW102S: This shallow well has a 10-ft screen; however, samples were collected only from one interval as drawdown exceeded the pump depth, similar to MW7S.
- 132-MW2A: This shallow well with a 10-ft screen was noted to be silted-in to approximately 14.5 ft below the top of inner casing, and only one sample was collected from a depth of 11 ft below the top of inner casing.
- 114-P2B4-MW101S: Samples were collected from this shallow well with a 10-ft screen from a depth of 16 ft below the top of casing. When the pump was set to the next sampling depth (approximately 11 ft), the turbidity of the purge water did not stabilize and was greater than 200 nephelometric turbidity units (NTU) and did not appear to be clearing. Therefore, only one sample was collected from this well location.
- 137-P3B-MW102S: Only one sample was collected from this shallow well with a 10-ft screen at 9 ft below the top of casing. The well was noted to have an obstruction at approximately 12 ft below the top casing and, therefore, samples could not be collected from the deeper interval.

Collection of groundwater samples from the open borehole intervals at wells 114-MW52D, 114-MW57D, 114-MW61D, and 114-MW66D was performed in accordance with Appendix C (Depth-Discrete Sampling and Profiling of Vertical Cross-Flows) of the *Groundwater Technical Guidance* (NJDEP, 2012a).

Analytical samples were bottled in certified containers provided by the laboratory and clearly labeled with the sample identification, depth, date of collection, and analysis to be performed. Analytical samples were collected, handled, and shipped in accordance with chain-of-custody protocols

described in the FSP-QAPP. Samples were analyzed using methods with adequate sensitivity to accurately measure concentrations to the GWQS. Samples collected for $Cr^{+6}$ were also analyzed in the laboratory for pH and ORP. As outlined in the groundwater RIWP, Quality Assurance (QA)/Quality Control (QC) samples were collected, including field blanks, field duplicates, matrix spike/matrix spike duplicates, and trip blanks (for VOC analysis). A summary of QA/QC samples collected is provided in **Table 4-3**.

#### 4.1.8.2 Groundwater Sample Collection for Other Field Programs

Groundwater sampling of permanent monitoring wells was also conducted for the following field programs:

- Forrest Street and Forrest Street Properties groundwater investigation;
- Capillary break and FerroBlack®-H PBR monitoring; and
- Baseline monitoring for the Phase I and Phase II IRMs.

Data from these sampling events that are relevant to this groundwater RI are included in this RIR.

#### 4.1.8.3 Groundwater Sample Collection from Temporary Screening Points

Groundwater grab samples were collected from temporary screening points where advanced. Upon collection of samples, the boreholes were abandoned and filled using bentonite grout. Groundwater screening samples were submitted for the analyses noted on **Table 4-2**. Analytical results are included in **Appendix L**.

#### 4.1.8.4 Water Quality Sample Collection from Sumps on Forrest Street Properties

In accordance with the GA Group Sites Groundwater RIWP, water quality samples were collected from three sumps located inside the 90 Forrest Street boiler room using dedicated bailers, from September 25 to September 28, 2017. Samples collected from the sumps were analyzed for Cr and $Cr^{+6}$. The sump data are presented in Appendix L.

### 4.1.9 Variations from the Remedial Investigation Sampling Plan

#### 4.1.9.1 Filtered Sample Analysis

During low-flow purging and sampling, the turbidity of purge water from certain wells did not stabilize or stabilized at a turbidity greater than the criterion of 10 NTU, even while the other water quality parameters achieved stabilization according to the criteria specified in the NJDEP FSPM. In these instances, samples were collected for both filtered and unfiltered laboratory analyses. The samples to be filtered were indicated on the chain of custody and were filtered (and preserved, if applicable) by the analytical laboratory upon sample receipt. Samples that were filtered are identified on **Table 4-2.**

#### 4.1.9.2 Monitoring Wells Not Sampled

Certain monitoring wells proposed for sampling in the RIWP could not be sampled, as explained below:

- 114-P2A-MW101S: Attempts were made to locate this monitoring well using a Global Positioning System (GPS); however, the well could not be located. It is likely that this well was damaged or excavated during soil remediation activities. This well was proposed to be sampled for VOCs and SVOCs. As adequate spatial coverage across the shallow water-

bearing zone in this area of Site 114 (i.e., the former MGP facility) was achieved, the absence of groundwater samples from this monitoring well does not affect the horizontal delineation of VOCs and SVOCs.

- 114-P1-IRM-40D: Samples were not collected during the RI at this well, but instead were collected from this location to support the ongoing Phase I IRM in Site 114. These groundwater samples were analyzed for $Cr^{+6}$ and TAL metals.
- 137-P3B-MW101I: Samples were not collected from this well due to the presence of DNAPL in the well.

### 4.1.10 Site-Wide Comprehensive Monitoring Well Gauging

A discussion of the site-wide comprehensive monitoring well groundwater elevation gauging program performed in the Project Area was presented in Section 3.7.2.

### 4.1.11 Analysis of Compounds with Interim Groundwater Quality Standards

At the time the groundwater RIWP was prepared, the NJDEP had added the following 12 constituents to the list of interim GWQS on November 25, 2015 (NJDEP, 2015):

- 1-Chloro-1,1-difluoroethane
- Cresols (mixed isomers)
- 1,1-Dichloro-1-fluoroethane
- 1-Methylnaphthalene
- Perfluorononanoic acid (PFNA)
- Strontium
- 1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)
- Tri-cresyl phosphate (mixed isomers)
- 1,2,4-Trimethylbenzene
- Tri-ortho-cresyl phosphate
- 1,4-Dioxane

In addition, the NJDEP added the following constituents to the list of interim specific GWQS on March 13, 2019.

- Perfluorooctanoic acid (PFOA)
- Perfluorooctanesulfonic acid (PFOS)

Of these, analyses for 1-chloro-1,1-difluoroethane, 1,1-dichloro-1-fluoroethane, tri-cresyl-phosphate, and tri-ortho-cresyl phosphate were not conducted during the groundwater RI because there was no NJDEP-certified laboratory available to conduct the analyses. In addition, analysis of PFNA, PFOA, and PFOS, which are three of the many compounds known as Per- and polyfluoroalkyl substances (PFAS), was not conducted because PFAS have never been manufactured, used, handled, stored, disposed, or discharged on Site 114 (AECOM, 2019h), as concurred to by NJDEP (NJDEP, 2019d).

## 4.2 Data Management

### 4.2.1 Laboratory Analysis

The soil and groundwater samples were analyzed by a NJ-certified laboratory (SGS North America). Summary tables of groundwater analytical data are provided in **Appendix L** and laboratory data packages are provided in **Appendix M**. The EQuIS® environmental data management software from EarthSoft, Inc. was used to manage the data for the RI. Subsets of the field data, including spatial data and geologic information were loaded into the database either directly using an EQuIS® import utility or via entry into electronic templates. Electronic data deliverables (EDDs) from the laboratory, provided in the AECOM-specific format, were imported into the project database. Upon completion of validation, data qualifiers were loaded into the database.

Quality control checks were performed throughout the process to verify the integrity of the data. These checks included:

- Reviews to check that laboratories reported all requested analyses;
- Checks that analytes were consistently and correctly identified;
- Reviews to check that units of measurement were provided and were consistent;
- Queries to determine that codes used in the database were documented properly;
- Reports to review sample definitions (depths, dates, locations);
- Proofing manually-entered data against the hard copy original; and
- Reports to review groupings of sample locations and coordinate systems.

Samples collected for analysis of $Cr^{+6}$ were also analyzed for pH and ORP. The $Cr^{+6}$ data were provided by the analytical laboratory as full NJ Tier I data deliverables.

### 4.2.2 Data Validation and Data Usability

Data validation of laboratory analytical results generated during the groundwater RI was performed by LDC or by AECOM to evaluate whether analytical data collected for this program were scientifically defensible, properly documented, of known quality, and met the objectives of the RI.

#### 4.2.2.1 Validation Procedures

Data validation included the review of analytical procedures, QC results, calibration procedures, data reduction, and completeness of the laboratory data packages as specified in the groundwater RIWP and FSP-QAPP. Deficiencies noted were communicated to the laboratory and resolutions were documented in the data validation reports. If appropriate, data were qualified for use as described later in this section. The laboratory data packages were reviewed in accordance with the FSP-QAPP, organic validation guidelines from United States Environmental Protection Agency (USEPA) Region 2, and the NJDEP validation Standard Operating Procedures (SOPs) for $Cr^{+6}$ and inorganic data. The following NJDEP validation guidelines served as the basis for the actions taken during validation:

- NJDEP Office of Data Quality SOP 5.A.10, Rev 3 (September 2009), SOP for Analytical Data Validation of Hexavalent Chromium – for USEPA SW-846 Method 3060A, USEPA SW-846 Method 7196A and USEPA SW-846 Method 7199;

- NJDEP Office of Data Quality SOP 5.A.16, Rev 1 (May 2002), Quality Assurance Data Validation of Analytical Deliverables for Inorganics (based on USEPA SW-846 Methods);
- Inductively Coupled Plasma Atomic Emission Spectroscopic (ICP-AES) Data Validation, SOP No. HW-3a Revision 0 (July 2015);
- Validating Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-846 Method 8260B, SOP HW-24, Revision 2; and
- Validating Semi-Volatile Organic Compounds By Gas Chromatography/Mass Spectrometry SW-846 Method 8270, SOP HW-22, Revision 4.

The level of validation ranged from a comprehensive validation per the NJDEP guidelines to a limited validation based on QC summary information, depending on the analyte. The validation procedures for the $Cr^{+6}$ data included full validation, which involved a comprehensive review of both summary forms and raw data, whereas the metals, SVOC, and VOC data received limited validation. Limited validation for metals, SVOC, and VOC data was based on information provided by the laboratory on their QC summary forms and did not include raw data review. At a minimum, limited validation included the following data elements:

- Agreement of analyses conducted with chain-of-custody requests;
- Holding times and sample preservation;
- Method blanks/field equipment blanks/ trip blanks;
- Surrogate spike recoveries;
- Laboratory Control Samples (LCS) or equivalent results;
- Matrix Spike (MS)/Matrix Spike Duplicate (MSD) results;
- Laboratory duplicate results;
- Field duplicate results; and
- Quantitation limits and sample results (limited to evaluating dilutions and re-analyses).

Validation reports were prepared for each data package that was validated. Validation reports are provided in **Appendix N**. These reports summarize the samples and parameters reviewed, nonconformance with established criteria, and validation actions (including application of data qualifiers), presented in accordance with the NJDEP “hit list” format. Validation data qualifiers were based on the USEPA Region 2 validation guidelines for organic data and the NJDEP validation SOPs for $Cr^{+6}$ and inorganic data. The qualifiers used in data validation consisted of the following:

- J Indicates the result was an estimated value; the associated numerical value was an approximate concentration of the analyte in the sample. J+ or J- is used when the direction of bias can be determined.
- U Indicates the analyte was not detected in the sample above the sample reporting limit.
- UJ Indicates the analyte was not detected above the reporting limit and the reporting limit was approximate.
- UB The analyte concentration is less than or equal to three (3) times the concentration in the associated method/preparation blank. The presence of the analyte in the sample is negated due to laboratory blank contamination

- JB The analyte concentration is greater than three (3) times, but less than or equal to ten (10) times the concentration in the associated method/preparation blank. The presence of that analyte in the sample is considered "real" but the concentration is quantitatively qualified due to method blank contamination.
- R The sample result was rejected due to serious deficiencies; the presence or absence of the analyte could not be confirmed.

Pursuant to N.J.A.C. 7:26E-3.13, laboratory data included as part of this RIR have been prepared in the HAZSITE EDD file format. EDDs will be electronically submitted with the Final RIR. A list of sample delivery groups (SDGs) submitted is provided as **Appendix O**.

#### 4.2.2.2 Data Usability Assessment

This data usability assessment has been prepared to address the usability of the groundwater samples collected from monitoring wells using low-flow sampling and purging methods. Groundwater samples collected to demonstrate compliance with the RI objectives were sent to SGS-North America Laboratories in Dayton, NJ (NJ Certification 12129). The analyses were performed in accordance with USEPA- and NJDEP-approved analytical protocols. QA analytical measures were implemented in accordance with the NJDEP TRSR (N.J.A.C. 7:26E) and complied with the requirements for a NJDEP-certified laboratory (NJDEP, 2017a). Specific QC issues identified during validation are documented in the individual data validation reports provided in **Appendix N.** Results of the data validation indicated that, in general, the analytical data were of adequate quality to meet the project objectives. However, there were some QA/QC issues identified during data validation that resulted in rejection of data or qualification of data as estimated. Data usability for groundwater samples collected from monitoring wells for the RI ("the RI dataset") was evaluated using the data quality indicators of precision, accuracy, representativeness, comparability, completeness, and sensitivity. Data that were not rejected during validation are regarded as usable.

**Precision**

Precision is the measure of agreement among repeated measurements of the same property under identical or substantially similar conditions and includes both field and analytical components. The information used to evaluate precision included results for field duplicates, matrix duplicates, and laboratory duplicates. For the RI dataset, relative percent difference (RPD) non-conformances were observed for field and/or laboratory duplicates associated with CCPW metals and SVOC data and field duplicates associated with other metals and VOC data.

Field precision was assessed through the collection and analysis of field duplicates and expressed as the RPD of the sample and field duplicate pair results. For the RI dataset, field duplicate precision resulted in qualification of 1.0% of $Cr^{+6}$ results, 0.4% of the CCPW metals results, 1.0% of non-CCPW metals results, 0.3% of SVOC results, and 0.3% of VOC results.

Laboratory precision was assessed through the RPD results for MS/MSDs, LCS/Laboratory Control Sample Duplicate pairs, and duplicate sample analyses. Laboratory precision resulted in qualification of 2.1% of the $Cr^{+6}$ results, 0.4% of the CCPW metals results, and 0.1% of the SVOC data. None of the non-CCPW metals or VOC results were qualified on the basis of laboratory precision in the RI dataset.

**Accuracy**

Accuracy is the degree of agreement between an observed value and an accepted reference or true value. The results of LCS data, surrogate recoveries, method blanks, and MS/MSDs were used as the primary indicators of accuracy; information such as sample container type, preservation, and holding time were also considered as impacts to analytical accuracy. Some of this information was assessed by the laboratory at the time of receipt (container type and preservation); other parameters were evaluated during the validation process.

The RI dataset included results for five (0.06%) non-detect SVOC results that were rejected based on matrix spike recoveries below the control limits and 30 (0.4%) non-detect SVOC results that were rejected based on surrogate recoveries below the control limits. No other were rejected for any of the analyses.

Qualification of data as estimated (J/UJ) for accuracy was related to issues such as field or laboratory blank contamination, LCS results, MS results, and holding time. A summary of the validation findings are presented by QC parameter type below.

The presence of target analytes in laboratory blanks and/or blanks related to field activities (i.e., field blanks) was cited as a reason for qualification of 2.8% of the CCPW metals results, 2.6% of the $Cr^{+6}$ results, 1.1% of the other metals results, and 0.2% of the SVOC results. None of the VOC results were qualified on the basis of blank results. For those blanks in which contaminants were detected, action levels were established per the NJDEP or USEPA Region 2 validation guidance documents. Associated sample results were qualified accordingly.

Six $Cr^{+6}$ results (3.1% of the $Cr^{+6}$ results reported) associated with the groundwater RI set were qualified for negative instrument drift with the potential for a false negative.

In this RI dataset, 2.1% of the $Cr^{+6}$ results, 0.1% of the non-CCPW metals data, 0.05% of the SVOC data, and 0.1% of the VOC data were qualified on the basis of MS or MSD recoveries that fell outside their respective control limits. Data points impacted by MS and/or MSD recoveries within this range were flagged as J or UJ; individual validation memoranda address the potential for high or low bias to sample results based on matrix interferences.

A single pair of Cr/$Cr^{+6}$ results were qualified as estimated (J/UJ) because the $Cr^{+6}$ result was greater than the Cr result. This can be a result of the different analytical methods used to test these two analytes. Total chromium was analyzed using an ICP-AES method, while hexavalent chromium was analyzed using a colorimetric method. Differences can result from the analytical error associated with each method, which can become more significant at lower concentration levels. The filtration step can also introduce error, which can impact the final results. The colorimetric procedure can be prone to interferences from other sample constituents, which impact color development; the Cr determination by ICP-AES is generally considered a more reliable measurement. There is no NJDEP GWQS for $Cr^{+6}$. Therefore, these results are used for informational purposes only. The analysis for Cr is considered accurate and was used for comparison with the NJDEP GWQS.

In the SVOC analysis, two results (0.03%) were qualified as estimated with a low bias (J-) based on low surrogate recovery; surrogate recoveries are indicative of matrix interferences or extraction efficiency. SVOC results that were rejected in the case of non-detect values associated with a very low surrogate recovery have been discussed previously.

### Representativeness

The representativeness of any field program is a function of the planning and procedures used to collect the samples and the locations and density of samples collected. Sampling and preservation methods were based on established methods and SOPs outlined in the groundwater RIWP (AECOM, 2017b) and FSP-QAPP (AECOM, 2010), which are known to minimize error associated with the disturbance of environmental samples from their natural setting.

Factors to be considered in evaluating representativeness are the use of standard analytical procedures, sample preservation, and use of the appropriate sample container. The analytical methods, preservation procedures, and containers used in this program were as specified in the FSP-QAPP.

### Comparability

Comparability of the data generated as part of the RI was maximized by using standard methods for sampling, analysis, and data validation.

### Completeness

Completeness is the measure of the amount of valid data obtained from a measurement system; valid data are defined as those data judged to be usable (i.e., not rejected as a result of the validation process). For the RI dataset, 16,120 individual data points were validated; 0.22% (35 SVOC results) were rejected and are considered unusable for project decisions; and 99.8% of the reported RI values generated are considered usable for project decisions.

### Sensitivity

Analytical dilutions were necessary for certain samples due to the sample matrix or elevated concentrations of target or non-target analytes. In some cases, analyses may have been performed using less than the nominal sample volume due to insufficient sample volume. The detection limits reported by the laboratory were adjusted to reflect the actual volume used and any dilution factors. Limitations in analytical methodologies, sample dilutions, lower sample volume, or the presence of substances that interfere with detection of specific analytes can result in detection limits that exceed the GWQS. In total, 386 individual CCPW metals, non-CCPW metals, VOC, and SVOC non-detect results had detection limits greater than the GWQS as follows:

| Compound | Number of Instances where Detection Limit is Greater Than GWQS |
|---|---|
| 1,1,2,2-TETRACHLOROETHANE | 5 |
| 1,1,2-TRICHLOROETHANE | 2 |
| 1,1-DICHLOROETHYLENE | 3 |
| 1,2,4-TRICHLOROBENZENE | 2 |
| 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 113 |
| 1,2-DIBROMOETHANE(EDB) | 113 |
| 1,2-DICHLOROETHANE | 2 |

| Compound | Number of Instances where Detection Limit is Greater Than GWQS |
|---|---|
| 1,2-DICHLOROPROPANE | 6 |
| ANTIMONY | 41 |
| ARSENIC | 16 |
| BERYLLIUM | 6 |
| BROMODICHLOROMETHANE | 6 |
| BROMOMETHANE | 5 |
| CARBON TETRACHLORIDE | 6 |
| CHLORODIBROMOMETHANE | 5 |
| CHLOROETHANE | 5 |
| DICHLOROMETHANE | 6 |
| LEAD | 13 |
| SELENIUM | 5 |
| TETRACHLOROETHENE | 5 |
| THALLIUM | 3 |
| TRIBROMOMETHANE | 5 |
| TRICHLOROETHYLENE | 5 |
| VANADIUM | 1 |
| VINYL CHLORIDE | 7 |

**Data Quality/Data Usability Conclusions**

The findings of this Data Quality Assessment and Data Usability Evaluation indicate that the data presented for the RI are sufficiently representative of actual conditions and may be used to support decisions with the exceptions identified below:

- Results for SVOCs qualified R are considered to have serious quality deficiencies and should not be used for project decisions.

Data qualifiers and reason codes were applied by the data validator to identify data limitations found in the validation process. Specific details regarding analytes and samples can be found in the individual data validation reports in **Appendix N.**

# 5.0 Remedial Investigation Findings

## 5.1 Summary of Groundwater Remedial Investigation Analytical Results

This section presents analytical results for samples collected during implementation of groundwater RI activities. Groundwater analytical data from RI monitoring events performed from September 26, 2017 to February 15, 2021 ("the groundwater RI data") were used to assess groundwater quality within the Project Area. Groundwater analytical results are compared to the NJDEP GWQS in accordance with N.J.A.C. 7:9C (NJDEP, 2020c). Analytical data are presented in tables, with concentrations greater than the applicable NJDEP GWQS shown in bold font. In addition, non-detect data reported on the tables to a detection limit that exceeds the applicable regulatory standard are also bolded. As discussed in Section 5.2, additional data have also been collected to support delineation for the groundwater RI and these data are integrated into the groundwater RI report in Section 5.3. During implementation of groundwater RI field activities, field blanks and trip blanks were collected in accordance with the FSP-QAPP, as described in Section 4. Groundwater monitoring well sample results are presented on **Table 5-1**, **Table 5-2**, **Table 5-3**, and **Table 5-4**. Analytical results from quality assurance samples are presented on **Table 5-5, Table 5-6,** and **Table 5-7**.

Groundwater RI analytical results from monitoring wells are presented in the following sections and grouped into the following categories:

- $Cr^{+6}$ and CCPW metals
- Non-CCPW metals
- VOCs
- SVOCs

Figures depicting groundwater RI analytical results for the CCPW metals, non-CCPW metals, VOCs, and SVOCs for the shallow, intermediate, and deep water-bearing zones are presented in **Appendix P**. **Appendix P** also includes figures showing analytical results for CCPW metals from monitoring wells completed in the basal till/weathered rock and in the bedrock. These figures include text boxes with concentrations greater than the NJDEP GWQS shown in bold font and non-detect data at a reporting limit that exceeds the applicable regulatory standard included, but not bolded. Sampled locations shown on the figures are color-coded based on the analytical results, with the coloring identifying which constituents were detected at concentrations greater than the NJDEP GWQS, if any (refer to legend on each figure for constituent color representations).

### 5.1.1 Hexavalent Chromium and Chromate Chemical Production Waste Metals

Hexavalent chromium and CCPW metals were sampled in soil and groundwater extensively throughout the Project Area and are associated with historic chromate ore processing operations at Site 114. The CCPW metals include five of the TAL metals considered most likely to be associated with CCPW impacts: Sb, Cr, Ni, Tl, and V. Groundwater analytical results for $Cr^{+6}$ and the CCPW metals are presented on **Table 5-1**. The following table summarizes, by water-bearing zone, the total number of CCPW metals results from the groundwater RI data that were detected at concentrations greater than the applicable NJDEP GWQS.

| | | | | Water-Bearing Zone | | | |
|---|---|---|---|---|---|---|---|
| | | | | Shallow | Intermediate | Deep | Bedrock |
| Number of Samples | | | | 59 | 40 | 37 | 42 |
| Analyte | Fraction | GWQS | Units | Number of Samples Exceeding NJDEP GWQS | | | |
| ANTIMONY | T | 6 | µg/L | - | - | 3 | - |
| CHROMIUM | T | 70 | µg/L | 14 | 17 | 16 | 13 |
| NICKEL | T | 100 | µg/L | - | 1 | - | - |
| VANADIUM | T | 60 | µg/L | 1 | 1 | - | - |
| | | | | | | | |
| | | | | | | | |
| Number of Samples | | | | 6 | 5 | 1 | 0 |
| Analyte | Fraction | GWQS | Units | Number of Samples Exceeding NJDEP GWQS | | | |
| CHROMIUM | D | 70 | µg/L | 2 | 2 | - | - |

Notes:
D = dissolved fraction
T = total/unfiltered fraction
- = indicates no samples exceeded the NJDEP GWQS for this analyte in this water-bearing zone

### 5.1.2 Non- Chromate Chemical Production Waste Metals

Although the CCPW metals (Sb, Cr, Ni, Tl, and V) are included in the TAL metals analytical suite, they are discussed separately above because they are related to chromate ore processing operations. The remaining 19 TAL metals are the non-CCPW metals, and include: Ag, Al, As, Ba, Be, Ca, Cd, Co, Cu, Fe, Hg, K, Mg, Mn, Na, Pb, Se, Sr, and Zn. Groundwater analytical results for non-CCPW metals are presented on **Table 5-2**. The following table summarizes, by water-bearing zone, the total number of non-CCPW metals results from the groundwater RI data that were detected at concentrations greater than the applicable NJDEP GWQS. Because they are naturally occurring within the regional groundwater and are not indicative of site-related impacts, Al, Fe, Mn, and Na are not included on the table.

| | | | | Water-Bearing Zone | | |
|---|---|---|---|---|---|---|
| | | | | Shallow | Intermediate | Deep |
| Number of Samples[1] | | | | 23 | 24 | 10 |
| Analyte | Fraction | GWQS | Units | Number of Samples Exceeding NJDEP GWQS | | |
| ARSENIC | T | 3 | µg/L | 10 | 14 | 3 |
| CADMIUM | T | 4 | µg/L | - | 1 | 2 |
| LEAD | T | 5 | µg/L | 4 | 2 | 3 |
| STRONTIUM | T | 2000 | µg/L | - | 1 | - |
| | | | | | | |
| Number of Samples[2] | | | | 1 | 3 | 1 |
| Analyte | Fraction | GWQS | Units | Number of Samples Exceeding NJDEP GWQS | | |
| ARSENIC | D | 3 | µg/L | - | 2 | 1 |
| STRONTIUM | D | 2000 | µg/L | - | 1 | - |

Notes:
[1]Number of samples for Strontium total fraction: 15 shallow, 16 intermediate, 9 deep.
[2]Number of samples for Strontium dissolved fraction: 0 shallow, 1 intermediate, 0 deep.
D = dissolved fraction
T = total/unfiltered fraction
- = indicates no samples exceeded the NJDEP GWQS for this analyte in this water-bearing zone

### 5.1.3 Volatile Organic Compounds

Volatile organic compounds on or emanating from Site 114 may have multiple sources including the former MGP and other on-site and off-site sources. Groundwater analytical results for VOCs are presented on **Table 5-3**. The following table summarizes, by water-bearing zone, the total number of VOC results from the groundwater RI data that were detected at concentrations greater than the applicable NJDEP GWQS.

| | | | | Water-Bearing Zone | | |
|---|---|---|---|---|---|---|
| | | | | Shallow | Intermediate | Deep |
| | | Number of Samples | | 46 | 58 | 9 |
| Analyte | Fraction | GWQS | Units | Number of Samples Exceeding NJDEP GWQS | | |
| 1,1-DICHLOROETHYLENE | N | 1 | µg/L | - | 9 | 4 |
| 1,2,4-TRICHLOROBENZENE | N | 9 | µg/L | 1 | - | - |
| 1,2,4-TRIMETHYLBENZENE[1] | N | 100 | µg/L | - | 4 | - |
| 1,2-DICHLOROBENZENE | N | 600 | µg/L | 1 | - | - |
| 1,2-DICHLOROETHANE | N | 2 | µg/L | - | 5 | 1 |
| 1,4-DICHLOROBENZENE | N | 75 | µg/L | 1 | - | - |
| BENZENE | N | 1 | µg/L | 19 | 20 | 2 |
| CHLOROBENZENE | N | 50 | µg/L | 1 | - | - |
| CIS-1,2-DICHLOROETHENE | N | 70 | µg/L | - | 2 | 1 |
| ETHYLBENZENE | N | 700 | µg/L | - | 1 | - |
| STYRENE (MONOMER) | N | 100 | µg/L | 3 | 2 | - |
| TETRACHLOROETHENE | N | 1 | µg/L | 3 | 6 | 1 |
| TOLUENE | N | 600 | µg/L | - | 1 | - |
| TRICHLOROETHYLENE | N | 1 | µg/L | 2 | 6 | 1 |
| VINYL CHLORIDE | N | 1 | µg/L | - | 2 | - |
| XYLENES | N | 1000 | µg/L | - | 1 | - |

Notes:
[1]Number of samples for 1,2,4-trimethylbenzene: 32 shallow, 28 intermediate, 4 deep.
N = total/unfiltered fraction
- = indicates no samples exceeded the NJDEP GWQS for this analyte in this water-bearing zone

### 5.1.4 Semi-volatile Organic Compounds

Semi-volatile organic compounds on or emanating from Site 114 may have multiple sources including the former MGP, other on-site and off-site sources, and historic fill. Groundwater analytical results for detected SVOCs are presented on **Table 5-4**. The following table summarizes, by water-bearing zone, the total number of SVOC results from the groundwater RI data that were detected at concentrations greater than the applicable NJDEP GWQS.

| | | | | Water-Bearing Zone | | |
|---|---|---|---|---|---|---|
| | | | | Shallow | Intermediate | Deep |
| | | Number of Samples | | 46 | 60 | 9 |
| Analyte | Fraction | GWQS | Units | Number of Samples Exceeding NJDEP GWQS | | |
| 1,4-DIOXANE | N | 0.4 | µg/L | - | 10 | 5 |
| 2-METHYLNAPHTHALENE | N | 30 | µg/L | 1 | 7 | - |
| BENZO(A)ANTHRACENE | N | 0.1 | µg/L | 9 | 16 | 4 |

| | | | | Water-Bearing Zone | | |
|---|---|---|---|---|---|---|
| | | | | Shallow | Intermediate | Deep |
| Number of Samples | | | | 46 | 60 | 9 |
| Analyte | Fraction | GWQS | Units | Number of Samples Exceeding NJDEP GWQS | | |
| BENZO(A)PYRENE | N | 0.1 | µg/L | 2 | 5 | - |
| BENZO(B)FLUORANTHENE | N | 0.2 | µg/L | 1 | 5 | - |
| BENZO(K)FLUORANTHENE | N | 0.5 | µg/L | - | 3 | - |
| BIS(2-ETHYLHEXYL)PHTHALATE | N | 3 | µg/L | 1 | 1 | - |
| HEXACHLOROBENZENE | N | 0.02 | µg/L | - | 1 | 1 |
| INDENO(1,2,3-CD)PYRENE | N | 0.2 | µg/L | - | 3 | - |
| NAPHTHALENE | N | 300 | µg/L | - | 7 | - |
| 1-METHYLNAPHTHALENE | N | 5 | µg/L | 7 | 12 | - |
| PENTACHLOROPHENOL | N | 0.3 | µg/L | 2 | - | - |

Notes:
N = total/unfiltered fraction
- = indicates no samples exceeded the NJDEP GWQS for this analyte in this water-bearing zone

## 5.2 Additional Groundwater Investigations

### 5.2.1 Other Groundwater Investigations in the Project Area

Data from the following activities were used to supplement the groundwater RI data, as necessary, to delineate the nature and extent of groundwater impacts:

- Previous RI groundwater investigation activities performed from September 1, 2015 to September 2017, as described in the 2018 Draft Groundwater RI Report (AECOM, 2018b);
- Baseline groundwater monitoring for the Phase I IRM performed from December 21, 2017 to January 31, 2018 (ARCADIS, 2018);
- Groundwater monitoring performed by JCRA in Berry Lane Park at monitoring wells MW-CR-3I, MW-CR-7I, and MW-CR-8I in February 2018 (Dresdner-Robin, 2018);
- FerroBlack®-H PBR compliance monitoring (site-wide) performed between June and December 2016 (AECOM, 2016c and AECOM, 2017a).
- Installation of three soil borings to confirm depth to bedrock and overburden geology in the northwest corner of Site 114 (114-BSB-01, 114-BSB-02, 114-BSB-03);
- Installation of Phase II IRM monitoring wells and remediation wells;
- HPT and VAP conducted during implementation of the Phase II IRM drilling program;
- Baseline groundwater monitoring for the Phase II IRM performed from March 16, 2020 to March 27, 2020 (AECOM, 2020f);
- Installation of soil borings and HPT/VAP for the Hydraulic Fracture Pilot Test on Site 114 (AECOM, 2019m);

- Groundwater monitoring conducted at FS/FSP in February and March 2019 (AECOM, 2019e);
- HPT, VAP, and groundwater monitoring conducted at FS/FSP in March/April and September of 2020 (AECOM, 2020e and AECOM, 2020i);
- HPT and VAP conducted during the PDI for the Phase III IRM in September 2020 and December 2020 (AECOM, 2021a);
- HPT and VAP conducted on Site 199 in September 2020;
- Installation of four borings and three wells during the Phase III IRM PDI completed in January 2021; and
- FerroBlack-H® Permit-by-Rule monitoring in the following areas:
    - Forrest Street and Site 135 (May 2018 to March 2019) (AECOM, 2020e)
    - Carteret Avenue and Halladay Street North (July and August 2020) (AECOM, 2020i)
- Capillary rise groundwater monitoring (Site 114) completed between July and August 2020 (AECOM, 2020i).

Groundwater analytical results from these investigations have already been reported to the NJDEP in various data submittals, technical memoranda, and/or regulatory reports. The groundwater RI analytical results presented in Section 5.1 are integrated with these additional data into an updated CSM for the Project Area, discussed in Section 5.3. Comprehensive tables with Project Area groundwater analytical results that were collected during other programs but used in this RIR are presented in **Appendix L**.

### 5.2.2 Dense Non-Aqueous Phase Liquid Investigation

DNAPL has been encountered in multiple locations at the GA Group Sites (refer to **Appendix A**, which includes PSEG's 2014 Groundwater RIR and **Appendix Q**, which provides additional supporting information related to observations of DNAPL in the Project Area). PSEG has accepted responsibility for the investigation and remediation of MGP-related impacts in the Project Area.

Visual, olfactory, and field instrument observations collected from temporary screening locations DNAPL-S1 and DNAPL-W1 confirm the presence of DNAPL in the area around monitoring well 137-P3B-MW101I. Previous investigations performed by PSEG (refer to **Appendix Q**, which includes Figure 5 from PSEG's 2012 Remedial Action Work Plan Addendum and Figure 5-10 from PSEG's 2007 Remedial Investigation Report) identified DNAPL in the same area along Carteret Avenue. Fingerprint analysis results from the sample of DNAPL collected at well 137-P3B-MW101I by PPG indicate that the DNAPL is related to MGP impacts. Communications between PPG and PSEG document that PSEG has agreed to this conclusion and that PSEG has accepted responsibility for the investigation and remediation of MGP-related impacts. The laboratory analytical report for the DNAPL fingerprint sample and documentation demonstrating that PSEG has acknowledged that this DNAPL appears to be MGP-related are included in **Appendix Q**. These analytical data were transmitted to PSEG and no further DNAPL delineation work was performed by PPG.

### 5.2.3 Investigations on Forrest Street and Forrest Street Properties

An overview of previous work and findings of investigations conducted at FS/FSP between 2003 and 2015 is presented in the March 17, 2016 technical memorandum entitled Technical Memorandum *FOR-005 Additional Forrest Street Remedial Investigation – Soil & Groundwater* (AECOM, 2016a), previously submitted to NJDEP. Additional monitoring well installation and groundwater monitoring activities were completed at FS/FSP from 2016 to 2018 during implementation of the groundwater RI for the GA Group Sites. Results from the investigation activities conducted from 2016 to 2018 are documented herein. Several investigations were subsequently conducted on FS/FSP in 2019 and 2020 to further characterize groundwater conditions in this portion of the Project Area, including groundwater elevation gauging, continuous monitoring of groundwater elevations using pressure transducers at select wells, groundwater sampling, and completion of VAP and HPT borings along the sheet pile between FS/FSP and Site 114.

Activities, findings, and conclusions from the 2019 and 2020 investigations are documented in the following technical memoranda previously submitted to NJDEP and included in **Appendix A**:

- *Evaluation of Groundwater Conditions at Forrest Street and Forrest Street Properties, City of Jersey City, Hudson County, New Jersey*, dated May 22, 2019 (AECOM 2019b).
- *Summary of Field Activities and Results for Work Conducted at Forrest Street and Forrest Street Properties – March/April 2020, City of Jersey City, Hudson County, New Jersey (GW-092)*, dated May 29, 2020 (AECOM, 2020b).
- *Addendum to GW-092, Summary of September 2020 Field Activities and Results for Work Conducted at Forrest Street and Forrest Street Properties, City of Jersey City, Hudson County, New Jersey (GW-096)*, dated October 30, 2020 (AECOM, 2020g).

Key findings from the investigations conducted at FS/FSP include:

- Prior to the installation of sheet pile along the northern border of Site 114 and Forrest Street in September 2012, groundwater flow direction in the shallow water-bearing zone was primarily northeastward from Site 114 toward the 90 and 98 Forrest Street buildings with Cr-impacted groundwater flowing northeastward from Site 114 onto FS/FSP. Residual CCPW-related impacts to groundwater from this historical migration pathway remain on FS/FSP.
- The meadow mat/peat layer present beneath most of Site 114 was not observed north of Forrest Street. Historical topographic maps indicate that the area north of Forrest Street was not part of the salt marsh that was filled to create the properties currently located in the GA Group Sites south of Forrest Street.
- Vertical hydraulic gradients at FS/FSP are primarily downward, from the shallow water-bearing zone to the intermediate water-bearing zone.
- The direction of shallow groundwater flow at FS/FSP was affected by the installation of sheet pile on Site 114. Prior to the sheet pile installation, CCPW-impacted groundwater flowed from Site 114 onto FS/FSP. Installation of the sheet pile and addition of DGA above the meadow mat on Site 114 substantially limited this groundwater flow path.
- The groundwater flow regime established at FS/FSP after installation of the sheet pile on Site 114 is dynamic and influenced by local recharge, the sumps in the basement of the building at 90 Forrest Street, and localized vertical hydraulic gradients. Currently, the dominant components of groundwater flow onto FS/FSP are from the northwest (Site 199), and from the southeast within the areas influenced by pumping of the sumps at 90 Forrest Street.

- Based on the results of the VAP/HPT investigation conducted in 2020, migration of CCPW-impacted groundwater from Site 114 onto FS/FSP is not currently occurring either through, or under, the sheet pile installed on Site 114.
- Residual CCPW source materials remain in soils at FS/FSP and are contributing to groundwater impacts on FS/FSP.

Residual CCPW source materials remain in soils on Site 199 and are contributing to the migration of CCPW-related impacts in shallow and intermediate water-bearing zone groundwater from Site 199 onto FS/FSP.

## 5.3 Updated Conceptual Site Model

This CSM update integrates data collected during groundwater RI activities completed from 2017 to February 2021 with data from additional Project Area investigations to provide the most current understanding of Project Area geology, hydrogeology, source areas, and nature and extent of CCPW-related impacts to groundwater. The information presented in this CSM has been prepared in accordance with the NJDEP guidance document *Technical Guidance for Preparation and Submission of a Conceptual Site Model* (NJDEP, 2019b). As stated in the NJDEP Technical Guidance, the CSM is an iterative tool that is updated and refined as additional information becomes available during implementation of the RI or other activities. This CSM will be updated as necessary upon completion of subsequent investigation activities, the implementation of ongoing groundwater IRMs and their associated monitoring programs, and performance of ongoing soil remedial actions being conducted at the Project Area.

**Figure 4-1** depicts the location of soil borings, monitoring wells, HPT/VAP points, and other Project Area features. Ten fence diagrams were developed to depict interpreted subsurface conditions within the Project Area based on existing information derived from previous investigations as well as information generated during groundwater RI activities (**Figures 5-1 through 5-9**). Fence diagram alignments are depicted on **Figure 4-1**. The fence diagrams include the following:

- Current ground surface along the alignments;
- Interpreted subsurface lithology;
- Current location of sheet piling;
- Select monitoring wells situated along the alignments;
- Interpreted water table within the shallow water-bearing zone;
- Direction of vertical hydraulic gradients based on the 2018 synoptic gauging event;
- Index of hydraulic conductivity logs indicative of relative soil permeability for HPT locations situated along the alignments; and
- Total Cr concentrations at monitoring wells and interpreted isoconcentration contours.

### 5.3.1 Geology and Hydrogeology

Comprehensive discussions of Project Area geology and hydrogeology are presented in Sections 3.5 and 3.7, respectively.

### 5.3.2 Source Areas

The sources of CCPW-related impacts to groundwater in the shallow water-bearing zone in the Project Area (**Figure 2-1**) include:

- The former chromite ore processing facility on Site 114;
- The former stockpiles of CCPW, which consisted of:
    - A stockpile of COPR extending from the eastern portion of Site 114 southward onto Site 137 (north and south of Carteret Avenue); and
    - A stockpile of green-gray mud (GGM) immediately south of the processing facility (identified as the Light Toned Pile on **Figure 2-1**);
- Fill materials impacted with CCPW; and
- Fill materials, which included CCPW, used to abandon the former Morris Canal.

The former chromite ore processing facility operated on the northwestern portion of the Project Area from approximately 1909 to 1963. Waste materials produced at the facility included CCPW. Some CCPW was reprocessed, but the majority was stockpiled on portions of the Project Area. Historical information shows that the waste stockpiles were gone by 1958 and the chromite ore processing facility structures were demolished by 1966 (AECOM, 2009). While the above-grade structures associated with the former chromite ore processing facility were demolished, some residual source materials associated with this facility remain in the subsurface, including chromium-impacted soils. Soil remedial actions consisting of source material excavation and off-site disposal are currently ongoing. Other than the chromite ore processing operation and the related CCPW metals, there have been no other metals processing operations on Site 114.

Operations at the former chromite ore processing facility included extraction of Cr from Transvaal chromite ore to produce aluminum hydrate, sodium chromate, sodium bichromate, sodium sulfate, vanadium pentoxide, and potassium bichromate in solid form (ENSR, 2003). The liquid generated in the process by leaching the roasted ore contained chromate, aluminate, and vanadate among other ionic species. The ionic species in the liquid were separated, purified, dried, and packaged for sale using a variety of chemical and physical processes such as acid addition, precipitation, evaporation, filtration, crystallization, and drying. No liquid effluents (wastes) were generated from these processes. The residue remaining after the leaching of the roast (COPR) and GGM constituted the only wastes generated at the former plant.

### 5.3.3 Extent of CCPW Related Impacts to Groundwater

This section defines the extent of CCPW-related impacts to groundwater within the Project Area, with a focus on the distribution of Cr. Groundwater analytical results are compared to the NJDEP GWQS in accordance with N.J.A.C. 7:9C (NJDEP, 2020c) to delineate the extent of groundwater impacts within the Project Area. Currently there is no GWQS for $Cr^{+6}$; therefore, chromium-related impacts are evaluated using the GWQS for Cr of 70 µg/L and $Cr^{+6}$ data are not used to delineate the extent of impacts to groundwater. **Figure 5-10**, **Figure 5-11**, and **Figure 5-12** depict the horizontal extent of Cr in the shallow, intermediate, and deep water-bearing zones, respectively. **Figure 5-13** depicts the horizontal extent of Cr in the basal till/weathered bedrock. The vertical extent of Cr in groundwater within the Project Area is depicted on **Figures 5-1** through **5-9**.

### 5.3.4 Fate and Transport of Chromium in Groundwater

Fate and transport processes consider the source of contamination and the changes that take place in constituents and their concentrations as they move through environmental media. In general, Cr leached from source areas infiltrated into the subsurface and migrated downward through the unsaturated zone. Once within the saturated zone, migration occurs primarily along the prevailing direction of groundwater flow, either horizontally or vertically, depending on hydraulic conditions via either advection or diffusion based on soil type. When low-permeability soils are encountered, Cr-impacted groundwater may spread laterally along the permeability contrast or the Cr may diffuse into and, given sufficient time, through the lower permeability soil horizon. Back-diffusion of Cr from the lower-permeability soils into surrounding higher-permeability soils may also occur over time, depending on concentration gradients or hydraulic conditions. The implications of soil heterogeneities on the fate and transport of chromium in the Project Area, including an evaluation of the relationship between soil heterogeneities and fate and transport, and an evaluation of matrix diffusion effects, is presented in **Appendix E**. The presence of natural (meadow mat) and anthropogenic (MGP residuals) organic matter within soils may also impact the mobility of Cr in groundwater via reduction and precipitation.

No liquid wastes were generated from operations at the former chromite ore processing facility. Therefore, groundwater impacts related to liquid wastes that may have migrated via density-driven flow are not present on Site 114 or in the Project Area. To evaluate for the potential of density-driven flow of groundwater with high concentrations of Cr, groundwater samples were collected from select monitoring wells for analysis of specific gravity (**Table 5-8**). For reference, the standard of comparison for solids and liquids subject to a density test is water at 4 degrees Celsius, which has a density of 1.0. Based on these results, groundwater with high concentrations of Cr appears to exhibit a specific gravity equivalent to unimpacted groundwater; therefore, migration of Cr-impacted groundwater is not likely to occur via density-driven flow.

Despite the amount of time that has passed since the chromate ore processing facility was decommissioned, the Cr groundwater plume in the Project Area does not extend very far from the former source areas, even where preferential pathways exist, such as utilities or other anthropogenic features. This indicates significant attenuation stemming from the natural mechanisms that affect the migration of Cr in groundwater. The fate and transport of Cr-related impacts to groundwater for each of the water-bearing zones within the Project Area is presented in the following subsections.

#### 5.3.4.1 Shallow Water-Bearing Zone

Prior to source removal, shallow fill materials and CCPW-impacted soils above the meadow mat were sources of Cr impacts to the shallow water-bearing zone groundwater. At pH greater than 6.5, $Cr^{+6}$ present as the water soluble chromate anion $CrO_4^{-2}$ is the dominant Cr species in CCPW-impacted groundwater. $Cr^{+6}$ is a strong oxidant and is rapidly reduced in the presence of $Fe^{+2}$ ions and minerals, reduced sulfur, microbes, and organic matter (USEPA,1999). Total Cr is the sum of trivalent chromium ($Cr^{+3}$) and $Cr^{+6}$ species. $Cr^{+6}$ is generally more mobile in groundwater with the $Cr^{+3}$ form less soluble and less mobile. Mobility of Cr in groundwater is chemically controlled by conditions such as pH, Eh, competing anions such as sulfate, the presence of certain minerals, and organic matter. Cr-impacted groundwater migrated along downward vertical hydraulic gradients from the shallow water-bearing zone into the underlying intermediate water-bearing zone through gaps in the meadow mat (where present). Holes in the meadow mat can be attributed to natural drainage features that formed when the meadow mat was the surficial layer of an estuarine setting, prior to initial filling. In addition, the former Morris Canal bisected the Project Area and local areas of the meadow mat were removed

during construction of the canal. Materials used to fill the canal, which included CCPW (primarily GGM), also serve as sources of groundwater impacts to the shallow water-bearing zone. Where meadow mat is present, the low permeability of the meadow mat limits vertical migration of Cr-impacted groundwater to underlying water-bearing zones. The meadow mat may also promote localized reducing conditions, where $Cr^{+6}$ is reduced to $Cr^{+3}$ and can complex to organic matter or precipitate out of solution. Meadow mat is a natural barrier to the migration of $Cr^{+6}$ in groundwater (Higgins,1998).

The shallow sources of Cr to groundwater are being eliminated as impacted shallow soils are removed and clean/amended fill is placed. Since 2010, soil remediation activities have removed the majority of the impacted shallow fill to the top of the meadow mat, or deeper where the meadow mat was not present. Backfill was amended with FerroBlack® H, an amendment that reduces $Cr^{+6}$ to $Cr^{+3}$. The reduction of $Cr^{+6}$ to $Cr^{+3}$ by ferrous iron is generally quite rapid, whereas the oxidation of $Cr^{+3}$ to $Cr^{+6}$ by soil manganese minerals or dissolved oxygen is quite slow. Thus, once impacted shallow soils are completely replaced by clean/amended fill, there will be no source of Cr to groundwater in the shallow water-bearing zone.

Current groundwater monitoring data indicate that soil remedial actions completed to date have significantly reduced Cr concentrations in the shallow water-bearing zone, with only a few localized areas remaining where Cr concentrations are greater than the NJDEP GWQS. The Cr concentrations in the shallow water-bearing zone are expected to continue decreasing as remediation activities progress.

#### 5.3.4.2 Intermediate Water-Bearing Zone

The primary source of Cr-impacts to the intermediate water-bearing zone is the overlying shallow water-bearing zone. Materials used to fill the former Morris Canal also serve as sources of impacts to the intermediate water-bearing zone. In the intermediate water-bearing zone, Cr migration occurs both horizontally and vertically, depending on hydraulic conditions. The sewer installed along Carteret Avenue appears to have served as a preferential pathway for migration of contaminants into downgradient areas to the east (Halladay Street and the Halsted Property) along the interface between the shallow and the intermediate water-bearing zones. Based on recent VAP data and groundwater analytical results, fine-grained, lower-permeability soils in the intermediate zone may be sequestering Cr within the soil matrix. Common soil minerals such as gibbsite ($Al_2O_3$), hematite ($Fe_2O_3$), pyrite ($FeS_2$), amorphous iron oxide ($Fe_2O_3$-$H_2O$), and silica ($SiO_2$) can absorb $Cr^{+6}$ or reduce the Cr oxidation state to $Cr^{+3}$. This change in Cr valence can precipitate Cr as insoluble $Cr(OH)_3$ or the Cr may become sorbed to other $Fe^{+3}$ minerals such as $Fe(OH)_3$ in solid mixtures (USEPA,1999). When the pH of the groundwater is between 5 and 12, this form of attenuation (i.e., $Cr^{+6} \rightarrow Cr^{+3} \rightarrow Cr(OH)_3$) by soil minerals can keep the dissolved $Cr^{+3}$ concentrations to below 50 µg/L (USEPA,1994).

While groundwater flux and Cr mass transport within low-permeability soils is expected to be low, these materials represent zones that may act to retain diffused Cr with the potential to discharge Cr into surrounding higher permeability soils over time. In northern portions of the Project Area (north of Carteret Avenue), the intermediate zone is less homogenous than in southern portions (south of Carteret Avenue), with layers of hydraulically-conductive sands and gravels interbedded with layers of finer-grained materials of lower permeability (silty sands, silts, and clays). In the southeastern corner of Site 114, the intermediate zone thickens near Carteret Avenue as the elevation of the bedrock surface lowers, with deposits becoming more homogeneous (sands and gravels prevail) and permeability increasing. South of Carteret Avenue and east of the former Morris Canal, the intermediate zone is characterized by thicker and more continuous sequences of silts and clays.

Where present, the interbedded silts and clays of the transition zone limit vertical migration of Cr-impacted groundwater into underlying soils.

Prior to placement of the sheet pile on Site 114, the declining bedrock surface, thickening and coarsening of intermediate zone deposits, and the presence of thick sequences of silts and clays south of Carteret Avenue shifted the intermediate zone groundwater flow pattern in the southeastern portion of Site 114 to the east/southeast, resulting in preferential contaminant migration into downgradient areas east of Site 114. Placement of the sheet pile and sealing of the sheet pile joints has significantly reduced horizontal migration into downgradient areas east of Site 114 within the intermediate zone.

Current monitoring data indicate that groundwater in the intermediate water-bearing zone is impacted by levels of Cr greater than the NJDEP GWQS, both within the GA Group Sites and in off-site areas. An overall improvement in groundwater quality with respect to Cr is evident at Site 114 in response to the soil remediation completed in the overlying shallow zone and implementation of the groundwater IRMs. Baseline data representative of groundwater conditions prior to full-system startup and operation of the Phase I and II IRMs were used to characterize the extent of Cr impacts to groundwater in the intermediate water-bearing zone. Operation of the groundwater IRMs is expected to affect future groundwater hydraulics and contaminant distribution within the intermediate water-bearing zone.

#### 5.3.4.3 Deep Water-Bearing Zone

The source of Cr impacts to the deep water-bearing zone is the overlying intermediate water-bearing zone. Migration of groundwater impacts from the intermediate water-bearing zone into the deep water-bearing zone occurs primarily along downward vertical hydraulic gradients within portions of the former Morris Canal, such as in the vicinity of wells 114-MC-PZ103 (intermediate zone well) and MW6C (deep zone well). Based on the distribution of Cr within the deep water-bearing zone, similar conditions can be expected in other portions of the former Morris Canal with Cr migration within the deep water-bearing zone primarily to the east-southeast along the prevailing direction of groundwater flow.

Similar to the intermediate water bearing zone, the deep water-bearing zone north of Carteret Avenue is less homogenous than in southern portions (south of Carteret Avenue), with layers of permeable sands and gravels interbedded with layers of finer-grained materials of lower permeability (silty sands, silts, and clays) overlying the basal till. In the southeastern corner of Site 114, the deep zone thickens near Carteret Avenue as the elevation of the bedrock surface lowers, with deposits grading into less permeable silts and clays underlain by basal till.

Where present, the lower-permeability unit separating the intermediate and deep water-bearing zones (the transition zone) attenuates the flux of Cr into the deep zone. For example, a downward vertical hydraulic gradient from the intermediate to the deep zone is evident at wells MW8D and MW8F; however, the concentration of Cr in well MW8D (intermediate zone) decreases with depth from 70,800 µg/L at 41 ft bgs to 1,398 µg/L at 45 ft bgs, with Cr detected at a concentration of 2 µg/L in underlying deep-zone well MW8F. Similar trends are evident at other well clusters with intermediate- and deep-zone monitoring well pairs (114-MW20B/C, MW4B/C, MW6B/C, MW7B/C). This indicates that Cr impacts are attenuated within the transition zone between the intermediate and deep water-bearing zones at these locations. These observations are consistent with results from the VAP borings completed at Site 114, many of which indicate decreasing concentrations of Cr with depth.

The bottom of the deep water-bearing zone consists of a layer of basal till sitting atop bedrock. The basal till is continuous across the Project Area and consists of dense and compact silty clays, sandy silts, and silty sands with subrounded to subangular fine to coarse gravel and cobbles and occasional interbedded lenses of clay, silt, or fine sand. Given this composition, the basal till limits vertical migration of Cr-impacted groundwater into the underlying bedrock by serving as an aquitard separating the overlying more permeable unconsolidated deposits from the bedrock. Sand stringers or lenses of sand within the basal till are evident in some borings (e.g., 114-MW49C, 114-MW56C, 114-MW57C, 114-MW60C, 114-MW62C, 114-MW66D). Of the approximately 390 ft of basal till logged within the Project Area, only 21 ft consisted of sand stringers or lenses, which equates to less than 6% of the basal till (**Appendix G**). The observed thickness of sand stringers or lenses within the basal till ranged from 0.2 feet to 6.5 feet. Where present, these higher permeability intervals within the basal till may serve as preferential migration pathways for Cr-impacted groundwater. This migration pathway is exemplified by visual observations at well 114-MW66D, where a 1-ft interval of loose fine-to-medium sand seeping yellow-colored water was observed in the basal till from 50 to 51 ft bgs. These higher-permeability zones within the basal till appear to be discontinuous or of limited extent, based on observations from boring logs across the Project Area. For example, at well 114-MW61C sand stringers were encountered within the basal till from 55 to 55.5 ft bgs and 60 to 61 ft bgs, whereas at nearby well 114-MW-66D sand stringers were encountered within the basal till only from 50 to 51 ft bgs. This finding is consistent with deposition in the glaciofluvial and glaciolacustrine environments that prevailed in the Project Area.

Groundwater conditions in the basal till are influenced by the shape of the bedrock surface. Based on the extensive monitoring well and remediation well network completed on Site 114 within the intermediate and deep water-bearing zones (hundreds of wells) and the 19 monitoring wells completed as part of the till/weathered bedrock investigation, basal till underlying the northwestern and eastern portions of Site 114 that contain elevated levels of Cr in groundwater does not exhibit Cr concentrations greater than the GWQS, demonstrating vertical attenuation of Cr as the overburden geology transitions into the basal till. This is evident at deep monitoring wells installed in the eastern portion of Site 114 (114-MW45C, 114-MW51C, 114-MW54C, and 114-MW59C) and in wells installed in the northwestern quadrant of Site 114 (114-MW48C, 114-MW49C, and 114-MW50C). In the central portion of Site 114, the basal till is encountered at shallower depths due to the bedrock high situated in this area (114-MW53C and 114-MW65C). In this area, the basal till is adjacent to higher-permeability deep-zone deposits with elevated concentrations of Cr in groundwater. Over time, migration of Cr-impacted groundwater into the basal till occurred to a limited extent horizontally via discontinuous sand stringers and vertically via diffusion. Similar conditions exist at well 114-MW63C, which is also situated in an area where the bedrock is higher than in surrounding areas.

Groundwater flow within the deep water-bearing zone is strongly influenced by the shape of the underlying bedrock surface. The bedrock high in the middle of Site 114 disrupts flow in the deep water-bearing zone effectively creating two migration pathways in the deep overburden: one from northwest to southeast around the bedrock high to the west and one from northwest to southeast around the bedrock high to the east. In the southwestern portion of Site 114 (west of the bedrock high), a localized bedrock valley creates a restricted flow regime, with groundwater flowing into the valley from upgradient areas to the north (near 114-MW67C) and discharging from the valley to the southeast over a rise in the bedrock surface in the vicinity of 114-MW57C. The southern limit of the valley coincides with the location of the former CCPW stockpile identified as the Light Toned Pile on **Figure 2-1**. Over time, the restricted groundwater flow regime in this area allowed for vertical migration of Cr-impacted groundwater into the basal till/weathered bedrock, as evidenced by the elevated Cr concentrations in wells 114-MW52C, 114-MW56C, 114-MW57C, and 114-MW61C. Migration of Cr within the basal till to the south of these wells (onto Site 132 and Site 143) is limited by

the rising bedrock surface near well 114-MW4D (**Figure 5-7**) and is delineated by well 132-P3-MW001D (**Figure 5-13**). In the southeastern portion of Site 114 (east of the bedrock high), the declining bedrock surface, thickening of deep zone deposits, and the presence of less permeable materials south of Carteret Avenue shifted the deep water-bearing zone groundwater flow pattern to the east/southeast. Chromium concentrations in the deep water-bearing zone in this portion of Site 114 attenuate quickly as the deep zone deposits become lower in elevation and fall below the areas of impacted groundwater (**Figure 5-8, Figure 5-12**).

Current monitoring data indicate that groundwater in the deep water-bearing zone is impacted by concentrations of Cr greater than the NJDEP GWQS, both within the GA Group Sites and in off-site areas. An overall improvement in groundwater quality with respect to Cr is evident at Site 114 in response to implementation of the groundwater IRMs. Baseline data representative of groundwater conditions prior to full-system startup and operation of the Phase I and II IRMs were used to characterize the extent of Cr impacts to groundwater in the deep water-bearing zone. Operation of the groundwater IRMs is expected to affect future groundwater hydraulics and contaminant distribution within the deep water-bearing zone.

#### 5.3.4.4 Bedrock Water-Bearing Zone

Based on data collected to date, the only portion of bedrock groundwater within the Project Area which exhibits CCPW-related impacts is situated in the southwestern quadrant of Site 114. The source of bedrock groundwater impacts in the southwestern portion of Site 114 is the overlying overburden. Migration of groundwater impacts from overburden soils into the bedrock in this area occurs along downward vertical hydraulic gradients, such as in the vicinity of wells 114-MW57C and 114-MW57D. Chromium-impacted groundwater may also enter the bedrock horizontally in areas where the elevation of the bedrock fluctuates significantly, thereby placing bedrock in lateral contact with adjacent overburden soils, such as in the vicinity of wells 114-MW52D and 114-MW53C. Migration of Cr-impacted groundwater within weathered bedrock is similar to porous media due to the high degree of interconnectivity between the weathered bedrock elements. Zones of highly-weathered bedrock where the rock has higher clay content within fractures exhibit lower permeability with reduced potential for contaminant migration. Within competent bedrock, migration occurs along bedding planes and interconnected fractures, cracks, or voids in the rock.

Based on the results of the till/weathered bedrock and bedrock investigations, the following findings relate to the migration of Cr-impacted groundwater from overburden into bedrock within the Project Area:

- Vertical delineation of Cr-related impacts to groundwater within the overburden in the areas targeted by the till/weathered bedrock well installation program has been achieved in several locations by monitoring wells exhibiting concentrations of Cr that are either not detected or are less than the GWQS (**Figure 5-13**).
- Migration of Cr-related impacts in groundwater into the upper portion of the weathered bedrock was observed at monitoring wells 114-MW53C, 114-MW57C, and 114-MW61C (**Figure 5-13**). The weathered bedrock at 114-MW53C and 114-MW61C consists of highly fractured rock with varying degrees of clay content in the fractures, which is expected to limit the potential for vertical migration into the underlying competent rock. This conclusion is supported by findings at 114-MW61D, which is an open borehole bedrock well completed at elevations below the screened interval of 114-MW61C and exhibits concentrations of Cr that are either not detected or significantly below the GWQS.

- Cr-related impacts to bedrock groundwater were observed at wells 114-MW52D, 114-MW57D, and 114-MW66D (Figure P-5**, Appendix P**), with concentrations of Cr greater than the GWQS ranging from 82.4 µg/L to 46,500 µg/L. All of these wells were installed in the Lockatong Formation. Based on geophysical logging data, the Lockatong Formation strikes to the northeast and dips to the northwest at approximately 14 degrees. Primary fracture features within the formation also dip to the northwest at angles ranging from 10 to 20 degrees. A secondary set of fractures dip more steeply to the southeast at angles ranging from 60 to 80 degrees. Migration of Cr-impacted groundwater is expected to occur along these features within the bedrock.
- Upward hydraulic gradients from bedrock into the basal till at well pairs 114-MW45C/114-MW6D, 114-MW54C/114-MW7D, and 114-MW52C/114-MW52D limit the potential for downward migration of groundwater impacts from overburden materials into bedrock in these areas. Downward gradients from the basal till/weathered bedrock into the bedrock were observed in the southwestern corner of Site 114 at well pairs 114-MW57C/114-MW57D and 114-MW61C/114-MW61D (**Table 3-4**).

## 5.4 Evaluation of non-CCPW Constituents Emanating from Site 114

The main focus of RI activities in the Project Area has been the delineation of $Cr^{+6}$, CCPW, and CCPW-related materials. However, based upon PPG's former ownership of Site 114, RI activities also included sampling and analysis for non-CCPW compounds on and off Site 114. Non-CCPW constituents that may be on or emanating from Site 114 include the non-CCPW metals (Ag, Al, As, Ba, Be, Ca, Cd, Co, Cu, Fe, Hg, K, Mg, Mn, Na, Sr, Pb, Se, and Zn), VOCs, and SVOCs. PPG's responsibility for these compounds is limited to those found to be on or emanating from Site 114 and does not include exceedances of regulatory criteria in off-Site areas that are not emanating from Site 114. PSEG has accepted responsibility for the former MGP operations on the eastern portion of Site 114 and has conducted a comprehensive RI program to identify the nature and extent of the former MGP impacts.

An evaluation of non-CCPW constituents in groundwater that may have emanated, or are emanating, from Site 114 onto adjacent properties is included in **Appendix A** (AECOM, 2021b). Key findings from this evaluation include:

- The following non-CCPW constituents in groundwater have been determined to be emanating from Site 114 and related to former MGP operations on Site 114. MGP-related constituents will be addressed by PSEG pursuant to their NJDEP SRP case.
    - Arsenic
    - Lead
    - 1,2,4-Trimethylbenzene
    - Benzene
    - Ethylbenzene
    - Toluene
    - Xylenes
    - 1-Methylnaphthalene
    - 2-Methylnaphthalene
    - Benzo(a)anthracene
    - Benzo(a)pyrene
    - Benzo(b)fluoranthene
    - Benzo(k)fluoranthene
    - Indeno(1,2,3-c,d)pyrene

  - Naphthalene
  - Ammonia
  - Cyanide
- One additional non-CCPW constituent, tetrachloroethene, was determined to be emanating from Site 114 only in the shallow water-bearing zone at well 114-MW41A.

The NJDEP asserts that 1,4-dioxane is emanating from Site 114 onto adjacent properties within the intermediate water-bearing zone in the southeast corner of Site 114, downgradient of wells 114-P2B4-MW101I and 114-P2B4-MW102I and within the limited area between monitoring wells MW8D, 114-MW19B, 114-MW20B, and 114-MW40B. In addition, NJDEP considers the delineation of 1,4-dioxane in this area to be complete. PPG disagrees with the NJDEP's position that 1,4-dioxane is emanating from Site 114 in this area but concurs that the delineation of 1,4-dioxane is complete. Furthermore, PPG reserves the right to revisit this evaluation in the future.

# 6.0 Conclusions and Recommendations

## 6.1 Conclusions

The primary objective of this groundwater RI was to delineate the horizontal and vertical extent of CCPW-related impacts to groundwater within the Project Area. Delineation of the extent of groundwater impacts related to non-CCPW metals, VOCs, and SVOCs that are on or emanating from Site 114 was also within the scope of the groundwater RI due to PPG's brief ownership of the Site 114 property. This groundwater RI includes the shallow, intermediate, deep, and bedrock water-bearing zones.

Based on the data collected to date, the following conclusions pertaining to the distribution of CCPW-related impacts to groundwater are identified for the Project Area:

- Horizontal delineation has been achieved for the shallow, intermediate, and deep water-bearing zones in accordance the TRSR (NJDEP, 2012b).
- Horizontal delineation within bedrock has been achieved on the eastern and northern portions of Site 114. Additional delineation in the bedrock is required south of 114-MW57D and to the west of wells 114-MW52D, 114-MW57D, and 114-MW66D (**Figure 6-1**).
- Vertical delineation within the overburden has been achieved in several parts of the Project Area; however, additional vertical delineation is required in bedrock in the southwestern portion of Site 114 within the area bounded by monitoring wells 114-MW67C, 114-MW65C, 114-MW53C, 114-MW57D, 114-MW68C, and 114-MW66D (**Figure 6-1**).

Based on the data collected to date, the following conclusions pertaining to non-CCPW metals, VOCs, and SVOCs that are on or emanating from Site 114 are identified for the Project Area:

- The constituents emanating from Site 114 have been identified and the horizontal and vertical extents of these constituents have been delineated.

## 6.2 Recommendations

The following recommendations are identified for the Project Area:

- A limited bedrock investigation should be conducted in the southwestern portion of Site 114 and northern portions of Site 143 and Site 132 (**Figure 6-1**) to complete the delineation requirements of the TRSR (NJDEP, 2012b).

Pursuant to this recommendation, a Scope of Work for additional bedrock remedial investigations in the Project Area was developed and submitted to NJDEP for review and approval on April 22, 2021. NJDEP provided comments on the proposed scope of work on July 30, 2021 and PPG responded to comments on August 17, 2021. PPG anticipates implementing the proposed scope of work in Fall of 2021. Documentation of the additional investigation activities and associated findings will be submitted to NJDEP as an addendum to this groundwater RI report.

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# Tables

**Table 2-1**
**Summary of Investigation Sites**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| Site Number | Site Name | Location | Property Owner | Current Usage | Block | Lot | NJDEP Program Interest Number |
|---|---|---|---|---|---|---|---|
| **Garfield Avenue Group Properties** | | | | | | | |
| 114 | Former MGP facility and COPR stockpile area | Southwest and Eastern portions of Site 114, including 880 Garfield Ave. and 2 Dakota St. | City of Jersey City (Jersey City Redevelopment Agency) | Vacant Land | 21501 | 16, 17, 18.01, 18.02, 19.01, 19.02 | G000005480 |
| | Former Chromate Chemical Production Facility | Northwest portion of Site 114, 900 Garfield Ave. | 900 Garfield Ave, Ryann LLC | Vacant Land | 21501 | 20.01, 20.02 | |
| 132 | Town & Country Linen (former name) | 824 Garfield Ave. | City of Jersey City (Jersey City Redevelopment Agency) | Vacant Land | 21510 | 2 | G000008749 |
| 133 | Ross Wax (former name) | 15 Halladay St. | PPG | Vacant Land | 21510 | 5 | 629345 |
| | Ross Wax (former name) | 22 Halladay St. | PPG | Vacant Land | 21509 | 1 | 025695 |
| 135 | Vitarroz or Narula (former name) | 51-99 Pacific Ave. | PPG | Vacant Land | 21509 | 2 | 246332 |
| 137 | TSI City Carriers (now known as 25 Halladay St., LLC) | 25 Halladay St. | PPG | Vacant Land | 21510 | 4 | G000008753 |
| | Rudolf Bass, Inc. (former name) | 45 Halladay St. | PPG | Vacant Land | 21510 | 3 | |
| 143 | F. Talarico Auto (former name) | 846 Garfield Ave. | PPG | Vacant Land | 21510 | 1 | G000008759 |

**Table 2-1**
**Summary of Investigation Sites**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| Site Number | Site Name | Location | Property Owner | Current Usage | Block | Lot | NJDEP Program Interest Number |
|---|---|---|---|---|---|---|---|
| **Adjacent Properties and Roadways Covered by the ACO** | | | | | | | |
| - | Carteret Avenue | Carteret Avenue | City of Jersey City | Public Roadway | N/A | N/A | Included in G000005480 |
| - | Garfield Avenue | Garfield Avenue | City of Jersey City | Public Roadway | N/A | N/A | |
| - | Halladay Street | Halladay Street | City of Jersey City | Public Roadway | N/A | N/A | |
| - | Halsted Building | Halladay Street | PPG | Vacant Industrial Building | 21502 | 12, 13, 14, 15, 16, 17 | 722429 |
| - | Al Smith Moving and Storage | 33 Pacific Avenue | GND Pacific Holdings, LLC | Vacant Land | 21509 | 3 | 775998 |
| - | Ten West Apparel | 800 Garfield Avenue | PPG | Vacant Industrial Property | 21510 | 39 | 777089 |
| - | Forrest Street and Forrest Street Properties | Forrest Street | Various Owners | Active Commercial Properties | 21501 | 10, 11, 12, 14.01 | 775706 |
| - | Fishbein | 816 Garfield Avenue | PPG | Vacant Land | 21510 | 11 | 629388 |
| **Other Adjacent Properties** | | | | | | | |
| 186 | - | 947 Garfield Avenue | Jorge Rodriguez | Vacant Land | 19802 | 2 | G000011477 |
| 199 | Hudson-Bergen Light Rail | Jersey City, NJ | Jersey City Sewerage Authority | Light Rail System | 21501 | 1.01, 2, 3 | G000044581 |

**Notes:**
1. Site 199 includes a portion of the Light Rail north of Site 114 between Garfield Avenue and Halladay Street.
2. Source: http://www.hudsoncountynj.org/search-tax-records/

ACO = Administrative Consent Order
COPR = Chromite Ore Processing Residue
MGP = manufactured gas plant
N/A = not applicable
NJ = New Jersey
NJDEP = New Jersey Department of Environmental Protection

# Table 3-1
# Top of Bedrock Elevation
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

| Location | Easting (ft NAD83) | Northing (ft NAD83) | Ground Surface Elevation (ft NAVD88) | Depth to Bedrock (ft bgs) | Bedrock Elevation[2] (ft NAVD88) | Notes | Rock Type |
|---|---|---|---|---|---|---|---|
| 114-BSB-01 | 611145.10 | 683901.80 | 14.7 | 63 | -48.3 | Sonic, drilled 5 ft into bedrock | Igneous - Diabase |
| 114-BSB-02 | 611029.00 | 683757.30 | 13.5 | 61.5 | -48.0 | Sonic, drilled 11.5 ft into bedrock | Igneous - Diabase |
| 114-BSB-03 | 611026.80 | 683530.40 | 13.9 | 76 | -62.1 | Sonic, drilled 5 ft into bedrock | Sedimentary |
| 114-MW15A | 610888.50 | 683851.50 | 13.44 | 6 | 7.4 | HSA/Mud rotary, refusal | Indeterminate |
| 114-MW16B | 610610.20 | 683366.40 | 16.1 | 19 | -2.9 | HSA/Air rotary, drilled 16.5 ft into bedrock | Igneous - Diabase |
| 114-MW19C | 611263.30 | 682737.30 | 10.94 | 101 | -90.1 | HSA/Mud rotary, refusal with observed weathered bedrock | Indeterminate |
| 114-MW20C | 611555.60 | 683020.20 | 12.4 | 84 | -71.6 | Mud rotary, refusal | Indeterminate |
| 114-MW22B | 610693.50 | 683254.90 | 12.6 | 35.5 | -22.9 | HSA/Mud rotary, refusal | Sedimentary |
| 114-MW25C | 611795.80 | 683600.40 | 10.4 | 55 | -44.6 | Sonic, drilled 3 ft into bedrock | Indeterminate |
| 114-MW4D | 610821.80 | 683258.90 | 12.91 | 87 | -74.1 | Mud and air rotary, drilled 20 ft into bedrock | Igneous - Diabase |
| 114-MW6D | 611298.40 | 683683.30 | 12.66 | 77 | -64.3 | Mud and air rotary, drilled 34 ft into bedrock | Sedimentary - Lockatong |
| 114-MW7D | 611189.20 | 683329.10 | 12.44 | 76.5 | -64.1 | Air rotary, drilled 13.5 ft into bedrock | Indeterminate |
| 114-MW45C | 611411.80 | 683675.00 | 11.5 | 71 | -59.5 | Sonic, drilled 5 ft into bedrock | Sedimentary - Lockatong |
| 114-MW48C | 611163.80 | 683919.40 | 15 | 58 | -43.0 | Sonic, drilled 6 ft into bedrock | Igneous - Diabase |
| 114-MW49C | 611378.10 | 683872.00 | 14.6 | 70 | -55.4 | Sonic, drilled 5 ft into bedrock | Sedimentary - Lockatong |
| 114-MW50C | 611043.10 | 683769.80 | 13.4 | 62 | -48.6 | Sonic, drilled 5 ft into bedrock | Igneous - Diabase |
| 114-MW51C | 611633.30 | 683637.40 | 12.2 | 77 | -64.8 | Sonic, drilled 5 ft into bedrock | Sedimentary - Stockton |
| 114-MW52C | 611034.70 | 683527.70 | 14 | 73 | -59.0 | Sonic, drilled 5 ft into bedrock | Sedimentary - Lockatong |
| 114-MW52D | 611077.50 | 683544.40 | 13.9 | 68 | -54.1 | Sonic & rock core, drilled 37 ft into bedrock | Sedimentary - Lockatong |
| 114-MW53C | 611157.60 | 683435.60 | 13.9 | 45.5 | -31.6 | Sonic, drilled 9.5 ft into bedrock | Sedimentary - Lockatong |
| 114-MW54C | 611214.90 | 683276.50 | 10.8 | 77 | -66.2 | Sonic, drilled 7 ft into bedrock | Sedimentary - Stockton |
| 114-MW55C | 611439.10 | 683519.80 | 11.1 | 68 | -56.9 | Sonic, drilled 7 ft into bedrock | Sedimentary - Stockton |
| 114-MW56C | 610934.80 | 683324.40 | 14 | 72 | -58.0 | Sonic, drilled 8 ft into bedrock | Sedimentary - Lockatong |
| 114-MW57C | 610949.90 | 683210.40 | 12.9 | 68 | -55.1 | Sonic, drilled 7 ft into bedrock | Sedimentary - Lockatong |
| 114-MW57D | 610903.90 | 683215.50 | 12.7 | 67 | -54.3 | Sonic & rock core, drilled 45.5 ft into bedrock | Sedimentary - Lockatong |
| 114-MW58C | 611371.20 | 683296.60 | 11.2 | 74 | -62.8 | Sonic, drilled 6 ft into bedrock | Sedimentary - Stockton |
| 114-MW59C | 611255.20 | 683079.60 | 12.1 | 92.5 | -80.4 | Sonic, drilled 7.5 ft into bedrock | Sedimentary - Stockton |
| 114-MW60C | 611340.10 | 682895.50 | 11 | 119.5 | -108.5 | Sonic, drilled 5.5 ft into bedrock | Sedimentary - Stockton |
| 114-MW61C | 610879.40 | 683478.60 | 14 | 63 | -49.0 | Sonic, drilled 12 ft into bedrock | Igneous - Diabase |
| 114-MW61D | 610873.20 | 683469.80 | 14.4 | 63 | -48.6 | Sonic & rock core, drilled 46 ft into bedrock | Igneous - Diabase |
| 114-MW62C | 611139.00 | 683749.80 | 13 | 71 | -58.0 | Sonic, drilled 9 ft into bedrock | Sedimentary - Lockatong |
| 114-MW63C | 611437.00 | 683762.10 | 15.5 | 66 | -50.5 | Sonic, drilled 6 ft into bedrock | Sedimentary - Lockatong |
| 114-MW64C | 611381.90 | 683046.00 | 10.8 | 93 | -82.2 | Sonic, drilled 7 ft into bedrock | Sedimentary - Stockton |
| 114-MW65C | 611291.70 | 683583.00 | 12.4 | 66 | -53.6 | Sonic, drilled 5 ft into bedrock | Sedimentary - Lockatong |
| 114-MW66D | 610941.40 | 683423.40 | 14.1 | 77 | -62.9 | Sonic & rock core, drilled 38 ft into bedrock | Sedimentary - Lockatong |
| 114-MW67C | 611022.24 | 683616.07 | 13.2 | 83 | -69.8 | Sonic, drilled 2 ft into bedrock | Sedimentary - Lockatong |
| 114-MW68C | 610851.13 | 683321.17 | 14.1 | 73 | -58.9 | Sonic, drilled 7 ft into bedrock | Igneous - Diabase |
| 114-MW69C | 611145.23 | 683213.16 | 10.8 | 68 | -57.2 | Sonic, drilled 7 ft into bedrock | Sedimentary - Stockton |
| 132-MW2B | 610555.00 | 682811.80 | 14.6 | 31 | -16.4 | HSA/Mud rotary, refusal | Indeterminate |
| 133-MW1C | 610670.80 | 682283.10 | 11.86 | 77 | -65.1 | HSA/Mud rotary, refusal | Indeterminate |
| 133-MW2C | 610792.70 | 682151.10 | 10.31 | 99 | -88.7 | HSA/Mud rotary, refusal | Indeterminate |
| 135-MW1C | 610951.30 | 682131.10 | 9.90 | 103 | -93.1 | HSA/Mud rotary, refusal | Indeterminate |
| 137-MW1C | 611036.70 | 683020.30 | 13.47 | 73 | -59.5 | HSA/Mud rotary, refusal | Indeterminate |
| 137-MW2C | 610918.50 | 682801.10 | 14.38 | 85 | -70.6 | HSA, refusal | Indeterminate |
| AE-2 | 611239.05 | 683932.09 | 15.063 | 63.3 | -48.2 | HSA, cored approximately 9 ft into bedrock | Igneous - Diabase |
| EF-37 | 610679.53 | 683445.78 | 12.93 | 16.5 | -3.6 | Geoprobe, refusal on observed weathered bedrock | Igneous - Diabase |

# Table 3-1
# Top of Bedrock Elevation
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

| Location | Easting (ft NAD83) | Northing (ft NAD83) | Ground Surface Elevation (ft NAVD88) | Depth to Bedrock (ft bgs) | Bedrock Elevation[2] (ft NAVD88) | Notes | Rock Type |
|---|---|---|---|---|---|---|---|
| GT-10A | 611023.04 | 683257.89 | 13.606 | 68 | -54.4 | HSA, refusal | Indeterminate |
| GT-14 | 610731.51 | 683345.66 | 11.327 | 34 | -22.7 | HSA/Mud rotary, drilled 11 ft into bedrock | Indeterminate |
| GT-15 | 610798.01 | 683454.83 | 11.156 | 50 | -38.8 | HSA, refusal with observed weathered bedrock | Indeterminate |
| GT-9C | 611129.51 | 683317.36 | 13.476 | 67 | -53.5 | HSA, refusal on weathered bedrock | Indeterminate |
| ICO-05 | 610279.35 | 682297.33 | 24.51 | 8.5 | 16.0 | Geoprobe, refusal | Igneous - Diabase |
| MW-4F | 611637.00 | 683326.50 | 12.88 | 77 | -64.1 | HSA/Mud rotary, refusal on bedrock | Indeterminate |
| MW-7F | 611837.52 | 682964.08 | 11.05 | 49 | -38.0 | HSA/Mud rotary, drilled 7 ft into bedrock then cored 5 ft into bedrock | Sedimentary |
| SB-23 | 611381.08 | 683099.76 | 15.05 | 88 | -73.0 | HSA/roller bit, drilled 3 ft into bedrock | Sedimentary |
| SB-24A | 611600.92 | 683591.80 | 12.75 | 80 | -67.3 | No boring log available. Data taken from Table 5-3 of PSEG 2007 RIR[1] | Indeterminate |
| SB-25 | 611476.89 | 682936.23 | 11.67 | 92.5 | -80.8 | HSA/roller bit, drilled 2.5 ft into bedrock | Sedimentary |
| SB-26 | 611718.13 | 683020.72 | 14.83 | 72 | -57.2 | HSA/roller bit, drilled 6 ft into bedrock | Sedimentary |
| SB-30 | 611570.48 | 682885.34 | 11.31 | 77 | -65.7 | HSA/mud rotary/roller bit, drilled 1 ft into bedrock | Sedimentary |
| SB-33 | 612010.49 | 683282.29 | 14.92 | 56.5 | -41.6 | HSA/mud rotary/roller bit, drilled 3 ft into bedrock | Sedimentary |
| SB-34 | 611847.36 | 683458.68 | 12.05 | 55 | -43.0 | HSA, refusal | Indeterminate |
| SB-57 | 611376.60 | 683257.40 | 12.18 | 73.5 | -61.3 | No boring log available. Data taken from Table 5-3 of PSEG 2007 RIR[1] | Indeterminate |
| SB-58 | 611677.40 | 683213.90 | 14.15 | 70 | -55.9 | No boring log available. Data taken from Table 5-3 of PSEG 2007 RIR[1] | Indeterminate |

**Notes:**

[1]PSEG, 2007. *Remedial Investigation Report - Former Halladay Street Gas Works* , Jersey City, New Jersey, December 2007.

[2]Blue shading denotes locations at which bedrock elevation is inferred based on refusal encountered during drilling.

bgs - below ground surface
ft - feet
HSA - Hollow stem auger
NAD83 - North American Datum of 1983
NAVD88 - North American Vertical Datum of 1988
PSEG - Public Service Electric and Gas Company
RIR - Remedial investigation report

**Table 3-2**
**Groundwater Elevations**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| Well ID | Easting (ft NAD83) | Northing (ft NAD83) | Well Type | Total Depth (ft) | Top of Inner Casing / Riser Elevation (ft NAVD88) | Measured Water Table Depth (ft) | Water Level Elevation (ft NAVD88) |
|---|---|---|---|---|---|---|---|
| 114MON33 | 611187.0 | 683570.3 | SHALLOW | 14.00 | 16.74 | 3.96 | 12.78 |
| 114-P1B-MW101S | 610775.8 | 683407.3 | SHALLOW | 15.10 | 13.30 | 2.34 | 10.96 |
| MW1C-3 | 611235.8 | 683937.3 | SHALLOW | 15.00 | 18.45 | 7.39 | 11.06 |
| MW-34 | 610794.7 | 683260.4 | SHALLOW | 18.00 | 15.65 | 4.99 | 10.66 |
| 10W-MW102S | 610516.5 | 682453.4 | SHALLOW | 17.00 | 15.11 | 6.53 | 8.58 |
| 114-MC-MW101S | 611054.3 | 683240.3 | SHALLOW | 15.00 | 14.17 | 2.94 | 11.23 |
| 114-MC-MW102S | 611155.1 | 683403.8 | SHALLOW | 17.00 | 14.65 | 4.22 | 10.43 |
| 114-MW14A | 611250.0 | 684019.5 | SHALLOW | 12.50 | 12.07 | 2.71 | 9.36 |
| 114-MW15A | 610888.5 | 683851.5 | SHALLOW | 6.00 | 13.05 | 2.62 | 10.43 |
| 114-MW20A | 611545.9 | 683012.2 | SHALLOW | 15.00 | 12.17 | 8.00 | 4.17 |
| 114-MW22A | 610687.8 | 683257.1 | SHALLOW | 19.00 | 11.90 | 4.08 | 7.82 |
| 114-MW24AR | 611670.0 | 683682.5 | SHALLOW | 14.00 | 11.36 | 3.58 | 7.78 |
| 114-MW25A | 611787.9 | 683588.8 | SHALLOW | 14.00 | 9.88 | 2.98 | 6.90 |
| 114-MW26A | 611900.8 | 683494.9 | SHALLOW | 15.00 | 14.20 | 6.79 | 7.41 |
| 114-MW27A | 611841.6 | 683638.6 | SHALLOW | 16.00 | 10.35 | 3.52 | 6.83 |
| 114-MW28A | 611972.7 | 683509.5 | SHALLOW | 14.00 | 15.30 | 6.89 | 8.41 |
| 114-MW2B1-2 | 611629.1 | 683807.6 | SHALLOW | 26.00 | 23.96 | 15.22 | 8.74 |
| 114-MW30A | 611950.1 | 683596.7 | SHALLOW | 14.00 | 9.90 | 1.33 | 8.57 |
| 114-MW36A | 611817.1 | 683551.8 | SHALLOW | 15.00 | 10.69 | 3.88 | 6.81 |
| 114-MW37A | 611912.7 | 683693.1 | SHALLOW | 15.00 | 10.87 | 4.20 | 6.67 |
| 114-MW38A | 611801.7 | 683760.3 | SHALLOW | 25.00 | 20.51 | 12.45 | 8.06 |
| 114-MW41A | 611376.3 | 683888.8 | SHALLOW | 15.00 | 18.24 | 8.20 | 10.04 |
| 114-MW42A | 610825.5 | 683625.8 | SHALLOW | 12.00 | 9.94 | 1.63 | 8.31 |
| 114-MW43A | 611056.7 | 683941.8 | SHALLOW | 12.00 | 11.38 | 1.14 | 10.24 |
| 114-MW44A | 611768.2 | 683634.4 | SHALLOW | 12.00 | 9.14 | 2.16 | 6.98 |
| 114-P1A-MW101S | 611028.5 | 683770.6 | SHALLOW | 15.00 | 14.33 | 4.18 | 10.15 |
| 114-P1B-MW103S | 610894.7 | 683233.7 | SHALLOW | 17.00 | 14.24 | 2.70 | 11.54 |
| 114-P1B-MW104S | 610918.1 | 683537.6 | SHALLOW | 14.00 | 13.93 | 2.43 | 11.50 |
| 114-P1C-MW101S | 611175.1 | 683916.7 | SHALLOW | 12.00 | 13.68 | 4.29 | 9.39 |
| 114-P1C-MW102S | 611067.2 | 683864.2 | SHALLOW | 14.00 | 14.91 | 5.43 | 9.48 |
| 114-P1C-MW104S | 611259.7 | 683908.9 | SHALLOW | 14.00 | 14.60 | 5.28 | 9.32 |
| 114-P2A-MW102S | 611697.4 | 683499.6 | SHALLOW | 20.00 | 13.70 | 4.09 | 9.61 |
| 114-P2A-MW103S | 611833.4 | 683389.7 | SHALLOW | 18.00 | 15.98 | 6.34 | 9.64 |
| 114-P2A-MW104S | 611588.5 | 683170.1 | SHALLOW | 20.00 | 12.83 | 3.51 | 9.32 |
| 114-P2B1-MW101S | 611427.8 | 683761.5 | SHALLOW | 13.00 | 15.01 | 4.84 | 10.17 |
| 114-P2B1-MW103S | 611290.4 | 683489.7 | SHALLOW | 13.00 | 12.99 | 2.45 | 10.54 |
| 114-P2B3-MW101S | 611356.2 | 683243.7 | SHALLOW | 16.00 | 13.93 | 3.44 | 10.49 |
| 114-P2B3-MW2 | 611161.2 | 682967.8 | SHALLOW | 17.00 | 11.97 | 1.31 | 10.66 |
| 114-P2B4-MW1 | 611284.7 | 682837.8 | SHALLOW | 17.00 | 10.50 | 0.00 | 10.50 |
| 114-P2B4-MW101S | 611266.9 | 683076.0 | SHALLOW | 18.00 | 13.48 | 4.76 | 8.72 |
| 114-P2B4-MW102S | 611283.9 | 682895.5 | SHALLOW | 16.00 | 13.44 | 3.11 | 10.33 |
| 114-P2B4-MW103S | 611496.7 | 683152.3 | SHALLOW | 16.00 | 15.30 | 4.84 | 10.46 |
| 114-P2B4-MW2 | 611324.7 | 682856.9 | SHALLOW | 17.00 | 10.75 | 0.59 | 10.16 |
| 132-P3A-MW103S | 610902.2 | 682953.6 | SHALLOW | 16.00 | 15.11 | 4.51 | 10.60 |
| 132-P3A-MW104S | 610760.0 | 682818.7 | SHALLOW | 16.00 | 14.80 | 3.43 | 11.37 |
| 132-P3A-MW2 | 610722.8 | 682915.9 | SHALLOW | 17.00 | 12.20 | 2.64 | 9.56 |
| 132-P3A-MW3 | 610668.2 | 682734.0 | SHALLOW | 18.00 | 13.01 | 4.35 | 8.66 |
| 132-P3A-MW4 | 610780.3 | 682676.9 | SHALLOW | 20.00 | 13.08 | 3.42 | 9.66 |
| 132-P3A-MW5 | 611000.6 | 683094.5 | SHALLOW | 17.00 | 12.45 | 2.70 | 9.75 |
| 133-MW6A | 610556.4 | 682210.1 | SHALLOW | 15.00 | 11.49 | 5.50 | 5.99 |
| 133-P3C-MW101S | 611157.8 | 682638.6 | SHALLOW | 14.00 | 12.16 | 2.59 | 9.57 |
| 133-P3C-MW102S | 610947.8 | 682441.5 | SHALLOW | 14.00 | 12.57 | 3.16 | 9.41 |
| 135-MW1AR | 610954.3 | 682134.3 | SHALLOW | 15.00 | 9.71 | 1.70 | 8.01 |
| 135-MW2A | 611409.2 | 682561.8 | SHALLOW | 16.50 | 8.74 | 0.77 | 7.97 |
| 135-P3C-MW101S | 611270.5 | 682599.1 | SHALLOW | 12.00 | 10.97 | 1.64 | 9.33 |
| 135-P3C-MW102S | 611120.7 | 682311.9 | SHALLOW | 15.00 | 10.99 | 2.81 | 8.18 |
| 137-P3B-MW1 | 611176.6 | 682893.6 | SHALLOW | 15.00 | 11.31 | 1.04 | 10.27 |
| 137-P3B-MW101S | 611109.9 | 682945.1 | SHALLOW | 16.00 | 14.61 | 4.14 | 10.47 |
| 137-P3B-MW102S | 610941.1 | 682662.1 | SHALLOW | 17.00 | 14.16 | 5.46 | 8.70 |
| 186-MW01 | 611231.8 | 684198.7 | SHALLOW | 15.00 | 18.37 | 9.54 | 8.83 |
| 186-MW02R | 611305.0 | 684165.2 | SHALLOW | 15.00 | 13.10 | 4.38 | 8.72 |
| FS-MW101S | 611769.0 | 683524.7 | SHALLOW | 9.00 | 10.83 | 2.30 | 8.53 |
| HSS-P3C-MW1S | 611265.2 | 682785.5 | SHALLOW | 17.00 | 11.97 | 2.46 | 9.51 |
| HSS-P3C-MW2S | 610994.0 | 682542.7 | SHALLOW | 14.00 | 12.37 | 2.87 | 9.50 |
| MW10S | 612063.0 | 683218.3 | SHALLOW | 15.00 | 13.79 | 5.96 | 7.83 |
| MW1C-4 | 611329.7 | 683908.4 | SHALLOW | 15.00 | 17.58 | 7.97 | 9.61 |
| MW-31A | 611088.6 | 683596.6 | SHALLOW | 16.00 | 15.72 | 3.30 | 12.42 |
| MW-35 | 610947.9 | 683183.3 | SHALLOW | 18.00 | 15.62 | 5.06 | 10.56 |
| MW7S | 611824.6 | 682961.0 | SHALLOW | 12.00 | 10.29 | 4.66 | 5.63 |
| MW8S | 611487.5 | 682643.0 | SHALLOW | 12.00 | 8.39 | 5.14 | 3.25 |
| MW-CR-2 | 611422.0 | 683982.0 | SHALLOW | 23.00 | 17.78 | 7.05 | 10.73 |
| MW-CR-3 | 611447.0 | 683975.0 | SHALLOW | 23.00 | 17.82 | 5.94 | 11.88 |
| MW-CR-4 | 611485.0 | 683962.0 | SHALLOW | 19.00 | 17.73 | 5.32 | 12.41 |
| MW-CR-5 | 611521.0 | 684115.0 | SHALLOW | 18.00 | 16.55 | 4.00 | 12.55 |
| MW-CR-6 | 611670.0 | 684406.0 | SHALLOW | 20.00 | 17.04 | 4.93 | 12.11 |
| MW-MORRIS1A | 611286.4 | 683664.0 | SHALLOW | 20.00 | 14.43 | 2.00 | 12.43 |
| 114-P1A-MW101I | 611036.1 | 683779.1 | INTERMEDIATE | 35.00 | 14.40 | 6.03 | 8.37 |
| 114-P1B-MW102I | 611027.7 | 683334.0 | INTERMEDIATE | 34.00 | 12.63 | 4.73 | 7.90 |
| 114-P1C-EW1 | 611297.4 | 683885.0 | INTERMEDIATE | 39.00 | 13.08 | 1.30 | 11.78 |
| 114-P2A-MW103I | 611823.6 | 683382.7 | INTERMEDIATE | 42.00 | 15.41 | 6.12 | 9.29 |

**Table 3-2**
**Groundwater Elevations**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

AECOM

| Well ID | Easting (ft NAD83) | Northing (ft NAD83) | Well Type | Total Depth (ft) | Top of Inner Casing / Riser Elevation (ft NAVD88) | Measured Water Table Depth (ft) | Water Level Elevation (ft NAVD88) |
|---|---|---|---|---|---|---|---|
| 10W-MW105I | 610626.9 | 682304.3 | INTERMEDIATE | 40.00 | 10.92 | 3.34 | 7.58 |
| 114-MC-PZ103 | 611276.6 | 683655.5 | INTERMEDIATE | 42.00 | 11.98 | 3.97 | 8.01 |
| 114-MC-PZ203 | 611253.7 | 683620.0 | INTERMEDIATE | 42.00 | 14.01 | 5.58 | 8.43 |
| 114-MW17B | 611688.5 | 683902.0 | INTERMEDIATE | 30.00 | 13.25 | 5.90 | 7.35 |
| 114-MW19B | 611259.9 | 682735.0 | INTERMEDIATE | 50.00 | 12.66 | 5.28 | 7.38 |
| 114-MW20B | 611548.0 | 683014.2 | INTERMEDIATE | 40.00 | 12.16 | 5.07 | 7.09 |
| 114-MW22B | 610693.5 | 683254.9 | INTERMEDIATE | 33.00 | 12.23 | 5.34 | 6.89 |
| 114-MW24B | 611662.3 | 683681.7 | INTERMEDIATE | 35.00 | 11.56 | 4.50 | 7.06 |
| 114-MW25B | 611795.8 | 683596.0 | INTERMEDIATE | 35.00 | 10.08 | 3.12 | 6.96 |
| 114-MW26B | 611844.2 | 683496.2 | INTERMEDIATE | 38.00 | 11.32 | 4.04 | 7.28 |
| 114-MW27B | 611835.7 | 683631.9 | INTERMEDIATE | 35.00 | 10.20 | 4.04 | 6.16 |
| 114-MW2B1-2I | 611639.0 | 683809.0 | INTERMEDIATE | 38.00 | 23.95 | 16.66 | 7.29 |
| 114-MW36B | 611795.9 | 683573.2 | INTERMEDIATE | 35.00 | 9.93 | 2.88 | 7.05 |
| 114-MW37B | 611917.3 | 683689.1 | INTERMEDIATE | 35.00 | 10.79 | 4.20 | 6.59 |
| 114-MW38B | 611806.7 | 683758.7 | INTERMEDIATE | 42.00 | 20.55 | 14.00 | 6.55 |
| 114-MW39B | 611588.9 | 682516.4 | INTERMEDIATE | 45.00 | 10.64 | 3.99 | 6.65 |
| 114-MW40B | 611701.6 | 682734.9 | INTERMEDIATE | 43.00 | 10.29 | 3.94 | 6.35 |
| 114-MW41B | 611366.9 | 683891.9 | INTERMEDIATE | 27.00 | 17.67 | 10.19 | 7.48 |
| 114-P1B-MW101I | 610792.0 | 683434.4 | INTERMEDIATE | 33.00 | 14.13 | 6.08 | 8.05 |
| 114-P1C-MW101I | 611171.1 | 683905.2 | INTERMEDIATE | 35.00 | 13.31 | 4.76 | 8.55 |
| 114-P1C-PZ1 | 611322.2 | 683895.7 | INTERMEDIATE | 36.00 | 16.18 | 7.41 | 8.77 |
| 114-P1C-PZ2 | 611286.0 | 683878.2 | INTERMEDIATE | 30.00 | 13.24 | 4.43 | 8.81 |
| 114-P1-MW-2I | 610974.0 | 683574.0 | INTERMEDIATE | 39.32 | 16.23 | 8.45 | 7.78 |
| 114-P2A-MW101I | 611562.6 | 683373.3 | INTERMEDIATE | 41.00 | 12.71 | 3.04 | 9.67 |
| 114-P2A-MW102I | 611686.2 | 683489.7 | INTERMEDIATE | 37.50 | 13.12 | 3.75 | 9.37 |
| 114-P2A-MW104I | 611579.1 | 683175.0 | INTERMEDIATE | 40.00 | 14.10 | 4.50 | 9.60 |
| 114-P2B1-MW101I | 611441.8 | 683756.1 | INTERMEDIATE | 40.00 | 13.95 | 5.83 | 8.12 |
| 114-P2B2-MW101I | 611630.1 | 683631.6 | INTERMEDIATE | 39.00 | 10.55 | 2.41 | 8.14 |
| 114-P2B3-MW101I | 611359.0 | 683256.6 | INTERMEDIATE | 35.00 | 12.93 | 4.40 | 8.53 |
| 114-P2B4-MW102I | 611299.5 | 682875.0 | INTERMEDIATE | 36.00 | 11.86 | 3.54 | 8.32 |
| 114-P2B4-MW103I | 611508.4 | 683137.7 | INTERMEDIATE | 34.00 | 13.05 | 4.44 | 8.61 |
| 132-P3A-MW102I | 610581.0 | 682952.2 | INTERMEDIATE | 28.00 | 15.81 | 9.48 | 6.33 |
| 132-P3A-MW103I | 610888.4 | 682958.1 | INTERMEDIATE | 44.00 | 13.21 | 5.74 | 7.47 |
| 132-P3A-MW104I | 610775.9 | 682812.8 | INTERMEDIATE | 48.00 | 12.88 | 5.25 | 7.63 |
| 132-P3A-MW105I | 610676.8 | 682695.3 | INTERMEDIATE | 42.00 | 14.10 | 6.74 | 7.36 |
| 133-P3C-MW101I | 611148.2 | 682630.9 | INTERMEDIATE | 42.00 | 12.02 | 4.79 | 7.23 |
| 133-P3C-MW102I | 610958.2 | 682452.2 | INTERMEDIATE | 46.00 | 12.18 | 4.78 | 7.40 |
| 135-MW1B | 610948.1 | 682129.6 | INTERMEDIATE | 34.00 | 9.64 | 2.41 | 7.23 |
| 135-MW2B | 611415.9 | 682568.1 | INTERMEDIATE | 33.00 | 8.65 | 1.62 | 7.03 |
| 135-MW3BR | 611114.8 | 682301.5 | INTERMEDIATE | 33.00 | 10.94 | 3.62 | 7.32 |
| 137-P3B-MW101I* | 611100.5 | 682952.0 | INTERMEDIATE | 45.00 | 13.00 | 5.61 | 7.39 |
| 137-P3B-MW102I | 610954.2 | 682651.6 | INTERMEDIATE | 49.00 | 12.94 | 4.16 | 8.78 |
| 143-P3A-MW101I | 610728.7 | 683206.9 | INTERMEDIATE | 30.00 | 12.93 | 5.32 | 7.61 |
| MW7D | 611819.5 | 682963.4 | INTERMEDIATE | 48.00 | 10.87 | 4.19 | 6.68 |
| MW8D | 611495.2 | 682650.1 | INTERMEDIATE | 49.00 | 8.52 | 1.43 | 7.09 |
| 114-MW19C | 611263.3 | 682737.3 | DEEP | 101.20 | 12.53 | 5.03 | 7.50 |
| 114-MW20C | 611555.6 | 683020.2 | DEEP | 83.00 | 12.07 | 4.26 | 7.81 |
| 114-MW25C | 611795.8 | 683600.4 | DEEP | 47.00 | 9.77 | 2.26 | 7.51 |
| 114-P1B-MW103D | 610887.2 | 683237.0 | DEEP | 56.00 | 16.73 | 8.77 | 7.96 |
| 114-P1-IRM-27D | 611197.0 | 683345.0 | DEEP | 53.00 | 13.26 | 6.11 | 7.15 |
| 132-P3A-MW104D-1 | 610794.3 | 682807.3 | DEEP | 55.00 | 14.89 | 7.50 | 7.39 |
| 132-P3A-MW104D-2 | 610794.3 | 682807.3 | DEEP | 72.00 | 14.89 | 7.20 | 7.69 |
| 133-MW1C | 610670.8 | 682283.1 | DEEP | 77.00 | 11.50 | 3.64 | 7.86 |
| 135-MW1C | 610951.3 | 682131.1 | DEEP | 103.00 | 9.34 | 1.41 | 7.93 |
| 137-MW1C | 611036.7 | 683020.3 | DEEP | 73.00 | 13.15 | 5.12 | 8.03 |
| 137-MW2C | 610918.5 | 682801.1 | DEEP | 83.00 | 13.87 | 6.14 | 7.73 |
| MW6C | 611301.5 | 683686.7 | DEEP | 65.00 | 12.90 | 5.28 | 7.62 |
| MW8F | 611479.9 | 682647.6 | DEEP | 84.00 | 8.89 | 2.45 | 6.44 |
| MW-CR-3D | 611443.5 | 683987.8 | DEEP | 46.00 | 14.88 | 6.97 | 7.91 |
| 114-MW4D | 610821.8 | 683258.9 | BEDROCK | 107.00 | 12.97 | 5.42 | 7.55 |
| 114-MW6D | 611298.4 | 683683.3 | BEDROCK | 111.00 | 12.69 | 3.38 | 9.31 |
| 114-MW7D | 611189.2 | 683329.1 | BEDROCK | 90.00 | 11.92 | 1.44 | 10.48 |

**Notes:**

1. Accessible monitoring wells across the Project Area were gauged between May 29 and June 1, 2018.

2. Monitoring wells 114-MW37A, 114-MW37B, 114-MW38A, and 114-MW38B were gauged on June 11, 2018. These wells were previously inaccessible.

3. Water level measurements were taken from the top of the inner well casing, or from the top of the temporary PVC riser put in place to protect these wells from damage during restoration. Refer to **Appendix J.1** for recent survey data of existing wells.

* - Intermediate well 137-P3B-MW101I contained DNAPL; depth to product was measured on April 27, 2018 as 44.1 ft below the top of inner casing.

DNAPL - dense non-aqueous phase liquid

ft - feet

NAVD88 - North American Vertical Datum of 1988

NAD83 - North American Datum of 1983

PVC - polyvinyl chloride

# Table 3-3
## Summary of Vertical Hydraulic Gradients
## Groundwater Remedial Investigation Report
## Garfield Avenue Group of Sites
## PPG, Jersey City, New Jersey

AECOM

| Well ID | Measurement Date | Screened Zone | Screen Reference | Top of Screen (feet below reference) | Bottom of Screen (feet below reference) | Top of Screen Elevation (feet) | Bottom of Screen Elevation (feet) | Screen Midpoint Elevation (feet) | Original Top of Casing Elevation[1] (feet) | Water Level Reference Point | Water Level Reference Point Elevation[2] (Riser or Inner Casing) (feet) | Groundwater Levels (May 31 - June 11, 2018) DTW (feet btc) | Groundwater Levels (May 31 - June 11, 2018) Groundwater Elevation (feet) | Is Screen Saturated? | Saturated Screen Midpoint Elevation (feet) | Distance Between Saturated Screen Midpoints (feet) | Vertical Hydraulic Gradient[3] | Vertical Groundwater Flow Direction |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-MORRIS1A | 2018-05-29 | S | Top of Casing | 10 | 20 | 1.81 | -8.19 | -3.19 | 11.81 | PVC Riser | 14.43 | 2.00 | 12.43 | Y | -3.19 | 21.37 | -0.2068 | S to I |
| 114-MC-PZ103 | 2018-05-29 | I | Top of Casing | 37 | 42 | -22.06 | -27.06 | -24.56 | 14.94 | PVC Riser | 11.98 | 3.97 | 8.01 | Y | -24.56 | 22.51 | -0.0173 | I to D |
| MW6C | 2018-05-29 | D | Top of Casing | 55 | 65 | -42.07 | -52.07 | -47.07 | 12.93 | Top of Casing | 12.90 | 5.28 | 7.62 | Y | -47.07 | 38.78 | 0.0436 | BR to D |
| 114-MW6D | 2018-05-29 | BR | Top of Casing | 86 | 111 | -73.35 | -98.35 | -85.85 | 12.65 | Top of Casing | 12.69 | 3.38 | 9.31 | Y | -85.85 | - | - | - |
| 114-P1A-MW101S | 2018-05-29 | S | Top of Casing | 5 | 15 | 9.33 | -0.67 | 4.33 | 14.33 | Top of Casing | 14.33 | 4.18 | 10.15 | Y | 4.33 | 19.93 | -0.0893 | S to I |
| 114-P1A-MW101I | 2018-05-29 | I | Top of Casing | 25 | 35 | -10.60 | -20.60 | -15.60 | 14.40 | Top of Casing | 14.40 | 6.03 | 8.37 | Y | -15.60 | - | - | - |
| 114-P1C-MW101S | 2018-05-29 | S | Top of Casing | 2 | 12 | 11.66 | 1.66 | 6.66 | 13.66 | Top of Casing | 13.68 | 4.29 | 9.39 | N | 5.53 | 24.72 | -0.0340 | S to I |
| 114-P1C-MW101I | 2018-05-29 | I | Top of Casing | 30 | 35 | -16.69 | -21.69 | -19.19 | 13.31 | Top of Casing | 13.31 | 4.76 | 8.55 | Y | -19.19 | - | - | - |
| 114-P1B-MW101S | 2018-05-29 | S | Top of Casing | 4 | 14 | 11.38 | 1.38 | 6.38 | 15.38 | Top of Casing | 13.30 | 2.34 | 10.96 | N | 6.17 | 17.86 | -0.1629 | S to I |
| 114-P1B-MW101I | 2018-05-29 | I | Top of Casing | 23 | 33 | -6.69 | -16.69 | -11.69 | 16.31 | Top of Casing | 14.13 | 6.08 | 8.05 | Y | -11.69 | - | - | - |
| 114-P2B1-MW101S | 2018-05-29 | S | Top of Casing | 3 | 13 | 11.99 | 1.99 | 6.99 | 14.99 | Top of Casing | 15.01 | 4.84 | 10.17 | N | 6.08 | 27.15 | -0.0755 | S to I |
| 114-P2B1-MW101I | 2018-05-29 | I | Top of Casing | 30 | 40 | -16.07 | -26.07 | -21.07 | 13.93 | Top of Casing | 13.95 | 5.83 | 8.12 | Y | -21.07 | - | - | - |
| 114-P1-IRM-27D | 2018-05-29 | D | Top of Casing | 33 | 53 | -19.74 | -39.74 | -29.74 | 13.26 | Top of Casing | 13.26 | 6.11 | 7.15 | Y | -29.74 | 45.34 | 0.0734 | BR to D |
| 114-MW7D | 2018-06-01 | BR | Top of Casing | 85 | 90 | -72.58 | -77.58 | -75.08 | 12.42 | Top of Casing | 11.92 | 1.44 | 10.48 | Y | -75.08 | - | - | - |
| 114-P2B3-MW101S | 2018-05-29 | S | Top of Casing | 6 | 16 | 7.89 | -2.11 | 2.89 | 13.89 | Top of Casing | 13.93 | 3.44 | 10.49 | Y | 2.89 | 19.99 | -0.0980 | S to I |
| 114-P2B3-MW101I | 2018-05-29 | I | Top of Casing | 25 | 35 | -12.10 | -22.10 | -17.10 | 12.90 | Top of Casing | 12.93 | 4.40 | 8.53 | Y | -17.10 | - | - | - |
| 114-P2B4-MW102S | 2018-05-29 | S | Top of Casing | 6 | 16 | 6.49 | -3.51 | 1.49 | 12.49 | PVC Riser | 13.44 | 3.11 | 10.33 | Y | 1.49 | 20.63 | -0.0974 | S to I |
| 114-P2B4-MW102I | 2018-05-29 | I | Top of Casing | 26 | 36 | -14.14 | -24.14 | -19.14 | 11.86 | Top of Casing | 11.86 | 3.54 | 8.32 | Y | -19.14 | - | - | - |
| 114-P2B4-MW103S | 2018-05-29 | S | Top of Casing | 6 | 16 | 9.26 | -0.74 | 4.26 | 15.26 | Top of Casing | 15.30 | 4.84 | 10.46 | Y | 4.26 | 20.23 | -0.0914 | S to I |
| 114-P2B4-MW103I | 2018-05-29 | I | Top of Casing | 24 | 34 | -10.97 | -20.97 | -15.97 | 13.03 | Top of Casing | 13.05 | 4.44 | 8.61 | Y | -15.97 | - | - | - |
| 114-P2A-MW102S | 2018-05-29 | S | Top of Casing | 10 | 20 | 3.68 | -6.32 | -1.32 | 13.68 | Top of Casing | 13.70 | 4.09 | 9.61 | Y | -1.32 | 18.07 | -0.0133 | S to I |
| 114-P2A-MW102I | 2018-05-29 | I | Top of Casing | 27.5 | 37.5 | -14.39 | -24.39 | -19.39 | 13.11 | Top of Casing | 13.12 | 3.75 | 9.37 | Y | -19.39 | - | - | - |
| 114-P2A-MW103S | 2018-05-29 | S | Top of Casing | 8 | 18 | 7.92 | -2.08 | 2.92 | 15.92 | Top of Casing | 15.98 | 6.34 | 9.64 | Y | 2.92 | 24.53 | -0.0143 | S to I |
| 114-P2A-MW103I | 2018-05-29 | I | Top of Casing | 32 | 42 | -16.61 | -26.61 | -21.61 | 15.39 | Top of Casing | 15.41 | 6.12 | 9.29 | Y | -21.61 | - | - | - |
| 114-P2A-MW104S | 2018-05-29 | S | Top of Casing | 10 | 20 | 2.84 | -7.16 | -2.16 | 12.84 | Top of Casing | 12.83 | 3.51 | 9.32 | Y | -2.16 | 18.74 | 0.0149 | I to S |
| 114-P2A-MW104I | 2018-05-29 | I | Top of Casing | 30 | 40 | -15.90 | -25.90 | -20.90 | 14.10 | Top of Casing | 14.10 | 4.50 | 9.60 | Y | -20.90 | - | - | - |
| 132-P3A-MW103S | 2018-05-29 | S | Top of Casing | 6 | 16 | 9.11 | -0.89 | 4.11 | 15.11 | Top of Casing | 15.11 | 4.51 | 10.60 | Y | 4.11 | 29.91 | -0.1046 | S to I |
| 132-P3A-MW103I | 2018-05-29 | I | Top of Casing | 34 | 44 | -20.80 | -30.80 | -25.80 | 13.20 | Top of Casing | 13.21 | 5.74 | 7.47 | Y | -25.80 | - | - | - |
| 132-P3A-MW104S | 2018-05-29 | S | Top of Casing | 6 | 16 | 8.80 | -1.20 | 3.80 | 14.80 | Top of Casing | 14.80 | 3.43 | 11.37 | Y | 3.80 | 33.92 | -0.1103 | S to I |
| 132-P3A-MW104I | 2018-05-29 | I | Top of Casing | 38 | 48 | -25.12 | -35.12 | -30.12 | 12.88 | Top of Casing | 12.88 | 5.25 | 7.63 | Y | -30.12 | 24.49 | 0.0024 | D to I |
| 132-P3A-MW104D-2 | 2018-05-29 | D | Top of Casing | 67 | 72 | -52.11 | -57.11 | -54.61 | 14.89 | Top of Casing | 14.89 | 7.20 | 7.69 | Y | -54.61 | - | - | - |
| 137-P3B-MW101S | 2018-05-29 | S | Top of Casing | 6 | 16 | 8.65 | -1.35 | 3.65 | 14.65 | Top of Casing | 14.61 | 4.14 | 10.47 | Y | 3.65 | 30.65 | -0.1005 | S to I |
| 137-P3B-MW101I | 2018-05-29 | I | Top of Casing | 35 | 45 | -22.00 | -32.00 | -27.00 | 13.00 | Top of Casing | 13.00 | 5.61 | 7.39 | Y | -27.00 | - | - | - |
| 137-P3B-MW102S | 2018-05-29 | S | Top of Casing | 7 | 17 | 7.16 | -2.84 | 2.16 | 14.16 | Top of Casing | 14.16 | 5.46 | 8.70 | Y | 2.16 | 33.23 | 0.0024 | I to S |
| 137-P3B-MW102I | 2018-05-29 | I | Top of Casing | 39 | 49 | -26.07 | -36.07 | -31.07 | 12.93 | Top of Casing | 12.94 | 4.16 | 8.78 | Y | -31.07 | - | - | - |
| 133-P3C-MW101S | 2018-05-29 | S | Top of Casing | 4 | 14 | 8.26 | -1.74 | 3.26 | 12.26 | PVC Riser | 12.16 | 2.59 | 9.57 | Y | 3.26 | 28.16 | -0.0831 | S to I |
| 133-P3C-MW101I | 2018-05-29 | I | Top of Casing | 32 | 42 | -19.90 | -29.90 | -24.90 | 12.10 | PVC Riser | 12.02 | 4.79 | 7.23 | Y | -24.90 | - | - | - |
| 133-P3C-MW102S | 2018-05-29 | S | Top of Casing | 4 | 14 | 8.66 | -1.34 | 3.66 | 12.66 | PVC Riser | 12.57 | 3.16 | 9.41 | Y | 3.66 | 32.39 | -0.0621 | S to I |
| 133-P3C-MW102I | 2018-05-29 | I | Top of Casing | 36 | 46 | -23.73 | -33.73 | -28.73 | 12.27 | PVC Riser | 12.18 | 4.78 | 7.40 | Y | -28.73 | - | - | - |
| 135-MW1AR | 2018-05-29 | S | Top of Casing | 10 | 15 | -0.29 | -5.29 | -2.79 | 9.71 | Top of Casing | 9.71 | 1.70 | 8.01 | Y | -2.79 | 19.07 | -0.0409 | S to I |
| 135-MW1B | 2018-05-29 | I | Top of Casing | 29 | 34 | -19.36 | -24.36 | -21.86 | 9.64 | Top of Casing | 9.64 | 2.41 | 7.23 | Y | -21.86 | 69.30 | 0.0101 | D to I |
| 135-MW1C | 2018-05-29 | D | Top of Casing | 98 | 103 | -88.66 | -93.66 | -91.16 | 9.34 | Top of Casing | 9.34 | 1.41 | 7.93 | Y | -91.16 | - | - | - |
| 135-MW2A | 2018-05-29 | S | Top of Casing | 3 | 16.5 | 5.74 | -7.76 | -1.01 | 8.74 | Top of Casing | 8.74 | 0.77 | 7.97 | Y | -1.01 | 20.84 | -0.0451 | S to I |
| 135-MW2B | 2018-05-29 | I | Top of Casing | 28 | 33 | -19.35 | -24.35 | -21.85 | 8.65 | Top of Casing | 8.65 | 1.62 | 7.03 | Y | -21.85 | - | - | - |
| 135-P3C-MW102S | 2018-05-29 | S | Top of Casing | 10 | 15 | 0.99 | -4.01 | -1.51 | 10.99 | Top of Casing | 10.99 | 2.81 | 8.18 | Y | -1.51 | 18.05 | -0.0476 | S to I |
| 135-MW3BR | 2018-05-29 | I | Top of Casing | 28 | 33 | -17.06 | -22.06 | -19.56 | 10.94 | Top of Casing | 10.94 | 3.62 | 7.32 | Y | -19.56 | - | - | - |
| MW8S | 2018-05-29 | S | Top of Casing | 7 | 12 | 1.39 | -3.61 | -1.11 | 8.39 | Top of Casing | 8.39 | 5.14 | 3.25 | Y | -1.11 | 34.37 | 0.1117 | I to S |
| MW8D | 2018-05-29 | I | Top of Casing | 39 | 49 | -30.48 | -40.48 | -35.48 | 8.52 | Top of Casing | 8.52 | 1.43 | 7.09 | Y | -35.48 | 36.13 | -0.0180 | I to D |
| MW8F | 2018-05-29 | D | Top of Casing | 78 | 83 | -69.11 | -74.11 | -71.61 | 8.89 | Top of Casing | 8.89 | 2.45 | 6.44 | Y | -71.61 | - | - | - |
| 114-MW20A | 2018-05-29 | S | Top of Casing | 3 | 15 | 9.17 | -2.83 | 3.17 | 12.17 | Top of Casing | 12.17 | 8.00 | 4.17 | N | 0.67 | 26.01 | 0.1123 | I to S |
| 114-MW20B | 2018-05-29 | I | Top of Casing | 35 | 40 | -22.84 | -27.84 | -25.34 | 12.16 | Top of Casing | 12.16 | 5.07 | 7.09 | Y | -25.34 | 43.09 | 0.0167 | D to I |
| 114-MW20C | 2018-05-29 | D | Top of Casing | 78 | 83 | -65.93 | -70.93 | -68.43 | 12.07 | Top of Casing | 12.07 | 4.26 | 7.81 | Y | -68.43 | - | - | - |
| MW7S | 2018-05-29 | S | Top of Casing | 2 | 12 | 8.29 | -1.71 | 3.29 | 10.29 | Top of Casing | 10.29 | 4.66 | 5.63 | N | 1.96 | 34.09 | 0.0308 | I to S |
| MW7D | 2018-05-29 | I | Top of Casing | 38 | 48 | -27.13 | -37.13 | -32.13 | 10.87 | Top of Casing | 10.87 | 4.19 | 6.68 | Y | -32.13 | - | - | - |

# Table 3-3
## Summary of Vertical Hydraulic Gradients
## Groundwater Remedial Investigation Report
## Garfield Avenue Group of Sites
## PPG, Jersey City, New Jersey

AECOM

| Well ID | Measurement Date | Screened Zone | Screen Reference | Top of Screen (feet below reference) | Bottom of Screen (feet below reference) | Top of Screen Elevation (feet) | Bottom of Screen Elevation (feet) | Screen Midpoint Elevation (feet) | Original Top of Casing Elevation[1] (feet) | Water Level Reference Point | Water Level Reference Point Elevation[2] (Riser or Inner Casing) (feet) | Groundwater Levels (May 31 - June 11, 2018) DTW (feet btc) | Groundwater Levels (May 31 - June 11, 2018) Groundwater Elevation (feet) | Is Screen Saturated? | Saturated Screen Midpoint Elevation (feet) | Distance Between Saturated Screen Midpoints (feet) | Vertical Hydraulic Gradient[3] | Vertical Groundwater Flow Direction |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 114-MW22A | 2018-05-29 | S | Top of Casing | 7 | 19 | 4.83 | -7.17 | -1.17 | 11.83 | Top of Casing | 11.90 | 4.08 | 7.82 | Y | -1.17 | 17.11 | -0.0544 | S to I |
| 114-MW22B | 2018-05-29 | I | Top of Casing | 28 | 33 | -15.78 | -20.78 | -18.28 | 12.22 | Top of Casing | 12.23 | 5.34 | 6.89 | Y | -18.28 | - | - | - |
| 114-MW41A | 2018-06-01 | S | Top of Casing | 10 | 15 | 8.24 | 3.24 | 5.74 | 18.24 | Top of Casing | 18.24 | 8.20 | 10.04 | Y | 5.74 | 12.57 | -0.2037 | S to I |
| 114-MW41B | 2018-06-01 | I | Top of Casing | 22 | 27 | -4.33 | -9.33 | -6.83 | 17.67 | Top of Casing | 17.67 | 10.19 | 7.48 | Y | -6.83 | - | - | - |
| 114-MW2B1-2 | 2018-05-29 | S | Top of Casing | 16 | 26 | 7.96 | -2.04 | 2.96 | 23.96 | Top of Casing | 23.96 | 15.22 | 8.74 | Y | 2.96 | 14.51 | -0.0999 | S to I |
| 114-MW2B1-2I | 2018-05-29 | I | Top of Casing | 33 | 38 | -9.05 | -14.05 | -11.55 | 23.95 | Top of Casing | 23.95 | 16.66 | 7.29 | Y | -11.55 | - | - | - |
| 114-MW37A | 2018-06-11 | S | Top of Casing | 10 | 15 | 0.87 | -4.13 | -1.63 | 10.87 | Top of Casing | 10.87 | 4.20 | 6.67 | Y | -1.63 | 20.08 | -0.0040 | S to I |
| 114-MW37B | 2018-06-11 | I | Top of Casing | 30 | 35 | -19.21 | -24.21 | -21.71 | 10.79 | Top of Casing | 10.79 | 4.20 | 6.59 | Y | -21.71 | - | - | - |
| 114-MW38A | 2018-06-11 | S | Top of Casing | 20 | 25 | 0.51 | -4.49 | -1.99 | 20.51 | Top of Casing | 20.51 | 12.45 | 8.06 | Y | -1.99 | 16.96 | -0.0890 | S to I |
| 114-MW38B | 2018-06-11 | I | Top of Casing | 37 | 42 | -16.45 | -21.45 | -18.95 | 20.55 | Top of Casing | 20.55 | 14.00 | 6.55 | Y | -18.95 | - | - | - |
| 114-MW36A | 2018-05-29 | S | Top of Casing | 10 | 15 | 0.69 | -4.31 | -1.81 | 10.69 | Top of Casing | 10.69 | 3.88 | 6.81 | Y | -1.81 | 20.76 | 0.0116 | I to S |
| 114-MW36B | 2018-05-29 | I | Top of Casing | 30 | 35 | -20.07 | -25.07 | -22.57 | 9.93 | Top of Casing | 9.93 | 2.88 | 7.05 | Y | -22.57 | - | - | - |
| 114-MW25A | 2018-05-29 | S | Top of Casing | 9 | 14 | 0.88 | -4.12 | -1.62 | 9.88 | Top of Casing | 9.88 | 2.98 | 6.90 | Y | -1.62 | 20.80 | 0.0029 | I to S |
| 114-MW25B | 2018-05-29 | I | Top of Casing | 30 | 35 | -19.92 | -24.92 | -22.42 | 10.08 | Top of Casing | 10.08 | 3.12 | 6.96 | Y | -22.42 | 12.31 | 0.0447 | D to I |
| 114-MW25C | 2018-05-29 | D | Top of Casing | 42 | 47 | -32.23 | -37.23 | -34.73 | 9.77 | Top of Casing | 9.77 | 2.26 | 7.51 | Y | -34.73 | - | - | - |
| 114-MW24AR | 2018-05-29 | S | Top of Casing | 9 | 14 | 2.36 | -2.64 | -0.14 | 11.36 | Top of Casing | 11.36 | 3.58 | 7.78 | Y | -0.14 | 20.95 | -0.0344 | S to I |
| 114-MW24B | 2018-05-29 | I | Top of Casing | 30 | 35 | -18.59 | -23.59 | -21.09 | 11.41 | Top of Casing | 11.56 | 4.50 | 7.06 | Y | -21.09 | - | - | - |
| 114-MW27A | 2018-05-29 | S | Top of Casing | 11 | 16 | -0.65 | -5.65 | -3.15 | 10.35 | Top of Casing | 10.35 | 3.52 | 6.83 | Y | -3.15 | 19.15 | -0.0350 | S to I |
| 114-MW27B | 2018-05-29 | I | Top of Casing | 30 | 35 | -19.80 | -24.80 | -22.30 | 10.20 | Top of Casing | 10.20 | 4.04 | 6.16 | Y | -22.30 | - | - | - |
| 114-MW19B | 2018-05-29 | I | Top of Casing | 45 | 50 | -32.38 | -37.38 | -34.88 | 12.62 | PVC Riser | 12.66 | 5.28 | 7.38 | Y | -34.88 | 51.09 | 0.0023 | D to I |
| 114-MW19C | 2018-05-29 | D | Top of Casing | 96 | 101 | -83.47 | -88.47 | -85.97 | 12.53 | PVC Riser | 12.53 | 5.03 | 7.50 | Y | -85.97 | - | - | - |

**Notes:**

[1]Original Top of Casing Elevation at well completion; casing may have been subsequently modified due to site activities.

[2]Reference elevation at time of water level gauging.

[3]Negative value indicates downward vertical groundwater flow direction.

Vertical Elevation Datum = feet in the North American Vertical Datum of 1988 (NAVD88).

- = Not Applicable

BR = Bedrock water-bearing zone

btc = Below top of casing

D = Deep water-bearing zone

DTW = Depth to Groundwater

I = Intermediate water-bearing zone

N = No

PVC = polyvinyl chloride

S = Shallow water-bearing zone

Y = Yes

# Table 3-4
# Groundwater Elevation Data - August 2020 and February 2021
# Groundwater Remedial Investigation Report
# Garfield Avenue Group Sites
# PPG, Jersey City, New Jersey

AECOM

| Well ID | Screened Zone | Screen Reference | Top of Screen (feet below reference) | Bottom of Screen (feet below reference) | Top of Screen Elevation (feet) | Bottom of Screen Elevation (feet) | Screen Midpoint Elevation (feet) | Screen Reference Elevation (feet) | Water Level Reference Point | Water Level Reference Point Elevation[1] (Riser or Inner Casing) (feet) | Groundwater Gauging Data | | Is Screen Saturated? | Saturated Screen Midpoint Elevation (feet) | Distance Between Saturated Screen Midpoints (feet) | Vertical Hydraulic Gradient[2] | Vertical Groundwater Flow Direction |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | DTW (feet btc) | Groundwater Elevation (feet) | | | | | |
| **August 21, 2020** | | | | | | | | | | | | | | | | | |
| 114-MW45C | Basal Till | Ground Surface | 67 | 71 | -55.50 | -59.50 | -57.50 | 11.50 | Top of PVC | 13.22 | 5.50 | 7.72 | Y | -57.50 | 28.35 | 0.1753 | BR to Basal Till |
| 114-MW6D | BR (open borehole) | Top of Casing | 86 | 111 | -73.35 | -98.35 | -85.85 | 12.65 | Top of Casing | 12.69 | 0.00 | 12.69 | Y | -85.85 | - | - | Artesian Flow |
| 114-MW54C | Basal Till | Ground Surface | 72 | 77 | -61.20 | -66.20 | -63.70 | 10.80 | Top of PVC | 12.71 | 5.70 | 7.01 | Y | -63.70 | 11.38 | 0.0703 | BR to Basal Till |
| 114-MW7D | BR | Top of Casing | 85 | 90 | -72.58 | -77.58 | -75.08 | 12.42 | Top of PVC | 11.92 | 4.11 | 7.81 | Y | -75.08 | - | - | - |
| 114-MW48C | Basal Till | Ground Surface | 53 | 57 | -38.00 | -42.00 | -40.00 | 15.00 | Top of PVC | 16.20 | 8.21 | 7.99 | - | - | - | - | - |
| 114-MW49C | Basal Till | Ground Surface | 64.5 | 69.5 | -49.90 | -54.90 | -52.40 | 14.60 | Top of PVC | 16.52 | 8.80 | 7.72 | - | - | - | - | - |
| 114-MW50C | Basal Till | Ground Surface | 57 | 62 | -43.60 | -48.60 | -46.10 | 13.40 | Top of PVC | 15.36 | 7.13 | 8.23 | - | - | - | - | - |
| 114-MW51C | Basal Till | Ground Surface | 71.5 | 76.5 | -59.30 | -64.30 | -61.80 | 12.20 | Top of PVC | 14.13 | 7.45 | 6.68 | - | - | - | - | - |
| 114-MW52C | Basal Till | Ground Surface | 68 | 73 | -54.00 | -59.00 | -56.50 | 14.00 | Top of PVC | 15.85 | 8.35 | 7.50 | - | - | - | - | - |
| 114-MW56C | Basal Till | Ground Surface | 67 | 72 | -53.00 | -58.00 | -55.50 | 14.00 | Top of PVC | 16.04 | 8.81 | 7.23 | - | - | - | - | - |
| 114-MW59C | Basal Till | Ground Surface | 89.5 | 92.5 | -77.40 | -80.40 | -78.90 | 12.10 | Top of PVC | 14.07 | 7.61 | 6.46 | - | - | - | - | - |
| 114-MW63C | Basal Till | Ground Surface | 63.75 | 65.75 | -48.25 | -50.25 | -49.25 | 15.50 | Top of PVC | 17.68 | 9.99 | 7.69 | - | - | - | - | - |
| 114-MW65C | Basal Till | Ground Surface | 60 | 65 | -47.60 | -52.60 | -50.10 | 12.40 | Top of PVC | 14.20 | 6.57 | 7.63 | - | - | - | - | - |
| 114-MW58C | Basal Till/Weathered BR | Ground Surface | 72.5 | 76 | -61.30 | -64.80 | -63.05 | 11.20 | Top of PVC | 12.51 | 2.96 | 9.55 | - | - | - | - | - |
| 114-MW61C | Basal Till/Weathered BR | Ground Surface | 62.5 | 67.5 | -48.50 | -53.50 | -51.00 | 14.00 | Top of PVC | 16.67 | 9.50 | 7.17 | - | - | - | - | - |
| 114-MW62C | Basal Till/Weathered BR | Ground Surface | 69 | 73 | -56.00 | -60.00 | -58.00 | 13.00 | Top of PVC | 15.04 | 7.09 | 7.95 | - | - | - | - | - |
| 114-MW53C | Weathered BR | Ground Surface | 46 | 47.5 | -32.10 | -33.60 | -32.85 | 13.90 | Top of PVC | 15.08 | 7.64 | 7.44 | - | - | - | - | - |
| 114-MW55C | Weathered BR | Ground Surface | 68 | 69 | -56.90 | -57.90 | -57.40 | 11.10 | Top of PVC | 13.23 | 5.75 | 7.48 | - | - | - | - | - |
| 114-MW57C | Weathered BR | Ground Surface | 68.5 | 70 | -55.60 | -57.10 | -56.35 | 12.90 | Top of PVC | 14.55 | 7.49 | 7.06 | - | - | - | - | - |
| 114-MW60C | Weathered BR | Ground Surface | 119.5 | 121.5 | -108.50 | -110.50 | -109.50 | 11.00 | Top of PVC | 12.87 | 7.43 | 5.44 | - | - | - | - | - |
| 114-MW64C | Weathered BR | Ground Surface | 93 | 96 | -82.20 | -85.20 | -83.70 | 10.80 | Top of PVC | 12.30 | 6.32 | 5.98 | - | - | - | - | - |
| 114-MW4D | BR (open borehole) | Top of Casing | 87 | 107 | -74.03 | -94.03 | -84.03 | 12.97 | Top of Casing | 12.97 | 6.02 | 6.95 | - | - | - | - | - |
| 114-MW16B | BR | Top of Casing | 30.5 | 55.5 | -14.97 | -39.97 | -27.47 | 15.53 | Top of PVC | 15.53 | 1.05 | 14.48 | - | - | - | - | - |
| **February 8, 2021** | | | | | | | | | | | | | | | | | |
| 114-MW45C | Basal Till | Ground Surface | 67 | 71 | -55.50 | -59.50 | -57.50 | 11.50 | Top of PVC | 13.22 | 5.68 | 7.54 | Y | -57.50 | 28.35 | 0.0155 | BR to Basal Till |
| 114-MW6D | BR (open borehole) | Top of Casing | 86 | 111 | -73.35 | -98.35 | -85.85 | 12.65 | Top of Casing | 12.69 | 4.71 | 7.98 | Y | -85.85 | - | - | - |
| 114-MW52C | Basal Till | Ground Surface | 68 | 73 | -54.00 | -59.00 | -56.50 | 14.00 | Top of PVC | 15.85 | 9.88 | 5.97 | Y | -56.50 | 22.10 | 0.1701 | BR to Basal Till |
| 114-MW52D | BR (open borehole) | Ground Surface | 80 | 105 | -66.10 | -91.10 | -78.60 | 13.90 | Top of Casing | 15.64 | 5.91 | 9.73 | Y | -78.60 | - | - | - |
| 114-MW61C | Basal Till/Weathered BR | Ground Surface | 62.5 | 67.5 | -48.50 | -53.50 | -51.00 | 14.00 | Top of PVC | 16.67 | 9.63 | 7.04 | Y | -51.00 | 31.60 | -0.0092 | Basal Till/Weathered BR to BR |
| 114-MW61D | BR (open borehole) | Ground Surface | 85 | 109 | -70.60 | -94.60 | -82.60 | 14.40 | Top of Casing | 16.59 | 9.84 | 6.75 | Y | -82.60 | - | - | - |
| 114-MW57C | Weathered BR | Ground Surface | 68.5 | 70 | -55.60 | -57.10 | -56.35 | 12.90 | Top of PVC | 14.55 | 8.42 | 6.13 | Y | -56.35 | 29.70 | -0.0145 | Weathered BR to BR |
| 114-MW57D | BR (open borehole) | Ground Surface | 85 | 112.5 | -72.30 | -99.80 | -86.05 | 12.70 | Top of Casing | 14.70 | 9.00 | 5.70 | Y | -86.05 | - | - | - |
| 114-MW54C | Basal Till | Ground Surface | 72 | 77 | -61.20 | -66.20 | -63.70 | 10.80 | Top of PVC | 12.71 | 6.41 | 6.30 | Y | -63.70 | 11.38 | 0.0589 | BR to Basal Till |
| 114-MW7D | BR | Top of Casing | 85 | 90 | -72.58 | -77.58 | -75.08 | 12.42 | Top of PVC | 11.92 | 4.95 | 6.97 | Y | -75.08 | - | - | |

**Notes:**

[1]Reference elevation at time of water level gauging.

[2]Negative value indicates downward vertical groundwater flow direction.

Vertical Elevation Datum = feet in the North American Vertical Datum of 1988 (NAVD88).

- = Not Applicable

BR = Bedrock

btc = Below top of casing

DTW = Depth to Groundwater

PVC = polyvinyl chloride

Y = Yes

**Table 3-5**
**Hydraulic Conductivity Estimates**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

AECOM

| Location | Water Bearing Zone | Screened Material | Screened Interval (ft bgs) | K (ft/day) | K (cm/sec) | Type of Test |
|---|---|---|---|---|---|---|
| 114-MW27A | SHALLOW | Fill - Historic | 11 - 16 | 1.68 | 5.93E-04 | Slug test |
| 114-P1A-MW101S | SHALLOW | Fill - DGA | 5 - 15 | 115.55 | 4.08E-02 | Slug test |
| 114-P1B-MW102S | SHALLOW | Fill - DGA | 6 - 16 | 6.23 | 2.20E-03 | Slug test |
| 114-P2B3-MW101S | SHALLOW | Fill - DGA | 6 - 16 | 1.24 | 4.37E-04 | Slug test |
| 114-P2B4-MW101S | SHALLOW | Fill - DGA | 8 - 18 | 1.42 | 5.01E-04 | Slug test |
| 133-MW1A | SHALLOW | Fill - Historic | 3 - 13 | 9.66 | 3.41E-03 | Slug test |
| 133-P3C-MW101S | SHALLOW | Fill - DGA | 4 - 14 | 140.68 | 4.96E-02 | Slug test |
| 133-P3C-MW102S | SHALLOW | Fill - Historic | 4 - 14 | 152.55 | 5.38E-02 | Slug test |
| 137-P3B-MW101S | SHALLOW | Fill - DGA | 6 - 16 | 60.37 | 2.13E-02 | Slug test |
| HSS-P3C-MW1S | SHALLOW | Fill - DGA | 7 - 17 | 156.85 | 5.53E-02 | Slug test |
| HSS-P3C-MW2S | SHALLOW | Fill - DGA | 6 - 16 | 181.35 | 6.40E-02 | Slug test |
| MW10S | SHALLOW | Fill - Historic | 5 - 15 | 1.72 | 6.07E-04 | Slug test |
| MW7S | SHALLOW | Fill - Historic | 2 - 12 | 8.12 | 2.86E-03 | Slug test |
| MW8S | SHALLOW | Fill - Historic | 7 - 12 | 13.09 | 4.62E-03 | Slug test |
| 114-MC-EW103 | INTERMEDIATE | Fine SAND with silt, trace clay/CLAY with silt, trace fine sand | 30 - 45 | 0.52 | 1.83E-04 | Pump Test |
| 114-MC-PZ103 | INTERMEDIATE | Fine SAND with silt, trace clay/CLAY some silt, litlle fine sand | 37 - 42 | 2.35 | 8.29E-04 | Pump Test |
| 114-MC-PZ203 | INTERMEDIATE | Fine SAND | 37 - 42 | 1.75 | 6.17E-04 | Pump Test |
| 114-MW19B | INTERMEDIATE | Silty CLAY, some very fine SAND | 45 - 50 | 3.76 | 1.33E-03 | Slug test |
| 114-MW24B | INTERMEDIATE | Fine to medium SAND | 30 - 35 | 3.95 | 1.39E-03 | Slug test |
| 114-MW27B | INTERMEDIATE | Fine to medium SAND with fine to coarse gravel | 30 - 35 | 0.14 | 4.94E-05 | Slug test |
| 133-MW1B | INTERMEDIATE | Fine SAND and silt/SILT with some very fine sand | 32- 37 | 43.65 | 1.54E-02 | Slug test |
| 137-MW1B | INTERMEDIATE | Fine to medium GRAVEL/Medium to coarse SAND, little silt, trace clay/SILT with very fine sand | 28 - 33 | 30.27 | 1.07E-02 | Slug test |
| 137-MW2B | INTERMEDIATE | Very fine to coarse SAND, some fine to medium gravel, trace silt/Very fine to fine sandy SILT | 28 - 33 | 6.65 | 2.35E-03 | Slug test |
| MW8D | INTERMEDIATE | SAND and SILT | 39 - 49 | 2.08 | 7.34E-04 | Slug test |
| MW7D | INTERMEDIATE/DEEP | Fine to coarse SAND/Silty fine SAND/Laminated Silt and silty SAND | 38 - 48 | 1.56 | 5.50E-04 | Slug test |
| 114-MW19C | DEEP | Very fine silty SAND and graded GRAVEL, trace clay/Very fine silty SAND/SILT, trace clay/Very fine SAND, trace silt | 96 - 101 | 2.02 | 7.13E-04 | Slug test |
| 114-MW67C | DEEP | Fine SAND, little silt, trace clay (Lower Deep Zone) | 50 - 56 | 1.16 | 4.09E-04 | Specific capacity test (confined) |
| 114-MW68C | DEEP | Fine SAND, some silt, trace clay (Lower Deep Zone) | 50 - 56 | 1.01 | 3.56E-04 | Specific capacity test (confined) |
| 114-MW70C | DEEP | Fine to medium SAND, some silt, little fine to coarse gravel (Lower Deep Zone) | 85 - 95 | 2.02 | 7.13E-04 | Specific capacity test (confined) |
| 133-MW1C | DEEP | Fine to coarse SAND and fine to coarse GRAVEL/SILT, some fine to coarse GRAVEL, little cobbles, trace fine sand | 72 - 77 | 1.54 | 5.43E-04 | Slug test |
| 137-MW1C | DEEP | SILT, some fine to coarase sand, little fine to coarse gravel, trace clay | 68 - 73 | 0.01 | 3.53E-06 | Slug test |
| MW6C | DEEP | Coarse to very fine SAND, some silt, little to coarse fine gravel (Lower Deep Zone) | 55 - 65 | 8.16 | 2.88E-03 | Slug test |
| 114-MW16B | BEDROCK | Diabase | 30.5 - 35.5 | 0.06 | 2.12E-05 | Slug test |

**Notes:**
bgs - below ground surface
cm - centimeters
DGA - dense graded aggregate
ft - feet
K - hydraulic conductivity
sec - second

**Table 3-6**
**Jar-Shake Test Results**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| Well ID | Depth (ft bgs) | USCS Code | Material Description Based on Field Observation | Jar Shake Test Result (% Fines)[1] | Estimated Hydraulic Conductivity (cm/sec)[2] |
|---|---|---|---|---|---|
| 114-MW48C | 20 | ML | Gray (7.5YR 5/1) clayey SILT, grades into greenish-gray (10Y 5/1) clayey silt, fine sand, damp. | 20 | $10^{-3}$ to $10^{-6}$ |
| 114-MW48C | 25 | SP-SM | Dark greyish brown (10YR 4/2) to brown (7.5YR 4/4), poorly graded SAND with silt, fine sand, little medium sand, silt, loose, wet. | 5-10 | > $10^{-3}$ to $10^{-6}$ |
| 114-MW48C | 35 | SP-SM | Reddish brown (7.5YR 5/6) to yellowish red (5YR 4/6), poorly graded SAND with silt, fine sand, little medium sand, trace coarse sand, little subrounded fine to coarse gravel, loose, wet. | 10-15 | > $10^{-3}$ to $10^{-6}$ |
| 114-MW48C | 49 | SW-SC | Reddish brown (5YR 5/3) clayey SAND, fine to coarse sand, little angular fine to coarse gravel, clay, dense, compacted, damp (Basal Till). | 30 | > $10^{-3}$ to $10^{-8}$ |
| 114-MW48C | 50 | SW-SC | Reddish brown (5YR 5/3) clayey SAND, fine to coarse sand, little subrounded to subangular fine to coarse gravel, clay, damp (becomes dry to damp at 57.5' to 58') (Basal Till). Boulder at 52 ft bgs. | 20 | > $10^{-3}$ to $10^{-8}$ |
| 114-MW49C | 22.5 | SM | Red (2.5YR 4/6) silty SAND, fine sand, loose, wet. | 15-20 | $10^{-3}$ to $10^{-6}$ |
| 114-MW49C | 30 | SP-SM | Red (2.5YR 4/6) poorly graded SAND with silt, fine sand, few silt, loose, wet. | 15 | > $10^{-3}$ to $10^{-6}$ |
| 114-MW49C | 37 | SP | Red (2.5YR 4/6) poorly graded SAND, fine sand, trace silt, loose, sharp contact with underlying clay, wet. | 5 | > $10^{-3}$ |
| 114-MW49C | 55 | SW-SC | Reddish brown (2.5YR 4/3) clayey SAND, fine to coarse sand, little subangular fine to coarse gravel (up to 2.5 inch across), very hard, dense and compacted, damp (Basal Till). | 25 | > $10^{-3}$ to $10^{-8}$ |
| 114-MW49C | 65 | SP | Interbedded SAND, poorly graded sand, fine to medium sand (Basal Basal Till). | 10 | > $10^{-3}$ |
| 114-MW50C | 23.3 | SP | Reddish brown (5YR 5/3) poorly graded SAND, fine SAND, trace SILT, wet. | 5 | > $10^{-3}$ |
| 114-MW50C | 33 | CL/ML | Reddish brown (5YR 4/3) laminated SILT and CLAY, medium dense, wet. Pale yellow groundwater. | 80 | $10^{-3}$ to $10^{-8}$ |
| 114-MW50C | 39 | SM | Reddish brown (5YR 4/3) silty SAND with few GRAVEL, medium SAND, little fine SAND, trace coarse SAND, few sub-angular fine to coarse GRAVEL, moist. | 20 | $10^{-3}$ to $10^{-6}$ |
| 114-MW50C | 43 | SM | Dark reddish brown (2.5YR 3/3) silty SAND, few sub-angular fine to coarse GRAVEL. Color changes to light olive gray (5Y 6/2) from 44.5' to 44.6'. | 20 | $10^{-3}$ to $10^{-6}$ |
| 114-MW50C | 49 | SC-SM | Light brown (7.5YR 6/4) clayey SAND or silty SAND, fine to coarse SAND, SILT, few to little sub-angular to sub-rounded fine to coarse GRAVEL, coarse GRAVEL (up to 2" across), moist, firm, (Basal Till). | 20 | $10^{-3}$ to $10^{-8}$ |
| 114-MW51C | 30 | SP-SM | Reddish brown (2.5YR 4/4) poorly graded SAND with SILT, fine SAND, sheen on groundwater, loose, wet. | 5-10 | > $10^{-3}$ to $10^{-6}$ |
| 114-MW51C | 35 | SP-SM | Reddish brown (2.5YR 4/4) poorly graded SAND with SILT, fine SAND. | 15 | > $10^{-3}$ to $10^{-6}$ |
| 114-MW51C | 38 | CL/ML | Weak red (10YR 4/3) SILT, CLAY, fine SAND, laminated. | 80 | $10^{-3}$ to $10^{-8}$ |
| 114-MW51C | 60 | SC | Reddish brown (2YR 4/3) clayey SAND, fine to medium SAND, trace coarse SAND, few to little sub-rounded to sub-angular fine to coarse GRAVEL, medium hardness, wet. | 25 | $10^{-6}$ to $10^{-8}$ |
| 114-MW51C | 68 | CL | Dark reddish gray (2.5YR 4/1) sandy CLAY, angular, fine to coarse SAND, little fine to coarse GRAVEL, hard, very dense, dry (Basal Till). | 50-60 | $10^{-6}$ to $10^{-8}$ |
| 114-MW52C | 25 | SM | Reddish brown poorly graded sand, fine sand, some silt, loose, wet. Yellow groundwater observed at 25 ft. | 30 | $10^{-3}$ to $10^{-6}$ |
| 114-MW52C | 40 | SP | Reddish brown poorly graded SAND, fine sand, little medium sand, wet. | 10 | > $10^{-3}$ |
| 114-MW52C | 48 | SW | Reddish brown well graded SAND, with little silt, fine to coarse sand, little subrounded to subangular fine to coarse gravel, several large pieces of gravel (up to 2.5 inch in diameter), wet. Bright yellow groundwater observed at 48 ft. | 25 | > $10^{-3}$ |
| 114-MW52C | 54 | SW-SC | Reddish brown well graded SAND with few clay, fine to coarse sand, wet. | 10 | > $10^{-3}$ to $10^{-8}$ |
| 114-MW52C | 61.5 | SC | Reddish brown well graded SAND with some clay, little subrounded to subangular fine to coarse gravel, very dense, damp (Basal Till). | 30 | $10^{-6}$ to $10^{-8}$ |
| 114-MW52C | 66 | SC/GC | Reddish brown well graded SAND, fine to coarse sand, some clay, fine to coarse subangular gravel, dry to damp (Basal Till). Seam of well graded fine to coarse gravel from 65-65.2. | 30 | $10^{-6}$ to $10^{-8}$ |
| 114-MW52C | 72.5 | SW-SC | Well graded SAND, fine to coarse sand with some clay, fine to coarse gravel embedded in sandy clay, very dense, dry to damp (Basal Till). | 40 | > $10^{-3}$ to $10^{-8}$ |
| 114-MW53C | 22.5 | SW | Reddish brown well graded SAND, little silt, little fine to coarse subrounded GRAVEL, medium dense, damp to wet. | 25 | > $10^{-3}$ |
| 114-MW53C | 28 | SM | Reddish brown poorly graded SAND with some silt, little fine to subrounded coarse gravel, wet. | 30 | $10^{-3}$ to $10^{-6}$ |
| 114-MW53C | 31 | SP | Reddish brown poorly graded SAND with little silt, loose, wet. | 25 | > $10^{-3}$ |
| 114-MW53C | 37 | ML | Reddish brown sandy SILT, medium dense, wet. | 60 | $10^{-3}$ to $10^{-6}$ |
| 114-MW53C | 39 | ML | Reddish brown sandy SILT, wet. | 75 | $10^{-3}$ to $10^{-6}$ |
| 114-MW53C | 40 | SW | Reddish brown well graded SAND, few silt, fine to medium sand, few coarse sand, loose, wet. | 10-15 | > $10^{-3}$ |
| 114-MW53C | 43 | SC | Reddish brown well graded SAND with some clay, fine to coarse sand, few to fine to coarse gravel, medium dense, damp to wet (Basal Till). | 30 | $10^{-6}$ to $10^{-8}$ |
| 114-MW53C | 44 | CL/GC | Gray sandy CLAY, fine to coarse sand, some fine to coarse gravel (up to 3 inches in diameter), very dense, damp to wet (Basal Till). | 60 | $10^{-6}$ to $10^{-8}$ |
| 114-MW53C | 45 | SP | Brown (7.5YR 4/3) poorly graded SAND, few silt, wet (Basal Till). | 5-10 | > $10^{-3}$ |

**Table 3-6**
**Jar-Shake Test Results**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| Well ID | Depth (ft bgs) | USCS Code | Material Description Based on Field Observation | Jar Shake Test Result (% Fines)[1] | Estimated Hydraulic Conductivity (cm/sec)[2] |
|---|---|---|---|---|---|
| 114-MW54C | 20 | SM | Dusky red (10YR 3/2) silty SAND, some medium sand, little fine sand, trace coarse sand, little fine to sub-rounded coarse gravel, MGP sheen, wet. | 25 | $10^{-3}$ to $10^{-6}$ |
| 114-MW54C | 23 | SM | Yellowish red (5YR 4/6) silty SAND, fine sand, loose, MGP sheen (up to 28'), wet. | 20 | $10^{-3}$ to $10^{-6}$ |
| 114-MW54C | 30 | SP-SM | Weak red (10YR 4/4) poorly graded SAND with silt, loose, wet. | 15 | > $10^{-3}$ to $10^{-6}$ |
| 114-MW54C | 35 | SM | Weak red (10YR 4/4) silty SAND, fine sand, loose, wet. | 30 | $10^{-3}$ to $10^{-6}$ |
| 114-MW54C | 37.5 | ML | Light reddish brown (5YR 5/4) SILT, wet. | 80 | $10^{-3}$ to $10^{-6}$ |
| 114-MW54C | 43.5 | SM | Weak red (10YR 5/4) silty SAND, fine sand, silt, loose, moist. | 25 | $10^{-3}$ to $10^{-6}$ |
| 114-MW54C | 50 | SP-SM | Reddish brown (2.5YR 4/3) poorly graded SAND with silt, fine sand, SILT, loose, wet. | 15-20 | > $10^{-3}$ to $10^{-6}$ |
| 114-MW54C | 60 | SM | Reddish brown (5YR 4/3) silty SAND, fine sand, moist. | 20 | $10^{-3}$ to $10^{-6}$ |
| 114-MW54C | 69 | SC-SM | Light brownish gray (10YR 6/2) clayey SAND or silty sand, fine to sand, little fine to coarse gravel (up to 2.5" across), very firm, dry (Basal Till). | 30 | $10^{-3}$ to $10^{-8}$ |
| 114-MW54C | 70 | SM | Dark gray (7.5YR 4/1) silty SAND, fine to coarse sand, few gravel, dry (Basal Till). | 25 | $10^{-3}$ to $10^{-6}$ |
| 114-MW54C | 75 | SM | Dark gray (7.5YR 4/1) silty SAND, fine to coarse sand, few gravel, dry (Basal Till). | 25 | $10^{-3}$ to $10^{-6}$ |
| 114-MW55C | 31 | ML | Yellowish red (5YR 4/6) sandy SILT, yellowish groundwater, loose, wet. | 55 | $10^{-3}$ to $10^{-6}$ |
| 114-MW55C | 41 | SM | Yellowish red (5YR 4/6) silty SAND, fine sand, loose, wet, yellowish groundwater. | 20 | $10^{-3}$ to $10^{-6}$ |
| 114-MW55C | 45 | ML | Reddish brown (5YR 5/4) SILT, loose, wet. | 90 | $10^{-3}$ to $10^{-6}$ |
| 114-MW55C | 50 | SM | Reddish brown (2.5YR 4/4) silty SAND, fine sand, wet, yellow groundwater. | 15-20 | $10^{-3}$ to $10^{-6}$ |
| 114-MW55C | 54 | SM | Reddish brown (2.5YR 4/4) silty SAND, fine sand, wet, yellow groundwater. | 20 | $10^{-3}$ to $10^{-6}$ |
| 114-MW55C | 55 | ML/CL | Reddish brown (2.5YR 4/4) sandy SILT, fine SAND and CLAY laminae, yellow groundwater. | 70 | $10^{-3}$ to $10^{-8}$ |
| 114-MW55C | 61 | SP-SM | Reddish brown poorly graded SAND with silt, fine to medium sand, trace coarse sand. | 10 | > $10^{-3}$ to $10^{-6}$ |
| 114-MW55C | 62.5 | CL/ML | Yellowish red (5YR 4/6) sandy CLAY and sandy silt, silt and clay laminae. | 70 | $10^{-3}$ to $10^{-8}$ |
| 114-MW55C | 63 | ML | Reddish brown SILT with fine sand. | 80 | $10^{-3}$ to $10^{-6}$ |
| 114-MW56C | 24 | SP | Reddish brown poorly graded SAND, medium sand with few silt, damp to wet. | 10-15 | > $10^{-3}$ |
| 114-MW56C | 28 | SP | Reddish brown poorly graded SAND, trace silt, fine to medium sand, damp to wet. Yellow tinged soils (strong brown, 7.5YR 5/6) observed between 29-30 ft bgs. | 5 | > $10^{-3}$ |
| 114-MW56C | 39 | SM | Reddish brown poorly graded SAND with some silt, mostly fine sand, wet. Very pale yellow water observed between 38-40 ft bgs. | 35 | $10^{-3}$ to $10^{-6}$ |
| 114-MW56C | 48 | SM | Poorly graded fine SAND, some silt, wet. | 30 | $10^{-3}$ to $10^{-6}$ |
| 114-MW56C | 50.5 | SP | Reddish brown poorly graded SAND with few silt, fine to medium sand, wet. Green-yellow water observed from 50-52 ft bgs. | 10 | > $10^{-3}$ |
| 114-MW56C | 57 | SC | Reddish brown well graded SAND with some clay, embedded with fine to coarse gravel, medium dense, damp (Basal Till). Yellow water from 57-58 ft bgs. | 35 | $10^{-6}$ to $10^{-8}$ |
| 114-MW56C | 60 | SP | Reddish brown poorly graded SAND, loose, wet. | 1-5 | > $10^{-3}$ |
| 114-MW56C | 64 | SC | Well graded sand with some clay, fine to coarse sand, embedded fine gravel, dense, dry to damp (Basal Till). | 30 | $10^{-6}$ to $10^{-8}$ |
| 114-MW57C | 11.5 | SP | Strong brown (7.5YR 4/6) fine SAND with little silt, dried plant roots, dense. | 25 | > $10^{-3}$ |
| 114-MW57C | 21 | SP | Grayish brown (10YR 5/2) poorly graded medium SAND, little fine sand, trace coarse sand and silt, loose, wet. | 1-5 | > $10^{-3}$ |
| 114-MW57C | 22.5 | SP | Reddish brown (5YR 5/4) poorly graded SAND with few silt, fine sand, loose to medium dense, wet. Yellow-tinged soils noted in the middle of the core after drying. | 10 | > $10^{-3}$ |
| 114-MW57C | 23 | ML | Reddish brown sandy SILT, wet. | 60 | $10^{-3}$ to $10^{-6}$ |
| 114-MW57C | 25.5 | SP | Dark reddish brown (5YR 3/4) with gray to black mottling, poorly graded fine SAND, loose to medium dense, wet. | 5 | > $10^{-3}$ |
| 114-MW57C | 31 | SP | Black and brown (7.5YR 4/2) and dark reddish brown (5YR 3/2) poorly graded SAND with trace silt, wet. | 5 | > $10^{-3}$ |
| 114-MW57C | 53 | SP | Dark reddish brown with black mottling, poorly graded SAND with little silt, fine sand, trace coarse sand, wet to damp. | 25 | > $10^{-3}$ |
| 114-MW57C | 61.5 | SP | Reddish brown poorly graded SAND with little silt, few medium grained sand, loose, wet. | 10 | > $10^{-3}$ |

**Table 3-6**
**Jar-Shake Test Results**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| Well ID | Depth (ft bgs) | USCS Code | Material Description Based on Field Observation | Jar Shake Test Result (% Fines)[1] | Estimated Hydraulic Conductivity (cm/sec)[2] |
|---|---|---|---|---|---|
| 114-MW58C | 20.5 | SW | Reddish brown (5YR 5/3) well graded SAND with little silt, fine to coarse sand, little to some fine to coarse gravel, loose, wet. MGP sheen and odor. | 25 | > $10^{-3}$ |
| 114-MW58C | 23 | SP | Light reddish brown (2.5YR 3/3) poorly graded SAND with few silt, medium sand, trace coarse sand, loose, wet. | 10 | > $10^{-3}$ |
| 114-MW58C | 28 | SP | Reddish brown (5YR 4/4) poorly graded SAND with little silt, mostly medium sand, trace coarse sand, loose, wet. | 20 | > $10^{-3}$ |
| 114-MW58C | 30 | SP | Reddish brown poorly graded SAND with few silt, fine to medium sand, loose, wet. | 10 | > $10^{-3}$ |
| 114-MW58C | 38 | SP | Reddish brown poorly graded SAND with few silt, mostly fine sand, loose, wet. | 10 | > $10^{-3}$ |
| 114-MW58C | 45.5 | SP | Reddish brown poorly graded SAND, mostly fine sand, trace silt, loose, wet. | 5 | > $10^{-3}$ |
| 114-MW58C | 50 | SP | Reddish brown (5YR 4/4) poorly graded SAND with little silt, mostly fine sand, wet. | 25 | > $10^{-3}$ |
| 114-MW58C | 55 | SM-SC | Reddish brown (5YR 4/4) poorly graded SAND with some silt/clay and fine gravel embedded, dense, wet. | 30 | $10^{-3}$ to $10^{-8}$ |
| 114-MW58C | 61 | SP | Reddish brown (5YR 4/1) poorly graded SAND with few silt, fine sand, loose, wet. | 5-10 | > $10^{-3}$ |
| 114-MW58C | 62.5 | SW | Reddish brown (5YR 4/4) well graded SAND with little silt, mostly fine sand, some subangular to subrounded coarse gravel (up to 2 inches in diameter), medium dense to loose, wet. | 20 | > $10^{-3}$ |
| 114-MW58C | 65 | SM | Reddish brown well graded SAND with some silt, fine to coarse sand, few embedded gravel, dense, damp to wet (Basal Till). | 35 | $10^{-3}$ to $10^{-6}$ |
| 114-MW58C | 70 | SM | Reddish brown (5YR 4/4) poorly graded SAND with some silt, fine sand, loose, damp (Basal Till). | 70 | $10^{-3}$ to $10^{-6}$ |
| 114-MW59C | 20 | SP | Reddish brown poorly graded SAND with little silt, little subrounded fine to coarse gravel. Strong MGP odor and sheen. PID = 6 ppm. | 25 | > $10^{-3}$ |
| 114-MW59C | 25 | SP | Dark reddish brown poorly graded SAND with few silt, mostly medium sand, little fine sand, loose, wet. Strong MGP odor and sheen. | 5-10 | > $10^{-3}$ |
| 114-MW59C | 29 | SP | Dark reddish brown (black staining from MGP) poorly graded SAND with little silt, mostly medium sand, little fine sand, trace fine subrounded gravel, wet. Strong MGP odor and sheen. PID = 65 ppm. | 10 | > $10^{-3}$ |
| 114-MW59C | 30 | SP | Reddish brown (2.5YR 4/3) poorly graded SAND, fine to medium sand, few medium sand, wet. PID = 39 ppm. | 15-20 | > $10^{-3}$ |
| 114-MW59C | 35 | SP | Dark reddish brown (5YR 3/2) poorly graded SAND with few silt, fine sand, wet. PID = 63 ppm. | 10-15 | > $10^{-3}$ |
| 114-MW59C | 39.5 | SP | Poorly graded SAND with little silt, mostly fine sand, wet. | 20-25 | > $10^{-3}$ |
| 114-MW59C | 40 | SP | Reddish brown (5YR 4/3) poorly graded SAND with few silt, loose, wet. MGP odor and sheen. PID = decreases from 50 ppm to 0.8 ppm. | 10-15 | > $10^{-3}$ |
| 114-MW59C | 72.5 | CL | Reddish brown CLAY with little sand, soft, wet. | 75 | $10^{-6}$ to $10^{-8}$ |
| 114-MW59C | 89.5 | CL | Reddish brown CLAY with few sand and angular rock pieces, several cobbles (up to 2 inches in diameter), very dense, damp (Basal Till). | 90 | $10^{-6}$ to $10^{-8}$ |
| 114-MW60C | 21.5 | SP | Reddish brown poorly graded SAND, medium sand, few coarse sand, few silt, few fine to coarse subrounded to subangular gravel, 1-inch thick clay lens at 21.8 ft bgs, wet. | 5-10 | > $10^{-3}$ |
| 114-MW60C | 23 | SP | Reddish brown poorly graded SAND, medium sand, trace coarse sand, trace silt, wet. | 1-5 | > $10^{-3}$ |
| 114-MW60C | 25 | SP | Reddish brown poorly graded SAND with few silt, medium sand, trace coarse sand, loose to medium density, wet. | 10 | > $10^{-3}$ |
| 114-MW60C | 31 | SP | Reddish brown poorly graded SAND with few silt, fine sand, few medium sand, wet. MGP odor and sheen on soils from 31.5 ft bgs, soil stained to dark brown (7.5YR 3/2). | 10 | > $10^{-3}$ |
| 114-MW60C | 39 | SP | Reddish brown (5YR 4/4) SAND with little silt, wet. Yellow tinge on soil surface after drying. | 20 | > $10^{-3}$ |
| 114-MW60C | 41 | SP | Reddish brown poorly graded SAND with little silt, fine sand, few medium sand, trace coarse sand, loose, wet. Yellow groundwater observed at 40 ft bgs. | 20 | > $10^{-3}$ |
| 114-MW60C | 53.5 | ML | Reddish brown sandy SILT, yellow groundwater, wet. | 30 | $10^{-3}$ to $10^{-6}$ |
| 114-MW60C | 92 | SP | Reddish brown poorly graded SAND with few silt, fine sand, trace coarse sand, trace gravel, wet. | 10 | > $10^{-3}$ |
| 114-MW60C | 116 | SM | Fine SAND with some silt, few medium to coarse rock pieces, loose, soft, wet (Basal Till). | 35 | $10^{-3}$ to $10^{-6}$ |
| 114-MW60C | 118 | ML | Reddish brown (5YR 5/3) sandy SILT, trace coarse sand, trace gravel, medium stiff, wet (Basal Till). | 75 | $10^{-3}$ to $10^{-6}$ |
| 114-MW61C | 22.5 | SP | Reddish brown poorly graded SAND with little silt, mostly fine sand, little medium sand, black staining from 24-25 ft bgs, loose, wet. | 25 | > $10^{-3}$ |
| 114-MW61C | 30 | SP | Dark reddish brown (5YR 3/3) poorly graded fine SAND, trace silt, wet. | 5 | > $10^{-3}$ |
| 114-MW61C | 32.5 | SP | Reddish brown poorly graded SAND with little silt, mostly fine sand, wet. | 25 | > $10^{-3}$ |
| 114-MW61C | 35 | CL | Reddish brown CLAY with some interbedded fine sand laminae, medium stiff, wet. | 30 | $10^{-6}$ to $10^{-8}$ |
| 114-MW61C | 42.5 | SP | Reddish brown poorly graded SAND, fine to medium sand, loose, wet. | 5 | > $10^{-3}$ |
| 114-MW61C | 47 | SP | Reddish brown poorly graded SAND with trace silt, loose, wet. | 5 | > $10^{-3}$ |
| 114-MW61C | 50 | SP | Poorly graded SAND, wet. Faint yellow staining on sand after drying. | 10-15 | > $10^{-3}$ |
| 114-MW61C | 50.5 | SW-SC | Well graded SAND with some clay, fine to coarse sand, little fine to coarse gravel, damp to wet (Basal Till). | 5 | > $10^{-3}$ to $10^{-8}$ |
| 114-MW61C | 54 | SW-SC | Well graded SAND with some clay, fine to coarse sand, little fine to coarse gravel, damp to wet (Basal Till). | 35 | > $10^{-3}$ to $10^{-8}$ |
| 114-MW61C | 57.5 | SW-SC | Reddish brown well graded SAND with some clay, fine to coarse sand, little subrounded to subangular gravel, medium dense to very dense, damp (Basal Till). | 30 | > $10^{-3}$ to $10^{-8}$ |
| 114-MW61C | 60.5 | SW | Reddish brown well graded SAND with few silt, loose, damp to wet (Basal Till). | 10 | > $10^{-3}$ |

**Table 3-6**
**Jar-Shake Test Results**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| Well ID | Depth (ft bgs) | USCS Code | Material Description Based on Field Observation | Jar Shake Test Result (% Fines)[1] | Estimated Hydraulic Conductivity (cm/sec)[2] |
|---|---|---|---|---|---|
| 114-MW62C | 20 | SP | Dark reddish brown (2.5YR 3/3) poorly graded SAND with little silt, subangular medium sand, trace coarse sand, loose, wet. Pale yellow groundwater observed. | 15 | $> 10^{-3}$ |
| 114-MW62C | 21 | SP | Reddish brown (2.5YR 4/3) poorly graded SAND with little silt, fine sand, wet. | 20 | $> 10^{-3}$ |
| 114-MW62C | 22 | SP | Reddish brown (2.5YR 4/3) poorly graded SAND with little silt, fine sand, wet. | 15 | $> 10^{-3}$ |
| 114-MW62C | 22.5 | SP | Dark reddish brown (2.5YR 3/3) poorly graded SAND with little silt, wet. Pale yellow groundwater observed at 22.0 ft. | 40 | $> 10^{-3}$ |
| 114-MW62C | 24 | ML | Reddish brown (5YR 4/4) sandy SILT, fine sand, wet. | 60 | $10^{-3}$ to $10^{-6}$ |
| 114-MW62C | 31 | ML | Reddish brown (5YR 4/4) SILT with sand, fine sand, loose, wet. | 55 | $10^{-3}$ to $10^{-6}$ |
| 114-MW62C | 33 | ML | Reddish brown (2.5YR 5/3) SILT with trace fine sand, wet. | 55 | $10^{-3}$ to $10^{-6}$ |
| 114-MW62C | 35 | ML | Reddish brown (2.5YR 5/3) SILT with trace fine sand, wet. | 95 | $10^{-3}$ to $10^{-6}$ |
| 114-MW62C | 41 | SW | Reddish brown (5YR 4/3) well graded SAND with few silt, medium sand, few fine sand, few coarse sand, little fine to coarse gravel (up to 2" across), grades into sand with little silt at 45 ft bgs, wet. | 10 | $> 10^{-3}$ |
| 114-MW62C | 45 | SP | Reddish brown (5YR 4/3) poorly graded SAND with little silt, medium sand, few coarse sand, loose, wet. | 20 | $> 10^{-3}$ |
| 114-MW62C | 46.5 | SM | Reddish brown (2.5YR 4/4) widely graded SAND with some silt, fine to angular coarse sand, few embedded fine to coarse gravel, very dense, dry to damp (Basal Till). | 30 | $10^{-3}$ to $10^{-6}$ |
| 114-MW62C | 50 | SM | Reddish brown (5YR 4/4) SAND with some silt, trace coarse sand, few fine to coarse subrounded to subangular gravel embedded in matrix, compact (at 50 ft), dense to very dense, damp (Basal Till). | 30 | $10^{-3}$ to $10^{-6}$ |
| 114-MW62C | 60 | SW | Reddish brown (5YR 4/4) well graded SAND with little silt, fine to coarse sand, little subangular to subrounded fine to coarse gravel, very dense, damp to dry (Basal Till). | 25 | $> 10^{-3}$ |
| 114-MW62C | 67 | SM | Reddish brown (5YR 4/4) poorly graded SAND with little silt, fine to medium sand, trace gravel, loose, damp (Basal Till). | 25 | $10^{-3}$ to $10^{-6}$ |
| 114-MW62C | 69 | SM | Reddish brown (5YR 4/3) widely graded SAND with some silt, fine to coarse sand, few fine to coarse gravel embedded, very dense, damp (Basal Till). | 30 | $10^{-3}$ to $10^{-6}$ |
| 114-MW63C | 19 | SP-SM | Dark reddish brown (5YR 3/4) poorly graded SAND with silt, medium sand, few fine sand, trace coarse sand, little gravel. | 10 | $> 10^{-3}$ to $10^{-6}$ |
| 114-MW63C | 23 | SP | Reddish brown, poorly graded SAND, trace silt, fine to medium sand, little sub-angular fine to coarse gravel, wet. | 1-5 | $> 10^{-3}$ |
| 114-MW63C | 40 | ML | Reddish brown (2.5YR 4/3) sandy SILT with fine sand, wet. | 70 | $10^{-3}$ to $10^{-6}$ |
| 114-MW63C | 50 | ML | Reddish brown SILT with fine SAND, wet, yellowish groundwater at 50 ft bgs. | 90-95 | $10^{-3}$ to $10^{-6}$ |
| 114-MW63C | 61 | SP | Reddish brown poorly graded SAND, fine sand, wet. | 4 | $> 10^{-3}$ |
| 114-MW63C | 63 | SC | Reddish brown clayey SAND, little fine to coarse sand, little fine to coarse gravel, firm (Basal Till). | 25 | $10^{-6}$ to $10^{-8}$ |
| 114-MW64C | 23.5 | SP | Brown (7.5YR 5/2) poorly graded SAND with few silt, loose between 22.5-24.2 ft bgs, medium dense between 24.2-25.2 ft bgs, wet. MGP sheen on soils between 20-22.5 ft bgs. | 10-15 | $> 10^{-3}$ |
| 114-MW64C | 24.5 | SP | Brown (7.5YR 5/2) poorly graded SAND with little silt, fine sand, loose to medium dense, moist. | 25 | $> 10^{-3}$ |
| 114-MW64C | 30 | SP | Reddish brown (5YR 4/4) poorly graded SAND with little silt, wet. Pale yellow groundwater observed in core. | 25 | $> 10^{-3}$ |
| 114-MW64C | 35 | SP | Reddish brown (5YR 4/4) poorly graded SAND, fine to medium sand, wet. | 10 | $> 10^{-3}$ |
| 114-MW64C | 41 | SP | Reddish brown (5YR 4/4) poorly graded SAND with few silt, medium sand, trace coarse sand, trace subrounded fine to coarse gravel, wet. MGP sheen observed on soils. | 10 | $> 10^{-3}$ |
| 114-MW64C | 51 | SP | Reddish brown poorly graded SAND with few silt, medium sand, little fine sand, loose, wet. MGP sheen observed on soils. | 10 | $> 10^{-3}$ |
| 114-MW64C | 81 | SP | Reddish brown poorly graded SAND, few silt, mostly fine sand, wet. | 10 | $> 10^{-3}$ |
| 114-MW64C | 83 | SC | Reddish brown clayey SAND with little fine to coarse gravel, medium dense, wet. | 40 | $10^{-6}$ to $10^{-8}$ |
| 114-MW64C | 90.5 | SP | Reddish brown poorly graded SAND with few silt, fine sand (Basal Till). | 10 | $> 10^{-3}$ |
| 114-MW65C | 26 | SP-SM | Weak red (2.5YR 4/2) poorly graded SAND with silt, fine sand, loose. | 5-10 | $> 10^{-3}$ to $10^{-6}$ |
| 114-MW65C | 29.5 | SP-SM | Weak red (2.5YR 4/2) poorly graded SAND with silt, fine sand, loose. | 20 | $> 10^{-3}$ to $10^{-6}$ |
| 114-MW65C | 35 | SM | Strong brown (7.5YR 4/6) silty SAND, fine sand, loose, wet. Yellowish groundwater at 33' to 37'. | 30 | $10^{-3}$ to $10^{-6}$ |
| 114-MW65C | 52 | SP-SM | Reddish brown (2.5YR 4/3) poorly graded SAND with silt, fine sand, little medium sand. | 15 | $> 10^{-3}$ to $10^{-6}$ |
| 114-MW65C | 53 | SM | Reddish brown (5YR 5/4) silty SAND, little sub-angular fine to sub-rounded coarse gravel, hard, moist (Basal Till). | 30 | $10^{-3}$ to $10^{-6}$ |
| 114-MW65C | 64 | SW-SC | Reddish brown (5YR 4/3) widely graded SAND with silt or clay, fine to coarse sand, little fine to coarse gravel, few large gravel (2" to 3" wide), hard, moist (Basal Till). | 15 | $> 10^{-3}$ to $10^{-8}$ |
| 114-MW65C | 65.5 | SM | Reddish brown (5YR 4/3) silty SAND, fine to coarse sand, few fine gravel, few coarse sub-rounded gravel (Basal Till). | 20 | $10^{-3}$ to $10^{-6}$ |

**Notes:**

[1]Percentage of fines (silt/clay) is an estimated value based on a field-testing method

[2]Estimated hydraulic conductivity value is for USCS code assigned to soil sample, based on Table B-2 from *Materials Testing FM 5-472 NAVFAC MO 330 AFJMAN 32-1221(I)* , Department of the Army, July 1, 2001

cm - centimeters

ft bgs - feet below ground surface

sec - seconds

USCS - Unified Soil Classification System

# Table 4-1
# Monitoring Well Network
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

| Well ID | Easting (ft NAD83) | Northing (ft NAD83) | Well Type | Well Permit Number | Well Installation Date | Total Depth (ft) | Screened Interval (ft) | Top of Inner Casing Elevation (ft NAVD88) | Inner Well Diameter (inches) |
|---|---|---|---|---|---|---|---|---|---|
| 114MON32 | 611239.5 | 683680.9 | SHALLOW | E201201464 | 2012-02-09 | 14.00 | 4 - 14 | 15.53 | 4.0 |
| 114MON33 | 611187.0 | 683570.3 | SHALLOW | E201201465 | 2012-03-02 | 14.00 | 4 - 14 | 16.74 | 4.0 |
| 114-P1B-MW101S | 610775.8 | 683407.3 | SHALLOW | E201404667 | 2014-05-19 | 15.10 | 4 - 14 | 13.30 | 4.0 |
| 114-P1B-MW102S | 611020.3 | 683323.2 | SHALLOW | E201404668 | 2014-05-02 | 16.00 | 6 - 16 | 13.06 | 4.0 |
| MW1C-3 | 611235.8 | 683937.3 | SHALLOW | E201308658 | 2013-07-03 | 15.00 | 5 - 15 | 18.45 | 2.0 |
| 10W-MW101S | 610587.4 | 682617.1 | SHALLOW | E201710694 | 2018-01-18 | 17.00 | 12 - 17 | 15.15 | 2.0 |
| 10W-MW102S | 610516.5 | 682453.4 | SHALLOW | E201710695 | 2018-01-19 | 17.00 | 12 - 17 | 15.11 | 2.0 |
| 114-MC-MW101S | 611054.3 | 683240.3 | SHALLOW | E201404675 | 2014-09-30 | 15.00 | 5 - 15 | 14.17 | 4.0 |
| 114-MC-MW102S | 611155.1 | 683403.8 | SHALLOW | E201404676 | 2014-09-30 | 17.00 | 7 - 17 | 14.65 | 4.0 |
| 114-MW14A | 611250.0 | 684019.5 | SHALLOW | 26-00082-033 | 2007-02-02 | 12.50 | 2.5 - 12.5 | 12.07 | 2.0 |
| 114-MW15A | 610888.5 | 683851.5 | SHALLOW | 26-00081-305 | 2007-01-30 | 6.00 | 2.5 - 6 | 13.05 | 2.0 |
| 114-MW16A | 610609.5 | 683363.0 | SHALLOW | 26-00081-300 | 2007-01-05 | 19.00 | 2 - 17 | 15.81 | 2.0 |
| 114-MW20AR | 611545.9 | 683012.1 | SHALLOW | E202006406 | 2020-06-26 | 13.00 | 8 - 13 | 11.26 | 2.0 |
| 114-MW22AR | 610688.0 | 683257.0 | SHALLOW | E202006408 | 2020-06-25 | 13.00 | 8 - 13 | 10.49 | 2.0 |
| 114-MW24AR | 611670.0 | 683682.5 | SHALLOW | E201802594 | 2018-04-09 | 14.00 | 9 - 14 | 11.36 | 2.0 |
| 114-MW25A | 611787.9 | 683588.8 | SHALLOW | E201118846 | 2011-12-02 | 14.00 | 9 - 14 | 9.88 | 4.0 |
| 114-MW26A | 611900.8 | 683494.9 | SHALLOW | E201118843 | 2011-11-30 | 15.00 | 10 - 15 | 14.20 | 4.0 |
| 114-MW27A | 611841.6 | 683638.6 | SHALLOW | E201118845 | 2011-12-02 | 16.00 | 11 - 16 | 10.35 | 4.0 |
| 114-MW28A | 611972.7 | 683509.5 | SHALLOW | E201118844 | 2011-11-30 | 14.00 | 9 - 14 | 15.30 | 4.0 |
| 114-MW2B1-2 | 611629.1 | 683807.6 | SHALLOW | E201400709 | 2014-05-09 | 26.00 | 16 - 26 | 23.96 | 2.0 |
| 114-MW30A | 611950.1 | 683596.7 | SHALLOW | E201206000 | 2012-02-03 | 14.00 | 9 - 14 | 9.90 | 2.0 |
| 114-MW36A | 611817.1 | 683551.8 | SHALLOW | E201505769 | 2015-06-22 | 15.00 | 10 - 15 | 10.69 | 2.0 |
| 114-MW37A | 611912.7 | 683693.1 | SHALLOW | E201505771 | 2015-06-23 | 15.00 | 10 - 15 | 10.87 | 2.0 |
| 114-MW38A | 611801.7 | 683760.3 | SHALLOW | E201505773 | 2015-07-01 | 25.00 | 20 - 25 | 20.51 | 2.0 |
| 114-MW41A | 611376.3 | 683888.8 | SHALLOW | E201710722 | 2017-10-25 | 15.00 | 10 -15 | 18.24 | 2.0 |
| 114-MW42A | 610825.5 | 683625.8 | SHALLOW | E201712012 | 2017-11-01 | 12.00 | 7 - 12 | 9.94 | 2.0 |
| 114-MW43A | 611056.7 | 683941.8 | SHALLOW | E201712608 | 2017-11-09 | 12.00 | 7 - 12 | 11.38 | 2.0 |
| 114-MW44A | 611768.2 | 683634.4 | SHALLOW | E201712282 | 2017-10-30 | 12.00 | 7 - 12 | 9.14 | 2.0 |
| 114-P1A-MW101S | 611028.5 | 683770.6 | SHALLOW | E201404666 | 2014-04-22 | 15.00 | 5 - 15 | 14.33 | 4.0 |
| 114-P1B-MW103S | 610894.7 | 683233.7 | SHALLOW | E201404669 | 2014-05-17 | 17.00 | 7 - 17 | 14.24 | 4.0 |
| 114-P1B-MW104S | 610918.1 | 683537.6 | SHALLOW | E201404670 | 2014-05-19 | 14.00 | 4 - 14 | 13.93 | 4.0 |
| 114-P1C-MW101S | 611175.1 | 683916.7 | SHALLOW | E201404674 | 2014-10-08 | 12.00 | 2 - 12 | 13.68 | 4.0 |
| 114-P1C-MW102S | 611067.2 | 683864.2 | SHALLOW | E201702772 | 2017-03-17 | 14.00 | 4 - 14 | 14.91 | 2.0 |
| 114-P1C-MW103S | 611224.6 | 683789.1 | SHALLOW | E201702773 | 2017-03-17 | 16.00 | 6 - 16 | 14.72 | 2.0 |
| 114-P1C-MW104S | 611259.7 | 683908.9 | SHALLOW | E201702774 | 2017-03-17 | 14.00 | 4 - 14 | 14.60 | 2.0 |
| 114-P2A-MW101S | 611575.0 | 683382.4 | SHALLOW | E201600651 | 2016-02-01 | 18.50 | 8.5 - 18.5 | 12.52 | 2.0 |
| 114-P2A-MW102S | 611697.4 | 683499.6 | SHALLOW | E201600653 | 2016-02-01 | 20.00 | 10 - 20 | 13.70 | 2.0 |
| 114-P2A-MW103S | 611833.4 | 683389.7 | SHALLOW | E201600655 | 2016-01-28 | 18.00 | 8 - 18 | 15.98 | 2.0 |
| 114-P2A-MW104S | 611588.5 | 683170.1 | SHALLOW | E201600657 | 2016-02-01 | 20.00 | 10 - 20 | 12.83 | 2.0 |
| 114-P2B1-MW101S | 611427.8 | 683761.5 | SHALLOW | E201404671 | 2014-10-14 | 13.00 | 3 - 13 | 15.01 | 4.0 |
| 114-P2B1-MW102S | 611360.5 | 683806.9 | SHALLOW | E201404672 | 2014-10-09 | 19.00 | 9 - 19 | 11.46 | 4.0 |
| 114-P2B1-MW103S | 611290.4 | 683489.7 | SHALLOW | E201404673 | 2014-04-29 | 13.00 | 3 - 13 | 12.99 | 4.0 |
| 114-P2B2-MW101S | 611635.6 | 683617.7 | SHALLOW | E201500663 | 2015-02-24 | 15.00 | 4.5 - 14.5 | 10.96 | 4.0 |
| 114-P2B3-MW101S | 611356.2 | 683243.7 | SHALLOW | E201500664 | 2015-02-19 | 16.00 | 6 - 16 | 13.93 | 4.0 |

# Table 4-1
# Monitoring Well Network
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

| Well ID | Easting (ft NAD83) | Northing (ft NAD83) | Well Type | Well Permit Number | Well Installation Date | Total Depth (ft) | Screened Interval (ft) | Top of Inner Casing Elevation (ft NAVD88) | Inner Well Diameter (inches) |
|---|---|---|---|---|---|---|---|---|---|
| 114-P2B3-MW2R | 611161.4 | 682967.8 | SHALLOW | E202006410 | 2020-06-26 | 14.00 | 9 - 14 | 10.87 | 2.0 |
| 114-P2B4-MW101S | 611266.9 | 683076.0 | SHALLOW | E201500665 | 2015-02-20 | 18.00 | 8 - 18 | 13.48 | 4.0 |
| 114-P2B4-MW102S | 611283.9 | 682895.5 | SHALLOW | E201500666 | 2015-02-24 | 16.00 | 6 - 16 | 13.44 | 4.0 |
| 114-P2B4-MW103S | 611496.7 | 683152.3 | SHALLOW | E201500667 | 2015-02-11 | 16.00 | 6 - 16 | 15.30 | 4.0 |
| 114-P2B4-MW2R | 611324.4 | 682856.7 | SHALLOW | E202006407 | 2020-06-24 | 14.00 | 9 - 14 | 9.81 | 2.0 |
| 132-MW2A | 610541.9 | 682823.9 | SHALLOW | 26-00082-298 | 2007-03-20 | 18.00 | 4 - 18 | 14.12 | 2.0 |
| 132-P3A-MW102S | 610574.2 | 682944.0 | SHALLOW | E201508500 | 2015-09-07 | 14.00 | 4 - 14 | 15.38 | 4.0 |
| 132-P3A-MW103S | 610902.2 | 682953.6 | SHALLOW | E201508502 | 2015-09-04 | 16.00 | 6 - 16 | 15.11 | 4.0 |
| 132-P3A-MW104S | 610760.0 | 682818.7 | SHALLOW | E201508504 | 2015-09-04 | 16.00 | 6 - 16 | 14.80 | 4.0 |
| 132-P3A-MW1R | 610877.0 | 683163.7 | SHALLOW | E202006411 | 2020-06-25 | 8.00 | 3 - 8 | 11.92 | 2.0 |
| 132-P3A-MW2 | 610722.8 | 682915.9 | SHALLOW | E201410049 | 2014-08-11 | 17.00 | 7 - 17 | 12.20 | 2.0 |
| 132-P3A-MW3 | 610668.2 | 682734.0 | SHALLOW | E201410050 | 2014-08-06 | 18.00 | 8 - 18 | 13.01 | 2.0 |
| 132-P3A-MW4 | 610780.3 | 682676.9 | SHALLOW | E201410051 | 2014-08-05 | 20.00 | 10 - 20 | 13.08 | 2.0 |
| 133-MW6A | 610556.4 | 682210.1 | SHALLOW | E201317206 | 2013-11-27 | 15.00 | 10 - 15 | 11.49 | 2.0 |
| 133-P3C-MW101S | 611157.8 | 682638.6 | SHALLOW | E201600649 | 2016-01-21 | 14.00 | 4 - 14 | 12.16 | 2.0 |
| 133-P3C-MW102S | 610947.8 | 682441.5 | SHALLOW | E201600679 | 2016-01-21 | 14.00 | 4 - 14 | 12.57 | 2.0 |
| 135-MW1AR | 610954.3 | 682134.3 | SHALLOW | E201802595 | 2018-03-29 | 15.00 | 10 - 15 | 9.71 | 2.0 |
| 135-MW2A | 611409.2 | 682561.8 | SHALLOW | 26-00082-878 | 2007-04-17 | 16.50 | 3 - 16.5 | 8.74 | 2.0 |
| 135-P3C-MW101S | 611270.5 | 682599.1 | SHALLOW | E201802607 | 2018-03-30 | 12.00 | 7 - 12 | 10.97 | 2.0 |
| 135-P3C-MW102S | 611120.7 | 682311.9 | SHALLOW | E201802598 | 2018-04-03 | 15.00 | 10 - 15 | 10.99 | 2.0 |
| 137-P3B-MW101S | 611109.9 | 682945.1 | SHALLOW | E201508494 | 2015-09-07 | 16.00 | 6 - 16 | 14.61 | 4.0 |
| 137-P3B-MW102S | 610941.1 | 682662.1 | SHALLOW | E201508496 | 2015-09-07 | 17.00 | 7 - 17 | 14.16 | 4.0 |
| 143-P3A-MW101S | 610734.9 | 683206.6 | SHALLOW | E201508498 | 2015-08-24 | 14.00 | 4 - 14 | 12.17 | 4.0 |
| 186-MW01 | 611231.8 | 684198.7 | SHALLOW | 2600048758 | 1997-09-11 | 15.00 | 5 - 15 | 18.37 | 2.0 |
| 186-MW02R | 611305.0 | 684165.2 | SHALLOW | E201710902 | 2017-09-30 | 15.00 | 5 - 15 | 13.10 | 2.0 |
| FS-MW101S | 611769.0 | 683524.7 | SHALLOW | E201802593 | 2018-04-09 | 9.00 | 4 - 9 | 10.83 | 2.0 |
| HSS-P3C-MW1S | 611265.2 | 682785.5 | SHALLOW | E201601117 | 2016-02-05 | 17.00 | 7 - 17 | 11.97 | 2.0 |
| HSS-P3C-MW2S | 610994.0 | 682542.7 | SHALLOW | E201601118 | 2016-02-05 | 14.00 | 4 - 14 | 12.37 | 2.0 |
| MW10S | 612063.0 | 683218.3 | SHALLOW | 26-00075-537 | 2007-08-16 | 15.00 | 5 - 15 | 13.79 | 2.0 |
| MW1C-4 | 611329.7 | 683908.4 | SHALLOW | E201308659 | 2013-07-02 | 15.00 | 5 - 15 | 17.58 | 2.0 |
| MW-31A | 611088.6 | 683596.6 | SHALLOW | E201207640 | 2012-05-25 | 16.00 | 6 - 16 | 15.72 | 2.0 |
| MW7S | 611824.6 | 682961.0 | SHALLOW | 26-00084-549 | 2007-08-16 | 12.00 | 2 - 12 | 10.29 | 2.0 |
| MW8S | 611487.5 | 682643.0 | SHALLOW | E201317210 | 2013-11-27 | 12.00 | 7 - 12 | 8.39 | 2.0 |
| MW-CR-1 | 611383.0 | 683994.0 | SHALLOW | E201317042 | 2013-11-19 | 22.00 | 2 - 22 | 17.61 | 4.0 |
| MW-CR-2 | 611422.0 | 683982.0 | SHALLOW | E201317043 | 2013-11-20 | 23.00 | 3 - 23 | 17.78 | 4.0 |
| MW-CR-3 | 611447.0 | 683975.0 | SHALLOW | E201317044 | 2013-11-21 | 23.00 | 3 - 23 | 17.82 | 4.0 |
| MW-CR-4 | 611485.0 | 683962.0 | SHALLOW | E201317045 | 2013-11-21 | 19.00 | 4 - 19 | 17.73 | 4.0 |
| MW-CR-5 | 611521.0 | 684115.0 | SHALLOW | E201317049 | 2013-11-22 | 18.00 | 3 - 18 | 16.55 | 4.0 |
| MW-CR-6 | 611670.0 | 684406.0 | SHALLOW | E201317050 | 2013-11-22 | 20.00 | 5 - 20 | 17.04 | 4.0 |
| MW-MORRIS1A | 611286.4 | 683664.0 | SHALLOW | E201217886 | 2012-11-28 | 20.00 | 10 - 20 | 14.43 | 4.0 |
| 114-P1A-MW101I | 611036.1 | 683779.1 | INTERMEDIATE | E201404661 | 2014-04-24 | 35.00 | 25 - 35 | 14.40 | 4.0 |
| 114-P1B-MW102I | 611027.7 | 683334.0 | INTERMEDIATE | E201404663 | 2014-05-07 | 34.00 | 24 - 34 | 12.63 | 4.0 |
| 114-P1C-EW1 | 611297.4 | 683885.0 | INTERMEDIATE | E201402919 | 2014-04-04 | 39.00 | 29 - 39 | 13.08 | 4.0 |
| 114-P2A-MW103I | 611823.6 | 683382.7 | INTERMEDIATE | E201600654 | 2016-01-29 | 42.00 | 32 - 42 | 15.41 | 2.0 |

# Table 4-1
# Monitoring Well Network
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

| Well ID | Easting (ft NAD83) | Northing (ft NAD83) | Well Type | Well Permit Number | Well Installation Date | Total Depth (ft) | Screened Interval (ft) | Top of Inner Casing Elevation (ft NAVD88) | Inner Well Diameter (inches) |
|---|---|---|---|---|---|---|---|---|---|
| 10W-MW105I | 610626.9 | 682304.3 | INTERMEDIATE | E201712014 | 2018-01-10 | 40.00 | 35 - 40 | 10.92 | 2.0 |
| 114-MC-EW103 | 611263.8 | 683631.3 | INTERMEDIATE | E201406161 | 2014-05-29 | 45.00 | 30 - 45 | 12.11 | 4.0 |
| 114-MC-PZ103 | 611276.6 | 683655.5 | INTERMEDIATE | E201406166 | 2014-06-03 | 42.00 | 37 - 42 | 11.98 | 2.0 |
| 114-MC-PZ203 | 611253.7 | 683620.0 | INTERMEDIATE | E201411821 | 2014-10-03 | 42.00 | 37 - 42 | 14.01 | 2.0 |
| 114-MW17B | 611688.5 | 683902.0 | INTERMEDIATE | E201711856 | 2018-02-07 | 30.00 | 25 - 30 | 13.25 | 2.0 |
| 114-MW19B | 611259.9 | 682735.0 | INTERMEDIATE | 26-00080-773 | 2006-10-13 | 50.00 | 45 - 50 | 12.66 | 2.0 |
| 114-MW22BR | 610699.9 | 683252.8 | INTERMEDIATE | E202006409 | 2020-07-02 | 31.00 | 26 - 31 | 10.25 | 2.0 |
| 114-MW24B | 611662.3 | 683681.7 | INTERMEDIATE | E201400225 | 2014-01-17 | 35.00 | 30 - 35 | 11.56 | 4.0 |
| 114-MW25B | 611795.8 | 683596.0 | INTERMEDIATE | E201317213 | 2014-01-24 | 35.00 | 30 - 35 | 10.08 | 4.0 |
| 114-MW26B | 611844.2 | 683496.2 | INTERMEDIATE | E201710720 | 2017-10-10 | 38.00 | 33 - 38 | 11.32 | 2.0 |
| 114-MW27B | 611835.7 | 683631.9 | INTERMEDIATE | E201400561 | 2014-02-04 | 35.00 | 30 - 35 | 10.20 | 4.0 |
| 114-MW2B1-2I | 611639.0 | 683809.0 | INTERMEDIATE | E201710717 | 2017-10-20 | 38.00 | 33 - 38 | 23.95 | 2.0 |
| 114-MW36B | 611795.9 | 683573.2 | INTERMEDIATE | E201505770 | 2015-06-28 | 35.00 | 30 - 35 | 9.93 | 2.0 |
| 114-MW37B | 611917.3 | 683689.1 | INTERMEDIATE | E201505772 | 2015-06-23 | 35.00 | 30 - 35 | 10.79 | 2.0 |
| 114-MW38B | 611806.7 | 683758.7 | INTERMEDIATE | E201505774 | 2015-07-07 | 42.00 | 37 - 42 | 20.55 | 2.0 |
| 114-MW39B | 611588.9 | 682516.4 | INTERMEDIATE | E201712605 | 2018-01-25 | 45.00 | 40 - 45 | 10.64 | 2.0 |
| 114-MW40B | 611701.6 | 682734.9 | INTERMEDIATE | E201803066 | 2018-04-10 | 43.00 | 38 - 43 | 10.29 | 2.0 |
| 114-MW41B | 611366.9 | 683891.9 | INTERMEDIATE | E201710723 | 2017-10-25 | 27.00 | 22 - 27 | 17.67 | 2.0 |
| 114-P1B-MW101I | 610792.0 | 683434.4 | INTERMEDIATE | E201404662 | 2014-05-22 | 33.00 | 23 - 33 | 14.13 | 4.0 |
| 114-P1C-MW101I | 611171.1 | 683905.2 | INTERMEDIATE | E201404665 | 2014-10-09 | 35.00 | 30 - 35 | 13.31 | 4.0 |
| 114-P1C-PZ1 | 611322.2 | 683895.7 | INTERMEDIATE | E201402920 | 2014-04-04 | 36.00 | 26 - 36 | 16.18 | 2.0 |
| 114-P1C-PZ2 | 611286.0 | 683878.2 | INTERMEDIATE | E201411822 | 2014-10-13 | 30.00 | 20 - 30 | 13.24 | 2.0 |
| 114-P1-IRM-5I | 611020.0 | 683198.0 | INTERMEDIATE | E201711736 | 2017-12-13 | 43.00 | 23 - 43 | 16.82 | 4.0 |
| 114-P1-MW-2I | 610974.0 | 683574.0 | INTERMEDIATE | E201711723 | 2017-12-11 | 39.32 | 19.32 - 39.32 | 16.23 | 2.0 |
| 114-P2A-MW101I | 611562.6 | 683373.3 | INTERMEDIATE | E201600650 | 2016-02-02 | 41.00 | 28 - 41 | 12.71 | 2.0 |
| 114-P2A-MW102I | 611686.2 | 683489.7 | INTERMEDIATE | E201600652 | 2016-02-02 | 37.50 | 27.5 - 37.5 | 13.12 | 2.0 |
| 114-P2A-MW104I | 611579.1 | 683175.0 | INTERMEDIATE | E201600656 | 2016-02-04 | 40.00 | 30 - 40 | 14.10 | 2.0 |
| 114-P2B1-MW101I | 611441.8 | 683756.1 | INTERMEDIATE | E201404664 | 2014-10-16 | 40.00 | 30 - 40 | 13.95 | 4.0 |
| 114-P2B2-MW101I | 611630.1 | 683631.6 | INTERMEDIATE | E201500658 | 2015-02-26 | 39.00 | 27 - 37 | 10.55 | 4.0 |
| 114-P2B3-MW101I | 611359.0 | 683256.6 | INTERMEDIATE | E201500659 | 2015-03-03 | 35.00 | 25 - 35 | 12.93 | 4.0 |
| 114-P2B4-MW101I | 611248.4 | 683067.9 | INTERMEDIATE | E201500660 | 2015-03-03 | 49.00 | 39 - 49 | 13.31 | 4.0 |
| 114-P2B4-MW102I | 611299.5 | 682875.0 | INTERMEDIATE | E201500661 | 2015-02-09 | 36.00 | 26 - 36 | 11.86 | 4.0 |
| 114-P2B4-MW103I | 611508.4 | 683137.7 | INTERMEDIATE | E201500662 | 2015-02-11 | 34.00 | 24 - 34 | 13.05 | 4.0 |
| 132-P3A-MW102I | 610581.0 | 682952.2 | INTERMEDIATE | E201508499 | 2015-09-09 | 28.00 | 18 - 28 | 15.81 | 4.0 |
| 132-P3A-MW103I | 610888.4 | 682958.1 | INTERMEDIATE | E201508501 | 2015-09-10 | 44.00 | 34 - 44 | 13.21 | 4.0 |
| 132-P3A-MW104I | 610775.9 | 682812.8 | INTERMEDIATE | E201508503 | 2015-09-04 | 48.00 | 38 - 48 | 12.88 | 4.0 |
| 132-P3A-MW105I | 610676.8 | 682695.3 | INTERMEDIATE | E201712013 | 2018-01-16 | 42.00 | 37 - 42 | 14.10 | 2.0 |
| 133-P3C-MW101I | 611148.2 | 682630.9 | INTERMEDIATE | E201600648 | 2016-01-25 | 42.00 | 32 - 42 | 12.02 | 2.0 |
| 133-P3C-MW102I | 610958.2 | 682452.2 | INTERMEDIATE | E201600678 | 2016-01-25 | 46.00 | 36 - 46 | 12.18 | 2.0 |
| 135-MW1B | 610948.1 | 682129.6 | INTERMEDIATE | 26-00082-194 | 2007-04-05 | 34.00 | 29 - 34 | 9.64 | 2.0 |
| 135-MW2B | 611415.9 | 682568.1 | INTERMEDIATE | 26-00082-879 | 2007-04-13 | 33.00 | 28 - 33 | 8.65 | 2.0 |
| 135-MW3BR | 611114.8 | 682301.5 | INTERMEDIATE | E201802596 | 2018-04-06 | 33.00 | 28 - 33 | 10.94 | 2.0 |
| 137-P3B-MW101I | 611100.5 | 682952.0 | INTERMEDIATE | E201508493 | 2015-09-04 | 45.00 | 35 - 45 | 13.00 | 4.0 |
| 137-P3B-MW102I | 610954.2 | 682651.6 | INTERMEDIATE | E201508495 | 2015-09-11 | 49.00 | 39 - 49 | 12.94 | 4.0 |

# Table 4-1
# Monitoring Well Network
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

| Well ID | Easting (ft NAD83) | Northing (ft NAD83) | Well Type | Well Permit Number | Well Installation Date | Total Depth (ft) | Screened Interval (ft) | Top of Inner Casing Elevation (ft NAVD88) | Inner Well Diameter (inches) |
|---|---|---|---|---|---|---|---|---|---|
| 143-P3A-MW101I | 610728.7 | 683206.9 | INTERMEDIATE | E201508497 | 2015-09-04 | 30.00 | 20 - 30 | 12.93 | 4.0 |
| MW7D | 611819.5 | 682963.4 | INTERMEDIATE | 26-00075-537 | 2005-07-14 | 48.00 | 38 - 48 | 10.87 | 2.0 |
| MW8D | 611495.2 | 682650.1 | INTERMEDIATE | 26-00075-536 | 2005-07-15 | 49.00 | 39 - 49 | 8.52 | 2.0 |
| HAL-P3-IRM-003I-B* | 611406.3 | 682918.3 | INTERMEDIATE | NA | 2021-05-19 | 80.00 | 60 - 80 | 14.76 | 2.0 |
| HAL-P3-IRM-004I-B* | 611455.5 | 682962.6 | INTERMEDIATE | NA | 2021-05-20 | 80.00 | 60 - 80 | 15.17 | 2.0 |
| HAL-P3-IRM-010I-B* | 611460.5 | 682906.5 | INTERMEDIATE | NA | 2021-05-20 | 80.00 | 60 - 80 | 14.83 | 2.0 |
| 114-MW25C | 611795.8 | 683600.4 | DEEP | E201710719 | 2017-10-13 | 47.00 | 42 - 47 | 9.77 | 2.0 |
| 114-MW67C | 611021.9 | 683615.9 | DEEP | E202100480 | 2021-01-20 | 58.00 | 50 - 56 | 14.67 | 6.0 |
| 114-MW68C | 610851.6 | 683321.4 | DEEP | E202100482 | 2021-01-19 | 58.00 | 50 - 56 | 15.75 | 6.0 |
| 114-MW70C | 611331.4 | 682887.0 | DEEP | E202100484 | 2021-01-25 | 97.00 | 85 - 95 | 13.79 | 6.0 |
| 114-P1B-MW103D | 610887.2 | 683237.0 | DEEP | E201711877 | 2017-11-13 | 56.00 | 51 - 56 | 16.73 | 2.0 |
| 114-P1-IRM-27D | 611197.0 | 683345.0 | DEEP | E201711737 | 2017-11-27 | 53.00 | 33 - 53 | 13.26 | 4.0 |
| 114-P1-IRM-40D | 611379.0 | 683501.0 | DEEP | E201711737 | 2017-12-18 | 67.00 | 47 - 67 | 12.73 | 4.0 |
| 132-P3A-MW104D-1 | 610794.3 | 682807.3 | DEEP | E201712010 | 2017-11-15 | 55.00 | 50 - 55 | 14.89 | 2.0 |
| 132-P3A-MW104D-2 | 610794.3 | 682807.3 | DEEP | E201712011 | 2017-11-15 | 72.00 | 67 - 72 | 14.89 | 2.0 |
| 133-MW2C | 610792.7 | 682151.1 | DEEP | 26-00082-198 | 2007-04-13 | 99.00 | 94 - 99 | 9.84 | 2.0 |
| 135-MW1C | 610951.3 | 682131.1 | DEEP | 26-00082-195 | 2007-03-30 | 103.00 | 98 - 103 | 9.34 | 2.0 |
| 137-MW1C | 611036.7 | 683020.3 | DEEP | 26-00082-189 | 2007-03-15 | 73.00 | 68 - 73 | 13.15 | 2.0 |
| 137-MW2C | 610918.5 | 682801.1 | DEEP | 26-00082-192 | 2007-03-05 | 83.00 | 78 - 83 | 13.87 | 2.0 |
| MW6C | 611301.5 | 683686.7 | DEEP | 26-00077-553 | 2005-12-07 | 65.00 | 55 - 65 | 12.90 | 2.0 |
| MW8F | 611479.9 | 682647.6 | DEEP | E201317209 | 2013-12-20 | 84.00 | 78 - 83 | 8.89 | 4.0 |
| MW-CR-3D | 611443.5 | 683987.8 | DEEP | E201711855 | 2018-02-02 | 46.00 | 41 - 46 | 14.88 | 2.0 |
| 133-MW1C | 610670.8 | 682283.1 | DEEP/TILL | 26-00082-877 | 2007-04-30 | 77.00 | 72 - 77 | 11.50 | 2.0 |
| 114-MW19C | 611263.3 | 682737.3 | BASAL TILL | 26-00081-141 | 2006-11-03 | 101.20 | 96 - 101 | 12.53 | 2.0 |
| 114-MW45C | 611411.8 | 683675.0 | BASAL TILL | E201909974 | 2019-10-02 | 76.00 | 67 - 71 | 13.22 | 2.0 |
| 114-MW48C | 611163.8 | 683919.4 | BASAL TILL | E202002714 | 2020-03-19 | 64.00 | 53 - 57 | 16.20 | 2.0 |
| 114-MW49C | 611378.1 | 683872.0 | BASAL TILL | E202002715 | 2020-03-20 | 75.00 | 64.5 - 69.5 | 16.52 | 2.0 |
| 114-MW50C | 611043.1 | 683769.8 | BASAL TILL | E202002716 | 2020-03-31 | 70.00 | 57 - 62 | 15.36 | 2.0 |
| 114-MW51C | 611633.3 | 683637.4 | BASAL TILL | E202002718 | 2020-03-25 | 82.00 | 71.5 - 76.5 | 14.13 | 2.0 |
| 114-MW52C | 611034.7 | 683527.7 | BASAL TILL | E202002719 | 2020-07-09 | 79.00 | 68 - 73 | 15.85 | 2.0 |
| 114-MW54C | 611214.9 | 683276.5 | BASAL TILL | E202002721 | 2020-04-02 | 84.00 | 72 - 77 | 12.71 | 2.0 |
| 114-MW56C | 610934.8 | 683324.4 | BASAL TILL | E202002723 | 2020-07-06 | 80.00 | 67 - 72 | 16.04 | 2.0 |
| 114-MW59C | 611255.2 | 683079.6 | BASAL TILL | E202002726 | 2020-06-22 | 100.00 | 89.5 - 92.5 | 14.07 | 2.0 |
| 114-MW63C | 611437.0 | 683762.1 | BASAL TILL | E202002938 | 2020-03-24 | 72.00 | 63.5 - 65.5 | 17.68 | 2.0 |
| 114-MW65C | 611291.7 | 683583.0 | BASAL TILL | E202002936 | 2020-03-18 | 72.00 | 60 - 65 | 14.20 | 2.0 |
| 132-P3-MW001D* | 610786.4 | 682809.4 | BASAL TILL | NA | 2021-06-03 | 88.00 | 78 - 88 | 18.30 | 2.0 |
| 114-MW58C | 611371.2 | 683296.6 | BASAL TILL/WEATHERED BR | E202002725 | 2020-06-18 | 80.00 | 72.5 - 76 | 12.51 | 2.0 |
| 114-MW61C | 610879.4 | 683478.6 | BASAL TILL/WEATHERED BR | E202002939 | 2020-07-15 | 75.00 | 62.5 - 67.5 | 16.67 | 2.0 |
| 114-MW62C | 611139.0 | 683749.8 | BASAL TILL/WEATHERED BR | E202002717 | 2020-06-16 | 80.00 | 69 - 73 | 15.04 | 2.0 |
| 114-MW53C | 611157.6 | 683435.6 | WEATHERED BEDROCK | E202002720 | 2020-07-13 | 55.00 | 46 - 47.5 | 15.08 | 2.0 |
| 114-MW55C | 611439.1 | 683519.8 | WEATHERED BEDROCK | E202002722 | 2020-03-27 | 75.00 | 68 - 69 | 13.23 | 2.0 |
| 114-MW57C | 610949.9 | 683210.4 | WEATHERED BEDROCK | E202002724 | 2020-07-01 | 75.00 | 68.5 - 70 | 14.55 | 2.0 |
| 114-MW60C | 611340.1 | 682895.5 | WEATHERED BEDROCK | E202002727 | 2020-06-29 | 125.00 | 119.5 - 121.5 | 12.87 | 2.0 |
| 114-MW64C | 611381.9 | 683046.0 | WEATHERED BEDROCK | E202002937 | 2020-06-24 | 100.00 | 93 - 96 | 12.30 | 2.0 |

# Table 4-1
# Monitoring Well Network
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

| Well ID | Easting (ft NAD83) | Northing (ft NAD83) | Well Type | Well Permit Number | Well Installation Date | Total Depth (ft) | Screened Interval (ft) | Top of Inner Casing Elevation (ft NAVD88) | Inner Well Diameter (inches) |
|---|---|---|---|---|---|---|---|---|---|
| 114-MW16B | 610610.2 | 683366.4 | BEDROCK | 26-00081-301 | 2007-01-05 | 35.50 | 30.5 - 35.5 | 15.53 | 2.0 |
| 114-MW4D | 610821.8 | 683258.9 | BEDROCK | 26-00081-206 | 2006-12-18 | 107.00 | 87 - 107 | 12.97 | 6.0 |
| 114-MW52D | 611077.5 | 683544.4 | BEDROCK | E202012657 | 2020-12-11 | 105.00 | 80 - 105 | 15.64 | 6.0 |
| 114-MW57D | 610903.9 | 683215.5 | BEDROCK | E202012660 | 2021-01-04 | 112.50 | 85 - 112.5 | 14.70 | 6.0 |
| 114-MW61D | 610873.2 | 683469.8 | BEDROCK | E202012658 | 2020-12-28 | 109.00 | 85 - 109 | 16.59 | 6.0 |
| 114-MW66D | 610941.4 | 683423.4 | BEDROCK | E202012659 | 2020-12-30 | 115.00 | 90 - 115 | 16.20 | 6.0 |
| 114-MW6D | 611298.4 | 683683.3 | BEDROCK | 26-00081-167 | 2006-12-14 | 111.00 | 86 - 111 | 12.69 | 6.0 |
| 114-MW7D | 611189.2 | 683329.1 | BEDROCK | 26-00081-207 | 2006-12-15 | 90.00 | 85 - 90 | 11.92 | 2.0 |

**Notes:**

1. Pilot test wells and IRM wells are not presented on this table, with the exception of those used in the groundwater RI.
2. This table presents only active monitoring wells.

* - These wells were installed for the ongoing Phase III groundwater IRM program. Well documentation, including as-built survey information (i.e., NJDEP B's) will be submitted under a separate cover.
BR - bedrock
ft - feet
IRM - Interim Remedial Measure
NA - not available
NAD83 - North American Datum of 1983 (Horizontal)
NAVD88 - North American Vertical Datum of 1988 (Vertical)
RI - Remedial Investigation

# Table 4-2
## Groundwater Sampling Summary
## Groundwater Remedial Investigation Report
## Garfield Avenue Group of Sites
## PPG, Jersey City, New Jersey

| Well Type | Location ID | Sample ID | Sample Type | Fraction | Lab SDG | Lab Sample ID | Date Collected | $Cr^{+6}$, pH, Eh | Metals | SVOC | VOC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SHALLOW | 10W-MW101S | 10W-MW101S-20180208 | N | T | JC60477 | JC60477-3 | 2018-02-08 | X | X | | |
| SHALLOW | 10W-MW102S | 10W-MW102S-20180208 | N | T | JC60477 | JC60477-2 | 2018-02-08 | X | X | | |
| SHALLOW | 114-MW14A | 114-MW14A-10.0-20171219 | N | T | JC57638 | JC57638-3 | 2017-12-19 | X | X | | |
| SHALLOW | 114-MW14A | 114-MW14A-5.0-20171219 | N | T | JC57638 | JC57638-4 | 2017-12-19 | X | X | | |
| SHALLOW | 114-MW15A | 114-MW15A-20180417 | N | D | JC64376 | JC64376-2F | 2018-04-17 | X | X | | |
| SHALLOW | 114-MW15A | 114-MW15A-20180417 | N | T | JC64376 | JC64376-2 | 2018-04-17 | X | X | | |
| SHALLOW | 114-MW20A | 114-MW20A-11.0-20180420 | N | N | JC64643 | JC64643-2 | 2018-04-20 | | | | X |
| SHALLOW | 114-MW20A | 114-MW20A-11.0-20180420 | N | N | JC64643 | JC64643-2A | 2018-04-20 | | | X | |
| SHALLOW | 114-MW20A | 114-MW20A-11.0-20180420 | N | T | JC64643 | JC64643-2A | 2018-04-20 | X | X | | |
| SHALLOW | 114-MW20A | 114-MW20A-8.0-20180420 | N | N | JC64643 | JC64643-3 | 2018-04-20 | | | | X |
| SHALLOW | 114-MW20A | 114-MW20A-8.0-20180420 | N | N | JC64643 | JC64643-3A | 2018-04-20 | | | X | |
| SHALLOW | 114-MW20A | 114-MW20A-8.0-20180420 | N | T | JC64643 | JC64643-3A | 2018-04-20 | X | X | | |
| SHALLOW | 114-MW22A | 114-MW22A-11.0-20180419 | N | T | JC64571 | JC64571-3 | 2018-04-19 | X | X | | |
| SHALLOW | 114-MW22A | 114-MW22A-16.0-20180419 | N | T | JC64571 | JC64571-2 | 2018-04-19 | X | X | | |
| SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | N | D | JC65325 | JC65325-3F | 2018-05-02 | X | X | | |
| SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | N | N | JC65325 | JC65325-3 | 2018-05-02 | | | X | X |
| SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | N | T | JC65325 | JC65325-3 | 2018-05-02 | X | X | | |
| SHALLOW | 114-MW25A | 114-MW25A-20170926 | N | N | JC51824 | JC51824-6 | 2017-09-26 | | | | X |
| SHALLOW | 114-MW25A | 114-MW25A-20170926 | N | T | JC51802 | JC51802-5 | 2017-09-26 | X | X | | |
| SHALLOW | 114-MW25A | 114-MW25A-20170926 | N | T | JC51824 | JC51824-6 | 2017-09-26 | | X | | |
| SHALLOW | 114-MW25A | 114-MW25A-20170927 | N | N | JC51824 | JC51824-7 | 2017-09-27 | | | X | |
| SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | N | N | JC57565 | JC57565-2A | 2017-12-18 | | | X | X |
| SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | N | T | JC57565 | JC57565-2 | 2017-12-18 | X | | | |
| SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | N | T | JC57565 | JC57565-2A | 2017-12-18 | | X | | |
| SHALLOW | 114-MW27A | 114-MW27A-20170926 | N | N | JC51824 | JC51824-5 | 2017-09-26 | | | X | X |
| SHALLOW | 114-MW27A | 114-MW27A-20170926 | N | T | JC51802 | JC51802-4 | 2017-09-26 | X | X | | |
| SHALLOW | 114-MW27A | 114-MW27A-20170926 | N | T | JC51824 | JC51824-5 | 2017-09-26 | | X | | |
| SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | N | N | JC57565 | JC57565-3A | 2017-12-18 | | | X | X |
| SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | N | T | JC57565 | JC57565-3 | 2017-12-18 | X | | | |
| SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | N | T | JC57565 | JC57565-3A | 2017-12-18 | | X | | |
| SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | N | N | JC56729A | JC56729-4A | 2017-12-06 | | | X | X |
| SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | N | T | JC56729 | JC56729-4 | 2017-12-06 | X | | | |
| SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | N | T | JC56729A | JC56729-4A | 2017-12-06 | | X | | |
| SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | N | N | JC56859A | JC56859-2A | 2017-12-07 | | | X | X |
| SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | N | T | JC56859 | JC56859-2 | 2017-12-07 | X | | | |
| SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | N | T | JC56859A | JC56859-2A | 2017-12-07 | | X | | |
| SHALLOW | 114-MW36A | 114-MW36A-20170927 | N | N | JC51890 | JC51890-3 | 2017-09-27 | | | X | X |
| SHALLOW | 114-MW36A | 114-MW36A-20170927 | N | T | JC51874 | JC51874-2 | 2017-09-27 | X | X | | |
| SHALLOW | 114-MW36A | 114-MW36A-20170927 | N | T | JC51890 | JC51890-3 | 2017-09-27 | | X | | |
| SHALLOW | 114-MW36A | 114-MW36A-20170927-X | FD | N | JC51890 | JC51890-4 | 2017-09-27 | | | X | X |
| SHALLOW | 114-MW36A | 114-MW36A-20170927-X | FD | T | JC51874 | JC51874-3 | 2017-09-27 | X | X | | |
| SHALLOW | 114-MW36A | 114-MW36A-20170927-X | FD | T | JC51890 | JC51890-4 | 2017-09-27 | | X | | |
| SHALLOW | 114-MW37A | 114-MW37A-20170926 | N | N | JC51824 | JC51824-3 | 2017-09-26 | | | X | X |
| SHALLOW | 114-MW37A | 114-MW37A-20170926 | N | T | JC51802 | JC51802-2 | 2017-09-26 | X | X | | |
| SHALLOW | 114-MW37A | 114-MW37A-20170928 | N | T | JC52029 | JC52029-2 | 2017-09-28 | | X | | |
| SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | N | N | JC56504A | JC56504-3A | 2017-12-04 | | | X | X |
| SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | N | T | JC56504 | JC56504-3 | 2017-12-04 | X | | | |
| SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | N | T | JC56504A | JC56504-3A | 2017-12-04 | | X | | |
| SHALLOW | 114-MW41A | 114-MW41A-20180420 | N | N | JC64643 | JC64643-10 | 2018-04-20 | | | X | X |
| SHALLOW | 114-MW41A | 114-MW41A-20180420 | N | T | JC64643 | JC64643-10 | 2018-04-20 | X | X | | |
| SHALLOW | 114-MW42A | 114-MW42A-20180417 | N | T | JC64376 | JC64376-3 | 2018-04-17 | X | X | | |
| SHALLOW | 114-MW43A | 114-MW43A-20180417 | N | T | JC64376 | JC64376-1 | 2018-04-17 | X | X | | |
| SHALLOW | 114-MW44A | 114-MW44A | N | T | JC55349 | JC55349-2 | 2017-11-13 | X | | | |
| SHALLOW | 114-MW44A | 114-MW44A | N | T | JC55349A | JC55349-2A | 2017-11-13 | | X | | |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | N | N | JC65178 | JC65178-4 | 2018-04-30 | | | X | X |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | N | N | JC65178 | JC65178-5 | 2018-04-30 | | | X | X |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | N | N | JC64444 | JC64444-9 | 2018-04-18 | | | X | X |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | N | N | JC64444 | JC64444-10 | 2018-04-18 | | | X | X |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | N | N | JC64643 | JC64643-6 | 2018-04-20 | | | | X |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | N | N | JC64643 | JC64643-6A | 2018-04-20 | | | X | |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | N | N | JC64643 | JC64643-7 | 2018-04-20 | | | | X |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | N | N | JC64643 | JC64643-7A | 2018-04-20 | | | X | |
| SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | N | N | JC51736 | JC51736-3 | 2017-09-25 | | | X | X |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | N | N | JC57276 | JC57276-3 | 2017-12-13 | | | X | X |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | N | N | JC57276 | JC57276-5 | 2017-12-13 | | | X | X |
| SHALLOW | 114-P2B4-MW1 | 114-P2B4-MW1-10.0-20180425 | N | D | JC64901 | JC64901-7F | 2018-04-25 | X | X | | |
| SHALLOW | 114-P2B4-MW1 | 114-P2B4-MW1-10.0-20180425 | N | T | JC64901 | JC64901-7 | 2018-04-25 | X | X | | |
| SHALLOW | 114-P2B4-MW1 | 114-P2B4-MW1-10.0-20180425X | FD | D | JC64901 | JC64901-8F | 2018-04-25 | X | X | | |
| SHALLOW | 114-P2B4-MW1 | 114-P2B4-MW1-10.0-20180425X | FD | T | JC64901 | JC64901-8 | 2018-04-25 | X | X | | |
| SHALLOW | 114-P2B4-MW1 | 114-P2B4-MW1-14.0-20180425 | N | T | JC64901 | JC64901-9 | 2018-04-25 | X | X | | |
| SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | N | N | JC57169 | JC57169-2 | 2017-12-12 | | | X | X |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | N | N | JC64571 | JC64571-6 | 2018-04-19 | | | X | X |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | N | N | JC64571 | JC64571-5 | 2018-04-19 | | | X | X |
| SHALLOW | 114-P2B4-MW2 | 114-P2B4-MW2-10.0-20180427 | N | T | JC65066 | JC65066-7 | 2018-04-27 | X | X | | |
| SHALLOW | 114-P2B4-MW2 | 114-P2B4-MW2-10.0-20180427X | FD | T | JC65066 | JC65066-8 | 2018-04-27 | X | X | | |
| SHALLOW | 114-P2B4-MW2 | 114-P2B4-MW2-14.0-20180427 | N | T | JC65066 | JC65066-9 | 2018-04-27 | X | X | | |
| SHALLOW | 114-P2B4-MW2 | 114-P2B4-MW2-14.0-20180427X | FD | T | JC65066 | JC65066-10 | 2018-04-27 | X | X | | |
| SHALLOW | 114-P2B4-MW3 | 114-P2B4-MW3-10.0-20180420 | N | T | JC64643 | JC64643-9 | 2018-04-20 | X | X | | |
| SHALLOW | 114-P2B4-MW3 | 114-P2B4-MW3-14.0-20180420 | N | T | JC64643 | JC64643-8 | 2018-04-20 | X | X | | |
| SHALLOW | 132-MW2A | 132-MW2A-11.0-20180426 | N | T | JC64986 | JC64986-8 | 2018-04-26 | X | X | | |
| SHALLOW | 132-MW2A | 132-MW2A-11.0-20180426X | FD | T | JC64986 | JC64986-9 | 2018-04-26 | X | X | | |
| SHALLOW | 132-P3A-MW102S | 132-P3A-MW102S-11.0-20180426 | N | T | JC64986 | JC64986-7 | 2018-04-26 | X | X | | |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | N | N | JC64986 | JC64986-2 | 2018-04-26 | | | X | X |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | N | N | JC64986 | JC64986-3 | 2018-04-26 | | | X | X |
| SHALLOW | 132-P3A-MW3 | 132-P3A-MW3-11.0-20180424 | N | T | JC64822 | JC64822-2 | 2018-04-24 | X | X | | |
| SHALLOW | 132-P3A-MW3 | 132-P3A-MW3-15.0-20180424 | N | T | JC64822 | JC64822-3 | 2018-04-24 | X | X | | |
| SHALLOW | 132-P3A-MW4 | 132-P3A-MW4-13.0-20180424 | N | T | JC64822 | JC64822-4 | 2018-04-24 | X | X | | |
| SHALLOW | 132-P3A-MW4 | 132-P3A-MW4-17.0-20180424 | N | T | JC64822 | JC64822-5 | 2018-04-24 | X | X | | |
| SHALLOW | 132-P3A-MW4 | 132-P3A-MW4-17.0-20180424X | FD | T | JC64822 | JC64822-6 | 2018-04-24 | X | X | | |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | N | N | JC67069 | JC67069-11 | 2018-05-31 | | | X | X |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | N | T | JC67069 | JC67069-11 | 2018-05-31 | X | X | | |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | N | N | JC67069 | JC67069-10 | 2018-05-31 | | | X | X |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | N | T | JC67069 | JC67069-10 | 2018-05-31 | X | X | | |
| SHALLOW | 133-MW6A | 133-MW6A-20171215 | N | T | JC57501 | JC57501-3 | 2017-12-15 | X | | | |
| SHALLOW | 133-MW6A | 133-MW6A-20171215 | N | T | JC57501A | JC57501-3A | 2017-12-15 | | X | | |
| SHALLOW | 133-MW6A | 133-MW6A-20180209 | N | T | JC60563 | JC60563-1 | 2018-02-09 | X | X | | |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | N | N | JC64763 | JC64763-11 | 2018-04-23 | | | X | X |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | N | N | JC64763 | JC64763-10 | 2018-04-23 | | | X | X |
| SHALLOW | 135-MW1AR | 135-MW1A-13.0-20180501 | N | T | JC65255 | JC65255-9 | 2018-05-01 | X | X | | |
| SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | N | N | JC64763 | JC64763-8 | 2018-04-23 | | | X | X |
| SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | N | T | JC64763 | JC64763-8A | 2018-04-23 | X | X | | |
| SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | N | N | JC64763 | JC64763-7 | 2018-04-23 | | | X | X |
| SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | N | T | JC64763 | JC64763-7A | 2018-04-23 | X | X | | |
| SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | N | N | JC64763 | JC64763-6 | 2018-04-23 | | | X | X |
| SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | N | T | JC64763 | JC64763-6A | 2018-04-23 | X | X | | |
| SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | N | N | JC64763 | JC64763-9R | 2018-04-23 | | | X | X |
| SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | N | T | JC64763 | JC64763-9 | 2018-04-23 | X | X | | |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | N | N | JC64822 | JC64822-9 | 2018-04-24 | | | X | X |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | N | N | JC64822 | JC64822-8 | 2018-04-24 | | | X | X |
| SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | N | N | JC64822 | JC64822-7 | 2018-04-24 | | | X | X |
| SHALLOW | 186-MW02R | 186-MW02R-13.0-20180531 | N | T | JC67069 | JC67069-8 | 2018-05-31 | X | X | | |
| SHALLOW | 186-MW02R | 186-MW02R-8.0-20180531 | N | T | JC67069 | JC67069-9 | 2018-05-31 | X | X | | |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | N | N | JC65255 | JC65255-7 | 2018-05-01 | | | X | X |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | N | N | JC65255 | JC65255-8 | 2018-05-01 | | | X | X |
| SHALLOW | MW10S | MW10S-12.0-20180426 | N | T | JC64986 | JC64986-10 | 2018-04-26 | X | X | | |
| SHALLOW | MW10S | MW10S-8.0-20180426 | N | D | JC64986 | JC64986-11F | 2018-04-26 | X | X | | |
| SHALLOW | MW10S | MW10S-8.0-20180426 | N | T | JC64986 | JC64986-11 | 2018-04-26 | X | X | | |
| SHALLOW | MW7S | MW7S-10.0-20180430 | N | D | JC65178 | JC65178-3F | 2018-04-30 | X | X | | |

# Table 4-2
## Groundwater Sampling Summary
## Groundwater Remedial Investigation Report
## Garfield Avenue Group of Sites
## PPG, Jersey City, New Jersey

| Well Type | Location ID | Sample ID | Sample Type | Fraction | Lab SDG | Lab Sample ID | Date Collected | $Cr^{+6}$, pH, Eh | Metals | SVOC | VOC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SHALLOW | MW7S | MW7S-10.0-20180430 | N | N | JC65178 | JC65178-3 | 2018-04-30 | | | X | X |
| SHALLOW | MW7S | MW7S-10.0-20180430 | N | T | JC65178 | JC65178-3 | 2018-04-30 | X | X | | |
| SHALLOW | MW8S | MW8S-20180427 | N | D | JC65066 | JC65066-11F | 2018-04-27 | X | X | | |
| SHALLOW | MW8S | MW8S-20180427 | N | N | JC65066 | JC65066-11R | 2018-04-27 | | | X | X |
| SHALLOW | MW8S | MW8S-20180427 | N | T | JC65066 | JC65066-11 | 2018-04-27 | X | X | | |
| SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | N | N | JC64444 | JC64444-4A | 2018-04-18 | | | X | X |
| SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | N | T | JC64444 | JC64444-4 | 2018-04-18 | X | | | |
| SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | N | T | JC64444 | JC64444-4A | 2018-04-18 | | X | | |
| SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | N | N | JC64444 | JC64444-3A | 2018-04-18 | | | X | X |
| SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | N | T | JC64444 | JC64444-3 | 2018-04-18 | X | | | |
| SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | N | T | JC64444 | JC64444-3A | 2018-04-18 | | X | | |
| SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | N | N | JC64444 | JC64444-2A | 2018-04-18 | | | X | X |
| SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | N | T | JC64444 | JC64444-2 | 2018-04-18 | X | | | |
| SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | N | T | JC64444 | JC64444-2A | 2018-04-18 | | X | | |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | N | N | JC57820 | JC57820-5 | 2017-12-21 | | | X | X |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | N | N | JC57820 | JC57820-4 | 2017-12-21 | | | X | X |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 * | N | N | JC58745 | JC58745-2 | 2018-01-12 | | | X | X |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 * | N | N | JC58745 | JC58745-3 | 2018-01-12 | | | X | X |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | N | N | JC64444 | JC64444-7 | 2018-04-18 | | | X | X |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | N | N | JC64444 | JC64444-8 | 2018-04-18 | | | X | X |
| INTERMEDIATE | 10W-MW105I | 10W-MW105I-20180312 | N | T | JC62130 | JC62130-2 | 2018-03-12 | X | | | |
| INTERMEDIATE | 10W-MW105I | 10W-MW105I-20180312 | N | T | JC62130 | JC62130-2A | 2018-03-12 | | X | | |
| INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | N | N | JC57752 | JC57752-4 | 2017-12-20 | | | X | X |
| INTERMEDIATE | 114-MW14B | 114-MW14B-20171219 | N | T | JC57638 | JC57638-2 | 2017-12-19 | X | X | | |
| INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | N | N | JC64444 | JC64444-5A | 2018-04-18 | | | X | X |
| INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | N | T | JC64444 | JC64444-5 | 2018-04-18 | X | | | |
| INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | N | T | JC64444 | JC64444-5A | 2018-04-18 | | X | | |
| INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | N | N | JC65255 | JC65255-5 | 2018-05-01 | | | X | X |
| INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | N | T | JC65255 | JC65255-5 | 2018-05-01 | X | X | | |
| INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | N | N | JC64571 | JC64571-8 | 2018-04-19 | | | X | X |
| INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | N | T | JC64571 | JC64571-8 | 2018-04-19 | X | X | | |
| INTERMEDIATE | 114-MW22B | 114-MW22B-20180419 | N | D | JC64571 | JC64571-4F | 2018-04-19 | X | X | | |
| INTERMEDIATE | 114-MW22B | 114-MW22B-20180419 | N | T | JC64571 | JC64571-4 | 2018-04-19 | X | X | | |
| INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | N | N | JC62130 | JC62130-1A | 2018-03-12 | | | X | X |
| INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | N | T | JC62130 | JC62130-1 | 2018-03-12 | X | | | |
| INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | N | T | JC62130 | JC62130-1A | 2018-03-12 | | X | | |
| INTERMEDIATE | 114-MW25B | 114-MW25B-20170928 | N | T | JC52007 | JC52007-2 | 2017-09-28 | X | | | |
| INTERMEDIATE | 114-MW25B | 114-MW25B-20170928 | N | T | JC52007A | JC52007-2A | 2017-09-28 | | X | | |
| INTERMEDIATE | 114-MW25B | 114-MW25B-20170928 | N | T | JC52029 | JC52029-3 | 2017-09-28 | | X | | |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | D | JC62228 | JC62228-2F | 2018-03-13 | X | X | | |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | N | JC62228 | JC62228-2 | 2018-03-13 | | | X | X |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | N | T | JC62228 | JC62228-2 | 2018-03-13 | X | X | | |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | D | JC62228 | JC62228-3F | 2018-03-13 | X | X | | |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | N | JC62228 | JC62228-3 | 2018-03-13 | | | X | X |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | FD | T | JC62228 | JC62228-3 | 2018-03-13 | X | X | | |
| INTERMEDIATE | 114-MW27B | 114-MW27B-20170928 | N | T | JC52007 | JC52007-3 | 2017-09-28 | X | | | |
| INTERMEDIATE | 114-MW27B | 114-MW27B-20170928 | N | T | JC52007A | JC52007-3A | 2017-09-28 | | X | | |
| INTERMEDIATE | 114-MW27B | 114-MW27B-20170928 | N | T | JC52029 | JC52029-4 | 2017-09-28 | | X | | |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | N | N | JC56729A | JC56729-2A | 2017-12-06 | | | X | X |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | N | T | JC56729 | JC56729-2 | 2017-12-06 | X | | | |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | N | T | JC56729A | JC56729-2A | 2017-12-06 | | X | | |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | FD | N | JC56729A | JC56729-3A | 2017-12-06 | | | X | X |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | FD | T | JC56729 | JC56729-3 | 2017-12-06 | X | | | |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | FD | T | JC56729A | JC56729-3A | 2017-12-06 | | X | | |
| INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | N | N | JC51890 | JC51890-5 | 2017-09-27 | | | X | X |
| INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | N | T | JC51874 | JC51874-4 | 2017-09-27 | X | X | | |
| INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | N | T | JC51890 | JC51890-5 | 2017-09-27 | | X | | |
| INTERMEDIATE | 114-MW37B | 114-MW37B-20170926 | N | N | JC51824 | JC51824-4 | 2017-09-26 | | | X | |
| INTERMEDIATE | 114-MW37B | 114-MW37B-20170926 | N | T | JC51802 | JC51802-3 | 2017-09-26 | X | X | | |
| INTERMEDIATE | 114-MW37B | 114-MW37B-20170926 | N | T | JC51824 | JC51824-4 | 2017-09-26 | | X | | |
| INTERMEDIATE | 114-MW38B | FORREST-114-MW38B-20171204 | N | T | JC56504 | JC56504-2 | 2017-12-04 | X | | | |
| INTERMEDIATE | 114-MW38B | FORREST-114-MW38B-20171204 | N | T | JC56504A | JC56504-2A | 2017-12-04 | | X | | |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | N | N | JC60652 | JC60652-1 | 2018-02-12 | | | X | X |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | N | T | JC60652 | JC60652-1 | 2018-02-12 | X | X | | |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | N | T | JC60652R | JC60652-1R | 2018-02-12 | | X | | |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | FD | N | JC60652 | JC60652-2 | 2018-02-12 | | | X | X |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | FD | T | JC60652 | JC60652-2 | 2018-02-12 | X | X | | |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | FD | T | JC60652R | JC60652-2R | 2018-02-12 | | X | | |
| INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | N | D | JC65066 | JC65066-6F | 2018-04-27 | X | X | | |
| INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | N | N | JC65066 | JC65066-6 | 2018-04-27 | | | X | X |
| INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | N | T | JC65066 | JC65066-6 | 2018-04-27 | X | X | | |
| INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | N | N | JC64643 | JC64643-11 | 2018-04-20 | | | X | X |
| INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | N | T | JC64643 | JC64643-11 | 2018-04-20 | X | X | | |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | N | N | JC57638 | JC57638-5 | 2017-12-19 | | | X | X |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | N | N | JC57501A | JC57501-4 | 2017-12-15 | | | X | X |
| INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | N | N | JC58670 | JC58670-2 | 2018-01-11 | | | X | X |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | N | N | JC58073A | JC58073-3A | 2017-12-27 | | | X | X |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | N | T | JC58073 | JC58073-3 | 2017-12-27 | X | | | |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | N | T | JC58073A | JC58073-3A | 2017-12-27 | | X | | |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | N | N | JC58073A | JC58073-2A | 2017-12-27 | | | X | X |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | N | T | JC58073 | JC58073-2 | 2017-12-27 | X | | | |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | N | T | JC58073A | JC58073-2A | 2017-12-27 | | X | | |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | N | N | JC58028A | JC58028-3A | 2017-12-26 | | | X | X |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | N | T | JC58028 | JC58028-3 | 2017-12-26 | X | | | |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | N | T | JC58028A | JC58028-3A | 2017-12-26 | | X | | |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | N | N | JC58028A | JC58028-2A | 2017-12-26 | | | X | X |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | N | T | JC58028 | JC58028-2 | 2017-12-26 | X | | | |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | N | T | JC58028A | JC58028-2A | 2017-12-26 | | X | | |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | N | N | JC58942 | JC58942-2 | 2018-01-16 | | | X | X |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | N | T | JC58942 | JC58942-2 | 2018-01-16 | X | X | | |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | N | N | JC58942 | JC58942-3 | 2018-01-16 | | | X | X |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | N | T | JC58942 | JC58942-3 | 2018-01-16 | X | X | | |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | N | N | JC58942 | JC58942-4 | 2018-01-16 | | | X | X |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | N | T | JC58942 | JC58942-4 | 2018-01-16 | X | X | | |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | N | N | JC58942 | JC58942-5 | 2018-01-16 | | | X | X |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | N | T | JC58942 | JC58942-5 | 2018-01-16 | X | X | | |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | N | N | JC67069 | JC67069-4 | 2018-05-31 | | | X | X |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | N | N | JC67069 | JC67069-3 | 2018-05-31 | | | X | X |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | N | N | JC65178 | JC65178-6 | 2018-04-30 | | | X | X |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | N | N | JC65178 | JC65178-7 | 2018-04-30 | | | X | X |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | N | N | JC64643 | JC64643-4 | 2018-04-20 | | | X | X |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | N | N | JC64643 | JC64643-5 | 2018-04-20 | | | X | X |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | N | N | JC58670 | JC58670-3 | 2018-01-11 | | | X | X |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | N | N | JC58670 | JC58670-4 | 2018-01-11 | | | X | X |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | N | N | JC67069 | JC67069-7 | 2018-05-31 | | | X | X |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | N | N | JC67069 | JC67069-5 | 2018-05-31 | | | X | X |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | FD | N | JC67069 | JC67069-6 | 2018-05-31 | | | X | X |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | N | N | JC57276 | JC57276-4 | 2017-12-13 | | | X | X |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | N | N | JC57276 | JC57276-2 | 2017-12-13 | | | X | X |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | N | N | JC57169 | JC57169-4 | 2017-12-12 | | | X | X |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | N | N | JC57169 | JC57169-3 | 2017-12-12 | | | X | X |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | N | N | JC64571 | JC64571-10 | 2018-04-19 | | | X | X |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | N | N | JC64571 | JC64571-9 | 2018-04-19 | | | X | X |
| INTERMEDIATE | 132-P3A-MW105I | 132-P3A-MW105I-20180208 | N | T | JC60477 | JC60477-1 | 2018-02-08 | X | X | | |
| INTERMEDIATE | 132-P3A-MW105I | 132-P3A-MW105I-20180209X | FD | T | JC60564 | JC60564-1 | 2018-02-09 | X | X | | |
| INTERMEDIATE | 132-P3A-MW105I | 132-P3A-MW105I-20180209Xa | FD | T | JC60564 | JC60564-2 | 2018-02-09 | X | X | | |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | N | N | JC64763 | JC64763-4 | 2018-04-23 | | | X | X |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | N | N | JC64763 | JC64763-5 | 2018-04-23 | | | X | X |

# Table 4-2
## Groundwater Sampling Summary
## Groundwater Remedial Investigation Report
## Garfield Avenue Group of Sites
## PPG, Jersey City, New Jersey

| Well Type | Location ID | Sample ID | Sample Type | Fraction | Lab SDG | Lab Sample ID | Date Collected | $Cr^{+6}$, pH, Eh | Metals | SVOC | VOC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| INTERMEDIATE | 135-MW1B | 135-MW1B-31.0-20180501 | N | T | JC65255 | JC65255-10 | 2018-05-01 | X | X | | |
| INTERMEDIATE | 135-MW1B | 135-MW1B-31.0-20180501X | FD | T | JC65255 | JC65255-11 | 2018-05-01 | X | X | | |
| INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | N | N | JC64901 | JC64901-6R | 2018-04-25 | | | X | X |
| INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | N | T | JC64901 | JC64901-6 | 2018-04-25 | X | X | | |
| INTERMEDIATE | 135-MW3BR | 135-MW3B-30.0-20180501 | N | N | JC65255 | JC65255-6R | 2018-05-01 | | | X | |
| INTERMEDIATE | 135-MW3BR | 135-MW3B-30.0-20180501 | N | T | JC65255 | JC65255-6 | 2018-05-01 | X | X | | |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | N | N | JC67069 | JC67069-13 | 2018-05-31 | | | X | X |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | N | N | JC67069 | JC67069-12 | 2018-05-31 | | | X | X |
| INTERMEDIATE | MW7D | MW7D-41.0-20180423 | N | N | JC64763 | JC64763-2 | 2018-04-23 | | | X | X |
| INTERMEDIATE | MW7D | MW7D-41.0-20180423 | N | T | JC64763 | JC64763-2 | 2018-04-23 | X | X | | |
| INTERMEDIATE | MW7D | MW7D-45.0-20180423 | N | N | JC64763 | JC64763-3 | 2018-04-23 | | | X | X |
| INTERMEDIATE | MW7D | MW7D-45.0-20180423 | N | T | JC64763 | JC64763-3 | 2018-04-23 | X | X | | |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425 | N | N | JC64901 | JC64901-2 | 2018-04-25 | | | X | X |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425 | N | T | JC64901 | JC64901-2 | 2018-04-25 | X | X | | |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425X | FD | N | JC64901 | JC64901-3 | 2018-04-25 | | | X | X |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425X | FD | T | JC64901 | JC64901-3 | 2018-04-25 | X | X | | |
| INTERMEDIATE | MW8D | MW8D-45.0-20180425 | N | D | JC64901 | JC64901-4F | 2018-04-25 | X | X | | |
| INTERMEDIATE | MW8D | MW8D-45.0-20180425 | N | N | JC64901 | JC64901-4 | 2018-04-25 | | | X | X |
| INTERMEDIATE | MW8D | MW8D-45.0-20180425 | N | T | JC64901 | JC64901-4A | 2018-04-25 | X | X | | |
| DEEP | 114-MW20C | 114-MW20C-20180419 | N | N | JC64571 | JC64571-7 | 2018-04-19 | | | X | X |
| DEEP | 114-MW20C | 114-MW20C-20180419 | N | T | JC64571 | JC64571-7 | 2018-04-19 | X | X | | |
| DEEP | 114-MW25C | 114-MW25C-20180313 | N | D | JC62228 | JC62228-1F | 2018-03-13 | X | X | | |
| DEEP | 114-MW25C | 114-MW25C-20180313 | N | N | JC62228 | JC62228-1 | 2018-03-13 | | | X | X |
| DEEP | 114-MW25C | 114-MW25C-20180313 | N | T | JC62228 | JC62228-1 | 2018-03-13 | X | X | | |
| DEEP | 114-P1B-MW103D | 114-P1B-MW103D-20171214 | N | T | JC57385 | JC57385-1 | 2017-12-14 | X | | | |
| DEEP | 114-P1B-MW103D | 114-P1B-MW103D-20171214 | N | T | JC57385 | JC57385-1A | 2017-12-14 | | X | | |
| DEEP | 114-P1B-MW103D | 114-P1B-MW103D-20171214X | FD | T | JC57385 | JC57385-2 | 2017-12-14 | X | | | |
| DEEP | 114-P1B-MW103D | 114-P1B-MW103D-20171214X | FD | T | JC57385 | JC57385-2A | 2017-12-14 | | X | | |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | N | N | JC57943A | JC57943-3A | 2017-12-22 | | | X | X |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | N | T | JC57943 | JC57943-3 | 2017-12-22 | X | | | |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | N | T | JC57943A | JC57943-3A | 2017-12-22 | | X | | |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | N | N | JC57943A | JC57943-2A | 2017-12-22 | | | X | X |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | N | T | JC57943 | JC57943-2 | 2017-12-22 | X | | | |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | N | T | JC57943A | JC57943-2A | 2017-12-22 | | X | | |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | N | N | JC57820 | JC57820-3A | 2017-12-21 | | | X | X |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | N | T | JC57820 | JC57820-3 | 2017-12-21 | X | | | |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | N | T | JC57820 | JC57820-3A | 2017-12-21 | | X | | |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | N | N | JC57820 | JC57820-2A | 2017-12-21 | | | X | X |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | N | T | JC57820 | JC57820-2 | 2017-12-21 | X | | | |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | N | T | JC57820 | JC57820-2A | 2017-12-21 | | X | | |
| DEEP | 132-P3A-MW104D-1 | 132-P3A-MW104D-1-52.0-20180426 | N | T | JC64986 | JC64986-5 | 2018-04-26 | X | X | | |
| DEEP | 132-P3A-MW104D-1 | 132-P3A-MW104D-1-52.0-20180426X | FD | T | JC64986 | JC64986-6 | 2018-04-26 | X | X | | |
| DEEP | MW6C | MW6C-57.0-20171220 | N | T | JC57752 | JC57752-2 | 2017-12-20 | X | X | | |
| DEEP | MW6C | MW6C-62.0-20171220 | N | T | JC57752 | JC57752-3 | 2017-12-20 | X | X | | |
| DEEP | MW8F | MW8F-20180425 | N | N | JC64901 | JC64901-5 | 2018-04-25 | | | X | X |
| DEEP | MW8F | MW8F-20180425 | N | T | JC64901 | JC64901-5 | 2018-04-25 | X | X | | |
| DEEP | MW-CR-3D | MW-CR-3D-20180418 | N | N | JC64444 | JC64444-6A | 2018-04-18 | | | X | X |
| DEEP | MW-CR-3D | MW-CR-3D-20180418 | N | T | JC64444 | JC64444-6 | 2018-04-18 | X | | | |
| DEEP | MW-CR-3D | MW-CR-3D-20180418 | N | T | JC64444 | JC64444-6A | 2018-04-18 | | X | | |
| BASAL TILL | 114-MW19C | 114-MW19C-99.0-20180427 | N | N | JC65066 | JC65066-5 | 2018-04-27 | | | X | X |
| BASAL TILL | 114-MW19C | 114-MW19C-99.0-20180427 | N | T | JC65066 | JC65066-5 | 2018-04-27 | X | X | | |
| BASAL TILL | 114-MW45C | 114-MW45C-70.5-20191021 | N | T | JC97157 | JC97157-2 | 2019-10-21 | X | X | | |
| BASAL TILL | 114-MW45C | 114-MW45C-71.0-20200820 | N | T | JD12022 | JD12022-2 | 2020-08-20 | X | X | | |
| BASAL TILL | 114-MW48C | 114-MW48C-56.2-20200819 | N | T | JD11956 | JD11956-2 | 2020-08-19 | X | X | | |
| BASAL TILL | 114-MW49C | 114-MW49C-69.0-20200819 | N | T | JD11956 | JD11956-1 | 2020-08-19 | X | X | | |
| BASAL TILL | 114-MW50C | 114-MW50C-61.5-20200820 | N | T | JD12022 | JD12022-1 | 2020-08-20 | X | X | | |
| BASAL TILL | 114-MW51C | 114-MW51C-76.0-20200828 | N | T | JD12393 | JD12393-3 | 2020-08-28 | X | X | | |
| BASAL TILL | 114-MW52C | 114-MW52C-72.5-20200824 | N | T | JD12146 | JD12146-2 | 2020-08-24 | X | X | | |
| BASAL TILL | 114-MW54C | 114-MW54C-76.5-20200827 | N | T | JD12322 | JD12322-4 | 2020-08-27 | X | X | | |
| BASAL TILL | 114-MW56C | 114-MW56C-72.0-20200821 | N | T | JD12104 | JD12104-1 | 2020-08-21 | X | X | | |
| BASAL TILL | 114-MW59C | 114-MW59C-92.5-20200902 | N | T | JD12593 | JD12593-1 | 2020-09-02 | X | X | | |
| BASAL TILL | 114-MW63C | 114-MW63C-67.0-20200827 | N | T | JD12322 | JD12322-5 | 2020-08-27 | X | X | | |
| BASAL TILL | 114-MW65C | 114-MW65C-62.5-20200824 | N | T | JD12146 | JD12146-3 | 2020-08-24 | X | X | | |
| BASAL TILL | 132-P3-MW001D | 132-P3-MW-001D-80.5 | N | T | 460-237317-1 | 460-237317-15 | 2021-06-24 | X | X | | |
| BASAL TILL | 132-P3-MW001D | 132-P3-MW-001D-85.5 | N | T | 460-237317-1 | 460-237317-16 | 2021-06-24 | X | X | | |
| BASAL TILL | 132-P3-MW001D | 132-P3-MW-001D-85.5-X | FD | T | 460-237317-1 | 460-237317-17 | 2021-06-24 | X | X | | |
| DEEP | 132-P3A-MW104D-2 | 132-P3A-MW104D-2-69.0-20180426 | N | T | JC64986 | JC64986-4 | 2018-04-26 | X | X | | |
| BASAL TILL/WEATHERED BR | 114-MW58C | 114-MW58C-76.0-20200831 | N | T | JD12474 | JD12474-1 | 2020-08-31 | X | X | | |
| BASAL TILL/WEATHERED BR | 114-MW61C | 114-MW61C-67.5-20200825 | N | T | JD12215 | JD12215-1 | 2020-08-25 | X | X | | |
| BASAL TILL/WEATHERED BR | 114-MW61C | 114-MW61C-67.5-20200825X | FD | T | JD12215 | JD12215-2 | 2020-08-25 | X | X | | |
| BASAL TILL/WEATHERED BR | 114-MW62C | 114-MW62C-73.0-20200824 | N | T | JD12146 | JD12146-1 | 2020-08-24 | X | X | | |
| WEATHERED BEDROCK | 114-MW53C | 114-MW53C-47.0-20200825 | N | T | JD12215 | JD12215-4 | 2020-08-25 | X | X | | |
| WEATHERED BEDROCK | 114-MW55C | 114-MW55C-70.5-20200901 | N | T | JD12508 | JD12508-1 | 2020-09-01 | X | X | | |
| WEATHERED BEDROCK | 114-MW57C | 114-MW57C-70-20200825 | N | T | JD12215 | JD12215-3 | 2020-08-25 | X | X | | |
| WEATHERED BEDROCK | 114-MW60C | 114-MW60C-121.0-20200828 | N | T | JD12393 | JD12393-1 | 2020-08-28 | X | X | | |
| WEATHERED BEDROCK | 114-MW60C | 114-MW60C-121.0-20200828X | FD | T | JD12393 | JD12393-2 | 2020-08-28 | X | X | | |
| WEATHERED BEDROCK | 114-MW64C | 114-MW64C-96.5-20200901 | N | T | JD12508 | JD12508-2 | 2020-09-01 | X | X | | |
| BEDROCK | 114-MW52D | 114-MW52D-81-20210211 | N | T | JD20260 | JD20260-2 | 2021-02-11 | X | X | | |
| BEDROCK | 114-MW52D | 114-MW52D-83.5-20210211 | N | T | JD20260 | JD20260-3 | 2021-02-11 | X | X | | |
| BEDROCK | 114-MW52D | 114-MW52D-88-20210211 | N | T | JD20260 | JD20260-4 | 2021-02-11 | X | X | | |
| BEDROCK | 114-MW52D | 114-MW52D-102-20210211 | N | T | JD20260 | JD20260-5 | 2021-02-11 | X | X | | |
| BEDROCK | 114-MW52D | 114-MW52D-105-20210211 | N | T | JD20260 | JD20260-6 | 2021-02-11 | X | X | | |
| BEDROCK | 114-MW16B | 114-MW16B-33.0-20200821 | N | T | JD12104 | JD12104-2 | 2020-08-21 | X | | | |
| BEDROCK | 114-MW16B | 114-MW16B-33.0-20200821 | N | T | JD12104R | JD12104-2R | 2020-08-21 | | X | | |
| BEDROCK | 114-MW4D | 114-MW4D-104.5-105.0 | N | T | JC88938 | JC88938-1 | 2019-05-30 | X | X | | |
| BEDROCK | 114-MW4D | 114-MW4D-104.5-105.0X | FD | T | JC88938 | JC88938-5 | 2019-05-30 | X | X | | |
| BEDROCK | 114-MW4D | 114-MW4D-89.5-90.0 | N | T | JC88938 | JC88938-4 | 2019-05-30 | X | X | | |
| BEDROCK | 114-MW4D | 114-MW4D-94.5-95.0 | N | T | JC88938 | JC88938-3 | 2019-05-30 | X | X | | |
| BEDROCK | 114-MW4D | 114-MW4D-99.5-100.0 | N | T | JC88938 | JC88938-2 | 2019-05-30 | X | X | | |
| BEDROCK | 114-MW4D | 114-MW4D-100-20200826 | N | T | JD12249 | JD12249-1 | 2020-08-26 | X | X | | |
| BEDROCK | 114-MW4D | 114-MW4D-95-20200826 | N | T | JD12249 | JD12249-2 | 2020-08-26 | X | X | | |
| BEDROCK | 114-MW4D | 114-MW4D-90-20200826 | N | T | JD12249 | JD12249-3 | 2020-08-26 | X | X | | |
| BEDROCK | 114-MW4D | 114-MW4D-85-20200826 | N | T | JD12249 | JD12249-4 | 2020-08-26 | X | X | | |
| BEDROCK | 114-MW57D | 114-MW57D-87.25-20210209 | N | T | JD20125 | JD20125-3 | 2021-02-09 | X | X | | |
| BEDROCK | 114-MW57D | 114-MW57D-90-20210209 | N | T | JD20125 | JD20125-2 | 2021-02-09 | X | X | | |
| BEDROCK | 114-MW57D | 114-MW57D-98-20210210 | N | T | JD20166 | JD20166-2 | 2021-02-10 | X | X | | |
| BEDROCK | 114-MW57D | 114-MW57D-98-20210210-X | FD | T | JD20166 | JD20166-3 | 2021-02-10 | X | X | | |
| BEDROCK | 114-MW57D | 114-MW57D-102-20210210 | N | T | JD20166 | JD20166-4 | 2021-02-10 | X | X | | |
| BEDROCK | 114-MW61D | 114-MW61D-88-20210212 | N | T | JD20313 | JD20313-2 | 2021-02-12 | X | X | | |
| BEDROCK | 114-MW61D | 114-MW61D-91-20210212 | N | T | JD20313 | JD20313-3 | 2021-02-12 | X | X | | |
| BEDROCK | 114-MW61D | 114-MW61D-93.5-20210212 | N | T | JD20313 | JD20313-4 | 2021-02-12 | X | X | | |
| BEDROCK | 114-MW61D | 114-MW61D-102-20210212 | N | T | JD20313 | JD20313-5 | 2021-02-12 | X | X | | |
| BEDROCK | 114-MW61D | 114-MW61D-106.5-20210215 | N | T | JD20380 | JD20380-2 | 2021-02-15 | X | X | | |
| BEDROCK | 114-MW61D | 114-MW61D-110-20210215 | N | T | JD20380 | JD20380-3 | 2021-02-15 | X | X | | |
| BEDROCK | 114-MW66D | 114-MW66D-92-20210210 | N | T | JD20166 | JD20166-5 | 2021-02-10 | X | X | | |
| BEDROCK | 114-MW66D | 114-MW66D-94-20210210 | N | T | JD20166 | JD20166-6 | 2021-02-10 | X | X | | |
| BEDROCK | 114-MW66D | 114-MW66D-110-20210210 | N | T | JD20166 | JD20166-7 | 2021-02-10 | X | X | | |
| BEDROCK | 114-MW66D | 114-MW66D-114-20210210 | N | T | JD20166 | JD20166-8 | 2021-02-10 | X | X | | |
| BEDROCK | 114-MW6D | 114-MW6D-104.5-105.0 | N | T | JC88938 | JC88938-7 | 2019-05-30 | X | X | | |
| BEDROCK | 114-MW6D | 114-MW6D-109.5-110.0 | N | T | JC88938 | JC88938-6 | 2019-05-30 | X | X | | |
| BEDROCK | 114-MW6D | 114-MW6D-89.5-90.0 | N | T | JC88938 | JC88938-10 | 2019-05-30 | X | X | | |
| BEDROCK | 114-MW6D | 114-MW6D-94.5-95.0 | N | T | JC88938 | JC88938-9 | 2019-05-30 | X | X | | |
| BEDROCK | 114-MW6D | 114-MW6D-99.5-100.0 | N | T | JC88938 | JC88938-8 | 2019-05-30 | X | X | | |
| BEDROCK | 114-MW6D | 114-MW6D-108.5-20200826 | N | T | JD12249 | JD12249-5 | 2020-08-26 | X | X | | |
| BEDROCK | 114-MW6D | 114-MW6D-103.5-20200826 | N | T | JD12249 | JD12249-6 | 2020-08-26 | X | X | | |
| BEDROCK | 114-MW6D | 114-MW6D-98.5-20200827 | N | T | JD12322 | JD12322-1 | 2020-08-27 | X | X | | |
| BEDROCK | 114-MW6D | 114-MW6D-93.5-20200827 | N | T | JD12322 | JD12322-2 | 2020-08-27 | X | X | | |
| BEDROCK | 114-MW6D | 114-MW6D-88.5-20200827 | N | T | JD12322 | JD12322-3 | 2020-08-27 | X | X | | |

# Table 4-2
# Groundwater Sampling Summary
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

| Well Type | Location ID | Sample ID | Sample Type | Fraction | Lab SDG | Lab Sample ID | Date Collected | $Cr^{+6}$, pH, Eh | Metals | SVOC | VOC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BEDROCK | 114-MW7D | 114-MW7D-87.5-88.0 | N | T | JC89029 | JC89029-1 | 2019-05-31 | X | X | | |
| BEDROCK | 114-MW7D | 114-MW7D-87.5-20200831 | N | T | JD12474 | JD12474-2 | 2020-08-31 | X | X | | |
| ***Groundwater Screening Samples*** | | | | | | | | | | | |
| N/A | 10W-SS101S | 10W-SS101S-11.0-15.0 | N | T | JC46649 | JC46649-2 | 2017-07-10 | X | X | | |
| N/A | 10W-SS101S | 10W-SS101S-11.0-15.0FF | N | D | JC46649 | JC46649-2F | 2017-07-10 | X | X | | |
| N/A | 10W-SS102S | 10W-SS102S-11.0-15.0 | N | T | JC46746 | JC46746-2 | 2017-07-11 | X | X | | |
| N/A | 10W-SS102S | 10W-SS102S-11.0-15.0FF | N | D | JC46746 | JC46746-2F | 2017-07-11 | X | X | | |
| N/A | 10W-SS105I | 10W-SSI105I-36.0-40.0 | N | T | JC46901 | JC46901-2 | 2017-07-13 | X | X | | |
| N/A | 10W-SS105I | 10W-SSI105I-36.0-40.0FF | N | D | JC46901 | JC46901-2F | 2017-07-13 | X | X | | |
| N/A | 114-SS-39B | 114-SS-39B-24.0-28.0 | N | N | JC53234 | JC53234-3 | 2017-10-16 | | | X | X |
| N/A | 114-SS-39B | 114-SS-39B-24.0-28.0 | N | T | JC53234 | JC53234-3 | 2017-10-16 | | X | | |
| N/A | 114-SS-39B | 114-SS-39B-24.0-28.0 | N | T | JC53234A | JC53234-3A | 2017-10-16 | X | | | |
| N/A | 114-SS-39B | 114-SS-39B-24.0-28.0-F | N | D | JC53234 | JC53234-3F | 2017-10-16 | | X | | |
| N/A | 114-SS-39B | 114-SS-39B-24.0-28.0-F | N | D | JC53234A | JC53234-3FA | 2017-10-16 | X | | | |
| N/A | 114-SS-39B | 114-SS-39B-32.0-36.0 | N | N | JC53234 | JC53234-4 | 2017-10-16 | | | X | X |
| N/A | 114-SS-39B | 114-SS-39B-32.0-36.0 | N | T | JC53234 | JC53234-4 | 2017-10-16 | | X | | |
| N/A | 114-SS-39B | 114-SS-39B-32.0-36.0 | N | T | JC53234A | JC53234-4A | 2017-10-16 | X | | | |
| N/A | 114-SS-39B | 114-SS-39B-32.0-36.0-F | N | D | JC53234 | JC53234-4F | 2017-10-16 | | X | | |
| N/A | 114-SS-39B | 114-SS-39B-32.0-36.0-F | N | D | JC53234A | JC53234-4FA | 2017-10-16 | X | | | |
| N/A | 114-SS-39B | 114-SS-39B-40.0-44.0 | N | N | JC53234 | JC53234-5 | 2017-10-16 | | | X | X |
| N/A | 114-SS-39B | 114-SS-39B-40.0-44.0 | N | T | JC53234 | JC53234-5 | 2017-10-16 | | X | | |
| N/A | 114-SS-39B | 114-SS-39B-40.0-44.0 | N | T | JC53234A | JC53234-5A | 2017-10-16 | X | | | |
| N/A | 114-SS-39B | 114-SS-39B-40.0-44.0-F | N | D | JC53234 | JC53234-5F | 2017-10-16 | | X | | |
| N/A | 114-SS-39B | 114-SS-39B-40.0-44.0-F | N | D | JC53234A | JC53234-5FA | 2017-10-16 | X | | | |
| N/A | 114-SS-39B | 114-SS-39B-46.0-49.5 | N | N | JC53234 | JC53234-6 | 2017-10-16 | | | X | X |
| N/A | 114-SS-39B | 114-SS-39B-46.0-49.5 | N | T | JC53234 | JC53234-6 | 2017-10-16 | | X | | |
| N/A | 114-SS-39B | 114-SS-39B-46.0-49.5 | N | T | JC53234A | JC53234-6A | 2017-10-16 | X | | | |
| N/A | 114-SS-39B | 114-SS-39B-46.0-49.5-F | N | D | JC53234 | JC53234-6F | 2017-10-16 | | X | | |
| N/A | 114-SS-39B | 114-SS-39B-46.0-49.5-F | N | D | JC53234A | JC53234-6FA | 2017-10-16 | X | | | |
| N/A | 114-SS-40B | 114-SS-40B-22.0-26.0 | N | N | JC54569A | JC54569-4A | 2017-11-02 | | | X | X |
| N/A | 114-SS-40B | 114-SS-40B-22.0-26.0 | N | T | JC54569 | JC54569-4 | 2017-11-02 | X | | | |
| N/A | 114-SS-40B | 114-SS-40B-22.0-26.0 | N | T | JC54569A | JC54569-4A | 2017-11-02 | | X | | |
| N/A | 114-SS-40B | 114-SS-40B-22.0-26.0-F | N | D | JC54569 | JC54569-5F | 2017-11-02 | X | | | |
| N/A | 114-SS-40B | 114-SS-40B-22.0-26.0-F | N | D | JC54569A | JC54569-5FA | 2017-11-02 | | X | | |
| N/A | 114-SS-40B | 114-SS-40B-22.0-26.0-F | N | D | JC54569A | JC54569-5FA | 2017-11-02 | | X | | |
| N/A | 114-SS-40B | 114-SS-40B-30.0-34.0 | N | N | JC54569A | JC54569-6A | 2017-11-02 | | | X | X |
| N/A | 114-SS-40B | 114-SS-40B-30.0-34.0 | N | T | JC54569 | JC54569-6 | 2017-11-02 | X | | | |
| N/A | 114-SS-40B | 114-SS-40B-30.0-34.0 | N | T | JC54569A | JC54569-6A | 2017-11-02 | | X | | |
| N/A | 114-SS-40B | 114-SS-40B-30.0-34.0-F | N | D | JC54569 | JC54569-7F | 2017-11-02 | X | | | |
| N/A | 114-SS-40B | 114-SS-40B-30.0-34.0-F | N | D | JC54569A | JC54569-7FA | 2017-11-02 | | X | | |
| N/A | 114-SS-40B | 114-SS-40B-36.0-40.0 | N | N | JC54569A | JC54569-8A | 2017-11-02 | | | X | X |
| N/A | 114-SS-40B | 114-SS-40B-36.0-40.0 | N | T | JC54569 | JC54569-8 | 2017-11-02 | X | | | |
| N/A | 114-SS-40B | 114-SS-40B-36.0-40.0 | N | T | JC54569A | JC54569-8A | 2017-11-02 | | X | | |
| N/A | 114-SS-40B | 114-SS-40B-36.0-40.0-F | N | D | JC54569 | JC54569-9F | 2017-11-02 | X | | | |
| N/A | 114-SS-40B | 114-SS-40B-36.0-40.0-F | N | D | JC54569A | JC54569-9FA | 2017-11-02 | | X | | |
| N/A | 114-SS-43A | 114-SS-43A-11.0-15.0 | N | T | JC54328 | JC54328-3 | 2017-10-31 | X | | | |
| N/A | 114-SS-43A | 114-SS-43A-11.0-15.0 | N | T | JC54328A | JC54328-3A | 2017-10-31 | | X | | |
| N/A | 114-SS-43A | 114-SS-43A-11.0-15.0-LF | N | D | JC54328 | JC54328-4F | 2017-10-31 | X | | | |
| N/A | 114-SS-43A | 114-SS-43A-11.0-15.0-LF | N | D | JC54328A | JC54328-4FA | 2017-10-31 | | X | | |
| N/A | 132-P3A-SSI | 132-P3A-SSI-30.0-34.0 | N | T | JC46746 | JC46746-3 | 2017-07-11 | X | X | | |
| N/A | 132-P3A-SSI | 132-P3A-SSI-30.0-34.0FF | N | D | JC46746 | JC46746-3F | 2017-07-11 | X | X | | |
| N/A | 132-P3A-SSI | 132-P3A-SSI-30.0-34.0X | FD | T | JC46746 | JC46746-4 | 2017-07-11 | X | X | | |
| N/A | 132-P3A-SSI | 132-P3A-SSI-30.0-34.0XFF | FD | D | JC46746 | JC46746-4F | 2017-07-11 | X | X | | |
| N/A | DNAPL-S1 | 137-S1-GW | N | N | JC55721 | JC55721-3 | 2017-11-17 | | | X | X |
| N/A | DNAPL-W1 | 137-W1-GW | N | N | JC55721 | JC55721-4 | 2017-11-17 | | | X | X |
| N/A | GAR-PDI-B'2A | GAR-RI-B'2A-GW-2.0-7.0 | N | T | JC33474 | JC33474-2 | 2016-12-11 | X | X | | |
| N/A | GAR-PDI-B'2A | GAR-RI-B'2A-GW-2.0-7.0X | FD | T | JC33474 | JC33474-3 | 2016-12-11 | X | X | | |
| N/A | GAR-PDI-B'2A | GAR-RI-B'2A-GWFF-2.0-7.0 | N | D | JC33474 | JC33474-2F | 2016-12-11 | X | X | | |
| N/A | GAR-PDI-B'2A | GAR-RI-B'2A-GWFF-2.0-7.0X | FD | D | JC33474 | JC33474-3F | 2016-12-11 | X | X | | |
| N/A | GAR-PDI-B'3A | GAR-RI-B'3A-GW-4.0-9.0 | N | T | JC33474 | JC33474-4 | 2016-12-11 | X | X | | |
| N/A | GAR-PDI-B'3A | GAR-RI-B'3A-GWFF-4.0-9.0 | N | D | JC33474 | JC33474-4F | 2016-12-11 | X | X | | |
| N/A | GAR-PDI-C13B | GAR-RI-C13B-GW-22.0-22.5 | N | T | JC33969 | JC33969-1 | 2016-12-18 | X | X | | |
| N/A | GAR-PDI-C13B | GAR-RI-C13B-GWFF-22.0-22.5 | N | D | JC33969 | JC33969-1F | 2016-12-18 | X | X | | |
| N/A | GAR-PDI-D14B | GAR-RI-D14B-GW-0.0-5.0 | N | T | JC33474 | JC33474-1 | 2016-12-11 | X | X | | |
| N/A | GAR-PDI-D14B | GAR-RI-D14B-GWFF-0.0-5.0 | N | D | JC33474 | JC33474-1F | 2016-12-11 | X | X | | |
| ***Sumps*** | | | | | | | | | | | |
| N/A | Forrest-Sump-E | FORREST-SUMP-E-20170928 | N | T | JC52007 | JC52007-6 | 2017-09-28 | X | | | |
| N/A | Forrest-Sump-E | FORREST-SUMP-E-20170928 | N | T | JC52007A | JC52007-6A | 2017-09-28 | | X | | |
| N/A | Forrest-Sump-S | FORREST-SUMP-S-20170925 | N | T | JC51716 | JC51716-2 | 2017-09-25 | X | X | | |
| N/A | Forrest-Sump-S | FORREST-SUMP-S-20170928 | N | T | JC52007 | JC52007-4 | 2017-09-28 | X | | | |
| N/A | Forrest-Sump-S | FORREST-SUMP-S-20170928 | N | T | JC52007A | JC52007-4A | 2017-09-28 | | X | | |
| N/A | Forrest-Sump-W | FORREST-SUMP-W-20170925 | N | T | JC51716 | JC51716-3 | 2017-09-25 | X | X | | |
| N/A | Forrest-Sump-W | FORREST-SUMP-W-20170928 | N | T | JC52007 | JC52007-5 | 2017-09-28 | X | | | |
| N/A | Forrest-Sump-W | FORREST-SUMP-W-20170928 | N | T | JC52007A | JC52007-5A | 2017-09-28 | | X | | |
| ***Soil Borings (DNAPL Delineation)*** | | | | | | | | | | | |
| N/A | DNAPL-S1 | 137-S1-32.5-33.0 | N | N | JC55607 | JC55607-2 | 2017-11-16 | | | X | X |
| N/A | DNAPL-S1 | 137-S1-47.5-48.0 | N | N | JC55607 | JC55607-3 | 2017-11-16 | | | X | X |
| N/A | DNAPL-W1 | 137-W1-32.5-33.0 | N | N | JC55607 | JC55607-4 | 2017-11-16 | | | X | X |
| N/A | DNAPL-W1 | 137-W1-47.5-48.0 | N | N | JC55607 | JC55607-5 | 2017-11-16 | | | X | X |

**NOTES:**

* - a laboratory transcription error resulted in the labeling of these samples as 114-PIB-MW102I-26.5-20180112 and 114-PIB-MW102I-31.5-20180112 instead of 114-P**1**B-MW102I-26.5-20180112 and 114-P**1**B-MW102I-31.5-20180112, respectively.
BR - bedrock
$Cr^{+6}$ - hexavalent chromium
DNAPL - dense non-aqueous phase liquid
Eh - oxidation-reduction potential (ORP)
Fraction:
  T or N - total/unfiltered
  D - dissolved/filtered
Sample Types:
  FD - field duplicate sample
  N - normal environmental sample
SDG - sample delivery group
SVOC - semi-volatile organic compounds
VOC - volatile organic compounds

**Table 4-3**
**Quality Assurance/Quality Control Sample Summary**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| Sample ID | Sample Type | Fraction | Lab SDG | Lab Sample ID | Date Collected | $Cr^{+6}$, pH, Eh | Metals | SVOC | VOC |
|---|---|---|---|---|---|---|---|---|---|
| GAR-RI-FB20161211A | EB | T | JC33474 | JC33474-5 | 12/11/2016 | X | X | | |
| GAR-RI-FB20161211A-FF | EB | D | JC33474 | JC33474-5F | 12/11/2016 | X | X | | |
| GAR-RI-FB20161218A | EB | T | JC33969 | JC33969-2 | 12/18/2016 | X | X | | |
| GAR-RI-FB20161218A-FF | EB | D | JC33969 | JC33969-2F | 12/18/2016 | X | X | | |
| 10W-FB20170710 | EB | T | JC46649 | JC46649-1 | 7/10/2017 | X | X | | |
| 10W-FB20170711 | EB | T | JC46746 | JC46746-1 | 7/11/2017 | X | X | | |
| 10W-FB20170713 | EB | T | JC46901 | JC46901-1 | 7/13/2017 | X | X | | |
| 114-FB20170925 | EB | N | JC51736 | JC51736-1 | 9/25/2017 | | | X | X |
| 114-TB20170925 | TB | N | JC51736 | JC51736-2 | 9/25/2017 | | | | X |
| FSP-FB20170925 | EB | T | JC51716 | JC51716-1 | 9/25/2017 | X | X | | |
| 114-FB20170926 | EB | N | JC51809 | JC51809-35 | 9/26/2017 | | | X | |
| 114-FB20170926 | EB | N | JC51824 | JC51824-1 | 9/26/2017 | | | X | X |
| 114-FB20170926 | EB | T | JC51802 | JC51802-1 | 9/26/2017 | X | X | | |
| 114-FB20170926 | EB | T | JC51824 | JC51824-1 | 9/26/2017 | | X | | |
| 114-TB20170926 | TB | N | JC51824 | JC51824-2 | 9/26/2017 | | | | X |
| 114-FB20170927 | EB | N | JC51890 | JC51890-1 | 9/27/2017 | | | X | X |
| 114-FB20170927 | EB | T | JC51874 | JC51874-1 | 9/27/2017 | X | X | | |
| 114-FB20170927 | EB | T | JC51890 | JC51890-1 | 9/27/2017 | | X | | |
| 114-TB20170927 | TB | N | JC51890 | JC51890-2 | 9/27/2017 | | | | X |
| 114-FB20170928 | EB | T | JC52029 | JC52029-1 | 9/28/2017 | | X | | |
| 114-FB20170928. | EB | T | JC52007 | JC52007-1 | 9/28/2017 | X | | | |
| 114-FB20170928. | EB | T | JC52007A | JC52007-1A | 9/28/2017 | | X | | |
| 114-FB20171016 | EB | D | JC53234 | JC53234-1F | 10/16/2017 | | X | | |
| 114-FB20171016 | EB | D | JC53234A | JC53234-1FA | 10/16/2017 | X | | | |
| 114-FB20171016 | EB | N | JC53234 | JC53234-1 | 10/16/2017 | | | X | X |
| 114-FB20171016 | EB | T | JC53234 | JC53234-1 | 10/16/2017 | | X | | |
| 114-FB20171016 | EB | T | JC53234A | JC53234-1A | 10/16/2017 | X | | | |
| TRIP BLANK_20171016 | TB | N | JC53234 | JC53234-2 | 10/16/2017 | | | | X |
| 114-FB20171031 | EB | T | JC54328 | JC54328-1 | 10/31/2017 | X | | | |
| 114-FB20171031 | EB | T | JC54328A | JC54328-1A | 10/31/2017 | | X | | |
| 114-FB20171031-LF | EB | D | JC54328 | JC54328-2F | 10/31/2017 | X | | | |
| 114-FB20171031-LF | EB | D | JC54328A | JC54328-2FA | 10/31/2017 | | X | | |
| 114-FB20171102 | EB | N | JC54569A | JC54569-1A | 11/2/2017 | | | X | X |
| 114-FB20171102 | EB | T | JC54569 | JC54569-1 | 11/2/2017 | X | | | |
| 114-FB20171102 | EB | T | JC54569A | JC54569-1A | 11/2/2017 | | X | | |
| 114-FB20171102-F | EB | D | JC54569 | JC54569-2F | 11/2/2017 | X | | | |
| 114-FB20171102-F | EB | D | JC54569A | JC54569-2FA | 11/2/2017 | | X | | |
| TRIP BLANK_20171102 | TB | N | JC54569A | JC54569-3 | 11/2/2017 | | | | X |
| 114-FB20171113A | EB | T | JC55349 | JC55349-1 | 11/13/2017 | X | | | |
| 114-FB20171113A | EB | T | JC55349A | JC55349-1A | 11/13/2017 | | X | | |
| 137-FB20171116 | EB | N | JC55607 | JC55607-1 | 11/16/2017 | | | X | X |
| 137-TB20171117 | TB | N | JC55721 | JC55721-2 | 11/17/2017 | | | | X |
| 137-FB20171117 | EB | N | JC55721 | JC55721-1 | 11/17/2017 | | | | X |
| FORREST-FB20171204 | EB | N | JC56504A | JC56504-1A | 12/4/2017 | | | X | X |
| FORREST-FB20171204 | EB | T | JC56504 | JC56504-1 | 12/4/2017 | X | | | |
| FORREST-FB20171204 | EB | T | JC56504A | JC56504-1A | 12/4/2017 | | X | | |
| TRIP BLANK-20171204 | TB | N | JC56504A | JC56504-4 | 12/4/2017 | | | | X |
| FORREST-FB20171206 | EB | N | JC56729A | JC56729-1A | 12/6/2017 | | | X | X |
| FORREST-FB20171206 | EB | T | JC56729 | JC56729-1 | 12/6/2017 | X | | | |
| FORREST-FB20171206 | EB | T | JC56729A | JC56729-1A | 12/6/2017 | | X | | |
| TRIP BLANK-20171206 | TB | N | JC56729A | JC56729-5 | 12/6/2017 | | | | X |
| FORREST-FB20171207 | EB | N | JC56859A | JC56859-1A | 12/7/2017 | | | X | X |
| FORREST-FB20171207 | EB | T | JC56859 | JC56859-1 | 12/7/2017 | X | | | |
| FORREST-FB20171207 | EB | T | JC56859A | JC56859-1A | 12/7/2017 | | X | | |
| TRIP BLANK-FB20171207 | TB | N | JC56859A | JC56859-4 | 12/7/2017 | | | | X |
| FB-20171212 | EB | N | JC57169 | JC57169-1 | 12/12/2017 | | | X | X |
| TRIP BLANK-20171212 | TB | N | JC57169 | JC57169-5 | 12/12/2017 | | | | X |
| FB-20171213 | EB | N | JC57276 | JC57276-6 | 12/13/2017 | | | X | X |
| TRIP BLANK-20171213 | TB | N | JC57276 | JC57276-1 | 12/13/2017 | | | | X |
| FB-20171214 | EB | T | JC57385 | JC57385-3 | 12/14/2017 | X | | | |
| FB-20171214 | EB | T | JC57385 | JC57385-3A | 12/14/2017 | | X | | |
| FB-20171215 | EB | N | JC57501A | JC57501-2A | 12/15/2017 | | | X | X |
| FB-20171215 | EB | T | JC57501 | JC57501-2 | 12/15/2017 | X | | | |
| FB-20171215 | EB | T | JC57501A | JC57501-2A | 12/15/2017 | | X | | |
| TRIP BLANK-20171215 | TB | N | JC57501A | JC57501-1 | 12/15/2017 | | | | X |
| FORREST-FB-20171218 | EB | N | JC57565 | JC57565-4 | 12/18/2017 | | | | X |
| FORREST-FB-20171218 | EB | N | JC57565 | JC57565-4B | 12/18/2017 | | | X | |
| FORREST-FB-20171218 | EB | T | JC57565 | JC57565-4A | 12/18/2017 | X | | | |
| FORREST-FB-20171218 | EB | T | JC57565 | JC57565-4B | 12/18/2017 | | X | | |
| TRIP BLANK-20171218 | TB | N | JC57565 | JC57565-1 | 12/18/2017 | | | | X |
| FIELD BLANK-20171219 | EB | N | JC57638 | JC57638-6 | 12/19/2017 | | | X | X |
| FIELD BLANK-20171219 | EB | T | JC57638 | JC57638-6 | 12/19/2017 | X | X | | |
| TRIP BLANK-20171219 | TB | N | JC57638 | JC57638-1 | 12/19/2017 | | | | X |
| FB-20171220 | EB | N | JC57752 | JC57752-5 | 12/20/2017 | | | X | X |
| FB-20171220 | EB | T | JC57752 | JC57752-5 | 12/20/2017 | X | X | | |
| TRIP BLANK-20171220 | TB | N | JC57752 | JC57752-1 | 12/20/2017 | | | | X |
| FB-20171221 | EB | N | JC57820 | JC57820-6A | 12/21/2017 | | | X | X |
| FB-20171221 | EB | T | JC57820 | JC57820-6 | 12/21/2017 | X | | | |
| FB-20171221 | EB | T | JC57820 | JC57820-6A | 12/21/2017 | | X | | |
| TRIP BLANK-20171221 | TB | N | JC57820 | JC57820-1 | 12/21/2017 | | | | X |
| FB-20171222 | EB | N | JC57943A | JC57943-8A | 12/22/2017 | | | X | X |
| FB-20171222 | EB | T | JC57943 | JC57943-8 | 12/22/2017 | X | | | |
| FB-20171222 | EB | T | JC57943A | JC57943-8A | 12/22/2017 | | X | | |
| TRIP BLANK-20171222 | TB | N | JC57943A | JC57943-1 | 12/22/2017 | | | | X |

**Table 4-3**
**Quality Assurance/Quality Control Sample Summary**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| Sample ID | Sample Type | Fraction | Lab SDG | Lab Sample ID | Date Collected | $Cr^{+6}$, pH, Eh | Metals | SVOC | VOC |
|---|---|---|---|---|---|---|---|---|---|
| FB-20171226 | EB | N | JC58028A | JC58028-4A | 12/26/2017 | | | X | X |
| FB-20171226 | EB | T | JC58028 | JC58028-4 | 12/26/2017 | X | | | |
| FB-20171226 | EB | T | JC58028A | JC58028-4A | 12/26/2017 | | X | | |
| TRIP BLANK-20171226 | TB | N | JC58028A | JC58028-1 | 12/26/2017 | | | | X |
| FB-20171227 | EB | N | JC58073A | JC58073-4A | 12/27/2017 | | | X | X |
| FB-20171227 | EB | T | JC58073 | JC58073-4 | 12/27/2017 | X | | | |
| FB-20171227 | EB | T | JC58073A | JC58073-4A | 12/27/2017 | | X | | |
| TRIP BLANK-20171227 | TB | N | JC58073A | JC58073-1 | 12/27/2017 | | | | X |
| FB-20180111 | EB | N | JC58670 | JC58670-5 | 1/11/2018 | | | X | X |
| TRIP BLANK-20180111 | TB | N | JC58670 | JC58670-1 | 1/11/2018 | | | | X |
| FB-20180112 | EB | N | JC58745 | JC58745-4 | 1/12/2018 | | | X | X |
| TRIP BLANK-20180112 | TB | N | JC58745 | JC58745-1 | 1/12/2018 | | | | X |
| FB-20180116 | EB | N | JC58942 | JC58942-6 | 1/16/2018 | | | X | X |
| FB-20180116 | EB | T | JC58942 | JC58942-6 | 1/16/2018 | X | X | | |
| TB-20180116 | TB | N | JC58942 | JC58942-1 | 1/16/2018 | | | | X |
| FB-20180208 | EB | T | JC60477 | JC60477-4 | 2/8/2018 | X | X | | |
| FB-20180209 | EB | T | JC60564 | JC60564-3 | 2/9/2018 | X | X | | |
| FB-20180209-A | EB | T | JC60563 | JC60563-2 | 2/9/2018 | X | X | | |
| FB-20180212 | EB | N | JC60652 | JC60652-3 | 2/12/2018 | | | X | X |
| FB-20180212 | EB | T | JC60652 | JC60652-3 | 2/12/2018 | X | X | | |
| TRIP BLANK-20180212 | TB | N | JC60652 | JC60652-4 | 2/12/2018 | | | | X |
| FB-20180312 | EB | N | JC62130 | JC62130-3A | 3/12/2018 | | | X | X |
| FB-20180312 | EB | T | JC62130 | JC62130-3 | 3/12/2018 | X | | | |
| FB-20180312 | EB | T | JC62130 | JC62130-3A | 3/12/2018 | | X | | |
| TRIP BLANK-20180312 | TB | N | JC62130 | JC62130-4 | 3/12/2018 | | | | X |
| FB-20180313 | EB | D | JC62228 | JC62228-4F | 3/13/2018 | X | X | | |
| FB-20180313 | EB | N | JC62228 | JC62228-4 | 3/13/2018 | | | X | X |
| FB-20180313 | EB | T | JC62228 | JC62228-4 | 3/13/2018 | X | X | | |
| TRIP BLANK-20180313 | TB | N | JC62228 | JC62228-5 | 3/13/2018 | | | | X |
| FB-20180417 | EB | D | JC64376 | JC64376-4F | 4/17/2018 | X | X | | |
| FB-20180417 | EB | T | JC64376 | JC64376-4 | 4/17/2018 | X | X | | |
| FB-20180418 | EB | N | JC64444 | JC64444-11A | 4/18/2018 | | | X | X |
| FB-20180418 | EB | T | JC64444 | JC64444-11 | 4/18/2018 | X | | | |
| FB-20180418 | EB | T | JC64444 | JC64444-11A | 4/18/2018 | | X | | |
| TB-20180418 | TB | N | JC64444 | JC64444-1 | 4/18/2018 | | | | X |
| FB-20180419 | EB | D | JC64571 | JC64571-11F | 4/19/2018 | X | X | | |
| FB-20180419 | EB | N | JC64571 | JC64571-11 | 4/19/2018 | | | X | X |
| FB-20180419 | EB | T | JC64571 | JC64571-11 | 4/19/2018 | X | X | | |
| TB-20180419 | TB | N | JC64571 | JC64571-1 | 4/19/2018 | | | | X |
| FB-20180420 | EB | N | JC64643 | JC64643-12 | 4/20/2018 | | | X | X |
| FB-20180420 | EB | T | JC64643 | JC64643-12 | 4/20/2018 | X | X | | |
| TB-20180420 | TB | N | JC64643 | JC64643-1 | 4/20/2018 | | | | X |
| FB-20180423 | EB | N | JC64763 | JC64763-12 | 4/23/2018 | | | X | X |
| FB-20180423 | EB | T | JC64763 | JC64763-12A | 4/23/2018 | X | X | | |
| TB-20180423 | TB | N | JC64763 | JC64763-1 | 4/23/2018 | | | | X |
| FB-20180424 | EB | N | JC64822 | JC64822-10 | 4/24/2018 | | | X | X |
| FB-20180424 | EB | T | JC64822 | JC64822-10 | 4/24/2018 | X | X | | |
| TB-20180424 | TB | N | JC64822 | JC64822-1 | 4/24/2018 | | | | X |
| FB-20180425 | EB | D | JC64901 | JC64901-10F | 4/25/2018 | X | X | | |
| FB-20180425 | EB | N | JC64901 | JC64901-10 | 4/25/2018 | | | X | X |
| FB-20180425 | EB | T | JC64901 | JC64901-10A | 4/25/2018 | X | X | | |
| TB-20180425 | TB | N | JC64901 | JC64901-1 | 4/25/2018 | | | | X |
| FB-20180426 | EB | D | JC64986 | JC64986-12F | 4/26/2018 | X | X | | |
| FB-20180426 | EB | N | JC64986 | JC64986-12 | 4/26/2018 | | | X | X |
| FB-20180426 | EB | T | JC64986 | JC64986-12 | 4/26/2018 | X | X | | |
| TB-20180426 | TB | N | JC64986 | JC64986-1 | 4/26/2018 | | | | X |
| FB-20180427-114-MW19C-PRE | EB | N | JC65066 | JC65066-3 | 4/27/2018 | | | X | X |
| FB-20180427 | EB | D | JC65066 | JC65066-2F | 4/27/2018 | X | X | | |
| FB-20180427 | EB | N | JC65066 | JC65066-2 | 4/27/2018 | | | X | X |
| FB-20180427 | EB | T | JC65066 | JC65066-2 | 4/27/2018 | X | X | | |
| FB-20180427-114-MW19C-POST | EB | N | JC65066 | JC65066-4 | 4/27/2018 | | | X | X |
| TB-20180427 | TB | N | JC65066 | JC65066-1 | 4/27/2018 | | | | X |
| TB-20180430 | TB | N | JC65178 | JC65178-2 | 4/30/2018 | | | | X |
| FB-20180430 | EB | N | JC65178 | JC65178-1 | 4/30/2018 | | | X | X |
| FB-20180430 | EB | T | JC65178 | JC65178-1 | 4/30/2018 | X | X | | |
| FB-20180430 | EB | T | JC65178 | JC65178-1F | 4/30/2018 | X | X | | |
| FB-20180501-114-MW19B-PRE | EB | N | JC65255 | JC65255-3 | 5/1/2018 | | | X | X |
| FB-20180501-114-MW19B-POST | EB | N | JC65255 | JC65255-4 | 5/1/2018 | | | X | X |
| FB-20180501 | EB | N | JC65255 | JC65255-2 | 5/1/2018 | | | X | X |
| FB-20180501 | EB | T | JC65255 | JC65255-2A | 5/1/2018 | X | X | | |
| TB-20180501 | TB | N | JC65255 | JC65255-1 | 5/1/2018 | | | | X |
| FB-20180502 | EB | D | JC65325 | JC65325-2F | 5/2/2018 | X | X | | |
| FB-20180502 | EB | N | JC65325 | JC65325-2 | 5/2/2018 | | | X | X |
| FB-20180502 | EB | T | JC65325 | JC65325-2 | 5/2/2018 | X | X | | |
| TB-20180502 | TB | N | JC65325 | JC65325-1 | 5/2/2018 | | | | X |
| FB-20180531 | EB | N | JC67069 | JC67069-2 | 5/31/2018 | | | X | X |
| FB-20180531 | EB | T | JC67069 | JC67069-2 | 5/31/2018 | X | X | | |
| TB-20180531 | TB | N | JC67069 | JC67069-1 | 5/31/2018 | | | | X |
| FB-201905300 | EB | T | JC88938 | JC88938-11 | 5/30/2019 | X | X | | |
| FB20190531 | EB | T | JC89029 | JC89029-2 | 5/31/2019 | X | X | | |
| FB-20191021 | EB | T | JC97157 | JC97157-1 | 10/21/2019 | X | X | | |
| FB-20191022 | EB | T | JC97214 | JC97214-2 | 10/22/2019 | X | X | | |
| FB20200819 | EB | T | JD11956 | JD11956-3 | 8/19/2020 | X | X | | |
| FB20200820 | EB | T | JD12022 | JD12022-3 | 8/20/2020 | X | X | | |

**Table 4-3**
**Quality Assurance/Quality Control Sample Summary**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| Sample ID | Sample Type | Fraction | Lab SDG | Lab Sample ID | Date Collected | $Cr^{+6}$, pH, Eh | Metals | SVOC | VOC |
|---|---|---|---|---|---|---|---|---|---|
| FB20200821 | EB | T | JD12104 | JD12104-3 | 8/21/2020 | X | X | | |
| FB20200824 | EB | T | JD12146 | JD12146-4 | 8/24/2020 | X | X | | |
| FB20200828 | EB | T | JD12393 | JD12393-4 | 8/28/2020 | X | X | | |
| FB-GWRI-20200825 | EB | T | JD12215 | JD12215-5 | 8/25/2020 | X | X | | |
| FB-GWRI-20200826 | EB | T | JD12249 | JD12249-7 | 8/26/2020 | X | X | | |
| FB-GWRI-20200827 | EB | T | JD12322 | JD12322-6 | 8/27/2020 | X | X | | |
| FB-GWRI-20200831 | EB | T | JD12474 | JD12474-3 | 8/31/2020 | X | X | | |
| FB-GWRI-20200901 | EB | T | JD12508 | JD12508-3 | 9/1/2020 | X | X | | |
| FB-GWRI-20200902 | EB | T | JD12593 | JD12593-2 | 9/2/2020 | X | X | | |
| FB-GWRI-20210209 | FB | T | JD20125 | JD20125-1 | 2/9/2021 | X | X | | |
| FB-GWRI-20210210 | FB | T | JD20166 | JD20166-1 | 2/10/2021 | X | X | | |
| FB-GWRI-20210211 | FB | T | JD20260 | JD20260-1 | 2/11/2021 | X | X | | |
| FB-GWRI-20210212 | FB | T | JD20313 | JD20313-1 | 2/12/2021 | X | X | | |
| FB-GWRI-20210215B | FB | T | JD20380 | JD20380-1 | 2/15/2021 | X | X | | |

**NOTES:**
$Cr^{+6}$ - hexavalent chromium
Eh - oxidation-reduction potential (ORP)
Fraction:
T or N - total/unfiltered
D - dissolved/filtered
Sample Types:
EB - equipment blank
FB - field blank
TB - trip blank
SDG - sample delivery group
SVOC - semi-volatile organic compounds
VOC - volatile organic compounds

**Table 5-1**
**Groundwater Analytical Results - Cr+6 and CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

AECOM

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | **Analyte** | ANTIMONY | CHROMIUM | CHROMIUM (HEXAVALENT) | NICKEL | THALLIUM | VANADIUM |
| | | | | | | **CAS RN** | 7440-36-0 | 7440-47-3 | 18540-29-9 | 7440-02-0 | 7440-28-0 | 7440-62-2 |
| | | | | | | **GWQS** | 6 | 70 | 70 | 100 | 2 | 60 |
| | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Depth (ft bTOIC)** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| SHALLOW | 10W-MW101S | 10W-MW101S-20180208 | 14.5 | N | T | JC60477 | 2018-02-08 | < 4.3 U | 6.4 J | 21 JB | < 10 U | < 1.6 U | 3.0 J |
| SHALLOW | 10W-MW102S | 10W-MW102S-20180208 | 14.5 | N | T | JC60477 | 2018-02-08 | < 4.3 U | < 10 U | 29 JB | < 10 U | < 1.6 U | 3.3 J |
| SHALLOW | 114-MW14A | 114-MW14A-10.0-20171219 | 10.0 | N | T | JC57638 | 2017-12-19 | < 4.3 U | 16.9 J | 40 J | < 3.2 UB | < 1.6 U | 4.7 J |
| SHALLOW | 114-MW14A | 114-MW14A-5.0-20171219 | 5.0 | N | T | JC57638 | 2017-12-19 | < 4.3 U | 21.4 | 28 | < 2.9 UB | < 1.6 U | 5.5 J |
| SHALLOW | 114-MW15A | 114-MW15A-20180417 | 4.25 | N | D | JC64376 | 2018-04-17 | < 4.3 U | 3.1 J | < 8.1 U | < 1.3 U | < 0.047 U | 2.1 J |
| SHALLOW | 114-MW15A | 114-MW15A-20180417 | 4.25 | N | T | JC64376 | 2018-04-17 | < 4.3 U | 5.0 JB | < 8.1 U | 1.8 J | < 0.089 UB | 3.8 J |
| SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | 11.5 | N | D | JC65325 | 2018-05-02 | - | < 0.85 U | < 8.1 U | - | - | - |
| SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | 11.5 | N | T | JC65325 | 2018-05-02 | < 4.3 U | 3.6 J | < 8.1 U | 32.5 | < 0.047 U | < 1.3 U |
| SHALLOW | 114-MW25A | 114-MW25A-20170926 | 11.5 | N | T | JC51802 | 2017-09-26 | - | **102** | < 8.1 U | - | - | - |
| SHALLOW | 114-MW25A | 114-MW25A-20170926 | 11.5 | N | T | JC51824 | 2017-09-26 | < 4.3 U | - | - | 10.0 | < 1.6 U | 2.6 J |
| SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | 12.5 | N | T | JC57565 | 2017-12-18 | < 4.3 U | 2.2 J | < 8.1 U | 26.4 | < 0.047 U | < 1.3 U |
| SHALLOW | 114-MW27A | 114-MW27A-20170926 | 13.5 | N | T | JC51802 | 2017-09-26 | - | 66.6 | 56 | - | - | - |
| SHALLOW | 114-MW27A | 114-MW27A-20170926 | 13.5 | N | T | JC51824 | 2017-09-26 | < 4.3 U | - | - | 9.4 J | < 1.6 U | 4.3 J |
| SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | 11.5 | N | T | JC57565 | 2017-12-18 | < 4.3 U | 3.5 J | < 8.1 U | < 4.4 UB | < 0.047 U | 1.5 J |
| SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | 21.0 | N | T | JC56729 | 2017-12-06 | - | - | < 8.1 U | - | - | - |
| SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | 21.0 | N | T | JC56729A | 2017-12-06 | < 4.3 U | 3.9 J | - | < 1.3 U | < 0.047 U | 2.4 J |
| SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | 11.5 | N | T | JC56859 | 2017-12-07 | - | - | < 8.1 U | - | - | - |
| SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | 11.5 | N | T | JC56859A | 2017-12-07 | < 4.3 U | < 0.85 U | - | < 1.7 UB | 0.048 J | 4.1 J |
| SHALLOW | 114-MW36A | 114-MW36A-20170927 | 10.0 | N | T | JC51874 | 2017-09-27 | - | 1.5 J | < 8.1 U | - | - | - |
| SHALLOW | 114-MW36A | 114-MW36A-20170927 | 10.0 | N | T | JC51890 | 2017-09-27 | < 4.3 U | - | - | 14.1 | < 1.6 U | 9.5 J |
| SHALLOW | 114-MW36A | 114-MW36A-20170927-X | 10.0 | FD | T | JC51874 | 2017-09-27 | - | 1.1 J | < 8.1 U | - | - | - |
| SHALLOW | 114-MW36A | 114-MW36A-20170927-X | 10.0 | FD | T | JC51890 | 2017-09-27 | < 4.3 U | - | - | 14.4 | < 1.6 U | 9.5 J |
| SHALLOW | 114-MW37A | 114-MW37A-20170926 | 12.5 | N | T | JC51802 | 2017-09-26 | - | 1.5 J | 16 J | - | - | - |
| SHALLOW | 114-MW37A | 114-MW37A-20170928 | 12.5 | N | T | JC52029 | 2017-09-28 | < 4.3 U | - | - | 4.0 J | < 1.6 U | 2.6 J |
| SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | 22.5 | N | T | JC56504 | 2017-12-04 | - | - | < 8.1 U | - | - | - |
| SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | 22.5 | N | T | JC56504A | 2017-12-04 | **< 8.6 U** | 20.4 | - | 10.4 J | 0.18 J | 21.6 J |
| SHALLOW | 114-MW41A | 114-MW41A-20180420 | 12.5 | N | T | JC64643 | 2018-04-20 | **< 43 U** | **65600** | **66900** | 46.0 J | < 0.24 U | 17.5 J |
| SHALLOW | 114-MW42A | 114-MW42A-20180417 | 9.5 | N | T | JC64376 | 2018-04-17 | < 4.3 U | 3.5 JB | < 8.1 U | 5.5 J | < 0.047 U | 2.1 J |
| SHALLOW | 114-MW43A | 114-MW43A-20180417 | 9.5 | N | T | JC64376 | 2018-04-17 | < 4.3 U | < 1.7 U | < 8.1 U | < 1.3 U | < 0.053 UB | 1.9 J |
| SHALLOW | 114-MW44A | 114-MW44A | 9.5 | N | T | JC55349 | 2017-11-13 | - | - | < 8.1 U | - | - | - |
| SHALLOW | 114-MW44A | 114-MW44A | 9.5 | N | T | JC55349A | 2017-11-13 | < 4.3 U | < 0.85 U | - | 5.3 J | < 1.6 U | < 1.3 U |
| SHALLOW | 132-MW2A | 132-MW2A-11.0-20180426 | 11.0 | N | T | JC64986 | 2018-04-26 | < 4.3 U | < 0.85 U | < 8.1 U | 10.0 | < 0.047 U | < 1.3 U |
| SHALLOW | 132-MW2A | 132-MW2A-11.0-20180426X | 11.0 | FD | T | JC64986 | 2018-04-26 | < 4.3 U | < 0.85 U | < 8.1 U | 10.4 | < 0.047 U | < 1.3 U |
| SHALLOW | 132-P3A-MW102S | 132-P3A-MW102S-11.0-20180426 | 11.0 | N | T | JC64986 | 2018-04-26 | < 4.3 U | < 0.85 U | < 8.1 U | 1.7 J | < 0.047 U | < 1.3 U |
| SHALLOW | 132-P3A-MW3 | 132-P3A-MW3-11.0-20180424 | 11.0 | N | T | JC64822 | 2018-04-24 | < 4.3 U | 4.3 J | < 8.1 U | 2.7 J | < 0.047 U | 10.0 J |
| SHALLOW | 132-P3A-MW3 | 132-P3A-MW3-15.0-20180424 | 15.0 | N | T | JC64822 | 2018-04-24 | **< 22 U** | 20.5 J | < 8.1 U | 10.0 J | < 0.047 U | 46.5 J |
| SHALLOW | 132-P3A-MW4 | 132-P3A-MW4-17.0-20180424 | 17.0 | N | T | JC64822 | 2018-04-24 | **< 22 U** | **22800 J** | **24100** | 8.0 J | < 0.24 U | 10.0 J |
| SHALLOW | 132-P3A-MW4 | 132-P3A-MW4-17.0-20180424X | 17.0 | FD | T | JC64822 | 2018-04-24 | < 4.3 U | **4720 J** | **26100 J** | < 1.3 U | 0.059 J | 1.7 J |
| SHALLOW | 132-P3A-MW4 | 132-P3A-MW4-13.0-20180424 | 13.0 | N | T | JC64822 | 2018-04-24 | **< 22 U** | **28200** | **30500** | < 6.7 U | 0.075 J | 7.5 J |
| SHALLOW | 133-MW6A | 133-MW6A-20171215 | 12.5 | N | T | JC57501 | 2017-12-15 | - | - | 8.4 J | - | - | - |
| SHALLOW | 133-MW6A | 133-MW6A-20171215 | 12.5 | N | T | JC57501A | 2017-12-15 | < 4.3 U | 7.3 J | - | < 1.3 U | < 1.6 U | 2.1 J |
| SHALLOW | 133-MW6A | 133-MW6A-20180209 | 12.5 | N | T | JC60563 | 2018-02-09 | < 4.3 U | 9.9 J | < 8.1 UJ | < 1.5 UB | < 1.6 U | 3.1 J |
| SHALLOW | 135-MW1AR | 135-MW1A-13.0-20180501 | 13.0 | N | T | JC65255 | 2018-05-01 | < 4.3 U | 19.5 | < 8.1 U | 18.1 JB | 0.12 J | 23.1 J |
| SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | 14.0 | N | T | JC64763 | 2018-04-23 | < 4.3 U | 2.3 J | < 8.1 U | 4.5 J | < 0.094 U | 1.9 J |
| SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | 10.0 | N | T | JC64763 | 2018-04-23 | < 4.3 U | 1.0 J | < 8.1 U | 4.8 J | < 0.12 U | 2.1 J |
| SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | 6.0 | N | T | JC64763 | 2018-04-23 | < 4.3 U | 1.1 J | < 8.1 U | 3.8 J | < 0.12 U | 2.7 J |
| SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | 12.0 | N | T | JC64763 | 2018-04-23 | < 4.3 U | 3.4 J | < 8.1 U | 5.8 J | < 0.047 U | 5.4 J |
| SHALLOW | 186-MW02R | 186-MW02R-13.0-20180531 | 13.0 | N | T | JC67069 | 2018-05-31 | < 4.3 U | 1.6 J | < 8.1 U | 27.4 | < 0.047 U | < 1.3 U |
| SHALLOW | 186-MW02R | 186-MW02R-8.0-20180531 | 8.0 | N | T | JC67069 | 2018-05-31 | < 4.3 U | 2.1 J | < 8.1 U | 27.8 | < 0.047 U | 1.7 J |
| SHALLOW | MW10S | MW10S-12.0-20180426 | 12.0 | N | T | JC64986 | 2018-04-26 | < 4.3 U | 2.2 J | < 8.1 U | 4.6 J | 0.093 J | < 1.3 U |
| SHALLOW | MW10S | MW10S-8.0-20180426 | 8.0 | N | D | JC64986 | 2018-04-26 | < 4.3 U | < 0.85 U | < 8.1 U | 4.1 J | 0.059 J | < 1.3 U |
| SHALLOW | MW10S | MW10S-8.0-20180426 | 8.0 | N | T | JC64986 | 2018-04-26 | < 4.3 U | 1.4 J | < 8.1 U | 4.2 J | 0.070 J | < 1.3 U |

**Table 5-1**
**Groundwater Analytical Results - Cr+6 and CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | **Analyte** | ANTIMONY | CHROMIUM | CHROMIUM (HEXAVALENT) | NICKEL | THALLIUM | VANADIUM |
| | | | | | | **CAS RN** | 7440-36-0 | 7440-47-3 | 18540-29-9 | 7440-02-0 | 7440-28-0 | 7440-62-2 |
| | | | | | | **GWQS** | 6 | 70 | 70 | 100 | 2 | 60 |
| | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Depth (ft bTOIC)** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| SHALLOW | MW7S | MW7S-10.0-20180430 | 10.0 | N | D | JC65178 | 2018-04-30 | < 4.3 U | 2.0 J | < 8.1 U | 3.8 J | 0.19 J | < 1.3 U |
| SHALLOW | MW7S | MW7S-10.0-20180430 | 10.0 | N | T | JC65178 | 2018-04-30 | < 4.3 U | 4.0 J | < 8.1 U | 4.3 J | 0.21 J | 1.7 J |
| SHALLOW | MW8S | MW8S-20180427 | 9.5 | N | D | JC65066 | 2018-04-27 | < 4.3 U | 1.6 J | < 8.1 U | < 2.3 UB | < 0.047 U | < 1.3 U |
| SHALLOW | MW8S | MW8S-20180427 | 9.5 | N | T | JC65066 | 2018-04-27 | < 4.3 U | 6.2 J | < 8.1 U | 3.4 J | 0.16 J | 3.3 J |
| SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | 21.0 | N | T | JC64444 | 2018-04-18 | < 4.3 U | 3.0 J | 8.1 J | 65.8 | < 0.047 U | 8.5 J |
| SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | 16.0 | N | T | JC64444 | 2018-04-18 | < 4.3 U | 2.1 J | 9.3 J | 56.0 | < 0.047 U | 7.5 J |
| SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | 11.0 | N | T | JC64444 | 2018-04-18 | < 4.3 U | 2.0 J | < 8.1 U | 50.4 | < 0.047 U | 6.7 J |
| INTERMEDIATE | 10W-MW105I | 10W-MW105I-20180312 | 37.5 | N | T | JC62130 | 2018-03-12 | < 4.3 U | 23.3 | 26 | 6.0 J | 0.12 J | 6.3 J |
| INTERMEDIATE | 114-MW14B | 114-MW14B-20171219 | 30.5 | N | T | JC57638 | 2017-12-19 | < 4.3 U | 5.9 J | < 8.1 U | 6.3 JB | < 1.6 U | 14.3 J |
| INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | 27.5 | N | T | JC64444 | 2018-04-18 | < 4.3 U | 7.4 J | < 8.1 U | 25.0 | < 0.047 U | 1.9 J |
| INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | 47.5 | N | T | JC65255 | 2018-05-01 | < 4.3 U | **168** | < 8.1 U | < 2.6 UB | 0.12 J | 2.6 J |
| INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | 37.5 | N | T | JC64571 | 2018-04-19 | **< 430 U** | **412000** | **211000** | < 6.7 U | < 0.24 U | **< 130 U** |
| INTERMEDIATE | 114-MW22B | 114-MW22B-20180419 | 30.5 | N | D | JC64571 | 2018-04-19 | < 4.3 U | **4590** | **1700** | 1.4 J | < 0.047 U | 1.5 J |
| INTERMEDIATE | 114-MW22B | 114-MW22B-20180419 | 30.5 | N | T | JC64571 | 2018-04-19 | < 4.3 U | **4680** | **1800** | 2.6 J | < 0.047 U | 3.1 J |
| INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | 33.0 | N | T | JC62130 | 2018-03-12 | < 4.3 U | 3.5 J | < 8.1 U | 12.6 | < 0.047 U | 2.6 J |
| INTERMEDIATE | 114-MW25B | 114-MW25B-20170928 | 32.5 | N | T | JC52007 | 2017-09-28 | - | - | < 8.1 U | - | - | - |
| INTERMEDIATE | 114-MW25B | 114-MW25B-20170928 | 32.5 | N | T | JC52007A | 2017-09-28 | - | 6.2 J | - | - | - | - |
| INTERMEDIATE | 114-MW25B | 114-MW25B-20170928 | 32.5 | N | T | JC52029 | 2017-09-28 | < 4.3 U | - | - | < 1.3 U | < 1.6 U | 2.6 J |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | 35.5 | N | D | JC62228 | 2018-03-13 | < 4.3 U | < 0.85 U | < 8.1 U | 8.1 J | < 0.047 U | 7.5 J |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | 35.5 | N | T | JC62228 | 2018-03-13 | < 4.3 U | 5.0 J | < 8.1 U | 13.1 | 0.048 J | 7.3 J |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | 35.5 | FD | D | JC62228 | 2018-03-13 | < 4.3 U | < 0.85 U | < 8.1 U | 8.5 J | < 0.047 U | 8.0 J |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | 35.5 | FD | T | JC62228 | 2018-03-13 | < 4.3 U | 2.4 J | < 8.1 U | 9.8 J | < 0.047 U | 8.5 J |
| INTERMEDIATE | 114-MW27B | 114-MW27B-20170928 | 32.5 | N | T | JC52007 | 2017-09-28 | - | - | < 8.1 U | - | - | - |
| INTERMEDIATE | 114-MW27B | 114-MW27B-20170928 | 32.5 | N | T | JC52007A | 2017-09-28 | - | 5.1 J | - | - | - | - |
| INTERMEDIATE | 114-MW27B | 114-MW27B-20170928 | 32.5 | N | T | JC52029 | 2017-09-28 | < 4.3 U | - | - | 4.6 J | < 1.6 U | 6.1 J |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | 35.5 | N | T | JC56729 | 2017-12-06 | - | - | **8800** | - | - | - |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | 35.5 | N | T | JC56729A | 2017-12-06 | **< 22 U** | **9940** | - | 34.0 | 0.057 J | 8.4 J |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | 35.5 | FD | T | JC56729 | 2017-12-06 | - | - | **9300** | - | - | - |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | 35.5 | FD | T | JC56729A | 2017-12-06 | **< 22 U** | **9930** | - | 34.0 | 0.062 J | 6.6 J |
| INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | 32.5 | N | T | JC51874 | 2017-09-27 | - | 42.2 | < 8.1 U | - | - | - |
| INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | 32.5 | N | T | JC51890 | 2017-09-27 | **< 8.6 U** | - | - | 17.4 J | **< 3.3 U** | 27.0 J |
| INTERMEDIATE | 114-MW37B | 114-MW37B-20170926 | 32.5 | N | T | JC51802 | 2017-09-26 | - | 1.8 J | < 8.1 U | - | - | - |
| INTERMEDIATE | 114-MW37B | 114-MW37B-20170926 | 32.5 | N | T | JC51824 | 2017-09-26 | < 4.3 U | - | - | 20.6 | < 1.6 U | 2.2 J |
| INTERMEDIATE | 114-MW38B | FORREST-114-MW38B-20171204 | 39.5 | N | T | JC56504 | 2017-12-04 | - | - | < 8.1 U | - | - | - |
| INTERMEDIATE | 114-MW38B | FORREST-114-MW38B-20171204 | 39.5 | N | T | JC56504A | 2017-12-04 | < 4.3 U | 5.9 J | - | < 1.6 UB | 0.089 J | 5.5 J |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | 42.5 | N | T | JC60652 | 2018-02-12 | - | 6.3 J | < 8.1 U | < 6.7 U | - | < 6.4 U |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | 42.5 | N | T | JC60652R | 2018-02-12 | **< 18 U** | - | - | - | < 0.47 U | - |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | 42.5 | FD | T | JC60652 | 2018-02-12 | - | 5.2 J | 9.2 J | < 6.7 U | - | < 6.4 U |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | 42.5 | FD | T | JC60652R | 2018-02-12 | **< 18 U** | - | - | - | 0.49 J | - |
| INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | 40.5 | N | D | JC65066 | 2018-04-27 | < 4.3 U | < 0.85 U | < 8.1 U | < 1.3 U | < 0.047 U | 1.4 J |
| INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | 40.5 | N | T | JC65066 | 2018-04-27 | < 4.3 U | 1.3 J | < 8.1 U | < 1.3 U | < 0.047 U | 1.9 J |
| INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | 24.5 | N | T | JC64643 | 2018-04-20 | **< 220 U** | **282000** | **275000** | **227** | < 0.24 U | **68.5 J** |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | 37.5 | N | T | JC58028 | 2017-12-26 | - | - | **1700** | - | - | - |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | 37.5 | N | T | JC58028A | 2017-12-26 | < 4.3 U | **4430** | - | 20.3 | < 0.047 U | 6.1 J |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | 32.5 | N | T | JC58028 | 2017-12-26 | - | - | < 8.1 U | - | - | - |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | 32.5 | N | T | JC58028A | 2017-12-26 | < 4.3 U | **644** | - | 11.5 | < 0.047 U | 5.7 J |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | 27.5 | N | T | JC58073 | 2017-12-27 | - | - | 8.7 J | - | - | - |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | 27.5 | N | T | JC58073A | 2017-12-27 | < 4.3 U | **542** | - | 7.8 J | < 0.047 U | 6.1 J |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | 22.5 | N | T | JC58073 | 2017-12-27 | - | - | **710** | - | - | - |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | 22.5 | N | T | JC58073A | 2017-12-27 | < 4.3 U | **3270** | - | 7.5 J | < 0.047 U | 10.0 J |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | 22.5 | N | T | JC58942 | 2018-01-16 | < 4.3 U | **230** | < 8.1 U | 32.7 | 0.11 J | 5.6 J |

**Table 5-1**
**Groundwater Analytical Results - Cr+6 and CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | ANTIMONY | CHROMIUM | CHROMIUM (HEXAVALENT) | NICKEL | THALLIUM | VANADIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **Analyte** | ANTIMONY | CHROMIUM | CHROMIUM (HEXAVALENT) | NICKEL | THALLIUM | VANADIUM |
| | | | | | | | **CAS RN** | 7440-36-0 | 7440-47-3 | 18540-29-9 | 7440-02-0 | 7440-28-0 | 7440-62-2 |
| | | | | | | | **GWQS** | 6 | 70 | 70 | 100 | 2 | 60 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Depth (ft bTOIC)** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | 27.5 | N | T | JC58942 | 2018-01-16 | < 4.3 U | **1370** | **860** | 54.9 | < 0.047 U | 7.4 J |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | 32.5 | N | T | JC58942 | 2018-01-16 | < 4.3 U | **2040** | **1100** | 63.2 | < 0.047 U | 7.4 J |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | 37.5 | N | T | JC58942 | 2018-01-16 | < 4.3 U | **2880** | **2000** | 71.6 | < 0.047 U | 7.5 J |
| INTERMEDIATE | 132-P3A-MW105I | 132-P3A-MW105I-20180208 | 39.5 | N | T | JC60477 | 2018-02-08 | < 4.3 U | 30.8 | 28 JB | < 10 U | **< 3.3 U** | 33.7 J |
| INTERMEDIATE | 132-P3A-MW105I | 132-P3A-MW105I-20180209X | 39.5 | FD | T | JC60564 | 2018-02-09 | < 4.3 U | 14.3 | 15 JB | 1.7 J | < 1.6 U | 17.6 J |
| INTERMEDIATE | 132-P3A-MW105I | 132-P3A-MW105I-20180209Xa | 39.5 | FD | T | JC60564 | 2018-02-09 | < 4.3 U | 17.4 | 21 JB | 1.5 J | < 1.6 U | 19.1 J |
| INTERMEDIATE | 135-MW1B | 135-MW1B-31.0-20180501 | 31.0 | N | T | JC65255 | 2018-05-01 | < 4.3 U | 9.9 J | < 8.1 U | < 2.7 UB | 0.057 J | 13.3 J |
| INTERMEDIATE | 135-MW1B | 135-MW1B-31.0-20180501X | 31.0 | FD | T | JC65255 | 2018-05-01 | < 4.3 U | 9.6 J | < 8.1 U | < 3.3 UB | < 0.047 U | 13.6 J |
| INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | 30.5 | N | T | JC64901 | 2018-04-25 | < 4.3 U | 5.5 J | < 8.1 U | 19.6 | < 0.047 U | 14.1 J |
| INTERMEDIATE | 135-MW3BR | 135-MW3B-30.0-20180501 | 30.0 | N | T | JC65255 | 2018-05-01 | < 4.3 U | 1.2 J | < 8.1 U | < 2.6 UB | < 0.047 U | 1.6 J |
| INTERMEDIATE | MW7D | MW7D-41.0-20180423 | 41.0 | N | T | JC64763 | 2018-04-23 | < 4.3 U | < 0.85 U | < 8.1 U | 4.6 J | < 0.047 U | < 1.3 U |
| INTERMEDIATE | MW7D | MW7D-45.0-20180423 | 45.0 | N | T | JC64763 | 2018-04-23 | < 4.3 U | < 0.85 U | < 8.1 U | 4.0 J | < 0.047 U | < 1.3 U |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425 | 41.0 | N | T | JC64901 | 2018-04-25 | **< 43 U** | **63100** | **77100** | < 2.7 U | < 0.094 U | < 13 U |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425X | 41.0 | FD | T | JC64901 | 2018-04-25 | **< 43 U** | **70800** | **69600** | < 2.7 U | < 0.094 U | < 13 U |
| INTERMEDIATE | MW8D | MW8D-45.0-20180425 | 45.0 | N | D | JC64901 | 2018-04-25 | **< 22 U** | **398** | < 8.1 U | < 6.7 U | < 0.12 U | < 6.4 U |
| INTERMEDIATE | MW8D | MW8D-45.0-20180425 | 45.0 | N | T | JC64901 | 2018-04-25 | **< 22 U** | **1390** | < 8.1 U | < 6.7 U | < 0.12 U | < 6.4 U |
| DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | 99.0 | N | T | JC65066 | 2018-04-27 | < 4.3 U | 33.7 | < 8.1 U | 3.6 J | 0.053 J | 6.6 J |
| DEEP | 114-MW20C | 114-MW20C-20180419 | 80.5 | N | T | JC64571 | 2018-04-19 | < 4.3 U | 4.8 J | < 8.1 U | 14.1 | < 0.047 U | 1.7 J |
| DEEP | 114-MW25C | 114-MW25C-20180313 | 44.5 | N | D | JC62228 | 2018-03-13 | < 4.3 U | 1.1 J | < 8.1 U | 5.5 J | < 0.047 U | < 1.3 U |
| DEEP | 114-MW25C | 114-MW25C-20180313 | 44.5 | N | T | JC62228 | 2018-03-13 | **< 22 U** | 41.5 J | < 8.1 U | 43.0 J | 0.50 J | 51.0 J |
| DEEP | 114-P1B-MW103D | 114-P1B-MW103D-20171214 | 53.5 | N | T | JC57385 | 2017-12-14 | **< 110 U** | **101000** | **95500** | < 6.7 U | < 0.24 U | 33.0 J |
| DEEP | 114-P1B-MW103D | 114-P1B-MW103D-20171214X | 53.5 | FD | T | JC57385 | 2017-12-14 | **< 110 U** | **104000** | **95000** | < 6.7 U | < 0.24 U | < 32 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | 50.0 | N | T | JC57820 | 2017-12-21 | **58.0 J** | **67500** | **59500** | 42.3 | < 0.047 U | < 13 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | 45.0 | N | T | JC57820 | 2017-12-21 | **< 43 U** | **71700** | **63100** | 44.1 | < 0.047 U | < 13 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | 40.0 | N | T | JC57943 | 2017-12-22 | - | - | **65600** | - | - | - |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | 40.0 | N | T | JC57943A | 2017-12-22 | **< 43 U** | **79000** | - | 38.6 | < 0.094 U | < 13 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | 35.0 | N | T | JC57943 | 2017-12-22 | - | - | **51000** | - | - | - |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | 35.0 | N | T | JC57943A | 2017-12-22 | **47.0 J** | **61000** | - | 34.8 | < 0.094 U | < 13 U |
| DEEP | 132-P3A-MW104D-1 | 132-P3A-MW104D-1-52.0-20180426 | 52.0 | N | T | JC64986 | 2018-04-26 | < 4.3 U | 45.3 | 17 | < 1.3 U | 0.19 J | < 1.3 U |
| DEEP | 132-P3A-MW104D-1 | 132-P3A-MW104D-1-52.0-20180426X | 52.0 | FD | T | JC64986 | 2018-04-26 | < 4.3 U | 41.8 | 18 | < 1.3 U | 0.21 J | < 1.3 U |
| DEEP | 132-P3A-MW104D-2 | 132-P3A-MW104D-2-69.0-20180426 | 69.0 | N | T | JC64986 | 2018-04-26 | < 4.3 U | 3.8 J | < 8.1 U | 3.1 J | 0.066 J | 2.5 J |
| DEEP | MW6C | MW6C-62.0-20171220 | 62.0 | N | T | JC57752 | 2017-12-20 | **< 22 U** | **35900** | **22900** | 62.4 | < 0.047 U | < 1.3 U |
| DEEP | MW6C | MW6C-57.0-20171220 | 57.0 | N | T | JC57752 | 2017-12-20 | **< 22 U** | **25800** | **14300** | 62.1 | < 0.047 U | < 1.3 U |
| DEEP | MW8F | MW8F-20180425 | 80.5 | N | T | JC64901 | 2018-04-25 | < 4.3 U | 2.0 J | < 8.1 U | < 1.3 U | < 0.047 U | 1.4 J |
| DEEP | MW-CR-3D | MW-CR-3D-20180418 | 43.5 | N | T | JC64444 | 2018-04-18 | < 4.3 U | 2.0 J | < 8.1 U | 9.0 J | < 0.047 U | < 1.3 U |
| BASAL TILL | 114-MW45C | 114-MW45C-70.5-20191021 | 70.5 | N | T | JC97157 | 2019-10-21 | < 6.0 U | 10.2 | < 10 U | 33.9 | **< 10 U** | < 50 U |
| BASAL TILL | 114-MW45C | 114-MW45C-71.0-20200820 | 71.0 | N | T | JD12022 | 2020-08-20 | < 4.7 U | 7.9 J | < 5.8 U | 25.7 | < 0.17 U | < 1.8 U |
| BASAL TILL | 114-MW48C | 114-MW48C-56.2-20200819 | 56.2 | N | T | JD11956 | 2020-08-19 | < 4.7 U | 11.3 JB | < 5.8 U | < 1.7 UB | < 0.17 U | < 1.8 U |
| BASAL TILL | 114-MW49C | 114-MW49C-69.0-20200819 | 69.0 | N | T | JD11956 | 2020-08-19 | < 4.7 U | 15.2 JB | < 5.8 U | 14.0 JB | < 0.17 U | 9.8 J |
| BASAL TILL | 114-MW50C | 114-MW50C-61.5-20200820 | 61.5 | N | T | JD12022 | 2020-08-20 | < 4.7 U | 2.1 J | < 5.8 U | 10.3 | < 0.17 U | 4.5 J |
| BASAL TILL | 114-MW51C | 114-MW51C-76.0-20200828 | 76.0 | N | T | JD12393 | 2020-08-28 | < 4.7 U | 3.3 J | < 5.8 U | 4.4 J | < 0.17 U | 1.8 J |
| BASAL TILL | 114-MW52C | 114-MW52C-72.5-20200824 | 72.5 | N | T | JD12146 | 2020-08-24 | < 4.7 U | **989** | **1000** | 10.2 | < 0.17 U | 3.7 J |
| BASAL TILL | 114-MW54C | 114-MW54C-76.5-20200827 | 76.5 | N | T | JD12322 | 2020-08-27 | < 4.7 U | < 2.0 U | < 5.8 U | 6.5 J | < 0.17 U | < 1.8 U |
| BASAL TILL | 114-MW56C | 114-MW56C-72.0-20200821 | 72.0 | N | T | JD12104 | 2020-08-21 | < 4.7 U | **1930** | **1800** | 2.3 J | < 0.17 U | 7.1 J |
| BASAL TILL | 114-MW59C | 114-MW59C-92.5-20200902 | 92.5 | N | T | JD12593 | 2020-09-02 | < 4.7 U | 22.7 | < 29 U | 25.5 | 0.27 J | 29.0 J |
| BASAL TILL | 114-MW63C | 114-MW63C-67.0-20200827 | 67.0 | N | T | JD12322 | 2020-08-27 | < 4.7 U | **167** | **150** | 2.9 J | < 0.17 U | < 1.8 U |
| BASAL TILL | 114-MW65C | 114-MW65C-62.5-20200824 | 62.5 | N | T | JD12146 | 2020-08-24 | **33.8** | **26800** | **25400** | 33.9 | < 0.17 U | 11.0 J |
| BASAL TILL | 132-P3-MW001D | 132-P3-MW-001D-80.5 | 80.5 | N | T | 460-237317-1 | 2021-06-24 | 1.2 J | < 2.5 U | < 8.1 U | 2.1 J | < 0.21 U | 2.6 J |
| BASAL TILL | 132-P3-MW001D | 132-P3-MW-001D-85.5 | 85.5 | N | T | 460-237317-1 | 2021-06-24 | 1.0 J | < 2.5 U | < 8.1 U | 1.9 J | < 0.21 U | 2.7 J |
| BASAL TILL | 132-P3-MW001D | 132-P3-MW-001D-85.5-X | 85.5 | FD | T | 460-237317-1 | 2021-06-24 | 0.82 J | < 2.5 U | < 8.1 U | 2.5 J | < 0.21 U | 3.8 J |
| BASAL TILL/WEATHERED BR | 114-MW58C | 114-MW58C-76.0-20200831 | 76.0 | N | T | JD12474 | 2020-08-31 | < 4.7 U | 4.4 J | < 5.8 U | 2.1 J | < 0.17 U | 2.0 J |

**Table 5-1**
**Groundwater Analytical Results - Cr+6 and CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | ANTIMONY | CHROMIUM | CHROMIUM (HEXAVALENT) | NICKEL | THALLIUM | VANADIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **Analyte** | | | | | | |
| | | | | | | | **CAS RN** | 7440-36-0 | 7440-47-3 | 18540-29-9 | 7440-02-0 | 7440-28-0 | 7440-62-2 |
| | | | | | | | **GWQS** | 6 | 70 | 70 | 100 | 2 | 60 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Depth (ft bTOIC)** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| BASAL TILL/WEATHERED BR | 114-MW61C | 114-MW61C-67.5-20200825 | 67.5 | N | T | JD12215 | 2020-08-25 | **< 94 U** | **90400** | **88900** | 7.0 J | < 0.17 U | 47.6 J |
| BASAL TILL/WEATHERED BR | 114-MW61C | 114-MW61C-67.5-20200825X | 67.5 | FD | T | JD12215 | 2020-08-25 | **< 94 U** | **94100** | **86300** | 6.6 J | < 0.17 U | 51.1 J |
| BASAL TILL/WEATHERED BR | 114-MW62C | 114-MW62C-73.0-20200824 | 73.0 | N | T | JD12146 | 2020-08-24 | < 4.7 U | < 2.0 U | < 5.8 U | 6.4 J | < 0.17 U | 3.5 J |
| WEATHERED BR | 114-MW53C | 114-MW53C-47.0-20200825 | 47.0 | N | T | JD12215 | 2020-08-25 | **< 47 U** | **55000** | **46700** | 40.4 | < 0.17 U | 29.2 J |
| WEATHERED BR | 114-MW55C | 114-MW55C-70.5-20200901 | 70.5 | N | T | JD12508 | 2020-09-01 | < 4.7 U | 6.8 J | < 5.8 U | 25.1 | < 0.17 U | < 1.8 U |
| WEATHERED BR | 114-MW57C | 114-MW57C-70-20200825 | 70.0 | N | T | JD12215 | 2020-08-25 | **< 24 U** | **32100** | **30200** | 7.2 J | < 0.17 U | 19.4 J |
| WEATHERED BR | 114-MW60C | 114-MW60C-121.0-20200828 | 121.0 | N | T | JD12393 | 2020-08-28 | < 4.7 U | < 2.0 U | < 5.8 U | < 1.7 U | < 0.17 U | < 1.8 U |
| WEATHERED BR | 114-MW60C | 114-MW60C-121.0-20200828X | 121.0 | FD | T | JD12393 | 2020-08-28 | < 4.7 U | < 2.0 U | < 5.8 U | < 1.7 U | < 0.17 U | < 1.8 U |
| WEATHERED BR | 114-MW64C | 114-MW64C-96.5-20200901 | 96.5 | N | T | JD12508 | 2020-09-01 | < 4.7 U | 5.7 J | < 5.8 U | < 1.7 U | < 0.17 U | < 1.8 U |
| BEDROCK | 114-MW16B | 114-MW16B-33.0-20200821 | 33.0 | N | T | JD12104 | 2020-08-21 | - | - | < 5.8 U | - | - | - |
| BEDROCK | 114-MW16B | 114-MW16B-33.0-20200821 | 33.0 | N | T | JD12104R | 2020-08-21 | < 4.7 U | 2.8 J | - | 1.8 J | < 0.17 U | 7.9 J |
| BEDROCK | 114-MW4D | 114-MW4D-104.5-105.0 | 104.5 | N | T | JC88938 | 2019-05-30 | < 4.7 U | 11.3 | < 5.8 U | 7.1 J | < 0.17 U | 4.9 J |
| BEDROCK | 114-MW4D | 114-MW4D-104.5-105.0X | 104.5 | FD | T | JC88938 | 2019-05-30 | < 4.7 U | 9.8 J | < 5.8 U | 7.3 J | < 0.17 U | 4.4 J |
| BEDROCK | 114-MW4D | 114-MW4D-99.5-100.0 | 99.5 | N | T | JC88938 | 2019-05-30 | < 4.7 U | 10.5 | < 5.8 U | 10.5 | < 0.17 U | 4.8 J |
| BEDROCK | 114-MW4D | 114-MW4D-94.5-95.0 | 94.5 | N | T | JC88938 | 2019-05-30 | < 4.7 U | 16.0 | < 5.8 U | 11.8 | < 0.17 U | 7.2 J |
| BEDROCK | 114-MW4D | 114-MW4D-89.5-90.0 | 89.5 | N | T | JC88938 | 2019-05-30 | < 4.7 U | 9.0 J | < 5.8 U | 7.4 J | < 0.17 U | 4.1 J |
| BEDROCK | 114-MW4D | 114-MW4D-100-20200826 | 100.0 | N | T | JD12249 | 2020-08-26 | < 4.7 U | < 2.0 U | < 5.8 UJ | < 1.7 U | < 0.17 U | < 1.8 U |
| BEDROCK | 114-MW4D | 114-MW4D-95-20200826 | 95.0 | N | T | JD12249 | 2020-08-26 | < 4.7 U | < 2.0 U | < 5.8 UJ | < 1.7 U | < 0.17 U | < 1.8 U |
| BEDROCK | 114-MW4D | 114-MW4D-90-20200826 | 90.0 | N | T | JD12249 | 2020-08-26 | < 4.7 U | < 2.0 U | < 5.8 UJ | < 1.7 U | < 0.17 U | < 1.8 U |
| BEDROCK | 114-MW4D | 114-MW4D-85-20200826 | 85.0 | N | T | JD12249 | 2020-08-26 | < 4.7 U | 2.0 J | < 5.8 UJ | 4.3 J | < 0.17 U | < 1.8 U |
| BEDROCK | 114-MW52D | 114-MW52D-81-20210211 | 81.0 | N | T | JD20260 | 2021-02-11 | **< 47 U** | **44000** | **47300** | 36.0 J | < 1.7 U | < 18 U |
| BEDROCK | 114-MW52D | 114-MW52D-83.5-20210211 | 83.5 | N | T | JD20260 | 2021-02-11 | **< 47 U** | **43000** | **44500** | 34.0 J | < 1.7 U | < 18 U |
| BEDROCK | 114-MW52D | 114-MW52D-88-20210211 | 88.0 | N | T | JD20260 | 2021-02-11 | **< 47 U** | **44100** | **47300** | 34.0 J | < 1.7 U | < 18 U |
| BEDROCK | 114-MW52D | 114-MW52D-102-20210211 | 102.0 | N | T | JD20260 | 2021-02-11 | **< 47 U** | **42200** | **47000** | 29.0 J | < 1.7 U | < 18 U |
| BEDROCK | 114-MW52D | 114-MW52D-105-20210211 | 105.0 | N | T | JD20260 | 2021-02-11 | **< 47 U** | **46500** | **46500** | 37.0 J | < 1.7 U | < 18 U |
| BEDROCK | 114-MW57D | 114-MW57D-87.25-20210209 | 87.25 | N | T | JD20125 | 2021-02-09 | < 4.7 U | **108** | < 5.8 UJ | 4.4 J | < 0.17 U | < 1.8 U |
| BEDROCK | 114-MW57D | 114-MW57D-90-20210209 | 90.0 | N | T | JD20125 | 2021-02-09 | < 4.7 U | **82.4** | < 5.8 UJ | 4.2 J | < 0.17 U | < 1.8 U |
| BEDROCK | 114-MW57D | 114-MW57D-98-20210210 | 98.0 | N | T | JD20166 | 2021-02-10 | < 4.7 U | **112** | < 5.8 U | 4.7 J | < 0.17 U | < 1.8 U |
| BEDROCK | 114-MW57D | 114-MW57D-98-20210210-X | 98.0 | FD | T | JD20166 | 2021-02-10 | < 4.7 U | **114** | < 5.8 U | 4.2 J | < 0.17 U | < 1.8 U |
| BEDROCK | 114-MW57D | 114-MW57D-102-20210210 | 102.0 | N | T | JD20166 | 2021-02-10 | < 4.7 U | 69.3 | < 5.8 U | 4.3 J | < 0.17 U | < 1.8 U |
| BEDROCK | 114-MW61D | 114-MW61D-88-20210212 | 88.0 | N | T | JD20313 | 2021-02-12 | < 4.7 U | 4.5 J | 6.0 J | < 1.7 U | < 0.17 U | 2.4 J |
| BEDROCK | 114-MW61D | 114-MW61D-91-20210212 | 91.0 | N | T | JD20313 | 2021-02-12 | < 4.7 U | 2.7 J | < 5.8 U | < 1.7 U | < 0.17 U | 2.6 J |
| BEDROCK | 114-MW61D | 114-MW61D-93.5-20210212 | 93.5 | N | T | JD20313 | 2021-02-12 | < 4.7 U | 2.3 J | < 5.8 U | < 1.7 U | < 0.17 U | 2.9 J |
| BEDROCK | 114-MW61D | 114-MW61D-102-20210212 | 102.0 | N | T | JD20313 | 2021-02-12 | < 4.7 U | 3.2 J | < 5.8 U | 2.0 J | < 0.17 U | 2.6 J |
| BEDROCK | 114-MW61D | 114-MW61D-106.5-20210215 | 106.5 | N | T | JD20380 | 2021-02-15 | < 4.7 U | < 2.0 U | < 5.8 U | < 1.7 U | < 0.17 U | < 1.8 U |
| BEDROCK | 114-MW61D | 114-MW61D-110-20210215 | 110.0 | N | T | JD20380 | 2021-02-15 | < 4.7 U | < 2.0 U | < 5.8 U | < 1.7 U | < 0.17 U | < 1.8 U |
| BEDROCK | 114-MW66D | 114-MW66D-92-20210210 | 92.0 | N | T | JD20166 | 2021-02-10 | < 4.7 U | **6450** | **5900** | 5.1 J | < 0.17 U | 4.9 J |
| BEDROCK | 114-MW66D | 114-MW66D-94-20210210 | 94.0 | N | T | JD20166 | 2021-02-10 | < 4.7 U | **6350** | **6000** | 5.5 J | < 0.17 U | 4.8 J |
| BEDROCK | 114-MW66D | 114-MW66D-110-20210210 | 110.0 | N | T | JD20166 | 2021-02-10 | < 4.7 U | **596** | **260** | 2.8 J | < 0.17 U | < 1.8 U |
| BEDROCK | 114-MW66D | 114-MW66D-114-20210210 | 114.0 | N | T | JD20166 | 2021-02-10 | < 4.7 U | **393** | **86** | 2.7 J | < 0.17 U | < 1.8 U |
| BEDROCK | 114-MW6D | 114-MW6D-109.5-110.0 | 109.5 | N | T | JC88938 | 2019-05-30 | < 4.7 U | 3.8 J | < 5.8 U | 8.3 J | < 0.17 U | 2.4 J |
| BEDROCK | 114-MW6D | 114-MW6D-104.5-105.0 | 104.5 | N | T | JC88938 | 2019-05-30 | < 4.7 U | 5.3 J | < 5.8 U | 9.8 J | < 0.17 U | 3.8 J |
| BEDROCK | 114-MW6D | 114-MW6D-99.5-100.0 | 99.5 | N | T | JC88938 | 2019-05-30 | < 4.7 U | 7.8 J | < 5.8 U | 12.2 | < 0.17 U | 5.3 J |
| BEDROCK | 114-MW6D | 114-MW6D-94.5-95.0 | 94.5 | N | T | JC88938 | 2019-05-30 | < 4.7 U | 7.6 J | < 5.8 U | 11.4 | < 0.17 U | 4.7 J |
| BEDROCK | 114-MW6D | 114-MW6D-89.5-90.0 | 89.5 | N | T | JC88938 | 2019-05-30 | < 4.7 U | 6.9 J | < 5.8 U | 11.9 | < 0.17 U | 4.8 J |
| BEDROCK | 114-MW6D | 114-MW6D-108.5-20200826 | 108.5 | N | T | JD12249 | 2020-08-26 | < 4.7 U | 3.4 J | < 5.8 UJ | 8.6 J | < 0.17 U | 1.8 J |
| BEDROCK | 114-MW6D | 114-MW6D-103.5-20200826 | 103.5 | N | T | JD12249 | 2020-08-26 | < 4.7 U | < 2.0 U | < 5.8 UJ | 6.8 J | < 0.17 U | < 1.8 U |
| BEDROCK | 114-MW6D | 114-MW6D-98.5-20200827 | 98.5 | N | T | JD12322 | 2020-08-27 | < 4.7 U | < 2.0 U | < 5.8 U | 6.1 J | < 0.17 U | < 1.8 U |
| BEDROCK | 114-MW6D | 114-MW6D-93.5-20200827 | 93.5 | N | T | JD12322 | 2020-08-27 | < 4.7 U | < 2.0 U | < 5.8 U | 5.3 J | < 0.17 U | < 1.8 U |
| BEDROCK | 114-MW6D | 114-MW6D-88.5-20200827 | 88.5 | N | T | JD12322 | 2020-08-27 | < 4.7 U | < 2.0 U | < 5.8 U | 5.3 J | < 0.17 U | < 1.8 U |
| BEDROCK | 114-MW7D | 114-MW7D-87.5-88.0 | 87.5 | N | T | JC89029 | 2019-05-31 | < 4.7 U | 6.3 J | 7.5 J- | 2.9 J | < 0.17 U | 5.2 J |
| BEDROCK | 114-MW7D | 114-MW7D-87.5-20200831 | 87.5 | N | T | JD12474 | 2020-08-31 | < 4.7 U | 3.6 J | < 5.8 U | < 1.7 U | < 0.17 U | < 1.8 U |

**Table 5-1**
**Groundwater Analytical Results - Cr+6 and CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | **Analyte** | ANTIMONY | CHROMIUM | CHROMIUM (HEXAVALENT) | NICKEL | THALLIUM | VANADIUM |
| | | | | | | **CAS RN** | 7440-36-0 | 7440-47-3 | 18540-29-9 | 7440-02-0 | 7440-28-0 | 7440-62-2 |
| | | | | | | **GWQS** | 6 | 70 | 70 | 100 | 2 | 60 |
| | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Depth (ft bTOIC)** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| **Shallow Zone Monitoring Wells Sampled Prior to Soil Remediation and Subsequently Decommissioned** | | | | | | | | | | | | | |
| SHALLOW | 114-MW20A | 114-MW20A-11.0-20180420 | 11.0 | N | T | JC64643 | 2018-04-20 | < 4.3 U | 27.6 | < 8.1 U | 5.1 J | < 0.047 U | 22.4 J |
| SHALLOW | 114-MW20A | 114-MW20A-8.0-20180420 | 8.0 | N | T | JC64643 | 2018-04-20 | < 4.3 U | 32.0 | < 8.1 U | 8.9 J | < 0.047 U | 27.6 J |
| SHALLOW | 114-MW22A | 114-MW22A-16.0-20180419 | 16.0 | N | T | JC64571 | 2018-04-19 | < 4.3 U | 1.0 J | < 8.1 U | < 1.3 U | < 0.047 U | < 1.3 U |
| SHALLOW | 114-MW22A | 114-MW22A-11.0-20180419 | 11.0 | N | T | JC64571 | 2018-04-19 | < 4.3 U | < 0.85 U | < 8.1 U | < 1.3 U | < 0.047 U | < 1.3 U |
| SHALLOW | 114-P2B4-MW1 | 114-P2B4-MW1-14.0-20180425 | 14.0 | N | T | JC64901 | 2018-04-25 | **< 43 U** | **47900** | **47100** | 19.0 J | < 0.094 U | < 13 U |
| SHALLOW | 114-P2B4-MW1 | 114-P2B4-MW1-10.0-20180425 | 10.0 | N | D | JC64901 | 2018-04-25 | **< 26 U** | **39600** | **35700** | 15.8 J | 0.12 J | < 7.7 U |
| SHALLOW | 114-P2B4-MW1 | 114-P2B4-MW1-10.0-20180425 | 10.0 | N | T | JC64901 | 2018-04-25 | **< 26 U** | **38600** | **37400** | 29.4 J | 0.37 J | 21.2 J |
| SHALLOW | 114-P2B4-MW1 | 114-P2B4-MW1-10.0-20180425X | 10.0 | FD | D | JC64901 | 2018-04-25 | **< 26 U** | **41000** | **35100** | 15.8 J | < 0.094 U | < 7.7 U |
| SHALLOW | 114-P2B4-MW1 | 114-P2B4-MW1-10.0-20180425X | 10.0 | FD | T | JC64901 | 2018-04-25 | **< 26 U** | **38400** | **36800** | 61.8 J | 0.40 J | **63.6 J** |
| SHALLOW | 114-P2B4-MW2 | 114-P2B4-MW2-10.0-20180427 | 10.0 | N | T | JC65066 | 2018-04-27 | < 4.3 U | **7310 J** | **39600 J** | < 1.3 U | < 0.047 U | < 1.3 U |
| SHALLOW | 114-P2B4-MW2 | 114-P2B4-MW2-10.0-20180427X | 10.0 | FD | T | JC65066 | 2018-04-27 | < 4.3 U | **7220 J** | **34600 J** | < 1.3 U | < 0.047 U | < 1.3 U |
| SHALLOW | 114-P2B4-MW2 | 114-P2B4-MW2-14.0-20180427 | 14.0 | N | T | JC65066 | 2018-04-27 | **< 17 U** | **21400** | **21200** | 8.2 J | < 0.094 U | 14.4 J |
| SHALLOW | 114-P2B4-MW2 | 114-P2B4-MW2-14.0-20180427X | 14.0 | FD | T | JC65066 | 2018-04-27 | **< 17 U** | **21100** | **21100** | 4.4 J | < 0.094 U | 14.4 J |
| SHALLOW | 114-P2B4-MW3 | 114-P2B4-MW3-14.0-20180420 | 14.0 | N | T | JC64643 | 2018-04-20 | < 4.3 U | 18.4 | < 8.1 U | < 1.3 U | < 0.047 U | 1.5 J |
| SHALLOW | 114-P2B4-MW3 | 114-P2B4-MW3-10.0-20180420 | 10.0 | N | T | JC64643 | 2018-04-20 | < 4.3 U | 4.9 J | < 8.1 U | < 1.3 U | < 0.047 U | < 1.3 U |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | 15.0 | N | T | JC67069 | 2018-05-31 | **< 22 U** | **34800** | **38900** | 15.5 J | < 0.24 U | 8.5 J |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | 10.0 | N | T | JC67069 | 2018-05-31 | **< 22 U** | **36700** | **41100** | 17.5 J | < 0.24 U | 10.0 J |

**Table 5-1**
**Groundwater Analytical Results - Cr+6 and CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

**NOTES:**

1. The reporting convention for non-detects in environmental analytical chemistry is that non-detects be reported as less than the RL. Outputs from the database default to reporting non-detects as less than the MDL.

2. Results may be reporting as less than the MDL or RL, but above the associated regulatory standard when dilution is required due to the presence of a significant quantity of a target or non-target analyte, or an interference from a target or non-target analyte. The presence of other substances, or combinations of other substances in a sample can impact whether an analytical method can be used to achieve the lowest possible RL.

3. **Bold** - Indicates an exceedance of the NJDEP's GWQS.

4. A "-" indicates that the sample was not tested for the analyte.

**ABBREVIATIONS:**

bTOIC - below top of inner casing

CAS RN - Chemical Abstracts Service Registry Number

CCPW - Chromate Chemical Production Waste

$Cr^{+6}$ - hexavalent chromium

Fractions:

D - dissolved/filtered

T - total/unfiltered

ft - feet

GWQS - Groundwater Quality Standard

MDL - method detection limit

N/A - not applicable

NJDEP - New Jersey Department of Environmental Protection

RL - reporting limit

Sample Types:

N - normal environmental sample

FD - field duplicate sample

SDG - sample delivery group

ug/L - micrograms per liter

**QUALIFIERS:**

J - Indicates the result was an estimated value; the associated numerical value was an approximate concentration of the analyte in the sample. J+ or J - is used when the direction of bias can be determined.

JB - The analyte concentration is greater than three (3) times, but less than or equal to ten (10) times the concentration in the associated method/preparation blank. The presence of that analyte in the sample is considered “real” but the concentration is quantitatively qualified due to method blank contamination.

U - Indicates the analyte was not detected in the sample above the sample RL.

UB - The analyte concentration is less than or equal to three (3) times the concentration in the associated method/preparation blank. The presence of the analyte in the sample is negated due to laboratory blank contamination.

UJ - Indicates the analyte was not detected above the RL and the RL was approximate.

# Table 5-2
# Groundwater Analytical Results - Non-CCPW Metals
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

| | | | | | | | | Analyte | ALUMINUM | ARSENIC | BARIUM | BERYLLIUM | CADMIUM | CALCIUM | COBALT | COPPER | IRON | LEAD | MAGNESIUM | MANGANESE | MERCURY | POTASSIUM | SELENIUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | CAS RN | 7429-90-5 | 7440-38-2 | 7440-39-3 | 7440-41-7 | 7440-43-9 | 7440-70-2 | 7440-48-4 | 7440-50-8 | 7439-89-6 | 7439-92-1 | 7439-95-4 | 7439-96-5 | 7439-97-6 | 7440-09-7 | 7782-49-2 |
| | | | | | | | | GWQS | 200 | 3 | 6000 | 1 | 4 | N/A | 100 | 1300 | 300 | 5 | N/A | 50 | 2 | N/A | 40 |
| | | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Depth (ft bTOIC)** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | | | | | | | | | | | | | |
| **Shallow Zone Monitoring Well Samples** | | | | | | | | | | | | | | | | | | | | | | | | |
| SHALLOW | 114-MW15A | 114-MW15A-20180417 | 4.25 | N | D | JC64376 | 2018-04-17 | | < 33 U | < 2.7 U | 40.1 J | < 0.40 U | < 0.70 U | 32300 | < 0.72 U | 4.2 J | < 32 U | < 2.6 U | 4390 J | 5.0 JB | < 0.13 U | 7670 J | < 6.6 U |
| SHALLOW | 114-MW15A | 114-MW15A-20180417 | 4.25 | N | T | JC64376 | 2018-04-17 | | **1420** | < 2.7 U | 47.8 J | < 0.40 U | < 0.70 U | 33300 | < 0.72 U | 8.2 J | **1340** | < 2.6 U | 4770 J | 25.7 | < 0.13 U | 7710 J | < 6.6 U |
| SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | 11.5 | N | T | JC65325 | 2018-05-02 | | **237 JB** | **< 14 U** | 57.5 J | < 0.40 U | < 0.70 U | 408000 | 6.8 J | 4.8 J | **884** | **< 13 U** | 67900 | **3810** | < 0.13 U | 26600 | 8.2 J |
| SHALLOW | 114-MW25A | 114-MW25A-20170926 | 11.5 | N | T | JC51824 | 2017-09-26 | | 66.7 J | < 2.7 U | 130 J | < 0.40 U | 0.70 J | 129000 | 1.9 J | 8.1 J | **352** | < 2.6 U | 27400 | **781** | < 0.083 U | 8180 J | < 6.6 U |
| SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | 12.5 | N | T | JC57565 | 2017-12-18 | | < 33 U | **23.9** | 150 J | < 0.40 U | 1.3 J | 108000 | 22.0 J | 6.9 J | **12200** | < 2.6 U | 15000 | **4370** | < 0.083 U | 29100 | < 6.6 U |
| SHALLOW | 114-MW27A | 114-MW27A-20170926 | 13.5 | N | T | JC51824 | 2017-09-26 | | 73.2 J | 2.7 J | 121 J | < 0.40 U | 2.7 J | 111000 | < 0.72 U | 3.4 J | 182 | < 2.6 U | 19500 | **1960** | < 0.083 U | 7980 J | < 6.6 U |
| SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | 11.5 | N | T | JC57565 | 2017-12-18 | | < 33 U | < 2.7 U | 114 J | < 0.40 U | < 0.70 U | 52300 | < 0.72 U | 12.1 | **438** | **11.0** | 10500 | **321** | < 0.083 U | 7930 J | < 6.6 U |
| SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | 21.0 | N | T | JC56729A | 2017-12-06 | | 135 J | **4.7** | 140 J | < 0.40 U | 1.1 J | 110000 | < 0.72 U | < 3.2 U | **2420** | < 2.6 U | 35400 | **2350** | < 0.083 U | 6250 J | < 6.6 U |
| SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | 11.5 | N | T | JC56859A | 2017-12-07 | | < 33 U | **20.5** | 51.1 J | < 0.40 U | 1.4 J+ | 90200 | < 0.72 U | < 3.2 U | **26800** | < 2.6 U | 10200 | **3650** | < 0.10 UB | 14200 | < 6.6 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927 | 10.0 | N | T | JC51890 | 2017-09-27 | | **3770** | 3.0 | 76.2 J | < 0.40 U | < 0.70 U | 203000 | 0.90 J | < 3.2 U | 48.1 J | < 2.6 U | 360 J | 9.9 J | < 0.083 U | 41800 | < 6.6 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927-X | 10.0 | FD | T | JC51890 | 2017-09-27 | | **3770** | **3.4** | 74.2 J | < 0.40 U | < 0.70 U | 203000 | 1.2 J | < 3.2 U | 118 | < 2.6 U | 324 J | 10.2 J | < 0.083 U | 39800 | < 6.6 U |
| SHALLOW | 114-MW37A | 114-MW37A-20170928 | 12.5 | N | T | JC52029 | 2017-09-28 | | **491** | **6.7** | 73.5 J | < 0.40 U | 0.70 J | 107000 | 6.4 J | 4.4 J | **12600** | < 2.6 U | 18800 | **5150** | < 0.083 U | 10300 | < 6.6 U |
| SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | 22.5 | N | T | JC56504A | 2017-12-04 | | **9560** | **22.4** | 153 J | < 0.80 U | < 1.4 U | 76200 | 4.0 J | 14.6 J | **16300** | **12.2** | 19600 | **2700** | < 0.083 U | 11200 J | < 13 U |
| SHALLOW | 114-MW41A | 114-MW41A-20180420 | 12.5 | N | T | JC64643 | 2018-04-20 | | **210 JB** | **< 27 U** | 51.0 J | **< 2.0 U** | < 3.5 U | 409000 | < 3.6 U | < 32 U | 245 J | **< 26 U** | < 320 U | 8.5 J | < 0.80 U | 10400 J | **< 66 U** |
| SHALLOW | 114-MW42A | 114-MW42A-20180417 | 9.5 | N | T | JC64376 | 2018-04-17 | | **900** | < 2.7 U | 183 J | < 0.40 U | < 0.70 U | 156000 | 1.6 J | 4.3 J | **1150** | < 2.6 U | 34600 | **1360** | < 0.13 U | 3550 J | < 6.6 U |
| SHALLOW | 114-MW43A | 114-MW43A-20180417 | 9.5 | N | T | JC64376 | 2018-04-17 | | **758** | < 2.7 U | 346 | < 0.40 U | < 0.70 U | 303000 | < 0.72 U | < 3.2 U | **13500** | **< 5.3 U** | 55500 | **10700** | < 0.13 U | 13400 | < 13 U |
| SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | 10.0 | N | T | JC64763 | 2018-04-23 | | < 33 U | - | 77.2 J | < 0.40 U | < 0.70 U | - | 1.0 J | 3.3 J | **12400** | - | 63800 | **2510** | < 0.13 U | 38300 | < 6.6 U |
| SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | 14.0 | N | T | JC64763 | 2018-04-23 | | 160 JB | - | 65.7 J | < 0.40 U | < 0.70 U | - | 1.0 J | 3.6 J | **1700** | - | 58000 | **1030** | < 0.13 U | 32000 | < 6.6 U |
| SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | 6.0 | N | T | JC64763 | 2018-04-23 | | < 33 U | - | 87.4 J | < 0.40 U | < 0.70 U | - | 1.0 J | < 3.2 U | **23400** | - | 72400 | **3470** | < 0.13 U | 46400 | < 6.6 U |
| SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | 12.0 | N | T | JC64763 | 2018-04-23 | | 170 JB | - | 225 | < 0.40 U | < 0.70 U | 166000 | 5.0 J | 3.5 J | **1700** | < 2.6 U | 37600 | **1640** | < 0.13 U | 28000 | < 6.6 U |
| **Shallow Zone Monitoring Wells Sampled Prior to Soil Remediation, and Subsequently Decommissioned** | | | | | | | | | | | | | | | | | | | | | | | | |
| SHALLOW | 114-MW20A | 114-MW20A-11.0-20180420 | 11.0 | N | T | JC64643 | 2018-04-20 | | 153 JB | **11.6** | 58.9 J | < 0.40 U | < 0.70 U | 43900 | 0.80 J | < 3.2 U | **1750** | **20.5** | 5770 | **115** | < 0.27 U | 12500 | < 6.6 U |
| SHALLOW | 114-MW20A | 114-MW20A-8.0-20180420 | 8.0 | N | T | JC64643 | 2018-04-20 | | **216 JB** | **10.6** | 63.7 J | < 0.40 U | < 0.70 U | 41800 | 1.3 J | 29.5 | **1110** | **24.6** | 4210 J | **79.5** | < 0.27 U | 14400 | 7.8 J |
| SHALLOW | 114-MW22A | 114-MW22A-11.0-20180419 | 11.0 | N | T | JC64571 | 2018-04-19 | | < 33 U | **44.3** | 303 | < 0.40 U | < 0.70 U | 191000 | < 0.72 U | < 3.2 U | **11000** | < 2.6 U | 31800 | **1720** | < 0.13 U | 14400 | < 6.6 U |
| SHALLOW | 114-MW22A | 114-MW22A-16.0-20180419 | 16.0 | N | T | JC64571 | 2018-04-19 | | < 33 U | **44.0** | 293 | < 0.40 U | < 0.70 U | 188000 | < 0.72 U | < 3.2 U | **10700** | < 2.6 U | 30500 | **1750** | < 0.13 U | 14000 | < 6.6 U |
| **Intermediate Zone Monitoring Well Samples** | | | | | | | | | | | | | | | | | | | | | | | | |
| INTERMEDIATE | 10W-MW105I | 10W-MW105I-20180312 | 37.5 | N | T | JC62130 | 2018-03-12 | | **1400** | **< 5.5 U** | 245 | < 0.40 U | < 0.70 U | 444000 | 6.9 J | 14.7 | **1470** | < 2.6 U | 9900 | 20.4 | < 0.083 U | 55500 | < 6.6 U |
| INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | 37.5 | N | T | JC64571 | 2018-04-19 | | **204 JB** | **< 270 U** | 26.0 J | **< 2.0 U** | < 3.5 U | 12000 J | < 3.6 U | < 320 U | < 160 U | **< 260 U** | 2970 J | < 42 U | < 0.40 U | 50300 | **< 660 U** |
| INTERMEDIATE | 114-MW22B | 114-MW22B-20180419 | 30.5 | N | D | JC64571 | 2018-04-19 | | < 33 U | < 2.7 U | 141 J | < 0.40 U | < 0.70 U | 133000 | < 0.72 U | < 3.2 U | < 32 U | < 2.6 U | 32400 | 10.4 J | < 0.13 U | 7130 J | < 6.6 U |
| INTERMEDIATE | 114-MW22B | 114-MW22B-20180419 | 30.5 | N | T | JC64571 | 2018-04-19 | | **660** | < 2.7 U | 167 J | < 0.40 U | < 0.70 U | 151000 | < 0.72 U | < 3.2 U | **790** | < 2.6 U | 33400 | 28.4 | < 0.13 U | 7340 J | < 6.6 U |
| INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | 33.0 | N | T | JC62130 | 2018-03-12 | | **331** | < 2.7 U | 90.2 J | < 0.40 U | < 0.70 U | 137000 | 1.3 J | 5.4 J | **609** | 4.3 | 30100 | **1120** | < 0.083 U | 5720 J | < 6.6 U |
| INTERMEDIATE | 114-MW25B | 114-MW25B-20170928 | 32.5 | N | T | JC52029 | 2017-09-28 | | 54.5 J | **5.4** | 51.5 J | < 0.40 U | < 0.70 U | 56300 | < 0.72 U | < 3.2 U | 61.4 J | < 2.6 U | 10900 | **150** | < 0.083 U | 3630 J | < 6.6 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | 35.5 | N | D | JC62228 | 2018-03-13 | | < 33 U | **4.6** | 40.3 J | < 0.40 U | < 0.70 U | 94900 | < 0.72 U | < 3.2 U | < 32 U | < 2.6 U | 13200 | 33.8 | < 0.083 U | 7280 J | < 6.6 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | 35.5 | N | T | JC62228 | 2018-03-13 | | **2520 J** | **5.5** | 64.6 J | < 0.40 U | < 0.70 U | 110000 | 2.4 J | 6.7 J | **3240 J** | < 2.6 U | 22800 J | **438 J** | < 0.083 U | 6640 J | < 6.6 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | 35.5 | FD | D | JC62228 | 2018-03-13 | | < 33 U | **4.5** | 40.8 J | < 0.40 U | < 0.70 U | 95300 | < 0.72 U | < 3.2 U | < 32 U | < 2.6 U | 13400 | 38.8 | < 0.083 U | 7220 J | < 6.6 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | 35.5 | FD | T | JC62228 | 2018-03-13 | | **586 J** | **5.3** | 46.8 J | < 0.40 U | < 0.70 U | 97500 | < 0.72 U | 5.2 J | **821 J** | < 2.6 U | 14100 J | **73.6 J** | < 0.083 U | 7320 J | < 6.6 U |
| INTERMEDIATE | 114-MW27B | 114-MW27B-20170928 | 32.5 | N | T | JC52029 | 2017-09-28 | | **2610** | **3.9** | 91.4 J | < 0.40 U | < 0.70 U | 82300 | 1.9 J | 8.4 J | **3300** | 4.7 | 18200 | **1420** | < 0.083 U | 4920 J | < 6.6 U |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | 35.5 | N | T | JC56729A | 2017-12-06 | | **489** | **< 14 U** | 62.1 J | < 0.40 U | 3.5 | 239000 | 17.0 J | 71.0 | **634** | **< 13 U** | 57500 | **425** | < 0.083 U | 18200 | < 6.6 U |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | 35.5 | FD | T | JC56729A | 2017-12-06 | | **415** | **< 14 U** | 62.4 J | < 0.40 U | 3.6 | 240000 | 16.4 J | 70.3 | **538** | **< 13 U** | 57900 | **437** | 0.20 | 18300 | < 6.6 U |
| INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | 32.5 | N | T | JC51890 | 2017-09-27 | | **12400** | **6.0** | 139 J | 1.0 J | < 1.4 U | 94800 | 8.6 J | 31.0 | **15300** | **23.0** | 21700 | **889** | < 0.17 U | 10700 J | < 13 U |
| INTERMEDIATE | 114-MW37B | 114-MW37B-20170926 | 32.5 | N | T | JC51824 | 2017-09-26 | | 78.7 J | **15.0** | 48.0 J | < 0.40 U | < 0.70 U | 125000 | < 0.72 U | < 3.2 U | **2470** | < 2.6 U | 28600 | **1230** | < 0.083 U | 6920 J | < 6.6 U |
| INTERMEDIATE | 114-MW38B | FORREST-114-MW38B-20171204 | 39.5 | N | T | JC56504A | 2017-12-04 | | **1720** | **15.4** | 134 J | < 0.40 U | < 0.70 U | 56200 | < 0.72 U | 8.4 J | **1860** | **6.1** | 10500 | **145** | < 0.083 U | 4350 J | < 6.6 U |
| INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | 24.5 | N | T | JC64643 | 2018-04-20 | | < 170 U | **< 140 U** | 21.0 J | **< 2.0 U** | **6.5 J** | 104000 | 28.0 J | < 160 U | 282 J | **< 130 U** | 12900 J | **374 J** | < 0.80 U | 31500 J | **< 330 U** |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | 22.5 | N | T | JC58073A | 2017-12-27 | | **282** | **11.5** | 65.5 J | < 0.40 U | 1.1 J | 129000 | 1.6 J | 4.1 J | **8240** | < 2.6 U | 24700 | **2040** | < 0.17 U | 24500 | < 6.6 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | 27.5 | N | T | JC58073A | 2017-12-27 | | **468** | **< 8.2 U** | 80.1 J | < 0.40 U | 1.5 J | 148000 | 1.5 J | 3.5 J | **11400** | < 2.6 U | 26400 | **2580** | < 0.17 U | 26800 | < 6.6 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | 32.5 | N | T | JC58028A | 2017-12-26 | | **249** | **< 8.2 U** | 86.7 J | < 0.40 U | 1.3 J | 134000 | 1.7 J | 3.2 J | **6950** | < 2.6 U | 29100 | **2380** | < 0.17 U | 27200 | < 6.6 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | 37.5 | N | T | JC58028A | 2017-12-26 | | **539** | **< 8.2 U** | 87.9 J | < 0.40 U | 1.1 J | 132000 | 2.2 J | 4.7 J | **7020** | < 2.6 U | 29200 | **2120** | < 0.17 U | 28300 | < 6.6 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | 22.5 | N | T | JC58942 | 2018-01-16 | | **882** | **7.1** | 255 | < 0.40 U | 1.2 J | 169000 | 10.3 J | 5.1 J | **2440** | < 2.6 U | 91300 | **3550** | < 0.083 U | 20700 | < 6.6 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | 27.5 | N | T | JC58942 | 2018-01-16 | | **1080** | **6.3** | 229 | < 0.40 U | 1.7 J | 164000 | 21.3 J | 13.4 | **2380** | 2.6 J | 80100 | **2960** | < 0.083 U | 19500 | < 6.6 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | 32.5 | N | T | JC58942 | 2018-01-16 | | **800** | **5.5** | 224 | < 0.40 U | 1.8 J | 167000 | 26.4 J | 15.8 | **1940** | < 2.6 U | 78500 | **2830** | < 0.083 U | 19200 | < 6.6 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | 37.5 | N | T | JC58942 | 2018-01-16 | | **957** | **5.9** | 208 | < 0.40 U | 1.7 J | 165000 | 32.0 J | 19.3 | **2020** | 2.6 J | 72300 | **2570** | < 0.083 U | 18100 | < 6.6 U |
| INTERMEDIATE | MW7D | MW7D-41.0-20180423 | 41.0 | N | T | JC64763 | 2018-04-23 | | < 40.8 UB | **302** | 268 | < 0.40 U | < 0.70 U | 147000 | 1.1 J | < 3.2 U | **6300** | < 2.6 U | 25300 | **8460** | < 0.13 U | 5370 J | < 6.6 U |
| INTERMEDIATE | MW7D | MW7D-45.0-20180423 | 45.0 | N | T | JC64763 | 2018-04-23 | | < 61.8 UB | **266** | 260 | < 0.40 U | < 0.70 U | 148000 | 0.90 J | < 3.2 U | **5750** | < 2.6 U | 25700 | **7300** | < 0.13 U | 5300 J | < 6.6 U |
| **Deep Zone Monitoring Well Samples** | | | | | | | | | | | | | | | | | | | | | | | | |
| DEEP | 114-MW20C | 114-MW20C-20180419 | 80.5 | N | T | JC64571 | 2018-04-19 | | **650** | < 2.7 U | 158 J | < 0.40 U | < 0.70 U | 111000 | < 0.72 U | 18.7 | **2750** | < 2.6 U | 21200 | **506** | < 0.13 U | 7060 J | < 6.6 U |
| DEEP | 114-MW25C | 114-MW25C-20180313 | 44.5 | N | D | JC62228 | 2018-03-13 | | < 33 U | **16.5** | 54.2 J | < 0.40 U | < 0.70 U | 95900 | 7.8 J | < 3.2 U | < 32 U | < 2.6 U | 18600 | **1360** | < 0.083 U | 5740 J | < 6.6 U |
| DEEP | 114-MW25C | 114-MW25C-20180313 | 44.5 | N | T | JC62228 | 2018-03-13 | | **28500** | **27.0** | 222 J | **< 2.0 U** | < 3.5 U | 137000 | 24.5 J | 38.5 J | **36400** | **22.0** | 34500 | **2460** | < 0.25 U | 15400 J | < 33 U |
| DEEP | 114-P1B-MW103D | 114-P1B-MW103D-20171214 | 53.5 | N | T | JC57385 | 2017-12-14 | | **1500 J** | **< 68 U** | 82.0 J | **< 2.0 U** | < 3.5 U | 149000 | < 3.6 U | < 16 U | **1610 J** | **< 66 U** | 15600 J | **153** | < 0.25 U | 12900 J | < 33 U |
| DEEP | 114-P1B-MW103D | 114-P1B-MW103D-20171214X | 53.5 | FD | T | JC57385 | 2017-12-14 | | **1130 J** | **< 68 U** | 83.5 J | **< 2.0 U** | < 3.5 U | 154000 | < 3.6 U | < 16 U | **1270 J** | **< 66 U** | 16400 J | **175** | 0.46 J | 12300 J | < 33 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | 35.0 | N | T | JC57943A | 2017-12-22 | | 107 J | **< 27 U** | 53.4 J | < 0.80 U | < 1.4 U | 38300 | 12.4 J | 9.4 J | 160 J | **< 26 U** | 12000 | **207** | < 0.17 U | 13500 J | < 13 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | 40.0 | N | T | JC57943A | 2017-12-22 | | **221 J** | **28.2 J** | 54.8 J | < 0.80 U | < 1.4 U | 35500 | 15.2 J | 10.0 J | 272 | **< 26 U** | 11700 | **214** | < 0.17 U | 13100 J | < 13 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | 45.0 | N | T | JC57820 | 2017-12-21 | | 139 J | **< 27 U** | 60.4 J | < 0.40 U | 2.4 J | 39300 | 6.6 J | 15.2 | 261 | **< 26 U** | 12900 | **240** | < 0.25 U | 14800 | **< 66 U** |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | 50.0 | N | T | JC57820 | 2017-12-21 | | 54.7 J | **32.3** | 57.6 J | < 0.40 U | 2.3 J | 38500 | 6.8 J | 14.6 | 147 | **< 26 U** | 12500 | **233** | < 0.25 U | 14300 | **< 66 U** |
| DEEP | MW6C | MW6C-57.0-20171220 | 57.0 | N | T | JC57752 | 2017-12-20 | | **286** | **< 14 U** | 121 J | < 0.40 U | **6.1** | 307000 | 49.1 J | 109 | **499** | **13.4 J** | 70600 | **889** | < 0.12 U | 10300 | < 6.6 U |
| DEEP | MW6C | MW6C-62.0-20171220 | 62.0 | N | T | JC57752 | 2017-12-20 | | **663** | **< 14 U** | 120 J | < 0.40 U | **6.6** | 319000 | 48.8 J | 113 | **961** | **20.9** | 70500 | **892** | < 0.12 U | 10600 | < 6.6 U |

# Table 5-2
# Groundwater Analytical Results - Non-CCPW Metals
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **Analyte** | SILVER | SODIUM | STRONTIUM | ZINC |
| | | | | | | | **CAS RN** | 7440-22-4 | 7440-23-5 | 7440-24-6 | 7440-66-6 |
| | | | | | | | **GWQS** | 40 | 50000 | 2000 | 2000 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L |
| **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Depth (ft bTOIC)** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | |
| **Shallow Zone Monitoring Well Samples** | | | | | | | | | | | |
| SHALLOW | 114-MW15A | 114-MW15A-20180417 | 4.25 | N | D | JC64376 | 2018-04-17 | < 3.1 U | 40600 | - | < 4.0 U |
| SHALLOW | 114-MW15A | 114-MW15A-20180417 | 4.25 | N | T | JC64376 | 2018-04-17 | < 3.1 U | 40700 | - | 9.9 J |
| SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | 11.5 | N | T | JC65325 | 2018-05-02 | < 3.1 U | **126000** | 683 | 15.5 J |
| SHALLOW | 114-MW25A | 114-MW25A-20170926 | 11.5 | N | T | JC51824 | 2017-09-26 | < 3.1 U | **78600** | - | 13.9 J |
| SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | 12.5 | N | T | JC57565 | 2017-12-18 | < 3.1 U | **117000** | 501 | 11.7 J |
| SHALLOW | 114-MW27A | 114-MW27A-20170926 | 13.5 | N | T | JC51824 | 2017-09-26 | < 3.1 U | 48700 | - | 21.5 |
| SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | 11.5 | N | T | JC57565 | 2017-12-18 | < 3.1 U | **85900** | 211 | 168 |
| SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | 21.0 | N | T | JC56729A | 2017-12-06 | < 3.1 U | 48200 | 295 | < 4.0 U |
| SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | 11.5 | N | T | JC56859A | 2017-12-07 | < 3.1 U | 15100 | 314 | 5.4 J |
| SHALLOW | 114-MW36A | 114-MW36A-20170927 | 10.0 | N | T | JC51890 | 2017-09-27 | < 3.1 U | **425000** | - | < 4.0 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927-X | 10.0 | FD | T | JC51890 | 2017-09-27 | < 3.1 U | **419000** | - | < 4.0 U |
| SHALLOW | 114-MW37A | 114-MW37A-20170928 | 12.5 | N | T | JC52029 | 2017-09-28 | < 3.1 U | 23600 | - | 5.5 J |
| SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | 22.5 | N | T | JC56504A | 2017-12-04 | < 6.3 U | 49600 | 297 | 28.2 J |
| SHALLOW | 114-MW41A | 114-MW41A-20180420 | 12.5 | N | T | JC64643 | 2018-04-20 | < 16 U | **127000** | 579 | < 40 U |
| SHALLOW | 114-MW42A | 114-MW42A-20180417 | 9.5 | N | T | JC64376 | 2018-04-17 | < 3.1 U | **96800** | - | 30.2 |
| SHALLOW | 114-MW43A | 114-MW43A-20180417 | 9.5 | N | T | JC64376 | 2018-04-17 | < 3.1 U | **81900** | - | 5.2 J |
| SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | 10.0 | N | T | JC64763 | 2018-04-23 | < 3.1 U | - | 1460 | 79.5 |
| SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | 14.0 | N | T | JC64763 | 2018-04-23 | < 3.1 U | - | 1290 | 73.7 |
| SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | 6.0 | N | T | JC64763 | 2018-04-23 | < 3.1 U | - | 1550 | 50.0 |
| SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | 12.0 | N | T | JC64763 | 2018-04-23 | < 3.1 U | - | 807 | 23.3 |
| **Shallow Zone Monitoring Wells Sampled Prior to Soil Remediation, and Subsequently Decommissioned** | | | | | | | | | | | |
| SHALLOW | 114-MW20A | 114-MW20A-11.0-20180420 | 11.0 | N | T | JC64643 | 2018-04-20 | < 3.1 U | **356000** | 319 | 34.6 |
| SHALLOW | 114-MW20A | 114-MW20A-8.0-20180420 | 8.0 | N | T | JC64643 | 2018-04-20 | < 3.1 U | **393000** | 323 | 68.2 |
| SHALLOW | 114-MW22A | 114-MW22A-11.0-20180419 | 11.0 | N | T | JC64571 | 2018-04-19 | < 3.1 U | **332000** | 849 | < 4.0 U |
| SHALLOW | 114-MW22A | 114-MW22A-16.0-20180419 | 16.0 | N | T | JC64571 | 2018-04-19 | < 3.1 U | **321000** | 828 | 6.0 J |
| **Intermediate Zone Monitoring Well Samples** | | | | | | | | | | | |
| INTERMEDIATE | 10W-MW105I | 10W-MW105I-20180312 | 37.5 | N | T | JC62130 | 2018-03-12 | < 3.1 U | **115000** | - | 10.3 J |
| INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | 37.5 | N | T | JC64571 | 2018-04-19 | < 16 U | **849000** | 1150 | < 400 U |
| INTERMEDIATE | 114-MW22B | 114-MW22B-20180419 | 30.5 | N | D | JC64571 | 2018-04-19 | < 3.1 U | **74200** | **2090** | < 4.0 U |
| INTERMEDIATE | 114-MW22B | 114-MW22B-20180419 | 30.5 | N | T | JC64571 | 2018-04-19 | < 3.1 U | **75100** | **2310** | < 4.0 U |
| INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | 33.0 | N | T | JC62130 | 2018-03-12 | < 3.1 U | **64100** | - | 103 |
| INTERMEDIATE | 114-MW25B | 114-MW25B-20170928 | 32.5 | N | T | JC52029 | 2017-09-28 | < 3.1 U | 12000 | - | < 4.0 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | 35.5 | N | D | JC62228 | 2018-03-13 | < 3.1 U | 47800 | - | < 28.8 UB |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | 35.5 | N | T | JC62228 | 2018-03-13 | < 3.1 U | 47500 | - | 74.3 |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | 35.5 | FD | D | JC62228 | 2018-03-13 | < 3.1 U | 47700 | - | < 24.4 UB |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | 35.5 | FD | T | JC62228 | 2018-03-13 | < 3.1 U | 47400 | - | 82.5 |
| INTERMEDIATE | 114-MW27B | 114-MW27B-20170928 | 32.5 | N | T | JC52029 | 2017-09-28 | < 3.1 U | 17400 | - | 17.8 J |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | 35.5 | N | T | JC56729A | 2017-12-06 | < 3.1 U | **535000** | 1060 | 30.9 |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | 35.5 | FD | T | JC56729A | 2017-12-06 | < 3.1 U | **538000** | 1060 | 24.6 |
| INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | 32.5 | N | T | JC51890 | 2017-09-27 | < 6.3 U | 17100 J | - | 114 |
| INTERMEDIATE | 114-MW37B | 114-MW37B-20170926 | 32.5 | N | T | JC51824 | 2017-09-26 | < 3.1 U | 31500 | - | 5.9 J |
| INTERMEDIATE | 114-MW38B | FORREST-114-MW38B-20171204 | 39.5 | N | T | JC56504A | 2017-12-04 | < 3.1 U | 13700 | 162 | 44.9 |
| INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | 24.5 | N | T | JC64643 | 2018-04-20 | < 16 U | **641000** | 180 | < 200 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | 22.5 | N | T | JC58073A | 2017-12-27 | < 3.1 U | **422000** | 314 | 4.3 J |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | 27.5 | N | T | JC58073A | 2017-12-27 | < 3.1 U | **437000** | 343 | 4.3 J |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | 32.5 | N | T | JC58028A | 2017-12-26 | < 3.1 U | **483000** | 364 | < 4.0 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | 37.5 | N | T | JC58028A | 2017-12-26 | < 3.1 U | **501000** | 364 | 4.2 J |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | 22.5 | N | T | JC58942 | 2018-01-16 | < 3.1 U | **511000** | 852 | 9.4 J |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | 27.5 | N | T | JC58942 | 2018-01-16 | < 3.1 U | **490000** | 768 | 14.5 J |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | 32.5 | N | T | JC58942 | 2018-01-16 | < 3.1 U | **472000** | 761 | 13.6 J |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | 37.5 | N | T | JC58942 | 2018-01-16 | < 3.1 U | **422000** | 717 | 16.3 J |
| INTERMEDIATE | MW7D | MW7D-41.0-20180423 | 41.0 | N | T | JC64763 | 2018-04-23 | < 3.1 U | - | 399 | 5.4 J |
| INTERMEDIATE | MW7D | MW7D-45.0-20180423 | 45.0 | N | T | JC64763 | 2018-04-23 | < 3.1 U | - | 395 | < 4.0 U |
| **Deep Zone Monitoring Well Samples** | | | | | | | | | | | |
| DEEP | 114-MW20C | 114-MW20C-20180419 | 80.5 | N | T | JC64571 | 2018-04-19 | < 3.1 U | **204000** | 442 | 21.6 |
| DEEP | 114-MW25C | 114-MW25C-20180313 | 44.5 | N | D | JC62228 | 2018-03-13 | < 3.1 U | 21700 | - | < 4.0 U |
| DEEP | 114-MW25C | 114-MW25C-20180313 | 44.5 | N | T | JC62228 | 2018-03-13 | < 16 U | 25100 J | - | 95.5 J |
| DEEP | 114-P1B-MW103D | 114-P1B-MW103D-20171214 | 53.5 | N | T | JC57385 | 2017-12-14 | < 16 U | **95700** | 312 | < 100 U |
| DEEP | 114-P1B-MW103D | 114-P1B-MW103D-20171214X | 53.5 | FD | T | JC57385 | 2017-12-14 | < 16 U | **98800** | 321 | < 100 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | 35.0 | N | T | JC57943A | 2017-12-22 | < 6.3 U | **365000** | 232 | < 40 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | 40.0 | N | T | JC57943A | 2017-12-22 | < 6.3 U | **382000** | 232 | < 40 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | 45.0 | N | T | JC57820 | 2017-12-21 | 3.1 J | **414000** | 255 | < 4.0 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | 50.0 | N | T | JC57820 | 2017-12-21 | 3.2 J | **403000** | 247 | < 4.0 U |
| DEEP | MW6C | MW6C-57.0-20171220 | 57.0 | N | T | JC57752 | 2017-12-20 | < 3.1 U | **173000** | 812 | 22.6 |
| DEEP | MW6C | MW6C-62.0-20171220 | 62.0 | N | T | JC57752 | 2017-12-20 | < 3.1 U | **185000** | 822 | 20.0 |

**Table 5-2**
**Groundwater Analytical Results - Non-CCPW Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

**NOTES:**

1. The reporting convention for non-detects in environmental analytical chemistry is that non-detects be reported as less than the RL. Outputs from the database default to reporting non-detects as less than the MDL.

2. Results may be reporting as less than the MDL or RL, but above the associated regulatory standard when dilution is required due to the presence of a significant quantity of a target or non-target analyte, or an interference from a target or non-target analyte. The presence of other substances, or combinations of other substances in a sample can impact whether an analytical method can be used to achieve the lowest possible RL.

3. **Bold** - Indicates an exceedance of the NJDEP's GWQS.

4. A "-" indicates that the sample was not tested for the analyte.

**ABBREVIATIONS:**

bTOIC - below top of inner casing

CAS RN - Chemical Abstracts Service Registry Number

CCPW - Chromate Chemical Production Waste

Fractions:

D - dissolved/filtered

T - total/unfiltered

ft - feet

GWQS - Groundwater Quality Standard

MDL - method detection limit

N/A - not applicable

NJDEP - New Jersey Department of Environmental Protection

RL - reporting limit

Sample Types:

N - normal environmental sample

FD - field duplicate sample

SDG - sample delivery group

ug/L - micrograms per liter

**QUALIFIERS:**

J - Indicates the result was an estimated value; the associated numerical value was an approximate concentration of the analyte in the sample. J+ or J - is used when the direction of bias can be determined.

JB - The analyte concentration is greater than three (3) times, but less than or equal to ten (10) times the concentration in the associated method/preparation blank. The presence of that analyte in the sample is considered “real” but the concentration is quantitatively qualified due to method blank contamination.

U - Indicates the analyte was not detected in the sample above the sample RL.

UB - The analyte concentration is less than or equal to three (3) times the concentration in the associated method/preparation blank. The presence of the analyte in the sample is negated due to laboratory blank contamination.

# Table 5-3
# Groundwater Analytical Results - VOCs
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

AECOM

| | | | | | | | Analyte | 1,1,1-TRICHLOROETHANE | 1,1,2,2-TETRACHLOROETHANE | 1,1,2-TRICHLOROETHANE | 1,1,2-TRICHLOROTRIFLUOROETHANE | 1,1-DICHLOROETHANE | 1,1-DICHLOROETHYLENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 71-55-6 | 79-34-5 | 79-00-5 | 76-13-1 | 75-34-3 | 75-35-4 |
| | | | | | | | GWQS | 30 | 1 | 3 | 20000 | 50 | 1 |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Depth (ft bTOIC)** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | | |
| ***Monitoring Wells*** | | | | | | | | | | | | | |
| SHALLOW | 114-MW20A * | 114-MW20A-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 114-MW20A * | 114-MW20A-8.0-20180420 | 8.0 | N | N | JC64643 | 2018-04-20 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | 11.5 | N | N | JC65325 | 2018-05-02 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 114-MW25A | 114-MW25A-20170926 | 11.5 | N | N | JC51824 | 2017-09-26 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | 12.5 | N | N | JC57565 | 2017-12-18 | < 2.5 U | **< 1.7 U** | < 2.4 U | < 12 U | < 2.1 U | **< 4.7 U** |
| SHALLOW | 114-MW27A | 114-MW27A-20170926 | 13.5 | N | N | JC51824 | 2017-09-26 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | 11.5 | N | N | JC57565 | 2017-12-18 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | 21.0 | N | N | JC56729A | 2017-12-06 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | 11.5 | N | N | JC56859A | 2017-12-07 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927 | 10.0 | N | N | JC51890 | 2017-09-27 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927-X | 10.0 | FD | N | JC51890 | 2017-09-27 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 114-MW37A | 114-MW37A-20170926 | 12.5 | N | N | JC51824 | 2017-09-26 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | 0.34 J | < 0.47 U |
| SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | 22.5 | N | N | JC56504A | 2017-12-04 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 114-MW41A | 114-MW41A-20180420 | 12.5 | N | N | JC64643 | 2018-04-20 | 0.40 J | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | 11.0 | N | N | JC65178 | 2018-04-30 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | 16.0 | N | N | JC65178 | 2018-04-30 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | 17.0 | N | N | JC64643 | 2018-04-20 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | 9.5 | N | N | JC51736 | 2017-09-25 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | 14.0 | N | N | JC57276 | 2017-12-13 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | 9.0 | N | N | JC57276 | 2017-12-13 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | 16.0 | N | N | JC57169 | 2017-12-12 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | 13.0 | N | N | JC64571 | 2018-04-19 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | 8.0 | N | N | JC64571 | 2018-04-19 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | 13.0 | N | N | JC64986 | 2018-04-26 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | 9.0 | N | N | JC64986 | 2018-04-26 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | 10.0 | N | N | JC67069 | 2018-05-31 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | 15.0 | N | N | JC67069 | 2018-05-31 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | 8.0 | N | N | JC64763 | 2018-04-23 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | 10.0 | N | N | JC64763 | 2018-04-23 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | 14.0 | N | N | JC64763 | 2018-04-23 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | 6.0 | N | N | JC64763 | 2018-04-23 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | 13.0 | N | N | JC64822 | 2018-04-24 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | 10.0 | N | N | JC65255 | 2018-05-01 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | 15.0 | N | N | JC65255 | 2018-05-01 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | MW7S | MW7S-10.0-20180430 | 10.0 | N | N | JC65178 | 2018-04-30 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | MW8S | MW8S-20180427 | 9.5 | N | N | JC65066 | 2018-04-27 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | 21.0 | N | N | JC64444 | 2018-04-18 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | 39.5 | N | N | JC57752 | 2017-12-20 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | 0.63 J | **1.7** |
| INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | 27.5 | N | N | JC64444 | 2018-04-18 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | 47.5 | N | N | JC65255 | 2018-05-01 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | 37.5 | N | N | JC64571 | 2018-04-19 | < 5.0 U | **< 3.4 U** | **< 4.8 U** | < 25 U | < 4.1 U | **< 9.5 U** |
| INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | 33.0 | N | N | JC62130 | 2018-03-12 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | 35.5 | N | N | JC62228 | 2018-03-13 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | 2.5 | **1.6** |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | 35.5 | FD | N | JC62228 | 2018-03-13 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | 2.5 | **1.6** |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | 35.5 | N | N | JC56729A | 2017-12-06 | 2.5 | < 0.17 U | < 0.24 U | < 1.2 U | 0.80 J | < 0.47 U |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | 35.5 | FD | N | JC56729A | 2017-12-06 | 2.5 | < 0.17 U | < 0.24 U | < 1.2 U | 0.72 J | < 0.47 U |
| INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | 32.5 | N | N | JC51890 | 2017-09-27 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | 42.5 | N | N | JC60652 | 2018-02-12 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | 42.5 | FD | N | JC60652 | 2018-02-12 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | 40.5 | N | N | JC65066 | 2018-04-27 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | 24.5 | N | N | JC64643 | 2018-04-20 | 0.38 J | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | 27.0 | N | N | JC57820 | 2017-12-21 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | 32.0 | N | N | JC57820 | 2017-12-21 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |

# Table 5-3
# Groundwater Analytical Results - VOCs
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

AECOM

| | | | | | | | Analyte | 1,1,1-TRICHLOROETHANE | 1,1,2,2-TETRACHLOROETHANE | 1,1,2-TRICHLOROETHANE | 1,1,2-TRICHLOROTRIFLUOROETHANE | 1,1-DICHLOROETHANE | 1,1-DICHLOROETHYLENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 71-55-6 | 79-34-5 | 79-00-5 | 76-13-1 | 75-34-3 | 75-35-4 |
| | | | | | | | GWQS | 30 | 1 | 3 | 20000 | 50 | 1 |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Depth (ft bTOIC)** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | | |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | 26.5 | N | N | JC57638 | 2017-12-19 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | 31.0 | N | N | JC57501A | 2017-12-15 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | 26.5 | N | N | JC58745 | 2018-01-12 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | 31.5 | N | N | JC58745 | 2018-01-12 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | 34.6 | N | N | JC58670 | 2018-01-11 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | 22.5 | N | N | JC58073A | 2017-12-27 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | 27.5 | N | N | JC58073A | 2017-12-27 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | 32.5 | N | N | JC58028A | 2017-12-26 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | 37.5 | N | N | JC58028A | 2017-12-26 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | 22.5 | N | N | JC58942 | 2018-01-16 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | 27.5 | N | N | JC58942 | 2018-01-16 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | 32.5 | N | N | JC58942 | 2018-01-16 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | 37.5 | N | N | JC58942 | 2018-01-16 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | 33.0 | N | N | JC67069 | 2018-05-31 | < 0.50 U | < 0.34 U | < 0.48 U | < 2.5 U | < 0.41 U | < 0.95 U |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | 38.0 | N | N | JC67069 | 2018-05-31 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | 30.0 | N | N | JC65178 | 2018-04-30 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | 35.0 | N | N | JC65178 | 2018-04-30 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | 34.5 | N | N | JC64444 | 2018-04-18 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | 39.5 | N | N | JC64444 | 2018-04-18 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | 33.0 | N | N | JC64643 | 2018-04-20 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | 37.0 | N | N | JC64643 | 2018-04-20 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | 32.5 | N | N | JC58670 | 2018-01-11 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | 37.5 | N | N | JC58670 | 2018-01-11 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | 29.0 | N | N | JC67069 | 2018-05-31 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | 34.0 | N | N | JC67069 | 2018-05-31 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | 34.0 | FD | N | JC67069 | 2018-05-31 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | 28.0 | N | N | JC57276 | 2017-12-13 | 3.8 | < 0.17 U | < 0.24 U | < 1.2 U | 3.0 | **9.3** |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | 33.0 | N | N | JC57276 | 2017-12-13 | 6.5 | < 0.17 U | < 0.24 U | < 1.2 U | 10.8 | **24.4** |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | 42.0 | N | N | JC57169 | 2017-12-12 | < 2.5 U | **< 1.7 U** | < 2.4 U | < 12 U | 8.4 J | **30.4** |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | 47.0 | N | N | JC57169 | 2017-12-12 | < 6.3 U | **< 4.2 U** | **< 6.0 U** | < 31 U | 7.5 J | **26.4** |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | 28.0 | N | N | JC64571 | 2018-04-19 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | 0.74 J | **4.4** |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | 33.0 | N | N | JC64571 | 2018-04-19 | < 1.3 U | < 0.84 U | < 1.2 U | < 6.2 U | 1.8 J | **15.7** |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | 38.0 | N | N | JC64763 | 2018-04-23 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | 42.0 | N | N | JC64763 | 2018-04-23 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | 30.5 | N | N | JC64901 | 2018-04-25 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | 37.0 | N | N | JC67069 | 2018-05-31 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | 42.0 | N | N | JC67069 | 2018-05-31 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | MW7D | MW7D-41.0-20180423 | 41.0 | N | N | JC64763 | 2018-04-23 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | 0.22 J | < 0.47 U |
| INTERMEDIATE | MW7D | MW7D-45.0-20180423 | 45.0 | N | N | JC64763 | 2018-04-23 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | 0.28 J | < 0.47 U |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425 | 41.0 | N | N | JC64901 | 2018-04-25 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425X | 41.0 | FD | N | JC64901 | 2018-04-25 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| INTERMEDIATE | MW8D | MW8D-45.0-20180425 | 45.0 | N | N | JC64901 | 2018-04-25 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | 99.0 | N | N | JC65066 | 2018-04-27 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| DEEP | 114-MW20C | 114-MW20C-20180419 | 80.5 | N | N | JC64571 | 2018-04-19 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| DEEP | 114-MW25C | 114-MW25C-20180313 | 44.5 | N | N | JC62228 | 2018-03-13 | < 2.5 U | **< 1.7 U** | < 2.4 U | < 12 U | < 2.1 U | **< 4.7 U** |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | 35.0 | N | N | JC57943A | 2017-12-22 | 2.5 | < 0.17 U | < 0.24 U | < 1.2 U | 4.9 | **5.4** |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | 40.0 | N | N | JC57943A | 2017-12-22 | 3.0 | < 0.17 U | < 0.24 U | < 1.2 U | 5.5 | **6.4** |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | 45.0 | N | N | JC57820 | 2017-12-21 | 2.6 | < 0.17 U | < 0.24 U | < 1.2 U | 4.9 | **5.6** |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | 50.0 | N | N | JC57820 | 2017-12-21 | 3.1 | < 0.17 U | < 0.24 U | < 1.2 U | 5.5 | **6.7** |
| DEEP | MW8F | MW8F-20180425 | 80.5 | N | N | JC64901 | 2018-04-25 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |
| DEEP | MW-CR-3D | MW-CR-3D-20180418 | 43.5 | N | N | JC64444 | 2018-04-18 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U | < 0.47 U |

# Table 5-3
# Groundwater Analytical Results - VOCs
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

AECOM

| | | | | | | | | 1,2,3-TRICHLOROBENZENE | 1,2,4-TRICHLOROBENZENE | 1,2,4-TRIMETHYLBENZENE | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 1,2-DIBROMOETHANE(EDB) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **Analyte** | 1,2,3-TRICHLOROBENZENE | 1,2,4-TRICHLOROBENZENE | 1,2,4-TRIMETHYLBENZENE | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 1,2-DIBROMOETHANE(EDB) |
| | | | | | | | **CAS RN** | 87-61-6 | 120-82-1 | 95-63-6 | 96-12-8 | 106-93-4 |
| | | | | | | | **GWQS** | - | 9 | 100 | 0.02 | 0.03 |
| | | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Depth (ft bTOIC)** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | |
| ***Monitoring Wells*** | | | | | | | | | | | | |
| SHALLOW | 114-MW20A * | 114-MW20A-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | < 0.50 U | < 0.50 U | 17.3 | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 114-MW20A * | 114-MW20A-8.0-20180420 | 8.0 | N | N | JC64643 | 2018-04-20 | < 0.50 U | < 0.50 U | 28.5 | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | 11.5 | N | N | JC65325 | 2018-05-02 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 114-MW25A | 114-MW25A-20170926 | 11.5 | N | N | JC51824 | 2017-09-26 | < 0.50 U | 0.90 J | - | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | 12.5 | N | N | JC57565 | 2017-12-18 | < 5.0 U | **140** | - | **< 6.9 U** | **< 2.1 U** |
| SHALLOW | 114-MW27A | 114-MW27A-20170926 | 13.5 | N | N | JC51824 | 2017-09-26 | < 0.50 U | 0.72 J | - | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | 11.5 | N | N | JC57565 | 2017-12-18 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | 21.0 | N | N | JC56729A | 2017-12-06 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | 11.5 | N | N | JC56859A | 2017-12-07 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 114-MW36A | 114-MW36A-20170927 | 10.0 | N | N | JC51890 | 2017-09-27 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 114-MW36A | 114-MW36A-20170927-X | 10.0 | FD | N | JC51890 | 2017-09-27 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 114-MW37A | 114-MW37A-20170926 | 12.5 | N | N | JC51824 | 2017-09-26 | < 0.50 U | 0.72 J | - | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | 22.5 | N | N | JC56504A | 2017-12-04 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 114-MW41A | 114-MW41A-20180420 | 12.5 | N | N | JC64643 | 2018-04-20 | < 0.50 U | < 0.50 U | 3.7 | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | 11.0 | N | N | JC65178 | 2018-04-30 | < 0.50 U | < 0.50 U | 1.8 J | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | 16.0 | N | N | JC65178 | 2018-04-30 | < 0.50 U | < 0.50 U | 1.8 J | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | < 0.50 U | < 0.50 U | 33.3 | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | 17.0 | N | N | JC64643 | 2018-04-20 | < 0.50 U | < 0.50 U | 38.7 | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | 9.5 | N | N | JC51736 | 2017-09-25 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | 14.0 | N | N | JC57276 | 2017-12-13 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | 9.0 | N | N | JC57276 | 2017-12-13 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | 16.0 | N | N | JC57169 | 2017-12-12 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | 13.0 | N | N | JC64571 | 2018-04-19 | < 0.50 U | < 0.50 U | 4.1 | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | 8.0 | N | N | JC64571 | 2018-04-19 | < 0.50 U | < 0.50 U | 3.4 | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | 13.0 | N | N | JC64986 | 2018-04-26 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | 9.0 | N | N | JC64986 | 2018-04-26 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | 10.0 | N | N | JC67069 | 2018-05-31 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | 15.0 | N | N | JC67069 | 2018-05-31 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | 8.0 | N | N | JC64763 | 2018-04-23 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | 10.0 | N | N | JC64763 | 2018-04-23 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | 14.0 | N | N | JC64763 | 2018-04-23 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | 6.0 | N | N | JC64763 | 2018-04-23 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | 13.0 | N | N | JC64822 | 2018-04-24 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | 10.0 | N | N | JC65255 | 2018-05-01 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | 15.0 | N | N | JC65255 | 2018-05-01 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | MW7S | MW7S-10.0-20180430 | 10.0 | N | N | JC65178 | 2018-04-30 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | MW8S | MW8S-20180427 | 9.5 | N | N | JC65066 | 2018-04-27 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | < 0.50 U | < 0.50 U | 2.0 | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | < 0.50 U | < 0.50 U | 2.0 | **< 0.69 U** | **< 0.21 U** |
| SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | 21.0 | N | N | JC64444 | 2018-04-18 | < 0.50 U | < 0.50 U | 1.8 J | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | 39.5 | N | N | JC57752 | 2017-12-20 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | 27.5 | N | N | JC64444 | 2018-04-18 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | 47.5 | N | N | JC65255 | 2018-05-01 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | 37.5 | N | N | JC64571 | 2018-04-19 | < 10 U | **< 10 U** | **552** | **< 14 U** | **< 4.2 U** |
| INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | 33.0 | N | N | JC62130 | 2018-03-12 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | 35.5 | N | N | JC62228 | 2018-03-13 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | 35.5 | FD | N | JC62228 | 2018-03-13 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | 35.5 | N | N | JC56729A | 2017-12-06 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | 35.5 | FD | N | JC56729A | 2017-12-06 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | 32.5 | N | N | JC51890 | 2017-09-27 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | 42.5 | N | N | JC60652 | 2018-02-12 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | 42.5 | FD | N | JC60652 | 2018-02-12 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | 40.5 | N | N | JC65066 | 2018-04-27 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | 24.5 | N | N | JC64643 | 2018-04-20 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | 27.0 | N | N | JC57820 | 2017-12-21 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | 32.0 | N | N | JC57820 | 2017-12-21 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |

# Table 5-3
# Groundwater Analytical Results - VOCs
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

AECOM

| | | | | | | | Analyte | 1,2,3-TRICHLOROBENZENE | 1,2,4-TRICHLOROBENZENE | 1,2,4-TRIMETHYLBENZENE | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 1,2-DIBROMOETHANE(EDB) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 87-61-6 | 120-82-1 | 95-63-6 | 96-12-8 | 106-93-4 |
| | | | | | | | GWQS | - | 9 | 100 | 0.02 | 0.03 |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Depth (ft bTOIC)** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | 26.5 | N | N | JC57638 | 2017-12-19 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | 31.0 | N | N | JC57501A | 2017-12-15 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | 26.5 | N | N | JC58745 | 2018-01-12 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | 31.5 | N | N | JC58745 | 2018-01-12 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | 34.6 | N | N | JC58670 | 2018-01-11 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | 22.5 | N | N | JC58073A | 2017-12-27 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | 27.5 | N | N | JC58073A | 2017-12-27 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | 32.5 | N | N | JC58028A | 2017-12-26 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | 37.5 | N | N | JC58028A | 2017-12-26 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | 22.5 | N | N | JC58942 | 2018-01-16 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | 27.5 | N | N | JC58942 | 2018-01-16 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | 32.5 | N | N | JC58942 | 2018-01-16 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | 37.5 | N | N | JC58942 | 2018-01-16 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | 33.0 | N | N | JC67069 | 2018-05-31 | < 1.0 U | < 1.0 U | **173** | **< 1.4 U** | **< 0.42 U** |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | 38.0 | N | N | JC67069 | 2018-05-31 | < 0.50 U | < 0.50 U | **195** | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | 30.0 | N | N | JC65178 | 2018-04-30 | < 0.50 U | < 0.50 U | 15.5 | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | 35.0 | N | N | JC65178 | 2018-04-30 | < 0.50 U | < 0.50 U | 20.1 | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | 34.5 | N | N | JC64444 | 2018-04-18 | 1.1 | 5.0 | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | 39.5 | N | N | JC64444 | 2018-04-18 | 1.1 | 5.5 | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | 33.0 | N | N | JC64643 | 2018-04-20 | < 0.50 U | < 0.50 U | 43.4 | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | 37.0 | N | N | JC64643 | 2018-04-20 | < 0.50 U | < 0.50 U | 49.3 | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | 32.5 | N | N | JC58670 | 2018-01-11 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | 37.5 | N | N | JC58670 | 2018-01-11 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | 29.0 | N | N | JC67069 | 2018-05-31 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | 34.0 | N | N | JC67069 | 2018-05-31 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | 34.0 | FD | N | JC67069 | 2018-05-31 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | 28.0 | N | N | JC57276 | 2017-12-13 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | 33.0 | N | N | JC57276 | 2017-12-13 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | 42.0 | N | N | JC57169 | 2017-12-12 | < 5.0 U | < 5.0 U | - | **< 6.9 U** | **< 2.1 U** |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | 47.0 | N | N | JC57169 | 2017-12-12 | < 13 U | **< 13 U** | - | **< 17 U** | **< 5.3 U** |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | 28.0 | N | N | JC64571 | 2018-04-19 | < 0.50 U | < 0.50 U | 9.4 | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | 33.0 | N | N | JC64571 | 2018-04-19 | < 2.5 U | < 2.5 U | **140** | **< 3.4 U** | **< 1.1 U** |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | 38.0 | N | N | JC64763 | 2018-04-23 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | 42.0 | N | N | JC64763 | 2018-04-23 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | 30.5 | N | N | JC64901 | 2018-04-25 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | 37.0 | N | N | JC67069 | 2018-05-31 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | 42.0 | N | N | JC67069 | 2018-05-31 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | MW7D | MW7D-41.0-20180423 | 41.0 | N | N | JC64763 | 2018-04-23 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | MW7D | MW7D-45.0-20180423 | 45.0 | N | N | JC64763 | 2018-04-23 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425 | 41.0 | N | N | JC64901 | 2018-04-25 | < 0.50 U | < 0.50 U | 10.9 J | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425X | 41.0 | FD | N | JC64901 | 2018-04-25 | < 0.50 U | < 0.50 U | 15.2 J | **< 0.69 U** | **< 0.21 U** |
| INTERMEDIATE | MW8D | MW8D-45.0-20180425 | 45.0 | N | N | JC64901 | 2018-04-25 | < 0.50 U | < 0.50 U | 0.29 J | **< 0.69 U** | **< 0.21 U** |
| DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | 99.0 | N | N | JC65066 | 2018-04-27 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| DEEP | 114-MW20C | 114-MW20C-20180419 | 80.5 | N | N | JC64571 | 2018-04-19 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| DEEP | 114-MW25C | 114-MW25C-20180313 | 44.5 | N | N | JC62228 | 2018-03-13 | < 5.0 U | < 5.0 U | - | **< 6.9 U** | **< 2.1 U** |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | 35.0 | N | N | JC57943A | 2017-12-22 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | 40.0 | N | N | JC57943A | 2017-12-22 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | 45.0 | N | N | JC57820 | 2017-12-21 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | 50.0 | N | N | JC57820 | 2017-12-21 | < 0.50 U | < 0.50 U | - | **< 0.69 U** | **< 0.21 U** |
| DEEP | MW8F | MW8F-20180425 | 80.5 | N | N | JC64901 | 2018-04-25 | < 0.50 U | < 0.50 U | < 0.24 U | **< 0.69 U** | **< 0.21 U** |
| DEEP | MW-CR-3D | MW-CR-3D-20180418 | 43.5 | N | N | JC64444 | 2018-04-18 | < 0.50 U | < 0.50 U | 0.50 J | **< 0.69 U** | **< 0.21 U** |

# Table 5-3
# Groundwater Analytical Results - VOCs
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

AECOM

| | | | | | | | Analyte | 1,2-DICHLOROBENZENE | 1,2-DICHLOROETHANE | 1,2-DICHLOROPROPANE | 1,4-DICHLOROBENZENE | 2-BUTANONE (MEK) | 4-METHYL-2-PENTANONE (MIBK) | ACETONE | BENZENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 95-50-1 | 107-06-2 | 78-87-5 | 106-46-7 | 78-93-3 | 108-10-1 | 67-64-1 | 71-43-2 |
| | | | | | | | GWQS | 600 | 2 | 1 | 75 | 300 | - | 6000 | 1 |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Depth (ft bTOIC)** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | | | | |
| ***Monitoring Wells*** | | | | | | | | | | | | | | | |
| SHALLOW | 114-MW20A * | 114-MW20A-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **34.0** |
| SHALLOW | 114-MW20A * | 114-MW20A-8.0-20180420 | 8.0 | N | N | JC64643 | 2018-04-20 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **34.0** |
| SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | 11.5 | N | N | JC65325 | 2018-05-02 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **1.8** |
| SHALLOW | 114-MW25A | 114-MW25A-20170926 | 11.5 | N | N | JC51824 | 2017-09-26 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | 12.5 | N | N | JC57565 | 2017-12-18 | **650** | < 2.0 U | **< 2.4 U** | **743** | < 48 U | < 30 U | < 50 U | **24.9** |
| SHALLOW | 114-MW27A | 114-MW27A-20170926 | 13.5 | N | N | JC51824 | 2017-09-26 | 1.2 | < 0.20 U | < 0.24 U | 0.96 J | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | 11.5 | N | N | JC57565 | 2017-12-18 | 1.8 | < 0.20 U | < 0.24 U | 2.7 | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | 21.0 | N | N | JC56729A | 2017-12-06 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | 11.5 | N | N | JC56859A | 2017-12-07 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927 | 10.0 | N | N | JC51890 | 2017-09-27 | 4.4 | < 0.20 U | < 0.24 U | 16.3 | < 4.8 U | < 3.0 U | 7.1 J | 0.77 |
| SHALLOW | 114-MW36A | 114-MW36A-20170927-X | 10.0 | FD | N | JC51890 | 2017-09-27 | 4.5 | < 0.20 U | < 0.24 U | 17.0 | < 4.8 U | < 3.0 U | 6.6 J | 0.80 |
| SHALLOW | 114-MW37A | 114-MW37A-20170926 | 12.5 | N | N | JC51824 | 2017-09-26 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | 22.5 | N | N | JC56504A | 2017-12-04 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| SHALLOW | 114-MW41A | 114-MW41A-20180420 | 12.5 | N | N | JC64643 | 2018-04-20 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | 23.7 | 0.29 J |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | 11.0 | N | N | JC65178 | 2018-04-30 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.20 J |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | 16.0 | N | N | JC65178 | 2018-04-30 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.21 J |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **49.0** |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | 17.0 | N | N | JC64643 | 2018-04-20 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **48.2** |
| SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | 9.5 | N | N | JC51736 | 2017-09-25 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **6.1** |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | 14.0 | N | N | JC57276 | 2017-12-13 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **34.9** |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | 9.0 | N | N | JC57276 | 2017-12-13 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **36.0** |
| SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | 16.0 | N | N | JC57169 | 2017-12-12 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **111** |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | 13.0 | N | N | JC64571 | 2018-04-19 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **35.0** |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | 8.0 | N | N | JC64571 | 2018-04-19 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **21.6** |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | 13.0 | N | N | JC64986 | 2018-04-26 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | 9.0 | N | N | JC64986 | 2018-04-26 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | 10.0 | N | N | JC67069 | 2018-05-31 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | 57.1 | < 0.17 U |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | 15.0 | N | N | JC67069 | 2018-05-31 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.22 J |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | 8.0 | N | N | JC64763 | 2018-04-23 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | 10.0 | N | N | JC64763 | 2018-04-23 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | 14.0 | N | N | JC64763 | 2018-04-23 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **7.4** |
| SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | 6.0 | N | N | JC64763 | 2018-04-23 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | 6.3 J | < 0.17 U |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | 13.0 | N | N | JC64822 | 2018-04-24 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **2.8** |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **2.9** |
| SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.26 J |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | 10.0 | N | N | JC65255 | 2018-05-01 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | 15.0 | N | N | JC65255 | 2018-05-01 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **4.2** |
| SHALLOW | MW7S | MW7S-10.0-20180430 | 10.0 | N | N | JC65178 | 2018-04-30 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| SHALLOW | MW8S | MW8S-20180427 | 9.5 | N | N | JC65066 | 2018-04-27 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | 3.1 J | 8.1 J | **1.3** |
| SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | 3.5 J | 9.4 J | **1.4** |
| SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | 21.0 | N | N | JC64444 | 2018-04-18 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | 3.9 J | 11.9 | **1.5** |
| INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | 39.5 | N | N | JC57752 | 2017-12-20 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | 6.5 J | 3.4 J | 58.3 | 0.41 J |
| INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | 27.5 | N | N | JC64444 | 2018-04-18 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | 17.1 | 23.2 | < 0.17 U |
| INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | 47.5 | N | N | JC65255 | 2018-05-01 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | 37.5 | N | N | JC64571 | 2018-04-19 | < 10 U | **< 4.0 U** | **< 4.7 U** | < 10 U | < 95 U | < 60 U | < 100 U | **7770** |
| INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | 33.0 | N | N | JC62130 | 2018-03-12 | < 0.50 U | 1.1 | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | 35.5 | N | N | JC62228 | 2018-03-13 | < 0.50 U | **10.2** | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **3.0** |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | 35.5 | FD | N | JC62228 | 2018-03-13 | < 0.50 U | **10.5** | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **2.9** |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | 35.5 | N | N | JC56729A | 2017-12-06 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | 35.5 | FD | N | JC56729A | 2017-12-06 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | 32.5 | N | N | JC51890 | 2017-09-27 | < 0.50 U | **46.1** | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | 42.5 | N | N | JC60652 | 2018-02-12 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.23 J |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | 42.5 | FD | N | JC60652 | 2018-02-12 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.24 J |
| INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | 40.5 | N | N | JC65066 | 2018-04-27 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | 24.5 | N | N | JC64643 | 2018-04-20 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | 5.5 J | 0.29 J |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | 27.0 | N | N | JC57820 | 2017-12-21 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | 32.0 | N | N | JC57820 | 2017-12-21 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |

# Table 5-3
# Groundwater Analytical Results - VOCs
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

| | | | | | | | Analyte | 1,2-DICHLOROBENZENE | 1,2-DICHLOROETHANE | 1,2-DICHLOROPROPANE | 1,4-DICHLOROBENZENE | 2-BUTANONE (MEK) | 4-METHYL-2-PENTANONE (MIBK) | ACETONE | BENZENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 95-50-1 | 107-06-2 | 78-87-5 | 106-46-7 | 78-93-3 | 108-10-1 | 67-64-1 | 71-43-2 |
| | | | | | | | GWQS | 600 | 2 | 1 | 75 | 300 | - | 6000 | 1 |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Water-Bearing Zone | Location ID | Sample ID | Sample Depth (ft bTOIC) | Sample Type | Fraction | Lab SDG | Date Collected | | | | | | | | |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | 26.5 | N | N | JC57638 | 2017-12-19 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | 31.0 | N | N | JC57501A | 2017-12-15 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | 5.9 J | 0.26 J |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | 26.5 | N | N | JC58745 | 2018-01-12 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.17 J |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | 31.5 | N | N | JC58745 | 2018-01-12 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | 34.6 | N | N | JC58670 | 2018-01-11 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | 22.5 | N | N | JC58073A | 2017-12-27 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | 27.5 | N | N | JC58073A | 2017-12-27 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | 32.5 | N | N | JC58028A | 2017-12-26 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.19 J |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | 37.5 | N | N | JC58028A | 2017-12-26 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | 5.5 J | 0.21 J |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | 22.5 | N | N | JC58942 | 2018-01-16 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | 27.5 | N | N | JC58942 | 2018-01-16 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | 32.5 | N | N | JC58942 | 2018-01-16 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | 37.5 | N | N | JC58942 | 2018-01-16 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | 33.0 | N | N | JC67069 | 2018-05-31 | < 1.0 U | < 0.40 U | < 0.47 U | < 1.0 U | < 9.5 U | < 6.0 U | < 10 U | **12.4** |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | 38.0 | N | N | JC67069 | 2018-05-31 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **14.4** |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | 30.0 | N | N | JC65178 | 2018-04-30 | 2.1 | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **311** |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | 35.0 | N | N | JC65178 | 2018-04-30 | 2.8 | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **500** |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | 34.5 | N | N | JC64444 | 2018-04-18 | 10.6 | **14.5** | < 0.24 U | 5.3 | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | 39.5 | N | N | JC64444 | 2018-04-18 | 11.4 | **13.7** | < 0.24 U | 5.7 | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | 33.0 | N | N | JC64643 | 2018-04-20 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | 7.8 J | **85.2** |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | 37.0 | N | N | JC64643 | 2018-04-20 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **83.1** |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | 32.5 | N | N | JC58670 | 2018-01-11 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.17 J |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | 37.5 | N | N | JC58670 | 2018-01-11 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.20 J |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | 29.0 | N | N | JC67069 | 2018-05-31 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.74 |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | 34.0 | N | N | JC67069 | 2018-05-31 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.53 |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | 34.0 | FD | N | JC67069 | 2018-05-31 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.48 J |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | 28.0 | N | N | JC57276 | 2017-12-13 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | 6.0 J | **97.4** |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | 33.0 | N | N | JC57276 | 2017-12-13 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | 5.9 J | **171** |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | 42.0 | N | N | JC57169 | 2017-12-12 | < 5.0 U | < 2.0 U | **< 2.4 U** | < 5.0 U | < 48 U | < 30 U | < 50 U | **1480** |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | 47.0 | N | N | JC57169 | 2017-12-12 | < 13 U | **< 5.0 U** | **< 5.9 U** | < 13 U | < 120 U | < 75 U | < 130 U | **3110** |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | 28.0 | N | N | JC64571 | 2018-04-19 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **320** |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | 33.0 | N | N | JC64571 | 2018-04-19 | < 2.5 U | < 1.0 U | **< 1.2 U** | < 2.5 U | < 24 U | < 15 U | < 25 U | **2070** |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | 38.0 | N | N | JC64763 | 2018-04-23 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | 42.0 | N | N | JC64763 | 2018-04-23 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | 30.5 | N | N | JC64901 | 2018-04-25 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | 37.0 | N | N | JC67069 | 2018-05-31 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | 42.0 | N | N | JC67069 | 2018-05-31 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | 55.0 | < 0.17 U |
| INTERMEDIATE | MW7D | MW7D-41.0-20180423 | 41.0 | N | N | JC64763 | 2018-04-23 | 0.59 J | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **22.3** |
| INTERMEDIATE | MW7D | MW7D-45.0-20180423 | 45.0 | N | N | JC64763 | 2018-04-23 | 0.73 J | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **16.7** |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425 | 41.0 | N | N | JC64901 | 2018-04-25 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **423 J** |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425X | 41.0 | FD | N | JC64901 | 2018-04-25 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **583 J** |
| INTERMEDIATE | MW8D | MW8D-45.0-20180425 | 45.0 | N | N | JC64901 | 2018-04-25 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **9.7** |
| DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | 99.0 | N | N | JC65066 | 2018-04-27 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| DEEP | 114-MW20C | 114-MW20C-20180419 | 80.5 | N | N | JC64571 | 2018-04-19 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | **2.0** |
| DEEP | 114-MW25C | 114-MW25C-20180313 | 44.5 | N | N | JC62228 | 2018-03-13 | < 5.0 U | **73.3** | **< 2.4 U** | < 5.0 U | < 48 U | < 30 U | < 50 U | **1190** |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | 35.0 | N | N | JC57943A | 2017-12-22 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.42 J |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | 40.0 | N | N | JC57943A | 2017-12-22 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.41 J |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | 45.0 | N | N | JC57820 | 2017-12-21 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.38 J |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | 50.0 | N | N | JC57820 | 2017-12-21 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | 0.45 J |
| DEEP | MW8F | MW8F-20180425 | 80.5 | N | N | JC64901 | 2018-04-25 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |
| DEEP | MW-CR-3D | MW-CR-3D-20180418 | 43.5 | N | N | JC64444 | 2018-04-18 | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U | < 3.0 U | < 5.0 U | < 0.17 U |

# Table 5-3
# Groundwater Analytical Results - VOCs
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

AECOM

| | | | | | | | | BROMODICHLOROMETHANE | BROMOMETHANE | CARBON DISULFIDE | CARBON TETRACHLORIDE | CHLOROBENZENE | CHLOROBROMOMETHANE | CHLORODIBROMOMETHANE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **Analyte** | 75-27-4 | 74-83-9 | 75-15-0 | 56-23-5 | 108-90-7 | 74-97-5 | 124-48-1 |
| | | | | | | | **CAS RN** | 1 | 10 | 700 | 1 | 50 | - | 1 |
| | | | | | | | **GWQS** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| | | | | | | | **Units** | | | | | | | |
| **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Depth (ft bTOIC)** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | | | |
| ***Monitoring Wells*** | | | | | | | | | | | | | | |
| SHALLOW | 114-MW20A * | 114-MW20A-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | 114-MW20A * | 114-MW20A-8.0-20180420 | 8.0 | N | N | JC64643 | 2018-04-20 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | 11.5 | N | N | JC65325 | 2018-05-02 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | 0.63 J | < 0.38 U | < 0.16 U |
| SHALLOW | 114-MW25A | 114-MW25A-20170926 | 11.5 | N | N | JC51824 | 2017-09-26 | < 0.22 U | < 1.4 U | < 0.23 U | < 0.34 U | 0.33 J | < 0.38 U | < 0.16 U |
| SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | 12.5 | N | N | JC57565 | 2017-12-18 | **< 2.2 U** | **< 14 U** | < 5.0 U | **< 3.4 U** | **1520** | < 3.8 U | **< 1.6 U** |
| SHALLOW | 114-MW27A | 114-MW27A-20170926 | 13.5 | N | N | JC51824 | 2017-09-26 | < 0.22 U | < 1.4 U | < 0.23 U | < 0.34 U | 0.84 J | < 0.38 U | < 0.16 U |
| SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | 11.5 | N | N | JC57565 | 2017-12-18 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | 2.1 | < 0.38 U | < 0.16 U |
| SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | 21.0 | N | N | JC56729A | 2017-12-06 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | 11.5 | N | N | JC56859A | 2017-12-07 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927 | 10.0 | N | N | JC51890 | 2017-09-27 | < 0.22 U | < 1.4 U | 0.81 J | < 0.34 U | 13.6 | < 0.38 U | < 0.16 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927-X | 10.0 | FD | N | JC51890 | 2017-09-27 | < 0.22 U | < 1.4 U | 0.99 J | < 0.34 U | 13.8 | < 0.38 U | < 0.16 U |
| SHALLOW | 114-MW37A | 114-MW37A-20170926 | 12.5 | N | N | JC51824 | 2017-09-26 | < 0.22 U | < 1.4 U | < 0.23 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | 22.5 | N | N | JC56504A | 2017-12-04 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | 114-MW41A | 114-MW41A-20180420 | 12.5 | N | N | JC64643 | 2018-04-20 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | 11.0 | N | N | JC65178 | 2018-04-30 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | 16.0 | N | N | JC65178 | 2018-04-30 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | 17.0 | N | N | JC64643 | 2018-04-20 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | 9.5 | N | N | JC51736 | 2017-09-25 | < 0.22 U | < 1.4 U | < 0.23 U | < 0.34 U | 2.6 | < 0.38 U | < 0.16 U |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | 14.0 | N | N | JC57276 | 2017-12-13 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | 9.0 | N | N | JC57276 | 2017-12-13 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | 16.0 | N | N | JC57169 | 2017-12-12 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | 13.0 | N | N | JC64571 | 2018-04-19 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | 8.0 | N | N | JC64571 | 2018-04-19 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | 13.0 | N | N | JC64986 | 2018-04-26 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | 9.0 | N | N | JC64986 | 2018-04-26 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | 10.0 | N | N | JC67069 | 2018-05-31 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | 15.0 | N | N | JC67069 | 2018-05-31 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | 8.0 | N | N | JC64763 | 2018-04-23 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | 10.0 | N | N | JC64763 | 2018-04-23 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | 14.0 | N | N | JC64763 | 2018-04-23 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | 6.0 | N | N | JC64763 | 2018-04-23 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | 13.0 | N | N | JC64822 | 2018-04-24 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | 10.0 | N | N | JC65255 | 2018-05-01 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | 15.0 | N | N | JC65255 | 2018-05-01 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | MW7S | MW7S-10.0-20180430 | 10.0 | N | N | JC65178 | 2018-04-30 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | MW8S | MW8S-20180427 | 9.5 | N | N | JC65066 | 2018-04-27 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | < 0.22 U | < 1.4 U | 1.0 J | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | < 0.22 U | < 1.4 U | 1.2 J | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | 21.0 | N | N | JC64444 | 2018-04-18 | < 0.22 U | < 1.4 U | 1.4 J | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | 39.5 | N | N | JC57752 | 2017-12-20 | < 0.22 U | < 1.4 U | 18.2 | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | 27.5 | N | N | JC64444 | 2018-04-18 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | 47.5 | N | N | JC65255 | 2018-05-01 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | 37.5 | N | N | JC64571 | 2018-04-19 | **< 4.3 U** | **< 27 U** | < 10 U | **< 6.7 U** | < 4.8 U | < 7.7 U | **< 3.3 U** |
| INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | 33.0 | N | N | JC62130 | 2018-03-12 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | 35.5 | N | N | JC62228 | 2018-03-13 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | 0.29 J | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | 35.5 | FD | N | JC62228 | 2018-03-13 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | 0.31 J | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | 35.5 | N | N | JC56729A | 2017-12-06 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | 35.5 | FD | N | JC56729A | 2017-12-06 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | 32.5 | N | N | JC51890 | 2017-09-27 | < 0.22 U | < 1.4 U | < 0.23 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | 42.5 | N | N | JC60652 | 2018-02-12 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | 42.5 | FD | N | JC60652 | 2018-02-12 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | 40.5 | N | N | JC65066 | 2018-04-27 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | 24.5 | N | N | JC64643 | 2018-04-20 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | 27.0 | N | N | JC57820 | 2017-12-21 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | 32.0 | N | N | JC57820 | 2017-12-21 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |

# Table 5-3
# Groundwater Analytical Results - VOCs
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | **Analyte** | BROMODICHLOROMETHANE | BROMOMETHANE | CARBON DISULFIDE | CARBON TETRACHLORIDE | CHLOROBENZENE | CHLOROBROMOMETHANE | CHLORODIBROMOMETHANE |
| | | | | | | **CAS RN** | 75-27-4 | 74-83-9 | 75-15-0 | 56-23-5 | 108-90-7 | 74-97-5 | 124-48-1 |
| | | | | | | **GWQS** | 1 | 10 | 700 | 1 | 50 | - | 1 |
| | | | | | | **Units** | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Depth (ft bTOIC)** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | | | |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | 26.5 | N | N | JC57638 | 2017-12-19 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | 31.0 | N | N | JC57501A | 2017-12-15 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | 26.5 | N | N | JC58745 | 2018-01-12 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | 31.5 | N | N | JC58745 | 2018-01-12 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | 34.6 | N | N | JC58670 | 2018-01-11 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | 22.5 | N | N | JC58073A | 2017-12-27 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | 27.5 | N | N | JC58073A | 2017-12-27 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | 32.5 | N | N | JC58028A | 2017-12-26 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | 37.5 | N | N | JC58028A | 2017-12-26 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | 22.5 | N | N | JC58942 | 2018-01-16 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | 27.5 | N | N | JC58942 | 2018-01-16 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | 32.5 | N | N | JC58942 | 2018-01-16 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | 37.5 | N | N | JC58942 | 2018-01-16 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | 33.0 | N | N | JC67069 | 2018-05-31 | < 0.43 U | < 2.7 U | < 1.0 U | < 0.67 U | < 0.48 U | < 0.77 U | < 0.33 U |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | 38.0 | N | N | JC67069 | 2018-05-31 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | 30.0 | N | N | JC65178 | 2018-04-30 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | 5.1 | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | 35.0 | N | N | JC65178 | 2018-04-30 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | 7.3 | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | 34.5 | N | N | JC64444 | 2018-04-18 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | 3.7 | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | 39.5 | N | N | JC64444 | 2018-04-18 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | 3.9 | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | 33.0 | N | N | JC64643 | 2018-04-20 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | 37.0 | N | N | JC64643 | 2018-04-20 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | 32.5 | N | N | JC58670 | 2018-01-11 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | 37.5 | N | N | JC58670 | 2018-01-11 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | 29.0 | N | N | JC67069 | 2018-05-31 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | 34.0 | N | N | JC67069 | 2018-05-31 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | 34.0 | FD | N | JC67069 | 2018-05-31 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | 28.0 | N | N | JC57276 | 2017-12-13 | < 0.22 U | < 1.4 U | 1.1 J | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | 33.0 | N | N | JC57276 | 2017-12-13 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | 42.0 | N | N | JC57169 | 2017-12-12 | **< 2.2 U** | **< 14 U** | < 5.0 U | **< 3.4 U** | < 2.4 U | < 3.8 U | **< 1.6 U** |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | 47.0 | N | N | JC57169 | 2017-12-12 | **< 5.4 U** | **< 34 U** | < 13 U | **< 8.4 U** | < 6.0 U | < 9.6 U | **< 4.1 U** |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | 28.0 | N | N | JC64571 | 2018-04-19 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | 33.0 | N | N | JC64571 | 2018-04-19 | **< 1.1 U** | < 6.9 U | < 2.5 U | **< 1.7 U** | < 1.2 U | < 1.9 U | < 0.82 U |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | 38.0 | N | N | JC64763 | 2018-04-23 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | 42.0 | N | N | JC64763 | 2018-04-23 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | 30.5 | N | N | JC64901 | 2018-04-25 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | 37.0 | N | N | JC67069 | 2018-05-31 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | 42.0 | N | N | JC67069 | 2018-05-31 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | MW7D | MW7D-41.0-20180423 | 41.0 | N | N | JC64763 | 2018-04-23 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | 0.37 J | < 0.38 U | < 0.16 U |
| INTERMEDIATE | MW7D | MW7D-45.0-20180423 | 45.0 | N | N | JC64763 | 2018-04-23 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | 0.43 J | < 0.38 U | < 0.16 U |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425 | 41.0 | N | N | JC64901 | 2018-04-25 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425X | 41.0 | FD | N | JC64901 | 2018-04-25 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| INTERMEDIATE | MW8D | MW8D-45.0-20180425 | 45.0 | N | N | JC64901 | 2018-04-25 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | 99.0 | N | N | JC65066 | 2018-04-27 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| DEEP | 114-MW20C | 114-MW20C-20180419 | 80.5 | N | N | JC64571 | 2018-04-19 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| DEEP | 114-MW25C | 114-MW25C-20180313 | 44.5 | N | N | JC62228 | 2018-03-13 | **< 2.2 U** | **< 14 U** | < 5.0 U | **< 3.4 U** | < 2.4 U | < 3.8 U | **< 1.6 U** |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | 35.0 | N | N | JC57943A | 2017-12-22 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | 40.0 | N | N | JC57943A | 2017-12-22 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | 45.0 | N | N | JC57820 | 2017-12-21 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | 50.0 | N | N | JC57820 | 2017-12-21 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| DEEP | MW8F | MW8F-20180425 | 80.5 | N | N | JC64901 | 2018-04-25 | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |
| DEEP | MW-CR-3D | MW-CR-3D-20180418 | 43.5 | N | N | JC64444 | 2018-04-18 | < 0.22 U | < 1.4 U | 0.83 J | < 0.34 U | < 0.24 U | < 0.38 U | < 0.16 U |

# Table 5-3
# Groundwater Analytical Results - VOCs
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

AECOM

| | | | | | | | Analyte | CHLOROETHANE | CHLOROFORM | CHLOROMETHANE | CIS-1,2-DICHLOROETHENE | CIS-1,3-DICHLOROPROPENE | CYCLOHEXANE | DICHLORODIFLUOROMETHANE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 75-00-3 | 67-66-3 | 74-87-3 | 156-59-2 | 10061-01-5 | 110-82-7 | 75-71-8 |
| | | | | | | | GWQS | 5 | 70 | - | 70 | - | - | 1000 |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Depth (ft bTOIC)** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | | | |
| ***Monitoring Wells*** | | | | | | | | | | | | | | |
| SHALLOW | 114-MW20A * | 114-MW20A-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 114-MW20A * | 114-MW20A-8.0-20180420 | 8.0 | N | N | JC64643 | 2018-04-20 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | 11.5 | N | N | JC65325 | 2018-05-02 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 114-MW25A | 114-MW25A-20170926 | 11.5 | N | N | JC51824 | 2017-09-26 | < 0.59 U | < 0.29 U | < 0.53 U | 3.6 | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | 12.5 | N | N | JC57565 | 2017-12-18 | **< 5.9 U** | < 2.9 U | < 5.3 U | 7.4 J | < 2.5 U | < 6.3 U | < 19 U |
| SHALLOW | 114-MW27A | 114-MW27A-20170926 | 13.5 | N | N | JC51824 | 2017-09-26 | < 0.59 U | < 0.29 U | < 0.53 U | 6.5 | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | 11.5 | N | N | JC57565 | 2017-12-18 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | 21.0 | N | N | JC56729A | 2017-12-06 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | 11.5 | N | N | JC56859A | 2017-12-07 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927 | 10.0 | N | N | JC51890 | 2017-09-27 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927-X | 10.0 | FD | N | JC51890 | 2017-09-27 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 114-MW37A | 114-MW37A-20170926 | 12.5 | N | N | JC51824 | 2017-09-26 | < 0.59 U | < 0.29 U | < 0.53 U | 4.3 | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | 22.5 | N | N | JC56504A | 2017-12-04 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 114-MW41A | 114-MW41A-20180420 | 12.5 | N | N | JC64643 | 2018-04-20 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | 11.0 | N | N | JC65178 | 2018-04-30 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | 16.0 | N | N | JC65178 | 2018-04-30 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | 17.0 | N | N | JC64643 | 2018-04-20 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | 9.5 | N | N | JC51736 | 2017-09-25 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | 14.0 | N | N | JC57276 | 2017-12-13 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | 9.0 | N | N | JC57276 | 2017-12-13 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | 16.0 | N | N | JC57169 | 2017-12-12 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | 13.0 | N | N | JC64571 | 2018-04-19 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | 8.0 | N | N | JC64571 | 2018-04-19 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | 13.0 | N | N | JC64986 | 2018-04-26 | < 0.59 U | 0.40 J | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | 9.0 | N | N | JC64986 | 2018-04-26 | < 0.59 U | 0.45 J | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | 10.0 | N | N | JC67069 | 2018-05-31 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | 15.0 | N | N | JC67069 | 2018-05-31 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | 8.0 | N | N | JC64763 | 2018-04-23 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | 10.0 | N | N | JC64763 | 2018-04-23 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | 14.0 | N | N | JC64763 | 2018-04-23 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | 6.0 | N | N | JC64763 | 2018-04-23 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 0.59 U | 0.82 J | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | 13.0 | N | N | JC64822 | 2018-04-24 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | 10.0 | N | N | JC65255 | 2018-05-01 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | 15.0 | N | N | JC65255 | 2018-05-01 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | MW7S | MW7S-10.0-20180430 | 10.0 | N | N | JC65178 | 2018-04-30 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | MW8S | MW8S-20180427 | 9.5 | N | N | JC65066 | 2018-04-27 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | 21.0 | N | N | JC64444 | 2018-04-18 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | 39.5 | N | N | JC57752 | 2017-12-20 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | 27.5 | N | N | JC64444 | 2018-04-18 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | 47.5 | N | N | JC65255 | 2018-05-01 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | 37.5 | N | N | JC64571 | 2018-04-19 | **< 12 U** | < 5.7 U | < 11 U | < 10 U | < 5.0 U | < 13 U | < 37 U |
| INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | 33.0 | N | N | JC62130 | 2018-03-12 | < 0.59 U | < 0.29 U | < 0.53 U | 0.88 J | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | 35.5 | N | N | JC62228 | 2018-03-13 | < 0.59 U | 0.41 J | < 0.53 U | **169** | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | 35.5 | FD | N | JC62228 | 2018-03-13 | < 0.59 U | 0.44 J | < 0.53 U | **174** | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | 35.5 | N | N | JC56729A | 2017-12-06 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | 35.5 | FD | N | JC56729A | 2017-12-06 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | 32.5 | N | N | JC51890 | 2017-09-27 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | 42.5 | N | N | JC60652 | 2018-02-12 | < 0.59 U | 0.42 J | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | 42.5 | FD | N | JC60652 | 2018-02-12 | < 0.59 U | 0.42 J | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | 40.5 | N | N | JC65066 | 2018-04-27 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | 24.5 | N | N | JC64643 | 2018-04-20 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | 27.0 | N | N | JC57820 | 2017-12-21 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | 32.0 | N | N | JC57820 | 2017-12-21 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |

# Table 5-3
# Groundwater Analytical Results - VOCs
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

| | | | | | | | Analyte | CHLOROETHANE | CHLOROFORM | CHLOROMETHANE | CIS-1,2-DICHLOROETHENE | CIS-1,3-DICHLOROPROPENE | CYCLOHEXANE | DICHLORODIFLUOROMETHANE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 75-00-3 | 67-66-3 | 74-87-3 | 156-59-2 | 10061-01-5 | 110-82-7 | 75-71-8 |
| | | | | | | | GWQS | 5 | 70 | - | 70 | - | - | 1000 |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Water-Bearing Zone | Location ID | Sample ID | Sample Depth (ft bTOIC) | Sample Type | Fraction | Lab SDG | Date Collected | | | | | | | |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | 26.5 | N | N | JC57638 | 2017-12-19 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | 31.0 | N | N | JC57501A | 2017-12-15 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | 26.5 | N | N | JC58745 | 2018-01-12 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | 31.5 | N | N | JC58745 | 2018-01-12 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | 34.6 | N | N | JC58670 | 2018-01-11 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | 22.5 | N | N | JC58073A | 2017-12-27 | < 0.59 U | 0.71 J | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | 27.5 | N | N | JC58073A | 2017-12-27 | < 0.59 U | 0.37 J | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | 32.5 | N | N | JC58028A | 2017-12-26 | < 0.59 U | 0.43 J | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | 37.5 | N | N | JC58028A | 2017-12-26 | < 0.59 U | 0.55 J | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | 22.5 | N | N | JC58942 | 2018-01-16 | < 0.59 U | 0.88 J | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | 27.5 | N | N | JC58942 | 2018-01-16 | < 0.59 U | 1.3 | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | 32.5 | N | N | JC58942 | 2018-01-16 | < 0.59 U | 1.1 | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | 37.5 | N | N | JC58942 | 2018-01-16 | < 0.59 U | 1.1 | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | 33.0 | N | N | JC67069 | 2018-05-31 | < 1.2 U | < 0.57 U | < 1.1 U | < 1.0 U | < 0.50 U | < 1.3 U | < 3.7 U |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | 38.0 | N | N | JC67069 | 2018-05-31 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | 30.0 | N | N | JC65178 | 2018-04-30 | < 0.59 U | < 0.29 U | < 0.53 U | 1.7 | < 0.25 U | 2.8 J | < 1.9 U |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | 35.0 | N | N | JC65178 | 2018-04-30 | < 0.59 U | < 0.29 U | < 0.53 U | 2.2 | < 0.25 U | 3.1 J | < 1.9 U |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | 34.5 | N | N | JC64444 | 2018-04-18 | < 0.59 U | < 0.29 U | < 0.53 U | 2.4 | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | 39.5 | N | N | JC64444 | 2018-04-18 | < 0.59 U | < 0.29 U | < 0.53 U | 2.7 | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | 33.0 | N | N | JC64643 | 2018-04-20 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | 0.65 J | < 1.9 U |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | 37.0 | N | N | JC64643 | 2018-04-20 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | 0.66 J | < 1.9 U |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | 32.5 | N | N | JC58670 | 2018-01-11 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | 37.5 | N | N | JC58670 | 2018-01-11 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | 29.0 | N | N | JC67069 | 2018-05-31 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | 34.0 | N | N | JC67069 | 2018-05-31 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | 34.0 | FD | N | JC67069 | 2018-05-31 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | 28.0 | N | N | JC57276 | 2017-12-13 | < 0.59 U | < 0.29 U | < 0.53 U | 0.88 J | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | 33.0 | N | N | JC57276 | 2017-12-13 | < 0.59 U | < 0.29 U | < 0.53 U | 1.3 | < 0.25 U | 0.65 J | < 1.9 U |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | 42.0 | N | N | JC57169 | 2017-12-12 | **< 5.9 U** | < 2.9 U | < 5.3 U | < 5.0 U | < 2.5 U | < 6.3 U | < 19 U |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | 47.0 | N | N | JC57169 | 2017-12-12 | **< 15 U** | < 7.2 U | < 13 U | < 12 U | < 6.3 UJ | < 16 U | < 47 U |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | 28.0 | N | N | JC64571 | 2018-04-19 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | 33.0 | N | N | JC64571 | 2018-04-19 | < 3.0 U | < 1.4 U | < 2.7 U | < 2.5 U | < 1.3 U | < 3.2 U | < 9.3 U |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | 38.0 | N | N | JC64763 | 2018-04-23 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | 42.0 | N | N | JC64763 | 2018-04-23 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | 30.5 | N | N | JC64901 | 2018-04-25 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | 37.0 | N | N | JC67069 | 2018-05-31 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | 42.0 | N | N | JC67069 | 2018-05-31 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | MW7D | MW7D-41.0-20180423 | 41.0 | N | N | JC64763 | 2018-04-23 | < 0.59 U | < 0.29 U | < 0.53 U | 3.4 | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | MW7D | MW7D-45.0-20180423 | 45.0 | N | N | JC64763 | 2018-04-23 | < 0.59 U | < 0.29 U | < 0.53 U | 3.5 | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425 | 41.0 | N | N | JC64901 | 2018-04-25 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425X | 41.0 | FD | N | JC64901 | 2018-04-25 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| INTERMEDIATE | MW8D | MW8D-45.0-20180425 | 45.0 | N | N | JC64901 | 2018-04-25 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | 99.0 | N | N | JC65066 | 2018-04-27 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| DEEP | 114-MW20C | 114-MW20C-20180419 | 80.5 | N | N | JC64571 | 2018-04-19 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| DEEP | 114-MW25C | 114-MW25C-20180313 | 44.5 | N | N | JC62228 | 2018-03-13 | **< 5.9 UJ** | < 2.9 U | < 5.3 U | **100** | < 2.5 U | < 6.3 U | < 19 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | 35.0 | N | N | JC57943A | 2017-12-22 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | 40.0 | N | N | JC57943A | 2017-12-22 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | 45.0 | N | N | JC57820 | 2017-12-21 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | 50.0 | N | N | JC57820 | 2017-12-21 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| DEEP | MW8F | MW8F-20180425 | 80.5 | N | N | JC64901 | 2018-04-25 | < 0.59 U | 0.44 J | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |
| DEEP | MW-CR-3D | MW-CR-3D-20180418 | 43.5 | N | N | JC64444 | 2018-04-18 | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U | < 0.25 U | < 0.63 U | < 1.9 U |

# Table 5-3
# Groundwater Analytical Results - VOCs
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

AECOM

| | | | | | | | Analyte | DICHLOROMETHANE | ETHYLBENZENE | ISOPROPYLBENZENE | M+P-XYLENE | M-DICHLOROBENZENE | METHYL ACETATE | METHYL N-BUTYL KETONE | METHYLCYCLOHEXANE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 75-09-2 | 100-41-4 | 98-82-8 | M+P-XYLENE | 541-73-1 | 79-20-9 | 591-78-6 | 108-87-2 |
| | | | | | | | GWQS | 3 | 700 | 700 | - | 600 | 7000 | 300 | - |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Depth (ft bTOIC)** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | | | | |
| ***Monitoring Wells*** | | | | | | | | | | | | | | | |
| SHALLOW | 114-MW20A * | 114-MW20A-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | < 1.0 U | 54.5 | 6.8 | 30.5 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 114-MW20A * | 114-MW20A-8.0-20180420 | 8.0 | N | N | JC64643 | 2018-04-20 | < 1.0 U | 80.6 | 8.9 | 46.1 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | 11.5 | N | N | JC65325 | 2018-05-02 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 114-MW25A | 114-MW25A-20170926 | 11.5 | N | N | JC51824 | 2017-09-26 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | 12.5 | N | N | JC57565 | 2017-12-18 | **< 10 U** | < 2.2 U | 2.6 J | < 4.3 U | 418 | < 31 U | < 33 U | < 18 U |
| SHALLOW | 114-MW27A | 114-MW27A-20170926 | 13.5 | N | N | JC51824 | 2017-09-26 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | 11.5 | N | N | JC57565 | 2017-12-18 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | 1.4 | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | 21.0 | N | N | JC56729A | 2017-12-06 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | 11.5 | N | N | JC56859A | 2017-12-07 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927 | 10.0 | N | N | JC51890 | 2017-09-27 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | 5.0 | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927-X | 10.0 | FD | N | JC51890 | 2017-09-27 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | 5.3 | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 114-MW37A | 114-MW37A-20170926 | 12.5 | N | N | JC51824 | 2017-09-26 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | 22.5 | N | N | JC56504A | 2017-12-04 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 114-MW41A | 114-MW41A-20180420 | 12.5 | N | N | JC64643 | 2018-04-20 | < 1.0 U | 2.1 | 0.41 J | 4.2 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | 11.0 | N | N | JC65178 | 2018-04-30 | < 1.0 U | 1.9 | 0.40 J | 0.57 J | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | 16.0 | N | N | JC65178 | 2018-04-30 | < 1.0 U | 2.1 | 0.37 J | 0.57 J | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | 0.58 J | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | < 1.0 U | 395 | 10 | 432 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | 17.0 | N | N | JC64643 | 2018-04-20 | < 1.0 U | 433 | 11.2 | 482 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | 9.5 | N | N | JC51736 | 2017-09-25 | < 1.0 U | < 0.22 U | 0.43 J | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | 14.0 | N | N | JC57276 | 2017-12-13 | < 1.0 U | 1.6 | 1.6 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | 9.0 | N | N | JC57276 | 2017-12-13 | < 1.0 U | 2.8 | 1.9 | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | 16.0 | N | N | JC57169 | 2017-12-12 | < 1.0 U | 14.5 | 1.4 | 1.3 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | 13.0 | N | N | JC64571 | 2018-04-19 | < 1.0 U | 10.5 | 0.95 J | 3.0 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | 8.0 | N | N | JC64571 | 2018-04-19 | < 1.0 U | 5.9 | 0.79 J | 1.2 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | 13.0 | N | N | JC64986 | 2018-04-26 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | 9.0 | N | N | JC64986 | 2018-04-26 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | 10.0 | N | N | JC67069 | 2018-05-31 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | 15.0 | N | N | JC67069 | 2018-05-31 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | 8.0 | N | N | JC64763 | 2018-04-23 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | 10.0 | N | N | JC64763 | 2018-04-23 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | 14.0 | N | N | JC64763 | 2018-04-23 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | 6.0 | N | N | JC64763 | 2018-04-23 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | 13.0 | N | N | JC64822 | 2018-04-24 | < 1.0 U | 0.31 J | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | < 1.0 U | 0.38 J | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | 10.0 | N | N | JC65255 | 2018-05-01 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | 15.0 | N | N | JC65255 | 2018-05-01 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | MW7S | MW7S-10.0-20180430 | 10.0 | N | N | JC65178 | 2018-04-30 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | MW8S | MW8S-20180427 | 9.5 | N | N | JC65066 | 2018-04-27 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | < 1.0 U | 21.4 | < 0.25 U | 1.3 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | < 1.0 U | 20.6 | < 0.25 U | 1.3 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | 21.0 | N | N | JC64444 | 2018-04-18 | < 1.0 U | 17.2 | < 0.25 U | 1.4 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | 39.5 | N | N | JC57752 | 2017-12-20 | < 1.0 U | 1.4 | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | 27.5 | N | N | JC64444 | 2018-04-18 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | 47.5 | N | N | JC65255 | 2018-05-01 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | 37.5 | N | N | JC64571 | 2018-04-19 | **< 20 U** | **1760** | 117 | 1620 | < 10 U | < 61 U | < 65 U | < 37 U |
| INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | 33.0 | N | N | JC62130 | 2018-03-12 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | 35.5 | N | N | JC62228 | 2018-03-13 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | 35.5 | FD | N | JC62228 | 2018-03-13 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | 35.5 | N | N | JC56729A | 2017-12-06 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | 35.5 | FD | N | JC56729A | 2017-12-06 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | 32.5 | N | N | JC51890 | 2017-09-27 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | 42.5 | N | N | JC60652 | 2018-02-12 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | 42.5 | FD | N | JC60652 | 2018-02-12 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | 40.5 | N | N | JC65066 | 2018-04-27 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | 24.5 | N | N | JC64643 | 2018-04-20 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | 27.0 | N | N | JC57820 | 2017-12-21 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | 32.0 | N | N | JC57820 | 2017-12-21 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |

# Table 5-3
# Groundwater Analytical Results - VOCs
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

| | | | | | | | Analyte | DICHLOROMETHANE | ETHYLBENZENE | ISOPROPYLBENZENE | M+P-XYLENE | M-DICHLOROBENZENE | METHYL ACETATE | METHYL N-BUTYL KETONE | METHYLCYCLOHEXANE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 75-09-2 | 100-41-4 | 98-82-8 | M+P-XYLENE | 541-73-1 | 79-20-9 | 591-78-6 | 108-87-2 |
| | | | | | | | GWQS | 3 | 700 | 700 | - | 600 | 7000 | 300 | - |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Water-Bearing Zone | Location ID | Sample ID | Sample Depth (ft bTOIC) | Sample Type | Fraction | Lab SDG | Date Collected | | | | | | | | |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | 26.5 | N | N | JC57638 | 2017-12-19 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | 31.0 | N | N | JC57501A | 2017-12-15 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | 26.5 | N | N | JC58745 | 2018-01-12 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | 31.5 | N | N | JC58745 | 2018-01-12 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | 34.6 | N | N | JC58670 | 2018-01-11 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | 22.5 | N | N | JC58073A | 2017-12-27 | < 1.0 U | 0.37 J | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | 27.5 | N | N | JC58073A | 2017-12-27 | < 1.0 U | 0.41 J | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | 32.5 | N | N | JC58028A | 2017-12-26 | < 1.0 U | 0.60 J | < 0.25 U | 0.47 J | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | 37.5 | N | N | JC58028A | 2017-12-26 | < 1.0 U | 0.70 J | < 0.25 U | 0.60 J | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | 22.5 | N | N | JC58942 | 2018-01-16 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | 27.5 | N | N | JC58942 | 2018-01-16 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | 32.5 | N | N | JC58942 | 2018-01-16 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | 37.5 | N | N | JC58942 | 2018-01-16 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | 33.0 | N | N | JC67069 | 2018-05-31 | < 2.0 U | 47.4 | 4.1 | 314 | < 1.0 U | < 6.1 U | < 6.5 U | < 3.7 U |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | 38.0 | N | N | JC67069 | 2018-05-31 | < 1.0 U | 59.8 | 5.6 | 379 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | 30.0 | N | N | JC65178 | 2018-04-30 | < 1.0 U | 127 | 47.8 | 2.3 | < 0.50 U | < 3.1 U | < 3.3 U | 4.4 J |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | 35.0 | N | N | JC65178 | 2018-04-30 | < 1.0 U | 159 | 49.6 | 3.5 | 0.56 J | < 3.1 U | < 3.3 U | 4.8 J |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | 34.5 | N | N | JC64444 | 2018-04-18 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | 2.6 | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | 39.5 | N | N | JC64444 | 2018-04-18 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | 2.8 | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | 33.0 | N | N | JC64643 | 2018-04-20 | < 1.0 U | 39.9 | 13.9 | 1.2 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | 37.0 | N | N | JC64643 | 2018-04-20 | < 1.0 U | 39.1 | 14.0 | 1.0 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | 32.5 | N | N | JC58670 | 2018-01-11 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | 37.5 | N | N | JC58670 | 2018-01-11 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | 29.0 | N | N | JC67069 | 2018-05-31 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | 34.0 | N | N | JC67069 | 2018-05-31 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | 34.0 | FD | N | JC67069 | 2018-05-31 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | 28.0 | N | N | JC57276 | 2017-12-13 | < 1.0 U | 40.6 | 55.4 | 94.4 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | 33.0 | N | N | JC57276 | 2017-12-13 | < 1.0 U | 57.7 | 67.9 | 157 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | 42.0 | N | N | JC57169 | 2017-12-12 | **< 10 U** | 90.2 | 30.2 | 344 | < 5.0 U | < 31 U | < 33 U | < 18 U |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | 47.0 | N | N | JC57169 | 2017-12-12 | **< 25 U** | 85.8 | 32.5 | 424 | < 13 U | < 77 U | < 81 U | < 46 U |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | 28.0 | N | N | JC64571 | 2018-04-19 | < 1.0 U | 146 | 15.6 | 6.7 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | 33.0 | N | N | JC64571 | 2018-04-19 | **< 5.0 U** | 108 | 52.9 | 77.1 | < 2.5 U | < 15 U | < 16 U | < 9.2 U |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | 38.0 | N | N | JC64763 | 2018-04-23 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | 42.0 | N | N | JC64763 | 2018-04-23 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | 30.5 | N | N | JC64901 | 2018-04-25 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | 37.0 | N | N | JC67069 | 2018-05-31 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | 42.0 | N | N | JC67069 | 2018-05-31 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | MW7D | MW7D-41.0-20180423 | 41.0 | N | N | JC64763 | 2018-04-23 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | MW7D | MW7D-45.0-20180423 | 45.0 | N | N | JC64763 | 2018-04-23 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425 | 41.0 | N | N | JC64901 | 2018-04-25 | < 1.0 U | 21.2 J | 2.2 J | 55.9 J | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425X | 41.0 | FD | N | JC64901 | 2018-04-25 | < 1.0 U | 33.0 J | 3.2 J | 78.5 J | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| INTERMEDIATE | MW8D | MW8D-45.0-20180425 | 45.0 | N | N | JC64901 | 2018-04-25 | < 1.0 U | 0.86 J | < 0.25 U | 1.4 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | 99.0 | N | N | JC65066 | 2018-04-27 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| DEEP | 114-MW20C | 114-MW20C-20180419 | 80.5 | N | N | JC64571 | 2018-04-19 | < 1.0 U | 0.31 J | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| DEEP | 114-MW25C | 114-MW25C-20180313 | 44.5 | N | N | JC62228 | 2018-03-13 | **< 10 U** | 165 | 12.7 | 226 | < 5.0 U | < 31 U | < 33 U | < 18 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | 35.0 | N | N | JC57943A | 2017-12-22 | < 1.0 U | 0.65 J | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | 40.0 | N | N | JC57943A | 2017-12-22 | < 1.0 U | 0.66 J | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | 45.0 | N | N | JC57820 | 2017-12-21 | < 1.0 U | 0.61 J | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | 50.0 | N | N | JC57820 | 2017-12-21 | < 1.0 U | 0.70 J | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| DEEP | MW8F | MW8F-20180425 | 80.5 | N | N | JC64901 | 2018-04-25 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |
| DEEP | MW-CR-3D | MW-CR-3D-20180418 | 43.5 | N | N | JC64444 | 2018-04-18 | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U |

# Table 5-3
# Groundwater Analytical Results - VOCs
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

| | | | | | | | Analyte | METHYL-TERT-BUTYL ETHER | O-XYLENE | STYRENE (MONOMER) | TETRACHLOROETHENE | TOLUENE | TRANS-1,2-DICHLOROETHENE | TRANS-1,3-DICHLOROPROPENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 1634-04-4 | 95-47-6 | 100-42-5 | 127-18-4 | 108-88-3 | 156-60-5 | 10061-02-6 |
| | | | | | | | GWQS | 70 | - | 100 | 1 | 600 | 100 | - |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Depth (ft bTOIC)** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | | | |
| ***Monitoring Wells*** | | | | | | | | | | | | | | |
| SHALLOW | 114-MW20A * | 114-MW20A-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | < 0.25 U | 32.5 | < 0.24 U | < 0.50 U | 9.0 | < 0.40 U | < 0.22 U |
| SHALLOW | 114-MW20A * | 114-MW20A-8.0-20180420 | 8.0 | N | N | JC64643 | 2018-04-20 | < 0.25 U | 47.6 | < 0.24 U | < 0.50 U | 12.8 | < 0.40 U | < 0.22 U |
| SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | 11.5 | N | N | JC65325 | 2018-05-02 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| SHALLOW | 114-MW25A | 114-MW25A-20170926 | 11.5 | N | N | JC51824 | 2017-09-26 | 4.9 | < 0.22 U | < 0.24 U | **5.1** | < 0.25 U | < 0.40 U | < 0.22 U |
| SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | 12.5 | N | N | JC57565 | 2017-12-18 | < 2.5 U | < 2.2 U | < 2.4 U | **< 5.0 U** | < 2.5 U | < 4.0 U | < 2.2 U |
| SHALLOW | 114-MW27A | 114-MW27A-20170926 | 13.5 | N | N | JC51824 | 2017-09-26 | 5.4 | < 0.22 U | < 0.24 U | **4.6** | < 0.25 U | < 0.40 U | < 0.22 U |
| SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | 11.5 | N | N | JC57565 | 2017-12-18 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | 21.0 | N | N | JC56729A | 2017-12-06 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | 11.5 | N | N | JC56859A | 2017-12-07 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927 | 10.0 | N | N | JC51890 | 2017-09-27 | 0.41 J | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927-X | 10.0 | FD | N | JC51890 | 2017-09-27 | 0.48 J | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| SHALLOW | 114-MW37A | 114-MW37A-20170926 | 12.5 | N | N | JC51824 | 2017-09-26 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | 22.5 | N | N | JC56504A | 2017-12-04 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| SHALLOW | 114-MW41A | 114-MW41A-20180420 | 12.5 | N | N | JC64643 | 2018-04-20 | < 0.25 U | 1.6 | 0.34 J | **6.5** | 1.3 | < 0.40 U | < 0.22 U |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | 11.0 | N | N | JC65178 | 2018-04-30 | < 0.25 U | 0.40 J | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | 16.0 | N | N | JC65178 | 2018-04-30 | < 0.25 U | 0.53 J | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | < 0.25 U | 291 | < 0.24 U | < 0.50 U | 13.4 | < 0.40 U | < 0.22 U |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | 17.0 | N | N | JC64643 | 2018-04-20 | < 0.25 U | 320 | < 0.24 U | < 0.50 U | 14.4 | < 0.40 U | < 0.22 U |
| SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | 9.5 | N | N | JC51736 | 2017-09-25 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | 14.0 | N | N | JC57276 | 2017-12-13 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | 9.0 | N | N | JC57276 | 2017-12-13 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | 16.0 | N | N | JC57169 | 2017-12-12 | < 0.25 U | 7.9 | < 0.24 U | < 0.50 U | 1.1 | < 0.40 U | < 0.22 U |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | 13.0 | N | N | JC64571 | 2018-04-19 | < 0.25 U | 3.7 | < 0.24 U | < 0.50 U | 1.2 | < 0.40 U | < 0.22 U |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | 8.0 | N | N | JC64571 | 2018-04-19 | < 0.25 U | 1.5 | < 0.24 U | < 0.50 U | 0.53 J | < 0.40 U | < 0.22 U |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | 13.0 | N | N | JC64986 | 2018-04-26 | 0.69 J | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | 9.0 | N | N | JC64986 | 2018-04-26 | 0.71 J | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | 10.0 | N | N | JC67069 | 2018-05-31 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | 15.0 | N | N | JC67069 | 2018-05-31 | 2.3 | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | 8.0 | N | N | JC64763 | 2018-04-23 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | 10.0 | N | N | JC64763 | 2018-04-23 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | 14.0 | N | N | JC64763 | 2018-04-23 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | 6.0 | N | N | JC64763 | 2018-04-23 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | 13.0 | N | N | JC64822 | 2018-04-24 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | 0.54 J | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | 10.0 | N | N | JC65255 | 2018-05-01 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | 15.0 | N | N | JC65255 | 2018-05-01 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| SHALLOW | MW7S | MW7S-10.0-20180430 | 10.0 | N | N | JC65178 | 2018-04-30 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| SHALLOW | MW8S | MW8S-20180427 | 9.5 | N | N | JC65066 | 2018-04-27 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | 0.95 J | 1.5 | **132** | < 0.50 U | 5.0 | < 0.40 U | < 0.22 U |
| SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | 1.0 | 1.5 | **135** | < 0.50 U | 5.1 | < 0.40 U | < 0.22 U |
| SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | 21.0 | N | N | JC64444 | 2018-04-18 | 1.0 | 1.7 | **144** | < 0.50 U | 5.2 | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | 39.5 | N | N | JC57752 | 2017-12-20 | 0.26 J | < 0.22 U | 1.4 | < 0.50 U | 0.36 J | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | 27.5 | N | N | JC64444 | 2018-04-18 | 1.5 | < 0.22 U | < 0.24 U | **3.9** | < 0.25 U | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | 47.5 | N | N | JC65255 | 2018-05-01 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | 37.5 | N | N | JC64571 | 2018-04-19 | < 5.0 U | 1130 | < 4.8 U | **< 10 U** | **2540** | < 8.0 U | < 4.3 U |
| INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | 33.0 | N | N | JC62130 | 2018-03-12 | 2.9 | < 0.22 U | < 0.24 U | **1.4** | < 0.25 U | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | 35.5 | N | N | JC62228 | 2018-03-13 | < 0.25 U | < 0.22 U | < 0.24 U | **30.8** | < 0.25 U | 1.3 | < 0.22 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | 35.5 | FD | N | JC62228 | 2018-03-13 | < 0.25 U | < 0.22 U | < 0.24 U | **34.2** | < 0.25 U | 1.3 | < 0.22 U |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | 35.5 | N | N | JC56729A | 2017-12-06 | 0.49 J | < 0.22 U | < 0.24 U | **3.6** | < 0.25 U | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | 35.5 | FD | N | JC56729A | 2017-12-06 | 0.44 J | < 0.22 U | < 0.24 U | **3.7** | < 0.25 U | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | 32.5 | N | N | JC51890 | 2017-09-27 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | 42.5 | N | N | JC60652 | 2018-02-12 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | 42.5 | FD | N | JC60652 | 2018-02-12 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | 40.5 | N | N | JC65066 | 2018-04-27 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | 24.5 | N | N | JC64643 | 2018-04-20 | 0.31 J | < 0.22 U | < 0.24 U | 0.67 J | < 0.25 U | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | 27.0 | N | N | JC57820 | 2017-12-21 | 2.4 | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | 32.0 | N | N | JC57820 | 2017-12-21 | 2.3 | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |

# Table 5-3
# Groundwater Analytical Results - VOCs
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

AECOM

| | | | | | | | Analyte | METHYL-TERT-BUTYL ETHER | O-XYLENE | STYRENE (MONOMER) | TETRACHLOROETHENE | TOLUENE | TRANS-1,2-DICHLOROETHENE | TRANS-1,3-DICHLOROPROPENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 1634-04-4 | 95-47-6 | 100-42-5 | 127-18-4 | 108-88-3 | 156-60-5 | 10061-02-6 |
| | | | | | | | GWQS | 70 | - | 100 | 1 | 600 | 100 | - |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Depth (ft bTOIC)** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | | | |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | 26.5 | N | N | JC57638 | 2017-12-19 | 1.9 | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | 31.0 | N | N | JC57501A | 2017-12-15 | 2.5 | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | 26.5 | N | N | JC58745 | 2018-01-12 | 2.3 | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | 31.5 | N | N | JC58745 | 2018-01-12 | 1.6 | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | 34.6 | N | N | JC58670 | 2018-01-11 | 16.5 | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | 22.5 | N | N | JC58073A | 2017-12-27 | 0.41 J | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | 27.5 | N | N | JC58073A | 2017-12-27 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | 32.5 | N | N | JC58028A | 2017-12-26 | < 0.25 U | 0.36 J | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | 37.5 | N | N | JC58028A | 2017-12-26 | 0.36 J | 0.40 J | < 0.24 U | < 0.50 U | 0.29 J | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | 22.5 | N | N | JC58942 | 2018-01-16 | 0.91 J | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | 27.5 | N | N | JC58942 | 2018-01-16 | 1.3 | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | 32.5 | N | N | JC58942 | 2018-01-16 | 1.4 | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | 37.5 | N | N | JC58942 | 2018-01-16 | 1.5 | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | 33.0 | N | N | JC67069 | 2018-05-31 | < 0.50 U | 187 | **198** | < 1.0 U | 63.6 | < 0.80 U | < 0.43 U |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | 38.0 | N | N | JC67069 | 2018-05-31 | < 0.25 U | 220 | **231** | < 0.50 U | 75.7 | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | 30.0 | N | N | JC65178 | 2018-04-30 | 2.7 | 6.9 | < 0.24 U | < 0.50 U | 2.8 | 0.48 J | < 0.22 U |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | 35.0 | N | N | JC65178 | 2018-04-30 | 3.4 | 11.7 | < 0.24 U | < 0.50 U | 3.9 | 0.51 J | < 0.22 U |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | 34.5 | N | N | JC64444 | 2018-04-18 | < 0.25 U | < 0.22 U | < 0.24 U | 0.74 J | < 0.25 U | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | 39.5 | N | N | JC64444 | 2018-04-18 | < 0.25 U | < 0.22 U | < 0.24 U | 0.70 J | < 0.25 U | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | 33.0 | N | N | JC64643 | 2018-04-20 | < 0.25 U | 3.7 | < 0.24 U | < 0.50 U | 3.7 | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | 37.0 | N | N | JC64643 | 2018-04-20 | < 0.25 U | 3.5 | < 0.24 U | < 0.50 U | 3.4 | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | 32.5 | N | N | JC58670 | 2018-01-11 | 5.2 | < 0.22 U | < 0.24 U | 0.70 J | < 0.25 U | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | 37.5 | N | N | JC58670 | 2018-01-11 | 7.3 | < 0.22 U | < 0.24 U | 0.78 J | < 0.25 U | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | 29.0 | N | N | JC67069 | 2018-05-31 | 1.1 | < 0.22 U | < 0.24 U | 1.0 | < 0.25 U | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | 34.0 | N | N | JC67069 | 2018-05-31 | 0.90 J | < 0.22 U | < 0.24 U | 0.82 J | < 0.25 U | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | 34.0 | FD | N | JC67069 | 2018-05-31 | 0.84 J | < 0.22 U | < 0.24 U | 0.82 J | < 0.25 U | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | 28.0 | N | N | JC57276 | 2017-12-13 | 6.3 | 221 | < 0.24 U | < 0.50 U | 34.6 | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | 33.0 | N | N | JC57276 | 2017-12-13 | 7.5 | 286 | < 0.24 U | < 0.50 U | 41.2 | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | 42.0 | N | N | JC57169 | 2017-12-12 | < 2.5 U | 283 | < 2.4 U | **< 5.0 U** | 35.3 | < 4.0 U | < 2.2 U |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | 47.0 | N | N | JC57169 | 2017-12-12 | < 6.3 U | 388 | < 6.1 U | **< 13 U** | 43.5 | < 10 U | < 5.4 U |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | 28.0 | N | N | JC64571 | 2018-04-19 | < 0.25 U | 11.5 | < 0.24 U | < 0.50 U | 3.4 | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | 33.0 | N | N | JC64571 | 2018-04-19 | < 1.3 U | 95.3 | < 1.2 U | **< 2.5 U** | 22.0 | < 2.0 U | < 1.1 U |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | 38.0 | N | N | JC64763 | 2018-04-23 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | 42.0 | N | N | JC64763 | 2018-04-23 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | 30.5 | N | N | JC64901 | 2018-04-25 | 2.9 | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | 37.0 | N | N | JC67069 | 2018-05-31 | 2.3 | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | 42.0 | N | N | JC67069 | 2018-05-31 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| INTERMEDIATE | MW7D | MW7D-41.0-20180423 | 41.0 | N | N | JC64763 | 2018-04-23 | 8.0 | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | 1.9 | < 0.22 U |
| INTERMEDIATE | MW7D | MW7D-45.0-20180423 | 45.0 | N | N | JC64763 | 2018-04-23 | 8.4 | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | 2.3 | < 0.22 U |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425 | 41.0 | N | N | JC64901 | 2018-04-25 | < 0.25 U | 26.7 J | < 0.24 U | < 0.50 U | 4.2 J | < 0.40 U | < 0.22 U |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425X | 41.0 | FD | N | JC64901 | 2018-04-25 | < 0.25 U | 37.2 J | < 0.24 U | < 0.50 U | 6.3 J | < 0.40 U | < 0.22 U |
| INTERMEDIATE | MW8D | MW8D-45.0-20180425 | 45.0 | N | N | JC64901 | 2018-04-25 | < 0.25 U | 0.64 J | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | 99.0 | N | N | JC65066 | 2018-04-27 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| DEEP | 114-MW20C | 114-MW20C-20180419 | 80.5 | N | N | JC64571 | 2018-04-19 | < 0.25 U | 0.52 J | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| DEEP | 114-MW25C | 114-MW25C-20180313 | 44.5 | N | N | JC62228 | 2018-03-13 | < 2.5 U | 159 J- | 80.9 | **41.5** | 153 | 5.8 J | < 2.2 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | 35.0 | N | N | JC57943A | 2017-12-22 | 3.7 | 0.49 J | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | 40.0 | N | N | JC57943A | 2017-12-22 | 3.4 | 0.52 J | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | 45.0 | N | N | JC57820 | 2017-12-21 | 3.3 | 0.53 J | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | 50.0 | N | N | JC57820 | 2017-12-21 | 3.3 | 0.57 J | < 0.24 U | < 0.50 U | 0.26 J | < 0.40 U | < 0.22 U |
| DEEP | MW8F | MW8F-20180425 | 80.5 | N | N | JC64901 | 2018-04-25 | < 0.25 U | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |
| DEEP | MW-CR-3D | MW-CR-3D-20180418 | 43.5 | N | N | JC64444 | 2018-04-18 | 0.82 J | < 0.22 U | < 0.24 U | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U |

# Table 5-3
# Groundwater Analytical Results - VOCs
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

| | | | | | | | Analyte | TRIBROMOMETHANE | TRICHLOROETHYLENE | TRICHLOROFLUOROMETHANE | VINYL CHLORIDE | XYLENES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 75-25-2 | 79-01-6 | 75-69-4 | 75-01-4 | 1330-20-7 |
| | | | | | | | GWQS | 4 | 1 | 2000 | 1 | 1000 |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Depth (ft bTOIC)** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | |
| ***Monitoring Wells*** | | | | | | | | | | | | |
| SHALLOW | 114-MW20A * | 114-MW20A-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | 63.0 |
| SHALLOW | 114-MW20A * | 114-MW20A-8.0-20180420 | 8.0 | N | N | JC64643 | 2018-04-20 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | 93.7 |
| SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | 11.5 | N | N | JC65325 | 2018-05-02 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| SHALLOW | 114-MW25A | 114-MW25A-20170926 | 11.5 | N | N | JC51824 | 2017-09-26 | < 0.42 U | **2.6** | < 0.60 U | < 0.62 U | < 0.22 U |
| SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | 12.5 | N | N | JC57565 | 2017-12-18 | **< 4.2 U** | **< 2.7 U** | < 6.0 U | **< 6.2 U** | < 2.2 U |
| SHALLOW | 114-MW27A | 114-MW27A-20170926 | 13.5 | N | N | JC51824 | 2017-09-26 | < 0.42 U | **2.4** | < 0.60 U | < 0.62 U | < 0.22 U |
| SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | 11.5 | N | N | JC57565 | 2017-12-18 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | 21.0 | N | N | JC56729A | 2017-12-06 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | 11.5 | N | N | JC56859A | 2017-12-07 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927 | 10.0 | N | N | JC51890 | 2017-09-27 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927-X | 10.0 | FD | N | JC51890 | 2017-09-27 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| SHALLOW | 114-MW37A | 114-MW37A-20170926 | 12.5 | N | N | JC51824 | 2017-09-26 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | 22.5 | N | N | JC56504A | 2017-12-04 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| SHALLOW | 114-MW41A | 114-MW41A-20180420 | 12.5 | N | N | JC64643 | 2018-04-20 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | 5.8 |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | 11.0 | N | N | JC65178 | 2018-04-30 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | 0.98 J |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | 16.0 | N | N | JC65178 | 2018-04-30 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | 1.1 |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | 723 |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | 17.0 | N | N | JC64643 | 2018-04-20 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | 802 |
| SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | 9.5 | N | N | JC51736 | 2017-09-25 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | 14.0 | N | N | JC57276 | 2017-12-13 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | 9.0 | N | N | JC57276 | 2017-12-13 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | 16.0 | N | N | JC57169 | 2017-12-12 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | 9.2 |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | 13.0 | N | N | JC64571 | 2018-04-19 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | 6.7 |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | 8.0 | N | N | JC64571 | 2018-04-19 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | 2.7 |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | 13.0 | N | N | JC64986 | 2018-04-26 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | 9.0 | N | N | JC64986 | 2018-04-26 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | 10.0 | N | N | JC67069 | 2018-05-31 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | 15.0 | N | N | JC67069 | 2018-05-31 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | 8.0 | N | N | JC64763 | 2018-04-23 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | 10.0 | N | N | JC64763 | 2018-04-23 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | 14.0 | N | N | JC64763 | 2018-04-23 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | 6.0 | N | N | JC64763 | 2018-04-23 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | 13.0 | N | N | JC64822 | 2018-04-24 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | 10.0 | N | N | JC65255 | 2018-05-01 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | 15.0 | N | N | JC65255 | 2018-05-01 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| SHALLOW | MW7S | MW7S-10.0-20180430 | 10.0 | N | N | JC65178 | 2018-04-30 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| SHALLOW | MW8S | MW8S-20180427 | 9.5 | N | N | JC65066 | 2018-04-27 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | < 0.42 U | 0.38 J | < 0.60 U | < 0.62 U | 2.8 |
| SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | < 0.42 U | 0.42 J | < 0.60 U | < 0.62 U | 2.8 |
| SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | 21.0 | N | N | JC64444 | 2018-04-18 | < 0.42 U | 0.54 J | < 0.60 U | < 0.62 U | 3.1 |
| INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | 39.5 | N | N | JC57752 | 2017-12-20 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | 27.5 | N | N | JC64444 | 2018-04-18 | < 0.42 U | 0.75 J | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | 47.5 | N | N | JC65255 | 2018-05-01 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | 37.5 | N | N | JC64571 | 2018-04-19 | **< 8.5 U** | **< 5.3 U** | < 12 U | **< 12 U** | **2750** |
| INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | 33.0 | N | N | JC62130 | 2018-03-12 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | 35.5 | N | N | JC62228 | 2018-03-13 | < 0.42 U | **19.5** | < 0.60 U | **2.2** | < 0.22 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | 35.5 | FD | N | JC62228 | 2018-03-13 | < 0.42 U | **20.0** | < 0.60 U | **2.2** | < 0.22 U |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | 35.5 | N | N | JC56729A | 2017-12-06 | < 0.42 U | 0.57 J | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | 35.5 | FD | N | JC56729A | 2017-12-06 | < 0.42 U | 0.62 J | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | 32.5 | N | N | JC51890 | 2017-09-27 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | 42.5 | N | N | JC60652 | 2018-02-12 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | 42.5 | FD | N | JC60652 | 2018-02-12 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | 40.5 | N | N | JC65066 | 2018-04-27 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | 24.5 | N | N | JC64643 | 2018-04-20 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | 27.0 | N | N | JC57820 | 2017-12-21 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | 32.0 | N | N | JC57820 | 2017-12-21 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |

# Table 5-3
# Groundwater Analytical Results - VOCs
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

| | | | | | | | Analyte | TRIBROMOMETHANE | TRICHLOROETHYLENE | TRICHLOROFLUOROMETHANE | VINYL CHLORIDE | XYLENES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 75-25-2 | 79-01-6 | 75-69-4 | 75-01-4 | 1330-20-7 |
| | | | | | | | GWQS | 4 | 1 | 2000 | 1 | 1000 |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Depth (ft bTOIC)** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | 26.5 | N | N | JC57638 | 2017-12-19 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | 31.0 | N | N | JC57501A | 2017-12-15 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | 26.5 | N | N | JC58745 | 2018-01-12 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | 31.5 | N | N | JC58745 | 2018-01-12 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | 34.6 | N | N | JC58670 | 2018-01-11 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | 22.5 | N | N | JC58073A | 2017-12-27 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | 0.54 J |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | 27.5 | N | N | JC58073A | 2017-12-27 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | 32.5 | N | N | JC58028A | 2017-12-26 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | 0.83 J |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | 37.5 | N | N | JC58028A | 2017-12-26 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | 1.0 |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | 22.5 | N | N | JC58942 | 2018-01-16 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | 27.5 | N | N | JC58942 | 2018-01-16 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | 32.5 | N | N | JC58942 | 2018-01-16 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | 37.5 | N | N | JC58942 | 2018-01-16 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | 33.0 | N | N | JC67069 | 2018-05-31 | < 0.85 U | < 0.53 U | < 1.2 U | **< 1.2 U** | 501 |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | 38.0 | N | N | JC67069 | 2018-05-31 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | 599 |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | 30.0 | N | N | JC65178 | 2018-04-30 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | 9.2 |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | 35.0 | N | N | JC65178 | 2018-04-30 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | 15.2 |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | 34.5 | N | N | JC64444 | 2018-04-18 | < 0.42 U | **3.4** | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | 39.5 | N | N | JC64444 | 2018-04-18 | < 0.42 U | **3.3** | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | 33.0 | N | N | JC64643 | 2018-04-20 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | 4.9 |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | 37.0 | N | N | JC64643 | 2018-04-20 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | 4.5 |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | 32.5 | N | N | JC58670 | 2018-01-11 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | 37.5 | N | N | JC58670 | 2018-01-11 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | 29.0 | N | N | JC67069 | 2018-05-31 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | 34.0 | N | N | JC67069 | 2018-05-31 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | 34.0 | FD | N | JC67069 | 2018-05-31 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | 28.0 | N | N | JC57276 | 2017-12-13 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | 315 |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | 33.0 | N | N | JC57276 | 2017-12-13 | < 0.42 U | 0.28 J | < 0.60 U | < 0.62 U | 443 |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | 42.0 | N | N | JC57169 | 2017-12-12 | **< 4.2 U** | **< 2.7 U** | < 6.0 U | **< 6.2 U** | 627 |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | 47.0 | N | N | JC57169 | 2017-12-12 | **< 11 U** | **< 6.7 U** | < 15 U | **< 16 U** | 812 |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | 28.0 | N | N | JC64571 | 2018-04-19 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | 18.2 |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | 33.0 | N | N | JC64571 | 2018-04-19 | < 2.1 U | **< 1.3 U** | < 3.0 U | **< 3.1 U** | 172 |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | 38.0 | N | N | JC64763 | 2018-04-23 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | 42.0 | N | N | JC64763 | 2018-04-23 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | 30.5 | N | N | JC64901 | 2018-04-25 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | 37.0 | N | N | JC67069 | 2018-05-31 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | 42.0 | N | N | JC67069 | 2018-05-31 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | MW7D | MW7D-41.0-20180423 | 41.0 | N | N | JC64763 | 2018-04-23 | < 0.42 U | **2.4** | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | MW7D | MW7D-45.0-20180423 | 45.0 | N | N | JC64763 | 2018-04-23 | < 0.42 U | **2.5** | < 0.60 U | < 0.62 U | < 0.22 U |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425 | 41.0 | N | N | JC64901 | 2018-04-25 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | 82.6 J |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425X | 41.0 | FD | N | JC64901 | 2018-04-25 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | 116 J |
| INTERMEDIATE | MW8D | MW8D-45.0-20180425 | 45.0 | N | N | JC64901 | 2018-04-25 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | 2.0 |
| DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | 99.0 | N | N | JC65066 | 2018-04-27 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| DEEP | 114-MW20C | 114-MW20C-20180419 | 80.5 | N | N | JC64571 | 2018-04-19 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | 0.52 J |
| DEEP | 114-MW25C | 114-MW25C-20180313 | 44.5 | N | N | JC62228 | 2018-03-13 | **< 4.2 U** | **21.7** | < 6.0 U | **< 6.2 U** | 385 |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | 35.0 | N | N | JC57943A | 2017-12-22 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | 0.49 J |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | 40.0 | N | N | JC57943A | 2017-12-22 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | 0.52 J |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | 45.0 | N | N | JC57820 | 2017-12-21 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | 0.53 J |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | 50.0 | N | N | JC57820 | 2017-12-21 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | 0.57 J |
| DEEP | MW8F | MW8F-20180425 | 80.5 | N | N | JC64901 | 2018-04-25 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |
| DEEP | MW-CR-3D | MW-CR-3D-20180418 | 43.5 | N | N | JC64444 | 2018-04-18 | < 0.42 U | < 0.27 U | < 0.60 U | < 0.62 U | < 0.22 U |

# Table 5-3
# Groundwater Analytical Results - VOCs
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

**NOTES:**

1. The reporting convention for non-detects in environmental analytical chemistry is that non-detects be reported as less than the RL. Outputs from the database default to reporting non-detects as less than the MDL.

2. Results may be reporting as less than the MDL or RL, but above the associated regulatory standard when dilution is required due to the presence of a significant quantity of a target or non-target analyte, or an interference from a target or non-target analyte. The presence of other substances, or combinations of other substances in a sample can impact whether an analytical method can be used to achieve the lowest possible RL.

3. **Bold** - Indicates an exceedance of the NJDEP's GWQS.

4. A "-" indicates that the sample was not tested for the analyte.

5. * - This well was sampled prior to soil remediation in this area, and was subsequently decommissioned.

**ABBREVIATIONS:**

bTOIC - below top of inner casing
CAS RN - Chemical Abstracts Service Registry Number
Fraction:
    N - total/unfiltered
ft - feet
GWQS - Groundwater Quality Standard
MDL - method detection limit
N/A - not applicable
NJDEP - New Jersey Department of Environmental Protection
RL - reporting limit
Sample Types:
    N - normal environmental sample
    FD - field duplicate sample
SDG - sample delivery group
ug/L - micrograms per liter
VOC - volatile organic compound

**QUALIFIERS:**

J - Indicates the result was an estimated value; the associated numerical value was an approximate concentration of the analyte in the sample. J+ or J - is used when the direction of bias can be determined.

U - Indicates the analyte was not detected in the sample above the sample RL.
UJ - Indicates the analyte was not detected above the RL and the RL was approximate.

**Table 5-4**
**Groundwater Analytical Results - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | Analyte | 1,2,4,5-TETRACHLOROBENZENE | 1,4-DIOXANE | 1-1'-BIPHENYL | 2,2'-OXYBIS(1-CHLOROPROPANE) | 2,3,4,6-TETRACHLOROPHENOL | 2,4,5-TRICHLOROPHENOL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 95-94-3 | 123-91-1 | 92-52-4 | 108-60-1 | 58-90-2 | 95-95-4 |
| | | | | | | | GWQS | - | 0.4 | 400 | - | 200 | 700 |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Water-Bearing Zone | Location ID | Sample ID | Sample Depth (ft bTOIC) | Sample Type | Fraction | Lab SDG | Date Collected | | | | | | |
| ***Monitoring Wells*** | | | | | | | | | | | | | |
| SHALLOW | 114-MW20A * | 114-MW20A-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | < 0.36 U | < 0.048 U | 0.49 J | < 0.40 U | < 1.4 U | < 1.3 U |
| SHALLOW | 114-MW20A * | 114-MW20A-8.0-20180420 | 8.0 | N | N | JC64643 | 2018-04-20 | < 0.37 U | < 0.049 U | 0.97 J | < 0.41 U | < 1.5 U | < 1.3 U |
| SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | 11.5 | N | N | JC65325 | 2018-05-02 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| SHALLOW | 114-MW25A | 114-MW25A-20170927 | 11.5 | N | N | JC51824 | 2017-09-27 | < 0.37 U | < 0.049 U | 0.41 J | < 0.40 U | < 1.5 U | < 1.3 U |
| SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | 12.5 | N | N | JC57565 | 2017-12-18 | < 0.39 U | < 0.051 U | < 0.22 U | < 0.42 U | < 1.5 U | < 1.4 U |
| SHALLOW | 114-MW27A | 114-MW27A-20170926 | 13.5 | N | N | JC51824 | 2017-09-26 | < 0.40 U | < 0.053 U | < 0.23 U | < 0.44 U | < 1.6 U | < 1.4 U |
| SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | 11.5 | N | N | JC57565 | 2017-12-18 | < 0.41 U | < 0.054 U | < 0.24 U | < 0.45 U | < 1.6 U | < 1.5 U |
| SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | 21.0 | N | N | JC56729A | 2017-12-06 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | 11.5 | N | N | JC56859A | 2017-12-07 | < 0.35 U | < 0.046 U | < 0.20 U | < 0.38 U | < 1.4 U | < 1.3 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927 | 10.0 | N | N | JC51890 | 2017-09-27 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927-X | 10.0 | FD | N | JC51890 | 2017-09-27 | < 0.39 U | < 0.051 U | < 0.22 U | < 0.42 U | < 1.5 U | < 1.4 U |
| SHALLOW | 114-MW37A | 114-MW37A-20170926 | 12.5 | N | N | JC51824 | 2017-09-26 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | 22.5 | N | N | JC56504A | 2017-12-04 | < 0.41 U | < 0.054 U | < 0.24 U | < 0.45 U | < 1.6 U | < 1.5 U |
| SHALLOW | 114-MW41A | 114-MW41A-20180420 | 12.5 | N | N | JC64643 | 2018-04-20 | < 0.37 U | < 0.049 U | 12.5 | < 0.40 U | < 1.5 U | < 1.3 U |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | 11.0 | N | N | JC65178 | 2018-04-30 | < 0.37 U | < 0.049 U | 1.2 | < 0.40 U | < 1.5 U | < 1.3 U |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | 16.0 | N | N | JC65178 | 2018-04-30 | < 0.41 U | < 0.053 U | 0.91 J | < 0.44 U | < 1.6 U | < 1.5 U |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | < 0.35 U | < 0.046 U | < 0.20 U | < 0.38 U | < 1.4 U | < 1.3 U |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | 17.0 | N | N | JC64643 | 2018-04-20 | < 0.35 U | < 0.046 U | < 0.20 U | < 0.38 U | < 1.4 U | < 1.3 U |
| SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | 9.5 | N | N | JC51736 | 2017-09-25 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | 14.0 | N | N | JC57276 | 2017-12-13 | < 0.38 U | < 0.050 U | 0.49 J | < 0.41 U | < 1.5 U | < 1.4 U |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | 9.0 | N | N | JC57276 | 2017-12-13 | < 0.37 U | < 0.049 U | 0.88 J | < 0.40 U | < 1.5 U | < 1.3 U |
| SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | 16.0 | N | N | JC57169 | 2017-12-12 | < 0.38 U | < 0.050 U | 8.5 | < 0.41 U | < 1.5 U | < 1.4 U |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | 13.0 | N | N | JC64571 | 2018-04-19 | < 0.41 U | 0.0685 J | 1.6 | < 0.45 U | < 1.6 U | < 1.5 U |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | 8.0 | N | N | JC64571 | 2018-04-19 | < 0.37 U | < 0.049 U | 1.3 | < 0.41 U | < 1.5 U | < 1.3 U |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | 13.0 | N | N | JC64986 | 2018-04-26 | < 0.39 U | < 0.052 U | < 0.23 U | < 0.43 U | < 1.6 U | < 1.4 U |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | 9.0 | N | N | JC64986 | 2018-04-26 | < 0.40 U | 0.101 J | < 0.23 U | < 0.43 U | < 1.6 U | < 1.4 U |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | 10.0 | N | N | JC67069 | 2018-05-31 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | R | R |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | 15.0 | N | N | JC67069 | 2018-05-31 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | R | R |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | 8.0 | N | N | JC64763 | 2018-04-23 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | 10.0 | N | N | JC64763 | 2018-04-23 | < 0.37 U | 0.136 | < 0.21 U | < 0.41 U | < 1.5 U | < 1.3 U |
| SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | 14.0 | N | N | JC64763 | 2018-04-23 | < 0.37 U | 0.0985 J | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | 6.0 | N | N | JC64763 | 2018-04-23 | < 0.36 U | 0.0821 J | < 0.21 U | < 0.40 U | < 1.4 U | < 1.3 U |
| SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | 13.0 | N | N | JC64822 | 2018-04-24 | < 0.37 U | 0.394 | < 0.21 U | < 0.40 U | < 1.4 U | < 1.3 U |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | < 0.37 U | 0.232 JB | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | < 0.38 U | < 0.050 U | < 0.22 U | < 0.41 U | < 1.5 U | < 1.4 U |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | 10.0 | N | N | JC65255 | 2018-05-01 | < 0.37 U | < 0.110 UB | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | 15.0 | N | N | JC65255 | 2018-05-01 | < 0.37 U | < 0.222 UB | < 0.21 U | < 0.41 U | < 1.5 U | < 1.3 U |
| SHALLOW | MW7S | MW7S-10.0-20180430 | 10.0 | N | N | JC65178 | 2018-04-30 | < 0.38 U | < 0.050 U | < 0.22 U | < 0.41 U | < 1.5 U | < 1.4 U |
| SHALLOW | MW8S | MW8S-20180427 | 9.5 | N | N | JC65066 | 2018-04-27 | < 0.40 U | < 0.053 U | < 0.23 U | < 0.44 U | < 1.6 U | < 1.4 U |
| SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | < 0.37 U | 0.316 | 0.36 J | < 0.40 U | < 1.5 U | < 1.3 U |
| SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | < 0.37 U | 0.255 | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | 21.0 | N | N | JC64444 | 2018-04-18 | < 0.39 U | 0.333 | < 0.22 U | < 0.42 U | < 1.5 U | < 1.4 U |
| INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | 39.5 | N | N | JC57752 | 2017-12-20 | < 0.39 U | **4.17** | < 0.22 U | < 0.42 U | < 1.5 U | < 1.4 U |
| INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | 27.5 | N | N | JC64444 | 2018-04-18 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | 47.5 | N | N | JC65255 | 2018-05-01 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | 37.5 | N | N | JC64571 | 2018-04-19 | < 0.38 U | 0.225 | 36.4 | < 0.41 U | < 1.5 U | < 1.4 U |
| INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | 33.0 | N | N | JC62130 | 2018-03-12 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | 35.5 | N | N | JC62228 | 2018-03-13 | < 0.37 U | **8.1** | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | 35.5 | FD | N | JC62228 | 2018-03-13 | < 0.37 U | **7.6** | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | 35.5 | N | N | JC56729A | 2017-12-06 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | 35.5 | FD | N | JC56729A | 2017-12-06 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | 32.5 | N | N | JC51890 | 2017-09-27 | < 0.39 U | < 0.051 U | < 0.22 U | < 0.42 U | < 1.5 U | < 1.4 U |
| INTERMEDIATE | 114-MW37B | 114-MW37B-20170926 | 32.5 | N | N | JC51824 | 2017-09-26 | < 0.39 U | **12.6 J** | < 0.22 U | < 0.42 U | < 1.5 U | < 1.4 U |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | 42.5 | N | N | JC60652 | 2018-02-12 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | 42.5 | FD | N | JC60652 | 2018-02-12 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | 40.5 | N | N | JC65066 | 2018-04-27 | < 0.38 U | < 0.050 U | < 0.22 U | < 0.42 U | < 1.5 U | < 1.4 U |
| INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | 24.5 | N | N | JC64643 | 2018-04-20 | < 0.37 U | < 0.047 U | 1.9 | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | 27.0 | N | N | JC57820 | 2017-12-21 | < 0.39 U | < 0.051 U | < 0.22 U | < 0.42 U | < 1.5 U | < 1.4 U |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | 32.0 | N | N | JC57820 | 2017-12-21 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | 26.5 | N | N | JC57638 | 2017-12-19 | < 0.41 U | 0.170 | < 0.24 U | < 0.45 U | < 1.6 U | < 1.5 U |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | 31.0 | N | N | JC57501A | 2017-12-15 | < 0.37 U | < 0.182 UB | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | 26.5 | N | N | JC58745 | 2018-01-12 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | 31.5 | N | N | JC58745 | 2018-01-12 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |

# Table 5-4
## Groundwater Analytical Results - SVOCs
## Groundwater Remedial Investigation Report
## Garfield Avenue Group of Sites
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| | | | | | | | Analyte | 1,2,4,5-TETRACHLOROBENZENE | 1,4-DIOXANE | 1-1'-BIPHENYL | 2,2'-OXYBIS(1-CHLOROPROPANE) | 2,3,4,6-TETRACHLOROPHENOL | 2,4,5-TRICHLOROPHENOL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 95-94-3 | 123-91-1 | 92-52-4 | 108-60-1 | 58-90-2 | 95-95-4 |
| | | | | | | | GWQS | - | 0.4 | 400 | - | 200 | 700 |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Depth (ft bTOIC)** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | | |
| INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | 34.6 | N | N | JC58670 | 2018-01-11 | < 0.37 U | 0.228 | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | 22.5 | N | N | JC58073A | 2017-12-27 | < 0.37 U | < 0.199 UB | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | 27.5 | N | N | JC58073A | 2017-12-27 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | 32.5 | N | N | JC58028A | 2017-12-26 | < 0.37 U | < 0.049 U | 0.56 J | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | 37.5 | N | N | JC58028A | 2017-12-26 | < 0.37 U | < 0.049 U | 0.53 J | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | 22.5 | N | N | JC58942 | 2018-01-16 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | 27.5 | N | N | JC58942 | 2018-01-16 | < 0.37 U | 0.152 J | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | 32.5 | N | N | JC58942 | 2018-01-16 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | 37.5 | N | N | JC58942 | 2018-01-16 | < 0.37 U | 0.164 J | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | 33.0 | N | N | JC67069 | 2018-05-31 | < 0.37 U | 0.0558 J | 3.3 | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | 38.0 | N | N | JC67069 | 2018-05-31 | < 0.37 U | 0.0846 J | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | 30.0 | N | N | JC65178 | 2018-04-30 | < 0.37 U | 0.0665 J | 4.4 | < 0.41 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | 35.0 | N | N | JC65178 | 2018-04-30 | < 0.37 U | 0.0696 J | 2.8 | < 0.41 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | 34.5 | N | N | JC64444 | 2018-04-18 | < 0.37 U | 0.289 | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | 39.5 | N | N | JC64444 | 2018-04-18 | < 0.38 U | **0.445** | < 0.22 U | < 0.41 U | < 1.5 U | < 1.4 U |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | 33.0 | N | N | JC64643 | 2018-04-20 | < 0.35 U | < 0.046 U | 4.6 | < 0.38 U | < 1.4 U | < 1.3 U |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | 37.0 | N | N | JC64643 | 2018-04-20 | < 0.37 U | < 0.049 U | 4.6 | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | 32.5 | N | N | JC58670 | 2018-01-11 | < 0.37 U | < 0.049 U | 0.55 J | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | 37.5 | N | N | JC58670 | 2018-01-11 | < 0.37 U | < 0.049 U | 0.51 J | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | 29.0 | N | N | JC67069 | 2018-05-31 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | 34.0 | N | N | JC67069 | 2018-05-31 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | 34.0 | FD | N | JC67069 | 2018-05-31 | < 0.37 U | < 0.046 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | 28.0 | N | N | JC57276 | 2017-12-13 | < 0.38 U | 0.334 | 42.8 | < 0.41 U | < 1.5 U | < 1.4 U |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | 33.0 | N | N | JC57276 | 2017-12-13 | < 0.37 U | **0.634** | 55.4 | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | 42.0 | N | N | JC57169 | 2017-12-12 | < 0.38 U | **3.82** | 42.8 | < 0.41 U | < 1.5 U | < 1.4 U |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | 47.0 | N | N | JC57169 | 2017-12-12 | < 0.38 U | **8.0** | 40.8 | < 0.41 U | < 1.5 U | < 1.4 U |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | 28.0 | N | N | JC64571 | 2018-04-19 | < 0.37 U | **2.77** | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | 33.0 | N | N | JC64571 | 2018-04-19 | < 0.37 U | **4.03** | 27.5 | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | 38.0 | N | N | JC64763 | 2018-04-23 | < 0.37 U | < 0.048 U | < 0.21 U | < 0.40 U | < 1.4 U | < 1.3 U |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | 42.0 | N | N | JC64763 | 2018-04-23 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.41 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | 30.5 | N | N | JC64901 | 2018-04-25 | < 0.36 U | - | < 0.21 U | < 0.39 U | < 1.4 U | < 1.3 U |
| INTERMEDIATE | 135-MW3BR | 135-MW3B-30.0-20180501 | 30.0 | N | N | JC65255 | 2018-05-01 | < 0.36 U | 0.201 | < 0.20 U | < 0.39 U | < 1.4 U | < 1.3 U |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | 37.0 | N | N | JC67069 | 2018-05-31 | < 0.37 U | 0.130 | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | 42.0 | N | N | JC67069 | 2018-05-31 | < 0.37 U | 0.122 | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| INTERMEDIATE | MW7D | MW7D-41.0-20180423 | 41.0 | N | N | JC64763 | 2018-04-23 | < 0.36 U | 0.181 | < 0.20 U | < 0.39 U | < 1.4 U | < 1.3 U |
| INTERMEDIATE | MW7D | MW7D-45.0-20180423 | 45.0 | N | N | JC64763 | 2018-04-23 | < 0.36 U | 0.254 | < 0.20 U | < 0.39 U | < 1.4 U | < 1.3 U |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425 | 41.0 | N | N | JC64901 | 2018-04-25 | < 0.42 U | 0.133 | 0.92 J | < 0.46 U | < 1.7 U | < 1.5 U |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425X | 41.0 | FD | N | JC64901 | 2018-04-25 | < 0.38 U | 0.108 | 1.4 | < 0.41 U | < 1.5 U | < 1.4 U |
| INTERMEDIATE | MW8D | MW8D-45.0-20180425 | 45.0 | N | N | JC64901 | 2018-04-25 | < 0.41 U | < 0.054 U | < 0.24 U | < 0.45 U | < 1.6 U | < 1.5 U |
| DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | 99.0 | N | N | JC65066 | 2018-04-27 | < 0.35 U | < 0.046 U | < 0.20 U | < 0.38 U | < 1.4 U | < 1.3 U |
| DEEP | 114-MW20C | 114-MW20C-20180419 | 80.5 | N | N | JC64571 | 2018-04-19 | < 0.41 U | 0.0541 J | 0.26 J | < 0.45 U | < 1.6 U | < 1.5 U |
| DEEP | 114-MW25C | 114-MW25C-20180313 | 44.5 | N | N | JC62228 | 2018-03-13 | < 0.37 U | **1.30** | 0.53 J | < 0.40 U | < 1.5 U | < 1.3 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | 35.0 | N | N | JC57943A | 2017-12-22 | < 0.41 U | **0.417** | < 0.24 U | < 0.45 U | < 1.6 U | < 1.5 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | 40.0 | N | N | JC57943A | 2017-12-22 | < 0.41 U | **0.597** | 0.52 J | < 0.44 U | < 1.6 U | < 1.5 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | 45.0 | N | N | JC57820 | 2017-12-21 | < 0.43 U | **0.410** | 0.63 J | < 0.46 U | < 1.7 U | < 1.5 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | 50.0 | N | N | JC57820 | 2017-12-21 | < 0.41 U | **0.419** | 0.72 J | < 0.45 U | < 1.6 U | < 1.5 U |
| DEEP | MW8F | MW8F-20180425 | 80.5 | N | N | JC64901 | 2018-04-25 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| DEEP | MW-CR-3D | MW-CR-3D-20180418 | 43.5 | N | N | JC64444 | 2018-04-18 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |

# Table 5-4
# Groundwater Analytical Results - SVOCs
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
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| | | | | | | | Analyte | 2,4,6-TRICHLOROPHENOL | 2,4-DICHLOROPHENOL | 2,4-DIMETHYLPHENOL | 2,4-DINITROPHENOL | 2,4-DINITROTOLUENE | 2,6-DINITROTOLUENE | 2-CHLORONAPHTHALENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 88-06-2 | 120-83-2 | 105-67-9 | 51-28-5 | 121-14-2 | 606-20-2 | 91-58-7 |
| | | | | | | | GWQS | 20 | 20 | 100 | 40 | - | - | 600 |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Depth (ft bTOIC)** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | | | |
| ***Monitoring Wells*** | | | | | | | | | | | | | | |
| SHALLOW | 114-MW20A * | 114-MW20A-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | < 0.91 U | < 1.2 U | < 2.4 U | < 1.5 U | < 0.54 U | < 0.47 U | < 0.23 U |
| SHALLOW | 114-MW20A * | 114-MW20A-8.0-20180420 | 8.0 | N | N | JC64643 | 2018-04-20 | < 0.93 U | < 1.3 U | < 2.5 U | < 1.6 U | < 0.56 U | < 0.48 U | < 0.24 U |
| SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | 11.5 | N | N | JC65325 | 2018-05-02 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| SHALLOW | 114-MW25A | 114-MW25A-20170927 | 11.5 | N | N | JC51824 | 2017-09-27 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | 12.5 | N | N | JC57565 | 2017-12-18 | < 0.96 U | 1.9 J | < 2.5 U | < 1.6 U | < 0.58 U | < 0.50 U | < 0.25 U |
| SHALLOW | 114-MW27A | 114-MW27A-20170926 | 13.5 | N | N | JC51824 | 2017-09-26 | < 1.0 U | < 1.4 U | < 2.7 U | < 1.7 U | < 0.60 U | < 0.52 U | < 0.26 U |
| SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | 11.5 | N | N | JC57565 | 2017-12-18 | < 1.0 U | < 1.4 U | < 2.7 U | < 1.7 U | < 0.61 U | < 0.53 U | < 0.26 U |
| SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | 21.0 | N | N | JC56729A | 2017-12-06 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | 11.5 | N | N | JC56859A | 2017-12-07 | < 0.88 U | < 1.2 U | < 2.3 U | < 1.5 U | < 0.53 U | < 0.45 U | < 0.22 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927 | 10.0 | N | N | JC51890 | 2017-09-27 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927-X | 10.0 | FD | N | JC51890 | 2017-09-27 | < 0.97 U | < 1.3 U | < 2.6 U | < 1.6 U | < 0.58 U | < 0.50 U | < 0.25 U |
| SHALLOW | 114-MW37A | 114-MW37A-20170926 | 12.5 | N | N | JC51824 | 2017-09-26 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | 22.5 | N | N | JC56504A | 2017-12-04 | < 1.0 U | < 1.4 U | < 2.7 U | < 1.7 U | < 0.61 U | < 0.53 U | < 0.26 U |
| SHALLOW | 114-MW41A | 114-MW41A-20180420 | 12.5 | N | N | JC64643 | 2018-04-20 | < 0.92 U | < 1.3 U | 2.6 J | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | 11.0 | N | N | JC65178 | 2018-04-30 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | 16.0 | N | N | JC65178 | 2018-04-30 | < 1.0 U | < 1.4 U | < 2.7 U | < 1.7 U | < 0.60 U | < 0.52 U | < 0.26 U |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | < 0.88 U | < 1.2 U | < 2.3 U | < 1.5 U | < 0.53 U | < 0.45 U | < 0.22 U |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | 17.0 | N | N | JC64643 | 2018-04-20 | < 0.88 U | < 1.2 U | < 2.3 U | < 1.5 U | < 0.53 U | < 0.45 U | < 0.22 U |
| SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | 9.5 | N | N | JC51736 | 2017-09-25 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | 14.0 | N | N | JC57276 | 2017-12-13 | < 0.94 U | < 1.3 U | < 2.5 U | < 1.6 U | < 0.56 U | < 0.49 U | < 0.24 U |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | 9.0 | N | N | JC57276 | 2017-12-13 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | 16.0 | N | N | JC57169 | 2017-12-12 | < 0.94 U | < 1.3 U | < 2.5 U | < 1.6 U | < 0.56 U | < 0.49 U | < 0.24 U |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | 13.0 | N | N | JC64571 | 2018-04-19 | < 1.0 U | < 1.4 U | < 2.7 U | < 1.7 U | < 0.61 U | < 0.53 U | < 0.26 U |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | 8.0 | N | N | JC64571 | 2018-04-19 | < 0.93 U | < 1.3 U | < 2.5 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | 13.0 | N | N | JC64986 | 2018-04-26 | < 0.98 U | < 1.4 U | < 2.6 U | < 1.6 U | < 0.59 U | < 0.51 U | < 0.25 U |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | 9.0 | N | N | JC64986 | 2018-04-26 | < 0.99 U | < 1.4 U | < 2.6 U | < 1.7 U | < 0.59 U | < 0.51 U | < 0.25 U |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | 10.0 | N | N | JC67069 | 2018-05-31 | R | R | R | R | < 0.55 U | < 0.48 U | < 0.24 U |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | 15.0 | N | N | JC67069 | 2018-05-31 | R | R | R | R | < 0.55 U | < 0.48 U | < 0.24 U |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | 8.0 | N | N | JC64763 | 2018-04-23 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | 10.0 | N | N | JC64763 | 2018-04-23 | < 0.93 U | < 1.3 U | < 2.5 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | 14.0 | N | N | JC64763 | 2018-04-23 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | 6.0 | N | N | JC64763 | 2018-04-23 | < 0.91 U | < 1.2 U | < 2.4 U | < 1.5 U | < 0.54 U | < 0.47 U | < 0.23 U |
| SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | 13.0 | N | N | JC64822 | 2018-04-24 | < 0.91 U | < 1.3 U | < 2.4 U | < 1.5 U | < 0.55 U | < 0.47 U | < 0.23 U |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | < 0.94 U | < 1.3 U | < 2.5 U | < 1.6 U | < 0.56 U | < 0.49 U | < 0.24 U |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | 10.0 | N | N | JC65255 | 2018-05-01 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | 15.0 | N | N | JC65255 | 2018-05-01 | < 0.93 U | < 1.3 U | < 2.5 U | < 1.6 U | < 0.56 U | < 0.48 U | < 0.24 U |
| SHALLOW | MW7S | MW7S-10.0-20180430 | 10.0 | N | N | JC65178 | 2018-04-30 | < 0.94 U | < 1.3 U | < 2.5 U | < 1.6 U | < 0.56 U | < 0.49 U | < 0.24 U |
| SHALLOW | MW8S | MW8S-20180427 | 9.5 | N | N | JC65066 | 2018-04-27 | < 1.0 U | < 1.4 U | < 2.7 U | < 1.7 U | < 0.60 U | < 0.52 U | < 0.26 U |
| SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | 21.0 | N | N | JC64444 | 2018-04-18 | < 0.97 U | < 1.3 U | < 2.6 U | < 1.6 U | < 0.58 U | < 0.50 U | < 0.25 U |
| INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | 39.5 | N | N | JC57752 | 2017-12-20 | < 0.97 U | < 1.3 U | < 2.6 U | < 1.6 U | < 0.58 U | < 0.50 U | < 0.25 U |
| INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | 27.5 | N | N | JC64444 | 2018-04-18 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | 47.5 | N | N | JC65255 | 2018-05-01 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | 37.5 | N | N | JC64571 | 2018-04-19 | < 0.94 U | < 1.3 U | < 2.5 U | < 1.6 U | < 0.56 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | 33.0 | N | N | JC62130 | 2018-03-12 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | 35.5 | N | N | JC62228 | 2018-03-13 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | 35.5 | FD | N | JC62228 | 2018-03-13 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | 35.5 | N | N | JC56729A | 2017-12-06 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | 35.5 | FD | N | JC56729A | 2017-12-06 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | 32.5 | N | N | JC51890 | 2017-09-27 | < 0.97 U | < 1.3 U | < 2.6 U | < 1.6 U | < 0.58 U | < 0.50 U | < 0.25 U |
| INTERMEDIATE | 114-MW37B | 114-MW37B-20170926 | 32.5 | N | N | JC51824 | 2017-09-26 | < 0.97 U | < 1.3 U | < 2.6 U | < 1.6 U | < 0.58 U | < 0.50 U | < 0.25 U |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | 42.5 | N | N | JC60652 | 2018-02-12 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | 42.5 | FD | N | JC60652 | 2018-02-12 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | 40.5 | N | N | JC65066 | 2018-04-27 | < 0.95 U | < 1.3 U | < 2.5 U | < 1.6 U | < 0.57 U | < 0.49 U | < 0.24 U |
| INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | 24.5 | N | N | JC64643 | 2018-04-20 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | 27.0 | N | N | JC57820 | 2017-12-21 | < 0.96 U | < 1.3 U | < 2.5 U | < 1.6 U | < 0.58 U | < 0.50 U | < 0.25 U |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | 32.0 | N | N | JC57820 | 2017-12-21 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | 26.5 | N | N | JC57638 | 2017-12-19 | < 1.0 U | < 1.4 U | < 2.7 U | < 1.7 U | < 0.61 U | < 0.53 U | < 0.26 U |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | 31.0 | N | N | JC57501A | 2017-12-15 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | 26.5 | N | N | JC58745 | 2018-01-12 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | 31.5 | N | N | JC58745 | 2018-01-12 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |

# Table 5-4
# Groundwater Analytical Results - SVOCs
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

| | | | | | | | Analyte | 2,4,6-TRICHLOROPHENOL | 2,4-DICHLOROPHENOL | 2,4-DIMETHYLPHENOL | 2,4-DINITROPHENOL | 2,4-DINITROTOLUENE | 2,6-DINITROTOLUENE | 2-CHLORONAPHTHALENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 88-06-2 | 120-83-2 | 105-67-9 | 51-28-5 | 121-14-2 | 606-20-2 | 91-58-7 |
| | | | | | | | GWQS | 20 | 20 | 100 | 40 | - | - | 600 |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Water-Bearing Zone | Location ID | Sample ID | Sample Depth (ft bTOIC) | Sample Type | Fraction | Lab SDG | Date Collected | | | | | | | |
| INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | 34.6 | N | N | JC58670 | 2018-01-11 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | 22.5 | N | N | JC58073A | 2017-12-27 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | 27.5 | N | N | JC58073A | 2017-12-27 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | 32.5 | N | N | JC58028A | 2017-12-26 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | 37.5 | N | N | JC58028A | 2017-12-26 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | 22.5 | N | N | JC58942 | 2018-01-16 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | 27.5 | N | N | JC58942 | 2018-01-16 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | 32.5 | N | N | JC58942 | 2018-01-16 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | 37.5 | N | N | JC58942 | 2018-01-16 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | 33.0 | N | N | JC67069 | 2018-05-31 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | 38.0 | N | N | JC67069 | 2018-05-31 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 UJ | < 0.24 U |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | 30.0 | N | N | JC65178 | 2018-04-30 | < 0.93 U | < 1.3 U | < 2.5 U | < 1.6 U | < 0.56 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | 35.0 | N | N | JC65178 | 2018-04-30 | < 0.93 U | < 1.3 U | < 2.5 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | 34.5 | N | N | JC64444 | 2018-04-18 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | 39.5 | N | N | JC64444 | 2018-04-18 | < 0.95 U | < 1.3 U | < 2.5 U | < 1.6 U | < 0.57 U | < 0.49 U | < 0.24 U |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | 33.0 | N | N | JC64643 | 2018-04-20 | < 0.88 U | < 1.2 U | < 2.3 U | < 1.5 U | < 0.53 U | < 0.45 U | < 0.22 U |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | 37.0 | N | N | JC64643 | 2018-04-20 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | 32.5 | N | N | JC58670 | 2018-01-11 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | 37.5 | N | N | JC58670 | 2018-01-11 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | 29.0 | N | N | JC67069 | 2018-05-31 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | 34.0 | N | N | JC67069 | 2018-05-31 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | 34.0 | FD | N | JC67069 | 2018-05-31 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | 28.0 | N | N | JC57276 | 2017-12-13 | < 0.94 U | < 1.3 U | < 2.5 U | < 1.6 U | < 0.56 U | < 0.49 U | < 0.24 U |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | 33.0 | N | N | JC57276 | 2017-12-13 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | 42.0 | N | N | JC57169 | 2017-12-12 | < 0.94 U | < 1.3 U | 5.4 | < 1.6 U | < 0.56 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | 47.0 | N | N | JC57169 | 2017-12-12 | < 0.94 U | < 1.3 U | 3.8 J | < 1.6 U | < 0.56 U | < 0.49 U | < 0.24 U |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | 28.0 | N | N | JC64571 | 2018-04-19 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | 33.0 | N | N | JC64571 | 2018-04-19 | < 0.92 U | < 1.3 U | 3.1 J | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | 38.0 | N | N | JC64763 | 2018-04-23 | < 0.91 U | < 1.3 U | < 2.4 U | < 1.5 U | < 0.55 U | < 0.47 U | < 0.23 U |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | 42.0 | N | N | JC64763 | 2018-04-23 | < 0.93 U | < 1.3 U | < 2.5 U | < 1.6 U | < 0.56 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | 30.5 | N | N | JC64901 | 2018-04-25 | < 0.90 U | < 1.2 U | < 2.4 U | < 1.5 U | < 0.54 U | < 0.46 U | < 0.23 U |
| INTERMEDIATE | 135-MW3BR | 135-MW3B-30.0-20180501 | 30.0 | N | N | JC65255 | 2018-05-01 | < 0.89 U | < 1.2 U | < 2.3 U | < 1.5 U | < 0.53 U | < 0.46 U | < 0.23 U |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | 37.0 | N | N | JC67069 | 2018-05-31 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | 42.0 | N | N | JC67069 | 2018-05-31 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| INTERMEDIATE | MW7D | MW7D-41.0-20180423 | 41.0 | N | N | JC64763 | 2018-04-23 | < 0.89 U | < 1.2 U | < 2.4 U | < 1.5 U | < 0.53 U | < 0.46 U | < 0.23 U |
| INTERMEDIATE | MW7D | MW7D-45.0-20180423 | 45.0 | N | N | JC64763 | 2018-04-23 | < 0.89 U | < 1.2 U | < 2.3 U | < 1.5 U | < 0.53 U | < 0.46 U | < 0.23 U |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425 | 41.0 | N | N | JC64901 | 2018-04-25 | < 1.0 U | < 1.4 U | < 2.8 U | < 1.8 U | < 0.63 U | < 0.54 U | < 0.27 U |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425X | 41.0 | FD | N | JC64901 | 2018-04-25 | < 0.94 U | < 1.3 U | < 2.5 U | < 1.6 U | < 0.56 U | < 0.49 U | < 0.24 U |
| INTERMEDIATE | MW8D | MW8D-45.0-20180425 | 45.0 | N | N | JC64901 | 2018-04-25 | < 1.0 U | < 1.4 U | < 2.7 U | < 1.7 U | < 0.61 U | < 0.53 U | < 0.26 U |
| DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | 99.0 | N | N | JC65066 | 2018-04-27 | < 0.88 U | < 1.2 U | < 2.3 U | < 1.5 U | < 0.53 U | < 0.45 U | < 0.22 U |
| DEEP | 114-MW20C | 114-MW20C-20180419 | 80.5 | N | N | JC64571 | 2018-04-19 | < 1.0 U | < 1.4 U | < 2.7 U | < 1.7 U | < 0.61 U | < 0.53 U | < 0.26 U |
| DEEP | 114-MW25C | 114-MW25C-20180313 | 44.5 | N | N | JC62228 | 2018-03-13 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | 35.0 | N | N | JC57943A | 2017-12-22 | < 1.0 U | < 1.4 U | < 2.7 U | < 1.7 U | < 0.61 U | < 0.53 U | < 0.26 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | 40.0 | N | N | JC57943A | 2017-12-22 | < 1.0 U | < 1.4 U | < 2.7 U | < 1.7 U | < 0.61 U | < 0.52 U | < 0.26 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | 45.0 | N | N | JC57820 | 2017-12-21 | < 1.1 U | < 1.5 U | < 2.8 U | < 1.8 U | < 0.63 U | < 0.55 U | < 0.27 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | 50.0 | N | N | JC57820 | 2017-12-21 | < 1.0 U | < 1.4 U | < 2.7 U | < 1.7 U | < 0.61 U | < 0.53 U | < 0.26 U |
| DEEP | MW8F | MW8F-20180425 | 80.5 | N | N | JC64901 | 2018-04-25 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |
| DEEP | MW-CR-3D | MW-CR-3D-20180418 | 43.5 | N | N | JC64444 | 2018-04-18 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U | < 0.24 U |

# Table 5-4
# Groundwater Analytical Results - SVOCs
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

| | | | | | | | Analyte | 2-CHLOROPHENOL | 2-METHYLNAPHTHALENE | 2-METHYLPHENOL | 2-NITROANILINE | 2-NITROPHENOL | 3,3'-DICHLOROBENZIDINE | 3,5,5-TRIMETHYL-2-CYCLOHEXENE-1-ONE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 95-57-8 | 91-57-6 | 95-48-7 | 88-74-4 | 88-75-5 | 91-94-1 | 78-59-1 |
| | | | | | | | GWQS | 40 | 30 | 50 | - | - | 30 | 40 |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Water-Bearing Zone | Location ID | Sample ID | Sample Depth (ft bTOIC) | Sample Type | Fraction | Lab SDG | Date Collected | | | | | | | |
| ***Monitoring Wells*** | | | | | | | | | | | | | | |
| SHALLOW | 114-MW20A * | 114-MW20A-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | < 0.80 U | 10.0 | < 0.87 U | < 0.27 U | < 0.94 U | < 0.50 U | < 0.27 U |
| SHALLOW | 114-MW20A * | 114-MW20A-8.0-20180420 | 8.0 | N | N | JC64643 | 2018-04-20 | < 0.83 U | 20.8 | < 0.90 U | < 0.28 U | < 0.97 U | < 0.51 U | < 0.28 U |
| SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | 11.5 | N | N | JC65325 | 2018-05-02 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| SHALLOW | 114-MW25A | 114-MW25A-20170927 | 11.5 | N | N | JC51824 | 2017-09-27 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | 12.5 | N | N | JC57565 | 2017-12-18 | 3.4 J | < 0.22 U | < 0.93 U | < 0.29 U | < 1.0 U | < 0.53 U | < 0.29 U |
| SHALLOW | 114-MW27A | 114-MW27A-20170926 | 13.5 | N | N | JC51824 | 2017-09-26 | < 0.89 U | < 0.23 U | < 0.97 U | < 0.30 U | < 1.0 U | < 0.55 U | < 0.30 U |
| SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | 11.5 | N | N | JC57565 | 2017-12-18 | < 0.91 U | < 0.23 U | < 0.99 U | < 0.31 U | < 1.1 U | < 0.56 U | < 0.31 U |
| SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | 21.0 | N | N | JC56729A | 2017-12-06 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | 11.5 | N | N | JC56859A | 2017-12-07 | < 0.78 U | < 0.20 U | < 0.85 U | < 0.26 U | < 0.91 U | < 0.48 U | < 0.26 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927 | 10.0 | N | N | JC51890 | 2017-09-27 | 6.5 | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927-X | 10.0 | FD | N | JC51890 | 2017-09-27 | 7.0 | < 0.22 U | < 0.93 U | < 0.29 U | < 1.0 U | < 0.53 U | < 0.29 U |
| SHALLOW | 114-MW37A | 114-MW37A-20170926 | 12.5 | N | N | JC51824 | 2017-09-26 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | 22.5 | N | N | JC56504A | 2017-12-04 | < 0.91 U | < 0.23 U | < 0.99 U | < 0.31 U | < 1.1 U | < 0.56 U | < 0.31 U |
| SHALLOW | 114-MW41A | 114-MW41A-20180420 | 12.5 | N | N | JC64643 | 2018-04-20 | < 0.82 U | **63.6** | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | 11.0 | N | N | JC65178 | 2018-04-30 | < 0.82 U | 3.5 | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | 16.0 | N | N | JC65178 | 2018-04-30 | < 0.90 U | 2.8 | < 0.97 U | < 0.30 U | < 1.0 U | < 0.55 U | < 0.30 U |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | < 0.78 U | < 0.20 U | < 0.85 U | < 0.26 U | < 0.91 U | < 0.48 U | < 0.26 U |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | 17.0 | N | N | JC64643 | 2018-04-20 | < 0.78 U | < 0.20 U | < 0.85 U | < 0.26 U | < 0.91 U | < 0.48 U | < 0.26 U |
| SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | 9.5 | N | N | JC51736 | 2017-09-25 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | 14.0 | N | N | JC57276 | 2017-12-13 | < 0.84 U | < 0.21 U | < 0.91 U | < 0.28 U | < 0.98 U | < 0.52 U | < 0.28 U |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | 9.0 | N | N | JC57276 | 2017-12-13 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | 16.0 | N | N | JC57169 | 2017-12-12 | < 0.84 U | < 0.21 U | < 0.91 U | < 0.28 U | < 0.98 U | < 0.52 U | < 0.28 U |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | 13.0 | N | N | JC64571 | 2018-04-19 | < 0.91 U | 0.85 J | < 0.98 U | < 0.31 U | < 1.1 U | < 0.56 U | < 0.31 U |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | 8.0 | N | N | JC64571 | 2018-04-19 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | 13.0 | N | N | JC64986 | 2018-04-26 | < 0.87 U | < 0.22 U | < 0.94 U | < 0.29 U | < 1.0 U | < 0.54 U | < 0.29 U |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | 9.0 | N | N | JC64986 | 2018-04-26 | < 0.88 U | < 0.23 U | < 0.95 U | < 0.30 U | < 1.0 U | < 0.55 U | < 0.30 U |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | 10.0 | N | N | JC67069 | 2018-05-31 | R | < 0.21 U | R | < 0.28 U | R | < 0.51 U | < 0.28 U |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | 15.0 | N | N | JC67069 | 2018-05-31 | R | < 0.21 U | R | < 0.28 U | R | < 0.51 U | < 0.28 U |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | 8.0 | N | N | JC64763 | 2018-04-23 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | 10.0 | N | N | JC64763 | 2018-04-23 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | 14.0 | N | N | JC64763 | 2018-04-23 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | 6.0 | N | N | JC64763 | 2018-04-23 | < 0.80 U | < 0.21 U | < 0.87 U | < 0.27 U | < 0.94 U | < 0.50 U | < 0.27 U |
| SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | 13.0 | N | N | JC64822 | 2018-04-24 | < 0.81 U | < 0.21 U | < 0.88 U | < 0.27 U | < 0.95 U | < 0.50 U | < 0.27 U |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | < 0.84 U | < 0.21 U | < 0.91 U | < 0.28 U | < 0.98 U | < 0.52 U | < 0.28 U |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | 10.0 | N | N | JC65255 | 2018-05-01 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | 15.0 | N | N | JC65255 | 2018-05-01 | < 0.83 U | < 0.21 U | < 0.90 U | < 0.28 U | < 0.97 U | < 0.51 U | < 0.28 U |
| SHALLOW | MW7S | MW7S-10.0-20180430 | 10.0 | N | N | JC65178 | 2018-04-30 | < 0.84 U | < 0.21 U | < 0.91 U | < 0.28 U | < 0.98 U | < 0.52 U | < 0.28 U |
| SHALLOW | MW8S | MW8S-20180427 | 9.5 | N | N | JC65066 | 2018-04-27 | < 0.89 U | < 0.23 U | < 0.97 U | < 0.30 U | < 1.0 U | < 0.55 U | < 0.30 U |
| SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | < 0.82 U | 0.93 J | 1.0 J | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | < 0.82 U | 0.53 J | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | 21.0 | N | N | JC64444 | 2018-04-18 | < 0.86 U | 0.77 J | < 0.93 U | < 0.29 U | < 1.0 U | < 0.53 U | < 0.29 U |
| INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | 39.5 | N | N | JC57752 | 2017-12-20 | < 0.86 U | 0.48 J | < 0.93 U | < 0.29 U | < 1.0 U | < 0.53 U | < 0.29 U |
| INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | 27.5 | N | N | JC64444 | 2018-04-18 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | 47.5 | N | N | JC65255 | 2018-05-01 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | 37.5 | N | N | JC64571 | 2018-04-19 | < 0.83 U | **538** | < 0.90 U | < 0.28 U | < 0.97 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | 33.0 | N | N | JC62130 | 2018-03-12 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | 35.5 | N | N | JC62228 | 2018-03-13 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | 35.5 | FD | N | JC62228 | 2018-03-13 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | 35.5 | N | N | JC56729A | 2017-12-06 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | 35.5 | FD | N | JC56729A | 2017-12-06 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | 32.5 | N | N | JC51890 | 2017-09-27 | < 0.86 U | < 0.22 U | < 0.93 U | < 0.29 U | < 1.0 U | < 0.53 U | < 0.29 U |
| INTERMEDIATE | 114-MW37B | 114-MW37B-20170926 | 32.5 | N | N | JC51824 | 2017-09-26 | < 0.86 U | < 0.22 U | < 0.93 U | < 0.29 U | < 1.0 U | < 0.53 U | < 0.29 U |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | 42.5 | N | N | JC60652 | 2018-02-12 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | 42.5 | FD | N | JC60652 | 2018-02-12 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | 40.5 | N | N | JC65066 | 2018-04-27 | < 0.85 U | < 0.22 U | < 0.92 U | < 0.29 U | < 0.99 U | < 0.52 U | < 0.29 U |
| INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | 24.5 | N | N | JC64643 | 2018-04-20 | < 0.82 U | 2.6 | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | 27.0 | N | N | JC57820 | 2017-12-21 | < 0.85 U | < 0.22 U | < 0.93 U | < 0.29 U | < 1.0 U | < 0.53 U | < 0.29 U |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | 32.0 | N | N | JC57820 | 2017-12-21 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | 26.5 | N | N | JC57638 | 2017-12-19 | < 0.91 U | < 0.23 U | < 0.99 U | < 0.31 U | < 1.1 U | < 0.56 U | < 0.31 U |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | 31.0 | N | N | JC57501A | 2017-12-15 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | 26.5 | N | N | JC58745 | 2018-01-12 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | 31.5 | N | N | JC58745 | 2018-01-12 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |

**Table 5-4**
**Groundwater Analytical Results - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | Analyte | 2-CHLOROPHENOL | 2-METHYLNAPHTHALENE | 2-METHYLPHENOL | 2-NITROANILINE | 2-NITROPHENOL | 3,3'-DICHLOROBENZIDINE | 3,5,5-TRIMETHYL-2-CYCLOHEXENE-1-ONE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 95-57-8 | 91-57-6 | 95-48-7 | 88-74-4 | 88-75-5 | 91-94-1 | 78-59-1 |
| | | | | | | | GWQS | 40 | 30 | 50 | - | - | 30 | 40 |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Water-Bearing Zone | Location ID | Sample ID | Sample Depth (ft bTOIC) | Sample Type | Fraction | Lab SDG | Date Collected | | | | | | | |
| INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | 34.6 | N | N | JC58670 | 2018-01-11 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | 22.5 | N | N | JC58073A | 2017-12-27 | < 0.82 U | 1.5 | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | 27.5 | N | N | JC58073A | 2017-12-27 | < 0.82 U | 2.1 | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | 32.5 | N | N | JC58028A | 2017-12-26 | < 0.82 U | 3.3 | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | 37.5 | N | N | JC58028A | 2017-12-26 | < 0.82 U | 3.1 | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | 22.5 | N | N | JC58942 | 2018-01-16 | < 0.82 U | 0.74 J | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | 27.5 | N | N | JC58942 | 2018-01-16 | < 0.82 U | 0.99 J | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | 32.5 | N | N | JC58942 | 2018-01-16 | < 0.82 U | 0.86 J | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | 37.5 | N | N | JC58942 | 2018-01-16 | < 0.82 U | 0.92 J | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | 33.0 | N | N | JC67069 | 2018-05-31 | < 0.82 U | **125** | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | 38.0 | N | N | JC67069 | 2018-05-31 | < 0.82 U | **170** | < 0.89 U | < 0.28 U | < 0.96 U | R | < 0.28 U |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | 30.0 | N | N | JC65178 | 2018-04-30 | < 0.83 U | < 0.21 U | < 0.90 U | < 0.28 U | < 0.97 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | 35.0 | N | N | JC65178 | 2018-04-30 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | 34.5 | N | N | JC64444 | 2018-04-18 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | 39.5 | N | N | JC64444 | 2018-04-18 | < 0.84 U | < 0.22 U | < 0.91 U | < 0.28 U | < 0.98 U | < 0.52 U | < 0.28 U |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | 33.0 | N | N | JC64643 | 2018-04-20 | < 0.78 U | 1.7 | < 0.85 U | < 0.26 U | < 0.91 U | < 0.48 U | < 0.26 U |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | 37.0 | N | N | JC64643 | 2018-04-20 | < 0.82 U | 1.6 | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | 32.5 | N | N | JC58670 | 2018-01-11 | < 0.82 U | 1.6 | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | 37.5 | N | N | JC58670 | 2018-01-11 | < 0.82 U | 2.2 | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | 29.0 | N | N | JC67069 | 2018-05-31 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | 34.0 | N | N | JC67069 | 2018-05-31 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | 34.0 | FD | N | JC67069 | 2018-05-31 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | 28.0 | N | N | JC57276 | 2017-12-13 | < 0.84 U | **37.7** | < 0.91 U | < 0.28 U | < 0.98 U | < 0.52 U | < 0.28 U |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | 33.0 | N | N | JC57276 | 2017-12-13 | < 0.82 U | **93.1** | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | 42.0 | N | N | JC57169 | 2017-12-12 | < 0.83 U | **700** | < 0.90 U | < 0.28 U | < 0.97 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | 47.0 | N | N | JC57169 | 2017-12-12 | < 0.84 U | **682** | < 0.91 U | < 0.28 U | < 0.98 U | < 0.52 U | < 0.28 U |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | 28.0 | N | N | JC64571 | 2018-04-19 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | 33.0 | N | N | JC64571 | 2018-04-19 | < 0.82 U | 9.8 | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | 38.0 | N | N | JC64763 | 2018-04-23 | < 0.81 U | < 0.21 U | < 0.88 U | < 0.27 U | < 0.95 U | < 0.50 U | < 0.27 U |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | 42.0 | N | N | JC64763 | 2018-04-23 | < 0.83 U | < 0.21 U | < 0.90 U | < 0.28 U | < 0.97 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | 30.5 | N | N | JC64901 | 2018-04-25 | < 0.80 U | < 0.20 U | < 0.86 U | < 0.27 U | < 0.93 U | R | < 0.27 U |
| INTERMEDIATE | 135-MW3BR | 135-MW3B-30.0-20180501 | 30.0 | N | N | JC65255 | 2018-05-01 | < 0.79 U | < 0.20 U | < 0.85 U | < 0.27 U | < 0.92 U | < 0.49 U | < 0.27 U |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | 37.0 | N | N | JC67069 | 2018-05-31 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | 42.0 | N | N | JC67069 | 2018-05-31 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| INTERMEDIATE | MW7D | MW7D-41.0-20180423 | 41.0 | N | N | JC64763 | 2018-04-23 | < 0.79 U | < 0.20 U | < 0.86 U | < 0.27 U | < 0.93 U | < 0.49 U | < 0.27 U |
| INTERMEDIATE | MW7D | MW7D-45.0-20180423 | 45.0 | N | N | JC64763 | 2018-04-23 | < 0.79 U | < 0.20 U | < 0.85 U | < 0.27 U | < 0.92 U | < 0.49 U | < 0.27 U |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425 | 41.0 | N | N | JC64901 | 2018-04-25 | < 0.93 U | 14.3 J | < 1.0 U | < 0.31 U | < 1.1 U | < 0.58 U | < 0.31 U |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425X | 41.0 | FD | N | JC64901 | 2018-04-25 | < 0.84 U | 21.8 J | < 0.91 U | < 0.28 U | < 0.98 U | < 0.52 U | < 0.28 U |
| INTERMEDIATE | MW8D | MW8D-45.0-20180425 | 45.0 | N | N | JC64901 | 2018-04-25 | < 0.91 U | 0.68 J | < 0.99 U | < 0.31 U | < 1.1 U | < 0.56 U | < 0.31 U |
| DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | 99.0 | N | N | JC65066 | 2018-04-27 | < 0.78 U | < 0.20 U | < 0.85 U | < 0.26 U | < 0.91 U | < 0.48 U | < 0.26 U |
| DEEP | 114-MW20C | 114-MW20C-20180419 | 80.5 | N | N | JC64571 | 2018-04-19 | < 0.91 U | < 0.23 U | < 0.99 U | < 0.31 U | < 1.1 U | < 0.56 U | < 0.31 U |
| DEEP | 114-MW25C | 114-MW25C-20180313 | 44.5 | N | N | JC62228 | 2018-03-13 | < 0.82 U | 11.8 | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | 35.0 | N | N | JC57943A | 2017-12-22 | < 0.91 U | 1.4 | < 0.99 U | < 0.31 U | < 1.1 U | < 0.56 U | < 0.31 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | 40.0 | N | N | JC57943A | 2017-12-22 | < 0.90 U | 2.1 | < 0.98 U | < 0.30 U | < 1.1 U | < 0.56 U | < 0.30 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | 45.0 | N | N | JC57820 | 2017-12-21 | < 0.94 U | 2.2 | < 1.0 U | < 0.32 U | < 1.1 U | < 0.58 U | < 0.32 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | 50.0 | N | N | JC57820 | 2017-12-21 | < 0.91 U | 2.8 | < 0.99 U | < 0.31 U | < 1.1 U | < 0.56 U | < 0.31 U |
| DEEP | MW8F | MW8F-20180425 | 80.5 | N | N | JC64901 | 2018-04-25 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | R | < 0.28 U |
| DEEP | MW-CR-3D | MW-CR-3D-20180418 | 43.5 | N | N | JC64444 | 2018-04-18 | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U | < 0.28 U |

**Table 5-4**
**Groundwater Analytical Results - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

AECOM

| | | | | | | | Analyte | 3+4-METHYLPHENOL | 3-NITROANILINE | 4,6-DINITRO-2-METHYLPHENOL | 4-BROMOPHENYL PHENYL ETHER | 4-CHLORO-3-METHYLPHENOL | 4-CHLOROPHENYL PHENYL ETHER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 106-44-5 | 99-09-2 | 534-52-1 | 101-55-3 | 59-50-7 | 7005-72-3 |
| | | | | | | | GWQS | 50 | - | 7 | - | 100 | - |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Water-Bearing Zone | Location ID | Sample ID | Sample Depth (ft bTOIC) | Sample Type | Fraction | Lab SDG | Date Collected | | | | | | |
| ***Monitoring Wells*** | | | | | | | | | | | | | |
| SHALLOW | 114-MW20A * | 114-MW20A-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | < 0.86 U | < 0.38 U | < 0.15 U | < 0.40 U | < 0.87 U | < 0.36 U |
| SHALLOW | 114-MW20A * | 114-MW20A-8.0-20180420 | 8.0 | N | N | JC64643 | 2018-04-20 | < 0.89 U | < 0.39 U | < 0.15 U | < 0.41 U | < 0.90 U | < 0.37 U |
| SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | 11.5 | N | N | JC65325 | 2018-05-02 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| SHALLOW | 114-MW25A | 114-MW25A-20170927 | 11.5 | N | N | JC51824 | 2017-09-27 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | 12.5 | N | N | JC57565 | 2017-12-18 | < 0.92 U | < 0.40 U | < 0.16 U | < 0.42 U | < 0.93 U | < 0.38 U |
| SHALLOW | 114-MW27A | 114-MW27A-20170926 | 13.5 | N | N | JC51824 | 2017-09-26 | < 0.96 U | < 0.42 U | < 0.17 U | < 0.44 U | < 0.97 U | < 0.40 U |
| SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | 11.5 | N | N | JC57565 | 2017-12-18 | < 0.98 U | < 0.43 U | < 0.17 U | < 0.45 U | < 0.99 U | < 0.41 U |
| SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | 21.0 | N | N | JC56729A | 2017-12-06 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | 11.5 | N | N | JC56859A | 2017-12-07 | < 0.84 U | < 0.37 U | < 0.15 U | < 0.38 U | < 0.85 U | < 0.35 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927 | 10.0 | N | N | JC51890 | 2017-09-27 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927-X | 10.0 | FD | N | JC51890 | 2017-09-27 | < 0.93 U | < 0.41 U | < 0.16 U | < 0.43 U | < 0.94 U | < 0.39 U |
| SHALLOW | 114-MW37A | 114-MW37A-20170926 | 12.5 | N | N | JC51824 | 2017-09-26 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | 22.5 | N | N | JC56504A | 2017-12-04 | < 0.98 U | < 0.43 U | < 0.17 U | < 0.45 U | < 0.99 U | < 0.41 U |
| SHALLOW | 114-MW41A | 114-MW41A-20180420 | 12.5 | N | N | JC64643 | 2018-04-20 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | 11.0 | N | N | JC65178 | 2018-04-30 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | 16.0 | N | N | JC65178 | 2018-04-30 | < 0.96 U | < 0.42 U | < 0.17 U | < 0.44 U | < 0.97 U | < 0.40 U |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | < 0.84 U | < 0.37 U | < 0.15 U | < 0.38 U | < 0.85 U | < 0.35 U |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | 17.0 | N | N | JC64643 | 2018-04-20 | < 0.84 U | < 0.37 U | < 0.15 U | < 0.38 U | < 0.85 U | < 0.35 U |
| SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | 9.5 | N | N | JC51736 | 2017-09-25 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | 14.0 | N | N | JC57276 | 2017-12-13 | < 0.90 U | < 0.39 U | < 0.16 U | < 0.41 U | < 0.91 U | < 0.37 U |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | 9.0 | N | N | JC57276 | 2017-12-13 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | 16.0 | N | N | JC57169 | 2017-12-12 | < 0.90 U | < 0.39 U | < 0.16 U | < 0.41 U | < 0.91 U | < 0.37 U |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | 13.0 | N | N | JC64571 | 2018-04-19 | < 0.97 U | < 0.43 U | < 0.17 U | < 0.45 U | < 0.99 U | < 0.40 U |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | 8.0 | N | N | JC64571 | 2018-04-19 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.41 U | < 0.90 U | < 0.37 U |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | 13.0 | N | N | JC64986 | 2018-04-26 | < 0.94 U | < 0.41 U | < 0.16 U | < 0.43 U | < 0.95 U | < 0.39 U |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | 9.0 | N | N | JC64986 | 2018-04-26 | < 0.95 U | < 0.42 U | < 0.16 U | < 0.43 U | < 0.96 U | < 0.39 U |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | 10.0 | N | N | JC67069 | 2018-05-31 | 1.3 J- | < 0.39 U | R | < 0.40 U | R | < 0.37 U |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | 15.0 | N | N | JC67069 | 2018-05-31 | R | < 0.39 U | R | < 0.40 U | R | < 0.37 U |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | 8.0 | N | N | JC64763 | 2018-04-23 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | 10.0 | N | N | JC64763 | 2018-04-23 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.41 U | < 0.90 U | < 0.37 U |
| SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | 14.0 | N | N | JC64763 | 2018-04-23 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | 6.0 | N | N | JC64763 | 2018-04-23 | < 0.86 U | < 0.38 U | < 0.15 U | < 0.40 U | < 0.87 U | < 0.36 U |
| SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | 13.0 | N | N | JC64822 | 2018-04-24 | < 0.87 U | < 0.38 U | < 0.15 U | < 0.40 U | < 0.88 U | < 0.36 U |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | < 0.90 U | < 0.39 U | < 0.16 U | < 0.41 U | < 0.91 U | < 0.37 U |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | 10.0 | N | N | JC65255 | 2018-05-01 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | 15.0 | N | N | JC65255 | 2018-05-01 | < 0.89 U | < 0.39 U | < 0.15 U | < 0.41 U | < 0.90 U | < 0.37 U |
| SHALLOW | MW7S | MW7S-10.0-20180430 | 10.0 | N | N | JC65178 | 2018-04-30 | < 0.90 U | < 0.39 U | < 0.16 U | < 0.41 U | < 0.91 U | < 0.37 U |
| SHALLOW | MW8S | MW8S-20180427 | 9.5 | N | N | JC65066 | 2018-04-27 | < 0.96 U | < 0.42 U | < 0.17 U | < 0.44 U | < 0.97 U | < 0.40 U |
| SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | 13.4 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | 10.1 | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | 21.0 | N | N | JC64444 | 2018-04-18 | 11.5 | < 0.41 U | < 0.16 U | < 0.43 U | < 0.94 U | < 0.39 U |
| INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | 39.5 | N | N | JC57752 | 2017-12-20 | 5.7 | < 0.41 U | R | < 0.43 U | < 0.94 U | < 0.39 U |
| INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | 27.5 | N | N | JC64444 | 2018-04-18 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | 47.5 | N | N | JC65255 | 2018-05-01 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | 37.5 | N | N | JC64571 | 2018-04-19 | 2.8 | < 0.39 U | < 0.16 U | < 0.41 U | < 0.91 U | < 0.37 U |
| INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | 33.0 | N | N | JC62130 | 2018-03-12 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | 35.5 | N | N | JC62228 | 2018-03-13 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | 35.5 | FD | N | JC62228 | 2018-03-13 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | 35.5 | N | N | JC56729A | 2017-12-06 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | 35.5 | FD | N | JC56729A | 2017-12-06 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | 32.5 | N | N | JC51890 | 2017-09-27 | < 0.93 U | < 0.41 U | < 0.16 U | < 0.43 U | < 0.94 U | < 0.39 U |
| INTERMEDIATE | 114-MW37B | 114-MW37B-20170926 | 32.5 | N | N | JC51824 | 2017-09-26 | < 0.93 U | < 0.41 U | < 0.16 U | < 0.43 U | < 0.94 U | < 0.39 U |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | 42.5 | N | N | JC60652 | 2018-02-12 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | 42.5 | FD | N | JC60652 | 2018-02-12 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | 40.5 | N | N | JC65066 | 2018-04-27 | < 0.91 U | < 0.40 U | < 0.16 U | < 0.42 U | < 0.92 U | < 0.38 U |
| INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | 24.5 | N | N | JC64643 | 2018-04-20 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | 27.0 | N | N | JC57820 | 2017-12-21 | < 0.92 U | < 0.40 U | < 0.16 U | < 0.42 U | < 0.93 U | < 0.38 U |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | 32.0 | N | N | JC57820 | 2017-12-21 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | 26.5 | N | N | JC57638 | 2017-12-19 | < 0.98 U | < 0.43 U | < 0.17 U | < 0.45 U | < 0.99 U | < 0.41 U |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | 31.0 | N | N | JC57501A | 2017-12-15 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | 26.5 | N | N | JC58745 | 2018-01-12 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | 31.5 | N | N | JC58745 | 2018-01-12 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |

**Table 5-4**
**Groundwater Analytical Results - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | Analyte | 3+4-METHYLPHENOL | 3-NITROANILINE | 4,6-DINITRO-2-METHYLPHENOL | 4-BROMOPHENYL PHENYL ETHER | 4-CHLORO-3-METHYLPHENOL | 4-CHLOROPHENYL PHENYL ETHER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 106-44-5 | 99-09-2 | 534-52-1 | 101-55-3 | 59-50-7 | 7005-72-3 |
| | | | | | | | GWQS | 50 | - | 7 | - | 100 | - |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Depth (ft bTOIC)** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | | |
| INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | 34.6 | N | N | JC58670 | 2018-01-11 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | 22.5 | N | N | JC58073A | 2017-12-27 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | 27.5 | N | N | JC58073A | 2017-12-27 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | 32.5 | N | N | JC58028A | 2017-12-26 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | 37.5 | N | N | JC58028A | 2017-12-26 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | 22.5 | N | N | JC58942 | 2018-01-16 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | 27.5 | N | N | JC58942 | 2018-01-16 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | 32.5 | N | N | JC58942 | 2018-01-16 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | 37.5 | N | N | JC58942 | 2018-01-16 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | 33.0 | N | N | JC67069 | 2018-05-31 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | 38.0 | N | N | JC67069 | 2018-05-31 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | 30.0 | N | N | JC65178 | 2018-04-30 | < 0.89 U | < 0.39 U | < 0.15 U | < 0.41 U | < 0.90 U | < 0.37 U |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | 35.0 | N | N | JC65178 | 2018-04-30 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.41 U | < 0.90 U | < 0.37 U |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | 34.5 | N | N | JC64444 | 2018-04-18 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | 39.5 | N | N | JC64444 | 2018-04-18 | < 0.90 U | < 0.40 U | < 0.16 U | < 0.41 U | < 0.91 U | < 0.38 U |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | 33.0 | N | N | JC64643 | 2018-04-20 | < 0.84 U | < 0.37 U | < 0.15 U | < 0.38 U | < 0.85 U | < 0.35 U |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | 37.0 | N | N | JC64643 | 2018-04-20 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | 32.5 | N | N | JC58670 | 2018-01-11 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | 37.5 | N | N | JC58670 | 2018-01-11 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | 29.0 | N | N | JC67069 | 2018-05-31 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | 34.0 | N | N | JC67069 | 2018-05-31 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | 34.0 | FD | N | JC67069 | 2018-05-31 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | 28.0 | N | N | JC57276 | 2017-12-13 | < 0.90 U | < 0.39 U | < 0.16 U | < 0.41 U | < 0.91 U | < 0.37 U |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | 33.0 | N | N | JC57276 | 2017-12-13 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | 42.0 | N | N | JC57169 | 2017-12-12 | 2.7 | < 0.39 U | < 0.16 U | < 0.41 U | < 0.91 U | < 0.37 U |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | 47.0 | N | N | JC57169 | 2017-12-12 | 2.5 | < 0.39 U | < 0.16 U | < 0.41 U | < 0.91 U | < 0.37 U |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | 28.0 | N | N | JC64571 | 2018-04-19 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | 33.0 | N | N | JC64571 | 2018-04-19 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | 38.0 | N | N | JC64763 | 2018-04-23 | < 0.87 U | < 0.38 U | < 0.15 U | < 0.40 U | < 0.88 U | < 0.36 U |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | 42.0 | N | N | JC64763 | 2018-04-23 | < 0.89 U | < 0.39 U | < 0.15 U | < 0.41 U | < 0.90 U | < 0.37 U |
| INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | 30.5 | N | N | JC64901 | 2018-04-25 | < 0.85 U | R | < 0.15 U | < 0.39 U | < 0.87 U | < 0.36 U |
| INTERMEDIATE | 135-MW3BR | 135-MW3B-30.0-20180501 | 30.0 | N | N | JC65255 | 2018-05-01 | < 0.85 U | < 0.37 U | < 0.15 U | < 0.39 U | < 0.86 U | < 0.35 U |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | 37.0 | N | N | JC67069 | 2018-05-31 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | 42.0 | N | N | JC67069 | 2018-05-31 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| INTERMEDIATE | MW7D | MW7D-41.0-20180423 | 41.0 | N | N | JC64763 | 2018-04-23 | < 0.85 U | < 0.37 U | < 0.15 U | < 0.39 U | < 0.86 U | < 0.35 U |
| INTERMEDIATE | MW7D | MW7D-45.0-20180423 | 45.0 | N | N | JC64763 | 2018-04-23 | < 0.85 U | < 0.37 U | < 0.15 U | < 0.39 U | < 0.86 U | < 0.35 U |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425 | 41.0 | N | N | JC64901 | 2018-04-25 | < 1.0 U | < 0.44 U | < 0.17 U | < 0.46 U | < 1.0 U | < 0.42 U |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425X | 41.0 | FD | N | JC64901 | 2018-04-25 | < 0.90 U | < 0.39 U | < 0.16 U | < 0.41 U | < 0.91 U | < 0.37 U |
| INTERMEDIATE | MW8D | MW8D-45.0-20180425 | 45.0 | N | N | JC64901 | 2018-04-25 | < 0.98 U | < 0.43 U | < 0.17 U | < 0.45 U | < 0.99 U | < 0.41 U |
| DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | 99.0 | N | N | JC65066 | 2018-04-27 | < 0.84 U | < 0.37 U | < 0.15 U | < 0.38 U | < 0.85 U | < 0.35 U |
| DEEP | 114-MW20C | 114-MW20C-20180419 | 80.5 | N | N | JC64571 | 2018-04-19 | < 0.98 U | < 0.43 U | < 0.17 U | < 0.45 U | < 0.99 U | < 0.41 U |
| DEEP | 114-MW25C | 114-MW25C-20180313 | 44.5 | N | N | JC62228 | 2018-03-13 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | 35.0 | N | N | JC57943A | 2017-12-22 | < 0.98 U | < 0.43 U | < 0.17 U | < 0.45 U | < 0.99 U | < 0.41 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | 40.0 | N | N | JC57943A | 2017-12-22 | < 0.97 U | < 0.43 U | < 0.17 U | < 0.44 U | < 0.98 U | < 0.40 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | 45.0 | N | N | JC57820 | 2017-12-21 | < 1.0 U | < 0.44 U | < 0.18 U | < 0.46 U | < 1.0 U | < 0.42 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | 50.0 | N | N | JC57820 | 2017-12-21 | < 0.98 U | < 0.43 U | < 0.17 U | < 0.45 U | < 0.99 U | < 0.41 U |
| DEEP | MW8F | MW8F-20180425 | 80.5 | N | N | JC64901 | 2018-04-25 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |
| DEEP | MW-CR-3D | MW-CR-3D-20180418 | 43.5 | N | N | JC64444 | 2018-04-18 | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U | < 0.89 U | < 0.37 U |

# Table 5-4
## Groundwater Analytical Results - SVOCs
## Groundwater Remedial Investigation Report
## Garfield Avenue Group of Sites
## PPG, Jersey City, New Jersey

AECOM

| | | | | | | | Analyte | 4-NITROPHENOL | ACENAPHTHENE | ACENAPHTHYLENE | ACETOPHENONE | ANTHRACENE | ATRAZINE | BENZALDEHYDE | BENZO(A)ANTHRACENE | BENZO(A)PYRENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 100-02-7 | 83-32-9 | 208-96-8 | 98-86-2 | 120-12-7 | 1912-24-9 | 100-52-7 | 56-55-3 | 50-32-8 |
| | | | | | | | GWQS | - | 400 | 100 | 700 | 2000 | 3 | - | 0.1 | 0.1 |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Water-Bearing Zone | Location ID | Sample ID | Sample Depth (ft bTOIC) | Sample Type | Fraction | Lab SDG | Date Collected | | | | | | | | | |
| ***Monitoring Wells*** | | | | | | | | | | | | | | | | |
| SHALLOW | 114-MW20A * | 114-MW20A-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | < 1.1 U | 4.2 | < 0.13 U | < 0.20 U | < 0.21 U | < 0.44 U | < 0.28 U | < 0.022 U | < 0.033 U |
| SHALLOW | 114-MW20A * | 114-MW20A-8.0-20180420 | 8.0 | N | N | JC64643 | 2018-04-20 | < 1.2 U | 5.6 | 0.51 J | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.034 U |
| SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | 11.5 | N | N | JC65325 | 2018-05-02 | < 1.2 U | 3.1 | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| SHALLOW | 114-MW25A | 114-MW25A-20170927 | 11.5 | N | N | JC51824 | 2017-09-27 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | 0.73 J | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | 12.5 | N | N | JC57565 | 2017-12-18 | < 1.2 U | 1.1 | < 0.14 U | < 0.22 U | < 0.22 U | < 0.47 U | < 0.30 U | < 0.024 U | < 0.035 U |
| SHALLOW | 114-MW27A | 114-MW27A-20170926 | 13.5 | N | N | JC51824 | 2017-09-26 | < 1.3 U | < 0.21 U | < 0.15 U | < 0.23 U | < 0.23 U | < 0.49 U | < 0.31 U | < 0.025 U | < 0.036 U |
| SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | 11.5 | N | N | JC57565 | 2017-12-18 | < 1.3 U | < 0.21 U | < 0.15 U | < 0.23 U | < 0.23 U | < 0.50 U | < 0.32 U | < 0.025 U | < 0.037 U |
| SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | 21.0 | N | N | JC56729A | 2017-12-06 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | 11.5 | N | N | JC56859A | 2017-12-07 | < 1.1 U | < 0.18 U | < 0.13 U | < 0.20 U | < 0.20 U | < 0.43 U | < 0.28 U | < 0.022 U | < 0.032 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927 | 10.0 | N | N | JC51890 | 2017-09-27 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927-X | 10.0 | FD | N | JC51890 | 2017-09-27 | < 1.2 U | < 0.20 U | < 0.14 U | < 0.22 U | < 0.22 U | < 0.47 U | < 0.30 U | < 0.024 U | < 0.035 U |
| SHALLOW | 114-MW37A | 114-MW37A-20170926 | 12.5 | N | N | JC51824 | 2017-09-26 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | 22.5 | N | N | JC56504A | 2017-12-04 | < 1.3 U | < 0.21 U | < 0.15 U | < 0.23 U | < 0.23 U | < 0.50 U | < 0.32 U | < 0.025 U | < 0.037 U |
| SHALLOW | 114-MW41A | 114-MW41A-20180420 | 12.5 | N | N | JC64643 | 2018-04-20 | < 1.2 U | 76.2 | 1.3 | 0.71 J | 10.3 | < 0.45 U | < 0.29 U | **0.161** | < 0.033 U |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | 11.0 | N | N | JC65178 | 2018-04-30 | < 1.2 U | 9.1 | < 0.14 U | < 0.21 U | 2.0 | < 0.45 U | < 0.29 U | **0.264** | 0.0455 J |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | 16.0 | N | N | JC65178 | 2018-04-30 | < 1.3 U | 7.2 | < 0.15 U | < 0.23 U | 2.0 | < 0.49 U | < 0.32 U | **0.392** | **0.112** |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | < 1.1 U | < 0.18 U | < 0.13 U | 2.3 | < 0.20 U | < 0.43 U | < 0.28 U | < 0.022 U | < 0.032 U |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | 17.0 | N | N | JC64643 | 2018-04-20 | < 1.1 U | < 0.18 U | < 0.13 U | < 0.20 U | < 0.20 U | < 0.43 U | < 0.28 U | < 0.022 U | < 0.032 U |
| SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | 9.5 | N | N | JC51736 | 2017-09-25 | < 1.2 U | 15.2 | 2.6 | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | 14.0 | N | N | JC57276 | 2017-12-13 | < 1.2 U | 30.1 | 2.6 | < 0.21 U | 3.1 | < 0.46 U | < 0.29 U | **0.592** | **0.298** |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | 9.0 | N | N | JC57276 | 2017-12-13 | < 1.2 U | 34.7 | 2.8 | < 0.21 U | 3.3 | < 0.45 U | < 0.29 U | **0.371** | 0.0854 |
| SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | 16.0 | N | N | JC57169 | 2017-12-12 | < 1.2 U | 64.7 | 3.9 | < 0.21 U | 6.1 | < 0.46 U | < 0.29 U | **0.206** | < 0.034 U |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | 13.0 | N | N | JC64571 | 2018-04-19 | < 1.3 U | 5.6 | 3.2 | < 0.23 U | 2.5 | < 0.49 U | < 0.32 U | **0.312** | < 0.037 U |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | 8.0 | N | N | JC64571 | 2018-04-19 | < 1.2 U | 4.9 | 2.9 | < 0.21 U | 2.1 | < 0.45 U | < 0.29 U | **0.312** | 0.0375 J |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | 13.0 | N | N | JC64986 | 2018-04-26 | < 1.2 U | < 0.20 U | < 0.14 U | < 0.22 U | < 0.22 U | < 0.48 U | < 0.31 U | < 0.024 U | < 0.035 U |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | 9.0 | N | N | JC64986 | 2018-04-26 | < 1.2 U | < 0.21 U | < 0.15 U | < 0.22 U | < 0.23 U | < 0.48 U | < 0.31 U | < 0.025 U | < 0.036 U |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | 10.0 | N | N | JC67069 | 2018-05-31 | R | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | 15.0 | N | N | JC67069 | 2018-05-31 | R | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | 8.0 | N | N | JC64763 | 2018-04-23 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | 10.0 | N | N | JC64763 | 2018-04-23 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | 14.0 | N | N | JC64763 | 2018-04-23 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | 6.0 | N | N | JC64763 | 2018-04-23 | < 1.1 U | < 0.19 U | < 0.13 U | < 0.20 U | < 0.21 U | < 0.44 U | < 0.28 U | < 0.022 U | < 0.033 U |
| SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | 13.0 | N | N | JC64822 | 2018-04-24 | < 1.1 U | < 0.19 U | < 0.13 U | < 0.21 U | < 0.21 U | < 0.44 U | < 0.29 U | < 0.023 U | < 0.033 U |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | < 1.2 U | 0.49 J | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.22 U | < 0.46 U | < 0.29 U | < 0.023 U | < 0.034 U |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | 10.0 | N | N | JC65255 | 2018-05-01 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | 15.0 | N | N | JC65255 | 2018-05-01 | < 1.2 U | 0.47 J | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.034 U |
| SHALLOW | MW7S | MW7S-10.0-20180430 | 10.0 | N | N | JC65178 | 2018-04-30 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.22 U | < 0.46 U | < 0.29 U | < 0.023 U | < 0.034 U |
| SHALLOW | MW8S | MW8S-20180427 | 9.5 | N | N | JC65066 | 2018-04-27 | < 1.3 U | < 0.21 U | < 0.15 U | < 0.23 U | < 0.23 U | < 0.49 U | < 0.31 U | **0.109** | 0.0769 |
| SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | < 1.2 U | < 0.19 U | < 0.14 U | 2.0 | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | < 1.2 U | 0.36 J | < 0.14 U | 1.5 J | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | 21.0 | N | N | JC64444 | 2018-04-18 | < 1.2 U | < 0.20 U | < 0.14 U | < 0.22 U | < 0.22 U | < 0.47 U | 3.8 J | < 0.024 U | < 0.035 U |
| INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | 39.5 | N | N | JC57752 | 2017-12-20 | < 1.2 U | < 0.20 U | < 0.14 U | 2.0 J | < 0.22 U | < 0.47 U | < 0.30 U | **0.153** | < 0.035 U |
| INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | 27.5 | N | N | JC64444 | 2018-04-18 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | 47.5 | N | N | JC65255 | 2018-05-01 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | 37.5 | N | N | JC64571 | 2018-04-19 | < 1.2 U | 213 | 13.5 | 73.7 | 3.4 | < 0.45 U | < 0.29 U | **0.188** | < 0.034 U |
| INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | 33.0 | N | N | JC62130 | 2018-03-12 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | 35.5 | N | N | JC62228 | 2018-03-13 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | 35.5 | FD | N | JC62228 | 2018-03-13 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | 35.5 | N | N | JC56729A | 2017-12-06 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | 35.5 | FD | N | JC56729A | 2017-12-06 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | 32.5 | N | N | JC51890 | 2017-09-27 | < 1.2 U | < 0.20 U | < 0.14 U | < 0.22 U | < 0.22 U | < 0.47 U | < 0.30 U | < 0.024 U | < 0.035 U |
| INTERMEDIATE | 114-MW37B | 114-MW37B-20170926 | 32.5 | N | N | JC51824 | 2017-09-26 | < 1.2 U | < 0.20 U | < 0.14 U | < 0.22 U | < 0.22 U | < 0.47 U | < 0.30 U | < 0.024 U | < 0.035 U |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | 42.5 | N | N | JC60652 | 2018-02-12 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | 42.5 | FD | N | JC60652 | 2018-02-12 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | 40.5 | N | N | JC65066 | 2018-04-27 | < 1.2 U | < 0.20 U | < 0.14 U | < 0.21 U | < 0.22 U | < 0.46 U | < 0.30 U | < 0.024 U | < 0.034 U |
| INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | 24.5 | N | N | JC64643 | 2018-04-20 | < 1.2 U | 4.7 | < 0.14 U | < 0.21 U | 0.83 J | < 0.45 U | < 0.29 U | **0.117** | < 0.032 U |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | 27.0 | N | N | JC57820 | 2017-12-21 | < 1.2 U | < 0.20 U | < 0.14 U | < 0.22 U | < 0.22 U | < 0.47 U | < 0.30 U | **0.132** | < 0.035 U |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | 32.0 | N | N | JC57820 | 2017-12-21 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | 26.5 | N | N | JC57638 | 2017-12-19 | < 1.3 U | < 0.21 U | < 0.15 U | < 0.23 U | < 0.23 U | < 0.50 U | < 0.32 U | < 0.025 U | < 0.037 U |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | 31.0 | N | N | JC57501A | 2017-12-15 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | 26.5 | N | N | JC58745 | 2018-01-12 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | 31.5 | N | N | JC58745 | 2018-01-12 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |

**Table 5-4**
**Groundwater Analytical Results - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | Analyte | 4-NITROPHENOL | ACENAPHTHENE | ACENAPHTHYLENE | ACETOPHENONE | ANTHRACENE | ATRAZINE | BENZALDEHYDE | BENZO(A)ANTHRACENE | BENZO(A)PYRENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 100-02-7 | 83-32-9 | 208-96-8 | 98-86-2 | 120-12-7 | 1912-24-9 | 100-52-7 | 56-55-3 | 50-32-8 |
| | | | | | | | GWQS | - | 400 | 100 | 700 | 2000 | 3 | - | 0.1 | 0.1 |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Water-Bearing Zone | Location ID | Sample ID | Sample Depth (ft bTOIC) | Sample Type | Fraction | Lab SDG | Date Collected | | | | | | | | | |
| INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | 34.6 | N | N | JC58670 | 2018-01-11 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | 22.5 | N | N | JC58073A | 2017-12-27 | < 1.2 U | 1.5 | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | 27.5 | N | N | JC58073A | 2017-12-27 | < 1.2 U | 1.9 | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | **0.189** | < 0.033 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | 32.5 | N | N | JC58028A | 2017-12-26 | < 1.2 U | 3.0 | 0.20 J | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | 37.5 | N | N | JC58028A | 2017-12-26 | < 1.2 U | 2.9 | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | 22.5 | N | N | JC58942 | 2018-01-16 | < 1.2 U | 0.40 J | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | 27.5 | N | N | JC58942 | 2018-01-16 | < 1.2 U | 0.40 J | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | 32.5 | N | N | JC58942 | 2018-01-16 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | 37.5 | N | N | JC58942 | 2018-01-16 | < 1.2 U | 0.41 J | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | 33.0 | N | N | JC67069 | 2018-05-31 | < 1.2 U | 5.6 | 37.7 | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | 38.0 | N | N | JC67069 | 2018-05-31 | < 1.2 U | 5.3 | 36.6 | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | 30.0 | N | N | JC65178 | 2018-04-30 | < 1.2 U | 198 | 3.9 | < 0.21 U | 7.1 | < 0.45 U | < 0.29 U | **0.114** | < 0.034 U |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | 35.0 | N | N | JC65178 | 2018-04-30 | < 1.2 U | 190 | 4.1 | < 0.21 U | 6.3 | < 0.45 U | < 0.29 U | **0.121** | < 0.033 U |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | 34.5 | N | N | JC64444 | 2018-04-18 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | 39.5 | N | N | JC64444 | 2018-04-18 | < 1.2 U | < 0.20 U | < 0.14 U | < 0.21 U | < 0.22 U | < 0.46 U | < 0.30 U | < 0.023 U | < 0.034 U |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | 33.0 | N | N | JC64643 | 2018-04-20 | < 1.1 U | 34.8 | 1.6 | < 0.20 U | 2.4 | < 0.43 U | < 0.28 U | < 0.022 U | < 0.032 U |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | 37.0 | N | N | JC64643 | 2018-04-20 | < 1.2 U | 35.2 | 1.6 | < 0.21 U | 2.2 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | 32.5 | N | N | JC58670 | 2018-01-11 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | 37.5 | N | N | JC58670 | 2018-01-11 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | 29.0 | N | N | JC67069 | 2018-05-31 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | 34.0 | N | N | JC67069 | 2018-05-31 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | 34.0 | FD | N | JC67069 | 2018-05-31 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.022 U | < 0.032 U |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | 28.0 | N | N | JC57276 | 2017-12-13 | < 1.2 U | 208 | 18.4 | < 0.21 U | 8.4 | < 0.46 U | < 0.29 U | **0.175** | < 0.034 U |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | 33.0 | N | N | JC57276 | 2017-12-13 | < 1.2 U | 248 | 25.5 | < 0.21 U | 10.8 | < 0.45 U | < 0.29 U | **0.223** | < 0.033 U |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | 42.0 | N | N | JC57169 | 2017-12-12 | < 1.2 U | 191 | 48.1 | 5.5 | 11.0 | < 0.45 U | < 0.29 U | **0.799** | **0.312** |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | 47.0 | N | N | JC57169 | 2017-12-12 | < 1.2 U | 184 | 47.1 | < 0.21 U | 9.7 | < 0.46 U | < 0.29 U | **0.666** | **0.271** |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | 28.0 | N | N | JC64571 | 2018-04-19 | < 1.2 U | 38.3 | 3.1 | 6.8 | 0.69 J | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | 33.0 | N | N | JC64571 | 2018-04-19 | < 1.2 U | 204 | 6.5 | < 0.21 U | 6.1 | < 0.45 U | < 0.29 U | **0.166** | < 0.033 U |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | 38.0 | N | N | JC64763 | 2018-04-23 | < 1.1 U | < 0.19 U | < 0.13 U | < 0.21 U | < 0.21 U | < 0.44 U | < 0.29 U | < 0.023 U | < 0.033 U |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | 42.0 | N | N | JC64763 | 2018-04-23 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.034 U |
| INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | 30.5 | N | N | JC64901 | 2018-04-25 | < 1.1 U | < 0.19 U | < 0.13 U | < 0.20 U | < 0.20 U | < 0.43 U | < 0.28 U | **0.149** | 0.0574 |
| INTERMEDIATE | 135-MW3BR | 135-MW3B-30.0-20180501 | 30.0 | N | N | JC65255 | 2018-05-01 | < 1.1 U | 18.5 | < 0.13 U | < 0.20 U | < 0.20 U | < 0.43 U | < 0.28 U | < 0.022 U | < 0.032 U |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | 37.0 | N | N | JC67069 | 2018-05-31 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | 0.0264 J | < 0.033 U |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | 42.0 | N | N | JC67069 | 2018-05-31 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |
| INTERMEDIATE | MW7D | MW7D-41.0-20180423 | 41.0 | N | N | JC64763 | 2018-04-23 | < 1.1 U | < 0.18 U | < 0.13 U | < 0.20 U | < 0.20 U | < 0.43 U | < 0.28 U | < 0.022 U | < 0.032 U |
| INTERMEDIATE | MW7D | MW7D-45.0-20180423 | 45.0 | N | N | JC64763 | 2018-04-23 | < 1.1 U | < 0.18 U | < 0.13 U | < 0.20 U | < 0.20 U | < 0.43 U | < 0.28 U | < 0.022 U | < 0.032 U |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425 | 41.0 | N | N | JC64901 | 2018-04-25 | < 1.3 U | 2.5 J | 0.34 J | < 0.24 U | 0.30 J | < 0.51 U | < 0.33 U | **1.54 J** | **1.17 J** |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425X | 41.0 | FD | N | JC64901 | 2018-04-25 | < 1.2 U | 4.1 J | 0.57 J | < 0.21 U | 0.45 J | < 0.46 U | < 0.29 U | **2.11 J** | **1.65 J** |
| INTERMEDIATE | MW8D | MW8D-45.0-20180425 | 45.0 | N | N | JC64901 | 2018-04-25 | < 1.3 U | < 0.21 U | < 0.15 U | < 0.23 U | < 0.23 U | < 0.50 U | < 0.32 U | **1.44** | **1.17** |
| DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | 99.0 | N | N | JC65066 | 2018-04-27 | < 1.1 U | < 0.18 U | < 0.13 U | < 0.20 U | < 0.20 U | < 0.43 U | < 0.28 U | < 0.022 U | < 0.032 U |
| DEEP | 114-MW20C | 114-MW20C-20180419 | 80.5 | N | N | JC64571 | 2018-04-19 | < 1.3 U | < 0.21 U | < 0.15 U | < 0.23 U | < 0.23 U | < 0.50 U | < 0.32 U | < 0.025 U | < 0.037 U |
| DEEP | 114-MW25C | 114-MW25C-20180313 | 44.5 | N | N | JC62228 | 2018-03-13 | < 1.2 U | 0.99 J | 4.4 | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | **0.104** | < 0.033 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | 35.0 | N | N | JC57943A | 2017-12-22 | < 1.3 U | 4.3 | < 0.15 U | < 0.23 U | 0.55 J | < 0.50 U | < 0.32 U | < 0.025 U | < 0.037 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | 40.0 | N | N | JC57943A | 2017-12-22 | < 1.3 U | 5.6 | < 0.15 U | < 0.23 U | 0.67 J | < 0.49 U | < 0.32 U | < 0.025 U | < 0.037 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | 45.0 | N | N | JC57820 | 2017-12-21 | < 1.3 U | 5.9 | < 0.16 U | < 0.24 U | 0.56 J | < 0.51 U | < 0.33 U | **0.161** | < 0.038 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | 50.0 | N | N | JC57820 | 2017-12-21 | < 1.3 U | 6.9 | < 0.15 U | < 0.23 U | 0.74 J | < 0.50 U | < 0.32 U | **0.129** | < 0.037 U |
| DEEP | MW8F | MW8F-20180425 | 80.5 | N | N | JC64901 | 2018-04-25 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | **0.213** | 0.0625 |
| DEEP | MW-CR-3D | MW-CR-3D-20180418 | 43.5 | N | N | JC64444 | 2018-04-18 | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U |

**Table 5-4**
**Groundwater Analytical Results - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

AECOM

| | | | | | | | Analyte | BENZO(B)FLUORANTHENE | BENZO(G,H,I)PERYLENE | BENZO(K)FLUORANTHENE | BENZYL BUTYL PHTHALATE | BIS(-2-CHLOROETHOXY)METHANE | BIS(2-CHLOROETHYL)ETHER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 205-99-2 | 191-24-2 | 207-08-9 | 85-68-7 | 111-91-1 | 111-44-4 |
| | | | | | | | GWQS | 0.2 | 100 | 0.5 | 100 | - | 7 |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Depth (ft bTOIC)** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | | |
| ***Monitoring Wells*** | | | | | | | | | | | | | |
| SHALLOW | 114-MW20A * | 114-MW20A-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | < 0.043 U | < 0.33 U | < 0.032 U | < 0.45 U | < 0.27 U | < 0.24 U |
| SHALLOW | 114-MW20A * | 114-MW20A-8.0-20180420 | 8.0 | N | N | JC64643 | 2018-04-20 | < 0.044 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | 11.5 | N | N | JC65325 | 2018-05-02 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| SHALLOW | 114-MW25A | 114-MW25A-20170927 | 11.5 | N | N | JC51824 | 2017-09-27 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | 12.5 | N | N | JC57565 | 2017-12-18 | < 0.045 U | < 0.36 U | < 0.034 U | < 0.48 U | < 0.29 U | < 0.26 U |
| SHALLOW | 114-MW27A | 114-MW27A-20170926 | 13.5 | N | N | JC51824 | 2017-09-26 | < 0.047 U | < 0.37 U | < 0.036 U | < 0.50 U | < 0.30 U | < 0.27 U |
| SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | 11.5 | N | N | JC57565 | 2017-12-18 | < 0.048 U | < 0.38 U | < 0.037 U | < 0.51 U | < 0.31 U | < 0.28 U |
| SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | 21.0 | N | N | JC56729A | 2017-12-06 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | 11.5 | N | N | JC56859A | 2017-12-07 | < 0.041 U | < 0.32 U | < 0.032 U | < 0.44 U | < 0.26 U | < 0.24 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927 | 10.0 | N | N | JC51890 | 2017-09-27 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927-X | 10.0 | FD | N | JC51890 | 2017-09-27 | < 0.046 U | < 0.36 U | < 0.035 U | < 0.48 U | < 0.29 U | < 0.26 U |
| SHALLOW | 114-MW37A | 114-MW37A-20170926 | 12.5 | N | N | JC51824 | 2017-09-26 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | 22.5 | N | N | JC56504A | 2017-12-04 | < 0.048 U | < 0.38 U | < 0.037 U | < 0.51 U | < 0.31 U | < 0.28 U |
| SHALLOW | 114-MW41A | 114-MW41A-20180420 | 12.5 | N | N | JC64643 | 2018-04-20 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | 11.0 | N | N | JC65178 | 2018-04-30 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | 16.0 | N | N | JC65178 | 2018-04-30 | 0.0964 J | < 0.37 U | < 0.036 U | < 0.50 U | < 0.30 U | < 0.27 U |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | < 0.041 U | < 0.32 U | < 0.032 U | < 0.44 U | < 0.26 U | < 0.24 U |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | 17.0 | N | N | JC64643 | 2018-04-20 | < 0.041 U | < 0.32 U | < 0.032 U | < 0.44 U | < 0.26 U | < 0.24 U |
| SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | 9.5 | N | N | JC51736 | 2017-09-25 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | 14.0 | N | N | JC57276 | 2017-12-13 | **0.252** | < 0.35 U | 0.0730 J | < 0.47 U | < 0.28 U | < 0.25 U |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | 9.0 | N | N | JC57276 | 2017-12-13 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | 16.0 | N | N | JC57169 | 2017-12-12 | < 0.044 U | < 0.35 U | < 0.034 U | < 0.47 U | < 0.28 U | < 0.25 U |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | 13.0 | N | N | JC64571 | 2018-04-19 | < 0.048 U | < 0.38 U | < 0.037 U | < 0.50 U | < 0.31 U | < 0.27 U |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | 8.0 | N | N | JC64571 | 2018-04-19 | < 0.044 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | 13.0 | N | N | JC64986 | 2018-04-26 | < 0.046 U | < 0.36 U | < 0.035 U | < 0.49 U | < 0.30 U | < 0.26 U |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | 9.0 | N | N | JC64986 | 2018-04-26 | < 0.047 U | < 0.37 U | < 0.036 U | < 0.49 U | < 0.30 U | < 0.27 U |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | 10.0 | N | N | JC67069 | 2018-05-31 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | 15.0 | N | N | JC67069 | 2018-05-31 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | 8.0 | N | N | JC64763 | 2018-04-23 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | 10.0 | N | N | JC64763 | 2018-04-23 | < 0.044 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | 14.0 | N | N | JC64763 | 2018-04-23 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | 6.0 | N | N | JC64763 | 2018-04-23 | < 0.043 U | < 0.33 U | < 0.032 U | < 0.45 U | < 0.27 U | < 0.24 U |
| SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | 13.0 | N | N | JC64822 | 2018-04-24 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.45 U | < 0.28 U | < 0.25 U |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | < 0.044 U | < 0.35 U | < 0.034 U | < 0.47 U | < 0.28 U | < 0.25 U |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | 10.0 | N | N | JC65255 | 2018-05-01 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | 15.0 | N | N | JC65255 | 2018-05-01 | < 0.044 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| SHALLOW | MW7S | MW7S-10.0-20180430 | 10.0 | N | N | JC65178 | 2018-04-30 | < 0.044 U | < 0.35 U | < 0.034 U | < 0.47 U | < 0.28 U | < 0.25 U |
| SHALLOW | MW8S | MW8S-20180427 | 9.5 | N | N | JC65066 | 2018-04-27 | 0.137 | < 0.37 U | < 0.036 U | < 0.50 U | < 0.30 U | < 0.27 U |
| SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | 21.0 | N | N | JC64444 | 2018-04-18 | < 0.046 U | < 0.36 U | < 0.035 U | < 0.48 U | < 0.29 U | < 0.26 U |
| INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | 39.5 | N | N | JC57752 | 2017-12-20 | 0.161 | < 0.36 U | < 0.035 U | < 0.48 U | < 0.29 U | < 0.26 U |
| INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | 27.5 | N | N | JC64444 | 2018-04-18 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | 47.5 | N | N | JC65255 | 2018-05-01 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | 37.5 | N | N | JC64571 | 2018-04-19 | < 0.044 U | < 0.35 U | < 0.034 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | 33.0 | N | N | JC62130 | 2018-03-12 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | 35.5 | N | N | JC62228 | 2018-03-13 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | 35.5 | FD | N | JC62228 | 2018-03-13 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | 35.5 | N | N | JC56729A | 2017-12-06 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | 35.5 | FD | N | JC56729A | 2017-12-06 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | 32.5 | N | N | JC51890 | 2017-09-27 | < 0.046 U | < 0.36 U | < 0.035 U | < 0.48 U | < 0.29 U | < 0.26 U |
| INTERMEDIATE | 114-MW37B | 114-MW37B-20170926 | 32.5 | N | N | JC51824 | 2017-09-26 | < 0.046 U | < 0.36 U | < 0.035 U | < 0.48 U | < 0.29 U | < 0.26 U |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | 42.5 | N | N | JC60652 | 2018-02-12 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | 42.5 | FD | N | JC60652 | 2018-02-12 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | 40.5 | N | N | JC65066 | 2018-04-27 | < 0.045 U | < 0.35 U | < 0.034 U | < 0.47 U | < 0.29 U | < 0.26 U |
| INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | 24.5 | N | N | JC64643 | 2018-04-20 | < 0.042 U | < 0.34 U | < 0.032 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | 27.0 | N | N | JC57820 | 2017-12-21 | < 0.045 U | < 0.36 U | < 0.034 U | < 0.48 U | < 0.29 U | < 0.26 U |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | 32.0 | N | N | JC57820 | 2017-12-21 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | 26.5 | N | N | JC57638 | 2017-12-19 | < 0.048 U | < 0.38 U | < 0.037 U | < 0.51 U | < 0.31 U | < 0.28 U |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | 31.0 | N | N | JC57501A | 2017-12-15 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | 26.5 | N | N | JC58745 | 2018-01-12 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | 31.5 | N | N | JC58745 | 2018-01-12 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |

**Table 5-4**
**Groundwater Analytical Results - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

AECOM

| | | | | | | | Analyte | BENZO(B)FLUORANTHENE | BENZO(G,H,I)PERYLENE | BENZO(K)FLUORANTHENE | BENZYL BUTYL PHTHALATE | BIS(-2-CHLOROETHOXY)METHANE | BIS(2-CHLOROETHYL)ETHER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 205-99-2 | 191-24-2 | 207-08-9 | 85-68-7 | 111-91-1 | 111-44-4 |
| | | | | | | | GWQS | 0.2 | 100 | 0.5 | 100 | - | 7 |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Depth (ft bTOIC)** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | | |
| INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | 34.6 | N | N | JC58670 | 2018-01-11 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | 22.5 | N | N | JC58073A | 2017-12-27 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | 27.5 | N | N | JC58073A | 2017-12-27 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | 32.5 | N | N | JC58028A | 2017-12-26 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | 37.5 | N | N | JC58028A | 2017-12-26 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | 22.5 | N | N | JC58942 | 2018-01-16 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | 27.5 | N | N | JC58942 | 2018-01-16 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | 32.5 | N | N | JC58942 | 2018-01-16 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | 37.5 | N | N | JC58942 | 2018-01-16 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | 33.0 | N | N | JC67069 | 2018-05-31 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | 38.0 | N | N | JC67069 | 2018-05-31 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | 30.0 | N | N | JC65178 | 2018-04-30 | < 0.044 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | 35.0 | N | N | JC65178 | 2018-04-30 | < 0.044 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | 34.5 | N | N | JC64444 | 2018-04-18 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | 39.5 | N | N | JC64444 | 2018-04-18 | < 0.045 U | < 0.35 U | < 0.034 U | < 0.47 U | < 0.29 U | < 0.25 U |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | 33.0 | N | N | JC64643 | 2018-04-20 | < 0.041 U | < 0.32 U | < 0.032 U | < 0.44 U | < 0.26 U | < 0.24 U |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | 37.0 | N | N | JC64643 | 2018-04-20 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | 32.5 | N | N | JC58670 | 2018-01-11 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | 37.5 | N | N | JC58670 | 2018-01-11 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | 29.0 | N | N | JC67069 | 2018-05-31 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | 34.0 | N | N | JC67069 | 2018-05-31 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | 34.0 | FD | N | JC67069 | 2018-05-31 | < 0.041 U | < 0.34 U | < 0.032 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | 28.0 | N | N | JC57276 | 2017-12-13 | < 0.044 U | < 0.35 U | < 0.034 U | < 0.47 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | 33.0 | N | N | JC57276 | 2017-12-13 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | 42.0 | N | N | JC57169 | 2017-12-12 | **0.258** | < 0.35 U | < 0.034 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | 47.0 | N | N | JC57169 | 2017-12-12 | **0.229** | < 0.35 U | < 0.034 U | < 0.47 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | 28.0 | N | N | JC64571 | 2018-04-19 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | 33.0 | N | N | JC64571 | 2018-04-19 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | 38.0 | N | N | JC64763 | 2018-04-23 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.45 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | 42.0 | N | N | JC64763 | 2018-04-23 | < 0.044 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | 30.5 | N | N | JC64901 | 2018-04-25 | 0.0937 J | < 0.33 U | < 0.032 U | < 0.44 U | < 0.27 U | < 0.24 U |
| INTERMEDIATE | 135-MW3BR | 135-MW3B-30.0-20180501 | 30.0 | N | N | JC65255 | 2018-05-01 | < 0.042 U | < 0.33 U | < 0.032 U | < 0.44 U | < 0.27 U | < 0.24 U |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | 37.0 | N | N | JC67069 | 2018-05-31 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | 42.0 | N | N | JC67069 | 2018-05-31 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | MW7D | MW7D-41.0-20180423 | 41.0 | N | N | JC64763 | 2018-04-23 | < 0.042 U | < 0.33 U | < 0.032 U | < 0.44 U | < 0.27 U | < 0.24 U |
| INTERMEDIATE | MW7D | MW7D-45.0-20180423 | 45.0 | N | N | JC64763 | 2018-04-23 | < 0.042 U | < 0.33 U | < 0.032 U | < 0.44 U | < 0.27 U | < 0.24 U |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425 | 41.0 | N | N | JC64901 | 2018-04-25 | **1.9 J** | 0.85 J | **0.683 J** | < 0.52 U | < 0.32 U | < 0.28 U |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425X | 41.0 | FD | N | JC64901 | 2018-04-25 | **3.2 J** | 1.6 | **0.986 J** | < 0.47 U | < 0.28 U | < 0.25 U |
| INTERMEDIATE | MW8D | MW8D-45.0-20180425 | 45.0 | N | N | JC64901 | 2018-04-25 | **1.8** | 0.87 J | **0.660** | < 0.51 U | < 0.31 U | < 0.28 U |
| DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | 99.0 | N | N | JC65066 | 2018-04-27 | < 0.041 U | < 0.32 U | < 0.032 U | < 0.44 U | < 0.26 U | < 0.24 U |
| DEEP | 114-MW20C | 114-MW20C-20180419 | 80.5 | N | N | JC64571 | 2018-04-19 | < 0.048 U | < 0.38 U | < 0.037 U | < 0.51 U | < 0.31 U | < 0.28 U |
| DEEP | 114-MW25C | 114-MW25C-20180313 | 44.5 | N | N | JC62228 | 2018-03-13 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | 35.0 | N | N | JC57943A | 2017-12-22 | < 0.048 U | < 0.38 U | < 0.037 U | < 0.51 U | < 0.31 U | < 0.28 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | 40.0 | N | N | JC57943A | 2017-12-22 | < 0.048 U | < 0.37 U | < 0.036 U | < 0.50 U | < 0.31 U | < 0.27 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | 45.0 | N | N | JC57820 | 2017-12-21 | < 0.050 U | < 0.39 U | < 0.038 U | < 0.53 U | < 0.32 U | < 0.29 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | 50.0 | N | N | JC57820 | 2017-12-21 | < 0.048 U | < 0.38 U | < 0.037 U | < 0.51 U | < 0.31 U | < 0.28 U |
| DEEP | MW8F | MW8F-20180425 | 80.5 | N | N | JC64901 | 2018-04-25 | 0.0978 J | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |
| DEEP | MW-CR-3D | MW-CR-3D-20180418 | 43.5 | N | N | JC64444 | 2018-04-18 | < 0.043 U | < 0.34 U | < 0.033 U | < 0.46 U | < 0.28 U | < 0.25 U |

# Table 5-4
# Groundwater Analytical Results - SVOCs
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

| | | | | | | | Analyte | BIS(2-ETHYLHEXYL)PHTHALATE | CAPROLACTAM | CARBAZOLE | CHRYSENE | DIBENZO(A,H)ANTHRACENE | DIBENZOFURAN | DIETHYL PHTHALATE | DIMETHYL PHTHALATE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 117-81-7 | 105-60-2 | 86-74-8 | 218-01-9 | 53-70-3 | 132-64-9 | 84-66-2 | 131-11-3 |
| | | | | | | | GWQS | 3 | 5000 | - | 5 | 0.3 | - | 6000 | 100 |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Water-Bearing Zone | Location ID | Sample ID | Sample Depth (ft bTOIC) | Sample Type | Fraction | Lab SDG | Date Collected | | | | | | | | |
| ***Monitoring Wells*** | | | | | | | | | | | | | | | |
| SHALLOW | 114-MW20A * | 114-MW20A-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | < 1.6 U | < 0.64 U | < 0.22 U | < 0.17 U | < 0.035 U | < 0.22 U | < 0.26 U | < 0.21 U |
| SHALLOW | 114-MW20A * | 114-MW20A-8.0-20180420 | 8.0 | N | N | JC64643 | 2018-04-20 | < 1.7 U | < 0.66 U | < 0.23 U | < 0.18 U | < 0.037 U | < 0.22 U | < 0.26 U | < 0.22 U |
| SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | 11.5 | N | N | JC65325 | 2018-05-02 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| SHALLOW | 114-MW25A | 114-MW25A-20170927 | 11.5 | N | N | JC51824 | 2017-09-27 | **4.3** | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | 12.5 | N | N | JC57565 | 2017-12-18 | < 1.7 U | < 0.68 U | 0.83 J | < 0.18 U | < 0.038 U | 0.73 J | < 0.27 U | < 0.23 U |
| SHALLOW | 114-MW27A | 114-MW27A-20170926 | 13.5 | N | N | JC51824 | 2017-09-26 | < 1.8 U | < 0.71 U | < 0.25 U | < 0.19 U | < 0.039 U | < 0.24 U | < 0.28 U | < 0.24 U |
| SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | 11.5 | N | N | JC57565 | 2017-12-18 | < 1.8 U | < 0.72 U | < 0.25 U | < 0.20 U | < 0.040 U | < 0.24 U | < 0.29 U | < 0.24 U |
| SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | 21.0 | N | N | JC56729A | 2017-12-06 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | 11.5 | N | N | JC56859A | 2017-12-07 | < 1.6 U | < 0.62 U | < 0.22 U | < 0.17 U | < 0.034 U | < 0.21 U | < 0.25 U | < 0.21 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927 | 10.0 | N | N | JC51890 | 2017-09-27 | < 1.7 U | 4.8 | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927-X | 10.0 | FD | N | JC51890 | 2017-09-27 | < 1.7 U | 4.8 | < 0.24 U | < 0.19 U | < 0.038 U | < 0.23 U | < 0.28 U | < 0.23 U |
| SHALLOW | 114-MW37A | 114-MW37A-20170926 | 12.5 | N | N | JC51824 | 2017-09-26 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | 22.5 | N | N | JC56504A | 2017-12-04 | < 1.8 U | < 0.72 U | < 0.25 U | < 0.20 U | < 0.040 U | < 0.24 U | < 0.29 U | < 0.24 U |
| SHALLOW | 114-MW41A | 114-MW41A-20180420 | 12.5 | N | N | JC64643 | 2018-04-20 | < 1.7 U | < 0.65 U | 26.0 | < 0.18 U | < 0.036 U | 60.9 | < 0.26 U | < 0.22 U |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | 11.0 | N | N | JC65178 | 2018-04-30 | < 1.7 U | 11.8 | < 0.23 U | < 0.18 U | < 0.036 U | 0.41 J | < 0.26 U | < 0.22 U |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | 16.0 | N | N | JC65178 | 2018-04-30 | < 1.8 U | 2.7 | < 0.25 U | < 0.19 U | < 0.040 U | < 0.24 U | < 0.29 U | < 0.24 U |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | < 1.6 U | < 0.62 U | < 0.22 U | < 0.17 U | < 0.034 U | < 0.21 U | < 0.25 U | < 0.21 U |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | 17.0 | N | N | JC64643 | 2018-04-20 | < 1.6 U | < 0.62 U | < 0.22 U | < 0.17 U | < 0.034 U | < 0.21 U | < 0.25 U | < 0.21 U |
| SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | 9.5 | N | N | JC51736 | 2017-09-25 | < 1.7 U | < 0.65 U | 0.40 J | < 0.18 U | < 0.036 U | 0.78 J | < 0.26 U | < 0.22 U |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | 14.0 | N | N | JC57276 | 2017-12-13 | < 1.7 U | < 0.66 U | 1.0 | 0.56 J | < 0.037 U | 1.4 J | < 0.27 U | < 0.22 U |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | 9.0 | N | N | JC57276 | 2017-12-13 | < 1.7 U | < 0.65 U | 1.1 | < 0.18 U | < 0.036 U | 1.6 J | < 0.26 U | < 0.22 U |
| SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | 16.0 | N | N | JC57169 | 2017-12-12 | < 1.7 U | < 0.66 U | 0.60 J | < 0.18 U | < 0.037 U | 2.7 J | < 0.27 U | < 0.22 U |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | 13.0 | N | N | JC64571 | 2018-04-19 | < 1.8 U | < 0.72 U | < 0.25 U | < 0.19 U | < 0.040 U | 0.57 J | < 0.29 U | < 0.24 U |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | 8.0 | N | N | JC64571 | 2018-04-19 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | 0.49 J | < 0.26 U | < 0.22 U |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | 13.0 | N | N | JC64986 | 2018-04-26 | < 1.8 U | 40.1 | < 0.24 U | < 0.19 U | < 0.039 U | 0.36 J | < 0.23 U | < 0.23 U |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | 9.0 | N | N | JC64986 | 2018-04-26 | < 1.8 U | 44.6 | < 0.25 U | < 0.19 U | < 0.039 U | 0.49 J | < 0.23 U | < 0.23 U |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | 10.0 | N | N | JC67069 | 2018-05-31 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | 15.0 | N | N | JC67069 | 2018-05-31 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | 8.0 | N | N | JC64763 | 2018-04-23 | < 1.7 U | 15.7 | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | 10.0 | N | N | JC64763 | 2018-04-23 | < 1.7 U | 12.3 | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | 14.0 | N | N | JC64763 | 2018-04-23 | < 1.7 U | 26.4 | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | 6.0 | N | N | JC64763 | 2018-04-23 | < 1.6 U | 2.2 | < 0.22 U | < 0.17 U | < 0.035 U | < 0.22 U | < 0.26 U | < 0.21 U |
| SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 1.7 U | 30.1 | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | 13.0 | N | N | JC64822 | 2018-04-24 | < 1.6 U | 0.79 J | < 0.23 U | < 0.17 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | < 1.7 U | < 0.66 U | < 0.23 U | < 0.18 U | < 0.037 U | < 0.22 U | < 0.27 U | < 0.22 U |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | 10.0 | N | N | JC65255 | 2018-05-01 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | 15.0 | N | N | JC65255 | 2018-05-01 | < 1.7 U | < 0.66 U | < 0.23 U | < 0.18 U | < 0.037 U | < 0.22 U | < 0.26 U | < 0.22 U |
| SHALLOW | MW7S | MW7S-10.0-20180430 | 10.0 | N | N | JC65178 | 2018-04-30 | < 1.7 U | 68.8 | < 0.23 U | < 0.18 U | < 0.037 U | < 0.22 U | < 0.27 U | < 0.22 U |
| SHALLOW | MW8S | MW8S-20180427 | 9.5 | N | N | JC65066 | 2018-04-27 | < 1.8 U | 13.9 | < 0.25 U | < 0.19 U | < 0.039 U | < 0.24 U | < 0.28 U | < 0.24 U |
| SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | < 1.7 U | < 0.65 U | 0.67 J | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | < 1.7 U | < 0.65 U | 0.37 J | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | 21.0 | N | N | JC64444 | 2018-04-18 | < 1.7 U | < 0.68 U | 0.55 J | < 0.19 U | < 0.038 U | < 0.23 U | < 0.28 U | < 0.23 U |
| INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | 39.5 | N | N | JC57752 | 2017-12-20 | < 1.7 U | < 0.68 U | 0.93 J | < 0.19 U | < 0.038 U | < 0.23 U | < 0.28 U | < 0.23 U |
| INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | 27.5 | N | N | JC64444 | 2018-04-18 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | 47.5 | N | N | JC65255 | 2018-05-01 | < 1.7 U | 45.6 | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | 37.5 | N | N | JC64571 | 2018-04-19 | < 1.7 U | < 0.66 U | 4.9 | 0.21 J | < 0.037 U | 5.6 | < 0.27 U | < 0.22 U |
| INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | 33.0 | N | N | JC62130 | 2018-03-12 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | 35.5 | N | N | JC62228 | 2018-03-13 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | 35.5 | FD | N | JC62228 | 2018-03-13 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | 35.5 | N | N | JC56729A | 2017-12-06 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | 35.5 | FD | N | JC56729A | 2017-12-06 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | 32.5 | N | N | JC51890 | 2017-09-27 | **3.2** | < 0.68 U | < 0.24 U | < 0.19 U | < 0.038 U | < 0.23 U | < 0.28 U | < 0.23 U |
| INTERMEDIATE | 114-MW37B | 114-MW37B-20170926 | 32.5 | N | N | JC51824 | 2017-09-26 | < 1.7 U | < 0.68 U | < 0.24 U | < 0.19 U | < 0.038 U | < 0.23 U | < 0.28 U | < 0.23 U |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | 42.5 | N | N | JC60652 | 2018-02-12 | < 1.7 U | 1.5 J | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | 42.5 | FD | N | JC60652 | 2018-02-12 | < 1.7 U | 1.2 J | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | 40.5 | N | N | JC65066 | 2018-04-27 | < 1.7 U | 1.6 J | < 0.24 U | < 0.18 U | < 0.037 U | < 0.23 U | < 0.27 U | < 0.22 U |
| INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | 24.5 | N | N | JC64643 | 2018-04-20 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.035 U | 0.31 J | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | 27.0 | N | N | JC57820 | 2017-12-21 | < 1.7 U | < 0.68 U | < 0.24 U | < 0.18 U | < 0.038 U | < 0.23 U | < 0.27 U | < 0.23 U |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | 32.0 | N | N | JC57820 | 2017-12-21 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | 26.5 | N | N | JC57638 | 2017-12-19 | < 1.8 U | < 0.72 U | < 0.25 U | < 0.20 U | < 0.040 U | < 0.24 U | < 0.29 U | < 0.24 U |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | 31.0 | N | N | JC57501A | 2017-12-15 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | 26.5 | N | N | JC58745 | 2018-01-12 | < 1.7 U | 4.8 | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | 31.5 | N | N | JC58745 | 2018-01-12 | < 1.7 U | 13.0 | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |

# Table 5-4
# Groundwater Analytical Results - SVOCs
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

| | | | | | | | Analyte | BIS(2-ETHYLHEXYL)PHTHALATE | CAPROLACTAM | CARBAZOLE | CHRYSENE | DIBENZO(A,H)ANTHRACENE | DIBENZOFURAN | DIETHYL PHTHALATE | DIMETHYL PHTHALATE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 117-81-7 | 105-60-2 | 86-74-8 | 218-01-9 | 53-70-3 | 132-64-9 | 84-66-2 | 131-11-3 |
| | | | | | | | GWQS | 3 | 5000 | - | 5 | 0.3 | - | 6000 | 100 |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Water-Bearing Zone | Location ID | Sample ID | Sample Depth (ft bTOIC) | Sample Type | Fraction | Lab SDG | Date Collected | | | | | | | | |
| INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | 34.6 | N | N | JC58670 | 2018-01-11 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | 22.5 | N | N | JC58073A | 2017-12-27 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | 27.5 | N | N | JC58073A | 2017-12-27 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | 0.49 J | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | 32.5 | N | N | JC58028A | 2017-12-26 | < 1.7 U | < 0.65 U | 0.47 J | < 0.18 U | < 0.036 U | 0.72 J | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | 37.5 | N | N | JC58028A | 2017-12-26 | < 1.7 U | < 0.65 U | 0.50 J | < 0.18 U | < 0.036 U | 0.65 J | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | 22.5 | N | N | JC58942 | 2018-01-16 | < 1.7 U | 1.8 J | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | 27.5 | N | N | JC58942 | 2018-01-16 | < 1.7 U | 6.5 | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | 32.5 | N | N | JC58942 | 2018-01-16 | < 1.7 U | 5.0 | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | 37.5 | N | N | JC58942 | 2018-01-16 | < 1.7 U | 12.1 | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | 33.0 | N | N | JC67069 | 2018-05-31 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | 38.0 | N | N | JC67069 | 2018-05-31 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | 30.0 | N | N | JC65178 | 2018-04-30 | < 1.7 U | 3.0 | 7.9 | < 0.18 U | < 0.037 U | 12.2 | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | 35.0 | N | N | JC65178 | 2018-04-30 | < 1.7 U | 12.3 | 8.8 | < 0.18 U | < 0.036 U | 13.1 | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | 34.5 | N | N | JC64444 | 2018-04-18 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | 39.5 | N | N | JC64444 | 2018-04-18 | < 1.7 U | < 0.67 U | < 0.23 U | < 0.18 U | < 0.037 U | < 0.23 U | < 0.27 U | < 0.22 U |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | 33.0 | N | N | JC64643 | 2018-04-20 | < 1.6 U | < 0.62 U | 0.57 J | < 0.17 U | < 0.034 U | 0.67 J | < 0.25 U | < 0.21 U |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | 37.0 | N | N | JC64643 | 2018-04-20 | < 1.7 U | < 0.65 U | 0.58 J | < 0.18 U | < 0.036 U | 0.76 J | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | 32.5 | N | N | JC58670 | 2018-01-11 | < 1.7 U | 4.9 | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | 37.5 | N | N | JC58670 | 2018-01-11 | < 1.7 U | 6.6 | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | 29.0 | N | N | JC67069 | 2018-05-31 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | 34.0 | N | N | JC67069 | 2018-05-31 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | 34.0 | FD | N | JC67069 | 2018-05-31 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | 0.0438 J | < 0.22 U | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | 28.0 | N | N | JC57276 | 2017-12-13 | < 1.7 U | < 0.66 U | 6.0 | < 0.18 U | < 0.037 U | 10.2 | < 0.27 U | < 0.22 U |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | 33.0 | N | N | JC57276 | 2017-12-13 | < 1.7 U | < 0.65 U | 8.4 | < 0.18 U | < 0.036 U | 12.1 | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | 42.0 | N | N | JC57169 | 2017-12-12 | < 1.7 U | < 0.66 U | 21.6 | 0.85 J | < 0.037 U | 8.4 | < 0.27 U | < 0.22 U |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | 47.0 | N | N | JC57169 | 2017-12-12 | < 1.7 U | < 0.66 U | 11.4 | 0.71 J | < 0.037 U | 7.4 | < 0.27 U | < 0.22 U |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | 28.0 | N | N | JC64571 | 2018-04-19 | < 1.7 U | < 0.65 U | 1.0 | < 0.18 U | < 0.036 U | 0.76 J | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | 33.0 | N | N | JC64571 | 2018-04-19 | < 1.7 U | < 0.65 U | 4.8 | < 0.18 U | < 0.036 U | 6.4 | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | 38.0 | N | N | JC64763 | 2018-04-23 | < 1.6 U | < 0.64 U | < 0.23 U | < 0.17 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | 42.0 | N | N | JC64763 | 2018-04-23 | < 1.7 U | < 0.66 U | < 0.23 U | < 0.18 U | < 0.037 U | < 0.22 U | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | 30.5 | N | N | JC64901 | 2018-04-25 | < 1.6 U | 18.0 | < 0.22 U | < 0.17 U | < 0.035 U | 0.56 J | < 0.25 U | < 0.21 U |
| INTERMEDIATE | 135-MW3BR | 135-MW3B-30.0-20180501 | 30.0 | N | N | JC65255 | 2018-05-01 | < 1.6 U | < 0.62 U | < 0.22 U | < 0.17 U | < 0.035 U | < 0.21 U | < 0.25 U | < 0.21 U |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | 37.0 | N | N | JC67069 | 2018-05-31 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | 42.0 | N | N | JC67069 | 2018-05-31 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| INTERMEDIATE | MW7D | MW7D-41.0-20180423 | 41.0 | N | N | JC64763 | 2018-04-23 | < 1.6 U | < 0.63 U | < 0.22 U | < 0.17 U | < 0.035 U | < 0.21 U | < 0.25 U | < 0.21 U |
| INTERMEDIATE | MW7D | MW7D-45.0-20180423 | 45.0 | N | N | JC64763 | 2018-04-23 | < 1.6 U | < 0.62 U | < 0.22 U | < 0.17 U | < 0.035 U | < 0.21 U | < 0.25 U | < 0.21 U |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425 | 41.0 | N | N | JC64901 | 2018-04-25 | < 1.9 U | < 0.74 U | 0.27 J | 1.4 | 0.185 | < 0.25 U | < 0.30 U | < 0.25 U |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425X | 41.0 | FD | N | JC64901 | 2018-04-25 | < 1.7 U | < 0.66 U | 0.45 J | 2.2 | 0.283 | 0.35 J | < 0.27 U | < 0.22 U |
| INTERMEDIATE | MW8D | MW8D-45.0-20180425 | 45.0 | N | N | JC64901 | 2018-04-25 | < 1.8 U | < 0.72 U | < 0.25 U | 1.3 | 0.193 | < 0.24 U | < 0.29 U | < 0.24 U |
| DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | 99.0 | N | N | JC65066 | 2018-04-27 | < 1.6 U | < 0.62 U | < 0.22 U | < 0.17 U | < 0.034 U | < 0.21 U | < 0.25 U | < 0.21 U |
| DEEP | 114-MW20C | 114-MW20C-20180419 | 80.5 | N | N | JC64571 | 2018-04-19 | < 1.8 U | < 0.72 U | < 0.25 U | < 0.20 U | < 0.040 U | < 0.24 U | < 0.29 U | < 0.24 U |
| DEEP | 114-MW25C | 114-MW25C-20180313 | 44.5 | N | N | JC62228 | 2018-03-13 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | 35.0 | N | N | JC57943A | 2017-12-22 | < 1.8 U | 11.5 | < 0.25 U | < 0.20 U | < 0.040 U | < 0.24 U | < 0.29 U | < 0.24 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | 40.0 | N | N | JC57943A | 2017-12-22 | < 1.8 U | 5.2 | < 0.25 U | < 0.19 U | < 0.040 U | < 0.24 U | < 0.29 U | < 0.24 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | 45.0 | N | N | JC57820 | 2017-12-21 | < 1.9 U | < 0.75 U | < 0.26 U | < 0.20 U | < 0.042 U | < 0.25 U | < 0.30 U | < 0.25 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | 50.0 | N | N | JC57820 | 2017-12-21 | < 1.8 U | < 0.72 U | < 0.25 U | < 0.20 U | < 0.040 U | < 0.24 U | < 0.29 U | < 0.24 U |
| DEEP | MW8F | MW8F-20180425 | 80.5 | N | N | JC64901 | 2018-04-25 | < 1.7 U | 13.5 | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |
| DEEP | MW-CR-3D | MW-CR-3D-20180418 | 43.5 | N | N | JC64444 | 2018-04-18 | < 1.7 U | < 0.65 U | < 0.23 U | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U |

# Table 5-4
# Groundwater Analytical Results - SVOCs
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

AECOM

| | | | | | | | Analyte | DI-N-BUTYLPHTHALATE | DI-N-OCTYL PHTHALATE | FLUORANTHENE | FLUORENE | HEXACHLORO-1,3-BUTADIENE | HEXACHLOROBENZENE | HEXACHLOROCYCLOPENTADIENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 84-74-2 | 117-84-0 | 206-44-0 | 86-73-7 | 87-68-3 | 118-74-1 | 77-47-4 |
| | | | | | | | GWQS | 700 | 100 | 300 | 300 | 1 | 0.02 | 40 |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Water-Bearing Zone | Location ID | Sample ID | Sample Depth (ft bTOIC) | Sample Type | Fraction | Lab SDG | Date Collected | | | | | | | |
| ***Monitoring Wells*** | | | | | | | | | | | | | | |
| SHALLOW | 114-MW20A * | 114-MW20A-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | 10.6 JB | < 0.23 U | < 0.17 U | 0.55 J | < 0.017 U | < 0.011 U | < 2.7 U |
| SHALLOW | 114-MW20A * | 114-MW20A-8.0-20180420 | 8.0 | N | N | JC64643 | 2018-04-20 | 2.4 | < 0.24 U | < 0.17 U | 0.75 J | < 0.018 U | < 0.011 U | < 2.8 U |
| SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | 11.5 | N | N | JC65325 | 2018-05-02 | < 0.50 U | < 0.23 U | < 0.17 U | 0.83 J | < 0.018 U | < 0.011 U | < 2.8 U |
| SHALLOW | 114-MW25A | 114-MW25A-20170927 | 11.5 | N | N | JC51824 | 2017-09-27 | < 0.50 U | < 0.23 U | 0.73 J | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | 12.5 | N | N | JC57565 | 2017-12-18 | < 0.52 U | < 0.24 U | < 0.18 U | 2.0 | < 0.019 U | < 0.012 U | < 2.9 U |
| SHALLOW | 114-MW27A | 114-MW27A-20170926 | 13.5 | N | N | JC51824 | 2017-09-26 | < 0.54 U | < 0.25 U | < 0.18 U | < 0.19 U | < 0.019 U | < 0.012 U | < 3.0 U |
| SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | 11.5 | N | N | JC57565 | 2017-12-18 | < 0.55 U | < 0.26 U | < 0.19 U | < 0.19 U | < 0.020 U | < 0.012 U | < 3.1 U |
| SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | 21.0 | N | N | JC56729A | 2017-12-06 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | 11.5 | N | N | JC56859A | 2017-12-07 | < 0.47 U | < 0.22 U | < 0.16 U | < 0.16 U | < 0.017 U | < 0.011 U | < 2.6 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927 | 10.0 | N | N | JC51890 | 2017-09-27 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927-X | 10.0 | FD | N | JC51890 | 2017-09-27 | < 0.52 U | < 0.25 U | < 0.18 U | < 0.18 U | < 0.019 U | < 0.012 U | < 2.9 U |
| SHALLOW | 114-MW37A | 114-MW37A-20170926 | 12.5 | N | N | JC51824 | 2017-09-26 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | 22.5 | N | N | JC56504A | 2017-12-04 | < 0.55 U | < 0.26 U | < 0.19 U | < 0.19 U | < 0.020 U | < 0.012 U | < 3.1 U |
| SHALLOW | 114-MW41A | 114-MW41A-20180420 | 12.5 | N | N | JC64643 | 2018-04-20 | < 0.50 U | < 0.23 U | 10.7 | 65.4 | < 0.018 U | 0.0169 | < 2.8 U |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | 11.0 | N | N | JC65178 | 2018-04-30 | < 0.50 U | < 0.23 U | 1.3 | 4.4 | < 0.018 U | < 0.011 U | < 2.8 U |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | 16.0 | N | N | JC65178 | 2018-04-30 | < 0.54 U | < 0.26 U | 1.6 | 3.8 | < 0.019 U | < 0.012 U | < 3.0 U |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | 1.9 | < 0.22 U | < 0.16 U | < 0.16 U | < 0.017 U | < 0.011 U | < 2.6 U |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | 17.0 | N | N | JC64643 | 2018-04-20 | 2.4 | < 0.22 U | < 0.16 U | < 0.16 U | < 0.017 U | < 0.011 U | < 2.6 U |
| SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | 9.5 | N | N | JC51736 | 2017-09-25 | < 0.50 U | < 0.23 U | 0.82 J | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | 14.0 | N | N | JC57276 | 2017-12-13 | < 1.0 UB | < 0.24 U | 1.8 | 4.5 | < 0.018 U | < 0.011 U | < 2.8 U |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | 9.0 | N | N | JC57276 | 2017-12-13 | < 0.50 U | < 0.23 U | 1.6 | 5.5 | < 0.018 U | < 0.011 U | < 2.8 U |
| SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | 16.0 | N | N | JC57169 | 2017-12-12 | < 0.51 U | < 0.24 U | 1.8 | 22.7 | < 0.018 U | < 0.011 U | < 2.8 U |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | 13.0 | N | N | JC64571 | 2018-04-19 | < 0.55 U | < 0.26 U | 1.4 | 5.1 | < 0.020 U | < 0.012 U | < 3.1 U |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | 8.0 | N | N | JC64571 | 2018-04-19 | < 0.50 U | < 0.24 U | 1.2 | 4.9 | < 0.018 U | < 0.011 U | < 2.8 U |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | 13.0 | N | N | JC64986 | 2018-04-26 | < 0.53 U | < 0.25 U | < 0.18 U | < 0.18 U | < 0.019 U | < 0.012 U | < 3.0 U |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | 9.0 | N | N | JC64986 | 2018-04-26 | < 0.53 U | < 0.25 U | < 0.18 U | < 0.18 U | < 0.019 U | < 0.012 U | < 3.0 U |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | 10.0 | N | N | JC67069 | 2018-05-31 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | 15.0 | N | N | JC67069 | 2018-05-31 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | 8.0 | N | N | JC64763 | 2018-04-23 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | 10.0 | N | N | JC64763 | 2018-04-23 | < 0.50 U | < 0.24 U | < 0.17 U | < 0.17 U | < 0.018 U | 0.0200 | < 2.8 U |
| SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | 14.0 | N | N | JC64763 | 2018-04-23 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | 6.0 | N | N | JC64763 | 2018-04-23 | 1.0 J | < 0.23 U | < 0.17 U | < 0.17 U | < 0.017 U | < 0.011 U | < 2.7 U |
| SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | 13.0 | N | N | JC64822 | 2018-04-24 | < 0.49 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | < 0.51 U | < 0.24 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | 10.0 | N | N | JC65255 | 2018-05-01 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | 15.0 | N | N | JC65255 | 2018-05-01 | < 0.50 U | < 0.24 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| SHALLOW | MW7S | MW7S-10.0-20180430 | 10.0 | N | N | JC65178 | 2018-04-30 | < 0.51 U | < 0.24 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| SHALLOW | MW8S | MW8S-20180427 | 9.5 | N | N | JC65066 | 2018-04-27 | < 0.54 U | < 0.25 U | < 0.18 U | < 0.19 U | < 0.019 U | < 0.012 U | < 3.0 U |
| SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | 21.0 | N | N | JC64444 | 2018-04-18 | < 0.52 U | < 0.25 U | < 0.18 U | < 0.18 U | < 0.019 U | < 0.012 U | < 2.9 U |
| INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | 39.5 | N | N | JC57752 | 2017-12-20 | < 0.52 U | < 0.25 U | < 0.18 U | 0.75 J | < 0.019 U | < 0.012 U | < 2.9 U |
| INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | 27.5 | N | N | JC64444 | 2018-04-18 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | 47.5 | N | N | JC65255 | 2018-05-01 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | 37.5 | N | N | JC64571 | 2018-04-19 | < 0.50 U | < 0.24 U | 1.2 | 48.6 | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | 33.0 | N | N | JC62130 | 2018-03-12 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | 35.5 | N | N | JC62228 | 2018-03-13 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | 35.5 | FD | N | JC62228 | 2018-03-13 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | **0.0832 J** | < 2.8 U |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | 35.5 | N | N | JC56729A | 2017-12-06 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | 35.5 | FD | N | JC56729A | 2017-12-06 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | 32.5 | N | N | JC51890 | 2017-09-27 | < 0.52 U | < 0.25 U | < 0.18 U | < 0.18 U | < 0.019 U | < 0.012 U | < 2.9 U |
| INTERMEDIATE | 114-MW37B | 114-MW37B-20170926 | 32.5 | N | N | JC51824 | 2017-09-26 | < 0.52 U | < 0.25 U | < 0.18 U | < 0.18 U | < 0.019 U | < 0.012 U | < 2.9 U |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | 42.5 | N | N | JC60652 | 2018-02-12 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | 42.5 | FD | N | JC60652 | 2018-02-12 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | 40.5 | N | N | JC65066 | 2018-04-27 | < 0.51 U | < 0.24 U | < 0.18 U | < 0.18 U | < 0.018 U | < 0.011 U | < 2.9 U |
| INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | 24.5 | N | N | JC64643 | 2018-04-20 | < 1.9 UB | < 0.23 U | 0.60 J | 1.6 | < 0.017 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | 27.0 | N | N | JC57820 | 2017-12-21 | < 0.52 U | < 0.24 U | < 0.18 U | < 0.18 U | < 0.019 U | < 0.012 U | < 2.9 U |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | 32.0 | N | N | JC57820 | 2017-12-21 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | 26.5 | N | N | JC57638 | 2017-12-19 | < 0.55 U | < 0.26 U | < 0.19 U | < 0.19 U | < 0.020 U | < 0.012 U | < 3.1 U |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | 31.0 | N | N | JC57501A | 2017-12-15 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | 26.5 | N | N | JC58745 | 2018-01-12 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | 31.5 | N | N | JC58745 | 2018-01-12 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |

**Table 5-4**
**Groundwater Analytical Results - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | Analyte | DI-N-BUTYLPHTHALATE | DI-N-OCTYL PHTHALATE | FLUORANTHENE | FLUORENE | HEXACHLORO-1,3-BUTADIENE | HEXACHLOROBENZENE | HEXACHLOROCYCLOPENTADIENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 84-74-2 | 117-84-0 | 206-44-0 | 86-73-7 | 87-68-3 | 118-74-1 | 77-47-4 |
| | | | | | | | GWQS | 700 | 100 | 300 | 300 | 1 | 0.02 | 40 |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Water-Bearing Zone** | **Location ID** | **Sample ID** | **Sample Depth (ft bTOIC)** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | | | |
| INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | 34.6 | N | N | JC58670 | 2018-01-11 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | 22.5 | N | N | JC58073A | 2017-12-27 | < 1.2 UB | < 0.23 U | < 0.17 U | 0.72 J | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | 27.5 | N | N | JC58073A | 2017-12-27 | < 0.50 U | < 0.23 U | < 0.17 U | 0.95 J | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | 32.5 | N | N | JC58028A | 2017-12-26 | < 0.50 U | < 0.23 U | < 0.17 U | 1.3 | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | 37.5 | N | N | JC58028A | 2017-12-26 | < 0.50 U | < 0.23 U | < 0.17 U | 1.2 | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | 22.5 | N | N | JC58942 | 2018-01-16 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | 27.5 | N | N | JC58942 | 2018-01-16 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | 32.5 | N | N | JC58942 | 2018-01-16 | 1.0 J | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | 37.5 | N | N | JC58942 | 2018-01-16 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | 33.0 | N | N | JC67069 | 2018-05-31 | < 0.50 U | < 0.23 U | < 0.17 U | 0.52 J | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | 38.0 | N | N | JC67069 | 2018-05-31 | < 0.50 U | < 0.23 U | < 0.17 U | 0.81 J | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | 30.0 | N | N | JC65178 | 2018-04-30 | < 0.50 U | < 0.24 U | 3.8 | 73.1 | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | 35.0 | N | N | JC65178 | 2018-04-30 | < 0.50 U | < 0.24 U | 3.7 | 73.9 | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | 34.5 | N | N | JC64444 | 2018-04-18 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | 39.5 | N | N | JC64444 | 2018-04-18 | < 0.51 U | < 0.24 U | < 0.17 U | < 0.18 U | < 0.018 U | < 0.011 U | < 2.9 U |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | 33.0 | N | N | JC64643 | 2018-04-20 | < 6.0 UB | < 0.22 U | 0.63 J | 9.1 | < 0.017 U | < 0.011 U | < 2.6 U |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | 37.0 | N | N | JC64643 | 2018-04-20 | < 3.9 UB | < 0.23 U | 0.63 J | 9.4 | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | 32.5 | N | N | JC58670 | 2018-01-11 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | 37.5 | N | N | JC58670 | 2018-01-11 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | 29.0 | N | N | JC67069 | 2018-05-31 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | 34.0 | N | N | JC67069 | 2018-05-31 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | 34.0 | FD | N | JC67069 | 2018-05-31 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.017 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | 28.0 | N | N | JC57276 | 2017-12-13 | < 0.51 U | < 0.24 U | 1.3 | 58.8 | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | 33.0 | N | N | JC57276 | 2017-12-13 | < 1.4 UB | < 0.23 U | 1.5 | 73.6 | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | 42.0 | N | N | JC57169 | 2017-12-12 | < 0.50 U | < 0.24 U | 3.8 | 54.3 | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | 47.0 | N | N | JC57169 | 2017-12-12 | < 0.51 U | < 0.24 U | 3.4 | 50.6 | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | 28.0 | N | N | JC64571 | 2018-04-19 | < 0.50 U | < 0.23 U | < 0.17 U | 4.5 | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | 33.0 | N | N | JC64571 | 2018-04-19 | < 0.50 U | < 0.23 U | 0.78 J | 45.4 | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | 38.0 | N | N | JC64763 | 2018-04-23 | 1.4 J | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | 42.0 | N | N | JC64763 | 2018-04-23 | 1.8 J | < 0.24 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | 30.5 | N | N | JC64901 | 2018-04-25 | < 0.48 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.017 U | < 0.011 U | < 2.7 U |
| INTERMEDIATE | 135-MW3BR | 135-MW3B-30.0-20180501 | 30.0 | N | N | JC65255 | 2018-05-01 | < 0.48 U | < 0.22 U | < 0.16 U | 0.43 J | < 0.017 U | < 0.011 U | < 2.7 U |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | 37.0 | N | N | JC67069 | 2018-05-31 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | 42.0 | N | N | JC67069 | 2018-05-31 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | MW7D | MW7D-41.0-20180423 | 41.0 | N | N | JC64763 | 2018-04-23 | < 0.48 U | < 0.23 U | < 0.16 U | < 0.17 U | < 0.017 U | < 0.011 U | < 2.7 U |
| INTERMEDIATE | MW7D | MW7D-45.0-20180423 | 45.0 | N | N | JC64763 | 2018-04-23 | < 0.48 U | < 0.22 U | < 0.16 U | < 0.16 U | < 0.017 U | < 0.011 U | < 2.7 U |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425 | 41.0 | N | N | JC64901 | 2018-04-25 | < 0.56 U | < 0.27 U | 2.7 J | 0.60 J | < 0.020 U | < 0.013 U | < 3.2 U |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425X | 41.0 | FD | N | JC64901 | 2018-04-25 | < 0.51 U | < 0.24 U | 4.7 J | 1.1 | < 0.018 U | < 0.011 U | < 2.8 U |
| INTERMEDIATE | MW8D | MW8D-45.0-20180425 | 45.0 | N | N | JC64901 | 2018-04-25 | < 0.55 U | < 0.26 U | 2.4 | < 0.19 U | < 0.020 U | < 0.012 U | < 3.1 U |
| DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | 99.0 | N | N | JC65066 | 2018-04-27 | < 0.47 U | < 0.22 U | < 0.16 U | < 0.16 U | < 0.017 U | < 0.011 U | < 2.6 U |
| DEEP | 114-MW20C | 114-MW20C-20180419 | 80.5 | N | N | JC64571 | 2018-04-19 | < 0.55 U | < 0.26 U | < 0.19 U | < 0.19 U | < 0.020 U | < 0.012 U | < 3.1 U |
| DEEP | 114-MW25C | 114-MW25C-20180313 | 44.5 | N | N | JC62228 | 2018-03-13 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | **0.0228** | < 2.8 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | 35.0 | N | N | JC57943A | 2017-12-22 | < 0.55 U | < 0.26 U | < 0.19 U | 1.6 | < 0.020 U | < 0.012 U | < 3.1 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | 40.0 | N | N | JC57943A | 2017-12-22 | < 0.55 U | < 0.26 U | < 0.19 U | 2.1 | < 0.020 U | < 0.012 U | < 3.1 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | 45.0 | N | N | JC57820 | 2017-12-21 | < 0.57 U | < 0.27 U | < 0.20 U | 2.2 | < 0.020 U | < 0.013 U | < 3.2 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | 50.0 | N | N | JC57820 | 2017-12-21 | < 0.55 U | < 0.26 U | < 0.19 U | 2.7 | < 0.020 U | < 0.012 U | < 3.1 U |
| DEEP | MW8F | MW8F-20180425 | 80.5 | N | N | JC64901 | 2018-04-25 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |
| DEEP | MW-CR-3D | MW-CR-3D-20180418 | 43.5 | N | N | JC64444 | 2018-04-18 | < 0.50 U | < 0.23 U | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U |

**Table 5-4**
**Groundwater Analytical Results - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

AECOM

| | | | | | | | Analyte | HEXACHLOROETHANE | INDENO(1,2,3-CD)PYRENE | NAPHTHALENE | 1-METHYLNAPHTHALENE | NITROBENZENE | N-NITROSO-DI-N-PROPYLAMINE | N-NITROSODIPHENYLAMINE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 67-72-1 | 193-39-5 | 91-20-3 | 90-12-0 | 98-95-3 | 621-64-7 | 86-30-6 |
| | | | | | | | GWQS | 7 | 0.2 | 300 | 5 | 6 | 10 | 10 |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Water-Bearing Zone | Location ID | Sample ID | Sample Depth (ft bTOIC) | Sample Type | Fraction | Lab SDG | Date Collected | | | | | | | |
| ***Monitoring Wells*** | | | | | | | | | | | | | | |
| SHALLOW | 114-MW20A * | 114-MW20A-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | < 0.38 U | < 0.037 U | 118 | **19.4** | < 0.63 U | < 0.47 U | < 0.22 U |
| SHALLOW | 114-MW20A * | 114-MW20A-8.0-20180420 | 8.0 | N | N | JC64643 | 2018-04-20 | < 0.39 U | < 0.038 U | 203 | **28.0** | < 0.65 U | < 0.49 U | < 0.22 U |
| SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | 11.5 | N | N | JC65325 | 2018-05-02 | < 0.39 U | < 0.038 U | 0.84 J | 2.7 | < 0.64 U | < 0.48 U | < 0.22 U |
| SHALLOW | 114-MW25A | 114-MW25A-20170927 | 11.5 | N | N | JC51824 | 2017-09-27 | < 0.39 U | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | 12.5 | N | N | JC57565 | 2017-12-18 | < 0.41 U | < 0.040 U | 2.9 | - | < 0.67 U | < 0.50 U | 1.1 J |
| SHALLOW | 114-MW27A | 114-MW27A-20170926 | 13.5 | N | N | JC51824 | 2017-09-26 | < 0.42 U | < 0.041 U | < 0.25 U | - | < 0.70 U | < 0.52 U | < 0.24 U |
| SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | 11.5 | N | N | JC57565 | 2017-12-18 | < 0.43 U | < 0.042 U | < 0.26 U | - | < 0.71 U | < 0.53 U | < 0.25 U |
| SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | 21.0 | N | N | JC56729A | 2017-12-06 | < 0.39 U | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | 11.5 | N | N | JC56859A | 2017-12-07 | < 0.37 U | < 0.036 U | < 0.22 U | - | < 0.61 U | < 0.46 U | < 0.21 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927 | 10.0 | N | N | JC51890 | 2017-09-27 | < 0.39 U | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927-X | 10.0 | FD | N | JC51890 | 2017-09-27 | < 0.41 U | < 0.040 U | < 0.24 U | - | < 0.68 U | < 0.51 U | < 0.23 U |
| SHALLOW | 114-MW37A | 114-MW37A-20170926 | 12.5 | N | N | JC51824 | 2017-09-26 | < 0.39 U | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | 22.5 | N | N | JC56504A | 2017-12-04 | < 0.43 U | < 0.042 U | < 0.26 U | - | < 0.71 U | < 0.53 U | < 0.25 U |
| SHALLOW | 114-MW41A | 114-MW41A-20180420 | 12.5 | N | N | JC64643 | 2018-04-20 | < 0.39 U | < 0.038 U | 177 | **37.8** | < 0.64 U | < 0.48 U | < 0.22 U |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | 11.0 | N | N | JC65178 | 2018-04-30 | < 0.39 U | < 0.038 U | 5.7 | **9.0** | < 0.64 U | < 0.48 U | < 0.22 U |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | 16.0 | N | N | JC65178 | 2018-04-30 | < 0.43 U | 0.0449 J | 4.8 | **7.1** | < 0.70 U | < 0.53 U | < 0.24 U |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | < 0.39 U | < 0.038 U | < 0.23 U | < 0.26 U | < 0.64 U | < 0.48 U | < 0.22 U |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | < 0.39 U | < 0.038 U | < 0.23 U | < 0.26 U | < 0.64 U | < 0.48 U | < 0.22 U |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | < 0.37 U | < 0.036 U | 70.2 | < 0.25 U | < 0.61 U | < 0.46 U | < 0.21 U |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | 17.0 | N | N | JC64643 | 2018-04-20 | < 0.37 U | < 0.036 U | 57.9 | < 0.25 U | < 0.61 U | < 0.46 U | < 0.21 U |
| SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | 9.5 | N | N | JC51736 | 2017-09-25 | < 0.39 U | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | 14.0 | N | N | JC57276 | 2017-12-13 | < 0.40 U | 0.0887 J | < 0.24 U | - | < 0.66 U | < 0.49 U | < 0.23 U |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | 9.0 | N | N | JC57276 | 2017-12-13 | < 0.39 U | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | 16.0 | N | N | JC57169 | 2017-12-12 | < 0.40 U | < 0.039 U | 19.1 | - | < 0.66 U | < 0.49 U | < 0.23 U |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | 13.0 | N | N | JC64571 | 2018-04-19 | < 0.43 U | < 0.042 U | 20.9 | **19.1** | < 0.71 U | < 0.53 U | < 0.25 U |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | 8.0 | N | N | JC64571 | 2018-04-19 | < 0.39 U | < 0.038 U | 5.2 | **15.1** | < 0.65 U | < 0.48 U | < 0.22 U |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | 13.0 | N | N | JC64986 | 2018-04-26 | < 0.41 U | < 0.040 U | < 0.25 U | < 0.28 U | < 0.68 U | < 0.51 U | < 0.24 U |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | 9.0 | N | N | JC64986 | 2018-04-26 | < 0.42 U | < 0.041 U | < 0.25 U | < 0.28 U | < 0.69 U | < 0.52 U | < 0.24 U |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | 10.0 | N | N | JC67069 | 2018-05-31 | < 0.39 U | < 0.038 U | < 0.23 U | < 0.26 U | < 0.64 U | < 0.48 U | < 0.22 U |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | 15.0 | N | N | JC67069 | 2018-05-31 | < 0.39 U | < 0.038 U | < 0.23 U | < 0.26 U | < 0.64 U | < 0.48 U | < 0.22 U |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 0.39 U | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | 8.0 | N | N | JC64763 | 2018-04-23 | < 0.39 U | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | 10.0 | N | N | JC64763 | 2018-04-23 | < 0.39 U | < 0.038 U | < 0.23 U | - | < 0.65 U | < 0.48 U | < 0.22 U |
| SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | 14.0 | N | N | JC64763 | 2018-04-23 | < 0.39 U | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | 6.0 | N | N | JC64763 | 2018-04-23 | < 0.38 U | < 0.037 U | < 0.23 U | - | < 0.63 U | < 0.47 U | < 0.22 U |
| SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 0.39 U | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | 13.0 | N | N | JC64822 | 2018-04-24 | < 0.39 U | < 0.038 U | < 0.23 U | < 0.26 U | < 0.64 U | < 0.48 U | < 0.22 U |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | < 0.39 U | < 0.038 U | < 0.23 U | < 0.26 U | < 0.64 U | < 0.48 U | < 0.22 U |
| SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | < 0.40 U | < 0.039 U | < 0.24 U | < 0.27 U | < 0.66 U | < 0.49 U | < 0.23 U |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | 10.0 | N | N | JC65255 | 2018-05-01 | < 0.39 U | < 0.038 U | < 0.23 U | < 0.26 U | < 0.64 U | < 0.48 U | < 0.22 U |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | 15.0 | N | N | JC65255 | 2018-05-01 | < 0.39 U | < 0.038 U | < 0.23 U | < 0.27 U | < 0.65 U | < 0.49 U | < 0.22 U |
| SHALLOW | MW7S | MW7S-10.0-20180430 | 10.0 | N | N | JC65178 | 2018-04-30 | < 0.40 U | < 0.039 U | < 0.24 U | < 0.27 U | < 0.66 U | < 0.49 U | < 0.23 U |
| SHALLOW | MW8S | MW8S-20180427 | 9.5 | N | N | JC65066 | 2018-04-27 | < 0.42 U | < 0.041 U | < 0.25 U | < 0.29 U | < 0.70 U | < 0.52 U | < 0.24 U |
| SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | < 0.39 U | < 0.038 U | 3.0 | 0.84 J | < 0.64 U | < 0.48 U | < 0.22 U |
| SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | < 0.39 U | < 0.038 U | 1.8 | 0.52 J | < 0.64 U | < 0.48 U | < 0.22 U |
| SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | 21.0 | N | N | JC64444 | 2018-04-18 | < 0.41 U | < 0.040 U | 2.9 | 0.74 J | < 0.68 U | < 0.51 U | < 0.23 U |
| INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | 39.5 | N | N | JC57752 | 2017-12-20 | < 0.41 U | < 0.040 U | 1.3 JB | - | < 0.68 U | < 0.51 U | < 0.23 U |
| INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | 27.5 | N | N | JC64444 | 2018-04-18 | < 0.39 U | < 0.038 U | < 0.23 U | < 0.26 U | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | 47.5 | N | N | JC65255 | 2018-05-01 | < 0.39 U | < 0.038 U | < 0.23 U | < 0.26 U | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | 37.5 | N | N | JC64571 | 2018-04-19 | < 0.40 U | < 0.039 U | **4640** | **709** | < 0.65 U | < 0.49 U | < 0.23 U |
| INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | 33.0 | N | N | JC62130 | 2018-03-12 | < 0.39 U | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | 35.5 | N | N | JC62228 | 2018-03-13 | < 0.39 U | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | 35.5 | FD | N | JC62228 | 2018-03-13 | < 0.39 U | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | 35.5 | N | N | JC56729A | 2017-12-06 | < 0.39 U | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | 35.5 | FD | N | JC56729A | 2017-12-06 | < 0.39 U | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | 32.5 | N | N | JC51890 | 2017-09-27 | < 0.41 U | < 0.040 U | < 0.24 U | - | < 0.68 U | < 0.51 U | < 0.23 U |
| INTERMEDIATE | 114-MW37B | 114-MW37B-20170926 | 32.5 | N | N | JC51824 | 2017-09-26 | < 0.41 U | < 0.040 U | < 0.24 U | - | < 0.68 U | < 0.51 U | < 0.23 U |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | 42.5 | N | N | JC60652 | 2018-02-12 | < 0.39 U | < 0.038 U | < 0.23 U | 0.56 | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | 42.5 | FD | N | JC60652 | 2018-02-12 | < 0.39 U | < 0.038 U | < 0.23 U | 0.45 | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | 40.5 | N | N | JC65066 | 2018-04-27 | < 0.40 U | < 0.039 U | < 0.24 U | < 0.27 U | < 0.66 U | < 0.50 U | < 0.23 U |
| INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | 24.5 | N | N | JC64643 | 2018-04-20 | < 0.39 U | < 0.037 U | 16.0 | **17.2** | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | 27.0 | N | N | JC57820 | 2017-12-21 | < 0.41 U | < 0.040 U | < 0.24 U | - | < 0.67 U | < 0.50 U | < 0.23 U |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | 32.0 | N | N | JC57820 | 2017-12-21 | < 0.39 U | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | 26.5 | N | N | JC57638 | 2017-12-19 | < 0.43 U | < 0.042 U | < 0.26 U | - | < 0.71 U | < 0.53 U | < 0.25 U |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | 31.0 | N | N | JC57501A | 2017-12-15 | < 0.39 U | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | 26.5 | N | N | JC58745 | 2018-01-12 | < 0.39 U | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | 31.5 | N | N | JC58745 | 2018-01-12 | < 0.39 U | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |

**Table 5-4**
**Groundwater Analytical Results - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | Analyte | HEXACHLOROETHANE | INDENO(1,2,3-CD)PYRENE | NAPHTHALENE | 1-METHYLNAPHTHALENE | NITROBENZENE | N-NITROSO-DI-N-PROPYLAMINE | N-NITROSODIPHENYLAMINE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 67-72-1 | 193-39-5 | 91-20-3 | 90-12-0 | 98-95-3 | 621-64-7 | 86-30-6 |
| | | | | | | | GWQS | 7 | 0.2 | 300 | 5 | 6 | 10 | 10 |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Water-Bearing Zone | Location ID | Sample ID | Sample Depth (ft bTOIC) | Sample Type | Fraction | Lab SDG | Date Collected | | | | | | | |
| INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | 34.6 | N | N | JC58670 | 2018-01-11 | < 0.39 U | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | 22.5 | N | N | JC58073A | 2017-12-27 | < 0.39 U | < 0.038 U | 3.9 | - | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | 27.5 | N | N | JC58073A | 2017-12-27 | < 0.39 U | < 0.038 U | 6.0 | - | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | 32.5 | N | N | JC58028A | 2017-12-26 | < 0.39 U | < 0.038 U | 8.6 | - | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | 37.5 | N | N | JC58028A | 2017-12-26 | < 0.39 U | < 0.038 U | 9.1 | - | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | 22.5 | N | N | JC58942 | 2018-01-16 | < 0.39 U | < 0.038 U | 4.0 | - | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | 27.5 | N | N | JC58942 | 2018-01-16 | < 0.39 U | < 0.038 U | 4.9 | - | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | 32.5 | N | N | JC58942 | 2018-01-16 | < 0.39 U | < 0.038 U | 4.3 | - | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | 37.5 | N | N | JC58942 | 2018-01-16 | < 0.39 U | < 0.038 U | 4.6 | - | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | 33.0 | N | N | JC67069 | 2018-05-31 | < 0.39 U | < 0.038 U | **1320** | **115** | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | 38.0 | N | N | JC67069 | 2018-05-31 | < 0.39 U | < 0.038 U | **1700** | **163** | < 0.64 UJ | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | 30.0 | N | N | JC65178 | 2018-04-30 | < 0.39 U | < 0.038 U | 34.8 | **396** | < 0.65 U | < 0.49 U | < 0.22 U |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | 35.0 | N | N | JC65178 | 2018-04-30 | < 0.39 U | < 0.038 U | 59.8 | **392** | < 0.65 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | 34.5 | N | N | JC64444 | 2018-04-18 | < 0.39 U | < 0.038 U | < 0.23 U | < 0.26 U | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | 39.5 | N | N | JC64444 | 2018-04-18 | < 0.40 U | < 0.039 U | < 0.24 U | < 0.27 U | < 0.66 U | < 0.49 U | < 0.23 U |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | 33.0 | N | N | JC64643 | 2018-04-20 | < 0.37 U | < 0.036 U | 39.1 | **88.9** | < 0.61 U | < 0.46 U | < 0.21 U |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | 37.0 | N | N | JC64643 | 2018-04-20 | < 0.39 U | < 0.038 U | 38.5 | **90.3** | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | 32.5 | N | N | JC58670 | 2018-01-11 | < 0.39 U | < 0.038 U | 8.5 | - | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | 37.5 | N | N | JC58670 | 2018-01-11 | < 0.39 U | < 0.038 U | 8.4 | - | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | 29.0 | N | N | JC67069 | 2018-05-31 | < 0.39 U | < 0.038 U | 4.8 | 0.76 J | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | 34.0 | N | N | JC67069 | 2018-05-31 | < 0.39 U | < 0.038 U | 1.6 | < 0.26 U | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | 34.0 | FD | N | JC67069 | 2018-05-31 | < 0.39 U | 0.0380 J | 2.6 | < 0.26 U | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | 28.0 | N | N | JC57276 | 2017-12-13 | < 0.40 U | < 0.039 U | **673** | - | < 0.66 U | < 0.49 U | < 0.23 U |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | 33.0 | N | N | JC57276 | 2017-12-13 | < 0.39 U | < 0.038 U | **1240** | - | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | 42.0 | N | N | JC57169 | 2017-12-12 | < 0.40 U | < 0.039 U | **3820** | - | < 0.65 U | < 0.49 U | < 0.23 U |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | 47.0 | N | N | JC57169 | 2017-12-12 | < 0.40 U | < 0.039 U | **4300** | - | < 0.66 U | < 0.49 U | < 0.23 U |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | 28.0 | N | N | JC64571 | 2018-04-19 | < 0.39 U | < 0.038 U | 0.99 J | **17.3** | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | 33.0 | N | N | JC64571 | 2018-04-19 | < 0.39 U | < 0.038 U | 130 | **447** | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | 38.0 | N | N | JC64763 | 2018-04-23 | < 0.39 U | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | 42.0 | N | N | JC64763 | 2018-04-23 | < 0.39 U | < 0.038 U | < 0.23 U | - | < 0.65 U | < 0.49 U | < 0.22 U |
| INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | 30.5 | N | N | JC64901 | 2018-04-25 | < 0.38 U | 0.0393 J | < 0.23 U | - | < 0.62 U | < 0.47 U | < 0.22 U |
| INTERMEDIATE | 135-MW3BR | 135-MW3B-30.0-20180501 | 30.0 | N | N | JC65255 | 2018-05-01 | < 0.37 U | < 0.037 U | < 0.22 U | < 0.25 U | < 0.62 U | < 0.46 U | < 0.21 U |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | 37.0 | N | N | JC67069 | 2018-05-31 | < 0.39 U | < 0.038 U | < 0.23 U | < 0.26 U | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | 42.0 | N | N | JC67069 | 2018-05-31 | < 0.39 U | < 0.038 U | < 0.23 U | < 0.26 U | < 0.64 U | < 0.48 U | < 0.22 U |
| INTERMEDIATE | MW7D | MW7D-41.0-20180423 | 41.0 | N | N | JC64763 | 2018-04-23 | < 0.38 U | < 0.037 U | < 0.22 U | - | < 0.62 U | < 0.46 U | < 0.21 U |
| INTERMEDIATE | MW7D | MW7D-45.0-20180423 | 45.0 | N | N | JC64763 | 2018-04-23 | < 0.37 U | < 0.037 U | < 0.22 U | - | < 0.62 U | < 0.46 U | < 0.21 U |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425 | 41.0 | N | N | JC64901 | 2018-04-25 | < 0.44 U | **0.909 J** | 168 | **15.5 J** | < 0.73 U | < 0.55 U | < 0.25 U |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425X | 41.0 | FD | N | JC64901 | 2018-04-25 | < 0.40 U | **1.25 J** | 187 | **21.1 J** | < 0.66 U | < 0.49 U | < 0.23 U |
| INTERMEDIATE | MW8D | MW8D-45.0-20180425 | 45.0 | N | N | JC64901 | 2018-04-25 | < 0.43 U | **0.889** | 4.2 | 0.62 J | < 0.71 U | < 0.53 U | < 0.25 U |
| DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | 99.0 | N | N | JC65066 | 2018-04-27 | < 0.37 U | < 0.036 U | < 0.22 U | < 0.25 U | < 0.61 U | < 0.46 U | < 0.21 U |
| DEEP | 114-MW20C | 114-MW20C-20180419 | 80.5 | N | N | JC64571 | 2018-04-19 | < 0.43 U | < 0.042 U | < 0.26 U | < 0.29 U | < 0.71 U | < 0.53 U | < 0.25 U |
| DEEP | 114-MW25C | 114-MW25C-20180313 | 44.5 | N | N | JC62228 | 2018-03-13 | < 0.39 U | < 0.038 U | 248 | - | < 0.64 U | < 0.48 U | < 0.22 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | 35.0 | N | N | JC57943A | 2017-12-22 | < 0.43 U | < 0.042 U | 2.3 | - | < 0.71 U | < 0.53 U | < 0.25 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | 40.0 | N | N | JC57943A | 2017-12-22 | < 0.43 U | < 0.042 U | 4.6 | - | < 0.71 U | < 0.53 U | < 0.24 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | 45.0 | N | N | JC57820 | 2017-12-21 | < 0.45 U | < 0.044 U | 5.8 | - | < 0.74 U | < 0.55 U | < 0.26 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | 50.0 | N | N | JC57820 | 2017-12-21 | < 0.43 U | < 0.042 U | 6.6 | - | < 0.71 U | < 0.53 U | < 0.25 U |
| DEEP | MW8F | MW8F-20180425 | 80.5 | N | N | JC64901 | 2018-04-25 | < 0.39 U | < 0.038 U | < 0.23 U | < 0.26 U | < 0.64 U | < 0.48 U | < 0.22 U |
| DEEP | MW-CR-3D | MW-CR-3D-20180418 | 43.5 | N | N | JC64444 | 2018-04-18 | < 0.39 U | < 0.038 U | < 0.23 U | < 0.26 U | < 0.64 U | < 0.48 U | < 0.22 U |

# Table 5-4
## Groundwater Analytical Results - SVOCs
## Groundwater Remedial Investigation Report
## Garfield Avenue Group of Sites
## PPG, Jersey City, New Jersey

| | | | | | | | Analyte | P-CHLOROANILINE | PENTACHLOROPHENOL | PHENANTHRENE | PHENOL | P-NITROANILINE | PYRENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 106-47-8 | 87-86-5 | 85-01-8 | 108-95-2 | 100-01-6 | 129-00-0 |
| | | | | | | | GWQS | - | 0.3 | 100 | 2000 | - | 200 |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Water-Bearing Zone | Location ID | Sample ID | Sample Depth (ft bTOIC) | Sample Type | Fraction | Lab SDG | Date Collected | | | | | | |
| ***Monitoring Wells*** | | | | | | | | | | | | | |
| SHALLOW | 114-MW20A * | 114-MW20A-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | < 0.33 U | < 0.13 U | < 0.17 U | < 0.38 U | < 0.43 U | < 0.21 U |
| SHALLOW | 114-MW20A * | 114-MW20A-8.0-20180420 | 8.0 | N | N | JC64643 | 2018-04-20 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.40 U | < 0.44 U | < 0.22 U |
| SHALLOW | 114-MW24AR | 114-MW24AR-20180502 | 11.5 | N | N | JC65325 | 2018-05-02 | < 0.34 U | < 0.13 U | 0.69 J | < 0.39 U | < 0.44 U | < 0.22 U |
| SHALLOW | 114-MW25A | 114-MW25A-20170927 | 11.5 | N | N | JC51824 | 2017-09-27 | < 0.34 U | < 0.13 U | 0.69 J | < 0.39 U | < 0.44 U | 1.3 |
| SHALLOW | 114-MW26A | FORREST-114-MW26A-20171218 | 12.5 | N | N | JC57565 | 2017-12-18 | < 0.35 U | < 0.13 U | < 0.18 U | < 0.41 U | < 0.46 U | < 0.23 U |
| SHALLOW | 114-MW27A | 114-MW27A-20170926 | 13.5 | N | N | JC51824 | 2017-09-26 | < 0.37 U | < 0.14 U | < 0.19 U | < 0.43 U | < 0.48 U | < 0.24 U |
| SHALLOW | 114-MW28A | FORREST-114-MW28A-20171218 | 11.5 | N | N | JC57565 | 2017-12-18 | < 0.38 U | < 0.14 U | < 0.19 U | < 0.44 U | < 0.49 U | < 0.24 U |
| SHALLOW | 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | 21.0 | N | N | JC56729A | 2017-12-06 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| SHALLOW | 114-MW30A | FORREST-114-MW30A-20171207 | 11.5 | N | N | JC56859A | 2017-12-07 | < 0.32 U | < 0.12 U | < 0.17 U | < 0.37 U | < 0.42 U | < 0.21 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927 | 10.0 | N | N | JC51890 | 2017-09-27 | < 0.34 U | < 0.13 U | < 0.18 U | 13.3 | < 0.44 U | < 0.22 U |
| SHALLOW | 114-MW36A | 114-MW36A-20170927-X | 10.0 | FD | N | JC51890 | 2017-09-27 | < 0.36 U | < 0.14 U | 0.49 J | 14.2 | < 0.46 U | < 0.23 U |
| SHALLOW | 114-MW37A | 114-MW37A-20170926 | 12.5 | N | N | JC51824 | 2017-09-26 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| SHALLOW | 114-MW38A | FORREST-114-MW38A-20171204 | 22.5 | N | N | JC56504A | 2017-12-04 | < 0.38 U | < 0.14 U | < 0.19 U | < 0.44 U | < 0.49 U | < 0.24 U |
| SHALLOW | 114-MW41A | 114-MW41A-20180420 | 12.5 | N | N | JC64643 | 2018-04-20 | < 0.34 U | < 0.13 U | 80.4 | < 0.39 U | < 0.44 U | 4.9 |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-11.0-20180430 | 11.0 | N | N | JC65178 | 2018-04-30 | < 0.34 U | < 0.13 U | 7.0 | < 0.39 U | < 0.44 U | 1.7 |
| SHALLOW | 114-P2A-MW102S | 114-P2A-MW102S-16.0-20180430 | 16.0 | N | N | JC65178 | 2018-04-30 | < 0.37 U | < 0.14 U | 7.6 | < 0.43 U | < 0.48 U | 1.9 |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| SHALLOW | 114-P2A-MW103S | 114-P2A-MW103S-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-11.0-20180420 | 11.0 | N | N | JC64643 | 2018-04-20 | < 0.32 U | < 0.12 U | < 0.17 U | < 0.37 U | < 0.42 U | < 0.21 U |
| SHALLOW | 114-P2A-MW104S | 114-P2A-MW104S-17.0-20180420 | 17.0 | N | N | JC64643 | 2018-04-20 | < 0.32 U | < 0.12 U | < 0.17 U | < 0.37 U | < 0.42 U | < 0.21 U |
| SHALLOW | 114-P2B2-MW101S | 114-P2B2-MW101S-20170925 | 9.5 | N | N | JC51736 | 2017-09-25 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | 1.2 |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-14.0-20171213 | 14.0 | N | N | JC57276 | 2017-12-13 | < 0.35 U | < 0.13 U | 9.9 | < 0.40 U | < 0.45 U | 2.9 |
| SHALLOW | 114-P2B3-MW101S | 114-P2B3-MW101S-9.0-20171213 | 9.0 | N | N | JC57276 | 2017-12-13 | < 0.34 U | < 0.13 U | 12.1 | < 0.39 U | < 0.44 U | 2.2 |
| SHALLOW | 114-P2B4-MW101S | 114-P2B4-MW101S-16.0-20171212 | 16.0 | N | N | JC57169 | 2017-12-12 | < 0.35 U | < 0.13 U | 28.7 | < 0.40 U | < 0.45 U | 2.4 |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-13.0-20180419 | 13.0 | N | N | JC64571 | 2018-04-19 | < 0.38 U | < 0.14 U | 9.7 | < 0.43 U | < 0.49 U | 2.1 |
| SHALLOW | 114-P2B4-MW102S | 114-P2B4-MW102S-8.0-20180419 | 8.0 | N | N | JC64571 | 2018-04-19 | < 0.34 U | < 0.13 U | 6.3 | < 0.39 U | < 0.44 U | 1.9 |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-13.0-20180426 | 13.0 | N | N | JC64986 | 2018-04-26 | < 0.36 U | < 0.14 U | < 0.19 U | < 0.42 U | < 0.47 U | < 0.23 U |
| SHALLOW | 132-P3A-MW104S | 132-P3A-MW104S-9.0-20180426 | 9.0 | N | N | JC64986 | 2018-04-26 | < 0.37 U | < 0.14 U | < 0.19 U | < 0.42 U | < 0.47 U | < 0.24 U |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-10.0-20180531 | 10.0 | N | N | JC67069 | 2018-05-31 | < 0.34 U | R | < 0.18 U | 3.7 J- | < 0.44 U | < 0.22 U |
| SHALLOW | 132-P3A-MW5 | 132-P3A-MW5-15.0-20180531 | 15.0 | N | N | JC67069 | 2018-05-31 | < 0.34 U | R | < 0.18 U | R | < 0.44 U | < 0.22 U |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| SHALLOW | 133-P3C-MW101S | 133-P3C-MW101S-8.0-20180423 | 8.0 | N | N | JC64763 | 2018-04-23 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| SHALLOW | 135-MW2A | 135-MW2A-10.0-20180423 | 10.0 | N | N | JC64763 | 2018-04-23 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| SHALLOW | 135-MW2A | 135-MW2A-14.0-20180423 | 14.0 | N | N | JC64763 | 2018-04-23 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| SHALLOW | 135-MW2A | 135-MW2A-6.0-20180423 | 6.0 | N | N | JC64763 | 2018-04-23 | < 0.33 U | < 0.13 U | < 0.17 U | < 0.38 U | < 0.43 U | < 0.21 U |
| SHALLOW | 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | 12.0 | N | N | JC64763 | 2018-04-23 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-13.0-20180424 | 13.0 | N | N | JC64822 | 2018-04-24 | < 0.34 U | < 0.13 U | < 0.17 U | < 0.39 U | < 0.44 U | < 0.22 U |
| SHALLOW | 137-P3B-MW101S | 137-P3B-MW101S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| SHALLOW | 137-P3B-MW102S | 137-P3B-MW102S-9.0-20180424 | 9.0 | N | N | JC64822 | 2018-04-24 | < 0.35 U | < 0.13 U | < 0.18 U | < 0.40 U | < 0.45 U | < 0.22 U |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-10.0-20180501 | 10.0 | N | N | JC65255 | 2018-05-01 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| SHALLOW | HSS-P3C-MW1S | HSS-P3C-MW1S-15.0-20180501 | 15.0 | N | N | JC65255 | 2018-05-01 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.40 U | < 0.44 U | < 0.22 U |
| SHALLOW | MW7S | MW7S-10.0-20180430 | 10.0 | N | N | JC65178 | 2018-04-30 | < 0.35 U | < 0.13 U | < 0.18 U | < 0.40 U | < 0.45 U | < 0.22 U |
| SHALLOW | MW8S | MW8S-20180427 | 9.5 | N | N | JC65066 | 2018-04-27 | < 0.37 U | < 0.14 U | < 0.19 U | < 0.43 U | < 0.48 U | < 0.24 U |
| SHALLOW | MW-CR-3 | MW-CR-3-11.0-20180418 | 11.0 | N | N | JC64444 | 2018-04-18 | < 0.34 U | **0.391** | 0.73 J | 162 | < 0.44 U | < 0.22 U |
| SHALLOW | MW-CR-3 | MW-CR-3-16.0-20180418 | 16.0 | N | N | JC64444 | 2018-04-18 | < 0.34 U | < 0.13 U | < 0.18 U | 144 | < 0.44 U | < 0.22 U |
| SHALLOW | MW-CR-3 | MW-CR-3-21.0-20180418 | 21.0 | N | N | JC64444 | 2018-04-18 | < 0.36 U | **0.404** | < 0.18 U | 122 | < 0.46 U | < 0.23 U |
| INTERMEDIATE | 114-MC-PZ103 | 114-MC-PZ103-2017220 | 39.5 | N | N | JC57752 | 2017-12-20 | < 0.36 U | R | < 0.18 U | 11.5 | < 0.46 U | < 0.23 U |
| INTERMEDIATE | 114-MW17B | 114-MW17B-20180418 | 27.5 | N | N | JC64444 | 2018-04-18 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| INTERMEDIATE | 114-MW19B | 114-MW19B20180501 | 47.5 | N | N | JC65255 | 2018-05-01 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| INTERMEDIATE | 114-MW20B | 114-MW20B-20180419 | 37.5 | N | N | JC64571 | 2018-04-19 | < 0.35 U | < 0.13 U | 44.2 | < 0.40 U | < 0.45 U | 1.5 |
| INTERMEDIATE | 114-MW24B | 114-MW24B-20180312 | 33.0 | N | N | JC62130 | 2018-03-12 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313 | 35.5 | N | N | JC62228 | 2018-03-13 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| INTERMEDIATE | 114-MW26B | 114-MW26B-20180313X | 35.5 | FD | N | JC62228 | 2018-03-13 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | 35.5 | N | N | JC56729A | 2017-12-06 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| INTERMEDIATE | 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | 35.5 | FD | N | JC56729A | 2017-12-06 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| INTERMEDIATE | 114-MW36B | 114-MW36B-20170927 | 32.5 | N | N | JC51890 | 2017-09-27 | < 0.36 U | < 0.14 U | < 0.18 U | < 0.41 U | < 0.46 U | < 0.23 U |
| INTERMEDIATE | 114-MW37B | 114-MW37B-20170926 | 32.5 | N | N | JC51824 | 2017-09-26 | < 0.36 U | < 0.14 U | < 0.18 U | < 0.41 U | < 0.46 U | < 0.23 U |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212 | 42.5 | N | N | JC60652 | 2018-02-12 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| INTERMEDIATE | 114-MW39B | 114-MW39B-20180212X | 42.5 | FD | N | JC60652 | 2018-02-12 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| INTERMEDIATE | 114-MW40B | 114-MW40B-20180427 | 40.5 | N | N | JC65066 | 2018-04-27 | < 0.35 U | < 0.13 U | < 0.18 U | < 0.40 U | < 0.45 U | < 0.23 U |
| INTERMEDIATE | 114-MW41B | 114-MW41B-20180420 | 24.5 | N | N | JC64643 | 2018-04-20 | < 0.34 U | < 0.12 U | 5.2 | < 0.39 U | < 0.44 U | 0.76 J |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-27.0-20171221 | 27.0 | N | N | JC57820 | 2017-12-21 | < 0.35 U | < 0.13 U | < 0.18 U | < 0.41 U | < 0.46 U | < 0.23 U |
| INTERMEDIATE | 114-P1A-MW101I | 114-P1A-MW101I-32.0-20171221 | 32.0 | N | N | JC57820 | 2017-12-21 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-26.5-20171219 | 26.5 | N | N | JC57638 | 2017-12-19 | < 0.38 U | < 0.14 U | < 0.19 U | < 0.44 U | < 0.49 U | < 0.24 U |
| INTERMEDIATE | 114-P1B-MW101I | 114-P1B-MW101I-31.0-20171215 | 31.0 | N | N | JC57501A | 2017-12-15 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-26.5-20180112 | 26.5 | N | N | JC58745 | 2018-01-12 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| INTERMEDIATE | 114-P1B-MW102I | 114-PIB-MW102I-31.5-20180112 | 31.5 | N | N | JC58745 | 2018-01-12 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |

**Table 5-4**
**Groundwater Analytical Results - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | Analyte | P-CHLOROANILINE | PENTACHLOROPHENOL | PHENANTHRENE | PHENOL | P-NITROANILINE | PYRENE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS RN | 106-47-8 | 87-86-5 | 85-01-8 | 108-95-2 | 100-01-6 | 129-00-0 |
| | | | | | | | GWQS | - | 0.3 | 100 | 2000 | - | 200 |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Water-Bearing Zone | Location ID | Sample ID | Sample Depth (ft bTOIC) | Sample Type | Fraction | Lab SDG | Date Collected | | | | | | |
| INTERMEDIATE | 114-P1C-MW101I | 114-P1C-MW101I-20180111 | 34.6 | N | N | JC58670 | 2018-01-11 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | 22.5 | N | N | JC58073A | 2017-12-27 | < 0.34 U | < 0.13 U | 0.85 J | < 0.39 U | < 0.44 U | < 0.22 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | 27.5 | N | N | JC58073A | 2017-12-27 | < 0.34 U | < 0.13 U | 1.4 | 0.84 J | < 0.44 U | < 0.22 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | 32.5 | N | N | JC58028A | 2017-12-26 | < 0.34 U | < 0.13 U | 1.1 | < 0.39 U | < 0.44 U | < 0.22 U |
| INTERMEDIATE | 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | 37.5 | N | N | JC58028A | 2017-12-26 | < 0.34 U | < 0.13 U | 1.1 | < 0.39 U | < 0.44 U | < 0.22 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | 22.5 | N | N | JC58942 | 2018-01-16 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | 27.5 | N | N | JC58942 | 2018-01-16 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | 32.5 | N | N | JC58942 | 2018-01-16 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| INTERMEDIATE | 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | 37.5 | N | N | JC58942 | 2018-01-16 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-33.0-20180531 | 33.0 | N | N | JC67069 | 2018-05-31 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| INTERMEDIATE | 114-P2A-MW101I | 114-P2A-MW101I-38.0-20180531 | 38.0 | N | N | JC67069 | 2018-05-31 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-30.0-20180430 | 30.0 | N | N | JC65178 | 2018-04-30 | < 0.34 U | < 0.13 U | 75.9 | 1.3 J | < 0.44 U | 4.6 |
| INTERMEDIATE | 114-P2A-MW102I | 114-P2A-MW102I-35.0-20180430 | 35.0 | N | N | JC65178 | 2018-04-30 | < 0.34 U | < 0.13 U | 76.2 | 1.6 J | < 0.44 U | 3.9 |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-34.5-20180418 | 34.5 | N | N | JC64444 | 2018-04-18 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| INTERMEDIATE | 114-P2A-MW103I | 114-P2A-MW103I-39.5-20180418 | 39.5 | N | N | JC64444 | 2018-04-18 | < 0.35 U | < 0.13 U | < 0.18 U | < 0.40 U | < 0.45 U | < 0.22 U |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-33.0-20180420 | 33.0 | N | N | JC64643 | 2018-04-20 | < 0.32 U | < 0.12 U | 10.6 | < 0.37 U | < 0.42 U | 0.89 J |
| INTERMEDIATE | 114-P2A-MW104I | 114-P2A-MW104I-37.0-20180420 | 37.0 | N | N | JC64643 | 2018-04-20 | < 0.34 U | < 0.13 U | 10.8 | < 0.39 U | < 0.44 U | 0.87 J |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20180111 | 32.5 | N | N | JC58670 | 2018-01-11 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| INTERMEDIATE | 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20180111 | 37.5 | N | N | JC58670 | 2018-01-11 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-29.0-20180531 | 29.0 | N | N | JC67069 | 2018-05-31 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531 | 34.0 | N | N | JC67069 | 2018-05-31 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| INTERMEDIATE | 114-P2B2-MW101I | 114-P2B2-MW101I-34.0-20180531-X | 34.0 | FD | N | JC67069 | 2018-05-31 | < 0.34 U | < 0.12 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-28.0-20171213 | 28.0 | N | N | JC57276 | 2017-12-13 | < 0.35 U | < 0.13 U | 44.1 | < 0.40 U | < 0.45 U | 2.0 |
| INTERMEDIATE | 114-P2B3-MW101I | 114-P2B3-MW101I-33.0-20171213 | 33.0 | N | N | JC57276 | 2017-12-13 | < 0.34 U | < 0.13 U | 59.0 | < 0.39 U | < 0.44 U | 2.1 |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-42.0-20171212 | 42.0 | N | N | JC57169 | 2017-12-12 | < 0.35 U | < 0.13 U | 52.6 | < 0.40 U | < 0.45 U | 6.2 |
| INTERMEDIATE | 114-P2B4-MW101I | 114-P2B4-MW101I-47.0-20171212 | 47.0 | N | N | JC57169 | 2017-12-12 | < 0.35 U | < 0.13 U | 48.2 | < 0.40 U | < 0.45 U | 5.2 |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-28.0-20180419 | 28.0 | N | N | JC64571 | 2018-04-19 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | 0.33 J |
| INTERMEDIATE | 114-P2B4-MW102I | 114-P2B4-MW102I-33.0-20180419 | 33.0 | N | N | JC64571 | 2018-04-19 | < 0.34 U | < 0.13 U | 31.2 | 6.1 | < 0.44 U | 1.1 |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-38.0-20180423 | 38.0 | N | N | JC64763 | 2018-04-23 | < 0.34 U | < 0.13 U | < 0.17 U | < 0.39 U | < 0.44 U | < 0.22 U |
| INTERMEDIATE | 133-P3C-MW101I | 133-P3C-MW101I-42.0-20180423 | 42.0 | N | N | JC64763 | 2018-04-23 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.40 U | < 0.44 U | < 0.22 U |
| INTERMEDIATE | 135-MW2B | 135-MW2B-20180425 | 30.5 | N | N | JC64901 | 2018-04-25 | < 0.33 UJ | < 0.13 U | < 0.17 U | < 0.38 U | < 0.43 UJ | < 0.21 U |
| INTERMEDIATE | 135-MW3BR | 135-MW3B-30.0-20180501 | 30.0 | N | N | JC65255 | 2018-05-01 | < 0.33 U | < 0.12 U | < 0.17 U | < 0.38 U | < 0.42 U | < 0.21 U |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-37.0-20180531 | 37.0 | N | N | JC67069 | 2018-05-31 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| INTERMEDIATE | 137-P3B-MW102I | 137-P3B-MW102I-42.0-20180531 | 42.0 | N | N | JC67069 | 2018-05-31 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| INTERMEDIATE | MW7D | MW7D-41.0-20180423 | 41.0 | N | N | JC64763 | 2018-04-23 | < 0.33 U | < 0.12 U | < 0.17 U | < 0.38 U | < 0.43 U | < 0.21 U |
| INTERMEDIATE | MW7D | MW7D-45.0-20180423 | 45.0 | N | N | JC64763 | 2018-04-23 | < 0.33 U | < 0.12 U | < 0.17 U | < 0.38 U | < 0.42 U | < 0.21 U |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425 | 41.0 | N | N | JC64901 | 2018-04-25 | < 0.39 U | < 0.15 U | 1.3 | 2.6 | < 0.50 U | 2.2 J |
| INTERMEDIATE | MW8D | MW8D-41.0-20180425X | 41.0 | FD | N | JC64901 | 2018-04-25 | < 0.35 U | < 0.13 U | 2.2 | 3.1 | < 0.45 U | 3.8 J |
| INTERMEDIATE | MW8D | MW8D-45.0-20180425 | 45.0 | N | N | JC64901 | 2018-04-25 | < 0.38 U | < 0.14 U | 0.85 J | < 0.44 U | < 0.49 U | 2.1 |
| DEEP | 114-MW19C | 114-MW19C-99.0-20180427 | 99.0 | N | N | JC65066 | 2018-04-27 | < 0.32 U | < 0.12 U | < 0.17 U | < 0.37 U | < 0.42 U | < 0.21 U |
| DEEP | 114-MW20C | 114-MW20C-20180419 | 80.5 | N | N | JC64571 | 2018-04-19 | < 0.38 U | < 0.14 U | < 0.19 U | < 0.44 U | < 0.49 U | < 0.24 U |
| DEEP | 114-MW25C | 114-MW25C-20180313 | 44.5 | N | N | JC62228 | 2018-03-13 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-35.0-20171222 | 35.0 | N | N | JC57943A | 2017-12-22 | < 0.38 U | < 0.14 U | 1.8 | < 0.44 U | < 0.49 U | < 0.24 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-40.0-20171222 | 40.0 | N | N | JC57943A | 2017-12-22 | < 0.37 U | < 0.14 U | 2.5 | < 0.43 U | < 0.48 U | < 0.24 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-45.0-20171221 | 45.0 | N | N | JC57820 | 2017-12-21 | < 0.39 U | < 0.15 U | 2.4 | < 0.45 U | < 0.51 U | < 0.25 U |
| DEEP | 114-P1-IRM-27D | 114-P1-IRM-27D-50.0-20171221 | 50.0 | N | N | JC57820 | 2017-12-21 | < 0.38 U | < 0.14 U | 3.3 | < 0.44 U | < 0.49 U | < 0.24 U |
| DEEP | MW8F | MW8F-20180425 | 80.5 | N | N | JC64901 | 2018-04-25 | R | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| DEEP | MW-CR-3D | MW-CR-3D-20180418 | 43.5 | N | N | JC64444 | 2018-04-18 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |

**Table 5-4**
**Groundwater Analytical Results - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

**NOTES:**

1. The reporting convention for non-detects in environmental analytical chemistry is that non-detects be reported as less than the RL. Outputs from the database default to reporting non-detects as less than the MDL.

2. Results may be reporting as less than the MDL or RL, but above the associated regulatory standard when dilution is required due to the presence of a significant quantity of a target or non-target analyte, or an interference from a target or non-target analyte. The presence of other substances, or combinations of other substances in a sample can impact whether an analytical method can be used to achieve the lowest possible RL.

3. **Bold** - Indicates an exceedance of the NJDEP's GWQS.

4. A "-" indicates that the sample was not tested for the analyte.

5. * - This well was sampled prior to soil remediation, and was subsequently decommissioned.

6. A laboratory transcription error resulted in the labeling of these samples as 114-PIB-MW102I-26.5-20180112 and 114-PIB-MW102I-31.5-20180112 instead of 114-P**1**B-MW102I-26.5-20180112 and 114-P**1**B-MW102I-31.5-20180112, respectively.

**ABBREVIATIONS:**

bTOIC - below top of inner casing
CAS RN - Chemical Abstracts Service Registry Number
Fraction:
  N - total/unfiltered
ft - feet
GWQS - Groundwater Quality Standard
MDL - method detection limit
N/A - not applicable
NJDEP - New Jersey Department of Environmental Protection
RL - reporting limit
Sample Types:
  N - normal environmental sample
  FD - field duplicate sample
SDG - sample delivery group
SVOC - semi-volatile organic compound
ug/L - micrograms per liter

**QUALIFIERS:**

J - Indicates the result was an estimated value; the associated numerical value was an approximate concentration of the analyte in the sample. J+ or J - is used when the direction of bias can be determined.

JB - The analyte concentration is greater than three (3) times, but less than or equal to ten (10) times the concentration in the associated method/preparation blank. The presence of that analyte in the sample is considered “real” but the concentration is quantitatively qualified due to method blank contamination.

R - The sample result was rejected due to serious deficiencies; the presence or absence of the analyte could not be confirmed.

U - Indicates the analyte was not detected in the sample above the sample RL.

UB - The analyte concentration is less than or equal to three (3) times the concentration in the associated method/preparation blank. The presence of the analyte in the sample is negated due to laboratory blank contamination.

UJ - Indicates the analyte was not detected above the RL and the RL was approximate.

**Table 5-5**
**Analytical Results from Quality Assurance Samples - Cr+6 and Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | Analyte | ALUMINUM | ANTIMONY | ARSENIC | BARIUM | BERYLLIUM | CADMIUM | CALCIUM METAL | CHROMIUM | CHROMIUM (HEXAVALENT) | COBALT | COPPER | IRON |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | CAS RN | 7429-90-5 | 7440-36-0 | 7440-38-2 | 7440-39-3 | 7440-41-7 | 7440-43-9 | 7440-70-2 | 7440-47-3 | 18540-29-9 | 7440-48-4 | 7440-50-8 | 7439-89-6 |
| | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| 114-FB20171102-F | EB | D | JC54569 | 11/2/2017 | - | - | - | - | - | - | - | - | < 8.1 U | - | - | - |
| 114-FB20171102-F | EB | D | JC54569A | 11/2/2017 | - | < 4.3 U | - | - | - | - | - | < 0.85 U | - | - | - | - |
| 10W-FB20170710 | EB | T | JC46649 | 7/10/2017 | - | < 4.3 U | - | - | - | - | - | < 0.85 U | < 8.1 U | - | - | - |
| 10W-FB20170711 | EB | T | JC46746 | 7/11/2017 | - | < 4.3 U | - | - | - | - | - | < 0.85 U | < 8.1 U | - | - | - |
| 10W-FB20170713 | EB | T | JC46901 | 7/13/2017 | - | < 4.3 U | - | - | - | - | - | < 0.85 U | < 8.1 U | - | - | - |
| 114-FB20170926 | EB | T | JC51802 | 9/26/2017 | - | - | - | - | - | - | - | < 0.85 U | < 8.1 U | - | - | - |
| 114-FB20170926 | EB | T | JC51824 | 9/26/2017 | < 33 U | < 4.3 U | < 2.7 U | < 1.3 U | < 0.40 U | < 0.70 U | 48.8 J | - | - | < 0.72 U | < 3.2 U | < 32 U |
| 114-FB20170927 | EB | T | JC51874 | 9/27/2017 | - | - | - | - | - | - | - | < 0.85 U | < 8.1 U | - | - | - |
| 114-FB20170927 | EB | T | JC51890 | 9/27/2017 | < 33 U | < 4.3 U | < 2.7 U | < 1.3 U | < 0.40 U | < 0.70 U | < 29 U | - | - | < 0.72 U | < 3.2 U | < 32 U |
| 114-FB20170928 | EB | T | JC52029 | 9/28/2017 | < 33 U | < 4.3 U | < 2.7 U | < 1.3 U | < 0.40 U | < 0.70 U | 119 J | - | - | < 0.72 U | < 3.2 U | < 32 U |
| 114-FB20170928. | EB | T | JC52007 | 9/28/2017 | - | - | - | - | - | - | - | - | < 8.1 U | - | - | - |
| 114-FB20170928. | EB | T | JC52007A | 9/28/2017 | - | - | - | - | - | - | - | < 0.85 U | - | - | - | - |
| 114-FB20171016 | EB | D | JC53234 | 10/16/2017 | - | < 4.3 U | - | - | - | - | - | < 0.85 U | - | - | - | - |
| 114-FB20171016 | EB | D | JC53234A | 10/16/2017 | - | - | - | - | - | - | - | - | < 8.1 U | - | - | - |
| 114-FB20171016 | EB | T | JC53234 | 10/16/2017 | - | < 4.3 U | - | - | - | - | - | < 0.85 U | - | - | - | - |
| 114-FB20171016 | EB | T | JC53234A | 10/16/2017 | - | - | - | - | - | - | - | - | < 8.1 U | - | - | - |
| 114-FB20171031 | EB | T | JC54328 | 10/31/2017 | - | - | - | - | - | - | - | - | < 8.1 U | - | - | - |
| 114-FB20171031 | EB | T | JC54328A | 10/31/2017 | - | < 4.3 U | - | - | - | - | - | < 0.85 U | - | - | - | - |
| 114-FB20171031-LF | EB | D | JC54328 | 10/31/2017 | - | - | - | - | - | - | - | - | < 8.1 U | - | - | - |
| 114-FB20171031-LF | EB | D | JC54328A | 10/31/2017 | - | < 4.3 U | - | - | - | - | - | < 0.85 U | - | - | - | - |
| 114-FB20171031-LF | EB | D | JC54328A | 10/31/2017 | - | < 4.3 U | - | - | - | - | - | < 0.85 U | - | - | - | - |
| 114-FB20171102 | EB | T | JC54569 | 11/2/2017 | - | - | - | - | - | - | - | - | < 8.1 U | - | - | - |
| 114-FB20171102 | EB | T | JC54569A | 11/2/2017 | - | < 4.3 U | - | - | - | - | - | < 0.85 U | - | - | - | - |
| 114-FB20171113A | EB | T | JC55349 | 11/13/2017 | - | - | - | - | - | - | - | - | < 8.1 U | - | - | - |
| 114-FB20171113A | EB | T | JC55349A | 11/13/2017 | - | < 4.3 U | - | - | - | - | - | < 0.85 U | - | - | - | - |
| FB-20171214 | EB | T | JC57385 | 12/14/2017 | < 33 U | < 4.3 U | < 2.7 U | < 1.3 U | < 0.40 U | < 0.70 U | < 29 U | < 0.85 U | < 8.1 U | < 0.72 U | < 3.2 U | < 32 U |
| FB-20171215 | EB | T | JC57501 | 12/15/2017 | - | - | - | - | - | - | - | - | < 8.1 U | - | - | - |
| FB-20171215 | EB | T | JC57501A | 12/15/2017 | - | < 4.3 U | - | - | - | - | - | < 0.85 U | - | - | - | - |
| FB-20171220 | EB | T | JC57752 | 12/20/2017 | < 33 U | < 4.3 U | < 2.7 U | < 1.3 U | < 0.40 U | < 0.70 U | < 29 U | < 0.85 U | < 8.1 U | < 0.72 U | 3.7 J | < 32 U |
| FB-20171221 | EB | T | JC57820 | 12/21/2017 | < 33 U | < 4.3 U | < 2.7 U | < 1.3 U | < 0.40 U | < 0.70 U | < 29 U | < 0.85 U | < 8.1 U | < 0.72 U | < 3.2 U | < 32 U |
| FB-20171222 | EB | T | JC57943 | 12/22/2017 | - | - | - | - | - | - | - | - | 8.2 J | - | - | - |
| FB-20171222 | EB | T | JC57943A | 12/22/2017 | < 33 U | < 4.3 U | < 2.7 U | < 1.3 U | < 0.40 U | < 0.70 U | < 29 U | 4.8 J | - | < 0.72 U | < 3.2 U | < 32 U |
| FB-20171226 | EB | T | JC58028 | 12/26/2017 | - | - | - | - | - | - | - | - | < 8.1 U | - | - | - |
| FB-20171226 | EB | T | JC58028A | 12/26/2017 | < 33 U | < 4.3 U | < 2.7 U | < 1.3 U | < 0.40 U | < 0.70 U | < 29 U | < 0.85 U | - | < 0.72 U | < 3.2 U | < 32 U |
| FB-20171227 | EB | T | JC58073 | 12/27/2017 | - | - | - | - | - | - | - | - | < 8.1 U | - | - | - |
| FB-20171227 | EB | T | JC58073A | 12/27/2017 | < 33 U | < 4.3 U | < 2.7 U | < 1.3 U | < 0.40 U | < 0.70 U | < 29 U | < 0.85 U | - | < 0.72 U | < 3.2 U | < 32 U |
| FB-20180116 | EB | T | JC58942 | 1/16/2018 | < 33 U | < 4.3 U | < 2.7 U | 3.0 J | < 0.40 U | < 0.70 U | 74.8 J | < 0.85 U | < 8.1 U | < 0.72 U | < 3.2 U | < 32 U |
| FB-20180208 | EB | T | JC60477 | 2/8/2018 | - | < 4.3 U | - | - | - | - | - | 1.4 J | < 8.1 U | - | - | - |
| FB-20180209 | EB | T | JC60564 | 2/9/2018 | - | < 4.3 U | - | - | - | - | - | < 0.85 U | < 8.1 U | - | - | - |
| FB-20180209-A | EB | T | JC60563 | 2/9/2018 | - | < 4.3 U | - | - | - | - | - | < 0.85 U | < 8.1 U | - | - | - |
| FB-20180212 | EB | T | JC60652 | 2/12/2018 | - | < 4.3 U | - | - | - | - | - | < 0.85 U | < 8.1 U | - | - | - |
| FB-20180312 | EB | T | JC62130 | 3/12/2018 | < 33 U | < 4.3 U | < 2.7 U | 1.7 J | < 0.40 U | < 0.70 U | 54.4 J | < 0.85 U | < 8.1 U | < 0.72 U | < 3.2 U | < 32 U |
| FB-20180313 | EB | D | JC62228 | 3/13/2018 | < 33 U | < 4.3 U | < 2.7 U | 2.2 J | < 0.40 U | < 0.70 U | < 29 U | < 0.85 U | < 8.1 U | < 0.72 U | < 3.2 U | < 32 U |
| FB-20180313 | EB | T | JC62228 | 3/13/2018 | < 33 U | < 4.3 U | < 2.7 U | 2.6 J | < 0.40 U | < 0.70 U | < 29 U | < 0.85 U | < 8.1 U | < 0.72 U | < 3.2 U | < 32 U |
| FB-20180417 | EB | D | JC64376 | 4/17/2018 | 38.7 J | < 4.3 U | < 2.7 U | 2.4 J | < 0.40 U | < 0.70 U | 66.6 J | < 0.85 U | < 8.1 U | < 0.72 U | < 3.2 U | < 32 U |
| FB-20180417 | EB | T | JC64376 | 4/17/2018 | 37.2 J | < 4.3 U | < 2.7 U | 2.5 J | < 0.40 U | < 0.70 U | 62.0 J | 1.0 J | < 8.1 U | < 0.72 U | < 3.2 U | < 32 U |
| FB-20180418 | EB | T | JC64444 | 4/18/2018 | - | < 4.3 U | - | - | - | - | - | < 0.85 U | < 8.1 U | - | - | - |
| FB-20180419 | EB | D | JC64571 | 4/19/2018 | 37.3 J | < 4.3 U | < 2.7 U | < 1.3 U | < 0.40 U | < 0.70 U | 32.6 J | < 0.85 U | < 8.1 U | < 0.72 U | < 3.2 U | < 32 U |
| FB-20180419 | EB | T | JC64571 | 4/19/2018 | 38.4 J | < 4.3 U | < 2.7 U | < 1.3 U | < 0.40 U | < 0.70 U | < 29 U | < 0.85 U | < 8.1 U | < 0.72 U | < 3.2 U | < 32 U |
| FB-20180420 | EB | T | JC64643 | 4/20/2018 | 33.5 J | < 4.3 U | < 2.7 U | 1.7 J | < 0.40 U | < 0.70 U | < 29 U | < 0.85 U | < 8.1 U | < 0.72 U | < 3.2 U | < 32 U |

**Table 5-5**
**Analytical Results from Quality Assurance Samples - Cr+6 and Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | Analyte | ALUMINUM | ANTIMONY | ARSENIC | BARIUM | BERYLLIUM | CADMIUM | CALCIUM METAL | CHROMIUM | CHROMIUM (HEXAVALENT) | COBALT | COPPER | IRON |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | CAS RN | 7429-90-5 | 7440-36-0 | 7440-38-2 | 7440-39-3 | 7440-41-7 | 7440-43-9 | 7440-70-2 | 7440-47-3 | 18540-29-9 | 7440-48-4 | 7440-50-8 | 7439-89-6 |
| | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Sample ID | Sample Type | Fraction | Lab SDG | Date Collected | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result |
| FB-20180423 | EB | T | JC64763 | 4/23/2018 | 38.0 J | < 4.3 | < 2.7 U | < 1.3 U | < 0.40 U | < 0.70 U | < 29 U | < 0.85 | < 8.1 U | < 0.72 U | < 3.2 U | < 32 U |
| FB-20180424 | EB | T | JC64822 | 4/24/2018 | - | < 4.3 U | - | - | - | - | - | < 0.85 U | < 8.1 U | - | - | - |
| FB-20180425 | EB | D | JC64901 | 4/25/2018 | - | < 4.3 U | - | - | - | - | - | < 0.85 U | < 8.1 U | - | - | - |
| FB-20180425 | EB | T | JC64901 | 4/25/2018 | - | < 4.3 U | - | - | - | - | - | < 0.85 U | < 8.1 U | - | - | - |
| FB-20180426 | EB | D | JC64986 | 4/26/2018 | - | < 4.3 U | - | - | - | - | - | < 0.85 U | < 8.1 U | - | - | - |
| FB-20180426 | EB | T | JC64986 | 4/26/2018 | - | < 4.3 U | - | - | - | - | - | < 0.85 U | < 8.1 U | - | - | - |
| FB-20180427 | EB | D | JC65066 | 4/27/2018 | - | < 4.3 U | - | - | - | - | - | < 0.85 U | < 8.1 U | - | - | - |
| FB-20180427 | EB | T | JC65066 | 4/27/2018 | - | < 4.3 U | - | - | - | - | - | < 0.85 U | < 8.1 U | - | - | - |
| FB-20180430 | EB | T | JC65178 | 4/30/2018 | - | < 4.3 U | - | - | - | - | - | < 0.85 U | < 8.1 U | - | - | - |
| FB-20180501 | EB | T | JC65255 | 5/1/2018 | - | < 4.3 U | - | - | - | - | - | < 0.85 U | < 8.1 U | - | - | - |
| FB-20180502 | EB | D | JC65325 | 5/2/2018 | - | - | - | - | - | - | - | < 0.85 U | < 8.1 U | - | - | - |
| FB-20180502 | EB | T | JC65325 | 5/2/2018 | 46.2 J | < 4.3 U | < 2.7 U | 1.3 J | < 0.40 U | < 0.70 U | < 29 U | < 0.85 U | < 8.1 U | < 0.72 U | < 3.2 U | < 32 U |
| FB-20180531 | EB | T | JC67069 | 5/31/2018 | - | < 4.3 U | - | - | - | - | - | < 0.85 U | < 8.1 U | - | - | - |
| FIELD BLANK-20171219 | EB | T | JC57638 | 12/19/2017 | - | < 4.3 U | - | - | - | - | - | < 0.85 U | < 8.1 U | - | - | - |
| FORREST-FB20171204 | EB | T | JC56504 | 12/4/2017 | - | - | - | - | - | - | - | - | < 8.1 U | - | - | - |
| FORREST-FB20171204 | EB | T | JC56504A | 12/4/2017 | < 33 U | < 4.3 U | < 2.7 U | < 1.3 U | < 0.40 U | < 0.70 U | 158 J | < 0.85 U | - | < 0.72 U | < 3.2 U | < 32 U |
| FORREST-FB20171206 | EB | T | JC56729 | 12/6/2017 | - | - | - | - | - | - | - | - | < 8.1 U | - | - | - |
| FORREST-FB20171206 | EB | T | JC56729A | 12/6/2017 | < 33 U | < 4.3 U | < 2.7 U | < 1.3 U | < 0.40 U | < 0.70 U | 84.6 J | < 0.85 U | - | < 0.72 U | < 3.2 U | < 32 U |
| FORREST-FB20171207 | EB | T | JC56859 | 12/7/2017 | - | - | - | - | - | - | - | - | < 8.1 U | - | - | - |
| FORREST-FB20171207 | EB | T | JC56859A | 12/7/2017 | < 33 U | < 4.3 U | < 2.7 U | < 1.3 U | < 0.40 U | < 0.70 U | 335 J | < 0.85 U | - | < 0.72 U | < 3.2 U | < 32 U |
| FORREST-FB-20171218 | EB | T | JC57565 | 12/18/2017 | < 33 U | < 4.3 U | < 2.7 U | < 1.3 U | < 0.40 U | < 0.70 U | 82.6 J | < 0.85 U | < 8.1 U | < 0.72 U | < 3.2 U | < 32 U |
| FSP-FB20170925 | EB | T | JC51716 | 9/25/2017 | - | - | - | - | - | - | - | < 0.85 U | < 8.1 U | - | - | - |
| GAR-RI-FB20161211A | EB | T | JC33474 | 12/11/2016 | - | < 3.3 U | - | - | - | - | - | < 0.81 U | < 3.9 UJ | - | - | - |
| GAR-RI-FB20161211A-FF | EB | D | JC33474 | 12/11/2016 | - | < 3.3 U | - | - | - | - | - | < 0.81 U | < 3.9 UJ | - | - | - |
| GAR-RI-FB20161218A | EB | T | JC33969 | 12/18/2016 | - | < 3.3 U | - | - | - | - | - | 1.0 J | < 3.9 U | - | - | - |
| GAR-RI-FB20161218A-FF | EB | D | JC33969 | 12/18/2016 | - | < 3.3 U | - | - | - | - | - | < 0.81 U | < 3.9 U | - | - | - |
| FB-201905300 | EB | T | JC88938 | 5/30/2019 | - | < 4.7 U | - | - | - | - | - | < 2.0 U | < 5.8 U | - | - | - |
| FB20190531 | EB | T | JC89029 | 5/31/2019 | - | < 4.7 U | - | - | - | - | - | < 2.0 U | < 5.8 U | - | - | - |
| FB-20191021 | EB | T | JC97157 | 10/21/2019 | - | < 6.0 U | - | - | - | - | - | < 10 U | < 10 U | - | - | - |
| FB-20191022 | EB | T | JC97214 | 10/22/2019 | - | < 4.7 U | - | - | - | - | - | < 2.0 U | < 10 U | - | - | - |
| FB20200819 | EB | T | JD11956 | 8/19/2020 | - | < 4.7 U | - | - | - | - | - | < 2.0 U | < 5.8 U | - | - | - |
| FB20200820 | EB | T | JD12022 | 8/20/2020 | - | < 4.7 U | - | - | - | - | - | < 2.0 U | < 5.8 U | - | - | - |
| FB20200821 | EB | T | JD12104 | 8/21/2020 | - | < 4.7 U | - | - | - | - | - | < 2.0 U | < 5.8 U | - | - | - |
| FB20200824 | EB | T | JD12146 | 8/24/2020 | - | < 4.7 U | - | - | - | - | - | < 2.0 U | < 5.8 U | - | - | - |
| FB-GWRI-20200825 | EB | T | JD12215 | 8/25/2020 | - | < 4.7 U | - | - | - | - | - | < 2.0 U | < 5.8 UJ | - | - | - |
| FB-GWRI-20200826 | EB | T | JD12249 | 8/26/2020 | - | < 4.7 U | - | - | - | - | - | < 2.0 U | < 5.8 UJ | - | - | - |
| FB-GWRI-20200827 | EB | T | JD12322 | 8/27/2020 | - | < 4.7 U | - | - | - | - | - | < 2.0 U | < 5.8 U | - | - | - |
| FB20200828 | EB | T | JD12393 | 8/28/2020 | - | < 4.7 U | - | - | - | - | - | < 2.0 U | < 5.8 U | - | - | - |
| FB-GWRI-20200831 | EB | T | JD12474 | 8/31/2020 | - | < 4.7 U | - | - | - | - | - | < 2.0 U | < 5.8 U | - | - | - |
| FB-GWRI-20200901 | EB | T | JD12508 | 9/1/2020 | - | < 4.7 U | - | - | - | - | - | < 2.0 U | < 5.8 U | - | - | - |
| FB-GWRI-20200902 | EB | T | JD12593 | 9/2/2020 | - | < 4.7 U | - | - | - | - | - | < 2.0 U | < 5.8 U | - | - | - |
| FB-GWRI-20210209 | FB | T | JD20125 | 2/9/2021 | - | < 4.7 U | - | - | - | - | - | < 2.0 U | < 5.8 UJ | - | - | - |
| FB-GWRI-20210210 | FB | T | JD20166 | 2/10/2021 | - | < 4.7 U | - | - | - | - | - | < 2.0 U | < 5.8 U | - | - | - |
| FB-GWRI-20210211 | FB | T | JD20260 | 2/11/2021 | - | < 4.7 U | - | - | - | - | - | < 2.0 U | < 5.8 U | - | - | - |
| FB-GWRI-20210212 | FB | T | JD20313 | 2/12/2021 | - | < 4.7 U | - | - | - | - | - | < 2.0 U | < 5.8 U | - | - | - |
| FB-GWRI-20210215B | FB | T | JD20380 | 2/15/2021 | - | < 4.7 U | - | - | - | - | - | < 2.0 U | < 5.8 U | - | - | - |

**Table 5-5**
**Analytical Results from Quality Assurance Samples - Cr+6 and Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | Analyte | LEAD | MAGNESIUM | MANGANESE | MERCURY | NICKEL | POTASSIUM | SELENIUM | SILVER | SODIUM | STRONTIUM | THALLIUM | VANADIUM | ZINC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | CAS RN | 7439-92-1 | 7439-95-4 | 7439-96-5 | 7439-97-6 | 7440-02-0 | 7440-09-7 | 7782-49-2 | 7440-22-4 | 7440-23-5 | 7440-24-6 | 7440-28-0 | 7440-62-2 | 7440-66-6 |
| | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** | **Result** |
| 114-FB20171102-F | EB | D | JC54569 | 11/2/2017 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 114-FB20171102-F | EB | D | JC54569A | 11/2/2017 | - | - | - | - | < 1.3 U | - | - | - | - | - | < 1.6 U | < 1.3 U | - |
| 10W-FB20170710 | EB | T | JC46649 | 7/10/2017 | - | - | - | - | 1.8 J | - | - | - | - | - | < 1.6 U | < 1.3 U | - |
| 10W-FB20170711 | EB | T | JC46746 | 7/11/2017 | - | - | - | - | 1.5 J | - | - | - | - | - | < 1.6 UJ | < 1.3 U | - |
| 10W-FB20170713 | EB | T | JC46901 | 7/13/2017 | - | - | - | - | 2.1 J | - | - | - | - | - | < 1.6 U | < 1.3 U | - |
| 114-FB20170926 | EB | T | JC51802 | 9/26/2017 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 114-FB20170926 | EB | T | JC51824 | 9/26/2017 | < 2.6 U | < 64 U | < 0.42 U | < 0.083 U | < 1.3 U | 442 J | < 6.6 U | < 3.1 U | 2740 J | - | < 1.6 U | < 1.3 U | < 4.0 U |
| 114-FB20170927 | EB | T | JC51874 | 9/27/2017 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 114-FB20170927 | EB | T | JC51890 | 9/27/2017 | < 2.6 U | < 64 U | < 0.42 U | < 0.083 U | < 1.3 U | < 230 U | < 6.6 U | < 3.1 U | < 130 U | - | < 1.6 U | < 1.3 U | < 4.0 U |
| 114-FB20170928 | EB | T | JC52029 | 9/28/2017 | < 2.6 U | < 64 U | < 0.42 U | < 0.083 U | < 1.3 U | < 230 U | < 6.6 U | < 3.1 U | 426 J | - | < 1.6 U | < 1.3 U | < 4.0 U |
| 114-FB20170928. | EB | T | JC52007 | 9/28/2017 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 114-FB20170928. | EB | T | JC52007A | 9/28/2017 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 114-FB20171016 | EB | D | JC53234 | 10/16/2017 | - | - | - | - | < 1.3 U | - | - | - | - | - | < 1.6 U | < 1.3 U | - |
| 114-FB20171016 | EB | D | JC53234A | 10/16/2017 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 114-FB20171016 | EB | T | JC53234 | 10/16/2017 | - | - | - | - | < 1.3 U | - | - | - | - | - | < 1.6 U | < 1.3 U | - |
| 114-FB20171016 | EB | T | JC53234A | 10/16/2017 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 114-FB20171031 | EB | T | JC54328 | 10/31/2017 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 114-FB20171031 | EB | T | JC54328A | 10/31/2017 | - | - | - | - | < 1.3 U | - | - | - | - | - | < 1.6 U | < 1.3 U | - |
| 114-FB20171031-LF | EB | D | JC54328 | 10/31/2017 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 114-FB20171031-LF | EB | D | JC54328A | 10/31/2017 | - | - | - | - | < 1.3 U | - | - | - | - | - | < 1.6 U | < 1.3 U | - |
| 114-FB20171102 | EB | T | JC54569 | 11/2/2017 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 114-FB20171102 | EB | T | JC54569A | 11/2/2017 | - | - | - | - | < 1.3 U | - | - | - | - | - | < 1.6 U | < 1.3 U | - |
| 114-FB20171113A | EB | T | JC55349 | 11/13/2017 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 114-FB20171113A | EB | T | JC55349A | 11/13/2017 | - | - | - | - | < 1.3 U | - | - | - | - | - | < 1.6 U | < 1.3 U | - |
| FB-20171214 | EB | T | JC57385 | 12/14/2017 | < 2.6 U | < 64 U | < 0.42 U | < 0.083 U | < 1.3 U | 231 J | < 6.6 U | < 3.1 U | < 130 U | < 0.30 U | < 0.047 U | < 1.3 U | < 4.0 U |
| FB-20171215 | EB | T | JC57501 | 12/15/2017 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| FB-20171215 | EB | T | JC57501A | 12/15/2017 | - | - | - | - | 2.0 J | - | - | - | - | - | < 1.6 U | < 1.3 U | - |
| FB-20171220 | EB | T | JC57752 | 12/20/2017 | < 2.6 U | < 64 U | < 0.42 U | < 0.083 U | < 1.3 U | < 230 U | < 6.6 U | < 3.1 U | < 130 U | < 0.30 U | < 0.047 U | < 1.3 U | < 4.0 U |
| FB-20171221 | EB | T | JC57820 | 12/21/2017 | < 2.6 U | < 64 U | < 0.42 U | < 0.083 U | < 1.3 U | < 230 U | < 6.6 U | < 3.1 U | 143 J | < 0.30 U | < 0.047 U | < 1.3 U | < 4.0 U |
| FB-20171222 | EB | T | JC57943 | 12/22/2017 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| FB-20171222 | EB | T | JC57943A | 12/22/2017 | < 2.6 U | < 64 U | < 0.42 U | < 0.083 U | < 1.3 U | < 230 U | < 6.6 U | < 3.1 U | < 130 U | < 0.30 U | < 0.047 U | < 1.3 U | < 4.0 U |
| FB-20171226 | EB | T | JC58028 | 12/26/2017 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| FB-20171226 | EB | T | JC58028A | 12/26/2017 | < 2.6 U | < 64 U | < 0.42 U | 0.17 J | < 1.3 U | < 230 U | < 6.6 U | < 3.1 U | 142 J | < 0.30 U | < 0.047 U | < 1.3 U | < 4.0 U |
| FB-20171227 | EB | T | JC58073 | 12/27/2017 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| FB-20171227 | EB | T | JC58073A | 12/27/2017 | < 2.6 U | < 64 U | < 0.42 U | < 0.083 U | < 1.3 U | < 230 U | < 6.6 U | < 3.1 U | 131 J | < 0.30 U | < 0.047 U | < 1.3 U | < 4.0 U |
| FB-20180116 | EB | T | JC58942 | 1/16/2018 | < 2.6 U | < 64 U | 1.2 J | < 0.083 U | < 1.3 U | < 230 U | < 6.6 U | < 3.1 U | 180 J | 4.4 J | < 0.047 U | < 1.3 U | < 4.0 U |
| FB-20180208 | EB | T | JC60477 | 2/8/2018 | - | - | - | - | 1.5 J | - | - | - | - | - | < 1.6 U | < 1.3 U | - |
| FB-20180209 | EB | T | JC60564 | 2/9/2018 | - | - | - | - | < 1.3 U | - | - | - | - | - | < 1.6 U | < 1.3 U | - |
| FB-20180209-A | EB | T | JC60563 | 2/9/2018 | - | - | - | - | 1.3 J | - | - | - | - | - | < 1.6 U | < 1.3 U | - |
| FB-20180212 | EB | T | JC60652 | 2/12/2018 | - | - | - | - | < 1.3 U | - | - | - | - | - | < 1.6 U | < 1.3 U | - |
| FB-20180312 | EB | T | JC62130 | 3/12/2018 | < 2.6 U | < 64 U | < 0.42 U | < 0.083 U | < 1.3 U | < 230 U | < 6.6 U | < 3.1 U | 219 J | - | < 0.047 U | < 1.3 U | < 4.0 U |
| FB-20180313 | EB | D | JC62228 | 3/13/2018 | < 2.6 U | < 64 U | 0.90 J | < 0.083 U | < 1.3 U | < 230 U | < 6.6 U | < 3.1 U | < 130 U | - | 0.050 J | < 1.3 U | 15.0 J |
| FB-20180313 | EB | T | JC62228 | 3/13/2018 | < 2.6 U | < 64 U | < 0.42 U | < 0.083 U | < 1.3 U | < 230 U | < 6.6 U | < 3.1 U | < 130 U | - | < 0.047 U | < 1.3 U | < 4.0 U |
| FB-20180417 | EB | D | JC64376 | 4/17/2018 | < 2.6 U | < 64 U | 0.50 J | < 0.13 U | < 1.3 U | < 230 U | < 6.6 U | < 3.1 U | 211 J | - | < 0.047 U | < 1.3 U | < 4.0 U |
| FB-20180417 | EB | T | JC64376 | 4/17/2018 | < 2.6 U | < 64 U | < 0.42 U | < 0.13 U | < 1.3 U | < 230 U | < 6.6 U | < 3.1 U | 211 J | - | 0.17 J | < 1.3 U | < 4.0 U |
| FB-20180418 | EB | T | JC64444 | 4/18/2018 | - | - | - | - | < 1.3 U | - | - | - | - | - | < 0.047 U | < 1.3 U | - |
| FB-20180419 | EB | D | JC64571 | 4/19/2018 | < 2.6 U | < 64 U | < 0.42 U | < 0.13 U | < 1.3 U | < 230 U | < 6.6 U | < 3.1 U | < 130 U | 1.2 J | < 0.047 U | < 1.3 U | < 4.0 U |
| FB-20180419 | EB | T | JC64571 | 4/19/2018 | < 2.6 U | < 64 U | < 0.42 U | < 0.13 U | < 1.3 U | < 230 U | < 6.6 U | < 3.1 U | < 130 U | 1.1 J | < 0.047 U | < 1.3 U | < 4.0 U |
| FB-20180420 | EB | T | JC64643 | 4/20/2018 | < 2.6 U | < 64 U | < 0.42 U | < 0.13 U | < 1.3 U | < 230 U | < 6.6 U | < 3.1 U | < 130 U | 1.3 J | < 0.047 U | < 1.3 U | < 4.0 U |

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**Analytical Results from Quality Assurance Samples - Cr+6 and Metals**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | Analyte | LEAD | MAGNESIUM | MANGANESE | MERCURY | NICKEL | POTASSIUM | SELENIUM | SILVER | SODIUM | STRONTIUM | THALLIUM | VANADIUM | ZINC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | CAS RN | 7439-92-1 | 7439-95-4 | 7439-96-5 | 7439-97-6 | 7440-02-0 | 7440-09-7 | 7782-49-2 | 7440-22-4 | 7440-23-5 | 7440-24-6 | 7440-28-0 | 7440-62-2 | 7440-66-6 |
| | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Sample ID | Sample Type | Fraction | Lab SDG | Date Collected | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result |
| FB-20180423 | EB | T | JC64763 | 4/23/2018 | < 2.6 U | < 64 U | 0.50 J | < 0.13 U | < 1.3 | < 230 U | < 6.6 U | < 3.1 U | - | 0.60 J | < 0.047 | < 1.3 | < 4.0 U |
| FB-20180424 | EB | T | JC64822 | 4/24/2018 | - | - | - | < 0.13 U | < 1.3 U | - | - | - | - | - | < 0.047 U | < 1.3 U | - |
| FB-20180425 | EB | D | JC64901 | 4/25/2018 | - | - | - | - | < 1.3 U | - | - | - | - | - | < 0.047 U | < 1.3 U | - |
| FB-20180425 | EB | T | JC64901 | 4/25/2018 | - | - | - | - | < 1.3 U | - | - | - | - | - | < 0.047 U | < 1.3 U | - |
| FB-20180426 | EB | D | JC64986 | 4/26/2018 | - | - | - | - | < 1.3 U | - | - | - | - | - | < 0.047 U | < 1.3 U | - |
| FB-20180426 | EB | T | JC64986 | 4/26/2018 | - | - | - | - | < 1.3 U | - | - | - | - | - | < 0.047 U | < 1.3 U | - |
| FB-20180427 | EB | D | JC65066 | 4/27/2018 | - | - | - | - | 2.5 J | - | - | - | - | - | < 0.047 U | < 1.3 U | - |
| FB-20180427 | EB | T | JC65066 | 4/27/2018 | - | - | - | - | < 1.3 U | - | - | - | - | - | < 0.047 U | < 1.3 U | - |
| FB-20180430 | EB | T | JC65178 | 4/30/2018 | - | - | - | - | < 1.3 U | - | - | - | - | - | < 0.047 U | < 1.3 U | - |
| FB-20180501 | EB | T | JC65255 | 5/1/2018 | - | - | - | - | 2.4 J | - | - | - | - | - | < 0.047 U | < 1.3 U | - |
| FB-20180502 | EB | D | JC65325 | 5/2/2018 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| FB-20180502 | EB | T | JC65325 | 5/2/2018 | < 2.6 U | < 64 U | < 0.42 U | < 0.13 U | < 1.3 U | < 230 U | < 6.6 U | < 3.1 U | < 130 UB | 1.6 J | < 0.047 U | < 1.3 U | < 4.0 U |
| FB-20180531 | EB | T | JC67069 | 5/31/2018 | - | - | - | - | < 1.3 U | - | - | - | - | - | < 0.047 U | < 1.3 U | - |
| FIELD BLANK-20171219 | EB | T | JC57638 | 12/19/2017 | - | - | - | - | 1.4 J | - | - | - | - | - | < 1.6 U | < 1.3 U | - |
| FORREST-FB20171204 | EB | T | JC56504 | 12/4/2017 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| FORREST-FB20171204 | EB | T | JC56504A | 12/4/2017 | < 2.6 U | < 64 U | 0.80 J | < 0.083 U | 1.6 J | < 230 U | < 6.6 U | < 3.1 U | 375 J | 4.2 J | < 0.047 U | < 1.3 U | < 4.0 U |
| FORREST-FB20171206 | EB | T | JC56729 | 12/6/2017 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| FORREST-FB20171206 | EB | T | JC56729A | 12/6/2017 | < 2.6 U | < 64 U | 0.80 J | < 0.083 U | 1.9 J | < 230 U | < 6.6 U | < 3.1 U | < 130 U | 3.6 J | < 0.047 U | < 1.3 U | < 4.0 U |
| FORREST-FB20171207 | EB | T | JC56859 | 12/7/2017 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| FORREST-FB20171207 | EB | T | JC56859A | 12/7/2017 | < 2.6 U | < 64 U | 2.3 J | 0.084 J | 3.4 J | < 230 U | < 6.6 U | < 3.1 U | 256 J | 6.0 J | < 0.047 U | < 1.3 U | < 4.0 U |
| FORREST-FB-20171218 | EB | T | JC57565 | 12/18/2017 | < 2.6 U | < 64 U | 0.80 J | < 0.083 U | 1.7 J | < 230 U | < 6.6 U | < 3.1 U | < 130 U | 3.7 J | < 0.047 U | < 1.3 U | < 4.0 U |
| FSP-FB20170925 | EB | T | JC51716 | 9/25/2017 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| GAR-RI-FB20161211A | EB | T | JC33474 | 12/11/2016 | - | - | - | - | 0.90 J | - | - | - | - | - | < 1.9 U | < 0.66 U | - |
| GAR-RI-FB20161211A-FF | EB | D | JC33474 | 12/11/2016 | - | - | - | - | < 0.76 U | - | - | - | - | - | < 1.9 U | < 0.66 U | - |
| GAR-RI-FB20161218A | EB | T | JC33969 | 12/18/2016 | - | - | - | - | 1.7 J | - | - | - | - | - | < 1.9 U | 0.70 J | - |
| GAR-RI-FB20161218A-FF | EB | D | JC33969 | 12/18/2016 | - | - | - | - | < 0.76 UB | - | - | - | - | - | < 1.9 U | < 0.66 U | - |
| FB-201905300 | EB | T | JC88938 | 5/30/2019 | - | - | - | - | < 1.7 U | - | - | - | - | - | < 0.17 U | < 1.8 U | - |
| FB20190531 | EB | T | JC89029 | 5/31/2019 | - | - | - | - | < 1.7 U | - | - | - | - | - | < 0.17 U | < 1.8 U | - |
| FB-20191021 | EB | T | JC97157 | 10/21/2019 | - | - | - | - | < 10 U | - | - | - | - | - | < 10 U | < 50 U | - |
| FB-20191022 | EB | T | JC97214 | 10/22/2019 | - | - | - | - | < 1.7 U | - | - | - | - | - | < 1.8 U | < 1.8 U | - |
| FB20200819 | EB | T | JD11956 | 8/19/2020 | - | - | - | - | < 1.7 U | - | - | - | - | - | < 0.17 U | < 1.8 U | - |
| FB20200820 | EB | T | JD12022 | 8/20/2020 | - | - | - | - | < 1.7 U | - | - | - | - | - | < 0.17 U | < 1.8 U | - |
| FB20200821 | EB | T | JD12104 | 8/21/2020 | - | - | - | - | < 1.7 U | - | - | - | - | - | < 0.17 U | < 1.8 U | - |
| FB20200824 | EB | T | JD12146 | 8/24/2020 | - | - | - | - | < 1.7 U | - | - | - | - | - | < 0.17 U | < 1.8 U | - |
| FB-GWRI-20200825 | EB | T | JD12215 | 8/25/2020 | - | - | - | - | < 1.7 U | - | - | - | - | - | < 0.17 U | < 1.8 U | - |
| FB-GWRI-20200826 | EB | T | JD12249 | 8/26/2020 | - | - | - | - | < 1.7 U | - | - | - | - | - | < 0.17 U | < 1.8 U | - |
| FB-GWRI-20200827 | EB | T | JD12322 | 8/27/2020 | - | - | - | - | < 1.7 U | - | - | - | - | - | < 0.17 U | < 1.8 U | - |
| FB20200828 | EB | T | JD12393 | 8/28/2020 | - | - | - | - | < 1.7 U | - | - | - | - | - | < 0.17 U | < 1.8 U | - |
| FB-GWRI-20200831 | EB | T | JD12474 | 8/31/2020 | - | - | - | - | < 1.7 U | - | - | - | - | - | < 0.17 U | < 1.8 U | - |
| FB-GWRI-20200901 | EB | T | JD12508 | 9/1/2020 | - | - | - | - | < 1.7 U | - | - | - | - | - | < 0.17 U | < 1.8 U | - |
| FB-GWRI-20200902 | EB | T | JD12593 | 9/2/2020 | - | - | - | - | < 1.7 U | - | - | - | - | - | < 0.17 U | < 1.8 U | - |
| FB-GWRI-20210209 | FB | T | JD20125 | 2/9/2021 | - | - | - | - | < 1.7 U | - | - | - | - | - | < 0.17 U | < 1.8 U | - |
| FB-GWRI-20210210 | FB | T | JD20166 | 2/10/2021 | - | - | - | - | < 1.7 U | - | - | - | - | - | < 0.17 U | < 1.8 U | - |
| FB-GWRI-20210211 | FB | T | JD20260 | 2/11/2021 | - | - | - | - | < 1.7 U | - | - | - | - | - | < 0.17 U | < 1.8 U | - |
| FB-GWRI-20210212 | FB | T | JD20313 | 2/12/2021 | - | - | - | - | < 1.7 U | - | - | - | - | - | < 0.17 U | < 1.8 U | - |
| FB-GWRI-20210215B | FB | T | JD20380 | 2/15/2021 | - | - | - | - | < 1.7 U | - | - | - | - | - | < 0.17 U | < 1.8 U | - |

# Table 5-5
# Analytical Results from Quality Assurance Samples - Cr+6 and Metals
# Groundwater Remedial Investigation Report
# Garfield Avenue Group of Sites
# PPG, Jersey City, New Jersey

**NOTE:**

1. A "-" indicates the sample was not tested for the analyte.

**ABBREVIATIONS:**

CAS RN - Chemical Abstracts Service Registry Number

$Cr^{+6}$ - hexavalent chromium

EB - equipment blank/field blank

Fractions:

D - dissolved/filtered

T - total/unfiltered

RL - reporting limit

SDG - sample delivery group

ug/L - micrograms per liter

**QUALIFIERS:**

J - Indicates the result was an estimated value; the associated numerical value was an approximate concentration of the analyte in the sample. J+ or J - is used when the direction of bias can be determined.

U - Indicates the analyte was not detected in the sample above the sample RL.

UB - The analyte concentration is less than or equal to three (3) times the concentration in the associated method/preparation blank. The presence of the analyte in the sample is negated due to laboratory blank contamination.

UJ - Indicates the analyte was not detected above the RL and the RL was approximate.

**Table 5-6**
**Analytical Results from Quality Assurance Samples - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | Analyte | 1,1,1-TRICHLOROETHANE | 1,1,2,2-TETRACHLOROETHANE | 1,1,2-TRICHLOROETHANE | 1,1,2-TRICHLOROTRIFLUOROETHANE | 1,1-DICHLOROETHANE |
|---|---|---|---|---|---|---|---|---|---|
| | | | | CAS RN | 71-55-6 | 79-34-5 | 79-00-5 | 76-13-1 | 75-34-3 |
| | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | |
| 114-FB20170925 | EB | N | JC51736 | 9/25/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| 114-FB20170926 | EB | N | JC51824 | 9/26/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| 114-FB20170927 | EB | N | JC51890 | 9/27/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| 114-FB20171016 | EB | N | JC53234 | 10/16/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| 114-FB20171102 | EB | N | JC54569A | 11/2/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| 114-TB20170925 | TB | N | JC51736 | 9/25/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| 114-TB20170926 | TB | N | JC51824 | 9/26/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| 114-TB20170927 | TB | N | JC51890 | 9/27/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| 137-FB20171117 | EB | N | JC55721 | 11/17/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| 137-TB20171117 | TB | N | JC55721 | 11/17/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| FB-20171212 | EB | N | JC57169 | 12/12/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| FB-20171213 | EB | N | JC57276 | 12/13/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| FB-20171215 | EB | N | JC57501A | 12/15/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| FB-20171220 | EB | N | JC57752 | 12/20/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| FB-20171221 | EB | N | JC57820 | 12/21/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| FB-20171222 | EB | N | JC57943A | 12/22/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| FB-20171226 | EB | N | JC58028A | 12/26/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| FB-20171227 | EB | N | JC58073A | 12/27/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| FB-20180111 | EB | N | JC58670 | 1/11/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| FB-20180112 | EB | N | JC58745 | 1/12/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| FB-20180116 | EB | N | JC58942 | 1/16/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| FB-20180212 | EB | N | JC60652 | 2/12/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| FB-20180312 | EB | N | JC62130 | 3/12/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| FB-20180313 | EB | N | JC62228 | 3/13/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| FB-20180418 | EB | N | JC64444 | 4/18/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| FB-20180419 | EB | N | JC64571 | 4/19/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| FB-20180420 | EB | N | JC64643 | 4/20/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| FB-20180423 | EB | N | JC64763 | 4/23/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| FB-20180424 | EB | N | JC64822 | 4/24/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| FB-20180425 | EB | N | JC64901 | 4/25/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| FB-20180426 | EB | N | JC64986 | 4/26/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| FB-20180427 | EB | N | JC65066 | 4/27/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| FB-20180427-114-MW19C-POST | EB | N | JC65066 | 4/27/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| FB-20180427-114-MW19C-PRE | EB | N | JC65066 | 4/27/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| FB-20180430 | EB | N | JC65178 | 4/30/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| FB-20180501 | EB | N | JC65255 | 5/1/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| FB-20180501-114-MW19B-POST | EB | N | JC65255 | 5/1/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| FB-20180501-114-MW19B-PRE | EB | N | JC65255 | 5/1/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |

**Table 5-6**
**Analytical Results from Quality Assurance Samples - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | Analyte | 1,1,1-TRICHLOROETHANE | 1,1,2,2-TETRACHLOROETHANE | 1,1,2-TRICHLOROETHANE | 1,1,2-TRICHLOROTRIFLUOROETHANE | 1,1-DICHLOROETHANE |
|---|---|---|---|---|---|---|---|---|---|
| | | | | CAS RN | 71-55-6 | 79-34-5 | 79-00-5 | 76-13-1 | 75-34-3 |
| | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | |
| FB-20180502 | EB | N | JC65325 | 5/2/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| FB-20180531 | EB | N | JC67069 | 5/31/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| FIELD BLANK-20171219 | EB | N | JC57638 | 12/19/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| FORREST-FB20171204 | EB | N | JC56504A | 12/4/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| FORREST-FB20171206 | EB | N | JC56729A | 12/6/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| FORREST-FB20171207 | EB | N | JC56859A | 12/7/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| FORREST-FB-20171218 | EB | N | JC57565 | 12/18/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| TB-20180116 | TB | N | JC58942 | 1/16/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| TB-20180418 | TB | N | JC64444 | 4/18/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| TB-20180419 | TB | N | JC64571 | 4/19/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| TB-20180420 | TB | N | JC64643 | 4/20/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| TB-20180423 | TB | N | JC64763 | 4/23/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| TB-20180424 | TB | N | JC64822 | 4/24/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| TB-20180425 | TB | N | JC64901 | 4/25/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| TB-20180426 | TB | N | JC64986 | 4/26/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| TB-20180427 | TB | N | JC65066 | 4/27/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| TB-20180430 | TB | N | JC65178 | 4/30/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| TB-20180501 | TB | N | JC65255 | 5/1/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| TB-20180502 | TB | N | JC65325 | 5/2/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| TB-20180531 | TB | N | JC67069 | 5/31/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| TRIP BLANK_20171016 | TB | N | JC53234 | 10/16/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| TRIP BLANK_20171102 | TB | N | JC54569A | 11/2/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| TRIP BLANK-20171204 | TB | N | JC56504A | 12/4/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| TRIP BLANK-20171206 | TB | N | JC56729A | 12/6/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| TRIP BLANK-20171212 | TB | N | JC57169 | 12/12/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| TRIP BLANK-20171213 | TB | N | JC57276 | 12/13/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| TRIP BLANK-20171215 | TB | N | JC57501A | 12/15/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| TRIP BLANK-20171218 | TB | N | JC57565 | 12/18/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| TRIP BLANK-20171219 | TB | N | JC57638 | 12/19/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| TRIP BLANK-20171220 | TB | N | JC57752 | 12/20/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| TRIP BLANK-20171221 | TB | N | JC57820 | 12/21/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| TRIP BLANK-20171222 | TB | N | JC57943A | 12/22/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| TRIP BLANK-20171226 | TB | N | JC58028A | 12/26/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| TRIP BLANK-20171227 | TB | N | JC58073A | 12/27/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| TRIP BLANK-20180111 | TB | N | JC58670 | 1/11/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| TRIP BLANK-20180112 | TB | N | JC58745 | 1/12/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| TRIP BLANK-20180212 | TB | N | JC60652 | 2/12/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| TRIP BLANK-20180312 | TB | N | JC62130 | 3/12/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| TRIP BLANK-20180313 | TB | N | JC62228 | 3/13/2018 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |
| TRIP BLANK-FB20171207 | TB | N | JC56859A | 12/7/2017 | < 0.25 U | < 0.17 U | < 0.24 U | < 1.2 U | < 0.21 U |

**Table 5-6**
**Analytical Results from Quality Assurance Samples - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | Analyte | 1,1-DICHLOROETHYLENE | 1,2,3-TRICHLOROBENZENE | 1,2,4-TRICHLOROBENZENE | 1,2,4-TRIMETHYLBENZENE | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | CAS RN | 75-35-4 | 87-61-6 | 120-82-1 | 95-63-6 | 96-12-8 |
| | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | |
| 114-FB20170925 | EB | N | JC51736 | 9/25/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| 114-FB20170926 | EB | N | JC51824 | 9/26/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| 114-FB20170927 | EB | N | JC51890 | 9/27/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| 114-FB20171016 | EB | N | JC53234 | 10/16/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| 114-FB20171102 | EB | N | JC54569A | 11/2/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| 114-TB20170925 | TB | N | JC51736 | 9/25/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| 114-TB20170926 | TB | N | JC51824 | 9/26/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| 114-TB20170927 | TB | N | JC51890 | 9/27/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| 137-FB20171117 | EB | N | JC55721 | 11/17/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| 137-TB20171117 | TB | N | JC55721 | 11/17/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| FB-20171212 | EB | N | JC57169 | 12/12/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| FB-20171213 | EB | N | JC57276 | 12/13/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| FB-20171215 | EB | N | JC57501A | 12/15/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| FB-20171220 | EB | N | JC57752 | 12/20/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| FB-20171221 | EB | N | JC57820 | 12/21/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| FB-20171222 | EB | N | JC57943A | 12/22/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| FB-20171226 | EB | N | JC58028A | 12/26/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| FB-20171227 | EB | N | JC58073A | 12/27/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| FB-20180111 | EB | N | JC58670 | 1/11/2018 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| FB-20180112 | EB | N | JC58745 | 1/12/2018 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| FB-20180116 | EB | N | JC58942 | 1/16/2018 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| FB-20180212 | EB | N | JC60652 | 2/12/2018 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| FB-20180312 | EB | N | JC62130 | 3/12/2018 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| FB-20180313 | EB | N | JC62228 | 3/13/2018 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| FB-20180418 | EB | N | JC64444 | 4/18/2018 | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U | < 0.69 U |
| FB-20180419 | EB | N | JC64571 | 4/19/2018 | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U | < 0.69 U |
| FB-20180420 | EB | N | JC64643 | 4/20/2018 | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U | < 0.69 U |
| FB-20180423 | EB | N | JC64763 | 4/23/2018 | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 | < 0.69 U |
| FB-20180424 | EB | N | JC64822 | 4/24/2018 | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U | < 0.69 U |
| FB-20180425 | EB | N | JC64901 | 4/25/2018 | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U | < 0.69 U |
| FB-20180426 | EB | N | JC64986 | 4/26/2018 | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U | < 0.69 U |
| FB-20180427 | EB | N | JC65066 | 4/27/2018 | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U | < 0.69 U |
| FB-20180427-114-MW19C-POST | EB | N | JC65066 | 4/27/2018 | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U | < 0.69 U |
| FB-20180427-114-MW19C-PRE | EB | N | JC65066 | 4/27/2018 | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U | < 0.69 U |
| FB-20180430 | EB | N | JC65178 | 4/30/2018 | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U | < 0.69 U |
| FB-20180501 | EB | N | JC65255 | 5/1/2018 | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U | < 0.69 U |
| FB-20180501-114-MW19B-POST | EB | N | JC65255 | 5/1/2018 | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U | < 0.69 U |
| FB-20180501-114-MW19B-PRE | EB | N | JC65255 | 5/1/2018 | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U | < 0.69 U |

**Table 5-6**
**Analytical Results from Quality Assurance Samples - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | Analyte | 1,1-DICHLOROETHYLENE | 1,2,3-TRICHLOROBENZENE | 1,2,4-TRICHLOROBENZENE | 1,2,4-TRIMETHYLBENZENE | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | CAS RN | 75-35-4 | 87-61-6 | 120-82-1 | 95-63-6 | 96-12-8 |
| | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | |
| FB-20180502 | EB | N | JC65325 | 5/2/2018 | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U | < 0.69 U |
| FB-20180531 | EB | N | JC67069 | 5/31/2018 | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U | < 0.69 U |
| FIELD BLANK-20171219 | EB | N | JC57638 | 12/19/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| FORREST-FB20171204 | EB | N | JC56504A | 12/4/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| FORREST-FB20171206 | EB | N | JC56729A | 12/6/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| FORREST-FB20171207 | EB | N | JC56859A | 12/7/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| FORREST-FB-20171218 | EB | N | JC57565 | 12/18/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| TB-20180116 | TB | N | JC58942 | 1/16/2018 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| TB-20180418 | TB | N | JC64444 | 4/18/2018 | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U | < 0.69 U |
| TB-20180419 | TB | N | JC64571 | 4/19/2018 | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U | < 0.69 U |
| TB-20180420 | TB | N | JC64643 | 4/20/2018 | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U | < 0.69 U |
| TB-20180423 | TB | N | JC64763 | 4/23/2018 | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 | < 0.69 U |
| TB-20180424 | TB | N | JC64822 | 4/24/2018 | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U | < 0.69 U |
| TB-20180425 | TB | N | JC64901 | 4/25/2018 | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U | < 0.69 U |
| TB-20180426 | TB | N | JC64986 | 4/26/2018 | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U | < 0.69 U |
| TB-20180427 | TB | N | JC65066 | 4/27/2018 | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U | < 0.69 U |
| TB-20180430 | TB | N | JC65178 | 4/30/2018 | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U | < 0.69 U |
| TB-20180501 | TB | N | JC65255 | 5/1/2018 | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U | < 0.69 U |
| TB-20180502 | TB | N | JC65325 | 5/2/2018 | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U | < 0.69 U |
| TB-20180531 | TB | N | JC67069 | 5/31/2018 | < 0.47 U | < 0.50 U | < 0.50 U | < 0.24 U | < 0.69 U |
| TRIP BLANK_20171016 | TB | N | JC53234 | 10/16/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| TRIP BLANK_20171102 | TB | N | JC54569A | 11/2/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| TRIP BLANK-20171204 | TB | N | JC56504A | 12/4/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| TRIP BLANK-20171206 | TB | N | JC56729A | 12/6/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| TRIP BLANK-20171212 | TB | N | JC57169 | 12/12/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| TRIP BLANK-20171213 | TB | N | JC57276 | 12/13/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| TRIP BLANK-20171215 | TB | N | JC57501A | 12/15/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| TRIP BLANK-20171218 | TB | N | JC57565 | 12/18/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| TRIP BLANK-20171219 | TB | N | JC57638 | 12/19/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| TRIP BLANK-20171220 | TB | N | JC57752 | 12/20/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| TRIP BLANK-20171221 | TB | N | JC57820 | 12/21/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| TRIP BLANK-20171222 | TB | N | JC57943A | 12/22/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| TRIP BLANK-20171226 | TB | N | JC58028A | 12/26/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| TRIP BLANK-20171227 | TB | N | JC58073A | 12/27/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| TRIP BLANK-20180111 | TB | N | JC58670 | 1/11/2018 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| TRIP BLANK-20180112 | TB | N | JC58745 | 1/12/2018 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| TRIP BLANK-20180212 | TB | N | JC60652 | 2/12/2018 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| TRIP BLANK-20180312 | TB | N | JC62130 | 3/12/2018 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| TRIP BLANK-20180313 | TB | N | JC62228 | 3/13/2018 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |
| TRIP BLANK-FB20171207 | TB | N | JC56859A | 12/7/2017 | < 0.47 U | < 0.50 U | < 0.50 U | - | < 0.69 U |

**Table 5-6**
**Analytical Results from Quality Assurance Samples - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

AECOM

| | | | | Analyte | 1,2-DIBROMOETHANE(EDB) | 1,2-DICHLOROBENZENE | 1,2-DICHLOROETHANE | 1,2-DICHLOROPROPANE | 1,4-DICHLOROBENZENE | 2-BUTANONE (MEK) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | CAS RN | 106-93-4 | 95-50-1 | 107-06-2 | 78-87-5 | 106-46-7 | 78-93-3 |
| | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | | |
| 114-FB20170925 | EB | N | JC51736 | 9/25/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| 114-FB20170926 | EB | N | JC51824 | 9/26/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| 114-FB20170927 | EB | N | JC51890 | 9/27/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| 114-FB20171016 | EB | N | JC53234 | 10/16/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| 114-FB20171102 | EB | N | JC54569A | 11/2/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| 114-TB20170925 | TB | N | JC51736 | 9/25/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| 114-TB20170926 | TB | N | JC51824 | 9/26/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| 114-TB20170927 | TB | N | JC51890 | 9/27/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| 137-FB20171117 | EB | N | JC55721 | 11/17/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| 137-TB20171117 | TB | N | JC55721 | 11/17/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| FB-20171212 | EB | N | JC57169 | 12/12/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| FB-20171213 | EB | N | JC57276 | 12/13/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| FB-20171215 | EB | N | JC57501A | 12/15/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| FB-20171220 | EB | N | JC57752 | 12/20/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| FB-20171221 | EB | N | JC57820 | 12/21/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| FB-20171222 | EB | N | JC57943A | 12/22/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| FB-20171226 | EB | N | JC58028A | 12/26/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| FB-20171227 | EB | N | JC58073A | 12/27/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| FB-20180111 | EB | N | JC58670 | 1/11/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| FB-20180112 | EB | N | JC58745 | 1/12/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| FB-20180116 | EB | N | JC58942 | 1/16/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| FB-20180212 | EB | N | JC60652 | 2/12/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| FB-20180312 | EB | N | JC62130 | 3/12/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| FB-20180313 | EB | N | JC62228 | 3/13/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| FB-20180418 | EB | N | JC64444 | 4/18/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| FB-20180419 | EB | N | JC64571 | 4/19/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| FB-20180420 | EB | N | JC64643 | 4/20/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| FB-20180423 | EB | N | JC64763 | 4/23/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| FB-20180424 | EB | N | JC64822 | 4/24/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| FB-20180425 | EB | N | JC64901 | 4/25/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| FB-20180426 | EB | N | JC64986 | 4/26/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| FB-20180427 | EB | N | JC65066 | 4/27/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| FB-20180427-114-MW19C-POST | EB | N | JC65066 | 4/27/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| FB-20180427-114-MW19C-PRE | EB | N | JC65066 | 4/27/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| FB-20180430 | EB | N | JC65178 | 4/30/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| FB-20180501 | EB | N | JC65255 | 5/1/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| FB-20180501-114-MW19B-POST | EB | N | JC65255 | 5/1/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| FB-20180501-114-MW19B-PRE | EB | N | JC65255 | 5/1/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |

**Table 5-6**
**Analytical Results from Quality Assurance Samples - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | Analyte | 1,2-DIBROMOETHANE(EDB) | 1,2-DICHLOROBENZENE | 1,2-DICHLOROETHANE | 1,2-DICHLOROPROPANE | 1,4-DICHLOROBENZENE | 2-BUTANONE (MEK) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | CAS RN | 106-93-4 | 95-50-1 | 107-06-2 | 78-87-5 | 106-46-7 | 78-93-3 |
| | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | | |
| FB-20180502 | EB | N | JC65325 | 5/2/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| FB-20180531 | EB | N | JC67069 | 5/31/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| FIELD BLANK-20171219 | EB | N | JC57638 | 12/19/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| FORREST-FB20171204 | EB | N | JC56504A | 12/4/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| FORREST-FB20171206 | EB | N | JC56729A | 12/6/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| FORREST-FB20171207 | EB | N | JC56859A | 12/7/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| FORREST-FB-20171218 | EB | N | JC57565 | 12/18/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| TB-20180116 | TB | N | JC58942 | 1/16/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| TB-20180418 | TB | N | JC64444 | 4/18/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| TB-20180419 | TB | N | JC64571 | 4/19/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| TB-20180420 | TB | N | JC64643 | 4/20/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| TB-20180423 | TB | N | JC64763 | 4/23/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| TB-20180424 | TB | N | JC64822 | 4/24/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| TB-20180425 | TB | N | JC64901 | 4/25/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| TB-20180426 | TB | N | JC64986 | 4/26/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| TB-20180427 | TB | N | JC65066 | 4/27/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| TB-20180430 | TB | N | JC65178 | 4/30/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| TB-20180501 | TB | N | JC65255 | 5/1/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| TB-20180502 | TB | N | JC65325 | 5/2/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| TB-20180531 | TB | N | JC67069 | 5/31/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| TRIP BLANK_20171016 | TB | N | JC53234 | 10/16/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| TRIP BLANK_20171102 | TB | N | JC54569A | 11/2/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| TRIP BLANK-20171204 | TB | N | JC56504A | 12/4/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| TRIP BLANK-20171206 | TB | N | JC56729A | 12/6/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| TRIP BLANK-20171212 | TB | N | JC57169 | 12/12/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| TRIP BLANK-20171213 | TB | N | JC57276 | 12/13/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| TRIP BLANK-20171215 | TB | N | JC57501A | 12/15/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| TRIP BLANK-20171218 | TB | N | JC57565 | 12/18/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| TRIP BLANK-20171219 | TB | N | JC57638 | 12/19/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| TRIP BLANK-20171220 | TB | N | JC57752 | 12/20/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| TRIP BLANK-20171221 | TB | N | JC57820 | 12/21/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| TRIP BLANK-20171222 | TB | N | JC57943A | 12/22/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| TRIP BLANK-20171226 | TB | N | JC58028A | 12/26/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| TRIP BLANK-20171227 | TB | N | JC58073A | 12/27/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| TRIP BLANK-20180111 | TB | N | JC58670 | 1/11/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| TRIP BLANK-20180112 | TB | N | JC58745 | 1/12/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| TRIP BLANK-20180212 | TB | N | JC60652 | 2/12/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| TRIP BLANK-20180312 | TB | N | JC62130 | 3/12/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| TRIP BLANK-20180313 | TB | N | JC62228 | 3/13/2018 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |
| TRIP BLANK-FB20171207 | TB | N | JC56859A | 12/7/2017 | < 0.21 U | < 0.50 U | < 0.20 U | < 0.24 U | < 0.50 U | < 4.8 U |

**Table 5-6**
**Analytical Results from Quality Assurance Samples - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | Analyte | 4-METHYL-2-PENTANONE (MIBK) | ACETONE | BENZENE | BROMODICHLOROMETHANE | BROMOMETHANE | CARBON DISULFIDE | CARBON TETRACHLORIDE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | CAS RN | 108-10-1 | 67-64-1 | 71-43-2 | 75-27-4 | 74-83-9 | 75-15-0 | 56-23-5 |
| | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | | | |
| 114-FB20170925 | EB | N | JC51736 | 9/25/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.23 U | < 0.34 U |
| 114-FB20170926 | EB | N | JC51824 | 9/26/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.23 U | < 0.34 U |
| 114-FB20170927 | EB | N | JC51890 | 9/27/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.23 U | < 0.34 U |
| 114-FB20171016 | EB | N | JC53234 | 10/16/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.23 U | < 0.34 U |
| 114-FB20171102 | EB | N | JC54569A | 11/2/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.23 U | < 0.34 U |
| 114-TB20170925 | TB | N | JC51736 | 9/25/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.23 U | < 0.34 U |
| 114-TB20170926 | TB | N | JC51824 | 9/26/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.23 U | < 0.34 U |
| 114-TB20170927 | TB | N | JC51890 | 9/27/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.23 U | < 0.34 U |
| 137-FB20171117 | EB | N | JC55721 | 11/17/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| 137-TB20171117 | TB | N | JC55721 | 11/17/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| FB-20171212 | EB | N | JC57169 | 12/12/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| FB-20171213 | EB | N | JC57276 | 12/13/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| FB-20171215 | EB | N | JC57501A | 12/15/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| FB-20171220 | EB | N | JC57752 | 12/20/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| FB-20171221 | EB | N | JC57820 | 12/21/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| FB-20171222 | EB | N | JC57943A | 12/22/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| FB-20171226 | EB | N | JC58028A | 12/26/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| FB-20171227 | EB | N | JC58073A | 12/27/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| FB-20180111 | EB | N | JC58670 | 1/11/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| FB-20180112 | EB | N | JC58745 | 1/12/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| FB-20180116 | EB | N | JC58942 | 1/16/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| FB-20180212 | EB | N | JC60652 | 2/12/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| FB-20180312 | EB | N | JC62130 | 3/12/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| FB-20180313 | EB | N | JC62228 | 3/13/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| FB-20180418 | EB | N | JC64444 | 4/18/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| FB-20180419 | EB | N | JC64571 | 4/19/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| FB-20180420 | EB | N | JC64643 | 4/20/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| FB-20180423 | EB | N | JC64763 | 4/23/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| FB-20180424 | EB | N | JC64822 | 4/24/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| FB-20180425 | EB | N | JC64901 | 4/25/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| FB-20180426 | EB | N | JC64986 | 4/26/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| FB-20180427 | EB | N | JC65066 | 4/27/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| FB-20180427-114-MW19C-POST | EB | N | JC65066 | 4/27/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| FB-20180427-114-MW19C-PRE | EB | N | JC65066 | 4/27/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| FB-20180430 | EB | N | JC65178 | 4/30/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| FB-20180501 | EB | N | JC65255 | 5/1/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| FB-20180501-114-MW19B-POST | EB | N | JC65255 | 5/1/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| FB-20180501-114-MW19B-PRE | EB | N | JC65255 | 5/1/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |

**Table 5-6**
**Analytical Results from Quality Assurance Samples - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

AECOM

| | | | | Analyte | 4-METHYL-2-PENTANONE (MIBK) | ACETONE | BENZENE | BROMODICHLOROMETHANE | BROMOMETHANE | CARBON DISULFIDE | CARBON TETRACHLORIDE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | CAS RN | 108-10-1 | 67-64-1 | 71-43-2 | 75-27-4 | 74-83-9 | 75-15-0 | 56-23-5 |
| | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | | | |
| FB-20180502 | EB | N | JC65325 | 5/2/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| FB-20180531 | EB | N | JC67069 | 5/31/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| FIELD BLANK-20171219 | EB | N | JC57638 | 12/19/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| FORREST-FB20171204 | EB | N | JC56504A | 12/4/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| FORREST-FB20171206 | EB | N | JC56729A | 12/6/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| FORREST-FB20171207 | EB | N | JC56859A | 12/7/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| FORREST-FB-20171218 | EB | N | JC57565 | 12/18/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| TB-20180116 | TB | N | JC58942 | 1/16/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| TB-20180418 | TB | N | JC64444 | 4/18/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| TB-20180419 | TB | N | JC64571 | 4/19/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| TB-20180420 | TB | N | JC64643 | 4/20/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| TB-20180423 | TB | N | JC64763 | 4/23/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| TB-20180424 | TB | N | JC64822 | 4/24/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| TB-20180425 | TB | N | JC64901 | 4/25/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| TB-20180426 | TB | N | JC64986 | 4/26/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| TB-20180427 | TB | N | JC65066 | 4/27/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| TB-20180430 | TB | N | JC65178 | 4/30/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| TB-20180501 | TB | N | JC65255 | 5/1/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| TB-20180502 | TB | N | JC65325 | 5/2/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| TB-20180531 | TB | N | JC67069 | 5/31/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| TRIP BLANK_20171016 | TB | N | JC53234 | 10/16/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.23 U | < 0.34 U |
| TRIP BLANK_20171102 | TB | N | JC54569A | 11/2/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.23 U | < 0.34 U |
| TRIP BLANK-20171204 | TB | N | JC56504A | 12/4/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| TRIP BLANK-20171206 | TB | N | JC56729A | 12/6/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| TRIP BLANK-20171212 | TB | N | JC57169 | 12/12/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| TRIP BLANK-20171213 | TB | N | JC57276 | 12/13/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| TRIP BLANK-20171215 | TB | N | JC57501A | 12/15/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| TRIP BLANK-20171218 | TB | N | JC57565 | 12/18/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| TRIP BLANK-20171219 | TB | N | JC57638 | 12/19/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| TRIP BLANK-20171220 | TB | N | JC57752 | 12/20/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| TRIP BLANK-20171221 | TB | N | JC57820 | 12/21/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| TRIP BLANK-20171222 | TB | N | JC57943A | 12/22/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| TRIP BLANK-20171226 | TB | N | JC58028A | 12/26/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| TRIP BLANK-20171227 | TB | N | JC58073A | 12/27/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| TRIP BLANK-20180111 | TB | N | JC58670 | 1/11/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| TRIP BLANK-20180112 | TB | N | JC58745 | 1/12/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| TRIP BLANK-20180212 | TB | N | JC60652 | 2/12/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| TRIP BLANK-20180312 | TB | N | JC62130 | 3/12/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| TRIP BLANK-20180313 | TB | N | JC62228 | 3/13/2018 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |
| TRIP BLANK-FB20171207 | TB | N | JC56859A | 12/7/2017 | < 3.0 U | < 5.0 U | < 0.17 U | < 0.22 U | < 1.4 U | < 0.50 U | < 0.34 U |

**Table 5-6**
**Analytical Results from Quality Assurance Samples - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

AECOM

| | | | | Analyte | CHLOROBENZENE | CHLOROBROMOMETHANE | CHLORODIBROMOMETHANE | CHLOROETHANE | CHLOROFORM | CHLOROMETHANE | CIS-1,2-DICHLOROETHENE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | CAS RN | 108-90-7 | 74-97-5 | 124-48-1 | 75-00-3 | 67-66-3 | 74-87-3 | 156-59-2 |
| | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | | | |
| 114-FB20170925 | EB | N | JC51736 | 9/25/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| 114-FB20170926 | EB | N | JC51824 | 9/26/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| 114-FB20170927 | EB | N | JC51890 | 9/27/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| 114-FB20171016 | EB | N | JC53234 | 10/16/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| 114-FB20171102 | EB | N | JC54569A | 11/2/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| 114-TB20170925 | TB | N | JC51736 | 9/25/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| 114-TB20170926 | TB | N | JC51824 | 9/26/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| 114-TB20170927 | TB | N | JC51890 | 9/27/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| 137-FB20171117 | EB | N | JC55721 | 11/17/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| 137-TB20171117 | TB | N | JC55721 | 11/17/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| FB-20171212 | EB | N | JC57169 | 12/12/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| FB-20171213 | EB | N | JC57276 | 12/13/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| FB-20171215 | EB | N | JC57501A | 12/15/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| FB-20171220 | EB | N | JC57752 | 12/20/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| FB-20171221 | EB | N | JC57820 | 12/21/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| FB-20171222 | EB | N | JC57943A | 12/22/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| FB-20171226 | EB | N | JC58028A | 12/26/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| FB-20171227 | EB | N | JC58073A | 12/27/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| FB-20180111 | EB | N | JC58670 | 1/11/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| FB-20180112 | EB | N | JC58745 | 1/12/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| FB-20180116 | EB | N | JC58942 | 1/16/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| FB-20180212 | EB | N | JC60652 | 2/12/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| FB-20180312 | EB | N | JC62130 | 3/12/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| FB-20180313 | EB | N | JC62228 | 3/13/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| FB-20180418 | EB | N | JC64444 | 4/18/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| FB-20180419 | EB | N | JC64571 | 4/19/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| FB-20180420 | EB | N | JC64643 | 4/20/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| FB-20180423 | EB | N | JC64763 | 4/23/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| FB-20180424 | EB | N | JC64822 | 4/24/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| FB-20180425 | EB | N | JC64901 | 4/25/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| FB-20180426 | EB | N | JC64986 | 4/26/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| FB-20180427 | EB | N | JC65066 | 4/27/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| FB-20180427-114-MW19C-POST | EB | N | JC65066 | 4/27/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| FB-20180427-114-MW19C-PRE | EB | N | JC65066 | 4/27/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| FB-20180430 | EB | N | JC65178 | 4/30/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| FB-20180501 | EB | N | JC65255 | 5/1/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| FB-20180501-114-MW19B-POST | EB | N | JC65255 | 5/1/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| FB-20180501-114-MW19B-PRE | EB | N | JC65255 | 5/1/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |

**Table 5-6**
**Analytical Results from Quality Assurance Samples - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

AECOM

| | | | | Analyte | CHLOROBENZENE | CHLOROBROMOMETHANE | CHLORODIBROMOMETHANE | CHLOROETHANE | CHLOROFORM | CHLOROMETHANE | CIS-1,2-DICHLOROETHENE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | CAS RN | 108-90-7 | 74-97-5 | 124-48-1 | 75-00-3 | 67-66-3 | 74-87-3 | 156-59-2 |
| | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | | | |
| FB-20180502 | EB | N | JC65325 | 5/2/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| FB-20180531 | EB | N | JC67069 | 5/31/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| FIELD BLANK-20171219 | EB | N | JC57638 | 12/19/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| FORREST-FB20171204 | EB | N | JC56504A | 12/4/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| FORREST-FB20171206 | EB | N | JC56729A | 12/6/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| FORREST-FB20171207 | EB | N | JC56859A | 12/7/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| FORREST-FB-20171218 | EB | N | JC57565 | 12/18/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| TB-20180116 | TB | N | JC58942 | 1/16/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| TB-20180418 | TB | N | JC64444 | 4/18/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| TB-20180419 | TB | N | JC64571 | 4/19/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| TB-20180420 | TB | N | JC64643 | 4/20/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| TB-20180423 | TB | N | JC64763 | 4/23/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| TB-20180424 | TB | N | JC64822 | 4/24/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| TB-20180425 | TB | N | JC64901 | 4/25/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| TB-20180426 | TB | N | JC64986 | 4/26/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| TB-20180427 | TB | N | JC65066 | 4/27/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| TB-20180430 | TB | N | JC65178 | 4/30/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| TB-20180501 | TB | N | JC65255 | 5/1/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| TB-20180502 | TB | N | JC65325 | 5/2/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| TB-20180531 | TB | N | JC67069 | 5/31/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| TRIP BLANK_20171016 | TB | N | JC53234 | 10/16/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| TRIP BLANK_20171102 | TB | N | JC54569A | 11/2/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| TRIP BLANK-20171204 | TB | N | JC56504A | 12/4/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| TRIP BLANK-20171206 | TB | N | JC56729A | 12/6/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| TRIP BLANK-20171212 | TB | N | JC57169 | 12/12/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| TRIP BLANK-20171213 | TB | N | JC57276 | 12/13/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| TRIP BLANK-20171215 | TB | N | JC57501A | 12/15/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| TRIP BLANK-20171218 | TB | N | JC57565 | 12/18/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| TRIP BLANK-20171219 | TB | N | JC57638 | 12/19/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| TRIP BLANK-20171220 | TB | N | JC57752 | 12/20/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| TRIP BLANK-20171221 | TB | N | JC57820 | 12/21/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| TRIP BLANK-20171222 | TB | N | JC57943A | 12/22/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| TRIP BLANK-20171226 | TB | N | JC58028A | 12/26/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| TRIP BLANK-20171227 | TB | N | JC58073A | 12/27/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| TRIP BLANK-20180111 | TB | N | JC58670 | 1/11/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| TRIP BLANK-20180112 | TB | N | JC58745 | 1/12/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| TRIP BLANK-20180212 | TB | N | JC60652 | 2/12/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| TRIP BLANK-20180312 | TB | N | JC62130 | 3/12/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| TRIP BLANK-20180313 | TB | N | JC62228 | 3/13/2018 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |
| TRIP BLANK-FB20171207 | TB | N | JC56859A | 12/7/2017 | < 0.24 U | < 0.38 U | < 0.16 U | < 0.59 U | < 0.29 U | < 0.53 U | < 0.50 U |

**Table 5-6**
**Analytical Results from Quality Assurance Samples - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | Analyte | CIS-1,3-DICHLOROPROPENE | CYCLOHEXANE | DICHLORODIFLUOROMETHANE | DICHLOROMETHANE | ETHYLBENZENE | ISOPROPYLBENZENE | M+P-XYLENE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | CAS RN | 10061-01-5 | 110-82-7 | 75-71-8 | 75-09-2 | 100-41-4 | 98-82-8 | M+P-XYLENE |
| | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | | | |
| 114-FB20170925 | EB | N | JC51736 | 9/25/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| 114-FB20170926 | EB | N | JC51824 | 9/26/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| 114-FB20170927 | EB | N | JC51890 | 9/27/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| 114-FB20171016 | EB | N | JC53234 | 10/16/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| 114-FB20171102 | EB | N | JC54569A | 11/2/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| 114-TB20170925 | TB | N | JC51736 | 9/25/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| 114-TB20170926 | TB | N | JC51824 | 9/26/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| 114-TB20170927 | TB | N | JC51890 | 9/27/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| 137-FB20171117 | EB | N | JC55721 | 11/17/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| 137-TB20171117 | TB | N | JC55721 | 11/17/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| FB-20171212 | EB | N | JC57169 | 12/12/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| FB-20171213 | EB | N | JC57276 | 12/13/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| FB-20171215 | EB | N | JC57501A | 12/15/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| FB-20171220 | EB | N | JC57752 | 12/20/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| FB-20171221 | EB | N | JC57820 | 12/21/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| FB-20171222 | EB | N | JC57943A | 12/22/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| FB-20171226 | EB | N | JC58028A | 12/26/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| FB-20171227 | EB | N | JC58073A | 12/27/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| FB-20180111 | EB | N | JC58670 | 1/11/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| FB-20180112 | EB | N | JC58745 | 1/12/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| FB-20180116 | EB | N | JC58942 | 1/16/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| FB-20180212 | EB | N | JC60652 | 2/12/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| FB-20180312 | EB | N | JC62130 | 3/12/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| FB-20180313 | EB | N | JC62228 | 3/13/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| FB-20180418 | EB | N | JC64444 | 4/18/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| FB-20180419 | EB | N | JC64571 | 4/19/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| FB-20180420 | EB | N | JC64643 | 4/20/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| FB-20180423 | EB | N | JC64763 | 4/23/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| FB-20180424 | EB | N | JC64822 | 4/24/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| FB-20180425 | EB | N | JC64901 | 4/25/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| FB-20180426 | EB | N | JC64986 | 4/26/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| FB-20180427 | EB | N | JC65066 | 4/27/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| FB-20180427-114-MW19C-POST | EB | N | JC65066 | 4/27/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| FB-20180427-114-MW19C-PRE | EB | N | JC65066 | 4/27/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| FB-20180430 | EB | N | JC65178 | 4/30/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| FB-20180501 | EB | N | JC65255 | 5/1/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| FB-20180501-114-MW19B-POST | EB | N | JC65255 | 5/1/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| FB-20180501-114-MW19B-PRE | EB | N | JC65255 | 5/1/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |

**Table 5-6**
**Analytical Results from Quality Assurance Samples - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

AECOM

| | | | | Analyte | CIS-1,3-DICHLOROPROPENE | CYCLOHEXANE | DICHLORODIFLUOROMETHANE | DICHLOROMETHANE | ETHYLBENZENE | ISOPROPYLBENZENE | M+P-XYLENE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | CAS RN | 10061-01-5 | 110-82-7 | 75-71-8 | 75-09-2 | 100-41-4 | 98-82-8 | M+P-XYLENE |
| | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | | | |
| FB-20180502 | EB | N | JC65325 | 5/2/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| FB-20180531 | EB | N | JC67069 | 5/31/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| FIELD BLANK-20171219 | EB | N | JC57638 | 12/19/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| FORREST-FB20171204 | EB | N | JC56504A | 12/4/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| FORREST-FB20171206 | EB | N | JC56729A | 12/6/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| FORREST-FB20171207 | EB | N | JC56859A | 12/7/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| FORREST-FB-20171218 | EB | N | JC57565 | 12/18/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| TB-20180116 | TB | N | JC58942 | 1/16/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| TB-20180418 | TB | N | JC64444 | 4/18/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| TB-20180419 | TB | N | JC64571 | 4/19/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| TB-20180420 | TB | N | JC64643 | 4/20/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| TB-20180423 | TB | N | JC64763 | 4/23/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| TB-20180424 | TB | N | JC64822 | 4/24/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| TB-20180425 | TB | N | JC64901 | 4/25/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| TB-20180426 | TB | N | JC64986 | 4/26/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| TB-20180427 | TB | N | JC65066 | 4/27/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| TB-20180430 | TB | N | JC65178 | 4/30/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| TB-20180501 | TB | N | JC65255 | 5/1/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| TB-20180502 | TB | N | JC65325 | 5/2/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| TB-20180531 | TB | N | JC67069 | 5/31/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| TRIP BLANK_20171016 | TB | N | JC53234 | 10/16/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| TRIP BLANK_20171102 | TB | N | JC54569A | 11/2/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| TRIP BLANK-20171204 | TB | N | JC56504A | 12/4/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| TRIP BLANK-20171206 | TB | N | JC56729A | 12/6/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| TRIP BLANK-20171212 | TB | N | JC57169 | 12/12/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| TRIP BLANK-20171213 | TB | N | JC57276 | 12/13/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| TRIP BLANK-20171215 | TB | N | JC57501A | 12/15/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| TRIP BLANK-20171218 | TB | N | JC57565 | 12/18/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| TRIP BLANK-20171219 | TB | N | JC57638 | 12/19/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| TRIP BLANK-20171220 | TB | N | JC57752 | 12/20/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| TRIP BLANK-20171221 | TB | N | JC57820 | 12/21/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| TRIP BLANK-20171222 | TB | N | JC57943A | 12/22/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| TRIP BLANK-20171226 | TB | N | JC58028A | 12/26/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| TRIP BLANK-20171227 | TB | N | JC58073A | 12/27/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| TRIP BLANK-20180111 | TB | N | JC58670 | 1/11/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| TRIP BLANK-20180112 | TB | N | JC58745 | 1/12/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| TRIP BLANK-20180212 | TB | N | JC60652 | 2/12/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| TRIP BLANK-20180312 | TB | N | JC62130 | 3/12/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| TRIP BLANK-20180313 | TB | N | JC62228 | 3/13/2018 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |
| TRIP BLANK-FB20171207 | TB | N | JC56859A | 12/7/2017 | < 0.25 U | < 0.63 U | < 1.9 U | < 1.0 U | < 0.22 U | < 0.25 U | < 0.43 U |

**Table 5-6**
**Analytical Results from Quality Assurance Samples - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

AECOM

| | | | | Analyte | M-DICHLOROBENZENE | METHYL ACETATE | METHYL N-BUTYL KETONE | METHYLCYCLOHEXANE | METHYL-TERT-BUTYL ETHER | O-XYLENE | STYRENE (MONOMER) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | CAS RN | 541-73-1 | 79-20-9 | 591-78-6 | 108-87-2 | 1634-04-4 | 95-47-6 | 100-42-5 |
| | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | | | |
| 114-FB20170925 | EB | N | JC51736 | 9/25/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| 114-FB20170926 | EB | N | JC51824 | 9/26/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| 114-FB20170927 | EB | N | JC51890 | 9/27/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| 114-FB20171016 | EB | N | JC53234 | 10/16/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| 114-FB20171102 | EB | N | JC54569A | 11/2/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| 114-TB20170925 | TB | N | JC51736 | 9/25/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| 114-TB20170926 | TB | N | JC51824 | 9/26/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| 114-TB20170927 | TB | N | JC51890 | 9/27/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| 137-FB20171117 | EB | N | JC55721 | 11/17/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| 137-TB20171117 | TB | N | JC55721 | 11/17/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| FB-20171212 | EB | N | JC57169 | 12/12/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| FB-20171213 | EB | N | JC57276 | 12/13/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| FB-20171215 | EB | N | JC57501A | 12/15/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| FB-20171220 | EB | N | JC57752 | 12/20/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| FB-20171221 | EB | N | JC57820 | 12/21/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| FB-20171222 | EB | N | JC57943A | 12/22/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| FB-20171226 | EB | N | JC58028A | 12/26/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| FB-20171227 | EB | N | JC58073A | 12/27/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| FB-20180111 | EB | N | JC58670 | 1/11/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| FB-20180112 | EB | N | JC58745 | 1/12/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| FB-20180116 | EB | N | JC58942 | 1/16/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| FB-20180212 | EB | N | JC60652 | 2/12/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| FB-20180312 | EB | N | JC62130 | 3/12/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| FB-20180313 | EB | N | JC62228 | 3/13/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| FB-20180418 | EB | N | JC64444 | 4/18/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| FB-20180419 | EB | N | JC64571 | 4/19/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| FB-20180420 | EB | N | JC64643 | 4/20/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| FB-20180423 | EB | N | JC64763 | 4/23/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| FB-20180424 | EB | N | JC64822 | 4/24/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| FB-20180425 | EB | N | JC64901 | 4/25/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| FB-20180426 | EB | N | JC64986 | 4/26/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| FB-20180427 | EB | N | JC65066 | 4/27/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| FB-20180427-114-MW19C-POST | EB | N | JC65066 | 4/27/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| FB-20180427-114-MW19C-PRE | EB | N | JC65066 | 4/27/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| FB-20180430 | EB | N | JC65178 | 4/30/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| FB-20180501 | EB | N | JC65255 | 5/1/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| FB-20180501-114-MW19B-POST | EB | N | JC65255 | 5/1/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| FB-20180501-114-MW19B-PRE | EB | N | JC65255 | 5/1/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |

**Table 5-6**
**Analytical Results from Quality Assurance Samples - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

AECOM

| | | | | Analyte | M-DICHLOROBENZENE | METHYL ACETATE | METHYL N-BUTYL KETONE | METHYLCYCLOHEXANE | METHYL-TERT-BUTYL ETHER | O-XYLENE | STYRENE (MONOMER) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | CAS RN | 541-73-1 | 79-20-9 | 591-78-6 | 108-87-2 | 1634-04-4 | 95-47-6 | 100-42-5 |
| | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | | | |
| FB-20180502 | EB | N | JC65325 | 5/2/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| FB-20180531 | EB | N | JC67069 | 5/31/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| FIELD BLANK-20171219 | EB | N | JC57638 | 12/19/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| FORREST-FB20171204 | EB | N | JC56504A | 12/4/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| FORREST-FB20171206 | EB | N | JC56729A | 12/6/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| FORREST-FB20171207 | EB | N | JC56859A | 12/7/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| FORREST-FB-20171218 | EB | N | JC57565 | 12/18/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| TB-20180116 | TB | N | JC58942 | 1/16/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| TB-20180418 | TB | N | JC64444 | 4/18/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| TB-20180419 | TB | N | JC64571 | 4/19/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| TB-20180420 | TB | N | JC64643 | 4/20/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| TB-20180423 | TB | N | JC64763 | 4/23/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| TB-20180424 | TB | N | JC64822 | 4/24/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| TB-20180425 | TB | N | JC64901 | 4/25/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| TB-20180426 | TB | N | JC64986 | 4/26/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| TB-20180427 | TB | N | JC65066 | 4/27/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| TB-20180430 | TB | N | JC65178 | 4/30/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| TB-20180501 | TB | N | JC65255 | 5/1/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| TB-20180502 | TB | N | JC65325 | 5/2/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| TB-20180531 | TB | N | JC67069 | 5/31/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| TRIP BLANK_20171016 | TB | N | JC53234 | 10/16/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| TRIP BLANK_20171102 | TB | N | JC54569A | 11/2/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| TRIP BLANK-20171204 | TB | N | JC56504A | 12/4/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| TRIP BLANK-20171206 | TB | N | JC56729A | 12/6/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| TRIP BLANK-20171212 | TB | N | JC57169 | 12/12/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| TRIP BLANK-20171213 | TB | N | JC57276 | 12/13/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| TRIP BLANK-20171215 | TB | N | JC57501A | 12/15/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| TRIP BLANK-20171218 | TB | N | JC57565 | 12/18/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| TRIP BLANK-20171219 | TB | N | JC57638 | 12/19/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| TRIP BLANK-20171220 | TB | N | JC57752 | 12/20/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| TRIP BLANK-20171221 | TB | N | JC57820 | 12/21/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| TRIP BLANK-20171222 | TB | N | JC57943A | 12/22/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| TRIP BLANK-20171226 | TB | N | JC58028A | 12/26/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| TRIP BLANK-20171227 | TB | N | JC58073A | 12/27/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| TRIP BLANK-20180111 | TB | N | JC58670 | 1/11/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| TRIP BLANK-20180112 | TB | N | JC58745 | 1/12/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| TRIP BLANK-20180212 | TB | N | JC60652 | 2/12/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| TRIP BLANK-20180312 | TB | N | JC62130 | 3/12/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| TRIP BLANK-20180313 | TB | N | JC62228 | 3/13/2018 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |
| TRIP BLANK-FB20171207 | TB | N | JC56859A | 12/7/2017 | < 0.50 U | < 3.1 U | < 3.3 U | < 1.8 U | < 0.25 U | < 0.22 U | < 0.24 U |

**Table 5-6**
**Analytical Results from Quality Assurance Samples - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | Analyte | TETRACHLOROETHENE | TOLUENE | TRANS-1,2-DICHLOROETHENE | TRANS-1,3-DICHLOROPROPENE | TRIBROMOMETHANE | TRICHLOROETHYLENE |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | CAS RN | 127-18-4 | 108-88-3 | 156-60-5 | 10061-02-6 | 75-25-2 | 79-01-6 |
| | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | | |
| 114-FB20170925 | EB | N | JC51736 | 9/25/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| 114-FB20170926 | EB | N | JC51824 | 9/26/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| 114-FB20170927 | EB | N | JC51890 | 9/27/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| 114-FB20171016 | EB | N | JC53234 | 10/16/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| 114-FB20171102 | EB | N | JC54569A | 11/2/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| 114-TB20170925 | TB | N | JC51736 | 9/25/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| 114-TB20170926 | TB | N | JC51824 | 9/26/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| 114-TB20170927 | TB | N | JC51890 | 9/27/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| 137-FB20171117 | EB | N | JC55721 | 11/17/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| 137-TB20171117 | TB | N | JC55721 | 11/17/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| FB-20171212 | EB | N | JC57169 | 12/12/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| FB-20171213 | EB | N | JC57276 | 12/13/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| FB-20171215 | EB | N | JC57501A | 12/15/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| FB-20171220 | EB | N | JC57752 | 12/20/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| FB-20171221 | EB | N | JC57820 | 12/21/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| FB-20171222 | EB | N | JC57943A | 12/22/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| FB-20171226 | EB | N | JC58028A | 12/26/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| FB-20171227 | EB | N | JC58073A | 12/27/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| FB-20180111 | EB | N | JC58670 | 1/11/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| FB-20180112 | EB | N | JC58745 | 1/12/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| FB-20180116 | EB | N | JC58942 | 1/16/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| FB-20180212 | EB | N | JC60652 | 2/12/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| FB-20180312 | EB | N | JC62130 | 3/12/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| FB-20180313 | EB | N | JC62228 | 3/13/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| FB-20180418 | EB | N | JC64444 | 4/18/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| FB-20180419 | EB | N | JC64571 | 4/19/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| FB-20180420 | EB | N | JC64643 | 4/20/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| FB-20180423 | EB | N | JC64763 | 4/23/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| FB-20180424 | EB | N | JC64822 | 4/24/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| FB-20180425 | EB | N | JC64901 | 4/25/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| FB-20180426 | EB | N | JC64986 | 4/26/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| FB-20180427 | EB | N | JC65066 | 4/27/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| FB-20180427-114-MW19C-POST | EB | N | JC65066 | 4/27/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| FB-20180427-114-MW19C-PRE | EB | N | JC65066 | 4/27/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| FB-20180430 | EB | N | JC65178 | 4/30/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| FB-20180501 | EB | N | JC65255 | 5/1/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| FB-20180501-114-MW19B-POST | EB | N | JC65255 | 5/1/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| FB-20180501-114-MW19B-PRE | EB | N | JC65255 | 5/1/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |

**Table 5-6**
**Analytical Results from Quality Assurance Samples - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | Analyte | TETRACHLOROETHENE | TOLUENE | TRANS-1,2-DICHLOROETHENE | TRANS-1,3-DICHLOROPROPENE | TRIBROMOMETHANE | TRICHLOROETHYLENE |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | CAS RN | 127-18-4 | 108-88-3 | 156-60-5 | 10061-02-6 | 75-25-2 | 79-01-6 |
| | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | | | | |
| FB-20180502 | EB | N | JC65325 | 5/2/2018 | < 0.50 U | 0.31 J | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| FB-20180531 | EB | N | JC67069 | 5/31/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| FIELD BLANK-20171219 | EB | N | JC57638 | 12/19/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| FORREST-FB20171204 | EB | N | JC56504A | 12/4/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| FORREST-FB20171206 | EB | N | JC56729A | 12/6/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| FORREST-FB20171207 | EB | N | JC56859A | 12/7/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| FORREST-FB-20171218 | EB | N | JC57565 | 12/18/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| TB-20180116 | TB | N | JC58942 | 1/16/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| TB-20180418 | TB | N | JC64444 | 4/18/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| TB-20180419 | TB | N | JC64571 | 4/19/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| TB-20180420 | TB | N | JC64643 | 4/20/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| TB-20180423 | TB | N | JC64763 | 4/23/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| TB-20180424 | TB | N | JC64822 | 4/24/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| TB-20180425 | TB | N | JC64901 | 4/25/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| TB-20180426 | TB | N | JC64986 | 4/26/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| TB-20180427 | TB | N | JC65066 | 4/27/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| TB-20180430 | TB | N | JC65178 | 4/30/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| TB-20180501 | TB | N | JC65255 | 5/1/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| TB-20180502 | TB | N | JC65325 | 5/2/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| TB-20180531 | TB | N | JC67069 | 5/31/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| TRIP BLANK_20171016 | TB | N | JC53234 | 10/16/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| TRIP BLANK_20171102 | TB | N | JC54569A | 11/2/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| TRIP BLANK-20171204 | TB | N | JC56504A | 12/4/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| TRIP BLANK-20171206 | TB | N | JC56729A | 12/6/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| TRIP BLANK-20171212 | TB | N | JC57169 | 12/12/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| TRIP BLANK-20171213 | TB | N | JC57276 | 12/13/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| TRIP BLANK-20171215 | TB | N | JC57501A | 12/15/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| TRIP BLANK-20171218 | TB | N | JC57565 | 12/18/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| TRIP BLANK-20171219 | TB | N | JC57638 | 12/19/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| TRIP BLANK-20171220 | TB | N | JC57752 | 12/20/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| TRIP BLANK-20171221 | TB | N | JC57820 | 12/21/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| TRIP BLANK-20171222 | TB | N | JC57943A | 12/22/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| TRIP BLANK-20171226 | TB | N | JC58028A | 12/26/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| TRIP BLANK-20171227 | TB | N | JC58073A | 12/27/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| TRIP BLANK-20180111 | TB | N | JC58670 | 1/11/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| TRIP BLANK-20180112 | TB | N | JC58745 | 1/12/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| TRIP BLANK-20180212 | TB | N | JC60652 | 2/12/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| TRIP BLANK-20180312 | TB | N | JC62130 | 3/12/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| TRIP BLANK-20180313 | TB | N | JC62228 | 3/13/2018 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |
| TRIP BLANK-FB20171207 | TB | N | JC56859A | 12/7/2017 | < 0.50 U | < 0.25 U | < 0.40 U | < 0.22 U | < 0.42 U | < 0.27 U |

**Table 5-6**
**Analytical Results from Quality Assurance Samples - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | Analyte | TRICHLOROFLUOROMETHANE | VINYL CHLORIDE | XYLENES |
|---|---|---|---|---|---|---|---|
| | | | | CAS RN | 75-69-4 | 75-01-4 | 1330-20-7 |
| | | | | Units | ug/L | ug/L | ug/L |
| **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | |
| 114-FB20170925 | EB | N | JC51736 | 9/25/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| 114-FB20170926 | EB | N | JC51824 | 9/26/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| 114-FB20170927 | EB | N | JC51890 | 9/27/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| 114-FB20171016 | EB | N | JC53234 | 10/16/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| 114-FB20171102 | EB | N | JC54569A | 11/2/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| 114-TB20170925 | TB | N | JC51736 | 9/25/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| 114-TB20170926 | TB | N | JC51824 | 9/26/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| 114-TB20170927 | TB | N | JC51890 | 9/27/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| 137-FB20171117 | EB | N | JC55721 | 11/17/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| 137-TB20171117 | TB | N | JC55721 | 11/17/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| FB-20171212 | EB | N | JC57169 | 12/12/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| FB-20171213 | EB | N | JC57276 | 12/13/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| FB-20171215 | EB | N | JC57501A | 12/15/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| FB-20171220 | EB | N | JC57752 | 12/20/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| FB-20171221 | EB | N | JC57820 | 12/21/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| FB-20171222 | EB | N | JC57943A | 12/22/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| FB-20171226 | EB | N | JC58028A | 12/26/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| FB-20171227 | EB | N | JC58073A | 12/27/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| FB-20180111 | EB | N | JC58670 | 1/11/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| FB-20180112 | EB | N | JC58745 | 1/12/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| FB-20180116 | EB | N | JC58942 | 1/16/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| FB-20180212 | EB | N | JC60652 | 2/12/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| FB-20180312 | EB | N | JC62130 | 3/12/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| FB-20180313 | EB | N | JC62228 | 3/13/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| FB-20180418 | EB | N | JC64444 | 4/18/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| FB-20180419 | EB | N | JC64571 | 4/19/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| FB-20180420 | EB | N | JC64643 | 4/20/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| FB-20180423 | EB | N | JC64763 | 4/23/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| FB-20180424 | EB | N | JC64822 | 4/24/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| FB-20180425 | EB | N | JC64901 | 4/25/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| FB-20180426 | EB | N | JC64986 | 4/26/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| FB-20180427 | EB | N | JC65066 | 4/27/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| FB-20180427-114-MW19C-POST | EB | N | JC65066 | 4/27/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| FB-20180427-114-MW19C-PRE | EB | N | JC65066 | 4/27/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| FB-20180430 | EB | N | JC65178 | 4/30/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| FB-20180501 | EB | N | JC65255 | 5/1/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| FB-20180501-114-MW19B-POST | EB | N | JC65255 | 5/1/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| FB-20180501-114-MW19B-PRE | EB | N | JC65255 | 5/1/2018 | < 0.60 U | < 0.62 U | < 0.22 U |

**Table 5-6**
**Analytical Results from Quality Assurance Samples - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | Analyte | TRICHLOROFLUOROMETHANE | VINYL CHLORIDE | XYLENES |
|---|---|---|---|---|---|---|---|
| | | | | CAS RN | 75-69-4 | 75-01-4 | 1330-20-7 |
| | | | | Units | ug/L | ug/L | ug/L |
| **Sample ID** | **Sample Type** | **Fraction** | **Lab SDG** | **Date Collected** | | | |
| FB-20180502 | EB | N | JC65325 | 5/2/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| FB-20180531 | EB | N | JC67069 | 5/31/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| FIELD BLANK-20171219 | EB | N | JC57638 | 12/19/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| FORREST-FB20171204 | EB | N | JC56504A | 12/4/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| FORREST-FB20171206 | EB | N | JC56729A | 12/6/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| FORREST-FB20171207 | EB | N | JC56859A | 12/7/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| FORREST-FB-20171218 | EB | N | JC57565 | 12/18/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| TB-20180116 | TB | N | JC58942 | 1/16/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| TB-20180418 | TB | N | JC64444 | 4/18/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| TB-20180419 | TB | N | JC64571 | 4/19/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| TB-20180420 | TB | N | JC64643 | 4/20/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| TB-20180423 | TB | N | JC64763 | 4/23/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| TB-20180424 | TB | N | JC64822 | 4/24/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| TB-20180425 | TB | N | JC64901 | 4/25/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| TB-20180426 | TB | N | JC64986 | 4/26/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| TB-20180427 | TB | N | JC65066 | 4/27/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| TB-20180430 | TB | N | JC65178 | 4/30/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| TB-20180501 | TB | N | JC65255 | 5/1/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| TB-20180502 | TB | N | JC65325 | 5/2/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| TB-20180531 | TB | N | JC67069 | 5/31/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| TRIP BLANK_20171016 | TB | N | JC53234 | 10/16/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| TRIP BLANK_20171102 | TB | N | JC54569A | 11/2/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| TRIP BLANK-20171204 | TB | N | JC56504A | 12/4/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| TRIP BLANK-20171206 | TB | N | JC56729A | 12/6/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| TRIP BLANK-20171212 | TB | N | JC57169 | 12/12/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| TRIP BLANK-20171213 | TB | N | JC57276 | 12/13/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| TRIP BLANK-20171215 | TB | N | JC57501A | 12/15/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| TRIP BLANK-20171218 | TB | N | JC57565 | 12/18/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| TRIP BLANK-20171219 | TB | N | JC57638 | 12/19/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| TRIP BLANK-20171220 | TB | N | JC57752 | 12/20/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| TRIP BLANK-20171221 | TB | N | JC57820 | 12/21/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| TRIP BLANK-20171222 | TB | N | JC57943A | 12/22/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| TRIP BLANK-20171226 | TB | N | JC58028A | 12/26/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| TRIP BLANK-20171227 | TB | N | JC58073A | 12/27/2017 | < 0.60 U | < 0.62 U | < 0.22 U |
| TRIP BLANK-20180111 | TB | N | JC58670 | 1/11/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| TRIP BLANK-20180112 | TB | N | JC58745 | 1/12/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| TRIP BLANK-20180212 | TB | N | JC60652 | 2/12/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| TRIP BLANK-20180312 | TB | N | JC62130 | 3/12/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| TRIP BLANK-20180313 | TB | N | JC62228 | 3/13/2018 | < 0.60 U | < 0.62 U | < 0.22 U |
| TRIP BLANK-FB20171207 | TB | N | JC56859A | 12/7/2017 | < 0.60 U | < 0.62 U | < 0.22 U |

**Table 5-6**
**Analytical Results from Quality Assurance Samples - VOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
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**NOTE:**

1. A "-" indicates the sample was not tested for the analyte.

**ABBREVIATIONS:**

CAS RN - Chemical Abstracts Service Registry Number
EB - equipment blank/field blank
N - total/unfiltered
RL- reporting limit
SDG - sample delivery group
TB - trip blank
VOC - volatile organic compounds
ug/L - micrograms per liter

**QUALIFIERS:**

J - Indicates the result was an estimated value; the associated numerical value was an approximate concentration of the analyte in the sample. J+ or J - is used when the direction of bias can be determined.

U - Indicates the analyte was not detected in the sample above the sample RL.

**Table 5-7**
**Analytical Results from Quality Assurance Samples - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

AECOM

| | | | | Analyte | 1,2,4,5-TETRACHLOROBENZENE | 1,4-DIOXANE | 1-1'-BIPHENYL | 2,2'-OXYBIS(1-CHLOROPROPANE) | 2,3,4,6-TETRACHLOROPHENOL | 2,4,5-TRICHLOROPHENOL |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | CAS RN | 95-94-3 | 123-91-1 | 92-52-4 | 108-60-1 | 58-90-2 | 95-95-4 |
| | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Sample ID | Sample Type | Fraction | Lab SDG | Date Collected | | | | | | |
| 114-FB20170925 | EB | N | JC51736 | 9/25/2017 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| 114-FB20170926 | EB | N | JC51809 | 9/26/2017 | - | - | - | - | - | - |
| 114-FB20170926 | EB | N | JC51824 | 9/26/2017 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| 114-FB20170927 | EB | N | JC51890 | 9/27/2017 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| 114-FB20171016 | EB | N | JC53234 | 10/16/2017 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| 114-FB20171102 | EB | N | JC54569A | 11/2/2017 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| FB-20171212 | EB | N | JC57169 | 12/12/2017 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| FB-20171213 | EB | N | JC57276 | 12/13/2017 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| FB-20171215 | EB | N | JC57501A | 12/15/2017 | < 0.41 U | < 0.054 U | < 0.24 U | < 0.45 U | < 1.6 U | < 1.5 U |
| FB-20171220 | EB | N | JC57752 | 12/20/2017 | < 0.38 U | < 0.050 U | < 0.22 U | < 0.42 U | < 1.5 U | < 1.4 U |
| FB-20171221 | EB | N | JC57820 | 12/21/2017 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.41 U | < 1.5 U | < 1.3 U |
| FB-20171222 | EB | N | JC57943A | 12/22/2017 | < 0.39 U | < 0.051 U | < 0.22 U | < 0.42 U | < 1.5 U | < 1.4 U |
| FB-20171226 | EB | N | JC58028A | 12/26/2017 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| FB-20171227 | EB | N | JC58073A | 12/27/2017 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| FB-20180111 | EB | N | JC58670 | 1/11/2018 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| FB-20180112 | EB | N | JC58745 | 1/12/2018 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| FB-20180116 | EB | N | JC58942 | 1/16/2018 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| FB-20180212 | EB | N | JC60652 | 2/12/2018 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| FB-20180312 | EB | N | JC62130 | 3/12/2018 | < 0.39 U | < 0.051 U | < 0.22 U | < 0.42 U | < 1.5 U | < 1.4 U |
| FB-20180313 | EB | N | JC62228 | 3/13/2018 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| FB-20180418 | EB | N | JC64444 | 4/18/2018 | < 0.40 U | < 0.053 U | < 0.23 U | < 0.44 U | < 1.6 U | < 1.4 U |
| FB-20180419 | EB | N | JC64571 | 4/19/2018 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| FB-20180420 | EB | N | JC64643 | 4/20/2018 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| FB-20180423 | EB | N | JC64763 | 4/23/2018 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| FB-20180424 | EB | N | JC64822 | 4/24/2018 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| FB-20180425 | EB | N | JC64901 | 4/25/2018 | < 0.36 U | < 0.048 U | < 0.21 U | < 0.40 U | < 1.4 U | < 1.3 U |
| FB-20180426 | EB | N | JC64986 | 4/26/2018 | < 0.37 U | < 0.048 U | < 0.21 U | < 0.40 U | < 1.4 U | < 1.3 U |
| FB-20180427 | EB | N | JC65066 | 4/27/2018 | < 0.36 U | < 0.047 U | < 0.20 U | < 0.39 U | < 1.4 U | < 1.3 U |
| FB-20180427-114-MW19C-POST | EB | N | JC65066 | 4/27/2018 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.41 U | < 1.5 U | < 1.3 U |
| FB-20180427-114-MW19C-PRE | EB | N | JC65066 | 4/27/2018 | < 0.42 U | < 0.055 U | < 0.24 U | < 0.46 U | < 1.7 U | < 1.5 U |
| FB-20180430 | EB | N | JC65178 | 4/30/2018 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| FB-20180501 | EB | N | JC65255 | 5/1/2018 | < 0.37 U | < 0.049 UB | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| FB-20180501-114-MW19B-POST | EB | N | JC65255 | 5/1/2018 | < 0.41 U | < 0.054 U | < 0.24 U | < 0.45 U | < 1.6 U | < 1.5 U |
| FB-20180501-114-MW19B-PRE | EB | N | JC65255 | 5/1/2018 | < 0.41 U | < 0.054 U | < 0.23 U | < 0.44 U | < 1.6 U | < 1.5 U |
| FB-20180502 | EB | N | JC65325 | 5/2/2018 | < 0.38 U | < 0.050 U | < 0.22 U | < 0.41 U | < 1.5 U | < 1.4 U |
| FB-20180531 | EB | N | JC67069 | 5/31/2018 | < 0.37 U | < 0.046 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| FIELD BLANK-20171219 | EB | N | JC57638 | 12/19/2017 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | R | R |
| FORREST-FB20171204 | EB | N | JC56504A | 12/4/2017 | < 0.38 U | < 0.050 U | < 0.22 U | < 0.42 U | < 1.5 U | < 1.4 U |
| FORREST-FB20171206 | EB | N | JC56729A | 12/6/2017 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| FORREST-FB20171207 | EB | N | JC56859A | 12/7/2017 | < 0.37 U | < 0.049 U | < 0.21 U | < 0.40 U | < 1.5 U | < 1.3 U |
| FORREST-FB-20171218 | EB | N | JC57565 | 12/18/2017 | < 0.39 U | < 0.051 U | < 0.22 U | < 0.42 U | < 1.5 U | < 1.4 U |

**Table 5-7**
**Analytical Results from Quality Assurance Samples - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | Analyte | 2,4,6-TRICHLOROPHENOL | 2,4-DICHLOROPHENOL | 2,4-DIMETHYLPHENOL | 2,4-DINITROPHENOL | 2,4-DINITROTOLUENE | 2,6-DINITROTOLUENE |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | CAS RN | 88-06-2 | 120-83-2 | 105-67-9 | 51-28-5 | 121-14-2 | 606-20-2 |
| | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Sample ID | Sample Type | Fraction | Lab SDG | Date Collected | | | | | | |
| 114-FB20170925 | EB | N | JC51736 | 9/25/2017 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U |
| 114-FB20170926 | EB | N | JC51809 | 9/26/2017 | - | - | - | - | - | - |
| 114-FB20170926 | EB | N | JC51824 | 9/26/2017 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U |
| 114-FB20170927 | EB | N | JC51890 | 9/27/2017 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U |
| 114-FB20171016 | EB | N | JC53234 | 10/16/2017 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U |
| 114-FB20171102 | EB | N | JC54569A | 11/2/2017 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U |
| FB-20171212 | EB | N | JC57169 | 12/12/2017 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U |
| FB-20171213 | EB | N | JC57276 | 12/13/2017 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U |
| FB-20171215 | EB | N | JC57501A | 12/15/2017 | < 1.0 U | < 1.4 U | < 2.7 U | < 1.7 U | < 0.61 U | < 0.53 U |
| FB-20171220 | EB | N | JC57752 | 12/20/2017 | < 0.95 U | < 1.3 U | < 2.5 U | < 1.6 U | < 0.57 U | < 0.49 U |
| FB-20171221 | EB | N | JC57820 | 12/21/2017 | < 0.93 U | < 1.3 U | < 2.5 U | < 1.6 U | < 0.56 U | < 0.48 U |
| FB-20171222 | EB | N | JC57943A | 12/22/2017 | < 0.97 U | < 1.3 U | < 2.6 U | < 1.6 U | < 0.58 U | < 0.50 U |
| FB-20171226 | EB | N | JC58028A | 12/26/2017 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U |
| FB-20171227 | EB | N | JC58073A | 12/27/2017 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U |
| FB-20180111 | EB | N | JC58670 | 1/11/2018 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U |
| FB-20180112 | EB | N | JC58745 | 1/12/2018 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U |
| FB-20180116 | EB | N | JC58942 | 1/16/2018 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U |
| FB-20180212 | EB | N | JC60652 | 2/12/2018 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U |
| FB-20180312 | EB | N | JC62130 | 3/12/2018 | < 0.97 U | < 1.3 U | < 2.6 U | < 1.6 U | < 0.58 U | < 0.50 U |
| FB-20180313 | EB | N | JC62228 | 3/13/2018 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U |
| FB-20180418 | EB | N | JC64444 | 4/18/2018 | < 1.0 U | < 1.4 U | < 2.7 U | < 1.7 U | < 0.60 U | < 0.52 U |
| FB-20180419 | EB | N | JC64571 | 4/19/2018 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U |
| FB-20180420 | EB | N | JC64643 | 4/20/2018 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U |
| FB-20180423 | EB | N | JC64763 | 4/23/2018 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U |
| FB-20180424 | EB | N | JC64822 | 4/24/2018 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U |
| FB-20180425 | EB | N | JC64901 | 4/25/2018 | < 0.91 U | < 1.2 U | < 2.4 U | < 1.5 U | < 0.54 U | < 0.47 U |
| FB-20180426 | EB | N | JC64986 | 4/26/2018 | < 0.91 U | < 1.3 U | < 2.4 U | < 1.5 U | < 0.55 U | < 0.47 U |
| FB-20180427 | EB | N | JC65066 | 4/27/2018 | < 0.89 U | < 1.2 U | < 2.3 U | < 1.5 U | < 0.53 U | < 0.46 U |
| FB-20180427-114-MW19C-POST | EB | N | JC65066 | 4/27/2018 | < 0.93 U | < 1.3 U | < 2.5 U | < 1.6 U | < 0.56 U | < 0.48 U |
| FB-20180427-114-MW19C-PRE | EB | N | JC65066 | 4/27/2018 | < 1.0 U | < 1.4 U | < 2.8 U | < 1.8 U | < 0.63 U | < 0.54 U |
| FB-20180430 | EB | N | JC65178 | 4/30/2018 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U |
| FB-20180501 | EB | N | JC65255 | 5/1/2018 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U |
| FB-20180501-114-MW19B-POST | EB | N | JC65255 | 5/1/2018 | < 1.0 U | < 1.4 U | < 2.7 U | < 1.7 U | < 0.61 U | < 0.53 U |
| FB-20180501-114-MW19B-PRE | EB | N | JC65255 | 5/1/2018 | < 1.0 U | < 1.4 U | < 2.7 U | < 1.7 U | < 0.61 U | < 0.52 U |
| FB-20180502 | EB | N | JC65325 | 5/2/2018 | < 0.94 U | < 1.3 U | < 2.5 U | < 1.6 U | < 0.56 U | < 0.49 U |
| FB-20180531 | EB | N | JC67069 | 5/31/2018 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U |
| FIELD BLANK-20171219 | EB | N | JC57638 | 12/19/2017 | R | R | R | R | < 0.55 U | < 0.48 U |
| FORREST-FB20171204 | EB | N | JC56504A | 12/4/2017 | < 0.95 U | < 1.3 U | < 2.5 U | < 1.6 U | < 0.57 U | < 0.49 U |
| FORREST-FB20171206 | EB | N | JC56729A | 12/6/2017 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U |
| FORREST-FB20171207 | EB | N | JC56859A | 12/7/2017 | < 0.92 U | < 1.3 U | < 2.4 U | < 1.6 U | < 0.55 U | < 0.48 U |
| FORREST-FB-20171218 | EB | N | JC57565 | 12/18/2017 | < 0.96 U | < 1.3 U | < 2.5 U | < 1.6 U | < 0.58 U | < 0.50 U |

**Table 5-7**
**Analytical Results from Quality Assurance Samples - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

AECOM

| | | | | Analyte | 2-CHLORONAPHTHALENE | 2-CHLOROPHENOL | 2-METHYLNAPHTHALENE | 2-METHYLPHENOL | 2-NITROANILINE | 2-NITROPHENOL | 3,3'-DICHLOROBENZIDINE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | CAS RN | 91-58-7 | 95-57-8 | 91-57-6 | 95-48-7 | 88-74-4 | 88-75-5 | 91-94-1 |
| | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Sample ID | Sample Type | Fraction | Lab SDG | Date Collected | | | | | | | |
| 114-FB20170925 | EB | N | JC51736 | 9/25/2017 | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U |
| 114-FB20170926 | EB | N | JC51809 | 9/26/2017 | - | - | - | - | - | - | - |
| 114-FB20170926 | EB | N | JC51824 | 9/26/2017 | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U |
| 114-FB20170927 | EB | N | JC51890 | 9/27/2017 | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U |
| 114-FB20171016 | EB | N | JC53234 | 10/16/2017 | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U |
| 114-FB20171102 | EB | N | JC54569A | 11/2/2017 | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U |
| FB-20171212 | EB | N | JC57169 | 12/12/2017 | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U |
| FB-20171213 | EB | N | JC57276 | 12/13/2017 | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U |
| FB-20171215 | EB | N | JC57501A | 12/15/2017 | < 0.26 U | < 0.91 U | < 0.23 U | < 0.99 U | < 0.31 U | < 1.1 U | < 0.56 U |
| FB-20171220 | EB | N | JC57752 | 12/20/2017 | < 0.24 U | < 0.85 U | < 0.22 U | < 0.92 U | < 0.29 U | < 0.99 U | < 0.52 U |
| FB-20171221 | EB | N | JC57820 | 12/21/2017 | < 0.24 U | < 0.83 U | < 0.21 U | < 0.90 U | < 0.28 U | < 0.97 U | < 0.51 U |
| FB-20171222 | EB | N | JC57943A | 12/22/2017 | < 0.25 U | < 0.86 U | < 0.22 U | < 0.93 U | < 0.29 U | < 1.0 U | < 0.53 U |
| FB-20171226 | EB | N | JC58028A | 12/26/2017 | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U |
| FB-20171227 | EB | N | JC58073A | 12/27/2017 | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U |
| FB-20180111 | EB | N | JC58670 | 1/11/2018 | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U |
| FB-20180112 | EB | N | JC58745 | 1/12/2018 | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U |
| FB-20180116 | EB | N | JC58942 | 1/16/2018 | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U |
| FB-20180212 | EB | N | JC60652 | 2/12/2018 | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U |
| FB-20180312 | EB | N | JC62130 | 3/12/2018 | < 0.25 U | < 0.86 U | < 0.22 U | < 0.93 U | < 0.29 U | < 1.0 U | < 0.53 U |
| FB-20180313 | EB | N | JC62228 | 3/13/2018 | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U |
| FB-20180418 | EB | N | JC64444 | 4/18/2018 | < 0.26 U | < 0.89 U | < 0.23 U | < 0.97 U | < 0.30 U | < 1.0 U | < 0.55 U |
| FB-20180419 | EB | N | JC64571 | 4/19/2018 | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U |
| FB-20180420 | EB | N | JC64643 | 4/20/2018 | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U |
| FB-20180423 | EB | N | JC64763 | 4/23/2018 | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U |
| FB-20180424 | EB | N | JC64822 | 4/24/2018 | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U |
| FB-20180425 | EB | N | JC64901 | 4/25/2018 | < 0.23 U | < 0.80 U | < 0.21 U | < 0.87 U | < 0.27 U | < 0.94 U | < 0.50 U |
| FB-20180426 | EB | N | JC64986 | 4/26/2018 | < 0.23 U | < 0.81 U | < 0.21 U | < 0.88 U | < 0.27 U | < 0.95 U | < 0.50 U |
| FB-20180427 | EB | N | JC65066 | 4/27/2018 | < 0.23 U | < 0.79 U | < 0.20 U | < 0.85 U | < 0.27 U | < 0.92 U | < 0.49 U |
| FB-20180427-114-MW19C-POST | EB | N | JC65066 | 4/27/2018 | < 0.24 U | < 0.83 U | < 0.21 U | < 0.90 U | < 0.28 U | < 0.97 U | < 0.51 U |
| FB-20180427-114-MW19C-PRE | EB | N | JC65066 | 4/27/2018 | < 0.27 U | < 0.93 U | < 0.24 U | < 1.0 U | < 0.31 U | < 1.1 U | < 0.58 U |
| FB-20180430 | EB | N | JC65178 | 4/30/2018 | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U |
| FB-20180501 | EB | N | JC65255 | 5/1/2018 | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U |
| FB-20180501-114-MW19B-POST | EB | N | JC65255 | 5/1/2018 | < 0.26 U | < 0.91 U | < 0.23 U | < 0.99 U | < 0.31 U | < 1.1 U | < 0.56 U |
| FB-20180501-114-MW19B-PRE | EB | N | JC65255 | 5/1/2018 | < 0.26 U | < 0.90 U | < 0.23 U | < 0.98 U | < 0.30 U | < 1.1 U | < 0.56 U |
| FB-20180502 | EB | N | JC65325 | 5/2/2018 | < 0.24 U | < 0.84 U | < 0.21 U | < 0.91 U | < 0.28 U | < 0.98 U | < 0.52 U |
| FB-20180531 | EB | N | JC67069 | 5/31/2018 | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U |
| FIELD BLANK-20171219 | EB | N | JC57638 | 12/19/2017 | < 0.24 U | R | < 0.21 U | R | < 0.28 U | R | < 0.51 U |
| FORREST-FB20171204 | EB | N | JC56504A | 12/4/2017 | < 0.24 U | < 0.85 U | < 0.22 U | < 0.92 U | < 0.29 U | < 0.99 U | < 0.52 U |
| FORREST-FB20171206 | EB | N | JC56729A | 12/6/2017 | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U |
| FORREST-FB20171207 | EB | N | JC56859A | 12/7/2017 | < 0.24 U | < 0.82 U | < 0.21 U | < 0.89 U | < 0.28 U | < 0.96 U | < 0.51 U |
| FORREST-FB-20171218 | EB | N | JC57565 | 12/18/2017 | < 0.25 U | < 0.85 U | < 0.22 U | < 0.93 U | < 0.29 U | < 1.0 U | < 0.53 U |

**Table 5-7**
**Analytical Results from Quality Assurance Samples - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | Analyte | 3,5,5-TRIMETHYL-2-CYCLOHEXENE-1-ONE | 3+4-METHYLPHENOL | 3-NITROANILINE | 4,6-DINITRO-2-METHYLPHENOL | 4-BROMOPHENYL PHENYL ETHER |
|---|---|---|---|---|---|---|---|---|---|
| | | | | CAS RN | 78-59-1 | 106-44-5 | 99-09-2 | 534-52-1 | 101-55-3 |
| | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L |
| Sample ID | Sample Type | Fraction | Lab SDG | Date Collected | | | | | |
| 114-FB20170925 | EB | N | JC51736 | 9/25/2017 | < 0.28 U | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U |
| 114-FB20170926 | EB | N | JC51809 | 9/26/2017 | - | - | - | - | - |
| 114-FB20170926 | EB | N | JC51824 | 9/26/2017 | < 0.28 U | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U |
| 114-FB20170927 | EB | N | JC51890 | 9/27/2017 | < 0.28 U | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U |
| 114-FB20171016 | EB | N | JC53234 | 10/16/2017 | < 0.28 U | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U |
| 114-FB20171102 | EB | N | JC54569A | 11/2/2017 | < 0.28 U | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U |
| FB-20171212 | EB | N | JC57169 | 12/12/2017 | < 0.28 U | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U |
| FB-20171213 | EB | N | JC57276 | 12/13/2017 | < 0.28 U | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U |
| FB-20171215 | EB | N | JC57501A | 12/15/2017 | < 0.31 U | < 0.98 U | < 0.43 U | < 0.17 U | < 0.45 U |
| FB-20171220 | EB | N | JC57752 | 12/20/2017 | < 0.29 U | < 0.91 U | < 0.40 U | < 0.16 U | < 0.42 U |
| FB-20171221 | EB | N | JC57820 | 12/21/2017 | < 0.28 U | < 0.89 U | < 0.39 U | < 0.15 U | < 0.41 U |
| FB-20171222 | EB | N | JC57943A | 12/22/2017 | < 0.29 U | < 0.93 U | < 0.41 U | < 0.16 U | < 0.43 U |
| FB-20171226 | EB | N | JC58028A | 12/26/2017 | < 0.28 U | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U |
| FB-20171227 | EB | N | JC58073A | 12/27/2017 | < 0.28 U | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U |
| FB-20180111 | EB | N | JC58670 | 1/11/2018 | < 0.28 U | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U |
| FB-20180112 | EB | N | JC58745 | 1/12/2018 | < 0.28 U | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U |
| FB-20180116 | EB | N | JC58942 | 1/16/2018 | < 0.28 U | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U |
| FB-20180212 | EB | N | JC60652 | 2/12/2018 | < 0.28 U | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U |
| FB-20180312 | EB | N | JC62130 | 3/12/2018 | < 0.29 U | < 0.93 U | < 0.41 U | < 0.16 U | < 0.43 U |
| FB-20180313 | EB | N | JC62228 | 3/13/2018 | < 0.28 U | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U |
| FB-20180418 | EB | N | JC64444 | 4/18/2018 | < 0.30 U | < 0.96 U | < 0.42 U | < 0.17 U | < 0.44 U |
| FB-20180419 | EB | N | JC64571 | 4/19/2018 | < 0.28 U | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U |
| FB-20180420 | EB | N | JC64643 | 4/20/2018 | < 0.28 U | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U |
| FB-20180423 | EB | N | JC64763 | 4/23/2018 | < 0.28 U | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U |
| FB-20180424 | EB | N | JC64822 | 4/24/2018 | < 0.28 U | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U |
| FB-20180425 | EB | N | JC64901 | 4/25/2018 | < 0.27 U | < 0.86 U | < 0.38 U | < 0.15 U | < 0.40 U |
| FB-20180426 | EB | N | JC64986 | 4/26/2018 | < 0.27 U | < 0.87 U | < 0.38 U | < 0.15 U | < 0.40 U |
| FB-20180427 | EB | N | JC65066 | 4/27/2018 | < 0.27 U | < 0.85 U | < 0.37 U | < 0.15 U | < 0.39 U |
| FB-20180427-114-MW19C-POST | EB | N | JC65066 | 4/27/2018 | < 0.28 U | < 0.89 U | < 0.39 U | < 0.15 U | < 0.41 U |
| FB-20180427-114-MW19C-PRE | EB | N | JC65066 | 4/27/2018 | < 0.31 U | < 1.0 U | < 0.44 U | < 0.17 U | < 0.46 U |
| FB-20180430 | EB | N | JC65178 | 4/30/2018 | < 0.28 U | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U |
| FB-20180501 | EB | N | JC65255 | 5/1/2018 | < 0.28 U | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U |
| FB-20180501-114-MW19B-POST | EB | N | JC65255 | 5/1/2018 | < 0.31 U | < 0.98 U | < 0.43 U | < 0.17 U | < 0.45 U |
| FB-20180501-114-MW19B-PRE | EB | N | JC65255 | 5/1/2018 | < 0.30 U | < 0.97 U | < 0.43 U | < 0.17 U | < 0.44 U |
| FB-20180502 | EB | N | JC65325 | 5/2/2018 | < 0.28 U | < 0.90 U | < 0.39 U | < 0.16 U | < 0.41 U |
| FB-20180531 | EB | N | JC67069 | 5/31/2018 | < 0.28 U | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U |
| FIELD BLANK-20171219 | EB | N | JC57638 | 12/19/2017 | < 0.28 U | R | < 0.39 U | R | < 0.40 U |
| FORREST-FB20171204 | EB | N | JC56504A | 12/4/2017 | < 0.29 U | < 0.91 U | < 0.40 U | < 0.16 U | < 0.42 U |
| FORREST-FB20171206 | EB | N | JC56729A | 12/6/2017 | < 0.28 U | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U |
| FORREST-FB20171207 | EB | N | JC56859A | 12/7/2017 | < 0.28 U | < 0.88 U | < 0.39 U | < 0.15 U | < 0.40 U |
| FORREST-FB-20171218 | EB | N | JC57565 | 12/18/2017 | < 0.29 U | < 0.92 U | < 0.40 U | < 0.16 U | < 0.42 U |

**Table 5-7**
**Analytical Results from Quality Assurance Samples - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | Analyte | 4-CHLORO-3-METHYLPHENOL | 4-CHLOROPHENYL PHENYL ETHER | 4-NITROPHENOL | ACENAPHTHENE | ACENAPHTHYLENE | ACETOPHENONE | ANTHRACENE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | CAS RN | 59-50-7 | 7005-72-3 | 100-02-7 | 83-32-9 | 208-96-8 | 98-86-2 | 120-12-7 |
| | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Sample ID | Sample Type | Fraction | Lab SDG | Date Collected | | | | | | | |
| 114-FB20170925 | EB | N | JC51736 | 9/25/2017 | < 0.89 U | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| 114-FB20170926 | EB | N | JC51809 | 9/26/2017 | - | - | - | - | - | - | - |
| 114-FB20170926 | EB | N | JC51824 | 9/26/2017 | < 0.89 U | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| 114-FB20170927 | EB | N | JC51890 | 9/27/2017 | < 0.89 U | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| 114-FB20171016 | EB | N | JC53234 | 10/16/2017 | < 0.89 U | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| 114-FB20171102 | EB | N | JC54569A | 11/2/2017 | < 0.89 U | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| FB-20171212 | EB | N | JC57169 | 12/12/2017 | < 0.89 U | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| FB-20171213 | EB | N | JC57276 | 12/13/2017 | < 0.89 U | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| FB-20171215 | EB | N | JC57501A | 12/15/2017 | < 0.99 U | < 0.41 U | < 1.3 U | < 0.21 U | < 0.15 U | < 0.23 U | < 0.23 U |
| FB-20171220 | EB | N | JC57752 | 12/20/2017 | < 0.92 U | < 0.38 U | < 1.2 U | < 0.20 U | < 0.14 U | < 0.21 U | < 0.22 U |
| FB-20171221 | EB | N | JC57820 | 12/21/2017 | < 0.90 U | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| FB-20171222 | EB | N | JC57943A | 12/22/2017 | < 0.94 U | < 0.39 U | < 1.2 U | < 0.20 U | < 0.14 U | < 0.22 U | < 0.22 U |
| FB-20171226 | EB | N | JC58028A | 12/26/2017 | < 0.89 U | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| FB-20171227 | EB | N | JC58073A | 12/27/2017 | < 0.89 U | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| FB-20180111 | EB | N | JC58670 | 1/11/2018 | < 0.89 U | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| FB-20180112 | EB | N | JC58745 | 1/12/2018 | < 0.89 U | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| FB-20180116 | EB | N | JC58942 | 1/16/2018 | < 0.89 U | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| FB-20180212 | EB | N | JC60652 | 2/12/2018 | < 0.89 U | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| FB-20180312 | EB | N | JC62130 | 3/12/2018 | < 0.94 U | < 0.39 U | < 1.2 U | < 0.20 U | < 0.14 U | < 0.22 U | < 0.22 U |
| FB-20180313 | EB | N | JC62228 | 3/13/2018 | < 0.89 U | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| FB-20180418 | EB | N | JC64444 | 4/18/2018 | < 0.97 U | < 0.40 U | < 1.3 U | < 0.21 U | < 0.15 U | < 0.23 U | < 0.23 U |
| FB-20180419 | EB | N | JC64571 | 4/19/2018 | < 0.89 U | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| FB-20180420 | EB | N | JC64643 | 4/20/2018 | < 0.89 U | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| FB-20180423 | EB | N | JC64763 | 4/23/2018 | < 0.89 U | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| FB-20180424 | EB | N | JC64822 | 4/24/2018 | < 0.89 U | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| FB-20180425 | EB | N | JC64901 | 4/25/2018 | < 0.87 U | < 0.36 U | < 1.1 U | < 0.19 U | < 0.13 U | < 0.20 U | < 0.21 U |
| FB-20180426 | EB | N | JC64986 | 4/26/2018 | < 0.88 U | < 0.36 U | < 1.1 U | < 0.19 U | < 0.13 U | < 0.21 U | < 0.21 U |
| FB-20180427 | EB | N | JC65066 | 4/27/2018 | < 0.86 U | < 0.35 U | < 1.1 U | < 0.18 U | < 0.13 U | < 0.20 U | < 0.20 U |
| FB-20180427-114-MW19C-POST | EB | N | JC65066 | 4/27/2018 | < 0.90 U | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| FB-20180427-114-MW19C-PRE | EB | N | JC65066 | 4/27/2018 | < 1.0 U | < 0.42 U | < 1.3 U | < 0.22 U | < 0.15 U | < 0.24 U | < 0.24 U |
| FB-20180430 | EB | N | JC65178 | 4/30/2018 | < 0.89 U | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| FB-20180501 | EB | N | JC65255 | 5/1/2018 | < 0.89 U | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| FB-20180501-114-MW19B-POST | EB | N | JC65255 | 5/1/2018 | < 0.99 U | < 0.41 U | < 1.3 U | < 0.21 U | < 0.15 U | < 0.23 U | < 0.23 U |
| FB-20180501-114-MW19B-PRE | EB | N | JC65255 | 5/1/2018 | < 0.98 U | < 0.40 U | < 1.3 U | < 0.21 U | < 0.15 U | < 0.23 U | < 0.23 U |
| FB-20180502 | EB | N | JC65325 | 5/2/2018 | < 0.91 U | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.22 U |
| FB-20180531 | EB | N | JC67069 | 5/31/2018 | < 0.89 U | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| FIELD BLANK-20171219 | EB | N | JC57638 | 12/19/2017 | R | < 0.37 U | R | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| FORREST-FB20171204 | EB | N | JC56504A | 12/4/2017 | < 0.92 U | < 0.38 U | < 1.2 U | < 0.20 U | < 0.14 U | < 0.21 U | < 0.22 U |
| FORREST-FB20171206 | EB | N | JC56729A | 12/6/2017 | < 0.89 U | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| FORREST-FB20171207 | EB | N | JC56859A | 12/7/2017 | < 0.89 U | < 0.37 U | < 1.2 U | < 0.19 U | < 0.14 U | < 0.21 U | < 0.21 U |
| FORREST-FB-20171218 | EB | N | JC57565 | 12/18/2017 | < 0.93 U | < 0.38 U | < 1.2 U | < 0.20 U | < 0.14 U | < 0.22 U | < 0.22 U |

**Table 5-7**
**Analytical Results from Quality Assurance Samples - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | Analyte | ATRAZINE | BENZALDEHYDE | BENZO(A)ANTHRACENE | BENZO(A)PYRENE | BENZO(B)FLUORANTHENE | BENZO(G,H,I)PERYLENE | BENZO(K)FLUORANTHENE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | CAS RN | 1912-24-9 | 100-52-7 | 56-55-3 | 50-32-8 | 205-99-2 | 191-24-2 | 207-08-9 |
| | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Sample ID | Sample Type | Fraction | Lab SDG | Date Collected | | | | | | | |
| 114-FB20170925 | EB | N | JC51736 | 9/25/2017 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U | < 0.033 U |
| 114-FB20170926 | EB | N | JC51809 | 9/26/2017 | - | - | - | < 0.22 U | - | - | - |
| 114-FB20170926 | EB | N | JC51824 | 9/26/2017 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U | < 0.033 U |
| 114-FB20170927 | EB | N | JC51890 | 9/27/2017 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U | < 0.033 U |
| 114-FB20171016 | EB | N | JC53234 | 10/16/2017 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U | < 0.033 U |
| 114-FB20171102 | EB | N | JC54569A | 11/2/2017 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U | < 0.033 U |
| FB-20171212 | EB | N | JC57169 | 12/12/2017 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U | < 0.033 U |
| FB-20171213 | EB | N | JC57276 | 12/13/2017 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U | < 0.033 U |
| FB-20171215 | EB | N | JC57501A | 12/15/2017 | < 0.50 U | < 0.32 U | < 0.025 U | < 0.037 U | < 0.048 U | < 0.38 U | < 0.037 U |
| FB-20171220 | EB | N | JC57752 | 12/20/2017 | < 0.46 U | < 0.30 U | < 0.024 U | < 0.034 U | < 0.045 U | < 0.35 U | < 0.034 U |
| FB-20171221 | EB | N | JC57820 | 12/21/2017 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.034 U | < 0.044 U | < 0.34 U | < 0.033 U |
| FB-20171222 | EB | N | JC57943A | 12/22/2017 | < 0.47 U | < 0.30 U | < 0.024 U | < 0.035 U | < 0.046 U | < 0.36 U | < 0.035 U |
| FB-20171226 | EB | N | JC58028A | 12/26/2017 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U | < 0.033 U |
| FB-20171227 | EB | N | JC58073A | 12/27/2017 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U | < 0.033 U |
| FB-20180111 | EB | N | JC58670 | 1/11/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U | < 0.033 U |
| FB-20180112 | EB | N | JC58745 | 1/12/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U | < 0.033 U |
| FB-20180116 | EB | N | JC58942 | 1/16/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U | < 0.033 U |
| FB-20180212 | EB | N | JC60652 | 2/12/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U | < 0.033 U |
| FB-20180312 | EB | N | JC62130 | 3/12/2018 | < 0.47 U | < 0.30 U | < 0.024 U | < 0.035 U | < 0.046 U | < 0.36 U | < 0.035 U |
| FB-20180313 | EB | N | JC62228 | 3/13/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U | < 0.033 U |
| FB-20180418 | EB | N | JC64444 | 4/18/2018 | < 0.49 U | < 0.31 U | < 0.025 U | < 0.036 U | < 0.047 U | < 0.37 U | < 0.036 U |
| FB-20180419 | EB | N | JC64571 | 4/19/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U | < 0.033 U |
| FB-20180420 | EB | N | JC64643 | 4/20/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U | < 0.033 U |
| FB-20180423 | EB | N | JC64763 | 4/23/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U | < 0.033 U |
| FB-20180424 | EB | N | JC64822 | 4/24/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U | < 0.033 U |
| FB-20180425 | EB | N | JC64901 | 4/25/2018 | < 0.44 U | < 0.28 U | < 0.022 U | < 0.033 U | < 0.043 U | < 0.33 U | < 0.032 U |
| FB-20180426 | EB | N | JC64986 | 4/26/2018 | < 0.44 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U | < 0.033 U |
| FB-20180427 | EB | N | JC65066 | 4/27/2018 | < 0.43 U | < 0.28 U | < 0.022 U | < 0.032 U | < 0.042 U | < 0.33 U | < 0.032 U |
| FB-20180427-114-MW19C-POST | EB | N | JC65066 | 4/27/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.034 U | < 0.044 U | < 0.34 U | < 0.033 U |
| FB-20180427-114-MW19C-PRE | EB | N | JC65066 | 4/27/2018 | < 0.51 U | < 0.33 U | < 0.026 U | < 0.038 U | < 0.049 U | < 0.39 U | < 0.038 U |
| FB-20180430 | EB | N | JC65178 | 4/30/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U | < 0.033 U |
| FB-20180501 | EB | N | JC65255 | 5/1/2018 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U | < 0.033 U |
| FB-20180501-114-MW19B-POST | EB | N | JC65255 | 5/1/2018 | < 0.50 U | < 0.32 U | < 0.025 U | < 0.037 U | < 0.048 U | < 0.38 U | < 0.037 U |
| FB-20180501-114-MW19B-PRE | EB | N | JC65255 | 5/1/2018 | < 0.49 U | < 0.32 U | < 0.025 U | < 0.037 U | < 0.048 U | < 0.37 U | < 0.036 U |
| FB-20180502 | EB | N | JC65325 | 5/2/2018 | < 0.46 U | < 0.29 U | < 0.023 U | < 0.034 U | < 0.044 U | < 0.35 U | < 0.034 U |
| FB-20180531 | EB | N | JC67069 | 5/31/2018 | < 0.45 U | < 0.29 U | < 0.022 U | < 0.032 U | < 0.041 U | < 0.34 U | < 0.032 U |
| FIELD BLANK-20171219 | EB | N | JC57638 | 12/19/2017 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U | < 0.033 U |
| FORREST-FB20171204 | EB | N | JC56504A | 12/4/2017 | < 0.46 U | < 0.30 U | < 0.024 U | < 0.034 U | < 0.045 U | < 0.35 U | < 0.034 U |
| FORREST-FB20171206 | EB | N | JC56729A | 12/6/2017 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U | < 0.033 U |
| FORREST-FB20171207 | EB | N | JC56859A | 12/7/2017 | < 0.45 U | < 0.29 U | < 0.023 U | < 0.033 U | < 0.043 U | < 0.34 U | < 0.033 U |
| FORREST-FB-20171218 | EB | N | JC57565 | 12/18/2017 | < 0.47 U | < 0.30 U | < 0.024 U | < 0.035 U | < 0.045 U | < 0.36 U | < 0.034 U |

**Table 5-7**
**Analytical Results from Quality Assurance Samples - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | Analyte | BENZYL BUTYL PHTHALATE | BIS(-2-CHLOROETHOXY)METHANE | BIS(2-CHLOROETHYL)ETHER | BIS(2-ETHYLHEXYL)PHTHALATE | CAPROLACTAM | CARBAZOLE |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | CAS RN | 85-68-7 | 111-91-1 | 111-44-4 | 117-81-7 | 105-60-2 | 86-74-8 |
| | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Sample ID | Sample Type | Fraction | Lab SDG | Date Collected | | | | | | |
| 114-FB20170925 | EB | N | JC51736 | 9/25/2017 | < 0.46 U | < 0.28 U | < 0.25 U | < 1.7 U | < 0.65 U | < 0.23 U |
| 114-FB20170926 | EB | N | JC51809 | 9/26/2017 | - | - | - | - | - | - |
| 114-FB20170926 | EB | N | JC51824 | 9/26/2017 | < 0.46 U | < 0.28 U | < 0.25 U | < 1.7 U | < 0.65 U | < 0.23 U |
| 114-FB20170927 | EB | N | JC51890 | 9/27/2017 | < 0.46 U | < 0.28 U | < 0.25 U | < 1.7 U | < 0.65 U | < 0.23 U |
| 114-FB20171016 | EB | N | JC53234 | 10/16/2017 | < 0.46 U | < 0.28 U | < 0.25 U | < 1.7 U | < 0.65 U | < 0.23 U |
| 114-FB20171102 | EB | N | JC54569A | 11/2/2017 | < 0.46 U | < 0.28 U | < 0.25 U | < 1.7 U | < 0.65 U | < 0.23 U |
| FB-20171212 | EB | N | JC57169 | 12/12/2017 | < 0.46 U | < 0.28 U | < 0.25 U | < 1.7 U | < 0.65 U | < 0.23 U |
| FB-20171213 | EB | N | JC57276 | 12/13/2017 | < 0.46 U | < 0.28 U | < 0.25 U | < 1.7 U | < 0.65 U | < 0.23 U |
| FB-20171215 | EB | N | JC57501A | 12/15/2017 | < 0.51 U | < 0.31 U | < 0.28 U | < 1.8 U | < 0.72 U | < 0.25 U |
| FB-20171220 | EB | N | JC57752 | 12/20/2017 | < 0.47 U | < 0.29 U | < 0.26 U | < 1.7 U | < 0.67 U | < 0.24 U |
| FB-20171221 | EB | N | JC57820 | 12/21/2017 | < 0.46 U | < 0.28 U | < 0.25 U | < 1.7 U | < 0.66 U | < 0.23 U |
| FB-20171222 | EB | N | JC57943A | 12/22/2017 | < 0.48 U | < 0.29 U | < 0.26 U | < 1.7 U | < 0.68 U | < 0.24 U |
| FB-20171226 | EB | N | JC58028A | 12/26/2017 | < 0.46 U | < 0.28 U | < 0.25 U | < 1.7 U | < 0.65 U | < 0.23 U |
| FB-20171227 | EB | N | JC58073A | 12/27/2017 | < 0.46 U | < 0.28 U | < 0.25 U | < 1.7 U | < 0.65 U | < 0.23 U |
| FB-20180111 | EB | N | JC58670 | 1/11/2018 | < 0.46 U | < 0.28 U | < 0.25 U | < 1.7 U | < 0.65 U | < 0.23 U |
| FB-20180112 | EB | N | JC58745 | 1/12/2018 | < 0.46 U | < 0.28 U | < 0.25 U | < 1.7 U | < 0.65 U | < 0.23 U |
| FB-20180116 | EB | N | JC58942 | 1/16/2018 | < 0.46 U | < 0.28 U | < 0.25 U | 4.2 | < 0.65 U | < 0.23 U |
| FB-20180212 | EB | N | JC60652 | 2/12/2018 | < 0.46 U | < 0.28 U | < 0.25 U | < 1.7 U | < 0.65 U | < 0.23 U |
| FB-20180312 | EB | N | JC62130 | 3/12/2018 | < 0.48 U | < 0.29 U | < 0.26 U | < 1.7 U | < 0.68 U | < 0.24 U |
| FB-20180313 | EB | N | JC62228 | 3/13/2018 | < 0.46 U | < 0.28 U | < 0.25 U | < 1.7 U | < 0.65 U | < 0.23 U |
| FB-20180418 | EB | N | JC64444 | 4/18/2018 | < 0.50 U | < 0.30 U | < 0.27 U | < 1.8 U | < 0.71 U | < 0.25 U |
| FB-20180419 | EB | N | JC64571 | 4/19/2018 | < 0.46 U | < 0.28 U | < 0.25 U | < 1.7 U | < 0.65 U | < 0.23 U |
| FB-20180420 | EB | N | JC64643 | 4/20/2018 | < 0.46 U | < 0.28 U | < 0.25 U | < 1.7 U | < 0.65 U | < 0.23 U |
| FB-20180423 | EB | N | JC64763 | 4/23/2018 | < 0.46 U | < 0.28 U | < 0.25 U | < 1.7 U | < 0.65 U | < 0.23 U |
| FB-20180424 | EB | N | JC64822 | 4/24/2018 | < 0.46 U | < 0.28 U | < 0.25 U | < 1.7 U | < 0.65 U | < 0.23 U |
| FB-20180425 | EB | N | JC64901 | 4/25/2018 | < 0.45 U | < 0.27 U | < 0.24 U | < 1.6 U | < 0.64 U | < 0.22 U |
| FB-20180426 | EB | N | JC64986 | 4/26/2018 | < 0.45 U | < 0.28 U | < 0.25 U | < 1.6 U | < 0.64 U | < 0.23 U |
| FB-20180427 | EB | N | JC65066 | 4/27/2018 | < 0.44 U | < 0.27 U | < 0.24 U | < 1.6 U | < 0.62 U | < 0.22 U |
| FB-20180427-114-MW19C-POST | EB | N | JC65066 | 4/27/2018 | < 0.46 U | < 0.28 U | < 0.25 U | < 1.7 U | < 0.66 U | < 0.23 U |
| FB-20180427-114-MW19C-PRE | EB | N | JC65066 | 4/27/2018 | < 0.52 U | < 0.32 U | < 0.28 U | < 1.9 U | < 0.74 U | < 0.26 U |
| FB-20180430 | EB | N | JC65178 | 4/30/2018 | < 0.46 U | < 0.28 U | < 0.25 U | < 1.7 U | < 0.65 U | < 0.23 U |
| FB-20180501 | EB | N | JC65255 | 5/1/2018 | < 0.46 U | < 0.28 U | < 0.25 U | < 1.7 U | < 0.65 U | < 0.23 U |
| FB-20180501-114-MW19B-POST | EB | N | JC65255 | 5/1/2018 | < 0.51 U | < 0.31 U | < 0.28 U | < 1.8 U | < 0.72 U | < 0.25 U |
| FB-20180501-114-MW19B-PRE | EB | N | JC65255 | 5/1/2018 | < 0.50 U | < 0.31 U | < 0.27 U | < 1.8 U | < 0.71 U | < 0.25 U |
| FB-20180502 | EB | N | JC65325 | 5/2/2018 | < 0.47 U | < 0.28 U | < 0.25 U | < 1.7 U | < 0.66 U | < 0.23 U |
| FB-20180531 | EB | N | JC67069 | 5/31/2018 | < 0.46 U | < 0.28 U | < 0.25 U | < 1.7 U | < 0.65 U | < 0.23 U |
| FIELD BLANK-20171219 | EB | N | JC57638 | 12/19/2017 | < 0.46 U | < 0.28 U | < 0.25 U | < 1.7 U | < 0.65 U | < 0.23 U |
| FORREST-FB20171204 | EB | N | JC56504A | 12/4/2017 | < 0.47 U | < 0.29 U | < 0.26 U | < 1.7 U | < 0.67 U | < 0.24 U |
| FORREST-FB20171206 | EB | N | JC56729A | 12/6/2017 | < 0.46 U | < 0.28 U | < 0.25 U | < 1.7 U | < 0.65 U | < 0.23 U |
| FORREST-FB20171207 | EB | N | JC56859A | 12/7/2017 | < 0.46 U | < 0.28 U | < 0.25 U | < 1.7 U | < 0.65 U | < 0.23 U |
| FORREST-FB-20171218 | EB | N | JC57565 | 12/18/2017 | < 0.48 U | < 0.29 U | < 0.26 U | < 1.7 U | < 0.68 U | < 0.24 U |

**Table 5-7**
**Analytical Results from Quality Assurance Samples - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | Analyte | CHRYSENE | DIBENZO(A,H)ANTHRACENE | DIBENZOFURAN | DIETHYL PHTHALATE | DIMETHYL PHTHALATE | DI-N-BUTYLPHTHALATE | DI-N-OCTYL PHTHALATE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | CAS RN | 218-01-9 | 53-70-3 | 132-64-9 | 84-66-2 | 131-11-3 | 84-74-2 | 117-84-0 |
| | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Sample ID | Sample Type | Fraction | Lab SDG | Date Collected | | | | | | | |
| 114-FB20170925 | EB | N | JC51736 | 9/25/2017 | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U |
| 114-FB20170926 | EB | N | JC51809 | 9/26/2017 | - | - | - | - | - | - | - |
| 114-FB20170926 | EB | N | JC51824 | 9/26/2017 | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U |
| 114-FB20170927 | EB | N | JC51890 | 9/27/2017 | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U |
| 114-FB20171016 | EB | N | JC53234 | 10/16/2017 | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U | 1.4 J | < 0.23 U |
| 114-FB20171102 | EB | N | JC54569A | 11/2/2017 | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U |
| FB-20171212 | EB | N | JC57169 | 12/12/2017 | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U |
| FB-20171213 | EB | N | JC57276 | 12/13/2017 | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U |
| FB-20171215 | EB | N | JC57501A | 12/15/2017 | < 0.20 U | < 0.040 U | < 0.24 U | < 0.29 U | < 0.24 U | < 0.55 U | < 0.26 U |
| FB-20171220 | EB | N | JC57752 | 12/20/2017 | < 0.18 U | < 0.037 U | < 0.23 U | < 0.27 U | < 0.22 U | < 0.51 U | < 0.24 U |
| FB-20171221 | EB | N | JC57820 | 12/21/2017 | < 0.18 U | < 0.037 U | < 0.22 U | < 0.26 U | < 0.22 U | < 0.50 U | < 0.24 U |
| FB-20171222 | EB | N | JC57943A | 12/22/2017 | < 0.19 U | < 0.038 U | < 0.23 U | < 0.28 U | < 0.23 U | < 0.52 U | < 0.25 U |
| FB-20171226 | EB | N | JC58028A | 12/26/2017 | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U | 1.0 J | < 0.23 U |
| FB-20171227 | EB | N | JC58073A | 12/27/2017 | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U | 1.4 J | < 0.23 U |
| FB-20180111 | EB | N | JC58670 | 1/11/2018 | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U |
| FB-20180112 | EB | N | JC58745 | 1/12/2018 | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U |
| FB-20180116 | EB | N | JC58942 | 1/16/2018 | < 0.18 U | < 0.036 U | < 0.22 U | 0.56 J | < 0.22 U | < 0.50 U | 1.1 J |
| FB-20180212 | EB | N | JC60652 | 2/12/2018 | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U |
| FB-20180312 | EB | N | JC62130 | 3/12/2018 | < 0.19 U | < 0.038 U | < 0.23 U | < 0.28 U | < 0.23 U | < 0.52 U | < 0.25 U |
| FB-20180313 | EB | N | JC62228 | 3/13/2018 | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U |
| FB-20180418 | EB | N | JC64444 | 4/18/2018 | < 0.19 U | < 0.039 U | < 0.24 U | < 0.28 U | < 0.24 U | < 0.54 U | < 0.25 U |
| FB-20180419 | EB | N | JC64571 | 4/19/2018 | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U |
| FB-20180420 | EB | N | JC64643 | 4/20/2018 | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U |
| FB-20180423 | EB | N | JC64763 | 4/23/2018 | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U |
| FB-20180424 | EB | N | JC64822 | 4/24/2018 | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U |
| FB-20180425 | EB | N | JC64901 | 4/25/2018 | < 0.17 U | < 0.035 U | < 0.22 U | < 0.26 U | < 0.21 U | < 0.49 U | < 0.23 U |
| FB-20180426 | EB | N | JC64986 | 4/26/2018 | < 0.17 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U | < 0.49 U | < 0.23 U |
| FB-20180427 | EB | N | JC65066 | 4/27/2018 | < 0.17 U | < 0.035 U | < 0.21 U | < 0.25 U | < 0.21 U | < 0.48 U | < 0.22 U |
| FB-20180427-114-MW19C-POST | EB | N | JC65066 | 4/27/2018 | < 0.18 U | < 0.037 U | < 0.22 U | < 0.26 U | < 0.22 U | < 0.50 U | < 0.24 U |
| FB-20180427-114-MW19C-PRE | EB | N | JC65066 | 4/27/2018 | < 0.20 U | < 0.041 U | < 0.25 U | < 0.30 U | < 0.25 U | < 0.56 U | < 0.27 U |
| FB-20180430 | EB | N | JC65178 | 4/30/2018 | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U |
| FB-20180501 | EB | N | JC65255 | 5/1/2018 | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U |
| FB-20180501-114-MW19B-POST | EB | N | JC65255 | 5/1/2018 | < 0.20 U | < 0.040 U | < 0.24 U | < 0.29 U | < 0.24 U | < 0.55 U | < 0.26 U |
| FB-20180501-114-MW19B-PRE | EB | N | JC65255 | 5/1/2018 | < 0.19 U | < 0.040 U | < 0.24 U | < 0.29 U | < 0.24 U | < 0.55 U | < 0.26 U |
| FB-20180502 | EB | N | JC65325 | 5/2/2018 | < 0.18 U | < 0.037 U | < 0.22 U | < 0.27 U | < 0.22 U | < 0.51 U | < 0.24 U |
| FB-20180531 | EB | N | JC67069 | 5/31/2018 | < 0.18 U | < 0.034 U | < 0.22 U | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U |
| FIELD BLANK-20171219 | EB | N | JC57638 | 12/19/2017 | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U |
| FORREST-FB20171204 | EB | N | JC56504A | 12/4/2017 | < 0.18 U | < 0.037 U | < 0.23 U | < 0.27 U | < 0.22 U | < 0.51 U | < 0.24 U |
| FORREST-FB20171206 | EB | N | JC56729A | 12/6/2017 | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U |
| FORREST-FB20171207 | EB | N | JC56859A | 12/7/2017 | < 0.18 U | < 0.036 U | < 0.22 U | < 0.26 U | < 0.22 U | < 0.50 U | < 0.23 U |
| FORREST-FB-20171218 | EB | N | JC57565 | 12/18/2017 | < 0.18 U | < 0.038 U | < 0.23 U | < 0.27 U | < 0.23 U | < 0.52 U | < 0.24 U |

**Table 5-7**
**Analytical Results from Quality Assurance Samples - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | Analyte | FLUORANTHENE | FLUORENE | HEXACHLORO-1,3-BUTADIENE | HEXACHLOROBENZENE | HEXACHLOROCYCLOPENTADIENE | HEXACHLOROETHANE |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | CAS RN | 206-44-0 | 86-73-7 | 87-68-3 | 118-74-1 | 77-47-4 | 67-72-1 |
| | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Sample ID | Sample Type | Fraction | Lab SDG | Date Collected | | | | | | |
| 114-FB20170925 | EB | N | JC51736 | 9/25/2017 | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| 114-FB20170926 | EB | N | JC51809 | 9/26/2017 | - | - | - | - | - | - |
| 114-FB20170926 | EB | N | JC51824 | 9/26/2017 | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| 114-FB20170927 | EB | N | JC51890 | 9/27/2017 | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| 114-FB20171016 | EB | N | JC53234 | 10/16/2017 | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| 114-FB20171102 | EB | N | JC54569A | 11/2/2017 | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| FB-20171212 | EB | N | JC57169 | 12/12/2017 | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| FB-20171213 | EB | N | JC57276 | 12/13/2017 | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| FB-20171215 | EB | N | JC57501A | 12/15/2017 | < 0.19 U | < 0.19 U | < 0.020 U | < 0.012 U | < 3.1 U | < 0.43 U |
| FB-20171220 | EB | N | JC57752 | 12/20/2017 | < 0.18 U | < 0.18 U | < 0.018 U | < 0.011 U | < 2.9 U | < 0.40 U |
| FB-20171221 | EB | N | JC57820 | 12/21/2017 | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| FB-20171222 | EB | N | JC57943A | 12/22/2017 | < 0.18 U | < 0.18 U | < 0.019 U | < 0.012 U | < 2.9 U | < 0.41 U |
| FB-20171226 | EB | N | JC58028A | 12/26/2017 | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| FB-20171227 | EB | N | JC58073A | 12/27/2017 | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| FB-20180111 | EB | N | JC58670 | 1/11/2018 | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| FB-20180112 | EB | N | JC58745 | 1/12/2018 | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| FB-20180116 | EB | N | JC58942 | 1/16/2018 | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| FB-20180212 | EB | N | JC60652 | 2/12/2018 | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| FB-20180312 | EB | N | JC62130 | 3/12/2018 | < 0.18 U | < 0.18 U | < 0.019 U | < 0.012 U | < 2.9 U | < 0.41 U |
| FB-20180313 | EB | N | JC62228 | 3/13/2018 | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| FB-20180418 | EB | N | JC64444 | 4/18/2018 | < 0.18 U | < 0.19 U | < 0.019 U | < 0.012 U | < 3.0 U | < 0.42 U |
| FB-20180419 | EB | N | JC64571 | 4/19/2018 | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| FB-20180420 | EB | N | JC64643 | 4/20/2018 | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| FB-20180423 | EB | N | JC64763 | 4/23/2018 | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| FB-20180424 | EB | N | JC64822 | 4/24/2018 | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| FB-20180425 | EB | N | JC64901 | 4/25/2018 | < 0.17 U | < 0.17 U | < 0.017 U | < 0.011 U | < 2.7 U | < 0.38 U |
| FB-20180426 | EB | N | JC64986 | 4/26/2018 | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| FB-20180427 | EB | N | JC65066 | 4/27/2018 | < 0.16 U | < 0.16 U | < 0.017 U | < 0.011 U | < 2.7 U | < 0.37 U |
| FB-20180427-114-MW19C-POST | EB | N | JC65066 | 4/27/2018 | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| FB-20180427-114-MW19C-PRE | EB | N | JC65066 | 4/27/2018 | < 0.19 U | < 0.19 U | < 0.020 U | < 0.013 U | < 3.2 U | < 0.44 U |
| FB-20180430 | EB | N | JC65178 | 4/30/2018 | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| FB-20180501 | EB | N | JC65255 | 5/1/2018 | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| FB-20180501-114-MW19B-POST | EB | N | JC65255 | 5/1/2018 | < 0.19 U | < 0.19 U | < 0.020 U | < 0.012 U | < 3.1 U | < 0.43 U |
| FB-20180501-114-MW19B-PRE | EB | N | JC65255 | 5/1/2018 | < 0.19 U | < 0.19 U | < 0.020 U | < 0.012 U | < 3.1 U | < 0.43 U |
| FB-20180502 | EB | N | JC65325 | 5/2/2018 | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U | < 0.40 U |
| FB-20180531 | EB | N | JC67069 | 5/31/2018 | < 0.17 U | < 0.17 U | < 0.017 U | < 0.011 U | < 2.8 U | < 0.39 U |
| FIELD BLANK-20171219 | EB | N | JC57638 | 12/19/2017 | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| FORREST-FB20171204 | EB | N | JC56504A | 12/4/2017 | < 0.18 U | < 0.18 U | < 0.018 U | < 0.011 U | < 2.9 U | < 0.40 U |
| FORREST-FB20171206 | EB | N | JC56729A | 12/6/2017 | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| FORREST-FB20171207 | EB | N | JC56859A | 12/7/2017 | < 0.17 U | < 0.17 U | < 0.018 U | < 0.011 U | < 2.8 U | < 0.39 U |
| FORREST-FB-20171218 | EB | N | JC57565 | 12/18/2017 | < 0.18 U | < 0.18 U | < 0.019 U | < 0.012 U | < 2.9 U | < 0.41 U |

**Table 5-7**
**Analytical Results from Quality Assurance Samples - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | Analyte | INDENO(1,2,3-CD)PYRENE | NAPHTHALENE | 1-METHYLNAPHTHALENE | NITROBENZENE | N-NITROSO-DI-N-PROPYLAMINE | N-NITROSODIPHENYLAMINE |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | CAS RN | 193-39-5 | 91-20-3 | 90-12-0 | 98-95-3 | 621-64-7 | 86-30-6 |
| | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Sample ID | Sample Type | Fraction | Lab SDG | Date Collected | | | | | | |
| 114-FB20170925 | EB | N | JC51736 | 9/25/2017 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| 114-FB20170926 | EB | N | JC51809 | 9/26/2017 | - | - | - | - | - | - |
| 114-FB20170926 | EB | N | JC51824 | 9/26/2017 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| 114-FB20170927 | EB | N | JC51890 | 9/27/2017 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| 114-FB20171016 | EB | N | JC53234 | 10/16/2017 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| 114-FB20171102 | EB | N | JC54569A | 11/2/2017 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| FB-20171212 | EB | N | JC57169 | 12/12/2017 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| FB-20171213 | EB | N | JC57276 | 12/13/2017 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| FB-20171215 | EB | N | JC57501A | 12/15/2017 | < 0.042 U | < 0.26 U | - | < 0.71 U | < 0.53 U | < 0.25 U |
| FB-20171220 | EB | N | JC57752 | 12/20/2017 | < 0.039 U | < 0.24 U | - | < 0.66 U | < 0.50 U | < 0.23 U |
| FB-20171221 | EB | N | JC57820 | 12/21/2017 | < 0.038 U | < 0.23 U | - | < 0.65 U | < 0.49 U | < 0.22 U |
| FB-20171222 | EB | N | JC57943A | 12/22/2017 | < 0.040 U | < 0.24 U | - | < 0.68 U | < 0.51 U | < 0.23 U |
| FB-20171226 | EB | N | JC58028A | 12/26/2017 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| FB-20171227 | EB | N | JC58073A | 12/27/2017 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| FB-20180111 | EB | N | JC58670 | 1/11/2018 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| FB-20180112 | EB | N | JC58745 | 1/12/2018 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| FB-20180116 | EB | N | JC58942 | 1/16/2018 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| FB-20180212 | EB | N | JC60652 | 2/12/2018 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| FB-20180312 | EB | N | JC62130 | 3/12/2018 | < 0.040 U | < 0.24 U | - | < 0.68 U | < 0.51 U | < 0.23 U |
| FB-20180313 | EB | N | JC62228 | 3/13/2018 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| FB-20180418 | EB | N | JC64444 | 4/18/2018 | < 0.041 U | < 0.25 U | < 0.29 U | < 0.70 U | < 0.52 U | < 0.24 U |
| FB-20180419 | EB | N | JC64571 | 4/19/2018 | < 0.038 U | < 0.23 U | < 0.26 U | < 0.64 U | < 0.48 U | < 0.22 U |
| FB-20180420 | EB | N | JC64643 | 4/20/2018 | < 0.038 U | < 0.23 U | < 0.26 U | < 0.64 U | < 0.48 U | < 0.22 U |
| FB-20180423 | EB | N | JC64763 | 4/23/2018 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| FB-20180424 | EB | N | JC64822 | 4/24/2018 | < 0.038 U | < 0.23 U | < 0.26 U | < 0.64 U | < 0.48 U | < 0.22 U |
| FB-20180425 | EB | N | JC64901 | 4/25/2018 | < 0.037 U | < 0.23 U | < 0.26 U | < 0.63 U | < 0.47 U | < 0.22 U |
| FB-20180426 | EB | N | JC64986 | 4/26/2018 | < 0.038 U | < 0.23 U | < 0.26 U | < 0.64 U | < 0.48 U | < 0.22 U |
| FB-20180427 | EB | N | JC65066 | 4/27/2018 | < 0.037 U | < 0.22 U | < 0.25 U | < 0.62 U | < 0.46 U | < 0.21 U |
| FB-20180427-114-MW19C-POST | EB | N | JC65066 | 4/27/2018 | < 0.038 U | < 0.23 U | < 0.27 U | < 0.65 U | < 0.49 U | < 0.22 U |
| FB-20180427-114-MW19C-PRE | EB | N | JC65066 | 4/27/2018 | < 0.043 U | < 0.26 U | < 0.30 U | < 0.73 U | < 0.55 U | < 0.25 U |
| FB-20180430 | EB | N | JC65178 | 4/30/2018 | < 0.038 U | < 0.23 U | < 0.26 U | < 0.64 U | < 0.48 U | < 0.22 U |
| FB-20180501 | EB | N | JC65255 | 5/1/2018 | < 0.038 U | < 0.23 U | < 0.26 U | < 0.64 U | < 0.48 U | < 0.22 U |
| FB-20180501-114-MW19B-POST | EB | N | JC65255 | 5/1/2018 | < 0.042 U | < 0.26 U | < 0.29 U | < 0.71 U | < 0.53 U | < 0.25 U |
| FB-20180501-114-MW19B-PRE | EB | N | JC65255 | 5/1/2018 | < 0.042 U | < 0.25 U | < 0.29 U | < 0.71 U | < 0.53 U | < 0.24 U |
| FB-20180502 | EB | N | JC65325 | 5/2/2018 | < 0.039 U | < 0.24 U | < 0.27 U | < 0.66 U | < 0.49 U | < 0.23 U |
| FB-20180531 | EB | N | JC67069 | 5/31/2018 | < 0.036 U | < 0.23 U | < 0.26 U | < 0.64 U | < 0.48 U | < 0.22 U |
| FIELD BLANK-20171219 | EB | N | JC57638 | 12/19/2017 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| FORREST-FB20171204 | EB | N | JC56504A | 12/4/2017 | < 0.039 U | < 0.24 U | - | < 0.66 U | < 0.50 U | < 0.23 U |
| FORREST-FB20171206 | EB | N | JC56729A | 12/6/2017 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| FORREST-FB20171207 | EB | N | JC56859A | 12/7/2017 | < 0.038 U | < 0.23 U | - | < 0.64 U | < 0.48 U | < 0.22 U |
| FORREST-FB-20171218 | EB | N | JC57565 | 12/18/2017 | < 0.040 U | < 0.24 U | - | < 0.67 U | < 0.50 U | < 0.23 U |

**Table 5-7**
**Analytical Results from Quality Assurance Samples - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

| | | | | Analyte | P-CHLOROANILINE | PENTACHLOROPHENOL | PHENANTHRENE | PHENOL | P-NITROANILINE | PYRENE |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | CAS RN | 106-47-8 | 87-86-5 | 85-01-8 | 108-95-2 | 100-01-6 | 129-00-0 |
| | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Sample ID | Sample Type | Fraction | Lab SDG | Date Collected | | | | | | |
| 114-FB20170925 | EB | N | JC51736 | 9/25/2017 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| 114-FB20170926 | EB | N | JC51809 | 9/26/2017 | - | - | - | - | - | - |
| 114-FB20170926 | EB | N | JC51824 | 9/26/2017 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| 114-FB20170927 | EB | N | JC51890 | 9/27/2017 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| 114-FB20171016 | EB | N | JC53234 | 10/16/2017 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| 114-FB20171102 | EB | N | JC54569A | 11/2/2017 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| FB-20171212 | EB | N | JC57169 | 12/12/2017 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| FB-20171213 | EB | N | JC57276 | 12/13/2017 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| FB-20171215 | EB | N | JC57501A | 12/15/2017 | < 0.38 U | < 0.14 U | < 0.19 U | < 0.44 U | < 0.49 U | < 0.24 U |
| FB-20171220 | EB | N | JC57752 | 12/20/2017 | < 0.35 U | < 0.13 U | < 0.18 U | < 0.40 U | < 0.45 U | < 0.23 U |
| FB-20171221 | EB | N | JC57820 | 12/21/2017 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.40 U | < 0.44 U | < 0.22 U |
| FB-20171222 | EB | N | JC57943A | 12/22/2017 | < 0.36 U | < 0.14 U | < 0.18 U | < 0.41 U | < 0.46 U | < 0.23 U |
| FB-20171226 | EB | N | JC58028A | 12/26/2017 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| FB-20171227 | EB | N | JC58073A | 12/27/2017 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| FB-20180111 | EB | N | JC58670 | 1/11/2018 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| FB-20180112 | EB | N | JC58745 | 1/12/2018 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| FB-20180116 | EB | N | JC58942 | 1/16/2018 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| FB-20180212 | EB | N | JC60652 | 2/12/2018 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| FB-20180312 | EB | N | JC62130 | 3/12/2018 | < 0.36 U | < 0.14 U | < 0.18 U | < 0.41 U | < 0.46 U | < 0.23 U |
| FB-20180313 | EB | N | JC62228 | 3/13/2018 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| FB-20180418 | EB | N | JC64444 | 4/18/2018 | < 0.37 U | < 0.14 U | < 0.19 U | < 0.43 U | < 0.48 U | < 0.24 U |
| FB-20180419 | EB | N | JC64571 | 4/19/2018 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| FB-20180420 | EB | N | JC64643 | 4/20/2018 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| FB-20180423 | EB | N | JC64763 | 4/23/2018 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| FB-20180424 | EB | N | JC64822 | 4/24/2018 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| FB-20180425 | EB | N | JC64901 | 4/25/2018 | < 0.33 U | < 0.13 U | < 0.17 U | < 0.38 U | < 0.43 U | < 0.21 U |
| FB-20180426 | EB | N | JC64986 | 4/26/2018 | < 0.34 U | < 0.13 U | < 0.17 U | < 0.39 U | < 0.44 U | < 0.22 U |
| FB-20180427 | EB | N | JC65066 | 4/27/2018 | < 0.33 U | < 0.12 U | < 0.17 U | < 0.38 U | < 0.42 U | < 0.21 U |
| FB-20180427-114-MW19C-POST | EB | N | JC65066 | 4/27/2018 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.40 U | < 0.44 U | < 0.22 U |
| FB-20180427-114-MW19C-PRE | EB | N | JC65066 | 4/27/2018 | < 0.39 U | < 0.15 U | < 0.20 U | < 0.45 U | < 0.50 U | < 0.25 U |
| FB-20180430 | EB | N | JC65178 | 4/30/2018 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| FB-20180501 | EB | N | JC65255 | 5/1/2018 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| FB-20180501-114-MW19B-POST | EB | N | JC65255 | 5/1/2018 | < 0.38 U | < 0.14 U | < 0.19 U | < 0.44 U | < 0.49 U | < 0.24 U |
| FB-20180501-114-MW19B-PRE | EB | N | JC65255 | 5/1/2018 | < 0.37 U | < 0.14 U | < 0.19 U | < 0.43 U | < 0.48 U | < 0.24 U |
| FB-20180502 | EB | N | JC65325 | 5/2/2018 | < 0.35 U | < 0.13 U | < 0.18 U | < 0.40 U | < 0.45 U | < 0.22 U |
| FB-20180531 | EB | N | JC67069 | 5/31/2018 | < 0.34 U | < 0.12 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| FIELD BLANK-20171219 | EB | N | JC57638 | 12/19/2017 | < 0.34 U | R | < 0.18 U | R | < 0.44 U | < 0.22 U |
| FORREST-FB20171204 | EB | N | JC56504A | 12/4/2017 | < 0.35 U | < 0.13 U | < 0.18 U | < 0.40 U | < 0.45 U | < 0.23 U |
| FORREST-FB20171206 | EB | N | JC56729A | 12/6/2017 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| FORREST-FB20171207 | EB | N | JC56859A | 12/7/2017 | < 0.34 U | < 0.13 U | < 0.18 U | < 0.39 U | < 0.44 U | < 0.22 U |
| FORREST-FB-20171218 | EB | N | JC57565 | 12/18/2017 | < 0.35 U | < 0.13 U | < 0.18 U | < 0.41 U | < 0.46 U | < 0.23 U |

**Table 5-7**
**Analytical Results from Quality Assurance Samples - SVOCs**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group of Sites**
**PPG, Jersey City, New Jersey**

**NOTE:**

1. A "-" indicates the sample was not tested for the analyte.

**ABBREVIATIONS:**

CAS RN - Chemical Abstracts Service Registry Number

EB - equipment blank/field blank

N - total/unfiltered

RL - reporting limit

SDG - sample delivery group

SVOC - semi-volatile organic compounds

ug/L - micrograms per liter

**QUALIFIERS:**

J - Indicates the result was an estimated value; the associated numerical value was an approximate concentration of the analyte in the sample. J+ or J - is used when the direction of bias can be determined.

R - The sample result was rejected due to serious deficiencies; the presence or absence of the analyte could not be confirmed.

U - Indicates the analyte was not detected in the sample above the sample RL.

UB - The analyte concentration is less than or equal to three (3) times the concentration in the associated method/preparation blank. The presence of the analyte in the sample is negated due to laboratory blank contamination.

**Table 5-8**
**Density Analysis Results**
**Groundwater Remedial Investigation Report**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| Well ID | Screened Zone | Sample Date | Depth Interval (ft btoic) | Chromium[1] (ug/L) | Hexavalent Chromium[1] (ug/L) | Visual Observation During Sampling | Specific Gravity Sample Date | Specific Gravity Sample Result[3] |
|---|---|---|---|---|---|---|---|---|
| 114-P2-MW-4D | Deep | 03/20/20 | 59.5 | 8.2 | < 10 U | Clear water | 09/17/20 | 1.0 |
| 114-P2-MW-11D | Deep | 03/23/20 | 47.5 | 826,000 | 722,000 | Yellow water | 09/17/20 | 1.0 |
| 114-P2-MW-5I | Intermediate | 03/25/20 | 38.5 | 1,300,000 | R | Green water | 09/17/20 | 1.0 |
| 114-P2-MW-6I | Intermediate | 03/17/20 | 42.5 | 2,960,000 | 3,230,000 | Orange water | 09/17/20 | 1.0 |
| 114-P2-IRM-43D | Deep | 03/19/20 | 53 | 13,300,000 | 1,180,000 | Yellow water | 09/18/20 | 1.0 |
| 114-P2-MW-9D | Deep | 03/24/20 | 61 | < 10 U | < 10 U | Clear water | 09/17/20 | 1.0 |
| 114-P2-MW-2I | Intermediate | 03/19/20 | 38.5 | < 10 U | < 10 U | Clear water | 09/17/20 | 1.0 |
| 114-MW53C | Till | 08/25/20 | 47 | 55,000 | 46,700 | Green water | -[2] | 0.99 |
| 114-MW61C | Till | 08/25/20 | 67.5 | 94,100 | 88,900 | Green water | -[2] | 1.0 |
| 114-MW48C | Till | 08/19/20 | 56.2 | 11.3 JB | < 5.8 U | Clear water | -[2] | 0.99 |

**Notes:**
[1]Results reported are for total fraction (unfiltered)
[2]Analysis was run on Hexavalent Chromium sample aliquot
[3]Specific Gravity analyzed via method ASTM D1429
ft btoic - feet below top of inner casing
JB - The analyte concentration is greater than three (3) times, but less than or equal to ten (10) times the concentration in the associated method/preparation blank. The presence of that analyte in the sample is considered “real” but the concentration is quantitatively qualified due to method blank contamination.
R - The sample result was rejected due to serious deficiencies; the presence or absence of the analyte could not be confirmed.
U - Indicates the analyte was not detected in the sample above the sample reporting limit
ug/L - micrograms per liter

# Figures

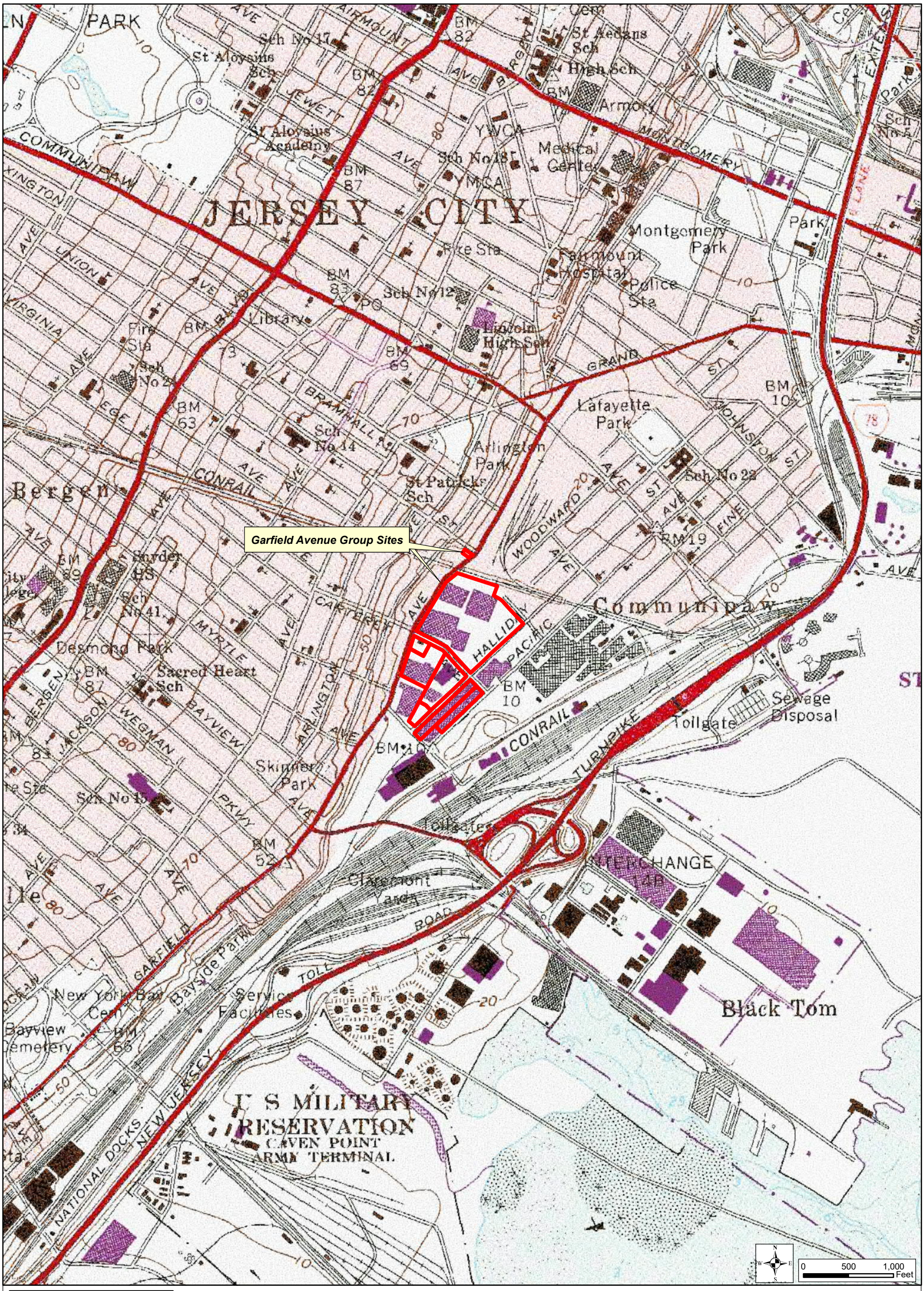


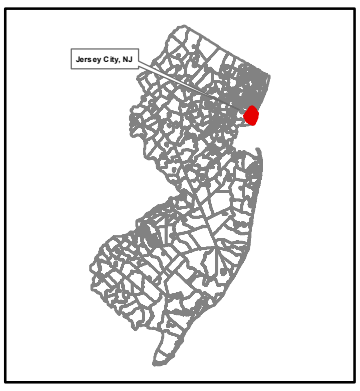


**LEGEND**

Garfield Avenue Group Boundary

**Map Sources:**
1. New Jersey State Plane North American Datum 1983 Coordinates (NAD83), U.S. Survey Feet.
2. Image Source: USGS Topographic Quadrangle: Jersey City, NJ, 1967 - Photo revised - 1981.
NJ = New Jersey
USGS = United States Geological Survey

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FIGURE 1-1
USGS SITE LOCATION MAP

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Site 186
Berry Lane Park
Site 199
NJ TRANSIT LIGHT RAIL LINE
French Park Warehouse
GARFIELD AVENUE
Forrest Street Properties
FORREST STREET
Site 114
Site 143
Site 132
CARTERET AVENUE
HALLADAY STREET
Halsted
PACIFIC AVENUE
Fishbein Property
Site 137
Ten West Apparel
Eden Wood
Site 133 East
Site 135
Site 133 West
CAVEN POINT AVENUE
Al Smith Moving & Storage

**Map Sources:**
1. New Jersey State Plane North American Datum 1983 Coordinates (NAD83), U.S. Survey Feet.
2. New Jersey 2017 High Resolution Orthophotography, Web Map Service, http://geodata.state.nj.us/imagerywms/Natural2017?.

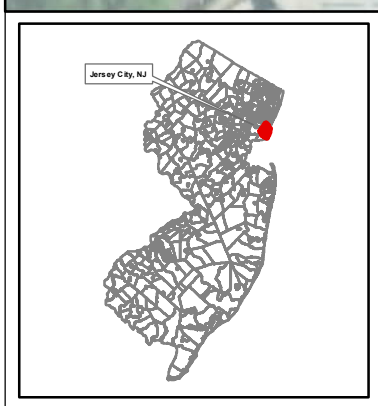


**LEGEND**

- Garfield Avenue Group Boundary
- Off-Site Properties
- Railroad Tracks

N W E S

0 100 200 Feet

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FIGURE 1-2
SITE PLAN

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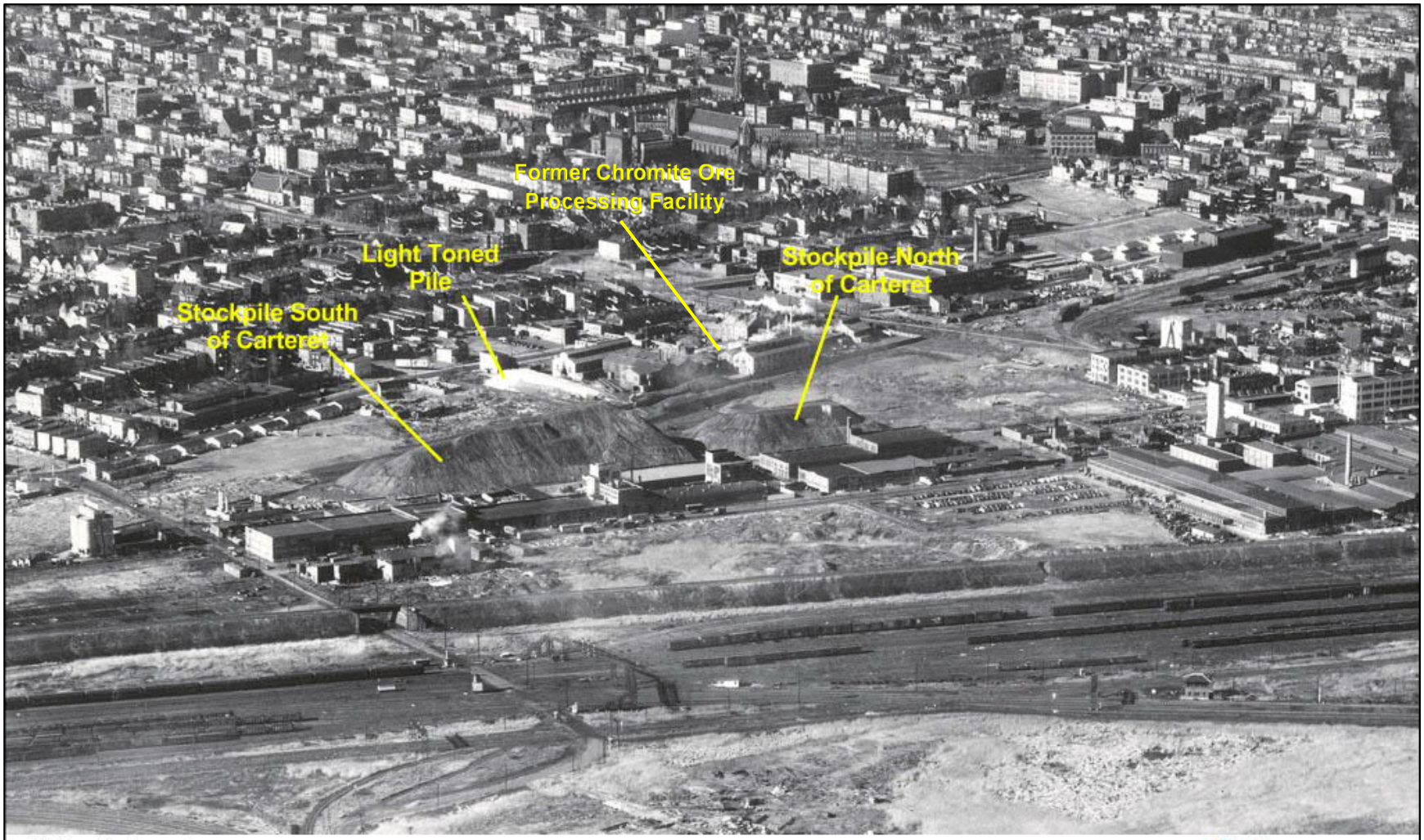


Oblique Photograph
102922
Jersey City, NJ
Photo Source: FAIRCHILD

Photo Taken After 4/28/1947

Underlying Image
PPGNPR1028244

AERO-DATA CORP
ENVIRONMENTAL
REMOTE SENSING CONSULTING SERVICES
AERIAL PHOTO ACQUISITION
INTERPRETATION and MAPPING

AECOM

**FIGURE 2-1**
**SOURCE AREAS**




**Map Sources:**
1. New Jersey State Plane North American Datum 1983 Coordinates (NAD83), U.S. Survey Feet.
2. Parcels of Hudson County, New Jersey State Plane NAD83, Hudson County Department of Planning, Jersey City, New Jersey, May 21, 2013.
3. New Jersey 2017 High Resolution Orthophotography, Web Map Service, http://geodata.state.nj.us/imagerywms/Natural2017?.

**Notes:**
1. "Competent" meadow mat refers to meadow mat present at a minimum thickness of 1 foot.

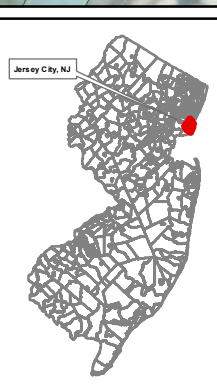


## LEGEND

- Garfield Avenue Group Boundary
- Hudson County Parcels
- Former Morris Canal
- Railroad Tracks
- Competent Meadow Mat Absent (Based on Existing Data or Lack of Data)
- Competent Meadow Mat (Based on Borings and Excavation Observations)

N W E S

0 100 200 Feet

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FIGURE 3-1
APPROXIMATE EXTENT
OF MEADOW MAT

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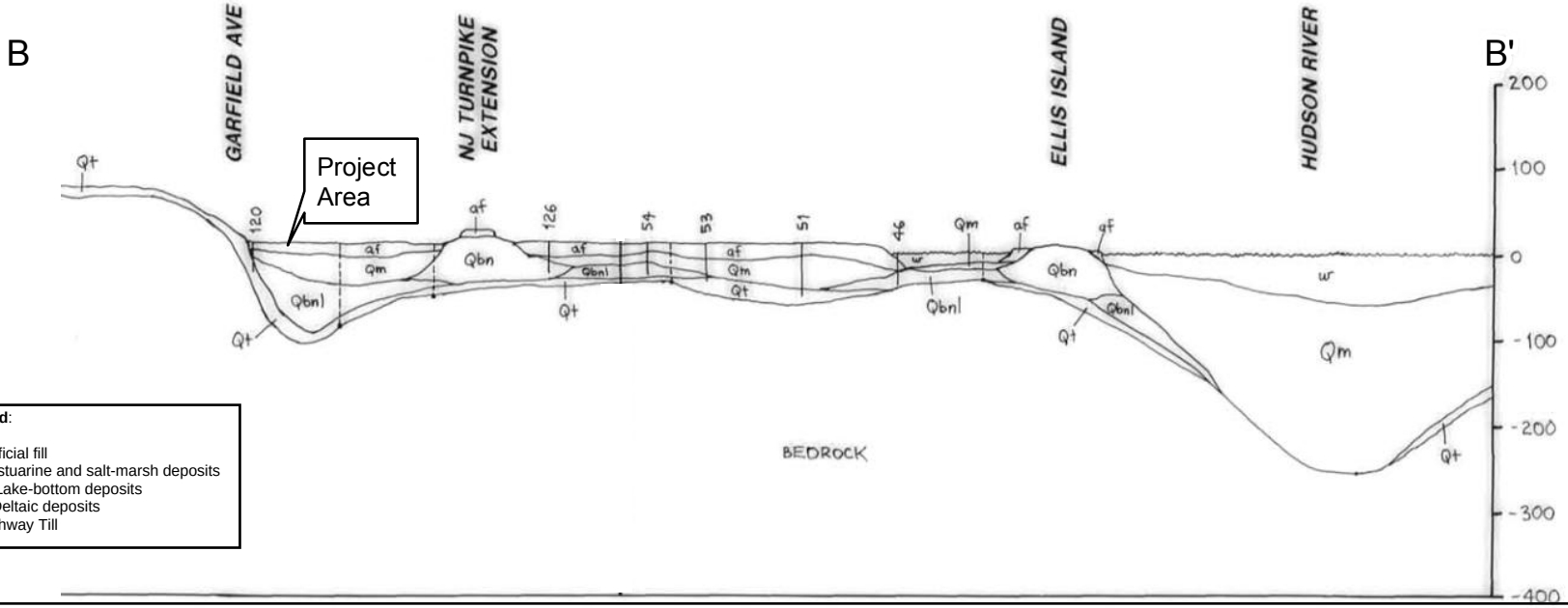


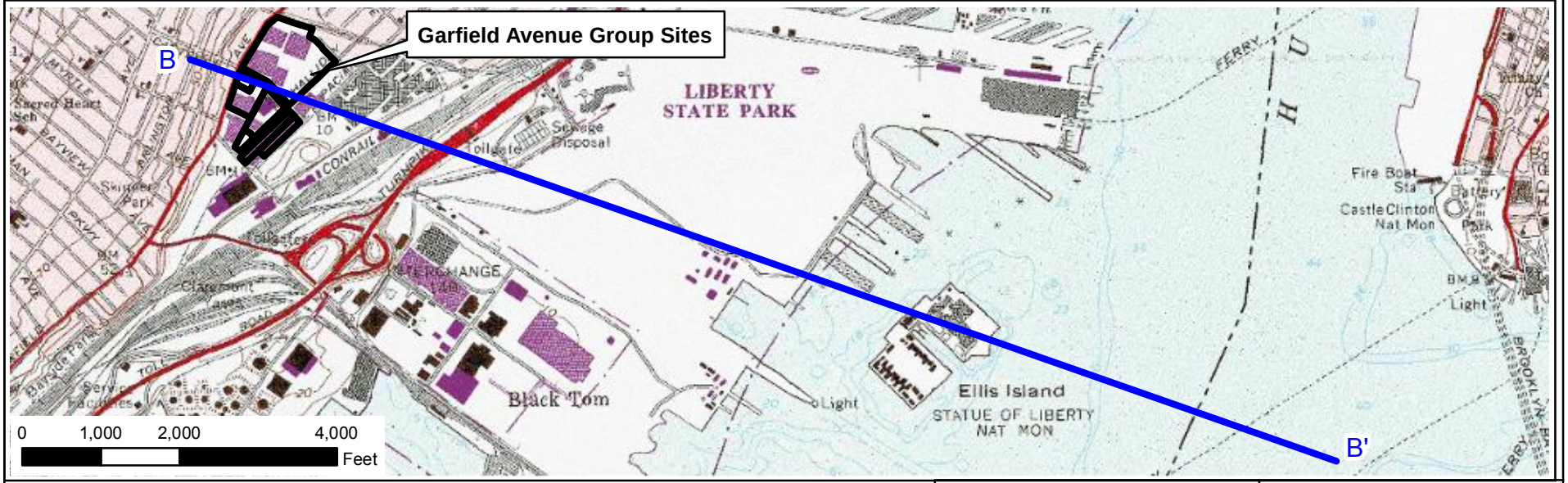


Notes:
1. New Jersey State Plane North American Datum 1983 Coordinates, U.S. Survey Feet.
2. Image Source: USGS Topographic Quadrangle: Jersey City, NJ, 1967 - Photorevised 1981.
3. Cross Section Source: Scott D. Standford (Department of Environmental Protection Division of Science and Research and New Jersey Geological Society). Surficial Geology of the Jersey City Quadrangle, Hudson and Essex Counties, New Jersey. 1995.
4. Latitude Coordinates: 403730 - 404500; Longitude Coordinates: -740730 - -740000.

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FIGURE 3-2
REGIONAL SURFICIAL GEOLOGY
CROSS-SECTION

\\uspsw2vfp001\DATA_USPSW2VFP001\Environment\Piscataway\Project\PPG-NJCProgram\6-Project\Input\6.4-GIS\MXD\GAGroup\RIWP-GW\GAG_RIWP-GW_RegionalGeology.mxd

**CROSS-SECTIONAL VIEW (A-A')**

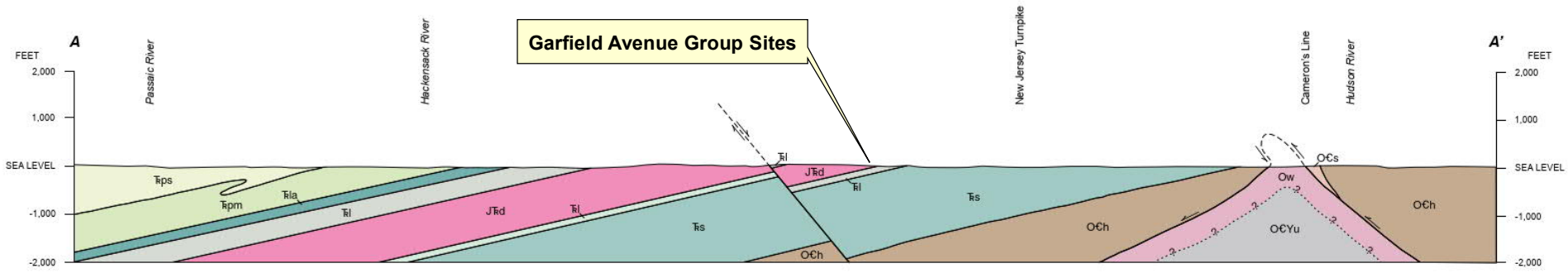


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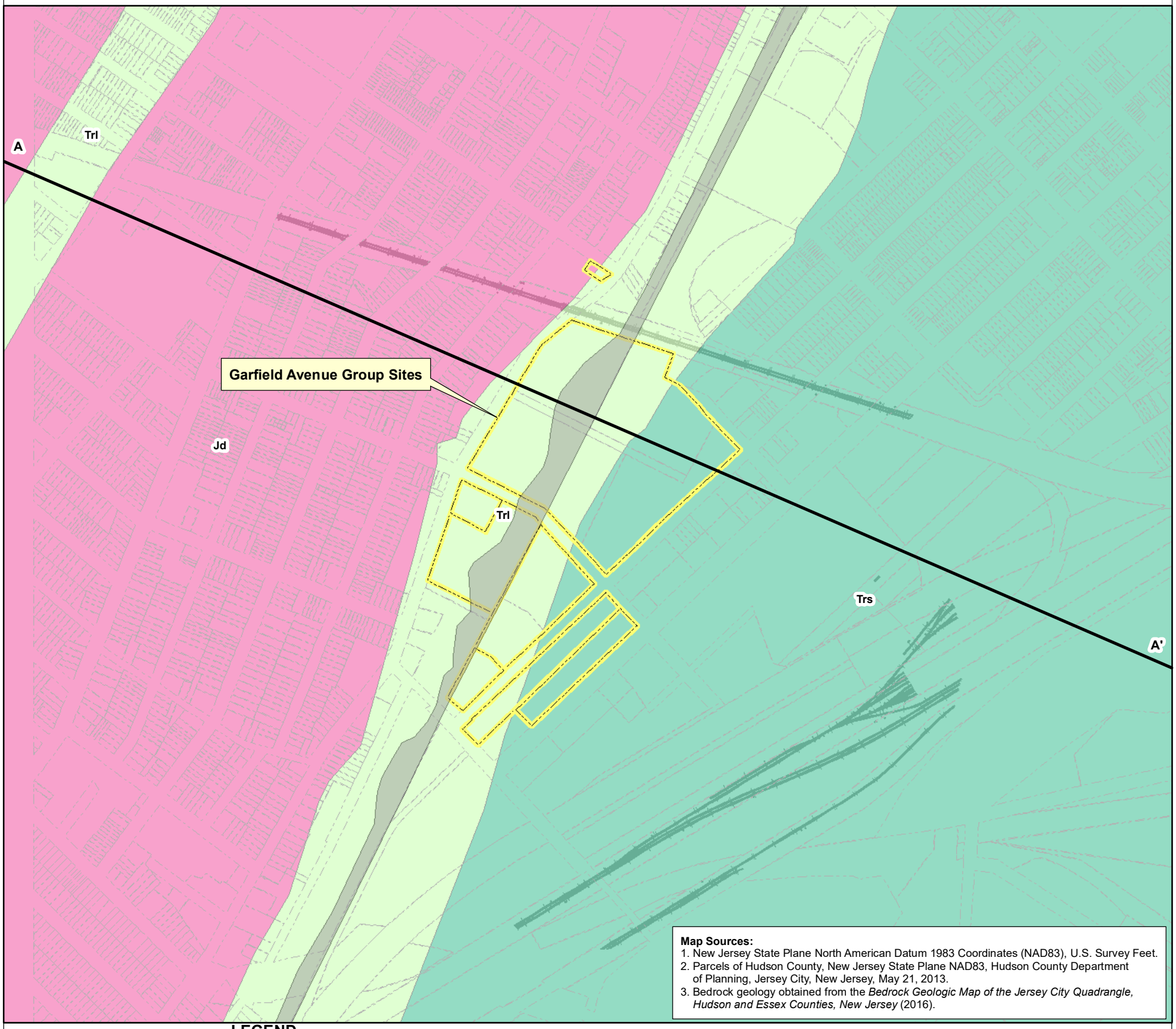


**Map Sources:**
1. New Jersey State Plane North American Datum 1983 Coordinates (NAD83), U.S. Survey Feet.
2. Parcels of Hudson County, New Jersey State Plane NAD83, Hudson County Department of Planning, Jersey City, New Jersey, May 21, 2013.
3. Bedrock geology obtained from the *Bedrock Geologic Map of the Jersey City Quadrangle, Hudson and Essex Counties, New Jersey* (2016).

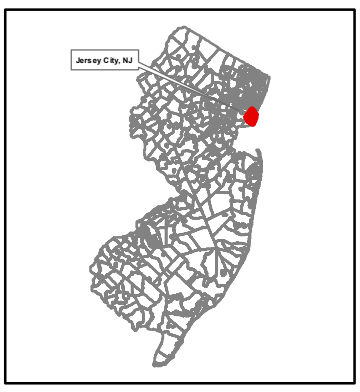


## LEGEND

- Garfield Avenue Group Boundary
- Hudson County Parcels
- Former Morris Canal
- Railroad Tracks

**Regional Bedrock Geology**

- Jd, Jurassic Diabase
- Trl, Lockatong Formation
- Trs, Stockton Formation

N W E S

0 250 500 Feet

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|---|---|---|
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FIGURE 3-3
REGIONAL BEDROCK GEOLOGY

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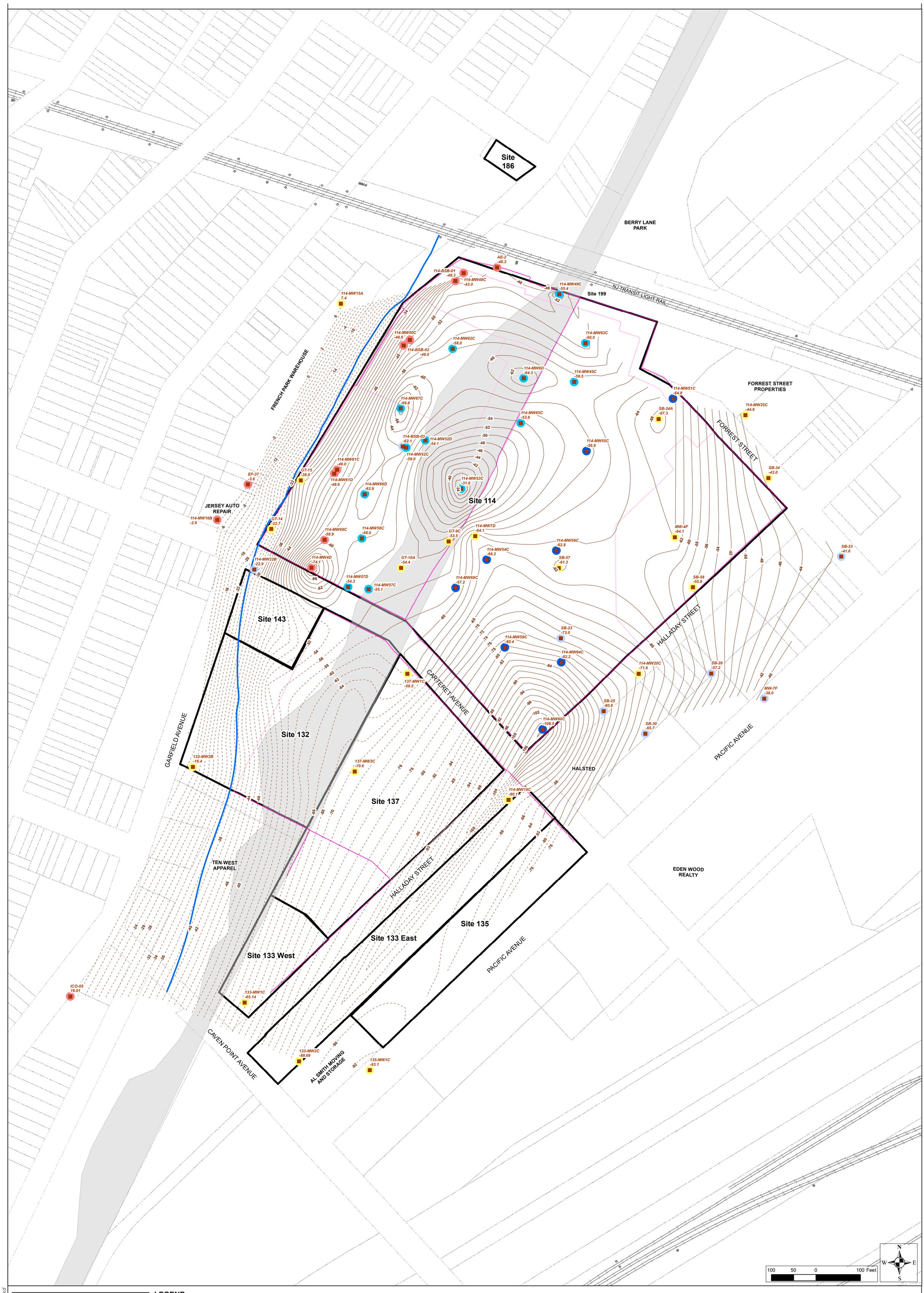


Jersey City, NJ

## LEGEND

- GARFIELD AVENUE GROUP SITES
- HUDSON COUNTY PARCELS
- FORMER MORRIS CANAL
- REMOVED SHEET PILE
- IN PLACE SHEET PILE
- RAILROAD TRACKS
- -90 TOP OF BEDROCK SURFACE (ELEVATION IN FEET NAVD88)
- -90 INFERRED TOP OF BEDROCK SURFACE (ELEVATION IN FEET NAVD88)
- INFERRED LIMIT OF THE DEEP WATER-BEARING ZONE
- INVESTIGATION LOCATION

**ROCK TYPE**

- IGNEOUS - DIABASE
- INDETERMINATE
- SEDIMENTARY
- SEDIMENTARY - LOCKATONG
- SEDIMENTARY - STOCKTON

***Label:***

135-MW1C Location ID
-93.1 Top of Bedrock Elevation (feet NAVD88)

**Map Sources:**
1. New Jersey State Plane North American Datum 1983 Coordinates, U.S. Survey Feet.
2. Vertical Elevations are in North American Vertical Datum of 1988 (NAVD88), U.S. Survey Feet.
3. Parcels of Hudson County, New Jersey State Plane NAD83, Hudson County Department of Planning, Jersey City, New Jersey, May 21, 2013.

**Notes:**
1. Data used to develop the interpreted top of bedrock surface was obtained from historical investigations conducted by PPG and Public Service Electric and Gas Company (PSEG), as well as bedrock investigations and monitoring well installations on Site 114 as part of the groundwater remedial investigation.
2. The bedrock type for 114-MW7D is noted as indeterminate based on review of Project Area data and published bedrock geology for this area. Information for the bedrock interval noted on the boring log for this well is inconsistent with the information compiled for the Project Area.

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|---|---|---|

# FIGURE 3-4
# TOP OF BEDROCK SURFACE

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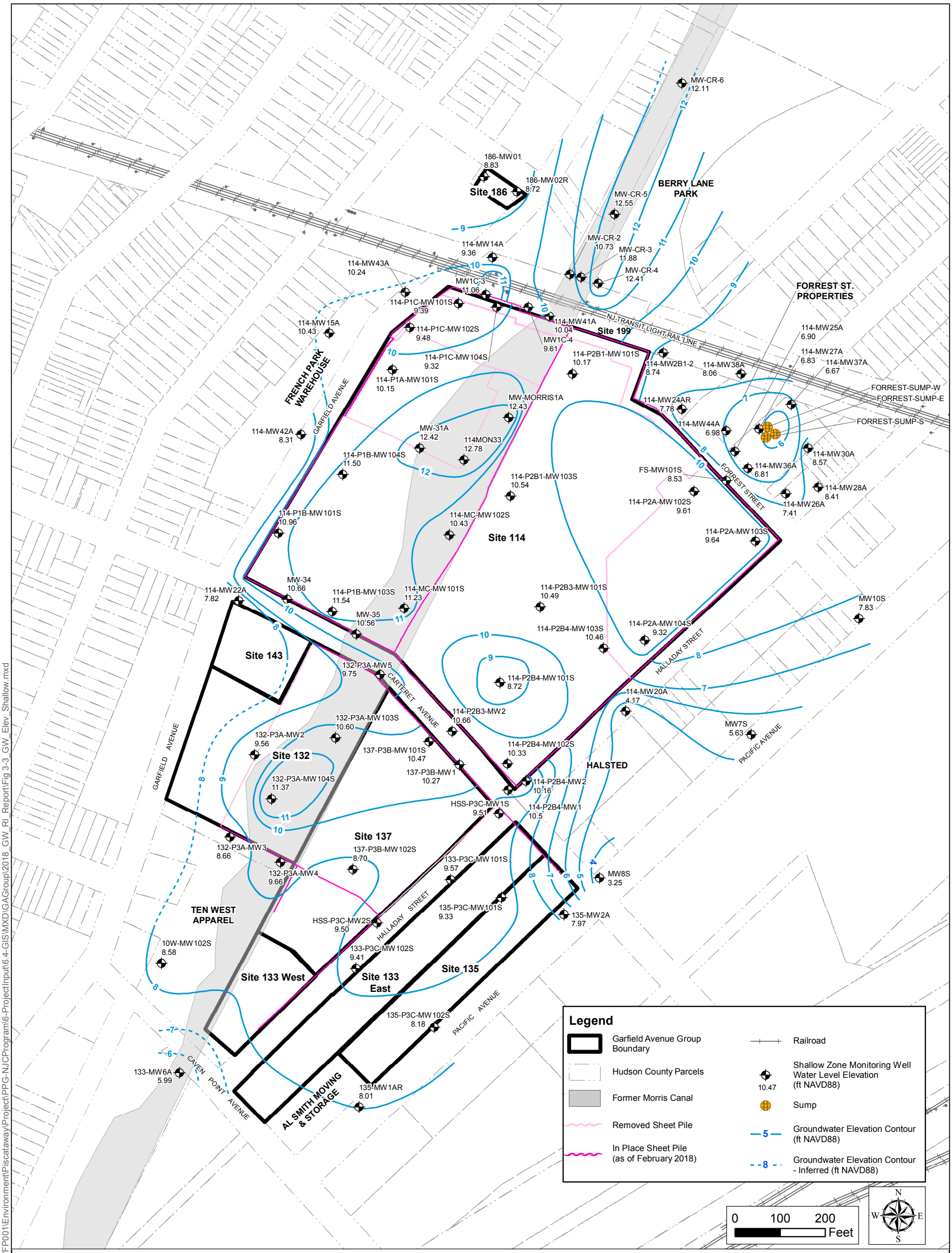


Notes:
1. Wells were gauged between May 29 and June 11, 2018.
2. Vertical Elevation Datum: North American Vertical Datum of 1988 (NAVD88).
3. ft - feet

Map Notes:
1. New Jersey (NJ) State Plane North American Datum 1983 (NAD83) Coordinates, U.S. Survey Feet.
2. Parcels of Hudson County, NJ State Plane NAD83, Hudson County Department of Planning, Jersey City, New Jersey, May 21, 2013.

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FIGURE 3-5
GROUNDWATER ELEVATION CONTOUR MAP
SHALLOW WATER-BEARING ZONE

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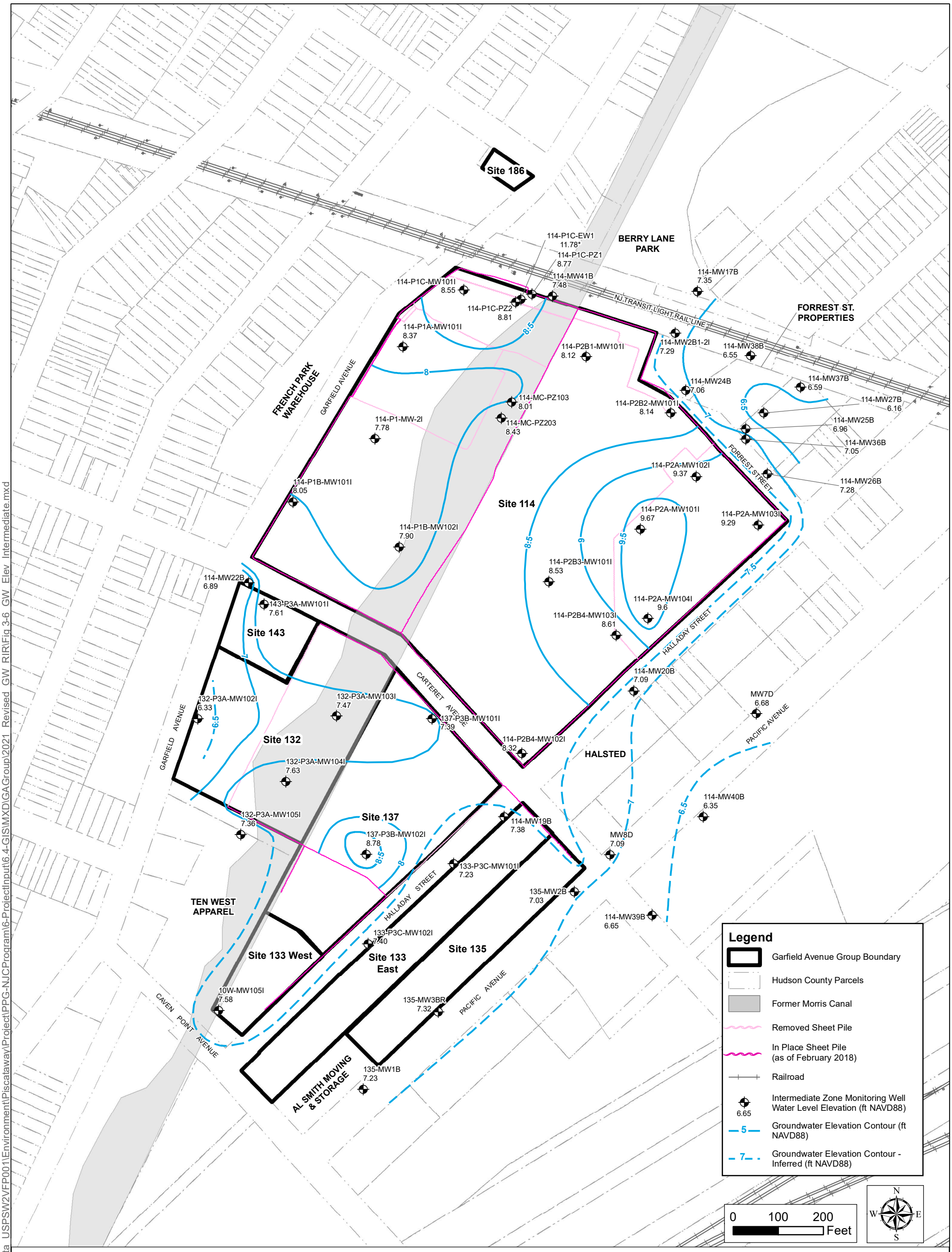


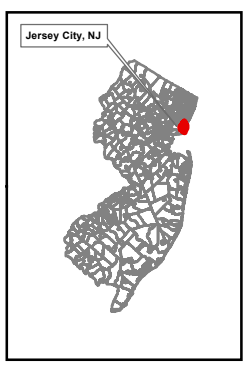


Notes:
1. Wells were gauged between May 29 and June 11, 2018.
2. Vertical Elevation Datum: North American Vertical Datum of 1988 (NAVD88).
3. * - data not used in contouring as it is anomalous.
4. ft - feet

Map Notes:
1. New Jersey (NJ) State Plane North American Datum 1983 (NAD83) Coordinates, U.S. Survey Feet.
2. Parcels of Hudson County, NJ State Plane NAD83, Hudson County Department of Planning, Jersey City, New Jersey, May 21, 2013.

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60550261

DATE: 3/18/2021 | DRAWN BY: SR | CHECKED BY: FS

FIGURE 3-6
GROUNDWATER ELEVATION CONTOUR MAP
INTERMEDIATE WATER-BEARING ZONE

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Site 186
BERRY LANE PARK
MW-CR-3D
7.91
Site 199
NJ TRANSIT LIGHT RAIL LINE
FRENCH PARK WAREHOUSE
GARFIELD AVENUE
MW6C
7.62
FORREST ST. PROPERTIES
114-MW25C
7.51
FORREST STREET
Site 114
114-P1-IRM-27D
7.15
114-P1B-MW103D
7.96
Site 143
HALLADAY STREET
137-MW1C
8.03
CARTERET AVENUE
114-MW20C
7.81
PACIFIC AVENUE
Site 132
132-P3A-MW104D-1
7.39
132-P3A-MW104D-2
7.69
137-MW2C
7.73
HALSTED
114-MW19C
7.50
Site 137
MW8F
6.44
TEN WEST APPAREL
HALLADAY STREET
Site 133 West
Site 133 East
Site 135
CAVEN POINT AVENUE
133-MW1C
7.86
PACIFIC AVENUE
AL SMITH MOVING & STORAGE
135-MW1C
7.93

**Legend**

- Garfield Avenue Group Boundary
- Former Morris Canal
- Removed Sheet Pile
- In Place Sheet Pile (as of February 2018)
- Inferred Limit of the Deep Water-Bearing Zone
- Railroad
- 6.44 — Deep Zone Monitoring Well Water Level Elevation (ft NAVD88)
- 8 — Groundwater Elevation Contour (ft NAVD88)
- 8 - - - Groundwater Elevation Contour - Inferred (ft NAVD88)

0 100 200 Feet

N W E S

Jersey City, NJ

Notes:
1. Wells were gauged between May 29 and June 1, 2018.
2. Vertical Elevation Datum: North American Vertical Datum of 1988 (NAVD88).
3. ft - feet

Map Notes:
1. New Jersey (NJ) State Plane North American Datum 1983 (NAD83) Coordinates, U.S. Survey Feet.
2. Parcels of Hudson County, NJ State Plane NAD83, Hudson County Department of Planning, Jersey City, New Jersey, May 21, 2013.

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JERSEY CITY, NEW JERSEY
60550261

DATE: 3/18/2021 | DRAWN BY: SR | CHECKED BY: FS

FIGURE 3-7
GROUNDWATER ELEVATION CONTOUR MAP
DEEP WATER-BEARING ZONE

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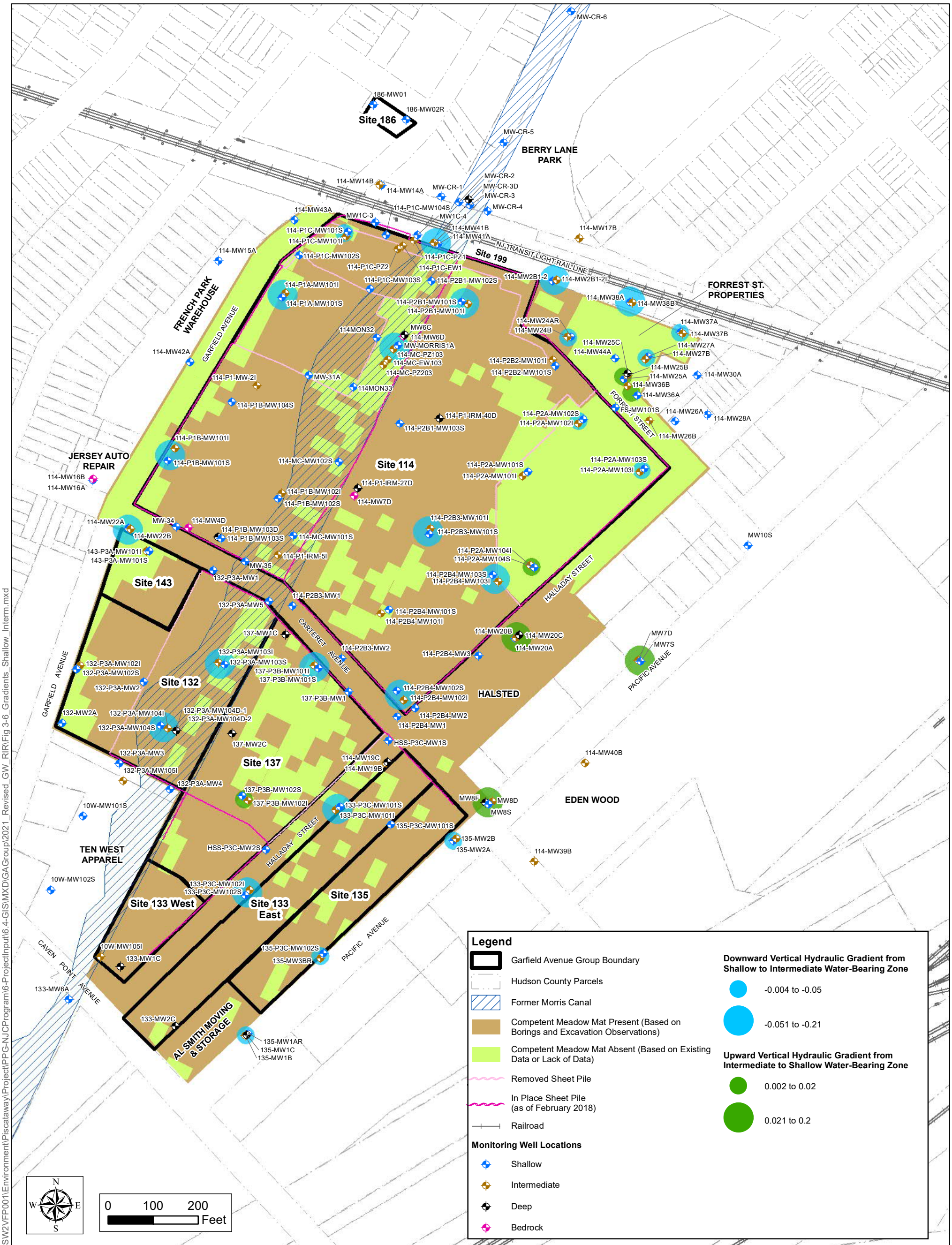


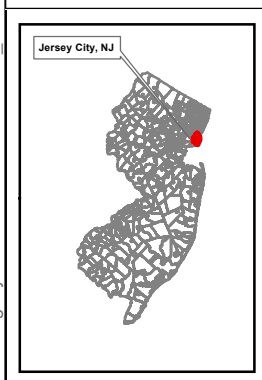


Notes:
1. Refer to Table 3-3 for summary of vertical hydraulic gradients calculated for each well cluster.
2. Monitoring wells were gauged between May 29 and June 11, 2018.

Map Notes:
1. New Jersey (NJ) State Plane North American Datum 1983 (NAD83) Coordinates, U.S. Survey Feet.
2. Parcels of Hudson County, New Jersey State Plane NAD83, Hudson County Department of Planning, Jersey City, New Jersey, May 21, 2013.

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60550261

| DATE: 3/5/2021 | DRAWN BY: SR | CHECKED BY: FS |
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FIGURE 3-8
VERTICAL HYDRAULIC GRADIENTS BETWEEN SHALLOW AND INTERMEDIATE WATER-BEARING ZONES

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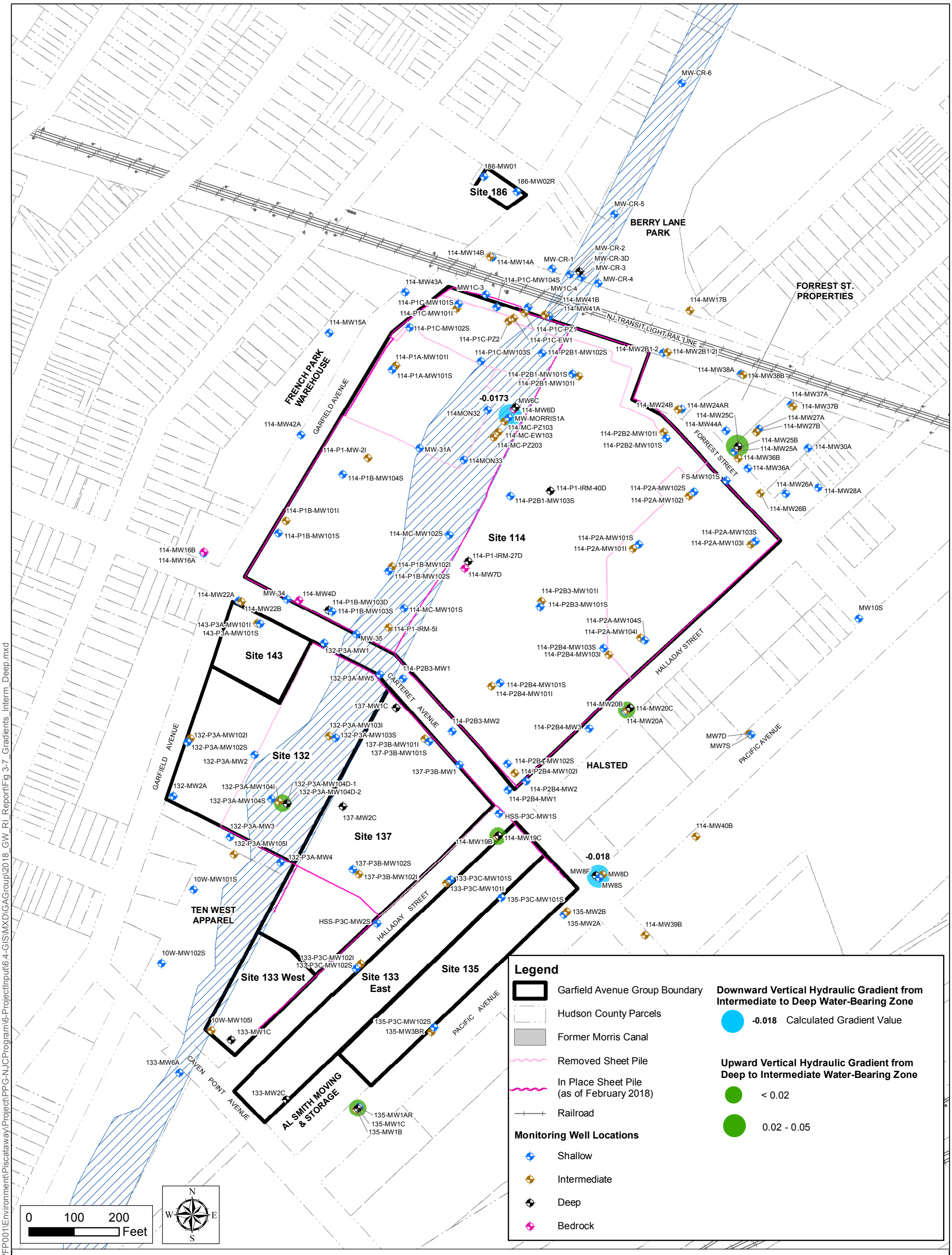


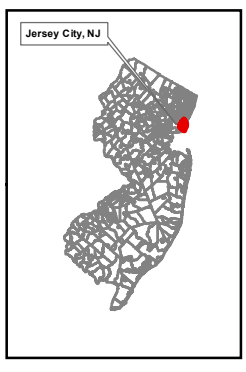


Notes:
1. Refer to Table 3-3 for summary of vertical hydraulic gradients calculated for each well cluster.
2. Monitoring wells were gauged between May 29 and June 11, 2018.

Map Notes:
1. New Jersey (NJ) State Plane North American Datum 1983 (NAD83) Coordinates, U.S. Survey Feet.
2. Parcels of Hudson County, New Jersey State Plane NAD83, Hudson County Department of Planning, Jersey City, New Jersey, May 21, 2013.

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JERSEY CITY, NEW JERSEY
60550261

DATE: 8/6/2018 | DRAWN BY: SR | CHECKED BY: FS

FIGURE 3-9
VERTICAL HYDRAULIC GRADIENTS BETWEEN INTERMEDIATE AND DEEP WATER-BEARING ZONES

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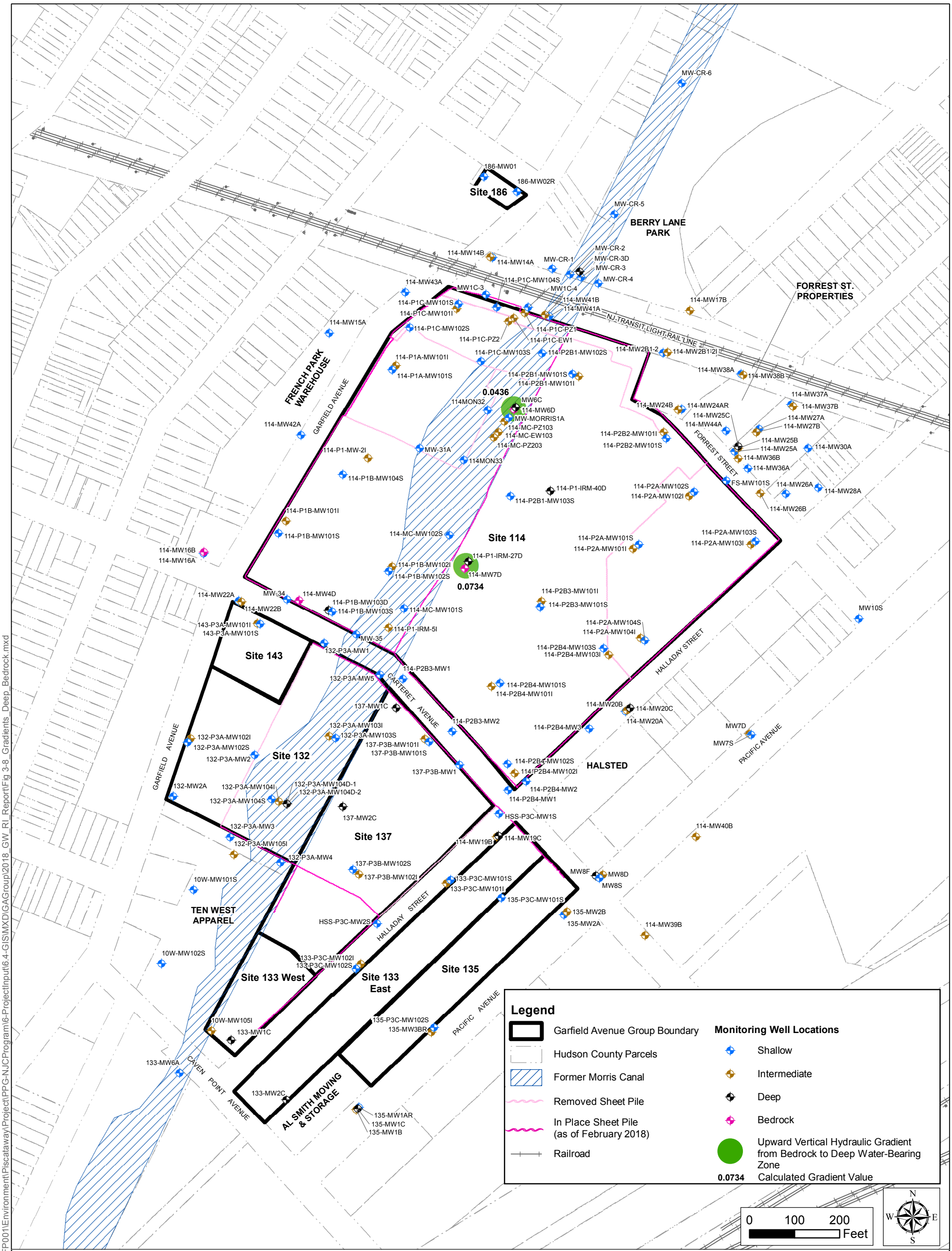


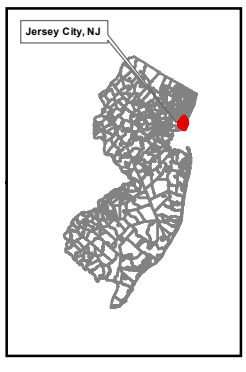


Notes:
1. Refer to Table 3-3 for summary of vertical hydraulic gradients calculated for each well cluster.
2. Monitoring wells were gauged between May 29 and June 11, 2018.

Map Notes:
1. New Jersey (NJ) State Plane North American Datum 1983 (NAD83) Coordinates, U.S. Survey Feet.
2. Parcels of Hudson County, New Jersey State Plane NAD83, Hudson County Department of Planning, Jersey City, New Jersey, May 21, 2013.

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JERSEY CITY, NEW JERSEY
60550261

DATE: 8/6/2018 | DRAWN BY: SR | CHECKED BY: FS

FIGURE 3-10
VERTICAL HYDRAULIC GRADIENTS
BETWEEN DEEP AND BEDROCK
WATER-BEARING ZONES

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Site 199

NJ TRANSIT LIGHT RAIL LINE

GARFIELD AVENUE

114-P1A-MW101S
K: 115.55 ft/day

MW6C
K: 8.16 ft/day

114-MC-PZ103
K: 2.35 ft/day

114-MC-EW103
K: 0.52 ft/day

114-MC-PZ203
K: 1.75 ft/day

114-MW67C
K: 1.16 ft/day

Forrest St.
Properties

114-MW24B
K: 3.95 ft/day

114-MW27A
K: 1.68 ft/day

114-MW27B
K: 0.14 ft/day

FORREST STREET

Site 114

114-MW16B
K: 0.06 ft/day

114-MW68C
K: 1.01 ft/day

114-P1B-MW102S
K: 6.23 ft/day

114-P2B3-MW101S
K: 1.24 ft/day

Site 143

HALLADAY STREET

114-P2B4-MW101S
K: 1.42 ft/day

137-MW1B
K: 30.27 ft/day

137-MW1C
K: 0.01 ft/day

CARTERET AVENUE

GARFIELD AVENUE

Site 132

137-P3B-MW101S
K: 60.37 ft/day

114-MW70C
K: 2.02 ft/day

MW7D
K: 1.56 ft/day

MW7S
K: 8.12 ft/day

PACIFIC AVENUE

137-MW2B
K: 6.65 ft/day

HSS-P3C-MW1S
K: 156.85 ft/day

Site 137

114-MW19C
K: 2.02 ft/day

114-MW19B
K: 3.76 ft/day

MW8D
K: 2.08 ft/day

MW8S
K: 13.09 ft/day

133-P3C-MW101S
K: 140.68 ft/day

HSS-P3C-MW2S
K: 181.35 ft/day

HALLADAY STREET

133-P3C-MW102S
K: 152.55 ft/day

Site 133

Site 135

PACIFIC AVENUE

CAVEN POINT AVENUE

133-MW1C
K: 1.54 ft/day

133-MW1B
K: 43.65 ft/day

133-MW1A
K: 9.66 ft/day

**Notes:**
1. Hydraulic conductivity testing results were obtained from slug tests and pump tests conducted between 2014 and 2021.
2. ft - feet
3. K - hydraulic conductivity

Map Notes:
1. New Jersey (NJ) State Plane North American Datum (NAD83) Coordinates, U.S. Survey Feet.
2. Parcels of Hudson County, NJ State Plane NAD83, Hudson County Department of Planning, Jersey City, New Jersey. May 21, 2013.

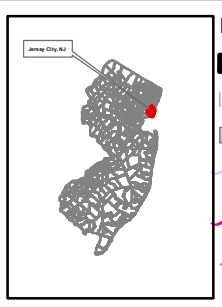


**Legend**

- Garfield Avenue Group Boundary
- Hudson County Parcels
- Former Morris Canal
- Removed Sheet Pile
- In Place Sheet Pile (as of February 2018)
- Railroad

**Monitoring Well Location**

- Shallow
- Intermediate
- Deep
- Bedrock

N W E S

0 150 Feet

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JERSEY CITY, NEW JERSEY
60550261

DATE: 2/12/2021 | DRAWN BY: SR | CHECKED BY: FS

FIGURE 3-11
HYDRAULIC CONDUCTIVITY
TESTING RESULTS

Last saved by: ravis 2021-02-12
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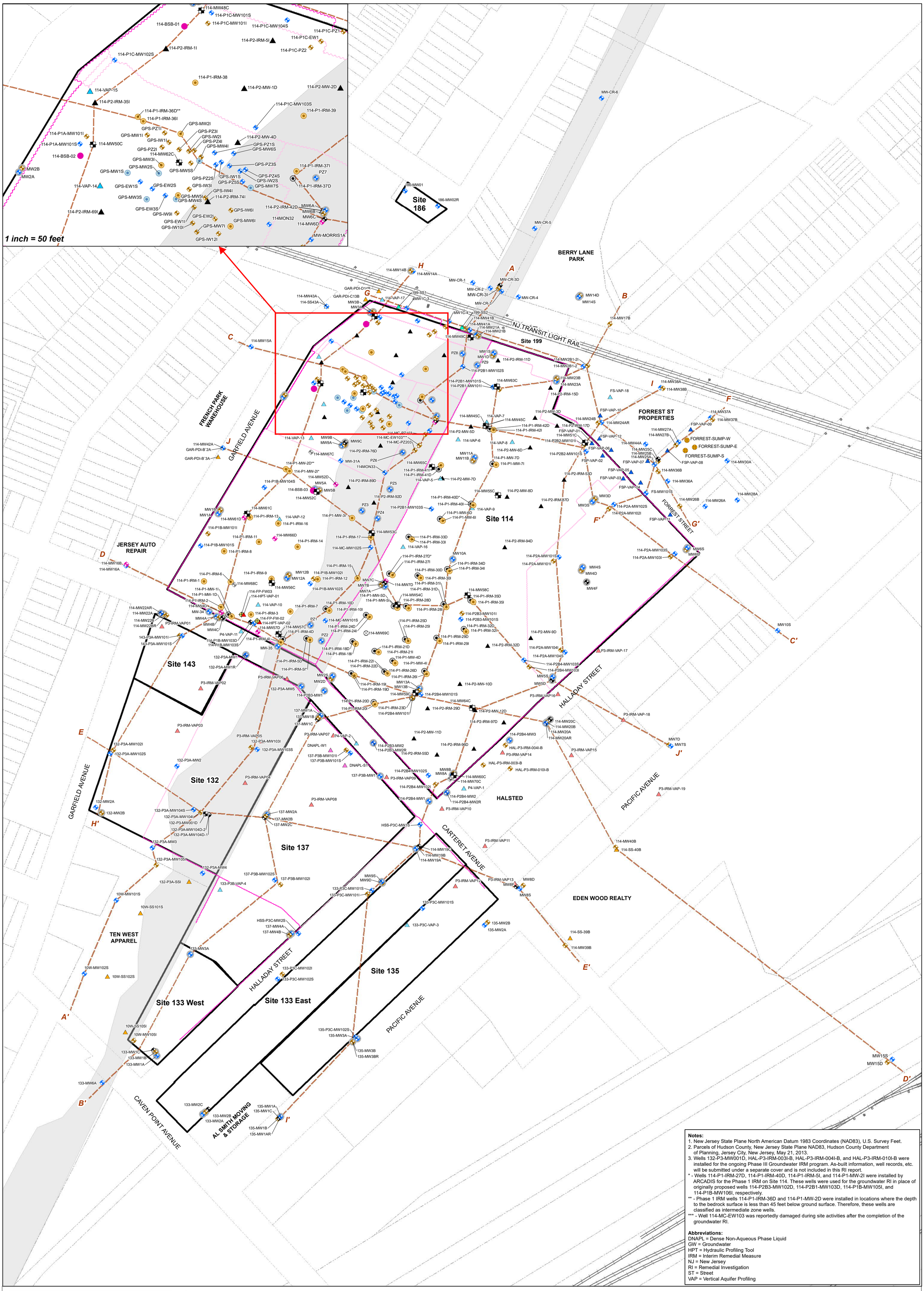


**Notes:**

1. New Jersey State Plane North American Datum 1983 Coordinates (NAD83), U.S. Survey Feet.
2. Parcels of Hudson County, New Jersey State Plane NAD83, Hudson County Department of Planning, Jersey City, New Jersey, May 21, 2013.
3. Wells 132-P3-MW001D, HAL-P3-IRM-003I-B, HAL-P3-IRM-004I-B, and HAL-P3-IRM-010I-B were installed for the ongoing Phase III Groundwater IRM program. As-built information, well records, etc. will be submitted under a separate cover and is not included in this RI report.

* - Wells 114-P1-IRM-27D, 114-P1-IRM-40D, 114-P1-IRM-5I, and 114-P1-MW-2I were installed by ARCADIS for the Phase 1 IRM on Site 114. These wells were used for the groundwater RI in place of originally proposed wells 114-P2B3-MW102D, 114-P2B1-MW103D, 114-P1B-MW105I, and 114-P1B-MW106I, respectively.

** - Phase 1 IRM wells 114-P1-IRM-36D and 114-P1-MW-2D were installed in locations where the depth to the bedrock surface is less than 45 feet below ground surface. Therefore, these wells are classified as intermediate zone wells.

*** - Well 114-MC-EW103 was reportedly damaged during site activities after the completion of the groundwater RI.

**Abbreviations:**

DNAPL = Dense Non-Aqueous Phase Liquid
GW = Groundwater
HPT = Hydraulic Profiling Tool
IRM = Interim Remedial Measure
NJ = New Jersey
RI = Remedial Investigation
ST = Street
VAP = Vertical Aquifer Profiling

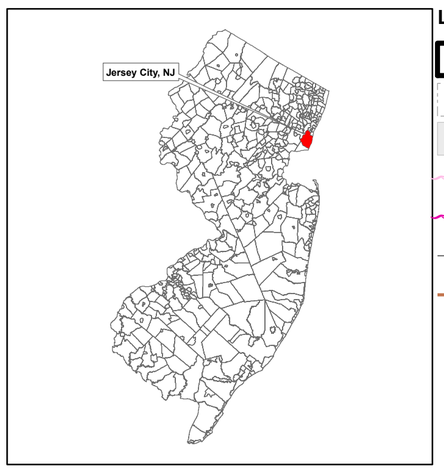


## LEGEND

- GARFIELD AVENUE GROUP BOUNDARY
- HUDSON COUNTY PARCELS
- FORMER MORRIS CANAL
- REMOVED SHEETPILE
- IN-PLACE SHEETPILE
- RAILROAD
- FENCE DIAGRAM ALIGNMENTS

**MONITORING WELLS**

- SHALLOW
- INTERMEDIATE
- DEEP
- BEDROCK
- TILL / WEATHERED BEDROCK
- LOWER DEEP ZONE WELL
- LOWER DEEP ZONE SOIL BORING (WELL NOT INSTALLED)
- FRACTURE PILOT TEST WELL
- SUMPS
- DECOMMISSIONED/ABANDONED/ INACTIVE WELLS

**TEMPORARY SCREENING POINTS**

- DNAPL DELINEATION (2017)
- GROUNDWATER RI (2017 - 2018)
- FRACTURE PILOT TEST (2019)
- PHASE II IRM (2019)
- PRE-DESIGN INVESTIGATION VAP (2015)
- FORREST STREET HPT/VAP INVESTIGATION (2020)
- PHASE III IRM (2020)
- SITE 199 HPT/VAP INVESTIGATION (2020)
- SONIC SOIL BORINGS (2019)

**PHASE I IRM WELLS**

- SHALLOW
- INTERMEDIATE
- DEEP

0 100 200 Feet

N W E S

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JERSEY CITY, NEW JERSEY
60550261

AECOM

DATE: 2021-08-12 | DRAWN BY: SR | CHECKED BY: FS

# FIGURE 4-1
# LOCATIONS OF MONITORING WELLS, SUMPS, AND TEMPORARY SCREENING POINTS

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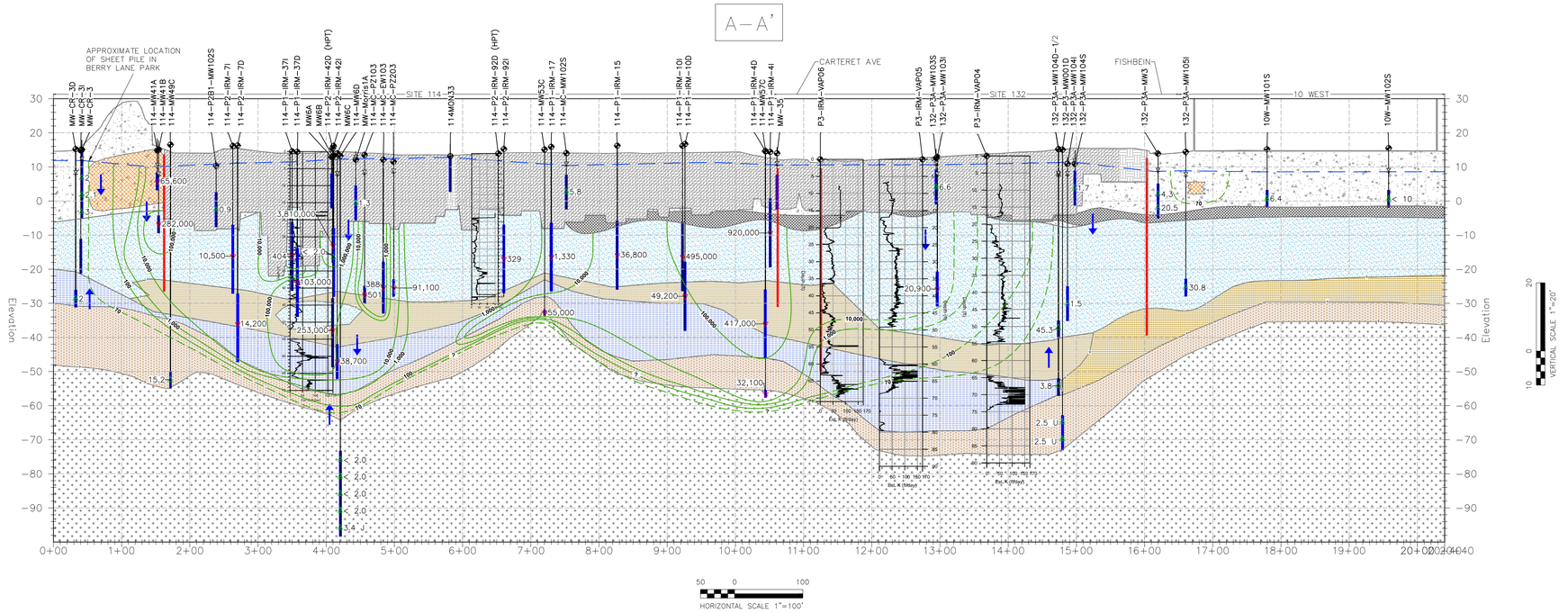


## LEGEND

- EXISTING GROUND SURFACE
- GROUNDWATER SURFACE, SHALLOW WELLS (MAY/JUNE 2018)
- STRUCTURE
- 114–MW25C — GROUNDWATER MONITORING WELL
- EXISTING SHEETPILE
- WELL RISER
- WELL SCREEN
- SHALLOW WATER-BEARING ZONE WELL POTENTIOMETRIC HEAD (MAY/JUNE 2018)
- INTERMEDIATE WATER-BEARING ZONE WELL POTENTIOMETRIC HEAD (MAY/JUNE 2018)
- DEEP WATER-BEARING ZONE WELL POTENTIOMETRIC HEAD (MAY/JUNE 2018)
- DIRECTION OF VERTICAL HYDRAULIC GRADIENT (MAY/JUNE 2018)

- 2.1 — Cr CONCENTRATION <70 ug/L
- 404 — Cr CONCENTRATION >70 ug/L
- 70 — Cr ISOCONTOUR 70 ug/L
- 100 — Cr ISOCONTOUR 100 ug/L
- 1,000 — Cr ISOCONTOUR 1,000 ug/L
- 10,000 — Cr ISOCONTOUR 10,000 ug/L
- 100,000 — Cr ISOCONTOUR 100,000 ug/L
- 1,000,000 — Cr ISOCONTOUR 1,000,000 ug/L
- ? — INFERRED Cr ISOCONTOUR

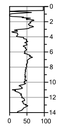


ESTIMATED HYDRAULIC CONDUCTIVITY LOG FROM HYDRAULIC PROFILE TOOL (HPT), FEET/DAY

## STRATIGRAPHY

SHALLOW WATER-BEARING ZONE

- FILL: FINE TO COARSE SAND WITH SILT AND GRAVEL; MAY INCLUDE VARIOUS MATERIALS ASSOCIATED WITH HISTORICAL FILL SUCH AS: CONSTRUCTION SPOILS, DEMOLITION DEBRIS, GARBAGE, INCINERATOR ASH, COAL ASH, SHIP BALLAST, AND INDUSTRIAL WASTE
- DENSE-GRADE AGGREGATE FILL: FINE TO COARSE SAND WITH FINE GRAVEL AND SILT
- FINE TO MEDIUM SAND WITH LENSES OF SILT, TRACE FINE GRAVEL

INTERMEDIATE WATER-BEARING ZONE

- MEADOW MAT: ESTUARINE AND SALT MARSH DEPOSITS
- SAND AND SILTY SAND WITH LENSES OF GRAVEL, SILT, OR CLAY
- TRANSITION ZONE: INTERBEDDED FINE TO VERY FINE SAND, SILT, AND CLAY

DEEP WATER-BEARING ZONE

- SAND WITH LENSES OF GRAVEL, SILT, OR CLAY
- SILT AND CLAY, WITH LENSES OF INTERBEDDED VERY FINE SAND
- BASAL TILL (LOWER FACIES OF RAHWAY TILL) REDDISH-BROWN SILTY CLAYS, SANDY SILTS, AND SILTY SANDS WITH SUBROUNDED TO SUBANGULAR FINE TO COARSE GRAVEL AND COBBLES, AND OCCASIONAL INTERBEDDED LENSES OF CLAY, SILT, OR FINE SAND. HARD, DENSE, COMPACT, AND TYPICALLY DRY.
- BEDROCK: STOCKTON FORMATION, LOCKATONG FORMATION, OR DIABASE
- AREA WITH VISUAL OBSERVATIONS OF CCPW, CONSISTING OF COPR, GREEN-GRAY MUD, OR FILL MIXED WITH COPR OR GREEN-GRAY MUD
- ? — DENOTES INFERRED STRATIGRAPHIC CONTACT
- FERROBLACK-H AMENDED BACKFILL AREA

NOTES:

1. ELEVATIONS ARE SHOWN IN FT NAVD88.
2. THE GWQS FOR Cr IS 70 ug/L.
3. DATA PRESENTED ON THIS FIGURE ARE FROM SAMPLES COLLECTED FROM MONITORING WELLS BETWEEN JUNE 15, 2011 AND FEBRUARY 2021, FOR VARIOUS GROUNDWATER PROGRAMS, INCLUDING BUT NOT LIMITED TO: GROUNDWATER RI (HISTORICAL AND RECENTLY COMPLETED), GROUNDWATER PILOT TESTING AND INTERIM REMEDIAL MEASURES (IRM) ON SITE 114, CAPILLARY RISE GROUNDWATER MONITORING AND SITE-WIDE FERROBLACK-H PERMIT-BY-RULE (PBR) COMPLIANCE MONITORING.
4. DATA FROM SAMPLES COLLECTED FROM HISTORICAL MONITORING WELLS LOCATED IN REMEDIAL AREAS (E.G., SITE 114) ARE SUPERCEDED BY MORE RECENT DATA COLLECTION PROGRAMS THAT WERE IMPLEMENTED AFTER THE COMPLETION OF SOIL REMEDIATION ACTIVITIES.
5. RESULTS PRESENTED ARE FROM THE ANALYSIS OF UNFILTERED GROUNDWATER SAMPLES.
6. CHROMIUM CONCENTRATIONS ARE PRESENTED IN UNITS OF MICROGRAMS PER LITER.

QUALIFIERS:

| | |
|---|---|
| J | RESULT IS AN ESTIMATED VALUE |
| U | ANALYTE WAS NOT DETECTED ABOVE THE METHOD DETECTION LIMIT OR REPORTING LIMIT |

DEFINITIONS:

| | |
|---|---|
| CCPW | CHROMATE CHEMICAL PRODUCTION WASTE |
| COPR | CHROMITE ORE PROCESSING RESIDUE |
| Cr | TOTAL CHROMIUM |
| FT NAVD88 | FEET IN NORTH AMERICAN VERTICAL DATUM OF 1988 |
| GWQS | GROUNDWATER QUALITY STANDARD |
| RI | REMEDIAL INVESTIGATION |
| ug/L | MICROGRAMS PER LITER |

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GARFIELD AVENUE GROUP SITES
JERSEY CITY, HUDSON COUNTY NEW JERSEY

**FENCE DIAGRAM A-A'**

DATE: 8/16/2021 | DRWN: GDS | **FIGURE 5-1**

File: G:\PPG GROUP\GARFIELD AVENUE\2021 GW RI\FY21\Fence Diagrams_08-2021\20210830 Fence Diagram_A-A'.dgn Layout: A-A' MOD-01 User: frederick.schuette Plotted: Aug 17, 2021 - 12:53pm XrefS:

B–B'

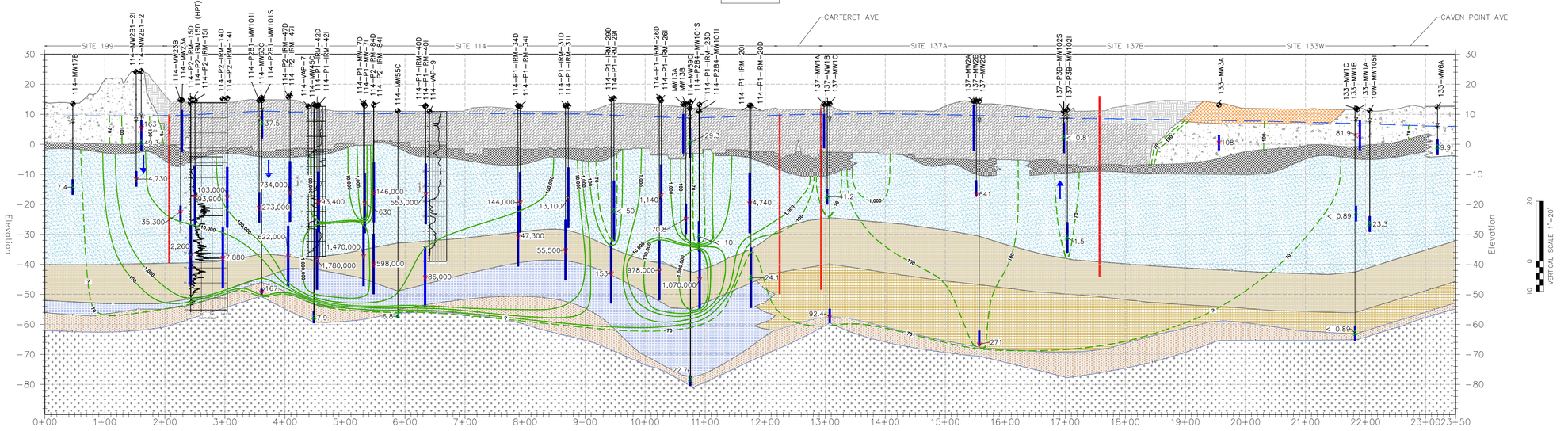


## LEGEND

- EXISTING GROUND SURFACE
- GROUNDWATER SURFACE, SHALLOW WELLS (MAY/JUNE 2018)
- STRUCTURE
- 114–MW25C — GROUNDWATER MONITORING WELL
- EXISTING SHEETPILE
- WELL RISER
- WELL SCREEN
- SHALLOW WATER-BEARING ZONE WELL POTENTIOMETRIC HEAD (MAY/JUNE 2018)
- INTERMEDIATE WATER-BEARING ZONE WELL POTENTIOMETRIC HEAD (MAY/JUNE 2018)
- DEEP WATER-BEARING ZONE WELL POTENTIOMETRIC HEAD (MAY/JUNE 2018)
- DIRECTION OF VERTICAL HYDRAULIC GRADIENT (MAY/JUNE 2018)

- △7.4 — Cr CONCENTRATION <70 ug/L
- ▽163 — Cr CONCENTRATION >70 ug/L
- –70– Cr ISOCONTOUR 70 ug/L
- 100 Cr ISCONTOUR 100 ug/L
- 1,000 Cr ISOCONTOUR 1,000 ug/L
- 10,000 Cr ISOCONTOUR 10,000 ug/L
- 100,000 Cr ISOCONTOUR 100,000 ug/L
- 1,000,000 Cr ISOCONTOUR 1,000,000 ug/L
- ? INFERRED Cr ISOCONTOUR

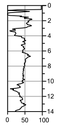


ESTIMATED HYDRAULIC CONDUCTIVITY LOG FROM HYDRAULIC PROFILE TOOL (HPT), FEET/DAY

## STRATIGRAPHY

SHALLOW WATER-BEARING ZONE
- FILL: FINE TO COARSE SAND WITH SILT AND GRAVEL, MAY INCLUDE VARIOUS MATERIALS ASSOCIATED WITH HISTORICAL FILL SUCH AS: CONSTRUCTION SPOILS, DEMOLITION DEBRIS, GARBAGE, INCINERATOR ASH, COAL ASH, SHIP BALLAST, AND INDUSTRIAL WASTE
- DENSE-GRADE AGGREGATE FILL: FINE TO COARSE SAND WITH FINE GRAVEL AND SILT
- FINE TO MEDIUM SAND WITH LENSES OF SILT, TRACE FINE GRAVEL

INTERMEDIATE WATER-BEARING ZONE
- MEADOW MAT: ESTUARINE AND SALT MARSH DEPOSITS
- SAND AND SILTY SAND WITH LENSES OF GRAVEL, SILT, OR CLAY
- TRANSITION ZONE: INTERBEDDED FINE TO VERY FINE SAND, SILT, AND CLAY

DEEP WATER-BEARING ZONE
- SAND WITH LENSES OF GRAVEL, SILT, OR CLAY
- SILT AND CLAY, WITH LENSES OF INTERBEDDED VERY FINE SAND
- BASAL TILL (LOWER FACIES OF RAHWAY TILL) REDDISH-BROWN SILTY CLAYS, SANDY SILTS, AND SILTY SANDS WITH SUBROUNDED TO SUBANGULAR FINE TO COARSE GRAVEL AND COBBLES, AND OCCASIONAL INTERBEDDED LENSES OF CLAY, SILT, OR FINE SAND, HARD, DENSE, COMPACT, AND TYPICALLY DRY.
- BEDROCK: STOCKTON FORMATION, LOCKATONG FORMATION, OR DIABASE
- AREA WITH VISUAL OBSERVATIONS OF CCPW, CONSISTING OF COPR, GREEN-GRAY MUD, OR FILL MIXED WITH COPR OR GREEN-GRAY MUD
- ? DENOTES INFERRED STRATIGRAPHIC CONTACT
- FERROBLACK-H AMENDED BACKFILL AREA

NOTES:

1. ELEVATIONS ARE SHOWN IN FT NAVD88.
2. THE GWQS FOR Cr IS 70 ug/L.
3. DATA PRESENTED ON THIS FIGURE ARE FROM SAMPLES COLLECTED FROM MONITORING WELLS BETWEEN JUNE 15, 2011 AND FEBRUARY 2021, FOR VARIOUS GROUNDWATER PROGRAMS, INCLUDING BUT NOT LIMITED TO: GROUNDWATER RI (HISTORICAL AND RECENTLY COMPLETED), GROUNDWATER PILOT TESTING AND INTERIM REMEDIAL MEASURES (IRM) ON SITE 114, CAPILLARY RISE GROUNDWATER MONITORING AND SITE-WIDE FERROBLACK-H PERMIT-BY-RULE (PBR) COMPLIANCE MONITORING.
4. DATA FROM SAMPLES COLLECTED FROM HISTORICAL MONITORING WELLS LOCATED IN REMEDIAL AREAS (E.G., SITE 114) ARE SUPERCEDED BY MORE RECENT DATA COLLECTION PROGRAMS THAT WERE IMPLEMENTED AFTER THE COMPLETION OF SOIL REMEDIATION ACTIVITIES.
5. RESULTS PRESENTED ARE FROM THE ANALYSIS OF UNFILTERED GROUNDWATER SAMPLES.
6. CHROMIUM CONCENTRATIONS ARE PRESENTED IN UNITS OF MICROGRAMS PER LITER.

QUALIFIERS:

| | |
|---|---|
| J | RESULT IS AN ESTIMATED VALUE |
| U | ANALYTE WAS NOT DETECTED ABOVE THE METHOD DETECTION LIMIT OR REPORTING LIMIT |

DEFINITIONS:

| | |
|---|---|
| CCPW | CHROMATE CHEMICAL PRODUCTION WASTE |
| COPR | CHROMITE ORE PROCESSING RESIDUE |
| Cr | TOTAL CHROMIUM |
| FT NAVD88 | FEET IN NORTH AMERICAN VERTICAL DATUM OF 1988 |
| GWQS | GROUNDWATER QUALITY STANDARD |
| RI | REMEDIAL INVESTIGATION |
| ug/L | MICROGRAMS PER LITER |

AECOM

PPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, HUDSON COUNTY NEW JERSEY

**FENCE DIAGRAM B-B'**

DATE: 8/16/2021 | DRWN: GDS | **FIGURE 5-2**

File: C:\210\CAD\20_SHEETS\GW 2021 GW RIR\Fence Diagrams_08-2021\2021FD303 Fence Diagram_B-B'.dwg Layout: B-B' AXD 0 User: fmdenk.schuett Plotted: Aug 17, 2021 - 1:56pm

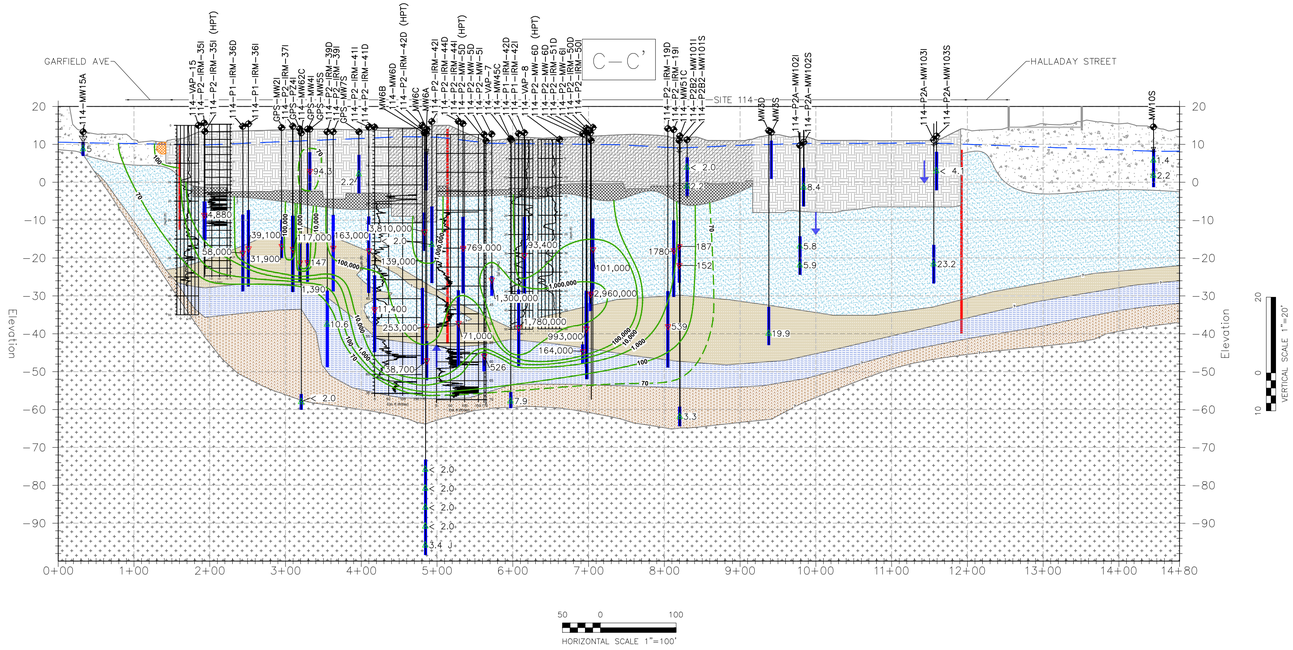


## LEGEND

- EXISTING GROUND SURFACE
- GROUNDWATER SURFACE, SHALLOW WELLS (MAY/JUNE 2018)
- STRUCTURE
- 114–MW25C GROUNDWATER MONITORING WELL
- EXISTING SHEETPILE
- WELL RISER
- WELL SCREEN
- SHALLOW WATER-BEARING ZONE WELL POTENTIOMETRIC HEAD (MAY/JUNE 2018)
- INTERMEDIATE WATER-BEARING ZONE WELL POTENTIOMETRIC HEAD (MAY/JUNE 2018)
- DEEP WATER-BEARING ZONE WELL POTENTIOMETRIC HEAD (MAY/JUNE 2018)
- DIRECTION OF VERTICAL HYDRAULIC GRADIENT (MAY/JUNE 2018)

- 8.4 Cr CONCENTRATION <70 ug/L
- 150 Cr CONCENTRATION >70 ug/L
- 70 Cr ISOCONTOUR 70 ug/L
- 100 Cr ISCONTOUR 100 ug/L
- 1,000 Cr ISOCONTOUR 1,000 ug/L
- 10,000 Cr ISOCONTOUR 10,000 ug/L
- 100,000 Cr ISOCONTOUR 100,000 ug/L
- 1,000,000 Cr ISOCONTOUR 1,000,000 ug/L
- ? INFERRED Cr ISOCONTOUR

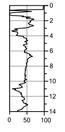


ESTIMATED HYDRAULIC CONDUCTIVITY LOG FROM HYDRAULIC PROFILE TOOL (HPT), FEET/DAY

## STRATIGRAPHY

SHALLOW WATER-BEARING ZONE

- FILL: FINE TO COARSE SAND WITH SILT AND GRAVEL, MAY INCLUDE VARIOUS MATERIALS ASSOCIATED WITH HISTORICAL FILL SUCH AS: CONSTRUCTION SPOILS, DEMOLITION DEBRIS, GARBAGE, INCINERATOR ASH, COAL ASH, SHIP BALLAST, AND INDUSTRIAL WASTE
- DENSE-GRADE AGGREGATE FILL: FINE TO COARSE SAND WITH FINE GRAVEL AND SILT
- FINE TO MEDIUM SAND WITH LENSES OF SILT, TRACE FINE GRAVEL

INTERMEDIATE WATER-BEARING ZONE

- MEADOW MAT: ESTUARINE AND SALT MARSH DEPOSITS
- SAND AND SILTY SAND WITH LENSES OF GRAVEL, SILT, OR CLAY
- TRANSITION ZONE: INTERBEDDED FINE TO VERY FINE SAND, SILT, AND CLAY

DEEP WATER-BEARING ZONE

- SAND WITH LENSES OF GRAVEL, SILT, OR CLAY
- SILT AND CLAY, WITH LENSES OF INTERBEDDED VERY FINE SAND
- BASAL TILL (LOWER FACIES OF RAHWAY TILL) REDDISH-BROWN SILTY CLAYS, SANDY SILTS, AND SILTY SANDS WITH SUBROUNDED TO SUBANGULAR FINE TO COARSE GRAVEL AND COBBLES, AND OCCASIONAL INTERBEDDED LENSES OF CLAY, SILT, OR FINE SAND, HARD, DENSE, COMPACT, AND TYPICALLY DRY.
- BEDROCK: STOCKTON FORMATION, LOCKATONG FORMATION, OR DIABASE
- AREA WITH VISUAL OBSERVATIONS OF CCPW, CONSISTING OF COPR, GREEN-GRAY MUD, OR FILL MIXED WITH COPR OR GREEN-GRAY MUD
- ? DENOTES INFERRED STRATIGRAPHIC CONTACT
- FERROBLACK-H AMENDED BACKFILL AREA

NOTES:

1. ELEVATIONS ARE SHOWN IN FT NAVD88.
2. THE GWQS FOR Cr IS 70 ug/L.
3. DATA PRESENTED ON THIS FIGURE ARE FROM SAMPLES COLLECTED FROM MONITORING WELLS BETWEEN JUNE 15, 2011 AND FEBRUARY 2021, FOR VARIOUS GROUNDWATER PROGRAMS, INCLUDING BUT NOT LIMITED TO: GROUNDWATER RI (HISTORICAL AND RECENTLY COMPLETED), GROUNDWATER PILOT TESTING AND INTERIM REMEDIAL MEASURES (IRM) ON SITE 114, CAPILLARY RISE GROUNDWATER MONITORING AND SITE-WIDE FERROBLACK-H PERMIT-BY-RULE (PBR) COMPLIANCE MONITORING.
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5. RESULTS PRESENTED ARE FROM THE ANALYSIS OF UNFILTERED GROUNDWATER SAMPLES.
6. CHROMIUM CONCENTRATIONS ARE PRESENTED IN UNITS OF MICROGRAMS PER LITER.

QUALIFIERS:

| | |
|---|---|
| J | RESULT IS AN ESTIMATED VALUE |
| U | ANALYTE WAS NOT DETECTED ABOVE THE METHOD DETECTION LIMIT OR REPORTING LIMIT |

DEFINITIONS:

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|---|---|
| CCPW | CHROMATE CHEMICAL PRODUCTION WASTE |
| COPR | CHROMITE ORE PROCESSING RESIDUE |
| Cr | TOTAL CHROMIUM |
| FT NAVD88 | FEET IN NORTH AMERICAN VERTICAL DATUM OF 1988 |
| GWQS | GROUNDWATER QUALITY STANDARD |
| RI | REMEDIAL INVESTIGATION |
| ug/L | MICROGRAMS PER LITER |

AECOM

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JERSEY CITY, HUDSON COUNTY NEW JERSEY

**FENCE DIAGRAM C-C'**

DATE: 8/16/2021 | DRWN: GDS | **FIGURE 5-3**

File: G:\910\GIS\20_SHEETS\GW 2021 GW RI\Fence Diagrams_08-2021\20210303 Fence Diagrams_C-C'.dgn Layout: C-C' ANSI B User: fmorin4 schuele Plotted: Aug 13, 2021 - 1:47pm mrf's

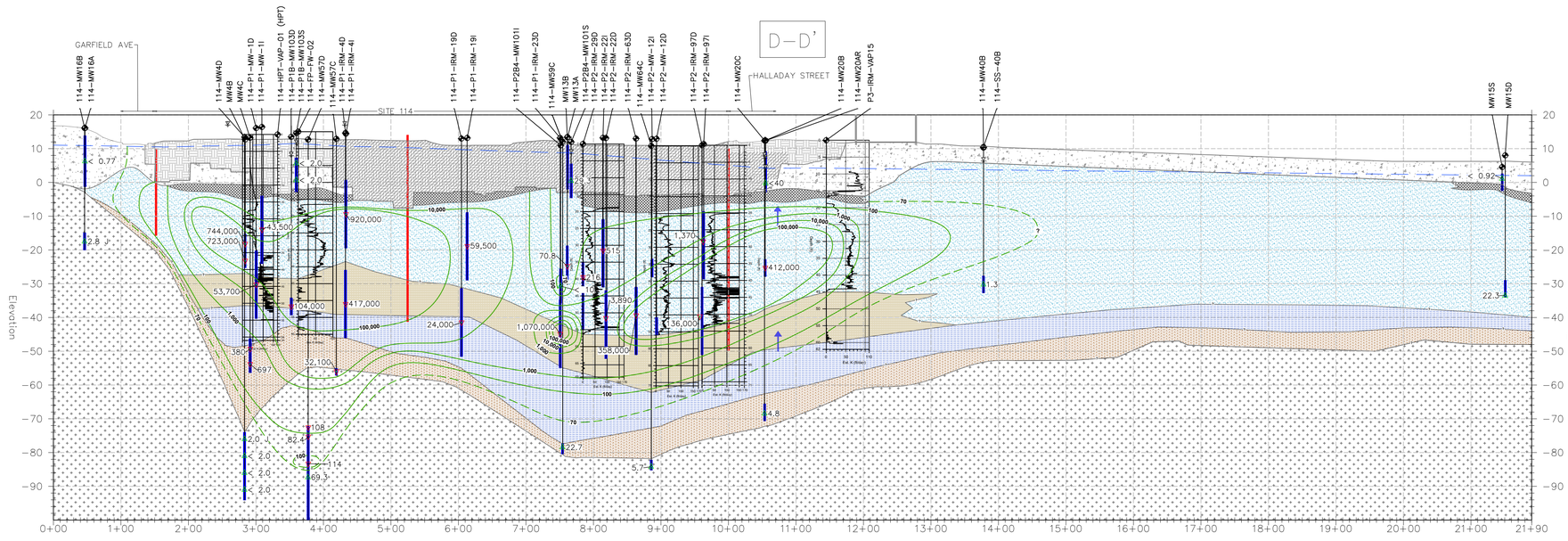


## LEGEND

- EXISTING GROUND SURFACE
- GROUNDWATER SURFACE, SHALLOW WELLS (MAY/JUNE 2018)
- STRUCTURE
- 114–MW25C — GROUNDWATER MONITORING WELL
- EXISTING SHEETPILE
- WELL RISER
- WELL SCREEN
- SHALLOW WATER-BEARING ZONE WELL POTENTIOMETRIC HEAD (MAY/JUNE 2018)
- INTERMEDIATE WATER-BEARING ZONE WELL POTENTIOMETRIC HEAD (MAY/JUNE 2018)
- DEEP WATER-BEARING ZONE WELL POTENTIOMETRIC HEAD (MAY/JUNE 2018)
- DIRECTION OF VERTICAL HYDRAULIC GRADIENT (MAY/JUNE 2018)

- △5.7 — Cr CONCENTRATION <70 ug/L
- ▽380 — Cr CONCENTRATION >70 ug/L
- 70 — Cr ISOCONTOUR 70 ug/L
- 100 — Cr ISCONTOUR 100 ug/L
- 1,000 — Cr ISOCONTOUR 1,000 ug/L
- 10,000 — Cr ISOCONTOUR 10,000 ug/L
- 100,000 — Cr ISOCONTOUR 100,000 ug/L
- 1,000,000 — Cr ISOCONTOUR 1,000,000 ug/L
- ? — INFERRED Cr ISOCONTOUR

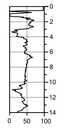


ESTIMATED HYDRAULIC CONDUCTIVITY LOG FROM HYDRAULIC PROFILE TOOL (HPT), FEET/DAY

## STRATIGRAPHY

SHALLOW WATER-BEARING ZONE
- FILL: FINE TO COARSE SAND WITH SILT AND GRAVEL, MAY INCLUDE VARIOUS MATERIALS ASSOCIATED WITH HISTORICAL FILL SUCH AS: CONSTRUCTION SPOILS, DEMOLITION DEBRIS, GARBAGE, INCINERATOR ASH, COAL ASH, SHIP BALLAST, AND INDUSTRIAL WASTE
- DENSE-GRADE AGGREGATE FILL: FINE TO COARSE SAND WITH FINE GRAVEL AND SILT
- FINE TO MEDIUM SAND WITH LENSES OF SILT, TRACE FINE GRAVEL

INTERMEDIATE WATER-BEARING ZONE
- MEADOW MAT: ESTUARINE AND SALT MARSH DEPOSITS
- SAND AND SILTY SAND WITH LENSES OF GRAVEL, SILT, OR CLAY
- TRANSITION ZONE: INTERBEDDED FINE TO VERY FINE SAND, SILT, AND CLAY

DEEP WATER-BEARING ZONE
- SAND WITH LENSES OF GRAVEL, SILT, OR CLAY
- SILT AND CLAY, WITH LENSES OF INTERBEDDED VERY FINE SAND
- BASAL TILL (LOWER FACIES OF RAHWAY TILL) REDDISH-BROWN SILTY CLAYS, SANDY SILTS, AND SILTY SANDS WITH SUBROUNDED TO SUBANGULAR FINE TO COARSE GRAVEL AND COBBLES, AND OCCASIONAL INTERBEDDED LENSES OF CLAY, SILT, OR FINE SAND. HARD, DENSE, COMPACT, AND TYPICALLY DRY.

- BEDROCK: STOCKTON FORMATION, LOCKATONG FORMATION, OR DIABASE
- AREA WITH VISUAL OBSERVATIONS OF CCPW, CONSISTING OF COPR, GREEN-GRAY MUD, OR FILL MIXED WITH COPR OR GREEN-GRAY MUD
- ? — DENOTES INFERRED STRATIGRAPHIC CONTACT
- FERROBLACK-H AMENDED BACKFILL AREA

NOTES:

1. ELEVATIONS ARE SHOWN IN FT NAVD88.
2. THE GWQS FOR Cr IS 70 ug/L.
3. DATA PRESENTED ON THIS FIGURE ARE FROM SAMPLES COLLECTED FROM MONITORING WELLS BETWEEN JUNE 15, 2011 AND FEBRUARY 2021, FOR VARIOUS GROUNDWATER PROGRAMS, INCLUDING BUT NOT LIMITED TO: GROUNDWATER RI (HISTORICAL AND RECENTLY COMPLETED), GROUNDWATER PILOT TESTING, AND INTERIM REMEDIAL MEASURES (IRM) ON SITE 114, CAPILLARY RISE GROUNDWATER MONITORING AND SITE-WIDE FERROBLACK-H PERMIT-BY-RULE (PBR) COMPLIANCE MONITORING.
4. DATA FROM SAMPLES COLLECTED FROM HISTORICAL MONITORING WELLS LOCATED IN REMEDIAL AREAS (E.G., SITE 114) ARE SUPERCEDED BY MORE RECENT DATA COLLECTION PROGRAMS THAT WERE IMPLEMENTED AFTER THE COMPLETION OF SOIL REMEDIATION ACTIVITIES.
5. RESULTS PRESENTED ARE FROM THE ANALYSIS OF UNFILTERED GROUNDWATER SAMPLES.
6. CHROMIUM CONCENTRATIONS ARE PRESENTED IN UNITS OF MICROGRAMS PER LITER.

QUALIFIERS:

| | |
|---|---|
| J | RESULT IS AN ESTIMATED VALUE |
| U | ANALYTE WAS NOT DETECTED ABOVE THE METHOD DETECTION LIMIT OR REPORTING LIMIT |

DEFINITIONS:

| | |
|---|---|
| CCPW | CHROMATE CHEMICAL PRODUCTION WASTE |
| COPR | CHROMITE ORE PROCESSING RESIDUE |
| Cr | TOTAL CHROMIUM |
| FT NAVD88 | FEET IN NORTH AMERICAN VERTICAL DATUM OF 1988 |
| GWQS | GROUNDWATER QUALITY STANDARD |
| RI | REMEDIAL INVESTIGATION |
| ug/L | MICROGRAMS PER LITER |

AECOM

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JERSEY CITY, HUDSON COUNTY NEW JERSEY

**FENCE DIAGRAM D-D'**

DATE: 8/13/2021 | DRWN: GDS | **FIGURE 5-4**

File: G:\910\CAD\29 SHEETS\CAD\2021 GW RIR\Fence Diagrams_08-2021\20210303 Fence Diagram_D-D'.dwg Layout: D-D' ANSI D User: fredrick.schuele Plotted: Aug 17, 2021 - 1:48pm

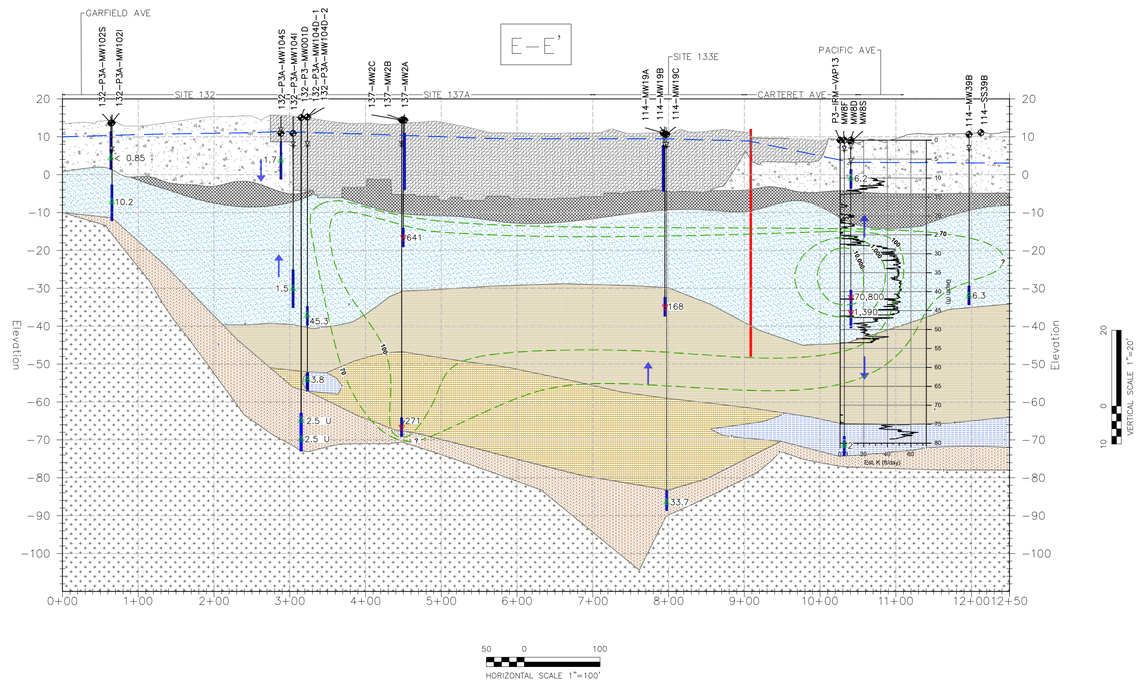


## LEGEND

- EXISTING GROUND SURFACE
- GROUNDWATER SURFACE, SHALLOW WELLS (MAY/JUNE 2018)
- STRUCTURE
- 114–MW25C — GROUNDWATER MONITORING WELL
- EXISTING SHEETPILE
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- WELL SCREEN
- SHALLOW WATER-BEARING ZONE WELL POTENTIOMETRIC HEAD (MAY/JUNE 2018)
- INTERMEDIATE WATER-BEARING ZONE WELL POTENTIOMETRIC HEAD (MAY/JUNE 2018)
- DEEP WATER-BEARING ZONE WELL POTENTIOMETRIC HEAD (MAY/JUNE 2018)
- DIRECTION OF VERTICAL HYDRAULIC GRADIENT (MAY/JUNE 2018)

- 3.8 — Cr CONCENTRATION <70 ug/L
- 271 — Cr CONCENTRATION >70 ug/L
- –70– — Cr ISOCONTOUR 70 ug/L
- 100 — Cr ISOCONTOUR 100 ug/L
- 1,000 — Cr ISOCONTOUR 1,000 ug/L
- 10,000 — Cr ISOCONTOUR 10,000 ug/L
- 100,000 — Cr ISOCONTOUR 100,000 ug/L
- 1,000,000 — Cr ISOCONTOUR 1,000,000 ug/L
- ? — INFERRED Cr ISOCONTOUR

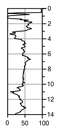


ESTIMATED HYDRAULIC CONDUCTIVITY LOG FROM HYDRAULIC PROFILE TOOL (HPT), FEET/DAY

## STRATIGRAPHY

SHALLOW WATER-BEARING ZONE

- FILL: FINE TO COARSE SAND WITH SILT AND GRAVEL, MAY INCLUDE VARIOUS MATERIALS ASSOCIATED WITH HISTORICAL FILL SUCH AS: CONSTRUCTION SPOILS, DEMOLITION DEBRIS, GARBAGE, INCINERATOR ASH, COAL ASH, SHIP BALLAST, AND INDUSTRIAL WASTE
- DENSE-GRADE AGGREGATE FILL: FINE TO COARSE SAND WITH FINE GRAVEL AND SILT
- FINE TO MEDIUM SAND WITH LENSES OF SILT, TRACE FINE GRAVEL

INTERMEDIATE WATER-BEARING ZONE

- MEADOW MAT: ESTUARINE AND SALT MARSH DEPOSITS
- SAND AND SILTY SAND WITH LENSES OF GRAVEL, SILT, OR CLAY
- TRANSITION ZONE: INTERBEDDED FINE TO VERY FINE SAND, SILT, AND CLAY

DEEP WATER-BEARING ZONE

- SAND WITH LENSES OF GRAVEL, SILT, OR CLAY
- SILT AND CLAY, WITH LENSES OF INTERBEDDED VERY FINE SAND
- BASAL TILL (LOWER FACIES OF RAHWAY TILL) REDDISH-BROWN SILTY CLAYS, SANDY SILTS, AND SILTY SANDS WITH SUBROUNDED TO SUBANGULAR FINE TO COARSE GRAVEL AND COBBLES, AND OCCASIONAL INTERBEDDED LENSES OF CLAY, SILT, OR FINE SAND. HARD, DENSE, COMPACT, AND TYPICALLY DRY.
- BEDROCK: STOCKTON FORMATION, LOCKATONG FORMATION, OR DIABASE
- AREA WITH VISUAL OBSERVATIONS OF CCPW, CONSISTING OF COPR, GREEN-GRAY MUD, OR FILL MIXED WITH COPR OR GREEN-GRAY MUD
- ? — DENOTES INFERRED STRATIGRAPHIC CONTACT
- FERROBLACK-H AMENDED BACKFILL AREA

NOTES:

1. ELEVATIONS ARE SHOWN IN FT NAVD88.
2. THE GWQS FOR Cr IS 70 ug/L.
3. DATA PRESENTED ON THIS FIGURE ARE FROM SAMPLES COLLECTED FROM MONITORING WELLS BETWEEN JUNE 15, 2011 AND FEBRUARY 2021, FOR VARIOUS GROUNDWATER PROGRAMS, INCLUDING BUT NOT LIMITED TO: GROUNDWATER RI (HISTORICAL AND RECENTLY COMPLETED), GROUNDWATER PILOT TESTING AND INTERIM REMEDIAL MEASURES (IRM) ON SITE 114, CAPILLARY RISE GROUNDWATER MONITORING AND SITE-WIDE FERROBLACK-H PERMIT-BY-RULE (PBR) COMPLIANCE MONITORING.
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6. CHROMIUM CONCENTRATIONS ARE PRESENTED IN UNITS OF MICROGRAMS PER LITER.

QUALIFIERS:

| | |
|---|---|
| J | RESULT IS AN ESTIMATED VALUE |
| U | ANALYTE WAS NOT DETECTED ABOVE THE METHOD DETECTION LIMIT OR REPORTING LIMIT |

DEFINITIONS:

| | |
|---|---|
| CCPW | CHROMATE CHEMICAL PRODUCTION WASTE |
| COPR | CHROMITE ORE PROCESSING RESIDUE |
| Cr | TOTAL CHROMIUM |
| FT NAVD88 | FEET IN NORTH AMERICAN VERTICAL DATUM OF 1988 |
| GWQS | GROUNDWATER QUALITY STANDARD |
| RI | REMEDIAL INVESTIGATION |
| ug/L | MICROGRAMS PER LITER |

AECOM

PPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, HUDSON COUNTY NEW JERSEY

**FENCE DIAGRAM E-E'**

DATE: 8/16/21 | DRWN: GDS | **FIGURE 5-5**

File: G:\PPG GRP\20 SHEETS\GW 2021 GW RI\FY21 Fence Diagrams_08-2021\20210303 Fence Diagram_E-E'.dwg Layout: E-E' 1X01 B User: hrotnik.schuele Plotted: Aug 12, 2021 - 1:53pm

F–F'

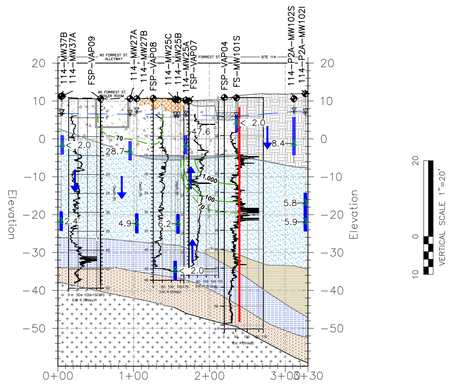


G–G'

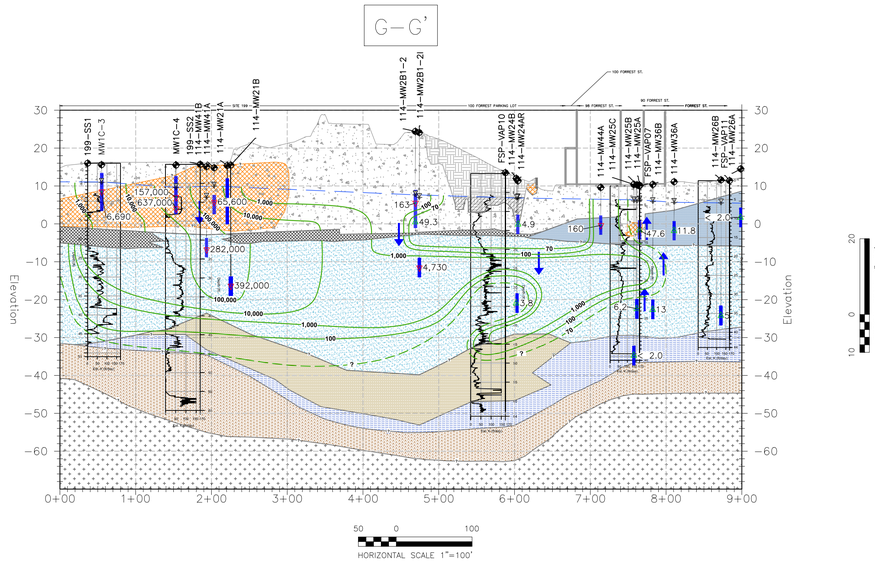


## LEGEND

- EXISTING GROUND SURFACE
- GROUNDWATER SURFACE, SHALLOW WELLS (MAY/JUNE, 2020)
- STRUCTURE
- 114–MW25C — GROUNDWATER MONITORING WELL
- EXISTING SHEETPILE
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- SHALLOW WATER-BEARING ZONE WELL POTENTIOMETRIC HEAD (MAY/JUNE 2018)
- INTERMEDIATE WATER-BEARING ZONE WELL POTENTIOMETRIC HEAD (MAY/JUNE 2018)
- DEEP WATER-BEARING ZONE WELL POTENTIOMETRIC HEAD (MAY/JUNE 2018)
- DIRECTION OF VERTICAL HYDRAULIC GRADIENT (MAY/JUNE 2018)

- △6.2 — Cr CONCENTRATION <70 ug/L
- ▽160 — Cr CONCENTRATION >70 ug/L
- 70 — Cr ISOCONTOUR 70 ug/L
- 100 — Cr ISCONTOUR 100 ug/L
- 1,000 — Cr ISOCONTOUR 1,000 ug/L
- 10,000 — Cr ISOCONTOUR 10,000 ug/L
- 100,000 — Cr ISOCONTOUR 100,000 ug/L
- 1,000,000 — Cr ISOCONTOUR 1,000,000 ug/L
- ? — INFERRED Cr ISOCONTOUR

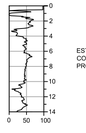


ESTIMATED HYDRAULIC CONDUCTIVITY LOG FROM HYDRAULIC PROFILE TOOL (HPT), FEET/DAY

## STRATIGRAPHY

SHALLOW WATER-BEARING ZONE
- FILL: FINE TO COARSE SAND WITH SILT AND GRAVEL, MAY INCLUDE VARIOUS MATERIALS ASSOCIATED WITH HISTORICAL FILL SUCH AS: CONSTRUCTION SPOILS, DEMOLITION DEBRIS, GARBAGE, INCINERATOR ASH, COAL ASH, SHIP BALLAST, AND INDUSTRIAL WASTE
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NOTES:

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| RI | REMEDIAL INVESTIGATION |
| ug/L | MICROGRAMS PER LITER |

AECOM

PPG
GARFIELD AVENUE GROUP OF SITES
JERSEY CITY, HUDSON COUNTY, NEW JERSEY

**FENCE DIAGRAMS F-F' AND G-G'**

DATE: 8/13/21 | DRWN: GDS | **FIGURE 5-6**

File: https://aecom.sharepoint.com/sites/PPG/Documents/605/9/11 CAD/Plt SHEETS/Plt/Forest Sheet/2020 Tech Memo/FS–FSP Fence Diagrams_11x17_G–B' 01-2020.dwg

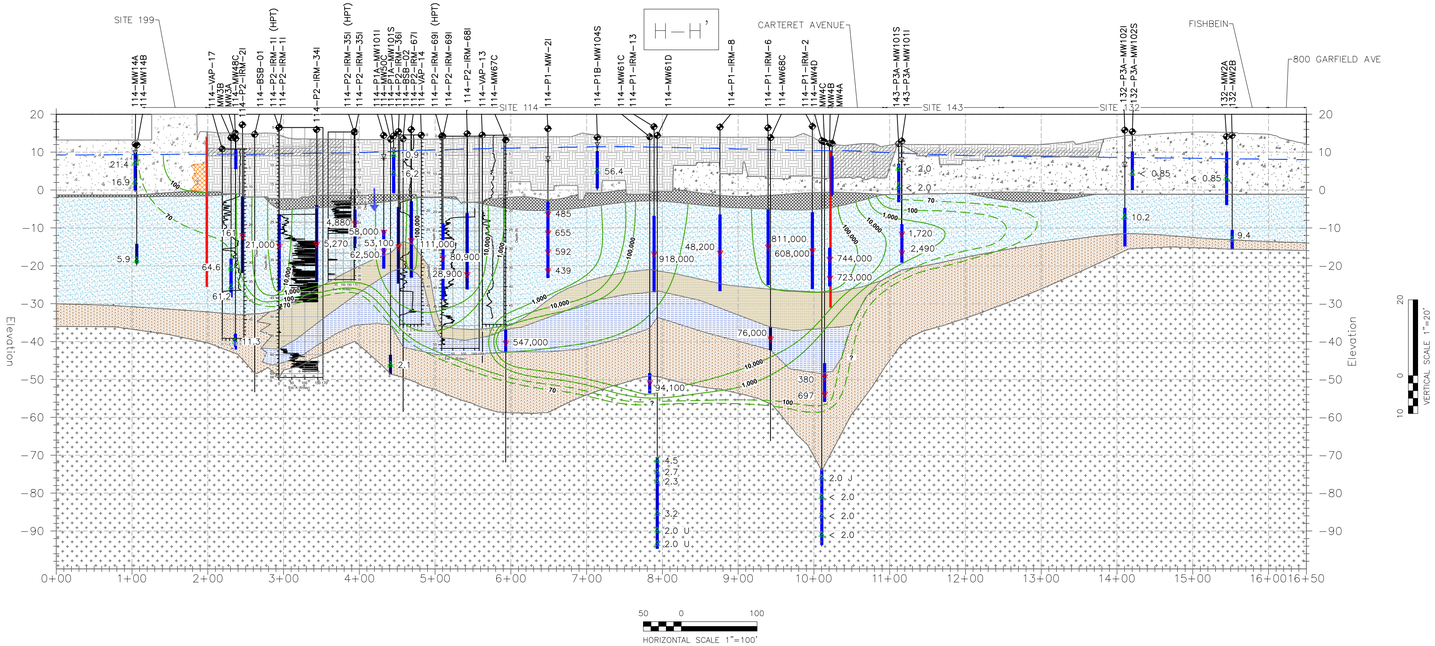


## LEGEND

- EXISTING GROUND SURFACE
- GROUNDWATER SURFACE, SHALLOW WELLS (MAY/JUNE 2018)
- STRUCTURE
- 114–MW25C — GROUNDWATER MONITORING WELL
- EXISTING SHEETPILE
- WELL RISER
- WELL SCREEN
- SHALLOW WATER-BEARING ZONE WELL POTENTIOMETRIC HEAD (MAY/JUNE 2018)
- INTERMEDIATE WATER-BEARING ZONE WELL POTENTIOMETRIC HEAD (MAY/JUNE 2018)
- DEEP WATER-BEARING ZONE WELL POTENTIOMETRIC HEAD (MAY/JUNE 2018)
- DIRECTION OF VERTICAL HYDRAULIC GRADIENT (MAY/JUNE 2018)

- △5.9 — Cr CONCENTRATION <70 ug/L
- ▽161 — Cr CONCENTRATION >70 ug/L
- 70 — Cr ISOCONTOUR 70 ug/L
- 100 — Cr ISCONTOUR 100 ug/L
- 1,000 — Cr ISOCONTOUR 1,000 ug/L
- 10,000 — Cr ISOCONTOUR 10,000 ug/L
- 100,000 — Cr ISOCONTOUR 100,000 ug/L
- 1,000,000 — Cr ISOCONTOUR 1,000,000 ug/L
- ? — INFERRED Cr ISOCONTOUR

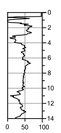


ESTIMATED HYDRAULIC CONDUCTIVITY LOG FROM HYDRAULIC PROFILE TOOL (HPT), FEET/DAY

## STRATIGRAPHY

SHALLOW WATER-BEARING ZONE
- FILL: FINE TO COARSE SAND WITH SILT AND GRAVEL, MAY INCLUDE VARIOUS MATERIALS ASSOCIATED WITH HISTORICAL FILL SUCH AS: CONSTRUCTION SPOILS, DEMOLITION DEBRIS, GARBAGE, INCINERATOR ASH, COAL ASH, SHIP BALLAST, AND INDUSTRIAL WASTE
- DENSE-GRADE AGGREGATE FILL: FINE TO COARSE SAND WITH FINE GRAVEL AND SILT
- FINE TO MEDIUM SAND WITH LENSES OF SILT, TRACE FINE GRAVEL

INTERMEDIATE WATER-BEARING ZONE
- MEADOW MAT: ESTUARINE AND SALT MARSH DEPOSITS
- SAND AND SILTY SAND WITH LENSES OF GRAVEL, SILT, OR CLAY
- TRANSITION ZONE: INTERBEDDED FINE TO VERY FINE SAND, SILT, AND CLAY

DEEP WATER-BEARING ZONE
- SAND WITH LENSES OF GRAVEL, SILT, OR CLAY
- SILT AND CLAY, WITH LENSES OF INTERBEDDED VERY FINE SAND
- BASAL TILL (LOWER FACIES OF RAHWAY TILL) REDDISH-BROWN SILTY CLAYS, SANDY SILTS, AND SILTY SANDS WITH SUBROUNDED TO SUBANGULAR FINE TO COARSE GRAVEL AND COBBLES, AND OCCASIONAL INTERBEDDED LENSES OF CLAY, SILT, OR FINE SAND. HARD, DENSE, COMPACT, AND TYPICALLY DRY.
- BEDROCK: STOCKTON FORMATION, LOCKATONG FORMATION, OR DIABASE
- AREA WITH VISUAL OBSERVATIONS OF CCPW, CONSISTING OF COPR, GREEN-GRAY MUD, OR FILL MIXED WITH COPR OR GREEN-GRAY MUD
- ? — DENOTES INFERRED STRATIGRAPHIC CONTACT
- FERROBLACK-H AMENDED BACKFILL AREA

## NOTES:

1. ELEVATIONS ARE SHOWN IN FT NAVD88.
2. THE GWQS FOR Cr IS 70 ug/L.
3. DATA PRESENTED ON THIS FIGURE ARE FROM SAMPLES COLLECTED FROM MONITORING WELLS BETWEEN JUNE 15, 2011 AND FEBRUARY 2021, FOR VARIOUS GROUNDWATER PROGRAMS, INCLUDING BUT NOT LIMITED TO: GROUNDWATER RI (HISTORICAL AND RECENTLY COMPLETED), GROUNDWATER PILOT TESTING, AND INTERIM REMEDIAL MEASURES (IRM) ON SITE 114, CAPILLARY RISE GROUNDWATER MONITORING AND SITE-WIDE FERROBLACK-H PERMIT-BY-RULE (PBR) COMPLIANCE MONITORING.
4. DATA FROM SAMPLES COLLECTED FROM HISTORICAL MONITORING WELLS LOCATED IN REMEDIAL AREAS (E.G., SITE 114) ARE SUPERCEDED BY MORE RECENT DATA COLLECTION PROGRAMS THAT WERE IMPLEMENTED AFTER THE COMPLETION OF SOIL REMEDIATION ACTIVITIES.
5. RESULTS PRESENTED ARE FROM THE ANALYSIS OF UNFILTERED GROUNDWATER SAMPLES.
6. CHROMIUM CONCENTRATIONS ARE PRESENTED IN UNITS OF MICROGRAMS PER LITER.

## QUALIFIERS:

| | |
|---|---|
| J | RESULT IS AN ESTIMATED VALUE |
| U | ANALYTE WAS NOT DETECTED ABOVE THE METHOD DETECTION LIMIT OR REPORTING LIMIT |

## DEFINITIONS:

| | |
|---|---|
| CCPW | CHROMATE CHEMICAL PRODUCTION WASTE |
| COPR | CHROMITE ORE PROCESSING RESIDUE |
| Cr | TOTAL CHROMIUM |
| FT NAVD88 | FEET IN NORTH AMERICAN VERTICAL DATUM OF 1988 |
| GWQS | GROUNDWATER QUALITY STANDARD |
| RI | REMEDIAL INVESTIGATION |
| ug/L | MICROGRAMS PER LITER |

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JERSEY CITY, HUDSON COUNTY NEW JERSEY

**FENCE DIAGRAM H-H'**

DATE: 8/13/2021 | DRWN: GDS | **FIGURE 5-7**

File: G:\910\GIS\20_SHEETS\GW\2021_GW_RIR\Fence Diagrams_08-2021\20210303 Fence Diagram_H-H'.mxd Layout: H-H' ANSI D User: frederick.schuele Plotted: Aug 17, 2021 - 12:53pm Xref's:

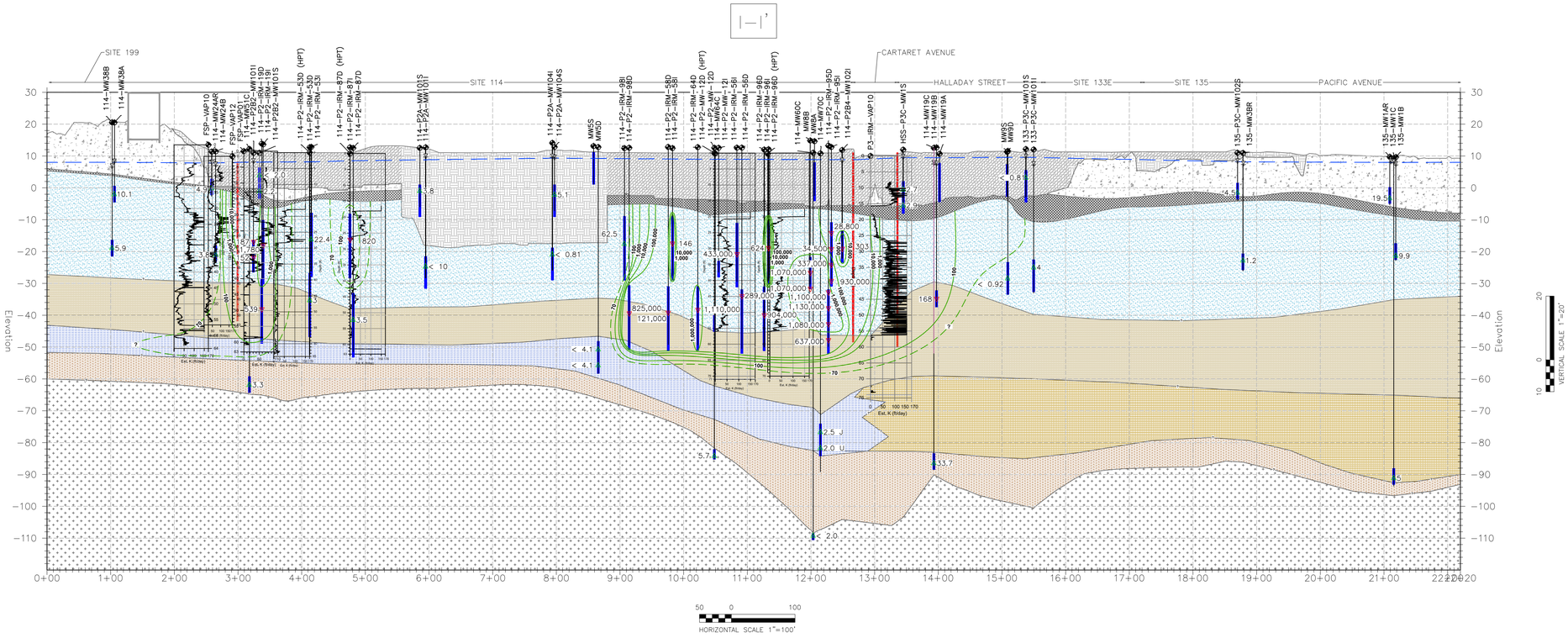


## LEGEND

- EXISTING GROUND SURFACE
- GROUNDWATER SURFACE, SHALLOW WELLS (MAY/JUNE 2018)
- STRUCTURE
- GROUNDWATER MONITORING WELL
- EXISTING SHEETPILE
- WELL RISER
- WELL SCREEN
- SHALLOW WATER-BEARING ZONE WELL POTENTIOMETRIC HEAD (MAY/JUNE 2018)
- INTERMEDIATE WATER-BEARING ZONE WELL POTENTIOMETRIC HEAD (MAY/JUNE 2018)
- DEEP WATER-BEARING ZONE WELL POTENTIOMETRIC HEAD (MAY/JUNE 2018)
- DIRECTION OF VERTICAL HYDRAULIC GRADIENT (MAY/JUNE 2018)

- Cr CONCENTRATION <70 ug/L
- Cr CONCENTRATION >70 ug/L
- Cr ISOCONTOUR 70 ug/L
- Cr ISCONTOUR 100 ug/L
- Cr ISOCONTOUR 1,000 ug/L
- Cr ISOCONTOUR 10,000 ug/L
- Cr ISOCONTOUR 100,000 ug/L
- Cr ISOCONTOUR 1,000,000 ug/L
- INFERRED Cr ISOCONTOUR
- ESTIMATED HYDRAULIC CONDUCTIVITY LOG FROM HYDRAULIC PROFILE TOOL (HPT), FEET/DAY

## STRATIGRAPHY

SHALLOW WATER-BEARING ZONE
- FILL: FINE TO COARSE SAND WITH SILT AND GRAVEL, MAY INCLUDE VARIOUS MATERIALS ASSOCIATED WITH HISTORICAL FILL SUCH AS: CONSTRUCTION SPOILS, DEMOLITION DEBRIS, GARBAGE, INCINERATOR ASH, COAL ASH, SHIP BALLAST, AND INDUSTRIAL WASTE
- DENSE-GRADE AGGREGATE FILL: FINE TO COARSE SAND WITH FINE GRAVEL AND SILT
- FINE TO MEDIUM SAND WITH LENSES OF SILT, TRACE FINE GRAVEL

INTERMEDIATE WATER-BEARING ZONE
- MEADOW MAT: ESTUARINE AND SALT MARSH DEPOSITS
- SAND AND SILTY SAND WITH LENSES OF GRAVEL, SILT, OR CLAY
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DEEP WATER-BEARING ZONE
- SAND WITH LENSES OF GRAVEL, SILT, OR CLAY
- SILT AND CLAY, WITH LENSES OF INTERBEDDED VERY FINE SAND
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- BEDROCK: STOCKTON FORMATION, LOCKATONG FORMATION, OR DIABASE
- AREA WITH VISUAL OBSERVATIONS OF CCPW, CONSISTING OF COPR, GREEN-GRAY MUD, OR FILL MIXED WITH COPR OR GREEN-GRAY MUD
- DENOTES INFERRED STRATIGRAPHIC CONTACT
- FERROBLACK-H AMENDED BACKFILL AREA

NOTES:

1. ELEVATIONS ARE SHOWN IN FT NAVD88.
2. THE GWQS FOR Cr IS 70 ug/L.
3. DATA PRESENTED ON THIS FIGURE ARE FROM SAMPLES COLLECTED FROM MONITORING WELLS BETWEEN JUNE 15, 2011 AND FEBRUARY 2021, FOR VARIOUS GROUNDWATER PROGRAMS, INCLUDING BUT NOT LIMITED TO: GROUNDWATER RI (HISTORICAL AND RECENTLY COMPLETED), GROUNDWATER PILOT TESTING AND INTERIM REMEDIAL MEASURES (IRM) ON SITE 114, CAPILLARY RISE GROUNDWATER MONITORING AND SITE-WIDE FERROBLACK-H PERMIT-BY-RULE (PBR) COMPLIANCE MONITORING.
4. DATA FROM SAMPLES COLLECTED FROM HISTORICAL MONITORING WELLS LOCATED IN REMEDIAL AREAS (E.G., SITE 114) ARE SUPERCEDED BY MORE RECENT DATA COLLECTION PROGRAMS THAT WERE IMPLEMENTED AFTER THE COMPLETION OF SOIL REMEDIATION ACTIVITIES.
5. RESULTS PRESENTED ARE FROM THE ANALYSIS OF UNFILTERED GROUNDWATER SAMPLES.
6. CHROMIUM CONCENTRATIONS ARE PRESENTED IN UNITS OF MICROGRAMS PER LITER.

QUALIFIERS:

| | |
|---|---|
| J | RESULT IS AN ESTIMATED VALUE |
| U | ANALYTE WAS NOT DETECTED ABOVE THE METHOD DETECTION LIMIT OR REPORTING LIMIT |

DEFINITIONS:

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| CCPW | CHROMATE CHEMICAL PRODUCTION WASTE |
| COPR | CHROMITE ORE PROCESSING RESIDUE |
| Cr | TOTAL CHROMIUM |
| FT NAVD88 | FEET IN NORTH AMERICAN VERTICAL DATUM OF 1988 |
| GWQS | GROUNDWATER QUALITY STANDARD |
| RI | REMEDIAL INVESTIGATION |
| ug/L | MICROGRAMS PER LITER |

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**FENCE DIAGRAM I-I'**

DATE: 8/16/2021 | DRWN: GDS | **FIGURE 5-8**

File: G:\910 CAD\20 SHEETS\GW 2021 GW RPT\Fence Diagrams_08-2021\2021 0303 Fence Diagram_I-I'.dwg Layout: I-I' ANSI D User: fnadeau.schuele Plotted: Aug 17, 2021 - 2:11pm

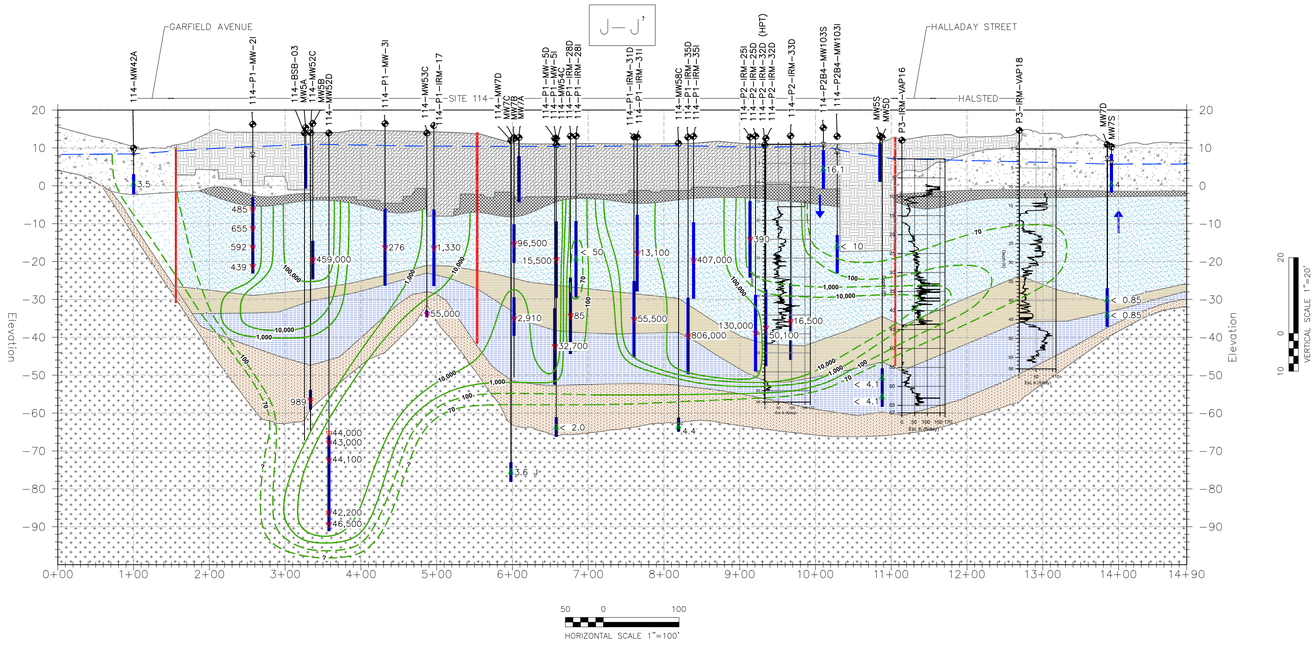


## LEGEND

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- GROUNDWATER SURFACE, SHALLOW WELLS (MAY/JUNE 2018)
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- 114—MW25C — GROUNDWATER MONITORING WELL
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- ▽485 — Cr CONCENTRATION >70 ug/L
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- 100,000 — Cr ISOCONTOUR 100,000 ug/L
- 1,000,000 — Cr ISOCONTOUR 1,000,000 ug/L
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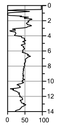


ESTIMATED HYDRAULIC CONDUCTIVITY LOG FROM HYDRAULIC PROFILE TOOL (HPT), FEET/DAY

## STRATIGRAPHY

SHALLOW WATER-BEARING ZONE
- FILL: FINE TO COARSE SAND WITH SILT AND GRAVEL, MAY INCLUDE VARIOUS MATERIALS ASSOCIATED WITH HISTORICAL FILL SUCH AS: CONSTRUCTION SPOILS, DEMOLITION DEBRIS, GARBAGE, INCINERATOR ASH, COAL ASH, SHIP BALLAST, AND INDUSTRIAL WASTE
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QUALIFIERS:

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DEFINITIONS:

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| CCPW | CHROMATE CHEMICAL PRODUCTION WASTE |
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| FT NAVD88 | FEET IN NORTH AMERICAN VERTICAL DATUM OF 1988 |
| GWQS | GROUNDWATER QUALITY STANDARD |
| RI | REMEDIAL INVESTIGATION |
| ug/L | MICROGRAMS PER LITER |

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JERSEY CITY, HUDSON COUNTY NEW JERSEY

**FENCE DIAGRAM J-J'**

DATE: 8/13/2021 | DRWN: GDS | **FIGURE 5-9**

File: C:\310_CAD\20_SHEETS\Cad\2021 GW RIR\Fence Diagrams_08-2021\20210303 Fence Diagram_J-J' dwg Layout: J-J' ANSI D User: frederik.schunk Plotted: Aug 13, 2021 - 2:18pm

| WELL ID | SAMPLE DATE |
|---|---|
| 10W-MW101S | 2/8/2018 |
| 10W-MW102S | 2/8/2018 |
| 114-MC-MW101S | 6/22/2016 |
| 114-MC-MW102S | 6/24/2016 |
| 114-MW14A | 12/19/2017 |
| 114-MW15A | 4/17/2018 |
| 114-MW16A | 12/15/2015 |
| 114-MW20AR | 7/28/2020 |
| 114-MW22AR | 7/20/2020 |
| 114-MW24A | 4/5/2017 |
| 114-MW24AR | 3/30/2020 |
| 114-MW25A | 7/22/2020 |
| 114-MW26A | 2/25/2019 |
| 114-MW27A | 4/1/2020 |
| 114-MW28A | 2/25/2019 |
| 114-MW2B1-2 | 3/30/2020 |
| 114-MW30A | 2/26/2019 |
| 114-MW36A | 4/2/2020 |
| 114-MW37A | 2/26/2019 |
| 114-MW38A | 2/27/2019 |
| 114-MW41A | 4/20/2018 |
| 114-MW42A | 4/17/2018 |
| 114-MW43A | 4/17/2018 |
| 114-MW44A | 2/25/2019 |
| 114-P1A-MW101S | 7/23/2020 |
| 114-P1B-MW101S | 7/24/2020 |
| 114-P1B-MW102S | 9/28/2020 |
| 114-P1B-MW103S | 7/29/2020 |
| 114-P1B-MW104S | 6/21/2016 |
| 114-P1C-MW101S | 7/23/2020 |
| 114-P1C-MW102S | 7/28/2020 |
| 114-P1C-MW103S | 5/23/2017 |
| 114-P1C-MW104S | 7/23/2020 |
| 114-P2A-MW101S | 12/12/2016 |
| 114-P2A-MW102S | 12/12/2016 |
| 114-P2A-MW103S | 12/13/2016 |
| 114-P2A-MW104S | 12/14/2016 |
| 114-P2B1-MW101S | 6/20/2016 |
| 114-P2B1-MW102S | 5/24/2017 |
| 114-P2B1-MW103S | 6/23/2016 |
| 114-P2B2-MW101S | 4/3/2020 |
| 114-P2B3-MW101S | 6/22/2016 |
| 114-P2B3-MW2R | 7/22/2020 |
| 114-P2B4-MW101S | 6/21/2016 |
| 114-P2B4-MW102S | 8/13/2020 |
| 114-P2B4-MW103S | 6/22/2016 |
| 114-P2B4-MW2R | 8/13/2020 |
| 132-MW2A | 4/26/2018 |
| 132-P3A-MW102S | 4/26/2018 |
| 132-P3A-MW103S | 6/16/2016 |
| 132-P3A-MW104S | 6/16/2016 |
| 132-P3A-MW1R | 7/21/2020 |
| 132-P3A-MW3 | 4/24/2018 |
| 132-P3A-MW4 | 4/24/2018 |
| 133-MW1A | 4/4/2014 |
| 133-MW3A | 1/26/2012 |
| 133-MW6A | 2/9/2018 |
| 133-P3C-MW101S | 12/16/2016 |
| 133-P3C-MW102S | 12/16/2016 |
| 135-MW1AR | 5/1/2018 |
| 135-MW2A | 4/23/2018 |
| 135-P3C-MW101S | 3/1/2019 |
| 135-P3C-MW102S | 3/1/2019 |
| 137-P3B-MW101S | 7/22/2020 |
| 137-P3B-MW102S | 3/17/2017 |
| 143-P3A-MW101S | 7/21/2020 |
| 186-MW01 | 6/29/2011 |
| 186-MW02R | 5/31/2018 |
| FS-MW101S | 7/22/2020 |
| GPS-MW1S | 11/13/2020 |
| GPS-MW2S | 11/13/2020 |
| GPS-MW3S | 11/11/2020 |
| GPS-MW4S | 11/11/2020 |
| GPS-MW5S | 11/13/2020 |
| GPS-MW6S | 11/13/2020 |
| GPS-MW7S | 11/13/2020 |
| GPS-PZ2S | 3/25/2019 |
| GPS-PZ3S | 3/25/2019 |
| HSS-P3C-MW1S | 7/28/2020 |
| HSS-P3C-MW2S | 12/15/2016 |
| MW10S | 4/26/2018 |
| MW14S | 7/20/2011 |
| MW15S | 3/31/2014 |
| MW1C-3 | 12/17/2015 |
| MW1C-4 | 12/17/2015 |
| MW-31A | 4/3/2017 |
| MW7S | 4/30/2018 |
| MW8S | 4/27/2018 |
| MW-CR-3 | 4/18/2018 |
| MW-MORRIS1A | 3/31/2017 |

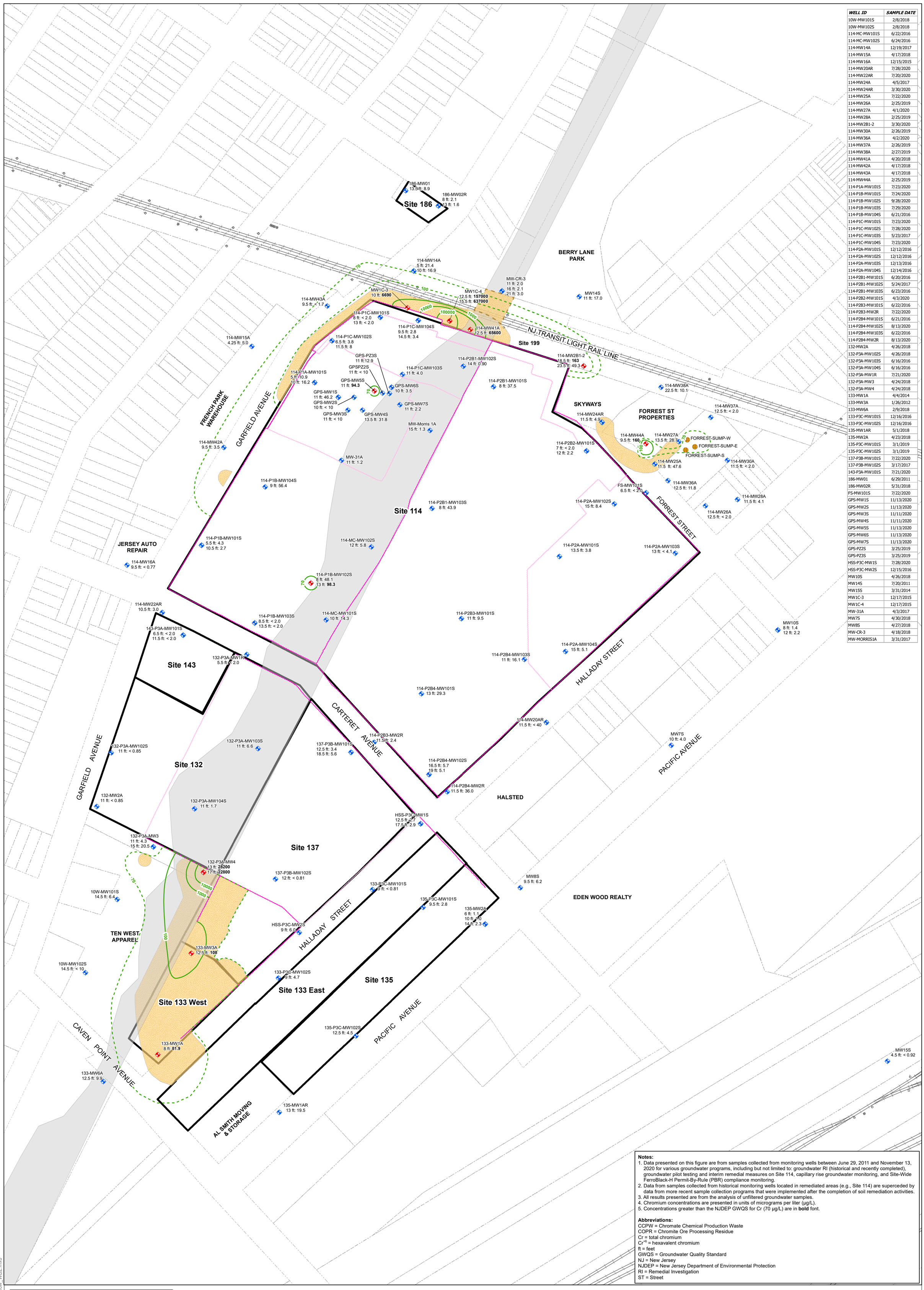


**Notes:**
1. Data presented on this figure are from samples collected from monitoring wells between June 29, 2011 and November 13, 2020 for various groundwater programs, including but not limited to: groundwater RI (historical and recently completed), groundwater pilot testing and interim remedial measures on Site 114, capillary rise groundwater monitoring, and Site-Wide FerroBlack-H Permit-By-Rule (PBR) compliance monitoring.
2. Data from samples collected from historical monitoring wells located in remediated areas (e.g., Site 114) are superceded by data from more recent sample collection programs that were implemented after the completion of soil remediation activities.
3. All results presented are from the analysis of unfiltered groundwater samples.
4. Chromium concentrations are presented in units of micrograms per liter (µg/L).
5. Concentrations greater than the NJDEP GWQS for Cr (70 µg/L) are in **bold** font.

**Abbreviations:**
CCPW = Chromate Chemical Production Waste
COPR = Chromite Ore Processing Residue
Cr = total chromium
$Cr^{+6}$ = hexavalent chromium
ft = feet
GWQS = Groundwater Quality Standard
NJ = New Jersey
NJDEP = New Jersey Department of Environmental Protection
RI = Remedial Investigation
ST = Street

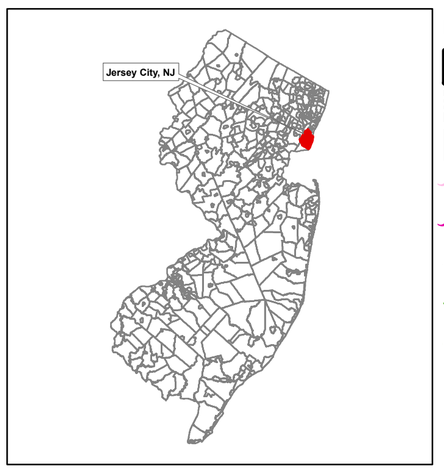


**LEGEND**

- GARFIELD AVENUE GROUP BOUNDARY
- HUDSON COUNTY PARCELS
- FORMER MORRIS CANAL
- REMOVED SHEETPILE
- IN-PLACE SHEETPILE (AS OF JULY 2019)
- RAILROAD TRACKS
- 70 — TOTAL CHROMIUM ISOPLETH (µg/L)
- 70 - - TOTAL CHROMIUM ISOPLETH (µg/L) - INFERRED
- APPROXIMATE EXTENT OF RESIDUAL SOURCE MATERIAL BASED ON VISUAL OBSERVATION OF CCPW OR COPR IN SOIL BORINGS OR DETECTION OF $CR^{+6}$ AT CONCENTRATIONS GREATER THAN 1,000 MILLIGRAMS PER KILOGRAM IN SOIL (AS OF APRIL 2020)
- INFERRED EXTENT OF RESIDUAL SOURCE MATERIAL WITHIN THE FORMER MORRIS CANAL
- SHALLOW MONITORING WELL (Cr < GWQS)
- SHALLOW MONITORING WELL (Cr > GWQS)
- SUMPS

***Label:***
135-MW1AR — Well ID
13 ft: 19.5 — Sample Depth: Cr Concentration (µg/L)

N W E S

0 100 200 Feet

**Map Notes:**
1. New Jersey State Plane North American Datum 1983 Coordinates (NAD83), U.S. Survey Feet.
2. Parcels of Hudson County, New Jersey State Plane NAD83, Hudson County Department of Planning, Jersey City, New Jersey, May 21, 2013.

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GARFIELD AVENUE GROUP
JERSEY CITY, NEW JERSEY
60550261

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# FIGURE 5-10
# DISTRIBUTION OF TOTAL CHROMIUM IN THE SHALLOW WATER-BEARING ZONE

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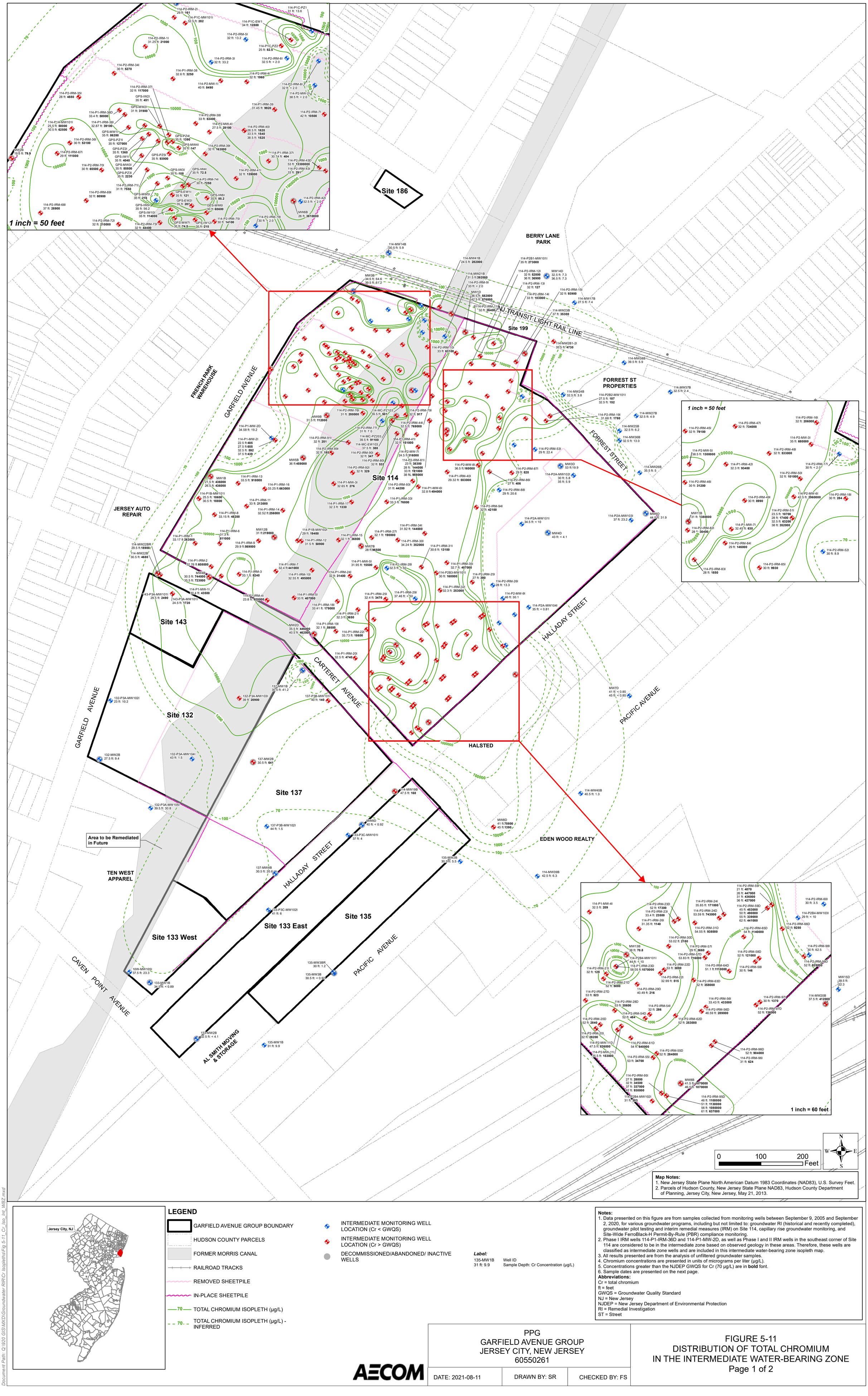





## LEGEND

- GARFIELD AVENUE GROUP BOUNDARY
- HUDSON COUNTY PARCELS
- FORMER MORRIS CANAL
- RAILROAD TRACKS
- REMOVED SHEETPILE
- IN-PLACE SHEETPILE
- 70 TOTAL CHROMIUM ISOPLETH (µg/L)
- 70 TOTAL CHROMIUM ISOPLETH (µg/L) - INFERRED
- INTERMEDIATE MONITORING WELL LOCATION (Cr < GWQS)
- INTERMEDIATE MONITORING WELL LOCATION (Cr > GWQS)
- DECOMMISSIONED/ABANDONED/ INACTIVE WELLS

***Label:***
135-MW1B — Well ID
31 ft: 9.9 — Sample Depth: Cr Concentration (µg/L)

**Map Notes:**
1. New Jersey State Plane North American Datum 1983 Coordinates (NAD83), U.S. Survey Feet.
2. Parcels of Hudson County, New Jersey State Plane NAD83, Hudson County Department of Planning, Jersey City, New Jersey, May 21, 2013.

**Notes:**
1. Data presented on this figure are from samples collected from monitoring wells between September 9, 2005 and September 2, 2020, for various groundwater programs, including but not limited to: groundwater RI (historical and recently completed), groundwater pilot testing and interim remedial measures (IRM) on Site 114, capillary rise groundwater monitoring, and Site-Wide FerroBlack-H Permit-By-Rule (PBR) compliance monitoring.
2. Phase I IRM wells 114-P1-IRM-36D and 114-P1-MW-2D, as well as Phase I and II IRM wells in the southeast corner of Site 114 are considered to be in the intermediate zone based on observed geology in these areas. Therefore, these wells are classified as intermediate zone wells and are included in this intermediate water-bearing zone isopleth map.
3. All results presented are from the analysis of unfiltered groundwater samples.
4. Chromium concentrations are presented in units of micrograms per liter (µg/L).
5. Concentrations greater than the NJDEP GWQS for Cr (70 µg/L) are in **bold** font.
6. Sample dates are presented on the next page.

**Abbreviations:**
Cr = total chromium
ft = feet
GWQS = Groundwater Quality Standard
NJ = New Jersey
NJDEP = New Jersey Department of Environmental Protection
RI = Remedial Investigation
ST = Street

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# FIGURE 5-11
# DISTRIBUTION OF TOTAL CHROMIUM IN THE INTERMEDIATE WATER-BEARING ZONE
Page 1 of 2

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Figure 5-11
Distribution of Total Chromium in the Intermediate Water-Bearing Zone


| *Well ID* | *Sample Date* |
|---|---|
| 10W-MW105I | 2018-03-12 |
| 114-MC-EW103 | 2016-06-23 |
| 114-MC-PZ103 | 2019-04-29 |
| 114-MC-PZ203 | 2019-05-02 |
| 114-MW14B | 2017-12-19 |
| 114-MW17B | 2018-04-18 |
| 114-MW19B | 2018-05-01 |
| 114-MW20B | 2018-04-19 |
| 114-MW21B | 2011-06-14 |
| 114-MW22B | 2018-04-19 |
| 114-MW22BR | 2020-07-20 |
| 114-MW23B | 2012-02-20 |
| 114-MW24B | 2020-03-30 |
| 114-MW25B | 2017-09-28 |
| 114-MW26B | 2018-03-13 |
| 114-MW27B | 2020-04-01 |
| 114-MW2B1-2I | 2020-03-30 |
| 114-MW36B | 2020-04-02 |
| 114-MW37B | 2019-02-26 |
| 114-MW38B | 2017-12-04 |
| 114-MW39B | 2018-02-12 |
| 114-MW40B | 2018-04-27 |
| 114-MW41B | 2018-04-20 |
| 114-P1A-MW101I | 2020-07-23 |
| 114-P1B-MW101I | 2020-07-24 |
| 114-P1B-MW102I | 2019-05-02 |
| 114-P1C-EW1 | 2015-06-18 |
| 114-P1C-MW101I | 2019-04-29 |
| 114-P1C-PZ1 | 2019-03-25 |
| 114-P1C-PZ2 | 2019-03-26 |
| 114-P1-IRM-1 | 2018-01-16 |
| 114-P1-IRM-10I | 2018-10-29 |
| 114-P1-IRM-11 | 2019-05-03 |
| 114-P1-IRM-12 | 2019-03-29 |
| 114-P1-IRM-13 | 2018-01-16 |
| 114-P1-IRM-14 | 2018-01-16 |
| 114-P1-IRM-15 | 2018-01-22 |
| 114-P1-IRM-16 | 2018-01-16 |
| 114-P1-IRM-17 | 2018-01-22 |
| 114-P1-IRM-18I | 2018-01-18 |
| 114-P1-IRM-19I | 2018-01-17 |
| 114-P1-IRM-2 | 2018-01-16 |
| 114-P1-IRM-20I | 2018-01-17 |
| 114-P1-IRM-21I | 2018-01-18 |
| 114-P1-IRM-22I | 2018-01-18 |
| 114-P1-IRM-23D | 2018-01-24 |
| 114-P1-IRM-24I | 2018-01-18 |
| 114-P1-IRM-25I | 2018-01-18 |
| 114-P1-IRM-26I | 2018-01-18 |
| 114-P1-IRM-27I | 2018-09-25 |
| 114-P1-IRM-28I | 2018-11-26 |
| 114-P1-IRM-29I | 2018-11-26 |
| 114-P1-IRM-3 | 2018-01-24 |
| 114-P1-IRM-30I | 2018-01-22 |
| 114-P1-IRM-31I | 2018-01-19 |
| 114-P1-IRM-32I | 2018-01-22 |
| 114-P1-IRM-33I | 2019-05-03 |
| 114-P1-IRM-34I | 2019-05-03 |
| 114-P1-IRM-35I | 2018-01-22 |
| 114-P1-IRM-36D | 2019-05-03 |

| *Well ID* | *Sample Date* |
|---|---|
| 114-P1-IRM-36I | 2018-11-26 |
| 114-P1-IRM-37I | 2019-04-30 |
| 114-P1-IRM-38 | 2018-11-26 |
| 114-P1-IRM-39 | 2018-11-26 |
| 114-P1-IRM-40I | 2019-05-03 |
| 114-P1-IRM-41I | 2018-11-28 |
| 114-P1-IRM-42I | 2019-05-01 |
| 114-P1-IRM-4I | 2018-01-24 |
| 114-P1-IRM-5I | 2018-01-23 |
| 114-P1-IRM-6 | 2018-01-16 |
| 114-P1-IRM-7 | 2018-01-24 |
| 114-P1-IRM-8 | 2018-10-29 |
| 114-P1-IRM-9 | 2018-10-29 |
| 114-P1-MW-1I | 2019-04-29 |
| 114-P1-MW-2D | 2019-04-29 |
| 114-P1-MW-2I | 2020-07-27 |
| 114-P1-MW-3I | 2019-04-30 |
| 114-P1-MW-4I | 2019-04-29 |
| 114-P1-MW-5I | 2019-04-30 |
| 114-P1-MW-6I | 2019-05-02 |
| 114-P1-MW-7I | 2019-04-30 |
| 114-P2A-MW101I | 2019-04-29 |
| 114-P2A-MW102I | 2020-04-03 |
| 114-P2A-MW103I | 2016-12-14 |
| 114-P2A-MW104I | 2016-12-19 |
| 114-P2B1-MW101I | 2019-05-01 |
| 114-P2B2-MW101I | 2020-07-27 |
| 114-P2B3-MW101I | 2019-05-02 |
| 114-P2B4-MW101I | 2018-06-04 |
| 114-P2B4-MW102I | 2018-06-04 |
| 114-P2B4-MW103I | 2019-04-30 |
| 114-P2-IRM-10I | 2020-03-18 |
| 114-P2-IRM-11I | 2020-03-18 |
| 114-P2-IRM-12I | 2020-03-25 |
| 114-P2-IRM-13I | 2020-03-18 |
| 114-P2-IRM-14I | 2020-03-17 |
| 114-P2-IRM-15I | 2020-03-17 |
| 114-P2-IRM-16I | 2020-03-19 |
| 114-P2-IRM-17I | 2020-03-19 |
| 114-P2-IRM-18I | 2020-03-19 |
| 114-P2-IRM-19I | 2020-03-27 |
| 114-P2-IRM-1I | 2020-03-20 |
| 114-P2-IRM-20D | 2020-03-23 |
| 114-P2-IRM-20I | 2020-03-23 |
| 114-P2-IRM-21D | 2020-03-23 |
| 114-P2-IRM-21I | 2020-03-23 |
| 114-P2-IRM-22D | 2020-03-23 |
| 114-P2-IRM-22I | 2020-03-26 |
| 114-P2-IRM-23D | 2020-03-27 |
| 114-P2-IRM-23I | 2020-03-26 |
| 114-P2-IRM-24D | 2020-03-27 |
| 114-P2-IRM-24I | 2020-03-27 |
| 114-P2-IRM-25I | 2020-03-27 |
| 114-P2-IRM-26I | 2020-03-25 |
| 114-P2-IRM-27D | 2020-03-23 |
| 114-P2-IRM-28D | 2020-03-23 |
| 114-P2-IRM-29D | 2020-03-27 |
| 114-P2-IRM-2I | 2020-03-20 |
| 114-P2-IRM-30D | 2020-03-27 |
| 114-P2-IRM-31D | 2020-03-27 |

| *Well ID* | *Sample Date* |
|---|---|
| 114-P2-IRM-34I | 2020-03-20 |
| 114-P2-IRM-35I | 2020-03-20 |
| 114-P2-IRM-36I | 2020-03-20 |
| 114-P2-IRM-37I | 2020-03-25 |
| 114-P2-IRM-38I | 2020-03-24 |
| 114-P2-IRM-39I | 2020-03-20 |
| 114-P2-IRM-3I | 2020-03-24 |
| 114-P2-IRM-40I | 2020-03-19 |
| 114-P2-IRM-41I | 2020-03-26 |
| 114-P2-IRM-42I | 2020-03-19 |
| 114-P2-IRM-43I | 2020-03-19 |
| 114-P2-IRM-43D | 2020-03-19 |
| 114-P2-IRM-44I | 2020-03-19 |
| 114-P2-IRM-45I | 2020-03-19 |
| 114-P2-IRM-46I | 2020-03-18 |
| 114-P2-IRM-47I | 2020-03-19 |
| 114-P2-IRM-48I | 2020-03-19 |
| 114-P2-IRM-49I | 2020-03-18 |
| 114-P2-IRM-4I | 2020-03-24 |
| 114-P2-IRM-50I | 2020-03-20 |
| 114-P2-IRM-51I | 2020-03-17 |
| 114-P2-IRM-52I | 2020-03-24 |
| 114-P2-IRM-53I | 2020-03-25 |
| 114-P2-IRM-54D | 2020-03-23 |
| 114-P2-IRM-54I | 2020-03-23 |
| 114-P2-IRM-55D | 2020-03-23 |
| 114-P2-IRM-55I | 2020-03-23 |
| 114-P2-IRM-56D | 2020-03-27 |
| 114-P2-IRM-56I | 2020-03-27 |
| 114-P2-IRM-57D | 2020-03-27 |
| 114-P2-IRM-57I | 2020-03-25 |
| 114-P2-IRM-58I | 2020-03-24 |
| 114-P2-IRM-58D | 2020-03-24 |
| 114-P2-IRM-59D | 2020-03-24 |
| 114-P2-IRM-59I | 2020-03-24 |
| 114-P2-IRM-5I | 2020-03-24 |
| 114-P2-IRM-60I | 2020-03-25 |
| 114-P2-IRM-61D | 2020-03-23 |
| 114-P2-IRM-62D | 2020-03-23 |
| 114-P2-IRM-63D | 2020-03-23 |
| 114-P2-IRM-64D | 2020-03-27 |
| 114-P2-IRM-65D | 2020-03-27 |
| 114-P2-IRM-66D | 2020-03-24 |
| 114-P2-IRM-67I | 2020-03-20 |
| 114-P2-IRM-68I | 2020-03-25 |
| 114-P2-IRM-69I | 2020-03-25 |
| 114-P2-IRM-6I | 2020-03-19 |
| 114-P2-IRM-70I | 2020-03-24 |
| 114-P2-IRM-71I | 2020-03-25 |
| 114-P2-IRM-72I | 2020-03-25 |
| 114-P2-IRM-73I | 2020-03-25 |
| 114-P2-IRM-74I | 2020-03-25 |
| 114-P2-IRM-75I | 2020-03-26 |
| 114-P2-IRM-76I | 2020-03-25 |
| 114-P2-IRM-77I | 2020-03-25 |
| 114-P2-IRM-78I | 2020-03-19 |
| 114-P2-IRM-79I | 2020-03-24 |
| 114-P2-IRM-7I | 2020-03-19 |
| 114-P2-IRM-80I | 2020-03-24 |
| 114-P2-IRM-81I | 2020-03-18 |

| *Well ID* | *Sample Date* |
|---|---|
| 114-P2-IRM-82I | 2020-03-18 |
| 114-P2-IRM-83I | 2020-03-25 |
| 114-P2-IRM-84I | 2020-03-20 |
| 114-P2-IRM-85I | 2020-03-25 |
| 114-P2-IRM-86I | 2020-03-25 |
| 114-P2-IRM-87I | 2020-03-26 |
| 114-P2-IRM-88I | 2020-03-24 |
| 114-P2-IRM-89I | 2020-03-26 |
| 114-P2-IRM-8I | 2020-03-19 |
| 114-P2-IRM-90I | 2020-03-26 |
| 114-P2-IRM-91I | 2020-03-26 |
| 114-P2-IRM-92I | 2020-03-26 |
| 114-P2-IRM-93I | 2020-03-26 |
| 114-P2-IRM-94I | 2020-03-26 |
| 114-P2-IRM-95D | 2020-03-20 |
| 114-P2-IRM-95I | 2020-03-20 |
| 114-P2-IRM-96D | 2020-03-24 |
| 114-P2-IRM-96I | 2020-03-26 |
| 114-P2-IRM-97D | 2020-03-20 |
| 114-P2-IRM-97I | 2020-03-20 |
| 114-P2-IRM-98D | 2020-03-24 |
| 114-P2-IRM-98I | 2020-03-24 |
| 114-P2-IRM-9I | 2020-03-19 |
| 114-P2-MW-11D | 2020-03-23 |
| 114-P2-MW-11I | 2020-03-23 |
| 114-P2-MW-1I | 2020-03-20 |
| 114-P2-MW-2I | 2020-03-19 |
| 114-P2-MW-3I | 2020-03-19 |
| 114-P2-MW-4I | 2020-03-20 |
| 114-P2-MW-5I | 2020-03-25 |
| 114-P2-MW-6I | 2020-03-17 |
| 114-P2-MW-7I | 2020-03-26 |
| 114-P2-MW-8I | 2020-03-20 |
| 114-P2-MW-9I | 2020-03-24 |
| 132-MW2B | 2011-06-17 |
| 132-P3A-MW102I | 2016-06-17 |
| 132-P3A-MW103I | 2016-06-16 |
| 132-P3A-MW104I | 2016-06-16 |
| 132-P3A-MW105I | 2018-02-08 |
| 133-MW1B | 2014-04-04 |
| 133-MW2B | 2011-06-20 |
| 133-P3C-MW101I | 2016-12-15 |
| 133-P3C-MW102I | 2016-12-16 |
| 135-MW1B | 2018-05-01 |
| 135-MW2B | 2018-04-25 |
| 135-MW3B | 2014-02-28 |
| 135-MW3BR | 2018-05-01 |
| 137-MW1B | 2014-04-01 |
| 137-MW2B | 2011-06-29 |
| 137-MW4B | 2014-03-06 |
| 137-P3B-MW101I | 2016-06-24 |
| 137-P3B-MW102I | 2016-06-15 |
| 143-P3A-MW101I | 2020-07-21 |
| GPS-EW1I | 2016-10-06 |
| GPS-EW2I | 2016-10-06 |
| GPS-IW10I | 2014-01-02 |
| GPS-IW12I | 2016-10-06 |
| GPS-IW1I | 2015-04-08 |
| GPS-IW2I | 2015-04-08 |
| GPS-IW3I | 2016-10-06 |

| *Well ID* | *Sample Date* |
|---|---|
| GPS-IW4I | 2016-10-06 |
| GPS-IW6I | 2016-10-06 |
| GPS-IW9I | 2016-10-06 |
| GPS-MW1I | 2013-05-29 |
| GPS-MW2I | 2019-05-01 |
| GPS-MW3I | 2019-05-02 |
| GPS-MW4I | 2015-04-07 |
| GPS-MW5I | 2019-05-01 |
| GPS-MW6I | 2019-04-30 |
| GPS-MW7I | 2016-10-06 |
| GPS-PZ1I | 2015-04-08 |
| GPS-PZ2I | 2015-04-08 |
| GPS-PZ3I | 2015-04-08 |
| GPS-PZ4I | 2015-04-08 |
| GPS-PZ5I | 2015-04-08 |
| MW11B | 2011-06-27 |
| MW12B | 2011-06-23 |
| MW13B | 2011-06-30 |
| MW14D | 2011-07-20 |
| MW15D | 2014-03-31 |
| MW1B | 2011-06-28 |
| MW1D | 2011-06-24 |
| MW2B | 2005-09-09 |
| MW2D | 2011-06-30 |
| MW3B | 2011-06-27 |
| MW3D | 2012-02-20 |
| MW4B | 2011-06-15 |
| MW4D | 2011-06-21 |
| MW5B | 2011-06-28 |
| MW6B | 2005-09-09 |
| MW6D | 2012-02-20 |
| MW7B | 2011-06-29 |
| MW7D | 2018-04-23 |
| MW8B | 2011-06-27 |
| MW8D | 2018-04-25 |
| MW9B | 2011-06-30 |
| MW9D | 2014-04-03 |

| WELL ID | SAMPLING DATE |
|---|---|
| 114-MW19C | 2018-04-27 |
| 114-MW20C | 2018-04-19 |
| 114-MW25C | 2020-04-01 |
| 114-P1B-MW103D | 2017-12-14 |
| 114-P1-IRM-10D | 2018-10-29 |
| 114-P1-IRM-18D | 2018-01-18 |
| 114-P1-IRM-19D | 2018-01-17 |
| 114-P1-IRM-20D | 2018-01-17 |
| 114-P1-IRM-21D | 2018-01-18 |
| 114-P1-IRM-22D | 2018-01-18 |
| 114-P1-IRM-24D | 2018-01-19 |
| 114-P1-IRM-25D | 2018-01-18 |
| 114-P1-IRM-26D | 2018-01-19 |
| 114-P1-IRM-27D | 2018-09-25 |
| 114-P1-IRM-28D | 2018-11-26 |
| 114-P1-IRM-29D | 2018-11-26 |
| 114-P1-IRM-30D | 2018-01-22 |
| 114-P1-IRM-31D | 2018-01-19 |
| 114-P1-IRM-32D | 2018-01-22 |
| 114-P1-IRM-33D | 2019-05-03 |
| 114-P1-IRM-34D | 2019-05-03 |
| 114-P1-IRM-35D | 2018-01-22 |
| 114-P1-IRM-37D | 2019-05-01 |
| 114-P1-IRM-40D | 2019-05-03 |
| 114-P1-IRM-41D | 2019-05-03 |
| 114-P1-IRM-42D | 2019-05-03 |
| 114-P1-IRM-4D | 2018-01-24 |
| 114-P1-IRM-5D | 2018-01-24 |
| 114-P1-MW-1D | 2019-05-02 |
| 114-P1-MW-4D | 2019-05-02 |
| 114-P1-MW-5D | 2019-05-02 |
| 114-P1-MW-6D | 2019-05-01 |
| 114-P1-MW-7D | 2019-05-02 |
| 114-P2-IRM-10D | 2020-03-18 |
| 114-P2-IRM-11D | 2020-03-18 |
| 114-P2-IRM-12D | 2020-03-17 |
| 114-P2-IRM-13D | 2020-03-18 |
| 114-P2-IRM-14D | 2020-03-17 |
| 114-P2-IRM-15D | 2020-03-17 |
| 114-P2-IRM-16D | 2020-03-19 |
| 114-P2-IRM-17D | 2020-03-19 |
| 114-P2-IRM-18D | 2020-03-19 |
| 114-P2-IRM-19D | 2020-03-27 |
| 114-P2-IRM-25D | 2020-03-25 |
| 114-P2-IRM-26D | 2020-03-27 |
| 114-P2-IRM-32D | 2020-03-24 |
| 114-P2-IRM-33D | 2020-03-25 |
| 114-P2-IRM-39D | 2020-03-20 |
| 114-P2-IRM-40D | 2020-03-19 |
| 114-P2-IRM-41D | 2020-03-26 |
| 114-P2-IRM-42D | 2020-03-19 |
| 114-P2-IRM-43D | 2020-03-19 |
| 114-P2-IRM-44D | 2020-03-19 |
| 114-P2-IRM-45D | 2020-03-19 |
| 114-P2-IRM-46D | 2020-03-18 |
| 114-P2-IRM-47D | 2020-03-19 |
| 114-P2-IRM-48D | 2020-03-19 |
| 114-P2-IRM-49D | 2020-03-17 |
| 114-P2-IRM-50D | 2020-03-19 |
| 114-P2-IRM-51D | 2020-03-17 |
| 114-P2-IRM-52D | 2020-03-16 |
| 114-P2-IRM-53D | 2020-03-25 |
| 114-P2-IRM-60D | 2020-03-25 |
| 114-P2-IRM-77D | 2020-03-26 |
| 114-P2-IRM-78D | 2020-03-19 |
| 114-P2-IRM-79D | 2020-03-24 |
| 114-P2-IRM-7D | 2020-03-19 |
| 114-P2-IRM-80D | 2020-03-26 |
| 114-P2-IRM-81D | 2020-03-18 |
| 114-P2-IRM-82D | 2020-03-18 |
| 114-P2-IRM-83D | 2020-03-18 |
| 114-P2-IRM-84D | 2020-03-20 |
| 114-P2-IRM-85D | 2020-03-25 |
| 114-P2-IRM-86D | 2020-03-16 |
| 114-P2-IRM-87D | 2020-03-26 |
| 114-P2-IRM-88D | 2020-03-24 |
| 114-P2-IRM-8D | 2020-03-19 |
| 114-P2-IRM-93D | 2020-03-26 |
| 114-P2-IRM-94D | 2020-03-26 |
| 114-P2-IRM-9D | 2020-03-19 |
| 114-P2-MW-1D | 2020-03-20 |
| 114-P2-MW-2D | 2020-03-19 |
| 114-P2-MW-3D | 2020-03-19 |
| 114-P2-MW-4D | 2020-03-20 |
| 114-P2-MW-5D | 2020-03-25 |
| 114-P2-MW-6D | 2020-03-17 |
| 114-P2-MW-7D | 2020-03-26 |
| 114-P2-MW-8D | 2020-03-20 |
| 114-P2-MW-9D | 2020-03-24 |
| 132-P3A-MW104D-1 | 2018-04-26 |
| 132-P3A-MW104D-2 | 2018-04-26 |
| 133-MW1C | 2014-04-04 |
| 133-MW2C | 2011-06-21 |
| 135-MW1C | 2015-12-16 |
| 137-MW1C | 2015-12-18 |
| 137-MW2C | 2015-12-14 |
| MW4C | 2011-06-22 |
| MW4F | 2011-06-21 |
| MW5D | 2011-06-23 |
| MW6C | 2019-05-01 |
| MW7C | 2011-06-29 |
| MW8F | 2018-04-25 |
| MW9C | 2011-06-30 |
| MW-CR-3D | 2018-04-18 |
| 114-MW67C | 2021-02-15 |
| 114-MW68C | 2021-02-16 |
| 114-MW70C | 2021-02-16 |

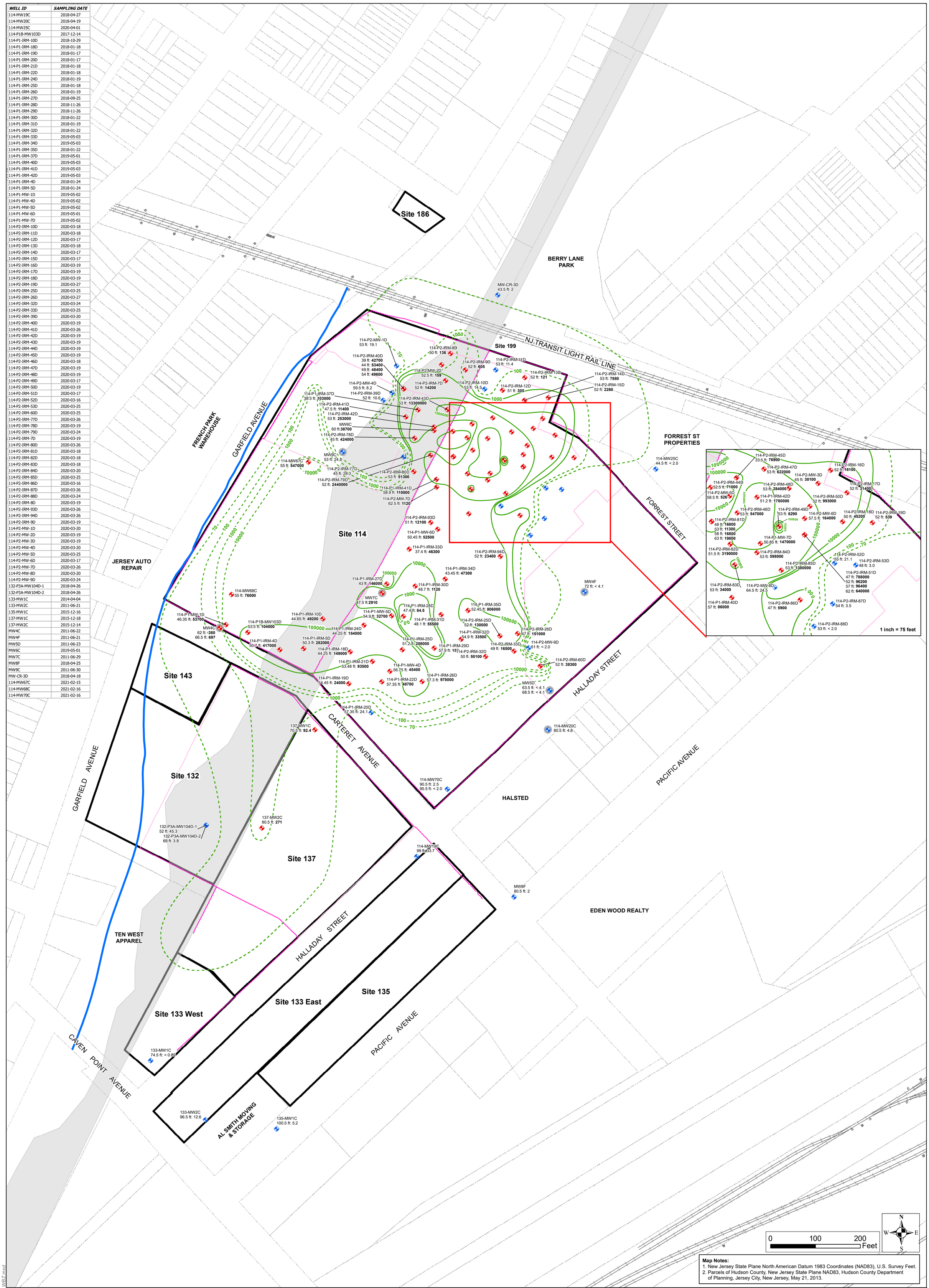


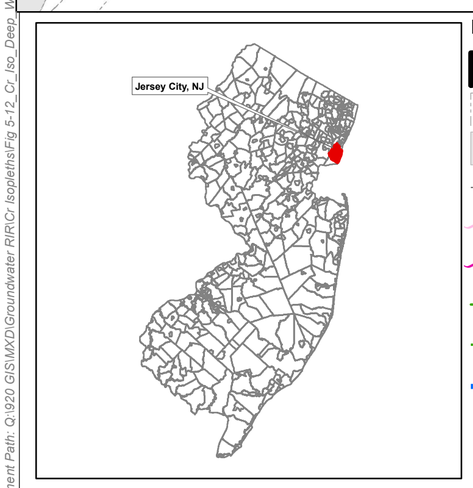


**LEGEND**

- GARFIELD AVENUE GROUP BOUNDARY
- HUDSON COUNTY PARCELS
- FORMER MORRIS CANAL
- RAILROAD TRACKS
- REMOVED SHEETPILE
- IN-PLACE SHEETPILE
- 70 TOTAL CHROMIUM ISOPLETH (µg/L)
- 70 TOTAL CHROMIUM ISOPLETH (µg/L) - INFERRED
- INFERRED LIMIT OF THE DEEP WATER-BEARING ZONE
- DEEP MONITORING WELL LOCATION (Cr < GWQS)
- DEEP MONITORING WELL LOCATION (Cr > GWQS)
- DECOMMISSIONED/ABANDONED/ INACTIVE WELLS

***Label:***
135-MW1C — Well ID
100.5 ft: 5.2 — Sample Depth: Cr Concentration (µg/L)

**Notes:**
1. Data presented on this figure are from samples collected from monitoring wells between June 21, 2011 and February 16, 2021, for various groundwater programs, including groundwater RI (historical and recently completed) and interim remedial measures on Site 114.
2. All results presented are from the analysis of unfiltered groundwater samples.
3. Chromium concentrations are presented in units of micrograms per liter (µg/L).
4. Concentrations greater than the NJDEP GWQS for Cr (70 µg/L) are in **bold** font.

**Abbreviations:**
Cr = total chromium
ft = feet
GWQS = Groundwater Quality Standard
NJ = New Jersey
NJDEP = New Jersey Department of Environmental Protection
RI = Remedial Investigation
ST = Street

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JERSEY CITY, NEW JERSEY
60550261

DATE: 2021-08-31 | DRAWN BY: SR | CHECKED BY: FS

# FIGURE 5-12
# DISTRIBUTION OF TOTAL CHROMIUM IN THE DEEP WATER-BEARING ZONE

User Name: ravis
Document Path: Q:\920 GIS\MXD\Groundwater RI\RICr Isopleths\Fig 5-12_Cr_Iso_Deep_WBZ.mxd

| WELL ID | SAMPLING DATE |
|---|---|
| 114-MW45C | 08/20/20 |
| 114-MW48C | 08/19/20 |
| 114-MW49C | 08/19/20 |
| 114-MW50C | 08/20/20 |
| 114-MW51C | 08/28/20 |
| 114-MW52C | 08/24/20 |
| 114-MW53C | 08/25/20 |
| 114-MW54C | 08/27/20 |
| 114-MW55C | 09/01/20 |
| 114-MW56C | 08/21/20 |
| 114-MW57C | 08/25/20 |
| 114-MW58C | 08/31/20 |
| 114-MW59C | 09/02/20 |
| 114-MW60C | 08/28/20 |
| 114-MW61C | 08/25/20 |
| 114-MW62C | 08/24/20 |
| 114-MW63C | 08/27/20 |
| 114-MW64C | 09/01/20 |
| 114-MW65C | 08/24/20 |
| 132-P3-MW001D | 06/24/21 |

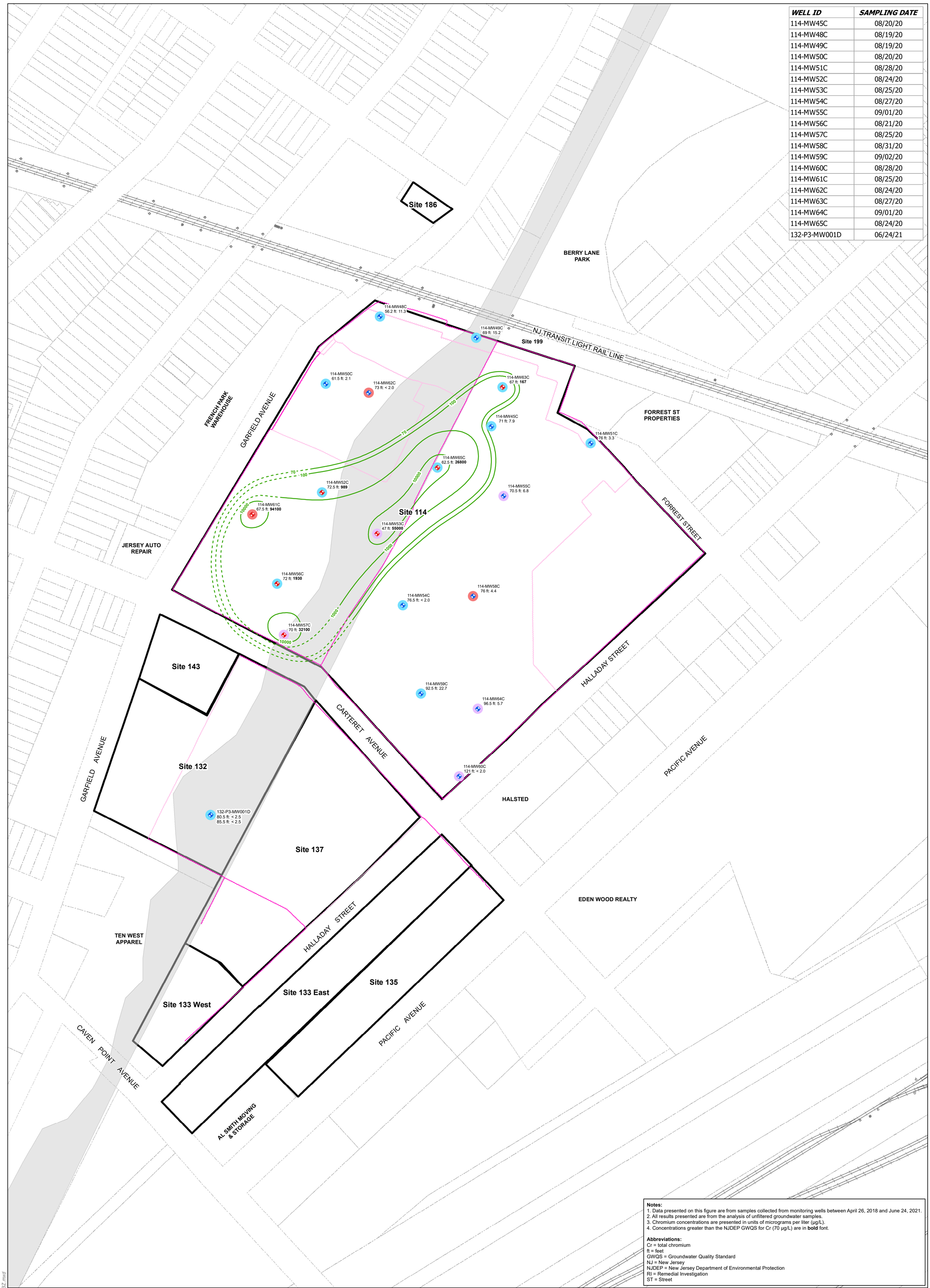


**Notes:**
1. Data presented on this figure are from samples collected from monitoring wells between April 26, 2018 and June 24, 2021.
2. All results presented are from the analysis of unfiltered groundwater samples.
3. Chromium concentrations are presented in units of micrograms per liter (µg/L).
4. Concentrations greater than the NJDEP GWQS for Cr (70 µg/L) are in **bold** font.

**Abbreviations:**
Cr = total chromium
ft = feet
GWQS = Groundwater Quality Standard
NJ = New Jersey
NJDEP = New Jersey Department of Environmental Protection
RI = Remedial Investigation
ST = Street

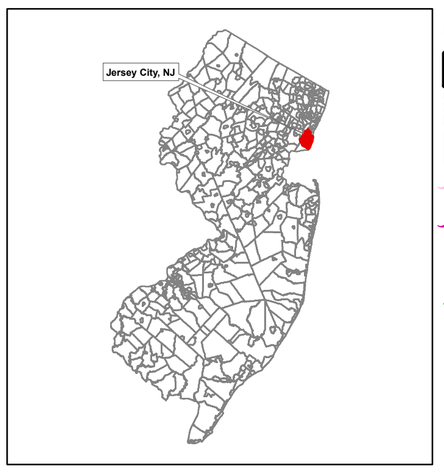


**LEGEND**

- GARFIELD AVENUE GROUP BOUNDARY
- HUDSON COUNTY PARCELS
- FORMER MORRIS CANAL
- REMOVED SHEETPILE
- IN-PLACE SHEETPILE
- RAILROAD TRACKS
- 70 TOTAL CHROMIUM ISOPLETH (µg/L)
- 70 TOTAL CHROMIUM ISOPLETH (µg/L) - INFERRED
- MONITORING WELL (Cr < GWQS)
- MONITORING WELL (Cr > GWQS)

**SCREENED ZONE**

- BASAL TILL
- BASAL TILL/WEATHERED BEDROCK
- WEATHERED BEDROCK

***Label:***
114-MW59C — Well ID
92.5 ft: 22.7 — Sample Depth: Cr Concentration (µg/L)

N W E S

0 100 200 Feet

**Map Notes:**
1. New Jersey State Plane North American Datum 1983 Coordinates (NAD83), U.S. Survey Feet.
2. Parcels of Hudson County, New Jersey State Plane NAD83, Hudson County Department of Planning, Jersey City, New Jersey, May 21, 2013.

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# FIGURE 5-13
# DISTRIBUTION OF TOTAL CHROMIUM IN THE BASAL TILL AND WEATHERED BEDROCK

Last Saved By: ravis
Document Path: Q:\920 GIS\MXD\Groundwater RI\RI\Cr Isopleths\Fig 5-13_Cr_Iso_Till_WBZ.mxd

1 inch = 50 feet

Site 186

Site 199

Site 114

Site 143

Site 132

Site 137

Site 133 West

Site 133 East

Site 135

BERRY LANE PARK

FRENCH PARK WAREHOUSE

JERSEY AUTO REPAIR

FORREST ST PROPERTIES

TEN WEST APPAREL

HALSTED

EDEN WOOD REALTY

AL SMITH MOVING & STORAGE

NJ TRANSIT LIGHT RAIL

GARFIELD AVENUE

FORREST STREET

HALLADAY STREET

CARTERET AVENUE

PACIFIC AVENUE

CAVEN POINT AVENUE

FORREST-SUMP-W

FORREST-SUMP-E

FORREST-SUMP-S

**Notes:**

1. New Jersey State Plane North American Datum 1983 Coordinates (NAD83), U.S. Survey Feet.
2. Parcels of Hudson County, New Jersey State Plane NAD83, Hudson County Department of Planning, Jersey City, New Jersey, May 21, 2013.
3. Wells 132-P3-MW001D, HAL-P3-IRM-003I-B, HAL-P3-IRM-004I-B, and HAL-P3-IRM-010I-B were installed for the ongoing Phase III Groundwater IRM program. As-built information, well records, etc. will be submitted under a separate cover and is not included in this RI report.

* - Wells 114-P1-IRM-27D, 114-P1-IRM-40D, 114-P1-IRM-5I, and 114-P1-MW-2I were installed by ARCADIS for the Phase 1 IRM on Site 114. These wells were used for the groundwater RI in place of originally proposed wells 114-P2B3-MW102D, 114-P2B1-MW103D, 114-P1B-MW105I, and 114-P1B-MW106I, respectively.

** - Phase 1 IRM wells 114-P1-IRM-36D and 114-P1-MW-2D were installed in locations where the depth to the bedrock surface is less than 45 feet below ground surface. Therefore, these wells are classified as intermediate zone wells.

*** - Well 114-MC-EW103 was reportedly damaged during site activities after the completion of the groundwater RI.

**Abbreviations:**

DNAPL = Dense Non-Aqueous Phase Liquid
GW = Groundwater
HPT = Hydraulic Profiling Tool
IRM = Interim Remedial Measure
NJ = New Jersey
RI = Remedial Investigation
ST = Street
VAP = Vertical Aquifer Profiling

Jersey City, NJ

## LEGEND

- GARFIELD AVENUE GROUP BOUNDARY
- HUDSON COUNTY PARCELS
- FORMER MORRIS CANAL
- AREA REQUIRING ADDITIONAL INVESTIGATION IN BEDROCK
- REMOVED SHEETPILE
- IN-PLACE SHEETPILE
- RAILROAD
- FENCE DIAGRAM ALIGNMENTS

**MONITORING WELLS**

- SHALLOW
- INTERMEDIATE
- DEEP
- BEDROCK
- TILL / WEATHERED BEDROCK
- LOWER DEEP ZONE WELL
- LOWER DEEP ZONE SOIL BORING (WELL NOT INSTALLED)
- FRACTURE PILOT TEST WELL
- SUMPS
- DECOMMISSIONED/ABANDONED/ INACTIVE WELLS

**TEMPORARY SCREENING POINTS**

- DNAPL DELINEATION (2017)
- GROUNDWATER RI (2017 - 2018)
- FRACTURE PILOT TEST (2019)
- PHASE II IRM (2019)
- PRE-DESIGN INVESTIGATION VAP (2015)
- FORREST STREET HPT/VAP INVESTIGATION (2020)
- PHASE III IRM (2020)
- SITE 199 HPT/VAP INVESTIGATION (2020)
- SONIC SOIL BORINGS (2019)

**PHASE I IRM WELLS**

- SHALLOW
- INTERMEDIATE
- DEEP

0 100 200 Feet

N W E S

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60550261

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DATE: 2021-08-17 | DRAWN BY: SR | CHECKED BY: FS

# FIGURE 6-1
# AREA REQUIRING ADDITIONAL INVESTIGATION IN BEDROCK

Last Saved By: ravis
Path: Q:\920 GIS\MXD\Groundwater RI\RI\Fig 6-1 Additional Delineation Area.mxd

# NJDEP Forms

## Cover Certification Form

## Case Inventory Document

## Public Notification

**New Jersey Department of Environmental Protection**
Site Remediation and Waste Management Program

# COVER/CERTIFICATION FORM

**(Submit with Remedial Phase Report, Receptor Evaluation, and CEA Forms)**

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE INFORMATION

Site Name: Hudson County Chromate Sites, Sites 114, 132, 133, 135, 137, 143, 199, Ten West Apparel, Halstead Bldg

AKAs: PPG Garfield Avenue Group Sites Forrest Street and Forrest Street Properties, Al Smith Moving and Storage, Fishbein, Roadways

Street Address: 800, 816, 824, 880-900, 846 Garfield Ave; 15, 22, 25, 45, 78, 97, 98, 100, 102, 104 Halladay St. 2 Dakota St.; 70 Carteret Ave; 33, 51-99 Pacific Ave; 84, 86, 90, 98, 100 Forrest St

Municipality: Jersey City (*Township, Borough or City*)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): G000005480,G000008749, 629345, 025695, 246332, G000008753, G000008759

Case Tracking Number(s) for this submission: RPC000051, RPC00001, PFR0000001 777089, 722429, 775706, 775998, 629388, G000044581

Date Remediation Initiated Pursuant to N.J.A.C. 7:26C-2: 07/19/1990

State Plane Coordinates for a central location at the site: Easting: 611210 Northing: 683537

List current Municipal Block and Lot Numbers of the Site:

| | | | |
|---|---|---|---|
| Block # 21501 | Lot #(s) 1.01, 10-12 | Block # 21501 | Lot #(s) 14.01-20.01 |
| Block # 21510 | Lot #(s) 1-5, 11, 39 | Block # | Lot #(s) |
| Block # 21509 | Lot #(s) 1-3 | Block # | Lot #(s) |
| Block # 21502 | Lot #(s) 12-17 | Block # | Lot #(s) |

## SECTION B. SUBMISSION STATUS

1. Indicate how the Electronic Data Deliverable (EDD) for this submission is being provided to the NJDEP:
   - ☐ Via Email at srpedd@dep.nj.gov (attach NJDEP confirmation email); or
   - ☐ CD (attach to this submission)
   - ☒ Not Applicable – No EDD
2. Complete the following Submission and Permit Status Table:

| **Remedial Phase Documents** | N/A | Included in this Submission | Previously Submitted | Date of Submission | Date of Revised Submission | Date of Previous NJDEP Approval | Date of Document Withdrawal |
|---|---|---|---|---|---|---|---|
| Preliminary Assessment Report | ☒ | ☐ | ☐ | | | | |
| Site Investigation Report | ☒ | ☐ | ☐ | | | | |
| Remedial Investigation Report | ☐ | ☐ | ☒ | 10/01/2018 | 08/31/2021 | | |
| Remedial Action Work Plan | ☐ | ☒ | ☐ | | | | |
| Remedial Action Report | ☒ | ☐ | ☐ | | | | |
| Response Action Outcome | ☒ | ☐ | ☐ | | | | |
| | | | | | | | |
| **Other Submissions** | | | | | | | |
| Alternative Soil Remediation Standard and/or Screening level Application Form | ☒ | ☐ | ☐ | | | | |
| Case Inventory Document | | ☒ | | | | | |
| Classification Exception Area / Well Restriction Area (CEA/WRA) | ☐ | ☐ | ☒ | 04/18/2018 | 03/24/2021 | 06/07/2018 | |
| Discharge to Ground Water Permit by Rule Authorization Request Phase I IRM | ☐ | ☐ | ☒ | 06/30/2017 | 05/22/2019 | 09/29/2017 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| IEC Engineered System Response Action Report | ☒ | ☐ | ☐ | | | | |
| Immediate Environmental Concern Report | ☒ | ☐ | ☐ | | | | |
| LNAPL Interim Remedial Measure Report | ☒ | ☐ | ☐ | | | | |
| Public Notification | ☐ | ☒ | ☐ | | | | |
| Receptor Evaluation | ☐ | ☐ | ☒ | 08/31/2021 | | | |
| Technical Impracticability Determination | ☒ | ☐ | ☐ | | | | |
| Vapor Concern Mitigation Report | ☒ | ☐ | ☐ | | | | |
| Permit Application – list: | ☐ | | | | | | |
| Discharge to Groundwater PBR Request | | ☐ | ☒ | 02/28/2019 | 01/19/2021 | 05/09/2019 | |
| Phase II IRM | | ☐ | ☐ | | | | |
| Discharge to Groundwater PBR Request | | ☐ | ☒ | 04/20/2021 | 06/24/2021 | 07/09/2021 | |
| Phase III IRM | | ☐ | ☐ | | | | |
| Radionuclide Remedial Action Report | ☒ | ☐ | ☐ | | | | |
| Radionuclide Remedial Action Workplan | ☒ | ☐ | ☐ | | | | |
| Radionuclide Remedial Investigation Report | ☒ | ☐ | ☐ | | | | |
| Radionuclide Remedial Investigation Workplan | ☒ | ☐ | ☐ | | | | |

## SECTION C. SITE USE

**Current Site Use:** (*check all that apply*)

- ☐ Industrial
- ☐ Residential
- ☒ Commercial
- ☐ School or child care
- ☐ Agricultural
- ☐ Park or recreational use
- ☒ Vacant
- ☐ Government
- ☒ Other: Roadways

**Intended Future Site Use, if known:** (*check all that apply*)

- ☐ Industrial
- ☒ Residential
- ☒ Commercial
- ☐ School or child care
- ☒ Park or recreational use
- ☐ Vacant
- ☐ Government
- ☐ Future site use unknown
- ☒ Other: Canal Crossing Redevelopment **

## SECTION D. CASE TYPE: (*check all that apply*)

- ☒ Administrative Consent Order (ACO)
- ☐ Brownfield Development Area (BDA)
- ☐ Child Care Facility
- ☒ Chrome Site (Chromate chemical production waste)
- ☐ Coal Gas
- ☐ Due Diligence with RAO
- ☐ Hazardous Discharge Remediation Fund (HDSRF) Grant/Loan
- ☐ ISRA
- ☐ Landfill (SRP subject only)
- ☐ Regulated Underground Storage Tank (UST)
- ☐ Remediation Agreement (RA)/Remediation Certification
- ☐ School Development Authority (SDA)
- ☐ School facility
- ☐ Spill Act Defense – Government Entity
- ☐ Spill Act Discharge
- ☐ UST Grant/Loan
- ☐ Other: _____

**Federal Case** (*check all that apply*)

☐ RCRA GPRA 2020 ☐ CERCLA/NPL ☐ USDOD ☐ USDOE

1. Is the party conducting remediation a government entity? ..... ☐ Yes ☒ No

If "Yes," check one: ☐ Federal ☐ State ☐ Municipal ☐ County

## SECTION E. PUBLIC FUNDS

Did the remediation utilize public funds? ..... ☐ Yes ☒ No

If "Yes," check applicable:

- ☐ UST Grant
- ☐ HDSRF Grant
- ☐ Spill Fund
- ☐ UST Loan
- ☐ HDSRF Loan
- ☐ Schools Development Authority
- ☐ Brownfield Reimbursement Program
- ☐ Landfill Reimbursement Program
- ☐ Environmental Infrastructure Trust



** Refer to http://www.tandmassociates.com/projects/planning-design-environmental-services-canal-crossing-redevelopment-area/

**SECTION F. LICENSED SITE REMEDIATION PROFESSIONAL INFORMATION AND STATEMENT**

LSRP ID Number: 573898

First Name: Mark Last Name: Pietrucha

Phone Numbers: (609)436-5339 Ext.: Fax:

Mailing Address: 2 Executive Campus, Suite 125

Municipality: Cherry Hill State: NJ Zip Code: 08002

Email Address: mietrucha@woodardcurran.com

This statement shall be signed by the LSRP who is submitting this notification in accordance with N.J.S.A. 58:10C-14, and N.J.S.A. 58:10B-1.3b(1) and (2).

*(1) I certify, as a Licensed Site Remediation Professional authorized pursuant to N.J.S.A. 58:10C-1 et seq. to conduct business in New Jersey, that for the remediation described in this submission, and all attachments included in this submission, I personally: Managed, supervised, or performed the remediation conducted at this site that is described in this submission, and all attachments included in this submission; and/or periodically reviewed and evaluated the work performed by other persons that forms the basis for the information in this submission; and/or completed the work of another site remediation professional, licensed or not, after having: (1) reviewed all available documentation on which I relied; (2) conducted a site visit and observed the then-current conditions and verified the status of as much of the work as was reasonably observable; and (3)concluded, in the exercise of my independent professional judgment, that there was sufficient information upon which to complete any additional phase of remediation and prepare workplans and reports related thereto.*

*(2) I certify:*

- *That I have read this submission and all attachments to this submission;*
- *That in performing the professional services as the licensed site remediation professional for the entire site or each area of concern, I adhered to the professional conduct standards and requirements governing licensed site remediation professionals provided in N.J.S.A. 58:10C-16;*
- *That the remediation conducted at the entire site or each area of concern, that is described in this submission and all attachments to this submission, was conducted pursuant to and in compliance with the remediation requirements in N.J.S.A. 58:10C-14.c;*
- *That the remediation described in this submission, and all attachments to this submission, was conducted pursuant to and in compliance with the regulations of the Site Remediation Professional Licensing Board at N.J.A.C. 7:26I; and*
- *That the information contained in this submission and all attachments to this submission is true, accurate, and complete.*

*(3) I certify, when this submission includes a response action outcome, that the entire site or each area of concern has been remediated in compliance with all applicable statutes, rules, and regulations and is protective of public health and safety and the environment.*

*(4) I certify that no other person is authorized or able to use any password, encryption method, or electronic signature that the Board or the Department have provided to me.*

*(5) I certify that I understand and acknowledge that:*

- *If I knowingly make a false statement, representation, or certification in any document or information I submit to the Department I may be subject to civil and administrative enforcement pursuant to N.J.S.A. 58:10C-17.a.1(a)through (f) by the Board, including but not limited to license suspension, revocation, or denial of renewal; and*
- *If I purposely, knowingly, or recklessly make a false statement, representation, or certification in any application, form, record, document or other information submitted to the Department or required to be maintained pursuant to the Site Remediation Reform Act, I shall be guilty, upon conviction, of a crime of the third degree and shall, notwithstanding the provisions of subsection b. of N.J.S.2C:43-3, be subject to a fine of not less than $5,000 nor more than $75,000 per day of violation, or by imprisonment, or both.*

*(6) I certify that I have read this certification prior to signing, certifying, and making this submission.*

LSRP Signature:  Date: 10/29/2021

LSRP Name: Mark Pietrucha, PE, LSRP

Company Name: Woodard & Curran

**SECTION G. PERSON RESPONSIBLE FOR CONDUCTING THE REMEDIATION INFORMATION AND CERTIFICATION**

Full Legal Name of the Person Responsible for Conducting the Remediation: PPG

Representative First Name: Jody Representative Last Name: Overmyer

Title: Senior Remediation Project Manager

Phone Number: (412) 235-8881 Ext.: FAX:

Mailing Address: 440 College Park Drive

Municipality: Monroeville State: PA Zip code: 15146

Email Address: overmyer@ppg.com

This certification shall be signed by the person responsible for conducting the remediation who is submitting this notification in accordance with Administrative Requirements for the Remediation of Contaminated Sites rule at N.J.A.C. 7:26C-1.5(a).

*I certify under penalty of law that I have personally examined and am familiar with the information submitted herein, including all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, to the best of my knowledge, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties.*

Signature: Date: 10/28/21

Name/Title: Jody Overmyer, Senior Remediation Project Manager

**For CEA Submissions:**

☐ Check this box if the person above is also the property owner of the site or their representative. If this person is not the site property owner, please ensure the site property owner's name and address is in the first line of the table in Section E.2 of the Classification Exception Area / Well Restriction Area (CEA/WRA) Fact Sheet Form.

Completed forms should be sent to:

Bureau of Case Assignment & Initial Notice
Site Remediation Program
NJ Department of Environmental Protection
401-05H
PO Box 420
Trenton, NJ 08625-0420

**Case Name:** HUDSON COUNTY CHROMATE - PPG (Garfield Avenue Group Sites)
**PI #:** 45, 25695, 246332, G000008753, G000008759, 777089, 722429, 775706, 775998, 629388, G000044581

**IMPORTANT:** ***1) The CID must be FINALIZED prior to upload. After the CID has been populated, click the Validate for Upload button and follow the instructions.***
***2) You MUST SAVE after finalizing, and before upload. Click the Enable for Editing button after uploading to edit again.***

**Activity #:** RPC000051, RPC00001, PFR0000001

**Case Inventory Document Version 1.5.1 02/04/21**

| AOC ID | AOC Type | AOC Description | Confirmed Contamination | Exclude AOC from Billing | AOC Status Achieved | Status Achieved Date | Incident Communication Center #s Managed in Case | NJDEP ID | Contaminated Media | Contaminants of Concern | Additional Contaminants of Concern | Additional Contaminants of Concern | Applicable Remediation Standard | Exposure Route | Additional Exposure Route | RA Type | Additional RA Type | Was an Order of Magnitude Evaluation Conducted? | Activity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Garfield Avenue Group-Ground Water | Environmental media - Media Ground water | Sitewide groundwater impacted by Chromate Chemical Production Waste (CCPW) metals including Chromium and other contaminations of concern (COCs) on or emanating from Site 114 associated with historical operations at Site 114 | Yes | | RAW | 10/29/2021 | | | Ground Water | Metals | VO | Other | Remediation Standards | Ground Water | | Bioremediation | Chemical Reduction | No | Total chromium (Cr) is the primary COC in the area. Other COCs reported at concentrations exceeding the NJDEP GWQS include CCPW metals, other TAL metals, VOCs and SVOCs. Concentrations of Cr and CCPW metals greater than the GWQS extend off of Site 114 across Garfield Avenue, Carteret Avenue, Halladay Street, Pacific Avenue, and Forrest Street. This AOC includes both on-site and off-site impacts.<br><br>Remedial Investigation of groundwater is documented in the 2021 Final Groundwater Remedial Investigation Report (GW-077). Delineation of CCPW metals, which includes Cr, and other constituents identified to be emanating from Site 114 is complete in the shallow, intermediate, and deep water-bearing zones. Additional delineation of Cr in the bedrock water bearing zone is necessary in the southwest quadrant of Site 114.<br><br>Between 2010 and 2021, chromium-impacted soil was excavated from HCC Sites 114, 132, 133 East, 135, 137 North, 143, and 186, from adjacent properties (Al Smith Moving & Furniture Company, Forrest Street Properties, and the former Halsted Corporation property), and adjacent roadways (Carteret Avenue, Halladay Street, Pacific Avenue, Garfield Avenue, and Forrest Street). Excavated material was disposed of at licensed, off-site locations in accordance with applicable regulations. During restoration activities, groundwater engineering controls were installed and/or maintained, including a capillary break, amended backfill, competent meadow mat, and sheet pile.<br><br>To expedite the treatment of groundwater associated with the portion of the GA Group Sites that is impacted with Cr and $Cr^{+6}$, a phased groundwater Interim Remedial Measure (IRM) approach was developed. Phase I has been implemented and focused primarily on the intermediate and upper portion of the deep water-bearing zones in the southwest quadrant of Site 114. The Phase I IRM also included a small Cr-impacted area in the shallow water-bearing zone. Phase II was initiated in October 2020 and focuses on the intermediate and upper portion of the deep water bearing zones in the northwest and southeast quadrant of Site 114. The third phase of the groundwater IRMs (Phase III) began in September 2021 to treat Cr-contaminated groundwater in the shallow, intermediate, and deep water-bearing zones in areas that are beyond the horizontal and vertical limits of the Phase I and Phase II IIRMs. The three IRMs use a combination of demonstrated active remediation technologies to achieve the remediation objectives.<br><br>A CEA was established by PPG on June 11, 2018 and a separate CEA was implemented by PSEG for this area that covers contaminants related to the former MGP located on the northeastern portion of Site 114. A revised CEA and a request for a Historic Fill CEA was submitted with the groundwater RIR in August 2021.<br><br>The remediation strategy for groundwater is documented in the October 2021 Remedial Action Work Plan. The goal of the remediation strategy is to protect human health and the environment through the attainment of the NJDEP Class II-A GWQS. The strategy includes a combination of active remedial actions to treat the saturated zones where practicable, followed by monitored natural attenuation (MNA), monitoring and maintaining existing groundwater engineering controls, and maintaining institutional controls. Long-term groundwater monitoring and maintenance will be performed to monitor the effectiveness of the remedy and engineering controls and ensure continued protection of public health and the environment. |

**New Jersey Department of Environmental Protection**
Site Remediation and Waste Management Program

# PUBLIC NOTIFICATION AND OUTREACH

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE LOCATION

Forrest Street and Forrest Street Properties, Al Smith Moving and Storage, Fishbein, Roadways

Site Name: Hudson County Chromate Sites, Sites 114, 132, 133, 135, 137, 143, 199, Ten West Apparel, Halstead Bldg

Program Interest (PI) Number(s): G000005480,G000008749, 629345, 025695, 246332, G000008753, G000008759

Case Tracking Number(s) for this submission: RPC000051, RPC00001, PFR0000001 777089, 722429, 775706, 775998, 629388, G000044581

**This form must be submitted with the Authorization to Submit a Report/Form Through NJDEP Online Form**
**Completed form should be uploaded to NJDEP Online.**
**There are required fields on this form, see instructions for details.**

## SECTION B. NOTIFICATION INFORMATION

1. Indicate the type of Public Notification:

☐ Initial ☒ Update

2. Provide the date initial field activities associated with the remedial investigation will or have commenced pursuant to 7:26C-1.7 (h). Date: 07/19/1990

3. Has it been determined that contamination migrated off site? ☒ Yes ☐ No

If "Yes", provide the date off site migration was determined pursuant to 7:26C-1.7 (l): 10/01/2018

4. Public notification was provided via*: (Check all that apply)*

Sign ☐ Yes ☒ No

If "Yes", date posted: _____

Letter ☒ Yes ☐ No

If "Yes", date provided: 08/25/2021

Fact sheet ☒ Yes ☐ No

If "Yes", date provided: 08/25/2021

Newspaper Display Advertisement ☒ Yes ☐ No

If "Yes", date published: 08/25/2021

5. Were materials produced in a language other than English? ☒ Yes ☐ No

If "Yes", in what other language was notification prepared? Spanish

6. Were copies provided to municipal clerk, local/county health dept., and local health agency? ☒ Yes ☐ No

7. Was public notification conducted using an alternate plan and is the rationale for this plan included? ☐ Yes ☒ No

8. Was additional public outreach conducted due to the NJDEP's determination of substantial public interest? ☐ Yes ☒ No

9. Add any comments:

**NOTE: Do not scan this form or alter it in any way, and do not incorporate it into any other document prior to upload. Complete the form on your computer and save it with a unique file name prior to upload.**

**Completed form should be uploaded to NJDEP Online**

PPG
440 College Park Drive
Monroeville, PA 15146

August 25, 2021

**Re: Chromium Cleanup Sites on Garfield Avenue**

Dear Sir or Madam,

This letter is to inform you that PPG is the party responsible for the investigation and/or remediation of chromium at the addresses referenced in the attached and to advise you of the status of the work at each site.

This notification is being sent to you in compliance with New Jersey's requirements for public notification in connection with contaminated site cleanups. These rules require that property owners and tenants within 200 feet of the site boundary of a contaminated site be notified before investigation or remediation work begins and every two years until the cleanup is complete. In addition, the law requires responsible parties to notify property owners and tenants within 200 feet of an impacted site when there is evidence of off-property contaminant migration from that site.

You are being notified by PPG because you are a property owner or tenant located within 200 feet of the boundary of one or more sites referenced in the atttached. In addition, you are being notified because contamination has migrated from one of these sites.

No action is required on your part. For your reference, however, we are enclosing a brief description of each site, summarizing conditions and activities to be taken. In addition, please find a fact sheet about groundwater contamination migration from Site No. 114.

Environmental reports about these sites submitted to the New Jersey Department of Environmental Protection are also being sent to the municipality for its review and comment. To learn more about New Jersey's public outreach requirements, visit: https://www.nj.gov/dep/srp/guidance/public_notification/

If you have any questions concerning the sites referenced above, you can visit www.chromecleanup.com or contact the independent, court-appointed site administrator overseeing the investigation and cleanup of these sites. The administrator can be reached by:

- Calling 201-777-2099;
- Sending an email to info@chromecleanup.com; or
- Writing to Chromium Cleanup Partnership, One Hovchild Plaza, 4000 Route 66, 4th Floor (MDMC), Tinton, Falls, N.J. 07753.

You can also direct your questions and comments to Jeff Worden, a PPG community relations consultant. His telephone number is: 412.253.0816. His email address is: jeff@worden-pr.com.

Sincerely,
PPG

(Over for Spanish)
(Página de la vuelta para español)

PPG
440 College Park Drive
Monroeville, PA 15146

25 de agosto de 2021

**Asunto: Sitios de limpieza de cromo en Garfield Avenue**

Estimado(a) Sr(a).:

Sirva esta carta para hacerle saber que PPG es la parte responsable de la investigación y/o del saneamiento de cromo en los domicilios señalados en el documento adjunto y para avisarle de la situación del trabajo en cada sitio. Se le envía esta notificación en cumplimiento con los requisitos de Nueva Jersey de notificación pública en relación con las tareas de limpieza de lugares contaminados. Estas normas exigen que los propietarios e inquilinos dentro de un radio de 200 pies (61 m) del perímetro del sitio contaminado sean notificados antes de iniciar la investigación o las tareas de saneamiento, y cada dos años hasta que la limpieza haya concluido. Asimismo, la ley requiere que las partes responsables notifiquen a los propietarios e inquilinos dentro de un perímetro de 200 pies con respecto a un lugar afectado cuando exista evidencia de una migración contaminante fuera de la propiedad en dicho sitio.

Usted está siendo notificado por PPG debido a su condición de propietario o inquilino que se encuentra dentro de un perímetro de 200 pies respecto de los límites de uno o más lugares mencionados en el anexo. Además, se le está notificando debido que la contaminación migró de uno de estos sitios.
No es necesario que tome ninguna medida. Sin embargo, para su referencia, adjuntamos una breve descripción de cada lugar y un resumen de las condiciones y actividades que se realizarán. Adicionalmente, sírvase encontrar una hoja informativa acerca de la migración de la contaminación en aguas subterráneas desde el sitio No. 114.

Los informes ambientales sobre este lugar presentados al Departamento de Protección de Medio Ambiente del Nueva Jersey también están siendo enviados a la municipalidad para su revisión y comentarios. Para obtener más información acerca de los requisitos de difusión al público de Nueva Jersey, visite: : https://www.nj.gov/dep/srp/guidance/public_notification/. Si tiene alguna pregunta acerca de los sitios mencionados anteriormente, puede visitar www.chromecleanup.com o comunicarse con el administrador del sitio designado por el tribunal para inspeccionar las tareas de investigación y limpieza de estos sitios. Puede comunicarse con el administrador de las siguientes formas:

- Llamar al 201-777-2099;
- Enviar un correo electrónico a info@chromecleanup.com; o
- Escribir a Chromium Cleanup Partnership, One Hovchild Plaza, 4000 Route 66, 4th Floor (MCDC), Tinton, Falls, N.J. 07753.

También puede enviar sus preguntas y comentarios a Jeff Worden, consultor de relaciones con la comunidad de PPG. Su número de teléfono es: 412.253.0816. Su dirección de correo electrónico es: jeff@worden-pr.com.

Atentamente,
PPG

(Over for English)
(Página de la vuelta para inglés)

**Site Descriptions**

*PPG is responsible for the investigation of hexavalent chromium that exceeds New Jersey Department of Environmental Protection (NJDEP) requirements at the following sites. In addition, if the source of hexavalent chromium is chromate chemical production waste, otherwise known as CCPW, then PPG is responsible for its cleanup. Also, PPG is responsible for the investigation and cleanup of all contaminants of concern that exceed NJDEP requirements at Site No. 114 and at properties that the company owns. This document includes a series of site descriptions that indicate the contaminants of concern, work completed and additional work to be conducted at each of the sites.*

**Hudson County Chrome Site No. 114 – Garfield Avenue Site**
**880-900 Garfield Ave., Jersey City, N.J. 07305**
**Block 21501, Lots 16, 17, 18.01, 19.01 and 20.01**
**NJDEP ID No. G000005480**

Chromate chemical production waste, or CCPW, was the source of hexavalent chromium concentrations that exceeded soil cleanup criteria and total chromium concentrations that exceed Groundwater Quality Standards (GWQS). PPG is also responsible for addressing nonchromium contamination, including volatile organics, semivolatile organics, non-CCPW metals, polychlorinated biphenyls and pesticides. Public Service Electric and Gas (PSEG) is taking the lead on addressing soil and groundwater impacts related to the former manufactured gas plant, including those emanating onto other sites.

PPG's soil remediation at Site 114 is complete. The excavation of chromium-impacted soil was conducted between July 2010 and November 2014 with approximately 530,000 tons of material removed from the site. Excavated material was treated and disposed of at licensed, offsite locations in accordance with applicable regulations. Most of the nonchromium contamination was removed during the chromium excavation. A soil cap has been installed to prevent direct contact or airborne exposure to the remaining impacted material. NJDEP issued a Consent Judgment Compliance Letter in June 2020 documenting that no further remedial action for soil is required.

The placement of clean backfill to near-final grade was completed in January 2015. Clean fill for a majority of the site was amended with FerroBlack®-H. This water-based suspension of ferrous iron and sulfide is designed to prevent the backfill from being contaminated by chromium-impacted groundwater and to support groundwater remediation. Ongoing testing indicates shallow groundwater (less than 20 feet deep) throughout most of the site is already in compliance with NJDEP's GWQS for total chromium.

The chromium-impacted soil at the site was the source of the chromium impacts in groundwater. To address these impacts, an interim groundwater remediation is under way. For more details about groundwater impacts, please see the fact sheet included in this mailing. No groundwater in Jersey City is used for drinking purposes. Furthermore, NJDEP has approved a Classification Exception Area, which forbids the installation or use of groundwater wells at the impacted properties. Reservoirs in Boonton, N.J., supply Jersey City with its drinking water.

**Hudson County Chrome Site No. 132 – Town and Country Linen Warehouse**
**824 Garfield Ave., Jersey City, N.J. 07305**
**Block 21510, Lot 2**
**NJDEP ID No. G000008749**

Chromate chemical production waste, or CCPW, was the source of hexavalent chromium concentrations that exceeded soil cleanup criteria and total chromium concentrations that exceed NJDEP's GWQS in the intermediate zone.

PPG's soil remediation at Site 132 is complete. In July 2013, the building on site was demolished and the building debris was properly disposed. Soil remediation was conducted between March 2014 and September 2014 with approximately 72,200 tons of chromium-contaminated waste being dug up and hauled away from this area. The excavated material was treated and disposed of at licensed, offsite locations in accordance with applicable regulations. NJDEP issued a Consent Judgment Compliance letter for soil in November 2019, documenting that no further remedial action is required.

The placement of clean backfill to near-final grade was completed in May 2015. Clean fill for a portion of the site was amended with FerroBlack®-H. This water-based suspension of ferrous iron and sulfide is designed to prevent the backfill from being contaminated by chromium-impacted groundwater and to support groundwater remediation.

**Hudson County Chrome Site No. 133 – Ross Wax**
**15 and 22-68 Halladay St., Jersey City, N.J. 07304**
**Block 21510, Lot 5, and Block 21509, Lot 1**
**NJDEP ID No. 025695**

Chromate chemical production waste, or CCPW, is the source of hexavalent chromium concentrations that exceed soil cleanup criteria and total chromium concentrations that exceed NJDEP's GWQS in shallow groundwater beneath Halladay Street, which is adjacent to the site.

PPG purchased the western side of the site, 15 Halladay Street, in May 2013, and the eastern side of the site, 22-68 Halladay Street, in February 2014.

*15 Halladay St. (Site 133 West)*

A soil investigation was conducted, resulting in a report that was submitted to NJDEP in 2012. Soil excavation began in August 2018 and resumed when the excavation commenced at the Ten West Apparel property in April 2021. Excavation and backfill are scheduled to be complete by December 2021.

*22-68 Halladay St. (Site 133 East)*

PPG's remediation of CCPW-impacted soil is complete for the majority of Site 133 East. The building on this site was demolished in October 2014 and the debris was disposed of at a regulated facility. Soil remediation was conducted between April 2015 and October 2015 with approximately 88,500 tons of chromium-contaminated waste being dug up and hauled away from this area, including the adjacent eastern properties on Site 135, where remediation was conducted concurrently with this site. The excavated material was treated and disposed of at licensed, offsite locations in accordance with

applicable regulations. NJDEP issued a Consent Judgment Compliance Letter for soil at Site 133 East in March of 2020, documenting that no further remedial action is required.

The placement of clean backfill to near-final grade was completed in July 2016. Clean fill for the northern portion of the site was amended with FerroBlack®-H. This water-based suspension of ferrous iron and sulfide is designed to prevent the backfill from being contaminated by chromium-impacted groundwater and to support groundwater remediation. Clean fill for the southern portion of the site was amended in the top two feet of the backfill.

A small portion of Site 133 East in proximity to the Ten West Apparel property was excavated and backfilled in 2021 as part of the ongoing Ten West Apparel remediation.

At Sites 133 West and East, PPG has retained a licensed site remediation professional (LSRP) to address nonchromium contamination from historic fill and prior site operations unrelated to PPG, including volatile organics, semivolatile organics, polychlorinated biphenyls or PCBs, non-CCPW metals and petroleum. Piotr Serwik of AECOM is the LSRP. His telephone number is: 610-234-4888. His email address is: Piotr.Serwik@aecom.com.

Under the LSRP program at Site 133 East, a remedial investigation report was submitted in September 2019. The closure of an underground storage tank containing fuel oil at Site 133 East was completed and a Response Action Outcome (RAO) was issued in December 2020, documenting no additional remedial action is required. At Site 133 West, the remedial investigation to address nonchromium contamination is ongoing. Nonchromium contaminants that exceed soil remediation standards and NJDEP's GWQS are being addressed under the LSRP program.

**Hudson County Chrome Site No. 135 – Vitarroz**
**51-99 Pacific Ave., Jersey City, N.J. 07304**
**Block 21509, Lot 2**
**NJDEP ID No. 246332**

Chromate chemical production waste, or CCPW, was the source of hexavalent chromium concentrations that exceeded soil cleanup criteria and total chromium concentrations that exceed NJDEP's GWQS in the adjacent right-of-way.

PPG's soil remediation of CCPW-impacted soil is complete. PPG purchased the property in August 2015. Between January and November 2015, the buildings on site were demolished and the building debris was properly disposed. Soil remediation was conducted between February 2016 and August 2016 with approximately 88,500 tons of chromium-contaminated waste being dug up and hauled away from this area, including the adjacent western properties on Site 133 East, where remediation was conducted concurrently with this site. The excavated material was disposed of at licensed, offsite locations in accordance with applicable regulations. NJDEP issued a Consent Judgment Compliance Letter for soil at Site 135 in January 2021, documenting that no further remedial action is required.

The placement of clean backfill to near-final grade was completed in December 2016. Clean fill for the northern portion of the site was amended with FerroBlack®-H. Clean fill for the southern portion of the site was amended in the top two feet of the backfill. This water-based suspension of ferrous iron and

sulfide is designed to prevent the backfill from being contaminated by chromium-impacted groundwater and to support groundwater remediation.

PPG has retained an LSRP to address nonchromium contamination from historic fill and prior site operations unrelated to PPG, including volatile organics, semivolatile organics, non-CCPW metals, PCBs and petroleum. Piotr Serwik of AECOM is the LSRP. His telephone number is: 610-234-4888. His email address is: Piotr.Serwik@aecom.com.

Under the LSRP program, a remedial action report for the closure of three separate underground storage tanks containing fuel oil was submitted to NJDEP in July 2017. Mercury-impacted soil associated with Incident No. 16-04-13-1350-52 was removed during the chromium remediation. An RAO was issued in December 2018, documenting that no further remedial action was required for mercury-impacted soil. A remedial action permit application to address impacts associated with historic fill was submitted to NJDEP in January 2021.

A remedial investigation to address nonchromium contamination in groundwater is ongoing. Nonchromium contaminants that exceed NJDEP's GWQS will be addressed under the LSRP program.

**Hudson County Chrome Site No. 137 – Rudolf Bass**
**25 and 45 Halladay St., Jersey City, N.J. 07304**
**Block 21510, Lots 3 and 4**
**NJDEP ID No. G000008753**

Chromate chemical production waste, or CCPW, was the source of hexavalent chromium concentrations that exceeded soil cleanup criteria and total chromium concentrations that exceed NJDEP's GWQS in the intermediate groundwater zone (about 20 to 40 feet deep).

PPG purchased the southern portion of the site (TSI Carriers, 25 Halladay Street) in May 2013 and the northern portion of the site (Rudolf Bass, 45 Halladay Street) in December 2013. PPG then demolished the building at 25 Halladay Street in August and September 2013 and the building at 45 Halladay Street in March and April 2014. Debris from both buildings was disposed at a regulated facility.

*45 Halladay and the Northern Portion of 25 Halladay (Site 137 North)*

PPG's soil remediation at Site 137 North is complete. The chromium soil cleanup was conducted between July 2014 and May 2015 for 45 Halladay Street and a portion of 25 Halladay Street, resulting in approximately 107,000 tons of chromium-contaminated waste being dug up and hauled away from this area. The material was treated and disposed of at licensed, offsite locations in accordance with applicable regulations. NJDEP issued a Consent Judgment Compliance Letter for soil at Site 137 North in June 2020, documenting that no further remedial action is required.

The placement of clean backfill to near-final grade was completed at 45 Halladay Street and the northern portion of 25 Halladay Street in August 2015. Clean fill for a majority of the site was amended with FerroBlack®-H. This water-based suspension of ferrous iron and sulfide is designed to prevent the backfill from being contaminated by chromium-impacted groundwater and to support groundwater remediation.

*Southern Portion of 25 Halladay (Site 137 South)*

Soil excavation activities began in August 2018. Excavation resumed when the Ten West Apparel excavation commenced in April 2021. Excavation and backfill are scheduled to be complete by December 2021.

For Sites 137 North and South, PPG has retained an LSRP to address nonchromium contamination from historic fill and prior site operations unrelated to PPG, including volatile organics, semivolatile organics, PCBs, pesticides, non-CCPW metals and petroleum. Piotr Serwik of AECOM is the LSRP. His telephone number is: 610-234-4888. His email address is: Piotr.Serwik@aecom.com.

Under the LSRP program, for Site 137 North, an RAO was issued in March 2020, documenting that no further remedial action is required. For Site 137 South, a remedial investigation to address nonchromium contamination is ongoing. Nonchromium contaminants that exceed soil remediation standards and NJDEP's GWQS will be addressed under the LSRP program.

**Hudson County Chrome Site No. 143 – F. Talarico Auto**
**846 Garfield Ave., Jersey City, N.J. 07305**
**Block 21510, Lot 1**
**NJDEP ID No. G000008759**

Chromate chemical production waste, or CCPW, was the source of hexavalent chromium concentrations in soil that exceeded cleanup criteria and total chromium concentrations that exceed NJDEP's GWQS in the intermediate groundwater zone (about 20 to 40 feet deep).

PPG's soil remediation of CCPW-impacted soil is complete. PPG purchased the site in February 2013 and demolished the building in June 2013, disposing of the debris at a regulated facility. Soil remediation was conducted between March 2014 and September 2014. Approximately 20,400 tons of chromium-contaminated waste was dug up and hauled away from this area. The material was treated and disposed of at licensed, offsite locations in accordance with applicable regulations. NJDEP issued a Consent Judgment Compliance Letter for soil at Site 143 in June 2020, documenting that no further remedial action is required.

The placement of clean backfill to near-final grade was completed in May 2015. Clean fill for a portion of the site was amended with FerroBlack®-H. This water-based suspension of ferrous sulfide is designed to prevent the backfill from being contaminated by chromium-impacted groundwater and to support groundwater remediation.

PPG has retained an LSRP to address nonchromium contamination from historic fill and prior site operations unrelated to PPG, including volatile organics, semivolatile organics, PCBs, pesticides, non-CCPW metals and petroleum. Al LoPilato of AECOM is the LSRP. His telephone number is: 845.425.4980. His email address is: alfred.lopilato@aecom.com.

Under the LSRP program, a remedial action report is being prepared to document that no additional remediation is required to address nonchromium contamination.

**Hudson County Chrome Site No. 186 – Garfield Avenue No. 1**
**947 Garfield Ave., Jersey City, N.J. 07304**
**Block 19802, Lot 2**
**NJDEP ID No. G0000114777**

Chromate chemical production waste, or CCPW, was the source of hexavalent chromium concentrations that exceeded soil cleanup criteria.

The soil cleanup was completed in November 2013. NJDEP issued a Consent Judgment Compliance Letter for soil at Site 186 in July 2015, documenting no further remedial action is required.

Groundwater quality at this site has been evaluated and the data are presented in the Garfield Avenue Group Groundwater Remedial Investigation Report. No further action is required related to groundwater.

**Former Fishbein Property**
**816 Garfield Ave., Jersey City, N.J. 07305**
**Block 21510, Lot 11**
**NJDEP ID No. 629388**

Hexavalent chromium concentrations exceed soil cleanup criteria and total chromium concentrations exceed NJDEP's GWQS at this location.

PPG purchased this property in December 2013. The results of a remedial investigation were submitted in 2012 and supplemented in 2018. Excavation of chromium-impacted material at this site is being conducted this month as part of the Ten West Apparel cleanup, which began in April 2021. Excavation and backfill are scheduled to be complete by December 2021.

PPG has retained an LSRP to address nonchromium contamination from historic fill and prior site operations unrelated to PPG, including semivolatile organics, PCBs and non-CCPW metals. Piotr Serwik of AECOM is the LSRP. His telephone number is: 610-234-4888. His email address is: Piotr.Serwik@aecom.com.

Under the LSRP program, a remedial investigation report addressing nonchromium contamination was submitted in January 2019. Remediation of nonchromium contaminants that exceed soil remediation standards and NJDEP's GWQS are being addressed under the LSRP program.

**Former Halsted Bag Company Property**
**78 Halladay St., Jersey City, N.J. 07304**
**Block 21502, Lots 12 through 17**
**NJDEP ID No. 722429**

Hexavalent chromium concentrations exceeded soil cleanup criteria and total chromium concentrations exceed NJDEP's GWQS at this location.

PPG's chromium soil remediation at this site is complete. PPG purchased the site in February 2016 and demolished the building between April and June 2018, disposing of the debris at a regulated facility. Soil remediation was conducted between May 2018 and August 2018. Approximately 16,500 tons of

chromium-contaminated waste were dug up and hauled away from this area. The material was treated and disposed of at licensed, offsite locations in accordance with applicable regulations. A draft remedial action report was submitted to NJDEP in June 2021 to document that no further remedial action is required. The placement of clean backfill to near-final grade was completed in August 2018.

PPG completed the excavation and backfill for the site in 2018 except for areas adjacent to Halladay Street North. These areas were excavated and backfilled concurrent with remediation of Halladay Street North, which was completed in April 2020. The delineation of soil impacts on the eastern boundary of this property is ongoing. Clean fill for a portion of the site was amended with FerroBlack®-H. This water-based suspension of ferrous iron and sulfide is designed to prevent the backfill from being contaminated by chromium-impacted groundwater and to support groundwater remediation. A remedial action report was submitted to NJDEP in June 2021.

PPG, meanwhile, has retained an LSRP to address nonchromium contamination from historic fill and prior site operations unrelated to PPG, including volatile organics, semivolatile organics, non-CCPW metals, PCBs and pesticides. Nonchromium contaminants that exceed soil remediation standards and groundwater screening levels will be addressed under the LSRP program. In January of 2021, PPG submitted to NJDEP a Remedial Investigation Report and Remedial Action Workplan for Non-Chromate Contaminants in soil and groundwater. Jeff Hosterman of Tetra Tech is the LSRP. His telephone number is: 302.283.2289. His email address is: jeff.hosterman@tetratech.com

**Forrest Street Properties**
**84, 86-90, 98-100, and 108 Forrest Street, Jersey City, N.J. 07304**
**Block 21501, Lots 11, 12 and 14.01**

Hexavalent chromium concentrations exceed soil cleanup criteria and total chromium concentrations exceed NJDEP's GWQS at this location.

Excavation of chromium-impacted soil and the placement of clean backfill on 108 Forrest Street began in March 2017 and were completed in July 2017 with approximately 9,600 tons of chromium-contaminated waste being dug up and hauled away from this area. The excavated material was disposed of at licensed, offsite locations in accordance with applicable regulations.

The placement of clean backfill to near-final grade on 108 Forrest Street was completed in August 2017. Clean fill for the northern portion of the site was amended with FerroBlack®-H in areas where groundwater was encountered. This water-based suspension of ferrous iron and sulfide is designed to prevent the backfill from being contaminated by chromium-impacted groundwater and to support groundwater remediation. A remedial action report for 108 Forrest was submitted to NJDEP in January 2019 and was conditionally approved by NJDEP in November 2019. Final approval by NJDEP is pending written concurrence from the property owner.

In March 2019, PPG submitted a remedial action work plan to propose an engineering control and restricted use remedy for these properties, taking into account the properties' current nonresidential use and impacts that remain under and adjacent to the buildings. Installation of the engineering controls began in June 2021 and will be completed this fall. PPG will conduct remedial excavation of the impacts that remain under and adjacent to the buildings in conjunction with the properties' future residential development.

**Al Smith Moving Property**
**33 Pacific Avenue, Jersey City, N.J. 07304**
**Block 21509, Lot 3**

Hexavalent chromium concentrations exceeded soil cleanup criteria at this location.

PPG's remediation at this property is complete. Demolition of the Al Smith Moving building occurred in July and August 2017. Soil remediation was conducted between August 2017 and January 2018 with approximately 12,600 tons of chromium-contaminated waste being dug up and hauled away from this area.

NJDEP issued a Consent Judgment Compliance Letter in October 2019, which documents that no further remedial action is required.

**Former Ten West Apparel Property**
**800 Garfield, Jersey City, N.J. 07304**
**Block 21510, Lot 39**

Hexavalent chromium concentrations exceed soil cleanup criteria and total chromium concentrations exceed NJDEP's GWQS at this location.

PPG purchased this property in April 2017 and demolished the building in May 2021, disposing of the debris at a regulated facility. Remedial excavation began in April 2021. Excavation and backfill are scheduled to be complete by December 2021. A groundwater investigation will follow.

PPG has retained an LSRP to address nonchromium contamination from historic fill and prior site operations unrelated to PPG. Nonchromium contaminants that exceed soil remediation standards and groundwater screening levels will be addressed under the LSRP program. In April of 2021, PPG submitted a Remedial Investigation Report and Remedial Action Workplan for Non-Chromate Contaminants in soil and groundwater to NJDEP. Jeff Hosterman of Tetra Tech is the LSRP. His telephone number is: 302.283.2289. His email address is: jeff.hosterman@tetratech.com.

**457 Communipaw Ave., Jersey City, N.J. 07305**
**Block 18901 Lots 11, 14 and 15**
**NJDEP ID No. 715149**

Chromate chemical production waste, or CCPW, is the source of hexavalent chromium concentrations that exceed soil cleanup criteria. Chromium impacted soil was discovered at the intersection of Berry Lane and Communipaw Avenue.

The excavation of approximately 70 tons of chromium-impacted soil was conducted between February and March 2016 at the Communipaw Avenue Right-of-Way (Block 18901, Lot 1.01) adjacent to 457 Communipaw Avenue. Excavated material was transported and disposed of at licensed, offsite locations in accordance with applicable regulations. The portion of this impacted area that was accessible to PPG has been fully remediated.

During the excavation, and confirmed by post excavation analytical results, CCPW was observed on the western sidewall of the excavation. This indicated soil impacts extend onto the adjacent property (457 Communipaw Ave, Block 18901, Lot 15). PPG conducted additional investigation between 2017 and September 2020. PPG is preparing a report that will document the findings of the investigation and propose a remedial approach.

Additional investigation was also conducted on the properties at 457-463 Communipaw in 2021. Chromium impacted soil was identified at depths up to about 9 feet below ground surface in portions of the site. A Remedial Investigation Report is being prepared to document the findings and a current use Remedial Action Work Plan is in preparation to excavate and/or cap impacted areas. The plan includes the installation of groundwater monitoring wells to evaluate groundwater conditions at the site.

Chrome blooms, meanwhile, were identified in a small area of the basement wall at 465 Communipaw Ave., and were addressed by the installation of an epoxy barrier. Monthly inspections of the basement indicate the epoxy barrier remains an effective remedial measure to prevent further impacts. Based on the success of this interim remedial measure, inspections will be extended to quarterly in the fall of 2021.

**Roadways**

**Caven Point Avenue and Pacific Avenue** (Between Garfield and Carteret avenues) – Hexavalent chromium concentrations exceed soil cleanup criteria at this location.

Remedial action for the site is engineering controls (existing asphalt cap) and institutional control (notice in lieu of deed notice). The institutional control is being implemented as a precautionary measure and will also serve as a nonresidential land use restriction. The remedy supports existing and expected future use of Caven Point Avenue and Pacific Avenue as public roads. PPG is preparing a draft remedial action report to document that no further remedial action is required.

**Carteret Avenue** (Between Garfield and Pacific avenues) – Chromate chemical production waste, or CCPW, is the source of hexavalent chromium concentrations that exceed soil cleanup criteria.

PPG's soil remediation in Carteret Avenue is complete. Remedial excavation began in June 2019 and was completed in January 2020 with approximately 37,200 tons of hazardous waste being dug up and hauled away from this area. The excavated material was disposed of at licensed offsite locations in accordance with applicable regulations. A final draft remedial action report was submitted to NJDEP in August 2021 to document that no further remedial action is required.

The placement of clean backfill to near-final grade was completed in February 2020. Clean fill was amended with FerroBlack®-H. This water-based suspension of ferrous iron and sulfide is designed to prevent the backfill from being contaminated by chromium-impacted groundwater and to support groundwater remediation.

**Forrest Street** (West of intersection with Halladay Street) – Chromate chemical production waste, or CCPW, is the source of hexavalent chromium concentrations that exceed soil cleanup criteria.

PPG's soil remediation in Forrest Street is complete. A section of Forrest Street has been fully restored following PPG's excavation of chromium-impacted soil in 2017. A Remedial Action Report was submitted

to NJDEP in February 2019 and approved by NJDEP in November 2020. A Remedial Action Permit application was submitted to NJDEP in March 2021. Chromium-impacted soil and debris under and in the proximity of the buildings will be addressed when the property is redeveloped.

**Garfield Avenue** (Between Carteret Avenue and light-rail bridge) – Chromate chemical production waste, or CCPW, is the source of hexavalent chromium concentrations that exceed soil cleanup criteria. A work plan to address the chromium-impacted soil beneath the street was approved by NJDEP and the City of Jersey City in December 2019. Remedial excavation will not begin until the street is closed to traffic as part of the planned redevelopment in this area.

**Halladay Street North** (Between Carteret Avenue and Forrest Street) – Chromate chemical production waste, or CCPW, was the source of hexavalent chromium concentrations that exceeded soil cleanup criteria. Remedial excavation began in January 2020 and was completed in April 2020 with approximately 12,200 tons of hazardous waste being dug up and hauled away from this area. Excavated material was disposed of at licensed offsite locations in accordance with applicable regulations. A draft remedial action report was submitted to NJDEP in July 2021 documenting that no further remedial action is required.

The placement of clean backfill to near-final grade was completed in April 2020. Clean fill for a portion of the site was amended with FerroBlack®-H. This water-based suspension of ferrous iron and sulfide is designed to prevent the backfill from being contaminated by chromium-impacted groundwater and to support groundwater remediation.

**Halladay Street South** (Between Carteret and Caven Point avenues) -- Chromate chemical production waste, or CCPW, was the source of hexavalent chromium concentrations that exceeded soil cleanup criteria.

PPG's soil remediation in Halladay Street South is complete. Remedial excavation began in May 2015. Excavation was performed concurrently with Site 133 East and was completed in October 2015 with approximately 44,600 tons of hazardous waste being dug up and hauled away from these areas. NJDEP issued a Consent Judgment Compliance Letter in June 2020, documenting that no further remedial action is required.

The placement of clean backfill to near-final grade was completed in July 2016. Clean fill for a majority of the site was amended with FerroBlack®-H. This water-based suspension of ferrous iron and sulfide is designed to prevent the backfill from being contaminated by chromium-impacted groundwater and to support groundwater remediation.

**Additional Investigations**

Based upon a request from the NJDEP to further delineate chromium contamination, the following properties were also investigated (the results were less than the soil remediation standards):

- Parness Trucking Corporation –181 Pacific Avenue (Block 19903, Lots 1, 4, 5, 8 & 9)
- Valero Station – 770 Garfield Avenue (Block 23305, Lots 1 & 2)
- East Coast Collision – 783 Garfield Avenue (Block 23304, Lot 13)
- Frenchpark Warehouse – 855 Garfield Avenue (Block 21404, Lots 3 & 5)
- Cypress Tavern – 784 Garfield Avenue (Block 21510, Lot 7)

- Garfield Avenue Scrap Metal – 802 Garfield Avenue (Block 21510, Lot 10)
- 20 Commercial Street (Block 24301, Lot 1)
- Former Northern Morris Canal Area (Block 18901, Lots 3 - 15)
- 851 Garfield Avenue, LLC - 851 Garfield Avenue (Block 21404, Lot 6) [The wells installed on this property may be used in the future groundwater remedial investigation.]

Total chromium concentrations of groundwater samples collected at wells on and near the Frenchpark Warehouse property in 2018 did not exceed NJDEP's GWQS. Samples collected before the soil excavation began across the street at Site 114 in 2014 exceeded standards.

**Descripciones del lugar**

*PPG es responsable de la investigación de cromo hexavalente que excede los requisitos del Departamento de Protección Ambiental de Nueva Jersey (NJDEP) en los siguientes sitios. Además, si la fuente de cromo hexavalente son residuos químicos de cromato, también conocidos como CCPW, entonces PPG es responsable de su limpieza. Además, PPG es responsable de la investigación y limpieza de todos los contaminantes de interés que exceden los requisitos del NJDEP en el sitio No. 114 y en las propiedades que posee la empresa. Este documento incluye una serie de descripciones de sitios que indican los contaminantes de interés, el trabajo completado y el trabajo adicional que se realizará en cada uno de los sitios.*

**Condado de Hudson, lugar contaminado con cromo N.º 114: sitio en Garfield Avenue**
**880-900 Garfield Ave., Jersey City, N.J. 07305**
**Manzana 21501, Lotes 16, 17, 18.01, 19.01 y 20.01**
**No. de ID de NJDEP G000005480**

Los desechos de producción química de cromato, o CCPW, eran la fuente de concentraciones de cromo hexavalente que excedieron los criterios para limpieza de suelo y las concentraciones de cromo total que superan las normas de calidad para aguas subterráneas (GWQS, por sus siglas en inglés). PPG también es responsable de abordar la contaminación sin cromo, incluidos compuestos orgánicos volátiles, compuestos orgánicos semivolátiles, metales sin CCPW, bifenilos policlorados y pesticidas. Public Service Electric and Gas (PSEG) está tomando la iniciativa para abordar los impactos del suelo y las aguas subterráneas relacionados con la antigua planta de gas manufacturado, incluidos los que emanan en otros sitios.

Se completó el saneamiento del suelo por parte de PPG en el sitio n.° 114. La excavación del suelo afectado por cromo se realizó entre julio de 2010 y noviembre de 2014 y se removieron aproximadamente 530,000 toneladas de material del sitio. El material excavado se trató y eliminó en ubicaciones autorizadas, fuera del sitio, de acuerdo con las reglamentaciones pertinentes. La mayor parte de la contaminación sin cromo se eliminó durante la excavación de cromo. Se ha instalado una capa de tierra para evitar el contacto directo o la exposición en el aire al material afectado restante. El NJDEP emitió una carta de cumplimiento de la sentencia acordada en junio de 2020 en la que se documenta que no se requiere ninguna medida correctiva adicional para el suelo.

La colocación del relleno limpio hasta la calificación casi final se completó en enero de 2015. El relleno limpio para la mayoría del sitio se modificó con FerroBlack®-H. Esta suspensión a base de agua de hierro ferroso y sulfuro está diseñada para evitar que el relleno se contamine con aguas subterráneas afectadas por cromo y para apoyar el saneamiento de las aguas subterráneas. Las pruebas continuas indican que las aguas subterráneas poco profundas (de menos de 20 pies de profundidad) en la mayor parte del sitio ya cumplen con las GWQS del NJDEP.

El suelo afectado por cromo en el sitio era la fuente de los impactos de cromo en las aguas subterráneas. Para abordar estos impactos, se está llevando a cabo un saneamiento provisional de las aguas subterráneas. Para obtener más detalles sobre los impactos en las aguas subterráneas, consulte la hoja informativa incluida en este correo. En Jersey City no se utilizan aguas subterráneas como agua

potable. Además, el NJDED ha aprobado un Área de Excepción de Clasificación, que prohíbe la instalación o el uso de pozos de agua subterránea en las propiedades afectadas. Las reservas en Boonton, N.J., suministran el agua potable a Jersey City.

**Condado de Hudson, lugar contaminado con cromo N.º 132 – Town and Country Linen Warehouse**
**824 Garfield Ave., Jersey City, N.J. 07305**
**Cuadra 21510, Lote 2**
**N.º de identificación del NJDEP G000008749**

Los residuos químicos de cromato, o CCPW, eran la fuente de concentraciones de cromo hexavalente que excedieron los criterios para limpieza de suelo y las concentraciones de cromo totales que exceden las GWQS del NJDEP en la zona intermedia.

Se completó el saneamiento del suelo por parte de PPG en el sitio n.° 132. En julio de 2013, el edificio en el sitio fue demolido y los escombros del edificio fueron eliminados adecuadamente. El saneamiento del suelo se realizó entre marzo de 2014 y septiembre de 2014, donde se extrajeron y retiraron de esta área aproximadamente 72,200 toneladas de desechos contaminados con cromo. El material excavado se trató y eliminó en ubicaciones autorizadas, fuera del sitio, de acuerdo con las reglamentaciones pertinentes. El NJDEP emitió una carta de cumplimiento de la sentencia acordada con respecto al suelo en noviembre de 2019, en la que se documenta que no se requiere ninguna otra medida correctiva.

La colocación del relleno limpio hasta la calificación casi final se completó en mayo de 2015. El relleno limpio de una parte del sitio se modificó con FerroBlack®-H. Esta suspensión a base de agua de hierro ferroso y sulfuro está diseñada para evitar que el relleno se contamine con aguas subterráneas afectadas por cromo y para apoyar el saneamiento de las aguas subterráneas.

**Condado de Hudson, lugar contaminado con cromo N.º 133: Ross Wax**
**15 and 22-68 Halladay St., Jersey City, N.J. 07304**
**Cuadra 21510, Lote 5 y Cuadra 21509, Lote 1**
**Nº de identificación del NJDEP 025695**

Los desechos de producción química de cromato, o CCPW, son la fuente de concentraciones de cromo hexavalente que exceden los criterios para limpieza de suelo y las concentraciones de cromo total que exceden las GWQS del NJDEP en aguas subterráneas debajo de la calle Halladay, que está adyacente al sitio.

PPG compró el lado occidental del sitio, 15 Halladay Street, en mayo de 2013, y el lado oriental del sitio, 22-68 Halladay Street, en febrero de 2014.

*15 Halladay St. (sitio No. 133 oeste)*

Se llevó a cabo una investigación del suelo y se presentó un informe al NJDEP en 2012. La excavación del suelo comenzó en agosto de 2018 y se reanudó cuando comenzó la excavación en la propiedad de Ten West Apparel en abril de 2021. La finalización de la excavación y el relleno está programada para diciembre de 2021.

*22-68 Halladay St. (sitio No. 133 este)*

Se completó el saneamiento del suelo afectado por CCPW en la mayoría del sitio n.° 133 este por parte de PPG. El edificio en este sitio fue demolido en octubre de 2014 y los escombros fueron eliminados en una instalación regulada. Se realizó el saneamiento del suelo entre abril de 2015 y octubre de 2015; se extrajeron y retiraron de esta área más de 88,500 toneladas de desechos contaminados con cromo, incluidas las propiedades adyacentes en el lado este en el sitio No. 135, donde el saneamiento se llevó a cabo simultáneamente con este sitio. El material excavado se trató y eliminó en ubicaciones autorizadas, fuera del sitio, de acuerdo con las reglamentaciones pertinentes. El NJDEP emitió una carta de cumplimiento de la sentencia acordada con respecto al suelo en el sitio 133 este, en marzo de 2020, en la que se documenta que no se requiere ninguna otra medida correctiva.

La colocación del relleno limpio hasta la calificación casi final se completó en julio de 2016. El relleno limpio de la parte norte del sitio se modificó con FerroBlack®-H. Esta suspensión a base de agua de hierro ferroso y sulfuro está diseñada para evitar que el relleno se contamine con aguas subterráneas afectadas por cromo y para apoyar el saneamiento de las aguas subterráneas. El relleno limpio de la parte sur del sitio se modificó en los dos pies superiores del relleno.

Se excavó y rellenó una pequeña porción del sitio n.° 133 este, próxima a la propiedad Ten West Apparel, en 2021 como parte del actual saneamiento de Ten West Apparel.

En los sitios n.º 133 oeste y este, PPG ha contratado a un profesional de saneamiento de sitios con licencia (LSRP, por sus siglas en inglés) para abordar la contaminación sin cromo, proveniente del relleno histórico y de las operaciones que se desarrollaban antes en el sitio, no relacionada con PPG, incluidos compuestos orgánicos volátiles, compuestos orgánicos semivolátiles, bifenilos policlorados o PCB, metales sin CCPW y petróleo. Piotr Serwik de AECOM es el LSRP. Su número de teléfono es: 610-234-4888. Su dirección de correo electrónico es: Piotr.Serwik@aecom.com.

En el marco del programa del LSRP en el sitio n.° 133 este, se presentó un informe de investigación sobre el saneamiento en septiembre de 2019. Se completó la clausura de un tanque de almacenamiento subterráneo que contenía aceite combustible en el sitio n.° 133 este y, en diciembre de 2020, se emitió el resultado de la solución (RAO, por sus siglas en inglés), en el que se documenta que no se requieren medidas correctivas adicionales. En el sitio n.° 133 oeste, la investigación sobre el saneamiento para tratar la contaminación sin cromo está en curso. Los contaminantes sin cromo que exceden los estándares de saneamiento del suelo y las GWQS del NJDEP se están tratando en el marco del programa del LSRP.

**Condado de Hudson, lugar contaminado con N.° 135: Vitarroz**
**51-99 Pacific Ave., Jersey City, N.J. 07304**
**Cuadra 21509, Lote 2**
**Nº de identificación del NJDEP 246332**

Los desechos de producción química de cromato, o CCPW, son la fuente de concentraciones de cromo hexavalente que excedieron los criterios para limpieza de suelo y las concentraciones de cromo total que exceden las GWQS del NJDEP en el derecho de paso adyacente.

Se completó el saneamiento del suelo afectado por CCPW por parte de PPG. PPG compró la propiedad en agosto de 2015. Entre enero y noviembre de 2015, el edificio en el sitio fue demolido y los escombros

del edificio fueron eliminados adecuadamente. Se realizó el saneamiento del suelo entre febrero de 2016 y agosto de 2016; se extrajeron y retiraron de esta área más de 88,500 toneladas de desechos contaminados con cromo, incluidas las propiedades adyacentes en el lado este en el sitio No. 133 este, donde el saneamiento se llevó a cabo simultáneamente con este sitio. El material excavado se eliminó en ubicaciones autorizadas, fuera del sitio, de acuerdo con las reglamentaciones pertinentes. El NJDEP emitió una carta de cumplimiento de la sentencia acordada con respecto al suelo en el sitio n.° 135, en enero de 2021, en la que se documenta que no se requiere ninguna otra medida correctiva.

La colocación del relleno limpio hasta la calificación casi final se completó en diciembre de 2016. El relleno limpio de la parte norte del sitio se modificó con FerroBlack®-H. El relleno limpio de la parte sur del sitio se modificó en los dos pies superiores del relleno. Esta suspensión a base de agua de hierro ferroso y sulfuro está diseñada para evitar que el relleno se contamine con aguas subterráneas afectadas por cromo y para apoyar el saneamiento de las aguas subterráneas.

PPG ha contratado a un LSRP para abordar la contaminación sin cromo del relleno histórico y las operaciones anteriores del sitio no relacionadas con PPG, incluidos compuestos orgánicos volátiles, compuestos orgánicos semivolátiles, metales que no son CCPW, PCB y petróleo. Piotr Serwik de AECOM es el LSRP. Su número de teléfono es: 610-234-4888. Su dirección de correo electrónico es: Piotr.Serwik@aecom.com

En el marco del programa del LSRP, en julio de 2017 se presentó al NJDEP un informe de medidas correctivas para la clausura de tres tanques de almacenamiento subterráneos que contienen aceite combustible. El suelo afectado por mercurio asociado con el incidente No. 16-04-13-1350-52 se removió durante el saneamiento del cromo. En diciembre de 2018 se publicó el RAO, en el que se documentaba que no se requerían medidas correctivas adicionales para los suelos afectados por el mercurio. En enero de 2021 se presentó al NJDEP una solicitud de permiso de medida correctiva para abordar las afectaciones asociadas al relleno histórico.

Hay en curso una investigación sobre el saneamiento para abordar la contaminación sin cromo en las aguas subterráneas. Los contaminantes sin cromo que excedan las GWQS del NJDEP se tratarán en el marco del programa del LSRP.

**Condado de Hudson, lugar contaminado con cromo N.º 137: Rudolf Bass**
**25 and 45 Halladay St., Jersey City, N.J. 07304**
**Cuadra 21510, Lotes 3 y 4**
**N.º de identificación del NJDEP G000008753**

Los residuos químicos de cromato, o CCPW, eran la fuente de concentraciones de cromo hexavalente que excedieron los criterios para limpieza de suelo y las concentraciones de cromo totales que exceden las GWQS del NJDEP en la zona intermedia de aguas subterráneas (alrededor de 20 a 40 pies de profundidad).

PPG compró la parte sur del sitio (TSI Carriers, 25 Halladay Street) en mayo de 2013 y la parte norte del sitio (Rudolf Bass, 45 Halladay Street) en diciembre de 2013. PPG luego demolió el edificio en 25 Halladay Street en agosto y septiembre de 2013 y el edificio en 45 Halladay Street en marzo y abril de 2014. Los escombros de ambos edificios se eliminaron en una instalación regulada.

*45 Halladay y la parte norte de 25 Halladay (sitio No. 137 norte)*

Se completó el saneamiento del suelo en el sitio n.° 137 norte por parte de PPG. La limpieza del suelo con cromo se realizó entre julio de 2014 y mayo de 2015 en 45 Halladay Street y una parte de 25 Halladay Street, donde se extrajeron y retiraron de esta área aproximadamente 107,000 toneladas de desechos contaminados con cromo. El material se trató y eliminó en ubicaciones autorizadas, fuera del sitio, de acuerdo con las reglamentaciones pertinentes. El NJDEP emitió una carta de cumplimiento de la sentencia acordada con respecto al suelo en el sitio n.° 137 norte, en junio de 2020, en la que se documenta que no se requiere ninguna otra medida correctiva.

Se realizó la colocación de relleno limpio en una calificación casi final en 45 Halladay Street y la parte norte de 25 Halladay Street en agosto de 2015. El relleno limpio para la mayoría del sitio se modificó con FerroBlack®-H. Esta suspensión a base de agua de hierro ferroso y sulfuro está diseñada para evitar que el relleno se contamine con aguas subterráneas afectadas por cromo y para apoyar el saneamiento de las aguas subterráneas.

*Parte sur de 25 Halladay (sitio No. 137 sur)*

Las actividades de excavación del suelo comenzaron en agosto de 2018. La excavación se reanudó cuando comenzó la excavación de Ten West Apparel en abril de 2021. La finalización de la excavación y el relleno está programada para diciembre de 2021.

Para los sitios n.º 137 norte y sur, PPG ha contratado a un LSRP para abordar la contaminación sin cromo, proveniente del relleno histórico y de las operaciones que se desarrollaban antes en el sitio, no relacionada con PPG, incluidos compuestos orgánicos volátiles, compuestos orgánicos semivolátiles, PCB, pesticidas, metales sin CCPW y petróleo. Piotr Serwik de AECOM es el LSRP. Su número de teléfono es: 610-234-4888. Su dirección de correo electrónico es: Piotr.Serwik@aecom.com.

En el marco del programa del LSRP, para el sitio n.° 137 norte, se emitió el RAO en marzo de 2020, en el que se documenta que no se requiere ninguna otra medida correctiva. Para el sitio n.° 137 sur, se está llevando a cabo una investigación sobre el saneamiento para tratar la contaminación sin cromo. Los contaminantes que no contienen cromo que exceden las normas de saneamiento del suelo y las GWQS del NJDEP se abordarán en el marco del programa del LSRP.

**Sitio contaminado con cromo No. 143 del condado de Hudson, F. Talarico Auto**
**846 Garfield Ave., Jersey City, N.J. 07305**
**Cuadra 21510, Lote 1**
**Nº de identificación del NJDEP G000008759**

Los residuos químicos de cromato, o CCPW, eran la fuente de cromo hexavalente que excedieron los criterios para limpieza de suelo y las concentraciones de cromo totales que exceden las GWQS del NJDEP en la zona intermedia de aguas subterráneas (alrededor de 20 a 40 pies de profundidad).

Se completó el saneamiento del suelo afectado por CCPW por parte de PPG. PPG compró el sitio en febrero de 2013 y demolió el edificio en junio de 2013, eliminando los escombros en una instalación regulada. El saneamiento del suelo se realizó entre marzo de 2014 y septiembre de 2014. Se extrajeron y retiraron de esta área aproximadamente 20,400 toneladas de desechos contaminados con cromo. El material se trató y eliminó en ubicaciones autorizadas, fuera del sitio, de acuerdo con las

reglamentaciones pertinentes. El NJDEP emitió una carta de cumplimiento de la sentencia acordada con respecto al suelo en el sitio n.° 143 en junio de 2020, en la que se documenta que no se requiere ninguna otra medida correctiva.

La colocación del relleno limpio hasta la calificación casi final se completó en mayo de 2015. El relleno limpio de una parte del sitio recibió relleno limpio que se modificó con FerroBlack®-H. Esta suspensión a base de agua de sulfuro ferroso está diseñada para evitar que el relleno se contamine con aguas subterráneas afectadas por cromo y para apoyar el saneamiento de las aguas subterráneas.

PPG ha contratado a un LSRP para abordar la contaminación sin cromo del relleno histórico y las operaciones anteriores del sitio no relacionadas con PPG, incluidos compuestos orgánicos volátiles, compuestos orgánicos semivolátiles, PCB, pesticidas, metales que no son CCPW y petróleo. Al LoPilato de AECOM es el LSRP. Su número de teléfono es: 845.425.4980. Su dirección de correo electrónico es: alfred.lopilato@aecom.com.

En el marco del programa del LSRP, se está preparando un informe de medidas correctivas para documentar que no se requiere ninguna corrección adicional para abordar la contaminación sin cromo.

**Condado de Hudson, lugar contaminado con cromo N.º 186: Garfield Avenue No. 1**
**947 Garfield Ave., Jersey City, N.J. 07304**
**Cuadra 19802, Lote 2**
**No. de ID de NJDEP G0000114777**

Los desechos de producción química de cromato, o CCPW, eran la fuente de concentraciones de cromo hexavalente que superaban los criterios para limpieza del suelo.

La limpieza del suelo se realizó en noviembre de 2013. El NJDEP emitió una carta de cumplimiento de la sentencia acordada con respecto al suelo en el sitio 186 en julio de 2015, en la que se documenta que no se requiere ninguna otra medida correctiva.

Se ha evaluado la calidad de las aguas subterráneas en este sitio y los datos se presentan en un informe de investigación sobre el saneamiento de aguas subterráneas del Grupo Garfield Avenue. No se requiere ninguna otra medida relacionada con las aguas subterráneas.

**Antigua propiedad de Fishbein**
**816 Garfield Ave., Jersey City, N.J. 07305**
**Cuadra 21510, Lote 11**
**Nº de identificación del NJDEP 629388**

Las concentraciones de cromo hexavalente exceden los criterios para limpieza del suelo y las concentraciones de cromo total exceden las GWQS del NJDEP en esta ubicación.

PPG compró esta propiedad en diciembre de 2013. Los resultados de una investigación de saneamiento se presentaron en 2012 y se complementaron en 2018. La excavación del material afectado por cromo en este sitio se lleva a cabo este mes como parte de la limpieza de Ten West Apparel, que comenzó en abril de 2021. La finalización de la excavación y el relleno está programada para diciembre de 2021.

PPG ha contratado a un LSRP para abordar la contaminación sin cromo del relleno histórico y las operaciones anteriores del sitio no relacionadas con PPG, incluidos compuestos orgánicos semivolátiles, PCB y metales que no son CCPW. Piotr Serwik de AECOM es el LSRP. Su número de teléfono es: 610-234-4888. Su dirección de correo electrónico es: Piotr.Serwik@aecom.com.

En el marco del programa del LSRP, en enero de 2019 se presentó un informe de investigación sobre el saneamiento que aborda la contaminación sin cromo. El saneamiento de contaminantes sin cromo que exceden los estándares de saneamiento del suelo y las GWQS del NJDEP se están abordando en el marco del programa del LSRP.

**Antigua propiedad de Halsted Bag Company**
**78 Halladay St., Jersey City, N.J. 07304**
**Cuadra 21502, Lotes 12 a 17**
**Nº de identificación del NJDEP 722429**

Las concentraciones de cromo hexavalente excedieron los criterios para limpieza del suelo y las concentraciones de cromo total exceden las GWQS del NJDEP en esta ubicación.

Se completó el saneamiento del suelo con cromo en este sitio por parte de PPG. PPG compró el sitio en febrero de 2016, demolió el edificio entre abril y junio de 2018 y eliminó los escombros en una instalación regulada. El saneamiento del suelo se realizó entre mayo de 2018 y agosto de 2018. Se extrajeron y retiraron de esta área aproximadamente 16,500 toneladas de desechos contaminados con cromo. El material se trató y eliminó en ubicaciones autorizadas, fuera del sitio, de acuerdo con las reglamentaciones pertinentes. En junio de 2021 se presentó al NJDEP un proyecto de informe sobre medidas correctivas para documentar que no se requieren medidas correctivas adicionales.

La colocación del relleno limpio hasta la calificación casi final se completó en agosto de 2018.
PPG realizó la excavación y el relleno del sitio en 2018, excepto en las áreas adyacentes a Halladay Street North. Estas áreas se excavaron y rellenaron de forma simultánea con el saneamiento de Halladay Street North, proceso que se completó en abril de 2020. La delimitación de los impactos del suelo en el límite oriental de esta propiedad está en curso. El relleno limpio de una parte del sitio se modificó con FerroBlack®-H. Esta suspensión a base de agua de hierro ferroso y sulfuro está diseñada para evitar que el relleno se contamine con aguas subterráneas afectadas por cromo y para apoyar el saneamiento de las aguas subterráneas. En junio de 2021 se presentó un informe de medidas correctivas al NJDEP.

Mientras tanto, PPG ha contratado a un LSRP para abordar la contaminación sin cromo, proveniente del relleno histórico y de las operaciones que se desarrollaban antes en el sitio, no relacionada con PPG, incluidos compuestos orgánicos volátiles, compuestos orgánicos semivolátiles, metales sin CCPW, PCB y pesticidas. Estos y otros contaminantes que no contienen cromo que exceden las normas de saneamiento del suelo y los niveles de detección de aguas subterráneas se abordarán bajo el programa LSRP. En enero de 2021, PPG presentó al NJDEP un informe de investigación sobre el saneamiento y un plan de trabajo de medidas correctivas para los contaminantes sin cromatos en suelos y aguas subterráneas. Jeff Hosterman de Tetra Tech es el LSRP. Su número de teléfono es: 302.283.2289. Su dirección de correo electrónico es: jeff.hosterman@tetratech.com

**Propiedades de Forrest Street**
**84, 86-90, 98-100 y 108 Forrest Street, Jersey City, N.J. 07304**
**Cuadra 21501, Lotes 11, 12 y 14.01**

Las concentraciones de cromo hexavalente exceden los criterios para limpieza del suelo y las concentraciones de cromo total exceden las GWQS del NJDEP en esta ubicación.

La excavación del suelo afectado por cromo y la colocación de relleno limpio en 108 Forrest Street comenzaron en marzo de 2017 y finalizaron en julio de 2017; se extrajeron y retiraron de esta área aproximadamente 9,600 toneladas de desechos contaminados con cromo. El material excavado se eliminó en ubicaciones autorizadas, fuera del sitio, de acuerdo con las reglamentaciones pertinentes.

La colocación del relleno limpio hasta la calificación casi final en 108 Forrest Street se completó en agosto de 2017. El relleno limpio para la parte norte del sitio se modificó con FerroBlack®-H en áreas donde se encontró agua subterránea. Esta suspensión a base de agua de hierro ferroso y sulfuro está diseñada para evitar que el relleno se contamine con aguas subterráneas afectadas por cromo y para apoyar el saneamiento de las aguas subterráneas. Un informe de medidas correctivas para 108 Forrest se presentó al NJDEP en enero de 2019 y el NJDEP lo aprobó de forma condicional en noviembre de 2019. La aprobación final por parte del NJDEP está pendiente de la aprobación por escrito del titular de la propiedad.

En marzo de 2019, PPG presentó un plan de trabajo de medidas correctivas que propone un control de ingeniería y un saneamiento de uso restringido para estas propiedades, considerando el uso no residencial actual de las propiedades y las afectaciones que quedan debajo y adyacentes a los edificios. La instalación de los controles de ingeniería comenzó en junio de 2021 y finalizará este otoño. PPG llevará a cabo una excavación de saneamiento de los impactos que permanecen debajo y adyacentes a los edificios junto con el futuro desarrollo residencial de las propiedades.

**Propiedad de Al Smith Moving**
**33 Pacific Avenue, Jersey City, N.J. 07304**
**Cuadra 21509, Lote 3**

Las concentraciones de cromo hexavalente excedieron los criterios para limpieza del suelo en este lugar.

PPG ha finalizado el saneamiento de esta propiedad. La demolición del edificio de Al Smith Moving tuvo lugar en julio y agosto de 2017. El saneamiento del suelo se realizó entre agosto de 2017 y enero de 2018, donde se extrajeron y retiraron de esta área aproximadamente 12,600 toneladas de desechos contaminados con cromo.

El NJDEP emitió una carta de cumplimiento de la sentencia acordada en octubre de 2019, la cual documenta que no se requiere ninguna otra medida correctiva.

**Antigua propiedad de Ten West Apparel**
**800 Garfield, Jersey City, N.J. 07304**
**Cuadra 21510, Lote 39**

Las concentraciones de cromo hexavalente exceden los criterios para limpieza del suelo y las concentraciones de cromo total exceden las GWQS del NJDEP en esta ubicación.

PPG compró esta propiedad en abril de 2017, demolió el edificio en mayo de 2021 y eliminó los escombros en una instalación regulada. Las excavaciones para el saneamiento comenzaron en abril de

2021. La finalización de la excavación y el relleno está programada para diciembre de 2021. Luego se realizará una investigación sobre las aguas subterráneas.

PPG ha contratado a un LSRP para abordar la contaminación sin cromo del relleno histórico y las operaciones anteriores del sitio no relacionadas con PPG. Estos y otros contaminantes que no contienen cromo que exceden las normas de saneamiento del suelo y los niveles de detección de aguas subterráneas se abordarán bajo el programa LSRP. En abril de 2021, PPG presentó al NJDEP un informe de investigación sobre el saneamiento y un plan de trabajo de medidas correctivas para los contaminantes sin cromatos en suelos y aguas subterráneas. Jeff Hosterman de Tetra Tech es el LSRP. Su número de teléfono es: 302.283.2289. Su dirección de correo electrónico es: jeff.hosterman@tetratech.com.

**457 Communipaw Ave., Jersey City, N.J. 07305**
**Cuadra 18901, Lotes 11, 14 y 15**
**No. de ID de NJDEP 715149**

Los desechos de producción química de cromato, o CCPW, son la fuente de concentraciones de cromo hexavalente que exceden los criterios de limpieza del suelo. Se descubrió suelo afectado por cromo en la intersección de Berry Lane y Communipaw Avenue.

La excavación de aproximadamente 70 toneladas de tierra afectada por cromo se realizó entre febrero y marzo de 2016 en el derecho de paso de Communipaw Avenue (cuadra 18901, lote 1.01) adyacente a 457 Communipaw Avenue. El material excavado se transportó y eliminó en ubicaciones autorizadas, fuera del sitio, de acuerdo con las reglamentaciones pertinentes. La parte de esta zona afectada que era accesible a PPG ha sido saneada por completo.

Durante la excavación se observaron CCPW en la pared lateral occidental de la excavación, lo cual confirmaron los resultados analíticos posteriores a la excavación. Esto indica que las afectaciones en el suelo se extienden a la propiedad adyacente (457 Communipaw Ave, cuadra 18901, lote 15). PPG realizó una investigación adicional entre 2017 y septiembre de 2020. PPG prepara un informe que documentará los resultados de la investigación y propondrá un enfoque correctivo.

También se realizaron investigaciones adicionales sobre las propiedades en 457-463 Communipaw en 2021. El suelo afectado por cromo se identificó a profundidades de hasta 9 pies por debajo de la superficie del suelo en partes del sitio. Se está preparando un informe de investigación sobre el saneamiento para documentar las conclusiones y se está preparando un plan de trabajo de medidas correctivas de uso actual para eliminar y/o tapar las áreas afectadas. El plan incluye la instalación de pozos de monitoreo de aguas subterráneas para evaluar las condiciones de dichas aguas en el sitio.

Mientras tanto, se identificaron proliferaciones de cromo en un área pequeña de la pared del sótano en 465 Communipaw Ave. y se abordaron con la instalación de una barrera de epoxi. Las inspecciones mensuales del sótano indican que la barrera epoxídica sigue siendo una medida correctiva eficaz para prevenir nuevas afectaciones. A partir del éxito de esta medida correctiva provisional, las inspecciones pasarán a ser trimestrales en el otoño de 2021.

**Carreteras**

**Caven Point Avenue y Pacific Avenue Roadways:** (entre Garfield Avenue y Carteret Avenue)

Las concentraciones de cromo hexavalente exceden los criterios para limpieza del suelo en este lugar. Las medidas correctivas para el sitio son los controles de ingeniería (tapa de asfalto existente) y el control institucional (aviso en lugar de aviso de escritura). El control institucional se está implementando como medida cautelar y también servirá como una restricción para el uso del terreno con fines no residenciales. El saneamiento apoya el uso actual y esperado a futuro de Caven Point Avenue y Pacific Avenue como vías públicas. PPG prepara un proyecto de informe de medidas correctivas para documentar que no se requieren más medidas correctivas.

**Carteret Avenue** (entre las avenidas Garfield y Pacific): los desechos de producción química de cromato, o CCPW, son la fuente de concentraciones de cromo hexavalente que exceden los criterios de limpieza del suelo.

Se completó el saneamiento del suelo en Carteret Avenue por parte de PPG. Las excavaciones de saneamiento del suelo comenzaron en junio de 2019 y finalizaron en enero de 2020. Se extrajeron y retiraron de esta área aproximadamente 37.200 toneladas de desechos peligrosos. El material excavado se eliminó en ubicaciones autorizadas, fuera del sitio, de acuerdo con las reglamentaciones pertinentes. En agosto de 2021 se presentó al NJDEP un proyecto final de informe sobre medidas correctivas para documentar que no se requiere ninguna otra medida correctiva.

La colocación del relleno limpio para la explanación casi final del terreno se completó en febrero de 2020. El relleno limpio se modificó con FerroBlack®-H. Esta suspensión a base de agua de hierro ferroso y sulfuro está diseñada para evitar que el relleno se contamine con aguas subterráneas afectadas por cromo y para apoyar el saneamiento de las aguas subterráneas.

**Forrest Street** (al oeste de la intersección con Halladay Street): los desechos de producción química de cromato, o CCPW, son la fuente de concentraciones de cromo hexavalente que exceden los criterios de limpieza del suelo.

Se completó el saneamiento del suelo en Forrest Street por parte de PPG. Una sección de Forrest Street ha sido completamente restaurada después de la excavación del suelo afectado por cromo por parte de PPG en 2017. En febrero de 2019 se presentó un informe de medidas correctivas al NJDEP, el cual se aprobó en noviembre de 2020. La solicitud de permiso para las medidas correctivas se presentó ante el NJDEP en marzo de 2021. El suelo y los escombros contaminados con cromo que se encuentran debajo y en las proximidades de los edificios se tratarán cuando la propiedad se vuelva a reurbanizar.

**Garfield Avenue** (entre Carteret Avenue y el puente ferroviario): los desechos de producción química cromato, o CCPW, son la fuente de concentraciones de cromo hexavalente que exceden los criterios de limpieza del suelo. En diciembre de 2019, el NJDEP y la Ciudad de Jersey aprobaron un plan de trabajo para tratar el suelo afectado por el cromo debajo de la calle. La excavación de saneamiento no comenzará hasta que la calle esté cerrada al tráfico como parte de la reurbanización planificada en esta área.

**Halladay Street North** (entre Carteret Avenue y Forrest Street): los desechos de producción química de cromato, o CCPW, fueron la fuente de concentraciones de cromo hexavalente que excedieron los criterios de limpieza del suelo. Las excavaciones de saneamiento comenzaron en enero de 2020 y finalizaron en abril de 2020, con aproximadamente 12.200 toneladas de desechos peligrosos que se

excavaron y retiraron de esta zona. El material excavado se eliminó en ubicaciones autorizadas, fuera del sitio, de acuerdo con las reglamentaciones pertinentes. En julio de 2021 se presentó al NJDEP un proyecto de informe sobre medidas correctivas en el que se documentaba que no se requieren medidas correctivas adicionales.

La colocación del relleno limpio para la explanación casi final del terreno se completó en abril de 2020. El relleno limpio de una parte del sitio se modificó con FerroBlack®-H. Esta suspensión a base de agua de hierro ferroso y sulfuro está diseñada para evitar que el relleno se contamine con aguas subterráneas afectadas por cromo y para apoyar el saneamiento de las aguas subterráneas.

**Halladay Street South** (entre las avenidas Carteret y Caven Point): los desechos de producción química de cromato, o CCPW, fueron la fuente de concentraciones de cromo hexavalente que excedieron los criterios de limpieza del suelo.

Se completó el saneamiento del suelo en Halladay Street South por parte de PPG. Las excavaciones de saneamiento comenzaron en mayo de 2015. La excavación se realizó simultáneamente con la del sitio n.° 133 este y se completó en octubre de 2015, con aproximadamente 44.600 toneladas de desechos peligrosos excavados y retirados de estas áreas. El NJDEP emitió una carta de cumplimiento de la sentencia acordada en junio de 2020, en la que se documenta que no se requiere ninguna otra medida correctiva.

La colocación del relleno limpio hasta la calificación casi final se completó en julio de 2016. El relleno limpio para la mayoría del sitio se modificó con FerroBlack®-H. Esta suspensión a base de agua de hierro ferroso y sulfuro está diseñada para evitar que el relleno se contamine con aguas subterráneas afectadas por cromo y para apoyar el saneamiento de las aguas subterráneas.

**Investigaciones adicionales**

De acuerdo con una solicitud del NJDEP para delinear aún más la contaminación por cromo, también se investigaron las siguientes propiedades (los resultados fueron menores que las normas de saneamiento del suelo):

- Parness Trucking Corporation –181 Pacific Avenue (cuadra 19903, lotes 1, 4, 5, 8 & 9)
- Estación Valero – 770 Garfield Avenue (cuadra 23305, lotes 1 & 2)
- East Cost Collision – 783 Garfield Avenue (cuadra 23304, lote 13)
- Frenchpark Warehouse – 855 Garfield Avenue (cuadra 21404, lotes 3 & 5)
- Cypress Tavern – 784 Garfield Avenue (cuadra 21510, lote 7)
- Garfield Avenue Scrap Metal – 802 Garfield Avenue (cuadra 21510, lote 10)
- 20 Commercial Street (cuadra 24301, lote 1)
- Antigua zona de Northern Morris Canal (cuadra 18901, lotes 3 - 15)
- 851 Garfield Avenue, LLC - 851 Garfield Avenue (cuadra 21404, lote 6) [Los pozos instalados en esta propiedad pueden usarse en la futura investigación de saneamiento de aguas subterráneas].

Las concentraciones de cromo total de las muestras de agua subterránea recolectadas en pozos y cerca de la propiedad de Frenchpark Warehouse en 2018 no excedieron las GWQS del NJDEP. Las muestras recolectadas antes de que comenzara la excavación del suelo al otro lado de la calle en el sitio No. 114 en 2014 excedieron las normas.

**Fact Sheet**

*In accordance with New Jersey Department of Environmental Protection (NJDEP) requirements for "Notification and Public Outreach," PPG is providing the following information relating to environmental conditions, remedial activities and off-site impacts in connection with the site described below.*

**Hudson County Chrome Site No. 114 – Garfield Avenue Site**
**880-900 Garfield Avenue, Jersey City, N.J. 07305**
**Block 21501, Lots 16, 17, 18.01, 19.01 and 20.01**
**NJDEP ID No. G000005480**

From 1905 to 1976, Hudson County was a center for chrome manufacturing, processing chromite ore imported into the United States. In the early 1900s, the Natural Products Refining Company opened a chrome plant at 880-900 Garfield Avenue. PPG purchased the plant in 1954 and ceased operations in 1963, selling the facility and property in 1964. The manufacturing process used at the facility produced a waste byproduct known as chromate chemical production waste, or CCPW. Over the years, the soil impacted with CCPW was used as fill material at residential, commercial and industrial construction sites.

PPG first detected hexavalent chromium at the Garfield Avenue Site (the Site) in the early 1980s. Concentrations of hexavalent chromium – a component of CCPW – were found to exceed soil cleanup criteria and total chromium concentrations in groundwater exceeded NJDEP groundwater quality standards (GWQS). As a result, PPG assumed responsibility for the remediation of 67 sites in Hudson County. In addition, PPG jointly accepted responsibility with Honeywell for 10 other sites. PPG is also responsible for addressing non-chromium contamination at Site 114, including volatile organics, semivolatile organics, non-CCPW metals, polychlorinated biphenyls and pesticides.

Before remediation was conducted, investigation activities identified that hexavalent chromium in soil was present throughout the Site with the majority above the meadow mat layer (approximately 15 feet below surface). Deeper soil impacts were found in the area of the former Morris Canal, which ran through the Site in a north-south direction.

CCPW in the soil was the source of hexavalent chromium in the groundwater at the Site. The highest concentrations of hexavalent chromium were found in the western portion of the Site, in the shallow (approximately 15 to 20 feet below ground surface) and intermediate (approximately 30 to 40 feet below ground surface) groundwater zones. Limited impacts have been observed at deeper depths. In 2005, PPG determined that chromium-impacted groundwater was migrating to the south and east of the Site and reported this information to the NJDEP in 2006. Investigations have since concluded that the southern boundary of the groundwater plume is at Caven Point Avenue, which is about 800 feet from the Garfield Avenue Site. The eastern boundary is along Pacific Avenue, which is approximately 200 feet away. The northern boundary is located at a commercial property located at 90 and 98 Forrest Street.

Interim remedial measures for soil were installed at the Garfield Avenue Site between 1990 and 1992. These measures, consisting of plastic covering, crushed gravel, and a perimeter fence, prevented direct contact with,

(Over)

or airborne exposure to, chrome residue at the Site until the cleanup began. Inspections of these measures were conducted quarterly and repairs were made as necessary.

Groundwater recovery sumps were installed at the Site between 2004 and 2005 to prevent water from migrating onto Garfield Avenue. Water generated by this system was collected on-site and transported to an offsite, permitted treatment facility until this procedure was replaced by the use of an onsite treatment facility to support excavation activities in 2011.

The excavation of chromium-impacted soil and debris at the Site was completed in November 2014. More than 530,000 tons of chromium-impacted soil were excavated, hauled off site, treated and disposed of at permitted disposal facilities.

The placement of clean backfill to near-final grade was completed in January 2015. Clean fill for a majority of the Site was amended with FerroBlack®-H. This water-based suspension of ferrous iron and sulfide is designed to prevent the backfill from being contaminated by chromium-impacted groundwater and to support groundwater remediation. Testing indicates shallow groundwater (less than 20 feet deep) throughout most of the site is already in compliance with the federal and New Jersey drinking water standard for total chromium.

To remediate areas of elevated chromium in groundwater within the intermediate and deep water-bearing zones and localized areas of the shallow water-bearing zone within Site 114 (i.e., the location of the former chromite ore processing plant), two interim remedial measures have been implemented or are under way. A third measure is being designed to treat areas of chromium contamination in the accessible shallow, intermediate and deep water-bearing zones in areas outside Site 114 and select areas within Site 114 that are beneath the vertical extents of the first measure. The measures use a combination of technologies to inject organic substrates into the subsurface to establish and maintain biological and/or chemical reactive zones to reduce chromium concentrations. Following treatment, the injected substrates will remain in the subsurface to maintain a geochemically reducing environment for an extended period, which will continue to provide treatment of chromium in groundwater. Once the substrates are used up, the site will transition to a monitored natural attenuation remedy.

PPG submitted a Groundwater Remedial Investigation report and Remedial Action Work Plan describing the nature and extent of groundwater contamination and the proposed remedial action plan for groundwater in March 2021.

It is important to note that groundwater is not used for drinking water purposes in Jersey City. Reservoirs in Boonton, N.J., supply Jersey City with its drinking water.

To learn more about hexavalent chromium, visit:

- New Jersey Department of Environmental Protection: http://www.state.nj.us/dep/dsr/chromium/
- Agency for Toxic Substances and Disease Registry: https://wwwn.cdc.gov/TSP/ToxFAQs/ToxFAQsDetails.aspx?faqid=61&toxid=17

If you have questions about the Garfield Avenue Site and related off-site impacts, you can contact the independent, court-appointed site administrator overseeing the investigation and cleanup of the Site. The administrator can be reached by:

- Calling: 201-777-2099;
- Sending an email to: info@chromecleanup.com;
- Writing to: Chromium Cleanup Partnership, One Hovchild Plaza, 4000 Route 66, 4th Floor (MCDC), Tinton, Falls, N.J. 07753; or
- Visiting: www.chromecleanup.com.

You can also direct your questions and comments to Jeff Worden, PPG's community relations consultant. His telephone number is: 412.253.0816. His email address is: jeff@worden-pr.com.

**Hoja de información básica**

*De conformidad con los requisitos del Departamento de Protección Ambiental de Nueva Jersey (NJDEP) en cuanto a "Notificación y divulgación al público", PPG suministra la siguiente información relacionada con las condiciones ambientales, actividades de saneamiento e impactos externos relacionados con el sitio que se describe a continuación.*

**Condado de Hudson, lugar contaminado con cromo N.º 114: sitio en Garfield Avenue**
**880-900 Garfield Avenue, Jersey City, N.J. 07305**
**Manzana 21501, Lotes 16, 17, 18.01, 19.01 y 20.01**
**No. de ID de NJDEP G000005480**

Entre 1905 y 1976, el condado de Hudson fue el centro de la fabricación de cromo, procesando cromita importada a los Estados Unidos. Natural Products Refining Company abrió una planta de cromo en 880-900 Garfield Avenue en la década de 1900. PPG adquirió la planta en 1954 y cesó sus operaciones en 1963, vendiendo la instalación y propiedad en 1964. El proceso de fabricación utilizado en la instalación produjo grandes cantidades de un subproducto de residuo conocido como residuos químicos de cromato, o CCPW. Con el transcurso de los años, el suelo afectado por CCPW se usó como material de relleno en sitios de construcción residenciales, comerciales e industriales.

PPG detectó cromo hexavalente por primera vez en el sitio de Garfield Avenue (el sitio) a principios de la década de 1980. Se detectó que las concentraciones de cromo hexavalente, un componente de los CCPW, exceden los criterios para limpieza del suelo y las concentraciones de cromo totales en las aguas subterráneas excedieron las normas de calidad para aguas subterráneas (GWQS) del NJDEP. Como resultado, PPG asumió la responsabilidad del saneamiento de 67 sitios en el Condado de Hudson. Además, PPG aceptó la responsabilidad conjunta con Honeywell para otros 10 sitios. PPG también es responsable de abordar la contaminación sin cromo en el sitio 114, incluidos compuestos orgánicos volátiles, compuestos orgánicos semivolátiles, metales sin CCPW, bifenilos policlorados y pesticidas.

Antes de la realización del saneamiento, las actividades de investigación identificaron que el cromo en el suelo estaba presente en el sitio, en su mayoría sobre la capa de turba (aproximadamente 15 pies bajo la superficie). Se encontraron impactos más profundos en el suelo en la zona del antiguo Morris Canal, que fluía por el sitio de norte a sur.

Los CCPW en el suelo eran la fuente de cromo hexavalente en las aguas subterráneas en el sitio. Las mayores concentraciones de cromo hexavalente se encontraron en la parte oeste del sitio, en las zonas de aguas subterráneas poco profundas (aproximadamente de 15 a 20 pies bajo la superficie del suelo) e intermedias (aproximadamente de 30 a 40 pies bajo la superficie del suelo). Se han observado impactos limitados a mayores profundidades. En 2005, PPG determinó que las aguas subterráneas afectadas por cromo estaban migrando hacia el sur y el este del sitio, e informó dicha situación al NJDEP en 2006. Desde entonces, las investigaciones han concluido que el límite sur de la pluma de aguas subterráneas es Caven Point Avenue, que se encuentra a aproximadamente 800 pies del sitio de Garfield Avenue. El límite oriental se encuentra a lo largo de Pacific Avenue, que está aproximadamente a 200 pies. El límite norte se encuentra en una propiedad comercial ubicada en 90 y 98 Forrest Street.

Entre los años 1990 y 1992 se instauraron medidas de saneamiento provisionales en el sitio ubicado de Garfield Avenue. Estas medidas, que implicaban recubrimiento con plástico, grava triturada y una cerca perimetral, evitaban el contacto directo con residuos de cromo

(Reverso)

o la exposición en el aire a ellos en el sitio hasta el inicio de la limpieza. Se realizaron inspecciones trimestrales de estas medidas
y se realizaron las reparaciones necesarias.

Entre los años 2004 y 2005 se instalaron sumideros para la recuperación de aguas subterráneas en el sitio a fin de evitar la migración del agua hacia Garfield Avenue. El agua generada por este sistema se recolectaba en el sitio y transportaba a una planta de tratamiento autorizada fuera del sitio hasta que este procedimiento fue reemplazado por el uso de una planta de tratamiento en el sitio para apoyar las actividades de excavación en 2011.

La excavación de suelo y desechos afectados por cromo en el sitio se concluyó en noviembre de 2014. Más de 530,000 toneladas de suelo afectado por cromo se excavaron, retiraron del sitio, se trataron y eliminaron en instalaciones de eliminación autorizadas.

La colocación del relleno limpio hasta la calificación casi final se completó en enero de 2015. El relleno limpio para la mayoría del sitio se modificó con FerroBlack®-H. Esta suspensión a base de agua de hierro ferroso y sulfuro está diseñada para evitar que el relleno se contamine con aguas subterráneas afectadas por cromo y para apoyar el saneamiento de las aguas subterráneas. Las pruebas indican que las aguas subterráneas poco profundas (de menos de 20 pies de profundidad) en la mayor parte del sitio ya cumplen con las normas federales y del estado de Nueva Jersey para el cromo total en el agua potable.

Para sanear áreas de cromo elevado en aguas subterráneas dentro de las zonas intermedias y profundas y áreas localizadas de la zona de aguas poco profundas dentro del sitio n.° 114 (es decir, la ubicación de la antigua planta procesadora de cromita), se han implementado o están en marcha dos medidas correctivas provisionales. Se está diseñando una tercera medida para tratar áreas contaminadas con cromo en las zonas accesibles de aguas poco profundas, intermedias y profundas en áreas fuera del sitio n.° 114 y áreas específicas dentro del sitio que están debajo del alcance vertical de la primera medida. Las medidas combinan tecnologías para inyectar sustratos orgánicos en la subsuperficie con el fin de establecer y mantener zonas biológicas y/o químicas reactivas para reducir las concentraciones de cromo. Después del tratamiento, los sustratos inyectados permanecerán en la subsuperficie para mantener un entorno de reducción geoquímica durante un período prolongado, que continuará tratando el cromo en las aguas subterráneas. Una vez que los sustratos se hayan agotado, el sitio pasará a un saneamiento de atenuación natural monitorizado.

PPG presentó un informe de investigación del saneamiento de las aguas subterráneas y un plan de trabajo de medidas correctivas en el que se describía la naturaleza y el alcance de la contaminación de las aguas subterráneas y el plan de medidas correctivas propuesto para tratar dichas aguas en marzo de 2021.

Es importante tener en cuenta que las aguas subterráneas no se utilizan con fines de agua potable en Jersey City. Las reservas en Boonton, N.J., suministran el agua potable a Jersey City.

Para conocer más sobre el cromo hexavalente, visite:

- Departamento de Protección Ambiental de Nueva Jersey: http://www.state.nj.us/dep/dsr/chromium/
- Agencia para Sustancias Tóxicas y el Registros de Enfermedades: http://www.atsdr.cdc.gov/toxfaqs/tf.asp?id=61&tid=17

Si tiene alguna pregunta acerca del sitio de Garfield Avenue y los impactos fuera del sitio relacionados, puede comunicarse con el administrador del sitio designado por el tribunal para inspeccionar las tareas de investigación y limpieza del sitio. Puede comunicarse con el administrador de las siguientes formas:

- Por teléfono: 201-777-2099;
- Por correo electrónico: info@chromecleanup.com;
- Por carta: Chromium Cleanup Partnership, One Hovchild Plaza, 4000 Route 66, 4th Floor (MCDC), Tinton, Falls, N.J. 07753; o
- Sitio web: www.chromecleanup.com.

También puede dirigir sus preguntas y comentarios a:

- Jeff Worden, consultor de relaciones con la comunidad de PPG: 412.253.0816; o
- Departamento de Protección Ambiental de Nueva Jersey, Oficina de Relaciones con la Comunidad: 1-800-253-5647.

**Public Notiication Mailing List**

Chromium Cleanup Sites on Garfield Avenue

| Owner Name | Other | Street Address | City, State | Zip Code |
|---|---|---|---|---|
| John 723, LLC | | 63 Major Drive | Sayreville, NJ | 08872 |
| Current Occupant | | 5 Summit Avenue | Jersey City, NJ | 07307 |
| John 723, LLC | | 63 Major Drive | Sayreville, NJ | 08872 |
| Current Occupant | | 1 Summit Avenue | Jersey City, NJ | 07304 |
| John 723, LLC | | 63 Major Drive | Sayreville, NJ | 08872 |
| Current Occupant | | 478A Communipaw Avenue | Jersey City, NJ | 07304 |
| 470 Parkway Realty, LLC | | 98 Jewett Avenue | Staten Island, NY | 10302 |
| Current Occupant | | 470 Communipaw Avenue | Jersey City, NJ | 07304 |
| Communipaw Associates, LLC | | 1879 Morris Avenue | Union, NJ | 07083 |
| Current Occupant | | 487 Communipaw Avenue | Jersey City, NJ | 07304 |
| N.J. Dept. of Transportation | | 1035 Parkway Avenue | Trenton, NJ | 08625 |
| Current Occupant | | Communipaw Avenue | Jersey City, NJ | 07304 |
| Akram, Qaiser | | 88 Gifford Avenue | Jersey City, NJ | 07304 |
| Current Occupant | | Communipaw Avenue | Jersey City, NJ | 07304 |
| Junction Holding Company, LLC | Or Current Occupant | 475 Communipaw Avenue | Jersey City, NJ | 07302 |
| Conwway, Somwattie | Or Current Occupant | 12-14 Harmon Street | Jersey City, NJ | 07302 |
| Gomez, Sandra M. | | 413 Communipaw Avenue | Jersey City, NJ | 07304 |
| Current Occupant | | 16 Harmon Street | Jersey City, NJ | 07304 |
| 452 Communipaw Avenue Realty Corp. | | 452 Communipaw Avenue | Jersey City, NJ | 07304 |
| Current Occupant | | 466 Communipaw Avenue | Jersey City, NJ | 07304 |
| Comfield, LLC | | 464 Communipaw Avenue | Jersey City, NJ | 07305 |
| Current Occupant(s) | | 1112 Garfield Ave. | Jersey City, NJ | 07304 |
| City of Jersey City | | 280 Grove Street | Jersey City, NJ | 07302 |
| Current Occupant | | 460 Communipaw Avenue | Jersey City, NJ | 07304 |
| Wesson, Marc & R. & C. Tenn | Or Current Occupant | 430 Communipaw Avenue | Jersey City, NJ | 07304 |
| Comfield, LLC c/o Alma Realty | | 31-10 37th Ave., Suite 500 | Long Island City, N.J. | 11101 |
| Current Occupant(s) | | 452 Communipaw Avenue | Jersey City, NJ | 07304 |
| Jersey City Redevelopment Agency | | 66 York Street | Jersey City, NJ | 07302 |
| Current Occupant | | 1 Berry Road | Jersey City, NJ | 07304 |
| Jersey City Redevelopment Agency | | 30 Montgomery Street | Jersey City, NJ | 07302 |
| Current Occupant | | 1000 Garfield Avenue | Jersey City, NJ | 07304 |
| Simmons, La Toya C/O K. Simmons | | 134 Krone Place | Hackensack, NJ | 07601 |
| Current Occupant | | 1028 Garfield Avenue | Jersey City, NJ | 07304 |
| Gipson & Sons | | 504 Coleman Drive | Clayton, N.J. | 08312 |
| Current Occupant | | 1042 Garfield Avenue | Jersey City, NJ | 07304 |
| Bell, Clifton & Philip | Or Current Occupant | 1052 Garfield Avenue | Jersey City, NJ | 07304 |
| Jersey City Redevelopment Agency | | 66 York Street | Jersey City, NJ | 07302 |
| Current Occupant | | 1054 Garfield Avenue | Jersey City, NJ | 07304 |
| Jersey City Redevelopment Agency | | 66 York Street | Jersey City, NJ | 07302 |
| Current Occupant | | 1056 Garfield Avenue | Jersey City, NJ | 07304 |
| Jersey City Redevelopment Agency | | 66 York Street | Jersey City, NJ | 07302 |
| Current Occupant | | 1058 Garfield Avenue | Jersey City, NJ | 07304 |
| Jersey City Redevelopment Agency | | 66 York Street | Jersey City, NJ | 07302 |
| Current Occupant | | 1060 Garfield Avenue | Jersey City, NJ | 07304 |
| 285 Lincoln Ave, LLC | | 295 Newark Avenue | Jersey City, NJ | 07302 |
| Current Occupant | | 1064 Garfield Avenue | Jersey City, NJ | 07304 |
| Jersey City Redevelopment Agency | | 66 York Street | Jersey City, NJ | 07302 |
| Current Occupant | | 1068 Garfield Avenue | Jersey City, NJ | 07304 |
| 285 Lincoln Ave, LLC | | 295 Newark Avenue | Jersey City, NJ | 07302 |
| Current Occupant | | 467 Communipaw Avenue | Jersey City, NJ | 07304 |
| 285 Lincoln Ave, LLC | | 295 Newark Avenue | Jersey City, NJ | 07302 |
| Current Occupant | | 461 Communipaw Avenue | Jersey City, NJ | 07304 |
| 285 Lincoln Ave, LLC | | 295 Newark Avenue | Jersey City, NJ | 07302 |
| Current Occupant | | 457 Communipaw Avenue | Jersey City, NJ | 07304 |
| ISC, LLC | | 445 Communipaw Avenue | Jersey City, NJ | 07302 |
| Current Occupant | | 7 Berry Road | Jersey City, NJ | 07304 |
| Ideal Supply Co. | Or Current Occupant | 445 Communipaw Avenue | Jersey City, NJ | 07304 |
| 451 Communipaw Ave. Inc. C/O Snow Joe LLC | | 305 Veterans Blvd. | Carlstadt, NJ | 07072 |
| Current Occupant | | 451 Communipaw Avenue | Jersey City, NJ | 07304 |
| Ragbarsingh, Rickhi & Leela | | 363 Mcloud Drive | Fort Lee, NJ | 07024 |
| Current Occupant | | 245 Randolph Avenue | Jersey City, NJ | 07304 |
| 243 Randolph, LLC | Or Current Occupant | 243 Randolph Avenue | Jersey City, NJ | 07304 |
| Simmons, Jared & Portia | | 1123 Morning Glory Drive | Monroe Township, NJ | 08831 |
| Current Occupant | | 241 Randolph Avenue | Jersey City, NJ | 07304 |
| Lopez, Raymond | Or Current Occupant | 239 Randolph Avenue | Jersey City, NJ | 07304 |
| Robinson, Jermaine | Or Current Occupant | 237 Randolph Avenue | Jersey City, NJ | 07304 |
| So, Kimberly, As Trustee | | 546 W 156 St #29 | New York, NY | 10032 |
| Current Occupant | | 16 Union Street | Jersey City, NJ | 07304 |
| 18 Union Street, LLC. | | 373 4th Street | Jersey City, NJ | 07302 |
| Current Occupant | | 18 Union Street | Jersey City, NJ | 07304 |
| Riske, Roger | | 7733 79th Street | Playa Del Rey, CA | 90293 |
| Current Occupant | | 20 Union Street | Jersey City, NJ | 07304 |
| Morrissette, Samuel & Julia | Or Current Occupant | 22 Union Street | Jersey City, NJ | 07304 |
| Suriel, Nelson Jr. | Or Current Occupant | 24 Union Street | Jersey City, NJ | 07304 |
| Valles-Mann, Justin & Stephanie | Or Current Occupant | 26 Union Street | Jersey City, NJ | 07304 |
| Freeman-Scott, Shuwanna & Nathaniel | | 47 Nutmeg Road | Aberdeen, NJ | 07747 |
| Current Occupant | | 236 Randolph Avenue | Jersey City, NJ | 07304 |
| Salley, Rudolph & Glenda | Or Current Occupant | 238 Randolph Avenue | Jersey City, NJ | 07304 |

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| Salley, Rudolph & Glenda | | 238 Randolph Avenue | Jersey City, NJ | 07304 |
| Current Occupant | | 240 Randolph Avenue | Jersey City, NJ | 07304 |
| Perkins, Meia | | 238 Randolph Avenue | Jersey City, NJ | 07304 |
| Current Occupant | | 242 Randolph Avenue | Jersey City, NJ | 07304 |
| Randolph Avenue 15, L.L.C. | | 4706 18th Avenue | Brooklyn, N.Y. | 11204 |
| Current Occupant | | 244 Randolph Avenue | Jersey City, NJ | 07304 |
| Ljuba, LLC | | 246-8 Randolph Avenue | Jersey City, NJ | 07304 |
| Current Occupant | | 246 Randolph Avenue | Jersey City, NJ | 07304 |
| Ryms Realty, Inc. | | 4706 18th Avenue | Brooklyn, N.Y. | 11204 |
| Current Occupant | | 2 Union Street | Jersey City, NJ | 07304 |
| 10-12 Union, LLC | | 4706 18th Avenue | Brooklyn, N.Y. | 11204 |
| Current Occupant | | 10-12 Union Street | Jersey City, NJ | 07304 |
| Randolph Properties, LLC | | 338 Randolph Avenue | Jersey City, NJ | 07304 |
| Current Occupant(s) | | 340 Randolph Avenue | Jersey City, NJ | 07304 |
| Wong, Cedric & Leung Victor | | 123 Town Square Pl., #296 | Jersey City, NJ | 07310 |
| Current Occupant | | 342 Randolph Avenue | Jersey City, NJ | 07304 |
| GND Holdings II LLC | | 17 Four Columns Drive | Morganville, NJ | 07751 |
| Current Occupant | | 344 Randolph Avenue | Jersey City, NJ | 07304 |
| Perez, Leticia | | PO Box 5222 | Jersey City, NJ | 07305 |
| Current Occupant | | 346 Randolph Avenue | Jersey City, NJ | 07304 |
| Perez, George | | P. O. Box 5222 | Jersey City, NJ | 07305 |
| Current Occupant | | 348 Randolph Avenue | Jersey City, NJ | 07304 |
| Martinez, Olnavi | Or Current Occupant | 350 Randolph Avenue | Jersey City, NJ | 07304 |
| Wu, Jing | | 389 Morris Road | Wayne, PA | 19087 |
| Current Occupant | | 352 Randolph Avenue | Jersey City, NJ | 07304 |
| Public Service Electric & Gas Co. | | 80 Park Pl. Tax Dept. T-6B | Newark, NJ | 07102 |
| Current Occupant | | 1051 Garfield Avenue | Jersey City, NJ | 07304 |
| Public Service Electric & Gas Co. | | 80 Park Pl. Tax Dept. T-6B | Newark, NJ | 07102 |
| Current Occupant | | 1047 Garfield Avenue | Jersey City, NJ | 07304 |
| 312 Arlington Ave. Condo Assoc., Inc. | Or Current Occupant | 312 Arlington Avenue | Jersey City, NJ | 07305 |
| KLM-18, LLC | | 138 Canterbury Way | Basking Ridge, NJ | 07920 |
| Current Occupant | | 23 Union Street | Jersey City, NJ | 07304 |
| Arias, Jose & Santos | Or Current Occupant | 21 Union Street | Jersey City, NJ | 07304 |
| Nicasio, Ana | Or Current Occupant | 19 Union Street | Jersey City, NJ | 07304 |
| Portocarrero, Jose | Or Current Occupant | 17 Union Street | Jersey City, NJ | 07304 |
| Mowatt, Esthrana | Or Current Occupant | 15 Union Street | Jersey City, NJ | 07304 |
| Tasgeel LLC | Or Current Occupant | 13 Union Street | Jersey City, NJ | 07304 |
| Howling, Latasha & Todd | | 225 Randolph Avenue | Jersey City, NJ | 07304 |
| Current Occupant | | 227 Randolph Avenue | Jersey City, NJ | 07304 |
| Howling, Latasha & Todd | Or Current Occupant | 225 Randolph Avenue | Jersey City, NJ | 07304 |
| Santiago, Victor & Elizabeth | Or Current Occupant | 223 Randolph Avenue | Jersey City, NJ | 07304 |
| Robinson, Valencia & Gentry | Or Current Occupant | 221 Randolph Avenue | Jersey City, NJ | 07304 |
| Blache, Michael & Ramsamooj, L. | Or Current Occupant | 219 Randolph Avenue | Jersey City, NJ | 07304 |
| Arlington Avenue Group, LLC | | 192 C. Columbus Drive | Jersey City, NJ | 07302 |
| Current Occupant | | 292 Arlington Avenue | Jersey City, NJ | 07304 |
| McKenzie, Aishah & Orlana Hendy | Or Current Occupant | 298 Arlington Avenue | Jersey City, NJ | 07304 |
| Bligen, Eliza & Abraham Jr. | Or Current Occupant | 300 Arlington Avenue | Jersey City, NJ | 07304 |
| Chom 302 A, LLC. | | 7 Glenwood Ave., Suite 418 | East Orange, NJ | 07017 |
| Current Occupant | | 302 Arlington Avenue | Jersey City, NJ | 07304 |
| Wu, Jing & Liu Lucy | | 104 Fairview Avenue, #1 | Jersey City, NJ | 07304 |
| Current Occupant | | 304 Arlington Avenue | Jersey City, NJ | 07304 |
| Klepner, Shimon | Or Current Occupant | 306 Arlington Avenue | Jersey City, NJ | 07304 |
| Hines, John L. & Jean | Or Current Occupant | 308 Arlington Avenue | Jersey City, NJ | 07304 |
| Zhang, Zhen | Or Current Occupant | 310 Arlington Avenue | Jersey City, NJ | 07304 |
| Metropolitan Family Health Network | Or Current Occupant | 935 Garfield Avenue | Jersey City, NJ | 07304 |
| Rodriguez, Jorge | | 100 Linden Avenue, Apt. #1 | Jersey City, NJ | 07305 |
| Current Occupant | | 947 Garfield Avenue | Jersey City, NJ | 07304 |
| Wallabout Realty Holding LLC | | 26 Rutlidge Street | Brooklyn, N.Y. | 11249 |
| Current Occupant | | 87 Van Horne Street | Jersey City, NJ | |
| Wallabout Realty Holding LLC | | 26 Rutledge Street | Brooklyn, N.Y. | 11249 |
| Current Occupant | | Woodward Street | Jersey City, NJ | 07304 |
| Wallabout Realty Holding LLC | | 26 Rutledge Street | Brooklyn, N.Y. | 11249 |
| Current Occupant | | 97 Van Horne Street | Jersey City, NJ | 07304 |
| 90 Van Horne Street | | 206 Railroad St. | Bayport, N.Y. | 11705 |
| Current Occupant(s) | | 90 Van Horne Street | Jersey City, NJ | 07304 |
| Alt Investments, Inc. | | 100 Rock Road West | Green Brook, N.J. | 08812 |
| Current Occupant(s) | | 92 Van  Horne Street | Jersey City, NJ | 07304 |
| Leonard Parness Trucking Corp. | | 181 Pacific Avenue | Jersey City, NJ | 07304 |
| Current Occupant | | 142 Halladay Street | Jersey City, NJ | 07304 |
| City of Jersey City | | 280 Grove Street | Jersey City, NJ | 07302 |
| Current Occupant | | 144 Halladay Street | Jersey City, NJ | 07304 |
| Leonard Parness Trucking Corp. | Or Current Occupant | 181 Pacific Avenue | Jersey City, NJ | 07304 |
| Jersey City Sewerage Authority | | 575 State Highway 440 | Jersey City, NJ | 07305 |
| Current Occupant | | 280 Arlington Avenue | Jersey City, NJ | |
| Pronti Construction Inc. | | 192 C. Columbus Drive | Jersey City, NJ | 07302 |
| Current Occupant | | 203-5 Randolph Avenue | Jersey City, NJ | 07304 |
| Pronti Construction Inc. | | 192 Columbus Drive | Jersey City, NJ | 07302 |
| Current Occupant | | 201 Randolph Avenue | Jersey City, NJ | 07304 |
| Jersey City Sewerage Authority | | 555 Route 440 | Jersey City, NJ | 07305 |
| Current Occupant | | 207 Randolph Avenue | Jersey City, NJ | 07304 |
| New Jersey Transit | | One Penn Plaza East | Newark, NJ | 07105 |
| Current Occupant | | 923 Garfield Avenue | Jersey City, NJ | 07304 |
| Frenchpark Warehouse Co. | | P. O. Box 280 | Kenilworth, NJ | 07033 |
| Current Occupant | | 855 Garfield Avenue | Jersey City, NJ | 07304 |

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| Frenchpark Warehouse Co. | | P. O. Box 280 | Kenilworth, NJ | 07033 |
| Current Occupant | | 861 Garfield Avenue | Jersey City, NJ | 07304 |
| Frenchpark Warehouse Co. | | P. O. Box 280 | Kenilworth, NJ | 07033 |
| Current Occupant | | 859 Garfield Avenue | Jersey City, NJ | 07304 |
| 851 Garfield Avenue, LLC | | 54 Edgewater Road | Cliffside, NJ | 07010 |
| Current Occupant | | 851 Garfield Avenue | Jersey City, NJ | 07304 |
| Fulton Capital Group Moch LLC. | | 7 Glenwood Ave. | East Orange, NJ | 07017 |
| Current Occupant | | 118 Carteret Avenue | Jersey City, NJ | |
| Midnight Publishing LCC | | 528 Bergen Avenue | Jersey City, NJ | 07304 |
| Current Occupant | | 122 Carteret Avenue | Jersey City, NJ | |
| Reid, Dwayne | | 9 Pulaski Avenue | Carteret, NJ | 07008 |
| Current Occupant | | 124 Carteret Avenue | Jersey City, NJ | |
| Perkins, Glenda | Or Current Occupant | 144 Randolph Avenue | Jersey City, NJ | 07305 |
| JC Capital Fund Moch 3 LLC | Or Current Occupant | 146 Randolph Avenue | Jersey City, NJ | 07305 |
| L & A Asset Holdings LLC | | 252 Pacific Avenue | Jersey City, NJ | 07304 |
| Current Occupant | | 148A Randolph Avenue | Jersey City, NJ | |
| Bruce Construction Corp. | | 117-05 89th Avenue | Richmond Hills, NY | 11418 |
| Current Occupant | | 150 Randolph Avenue | Jersey City, NJ | 07304 |
| Gulin, Ivan N. | Or Current Occupant | 152 Randolph Avenue | Jersey City, NJ | 07305 |
| Williams, Annie | Or Current Occupant | 154 Randolph Avenue | Jersey City, NJ | 07305 |
| Delaware Investments MOH 1, LLC | | 7 Glenwood Ave. | East Orange, NJ | 07017 |
| Current Occupant | | 156 Randolph Ave. | Jersey City, NJ | |
| Lipshitz, Joel | | 4118 14th Avenue, #148 | Brooklyn, N.Y. | 11219 |
| Current Occupant | | 158 Randolph Avenue | Jersey City, NJ | 07304 |
| Toral Rafael & Rogelio | | PO Box 8189 | Jersey City, NJ | 07308 |
| Current Occupant | | 166 Randolph Avenue | Jersey City, NJ | 07304 |
| Tudela, Luis V. & Kathiuska | Or Current Occupant | 168 Randolph Avenue | Jersey City, NJ | 07302 |
| Mousa, Atef & Gerges, Mona | | 3737 West Ave., #M10 | Lancaster, CA | 93536 |
| Current Occupant | | 170 Randolph Avenue | Jersey City, NJ | 07305 |
| Shaw, Delores | Or Current Occupant | 172 Randolph Avenue | Jersey City, NJ | 07305 |
| Game Holdings, LLC | | P. O. Box 38 | Pomona, N.Y. | 10970 |
| Current Occupant | | 176 Randolph Avenue | Jersey City, NJ | 07305 |
| GND Builders, LLC | | 17 Four Columns Drive | Morganville, NJ | 07751 |
| Current Occupant | | 180 Randolpph Avenue | Jersey City, NJ | 07304 |
| 182 Randolph Ave. Condominium Assoc. | Or Current Occupant | 182 Randolph Avenue | Jersey City, NJ | 07305 |
| Thompson, Robert G. & Adolphus, Lena | Or Current Occupant | 184 Randolph Avenue | Jersey City, NJ | 07305 |
| Okoeguuale, Ero-Mosele | Or Current Occupant | 186 Randolph Avenue | Jersey City, NJ | 07304 |
| Mazur, Anatoliy & Maria | | 8 Rale Place | Palm Coast, FL | 32164 |
| Current Occupant | | 188 Randolph Avenue | Jersey City, NJ | 07304 |
| Gulin, Iryna & Volodymyr | Or Current Occupant | 190 Randolph Avenue | Jersey City, NJ | 07304 |
| Orach, Rostyslav | | 711 Amsterdam Avenue #21L | New York, NY | 10025 |
| Current Occupant | | 192 Randolph Avenue | Jersey City, NJ | 07305 |
| Mazur, Taras | Or Current Occupant | 194 Randolph Avenue | Jersey City, NJ | 07304 |
| 196 Randolph LLC | | 199 Van Horne Street | Jersey City, NJ | 07304 |
| Current Occupant | | 196 Randolph Avenue | Jersey City, NJ | 07304 |
| Majewski, Daniel & Amanda | Or Current Occupant | 196 Randolph Avenue | Jersey City, NJ | 07305 |
| Malich, O. Chaykivskyy, M. & S. | Or Current Occupant | 198 Randolph Avenue | Jersey City, NJ | 07305 |
| Jersey City Sewerage Authority | | 575 State Highway 440 | Jersey City, NJ | 07305 |
| Current Occupant | | 163 Halladay Street | Jersey City, NJ | 07304 |
| E27 Street LLC | | 181 Pacific Avenue | Jersey City, NJ | 07304 |
| Current Occupant | | 151 Halladay Street | Jersey City, NJ | 07304 |
| Glushko, Walter | Or Current Occupant | 149 Halladay Street | Jersey City, NJ | 07304 |
| Mendoza, Donald & Margie Daryl H. | Or Current Occupant | 147 Halladay Street | Jersey City, NJ | 07304 |
| Garcia, Margarita | Or Current Occupant | 145 Halladay Street | Jersey City, NJ | 07304 |
| Bonilla, Julissa | Or Current Occupant | 143 Halladay Street | Jersey City, NJ | 07304 |
| Kulozu, Bekir | | P.O. Box 13017 | Jersey City, NJ | 07303 |
| Current Occupant(s) | | 141 Halladay Street | Jersey City, NJ | 07304 |
| 78 Forrest Street Assoc. | | 28 Bromleigh Road | Stuart Manor, NY | 11530 |
| Current Occupant | | 78 Forrest Street | Jersey City, NJ | 07304 |
| 90 Forrest Associates, L.L.C. | | 28 Bromleigh Road | Stewart Manor, NY | 11530 |
| Current Occupant | | 84 Forrest Street | Jersey City, NJ | 07304 |
| 90 Forrest Associates, L.L.C. | | 28 Bromleigh Road | Stewart Manor, NY | 11530 |
| Current Occupant | | 86 Forrest Street | Jersey City, NJ | 07304 |
| 151 Halladay Street, LLC | | 181 Pacific Street | Jersey City, NJ | 07304 |
| Current Occupant | | Inside Halladay Street | Jersey City, NJ | 07304 |
| 100 Forrest Associates, L.L.C. | | 28 Bromleigh Road | Stewart Manor, NY | 11530 |
| Current Occupant | | 98 Forrest Street | Jersey City, NJ | 07304 |
| 100 Forrest Associates, LLC | | 2473 NW 66th Drive | Boca Raton, FL | 33496 |
| Current Occupant | | 108 Forrest Street | Jersey City, NJ | 07304 |
| Jersey City Redevelopment Agency | | 55 York St. | Jersey City, NJ | 07302 |
| Current Occupant | | 2 Dakota Street | Jersey City, NJ | |
| Jersey City Redevelopment Agency | | 66 York St. | Jersey City, NJ | 07302 |
| Current Occupant | | 70 Carteret Avenue | Jersey City, NJ | 07305 |
| Jersey City Redevelopment Agency | | 66 York St. | Jersey City, NJ | 07302 |
| Current Occupant | | 880 Garfield Avenue | Jersey City, NJ | 07304 |
| Jersey City Redevelopment Agency | | 30 Montgomery Street | Jersey City, NJ | 07302 |
| Current Occupant | | 884 Garfield Avenue | Jersey City, NJ | 07304 |
| 900 Garfield Avenue, % Ryann LLC | | 1735 Market Street #A-400 | Philadelphia, PA | 19103 |
| Current Occupant | | 900 Garfield Avenue | Jersey City, NJ | 07304 |
| Wieder, Israel | Or Current Occupant | 77 Forrest Street | Jersey City, NJ | 07304 |
| Quartz Realty, L.L.C. | | 20 Birch Street | Jersey City, NJ | 07305 |
| Current Occupant | | 163 Pacific Avenue | Jersey City, NJ | 07304 |
| Pacific Kater LLC | | 210 Fairmount Avenue | Jersey City, NJ | 07306 |
| Current Occupant | | 161 Pacific Avenue | Jersey City, NJ | 07304 |

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|---|---|---|---|---|
| Pacific Kater LLC | | 210 Fairmount Avenue | Jersey City, NJ | 07306 |
| Current Occupant | | 159 Pacific Avenue | Jersey City, NJ | 07304 |
| Pacific Kater LLC | | 210 Fairmount Avenue | Jersey City, NJ | 07306 |
| Current Occupant | | 157 Pacific Avenue | Jersey City, NJ | 07304 |
| Metrick, Stuart & Michelle | Or Current Occupant | 149 Pacific Avenue | Jersey City, NJ | 07304 |
| Ross, Isaac % Artis Jordan | Or Current Occupant | 28 Lorelei Dr | Howell, NJ | 07731 |
| Current Occupant | | 145 Pacific Avenue | Jersey City, NJ | |
| Nine Lawton Street, Inc. | | 1058 Jassamine Way | Fort Lee, NJ | 07024 |
| Current Occupant | | 133 Pacific Avenue | Jersey City, NJ | 07304 |
| 107-123 & 127 Pacific Ave. Assoc., LLC | | 130 North Main St. #St 201 | New City, NY | 10956 |
| Current Occupant | | 131 Pacific Avenue | Jersey City, NJ | 07304 |
| 107-123 & 127 Pacific Ave. Assoc., LLC | | 130 North Main St. #St 201 | New City, NY | 10956 |
| Current Occupant | | 107 Pacific Avenue | Jersey City, NJ | 07304 |
| One0One Pacific Ave., LLC | | 415 Newark St #6B | Hoboken, NJ | 07030 |
| Current Occupant | | 105-101 Pacific Avenue | Jersey City, NJ | 07304 |
| PPG Industries, Inc. | | One PPG Place | Pittsburgh, PA | 15272 |
| Current Occupant(s) | | 78 Halladay Street | Jersey City, NJ | 07304 |
| PPG Industries, Inc. | | One PPG Place | Pittsburgh, PA | 15272 |
| Current Occupant | | 94 Halladay Street | Jersey City, NJ | 07304 |
| PPG Industries, Inc. | | One PPG Place | Pittsburgh, PA | 15272 |
| Current Occupant | | 98 Halladay Street | Jersey City, NJ | 07304 |
| PPG Industries, Inc. | | One PPG Place | Pittsburgh, PA | 15272 |
| Current Occupant | | 100 Halladay Street | Jersey City, NJ | 07304 |
| PPG Industries, Inc. | | One PPG Place | Pittsburgh, PA | 15272 |
| Current Occupant | | 102 Halladay Street | Jersey City, NJ | 07304 |
| PPG Industries, Inc. | | One PPG Place | Pittsburgh, PA | 15272 |
| Current Occupant | | 104 Halladay Street | Jersey City, NJ | 07304 |
| Halladay Invest. Inc. | | 186 Ocean Avenue | Jersey City, NJ | 07305 |
| Current Occupant | | 106-116 Halladay Street | Jersey City, NJ | 07304 |
| Halladay Invest. Inc. | | 186 Ocean Avenue | Jersey City, NJ | 07305 |
| Current Occupant | | 118-126 Halladay Street | Jersey City, NJ | 07304 |
| Caven Point Partners LLC | | 418 West Side Avenue | Jersey City, NJ | 07305 |
| Current Occupant | | 34 Caven Point Avenue | Jersey City, NJ | 07305 |
| Antonucci, Alan | | P. O. Box 6466 | Jersey City, NJ | 07306 |
| Current Occupant | | 2-22 Pacific Avenue | Jersey City, NJ | 07304 |
| Antonucci, Alan & Christopher | | P. O. Box 6466 Ave. | Jersey City, NJ | 07306 |
| Current Occupant | | 24-46 Pacific Avenue | Jersey City, NJ | 07304 |
| Spectrum Health Care Inc. | Or Current Occupant | 74 Pacific Avenue | Jersey City, NJ | 07304 |
| Eden Wood Realty, LLC | | 47 Parsipanny Road | Whippany, N.J. | 07981 |
| Current Occupant | | 33-47 Carteret Avenue | Jersey City, NJ | 07305 |
| Eden Wood Realty, LLC | | 47 Parsipanny Road | Whippany, N.J. | 07981 |
| Current Occupant | | Central R R Ins | Jersey City, NJ | 07305 |
| Eden Wood Realty, LLC | | 47 Parsipanny Road | Whippany, N.J. | 07981 |
| Current Occupant | | 150 Pacific Avenue | Jersey City, NJ | 07304 |
| 200 Pacific 18, L.L.C. %Fortune FNCL | | PO Box 5397 | New York, NY | 10185 |
| Current Occupant | | 184-200 Pacific Avenue | Jersey City, NJ | 07304 |
| PPG Industries, Inc. | | One PPG Place | Pittsburgh, PA | 15272 |
| Current Occupant | | 22 Halladay Street | Jersey City, NJ | 07304 |
| PPG Industries, Inc. | | One PPG Place | Pittsburgh, PA | 15272 |
| Current Occupant | | 51-99 Pacific Avenue | Jersey City, NJ | 07304 |
| Njeda, C/O A. Smith Moving & Furn | Or Current Occupant | 33 Pacific Avenue | Jersey City, NJ | 07304 |
| PPG Industries, Inc. %Tax Admin. Dept. | | One PPG Place | Pittsburgh, PA | 15272 |
| Current Occupant | | 846 Garfield Avenue | Jersey City, NJ | 07304 |
| Jersey City Redevelopment Agency | | 66 York St. | Jersey City, NJ | 07302 |
| Current Occupant | | 824 Garfield Avenue | Jersey City, NJ | 07304 |
| PPG Industries, Inc. %Tax Admin. Dept. | | One PPG Place | Pittsburgh, PA | 15272 |
| Current Occupant | | 45 Halladay Street | Jersey City, NJ | 07304 |
| PPG Industries, Inc. %Tax Admin. Dept. | | One PPG Place | Pittsburgh, PA | 15272 |
| Current Occupant | | 25 Halladay Street | Jersey City, NJ | 07304 |
| PPG Industries, Inc. %Tax Admin. Dept. | | One PPG Place | Pittsburgh, PA | 15272 |
| Current Occupant | | 15 Halladay Street | Jersey City, NJ | 07304 |
| Michael, John | | 344 Princeton Avenue | Jersey City, NJ | 07305 |
| Current Occupant | | 784 Garfield Avenue | Jersey City, NJ | 07304 |
| Pace, Clement | | 1120 Heckel Avenue | Mountainside, NJ | 07092 |
| Current Occupant | | 802 Garfield Avenue | Jersey City, NJ | 07304 |
| PPG Industries, Inc. %Tax Admin. Dept. | | One PPG Place | Pittsburgh, PA | 15272 |
| Current Occupant | | 816 Garfield Avenue | Jersey City, NJ | 07304 |
| PPG Industries, Inc. | | One PPG Place | Pittsburgh, PA | 15272 |
| Current Occupant(s) | | 800 Garfield Ave. | Jersey City, N.J. | 07305 |
| Dariel Building, LLC | Or Current Occupant | 133 Carteret Avenue | Jersey City, NJ | 07305 |
| Essendon, LLC %Dixon Advisory | | PO Box 2032 | Jersey City, NJ | 07303 |
| Current Occupant | | 140 Randolph Avenue | Jersey City, NJ | 07304 |
| Russell, Willie & Ella | Or Current Occupant | 123 Carteret Avenue | Jersey City, NJ | 07305 |
| Murillo, Tiffany | Or Current Occupant | 121 Carteret Avenue | Jersey City, NJ | 07305 |
| Teague, Garthelia A. | Or Current Occupant | 119 Carteret Avenue | Jersey City, NJ | 07305 |
| Brun, Donald | Or Current Occupant | 117 Carteret Avenue | Jersey City, NJ | 07305 |
| 115 Carteret Ave., LLC. | Or Current Occupant | 115 Carteret Avenue | Jersey City, NJ | 07305 |
| 829 Garfield Holdings, LP | Or Current Occupant | 829 Garfield Avenue | J | 07305 |
| Bascom, Malini | Or Current Occupant | 2 Claremont Avenue | Jersey City, NJ | 07305 |
| Velez, David | Or Current Occupant | 4 Claremont Avenue | Jersey City, NJ | 07305 |
| Bunbury, Sophi | Or Current Occupant | 6 Claremont Avenue | Jersey City, NJ | 07305 |
| Ostreicher, Abraham | Or Current Occupant | 8 Claremont Avenue | Jersey City, NJ | 07310 |
| Mirthil, Reginald | Or Current Occupant | 10 Claremont Avenue | Jersey City, NJ | 07305 |
| Merritt, Besie | Or Current Occupant | 12 Claremont Avenue | Jersey City, NJ | 07305 |

| | | | | |
|---|---|---|---|---|
| Geelong, LLC % Dixon Advisory | | 1000 Plaza Two, 10 Fl. | Jersey City, NJ | 07311 |
| Current Occupant | | 98 Randolph Avenue | Jersey City, NJ | 07305 |
| Rodriguez, Robinson | | 98A Randolph Avenue | Jersey City, NJ | 07305 |
| Current Occupant | | 98.5 Randolph Avenue | Jersey City, NJ | 07305 |
| O'Marde, Heidi | Or Current Occupant | 100 Randolph Avenue | Jersey City, NJ | 07305 |
| Dionisio, Michael | Or Current Occupant | 102 Randolph Avenue | Jersey City, NJ | 07305 |
| ABI, LLC | | 259 Newkirk Avenue | Brooklyn, N.Y. | 11230 |
| Current Occupant | | 104 Randolph Avenue | Jersey City, NJ | 07305 |
| Gannon, Dana | Or Current Occupant | 106 Randolph Avenue | Jersey City, NJ | 07305 |
| Rollins, Lorraine A. | Or Current Occupant | 108 Randolph Avenue | Jersey City, NJ | 07305 |
| Samet, Shiya | | 199 Lee Ave., #338 | Brooklyn, N.Y. | 11211 |
| Current Occupant | | 110 Randolph Avenue | Jersey City, NJ | 07305 |
| Weathers, Thimothy | Or Current Occupant | 112 Randolph Avenue | Jersey City, NJ | 07305 |
| Smith, Arnold & Regina & Peoples, Mae | Or Current Occupant | 114 Randolph Avenue | Jersey City, NJ | 07305 |
| Randolph Estates LLC | | 1274 49th Street, #546 | Brooklyn, N.Y. | 11219 |
| Current Occupant | | 116 Randolph Avenue | Jersey City, NJ | 07305 |
| Badawi, Fahmi | | 68 Magnolia Avenue, #C2 | Jersey City, NJ | 07306 |
| Current Occupant | | 118 Randolph Avenue | Jersey City, NJ | 07305 |
| Little, Oralee J. | Or Current Occupant | 120 Randolph Avenue | Jersey City, NJ | 07305 |
| 122 Randolph Ave. Realty, LLC | | P.O. Box 796 | Monroe, N.Y. | 10949 |
| Current Occupant | | 122 Randolph Avenue | Jersey City, NJ | 07305 |
| 126 Randolph Holdings, LLC. | | 85 Main Street #204 | Hackensack, NJ | 07601 |
| Current Occupant | | 126 Randolph Avenue | Jersey City, NJ | |
| Vergara, Luis E. & Diane Valencia | | 47 Gallinson Drive | New Providence, NJ | 07974 |
| Current Occupant | | 128 Randolph Avenue | Jersey City, NJ | 07305 |
| Bernales, Namnama & Perkins, Alex | Or Current Occupant | 130 Randolph Avenue | Jersey City, NJ | 07305 |
| Luyando, Bemgil | Or Current Occupant | 132 Randolph Avenue | Jersey City, NJ | 07305 |
| Keller Robbin | Or Current Occupant | 15 Claremont Avenue | Jersey City, NJ | 07305 |
| GG Medina | Or Current Occupant | 11 Claremont Avenue | Jersey City, NJ | 07305 |
| Ray, Theresa | Or Current Occupant | 9 Claremont Avenue | Jersey City, NJ | 07304 |
| Yeldell, Dion | | 7 Junegrass Way | Hackettstown, NJ | 07840 |
| Current Occupant | | 5 Claremont Avenue | Jersey City, NJ | 07305 |
| Turnheim, Jacob | | 49 Decatur Avenue | Spring Valley, NY | 10977 |
| Current Occupant(s) | | 3 Claremont Ave. | Jersey City, N.J. | 07305 |
| Jacob King LLC | | 199 Lee Ave., Suite 571 | Brooklyn, N.Y. | 11211 |
| Current Occupant(s) | | 1 Claremont Ave. | Jersey City, N.J. | 07305 |
| Atlantic Tides LLC | | 1459 Garrett Drive | Wall, N.J. | 07719 |
| Current Occupant(s) | | 783 Garfield Avenue | Jersey City, N.J. | 07305 |
| T & C Investments, L.L.C. | Or Current Occupant | 770 Garfield Avenue | Jersey City, NJ | 07305 |
| T & C Investments, L.L.C. | Or Current Occupant | 758 Garfield Avenue | Jersey City, NJ | 07305 |
| City of Jersey City | | 280 Grove Street | Jersey City, NJ | 07302 |
| Current Occupant | | 20 Commercial Street | Jersey City, NJ | 07305 |
| Sudylo, Andrew & Julia | | 534 Ridge Road | Phillipsburg, NJ | 08865 |
| Current Occupant | | 55 Caven Point Avenue | Jersey City, NJ | 07305 |
| Consolidated Rail | | P. O. Box 8499 | Philadelphia, PA | 19101 |
| Current Occupant | | Caven Point Avenue | Jersey City, NJ | 07305 |
| 21 Caven Point Avenue, LLC | | 153 E. Linden Ave. | Englewood Cliffs, N.J. | 07631 |
| Current Occupant | | 21 Caven Point Avenue | Jersey City, NJ | 07305 |
| Current Occupant(s) | | 2 Union St., Apt. 1A | Jersey City, N.J. | 07304 |
| Current Occupant(s) | | 2 Union St., Apt. 1B | Jersey City, N.J. | 07304 |
| Current Occupant(s) | | 2 Union St., Apt. 1C | Jersey City, N.J. | 07304 |
| Current Occupant(s) | | 2 Union St., Apt. 1D | Jersey City, N.J. | 07304 |
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| Current Occupant(s) | | 2 Union St., Apt. 1G | Jersey City, N.J. | 07304 |
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| Current Occupant(s) | | 2 Union St., Apt. 1P | Jersey City, N.J. | 07304 |
| Current Occupant(s) | | 2 Union St., Apt. 1Q | Jersey City, N.J. | 07304 |
| Current Occupant(s) | | 2 Union St., Apt. 1R | Jersey City, N.J. | 07304 |
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| Current Occupant(s) | | 2 Union St., Apt. 2F | Jersey City, N.J. | 07304 |
| Current Occupant(s) | | 2 Union St., Apt. 2G | Jersey City, N.J. | 07304 |
| Current Occupant(s) | | 2 Union St., Apt. 2H | Jersey City, N.J. | 07304 |
| Current Occupant(s) | | 2 Union St., Apt. 2I | Jersey City, N.J. | 07304 |
| Current Occupant(s) | | 2 Union St., Apt. 2J | Jersey City, N.J. | 07304 |
| Current Occupant(s) | | 2 Union St., Apt. 2K | Jersey City, N.J. | 07304 |
| Current Occupant(s) | | 2 Union St., Apt. 2L | Jersey City, N.J. | 07304 |
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| Current Occupant(s) | | 2 Union St., Apt. 2Q | Jersey City, N.J. | 07304 |
| Current Occupant(s) | | 2 Union St., Apt. 2R | Jersey City, N.J. | 07304 |

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|---|---|---|---|
| Eastern Waterproofing | 350 Communipaw Ave. | Jersey City, N.J. | 07304 |
| Wilson Automotive Warehouse | 98 Forrest St. | Jersey City, N.J. | 07304 |
| Vision Tours Corp. | 77 Forrest St. | Jersey City, N.J. | 07304 |
| State Transtour Corp. | 77 Forrest St. | Jersey City, N.J. | 07304 |
| Milly's Unisex Beauty Center | 163 Pacific Avenue | Jersey City, N.J. | 07304 |
| Current Occupant | 181A Pacific Avenue | Jersey City. N.J. | 07304 |
| J & A Auto Repair | 181 Pacific Avenue | Jersey City, N.J. | 07304 |
| Restaurant Supplies, Inc. | 181 Pacific Avenue | Jersey City, N.J. | 07304 |
| Rim Repair | 181 Pacific Avenue | Jersey City, N.J. | 07304 |
| Pacific Pic and Pac | 181 Pacific Avenue | Jersey City, N.J. | 07304 |
| Parness | 181 Pacific Avenue | Jersey City, N.J. | 07304 |
| Pacific Logistics | 181 Pacific Avenue | Jersey City. N.J. | 07304 |
| LS Restaurant Supplies | 181 Pacific Avenue | Jersey City, N.J. | 07304 |
| El Boricua Lechoria | 213 Pacific Avenue | Jersey City, N.J. | 07304 |
| Eden Wood Corporation | 150 Pacific Avenue | Jersey City, N.J. | 07304 |
| Midway Transportation | 150 Pacific Avenue, C-2 | Jersey City, N.J. | 07304 |
| Verdi Travel Ware | 150 Pacific Avenue, A-1 | Jersey City. N.J. | 07304 |
| Lou Levy & Sons | 150 Pacific Avenue, A-2 | Jersey City, N.J. | 07304 |
| Contract Furniture Transport, Inc. | 150 Pacific Avenue, Building Q | Jersey City, N.J. | 07304 |
| Cable TV of Jersey City | 150 Pacific Avenue, Building P | Jersey City, N.J. | 07304 |
| At Home USA | 150 Pacific Avenue, Building R | Jersey City, N.J. | 07304 |
| Advanced Built Structures, Inc. | 150 Pacific Avenue | Jersey City. N.J. | 07304 |
| Green Environmental Services | 118 Halladay | Jersey City, N.J. | 07304 |
| Current Occupant | 120 Halladay | Jersey City, N.J. | 07304 |
| Turnpike Auto | 94 Halladay Street | Jersey City. N.J. | 07304 |
| Liberty Aggregates | 34 Caven Point Avenue | Jersey City, N.J. | 07305 |
| Liberty Stone | 50 Caven Point Avenue | Jersey City, N.J. | 07305 |
| Reliable Recycling | 1 Caven Point Avenue | Jersey City, N.J. | 07305 |
| Luna Pallet | 55 Caven Point Avenue | Jersey City, N.J. | 07305 |
| Current Occupant | 20 Caven Point Avenue | Jersey City. N.J. | 07305 |
| Current Occupant | 21 Caven Point Avenue | Jersey City, N.J. | 07305 |
| Dorothy Laguzza, K&L Gates LLP | One Newark Center | Newark, NJ | 07102 |
| Jeff Worden, Worden Public Relations | P.O. Box 10443 | Pittsburgh, PA | 15234 |

# JC cop pleads guilty to attempted sex with minors charge

BY KEVIN CANESSA JR.
CITY EDITOR

A 34-year-old Jersey City police officer pleaded guilty to a charge he traveled to Atlantic City to sexually assault two underage girls, Acting Attorney General Andrew J. Bruck said yesterday.

Stephen T. Wilson, 34, of Bayonne, had been charged with one count of second-degree attempted aggravated sexual assault in Atlantic County. Under his plea agreement, the state will recommend Wilson be sentenced to eight years in state prison.

He will also be required to register as a sex offender under Megan's Law and will be subject to parole supervision for life, the AG's office said.

Sentencing is set for Oct. 21.

Wilson reportedly used a chat app with other adults who told him they'd provide him access to children he could sexually assault, reports said.

The Attorney General's Office said Wilson, who was suspended after his Feb. 26 arrest, traveled to Atlantic City to meet adults he met on an incest chat app, who offered him access to underage girls, ages 8 and 10, in exchange for $200. When he was nabbed, he reportedly had condoms and more than $500 in cash on him.

"Predators like Wilson will go to great lengths to sexually exploit children, but law enforcement will go farther to bring them to justice," Bruck said. "Let this sentence serve as a warning to anyone who believes they can exploit or prey on innocent children. We will continue to work with our partners to aggressively investigate and prosecute child predators."

Wilson made $109,756 with the Jersey City PD and had been with the department for 13 years, according to state pension records.

Authorities urge anyone with information about the distribution of child sexual-abuse materials on the internet — or about suspected improper contact by anyone communicating with children on the internet — to call the New Jersey Internet Crimes Against Children Task Force Tipline at 888-648-6007.



NJ ADVANCE MEDIA FILE PHOTO

**WESTFIELD GARDEN** State Plaza parking lot.

# JC residents carjacked at Bergen mall: police

BY NOAH COHEN
NJ ADVANCE MEDIA

Two men were carjacked at gunpoint late Tuesday at the Westfield Garden State Plaza in Bergen County, police said.

The Jersey City residents told officers they left the mall in Paramus and saw a man sitting on a light post stanchion near their 2020 Mercedes G-Wagon around 9:20 p.m., according to Paramus Police Chief Kenneth Ehrenberg.

When the men got into the SUV, the assailant ran over to them, pulled a handgun and demanded the keys, Ehrenberg said. The carjacker took off in the Mercedes, he said.

The New Jersey State Police Auto Theft Task Force helped Paramus police find the stolen SUV in Jersey City, according to the chief, who said borough police also seized a vehicle used in the carjacking.

The suspect was described as a man, approximately 6-foot-3 tall with a black sweatshirt and grey sweatpants and wearing a black face mask, according to police.

Ehrenberg asked anyone with information to call police at 201-262-3400 or use the department's anonymous tips app available at www.paramuspolice.org.

# Man beat store owner with brick: cops

BY RON ZEITLINGER
MANAGING EDITOR

A Jersey City store owner was beaten with a brick after a dispute with a man who entered his store Wednesday afternoon, authorities said.

The 51-year-old, whose business is located on Monticello Avenue, was treated at the Jersey City Medical Center and released, a Jersey City spokesman said.

Yerola Pitter, 30, also of Jersey City, was arrested and charged with aggravated assault after the 4 p.m. incident, the spokesman said. Pitter is charged with possession of a weapon, the brick, and using it for an unlawful purpose.

**Notification of Environmental Investigation and Cleanup**
**Hudson County Chromate Site No. 114, Garfield Avenue Site**
**880-900 Garfield Ave., Jersey City, N.J. 07305**
**Block 21501, Lots 16, 17, 18.01, 19.01 and 20.01**
**NJDEP ID #G000005480**
**September 15, 2021**

In accordance with New Jersey Department of Environmental Protection (NJDEP) regulations for "Notification and Public Outreach," PPG is required to provide information relating to environmental conditions and remedial activities being conducted at the above-referenced site.

Former operations conducted at the Garfield Avenue Site (the Site) included a chromium ore processing plant. Groundwater at the Site is impacted with hexavalent chromium and other incidental metals that were associated with Site operations and were initially detected in the groundwater in 1983 and in the soil in 1990. PPG has determined that the contamination in groundwater has migrated from the Site and has defined the extent of contamination in the shallow, intermediate and deep-water bearing zones. Investigation in the bedrock water-bearing zone continues.

Excavation of chromium-impacted soil at Site 114, which was the source of chromium in groundwater, was completed in November 2014. Groundwater treatment, meanwhile, began in 2017 and remains under way. The southern boundary of the groundwater contamination is located approximately at Caven Point Avenue, which is about 1,000 feet from the Site. The eastern boundary is approximately 500 feet from the Site, east of Pacific Avenue near the intersection with Carteret Avenue. The northern boundary is located proximate to the Hudson-Bergen Light Rail tracks.

The chromium-impacted groundwater is located beneath properties in and immediately around the Site. Water reservoirs in Boonton, N.J., supply Jersey City with its drinking water. No groundwater in Jersey City is used for drinking, household or commercial uses. Furthermore, NJDEP has approved a Classification Exception Area, which forbids the installation or use of groundwater wells at the impacted properties.

For additional information or to obtain a copy of the complete fact sheet for this Site, please contact:

- The independent, court-appointed site administrator for PPG's cleanups via:
  - Telephone: 201-777-2099;
  - Email: Info@chromecleanup.com; or
  - Letter: Chromium Cleanup Partnership, One Hovchild Plaza, 4000 Route 66, 4th Floor (MDMC), Tinton, Falls, N.J. 07753; or
* PPG's community relations consultant, Jeff Worden, via:
  - Telephone: 412-253-0816; or
  - Email: jeff@worden-pr.com.

PAID FOR BY PPG

AECOM

Prepared for:
PPG
Jersey City, NJ

Prepared by:
**AECOM**
Piscataway, NJ
Project No. 60631459
January 2022

# Groundwater Remedial Action Work Plan Garfield Avenue Group Sites

## Final

NJDEP Program Interest Numbers: G000005480, G000008749, 629345, 025695, 246332, G000008753, G000008759, G000044581, 777089, 722429, 775706, 775998, 629388

**PPG**
**Hudson County Chromate Sites**
**Jersey City, New Jersey**

Document No. GW-008

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# List of Definitions

**Chromate Chemical Production Waste (CCPW):** A by-product generated from the production of sodium bichromate, including chromite ore processing residue, green-gray mud, and fill mixed with chromite ore processing residue or green-gray mud.

**Chromite Ore Processing Residue (COPR):** A specific type of CCPW generally characterized as a reddish brown, coarse to fine, gravel with varying amounts of sand and silt particles. The gravel portion of the matrix is typically defined as nodules from the chromate manufacturing process that range in size from ⅛- to ¾-inch in diameter. However, nodules have been infrequently detected at diameters of greater than an inch. Different sized nodules may be found cemented together to form larger clusters. The matrix of these clusters may consist of cement-like silt. These nodules can be disintegrated easily with a hammer. Occasionally when detected in the saturated zone, COPR nodules may appear as a fine-grained material that has weathered. The permeability of this material is variable. The inner matrix of COPR nodules typically contains higher concentrations of hexavalent chromium than the surface of the nodules but lower concentrations than green-gray mud.

**Chromium:** An element found in nature that is commonly used in manufacturing activities. Chromium may be present in soil or water as trivalent and hexavalent chromium. Trivalent chromium is an essential nutrient at trace concentrations and is generally found is groundwater systems in solid form (i.e., as precipitates with other minerals). Hexavalent chromium can be present in many forms, some of which are carcinogenic at high concentrations. Hexavalent chromium is typically present in the aqueous phase and is more mobile than the trivalent form. Total chromium, as measured in soil or groundwater, is the sum of trivalent and hexavalent chromium.

**Green-Gray Mud (GGM):** Generally, lime green dense silt, with minor amounts of fine sand and clay. When found in the saturated zone, the grain size of this material may have been affected further due to weathering processes. This can give the material a wet, clayey silt or silty clay appearance with little or no physical or structural integrity. This material has a low permeability. The pH of this material is generally 11 to 12 standard units.

# List of Acronyms

| | |
|---|---|
| µg/L | micrograms per liter |
| ACO | Administrative Consent Order |
| A-DGA | amended dense-graded aggregate |
| AOC | area of concern |
| ASM | Al Smith Moving & Furniture Company, Inc. property |
| bgs | below ground surface |
| CaSx | calcium polysulfide |
| CCPW | Chromate Chemical Production Waste |
| CEA | Classification Exception Area |
| cells/mL | cells per milliliter |
| CID | Case Inventory Document |
| COCs | contaminants of concern |
| COPR | chromite ore processing residue |
| Cr | chromium |
| $Cr^{+3}$ | trivalent chromium |
| $Cr^{+6}$ | hexavalent chromium |
| CSM | conceptual site model |
| DGA | dense-graded aggregate |
| DGW | discharge to groundwater |
| DIGWSSL | Default Impact to Groundwater Soil Screening Levels |
| DNAPL | dense non-aqueous phase liquid |
| EC | engineering control |
| EDD | electronic data deliverable |
| El. | elevation |
| EVO | emulsified vegetable oil |
| FA | Financial Assurance |
| FeS | ferrous sulfide |
| Fishbein | Former Fishbein Property |
| FSPM | Field Sampling Procedures Manual |
| FSP/QAPP | Field Sampling Plan-Quality Assurance Project Plan |
| ft | feet |
| GA | Garfield Avenue |
| GGM | green-gray mud |
| gpm | gallons per minute |
| GWMP | Groundwater Monitoring Plan |
| GWQS | Groundwater Quality Standards |
| GWTP | groundwater treatment plant |
| Halsted | Former Halsted Corporation Property |
| Hampshire | Hampshire Urban Redevelopment Renewal, LLC |
| HASP | Health and Safety Plan |

| | |
|---|---|
| HBLR | Hudson-Bergen Light Rail |
| HCC | Hudson County Chromate |
| HDPE | high-density polyethylene |
| HPT | hydraulic profiling tool |
| IRB/SRB | iron- and sulfate-reducing bacteria |
| IRM | interim remedial measure |
| IRZ | *in situ* reaction zone |
| ISAB | *in situ* bioprecipitation |
| ISCR | *in situ* chemical reduction |
| JCMUA | Jersey City Municipal Utilities Authority |
| JCO | Judicial Consent Order |
| JCRA | Jersey City Redevelopment Agency |
| lbs | pounds |
| LTM | long-term monitoring |
| mg/kg | milligrams per kilogram |
| mg/L | milligrams per liter |
| MGP | manufactured gas plant |
| MIU | mobile injection units |
| mm | millimeter |
| MNA | monitored natural attenuation |
| MSDS | Material Safety Data Sheet |
| mV | millivolts |
| NAVD88 | North American Vertical Datum of 1988 |
| Ni | Nickel |
| NILODN | Notice in Lieu of Deed Notice |
| NJ | New Jersey |
| N.J.A.C. | New Jersey Administrative Code |
| NJDEP | New Jersey Department of Environmental Protection |
| NJPDES | New Jersey Pollutant Discharge Elimination System |
| OGS | open grade stone |
| ORP | oxidation-reduction potential |
| PAH | polycyclic aromatic hydrocarbons |
| PBR | permit-by-rule |
| PCE | tetrachloroethene |
| ppm | parts per million |
| PSEG | Public Service Electric & Gas Company |
| PVSC | Passaic Valley Sewerage Commission |
| RA | remedial action |
| RAP | Remedial Action Permit |
| RAPR | Remedial Action Progress Report |
| RAR | Remedial Action Report |
| RAWP | Remedial Action Work Plan |

| | |
|---|---|
| RI | remedial investigation |
| RIR | Remedial Investigation Report |
| RIWP | Remedial Investigation Work Plan |
| ROW | right-of-way |
| s.u. | standard units |
| Sb | antimony |
| SRP | Site Remediation Program |
| SVOC | semi-volatile organic compound |
| TAL | Target Analyte List |
| TAP | temporary access permit |
| TCE | trichloroethylene |
| Tl | thallium |
| TOC | total organic carbon |
| TRSR | Technical Requirements for Site Remediation |
| USCS | Unified Soil Classification System |
| USEPA | United States Environmental Protection Agency |
| USGS | United States Geological Survey |
| V | vanadium |
| VOC | volatile organic compound |
| WRA | Well Restriction Area |
| wt. | weight |

# Executive Summary

AECOM has prepared this Remedial Action Work Plan (RAWP) on behalf of PPG, to present the groundwater remediation strategy at the Garfield Avenue (GA) Group Sites (Project Area), part of the Hudson County Chromate (HCC) Sites in Jersey City, New Jersey. Groundwater within the Project Area is subject to the New Jersey Department of Environmental Protection (NJDEP) Class-IIA Groundwater Quality Standards (GWQS), and is impacted by Chromate Chemical Production Waste (CCPW) metals, primarily total chromium (Cr) and hexavalent chromium ($Cr^{+6}$), and other non-CCPW contaminants, including select volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and non-CCPW metals.

Groundwater remedial investigation (RI) activities in the shallow, intermediate, and deep water-bearing zones across the Project Area have been completed and documented in the August 31, 2021 *Groundwater Remedial Investigation Report, Final* (AECOM, 2021e) ("Groundwater RIR"), and a limited investigation of the bedrock water-bearing zone on Site 114 is anticipated to be completed later. If warranted, an addendum to this RAWP will be prepared for the bedrock water-bearing zone. The findings from the RI were used to develop a conceptual site model (CSM) that is the basis for a comprehensive remediation strategy for the Project Area and is described in this RAWP. As discussed in the Groundwater RIR, groundwater in this part of Jersey City is classified as Class II-A (potable ground water with conventional treatment at current water quality); however, the groundwater is slightly brackish and is not used for potable, industrial, commercial, or private use.

The groundwater remediation goal for the Project Area is to protect human health and the environment through the attainment of the NJDEP Class II-A GWQS for the contaminants of concern (COCs). The remediation strategy to achieve the remediation goal includes a combination of active remedial actions to treat the saturated zones, where practicable and where $Cr^{+6}$ in groundwater is greater than 1,000 micrograms per liter (µg/L), followed by monitored natural attenuation (MNA) once a stable or immobilized plume is demonstrated, monitoring and maintaining existing groundwater engineering controls, and maintaining institutional controls.

Excavation of the source material across the Project Area, followed by backfilling with clean backfill (amended with FerroBlack®-H reductant, or unamended) has considerably improved groundwater quality with respect to the COCs within the shallow water-bearing zone. To remediate areas of elevated (i.e., greater than 1,000 µg/L) $Cr^{+6}$ in the intermediate and deep water-bearing zones, and localized areas in the shallow water-bearing zone within Site 114 (i.e., the location of the former chromite ore processing plant), three phases of interim remedial measures (IRMs) have been implemented or are currently underway (Phase I, Phase II and Phase III). The IRMs use a combination of *in situ* remediation technologies (injection of reagents and/or establishment of reactive zones) to establish and maintain reactive zones to achieve contaminant concentration reductions. Following active *in situ* treatment, the injected reagent(s) will maintain a geochemically reducing environment for an extended period (enhanced attenuation period), that will further attenuate COC concentrations during the active remedy phase, prior to a transition to an MNA remedy phase.

A request for an Active Category Groundwater Remedial Action Permit (RAP) will be submitted to the NJDEP for review and approval as soon as the requirements for the Active Category Groundwater RAP outlined in NJDEP's *Ground Water Remedial Action Permit Guidance* (https://nj.gov/dep/srp/guidance/srra/rem_action_permit_guidance_gw.pdf) have been met. It is expected that these requirements will be met upon completion of the treatment monitoring programs

for the three IRM phases, and at a minimum after four quarters of post-treatment monitoring data are available for the Phase III IRM. The data from these robust area-wide groundwater monitoring required under the NJDEP Discharge to Groundwater Permit-By-Rules (PBRs) for the three IRM Phases are expected to support that the active system remedy is effective. A groundwater monitoring plan, consisting of performance monitoring wells (e.g., upgradient, source area, plume longitudinal, transverse, and fringe) and sentinel wells, will be used to monitor treatment performance, groundwater quality with respect to Cr and $Cr^{+6}$ concentrations, and subsurface geochemistry during and after active treatment to evaluate the effectiveness of the active remedy, following which, transition to an MNA remedy with long-term monitoring will commence. The transition to MNA will be guided by a comprehensive performance data collection program anticipated to span a period of eight to ten years, consistent with the lines-of-evidence approach for metals outlined in the NJDEP's March 2012 *Monitored Natural Attenuation Technical Guidance* (NJDEP, 2012a).

The proposed groundwater engineering controls (FerroBlack®-H amended backfill, competent meadow mat, sheet pile, and capillary break) are intended to prevent or reduce the risk of exposure to contaminated groundwater present within the confines of the Project Area, to prevent mass discharge from the Project Area onto surrounding roadways and properties, and to protect remediated areas from recontamination. Long-term groundwater monitoring and maintenance will be performed to monitor the effectiveness of these engineering controls and aid in the continued protection of public health and the environment. In addition, the existing Classification Exception Area (CEA)/Well Restriction Area (WRA) for the Project Area, originally established in June 2018, will be updated and maintained until the groundwater remediation goal of achieving the NJ Class-IIA GWQS for the COCs has been met.

As discussed in the CSM, overburden materials in the Project Area were deposited in glaciofluvial and glaciolacustrine environments, resulting in a complex and heterogeneous matrix of soils consisting of sands, silty sands, silts, clays, and gravels of varying permeability. Given this composition of the overburden and the presence of source materials (e.g., green-gray mud) remaining beneath the light rail on Site 199, attainment of NJDEP Class II-A GWQS is not practicable in the short term in all portions of the Project Area. Therefore, a long-term remediation strategy that includes active groundwater treatment, MNA, groundwater monitoring, engineering controls, and institutional controls will be established to manage the mass discharge of COCs off site and risk to human health and future receptors. Details about each of these components of the groundwater remediation strategy are provided in this RAWP.

# 1 Introduction and Background

AECOM has prepared this Remedial Action Work Plan (RAWP) on behalf of PPG to present the remedial action (RA) approach for groundwater at the Garfield Avenue (GA) Group part of the Hudson County Chromate (HCC) Sites in Jersey City, Hudson County, New Jersey. The GA Group Sites include: Sites 114, 132, 133, 135, 137, and 143, the Roadways (Carteret Avenue, Forrest Street, Garfield Avenue, Halladay Street North, Halladay Street South, Caven Point Avenue, and Pacific Avenue), and the Off-Site Properties (Al Smith Moving, Halsted Corporation, Fishbein, Forrest Street Properties, and Ten West Apparel). This RAWP also provides the groundwater RA approach for HCC Site 199. Hereinafter these areas are referred to collectively as "the Project Area" (**Figure 1-1** and **Figure 1-2**).

Groundwater remedial investigation (RI) activities have been completed at the Project Area to delineate the horizontal and vertical extents of groundwater impacts related to Chromate Chemical Production Waste (CCPW), non-CCPW Target Analyte List (TAL) metals, volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs) contamination in the shallow, intermediate, and deep water-bearing zones, and are described in detail in the August 2021 Groundwater RI Report (Groundwater RIR) (AECOM, 2021e). Focused investigations in the bedrock water-bearing zone were also conducted during the groundwater RI. CCPW-related contamination in the bedrock has not been fully delineated and will be completed at a later date and presented in a subsequent report.

In November 2010, PPG prepared a Conceptual Plan for remediation of CCPW in soil and groundwater at the GA Group Sites (AECOM, 2010b). Between November 2010 and March 2020, PPG completed soil remediation activities that have removed a substantial portion of the CCPW-impacted fill and shallow soils. Additional soil remediation activities are ongoing. During this period, PPG performed bench- and pilot-scale tests to evaluate several remediation technologies and selected and began implementing groundwater Interim Remedial Measures (IRMs) in the shallow, intermediate, and deep water-bearing zones of Site 114. Based on the effectiveness of source area soil excavation and the groundwater IRMs, PPG developed a conceptual groundwater remediation strategy and shared this strategy with the New Jersey Department of Environmental Protection (NJDEP) in August 2020 via the Technical Memorandum (GW-093) titled *Remediation Strategy for CCPW in Groundwater for the PPG GA Group, HCC Sites, in Jersey City, New Jersey* (AECOM, 2020a).

Following the submittal of this Technical Memorandum (GW-093), and in order to facilitate NJDEP's review of the draft groundwater RAWP for the Project Area, PPG provided sections of the draft RAWP ahead of submittal of the draft RAWP via the Technical Memorandum (GW-095) *Remediation Goals / Objectives and Remedial Action Selection for the Groundwater Remedial Action Work Plan for the PPG GA Group, HCC Sites, Jersey City, New Jersey* (AECOM, 2020c). Specifically, PPG provided the sections of the draft RAWP relevant to groundwater remediation goals and objectives and selection of the groundwater remedial action to the NJDEP.

These August and September 2020 Technical Memoranda (GW-093 and GW-095) were prepared to guide discussions with the NJDEP and stakeholders regarding the remediation strategy. Based on the discussions between September 2020 and February 2021 resulting from these submittals, PPG has further developed the concepts presented in the Memoranda, and this draft RAWP formally

documents the groundwater remediation strategy for the Project Area, including groundwater remediation goals and objectives, selection and description of the groundwater remedial action, implementation of the remedial action, remedy transition and monitoring plans, schedule, and reporting.

## 1.1 Regulatory History

Investigation and remediation activities in the Project Area are regulated by the NJDEP but are administered by the Superior Court of New Jersey under an Administrative Consent Order (ACO) (NJDEP, 1990) and a Partial Judicial Consent Order Concerning the PPG Sites (JCO) (Superior Court of New Jersey Law Division – Hudson County, 2009).

PPG and the NJDEP entered into an ACO in 1990 requiring the investigation and remediation of locations where CCPW or CCPW-impacted materials related to former PPG operations may be present. On June 26, 2009, NJDEP, PPG, and the City of Jersey City entered into a JCO with the purpose of assessing and remediating sources of contamination in impacted soil and groundwater at the Project Area. In accordance with the JCO, PPG is responsible for remediating CCPW, CCPW-impacted materials, and other contaminants of concern (COCs), which are on or have emanated from Site 114 onto adjacent properties and road rights-of-way (ROWs).

The Public Service Electric & Gas Company (PSEG) is responsible for investigating and remediating impacts related to the operation of the former manufactured gas plant (MGP) located within the Project Area (PSEG, 2007; PSEG, 2009; PSEG, 2014a). Soil remediation by PSEG has been completed on the former MGP location within Site 114. A groundwater Classification Exception Area (CEA) was proposed by PSEG primarily for MGP-related constituents within the area impacted by the former MGP operations (PSEG, 2014b). The NJDEP approved PSEG's CEA proposal and established the CEA for MGP-related constituents on July 25, 2014.

## 1.2 Project Area Location and Description

### 1.2.1 Site 114

Site 114 is vacant land located in a commercial and residential area on Garfield Avenue in Jersey City, Hudson County, New Jersey. Site 114 is described in the ACO as Block 2026.A, Lots 1 and 3A and Block 2026.1, Lots 2A, 3B and 4A (current Block 21501, Lots 16, 17, 18, 19, and 20). Site 114 is bordered to the west by Garfield Avenue, to the south by Carteret Avenue and HCC Sites 132, 135, 137, and 143, to the east by Halladay Street, and to the north by Forrest Street and Site 199, part of which includes an active railroad operated by New Jersey (NJ) Transit (referred to as NJ Transit Light Rail).

The total area encompassed by Site 114 is 16.6 acres. Site 114 is the former location of a chromite ore processing facility and a former MGP. The Morris Canal was a man-made surface water body trending northeast/southwest, that formerly bisected the GA Group Sites. The MGP facility operated on the portion of Site 114 located east of the former Morris Canal from about 1886 to the mid-1930s. The western half of Site 114 was the location of the former chromite ore processing facility that operated from about 1911 to 1963. The chromite ore processing operation included a large stockpile of CCPW, primarily consisting of chromite ore processing residue (COPR), extending from the eastern portion of Site 114 southward onto Site 137. The locations of the former ore processing facility and the CCPW storage pile were identified using historical aerial photographs, which were provided in the March 2011 Remedial Investigation Work Plan (March 2011 RIWP) (AECOM, 2011).

Following demolition of above-grade structures associated with the chromite ore processing facility and the MGP facility, the remaining foundations were buried, raising the ground surface elevation (El.) by several feet. Three warehouse structures were later constructed on the property during the late 1960s. These warehouses were demolished down to the concrete floor slabs between August and December 2002.

The areas adjacent to and across the surrounding streets from Site 114 are characterized as commercial and light industrial. An office furniture manufacturer/warehouse and an auto repair shop are located west of Site 114 across Garfield Avenue. Residential areas are present further to the west. A former auto body shop/used car dealer (Site 143), a former abandoned warehouse now a vacant lot (Site 132), and former light industrial machinery/box manufacturer/warehouses/packing and recycling (Site 137) are present to the south of Site 114. Other properties further to the south/southeast include three vacant lots formerly occupied by warehouses (Site 133, Site 135, and Al Smith Moving and Storage). East of the Site 114 across Halladay Street, a former bag manufacturer/warehouse (the former Halsted Corporation) and a former auto/truck repair shop were present. Commercial, light industrial, railroad ROW, and material recycling facilities are located further to the east and southeast. The NJ Transit Light Rail ROW (Site 199) is located along the northern Site 114 boundary. A Light Rail Transit Station is present to the west-northwest of Site 114. Warehouse and light industrial buildings are present toward the northeast and across Forrest Street. Berry Lane Park and several commercial, light-industrial, and residential properties are located to the north and beyond the Light Rail ROW.

The residential areas north and west of Site 114 have been identified as part of the Jersey City Redevelopment Agency (JCRA)-approved Canal Crossing Redevelopment Plan (City of Jersey City, Division of City Planning, 2020).

Prior to the soil remedial action at Site 114, there were approximately 4.0 acres of paved areas (roadways and parking), including Dakota Street, which bisected Site 114 in an east-west direction starting at Garfield Avenue. Dakota Street was not an active public ROW and it is currently enclosed within the fenced area of Site 114. Prior to soil remediation activities, approximately 1.8 acres of Site 114 consisted of landscaped and open areas surrounding the concrete slabs of the warehouses. The landscaped areas consisted primarily of long and narrow vegetated strips along the edges of the concrete slabs. There was a 4.0-acre area on Site 114 that was capped with stone overlying a polyethylene liner, which was constructed by PPG in 1992 as an IRM (i.e., IRM #1).

Site 114 is currently vacant land owned by the JCRA and 900 Garfield Ave, % Ryann LLC (900 Garfield Avenue, LLC). At the present, Site 114 remains completely enclosed by a barrier fence for security purposes.

### 1.2.2 Site Location and Description of Remaining Garfield Avenue Group Sites

The remaining five sites (Sites 132, 133, 135, 137, and 143) that comprise the GA Group are proximate to each other on abutting parcels, collectively bordered to the west by Garfield Avenue, to the south by Caven Point Avenue, to the east by Pacific Avenue, and to the north by Carteret Avenue (**Figure 1-2**). The total area encompassed by the five sites is 11.3 acres.

#### 1.2.2.1 Site 132 – Former Town and Country

Site 132 is bordered to the west by Garfield Avenue; to the south by vacant land (816 Garfield Avenue [a.k.a. the Former Fishbein Property]), to the east by Site 137, and to the north by Site 143 and Carteret Avenue. Site 114 is located directly north across Carteret Avenue.

The total area encompassed by Site 132 is 3.16 acres. A vacant warehouse, constructed circa 1971, was demolished and the grassy and paved areas were removed in July 2013, and the building slab was subsequently removed. The warehouse was previously occupied by Town and Country Linen.

#### 1.2.2.2 Site 133 – Former Ross Wax

The western parcel of Site 133 (Site 133W) is bordered to the west and to the south by 800 Garfield Avenue (a.k.a. Ten West Apparel), to the east by Halladay Street, and to the north by Site 137. The eastern parcel of Site 133 (Site 133E) is bordered to the west by Halladay Street, to the south by Caven Point Avenue, to the east by commercial property (Al Smith Moving) and Site 135, and to the north by Carteret Avenue.

The total area encompassed by Site 133 is 2.41 acres. Several contiguous warehouses were located on Site 133E, covering an area of approximately 1.7 acres. The warehouses were demolished from September through October 2014. Previous site uses included varnish and paint manufacturing.

#### 1.2.2.3 Site 135 – Former Vitarroz/Narula

Site 135 is bordered to the west by Site 133E, to the south by commercial property (Al Smith Moving), to the east by Pacific Avenue, and to the north by Carteret Avenue.

The total area encompassed by Site 135 is approximately 1.5 acres. Several contiguous warehouses were formerly located on the property, covering an area of approximately 1.2 of the 1.5 acres. These structures were demolished in January and February of 2016 prior to the initiation of soil remediation at Site 135. Previous site uses included general grocery warehousing, operations by the Clorox Chemical Co., and other manufacturing operations.

#### 1.2.2.4 Site 137 – Former Rudolf Bass & Former TSI City Carriers

Site 137 is bordered to the west by Site 132, 816 Garfield Avenue (the Former Fishbein Property), and 800 Garfield Avenue (Ten West Apparel), to the south by Site 133W, to the east by Halladay Street, and to the north by Carteret Avenue. Site 114 is located immediately north of Carteret Avenue.

The total area encompassed by Site 137 is approximately 3.24 acres. Two warehouses and paved areas were formerly located on the property. The larger of these two warehouses located at 45 Halladay Street was owned and operated by Rudolf Bass and was utilized for the storage of used industrial machinery for resale and various businesses including but not limited to woodworking and storage. The smaller warehouse located at 25 Halladay Street was occupied by TSI City Carriers.

Prior to the construction of these warehouses, Site 137 was used to stockpile CCPW generated at the former PPG chromite ore processing facility. The CCPW was stockpiled at Site 137 until about 1958, when the property was cleared and leveled. The 45 Halladay Street building was demolished in March 2014 and the building at 25 Halladay Street was demolished from late August through early September 2013.

#### 1.2.2.5 Site 143 – Former F. Talarico Auto

Site 143 is bordered to the west by Garfield Avenue, to the south and east by Site 132, and to the north by Carteret Avenue. Residential properties are located west of Garfield Avenue. Site 114 is located immediately north of Carteret Avenue.

The total area encompassed by Site 143 is approximately 0.72 acres. A building constructed between 1963 and 1966 and paved areas were present on the property. The property operated as Talarico Auto and was used for auto repair and sales. Previous site uses included vacant land, auto salvage, and residential. The building was demolished in July 2013 and the building slab was subsequently removed in preparation for soil remediation.

#### 1.2.2.6 Site 199

Site 199 is designated by the NJDEP as an orphan sewer site where hexavalent chromium ($Cr^{+6}$)-impacted backfill may have been used. It is located along the NJ Transit Hudson-Bergen Light Rail (HBLR) tracks between Garfield Avenue and Halladay Street. Site 199 covers approximately 2.4 acres (approximately 1,040 feet long by 100 feet wide) and is mostly owned by the Jersey City Municipal Utilities Authority (JCMUA), with smaller portions owned by the City of Jersey City and the JCRA. NJ Transit maintains a ROW extending approximately 50 feet on both sides of the light rail tracks, for operation of the light rail system. In accordance with the Consent Judgment between the NJDEP et al. and Honeywell International, Inc. et al., dated September 7, 2011, Honeywell and PPG share responsibility for addressing chromium-related impacts at this Site.

### 1.2.3 Roadways and Off-Site Properties

#### 1.2.3.1 Roadways

The Roadways that abut the GA Group Sites include Carteret Avenue, Caven Point Avenue and Pacific Avenue, Forrest Street, Garfield Avenue, Halladay Street North, and Halladay Street South (**Figure 1-2**).

**Carteret Avenue**

Carteret Avenue is bordered to the south by Site 143, Site 132, Site 137 North, Site 133 East, Site 135, and Halladay Street South (the portion of Halladay Street located between Carteret Avenue and Caven Point Avenue). Carteret Avenue is bordered to the north by Site 114, Halladay Street North (the portion of Halladay Street located between Forrest Street and Carteret Avenue), and the Former Halsted Corporation property.

The total area encompassed by Carteret Avenue Roadway is approximately 1.4 acres. Carteret Avenue Roadway is currently vacant land owned by the City of Jersey City. Prior to soil remediation activities, the property consisted of a two-lane asphalted roadway underlain by underground water, combined sewer, and gas utility lines.

**Caven Point Avenue and Pacific Avenue Roadways**

Caven Point Avenue and Pacific Avenue Roadways border the GA Group Sites located to the north, including (from west to east): Ten West Apparel (800 Garfield Avenue), Halladay Street South, Site 133 East, the Al Smith Moving property, and Site 135.

The total area encompassed by the Site is approximately 2.4 acres. Caven Point Avenue and Pacific Avenue are active, two-lane, asphalt, municipal roadways underlain by underground water, combined sewer, and gas utility lines, owned by the City of Jersey City.

**Forrest Street Roadway**

The Forrest Street Roadway is bordered to the south and west by Site 114, to the north by Forrest Street Properties, and to the northeast by a Halladay Street residential property.

The total area encompassed by Forrest Street Roadway is approximately 0.45 acres. Forrest Street Roadway is an active, two-lane asphalt roadway underlain by underground water, combined sewer, and gas utility lines.

**Garfield Avenue Roadway**

Garfield Avenue Roadway is bordered to the east by Site 114 and to the west by Frenchpark Warehouse Co., Jersey Auto Repair, and vacant land. The Garfield Avenue Roadway extends from Carteret Avenue to the New Jersey Transit Hudson-Bergen Light Rail.

The total area encompassed by Garfield Avenue Roadway is approximately 0.9 acres. Garfield Avenue Roadway is a heavily traveled urban roadway that runs approximately north-south. Concrete sidewalks are present on both the east and west sides of the roadway.

**Halladay Street North**

The Halladay Street North property is located on Halladay Street between Forrest Street to the northeast and Carteret Avenue to the southwest. Halladay Street North is bordered to the northwest by Site 114 and to the southeast by the Former Halsted Corporation Property (Halsted). The total area encompassed by Halladay Street North is approximately 1.2 acres.

**Halladay Street South**

Halladay Street South is located on Halladay Street between Carteret Avenue to the north and Caven Point Avenue to the south. The southernmost portion of Halladay Street South, immediately adjacent to Caven Point Avenue, is considered part of Phase 3B South and will be addressed in a separate submission from Halladay Street South. Halladay Street South is bordered to the west by Site 137A, Site 137B, and Site 133 West, and to the east by Site 133 East. Site 114 is located to the northwest across Carteret Avenue from Halladay Street South. The total area encompassed by Halladay Street South is approximately 0.8 acres.

#### 1.2.3.2 Off-Site Properties

The Off-Site Properties that abut the GA Group Sites include Al Smith Moving, Halsted Corporation, Fishbein, Forrest Street Properties, and Ten West Apparel (**Figure 1-2**).

**Al Smith Moving & Furniture Company, Inc.**

The Al Smith Moving & Furniture Company, Inc. property (ASM) is located at 33 Pacific Avenue, Jersey City, and is bordered to the northwest by Site 133 East, to the northeast by Site 135, to the southeast by Pacific Avenue, and to the southwest by Caven Point Avenue.

The total area encompassed by ASM is approximately 0.5 acres. ASM is currently vacant land owned by GND PACIFIC HOLDINGS, LLC. Prior to remediation, the property was almost completely

occupied by a commercial warehouse building operated by the Al Smith Moving & Furniture Company, Inc. The building was demolished as part of the RA at the Site in 2017.

**Halsted**

The Former Halsted Corporation Property (Halsted) is approximately 1 acre and occupies Lots 12 through 17 on Block 21502. The property was historically used in bag fabrication operations circa 1927-1928, and as a warehouse. According to the August 2014 *Preliminary Assessment Report, Halsted Corporation Facility, 78 Halladay Street, Jersey City, New Jersey* (AECOM, 2014), historical operations have included sewing and printing of bags used for containing manure, sand, fertilizer, animal feed, and similar purposes. The property is currently vacant and owned by PPG.

**Former Fishbein Property**

The area identified as the Former Fishbein Property (Fishbein) is located at 816 Garfield Avenue. This property is bordered to the north by Site 132; to the south by Ten West Apparel (800 Garfield Avenue); to the east by Site 137, and to the west by Garfield Avenue.

The total area encompassed by Fishbein is approximately 0.26 acres. PPG purchased the property on December 9, 2013; at that time, it was a vacant, partially paved lot, and is currently in that condition. Historically, the property was used as an automobile scrap yard and a parking area.

**Forrest Street Properties**

Forrest Street Properties is comprised of the properties located at 84, 86-90, 98-100, and 108 Forrest Street. Forrest Street Properties is bordered to the west by Site 114, to the south by Site 114 and Forrest Street, to the east by the Halladay Street residential properties, and to the north by Site 199 and the NJ Transit Light Rail Line.

The total area encompassed by Forrest Street Properties is approximately 1.38 acres. Forrest Street Properties contains vacant, industrial, and/or commercial land owned by 90 Forrest Associates, LLC (Block 21501, Lots 11 and 12), and 100 Forrest Associates, LLC (Block 21501, Lots 14 and 15). Block 21501, Lot 15 is currently vacant land used for access to 100 Forrest Street. Prior to remediation, the Block 21501, Lot 15 property was vacant and undeveloped.

## 1.3 NJDEP Forms and Regulatory Cross Reference Guide

New Jersey Administrative Code (N.J.A.C.) 7:26E-5.5 provides the requirements for a RAWP. **Table 1-1** provides a cross reference table of the requirements and their location within this RAWP.

Per N.J.A.C. 7:26E-1.6, the following regulatory forms are included with this submission:

- Cover Certification Form;
- Public Notification Form; and
- Case Inventory Document (CID).

An updated receptor evaluation was submitted as part of the Groundwater RIR (AECOM, 2021e), and is summarized in Section 2.2.

# 2 Summary of Groundwater Remedial Investigation

The Groundwater RIR (AECOM, 2021e) presents the results, findings, conclusions, and recommendations from the groundwater RI for the Project Area. A Conceptual Site Model (CSM) was prepared and updated during implementation of the groundwater RI to provide the current understanding of Project Area setting and conditions and is included in the groundwater RI report, which is included in **Appendix A.1** of this RAWP. Key findings from the RI relevant to the remediation strategy are summarized below.

## 2.1 Conceptual Site Model

The information presented in the CSM was prepared in accordance with the NJDEP guidance and is an iterative tool that is updated and refined as additional information becomes available.

### 2.1.1 Physical and Environmental Setting

The Project Area is located in an urban area in Jersey City, Hudson County, NJ (**Figure 1-2**). The Project Area consists of former industrial and commercial properties and businesses located within the Canal Crossing Redevelopment Area, which encompasses 111 acres of planned redevelopment space in the southeastern section of Jersey City, NJ (City of Jersey City, 2020). The area sits on top of a variety of fill material that was historically used to reclaim land in estuarine areas for industrial development. Many parcels within the Project Area changed ownership several times over the years and each owner used the land for different industrial purposes. For more information about the parcels in the Project Area, see Section 1.2 of this report and/or the Groundwater RIR (AECOM, 2021e) in **Appendix A.1**.

#### 2.1.1.1 Topography

The Project Area has little topographic relief, with ground surface elevations ranging from El. 9 to 16 feet (ft) relative to the North American Vertical Datum of 1988 (NAVD88). However, just to the west of Garfield Avenue the topography rises approximately 30 to 40 ft in elevation within several hundred yards of the Project Area. The topography east of the Project Area is flat, extending to the Hudson River and Upper New York Bay.

#### 2.1.1.2 Surface Water

The only surface water source in the vicinity of the Project Area is the Upper New York Bay, which is located approximately 3,800 ft to the southeast. Precipitation infiltrates into Project Area fill materials, and excess surface water runoff is directed into the City-owned combined sewer system.

#### 2.1.1.3 Wetlands

There are no mapped wetlands on or adjacent to the Project Area.

#### 2.1.1.4 Former Morris Canal

The former Morris Canal bisects the Project Area and extends northeast and southwest beyond the GA Group Sites (**Figure 1-2**). Historical records indicate that the former canal was up to 40 feet wide

and 25 feet deep. The canal was decommissioned in the 1920s and was subsequently backfilled by 1951 with a variety of non-native materials, including CCPW.

## 2.1.2 Geology

A description of the Regional and Project Area geology is presented below.

### 2.1.2.1 Regional Surficial Geology

The United States Geological Survey (USGS) describes the regional surficial geology as unconsolidated sediments of Recent and Pleistocene age (Stone, et.al, 2002). These include alluvial, estuarine, eolian (windblown), and glacial lacustrine deposits, and glacial till of late Wisconsin age. The native regional surficial units include (Stanford, 1995):

1. **Estuarine and salt-marsh deposits**: Black, dark brown, and dark-gray organic silt and clay, and salt-marsh peat, with some sand; contains shells; that is generally less than 20 ft thick but can be up to 40 ft thick in some portions of the Project Area.

2. **Lake bottom deposits**: Gray to reddish-brown silt, clay, and fine sand; thinly layered to varved; well-sorted and stratified; up to 150 ft thick.

3. **Rahway Till**: Reddish-brown to reddish-yellow silty sand to sandy silt, containing subrounded and subangular pebbles and cobbles and few subrounded boulders; poorly sorted, non-stratified, generally compact below the soil zone; up to 50 ft thick. The Rahway Till forms a nearly continuous blanket on the bedrock surface, except on the steep eastern slope of the Palisades Ridge (Stanford, 1995).

Artificial fill consisting of a variety of debris and materials overlies the native unconsolidated materials in areas where fill was used to reclaim the shoreline from the Upper New York Bay or to fill marshlands and estuarine areas.

### 2.1.2.2 Project Area Surficial Geology

The Project Area is located on miscellaneous fill material that was used to reclaim the salt marsh for construction of this portion of Jersey City. Native materials beneath the fill include an organic meadow mat layer and unconsolidated deposits of glacial origin. Unconsolidated native surficial deposits pinch out against the rising bedrock surface west of the Project Area, in the vicinity of Garfield Avenue where outcrops of the Diabase are mapped (Volkert, 2016).

The primary surficial geologic units within the Project Area, from top to bottom, include:

- Fill (**the shallow zone**), consisting of:
    - Non-native fill materials in areas where soil remediation is not needed or has not yet been implemented, and
    - Clean fill (unamended or amended with the FerroBlack®-H reductant) where the previously existing non-native fill materials and subsurface structures were excavated to remove sources of chromium (Cr).
- Underlying the fill, a discontinuous layer of estuarine organic-rich deposits (meadow mat);

- Underlying the meadow mat, or directly below the fill where the meadow mat is absent, native soils consisting of sands, silty sands, silts, and clays (**the intermediate zone**) generally separated from the underlying deep zone by a layer of interbedded lower permeability silts, clayey silts, silty sands, and clays (**the transition zone, part of the intermediate zone**); and
- Underlying the intermediate zone, sands with lenses of silt, clay, and gravel underlain by the basal facies of the Rahway Till (**the deep zone, includes the basal till and overlying sands**).

#### 2.1.2.3 Regional Bedrock Geology

Jersey City is located within the upper portion of the drainage basin for Newark Bay and lies within a glaciated section of the northeast-southwest trending Newark Basin. The bedrock is principally composed of Upper Triassic to Lower Jurassic age sedimentary rocks, known collectively as the Newark Supergroup (Drake, Jr. et al., 1997). In New Jersey, the sedimentary rocks of the Newark Supergroup are composed of reddish-brown arkosic sandstone, mudstone, siltstone, conglomerate, and dark gray argillite (Volkert, 2016). The Newark Supergroup is divided into three formations based on lithology, including:

- A lower unit identified as the Stockton Formation,
- A middle unit identified as the Lockatong Formation, and
- An upper unit identified as the Passaic Formation.

These sedimentary units have been intruded by igneous rock, principally diabase, in the form of sills and dikes, with the intrusions now generally forming ridges such as the Palisades and the Heights in Jersey City. More detailed descriptions of each of these bedrock units are provided in USGS Open File Map OFM-110 (Volkert, 2016).

#### 2.1.2.4 Project Area Bedrock Geology

Consistent with the regional bedrock units, bedrock within the Project Area includes the Stockton Formation in the eastern portion of the area, the Lockatong Formation in the central portion of the area, and the diabase along the western margin of the area. The bedrock surface in the Project Area was shaped by various factors, including weathering, erosion, and glacial activity. Depth to bedrock ranges from 6 ft below ground surface (bgs) to the northwest (west of Garfield Avenue) to 119.5 ft bgs in the southeastern portion of Site 114.

Within the Project Area, the bedrock surface is characterized by two bedrock valleys (or channels) with a bedrock high separating these features in the central portion of Site 114. The bedrock surface rises to the north, east, and west of these features, resulting in a northwest-southeast trending trough with its highest elevations in the northwestern portion of the Project Area and its lowest elevations in the southeastern portion of the Project Area.

### 2.1.3 Hydrogeology

#### 2.1.3.1 Regional Groundwater Flow

Groundwater occurs regionally in the following geologic formations: the fill, the unconsolidated overburden soils/meadow mat, and the bedrock. A summary of groundwater flow in these formations is provided below:

- **Fill**: Groundwater in the fill is unconfined and is typically encountered within 10 ft bgs. In general, the shallow zone groundwater flow patterns represent a subdued version of land

surface topography although variations in these flow patterns can be attributed to heterogeneities in the fill.

- **Native Unconsolidated Overburden and Meadow Mat**: Groundwater flow in overburden materials is controlled by permeability or flow through the connected pore spaces in the soil matrix. Groundwater is mostly unconfined but may be semi-confined to confined in areas with complex stratigraphy consisting of alternating layers of less and more permeable materials. The meadow mat is a dense matrix of organic material and fine-grained soils, and this layer generally exhibits permeability that is three or more orders-of-magnitude less than surrounding materials.
- **Bedrock:** Groundwater within bedrock is stored and transmitted along fractures, bedding planes, and interconnected cracks or voids in the rock. The diabase has no matrix permeability and although fractured, serves as a no-flow boundary in the Project Area. Groundwater flow in the Lockatong and Stockton formations occurs primarily along bedding plane strike, with secondary flow along fractures parallel to bedding and along steeply dipping fractures.

#### 2.1.3.2 Project Area Groundwater Flow

Similar to the regional hydrogeology, groundwater in the Project Area occurs within distinct hydrostratigraphic water-bearing zones (units), as follows:

- **Shallow Water-Bearing Zone**: includes groundwater present in the fill from the water table to the top of the meadow mat. Where the fill was excavated during soil remediation, the backfill is a more uniform dense-graded aggregate (DGA) material or DGA amended with FerroBlack®-H. In the northeastern corner of Site 114, beyond Forrest Street, a native sandy unit underlies the fill above the intermediate water-bearing zone deposits.
- **Intermediate Water-Bearing Zone**: includes groundwater present in the meadow mat, the underlying sand unit, and the transition zone. Where present, the meadow mat is the transition zone between the shallow and intermediate water-bearing zones and generally limits vertical groundwater movement between these zones. Where meadow mat is absent, the shallow and intermediate water-bearing zones are in direct contact. Where present, the transition zone behaves like an aquitard due to its lower permeability. The intermediate water-bearing zone pinches out against the rising bedrock surface west of the Project Area (beyond Garfield Avenue).
- **Deep Water-Bearing Zone**: north of Carteret Avenue, the deep zone consists primarily of sand and gravel with lenses of clay or silt underlain by basal till. South of Carteret Avenue, the deep zone becomes more difficult to differentiate from the intermediate zone as both zones grade into thicker sequences of lower conductivity materials such as silts, clays, and fine sands with silt and clay. The deep water-bearing zone pinches out against the rising bedrock surface on the western margin of the Project Area near Garfield Avenue.
- **Bedrock Water-Bearing Zone**: consists primarily of the Lockatong Formation, with the Palisades Sill (diabase) along the western edge of the Project Area and a section of the Stockton Formation in the eastern portion of Site 114. Groundwater flow within the bedrock occurs only within interconnected bedrock fractures, bedding planes, cracks, and voids. Yields from bedrock wells in the Project Area are low (0.02 to 0.05 gallons per minute [gpm]). Groundwater flow in bedrock is a small fraction of the total groundwater flux through the Project Area.

### 2.1.4 CCPW Source Areas

The sources of CCPW-related impacts to groundwater in the shallow water-bearing zone in the Project Area include:

- The former chromite ore processing facility on Site 114;
- The former stockpiles of CCPW, which consisted of:
    - A stockpile of COPR extending from the eastern portion of Site 114 southward onto Site 137 (north and south of Carteret Avenue); and
    - A stockpile of green-gray mud (GGM) immediately south of the processing facility;
- Fill materials impacted with CCPW; and
- Fill materials, which included CCPW, used to abandon the former Morris Canal (includes GGM remaining under the light rail on Site 199).

### 2.1.5 CCPW Groundwater Impacts

Groundwater analytical results were compared to the NJDEP Class-IIA Groundwater Quality Standards (GWQS) in accordance with N.J.A.C. 7:9C (NJDEP, 2020a) to delineate the horizontal and vertical extent of Cr-related impacts to groundwater within the Project Area. Currently there is no GWQS for $Cr^{+6}$; therefore, Cr-related impacts are evaluated using the GWQS for Cr of 70 micrograms per liter (µg/L). The current understanding of the distribution of Cr in groundwater is presented in plan-view and on cross-sections in the Groundwater RIR figures included in **Appendix A.1:**

- Horizontal delineation was achieved for the shallow, intermediate, and deep water-bearing zones in accordance with the NJDEP's Technical Requirements for Site Remediation (TRSR) (NJDEP, 2012b).
- Horizontal delineation within bedrock was achieved on the eastern and northern portions of Site 114. Additional delineation is required to the south and west of Site 114, within a limited area in the southwestern portion of Site 114 and northern portions of Sites 143 and 132.
- Vertical delineation within the overburden was achieved in several parts of the Project Area. However, additional vertical delineation is required in bedrock in the southwestern portion of Site 114 and northern portions of Site 143 and Site 132.

### 2.1.6 Fate and Transport of Chromium in Groundwater

In general, Cr leached from source areas, infiltrated into the subsurface and migrated downward through the unsaturated zone. Once within the saturated zone, migration occurs horizontally or vertically along the prevailing direction of groundwater flow via advection or diffusion based on soil type. When low-permeability soils are encountered, Cr-impacted groundwater may spread laterally along the permeability contrast where low permeability soil is encountered or diffuse into the low permeability soils. Back-diffusion of Cr from these lower-permeability soils into surrounding higher-permeability soils may occur over time, depending on concentration gradients or hydraulic conditions.

A more detailed discussion of the fate and transport of Cr-related impacts to groundwater for each of the water-bearing zones within the Project Area is presented in the Groundwater RIR (AECOM, 2021e). Key elements from the Groundwater RIR are summarized below:

- The Cr groundwater plume in the Project Area does not extend very far from the former source areas, even where preferential pathways exist, such as utilities or other anthropogenic features.
- No liquid wastes were generated from operations at the former chromite ore processing facility. Therefore, density-driven flow is not a likely contaminant transport mechanism in the Project Area.
- Shallow water-bearing zone:
    - Prior to source removal, shallow fill materials and CCPW-impacted soils above the meadow mat were sources of Cr impacts to the shallow water-bearing zone groundwater.
    - The shallow sources of Cr to groundwater are being eliminated as impacted shallow soils are removed and clean/amended fill is placed.
    - Soil remedial actions completed to date have significantly reduced Cr concentrations in the shallow water-bearing zone, with only a few localized areas remaining that exhibit Cr concentrations greater than the NJDEP GWQS.
- Intermediate water-bearing zone:
    - The primary source of Cr-impacts to the intermediate water-bearing zone is the overlying shallow water-bearing zone. Materials used to fill the former Morris Canal also serve as sources of impacts to the intermediate water-bearing zone.
    - Cr migration occurs both horizontally and vertically, depending on hydraulic conditions.
    - Fine-grained, low-permeability, soils in the intermediate zone may be sequestering Cr within the soil matrix. While groundwater flux and Cr mass transport within low-permeability soils is low, these materials may retain diffused Cr with the potential to slowly back-diffuse Cr into surrounding higher permeability soils.
    - In portions of the Project Area north of Carteret Avenue, the intermediate zone is more heterogeneous than south of Carteret Avenue, with layers of permeable sands and gravels interbedded with lower permeability layers of finer-grained materials.
    - The intermediate zone thickens in the southeastern corner of Site 114 as the bedrock surface deepens. Overburden deposits become more homogeneous, with permeability increasing, and sands and gravels prevail.
    - South of Carteret Avenue and east of the former Morris Canal, the intermediate zone is characterized by thicker and more continuous sequences of silts and clays.
    - Where present, the interbedded silts and clays of the transition zone limit vertical migration of Cr-impacted groundwater into underlying soils.
    - Placement of the sheet pile and sealing of the sheet pile joints has significantly reduced horizontal migration of Cr-impacted groundwater off Site 114 within the intermediate water-bearing zone.
    - Current monitoring data indicate that groundwater within the intermediate water-bearing zone is impacted by levels of Cr greater than the NJDEP GWQS, both within the GA Group Sites and in off-site areas.

- Deep water-bearing zone:
    - The source of Cr impacts to the deep water-bearing zone is the overlying intermediate water-bearing zone.
    - Migration of groundwater impacts from the intermediate water-bearing zone into the deep water-bearing zone occurs primarily along downward vertical hydraulic gradients within portions of the former Morris Canal.
    - The deep water-bearing zone north of Carteret Avenue is less homogeneous than it is south of Carteret Avenue, with layers of permeable sands and gravels interbedded with layers of finer-grained material of lower permeability overlying the basal till.
    - The deep zone thickens in the southeastern corner of Site 114 as the elevation of the bedrock surface lowers, with deposits grading into less permeable silts and clays underlain by basal till.
    - Where present, the lower-permeability transition zone separating the intermediate and deep water-bearing zones attenuates the groundwater flux and Cr mass transport into the deep zone.
    - The bottom of the deep water-bearing zone consists of a layer of basal till sitting atop bedrock. The basal till is continuous across the Project Area and limits vertical migration of Cr-impacted groundwater into the underlying bedrock. Discontinuous sand stringers or sand lenses of limited extent within the basal till may serve as preferential migration pathways for Cr-impacted groundwater. However, these more permeable zones within the basal till comprise a very small portion of the overall thickness of the basal till.
    - Groundwater flow within the deep water-bearing zone is influenced by the shape of the underlying bedrock surface. The bedrock high in the middle of Site 114 disrupts flow in the deep water-bearing zone effectively creating two migration pathways in the deep overburden around this bedrock high.
    - Groundwater conditions in the basal till are influenced by the shape of the bedrock surface. Based on the extensive monitoring well and remediation well network on Site 114 in the intermediate and deep water-bearing zones, and the 19 monitoring wells installed as part of the groundwater RI, , basal till underlying the northwestern and eastern portions of Site 114 that contain elevated concentrations of Cr in groundwater does not exhibit Cr concentrations greater than the GWQS, demonstrating vertical attenuation of Cr as the overburden geology transitions into the basal till. The basal till in the central portion of Site 114 is encountered at shallower depths due to the bedrock high situated in this area, and is adjacent to higher-permeability deep-zone deposits with elevated concentrations of Cr. Migration of Cr-impacted groundwater into the basal till in these areas occurred to a limited extent horizontally via discontinuous sand stringers and vertically via diffusion.
    - In the southwestern portion of Site 114 (west of the bedrock high), a localized bedrock valley creates a restricted flow regime in the deep water-bearing zone, with groundwater flowing into the valley from upgradient areas to the north and discharging from the valley to the southeast over a rise in the bedrock surface. The southern limit of the valley coincides with the location of the former CCPW stockpile identified as the Light Toned Pile (refer to Figure 2-1 in the Groundwater RIR [**Appendix A.1**]). The restricted groundwater flow regime in this area allowed for vertical migration of Cr-impacted groundwater into the basal till/weathered bedrock.

  - Chromium concentrations in the deep water-bearing zone in the southeastern portion of Site 114 located east of the bedrock high attenuate quickly as the deep zone deposits become lower in elevation and fall below the areas of impacted groundwater.

- Bedrock water-bearing zone:
  - Based on data collected to date, the only portion of bedrock groundwater within the Project Area which exhibits CCPW-related impacts is situated in the southwestern quadrant of Site 114.
  - The source of bedrock groundwater impacts in the southwestern portion of Site 114 is the overlying overburden, with migration from overburden soils into the bedrock along downward vertical hydraulic gradients. Chromium-impacted groundwater may also enter the bedrock horizontally in areas where the elevation of the bedrock fluctuates significantly, thereby placing bedrock in lateral contact with adjacent overburden soils.
  - Migration of Cr-impacted groundwater within weathered bedrock is similar to porous media due to the high degree of interconnectivity between the weathered bedrock elements. Zones of highly-weathered bedrock where the rock occurs within a clay matrix exhibit lower permeability with reduced potential for contaminant migration.
  - Within competent bedrock, migration occurs along bedding planes and interconnected fractures, cracks, or voids in the rock.

## 2.2 Receptor Evaluation

An updated receptor evaluation was prepared for the Project Area and included with the Groundwater RIR (AECOM, 2021e). Conclusions from the receptor evaluation are summarized below:

- Groundwater beneath the Project Area is not used as a source of potable water, as the area is served by the municipal water supply system.
- Land use surrounding the Project Area includes predominantly commercial and industrial properties (e.g., warehouses, garages, etc.).
- Residential properties are located to the west of the Project Area, between Garfield Avenue and Randolph Avenue (upgradient of the groundwater plume).
- No schools or childcare centers are present within 200 feet of the Project Area.
- No sensitive receptors are present within 200 ft downgradient of the 70 µg/L Cr isopleth in the shallow, intermediate, or deep water-bearing zones. In addition, the results of the well search included in the updated receptor evaluation show that no irrigation or domestic supply wells are located within a half-mile of the Project Area.

## 2.3 Classification Exception Areas

Three CEAs were proposed or established for the Project Area to serve as institutional controls and provide notification to the public that COC concentrations remain at concentrations greater than the GWQS. These CEAs are discussed below.

### 2.3.1 CEA for Project Area Groundwater

A CEA for the Project Area was established by the NJDEP on June 7, 2018 (NJDEP, 2018a) and an updated CEA/Well Restriction Area (WRA) Form was submitted with the Groundwater RIR (AECOM, 2021e) to propose a revision to the CEA. The proposed updated CEA encompasses an area of approximately 35 acres and extends vertically to a depth of approximately 114 ft bgs. The CEA includes the shallow, intermediate and deep water-bearing zones, and a portion of the bedrock water bearing zone where Cr-related contamination was observed during the recently completed RI. The vertical extent of the CEA within the bedrock will be updated in the future, if additional information becomes available indicating that an update to the CEA is necessary. The CEA serves as an institutional control and provides notification to the public that COC concentrations remain at concentrations greater than the GWQS within the areas encompassed by the CEA.

### 2.3.2 CEA for Historic Fill-related COCs

The Project Area is located within an area of New Jersey where historic fill was widely used to raise the topographic elevation (NJDEP, 2013a). Historic fill refers to non-indigenous material, which was contaminated prior to emplacement and which includes construction and demolition debris, dredge spoils, incinerator residue, fly ash, and other non-hazardous solid wastes.

Prior to filling and land reclamation activities, which began in the late 1800s, the shoreline near the Project Area was located slightly east of Garfield Avenue. The low-lying marshy areas were filled over time using a variety of fill materials transported from various source areas. Research indicates that fill included construction spoils, silts and sands, demolition debris, garbage from New York City, incinerator ash, coal ash, ship ballast, industrial waste, and other miscellaneous materials. Historical maps indicate that the majority of filling activities occurred between 1905 and 1947 (AECOM, 2012a). As most of the Project Area was underlain by non-native historic fill from the ground surface to the meadow mat prior to implementation of any soil remedial actions, it is expected that some of the non-CCPW related impacts to groundwater are attributable to historic fill.

As described in the February 2012 *Remedial Investigation Report – Soil* (2012 Soil RIR) (AECOM, 2012a), several non-CCPW-related COCs were found in soil samples at concentrations greater than their applicable regulatory criteria:

- TAL metals such as aluminum, mercury, cadmium, zinc, etc. were detected in soil samples at concentrations greater than their respective Default Impact to Groundwater Soil Screening Levels (DIGWSSLs), and the distribution of these metals was coincident with the historic fill material found throughout this section of Jersey City.
- SVOCs, including compounds typically associated with historic fill (e.g., polycyclic aromatic hydrocarbons [PAHs]), were identified in soil in the western portion of Site 114 and were coincident with the historic fill material found throughout this section of Jersey City. The concentrations of these SVOCs fall within the range of historic fill and the soil boring logs support the designation of historic fill.

Additionally, historical boring logs advanced during various soil RI programs show a variety of fill types and fill layers across the Project Area.

Several historic fill-related contaminants have been detected at concentrations greater than their respective GWQS in Project Area groundwater. The distribution of historic fill-related compounds in the Project Area groundwater was evaluated in PPG's Technical Memorandum *GW-072A, Constituents of Concern Emanating from Site 114 – Groundwater* (Emanating from Groundwater

Technical Memorandum), included in Appendix A to the Groundwater RIR (AECOM, 2021e), and in PSEG's 2014 Groundwater RIR (PSEG, 2014a). These documents identified the constitutes in groundwater associated with historic fill. NJDEP has concurred with this assessment, in an email dated February 24, 2021 (NJDEP, 2021b).

A CEA/WRA Fact Sheet Form for historic fill-related impacts to groundwater was submitted with the Groundwater RIR (AECOM, 2021e) to propose establishment of a virtual CEA. The following historic-fill related COCs were included in the Historic Fill virtual CEA application:

- Beryllium
- Cadmium
- Cobalt
- Mercury
- Selenium
- Silver
- Zinc
- 3+4-Methylphenol

### 2.3.3 CEA for MGP-related Impacts

As stated in Section 1, PSEG is responsible for remediating impacts related to the operation of the former MGP on Site 114. Several MGP-related COCs remain in groundwater at concentrations greater than their respective NJ GWQS. The COCs related to the former MGP are summarized in the Emanating from Groundwater Technical Memorandum, included in Appendix A of the Groundwater RIR (AECOM, 2021e).

On June 6, 2014, PSEG submitted a proposal for the establishment of a CEA for groundwater contamination relating to the operation of the former MGP on Site 114 (Block 21501, Lots 16, 17, 18 and 19) (PSEG, 2014b), which was approved by the NJDEP on July 25, 2014. The CEA associated with the former MGP remediation encompasses an area of approximately 76 acres and extends vertically to a depth of 100 ft bgs.

# 3 Summary of Completed and Ongoing Remedial Actions

This section summarizes the completed and ongoing remedial actions at the Project Area. Soil remedial activities completed over the past decade have removed a substantial portion of CCPW-impacted fill and shallow soils, and additional soil remedial activities are ongoing. These soil remedial activities have resulted in a considerable and extensive improvement of groundwater quality within the shallow water-bearing zone. During soil remediation and restoration activities, groundwater engineering controls were established, which include a capillary break, amended backfill, and steel sheet pile. In addition, competent low-permeability meadow mat, a naturally occurring feature, is present across large portions of the Project Area. The meadow mat has limited vertical migration of Cr-impacted groundwater and promotes reducing conditions where $Cr^{+6}$ is reduced to trivalent chromium ($Cr^{+3}$) in this saturated zone area.

Based on bench- and pilot- scale testing conducted between 2011 and 2015, groundwater IRMs have been, are being, or are planned to be conducted in a phased approach to remediate targeted portions of the Project Area. Finally, three CEAs have been proposed or established for the Project Area to serve as institutional controls and provide notification to the public that COCs concentrations remain greater than the GWQS.

Collectively, these soil and groundwater remedial actions are important components of the overall groundwater remediation strategy for the Project Area. The rest of this section is organized as follows:

- Section 3.1 summarizes the soil remedial actions completed and ongoing, and existing groundwater engineering controls;
- Section 3.2 summarizes the bench- and pilot-scale testing that was completed and used to select groundwater remedial alternatives;
- Section 3.3 summarizes groundwater IRMs that have been completed, or are ongoing; and
- Section 3.4 summarizes the institutional controls that have been proposed or established.

## 3.1 Soil Remediation

### 3.1.1 Soil Excavation, Backfilling, and Restoration

Between 2010 and 2020, Cr-impacted soil was excavated from HCC Sites 114, 132, 133 East, 135, 137 North, 143, and 186, from adjacent properties (ASM, Forrest Street Properties, and Halsted), and adjacent roadways (Carteret Avenue, Halladay Street, and Forrest Street). As of June 30, 2021, 878,400 tons of hazardous waste material and 213,450 tons of non-hazardous waste material have been excavated from these areas (AECOM, 2021d). Excavated material was disposed of at licensed, off-site locations in accordance with applicable regulations.

Approximately 1,388,000 tons of imported clean fill material was placed in the Project Area through June 30, 2021 (AECOM, 2021d). Clean backfill (DGA) for a portion of these areas was amended with FerroBlack®-H, a chemical reductant designed to remediate heavy metals such as Cr. This water-based suspension of ferrous sulfide solids is used to prevent the amended backfill from being recontaminated by rising Cr-impacted groundwater during periods of precipitation and infiltration, and to support groundwater remediation of Cr.

Placement of FerroBlack®-H-amended backfill has resulted in substantial improvement in groundwater quality within the shallow water-bearing zone, as is evident from the groundwater analytical data collected from shallow-zone monitoring wells in these remediated areas (refer to Figure 5-11 in **Appendix A.1**). Additional excavation and backfilling activities are ongoing at Site 133 West, Site 137 South, and at the adjacent Ten West Apparel and former Fishbein properties. A description of FerroBlack®-H-amended backfill as a groundwater engineering control is discussed in Section 3.1.2.2 and Section 6.4.2.

Soil remedial action reports (RARs) for several HCC Sites, adjacent roadways, and off-site properties were submitted to the project stakeholders and have been approved, or conditionally approved by the NJDEP. The following table summarizes the 19 HCC Sites/roadways/off-site properties where soil remediation was completed, and the 14 RAR Determinations issued as of December 2021[1].

**Table 3-1 Soil Remediation Status [1]**

| Site Name | Excavation Complete | Backfill Complete | Restoration Complete | RAR Determination | Consent Judgement Compliance |
|---|---|---|---|---|---|
| Site 114 | 11/24/2014 | 1/21/2015 | 1/31/2018 | 10/31/2019 | 6/1/2020 |
| Site 132 | 9/5/2014 | 5/15/2015 | 1/31/2018 | 6/27/2019 | 11/1/2019 |
| Site 143 | 9/5/2014 | 5/15/2015 | 1/31/2018 | 9/30/2019 | 6/26/2020 |
| Site 137 (North) | 5/15/2015 | 8/3/2015 | 1/31/2018 | 9/30/2019 | 6/26/2020 |
| Halladay Street South (AOC HSS-1A) | 10/22/2015 | 7/29/2016 | 1/31/2018 | 5/2/2019 | 6/30/2020 |
| Site 133 (East) (AOC 133E-1A) | 10/22/2015 | 7/29/2016 | 1/31/2018 | 10/11/2019 | 3/24/20 |
| Site 135 (North) | 5/25/2016 | 7/29/2016 | 1/31/2018 | 10/11/2019 | 1/15/2021 |
| Site 135 (South) | 8/23/2016 | 12/29/2016 | 1/31/2018 | 10/11/2019 | 1/15/2021 |
| 108 Forrest Street | 7/19/2017 | 8/9/2017 | 5/2/2018 | 10/29/2019 | - |
| Al Smith Moving | 1/8/2018 | 1/26/2018 | 2/15/2018 | 5/28/2019 | 10/11/2020 |
| Forrest Street | 8/4/2017 | 9/1/2017 | 6/27/2018 | 10/29/2019 | - |
| Halsted Corporation | 8/10/2018 | 8/24/2018 | 4/24/2019 | - | - |
| Halladay Street South (AOC HSS-1B) | 11/30/21 | 12/31/21 | Anticipated Feb 2022 | - | - |
| Phase 3B-South (Sites 133 West, 137 South, Ten West Apparel, Fishbein, and portions of Halladay Street South) | 11/30/21 | 12/31/21 | Anticipated Feb 2022 | - | - |
| 84, 86-90, 98-100 Forrest Street | Approved RAWP for Restricted Use Remedy | | | 9/28/2021 | |
| Carteret Avenue | 1/15/2020 | 2/7/2020 | 12/16/2020 | 9/28/2021 | - |
| Halladay Street North | 4/2/2020 | 4/10/2020 | 4/10/2020 | 12/29/21 | - |

[1] Based on Master Schedule for the NJ PPG Chrome Remediation Sites, Exhibit 2/3, Revision date July 30, 2021 (Riccio, 2021). RAR Determination for Carteret Avenue, Halladay Street North, and 84, 86-90, 98-100 Forrest Street is also included.

| Site Name | Excavation Complete | Backfill Complete | Restoration Complete | RAR Determination | Consent Judgement Compliance |
|---|---|---|---|---|---|
| Garfield Avenue | Approved RAWP for Restricted Use Remedy | | | - | |
| Pacific Avenue and Caven Point Avenue | Approved RAWP for EC and NILODN | | | - | |

**Notes:**
AOC = Area of Concern
EC = engineering control
NILODN = Notice in Lieu of Deed Notice

### 3.1.2 Engineering Controls

The November 16, 2018 memorandum titled *Site 114 – Summary of Proposed Groundwater Engineering Controls* (AECOM, 2018b) introduced the concept of groundwater engineering controls as a component of the overall groundwater remediation strategy for the Project Area. The memorandum identified four features that were either installed during soil remediation, or are naturally occurring within the Project Area, that would serve as engineering controls for contaminated groundwater. The four features are:

1) Capillary break;
2) FerroBlack®-H-amended backfill;
3) Competent meadow mat; and
4) Sheet pile barrier.

Each of these installed or natural features are intended to prevent or reduce the risk of exposure to contaminated groundwater in the Project Area and, also, serve to reduce mass discharge from the Project Area onto surrounding roadways and properties. **Figure 3-1** depicts the as-built conditions of these controls as of August 2021. A brief discussion of these engineering controls is provided below, and Section 6.4 describes how the controls serve the overall groundwater remedial objectives for the Project Area.

#### 3.1.2.1 Capillary Break

Since soil remediation was and will be performed prior to groundwater remediation, a capillary break consisting of an impermeable high-density polyethylene (HDPE) liner or a 6-inch layer of open grade stone (OGS) was required in certain areas to prevent the formation of surficial $Cr^{+6}$ blooms. The criteria for determining the need for a capillary break are described in the approved *Capillary Break Design Final Report (Revision 2)* (AECOM, 2017f). The extents of the installed capillary break are detailed in the approved *Capillary Break Design Final Report* (Revision 2) (AECOM, 2017f) and *Capillary Break Design Final Report (Revision 2) Addendum (Revision 1)* (AECOM, 2021a).

The impermeable HDPE liner capillary break was installed in portions of Site 114 at approximately 1 to 2 ft bgs, in Forrest Street, along Halladay Street (in the vicinity of the 101 Pacific Avenue building), and at Site 199. the capillary break consisting of a 6-inch layer of OGS was installed in portions of Site 114 at elevation 13.2 feet NAVD88 (**Figure 3-1**).

#### 3.1.2.2 FerroBlack®-H-Amended Backfill

Backfill (DGA) amended with FerroBlack®-H at varying dosages (0.7% to 2.8% by weight [wt.]) was placed in various portions of the Project Area, shown on **Figure 3-1**. The required FerroBlack®-H soil

dose was determined based on the concentration of $Cr^{+6}$ in groundwater and is summarized in the table below:

**Table 3-2 Basis for Use of FerroBlack®-H in Backfill**

| $Cr^{+6}$ Concentration in Shallow Groundwater | FerroBlack®-H Solution (% by wt.) |
|---|---|
| Less than 1 part per million (ppm) | 0 |
| Greater than 1 ppm but less than 100 ppm | 0.7 |
| Greater than 100 ppm | 2.0-2.8 |

**Notes:**
ppm parts per million
% percentage
wt. weight

The thickness of the amended backfill layer ranges from 5.5 ft to 21.4 ft (AECOM, 2017f; AECOM, 2021a). As of September 30, 2021, approximately 12,200 tons of FerroBlack®-H has been mixed with clean fill to prevent recontamination of shallow soils by rising $Cr^{+6}$-contaminated groundwater beneath the amended backfill. The FerroBlack®-H also serves as a first step in treating total Cr and $Cr^{+6}$ contamination in groundwater.

According to the approved Discharge to Groundwater (DGW) Permit-By-Rule (PBR) for FerroBlack®-H application at the Project Area (NJDEP, 2012c; NJDEP, 2013c; NJDEP, 2015; NJDEP, 2017a; NJDEP, 2017b), four quarters of groundwater monitoring (following placement of the amended backfill) is required to demonstrate the effectiveness of the FerroBlack®-H in preventing recontamination of groundwater by $Cr^{+6}$ in the shallow water-bearing zone. A discussion of the effectiveness of the backfill amendment is provided in Section 6.4.3. Groundwater monitoring under the PBR was completed for Site 114, Site 132, Site 133 East, Site 135, Site 137 North, Site 143, Halladay Street South, and Forrest Street, Carteret Avenue, and Halladay Street North. As soil remediation is completed in additional project areas (e.g., Site 133 West, former Fishbein property, etc.), four quarters of groundwater monitoring will be conducted, as outlined in the 2017 *Groundwater Monitoring Plan – Final* (AECOM, 2017c) (GWMP) and approved PBR.

#### 3.1.2.3 Competent Meadow Mat

As discussed in Section 2, the meadow mat is a naturally occurring, low-permeability estuarine, organic-rich layer comprised primarily of peat, which is present at depths ranging from 10 to 25 ft bgs (**Figure 3-1**). As an engineering control, competent meadow mat is 1 foot or greater in thickness and, where present, limits vertical flow of impacted groundwater from the intermediate water-bearing zone into the shallow water-bearing zone. In addition, the meadow mat acts as a long-lasting natural source of organic carbon (reductant) that maintains a reducing geochemical environment, which promotes reduction of $Cr^{+6}$ to $Cr^{+3}$.

#### 3.1.2.4 Sheet Pile

Steel sheet pile was driven into the native soil/fill during soil remedial actions conducted by PPG and PSEG to aid in dewatering activities and to limit off-site mass discharge of groundwater COCs and MGP fluids. In general, the sheet pile begins at the ground surface, intersects the shallow and intermediate water-bearing zones, and terminates in the deep water-bearing zone. Sheet pile is currently present at the perimeter and the interior of Site 114 (bisecting Site 114 into eastern and

western portions), and along Carteret Avenue and Sites 143, 132, 137, and 135 (**Figure 3-1**), and will be used as an engineering control in the intermediate water bearing zone and in the portion of the deep water-bearing zone where present. Additional details pertaining to the use of the sheet pile as a groundwater engineering control are provided in Section 6.4.4.

## 3.2 Groundwater Bench- and Pilot-Scale Tests Supporting Selection of Remedial Action

PPG has conducted a series of bench- and pilot-scale tests to evaluate the effectiveness and implementability of several groundwater remedial technologies to treat groundwater COCs. Key bench- and pilot-scale tests conducted in recent years supporting the groundwater remedial action selection are summarized in **Table 3-3**, and include the following:

- Bucket testing of chemical reagents for soil amendment;
- Pilot testing of FerroBlack®-H as a soil amendment;
- Groundwater in situ pilot testing with biological and chemical reagents; and
- Hydraulic fracturing.

These tests provided valuable design data on the following:

- Cr treatment performance;
- Reagent longevity and use;
- Information on fluid injection flows, pressures, and transport within the shallow and intermediate water-bearing zone.

Findings from these tests were used to select remedial alternatives for this RAWP.

## 3.3 Groundwater Interim Remedial Measures

Three groundwater IRMs (i.e., Phase I, Phase II, and Phase III) have or are currently being implemented on Site 114 (**Figure 3-2**) to actively treat groundwater impacted with $Cr^{+6}$ in the shallow, intermediate, and deep water-bearing zones. As confirmed during implementation and post-treatment monitoring, the Phase I IRM has reduced $Cr^{+6}$ concentrations within the Site 114 area and is expected to reduce future mass flux from the treated areas in the Project Area and potential mass discharge outside of the Project Area. These IRMs are being implemented under PBR authorizations issued by the NJDEP. Progress reports for the IRMs have been submitted to the NJDEP on a quarterly basis as required by the PBRs and will continue through the completion of the post-treatment performance monitoring period. Copies of PBR authorization requests and approvals for each IRM phase are provided in **Appendix B**.

The three IRMs use a combination of demonstrated active remediation technologies, including *in situ* anaerobic bioprecipitation (ISAB) and *in situ* chemical reduction (ISCR), to achieve the remediation objectives. Post-treatment monitoring data from Phase I IRM show that the IRM decreased groundwater Cr and $Cr^{+6}$ concentrations up three to four orders of magnitude across most of the treatment area, with $Cr^{+6}$ concentrations below the detection limits at most monitoring locations and reductions in the lateral extent of the groundwater plume within the treatment area (Arcadis, 2021). Lessons learned from the Phase I program were adopted as part of the Phase II design, and current treatment monitoring data from the Phase II IRM program indicate the development of a reactive zone and decreases in groundwater Cr and $Cr^{+6}$ concentrations in the treatment areas (AECOM , 2021b).

These results indicate that the extent of treatment achieved during the Phase II program will be consistent with Phase I.

### 3.3.1 Current Status

The Phase I IRM program was completed during early 2020 and the post-treatment performance monitoring will be performed through early 2022. The Phase II IRM system is installed, and remediation is ongoing and will be followed by an additional two years of post-treatment PBR monitoring. Operation of the Phase III IRM system began in September 2021, and, similar to Phases I and II, active operations will be followed by two years of post-treatment monitoring. The following subsections summarize the work completed in the Phase I and II IRMs, and work planned under the Phase III IRM program. Descriptions of the *in situ* treatment technologies are included in Section 6.1.

#### 3.3.1.1 Phase I IRM

The Phase I IRM was implemented between July 2017 and March 2020. As outlined in the Phase I PBR (Arcadis, 2017b), the objectives of the Phase I IRM program were:

- Achieve reductions of groundwater Cr and $Cr^{+6}$ concentrations on Site 114:
    - In the northern area of Site 114, remove groundwater Cr and $Cr^{+6}$ mass and reduce concentrations in the intermediate and deep water-bearing zones to less than 1,000 milligrams per liter (mg/L) via continuous groundwater extraction to make the area more suitable for ISAB during the Phase II IRM.
    - In the southern area of Site 114, establish an anaerobic reactive zone in the intermediate and deep water-bearing zones to reduce concentrations of Cr and $Cr^{+6}$ via ISAB.
- Achieve the same objectives within a localized area of shallow groundwater in the northern portion of Site 114 via ISAB.
- Document post-treatment groundwater trends showing continuing attenuation/reduction of Cr toward achieving the NJDEP Class II-A GWQS.
- Collect and evaluate site-specific information regarding the remediation system operation to support optimization of subsequent IRM phases.

The Phase I IRM treatment included a combination of groundwater extraction and injection using pulsed organic carbon substrate delivery. The IRM configuration included the following components:

- Groundwater was recovered in the northern portion of Site 114 in areas containing the highest Cr and $Cr^{+6}$ concentrations, and at wells closer to the injection areas, to enhance propagation of the reactive zone for $Cr^{+6}$ ISAB and provide treatment to those areas by removing Cr.
- Recovered groundwater was treated to remove Cr via an on-site groundwater treatment plant (GWTP) and treated groundwater or potable water was used for pulsed organic carbon substrate delivery into the intermediate and deep water-bearing zones in the southern portion of the site.
- Organic carbon was introduced to a small area in the shallow water-bearing zone in the northern portion of Site 114 to treat a localized area of elevated Cr and $Cr^{+6}$.

The Phase I IRM well network consisted of 68, 4-inch diameter remediation wells (42 intermediate-zone wells and 26 deep-zone wells), 13 2-inch diameter monitoring wells (seven intermediate-zone

wells and six deep zone wells), and six pre-existing shallow-zone wells in the former IRM #1 pilot test area (Arcadis, 2018).

Approximately 14 million gallons of groundwater were extracted and treated from the treatment area, and 9.4 million gallons of reagent injection solution (dilute organic carbon and potable water) were injected into the target treatment zones. An estimated 32,427 pounds (lbs) of Cr and 29,544 lbs $Cr^{+6}$ were removed via groundwater extraction and ex situ treatment as a result of Phase I IRM operations (Arcadis, 2021).

Performance monitoring data collected through the third quarter of 2021 demonstrate that considerable concentration reduction of $Cr^{+6}$ was achieved during Phase I operations and has been sustained during the post-treatment monitoring program. In both intermediate and deep water-bearing zones where operations were targeted, $Cr^{+6}$ concentrations are currently below the detection limit. The magnitude of concentration reductions of Cr and $Cr^{+6}$ is approximately three and four orders of magnitude compared to baseline conditions, with limited exceptions. For example, only transient reductions in $Cr^{+6}$ were observed in well cluster 114-P1-MW1I/D and the development of a reactive zone in this area was limited. The 114-P1-MW1I/D well cluster is located within the sheet pile on Site 114, within a static hydraulic zone near two injection wells. The treatment response in the localized area near wells 114-P1-MW-1I and 114-P1-MW-1D was less complete based on competing hydraulic forces between the sheet pile and adjacent operating injections wells (114-P1-MW-1I) and/or due to their construction in lower permeability strata (114-P1-MW-1D). The lower-permeability zones in this area represent the upper portion of the deep water-bearing zone, which can store immobile $Cr^{+6}$. The localized $Cr^{+6}$ impacts within the sheet pile and the diffused $Cr^{+6}$ within the low permeability zone are considered immobile and not migrating offsite, and therefore do not represent an exposure risk to receptors.

The reactive zone established during Phase I IRM operations continues to be active and robust, as evidenced by sustained total organic carbon (TOC) concentrations that are elevated from the baseline, continued indication of iron sulfide generation, and sustained reducing geochemical conditions (i.e., low dissolved oxygen, low to negative oxidation-reduction potential [ORP], increasing methane concentrations, etc.) (Arcadis, 2021). Continued post-treatment performance monitoring will provide additional data to support the evaluation of reactive zone persistence in the subsurface.

#### 3.3.1.2 Phase II IRM

As outlined in the Phase II PBR (Arcadis, 2019), the objectives of the Phase II IRM program are:

- Establish anaerobic reactive zones to support ISAB and ISCR reduction of Cr and $Cr^{+6}$ within:
    - The northern portion of Site 114 where Phase I groundwater extraction was used to reduce Cr; and
    - The southeastern portion of Site 114.
- Document post-treatment trends showing continuing attenuation/reduction of Cr toward achieving the Class II-A GWQS.
- Collect site-specific information regarding the system operation to support the design of Phase III IRM.

The Phase II IRM design adopted the design learnings from Phase I and resulted in a denser well network. The expectation for the Phase II program is that similar concentration reductions and

reactive zone establishment will be achieved through the Phase II area as was achieved in the Phase I area.

Baseline sampling of the Phase II IRM well network was completed in March 2020 and full-scale operation of system began in October 2020. The Phase II IRM includes a combination of groundwater extraction and injection using pulsed reagent delivery and is configured as follows (refer to **Figure 3-2):**

- In the central portion of Site 114, groundwater is being recovered using 15 extraction wells from areas containing elevated Cr and $Cr^{+6}$ concentrations. This extraction layout provides direct treatment of the area by removing Cr, resulting in less overall Cr in the subsurface. This area is also strategically advantageous to hydraulic operation, as the centralized location enhances the subsurface progression of organic carbon and reactive zone distribution from both Phase II (north to south) and Phase I (south to north) IRM operations. Recovered groundwater is ex situ treated to remove Cr mass using an on-site GWTP prior to discharge to the Passaic Valley Sewerage Commission (PVSC), in accordance with the PBR.
- Groundwater extraction is also performed to induce hydraulic gradients across the injection area to support flushing of Cr mass towards the extraction wells and to maintain the hydraulic balance in the treated area within the sheet pile enclosure. In addition, the extraction well locations, in most cases, target areas with the highest Cr and $Cr^{+6}$ concentrations that benefit the removal of Cr mass from Site 114.
- In the northern portion of Site 114, a combination of localized groundwater extraction and reagent injection will provide a degradable source of organic carbon or chemical reductant that will establish a reactive zone for ISAB or ISCR of $Cr^{+6}$ to $Cr^{+3}$ and subsequent precipitation and fixation of Cr within the aquifer matrix.
- In the southeastern corner of Site 114, groundwater may be recovered from non-DNAPL areas or treatment zones to manage groundwater mounding in that area during the injection of substrates to support ISAB in an area not included in the Phase I IRM. The extracted groundwater will be treated and discharged to the PVSC in accordance with the PBR.
- Similar to Phase I IRM operations, the extraction/injection dynamics will help maintain the hydraulic balance inside the sheet pile enclosure around Site 114 and will also support flushing of Cr mass within the pumping wells hydraulic capture radius toward the extraction wells for removal and treatment.
- In Phase II IRM areas where dense non-aqueous phase liquid (DNAPL) associated with the former MGP is present, the DNAPL will be removed from pumping or injection wells, as practical, before extraction or injections commence or during the treatment period. This flexible and adaptive approach will be implemented according to the approved modification of the Groundwater Phase II IRM PBR (NJDEP, 2021a).

The Phase II IRM well network consists of 159 4-inch diameter remediation wells (84 intermediate-zone wells and 75 deep-zone wells) and 24 2-inch diameter monitoring wells (12 intermediate- zone wells and 12 deep-zone wells).

An estimated 117,000 to 138,000 gallons of reagent (organic carbon substrate and chemical reductant) and 11,000,000 to 15,000,000 gallons of potable water will be injected into the treatment zones over a 12-month period, per the PBR authorization.

The following bullets provide the operational summary of the Phase II IRM system, as of September 30, 2021:

*Northern Area of Site 114:*

- A total of approximately 6.1 million gallons of organic carbon substrate (molasses) and potable water, as well as 4.9 million gallons of the chemical reductant (calcium polysulfide [CaSx]) has been delivered into the target treatment areas to establish reactive zones.
- Approximately 9 million gallons of contaminated groundwater have been extracted from this area, which amounts to the removal of an estimate 9,108 lbs of Cr and 9,061 lbs of $Cr^{+6}$.

*Southeastern Area of Site 114:*

- Over 2.2 million galls of organic carbon substrate (molasses) and potable water have been injected into the target treatment areas within the southeastern portion of Site 114 to establish reactive zones.
- Approximately 313,000 gallons of contaminated groundwater have been extracted from this area, which amounts to the removal of an estimated 869 lbs of Cr and 635 lbs of $Cr^{+6}$.
- To allow extraction to proceed from wells that have contained, or could contain DNAPL in the southeastern area, a separate DNAPL extraction system was constructed in August 2021, and was brought into operation in September 2021.

Operational and treatment monitoring in the northern and southeastern areas of Site 114 are underway. Increased TOC concentrations above baseline conditions (i.e., breakthrough) in portions of the intermediate and deep water-bearing zones and development of the bioprecipitation reactive zone have been observed during monthly treatment monitoring. Similar to the Phase I findings, the presence of TOC has been correlated with decreases in Cr and $Cr^{+6}$ concentrations and continued advancement of the reactive zone is expected as the ISAB and ISCR injection program is completed in the Phase II IRM north area and southeastern areas (AECOM, 2021f).

#### 3.3.1.3 Phase III IRM

The third phase of the groundwater IRMs is underway, and is intended to actively treat $Cr^{+6}$-contaminated groundwater in the shallow, intermediate, and deep water-bearing zones where Cr is present at concentrations greater than 1,000 µg/L in areas that are not targeted by the Phase I and Phase II IRMs.

The Phase III IRM area (**Figure 3-2**) is comprised of select water-bearing zones within the following areas outside Site 114:

- Carteret Avenue;
- Select areas within HCC Sites 132, 137 and 143;
- Halladay Street North;
- Intersection of Carteret Avenue and Pacific Avenue; in the vicinity of the 101 Pacific Avenue property;
- Forrest Street; and
- Site 199.

The Phase III IRM includes targeted treatment in strategic areas within the lower portion of the deep water-bearing zone within Site 114 below the transition zone and beneath the vertical limits of the Phase I IRM but above the top of the basal till (i.e., the lower portion of the deep water-bearing zone).

This phase of the IRM includes a combination of in situ reagent injections to stimulate biotic or abiotic reduction of $Cr^{+6}$ (ISAB or ISCR) and localized FerroBlack®-H emplacement to form a reactive zone in select areas. A conceptual layout of the Phase III IRM is provided on **Figure 3-2**. Descriptions of how these technologies will be implemented to achieve the groundwater remediation goal are provided in Section 6.1.

In areas planned for in situ treatment via injections using ISAB or ISCR, a degradable source of organic carbon (molasses) or chemical reductant (CaSx) will be delivered using mobile injection units (MIUs) through an injection well network with adequate spatial coverage to establish an in situ reactive zone within each target treatment area, similar to the Phases I and II IRMs. It is anticipated that where well-based delivery is proposed for the Phase III IRM, reagent delivery will be performed using injection methods. Groundwater extraction options to manage groundwater mounding within the treatment areas; if required, will be completed using a temporary well-point dewatering system or localized groundwater extraction using pumps from injection or dedicated extraction wells. The extraction method will depend on the final location of well points and the hydraulic conditions encountered in each of the treatment areas during implementation. The injection approach and extraction option using pumps were effective in the Phase I and the initial stages of Phase II IRMs, and the Phase III design retains the flexibility to optimize the treatment process. Relevant design details of the Phase III IRM system were provided in the PBR application (AECOM, 2021c), included in **Appendix B**.

In areas planned for FerroBlack®-H emplacement, the reagent will be delivered into the target zones via a series of soil borings in a line perpendicular to the direction of groundwater flow. Once emplaced, the FerroBlack®-H will establish a reducing environment within the zone of influence of the injected material. The active mechanism of this reagent is described in further detail in Section 6.4.2.

The Phase III IRM PBR application was submitted to the NJDEP's Bureau of Case Assignment and Initial Notice on April 20, 2021. The Phase III IRM PBR application was approved by NJDEP. The Phase III IRM system began operations, starting with injections of the organic carbon substrate (molasses) and potable water in the Carteret Avenue treatment area in September 2021. Activities to support FerroBlack®-H emplacement in the lower portion of the deep water-bearing zone on Site 114 commenced on September 9, 2021 and are ongoing.

## 3.4 Groundwater Institutional Controls

As described in Section 2.3, two CEAs have been established for CCPW- and non-CCPW-related groundwater impacts within the Project Area. A proposal to establish a third virtual CEA, for historic fill-related COCs, has been submitted to the NJDEP with the Groundwater RIR (AECOM, 2021e).

# 4 Groundwater Remediation Goals and Objectives

Investigation and remediation activities at the Project Area are regulated by the NJDEP as administered by the Superior Court of New Jersey under the 1990 ACO and the 2009 Partial Consent JCO Concerning the PPG Sites. In accordance with the 2009 JCO, PPG is responsible for remediating CCPW and CCPW-related constituents in soil and groundwater at the Project Area that are present in exceedance of their respective remediation standards. PPG is also responsible for CCPW and non-CCPW constituents that were determined to be emanating from Site 114 onto adjacent parcels, in accordance with the 1990 ACO.

## 4.1 Constituents of Concern

### 4.1.1 CCPW Parameters

Extensive groundwater investigations have occurred since 2005, as documented in the Groundwater RIR (AECOM, 2021e). The primary groundwater COCs that are the target of active treatment include the CCPW metals (antimony [Sb], nickel [Ni], thallium [Tl], vanadium [V], and Cr) and $Cr^{+6}$. PPG maintains responsibility for CCPW metals-related impacts (i.e., at concentrations greater than the GWQS) to groundwater within and outside Site 114 (as defined by the extent of the 70 µg/L Cr isopleths depicted on **Figures 4-1** through **4-3**).

### 4.1.2 Non-CCPW Parameters

The secondary groundwater COCs exhibiting concentrations in groundwater above their respective GWQS on Site 114 include VOCs, SVOCs, and TAL metals. An evaluation of these non-CCPW constituents is described in the Emanating From Groundwater Technical Memorandum (AECOM, 2021e). Non-CCPW constituents exceeding their respective GWQS on Site 114 are included in the Project Area CEA.

With the exception of tetrachloroethene (PCE) in groundwater detected in the shallow water-bearing zone at monitoring well 114-MW41A located on Site 199 (refer to Figure 4-1 in **Appendix A.1**), and 1,4-dioxane detected in the localized area between the southeast corner of Site 114 and four off-site intermediate zone monitoring wells (MW8D, 114-MW19B, 114-MW20B and 114-MW40B), the non-CCPW constituents identified as emanating from Site 114 in groundwater are either MGP-related, or historic fill-related. PSEG maintains responsibility for remediation of MGP-related constituents in groundwater both on- and off-Site 114 pursuant to their Site Remediation Program (SRP) case[2]. Historic fill-related groundwater contamination is documented in the Historic Fill virtual CEA/WRA proposal submitted to NJDEP with the Groundwater RIR (AECOM, 2021e).

[2] PSEG is responsible for investigating and remediating impacts related to the operation of the former MGP located in the Project Area (PSEG, 2007; PSEG, 2009; PSEG, 2014). MGP-related impacts within the Project Area are being addressed by PSEG under NJDEP Site Remediation Program (SRP), Program Interest Number G000005480, Activity Number LSR120001, per the July 2019 agreement between PPG and PSEG (PPG and PSEG, 2019).

## 4.2 Remediation Criteria

Per N.J.A.C. 7:9C, remediation standards applicable to the Project Area are the Class II-A Groundwater Quality Standards (NJDEP, 2020a). GWQS have been established for the COCs, in µg/L:

**Table 4-1**
**NJDEP GWQS for Groundwater COCs**

| Groundwater Constituent of Concern | NJDEP GWQS (µg/L) |
|---|---|
| **CCPW-related COCs** | |
| Chromium (total) | 70 |
| Antimony (total) | 6 |
| Nickel | 100 |
| Thallium | 2 |
| Vanadium | 60 |
| **Non-CCPW-related COCs Emanating from Site 114** | |
| Tetrachloroethene | 1 |
| 1,4-dioxane | 0.4 |

**Table 4-2**
**NJDEP GWQS for Non-CCPW COCs Included in the Project Area CEA**

| Groundwater Constituent of Concern | NJDEP GWQS (µg/L) |
|---|---|
| 1,1,2-Trichloroethane | 3 |
| 1,1-Dichloroethylene | 1 |
| 1,2-Dichloroethane | 2 |
| Aluminum | 200 |
| Bis(2-ethylhexyl)phthalate | 3 |
| Chloride | 250,000 |
| cis-1,2-Dichloroethene | 70 |
| Copper | 1,300 |
| Iron | 300 |
| Manganese | 50 |
| Pentachlorophenol | 0.3 |
| Sodium | 50,000 |
| Styrene (monomer) | 100 |
| Sulfate | 250,000 |
| Trichloroethylene | 1 |
| Vinyl Chloride | 1 |

The NJDEP has established specific remediation requirements for Cr in groundwater within the State of New Jersey via a memorandum dated February 8, 2007 from Lisa Jackson, Commissioner, to Irene Kropp, Assistant Commissioner (NJDEP, 2007). This memorandum provides the following remediation objectives specific to Cr in groundwater at NJDEP SRP sites, inclusive of the Project Area:

- Cr groundwater contamination below a depth of 20 ft bgs should be controlled, contained or treated through the use of conventional or innovative technologies;
- Cr groundwater contamination should be controlled, contained or treated through the use of conventional or innovative technologies;
- A capillary break should be installed to prevent any crystallization of chromate on soil surfaces; and
- A CEA should be established.

The NJDEP has provided clarifying information for groundwater remediation at Site 114 in a letter dated December 22, 2020 from Mark Pedersen, Commissioner (NJDEP, 2020b). This letter states that the NJDEP expects PPG to make every effort to actively treat groundwater contamination before a containment and control strategy will be considered by the NJDEP. The letter provides the NJDEP's opinion that an active remedy is necessary in the lower portion of the deep water-bearing zone on Site 114, where recent groundwater sampling data have shown Cr concentrations greater than 100,000 µg/L that are not currently being targeted by the Phase I and II IRM active treatment systems. The NJDEP acknowledges that this portion of Site 114 underlies an area on Site 114 proposed for the initial phase of Hampshire Urban Redevelopment Renewal, LLC's (Hampshire) proposed redevelopment, and that efficient implementation of an active remedy in this zone should be coordinated such that PPG's selected remediation strategy does not compromise the potential for redevelopment. Finally, the Pederson letter (NJDEP, 2020b) states that PPG's active remediation (via the Phase I and II IRMs) to date appears to be improving the groundwater quality on Site 114. PPG notes that, based on the September 2, 2020 NJDEP Listserv publication for an Active System Ground Water Remedial Action Permit (RAP), in addition to groundwater pump and treat systems, the NJDEP considers remedial injections and reactive barriers to be active remedies.

## 4.3 Remediation Goals and Objectives

The long-term remediation goals for groundwater in the Project Area is to protect human health and the environment. This goal will be achieved through compliance with the NJDEP Class II-A GWQS (N.J.A.C. 7:9C) using a combination of active treatment, monitored natural attenuation (MNA), and long-term monitoring combined with institutional and engineering controls.

In specific treatment zones (spatial extents) where active treatment is not feasible, technical impracticability will be evaluated and, if appropriate, an application for a Technical Impracticability determination will be submitted to the NJDEP in accordance with the NJDEP's Technical Impracticability – Guidance for Groundwater (NJDEP, 2013b).

Remediation objectives (short-term and long-term) are the strategies that will be implemented to achieve the remediation goal. These strategies include the following milestones:

- Reduce the exposure of current and future receptors to the groundwater COCs, so as to protect the public health, safety, and the environment.

- Achieve compliance with the GWQS through the initial implementation of an active remedy where practicable in areas with groundwater $Cr^{+6}$ concentrations greater than 1,000 µg/L (**Figures 4-1** through **4-3**), implementation of contingency measures as appropriate, and to transition to an MNA remedy combined with long-term monitoring.
- Design and implement the remediation strategy to control the migration of groundwater and minimize the mass discharge or flux leaving the Project Area.
- Until the groundwater remediation goal is achieved, reduce the risk of exposure to groundwater through monitoring and maintenance of engineering controls, including a capillary break and FerroBlack®-H-amended backfill, establish/maintain a CEA as an institutional control, and monitor groundwater to measure the progress of the remedial action toward meeting the remediation goals.
- Apply for and obtain an Active Category Groundwater RAP after monitoring data demonstrate the effectiveness of the active system remedy (as per the requirements for the Active Category Groundwater RAP outlined in NJDEP's Ground Water Remedial Action Permit Guidance). Transition to an MNA Category Groundwater RAP will be considered when monitoring data demonstrate that it is appropriate to do so.

## 4.4 Remediation Areas

### 4.4.1 Remediation Target Area

The horizontal extent of the Project Area where CCPW-related COCs are present in groundwater at concentrations greater than the NJDEP GWQS in the shallow, intermediate, and deep water-bearing zones is depicted on **Figures 4-1** through **4-3.** These areas are defined by the extent of Cr in groundwater within each water-bearing zone at concentrations greater than the 70 µg/L NJDEP GWQS. The vertical extent of CCPW-related groundwater contamination is depicted on Figures 5-1 through 5-9 of the Groundwater RIR (**Appendix A.1**). The horizontal and vertical extent of Cr-related impacts to groundwater defines the limits of the overall remediation target area.

The volume of groundwater targeted for remediation resides in the pore spaces of the hydrogeologic units within the shallow, intermediate, and deep water-bearing zones. In general, overburden materials where groundwater flow and transport are dominated by advection are considered permeable and materials where groundwater flow and transport are dominated by diffusion are considered to exhibit low permeability. The concept of low permeability is well documented in the literature and is commonly understood to include soils that are dominated by fine grained or low primary porosity materials such as silts, clays, glacial till, over-bank deposits, and marine deposits (Horst, et. al, 2019).

Based on the evaluation of hydraulic profiling tool (HPT) data conducted during the groundwater RI (AECOM, 2021e), it is estimated that 73% of the intermediate and deep water-bearing zone soils (not inclusive of the basal till) are permeable, are therefore accessible for active *in situ* treatment, and are soils where extensive reduction of $Cr^{+6}$ can be expected. The remaining 27% of soils in the intermediate and deep water-bearing zones are characterized by low permeability and are inaccessible for active *in situ* treatment. Additional detail regarding the occurrence of low-permeability soils at the Site is presented in the technical memorandum included in **Appendix A.2**. Low permeability soils serve to immobilize $Cr^{+6}$ and impacted groundwater residing in these soils does not pose a risk to human and ecological receptors. Furthermore, it is impractical to delineate or access via active treatment the numerous dead-end or highly constrained pore spaces within these low permeability soils. Therefore, low permeability soils are not targeted for active treatment but will be

managed under an MNA remedy and via the excess reductive capacity emplaced within adjacent more permeable zones by the active treatment technologies.

It is not possible to estimate the mass of Cr remaining within overburden soils and groundwater because the mass of Cr initially released is unknown. Furthermore, an assessment of the mass of Cr remaining in the subsurface is not necessary for implementation of the Phase I, Phase II, and Phase III IRMs, nor is this information necessary for the overall remediation strategy for the Project Area.

Groundwater flow in competent bedrock occurs only within interconnected fractures, bedding planes, cracks, and voids, and not within the rock matrix itself. Flow in weathered bedrock immediately below overburden materials is similar to porous media flow due to the high degree of interconnectivity between the weathered bedrock elements, except in areas where the weathered rock has higher clay content within fractures, which reduces the permeability of the weathered horizon. Based on borehole geophysical logging measurements and observations during bedrock well development and sampling, yields from bedrock wells in the Project Area are low (AECOM, 2021e). Overall, groundwater flow in bedrock is a small fraction of the total groundwater flux through the Project Area.

### 4.4.2 Active Remediation Target Area

One of the objectives of the Project Area groundwater remediation strategy is to achieve compliance with the GWQS through the implementation of an active remedy, where practicable, in areas with $Cr^{+6}$ concentrations greater than 1,000 µg/L. Over the course of treatment and when conditions are appropriate, the active component of the remedy will be transitioned to an MNA remedy. The areal extent where $Cr^{+6}$ is present in groundwater at concentrations greater than 1,000 µg/L in each overburden water-bearing zone is depicted on **Figures 4-1** through **4-3**. To define the active remediation target areas, it was assumed that Cr concentrations within the 1,000 µg/L Cr isopleths consist entirely of $Cr^{+6}$. Active groundwater treatment for a portion of these areas has already been completed or is ongoing via implementation of the Phase I and II IRMs, and treatment for the remaining areas will be accomplished via implementation of the Phase III IRM. The locations of the Phase I, II and III IRM areas are shown on **Figure 3-2**.

The deep water-bearing zone extends to depths greater than the bottom of existing Phase I and II IRM remediation wells in certain portions of Site 114, especially in the southeastern and southwestern portions of Site 114 (refer to Figures 5-1 through 5-9 in **Appendix A.1**). Certain areas of this lower portion of the deep water-bearing zone (the Lower Deep Zone) exhibit $Cr^{+6}$ concentrations greater than 1,000 µg/L. The Lower Deep Zone includes overburden materials situated below the bottom of the transition zone, above the top of the basal till, and below the bottom of Phase I and II IRM remediation wells. The portions of the Lower Deep Zone warranting active remediation are illustrated on **Figure 3-2** and will be targeted during implementation of the Phase III IRM.

### 4.4.3 Practicality of Active Treatment

The active *in situ* remedies selected for the Project Area (Section 5.3) include the delivery of remediation compounds to the targeted water-bearing zones to establish groundwater conditions that are favorable for the reduction of $Cr^{+6}$ to $Cr^{+3}$. The efficacy of the delivery of remediation compounds is directly related to the permeability of the targeted materials. In areas where the permeability does not allow remediation compounds to be delivered into the pore spaces of the targeted materials using demonstrated technologies, technical impracticability will be evaluated and, if appropriate, an application for a Technical Impracticability Determination will be submitted to the NJDEP in accordance with the NJDEP's *Technical Impracticability – Guidance for Groundwater* (NJDEP, 2013b).

#### 4.4.3.1 Hydrogeologic Considerations for Selecting Active *In Situ* Treatment Zones

Permeability is the property of a porous material which permits the passage or seepage of water (or other fluids) through its interconnected interstices, voids, or pores. Total porosity is defined as the percentage of the total volume of a rock or soil that is occupied by interstices, voids, or pores (Heath, 1983). Porosity of soils depends on the range in grain size (sorting) and on the shape of the particles that comprise the soil. In general, total porosity increases with increasing sorting and decreases with increasing sphericity. Total porosity decreases with closer packing of the soil particles. Groundwater (or other fluids, e.g., DNAPL) may exist within all available interstices, voids, or pores, but only flows where they are interconnected. The interconnected interstices, voids, or pores that contribute to fluid flow represent the effective porosity of the material. Effective porosity excludes isolated interstices, voids, or pores, and pore volume that is occupied by water (or other fluids, e.g., DNAPL) adsorbed on clay minerals or other grains.

The specific yield of an aquifer, which is also known as effective porosity, is the volume of water that will drain under the influence of gravity. Specific retention of an aquifer is the amount of water retained by capillary forces during gravity drainage. The relationship between total porosity, specific yield, and specific retention can be expressed as follows (Bear, 1979):

$$n = Sy + Sr$$

where n is total porosity [dimensionless],
Sy is specific yield [dimensionless], and
Sr is specific retention [dimensionless].

Therefore, specific yield (i.e., effective porosity) is less than the total porosity. The following figure illustrates the relationship between total porosity, specific yield, and specific retention for silts, clays, sands, and gravels (Davis and DeWiest, 1966):

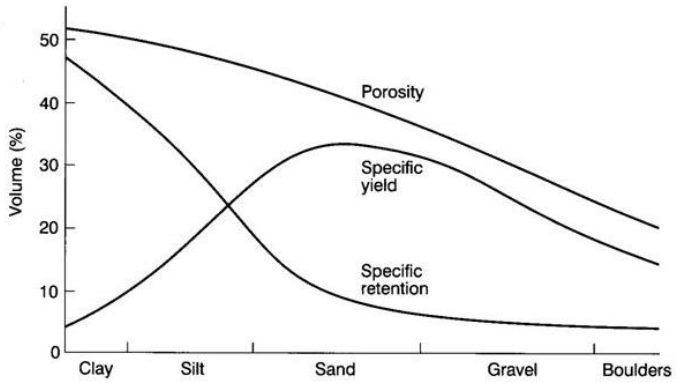


Based on this information, the total porosity of silts and clays is higher than sands and gravels while the effective porosity of sands and gravels is higher than silts and clays. Therefore, silts and clays contain more pore water but do not contribute to advective groundwater flow and mass flux of Cr-impacted groundwater because the pore water in these soils has limited mobility (low effective porosity) relative to sands and gravels. Conversely, due to their higher effective porosity, sands and gravels can more readily accept remediation compounds relative to low permeability soils. This

conclusion is supported by findings from the Phase I IRM performance monitoring program which indicate favorable distribution of remediation compounds into more permeable materials.

The basal till at the bottom of the deep water-bearing zone and above bedrock consists of silty clays, sandy silts, and silty sands with subrounded to subangular fine to coarse gravel, cobbles, and occasional interbedded lenses of clay, silt, or fine sand. The thickness of the basal till encountered in soil borings ranges from 1 foot to 30 feet, with the basal till continuous across the Project Area. In general, the basal till consists of a wide range of materials typically exhibiting low permeability and low moisture content (damp to dry) but includes discontinuous stringers or lenses of permeable sands. The observed thickness of sand stringers or lenses within the basal till ranged from 0.2 to 6.5 feet. Of the approximately 390 feet of basal till logged within the Project Area, only 21 feet consisted of sand stringers or lenses, which equates to less than 6% of the basal till (AECOM, 2021e). Therefore, the basal till is unlikely to significantly contribute to advective groundwater flow and mass flux of Cr-impacted groundwater and delivery of remediation compounds into the basal till may not be practicable.

The bedrock water-bearing zone within the Project Area consists primarily of the Lockatong Formation, with the Palisades Sill (diabase) along the western edge of the Project Area and a section of the Stockton Formation in the eastern portion of Site 114. Based on findings from the groundwater RI, yields from bedrock wells are low, ranging from 0.02 to 0.05 gpm (AECOM, 2021e).

#### 4.4.3.2 Integration with CSM for the Project Area

Based on the geology, hydrogeology, and the fate and transport of Cr within the Project Area described in the CSM, it is understood that residual concentrations of $Cr^{+6}$ can be expected to remain in low permeability soils (i.e., silts and clays, highly organic soils, glacial till) after completion of the IRMs and that back-diffusion of $Cr^{+6}$ from these low permeability soils into surrounding higher permeability soils (i.e., sands and gravels) may occur over time. The expected release of $Cr^{+6}$ from low permeability soils via back-diffusion will be highest within the first several years following completion of IRM treatment, after which mass discharge from low to high permeability soils will decline significantly for several years after post-treatment (estimated 5 to 10 years).

Based on hundreds of soil borings completed across the Project Area, correlation of HPT logs with soil boring logs, and four years of IRM operation, maintenance and monitoring, it is evident that soils not suitable for active *in situ* treatment include fine grained and cohesive soils characterized by the following descriptions based on the Unified Soil Classification System (USCS):

- **ML**: Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity.
- **CL**: Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
- **OL**: Organic silts and organic silty clays of low plasticity.
- **MH**: Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
- **CH**: Inorganic clays of high plasticity, fat clays.
- **OH**: Organic clays of medium to high plasticity, organic silts
- **PT:** Peat and other highly organic soils.

Based on the information presented above and lessons learned during groundwater IRM implementation, the following conclusions can be made regarding the practicability of active *in situ* treatment for the water-bearing zones within the Project Area:

- Active *in situ* treatment of permeable soils within the intermediate and deep water-bearing zones is practicable as these soils readily accept remediation compounds. These soils contribute to advective groundwater flow and mass flux of Cr-impacted groundwater.
- Active *in situ* treatment of soils with low permeability within the intermediate and deep water-bearing zones is not possible, as these soils do not readily accept remediation compounds. These soils are unlikely to significantly contribute to advective groundwater flow and mass flux of Cr-impacted groundwater and include the thinly-interbedded fine sands, silts, and clays of the transition zone, any lenses of silts or clays that may be interbedded within the more permeable portions of the intermediate and deep water-bearing zones, and the basal till. Dissolved $Cr^{+6}$ is expected to reside in low permeability soils after cessation of the IRMs with back-diffusion from the low permeability soils to surrounding higher permeability soils, but the excess reductive capacity delivered to the overburden via the IRMs will attenuate back-diffusion of $Cr^{+6}$ from these soils into surrounding higher permeability materials.
- Based on the composition and depositional environment of the basal till and the findings from the groundwater RI (AECOM, 2021e) which indicate that less than 6% of the basal till consists of discontinuous sand stringers or lenses, it is not possible to identify and target sand stringers and lenses within the basal till for active *in situ* remediation.
- Based on the low effective porosity of the bedrock in areas where elevated Cr concentrations have been identified in groundwater samples collected from bedrock monitoring wells (AECOM, 2021e), implementation of active *in situ* remediation is unlikely to be feasible in the bedrock zone.

# 5 Selection of Groundwater Remedial Action

## 5.1 Identification of Groundwater Remedial Alternatives

**Table 5-1** identifies the groundwater remedial alternatives evaluated for the Project Area. These alternatives were selected based on their performance during pilot testing and implemented IRMs, as described in Section 3.0. Ten remedial alternatives are presented in **Table 5-1** and are briefly described in the subsections below.

### 5.1.1 No Action Remedy Alternative

A no action alternative is presented in **Table 5-1** for comparison to other alternatives. For this alternative, existing engineering and institutional controls would remain in place, although they would not be monitored or maintained.

### 5.1.2 Active Remedy Alternatives

According to the September 2, 2020 NJDEP Listserv publication for an Active System Ground Water RAP, active remediation technologies are those that are effectively remediating contamination and are functioning as designed. This includes remedial injections that are performed at an appropriate frequency to demonstrate that they are effectively remediating contamination for a minimum of one year prior to submitting an Active System Groundwater RAP application. Active remedies also include remedial injections and reactive barriers installed for a minimum of one year prior to submittal of an Active System Groundwater RAP application. Therefore, the following eight active remedial action alternatives were evaluated in **Table 5-1** for treating groundwater COCs in the Project Area.

- **Extraction Barrier:** An extraction barrier consists of a row of extraction wells in the target area with radii of influence that form a hydraulic barrier along the target section of the Project Area boundary. Cr- and $Cr^{+6}$-contaminated groundwater migrating towards the off-site areas would be extracted and treated through an on-site groundwater treatment system and either discharged or reinjected into the subsurface. This alternative manages the mass discharge of Cr and $Cr^{+6}$ that could migrate beyond the Project Area.
- **FerroBlack®-H Emplacement:** This alternative is intended to treat localized areas of contamination by emplacement of a ferrous sulfide based chemical reductant (FerroBlack®-H) into the target zones. The reductant will abiotically reduce $Cr^{+6}$ to the less mobile and less toxic $Cr^{+3}$, thereby immobilizing it within the aquifer. FerroBlack®-H has proven effective at treating $Cr^{+6}$ based on past bench- and pilot-scale testing and is used as an effective backfill amendment material that has prevented recontamination of the backfilled portions in the Project Area.
- **Pump and Treat**: The pump and treat remedial action alternative removes groundwater from areas containing the highest Cr and $Cr^{+6}$ concentrations in the aquifer within the zone of influence of an extraction well. The technology can be used to spread reagents in the subsurface or maintain hydraulic control within areas surrounded by sheet pile (e.g., Site 114). Extracted water is treated via an ex-situ GWTP prior to discharge or reinjection.
- **ISAB**: The ISAB remedial action alternative remediates Cr and $Cr^{+6}$ concentrations by injecting organic carbon substrates (molasses and emulsified vegetable oil [EVO]) in a target

area to establish a reactive zone and reduce $Cr^{+6}$ to less soluble $Cr^{+3}$ through reactions with biologically-generated reductants or via direct anaerobic respiration with $Cr^{+6}$. This subsequently precipitates and immobilizes Cr within the zone of influence of the treatment area. The use of organic carbon substrates to stimulate anerobic reduction is an effective remedial approach in the Project Area proven by past pilot testing and ongoing Phase I IRM performance monitoring data.

- **ISCR with CaSx**: The ISCR with CaSx remedial action alternative is implemented by injecting CaSx reagent in a target area to establish a reducing environment and chemically reduce $Cr^{+6}$ to less soluble $Cr^{+3}$, and subsequently precipitate and immobilize Cr within the zone of influence of the treatment area. Pilot testing has demonstrated the effectiveness of this reagent in reducing $Cr^{+6}$ concentrations.
- **ISCR with FerroBlack®-H**: The ISCR with FerroBlack®-H remedial action alternative is implemented by injecting FerroBlack®-H reagent in a target area to establish a reducing environment and chemically reduce $Cr^{+6}$ to less soluble $Cr^{+3}$, and subsequently precipitate and immobilize Cr within the zone of influence of the treatment area. FerroBlack®-H has proven effective at treating $Cr^{+6}$ based on bench- and pilot-scale testing.
- **Hydraulic Fracturing for ISCR**: Hydraulic fracturing is a technique used to increase permeability in low permeability zones by creating hydraulic fractures at target depths. A high-pressure water jet is applied at the target depth in a fracture well to perforate the casing at that depth and establish a fracture within the low permeability zone. Reagents can then be emplaced within the established fracture using ISCR to treat Cr and $Cr^{+6}$ in low permeability areas.
- **Enhanced Attenuation**: Enhanced attenuation occurs following a period of active *in situ* treatment during which residual injection reagent, biological processes, or reactive mineral species serve to sustain the continued decrease of contaminant concentrations via interaction with these materials. This alternative is not applicable on its own but follows the injection phase of ISAB or ISCR remedies that serve to establish a geochemically reducing environment and promote expedited rates of attenuation for multiple years beyond active injections (AECOM, 2016).

### 5.1.3 MNA Remedy Alternative

The MNA remedy alternative uses natural physical, chemical, or biological processes to reduce $Cr^{+6}$ in groundwater to less soluble $Cr^{+3}$, and subsequently precipitate and immobilize Cr. MNA is typically used after an active remedial action is complete to monitor continued natural reductions in concentrations to target levels. MNA relies on a long-term groundwater monitoring program to demonstrate that favorable natural attenuation processes are ongoing, the contaminant plume is stable and shrinking, risks to receptors are mitigated, and the natural attenuation capacity of the aquifer is not exhausted, as demonstrated by sustained favorable geochemical conditions and decreasing contaminant concentrations.

## 5.2 Evaluation of Remedial Alternatives

The 10 remedial action alternatives were evaluated and compared, as shown on **Table 5-1** using the following comparative criteria:

- **Overall protection of human health and the environment:** This criterion describes how the alternative protects or continues to protect human health and the environment. Except for the

no action alternative, risks to receptors are mitigated through monitoring and maintaining existing engineering and institutional controls.

- **Achievement of remediation goal and objectives:** This criterion describes how successfully each alternative can be used to meet the groundwater remediation goal and objectives.
- **Long-term effectiveness and permanence**: The effectiveness of the remedial alternative to achieve long-term contaminant or mass reduction, and the adequacy and reliability of the alternative to maintain the contaminant or mass reduction are described. The duration of monitoring required is also compared.
- **Short-term effectiveness and compatibility with redevelopment**: This criterion is used to compare the ability of the remedial alternative to be integrated with redevelopment, including the presence and duration of required remediation infrastructure and monitoring requirements.
- **Implementability**: The ability to construct, operate, maintain, and monitor the remedy is considered in the evaluation of implementability of the remedial alternative. This includes the ability to obtain any access or approvals required, and availability of services and materials.
- **Comparative cost**: The comparative cost criterion is used to compare the construction, operating, maintenance, and monitoring costs of the remedial alternatives. Each alternative is assigned a low, medium-low, medium, medium-high, or high comparative cost.
- **Regulatory acceptance**: The anticipated regulatory acceptance of the remedial alternatives, including criteria that need to be demonstrated prior to acceptance, required pairing of remediation technologies that may be required for acceptance, and other considerations are described.

Each alternative is evaluated against the above criteria and assigned a score from 1 to 5 for each criterion, with one being most favorable and 5 being least favorable. The scores for the seven criteria are totaled and the application of the technology is evaluated in the final column of the table based on the comparative score and possible application to the Project Area groundwater.

The results of this evaluation indicate that ISAB and ISCR (combined with either FerroBlack®-H or CaSx) are favorable active remediation alternatives. Enhanced attenuation is also favorable and is coupled with and established by both the ISAB and ISCR active remedies. A permeable reactive or extraction barrier are not suitable alternatives for a Project Area-wide remediation strategy but may be applicable in select areas to control contaminant mass flux, if needed. The FerroBlack®-H reactive zone is a viable alternative for targeted treatment and may also be used to supplement an *in situ* active remedy. MNA is a favorable remediation measure after active treatment is complete. The no action alternative and hydraulic fracturing alternative were eliminated through this analysis.

## 5.3 Selection of Remediation Alternatives

Based on the remedial action alternatives evaluation summarized in **Table 5-1**, a groundwater remediation strategy was selected for treating CCPW, CCPW-impacted materials, and other groundwater COCs by combining or coupling alternatives proven to be applicable and implementable in the Project Area. The selected groundwater remediation strategy is summarized in **Table 5-2, Figure 5-1,** and **Figure 3-2,** and includes:

- Provide active groundwater treatment where practicable as described in Section 4.4.3 in select areas and water-bearing zones with $Cr^{+6}$ concentrations greater than 1,000 µg/L (Parts 1 and 2 of active treatment remedy as depicted on **Figure 5-1**);

- Provide active treatment (where practicable) of non-Cr COCs within the select areas and water bearing zones where active $Cr^{+6}$ treatment is occurring (Parts 1 and 2 of active treatment remedy as depicted on **Figure 5-1**);

- Long-term monitoring to establish lines of evidence for transition to MNA Remedial Action Permit for metals and non-CCPW COCs (e.g., PCE) in accordance with the NJDEP's MNA Guidance (Part 3 of active treatment remedy as depicted on Figure 5-1);

- Monitor groundwater conditions and engineering controls over the long-term (Parts 1, 2 and 3 of active treatment remedy and MNA treatment remedy as depicted on **Figure 5-1**);

- Maintain engineering controls; and

- Maintain institutional controls (CEA) for COCs that are on or emanating from Site 114.

The components of the remediation strategy are briefly described below and are presented in greater detail in Section 6.

### 5.3.1 Active Remedy Selection

The selected active remedy uses demonstrated remediation alternatives and includes the following:

- Part 1 of active treatment remedy as depicted on **Figure 5-1**:
    - Injections of electron donors (i.e., organic carbon substrate) to create and support an environment conducive to ISAB, and/or injections of a chemical reductant to support ISCR in the shallow, intermediate, and deep water-bearing zones;
    - Injections of electron donors to create and support ISAB and/or injections of chemical reductant to support ISCR in the shallow, intermediate, and deep water-bearing zones; and
    - Emplacement of FerroBlack®-H to create reactive zones to create and support ISCR in select areas and water-bearing zones.
- Part 2 of active treatment remedy as depicted on **Figure 5-1**:
    - Enhanced attenuation.

The Phase I, II, and III IRMs are selected as the first step of the active remedy based on their effectiveness to reduce Cr COCs groundwater concentration where implemented. The IRM phases will be followed by a period of enhanced attenuation as a second step of the active remedy.

The concentrations of non-Cr COCs within the active treatment areas are lower compared to Cr and are not the primary COCs of the active remedy. These COCs (listed in Section 4.1) are included in the Project Area CEA and will be managed under this institutional control. In addition, several of the non-Cr COCs will be treated using the select active remedies (e.g., *in situ* via ISAB or ISCR or *ex situ* via the above-ground GWTP) (Arcadis, 2017b; Arcadis, 2019). The concentrations of 1,4-dioxane in the limited area southeast of Site 114 will be confirmed by sampling wells in the Phase III IRM area. If

found to be present at concentrations less than the GWQS of 0.4 µg/L, this COC will be removed from the Project Area CEA. If concentrations are greater than the GWQS, the geochemical conditions in that area will be evaluated in support of an MNA remedy.

### 5.3.2 Monitored Natural Attenuation Remedy Selection

The establishment of groundwater engineering controls and the completion of the active remedy described above, in combination with natural processes will continue to remediate residual Cr, $Cr^{+6}$, and non-Cr COCs in the groundwater. Data from the IRM performance monitoring and the subsequent enhanced attenuation monitoring, with respect to organic carbon distribution and persistence in the subsurface, geochemical indicators, and trends in Cr, $Cr^{+6}$, and non-Cr concentrations in groundwater will be used to support the transition to an MNA remedy during Part 3 of the active treatment remedy as depicted on **Figure 5-1**. As described in **Figure 5-1**, the IRM performance monitoring, followed by the enhanced attenuation monitoring will provide a dataset that spans over several years, which will provide a solid understanding of long-term concentration trends after the cessation of the IRMs, with which, a decision on the suitability to transition to MNA, can be made.

The MNA remedy will rely on a long-term groundwater monitoring program to demonstrate that the natural attenuation processes are ongoing and that the natural assimilative capacity of the groundwater and aquifer matrix to degrade the COCs is not exhausted as demonstrated by sustained favorable geochemical conditions.

### 5.3.3 Engineering and Institutional Controls

As discussed in Section 3.1.2, several groundwater engineering controls were established during soil remediation and restoration activities, which include a capillary break, amended backfill, and sheet pile. In addition, the presence of a competent meadow mat layer between the shallow and intermediate water-bearing zones serves as a natural control preventing the vertical migration of COCs.

Further, a CEA was established in 2018, an update to which was submitted with the Groundwater RIR (AECOM, 2021e). The contaminants listed in the updated CEA include the CCPW metals and non-CCPW COCs identified as on or emanating from Site 114 in groundwater in the Emanating from Technical Memorandum. The CEA will be updated, as needed, and maintained until the remediation goal is attained. Following the implementation of the active remedies, long-term groundwater monitoring will be conducted via the MNA remedy, and maintenance of groundwater engineering controls.

### 5.3.4 Contingency Remedy

Both during and after active treatment (Parts 1, 2 or 3 of the active treatment remedy as depicted on **Figure 5-1**), should the lines of evidence indicate that the GWQS for the COCs cannot be achieved in certain areas via the selected active groundwater remedies, either due to the presence of low permeability zones, technology limitations, or limitations with reagent (e.g., molasses, EVO, CaSx, FerroBlack®-H) distribution or groundwater extraction, contingency remedies, such as localized/targeted treatment using ISAB or ISCR, or FerroBlack®-H emplacement will be implemented in applicable areas. Where it is determined that the active remedy cannot be optimized further due to either limitations from an engineering perspective or subsurface limitations (i.e., presence of low permeability zones), an evaluation of technical impracticability will be conducted in accordance with the NJDEP's *Technical Impracticability – Guidance for Groundwater* (NJDEP, 2013b). Long-term

monitoring will be conducted to document continued protectiveness of public health and safety, and the environment, and the existing CEA will continue to be maintained/updated for these areas. PPG acknowledges that should contingent remedies require implementation in the future during and/or after redevelopment activities, those factors of redevelopment (i.e., buildings, etc.) will be considered when evaluating potential future contingent remedies.

## 5.4 Summary of Groundwater Remediation Strategy

The selected remediation strategy for the shallow, intermediate, and deep water-bearing zones includes a combination of active remedies, an MNA remedy, engineering controls, and institutional controls, supplemented by robust monitoring programs. This strategy is designed to be flexible and adaptive to allow optimization of the remedial actions, or to allow for a transition from one technology to a more effective remedial option. The remediation strategy is presented in **Table 5-2** and depicted in **Figure 3-2** and includes the following:

- Active treatment of groundwater $Cr^{+6}$ concentrations greater than 1,000 µg/L in water-bearing zones, where practicable, using a combination of one or more ISAB and/or ISCR alternatives to treat or reduce concentrations of $Cr^{+6}$ and other COCs in groundwater, followed by enhanced attenuation.
- During Parts 1, 2 and 3 of the active treatment remedy as shown on **Figure 5-1**, implementation of contingency measures as appropriate.
- After active treatment and enhanced attenuation, transition to an MNA remedy, where continued reductions in concentrations of COCs in groundwater will continue; and
- Monitoring and maintenance of existing groundwater engineering controls and a CEA until the long-term groundwater remediation goal is achieved.

**Figure 5-1** presents an illustration of the overall groundwater remediation strategy. The selected remediation strategy will achieve the groundwater remediation goal and objectives because it relies on a combination of demonstrated active treatment alternatives (Parts 1 and 2 of the active treatment remedy, as depicted on the Figure) to attenuate COCs in groundwater before transitioning to an MNA alternative during Part 3 (long-term monitoring) of the active treatment remedy as depicted on the Figure. This strategy will be coupled with a capillary break, which was installed and will be maintained to prevent the crystallization of chromate on soil surfaces, additional groundwater engineering controls (such as FerroBlack®-H amended fill and sheet pile), which have been installed and will be monitored and maintained, a CEA that was established and will be updated and maintained for the duration of the remedial action, and a long-term groundwater monitoring program. Contingency remedies are retained should the lines of evidence indicate that the GWQS for the COCs cannot be achieved via the selected active remedies. Finally, a request for an Active Category Groundwater Remedial Action Permit (RAP) will be submitted to the NJDEP for review and approval after initial groundwater monitoring data suggest that the active system remedy is effective in accordance with the requirements for the Active Category Groundwater RAP outlined in NJDEP's *Ground Water Remedial Action Permit Guidance*.

# 6 Description of Groundwater Remedial Action

This section provides a detailed description of the groundwater remedial action and the alternatives selected for use in each of the treatment areas and water-bearing zones. The groundwater remediation strategy was identified in Section 5.0 and is summarized on **Table 5-2** and **Figure 3-2**. The remediation strategy includes a combination of active treatment and associated monitoring, contingency remedies (as needed), engineering and institutional controls, and MNA.

## 6.1 Active Remedy

The selected active remedy, described in the following subsections, is based on demonstrated remediation alternatives and includes the following technologies:

- Part 1 of the active treatment remedy as depicted on **Figure 5-1**:
    - Injections of electron donors (i.e., organic carbon substrate) to create and support an environment conducive to ISAB, and/or injections of a chemical reductant to support ISCR in the shallow, intermediate, and deep water-bearing zones;
    - Injections of electron donors to create and support ISAB and/or injections of chemical reductant to support ISCR in the shallow, intermediate, and deep water-bearing zones; and
    - Injections of FerroBlack®-H as permeable reactive zones to create and support ISCR in select areas and water bearing zones.
- Part 2 of the active treatment remedy as depicted on **Figure 5-1**:
    - Enhanced attenuation.

As described in Section 3.3, active remediation is being achieved through three IRM phases. The three IRMs are designed to treat specific water-bearing zones and treatment areas using a combination of active remediation technologies including ISAB and ISCR. It is expected that residual reactive zone capacity from the active remedy will persist once injections of reagent are complete and enhanced attenuation will continue to provide treatment of COCs and reduce the potential risk of exposure to receptors. The persistence of the reactive zone capacity will be demonstrated and evaluated using a robust monitoring program.

### 6.1.1 In Situ Anaerobic Bioprecipitation and Chemical Reduction

*In situ* treatment of $Cr^{+6}$ is a well-developed technology (United States Environmental Protection Agency [USEPA], 2000), which can be implemented via biologically-mediated precipitation (ISAB) and chemical reduction (ISCR) processes. Although biological and chemical treatment mechanisms differ, both treatment processes are designed to reductively precipitate and permanently fix/immobilize the $Cr^{+6}$ in the aquifer, reduce $Cr^{+6}$ concentrations in groundwater to achieve remediation goals, and support long-term treatment permanence.

PPG has conducted bench- and pilot-scale testing of several biological and chemical treatment technologies. These studies evaluated the feasibility of both ISAB and ISCR technologies for treatment of $Cr^{+6}$-impacted groundwater and saturated soil at the Project Area. These tests provided

information relative to the anticipated $Cr^{+6}$ treatment performance reagent longevity and use, and design information pertaining to fluid injection and transport within the shallow and intermediate and deep water-bearing zones. Findings from these tests were used to develop the IRMs.

**In situ Anerobic Bioprecipitatio**n is an established biologically-mediated remedial technology for the treatment of metals (e.g., Cr) and other COCs in groundwater. This technology uses continuous or periodic delivery of degradable organic carbon substrates, such as molasses or EVO, into the contaminated groundwater system to stimulate the native microorganisms and promote the development of an *in situ* reaction zone (IRZ).

Within the IRZ, fermentation of the organic carbon substrate promotes development of iron- and sulfate-reducing groundwater conditions that are favorable for the reduction of $Cr^{+6}$. Under these conditions, $Cr^{+6}$ is reduced to $Cr^{+3}$ through reactions with multiple biologically-generated reductants or via direct anaerobic respiration with $Cr^{+6}$ serving as the terminal electron acceptor. The reduction of $Cr^{+6}$ to $Cr^{+3}$ provides three benefits from a treatment perspective:

- $Cr^{+3}$ is less toxic than $Cr^{+6}$ and, therefore, has higher permissible environmental concentrations;
- $Cr^{+3}$ is less soluble than $Cr^{+6}$ under Project Area groundwater conditions and forms a precipitate that is immobilized in the form of a hydroxide mineral that can be incorporated in a matrix of carbonate, sulfide, and other precipitates generated during the treatment process; and
- Insoluble $Cr^{+3}$ phases are resistant to re-oxidation to $Cr^{+6}$ phases under the soil and groundwater conditions at the Project Area.

The above benefits, combined with the pH-neutralizing effects of organic carbon fermentation, and the capability of the ISAB process to establish a reactive zone with sustained biological and abiotic reduction capacity, make $Cr^{+6}$ treatment via ISAB a suitable groundwater remedial technology for the Project Area.

A pilot test was completed within the shallow and intermediate zones of the former Phase IRM I test area on Site 114 to test the effectiveness of an ISAB remedy for $Cr^{+6}$-contaminated groundwater. The performance monitoring results showed that treatment of $Cr^{+6}$ impacts was achieved in groundwater and soil in the test area, with the treatment goals of 90% reduction of $Cr^{+6}$ in groundwater, and the target concentration of 20 milligrams per kilogram (mg/kg) of $Cr^{+6}$ in soil, being met (Arcadis, 2017a).

Based on the pilot test results, ISAB was selected for the Phase I and II IRM programs. Performance monitoring data from the Phase I IRM through the fourth quarter of 2020 show that Cr and $Cr^{+6}$ concentrations were reduced by three and four orders of magnitude (compared to baseline conditions) in the majority of the Phase I treatment area, with limited exceptions (Arcadis, 2021). In the Phase II IRM area, breakthrough with respect to TOC concentrations present in treatment areas with greater than baseline TOC concentrations, and decreases in Cr and $Cr^{+6}$ concentrations were observed in several monitoring wells during monthly treatment monitoring, and is expected to progress further as the remainder of the injection program is completed (AECOM, 2021f).

**In Situ Chemical Reduction** is a direct abiotic chemical reduction treatment that is implemented by introducing a reductant to chemically reduce $Cr^{+6}$ to less soluble $Cr^{+3}$, which in turn geochemically binds onto soil surfaces in the target groundwater treatment zone (USEPA, 2000). This is achieved by the delivery of the chemical reductant into the subsurface, which facilitates abiotic Cr removal in the aqueous phase via conversion of $Cr^{+6}$ to $Cr^{+3}$, and subsequent precipitation as either chromium

hydroxide or as iron-Cr hydroxide complexes. An ISCR pilot test was conducted on Site 114 (**Table 3-3**) to evaluate the applicability of abiotic treatment for $Cr^{+6}$ in groundwater and saturated soil. During the ISCR pilot test, two chemical reductants, FerroBlack®-H and CaSx, were tested to assess the viability of ISCR at the Site. The pilot test performance monitoring data demonstrated that $Cr^{+6}$ and total Cr concentrations were reduced by greater than 90% and 75%, respectively, when compared to the baseline concentrations. Overall, pilot testing showed that ISCR is effective for $Cr^{+6}$ treatment (AECOM, 2017b) and is included in the selected active remedy to complement ISAB. This technology provides reagent flexibility and can be applied alone or in combination with ISAB to optimize the remediation strategy.

Strategically located extraction wells may be used to increase the horizontal hydraulic gradient between injection and pumping wells to propagate distribution of the organic carbon substrate or chemical reagents (electron donors) to establish a reactive zone favorable for the reduction of $Cr^{+6}$ to $Cr^{+3}$.

### 6.1.2 FerroBlack®-H Emplacement

In areas planned for FerroBlack®-H treatment, the reagent will be delivered into the target zones to establish a reducing environment within the zone of influence of the injected material. FerroBlack®-H is a proprietary reagent of Redox Solutions, LLC, and is a reductive, colloidal suspension of 1-2% by wt. soluble sulfides and 7-8% by wt. insoluble iron sulfides. The reagent will precipitate $Cr^{+6}$ out of the aqueous phase as iron-chromium hydroxide complexes, thereby reducing the concentration of dissolved-phase Cr. The soluble iron sulfide (FeS) component serves as a short-term source of sulfides (electron donor) to promote the reduction of $Cr^{+6}$ to $Cr^{+3}$, while the minimally soluble FeS particles act as a long-term source of reductant. The active mechanism of this reagent is described in further detail in Section 6.4.2.

The effectiveness of this chemical reductant was demonstrated in laboratory, bench-scale, and pilot-scale testing, and through its use as a backfill amendment across the Project Area over the last decade. A desktop evaluation demonstrating the longevity of the reductant when applied as a backfill amendment was documented in the approved December 2017 *Capillary Break Design Final Report (Revision 2)* (AECOM, 2017a). Various delivery methods for introducing the reagent into the target zones are being evaluated.

Since submission of the Draft Groundwater RAWP in March 2021, a request for a PBR Authorization to implement the remedy during the Phase III IRM was prepared and the full-scale design for the Phase III IRM was developed. During the preparation of these documents, an evaluation of the treatment extents and locations of FerroBlack®-H reactive zones was conducted. The evaluation included a geotechnical assessment of the proposed Phase III IRM on HCC Site 199, which was summarized in a memorandum, provided as **Appendix C**. The memorandum evaluates potential risks associated with the implementation of the Phase III IRM at HCC Site 199 adjacent to the HBLR tracks between Garfield Avenue and Halladay Street, and the Forrest Street Properties. The memorandum also identifies mitigation measures, limits, and controls that would facilitate safe implementation of planned IRM activities within this area. The memorandum concludes that injections of electron donors to support ISAB can be completed at HCC Site 199 during the Phase III IRM with relatively low risk to the HBLR tracks by following the recommended injection and vibration monitoring guidance provided in the memorandum. However, the memorandum also concludes that, based on current understanding and available data, the injection of FerroBlack®-H to establish the reactive zone is not recommended at HCC Site 199 due to the potential risk of disturbances to the HBLR tracks and

related infrastructure; the detailed technical evaluations supporting these recommendations are included in the memorandum.

### 6.1.3 Enhanced Attenuation

Organic carbon substrates (e.g., molasses, EVO) delivered during the active treatment phase (Part 1 of the active treatment remedy as depicted on **Figure 5-1**) are fermented by native microbial species to yield electron donor that is used to generate energy and biomass in conjunction with the reduction of terminal electrons acceptors within the Project Area (notably iron and sulfate). These processes support short-term $Cr^{+6}$ reduction in the presence of iron-sulfide minerals or via biological $Cr^{+6}$ reduction. While the delivered carbon substrates are consumed and depleted via these respiration processes, the buildup of biomass as a result of continuous substrate delivery over several months into the target treatment areas serves as a reservoir for additional electron donor availability via endogenous cellular decay and biomass recycling within the reactive zones. In addition to sustained treatment benefits of reactive iron-sulfide minerals emplaced in the active treatment zone, this biomass recycling process is expected to provide a long-term source of electron donors that can perpetuate these geochemical and biological processes and extend COC attenuation even after cessation of reagent injections (Suthersan, et. al., 2013). This period, referred to as "enhanced attenuation" is a part of the active plume remediation strategy that works towards the groundwater treatment goal by providing a bridge between source-zone treatment (i.e., the IRMs) and the MNA non-active phase (ITRC, 2010), and to support the RAP application for transitioning to an MNA remedy. Therefore, it is expected that, following *in situ* active treatment (Part 1 of the active treatment remedy as depicted on **Figure 5-1**), residual injected material will continue to maintain a geochemically reducing environment for several years (AECOM, 2016). The IRMs have or will provide organic carbon reductive capacity, which is expected to remain in place and provide continued treatment for an estimated 10 to 15 years. The actual timeframe of this attenuation period and, therefore, the longevity of the substrate will be confirmed through groundwater monitoring (described in Section 7.3.1), which will provide the information to demonstrate continued attenuation of contaminant concentrations and persistence of aquifer reductive capacity.

### 6.1.4 Transition from Active Remedy to MNA Remedy

The extended monitoring period following active treatment (Part 3 of active treatment remedy as depicted on **Figure 5-1**) will evaluate long-term contaminant concentration trends and will guide the transition to the MNA phase of the remediation strategy. This will be achieved through a lines of evidence-based approach, as described in the *Monitored Natural Attenuation Technical Guidance* (NJDEP, 2012a). The expected longevity of the injected reagents and assimilative reductive capacity of the aquifer will be evaluated through a monitoring program that will analyze groundwater samples for the primary COCs (Cr and $Cr^{+6}$) and key geochemical indicators. The two (primary and secondary) lines of evidence that will be used to assess the long-term COCs concentration trends will include the following:

*Primary Lines of Evidence:*

- Analysis of plume behavior (i.e., shrinking, stable, or expanding plume), through spatial and/or graphical methods.
- Trend analysis of contaminants of interest (i.e., Cr and $Cr^{+6}$), using concentration vs. time plots, concentration vs. distance plots, and statistical tools (e.g., Mann-Kendall test or other approved modeling software [PHREEQC, MINTEQA2, etc.]).

- Regression analysis to estimate anticipated cleanup timeframes to achieve the GWQS goal of 70 µg/L.

*Secondary Lines of Evidence:*

- Evaluation of the stability of redox conditions characterized by low to negative ORP, low dissolved oxygen concentrations (i.e., less than 1 mg/L), and circum-neutral pH in groundwater.
- Analysis of groundwater concentrations of TOC, sulfur species, and iron.
    - TOC serves as a bulk indicator of organic carbon within the aquifer that can be fermented and utilized as the primary elector donor for ISAB.
    - Dissolved iron concentrations are indicative of microbial activity.
    - Sulfate is reduced under the anaerobic conditions that dominate most of the Project Area and is used as an electron acceptor to generate sulfide; therefore, residual sulfate concentrations provides a useful indicator of residual capacity to general additional iron sulfide minerals for ISAB.

## 6.2 Monitored Natural Attenuation Remedy

MNA is a remediation technology that is demonstrated, well understood, and accepted by the NJDEP for treating organic and inorganic compounds including $Cr^{+6}$. Natural attenuation processes include a combination of physical, chemical, or biological processes that reduce $Cr^{+6}$ in groundwater to the less mobile and less toxic $Cr^{+3}$. The primary mechanisms by which dissolved $Cr^{+6}$ is attenuated in groundwater include sorption and desorption to soils; precipitation, coprecipitation, and dissolution; and dilution and dispersion. Under conducive geochemical conditions, dissolved $Cr^{+6}$ is reduced to $Cr^{+3}$ hydroxides, which, under circum-neutral pH conditions, are immobilized within the formation and remain relatively immobile. Hexavalent chromium is a strong oxidant and is reduced to $Cr^{+3}$ compounds in the presence of electron donors such as ferrous iron, sulfide, and organic matter (Palmer and Puls, 1994).

Monitored natural attenuation is typically used in conjunction with other remedial measures or as a follow up to an active remedy (e.g., ISAB, ISCR, or enhanced attenuation), all of which have been implemented on Site 114 during IRMs since 2017, and are planned in various areas of the Project Area between 2020 and 2023.

In accordance with the NJDEP's guidance on MNA, the evaluation of MNA as a component of the groundwater remediation strategy for a site shall demonstrate the following (NJDEP, 2012a):

- Whether the COCs are likely to be effectively addressed by natural attenuation processes;
- Potential for the COCs contaminant plume to migrate; and
- Potential for unacceptable risks to human health and the environment.

For MNA to be effective, a geochemically-reducing groundwater environment is required, which is characterized by near-neutral pH conditions, low or negative ORP, low dissolved oxygen levels, and high organic carbon content. Treatment monitoring data from the ongoing Phase I IRM show that the introduction of organic carbon substrate is effective in establishing and sustaining a geochemically-reducing environment within the IRM areas at Site 114. Eight quarterly rounds of post-treatment performance monitoring data, followed by enhanced attenuation monitoring from each of the three

IRM phases, will be used to evaluate the persistence of reducing conditions and to confirm the decreasing concentration trends of Cr and $Cr^{+6}$ toward meeting the NJDEP GWQS.

In addition, the presence of the organic carbon-rich meadow mat layer between the shallow and intermediate water-bearing zones serves as a natural source of organic reductants, which promotes reducing conditions in the intermediate water-bearing zone. Competent meadow mat with a thickness of 1 foot or more is present across portions of the Project Area, at depths ranging from approximately 10 to 25 ft bgs. In addition to this natural source of reducing capacity, hydrocarbons related to MGP impacts also promote and sustain reducing groundwater conditions.

Naturally-occurring microorganisms engender geochemical conditions favorable for the bioprecipitation of $Cr^{+6}$. Microbial samples were collected in 2013, prior to Phase I IRM injections at representative shallow and intermediate zone wells within the ISAB pilot test area on Site 114. Iron- and sulfate-reducing bacteria (IRB/SRB) were present at concentrations ranging from 100 cells per milliliter (cells/mL) to over 4,000 cells/mL (Arcadis, 2017b), indicating a robust microbial population in Project Area groundwater. These microbial cultures are generally ubiquitous in groundwater systems and via the Phase I and II IRM programs have been demonstrated to be effective in reducing $Cr^{+6}$.

Treatment and post-treatment monitoring data from the ongoing Phase I IRM show that considerable reduction of $Cr^{+6}$ concentrations was achieved in the intermediate and deep water-bearing zones, demonstrating that the implementation of the IRMs will be effective for significantly reducing elevated concentrations of $Cr^{+6}$ within permeable treatment zones. Upon completion of the active remedy phase and associated monitoring, cleanup timeframes (i.e., the time required for the concentrations of Cr and $Cr^{+6}$ to attenuate to the 70 µg/L GWQS for Cr) may be estimated.

## 6.3 Contingency Remedy

Developing an effective treatment and performance monitoring approach will be used to evaluate baseline conditions and progress towards achieving the remediation objectives for the selected remediation strategy. Several lines of evidence will be used to determine the effectiveness of the active remedies and MNA. These lines of evidence include continued protection of human health and the environment, performance monitoring metrics, reductions in plume dimensions, decreasing concentration trends, conducive subsurface geochemistry, or mass discharge reduction.

During the active treatment remedy (i.e., Parts 1, 2, and 3 as depicted on **Figure 5-1**), should the lines of evidence indicate that the GWQS for the COCs cannot be achieved in certain areas via the selected groundwater remedies, either due to technology limitations or limitations with reagent (e.g., molasses, EVO, CaSx, FerroBlack®-H) distribution or groundwater extraction, contingency remedies, such as localized/targeted treatment using ISAB or ISCR, or FerroBlack®-H emplacement will be implemented in applicable areas where a remedy is necessary to remain protective of human health and the environment. The application for Active Category Groundwater RAP will also outline PPG's anticipated contingency remedies and conditions for implementation of same for Parts 2 and 3 of the active treatment remedy.

Where it is determined that the active remedy cannot be optimized further due to either limitations from an engineering perspective or subsurface limitations (i.e., presence of low permeability zones), a Technical Impracticability Determination will be sought in accordance with the NJDEP's *Technical Impracticability – Guidance for Groundwater* (NJDEP, 2013b). Long-term monitoring will be conducted to document continued protectiveness of public health and safety, and the environment, and the existing CEA will be maintained/updated for these areas.

With respect to HCC Site 199, it is recognized that GGM remains under the HBLR and has the potential to serve as a long-term source of $Cr^{+6}$ to groundwater migrating onto/through Site 199. In lieu of the FerroBlack®-H reactive zone, a robust groundwater monitoring program will be implemented to monitor conditions on HCC Site 199. Upon commencement of injections, groundwater monitoring will be completed at time intervals that will provide sufficient data to confirm whether the remedial objectives are being achieved. Sampling of monitoring wells within the treatment area will determine whether the remedial action is progressing as planned and whether modifications will be necessary to optimize or improve performance. In the event that Cr and $Cr^{+6}$ concentrations begin to show increases related to influx from the GGM, focused, limited-duration injections of organic carbon substrate and/or chemical reductant on HCC Site 199 could be proposed to abate these conditions.

## 6.4 Groundwater Engineering Controls

The nature and extent of Cr and $Cr^{+6}$-related groundwater impacts are documented in the Groundwater RIR (AECOM, 2021e). The $Cr^{+6}$ plume remains primarily within the Project Area boundaries and has not migrated very far from the former source areas, even in areas where preferential migration pathways or lower permeability soils are present. This indicates attenuation stemming from natural mechanisms (sorption/desorption, precipitation/coprecipitation/dissolution, and dilution/dispersion) that has and will continue to affect the fate and transport of Cr and $Cr^{+6}$ in groundwater. Active treatment achieves reduction of dissolved-phase $Cr^{+6}$, while the combination of MNA along with natural and engineered hydraulic controls provide long-term control and containment of residual and less accessible Cr mass.

The risks to public health and the environment have been eliminated by the excavation of shallow CCPW-impacted soils and replacement with amended or unamended clean backfill material. The placement of clean soils and the presence of a capillary break mitigate the risk of direct exposure (ingestion, dermal, inhalation) from impacted material and prevent future $Cr^{+6}$ blooming. In addition, the use of clean backfill amended with an iron-sulfide based reducing agent (FerroBlack®-H) across most of the Project Area prevents the recontamination of shallow soils with $Cr^{+6}$-impacted groundwater, should rising groundwater levels occur due to precipitation or other mechanisms in the future.

During soil remediation activities, several groundwater engineering controls were installed and/or maintained, including sheet pile, capillary break, and placement of amended backfill. These controls limit the future transport of Cr in groundwater in multiple directions, including upward into the shallow zone and horizontally into areas outside the sheet pile perimeter. Natural geologic controls (competent meadow mat layer) also limit vertical migration of Cr. In addition to these controls, a CEA was established in 2018 (AECOM, 2018a; NJDEP, 2018a) and updated in 2021 (AECOM, 2021e). Collectively, the risk of exposure to contaminated groundwater is reduced through ongoing monitoring and maintenance of these engineering and institutional controls while MNA is ongoing, and until the groundwater remediation goal is met.

### 6.4.1 Capillary Break

A capillary rise study was conducted to support the design of a capillary break for the GA Group Sites (AECOM, 2017a). Based on the results of this study, it was determined that a 6-inch layer of OGS, or a 2.8-ft layer of DGA (unamended or amended with FerroBlack®-H [A-DGA]), would be an effective capillary break for the Project Area. A 40-millimeter (mm) HDPE impermeable liner was also established as an acceptable capillary break option (AECOM, 2017f). In areas where a capillary break was required, a design groundwater elevation of 13.2 ft NAVD88 was established for the portion of the GA Group Sites north of Carteret Avenue, and 11.0 ft NAVD88 for the areas south of Carteret Avenue

(AECOM, 2017f). The extent of the installed capillary break is depicted on **Figure 3-1**. In certain areas where the placement of OGS, DGA, A-DGA, or HDPE liner capillary break is not feasible (e.g., in areas where excavation is limited due to the presence of infrastructure), an asphalt covering of the surface, with a minimum thickness of four inches, serves as the capillary break (e.g. the former Halsted Corporation Property).

The need for a capillary break was determined based on an evaluation of:

- Cr concentrations in the shallow and intermediate water-bearing zones;
- $Cr^{+6}$ concentrations in soil;
- Presence or absence of competent meadow mat; and
- Presence or absence of A-DGA.

Per the approved November 2017 GWMP, groundwater monitoring was proposed to demonstrate that groundwater in the remediated portions of the Project Area that are adjacent to unremediated areas remains of acceptable quality to preclude the need for a capillary break. Three annual sampling events were proposed in the GWMP, the first of which was completed in the third quarter of 2020. Analytical data and a summary of the results were transmitted via email to the NJDEP on November 9, 2020 (Document no. GW-097) (AECOM, 2020d). Concentrations of Cr and $Cr^{+6}$ in 14 of the 16 shallow monitoring wells sampled continued to remain less than the NJDEP GWQS of 70 µg/L for Cr. The concentrations of Cr and $Cr^{+6}$ in the two wells where exceedances of the GWQS were observed, were similar to the concentration levels in past sampling events, therefore, these exceedances were not unexpected.

Completion of the three annual rounds of groundwater monitoring under the capillary break program is expected to provide sufficient evidence that conditions continue to exist that preclude the need for a capillary break.

### 6.4.2 FerroBlack®-H Amended Backfill

As stated in Section 3.1.1, soil remediation (excavation and backfilling) have been completed in several portions of the Project Area. The open excavations were backfilled with DGA, which, in many areas, was amended with FerroBlack®-H, to prevent the recontamination of clean backfill with $Cr^{+6}$-impacted groundwater. **Figure 3-1** identifies the areas where FerroBlack®-H-amended backfill was used. The amendment was applied to clean backfill at dosages ranging from 0.7% by wt. to 2.8% by wt.

The reduction of $Cr^{+6}$ to the less toxic, less mobile $Cr^{+3}$ precipitates by FerroBlack®-H occurs through one or more geochemical processes, whereby:

- The soluble sulfides component of the FerroBlack®-H reacts rapidly with aqueous $Cr^{+6}$, providing a readily available source of electron donor (i.e., dissolved sulfides) resulting in its reduction to $Cr^{+3}$ and the formation of an iron-chromium precipitate; and
- The insoluble phase of FerroBlack®-H, mainly comprised of minimally soluble FeS particles, provides a slow-release long-term source of both iron and sulfur species to promote the continued reduction of $Cr^{+6}$ to $Cr^{+3}$, through a combination of dissolution, surface adsorption, and co-precipitation reactions. The reduction of $Cr^{+6}$ occurs at the FeS particles surface, and results in the formation of $Cr^{+3}$-$Fe^{+3}$ hydroxides or oxyhydroxide (e.g., $Cr_xFe_{1-x})(OH)_3$ or $Cr_xFe_{1-x}OOH$) at pH conditions greater than 4 standard units (s.u.) (Patterson, et.

al., 1997; Mullet, et. al., 2004; Palmer and Puls, 1994). The mineral matrix of the FeS will continue to provide a slow-release, long-term source of reductant.

Laboratory column testing studies were conducted to evaluate the effectiveness of FerroBlack®-H as a soil amendment (Brown et. al., 2008). FerroBlack®-H was applied at dosages ranging from 0.9% by wt. to 2.7% by wt., similar to the dosages applied to the backfill at the GA Group Sites. Simulated rainwater was passed through the columns over a 50-day period, which was intended to simulate 30 to 50 years of groundwater flow. After the exposure period, it was found that the COPR-containing soil that was treated with FerroBlack®-H maintained ORP values of less than -400 millivolts (mV), indicative of strong reducing conditions, and also did not result in any leachable $Cr^{+6}$ over the period of testing. The testing demonstrated the longevity of the amendment and concluded that FerroBlack®-H would not be passivated and would continue to treat residual $Cr^{+6}$ for the entire duration of the simulated period.

In 2012, bucket testing of several chemical reagents was conducted to evaluate effectiveness and health and safety risks for full-scale application during soil remediation across the Project Area. Based on the results of the bucket testing, FerroBlack®-H was selected for pilot-scale testing in a small portion of Site 114, based on a comparison of health, safety, odor issues, effectiveness in reducing $Cr^{+6}$, cost, and other considerations (AECOM, 2012b).

In order to evaluate the effectiveness of FerroBlack®-H as a backfill amendment under actual Site 114 conditions, a pilot test was conducted within a 30-ft by 30-ft excavation (measuring 18 ft in depth), constructed within the footprint of the former Morris Canal on Site 114 (AECOM, 2012b; AECOM, 2017d). Groundwater within this portion of Site 114 contained some of the highest levels of Cr and $Cr^{+6}$ across the Project Area. The excavated test cell was backfilled with DGA amended with FerroBlack®-H, added at a loading rate of 3% by wt. Baseline and post-treatment soil and groundwater samples were collected to assess the effectiveness of the backfill amendment. The pilot test demonstrated the following:

- FerroBlack®-H-amended backfill was effective in preventing recontamination of clean soil (backfill material) with $Cr^{+6}$;
- Groundwater concentrations of Cr and $Cr^{+6}$ were reduced by over 98% compared to the baseline values within the test cell; and
- FerroBlack®-H was effective in maintaining a reducing geochemical environment, characterized by near-neutral pH, low or negative ORP, and low dissolved oxygen content.

The concentrations of several TAL metals were also reduced to concentrations less than their respective GWQS by the end of the performance monitoring period.

Following placement of FerroBlack®-H -amended backfill during full-scale application, shallow groundwater quality with respect to Cr and $Cr^{+6}$ has improved across most of the Project Area where the amendment was used. Within Site 114, concentrations of Cr and $Cr^{+6}$ in the shallow water-bearing zone have reduced to less than the GWQS of 70 µg/L in most areas, with very limited exceptions, and continue to remain less than the GWQS, as evidenced by the most recent data collected under the capillary break monitoring program (AECOM, 2020d).

The use of FerroBlack®-H as a backfill amendment has aided the establishment and maintenance of a geochemically-reducing environment, specifically near-neutral pH (6 to 8 s.u.), low or negative ORP, and low (less than 1 mg/L) dissolved oxygen content. Under these conducive geochemical conditions, the kinetics of re-oxidation of $Cr^{+3}$ to $Cr^{+6}$ are extremely slow, due to the poor solubility of the iron-

chromium hydroxide precipitates (Eary and Ral, 1987). To date, there have been no occurrences of $Cr^{+6}$ "rebound" in shallow groundwater in areas where FerroBlack®-H was applied to the clean backfill.

In order to quantify the expected longevity of the FerroBlack®-H applied at the Project Area, PPG performed a longevity assessment that was included as Appendix E of the approved *Capillary Break Design Report – Final* (AECOM, 2017f) and the February 2021 *Capillary Break Design Final Report (Revision 2) Addendum (Revision 1)* (AECOM, 2021a). Calculations were performed to evaluate if the applied FerroBlack®-H would be sufficient to sustain reducing conditions in the subsurface for an extended period and the results indicated that the amendment would continue to be effective for a minimum of 200 years. The dosage of FerroBlack®-H calculated from the results of the bucket testing (220 grams of FerroBlack®-H per gram of $Cr^{+6}$) was conservative, as this dosage did not "fail" during bucket testing and incorporates a considerable safety factor when compared with the stoichiometric requirement. In addition to the reductive capacity of the amendment alone, the presence of competent meadow mat (discussed below) and the observed downward vertical hydraulic gradients are expected to extend the longevity of this groundwater engineering control.

### 6.4.3 Competent Meadow Mat

Competent meadow mat is present across large portions of the Project Area, as shown on **Figure 3-1**. The meadow mat is an organic carbon-rich layer comprised primarily of peat, and acts as a natural source of organic carbon (reductant), thereby acting as a chemical barrier that maintains a reducing environment in the subsurface where it is present, which promotes reduction of $Cr^{+6}$ to $Cr^{+3}$. In areas where an upward vertical hydraulic gradient exists, the presence of competent meadow mat also functions as a physical barrier due to its low permeability, and limits upward vertical flow of impacted groundwater from the intermediate zone into the shallow zone (e.g., Halladay Street North).

### 6.4.4 Sheet Pile

Steel sheet piling was installed around the perimeter and on the interior of Site 114, and along Sites 132, 135, 137, and 143 (**Figure 3-1**) to stabilize the excavation and to limit off-site migration of impacted groundwater during soil remedial activities in the Project Area. The sheet pile around the former MGP facility (i.e., the eastern half of Site 114) was installed by PSEG as part of soil remedial activities to address MGP-related impacts in the northeast portion of Site 114 (Area A sheet pile). In accordance with PSEG's *Remedial Action Work Plan Addendum for On-Site Soils, Former Halladay Street Gas Works, Jersey City, New Jersey* (PSEG, 2012), the sheet pile surrounding this eastern portion of Site 114 is an engineering control for the MGP-related contaminants and is required to stay in place as part of the MGP remedy.

The sheet pile installed by PPG as part of CCPW-remediation activities on Site 114 was interlocked with the Area A sheet pile installed by PSEG for the MGP remediation. The sheet pile installed by PSEG is a permanent, sealed structure. Collectively, the sheet pile installed by PPG and PSEG is intended to serve as a long-term engineering control to prevent off-site migration of CCPW- and MGP-related constituents. A majority of the sheet pile installed around Site 114 was sealed using impermeable sealants (primarily Wadit and Adeka A-30), which are applied to the sheet pile interlocks before being driven into the ground. The Wadit sealant is both chemical and water-resistant and can tolerate temperature extremes, up to depths of 130 ft bgs. Laboratory tests have demonstrated the water tightness of this sealant (TU Dortmund, 2008).

Extensive studies and evaluations on the potential for corrosion of the sheet pile have been completed by AECOM, on behalf of PPG, using literature sources and site-specific testing. These activities were summarized in the August 28, 2020 Technical Memorandum titled *Evaluation of Corrosion Potential*

*and Estimated Design Life of Steel Sheet Pile Separating Garfield Avenue Group Site 114 and Site 199* (AECOM, 2020b). This Memorandum concludes that corrosion of sheet pile below the water table is negligible. Permanently submerged surfaces are not subject to significant corrosion primarily due to the low level of oxygen available. Therefore, the portion of the sheet pile that is at potential risk of corrosion is only the portion above El. 7.9 ft NAVD88 (i.e., within the shallow water-bearing zone). The sheet pile will not be identified as a groundwater engineering control for the shallow water-bearing zone at the Project Area, as described further below.

In summary, the presence of a permanent, sealed sheet pile barrier around the perimeter of Site 114 limits the off-site migration of contaminated groundwater from the intermediate and upper portion of the deep water-bearing zones onto adjacent properties and roadways.

The sheet pile is not intended to be a component of the groundwater remedy for the shallow water-bearing zone for the following reasons:

- The groundwater contamination on Site 199 along the northern Site 114 boundary is planned for active treatment as part of the Phase III IRM. The presence of FerroBlack®-H amended backfill on the Site 114 side of the sheet pile serves as an effective engineering control to prevent the recontamination of shallow groundwater on Site 114. As documented in the approved December 2017 *Capillary Break Design Final Report* (Revision 2) (AECOM, 2017f), the amendment is expected to last several hundred years. Analytical data collected since completion of backfilling activities from shallow monitoring wells within Site 114, adjacent to Site 199, demonstrate that potential flow of Cr-contaminated groundwater from Site 199 is not impacting shallow groundwater quality on Site 114.
- Active treatment and performance monitoring under the Phase III IRM program will address the Cr concentrations on Site 199 near the former Morris Canal.
- In other areas of Site 114, shallow groundwater quality has improved significantly since the placement of clean amended and/or unamended backfill following source material excavation. Limited pockets of low-level Cr GWQS exceedances exist in the shallow zone within Site 114 that are expected to naturally attenuate (**Figure 4-1**). These isolated areas do not present a risk for off-site migration, as evidenced by the presence of clean downgradient wells.
- In the areas outside of Site 114, where excavation and backfilling activities have been completed, groundwater concentrations of Cr and $Cr^{+6}$ continue to remain less than the GWQS of 70 µg/L. Shallow groundwater contamination in areas that are yet to be remediated (e.g., Site 133 West, Site 137 South, etc.) will be addressed once the source material is removed and clean backfill placed. Shallow groundwater quality in these areas will be monitored under the FerroBlack®-H PBR monitoring program in accordance with the GWMP.

## 6.5 Groundwater Institutional Controls

As stated in Section 2.2., three CEAs have been or will be established in the Project Area:

1. CEA for the shallow, intermediate, deep, and portion of the bedrock water-bearing zones within the Project Area (AECOM, 2021e);

2. Virtual CEA for historic fill within Site 114 (AECOM, 2021e); and

3. CEA for former MGP (PSEG, 2014b).

These CEAs serve as institutional controls for CCPW and non-CCPW COCs, so that impacted groundwater will not be used without permission from the NJDEP. Thus, these CEAs are part of the groundwater remediation strategy for the Project Area to reduce potential future risk to human health. The CEAs will be updated in the future as needed.

# 7 Groundwater Remedial Action Implementation

## 7.1 Permits and Notifications

### 7.1.1 Permit-By-Rule (PBR)

Several DGW PBR authorizations related to groundwater remedial action were previously issued for remediation at the Project Area. Relevant PBRs are summarized below.

**Table 7-1 List of Approved Permits-By-Rule for Groundwater**

| Description | Date Submitted | Date Approved by NJDEP |
|---|---|---|
| PBR authorization to inject molasses and Rhodamine WT dye tracer for the *in situ* bio-precipitation pilot study in the former IRM #1 area of Site 114. | 1/8/2014 | 1/28/2014 |
| Modification to the January 28, 2014 bioprecipitation New Jersey Pollution Discharge Elimination System (NJPDES)/DGW PBR to perform a second round of injections of molasses. | 8/8/2014 | 8/12/2014 |
| PBR authorization to perform an *in situ* chemical reduction pilot test using CaSx and FerroBlack®-H in the former IRM #1 area and the Phase 1C area of Site 114. | 6/15/2014 | Conditionally approved on 4/10/2015; Final approval on 6/2/2015 |
| PBR authorization to perform injections of organic carbon substrates (molasses and EVO) on Site 114 (Phase I IRM). | 6/30/2017 | 9/21/2017 |
| Modification to the Phase I PBR include:<br>1) Use of new multipurpose injection/extraction wells for a supplemental shallow zone injection event; and<br>2) Authorization to conduct a hydraulic fracturing pilot test on Site 114 in the transitional intermediate/deep water-bearing zone. | 5/22/2019 | 5/23/2019 |
| PBR authorization to perform injections of organic carbon substrates (molasses and EVO) on Site 114 (Phase II IRM). | 2/28/2019 | 5/9/2019 |
| Modification to the Phase II IRM PBR for authorization to remove DNAPL from injection wells and commence reagent injections without DNAPL recovery to 0.01 ft before commencing reagent injections. | 1/19/2021 | 1/21/2021 |

| Description | Date Submitted | Date Approved by NJDEP |
|---|---|---|
| PBR authorization to perform in situ injections of organic carbon substrates (molasses and/or EVO) and chemical reagents (CaSx and FerroBlack®-H) (Phase III IRM). | 4/20/2021 | 7/9/2021 |

Copies of the PBR application requests and NJDEP authorizations for the three phases of IRMs are included in **Appendix B**.

### 7.1.2 Remedial Action Permit

An application for an Active System Groundwater RAP will be submitted to the NJDEP for review and approval as soon as the requirements for the Active Category Groundwater RAP outlined in NJDEP's *Ground Water Remedial Action Permit Guidance* (https://nj.gov/dep/srp/guidance/srra/rem_action_permit_guidance_gw.pdf) have been met. It is expected that these requirements will be met upon completion of the treatment monitoring programs for the three IRM phases, and at a minimum after four quarters of post-treatment monitoring data are available for the Phase III IRM. The data from these robust area-wide groundwater monitoring required under the PBRs for the three IRM Phases are expected to support that the active system remedy is effective. PPG will submit the request for an Active System Groundwater RAP at the same time as the Draft RAR.

### 7.1.3 Other Permits

#### 7.1.3.1 Temporary Access Permit

Any intrusive work planned on or within the ROW of the NJ Transit property (Site 199 [Block 21501, Lot 1.01]) will be performed under a temporary access permit (TAP) obtained from the NJ Transit Authority.

#### 7.1.3.2 Sidewalk or Road Opening Permits

Work proposed within public roadways or ROWs will be performed after obtaining the necessary approvals from the City of Jersey City (i.e., road opening or sidewalk opening permits). Traffic control measures will be implemented in accordance with the City's requirements.

### 7.1.4 Public Notification Requirement

For remedial actions implemented under the PBRs where the discharge will last longer than 180 days, a public notice is required. The public notice allows interested persons to submit written comments up to 30 calendar days after issuance of the public notice. A copy of the public notice will be sent to the Municipal Clerk and to local health officials for the City of Jersey City and Hudson County.

## 7.2 Health and Safety

A Health and Safety Plan (HASP) has been prepared for the PPG program. The HASP establishes general health and safety protocols to be followed by personnel during various field activities. The HASP describes training, medical surveillance, personal hygiene practices, hazard exposure monitoring, and other relevant topics. The HASP is intended to be a dynamic document that is updated annually or more frequently if conditions change.

## 7.3 Access

The Project Area is comprised of PPG-owned and non-PPG-owned properties. PPG-owned properties will be fenced for security purposes. Access to properties not owned by PPG will be negotiated with the appropriate parties. The Project Area is currently (as of October 2021) monitored by a security guard present at the entrance 24 hours a day, 7 days a week.

## 7.4 Effectiveness Evaluation

### 7.4.1 Groundwater Monitoring

Upon commencement of the remedial action, groundwater monitoring will be completed at time intervals that will provide sufficient data to confirm whether the remedial objectives are being achieved (implement remedial action ahead of redevelopment activities, reduce risks to human health and environment and reduce Cr concentrations and mass flux/mass discharge). Sampling of the former source and plume area performance monitoring wells will serve to monitor the remedial action, determine whether it is progressing as planned, and whether modifications are necessary to optimize or improve performance, as recommended in the NJDEP's *In Situ Remediation: Design Considerations and Performance Monitoring Technical Guidance Document* (NJDEP, 2017d). Sampling will also be used to assess whether the remedial action may cause unintended consequences, such as GWQS exceedances of other COCs and, if so, what modifications to the remedial action may be warranted. Sampling of downgradient performance monitoring wells will determine whether the remedial action is causing a mass flux/mass discharge of contaminants outside of the Project Area and, if so, appropriate modifications may be considered. Performance and compliance monitoring will demonstrate whether potential receptors continue to be protected during and after the remedial action.

Once the active remedy is complete in a water-bearing zone, and the remedy is transitioned to MNA monitoring of select performance, compliance and sentinel wells in that zone will be completed to demonstrate continued progress of the long term objective (i.e., continued progress to meeting the GWQS for Cr and other COCs). The following sections describe the conceptual monitoring plans for the active systems and MNA remedies.

#### 7.4.1.1 Active System Remedy

A conceptual monitoring plan and schedule for the active system remedy are presented in **Table 7-2**. This plan includes monitoring that will be conducted in accordance with the PBRs for Phases I, II, and III IRMs and monitoring that will be conducted to evaluate the enhanced attenuation remedy.

*In situ* Treatment Monitoring (via IRM PBRs)

Monitoring parameters, schedule, and frequency for the Phase I, Phase II, and Phase III IRMs effectiveness evaluation were defined in the respective PBR authorizations (**Appendix B**).

The objectives of the IRM groundwater monitoring program are to evaluate the following:

- Distribution of reagent (biological or chemical) within targeted zones;
- Effectiveness of $Cr^{+6}$ reduction; and
- Establishment and maintenance of reducing conditions during and post-treatment.

The timing of sampling in the IRM groundwater monitoring plan is critical to evaluate the effectiveness of the remediation and to reduce risk to human health and the environment. Therefore, sampling will occur prior to, during, and following treatment applications. Groundwater monitoring for the three IRM phases is comprised of the following:

- Baseline sampling prior to system startup;
- Operational monitoring;
- Treatment monitoring; and
- Post-treatment performance monitoring.

Enhanced Attenuation (Post-PBR Monitoring)

The objective of the enhanced attenuation phase monitoring is to monitor the capacity of the aquifer for continued reduction of COC concentrations after a significant amount of time has elapsed following active injection cessation.

The following COCs will be analyzed under this phase of monitoring:

- $Cr^{+6}$ and CCPW metals; and
- PCE and its breakdown products (trichloroethylene [TCE], cis-1,2-dichloroethene, and vinyl chloride) in shallow well 114-MW41A (on Site 199).

In addition, key geochemical indicators such as iron, sulfates, sulfides, TOC, and field geochemical parameters (pH, ORP, dissolved oxygen, temperature, turbidity, and specific conductivity) may be collected to support the evaluation of $Cr/Cr^{+6}$ attenuation.

The monitoring well network for the enhanced attenuation phase is expected to include a subset of the PBR monitoring well network and will be defined upon evaluation of the two-year post-treatment performance monitoring data for each IRM phase. The well network will consist of background wells, source area wells, plume area wells, and sentinel wells, and will provide optimal spatial coverage and be used to demonstrate that the contaminant plume is not migrating beyond the limits of the existing CEAs for the Project Area. The monitoring well network will be defined in the Active System Groundwater RAP.

As presented in **Table 7-2**, monitoring for the enhanced attenuation remedy is proposed semi-annually for the first year following completion of the two-year post-treatment performance monitoring for the in situ treatment remedy, and annually thereafter. As discussed in Section 6.1.3, the IRMs have or will provide organic carbon reductive capacity which is expected to remain in place and provide continued treatment for an estimated eight to ten years. The actual timeframe of this attenuation period and therefore, the longevity of the substrate, will be confirmed through groundwater monitoring which will provide the information to demonstrate continued attenuation of contaminant concentrations and persistence of aquifer reductive capacity. A robust dataset of contaminant concentrations and subsurface geochemistry information will be available upon completion of the enhanced attenuation period to evaluate the transition to an MNA remedy, consistent with the lines of evidence approach described in the NJDEP MNA Guidance (and described in Section 6.1.3). This extended monitoring period of PBR performance monitoring (quarterly) for the IRMs followed by enhanced attenuation monitoring (semi-annual to annual) will account for seasonal fluctuations in the water table and seasonal variability in contaminant concentrations.

### 7.4.1.2 MNA Remedy

As noted in the previous section, monitoring data from the three phases of the IRMs, and the enhanced attenuation program, will be used to demonstrate continued contaminant concentration reduction to support a transition to an MNA remedy. These data will be evaluated to gain an understanding of:

- Cr and $Cr^{+6}$ concentration reductions compared to pre-treatment concentrations;
- Concentration trends (i.e., increasing, decreasing, stable);
- Groundwater geochemistry;
- Attenuation rates and estimated cleanup timeframes (i.e., how many years to meet the 70 µg/L GWQS for Cr); and
- Plume behavior (i.e., stable, decreasing, increasing).

The analytical suite for the MNA program is expected to include $Cr^{+6}$ and CCPW metals, as well as appropriate geochemical parameters that will be analyzed or monitored routinely or as required will help assess the continued attenuation of Cr and $Cr^{+6}$ in groundwater (NJDEP, 2012a).

This dataset is expected to provide sufficient information to evaluate the persistence of reducing conditions, even after ceasing active treatment and, therefore, will serve as a gauge for the reductive capacity of the aquifer and the longevity of the biological reductant(s). A long-term groundwater monitoring (LTM) program will be established in the RAP for MNA to support regular monitoring of natural attenuation capacity within the aquifer.

The monitoring well network for the MNA program will include background, former source and plume area(s), and sentinel monitoring wells. It will include a combination of monitoring wells from the individual IRM phases, selected to provide adequate spatial coverage, and will be used to demonstrate that the contaminant plume is not migrating beyond the limits of the CEA. Sampling frequency for the MNA program will be guided by the NJDEP's Groundwater Remedial Action Permit Guidance at the time of implementation and may include a frequency shown in the table below. It is noted that sentinel wells and plume fringe wells monitored for the MNA remedy will help verify that the contaminant plume is not migrating beyond the horizontal boundaries of the CEA and could support reducing the extent of the CEA in the future.

**Table 7-3 Groundwater Monitoring Plan for Monitored Natural Attenuation**

| Phase | Performance Well Sampling Frequency | Sentinel Well Sampling Frequency |
|---|---|---|
| Upon issuance of MNA RAP | Annually, for years 1-4 | 1/2 of the travel time to nearest receptor or annually, whichever is more frequent |
| After 4 years | Biennially, for years 5-8 | 1/2 of the travel time to nearest receptor or biennially, whichever is more frequent |
| After 8 years | Every 4 years or every 8 years, dependent upon contaminant concentrations | 1/2 of the travel time to nearest receptor or same frequency as the performance wells, whichever is more frequent |

### 7.4.2 Maintenance and Monitoring of Groundwater Engineering Controls

Capillary Break

In areas where A-DGA does not exist, and where a capillary break was not required, based on the criteria laid out in the December 2017 *Capillary Break Design Final Report (Revision 2)* (AECOM, 2017e), groundwater monitoring for select parameters (defined in the GWMP) will be conducted annually, for a total of three years. The purpose of this monitoring is to verify that a capillary break is still not needed. The need for a capillary break will be re-evaluated if the data indicate these conditions have changed.

For areas where a capillary break does exist, the extent of the capillary break and notification procedures for penetrating the capillary break will be communicated to the property owners in the Active System Groundwater RAP. This will require the property owner or responsible party to notify PPG prior to breaching the capillary break so that PPG can coordinate repairs. In the event that the capillary break is compromised, it will be repaired or replaced, until such a time that the NJDEP agrees that a capillary break is no longer required, based on monitoring data (AECOM, 2017e). Repairs to the capillary break will be documented in the biennial certification report for the Active System Groundwater RAP.

FerroBlack®-H-amended Backfill

Groundwater monitoring in areas where FerroBlack®-H-amended backfill was used, is complete, or is underway for most of the Project Area. Progress of groundwater monitoring in these areas has been documented in past quarterly reports submitted to the NJDEP, as required by the PBR for site-wide application of FerroBlack®-H. As additional areas are excavated and backfilled, four quarters of groundwater monitoring will be conducted, and samples will be analyzed for the parameters defined in the 2017 GWMP and the PBR for site-wide application of FerroBlack®-H. Longevity calculations estimate that the FerroBlack®-H amendment will be effective in reducing $Cr^{+6}$ for a minimum of 200 years (AECOM, 2017d). Biennial groundwater monitoring of select shallow zone monitoring wells will be conducted to monitor the long-term effectiveness of this engineering control. Specific inspection and repair procedures for the amended backfill, if necessary, will be described in the application for an Active System Groundwater RAP.

Competent Meadow Mat

The meadow mat is a naturally occurring subsurface feature that is present across a large portion of the Project Area. The presence of competent meadow mat is documented and well understood. No regular monitoring or maintenance is required for this natural engineering control.

Sheet Pile

The potential for migration of contaminated groundwater across and/or underneath the sheet pile wall will be monitored by sampling monitoring wells on either side of the sheet pile. If warranted, an engineered permeable reactive barrier may be considered as a contingency remedy to prevent off-site migration of impacted groundwater, should it occur. Extensive studies and evaluations on the potential for corrosion of the sheet pile have been completed by AECOM, on behalf of PPG, using literature sources and site-specific testing. These activities were summarized in the August 28, 2020 Technical Memorandum titled Evaluation of Corrosion Potential and Estimated Design Life of Steel Sheet Pile Separating Garfield Avenue Group Site 114 and Site 199 (AECOM, 2020b). The sheet pile is not

proposed as an engineering control for the shallow water-bearing zone. Groundwater monitoring proposed in the Phase III IRM area will provide the information needed to verify that contaminated groundwater is not flowing past the sheet pile wall, thereby demonstrating the effectiveness of the sheet pile as an engineering control in the intermediate and deep (where present) water-bearing zones.

### 7.4.3 Field Procedures

Drilling, well installation, and well development will be conducted in accordance with the requirements set forth in N.J.A.C. 7:9D, by a NJ-licensed drilling subcontractor.

Groundwater sampling will be conducted in accordance with the NJDEP Field Sampling Procedures Manual (FSPM) (NJDEP, 2005), and the June 2010 Field Sampling Plan-Quality Assurance Project Plan (FSP/QAPP) (AECOM, 2010a), included as **Appendix D** to this RAWP. Groundwater analytical samples will be handled in a manner consistent with the sample container, holding time, and preservation requirements specific to the analytical method used. Sampling procedures will be consistent with the Standard Operating Procedures defined in the FSP/QAPP.

Field instruments will be calibrated on a daily basis, in accordance with the instrument specifications, and calibration data will be recorded in field data sheets. Instruments that may be used during groundwater sampling activities include water level indicators, oil/water interface probes, and water quality indicators.

Groundwater samples collected for regulatory compliance (e.g., performance monitoring data from the IRMs) will be collected using low-flow purging and sampling techniques, consistent with the FSP/QAPP and the NJDEP's *Low Flow Purging and Sampling Guidance* (NJDEP, 2003) or using improved sampling procedures approved by the NJDEP at the time of compliance sampling. Field water quality parameters (pH, ORP, dissolved oxygen, specific conductivity, temperature, and turbidity) will be recorded on dedicated low-flow sampling form. Samples will be collected into appropriately preserved sample containers provided by the analytical laboratory and stored in coolers at 4 degrees Celsius before being relinquished to the laboratory.

Deviations from the FSPM and/or the June 2010 FSP/QAPP will be documented in a field change notification and submitted for approval to the NJDEP prior to field implementation. Field change notifications for the Phase II and Phase III IRMs (FCN 20 and FCN 22) are included in **Appendix D**, along with the email approvals from the NJDEP.

### 7.4.4 Data Management

#### 7.4.4.1 Laboratory Analytical Data Reporting

Full laboratory data deliverables, as defined in Appendix A of the Technical Requirements for Site Remediation (NJDEP, 2018b) will be submitted for the $Cr^{+6}$ and $Cr^{+6}$-associated analyses (i.e., ORP and pH). Reduced laboratory data deliverables will be submitted for other analytes of interest (metals, VOCs, etc.). Electronic data deliverables (EDDs) of the validated analytical data will be uploaded to a PPG program-specific environmental database (EQuIS®).

#### 7.4.4.2 Data Validation

Each analytical data package will undergo a formal review process. One hundred percent of the analytical data will be reviewed, either as a "full" validation or a "limited" validation (as defined in Section 13.1 of the FSP/QAPP), for a check of completeness, data usability, and data reliability.

The discovery of significant anomalies or discrepancies during data validation may result in the in-depth review of the raw data, and the incorporation of additional review elements.

Validation of aqueous samples will be performed in accordance with the FSP/QAPP and the following NJDEP validation protocols:

- NJDEP Office of Data Quality SOP 5.A.10, Rev. 3 (September 2009), SOP for Analytical Data Validation of Hexavalent Chromium – for USEPA SW846 Method 3060A, USEPA SW846 Method 7196A, and USEPA SW846 Method 7199;
- NJDEP Office of Data Quality SOP 5.A.16, Rev. 1 (May 2002), Quality Assurance Data Validation of Analytical Deliverables for Inorganics (based on USEPA SW846 Methods); and
- ICP-AES Data Validation, SOP No. HW-3a Rev. 0 (July 2015).

Once the validation for a data package is complete, a data validation memorandum will be prepared. This memorandum will summarize the samples reviewed, the level of validation completed, non-conformances with the established criteria, and validation actions (i.e., application of data qualifiers).

The final laboratory analytical reports, along with the data validation memoranda will be included in relevant submittals.

## 7.5 Site Restoration

Following completion of the active remedy, remediation wells and select monitoring wells will be decommissioned in accordance with the N.J.A.C. 7:9D regulations by a NJ-licensed drilling subcontractor. As necessary, modification to the decommissioning of remediation wells may be evaluated and a request made to the NJDEP for approval. Select monitoring wells will be retained for inclusion in the MNA monitoring program, as needed.

The remediation network piping (injection, extraction, conveyance) and other subsurface pipes (electrical conduits) will be disconnected and abandoned in-place or removed upon completion of injection and extraction operations. In addition, above-grade infrastructure, including mobile injection units, well vaults and well casings will be disconnected and removed.

Areas where the HDPE capillary break liner was compromised due to drilling will be patched and repaired by a qualified subcontractor. Liner repairs will be documented in the biennial certification reports for the Active System Groundwater RAP.

## 7.6 Variances from NJAC 7:26E(5)

No variances are required for the work proposed in this RAWP.

# 8 Schedule and Reporting

## 8.1 Schedule

In accordance with the 1990 ACO and JCO, implementation and completion of the work to remediate soil and groundwater at the HCC Sites is proposed in accordance with a judicially-enforceable Master Schedule. The Master Schedule was most recently updated on July 30, 2021 and reflects the following milestones relevant to groundwater remediation:

- Groundwater IRM, Phase III: The PBR application for implementation of the Phase III groundwater IRM was submitted to the NJDEP BCAIN on April 20, 2021, with final approval issued on July 9, 2021. The Phase III treatment system began operating September 2021 and is expected to run for 12 to 14 months, after which a two-year post-treatment monitoring period will commence.

- Groundwater RAR: The Master Schedule milestone for the submission of a groundwater RAR is November 2023.

- Groundwater RAP: An application for an Active Category Groundwater RAP will be submitted with the RAR, i.e., as soon as the requirements for the Active Category Groundwater RAP outlined in NJDEP's *Ground Water Remedial Action Permit Guidance* (https://nj.gov/dep/srp/guidance/srra/rem_action_permit_guidance_gw.pdf) have been met. It is expected that these requirements will be met upon completion of the treatment monitoring programs for the three IRM phases, and at a minimum after four quarters of post-treatment monitoring data are available for the Phase III IRM. The data from these robust area-wide groundwater monitoring required under the PBRs for the three IRM Phases are expected to support that the active system remedy is effective.

## 8.2 Reporting

### 8.2.1 Remedial Action Progress Reports

During the implementation of remedial activities under the JCO, written Remedial Action Progress Reports (RAPRs) will be submitted to NJDEP within six weeks following the end of each quarter. Progress reporting will continue until the Active Category Groundwater RAP is issued. The progress report will include the following items, as applicable:

- Description of actions taken toward achieving compliance with the 1990 ACO and JCO during the previous quarter;

- Description and a schedule of actions which are expected to be initiated or completed during the following quarter; and

- Description of delays encountered or anticipated that may affect the future schedule and a description of the efforts made to mitigate these delays.

### 8.2.2 Active Remedy Reporting

#### 8.2.2.1 *In situ* Treatment Reporting under IRM PBRs

Quarterly Progress Reports

As specified in the PBRs for each IRM Phase, quarterly brief progress reports will be prepared and submitted to the NJDEP for review and comment in accordance with the PBR requirements for each IRM Phase during implementation of the groundwater IRMs. These progress reports will include in bullet format: details describing the activities completed within the reporting period, issues encountered, deviations from the PBR, samples collected (along with analytical data tables, figures, and supporting appendices), and work planned for the next quarter.

In order to enhance understanding of the progress of the IRM Phases, PPG intends to consolidate the PBR reporting into one quarterly report for the three IRM phases beginning in the first quarter of 2022. PPG will request a PBR modification if needed. In the consolidated quarterly report, PPG will depict the progress of the remediation in plan-view using appropriate graphics to convey progress to stakeholders on a high level (e.g., “heat maps”).

In addition to the progress reporting, PPG will more extensively evaluate progress of the remedy on an annual basis. In the fourth quarter progress reports, PPG will provide a remediation progress summary using snapshots of a 3-dimensional representation of the remediation. PPG will provide an opportunity for a technical discussion on a semi-annual or periodic basis with NJDEP and other stakeholders to review the 3-dimensional representation and answer specific questions regarding the overall understanding of remedial progress and the need for possible contingencies.

Final Report

A final completion report to close out the PBR will be prepared upon completion of each phase of the IRMs. This report will document the work performed under the approved PBR, including deviations from the PBR, and a discussion of the effectiveness of the IRM. This report will be submitted to the NJDEP within the applicable consolidated quarterly report.

#### 8.2.2.2 Enhanced Attenuation Monitoring Reporting and Long-Term Groundwater Monitoring

PPG will continue to provide progress reporting for the IRM portion of the active remedy as per the PBRs (i.e., quarterly). The groundwater remediation timeline shown on **Figure 5-1** shows that PPG expects that the Active Category Groundwater RAP will be issued concurrent with the close-out of the PBRs. Thus, progress reporting subsequent to the PBRs will follow NJDEP regulations and guidance for demonstrating remedial action protectiveness (i.e., biennial certifications). Reporting of the enhanced attenuation remedy and long-term groundwater monitoring for the biennial certification will include analytical data tables, result maps, laboratory reports, data validation reports, and a discussion of results and concentration trends observed over all three IRM phases to support the lines of evidence to transition to MNA.

### 8.2.3 MNA Remedy Reporting

After transition to a MNA Category Groundwater RAP, biennial certification reports will continue, which will be submitted in accordance with the MNA Category Groundwater RAP reporting requirements.

### 8.2.4 Reporting Associated with November 2017 GWMP

Reporting for the groundwater analytical data collected under the FerroBlack®-H PBR and the capillary break monitoring programs will continue until completed (in 2022), in accordance with the November 2017 GWMP.

### 8.2.5 Final Reporting

PPG will submit an RAR, prepared in accordance with N.J.A.C. 7:26E-6.7 (later replaced by N.J.A.C. 7:26E-5.7 per the August 6, 2018 amendment), and an application for an Active Category Groundwater RAP to the NJDEP for review and approval as soon as the requirements for the Active Category Groundwater RAP outlined in NJDEP's *Ground Water Remedial Action Permit Guidance* (https://nj.gov/dep/srp/guidance/srra/rem_action_permit_guidance_gw.pdf) have been met. It is expected that these requirements will be met upon completion of the treatment monitoring programs for the three IRM phases, and at a minimum after four quarters of post-treatment monitoring data are available for the Phase III IRM. The data from these robust area-wide groundwater monitoring required under the PBRs for the three IRM Phases are expected to support that the active system remedy is effective.

Per a September 2, 2020 NJDEP Listserv email correspondence, the Active Category Groundwater RAP is applicable to sites where the remedy includes an active groundwater treatment system. The Listserv indicates the NJDEP considers technologies such as remedial injections (with durations of greater than 180 days) and reactive barriers as an acceptable long-term remedial action where an Active Category Groundwater RAP can be issued. Requirements specified in NJDEP Ground Water Remedial Action Permit Guidance (NJDEP, 2017c) for the Active Category Groundwater RAP include the following, which will be met by PPG prior to the request for the Active Category RAP:

1. The active ground water treatment system is effectively operating and functioning as designed. A minimum of four (4) consecutive quarterly rounds of ground water samples should be collected to demonstrate this.

2. All soil contamination in the unsaturated zone has been remediated to the applicable numeric Migration to Ground Water Soil Remediation Standard for all AOCs associated with the CEA.

3. The ground water plume is not migrating horizontally or vertically into an uncontaminated aquifer zone adjacent to or below the contaminant plume.

4. The ground water plume is contained and not impacting the sentinel well(s).

5. Financial Assurance (FA) has been established for the operation and maintenance of any engineering control necessary for the period that the control(s) will be operating. The FA must be established for the duration the engineering control will be in place.

6. The ground water remedial action is demonstrated to be protective of public health and safety and of the environment. This includes an evaluation of all potential receptors as required by N.J.A.C. 7:26E.

The RAR will include the following:

- Description of remedial activities performed, including IRMs;
- Descriptions of deviations from the RAWP;
- Discussion of the remediation goal and objectives that were achieved;
- Description of site restoration activities;
- Remedial action costs incurred;
- Applicable regulatory forms; and
- Certification signed by the person who supervised or directed the preparation of the final RAR.

The overall performance of the IRMs, waste management, laboratory documentation, data quality assessments, supporting tables and figures, and other related information will be summarized and/or included as appendices to the RAR.

# 9 References

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# Tables

**Table 1-1. Regulatory Cross Reference Table**
Groundwater Remedial Action Work Plan, Final
Garfield Avenue Group Sites
PPG, Jersey City, New Jersey

**N.J.A.C. 7:26E (last amended August 6, 2018) regulations are the primary source of Remedial Action Work Plan (RAWP) requirements. This document is not to be used as a replacement for the Technical Regulations.**

| Regulation | Description | Document Location | |
|---|---|---|---|
| N.J.A.C. 7:26E-5.5 | Remedial Action Workplan | Report | Location |
| 5.5(a) | The person responsible for conducting the remediation shall prepare and submit to the Department prior to implementation, a remedial action workplan for each area of concern requiring a remedial action, unless a final remediation document for unrestricted use is filed with the Department within one year after the earliest applicable requirement to remediate, pursuant to N.J.A.C. 7:26C-2.2. | Groundwater Remedial Action Work Plan, Garfield Avenue Group Sites, Draft | throughout |
| 5.5(b) | The person responsible for conducting the remediation shall include the following in each remedial action workplan for each area of concern: | Groundwater Remedial Action Work Plan, Garfield Avenue Group Sites, Draft | see below |
| 5.5(b)1. | A summary of the findings and recommendations from the remedial investigation report prepared pursuant to N.J.A.C. 7:26E-4.9; | Groundwater Remedial Action Work Plan, Garfield Avenue Group Sites, Draft | Section 2.0 Summary of Groundwater Remedial Investigation |
| 5.5(b)2. | A description of any interim remedial measures previously implemented; | Groundwater Remedial Action Work Plan, Garfield Avenue Group Sites, Draft | Section 3.3 Summary of Completed and Ongoing Remedial Actions: Groundwater Interim Remedial Measures |
| 5.5(b)3. | The identification of each area of concern where the remedial action will be implemented, including:<br>i. The horizontal and vertical extent of the area to be remediated correlated to the extent of contamination; and<br>ii. The volume of the contamination to be treated or removed for each environmental medium; | Groundwater Remedial Action Work Plan, Garfield Avenue Group Sites, Draft | Section 4.4 Remediation Areas |
| 5.5(b)4. | A detailed description of the remedial action and the remedial technology to be used for the area of concern, including the results of any bench scale, pilot test or design studies; | Groundwater Remedial Action Work Plan, Garfield Avenue Group Sites, Draft | Section 6.0 Description of Groundwater Remedial Action and<br>Section 3.2 Groundwater Bench- and Pilot-Scale Tests Supporting Selection of Remedial Action |
| 5.5(b)5. | Identification of all applicable remediation standards; | Groundwater Remedial Action Work Plan, Garfield Avenue Group Sites, Draft | Section 4.2 Remediation Criteria |
| 5.5(b)6. | A plan to evaluate the effectiveness of the remedial action; | Groundwater Remedial Action Work Plan, Garfield Avenue Group Sites, Draft | Section 7.4 Effectiveness Evaluation |
| 5.5(b)7. | A perimeter air monitoring and action plan to be implemented during a remedial action, if applicable, designed to monitor and control off-site excursion of dust, vapor and odors; | Groundwater Remedial Action Work Plan, Garfield Avenue Group Sites, Draft | not applicable |

**Table 1-1. Regulatory Cross Reference Table**
Groundwater Remedial Action Work Plan, Final
Garfield Avenue Group Sites
PPG, Jersey City, New Jersey

| Regulation | Description | Document Location | |
|---|---|---|---|
| **N.J.A.C. 7:26E-5.5** | **Remedial Action Workplan** | **Report** | **Location** |
| 5.5(b)8. | A list of all required permits; | Groundwater Remedial Action Work Plan, Garfield Avenue Group Sites, Draft | Section 7.1 Permits and Notifications |
| 5.5(b)9. | A fill use plan that complies with N.J.A.C. 7:26E-5.2, if applicable; | Groundwater Remedial Action Work Plan, Garfield Avenue Group Sites, Draft | not applicable |
| 5.5(b)10. | A plan to restore the site after implementing the remedial action, if applicable; and | Groundwater Remedial Action Work Plan, Garfield Avenue Group Sites, Draft | Section 7.5 Site Restoration |
| 5.5(b)11. | The proposed completion date of the remedial action and a schedule of the remedial action for the initiation and completion of each remedial action task, pursuant to the required regulatory timeframe at N.J.A.C. 7:26E-5.8. | Groundwater Remedial Action Work Plan, Garfield Avenue Group Sites, Draft | Section 8.1 Schedule |
| 5.5(c) | The person responsible for conducting the remediation shall submit a revised remedial action workplan or remedial action workplan addendum prepared pursuant to this section: | Groundwater Remedial Action Work Plan, Garfield Avenue Group Sites, Draft | not applicable at this time |
| 5.5(c)1. | When a remedial action does not perform as designed; or | Groundwater Remedial Action Work Plan, Garfield Avenue Group Sites, Draft | not applicable at this time |
| 5.5(c)2. | To upgrade or change the selected remedial action. | Groundwater Remedial Action Work Plan, Garfield Avenue Group Sites, Draft | not applicable at this time |

Table 3-3. Summary of Key Recent Groundwater Bench- and Pilot-Scale Tests for Evaluating Remedial Technologies
Groundwater Remedial Action Work Plan, Final
Garfield Avenue Group Sites
PPG, Jersey City, New Jersey

| *Title/Year* | *Technology* | *Matrix* | *Objectives* | *Description* | *Results and Conclusions* | *Reference(s)* |
|---|---|---|---|---|---|---|
| Bucket Testing of Backfill Amendment Reagents (2012) | ISCR | Soil and Groundwater | • Assess effectiveness of six amendment reagents at varying doses;<br>• Evaluate safe handling procedures and odor issues for full-scale application; and<br>• Evaluate clean fill blending methods and provide recommendations for full-scale use. | The bench-scale bucket testing consisted of seven tests and a control sample. Tests involved blending of clean backfill (i.e., DGA) with reagents at varying dosages, and saturating the amended soils with $Cr^{+6}$-contaminated groundwater collected from the Site (in the former Morris Canal area).<br><br>The reagents tested included FerroBlack®-H, calcium polysulfide, ferrous sulfide, and sodium hydrosulfide.<br><br>The pilot test was intended to simulate conditions that would likely occur after excavations were backfilled, and groundwater recharges into the area. | While all reagents tested exhibited varying levels of effectiveness in reducing the concentration of $Cr^{+6}$, certain reagents resulted in elevated concentrations of other metals (e.g., mercury and selenium), and certain reagent mixes exhibited odor issues when blending.<br><br>FerroBlack®-H was selected for pilot-scale testing, at a dosage of 220 grams of FerroBlack®-H per gram of $Cr^{+6}$, based on a comparison of health, safety, and odor issues, effectiveness, cost, introduction of undesirable metals, ability to treat metals other than $Cr^{+6}$, and ability to reduce the solubility of Cr. | AECOM, 2012b. *Backfill Amendment Pilot Test – Final Report. 900 Garfield Avenue – PPG Site 114, Jersey City, New Jersey*. 27 February 2012. |
| Backfill Amendment Pilot Test (2012) | ISCR | Soil and Groundwater | • Assess the effectiveness of the selected backfill amendment reagent under actual Site conditions (i.e., pilot test) over a period of several months; and<br>• Provide data for full-scale application of the treatment method. | FerroBlack®-H amended backfill was applied to a 30 ft by 30 ft test cell (measuring 18 ft in depth) constructed within the former Morris Canal area. Approximately 6 gallons of FerroBlack®-H was added per ton of certified clean backfill, corresponding to a loading rate of 3% FerroBlack®-H by weight.<br><br>A baseline groundwater sample was collected as an initial indication of water quality recharging into the test cell. A baseline soil sample was also collected, from the bottom of the excavated test cell.<br><br>In addition, three monitoring wells were installed, one upgradient of the test cell, one within the test cell, and one downgradient of the test cell. Four performance monitoring soil and groundwater sampling events were completed, and samples were primarily analyzed for $Cr^{+6}$, TAL metals, pH and ORP. | Soil:<br>• The primary goal of preventing clean soils (i.e., amended DGA) from being recontaminated with $Cr^{+6}$, was achieved.<br>• The soil data also showed no significant increases in the concentrations of other metals as a result of use of the amendment. NJDEP SRS for all metals were met in soil.<br><br>Groundwater:<br>• Cr and $Cr^{+6}$ levels in groundwater samples collected from within the test cell reduced by over 98% compared to the baseline conditions.<br>• The concentrations of several TAL metals within the test cell were reduced to below their respective NJDEP GWQS by the end of the performance monitoring period.<br>• Cr and $Cr^{+6}$ concentration reductions (of over 75%) were recorded in the two wells located outside the test cell.<br>• Groundwater geochemistry data indicated that the application of FerroBlack®-H was effective in maintaining a reducing subsurface environment, characterized by negative ORP and a low dissolved oxygen content, which are conducive to the reduction of $Cr^{+6}$.<br><br>Testing also demonstrated that the amendment can be applied safely without adverse impacts to residents or Site workers. | AECOM, 2012b. *Backfill Amendment Pilot Test – Final Report. 900 Garfield Avenue – PPG Site 114, Jersey City, New Jersey*. 27 February 2012.<br><br>AECOM, 2017d. *Backfill Amendment Test Cell Permit-By-Rule Final Report. PPG Garfield Avenue Group, Hudson County Chromium Sites, Jersey City, New Jersey.* 5 December 2017. |

| *Title/Year* | *Technology* | *Matrix* | *Objectives* | *Description* | *Results and Conclusions* | *Reference(s)* |
|---|---|---|---|---|---|---|
| Morris Canal Permit-By-Rule Pilot Test (2012) | ISCR | Soil and Groundwater | • Assess the effectiveness of the selected backfill amendment reagent under actual Site conditions in a larger area compared to the test cell over a period of several months;<br>• Reduce concentrations of Cr and $Cr^{+6}$ in Site groundwater; and<br>• Evaluate effectiveness of the amended backfill for Site-wide application. | The pilot test involved application of a 2.8% (by weight) solution of FerroBlack®-H to clean backfill (DGA) to fill the excavation within the treatment area, within the footprint of the former Morris Canal.<br><br>Excavation of the treatment area resulted in the removal of approximately 22,500 tons of $Cr^{+6}$-impacted soils and concrete. This was followed by the placement of approximately 28,400 tons of FerroBlack®-H amended backfill, up to a depth of 26 ft bgs.<br><br>One shallow and one deep monitoring well were installed within the treatment area. Performance monitoring samples were collected and analyzed for $Cr^{+6}$, TAL metals, pH and ORP. | • Cr and $Cr^{+6}$ concentrations in the shallow monitoring well in the treatment area were below the NJDEP GWQS for Cr (70 ppb), compared to a pre-treatment groundwater concentration of 62,800 ppb of $Cr^{+6}$.<br>• Cr and $Cr^{+6}$ concentrations in the deep monitoring well in the treatment area were reduced by over 80% compared to pre-treatment levels.<br>• Concentrations of other metals were reduced in comparison to baseline/pre-treatment levels, to varying degrees.<br><br>The pilot test was considered successful, and provided useful data for full-scale design. | AECOM, 2017e. *Morris Canal Permit-By-Rule Final Report. PPG Garfield Avenue Group, Hudson County Chromium Sites, Jersey City, New Jersey.* 5 December 2017. |
| MGP Waste and FerroBlack®-H Bucket Test (2013) | ISCR | Soil and Groundwater | • Evaluate the use of FerroBlack®-H as a backfill amendment reagent in portions of the Site where former MGP residuals are present. | The bucket test consisted of testing FerroBlack®-H amended fill with a groundwater test solution (prepared to simulate a "worst case" scenario, i.e., consisting of equal parts of MGP-impacted groundwater and visibly green (i.e., Cr-impacted) groundwater. Air monitoring was also conducted to assess generation of VOCs and hydrogen sulfide gases. Baseline soil and groundwater samples were collected for comparison.<br><br>Post-exposure groundwater samples were collected and analyzed for $Cr^{+6}$, TAL metals, pH, ORP, SVOCs, VOCs, ferrous and ferric iron, and dissolved oxygen. | • The results of the bucket testing indicated that $Cr^{+6}$ was reduced in the MGP-contaminated test groundwater sample, in the presence of FerroBlack®-H.<br>• Generation of undesired gases was not observed.<br>• Concentrations of other TAL metals, VOCs and SVOCs were not significantly impacted by the presence of FerroBlack®-H.<br><br>The pilot test concluded that the application of FerroBlack®-H to clean backfill does not adversely impact areas with MGP-contaminated groundwater, that $Cr^{+6}$ reduction was still achieved, and that the reagent may be applied in areas where both Cr and MGP impacts are present. | AECOM, 2013. *MGP Waste and FerroBlack®-H Bucket Test – DRAFT*. 5 September 2013. |
| Groundwater *In-situ* Bioprecipitation Pilot Test (2014) | ISAB | Groundwater | • Demonstrate the effectiveness of the ISAB technology for the treatment of $Cr^{+6}$ impacts within the shallow and intermediate zones; and<br>• Collect Site-specific data from hydraulic injection/tracer testing to support full-scale design. | Two injection events were conducted between March and September 2014 to introduce organic carbon (molasses) into the shallow and intermediate zones within a test area on Site 114 (IRM #1). A dye test comprised of injection of a Rhodamine dye was also conducted concurrently to support evaluation of injection volumes and distribution. Baseline soil and groundwater samples were collected for comparison with post-treatment sample data.<br><br>Following active treatment, performance monitoring was conducted over a 12-month period. Groundwater samples were collected and analyzed for $Cr^{+6}$, TAL metals, pH, ORP, total organic carbon, | • The pilot test demonstrated that injections into the shallow and intermediate zones were feasible, at flow rates between 0.5 to 1 gallon per minute.<br>• In areas where organic carbon concentrations increased as a result of injections, rapid $Cr^{+6}$ reduction was observed, by up to five orders of magnitude in comparison to baseline levels.<br>• $Cr^{+6}$ concentrations in soil were reduced by three to four orders of magnitude in comparison to baseline levels.<br>• pH was neutralized in the shallow zone, which supports long-term stability of the precipitated trivalent chromium ($Cr^{+3}$). | ARCADIS, 2017a. *Completion Report: ARCADIS Groundwater Bioprecipitation Pilot Test. Garfield Avenue Site 114 and Former Halladay Street Gas Works, Jersey City, New Jersey*. April 2017. |

| *Title/Year* | *Technology* | *Matrix* | *Objectives* | *Description* | *Results and Conclusions* | *Reference(s)* |
|---|---|---|---|---|---|---|
| | | | | and select anions of interest (sulfates, sulfides, nitrate, and nitrite). | The effectiveness and permanence of $Cr^{+6}$ treatment was demonstrated by reduced $Cr^{+6}$ concentrations throughout the 12-month performance monitoring period. The pilot test was considered successful and provided useful design parameters for full-scale implementation. | |
| Groundwater *In-situ* Chemical Reduction Pilot Study (2016) | ISCR | Groundwater | • Reduce $Cr^{+6}$ in groundwater to the less mobile and less toxic $Cr^{+3}$; and<br>• Secondary objectives included evaluating the effectiveness of chemical reductants on the concentrations of other TAL metals, assess the changes to groundwater pH, and evaluate the ability to distribute the reagents in the subsurface. | The pilot test network, comprised of injection and monitoring wells, was set up adjacent to the *In-situ* bioprecipitation pilot test (described above), in the IRM #1 area of Site 114. An additional intermediate zone test area was established in the Phase 1C area of Site 114.<br><br>FerroBlack®-H was injected into the shallow zone treatment area, and calcium polysulfide (in IRM #1) as well as FerroBlack®-H (in Phase 1C) was used for injections into the intermediate zone treatment area. Baseline soil and groundwater samples were collected for comparison with post-treatment sample data. | • In the shallow zone, concentration reductions of Cr and $Cr^{+6}$ of over 90% were observed after the 12-month performance monitoring phase.<br>• In the intermediate zone of IRM #1, $Cr^{+6}$ was reduced by 100%, and Cr was reduced by over 75%.<br>• Concentration reductions in the Phase 1C area were less significant, ranging from 50% to 75% compared to baseline levels.<br>• Reductions in the concentrations of several other TAL metals were also noted as a result of the chemical injections.<br>• In soil, $Cr^{+6}$ concentrations reduced by over 50% in areas where the reagent was distributed.<br><br>The pilot test was considered successful, with both reagents tested (i.e., FerroBlack®-H and calcium polysulfide) demonstrating their effectiveness in reducing $Cr^{+6}$ in groundwater and in establishing a reducing environment in the subsurface, which persisted through the end of the performance monitoring period. | AECOM, 2017b. *Groundwater Chemical Reduction Pilot Study Completion Report – Final. PPG Garfield Avenue Group, Hudson County Chromium Sites, Jersey City, New Jersey*. 11 September 2017. |
| Hydraulic Fracturing and FerroBlack®-H Emplacement in Low-Permeability Zones Pilot Test (2019) | Hydraulic Fracturing and ISCR | Soil and Groundwater | • Evaluate effectiveness of hydraulic fracturing techniques to deliver reagents to low permeability zones below the meadow mat;<br>• Estimate the radius of influence for emplacement of FerroBlack®-H within low permeability zones; and<br>• Evaluate the potential for effects of fracturing on the meadow mat above the target fracture zones. | HPT and VAP characterization of the pilot test area was completed prior to implementation to identify high- and low-permeability zones. A target treatment zone of 40 to 50 ft bgs was selected upon review of the HPT/VAP data.<br><br>Three fracture wells and one monitoring well were installed for the purposes of the pilot study.<br><br>Aquifer testing and hydraulic conductivity characterization were completed via performance of pre-and post-fracture slug tests at select monitoring wells in order to evaluate changes in hydraulic conductivity (K) of the intermediate and deep water-bearing zones adjacent to these wells in response to the fracturing pilot test. | • The pilot test demonstrated that hydraulic fracturing techniques can be used to emplace FerroBlack®-H into low permeability zones within the intermediate and deep water-bearing zones.<br>• The estimated radius of influence for the technique within the low permeability zone ranged from 15-25 feet.<br>• Data and observations from the pilot test indicate that the injected FerroBlack®-H did not affect the overlying shallow zone, and by inference, did not affect the meadow mat unit.<br><br>The pilot test demonstrated proof of concept of hydraulic fracturing technology for the emplacement of chemical reductant(s) within low-permeability soils. | AECOM, 2019. *Technical Memorandum – Hydraulic Fracturing and FerroBlack®-H Emplacement in Low-Permeability Zones Pilot Test. Hudson County Chromate Site 114, Jersey City, New Jersey*. 6 November 2019. |

| *Title/Year* | *Technology* | *Matrix* | *Objectives* | *Description* | *Results and Conclusions* | *Reference(s)* |
|---|---|---|---|---|---|---|
| | | | | FerroBlack®-H was injected at each of the three fracture wells at two pre-determined depths within the low-permeability zones. Target fracture depths were selected based on soil boring information, penetrometer readings, HPT logs, and VAP data. Tiltmeters were deployed to monitor ground surface deformation during the injections.<br><br>Soil borings were advanced at two locations to confirm the delivery of FerroBlack®-H into the target zones. | However, large-scale applicability was not evaluated. Reagent distribution is likely to be influenced by heterogeneities in the formation, and most distributions and not expected to be uniform or radial. | |

Acronyms:

| | |
|---|---|
| bgs | below ground surface |
| Cr | total chromium |
| $Cr^{+3}$ | trivalent chromium |
| $Cr^{+6}$ | hexavalent chromium |
| DGA | Dense-graded aggregate |
| ft | feet |
| GWQS | Groundwater Quality Standards |
| HPT | hydraulic profiling tool |
| ISAB | in-situ anaerobic bioprecipitation |
| ISCR | in-situ chemical reduction |
| MGP | manufactured gas plant |
| NJDEP | New Jersey Department of Environmental Protection |
| ORP | oxidation-reduction potential |
| ppb | parts per billion |
| ppm | parts per million |
| SRS | Soil Remediation Standards |
| SVOC | semivolatile organic compound |
| TAL | target analyte list |
| VAP | vertical aquifer profiling |
| VOC | volatile organic compound |

**Table 5-1**
**Comparative Analysis of Groundwater Remedial Alternatives**
**Groundwater Remedial Action Work Plan, Final**
**Garfield Avenue Group Sites, PPG, Jersey City, New Jersey**

| Alternative | Comparative Criteria [1] | | | | | | | Total Score | Application of the Remedial Technology |
|---|---|---|---|---|---|---|---|---|---|
| | Overall Protection of Human Health and the Environment | Achievement of Remedial Goals and Objectives | Long-Term Effectiveness and Permanence | Short-Term Effectiveness (Compatibility with Redevelopment) | Implementability | Comparative Cost (Low/Medium/High) | Regulatory Acceptance | | |
| **No Action** | | | | | | | | | |
| Alternative 1: No Action | - Groundwater is not currently used, nor expected to be used in the future, as potable water; the area is served by municipal water supply system.<br>- Three Classification Exception Areas (CEAs) will provide notice to future receptors that groundwater is not suitable for potable water.<br>- Groundwater engineering controls (ECs) are in place to prevent groundwater from impacting soil remediation areas.<br>- However, under the "no action" alternative, the current ECs and ICs would not be maintained to prevent exposure to contaminated groundwater. | - Contaminant reduction only occurs via natural mechanisms (no active or monitored natural attenuation [MNA] remedy is applied to reduce contaminant of concern [COC] concentrations), thus COC concentrations will remain above New Jersey Department of Environmental Protection (NJDEP) Groundwater Quality Standards (GWQS). | - Contaminant and mass reduction only occurs via natural mechanisms (no active or MNA remedy is applied to reduce COC concentrations), thus this alternative is not effective in the long-term. | - No infrastructure required. | - Not Applicable | None | - Least likely.<br>- Contaminant and mass reduction only occurs via natural mechanisms (no active or MNA remedy is applied to reduce COC concentrations), thus this alternative is not effective in the short or long term. | 23 | The no action alternative is not recommended. A combination of active remediation and MNA will be most effective in meeting the remedial goal and objectives. |
| **Alternative 1 Score** | 5 | 5 | 5 | 1 | 1 | 1 | 5 | | |
| **Active Remediation** | | | | | | | | | |
| Alternative 2: FerroBlack®-H Permeable Reactive Barrier (PRB) | - Groundwater is not currently used, nor expected to be used in the future, as potable water; the area is served by municipal water supply system.<br>- Three CEAs will provide notice to future receptors that groundwater is not suitable for potable water.<br>- Groundwater ECs are in place to prevent groundwater from impacting soil remediation areas. | - Provides treatment of COCs at the barrier location as groundwater passes through under natural flow conditions.<br>- Controls the mass flux leaving the Project Area boundaries. | - A PRB is successful in controlling mass flux leaving the Project Area limits and providing contaminant reduction within the zone of influence of the barrier, but does not provide contaminant mass reduction across the entire Project Area.<br>- Contaminant mass reduction is permanent within the zone of influence of the barrier.<br>- PRB extends duration of the remediation compared to Alternatives 4 through 7 because it relies on natural groundwater flow to reach the barrier before treatment occurs.<br>- Long-term monitoring required to prove effectiveness. | - Can be installed in the short-term.<br>- Location of barrier can be coordinated with redevelopment plan.<br>- Effective in the short-term. | - Implementable.<br>- Success of technology is demonstrated by successful in-situ chemical reduction (ISCR) pilot test implementation (Table 3-3), and use of material as a backfill amendment during soil remediation.<br>- If alternative is constructed on properties not owned by PPG, access agreements will be necessary. | Medium | - Likely acceptable to control mass flux leaving the Project Area boundaries. | 14 | Technology would be best applied as a contingency measure in applicable areas, to provide containment if needed, in the future. |
| **Alternative 2 Score** | 1 | 2 | 2 | 2 | 2 | 3 | 2 | | |
| Alternative 3: Extraction Barrier | - Groundwater is not currently used, nor expected to be used in the future, as potable water; the area is served by municipal water supply system.<br>- Three CEAs will provide notice to future receptors that groundwater is not suitable for potable water.<br>- Groundwater ECs are in place to prevent groundwater from impacting soil remediation areas. | - Provides mass removal at the barrier location as groundwater passes through under natural flow conditions.<br>- Controls the mass flux leaving the site boundary for as long as pumping continues. | - An extraction barrier is successful in controlling mass flux leaving the Project Area and providing contaminant reduction within the zone of influence of the barrier, but does not provide contaminant mass reduction across the entire Project Area.<br>- Contaminant mass reduction is permanent within the barrier.<br>- Extraction barrier extends duration of the remediation compared to Alternatives 4 through 7 because it relies on natural and induced groundwater flow to reach the barrier before treatment occurs.<br>- Long-term monitoring required to prove effectiveness. | - Can be installed in the short-term and can utilize existing groundwater treatment plant (GWTP).<br>- Location of barrier can be coordinated with redevelopment plan.<br>- Effective in the short-term. | - Implementable.<br>- Pump and treat is a widely used alternative at contaminated groundwater sites.<br>- If alternative is constructed on properties not owned by PPG, access agreements will be necessary | Medium-High | - Likely acceptable to control mass flux leaving the Project Area boundaries. | 18 | Technology would be best applied as a contingency measure in applicable areas, to provide containment if needed, in the future. |
| **Alternative 3 Score** | 1 | 3 | 4 | 2 | 2 | 4 | 2 | | |
| Alternative 4: Pump and Treat | - Groundwater is not currently used, nor expected to be used in the future, as potable water; the area is served by municipal water supply system.<br>- Three CEAs will provide notice to future receptors that groundwater is not suitable for potable water.<br>- Groundwater ECs are in place to prevent groundwater from impacting soil remediation areas. | - Comprehensive and permanent contaminant reduction and mass removal.<br>- Controls the mass flux leaving the site boundary for as long as pumping continues. | - Pump and Treat is effective and provides permanent mass removal, but only within the zone of influence of the extraction well.<br>- Moderate-term monitoring | - Based on estimated number of extraction wells expected necessary to achieve the remedial goal and objectives, this alternative is not compatible with the redevelopment plan. | - Implementable.<br>- Pump and treat is a widely used alternative at contaminated groundwater sites.<br>- If alternative is constructed on properties not owned by PPG, access agreements will be necessary. | High | - Likely acceptable.<br>- Permanence of the remediation will be monitored. | 21 | Pump and treat is recommended for mass removal and plume stabilization. Pump and treat could be paired with another remedial technology such as In-situ Anerobic Bioprecipitation (ISAB) or ISCR to expedite the remediation. |

**Table 5-1**
**Comparative Analysis of Groundwater Remedial Alternatives**
**Groundwater Remedial Action Work Plan, Final**
**Garfield Avenue Group Sites, PPG, Jersey City, New Jersey**

| Alternative | Comparative Criteria [1] | | | | | | | Total Score | Application of the Remedial Technology |
|---|---|---|---|---|---|---|---|---|---|
| | Overall Protection of Human Health and the Environment | Achievement of Remedial Goals and Objectives | Long-Term Effectiveness and Permanence | Short-Term Effectiveness (Compatibility with Redevelopment) | Implementability | Comparative Cost (Low/Medium/High) | Regulatory Acceptance | | |
| **Alternative 4 Score** | 1 | 2 | 3 | 5 | 2 | 5 | 3 | | |
| Alternative 5: ISAB | - Groundwater is not currently used, nor expected to be used in the future, as potable water; the area is served by municipal water supply system.<br>- Three CEAs will provide notice to future receptors that groundwater is not suitable for potable water.<br>- Groundwater ECs are in place to prevent groundwater from impacting soil remediation areas. | - Comprehensive and permanent contaminant reduction.<br>- Eliminates mass flux leaving the site boundary. | - ISAB is effective and permanent as demonstrated by reduced hexavalent chromium ($Cr^{+6}$) concentrations in groundwater during the Phase I Interim Remedial Measure (IRM) performance monitoring period.<br>- Once reagent injections are completed, residual reductive capacity in the aquifer will continue to treat COCs. | - Short-term temporary infrastructure required.<br>- Can be integrated with redevelopment. | - Implementable<br>- Effectiveness has been demonstrated by a successful pilot test and ongoing performance monitoring for IRM Phases I and II.<br>- If alternative is constructed on properties not owned by PPG, access agreements will be necessary. | Medium | - Already accepted for IRM Phase I and II.<br>- Permanence of the remediation will be monitored. | 14 | ISAB is an effective source zone remedy, as demonstrated in the IRM Phase I and II as well as past pilot testing. |
| **Alternative 5 Score** | 1 | 2 | 2 | 3 | 2 | 3 | 1 | | |
| Alternative 6: ISCR with Calcium Polysulfide (CaSx) | - Groundwater is not currently used, nor expected to be used in the future, as potable water; the area is served by municipal water supply system.<br>- Three CEAs will provide notice to future receptors that groundwater is not suitable for potable water.<br>- Groundwater ECs are in place to prevent groundwater from impacting soil remediation areas. | - Comprehensive and permanent contaminant reduction.<br>- Eliminates mass flux leaving the site boundary. | - ISCR with CaSx is effective and permanent as demonstrated by reduced $Cr^{+6}$ concentrations in groundwater and an established reducing environment in the subsurface, which persisted through the end of the monitoring period (one year) in a successful pilot test (Table 3-3).<br>- Moderate-term monitoring | - Short-term temporary infrastructure required.<br>- Can be integrated with redevelopment. | - Implementable<br>- Effectiveness has been demonstrated by a successful pilot test and ongoing performance monitoring for IRM Phase II.<br>- If alternative is constructed on properties not owned by PPG, access agreements will be necessary. | Medium-High | - Already accepted for IRM Phase I and II.<br>- Permanence of the remediation will be monitored. | 15 | ISCR with CaSx is an effective source zone remedy, as demonstrated in past pilot testing. |
| **Alternative 6 Score** | 1 | 2 | 2 | 3 | 2 | 4 | 1 | | |
| Alternative 7: ISCR with FerroBlack®-H | - Groundwater is not currently used, nor expected to be used in the future, as potable water; the area is served by municipal water supply system.<br>- Three CEAs will provide notice to future receptors that groundwater is not suitable for potable water.<br>- Groundwater ECs are in place to prevent groundwater from impacting soil remediation areas. | - Comprehensive and permanent contaminant reduction.<br>- Eliminates mass flux leaving the site boundary. | - ISCR with FerroBlack®-H is effective and permanent as demonstrated by reduced $Cr^{+6}$ concentrations in groundwater and an established reducing environment in the subsurface, which persisted through the end of the monitoring period (one year) in a successful pilot test (Table 3-3). Long-term effectiveness has also been demonstrated through use of this reagent as a backfill amendment during soil remediation.<br>- Moderate-term monitoring | - Can be integrated with redevelopment. | - Implementable, as demonstrated by a successful pilot test.<br>- If alternative is constructed on properties not owned by PPG, access agreements will be necessary. | Medium | - Likely acceptable.<br>- Permanence of the remediation will be monitored. | 15 | ISCR with FerroBlack®-H is recommended as a source zone treatment technology, either as a standalone option, or in combination with a pump and treat remedy for site-wide coverage. |
| **Alternative 7 Score** | 1 | 2 | 2 | 3 | 2 | 3 | 2 | | |
| Alternative 8: Hydraulic Fracturing for ISCR | - Groundwater is not currently used, nor expected to be used in the future, as potable water; the area is served by municipal water supply system.<br>- Three CEAs will provide notice to future receptors that groundwater is not suitable for potable water.<br>- Groundwater ECs are in place to prevent groundwater from impacting soil remediation areas. | - Facilitates reagent placement in low permeability units.<br>- Fracturing is a delivery method, therefore this remedy must be combined with ISAB or ISCR to achieve remedial goal and objectives. | -There is limited data on the success of hydraulic fracturing for treatment of mass in low permeability units. Successful implementation of hydraulic fracturing may vary based on heterogeneities and in-situ stresses of the formation. | - Short-term temporary infrastructure required.<br>- Can be integrated with redevelopment. | - Successful implementation of hydraulic fracturing may vary based on heterogeneities and in-situ stresses of the formation. The pilot test demonstrated that it could be used to emplace reagent in the low permeability unit, but success will vary across the Project Area.<br>- If alternative is constructed on properties not owned by PPG, access agreements will be necessary. | High | - Challenging.<br>- Effectiveness and permanence of the remediation will be monitored. | 26 | Hydraulic fracturing is not recommended. Heterogeneities in the formation make this technology technically impracticable. |
| **Alternative 8 Score** | 1 | 5 | 4 | 3 | 4 | 5 | 4 | | |
| Alternative 9: Enhanced Attenuation | - Groundwater is not currently used, nor expected to be used in the future, as potable water; the area is served by municipal water supply system.<br>- Three CEAs will provide notice to future receptors that groundwater is not suitable for potable water.<br>- Groundwater ECs are in place to prevent groundwater from impacting soil remediation areas. | - Once reagent injections (chemical or biological) are completed, residual reductive capacity in the aquifer will continue to treat COCs.<br>- Continues active treatment after in-situ injections are complete. | - Once reagent injections (chemical or biological) are completed, residual reductive capacity in the aquifer will continue to treat COCs for an estimated 8-10 years. | - No additional infrastructure is required after ISAB or ISCR is complete.<br>- Can be integrated with redevelopment. | - Implementable as demonstrated by successful ISAB and ISCR pilot tests and subsequent performance monitoring.<br>- If components of alternative (e.g., monitoring wells) are constructed on properties not owned by PPG, access agreements will be necessary. | Low (no additional cost after ISCR or ISAB) | - Likely acceptable with ISCR or ISAB.<br>- Permanence of the remediation will be monitored. | 10 | Enhanced attenuation is an effective remedy after the successful implementation of ISAB or ISCR. Alternative relies on the residual reductive capacity of the aquifer to continue to treat COCs. |

**Table 5-1**
**Comparative Analysis of Groundwater Remedial Alternatives**
**Groundwater Remedial Action Work Plan, Final**
**Garfield Avenue Group Sites, PPG, Jersey City, New Jersey**

| Alternative | Comparative Criteria [1] | | | | | | | Total Score | Application of the Remedial Technology |
|---|---|---|---|---|---|---|---|---|---|
| | Overall Protection of Human Health and the Environment | Achievement of Remedial Goals and Objectives | Long-Term Effectiveness and Permanence | Short-Term Effectiveness (Compatibility with Redevelopment) | Implementability | Comparative Cost (Low/Medium/High) | Regulatory Acceptance | | |
| **Alternative 9 Score** | 1 | 2 | 2 | 1 | 1 | 1 | 2 | | |
| **Monitored Natural Attenuation** | | | | | | | | | |
| Alternative 10: Monitored Natural Attenuation only | - Groundwater is not currently used, nor expected to be used in the future, as potable water; the area is served by municipal water supply system.<br>- Three CEAs will provide notice to future receptors that groundwater is not suitable for potable water.<br>- Groundwater ECs are in place to prevent groundwater from impacting soil remediation areas. | - Once active remedy (i.e., reagent injections (chemical or biological) followed by enhanced attenuation) are completed, natural mechanisms will continue to treat COCs to meet NJDEP GWQS. | - Once active remedy (i.e., ISAB or ISCR, followed by enhanced attenuation) is completed, natural mechanisms will continue to treat COCs to meet NJDEP GWQS in the long term. | - Least amount of infrastructure required.<br>- Can be integrated with redevelopment. | - Implementable, only monitoring is required.<br>- If components of alternative (e.g., monitoring wells) are constructed on properties not owned by PPG, access agreements will be necessary | Low | - Likely acceptable after active remedy implemented.<br>- Need to prove plume is stable and exposure risk is mitigated through robust monitoring program.<br>- Permanence of the remediation will be monitored.<br>- Need to accept a long cleanup timeframe. | 13 | MNA is a proven effective alternative to achieve the remedial goal and objectives. |
| **Alternative 10 Score** | 1 | 2 | 2 | 1 | 1 | 1 | 5 | | |

Notes

1. Comparative criteria ranking system is described below.

Scores are assigned from 1 (most favorable) to 5 (least favorable). The lowest overall score is most favorable.

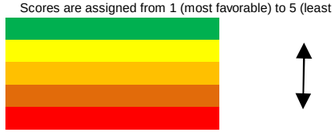

| | |
|---|---|
| Most favorable | 1 |
| | 2 |
| | 3 |
| | 4 |
| Least favorable | 5 |

Acronyms:

CaSx: calcium polysulfide
CEA: Classification Exception Area
COC: contaminant of concern
$Cr^{+6}$: hexavalent chromium
EC: engineering control
GWQS: Groundwater Quality Standards
GWTP: groundwater treatment plant
IRM: Interim Remedial Measure
ISAB: in-situ anaerobic bioprecipitation
ISCR: in-situ chemical reduction
MNA: monitored natural attenuation
NJDEP: New Jersey Department of Environmental Protection
PRB: permeable reactive barrier

**Table 5-2. Groundwater Remediation Strategy Summary**
Groundwater Remedial Action Work Plan, Final
Garfield Avenue Group Sites
PPG, Jersey City, NJ

| Water-Bearing Zone | Groundwater Remediation Strategy | | | | |
|---|---|---|---|---|---|
| | **Active Remedy[1]** | | **MNA Remedy** | **Contingency Remedy** | **Institutional and Engineering Controls, Maintenance, and Monitoring** |
| | **In-Situ Treatment**<br><br>Goal: Actively treat $Cr^{+6}$ concentrations greater than 1,000 µg/L where practicable<br><br>Expected Timeframe: 2017 - 2024 | **Enhanced Attenuation and Long-Term Monitoring**<br><br>Goal: Actively treat $Cr^{+6}$ concentrations and other COCs and evaluate lines of evidence for transition to MNA<br><br>Expected Timeframe: Estimated 8-10 years beyond in-situ treatment[2] | **Monitored Natural Attenuation**<br><br>Goal: Naturally attenuate residual concentrations of Cr and other COCs<br><br>Expected Timeframe: or TBD[3] | **During Active Remedy, as necessary**<br><br>Goal: Contingency remedy to be implemented, if needed, during active remedy or after Active Category RAP-GW issued by NJDEP[4]<br><br>Expected Timeframe: 2017 - 2062[5], if necessary | **Various (see below)**<br><br>Goal: Monitor and maintain groundwater engineering controls and Classification Exception Area until groundwater quality standards are achieved<br><br>Expected Timeframe: 2018 –TBD[3] |
| Shallow | ISAB<br>(IRM Phase I)<br><br>ISAB<br>(IRM Phase III – Site 199 only) | ISAB and/or ISCR<br>Enhanced Attenuation | MNA | Localized ISCR, ISAB, FerroBlack®-H Emplacement or Technical Impracticability Determination[6] | Capillary Break<br>FerroBlack®-H-amended Backfill<br>Meadow Mat<br>Classification Exception Area<br>Long-term Groundwater Monitoring |
| Intermediate | ISAB and/or ISCR<br>(IRM Phases I and II)<br><br>ISAB, ISCR, FerroBlack®-H Emplacement (IRM Phase III) | | | | Sheet Pile<br>Classification Exception Area<br>Long-term Groundwater Monitoring |
| Deep | ISAB and/or ISCR<br>(IRM Phases I and II)<br><br>ISAB and/or ISCR<br>(IRM Phase III)<br><br>FerroBlack®-H Emplacement<br>(IRM Phase III)[6] | | | | Sheet Pile (where present)<br>Classification Exception Area<br>Long-term Groundwater Monitoring |
| Bedrock[7] | N/A | | MNA | Technical Impracticability Determination | Classification Exception Area<br>Long-Term Groundwater Monitoring |

**Notes:**
[1] = Refer to Figure 3-2 for the horizontal extents of each IRM phase in each water-bearing zone.
[2] = Once ISAB and/or ISCR injections and associated performance monitoring are completed via in-situ active treatment, residual abiotic or reductive capacity in the aquifer will continue to treat COCs under an enhanced attenuation active remedy. The duration of the enhanced attenuation and associated long-term monitoring may be shortened if lines of evidence point to a transition to MNA sooner than the estimated timeframe presented on this table.
[3] = MNA remedy will continue as necessary to reach the groundwater quality standards, thus groundwater institutional and engineering controls will be monitored and maintained during this time period.
[4]= Both during and after active treatment (Parts 1, 2 or 3 of the active treatment remedy as depicted on Figure 5-1), should the lines of evidence indicate that the GWQS for the COCs cannot be achieved in certain areas via the selected active groundwater remedies, either due to the presence of low permeability zones, technology limitations, or limitations with reagent (e.g., molasses, EVO, CaSx, FerroBlack®-H) distribution or groundwater extraction, contingency remedies, such as localized/targeted treatment using ISAB or ISCR, or FerroBlack®-H emplacement will be implemented in applicable areas.
[5] = Estimated timeframe provided; timing will be guided by monitoring data and may be shorter or longer, as appropriate
[6] = FerroBlack®-H emplacement will provide in-situ treatment for targeted areas within the lower portion of the deep water-bearing zone on Site 114.
[7] = Additional groundwater remedial investigation is necessary in the bedrock water-bearing zone in the southwest corner of Site 114 to complete delineation of $Cr^{+6}$ and Cr impacts, thus a final remedial decision for the bedrock water-bearing zone will be determined upon completion of the RI.

**Acronyms:**
CaSx = calcium polysulfide; COC = contaminant of concern; Cr = chromium (total); $Cr^{+6}$ = chromium (hexavalent); EVO = emulsified vegetable oil; GWQS = Groundwater Quality Standard; IRM = Interim Remedial Measure; ISAB = in-situ anaerobic bioprecipitation; ISCR = in-situ chemical reduction; MNA = monitored natural attenuation; N/A = not applicable; NJDEP = New Jersey Department of Environmental Protection; RAP-GW = Remedial Action Permit - Groundwater; TBD = to be determined;
µg/L = micrograms per liter

**Table 7-2. Groundwater Monitoring Plan for Active Remedy**
Groundwater Remedial Action Work Plan, Final
Garfield Avenue Group Sites
PPG, Jersey City, New Jersey

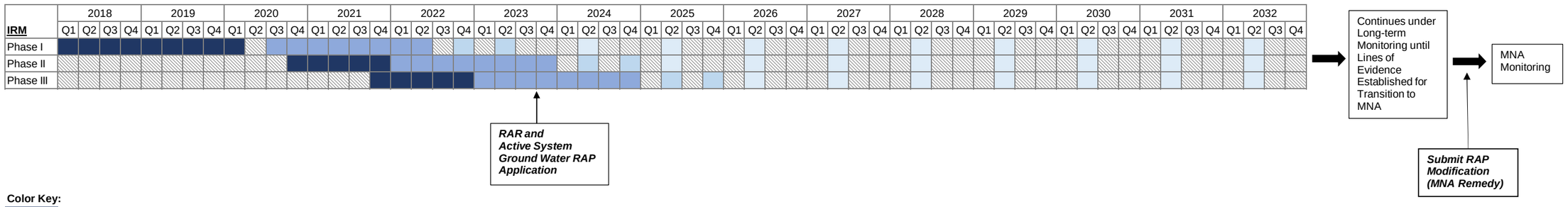


**Color Key:**

- Treatment monitoring (monthly) (Part 1 of active treatment remedy as depicted on Figure 5-1)
- Post-treatment performance monitoring (quarterly) (Part 1 of active treatment remedy as depicted on Figure 5-1)
- Monitoring of enhanced attenuation* (semi-annual) (Part 2 of active treatment remedy as depicted on Figure 5-1)
- Monitoring of enhanced attenuation* (annual) (Part 2 of active treatment remedy as depicted on Figure 5-1)

**Notes:**

1. Analysis for the treatment and post-treatment performance monitoring will be in accordance with the PBR authorizations for each IRM phase.
2. For the post-PBR monitoring program, samples will be analyzed for: $Cr^{+6}$, and CCPW metals. During the Phase III IRM program, groundwater samples collected from Site 199 will also be analyzed for PCE and its breakdown products (i.e., TCE, cis-1,2-dichloroethene and vinyl chloride).
3. Key geochemical indicators (e.g., sulfates, sulfides, iron, total organic carbon, etc.) and field parameters (pH, ORP, dissolved oxygen, specific conductivity, temperature, and turbidity) will be collected during all sampling events.

* - enhanced attenuation refers to the phase of continued decrease of contaminant concentrations (Cr and $Cr^{+6}$) through natural processes following active treatment (AECOM, 2016).

$Cr^{+6}$ = hexavalent chromium
CCPW = Chromate Chemical Production Waste
CCPW metals = antimony, chromium, nickel, thallium, and vanadium
IRM = interim remedial measures
MNA = monitored natural attenuation
ORP = oxidation-reduction potential
PBR = permit-by-rule
PCE = tetrachloroethylene
RAP = remedial action permit
RAR = remedial action report
TCE = trichloroethylene

**Reference:**

AECOM, 2016. *GW-050: Concepts for Groundwater Interim Remedial Measures for the Garfield Avenue Group Sites, Jersey City, New Jersey* . 2 December 2016.

# Figures

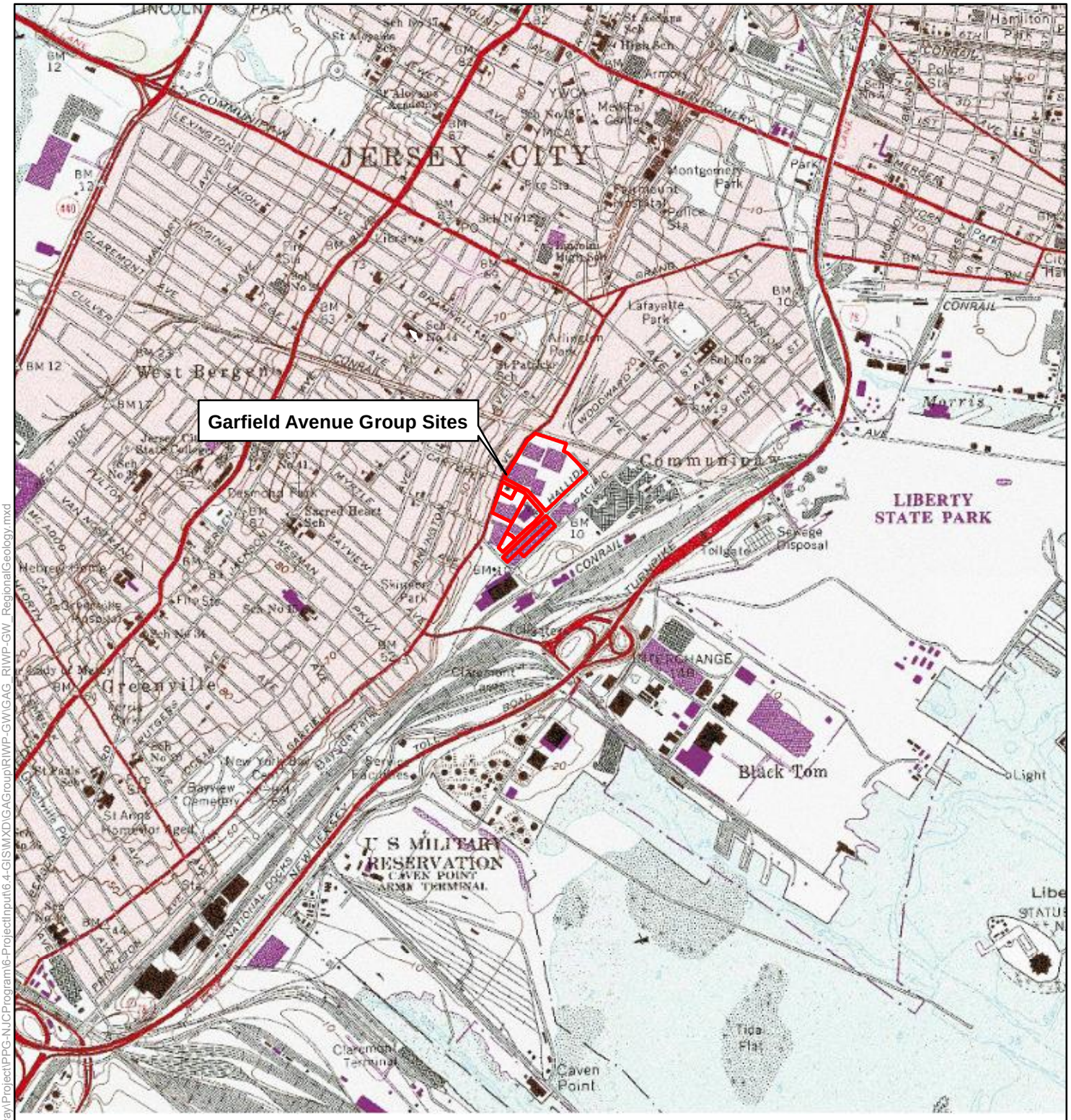


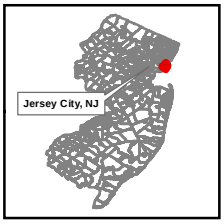


0 1,000 2,000 4,000 Feet

Notes:
1. New Jersey State Plane North American Datum 1983 Coordinates, U.S. Survey Feet.
2. Image Source: USGS Topographic Quadrangle: Jersey City, NJ, 1967 - Photorevised 1981.
3. Latitude Coordinates: 403730 - 404500; Longitude Coordinates: -740730 - -740000.
4. USGS - United States Geological Survey

AECOM

N W E S

PPG
GARFIELD AVENUE GROUP
JERSEY CITY, NEW JERSEY
60550261. GA.GW.RI.RPT.D

DATE: 3/1/2017 | DRAWN BY: JL | CHECKED BY: AS

FIGURE 1-1
USGS SITE LOCATION MAP

\\uspsw2vfp001\DATA_USPSW2VFP001\Environment\Piscataway\Project\PPG-NJCProgram\6-ProjectInput\6.4-GISMXD\GAGroup\RIWP-GW\GAG_RIWP-GW_RegionalGeology.mxd

Berry Lane Park

Site 199

NJ TRANSIT LIGHT RAIL LINE

French Park Warehouse

GARFIELD AVENUE

Forrest Street Properties

FORREST STREET

Site 114

Site 143

Site 132

CARTERET AVENUE

HALLADAY STREET

Halsted

PACIFIC AVENUE

GARFIELD AVENUE

Fishbein Property

Site 137

Eden Wood

Ten West Apparel

HALLADAY STREET

Site 133 East

Site 135

Site 133 West

CAVEN POINT AVENUE

PACIFIC AVENUE

Al Smith Moving & Storage

**Map Sources:**
1. New Jersey State Plane North American Datum 1983 Coordinates (NAD83), U.S. Survey Feet.
2. New Jersey 2017 High Resolution Orthophotography, Web Map Service, http://geodata.state.nj.us/imagerywms/Natural2017?.

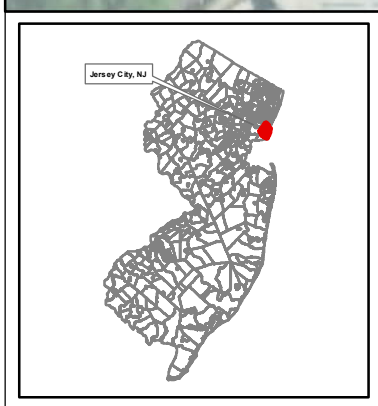


**LEGEND**

- Garfield Avenue Group Boundary
- Off-Site Properties
- Railroad Tracks

N W E S

0 100 200 Feet

AECOM

PPG
GARFIELD AVENUE GROUP
JERSEY CITY, NEW JERSEY
60550261

DATE: 3/26/2021 | DRAWN BY: SR | CHECKED BY: FS

FIGURE 1-2
SITE PLAN

Last Saved By: ravis
Document Path: Q:\PPG - GDS\920 GIS\MXD\Groundwater R\R\Fig 1-2 Site Plan.mxd

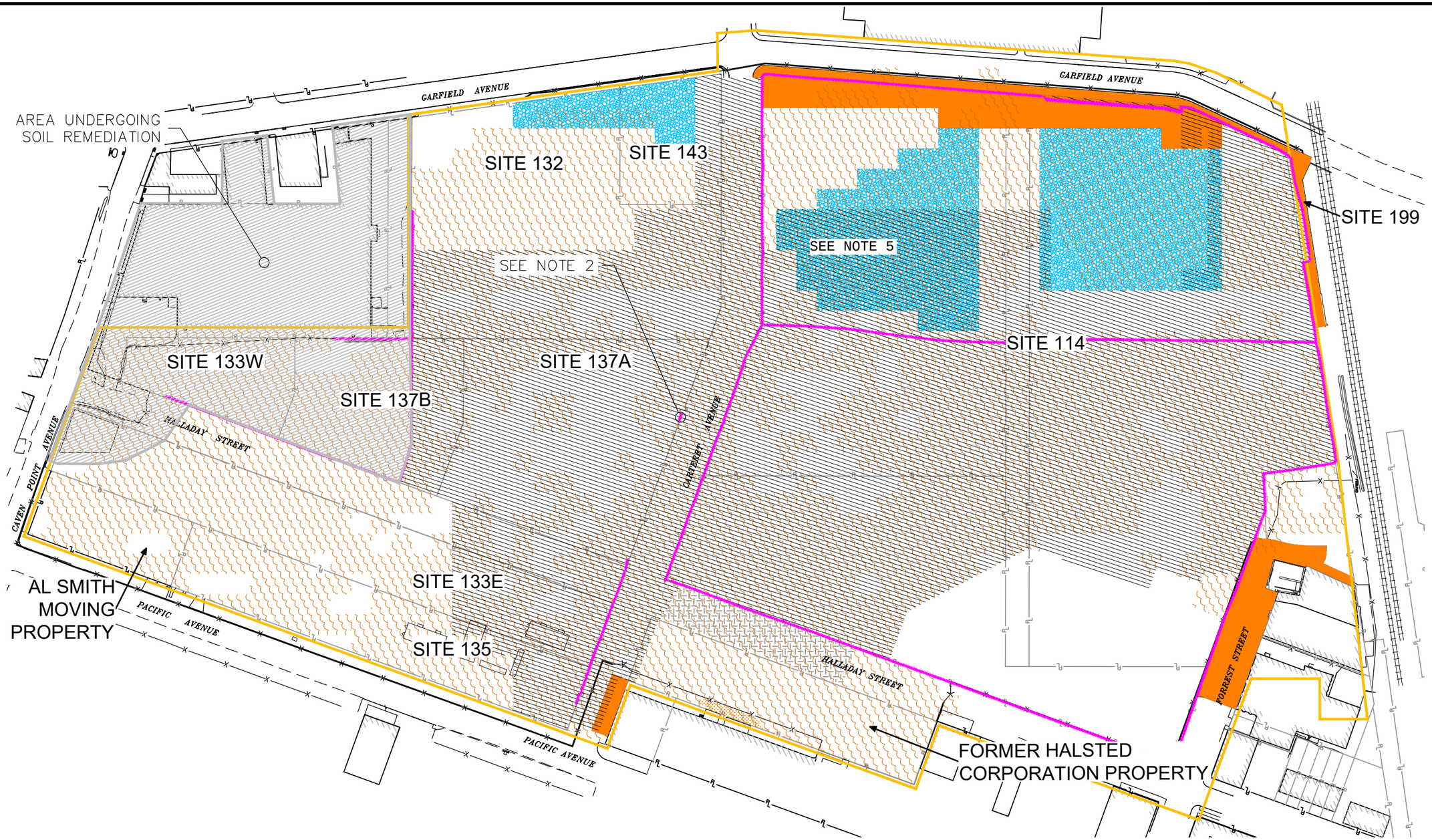


**LEGEND**

- PROPERTY LINE
- PHASE BOUNDARY
- SHEET PILE
- NEW JERSEY TRANSIT LIGHT RAIL
- EXISTING BUILDING
- CURB
- EXISTING BUILDING FOUNDATION
- LIMIT OF AREA INCLUDED IN EXTENT OF MM ANALYSIS
- COMPETENT MM (>1 FT THICKNESS) - BASED ON BORING LOGS AND VISUAL CONFIRMATION
- EXTENT OF FERROBLACK-H AMENDED BACKFILL PLACED FROM BASE OF EXCAVATION TO ELEVATION 11.0 (FT NAVD88)
- EXTENT OF FERROBLACK-H AMENDED BACKFILL PLACED FROM BASE OF EXCAVATION TO ELEVATION 9.0 (FT NAVD88)
- EXTENT OF OGS CAPILLARY BREAK
- EXTENT OF HDPE CAPILLARY BREAK
- EXTENT OF ASPHALT CAPILLARY BREAK (SEE NOTE 3)

NOTES:

1. GROUNDWATER ENGINEERING CONTROLS SHOWN ON THIS FIGURE ARE REFERENCED FROM THE *CAPILLARY BREAK DESIGN, FINAL REPORT (REVISION 2) ADDENDUM (REVISION 1), FEBRUARY 2021.*
2. THE IDENTIFIED SECTION OF SHEET PILE HAS BEEN LEFT IN PLACE DUE TO AN EXISTING UTILITY CROSSING; THIS SECTION OF SHEET PILE DOES NOT ACT AS AN ENGINEERING CONTROL.
3. ADDITIONAL ASPHALT CAPILLARY BREAK TO BE INSTALLED ON THE FORMER HALSTED PROPERTY, FINAL EXTENTS OF THE ASPHALT CAPILLARY BREAK WILL BE PROVIDED IN THE HALSTED REMEDIAL ACTION REPORT.
4. THE EXTENTS OF THE ENGINEERING CONTROLS DEPICTED ON THIS FIGURE ARE CURRENT AS OF AUGUST 2021.
5. PPG WILL CONTINUE TO MONITOR GROUNDWATER CONDITIONS IN SHALLOW MONITORING WELL 114-P1B-MW102S. SHOULD GROUNDWATER ANALYTICAL DATA FOR TOTAL CHROMIUM INDICATE THAT A CAPILLARY BREAK IS NO LONGER REQUIRED (BASED ON TWO CONSECUTIVE ROUNDS OF SAMPLE COLLECTION), PPG WILL PROCEED TO REMOVE THE CAPILLARY BREAK IN THIS AREA.

| | | |
|---|---|---|
| COMPETENT MM | - | INDICATES MM PRESENT AT A MINIMUM THICKNESS OF 1 FOOT |
| HDPE | - | HIGH-DENSITY POLYETHYLENE |
| MM | - | MEADOW MAT |
| NAVD88 | - | NORTH AMERICAN VERTICAL DATUM 1988 |
| OGS | - | OPEN GRADE STONE |

75 0 150

GRAPHIC SCALE IN FEET

AECOM

PPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY

**GROUNDWATER ENGINEERING CONTROLS AS-BUILT CONDITIONS**

DATE: 10/27/2021 | DRWN: JJA | **FIGURE 3-1**

File: Q:\20 SHEETS\GW\GW Engineering Controls\2021-10-25_GW Engineering Controls.dwg Layout: FIGURE 3-1 User: John.Angelone Plotted: Oct 27, 2021 - 9:46am Xref's:

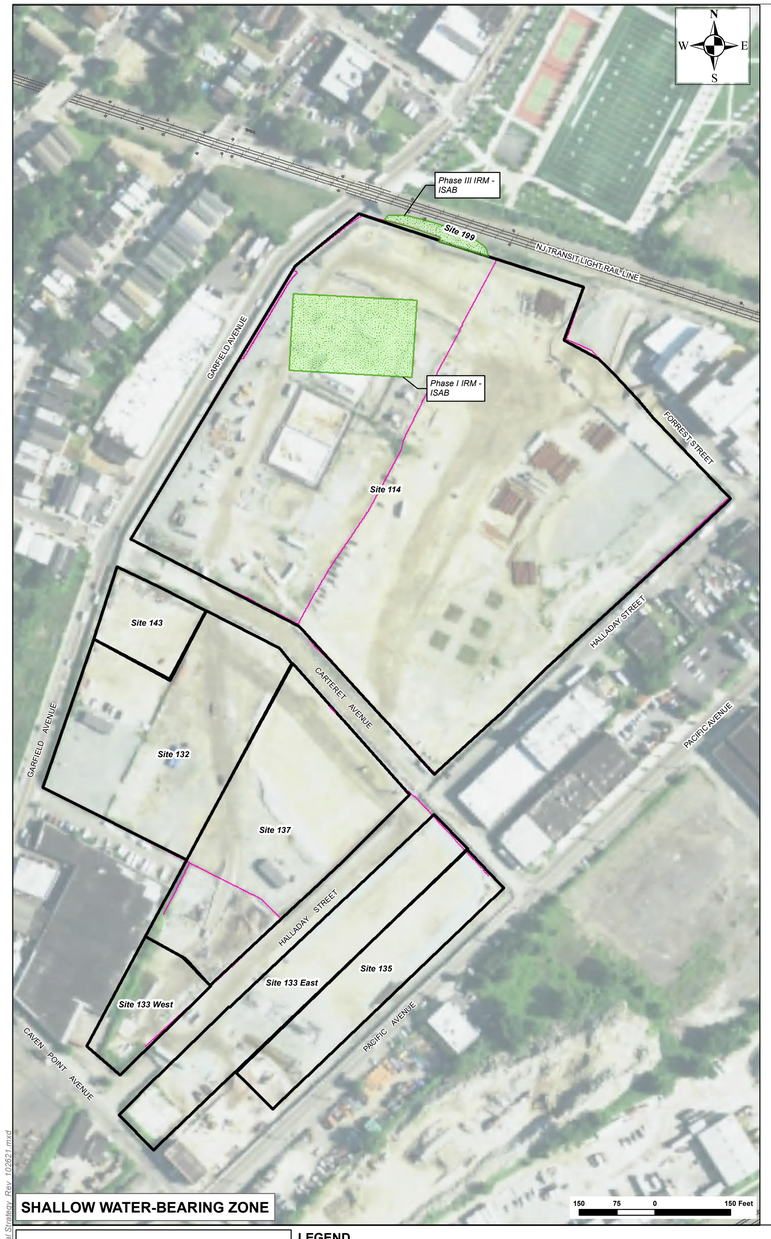


SHALLOW WATER-BEARING ZONE




INTERMEDIATE WATER-BEARING ZONE

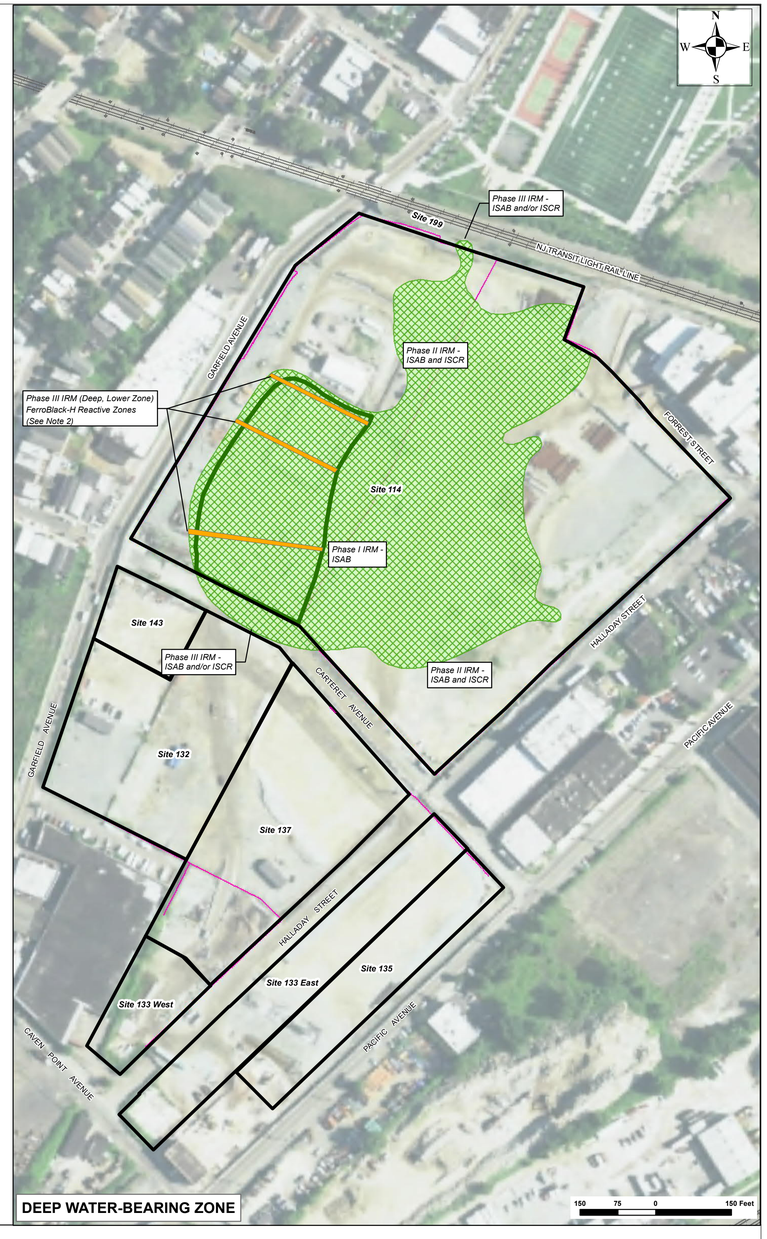


DEEP WATER-BEARING ZONE

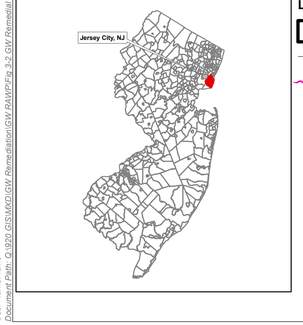


**LEGEND**

- GARFIELD AVENUE GROUP BOUNDARY
- RAILROAD TRACKS
- IN-PLACE SHEETPILE
- SHALLOW ZONE TREATMENT AREAS (ISAB)
- INTERMEDIATE ZONE TREATMENT AREAS (ISAB, ISCR AND/OR FERROBLACK-H REACTIVE ZONES)
- DEEP ZONE TREATMENT AREAS (ISAB AND/OR ISCR)
- PHASE III IRM - DEEP, LOWER (FERROBLACK-H REACTIVE ZONES) - SELECT LOCATIONS
- APPROXIMATE LOCATIONS OF FERROBLACK-H REACTIVE ZONES

**Notes:**

1. The treatment extents for the Phase III IRM and locations of reactive zones depicted on this map are approximate and will be finalized upon completion of as-built surveys. Additionally, placement of remediation wells are not depicted on this figure and will be finalized based on an evaluation of various factors such as presence of utilities, access to private properties, etc.
2. FerroBlack-H reactive zones on Site 114 will provide *in situ* treatment for targeted areas within the lower portion of the deep water-bearing zone on Site 114 that were not targeted under the Phase I IRM.
3. New Jersey State Plane North American Datum 1983 Coordinates (NAD83), U.S. Survey Feet.
4. New Jersey 2017 High Resolution Orthophotography, Web Map Service, http://geodata.state.nj.us/imagerywms/Natural2017?.

IRM = interim remedial measures
ISAB = in-situ anaerobic bioprecipitation
ISCR = in-situ chemical reduction

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60631459

DATE: 10/26/21 | DRAWN BY: SR | CHECKED BY: FS

# FIGURE 3-2
# GROUNDWATER REMEDIATION STRATEGY
# ACTIVE *IN SITU* REMEDIATION

User Name: ravis
Document Path: Q:\900 GIS\MXD\GW Remediation\GW RAWP\Fig 3-2 GW Remedial Strategy Rev 102621.mxd

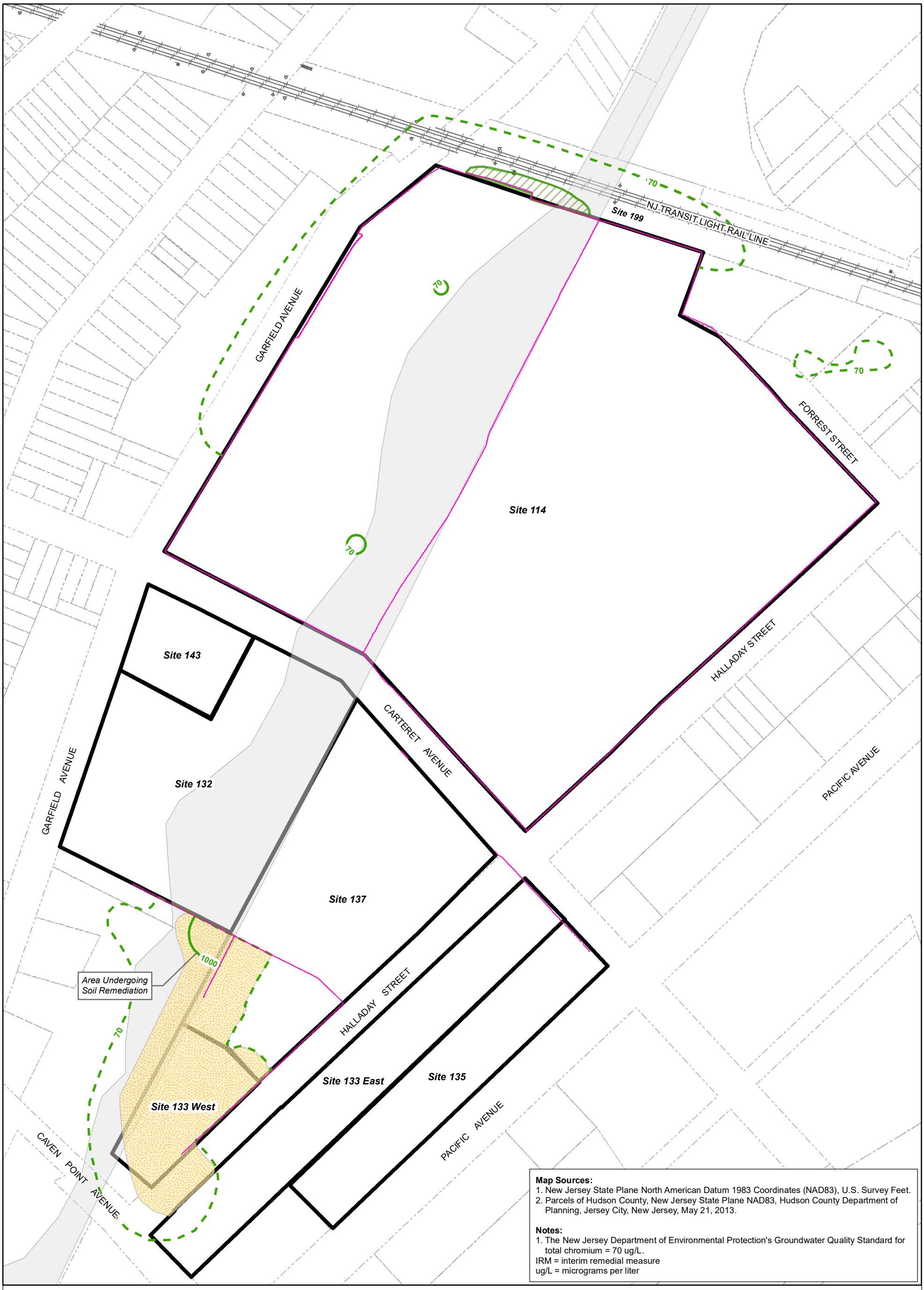


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FIGURE 4-1
TARGET ACTIVE REMEDIATION AREAS IN THE SHALLOW WATER-BEARING ZONE

Last Saved By: ravis
Document Path: Q:\920 G\SMXD\GW Remediation\GW RAWP\Fig 4-1 Target Treatment Area_Shallow.mxd

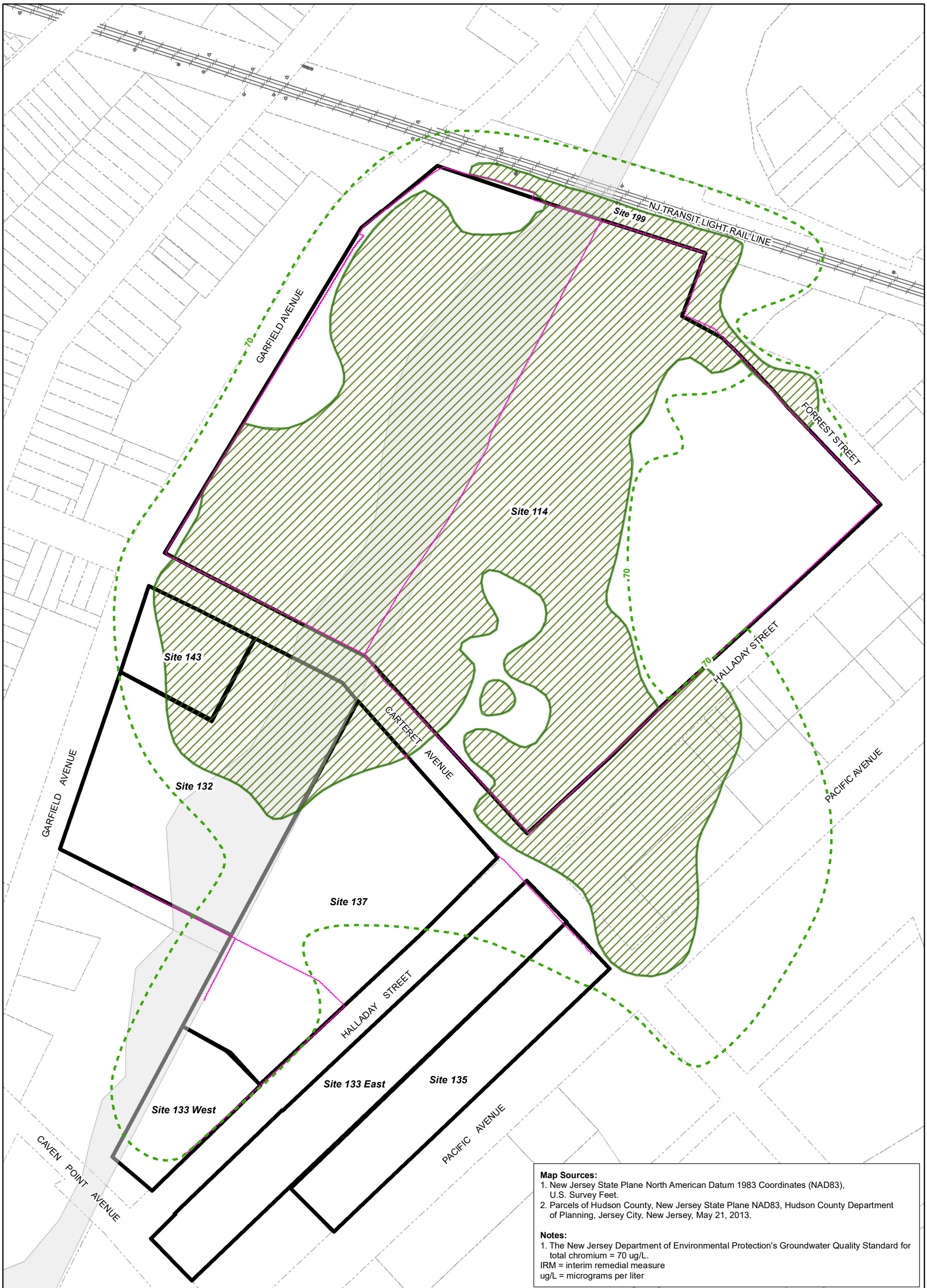


**Map Sources:**
1. New Jersey State Plane North American Datum 1983 Coordinates (NAD83), U.S. Survey Feet.
2. Parcels of Hudson County, New Jersey State Plane NAD83, Hudson County Department of Planning, Jersey City, New Jersey, May 21, 2013.

**Notes:**
1. The New Jersey Department of Environmental Protection's Groundwater Quality Standard for total chromium = 70 ug/L.

IRM = interim remedial measure
ug/L = micrograms per liter

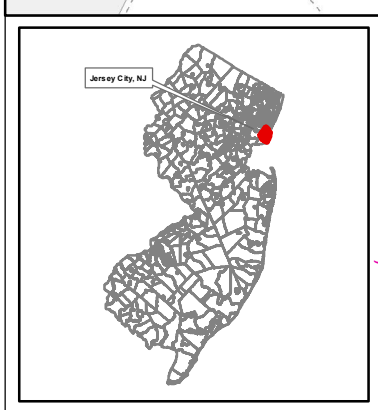


## LEGEND

- GARFIELD AVENUE GROUP SITES
- HUDSON COUNTY PARCELS
- FORMER MORRIS CANAL
- RAILROAD TRACKS
- IN-PLACE SHEET PILE
- TOTAL CHROMIUM IN THE INTERMEDIATE WATER-BEARING ZONE GREATER THAN 70 ug/L (DASHED WHERE INFERRED)
- ACTIVE REMEDIATION TARGET AREA FOR GROUNDWATER IN THE INTERMEDIATE WATER-BEARING ZONE
- AREAS BEING ADDRESSED VIA ACTIVE *IN SITU* TREATMENT (IRMs)

N W E S

0 75 150 Feet

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FIGURE 4-2
TARGET ACTIVE REMEDIATION AREAS IN THE INTERMEDIATE WATER-BEARING ZONE

Last Saved By: ravis
Document Path: Q:\920 GIS\MXD\GW Remediation\GW RAWP\Fig 4-2 Target Treatment Area_Int.mxd

NJ TRANSIT LIGHT RAIL LINE

GARFIELD AVENUE

Site 199

FORREST STREET

Site 114

HALLADAY STREET

Site 143

CARTERET AVENUE

PACIFIC AVENUE

GARFIELD AVENUE

Site 132

70

Site 137

HALLADAY STREET

Site 133 East

Site 135

Site 133 West

PACIFIC AVENUE

CAVEN POINT AVENUE

**Map Sources:**
1. New Jersey State Plane North American Datum 1983 Coordinates (NAD83), U.S. Survey Feet.
2. Parcels of Hudson County, New Jersey State Plane NAD83, Hudson County Department of Planning, Jersey City, New Jersey, May 21, 2013.

**Notes:**
1. The New Jersey Department of Environmental Protection's Groundwater Quality Standard for total chromium = 70 ug/L.

IRM = interim remedial measure
ug/L = micrograms per liter

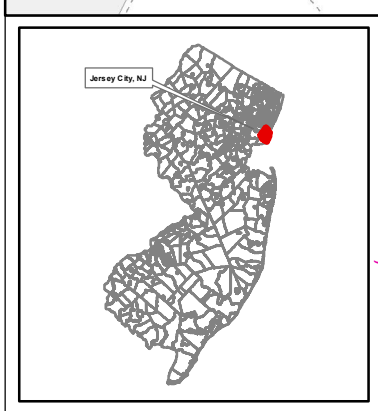


## LEGEND

- GARFIELD AVENUE GROUP SITES
- HUDSON COUNTY PARCELS
- FORMER MORRIS CANAL
- RAILROAD TRACKS
- IN-PLACE SHEET PILE
- TOTAL CHROMIUM IN THE DEEP WATER-BEARING ZONE GREATER THAN 70 ug/L (DASHED WHERE INFERRED)
- ACTIVE REMEDIATION TARGET AREA FOR GROUNDWATER IN THE DEEP WATER-BEARING ZONE
- AREAS BEING ADDRESSED VIA ACTIVE *IN SITU* TREATMENT (IRMs)

N W E S

0 75 150 Feet

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60550261

DATE: 10/28/21 | DRAWN BY: SR | CHECKED BY: FS

FIGURE 4-3
TARGET ACTIVE REMEDIATION AREAS IN THE DEEP WATER-BEARING ZONE

Last Saved By: ravis
Document Path: Q:\920 GIS\MXD\GW Remediation\GW RAWP\Fig 4-3 Target Treatment Area_Deep.mxd

# Figure 5-1. Groundwater Remediation Strategy
## Groundwater Remedial Action Work Plan, Final
## Garfield Avenue Group Sites, PPG, Jersey City, New Jersey

## Groundwater Institutional and Engineering Controls

### Groundwater Institutional and Engineering Controls – 2013 - 2021

- Classification Exception Area(s)
- FerroBlack®-H Amended Backfill
- Capillary Break
- Sheet Pile
- Competent Meadow Mat

2013 to 2021

## Active Treatment

### Part 1 of Active Treatment Remedy – 2017 to 2024
### Phase I, II and III Interim Remedial Measures (IRMs)
### (per NJDEP Permit-by-Rule [PBR] Authorizations)

- Targets in-situ treatment of treatable zones of $Cr^{+6}$ within the Cr 1,000 ppb isopleth
- In-situ Anaerobic Biodegradation (ISAB) and In-situ Chemical Reduction (ISCR) via Phase I, II and III IRMs
- Robust Area-Wide Groundwater Monitoring and Reporting per PBRs

2017 to 2023

Submit Remedial Action Report
and submit request for Active Category Remedial Action Permit, including
Area-wide Monitoring Network for Parts 2 and 3 of Active Remedy

2023

- Robust Area-Wide Groundwater Monitoring and Reporting per PBRs (continues)
- Closeout of PBRs

2024

Remedial Action Report approval
Active Category Remedial Action Permit issued

### Part 2 of Active Treatment Remedy – 2024 to (estimated) 2032*
### Enhanced Attenuation (i.e., post-PBR period)

2024 to 2032

- Continued In-situ Treatment via ISAB/ISCR induced by the IRMs – "Enhanced Attenuation"
- Groundwater monitoring to demonstrate ISAB and ISCR ongoing
- Reporting as per NJDEP Guidance
- At completion of ISAB and ISCR treatment, transition to long-term groundwater monitoring

### Part 3 of Active Treatment Remedy – (estimated) 2032* to (estimated) TBD*
### Long-Term Groundwater Monitoring

2032 to TBD

- Long term groundwater monitoring and reporting per NJDEP guidance
- Remedy continues under Active Category Remedial Action Permit until transition to Monitored Natural Attenuation Category Remedial Action Permit is suitable

## Monitored Natural Attenuation Treatment

- Continue long term groundwater monitoring and reporting per NJDEP guidance under Monitored Natural Attenuation Remedial Action Permit

TBD to 2062

* *Estimated timeframe provided; timing will be guided by monitoring data and may be shorter or longer, as appropriate*

# Appendix A

# Relevant Submittals

# Appendix A.1

# Groundwater Remedial Investigation Report, Final

**(Submitted to the Site Administrator's Technical Consultant on January 25, 2022 for distribution to stakeholders as per the JCO Submittal Finalization Process)**

# Appendix A.2

# Responses to Comments on Definition of Low Permeability

| | | | |
|---|---|---|---|
| TO | Dave Doyle, NJDEP | | Page 1 |
| CC | Dave Van Eck, NJDEP | Sal Caragliano, Property Owner | |
| | Ronald Riccio, Site Administrator | Patrick Mottola, Chiesa Shahinian & Giantomasi | |
| | James Ray, Site Administrator PM | Prabal Amin, Weston Solutions, Inc. | |
| | Nancy Colson, Site Administrator Assistant | Ralph Costa, Weston Solutions, Inc. | |
| | Rob Schmitt, Hampshire | Lihua Zhang, Weston Solutions, Inc. | |
| | Chris Fiore, Jersey City Redevelopment Agency (JCRA) | Jody Overmyer, PPG | |
| | Chris Daggett, Hampshire | Richard Feinberg, PPG | |
| | Peter Sorge, JM Sorge | Mark Terril, PPG | |
| | David Spader, ERFS | Dorothy Laguzza, KL Gates | |
| | Nick Strasser, Jersey City Counsel | Joe Lagrotteria, KL Gates | |
| | Peter Baker, Jersey City Counsel | Bill Spronz, AECOM | |
| | Bhavini Doshi, JCRA Counsel | Shree Ravi, AECOM | |
| | Eric Tomaszewski, JCRA Counsel | | |
| Subject | Responses to Comments on Definition of Low Permeability, PPG Garfield Avenue Group, Hudson County Chromium Sites, Jersey City, New Jersey | | |
| From | Frederik Schuele, AECOM | | |
| | Shannon Gleason, AECOM | | |
| | Matt Schnobrich, Arcadis | | |
| Date | July 15, 2021 | | |

On behalf of PPG, AECOM is hereby providing a response to New Jersey Department of Environmental Protection (NJDEP) and Jersey City comments on the March 24, 2021 *Revised Draft Groundwater Remedial Investigation (RI) Report, PPG Garfield Avenue Group, Hudson County Chromium Sites, Jersey City, New Jersey* (GW-077) and the March 31, 2021 *Draft Groundwater Remedial Action Work Plan (RAWP), PPG Garfield Avenue Group, Hudson County Chromium Sites, Jersey City, New Jersey* (GW-008) regarding the definition of low permeability at the Garfield Avenue Group Sites (the Project Area). Although extensive discussions have been held with NJDEP and the Technical Consultant regarding this topic, NJDEP continues to request additional information and discussion; thus, PPG has prepared this separate response focusing on this topic.

## Introduction

The terms porosity and permeability and their relationship to hydraulic conductivity are described herein. Within the context of this discussion, it is important to understand that there is no single value of hydraulic conductivity that can be used to describe a material as having high or low permeability. No "bright line" exists in nature, rather, values of hydraulic conductivity for subsurface materials range over several orders of magnitude. The subsurface materials (overburden) at the Project Area do not consist of homogenous soils that exhibit a single permeability (e.g., a 50-foot lens of beach sand), in which case, stakeholder agreement on low permeability would be easy. Instead, the soils in the Project Area are highly heterogeneous because the overburden at the Project Area was formed by glaciers, which resulted in the deposition of a multi-layered sequence containing a complex mixture of soil types. In such an environment, no single value of hydraulic conductivity can be established to denote a soil type

as having high or low permeability. Further, there is no one field test that is 100% accurate in measuring hydraulic conductivity. Instead, a comprehensive review of existing site information that integrates available hydraulic conductivity data, real-time geologic logging, and observations of flow rates and reagent distribution during the Interim Remedial Measures (IRMs) is necessary to evaluate soil permeability and understand whether or not remediation reagents can be effectively delivered to a targeted soil type. This assessment has been completed at the Project Area via implementation of the Phase I and Phase II IRMs, where over 12 million gallons of remediation reagents have been injected into the overburden. Information gathered during these IRMs has shown that they are successful at delivering remediation reagents to sands, gravels, silty sands, and sandy silts within portions of the intermediate and deep water-bearing zones, as supported by the significant concentration reductions of $Cr^{+6}$ compared to baseline levels, in some cases up to four orders of magnitude. Furthermore, lessons learned from the IRMs include the understanding that delivery of remediation reagents to silts and clays is difficult.

## Definitions of Porosity, Permeability, and Hydraulic Conductivity

Porosity is the amount of empty space within a given material. In a soil or rock, the porosity (empty space) exists between the grains of minerals. In a material like gravel, the grains are large and there are lots of empty spaces between them because they do not fit together very well (see Figure 1). However, in a material that is a mixture of gravel, sand, and clay, the porosity is much less because the smaller grains fill the spaces (see Figure 2). The amount of water a material can hold is directly related to the porosity because water will fill the empty spaces in a material. Porosity is measured by the percentage of empty space that exists within a particular porous media.

Figure 1

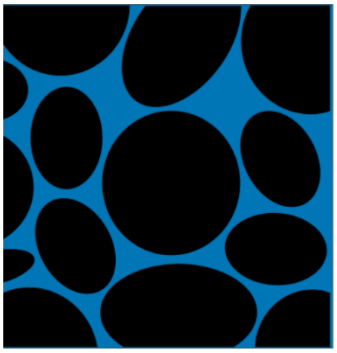

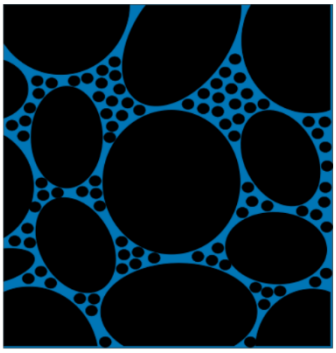

Figure 2

Permeability is closely related to porosity. Permeability refers to how connected pore spaces are to one another. If a material has high permeability, then pore spaces are connected to one another and allow water to flow from one space to another. Referring to Figure 1, it is easy to visualize how water would readily flow within the pore spaces around the grains of gravel. However, if there is low permeability, then the pore spaces are isolated (see Figures 2, 3 and 4). In a low-permeability material, most of the pore spaces are blocked, meaning water cannot flow through it easily – rather, water will flow where the pore spaces are connected (see Figure 4 -- the dark blue coloring represents water flowing through this low permeability material). As shown in Figure 4, water will not flow to, or through, some pore spaces (shaded in light blue) due to the low permeability of the material.

Figure 3

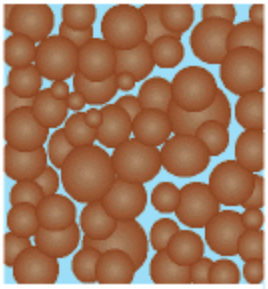

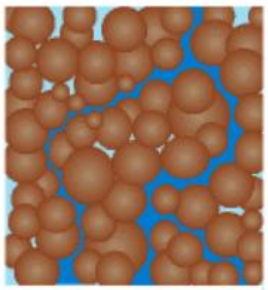

Figure 4

Hydraulic conductivity is a measurement of the ease with which a fluid (usually water) can move through connected pore spaces or fractures. Its magnitude depends on how well connected the pore spaces of the material are (i.e., how permeable the material is). Materials with high permeability have a high hydraulic conductivity, whereas low-permeability materials have low hydraulic conductivity. Values of hydraulic conductivity for subsurface materials range over several orders of magnitude, and the permeability of a single soil type is relative to its surrounding soil types. For example, a lens of fine sand within a sequence of coarse gravel exhibits low permeability relative to the surrounding gravel, whereas a lens of fine sand within a sequence of silt and clay exhibits high permeability relative to the surrounding silts and clays.

## Definition of Low Permeability for Soils at the Project Area

The definition of low permeability as it relates to groundwater flow is well documented in the literature and is a fundamental concept taught in introductory hydrogeology courses (Fetter, 2001). Low-permeability geologic materials are commonly understood to include soils that are dominated by silt or clay, or soils that are described as clayey or silty glacial till (see Figure 5).

Figure 5

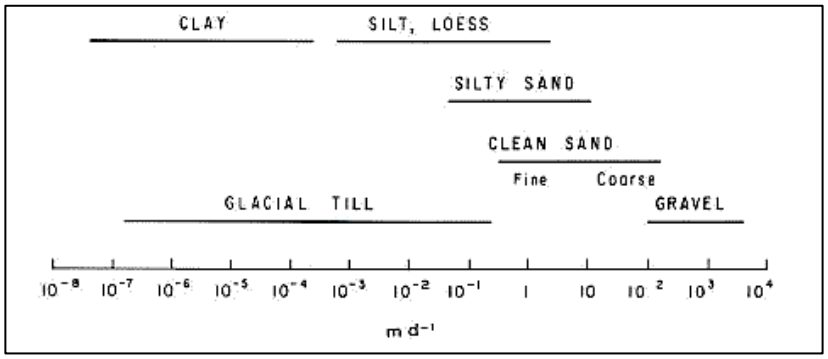


| Formation | Hydraulic Conductivity, m/day |
|---|---|
| Unconsolidated Formations | |
| Gravel, coarse | 1000–8600 |
| Gravel, medium | 20–1000 |
| Gravel, fine | 20–50 |
| Sand, coarse | 0.1–500 |
| Sand, medium | 0.1–50 |
| Sand, fine | 0.01–20 |
| Silt, sandy | 1–4 |
| Silt, clayey | 0.2–1 |
| Till, gavel | 30 |
| Till, sandy | 0.2 |
| Till, clayey | $\leq 10^{-5}$ |
| Clay | ≤ 0.0005 |

This is important for the Project Area, because visual evidence of the presence of silts, clays, or glacial till (i.e., low permeability soils) is readily available from the 30,000 feet of soil borings completed at over 850 locations within the 49-acre Project Area during investigation activities. For each soil boring, a log is developed as required by NJDEP *Ground Water Technical Guidance for Site Investigation, Remedial Investigation and Remedial Action Performance Monitoring* and the observed soils are described using the Unified Soil Classification System (USCS) (Howard, 1986). The USCS is used universally to describe soils and is accepted by the NJDEP. Within the Project Area, boring logs identify low-permeability soils using the USCS codes listed below.

ML: Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity.

CL: Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.

OL: Organic silts and organic silty clays of low plasticity.

MH: Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.

CH: Inorganic clays of high plasticity, fat clays.

OH: Organic clays of medium to high plasticity, organic silts

PT: Peat and other highly organic soils.

The Project Area soils outlined above have also been characterized by over 2,700 vertical feet of hydraulic profile tool (HPT) borings, which provide high resolution insights into the hydraulic conductivity of these materials and support the conclusion that these are low-permeability soils (see Figure 6 for an example of a HPT log identifying low and high permeability intervals within overburden soils). HPT logs are generated by advancing a probe through the subsurface at a constant rate while water is injected through a screen on the side of the probe. There is a pressure sensor on the probe that measures how easily the water was able to enter the soil. The pressure response measures the relative ability (compared to other surrounding soils) of the soil to transmit water. The use of HPT data to assess low permeability at the Project Area was reviewed with the NJDEP and the Technical Consultant in a virtual meeting held on February 16, 2021. A copy of the presentation provided at this meeting is attached for reference.

In addition to the above listed soil materials, the basal till in the Project Area consists of silty clays, sandy silts, and silty sands with subrounded to subangular fine to coarse gravel and cobbles and occasional interbedded lenses of clay, silt, or fine sand. Therefore, Project Area soils described by the USCS codes above or designated as “basal till” are considered low-permeability soils.

## In-situ Active Treatment in Project Area

The *in-situ* remedies selected for active groundwater remediation within the Project Area include the delivery of remediation reagents to saturated soils to establish groundwater conditions that are favorable for the reduction of hexavalent chromium ($Cr^{+6}$) to trivalent chromium ($Cr^{+3}$). Three phases of IRMs deliver remediation reagents to geologic materials within portions of the intermediate and deep water-bearing zones where $Cr^{+6}$ is present.

Figure 6

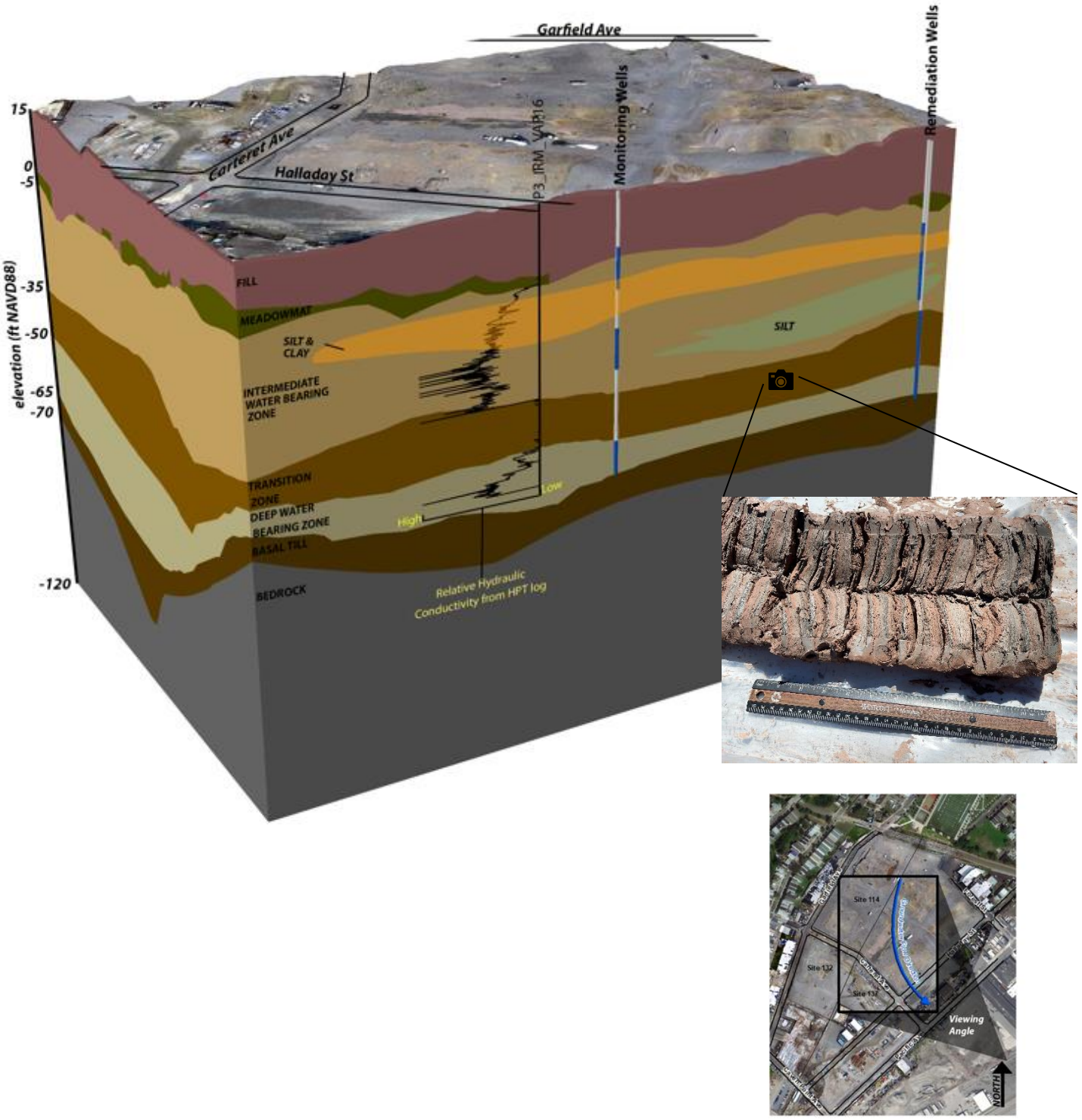
Garfield Ave
Carteret Ave
Halladay St
P3_IRM_VAP16
Monitoring Wells
Remediation Wells
15
0
-5
-35
-50
-65
-70
-120
elevation (ft NAVD88)
FILL
MEADOWMAT
SILT & CLAY
INTERMEDIATE WATER BEARING ZONE
TRANSITION ZONE
DEEP WATER BEARING ZONE
BASAL TILL
BEDROCK
SILT
High
Low
Relative Hydraulic Conductivity from HPT log
Site 114
Site 132
Site 137
Viewing Angle
NORTH

The IRMs do not target the basal till because remediation reagents cannot be delivered to all available pore spaces within this low-permeability soil horizon (refer to Figure 4 – it would not be possible to deliver reagents to all available pore spaces – the light blue spaces would be by-passed). Thus, we say that remediation reagents cannot be easily delivered through the pore spaces within low permeability soil horizons. This is supported by the technical paper *Groundwater Remediation in Low-Permeability Settings: The Evolving Spectrum of Proven and Potential* by Horst and Schnobrich, et al. (2019) which provides a practical definition of low-permeability as being soils "*where it is very challenging to get fluids either in or out*."

Lenses of low-permeability materials exist within the intermediate and deep water-bearing zones (see Figure 6), as a result, the IRM remediation wells were installed across intervals of both higher and lower permeability materials with the understanding that remediation reagents would be variably distributed through each soil type. In these cases, it can be expected that $Cr^{+6}$ will be treated in the permeable lenses and that residual concentrations of $Cr^{+6}$ will remain in the low-permeability lenses even after completion of the IRMs, because remediation reagents cannot be delivered to all pore spaces within the low-permeability materials.

The IRMs address the expected short-term, localized increase in $Cr^{+6}$ concentrations that may occur for a limited period after the IRM injections cease. These increases result from "back-diffusion" of $Cr^{+6}$ into surrounding higher permeability soils from low-permeability soils into which remediation reagents could not be injected. The release of $Cr^{+6}$ from such low-permeability soils will be highest within the first several years following completion of IRM treatment, after which the rate of $Cr^{+6}$ diffusion will decline significantly during post-treatment. The excess remediation reagents being delivered by the IRMs to the more permeable intervals of the intermediate and deep water-bearing zones surrounding low-permeability soils are expected to persist in the subsurface during this back-diffusion period. Therefore, when there is back-diffusion of $Cr^{+6}$ into already treated areas, the excess volume of remediation reagents will continue to induce geochemical conditions that are favorable to the treatment of $Cr^{+6}$.

## Long-Term Monitoring and Management

The Groundwater Remedial Action Work Plan for the Project Area includes completion of the IRMs to provide short-term $Cr^{+6}$ reduction and establish a sustained reactive zone to continue $Cr^{+6}$ treatment following IRM completion, installation of reactive barriers in the lower portion of the deep water-bearing zone, long-term groundwater monitoring to track continued $Cr^{+6}$ natural attenuation, groundwater engineering controls (such as FerroBlack®-H amended fill and sheet pile), and establishment of a NJDEP Classification Exception Area.

It is important to note that despite the decades that have elapsed since the former source areas were removed, the total chromium (Cr) groundwater plume in the Project Area does not extend very far from the former source areas, even where preferential pathways exist, such as utilities or other anthropogenic features. The IRMs target delivery of remediation compounds to permeable soils within portions of the intermediate and deep water-bearing zones where $Cr^{+6}$ is present – and by targeting these permeable zones, we are targeting remediation of the most prevalent pathway for Cr to migrate away from the Project Area.

## Summary

Permeability refers to how connected pore spaces are to one another. If the material has high permeability, then pore spaces are connected to one another and allow water to flow from one space to another. At remediation sites, these spaces provide the conduits for contaminants to migrate, for plumes to expand, and drive potential future risk. If the material has low permeability, then the pore spaces are isolated and blocked, indicating that water cannot flow through it easily. Contaminants present in these soils are not readily mobile and do not represent a significant risk if the areas can be managed by other naturally occurring processes or via institutional means. In the Project Area, there is visual evidence of the presence of silts, clays, and glacial till from the thousands of feet of soil borings completed. As shown on Figure 5, there is no singular hydraulic conductivity value that can be assigned to these materials; no such "bright line" exists in nature. Therefore, for practical purposes at the Project Area within the context of groundwater remediation, any soils described by USCS codes ML, CL, OL, MH, CH, OH and PT, or as basal till, are considered to be low-permeability soils.

The IRMs target delivery of remediation reagents to permeable soils within portions of the intermediate and deep water-bearing zones where $Cr^{+6}$ is present – and by targeting these permeable zones, PPG is targeting remediation of the most prevalent pathway for Cr to migrate away from the Project Area. The IRMs do not target the basal till because remediation reagents cannot be easily delivered to all available pore spaces within this low-permeability soil horizon (refer to Figure 4). In areas of low-permeability, where remediation reagents cannot be delivered into the pore spaces of the targeted materials, residual Cr will be managed via the excess volume of remediation reagents delivered to the surrounding high-permeability soils during the IRMs, and via natural attenuation and long-term monitoring.

## References

Fetter, C.W. (2001) Applied Hydrogeology. 4th Edition, Prentice Hall, Upper Saddle River.

Horst, et al., 2019. Horst, John & Divine, Craig & Schnobrich, Matthew & Oesterreich, Ryan & Munholland, Jonah. Groundwater Remediation in Low-Permeability Settings: The Evolving Spectrum of Proven and Potential. Ground Water Monitoring and Remediation. 39. 10.1111/gwmr.12316. 2019

Howard, Amster K. Soil Classification Handbook: Unified Soil Classification System. Denver, Colo.: Geotechnical Branch, Division of Research and Laboratory Services, Engineering and Research Center, Bureau of Reclamation, 1986.

ATTACHMENT

PRESENTATION FROM FEBRUARY 16, 2021 VIRTUAL MEETING

LOWER PERMEABILITY TECHNICAL BREAKOUT

# LOWER PERMEABILITY TECHNICAL BREAKOUT

PPG Site 114

February 16, 2021

# Remedy Development Framework

- Based on initial CSM, the 2010 *Remediation Strategy for CCPW in Groundwater* acknowledged that complete treatment was infeasible
  - Implement groundwater treatment for bulk removal prior to transition to MNA
  - Target Cr(VI) goal of 1,000 µg/L
- Evolution of CSM has provided better insights into what is feasible
- Remedy development framework considering the following elements:
  - Permeable vs impermeable soils?
  - If soils are permeable, is the Cr(VI) mass significant in concentration and magnitude?
  - As appropriate, select combination of active and passive groundwater remedies to achieve bulk removal and leverage MNA and site controls

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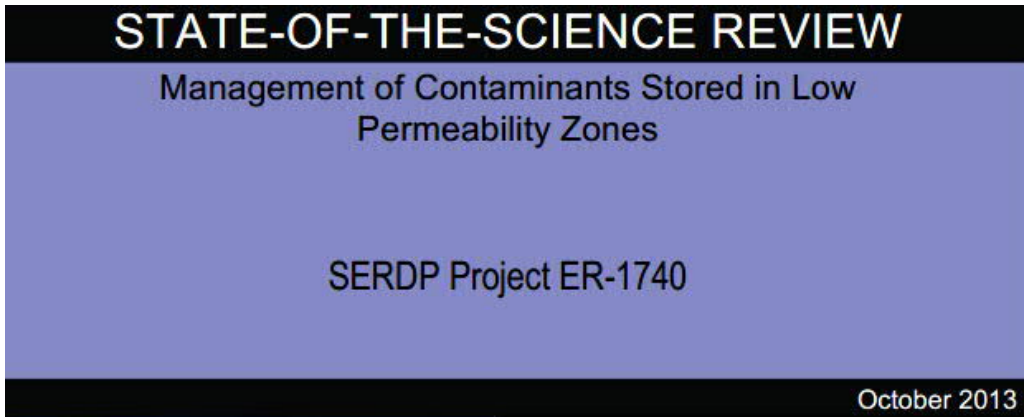


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**University of Guelph**

C.J. Newell
**GSI Environmental Inc.**

J.F. Devlin
**University of Kansas**

*…it is important to note that the terms transmissive and low K describe contrasts in permeability as opposed to absolute values of permeability.*

- *A fine-sand can be a transmissive zone given that the remainder of the domain is silt and/or clay*
- *A fine-sand can be a low k zone given that the remainder of the media is a well-sorted coarse sand or gravel*

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# Conceptual model for groundwater & COC transport

Aquifer flow and flux can be sorted into three primary compartments based on order of magnitude changes in hydraulic conductivity

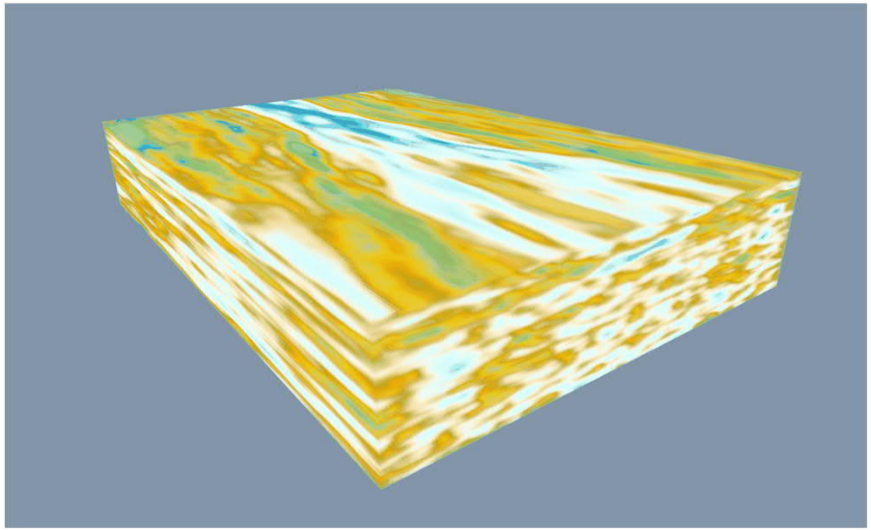

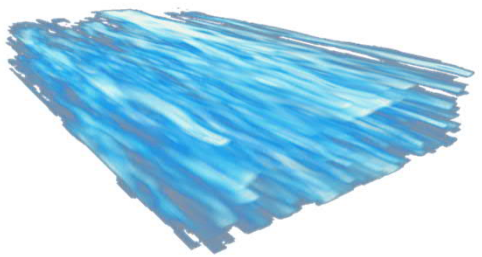

**Compartment 1**
True advection
**90% of flow**

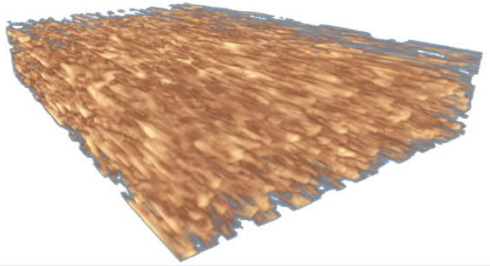

**Compartment 2**
Slow advection
**9% of flow**

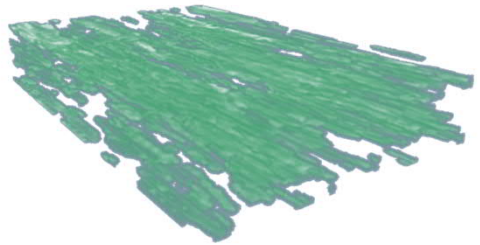

**Compartment 3**
Storage
**1% of flow**

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# Real-Time K Profiling

- Permeability differences explain variability in IRM reagent breakthrough response timing

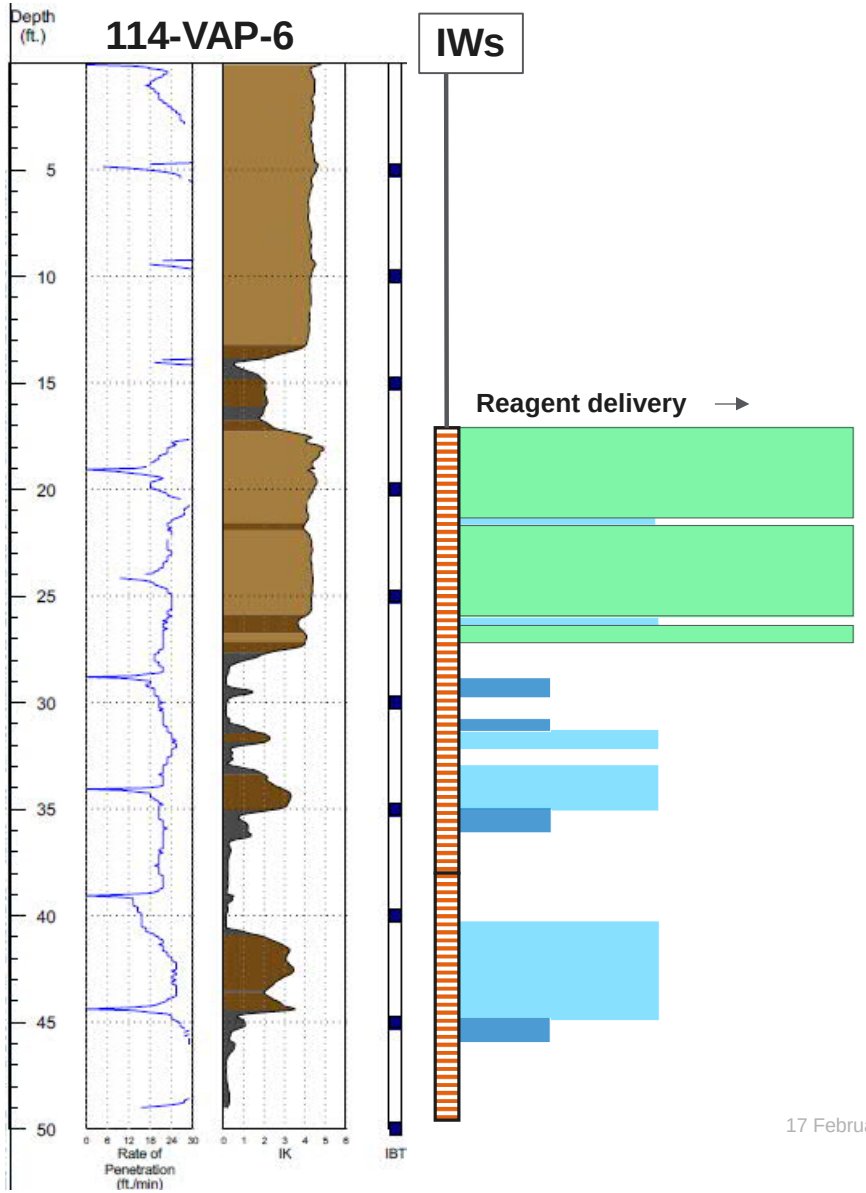


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# Real-Time K Profiling

- Permeability differences explain variability in IRM reagent breakthrough response timing

- Explain areas with limited response or incomplete Cr(VI) treatment and areas where fluids cannot be injected or extracted

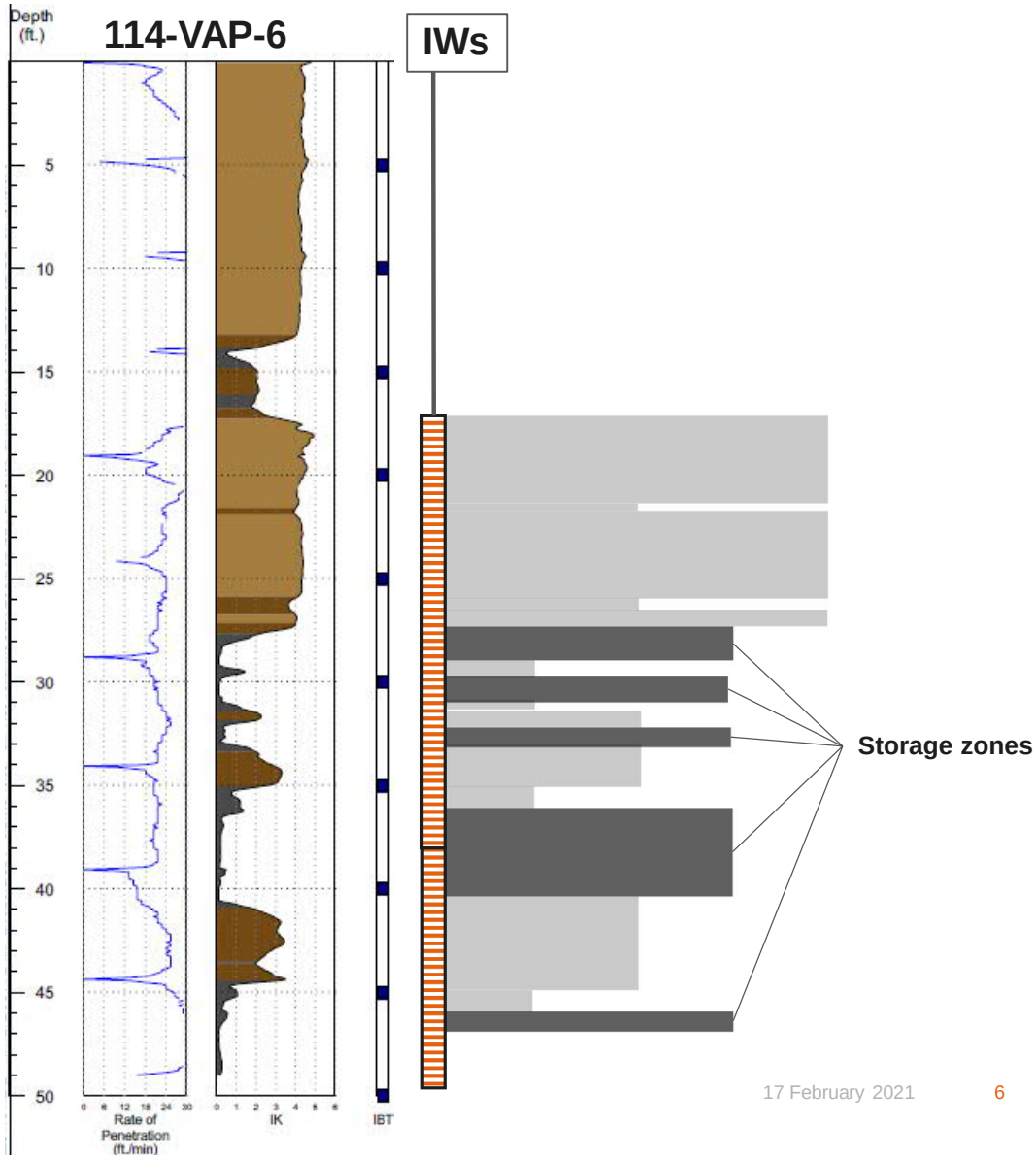


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# Real-Time K Profiling

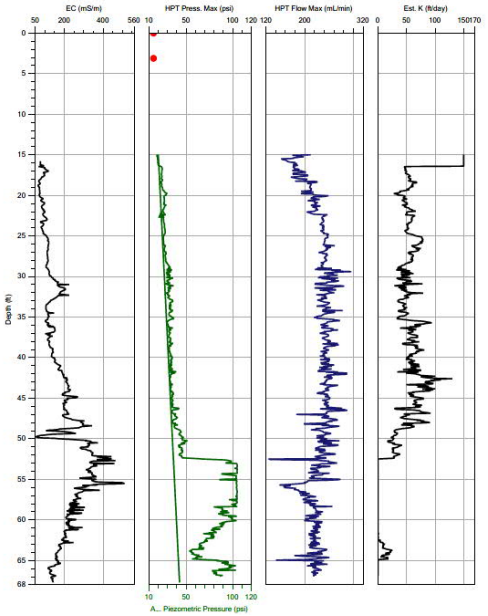


- HPT or Waterloo Profiler both provide a real-time estimate of hydraulic conductivity (K)
- Provide insights into relative permeability and estimated K values, but discrete interval data is not the same as pump test data
- K detection range of HPT instrumentation is 0.1 – 75 feet/day
  - $3.47 \times 10^{-5}$ to $2.6 \times 10^{-2}$ cm/sec
  - This range appropriate for remedial decision making
- Used data to sort Site 114 geology to understand remediation feasibility considering relative differences in aquifer behavior

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# 114-MW55C – 20-30 ft bgs

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description |
|---|---|---|---|---|---|---|
| 21–22 | 5.5 / 10 | 0 | WET | SP-SM | | Reddish brown (10YR 4/4) poorly graded SAND with SILT, medium SAND, few SILT, loose, wet. Yellowish groundwater at 21.5' to 22.5'. |
| 23–24 | | | WET | SP-SM | | Reddish brown (5YR 4/4) poorly graded SAND with silt, medium sand, some sub-rounded fine to coarse gravel, loose, wet. |
| 25 | | | WET | ML | | Yellowish red (5YR 4/6) SILT, massive, wet. |
| 26–27 | | | WET | ML/CL | | Yellowish red (5YR 4/6) laminated, interbedded SILT, CLAY, fine SAND, compacted, wet. |
| 29–30 | | | WET | ML | | Reddish brown (5YR 4/4) SILT, loose, wet. |

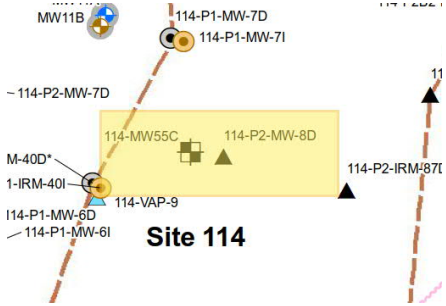


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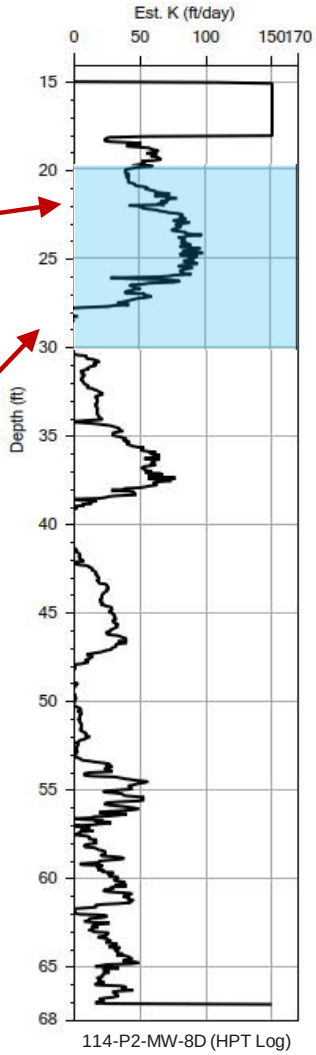


114-P2-MW-8D (HPT Log)

# 114-MW55C – 30-40 ft bgs

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description |
|---|---|---|---|---|---|---|
| 30 | 6 / 10 | 0 | WET | ML | | Yellowish red (5YR 4/6) sandy SILT, yellowish groundwater, loose, wet. |
| 31 | | | | | | |
| 32 | | | | | | 31 ft: 55% fines (silt/clay) |
| 33 | | | | | | |
| 34 | | | | | | |
| 35 | | | WET | ML/CL | | Yellowish red (5YR 4/6) interbedded fine SAND, SILT and CLAY, compact, wet. |
| 36 | | | | | | |
| 37 | | | | | | |
| 38 | | | | | | |
| 39 | | | | | | |

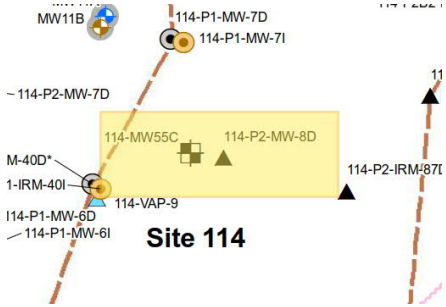


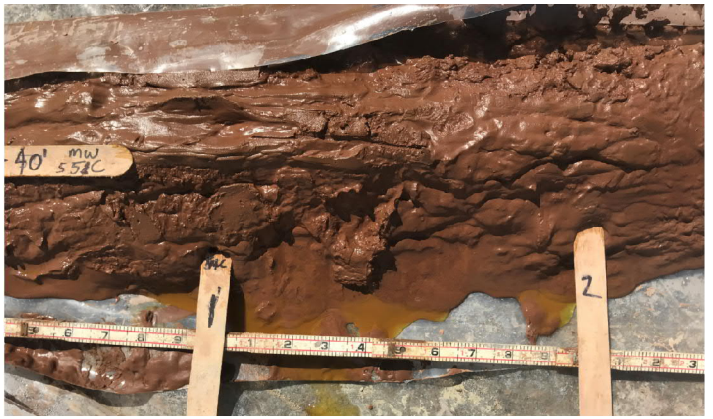





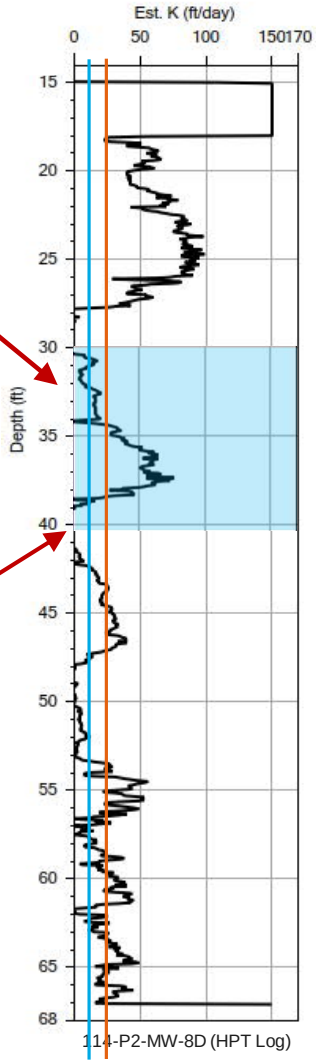


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# 114-MW55C – 40-50 ft bgs

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description |
|---|---|---|---|---|---|---|
| 41 – 44 | 7.3 / 10 | 0 | WET | SM | | Yellowish red (5YR 4/6) silty SAND, fine sand, loose, wet, yellowish groundwater. 41 ft: 20% fines (silt/clay) |
| 44 – 47 | | | WET | ML | | Reddish brown (5YR 5/4) SILT, loose, wet. 45 ft: 90% fines (silt/clay) |
| 47 – 49 | | | N/A | ML/CL | | Reddish brown (5YR 5/4) laminated SILT and CLAY. |

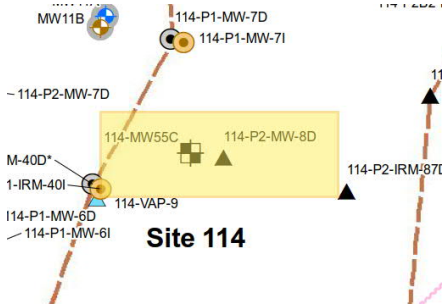


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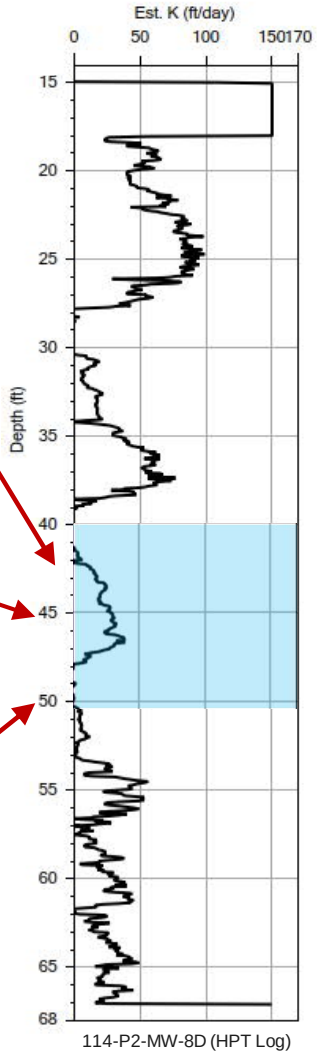

# 114-MW55C – 50-60 ft bgs

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description |
|---|---|---|---|---|---|---|
| 50 | | | | | | Reddish brown (2.5YR 4/4) silty SAND, fine sand, wet, yellow groundwater. |
| 51 | | | | | | |
| 52 | | | WET | SM | | 50 ft: 15-20% fines (silt/clay) |
| 53 | | | | | | |
| 54 | | | WET | SM | | Reddish brown (2.5YR 4/4) silty SAND, fine sand, wet, yellow groundwater. |
| 55 | 6.5 / 10 | 0 | | | | Reddish brown (2.5YR 4/4) sandy SILT, fine SAND and CLAY laminae, yellow groundwater. |
| 56 | | | | | | |
| 57 | | | WET | ML/CL | | 55 ft: 70% fines (silt/clay) |
| 58 | | | | | | |
| 59 | | | | | | |






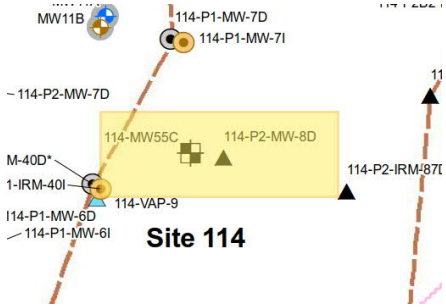


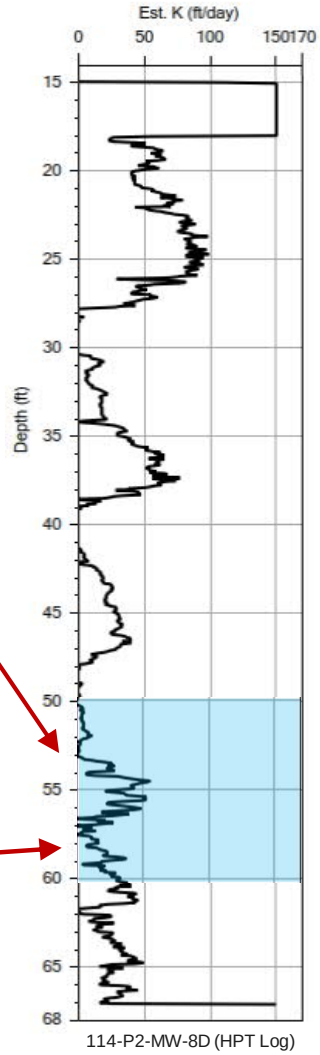

114-P2-MW-8D (HPT Log)

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# 114-MW55C – 60-70 ft bgs

| Depth Range (ft bgs) | Recovery (ft/ft) | PID (ppm) | Moisture Content | USCS | Graphic Log | Material Description |
|---|---|---|---|---|---|---|
| 61 | 7.5 / 10 | 0 | WET | SP-SM | | Reddish brown poorly graded SAND with silt, fine to medium sand, trace coarse sand. 61 ft: 10% fines (silt/clay) |
| 62 | | | MOIST | CL/ML | | Yellowish red (5YR 4/6) sandy CLAY and sandy silt, silt and clay laminae. |
| 63 | | | MOIST | ML | | Reddish brown SILT with fine sand. 63 ft: 80% fines (silt/clay) |
| 64 | | | | | | |
| 65 | | | | | | |
| 66 | | | | | | |
| 67 | | | DRY | SC-GC | | Reddish brown (5YR 5/4) clayey SAND, some sub-rounded to sub-angular fine to coarse gravel, dry (Basal Till). |
| 68 | | | | | | Light gray sandstone, wet (Stockton Formation). Highly weathered from 68-70 ft bgs (broken rock in clay matrix), competent from 70-75 ft bgs. End of boring at 75 ft. |
| 69 | | | | | | |
| 70 | | | | | | |

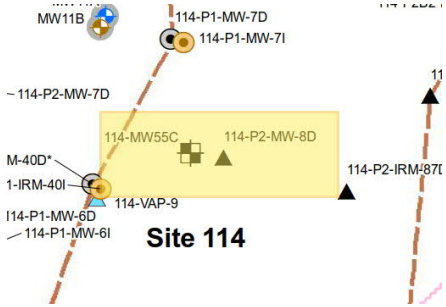


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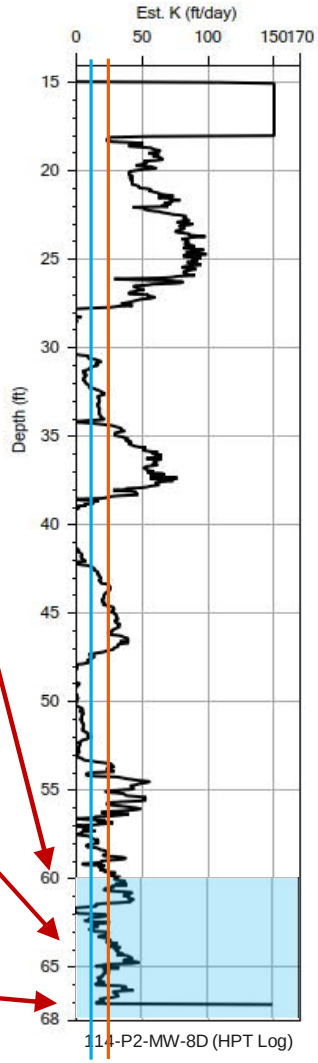

# Sorting K Distribution

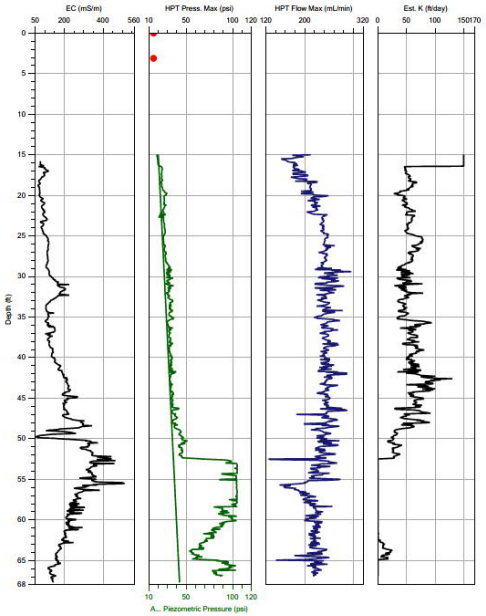


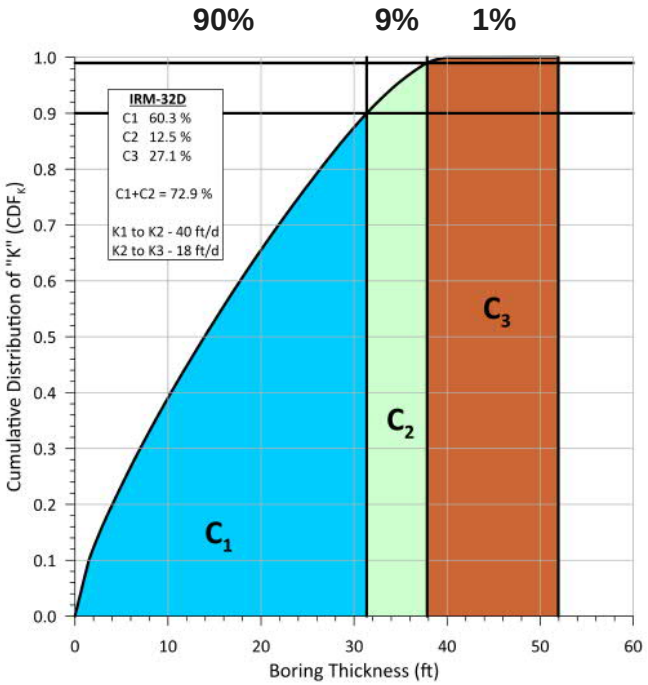


- CDF plots sort boring K data based on relative permeability
- Zones separated based on order of magnitude differences in relative flow (90%, 9% and 1%)
- Transition points are unique to each boring, but are still representative of groundwater flow through aquifer soils
- From Phase II IRM data, average K value for C2-C3 transition was 11 ft/day or $3.74 \times 10^{-3}$ cm/sec

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# Understanding K Distribution

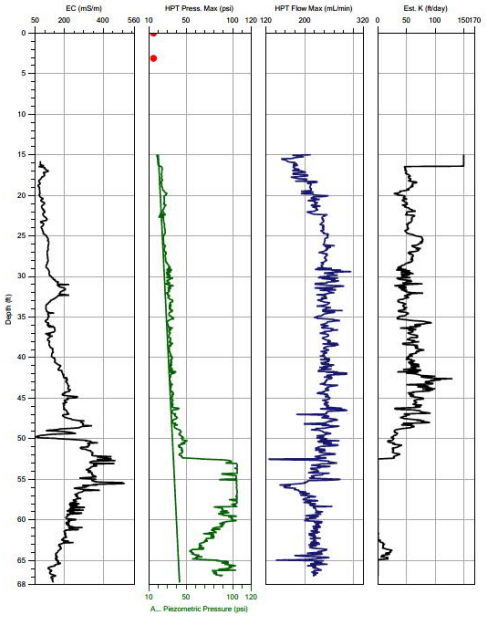


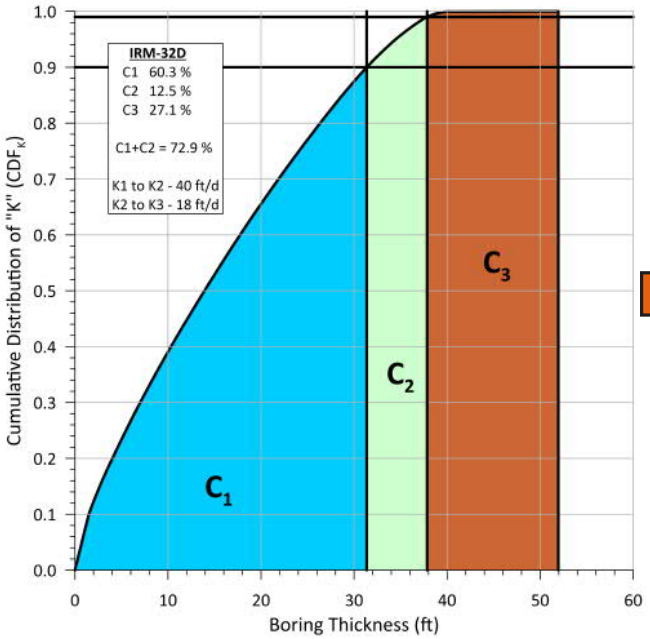


**Sorting of all HPT K data indicates:**

- 54.6% in C1 – permeable zone
- 19.7% in C2 – limited permeability
- 25.8% in C3 – low permeability

**Key question: If ~75% is treatable, what happens to the remaining 25%?**

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# Low Permeability Findings

- Site 114 heterogeneity and permeability contrasts have significant bearing on what can be implemented within the aquifer
- Soils dominated by silts and clays, or as “tight” and “dense” are going to be inaccessible to remediation – while often logged as “wet”
- Using HPT output data, inaccessible soils are generally 3 ft/day ($1x10^{-3}$ cm/sec) or lower
- Higher permeability zones must be connected to be treatable, and relevant from a transport and risk perspective

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# Appendix B

# Permit-By-Rule Requests and Authorizations – Phase I, Phase II, and Phase III IRMs

**New Jersey Department of Environmental Protection**
Site Remediation Program

# DISCHARGE TO GROUND WATER (DGW) PERMIT-BY-RULE AUTHORIZATION REQUEST

☐ LSRP ☐ Subsurface Evaluator (UHOT)

**Date Stamp**
**(For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Garfield Avenue Site 114 and Former Halladay Street Gas Works

AKAs:

Street Address: 900 Garfield Avenue

Municipality: Jersey City (*Township, Borough or City*)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): G000008791

Case Tracking Number(s) for this submission:

Municipal block(s) and lot(s) where the **proposed discharge(s)** would occur:

Block # 21501 Lot #(s) 16,17,18, 19, 20 Block # Lot #(s)

Block # Lot #(s) Block # Lot #(s)

## SECTION B. FEE AND DISCHARGE INFORMATION

DGW Proposal Review Fee ..... $350.00

**Discharge Type** *(check all that apply)*

☒ Discharge of Recovered Ground Water

Will the discharge be a result of dewatering only? ..... ☒ Yes ☐ No

☒ Discharge that is part of an *In situ* Remediation

☐ Discharges other than those above *(see instructions for more information)*

**Facility Type** *(check all that apply)*

☒ Underground Injection Control (UIC) facility (i.e., any type of injection)

☐ Non-UIC (e.g., surface application) *(see instructions for more information)*

**Attach a Discharge to Ground Water Proposal to this form** *(see instructions)* See attached CD

## SECTION C. PUBLIC NOTICE PROVISIONS *(Does not apply to residential heating oil tank cases)*

Is the proposed discharge lasting greater than 180 days? ..... ☒ Yes ☐ No

If "Yes," attach a copy of the public notice written as you intend it to be published. *(see instructions)* See attached CD, Appendix A

## SECTION D. SITE USE AND GROUND WATER CLASSIFICATION

**Current Site Use** *(check all that apply)*

☐ Industrial ☐ Agricultural
☐ Residential ☐ Park or recreational use
☐ Commercial ☒ Vacant
☐ School or child care ☐ Government
☐ Other

**Intended Future Site Use** *(check all that apply)*

☐ Industrial ☐ Park or recreational use
☐ Residential ☐ Vacant
☐ Commercial ☐ Government
☐ School or child care ☒ Future site use unknown

What is the ground water classification for this site as per N.J.A.C. 7:9C? *(check all that apply)*

☐ Class I-A ☒ Class II-A
☐ Class I-PL Pinelands Protection Area ☐ Class III-A
☐ Class I-PL Pinelands Preservation Area ☐ Class III-B

## SECTION E. RECEPTOR EVALUATION SUMMARY

### Non-UHOT Cases

1. Have any of the following been identified on the site or within 200 feet of the site boundary?

   Check all that apply.

   ☒ Residences
   ☐ Child care facilities
   ☐ Public and private schools (K-12)
   ☐ Surface water
   ☒ Other occupied buildings
   ☒ Public parks and playgrounds

2. Did the well search conducted as a part of the receptor evaluation show any well use (potable, industrial, or irrigation)? ☐ Yes ☒ No

   If "Yes," indicate the type of use and approximate distance (closest occurrence) from site: *(Check all that apply)*

   ☐ Potable Distance from site: _____ feet

   ☐ Industrial Distance from site: _____ feet

   ☐ Irrigation Distance from site: _____ feet

3. Have any of these receptors been impacted? ☐ Yes ☒ No
   If "Yes," Do you have an NJDEP assigned Case Manager? ☐ Yes ☐ No

   If "Yes," please list the Case Manager: _____

### UHOT Cases

1. Is ground water contamination above the Ground Water Remediation Standards? ☐ Yes ☐ No
   If "Yes," answer questions 2 and 3.
2. Has a potable well been identified within 100 feet of the contamination? ☐ Yes ☐ No
3. Have any potable wells been impacted? ☐ Yes ☐ No
   If "Yes," has the NJDEP been notified? ☐ Yes ☐ No

## SECTION F. PERSON RESPONSIBLE FOR CONDUCTING THE REMEDIATION INFORMATION AND CERTIFICATION

Full Legal Name of the Person Responsible for Conducting the Remediation: PPG Industries, Inc.

Representative First Name: Mark Representative Last Name: Terril

Title: Corporate Director Environmental Affairs

Telephone Number: (412) 434-2708 Ext.: _____ FAX: _____

Mailing Address: One PPG Place

City/Town: Pittsburgh State: PA Zip Code: 15222

Email Address: terril@ppg.com

This certification shall be signed by the person responsible for conducting the remediation who is submitting this notification in accordance with Administrative Requirements for the Remediation of Contaminated Sites rule at N.J.A.C. 7:26C-1.5(a).

*I certify under penalty of law that I have personally examined and am familiar with the information submitted herein, including all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, to the best of my knowledge, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties.*

Signature: Mark Terril Date: June 29, 2017

Name/Title: Mark Terril/Corporate Director Environmental Affairs

☐ Check this box if the person above is also the property owner of the site or their representative. If this person is not the site property owner, please ensure the site property owner's name and address is included in the DGW Proposal, and also indicate that the property owner has been informed about the proposed discharge.

**SECTION G. LICENSED SITE REMEDIATION PROFESSIONAL INFORMATION AND STATEMENT**

LSRP ID Number: _____

First Name: _____ Last Name: _____

Phone Number: _____ Ext: _____ Fax: _____

Mailing Address: _____

City/Town: _____ State: _____ Zip Code: _____

Email Address: _____

This statement shall be signed by the LSRP who is submitting this notification in accordance with N.J.S.A. 58:10C-14, and N.J.S.A. 58:10B-1.3b(1) and (2).

*I certify that I am a Licensed Site Remediation Professional authorized pursuant to N.J.S.A. 58:10C to conduct business in New Jersey. As the Licensed Site Remediation Professional of record for this remediation, I:*

**[SELECT ONE OR BOTH OF THE FOLLOWING AS APPLICABLE]:**

☐ *directly oversaw and supervised all of the referenced remediation, and\or*

☐ *personally reviewed and accepted all of the referenced remediation presented herein.*

*I believe that the information contained herein, and including all attached documents, is true, accurate and complete.*

*It is my independent professional judgment and opinion that the remediation conducted at this site, as reflected in this submission to the Department, conforms to, and is consistent with, the remediation requirements in N.J.S.A. 58:10C-14.*

*My conduct and decisions in this matter were made upon the exercise of reasonable care and diligence, and by applying the knowledge and skill ordinarily exercised by licensed site remediation professionals practicing in good standing, in accordance with N.J.S.A. 58:10C-16, in the State of New Jersey at the time I performed these professional services.*

*I am aware pursuant to N.J.S.A. 58:10C-17 that for purposely, knowingly or recklessly submitting false statement, representation or certification in any document or information submitted to the board or Department, etc., that there are significant civil, administrative and criminal penalties, including license revocation or suspension, fines and being punished by imprisonment for conviction of a crime of the third degree.*

LSRP Signature: _____ Date: _____

LSRP Name/Title: _____

Company Name: _____

Completed forms should be sent to:

Bureau of Case Assignment & Initial Notice
Site Remediation Program
NJ Department of Environmental Protection
401-05H
PO Box 420
Trenton, NJ 08625-0420

**SECTION G. SUBSURFACE EVALUATOR UST REPORT CERTIFICATION FORM**

*I certify under penalty of law that the work was performed under my oversight and I have reviewed the report and all attached documents, and the submitted information is true, accurate and complete in accordance with the requirements of N.J.A.C. 7:14B and N.J.A.C. 7:26E. I am aware that there are significant civil and criminal penalties for submitting false, inaccurate or incomplete information including fines and/or imprisonment.*

Name: _____ UST Cert. No.: _____

Firm: _____ Firm's UST Cert. Number: _____

Firm Address: _____

City/Town: _____ State: _____ Zip Code: _____

Phone Number: _____ Ext: _____ Fax: _____

Signature: _____ Date: _____

Completed forms should be sent to:

Bureau of Case Assignment & Initial Notice
Site Remediation Program
NJ Department of Environmental Protection
401-05H
PO Box 420
Trenton, NJ 08625-0420

ARCADIS Design & Consultancy for natural and built assets

PPG Garfield Avenue Group Sites

# GROUNDWATER INTERIM REMEDIAL MEASURE: PHASE I DESIGN AND PERMIT-BY-RULE AUTHORIZATION REQUEST

June 2017

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# GROUNDWATER INTERIM REMEDIAL MEASURE: PHASE I DESIGN AND PBR AUTHORIZATION REQUEST

PPG Garfield Avenue Group Sites
Jersey City, New Jersey

Program Interest #G000008791

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Date:
June 2017

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# 1 INTRODUCTION AND IRM OVERVIEW

On behalf of PPG, Arcadis U.S., Inc. (Arcadis) prepared this *Groundwater Interim Remedial Measure (IRM): Phase I Design and Permit-By-Rule (PBR) Authorization Request* (Design) for the Garfield Avenue Group Sites located in Jersey City, New Jersey (the site, **Figure 1**).

In order to expedite the treatment of groundwater associated with the portion of the Garfield Avenue Group Sites impacted with total and hexavalent chromium (Cr and Cr[VI]), an IRM approach has been developed consistent with the December 2016 technical memorandum titled, *GW-050: Concepts for Groundwater Interim Remedial Measures for Garfield Avenue Group Sites, Jersey City, New Jersey* (AECOM 2016) and subsequent discussions with the New Jersey Department of Environmental Protection (NJDEP) on May 18, 2017 and May 31, 2017. The envisioned IRM Program will be implemented in phases, with each phase representing a manageable portion of the affected area. The phases will be implemented successively to test the technical approach and allow for continuous optimization of the process with the details of each phase beyond the first dependent on what is observed in the prior phase. The IRM Program will focus primarily on the intermediate and deep water-bearing zones where source removal has been completed and where elevated Cr(VI) is present in the groundwater. In the case of Phase I, however, the IRM Program will also include a small area containing Cr in the shallow water-bearing zone.

Phase I of the IRM, the subject of this Design and PBR Authorization Request, will be implemented at Site 114, which is located at 900 Garfield Avenue in Jersey City, New Jersey (**Figure 2**). The proposed design for Phase I, as described herein, has been configured as follows:

- Treatment will occur in both the northern and southern portions of Site 114.
- In the northern portion of Site 114, groundwater will be recovered from the areas of highest total Cr and Cr(VI) concentrations. This provides direct treatment of those areas by removing Cr, resulting in less overall Cr in the subsurface. The recovered water will be treated using the existing water treatment plant so that it is suitable for re-injection.
- The treated water will be amended with substrates to provide a degradable source of organic carbon. It will be amended prior to reinjection in the southern portion of Site 114, where concentrations of Cr are lower and more amenable to rapid bioremediation. The organic carbon will stimulate the in situ biological reduction of Cr(VI) to trivalent Cr (Cr[III]) and subsequent precipitation and fixation of Cr within the aquifer matrix as an in situ anaerobic bioprecipitation (ISAB) approach.
- The extraction/injection dynamics will help maintain the hydraulic balance inside the sheet pile enclosure around Site 114 and may also support flushing of Cr mass toward the extraction wells to speed up the reduction of Cr concentrations in the hot spots.

This design will treat the southern portion of Site 114 using ISAB and establish conditions more conducive to rapid and successful ISAB of Cr in the northern part of Site 114, which would be envisioned for the subsequent phase of the IRM. Collectively, this establishes a phasing plan for the IRM Program that will enhance the technical success of the multiple phases to achieve the most progress in the shortest timeframe and allow continuous optimization of the treatment process.

## 1.1 IRM Objectives

Active treatment performed during the phased IRM Program is envisioned to be completed over an aggressive 3-year timeframe that includes approximately 1 year of active treatment per phase. Each active treatment phase would then be followed by approximately 2 years of post-treatment monitoring. The objectives of the Phase I program are to achieve the following:

- Meaningful reductions of total Cr concentrations in groundwater:
  - In the northern portion of Site 114, reduction of Cr(VI) and total Cr from levels currently above 1,000 milligrams per liter (mg/L) via groundwater recovery to make the area more suitable for ISAB in a future IRM phase.
  - In the southern portion of Site 114, creation of an anaerobic reactive zone to support ISAB reduction of both Cr(VI) and total Cr.
  - Achieve the same within a localized area of shallow groundwater in the northern portion of Site 114.
- Document post-treatment trends showing continuing attenuation/reduction of total Cr toward the Groundwater Quality Standards (GWQS).
- Capture site-specific information on the system operation to support subsequent IRM phases.

## 1.2 Regulatory and Permitting Considerations

Because it involves injections, Phase I of the IRM will require the preparation of a New Jersey Pollutant Discharge Elimination System (NJPDES) Discharge to Groundwater (DGW) PBR Authorization Request. Pursuant to the NJPDES rules (N.J.A.C. 7:14A-7.5 and 8.5) and Technical Requirements for Site Remediation (N.J.A.C. 7:26E-5.6), this PBR Authorization Request Form is provided along with this Design document, and the detailed design describing the DGW activities are provided in this Design document.

In addition, because the DGW PBR involves operation beyond 180 days, a 45-day public notice is also required prior to the start of the groundwater discharge in accordance with 7:26E-5.6 (c)1-4. A draft notice is provided as **Appendix A**. Proof of publication will be provided to the NJDEP within 15 days after the notice is published.

Because the design also involves the withdrawal/removal of groundwater, either a Water Use Registration (WUR) or Water Allocation Permit (WAP) are required by the NJDEP Division of Water Supply (DWS). PPG currently maintains a WUR for the site (WUR100001) associated with the ongoing excavation dewatering efforts. The current WUR covers PPG Site 114 with an upper limit of total water from all diversion sources of 3.1 million gallons per month. The design for Phase I of the IRM relies on balancing the IRM-related groundwater extraction with the excavation dewatering extraction needs, such that the total dewatering will stay within the approved volumes of the current permit. The existing WUR (WUR100001) permit will be updated with the additional wells proposed for extraction purposes during the IRM, consistent with previous modifications during excavation dewatering activities.

The balance of this document provides the relevant technical background followed by the detailed design (and basis), operation, and monitoring plan for Phase I of the IRM.

# 2 TECHNICAL BACKGROUND

This section provides a brief summary of pertinent site background information, remediation history, site geology and hydrogeology, fate and transport of Cr in groundwater, and discussion of Cr treatment technologies that have been evaluated for the site. This represents the baseline information used in the IRM design.

## 2.1 Site Use, Remediation History, and Future Site Redevelopment Plans

In 1954, PPG acquired the 16.6-acre property from Natural Products Refining Company and processed chromite ore until 1963. In 1964, the plant was sold, and by 1976, chromite ore processing at the site had ceased. During the chromite ore processing operation, chromate chemical production waste (CCPW) was generated as a by-product from the production of sodium bichromate, including Chromite Ore Processing Residue (COPR), green-gray mud, and fill mixed with COPR or green-gray mud. Some of it was used as fill around the site. These materials served as an existing source of Cr impacts observed in soil and groundwater at the site.

In 1990, PPG and the NJDEP entered into an Administrative Consent Order (ACO) to investigate and remediate locations where CCPW or CCPW-impacted materials related to former PPG operations may be present. On June 26, 2009, NJDEP, PPG, and the City of Jersey City entered into a Partial Consent Judgment Concerning the PPG Sites, also referred to as the Judicial Consent Order (JCO), with the purpose of assessing the groundwater and sources of contamination at these sites as expeditiously as possible. The goal of the JCO was to complete the investigation and soil remediation activities at the PPG sites within 5 years. The selected approach for Cr-impacted soil is excavation and off-site disposal. Soil remediation at Site 114 was completed between July 2010 and January 2015. The final groundwater remedy is currently being evaluated, but this IRM is intended to advance groundwater treatment throughout all of Site 114 prior to final remedy selection.

The site is enclosed in steel sheet piling with internal shoring that bisects the site into east and west portions (**Figure 2**). The sheet pile is installed to variable depths along its length based on the site geology, with the majority of sheet pile section separating the western and eastern areas of Site 114 installed to approximately 55 feet below ground surface (bgs). Currently, the site is completely enclosed by a security fence with a main entrance gate at the intersection of Carteret Avenue and Halladay Street. A New Jersey Transit Rail Line bounds the site to the north, and a residential neighborhood is located to the west across Garfield Avenue. The southern and eastern boundary of the site is surrounded by light industrial and commercial areas near the New Jersey Turnpike Extension (Interstate 78). The eastern side of the site is the location of a former manufactured gas plant (MGP). Remediation of the MGP-impacted soils has been completed. The primary approach for soils impacted with MGP is excavation and off-site disposal.

The site is currently vacant, and remediation activities, including excavation of source mass, have been conducted at the site. The site and a few surrounding sites have been planned to be redeveloped into a multi-block retail and residential complex by the City of Jersey City and the Jersey City Redevelopment

Agency. The redevelopment will be implemented as a phased approach while the groundwater remediation is being conducted at the site.

## 2.2 Chromium Treatment Pilot Testing

In situ treatment of Cr(VI) is a well-developed technology (United States Environmental Protection Agency [USEPA] 2000), which may be implemented via biologically mediated precipitation and chemical reduction processes. Although biological and chemical treatment mechanisms differ, both treatment processes are designed to reductively precipitate and permanently fix/immobilize the Cr in the aquifer, reduce Cr concentrations in groundwater to achieve treatment goals, and support long-term treatment permanence.

Pilot scale testing was completed to evaluate the feasibility of both ISAB and in situ chemical reduction (ISCR) technologies for treatment of Cr-impacted groundwater and saturated soil at the site per the *Technical Execution Plan: Pilot Study for In Situ Treatment of Chromium Impacted Groundwater Using Reduced Iron/Free Sulfide Injections and Bioprecipitation* (AECOM 2013). These tests provided information relative to the anticipated Cr treatment performance, reagent longevity and utilization, and yielded information pertaining to fluid injection and transport within shallow and intermediate water-bearing zone geologies. The implementation and findings from these tests were used for developing the IRM remedial program and are summarized in the following sections.

### 2.2.1 In Situ Anaerobic Bioprecipitation Pilot Testing

ISAB is an established remedial technology for the treatment of groundwater. This technology employs periodic delivery of degradable organic carbon substrates, such as molasses, into the contaminated groundwater system to stimulate the native microorganisms and promote the development of an in situ reaction zone (IRZ). Within the IRZ, fermentation of the organic carbon substrate promotes development of iron- and sulfate-reducing groundwater conditions that are favorable for the reduction of Cr(VI). Under these conditions, Cr(VI) will be reduced to Cr[III] through reactions with multiple biologically-generated reductants or via direct anaerobic respiration with Cr(VI) serving as the terminal electron acceptor. Specifically, Cr(VI) will be reduced to form less soluble Cr(III)-hydroxide via the following three major reduction mechanisms:

- Direct anaerobic respiration with Cr(VI) serving as the terminal electron acceptor (e.g., enzymatic extracellular reduction and intracellular reduction [Zhu et al. 2008]).
- Reduction by sulfide (hydrogen sulfide [$H_2S$], hydrosulfide [$HS^-$]) and ferrous iron (Fe[II]). Under reducing conditions, sulfide and ferrous iron (Fe[ll]) will be produced from reduction of naturally occurring sulfate and iron.
- Formation of an iron-Cr hydroxide complex that is less soluble and more stable than pure chromium hydroxide (Cr[OH]3) (Sass and Rai 1987; Eary and Rai 1988).

The reduction of Cr(VI) to Cr(III) provides three clear benefits from a treatment perspective. First, Cr(III) is less toxic and, therefore, has higher permissible environmental concentrations. Second, Cr(III) is less soluble under site groundwater conditions and may be immobilized in the form of a hydroxide mineral that can be incorporated in a matrix of carbonate, sulfide, and other precipitates generated during the

treatment process. Finally, insoluble Cr(III) phases are resistant to re-oxidation to Cr(VI) phases under soil and groundwater conditions of the site. These factors combine to make Cr(VI) treatment via in situ anaerobic bioprecipitation an attractive remedial technology at the site.

A pilot test was completed by injection of dilute molasses solution, as an organic carbon source, into the shallow and intermediate water-bearing zone to evaluate ISAB as a technology to treat Cr(VI) in groundwater and saturated soil in an area at the northwestern part of Site 114 (**Figure 2**). This ISAB pilot test was completed per a PBR authorization and a modified PBR approved by the NJDEP on January 28 and August 12, 2014, respectively.

The results of the ISAB pilot test demonstrate that complete treatment of Cr(VI) impacts was achieved in soil and groundwater at the site using this technology. Cr(VI) concentrations were reduced below the detection limit at multiple monitoring locations through the end of the 12-month monitoring period, demonstrating the stability of the treatment.

ISAB injections were successful in stimulating the development of highly-reducing groundwater conditions. The treatment exceeded the goals of 90% reduction in Cr(VI) in groundwater and the NJDEP Non-Residential Direct Contact Soil Cleanup Criteria (NRDCSCC) of 20 milligrams per kilogram (mg/kg) in soils where organic carbon distribution was achieved. When compared to the baseline levels, rapid reduction of Cr(VI) concentrations up to 5 orders of magnitude in groundwater and 3-to-4 orders of magnitude in soil were observed in the reactive zone where organic carbon was effectively delivered. Elevated organic carbon concentrations and the established reducing conditions persisted through the end of the performance monitoring period. In addition, successful treatment in groundwater was also achieved in the anoxic fringe, where the reducing environment favorable for Cr(VI) reduction was established and in the absence of clear evidence of organic carbon delivery.

Details of the implementation and results of the ISAB pilot test are included in *The Groundwater Bioprecipitation Pilot Test Completion Report* (Arcadis 2017).

### 2.2.2 In Situ Chemical Reduction Pilot Testing

In addition to testing the biological treatment option, an ISCR pilot test was conducted to evaluate the applicability of abiotic treatment for Cr(VI) in groundwater and saturated soil at the site. This ISCR pilot test was completed per a PBR authorization approved by the NJDEP on June 2, 2015.

When compared to biological treatment, the abiotic process (chemical reduction) is implemented by introducing a reductant to chemically reduce Cr(VI) to less soluble Cr(III), which will geochemically bind onto soil surfaces in the target groundwater treatment zone (USEPA 2000). This is achieved by the delivery of the chemical reductant into the subsurface, which facilitates abiotic Cr removal similar to those described in Section 2.2.1 via conversion of Cr(VI) to Cr(III) and subsequent precipitation as either $Cr(OH)_3$ or as iron-Cr hydroxide complexes.

During the ISCR pilot test, two chemical reductants, FerroBlack®-H and calcium polysulfide (CaSx), were tested to assess the viability of ISCR at the site. Specifically,

- FerroBlack®-H was delivered into the shallow water-bearing zone of the IRM #1 area via multiple Geoprobe® direct push points and temporary wells and into the intermediate water-bearing zone of the Phase 1C area via one existing well.

- CaSx (along with sodium bicarbonate) was delivered into the intermediate water-bearing zone of the IRM #1 area via multiple injection wells.

The pilot test performance monitoring data suggested that Cr(VI) and total Cr concentrations were reduced by greater than 90% and 75%, respectively, when compared to the baseline levels. In addition, an approximately 50% reduction of Cr(VI) and total Cr concentrations in groundwater were achieved in an area where the injection of the reagent was not fully completed, when compared to the baseline levels. Cr(VI) concentrations in saturated soil were also reduced by greater than 50% of the baseline levels or remained below the NJDEP NRDCSCC of 20 mg/kg.

Overall, based on the results of this pilot test, the ISCR approach was effective and remains a viable option for Cr(VI) treatment, in addition to ISAB technology for the site. Details of the implementation and results of the pilot test are included in *The Groundwater Chemical Reduction Pilot Study Completion Report* (AECOM 2017).

### 2.2.3 Implication for IRM Design

The pilot tests were completed to evaluate the use of the ISAB and ISCR as options to address elevated Cr(VI) concentrations present in the site's groundwater. The field-scale organic carbon substrate and chemical reductant injection and performance monitoring were conducted to demonstrate the effectiveness of the techniques. The data collected during these tests have been used to support the design of Phase I of the IRM data.

The results of performance monitoring of the ISAB and ISCR pilot tests suggest that complete treatment of Cr(VI) impacts were achieved in soil and groundwater at the site using both technologies. Specifically, the test results demonstrated the following:

- Both ISAB and ISCR technologies demonstrated the capability for rapid, effective, and permanent (at least 1-year post reagent injection) Cr treatment.
- Elevated organic carbon concentrations or chemical reductant and the established reducing conditions persisted through the end of the performance monitoring period (12 months), which suggests treatment effectiveness may last for an extended period without additional reagent amendment.
- Injections were able to achieve distribution of reagent within the target footprint within the testing period. Where ISAB injection wells were used, average injection rates ranged between 0.5 and 1 gallon per minute (gpm). The flow rate observed in the intermediate water-bearing zone was lower than that observed in the shallow zone, which was attributed to the presence of finer-grained soils in the upper intermediate zone and the 10-foot injection well screens employed. To improve injectability during Phase I, increased screen lengths have been considered (20 – 40 feet) to allow broader access to intervals containing Cr and sufficient permeability to achieve distribution. Further, increased flow rates are also assumed due to the increased permeability of intermediate zone soils in the southern area of Site 114. It has been assumed that injection flow rates during Phase I will be 1 gpm based on these additional considerations and due to the hydraulic benefits provided by groundwater recirculation.

- Injection limitations during the ISAB pilot test were observed related to the fermentation of organic carbon and generation of gases within the subsurface, following sustained delivery of carbon substrate over extended timeframes. During the ISCR testing, the solid clogging of screens and surfacing under pressurized injection were observed related to the viscous nature of the blended FerroBlack©-H particulate and water mixture. These observations have been considered in development of the adaptive Phase I operational program, with adjustment of operating well locations, injection/extraction flow rates, substrate dosing, periodic well redevelopment, and supplemental fouling mitigation techniques incorporated into the existing treatment system.
- Where groundwater pH was high, the ISAB pilot test was successful in moderating pH to a circumneutral range (approximately pH 7 S.U.) which is advantageous for enhancing the long-term stability of precipitated Cr(III).

The evaluation of pilot test results (e.g., mobile porosities, injection flow rates and pressures, and reagent loading) provided design parameters for Phase I of the IRM. These design parameters provide a starting point for the well-based injection and extraction designs discussed in Sections 3 and 5 of this document.

## 2.3 Site Geology and Hydrology

The site is located on the Jersey City peninsula approximately midway between the Passaic River and the Hackensack River junction to the west (approximately 1.8 miles) and the upper bay/mouth of the Hudson River to the east (approximately 1.6 miles). Site observations from soil logs are consistent with the regional geologic mapping and include approximately 16 feet of poorly sorted fill materials over organic rich meadow mat. The meadow mat occurs throughout the majority of the site and marks the transition from the shallow fill aquifer to underlying intermediate and deep water-bearing zones.

The hydrogeologic units present at the site have been historically classified as the shallow water-bearing zone (soils and groundwater above the meadow mat), the intermediate water-bearing zone (soils and groundwater below the meadow mat to approximate depths of 37 feet bgs), and the deep water-bearing zone (soil and groundwater between 37 to 65 feet bgs). The presence and thickness of these units varies based on the relative depth to bedrock, which varies across Site 114. While not viewed as a separate hydrogeologic unit, the meadow mat that separates the shallow and intermediate water-bearing zones represents a semi-confining layer for the intermediate water-bearing zone (where present).

### 2.3.1 Shallow Water-Bearing Zone

The shallow water-bearing zone is classified as soils and groundwater above the meadow mat and is present to approximately 15 feet bgs. The meadow mat is encountered at Site 114 at elevations of 0 to -5 feet (North American Vertical Datum of 1988). The shallow fill has been excavated to a large extent as part of the soil and groundwater remediation in the shallow water-bearing zone (completed at Site 114). A clean, uniform dense-graded aggregate (DGA) was backfilled to grade and was, in some areas, complemented by a capillary cap to limit recharge and flooding. In many areas of Site 114, the backfill was amended with FerroBlack®-H to prevent the clean fill from being re-contaminated with Cr-containing groundwater from areas in which Cr remains elevated. The shallow aquifer depth to groundwater ranges from approximately 1 to 8.6 feet bgs. Current and future horizontal shallow groundwater flow is limited by the sheet pile walls, and vertical flow is limited by the meadow mat.

The meadow mat consists of silt and clay with varying amounts of organic materials; however, in some places, the organic content is low or absent. The thickness of the meadow mat varies from less than 1 foot to approximately 6 feet and exhibits reduced hydraulic conductivity compared to the shallow fill and underlying intermediate aquifer.

Shallow aquifer groundwater elevations were depressed during excavation activities and currently are being recharged by precipitation. There is negligible groundwater flow due to sheet pile controls. Shallow groundwater within the sheet pile walls can only escape through sheet pile leakage and downward vertical transport through the meadow mat or in areas where the meadow mat is absent.

### 2.3.2 Intermediate Water-Bearing Zone

The intermediate water-bearing zone at Site 114 is classified as soils and groundwater below the meadow mat and across the GAG sites is encountered to terminal depth elevation of approximately -50 feet. Within Site 114, intermediate soils are encountered at depth elevations between -20 and -30 feet. The intermediate aquifer consists of silty sand or fine-to-coarse sands with varying amounts of silt and gravel. The top of the granular soils is encountered below the meadow mat, with an observed vertical thickness of 5 to 20 feet.

The hydraulic gradient in the intermediate aquifer is east-southeast or southeast and ranges from 0.004 feet per foot (ft/ft) to 0.002 ft/ft (March 2017 data). The estimated hydraulic conductivity in the intermediate water-bearing zone is up to approximately 5 feet per day (ft/day), and estimated seepage velocity is approximately 0.02 to 0.04 ft/day. The flow is likely to be affected by leaking sheet pile and recharge associated with the nearby diabase contact parallel to Garfield Avenue. There is an observed upward hydraulic gradient from the lower permeable, deeper aquifer to the intermediate aquifer, further supporting the potential for higher degrees of volumetric flux in the intermediate aquifer.

### 2.3.3 Deep Water-Bearing Zone

The deep water-bearing zone is classified as soils and groundwater below the intermediate zone and to the top of either regional till or bedrock. The deep water-bearing zone is encountered at the GAG sites to a terminal depth elevation of approximately -65 feet, and within Site 114 to a terminal depth elevation of approximately -50 feet. The deep aquifer consists of varying mixes of sand, silt, and clay. The deep aquifer has been characterized in vertical aquifer profiling (VAP) logs and soil borings as containing variable relative hydraulic conductivities that reflect changes in granular and fine-grained sediments. The deep aquifer exhibits relative hydraulic conductivities of up to approximately 5 ft/day.

Depending on location, the deep aquifer hydraulic gradient is east, east-southeast, and southeasterly and is about 0.005 ft/ft. The VAP logs indicate that the hydraulic conductivity of the deeper aquifer is variable and reflects the variable proportions of fine soil materials. Therefore, the seepage velocities in the deep aquifer may range about an order of magnitude from 0.004 to 0.04 ft/day.

Groundwater elevation data collected from shallow, intermediate, and deep water-bearing zones in December 2016 and the iso-potentiometric contour maps developed with these data are shown on **Figure 3.**

### 2.3.4 Aquifer Testing Results

To evaluate achievable groundwater extraction rates and water table drawdown within the vicinity of a pumping well, a pump test was completed by AECOM in the northern area of Site 114, east of the pilot test area (AECOM 2015).

A step drawdown pump test, a 3-day constant rate pump test, and a recovery test (to monitor the time taken for water levels to resume to original conditions observed prior to pumping) were completed between November 4 and November 17, 2014. These tests were conducted by extracting groundwater from the intermediate water-bearing zone well 114-MC-EW-103 (**Figure 2**). During the pumping test, a sustained groundwater pumping rate of approximately 3 gpm was achieved in 114-MC-EW103 over a period of 72 hours. Drawdowns at the monitoring wells were found to range between 25 feet (at the pumping well) to 4 feet (at an intermediate well located 27 feet away). No measurable water level drawdowns were observed at monitoring wells located more than 27 feet from the extraction well.

Hydraulic conductivity estimates from both the pumping and recovery tests were found to range from 1 to 5 ft/day for the intermediate water-bearing zone. These estimates are consistent with representative values for silt and loess sediments, which were the main soil types observed across the well screens.

The observed sustainable pumping rate of approximately 3 gpm has been used for the groundwater extraction rate design and as the basis for the groundwater model development for Phase I of the IRM, as discussed in Section 3.1.1. These data will be further verified and refined during the extraction and injection testing as the part of the confirmatory data collection effort, as discussed in Section 2.5.2.

## 2.4 Nature and Extent of Chromium Impacts

### 2.4.1 Chromium in Groundwater

The primary site contaminant of concern (COC) in groundwater is Cr. Total Cr and Cr(VI) have been detected in shallow, intermediate, and deep groundwater water-bearing zones at the site at concentrations exceeding the GWQS of 70 micrograms per liter (µg/L). Recent total Cr and Cr(VI) concentrations and iso-concentration contour maps for the shallow, intermediate, and deep water-bearing zones are presented on **Figures 4** through **9**, respectively. As shown on **Figures 4** through **9**, both total Cr and Cr(VI) are primarily present in the intermediate water-bearing zone with a reduced footprint and magnitude observed in the deep water-bearing zone at Site 114. As Cr within the shallow water-bearing zone has been excavated, concentrations above the GWQS were only observed at a few localized areas at the site. Groundwater within the intermediate and deep water-bearing zones at Site 114 is confined by the existing sheet pile enclosures that reduce the likelihood of Cr transport in groundwater. The historical total Cr and Cr(VI) data in groundwater are provided in **Appendix B**.

*Shallow Water-Bearing Zone*

The concentrations of Cr in the shallow water-bearing zone prior to the excavation work ranged from less than 1,000 micrograms per liter (µg/L) to 16,000,000 µg/L. The concentrations of both total Cr and Cr(VI) and the areas with concentrations exceeding the GWQS of 70 µg/L for total Cr have been reduced as a result of shallow water-bearing zone soil excavation and treatment of backfilled FerroBlack®-H material. The current distribution and concentrations of total Cr and Cr(VI) in the shallow water-bearing zone are

shown on **Figures 4** and **5**, respectively. As shown on **Figures 4** and **5**, total Cr and Cr(VI) concentrations have been reduced below the 70 µg/L in most areas at Site 114, except for the pilot test area located in the northwestern portion of Site 114 and in localized areas surrounding monitoring wells 114-P2B1-MW102S, 114-P1B-MW102S, 114-P2A-MW104S, and 114-MW25A. In addition, total Cr and Cr(VI) concentrations remain elevated along the light rail line, beneath the Carteret Avenue, and at a few localized areas outside of Site 114. Except for the pilot test area, areas within Site 114 that contain total Cr and Cr(VI) above the GWQS are in areas backfilled with FerroBlack®-H material. Continued Cr treatment in the presence of FerroBlack®-H material in these areas is expected to continue over time. Residual Cr impacts in the pilot test area, where no FerroBlack®-H is present, will be treated with supplemental IRM polishing treatment as discussed in Section 4.

*Intermediate Water-Bearing Zone*

Cr concentrations at intermediate water-bearing zone monitoring wells, between 2015 and 2016, ranged from less than 1,000 µg/L to 1,000,000 µg/L, except for a total Cr concentration of 1,320,000 µg/L detected at 114-P2B1-MW101I in June 2016. VAP sampling activities completed in May and June 2015 indicate that total Cr and Cr(VI) concentrations above 1,000,000 µg/L were present in the same area (northeastern portion of Site 114). Total Cr and Cr(VI) concentrations were detected as high as 5,720,000 µg/L and 5,370,000 µg/L, respectively, at VAP location 114-VAP-6. It is anticipated that these concentrations represent the baseline for IRM Design.

The current distribution and concentrations of total Cr and Cr(VI) in the intermediate water-bearing zone are shown on **Figures 6** and **7**, respectively. As shown on **Figures 6** and **7**, the Cr concentrations and the footprint of the Cr-impacted area are stable and well-aligned with the sheet pile enclosures installed around the site boundaries. These observations suggest that the sheet pile enclosures effectively limit the migration of Cr off site.

In the northwestern portion of the site, where the ISAB and ISCR pilot tests were completed, total Cr and Cr(VI) concentrations have been reduced below the 70 µg/L GWQS for total Cr (**Figures 6** and **7**), where reagent distribution and/or geochemical reducing conditions were achieved.

*Deep Water-Bearing Zone*

The distribution of total Cr and Cr (VI) in the deep water-bearing zone are observed across a smaller spatial footprint and are lower in concentration when compared to the extent of Cr in the intermediate water-bearing zone. Cr concentrations exceeding the 70 µg/L GWQS for total Cr were detected along the center of Site 114 at MW6C in March 2016, with the highest concentrations of total Cr and Cr(VI) detected at 9,890 µg/L and 10,400 µg/L, respectively. The current distribution and concentrations of total Cr and Cr(VI) in the deep water-bearing zone are shown on **Figures 8** and **9**, respectively.

### 2.4.2 Chromium in the Soil

Cr impacts in shallow water-bearing zone soils have been removed via excavation, and soil concentrations in exceedance of the NRDCSCC have been identified within the intermediate and deep water-bearing zones. These exceedances are attributed to the high dissolved-phase concentrations that result in an elevated saturated soil sample response. As soil Cr impacts in the intermediate and deep water-bearing zones become in equilibrium with groundwater, soil impacts are expected to be treated via the groundwater IRM Program. The historical total Cr and Cr(VI) data in soil are provided in **Appendix B**.

### 2.4.3 Other Contaminants

Additional contaminants historically detected above the applicable GWQS values at Site 114 include Target Analyte List (TAL) metals, cyanide, petroleum hydrocarbon compounds, volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs) associated with former MGP operations. While metals have been detected across Site 114, VOCs and SVOCs were primarily observed at localized areas in the eastern portion of the site (e.g., 114-MW20B). Based on the most recent sampling events (2015 or 2016), the following COCs were detected above the GWQS values:

- Metals – aluminum, antimony, arsenic, beryllium, cadmium, copper, iron, lead, manganese, nickel, selenium, silver, sodium, thallium, and vanadium
- VOCs – benzene, ethylbenzene, and trichloroethene
- SVOCs – bis(2-ethylhexyl)phthalate, benzo(b)fluoranthene, benzo(a)anthracene, and benzo(a)pyrene

While the concentrations of these COCs were lower compared to Cr and are not the primary targets of the IRM Program, these additional COCs have been considered as part of the IRM Program development and will be addressed via IRM treatment operations. These contaminants are expected to be treated with the existing treatment plant (e.g., via metal precipitation, granular activated carbon [GAC] adsorption, and filtration) or may be otherwise utilized as supplemental organic carbon substrates for ISAB or via natural biological degradation (e.g., VOCs and SVOCs). The historical data for these additional contaminants are provided in **Appendix B**, with a general summary of the most notable COCs observed in the intermediate and deep water-bearing zones included below.

- The average concentration of arsenic was 112.7 µg/L among the detected concentrations in the intermediate and deep water-bearing zone monitoring wells in 2016; while the maximum detection was 484 µg/L in GPS-IW4I in April 2016, most detections were below 300 µg/L in 2016.
- The average concentration of lead was 16.1 µg/L among the detected concentrations in the intermediate and deep water-bearing zone monitoring wells in 2016; while the maximum detection was 156 µg/L in 114-P2B4-MW101I in March 2016, most detections were below 30 µg/L in 2016.
- The average concentration of copper was 121.4 µg/L among the detected concentrations in the intermediate and deep water-bearing zone monitoring wells in 2016; while the maximum detection was 2,290 µg/L in 114-P2B1-MW101I in March 2016, most detections were below 500 µg/L in 2016.
- The average concentration of manganese was 1,793 µg/L among the detected concentrations in the intermediate and deep water-bearing zone monitoring wells in 2016; while the maximum detection was 34,000 µg/L in 114-P2A-MW102I in December 2016, most detections were below 6,000 µg/L in 2016.
- The average concentration of nickel was 62.9 µg/L among the detected concentrations in the intermediate and deep water-bearing zone monitoring wells in 2016; while the maximum detection was 945 µg/L in 114-P2B1-MW101I in June 2016, most detections were below 300 µg/L in 2016.
- The average concentration of benzene was 318.5 µg/L among the detected concentrations in the intermediate and deep water-bearing zone monitoring wells in 2015; while the maximum detection was 1,170 µg/L in 114-MW20B in October 2015, most detections were below 70 µg/L in 2015.

- The average concentration of naphthalene was 459.9 µg/L among the detected concentrations in the intermediate and deep water-bearing zone monitoring wells in 2015. While the maximum detection was 1,070 µg/L in 114-MW20B in October 2015, most detections were below 12 µg/L in 2015.

Except for manganese, the maximum concentrations of all above COCs are below the permitted effluent limitations for the water treatment system. As detailed in Section 3.1.3, operation of the water treatment system has been effective in reducing these concentrations prior to historical discharge, and ongoing monitoring of these COCs to demonstrate that sufficient treatment is achieved for reinjection use will be conducted over the course of the IRM.

## 2.5 Confirmatory Data Collection

Pilot test results and historical site data have provided information to support development of the Phase I IRM Program. To further refine the approach and ensure its overall success, the collection of additional soil and hydrogeologic data are planned as part of IRM implementation to confirm remedial well design specifications and to improve the understanding of heterogeneity of geological formation and variation of hydrogeological behavior across the IRM Phase I area. As discussed in Sections 2.2 and 2.3, previously completed pumping test and injection pilot tests performed within the northwestern portion of Site 114 demonstrated that sustainable extraction rates of approximately 3 gpm (Section 2.3.4) and injection rates of up to approximately 1 gpm (Section 2.2.3) could be achieved.

VAP data collected during 2015 demonstrate that the relative permeability of soil materials present within the intermediate and deep water-bearing zones are variable across the site and suggest that variability in achievable injection and extraction flow rates are anticipated as part of IRM implementation. From a design standpoint, confirming the achievable flow rates for each of the areas targeted during IRM Phase I operation is considered a critical step to optimize the remedial well network and overall IRM performance. As treatment performance and IRM Phase I operational timeframe requires introduction of sufficient volumes of organic carbon and treated groundwater into the subsurface, verifying the existing understanding of the hydrogeological information is critical to refine the design and to ensure overall IRM Phase I success.

While it is critical to design refinement and eventual IRM Phase I remedial outcomes, collection of this hydraulic information is not required for PBR and IRM Phase I Work Plan approval. Therefore, Arcadis recommends performing the confirmatory data collection activities following the submittal of the PBR Authorization request to expedite IRM Phase I implementation. Developed to enable adaptive modification or alteration over the course of the Phase I program, this IRM design document acknowledges the collection of supplemental information during procurement and implementation phases for updating the dynamic recirculation simulations and to adjust the well network, as necessary.

Arcadis' proposed confirmatory data collection activities include the following primary elements:

- Installation of four multi-purpose (injection and extraction) Phase I remediation wells for groundwater extraction and clean water injection tests to verify geological and contaminant distribution.
- Completion of groundwater extraction and clean water injection tests to verify sustainable extraction and injection rates at each of the four well locations to refine Phase I well design.

The updated hydraulic information collected via the above tests will be integrated into the dynamic groundwater recirculation flow and solute transport model to provide final specifications for the Phase I well network. As applicable, the total number of injection and extraction wells may be increased or decreased and well locations may be modified to account for observed flow rates.

The following summarizes the proposed Arcadis activities performed as part of this supplemental testing.

### 2.5.1 Well Installation and Construction Parameter Sampling

Four locations are proposed for test well installation and pre-design testing. Each of these locations are intended to be included as part of the IRM Phase I well network and will be designed to accommodate either injection or extraction functions. Two of these locations are proposed in the northeast portion of Site 114 (initially targeted for extraction during Phase I), and two will be positioned within the southwest and southeast, as shown on **Figure 10**. Two of the four new wells will be located in areas where existing monitoring wells are present and available for use in assessing extraction drawdown and injection hydraulics. Wells will be installed with well screen placement determined from historical information and drilling observations, with at least one of the two wells in each area encompassing the intermediate and deep water-bearing zones (or both, if applicable). The construction details of the proposed pre-design testing wells are included in **Table 1**.

Specifically, wells will be constructed as follows:

- Borings will be advanced using the hollow stem auger (HSA) drilling techniques or similar drilling technologies. During drilling, soil samples will be collected via split spoon sampling both from depth intervals to confirm the bottom of the meadow mat and from depth intervals targeted for well screen placement. Up to five split spoon samples will be collected from each drilling location.
- To support IRM Phase I well construction specifications, two soil samples will be collected from intervals within the screened interval at each new well for analysis of soil gradation (sieve and hydrometer analysis). Sample intervals will be selected to represent the fine and coarse portions of the intermediate and deeper aquifers. Field observations of soil properties will be used as a design basis for the test injection/extraction well screen and filter pack placement. Soil samples selected for laboratory physical properties testing, especially information related to the finer grained fraction, will be used as a conservative design basis for the Phase I injection and extraction wells.
- While detailed lithologic logging during drilling will be used to finalize the exact intervals for test well screen installation, it is assumed that intermediate water-bearing zone pre-design wells will be constructed with 4-inch stainless steel, 10-slot, 20-foot screens at approximate depths between 20 to 40 feet bgs.
- For pre-design purposes, it is assumed that two deep water-bearing zone wells will be constructed with 4-inch stainless steel, 10-slot, 20-foot screens between 45 to 65 feet bgs.
- Wells will be completed with schedule 40 polyvinyl chloride (PVC) risers and stickups approximately 2 to 3 feet above ground surface.
- The well construction design is based on the current understanding of contaminant distribution and hydrogeological characteristics in the intermediate and deep water-bearing zones and may be adjusted based on field observations. The annular space will be filled as follows:

- #0 filter sand extending from the bottom of the boring to 1 or 2 feet above the screen.
- Hydrated bentonite (1 foot).
- Neat Portland cement grout extending to 3 feet bgs.

For the intermediate depth test wells, the hydrated bentonite and neat Portland cement grout placement will be designed to limit pumping and injection-related hydraulic short circuiting between the shallow- and intermediate-depth aquifers. The well seal will be constructed at or below the bottom of the meadow mat or, in the absence of the meadow mat, below the fine-grained soils, if present. Other modifications may be made to the well construction specifications detailed above (e.g., filter pack selection, completion elevation) based on soil cutting and drilling observations.

Following installation and annulus curing, the wells will be developed using surge and pump techniques, including a double 4-inch surge block and a submersible pump capable of variable pumping rates from 0.5 to 5 gpm. The well development will include removing a minimum of three well volumes while observing field parameters, including temperature, specific conductance, pH, and turbidity. Initial groundwater drawdown and sustainable pumping rate information will be assessed during well development at variable flow rates of 33%, 67% and 100% of the max expected sustainable extraction rates (1 gpm, 2 gpm, and 3 gpm) to inform the pump rates associated with the pre-design step tests and long-term, sustained-rate pump tests.

### 2.5.2 Extraction and Injection Testing

Two of the four test well locations will be positioned with nearby monitoring wells to evaluate draw down. The existing monitoring wells are located at distances between approximately 20 to 80 feet away from the planned test wells. They correspond to one to two times the estimated saturated thickness of the intermediate or deep aquifers and are consistent with observed radius of influence drawdowns during the 2015 pump test (AECOM 2015).

The extraction and injection testing is intended to provide hydraulic data to support the final injection and extraction well network design, including the following:

- Hydraulic conductivity ranges and ability to extract and inject water to refine the number of wells required to successfully distribute carbon amendment within the desired timeframe.
- Ratio of extraction-to-injection flow rates and well numbers, expected to range from 1:1 to 1:3.
- Ability to limit hydraulic communication with the shallow aquifer.
- Presence of significant hydraulic conductivity gradient between the intermediate and deep aquifers that will inform design of injection/extraction well screen lengths;
- Water quality during extraction and volume of water to be handled by the treatment system.
- Representative geochemical parameters (e.g., dissolved iron and manganese) concentrations to assess potential fouling concerns during Phase I.

### 2.5.2.1 Step Pumping Test

Based on the known hydraulic conductivity ranging from 1 to 5 ft/day and the AECOM pump test (AECOM 2015), the maximum pumping rate at each well is expected to be approximately 3 gpm. The maximum pump rate will be further evaluated during the well development, as discussed in Section 2.5.1. Step pumping tests are most commonly run with three steps at 33%, 67%, and 100% of the anticipated maximum pumping rate of the well.

The procedure outlined below is in accordance with the requirements of the Arcadis Pumping Test Standard Operating Procedures included as (**Appendix C**). The first step is to operate the pump at a rate of approximately 1 gpm. Additional steps will be evaluated based on the response observed during the first step. Each step will be allowed to run for a maximum of 2 to 3 hours for a total maximum pumping time of 9 hours. Pumping will be set and maintained at constant rates and precisely measured using a manometer. Water generated during the step tests will be transferred to the existing treatment system for treatment at the site.

Following shutdown of the pumping well, recovery of the water level will be recorded until the water level recovers to within 90% of the original static condition or for a maximum of 2 hours. Pressure transducers will be set to collect water level data at 5 second intervals throughout the duration of the step pumping test.

Manual water level readings will be collected at the test well for backup and calibration of the pressure transducer data. Manual water level readings will be recorded at the pumping well at the following intervals for each step:

| Elapsed Time (minutes) | Interval Between Manual Measurements (minutes) |
|---|---|
| **0 to 5** | 1 |
| **5 to 15** | 2 |
| **15 to 60** | 5 |
| **60 to 120** | 10 |

Manual water level readings will also be collected from the monitoring wells as frequently as practical to provide a backup to the pressure transducer data. The plotted results of a step pumping test will be used to select the discharge rate for a follow-up constant rate pumping test.

### 2.5.2.2 Constant Rate Pumping Test

After the completion of the step pumping test, a constant rate pumping test will be completed at each test well for a duration of approximately 36 to 48 hours. The flow rate for the constant rate test will be selected based on the results of the step pumping test. The exact duration of the test will be determined by evaluating the drawdown curves. The goal of the testing would be to achieve a steady state pumping

condition at the selected pumping rate for a minimum period of 12 hours and determine the maximum pumping capacity of the intermediate and deep aquifer. Pumping rates will be selected so as not to expose or dewater the pumping well screen. Pressure transducers in the test well and surrounding monitoring wells will be set to record data at 10 second intervals. Additional manual readings will be collected at the pumping well and surrounding monitoring wells at the following frequency:

| Elapsed Time (minutes) | Interval Between Manual Measurements (minutes) |
|---|---|
| **0 to 5** | 1 |
| **5 to 15** | 2 |
| **15 to 60** | 5 |
| **60 to 120** | 10 |
| **120 to 240** | 30 |
| **240** to completion | 60 |

Pumping will be set and maintained at constant rates, and measured using a manometer. Water generated during the constant rate tests will be transferred to the existing treatment system for treatment at the site.

During the constant rate extraction test, total Cr, Cr(VI), and total iron samples will be collected at the beginning of the test, near the mid-point, and at the conclusion of the test.

#### 2.5.2.3 Constant Rate Injection Test

The injection tests will be conducted at constant rates for a duration of up to approximately 36 hours in the four test wells. The exact duration of the test will be determined by evaluating the groundwater elevation within the injection test well and associated monitoring wells. The goal of the testing will be to achieve a steady-state water level at the selected injection rate for an extended period of time and to determine the overall injection capacity of the intermediate and/or deep aquifer at each location. The injection rate will be selected based on the results of the pumping test and adjusted based on observed head rise, if appropriate. Water for the tests will be obtained from the on-site public water supply and will be conveyed in temporary above-grade piping to each test well.

The pressure transducer within the test well will be set to record data at 10 second intervals during the test. The pressure transducer within the test injection well should be isolated within a 1-inch stilling well consisting of PVC pipe lowered to several feet below the initial water table. This will eliminate the noise and turbulence associated with water cascading into the well. Injection rates will be set and maintained at constant rates and measured using a manometer.

In addition to the pressure transducer data, manual water level data will be collected at the test well for backup and to calibrate the pressure transducer data. Manual water level readings will be recorded at the injection well and surrounding monitoring wells at intervals consistent with the steady-state extraction test outlined above.

#### 2.5.2.4 Geochemical Testing

Each of the four pre-design testing wells will be sampled prior to the extraction and injection tests to analyse for multiple water quality parameters that will be used to develop the final design and operation of the groundwater treatment system. Sampling will be completed prior to extraction and injection testing to represent baseline aquifer conditions. A three-volume-purge methodology will be used as it will better reflect actual system influent conditions from the pumping extraction wells than other methods.

The sampling and analytical methods will follow NJDEP standards, and standard analytical and reporting times are assumed. The groundwater samples will be analysed at a New Jersey-certified laboratory for a suite of analyses that includes relevant groundwater contaminants and groundwater quality data. The analytical suite for each of the four testing wells will include the following:

- VOCs and SVOCs
- TAL metals (total and dissolved)
- Cr(VI) (total and dissolved)
- Sulfate
- Total organic carbon (TOC)
- Field parameters (pH, conductivity, dissolved oxygen [DO], turbidity, oxidation-reduction potential [ORP], etc.)

The groundwater analytical data will be used for selecting, sizing, and optimizing the necessary treatment process steps and chemical amendments for the treatment system operation, as described in Section 3.1.3. While historical operation of the water treatment system has demonstrated significant removal efficiency for Cr, VOCs, SVOCs, and other metals in groundwater, supplemental sampling from these locations will further inform system design requirements. This groundwater data will also be used to identify system, subsurface scaling, or fouling issues for the IRM Program operation and to determine the means to mitigate those issues.

# 3 PHASE I IRM DESIGN: INTERMEDIATE AND DEEP WATER-BEARING ZONES

Activities proposed as part of the IRM Phase I and summarized in this PBR request include the following:

- Implementation of ISAB to initiate and sustain biological treatment in the southern half of Site 114 while leveraging groundwater extraction within the northern part of Site 114 to remove Cr mass.
- Extraction and reinjection activities included as part of the Phase I IRM are designed to address intermediate and deep groundwater horizons, utilizing both biological degradation and physical extraction means.
- In conjunction with these activities, supplemental injection activities are being proposed for shallow water-bearing zone treatment to promote localized treatment in an area that contains residual Cr.

Each of these PBR elements are presented in the sections below.

## 3.1 IRM Design Basis and Infrastructure

The ISAB treatment program builds on successful results achieved during pilot testing activities. The IRM Phase I program will rely on an injectable organic carbon substrate (e.g., molasses, emulsified vegetable oil [EVO]) to establish reduced geochemical conditions and to stimulate the native microbial community to support reduction of Cr(VI) to Cr(III). As detailed in Section 2.2, this process is facilitated by several primary mechanisms that foster the precipitation and fixation of Cr(III) in aquifer soils. To achieve ISAB treatment within the southern area of Site 114, the IRM Program has been developed with a well network designed to allow sustained delivery of treated groundwater that has been amended with organic carbon into the subsurface. Groundwater extraction activities concurrent with ISAB reinjection will serve the following primary objectives:

- Provide a source of water for sustained ISAB injections.
- Maintain hydraulic conditions within the Site 114 sheet pile to limit mounding during sustained injection activities.
- Support removal of Cr(VI) concentrations from the northern portion of Site 114.

As demonstrated during the pilot test, the propagation of both organic carbon and reduced groundwater chemical species (e.g., ferrous iron, sulfide) through the subsurface collectively support Cr(VI) to Cr(III) reduction and precipitation (Arcadis 2017). To accomplish this, the proposed well network will be used adaptively over the course of operation in conjunction with systematic modification of extraction and reinjection flow rates, well configuration (i.e., extraction or injection), and organic carbon dosing. The recommended well network was developed based on incorporating existing site information into a groundwater and solute transport model (Section 3.1.1). This model was used to determine specifications for well spacing, vertical installation, and operational sequencing based on previously identified hydraulic information. These hydraulic parameters will be further verified and refined during confirmatory testing activities outlined in Section 2.5.2. The following sections present the modelling and design basis and the Phase I well network, water treatment, and conveyance infrastructure specifications.

### 3.1.1 Recirculation Flow and Solute Transport Modelling

Historical geologic and hydraulic information was utilized to develop an appropriate design well network capable of establishing a complete reactive zone within targeted intermediate and deep water-bearing zones over an initial 6-month period within the Phase I IRM treatment footprint. A groundwater flow and solute transport model was constructed for Site 114 to assess the necessary spacing, orientation, and operational sequencing of the Phase I well network (**Appendix D**). The modeling approach allowed verification of the combination of extraction and injection activities at Site 114 that avoid excessive hydraulic mounding within the sheet pile walls while achieving organic carbon distribution during the Phase I operational timeframe. Finally, the model serves as a tool for future optimization of the Phase I program based on additional groundwater extraction and injection information generated over the course of operation.

As detailed in **Appendix D**, MODFLOW was selected for the construction of the numerical groundwater flow model at the site. The model extents are limited to the Site 114 boundary that follows the perimeter sheet pile walls as they effectively hydraulically control the majority of the site. The model is composed of four vertical layers that discretely represent the shallow fill, meadow mat, intermediate, and deep aquifers. The base of the model represents the contact between the bottom of the deep aquifer and the underlying till and/or bedrock. Hydraulic parameters, such as hydraulic conductivity and recharge, were assigned within ranges of observed values based on site slug tests, aquifer tests, and literature values. Iterative remedy simulations were then conducted to evaluate the temporal change in heads during remedy operations. Once the groundwater flow model was constructed, solute transport modeling was performed using Modular 3-D Transport Model (MT3D) and MT3D Multi-Species (MT3DMS). The solute transport modeling was used to represent the development of the ISAB reactive zone based on carbon substrate injection simulations during the first 6 months of Phase I operations.

The groundwater flow and solute transport model were used to identify an IRM design consisting of 35 injection well and 7 extraction well positions. The injection wells are located on the southern half of Site 114 within the Phase I area. The southern well network includes variable sequencing that utilizes wells operated for injection purposes and wells that are shifted from extraction to injection purposes to control hydraulic mounding during different steps of the Phase I program. Dedicated Phase I extraction wells are located on the northern half of Site 114 and are located in areas of highest observed Cr concentrations to maximize mass removal.

Iterations of the site-specific injection and extraction flow rates and the Phase I well network indicated that a combined total injection and extraction rate of 17 gpm can achieve organic carbon distribution within the southern area of Site 114 during the first 6-month period. While this flow rate was acceptable for modelling purposes, it is anticipated that wells will behave differently based on unique geologic heterogeneities in different areas of the site. It is also assumed that, where achievable, injection and extraction rates will be increased to maximize the total quantity of groundwater extracted and injected within system capabilities (40 gpm) and up to permit specifications. Over the first 6 months of operation, the Phase I design entails initiation of injection activities within the southern end of Site 114, followed by gradual northward shifts in operating wells during three, 8-week cycles. Following this 6-month period, additional cycles are anticipated to replenish organic carbon substrates and address residual Cr concentrations.

The model developed for Phase I operations will be leveraged to review and refine remedial operations based on additional information obtained during hydrogeologic testing, hydraulic monitoring, and water quality monitoring during confirmatory testing activities, remedial well infrastructure installation, and Phase I operation. This information will enable use of the model as a predictive tool or to evaluate remedy performance, acknowledging that monitoring information will be used to demonstrate overall treatment extent and adapt remedial operations.

### 3.1.2 Extraction and Injection Well Design

The number and location of injection and extraction wells were determined based on groundwater flow modelling, the distribution of Cr in intermediate and deep water-bearing unit groundwater, and the site-specific geology. The model indicates that a total number of 35 injection well positions and 7 groundwater extraction well positions are necessary. Each position is assumed to entail discrete screened intervals in both the intermediate and deep water-bearing units. While this results in 70 total injection wells and 14 extraction wells, confirmatory testing activities performed in advance of the full-scale well network will provide increased hydraulic data resolution in each area of the site targeted for remediation during Phase I (Section 2.5). These data will be used to refine the overall understanding of differences in injection or extraction rates based on the variable hydrogeology and will enable more specific model refinement to verify that the proposed well network is appropriate to achieve the IRM objectives. The layout and vertical interval specifications for IRM Phase I extraction and injection wells are, therefore, considered to be a conceptual representation of the final network, with further refinements made following pre-design testing and in response to drilling observations during well installation. For PBR approval purposes, it is assumed that up to 100 total injection wells and 25 total extraction wells will be installed. The proposed IRM Phase I remedial well layout is shown on **Figure 10**, and the well construction details are included in **Table 1**. The final number of injection and extraction well locations will be finalized based on the following:

- Pre-design testing (including drilling and test well installations, soil gradation and hydrometer physical properties testing, and the hydraulic testing program).
- Inferences from the conceptual site model, including the updated Enhanced Visualization System (EVS) 3-D model.
- Field observations during the drilling of each injection and extraction well.

The conceptual design of the extraction and injection well completions are summarized on **Figure 11** and include the following:

- 6.25-inch inner diameter HSA drilling or using similar drilling technologies to targeted termination depth with 2 feet split spoon at selected depth intervals to confirm geology.
- 4-inch stainless steel screen (10-slot with #0 sand pack).
- Schedule 40 PVC riser to approximately 3 feet above ground or completed with flush mount well vaults.
- The wells will be finished with stick up mounts or completed with flush mount well vaults and insulated. Locking covers will be placed over each wellhead assembly.

During well completion, hydrated bentonite and grout will be used to seal the annulus to the surface. Borings from each well will be considered to ensure a competent seal with the meadow mat to eliminate hydraulic communication between the shallow and intermediate aquifers. While stick-up well construction is currently considered a part of the design, the option of using flush mount completions will be reviewed during the final wellhead and system conveyance infrastructure design. Final well completion determination will also account for surface elevation changes during regrading activities performed during site restoration activities. As applicable, protective bollards may also be installed to prevent well damage during the IRM.

For the purposes of this PBR, individual well screen lengths are proposed to be between 20 to 40 feet in length, which will be further refined based on results from the pre-design testing program, the soil lithology observed during drilling activities, the distribution of Cr, and the updated conceptual site model (CSM). To conceptually demonstrate this, a diagram showing the orientation of IRM Phase I remediation well screens with the Site 114 geology and Cr distribution is shown on **Figure 12**. The extraction well pumps will be set at the midpoint of the screened interval, and drawdown will be adjusted and controlled by readings from a pressure transducer installed at the top of the screened interval. This is intended to limit over pumping the extraction wells, to limit exposing the screen to air (and oxygen), and to control well fouling. Based on previous hydraulic testing, it is assumed that extraction rates will operate at 3 gpm. Where feasible, extraction rates will be increased based on the specific capacity of the aquifer at a given well location.

The injection wells will be equipped with a drop tube to approximately 2 feet below the seasonal low groundwater elevation to convey the injected recirculation water and carbon amendment to the saturated interval and thereby limit aeration of the injection water and bubble entrainment within the reinjection stream. Injection by drop tube also provides greater resilience for well fouling. Each active injection well will be equipped with a pressure transducer installed at the top of the screened interval to monitor the water level at the well. Based on previous testing at the site and the common ratios of injection well capacity relative to injection wells, it is estimated that injection rates may vary between 0.5 to 3 gpm per well. Similar to extraction operations, injection wells may be operated at higher flow rates, depending on the nature of the soil formation and ability to receive fluids.

### 3.1.3 Ex Situ Groundwater Treatment

The ex situ treatment system will be used to handle extracted groundwater for treatment, carbon substrate amendment, and injection to support the IRM ISAB recirculation approach. Treatment system operation will be conducted in accordance with the existing WUR for the site (WUR100001), with the treatment train qualified to address an anticipated extraction and injection flow rate of 40 gpm. For PBR purposes, it is assumed that Phase I operations will entail 40 gpm of total system flow over 12 months of operation, resulting in a total recirculated volume of 21 million gallons. This equates to approximately 1.75 million gallons per month, which is within the WUR permit specifications and still leaves capacity for excavation dewatering needs, as necessary.

As detailed in Section 2.4.3, the primary COCs are elevated levels of Cr(VI), up to or above 1,000,000 µg/L; low levels of other metals; VOCs; and SVOCs. The current water treatment system has been used effectively to achieve removal of these target COCs and comply with permit requirements during previous excavation dewatering activities. These activities have been conducted in areas of the shallow water-

bearing zone where these other metals, VOCs and SVOCs are observed at considerably higher concentrations than those identified in the intermediate and deep water-bearing zones. As an example, the maximum influent concentration of total VOCs and SVOCs considered in the WUR permit were 18.87 mg/L and 5.88 mg/L, respectively – concentrations that are higher than the highest concentrations observed within the intermediate and deep water-bearing zones.

Over the course of operation, the water treatment system will be monitored for flow rate and treatment management. The conservative 40 gpm flow rate proposed for the IRM still accommodates sufficient system capacity within the WUR for anticipated excavation dewatering needs. There may be transient or sporadic occurrences where excavation dewatering needs to be increased to accommodate recharge from significant storm events, and total IRM flow rates during these potential durations can be temporarily reduced to remain within the WUR. Treatment system management includes ongoing review of influent and effluent COC concentrations at the water treatment plant to ensure that reinjected water meets the requirements of the PBR. The treatment of COCs in the effluent groundwater used for reinjection will be sufficient to achieve either 95% reduction of influent levels or below the applicable GWQS values, whichever is less stringent. Based on the groundwater sourced to the treatment system, a review of individual COCs will be performed to ensure that these treatment objectives are met. In the event that shallow groundwater from areas containing elevated metals, VOCs, or SVOCs is being delivered to the treatment system, supplemental polishing steps (adsorption) may be used to address these impacts or groundwater from these areas may be temporarily diverted from the IRM recirculation water sources. The water treatment train will consist of the following basic unit process elements:

- Groundwater extraction
- Chemical reduction (Cr[VI] removal)
- Aeration (metals removal)
- Chemical amendment (biological inactivation)
- Phase separation (solids removal)
- Adsorption (VOC removal and Cr[VI]/metals polishing)
- Chemical amendment (organic carbon amendment)
- Amended water injection
- Residuals management (solids thickening, dewatering, and disposal)

The treatment system will facilitate continuous operation while minimizing operator input and manual system operations to the extent practical. Similar to previous site operations, dewatered treatment residuals will be stored on site prior to off-site disposal. Many of the above components are similar to the existing water treatment system currently present on site for treatment of extracted groundwater. The additional unit process considerations include an aeration step to enhance iron removal prior to phase separation, a supplemental pH adjustment step to support biological inactivation to limit system and well fouling, and a review of necessary adsorption technologies (i.e., GAC, ion exchange) and residence times to achieve appropriate COC reductions in groundwater extracted for reinjection use. To facilitate implementation of the IRM within Site 114, the existing water treatment system will be relocated to a different portion of the Garfield Avenue Group (GAG) sites. As part of this relocation, any review or

retrofitting of the water treatment system will be performed to accommodate the conveyance and treatment needs for the IRM, achieving the same level of treatment previously observed to comply with permit specifications and treatment requirements. Supporting data for this review process will include historical data and analytical data collected as part of confirmatory sampling and baseline sampling activities following IRM well network installation.

### 3.1.4 Recirculation Conveyance and Reagent Mixing

The conveyance infrastructure for the Phase I system will be designed to facilitate adaptive extraction and injection operations, to allow flexibility for reuse of conveyance materials with different well sequencing, and to accommodate other site activities, such as earthwork and dewatering operations. A conceptual layout of the conveyance infrastructure is presented on **Figure 13**.

The water conveyance piping for the extraction wells will be standard dimension ratio (SDR) 11, high density polyethylene (HDPE) double-contained piping. The 2-inch carrier pipe and 4-inch containment pipe will readily accommodate the anticipated flow rates of 1 to 3 gpm. The individual extraction well conveyance line laterals will be joined conveyance header pipes, and those header pipes will be manifolded together at the system. The double containment will protect against leaks and prevent damage to the piping.

In addition to the extraction conveyance piping, 2-inch, non-metallic electrical conduits will be installed between each extraction well and the Phase 1 treatment system. Each extraction well will have two conduits, one for pump power wiring and the other for instrument signal wiring. The conduits will be installed alongside the conveyance piping to each well with adequate separation between the power and signal wire conduits to prevent interference. The conveyance piping and conduit for the extraction wells will be installed on land surface and protected with a temporary soil cover up to 3 feet deep, which both protects these utilities from damage and the elements and prevents water from freezing within the pipes. Buried utility runs will be marked with colored stakes at regular intervals as visual indicators. This conveyance piping and conduit installation approach will also be applied to those extraction wells that will be repurposed as injection wells at later phases of operation.

The treated water conveyance piping between the treatment system and each injection trailer will be a 2-inch SDR, 11 HDPE single-wall piping that will handle the anticipated 40 gpm maximum design flow for injection at each well field. Treated groundwater for reinjection will be routed to two mobile injection trailers staged in the southern part of Site 114. These trailers will include a storage tank for the stock reagent solution and appropriate metering pumps, in-line mixing components, and manifolding to control carbon substrate amendment into the treated groundwater prior to delivery into operating injection wells. Dynamic operation of these trailers will also be used to toggle between periods of carbon substrate pulsing and treated groundwater reinjection alone. These conveyance pipes will be manifolded at the system. Two-inch non-metallic electrical conduits will be installed between each injection trailer and the Phase 1 treatment system. Each trailer will have two conduits, one for power wiring and the other for instrument signal wiring. The conduits will be installed alongside the conveyance piping to each trailer with adequate separation between the power and signal wire conduits to prevent interference. Similar to the extraction well utilities, the injection trailer utilities will be buried and marked. The injection trailers will be centrally located at both injection well fields to minimize the need for trailer relocation.

Each injection trailer will be outfitted with an injection manifold and instrumentation to monitor and inject up to 10 injection wells at a time. Instrumentation will be installed at the injection manifolds to allow for pressure and flow monitoring for the active injection wells. Heat tracing and pipe insulation will be used to prevent the exposed pipes from freezing. Injection water will be conveyed to the active injection wells from the injection manifolds using flexible hosing that may be insulated and heat-traced, depending on the weather. Hoses will be placed on-grade, and hose runs will be marked using colored stakes at regular intervals as visual indicators.

If there is a need to move or alter the utilities to accommodate adaptive system operation, such as repurposing wells, or to accommodate other site activities, hoses, piping, and conduits can be uncovered and relocated or altered, as necessary. The use of flexible hoses, HDPE piping, and non-metallic conduit allows for flexibility in the utility layouts. Alternative methods of covering and protecting the lines will be considered during development of the final conveyance infrastructure design and may include burying portions of the delivery lines or using heat trace to eliminate freezing risk.

## 3.2 IRM Operation: Intermediate and Deep Water-Bearing Zones

### 3.2.1 Adaptive Management Overview

An integral component to successful groundwater recirculation remedies is maintaining an overall degree of adaptability over the course of operation to respond to field observations and to maintain the pace of overall remedial performance. Key aspects of the performance include Cr concentration reduction, mass recovery (extraction wells), organic carbon distribution, and evidence of reduced groundwater geochemical change within the subsurface. These indicators will be assessed as part of the Groundwater Monitoring Program (Section 5) and used to adapt overall extraction and injection operations during Phase I.

The conceptual layout for the IRM Phase I well network is provided on **Figure 10** and in **Appendix D**, which includes variable groups of injection wells that will be sequenced strategically over the course of the Phase I program to deliver both organic carbon and treated groundwater uniformly through the subsurface. Performance data will be used to guide system operation and unique well sequencing to meet the overall Phase I objectives over the course of operation. Data that will be evaluated continuously to optimize the remedial performance include, but is not limited to, the following:

- Monitoring well water quality data, including laboratory data (e.g., TOC, total Cr, and Cr[VI]) and field parameters (e.g., DO and ORP).
- Extraction well water quality data (e.g., TOC, total Cr, and Cr[VI]).
- Individual extraction and injection well flow rates.
- Treatment system influent water quality.
- Changes in overall Cr distribution extent and plume footprint.

The pulsing of carbon amendment in concert with the sequenced extraction scheme is key to overcoming aquifer heterogeneities, ambient hydraulic gradients, and preferred flow paths. Injections will be implemented gradually and stepwise from the southern portion toward the north. Continuous extraction

from the northern portion are intended to achieve mass removal, pull carbon amendment north, and balance the water demand required for injections. The specific timing of transitions between injection wells will be assessed based on the observations listed above. As the IRM Phase I progresses, specific adjustments (e.g., wells for extraction and injection, flow rates, organic carbon dosing) will be made to optimize the system performance. These adjustments will likewise be based on the observations listed above, and include the following:

- Increases and decreases in individual extraction well pumping rates to optimize mass recovery, distribute organic carbon, redox chemistry, and promote hydraulic control.
- Adjustments of individual injection well flow rates and duration of carbon amendment pulsing. This includes substrate dosing and volume adjustments to refine hydraulic control and optimize the distribution of organic carbon.
- Strategic conversion of extraction wells to injection wells or injection wells to extraction wells to optimize mass recovery, organic carbon distribution, and hydraulic control. This may also include the installation of additional extraction and/or injection wells.
- Strategic adjustments to the extraction scheme to ensure water chemistry and flow rate meets the treatment systems operational requirements.
- The type of organic carbon substrate (e.g., molasses and EVO) used and the relative dosing strength to induce and sustain the bioprecipitation processes in situ.
- The timing of organic carbon substrate dosing and recirculation shutdown and initiation of rebound monitoring.

The above management framework is advantageous in that it allows flexibility to provide a high likelihood of success and enables routine optimization for maximum Phase I efficiency. Each of these steps also serve to develop insights into supporting the transition of Phase I operations into subsequent phases of treatment at the GAG sites.

As reduction in Cr concentrations are achieved within the IRM Phase I area and attention turns to subsequent IRM treatment phases, select Phase I wells may continue to be operated as injection or extraction wells to maintain treatment performance during the transition. This will support hydraulic control, organic carbon distribution, and mass removal.

### 3.2.2 Reagent Selection and Dosing Strategy

In support of sustaining ISAB treatment mechanisms during active operation and post-IRM monitoring phases, multiple carbon substrates may be utilized. These will include dissolved-phase organic carbon materials (e.g., molasses) that can be easily distributed in the subsurface and longer lasting materials that can provide extended longevity following injection (e.g., EVO). Like other operational decisions, substrate selection will be an adaptive consideration with decisions based on field information obtained during IRM Phase I.

During system operation and injection, it is assumed that organic carbon will be dosed via the recirculation stream for approximately 4 hours per day. For the other 20 hours of daily operation, injection will continue to be treated with water but without substrate dosing. Dosing timing and reagent strength will

be supported by ongoing operational monitoring (Section 5) to strike an appropriate balance between sustaining overall injectability, limiting well fouling and potential back pressure generation related to fermented gas generation, and achieving subsurface TOC distribution.

A combination of ISAB substrates is considered for use during Phase I. Phase I operations will be initiated using molasses as the organic carbon substrate consistent with the previous ISAB pilot test. Over the course of operation, EVO will be considered during late stage recirculation to distribution a long-term source of organic carbon for supplemental post-operational polishing. While pulsed operation is anticipated, it is assumed for PBR approval purposes that the average organic carbon dosing over the course of the 12-month Phase I program is 0.5% by volume. Based on the projected total recirculation volume of 21 million gallons of groundwater, the organic carbon demands for Phase I will be no more than 105,000 gallons of substrate (either molasses, EVO, or a combination of both). As specified above, the actual dosing strength of these organic carbon substrates, the dosing durations per day (or per week), and the timing of molasses and EVO use will be determined based on monitoring observations.

Reagent flexibility is considered a key consideration for maximizing overall treatment during the IRM Program. While the carbon substrates above will serve as the primary reagents for use, other reagents are being included in this PBR to allow flexibility in the event that unique areas of the site are better suited to their application. As described in Section 2.2.2, both FerroBlack®-H and CaSx were used to achieve treatment during pilot test activities, and these reagents are retained for potential consideration during Phase I. CaSx could be delivered via the recirculation network as a soluble reagent for ISCR in select areas of Site 114 in lieu of or prior to use of carbon substrate. In addition to these two reagents, ferrous sulfate may also be used as a supplement to the carbon substrate source to provide additional iron and sulfide to further enhance Cr abiotic reduction mechanisms.

The Safety Data Sheets (SDS) for molasses, EVO, CaSx, and ferrous sulfate are included in **Appendix E**.

### 3.2.3 Injection and Extraction Well Flow Rates and Operating Sequencing

Consistent with the dynamic management approach discussed in Section 3.1.1 and **Appendix D**, operation of the individual injection and extraction wells will be modified based on routine performance data reviews reliant on both operational and treatment monitoring (Section 5) and updates to the dynamic groundwater and solute transport flow model. The sequencing of well operations are planned as part of three, 8-week steps to enable carbon distribution across the southern portion of Site 114 within the first 6 months. Supplemental operations would then be completed during the second 6 months to sustain treatment in areas requiring additional carbon delivery. Data collected over the course of operation will be used to adapt the overall program based on observed response, with a focus on overcoming aquifer heterogeneities and optimizing carbon amendment distribution. As a result, the individual steps or select operation of injection and extraction well locations may be modified from that proposed in Section 3.1.1 to accommodate hydrogeologic variability and the extent of distribution achieved.

Injection well operational sequencing steps and modification may include the following:

- Injection rates in individual injection wells may be reduced or temporarily stopped to alter the hydraulic gradients and stresses applied to the intermediate and deep aquifers. As previously

discussed, injection rates may also be reduced to focus available recirculation water on other well locations.

- The timing, duration, and dosing of carbon amendment pulsing may be adjusted to maximize sustainable flow rates and enhance carbon amendment distribution.
- Injection wells may temporarily or permanently be converted to extraction wells to enhance hydraulic control, mass removal, and/or overcome aquifer heterogeneities.

Similarly, individual extraction well operational modifications may include the following:

- Adjustment of extraction rates to optimize mass recovery, hydraulic control, overcome aquifer heterogeneities, and optimize carbon amendment distribution.
- Temporarily or permanently stop extraction. Groundwater extraction from an extraction well may be stopped if carbon amendment breakthrough is observed in the extraction well. Stopping extractions from the well will limit carbon loading of the treatment system and will prevent removal of the carbon substrate from the aquifer. In these instances, other extraction wells will be brought online to sustain the recirculation process and maintain overall recirculation water demands.

Injection wells positioned within the southern area of Site 114, which are not utilized as part of the initial operations, may be sampled as temporary monitoring wells to evaluate subsurface carbon distribution and to support decisions related to injection well sequence timing. Data from these wells may also be collected after injections have been completed to evaluate TOC longevity and to determine the timing of supplemental delivery, as necessary.

### 3.2.4 Well Development and Fouling Management

Arcadis' experience from similar groundwater recirculation and injection systems underpins the importance of a systematic well redevelopment and fouling management plan. This is particularly important for injection wells, where mixing of water with a range in redox potential and with organic carbon amendment can promote the formation of biofilms and/or metal precipitation. Biofilms and metal precipitation can be associated with a reduction in injection rates. A proactive injection well redevelopment scheme has been demonstrated to prolong good injection well performances at sites with similar remedy and geochemical conditions. Redevelopment may include physical scrubbing, surging, and jetting of the well with or without the addition of chemicals/pH adjustments to remove biofilm and metal precipitates. Initial concepts of well redevelopment and fouling management include redeveloping each injection well on a quarterly basis; however, consistent with the adaptive management plan, the schedule for redevelopment of certain wells may be adjusted based on operational data (e.g., observed injection flow rates and wellhead pressures).

### 3.2.5 Well Network Optimization

Additional or replacement wells may be installed as the IRM Phase I progresses. The wells may include both injection and extraction wells with the intent of:

- Replacing destroyed or severely fouled wells.

- Enhancing hydraulic control, Cr recovery, or carbon amendment distribution in areas where performance is observed to be limited.

Additional wells may also be added to increase the vertical distribution of amendment by targeting depth intervals not sufficiently addressed by the initial injection/extraction well network.

### 3.2.6 Waste Disposal

Soil cuttings and drilling mud generated from well installation will be containerized in properly labeled 55-gallon drums or larger containers and disposed of at an appropriate off-site disposal facility using existing investigation-derived waste (IDW) profiles for Site 114. Purged water from well development and groundwater sampling activities will be temporarily stored in tanks and transferred to the treatment system following sufficient time for solid to settle. The settled solids will be disposed of at an appropriate off-site disposal facility. Groundwater will be treated before being re-injected. Sludge or filter cake generated from this process will be disposed of at an appropriate off-site disposal facility.

# 4 PHASE I IRM DESIGN: SHALLOW WATER-BEARING ZONE

As discussed in the IRM Phase I program at the beginning of Section 3, shallow water-bearing zone polishing treatment for Cr-impacted groundwater will be implemented in the vicinity of the current water treatment plant and pilot testing areas located on the north-western portion of the site (**Figure 10**). This treatment is proposed to address an area of the shallow water-bearing zone that contains residual Cr impacts where excavation was completed but not amended with FerroBlack®-H. The shallow water-bearing zone treatment, proposed as part of this PBR, utilizes ISAB accomplished via carbon substrate injection via temporary injection wells.

The shallow treatment will be completed as part of one injection event using temporary injection points. Injection points will be placed throughout an area estimated to be approximately 20,000 square feet ($ft^2$). Additional refinement of the target treatment area will be supported by supplemental sampling activities performed as part of the Remedial Investigation Program prior to IRM implementation. This data will be integrated into data from pilot test wells, VAP sample locations, and other monitoring wells in the area to finalize the exact location and orientation of temporary injection points. Within this area, an estimated 70 total injection points will be installed on 20-foot on-center spacing. The estimated radius of influence from these locations is 10 feet, based on shallow water-bearing zone injection results observed during the ISAB pilot test.

Injection points will be installed prior to injection, utilizing direct-push drilling methods. Injection points will be constructed using 1-inch PVC casing materials and a 10-foot 0.020-slot injection screen. The screen interval will be placed at depths between 5 to 15 ft bgs or with a terminal depth consistent with the observed top of the meadow mat.

The selected carbon substrate for shallow water-bearing zone treatment is EVO, which provides extended organic carbon longevity following the one-time injection event. The injection solution will be mixed above-grade using temporary containment equipment to achieve an as-delivered EVO dosing rate of 2% by volume. Using the estimated mobile porosity of 14% determined during the ISAB pilot test (Arcadis 2017), a total volume of up to 235,000 gallons of 2% EVO solution and up to approximately 5,000 gallons of as-delivered EVO material will be injected within the target treatment area. Injection observations will be utilized to evaluate the total per-point injection volumes and make any necessary modifications based on feasible injection flow rates at each location. If select locations exhibit limited overall injectability, additional volumes may be delivered into adjacent points to optimize shallow water-bearing zone EVO distribution.

During injection, multiple injection points/piezometers will be manifolded together for simultaneous injection. Injection flow rates and pressures will be closely monitored and controlled to avoid any surfacing of reagents or fracturing of the formation. The SDS for EVO is included in **Appendix E**.

# 5 IRM MONITORING PROGRAM

The groundwater monitoring program for the IRM Phase I has been developed to support ongoing evaluation of Cr treatment effectiveness, to provide feedback related to Phase I recirculation operations, and to support continuous adaptation and optimization of the recirculation program. IRM Phase I monitoring activities are proposed as part of four primary categories to support treatment assessment and performance optimization. These consist of: 1) baseline sampling, 2) operational monitoring, 3) treatment monitoring, and 4) post-treatment monitoring.

A combination of both new and existing monitoring wells will be incorporated as part of each of these monitoring categories. A summary of the overall Phase I monitoring program is provided in **Table 3**, and a list of new and existing monitoring wells, included in each of these monitoring categories for the shallow, intermediate and deep water-bearing zones, are provided in **Table 2**. The monitoring well network is shown on **Figure 14**. In addition to these well locations, select Phase I extraction and injection wells may also be periodically added into the sampling program to supplement the dedicated monitoring well network locations.

The details of the groundwater monitoring program are discussed in the sections below.

## 5.1 Baseline Sampling

Prior to the startup of Phase I operations, but following the installation of the remediation well network and new monitoring well locations, samples will be collected for baseline analysis to establish the starting conditions for IRM treatment performance review. In accordance with **Table 3**, baseline samples will be collected for TAL metals (total and dissolved); Cr(VI) (total and dissolved); key geochemical parameters (sulfate/sulfide and methane); TOC, field parameters (pH, specific conductivity, DO, ORP, turbidity, and temperature); and depth to groundwater. A summary of the monitoring wells included in the baseline sampling event is provided in **Table 2** along with all the new injection and extraction wells.

Baseline samples will be collected using the low-flow sampling method. Purge water generated during sampling will be temporarily stored and then transferred to the groundwater treatment system. Prior to the start of purging, depth to water will be gauged at each well location. Following purging, field parameter measurements will be recorded. Samples collected for dissolved metal analyses will be filtered using 0.45 micrometer (µm) filters in the field.

## 5.2 Operational Monitoring

The operational monitoring program will be utilized to assess ongoing remedial system performance in support of guiding potential modifications to inject and extract flow rates, well balancing, carbon dosing and timing, and to pre-emptively guide potential biofouling management and well redevelopment. Operational monitoring will yield information pertaining to the sustainable recirculation flow rates, will confirm that wellhead injection pressures are within an appropriate range, will be useful in evaluating hydraulic influence of extraction and injection operations, and will confirm overall aboveground treatment system effectiveness in accordance with the WUR permit. Collectively, these data will be used to guide adaptive system operations, routine adjustments, and overall optimization.

Depending on the parameters, operational monitoring will be performed at variable frequencies (weekly, biweekly, or monthly), as necessary, over the course of operation (**Table 3**). A summary of the well locations included as part of the operational monitoring program is provided in **Table 2**. Measurements may be periodically performed more frequently than specified in **Table 3** to support potential troubleshooting activities over the course of operation. Given the adaptive nature of the recirculation program and the sequencing of different groupings of injection and extraction wells over the course of operation, it is anticipated that the operational sampling frequency of existing monitoring wells will be adapted over time. As an example, monitoring wells located within the southernmost area of Site 114 are most relevant for operational monitoring during the first step of recirculation activities. Following this initial 8-week period and the transition to more northerly injection wells, the frequency and parameter list of the initial monitoring locations may be reduced to maintain remedial efficiency, as applicable.

For the operational monitoring, analytical data and field parameter measurements for extracted and treated groundwater will be collected at operating extraction wells from sampling ports located at the wellheads or at the influent to the water treatment system. When collected from dedicated sampling ports, samples will be collected via grab sampling techniques. For individual well locations, samples will be collected using the one-volume purge sampling method (Arcadis 2017). The one-volume technique will entail dedicated tubing deployed to the middle of the screen intervals in each well for purging and sampling. Purge water generated during sampling will be temporarily stored and then transferred to the groundwater treatment system.

## 5.3 Treatment Monitoring

Overall Phase I remedial performance will be documented via ongoing treatment monitoring over the course of the 12-month program. Sampling parameters will be collected to verify organic carbon distribution, assess the development of reduced geochemical groundwater conditions within the subsurface, and confirm corresponding declines in total Cr and Cr(VI). The development of the reactive zone confirmed via treatment monitoring activities will be used to guide carbon substrate dosing strength and frequency based on the observed subsurface response and confirm that reactive zone propagation has been achieved prior to transition of operating recirculation wells to subsequent steps. A summary of the analytical and field parameter measurements for treatment sampling is provided in **Table 3**, and well locations included in the overall treatment monitoring program are included in **Table 2** and **Figure 14**.

Similar to the operational monitoring specifications, treatment monitoring parameters will be collected at specified frequency based on the relevance of a given parameter to operation and optimization activities. TOC and field parameter sampling is proposed most frequently (biweekly to monthly) to effectively gauge propagation of both carbon substrate and geochemical influence within the subsurface. Total Cr and Cr(VI) and select geochemical parameters (ferrous [dissolved] iron, dissolved manganese, sulfate) will be collected monthly to enable the collection of at least one to two samples between recirculation well steps. Methane sampling is also proposed, albeit less frequently, to confirm the overall extent of reduced groundwater conditions. Similar to the sampling frequency considerations presented for the operational monitoring program, select well locations or parameters may be collected more frequently for system optimization purposes, as applicable.

Treatment monitoring samples will be collected using the low-flow sampling method. Purge water generated during sampling will be temporarily stored and then transferred to the groundwater treatment

system. Prior to the start of purging, depth to water will be gauged at each well location. Following purging, field parameter measurements will be recorded. Samples collected for dissolved metal analyses will be filtered using 0.45 micrometer (µm) filters in the field.

Data collected as part of the treatment monitoring program will be used to confirm treatment performance in areas undergoing active carbon recirculation and to confirm the longevity of TOC availability and treatment permanence as recirculation activities transition to other areas of Site 114. Data collected between recirculation cycles will also be used to determine whether subsequent carbon substrate delivery is required during the 12-month Phase I period. These decisions will be guided based on observed TOC strength, its longevity in the subsurface, and extent of observed Cr reduction.

## 5.4 Post-Treatment Monitoring

Following the 12-month Phase I operational program, post-treatment monitoring will be used to document overall Cr treatment performance, confirm the residual reactive zone reduction capacity (via residual TOC and reduced geochemistry species), and develop an appropriate data set to demonstrate ongoing natural attenuation of any residual total Cr and Cr(VI). Post-treatment sampling will be performed in accordance with **Table 3** and at well locations shown in **Table 2**.

Treatment monitoring samples will be collected using the low-flow sampling method. Purge water generated during sampling will be temporarily stored and then transferred to the groundwater treatment system – or containerized and disposed of off-site, as appropriate. Prior to the start of purging, depth to water will be gauged at each well location. Following purging, field parameter measurements will be recorded. Samples collected for dissolved metal analyses will be filtered using 0.45 micrometer (µm) filters in the field.

Post-treatment sampling activities will be performed on a quarterly basis over a total duration of two years.

# 6 SCHEDULE AND REPORTING

Details of the supplemental pre-design testing, well and system installation, system operation, and performance monitoring results associated with the IRM Phase I program will be documented as part of a quarterly technical status reports submitted to the NJDEP. These quarterly status reports will include succinct, high-level summaries of activities performed, data collected, adaptive steps taken to modify or optimize Phase I treatment, and an overview of activities planned for the subsequent quarter.

Upon approval of this IRM Phase I Work Plan and the PBR Authorization by NJDEP and receiving all the applicable permits required to conduct the field work detailed in this design, PPG proceed with startup of the IRM Phase I program. As detailed in Section 2.5, confirmatory testing activities in support of design finalization are planned concurrent with NJDEP review, with these data being utilized to advance specific design elements and refine the hydraulic understanding in select areas of Site 114. Other IRM infrastructure construction (e.g., well installation, water treatment plant modification, conveyance piping installation) may also be initiated prior to final approval to expedite elements of the project schedule, as necessary. The IRM Phase I operation is anticipated to start in fourth quarter of 2017 and last for a duration of up to approximately 12 months, followed by a post-operational monitoring of 2 years. As-built layouts for the IRM Design will be provided as part of the first quarterly status report, anticipated during first quarter 2018.

The schedule for implementation of the IRM Phase I program may be adjusted based on regulatory review and approval of the PBR Authorization and the Work Plan.

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# ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| ACO | Administrative Consent |
| Arcadis | Arcadis U.S., Inc. |
| bgs | below ground surface |
| CaSx | calcium polysulfide |
| CCPW | chromate chemical production waste |
| COC | contaminant of concern |
| COPR | chromite ore processing residue |
| CSM | conceptual site model |
| Cr | chromium |
| Cr(OH)3 | chromium hydroxide |
| Cr(III) | trivalent chromium |
| Cr(VI) | hexavalent chromium |
| Design | *Groundwater Interim Remedial Measure: Phase I Design and Permit-By-Rule Authorization Request* |
| DGA | dense-graded aggregate |
| DGW | Discharge to Groundwater |
| DO | dissolved oxygen |
| DWS | Division of Water Supply |
| EVO | emulsified vegetable oil |
| EVS | Enhanced Visualization System |
| Fe(II) | ferrous iron |
| $ft^2$ | square foot |
| ft/day | feet per day |
| ft/ft | feet per foot |
| GAC | granular activated carbon |
| GAG | Garfield Avenue Group |
| GWQS | Groundwater Quality Standards |
| gpm | gallon per minute |
| $H_2S$ | hydrogen sulfide |
| HDPE | high density polyethylene |

| | |
|---|---|
| $HS^-$ | hydrosulfide |
| HSA | hollow stem auger |
| IDW | investigation-derived waste |
| ISAB | in situ anaerobic bioprecipitation |
| ISCR | in situ chemical reduction |
| IRM | interim remedial measure |
| IRZ | in situ reactive zone |
| JCO | Judicial Consent Order |
| lbs | pounds |
| mg/kg | milligrams per kilogram |
| mg/L | milligrams per liter |
| MGP | manufactured gas plant |
| MNA | monitored natural attenuation |
| MT3D | Modular 3-D Transport Model |
| MT3DMS | Modular 3-D Transport Model Multi-Species |
| N.J.A.C. | New Jersey Administrative Code |
| NJDEP | New Jersey Department of Environmental Protection |
| NJPDES | New Jersey Pollutant Discharge Elimination System |
| NRDCSCC | Non-Residential Direct Contact Soil Cleanup Criteria |
| ORP | oxidation-reduction potential |
| PBR | Permit-by-Rule |
| PVC | polyvinyl chloride |
| SDR | standard dimension ratio |
| SDS | Safety Data Sheets |
| SVOC | semi-volatile organic compound |
| S.U. | standard unit |
| TAL | Target Analyte List |
| TOC | total organic carbon |
| USEPA | United States Environmental Protection Agency |
| VAP | vertical aquifer profiling |
| VOC | volatile organic compound |

| | |
|---|---|
| WAP | Water Allocation Permit |
| WUR | Water Use Registration |
| µg/L | micrograms per liter |

# TABLES

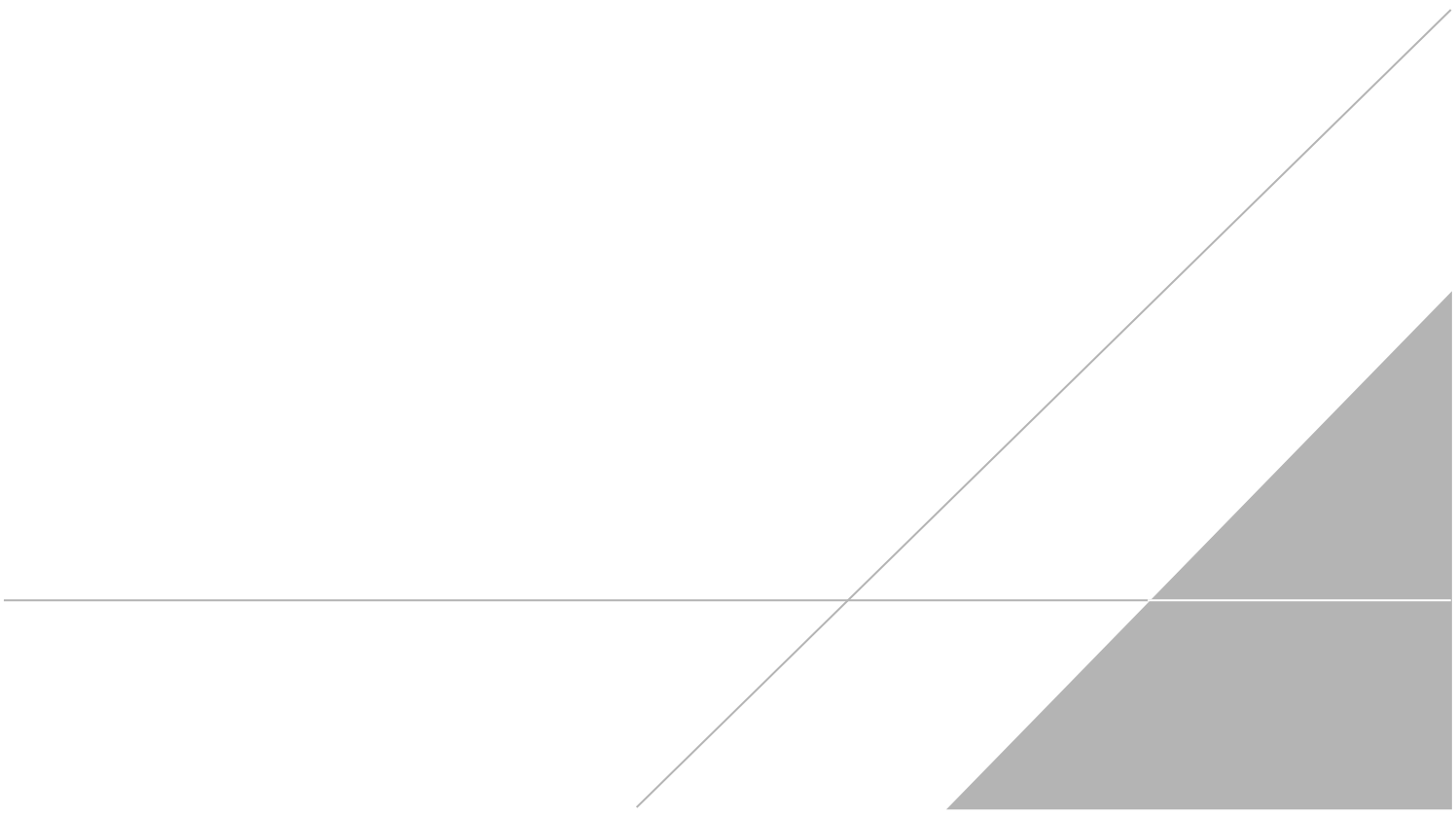

ARCADIS Design & Consultancy for natural and built assets

**Table 1**
**IRM Phase I Remediation Well Details**
**Groundwater IRM Phase I Design and PBR Authorization Request**
**PPG Garfield Avenue Group Sites, Jersey City, New Jersey**

| WELL ID | Well Installation Date | Well Diameter (in) | Total Depth (ft bgs) | Top of Screen (ft bTOC) | Bottom of Screen (ft bTOC) | Ground Surface Elevation (ft NAVD88) | Top of Casing Elevation (ft NAVD88) |
|---|---|---|---|---|---|---|---|
| **Proposed Remediation Well Locations (Injection/Extraction During IRM Phase I)[1]** | | | | | | | |
| 114-P1-IRM-1 | TBD | 4 | 40 | 20 | 40 | TBD | TBD |
| 114-P1-IRM-2 | TBD | 4 | 40 | 20 | 40 | TBD | TBD |
| 114-P1-IRM-3 | TBD | 4 | 40 | 20 | 40 | TBD | TBD |
| 114-P1-IRM-4I/D | TBD | 4 | 65 | 20 | 65 | TBD | TBD |
| 114-P1-IRM-5I/D | TBD | 4 | 65 | 20 | 65 | TBD | TBD |
| 114-P1-IRM-6 | TBD | 4 | 40 | 20 | 40 | TBD | TBD |
| 114-P1-IRM-7 | TBD | 4 | 40 | 20 | 40 | TBD | TBD |
| 114-P1-IRM-8 | TBD | 4 | 40 | 20 | 40 | TBD | TBD |
| 114-P1-IRM-9 | TBD | 4 | 40 | 20 | 40 | TBD | TBD |
| 114-P1-IRM-10I/D | TBD | 4 | 65 | 20 | 65 | TBD | TBD |
| 114-P1-IRM-11 | TBD | 4 | 40 | 20 | 40 | TBD | TBD |
| 114-P1-IRM-12 | TBD | 4 | 40 | 20 | 40 | TBD | TBD |
| 114-P1-IRM-13 | TBD | 4 | 40 | 20 | 40 | TBD | TBD |
| 114-P1-IRM-14 | TBD | 4 | 40 | 20 | 40 | TBD | TBD |
| 114-P1-IRM-15 | TBD | 4 | 40 | 20 | 40 | TBD | TBD |
| 114-P1-IRM-16 | TBD | 4 | 40 | 20 | 40 | TBD | TBD |
| 114-P1-IRM-17 | TBD | 4 | 40 | 20 | 40 | TBD | TBD |
| 114-P1-IRM-18I/D | TBD | 4 | 65 | 20 | 65 | TBD | TBD |
| 114-P1-IRM-19I/D | TBD | 4 | 65 | 20 | 65 | TBD | TBD |
| 114-P1-IRM-20I/D | TBD | 4 | 65 | 20 | 65 | TBD | TBD |
| 114-P1-IRM-21I/D | TBD | 4 | 65 | 20 | 65 | TBD | TBD |
| 114-P1-IRM-22I/D | TBD | 4 | 65 | 20 | 65 | TBD | TBD |
| 114-P1-IRM-23I/D | TBD | 4 | 65 | 20 | 65 | TBD | TBD |
| 114-P1-IRM-24I/D | TBD | 4 | 65 | 20 | 65 | TBD | TBD |
| 114-P1-IRM-25I/D | TBD | 4 | 65 | 20 | 65 | TBD | TBD |
| 114-P1-IRM-26I/D | TBD | 4 | 65 | 20 | 65 | TBD | TBD |
| 114-P1-IRM-27I/D | TBD | 4 | 65 | 20 | 65 | TBD | TBD |
| 114-P1-IRM-28I/D | TBD | 4 | 65 | 20 | 65 | TBD | TBD |
| 114-P1-IRM-29I/D | TBD | 4 | 65 | 20 | 65 | TBD | TBD |
| 114-P1-IRM-30I/D | TBD | 4 | 65 | 20 | 65 | TBD | TBD |
| 114-P1-IRM-31I/D | TBD | 4 | 65 | 20 | 65 | TBD | TBD |
| 114-P1-IRM-32I/D | TBD | 4 | 65 | 20 | 65 | TBD | TBD |
| 114-P1-IRM-33I/D | TBD | 4 | 65 | 20 | 65 | TBD | TBD |
| 114-P1-IRM-34I/D | TBD | 4 | 65 | 20 | 65 | TBD | TBD |
| 114-P1-IRM-35I/D | TBD | 4 | 65 | 20 | 65 | TBD | TBD |

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**Table 1**
**IRM Phase I Remediation Well Details**
**Groundwater IRM Phase I Design and PBR Authorization Request**
**PPG Garfield Avenue Group Sites, Jersey City, New Jersey**

| WELL ID | Well Installation Date | Well Diameter (in) | Total Depth (ft bgs) | Top of Screen (ft bTOC) | Bottom of Screen (ft bTOC) | Ground Surface Elevation (ft NAVD88) | Top of Casing Elevation (ft NAVD88) |
|---|---|---|---|---|---|---|---|
| **Proposed Remediation Well Locations (Extraction During IRM Phase I)[1]** | | | | | | | |
| 114-P1-IRM-36I/D | TBD | 4 | 65 | 20 | 65 | TBD | TBD |
| 114-P1-IRM-37I/D | TBD | 4 | 65 | 20 | 65 | TBD | TBD |
| 114-P1-IRM-38 | TBD | 4 | 40 | 20 | 40 | TBD | TBD |
| 114-P1-IRM-39 | TBD | 4 | 40 | 20 | 40 | TBD | TBD |
| 114-P1-IRM-40I/D | TBD | 4 | 65 | 20 | 65 | TBD | TBD |
| 114-P1-IRM-41I/D | TBD | 4 | 65 | 20 | 65 | TBD | TBD |
| 114-P1-IRM-42I/D | TBD | 4 | 65 | 20 | 65 | TBD | TBD |

**Notes:**
bgs - below ground surface
bTOC - below top of casing
ft - feet
I/D - intermediate/deep
in - inches
IRM - interim remedial measures
NAVD88 - North American Vertical Datum, 1988
PBR - Permit-by-Rule
TBD - to be determined
-- not available
1 - The total depth of new wells and number of screens at each location are tentative and may be adjusted based on field observation.
* PPG will prepare and submit a revised remediation well network table once proposed extraction, injection and monitoring wells are installed

**Table 2**
**IRM Phase I Monitoring Well Details**
**Groundwater IRM Phase I Design and PBR Authorization Request**
**PPG Garfield Avenue Group Sites, Jersey City, New Jersey**

| WELL ID | Well Installation Date | Well Diameter (in) | Total Depth (ft bgs) | Top of Screen (ft bTOC) | Bottom of Screen (ft bTOC) | Ground Surface Elevation (ft NAVD88) | Top of Casing Elevation (ft NAVD88) | IRM Phase I Monitoring Program Category | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Proposed New Monitoring Well Locations[1]** | | | | | | | | **Baseline** | **Operational** | **Treatment** | **Post-Treatment** |
| 114-P1-MW1I/D | TBD | 2 | 65 | 20 | 65 | TBD | TBD | X | X | X | X |
| 114-P1-MW2I/D | TBD | 2 | 40 | 20 | 40 | TBD | TBD | X | X | X | X |
| 114-P1-MW3I/D | TBD | 2 | 40 | 20 | 40 | TBD | TBD | X | X | X | X |
| 114-P1-MW4I/D | TBD | 2 | 40 | 20 | 40 | TBD | TBD | X | X | X | X |
| 114-P1-MW5I/D | TBD | 2 | 65 | 20 | 65 | TBD | TBD | X | X | X | X |
| 114-P1-MW6I/D | TBD | 2 | 65 | 20 | 65 | TBD | TBD | X | X | X | X |
| 114-P1-MW7I/D | TBD | 2 | 65 | 20 | 65 | TBD | TBD | X | X | X | X |
| **Existing Shallow Water-Bearing Zone Monitoring Wells** | | | | | | | | **Baseline** | **Operational** | **Treatment** | **Post-Treatment** |
| GPS-MW1S | 10/16/2013 | 2 | 16 | 6 | 16 | 14.90 | 14.53 | X | X | | X |
| GPS-MW2S | 4/22/2013 | 2 | 15 | 5 | 15 | 13.00 | 14.31 | X | X | | X |
| GPS-MW3S | 10/16/2013 | 2 | 16 | 6 | 16 | 13.10 | 14.01 | X | X | | X |
| GPS-MW4S | 8/29/2013 | 2 | 16 | 6 | 16 | 14.00 | 13.66 | X | X | | X |
| GPS-MW5S | 10/8/2013 | 2 | 16 | 6 | 16 | 14.00 | 13.87 | X | X | | X |
| GPS-MW6S | 4/19/2013 | 2 | 16 | 6 | 16 | 13.30 | 12.98 | X | X | | X |
| GPS-MW7S | 9/4/2013 | 2 | 16 | 6 | 16 | 13.30 | 13.16 | X | X | | X |
| **Existing Intermediate Water-Bearing Zone Monitoring Wells** | | | | | | | | **Baseline** | **Operational** | **Treatment** | **Post-Treatment** |
| 114-MC-EW103 | 5/29/2014 | 4 | 45 | 30 | 45 | -- | 12.11 | X | X | X | X |
| 114-MC-PZ103 | 6/3/2014 | 2 | 42 | 37 | 42 | -- | 11.98 | X | | X | X |
| 114-MC-PZ203 | 10/3/2014 | 2 | 43 | 37 | 42 | 11.50 | 14.01 | X | | X | X |
| 114-P1A-MW101I | 4/24/2014 | 4 | 35 | 25 | 35 | 15.20 | 14.40 | X | X | X | X |
| 114-P1B-MW101I | 5/22/2014 | 4 | 33 | 23 | 33 | 14.40 | 14.13 | X | X | X | X |
| 114-P1B-MW102I | 5/7/2014 | 4 | 34 | 24 | 34 | 11.20 | 12.63 | X | X | X | X |
| 114-P1C-MW101I | 10/9/2014 | 4 | 35 | 30 | 35 | 11.20 | 13.31 | X | X | X | X |
| 114-P1C-PZ1 | 4/4/2014 | 2 | 36 | 26 | 36 | 14.10 | 16.18 | X | | X | X |
| 114-P1C-PZ2 | 10/13/2014 | 2 | 30 | 20 | 30 | 10.40 | 13.24 | X | X | X | X |
| 114-P2A-MW101I | 2/4/2016 | 2 | 41 | 31 | 41 | 9.40 | 12.71 | X | X | X | X |
| 114-P2B1-MW101I | 10/16/2014 | 4 | 40 | 30 | 40 | 11.10 | 13.93 | X | X | X | X |
| 114-P2B2-MW101I | 2/26/2015 | 4 | 39 | 27 | 37 | 11.00 | 10.55 | X | | X | X |
| 114-P2B3-MW101I | 3/3/2015 | 4 | 35 | 25 | 35 | 10.90 | 12.9 | X | | X | X |
| 114-P2B4-MW101I | 3/3/2015 | 4 | 49 | 39 | 49 | 11.00 | 13.31 | X | X | X | X |
| 114-P2B4-MW102I | 2/9/2015 | 4 | 36 | 26 | 36 | 10.60 | 11.86 | X | | X | X |
| 114-P2B4-MW103I | 2/11/2015 | 4 | 34 | 22 | 32 | 11.90 | 13.03 | X | | X | X |
| GPS-MW2I | 4/23/2013 | 2 | 35 | 25 | 36 | 14.40 | 14.07 | X | X | X | X |
| GPS-MW3I | 10/11/2013 | 2 | 40 | 30 | 40 | 14.60 | 14.12 | X | X | X | X |
| GPS-MW5I | 9/6/2013 | 2 | 40 | 30 | 40 | 14.00 | 13.82 | X | X | X | X |
| GPS-MW6I | 4/29/2013 | 2 | 35 | 30 | 40 | 13.40 | 13.13 | X | X | X | X |
| **Existing Deep Water-Bearing Zone Monitoring Wells** | | | | | | | | **Baseline** | **Operational** | **Treatment** | **Post-Treatment** |
| MW6C | 12/7/2005 | 2 | 65 | 55 | 65 | -- | 14.18 | X | X | X | X |

**Notes:**
bgs - below ground surface
bTOC - below top of casing
ft - feet
I/D - intermediate/deep
in - inches
IRM - interim remedial measures
NAVD88 - North American Vertical Datum, 1988
PBR - Permit-by-Rule
TBD - to be determined
-- not available
1 - The total depth of new wells and number of screens at each location are tentative and may be adjusted based on field observation.
* PPG will prepare and submit a revised monitoring well network table once proposed extraction, injection and monitoring wells are installed

**Table 3**
**IRM Phase I Groundwater Monitoring Program**
**Groundwater IRM Phase I Design and PBR Authorization Request**
**PPG Garfield Avenue Group Sites, Jersey City, New Jersey**

| Monitoring Program | Monitoring Well Network | Monitoring Parameters | Monitoring Frequency |
|---|---|---|---|
| Baseline Monitoring | New extraction, injection, monitoring wells and existing monitoring wells | 1. **Field Parameters**: DTW, pH, conductivity, DO, ORP, turbidity, and temperature<br>2. **Lab Analytical**: Total/dissolved TAL metals, total/dissolved Cr(VI), TOC, sulfate/sulfide, and methane | Prior to operation start |
| Operational Monitoring | New extraction and monitoring wells, existing shallow, intermediate and deep monitoring wells, and system sampling port (influent and effluent) | 1. **Field Parameters**: DTW | Weekly - Biweekly |
| | | 2. **System Parameters**<br>- Injection / extraction well flow rates | Weekly |
| | | - Wellhead pressures | Weekly |
| | | - Water treatment system monitoring | Weekly - Monthly (as appropriate) |
| Treatment Monitoring | New extraction and monitoring wells, and existing intermediate and deep monitoring wells | 1. **Field Parameters**: DTW, pH, conductivity, DO, ORP, turbidity, and temperature | Biweekly - Monthly |
| | | **2. Lab Analytical:**<br>- Total/dissolved Cr and Cr(VI) | Monthly |
| | | - TOC | Biweekly - Monthly |
| | | - Supplemental geochemical parameters (sulfate, ferrous [dissolved] iron, dissolved manganese) | Monthly |
| | | - Methane | Monthly - Quarterly |
| Post-Treatment Monitoring | New monitoring wells and existing shallow, intermediate and deep monitoring wells | 1. **Field Parameters**: DTW, pH, conductivity, DO, ORP, turbidity, and temperature<br>2. **Lab Analytical**: Total/dissolved TAL metals, total/dissolved Cr and Cr(VI), VOCs, SVOCs, TOC, sulfate/sulfide, dissolved iron, dissolved manganese, and methane. | Quarterly following system shutdown for up to 2 years |

**Notes:**

1. The monitoring locations, parameters, and frequencies provided in this table serve as a general guidance for IRM-related monitoring activities and may be adjusted or changed based on IRM Phase I performance, injection and extraction areas in operation, and observed monitoring results.
2. Dissolved metal samples are to be field filtered prior to sample collection.

Cr - chromium
Cr(VI) - hexavalent chromium
DO - dissolved oxygen
DTW - depth-to-water
IRM - Interim Remedial Measures
ORP - oxidation-reduction potential
PBR - Permit-by-Rule
SVOCs - semi-volatile organic compounds
TAL - target analyte list
TOC - total organic carbon
VOCs - volatile organic compounds

# FIGURES

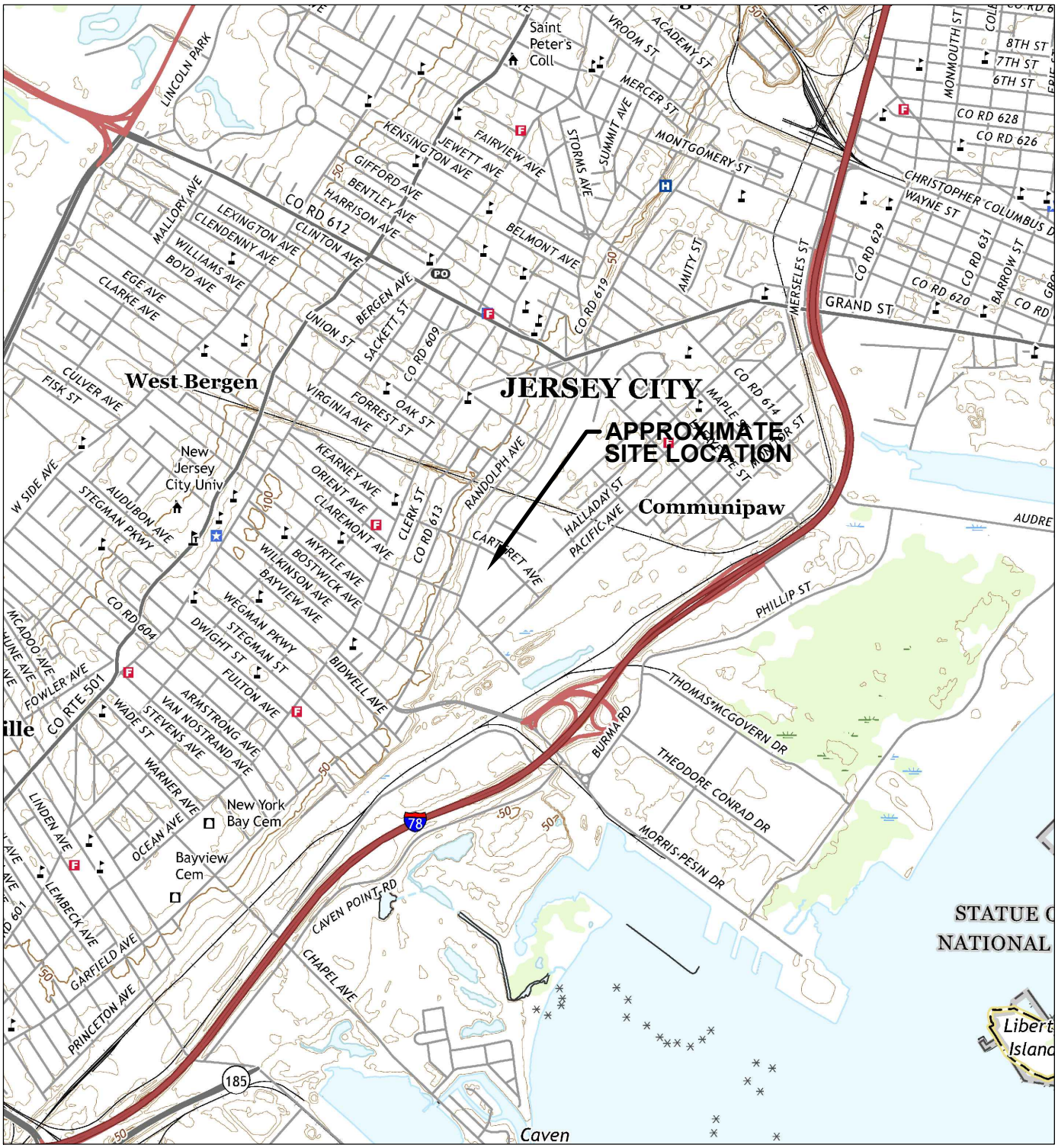


**SOURCE:**
USGS QUADRANGLE MAP
MORRISTOWN, NJ
7.5 MINUTE SERIES
CONTOUR INTERVAL 10 FEET

0 2000' 4000'
GRAPHIC SCALE

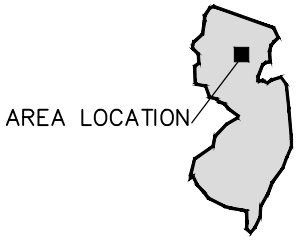


PPG GARFIELD AVENUE GROUP SITES,
JERSEY CITY, NEW JERSEY

**SITE LOCATION MAP**

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FIGURE
1

CITY NEWTOWN PA DIV GROUP ENV CAD DB TFATTO LD O PIC O PM R d TM O LYR O ON OFF REF
C ENVCAD TAMPA R T C NP PPG JERSEY CITY FIG SITE LOCATION MAP d LAYOUT SAVED PM ACADVER S LMS TEC PAGESETUP PLOTSTYLETABLE PLTFULL CTB PLOTTED PM BY RIC ARDS, JIM
XREFS IMAGES PROJECTNAME
X NP X

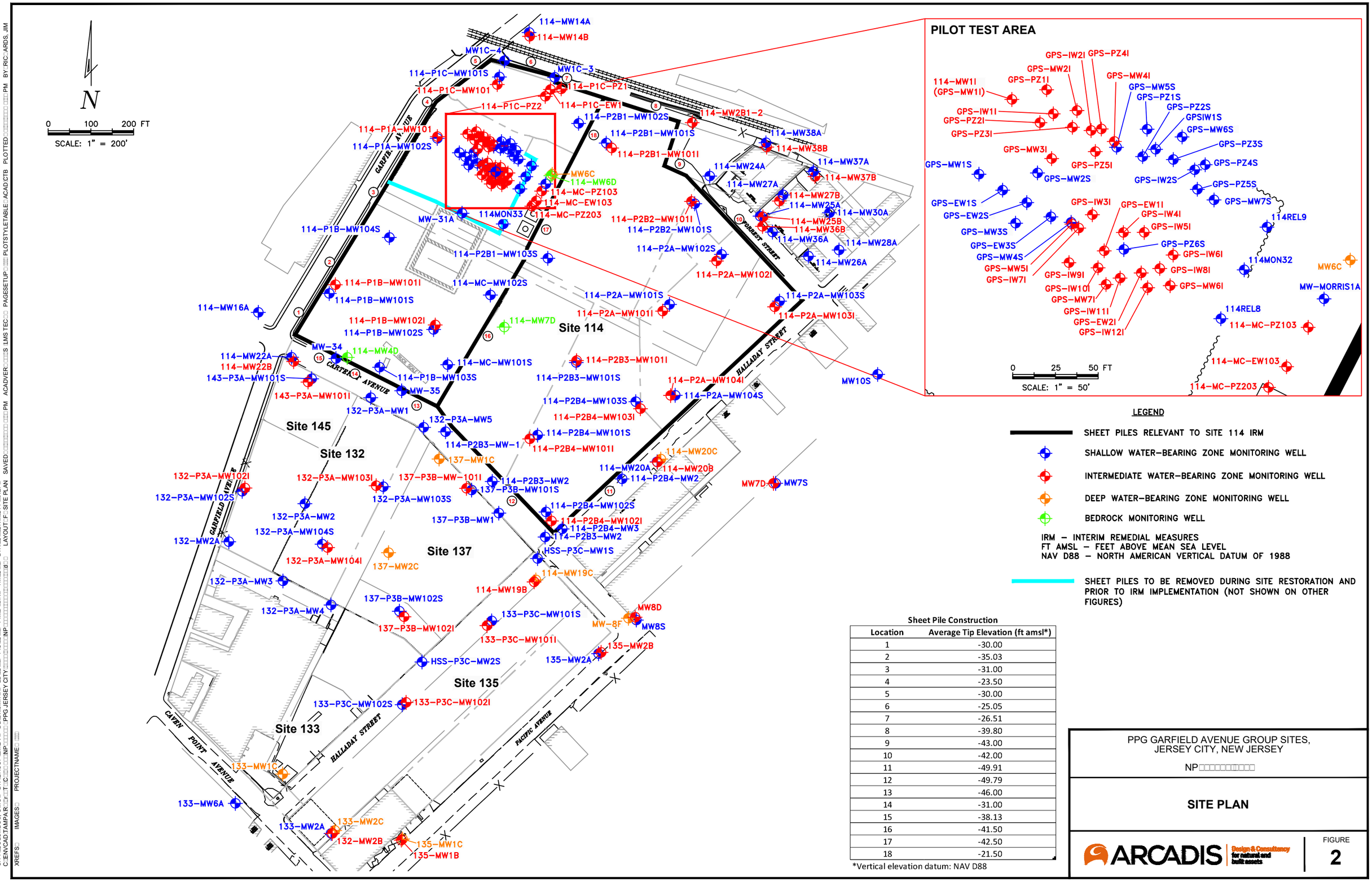


**Sheet Pile Construction**

| Location | Average Tip Elevation (ft amsl*) |
|---|---|
| 1 | -30.00 |
| 2 | -35.03 |
| 3 | -31.00 |
| 4 | -23.50 |
| 5 | -30.00 |
| 6 | -25.05 |
| 7 | -26.51 |
| 8 | -39.80 |
| 9 | -43.00 |
| 10 | -42.00 |
| 11 | -49.91 |
| 12 | -49.79 |
| 13 | -46.00 |
| 14 | -31.00 |
| 15 | -38.13 |
| 16 | -41.50 |
| 17 | -42.50 |
| 18 | -21.50 |

*Vertical elevation datum: NAV D88

PPG GARFIELD AVENUE GROUP SITES,
JERSEY CITY, NEW JERSEY

NP□□□□□□□□□□□

**SITE PLAN**

ARCADIS Design & Consultancy for natural and built assets

FIGURE 2

CITY:COLUMBUS, O DIV/GROUP: ENV DB: R. SMITH LD: PIC: PM: J. TM: LYR: ON: OFF: REF:
C:\ENVCAD\TAMPA\ACADVER: 2015 LMS TECH PAGESETUP: PLOTSTYLETABLE: ACAD.CTB PLOTTED: BY: RIC ARDS, JIM
XREFS: IMAGES: PROJECTNAME: NP SAVED: LAYOUT: F:\SITE PLAN

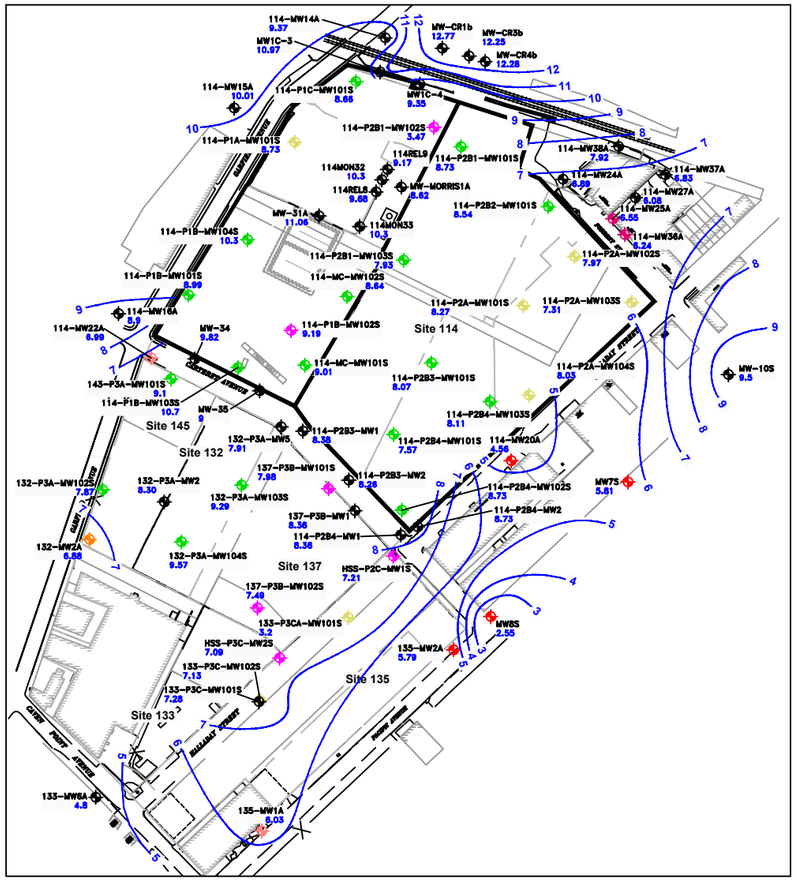


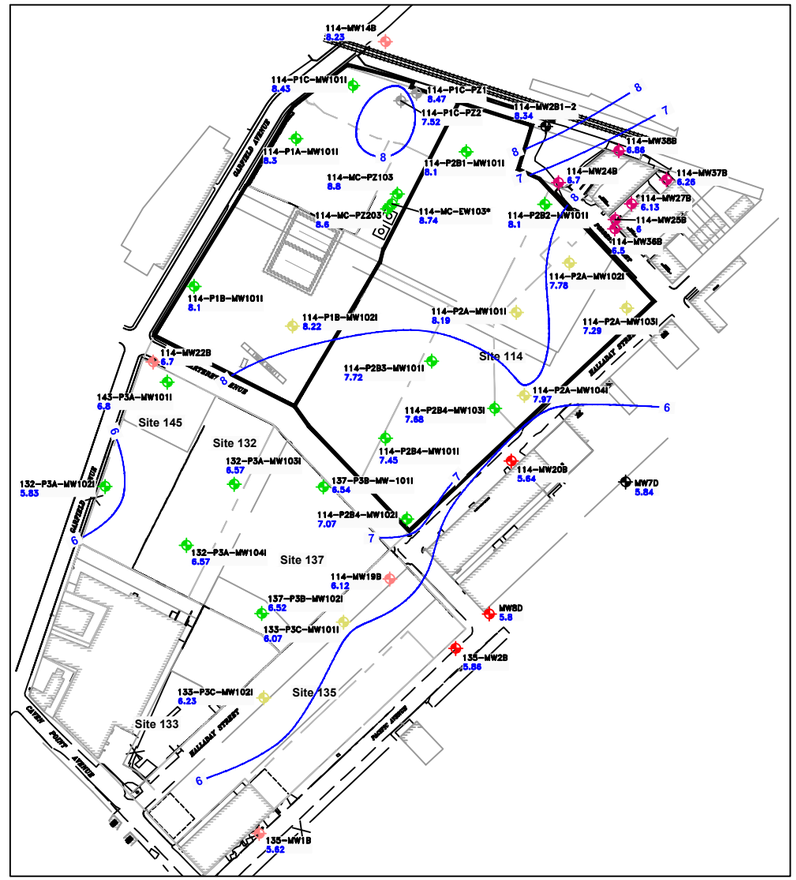


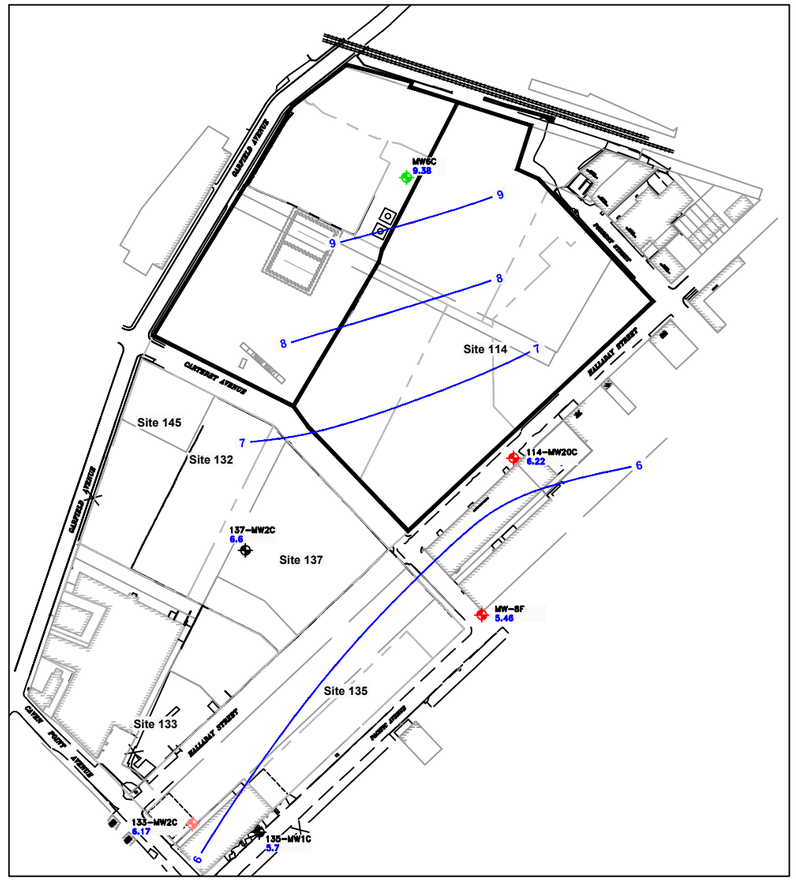


## SHALLOW WATER-BEARING ZONE

## INTERMEDIATE WATER-BEARING ZONE

## DEEP WATER-BEARING ZONE

LEGEND

- HISTORICAL RI WELLS (DATA FROM 2017)
- FERROBLACK ⊙ –H PBR MONITORING WELLS (JUNE 2016)
- FERROBLACK ⊙ –H PBR MONITORING WELLS (SEPTEMBER 2016)
- CHEMICAL REDUCTION PILOT TEST WELLS (SEPTEMBER & OCTOBER 2016)
- HISTORICAL RI WELLS (DECEMEBR 2015)
- WELLS SURROUNDING HALSTED AREA (OCTOBER 2015)
- BIOPRECIPITATION PILOT STUDY WELLS (APRIL 2015)
- FOREST STREET MONITORING WELLS (JULY 2015)
- HISTORICAL DATA FROM ACTIVE MONITORING WELLS PRE–REMEDIATION 2011–2014
- HISTORICAL DATA FROM DECOMMISSIONED MONITORING WELLS PRE–REMEDIATION 2011–2014

- SHEET PILES RELEVANT TO SITE 114 IRM
- MW7S 5.81 — MONITORING WELL WATER LEVEL ELEVATION (DECEMBER 2016) (ft amsl)
- 6 — INFERRED WATER LEVEL CONTOUR (ft amsl)

N□□□□□□
□□ E□□□□□□□□ □□r□□□□□d□□□□ □□NAV D□□, □□ U□S □□r□□□ □□□□□□

□□□□ □□□F□□□A□□□□ M□□□□ S□□ L□□□□
NAV D□□ □N□r□□ A□ □r□□□□ V□r□□□□D□□□□ □□□□□□□
PBR – Permit by Rule
R I – Remedial Investigation
IRM □I□□□r□□ R□□ □d□□□M□□□□r□□

N

0 180 360 FT

SCALE: 1" = 360'

PPG GARFIELD AVENUE GROUP SITES,
JERSEY CITY, NEW JERSEY

NP□□□□□□□□□□□□

# GROUNDWATER ELEVATION CONTOUR MAPS DECEMBER 2016

ARCADIS Design & Consultancy for natural and built assets

FIGURE 3

CITY:□COLUMBUS, O□IO□ DIV/GROUP:□MIDW□ DB:□R.SMI□□ LD:□□ PIC:□□ PM:□P.JIN□ TM:□□ LYR:□D□□ON:□□OFF:□REF□
C:□ENVCAD□TAMPA R□□□T□IC□□□□□□NP□□□□□□PPG JERSEY CITY□□□□□□□□□□□□NP□□□□□□□□□□□□□□□□□□□□□□□□□□□d□□ LAYOUT:□F□GW ELEV'S□AL□INTER DEEP
RIC□ARDS, JIM XREFS□ IMAGES□ PROJECTNAME□□□ SAVED:□□□□□□□□□□ □□□AM ACADVER:□□□□S LMS TEC:□□ PAGESETUP:□□□□ PLOTSTYLETABLE:□ACAD.CTB PLOTTED:□□□□□□□□□□□□□PM BY□□

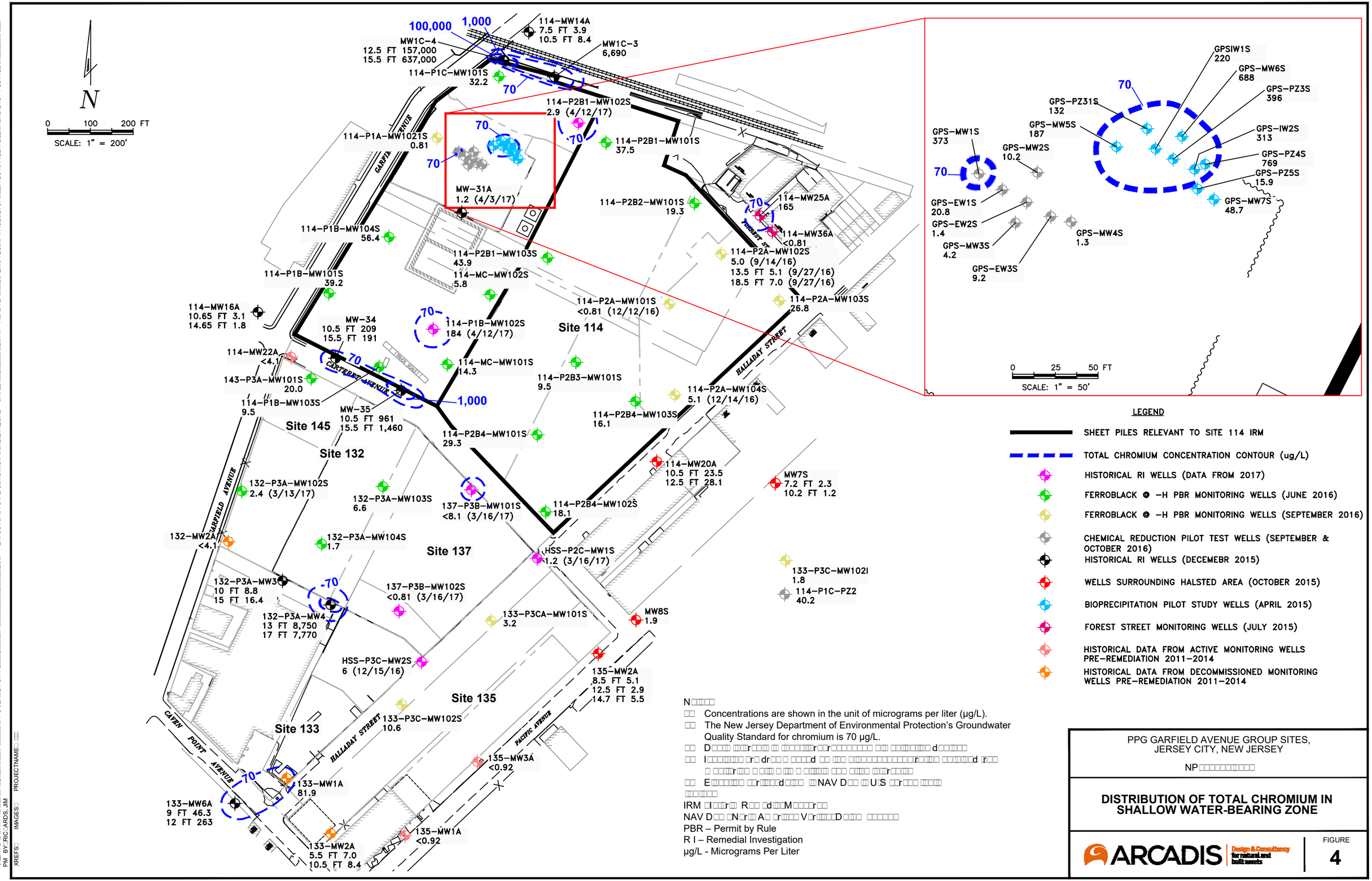


N□□□□□

□□ Concentrations are shown in the unit of micrograms per liter (µg/L).

□□ The New Jersey Department of Environmental Protection's Groundwater Quality Standard for chromium is 70 µg/L.

□□ D□□□ □□□r□□□ □□ □□□□□□r□□r□□□□□□ □□□ □□□□□□ d□□□□□

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□□ E□□□□□ □□r□□□d□□□ □NAV D□□ □U□S □□r□□ □□□□ □□□□□

IRM □I□□r□ R□□ □d□M□□□r□□

NAV D□□ □N□r□ A□ □r□□□ V□r□□□D□□□ □□□□□

PBR – Permit by Rule

R I – Remedial Investigation

µg/L - Micrograms Per Liter

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# DISTRIBUTION OF TOTAL CHROMIUM IN SHALLOW WATER-BEARING ZONE

ARCADIS Design & Consultancy for natural and built assets

FIGURE 4

CITY:COLUMBUS,O□IO□ DIV/GROUP:JM/DV□ DB:R□SMIT□□ LD:□□ PIC:□□ PM:TP□JIN□ TM:□□ LYR:□□□ON□□OFF□REF□
C:□ENVCAD□TAMPA□R□r□T□C□□□□□□NP□□□□□□PPG JERSEY CITY□□□□□□□□□NP□□□□□□□□□□□

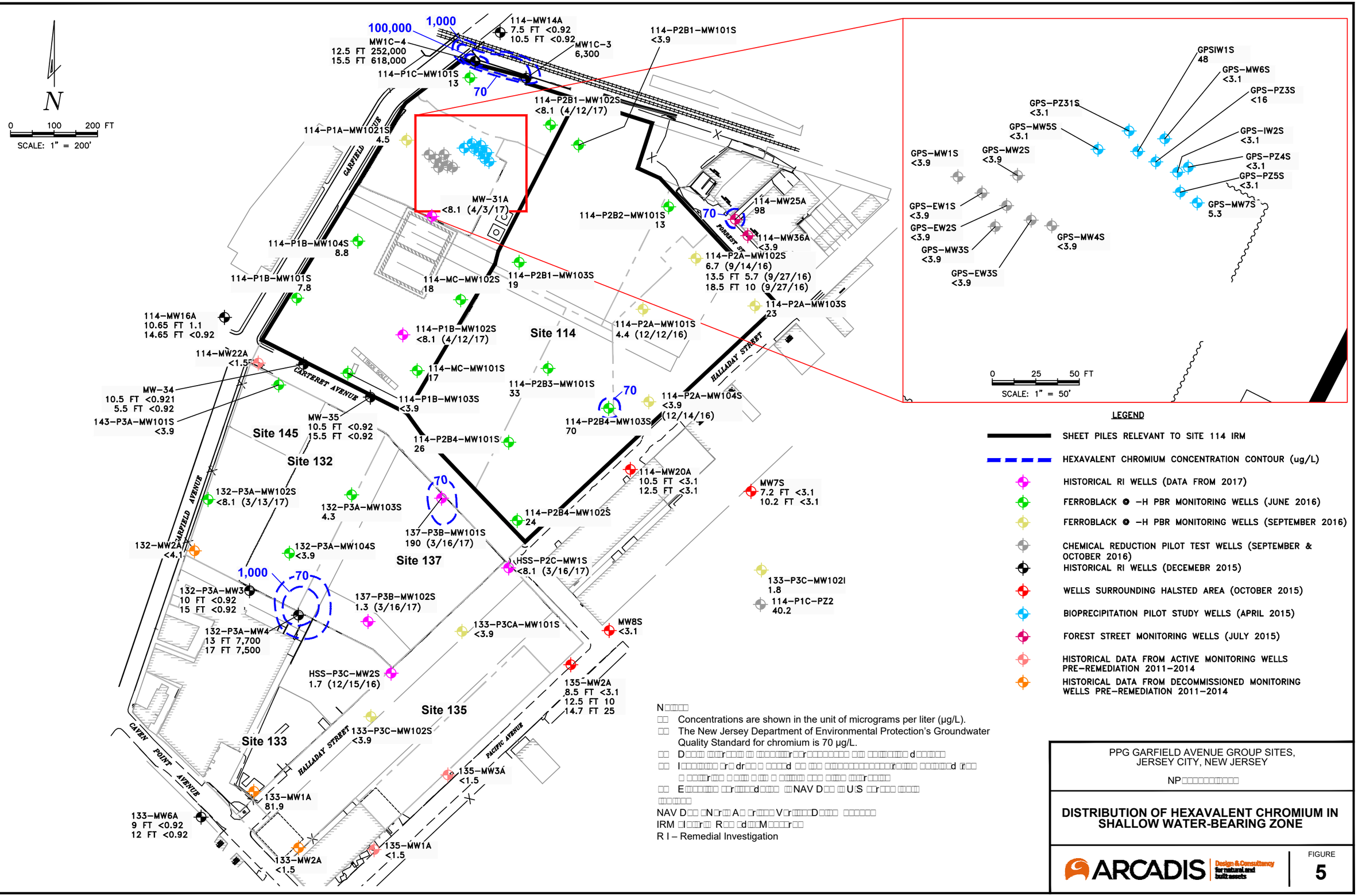


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# DISTRIBUTION OF HEXAVALENT CHROMIUM IN SHALLOW WATER-BEARING ZONE

ARCADIS Design & Consultancy for natural and built assets

FIGURE
5

CITY:COLUMBUS, OH DIV/GROUP:IM/DV DB:R.SMITH LD:TO PIC:TO PM:P.JIN TM:TO LYR:ON=TOFF:REF:
C:\ENVCAD\TAMPA\R_PLT\IC_□□□ □□□\NP_□□□□□\PPG JERSEY CITY\□□□□□□□□□\NP_□□□□□□□□□□□□□□□□□□□□□\d_□□ LAYOUT:F_□EXAVALENT C□ROMIUM S□AL GW ZONE
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XREFS□ IMAGES□ PROJECTNAME□ □□□

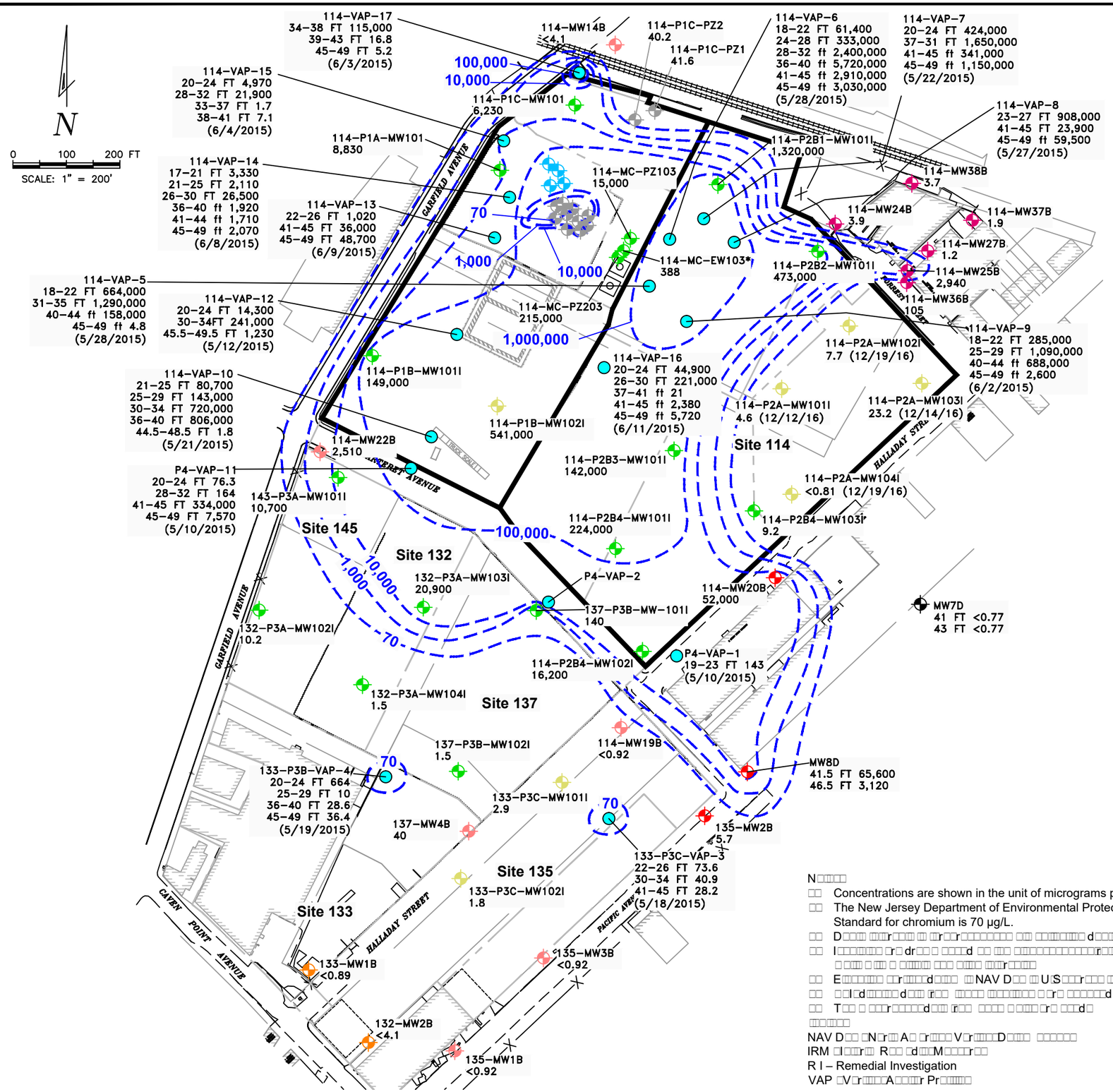


N□□□□□

□□ Concentrations are shown in the unit of micrograms per liter (µg/L).

□□ The New Jersey Department of Environmental Protection's Groundwater Quality Standard for chromium is 70 µg/L.

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□□ T□□ □ □□□r□□□□□d□□□ r□□ □□□□ □ □□□□ □r□ □□□d□

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NAV D□□ □N□r□□ A□ □r□□□□ V□r□□□□D□□□□ □□□□□□□

IRM □I□□r□□ R□□ □d□□M□□□□r□□

R I – Remedial Investigation

VAP □V□r□□□□A□□□□r Pr□□□□□

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# DISTRIBUTION OF TOTAL CHROMIUM IN INTERMEDIATE WATER-BEARING ZONE

ARCADIS Design & Consultancy for natural and built assets

FIGURE 6

CITY:□COLUMBUS, O□IO□ DIV/GROUP:□IM DIV.□ DB:□R.SMIT□ LD:□O□ PIC:□O□ PM:□P.JIN□ TM:□O□ LYR:□O□ON□O□F□REF□□
C:□ENVCAD.TAMPA.R□□r□T□IC□□□□NP□□□□□□□PPG JERSEY CITY□□□□□□□□□□□□NP□□□□□□□□□□□□□□□

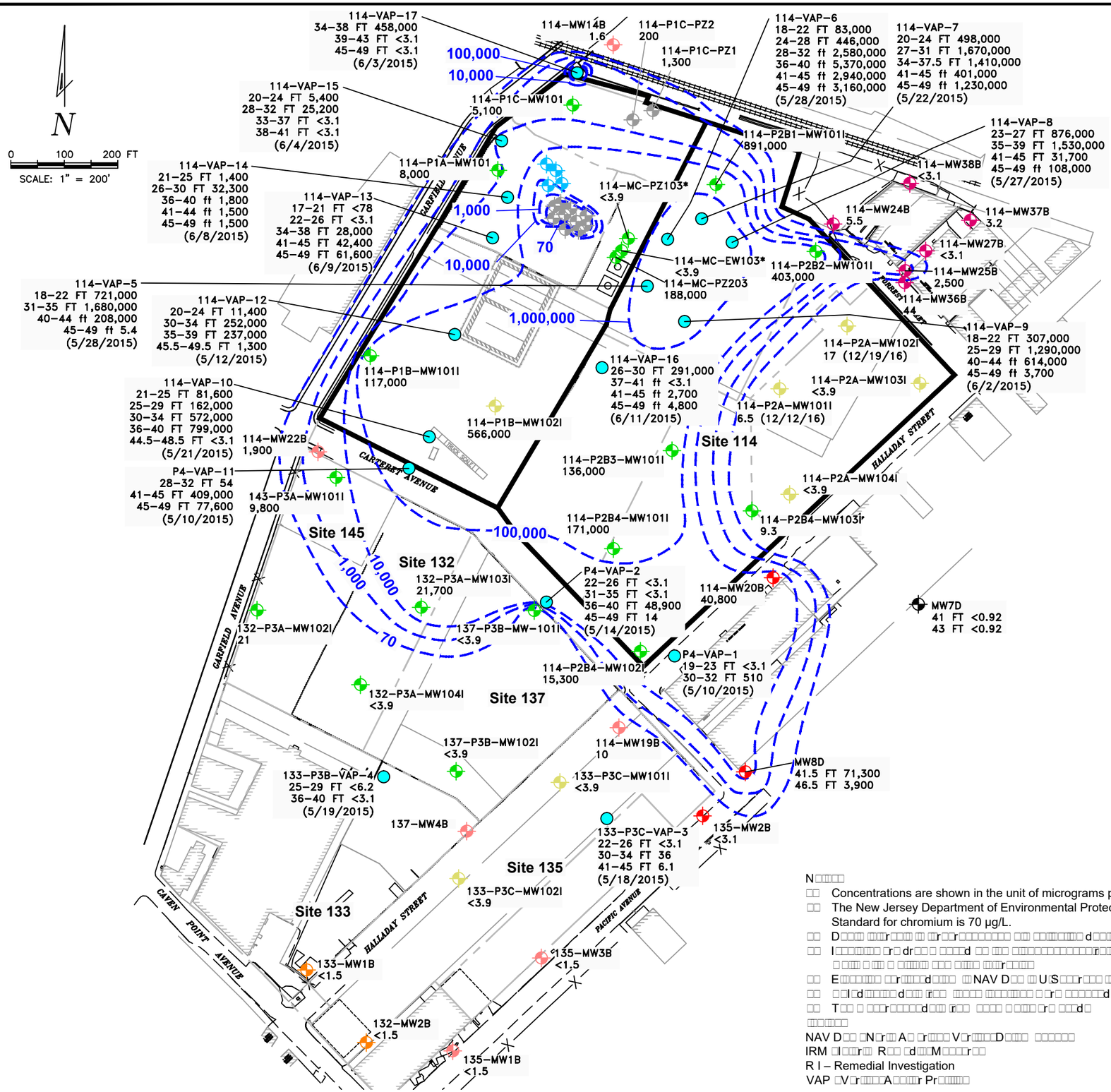


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□□ Concentrations are shown in the unit of micrograms per liter (µg/L).

□□ The New Jersey Department of Environmental Protection's Groundwater Quality Standard for chromium is 70 µg/L.

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□□ E□□□□□□□□ □□r□□□□d□□□□ □□NAV D□□ □□ U□S□□□r□□□ □□□

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NAV D□□ □N□r□□ A□ □r□□□□ V□r□□□□D□□□□ □□□□□□□

IRM □I□□□r□□ R□□ □d□□□M□□□□r□□

R I – Remedial Investigation

VAP □V□r□□□□A□□□□r Pr□□□□□

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**DISTRIBUTION OF HEXAVALENT CHROMIUM IN INTERMEDIATE WATER-BEARING ZONE**

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FIGURE
7

CITY:(COLUMBUS, OHIO) DIV/GROUP:JIM DIV DB:R.SMITH LD:(OPT) PIC:(OPT) PM:JP.JIN TM:(OPT) LYR:(ON);(OFF);REF*
C:\ENVCAD\TAMPA\□r□T□\C□□□□□\NP□□□□□\PPG JERSEY CITY□□□□□□□\NP□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□d□□
□□□□□□□ □□□PM BY:RIC□ARDS, JIM
XREFS: IMAGES: PROJECTNAME:□ □□□
CITY:(COLUMBUS, OHIO) DIV/GROUP:JIM DIV DB:R.SMITH LD:(OPT) PIC:(OPT) PM:JP.JIN TM:(OPT) LYR:(ON);(OFF);REF
C:\ENVCAD\TAMPA\□r□T□\C□□□□□\NP□□□□□\PPG JERSEY CITY□□□□□□□\NP□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□d□□
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C:\ENVCAD\TAMPA\□r□T□\C□□□□□\NP□□□□□\PPG JERSEY CITY□□□□□□□\NP□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□d□□
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XREFS: IMAGES: PROJECTNAME:□ □□□
CITY:(COLUMBUS, OHIO) DIV/GROUP:JIM DIV DB:R.SMITH LD:(OPT) PIC:(OPT) PM:JP.JIN TM:(OPT) LYR:(ON);(OFF);REF
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0 100 200 FT

SCALE: 1" = 200'

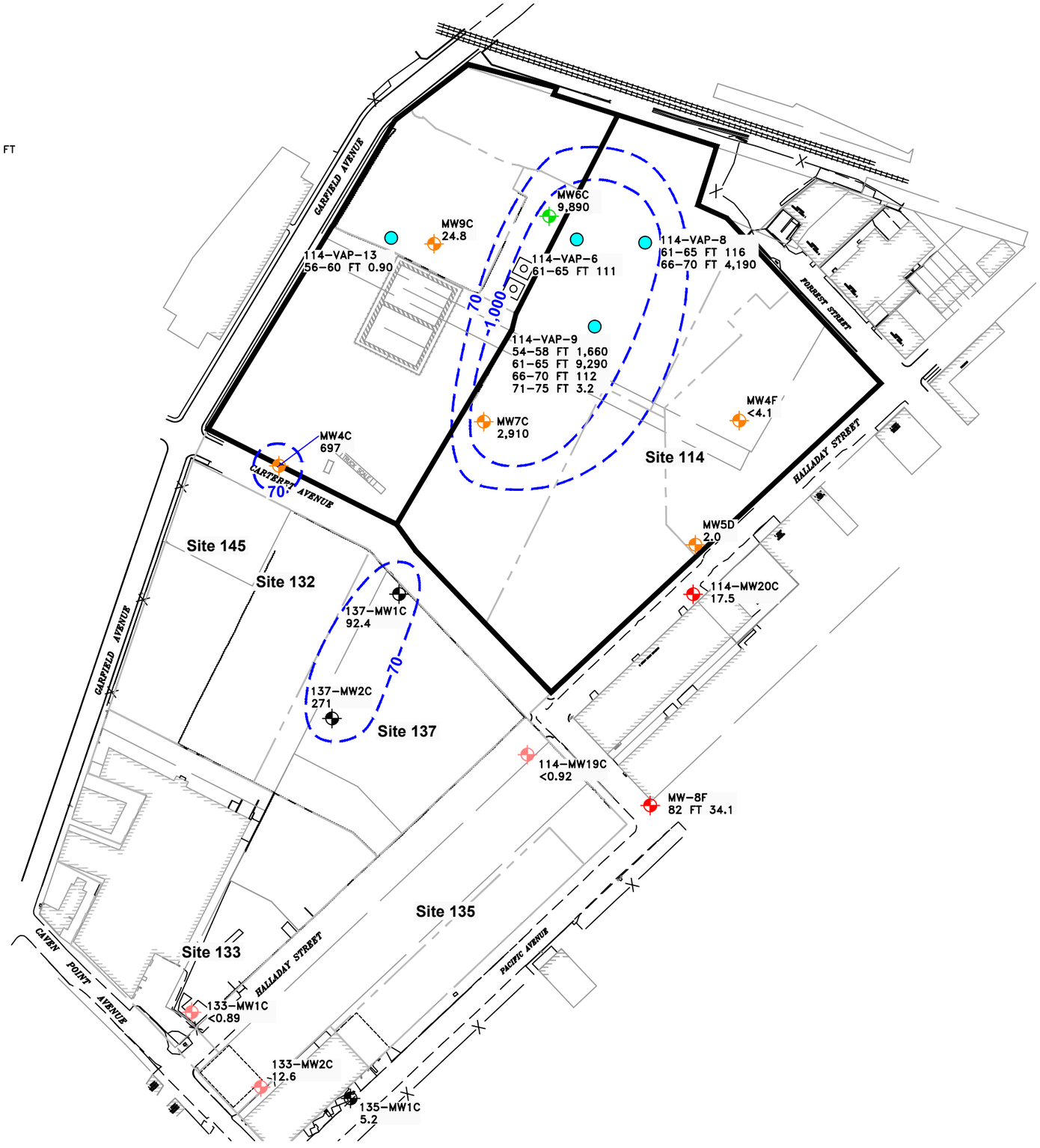


LEGEND

- SHEET PILES RELEVANT TO SITE 114 IRM
- 70 — TOTAL CHROMIUM CONCENTRATION CONTOUR (ug/L)
- FERROBLACK ⊙ –H PBR MONITORING WELLS (JUNE 2016)
- HISTORICAL RI WELLS (DECEMEBR 2015)
- WELLS SURROUNDING HALSTED AREA (OCTOBER 2015)
- HISTORICAL DATA FROM ACTIVE MONITORING WELLS PRE–REMEDIATION 2011–2014
- HISTORICAL DATA FROM DECOMMISSIONED MONITORING WELLS PRE–REMEDIATION 2011–2014
- VAP BORING (MAY/JUNE 2015)

N□□□□□
□□ Concentrations are shown in the unit of micrograms per liter (µg/L).
□□ Pr□r□□ □d□□□□□ d□□□ d□□□□ r□□ □□□□□□□□□□□
□□ D□□□□ □□□r□□□□r□□r□□□□□□□□□ □□□ □□□□□□□□□ d□□□□□□
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□ □□□□r□□□ □ □□□□ □r VAP □□□□□□□□ □ □□□ □ □□□□□□ □□□ □□□□ □□□□r□□□□
□□ T□□ □ □□□r□□□□□d□□□ r□□ □□□□ □ □□□□ □r□ □□□d□
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IRM □I□□□r□ R□□ □d□□M□□□□r□□
R I – Remedial Investigation
VAP □V□r□□□□A□□□□r Pr□□□□□

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**DISTRIBUTION OF TOTAL CHROMIUM IN DEEP WATER-BEARING ZONE**

ARCADIS Design & Consultancy for natural and built assets

FIGURE 8

CITY:□COLUMBUS, OH□ DIV/GROUP:□IM□DV□ DB:□R.SMI□□ LD:□□ PIC:□□ PM:□P.JIN□ TM:□□ LYR:□□ ON:□□ OFF:□REF□
C:□ENVCAD□TAMPA□R□□T□IC□□□□□NP□□□□□□□PPG JERSEY CITY□□□□□□□□□□□NP□□□□□□□□□□□□□□

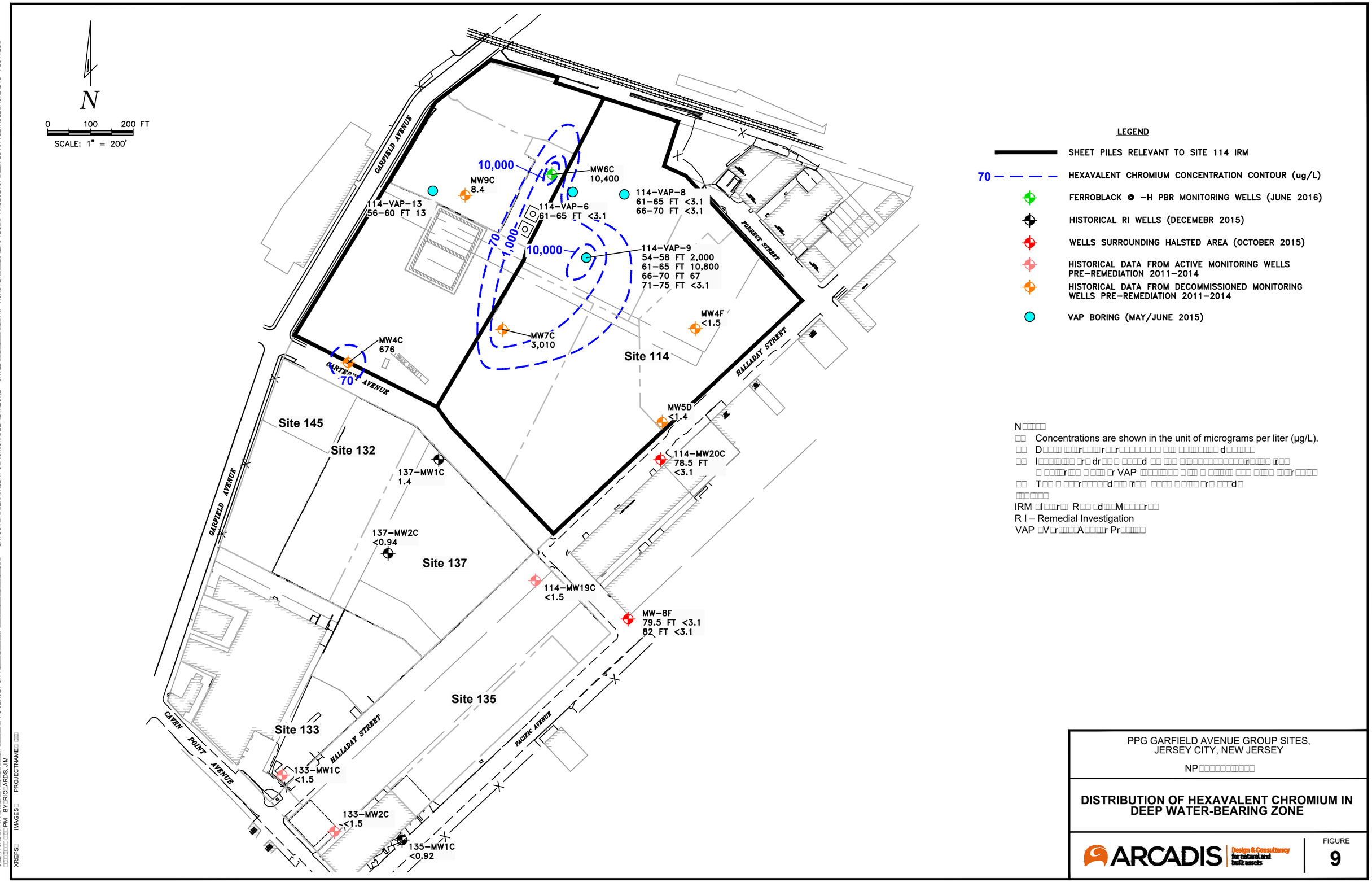


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**DISTRIBUTION OF HEXAVALENT CHROMIUM IN DEEP WATER-BEARING ZONE**

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FIGURE
9

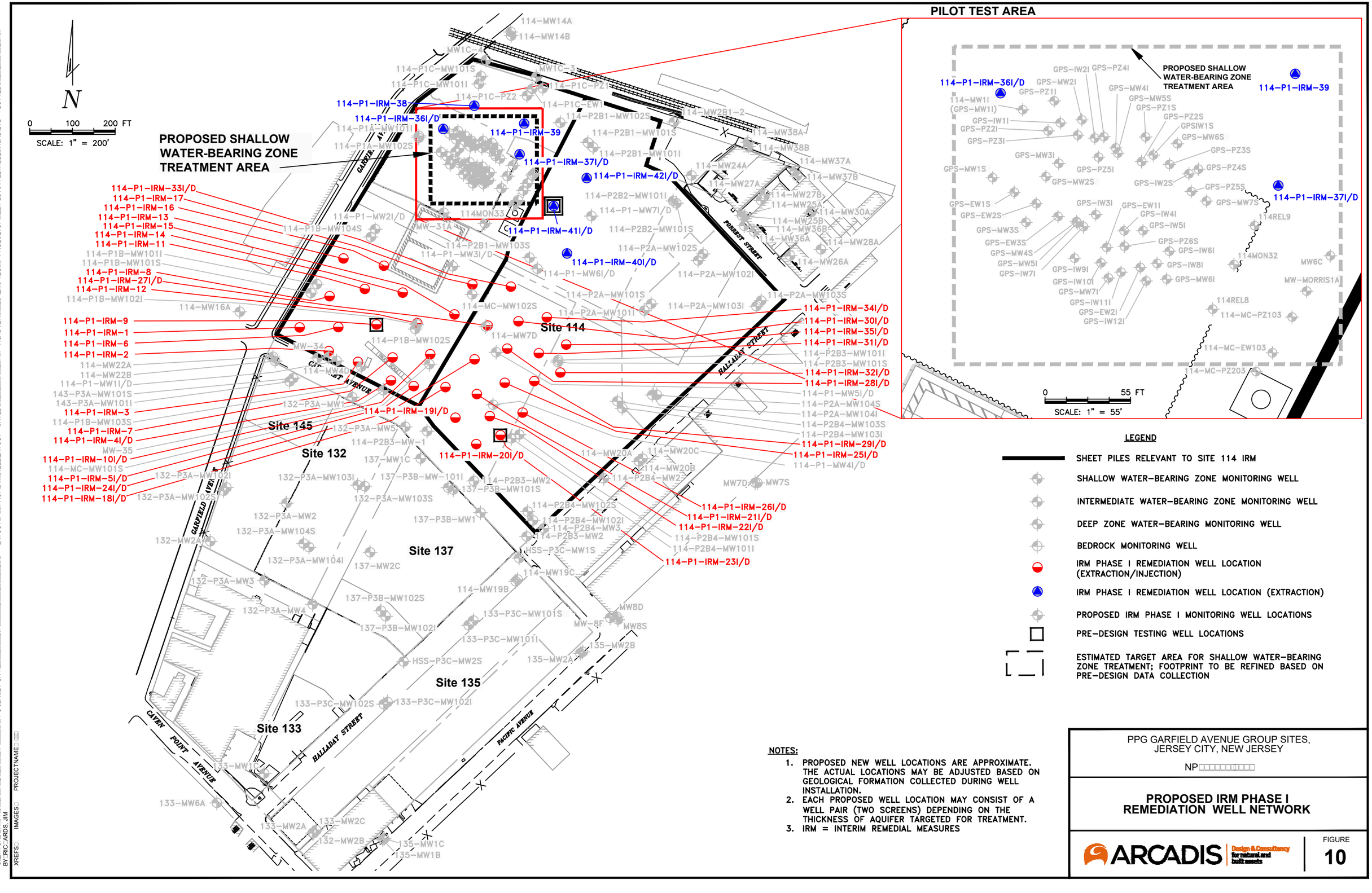


**NOTES:**

1. PROPOSED NEW WELL LOCATIONS ARE APPROXIMATE. THE ACTUAL LOCATIONS MAY BE ADJUSTED BASED ON GEOLOGICAL FORMATION COLLECTED DURING WELL INSTALLATION.
2. EACH PROPOSED WELL LOCATION MAY CONSIST OF A WELL PAIR (TWO SCREENS) DEPENDING ON THE THICKNESS OF AQUIFER TARGETED FOR TREATMENT.
3. IRM = INTERIM REMEDIAL MEASURES

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# PROPOSED IRM PHASE I REMEDIATION WELL NETWORK

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FIGURE 10

CITY:□COLUMBUS, O□ DIV/GROUP:□IM/DV□ DB:R□SMII□ LD:□□ PIC:□□ PM:□P□JIN□ TM:□D□ LYR:□□ON□ OFF:□REF□
C:□ENVCAD□TAMPA R:□□T□/C□□□□NP□□□□□□PPG JERSEY CITY□□□□□□□□□NP□□□□□□□□□□□

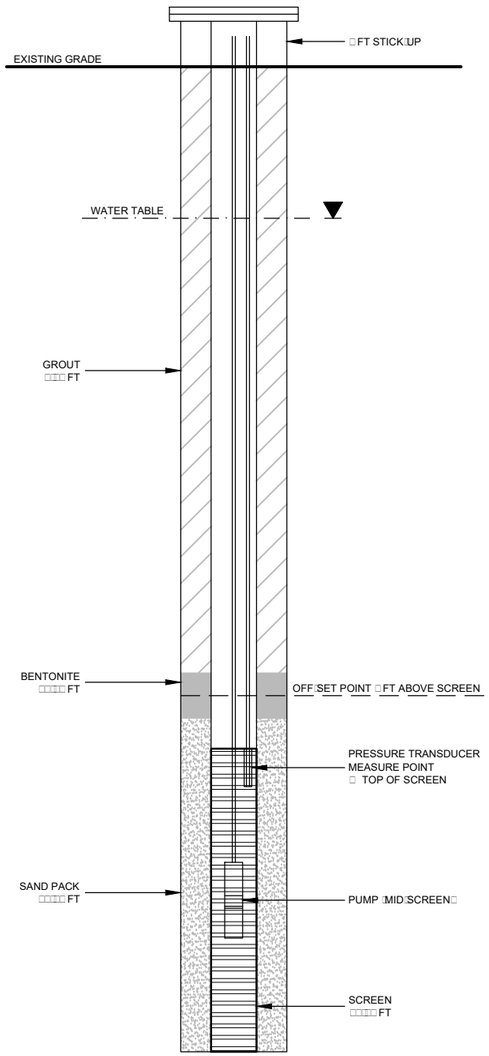


**DEEP WATER-BEARING ZONE EXTRACTION WELL**

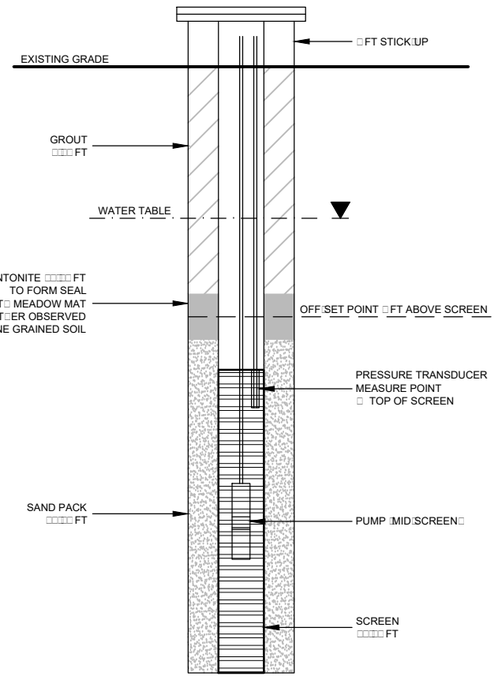


**INTERMEDIATE WATER-BEARING ZONE EXTRACTION WELL**

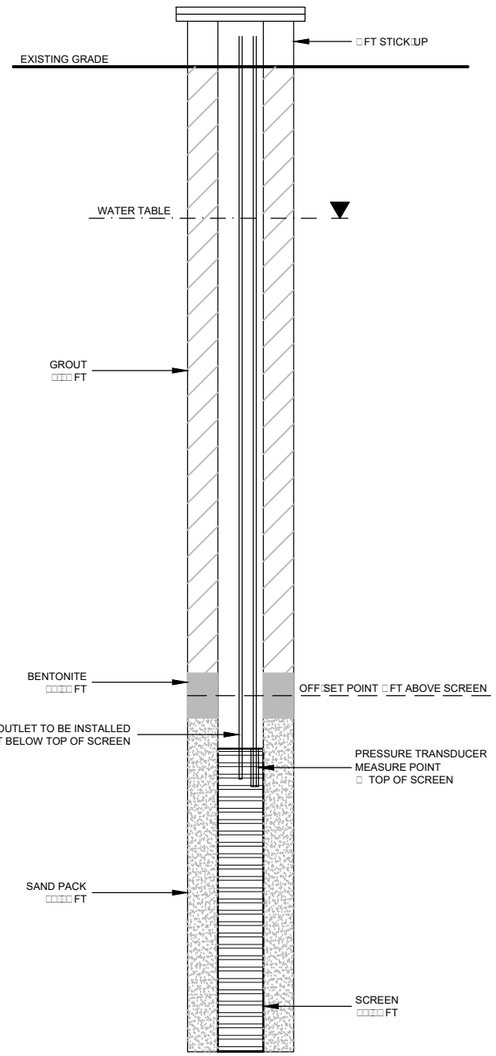


**DEEP WATER-BEARING ZONE INJECTION WELL**

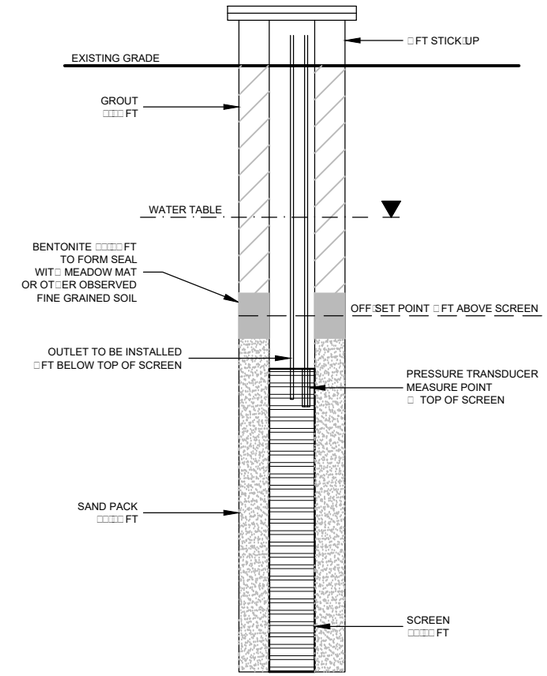


**INTERMEDIATE WATER-BEARING ZONE INJECTION WELL**

**DRAWING NOT TO SCALE**

NOTE

ACTUAL LENGT OF SCREEN AND OPERATIONS WILL BE BASED ON PRE DESIGN TESTING AND FIELD OBSERVATIONS

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**CONCEPTUAL EXTRACTION AND INJECTION WELL CONSTRUCTION DETAILS**

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FIGURE
11

CITY COLUMBUS, O DIV GROUP IM DV DB R SMIT LD O PIC O PM P JIN TM O LYR O ON OFF REF
C ENVCAD TAMPA R T C NP PPG JERSEY CITY NP P d LAYOUT FIG SAVED PM ACADVER S LMS TEC PAGESETUP PLOTSTYLETABLE PLTFULL CTB PLOTTED PM BY RIC ARDS, JIM
XREFS IMAGES PROJECTNAME

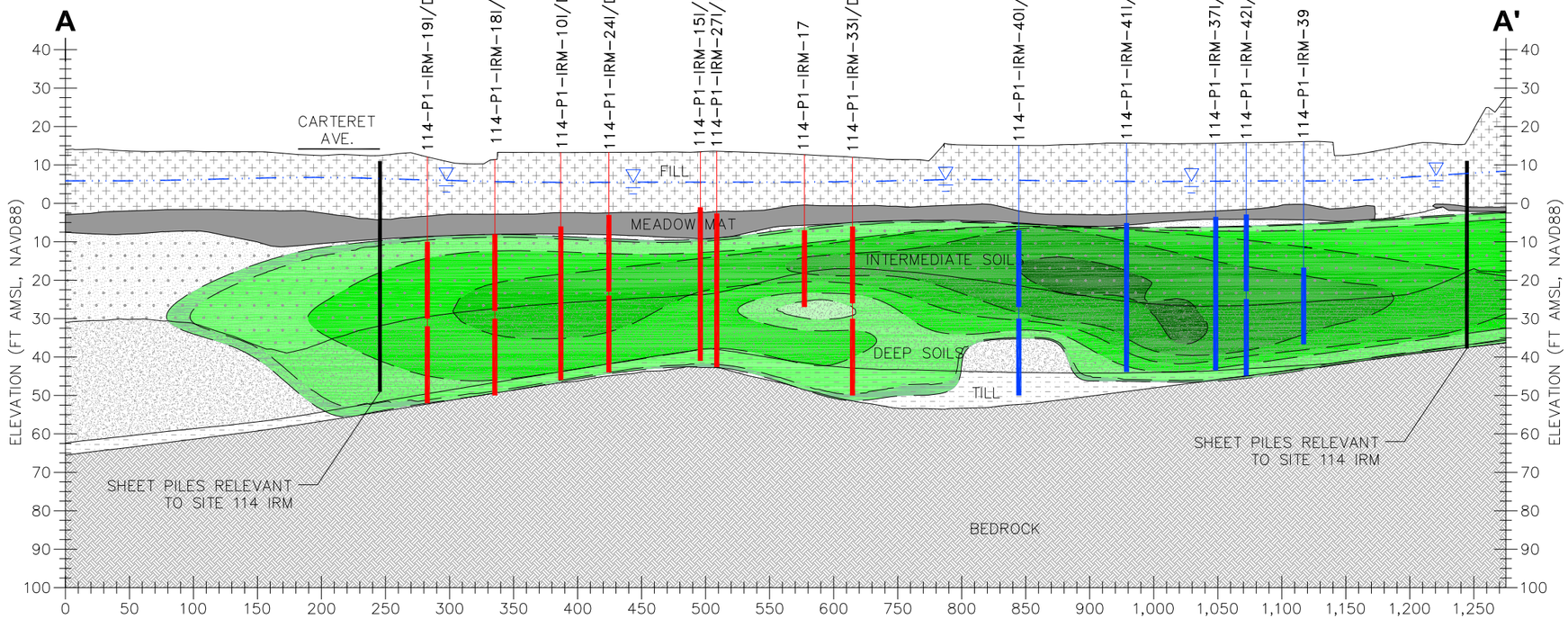


LITHOLOGY LEGEND

- FILL
- MEADOW MAT
- INTERMEDIATE SOILS
- DEEP SOILS
- TILL
- BEDROCK

DISSOLVED CR(VI) CONCENTRATIONS

- >1,000,000 µg/L CR(VI)
- 100,000–1,000,000 µg/L CR(VI)
- 10,000–100,000 µg/L CR(VI)
- 1,000–10,000 µg/L CR(VI)
- 100–1,000 µg/L CR(VI)
- 70–100 µg/L CR(VI)

FALL 2015 GROUNDWATER ELEVATIONS (NAVD88)

SHALLOW WELL

µg/L – MICROGRAMS PER LITER
CR(VI) – HEXAVALENT CHROMIUM
IRM – INTERIM REMEDIAL MEASURES
FT AMSL – FEET ABOVE MEAN SEA LEVEL
NAVD88 – NORTH AMERICAN VERTICAL DATUM 1988

LEGEND

IRM PHASE I REMEDIATION WELL LOCATION (INJECTION/EXTRACTION)–APPROXIMATE LOCATION AND SCREEN INTERVAL

IRM PHASE I REMEDIATION WELL LOCATION (EXTRACTION)–APPROXIMATE LOCATION AND SCREEN INTERVAL

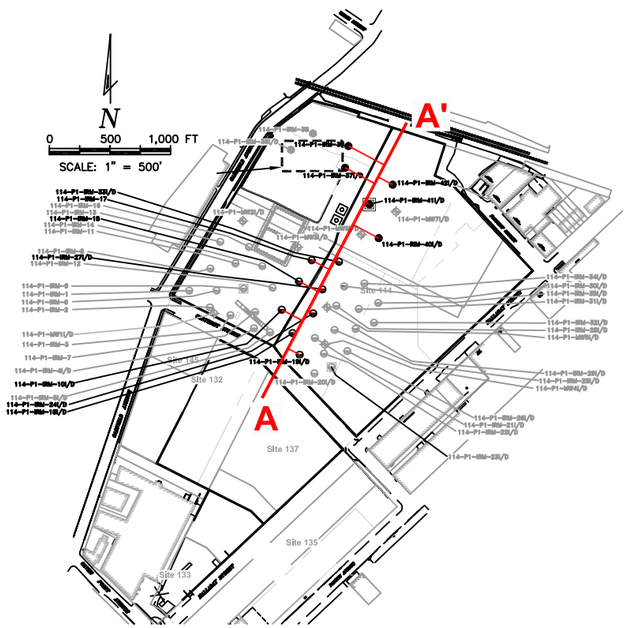


NOTE:

THE CROSS-SECTION AND HEXAVALENT CHROMIUM DISTRIBUTION WERE GENERATED BY AECOM (NOVEMBER 11, 2015).

PPG GARFIELD AVENUE GROUP SITES,
JERSEY CITY, NEW JERSEY

NP000775.0001

**ALIGNMENT OF IRM PHASE I REMEDIATION WELL NETWORK WITH GEOLOGY AND CHROMIUM DISTRIBUTION**

ARCADIS Design & Consultancy for natural and built assets

FIGURE
12

CITY:(COLUMBUS, OHIO) DIV/GROUP:(IM/DV) DB:(R. SMITH) LD:(Opt) PIC:(Opt) PM:(P. JIN) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
C:\ENVCAD\TAMPA\Return_To\Columbus\NP000775 - PPG JERSEY CITY\00011\00001\NP000775-0001-2017-08.dwg LAYOUT: F12 CROSS SECTION SAVED: 6/29/2017 2:51 PM ACADVER: 19.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ARCADIS.CTB PLOTTED: 6/29/2017 2:51 PM BY:
RICHARDS, JIM
XREFS: IMAGES: PROJECTNAME: ----

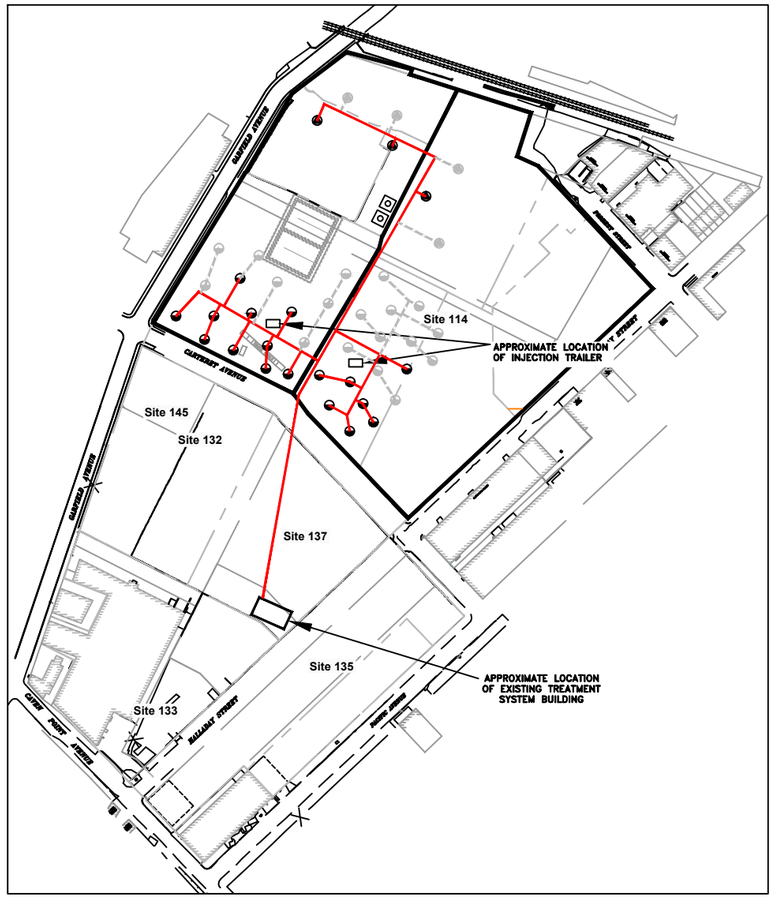


STEP 1

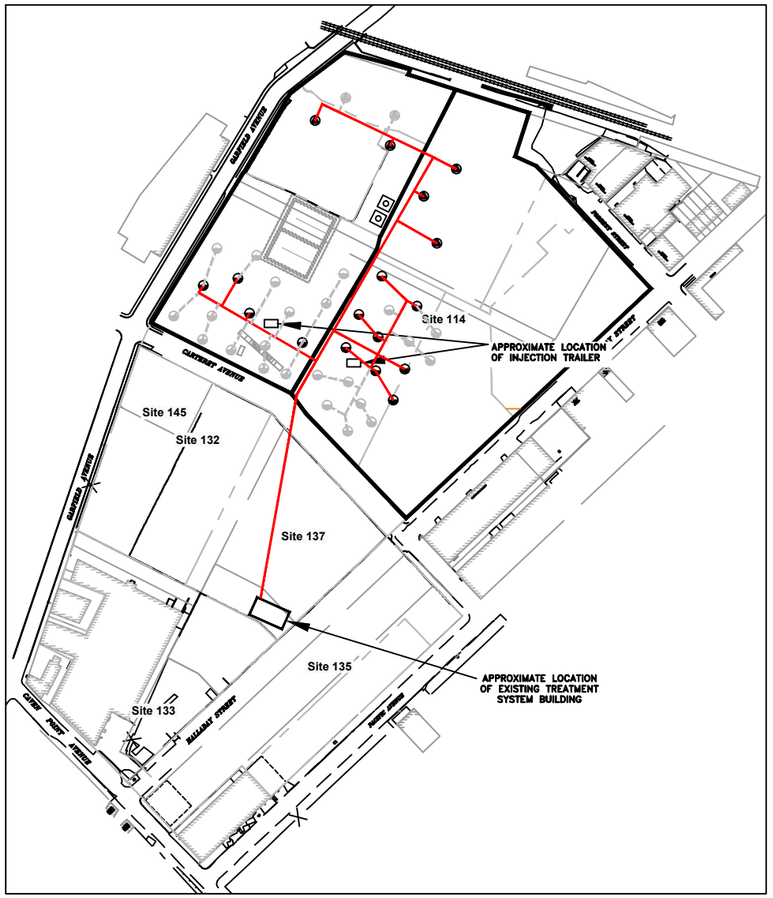


STEP 2

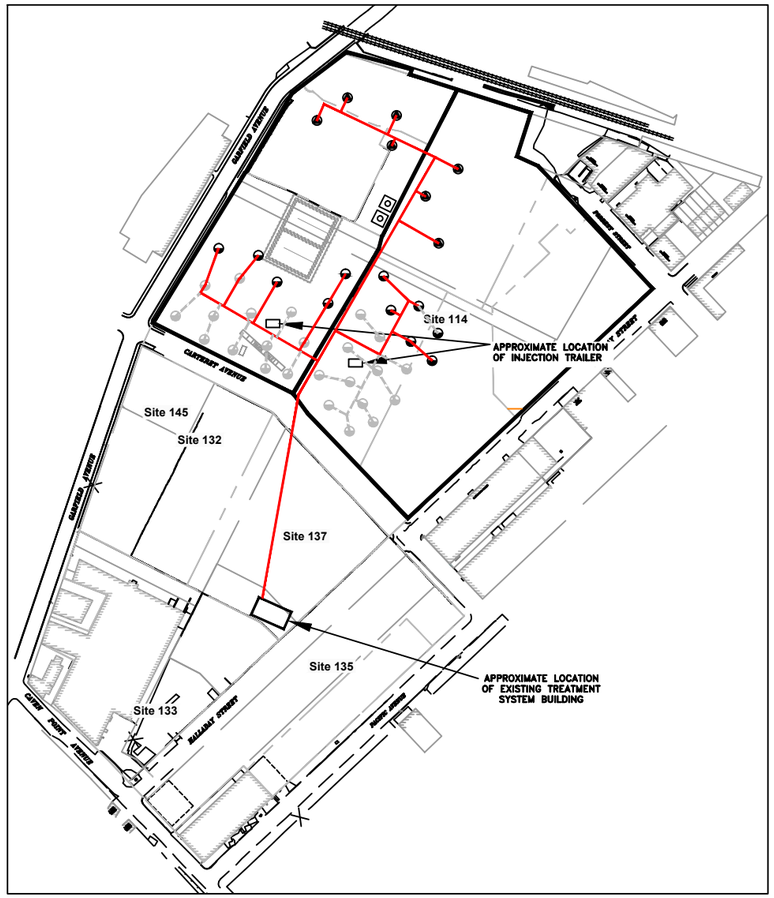


STEP 3

LEGEND

- SHEET PILES RELEVANT TO SITE 114 IRM
- OPERATING IRM PHASE I REMEDIATION WELL LOCATION (INJECTION/EXTRACTION)
- OPERATING IRM PHASE I REMEDIATION WELL LOCATION (EXTRACTION)
- NON-OPERATING IRM PHASE I REMEDIATION WELL LOCATION (INJECTION/EXTRACTION)
- NON-OPERATING IRM PHASE I REMEDIATION WELL LOCATION (EXTRACTION)
- ENTIRE IRM TREATMENT SYSTEM PIPING NETWORK
- OPERATING IRM TREATMENT SYSTEM PIPING LINES

NOTES:

1. PROPOSED NEW WELL LOCATIONS ARE APPROXIMATE. THE ACTUAL LOCATIONS MAY BE ADJUSTED BASED ON GEOLOGICAL FORMATION INFORMATION COLLECTED DURING WELL INSTALLATION.
2. EACH PROPOSED WELL LOCATION MAY CONSIST OF A WELL PAIR (TWO SCREENS) DEPENDING ON THE THICKNESS OF AQUIFER TARGETED FOR TREATMENT.
3. IRM = INTERIM REMEDIAL MEASURES

N

0 180 360 FT

SCALE: 1" = 360'

PPG GARFIELD AVENUE GROUP SITES,
JERSEY CITY, NEW JERSEY

NP□□□□□□□□□□□

# PROPOSED IRM PHASE I CONVEYANCE PIPING ORIENTATION

ARCADIS Design & Consultancy for natural and built assets

FIGURE 13

CITY:□COLUMBUS, OH□ DIV/GROUP:JIM,DV□ DB:R.SMIT□□ LD:□□ PIC:□□ PM:JP□JIN□ TM:□□ LYR:□□ON □OFF□REF□
C:□ENVCAD\TAMPA\R□□T□C□□□□INP:□□□□□PPG JERSEY CITY□□□□□□□□□INP:□□□□□□□□□□□

N

0 100 200 FT

SCALE: 1" = 200'

**PROPOSED SHALLOW WATER-BEARING ZONE TREATMENT AREA**

114-MW14A
114-MW14B
MW1C
MW1C-3
114-P1C-MW101S
114-P1C-MW101I
114-P1C-PZ1
114-P1C-PZ2
114-P1-IRM-38
114-P1C-EW1
114-P1-IRM-36I/D
114-P1A-MW101I
114-P1-IRM-39
114-P2B1-MW102S
114-P2B1-MW101S
114-P1A-MW102S
114-P2B1-MW101I
114-MW38A
114-MW38B
114-P1-IRM-37I/D
114-MW24A
114-MW37A
114-MW37B
114-P1-IRM-42I/D
114-MW27A
114-P2B2-MW101I
114-MW27B
114-MW25A
114-P1-MW7I/D
114-MW30A
114-P1-MW2I/D
114MON33
114-MW25B
114-MW36B
114-P1B-MW104S
MW-31A
114-P1-IRM-41I/D
114-P2B2-MW102S
114-MW36A
114-MW28A
114-P2B1-MW103S
114-P2A-MW102S
114-P1-MW3I/D
114-P1-IRM-40I/D
114-MW26A
114-P1-MW6I/D
114-P2A-MW102I
114-P2A-MW101S
114-P2A-MW103S
114-P2A-MW103I
114-MC-MW102S
114-P2A-MW101I
114-P1-IRM-34I/D
114-P1-IRM-30I/D
114-P1-IRM-35I/D
114-P1-IRM-31I/D
114-P2B3-MW101I
114-P2B3-MW101S
114-P1-IRM-32I/D
114-P1-IRM-28I/D
114-P1-MW5I/D
114-P2A-MW104S
114-P2A-MW104I
114-P2B4-MW103S
114-P2B4-MW103I
114-P1-IRM-29I/D
114-P1-IRM-25I/D
114-P1-MW4I/D
114-P1-IRM-26I/D
114-P1-IRM-21I/D
114-P1-IRM-22I/D
114-P2B4-MW101S
114-P2B4-MW101I
114-P1-IRM-23I/D
114-P2B4-MW102I
114-P2B4-MW3
114-P2B3-MW2
HSS-P3C-MW1S
114-MW19C
114-MW19B
MW8D
MW-8F
MW8S
133-P3C-MW101S
133-P3C-MW101I
135-MW2B
135-MW2A
HSS-P3C-MW2S
133-P3C-MW102S
133-P3C-MW102I
133-MW1C
133-MW6A
133-MW2A
133-MW2C
132-MW2B
135-MW1C
135-MW1B
MW7D
MW7S
114-MW20A
114-MW20C
114-MW20B
114-P2B4-MW2
114-P2B3-MW2
137-P3B-MW1
137-P3B-MW101I
137-P3B-MW101S
132-P3A-MW103S
137-P3B-MW102S
137-P3B-MW102I
137-MW2C
137-MW1C
132-P3A-MW2
132-P3A-MW104S
132-P3A-MW104I
132-P3A-MW3
132-P3A-MW4
132-MW2A
132-P3A-MW103I
132-P3A-MW102I
132-P3A-MW102S
132-P3A-MW5
114-P2B3-MW-1
132-P3A-MW1
114-P1-IRM-19I/D
114-P1-IRM-20I/D
114-MW7D
MW-34
114-MW4D
114-P1B-MW102S
114-MW16A
114-P1-IRM-9
114-P1-IRM-1
114-P1-IRM-6
114-P1-IRM-2
114-MW22A
114-MW22B
114-P1-MW1I/D
143-P3A-MW101S
143-P3A-MW101I
114-P1-IRM-3
114-P1B-MW103S
114-P1-IRM-7
114-P1-IRM-4I/D
MW-35
114-P1-IRM-10I/D
114-MC-MW101S
114-P1-IRM-5I/D
114-P1-IRM-24I/D
114-P1-IRM-18I/D
114-P1-IRM-33I/D
114-P1-IRM-17
114-P1-IRM-16
114-P1-IRM-13
114-P1-IRM-15
114-P1-IRM-14
114-P1-IRM-11
114-P1B-MW101I
114-P1B-MW101S
114-P1-IRM-8
114-P1-IRM-27I/D
114-P1-IRM-12
114-P1B-MW102I

Site 114
Site 145
Site 132
Site 137
Site 135
Site 133

GARFIELD AVENUE
CASTLE AVENUE
FORREST STREET
HALLADAY STREET
CAVEN POINT AVENUE
PACIFIC AVENUE

## PILOT TEST AREA

GPS-IW2I
GPS-PZ4I
114-P1-IRM-39
114-P1-IRM-36I/D
GPS-MW2I
GPS-PZ1I
GPS-MW4I
GPS-MW5S
114-MW1I
(GPS-MW1I)
GPS-PZ1S
GPS-IW1I
GPS-PZ2S
GPS-PZ2I
GPSIW1S
GPS-PZ3I
GPS-MW6S
GPS-MW3I
GPS-PZ3S
GPS-MW1S
GPS-PZ5I
GPS-PZ4S
GPS-MW2S
114-P1-IRM-37I/D
GPS-IW2S
GPS-PZ5S
GPS-EW1S
GPS-IW3I
GPS-EW1I
GPS-MW7S
GPS-EW2S
GPS-IW4I
114REL9
GPS-MW3S
GPS-IW5I
GPS-EW3S
GPS-PZ6S
MW6C
GPS-MW4S
GPS-IW6I
114MON32
GPS-MW5I
GPS-IW8I
GPS-IW9I
GPS-IW7I
GPS-MW6I
114-MW6D
GPS-IW10I
MW-MORRIS1A
GPS-MW7I
114REL8
GPS-IW11I
114-MC-PZ103
GPS-EW2I
GPS-IW12I
114-MC-EW103
114-MC-PZ203

0 25 50 FT

SCALE: 1" = 50'

**LEGEND**

- SHEET PILES RELEVANT TO SITE 114 IRM
- SHALLOW WATER-BEARING ZONE MONITORING WELL
- INTERMEDIATE WATER-BEARING ZONE MONITORING WELL
- DEEP ZONE WATER-BEARING MONITORING WELL
- IRM PHASE I RECIRCULATION/IN-SITU TREATMENT AREA WELL LOCATIONS
- IRM PHASE I RECIRCULATION ONLY AREA WELL LOCATIONS
- PROPOSED IRM PHASE I MONITORING WELL LOCATIONS
- PRE-DESIGN TESTING WELL LOCATIONS
- MONITORING WELLS NOT INCLUDED IN THE IRM PHASE I MONITORING PROGRAM

**NOTES:**

1. PROPOSED NEW WELL LOCATIONS ARE APPROXIMATE. THE ACTUAL LOCATIONS MAY BE ADJUSTED BASED ON GEOLOGICAL FORMATION COLLECTED DURING WELL INSTALLATION.
2. EACH PROPOSED WELL LOCATION MAY CONSIST OF A WELL PAIR (TWO SCREENS) DEPENDING ON THE THICKNESS OF AQUIFER TARGETED FOR TREATMENT.
3. IRM = INTERIM REMEDIAL MEASURES

PPG GARFIELD AVENUE GROUP SITES,
JERSEY CITY, NEW JERSEY

NP□□□□□□□□□□□

**PROPOSED IRM PHASE I MONITORING WELL NETWORK**

ARCADIS Design & Consultancy for natural and built assets

FIGURE 14

C:\ENVCAD\TAMPA\□□T\C□□□□□□\NP□□□□□□\PPG JERSEY CITY□□□□□□□\NP□□□□□□□□□□□□□□□□□\d□□ LAYOUT-F□□PROP IRM WELL SAVED□□□□□□□□ □□□□ AM BY□
CITY:\COLUMBUS_O□IO□ DIV.GROUP:□MI.DV□ DB:R□SMIT□□ LD:□O□ PIC:□O□ PM:□P□JIN□ IM□O□ LYR:□O□ON□□OFF□REF□
XREFS□ IMAGES□ PROJECTNAME□□□□
RIC□ARDS, JIM ACADVER□□□□□S LMS TEC□□ PAGESETUP□□□□ PLOTSTYLETABLE□ACAD.CTB PLOTTED□□□□□□□□ □□□□ AM

# APPENDIX A

## Draft Public Notice

## DRAFT PUBLIC NOTICE

Take notice that, as part of the remediation of Garfield Avenue Site 114 and Former Halladay Street Gas Works at 900 Garfield Avenue, Block: 21501 Lots: 16,17,18, 19, 20, in City of Jersey City, Hudson County, a proposal has been submitted to the New Jersey Department of Environmental Protection (Department) to discharge to ground water in accordance with a permit issued pursuant to the provisions of the New Jersey Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., the New Jersey Pollutant Discharge Elimination System, N.J.A.C. 7:14A; the Ground Water Quality Standards, N.J.A.C. 7:9C; and the Technical Requirements for Site Remediation, N.J.A.C. 7:26E. The Department's Site Remediation Program is reviewing the proposal to discharge to ground water for the purpose of remediating a contaminated site with the program interest # G000008791.

Brief description of the proposed discharge: The Phase I pilot study will be implemented at Site 114, which is located at 900 Garfield Avenue in Jersey City, Hudson County, New Jersey. The site is located on the Jersey City peninsula approximately midway between the Passaic River and Hackensack River junction to the west (approximately 1.8 miles) and the upper bay/mouth of the Hudson River to the east (approximately 1.6 miles). The local overburden geology is generally consistent with the regional geologic mapping, and includes approximately 16 feet of poorly sorted fill materials over organic rich meadow mat. The meadow mat occurs over most of the site and marks the transition from the shallow fill aquifer to the intermediate depth and deep aquifers, although in some areas the meadow mat is absent. The Pilot Study will include a combination of groundwater extraction, treatment, and reinjection to achieve in-situ anaerobic bioprecipitation (ISAB) and in-situ chemical reduction (ISCR) In the overburden. ISAB will be achieved by injecting organic carbon substrate (e.g., molasses and/or emulsified vegetable oil [EVO]) to establish geochemical reducing conditions to stimulate native microbial community for reducing hexavalent chromium (Cr[VI]) to trivalent chromium (Cr[III]) which will eventually be precipitated and permanently fixed in soil formation. At the same time, distribution of injected organic carbon substrate and expansion of established reducing conditions (ISCR) will be supported with a dynamically operated well network (i.e., alternately operating wells for extraction and/or injection as needed) and groundwater recirculation (i.e., reinjecting of extracted groundwater after aboveground treatment). A copy of this public notice has been sent to the Municipal Clerk and designated local health official for Jersey City and Hudson County.

A copy of the discharge to ground water proposal is available from the person responsible for conducting the remediation (Mark Terril, One PPG Place, Pittsburgh, PA 15222), or as part of the administrative record which is on file at the offices of the Department, Site Remediation Program, located at 401 East State Street, Trenton, Mercer County, New Jersey. The file may be reviewed under the New Jersey Open Public Records Act (OPRA), N.J.S.A. 47:1A-1 et seq. Information regarding the OPRA procedures is available at http://www.state.nj.us/dep/opra/oprainfo.html.

Interested persons may submit written comments regarding the discharge to ground water proposal to the Department at the address listed below and to the owner or operator of the facility: Richard Feinberg, 900 Garfield Avenue, Jersey City, NJ, 07305. All comments shall be submitted within 30 calendar days after the date of this public notice, or the end of any public hearing that the Department may schedule that occurs after that date. All persons who believe that the discharge to ground water proposal is inappropriate, must submit all reasonably ascertainable issues in writing to the Department, with all

supporting material, by the close of the public comment period. The Department will consider all public comments that relate to the discharge to ground water proposal, provided that the Department receives the comments by the close of the public comment period. After the close of the public comment period, the Department will render a decision regarding the proposed discharge to ground water.

The Department will respond to all significant and timely comments with its decision regarding the discharge to ground water proposal. Each person who has submitted written comments will receive notice of the Department's decision.

Any person may request in writing that the Department hold a non-adversarial public hearing on the discharge to ground water proposal. This request shall state the nature of the issues to be raised in the proposed hearing and shall be submitted within 30 calendar days of the date of this public notice to the address cited below. A public hearing will be conducted whenever the Department determines that there is a significant degree of public interest in the discharge to ground water decision. If a public hearing is held, the public comment period in this notice shall automatically be extended to the close of the public hearing.

Comments and written requests for a non-adversarial public hearing shall be sent to:

NJ Department of Environmental Protection
Site Remediation Program
Bureau Case Assignment and Initial Notice
Mail Code 401-05H
401 East State Street
P.O. Box 420 Trenton,
NJ 08625-0420
ATTN: DGW proposal

# APPENDIX B

## Historical Groundwater and Soil Data

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 10W-D32A | 10W-F38A | 10W-H35A | 10W-I43A | 10W-L39A | 10W-M45A | 90FORR-ESW-001 | 90FORR-WSW-001 | 114-ABPT-IW1I-010515 | 114-ABPT-IW1I-040815 | 114-ABPT-IW1I-060314 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | | | | |
| Date Collected: | | | 05/29/14 | 05/28/14 | 05/28/14 | 05/15/14 | 05/20/14 | 05/29/14 | 10/05/11 | 10/05/11 | 01/05/15 | 04/08/15 | 06/03/14 |
| Location ID: | CAS Number | Units | 10W-D32A | 10W-F38A | 10W-H35A | 10W-I43A | 10W-L39A | 10W-M45A | Forrest-SUMP-E | Forrest-SUMP-W | GPS-IW1I | GPS-IW1I | GPS-IW1I |
| **Volatile Organics** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.0 U [5 U] | 5.0 U | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.0 U [5 U] | 5.0 U | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.0 U [5 U] | 5.0 U | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.0 U [5 U] | 5.0 U | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | 10 U | 10 U | 10 U | 10 U | 10 U [10 U] | 10 U | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.0 U [5 U] | 5.0 U | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | 10 U | 10 U | 10 U | 10 U | 10 U [10 U] | 10 U | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | 0.50 U | 0.50 U | 0.50 U | 0.50 U | 0.50 U [0.5 U] | 0.50 U | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.0 U [5 U] | 5.0 U | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U [2 U] | 2.0 U | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U [2 U] | 2.0 U | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U [2 U] | 2.0 U | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.0 U [5 U] | 5.0 U | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.0 U [5 U] | 5.0 U | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.0 U [5 U] | 5.0 U | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U [2 U] | 2.0 U | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | 1.0 U | 1.0 U | 1.0 U | 0.50 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.0 U [5 U] | 5.0 U | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.0 U [5 U] | 5.0 U | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.0 U [5 U] | 5.0 U | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | 19.7 | 1.0 U | 1.0 U | 1.0 U | 0.36 [0.35] | 0.28 | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U [2 U] | 2.0 U | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 10W-D32A 05/29/14 10W-D32A | 10W-F38A 05/28/14 10W-F38A | 10W-H35A 05/28/14 10W-H35A | 10W-I43A 05/15/14 10W-I43A | 10W-L39A 05/20/14 10W-L39A | 10W-M45A 05/29/14 10W-M45A | 90FORR-ESW-001 10/05/11 Forrest-SUMP-E | 90FORR-WSW-001 10/05/11 Forrest-SUMP-W | 114-ABPT-IW1I-010515 01/05/15 GPS-IW1I | 114-ABPT-IW1I-040815 04/08/15 GPS-IW1I | 114-ABPT-IW1I-060314 06/03/14 GPS-IW1I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U [2 U] | 2.0 U | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U [2 U] | 2.0 U | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.1 U [5 U] | 5.3 U | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.1 U [5 U] | 5.3 U | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.1 U [5 U] | 5.3 U | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U [2 U] | 2.1 U | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.1 U [5 U] | 5.3 U | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | 20 U | 20 U | 20 U | 20 U | 20 U [20 U] | 21 U | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U [2 U] | 2.0 U | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.1 U [5 U] | 5.3 U | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | 20 U | 20 U | 20 U | 20 U | 20 U [20 U] | 21 U | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | 0.54 | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U [2 U] | 2.1 U | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.1 U [5 U] | 5.0 U | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.1 U [5 U] | 5.3 U | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U [2 U] | 2.0 U | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.1 U [5 U] | 5.0 U | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U [2 U] | 2.0 U | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.1 U [5 U] | 5.3 U | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U [2 U] | 2.0 U | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U [2 U] | 2.1 U | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.1 U [5 U] | 5.0 U | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | 10 U | 10 U | 10 U | 10 U | 10 U [10 U] | 11 U | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | 1.45 | 0.10 U | 0.120 | 0.10 U | 0.716 [0.719] | 0.433 | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | 0.10 U | 0.10 U | 0.10 U | 0.10 U | 0.10 U [0.1 U] | 0.10 U | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U [2 U] | 2.0 U | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | 1.06 | 0.10 U | 0.256 | 0.10 U | 0.517 [0.464] | 0.132 | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U [2 U] | 2.0 U | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.1 U [5 U] | 5.0 U | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | 0.230 | 0.10 U | 0.169 | 0.184 | 0.386 [0.363] | 0.240 | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | 0.10 U | 0.10 U | 0.10 U | 0.10 U | 0.446 [0.36] | 0.108 | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | 0.10 U | 0.10 U | 0.10 U | 0.10 U | 0.629 [0.491] | 0.136 | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | 0.10 U | 0.10 U | 0.10 U | 0.10 U | 0.343 [0.275] | 0.10 U | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | 0.10 U | 0.10 U | 0.10 U | 0.10 U | 0.140 [0.161] | 0.10 U | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U [2 U] | 2.0 U | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U [2 U] | 2.0 U | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | 2.0 U | 2.0 U | 1.0 | 2.0 U | 2.0 U [2 U] | 2.0 U | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U [2 U] | 2.0 U | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 10W-D32A<br>05/29/14<br>10W-D32A | 10W-F38A<br>05/28/14<br>10W-F38A | 10W-H35A<br>05/28/14<br>10W-H35A | 10W-I43A<br>05/15/14<br>10W-I43A | 10W-L39A<br>05/20/14<br>10W-L39A | 10W-M45A<br>05/29/14<br>10W-M45A | 90FORR-ESW-001<br>10/05/11<br>Forrest-SUMP-E | 90FORR-WSW-001<br>10/05/11<br>Forrest-SUMP-W | 114-ABPT-IW1I-010515<br>01/05/15<br>GPS-IW1I | 114-ABPT-IW1I-040815<br>04/08/15<br>GPS-IW1I | 114-ABPT-IW1I-060314<br>06/03/14<br>GPS-IW1I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U [2 U] | 2.0 U | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | 0.77 | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | 0.162 | 0.10 U | 0.10 U | 0.10 U | 0.571 [0.373] | 0.10 U | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | 0.10 U | 0.10 U | 0.10 U | 0.10 U | 0.10 U [0.1 U] | 0.10 U | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | 0.94 | 5.0 U | 5.0 U | 5.0 U | 5.1 U [5 U] | 5.0 U | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U [2 U] | 2.0 U | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U [2 U] | 2.0 U | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U [2 U] | 2.0 U | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U [2 U] | 2.0 U | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | 0.891 | 0.10 U | 0.559 | 0.138 | 1.26 [1.04] | 0.324 | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | 1.37 | 0.10 U | 0.232 | 0.10 U | 0.462 [0.423] | 0.332 | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | 0.021 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U [0.02 U] | 0.020 U | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | 10 U | 10 U | 10 U | 10 U | 10 U [10 U] | 10 U | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U [2 U] | 2.0 U | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | 0.10 U | 0.10 U | 0.10 U | 0.10 U | 0.251 [0.209] | 0.10 U | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U [2 U] | 2.0 U | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | 0.448 | 0.10 U | 0.10 U | 0.10 U | 0.308 [0.278] | 0.10 U | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U [2 U] | 2.0 U | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U [2 U] | 2.0 U | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.1 U [5 U] | 5.0 U | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.1 U [5 U] | 5.0 U | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | 0.30 U | 0.30 U | 0.30 U | 0.30 U | 0.30 U [0.3 U] | 0.30 U | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | 2.35 | 0.10 U | 0.790 | 0.10 U | 1.77 [1.62] | 0.779 | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U [2 U] | 2.1 U | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | 0.685 | 0.10 U | 0.476 | 0.152 | 1.14 [0.976] | 0.341 | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | 0.10 U | 0.10 U | 0.10 U | 0.10 U | 0.10 U [0.1 U] | 0.10 U | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | 0.10 U | 0.10 U | 0.10 U | 0.10 U | 0.10 U [0.1 U] | 0.10 U | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | 0.10 U | 0.10 U | 0.10 U | 0.10 U | 0.10 U [0.1 U] | 0.10 U | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | 0.51 U | 0.50 U | 0.52 U | 0.50 U | 0.52 U [0.5 U] | 0.50 U | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | 0.51 U | 0.50 U | 0.52 U | 0.50 U | 0.52 U [0.5 U] | 0.50 U | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | 51 U | 50 U | 52 U | 50 U | 52 U [50 U] | 50 U | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 17,700 | 7,820 | 14,500 | 19,300 | 5,090 [4,830] | 995 | NA | NA | NA | 1,990 | NA |
| Antimony | 7440-36-0 | ug/L | 6.0 U | 6.0 U | 6.0 U | 6.0 U | 17.9 [14.9] | 6.0 U | NA | NA | NA | 11.0 J | NA |
| Arsenic | 7440-38-2 | ug/L | 31.3 | 16.9 | 413 | 29.6 | 151 [149] | 27.5 | NA | NA | NA | 28.4 | NA |
| Barium | 7440-39-3 | ug/L | 491 | 399 | 654 | 1,050 | 962 [891] | 307 | NA | NA | NA | 179 J | NA |
| Beryllium | 7440-41-7 | ug/L | 2.1 | 0.90 | 1.1 | 1.4 | 1.0 U [0.4] | 1.0 U | NA | NA | NA | 2.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 3.0 U | 0.80 | 0.80 | 2.0 | 7.2 [6.8] | 3.0 U | NA | NA | NA | 1.8 J | NA |
| Calcium | 7440-70-2 | ug/L | 114,000 | 119,000 | 70,300 | 72,000 | 43,600 [40,100] | 75,900 | NA | NA | NA | 197,000 J | NA |
| Chromium | 7440-47-3 | ug/L | 29.1 | 14.1 | 31.9 | 93.4 | 79.2 [73] | 10.1 | 13,000 | 51,000 | 6,750 | 4,040 | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 U | 18 J | 10 UJ | 10 U | 18 J [42 J] | 97 | 12,600 | 35,700 | 5.9 J | 100 | NA |
| Cobalt | 7440-48-4 | ug/L | 12.9 | 4.2 | 6.6 | 13.1 | 5.0 [4.8] | 50 U | NA | NA | NA | 75.6 J | NA |
| Copper | 7440-50-8 | ug/L | 42.8 | 29.7 | 36.2 | 190 | 469 [433] | 14.5 | NA | NA | NA | 92.8 | NA |
| Dicamba | 1918-00-9 | ug/L | 0.10 U | 0.10 U | 0.10 U | 0.10 U | 0.10 U [0.1 U] | 0.10 U | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | 0.51 U | 0.50 U | 0.52 U | 0.50 U | 0.52 U [0.5 U] | 0.50 U | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | 0.51 U | 0.50 U | 0.52 U | 0.50 U | 0.52 U [0.5 U] | 0.50 U | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 44,300 | 49,400 | 27,600 | 48,400 | 24,200 [22,700] | 21,700 | NA | NA | 274,000 | 222,000 | NA |
| Lead | 7439-92-1 | ug/L | 329 | 489 | 484 | 3,190 | 1,160 [1,110] | 125 | NA | NA | NA | 18.0 | NA |
| Magnesium | 7439-95-4 | ug/L | 32,400 | 17,600 | 23,600 | 17,500 | 13,400 [12,500] | 17,100 | NA | NA | NA | 70,500 J | NA |
| Manganese | 7439-96-5 | ug/L | 1,660 | 1,510 | 648 | 1,880 | 687 [642] | 827 | NA | NA | 6,060 J | 6,640 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 10W-D32A 05/29/14 10W-D32A | 10W-F38A 05/28/14 10W-F38A | 10W-H35A 05/28/14 10W-H35A | 10W-I43A 05/15/14 10W-I43A | 10W-L39A 05/20/14 10W-L39A | 10W-M45A 05/29/14 10W-M45A | 90FORR-ESW-001 10/05/11 Forrest-SUMP-E | 90FORR-WSW-001 10/05/11 Forrest-SUMP-W | 114-ABPT-IW1I-010515 01/05/15 GPS-IW1I | 114-ABPT-IW1I-040815 04/08/15 GPS-IW1I | 114-ABPT-IW1I-060314 06/03/14 GPS-IW1I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | 51 U | 50 U | 52 U | 50 U | 52 U [50 U] | 50 U | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.23 | 0.40 | 0.97 | 1.3 | 1.5 [1.7] | 0.14 | NA | NA | NA | 0.60 U | NA |
| Nickel | 7440-02-0 | ug/L | 28.7 | 8.8 | 14.9 | 31.3 | 15.9 [14.7] | 10 U | NA | NA | NA | 132 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | 0.051 U | 0.050 U | 0.052 U | 0.050 U | 0.052 U [0.05 U] | 0.050 U | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 13,200 | 18,000 | 11,400 | 11,700 | 20,600 [19,300] | 13,600 | NA | NA | NA | 343,000 | NA |
| Selenium | 7782-49-2 | ug/L | 13.2 | 13.5 | 15.1 | 10 U | 10 U [10 U] | 3.9 | NA | NA | NA | 20 U | NA |
| Silver | 7440-22-4 | ug/L | 2.5 | 10 U | 10 U | 5.5 | 3.4 [3.6] | 1.3 | NA | NA | NA | 20 U | NA |
| Sodium | 7440-23-5 | ug/L | 76,400 | 101,000 | 36,300 | 78,800 | 166,000 [155,000] | 70,900 | NA | NA | NA | 109,000 J | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U [2 U] | 2.0 U | NA | NA | NA | 4.0 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | 13,000 | 51,000 | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 67.2 | 19.6 | 40.2 | 46.4 | 21.7 [19.8] | 4.0 | NA | NA | NA | 51.2 J | NA |
| Zinc | 7440-66-6 | ug/L | 521 | 195 | 422 | 3,380 | 1,490 [1,460] | 93.1 | NA | NA | NA | 185 | NA |
| **Metals-Filtered** | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 640 | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 12 U | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 28.0 | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 120 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 2.0 U | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.80 J | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 122,000 J | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 5,290 | 3,480 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 3.4 J | 110 | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 55.2 J | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 35.6 | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 259,000 | 173,000 | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 14.4 | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 50,600 J | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 7,570 J | 4,110 | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.60 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 139 | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 265,000 | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 145,000 J | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 4.0 U | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 56.8 J | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 91.8 | NA |
| **Metals-TCLP** | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | 0.50 U | 0.52 U | 0.50 U | 0.56 U | 0.52 U [0.51 U] | 0.50 U | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 10W-D32A 05/29/14 10W-D32A | 10W-F38A 05/28/14 10W-F38A | 10W-H35A 05/28/14 10W-H35A | 10W-I43A 05/15/14 10W-I43A | 10W-L39A 05/20/14 10W-L39A | 10W-M45A 05/29/14 10W-M45A | 90FORR-ESW-001 10/05/11 Forrest-SUMP-E | 90FORR-WSW-001 10/05/11 Forrest-SUMP-W | 114-ABPT-IW1I-010515 01/05/15 GPS-IW1I | 114-ABPT-IW1I-040815 04/08/15 GPS-IW1I | 114-ABPT-IW1I-060314 06/03/14 GPS-IW1I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | 0.50 U | 0.52 U | 0.50 U | 0.56 U | 0.52 U [0.51 U] | 0.50 U | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | 0.50 U | 0.52 U | 0.50 U | 0.56 U | 0.52 U [0.51 U] | 0.50 U | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | 0.50 U | 0.52 U | 0.50 U | 0.56 U | 0.52 U [0.51 U] | 0.50 U | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | 0.50 U | 0.52 U | 0.50 U | 0.56 U | 0.52 U [0.51 U] | 0.50 U | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | 0.50 U | 0.52 U | 0.50 U | 0.56 U | 0.52 U [0.51 U] | 0.50 U | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | 0.50 U | 0.52 U | 0.50 U | 0.56 U | 0.52 U [0.51 U] | 0.50 U | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | 0.50 U | 0.52 U | 0.50 U | 0.56 U | 0.52 U [0.51 U] | 0.50 U | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | 0.50 U | 0.52 U | 0.50 U | 0.56 U | 0.52 U [0.51 U] | 0.50 U | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | 0.010 U | 0.010 U | 0.010 U | 0.011 U | 0.010 U [0.01 U] | 0.010 U | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | 0.010 U | 0.010 U | 0.010 U | 0.011 U | 0.010 U [0.01 U] | 0.010 U | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | 0.010 U | 0.010 U | 0.010 U | 0.011 U | 0.010 U [0.01 U] | 0.010 U | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | 0.010 U | 0.010 U | 0.010 U | 0.011 U | 0.010 U [0.01 U] | 0.010 U | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | 0.010 U | 0.010 U | 0.010 U | 0.011 U | 0.010 U [0.01 U] | 0.010 U | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | 0.010 U | 0.010 U | 0.010 U | 0.011 U | 0.010 U [0.01 U] | 0.010 U | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | 0.010 U | 0.010 U | 0.010 U | 0.011 U | 0.010 U [0.01 U] | 0.010 U | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | 0.010 U | 0.010 U | 0.010 U | 0.011 U | 0.010 U [0.01 U] | 0.010 U | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | 0.010 U | 0.010 U | 0.010 U | 0.011 U | 0.010 U [0.01 U] | 0.010 U | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | 0.010 U | 0.010 U | 0.010 U | 0.011 U | 0.010 U [0.01 U] | 0.010 U | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | 0.010 U | 0.010 U | 0.010 U | 0.011 U | 0.010 U [0.01 U] | 0.010 U | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | 0.010 U | 0.010 U | 0.010 U | 0.011 U | 0.010 U [0.01 U] | 0.010 U | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | 0.010 U | 0.010 U | 0.010 U | 0.011 U | 0.010 U [0.01 U] | 0.010 U | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | 0.010 U | 0.010 U | 0.010 U | 0.011 U | 0.010 U [0.01 U] | 0.010 U | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | 0.010 U | 0.010 U | 0.010 U | 0.011 U | 0.010 U [0.01 U] | 0.010 U | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | 0.010 U | 0.010 U | 0.010 U | 0.011 U | 0.010 U [0.01 U] | 0.010 U | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | 0.010 U | 0.010 U | 0.010 U | 0.011 U | 0.010 U [0.01 U] | 0.010 U | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | 0.010 U | 0.010 U | 0.010 U | 0.011 U | 0.010 U [0.01 U] | 0.010 U | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | 0.010 U | 0.010 U | 0.010 U | 0.011 U | 0.010 U [0.01 U] | 0.010 U | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | 0.020 U | 0.021 U | 0.020 U | 0.022 U | 0.021 U [0.02 U] | 0.020 U | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | 0.25 U | 0.26 U | 0.25 U | 0.28 U | 0.26 U [0.26 U] | 0.25 U | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | 0.010 U | 0.010 U | 0.010 U | 0.011 U | 0.010 U [0.01 U] | 0.010 U | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 37 J | 85 J | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 200 U | 85 J | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 100 U | 100 U | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 411 | 428 | 437 | 492 | 390 [403] | 427 | 365 | 362 | 326 | 340 | NA |
| pH | ARC-pH | SU | 6.34 | 6.63 | 6.75 | 6.71 | 6.68 [6.65] | 6.55 | 7.50 | 7.83 | 4.75 | 5.00 | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 10W-D32A<br>05/29/14<br>10W-D32A | 10W-F38A<br>05/28/14<br>10W-F38A | 10W-H35A<br>05/28/14<br>10W-H35A | 10W-I43A<br>05/15/14<br>10W-I43A | 10W-L39A<br>05/20/14<br>10W-L39A | 10W-M45A<br>05/29/14<br>10W-M45A | 90FORR-ESW-001<br>10/05/11<br>Forrest-SUMP-E | 90FORR-WSW-001<br>10/05/11<br>Forrest-SUMP-W | 114-ABPT-IW1I-010515<br>01/05/15<br>GPS-IW1I | 114-ABPT-IW1I-040815<br>04/08/15<br>GPS-IW1I | 114-ABPT-IW1I-060314<br>06/03/14<br>GPS-IW1I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 95,600 | 53,800 | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 3,700 | 5,600 | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 2,530,000 | 6,300 | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 16,730 | NA | 3,740 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | 32 | NA | 18 |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | 4.78 | NA | 5.05 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | 3.53 | NA | 4.04 |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | 6.92 | NA | 25.92 |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | 363 | NA | 590 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-ABPT-IW1I-060614 | 114-ABPT-IW1I-061914 | 114-ABPT-IW1I-070114 | 114-ABPT-IW1I-071614 | 114-ABPT-IW1I-080614 | 114-ABPT-IW1I-100814 | 114-ABPT-IW1S-010615 | 114-ABPT-IW1S-040715 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | |
| Date Collected: | | | 06/06/14 | 06/19/14 | 07/01/14 | 07/16/14 | 08/06/14 | 10/08/14 | 01/06/15 | 04/07/15 |
| Location ID: | CAS Number | Units | GPS-IW1I | GPS-IW1I | GPS-IW1I | GPS-IW1I | GPS-IW1I | GPS-IW1I | GPS-IW1S | GPS-IW1S |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-IW1I-060614<br>06/06/14<br>GPS-IW1I | 114-ABPT-IW1I-061914<br>06/19/14<br>GPS-IW1I | 114-ABPT-IW1I-070114<br>07/01/14<br>GPS-IW1I | 114-ABPT-IW1I-071614<br>07/16/14<br>GPS-IW1I | 114-ABPT-IW1I-080614<br>08/06/14<br>GPS-IW1I | 114-ABPT-IW1I-100814<br>10/08/14<br>GPS-IW1I | 114-ABPT-IW1S-010615<br>01/06/15<br>GPS-IW1S | 114-ABPT-IW1S-040715<br>04/07/15<br>GPS-IW1S |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-IW1I-060614<br>06/06/14<br>GPS-IW1I | 114-ABPT-IW1I-061914<br>06/19/14<br>GPS-IW1I | 114-ABPT-IW1I-070114<br>07/01/14<br>GPS-IW1I | 114-ABPT-IW1I-071614<br>07/16/14<br>GPS-IW1I | 114-ABPT-IW1I-080614<br>08/06/14<br>GPS-IW1I | 114-ABPT-IW1I-100814<br>10/08/14<br>GPS-IW1I | 114-ABPT-IW1S-010615<br>01/06/15<br>GPS-IW1S | 114-ABPT-IW1S-040715<br>04/07/15<br>GPS-IW1S |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 5,670 | NA | NA | NA | NA | NA | NA | 1,260 |
| Antimony | 7440-36-0 | ug/L | 6.0 U | NA | NA | NA | NA | NA | NA | 12 U |
| Arsenic | 7440-38-2 | ug/L | 37.8 | NA | NA | NA | NA | NA | NA | 10.0 |
| Barium | 7440-39-3 | ug/L | 410 | NA | NA | NA | NA | NA | NA | 162 J |
| Beryllium | 7440-41-7 | ug/L | 3.2 J | NA | NA | NA | NA | NA | NA | 2.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 2.3 J | NA | NA | NA | NA | NA | NA | 6.0 U |
| Calcium | 7440-70-2 | ug/L | 415,000 | NA | NA | NA | NA | NA | NA | 375,000 |
| Chromium | 7440-47-3 | ug/L | 12,400 | NA | NA | NA | 5,170 J | 2,120 J | 1,640 J | 220 |
| Chromium VI | 18540-29-9 | ug/L | 200 | NA | NA | NA | 120 J | 600 | 100 UJ | 48 J |
| Cobalt | 7440-48-4 | ug/L | 175 | NA | NA | NA | NA | NA | NA | 5.4 J |
| Copper | 7440-50-8 | ug/L | 65.7 | NA | NA | NA | NA | NA | NA | 74.6 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 102,000 | NA | NA | NA | 72,700 | 50,400 J | 69,700 | 17,100 |
| Lead | 7439-92-1 | ug/L | 32.5 | NA | NA | NA | NA | NA | NA | 11.6 |
| Magnesium | 7439-95-4 | ug/L | 107,000 | NA | NA | NA | NA | NA | NA | 57,700 |
| Manganese | 7439-96-5 | ug/L | 26,100 J | NA | NA | NA | 41,100 J | 3,100 | 3,740 | 1,540 |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-IW1I-060614<br>06/06/14<br>GPS-IW1I | 114-ABPT-IW1I-061914<br>06/19/14<br>GPS-IW1I | 114-ABPT-IW1I-070114<br>07/01/14<br>GPS-IW1I | 114-ABPT-IW1I-071614<br>07/16/14<br>GPS-IW1I | 114-ABPT-IW1I-080614<br>08/06/14<br>GPS-IW1I | 114-ABPT-IW1I-100814<br>10/08/14<br>GPS-IW1I | 114-ABPT-IW1S-010615<br>01/06/15<br>GPS-IW1S | 114-ABPT-IW1S-040715<br>04/07/15<br>GPS-IW1S |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.091 J | NA | NA | NA | NA | NA | NA | 0.97 |
| Nickel | 7440-02-0 | ug/L | 267 | NA | NA | NA | NA | NA | NA | 47.0 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 374,000 | NA | NA | NA | NA | NA | NA | 238,000 |
| Selenium | 7782-49-2 | ug/L | 23.7 J | NA | NA | NA | NA | NA | NA | 7.4 J |
| Silver | 7440-22-4 | ug/L | 4.8 J | NA | NA | NA | NA | NA | NA | 2.2 J |
| Sodium | 7440-23-5 | ug/L | 197,000 | NA | NA | NA | NA | NA | NA | 121,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | 4.0 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 127 | NA | NA | NA | NA | NA | NA | 21.8 J |
| Zinc | 7440-66-6 | ug/L | 254 | NA | NA | NA | NA | NA | NA | 195 |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | 1,350 | NA | NA | NA | NA | NA | NA | 1,220 |
| Antimony | 7440-36-0 | ug/L | 6.0 U | NA | NA | NA | NA | NA | NA | 12 U |
| Arsenic | 7440-38-2 | ug/L | 24.6 | NA | NA | NA | NA | NA | NA | 8.0 |
| Barium | 7440-39-3 | ug/L | 494 | NA | NA | NA | NA | NA | NA | 180 J |
| Beryllium | 7440-41-7 | ug/L | 10.7 J | NA | NA | NA | NA | NA | NA | 2.0 U |
| Cadmium | 7440-43-9 | ug/L | 2.5 J | NA | NA | NA | NA | NA | NA | 6.0 U |
| Calcium | 7440-70-2 | ug/L | 498,000 | NA | NA | NA | NA | NA | NA | 426,000 |
| Chromium | 7440-47-3 | ug/L | 13,700 | NA | NA | NA | 6,580 J | 3,140 J | 449 J | 242 |
| Chromium VI | 18540-29-9 | ug/L | 180 | NA | NA | NA | 190 J | 10 U | 52 J | 110 J |
| Cobalt | 7440-48-4 | ug/L | 202 | NA | NA | NA | NA | NA | NA | 6.0 J |
| Copper | 7440-50-8 | ug/L | 11.1 | NA | NA | NA | NA | NA | NA | 53.0 |
| Iron | 7439-89-6 | ug/L | 117,000 | NA | NA | NA | 94,700 | 75,900 J | 60,300 | 18,700 |
| Lead | 7439-92-1 | ug/L | 17.5 | NA | NA | NA | NA | NA | NA | 12.2 |
| Magnesium | 7439-95-4 | ug/L | 131,000 | NA | NA | NA | NA | NA | NA | 65,600 |
| Manganese | 7439-96-5 | ug/L | 34,300 J | NA | NA | NA | 55,200 J | 2,630 | 4,820 | 1,740 |
| Mercury | 7439-97-6 | ug/L | 1.2 U | NA | NA | NA | NA | NA | NA | 0.60 U |
| Nickel | 7440-02-0 | ug/L | 310 | NA | NA | NA | NA | NA | NA | 53.2 |
| Potassium | 7440-09-7 | ug/L | 446,000 | NA | NA | NA | NA | NA | NA | 270,000 |
| Selenium | 7782-49-2 | ug/L | 50 U | NA | NA | NA | NA | NA | NA | 9.8 J |
| Silver | 7440-22-4 | ug/L | 2.6 J | NA | NA | NA | NA | NA | NA | 2.2 J |
| Sodium | 7440-23-5 | ug/L | 237,000 | NA | NA | NA | NA | NA | NA | 138,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | 4.0 U |
| Vanadium | 7440-62-2 | ug/L | 112 | NA | NA | NA | NA | NA | NA | 24.0 J |
| Zinc | 7440-66-6 | ug/L | 213 | NA | NA | NA | NA | NA | NA | 197 |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-IW1I-060614<br>06/06/14<br>GPS-IW1I | 114-ABPT-IW1I-061914<br>06/19/14<br>GPS-IW1I | 114-ABPT-IW1I-070114<br>07/01/14<br>GPS-IW1I | 114-ABPT-IW1I-071614<br>07/16/14<br>GPS-IW1I | 114-ABPT-IW1I-080614<br>08/06/14<br>GPS-IW1I | 114-ABPT-IW1I-100814<br>10/08/14<br>GPS-IW1I | 114-ABPT-IW1S-010615<br>01/06/15<br>GPS-IW1S | 114-ABPT-IW1S-040715<br>04/07/15<br>GPS-IW1S |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | 120 | NA | NA | NA | 53 J | 99 J | 150 | 120 |
| Nitrate-N | 14797-55-8 | ug/L | 120 J | NA | NA | NA | 53 J | 99 J | 150 J | 40 J |
| Nitrite | 14797-65-0 | ug/L | 50 UJ | NA | NA | NA | 10 U | 50 U | 100 U | 80 |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 377 | NA | NA | NA | 272 | 359 | 399 | 225 |
| pH | ARC-pH | SU | 5.29 | NA | NA | NA | 5.49 | 4.50 | 6.43 | 6.91 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-IW1I-060614<br>06/06/14<br>GPS-IW1I | 114-ABPT-IW1I-061914<br>06/19/14<br>GPS-IW1I | 114-ABPT-IW1I-070114<br>07/01/14<br>GPS-IW1I | 114-ABPT-IW1I-071614<br>07/16/14<br>GPS-IW1I | 114-ABPT-IW1I-080614<br>08/06/14<br>GPS-IW1I | 114-ABPT-IW1I-100814<br>10/08/14<br>GPS-IW1I | 114-ABPT-IW1S-010615<br>01/06/15<br>GPS-IW1S | 114-ABPT-IW1S-040715<br>04/07/15<br>GPS-IW1S |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 276,000 | NA | NA | NA | 128,000 | 85,200 | 3,400 JB | 10,000 UB |
| Sulfide | 18496-25-8 | ug/L | 3,400 | NA | NA | NA | 3,900 | 4,300 | 6,700 | 2,800 |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 2,550,000 | 1,770,000 | 1,180,000 | 1,240,000 | 3,370,000 | 1,730,000 | 2,450,000 | 481,000 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 20,200 | NA | NA | 1,320 | 1,650 | 6,840 | 12,290 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 554 | NA | NA | 74 | 113 | 66 | 170 | NA |
| pH | ARC-pH | SU | 5.27 | NA | NA | 6.2 | 5.42 | 4.51 | 6.88 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | 4.15 | NA | NA | 3.47 | 3.86 | 1.78 | 5.13 | NA |
| Temperature | ARC-Temp | deg c | 17.66 | NA | NA | 18.15 | 21.9 | 18.36 | 10.51 | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | 426 | 395 | 814 | 1,000 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-ABPT-IW1S-060614 | 114-ABPT-IW1S-061914 | 114-ABPT-IW1S-070114 | 114-ABPT-IW1S-071614 | 114-ABPT-IW1S-080614 | 114-ABPT-IW1S-100714 | 114-ABPT-IW2I-010615 | 114-ABPT-IW2I-040815 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | |
| Date Collected: | | | 06/06/14 | 06/19/14 | 07/01/14 | 07/16/14 | 08/06/14 | 10/07/14 | 01/06/15 | 04/08/15 |
| Location ID: | CAS Number | Units | GPS-IW1S | GPS-IW1S | GPS-IW1S | GPS-IW1S | GPS-IW1S | GPS-IW1S | GPS-IW2I | GPS-IW2I |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-IW1S-060614<br>06/06/14<br>GPS-IW1S | 114-ABPT-IW1S-061914<br>06/19/14<br>GPS-IW1S | 114-ABPT-IW1S-070114<br>07/01/14<br>GPS-IW1S | 114-ABPT-IW1S-071614<br>07/16/14<br>GPS-IW1S | 114-ABPT-IW1S-080614<br>08/06/14<br>GPS-IW1S | 114-ABPT-IW1S-100714<br>10/07/14<br>GPS-IW1S | 114-ABPT-IW2I-010615<br>01/06/15<br>GPS-IW2I | 114-ABPT-IW2I-040815<br>04/08/15<br>GPS-IW2I |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-ABPT-IW1S-060614 06/06/14 GPS-IW1S | 114-ABPT-IW1S-061914 06/19/14 GPS-IW1S | 114-ABPT-IW1S-070114 07/01/14 GPS-IW1S | 114-ABPT-IW1S-071614 07/16/14 GPS-IW1S | 114-ABPT-IW1S-080614 08/06/14 GPS-IW1S | 114-ABPT-IW1S-100714 10/07/14 GPS-IW1S | 114-ABPT-IW2I-010615 01/06/15 GPS-IW2I | 114-ABPT-IW2I-040815 04/08/15 GPS-IW2I |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 3,930 | NA | NA | NA | NA | NA | NA | 1,430 |
| Antimony | 7440-36-0 | ug/L | 4.8 J | NA | NA | NA | NA | NA | NA | 12 U |
| Arsenic | 7440-38-2 | ug/L | 10.5 J | NA | NA | NA | NA | NA | NA | 31.8 |
| Barium | 7440-39-3 | ug/L | 661 | NA | NA | NA | NA | NA | NA | 112 J |
| Beryllium | 7440-41-7 | ug/L | 0.90 J | NA | NA | NA | NA | NA | NA | 2.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 0.80 J | NA | NA | NA | NA | NA | NA | 0.80 J |
| Calcium | 7440-70-2 | ug/L | 1,210,000 | NA | NA | NA | NA | NA | NA | 111,000 J |
| Chromium | 7440-47-3 | ug/L | 785 J | NA | NA | NA | 268 J | 149 | 2,030 J | 451 |
| Chromium VI | 18540-29-9 | ug/L | 120 | NA | NA | NA | 17 J | 10 U | 39 J | 10 U |
| Cobalt | 7440-48-4 | ug/L | 25.2 J | NA | NA | NA | NA | NA | NA | 16.2 J |
| Copper | 7440-50-8 | ug/L | 38.0 | NA | NA | NA | NA | NA | NA | 17.4 J |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 60,300 | NA | NA | NA | 6,480 J | 138,000 | 115,000 | 32,100 |
| Lead | 7439-92-1 | ug/L | 28.6 | NA | NA | NA | NA | NA | NA | 15.6 |
| Magnesium | 7439-95-4 | ug/L | 108,000 | NA | NA | NA | NA | NA | NA | 18,000 J |
| Manganese | 7439-96-5 | ug/L | 5,540 | NA | NA | NA | 581 J | 9,280 | 6,790 J | 3,100 J |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-IW1S-060614<br>06/06/14<br>GPS-IW1S | 114-ABPT-IW1S-061914<br>06/19/14<br>GPS-IW1S | 114-ABPT-IW1S-070114<br>07/01/14<br>GPS-IW1S | 114-ABPT-IW1S-071614<br>07/16/14<br>GPS-IW1S | 114-ABPT-IW1S-080614<br>08/06/14<br>GPS-IW1S | 114-ABPT-IW1S-100714<br>10/07/14<br>GPS-IW1S | 114-ABPT-IW2I-010615<br>01/06/15<br>GPS-IW2I | 114-ABPT-IW2I-040815<br>04/08/15<br>GPS-IW2I |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.080 J | NA | NA | NA | NA | NA | NA | 0.20 U |
| Nickel | 7440-02-0 | ug/L | 160 J | NA | NA | NA | NA | NA | NA | 34.8 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 502,000 | NA | NA | NA | NA | NA | NA | 125,000 J |
| Selenium | 7782-49-2 | ug/L | 21.0 J | NA | NA | NA | NA | NA | NA | 20 U |
| Silver | 7440-22-4 | ug/L | 10.1 J | NA | NA | NA | NA | NA | NA | 2.0 J |
| Sodium | 7440-23-5 | ug/L | 193,000 | NA | NA | NA | NA | NA | NA | 99,900 J |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | 4.0 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 88.5 | NA | NA | NA | NA | NA | NA | 22.0 J |
| Zinc | 7440-66-6 | ug/L | 37.1 J | NA | NA | NA | NA | NA | NA | 75.0 |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | 470 | NA | NA | NA | NA | NA | NA | 147 J |
| Antimony | 7440-36-0 | ug/L | 8.1 | NA | NA | NA | NA | NA | NA | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | 20.2 J | NA | NA | NA | NA | NA | NA | 34.1 |
| Barium | 7440-39-3 | ug/L | 792 | NA | NA | NA | NA | NA | NA | 128 J |
| Beryllium | 7440-41-7 | ug/L | 11.9 J | NA | NA | NA | NA | NA | NA | 1.0 U |
| Cadmium | 7440-43-9 | ug/L | 6.0 U | NA | NA | NA | NA | NA | NA | 0.50 J |
| Calcium | 7440-70-2 | ug/L | 1,400,000 | NA | NA | NA | NA | NA | NA | 155,000 J |
| Chromium | 7440-47-3 | ug/L | 1,080 J | NA | NA | NA | 592 J | 148 | 1,510 J | 498 J |
| Chromium VI | 18540-29-9 | ug/L | 110 | NA | NA | NA | 76 J | 10 U | 52 J | 10 UJ |
| Cobalt | 7440-48-4 | ug/L | 34.1 J | NA | NA | NA | NA | NA | NA | 19.4 J |
| Copper | 7440-50-8 | ug/L | 7.6 J | NA | NA | NA | NA | NA | NA | 10 U |
| Iron | 7439-89-6 | ug/L | 71,000 | NA | NA | NA | 9,840 J | 135,000 | 90,900 | 39,400 |
| Lead | 7439-92-1 | ug/L | 1.5 J | NA | NA | NA | NA | NA | NA | 2.6 J |
| Magnesium | 7439-95-4 | ug/L | 131,000 | NA | NA | NA | NA | NA | NA | 24,000 J |
| Manganese | 7439-96-5 | ug/L | 6,560 | NA | NA | NA | 798 J | 9,150 | 7,090 J | 4,210 J |
| Mercury | 7439-97-6 | ug/L | 1.2 U | NA | NA | NA | NA | NA | NA | 0.20 U |
| Nickel | 7440-02-0 | ug/L | 208 J | NA | NA | NA | NA | NA | NA | 41.6 |
| Potassium | 7440-09-7 | ug/L | 614,000 | NA | NA | NA | NA | NA | NA | 172,000 J |
| Selenium | 7782-49-2 | ug/L | 12.8 J | NA | NA | NA | NA | NA | NA | 10 U |
| Silver | 7440-22-4 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | 1.4 J |
| Sodium | 7440-23-5 | ug/L | 220,000 | NA | NA | NA | NA | NA | NA | 134,000 J |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 4.0 U | NA | NA | NA | NA | NA | NA | 2.0 U |
| Vanadium | 7440-62-2 | ug/L | 77.5 | NA | NA | NA | NA | NA | NA | 21.0 J |
| Zinc | 7440-66-6 | ug/L | 20 U | NA | NA | NA | NA | NA | NA | 20 UB |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-IW1S-060614<br>06/06/14<br>GPS-IW1S | 114-ABPT-IW1S-061914<br>06/19/14<br>GPS-IW1S | 114-ABPT-IW1S-070114<br>07/01/14<br>GPS-IW1S | 114-ABPT-IW1S-071614<br>07/16/14<br>GPS-IW1S | 114-ABPT-IW1S-080614<br>08/06/14<br>GPS-IW1S | 114-ABPT-IW1S-100714<br>10/07/14<br>GPS-IW1S | 114-ABPT-IW2I-010615<br>01/06/15<br>GPS-IW2I | 114-ABPT-IW2I-040815<br>04/08/15<br>GPS-IW2I |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | 110 | NA | NA | NA | 44 J | 1,000 U | 47 J | 12 J |
| Nitrate-N | 14797-55-8 | ug/L | 110 J | NA | NA | NA | 44 J | 1,000 U | 200 U | 12 J |
| Nitrite | 14797-65-0 | ug/L | 50 UJ | NA | NA | NA | 10 U | 20 U | 100 U | 10 U |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 340 | NA | NA | NA | 252 | 230 | 264 | 343 |
| pH | ARC-pH | SU | 6.04 | NA | NA | NA | 6.68 | 5.23 | 5.62 | 6.09 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-IW1S-060614<br>06/06/14<br>GPS-IW1S | 114-ABPT-IW1S-061914<br>06/19/14<br>GPS-IW1S | 114-ABPT-IW1S-070114<br>07/01/14<br>GPS-IW1S | 114-ABPT-IW1S-071614<br>07/16/14<br>GPS-IW1S | 114-ABPT-IW1S-080614<br>08/06/14<br>GPS-IW1S | 114-ABPT-IW1S-100714<br>10/07/14<br>GPS-IW1S | 114-ABPT-IW2I-010615<br>01/06/15<br>GPS-IW2I | 114-ABPT-IW2I-040815<br>04/08/15<br>GPS-IW2I |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 18,100 | NA | NA | NA | 3,900 J | 200,000 U | 29,200 | 10,000 UB |
| Sulfide | 18496-25-8 | ug/L | 8,700 | NA | NA | NA | 2,100 | 15,000 | 3,800 | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 2,870,000 | 2,180,000 | 1,160,000 J | 654,000 | 341,000 | 4,290,000 | 1,220,000 | 170,000 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 17,840 | 5,520 | NA | 10,750 | 10,720 | 10,960 | 11,180 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 138 | 72 | NA | 149 | 18 | 41 | 79 | NA |
| pH | ARC-pH | SU | 6.66 | 6.84 | NA | 7.14 | 6.49 | 5.7 | 5.89 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | 6.27 | 4.45 | NA | 3.75 | 3.85 | 6.86 | 3.36 | NA |
| Temperature | ARC-Temp | deg c | 16.52 | 17.74 | NA | 20.08 | 24.55 | 21.18 | 12.26 | NA |
| Turbidity | ARC-Turb | NTU | 712 | 130 | NA | 157 | 237 | 736 | 0 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-ABPT-IW2I-060314 06/03/14 GPS-IW2I | 114-ABPT-IW2I-061914 06/19/14 GPS-IW2I | 114-ABPT-IW2I-070114 07/01/14 GPS-IW2I | 114-ABPT-IW2I-071614 07/16/14 GPS-IW2I | 114-ABPT-IW2I-080714 08/07/14 GPS-IW2I | 114-ABPT-IW2I-100814 10/08/14 GPS-IW2I | 114-ABPT-IW2S-010615 01/06/15 GPS-IW2S | 114-ABPT-IW2S-040715 04/07/15 GPS-IW2S |
|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-IW2I-060314<br>06/03/14<br>GPS-IW2I | 114-ABPT-IW2I-061914<br>06/19/14<br>GPS-IW2I | 114-ABPT-IW2I-070114<br>07/01/14<br>GPS-IW2I | 114-ABPT-IW2I-071614<br>07/16/14<br>GPS-IW2I | 114-ABPT-IW2I-080714<br>08/07/14<br>GPS-IW2I | 114-ABPT-IW2I-100814<br>10/08/14<br>GPS-IW2I | 114-ABPT-IW2S-010615<br>01/06/15<br>GPS-IW2S | 114-ABPT-IW2S-040715<br>04/07/15<br>GPS-IW2S |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-IW2I-060314<br>06/03/14<br>GPS-IW2I | 114-ABPT-IW2I-061914<br>06/19/14<br>GPS-IW2I | 114-ABPT-IW2I-070114<br>07/01/14<br>GPS-IW2I | 114-ABPT-IW2I-071614<br>07/16/14<br>GPS-IW2I | 114-ABPT-IW2I-080714<br>08/07/14<br>GPS-IW2I | 114-ABPT-IW2I-100814<br>10/08/14<br>GPS-IW2I | 114-ABPT-IW2S-010615<br>01/06/15<br>GPS-IW2S | 114-ABPT-IW2S-040715<br>04/07/15<br>GPS-IW2S |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 4,010 | NA | NA | NA | NA | NA | NA | 10,400 |
| Antimony | 7440-36-0 | ug/L | 6.0 U | NA | NA | NA | NA | NA | NA | 12 U |
| Arsenic | 7440-38-2 | ug/L | 22.1 J | NA | NA | NA | NA | NA | NA | 7.2 |
| Barium | 7440-39-3 | ug/L | 212 | NA | NA | NA | NA | NA | NA | 189 J |
| Beryllium | 7440-41-7 | ug/L | 5.3 | NA | NA | NA | NA | NA | NA | 2.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 2.2 J | NA | NA | NA | NA | NA | NA | 6.0 U |
| Calcium | 7440-70-2 | ug/L | 200,000 J | NA | NA | NA | NA | NA | NA | 150,000 J |
| Chromium | 7440-47-3 | ug/L | 2,420 J | NA | NA | NA | 3,410 J | 517 J | 569 J | 313 |
| Chromium VI | 18540-29-9 | ug/L | 10 U | NA | NA | NA | 10 U | 480 | 100 UJ | 10 U |
| Cobalt | 7440-48-4 | ug/L | 76.9 J | NA | NA | NA | NA | NA | NA | 8.2 J |
| Copper | 7440-50-8 | ug/L | 46.2 | NA | NA | NA | NA | NA | NA | 66.4 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 77,200 J | NA | NA | NA | 97,800 J | 31,800 J | 24,500 J | 26,900 |
| Lead | 7439-92-1 | ug/L | 46.6 | NA | NA | NA | NA | NA | NA | 20.0 |
| Magnesium | 7439-95-4 | ug/L | 36,200 J | NA | NA | NA | NA | NA | NA | 33,200 |
| Manganese | 7439-96-5 | ug/L | 9,510 J | NA | NA | NA | 13,700 J | 4,190 J | 2,230 | 1,000 |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-IW2I-060314<br>06/03/14<br>GPS-IW2I | 114-ABPT-IW2I-061914<br>06/19/14<br>GPS-IW2I | 114-ABPT-IW2I-070114<br>07/01/14<br>GPS-IW2I | 114-ABPT-IW2I-071614<br>07/16/14<br>GPS-IW2I | 114-ABPT-IW2I-080714<br>08/07/14<br>GPS-IW2I | 114-ABPT-IW2I-100814<br>10/08/14<br>GPS-IW2I | 114-ABPT-IW2S-010615<br>01/06/15<br>GPS-IW2S | 114-ABPT-IW2S-040715<br>04/07/15<br>GPS-IW2S |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.40 U | NA | NA | NA | NA | NA | NA | 0.60 U |
| Nickel | 7440-02-0 | ug/L | 120 J | NA | NA | NA | NA | NA | NA | 40.4 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 221,000 J | NA | NA | NA | NA | NA | NA | 122,000 J |
| Selenium | 7782-49-2 | ug/L | 14.8 J | NA | NA | NA | NA | NA | NA | 7.2 J |
| Silver | 7440-22-4 | ug/L | 1.5 J | NA | NA | NA | NA | NA | NA | 20 UJ |
| Sodium | 7440-23-5 | ug/L | 50,400 J | NA | NA | NA | NA | NA | NA | 181,000 J |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 4.0 U | NA | NA | NA | NA | NA | NA | 4.0 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 44.7 J | NA | NA | NA | NA | NA | NA | 37.8 J |
| Zinc | 7440-66-6 | ug/L | 207 J | NA | NA | NA | NA | NA | NA | 145 |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | 2,240 | NA | NA | NA | NA | NA | NA | 57.0 J |
| Antimony | 7440-36-0 | ug/L | 13.7 | NA | NA | NA | NA | NA | NA | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | 32.1 J | NA | NA | NA | NA | NA | NA | 5.1 |
| Barium | 7440-39-3 | ug/L | 357 | NA | NA | NA | NA | NA | NA | 99.3 J |
| Beryllium | 7440-41-7 | ug/L | 3.0 | NA | NA | NA | NA | NA | NA | 1.0 U |
| Cadmium | 7440-43-9 | ug/L | 2.2 J | NA | NA | NA | NA | NA | NA | 3.0 U |
| Calcium | 7440-70-2 | ug/L | 360,000 J | NA | NA | NA | NA | NA | NA | 171,000 J |
| Chromium | 7440-47-3 | ug/L | 11,700 J | NA | NA | NA | 4,010 J | 941 J | 686 J | 161 |
| Chromium VI | 18540-29-9 | ug/L | 3.5 J | NA | NA | NA | 10 U | 10 U | 76 J | 10 U |
| Cobalt | 7440-48-4 | ug/L | 176 J | NA | NA | NA | NA | NA | NA | 0.80 J |
| Copper | 7440-50-8 | ug/L | 43.6 | NA | NA | NA | NA | NA | NA | 10 U |
| Iron | 7439-89-6 | ug/L | 103,000 J | NA | NA | NA | 127,000 J | 61,700 J | 24,900 J | 8,300 |
| Lead | 7439-92-1 | ug/L | 21.6 | NA | NA | NA | NA | NA | NA | 2.0 J |
| Magnesium | 7439-95-4 | ug/L | 116,000 J | NA | NA | NA | NA | NA | NA | 34,100 |
| Manganese | 7439-96-5 | ug/L | 26,100 J | NA | NA | NA | 15,900 J | 7,960 J | 2,310 | 963 |
| Mercury | 7439-97-6 | ug/L | 0.10 J | NA | NA | NA | NA | NA | NA | 0.20 U |
| Nickel | 7440-02-0 | ug/L | 267 J | NA | NA | NA | NA | NA | NA | 14.3 |
| Potassium | 7440-09-7 | ug/L | 443,000 J | NA | NA | NA | NA | NA | NA | 143,000 J |
| Selenium | 7782-49-2 | ug/L | 30.4 J | NA | NA | NA | NA | NA | NA | 4.1 J |
| Silver | 7440-22-4 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | 1.9 J |
| Sodium | 7440-23-5 | ug/L | 226,000 J | NA | NA | NA | NA | NA | NA | 237,000 J |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | 2.0 U |
| Vanadium | 7440-62-2 | ug/L | 110 J | NA | NA | NA | NA | NA | NA | 8.3 J |
| Zinc | 7440-66-6 | ug/L | 282 J | NA | NA | NA | NA | NA | NA | 20 UB |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-IW2I-060314<br><br>06/03/14<br>GPS-IW2I | 114-ABPT-IW2I-061914<br><br>06/19/14<br>GPS-IW2I | 114-ABPT-IW2I-070114<br><br>07/01/14<br>GPS-IW2I | 114-ABPT-IW2I-071614<br><br>07/16/14<br>GPS-IW2I | 114-ABPT-IW2I-080714<br><br>08/07/14<br>GPS-IW2I | 114-ABPT-IW2I-100814<br><br>10/08/14<br>GPS-IW2I | 114-ABPT-IW2S-010615<br><br>01/06/15<br>GPS-IW2S | 114-ABPT-IW2S-040715<br><br>04/07/15<br>GPS-IW2S |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | 64 J | NA | NA | NA | 29 J | 1,000 U | 120 | 57 J |
| Nitrate-N | 14797-55-8 | ug/L | 64 J | NA | NA | NA | 29 J | 1,100 U | 120 J | 57 J |
| Nitrite | 14797-65-0 | ug/L | 10 U | NA | NA | NA | 10 U | 50 U | 100 U | 10 U |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 411 | NA | NA | NA | 284 | 336 | 217 | 273 |
| pH | ARC-pH | SU | 5.04 | NA | NA | NA | 5.56 | 4.63 | 7.02 | 6.71 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-IW2I-060314<br>06/03/14<br>GPS-IW2I | 114-ABPT-IW2I-061914<br>06/19/14<br>GPS-IW2I | 114-ABPT-IW2I-070114<br>07/01/14<br>GPS-IW2I | 114-ABPT-IW2I-071614<br>07/16/14<br>GPS-IW2I | 114-ABPT-IW2I-080714<br>08/07/14<br>GPS-IW2I | 114-ABPT-IW2I-100814<br>10/08/14<br>GPS-IW2I | 114-ABPT-IW2S-010615<br>01/06/15<br>GPS-IW2S | 114-ABPT-IW2S-040715<br>04/07/15<br>GPS-IW2S |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 82,200 | NA | NA | NA | 78,800 | 143,000 | 10,000 UB | 12,000 JB |
| Sulfide | 18496-25-8 | ug/L | 4,900 | NA | NA | NA | 1,900 J | 5,700 | 4,800 | 5,500 |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 1,320,000 | 1,630,000 | 1,730,000 | 1,610,000 | 23,000 | 2,990,000 | 690,000 | 153,000 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 4,630 | NA | NA | 1,590 | 2,620 | 11,180 | 12,500 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 35 | NA | NA | 84 | 33 | 74 | 70 | NA |
| pH | ARC-pH | SU | 6.8 | NA | NA | 5.29 | 5.35 | 6.19 | 6.84 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | 4.57 | NA | NA | 2.95 | 3.07 | 3.61 | 5.79 | NA |
| Temperature | ARC-Temp | deg c | 16.53 | NA | NA | 20.26 | 18.88 | 19.69 | 10.77 | NA |
| Turbidity | ARC-Turb | NTU | 35 | NA | NA | 368 | 505 | 72.5 | 129 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-ABPT-IW2S-060614 06/06/14 GPS-IW2S | 114-ABPT-IW2S-061914 06/19/14 GPS-IW2S | 114-ABPT-IW2S-070114 07/01/14 GPS-IW2S | 114-ABPT-IW2S-071614 07/16/14 GPS-IW2S | 114-ABPT-IW2S-080714 08/07/14 GPS-IW2S | 114-ABPT-IW2S-100714 10/07/14 GPS-IW2S | 114-ABPT-MW2I-010515 01/05/15 GPS-MW2I | 114-ABPT-MW2I-040815 04/08/15 GPS-MW2I |
|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-IW2S-060614<br>06/06/14<br>GPS-IW2S | 114-ABPT-IW2S-061914<br>06/19/14<br>GPS-IW2S | 114-ABPT-IW2S-070114<br>07/01/14<br>GPS-IW2S | 114-ABPT-IW2S-071614<br>07/16/14<br>GPS-IW2S | 114-ABPT-IW2S-080714<br>08/07/14<br>GPS-IW2S | 114-ABPT-IW2S-100714<br>10/07/14<br>GPS-IW2S | 114-ABPT-MW2I-010515<br>01/05/15<br>GPS-MW2I | 114-ABPT-MW2I-040815<br>04/08/15<br>GPS-MW2I |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

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| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-IW2S-060614<br>06/06/14<br>GPS-IW2S | 114-ABPT-IW2S-061914<br>06/19/14<br>GPS-IW2S | 114-ABPT-IW2S-070114<br>07/01/14<br>GPS-IW2S | 114-ABPT-IW2S-071614<br>07/16/14<br>GPS-IW2S | 114-ABPT-IW2S-080714<br>08/07/14<br>GPS-IW2S | 114-ABPT-IW2S-100714<br>10/07/14<br>GPS-IW2S | 114-ABPT-MW2I-010515<br>01/05/15<br>GPS-MW2I | 114-ABPT-MW2I-040815<br>04/08/15<br>GPS-MW2I |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 2,860 | NA | NA | NA | NA | NA | NA | 379 |
| Antimony | 7440-36-0 | ug/L | 5.7 J | NA | NA | NA | NA | NA | NA | 30 UJ |
| Arsenic | 7440-38-2 | ug/L | 16.1 | NA | NA | NA | NA | NA | NA | 30.8 |
| Barium | 7440-39-3 | ug/L | 678 J | NA | NA | NA | NA | NA | NA | 25.3 J |
| Beryllium | 7440-41-7 | ug/L | 0.80 J | NA | NA | NA | NA | NA | NA | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 1.0 J | NA | NA | NA | NA | NA | NA | 23.7 |
| Calcium | 7440-70-2 | ug/L | 1,130,000 | NA | NA | NA | NA | NA | NA | 151,000 J |
| Chromium | 7440-47-3 | ug/L | 455 J | NA | NA | NA | 143 J | 82.0 | 195,000 J | 150,000 J |
| Chromium VI | 18540-29-9 | ug/L | 10 U | NA | NA | NA | 45 | 41 | 186,000 J | 160,000 J |
| Cobalt | 7440-48-4 | ug/L | 33.8 J | NA | NA | NA | NA | NA | NA | 133 |
| Copper | 7440-50-8 | ug/L | 19.2 | NA | NA | NA | NA | NA | NA | 407 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 68,400 | NA | NA | NA | 29,300 J | 35,400 | 164 J | 462 J |
| Lead | 7439-92-1 | ug/L | 33.2 | NA | NA | NA | NA | NA | NA | 14.5 J |
| Magnesium | 7439-95-4 | ug/L | 137,000 J | NA | NA | NA | NA | NA | NA | 29,300 J |
| Manganese | 7439-96-5 | ug/L | 6,160 J | NA | NA | NA | 2,000 J | 2,210 | 454 | 384 |

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| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-IW2S-060614<br>06/06/14<br>GPS-IW2S | 114-ABPT-IW2S-061914<br>06/19/14<br>GPS-IW2S | 114-ABPT-IW2S-070114<br>07/01/14<br>GPS-IW2S | 114-ABPT-IW2S-071614<br>07/16/14<br>GPS-IW2S | 114-ABPT-IW2S-080714<br>08/07/14<br>GPS-IW2S | 114-ABPT-IW2S-100714<br>10/07/14<br>GPS-IW2S | 114-ABPT-MW2I-010515<br>01/05/15<br>GPS-MW2I | 114-ABPT-MW2I-040815<br>04/08/15<br>GPS-MW2I |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | NA | NA | NA | NA | NA | NA | 0.20 U |
| Nickel | 7440-02-0 | ug/L | 214 | NA | NA | NA | NA | NA | NA | 162 J |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 649,000 | NA | NA | NA | NA | NA | NA | 11,800 |
| Selenium | 7782-49-2 | ug/L | 20.1 J | NA | NA | NA | NA | NA | NA | 50 U |
| Silver | 7440-22-4 | ug/L | 10.0 J | NA | NA | NA | NA | NA | NA | 8.7 J |
| Sodium | 7440-23-5 | ug/L | 213,000 J | NA | NA | NA | NA | NA | NA | 291,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | 10 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 80.0 | NA | NA | NA | NA | NA | NA | 177 J |
| Zinc | 7440-66-6 | ug/L | 52.0 J | NA | NA | NA | NA | NA | NA | 130 |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | 529 | NA | NA | NA | NA | NA | NA | 80.4 J |
| Antimony | 7440-36-0 | ug/L | 8.5 | NA | NA | NA | NA | NA | NA | 77.6 J |
| Arsenic | 7440-38-2 | ug/L | 18.6 | NA | NA | NA | NA | NA | NA | 32.7 |
| Barium | 7440-39-3 | ug/L | 835 J | NA | NA | NA | NA | NA | NA | 22.9 J |
| Beryllium | 7440-41-7 | ug/L | 14.8 J | NA | NA | NA | NA | NA | NA | 1.0 U |
| Cadmium | 7440-43-9 | ug/L | 6.0 U | NA | NA | NA | NA | NA | NA | 23.6 |
| Calcium | 7440-70-2 | ug/L | 1,340,000 | NA | NA | NA | NA | NA | NA | 150,000 J |
| Chromium | 7440-47-3 | ug/L | 614 J | NA | NA | NA | 177 J | 94.0 | 181,000 J | 142,000 J |
| Chromium VI | 18540-29-9 | ug/L | 42 | NA | NA | NA | 2.3 J | 9.1 J | 186,000 J | 160,000 J |
| Cobalt | 7440-48-4 | ug/L | 38.9 J | NA | NA | NA | NA | NA | NA | 131 |
| Copper | 7440-50-8 | ug/L | 7.2 J | NA | NA | NA | NA | NA | NA | 386 |
| Iron | 7439-89-6 | ug/L | 73,400 | NA | NA | NA | 35,700 J | 40,300 | 84.1 J | 35.1 J |
| Lead | 7439-92-1 | ug/L | 3.0 U | NA | NA | NA | NA | NA | NA | 10.7 J |
| Magnesium | 7439-95-4 | ug/L | 176,000 J | NA | NA | NA | NA | NA | NA | 29,100 J |
| Manganese | 7439-96-5 | ug/L | 7,770 J | NA | NA | NA | 2,520 J | 2,500 | 426 | 385 |
| Mercury | 7439-97-6 | ug/L | 1.2 U | NA | NA | NA | NA | NA | NA | 0.20 U |
| Nickel | 7440-02-0 | ug/L | 250 | NA | NA | NA | NA | NA | NA | 162 J |
| Potassium | 7440-09-7 | ug/L | 783,000 | NA | NA | NA | NA | NA | NA | 11,700 |
| Selenium | 7782-49-2 | ug/L | 11.9 J | NA | NA | NA | NA | NA | NA | 50 U |
| Silver | 7440-22-4 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | 8.4 J |
| Sodium | 7440-23-5 | ug/L | 284,000 J | NA | NA | NA | NA | NA | NA | 290,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | 10 U |
| Vanadium | 7440-62-2 | ug/L | 75.3 | NA | NA | NA | NA | NA | NA | 162 J |
| Zinc | 7440-66-6 | ug/L | 20 U | NA | NA | NA | NA | NA | NA | 132 |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

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| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-IW2S-060614<br>06/06/14<br>GPS-IW2S | 114-ABPT-IW2S-061914<br>06/19/14<br>GPS-IW2S | 114-ABPT-IW2S-070114<br>07/01/14<br>GPS-IW2S | 114-ABPT-IW2S-071614<br>07/16/14<br>GPS-IW2S | 114-ABPT-IW2S-080714<br>08/07/14<br>GPS-IW2S | 114-ABPT-IW2S-100714<br>10/07/14<br>GPS-IW2S | 114-ABPT-MW2I-010515<br>01/05/15<br>GPS-MW2I | 114-ABPT-MW2I-040815<br>04/08/15<br>GPS-MW2I |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | 140 | NA | NA | NA | 44 J | 100 JB | 570 | 810 |
| Nitrate-N | 14797-55-8 | ug/L | 140 J | NA | NA | NA | 28 J | 100 JB | 410 | 680 |
| Nitrite | 14797-65-0 | ug/L | 50 UJ | NA | NA | NA | 16 | 20 U | 160 | 130 |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 359 | NA | NA | NA | 279 | 310 | 297 | 332 |
| pH | ARC-pH | SU | 6.21 | NA | NA | NA | 6.73 | 6.21 | 6.93 | 7.14 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-ABPT-IW2S-060614 06/06/14 GPS-IW2S | 114-ABPT-IW2S-061914 06/19/14 GPS-IW2S | 114-ABPT-IW2S-070114 07/01/14 GPS-IW2S | 114-ABPT-IW2S-071614 07/16/14 GPS-IW2S | 114-ABPT-IW2S-080714 08/07/14 GPS-IW2S | 114-ABPT-IW2S-100714 10/07/14 GPS-IW2S | 114-ABPT-MW2I-010515 01/05/15 GPS-MW2I | 114-ABPT-MW2I-040815 04/08/15 GPS-MW2I |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 37,600 | NA | NA | NA | 2,000 J | 50,000 U | 388,000 | 346,000 |
| Sulfide | 18496-25-8 | ug/L | 6,400 | NA | NA | NA | 4,000 | 3,500 | 2,000 U | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 3,090,000 | 2,200,000 | 1,790,000 J | 1,630,000 | 1,640,000 | 1,480,000 | 9,500 | 7,400 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 10,400 | 10,560 | NA | 11,350 | 11,500 | 8,360 | 10,320 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 76 | 99 | NA | 71 | 33 | 89 | 151 | NA |
| pH | ARC-pH | SU | 6.29 | 6.65 | NA | 6.83 | 6.54 | 6.52 | 7.09 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | 7.15 | 4.2 | NA | 4.61 | 5.92 | 3.55 | 2.37 | NA |
| Temperature | ARC-Temp | deg c | 15.25 | 18.71 | NA | 25.94 | 19.13 | 20.95 | 11.62 | NA |
| Turbidity | ARC-Turb | NTU | 795 | 48.3 | NA | 103 | 70.5 | 689 | 4.6 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW2I-060314<br>06/03/14<br>GPS-MW2I | 114-ABPT-MW2I-061914<br>06/19/14<br>GPS-MW2I | 114-ABPT-MW2I-070114<br>07/01/14<br>GPS-MW2I | 114-ABPT-MW2I-071714<br>07/17/14<br>GPS-MW2I | 114-ABPT-MW2I-080714<br>08/07/14<br>GPS-MW2I | 114-ABPT-MW2I-100814<br>10/08/14<br>GPS-MW2I | 114-ABPT-MW3I-010515<br>01/05/15<br>GPS-MW3I | 114-ABPT-MW3I-040815<br>04/08/15<br>GPS-MW3I |
|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW2I-060314<br><br>06/03/14<br>GPS-MW2I | 114-ABPT-MW2I-061914<br><br>06/19/14<br>GPS-MW2I | 114-ABPT-MW2I-070114<br><br>07/01/14<br>GPS-MW2I | 114-ABPT-MW2I-071714<br><br>07/17/14<br>GPS-MW2I | 114-ABPT-MW2I-080714<br><br>08/07/14<br>GPS-MW2I | 114-ABPT-MW2I-100814<br><br>10/08/14<br>GPS-MW2I | 114-ABPT-MW3I-010515<br><br>01/05/15<br>GPS-MW3I | 114-ABPT-MW3I-040815<br><br>04/08/15<br>GPS-MW3I |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW2I-060314<br><br>06/03/14<br>GPS-MW2I | 114-ABPT-MW2I-061914<br><br>06/19/14<br>GPS-MW2I | 114-ABPT-MW2I-070114<br><br>07/01/14<br>GPS-MW2I | 114-ABPT-MW2I-071714<br><br>07/17/14<br>GPS-MW2I | 114-ABPT-MW2I-080714<br><br>08/07/14<br>GPS-MW2I | 114-ABPT-MW2I-100814<br><br>10/08/14<br>GPS-MW2I | 114-ABPT-MW3I-010515<br><br>01/05/15<br>GPS-MW3I | 114-ABPT-MW3I-040815<br><br>04/08/15<br>GPS-MW3I |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 200 U | NA | NA | NA | NA | NA | NA | 274 |
| Antimony | 7440-36-0 | ug/L | 364 J | NA | NA | NA | NA | NA | NA | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | 15 U | NA | NA | NA | NA | NA | NA | 3.0 U |
| Barium | 7440-39-3 | ug/L | 30.1 J | NA | NA | NA | NA | NA | NA | 57.1 J |
| Beryllium | 7440-41-7 | ug/L | 1.0 U | NA | NA | NA | NA | NA | NA | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 14.8 J | NA | NA | NA | NA | NA | NA | 9.3 |
| Calcium | 7440-70-2 | ug/L | 176,000 | NA | NA | NA | NA | NA | NA | 152,000 J |
| Chromium | 7440-47-3 | ug/L | 195,000 | NA | NA | NA | 201,000 | 167,000 | 20,100 J | 21,400 J |
| Chromium VI | 18540-29-9 | ug/L | 197,000 J | NA | NA | NA | 188,000 | 163,000 | 45,100 J | 15,800 J |
| Cobalt | 7440-48-4 | ug/L | 37.4 J | NA | NA | NA | NA | NA | NA | 85.4 |
| Copper | 7440-50-8 | ug/L | 306 J | NA | NA | NA | NA | NA | NA | 246 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 100 U | NA | NA | NA | 98.9 J | 175 J | 504 | 259 |
| Lead | 7439-92-1 | ug/L | 19.9 | NA | NA | NA | NA | NA | NA | 3.5 |
| Magnesium | 7439-95-4 | ug/L | 34,400 | NA | NA | NA | NA | NA | NA | 32,600 J |
| Manganese | 7439-96-5 | ug/L | 470 | NA | NA | NA | 450 | 370 | 457 | 520 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW2I-060314<br><br>06/03/14<br>GPS-MW2I | 114-ABPT-MW2I-061914<br><br>06/19/14<br>GPS-MW2I | 114-ABPT-MW2I-070114<br><br>07/01/14<br>GPS-MW2I | 114-ABPT-MW2I-071714<br><br>07/17/14<br>GPS-MW2I | 114-ABPT-MW2I-080714<br><br>08/07/14<br>GPS-MW2I | 114-ABPT-MW2I-100814<br><br>10/08/14<br>GPS-MW2I | 114-ABPT-MW3I-010515<br><br>01/05/15<br>GPS-MW3I | 114-ABPT-MW3I-040815<br><br>04/08/15<br>GPS-MW3I |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | NA | NA | NA | NA | NA | NA | 0.20 U |
| Nickel | 7440-02-0 | ug/L | 130 | NA | NA | NA | NA | NA | NA | 144 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 14,900 | NA | NA | NA | NA | NA | NA | 7,130 J |
| Selenium | 7782-49-2 | ug/L | 50 U | NA | NA | NA | NA | NA | NA | 4.4 J |
| Silver | 7440-22-4 | ug/L | 1.5 J | NA | NA | NA | NA | NA | NA | 2.5 J |
| Sodium | 7440-23-5 | ug/L | 340,000 | NA | NA | NA | NA | NA | NA | 116,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | 2.0 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 250 U | NA | NA | NA | NA | NA | NA | 1.1 J |
| Zinc | 7440-66-6 | ug/L | 255 | NA | NA | NA | NA | NA | NA | 41.8 JB |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | 200 U | NA | NA | NA | NA | NA | NA | 85.2 J |
| Antimony | 7440-36-0 | ug/L | 646 J | NA | NA | NA | NA | NA | NA | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | 15 U | NA | NA | NA | NA | NA | NA | 3.0 U |
| Barium | 7440-39-3 | ug/L | 28.2 J | NA | NA | NA | NA | NA | NA | 56.5 J |
| Beryllium | 7440-41-7 | ug/L | 1.0 U | NA | NA | NA | NA | NA | NA | 1.0 U |
| Cadmium | 7440-43-9 | ug/L | 9.2 | NA | NA | NA | NA | NA | NA | 9.4 |
| Calcium | 7440-70-2 | ug/L | 171,000 | NA | NA | NA | NA | NA | NA | 154,000 J |
| Chromium | 7440-47-3 | ug/L | 215,000 | NA | NA | NA | 199,000 | 181,000 | 22,100 J | 21,800 J |
| Chromium VI | 18540-29-9 | ug/L | 225,000 J | NA | NA | NA | 188,000 | 154,000 | 21,300 J | 19,900 J |
| Cobalt | 7440-48-4 | ug/L | 41.2 J | NA | NA | NA | NA | NA | NA | 87.0 |
| Copper | 7440-50-8 | ug/L | 393 J | NA | NA | NA | NA | NA | NA | 251 |
| Iron | 7439-89-6 | ug/L | 100 U | NA | NA | NA | 100 U | 140 J | 46.1 J | 10.9 J |
| Lead | 7439-92-1 | ug/L | 22.0 | NA | NA | NA | NA | NA | NA | 3.7 |
| Magnesium | 7439-95-4 | ug/L | 34,500 | NA | NA | NA | NA | NA | NA | 33,300 J |
| Manganese | 7439-96-5 | ug/L | 567 | NA | NA | NA | 439 | 420 | 472 | 521 |
| Mercury | 7439-97-6 | ug/L | 0.086 J | NA | NA | NA | NA | NA | NA | 0.20 U |
| Nickel | 7440-02-0 | ug/L | 130 | NA | NA | NA | NA | NA | NA | 147 |
| Potassium | 7440-09-7 | ug/L | 14,700 | NA | NA | NA | NA | NA | NA | 7,230 J |
| Selenium | 7782-49-2 | ug/L | 50 U | NA | NA | NA | NA | NA | NA | 3.1 J |
| Silver | 7440-22-4 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | 2.1 J |
| Sodium | 7440-23-5 | ug/L | 326,000 | NA | NA | NA | NA | NA | NA | 117,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | 2.0 U |
| Vanadium | 7440-62-2 | ug/L | 29.3 J | NA | NA | NA | NA | NA | NA | 1.6 J |
| Zinc | 7440-66-6 | ug/L | 334 | NA | NA | NA | NA | NA | NA | 44.0 JB |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW2I-060314<br><br>06/03/14<br>GPS-MW2I | 114-ABPT-MW2I-061914<br><br>06/19/14<br>GPS-MW2I | 114-ABPT-MW2I-070114<br><br>07/01/14<br>GPS-MW2I | 114-ABPT-MW2I-071714<br><br>07/17/14<br>GPS-MW2I | 114-ABPT-MW2I-080714<br><br>08/07/14<br>GPS-MW2I | 114-ABPT-MW2I-100814<br><br>10/08/14<br>GPS-MW2I | 114-ABPT-MW3I-010515<br><br>01/05/15<br>GPS-MW3I | 114-ABPT-MW3I-040815<br><br>04/08/15<br>GPS-MW3I |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | 1,200 | NA | NA | NA | 650 | 800 | 2,700 | 3,100 |
| Nitrate-N | 14797-55-8 | ug/L | 1,000 | NA | NA | NA | 480 | 640 | 2,700 | 3,100 |
| Nitrite | 14797-65-0 | ug/L | 170 | NA | NA | NA | 170 | 160 | 26 | 19 |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 551 | NA | NA | NA | 338 | 384 | 284 | 334 |
| pH | ARC-pH | SU | 7.01 | NA | NA | NA | 7.11 | 7.07 | 6.98 | 7.01 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW2I-060314<br>06/03/14<br>GPS-MW2I | 114-ABPT-MW2I-061914<br>06/19/14<br>GPS-MW2I | 114-ABPT-MW2I-070114<br>07/01/14<br>GPS-MW2I | 114-ABPT-MW2I-071714<br>07/17/14<br>GPS-MW2I | 114-ABPT-MW2I-080714<br>08/07/14<br>GPS-MW2I | 114-ABPT-MW2I-100814<br>10/08/14<br>GPS-MW2I | 114-ABPT-MW3I-010515<br>01/05/15<br>GPS-MW3I | 114-ABPT-MW3I-040815<br>04/08/15<br>GPS-MW3I |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 422,000 | NA | NA | NA | 414,000 | 384,000 | 151,000 | 148,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | NA | NA | NA | 2,000 U | 2,000 U | 2,000 U | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 10,100 | 10,500 | 10,600 J | 9,900 | 10,700 | 9,400 | 4,600 | 3,500 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 14,900 | NA | NA | 2,400 | 2,530 | 13,380 | 13,820 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 184 | NA | NA | 134 | 118 | 33 | 163 | NA |
| pH | ARC-pH | SU | 7.21 | NA | NA | 7.18 | 7.23 | 6.87 | 7 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | 2.45 | NA | NA | 2.11 | 2.53 | 2.78 | 1.32 | NA |
| Temperature | ARC-Temp | deg c | 25.33 | NA | NA | 17.81 | 19.9 | 19.64 | 10.17 | NA |
| Turbidity | ARC-Turb | NTU | 1.1 | NA | NA | 9.3 | 5.5 | 0 | 7.1 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-ABPT-MW3I-061914 | 114-ABPT-MW3I-070114 | 114-ABPT-MW3I-071714 | 114-ABPT-MW3I-080614 | 114-ABPT-MW3I-100814 | 114-ABPT-MW4I-010515 | 114-ABPT-MW4I-060614 | 114-ABPT-MW4I-061914 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | |
| Date Collected: | | | 06/19/14 | 07/01/14 | 07/17/14 | 08/06/14 | 10/08/14 | 01/05/15 | 06/06/14 | 06/19/14 |
| Location ID: | CAS Number | Units | GPS-MW3I | GPS-MW3I | GPS-MW3I | GPS-MW3I | GPS-MW3I | GPS-MW4I | GPS-MW4I | GPS-MW4I |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW3I-061914<br><br>06/19/14<br>GPS-MW3I | 114-ABPT-MW3I-070114<br><br>07/01/14<br>GPS-MW3I | 114-ABPT-MW3I-071714<br><br>07/17/14<br>GPS-MW3I | 114-ABPT-MW3I-080614<br><br>08/06/14<br>GPS-MW3I | 114-ABPT-MW3I-100814<br><br>10/08/14<br>GPS-MW3I | 114-ABPT-MW4I-010515<br><br>01/05/15<br>GPS-MW4I | 114-ABPT-MW4I-060614<br><br>06/06/14<br>GPS-MW4I | 114-ABPT-MW4I-061914<br><br>06/19/14<br>GPS-MW4I |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW3I-061914<br><br>06/19/14<br>GPS-MW3I | 114-ABPT-MW3I-070114<br><br>07/01/14<br>GPS-MW3I | 114-ABPT-MW3I-071714<br><br>07/17/14<br>GPS-MW3I | 114-ABPT-MW3I-080614<br><br>08/06/14<br>GPS-MW3I | 114-ABPT-MW3I-100814<br><br>10/08/14<br>GPS-MW3I | 114-ABPT-MW4I-010515<br><br>01/05/15<br>GPS-MW4I | 114-ABPT-MW4I-060614<br><br>06/06/14<br>GPS-MW4I | 114-ABPT-MW4I-061914<br><br>06/19/14<br>GPS-MW4I |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | 296 | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | 6.0 U | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | 4.3 | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | 77.8 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | 4.5 | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | 131,000 | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 29,200 J | 24,900 | 128 J | 1,340 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | 30,200 J | 21,000 | 20 | 1,200 | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | 109 | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | 71.4 | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | 285 | 154 | 320 | 419 | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | 10.6 | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | 34,800 | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | 396 | 440 | 6,810 | 3,070 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW3I-061914<br><br>06/19/14<br>GPS-MW3I | 114-ABPT-MW3I-070114<br><br>07/01/14<br>GPS-MW3I | 114-ABPT-MW3I-071714<br><br>07/17/14<br>GPS-MW3I | 114-ABPT-MW3I-080614<br><br>08/06/14<br>GPS-MW3I | 114-ABPT-MW3I-100814<br><br>10/08/14<br>GPS-MW3I | 114-ABPT-MW4I-010515<br><br>01/05/15<br>GPS-MW4I | 114-ABPT-MW4I-060614<br><br>06/06/14<br>GPS-MW4I | 114-ABPT-MW4I-061914<br><br>06/19/14<br>GPS-MW4I |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | 0.20 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | 68.1 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | 7,840 J | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | 5.8 J | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | 1.3 J | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | 145,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | 2.0 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | 4.3 J | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | 47.5 J | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | 21.4 J | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | 6.0 U | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | 2.7 J | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | 80.6 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | 4.2 | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | 131,000 | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 29,000 J | 23,800 | 177 J | 1,220 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | 11,200 J | 20,500 | 8.3 J | 1,000 | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | 105 | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | 51.6 | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | 31.8 J | 21.1 J | 255 | 55.1 J | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | 8.5 | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | 35,100 | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | 396 | 406 | 6,070 | 3,080 | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | 0.20 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | 67.7 | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | 8,780 J | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | 153,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | 2.0 U | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | 1.7 J | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | 34.3 | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW3I-061914<br><br>06/19/14<br>GPS-MW3I | 114-ABPT-MW3I-070114<br><br>07/01/14<br>GPS-MW3I | 114-ABPT-MW3I-071714<br><br>07/17/14<br>GPS-MW3I | 114-ABPT-MW3I-080614<br><br>08/06/14<br>GPS-MW3I | 114-ABPT-MW3I-100814<br><br>10/08/14<br>GPS-MW3I | 114-ABPT-MW4I-010515<br><br>01/05/15<br>GPS-MW4I | 114-ABPT-MW4I-060614<br><br>06/06/14<br>GPS-MW4I | 114-ABPT-MW4I-061914<br><br>06/19/14<br>GPS-MW4I |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | 1,800 | 1,900 | 100 U | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | 1,700 | 1,800 | 110 U | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | 120 | 75 | 10 U | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | 302 | 334 | 296 | 386 | NA |
| pH | ARC-pH | SU | NA | NA | NA | 7.00 | 7.04 | 6.64 | 7.12 | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW3I-061914<br><br>06/19/14<br>GPS-MW3I | 114-ABPT-MW3I-070114<br><br>07/01/14<br>GPS-MW3I | 114-ABPT-MW3I-071714<br><br>07/17/14<br>GPS-MW3I | 114-ABPT-MW3I-080614<br><br>08/06/14<br>GPS-MW3I | 114-ABPT-MW3I-100814<br><br>10/08/14<br>GPS-MW3I | 114-ABPT-MW4I-010515<br><br>01/05/15<br>GPS-MW4I | 114-ABPT-MW4I-060614<br><br>06/06/14<br>GPS-MW4I | 114-ABPT-MW4I-061914<br><br>06/19/14<br>GPS-MW4I |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | 174,000 | 152,000 | 70,900 | 154,000 | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | 2,000 U | 2,000 U | 2,000 U | 2,000 U | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 4,400 | 7,700 | 5,100 | 4,100 | 4,300 JB | 11,300 | NA | 4,700 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 4,600 | NA | 1,320 | 2,520 | 14,350 | 14,580 | 9,030 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 45 | NA | 137 | 116 | 32 | 5 | 32 | NA |
| pH | ARC-pH | SU | 8.74 | NA | 7.28 | 7.18 | 7.61 | 4.74 | 8.92 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | 1.04 | NA | 1.38 | 1.37 | 1.51 | 1.54 | 1.32 | NA |
| Temperature | ARC-Temp | deg c | 17.2 | NA | 17.88 | 20.71 | 22.21 | 8.6 | 17.15 | NA |
| Turbidity | ARC-Turb | NTU | 6 | NA | 5.4 | 10.6 | 2.5 | 0 | 17.1 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-ABPT-MW4I-070114 07/01/14 GPS-MW4I | 114-ABPT-MW4I-071614 07/16/14 GPS-MW4I | 114-ABPT-MW4I-080714 08/07/14 GPS-MW4I | 114-ABPT-MW4I-100714 10/07/14 GPS-MW4I | 114-ABPT-MW5S-010515 01/05/15 GPS-MW5S | 114-ABPT-MW5S-040715 04/07/15 GPS-MW5S | 114-ABPT-MW5S-060614 06/06/14 GPS-MW5S | 114-ABPT-MW5S-061914 06/19/14 GPS-MW5S |
|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW4I-070114<br>07/01/14<br>GPS-MW4I | 114-ABPT-MW4I-071614<br>07/16/14<br>GPS-MW4I | 114-ABPT-MW4I-080714<br>08/07/14<br>GPS-MW4I | 114-ABPT-MW4I-100714<br>10/07/14<br>GPS-MW4I | 114-ABPT-MW5S-010515<br>01/05/15<br>GPS-MW5S | 114-ABPT-MW5S-040715<br>04/07/15<br>GPS-MW5S | 114-ABPT-MW5S-060614<br>06/06/14<br>GPS-MW5S | 114-ABPT-MW5S-061914<br>06/19/14<br>GPS-MW5S |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW4I-070114<br>07/01/14<br>GPS-MW4I | 114-ABPT-MW4I-071614<br>07/16/14<br>GPS-MW4I | 114-ABPT-MW4I-080714<br>08/07/14<br>GPS-MW4I | 114-ABPT-MW4I-100714<br>10/07/14<br>GPS-MW4I | 114-ABPT-MW5S-010515<br>01/05/15<br>GPS-MW5S | 114-ABPT-MW5S-040715<br>04/07/15<br>GPS-MW5S | 114-ABPT-MW5S-060614<br>06/06/14<br>GPS-MW5S | 114-ABPT-MW5S-061914<br>06/19/14<br>GPS-MW5S |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 5,680 | 3,310 | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 3.2 J | 6.0 U | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 21.6 | 22.7 | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 73.5 J | 20.7 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 0.40 J | 1.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 3.0 U | 3.0 U | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 21,700 J | 43,200 | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 4,090 J | 70.5 | 32.5 | 187 | 2,110 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 3,500 J | 10 U | 10 U | 10 U | 3,500 J | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 6.7 J | 2.0 J | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 19.5 | 8.5 J | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 33.0 J | 602 | 3,140 | 9,830 | 176 | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 7.8 | 2.7 J | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 13,300 | 546 J | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | 2,440 J | 4,980 | 69.6 | 196 | 8.3 J | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW4I-070114<br>07/01/14<br>GPS-MW4I | 114-ABPT-MW4I-071614<br>07/16/14<br>GPS-MW4I | 114-ABPT-MW4I-080714<br>08/07/14<br>GPS-MW4I | 114-ABPT-MW4I-100714<br>10/07/14<br>GPS-MW4I | 114-ABPT-MW5S-010515<br>01/05/15<br>GPS-MW5S | 114-ABPT-MW5S-040715<br>04/07/15<br>GPS-MW5S | 114-ABPT-MW5S-060614<br>06/06/14<br>GPS-MW5S | 114-ABPT-MW5S-061914<br>06/19/14<br>GPS-MW5S |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.40 J | 0.15 J | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | 92.6 J | 135 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 28,100 | 34,800 | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 4.2 J | 10 U | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 10 U | 10 U | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 854,000 J | 510,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | 4.0 U | 2.0 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | 68.6 | 77.0 | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 95.3 | 20 U | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 761 | 3,540 | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 4.8 J | 3.6 J | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 24.3 | 24.2 | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 18.0 J | 18.7 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 0.80 J | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 3.0 U | 3.0 U | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 30,000 J | 42,200 | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 4,260 J | 70.6 | 31.8 | 70.6 | 2,300 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 3,800 J | 10 U | 10 U | 10 U | 1,900 | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 1.3 J | 50 U | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 1.9 J | 7.2 J | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 100 U | 395 | 71.9 J | 51.8 J | 81.1 J | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 1.9 J | 3.0 U | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 2,690 J | 573 J | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | 2,460 J | 4,590 | 54.2 | 28.7 | 6.1 J | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.42 J | 1.2 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | 122 J | 147 | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 28,800 | 40,600 | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 5.2 J | 10 U | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 10 U | 10 U | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 621,000 J | 548,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 4.0 U | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | 46.0 J | 79.9 | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 20 UB | 20 U | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW4I-070114<br>07/01/14<br>GPS-MW4I | 114-ABPT-MW4I-071614<br>07/16/14<br>GPS-MW4I | 114-ABPT-MW4I-080714<br>08/07/14<br>GPS-MW4I | 114-ABPT-MW4I-100714<br>10/07/14<br>GPS-MW4I | 114-ABPT-MW5S-010515<br>01/05/15<br>GPS-MW5S | 114-ABPT-MW5S-040715<br>04/07/15<br>GPS-MW5S | 114-ABPT-MW5S-060614<br>06/06/14<br>GPS-MW5S | 114-ABPT-MW5S-061914<br>06/19/14<br>GPS-MW5S |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | 100 U | 100 U | 91 J | 51 J | 170 | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | 110 U | 110 U | 91 J | 51 J | 110 U | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | 4.9 J | 10 U | 10 U | 10 U | 190 J | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 308 | 350 | 226 | 213 | 335 | NA |
| pH | ARC-pH | SU | NA | NA | 7.40 | 6.90 | 9.28 | 9.62 | 11.18 | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW4I-070114<br>07/01/14<br>GPS-MW4I | 114-ABPT-MW4I-071614<br>07/16/14<br>GPS-MW4I | 114-ABPT-MW4I-080714<br>08/07/14<br>GPS-MW4I | 114-ABPT-MW4I-100714<br>10/07/14<br>GPS-MW4I | 114-ABPT-MW5S-010515<br>01/05/15<br>GPS-MW5S | 114-ABPT-MW5S-040715<br>04/07/15<br>GPS-MW5S | 114-ABPT-MW5S-060614<br>06/06/14<br>GPS-MW5S | 114-ABPT-MW5S-061914<br>06/19/14<br>GPS-MW5S |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | 156,000 | 115,000 | 92,100 | 206,000 | 201,000 | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | 2,000 U | 2,000 U | 2,800 | 11,300 | 10,200 | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 5,300 | 4,700 JB | 4,400 | 6,500 | 27,900 | 57,000 | 54,500 | 27,800 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 12,160 | 2,140 | 9,640 | 12,400 | NA | 20,330 | 20,440 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 150 | 139 | 23 | 139 | NA | 120 | 202 |
| pH | ARC-pH | SU | NA | 7.28 | 7.16 | 9.27 | 8.99 | NA | 11.49 | 14 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | 1.32 | 1.44 | 1.54 | 1.02 | NA | 2.4 | 1.01 |
| Temperature | ARC-Temp | deg c | NA | 18.53 | 22.8 | 17.92 | 9.39 | NA | 18.75 | 17.13 |
| Turbidity | ARC-Turb | NTU | NA | 7.4 | 0 | 6.2 | 153 | NA | 11.4 | 16 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-ABPT-MW5S-070114 | 114-ABPT-MW5S-071614 | 114-ABPT-MW5S-080714 | 114-ABPT-MW5S-100714 | 114-ABPT-MW6S-011415 | 114-ABPT-MW6S-040715 | 114-ABPT-MW6S-060614 | 114-ABPT-MW6S-062014 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | |
| Date Collected: | | | 07/01/14 | 07/16/14 | 08/07/14 | 10/07/14 | 01/14/15 | 04/07/15 | 06/06/14 | 06/20/14 |
| Location ID: | CAS Number | Units | GPS-MW5S | GPS-MW5S | GPS-MW5S | GPS-MW5S | GPS-MW6S | GPS-MW6S | GPS-MW6S | GPS-MW6S |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW5S-070114<br>07/01/14<br>GPS-MW5S | 114-ABPT-MW5S-071614<br>07/16/14<br>GPS-MW5S | 114-ABPT-MW5S-080714<br>08/07/14<br>GPS-MW5S | 114-ABPT-MW5S-100714<br>10/07/14<br>GPS-MW5S | 114-ABPT-MW6S-011415<br>01/14/15<br>GPS-MW6S | 114-ABPT-MW6S-040715<br>04/07/15<br>GPS-MW6S | 114-ABPT-MW6S-060614<br>06/06/14<br>GPS-MW6S | 114-ABPT-MW6S-062014<br>06/20/14<br>GPS-MW6S |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW5S-070114<br>07/01/14<br>GPS-MW5S | 114-ABPT-MW5S-071614<br>07/16/14<br>GPS-MW5S | 114-ABPT-MW5S-080714<br>08/07/14<br>GPS-MW5S | 114-ABPT-MW5S-100714<br>10/07/14<br>GPS-MW5S | 114-ABPT-MW6S-011415<br>01/14/15<br>GPS-MW6S | 114-ABPT-MW6S-040715<br>04/07/15<br>GPS-MW6S | 114-ABPT-MW6S-060614<br>06/06/14<br>GPS-MW6S | 114-ABPT-MW6S-062014<br>06/20/14<br>GPS-MW6S |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 114,000 J | 21,200 | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 30 U | 6.0 U | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 17.5 | 6.4 | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 878 J | 221 | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 6.0 | 1.5 | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 3.0 J | 0.70 J | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 102,000 J | 107,000 | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 410 J | 142 | 500 | 688 | 126 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 47 | 10 U | 10 UJ | 10 U | 5.8 J | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 86.5 J | 15.8 J | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 333 | 44.7 | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 1,500 | 1,520 | 130,000 | 205,000 | 35,600 | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 105 | 24.4 | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 87,100 | 16,100 | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | 25.3 | 134 | 1,610 | 2,400 J | 405 | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW5S-070114<br>07/01/14<br>GPS-MW5S | 114-ABPT-MW5S-071614<br>07/16/14<br>GPS-MW5S | 114-ABPT-MW5S-080714<br>08/07/14<br>GPS-MW5S | 114-ABPT-MW5S-100714<br>10/07/14<br>GPS-MW5S | 114-ABPT-MW6S-011415<br>01/14/15<br>GPS-MW6S | 114-ABPT-MW6S-040715<br>04/07/15<br>GPS-MW6S | 114-ABPT-MW6S-060614<br>06/06/14<br>GPS-MW6S | 114-ABPT-MW6S-062014<br>06/20/14<br>GPS-MW6S |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.71 J | 0.20 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | 231 | 44.7 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 57,800 J | 33,400 | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 25.0 J | 15.2 | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 14.0 J | 3.6 J | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 155,000 J | 121,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | 10 U | 2.0 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | 347 J | 65.7 | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 770 J | 468 | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 61.9 J | 59.0 J | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 6.0 U | 4.5 J | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 2.0 J | 2.7 J | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 45.1 J | 37.6 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 0.50 J | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 3.0 U | 3.0 U | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 81,000 J | 107,000 | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 479 J | 150 | 15.4 | 1.5 J | 3.0 J | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 10 U | 10 U | 10 UJ | 10 U | 10 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 50 UJ | 50 U | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 10 U | 3.8 J | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 49.7 J | 78.6 J | 3,990 | 232 | 100 U | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 3.0 U | 3.0 U | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 27,000 | 4,070 J | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | 2.6 J | 161 | 136 | 339 J | 14.3 J | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.20 U | 0.20 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | 2.2 J | 4.2 J | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 13,300 J | 28,300 | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 10 U | 10 U | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 10 U | 10 U | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 184,000 J | 140,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.0 U | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | 1.3 J | 12.3 J | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 20 UBJ | 20 U | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW5S-070114<br>07/01/14<br>GPS-MW5S | 114-ABPT-MW5S-071614<br>07/16/14<br>GPS-MW5S | 114-ABPT-MW5S-080714<br>08/07/14<br>GPS-MW5S | 114-ABPT-MW5S-100714<br>10/07/14<br>GPS-MW5S | 114-ABPT-MW6S-011415<br>01/14/15<br>GPS-MW6S | 114-ABPT-MW6S-040715<br>04/07/15<br>GPS-MW6S | 114-ABPT-MW6S-060614<br>06/06/14<br>GPS-MW6S | 114-ABPT-MW6S-062014<br>06/20/14<br>GPS-MW6S |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | 51 J | 100 UB | 100 UB | 36 J | 68 J | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | 31 J | 110 UB | 110 U | 36 J | 110 U | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | 20 | 10 U | 10 U | 10 U | 100 J | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 367 | 243 | 398 | 278 | 379 | NA |
| pH | ARC-pH | SU | NA | NA | 11.03 | 8.82 | 7.37 | 7.53 | 8.63 | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW5S-070114<br>07/01/14<br>GPS-MW5S | 114-ABPT-MW5S-071614<br>07/16/14<br>GPS-MW5S | 114-ABPT-MW5S-080714<br>08/07/14<br>GPS-MW5S | 114-ABPT-MW5S-100714<br>10/07/14<br>GPS-MW5S | 114-ABPT-MW6S-011415<br>01/14/15<br>GPS-MW6S | 114-ABPT-MW6S-040715<br>04/07/15<br>GPS-MW6S | 114-ABPT-MW6S-060614<br>06/06/14<br>GPS-MW6S | 114-ABPT-MW6S-062014<br>06/20/14<br>GPS-MW6S |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | 201,000 | 227,000 | 62,500 | 112,000 | 295,000 | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | 7,900 | 38,900 | 2,000 U | 2,000 U | 2,000 U | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 64,900 | 8,100 | 47,700 | 71,200 | 17,100 J | 4,600 J | 5,900 | 18,000 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 12,390 | 1,870 | 9,810 | 19,530 | NA | 13,840 | 4,640 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 68 | 243 | 214 | 34 | NA | 64 | 68 |
| pH | ARC-pH | SU | NA | 9.39 | 11.83 | 9.14 | 7.66 | NA | 8.88 | 8.56 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | 0.216 | 2.69 | 3.88 | 0.574 | NA | 1.13 | 0.869 |
| Temperature | ARC-Temp | deg c | NA | 19.3 | 22.34 | 19.44 | 10.63 | NA | 23.84 | 20.38 |
| Turbidity | ARC-Turb | NTU | NA | 166 | 126 | 27.7 | 0 | NA | 0 | 794 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-ABPT-MW6S-070114 | 114-ABPT-MW6S-071714 | 114-ABPT-MW6S-080714 | 114-ABPT-MW6S-100814 | 114-ABPT-MW7S-010615 | 114-ABPT-MW7S-040715 | 114-ABPT-MW7S-060614 | 114-ABPT-MW7S-061914 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | |
| Date Collected: | | | 07/01/14 | 07/17/14 | 08/07/14 | 10/08/14 | 01/06/15 | 04/07/15 | 06/06/14 | 06/19/14 |
| Location ID: | CAS Number | Units | GPS-MW6S | GPS-MW6S | GPS-MW6S | GPS-MW6S | GPS-MW7S | GPS-MW7S | GPS-MW7S | GPS-MW7S |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW6S-070114<br>07/01/14<br>GPS-MW6S | 114-ABPT-MW6S-071714<br>07/17/14<br>GPS-MW6S | 114-ABPT-MW6S-080714<br>08/07/14<br>GPS-MW6S | 114-ABPT-MW6S-100814<br>10/08/14<br>GPS-MW6S | 114-ABPT-MW7S-010615<br>01/06/15<br>GPS-MW7S | 114-ABPT-MW7S-040715<br>04/07/15<br>GPS-MW7S | 114-ABPT-MW7S-060614<br>06/06/14<br>GPS-MW7S | 114-ABPT-MW7S-061914<br>06/19/14<br>GPS-MW7S |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW6S-070114<br>07/01/14<br>GPS-MW6S | 114-ABPT-MW6S-071714<br>07/17/14<br>GPS-MW6S | 114-ABPT-MW6S-080714<br>08/07/14<br>GPS-MW6S | 114-ABPT-MW6S-100814<br>10/08/14<br>GPS-MW6S | 114-ABPT-MW7S-010615<br>01/06/15<br>GPS-MW7S | 114-ABPT-MW7S-040715<br>04/07/15<br>GPS-MW7S | 114-ABPT-MW7S-060614<br>06/06/14<br>GPS-MW7S | 114-ABPT-MW7S-061914<br>06/19/14<br>GPS-MW7S |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 8,460 | 1,130 | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 4.2 J | 6.0 U | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 9.3 J | 9.8 | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 82.8 J | 23.9 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 0.40 J | 1.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 0.30 J | 3.0 U | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 98,600 | 103,000 | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 22.2 | 99.7 | 13.2 | 48.7 | 12.4 J | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 10 U | 10 U | 10 U | 5.3 J | 10 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 5.4 J | 50 U | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 22.3 | 10 U | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 5,950 | 17,400 | 3,240 | 13,300 | 474 | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 10.7 | 2.6 J | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 4,660 J | 139 J | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | 124 | 209 | 39.2 | 160 | 3.8 J | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW6S-070114<br>07/01/14<br>GPS-MW6S | 114-ABPT-MW6S-071714<br>07/17/14<br>GPS-MW6S | 114-ABPT-MW6S-080714<br>08/07/14<br>GPS-MW6S | 114-ABPT-MW6S-100814<br>10/08/14<br>GPS-MW6S | 114-ABPT-MW7S-010615<br>01/06/15<br>GPS-MW7S | 114-ABPT-MW7S-040715<br>04/07/15<br>GPS-MW7S | 114-ABPT-MW7S-060614<br>06/06/14<br>GPS-MW7S | 114-ABPT-MW7S-061914<br>06/19/14<br>GPS-MW7S |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.40 U | 0.20 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | 43.9 | 45.9 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 35,100 | 42,700 | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 4.1 J | 10 U | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 10 U | 10 U | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 176,000 | 214,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.0 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | 42.0 J | 49.4 J | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 60.3 JB | 20 U | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 655 | 671 | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 4.1 J | 6.0 U | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 9.3 J | 8.6 | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 19.2 J | 21.6 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 0.80 J | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 3.0 U | 3.0 U | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 114,000 | 93,500 | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 10 U | 10 UB | 1.7 J | 1.4 J | 41.6 J | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 10 U | 10 U | 10 U | 10 U | 2.5 J | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 50 U | 50 U | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 10 U | 1.8 J | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 122 | 21.1 J | 100 U | 22.0 J | 80.5 J | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 2.7 J | 3.0 U | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 5,000 U | 43.0 J | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | 81.2 | 46.3 | 15 U | 0.50 J | 15 U | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.60 U | 1.2 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | 34.2 | 42.0 | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 39,000 | 40,800 | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 3.2 J | 10 U | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 10 U | 10 U | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 216,000 | 203,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.0 U | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | 18.0 J | 49.8 J | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 20 UB | 20 U | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW6S-070114<br>07/01/14<br>GPS-MW6S | 114-ABPT-MW6S-071714<br>07/17/14<br>GPS-MW6S | 114-ABPT-MW6S-080714<br>08/07/14<br>GPS-MW6S | 114-ABPT-MW6S-100814<br>10/08/14<br>GPS-MW6S | 114-ABPT-MW7S-010615<br>01/06/15<br>GPS-MW7S | 114-ABPT-MW7S-040715<br>04/07/15<br>GPS-MW7S | 114-ABPT-MW7S-060614<br>06/06/14<br>GPS-MW7S | 114-ABPT-MW7S-061914<br>06/19/14<br>GPS-MW7S |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | 160 | 260 | 33 J | 23 J | 110 | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | 150 | 250 | 33 J | 23 J | 110 U | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | 6.6 J | 7.5 J | 10 U | 10 U | 220 J | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 281 | 260 | 475 | 138 | 342 | NA |
| pH | ARC-pH | SU | NA | NA | 8.15 | 7.66 | 10.87 | 10.73 | 10.92 | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW6S-070114<br>07/01/14<br>GPS-MW6S | 114-ABPT-MW6S-071714<br>07/17/14<br>GPS-MW6S | 114-ABPT-MW6S-080714<br>08/07/14<br>GPS-MW6S | 114-ABPT-MW6S-100814<br>10/08/14<br>GPS-MW6S | 114-ABPT-MW7S-010615<br>01/06/15<br>GPS-MW7S | 114-ABPT-MW7S-040715<br>04/07/15<br>GPS-MW7S | 114-ABPT-MW7S-060614<br>06/06/14<br>GPS-MW7S | 114-ABPT-MW7S-061914<br>06/19/14<br>GPS-MW7S |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | 386,000 | 352,000 | 244,000 | 263,000 | 244,000 | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | 2,000 U | 2,000 U | 1,300 J | 960 J | 2,800 | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 19,000 | 5,000 | 6,900 | 7,000 | 29,000 | 26,000 | 27,600 | 22,400 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 2,500 | 9,660 | 11,130 | 11,690 | NA | 15,810 | 3,300 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 83 | 53 | 89 | 186 | NA | 140 | 168 |
| pH | ARC-pH | SU | NA | 8.4 | 9.38 | 7.25 | 11.47 | NA | 11.28 | 11.31 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | 0.834 | 1.64 | 2.32 | 1.82 | NA | 1.54 | 1.15 |
| Temperature | ARC-Temp | deg c | NA | 20.53 | 24.45 | 20.75 | 13.52 | NA | 20.46 | 18.71 |
| Turbidity | ARC-Turb | NTU | NA | 967 | 195 | 32 | 39.8 | NA | 18.4 | 9.9 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW7S-070114<br>07/01/14<br>GPS-MW7S | 114-ABPT-MW7S-071614<br>07/16/14<br>GPS-MW7S | 114-ABPT-MW7S-080714<br>08/07/14<br>GPS-MW7S | 114-ABPT-MW7S-100814<br>10/08/14<br>GPS-MW7S | 114-ABPT-MW41-040715<br>04/07/15<br>GPS-MW4I | 114-ABPT-MW41-060314<br>06/03/14<br>GPS-MW4I | 114-ABPT-MW1011-080614<br>08/06/14<br>114-P1A-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW7S-070114<br>07/01/14<br>GPS-MW7S | 114-ABPT-MW7S-071614<br>07/16/14<br>GPS-MW7S | 114-ABPT-MW7S-080714<br>08/07/14<br>GPS-MW7S | 114-ABPT-MW7S-100814<br>10/08/14<br>GPS-MW7S | 114-ABPT-MW41-040715<br>04/07/15<br>GPS-MW4I | 114-ABPT-MW41-060314<br>06/03/14<br>GPS-MW4I | 114-ABPT-MW1011-080614<br>08/06/14<br>114-P1A-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW7S-070114<br>07/01/14<br>GPS-MW7S | 114-ABPT-MW7S-071614<br>07/16/14<br>GPS-MW7S | 114-ABPT-MW7S-080714<br>08/07/14<br>GPS-MW7S | 114-ABPT-MW7S-100814<br>10/08/14<br>GPS-MW7S | 114-ABPT-MW41-040715<br>04/07/15<br>GPS-MW4I | 114-ABPT-MW41-060314<br>06/03/14<br>GPS-MW4I | 114-ABPT-MW1011-080614<br>08/06/14<br>114-P1A-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | 498 | 11.0 J | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | 6.0 U | 6.0 U | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | 4.0 | 3.0 U | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | 127 J | 82.9 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | 1.3 J | 4.2 | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | 146,000 | 131,000 | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 10.1 | 9.6 JB | 147 | 766 | 15,400 J |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 10 U | 10 U | 10 U | 540 | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | 47.8 J | 102 | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | 19.6 | 50.4 | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 2,540 | 1,310 | 961 | 294 | 79.9 J |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | 10.6 | 10.6 | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | 38,700 | 33,900 | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | 32.7 | 16.0 | 5,070 | 3,410 | 218 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW7S-070114<br>07/01/14<br>GPS-MW7S | 114-ABPT-MW7S-071614<br>07/16/14<br>GPS-MW7S | 114-ABPT-MW7S-080714<br>08/07/14<br>GPS-MW7S | 114-ABPT-MW7S-100814<br>10/08/14<br>GPS-MW7S | 114-ABPT-MW41-040715<br>04/07/15<br>GPS-MW4I | 114-ABPT-MW41-060314<br>06/03/14<br>GPS-MW4I | 114-ABPT-MW1011-080614<br>08/06/14<br>114-P1A-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | 0.20 U | 0.20 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | 50.9 | 67.7 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | 9,000 J | 8,070 J | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | 2.2 J | 7.5 J | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | 1.1 J | 10 U | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | 139,000 J | 155,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | 2.0 U | 2.0 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | 3.3 J | 50 U | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | 42.9 JB | 46.5 | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | 33.1 J | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | 6.0 U | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | 5.4 | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | 129 J | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | 1.0 U | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | 1.3 J | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | 151,000 | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 10 U | 10.9 JB | 63.5 | NA | 15,500 J |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 10 U | 10 U | 10 U | 540 | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | 49.5 J | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | 17.0 | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 36.8 J | 100 U | 239 | NA | 13.2 J |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | 10.4 | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | 39,700 | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | 15 U | 15 U | 5,240 | NA | 218 |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | 0.20 U | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | 50.3 | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | 8,900 J | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | 3.1 J | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | 1.0 J | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | 139,000 J | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | 1.8 J | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | 2.4 J | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | 35.9 JB | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW7S-070114<br>07/01/14<br>GPS-MW7S | 114-ABPT-MW7S-071614<br>07/16/14<br>GPS-MW7S | 114-ABPT-MW7S-080714<br>08/07/14<br>GPS-MW7S | 114-ABPT-MW7S-100814<br>10/08/14<br>GPS-MW7S | 114-ABPT-MW41-040715<br>04/07/15<br>GPS-MW4I | 114-ABPT-MW41-060314<br>06/03/14<br>GPS-MW4I | 114-ABPT-MW1011-080614<br>08/06/14<br>114-P1A-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | 70 J | 100 U | 100 U | 27 J | 6,600 |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | 53 J | 110 U | 110 U | 27 J | 6,500 |
| Nitrite | 14797-65-0 | ug/L | NA | NA | 17 | 10 U | 10 U | 10 U | 87 |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 87.2 | 122 | 301 | 422 | NA |
| pH | ARC-pH | SU | NA | NA | 10.71 | 10.75 | 6.60 | 7.50 | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW7S-070114<br>07/01/14<br>GPS-MW7S | 114-ABPT-MW7S-071614<br>07/16/14<br>GPS-MW7S | 114-ABPT-MW7S-080714<br>08/07/14<br>GPS-MW7S | 114-ABPT-MW7S-100814<br>10/08/14<br>GPS-MW7S | 114-ABPT-MW41-040715<br>04/07/15<br>GPS-MW4I | 114-ABPT-MW41-060314<br>06/03/14<br>GPS-MW4I | 114-ABPT-MW1011-080614<br>08/06/14<br>114-P1A-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | 236,000 | 190,000 | 75,900 | 155,000 | 124,000 |
| Sulfide | 18496-25-8 | ug/L | NA | NA | 1,200 J | 2,000 | 2,000 U | 2,000 U | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 22,400 | 92,600 | 34,200 | 39,700 | 7,300 | 5,200 | 2,600 J |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 2,050 | 10,090 | 8,950 | NA | 8,720 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 161 | 170 | 115 | NA | 23 | NA |
| pH | ARC-pH | SU | NA | 10.9 | 11.55 | 9.29 | NA | 7.22 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | 1.07 | 1.38 | 2.17 | NA | 1.35 | NA |
| Temperature | ARC-Temp | deg c | NA | 20.61 | 20.67 | 20.04 | NA | 20.7 | NA |
| Turbidity | ARC-Turb | NTU | NA | 765 | 179 | 60.9 | NA | 10.8 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW101I-080614<br>08/06/14<br>114-P1A-MW101I | 114-ABPT-MW101S-080614<br>08/06/14<br>114-P1A-MW101S | 114-ABPT-P1A-MW101I-010615<br>01/06/15<br>114-P1A-MW101I | 114-ABPT-P1A-MW101I-040815<br>04/08/15<br>114-P1A-MW101I | 114-ABPT-P1A--MW101I-060614<br>06/06/14<br>114-P1A-MW101I | 114-ABPT-P1A-MW101I-061914<br>06/19/14<br>114-P1A-MW101I |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW101I-080614<br>08/06/14<br>114-P1A-MW101I | 114-ABPT-MW101S-080614<br>08/06/14<br>114-P1A-MW101S | 114-ABPT-P1A-MW101I-010615<br>01/06/15<br>114-P1A-MW101I | 114-ABPT-P1A-MW101I-040815<br>04/08/15<br>114-P1A-MW101I | 114-ABPT-P1A--MW101I-060614<br>06/06/14<br>114-P1A-MW101I | 114-ABPT-P1A-MW101I-061914<br>06/19/14<br>114-P1A-MW101I |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW101I-080614<br>08/06/14<br>114-P1A-MW101I | 114-ABPT-MW101S-080614<br>08/06/14<br>114-P1A-MW101S | 114-ABPT-P1A-MW101I-010615<br>01/06/15<br>114-P1A-MW101I | 114-ABPT-P1A-MW101I-040815<br>04/08/15<br>114-P1A-MW101I | 114-ABPT-P1A--MW101I-060614<br>06/06/14<br>114-P1A-MW101I | 114-ABPT-P1A-MW101I-061914<br>06/19/14<br>114-P1A-MW101I |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | 47.0 J | 84.3 J | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | 6.0 U | 3.9 J | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | 3.0 U | 5.4 J | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | 106 J | 72.9 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | 1.0 U | 0.60 J | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | 0.60 J | 1.9 J | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | 136,000 | 111,000 | NA |
| Chromium | 7440-47-3 | ug/L | NA | 13,600 J | 7,170 J | 6,590 | 23,800 | NA |
| Chromium VI | 18540-29-9 | ug/L | 15,900 J | 28,500 J | 7,000 J | 5,500 J | 23,500 | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | 3.0 J | 26.4 J | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | 8.5 J | 59.0 | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 250 | 100 UB | 66.9 J | 87.7 J | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | 3.0 U | 3.9 | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | 21,500 | 27,200 | NA |
| Manganese | 7439-96-5 | ug/L | NA | 15 U | 197 | 175 | 279 | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW101I-080614<br>08/06/14<br>114-P1A-MW101I | 114-ABPT-MW101S-080614<br>08/06/14<br>114-P1A-MW101S | 114-ABPT-P1A-MW101I-010615<br>01/06/15<br>114-P1A-MW101I | 114-ABPT-P1A-MW101I-040815<br>04/08/15<br>114-P1A-MW101I | 114-ABPT-P1A--MW101I-060614<br>06/06/14<br>114-P1A-MW101I | 114-ABPT-P1A-MW101I-061914<br>06/19/14<br>114-P1A-MW101I |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | 0.20 U | 0.20 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | 14.5 | 46.0 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | 5,530 J | 6,770 J | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | 10 U | 10 U | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | 8.0 JB | 10 U | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | 172,000 | 162,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | 2.0 U | 2.0 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | 50 UJ | 20.9 J | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | 20 UB | 20 U | NA |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | 200 U | 200 U | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | 6.0 U | 10.9 | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | 3.0 U | 2.6 J | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | 103 J | 77.8 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | 0.70 J | 2.8 J | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | 131,000 | 113,000 | NA |
| Chromium | 7440-47-3 | ug/L | NA | 13,600 J | 6,450 J | 6,370 | 24,400 | NA |
| Chromium VI | 18540-29-9 | ug/L | 13,800 J | 14,000 J | 2,900 J | 5,500 J | 22,500 | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | 3.0 J | 23.5 J | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | 8.3 J | 58.5 | NA |
| Iron | 7439-89-6 | ug/L | NA | 81.3 J | 100 U | 100 UB | 100 U | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | 3.0 U | 3.2 | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | 20,700 | 27,700 | NA |
| Manganese | 7439-96-5 | ug/L | NA | 15 U | 193 | 175 | 289 | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | 0.20 U | 1.2 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | 13.9 | 48.7 | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | 5,420 J | 7,290 J | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | 10 U | 10 U | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | 7.4 JB | 10 U | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | 171,000 | 173,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | 2.0 U | 2.0 U | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | 50 UJ | 8.7 J | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | 20 UB | 20 U | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW101I-080614<br>08/06/14<br>114-P1A-MW101I | 114-ABPT-MW101S-080614<br>08/06/14<br>114-P1A-MW101S | 114-ABPT-P1A-MW101I-010615<br>01/06/15<br>114-P1A-MW101I | 114-ABPT-P1A-MW101I-040815<br>04/08/15<br>114-P1A-MW101I | 114-ABPT-P1A--MW101I-060614<br>06/06/14<br>114-P1A-MW101I | 114-ABPT-P1A-MW101I-061914<br>06/19/14<br>114-P1A-MW101I |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | 100 U | 8,100 | 8,700 | 4,700 | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | 110 U | 8,100 | 8,700 | 4,600 | NA |
| Nitrite | 14797-65-0 | ug/L | NA | 68 | 3 J | 5.4 J | 79 J | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 296 | 116 | 679 | 302 | 475 | NA |
| pH | ARC-pH | SU | 6.83 | 11.30 | 6.72 | 6.75 | 6.89 | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-MW101I-080614<br>08/06/14<br>114-P1A-MW101I | 114-ABPT-MW101S-080614<br>08/06/14<br>114-P1A-MW101S | 114-ABPT-P1A-MW101I-010615<br>01/06/15<br>114-P1A-MW101I | 114-ABPT-P1A-MW101I-040815<br>04/08/15<br>114-P1A-MW101I | 114-ABPT-P1A--MW101I-060614<br>06/06/14<br>114-P1A-MW101I | 114-ABPT-P1A-MW101I-061914<br>06/19/14<br>114-P1A-MW101I |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 492,000 | 108,000 JB | 111,000 | 132,000 | NA |
| Sulfide | 18496-25-8 | ug/L | NA | 520 J | 2,000 U | 2,000 U | 2,000 U | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | 26,900 | 3,400 JB | 4,900 J | 3,000 | 3,000 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 1,890 | 1,850 | 12,090 | NA | 11,150 | 3,600 |
| Oxidation Reduction Potential | ARC-ORP | mV | 209 | 272 | 173 | NA | 37 | 28 |
| pH | ARC-pH | SU | 6.57 | 12.08 | 7.67 | NA | 6.96 | 8.22 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | 1.49 | 2.91 | 1.67 | NA | 1.28 | 0.98 |
| Temperature | ARC-Temp | deg c | 18.65 | 20.84 | 12.24 | NA | 16.28 | 17.57 |
| Turbidity | ARC-Turb | NTU | 5.6 | 5.9 | 12.8 | NA | 2.6 | 0 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-P1A-MW101I-070114<br><br>07/01/14<br>114-P1A-MW101I | 114-ABPT-P1A-MW101I-071614<br><br>07/16/14<br>114-P1A-MW101I | 114-ABPT-P1A-MW101I-100814<br><br>10/08/14<br>114-P1A-MW101I | 114-ABPT-P1A-MW101S-010615<br><br>01/06/15<br>114-P1A-MW101S | 114-ABPT-P1A-MW101S-040815<br><br>04/08/15<br>114-P1A-MW101S | 114-ABPT-P1A-MW101S-060614<br><br>06/06/14<br>114-P1A-MW101S |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-P1A-MW101I-070114<br>07/01/14<br>114-P1A-MW101I | 114-ABPT-P1A-MW101I-071614<br>07/16/14<br>114-P1A-MW101I | 114-ABPT-P1A-MW101I-100814<br>10/08/14<br>114-P1A-MW101I | 114-ABPT-P1A-MW101S-010615<br>01/06/15<br>114-P1A-MW101S | 114-ABPT-P1A-MW101S-040815<br>04/08/15<br>114-P1A-MW101S | 114-ABPT-P1A-MW101S-060614<br>06/06/14<br>114-P1A-MW101S |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-P1A-MW101I-070114<br>07/01/14<br>114-P1A-MW101I | 114-ABPT-P1A-MW101I-071614<br>07/16/14<br>114-P1A-MW101I | 114-ABPT-P1A-MW101I-100814<br>10/08/14<br>114-P1A-MW101I | 114-ABPT-P1A-MW101S-010615<br>01/06/15<br>114-P1A-MW101S | 114-ABPT-P1A-MW101S-040815<br>04/08/15<br>114-P1A-MW101S | 114-ABPT-P1A-MW101S-060614<br>06/06/14<br>114-P1A-MW101S |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | 2,970 | 3,420 |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | 6.0 U | 6.8 J |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | 9.6 | 15.0 |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | 41.2 J | 25.4 J |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | 1.0 U | 0.70 J |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | 0.30 J | 3.0 U |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | 67,800 J | 44,500 |
| Chromium | 7440-47-3 | ug/L | NA | NA | 9,710 J | 4,870 J | 2,730 J | 28,900 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 10,800 J | 5,300 J | 2,200 J | 27,700 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | 2.5 J | 50 U |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | 4.4 J | 13.2 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 212 | 1,530 | 1,260 J | 927 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | 6.0 U | 7.1 |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | 498 J | 330 J |
| Manganese | 7439-96-5 | ug/L | NA | NA | 224 | 19.4 | 16.9 | 5.6 J |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-P1A-MW101I-070114<br>07/01/14<br>114-P1A-MW101I | 114-ABPT-P1A-MW101I-071614<br>07/16/14<br>114-P1A-MW101I | 114-ABPT-P1A-MW101I-100814<br>10/08/14<br>114-P1A-MW101I | 114-ABPT-P1A-MW101S-010615<br>01/06/15<br>114-P1A-MW101S | 114-ABPT-P1A-MW101S-040815<br>04/08/15<br>114-P1A-MW101S | 114-ABPT-P1A-MW101S-060614<br>06/06/14<br>114-P1A-MW101S |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | 0.20 U | 0.20 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | 68.4 | 116 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | 93,000 | 101,000 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | 3.5 J | 5.7 J |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | 1.4 J | 10 U |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | 513,000 | 500,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | 4.0 UJ | 6.0 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | 165 J | 197 |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | 20 UB | 20 U |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | 3,270 | 2,820 |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | 6.0 U | 17.5 J |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | 6.9 | 11.3 |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | 44.3 J | 20.4 J |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | 1.0 U | 2.1 J |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | 3.0 U | 3.0 U |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | 66,600 J | 43,800 |
| Chromium | 7440-47-3 | ug/L | NA | NA | 8,410 J | 5,320 J | 2,780 J | 29,500 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 15,300 J | 5,800 J | 2,300 J | 25,300 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | 2.5 J | 50 U |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | 4.4 J | 8.5 J |
| Iron | 7439-89-6 | ug/L | NA | NA | 100 U | 1,820 | 1,790 J | 108 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | 6.0 U | 8.4 J |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | 746 J | 5,000 U |
| Manganese | 7439-96-5 | ug/L | NA | NA | 190 | 25.1 | 22.3 | 15 U |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | 0.20 U | 1.2 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | 70.4 | 112 |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | 91,800 | 105,000 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | 20 U | 10 U |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | 1.4 J | 10 U |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | 519,000 | 466,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | 3.8 J | 6.0 U |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | 165 J | 176 |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | 20 UB | 60 U |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

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| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-P1A-MW101I-070114<br>07/01/14<br>114-P1A-MW101I | 114-ABPT-P1A-MW101I-071614<br>07/16/14<br>114-P1A-MW101I | 114-ABPT-P1A-MW101I-100814<br>10/08/14<br>114-P1A-MW101I | 114-ABPT-P1A-MW101S-010615<br>01/06/15<br>114-P1A-MW101S | 114-ABPT-P1A-MW101S-040815<br>04/08/15<br>114-P1A-MW101S | 114-ABPT-P1A-MW101S-060614<br>06/06/14<br>114-P1A-MW101S |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | 7,800 | 24 J | 100 U | 37 J |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | 7,800 | 110 U | 110 U | 110 U |
| Nitrite | 14797-65-0 | ug/L | NA | NA | 12 | 3.8 J | 13 | 89 J |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 312 | 672 | 165 | 346 |
| pH | ARC-pH | SU | NA | NA | 6.64 | 11.36 | 11.28 | 11.44 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-P1A-MW101I-070114<br>07/01/14<br>114-P1A-MW101I | 114-ABPT-P1A-MW101I-071614<br>07/16/14<br>114-P1A-MW101I | 114-ABPT-P1A-MW101I-100814<br>10/08/14<br>114-P1A-MW101I | 114-ABPT-P1A-MW101S-010615<br>01/06/15<br>114-P1A-MW101S | 114-ABPT-P1A-MW101S-040815<br>04/08/15<br>114-P1A-MW101S | 114-ABPT-P1A-MW101S-060614<br>06/06/14<br>114-P1A-MW101S |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | 107,000 | 485,000 | 483,000 | 444,000 |
| Sulfide | 18496-25-8 | ug/L | NA | NA | 2,000 U | 770 J | 1,600 J | 1,600 J |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 4,000 | 3,800 JB | 2,700 JB | 27,500 | 25,300 | 34,600 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 1,070 | 9,520 | 13,400 | NA | 4,870 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 131 | 119 | 57 | NA | 150 |
| pH | ARC-pH | SU | NA | 9.48 | 7.03 | 12.13 | NA | 11.34 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | 1.48 | 1.76 | 3.64 | NA | 2.69 |
| Temperature | ARC-Temp | deg c | NA | 16.54 | 19.32 | 10.73 | NA | 17.26 |
| Turbidity | ARC-Turb | NTU | NA | 4.5 | 5 | 144 | NA | 12 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-P1A-MW101S-061914<br>06/19/14<br>114-P1A-MW101S | 114-ABPT-P1A-MW101S-070114<br>07/01/14<br>114-P1A-MW101S | 114-ABPT-P1A-MW101S-071614<br>07/16/14<br>114-P1A-MW101S | 114-ABPT-P1A-MW101S-100814<br>10/08/14<br>114-P1A-MW101S | 114-ABPT-PZ1I-010515<br>01/05/15<br>GPS-PZ1I | 114-ABPT-PZ1I-040815<br>04/08/15<br>GPS-PZ1I | 114-ABPT-PZ1I-060314<br>06/03/14<br>GPS-PZ1I |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-P1A-MW101S-061914<br>06/19/14<br>114-P1A-MW101S | 114-ABPT-P1A-MW101S-070114<br>07/01/14<br>114-P1A-MW101S | 114-ABPT-P1A-MW101S-071614<br>07/16/14<br>114-P1A-MW101S | 114-ABPT-P1A-MW101S-100814<br>10/08/14<br>114-P1A-MW101S | 114-ABPT-PZ1I-010515<br>01/05/15<br>GPS-PZ1I | 114-ABPT-PZ1I-040815<br>04/08/15<br>GPS-PZ1I | 114-ABPT-PZ1I-060314<br>06/03/14<br>GPS-PZ1I |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-P1A-MW101S-061914<br>06/19/14<br>114-P1A-MW101S | 114-ABPT-P1A-MW101S-070114<br>07/01/14<br>114-P1A-MW101S | 114-ABPT-P1A-MW101S-071614<br>07/16/14<br>114-P1A-MW101S | 114-ABPT-P1A-MW101S-100814<br>10/08/14<br>114-P1A-MW101S | 114-ABPT-PZ1I-010515<br>01/05/15<br>GPS-PZ1I | 114-ABPT-PZ1I-040815<br>04/08/15<br>GPS-PZ1I | 114-ABPT-PZ1I-060314<br>06/03/14<br>GPS-PZ1I |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 318 | 251 |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 42.8 | 319 J |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 35.3 | 15 U |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 29.3 J | 25.8 J |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 20.8 | 10.3 J |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 142,000 J | 161,000 |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 11,300 J | 153,000 J | 127,000 J | 165,000 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | 10,500 J | 143,000 J | 142,000 J | 168,000 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 135 | 44.8 J |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 395 J | 243 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | 1,590 | 102 | 358 J | 280 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 15 UJ | 18.5 |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 26,200 J | 28,600 |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | 20.3 | 396 | 345 | 323 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-P1A-MW101S-061914<br>06/19/14<br>114-P1A-MW101S | 114-ABPT-P1A-MW101S-070114<br>07/01/14<br>114-P1A-MW101S | 114-ABPT-P1A-MW101S-071614<br>07/16/14<br>114-P1A-MW101S | 114-ABPT-P1A-MW101S-100814<br>10/08/14<br>114-P1A-MW101S | 114-ABPT-PZ1I-010515<br>01/05/15<br>GPS-PZ1I | 114-ABPT-PZ1I-040815<br>04/08/15<br>GPS-PZ1I | 114-ABPT-PZ1I-060314<br>06/03/14<br>GPS-PZ1I |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.20 U | 0.20 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | 189 | 134 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 11,200 | 13,300 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 50 U | 50 U |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 7.7 J | 1.4 J |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 265,000 | 306,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | 10 U | 10 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | 149 J | 250 U |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 170 | 255 |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 73.6 J | 200 U |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 26.5 J | 471 J |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 31.0 | 15 U |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 28.5 J | 22.2 J |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 20.5 | 6.3 |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 145,000 J | 151,000 |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 14,200 J | 153,000 J | 132,000 J | 176,000 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | 13,300 J | 140,000 J | 143,000 J | 164,000 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 133 | 48.0 J |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 395 J | 296 |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | 59.6 J | 92.2 J | 500 U | 31.2 J |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 9.8 J | 21.7 |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 26,700 J | 27,600 |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | 15 U | 397 | 341 | 316 |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.20 U | 0.20 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | 187 | 130 |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 11,800 | 12,400 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 50 U | 50 U |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 7.9 J | 10 U |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 270,000 | 283,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | 10 U | 10 U |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | 153 J | 20.5 J |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 178 | 292 |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-P1A-MW101S-061914<br>06/19/14<br>114-P1A-MW101S | 114-ABPT-P1A-MW101S-070114<br>07/01/14<br>114-P1A-MW101S | 114-ABPT-P1A-MW101S-071614<br>07/16/14<br>114-P1A-MW101S | 114-ABPT-P1A-MW101S-100814<br>10/08/14<br>114-P1A-MW101S | 114-ABPT-PZ1I-010515<br>01/05/15<br>GPS-PZ1I | 114-ABPT-PZ1I-040815<br>04/08/15<br>GPS-PZ1I | 114-ABPT-PZ1I-060314<br>06/03/14<br>GPS-PZ1I |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | 25 J | 760 | 860 | 900 |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | 110 U | 600 | 700 | 580 |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | 60 | 160 | 160 | 320 |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | 132 | 298 | 330 | 550 |
| pH | ARC-pH | SU | NA | NA | NA | 11.22 | 6.96 | 7.21 | 6.98 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-P1A-MW101S-061914<br>06/19/14<br>114-P1A-MW101S | 114-ABPT-P1A-MW101S-070114<br>07/01/14<br>114-P1A-MW101S | 114-ABPT-P1A-MW101S-071614<br>07/16/14<br>114-P1A-MW101S | 114-ABPT-P1A-MW101S-100814<br>10/08/14<br>114-P1A-MW101S | 114-ABPT-PZ1I-010515<br>01/05/15<br>GPS-PZ1I | 114-ABPT-PZ1I-040815<br>04/08/15<br>GPS-PZ1I | 114-ABPT-PZ1I-060314<br>06/03/14<br>GPS-PZ1I |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | 484,000 | 337,000 | 331,000 | 364,000 |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | 1,300 J | 2,000 U | 2,000 U | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 30,500 | 35,300 | 22,500 | 30,200 | 8,400 | 7,200 | 8,600 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 3,650 | NA | 1,430 | 10,230 | 11,750 | NA | 15,400 |
| Oxidation Reduction Potential | ARC-ORP | mV | 78 | NA | 11 | 108 | 213 | NA | 174 |
| pH | ARC-pH | SU | 11.83 | NA | 10.47 | 11.55 | 7.01 | NA | 7.16 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | 2 | NA | 2.63 | 3.93 | 2.32 | NA | 2.71 |
| Temperature | ARC-Temp | deg c | 16.87 | NA | 18.3 | 21.39 | 6.5 | NA | 21.22 |
| Turbidity | ARC-Turb | NTU | 22.2 | NA | 14.9 | 51.3 | 2.6 | NA | 54.1 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-ABPT-PZ1I-061914 | 114-ABPT-PZ1I-070114 | 114-ABPT-PZ1I-071614 | 114-ABPT-PZ1I-080614 | 114-ABPT-PZ1I-100814 | 114-ABPT-PZ1S-010615 | 114-ABPT-PZ1S-040715 | 114-ABPT-PZ1S-060614 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | |
| Date Collected: | | | 06/19/14 | 07/01/14 | 07/16/14 | 08/06/14 | 10/08/14 | 01/06/15 | 04/07/15 | 06/06/14 |
| Location ID: | CAS Number | Units | GPS-PZ1I | GPS-PZ1I | GPS-PZ1I | GPS-PZ1I | GPS-PZ1I | GPS-PZ1S | GPS-PZ1S | GPS-PZ1S |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-ABPT-PZ1I-061914 06/19/14 GPS-PZ1I | 114-ABPT-PZ1I-070114 07/01/14 GPS-PZ1I | 114-ABPT-PZ1I-071614 07/16/14 GPS-PZ1I | 114-ABPT-PZ1I-080614 08/06/14 GPS-PZ1I | 114-ABPT-PZ1I-100814 10/08/14 GPS-PZ1I | 114-ABPT-PZ1S-010615 01/06/15 GPS-PZ1S | 114-ABPT-PZ1S-040715 04/07/15 GPS-PZ1S | 114-ABPT-PZ1S-060614 06/06/14 GPS-PZ1S |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ1I-061914<br>06/19/14<br>GPS-PZ1I | 114-ABPT-PZ1I-070114<br>07/01/14<br>GPS-PZ1I | 114-ABPT-PZ1I-071614<br>07/16/14<br>GPS-PZ1I | 114-ABPT-PZ1I-080614<br>08/06/14<br>GPS-PZ1I | 114-ABPT-PZ1I-100814<br>10/08/14<br>GPS-PZ1I | 114-ABPT-PZ1S-010615<br>01/06/15<br>GPS-PZ1S | 114-ABPT-PZ1S-040715<br>04/07/15<br>GPS-PZ1S | 114-ABPT-PZ1S-060614<br>06/06/14<br>GPS-PZ1S |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 112 J | 427 J | |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 6.0 U | 9.2 | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 4.8 | 16.1 | |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 152 J | 514 | |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 3.0 U | 3.0 U | |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 178,000 | 942,000 J | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 150,000 J | 79,100 | 130 | 132 | 1,160 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | 134,000 J | 64,700 | 10 U | 10 U | 8 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | 2.4 J | 9.4 J |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | 4.1 J | 3.4 J |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | 273 J | 320 | 1,240 | 2,820 | 480 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | 3.0 U | 9.0 U |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | 21,700 | 41,100 |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | 422 | 509 | 217 J | 327 | 30.5 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-ABPT-PZ1I-061914 06/19/14 GPS-PZ1I | 114-ABPT-PZ1I-070114 07/01/14 GPS-PZ1I | 114-ABPT-PZ1I-071614 07/16/14 GPS-PZ1I | 114-ABPT-PZ1I-080614 08/06/14 GPS-PZ1I | 114-ABPT-PZ1I-100814 10/08/14 GPS-PZ1I | 114-ABPT-PZ1S-010615 01/06/15 GPS-PZ1S | 114-ABPT-PZ1S-040715 04/07/15 GPS-PZ1S | 114-ABPT-PZ1S-060614 06/06/14 GPS-PZ1S |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | 0.60 U | 0.20 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | 34.9 | 156 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | 109,000 | 244,000 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | 5.3 J | 30 U |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | 10 UJ | 7.5 J |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | 277,000 | 372,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | 2.0 U | 10 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | 17.0 J | 105 |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | 20 UB | 20 U |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | 97.9 J | 389 J |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | 6.0 U | 11.8 |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | 3.9 | 14.6 |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | 156 J | 623 |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 5.4 |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | 0.30 J | 6.0 U |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | 179,000 | 1,240,000 J |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 156,000 J | 73,600 | 225 | 138 | 873 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | 73,600 J | 65,200 | 10 U | 10 U | 47 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | 2.3 J | 10.7 J |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | 4.8 J | 6.7 J |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | 165 J | 48.1 J | 1,470 | 2,770 | 427 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | 3.0 U | 3.0 U |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | 22,400 | 45,200 |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | 410 | 499 | 271 J | 329 | 30.1 |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | 0.60 U | 1.2 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | 34.4 | 156 |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | 108,000 | 280,000 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | 4.7 J | 20 U |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | 1.1 J | 10 U |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | 267,000 | 341,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | 2.0 U | 4.0 U |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | 17.5 J | 129 |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | 20 UB | 20 U |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-ABPT-PZ1I-061914 06/19/14 GPS-PZ1I | 114-ABPT-PZ1I-070114 07/01/14 GPS-PZ1I | 114-ABPT-PZ1I-071614 07/16/14 GPS-PZ1I | 114-ABPT-PZ1I-080614 08/06/14 GPS-PZ1I | 114-ABPT-PZ1I-100814 10/08/14 GPS-PZ1I | 114-ABPT-PZ1S-010615 01/06/15 GPS-PZ1S | 114-ABPT-PZ1S-040715 04/07/15 GPS-PZ1S | 114-ABPT-PZ1S-060614 06/06/14 GPS-PZ1S |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | 660 | 780 | 100 | 44 J | 80 J |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | 520 | 630 | 100 J | 44 J | 80 J |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | 140 | 150 | 10 U | 10 U | 10 UJ |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | 325 | 312 | 240 | 299 | 431 |
| pH | ARC-pH | SU | NA | NA | NA | 7.06 | 7.17 | 6.85 | 6.99 | 9.52 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-ABPT-PZ1I-061914 06/19/14 GPS-PZ1I | 114-ABPT-PZ1I-070114 07/01/14 GPS-PZ1I | 114-ABPT-PZ1I-071614 07/16/14 GPS-PZ1I | 114-ABPT-PZ1I-080614 08/06/14 GPS-PZ1I | 114-ABPT-PZ1I-100814 10/08/14 GPS-PZ1I | 114-ABPT-PZ1S-010615 01/06/15 GPS-PZ1S | 114-ABPT-PZ1S-040715 04/07/15 GPS-PZ1S | 114-ABPT-PZ1S-060614 06/06/14 GPS-PZ1S |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | 366,000 | 285,000 | 100,000 | 116,000 | 265,000 |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | 2,000 U | 2,000 U | 3,300 | 3,200 | 6,000 |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 8,700 | 7,100 | 8,400 | 8,100 | 6,400 | 191,000 | 89,100 | 1,640,000 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | 1,870 | 2,180 | 9,060 | 12,650 | NA | 14,450 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 149 | 123 | 16 | 137 | NA | 145 |
| pH | ARC-pH | SU | NA | NA | 8.55 | 7.17 | 10.08 | 7.49 | NA | 9.62 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | 2.09 | 2 | 1.93 | 2.92 | NA | 4.47 |
| Temperature | ARC-Temp | deg c | NA | NA | 19.52 | 21.26 | 18.92 | 8.46 | NA | 15.76 |
| Turbidity | ARC-Turb | NTU | NA | NA | 83.1 | 23 | 5.2 | 13.2 | NA | 272 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-ABPT-PZ1S-061914 | 114-ABPT-PZ1S-070114 | 114-ABPT-PZ1S-071614 | 114-ABPT-PZ1S-080614 | 114-ABPT-PZ1S-100714 | 114-ABPT-PZ2I-040815 | 114-ABPT-PZ2I-060314 | 114-ABPT-PZ2I-061914 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | |
| Date Collected: | | | 06/19/14 | 07/01/14 | 07/16/14 | 08/06/14 | 10/07/14 | 04/08/15 | 06/03/14 | 06/19/14 |
| Location ID: | CAS Number | Units | GPS-PZ1S | GPS-PZ1S | GPS-PZ1S | GPS-PZ1S | GPS-PZ1S | GPS-PZ2I | GPS-PZ2I | GPS-PZ2I |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ1S-061914<br>06/19/14<br>GPS-PZ1S | 114-ABPT-PZ1S-070114<br>07/01/14<br>GPS-PZ1S | 114-ABPT-PZ1S-071614<br>07/16/14<br>GPS-PZ1S | 114-ABPT-PZ1S-080614<br>08/06/14<br>GPS-PZ1S | 114-ABPT-PZ1S-100714<br>10/07/14<br>GPS-PZ1S | 114-ABPT-PZ2I-040815<br>04/08/15<br>GPS-PZ2I | 114-ABPT-PZ2I-060314<br>06/03/14<br>GPS-PZ2I | 114-ABPT-PZ2I-061914<br>06/19/14<br>GPS-PZ2I |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

| Sample Name: | | | 114-ABPT-PZ1S-061914 | 114-ABPT-PZ1S-070114 | 114-ABPT-PZ1S-071614 | 114-ABPT-PZ1S-080614 | 114-ABPT-PZ1S-100714 | 114-ABPT-PZ2I-040815 | 114-ABPT-PZ2I-060314 | 114-ABPT-PZ2I-061914 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | |
| Date Collected: | | | 06/19/14 | 07/01/14 | 07/16/14 | 08/06/14 | 10/07/14 | 04/08/15 | 06/03/14 | 06/19/14 |
| Location ID: | CAS Number | Units | GPS-PZ1S | GPS-PZ1S | GPS-PZ1S | GPS-PZ1S | GPS-PZ1S | GPS-PZ2I | GPS-PZ2I | GPS-PZ2I |
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 2,820 | 200 U | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 6.0 U | 88.8 J | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 3.5 | 6.0 U | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 58.9 J | 33.5 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 0.50 J | 12.5 | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 94,700 J | 108,000 | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 193 J | 172 | 1,360 J | 55,300 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | 10 U | 23 | 870 J | 57,700 | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 32.6 J | 82.2 | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 29.3 | 309 | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | 83.5 J | 589 | 4,770 | 46.0 J | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 6.4 | 10.6 | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 25,000 J | 24,600 | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | 45.2 J | 108 J | 675 | 289 | NA |

| Sample Name: | | | 114-ABPT-PZ1S-061914 | 114-ABPT-PZ1S-070114 | 114-ABPT-PZ1S-071614 | 114-ABPT-PZ1S-080614 | 114-ABPT-PZ1S-100714 | 114-ABPT-PZ2I-040815 | 114-ABPT-PZ2I-060314 | 114-ABPT-PZ2I-061914 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | |
| Date Collected: | | | 06/19/14 | 07/01/14 | 07/16/14 | 08/06/14 | 10/07/14 | 04/08/15 | 06/03/14 | 06/19/14 |
| Location ID: | CAS Number | Units | GPS-PZ1S | GPS-PZ1S | GPS-PZ1S | GPS-PZ1S | GPS-PZ1S | GPS-PZ2I | GPS-PZ2I | GPS-PZ2I |
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.20 U | 0.20 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | 71.3 | 130 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 9,840 J | 9,020 J | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 10 U | 10 U | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 10 U | 10 U | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 158,000 | 215,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 4.0 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | 8.8 J | 2.4 J | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 73.1 | 133 | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 70.6 J | 41.2 J | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 6.0 U | 122 J | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 2.4 J | 6.0 U | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 51.1 J | 30.6 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 0.90 J | 12.9 | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 129,000 J | 103,000 | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 285 J | 195 | 2,350 J | 60,900 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | 10 U | 17 | 1,800 J | 56,900 | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 57.1 | 80.0 | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 18.9 | 311 | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | 48.1 J | 550 | 87.3 J | 117 | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 3.2 | 10.5 | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 31,100 J | 24,300 | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | 85.4 J | 149 J | 693 | 296 | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.20 U | 0.092 J | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | 82.4 | 126 | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 11,400 | 8,630 J | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 10 U | 6.7 J | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 10 U | 10 U | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 180,000 | 214,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 4.0 U | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | 1.2 J | 18.0 J | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 20 UB | 162 | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-ABPT-PZ1S-061914 06/19/14 GPS-PZ1S | 114-ABPT-PZ1S-070114 07/01/14 GPS-PZ1S | 114-ABPT-PZ1S-071614 07/16/14 GPS-PZ1S | 114-ABPT-PZ1S-080614 08/06/14 GPS-PZ1S | 114-ABPT-PZ1S-100714 10/07/14 GPS-PZ1S | 114-ABPT-PZ2I-040815 04/08/15 GPS-PZ2I | 114-ABPT-PZ2I-060314 06/03/14 GPS-PZ2I | 114-ABPT-PZ2I-061914 06/19/14 GPS-PZ2I |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | 100 U | 100 UB | 970 | 1,300 | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | 110 U | 110 UB | 970 | 1,200 | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | 10 U | 10 U | 3.5 J | 120 | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | 190 | 277 | 318 | 544 | NA |
| pH | ARC-pH | SU | NA | NA | NA | 9.75 | 7.61 | 7.29 | 7.25 | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ1S-061914<br>06/19/14<br>GPS-PZ1S | 114-ABPT-PZ1S-070114<br>07/01/14<br>GPS-PZ1S | 114-ABPT-PZ1S-071614<br>07/16/14<br>GPS-PZ1S | 114-ABPT-PZ1S-080614<br>08/06/14<br>GPS-PZ1S | 114-ABPT-PZ1S-100714<br>10/07/14<br>GPS-PZ1S | 114-ABPT-PZ2I-040815<br>04/08/15<br>GPS-PZ2I | 114-ABPT-PZ2I-060314<br>06/03/14<br>GPS-PZ2I | 114-ABPT-PZ2I-061914<br>06/19/14<br>GPS-PZ2I |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | 310,000 | 110,000 | 90,200 | 244,000 | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | 14,000 | 15,600 | 2,000 U | 2,000 U | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 1,720,000 | 1,950,000 J | 1,660,000 | 756,000 | 494,000 | 5,900 | 6,000 | 5,500 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 14,440 | NA | 11,600 | 9,620 | 12,650 | NA | 15,850 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 331 | NA | 330 | 300 | 159 | NA | 92 | NA |
| pH | ARC-pH | SU | 14 | NA | 9.96 | 10.58 | 7.4 | NA | 7.33 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | 4.9 | NA | 3.82 | 3.5 | 3.09 | NA | 1.62 | NA |
| Temperature | ARC-Temp | deg c | 16.74 | NA | 18.81 | 24.15 | 19.92 | NA | 16.92 | NA |
| Turbidity | ARC-Turb | NTU | 17.6 | NA | 16.1 | 17.4 | 20.4 | NA | 6.1 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-ABPT-PZ2I-070114<br>07/01/14<br>GPS-PZ2I | 114-ABPT-PZ2I-071714<br>07/17/14<br>GPS-PZ2I | 114-ABPT-PZ2I-080614<br>08/06/14<br>GPS-PZ2I | 114-ABPT-PZ2I-100814<br>10/08/14<br>GPS-PZ2I | 114-ABPT-PZ2S-010615<br>01/06/15<br>GPS-PZ2S | 114-ABPT-PZ2S-040715<br>04/07/15<br>GPS-PZ2S | 114-ABPT-PZ2S-060614<br>06/06/14<br>GPS-PZ2S | 114-ABPT-PZ2S-061914<br>06/19/14<br>GPS-PZ2S |
|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ2I-070114<br>07/01/14<br>GPS-PZ2I | 114-ABPT-PZ2I-071714<br>07/17/14<br>GPS-PZ2I | 114-ABPT-PZ2I-080614<br>08/06/14<br>GPS-PZ2I | 114-ABPT-PZ2I-100814<br>10/08/14<br>GPS-PZ2I | 114-ABPT-PZ2S-010615<br>01/06/15<br>GPS-PZ2S | 114-ABPT-PZ2S-040715<br>04/07/15<br>GPS-PZ2S | 114-ABPT-PZ2S-060614<br>06/06/14<br>GPS-PZ2S | 114-ABPT-PZ2S-061914<br>06/19/14<br>GPS-PZ2S |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ2I-070114<br>07/01/14<br>GPS-PZ2I | 114-ABPT-PZ2I-071714<br>07/17/14<br>GPS-PZ2I | 114-ABPT-PZ2I-080614<br>08/06/14<br>GPS-PZ2I | 114-ABPT-PZ2I-100814<br>10/08/14<br>GPS-PZ2I | 114-ABPT-PZ2S-010615<br>01/06/15<br>GPS-PZ2S | 114-ABPT-PZ2S-040715<br>04/07/15<br>GPS-PZ2S | 114-ABPT-PZ2S-060614<br>06/06/14<br>GPS-PZ2S | 114-ABPT-PZ2S-061914<br>06/19/14<br>GPS-PZ2S |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 625 | 772 | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 5.8 J | 4.7 J | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 13.6 | 17.1 | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 24.3 J | 30.0 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 3.0 U | 3.0 U | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 158,000 | 119,000 | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 41,900 J | 22,400 | 2.9 J | 3.3 J | 3.3 J | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 46,700 J | 16,800 | 10 U | 10 U | 10 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 50 U | 50 U | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 3.0 J | 10 U | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 155 | 166 | 223 | 262 | 266 | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 2.3 J | 1.3 J | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 76.4 J | 83.6 J | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | 253 J | 294 | 2.3 J | 5.5 J | 2.5 J | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ2I-070114<br>07/01/14<br>GPS-PZ2I | 114-ABPT-PZ2I-071714<br>07/17/14<br>GPS-PZ2I | 114-ABPT-PZ2I-080614<br>08/06/14<br>GPS-PZ2I | 114-ABPT-PZ2I-100814<br>10/08/14<br>GPS-PZ2I | 114-ABPT-PZ2S-010615<br>01/06/15<br>GPS-PZ2S | 114-ABPT-PZ2S-040715<br>04/07/15<br>GPS-PZ2S | 114-ABPT-PZ2S-060614<br>06/06/14<br>GPS-PZ2S | 114-ABPT-PZ2S-061914<br>06/19/14<br>GPS-PZ2S |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.60 U | 0.091 J | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | 67.2 | 82.3 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 46,800 | 55,100 | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 4.2 J | 4.2 J | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 10 U | 1.2 J | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 260,000 | 259,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.0 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | 8.1 J | 17.0 J | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 20 UB | 20 U | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 415 | 540 | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 5.4 J | 3.8 J | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 13.2 | 12.0 | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 22.6 J | 28.6 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.1 | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 3.0 U | 3.0 U | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 162,000 | 117,000 | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 43,100 J | 23,900 | 3.1 J | 2.7 J | 2.4 J | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 47,800 J | 17,400 | 10 U | 10 U | 10 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 50 U | 50 U | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 10 U | 1.4 J | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 63.5 J | 46.4 J | 100 UB | 13.1 J | 12.1 J | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 2.0 J | 3.0 U | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 5,000 U | 5,000 U | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | 262 J | 295 | 15 U | 0.30 J | 15 U | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.60 U | 0.57 J | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | 68.6 | 82.9 | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 47,500 | 56,300 | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 4.8 J | 10 U | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 10 U | 10 U | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 270,000 | 267,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.0 U | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | 8.6 J | 16.2 J | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 20 UB | 20 U | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ2I-070114<br>07/01/14<br>GPS-PZ2I | 114-ABPT-PZ2I-071714<br>07/17/14<br>GPS-PZ2I | 114-ABPT-PZ2I-080614<br>08/06/14<br>GPS-PZ2I | 114-ABPT-PZ2I-100814<br>10/08/14<br>GPS-PZ2I | 114-ABPT-PZ2S-010615<br>01/06/15<br>GPS-PZ2S | 114-ABPT-PZ2S-040715<br>04/07/15<br>GPS-PZ2S | 114-ABPT-PZ2S-060614<br>06/06/14<br>GPS-PZ2S | 114-ABPT-PZ2S-061914<br>06/19/14<br>GPS-PZ2S |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | 1,300 | 1,200 | 60 J | 23 J | 44 J | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | 1,200 | 1,200 | 60 J | 23 J | 39 J | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | 130 | 44 | 10 U | 10 U | 4.7 J | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 325 | 311 | 48.5 | 130 | 363 | NA |
| pH | ARC-pH | SU | NA | NA | 7.18 | 7.35 | 10.72 | 10.57 | 10.60 | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ2I-070114<br>07/01/14<br>GPS-PZ2I | 114-ABPT-PZ2I-071714<br>07/17/14<br>GPS-PZ2I | 114-ABPT-PZ2I-080614<br>08/06/14<br>GPS-PZ2I | 114-ABPT-PZ2I-100814<br>10/08/14<br>GPS-PZ2I | 114-ABPT-PZ2S-010615<br>01/06/15<br>GPS-PZ2S | 114-ABPT-PZ2S-040715<br>04/07/15<br>GPS-PZ2S | 114-ABPT-PZ2S-060614<br>06/06/14<br>GPS-PZ2S | 114-ABPT-PZ2S-061914<br>06/19/14<br>GPS-PZ2S |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | 228,000 | 181,000 | 162,000 | 133,000 | 250,000 | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | 2,000 U | 2,000 U | 4,200 | 3,400 | 3,600 | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 6,700 | 5,500 | 5,100 | 4,000 JB | 145,000 | 130,000 | 73,500 | 86,900 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 1,200 | 1,960 | 13,270 | 14,140 | NA | 14,440 | 14,350 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 181 | 95 | 28 | 258 | NA | 184 | 177 |
| pH | ARC-pH | SU | NA | 7.18 | 7.38 | 8.2 | 11.54 | NA | 11.07 | 12.65 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | 1.42 | 1.48 | 1.54 | 2.42 | NA | 1.96 | 2.03 |
| Temperature | ARC-Temp | deg c | NA | 18.27 | 19.36 | 22.1 | 9.44 | NA | 15.73 | 18.2 |
| Turbidity | ARC-Turb | NTU | NA | 25 | 21.9 | 1 | 0.1 | NA | 32.7 | 17.8 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ2S-070114<br>07/01/14<br>GPS-PZ2S | 114-ABPT-PZ2S-071614<br>07/16/14<br>GPS-PZ2S | 114-ABPT-PZ2S-080614<br>08/06/14<br>GPS-PZ2S | 114-ABPT-PZ2S-100714<br>10/07/14<br>GPS-PZ2S | 114-ABPT-PZ3I-010515<br>01/05/15<br>GPS-PZ3I | 114-ABPT-PZ3I-040815<br>04/08/15<br>GPS-PZ3I | 114-ABPT-PZ3I-060314<br>06/03/14<br>GPS-PZ3I | 114-ABPT-PZ3I-061914<br>06/19/14<br>GPS-PZ3I |
|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-ABPT-PZ2S-070114 07/01/14 GPS-PZ2S | 114-ABPT-PZ2S-071614 07/16/14 GPS-PZ2S | 114-ABPT-PZ2S-080614 08/06/14 GPS-PZ2S | 114-ABPT-PZ2S-100714 10/07/14 GPS-PZ2S | 114-ABPT-PZ3I-010515 01/05/15 GPS-PZ3I | 114-ABPT-PZ3I-040815 04/08/15 GPS-PZ3I | 114-ABPT-PZ3I-060314 06/03/14 GPS-PZ3I | 114-ABPT-PZ3I-061914 06/19/14 GPS-PZ3I |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ2S-070114<br>07/01/14<br>GPS-PZ2S | 114-ABPT-PZ2S-071614<br>07/16/14<br>GPS-PZ2S | 114-ABPT-PZ2S-080614<br>08/06/14<br>GPS-PZ2S | 114-ABPT-PZ2S-100714<br>10/07/14<br>GPS-PZ2S | 114-ABPT-PZ3I-010515<br>01/05/15<br>GPS-PZ3I | 114-ABPT-PZ3I-040815<br>04/08/15<br>GPS-PZ3I | 114-ABPT-PZ3I-060314<br>06/03/14<br>GPS-PZ3I | 114-ABPT-PZ3I-061914<br>06/19/14<br>GPS-PZ3I |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 181,000 J | 444 | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 30 U | 56.2 J | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 31.5 | 3.0 U | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 1,390 J | 57.4 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 7.0 | 1.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 4.0 J | 9.7 | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 69,500 J | 136,000 | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 1.9 J | 2.9 J | 2,470 | 2,230 | 44,400 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 10 U | 10 U | 4.7 J | 20 U | 48,600 | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 149 J | 85.7 | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 585 | 212 | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 109 | 75.2 J | 202,000 | 317,000 | 423 | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 190 | 8.5 | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 113,000 J | 33,000 | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | 1.1 J | 15 U | 42,600 | 3,790 J | 409 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ2S-070114<br>07/01/14<br>GPS-PZ2S | 114-ABPT-PZ2S-071614<br>07/16/14<br>GPS-PZ2S | 114-ABPT-PZ2S-080614<br>08/06/14<br>GPS-PZ2S | 114-ABPT-PZ2S-100714<br>10/07/14<br>GPS-PZ2S | 114-ABPT-PZ3I-010515<br>01/05/15<br>GPS-PZ3I | 114-ABPT-PZ3I-040815<br>04/08/15<br>GPS-PZ3I | 114-ABPT-PZ3I-060314<br>06/03/14<br>GPS-PZ3I | 114-ABPT-PZ3I-061914<br>06/19/14<br>GPS-PZ3I |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 1.3 | 0.20 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | 410 | 108 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 93,900 J | 8,290 J | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 50 U | 5.7 J | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 50 U | 10 U | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 240,000 J | 178,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | 8.5 J | 2.0 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | 503 J | 50 U | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 1,630 J | 65.6 | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 85.5 J | 200 U | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 6.0 U | 87.2 J | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 6.7 | 7.4 | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 128 J | 41.1 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 0.80 J | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 3.0 U | 8.1 | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 60,900 J | 139,000 | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 2.3 J | 2.6 J | 2,130 | 235 | 36,900 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 10 U | 10 U | 8.3 J | 10 U | 39,800 | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 10.3 J | 78.7 | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 10 U | 178 | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 14.3 J | 43.0 J | 194,000 | 47,000 | 22.6 J | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 5.0 | 8.8 | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 18,700 J | 34,300 | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | 15 U | 15 U | 36,800 | 2,070 J | 415 | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.20 U | 0.20 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | 24.5 | 94.1 | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 32,200 J | 8,250 J | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 10 U | 8.9 J | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 10 U | 10 U | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 329,000 J | 164,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.0 U | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | 10.8 J | 50 U | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 20 UJB | 48.0 | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ2S-070114<br>07/01/14<br>GPS-PZ2S | 114-ABPT-PZ2S-071614<br>07/16/14<br>GPS-PZ2S | 114-ABPT-PZ2S-080614<br>08/06/14<br>GPS-PZ2S | 114-ABPT-PZ2S-100714<br>10/07/14<br>GPS-PZ2S | 114-ABPT-PZ3I-010515<br>01/05/15<br>GPS-PZ3I | 114-ABPT-PZ3I-040815<br>04/08/15<br>GPS-PZ3I | 114-ABPT-PZ3I-060314<br>06/03/14<br>GPS-PZ3I | 114-ABPT-PZ3I-061914<br>06/19/14<br>GPS-PZ3I |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | 35 J | 100 U | 43 J | 100 U | 480 | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | 32 J | 110 U | 200 U | 110 U | 350 | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | 3.2 J | 10 U | 100 U | 11 | 130 | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 87.5 | 104 | 313 | 340 | 393 | NA |
| pH | ARC-pH | SU | NA | NA | 10.56 | 10.51 | 4.77 | 6.31 | 7.35 | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ2S-070114<br>07/01/14<br>GPS-PZ2S | 114-ABPT-PZ2S-071614<br>07/16/14<br>GPS-PZ2S | 114-ABPT-PZ2S-080614<br>08/06/14<br>GPS-PZ2S | 114-ABPT-PZ2S-100714<br>10/07/14<br>GPS-PZ2S | 114-ABPT-PZ3I-010515<br>01/05/15<br>GPS-PZ3I | 114-ABPT-PZ3I-040815<br>04/08/15<br>GPS-PZ3I | 114-ABPT-PZ3I-060314<br>06/03/14<br>GPS-PZ3I | 114-ABPT-PZ3I-061914<br>06/19/14<br>GPS-PZ3I |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | 278,000 | 219,000 | 32,200 J | 10,000 UB | 247,000 | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | 4,100 | 3,500 | 6,700 | 1,800 J | 2,000 U | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 125,000 | 115,000 | 141,000 | 304,000 | 3,120,000 | 326,000 | 5,300 | 4,800 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 11,690 | 9,020 | 9,010 | 11,610 | NA | 12,480 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 230 | 222 | 208 | 49 | NA | 166 | NA |
| pH | ARC-pH | SU | NA | 11.03 | 11.13 | 10.82 | 4.76 | NA | 7.39 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | 1.91 | 2.09 | 2.65 | 0.003 | NA | 1.57 | NA |
| Temperature | ARC-Temp | deg c | NA | 19.08 | 25.43 | 19.1 | 9.4 | NA | 23.18 | NA |
| Turbidity | ARC-Turb | NTU | NA | 44.3 | 28 | 35.7 | 134 | NA | 16.3 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-ABPT-PZ3I-070114 | 114-ABPT-PZ3I-071714 | 114-ABPT-PZ3I-080614 | 114-ABPT-PZ3I-100814 | 114-ABPT-PZ3S-010615 | 114-ABPT-PZ3S-040715 | 114-ABPT-PZ3S-060614 | 114-ABPT-PZ3S-061914 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | |
| Date Collected: | | | 07/01/14 | 07/17/14 | 08/06/14 | 10/08/14 | 01/06/15 | 04/07/15 | 06/06/14 | 06/19/14 |
| Location ID: | CAS Number | Units | GPS-PZ3I | GPS-PZ3I | GPS-PZ3I | GPS-PZ3I | GPS-PZ3S | GPS-PZ3S | GPS-PZ3S | GPS-PZ3S |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ3I-070114<br>07/01/14<br>GPS-PZ3I | 114-ABPT-PZ3I-071714<br>07/17/14<br>GPS-PZ3I | 114-ABPT-PZ3I-080614<br>08/06/14<br>GPS-PZ3I | 114-ABPT-PZ3I-100814<br>10/08/14<br>GPS-PZ3I | 114-ABPT-PZ3S-010615<br>01/06/15<br>GPS-PZ3S | 114-ABPT-PZ3S-040715<br>04/07/15<br>GPS-PZ3S | 114-ABPT-PZ3S-060614<br>06/06/14<br>GPS-PZ3S | 114-ABPT-PZ3S-061914<br>06/19/14<br>GPS-PZ3S |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ3I-070114<br>07/01/14<br>GPS-PZ3I | 114-ABPT-PZ3I-071714<br>07/17/14<br>GPS-PZ3I | 114-ABPT-PZ3I-080614<br>08/06/14<br>GPS-PZ3I | 114-ABPT-PZ3I-100814<br>10/08/14<br>GPS-PZ3I | 114-ABPT-PZ3S-010615<br>01/06/15<br>GPS-PZ3S | 114-ABPT-PZ3S-040715<br>04/07/15<br>GPS-PZ3S | 114-ABPT-PZ3S-060614<br>06/06/14<br>GPS-PZ3S | 114-ABPT-PZ3S-061914<br>06/19/14<br>GPS-PZ3S |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 301 | 1,590 | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 3.0 J | 3.8 J | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 6.1 | 13.2 | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 263 | 658 | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 0.60 J | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 3.0 U | 3.0 U | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 395,000 | 1,110,000 | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 6,360 J | 1,340 | 709 J | 396 | 1,640 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 8,600 J | 500 | 76 J | 50 U | 68 | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 3.8 J | 15.6 J | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 10 U | 7.8 J | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 357 | 94,600 | 45,300 | 23,800 | 50,000 | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 4.6 | 13.2 | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 70,300 | 105,000 | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | 423 J | 8,660 | 2,430 | 1,510 | 5,020 | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ3I-070114<br>07/01/14<br>GPS-PZ3I | 114-ABPT-PZ3I-071714<br>07/17/14<br>GPS-PZ3I | 114-ABPT-PZ3I-080614<br>08/06/14<br>GPS-PZ3I | 114-ABPT-PZ3I-100814<br>10/08/14<br>GPS-PZ3I | 114-ABPT-PZ3S-010615<br>01/06/15<br>GPS-PZ3S | 114-ABPT-PZ3S-040715<br>04/07/15<br>GPS-PZ3S | 114-ABPT-PZ3S-060614<br>06/06/14<br>GPS-PZ3S | 114-ABPT-PZ3S-061914<br>06/19/14<br>GPS-PZ3S |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.60 UJ | 0.20 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | 33.9 | 86.9 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 280,000 | 465,000 | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 6.7 J | 17.7 J | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 2.2 J | 10.3 J | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 158,000 | 329,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 10 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | 24.2 J | 71.7 | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 20 UB | 20 U | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 84.2 J | 372 J | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 3.5 J | 6.2 | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 4.7 | 13.8 | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 247 | 790 | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 10.3 J | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 3.0 U | 6.0 U | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 372,000 | 1,280,000 | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 7,650 J | 939 | 787 J | 322 | 1,880 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 8,000 J | 10 U | 88 J | 10 U | 79 | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 2.9 J | 18.1 J | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 10 U | 7.7 J | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 100 U | 51,900 | 42,700 | 21,000 | 55,700 | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 4.0 | 2.9 J | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 65,700 | 124,000 | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | 540 J | 5,020 | 2,930 | 1,390 | 5,770 | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.21 J | 1.2 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | 31.1 | 92.1 | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 262,000 | 533,000 | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 4.3 J | 20 U | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 1.9 J | 10 U | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 151,000 | 339,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 4.0 U | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | 22.5 J | 67.4 | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 20 UB | 20 U | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ3I-070114<br>07/01/14<br>GPS-PZ3I | 114-ABPT-PZ3I-071714<br>07/17/14<br>GPS-PZ3I | 114-ABPT-PZ3I-080614<br>08/06/14<br>GPS-PZ3I | 114-ABPT-PZ3I-100814<br>10/08/14<br>GPS-PZ3I | 114-ABPT-PZ3S-010615<br>01/06/15<br>GPS-PZ3S | 114-ABPT-PZ3S-040715<br>04/07/15<br>GPS-PZ3S | 114-ABPT-PZ3S-060614<br>06/06/14<br>GPS-PZ3S | 114-ABPT-PZ3S-061914<br>06/19/14<br>GPS-PZ3S |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | 220 | 530 J | 95 J | 68 J | 100 | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | 190 | 530 J | 95 J | 68 J | 100 J | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | 32 | 50 U | 100 U | 10 U | 50 UJ | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 328 | 368 | 248 | 257 | 354 | NA |
| pH | ARC-pH | SU | NA | NA | 6.99 | 4.43 | 6.81 | 6.96 | 6.54 | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ3I-070114<br>07/01/14<br>GPS-PZ3I | 114-ABPT-PZ3I-071714<br>07/17/14<br>GPS-PZ3I | 114-ABPT-PZ3I-080614<br>08/06/14<br>GPS-PZ3I | 114-ABPT-PZ3I-100814<br>10/08/14<br>GPS-PZ3I | 114-ABPT-PZ3S-010615<br>01/06/15<br>GPS-PZ3S | 114-ABPT-PZ3S-040715<br>04/07/15<br>GPS-PZ3S | 114-ABPT-PZ3S-060614<br>06/06/14<br>GPS-PZ3S | 114-ABPT-PZ3S-061914<br>06/19/14<br>GPS-PZ3S |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | 143,000 | 111,000 | 10,000 UB | 10,000 UB | 17,300 | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | 2,000 U | 3,800 | 3,100 | 1,300 J | 3,600 | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 6,300 | 5,700 | 4,600 | 3,940,000 | 440,000 | 253,000 | 2,140,000 | 1,290,000 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 1,220 | 2,350 | 8,620 | 11,670 | NA | 13,120 | 13,560 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 124 | 93 | 98 | 171 | NA | 118 | 164 |
| pH | ARC-pH | SU | NA | 7.38 | 7.17 | 4.52 | 7.34 | NA | 7.22 | 14 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | 1.39 | 1.34 | 3.1 | 5 | NA | 5.98 | 4.85 |
| Temperature | ARC-Temp | deg c | NA | 17.91 | 20.75 | 17.76 | 11.4 | NA | 16.64 | 18.75 |
| Turbidity | ARC-Turb | NTU | NA | 75.1 | 92.5 | 615 | 162 | NA | 93.3 | 36.5 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-ABPT-PZ3S-070114<br>07/01/14<br>GPS-PZ3S | 114-ABPT-PZ3S-071614<br>07/16/14<br>GPS-PZ3S | 114-ABPT-PZ3S-080614<br>08/06/14<br>GPS-PZ3S | 114-ABPT-PZ3S-100714<br>10/07/14<br>GPS-PZ3S | 114-ABPT-PZ4I-010515<br>01/05/15<br>GPS-PZ4I | 114-ABPT-PZ4I-040815<br>04/08/15<br>GPS-PZ4I | 114-ABPT-PZ4I-060314<br>06/03/14<br>GPS-PZ4I | 114-ABPT-PZ4I-061914<br>06/19/14<br>GPS-PZ4I |
|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-ABPT-PZ3S-070114 07/01/14 GPS-PZ3S | 114-ABPT-PZ3S-071614 07/16/14 GPS-PZ3S | 114-ABPT-PZ3S-080614 08/06/14 GPS-PZ3S | 114-ABPT-PZ3S-100714 10/07/14 GPS-PZ3S | 114-ABPT-PZ4I-010515 01/05/15 GPS-PZ4I | 114-ABPT-PZ4I-040815 04/08/15 GPS-PZ4I | 114-ABPT-PZ4I-060314 06/03/14 GPS-PZ4I | 114-ABPT-PZ4I-061914 06/19/14 GPS-PZ4I |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ3S-070114<br>07/01/14<br>GPS-PZ3S | 114-ABPT-PZ3S-071614<br>07/16/14<br>GPS-PZ3S | 114-ABPT-PZ3S-080614<br>08/06/14<br>GPS-PZ3S | 114-ABPT-PZ3S-100714<br>10/07/14<br>GPS-PZ3S | 114-ABPT-PZ4I-010515<br>01/05/15<br>GPS-PZ4I | 114-ABPT-PZ4I-040815<br>04/08/15<br>GPS-PZ4I | 114-ABPT-PZ4I-060314<br>06/03/14<br>GPS-PZ4I | 114-ABPT-PZ4I-061914<br>06/19/14<br>GPS-PZ4I |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 25,600 | 273 | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 12 U | 6.0 U | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 22.4 | 3.0 U | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 642 | 32.1 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 1.0 J | 1.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 1.0 J | 5.8 | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 151,000 J | 112,000 | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 172 J | 226 | 18,500 | 1,390 J | 19,000 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 9.6 J | 27 | 8.3 J | 10 U | 39,100 J | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 26.4 J | 106 | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 66.6 | 83.6 | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 7,130 | 73,200 | 194,000 | 64,800 | 331 | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 22.2 | 8.7 | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 43,100 J | 30,200 J | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | 763 J | 4,410 | 24,900 | 6,720 | 1,470 J | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ3S-070114<br>07/01/14<br>GPS-PZ3S | 114-ABPT-PZ3S-071614<br>07/16/14<br>GPS-PZ3S | 114-ABPT-PZ3S-080614<br>08/06/14<br>GPS-PZ3S | 114-ABPT-PZ3S-100714<br>10/07/14<br>GPS-PZ3S | 114-ABPT-PZ4I-010515<br>01/05/15<br>GPS-PZ4I | 114-ABPT-PZ4I-040815<br>04/08/15<br>GPS-PZ4I | 114-ABPT-PZ4I-060314<br>06/03/14<br>GPS-PZ4I | 114-ABPT-PZ4I-061914<br>06/19/14<br>GPS-PZ4I |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.40 U | 0.20 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | 109 | 102 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 19,000 J | 11,700 | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 20 U | 7.3 J | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 20 U | 10 U | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 110,000 J | 162,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | 3.8 J | 2.0 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | 75.6 J | 50 U | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 217 | 36.4 | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 104 J | 200 U | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 6.0 U | 11.1 | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 20.7 | 5.3 | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 448 | 32.0 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 3.0 U | 4.7 | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 180,000 J | 121,000 | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 266 J | 255 | 516 | 201 | 11,200 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 17 | 13 | 29 J | 3.7 J | 11,400 | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 9.4 J | 110 | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 10 U | 53.4 | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 5,530 | 64,800 | 41,500 | 31,800 | 20.7 J | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 4.0 | 10.5 | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 37,700 J | 32,300 J | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | 1,050 J | 4,320 | 18,100 | 7,650 | 2,230 J | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.20 U | 0.20 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | 64.5 | 93.8 | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 13,100 J | 11,600 | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 10 U | 9.1 J | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 10 U | 10 U | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 136,000 J | 151,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.0 U | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | 10.8 J | 5.8 J | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 20 UB | 22.5 | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ3S-070114<br>07/01/14<br>GPS-PZ3S | 114-ABPT-PZ3S-071614<br>07/16/14<br>GPS-PZ3S | 114-ABPT-PZ3S-080614<br>08/06/14<br>GPS-PZ3S | 114-ABPT-PZ3S-100714<br>10/07/14<br>GPS-PZ3S | 114-ABPT-PZ4I-010515<br>01/05/15<br>GPS-PZ4I | 114-ABPT-PZ4I-040815<br>04/08/15<br>GPS-PZ4I | 114-ABPT-PZ4I-060314<br>06/03/14<br>GPS-PZ4I | 114-ABPT-PZ4I-061914<br>06/19/14<br>GPS-PZ4I |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | 53 J | 100 UB | 89 J | 100 U | 31 J | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | 53 J | 120 UB | 200 U | 110 U | 110 U | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | 10 U | 20 U | 47 J | 10 U | 28 | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 257 | 276 | 299 | 340 | 529 | NA |
| pH | ARC-pH | SU | NA | NA | 6.98 | 6.41 | 6.57 | 6.64 | 7.60 | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ3S-070114<br>07/01/14<br>GPS-PZ3S | 114-ABPT-PZ3S-071614<br>07/16/14<br>GPS-PZ3S | 114-ABPT-PZ3S-080614<br>08/06/14<br>GPS-PZ3S | 114-ABPT-PZ3S-100714<br>10/07/14<br>GPS-PZ3S | 114-ABPT-PZ4I-010515<br>01/05/15<br>GPS-PZ4I | 114-ABPT-PZ4I-040815<br>04/08/15<br>GPS-PZ4I | 114-ABPT-PZ4I-060314<br>06/03/14<br>GPS-PZ4I | 114-ABPT-PZ4I-061914<br>06/19/14<br>GPS-PZ4I |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | 2,100 J | 50,000 U | 1,200 J | 21,700 JB | 240,000 | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | 750 J | 1,900 J | 4,300 | 770 J | 2,000 U | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 1,040,000 | 477,000 | 235,000 | 1,620,000 | 119,000 | 19,800 | 6,800 | 7,000 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 11,210 | 9,460 | 11,590 | 15,020 | NA | 2,700 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 152 | 125 | 121 | 99 | NA | 45 | NA |
| pH | ARC-pH | SU | NA | 7.18 | 7.41 | 7.38 | 6.74 | NA | 7.87 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | 3.79 | 3.6 | 5.1 | 2.55 | NA | 0.995 | NA |
| Temperature | ARC-Temp | deg c | NA | 21.59 | 24 | 22.27 | 6.03 | NA | 26.9 | NA |
| Turbidity | ARC-Turb | NTU | NA | 1,168 | 43.9 | 214 | 741 | NA | 82.7 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-ABPT-PZ4I-070114 07/01/14 GPS-PZ4I | 114-ABPT-PZ4I-071614 07/16/14 GPS-PZ4I | 114-ABPT-PZ4I-080714 08/07/14 GPS-PZ4I | 114-ABPT-PZ4I-100814 10/08/14 GPS-PZ4I | 114-ABPT-PZ4S-010615 01/06/15 GPS-PZ4S | 114-ABPT-PZ4S-040715 04/07/15 GPS-PZ4S | 114-ABPT-PZ4S-060614 06/06/14 GPS-PZ4S | 114-ABPT-PZ4S-061914 06/19/14 GPS-PZ4S |
|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ4I-070114<br>07/01/14<br>GPS-PZ4I | 114-ABPT-PZ4I-071614<br>07/16/14<br>GPS-PZ4I | 114-ABPT-PZ4I-080714<br>08/07/14<br>GPS-PZ4I | 114-ABPT-PZ4I-100814<br>10/08/14<br>GPS-PZ4I | 114-ABPT-PZ4S-010615<br>01/06/15<br>GPS-PZ4S | 114-ABPT-PZ4S-040715<br>04/07/15<br>GPS-PZ4S | 114-ABPT-PZ4S-060614<br>06/06/14<br>GPS-PZ4S | 114-ABPT-PZ4S-061914<br>06/19/14<br>GPS-PZ4S |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ4I-070114<br>07/01/14<br>GPS-PZ4I | 114-ABPT-PZ4I-071614<br>07/16/14<br>GPS-PZ4I | 114-ABPT-PZ4I-080714<br>08/07/14<br>GPS-PZ4I | 114-ABPT-PZ4I-100814<br>10/08/14<br>GPS-PZ4I | 114-ABPT-PZ4S-010615<br>01/06/15<br>GPS-PZ4S | 114-ABPT-PZ4S-040715<br>04/07/15<br>GPS-PZ4S | 114-ABPT-PZ4S-060614<br>06/06/14<br>GPS-PZ4S | 114-ABPT-PZ4S-061914<br>06/19/14<br>GPS-PZ4S |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 120,000 J | 300 J | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 30 U | 2.6 J | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 13.5 J | 13.9 | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 964 J | 356 | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 5.5 | 1.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 2.5 J | 3.0 U | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 121,000 J | 722,000 | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 429 | 6,970 | 1,860 J | 769 | 132 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 310 | 14 | 100 UJ | 10 U | 39 | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 84.5 J | 7.6 J | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 312 | 2.8 J | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 372 | 62,500 | 552,000 J | 218,000 | 621 | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 103 | 2.9 J | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 81,500 J | 30,600 | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | 3,180 J | 8,510 | 5,230 J | 2,130 J | 565 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ4I-070114<br>07/01/14<br>GPS-PZ4I | 114-ABPT-PZ4I-071614<br>07/16/14<br>GPS-PZ4I | 114-ABPT-PZ4I-080714<br>08/07/14<br>GPS-PZ4I | 114-ABPT-PZ4I-100814<br>10/08/14<br>GPS-PZ4I | 114-ABPT-PZ4S-010615<br>01/06/15<br>GPS-PZ4S | 114-ABPT-PZ4S-040715<br>04/07/15<br>GPS-PZ4S | 114-ABPT-PZ4S-060614<br>06/06/14<br>GPS-PZ4S | 114-ABPT-PZ4S-061914<br>06/19/14<br>GPS-PZ4S |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.98 J | 0.20 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | 239 | 49.0 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 97,600 J | 188,000 | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 32.5 J | 9.7 J | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 12.0 J | 6.0 J | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 98,600 J | 506,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | 10 U | 6.0 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | 373 J | 98.5 | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 705 J | 20 U | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 52.1 J | 111 J | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 6.0 U | 3.9 J | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 4.3 | 10.4 | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 103 J | 389 | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 4.1 | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 3.0 U | 3.0 U | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 117,000 J | 737,000 | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 388 | 277 | 46.8 J | 10.9 | 127 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 250 | 10 U | 100 UJ | 10 U | 10 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 0.30 J | 8.8 J | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 2.0 J | 5.0 J | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 24.9 J | 17,400 | 12,700 J | 3,390 | 302 | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 3.0 U | 3.0 U | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 16,400 J | 33,600 | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | 3,260 J | 8,770 | 471 J | 426 J | 614 | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.20 U | 1.2 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | 34.3 | 50.2 | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 59,400 J | 201,000 | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 10 U | 13.5 J | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 10 U | 10 U | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 119,000 J | 606,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 4.0 U | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | 13.6 J | 90.4 | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 200 J | 20 U | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ4I-070114<br>07/01/14<br>GPS-PZ4I | 114-ABPT-PZ4I-071614<br>07/16/14<br>GPS-PZ4I | 114-ABPT-PZ4I-080714<br>08/07/14<br>GPS-PZ4I | 114-ABPT-PZ4I-100814<br>10/08/14<br>GPS-PZ4I | 114-ABPT-PZ4S-010615<br>01/06/15<br>GPS-PZ4S | 114-ABPT-PZ4S-040715<br>04/07/15<br>GPS-PZ4S | 114-ABPT-PZ4S-060614<br>06/06/14<br>GPS-PZ4S | 114-ABPT-PZ4S-061914<br>06/19/14<br>GPS-PZ4S |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | 100 U | 100 U | 40 J | 32 J | 90 J | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | 110 U | 110 U | 200 U | 20 J | 90 J | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | 10 U | 10 U | 100 U | 12 | 50 UJ | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 333 | 317 | 215 | 308 | 346 | NA |
| pH | ARC-pH | SU | NA | NA | 7.28 | 6.58 | 7.38 | 7.37 | 7.72 | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ4I-070114<br>07/01/14<br>GPS-PZ4I | 114-ABPT-PZ4I-071614<br>07/16/14<br>GPS-PZ4I | 114-ABPT-PZ4I-080714<br>08/07/14<br>GPS-PZ4I | 114-ABPT-PZ4I-100814<br>10/08/14<br>GPS-PZ4I | 114-ABPT-PZ4S-010615<br>01/06/15<br>GPS-PZ4S | 114-ABPT-PZ4S-040715<br>04/07/15<br>GPS-PZ4S | 114-ABPT-PZ4S-060614<br>06/06/14<br>GPS-PZ4S | 114-ABPT-PZ4S-061914<br>06/19/14<br>GPS-PZ4S |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | 174,000 | 20,000 U | 32,600 | 6,600 JB | 62,500 | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | 2,000 U | 1,900 J | 2,600 | 2,400 | 14,600 | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 13,900 | 5,600 JB | 4,700 | 148,000 | 47,000 | 55,500 | 1,470,000 | 1,100,000 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 1,430 | 1,600 | 9,710 | 14,800 | NA | 14,420 | 10,590 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 33 | 3 | 41 | 62 | NA | 178 | 98 |
| pH | ARC-pH | SU | NA | 8.3 | 7.09 | 7.18 | 7.65 | NA | 8.06 | 7.68 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | 0.809 | 1.29 | 2.26 | 1.09 | NA | 5.33 | 3.13 |
| Temperature | ARC-Temp | deg c | NA | 19.02 | 19.68 | 20.41 | 9.95 | NA | 17.51 | 17.96 |
| Turbidity | ARC-Turb | NTU | NA | 226 | 47.3 | 6.8 | 0 | NA | 58.5 | 28.9 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-ABPT-PZ4S-070114 | 114-ABPT-PZ4S-071614 | 114-ABPT-PZ4S-080614 | 114-ABPT-PZ4S-100714 | 114-ABPT-PZ5I-010515 | 114-ABPT-PZ5I-040815 | 114-ABPT-PZ5I-060314 | 114-ABPT-PZ5I-061914 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | |
| Date Collected: | | | 07/01/14 | 07/16/14 | 08/06/14 | 10/07/14 | 01/05/15 | 04/08/15 | 06/03/14 | 06/19/14 |
| Location ID: | CAS Number | Units | GPS-PZ4S | GPS-PZ4S | GPS-PZ4S | GPS-PZ4S | GPS-PZ5I | GPS-PZ5I | GPS-PZ5I | GPS-PZ5I |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ4S-070114<br>07/01/14<br>GPS-PZ4S | 114-ABPT-PZ4S-071614<br>07/16/14<br>GPS-PZ4S | 114-ABPT-PZ4S-080614<br>08/06/14<br>GPS-PZ4S | 114-ABPT-PZ4S-100714<br>10/07/14<br>GPS-PZ4S | 114-ABPT-PZ5I-010515<br>01/05/15<br>GPS-PZ5I | 114-ABPT-PZ5I-040815<br>04/08/15<br>GPS-PZ5I | 114-ABPT-PZ5I-060314<br>06/03/14<br>GPS-PZ5I | 114-ABPT-PZ5I-061914<br>06/19/14<br>GPS-PZ5I |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ4S-070114<br>07/01/14<br>GPS-PZ4S | 114-ABPT-PZ4S-071614<br>07/16/14<br>GPS-PZ4S | 114-ABPT-PZ4S-080614<br>08/06/14<br>GPS-PZ4S | 114-ABPT-PZ4S-100714<br>10/07/14<br>GPS-PZ4S | 114-ABPT-PZ5I-010515<br>01/05/15<br>GPS-PZ5I | 114-ABPT-PZ5I-040815<br>04/08/15<br>GPS-PZ5I | 114-ABPT-PZ5I-060314<br>06/03/14<br>GPS-PZ5I | 114-ABPT-PZ5I-061914<br>06/19/14<br>GPS-PZ5I |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 634 | 544 | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 58.0 | 127 | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 22.8 | 15 U | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 47.3 J | 33.5 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 47.4 | 34.0 | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 89,500 J | 85,400 | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 93.3 | 976 | 109,000 J | 93,900 | 117,000 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 29 | 10 U | 113,000 J | 100,000 J | 116,000 J | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 189 J | 150 | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 693 | 653 | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 16,600 | 178,000 | 737 | 760 | 530 | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 23.9 | 21.6 | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 60,900 J | 41,800 | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | 279 | 2,290 | 164 | 222 | 210 | NA |

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-ABPT-PZ4S-070114 07/01/14 GPS-PZ4S | 114-ABPT-PZ4S-071614 07/16/14 GPS-PZ4S | 114-ABPT-PZ4S-080614 08/06/14 GPS-PZ4S | 114-ABPT-PZ4S-100714 10/07/14 GPS-PZ4S | 114-ABPT-PZ5I-010515 01/05/15 GPS-PZ5I | 114-ABPT-PZ5I-040815 04/08/15 GPS-PZ5I | 114-ABPT-PZ5I-060314 06/03/14 GPS-PZ5I | 114-ABPT-PZ5I-061914 06/19/14 GPS-PZ5I |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.20 U | 0.20 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | 196 J | 182 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 30,300 | 19,600 | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 30 U | 50 U | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 7.1 J | 10 U | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 798,000 | 545,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | 6.0 UJ | 10 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | 111 J | 250 U | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 152 | 121 | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 48.5 J | 200 U | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 62.1 | 132 | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 22.1 | 9.0 U | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 42.7 J | 27.2 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 2.3 | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 48.6 | 44.4 | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 88,500 J | 77,200 | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 22.6 | 16.5 | 112,000 J | 93,600 J | 125,000 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 2.8 J | 10 U | 112,000 J | 99,000 J | 124,000 J | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 189 J | 155 | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 699 | 641 | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 90.7 J | 195 | 74.6 J | 75.2 J | 25.6 J | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 21.5 | 27.6 | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 61,600 J | 42,400 | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | 155 | 224 | 214 | 192 | 168 | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.20 U | 0.12 J | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | 196 J | 181 | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 32,200 | 19,900 | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 30 U | 10 U | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 6.9 J | 10 U | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 791,000 | 560,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | 5.8 J | 6.0 U | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | 108 J | 21.1 J | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 151 | 158 | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ4S-070114<br>07/01/14<br>GPS-PZ4S | 114-ABPT-PZ4S-071614<br>07/16/14<br>GPS-PZ4S | 114-ABPT-PZ4S-080614<br>08/06/14<br>GPS-PZ4S | 114-ABPT-PZ4S-100714<br>10/07/14<br>GPS-PZ4S | 114-ABPT-PZ5I-010515<br>01/05/15<br>GPS-PZ5I | 114-ABPT-PZ5I-040815<br>04/08/15<br>GPS-PZ5I | 114-ABPT-PZ5I-060314<br>06/03/14<br>GPS-PZ5I | 114-ABPT-PZ5I-061914<br>06/19/14<br>GPS-PZ5I |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | 42 J | 1,000 U | 96 J | 160 | 410 | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | 42 J | 1,000 U | 110 U | 89 J | 240 | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | 10 U | 10 U | 160 | 71 | 170 | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 222 | 284 | 285 | 329 | 408 | NA |
| pH | ARC-pH | SU | NA | NA | 8.02 | 7.64 | 7.25 | 7.33 | 7.48 | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ4S-070114<br>07/01/14<br>GPS-PZ4S | 114-ABPT-PZ4S-071614<br>07/16/14<br>GPS-PZ4S | 114-ABPT-PZ4S-080614<br>08/06/14<br>GPS-PZ4S | 114-ABPT-PZ4S-100714<br>10/07/14<br>GPS-PZ4S | 114-ABPT-PZ5I-010515<br>01/05/15<br>GPS-PZ5I | 114-ABPT-PZ5I-040815<br>04/08/15<br>GPS-PZ5I | 114-ABPT-PZ5I-060314<br>06/03/14<br>GPS-PZ5I | 114-ABPT-PZ5I-061914<br>06/19/14<br>GPS-PZ5I |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | 425,000 | 180,000 | 463,000 | 465,000 | 495,000 | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | 14,800 | 11,200 | 2,000 U | 2,000 U | 20,000 U | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 649,000 | 370,000 | 160,000 | 148,000 | 18,700 | 18,100 | 12,400 | 14,600 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 9,650 | 9,410 | 9,310 | 13,740 | NA | 13,540 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 233 | 238 | 124 | 160 | NA | 167 | NA |
| pH | ARC-pH | SU | NA | 7.94 | 8.12 | 8.04 | 7.19 | NA | 7.58 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | 1.57 | 2.87 | 1.63 | 3.6 | NA | 3.06 | NA |
| Temperature | ARC-Temp | deg c | NA | 27.18 | 24.13 | 19.85 | 10.77 | NA | 23.7 | NA |
| Turbidity | ARC-Turb | NTU | NA | 73.5 | 0 | 1,000 | 13 | NA | 9.8 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-ABPT-PZ5I-070114 07/01/14 GPS-PZ5I | 114-ABPT-PZ5I-071614 07/16/14 GPS-PZ5I | 114-ABPT-PZ5I-080714 08/07/14 GPS-PZ5I | 114-ABPT-PZ5I-100814 10/08/14 GPS-PZ5I | 114-ABPT-PZ5S-010615 01/06/15 GPS-PZ5S | 114-ABPT-PZ5S-040715 04/07/15 GPS-PZ5S | 114-ABPT-PZ5S-060614 06/06/14 GPS-PZ5S | 114-ABPT-PZ5S-061914 06/19/14 GPS-PZ5S |
|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ5I-070114<br>07/01/14<br>GPS-PZ5I | 114-ABPT-PZ5I-071614<br>07/16/14<br>GPS-PZ5I | 114-ABPT-PZ5I-080714<br>08/07/14<br>GPS-PZ5I | 114-ABPT-PZ5I-100814<br>10/08/14<br>GPS-PZ5I | 114-ABPT-PZ5S-010615<br>01/06/15<br>GPS-PZ5S | 114-ABPT-PZ5S-040715<br>04/07/15<br>GPS-PZ5S | 114-ABPT-PZ5S-060614<br>06/06/14<br>GPS-PZ5S | 114-ABPT-PZ5S-061914<br>06/19/14<br>GPS-PZ5S |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ5I-070114<br>07/01/14<br>GPS-PZ5I | 114-ABPT-PZ5I-071614<br>07/16/14<br>GPS-PZ5I | 114-ABPT-PZ5I-080714<br>08/07/14<br>GPS-PZ5I | 114-ABPT-PZ5I-100814<br>10/08/14<br>GPS-PZ5I | 114-ABPT-PZ5S-010615<br>01/06/15<br>GPS-PZ5S | 114-ABPT-PZ5S-040715<br>04/07/15<br>GPS-PZ5S | 114-ABPT-PZ5S-060614<br>06/06/14<br>GPS-PZ5S | 114-ABPT-PZ5S-061914<br>06/19/14<br>GPS-PZ5S |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 2,950 | 929 | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 6.0 U | 2.7 J | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 7.5 | 11.0 | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 40.4 J | 19.3 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 0.60 J | 1.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 3.0 U | 3.0 U | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 45,700 J | 90,800 | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 74,500 J | 81,700 J | 47.1 | 15.9 | 1.7 J | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 83,500 J | 83,600 J | 10 U | 10 U | 10 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 1.1 J | 50 U | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 8.8 J | 10 U | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 2,510 | 1,080 | 13,800 | 3,980 | 115 J | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 4.5 | 2.0 J | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 1,420 J | 49.4 J | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | 199 | 219 | 141 | 43.1 | 15 U | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ5I-070114<br>07/01/14<br>GPS-PZ5I | 114-ABPT-PZ5I-071614<br>07/16/14<br>GPS-PZ5I | 114-ABPT-PZ5I-080714<br>08/07/14<br>GPS-PZ5I | 114-ABPT-PZ5I-100814<br>10/08/14<br>GPS-PZ5I | 114-ABPT-PZ5S-010615<br>01/06/15<br>GPS-PZ5S | 114-ABPT-PZ5S-040715<br>04/07/15<br>GPS-PZ5S | 114-ABPT-PZ5S-060614<br>06/06/14<br>GPS-PZ5S | 114-ABPT-PZ5S-061914<br>06/19/14<br>GPS-PZ5S |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.20 U | 0.20 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | 18.6 | 39.9 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 22,600 | 47,800 | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 10 U | 10 U | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 10 U | 10 U | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 101,000 | 254,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.0 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | 50.0 | 51.0 | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 28.2 JB | 20 U | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 633 | 854 | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 3.3 J | 2.8 J | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 8.4 | 10.8 | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 23.1 J | 19.5 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 3.0 U | 3.0 U | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 53,700 J | 90,800 | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 89,500 J | 103,000 J | 1.4 J | 1.6 J | 1.9 J | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 87,300 J | 85,400 | 10 U | 10 U | 10 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 50 U | 50 U | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 10 U | 1.3 J | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 12.8 J | 118 J | 100 UB | 24.1 J | 27.7 J | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 3.0 U | 3.0 U | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 5,000 U | 5,000 U | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | 166 | 204 | 15 U | 0.30 J | 15 U | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.20 U | 0.60 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | 16.2 | 43.2 | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 25,300 | 50,700 | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 3.2 J | 10 U | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 10 U | 10 U | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 119,000 | 261,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.0 U | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | 42.2 J | 47.1 J | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 20 UB | 20 U | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ5I-070114<br>07/01/14<br>GPS-PZ5I | 114-ABPT-PZ5I-071614<br>07/16/14<br>GPS-PZ5I | 114-ABPT-PZ5I-080714<br>08/07/14<br>GPS-PZ5I | 114-ABPT-PZ5I-100814<br>10/08/14<br>GPS-PZ5I | 114-ABPT-PZ5S-010615<br>01/06/15<br>GPS-PZ5S | 114-ABPT-PZ5S-040715<br>04/07/15<br>GPS-PZ5S | 114-ABPT-PZ5S-060614<br>06/06/14<br>GPS-PZ5S | 114-ABPT-PZ5S-061914<br>06/19/14<br>GPS-PZ5S |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | 87 J | 48 J | 32 J | 22 J | 31 J | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | 110 U | 110 U | 32 J | 22 J | 110 U | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | 160 | 160 | 10 U | 10 U | 6.7 J | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 326 | 301 | 69.8 | 196 | 321 | NA |
| pH | ARC-pH | SU | NA | NA | 7.60 | 7.56 | 10.59 | 10.26 | 11.00 | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ5I-070114<br>07/01/14<br>GPS-PZ5I | 114-ABPT-PZ5I-071614<br>07/16/14<br>GPS-PZ5I | 114-ABPT-PZ5I-080714<br>08/07/14<br>GPS-PZ5I | 114-ABPT-PZ5I-100814<br>10/08/14<br>GPS-PZ5I | 114-ABPT-PZ5S-010615<br>01/06/15<br>GPS-PZ5S | 114-ABPT-PZ5S-040715<br>04/07/15<br>GPS-PZ5S | 114-ABPT-PZ5S-060614<br>06/06/14<br>GPS-PZ5S | 114-ABPT-PZ5S-061914<br>06/19/14<br>GPS-PZ5S |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | 419,000 | 500,000 | 166,000 | 80,000 | 197,000 | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | 2,000 U | 2,000 U | 1,400 J | 770 J | 4,900 | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 13,700 | 14,700 | 12,900 | 14,900 | 32,900 | 11,600 | 28,400 | 38,400 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 1,700 | 2,190 | 11,960 | 13,890 | NA | 14,770 | 2,350 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 3 | 77 | 31 | 200 | NA | 154 | 264 |
| pH | ARC-pH | SU | NA | 8.04 | 7.51 | 6.75 | 11.32 | NA | 11.25 | 11.39 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | 2.85 | 2.82 | 3.82 | 1.87 | NA | 1.85 | 1.46 |
| Temperature | ARC-Temp | deg c | NA | 19.48 | 19.96 | 19.67 | 10.99 | NA | 16.12 | 18.71 |
| Turbidity | ARC-Turb | NTU | NA | 805 | 403 | 37.5 | 431 | NA | 9.1 | 10.3 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-ABPT-PZ5S-070114 | 114-ABPT-PZ5S-071614 | 114-ABPT-PZ5S-080614 | 114-ABPT-PZ5S-100714 | 114-ABPT-PZ21-010515 | 114-D1B-MW102I | 114-G1A004 | 114-G1B004 | 114-G1D001 | 114-G1S001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | 6.97 | 27.11 | 45 | 8.81 |
| Date Collected: | | | 07/01/14 | 07/16/14 | 08/06/14 | 10/07/14 | 01/05/15 | 05/30/14 | 09/12/05 | 09/12/05 | 09/08/05 | 09/08/05 |
| Location ID: | CAS Number | Units | GPS-PZ5S | GPS-PZ5S | GPS-PZ5S | GPS-PZ5S | GPS-PZ2I | 114-P1B-MW102I | MW1A | MW1B | MW1D | MW1S |
| **Volatile Organics** | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | 1 U | 0.33 J | 1 U [0.39 J] |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | 1 U | 1 U | 1 U [1 U] |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | 1 U | 1 U | 1 U [1 U] |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | 1 U | 1 U | 1 U [1 U] |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | 1 U | 1 U | 1 U [1 U] |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | 1 U | 1 UJ | 1 UJ [1 UJ] |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | 1 U | 1 U | 1 U [1 U] |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | 50 U | 10 U | 10 U | 10 U [10 U] |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | 25 U | 5 U | 5 U | 5 U [5 U] |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | 50 U | 10 U | 10 U | 10 U [10 U] |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | 1 U | 1 U | 1 U [1 U] |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | 1 U | 1 UJ | 1 UJ [1 UJ] |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | 20 U | 4 U | 4 UJ | 4 UJ [4 UJ] |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 2 U | 2 U | 2 U [2 U] |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 2 U | 2 UJ | 2 UJ [2 UJ] |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | 1 U | 1 U | 1 U [1 UJ] |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | 1 U | 1 U | 1 U [1 U] |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | 1 U | 1 UJ | 1 UJ [1 UJ] |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | 1 U | 1 U | 1 U [1 U] |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | 1 U | 1 U | 1 U [1 U] |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | 1 U | 1 U | 1 U [1 U] |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | 1 U | 1 U | 1 U [1 U] |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | 1 U | 1 U | 1 U [1 U] |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 2 U | 2 U | 2 U [2 U] |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | 1 U | 1 U | 1 U [1 U] |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | 25 U | 5 U | 5 U | 5 U [5 U] |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | 25 U | 5 U | 5 U | 5 U [5 U] |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | 1 U | 0.55 J | 38.2 [44.7] |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | 1 U | 1 U | 1 U [1 U] |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | 17 U | 3.4 U | 0.88 | 38.5 [45.1] |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | 1 U | 1 U | 1 U [1 U] |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ5S-070114<br>07/01/14<br>GPS-PZ5S | 114-ABPT-PZ5S-071614<br>07/16/14<br>GPS-PZ5S | 114-ABPT-PZ5S-080614<br>08/06/14<br>GPS-PZ5S | 114-ABPT-PZ5S-100714<br>10/07/14<br>GPS-PZ5S | 114-ABPT-PZ21-010515<br>01/05/15<br>GPS-PZ2I | 114-D1B-MW102I<br>05/30/14<br>114-P1B-MW102I | 114-G1A004<br>6.97<br>09/12/05<br>MW1A | 114-G1B004<br>27.11<br>09/12/05<br>MW1B | 114-G1D001<br>45<br>09/08/05<br>MW1D | 114-G1S001<br>8.81<br>09/08/05<br>MW1S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | 1 U | 1 U | 1 U [1 U] |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | 1 U | 1 U | 1 U [1 U] |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | 1 U | 1 U | 0.32 J [1 U] |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | 1 U | 1 U | 1 U [1 U] |
| **Semivolatile Organics** | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 2.2 U [2.2 U] |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 2.2 U [2.2 U] |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 2.2 U [2.2 U] |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 2.2 U [2.2 U] |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 2.2 U [2.2 U] |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | 500 U | 5.3 U | 5.3 U | 5.4 U [5.4 U] |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | 500 U | 5.3 U | 5.3 U | 5.4 U [5.4 U] |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | 500 U | 5.3 U | 5.3 U | 5.4 U [5.4 U] |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | 500 U | 5.3 U | 5.3 U | 5.4 U [5.4 U] |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | 2,000 UJ | 21 UJ | 21 U | 22 U [22 U] |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 2.2 U [2.2 U] |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 2.2 U [2.2 U] |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | 500 U | 5.3 U | 5.3 U | 5.4 U [5.4 U] |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | 500 U | 5.3 U | 5.3 U | 5.4 U [5.4 U] |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | 2,000 U | 21 U | 21 U | 22 U [22 U] |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 2.3 [1.6 J] |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | 500 U | 5.3 U | 5.3 U | 5.4 U [5.4 U] |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | 500 U | 5.3 U | 5.3 UJ | 5.4 UJ [5.4 UJ] |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | 500 U | 5.3 U | 5.3 U | 5.4 U [5.4 U] |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | 500 U | 5.3 U | 5.3 U | 5.4 U [5.4 U] |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | 500 U | 5.3 U | 5.3 U | 5.4 U [5.4 U] |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 2.2 U [2.2 U] |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | 500 U | 5.3 U | 5.3 U | 5.4 U [5.4 U] |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 2.2 U [2.2 U] |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | 500 U | 5.3 U | 5.3 U | 5.4 U [5.4 U] |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | 500 UJ | 5.3 UJ | 5.3 U | 5.4 U [5.4 U] |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | R | R | 21 UJ | 22 UJ [22 UJ] |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 5.1 [3.5] |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 2.2 U [2.2 U] |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 0.81 J [0.74 J] |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 2.2 U [0.55 J] |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 2.2 U [2.2 U] |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 2.2 U [2.2 U] |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 2.2 U [2.2 U] |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 2.2 U [2.2 U] |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 2.2 U [2.2 U] |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 2.2 U [2.2 U] |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 2.2 U [2.1 J] |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 2.2 U [2.2 U] |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ5S-070114<br>07/01/14<br>GPS-PZ5S | 114-ABPT-PZ5S-071614<br>07/16/14<br>GPS-PZ5S | 114-ABPT-PZ5S-080614<br>08/06/14<br>GPS-PZ5S | 114-ABPT-PZ5S-100714<br>10/07/14<br>GPS-PZ5S | 114-ABPT-PZ21-010515<br>01/05/15<br>GPS-PZ2I | 114-D1B-MW102I<br>05/30/14<br>114-P1B-MW102I | 114-G1A004<br>6.97<br>09/12/05<br>MW1A | 114-G1B004<br>27.11<br>09/12/05<br>MW1B | 114-G1D001<br>45<br>09/08/05<br>MW1D | 114-G1S001<br>8.81<br>09/08/05<br>MW1S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | 200 UJ | 2.1 UJ | 2.1 UJ | 2.2 UJ [2.2 UJ] |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 2.2 U [0.63 J] |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 2.2 U [2.2 U] |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | 500 U | 5.3 U | 5.3 U | 5.4 U [5.4 U] |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 2.2 U [2.2 U] |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 2.2 U [2.2 U] |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 2.2 U [2.2 U] |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 2.2 U [2.2 U] |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 0.94 J [1.2 J] |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 2.5 [1.8 J] |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 2.2 U [2.2 U] |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 2.2 U [2.2 U] |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | 2,000 UJ | 21 UJ | 21 UJ | 22 UJ [22 UJ] |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | 500 U | 5.3 U | 5.3 U | 5.4 U [5.4 U] |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 2.2 U [2.2 U] |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 2.2 U [2.2 U] |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 1.9 J [1.4 J] |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 2.2 U [2.2 U] |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 2.2 U [2.2 U] |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | 500 U | 5.3 U | 5.3 U | 5.4 U [5.4 U] |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | 500 U | 5.3 U | 5.3 UJ | 5.4 UJ [5.4 UJ] |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | 2,000 U | 21 U | 21 U | 22 U [22 U] |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 4.1 [3.8] |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | 500 U | 5.3 U | 5.3 U | 1.2 J [1 J] |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 2.1 U | 2.1 U | 2.5 J [2.8] |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | 320 U | 3.3 U | 3.4 U | 21 [21] |
| **Metals** | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | 5,920 | 200 U | 1,000 U | 2,240 [2,210] |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | 25 U | 14.8 | 25 U | 8.4 [6.7] |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | 108 | 5.5 | 25 U | 5.0 [6.8] |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | 1,000 U | 200 U | 200 U | 200 U [200 U] |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | 25 U | 5 U | 5.0 U | 5.0 U [5 U] |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | 20 U | 4 U | 4.0 U | 4.0 U [4 U] |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | 25,000 U | 123,000 | 190,000 | 113,000 [115,000] |
| Chromium | 7440-47-3 | ug/L | NA | NA | 9.1 J | 6.0 J | 916 | 287,000 | 6,530 | 51,700 | 110,000 | 34,100 [34,400] |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 10 U | 10 U | 74 J | NA | 50 U | 55,800 | 320 | 33,300 [33,700] |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | 250 U | 50 U | 50 U | 50 U [50 U] |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | 227 | 79.9 | 38.5 | 25 U [25 U] |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 2,530 | 1,440 | 1,680 | NA | 20,000 | 464 | 1,130 | 906 [1,010] |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | 310 | 3.3 | 18.6 | 3.0 U [3.7] |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | 25,000 U | 28,000 | 34,100 | 5,000 U [5,000 U] |
| Manganese | 7439-96-5 | ug/L | NA | NA | 32.6 | 15.8 | 929 | NA | 794 | 286 | 259 | 17.2 [18] |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ5S-070114<br>07/01/14<br>GPS-PZ5S | 114-ABPT-PZ5S-071614<br>07/16/14<br>GPS-PZ5S | 114-ABPT-PZ5S-080614<br>08/06/14<br>GPS-PZ5S | 114-ABPT-PZ5S-100714<br>10/07/14<br>GPS-PZ5S | 114-ABPT-PZ21-010515<br>01/05/15<br>GPS-PZ2I | 114-D1B-MW102I<br>05/30/14<br>114-P1B-MW102I | 114-G1A004<br>6.97<br>09/12/05<br>MW1A | 114-G1B004<br>27.11<br>09/12/05<br>MW1B | 114-G1D001<br>45<br>09/08/05<br>MW1D | 114-G1S001<br>8.81<br>09/08/05<br>MW1S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | 1.2 | 0.2 U | 0.20 U | 0.20 U [0.2 U] |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | 60.6 | 86.7 | 121 [119] |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | 68,100 | 5,390 | 16,100 | 11,000 [10,900] |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | 32.9 | 5 U | 25 U | 5.5 [5 U] |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | 50 U | 10 U | 10 U | 10 U [10 U] |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | 1,960,000 | 235,000 | 16,900 | 125,000 [124,000] |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | 50 U | 10 U | 50 U | 10 U [10 U] |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | 7,810 | 51,800 | 110,000 | 34,300 [34,600] |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | 1,280 | 50 U | 50 U | 110 [106] |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | 1,110 | 25.0 | 20 U | 20 U [20 U] |
| **Metals-Filtered** | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 0.90 J | 10 U | 1,070 | 305,000 | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 10 U | 10 U | 1,100 J | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 18.5 J | 40.6 J | 198 | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | 15 U | 15 U | 874 | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-ABPT-PZ5S-070114<br>07/01/14<br>GPS-PZ5S | 114-ABPT-PZ5S-071614<br>07/16/14<br>GPS-PZ5S | 114-ABPT-PZ5S-080614<br>08/06/14<br>GPS-PZ5S | 114-ABPT-PZ5S-100714<br>10/07/14<br>GPS-PZ5S | 114-ABPT-PZ21-010515<br>01/05/15<br>GPS-PZ2I | 114-D1B-MW102I<br>05/30/14<br>114-P1B-MW102I | 114-G1A004<br>6.97<br>09/12/05<br>MW1A | 114-G1B004<br>27.11<br>09/12/05<br>MW1B | 114-G1D001<br>45<br>09/08/05<br>MW1D | 114-G1S001<br>8.81<br>09/08/05<br>MW1S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | 5,000 U | 5,000 U | 5,000 U | 5,000 U [5,000 U] |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | 40,000 U | 40,000 U | 90,600 | 20,000 U [20,000 U] |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | 148,000 | 5,000 | 2,800 | 1,900 [1,900] |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | 1,000 U | 1,900 | 1,400 | 3,200 [2,300] |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | 2,500 U | 100 U | NA | 130 [120] |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | 100 U | 100 U | 250 | NA | 1,000 U | 1,400 | 630 | 1,500 [1,400] |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | 110 U | 110 U | 250 | NA | 1,500 U | 1,200 | 510 | 720 [590] |
| Nitrite | 14797-65-0 | ug/L | NA | NA | 4.6 J | 10 U | 10 U | NA | 500 U | 180 | 120 | 780 [810] |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 104 | 93.0 | 294 | NA | 302 | 318 | 308 | 163 [166] |
| pH | ARC-pH | SU | NA | NA | 10.82 | 10.75 | 7.29 | NA | 8.54 | 6.7 | 6.95 | 11.21 [11.18] |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-ABPT-PZ5S-070114 | 114-ABPT-PZ5S-071614 | 114-ABPT-PZ5S-080614 | 114-ABPT-PZ5S-100714 | 114-ABPT-PZ21-010515 | 114-D1B-MW102I | 114-G1A004 | 114-G1B004 | 114-G1D001 | 114-G1S001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | 6.97 | 27.11 | 45 | 8.81 |
| Date Collected: | | | 07/01/14 | 07/16/14 | 08/06/14 | 10/07/14 | 01/05/15 | 05/30/14 | 09/12/05 | 09/12/05 | 09/08/05 | 09/08/05 |
| Location ID: | CAS Number | Units | GPS-PZ5S | GPS-PZ5S | GPS-PZ5S | GPS-PZ5S | GPS-PZ2I | 114-P1B-MW102I | MW1A | MW1B | MW1D | MW1S |
| Sulfate | 14808-79-8 | ug/L | NA | NA | 229,000 | 263,000 | 117,000 | NA | 40,000 U | 40,000 U | 60,000 U | 46,800 [45,900] |
| Sulfide | 18496-25-8 | ug/L | NA | NA | 1,800 J | 1,500 J | 2,000 U | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 31,900 | 29,800 | 31,900 | 59,200 | 8,100 | NA | 668,000 | 5,800 | 3,700 | 2,600 [3,000] |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 2,970 | 9,040 | 10,590 | 10,130 | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 192 | 151 | 207 | 52 | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | 11.22 | 11.51 | 10.27 | 6.37 | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | 1.67 | 1.76 | 2.39 | 1.46 | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 20.15 | 24.84 | 20.71 | 11.32 | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | 82.6 | 86.2 | 540 | 41.8 | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-G2A005 | 114-G2B003 | 114-G2D001 | 114-G2S001 | 114-G3A003 | 114-G3B004 | 114-G3D001 | 114-G3S001 | 114-G3D001 | 114-G4B005 | 114-G4C-001 | 114-G3S001 | 114-G4A005 | 114-G4B005 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 5.01 | 19.6 | 38.6 | 6.72 | 5.02 | 36.1 | 50.1 | 5.63 | 50.1 | 32.85 | 64 | 5.63 | 11.58 | 32.85 |
| Date Collected: | | | 09/09/05 | 09/09/05 | 09/13/05 | 09/12/05 | 09/08/05 | 09/08/05 | 09/14/05 | 09/14/05 | 09/14/05 | 09/12/05 | 12/15/05 | 09/14/05 | 09/12/05 | 09/12/05 |
| Location ID: | CAS Number | Units | MW2A | MW2B | MW2D | MW2S | MW3A | MW3B | MW3D | MW3S | MW3D | MW4B | MW4C | MW3S | MW4A | MW4B |
| **Volatile Organics** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | 20 U | 1 U | 1 U | 1 U | 1 U | 1 U | 2 U | 5 U | NA | NA | 1.0 U | NA | 1 U | 1 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | 20 U | 1 U | 1 U | R | 1 U | 1 U | 2 U | 5 U | NA | NA | 1.0 U | NA | 1 U | 1 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | 20 U | 1 U | 1 U | 1 UJ | 1 U | 1 U | 2 U | 5 U | NA | NA | 1.0 U | NA | 1 U | 1 U |
| 1,1-Dichloroethane | 75-34-3 | ug/L | 20 U | 1 U | 1 U | 1 U | 1 U | 1 U | 2 U | 5 U | NA | NA | 1.0 U | NA | 1 U | 1 U |
| 1,1-Dichloroethene | 75-35-4 | ug/L | 20 U | 1 U | 1 U | 1 U | 1 U | 1 U | 2 U | 5 U | NA | NA | 1.0 U | NA | 1 U | 1 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | 20 U | 1 U | 1 U | 1 U | 1 UJ | 1 UJ | 2 U | 5 U | NA | NA | 1.0 U | NA | 1 U | 1 U |
| 1,2-Dichloropropane | 78-87-5 | ug/L | 20 U | 1 U | 1 U | 1 U | 1 U | 1 U | 2 U | 5 U | NA | NA | 1.0 U | NA | 1 U | 1 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | R | R | 10 UJ | 3.3 J | 10 U | 10 U | 20 U | 50 U | NA | NA | 10 U | NA | 10 U | 10 U |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | 100 U | 5 U | 5 U | 5 U | 5 U | 5 U | 10 U | 25 U | NA | NA | 5.0 U | NA | 5 U | 5 U |
| Acetone | 67-64-1 | ug/L | 225 J | R | 4.5 J | 78.4 J | 10 U | 10 U | 20 UJ | 50 UJ | NA | NA | 148 | NA | 10 U | 5.1 J |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | 20 U | 1 U | 30.5 | 8.3 | 1 U | 1 U | 368 | 628 | NA | NA | 1.0 U | NA | 1 U | 2.9 |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | 20 U | 1 U | 1 U | 1 U | 1 UJ | 1 UJ | 2 U | 5 U | NA | NA | 1.0 U | NA | 1 U | 1 U |
| Bromoform | 75-25-2 | ug/L | 80 U | 4 U | 4 U | 4 U | 4 UJ | 4 UJ | 8 U | 20 U | NA | NA | 4.0 U | NA | 4 U | 4 U |
| Bromomethane | 74-83-9 | ug/L | 40 U | 2 U | 2 U | 2 U | 2 U | 2 U | 4 U | 10 U | NA | NA | 2.0 U | NA | 2 U | 2 U |
| Carbon Disulfide | 75-15-0 | ug/L | 40 U | 2 U | 10.2 | 2 U | 0.71 J | 2 UJ | 4 U | 10 U | NA | NA | 2.0 U | NA | 2 U | 1.2 J |
| Carbon Tetrachloride | 56-23-5 | ug/L | 20 U | 1 U | 1 U | 1 UJ | 1 UJ | 1 U | 2 U | 5 U | NA | NA | 1.0 U | NA | 1 U | 1 U |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | 20 U | 1 U | 1 U | 1 U | 1 U | 1 U | 2 U | 5 U | NA | NA | 1.0 U | NA | 1 U | 1 U |
| Chlorodibromomethane | 124-48-1 | ug/L | 20 U | 1 U | 1 U | 1 U | 1 UJ | 1 UJ | 2 U | 5 U | NA | NA | 1.0 U | NA | 1 U | 1 U |
| Chloroethane | 75-00-3 | ug/L | 20 U | 1 U | 1 U | 1 U | 1 U | 1 U | 2 U | 5 U | NA | NA | 1.0 U | NA | 1 U | 1 U |
| Chloroform | 67-66-3 | ug/L | 20 U | 1 U | 1 U | 1 U | 1 U | 1 U | 2 U | 5 U | NA | NA | NA | NA | 1 U | 1 U |
| Chloromethane | 74-87-3 | ug/L | 20 U | 1 U | 1 U | 1 U | 1 U | 1 U | 2 U | 5 U | NA | NA | NA | NA | 1 U | 1 U |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | 20 U | 1 U | 1 U | 1 U | 1 U | 1 U | 2 U | 5 U | NA | NA | NA | NA | 1 U | 1 U |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | 20 U | 1 U | 1 U | 1 U | 1 U | 1 U | 2 U | 5 U | NA | NA | NA | NA | 1 U | 1 U |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | 40 U | 2 U | 2 U | 2 U | 2 U | 2 U | 4 U | 10 U | NA | NA | NA | NA | 2 U | 2 U |
| Ethylbenzene | 100-41-4 | ug/L | 20 U | 1 U | 8.2 | 1.6 | 1 U | 1 U | 369 | 349 | NA | NA | NA | NA | 1 U | 1 U |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | 100 U | 5 U | 5 U | 5 U | 5 U | 5 U | 10 UJ | 25 UJ | NA | NA | NA | NA | 5 U | 5 U |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | 100 U | 5 U | 5 U | 5 U | 5 U | 5 U | 10 U | 25 U | NA | NA | NA | NA | 5 U | 5 U |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | 20 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1.4 J | 5 U | NA | NA | NA | NA | 1 U | 1 U |
| Toluene | 108-88-3 | ug/L | 20 U | 1 U | 21.7 | 3.2 | 1 U | 1 U | 275 | 338 | NA | NA | NA | NA | 1 U | 1 U |
| Total VOCs | ARC-TVOC | ug/L | 225 | 1.8 U | 93.9 | 98.9 | 0.71 | 3.4 U | 1,370 | 1,840 | NA | NA | NA | NA | 3.4 U | 9.2 |
| Total Xylenes | 1330-20-7 | ug/L | 20 U | 1 U | 18.8 | 4.1 | 1 U | 1 U | 353 | 522 | NA | NA | NA | NA | 1 U | 1 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-G2A005 5.01 09/09/05 MW2A | 114-G2B003 19.6 09/09/05 MW2B | 114-G2D001 38.6 09/13/05 MW2D | 114-G2S001 6.72 09/12/05 MW2S | 114-G3A003 5.02 09/08/05 MW3A | 114-G3B004 36.1 09/08/05 MW3B | 114-G3D001 50.1 09/14/05 MW3D | 114-G3S001 5.63 09/14/05 MW3S | 114-G3D001 50.1 09/14/05 MW3D | 114-G4B005 32.85 09/12/05 MW4B | 114-G4C-001 64 12/15/05 MW4C | 114-G3S001 5.63 09/14/05 MW3S | 114-G4A005 11.58 09/12/05 MW4A | 114-G4B005 32.85 09/12/05 MW4B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | 20 U | 1 U | 1 U | 1 U | 1 U | 1 U | 2 U | 5 U | NA | NA | NA | NA | 1 U | 1 U |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | 20 U | 1 U | 1 U | 1 U | 1 U | 1 U | 2 U | 5 U | NA | NA | NA | NA | 1 U | 1 U |
| Trichloroethene | 79-01-6 | ug/L | 20 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1.1 J | 5 U | NA | NA | NA | NA | 1 U | 1 U |
| Vinyl chloride | 75-01-4 | ug/L | 20 U | 1 U | 1 U | 1 U | 1 U | 1 U | 2 U | 5 U | NA | NA | NA | NA | 1 U | 1 U |
| **Semivolatile Organics** | | | | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2.1 U | 2 U | 2 U | NA | NA | NA | NA | 2.2 U | 2.1 U |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2.1 U | 2 U | 2 U | NA | NA | NA | NA | 2.2 U | 2.1 U |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2.1 U | 2 U | 2 U | NA | NA | NA | NA | 2.2 U | 2.1 U |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2.1 U | 2 U | 2 U | NA | NA | NA | NA | 2.2 U | 2.1 U |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2.1 U | 2 U | 2 U | NA | 2.1 U | NA | NA | 2.2 U | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | 5.6 U | 5.6 U | 5 U | 5 U | 5 U | 5.3 U | 5 U | 5.1 U | NA | 5.3 U | NA | NA | 5.5 U | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | 5.6 U | 5.6 U | 5 U | 5 U | 5 U | 5.3 U | 5 U | 5.1 U | NA | 5.3 U | NA | NA | 5.5 U | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | 5.6 U | 5.6 U | 5 U | 5 U | 5 U | 5.3 U | 5 U | 5.1 U | NA | 5.3 U | NA | NA | 5.5 U | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | 5.6 U | 5.6 U | 2.3 J | 11.4 | 5 U | 5.3 U | 5 U | 9.6 | NA | 5.3 U | NA | NA | 5.5 U | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | 22 UJ | 22 UJ | 20 UJ | 20 U | 20 U | 21 U | 20 U | NA | NA | 21 U | NA | 20 U | 22 UJ | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2.1 U | 2 U | NA | NA | 2.1 U | NA | 2 U | 2.2 U | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2.1 U | 2 U | NA | NA | 2.1 U | NA | 2 U | 2.2 U | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | 5.6 U | 5.6 U | 5 U | 5 U | 5 U | 5.3 U | 5 U | NA | NA | 5.3 U | NA | 5.1 U | 5.5 U | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | 5.6 U | 5.6 U | 5 U | 5 U | 5 U | 5.3 U | 5 U | NA | NA | 5.3 U | NA | 5.1 U | 5.5 U | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | 22 UJ | 22 UJ | 20 U | 20 U | 20 U | 21 U | 20 U | NA | NA | 21 U | NA | 20 U | 22 U | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | 2.2 U | 2.2 U | 107 | 6.9 | 2 U | 2.1 U | 46.9 | NA | NA | 2.1 U | NA | 347 | 2.2 U | NA |
| 2-Methylphenol | 95-48-7 | ug/L | 1.1 J | 5.6 U | 10.9 | 10.3 | 5 U | 5.3 U | 5 U | NA | NA | 5.3 U | NA | 4.0 J | 5.5 U | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | 5.6 U | 5.6 UJ | 5 U | 5 U | 5 UJ | 5.3 UJ | 5 U | NA | NA | 5.3 U | NA | 5.1 U | 5.5 U | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | 5.6 U | 5.6 U | 5 U | 5 U | 5 U | 5.3 U | 5 U | NA | NA | 5.3 U | NA | 5.1 U | 5.5 U | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | 5.6 U | 5.6 U | 5 U | R | 5 U | 5.3 U | 5 U | NA | NA | 5.3 U | NA | 5.1 U | 5.5 U | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | 5.6 U | 5.6 U | 5 U | 5 U | 5 U | 5.3 U | 5 U | NA | NA | 5.3 U | NA | 5.1 U | 5.5 U | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2.1 U | 2 U | NA | NA | 2.1 U | NA | 2 U | 2.2 U | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | 5.6 U | 5.6 U | 5 U | 5 U | 5 U | 5.3 U | 5 U | NA | NA | 5.3 U | NA | 5.1 U | 5.5 U | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2.1 U | 2 U | NA | NA | 2.1 U | NA | 2 U | 2.2 U | NA |
| 4-Methylphenol | 106-44-5 | ug/L | 14.4 | 5.6 U | 15 | 28.9 | 5 U | 5.3 U | 5 U | NA | NA | 5.3 U | NA | 3.6 J | 5.5 U | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | 5.6 UJ | 5.6 UJ | 5 U | 5 UJ | 5 U | 5.3 U | 5 U | NA | NA | 5.3 UJ | NA | 5.1 U | 5.5 UJ | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | 22 UJ | 22 UJ | 20 UJ | R | 20 UJ | 21 UJ | 20 U | NA | NA | R | NA | 20 U | R | NA |
| Acenaphthene | 83-32-9 | ug/L | 2.2 U | 2.2 U | 22.1 | 3.9 | 2 U | 2.1 U | 16.5 | NA | NA | 2.1 U | NA | 111 | 2.2 U | NA |
| Acenaphthylene | 208-96-8 | ug/L | 2.2 U | 2.2 U | 0.9 J | 2 U | 2 U | 2.1 U | 16.3 | NA | NA | 2.1 U | NA | 38.5 | 2.2 U | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | 2.2 U | 2.2 U | 1.6 J | 2 U | 2 U | 2.1 U | 0.89 | NA | NA | 2.1 U | NA | 15.2 | 2.2 U | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2.1 U | 2 U | NA | NA | 2.1 U | NA | 2.0 J | 2.2 U | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2.1 U | 2 U | NA | NA | 2.1 U | NA | 1.5 J | 2.2 U | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2.1 U | 2 U | NA | NA | 2.1 U | NA | 2 U | 2.2 U | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2.1 U | 2 U | NA | NA | 2.1 U | NA | 2 U | 2.2 U | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2.1 U | 2 U | NA | NA | 2.1 U | NA | 2 U | 2.2 U | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2.1 U | 2 U | NA | NA | 2.1 U | NA | 2 U | 2.2 U | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2.1 U | 2 U | NA | NA | 2.1 U | NA | 2 U | 2.2 U | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2.1 U | 2 U | NA | NA | 2.1 U | NA | 2 U | 2.2 U | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2.1 U | 2 U | NA | NA | 2.1 U | NA | 2 U | 2.2 U | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-G2A005 | 114-G2B003 | 114-G2D001 | 114-G2S001 | 114-G3A003 | 114-G3B004 | 114-G3D001 | 114-G3S001 | 114-G3D001 | 114-G4B005 | 114-G4C-001 | 114-G3S001 | 114-G4A005 | 114-G4B005 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 5.01 | 19.6 | 38.6 | 6.72 | 5.02 | 36.1 | 50.1 | 5.63 | 50.1 | 32.85 | 64 | 5.63 | 11.58 | 32.85 |
| Date Collected: | | | 09/09/05 | 09/09/05 | 09/13/05 | 09/12/05 | 09/08/05 | 09/08/05 | 09/14/05 | 09/14/05 | 09/14/05 | 09/12/05 | 12/15/05 | 09/14/05 | 09/12/05 | 09/12/05 |
| Location ID: | CAS Number | Units | MW2A | MW2B | MW2D | MW2S | MW3A | MW3B | MW3D | MW3S | MW3D | MW4B | MW4C | MW3S | MW4A | MW4B |
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | 2.2 U | 2.2 U | 30.8 | 2 UJ | 2 UJ | 2.1 UJ | 1.2 | NA | NA | 2.1 UJ | NA | 8.8 | 2.2 UJ | NA |
| Chrysene | 218-01-9 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2.1 U | 2 U | NA | NA | 2.1 U | NA | 2.3 | 2.2 U | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2.1 U | 2 U | NA | NA | 2.1 U | NA | 2 U | 2.2 U | NA |
| Dibenzofuran | 132-64-9 | ug/L | 5.6 U | 5.6 U | 29.2 | 5 U | 5 U | 5.3 U | 5 U | NA | NA | 5.3 U | NA | 6.7 | 5.5 U | NA |
| Diethyl phthalate | 84-66-2 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2.1 U | 2 U | NA | NA | 2.1 U | NA | 2 U | 2.2 U | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2.1 U | NA | NA | 2 U | 2.1 U | NA | 2 U | 2.2 U | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2.1 U | NA | NA | 2 U | 2.1 U | NA | 2 U | 2.2 U | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2.1 U | NA | NA | 2 U | 2.1 U | NA | 2 U | 2.2 U | NA |
| Fluoranthene | 206-44-0 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2.1 U | NA | NA | 2 U | 2.1 U | NA | 6.7 | 0.63 J | NA |
| Fluorene | 86-73-7 | ug/L | 2.2 U | 2.2 U | 2.6 | 2 U | 2 U | 2.1 U | NA | NA | 5.0 | 2.1 U | NA | 61.9 | 2.2 U | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2.1 U | NA | NA | 2 U | 2.1 U | NA | 2 U | 2.2 U | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2.1 U | NA | NA | 2 U | 2.1 U | NA | 2 U | 2.2 U | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | 22 UJ | 22 UJ | 20 U | 20 UJ | 20 UJ | 21 UJ | NA | NA | 20 U | 21 UJ | NA | 20 U | 22 UJ | NA |
| Hexachloroethane | 67-72-1 | ug/L | 5.6 U | 5.6 U | 5 U | 5 U | 5 U | 5.3 U | NA | NA | 5 U | 5.3 U | NA | 5.1 U | 5.5 U | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2.1 U | NA | NA | 2 U | 2.1 U | NA | 2 U | 2.2 U | NA |
| Isophorone | 78-59-1 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2.1 U | NA | NA | 2 U | 2.1 U | NA | 2 U | 2.2 U | NA |
| Naphthalene | 91-20-3 | ug/L | 4.9 J | 2.2 U | 1,140 | 63.8 | 2 U | 2.1 U | NA | NA | 998 | 2.1 U | NA | 1,820 | 2.2 U | NA |
| Nitrobenzene | 98-95-3 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2.1 U | NA | NA | 2 U | 2.1 U | NA | 2 U | 2.2 U | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2.1 U | NA | NA | 2 U | 2.1 U | NA | 2 U | 2.2 U | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | 5.6 U | 5.6 U | 5 U | 5 U | 5 U | 5.3 U | NA | NA | 5 U | 5.3 U | NA | 5.1 U | 5.5 U | NA |
| p-Chloroaniline | 106-47-8 | ug/L | 5.6 U | 5.6 U | 5 U | 5 U | 5 UJ | 5.3 UJ | NA | NA | 5 U | 5.3 U | NA | 5.1 U | 5.5 U | NA |
| Pentachlorophenol | 87-86-5 | ug/L | 22 U | 22 U | 4 J | 20 U | 20 U | 21 U | 20 U | NA | NA | 21 U | NA | 20 U | 22 U | NA |
| Phenanthrene | 85-01-8 | ug/L | 2.2 U | 2.2 U | 9.9 | 1.4 J | 0.51 J | 2.1 U | 4.8 | NA | NA | 2.1 U | NA | 69.2 | 1.2 J | NA |
| Phenol | 108-95-2 | ug/L | 142 | 5.6 U | 5 U | 12.4 | 5 U | 5.3 U | 5 U | NA | NA | 5.3 U | NA | 8.6 | 5.5 U | NA |
| Pyrene | 129-00-0 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2.1 U | 2 U | NA | NA | 2.1 U | NA | 9.7 | 0.55 J | NA |
| Total SVOCs | ARC-TSVOC | ug/L | 162 | 3.5 U | 1,380 | 139 | 0.51 | 3.3 U | 1,090 | NA | NA | 3.4 U | NA | 2,530 | 2.4 | NA |
| **Metals** | | | | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 20,400 | 200 U | 10,000 U | 1,570 | 200 U | 756 | 291 | NA | NA | 20,000 U | NA | 524 | 2,190 | NA |
| Antimony | 7440-36-0 | ug/L | 250 U | 5 U | 250 U | 5.2 | 5 U | 5 U | 5 U | NA | NA | 500 U | NA | 5 U | 5 U | NA |
| Arsenic | 7440-38-2 | ug/L | 408 | 5 U | 250 U | 5 U | 44.0 | 5 U | 13.7 | NA | NA | 500 U | NA | 11.8 | 10.4 | NA |
| Barium | 7440-39-3 | ug/L | 10,000 U | 200 U | 10,000 U | 308 | 200 U | 200 U | 200 U | NA | NA | 20,000 U | NA | 200 U | 200 U | NA |
| Beryllium | 7440-41-7 | ug/L | 250 U | 5 U | 250 U | 5 U | 5 U | 5 U | 5 U | NA | NA | 500 U | NA | 5 U | 5 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 200 U | 4 U | 200 U | 4 U | 4 U | 4 U | 4 U | NA | NA | 400 U | NA | 4 U | 4 U | NA |
| Calcium | 7440-70-2 | ug/L | 250,000 U | 234,000 | 250,000 U | 458,000 | 165,000 | 132,000 | 61,900 | NA | NA | 500,000 U | NA | 5,000 U | 10,300 | NA |
| Chromium | 7440-47-3 | ug/L | 597,000 | 79.9 | 444,000 | 12,700 | 1,450 | 68.2 | 10 U | NA | NA | 1,140,000 | NA | 124 | 481 | NA |
| Chromium VI | 18540-29-9 | ug/L | 767,000 | 50 U | 140 | 12,100 | 50 U | 38,300 | 50 U | NA | NA | 1,150,000 | NA | 50 U | 330 | NA |
| Cobalt | 7440-48-4 | ug/L | 2,500 U | 50 U | 2,500 U | 50 U | 50 U | 50 U | 50 U | NA | NA | 5,000 U | NA | 50 U | 50 U | NA |
| Copper | 7440-50-8 | ug/L | 1,300 U | 25 U | 1,300 U | 25 U | 82.3 | 46.1 | 25 U | NA | NA | 2,500 U | NA | 25 U | 48.9 | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 5,000 U | 289 | 5,000 U | 100 U | 8,720 | 1,150 | 666 | NA | NA | 10,000 U | NA | 543 | 3,040 | NA |
| Lead | 7439-92-1 | ug/L | 150 U | 18.5 | 150 U | 5.8 | 18.8 | 6.2 | 3 U | NA | NA | 300 U | NA | 18.4 | 105 | NA |
| Magnesium | 7439-95-4 | ug/L | 250,000 U | 37,400 | 250,000 U | 5,000 U | 10,900 | 24,300 | 16,600 | NA | NA | 500,000 U | NA | 5,000 U | 7,170 | NA |
| Manganese | 7439-96-5 | ug/L | 750 U | 694 | 750 U | 15 U | 97.4 | 1,510 | 510 | NA | NA | 1,500 U | NA | 40.3 | 78.2 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-G2A005 5.01 09/09/05 MW2A | 114-G2B003 19.6 09/09/05 MW2B | 114-G2D001 38.6 09/13/05 MW2D | 114-G2S001 6.72 09/12/05 MW2S | 114-G3A003 5.02 09/08/05 MW3A | 114-G3B004 36.1 09/08/05 MW3B | 114-G3D001 50.1 09/14/05 MW3D | 114-G3S001 5.63 09/14/05 MW3S | 114-G3D001 50.1 09/14/05 MW3D | 114-G4B005 32.85 09/12/05 MW4B | 114-G4C-001 64 12/15/05 MW4C | 114-G3S001 5.63 09/14/05 MW3S | 114-G4A005 11.58 09/12/05 MW4A | 114-G4B005 32.85 09/12/05 MW4B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.65 | 0.2 U | 0.20 U | 0.2 U | 0.4 U | 0.2 U | 0.2 U | NA | NA | 0.2 U | NA | 0.43 | 0.2 U | NA |
| Nickel | 7440-02-0 | ug/L | 2,000 U | 43.8 | 2,000 U | 40 U | 40 U | 40 U | 40 U | NA | NA | 4,000 U | NA | 40 U | 40 U | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 540,000 | 36,800 | 250,000 U | 23,600 | 40,300 | 5,100 | 17,700 | NA | NA | 500,000 U | NA | 29,700 | 25,300 | NA |
| Selenium | 7782-49-2 | ug/L | 250 U | 5 U | 250 U | 5 U | 5 U | 5 U | 5 U | NA | NA | 500 U | NA | 5 U | 5 U | NA |
| Silver | 7440-22-4 | ug/L | 500 U | 10 U | 500 U | 10 U | 10 U | 10 U | 10 U | NA | NA | 1,000 U | NA | 10 U | 10 U | NA |
| Sodium | 7440-23-5 | ug/L | 3,690,000 | 263,000 | 572,000 | 370,000 | 808,000 | 52,900 | 53,900 | NA | NA | 906,000 | NA | 368,000 | 321,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 500 U | 10 U | 500 U | 10 U | 10 U | 10 U | 10 U | NA | NA | 1,000 U | NA | 10 U | 10 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | 597,000 | 124 | 444,000 | 12,700 | 1,520 | 68.2 | 50 U | NA | NA | 1,140,000 | NA | 124 | 481 | NA |
| Vanadium | 7440-62-2 | ug/L | 2,500 U | 50 U | 2,500 U | 50 U | 66.5 | 50 U | 50 U | NA | NA | 5,000 U | NA | 50 U | 50 U | NA |
| Zinc | 7440-66-6 | ug/L | 1,000 U | 22.7 | 1,000 U | 20 U | 167 | 290 | 20 U | NA | NA | 2,000 U | NA | 31.7 | 78.8 | NA |
| **Metals-Filtered** | | | | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-G2A005<br>5.01<br>09/09/05<br>MW2A | 114-G2B003<br>19.6<br>09/09/05<br>MW2B | 114-G2D001<br>38.6<br>09/13/05<br>MW2D | 114-G2S001<br>6.72<br>09/12/05<br>MW2S | 114-G3A003<br>5.02<br>09/08/05<br>MW3A | 114-G3B004<br>36.1<br>09/08/05<br>MW3B | 114-G3D001<br>50.1<br>09/14/05<br>MW3D | 114-G3S001<br>5.63<br>09/14/05<br>MW3S | 114-G3D001<br>50.1<br>09/14/05<br>MW3D | 114-G4B005<br>32.85<br>09/12/05<br>MW4B | 114-G4C-001<br>64<br>12/15/05<br>MW4C | 114-G3S001<br>5.63<br>09/14/05<br>MW3S | 114-G4A005<br>11.58<br>09/12/05<br>MW4A | 114-G4B005<br>32.85<br>09/12/05<br>MW4B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | 4,970,000 | 5,000 U | 5,000 U | 5,000 U | 5,000 U | 5,000 U | 5,000 U | NA | NA | 5,000 U | NA | 5,000 U | 7,500 | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | 967,000 | 40,000 U | 40,000 U | 67,900 | 83,800 | 20,000 U | 62,900 | NA | NA | 40,000 U | NA | 20,000 U | 40,000 U | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | 315,000 | 8,500 | 6,900 | 8,200 | 61,100 | 1,600 | 2,500 | NA | NA | 8,400 | NA | 11,800 | 11,000 | NA |
| Dissolved Oxygen | ARC-DO | ug/L | 1,300 | 3,700 | 1,000 U | 1,000 U | 1,900 | 1,700 | 1,000 U | NA | NA | 1,000 U | NA | 1,000 U | 1,000 U | NA |
| Ferrous iron | 15438-31-0 | ug/L | 100 U | 100 U | 100 U | 100 U | 6,200 | 110 | 100 U | NA | NA | 170 | NA | 100 U | 840 | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | 1,000 U | 2,100 | 1,000 U | 550 | 100 U | 150 | 1,000 U | NA | NA | 1,000 U | NA | 1,000 U | 1,000 U | NA |
| Nitrate-N | 14797-55-8 | ug/L | 1,000 U | 2,100 | 1,000 U | 200 U | 110 U | 150 | 1,000 U | NA | NA | 1,000 U | NA | 1,000 U | 1,000 U | NA |
| Nitrite | 14797-65-0 | ug/L | 47 | 10 U | 150 | 430 | 10 U | 10 U | 10 U | NA | NA | 130 | NA | 10 U | 10 U | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 134 | 287 | 332 | 82.2 | 321 | 299 | 290 | NA | NA | 358 | NA | 239 | 220 | NA |
| pH | ARC-pH | SU | 11.6 | 6.73 | 6.81 | 11.54 | 8.93 | 6.72 | 7.56 | NA | NA | 6.43 | NA | 9.54 | 7.62 | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-G2A005 | 114-G2B003 | 114-G2D001 | 114-G2S001 | 114-G3A003 | 114-G3B004 | 114-G3D001 | 114-G3S001 | 114-G3D001 | 114-G4B005 | 114-G4C-001 | 114-G3S001 | 114-G4A005 | 114-G4B005 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 5.01 | 19.6 | 38.6 | 6.72 | 5.02 | 36.1 | 50.1 | 5.63 | 50.1 | 32.85 | 64 | 5.63 | 11.58 | 32.85 |
| Date Collected: | | | 09/09/05 | 09/09/05 | 09/13/05 | 09/12/05 | 09/08/05 | 09/08/05 | 09/14/05 | 09/14/05 | 09/14/05 | 09/12/05 | 12/15/05 | 09/14/05 | 09/12/05 | 09/12/05 |
| Location ID: | CAS Number | Units | MW2A | MW2B | MW2D | MW2S | MW3A | MW3B | MW3D | MW3S | MW3D | MW4B | MW4C | MW3S | MW4A | MW4B |
| Sulfate | 14808-79-8 | ug/L | 400,000 U | 80,000 U | 40,000 U | 27,400 | 200,000 U | 49,100 | 29,700 | NA | NA | 695,000 | NA | 60,600 | 20,000 U | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 335,000 | 11,900 | 7,300 | 10,500 | 5,000 U | 1,900 | 3,100 | NA | NA | 9,200 | NA | 14,600 | 3,000 U | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-G4C-001 | 114-G4D001 | 114-G4F001 | 114-G4S001 | 114-G5A003 | 114-G5B005 | 114-G5D001 | 114-G5S001 | 114-G6A003 | 114-G6B003 | 114-G6C-001 | 114-G6D001 | 114-G6S001 | 114-G7A-003 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 64 | 45.96 | 75.13 | 9.62 | 12.6 | 12 | 64.61 | 5.65 | 7.96 | 31.2 | 60 | 42.2 | 9.97 | 12 |
| Date Collected: | | | 12/15/05 | 09/14/05 | 09/14/05 | 09/13/05 | 09/09/05 | 09/09/05 | 09/13/05 | 09/13/05 | 09/09/05 | 09/09/05 | 12/22/05 | 09/13/05 | 09/13/05 | 09/09/05 |
| Location ID: | CAS Number | Units | MW4C | MW4D | MW4F | MW4S | MW5A | MW5B | MW5D | MW5S | MW6A | MW6B | MW6C | MW6D | MW6S | MW7A |
| **Volatile Organics** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | 50 U | 1 U | 1 U | 20.4 J | 10 U | 1 U | 5 U | 25.6 | 50 U | 1.0 U | 6.5 [6.1] | 1 U | 5 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | 50 U | 1 U | 1 U | 50 U | 10 U | 1 U | 5 U | 10 U | 50 U | 1.0 U | 5 U [5 U] | 1 U | 5 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | 50 U | 1 U | 1 U | 50 U | 10 U | 1 U | 5 U | 10 U | 50 U | 1.0 U | 5 U [5 U] | 1 U | 5 U |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | 50 U | 1 U | 1 U | 50 U | 10 U | 1 U | 5 U | 4.7 J | 50 U | 1.0 U | 26.6 [25.4] | 0.84 J | 5 U |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | 50 U | 1 U | 1 U | 50 U | 10 U | 1 U | 5 U | 10 U | 50 U | 1.0 U | 24.6 [25.4] | 1 U | 5 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | 50 U | 75.8 | 1 U | 50 U | 10 U | 1 U | 5 U | 10 U | 50 U | 1.0 U | 5 U [5 U] | 1 U | 5 U |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | 50 U | 1 U | 1 U | 50 U | 10 U | 1 U | 5 U | 10 U | 50 U | 1.0 U | 5 U [5 U] | 1 U | 5 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | 500 U | 10 U | 10 UJ | R | R | 10 UJ | 50 UJ | R | R | 10 U | 50 UJ [50 UJ] | 10 UJ | R |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | 250 U | 5 U | 5 U | 250 U | 50 U | 5 U | 25 U | 50 U | 250 U | 5.0 U | 25 U [25 U] | 5 U | 25 U |
| Acetone | 67-64-1 | ug/L | NA | 500 U | 10 U | 10 U | R | R | 10 U | 50 U | R | R | 6.3 J | 50 U [50 U] | 10 U | R |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | 6,880 | 3 | 0.34 J | 50 U | 10 U | 2.2 | 2,100 | 10 U | 50 U | 1.0 U | 1.9 J [1.6 J] | 8 | 2.6 J |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | 50 U | 1 U | 1 U | 50 U | 10 U | 1 U | 5 U | 10 U | 50 U | 1.0 U | 5 U [5 U] | 1 U | 5 U |
| Bromoform | 75-25-2 | ug/L | NA | 200 U | 4 U | 4 U | 200 U | 40 U | 4 U | 20 U | 40 U | 200 U | 4.0 U | 20 U [20 U] | 4 U | 20 U |
| Bromomethane | 74-83-9 | ug/L | NA | 100 U | 2 U | 2 U | 100 U | 20 U | 2 U | 10 U | 20 U | 100 U | 2.0 U | 10 U [10 U] | 2 U | 10 U |
| Carbon Disulfide | 75-15-0 | ug/L | NA | 100 U | 2 U | 2 U | 100 U | 20 U | 2 U | 10 U | 20 U | 100 U | 2.0 U | 10 U [10 U] | 2 U | 10 U |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | 50 U | 1 U | 1 U | 50 U | 10 U | 1 U | 5 U | 10 U | 50 U | 1.0 U | 5 U [5 U] | 1 U | 5 U |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | 50 U | 1 U | 1 U | 50 U | 10 U | 1 U | 5 U | 10 U | 50 U | 1.0 U | 5 U [5 U] | 32 | 5 U |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | 50 U | 1 U | 1 U | 50 U | 10 U | 1 U | 5 U | 10 U | 50 U | 1.0 U | 5 U [5 U] | 1 U | 5 U |
| Chloroethane | 75-00-3 | ug/L | NA | 50 U | 1 U | 1 U | 50 U | 10 U | 1 U | 5 U | 10 U | 50 U | 1.0 U | 5 U [5 U] | 1 U | 5 U |
| Chloroform | 67-66-3 | ug/L | 4.0 | 50 U | 1 U | 1 U | 50 U | 10 U | 1 U | 5 U | 10 U | 50 U | 0.18 J | 1.4 J [5 U] | 1 U | 5 U |
| Chloromethane | 74-87-3 | ug/L | 1.0 U | 50 U | 1 U | 1 U | 50 U | 10 U | 1 U | 5 U | 10 U | 50 U | 1.0 U | 5 U [5 U] | 1 U | 5 U |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | 1.0 U | 50 U | 17.5 | 1 U | 50 U | 10 U | 1 U | 5 U | 10 U | 50 U | 0.32 J | 2,110 [1,950] | 1.2 | 5 U |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | 1.0 U | 50 U | 1 U | 1 U | 50 U | 10 U | 1 U | 5 U | 10 U | 50 U | 1.0 U | 5 U [5 U] | 1 U | 5 U |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | 2.0 U | 100 U | 2 U | 2 U | 100 U | 20 U | 2 U | 10 U | 20 U | 100 U | 2.0 U | 10 U [10 U] | 2 U | 10 U |
| Ethylbenzene | 100-41-4 | ug/L | 1.0 U | 5,880 | 2.3 | 0.56 J | 50 U | 10 U | 1 U | 1,320 | 10 U | 50 U | 1.0 U | 5 U [5 U] | 1 U | 2.8 J |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | 5.0 U | 250 U | 5 U | 5 U | 250 U | 50 U | 5 U | 25 U | 50 U | 250 U | 5.0 U | 25 U [25 U] | 5 U | 25 U |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | 5.0 U | 250 U | 5 U | 5 U | 250 U | 50 U | 5 U | 25 U | 50 U | 250 U | 5.0 U | 25 U [25 U] | 5 U | 25 U |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | 1.0 U | 50 U | 1 U | 1 U | 50 U | 10 U | 1 U | 5 U | 31.4 | 50 U | 1.0 U | 1,150 [1,210] | 1 U | 5 U |
| Toluene | 108-88-3 | ug/L | 1.0 U | 92.8 | 0.69 J | 1 U | 12.2 J | 10 U | 1 U | 530 | 10 U | 50 U | 1.0 U | 5 U [5 U] | 1 U | 4 J |
| Total VOCs | ARC-TVOC | ug/L | 152 | 18,900 | 102 | 0.90 | 48.9 | 18 U | 2.2 | 6,630 | 61.7 | 92 U | 6.8 | 3,860 [3,740] | 45 | 20.2 |
| Total Xylenes | 1330-20-7 | ug/L | 1.0 U | 6,020 | 2.8 | 1 U | 16.3 J | 10 U | 1 U | 2,680 | 10 U | 50 U | 1.0 U | 5 U [5 U] | 1 U | 10.8 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-G4C-001<br>64<br>12/15/05<br>MW4C | 114-G4D001<br>45.96<br>09/14/05<br>MW4D | 114-G4F001<br>75.13<br>09/14/05<br>MW4F | 114-G4S001<br>9.62<br>09/13/05<br>MW4S | 114-G5A003<br>12.6<br>09/09/05<br>MW5A | 114-G5B005<br>12<br>09/09/05<br>MW5B | 114-G5D001<br>64.61<br>09/13/05<br>MW5D | 114-G5S001<br>5.65<br>09/13/05<br>MW5S | 114-G6A003<br>7.96<br>09/09/05<br>MW6A | 114-G6B003<br>31.2<br>09/09/05<br>MW6B | 114-G6C-001<br>60<br>12/22/05<br>MW6C | 114-G6D001<br>42.2<br>09/13/05<br>MW6D | 114-G6S001<br>9.97<br>09/13/05<br>MW6S | 114-G7A-003<br>12<br>09/09/05<br>MW7A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | 1.0 U | 50 U | 1 U | 1 U | 50 U | 10 U | 1 U | 5 U | 10 U | 50 U | 1.0 U | 15.7 [12.9] | 1 U | 5 U |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | 1.0 U | 50 U | 1 U | 1 U | 50 U | 10 U | 1 U | 5 U | 10 U | 50 U | 1.0 U | 5 U [5 U] | 1 U | 5 U |
| Trichloroethene | 79-01-6 | ug/L | 1.0 U | 50 U | 1 U | 1 U | 50 U | 10 U | 1 U | 5 U | 10 U | 50 U | 1.0 U | 481 [468 J] | 1 U | 5 U |
| Vinyl chloride | 75-01-4 | ug/L | 1.0 U | 50 U | 1 U | 1 U | 50 U | 10 U | 1 U | 5 U | 10 U | 50 U | 1.0 U | 42.6 [40.6] | 3.4 | 5 U |
| **Semivolatile Organics** | | | | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | 2.0 U | 2.1 U | 2.1 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.1 U | 2.1 U | 2 U | 2.2 U | 9 [7.3] | 143 | 2.1 U |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | 2.0 U | 2.1 U | 2.1 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.1 U | 2.1 U | 2 U | 2.2 U | 1.5 J [1.4 J] | 19.5 | 2.1 U |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | 2.0 U | 2.1 U | 2.1 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.1 U | 2.1 U | 2 U | 2.2 U | 2 U [2 U] | 42.7 | 2.1 U |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | 2.0 U | 2.1 U | 2.1 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.1 U | 2.1 U | 2 U | 2.2 U | 2 U [2 U] | 22.7 | 2.1 U |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | 2.0 U | 2.1 U | 2.1 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.1 U | 2.1 U | 2 U | 2.2 U | 2 U [2 U] | 2 U | 2.1 U |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | 5.0 U | 5.2 U | 5.2 U | 5.6 U | 5.6 U | 5.4 U | 5.6 U | 5.3 U | R | 5 U | 5.6 U | 5.1 U [5 U] | 5.1 U | 5.3 U |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | 5.0 U | 5.2 U | 5.2 U | 5.6 U | 5.6 U | 5.4 U | 5.6 U | 5.3 U | R | 5 U | 5.6 U | 5.1 U [5 U] | 5.1 U | 5.3 U |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | 5.0 U | 5.2 U | 5.2 U | 5.6 U | 5.6 U | 5.4 U | 5.6 U | 5.3 U | R | 5 U | 5.6 U | 5.1 U [5 U] | 5.1 U | 5.3 U |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | 5.0 U | 5.2 U | 5.2 U | 5.6 U | 5.6 U | 5.4 U | 5.6 U | 23.7 | R | 5 U | 5.6 U | 5.1 U [5 U] | 5.1 U | 5.3 U |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | 20 U | 21 U | 21 U | 22 UJ | 22 UJ | 22 UJ | 22 UJ | 21 UJ | R | 20 UJ | 22 U | 20 UJ [20 UJ] | 20 UJ | 21 UJ |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | 2.0 U | 2.1 U | 2.1 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.1 U | 2.1 U | 2 U | 2.2 U | 2 U [2 U] | 2 U | 2.1 U |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | 2.0 U | 2.1 U | 2.1 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.1 U | 2.1 U | 2 U | 2.2 U | 2 U [2 U] | 2 U | 2.1 U |
| 2-Chloronaphthalene | 91-58-7 | ug/L | 5.0 U | 5.2 U | 5.2 U | 5.6 U | 5.6 U | 5.4 U | 5.6 U | 5.3 U | 5.2 U | 5 U | 5.6 U | 5.1 U [5 U] | 5.1 U | 5.3 U |
| 2-Chlorophenol | 95-57-8 | ug/L | 5.0 U | 5.2 U | 5.2 U | 5.6 U | 5.6 U | 5.4 U | 5.6 U | 5.3 U | R | 5 U | 5.6 U | 5.1 U [5 U] | 5.1 U | 5.3 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | 20 U | 21 U | 21 U | 22 U | 22 UJ | 22 UJ | 22 U | 21 U | R | 20 UJ | 22 U | 20 U [20 U] | 20 U | 21 UJ |
| 2-Methylnaphthalene | 91-57-6 | ug/L | 2.0 U | 3.5 | 477 | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 315 | 2.1 U | 2 U | 2.2 U | 2 U [2 U] | 2 U | 36.6 |
| 2-Methylphenol | 95-48-7 | ug/L | 5.0 U | 5.2 U | 5.2 U | 5.6 U | 5.6 U | 5.4 U | 5.6 U | 6.3 | R | 5 U | 5.6 U | 5.1 U [5 U] | 5.1 U | 5.3 U |
| 2-Nitroaniline | 88-74-4 | ug/L | 5.0 U | 5.2 U | 5.2 U | 5.6 U | 5.6 UJ | 5.4 UJ | 5.6 U | 5.3 U | 5.2 UJ | 5 UJ | 5.6 U | 5.1 U [5 U] | 5.1 U | 5.3 U |
| 2-Nitrophenol | 88-75-5 | ug/L | 5.0 U | 5.2 U | 5.2 U | 5.6 U | 5.6 U | 5.4 U | 5.6 U | 5.3 U | R | 5 U | 5.6 U | 5.1 U [5 U] | 5.1 U | 5.3 U |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | 5.0 U | 5.2 U | 5.2 U | 5.6 U | 5.6 U | 5.4 U | 5.6 U | 5.3 U | 5.2 U | 5 U | 5.6 U | 5.1 U [5 U] | 5.1 U | 5.3 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | 5.0 U | 5.2 U | 5.2 U | 5.6 U | 5.6 U | 5.4 U | 5.6 U | 5.3 U | 5.2 U | 5 U | 5.6 U | 5.1 U [5 U] | 5.1 U | 5.3 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | 2.0 U | 2.1 U | 2.1 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.1 U | 2.1 U | 2 U | 2.2 U | 2 U [2 U] | 2 U | 2.1 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | 5.0 U | 5.2 U | 5.2 U | 5.6 U | 5.6 U | 5.4 U | 5.6 U | 5.3 U | R | 5 U | 5.6 U | 5.1 U [5 U] | 5.1 U | 5.3 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | 2.0 U | 2.1 U | 2.1 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.1 U | 2.1 U | 2 U | 2.2 U | 2 U [2 U] | 2 U | 2.1 U |
| 4-Methylphenol | 106-44-5 | ug/L | 5.0 U | 5.2 U | 5.2 U | 5.6 U | 43.2 | 5.4 U | 5.6 U | 13.3 | R | 1.1 J | 5.6 U | 5.1 U [5 U] | 5.1 U | 41 |
| 4-Nitroaniline | 100-01-6 | ug/L | 5.0 U | 5.2 U | 5.2 U | 5.6 U | 5.6 U | 5.4 U | 5.6 U | 5.3 U | 5.2 U | 5 U | 5.6 U | 5.1 U [5 U] | 5.1 U | 5.3 UJ |
| 4-Nitrophenol | 100-02-7 | ug/L | 20 U | 21 U | 21 U | 22 UJ | 22 UJ | 22 UJ | 22 UJ | 21 UJ | R | 20 UJ | 22 U | 20 UJ [20 UJ] | 20 UJ | 21 UJ |
| Acenaphthene | 83-32-9 | ug/L | 2.0 U | 0.52 J | 162 | 9.9 | 2.2 U | 2.2 U | 0.86 J | 99.3 | 2.1 U | 2 U | 2.2 U | 2 U [2 U] | 2 U | 6.9 |
| Acenaphthylene | 208-96-8 | ug/L | 2.0 U | 0.93 J | 5.7 | 0.95 J | 2.2 U | 2.2 U | 2.2 U | 13 | 2.1 U | 2 U | 2.2 U | 2 U [2 U] | 2 U | 2.3 |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | 2.0 U | 0.90 J | 4.7 | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 9.8 | 2.1 U | 2 U | 2.2 U | 2 U [2 U] | 2 U | 3.3 |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | 2.0 U | 2.1 U | 2.1 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.4 | 2.1 U | 2 U | 2.2 U | 2 U [2 U] | 2 U | 1.1 |
| Benzo(a)pyrene | 50-32-8 | ug/L | 2.0 U | 2.1 U | 2.1 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 1.3 J | 2.1 U | 2 U | 2.2 U | 2 U [2 U] | 2 U | 2.1 U |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | 2.0 U | 2.1 U | 2.1 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 0.92 J | 2.1 U | 2 U | 2.2 U | 2 U [2 U] | 2 U | 2.1 U |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | 2.0 U | 2.1 U | 2.1 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.1 U | 2.1 U | 2 U | 2.2 U | 2 U [2 U] | 2 U | 2.1 U |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | 2.0 U | 2.1 U | 2.1 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 0.88 J | 2.1 U | 2 U | 2.2 U | 2 U [2 U] | 2 U | 2.1 U |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | 2.0 U | 2.1 U | 2.1 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.1 U | 2.1 U | 2 U | 2.2 U | 2 U [2 U] | 2 U | 2.1 U |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | 2.0 U | 2.1 U | 2.1 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.1 U | 2.1 U | 2 U | 2.2 U | 2 U [2 U] | 2 U | 2.1 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | 2.0 U | 2.1 U | 2.1 U | 2.2 U | 2.2 U | 1.8 J | 2.2 U | 2.1 U | 2.1 U | 1.1 J | 2.2 U | 2 U [2 U] | 2 U | 2.1 U |
| Butyl benzyl phthalate | 85-68-7 | ug/L | 2.0 U | 2.1 U | 2.1 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.1 U | 2.1 U | 2 U | 2.2 U | 2 U [2 U] | 2 U | 2.1 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-G4C-001<br>64<br>12/15/05<br>MW4C | 114-G4D001<br>45.96<br>09/14/05<br>MW4D | 114-G4F001<br>75.13<br>09/14/05<br>MW4F | 114-G4S001<br>9.62<br>09/13/05<br>MW4S | 114-G5A003<br>12.6<br>09/09/05<br>MW5A | 114-G5B005<br>12<br>09/09/05<br>MW5B | 114-G5D001<br>64.61<br>09/13/05<br>MW5D | 114-G5S001<br>5.65<br>09/13/05<br>MW5S | 114-G6A003<br>7.96<br>09/09/05<br>MW6A | 114-G6B003<br>31.2<br>09/09/05<br>MW6B | 114-G6C-001<br>60<br>12/22/05<br>MW6C | 114-G6D001<br>42.2<br>09/13/05<br>MW6D | 114-G6S001<br>9.97<br>09/13/05<br>MW6S | 114-G7A-003<br>12<br>09/09/05<br>MW7A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | 2.0 U | 2.1 U | 6.9 | 2.2 U | 0.75 J | 2.2 U | 2.2 U | 4.9 | 2.1 U | 2 U | 2.2 U | 2 U [2 U] | 2 U | 1 |
| Chrysene | 218-01-9 | ug/L | 2.0 U | 2.1 U | 2.1 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.5 | 2.1 U | 2 U | 2.2 U | 2 U [2 U] | 2 U | 1.3 J |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | 2.0 U | 2.1 U | 2.1 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.1 U | 2.1 U | 2 U | 2.2 U | 2 U [2 U] | 2 U | 2.1 U |
| Dibenzofuran | 132-64-9 | ug/L | 5.0 U | 5.2 U | 3.1 J | 0.73 J | 5.6 U | 5.4 U | 5.6 U | 4 J | 5.2 U | 5 U | 5.6 U | 5.1 U [5 U] | 5.1 U | 1.5 J |
| Diethyl phthalate | 84-66-2 | ug/L | 2.0 U | 2.1 U | 2.1 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.1 U | 2.1 U | 2 U | 2.2 U | 2 U [2 U] | 2 U | 2.1 U |
| Dimethyl phthalate | 131-11-3 | ug/L | 2.0 U | 2.1 U | 2.1 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.1 U | 2.1 U | 2 U | 2.2 U | 2 U [2 U] | 2 U | 2.1 U |
| Di-n-butyl phthalate | 84-74-2 | ug/L | 2.4 | 2.1 U | 2.1 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.1 U | 2.1 U | 2 U | 2.2 U | 2 U [2 U] | 2 U | 2.1 U |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | 2.0 U | 2.1 U | 2.1 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.1 U | 2.1 U | 2 U | 2.2 U | 2 U [2 U] | 2 U | 2.1 U |
| Fluoranthene | 206-44-0 | ug/L | 2.0 U | 0.85 J | 2.1 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 6 | 2.1 U | 2 U | 0.64 J | 2 U [2 U] | 2 U | 3.8 |
| Fluorene | 86-73-7 | ug/L | 2.0 U | 0.99 J | 39.0 | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 33.4 | 2.1 U | 2 U | 2.2 U | 2 U [2 U] | 2 U | 5.8 |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | 2.0 U | 2.1 U | 2.1 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.1 U | 2.1 U | 2 U | 2.2 U | 2 U [2 U] | 2 U | 2.1 U |
| Hexachlorobenzene | 118-74-1 | ug/L | 2.0 U | 2.1 U | 2.1 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.1 U | 2.1 U | 2 U | 2.2 U | 2 U [2 U] | 2 U | 2.1 U |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | 20 U | 21 U | 21 U | 22 U | 22 UJ | 22 UJ | 22 U | 21 U | 21 UJ | 20 UJ | 22 U | 20 U [20 U] | 20 U | 21 UJ |
| Hexachloroethane | 67-72-1 | ug/L | 5.0 U | 5.2 U | 5.2 U | 5.6 U | 5.6 U | 5.4 U | 5.6 U | 5.3 U | 5.2 U | 5 U | 5.6 U | 5.1 U [5 U] | 5.1 U | 5.3 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | 2.0 U | 2.1 U | 2.1 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.1 U | 2.1 U | 2 U | 2.2 U | 2 U [2 U] | 2 U | 2.1 U |
| Isophorone | 78-59-1 | ug/L | 2.0 U | 2.1 U | 2.1 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.1 U | 2.1 U | 2 U | 2.2 U | 2 U [2 U] | 2 U | 2.1 U |
| Naphthalene | 91-20-3 | ug/L | 0.75 J | 8.4 JF | 8,180 | 1.8 B | 3.4 J | 2.2 U | 1.9 B | 2,740 | 2.1 U | 2 U | 0.72 J | 2 U [2 U] | 2 U | 67.9 |
| Nitrobenzene | 98-95-3 | ug/L | 2.0 U | 2.1 U | 2.1 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.1 U | 2.1 U | 2 U | 2.2 U | 2 U [2 U] | 2 U | 2.1 U |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | 2.0 U | 2.1 U | 2.1 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.1 U | 2.1 U | 2 U | 2.2 U | 2 U [2 U] | 2 U | 2.1 U |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | 5.0 U | 5.2 U | 5.2 U | 5.6 U | 5.6 U | 5.4 U | 5.6 U | 5.3 U | 5.2 U | 5 U | 5.6 U | 5.1 U [5 U] | 5.1 U | 5.3 U |
| p-Chloroaniline | 106-47-8 | ug/L | 5.0 U | 5.2 U | 5.2 U | 5.6 U | 5.6 U | 5.4 U | 5.6 U | 5.3 U | 5.2 U | 5 U | 5.6 U | 5.1 U [5 U] | 5.1 U | 5.3 U |
| Pentachlorophenol | 87-86-5 | ug/L | 20 U | 21 U | 21 U | 22 U | 22 U | 22 U | 22 U | 21 U | R | 20 U | 22 U | 20 U [20 U] | 20 U | 21 U |
| Phenanthrene | 85-01-8 | ug/L | 2.0 U | 3.9 J | 26.1 | 2.2 U | 0.68 J | 2.2 U | 0.74 J | 42.5 | 0.55 J | 2 U | 1.4 J | 2 U [2 U] | 2 U | 20.3 |
| Phenol | 108-95-2 | ug/L | 5.0 U | 5.2 U | 5.2 U | 5.6 U | 108 | 5.4 U | 5.6 U | 5.3 U | 2.8 J | 4.2 J | 5.6 U | 5.1 U [5 U] | 5.1 U | 39.7 |
| Pyrene | 129-00-0 | ug/L | 2.0 U | 1.2 J | 2.1 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 9.3 | 2.1 U | 2 U | 0.46 J | 2 U [2 U] | 0.71 J | 4.9 |
| Total SVOCs | ARC-TSVOC | ug/L | 3.2 | 21 | 8,900 | 13 | 156 | 1.8 | 3.5 | 3,330 | 3.4 | 6.4 | 3.2 | 11 [8.7] | 229 | 237 |
| **Metals** | | | | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 200 U | 530 | 200 U | 200 U | 10,000 U | 200 U | 200 U | 596 | 2,550 | 20,000 U | 4,090 | 200 U [200 U] | 200 U | 7,530 |
| Antimony | 7440-36-0 | ug/L | 5.0 U | 5 U | 5 U | 8.4 | 164 | 244 | 5.0 U | 5.1 | 192 | 500 U | 79.5 | 5.0 U [5 U] | 5 U | 13.3 |
| Arsenic | 7440-38-2 | ug/L | 5.0 U | 13.2 | 19.1 | 5.0 U | 250 U | 100 U | 14.0 | 51.1 | 50 U | 500 U | 30.1 | 50 U [5 U] | 43.7 | 9.2 |
| Barium | 7440-39-3 | ug/L | 200 U | 200 U | 200 U | 200 U | 10,000 U | 200 U | 200 U | 200 U | 200 U | 20,000 U | 200 U | 200 U [200 U] | 200 U | 200 U |
| Beryllium | 7440-41-7 | ug/L | 1.0 U | 5 U | 5 U | 5.0 U | 250 U | 100 U | 5.0 U | 5.0 U | 50 U | 500 U | 1.0 U | 5.0 U [5 U] | 5 U | 5.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 4.0 U | 4 U | 4 U | 4.0 U | 200 U | 4.0 U | 4.0 U | 4.0 U | 4.0 U | 400 U | 4.0 U | 4.0 U [4 U] | 4 U | 4.0 U |
| Calcium | 7440-70-2 | ug/L | 73,300 | 67,100 | 114,000 | 39,600 | 250,000 U | 137,000 | 78,300 | 7,760 | 109,000 | 500,000 U | 137,000 | 68,100 [68,300] | 83,300 | 83,100 |
| Chromium | 7440-47-3 | ug/L | 526 | 10 U | 10 U | 28.3 | 605,000 | 494,000 | 29.4 | 214 | 402,000 | 3,810,000 | 60,600 | 10 U [10 U] | 13.2 | 55,100 |
| Chromium VI | 18540-29-9 | ug/L | 570 | 50 U | 50 U | 50 U | 1,260,000 | 512,000 | 50 U | 50 U | 534,000 | 4,440,000 | 65,600 J | 50 U [50 U] | 50 U | 52,900 |
| Cobalt | 7440-48-4 | ug/L | 50 U | 50 U | 50 U | 50 U | 2,500 U | 50 U | 50 U | 50 U | 50 U | 5,000 U | 86.7 | 50 U [50 U] | 50 U | 50 U |
| Copper | 7440-50-8 | ug/L | 25 U | 25 U | 25 U | 25 U | 1,300 U | 25 U | 34.5 | 48.2 | 58.4 | 2,500 U | 153 | 25 U [25 U] | 25 U | 25 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 331 | 1,770 | 381 | 642 | 5,000 U | 2,000 U | 1,190 | 1,010 | 1,000 U | 10,000 U | 3,700 J | 299 [341] | 12,600 | 1,200 |
| Lead | 7439-92-1 | ug/L | 3.3 | 3 U | 3 U | 3.9 | 150 U | 81.8 | 3.0 U | 81.7 | 51.0 | 300 U | 11.3 | 3.5 [3 U] | 5.9 | 7.0 |
| Magnesium | 7439-95-4 | ug/L | 12,100 | 18,100 | 20,900 | 32,200 | 250,000 U | 45,000 | 16,500 | 5,000 U | 5,000 U | 500,000 U | 34,000 | 16,800 [16,700] | 15,100 | 5,000 U |
| Manganese | 7439-96-5 | ug/L | 15 U | 2,430 | 165 | 73.0 | 750 U | 240 | 600 | 24.2 | 15 U | 1,500 U | 403 | 195 [197] | 4,990 | 21.9 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-G4C-001<br>64<br>12/15/05<br>MW4C | 114-G4D001<br>45.96<br>09/14/05<br>MW4D | 114-G4F001<br>75.13<br>09/14/05<br>MW4F | 114-G4S001<br>9.62<br>09/13/05<br>MW4S | 114-G5A003<br>12.6<br>09/09/05<br>MW5A | 114-G5B005<br>12<br>09/09/05<br>MW5B | 114-G5D001<br>64.61<br>09/13/05<br>MW5D | 114-G5S001<br>5.65<br>09/13/05<br>MW5S | 114-G6A003<br>7.96<br>09/09/05<br>MW6A | 114-G6B003<br>31.2<br>09/09/05<br>MW6B | 114-G6C-001<br>60<br>12/22/05<br>MW6C | 114-G6D001<br>42.2<br>09/13/05<br>MW6D | 114-G6S001<br>9.97<br>09/13/05<br>MW6S | 114-G7A-003<br>12<br>09/09/05<br>MW7A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | 0.2 U | 0.2 U | 0.20 U | 0.4 U | 0.20 U | 0.20 U | 0.25 | 0.40 U | 0.40 U | 0.20 U | 0.20 U [0.2 U] | 0.2 U | 0.20 U |
| Nickel | 7440-02-0 | ug/L | 40 U | 40 U | 40 U | 40 U | 2,000 U | 40 U | 40 U | 40 U | 520 | 4,000 U | 85.1 | 40 U [40 U] | 40 U | 147 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 34,200 | 5,460 | 6,390 | 5,000 U | 250,000 U | 26,200 | 16,000 | 10,700 | 181,000 | 500,000 U | 12,200 | 17,600 [17,100] | 8,660 | 36,000 |
| Selenium | 7782-49-2 | ug/L | 5.0 U | 5 U | 5 U | 5.4 | 250 U | 100 U | 5.0 U | 5.0 U | 50 U | 500 U | 5.0 U | 5 U [5 U] | 5 U | 25 U |
| Silver | 7440-22-4 | ug/L | 10 U | 10 U | 10 U | 10 U | 500 U | 10 U | 10 U | 10 U | 10 U | 1,000 U | 10 U | 10 U [10 U] | 10 U | 10 U |
| Sodium | 7440-23-5 | ug/L | 50,800 | 75,600 | 22,300 | 18,400 | 5,170,000 | 676,000 | 179,000 | 203,000 | 841,000 | 5,140,000 | 155,000 | 21,300 [20,900] | 30,300 | 543,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 10 U | 10 U | 10 U | 10 U | 500 U | 200 U | 10 U | 10 U | 100 U | 1,000 U | 10 U | 10 U [10 U] | 10 U | 10 U |
| Total CCPW Metals | CCPW-M | ug/L | 526 | 50 U | 50 U | 36.7 | 605,000 | 494,000 | 29.4 | 697 | 403,000 | 3,810,000 | 60,800 | 50 U [50 U] | 13.2 | 55,400 |
| Vanadium | 7440-62-2 | ug/L | 50 U | 50 U | 50 U | 50 U | 2,500 U | 1,000 U | 50 U | 478 | 500 U | 5,000 U | 50 U | 50 U [50 U] | 50 U | 124 |
| Zinc | 7440-66-6 | ug/L | 43.1 | 20 U | 20 U | 20 U | 1,000 U | 400 U | 20 U | 76.1 | 200 U | 2,000 U | 46.0 | 20 U [20 U] | 20 U | 20 U |
| **Metals-Filtered** | | | | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 590 | NA | NA | NA | NA | NA | NA | NA | NA | NA | 54,300 J | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-G4C-001<br>64<br>12/15/05<br>MW4C | 114-G4D001<br>45.96<br>09/14/05<br>MW4D | 114-G4F001<br>75.13<br>09/14/05<br>MW4F | 114-G4S001<br>9.62<br>09/13/05<br>MW4S | 114-G5A003<br>12.6<br>09/09/05<br>MW5A | 114-G5B005<br>12<br>09/09/05<br>MW5B | 114-G5D001<br>64.61<br>09/13/05<br>MW5D | 114-G5S001<br>5.65<br>09/13/05<br>MW5S | 114-G6A003<br>7.96<br>09/09/05<br>MW6A | 114-G6B003<br>31.2<br>09/09/05<br>MW6B | 114-G6C-001<br>60<br>12/22/05<br>MW6C | 114-G6D001<br>42.2<br>09/13/05<br>MW6D | 114-G6S001<br>9.97<br>09/13/05<br>MW6S | 114-G7A-003<br>12<br>09/09/05<br>MW7A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | 5,000 U | 391,000 | 133,000 | 5,000 U | 12,600,000 | 5,000 U | 5,000 U | 83,600 | 932,000 | 3,190,000 | 5,000 U | 5,000 U [5,000 U] | 5,000 U | 546,000 |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | 77,800 | 35,600 | 63,700 | 20,000 U | 557,000 | 40,000 U | 40,000 U | 23,200 | 20,000 U | 40,000 U | 102,000 | 54,200 [55,400] | 65,900 | 53,100 |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | 3,500 | 6,700 | 1,000 U | 3,200 | 297,000 | 7,800 | 1,500 | 13,200 | 142,000 | 25,000 U | 14,200 | 1,100 [1,100] | 3,100 | 26,200 |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 1,000 U | 1,700 | 5,400 | 1,200 | 2,600 | 1,600 | 1,000 U | 1,500 | 1,400 | NA | 1,000 U [1,000 U] | 1,000 U | 1,200 |
| Ferrous iron | 15438-31-0 | ug/L | 400 U | 210 | 100 U | 100 U | 100 U | 100 U | 100 U | 230 | 100 U | 1,000 U | 200 U | 100 U [100 U] | 5,700 | 100 U |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | 200 | 1,000 U | 1,000 U | 1,000 U | 1,200 | 1,000 U | 1,000 U | 1,000 U | 33,800 | 1,000 U | 2,000 U | 1,000 U [1,000 U] | 1,000 U | 1,000 U |
| Nitrate-N | 14797-55-8 | ug/L | 110 U | 1,000 U | 1,000 U | 1,000 U | 1,100 U | 1,000 U | 1,000 U | 1,000 U | 6,000 U | 1,000 U | 2,000 U | 1,000 U [1,000 U] | 1,000 U | 1,100 U |
| Nitrite | 14797-65-0 | ug/L | 150 | 10 U | 10 U | 10 U | 1,400 | 110 | 10 U | 10 U | 30,100 | 95 | 120 | 10 U [10 U] | 10 U | 1,100 |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 302 | 370 | 296 | 43.9 | 302 | 298 | 258 | 5.3 | 116 | NA | 234 [247] | 324 | 74.6 |
| pH | ARC-pH | SU | NA | 6.99 | 7.39 | 7.49 | 12.6 | 6.8 | 7.60 | 9.23 | 11.98 | 10 | NA | 7.72 [7.76] | 6.52 | 11.73 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-G4C-001 64 12/15/05 MW4C | 114-G4D001 45.96 09/14/05 MW4D | 114-G4F001 75.13 09/14/05 MW4F | 114-G4S001 9.62 09/13/05 MW4S | 114-G5A003 12.6 09/09/05 MW5A | 114-G5B005 12 09/09/05 MW5B | 114-G5D001 64.61 09/13/05 MW5D | 114-G5S001 5.65 09/13/05 MW5S | 114-G6A003 7.96 09/09/05 MW6A | 114-G6B003 31.2 09/09/05 MW6B | 114-G6C-001 60 12/22/05 MW6C | 114-G6D001 42.2 09/13/05 MW6D | 114-G6S001 9.97 09/13/05 MW6S | 114-G7A-003 12 09/09/05 MW7A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 213,000 | 20,000 U | 20,000 U | 22,700 | 20,000 U | 471,000 | 40,000 U | 20,000 U | 60,000 U | 400,000 U | 202,000 | 84,600 [85,100] | 34,200 | 43,200 |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | 567,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA | 935,000 | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 4,000 | 6,900 | 1,000 U | 3,600 | 347,000 | 8,000 | 1,600 | 3,000 U | 130,000 | 125,000 | 15,400 | 1,300 [1,200] | 3,900 | 37,000 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-G7B-003 27.5 09/09/05 MW7B | 114-G7C-001 47.5 12/15/05 MW7C | 114-G8A-004R 14.73 09/12/05 MW8A | 114-G8B-003 42.71 09/13/05 MW8B | 114-G9A-001 10 11/21/05 MW9A | 114-G9B-001 32 11/28/05 MW9B | 114-G9B-001F 32 11/28/05 MW9B | 114-G9B-001UF 32 11/28/05 MW9B | 114-G9C-001 53 12/15/05 MW9C | 114-G10A-001 9.5 11/22/05 MW10A | 114-G11A-001 12 11/21/05 MW11A | 114-G11B-001 31 12/14/05 MW11B | 114-G12A-001 10 11/22/05 MW12A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | 5 U | 1.0 U | 5 UJ | 25 U | 29.4 | 1.0 U | NA | NA | 1.0 U | 50 U | 1.0 U [1 U] | 1.4 | 50 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | 5 U | 1.0 U | 5 UJ | 25 U | R | 1.0 U | NA | NA | 1.0 U | 50 U | 1.0 U [1 U] | 1.0 U | 50 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | 5 U | 1.0 U | 5 UJ | 25 U | R | 1.0 U | NA | NA | 1.0 U | 50 U | 1.0 U [1 U] | 1.0 U | 50 U |
| 1,1-Dichloroethane | 75-34-3 | ug/L | 5 U | 1.0 U | 5 UJ | 25 U | 0.69 J | 1.0 U | NA | NA | 1.0 U | 50 U | 1.3 [1.3] | 1.0 U | 50 U |
| 1,1-Dichloroethene | 75-35-4 | ug/L | 5 U | 1.0 U | 5 UJ | 25 U | 0.76 J | 1.0 U | NA | NA | 1.0 U | 50 U | 0.91 J [1.1] | 0.72 J | 50 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | 5 U | 1.0 U | 5 UJ | 25 U | 1.0 UJ | 1.0 U | NA | NA | 1.0 U | 50 U | 1.0 U [1 U] | 1.0 U | 50 U |
| 1,2-Dichloropropane | 78-87-5 | ug/L | 5 U | 1.0 U | 5 UJ | 25 U | 1.0 UJ | 1.0 U | NA | NA | 1.0 U | 50 U | 1.0 U [1 U] | 1.0 U | 50 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | R | 10 U | 50 UJ | 250 UJ | 10 UJ | 10 U | NA | NA | 10 U | 500 U | 10 U [10 U] | 10 U | 500 U |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | 25 U | 5.0 U | 25 UJ | 130 U | 5.0 UJ | 5.0 U | NA | NA | 5.0 U | 250 U | 5.0 U [5 U] | 5.0 U | 250 U |
| Acetone | 67-64-1 | ug/L | R | 446 | 132 J | 250 U | 49.8 J | 5.7 J | NA | NA | 10 U | 500 U | 10.0 [8.3 J] | 10 UJ | 500 U |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | 5 U | 1.0 U | 11.5 J | 3,460 | 0.56 J | 1.0 U | NA | NA | 1.0 U | 259 J | 18.6 J [26.5 J] | 0.45 J | 50 U |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | 5 U | 1.0 U | 5 UJ | 25 U | R | 1.0 U | NA | NA | 1.0 U | 50 U | 1.0 U [1 U] | 1.0 U | 50 U |
| Bromoform | 75-25-2 | ug/L | 20 U | 4.0 U | 20 UJ | 100 U | 4.0 UJ | 4.0 U | NA | NA | 4.0 U | 200 U | 4.0 U [4 U] | 4.0 U | 200 U |
| Bromomethane | 74-83-9 | ug/L | 10 U | 2.0 U | 10 UJ | 50 U | R | 2.0 U | NA | NA | 2.0 U | 100 U | 2.0 U [2 U] | 2.0 U | 100 U |
| Carbon Disulfide | 75-15-0 | ug/L | 10 U | 2.0 U | 10 UJ | 50 U | R | 11.5 | NA | NA | 2.0 U | 100 U | 1.5 J [2] | 2.0 U | 100 U |
| Carbon Tetrachloride | 56-23-5 | ug/L | 5 U | 1.0 U | 5 UJ | 25 U | 1.0 UJ | 1.0 U | NA | NA | 1.0 U | 50 U | 1.0 U [1 U] | 1.0 U | 50 U |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | 5 U | 1.0 U | 5 UJ | 25 U | 1.0 UJ | 1.0 U | NA | NA | 1.0 U | 50 UJ | 1.0 U [1 U] | 1.0 U | 50 U |
| Chlorodibromomethane | 124-48-1 | ug/L | 5 U | 1.0 U | 5 UJ | 25 U | R | 1.0 U | NA | NA | 1.0 U | 50 U | 1.0 U [1 U] | 1.0 U | 50 U |
| Chloroethane | 75-00-3 | ug/L | 5 U | 1.0 U | 5 UJ | 25 U | 1.0 UJ | 1.0 U | NA | NA | 1.0 U | 50 U | 1.0 U [1 U] | 1.0 U | 50 U |
| Chloroform | 67-66-3 | ug/L | 5 U | 1.0 U | 5 UJ | 25 U | 1.0 UJ | 4.2 | NA | NA | 0.34 J | 50 U | 1.0 U [1 U] | 0.64 J | 50 U |
| Chloromethane | 74-87-3 | ug/L | 5 U | 1.0 U | 5 UJ | 25 U | 1.0 UJ | 1.0 U | NA | NA | 1.0 U | 50 U | 1.0 U [1 U] | 1.0 U | 50 U |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | 5 U | 1.0 U | 5 UJ | 25 U | R | 0.42 J | NA | NA | 1.0 U | 50 U | 0.63 J [0.73 J] | 1.0 U | 50 U |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | 5 U | 1.0 U | 5 UJ | 25 U | R | 1.0 U | NA | NA | 1.0 U | 50 U | 1.0 U [1 U] | 1.0 U | 50 U |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | 10 U | 2.0 U | 10 UJ | 50 U | 2.0 UJ | 2.0 U | NA | NA | 2.0 U | 100 U | 2.0 U [2 U] | 2.0 U | 100 U |
| Ethylbenzene | 100-41-4 | ug/L | 5 U | 1.0 U | 37 J | 328 | 1.0 UJ | 1.0 U | NA | NA | 1.0 U | 473 | 15.2 [20.6] | 1.0 U | 50 U |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | 25 U | 5.0 U | 25 UJ | 130 U | 5.0 UJ | 5.0 U | NA | NA | 5.0 U | 250 U | 5.0 U [5 U] | 5.0 U | 250 U |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | 25 U | 5.0 U | 25 UJ | 130 U | 5.0 UJ | 5.0 U | NA | NA | 5.0 U | 250 UJ | 1.7 J [2.2 J] | 5.0 U | 250 U |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | 5 U | 1.0 U | 5 UJ | 25 U | 1.0 UJ | 1.0 U | NA | NA | 1.0 U | 50 U | 46.6 [45.5] | 0.66 J | 50 U |
| Toluene | 108-88-3 | ug/L | 1.7 J | 1.0 U | 25.3 J | 39.3 | 0.39 J | 1.0 U | NA | NA | 1.0 U | 395 | 3.3 [3.9] | 1.0 U | 50 U |
| Total VOCs | ARC-TVOC | ug/L | 3.7 | 446 | 299 | 4,730 | 81.6 | 21.8 | NA | NA | 0.34 | 1,770 | 125 [140] | 3.9 | 170 U |
| Total Xylenes | 1330-20-7 | ug/L | 2 J | 1.0 U | 92.8 J | 907 | 1.0 UJ | 1.0 U | NA | NA | 1.0 U | 641 J | 10.0 J [14.2 J] | 1.0 U | 50 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-G7B-003<br>27.5<br>09/09/05<br>MW7B | 114-G7C-001<br>47.5<br>12/15/05<br>MW7C | 114-G8A-004R<br>14.73<br>09/12/05<br>MW8A | 114-G8B-003<br>42.71<br>09/13/05<br>MW8B | 114-G9A-001<br>10<br>11/21/05<br>MW9A | 114-G9B-001<br>32<br>11/28/05<br>MW9B | 114-G9B-001F<br>32<br>11/28/05<br>MW9B | 114-G9B-001UF<br>32<br>11/28/05<br>MW9B | 114-G9C-001<br>53<br>12/15/05<br>MW9C | 114-G10A-001<br>9.5<br>11/22/05<br>MW10A | 114-G11A-001<br>12<br>11/21/05<br>MW11A | 114-G11B-001<br>31<br>12/14/05<br>MW11B | 114-G12A-001<br>10<br>11/22/05<br>MW12A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | 5 U | 1.0 U | 5 UJ | 25 U | 1.0 UJ | 1.0 U | NA | NA | 1.0 U | 50 U | 1.9 [1.5] | 1.0 U | 50 U |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | 5 U | 1.0 U | 5 UJ | 25 U | 1.0 UJ | 1.0 U | NA | NA | 1.0 U | 50 U | 1.0 U [1 U] | 1.0 U | 50 U |
| Trichloroethene | 79-01-6 | ug/L | 5 U | 1.0 U | 5 UJ | 25 U | 1.0 UJ | 1.0 U | NA | NA | 1.0 U | 50 U | 13.0 [11.7] | 1.0 U | 50 U |
| Vinyl chloride | 75-01-4 | ug/L | 5 U | 1.0 U | 5 UJ | 25 U | 1.0 UJ | 1.0 U | NA | NA | 1.0 U | 50 U | 1.0 U [1 U] | 1.0 U | 50 U |
| **Semivolatile Organics** | | | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | 2.4 UJ | 2.2 U | 2.1 U | 2.2 U | 2.1 U | 2.2 U | NA | NA | 2.0 U | 2.1 U | 2.0 U [2.1 U] | 2.0 U | 2.1 U |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | 2.4 UJ | 2.2 U | 2.1 U | 2.2 U | 2.1 U | 2.2 U | NA | NA | 2.0 U | 2.1 U | 2.0 U [2.1 U] | 2.0 U | 2.1 U |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | 2.4 UJ | 2.2 U | 2.1 U | 2.2 U | 2.1 U | 2.2 U | NA | NA | 2.0 U | 2.1 U | 2.0 U [2.1 U] | 2.0 U | 2.1 U |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | 2.4 UJ | 2.2 U | 2.1 U | 2.2 U | 2.1 U | 2.2 U | NA | NA | 2.0 U | 2.1 U | 2.0 U [2.1 U] | 2.0 U | 2.1 U |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | 2.4 UJ | 2.2 U | 2.1 U | 2.2 U | 2.1 U | 2.2 U | NA | NA | 2.0 U | 2.1 U | 2.0 U [2.1 U] | 2.0 U | 2.1 U |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | 5.9 UJ | 5.4 U | 5.2 U | 5.6 U | 5.2 U | 5.5 U | NA | NA | 5.0 U | 5.3 U | 5.0 U [5.3 U] | 5.0 U | 5.2 U |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | 5.9 UJ | 5.4 U | 5.2 U | 5.6 U | 5.2 U | 5.5 U | NA | NA | 5.0 U | 5.3 U | 5.0 U [5.3 U] | 5.0 U | 5.2 U |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | 5.9 UJ | 5.4 U | 5.2 U | 5.6 U | 5.2 U | 5.5 U | NA | NA | 5.0 U | 5.3 U | 5.0 U [5.3 U] | 5.0 UJ | 5.2 U |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | 5.9 UJ | 5.4 U | 5.2 U | 3.3 J | 5.2 U | 5.5 U | NA | NA | 5.0 U | 9.9 | 5.0 U [5.3 U] | 5.0 U | 5.2 U |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | 24 UJ | 22 U | 21 UJ | 22 UJ | 21 U | 22 U | NA | NA | 20 U | 21 U | 20 U [21 U] | 20 U | 21 U |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | 2.4 UJ | 2.2 U | 2.1 U | 2.2 U | 2.1 U | 2.2 U | NA | NA | 2.0 U | 2.1 U | 2.0 U [2.1 U] | 2.0 U | 2.1 U |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | 2.4 UJ | 2.2 U | 2.1 U | 2.2 U | 2.1 U | 2.2 U | NA | NA | 2.0 U | 2.1 U | 2.0 U [2.1 U] | 2.0 U | 2.1 U |
| 2-Chloronaphthalene | 91-58-7 | ug/L | 5.9 UJ | 5.4 U | 5.2 U | 5.6 U | 5.2 U | 5.5 U | NA | NA | 5.0 U | 5.3 U | 5.0 U [5.3 U] | 5.0 U | 5.2 U |
| 2-Chlorophenol | 95-57-8 | ug/L | 5.9 UJ | 5.4 U | 5.2 U | 5.6 U | 5.2 U | 5.5 U | NA | NA | 5.0 U | 5.3 U | 5.0 U [5.3 U] | 5.0 U | 5.2 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | 24 UJ | 22 U | 21 U | 22 U | 21 U | 22 U | NA | NA | 20 U | 21 U | 20 U [21 U] | 20 U | 21 U |
| 2-Methylnaphthalene | 91-57-6 | ug/L | 2.4 UJ | 2.2 U | 314 | 563 | 2.1 U | 2.2 U | NA | NA | 2.0 U | 414 | 5.1 [5.1] | 2.0 U | 2.1 U |
| 2-Methylphenol | 95-48-7 | ug/L | 5.9 UJ | 5.4 U | 3.7 J | 5.6 U | 5.2 U | 5.5 U | NA | NA | 5.0 U | 5.9 | 5.0 U [5.3 U] | 5.0 U | 5.2 U |
| 2-Nitroaniline | 88-74-4 | ug/L | 5.9 UJ | 5.4 U | 5.2 U | 5.6 U | R | 5.5 U | NA | NA | 5.0 U | 5.3 U | 5.0 U [5.3 U] | 5.0 U | 5.2 U |
| 2-Nitrophenol | 88-75-5 | ug/L | 5.9 UJ | 5.4 U | 5.2 U | 5.6 U | 5.2 U | 5.5 U | NA | NA | 5.0 U | 5.3 U | 5.0 U [5.3 U] | 5.0 U | 5.2 U |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | 5.9 UJ | 5.4 U | 5.2 U | 5.6 U | R | 5.5 U | NA | NA | 5.0 U | 5.3 U | 5.0 U [5.3 U] | R | 5.2 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | 5.9 UJ | 5.4 U | 5.2 U | 5.6 U | R | 5.5 U | NA | NA | 5.0 U | 5.3 U | 5.0 U [5.3 U] | 5.0 U | 5.2 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | 2.4 UJ | 2.2 U | 2.1 U | 2.2 U | 2.1 U | 2.2 U | NA | NA | 2.0 U | 2.1 U | 2.0 U [2.1 U] | 2.0 U | 2.1 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | 5.9 UJ | 5.4 U | 5.2 U | 5.6 U | 5.2 U | 5.5 U | NA | NA | 5.0 U | 5.3 U | 5.0 U [5.3 U] | 5.0 U | 5.2 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | 2.4 UJ | 2.2 U | 2.1 U | 2.2 U | 2.1 U | 2.2 U | NA | NA | 2.0 U | 2.1 U | 2.0 U [2.1 U] | 2.0 U | 2.1 U |
| 4-Methylphenol | 106-44-5 | ug/L | 5.9 UJ | 5.4 U | 24.3 | 5.6 U | 4.8 J | 5.5 U | NA | NA | 5.0 U | 33.0 | 5.0 U [5.3 U] | 5.0 U | 5.2 U |
| 4-Nitroaniline | 100-01-6 | ug/L | 5.9 UJ | 5.4 U | 5.2 UJ | 5.6 U | R | 5.5 U | NA | NA | 5.0 U | 5.3 U | 5.0 U [5.3 U] | 5.0 U | 5.2 U |
| 4-Nitrophenol | 100-02-7 | ug/L | 24 UJ | 22 U | R | 22 UJ | 21 U | 22 U | NA | NA | 20 U | 21 U | 20 U [21 U] | 20 U | 21 U |
| Acenaphthene | 83-32-9 | ug/L | 2.4 UJ | 2.2 U | 48.9 | 138 | 2.1 U | 2.2 U | NA | NA | 2.0 U | 92.1 | 8.0 [7.9] | 2.0 U | 2.1 U |
| Acenaphthylene | 208-96-8 | ug/L | 2.4 UJ | 2.2 U | 28.4 | 28.6 | 2.1 U | 2.2 U | NA | NA | 2.0 U | 27.6 | 1.2 J [1.3 J] | 2.0 U | 2.1 U |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | 2.4 UJ | 2.2 U | 2.4 | 4.4 | 2.1 U | 2.2 U | NA | NA | 2.0 U | 22.1 | 3.7 [3.5] | 2.0 U | 2.1 U |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | 2.4 UJ | 2.2 U | 2.1 U | 2.2 U | 2.1 U | 2.2 U | NA | NA | 2.0 U | 5.1 | 0.39 J [2.1 U] | 2.0 U | 2.1 U |
| Benzo(a)pyrene | 50-32-8 | ug/L | 2.4 UJ | 2.2 U | 2.1 U | 2.2 U | 2.1 U | 2.2 U | NA | NA | 2.0 U | 3.4 | 2.0 U [2.1 U] | 2.0 U | 2.1 U |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | 2.4 UJ | 2.2 U | 2.1 U | 2.2 U | 2.1 U | 2.2 U | NA | NA | 2.0 U | 1.4 J | 2.0 U [2.1 U] | 2.0 U | 2.1 U |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | 2.4 UJ | 2.2 U | 2.1 U | 2.2 U | 2.1 U | 2.2 U | NA | NA | 2.0 U | 0.59 J | 2.0 U [2.1 U] | 2.0 U | 2.1 U |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | 2.4 UJ | 2.2 U | 2.1 U | 2.2 U | 2.1 U | 2.2 U | NA | NA | 2.0 U | 2.4 | 2.0 U [2.1 U] | 2.0 U | 2.1 U |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | 2.4 UJ | 2.2 U | 2.1 U | 2.2 U | 2.1 U | 2.2 U | NA | NA | 2.0 U | 2.1 U | 2.0 U [2.1 U] | 2.0 U | 2.1 U |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | 2.4 UJ | 2.2 U | 2.1 U | 2.2 U | 2.1 U | 2.2 U | NA | NA | 2.0 U | 2.1 U | 2.0 U [2.1 U] | 2.0 U | 2.1 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | 2.4 UJ | 2.2 U | 2.1 U | 1.4 J | 2.1 U | 2.2 U | NA | NA | 2.0 U | 2.1 U | 2.0 U [2.1 U] | 2.0 U | 2.1 U |
| Butyl benzyl phthalate | 85-68-7 | ug/L | 2.4 UJ | 2.2 U | 2.1 U | 2.2 U | 2.1 U | 2.2 U | NA | NA | 2.0 U | 2.1 U | 2.0 U [2.1 U] | 2.0 U | 2.1 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-G7B-003<br>27.5<br>09/09/05<br>MW7B | 114-G7C-001<br>47.5<br>12/15/05<br>MW7C | 114-G8A-004R<br>14.73<br>09/12/05<br>MW8A | 114-G8B-003<br>42.71<br>09/13/05<br>MW8B | 114-G9A-001<br>10<br>11/21/05<br>MW9A | 114-G9B-001<br>32<br>11/28/05<br>MW9B | 114-G9B-001F<br>32<br>11/28/05<br>MW9B | 114-G9B-001UF<br>32<br>11/28/05<br>MW9B | 114-G9C-001<br>53<br>12/15/05<br>MW9C | 114-G10A-001<br>9.5<br>11/22/05<br>MW10A | 114-G11A-001<br>12<br>11/21/05<br>MW11A | 114-G11B-001<br>31<br>12/14/05<br>MW11B | 114-G12A-001<br>10<br>11/22/05<br>MW12A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | 2.4 UJ | 2.2 U | 3.1 J | 5.3 | 2.1 U | 2.2 U | NA | NA | 2.0 U | 8.4 | 10.7 [10.8] | 2.0 U | 2.1 U |
| Chrysene | 218-01-9 | ug/L | 2.4 UJ | 2.2 U | 2.1 U | 2.2 U | 2.1 U | 2.2 U | NA | NA | 2.0 U | 5.1 | 0.42 J [2.1 U] | 2.0 U | 2.1 U |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | 2.4 UJ | 2.2 U | 2.1 U | 2.2 U | 2.1 U | 2.2 U | NA | NA | 2.0 U | 2.1 U | 2.0 U [2.1 U] | 2.0 U | 2.1 U |
| Dibenzofuran | 132-64-9 | ug/L | 5.9 UJ | 5.4 U | 6.4 J | 10.1 | 5.2 U | 5.5 U | NA | NA | 5.0 U | 7.6 | 4.4 J [4.3 J] | 5.0 U | 5.2 U |
| Diethyl phthalate | 84-66-2 | ug/L | 2.4 UJ | 2.2 U | 2.1 U | 2.2 U | 2.1 U | 2.2 U | NA | NA | 2.0 U | 2.1 U | 2.0 U [2.1 U] | 2.0 U | 2.1 U |
| Dimethyl phthalate | 131-11-3 | ug/L | 2.4 UJ | 2.2 U | 2.1 U | 2.2 U | 2.1 U | 2.2 U | NA | NA | 2.0 U | 2.1 U | 2.0 U [2.1 U] | 2.0 U | 2.1 U |
| Di-n-butyl phthalate | 84-74-2 | ug/L | 2.4 UJ | 2.2 U | 2.1 U | 2.2 U | 2.1 U | 2.2 U | NA | NA | 2.0 U | 2.1 U | 2.0 U [2.1 U] | 2.0 U | 2.1 U |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | 2.4 UJ | 2.2 U | 2.1 U | 2.2 U | 2.1 U | 2.2 U | NA | NA | 2.0 U | 2.1 U | 2.0 U [2.1 U] | 2.0 U | 2.1 U |
| Fluoranthene | 206-44-0 | ug/L | 2.4 UJ | 2.2 U | 2.5 J | 1.5 J | 2.1 U | 2.2 U | NA | NA | 2.0 U | 14.1 | 5.2 [5.2] | 2.0 U | 2.1 U |
| Fluorene | 86-73-7 | ug/L | 2.4 UJ | 2.2 U | 23.9 | 43.9 | 2.1 U | 2.2 U | NA | NA | 2.0 U | 39.9 | 5.1 [5] | 2.0 U | 2.1 U |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | 2.4 UJ | 2.2 U | 2.1 U | 2.2 U | 2.1 U | 2.2 U | NA | NA | 2.0 U | 2.1 U | 2.0 U [2.1 U] | 2.0 U | 2.1 U |
| Hexachlorobenzene | 118-74-1 | ug/L | 2.4 UJ | 2.2 U | 2.1 U | 2.2 U | 2.1 U | 2.2 U | NA | NA | 2.0 U | 2.1 U | 2.0 U [2.1 U] | 2.0 U | 2.1 U |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | 24 UJ | 22 U | 21 UJ | 22 U | 21 U | 22 U | NA | NA | 20 U | 21 U | 20 U [21 U] | 20 U | 21 U |
| Hexachloroethane | 67-72-1 | ug/L | 5.9 UJ | 5.4 U | 5.2 U | 5.6 U | 5.2 U | 5.5 U | NA | NA | 5.0 U | 5.3 U | 5.0 U [5.3 U] | 5.0 U | 5.2 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | 2.4 UJ | 2.2 U | 2.1 U | 2.2 U | 2.1 U | 2.2 U | NA | NA | 2.0 U | 0.47 J | 2.0 U [2.1 U] | 2.0 U | 2.1 U |
| Isophorone | 78-59-1 | ug/L | 2.4 UJ | 2.2 U | 2.1 U | 2.2 U | 2.1 U | 2.2 U | NA | NA | 2.0 U | 2.1 U | 2.0 U [2.1 U] | 2.0 U | 2.1 U |
| Naphthalene | 91-20-3 | ug/L | 2.4 UJ | 2.2 U | 1,050 | 5,010 | 2.1 U | 2.2 U | NA | NA | 0.80 J | 1,850 | 22.3 [22.5] | 2.0 U | 2.1 U |
| Nitrobenzene | 98-95-3 | ug/L | 2.4 UJ | 2.2 U | 2.1 U | 2.2 U | 2.1 U | 2.2 U | NA | NA | 2.0 U | 2.1 U | 2.0 U [2.1 U] | 2.0 U | 2.1 U |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | 2.4 UJ | 2.2 U | 2.1 U | 2.2 U | 2.1 U | 2.2 U | NA | NA | 2.0 U | 2.1 U | 2.0 U [2.1 U] | 2.0 U | 2.1 U |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | 5.9 UJ | 5.4 U | 5.2 U | 5.6 U | 5.2 U | 5.5 U | NA | NA | 5.0 U | 5.3 U | 5.0 U [5.3 U] | 5.0 UJ | 5.2 U |
| p-Chloroaniline | 106-47-8 | ug/L | 5.9 UJ | 5.4 U | 5.2 U | 5.6 U | R | 5.5 U | NA | NA | 5.0 U | 5.3 U | 5.0 U [5.3 U] | 5.0 U | 5.2 U |
| Pentachlorophenol | 87-86-5 | ug/L | 24 UJ | 22 U | 21 U | 22 U | 21 U | 22 U | NA | NA | 20 U | 21 U | 20 U [21 U] | 20 U | 21 U |
| Phenanthrene | 85-01-8 | ug/L | 2.4 UJ | 2.2 U | 44.3 | 64.9 | 2.1 U | 2.2 U | NA | NA | 2.0 U | 71.0 | 13.6 [13.1] | 2.0 U | 2.1 U |
| Phenol | 108-95-2 | ug/L | 5.9 UJ | 5.4 U | 63.8 | 5.6 U | 16.9 | 5.5 U | NA | NA | 5.0 U | 17.7 | 7.6 [7.7] | 5.0 U | 5.2 U |
| Pyrene | 129-00-0 | ug/L | 2.4 UJ | 2.2 U | 2.6 | 1.9 J | 2.1 U | 2.2 U | NA | NA | 2.0 U | 20.8 | 2.9 [3] | 2.0 U | 2.1 U |
| Total SVOCs | ARC-TSVOC | ug/L | 3.7 U | 3.4 U | 1,620 | 5,880 | 21.7 | 3.5 U | NA | NA | 0.80 | 2,650 | 90.6 [89.4] | 3.2 U | 3.3 U |
| **Metals** | | | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 428 | 431 | 200 U | 10,000 U | 1,390 | 1,000 U | NA | NA | 200 U | 432 | 14,100 [14,000] | 10,000 UJ | 7,440 |
| Antimony | 7440-36-0 | ug/L | 65.9 | 6.3 | 79.7 | 250 U | 5.0 U | 118 | NA | NA | 5.0 U | 5.0 U | 7.6 [5.9] | 1,010 J | 5.0 U |
| Arsenic | 7440-38-2 | ug/L | 25 U | 5.0 U | 50 U | 250 U | 41.6 | 430 | NA | NA | 5.0 U | 63.7 | 18.0 [18.9] | 684 | 99.8 |
| Barium | 7440-39-3 | ug/L | 200 U | 200 U | 200 U | 10,000 U | 200 U | 200 U | NA | NA | 200 U | 200 U | 200 U [200 U] | 10,000 U | 200 U |
| Beryllium | 7440-41-7 | ug/L | 25 U | 1.0 U | 5 U | 250 U | 1.0 U | 1.0 U | NA | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 50 U | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 4.3 | 4.0 U | 4 U | 200 U | 4.0 U | 4.0 U | NA | NA | 4.0 U | 4.0 U | 4.0 U [4 U] | 200 U | 4.0 U |
| Calcium | 7440-70-2 | ug/L | 83,100 | 35,000 | 521,000 | 250,000 U | 81,900 | 47,900 | NA | NA | 185,000 | 6,770 | 5,000 U [5,000 U] | 250,000 U | 10,400 |
| Chromium | 7440-47-3 | ug/L | 152,000 | 12,400 | 327,000 | 879,000 | 21,900 | 271,000 | NA | NA | 77.1 | 6,250 | 381 [364] | 2,050,000 J | 18,600 |
| Chromium VI | 18540-29-9 | ug/L | 172,000 | 13,600 | 302,000 | 140 | 22,500 | NA | 246,000 | 253,000 | 50 U | 100 U | 50 U [50 U] | 1,980,000 | 15,900 |
| Cobalt | 7440-48-4 | ug/L | 50 U | 50 U | 50 U | 2,500 U | 50 U | 250 U | NA | NA | 50 U | 79.2 | 50 U [50 U] | 2,500 U | 50 U |
| Copper | 7440-50-8 | ug/L | 86.8 | 25 U | 26.7 | 1,300 U | 25 U | 25 U | NA | NA | 25 U | 42.5 | 25 U [25 U] | 1,300 U | 50.4 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 500 U | 1,250 | 1,000 U | 5,000 U | 100 U | 500 U | NA | NA | 1,950 | 8,220 | 1,010 [936] | 5,000 UJ | 3,130 |
| Lead | 7439-92-1 | ug/L | 27.3 | 3.0 U | 634 | 150 U | 3.6 | 15 U | NA | NA | 3.0 U | 57.1 | 8.0 [10.2] | 150 U | 187 |
| Magnesium | 7439-95-4 | ug/L | 58,600 | 9,140 | 5,000 U | 250,000 U | 5,000 U | 22,800 | NA | NA | 31,800 | 5,000 U | 5,000 U [5,000 U] | 250,000 UJ | 7,870 |
| Manganese | 7439-96-5 | ug/L | 134 | 38.8 | 15 U | 750 U | 15 U | 75 U | NA | NA | 648 | 395 | 20.9 [20.6] | 750 U | 64.6 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-G7B-003<br>27.5<br>09/09/05<br>MW7B | 114-G7C-001<br>47.5<br>12/15/05<br>MW7C | 114-G8A-004R<br>14.73<br>09/12/05<br>MW8A | 114-G8B-003<br>42.71<br>09/13/05<br>MW8B | 114-G9A-001<br>10<br>11/21/05<br>MW9A | 114-G9B-001<br>32<br>11/28/05<br>MW9B | 114-G9B-001F<br>32<br>11/28/05<br>MW9B | 114-G9B-001UF<br>32<br>11/28/05<br>MW9B | 114-G9C-001<br>53<br>12/15/05<br>MW9C | 114-G10A-001<br>9.5<br>11/22/05<br>MW10A | 114-G11A-001<br>12<br>11/21/05<br>MW11A | 114-G11B-001<br>31<br>12/14/05<br>MW11B | 114-G12A-001<br>10<br>11/22/05<br>MW12A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | 0.20 U | 0.2 U | 0.20 U | 0.21 | 0.20 U | NA | NA | 0.20 U | 0.78 | 0.66 [0.71] | 0.20 U | 0.46 |
| Nickel | 7440-02-0 | ug/L | 44.2 | 72.5 | 221 | 2,000 U | 76.6 | 40 U | NA | NA | 40 U | 493 | 68.6 [68] | 2,000 U | 60.9 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 30,600 | 40,800 | 70,500 | 250,000 U | 55,000 | 56,300 | NA | NA | 6,360 | 116,000 | 28,500 [28,700] | 250,000 UJ | 103,000 |
| Selenium | 7782-49-2 | ug/L | 33.4 | 5.0 U | 50 U | 250 U | 5.1 | 29.2 | NA | NA | 5.0 U | 14.3 | 5.2 [6.2] | 250 UJ | 28.1 |
| Silver | 7440-22-4 | ug/L | 10 U | 10 U | 10 U | 500 U | 10 U | 10 U | NA | NA | 10 U | 10 U | 10 U [10 U] | 500 UJ | 10 U |
| Sodium | 7440-23-5 | ug/L | 688,000 | 176,000 | 2,400,000 | 1,290,000 | 1,220,000 | 848,000 | NA | NA | 90,600 | 3,110,000 | 392,000 [396,000] | 2,070,000 J | 2,190,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 50 U | 10 U | 100 U | 500 U | 10 U | 50 U | NA | NA | 10 U | 10 U | 10 U [10 U] | 500 U | 10 U |
| Total CCPW Metals | CCPW-M | ug/L | 152,000 | 12,500 | 327,000 | 879,000 | 22,000 | 271,000 | NA | NA | 77.1 | 7,540 | 1,860 [1,860] | 2,050,000 | 19,400 |
| Vanadium | 7440-62-2 | ug/L | 250 U | 50 U | 500 U | 2,500 U | 66.4 | 50 U | NA | NA | 50 U | 796 | 1,400 [1,420] | 2,500 U | 691 |
| Zinc | 7440-66-6 | ug/L | 100 U | 20 U | 584 | 1,000 U | 20 U | 100 U | NA | NA | 20 U | 164 | 20 U [20 U] | 1,000 UJ | 184 |
| **Metals-Filtered** | | | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 14,000 | NA | NA | NA | NA | NA | NA | 50 U | NA | NA | 1,900,000 J | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-G7B-003<br>27.5<br>09/09/05<br>MW7B | 114-G7C-001<br>47.5<br>12/15/05<br>MW7C | 114-G8A-004R<br>14.73<br>09/12/05<br>MW8A | 114-G8B-003<br>42.71<br>09/13/05<br>MW8B | 114-G9A-001<br>10<br>11/21/05<br>MW9A | 114-G9B-001<br>32<br>11/28/05<br>MW9B | 114-G9B-001F<br>32<br>11/28/05<br>MW9B | 114-G9B-001UF<br>32<br>11/28/05<br>MW9B | 114-G9C-001<br>53<br>12/15/05<br>MW9C | 114-G10A-001<br>9.5<br>11/22/05<br>MW10A | 114-G11A-001<br>12<br>11/21/05<br>MW11A | 114-G11B-001<br>31<br>12/14/05<br>MW11B | 114-G12A-001<br>10<br>11/22/05<br>MW12A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | 9,400 | 6,900 | 5,000 U | 24,000 | NA | 5,000 U | NA | NA | 5,000 U | 2,870,000 | 154,000 [168,000] | 5,000 U | 467,000 |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | 80,000 U | 68,300 | 40,000 U | 456,000 | 41,400 | 457,000 | NA | NA | 183,000 | 114,000 | 20,000 U [20,000 U] | 130,000 | 183,000 |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | 8,000 | 6,900 | 34,600 | 14,400 | 21,800 | 10,200 | NA | NA | 2,300 | 211,000 | 14,400 [13,400] | 19,500 | 322,000 |
| Dissolved Oxygen | ARC-DO | ug/L | 2,100 | NA | 1,000 U | 1,800 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | 100 U | 400 U | 170 | 100 U | R | 200 U | NA | NA | 1,100,000 | R | R [R] | 200 U | R |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | 1,000 U | 1,000 U | 1,700 | 1,000 U | 12,500 | 1,000 U | NA | NA | 4,400 | 100 U | 100 U [100 U] | 2,000 U | 100 U |
| Nitrate-N | 14797-55-8 | ug/L | 1,000 U | 1,000 U | 1,100 U | 1,000 U | 9,500 | 1,000 U | NA | NA | 4,400 | 110 U | 110 U [110 U] | 2,000 U | 110 U |
| Nitrite | 14797-65-0 | ug/L | 500 U | 86 | 1,200 | 150 | 3,000 | 160 | NA | NA | 26 | 10 U | 10 U [10 U] | 88 | 10 U |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 234 | NA | 82.4 | 310 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | 7.72 | NA | 12.41 | 8.22 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-G7B-003<br>27.5<br>09/09/05<br>MW7B | 114-G7C-001<br>47.5<br>12/15/05<br>MW7C | 114-G8A-004R<br>14.73<br>09/12/05<br>MW8A | 114-G8B-003<br>42.71<br>09/13/05<br>MW8B | 114-G9A-001<br>10<br>11/21/05<br>MW9A | 114-G9B-001<br>32<br>11/28/05<br>MW9B | 114-G9B-001F<br>32<br>11/28/05<br>MW9B | 114-G9B-001UF<br>32<br>11/28/05<br>MW9B | 114-G9C-001<br>53<br>12/15/05<br>MW9C | 114-G10A-001<br>9.5<br>11/22/05<br>MW10A | 114-G11A-001<br>12<br>11/21/05<br>MW11A | 114-G11B-001<br>31<br>12/14/05<br>MW11B | 114-G12A-001<br>10<br>11/22/05<br>MW12A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 80,000 U | 246,000 | 40,000 U | 526,000 | 549,000 | 571,000 | NA | NA | 222,000 | 2,260,000 | 103,000 [102,000] | 994,000 | 131,000 |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | 696,000 | NA | NA | 3,230,000 | 2,700,000 | NA | NA | 975,000 | 7,600,000 | 1,110,000 [1,070,000] | 6,760,000 | 4,810,000 |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 9,100 | 6,900 | 39,300 | 14,900 | 24,300 | 10,500 | NA | NA | 3,500 | 367,000 | 14,700 [17,800] | 20,300 | 428,000 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-G12B-001 | 114-G13A-001 | 114-G13B-001 | 114-GPZ1-001 | 114-GPZ2-001 | 114-GPZ3-001 | 114-GPZ4-001 | 114-GPZ5-001 | 114-GPZ6-001 | 114-GPZ7-001 | 114-GPZ8-001 | 114-GPZ8-001F |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 31 | 9.5 | 37 | 17.5 | 10.5 | 9 | 8.5 | 14.5 | 12 | 11 | 14 | 14 |
| Date Collected: | | | 12/14/05 | 11/22/05 | 12/15/05 | 11/22/05 | 11/28/05 | 11/28/05 | 11/28/05 | 11/28/05 | 11/28/05 | 11/28/05 | 11/29/05 | 11/29/05 |
| Location ID: | CAS Number | Units | MW12B | MW13A | MW13B | PZ1 | PZ2 | PZ3 | PZ4 | PZ5 | PZ6 | PZ7 | PZ8 | PZ8 |
| **Volatile Organics** | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | 1.0 U [1 U] | 2.0 U | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | 1.0 U [1 U] | 2.0 U | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | 1.0 U [1 U] | 2.0 U | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | 1.0 U [1 U] | 2.0 U | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | 1.0 U [1 U] | 2.0 U | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | 1.0 U [1 U] | 2.0 U | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | 1.0 U [1 U] | 2.0 U | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | 10 U [10 U] | 20 U | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | 5.0 U [5 U] | 10 U | 5.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | 10 U [10 U] | 30.5 | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | 0.64 J [0.64 J] | 76.4 | 1,330 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | 1.0 U [1 U] | 2.0 U | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | 4.0 U [4 U] | 8.0 U | 4.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | 2.0 U [2 U] | 4.0 U | 2.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | 2.0 U [2 U] | 4.0 U | 2.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | 1.0 U [1 U] | 2.0 U | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | 1.0 U [1 U] | 2.0 U | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | 1.0 U [1 U] | 2.0 U | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | 1.0 U [1 U] | 2.0 U | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | 1.0 U [1 U] | 2.0 U | 4.2 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | 1.0 U [1 U] | 2.0 U | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | 1.0 U [1 U] | 2.0 U | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | 1.0 U [1 U] | 2.0 U | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | 2.0 U [2 U] | 4.0 U | 2.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | 0.74 J [0.8 J] | 49.2 | 642 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | 5.0 U [5 U] | 10 U | 5.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | 5.0 U [5 U] | 10 U | 5.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | 1.0 U [1 U] | 1.4 J | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | 0.64 J [0.58 J] | 107 | 421 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | 2.7 [2.7] | 335 | 3,110 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | 0.67 J [0.68 J] | 70.5 | 710 | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-G12B-001<br>31<br>12/14/05<br>MW12B | 114-G13A-001<br>9.5<br>11/22/05<br>MW13A | 114-G13B-001<br>37<br>12/15/05<br>MW13B | 114-GPZ1-001<br>17.5<br>11/22/05<br>PZ1 | 114-GPZ2-001<br>10.5<br>11/28/05<br>PZ2 | 114-GPZ3-001<br>9<br>11/28/05<br>PZ3 | 114-GPZ4-001<br>8.5<br>11/28/05<br>PZ4 | 114-GPZ5-001<br>14.5<br>11/28/05<br>PZ5 | 114-GPZ6-001<br>12<br>11/28/05<br>PZ6 | 114-GPZ7-001<br>11<br>11/28/05<br>PZ7 | 114-GPZ8-001<br>14<br>11/29/05<br>PZ8 | 114-GPZ8-001F<br>14<br>11/29/05<br>PZ8 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | 1.0 U [1 U] | 2.0 U | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | 1.0 U [1 U] | 2.0 U | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | 1.0 U [1 U] | 2.0 U | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | 1.0 U [1 U] | 2.0 U | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | 2.0 U [2 U] | 2.2 U | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | 2.0 U [2 U] | 2.2 U | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | 2.0 U [2 U] | 2.2 U | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | 2.0 U [2 U] | 2.2 U | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | 2.0 U [2 U] | 2.2 U | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | 5.0 U [5 U] | 5.6 U | 5.4 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | 5.0 U [5 U] | 5.6 U | 5.4 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | 5.0 U [5 U] | 5.6 U | 5.4 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | 5.0 U [5 U] | 10.5 | 2.1 J | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | 20 U [20 U] | 22 U | 22 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | 2.0 U [2 U] | 2.2 U | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | 2.0 U [2 U] | 2.2 U | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | 5.0 U [5 U] | 5.6 U | 5.4 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | 5.0 U [5 U] | 5.6 U | 5.4 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | 20 U [20 U] | 22 U | 22 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | 0.59 J [0.57 J] | 289 | 675 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | 5.0 U [5 U] | 5.6 U | 5.4 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | 5.0 U [5 U] | 5.6 U | 5.4 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | 5.0 U [5 U] | 5.6 U | 5.4 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | 5.0 U [5 U] | 5.6 U | 5.4 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | 5.0 U [5 U] | 5.6 U | 5.4 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | 2.0 U [2 U] | 2.2 U | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | 5.0 U [5 U] | 5.6 U | 5.4 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | 2.0 U [2 U] | 2.2 U | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | 5.0 U [5 U] | 223 | 1.8 J | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | 5.0 U [5 U] | 5.6 U | 5.4 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | 20 U [20 U] | 22 U | 22 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | 2.0 U [2 U] | 85.7 | 150 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | 2.0 U [2 U] | 5.2 | 98.6 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | 2.0 U [2 U] | 9.8 | 12.6 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | 2.0 U [2 U] | 2.2 U | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | 2.0 U [2 U] | 2.2 U | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | 2.0 U [2 U] | 2.2 U | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | 2.0 U [2 U] | 2.2 U | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | 2.0 U [2 U] | 2.2 U | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | 2.0 U [2 U] | 2.2 U | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | 2.0 U [2 U] | 2.2 U | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | 2.0 U [2 U] | 2.2 U | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | 2.0 U [2 U] | 2.2 U | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-G12B-001<br>31<br>12/14/05<br>MW12B | 114-G13A-001<br>9.5<br>11/22/05<br>MW13A | 114-G13B-001<br>37<br>12/15/05<br>MW13B | 114-GPZ1-001<br>17.5<br>11/22/05<br>PZ1 | 114-GPZ2-001<br>10.5<br>11/28/05<br>PZ2 | 114-GPZ3-001<br>9<br>11/28/05<br>PZ3 | 114-GPZ4-001<br>8.5<br>11/28/05<br>PZ4 | 114-GPZ5-001<br>14.5<br>11/28/05<br>PZ5 | 114-GPZ6-001<br>12<br>11/28/05<br>PZ6 | 114-GPZ7-001<br>11<br>11/28/05<br>PZ7 | 114-GPZ8-001<br>14<br>11/29/05<br>PZ8 | 114-GPZ8-001F<br>14<br>11/29/05<br>PZ8 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | 2.0 U [2 U] | 5.5 | 11.7 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | 2.0 U [2 U] | 2.2 U | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | 2.0 U [2 U] | 2.2 U | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | 5.0 U [5 U] | 5.9 | 9.2 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | 2.0 U [2 U] | 2.2 U | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | 2.0 U [2 U] | 2.2 U | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | 2.0 U [2 U] | 2.2 U | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | 2.0 U [2 U] | 2.2 U | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | 2.0 U [2 U] | 4.6 | 2.8 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | 2.0 U [2 U] | 30.1 | 58.0 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | 2.0 U [2 U] | 2.2 U | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | 2.0 U [2 U] | 2.2 U | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | 20 U [20 U] | 22 U | 22 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | 5.0 U [5 U] | 5.6 U | 5.4 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | 2.0 U [2 U] | 2.2 U | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | 2.0 U [2 U] | 2.2 U | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | 3.3 [3.6] | 1,000 | 3,280 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | 2.0 U [2 U] | 2.2 U | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | 2.0 U [2 U] | 2.2 U | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | 5.0 U [5 U] | 5.6 U | 5.4 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | 5.0 U [5 U] | 5.6 U | 5.4 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | 20 U [20 U] | 22 U | 22 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | 2.0 U [2 U] | 53.4 | 61.9 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | 5.0 U [5 U] | 281 | 5.7 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | 2.0 U [2 U] | 5.6 | 3.4 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | 3.9 [4.2] | 2,010 | 4,370 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 1,000 UJ [1,830 J] | 2,270 | 200 U | 200 U | 11,000 | 1,860 | 600 U | 2,000 U | 309 | 1,000 U | 50,000 UJ | NA |
| Antimony | 7440-36-0 | ug/L | 105 J [25.4 J] | 5.0 U | 5.0 U | 5.0 U | 13.8 | 7.9 | 45.4 | 144 | 19.6 | 97.3 | 1,330 J | NA |
| Arsenic | 7440-38-2 | ug/L | 25 U [25 U] | 68.6 | 54.5 | 35.5 | 34.4 | 20.9 | 144 | 500 | 63.1 | 272 | 12,600 J | NA |
| Barium | 7440-39-3 | ug/L | 200 U [200 U] | 200 U | 200 U | 407 | 200 U | 200 U | 200 U | 200 U | 200 U | 200 U | 50,000 UJ | NA |
| Beryllium | 7440-41-7 | ug/L | 1.0 U [1 U] | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 250 UJ | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 4.0 U [4 U] | 4.0 U | 4.0 U | 4.0 U | 4.0 U | 4.0 U | 4.0 U | 4.0 U | 4.0 U | 4.0 U | 1,000 UJ | NA |
| Calcium | 7440-70-2 | ug/L | 112,000 [128,000] | 223,000 | 69,200 | 735,000 | 5,000 U | 104,000 | 340,000 | 16,500 | 220,000 | 32,700 | 1,900,000 J | NA |
| Chromium | 7440-47-3 | ug/L | 252,000 J [118,000 J] | 48,900 | 17.1 | 14,900 | 22,900 | 12,500 | 88,300 | 289,000 | 42,100 | 178,000 | 8,850,000 J | NA |
| Chromium VI | 18540-29-9 | ug/L | 321,000 [312,000] | 49,700 | 50 U | 14,400 | 24,100 | 12,800 | 88,200 | 249,000 | 35,800 | 163,000 | 7,890,000 J | 7,740,000 J |
| Cobalt | 7440-48-4 | ug/L | 50 U [50 U] | 50 U | 50 U | 50 U | 50 U | 50 U | 50 U | 500 U | 50 U | 250 U | 13,000 UJ | NA |
| Copper | 7440-50-8 | ug/L | 33.0 [49.3] | 25 U | 25 U | 25 U | 25 U | 25 U | 25 U | 66.1 | 31.2 | 25 U | 6,300 UJ | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 500 UJ [1,430 J] | 100 | 728 | 100 U | 100 U | 123 | 300 U | 1,000 U | 100 U | 500 U | 25,000 UJ | NA |
| Lead | 7439-92-1 | ug/L | 15 U [15 U] | 4.8 | 3.0 | 9.3 | 3.0 U | 3.0 U | 9.0 U | 30 U | 10.6 | 15 U | 750 UJ | NA |
| Magnesium | 7439-95-4 | ug/L | 43,000 J [24,000 J] | 5,000 U | 82,700 | 5,000 U | 5,000 U | 5,000 U | 5,000 U | 5,000 U | 5,000 U | 5,000 U | 1,300,000 UJ | NA |
| Manganese | 7439-96-5 | ug/L | 179 [132] | 15 U | 912 | 15 U | 15 U | 15 U | 15 U | 150 U | 15 U | 75 U | 3,800 UJ | NA |

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| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-G12B-001<br>31<br>12/14/05<br>MW12B | 114-G13A-001<br>9.5<br>11/22/05<br>MW13A | 114-G13B-001<br>37<br>12/15/05<br>MW13B | 114-GPZ1-001<br>17.5<br>11/22/05<br>PZ1 | 114-GPZ2-001<br>10.5<br>11/28/05<br>PZ2 | 114-GPZ3-001<br>9<br>11/28/05<br>PZ3 | 114-GPZ4-001<br>8.5<br>11/28/05<br>PZ4 | 114-GPZ5-001<br>14.5<br>11/28/05<br>PZ5 | 114-GPZ6-001<br>12<br>11/28/05<br>PZ6 | 114-GPZ7-001<br>11<br>11/28/05<br>PZ7 | 114-GPZ8-001<br>14<br>11/29/05<br>PZ8 | 114-GPZ8-001F<br>14<br>11/29/05<br>PZ8 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U [0.2 U] | 0.20 U | 0.20 U | 0.20 U | 0.20 U | 0.20 U | 0.20 UJ | 0.20 UJ | 0.20 U | 0.20 U | 1.6 UJ | NA |
| Nickel | 7440-02-0 | ug/L | 40 U [40 U] | 208 | 40 U | 40 U | 40 U | 109 | 40 U | 124 | 303 | 388 | 10,000 UJ | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 34,500 J [18,600 J] | 54,500 | 44,300 | 21,900 | 13,300 | 21,400 | 22,500 | 98,600 | 115,000 | 61,600 | 1,300,000 UJ | NA |
| Selenium | 7782-49-2 | ug/L | 25 UJ [25 UJ] | 7.1 | 5.0 U | 5.0 U | 5.0 | 5.0 U | 15 U | 50 U | 5.0 U | 25 U | 1,300 UJ | NA |
| Silver | 7440-22-4 | ug/L | 50 UJ [50 UJ] | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U | 2,500 UJ | NA |
| Sodium | 7440-23-5 | ug/L | 588,000 J [305,000 J] | 1,100,000 | 432,000 | 493,000 | 341,000 | 575,000 | 507,000 | 3,160,000 | 1,250,000 | 376,000 | 8,440,000 J | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 50 U [50 U] | 10 U | 10 U | 10 U | 10 U | 10 U | 30 U | 100 U | 10 U | 50 U | 2,500 UJ | NA |
| Total CCPW Metals | CCPW-M | ug/L | 252,000 [118,000] | 49,100 | 17.1 | 14,900 | 26,000 | 12,600 | 88,300 | 293,000 | 42,400 | 179,000 | 8,850,000 | NA |
| Vanadium | 7440-62-2 | ug/L | 50 U [50 U] | 50 U | 50 U | 50 U | 3,080 | 50 U | 50 U | 3,770 | 50 U | 692 | 13,000 UJ | NA |
| Zinc | 7440-66-6 | ug/L | 20 UJ [110 J] | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U | 200 U | 20 U | 100 U | 5,000 UJ | NA |
| **Metals-Filtered** | | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 217,000 J [252,000 J] | NA | 50 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-G12B-001<br>31<br>12/14/05<br>MW12B | 114-G13A-001<br>9.5<br>11/22/05<br>MW13A | 114-G13B-001<br>37<br>12/15/05<br>MW13B | 114-GPZ1-001<br>17.5<br>11/22/05<br>PZ1 | 114-GPZ2-001<br>10.5<br>11/28/05<br>PZ2 | 114-GPZ3-001<br>9<br>11/28/05<br>PZ3 | 114-GPZ4-001<br>8.5<br>11/28/05<br>PZ4 | 114-GPZ5-001<br>14.5<br>11/28/05<br>PZ5 | 114-GPZ6-001<br>12<br>11/28/05<br>PZ6 | 114-GPZ7-001<br>11<br>11/28/05<br>PZ7 | 114-GPZ8-001<br>14<br>11/29/05<br>PZ8 | 114-GPZ8-001F<br>14<br>11/29/05<br>PZ8 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | 5,000 U [5,000 U] | 465,000 | 5,000 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | 198,000 [216,000] | 82,800 | 283,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | 11,800 [11,400] | 50,500 | 13,900 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | 200 U [200 U] | R | 400 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | 2,000 U [2,000 U] | 520 | 100 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | 2,000 U [2,000 U] | 1,000 U | 110 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | 110 [170] | 800 | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-G12B-001 | 114-G13A-001 | 114-G13B-001 | 114-GPZ1-001 | 114-GPZ2-001 | 114-GPZ3-001 | 114-GPZ4-001 | 114-GPZ5-001 | 114-GPZ6-001 | 114-GPZ7-001 | 114-GPZ8-001 | 114-GPZ8-001F |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 31 | 9.5 | 37 | 17.5 | 10.5 | 9 | 8.5 | 14.5 | 12 | 11 | 14 | 14 |
| Date Collected: | | | 12/14/05 | 11/22/05 | 12/15/05 | 11/22/05 | 11/28/05 | 11/28/05 | 11/28/05 | 11/28/05 | 11/28/05 | 11/28/05 | 11/29/05 | 11/29/05 |
| Location ID: | CAS Number | Units | MW12B | MW13A | MW13B | PZ1 | PZ2 | PZ3 | PZ4 | PZ5 | PZ6 | PZ7 | PZ8 | PZ8 |
| Sulfate | 14808-79-8 | ug/L | 291,000 [317,000] | 33,100 | 592,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | 2,390,000 [2,380,000] | 3,100,000 | 1,860,000 | NA | 887,000 | 1,510,000 | 1,920,000 | 8,350,000 | 3,640,000 | 1,380,000 | 15,900,000 | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 12,800 [12,600] | 50,500 | 14,900 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-GPZ9-001 | 114-GPZ9-001F | 114-GWPS-BS-IT1-WK1 | 114-GWPS-BS-IT1-WK1-F | 114-GWPS-BS-IT1-WK2 | 114-GWPS-BS-IT1-WK2-F | 114-GWPS-BS-IT1-WK3 | 114-GWPS-BS-IT1-WK3-F |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 11 | 11 | | | | | | |
| Date Collected: | | | 11/29/05 | 11/29/05 | 02/06/14 | 02/06/14 | 02/14/14 | 02/14/14 | 02/20/14 | 02/20/14 |
| Location ID: | CAS Number | Units | PZ9 | PZ9 | noloc | noloc | noloc | noloc | noloc | noloc |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GPZ9-001<br>11<br>11/29/05<br>PZ9 | 114-GPZ9-001F<br>11<br>11/29/05<br>PZ9 | 114-GWPS-BS-IT1-WK1<br><br>02/06/14<br>noloc | 114-GWPS-BS-IT1-WK1-F<br><br>02/06/14<br>noloc | 114-GWPS-BS-IT1-WK2<br><br>02/14/14<br>noloc | 114-GWPS-BS-IT1-WK2-F<br><br>02/14/14<br>noloc | 114-GWPS-BS-IT1-WK3<br><br>02/20/14<br>noloc | 114-GWPS-BS-IT1-WK3-F<br><br>02/20/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GPZ9-001<br>11<br>11/29/05<br>PZ9 | 114-GPZ9-001F<br>11<br>11/29/05<br>PZ9 | 114-GWPS-BS-IT1-WK1<br><br>02/06/14<br>noloc | 114-GWPS-BS-IT1-WK1-F<br><br>02/06/14<br>noloc | 114-GWPS-BS-IT1-WK2<br><br>02/14/14<br>noloc | 114-GWPS-BS-IT1-WK2-F<br><br>02/14/14<br>noloc | 114-GWPS-BS-IT1-WK3<br><br>02/20/14<br>noloc | 114-GWPS-BS-IT1-WK3-F<br><br>02/20/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 19,600 J | NA | 12,700 | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 250 UJ | NA | 31.2 | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | 250 U | NA | 3.0 U | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | 10,000 U | NA | 147 J | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | 50 UJ | NA | 1.9 | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 200 UJ | NA | 1.9 J | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | 250,000 U | NA | 111,000 | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 995,000 | NA | 25,900 | NA | 38,100 | NA | 39,100 | NA |
| Chromium VI | 18540-29-9 | ug/L | 899,000 J | 856,000 J | 25,200 | NA | 50,500 | NA | 45,200 | NA |
| Cobalt | 7440-48-4 | ug/L | 2,500 UJ | NA | 33.4 J | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | 1,300 UJ | NA | 79.1 | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 6,340 J | NA | 17,600 J | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | 150 UJ | NA | 24.4 | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | 250,000 UJ | NA | 44,800 | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 750 UJ | NA | 447 J | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GPZ9-001<br>11<br>11/29/05<br>PZ9 | 114-GPZ9-001F<br>11<br>11/29/05<br>PZ9 | 114-GWPS-BS-IT1-WK1<br><br>02/06/14<br>noloc | 114-GWPS-BS-IT1-WK1-F<br><br>02/06/14<br>noloc | 114-GWPS-BS-IT1-WK2<br><br>02/14/14<br>noloc | 114-GWPS-BS-IT1-WK2-F<br><br>02/14/14<br>noloc | 114-GWPS-BS-IT1-WK3<br><br>02/20/14<br>noloc | 114-GWPS-BS-IT1-WK3-F<br><br>02/20/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | NA | 0.60 U | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 2,000 U | NA | 65.4 J | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 250,000 U | NA | 27,700 | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | 250 U | NA | 3.2 J | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | 500 UJ | NA | 10 U | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | 1,730,000 | NA | 332,000 J | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 500 UJ | NA | 4.8 J | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | 995,000 | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 2,500 U | NA | 23.8 J | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | 1,000 UJ | NA | 120 | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 26,700 | NA | 42,600 | NA | 43,300 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | 25,800 | NA | 48,800 | NA | 39,700 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GPZ9-001<br>11<br>11/29/05<br>PZ9 | 114-GPZ9-001F<br>11<br>11/29/05<br>PZ9 | 114-GWPS-BS-IT1-WK1<br><br>02/06/14<br>noloc | 114-GWPS-BS-IT1-WK1-F<br><br>02/06/14<br>noloc | 114-GWPS-BS-IT1-WK2<br><br>02/14/14<br>noloc | 114-GWPS-BS-IT1-WK2-F<br><br>02/14/14<br>noloc | 114-GWPS-BS-IT1-WK3<br><br>02/20/14<br>noloc | 114-GWPS-BS-IT1-WK3-F<br><br>02/20/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | 200 U | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 378 | 335 | 258 | 269 | 279 | 316 |
| pH | ARC-pH | SU | NA | NA | 8.16 | 8.25 | 8.07 | 7.95 | 8.36 | 7.89 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GPZ9-001<br>11<br>11/29/05<br>PZ9 | 114-GPZ9-001F<br>11<br>11/29/05<br>PZ9 | 114-GWPS-BS-IT1-WK1<br><br>02/06/14<br>noloc | 114-GWPS-BS-IT1-WK1-F<br><br>02/06/14<br>noloc | 114-GWPS-BS-IT1-WK2<br><br>02/14/14<br>noloc | 114-GWPS-BS-IT1-WK2-F<br><br>02/14/14<br>noloc | 114-GWPS-BS-IT1-WK3<br><br>02/20/14<br>noloc | 114-GWPS-BS-IT1-WK3-F<br><br>02/20/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | 853,000 | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | 1,000 | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | 1,810,000 | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-GWPS-BS-IT1-WK4 | 114-GWPS-BS-IT1-WK4-F | 114-GWPS-BS-IT1-WK5 | 114-GWPS-BS-IT1-WK5-F | 114-GWPS-BS-IT1-WK6 | 114-GWPS-BS-IT1-WK6-F | 114-GWPS-BS-IT1-WK7 | 114-GWPS-BS-IT1-WK7-F |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | |
| Date Collected: | | | 02/27/14 | 02/27/14 | 03/06/14 | 03/06/14 | 03/12/14 | 03/12/14 | 03/20/14 | 03/20/14 |
| Location ID: | CAS Number | Units | noloc | noloc | noloc | noloc | noloc | noloc | noloc | noloc |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-GWPS-BS-IT1-WK4 02/27/14 noloc | 114-GWPS-BS-IT1-WK4-F 02/27/14 noloc | 114-GWPS-BS-IT1-WK5 03/06/14 noloc | 114-GWPS-BS-IT1-WK5-F 03/06/14 noloc | 114-GWPS-BS-IT1-WK6 03/12/14 noloc | 114-GWPS-BS-IT1-WK6-F 03/12/14 noloc | 114-GWPS-BS-IT1-WK7 03/20/14 noloc | 114-GWPS-BS-IT1-WK7-F 03/20/14 noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-GWPS-BS-IT1-WK4 02/27/14 noloc | 114-GWPS-BS-IT1-WK4-F 02/27/14 noloc | 114-GWPS-BS-IT1-WK5 03/06/14 noloc | 114-GWPS-BS-IT1-WK5-F 03/06/14 noloc | 114-GWPS-BS-IT1-WK6 03/12/14 noloc | 114-GWPS-BS-IT1-WK6-F 03/12/14 noloc | 114-GWPS-BS-IT1-WK7 03/20/14 noloc | 114-GWPS-BS-IT1-WK7-F 03/20/14 noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 45,200 | NA | 36,400 | NA | 51,300 | NA | 56,700 | NA |
| Chromium VI | 18540-29-9 | ug/L | 290 | NA | 46,800 | NA | 49,300 | NA | 62,700 | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT1-WK4<br>02/27/14<br>noloc | 114-GWPS-BS-IT1-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-IT1-WK5<br>03/06/14<br>noloc | 114-GWPS-BS-IT1-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-IT1-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-IT1-WK6-F<br>03/12/14<br>noloc | 114-GWPS-BS-IT1-WK7<br>03/20/14<br>noloc | 114-GWPS-BS-IT1-WK7-F<br>03/20/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 46,900 | NA | 41,500 | NA | 54,900 | NA | 55,400 |
| Chromium VI | 18540-29-9 | ug/L | NA | 52,400 | NA | 70,300 | NA | 48,700 J | NA | 60,000 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT1-WK4<br>02/27/14<br>noloc | 114-GWPS-BS-IT1-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-IT1-WK5<br>03/06/14<br>noloc | 114-GWPS-BS-IT1-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-IT1-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-IT1-WK6-F<br>03/12/14<br>noloc | 114-GWPS-BS-IT1-WK7<br>03/20/14<br>noloc | 114-GWPS-BS-IT1-WK7-F<br>03/20/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 519 | 367 | 334 | 315 | 556 | 661 | 342 | 390 |
| pH | ARC-pH | SU | 8.09 | 8.00 | 8.37 | 8.39 | 8.00 | 8.25 | 8.56 | 8.40 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT1-WK4<br>02/27/14<br>noloc | 114-GWPS-BS-IT1-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-IT1-WK5<br>03/06/14<br>noloc | 114-GWPS-BS-IT1-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-IT1-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-IT1-WK6-F<br>03/12/14<br>noloc | 114-GWPS-BS-IT1-WK7<br>03/20/14<br>noloc | 114-GWPS-BS-IT1-WK7-F<br>03/20/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-GWPS-BS-IT1-WK8 | 114-GWPS-BS-IT1-WK8-F | 114-GWPS-BS-IT1-WK9 | 114-GWPS-BS-IT1-WK9-F | 114-GWPS-BS-IT1-WK10 | 114-GWPS-BS-IT1-WK10-F | 114-GWPS-BS-IT2-WK1 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | |
| Date Collected: | | | 03/27/14 | 03/27/14 | 04/04/14 | 04/04/14 | 04/15/14 | 04/15/14 | 02/06/14 |
| Location ID: | CAS Number | Units | noloc | noloc | noloc | noloc | noloc | noloc | noloc |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT1-WK8<br>03/27/14<br>noloc | 114-GWPS-BS-IT1-WK8-F<br>03/27/14<br>noloc | 114-GWPS-BS-IT1-WK9<br>04/04/14<br>noloc | 114-GWPS-BS-IT1-WK9-F<br>04/04/14<br>noloc | 114-GWPS-BS-IT1-WK10<br>04/15/14<br>noloc | 114-GWPS-BS-IT1-WK10-F<br>04/15/14<br>noloc | 114-GWPS-BS-IT2-WK1<br>02/06/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT1-WK8<br>03/27/14<br>noloc | 114-GWPS-BS-IT1-WK8-F<br>03/27/14<br>noloc | 114-GWPS-BS-IT1-WK9<br>04/04/14<br>noloc | 114-GWPS-BS-IT1-WK9-F<br>04/04/14<br>noloc | 114-GWPS-BS-IT1-WK10<br>04/15/14<br>noloc | 114-GWPS-BS-IT1-WK10-F<br>04/15/14<br>noloc | 114-GWPS-BS-IT2-WK1<br>02/06/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | 18,400 | NA | 78,000 |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | 6.0 U | NA | 36 U |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | 9.0 | NA | 99.0 |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | 179 J | NA | 642 |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | 1.1 | NA | 12.0 |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | 1.5 J | NA | 4.2 J |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | 73,100 | NA | 146,000 |
| Chromium | 7440-47-3 | ug/L | 66,800 | NA | 18,500 | NA | 11,700 | NA | 6,540 |
| Chromium VI | 18540-29-9 | ug/L | 65,000 | NA | 17,800 | NA | 11,500 | NA | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | 28.6 J | NA | 128 |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | 53.9 | NA | 154 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | 31,100 | NA | 133,000 J |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | 27.1 | NA | 123 |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | 22,500 | NA | 78,900 |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | 727 | NA | 3,990 J |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT1-WK8<br><br>03/27/14<br>noloc | 114-GWPS-BS-IT1-WK8-F<br><br>03/27/14<br>noloc | 114-GWPS-BS-IT1-WK9<br><br>04/04/14<br>noloc | 114-GWPS-BS-IT1-WK9-F<br><br>04/04/14<br>noloc | 114-GWPS-BS-IT1-WK10<br><br>04/15/14<br>noloc | 114-GWPS-BS-IT1-WK10-F<br><br>04/15/14<br>noloc | 114-GWPS-BS-IT2-WK1<br><br>02/06/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | 0.10 J | NA | 0.56 J |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | 60.9 | NA | 258 J |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | 32,800 | NA | 41,400 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | 77.9 | NA | 60 U |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | 3.9 J | NA | 5.8 J |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | 209,000 | NA | 964,000 J |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | 4.0 U | NA | 10.8 J |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | 45.2 J | NA | 206 |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | 114 | NA | 603 |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 72,600 | NA | 20,200 | NA | 12,500 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 67,100 | NA | 19,000 | NA | 11,400 | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT1-WK8<br>03/27/14<br>noloc | 114-GWPS-BS-IT1-WK8-F<br>03/27/14<br>noloc | 114-GWPS-BS-IT1-WK9<br>04/04/14<br>noloc | 114-GWPS-BS-IT1-WK9-F<br>04/04/14<br>noloc | 114-GWPS-BS-IT1-WK10<br>04/15/14<br>noloc | 114-GWPS-BS-IT1-WK10-F<br>04/15/14<br>noloc | 114-GWPS-BS-IT2-WK1<br>02/06/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | 150 J | NA | 470 J |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 419 | 616 | 315 | 323 | 481 | 660 | 268 |
| pH | ARC-pH | SU | 8.04 | 7.97 | 7.84 | 7.84 | 7.93 | NA | 9.00 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT1-WK8<br>03/27/14<br>noloc | 114-GWPS-BS-IT1-WK8-F<br>03/27/14<br>noloc | 114-GWPS-BS-IT1-WK9<br>04/04/14<br>noloc | 114-GWPS-BS-IT1-WK9-F<br>04/04/14<br>noloc | 114-GWPS-BS-IT1-WK10<br>04/15/14<br>noloc | 114-GWPS-BS-IT1-WK10-F<br>04/15/14<br>noloc | 114-GWPS-BS-IT2-WK1<br>02/06/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | 424,000 | NA | 839,000 |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | 2,000 U | NA | 167,000 |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-GWPS-BS-IT2-WK1-F 02/06/14 noloc | 114-GWPS-BS-IT2-WK2 02/14/14 noloc | 114-GWPS-BS-IT2-WK2-F 02/14/14 noloc | 114-GWPS-BS-IT2-WK3 02/20/14 noloc | 114-GWPS-BS-IT2-WK3-F 02/20/14 noloc | 114-GWPS-BS-IT2-WK4 02/27/14 noloc | 114-GWPS-BS-IT2-WK4-F 02/27/14 noloc | 114-GWPS-BS-IT2-WK5 03/06/14 noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-GWPS-BS-IT2-WK1-F 02/06/14 noloc | 114-GWPS-BS-IT2-WK2 02/14/14 noloc | 114-GWPS-BS-IT2-WK2-F 02/14/14 noloc | 114-GWPS-BS-IT2-WK3 02/20/14 noloc | 114-GWPS-BS-IT2-WK3-F 02/20/14 noloc | 114-GWPS-BS-IT2-WK4 02/27/14 noloc | 114-GWPS-BS-IT2-WK4-F 02/27/14 noloc | 114-GWPS-BS-IT2-WK5 03/06/14 noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT2-WK1-F<br>02/06/14<br>noloc | 114-GWPS-BS-IT2-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-IT2-WK2-F<br>02/14/14<br>noloc | 114-GWPS-BS-IT2-WK3<br>02/20/14<br>noloc | 114-GWPS-BS-IT2-WK3-F<br>02/20/14<br>noloc | 114-GWPS-BS-IT2-WK4<br>02/27/14<br>noloc | 114-GWPS-BS-IT2-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-IT2-WK5<br>03/06/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 15,200 | NA | 20,800 | NA | 17,800 | NA | 14,200 |
| Chromium VI | 18540-29-9 | ug/L | NA | 150 | NA | 19,000 | NA | 4,600 | NA | 4,300 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT2-WK1-F<br>02/06/14<br>noloc | 114-GWPS-BS-IT2-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-IT2-WK2-F<br>02/14/14<br>noloc | 114-GWPS-BS-IT2-WK3<br>02/20/14<br>noloc | 114-GWPS-BS-IT2-WK3-F<br>02/20/14<br>noloc | 114-GWPS-BS-IT2-WK4<br>02/27/14<br>noloc | 114-GWPS-BS-IT2-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-IT2-WK5<br>03/06/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 65.4 | NA | 7,600 | NA | 11,400 | NA | 6,750 | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 U | NA | 39 | NA | 190 | NA | 10 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT2-WK1-F<br>02/06/14<br>noloc | 114-GWPS-BS-IT2-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-IT2-WK2-F<br>02/14/14<br>noloc | 114-GWPS-BS-IT2-WK3<br>02/20/14<br>noloc | 114-GWPS-BS-IT2-WK3-F<br>02/20/14<br>noloc | 114-GWPS-BS-IT2-WK4<br>02/27/14<br>noloc | 114-GWPS-BS-IT2-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-IT2-WK5<br>03/06/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 266 | 277 | 276 | 252 | 277 | 365 | 125 | 345 |
| pH | ARC-pH | SU | 8.83 | 8.54 | 8.70 | 7.95 | 8.46 | 7.96 | 8.17 | 8.19 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT2-WK1-F<br>02/06/14<br>noloc | 114-GWPS-BS-IT2-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-IT2-WK2-F<br>02/14/14<br>noloc | 114-GWPS-BS-IT2-WK3<br>02/20/14<br>noloc | 114-GWPS-BS-IT2-WK3-F<br>02/20/14<br>noloc | 114-GWPS-BS-IT2-WK4<br>02/27/14<br>noloc | 114-GWPS-BS-IT2-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-IT2-WK5<br>03/06/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-GWPS-BS-IT2-WK5-F 03/06/14 noloc | 114-GWPS-BS-IT2-WK6 03/12/14 noloc | 114-GWPS-BS-IT2-WK6-F 03/12/14 noloc | 114-GWPS-BS-IT2-WK7 03/20/14 noloc | 114-GWPS-BS-IT2-WK7-F 03/20/14 noloc | 114-GWPS-BS-IT2-WK8 03/27/14 noloc | 114-GWPS-BS-IT2-WK8-F 03/27/14 noloc | 114-GWPS-BS-IT2-WK9 04/04/14 noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT2-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-IT2-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-IT2-WK6-F<br>03/12/14<br>noloc | 114-GWPS-BS-IT2-WK7<br>03/20/14<br>noloc | 114-GWPS-BS-IT2-WK7-F<br>03/20/14<br>noloc | 114-GWPS-BS-IT2-WK8<br>03/27/14<br>noloc | 114-GWPS-BS-IT2-WK8-F<br>03/27/14<br>noloc | 114-GWPS-BS-IT2-WK9<br>04/04/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT2-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-IT2-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-IT2-WK6-F<br>03/12/14<br>noloc | 114-GWPS-BS-IT2-WK7<br>03/20/14<br>noloc | 114-GWPS-BS-IT2-WK7-F<br>03/20/14<br>noloc | 114-GWPS-BS-IT2-WK8<br>03/27/14<br>noloc | 114-GWPS-BS-IT2-WK8-F<br>03/27/14<br>noloc | 114-GWPS-BS-IT2-WK9<br>04/04/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 26,300 | NA | 22,400 | NA | 7,160 | NA | 16,800 |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U | NA | 180 | NA | 1,000 | NA | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT2-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-IT2-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-IT2-WK6-F<br>03/12/14<br>noloc | 114-GWPS-BS-IT2-WK7<br>03/20/14<br>noloc | 114-GWPS-BS-IT2-WK7-F<br>03/20/14<br>noloc | 114-GWPS-BS-IT2-WK8<br>03/27/14<br>noloc | 114-GWPS-BS-IT2-WK8-F<br>03/27/14<br>noloc | 114-GWPS-BS-IT2-WK9<br>04/04/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 5,020 | NA | 2,800 | NA | 1,030 | NA | 1,410 | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 U | NA | 3 J | NA | 5.1 J | NA | 10 UJ | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT2-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-IT2-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-IT2-WK6-F<br>03/12/14<br>noloc | 114-GWPS-BS-IT2-WK7<br>03/20/14<br>noloc | 114-GWPS-BS-IT2-WK7-F<br>03/20/14<br>noloc | 114-GWPS-BS-IT2-WK8<br>03/27/14<br>noloc | 114-GWPS-BS-IT2-WK8-F<br>03/27/14<br>noloc | 114-GWPS-BS-IT2-WK9<br>04/04/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 151 | 534 | NA | 349 | 264 | 424 | 204 | 642 |
| pH | ARC-pH | SU | 8.28 | 7.95 | NA | 8.12 | 8.12 | 7.82 | 7.65 | 1.47 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT2-WK5-F<br><br>03/06/14<br>noloc | 114-GWPS-BS-IT2-WK6<br><br>03/12/14<br>noloc | 114-GWPS-BS-IT2-WK6-F<br><br>03/12/14<br>noloc | 114-GWPS-BS-IT2-WK7<br><br>03/20/14<br>noloc | 114-GWPS-BS-IT2-WK7-F<br><br>03/20/14<br>noloc | 114-GWPS-BS-IT2-WK8<br><br>03/27/14<br>noloc | 114-GWPS-BS-IT2-WK8-F<br><br>03/27/14<br>noloc | 114-GWPS-BS-IT2-WK9<br><br>04/04/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-GWPS-BS-IT2-WK9-F 04/04/14 noloc | 114-GWPS-BS-IT2-WK10 04/15/14 noloc | 114-GWPS-BS-IT2-WK10-F 04/15/14 noloc | 114-GWPS-BS-IT3-WK1 02/06/14 noloc | 114-GWPS-BS-IT3-WK1-F 02/06/14 noloc | 114-GWPS-BS-IT3-WK2 02/14/14 noloc | 114-GWPS-BS-IT3-WK2-F 02/14/14 noloc |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT2-WK9-F<br>04/04/14<br>noloc | 114-GWPS-BS-IT2-WK10<br>04/15/14<br>noloc | 114-GWPS-BS-IT2-WK10-F<br>04/15/14<br>noloc | 114-GWPS-BS-IT3-WK1<br>02/06/14<br>noloc | 114-GWPS-BS-IT3-WK1-F<br>02/06/14<br>noloc | 114-GWPS-BS-IT3-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-IT3-WK2-F<br>02/14/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT2-WK9-F<br>04/04/14<br>noloc | 114-GWPS-BS-IT2-WK10<br>04/15/14<br>noloc | 114-GWPS-BS-IT2-WK10-F<br>04/15/14<br>noloc | 114-GWPS-BS-IT3-WK1<br>02/06/14<br>noloc | 114-GWPS-BS-IT3-WK1-F<br>02/06/14<br>noloc | 114-GWPS-BS-IT3-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-IT3-WK2-F<br>02/14/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 35,400 | NA | 62,600 | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | 12 U | NA | 7.8 J | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | 27.8 | NA | 18.0 | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | 304 J | NA | 162 J | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | 2.4 | NA | 1.6 J | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 2.4 J | NA | 1.0 J | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | 217,000 | NA | 34,200 | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 5,840 | NA | 727 | NA | 9,100 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U | NA | 7.7 J | NA | 10 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | 36.0 J | NA | 24.2 J | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | 73.6 | NA | 107 | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 61,400 | NA | 114,000 J | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | 54.6 | NA | 26.0 J | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | 53,600 | NA | 8,500 J | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | 2,170 | NA | 1,100 J | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT2-WK9-F<br>04/04/14<br>noloc | 114-GWPS-BS-IT2-WK10<br>04/15/14<br>noloc | 114-GWPS-BS-IT2-WK10-F<br>04/15/14<br>noloc | 114-GWPS-BS-IT3-WK1<br>02/06/14<br>noloc | 114-GWPS-BS-IT3-WK1-F<br>02/06/14<br>noloc | 114-GWPS-BS-IT3-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-IT3-WK2-F<br>02/14/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.11 J | NA | 0.60 U | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | 94.8 | NA | 100 J | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 32,700 | NA | 39,800 | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | 128 | NA | 20 U | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | 6.0 J | NA | 20 U | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | 262,000 | NA | 6,010,000 J | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 8.0 U | NA | 20 U | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 79.2 J | NA | 34.2 J | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | 211 | NA | 276 | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 43.2 | NA | 28.4 | NA | 14.3 | NA | 41.9 |
| Chromium VI | 18540-29-9 | ug/L | 22 | NA | 10 U | NA | 10 U | NA | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT2-WK9-F<br>04/04/14<br>noloc | 114-GWPS-BS-IT2-WK10<br>04/15/14<br>noloc | 114-GWPS-BS-IT2-WK10-F<br>04/15/14<br>noloc | 114-GWPS-BS-IT3-WK1<br>02/06/14<br>noloc | 114-GWPS-BS-IT3-WK1-F<br>02/06/14<br>noloc | 114-GWPS-BS-IT3-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-IT3-WK2-F<br>02/14/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | 37 J | NA | 4,700 | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 314 | 472 | 656 | 90.1 | 191 | 275 | 252 |
| pH | ARC-pH | SU | 8.17 | 7.55 | 7.94 | 10.38 | 9.21 | 8.55 | 8.56 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT2-WK9-F<br>04/04/14<br>noloc | 114-GWPS-BS-IT2-WK10<br>04/15/14<br>noloc | 114-GWPS-BS-IT2-WK10-F<br>04/15/14<br>noloc | 114-GWPS-BS-IT3-WK1<br>02/06/14<br>noloc | 114-GWPS-BS-IT3-WK1-F<br>02/06/14<br>noloc | 114-GWPS-BS-IT3-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-IT3-WK2-F<br>02/14/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 855,000 | NA | 886,000 | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | 9,900 | NA | 24,000 | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-GWPS-BS-IT3-WK3 | 114-GWPS-BS-IT3-WK3-F | 114-GWPS-BS-IT3-WK4 | 114-GWPS-BS-IT3-WK4-F | 114-GWPS-BS-IT3-WK5 | 114-GWPS-BS-IT3-WK5-F | 114-GWPS-BS-IT3-WK6 | 114-GWPS-BS-IT3-WK6-F |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | |
| Date Collected: | | | 02/20/14 | 02/20/14 | 02/27/14 | 02/27/14 | 03/06/14 | 03/06/14 | 03/12/14 | 03/12/14 |
| Location ID: | CAS Number | Units | noloc | noloc | noloc | noloc | noloc | noloc | noloc | noloc |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-GWPS-BS-IT3-WK3 02/20/14 noloc | 114-GWPS-BS-IT3-WK3-F 02/20/14 noloc | 114-GWPS-BS-IT3-WK4 02/27/14 noloc | 114-GWPS-BS-IT3-WK4-F 02/27/14 noloc | 114-GWPS-BS-IT3-WK5 03/06/14 noloc | 114-GWPS-BS-IT3-WK5-F 03/06/14 noloc | 114-GWPS-BS-IT3-WK6 03/12/14 noloc | 114-GWPS-BS-IT3-WK6-F 03/12/14 noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-GWPS-BS-IT3-WK3 02/20/14 noloc | 114-GWPS-BS-IT3-WK3-F 02/20/14 noloc | 114-GWPS-BS-IT3-WK4 02/27/14 noloc | 114-GWPS-BS-IT3-WK4-F 02/27/14 noloc | 114-GWPS-BS-IT3-WK5 03/06/14 noloc | 114-GWPS-BS-IT3-WK5-F 03/06/14 noloc | 114-GWPS-BS-IT3-WK6 03/12/14 noloc | 114-GWPS-BS-IT3-WK6-F 03/12/14 noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 11,300 | NA | 27,700 | NA | 11,300 | NA | 2,340 | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 U | NA | 10 U | NA | 22 | NA | 1.9 J | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT3-WK3<br>02/20/14<br>noloc | 114-GWPS-BS-IT3-WK3-F<br>02/20/14<br>noloc | 114-GWPS-BS-IT3-WK4<br>02/27/14<br>noloc | 114-GWPS-BS-IT3-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-IT3-WK5<br>03/06/14<br>noloc | 114-GWPS-BS-IT3-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-IT3-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-IT3-WK6-F<br>03/12/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 1,480 | NA | 125 | NA | 84.5 | NA | 205 |
| Chromium VI | 18540-29-9 | ug/L | NA | 1,100 | NA | 10 U | NA | 16 | NA | 90 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT3-WK3<br>02/20/14<br>noloc | 114-GWPS-BS-IT3-WK3-F<br>02/20/14<br>noloc | 114-GWPS-BS-IT3-WK4<br>02/27/14<br>noloc | 114-GWPS-BS-IT3-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-IT3-WK5<br>03/06/14<br>noloc | 114-GWPS-BS-IT3-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-IT3-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-IT3-WK6-F<br>03/12/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 251 | 289 | 193 | 232 | 331 | 249 | 379 | 459 |
| pH | ARC-pH | SU | 8.14 | 8.97 | 8.53 | 9.03 | 7.98 | 8.59 | 8.08 | 8.33 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT3-WK3<br>02/20/14<br>noloc | 114-GWPS-BS-IT3-WK3-F<br>02/20/14<br>noloc | 114-GWPS-BS-IT3-WK4<br>02/27/14<br>noloc | 114-GWPS-BS-IT3-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-IT3-WK5<br>03/06/14<br>noloc | 114-GWPS-BS-IT3-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-IT3-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-IT3-WK6-F<br>03/12/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT3-WK7<br>03/20/14<br>noloc | 114-GWPS-BS-IT3-WK7-F<br>03/20/14<br>noloc | 114-GWPS-BS-IT3-WK8<br>03/27/14<br>noloc | 114-GWPS-BS-IT3-WK8-F<br>03/27/14<br>noloc | 114-GWPS-BS-IT3-WK9<br>04/04/14<br>noloc | 114-GWPS-BS-IT3-WK9-F<br>04/04/14<br>noloc | 114-GWPS-BS-IT3-WK10<br>04/15/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT3-WK7<br><br>03/20/14<br>noloc | 114-GWPS-BS-IT3-WK7-F<br><br>03/20/14<br>noloc | 114-GWPS-BS-IT3-WK8<br><br>03/27/14<br>noloc | 114-GWPS-BS-IT3-WK8-F<br><br>03/27/14<br>noloc | 114-GWPS-BS-IT3-WK9<br><br>04/04/14<br>noloc | 114-GWPS-BS-IT3-WK9-F<br><br>04/04/14<br>noloc | 114-GWPS-BS-IT3-WK10<br><br>04/15/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT3-WK7<br><br>03/20/14<br>noloc | 114-GWPS-BS-IT3-WK7-F<br><br>03/20/14<br>noloc | 114-GWPS-BS-IT3-WK8<br><br>03/27/14<br>noloc | 114-GWPS-BS-IT3-WK8-F<br><br>03/27/14<br>noloc | 114-GWPS-BS-IT3-WK9<br><br>04/04/14<br>noloc | 114-GWPS-BS-IT3-WK9-F<br><br>04/04/14<br>noloc | 114-GWPS-BS-IT3-WK10<br><br>04/15/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | 956,000 |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | 120 U |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | 264 |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | 6,550 |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | 35.0 |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | 32.0 |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | 1,440,000 |
| Chromium | 7440-47-3 | ug/L | 91,200 | NA | 112,000 | NA | 9,760 | NA | 70,600 |
| Chromium VI | 18540-29-9 | ug/L | 10 U | NA | 10 UJ | NA | 2.5 J | NA | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | 665 |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | 2,900 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | 2,860,000 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | 886 |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | 478,000 |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | 51,500 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT3-WK7<br><br>03/20/14<br>noloc | 114-GWPS-BS-IT3-WK7-F<br><br>03/20/14<br>noloc | 114-GWPS-BS-IT3-WK8<br><br>03/27/14<br>noloc | 114-GWPS-BS-IT3-WK8-F<br><br>03/27/14<br>noloc | 114-GWPS-BS-IT3-WK9<br><br>04/04/14<br>noloc | 114-GWPS-BS-IT3-WK9-F<br><br>04/04/14<br>noloc | 114-GWPS-BS-IT3-WK10<br><br>04/15/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | 0.34 |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | 1,680 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | 250,000 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | 1,070 |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | 74.0 J |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | 655,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | 40 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | 1,610 |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | 7,530 |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 722 | NA | 89.5 | NA | 23.8 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 3,800 J | NA | 9.3 J | NA | 10 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT3-WK7<br><br>03/20/14<br>noloc | 114-GWPS-BS-IT3-WK7-F<br><br>03/20/14<br>noloc | 114-GWPS-BS-IT3-WK8<br><br>03/27/14<br>noloc | 114-GWPS-BS-IT3-WK8-F<br><br>03/27/14<br>noloc | 114-GWPS-BS-IT3-WK9<br><br>04/04/14<br>noloc | 114-GWPS-BS-IT3-WK9-F<br><br>04/04/14<br>noloc | 114-GWPS-BS-IT3-WK10<br><br>04/15/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | 9,400 |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 336 | 330 | 416 | 335 | 379 | 312 | 465 |
| pH | ARC-pH | SU | 8.28 | 8.92 | 7.95 | 7.92 | 8.14 | 8.20 | 8.59 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT3-WK7<br><br>03/20/14<br>noloc | 114-GWPS-BS-IT3-WK7-F<br><br>03/20/14<br>noloc | 114-GWPS-BS-IT3-WK8<br><br>03/27/14<br>noloc | 114-GWPS-BS-IT3-WK8-F<br><br>03/27/14<br>noloc | 114-GWPS-BS-IT3-WK9<br><br>04/04/14<br>noloc | 114-GWPS-BS-IT3-WK9-F<br><br>04/04/14<br>noloc | 114-GWPS-BS-IT3-WK10<br><br>04/15/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | 529,000 |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-GWPS-BS-IT3-WK10-F 04/15/14 noloc | 114-GWPS-BS-IT4-WK1 02/06/14 noloc | 114-GWPS-BS-IT4-WK1-F 02/06/14 noloc | 114-GWPS-BS-IT4-WK2 02/14/14 noloc | 114-GWPS-BS-IT4-WK2-F 02/14/14 noloc | 114-GWPS-BS-IT4-WK3 02/20/14 noloc | 114-GWPS-BS-IT4-WK3-F 02/20/14 noloc | 114-GWPS-BS-IT4-WK4 02/27/14 noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-GWPS-BS-IT3-WK10-F 04/15/14 noloc | 114-GWPS-BS-IT4-WK1 02/06/14 noloc | 114-GWPS-BS-IT4-WK1-F 02/06/14 noloc | 114-GWPS-BS-IT4-WK2 02/14/14 noloc | 114-GWPS-BS-IT4-WK2-F 02/14/14 noloc | 114-GWPS-BS-IT4-WK3 02/20/14 noloc | 114-GWPS-BS-IT4-WK3-F 02/20/14 noloc | 114-GWPS-BS-IT4-WK4 02/27/14 noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT3-WK10-F<br><br>04/15/14<br>noloc | 114-GWPS-BS-IT4-WK1<br><br>02/06/14<br>noloc | 114-GWPS-BS-IT4-WK1-F<br><br>02/06/14<br>noloc | 114-GWPS-BS-IT4-WK2<br><br>02/14/14<br>noloc | 114-GWPS-BS-IT4-WK2-F<br><br>02/14/14<br>noloc | 114-GWPS-BS-IT4-WK3<br><br>02/20/14<br>noloc | 114-GWPS-BS-IT4-WK3-F<br><br>02/20/14<br>noloc | 114-GWPS-BS-IT4-WK4<br><br>02/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 66,900 | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | 14.0 J | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | 34.0 | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | 751 | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | 10.6 | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 6.2 | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | 621,000 | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 5,050 | NA | 32,400 | NA | 22,500 | NA | 25,900 |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U | NA | 10 U | NA | 10 U | NA | 300 |
| Cobalt | 7440-48-4 | ug/L | NA | 95.4 J | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | 419 | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 712,000 J | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | 159 | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | 116,000 | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | 13,100 J | NA | NA | NA | NA | NA | NA |

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-GWPS-BS-IT3-WK10-F 04/15/14 noloc | 114-GWPS-BS-IT4-WK1 02/06/14 noloc | 114-GWPS-BS-IT4-WK1-F 02/06/14 noloc | 114-GWPS-BS-IT4-WK2 02/14/14 noloc | 114-GWPS-BS-IT4-WK2-F 02/14/14 noloc | 114-GWPS-BS-IT4-WK3 02/20/14 noloc | 114-GWPS-BS-IT4-WK3-F 02/20/14 noloc | 114-GWPS-BS-IT4-WK4 02/27/14 noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.60 U | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | 247 J | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 46,800 | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | 20 U | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | 20 U | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | 1,110,000 J | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 8.0 U | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 174 | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | 441 | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 22.5 | NA | 38.8 | NA | 61.3 | NA | 48.6 | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 U | NA | 10 U | NA | 10 U | NA | 4 J | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT3-WK10-F<br><br>04/15/14<br>noloc | 114-GWPS-BS-IT4-WK1<br><br>02/06/14<br>noloc | 114-GWPS-BS-IT4-WK1-F<br><br>02/06/14<br>noloc | 114-GWPS-BS-IT4-WK2<br><br>02/14/14<br>noloc | 114-GWPS-BS-IT4-WK2-F<br><br>02/14/14<br>noloc | 114-GWPS-BS-IT4-WK3<br><br>02/20/14<br>noloc | 114-GWPS-BS-IT4-WK3-F<br><br>02/20/14<br>noloc | 114-GWPS-BS-IT4-WK4<br><br>02/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | 106,000 | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 655 | 328 | 357 | 251 | 299 | 297 | 249 | 294 |
| pH | ARC-pH | SU | 9.41 | 5.19 | 4.56 | 7.26 | 4.57 | 6.51 | 5.98 | 7.10 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT3-WK10-F<br><br>04/15/14<br>noloc | 114-GWPS-BS-IT4-WK1<br><br>02/06/14<br>noloc | 114-GWPS-BS-IT4-WK1-F<br><br>02/06/14<br>noloc | 114-GWPS-BS-IT4-WK2<br><br>02/14/14<br>noloc | 114-GWPS-BS-IT4-WK2-F<br><br>02/14/14<br>noloc | 114-GWPS-BS-IT4-WK3<br><br>02/20/14<br>noloc | 114-GWPS-BS-IT4-WK3-F<br><br>02/20/14<br>noloc | 114-GWPS-BS-IT4-WK4<br><br>02/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 565,000 | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | 74,000 | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-GWPS-BS-IT4-WK4-F 02/27/14 noloc | 114-GWPS-BS-IT4-WK5 03/06/14 noloc | 114-GWPS-BS-IT4-WK5-F 03/06/14 noloc | 114-GWPS-BS-IT4-WK6 03/12/14 noloc | 114-GWPS-BS-IT4-WK6-F 03/12/14 noloc | 114-GWPS-BS-IT4-WK7 03/20/14 noloc | 114-GWPS-BS-IT4-WK7-F 03/20/14 noloc | 114-GWPS-BS-IT4-WK8 03/27/14 noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT4-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-IT4-WK5<br>03/06/14<br>noloc | 114-GWPS-BS-IT4-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-IT4-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-IT4-WK6-F<br>03/12/14<br>noloc | 114-GWPS-BS-IT4-WK7<br>03/20/14<br>noloc | 114-GWPS-BS-IT4-WK7-F<br>03/20/14<br>noloc | 114-GWPS-BS-IT4-WK8<br>03/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-GWPS-BS-IT4-WK4-F 02/27/14 noloc | 114-GWPS-BS-IT4-WK5 03/06/14 noloc | 114-GWPS-BS-IT4-WK5-F 03/06/14 noloc | 114-GWPS-BS-IT4-WK6 03/12/14 noloc | 114-GWPS-BS-IT4-WK6-F 03/12/14 noloc | 114-GWPS-BS-IT4-WK7 03/20/14 noloc | 114-GWPS-BS-IT4-WK7-F 03/20/14 noloc | 114-GWPS-BS-IT4-WK8 03/27/14 noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 9,910 | NA | 16,700 | NA | 68,400 | NA | 33,300 |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U | NA | 970 | NA | 15,000 | NA | 34,100 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT4-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-IT4-WK5<br>03/06/14<br>noloc | 114-GWPS-BS-IT4-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-IT4-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-IT4-WK6-F<br>03/12/14<br>noloc | 114-GWPS-BS-IT4-WK7<br>03/20/14<br>noloc | 114-GWPS-BS-IT4-WK7-F<br>03/20/14<br>noloc | 114-GWPS-BS-IT4-WK8<br>03/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 37.2 | NA | 3,470 | NA | 9,660 | NA | 12,000 | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 U | NA | 10 U | NA | 23,700 J | NA | 13,100 J | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT4-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-IT4-WK5<br>03/06/14<br>noloc | 114-GWPS-BS-IT4-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-IT4-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-IT4-WK6-F<br>03/12/14<br>noloc | 114-GWPS-BS-IT4-WK7<br>03/20/14<br>noloc | 114-GWPS-BS-IT4-WK7-F<br>03/20/14<br>noloc | 114-GWPS-BS-IT4-WK8<br>03/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 266 | 355 | 279 | 390 | 463 | 352 | 379 | 436 |
| pH | ARC-pH | SU | 6.31 | 7.10 | 6.65 | 7.61 | 8.08 | 7.98 | 7.91 | 7.37 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT4-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-IT4-WK5<br>03/06/14<br>noloc | 114-GWPS-BS-IT4-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-IT4-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-IT4-WK6-F<br>03/12/14<br>noloc | 114-GWPS-BS-IT4-WK7<br>03/20/14<br>noloc | 114-GWPS-BS-IT4-WK7-F<br>03/20/14<br>noloc | 114-GWPS-BS-IT4-WK8<br>03/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-GWPS-BS-IT4-WK8-F 03/27/14 noloc | 114-GWPS-BS-IT4-WK9 04/04/14 noloc | 114-GWPS-BS-IT4-WK9-F 04/04/14 noloc | 114-GWPS-BS-IT5-WK1 02/06/14 noloc | 114-GWPS-BS-IT5-WK1-F 02/06/14 noloc | 114-GWPS-BS-IT5-WK2 02/14/14 noloc | 114-GWPS-BS-IT5-WK2-F 02/14/14 noloc | 114-GWPS-BS-IT5-WK3 02/20/14 noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT4-WK8-F<br>03/27/14<br>noloc | 114-GWPS-BS-IT4-WK9<br>04/04/14<br>noloc | 114-GWPS-BS-IT4-WK9-F<br>04/04/14<br>noloc | 114-GWPS-BS-IT5-WK1<br>02/06/14<br>noloc | 114-GWPS-BS-IT5-WK1-F<br>02/06/14<br>noloc | 114-GWPS-BS-IT5-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-IT5-WK2-F<br>02/14/14<br>noloc | 114-GWPS-BS-IT5-WK3<br>02/20/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT4-WK8-F<br>03/27/14<br>noloc | 114-GWPS-BS-IT4-WK9<br>04/04/14<br>noloc | 114-GWPS-BS-IT4-WK9-F<br>04/04/14<br>noloc | 114-GWPS-BS-IT5-WK1<br>02/06/14<br>noloc | 114-GWPS-BS-IT5-WK1-F<br>02/06/14<br>noloc | 114-GWPS-BS-IT5-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-IT5-WK2-F<br>02/14/14<br>noloc | 114-GWPS-BS-IT5-WK3<br>02/20/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 32,700 | NA | 122,000 | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | 6.0 U | NA | 43.4 | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | 26.8 | NA | 29.0 | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | 289 | NA | 1,440 | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | 2.1 | NA | 21.2 | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 1.5 J | NA | 7.6 | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | 149,000 | NA | 271,000 | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 5,040 | NA | 13,600 | NA | 2,360 | NA | 27,000 |
| Chromium VI | 18540-29-9 | ug/L | NA | 690 | NA | 10 U | NA | 10 U | NA | 14,000 |
| Cobalt | 7440-48-4 | ug/L | NA | 38.5 J | NA | 265 | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | 78.3 | NA | 296 | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 71,500 | NA | 811,000 J | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | 47.9 | NA | 187 | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | 40,300 | NA | 144,000 | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | 3,060 | NA | 11,400 J | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT4-WK8-F<br>03/27/14<br>noloc | 114-GWPS-BS-IT4-WK9<br>04/04/14<br>noloc | 114-GWPS-BS-IT4-WK9-F<br>04/04/14<br>noloc | 114-GWPS-BS-IT5-WK1<br>02/06/14<br>noloc | 114-GWPS-BS-IT5-WK1-F<br>02/06/14<br>noloc | 114-GWPS-BS-IT5-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-IT5-WK2-F<br>02/14/14<br>noloc | 114-GWPS-BS-IT5-WK3<br>02/20/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.42 J | NA | 0.37 J | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | 92.4 | NA | 811 J | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 25,600 | NA | 103,000 | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | 12.4 | NA | 20 U | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | 4.3 J | NA | 20 U | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | 230,000 | NA | 1,330,000 J | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 3.8 J | NA | 40 U | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 70.7 | NA | 324 | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | 202 | NA | 700 | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 28,100 | NA | 1,150 | NA | 78.7 | NA | 62.9 | NA |
| Chromium VI | 18540-29-9 | ug/L | 23,500 | NA | 1,200 | NA | 10 U | NA | 130 | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT4-WK8-F<br>03/27/14<br>noloc | 114-GWPS-BS-IT4-WK9<br>04/04/14<br>noloc | 114-GWPS-BS-IT4-WK9-F<br>04/04/14<br>noloc | 114-GWPS-BS-IT5-WK1<br>02/06/14<br>noloc | 114-GWPS-BS-IT5-WK1-F<br>02/06/14<br>noloc | 114-GWPS-BS-IT5-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-IT5-WK2-F<br>02/14/14<br>noloc | 114-GWPS-BS-IT5-WK3<br>02/20/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | 1,400 | NA | 446,000 | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 396 | 375 | 314 | 311 | 265 | 350 | 335 | 281 |
| pH | ARC-pH | SU | 7.31 | 8.29 | 7.97 | 6.13 | 6.31 | 6.47 | 6.71 | 7.30 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT4-WK8-F<br>03/27/14<br>noloc | 114-GWPS-BS-IT4-WK9<br>04/04/14<br>noloc | 114-GWPS-BS-IT4-WK9-F<br>04/04/14<br>noloc | 114-GWPS-BS-IT5-WK1<br>02/06/14<br>noloc | 114-GWPS-BS-IT5-WK1-F<br>02/06/14<br>noloc | 114-GWPS-BS-IT5-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-IT5-WK2-F<br>02/14/14<br>noloc | 114-GWPS-BS-IT5-WK3<br>02/20/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 434,000 | NA | 4,670,000 | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | 2,000 U | NA | 2,000 U | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-GWPS-BS-IT5-WK3-F | 114-GWPS-BS-IT5-WK4 | 114-GWPS-BS-IT5-WK4-F | 114-GWPS-BS-IT5-WK5 | 114-GWPS-BS-IT5-WK5-F | 114-GWPS-BS-IT5-WK6 | 114-GWPS-BS-IT5-WK6-F | 114-GWPS-BS-IT6-WK1 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | |
| Date Collected: | | | 02/20/14 | 02/27/14 | 02/27/14 | 03/06/14 | 03/06/14 | 03/12/14 | 03/12/14 | 02/06/14 |
| Location ID: | CAS Number | Units | noloc | noloc | noloc | noloc | noloc | noloc | noloc | noloc |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT5-WK3-F<br>02/20/14<br>noloc | 114-GWPS-BS-IT5-WK4<br>02/27/14<br>noloc | 114-GWPS-BS-IT5-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-IT5-WK5<br>03/06/14<br>noloc | 114-GWPS-BS-IT5-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-IT5-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-IT5-WK6-F<br>03/12/14<br>noloc | 114-GWPS-BS-IT6-WK1<br>02/06/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-GWPS-BS-IT5-WK3-F 02/20/14 noloc | 114-GWPS-BS-IT5-WK4 02/27/14 noloc | 114-GWPS-BS-IT5-WK4-F 02/27/14 noloc | 114-GWPS-BS-IT5-WK5 03/06/14 noloc | 114-GWPS-BS-IT5-WK5-F 03/06/14 noloc | 114-GWPS-BS-IT5-WK6 03/12/14 noloc | 114-GWPS-BS-IT5-WK6-F 03/12/14 noloc | 114-GWPS-BS-IT6-WK1 02/06/14 noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 38,200 | NA | 24,600 |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 12 U | NA | 61.7 |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 20.8 | NA | 32.3 |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 324 J | NA | 459 |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 2.6 | NA | 1.7 |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 4.6 J | NA | 30 U |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 134,000 | NA | 367,000 |
| Chromium | 7440-47-3 | ug/L | NA | 26,600 | NA | 63,900 | NA | 26,300 | NA | 946 |
| Chromium VI | 18540-29-9 | ug/L | NA | 10,000 | NA | 22,100 | NA | 24,500 | NA | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 78.2 J | NA | 162 |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 183 | NA | 113 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | 66,900 | NA | 2,350,000 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 68.0 | NA | 47.7 |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 53,400 | NA | 103,000 |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | 1,940 | NA | 24,300 J |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT5-WK3-F<br>02/20/14<br>noloc | 114-GWPS-BS-IT5-WK4<br>02/27/14<br>noloc | 114-GWPS-BS-IT5-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-IT5-WK5<br>03/06/14<br>noloc | 114-GWPS-BS-IT5-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-IT5-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-IT5-WK6-F<br>03/12/14<br>noloc | 114-GWPS-BS-IT6-WK1<br>02/06/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.60 U | NA | 0.60 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | 167 | NA | 506 J |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 34,900 | NA | 58,700 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 20 U | NA | 26.1 J |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 6.2 J | NA | 50 U |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 329,000 | NA | 3,100,000 J |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | 12 U | NA | 10 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | 92.6 J | NA | 250 U |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 282 | NA | 269 |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 5,160 | NA | 3,120 | NA | 16,700 | NA | 25,300 | NA |
| Chromium VI | 18540-29-9 | ug/L | 4,800 | NA | 3,300 | NA | 15,800 | NA | 24,200 J | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT5-WK3-F<br>02/20/14<br>noloc | 114-GWPS-BS-IT5-WK4<br>02/27/14<br>noloc | 114-GWPS-BS-IT5-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-IT5-WK5<br>03/06/14<br>noloc | 114-GWPS-BS-IT5-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-IT5-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-IT5-WK6-F<br>03/12/14<br>noloc | 114-GWPS-BS-IT6-WK1<br>02/06/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | 380 | NA | 2,640,000 |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 263 | 291 | 293 | 354 | 293 | 398 | 472 | 365 |
| pH | ARC-pH | SU | 7.12 | 7.65 | 7.49 | 7.85 | 7.90 | 8.17 | 8.24 | 4.21 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT5-WK3-F<br>02/20/14<br>noloc | 114-GWPS-BS-IT5-WK4<br>02/27/14<br>noloc | 114-GWPS-BS-IT5-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-IT5-WK5<br>03/06/14<br>noloc | 114-GWPS-BS-IT5-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-IT5-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-IT5-WK6-F<br>03/12/14<br>noloc | 114-GWPS-BS-IT6-WK1<br>02/06/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | 725,000 | NA | 689,000 |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | 2,000 U | NA | 2,000 |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-GWPS-BS-IT6-WK1-F 02/06/14 noloc | 114-GWPS-BS-IT6-WK2 02/14/14 noloc | 114-GWPS-BS-IT6-WK2-F 02/14/14 noloc | 114-GWPS-BS-IT6-WK3 02/20/14 noloc | 114-GWPS-BS-IT6-WK3-F 02/20/14 noloc | 114-GWPS-BS-IT6-WK4 02/27/14 noloc | 114-GWPS-BS-IT6-WK4-F 02/27/14 noloc | 114-GWPS-BS-IT6-WK5 03/06/14 noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT6-WK1-F<br>02/06/14<br>noloc | 114-GWPS-BS-IT6-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-IT6-WK2-F<br>02/14/14<br>noloc | 114-GWPS-BS-IT6-WK3<br>02/20/14<br>noloc | 114-GWPS-BS-IT6-WK3-F<br>02/20/14<br>noloc | 114-GWPS-BS-IT6-WK4<br>02/27/14<br>noloc | 114-GWPS-BS-IT6-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-IT6-WK5<br>03/06/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT6-WK1-F<br>02/06/14<br>noloc | 114-GWPS-BS-IT6-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-IT6-WK2-F<br>02/14/14<br>noloc | 114-GWPS-BS-IT6-WK3<br>02/20/14<br>noloc | 114-GWPS-BS-IT6-WK3-F<br>02/20/14<br>noloc | 114-GWPS-BS-IT6-WK4<br>02/27/14<br>noloc | 114-GWPS-BS-IT6-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-IT6-WK5<br>03/06/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 3,020 | NA | 20,300 | NA | 6,930 | NA | 36,600 |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U | NA | 10 U | NA | 10 U | NA | 5.5 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT6-WK1-F<br>02/06/14<br>noloc | 114-GWPS-BS-IT6-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-IT6-WK2-F<br>02/14/14<br>noloc | 114-GWPS-BS-IT6-WK3<br>02/20/14<br>noloc | 114-GWPS-BS-IT6-WK3-F<br>02/20/14<br>noloc | 114-GWPS-BS-IT6-WK4<br>02/27/14<br>noloc | 114-GWPS-BS-IT6-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-IT6-WK5<br>03/06/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 9.7 | NA | 11.3 J | NA | 27.7 J | NA | 48.3 | NA |
| Chromium VI | 18540-29-9 | ug/L | 4.3 J | NA | 12 | NA | 10 U | NA | 98 | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT6-WK1-F<br>02/06/14<br>noloc | 114-GWPS-BS-IT6-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-IT6-WK2-F<br>02/14/14<br>noloc | 114-GWPS-BS-IT6-WK3<br>02/20/14<br>noloc | 114-GWPS-BS-IT6-WK3-F<br>02/20/14<br>noloc | 114-GWPS-BS-IT6-WK4<br>02/27/14<br>noloc | 114-GWPS-BS-IT6-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-IT6-WK5<br>03/06/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 487 | 262 | 413 | 292 | 409 | 291 | 379 | 264 |
| pH | ARC-pH | SU | 3.57 | 4.09 | 3.56 | 5.51 | 4.09 | 5.75 | 4.47 | 6.10 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT6-WK1-F<br>02/06/14<br>noloc | 114-GWPS-BS-IT6-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-IT6-WK2-F<br>02/14/14<br>noloc | 114-GWPS-BS-IT6-WK3<br>02/20/14<br>noloc | 114-GWPS-BS-IT6-WK3-F<br>02/20/14<br>noloc | 114-GWPS-BS-IT6-WK4<br>02/27/14<br>noloc | 114-GWPS-BS-IT6-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-IT6-WK5<br>03/06/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-GWPS-BS-IT6-WK5-F 03/06/14 noloc | 114-GWPS-BS-IT6-WK6 03/12/14 noloc | 114-GWPS-BS-IT6-WK6-F 03/12/14 noloc | 114-GWPS-BS-IT6-WK7 03/20/14 noloc | 114-GWPS-BS-IT6-WK7-F 03/20/14 noloc | 114-GWPS-BS-IT6-WK8 03/27/14 noloc | 114-GWPS-BS-IT6-WK8-F 03/27/14 noloc | 114-GWPS-BS-IT6-WK9 04/04/14 noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT6-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-IT6-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-IT6-WK6-F<br>03/12/14<br>noloc | 114-GWPS-BS-IT6-WK7<br>03/20/14<br>noloc | 114-GWPS-BS-IT6-WK7-F<br>03/20/14<br>noloc | 114-GWPS-BS-IT6-WK8<br>03/27/14<br>noloc | 114-GWPS-BS-IT6-WK8-F<br>03/27/14<br>noloc | 114-GWPS-BS-IT6-WK9<br>04/04/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT6-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-IT6-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-IT6-WK6-F<br>03/12/14<br>noloc | 114-GWPS-BS-IT6-WK7<br>03/20/14<br>noloc | 114-GWPS-BS-IT6-WK7-F<br>03/20/14<br>noloc | 114-GWPS-BS-IT6-WK8<br>03/27/14<br>noloc | 114-GWPS-BS-IT6-WK8-F<br>03/27/14<br>noloc | 114-GWPS-BS-IT6-WK9<br>04/04/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 136,000 |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | 30 U |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 30.5 |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1,160 |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 9.0 |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.5 J |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 170,000 |
| Chromium | 7440-47-3 | ug/L | NA | 54,100 | NA | 79,800 | NA | 77,500 | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U | NA | 10 U | NA | 28,500 | NA | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 139 J |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 420 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 118,000 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 218 |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 89,200 |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 6,020 |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT6-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-IT6-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-IT6-WK6-F<br>03/12/14<br>noloc | 114-GWPS-BS-IT6-WK7<br>03/20/14<br>noloc | 114-GWPS-BS-IT6-WK7-F<br>03/20/14<br>noloc | 114-GWPS-BS-IT6-WK8<br>03/27/14<br>noloc | 114-GWPS-BS-IT6-WK8-F<br>03/27/14<br>noloc | 114-GWPS-BS-IT6-WK9<br>04/04/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.42 J |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | 97.6 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 59,200 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 44.0 J |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 18.0 J |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 207,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 324 |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 862 |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 26.1 | NA | 44.7 | NA | 45.6 | NA | 13,400 | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 U | NA | R | NA | 10 UJ | NA | 12,300 | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT6-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-IT6-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-IT6-WK6-F<br>03/12/14<br>noloc | 114-GWPS-BS-IT6-WK7<br>03/20/14<br>noloc | 114-GWPS-BS-IT6-WK7-F<br>03/20/14<br>noloc | 114-GWPS-BS-IT6-WK8<br>03/27/14<br>noloc | 114-GWPS-BS-IT6-WK8-F<br>03/27/14<br>noloc | 114-GWPS-BS-IT6-WK9<br>04/04/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | 870 |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 324 | 399 | 472 | 359 | 388 | 436 | 639 | 371 |
| pH | ARC-pH | SU | 5.28 | 6.93 | 7.12 | 7.74 | 6.99 | 7.56 | 6.90 | 8.07 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT6-WK5-F<br><br>03/06/14<br>noloc | 114-GWPS-BS-IT6-WK6<br><br>03/12/14<br>noloc | 114-GWPS-BS-IT6-WK6-F<br><br>03/12/14<br>noloc | 114-GWPS-BS-IT6-WK7<br><br>03/20/14<br>noloc | 114-GWPS-BS-IT6-WK7-F<br><br>03/20/14<br>noloc | 114-GWPS-BS-IT6-WK8<br><br>03/27/14<br>noloc | 114-GWPS-BS-IT6-WK8-F<br><br>03/27/14<br>noloc | 114-GWPS-BS-IT6-WK9<br><br>04/04/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 228,000 |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT6-WK9-F<br><br>04/04/14<br>noloc | 114-GWPS-BS-ST1-WK1<br><br>02/06/14<br>noloc | 114-GWPS-BS-ST1-WK1-F<br><br>02/06/14<br>noloc | 114-GWPS-BS-ST1-WK2<br><br>02/14/14<br>noloc | 114-GWPS-BS-ST1-WK2-F<br><br>02/14/14<br>noloc | 114-GWPS-BS-ST1-WK3<br><br>02/20/14<br>noloc | 114-GWPS-BS-ST1-WK3-F<br><br>02/20/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT6-WK9-F<br><br>04/04/14<br>noloc | 114-GWPS-BS-ST1-WK1<br><br>02/06/14<br>noloc | 114-GWPS-BS-ST1-WK1-F<br><br>02/06/14<br>noloc | 114-GWPS-BS-ST1-WK2<br><br>02/14/14<br>noloc | 114-GWPS-BS-ST1-WK2-F<br><br>02/14/14<br>noloc | 114-GWPS-BS-ST1-WK3<br><br>02/20/14<br>noloc | 114-GWPS-BS-ST1-WK3-F<br><br>02/20/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT6-WK9-F<br>04/04/14<br>noloc | 114-GWPS-BS-ST1-WK1<br>02/06/14<br>noloc | 114-GWPS-BS-ST1-WK1-F<br>02/06/14<br>noloc | 114-GWPS-BS-ST1-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-ST1-WK2-F<br>02/14/14<br>noloc | 114-GWPS-BS-ST1-WK3<br>02/20/14<br>noloc | 114-GWPS-BS-ST1-WK3-F<br>02/20/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 28,700 | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | 60 U | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | 3.6 | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | 314 | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | 4.3 | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 1.2 | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | 154,000 | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 23,600 | NA | 28,900 | NA | 18,300 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 24,500 | NA | 22,600 | NA | 18,900 | NA |
| Cobalt | 7440-48-4 | ug/L | NA | 23.5 | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | 81.2 | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 39,200 | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | 71.2 | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | 31,400 | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | 533 | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT6-WK9-F<br>04/04/14<br>noloc | 114-GWPS-BS-ST1-WK1<br>02/06/14<br>noloc | 114-GWPS-BS-ST1-WK1-F<br>02/06/14<br>noloc | 114-GWPS-BS-ST1-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-ST1-WK2-F<br>02/14/14<br>noloc | 114-GWPS-BS-ST1-WK3<br>02/20/14<br>noloc | 114-GWPS-BS-ST1-WK3-F<br>02/20/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.27 J | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | 131 | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 82,800 | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | 100 U | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | 2.7 | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | 1,050,000 | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 20 U | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 71.9 | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | 198 | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 213 | NA | 30,100 | NA | 25,500 | NA | 23,500 |
| Chromium VI | 18540-29-9 | ug/L | 170 | NA | 30,300 | NA | 26,000 | NA | 20,800 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT6-WK9-F<br><br>04/04/14<br>noloc | 114-GWPS-BS-ST1-WK1<br><br>02/06/14<br>noloc | 114-GWPS-BS-ST1-WK1-F<br><br>02/06/14<br>noloc | 114-GWPS-BS-ST1-WK2<br><br>02/14/14<br>noloc | 114-GWPS-BS-ST1-WK2-F<br><br>02/14/14<br>noloc | 114-GWPS-BS-ST1-WK3<br><br>02/20/14<br>noloc | 114-GWPS-BS-ST1-WK3-F<br><br>02/20/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | 310 | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 314 | 354 | 351 | 321 | 295 | 279 | 320 |
| pH | ARC-pH | SU | 8.01 | 7.83 | 8.09 | 7.89 | 7.75 | 7.76 | 7.75 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-IT6-WK9-F<br>04/04/14<br>noloc | 114-GWPS-BS-ST1-WK1<br>02/06/14<br>noloc | 114-GWPS-BS-ST1-WK1-F<br>02/06/14<br>noloc | 114-GWPS-BS-ST1-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-ST1-WK2-F<br>02/14/14<br>noloc | 114-GWPS-BS-ST1-WK3<br>02/20/14<br>noloc | 114-GWPS-BS-ST1-WK3-F<br>02/20/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 2,250,000 | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | 2,000 U | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-GWPS-BS-ST1-WK4 02/27/14 noloc | 114-GWPS-BS-ST1-WK4-F 02/27/14 noloc | 114-GWPS-BS-ST1-WK5 03/06/14 noloc | 114-GWPS-BS-ST1-WK5-F 03/06/14 noloc | 114-GWPS-BS-ST1-WK6 03/12/14 noloc | 114-GWPS-BS-ST1-WK6-F 03/12/14 noloc | 114-GWPS-BS-ST1-WK7 03/20/14 noloc |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST1-WK4<br><br>02/27/14<br>noloc | 114-GWPS-BS-ST1-WK4-F<br><br>02/27/14<br>noloc | 114-GWPS-BS-ST1-WK5<br><br>03/06/14<br>noloc | 114-GWPS-BS-ST1-WK5-F<br><br>03/06/14<br>noloc | 114-GWPS-BS-ST1-WK6<br><br>03/12/14<br>noloc | 114-GWPS-BS-ST1-WK6-F<br><br>03/12/14<br>noloc | 114-GWPS-BS-ST1-WK7<br><br>03/20/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST1-WK4<br><br>02/27/14<br>noloc | 114-GWPS-BS-ST1-WK4-F<br><br>02/27/14<br>noloc | 114-GWPS-BS-ST1-WK5<br><br>03/06/14<br>noloc | 114-GWPS-BS-ST1-WK5-F<br><br>03/06/14<br>noloc | 114-GWPS-BS-ST1-WK6<br><br>03/12/14<br>noloc | 114-GWPS-BS-ST1-WK6-F<br><br>03/12/14<br>noloc | 114-GWPS-BS-ST1-WK7<br><br>03/20/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 18,800 | NA | 65,300 | NA | 55,500 | NA | 72,900 |
| Chromium VI | 18540-29-9 | ug/L | 390 | NA | 69,600 | NA | 58,700 | NA | 87,900 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST1-WK4<br>02/27/14<br>noloc | 114-GWPS-BS-ST1-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-ST1-WK5<br>03/06/14<br>noloc | 114-GWPS-BS-ST1-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-ST1-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-ST1-WK6-F<br>03/12/14<br>noloc | 114-GWPS-BS-ST1-WK7<br>03/20/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 18,100 | NA | 74,900 | NA | 61,500 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 17,800 | NA | 62,900 | NA | 45,400 J | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST1-WK4<br><br>02/27/14<br>noloc | 114-GWPS-BS-ST1-WK4-F<br><br>02/27/14<br>noloc | 114-GWPS-BS-ST1-WK5<br><br>03/06/14<br>noloc | 114-GWPS-BS-ST1-WK5-F<br><br>03/06/14<br>noloc | 114-GWPS-BS-ST1-WK6<br><br>03/12/14<br>noloc | 114-GWPS-BS-ST1-WK6-F<br><br>03/12/14<br>noloc | 114-GWPS-BS-ST1-WK7<br><br>03/20/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 324 | 318 | 328 | 314 | 375 | 451 | 330 |
| pH | ARC-pH | SU | 7.81 | 7.82 | 7.77 | 7.81 | 7.94 | 8.07 | 8.04 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST1-WK4<br>02/27/14<br>noloc | 114-GWPS-BS-ST1-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-ST1-WK5<br>03/06/14<br>noloc | 114-GWPS-BS-ST1-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-ST1-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-ST1-WK6-F<br>03/12/14<br>noloc | 114-GWPS-BS-ST1-WK7<br>03/20/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-GWPS-BS-ST1-WK7-F 03/20/14 noloc | 114-GWPS-BS-ST1-WK8 03/27/14 noloc | 114-GWPS-BS-ST1-WK8-F 03/27/14 noloc | 114-GWPS-BS-ST1-WK9 04/04/14 noloc | 114-GWPS-BS-ST1-WK9-F 04/04/14 noloc | 114-GWPS-BS-ST1-WK10 04/15/14 noloc | 114-GWPS-BS-ST1-WK10-F 04/15/14 noloc |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST1-WK7-F<br>03/20/14<br>noloc | 114-GWPS-BS-ST1-WK8<br>03/27/14<br>noloc | 114-GWPS-BS-ST1-WK8-F<br>03/27/14<br>noloc | 114-GWPS-BS-ST1-WK9<br>04/04/14<br>noloc | 114-GWPS-BS-ST1-WK9-F<br>04/04/14<br>noloc | 114-GWPS-BS-ST1-WK10<br>04/15/14<br>noloc | 114-GWPS-BS-ST1-WK10-F<br>04/15/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST1-WK7-F<br><br>03/20/14<br>noloc | 114-GWPS-BS-ST1-WK8<br><br>03/27/14<br>noloc | 114-GWPS-BS-ST1-WK8-F<br><br>03/27/14<br>noloc | 114-GWPS-BS-ST1-WK9<br><br>04/04/14<br>noloc | 114-GWPS-BS-ST1-WK9-F<br><br>04/04/14<br>noloc | 114-GWPS-BS-ST1-WK10<br><br>04/15/14<br>noloc | 114-GWPS-BS-ST1-WK10-F<br><br>04/15/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 15,500 | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 6.0 U | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 10.2 | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 186 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 1.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 1.2 J | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 146,000 | NA |
| Chromium | 7440-47-3 | ug/L | NA | 54,300 | NA | 18,100 | NA | 10,200 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 53,500 | NA | 20,100 | NA | 10,000 | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 13.4 J | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 34.0 | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | 24,200 | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 21.5 | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 10,700 | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | 265 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST1-WK7-F<br>03/20/14<br>noloc | 114-GWPS-BS-ST1-WK8<br>03/27/14<br>noloc | 114-GWPS-BS-ST1-WK8-F<br>03/27/14<br>noloc | 114-GWPS-BS-ST1-WK9<br>04/04/14<br>noloc | 114-GWPS-BS-ST1-WK9-F<br>04/04/14<br>noloc | 114-GWPS-BS-ST1-WK10<br>04/15/14<br>noloc | 114-GWPS-BS-ST1-WK10-F<br>04/15/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.050 J | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | 56.6 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 76,900 | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 75.7 | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 4.1 J | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 371,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | 6.0 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | 54.8 | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 67.6 | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 78,200 | NA | 61,400 | NA | 20,100 | NA | 11,800 |
| Chromium VI | 18540-29-9 | ug/L | 86,800 J | NA | 51,900 | NA | 20,000 | NA | 5,200 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST1-WK7-F<br><br>03/20/14<br>noloc | 114-GWPS-BS-ST1-WK8<br><br>03/27/14<br>noloc | 114-GWPS-BS-ST1-WK8-F<br><br>03/27/14<br>noloc | 114-GWPS-BS-ST1-WK9<br><br>04/04/14<br>noloc | 114-GWPS-BS-ST1-WK9-F<br><br>04/04/14<br>noloc | 114-GWPS-BS-ST1-WK10<br><br>04/15/14<br>noloc | 114-GWPS-BS-ST1-WK10-F<br><br>04/15/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | 27 J | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 616 | 421 | 384 | 369 | 307 | 455 | 658 |
| pH | ARC-pH | SU | 8.00 | 7.47 | 7.79 | 7.96 | 7.58 | 7.67 | 7.73 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST1-WK7-F<br>03/20/14<br>noloc | 114-GWPS-BS-ST1-WK8<br>03/27/14<br>noloc | 114-GWPS-BS-ST1-WK8-F<br>03/27/14<br>noloc | 114-GWPS-BS-ST1-WK9<br>04/04/14<br>noloc | 114-GWPS-BS-ST1-WK9-F<br>04/04/14<br>noloc | 114-GWPS-BS-ST1-WK10<br>04/15/14<br>noloc | 114-GWPS-BS-ST1-WK10-F<br>04/15/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | 815,000 | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | 2,000 U | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-GWPS-BS-ST2-WK1<br>02/06/14<br>noloc | 114-GWPS-BS-ST2-WK1-F<br>02/06/14<br>noloc | 114-GWPS-BS-ST2-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-ST2-WK2-F<br>02/14/14<br>noloc | 114-GWPS-BS-ST2-WK3<br>02/20/14<br>noloc | 114-GWPS-BS-ST2-WK3-F<br>02/20/14<br>noloc | 114-GWPS-BS-ST2-WK4<br>02/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST2-WK1<br><br>02/06/14<br>noloc | 114-GWPS-BS-ST2-WK1-F<br><br>02/06/14<br>noloc | 114-GWPS-BS-ST2-WK2<br><br>02/14/14<br>noloc | 114-GWPS-BS-ST2-WK2-F<br><br>02/14/14<br>noloc | 114-GWPS-BS-ST2-WK3<br><br>02/20/14<br>noloc | 114-GWPS-BS-ST2-WK3-F<br><br>02/20/14<br>noloc | 114-GWPS-BS-ST2-WK4<br><br>02/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST2-WK1<br><br>02/06/14<br>noloc | 114-GWPS-BS-ST2-WK1-F<br><br>02/06/14<br>noloc | 114-GWPS-BS-ST2-WK2<br><br>02/14/14<br>noloc | 114-GWPS-BS-ST2-WK2-F<br><br>02/14/14<br>noloc | 114-GWPS-BS-ST2-WK3<br><br>02/20/14<br>noloc | 114-GWPS-BS-ST2-WK3-F<br><br>02/20/14<br>noloc | 114-GWPS-BS-ST2-WK4<br><br>02/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 6,910 | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 15.0 | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | 60 U | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | 111 | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | 1.1 | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 4.9 | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | 302,000 | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 193 | NA | 524 | NA | 1,050 | NA | 20,400 |
| Chromium VI | 18540-29-9 | ug/L | 15 | NA | 16 | NA | 11 | NA | 22 |
| Cobalt | 7440-48-4 | ug/L | 93.2 | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | 11.6 J | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 590,000 J | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | 60 U | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | 41,800 | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 6,510 J | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST2-WK1<br>02/06/14<br>noloc | 114-GWPS-BS-ST2-WK1-F<br>02/06/14<br>noloc | 114-GWPS-BS-ST2-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-ST2-WK2-F<br>02/14/14<br>noloc | 114-GWPS-BS-ST2-WK3<br>02/20/14<br>noloc | 114-GWPS-BS-ST2-WK3-F<br>02/20/14<br>noloc | 114-GWPS-BS-ST2-WK4<br>02/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.60 U | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 416 J | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 93,200 | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | 200 U | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | 20 U | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | 1,670,000 J | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 40 U | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 14.3 J | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | 85.5 | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 2.9 J | NA | 9.1 J | NA | 27.9 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 21 | NA | 10 U | NA | 6.1 J | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST2-WK1<br>02/06/14<br>noloc | 114-GWPS-BS-ST2-WK1-F<br>02/06/14<br>noloc | 114-GWPS-BS-ST2-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-ST2-WK2-F<br>02/14/14<br>noloc | 114-GWPS-BS-ST2-WK3<br>02/20/14<br>noloc | 114-GWPS-BS-ST2-WK3-F<br>02/20/14<br>noloc | 114-GWPS-BS-ST2-WK4<br>02/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | 592,000 | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 342 | 384 | 254 | 224 | 219 | 211 | 309 |
| pH | ARC-pH | SU | 5.76 | 5.24 | 6.27 | 6.27 | 6.74 | 6.61 | 7.13 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST2-WK1<br>02/06/14<br>noloc | 114-GWPS-BS-ST2-WK1-F<br>02/06/14<br>noloc | 114-GWPS-BS-ST2-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-ST2-WK2-F<br>02/14/14<br>noloc | 114-GWPS-BS-ST2-WK3<br>02/20/14<br>noloc | 114-GWPS-BS-ST2-WK3-F<br>02/20/14<br>noloc | 114-GWPS-BS-ST2-WK4<br>02/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 6,140,000 | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | 400 J | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST2-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-ST2-WK5<br>03/06/14<br>noloc | 114-GWPS-BS-ST2-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-ST2-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-ST2-WK6-F<br>03/12/14<br>noloc | 114-GWPS-BS-ST2-WK7<br>03/20/14<br>noloc | 114-GWPS-BS-ST2-WK7-F<br>03/20/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST2-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-ST2-WK5<br>03/06/14<br>noloc | 114-GWPS-BS-ST2-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-ST2-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-ST2-WK6-F<br>03/12/14<br>noloc | 114-GWPS-BS-ST2-WK7<br>03/20/14<br>noloc | 114-GWPS-BS-ST2-WK7-F<br>03/20/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST2-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-ST2-WK5<br>03/06/14<br>noloc | 114-GWPS-BS-ST2-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-ST2-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-ST2-WK6-F<br>03/12/14<br>noloc | 114-GWPS-BS-ST2-WK7<br>03/20/14<br>noloc | 114-GWPS-BS-ST2-WK7-F<br>03/20/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 15,300 | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 12.1 J | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 10.7 | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 180 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 0.30 J | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 1.0 J | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 109,000 | NA |
| Chromium | 7440-47-3 | ug/L | NA | 26,300 | NA | 50,800 | NA | 24,500 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 68,100 | NA | 46,000 | NA | 43,600 | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 8.9 J | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 41.2 | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | 26,900 | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 38.0 | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 11,700 | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | 337 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST2-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-ST2-WK5<br>03/06/14<br>noloc | 114-GWPS-BS-ST2-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-ST2-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-ST2-WK6-F<br>03/12/14<br>noloc | 114-GWPS-BS-ST2-WK7<br>03/20/14<br>noloc | 114-GWPS-BS-ST2-WK7-F<br>03/20/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.20 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | 76.3 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 65,000 | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 10 U | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 3.1 J | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 507,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | 10 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | 45.8 J | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 87.8 | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 9.2 J | NA | 26,400 | NA | 53,400 | NA | 25,400 |
| Chromium VI | 18540-29-9 | ug/L | 17 | NA | 690 | NA | 57,800 J | NA | 27,400 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST2-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-ST2-WK5<br>03/06/14<br>noloc | 114-GWPS-BS-ST2-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-ST2-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-ST2-WK6-F<br>03/12/14<br>noloc | 114-GWPS-BS-ST2-WK7<br>03/20/14<br>noloc | 114-GWPS-BS-ST2-WK7-F<br>03/20/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | 10,000 U | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 303 | 333 | 312 | 396 | 465 | 339 | 617 |
| pH | ARC-pH | SU | 6.98 | 7.71 | 7.71 | 8.07 | 8.13 | 7.87 | 8.07 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST2-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-ST2-WK5<br>03/06/14<br>noloc | 114-GWPS-BS-ST2-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-ST2-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-ST2-WK6-F<br>03/12/14<br>noloc | 114-GWPS-BS-ST2-WK7<br>03/20/14<br>noloc | 114-GWPS-BS-ST2-WK7-F<br>03/20/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | 789,000 | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | 2,000 U | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-GWPS-BS-ST3-WK1 02/06/14 noloc | 114-GWPS-BS-ST3-WK1-F 02/06/14 noloc | 114-GWPS-BS-ST3-WK2 02/14/14 noloc | 114-GWPS-BS-ST3-WK2-F 02/14/14 noloc | 114-GWPS-BS-ST3-WK3 02/20/14 noloc | 114-GWPS-BS-ST3-WK3-F 02/20/14 noloc | 114-GWPS-BS-ST3-WK4 02/27/14 noloc |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST3-WK1<br><br>02/06/14<br>noloc | 114-GWPS-BS-ST3-WK1-F<br><br>02/06/14<br>noloc | 114-GWPS-BS-ST3-WK2<br><br>02/14/14<br>noloc | 114-GWPS-BS-ST3-WK2-F<br><br>02/14/14<br>noloc | 114-GWPS-BS-ST3-WK3<br><br>02/20/14<br>noloc | 114-GWPS-BS-ST3-WK3-F<br><br>02/20/14<br>noloc | 114-GWPS-BS-ST3-WK4<br><br>02/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST3-WK1<br><br>02/06/14<br>noloc | 114-GWPS-BS-ST3-WK1-F<br><br>02/06/14<br>noloc | 114-GWPS-BS-ST3-WK2<br><br>02/14/14<br>noloc | 114-GWPS-BS-ST3-WK2-F<br><br>02/14/14<br>noloc | 114-GWPS-BS-ST3-WK3<br><br>02/20/14<br>noloc | 114-GWPS-BS-ST3-WK3-F<br><br>02/20/14<br>noloc | 114-GWPS-BS-ST3-WK4<br><br>02/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 32,200 | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 5.8 J | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | 21.7 | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | 72.5 J | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | 0.70 J | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 0.50 J | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | 63,800 | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 289 | NA | 1,420 | NA | 4,680 | NA | 9,080 |
| Chromium VI | 18540-29-9 | ug/L | 10 U | NA | 10 U | NA | 10 U | NA | 10 U |
| Cobalt | 7440-48-4 | ug/L | 7.7 J | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | 45.5 | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 42,900 J | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | 30 U | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | 4,000 J | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 348 J | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST3-WK1<br>02/06/14<br>noloc | 114-GWPS-BS-ST3-WK1-F<br>02/06/14<br>noloc | 114-GWPS-BS-ST3-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-ST3-WK2-F<br>02/14/14<br>noloc | 114-GWPS-BS-ST3-WK3<br>02/20/14<br>noloc | 114-GWPS-BS-ST3-WK3-F<br>02/20/14<br>noloc | 114-GWPS-BS-ST3-WK4<br>02/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.29 J | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 81.0 J | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 98,600 | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | 100 U | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | 10 U | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | 6,490,000 J | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 20 U | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 18.0 J | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | 99.2 | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 27.2 | NA | 13.3 | NA | 17.2 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U | NA | 10 U | NA | 10 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST3-WK1<br>02/06/14<br>noloc | 114-GWPS-BS-ST3-WK1-F<br>02/06/14<br>noloc | 114-GWPS-BS-ST3-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-ST3-WK2-F<br>02/14/14<br>noloc | 114-GWPS-BS-ST3-WK3<br>02/20/14<br>noloc | 114-GWPS-BS-ST3-WK3-F<br>02/20/14<br>noloc | 114-GWPS-BS-ST3-WK4<br>02/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | 8,100 | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 34.2 | 139 | 107 | 212 | 174 | 227 | 280 |
| pH | ARC-pH | SU | 10.66 | 10.44 | 8.85 | 9.11 | 8.97 | 9.27 | 8.62 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST3-WK1<br>02/06/14<br>noloc | 114-GWPS-BS-ST3-WK1-F<br>02/06/14<br>noloc | 114-GWPS-BS-ST3-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-ST3-WK2-F<br>02/14/14<br>noloc | 114-GWPS-BS-ST3-WK3<br>02/20/14<br>noloc | 114-GWPS-BS-ST3-WK3-F<br>02/20/14<br>noloc | 114-GWPS-BS-ST3-WK4<br>02/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 2,150,000 | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | 32,500 | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-GWPS-BS-ST3-WK4-F 02/27/14 noloc | 114-GWPS-BS-ST3-WK5 03/06/14 noloc | 114-GWPS-BS-ST3-WK5-F 03/06/14 noloc | 114-GWPS-BS-ST3-WK6 03/12/14 noloc | 114-GWPS-BS-ST3-WK6-F 03/12/14 noloc | 114-GWPS-BS-ST3-WK7 03/20/14 noloc | 114-GWPS-BS-ST3-WK7-F 03/20/14 noloc |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST3-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-ST3-WK5<br>03/06/14<br>noloc | 114-GWPS-BS-ST3-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-ST3-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-ST3-WK6-F<br>03/12/14<br>noloc | 114-GWPS-BS-ST3-WK7<br>03/20/14<br>noloc | 114-GWPS-BS-ST3-WK7-F<br>03/20/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST3-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-ST3-WK5<br>03/06/14<br>noloc | 114-GWPS-BS-ST3-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-ST3-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-ST3-WK6-F<br>03/12/14<br>noloc | 114-GWPS-BS-ST3-WK7<br>03/20/14<br>noloc | 114-GWPS-BS-ST3-WK7-F<br>03/20/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 1,330 | NA | 6,130 | NA | 24,100 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 3.2 J | NA | 1.9 J | NA | 10 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST3-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-ST3-WK5<br>03/06/14<br>noloc | 114-GWPS-BS-ST3-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-ST3-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-ST3-WK6-F<br>03/12/14<br>noloc | 114-GWPS-BS-ST3-WK7<br>03/20/14<br>noloc | 114-GWPS-BS-ST3-WK7-F<br>03/20/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 52.6 | NA | 51.6 | NA | 73.5 | NA | 64.0 |
| Chromium VI | 18540-29-9 | ug/L | 10 U | NA | 12 | NA | 3 J | NA | 12 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST3-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-ST3-WK5<br>03/06/14<br>noloc | 114-GWPS-BS-ST3-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-ST3-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-ST3-WK6-F<br>03/12/14<br>noloc | 114-GWPS-BS-ST3-WK7<br>03/20/14<br>noloc | 114-GWPS-BS-ST3-WK7-F<br>03/20/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 291 | 274 | 266 | 432 | NA | 319 | 373 |
| pH | ARC-pH | SU | 9.43 | 8.31 | 9.14 | 7.81 | 8.49 | 8.03 | 8.44 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST3-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-ST3-WK5<br>03/06/14<br>noloc | 114-GWPS-BS-ST3-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-ST3-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-ST3-WK6-F<br>03/12/14<br>noloc | 114-GWPS-BS-ST3-WK7<br>03/20/14<br>noloc | 114-GWPS-BS-ST3-WK7-F<br>03/20/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-GWPS-BS-ST3-WK8 | 114-GWPS-BS-ST3-WK8-F | 114-GWPS-BS-ST3-WK9 | 114-GWPS-BS-ST3-WK9-F | 114-GWPS-BS-ST3-WK10 | 114-GWPS-BS-ST3-WK10-F | 114-GWPS-BS-ST4-WK1 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | |
| Date Collected: | | | 03/27/14 | 03/27/14 | 04/04/14 | 04/04/14 | 04/15/14 | 04/15/14 | 02/06/14 |
| Location ID: | CAS Number | Units | noloc | noloc | noloc | noloc | noloc | noloc | noloc |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST3-WK8<br>03/27/14<br>noloc | 114-GWPS-BS-ST3-WK8-F<br>03/27/14<br>noloc | 114-GWPS-BS-ST3-WK9<br>04/04/14<br>noloc | 114-GWPS-BS-ST3-WK9-F<br>04/04/14<br>noloc | 114-GWPS-BS-ST3-WK10<br>04/15/14<br>noloc | 114-GWPS-BS-ST3-WK10-F<br>04/15/14<br>noloc | 114-GWPS-BS-ST4-WK1<br>02/06/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST3-WK8<br>03/27/14<br>noloc | 114-GWPS-BS-ST3-WK8-F<br>03/27/14<br>noloc | 114-GWPS-BS-ST3-WK9<br>04/04/14<br>noloc | 114-GWPS-BS-ST3-WK9-F<br>04/04/14<br>noloc | 114-GWPS-BS-ST3-WK10<br>04/15/14<br>noloc | 114-GWPS-BS-ST3-WK10-F<br>04/15/14<br>noloc | 114-GWPS-BS-ST4-WK1<br>02/06/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | 53,900 | NA | 13,500 |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | 12 U | NA | 19.6 J |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | 7.6 | NA | 15.9 |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | 486 | NA | 296 |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | 1.2 J | NA | 2.0 |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | 2.4 J | NA | 15 U |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | 176,000 | NA | 652,000 |
| Chromium | 7440-47-3 | ug/L | 1,010 | NA | 6,540 | NA | 6,350 | NA | 858 |
| Chromium VI | 18540-29-9 | ug/L | 46 | NA | 10 U | NA | 10 U | NA | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | 37.8 J | NA | 40.0 J |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | 106 | NA | 74.1 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | 107,000 | NA | 778,000 J |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | 71.4 | NA | 39.9 |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | 23,400 | NA | 44,500 |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | 1,070 | NA | 12,300 J |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST3-WK8<br>03/27/14<br>noloc | 114-GWPS-BS-ST3-WK8-F<br>03/27/14<br>noloc | 114-GWPS-BS-ST3-WK9<br>04/04/14<br>noloc | 114-GWPS-BS-ST3-WK9-F<br>04/04/14<br>noloc | 114-GWPS-BS-ST3-WK10<br>04/15/14<br>noloc | 114-GWPS-BS-ST3-WK10-F<br>04/15/14<br>noloc | 114-GWPS-BS-ST4-WK1<br>02/06/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | 0.14 J | NA | 0.60 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | 138 | NA | 90.0 J |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | 95,400 | NA | 121,000 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | 155 | NA | 20.8 J |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | 9.4 J | NA | 8.4 J |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | 500,000 | NA | 2,420,000 J |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | 12 U | NA | 10 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | 116 | NA | 29.0 J |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | 318 | NA | 166 |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 2,780 | NA | 334 | NA | 123 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 2,100 | NA | 10 U | NA | 10 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST3-WK8<br><br>03/27/14<br>noloc | 114-GWPS-BS-ST3-WK8-F<br><br>03/27/14<br>noloc | 114-GWPS-BS-ST3-WK9<br><br>04/04/14<br>noloc | 114-GWPS-BS-ST3-WK9-F<br><br>04/04/14<br>noloc | 114-GWPS-BS-ST3-WK10<br><br>04/15/14<br>noloc | 114-GWPS-BS-ST3-WK10-F<br><br>04/15/14<br>noloc | 114-GWPS-BS-ST4-WK1<br><br>02/06/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | 940 | NA | 916,000 |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 403 | 348 | 366 | 302 | 447 | 654 | 404 |
| pH | ARC-pH | SU | 7.88 | 8.36 | 8.53 | 8.49 | 6.40 | 8.63 | 4.51 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST3-WK8<br><br>03/27/14<br>noloc | 114-GWPS-BS-ST3-WK8-F<br><br>03/27/14<br>noloc | 114-GWPS-BS-ST3-WK9<br><br>04/04/14<br>noloc | 114-GWPS-BS-ST3-WK9-F<br><br>04/04/14<br>noloc | 114-GWPS-BS-ST3-WK10<br><br>04/15/14<br>noloc | 114-GWPS-BS-ST3-WK10-F<br><br>04/15/14<br>noloc | 114-GWPS-BS-ST4-WK1<br><br>02/06/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | 963,000 | NA | 1,630,000 |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | 20,200 | NA | 38,000 |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-GWPS-BS-ST4-WK1-F 02/06/14 noloc | 114-GWPS-BS-ST4-WK2 02/14/14 noloc | 114-GWPS-BS-ST4-WK2-F 02/14/14 noloc | 114-GWPS-BS-ST4-WK3 02/20/14 noloc | 114-GWPS-BS-ST4-WK3-F 02/20/14 noloc | 114-GWPS-BS-ST4-WK4 02/27/14 noloc | 114-GWPS-BS-ST4-WK4-F 02/27/14 noloc |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST4-WK1-F<br>02/06/14<br>noloc | 114-GWPS-BS-ST4-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-ST4-WK2-F<br>02/14/14<br>noloc | 114-GWPS-BS-ST4-WK3<br>02/20/14<br>noloc | 114-GWPS-BS-ST4-WK3-F<br>02/20/14<br>noloc | 114-GWPS-BS-ST4-WK4<br>02/27/14<br>noloc | 114-GWPS-BS-ST4-WK4-F<br>02/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST4-WK1-F<br>02/06/14<br>noloc | 114-GWPS-BS-ST4-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-ST4-WK2-F<br>02/14/14<br>noloc | 114-GWPS-BS-ST4-WK3<br>02/20/14<br>noloc | 114-GWPS-BS-ST4-WK3-F<br>02/20/14<br>noloc | 114-GWPS-BS-ST4-WK4<br>02/27/14<br>noloc | 114-GWPS-BS-ST4-WK4-F<br>02/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 786 | NA | 8,610 | NA | 1,660 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U | NA | 10 U | NA | 10 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST4-WK1-F<br>02/06/14<br>noloc | 114-GWPS-BS-ST4-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-ST4-WK2-F<br>02/14/14<br>noloc | 114-GWPS-BS-ST4-WK3<br>02/20/14<br>noloc | 114-GWPS-BS-ST4-WK3-F<br>02/20/14<br>noloc | 114-GWPS-BS-ST4-WK4<br>02/27/14<br>noloc | 114-GWPS-BS-ST4-WK4-F<br>02/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 10 U | NA | 2.5 J | NA | 5.6 J | NA | 10.8 |
| Chromium VI | 18540-29-9 | ug/L | 11 | NA | 10 U | NA | 12 | NA | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST4-WK1-F<br><br>02/06/14<br>noloc | 114-GWPS-BS-ST4-WK2<br><br>02/14/14<br>noloc | 114-GWPS-BS-ST4-WK2-F<br><br>02/14/14<br>noloc | 114-GWPS-BS-ST4-WK3<br><br>02/20/14<br>noloc | 114-GWPS-BS-ST4-WK3-F<br><br>02/20/14<br>noloc | 114-GWPS-BS-ST4-WK4<br><br>02/27/14<br>noloc | 114-GWPS-BS-ST4-WK4-F<br><br>02/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 264 | 284 | 269 | 229 | 210 | 383 | 247 |
| pH | ARC-pH | SU | 5.38 | 6.11 | 5.78 | 6.87 | 6.55 | 7.02 | 6.51 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST4-WK1-F<br>02/06/14<br>noloc | 114-GWPS-BS-ST4-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-ST4-WK2-F<br>02/14/14<br>noloc | 114-GWPS-BS-ST4-WK3<br>02/20/14<br>noloc | 114-GWPS-BS-ST4-WK3-F<br>02/20/14<br>noloc | 114-GWPS-BS-ST4-WK4<br>02/27/14<br>noloc | 114-GWPS-BS-ST4-WK4-F<br>02/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-GWPS-BS-ST4-WK5 03/06/14 noloc | 114-GWPS-BS-ST4-WK5-F 03/06/14 noloc | 114-GWPS-BS-ST4-WK6 03/12/14 noloc | 114-GWPS-BS-ST4-WK6-F 03/12/14 noloc | 114-GWPS-BS-ST4-WK7 03/20/14 noloc | 114-GWPS-BS-ST4-WK7-F 03/20/14 noloc | 114-GWPS-BS-ST4-WK8 03/27/14 noloc |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST4-WK5<br><br>03/06/14<br>noloc | 114-GWPS-BS-ST4-WK5-F<br><br>03/06/14<br>noloc | 114-GWPS-BS-ST4-WK6<br><br>03/12/14<br>noloc | 114-GWPS-BS-ST4-WK6-F<br><br>03/12/14<br>noloc | 114-GWPS-BS-ST4-WK7<br><br>03/20/14<br>noloc | 114-GWPS-BS-ST4-WK7-F<br><br>03/20/14<br>noloc | 114-GWPS-BS-ST4-WK8<br><br>03/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST4-WK5<br><br>03/06/14<br>noloc | 114-GWPS-BS-ST4-WK5-F<br><br>03/06/14<br>noloc | 114-GWPS-BS-ST4-WK6<br><br>03/12/14<br>noloc | 114-GWPS-BS-ST4-WK6-F<br><br>03/12/14<br>noloc | 114-GWPS-BS-ST4-WK7<br><br>03/20/14<br>noloc | 114-GWPS-BS-ST4-WK7-F<br><br>03/20/14<br>noloc | 114-GWPS-BS-ST4-WK8<br><br>03/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 6,290 | NA | 9,610 | NA | 9,310 | NA | 59,400 |
| Chromium VI | 18540-29-9 | ug/L | 6.6 J | NA | 5,800 | NA | 200 | NA | 14 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST4-WK5<br><br>03/06/14<br>noloc | 114-GWPS-BS-ST4-WK5-F<br><br>03/06/14<br>noloc | 114-GWPS-BS-ST4-WK6<br><br>03/12/14<br>noloc | 114-GWPS-BS-ST4-WK6-F<br><br>03/12/14<br>noloc | 114-GWPS-BS-ST4-WK7<br><br>03/20/14<br>noloc | 114-GWPS-BS-ST4-WK7-F<br><br>03/20/14<br>noloc | 114-GWPS-BS-ST4-WK8<br><br>03/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 21.5 | NA | 6,870 | NA | 868 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U | NA | 5,600 J | NA | 270 J | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST4-WK5<br><br>03/06/14<br>noloc | 114-GWPS-BS-ST4-WK5-F<br><br>03/06/14<br>noloc | 114-GWPS-BS-ST4-WK6<br><br>03/12/14<br>noloc | 114-GWPS-BS-ST4-WK6-F<br><br>03/12/14<br>noloc | 114-GWPS-BS-ST4-WK7<br><br>03/20/14<br>noloc | 114-GWPS-BS-ST4-WK7-F<br><br>03/20/14<br>noloc | 114-GWPS-BS-ST4-WK8<br><br>03/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 304 | 313 | NA | 390 | 338 | 378 | 409 |
| pH | ARC-pH | SU | 7.40 | 7.49 | 8.00 | 8.07 | 7.75 | 7.67 | 7.23 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST4-WK5<br><br>03/06/14<br>noloc | 114-GWPS-BS-ST4-WK5-F<br><br>03/06/14<br>noloc | 114-GWPS-BS-ST4-WK6<br><br>03/12/14<br>noloc | 114-GWPS-BS-ST4-WK6-F<br><br>03/12/14<br>noloc | 114-GWPS-BS-ST4-WK7<br><br>03/20/14<br>noloc | 114-GWPS-BS-ST4-WK7-F<br><br>03/20/14<br>noloc | 114-GWPS-BS-ST4-WK8<br><br>03/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-GWPS-BS-ST4-WK8-F | 114-GWPS-BS-ST4-WK9 | 114-GWPS-BS-ST4-WK9-F | 114-GWPS-BS-ST4-WK10 | 114-GWPS-BS-ST4-WK10-F | 114-GWPS-BS-ST5-WK1 | 114-GWPS-BS-ST5-WK1-F |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | |
| Date Collected: | | | 03/27/14 | 04/04/14 | 04/04/14 | 04/15/14 | 04/15/14 | 02/06/14 | 02/06/14 |
| Location ID: | CAS Number | Units | noloc | noloc | noloc | noloc | noloc | noloc | noloc |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST4-WK8-F<br>03/27/14<br>noloc | 114-GWPS-BS-ST4-WK9<br>04/04/14<br>noloc | 114-GWPS-BS-ST4-WK9-F<br>04/04/14<br>noloc | 114-GWPS-BS-ST4-WK10<br>04/15/14<br>noloc | 114-GWPS-BS-ST4-WK10-F<br>04/15/14<br>noloc | 114-GWPS-BS-ST5-WK1<br>02/06/14<br>noloc | 114-GWPS-BS-ST5-WK1-F<br>02/06/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST4-WK8-F<br>03/27/14<br>noloc | 114-GWPS-BS-ST4-WK9<br>04/04/14<br>noloc | 114-GWPS-BS-ST4-WK9-F<br>04/04/14<br>noloc | 114-GWPS-BS-ST4-WK10<br>04/15/14<br>noloc | 114-GWPS-BS-ST4-WK10-F<br>04/15/14<br>noloc | 114-GWPS-BS-ST5-WK1<br>02/06/14<br>noloc | 114-GWPS-BS-ST5-WK1-F<br>02/06/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | 109,000 | NA | 7,960 J | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | 12 U | NA | 43.2 J | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | 26.0 | NA | 101 | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | 1,230 | NA | 342 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | 2.6 | NA | 7.3 J | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | 5.6 J | NA | 30 U | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | 315,000 | NA | 871,000 J | NA |
| Chromium | 7440-47-3 | ug/L | NA | 4,980 | NA | 19,900 | NA | 104 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U | NA | 10 UJ | NA | 10 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | 101 | NA | 187 J | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | 290 | NA | 59.6 J | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | 246,000 | NA | 2,240,000 | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | 198 | NA | 30 U | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | 70,500 | NA | 103,000 J | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | 2,370 | NA | 33,300 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST4-WK8-F<br>03/27/14<br>noloc | 114-GWPS-BS-ST4-WK9<br>04/04/14<br>noloc | 114-GWPS-BS-ST4-WK9-F<br>04/04/14<br>noloc | 114-GWPS-BS-ST4-WK10<br>04/15/14<br>noloc | 114-GWPS-BS-ST4-WK10-F<br>04/15/14<br>noloc | 114-GWPS-BS-ST5-WK1<br>02/06/14<br>noloc | 114-GWPS-BS-ST5-WK1-F<br>02/06/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | 0.32 | NA | 0.60 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | 368 | NA | 542 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | 152,000 | NA | 205,000 J | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | 205 | NA | 88.1 J | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | 21.2 | NA | 87.9 J | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | 567,000 | NA | 5,980,000 J | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | 12 U | NA | 20 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | 310 | NA | 51.3 J | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | 668 | NA | 496 | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 2,490 | NA | 49.2 | NA | 1,850 | NA | 28.3 J |
| Chromium VI | 18540-29-9 | ug/L | 430 | NA | 17 | NA | 1,000 J | NA | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST4-WK8-F<br>03/27/14<br>noloc | 114-GWPS-BS-ST4-WK9<br>04/04/14<br>noloc | 114-GWPS-BS-ST4-WK9-F<br>04/04/14<br>noloc | 114-GWPS-BS-ST4-WK10<br>04/15/14<br>noloc | 114-GWPS-BS-ST4-WK10-F<br>04/15/14<br>noloc | 114-GWPS-BS-ST5-WK1<br>02/06/14<br>noloc | 114-GWPS-BS-ST5-WK1-F<br>02/06/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | 5,100 | NA | 1,970,000 | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 370 | 368 | 296 | 445 | 645 | 411 | 362 |
| pH | ARC-pH | SU | 7.55 | 7.72 | 7.68 | 7.05 | 7.57 | 4.16 | 4.33 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST4-WK8-F<br><br>03/27/14<br>noloc | 114-GWPS-BS-ST4-WK9<br><br>04/04/14<br>noloc | 114-GWPS-BS-ST4-WK9-F<br><br>04/04/14<br>noloc | 114-GWPS-BS-ST4-WK10<br><br>04/15/14<br>noloc | 114-GWPS-BS-ST4-WK10-F<br><br>04/15/14<br>noloc | 114-GWPS-BS-ST5-WK1<br><br>02/06/14<br>noloc | 114-GWPS-BS-ST5-WK1-F<br><br>02/06/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | 1,490,000 | NA | 3,120,000 | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | 2,000 U | NA | 2,000 U | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-GWPS-BS-ST5-WK2 02/14/14 noloc | 114-GWPS-BS-ST5-WK2-F 02/14/14 noloc | 114-GWPS-BS-ST5-WK3 02/20/14 noloc | 114-GWPS-BS-ST5-WK3-F 02/20/14 noloc | 114-GWPS-BS-ST5-WK4 02/27/14 noloc | 114-GWPS-BS-ST5-WK4-F 02/27/14 noloc | 114-GWPS-BS-ST5-WK5 03/06/14 noloc |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST5-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-ST5-WK2-F<br>02/14/14<br>noloc | 114-GWPS-BS-ST5-WK3<br>02/20/14<br>noloc | 114-GWPS-BS-ST5-WK3-F<br>02/20/14<br>noloc | 114-GWPS-BS-ST5-WK4<br>02/27/14<br>noloc | 114-GWPS-BS-ST5-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-ST5-WK5<br>03/06/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST5-WK2<br><br>02/14/14<br>noloc | 114-GWPS-BS-ST5-WK2-F<br><br>02/14/14<br>noloc | 114-GWPS-BS-ST5-WK3<br><br>02/20/14<br>noloc | 114-GWPS-BS-ST5-WK3-F<br><br>02/20/14<br>noloc | 114-GWPS-BS-ST5-WK4<br><br>02/27/14<br>noloc | 114-GWPS-BS-ST5-WK4-F<br><br>02/27/14<br>noloc | 114-GWPS-BS-ST5-WK5<br><br>03/06/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 66,700 | NA | 21,900 | NA | 13,300 | NA | 43,300 |
| Chromium VI | 18540-29-9 | ug/L | 10 U | NA | 10 U | NA | 10 U | NA | 1,700 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST5-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-ST5-WK2-F<br>02/14/14<br>noloc | 114-GWPS-BS-ST5-WK3<br>02/20/14<br>noloc | 114-GWPS-BS-ST5-WK3-F<br>02/20/14<br>noloc | 114-GWPS-BS-ST5-WK4<br>02/27/14<br>noloc | 114-GWPS-BS-ST5-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-ST5-WK5<br>03/06/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 10 U | NA | 1.9 J | NA | 40.8 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 | NA | 49 | NA | 140 | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST5-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-ST5-WK2-F<br>02/14/14<br>noloc | 114-GWPS-BS-ST5-WK3<br>02/20/14<br>noloc | 114-GWPS-BS-ST5-WK3-F<br>02/20/14<br>noloc | 114-GWPS-BS-ST5-WK4<br>02/27/14<br>noloc | 114-GWPS-BS-ST5-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-ST5-WK5<br>03/06/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 279 | 294 | 217 | 228 | 371 | 254 | 316 |
| pH | ARC-pH | SU | 5.99 | 5.09 | 6.26 | 5.98 | 6.98 | 6.26 | 7.29 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST5-WK2<br>02/14/14<br>noloc | 114-GWPS-BS-ST5-WK2-F<br>02/14/14<br>noloc | 114-GWPS-BS-ST5-WK3<br>02/20/14<br>noloc | 114-GWPS-BS-ST5-WK3-F<br>02/20/14<br>noloc | 114-GWPS-BS-ST5-WK4<br>02/27/14<br>noloc | 114-GWPS-BS-ST5-WK4-F<br>02/27/14<br>noloc | 114-GWPS-BS-ST5-WK5<br>03/06/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-GWPS-BS-ST5-WK5-F 03/06/14 noloc | 114-GWPS-BS-ST5-WK6 03/12/14 noloc | 114-GWPS-BS-ST5-WK6-F 03/12/14 noloc | 114-GWPS-BS-ST5-WK7 03/20/14 noloc | 114-GWPS-BS-ST5-WK7-F 03/20/14 noloc | 114-GWPS-BS-ST5-WK8 03/27/14 noloc | 114-GWPS-BS-ST5-WK8-F 03/27/14 noloc |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST5-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-ST5-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-ST5-WK6-F<br>03/12/14<br>noloc | 114-GWPS-BS-ST5-WK7<br>03/20/14<br>noloc | 114-GWPS-BS-ST5-WK7-F<br>03/20/14<br>noloc | 114-GWPS-BS-ST5-WK8<br>03/27/14<br>noloc | 114-GWPS-BS-ST5-WK8-F<br>03/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST5-WK5-F<br>03/06/14<br>noloc | 114-GWPS-BS-ST5-WK6<br>03/12/14<br>noloc | 114-GWPS-BS-ST5-WK6-F<br>03/12/14<br>noloc | 114-GWPS-BS-ST5-WK7<br>03/20/14<br>noloc | 114-GWPS-BS-ST5-WK7-F<br>03/20/14<br>noloc | 114-GWPS-BS-ST5-WK8<br>03/27/14<br>noloc | 114-GWPS-BS-ST5-WK8-F<br>03/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 8,220 | NA | 11,900 | NA | 2,620 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U | NA | 280 | NA | 520 | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST5-WK5-F<br><br>03/06/14<br>noloc | 114-GWPS-BS-ST5-WK6<br><br>03/12/14<br>noloc | 114-GWPS-BS-ST5-WK6-F<br><br>03/12/14<br>noloc | 114-GWPS-BS-ST5-WK7<br><br>03/20/14<br>noloc | 114-GWPS-BS-ST5-WK7-F<br><br>03/20/14<br>noloc | 114-GWPS-BS-ST5-WK8<br><br>03/27/14<br>noloc | 114-GWPS-BS-ST5-WK8-F<br><br>03/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 7,720 | NA | 16.4 | NA | 4,120 | NA | 525 |
| Chromium VI | 18540-29-9 | ug/L | 7,500 | NA | 4.2 J | NA | 170 J | NA | 82 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST5-WK5-F<br><br>03/06/14<br>noloc | 114-GWPS-BS-ST5-WK6<br><br>03/12/14<br>noloc | 114-GWPS-BS-ST5-WK6-F<br><br>03/12/14<br>noloc | 114-GWPS-BS-ST5-WK7<br><br>03/20/14<br>noloc | 114-GWPS-BS-ST5-WK7-F<br><br>03/20/14<br>noloc | 114-GWPS-BS-ST5-WK8<br><br>03/27/14<br>noloc | 114-GWPS-BS-ST5-WK8-F<br><br>03/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 314 | 391 | 405 | 344 | 378 | 404 | 369 |
| pH | ARC-pH | SU | 7.67 | 7.99 | NA | 7.47 | 7.66 | 7.03 | 7.35 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST5-WK5-F<br><br>03/06/14<br>noloc | 114-GWPS-BS-ST5-WK6<br><br>03/12/14<br>noloc | 114-GWPS-BS-ST5-WK6-F<br><br>03/12/14<br>noloc | 114-GWPS-BS-ST5-WK7<br><br>03/20/14<br>noloc | 114-GWPS-BS-ST5-WK7-F<br><br>03/20/14<br>noloc | 114-GWPS-BS-ST5-WK8<br><br>03/27/14<br>noloc | 114-GWPS-BS-ST5-WK8-F<br><br>03/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-GWPS-BS-ST5-WK9 04/04/14 noloc | 114-GWPS-BS-ST5-WK9-F 04/04/14 noloc | 114-GWPS-BS-ST5-WK10 04/15/14 noloc | 114-GWPS-BS-ST5-WK10-F 04/15/14 noloc | 114-GWPS-BS-ST6-WK1 03/20/14 noloc | 114-GWPS-BS-ST6-WK1-F 03/20/14 noloc | 114-GWPS-BS-ST6-WK2 03/27/14 noloc |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST5-WK9<br><br>04/04/14<br>noloc | 114-GWPS-BS-ST5-WK9-F<br><br>04/04/14<br>noloc | 114-GWPS-BS-ST5-WK10<br><br>04/15/14<br>noloc | 114-GWPS-BS-ST5-WK10-F<br><br>04/15/14<br>noloc | 114-GWPS-BS-ST6-WK1<br><br>03/20/14<br>noloc | 114-GWPS-BS-ST6-WK1-F<br><br>03/20/14<br>noloc | 114-GWPS-BS-ST6-WK2<br><br>03/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST5-WK9<br>04/04/14<br>noloc | 114-GWPS-BS-ST5-WK9-F<br>04/04/14<br>noloc | 114-GWPS-BS-ST5-WK10<br>04/15/14<br>noloc | 114-GWPS-BS-ST5-WK10-F<br>04/15/14<br>noloc | 114-GWPS-BS-ST6-WK1<br>03/20/14<br>noloc | 114-GWPS-BS-ST6-WK1-F<br>03/20/14<br>noloc | 114-GWPS-BS-ST6-WK2<br>03/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | 26,400 | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | 6.0 U | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | 15 U | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | 295 | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | 0.80 J | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | 1.7 J | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | 209,000 | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 18,600 | NA | 5,250 | NA | NA | NA | 5,050 |
| Chromium VI | 18540-29-9 | ug/L | 17 | NA | 10 U | NA | 10 U | NA | 7 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | 24.1 J | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | 81.9 | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 75,700 | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | 50.1 | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | 17,800 | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | 816 | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST5-WK9<br>04/04/14<br>noloc | 114-GWPS-BS-ST5-WK9-F<br>04/04/14<br>noloc | 114-GWPS-BS-ST5-WK10<br>04/15/14<br>noloc | 114-GWPS-BS-ST5-WK10-F<br>04/15/14<br>noloc | 114-GWPS-BS-ST6-WK1<br>03/20/14<br>noloc | 114-GWPS-BS-ST6-WK1-F<br>03/20/14<br>noloc | 114-GWPS-BS-ST6-WK2<br>03/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | 0.13 J | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | 108 | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | 83,600 | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | 98.7 | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | 5.7 J | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | 408,000 | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | 10 U | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | 70.2 | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | 146 | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 10.1 | NA | 176 | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U | NA | 10 U | NA | 6.3 J | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST5-WK9<br><br>04/04/14<br>noloc | 114-GWPS-BS-ST5-WK9-F<br><br>04/04/14<br>noloc | 114-GWPS-BS-ST5-WK10<br><br>04/15/14<br>noloc | 114-GWPS-BS-ST5-WK10-F<br><br>04/15/14<br>noloc | 114-GWPS-BS-ST6-WK1<br><br>03/20/14<br>noloc | 114-GWPS-BS-ST6-WK1-F<br><br>03/20/14<br>noloc | 114-GWPS-BS-ST6-WK2<br><br>03/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | 140 J | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 372 | 303 | 446 | 512 | 203 | 323 | 379 |
| pH | ARC-pH | SU | 7.90 | 7.81 | 7.46 | 7.61 | 7.96 | 8.64 | 7.55 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST5-WK9<br>04/04/14<br>noloc | 114-GWPS-BS-ST5-WK9-F<br>04/04/14<br>noloc | 114-GWPS-BS-ST5-WK10<br>04/15/14<br>noloc | 114-GWPS-BS-ST5-WK10-F<br>04/15/14<br>noloc | 114-GWPS-BS-ST6-WK1<br>03/20/14<br>noloc | 114-GWPS-BS-ST6-WK1-F<br>03/20/14<br>noloc | 114-GWPS-BS-ST6-WK2<br>03/27/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | 783,000 | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | 2,000 U | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST6-WK2-F<br>03/27/14<br>noloc | 114-GWPS-BS-ST6-WK4<br>04/15/14<br>noloc | 114-GWPS-BS-ST6-WK4-F<br>04/15/14<br>noloc | 114-GWPS-BS-ST6-WK7<br>03/20/14<br>noloc | 114-GWPS-BS-ST6-WK7-F<br>03/20/14<br>noloc | 114-GWPS-BS-ST6-WK9<br>04/04/14<br>noloc | 114-GWPS-BS-ST6-WK9-F<br>04/04/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST6-WK2-F<br>03/27/14<br>noloc | 114-GWPS-BS-ST6-WK4<br>04/15/14<br>noloc | 114-GWPS-BS-ST6-WK4-F<br>04/15/14<br>noloc | 114-GWPS-BS-ST6-WK7<br>03/20/14<br>noloc | 114-GWPS-BS-ST6-WK7-F<br>03/20/14<br>noloc | 114-GWPS-BS-ST6-WK9<br>04/04/14<br>noloc | 114-GWPS-BS-ST6-WK9-F<br>04/04/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST6-WK2-F<br>03/27/14<br>noloc | 114-GWPS-BS-ST6-WK4<br>04/15/14<br>noloc | 114-GWPS-BS-ST6-WK4-F<br>04/15/14<br>noloc | 114-GWPS-BS-ST6-WK7<br>03/20/14<br>noloc | 114-GWPS-BS-ST6-WK7-F<br>03/20/14<br>noloc | 114-GWPS-BS-ST6-WK9<br>04/04/14<br>noloc | 114-GWPS-BS-ST6-WK9-F<br>04/04/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 830,000 | NA | 898,000 | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | 60 U | NA | 30 U | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | 129 | NA | 93.0 | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | 7,380 | NA | 7,350 | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | 15.0 | NA | 16.5 | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 32.0 | NA | 43.0 | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | 517,000 | NA | 432,000 | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 34,200 | NA | 21,200 | NA | 4,260 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U | NA | NA | NA | 14 | NA |
| Cobalt | 7440-48-4 | ug/L | NA | 659 | NA | 611 | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | 2,280 | NA | 2,350 | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 1,930,000 | NA | 1,840,000 | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | 1,050 | NA | 1,000 | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | 390,000 | NA | 393,000 | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | 17,400 | NA | 18,900 | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST6-WK2-F<br>03/27/14<br>noloc | 114-GWPS-BS-ST6-WK4<br>04/15/14<br>noloc | 114-GWPS-BS-ST6-WK4-F<br>04/15/14<br>noloc | 114-GWPS-BS-ST6-WK7<br>03/20/14<br>noloc | 114-GWPS-BS-ST6-WK7-F<br>03/20/14<br>noloc | 114-GWPS-BS-ST6-WK9<br>04/04/14<br>noloc | 114-GWPS-BS-ST6-WK9-F<br>04/04/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 1.9 | NA | 6.0 U | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | 2,280 | NA | 2,250 | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 466,000 | NA | 463,000 | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | 1,200 | NA | 50 U | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | 122 | NA | 21.5 J | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | 2,060,000 | NA | 4,340,000 | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 40 U | NA | 30 U | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 1,780 | NA | 1,840 | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | 9,280 | NA | 8,290 | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 64.4 | NA | 52.6 | NA | 12.7 | NA | 42.6 |
| Chromium VI | 18540-29-9 | ug/L | 24 | NA | 10 U | NA | NA | NA | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST6-WK2-F<br>03/27/14<br>noloc | 114-GWPS-BS-ST6-WK4<br>04/15/14<br>noloc | 114-GWPS-BS-ST6-WK4-F<br>04/15/14<br>noloc | 114-GWPS-BS-ST6-WK7<br>03/20/14<br>noloc | 114-GWPS-BS-ST6-WK7-F<br>03/20/14<br>noloc | 114-GWPS-BS-ST6-WK9<br>04/04/14<br>noloc | 114-GWPS-BS-ST6-WK9-F<br>04/04/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | 3,200 | NA | 15,400 | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 340 | 426 | 460 | NA | NA | 351 | 322 |
| pH | ARC-pH | SU | 7.83 | 7.45 | 7.70 | NA | NA | 7.87 | 7.74 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-BS-ST6-WK2-F<br>03/27/14<br>noloc | 114-GWPS-BS-ST6-WK4<br>04/15/14<br>noloc | 114-GWPS-BS-ST6-WK4-F<br>04/15/14<br>noloc | 114-GWPS-BS-ST6-WK7<br>03/20/14<br>noloc | 114-GWPS-BS-ST6-WK7-F<br>03/20/14<br>noloc | 114-GWPS-BS-ST6-WK9<br>04/04/14<br>noloc | 114-GWPS-BS-ST6-WK9-F<br>04/04/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 1,650,000 | NA | 1,660,000 | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | 113,000 | NA | 101,000 | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-GWPS-EW1S-BL 10/29/13 GPS-EW1S | 114-GWPS-EW2I-BL 10/29/13 GPS-EW2I | 114-GWPS-EW2S-BL 10/30/13 GPS-EW2S | 114-GWPS-EW3S-BL 11/04/13 GPS-EW3S | 114-GWPS-GWTRIT-INT-0.4%CPS 01/14/14 noloc | 114-GWPS-GWTRIT-INT-1%FES 01/14/14 noloc | 114-GWPS-GWTRIT-INT-1.5%CPS 01/14/14 noloc |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-EW1S-BL<br>10/29/13<br>GPS-EW1S | 114-GWPS-EW2I-BL<br>10/29/13<br>GPS-EW2I | 114-GWPS-EW2S-BL<br>10/30/13<br>GPS-EW2S | 114-GWPS-EW3S-BL<br>11/04/13<br>GPS-EW3S | 114-GWPS-GWTRIT-INT-0.4%CPS<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-1%FES<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-1.5%CPS<br>01/14/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-EW1S-BL<br>10/29/13<br>GPS-EW1S | 114-GWPS-EW2I-BL<br>10/29/13<br>GPS-EW2I | 114-GWPS-EW2S-BL<br>10/30/13<br>GPS-EW2S | 114-GWPS-EW3S-BL<br>11/04/13<br>GPS-EW3S | 114-GWPS-GWTRIT-INT-0.4%CPS<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-1%FES<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-1.5%CPS<br>01/14/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 426 | 390 J | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | 127 | 60 UJ | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | 3.8 | 30.3 | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | 41.8 J | 20.7 J | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | 4.0 U | 40 U | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 1.5 J | 50 U | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | 85,700 | 21,100 | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 11,500 | 94,800 | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 258,000 | 11,400 | 112,000 J | 173,000 | 10 RA | 10 RA | 10 RA |
| Cobalt | 7440-48-4 | ug/L | NA | 48.3 J | 5.6 J | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | 29.3 | 30.0 J | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 880 | 3,000 U | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | 1.2 J | 50 U | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | 36,500 | 50,000 U | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | 226 | 150 U | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-EW1S-BL<br>10/29/13<br>GPS-EW1S | 114-GWPS-EW2I-BL<br>10/29/13<br>GPS-EW2I | 114-GWPS-EW2S-BL<br>10/30/13<br>GPS-EW2S | 114-GWPS-EW3S-BL<br>11/04/13<br>GPS-EW3S | 114-GWPS-GWTRIT-INT-0.4%CPS<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-1%FES<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-1.5%CPS<br>01/14/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.50 U | 0.50 U | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | 48.2 | 127 J | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 13,100 | 39,300 J | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | 10 U | 100 U | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | 1.7 J | 100 UJ | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | 152,000 | 631,000 | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 1.0 U | 1.0 U | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 50 U | 44.2 J | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | 20.4 | 200 U | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-EW1S-BL<br>10/29/13<br>GPS-EW1S | 114-GWPS-EW2I-BL<br>10/29/13<br>GPS-EW2I | 114-GWPS-EW2S-BL<br>10/30/13<br>GPS-EW2S | 114-GWPS-EW3S-BL<br>11/04/13<br>GPS-EW3S | 114-GWPS-GWTRIT-INT-0.4%CPS<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-1%FES<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-1.5%CPS<br>01/14/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | 148,000 | 345,000 | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | 5,000 U | 136,000 | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | 76,200 | 709,000 | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | 200 U | 200 U | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | 84 J | 770 | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | 860 | 3,200 U | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | 150 | 1,200 | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | 120 | 3,000 U | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | 33 | 3,500 | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 204 | 383 | 245 | 244 | 206 | 455 | 238 |
| pH | ARC-pH | SU | 10.64 | 7.24 | 9.97 | 9.44 | 10.91 | 4.22 | 10.99 |
| Phosphate | 14265-44-2 | ug/L | NA | 50 UJ | 120 | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-EW1S-BL<br>10/29/13<br>GPS-EW1S | 114-GWPS-EW2I-BL<br>10/29/13<br>GPS-EW2I | 114-GWPS-EW2S-BL<br>10/30/13<br>GPS-EW2S | 114-GWPS-EW3S-BL<br>11/04/13<br>GPS-EW3S | 114-GWPS-GWTRIT-INT-0.4%CPS<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-1%FES<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-1.5%CPS<br>01/14/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 222,000 | 338,000 | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | 3,000 U | 6,500 | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | 1,000 U | 52,200 | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | 52 | 22 J | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-GWTRIT-INT-1.5%FBH<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-1.75%FES<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-2%FBH<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-3%CPS<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-3%FBH<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-3.5%FES<br>01/14/14<br>noloc |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-GWTRIT-INT-1.5%FBH<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-1.75%FES<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-2%FBH<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-3%CPS<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-3%FBH<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-3.5%FES<br>01/14/14<br>noloc |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-GWTRIT-INT-1.5%FBH<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-1.75%FES<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-2%FBH<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-3%CPS<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-3%FBH<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-3.5%FES<br>01/14/14<br>noloc |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 20,300 RA | 10 RA | 27,700 RA | 10 RA | 14,700 RA | 16 RA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-GWTRIT-INT-1.5%FBH<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-1.75%FES<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-2%FBH<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-3%CPS<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-3%FBH<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-3.5%FES<br>01/14/14<br>noloc |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-GWTRIT-INT-1.5%FBH<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-1.75%FES<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-2%FBH<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-3%CPS<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-3%FBH<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-3.5%FES<br>01/14/14<br>noloc |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 124 | 485 | 119 | 234 | 113 | 521 |
| pH | ARC-pH | SU | 10.85 | 3.95 | 10.77 | 11.14 | 11.08 | 3.73 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-GWTRIT-INT-1.5%FBH<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-1.75%FES<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-2%FBH<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-3%CPS<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-3%FBH<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-INT-3.5%FES<br>01/14/14<br>noloc |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-GWPS-GWTRIT-INT-CONTROL 01/14/14 noloc | 114-GWPS-GWTRIT-SHALLOW-0.2%CPS 01/14/14 noloc | 114-GWPS-GWTRIT-SHALLOW-1.3%FBH 01/14/14 noloc | 114-GWPS-GWTRIT-SHALLOW-1.5%CPS 01/14/14 noloc | 114-GWPS-GWTRIT-SHALLOW-3%CPS 01/14/14 noloc |
|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-GWTRIT-INT-CONTROL<br><br>01/14/14<br>noloc | 114-GWPS-GWTRIT-SHALLOW-0.2%CPS<br><br>01/14/14<br>noloc | 114-GWPS-GWTRIT-SHALLOW-1.3%FBH<br><br>01/14/14<br>noloc | 114-GWPS-GWTRIT-SHALLOW-1.5%CPS<br><br>01/14/14<br>noloc | 114-GWPS-GWTRIT-SHALLOW-3%CPS<br><br>01/14/14<br>noloc |
|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-GWTRIT-INT-CONTROL<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-SHALLOW-0.2%CPS<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-SHALLOW-1.3%FBH<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-SHALLOW-1.5%CPS<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-SHALLOW-3%CPS<br>01/14/14<br>noloc |
|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 90,800 RA | 46,700 RA | 30,500 RA | 10 RA | 10 RA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-GWTRIT-INT-CONTROL<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-SHALLOW-0.2%CPS<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-SHALLOW-1.3%FBH<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-SHALLOW-1.5%CPS<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-SHALLOW-3%CPS<br>01/14/14<br>noloc |
|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-GWTRIT-INT-CONTROL<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-SHALLOW-0.2%CPS<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-SHALLOW-1.3%FBH<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-SHALLOW-1.5%CPS<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-SHALLOW-3%CPS<br>01/14/14<br>noloc |
|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 223 | 160 | 63.9 | 242 | 265 |
| pH | ARC-pH | SU | 8.53 | 11.71 | 11.48 | 11.19 | 11.18 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-GWTRIT-INT-CONTROL<br><br>01/14/14<br>noloc | 114-GWPS-GWTRIT-SHALLOW-0.2%CPS<br><br>01/14/14<br>noloc | 114-GWPS-GWTRIT-SHALLOW-1.3%FBH<br><br>01/14/14<br>noloc | 114-GWPS-GWTRIT-SHALLOW-1.5%CPS<br><br>01/14/14<br>noloc | 114-GWPS-GWTRIT-SHALLOW-3%CPS<br><br>01/14/14<br>noloc |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-GWTRIT-SHALLOW-3%FBH<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-SHALLOW-6%FBH<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-SHALLOW-CONTROL<br>01/14/14<br>noloc | 114-GWPS-IW1I-BL<br>10/30/13<br>GPS-IW1I | 114-GWPS-IW1I-BL-2<br>11/04/13<br>GPS-IW1I | 114-GWPS-IW3I-BL<br>10/31/13<br>GPS-IW3I | 114-GWPS-IW3S<br>01/02/14<br>114-GWPS-IW3S |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-GWTRIT-SHALLOW-3%FBH<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-SHALLOW-6%FBH<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-SHALLOW-CONTROL<br>01/14/14<br>noloc | 114-GWPS-IW1I-BL<br>10/30/13<br>GPS-IW1I | 114-GWPS-IW1I-BL-2<br>11/04/13<br>GPS-IW1I | 114-GWPS-IW3I-BL<br>10/31/13<br>GPS-IW3I | 114-GWPS-IW3S<br>01/02/14<br>114-GWPS-IW3S |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-GWTRIT-SHALLOW-3%FBH<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-SHALLOW-6%FBH<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-SHALLOW-CONTROL<br>01/14/14<br>noloc | 114-GWPS-IW1I-BL<br>10/30/13<br>GPS-IW1I | 114-GWPS-IW1I-BL-2<br>11/04/13<br>GPS-IW1I | 114-GWPS-IW3I-BL<br>10/31/13<br>GPS-IW3I | 114-GWPS-IW3S<br>01/02/14<br>114-GWPS-IW3S |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | 360 J | NA | 118 J | 428 |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | 120 UJ | NA | 30 U | 252 |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | 3.6 | NA | 3.0 U | 61.4 |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | 50.4 J | NA | 35.6 J | 18.4 J |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | 80 U | NA | 4.0 U | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | 10.3 J | NA | 8.7 | 15 U |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | 150,000 | NA | 102,000 | 41,300 |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 116,000 | NA | 125,000 | 158,000 |
| Chromium VI | 18540-29-9 | ug/L | 28,700 RA | 24,600 RA | 149,000 RA | 124,000 J | 93,100 | 109,000 | 153,000 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | 103 J | NA | 68.9 | 2.2 J |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | 370 J | NA | 337 | 31.3 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | 848 J | NA | 181 | 205 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | 100 U | NA | 8.2 | 15 U |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | 43,200 J | NA | 30,800 | 74.0 J |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | 246 J | NA | 173 | 0.80 J |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-GWTRIT-SHALLOW-3%FBH<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-SHALLOW-6%FBH<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-SHALLOW-CONTROL<br>01/14/14<br>noloc | 114-GWPS-IW1I-BL<br>10/30/13<br>GPS-IW1I | 114-GWPS-IW1I-BL-2<br>11/04/13<br>GPS-IW1I | 114-GWPS-IW3I-BL<br>10/31/13<br>GPS-IW3I | 114-GWPS-IW3S<br>01/02/14<br>114-GWPS-IW3S |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | 0.50 U | NA | 0.20 U | 0.20 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | 165 J | NA | 107 | 71.7 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | 9,010 J | NA | 11,000 | 59,900 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | 200 U | NA | 10 U | 9.0 J |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | 200 UJ | NA | 5.0 U | 5.4 J |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | 210,000 | NA | 214,000 | 528,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | 1.0 U | NA | 4.0 U | 10 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | 1,000 UJ | NA | 10 U | 170 |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | 286 J | NA | 234 | 100 U |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | 156,000 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | 147,000 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-GWTRIT-SHALLOW-3%FBH<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-SHALLOW-6%FBH<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-SHALLOW-CONTROL<br>01/14/14<br>noloc | 114-GWPS-IW1I-BL<br>10/30/13<br>GPS-IW1I | 114-GWPS-IW1I-BL-2<br>11/04/13<br>GPS-IW1I | 114-GWPS-IW3I-BL<br>10/31/13<br>GPS-IW3I | 114-GWPS-IW3S<br>01/02/14<br>114-GWPS-IW3S |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | 480,000 | NA | 454,000 | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | 5,000 U | NA | 5,000 U | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | 92,700 | NA | 123,000 | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | 200 U | NA | 69 J | 81 |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | 130 J | NA | 170 J | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | 810 J | NA | 110 J | 120 |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | 1,200 | NA | 1,000 | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | 1,000 | NA | 840 | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | 190 | NA | 160 | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 46.6 | 52.4 | 163 | 363 | 315 | 354 | 216 |
| pH | ARC-pH | SU | 11.57 | 11.80 | 9.79 | 7.11 | 7.61 | 7.39 | 9.56 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | 39 J | NA | 50 UJ | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-GWTRIT-SHALLOW-3%FBH<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-SHALLOW-6%FBH<br>01/14/14<br>noloc | 114-GWPS-GWTRIT-SHALLOW-CONTROL<br>01/14/14<br>noloc | 114-GWPS-IW1I-BL<br>10/30/13<br>GPS-IW1I | 114-GWPS-IW1I-BL-2<br>11/04/13<br>GPS-IW1I | 114-GWPS-IW3I-BL<br>10/31/13<br>GPS-IW3I | 114-GWPS-IW3S<br>01/02/14<br>114-GWPS-IW3S |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | 365,000 | NA | 320,000 | 573,000 |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | 3,000 U | NA | 3,000 U | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | 6,300 | NA | 7,800 | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | 41 J | NA | 50 | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-GWPS-IW5I-BL 10/31/13 GPS-IW5I | 114-GWPS-IW9I-BL 10/31/13 GPS-IW9I | 114-GWPS-IW-10I 01/02/14 GPS-IW10I | 114-GWPS-IW12I-BL 10/31/13 GPS-IW12I | 114-GWPS-MGPBT-BL 06/04/13 noloc | 114-GWPS-MGPBT-CONTROL-1 06/12/13 noloc | 114-GWPS-MGPBT-CONTROL-2 06/19/13 noloc | 114-GWPS-MGPBT-TEST-1 06/12/13 noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | 20 U | 10 U | 1.0 U | 10 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | 20 U | 10 U | 1.0 U | 10 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | 100 U | 50 U | 5.0 U | 50 U |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | 20 U | 10 U | 1.0 U | 10 U |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | 20 U | 10 U | 1.0 U | 10 U |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | 20 U | 10 U | 1.0 U | 10 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | 100 U | 50 U | 5.0 U | 50 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | 100 U | 50 U | 5.0 U | 50 U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | 200 U | 100 U | 10 U | 100 U |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | 40 U | 20 U | 2.0 U | 20 U |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | 20 U | 10 U | 1.0 U | 10 U |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | 20 U | 10 U | 1.0 U | 10 U |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | 20 U | 10 U | 1.0 U | 10 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | 20 U | 10 U | 1.0 U | 10 U |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | 20 U | 10 U | 1.0 U | 10 U |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | 2,500 U | 1,300 U | 130 U | 1,300 U |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | 200 U | 31.0 J | 21.0 | 100 U |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | 100 U | 50 U | 5.0 U | 50 U |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | 159 J | 216 | 244 J | 163 |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | 10,300 | 5,620 | 1,580 | 1,920 J |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | 100 U | 50 U | 5.0 U | 50 U |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | 20 U | 10 U | 1.0 U | 10 U |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | 80 U | 40 U | 4.0 U | 40 U |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | 40 U | 20 U | 2.0 U | 20 U |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | 10.6 J | 3.0 J | 1.2 J | 8.1 J |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | 20 U | 10 U | 1.0 U | 10 U |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | 100 U | 50 U | 5.0 U | 50 U |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | 100 U | 50 U | 5.0 U | 50 U |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | 20 U | 10 U | 1.0 U | 10 U |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | 20 U | 10 U | 1.0 U | 10 U |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | 20 U | 10 U | 1.0 U | 10 U |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | 20 U | 10 U | 1.0 U | 10 U |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | 20 U | 10 U | 1.0 U | 10 U |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | 20 U | 10 U | 0.68 J | 10 U |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | 20 U | 10 U | 1.0 U | 10 U |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | 100 U | 50 U | 5.0 U | 50 U |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | 20.6 J | 20 U | 2.0 U | 20 U |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | 1,330 | 480 | 139 | 122 |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | 28.2 J | 9.6 J | 7.5 | 20 U |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | 1,670 | 601 | 394 | 156 |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | 100 U | 50 U | 5.0 U | 50 U |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | 100 U | 50 U | 5.0 U | 50 U |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | 100 U | 50 U | 5.0 U | 50 U |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | 6.1 J | 3.9 J | 4.1 | 2.7 J |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | 888 | 378 | 116 | 95.9 |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | 382 | 50 U | 88.5 | 41.4 J |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | 20 U | 10 U | 1.0 U | 10 U |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | 5,320 | 2,390 | 738 | 750 |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | 2,560 | 979 | 510 | 252 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-IW5I-BL<br>10/31/13<br>GPS-IW5I | 114-GWPS-IW9I-BL<br>10/31/13<br>GPS-IW9I | 114-GWPS-IW-10I<br>01/02/14<br>GPS-IW10I | 114-GWPS-IW12I-BL<br>10/31/13<br>GPS-IW12I | 114-GWPS-MGPBT-BL<br>06/04/13<br>noloc | 114-GWPS-MGPBT-CONTROL-1<br>06/12/13<br>noloc | 114-GWPS-MGPBT-CONTROL-2<br>06/19/13<br>noloc | 114-GWPS-MGPBT-TEST-1<br>06/12/13<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | 20 U | 10 U | 1.0 U | 10 U |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | 20 U | 10 U | 1.0 U | 10 U |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | 20 U | 10 U | 1.0 U | 10 U |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | 20 U | 10 U | 1.0 U | 10 U |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | 41.4 | 1.3 U | 7.8 | 1.0 U |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | 2.0 U | 2.5 U | 2.0 U | 2.0 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | 2.0 U | 2.5 U | 2.0 U | 2.0 U |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | 5.0 U | 6.3 U | 5.0 U | 5.0 U |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | 5.0 U | 6.3 U | 5.0 U | 5.0 U |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | 5.0 U | 6.3 U | 5.0 U | 5.0 U |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | 5.0 U | 6.3 U | 5.0 U | 5.0 U |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | 197 | 28.5 | 32.4 | 5.0 U |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | 20 U | 25 U | 20 U | 20 U |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | 2.0 U | 2.5 U | 2.0 U | 2.0 U |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | 2.0 U | 2.5 U | 2.0 U | 2.0 U |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | 2.0 U | 2.5 U | 2.0 U | 2.0 U |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | 5.0 U | 6.3 U | 5.0 U | 5.0 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | 20 U | 25 U | 20 U | 20 U |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | 546 | 8.4 | 93.5 | 1.0 U |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | 95.1 | 22.8 | 26.2 | 8.9 |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | 5.0 U | 6.3 U | 5.0 U | 5.0 U |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | 5.0 U | 6.3 U | 5.0 U | 5.0 U |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | 5.0 U | 6.3 U | 5.0 U | 5.0 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | 5.0 U | 6.3 U | 5.0 U | 5.0 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | 2.0 U | 2.5 U | 2.0 U | 2.0 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | 5.0 U | 6.3 U | 5.0 U | 5.0 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | 2.0 U | 2.5 U | 2.0 U | 2.0 U |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | 234 | 16.8 | 11.6 | 2.0 U |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | 5.0 U | 6.3 U | 5.0 U | 5.0 U |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | 10 U | 13 U | 10 U | 10 U |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | 0.713 | 12.8 | 0.10 U |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | 1.69 | 26.6 | 1.63 |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | 112 | 41.6 | 38.4 | 16.8 |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | 0.708 | 4.48 | 0.647 |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | 5.0 U | 6.3 U | 5.0 U | 5.0 U |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | 5.0 U | 6.3 U | 5.0 U | 5.0 U |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | 0.186 | 0.872 | 0.190 |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | 3.75 | 0.13 U | 0.314 | 0.10 U |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | 2.87 | 0.13 U | 0.232 | 0.10 U |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | 1.62 | 0.13 U | 0.10 U | 0.10 U |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | 2.17 | 0.13 U | 0.10 U | 0.10 U |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | 2.0 U | 2.5 U | 2.0 U | 2.0 U |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | 2.0 U | 2.5 U | 2.0 U | 2.0 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | 2.0 U | 2.5 U | 2.0 U | 2.0 U |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | 2.0 U | 2.5 U | 2.0 U | 2.0 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-IW5I-BL<br>10/31/13<br>GPS-IW5I | 114-GWPS-IW9I-BL<br>10/31/13<br>GPS-IW9I | 114-GWPS-IW-10I<br>01/02/14<br>GPS-IW10I | 114-GWPS-IW12I-BL<br>10/31/13<br>GPS-IW12I | 114-GWPS-MGPBT-BL<br>06/04/13<br>noloc | 114-GWPS-MGPBT-CONTROL-1<br>06/12/13<br>noloc | 114-GWPS-MGPBT-CONTROL-2<br>06/19/13<br>noloc | 114-GWPS-MGPBT-TEST-1<br>06/12/13<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | 2.0 U | 2.5 U | 2.0 U | 2.0 U |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | 10.6 | 1.3 U | 3.8 | 1.8 |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | 0.13 U | 0.649 | 0.10 U |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | 0.485 | 0.13 U | 0.10 U | 0.10 U |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | 5.9 | 6.3 U | 1.3 J | 5.0 U |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | 2.2 | 2.5 U | 2.0 U | 2.0 U |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | 2.0 U | 2.5 U | 2.0 U | 2.0 U |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | 2.0 U | 2.5 U | 2.0 U | 2.0 U |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | 2.0 U | 2.5 U | 2.0 U | 2.0 U |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | 0.256 | 2.22 | 0.285 |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | 0.978 | 14.1 | 1.43 |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | 1.0 U | 1.3 U | 1.0 U | 1.0 U |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | 0.020 U | 0.025 U | 0.020 U | 0.020 U |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | 10 U | 13 U | 10 U | 10 U |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | 2.0 U | 2.5 U | 2.0 U | 2.0 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | 2.09 | 0.13 U | 0.10 U | 0.10 U |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | 2.0 U | 2.5 U | 2.0 U | 2.0 U |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | 100 | 371 | 0.10 U |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | 2.0 U | 2.5 U | 2.0 U | 2.0 U |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | 2.0 U | 2.5 U | 2.0 U | 2.0 U |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | 5.0 U | 6.3 U | 5.0 U | 5.0 U |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | 5.0 U | 6.3 U | 5.0 U | 5.0 U |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | 0.30 U | 0.38 U | 0.30 U | 0.30 U |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | 1.27 | 17.3 | 0.428 |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | 2.0 U | 11.2 | 6.4 | 2.0 U |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | 0.358 | 3.17 | 0.406 |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | 85.9 J | NA | 1,500 | 104,000 | 5,420 | 39,600 |
| Antimony | 7440-36-0 | ug/L | NA | NA | 68.1 | NA | 83.7 | 8.3 | 6.0 U | 3.4 J |
| Arsenic | 7440-38-2 | ug/L | NA | NA | 27.3 | NA | 10.3 | 22.1 | 8.1 | 9.1 |
| Barium | 7440-39-3 | ug/L | NA | NA | 26.3 J | NA | 41.5 J | 471 | 69.2 J | 176 J |
| Beryllium | 7440-41-7 | ug/L | NA | NA | 1.0 U | NA | 1.0 U | 6.8 | 0.40 J | 2.0 |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | 4.3 J | NA | 3.0 U | 3.0 U | 0.40 J | 0.90 J |
| Calcium | 7440-70-2 | ug/L | NA | NA | 33,100 | NA | 48,900 | 164,000 | 118,000 | 169,000 |
| Chromium | 7440-47-3 | ug/L | NA | NA | 114,000 | NA | 10,200 | 3,720 | 4,180 | 318 |
| Chromium VI | 18540-29-9 | ug/L | 4.3 J | 72,200 | 100,000 | 37,000 | 11,900 | 6,300 J | 5,200 J | R |
| Cobalt | 7440-48-4 | ug/L | NA | NA | 165 | NA | 14.1 J | 152 | 22.6 J | 42.2 J |
| Copper | 7440-50-8 | ug/L | NA | NA | 354 | NA | 14.3 | 496 | 32.5 | 165 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 72.1 J | NA | 7,990 | 183,000 | 15,700 | 65,500 |
| Lead | 7439-92-1 | ug/L | NA | NA | 15 U | NA | 23.2 | 69.3 | 46.4 | 28.5 |
| Magnesium | 7439-95-4 | ug/L | NA | NA | 24,300 | NA | 27,400 | 106,000 | 30,100 | 31,500 |
| Manganese | 7439-96-5 | ug/L | NA | NA | 19.8 | NA | 953 | 2,050 | 1,160 | 708 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-IW5I-BL<br>10/31/13<br>GPS-IW5I | 114-GWPS-IW9I-BL<br>10/31/13<br>GPS-IW9I | 114-GWPS-IW-10I<br>01/02/14<br>GPS-IW10I | 114-GWPS-IW12I-BL<br>10/31/13<br>GPS-IW12I | 114-GWPS-MGPBT-BL<br>06/04/13<br>noloc | 114-GWPS-MGPBT-CONTROL-1<br>06/12/13<br>noloc | 114-GWPS-MGPBT-CONTROL-2<br>06/19/13<br>noloc | 114-GWPS-MGPBT-TEST-1<br>06/12/13<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | 0.20 U | NA | 0.15 J | 0.60 U | 0.15 J | 0.60 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | 177 | NA | 20.9 | 335 | 35.6 | 122 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | 17,200 | NA | 28,100 | 91,700 | 29,100 | 98,100 |
| Selenium | 7782-49-2 | ug/L | NA | NA | 4.5 J | NA | 3.2 J | 18.1 | 11.8 JB | 21.0 J |
| Silver | 7440-22-4 | ug/L | NA | NA | 2.9 J | NA | 10 U | 2.0 J | 10 U | 10 U |
| Sodium | 7440-23-5 | ug/L | NA | NA | 282,000 | NA | 275,000 | 232,000 | 247,000 | 3,960,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | 8.7 J | NA | 2.0 U | 10 U | 2.6 J | 10 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | 7.2 J | NA | 13.8 J | 328 | 26.6 J | 96.1 |
| Zinc | 7440-66-6 | ug/L | NA | NA | 32.5 J | NA | 20.5 | 221 | 51.0 | 305 |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 111,000 | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 103,000 | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-IW5I-BL<br>10/31/13<br>GPS-IW5I | 114-GWPS-IW9I-BL<br>10/31/13<br>GPS-IW9I | 114-GWPS-IW-10I<br>01/02/14<br>GPS-IW10I | 114-GWPS-IW12I-BL<br>10/31/13<br>GPS-IW12I | 114-GWPS-MGPBT-BL<br>06/04/13<br>noloc | 114-GWPS-MGPBT-CONTROL-1<br>06/12/13<br>noloc | 114-GWPS-MGPBT-CONTROL-2<br>06/19/13<br>noloc | 114-GWPS-MGPBT-TEST-1<br>06/12/13<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | 3,600 J | 3,300 J | 4,100 J | 260 J |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | 81 | NA | 100 J | 360 J | 51 J | 120 J |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | 300 U | NA | 7,900 | 183,000 | 15,600 | 65,400 |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 317 | 350 | 285 | 334 | 301 | 326 | 301 | 299 |
| pH | ARC-pH | SU | 7.69 | 7.72 | 8.32 | 8.23 | 8.99 | 7.87 | 7.97 | 7.32 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-IW5I-BL<br>10/31/13<br>GPS-IW5I | 114-GWPS-IW9I-BL<br>10/31/13<br>GPS-IW9I | 114-GWPS-IW-10I<br>01/02/14<br>GPS-IW10I | 114-GWPS-IW12I-BL<br>10/31/13<br>GPS-IW12I | 114-GWPS-MGPBT-BL<br>06/04/13<br>noloc | 114-GWPS-MGPBT-CONTROL-1<br>06/12/13<br>noloc | 114-GWPS-MGPBT-CONTROL-2<br>06/19/13<br>noloc | 114-GWPS-MGPBT-TEST-1<br>06/12/13<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | 417,000 | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-MGPBT-TEST-2<br>06/19/13<br>noloc | 114-GWPS-MW1I-BL<br>05/29/13<br>GPS-MW1I | 114-GWPS-MW1S-BL<br>05/29/13<br>GPS-MW1S | 114-GWPS-MW2I-BL<br>05/29/13<br>GPS-MW2I | 114-GWPS-MW2S-BL<br>05/29/13<br>GPS-MW2S | 114-GWPS-MW3I-BL<br>11/04/13<br>GPS-MW3I | 114-GWPS-MW3S-BL<br>10/30/13<br>GPS-MW3S | 114-GWPS-MW4I-BL<br>11/04/13<br>GPS-MW4I |
|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | 50 U | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | 50 U | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | 50 U | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | 100 U | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | 20 U | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | 1,300 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | 100 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | 50 U | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | 148 | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | 2,280 | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | 50 U | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | 40 U | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | 20 U | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | 5.1 J | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | 50 U | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | 50 U | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | 50 U | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | 20 U | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | 164 | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | 20 U | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | 204 | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | 50 U | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | 50 U | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | 50 U | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | 130 | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | 50.0 | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | 891 | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | 334 | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-MGPBT-TEST-2<br><br>06/19/13<br>noloc | 114-GWPS-MW1I-BL<br><br>05/29/13<br>GPS-MW1I | 114-GWPS-MW1S-BL<br><br>05/29/13<br>GPS-MW1S | 114-GWPS-MW2I-BL<br><br>05/29/13<br>GPS-MW2I | 114-GWPS-MW2S-BL<br><br>05/29/13<br>GPS-MW2S | 114-GWPS-MW3I-BL<br><br>11/04/13<br>GPS-MW3I | 114-GWPS-MW3S-BL<br><br>10/30/13<br>GPS-MW3S | 114-GWPS-MW4I-BL<br><br>11/04/13<br>GPS-MW4I |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | 4.5 | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | 85.2 | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | 20 U | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | 20 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | 47.3 | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | 39.9 | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | 13.7 | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | 4.48 | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | 13.9 | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | 95.7 | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | 4.07 | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | 1.09 | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | 0.446 | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | 0.357 | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | 0.164 | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | 0.144 | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | 2.0 U | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-MGPBT-TEST-2<br><br>06/19/13<br>noloc | 114-GWPS-MW1I-BL<br><br>05/29/13<br>GPS-MW1I | 114-GWPS-MW1S-BL<br><br>05/29/13<br>GPS-MW1S | 114-GWPS-MW2I-BL<br><br>05/29/13<br>GPS-MW2I | 114-GWPS-MW2S-BL<br><br>05/29/13<br>GPS-MW2S | 114-GWPS-MW3I-BL<br><br>11/04/13<br>GPS-MW3I | 114-GWPS-MW3S-BL<br><br>10/30/13<br>GPS-MW3S | 114-GWPS-MW4I-BL<br><br>11/04/13<br>GPS-MW4I |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | 1.6 | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | 0.977 | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | 0.10 U | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | 0.65 J | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | 2.18 | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | 4.16 | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | 0.020 U | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | 0.10 U | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | 151 | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | 0.30 U | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | 9.6 | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | 9.9 | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | 3.09 | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 13,700 | 1,350 J [1,000 J] | 4,010 J | 1,510 J | 22,000 J | 802 | 1,410 | 57.4 J |
| Antimony | 7440-36-0 | ug/L | 6.0 U | 18 UJ [29 J] | 18 UJ | 53.7 J | 2.2 J | 12 U | 1.9 J | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | 3.5 | 9.0 U [6 U] | 7.1 J | 8.4 | 12.2 | 17.7 | 18.0 | 3.4 |
| Barium | 7440-39-3 | ug/L | 63.3 J | 33.9 J [30.6 J] | 55.8 J | 31.7 J | 239 | 27.5 J | 11.0 J | 59.5 |
| Beryllium | 7440-41-7 | ug/L | 0.60 J | 1.0 U [1 U] | 1.0 U | 1.0 U | 1.0 | 4.0 U | 4.0 U | 4.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 0.60 J | 17.8 [18.9] | 1.0 J | 17.1 | 3.0 U | 4.0 U | 5.0 U | 2.0 J |
| Calcium | 7440-70-2 | ug/L | 66,200 | 110,000 [112,000] | 56,500 | 96,400 | 86,900 | 76,900 | 30,000 | 90,600 |
| Chromium | 7440-47-3 | ug/L | 153 | 86,200 [85,100] | 91,800 | 41,200 | 131 | 66,200 | 60.9 | 5,150 |
| Chromium VI | 18540-29-9 | ug/L | R | 90,900 [91,200] | 83,900 | 47,400 | 6.5 J | 55,800 | 27 J | 4,500 |
| Cobalt | 7440-48-4 | ug/L | 25.3 J | 146 [155] | 17.4 J | 82.9 | 18.2 J | 21.6 J | 1.1 J | 35.5 J |
| Copper | 7440-50-8 | ug/L | 69.1 | 454 [488] | 40.8 | 303 | 41.0 | 7.4 J | 1.1 J | 47.3 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 30,700 | 2,200 J [1,670 J] | 3,670 J | 2,410 J | 32,500 J | 1,360 | 204 J | 79.5 J |
| Lead | 7439-92-1 | ug/L | 12.8 | 18.3 [17.3] | 20.9 | 3.8 | 44.0 | 1.9 J | 5.0 U | 3.0 J |
| Magnesium | 7439-95-4 | ug/L | 13,900 | 24,100 [24,500] | 1,200 J | 19,000 | 10,100 | 523 J | 5,000 U | 20,900 |
| Manganese | 7439-96-5 | ug/L | 427 | 447 [473] | 46.7 | 329 | 386 | 36.9 | 15 U | 215 |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-MGPBT-TEST-2<br><br>06/19/13<br>noloc | 114-GWPS-MW1I-BL<br><br>05/29/13<br>GPS-MW1I | 114-GWPS-MW1S-BL<br><br>05/29/13<br>GPS-MW1S | 114-GWPS-MW2I-BL<br><br>05/29/13<br>GPS-MW2I | 114-GWPS-MW2S-BL<br><br>05/29/13<br>GPS-MW2S | 114-GWPS-MW3I-BL<br><br>11/04/13<br>GPS-MW3I | 114-GWPS-MW3S-BL<br><br>10/30/13<br>GPS-MW3S | 114-GWPS-MW4I-BL<br><br>11/04/13<br>GPS-MW4I |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.11 J | 0.20 U [0.2 U] | 0.16 J | 0.092 J | 0.18 J | 0.20 U | 0.50 U | 0.20 U |
| Nickel | 7440-02-0 | ug/L | 44.2 | 181 [185] | 157 | 141 | 136 | 165 | 84.2 | 42.1 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 39,500 | 7,760 J [7,510 J] | 66,200 | 7,260 J | 37,000 | 22,600 | 55,000 | 7,720 |
| Selenium | 7782-49-2 | ug/L | 27.8 JB | 10 U [10 U] | 10 U | 10 U | 7.8 J | 10 U | 7.1 J | 10 U |
| Silver | 7440-22-4 | ug/L | 10 U | 30 U [20 U] | 30 U | 10 U | 2.6 J | 1.6 J | 1.3 J | 5.0 U |
| Sodium | 7440-23-5 | ug/L | 1,840,000 | 216,000 [221,000] | 904,000 | 154,000 | 154,000 | 222,000 | 232,000 | 138,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 10 U | 6.0 U [4 U] | 6.0 U | 2.0 U | 2.0 U | 2.0 U | 1.0 U | 2.0 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 36.1 J | 53.8 J [54.5 J] | 131 J | 7.7 J | 75.1 | 87.5 | 117 J | 3.9 J |
| Zinc | 7440-66-6 | ug/L | 153 | 115 [103] | 20 U | 92.4 | 106 | 20 U | 20 U | 22.2 |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-MGPBT-TEST-2<br><br>06/19/13<br>noloc | 114-GWPS-MW1I-BL<br><br>05/29/13<br>GPS-MW1I | 114-GWPS-MW1S-BL<br><br>05/29/13<br>GPS-MW1S | 114-GWPS-MW2I-BL<br><br>05/29/13<br>GPS-MW2I | 114-GWPS-MW2S-BL<br><br>05/29/13<br>GPS-MW2S | 114-GWPS-MW3I-BL<br><br>11/04/13<br>GPS-MW3I | 114-GWPS-MW3S-BL<br><br>10/30/13<br>GPS-MW3S | 114-GWPS-MW4I-BL<br><br>11/04/13<br>GPS-MW4I |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | 493,000 [458,000] | 794,000 | 460,000 | 89,700 | 272,000 | 300,000 | 387,000 |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | 5,000 U [5,000 U] | 659,000 | 5,000 U | 41,900 | 77,200 | 220,000 | 5,000 U |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | 127,000 [128,000] | 906,000 | 134,000 | 254,000 | 102,000 | 330,000 | 138,000 |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | 1,800 J | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | 520 J | 65 J [R] | 130 J | R | R | 200 U | 93 J | 200 U |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | 120 J [140 J] | 400 U | 120 J | 400 | 280 | 640 | 160 J |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | 30,200 | 2,100 J [1,700 J] | 3,500 J | 2,400 J | 32,500 J | 1,300 | 110 J | 59 J |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | 1,600 [1,400] | 5.1 J | 1,600 | 32 J | 490 | 100 U | 55 J |
| Nitrate-N | 14797-55-8 | ug/L | NA | 1,500 [1,300] | 600 U | 1,600 | 620 | 600 U | 1,500 | 46 J |
| Nitrite | 14797-65-0 | ug/L | NA | 85 J [120 J] | 85 J | 500 U | 650 | 790 | 1,500 | 9.3 J |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 328 | 318 [276] | 123 | 310 | 216 | 211 | 190 | 301 |
| pH | ARC-pH | SU | 7.74 | 7.12 [7.49] | 10.61 | 7.19 | 10.32 | 11.03 | 10.86 | 7.64 |
| Phosphate | 14265-44-2 | ug/L | NA | 98 [50] | 48 J | 18 J | 18 J | 34 J | 37 J | 6 J |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-MGPBT-TEST-2<br><br>06/19/13<br>noloc | 114-GWPS-MW1I-BL<br><br>05/29/13<br>GPS-MW1I | 114-GWPS-MW1S-BL<br><br>05/29/13<br>GPS-MW1S | 114-GWPS-MW2I-BL<br><br>05/29/13<br>GPS-MW2I | 114-GWPS-MW2S-BL<br><br>05/29/13<br>GPS-MW2S | 114-GWPS-MW3I-BL<br><br>11/04/13<br>GPS-MW3I | 114-GWPS-MW3S-BL<br><br>10/30/13<br>GPS-MW3S | 114-GWPS-MW4I-BL<br><br>11/04/13<br>GPS-MW4I |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 312,000 [313,000] | 460,000 | 192,000 | 301,000 | 270,000 | 69,100 | 112,000 |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | 3,000 J [4,500 J] | 10,000 J | 3,000 J | R | 3,000 U | 5,500 | 3,000 U |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | 7,300 [7,500] | 71,100 | 5,300 | 25,200 | 11,700 | 32,300 | 4,100 J |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | 50 U [50 U] | 190 | 50 U | 250 | 18 J | 190 | 50 U |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-GWPS-MW4S-BL | 114-GWPS-MW5I-BL | 114-GWPS-MW5S-BL | 114-GWPS-MW6I-BL | 114-GWPS-MW6S-BL | 114-GWPS-MW7I-BL | 114-GWPS-MW7S-BL | 114-GWPS-PZ1I-BL | 114-GWPS-PZ1S-BL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | | |
| Date Collected: | | | 11/01/13 | 11/01/13 | 11/01/13 | 05/29/13 | 05/29/13 | 10/30/13 | 11/01/13 | 11/06/13 | 11/06/13 |
| Location ID: | CAS Number | Units | GPS-MW4S | GPS-MW5I | GPS-MW5S | GPS-MW6I | GPS-MW6S | GPS-MW7I | GPS-MW7S | GPS-PZ1I | GPS-PZ1S |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-MW4S-BL<br>11/01/13<br>GPS-MW4S | 114-GWPS-MW5I-BL<br>11/01/13<br>GPS-MW5I | 114-GWPS-MW5S-BL<br>11/01/13<br>GPS-MW5S | 114-GWPS-MW6I-BL<br>05/29/13<br>GPS-MW6I | 114-GWPS-MW6S-BL<br>05/29/13<br>GPS-MW6S | 114-GWPS-MW7I-BL<br>10/30/13<br>GPS-MW7I | 114-GWPS-MW7S-BL<br>11/01/13<br>GPS-MW7S | 114-GWPS-PZ1I-BL<br>11/06/13<br>GPS-PZ1I | 114-GWPS-PZ1S-BL<br>11/06/13<br>GPS-PZ1S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-GWPS-MW4S-BL 11/01/13 GPS-MW4S | 114-GWPS-MW5I-BL 11/01/13 GPS-MW5I | 114-GWPS-MW5S-BL 11/01/13 GPS-MW5S | 114-GWPS-MW6I-BL 05/29/13 GPS-MW6I | 114-GWPS-MW6S-BL 05/29/13 GPS-MW6S | 114-GWPS-MW7I-BL 10/30/13 GPS-MW7I | 114-GWPS-MW7S-BL 11/01/13 GPS-MW7S | 114-GWPS-PZ1I-BL 11/06/13 GPS-PZ1I | 114-GWPS-PZ1S-BL 11/06/13 GPS-PZ1S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 1,920 | 8,140 | 7,310 | 1,280 J | 9,280 J | 733 | 2,200 | 200 U | 886 |
| Antimony | 7440-36-0 | ug/L | 2.9 J | 600 U | 5.2 J | 58.2 J | 3.0 J | 1,060 J | 4.5 J | 300 | 29.5 |
| Arsenic | 7440-38-2 | ug/L | 7.7 | 11.6 | 28.0 | 6.0 U | 10.7 | 6.3 | 15.9 | 15 U | 39.4 |
| Barium | 7440-39-3 | ug/L | 18.7 J | 114 | 43.9 J | 29.5 J | 120 J | 69.2 J | 27.8 J | 47.6 J | 16.1 J |
| Beryllium | 7440-41-7 | ug/L | 4.0 U | 4.0 U | 4.0 U | 1.0 U | 0.40 J | 4.0 U | 4.0 U | 3.0 U | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 4.0 U | 14.1 | 4.0 U | 1.2 J | 3.0 U | 2.3 J | 4.0 U | 11.4 | 3.0 U |
| Calcium | 7440-70-2 | ug/L | 55,400 | 131,000 | 54,600 | 55,200 | 108,000 | 68,400 | 96,800 | 172,000 | 50,900 |
| Chromium | 7440-47-3 | ug/L | 67.9 | 284,000 | 80.4 | 43,700 | 852 | 44,600 | 23.1 | 218,000 | 27,500 |
| Chromium VI | 18540-29-9 | ug/L | 10 UJ | 263,000 J | 37 J | 46,600 | 3,300 | 50,200 J | 19 J | 224,000 | 30,000 |
| Cobalt | 7440-48-4 | ug/L | 2.0 J | 99.0 | 5.4 J | 9.0 J | 9.1 J | 63.2 | 1.6 J | 42.8 J | 50 U |
| Copper | 7440-50-8 | ug/L | 25 U | 624 | 10.3 J | 28.5 | 25.5 | 46.3 | 25 U | 202 | 8.1 J |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 515 | 13,700 | 4,230 | 1,710 J | 13,800 J | 538 | 884 | 200 J | 64.1 J |
| Lead | 7439-92-1 | ug/L | 5.0 U | 16.9 | 6.4 | 3.0 U | 14.0 | 5.0 U | 3.5 J | 15 U | 9.0 U |
| Magnesium | 7439-95-4 | ug/L | 153 J | 42,400 | 1,250 J | 20,200 | 5,190 | 3,040 J | 233 J | 32,300 | 5,000 U |
| Manganese | 7439-96-5 | ug/L | 6.0 J | 943 | 60.3 | 195 | 136 | 14.3 J | 9.1 J | 236 | 3.4 J |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-MW4S-BL<br>11/01/13<br>GPS-MW4S | 114-GWPS-MW5I-BL<br>11/01/13<br>GPS-MW5I | 114-GWPS-MW5S-BL<br>11/01/13<br>GPS-MW5S | 114-GWPS-MW6I-BL<br>05/29/13<br>GPS-MW6I | 114-GWPS-MW6S-BL<br>05/29/13<br>GPS-MW6S | 114-GWPS-MW7I-BL<br>10/30/13<br>GPS-MW7I | 114-GWPS-MW7S-BL<br>11/01/13<br>GPS-MW7S | 114-GWPS-PZ1I-BL<br>11/06/13<br>GPS-PZ1I | 114-GWPS-PZ1S-BL<br>11/06/13<br>GPS-PZ1S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.11 J | 0.20 U | 0.75 | 0.20 U | 0.20 U | 0.50 U | 0.089 J | 0.20 U | 0.25 |
| Nickel | 7440-02-0 | ug/L | 92.1 | 837 | 199 | 20.8 | 110 | 158 | 139 | 98.4 | 148 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 60,700 | 15,800 | 54,500 | 10,100 | 49,300 | 18,900 | 55,600 | 18,700 | 53,500 |
| Selenium | 7782-49-2 | ug/L | 6.7 J | 10 U | 5.3 J | 10 U | 8.0 J | 10 U | 5.8 J | 30 U | 5.9 J |
| Silver | 7440-22-4 | ug/L | 5.0 U | 1.6 J | 1.9 J | 10 U | 10 U | 1.0 J | 5.0 U | 10 U | 10 U |
| Sodium | 7440-23-5 | ug/L | 312,000 | 522,000 | 715,000 | 262,000 | 168,000 | 201,000 | 256,000 | 311,000 | 685,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 2.0 U | 4.0 U | 2.0 U | 4.0 U | 2.0 U | 1.0 U | 2.0 U | 10 UJ | 6.0 UJ |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 54.3 | 21.1 | 113 | 10.1 J | 64.1 | 50 UJ | 48.4 | 189 | 52.2 |
| Zinc | 7440-66-6 | ug/L | 4.2 J | 331 | 16.6 J | 20 U | 45.6 | 20 U | 5.6 J | 251 | 20 U |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-MW4S-BL<br>11/01/13<br>GPS-MW4S | 114-GWPS-MW5I-BL<br>11/01/13<br>GPS-MW5I | 114-GWPS-MW5S-BL<br>11/01/13<br>GPS-MW5S | 114-GWPS-MW6I-BL<br>05/29/13<br>GPS-MW6I | 114-GWPS-MW6S-BL<br>05/29/13<br>GPS-MW6S | 114-GWPS-MW7I-BL<br>10/30/13<br>GPS-MW7I | 114-GWPS-MW7S-BL<br>11/01/13<br>GPS-MW7S | 114-GWPS-PZ1I-BL<br>11/06/13<br>GPS-PZ1I | 114-GWPS-PZ1S-BL<br>11/06/13<br>GPS-PZ1S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | 382,000 | 603,000 | 585,000 | 374,000 | 151,000 | 227,000 | 346,000 | 585,000 | 439,000 |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | 300,000 | 5,000 U | 477,000 | 6,600 | 82,100 | 76,000 | 208,000 | 5,000 U | 351,000 |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | 345,000 | 160,000 | 726,000 | 98,900 | 241,000 | 89,200 | 349,000 | 153,000 | 733,000 |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | 210 | 77 J | 250 | R | R | 200 U | 110 J | 200 U | 200 U |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | 450 | 220 | 780 | 98 J | 330 | 120 J | 410 | 200 J | 490 |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | 310 | 13,600 | 4,000 | 1,700 J | 13,800 J | 520 | 770 | 180 J | 43 J |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | 100 U | 670 | 60 J | 6.9 J | 100 U | 340 | 100 U | 600 | 54 J |
| Nitrate-N | 14797-55-8 | ug/L | 110 U | 530 | 110 U | 600 U | 860 | 600 U | 110 U | 520 | 51 J |
| Nitrite | 14797-65-0 | ug/L | 10 U | 140 | 61 | 500 U | 860 | 350 J | 10 U | 78 | 3 J |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 77.0 | 282 | 33.2 | 298 | 194 | 146 | 119 | 310 | 59.1 |
| pH | ARC-pH | SU | 10.86 | 7.06 | 11.04 | 7.90 | 10.15 | 11.08 | 10.66 | 7.04 | 10.58 |
| Phosphate | 14265-44-2 | ug/L | 23 J | 96 | 63 | 29 J | 18 J | 50 U | 41 J | 79 | 96 |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-MW4S-BL<br>11/01/13<br>GPS-MW4S | 114-GWPS-MW5I-BL<br>11/01/13<br>GPS-MW5I | 114-GWPS-MW5S-BL<br>11/01/13<br>GPS-MW5S | 114-GWPS-MW6I-BL<br>05/29/13<br>GPS-MW6I | 114-GWPS-MW6S-BL<br>05/29/13<br>GPS-MW6S | 114-GWPS-MW7I-BL<br>10/30/13<br>GPS-MW7I | 114-GWPS-MW7S-BL<br>11/01/13<br>GPS-MW7S | 114-GWPS-PZ1I-BL<br>11/06/13<br>GPS-PZ1I | 114-GWPS-PZ1S-BL<br>11/06/13<br>GPS-PZ1S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 72,100 | 466,000 | 240,000 | 373,000 | 389,000 | 255,000 | 133,000 | 407,000 | 470,000 |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | 3,000 U | 3,000 U | 3,000 U | 3,500 J | R | 4,000 | 3,000 U | 3,000 U | 6,000 |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 15,100 | 12,400 | 35,600 | 2,600 | 25,600 | 5,100 | 55,400 | 9,900 | 62,400 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | 75 J | 79 J | 50 U | 38 J | 250 | 50 U | 95 J | 20 J | 50 U |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-GWPS-PZ2I-BL 11/06/13 GPS-PZ2I | 114-GWPS-PZ2S-BL 11/05/13 GPS-PZ2S | 114-GWPS-PZ3I-BL 11/06/13 GPS-PZ3I | 114-GWPS-PZ3S-BL 11/05/13 GPS-PZ3S | 114-GWPS-PZ4I-BL 11/06/13 GPS-PZ4I | 114-GWPS-PZ4S-BL 11/05/13 GPS-PZ4S | 114-GWPS-PZ5I-BL 11/06/13 GPS-PZ5I | 114-GWPS-PZ5S-BL 11/05/13 GPS-PZ5S | 114-GWPS-PZ6S-BL 10/31/13 GPS-PZ6S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-PZ2I-BL<br>11/06/13<br>GPS-PZ2I | 114-GWPS-PZ2S-BL<br>11/05/13<br>GPS-PZ2S | 114-GWPS-PZ3I-BL<br>11/06/13<br>GPS-PZ3I | 114-GWPS-PZ3S-BL<br>11/05/13<br>GPS-PZ3S | 114-GWPS-PZ4I-BL<br>11/06/13<br>GPS-PZ4I | 114-GWPS-PZ4S-BL<br>11/05/13<br>GPS-PZ4S | 114-GWPS-PZ5I-BL<br>11/06/13<br>GPS-PZ5I | 114-GWPS-PZ5S-BL<br>11/05/13<br>GPS-PZ5S | 114-GWPS-PZ6S-BL<br>10/31/13<br>GPS-PZ6S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-PZ2I-BL<br>11/06/13<br>GPS-PZ2I | 114-GWPS-PZ2S-BL<br>11/05/13<br>GPS-PZ2S | 114-GWPS-PZ3I-BL<br>11/06/13<br>GPS-PZ3I | 114-GWPS-PZ3S-BL<br>11/05/13<br>GPS-PZ3S | 114-GWPS-PZ4I-BL<br>11/06/13<br>GPS-PZ4I | 114-GWPS-PZ4S-BL<br>11/05/13<br>GPS-PZ4S | 114-GWPS-PZ5I-BL<br>11/06/13<br>GPS-PZ5I | 114-GWPS-PZ5S-BL<br>11/05/13<br>GPS-PZ5S | 114-GWPS-PZ6S-BL<br>10/31/13<br>GPS-PZ6S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 573 | 298 | 1,070 | NA | NA | 122 J | 971 | NA |
| Antimony | 7440-36-0 | ug/L | NA | 3.0 J | 12 U | 5.0 J | NA | NA | 22.9 | 2.4 J | NA |
| Arsenic | 7440-38-2 | ug/L | NA | 20.8 | 13.1 | 14.9 | NA | NA | 11.0 | 10.1 | NA |
| Barium | 7440-39-3 | ug/L | NA | 15.0 J | 24.8 J | 46.6 J | NA | NA | 31.8 J | 23.9 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | 4.0 U | 1.0 U | 4.0 U | NA | NA | 1.0 U | 4.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 4.0 U | 1.5 J | 4.0 U | NA | NA | 3.0 U | 4.0 U | NA |
| Calcium | 7440-70-2 | ug/L | NA | 55,600 | 68,000 | 234,000 | NA | NA | 75,700 | 108,000 | NA |
| Chromium | 7440-47-3 | ug/L | NA | 10 U | 69,300 | 4,430 | NA | NA | 82,000 | 10 U | NA |
| Chromium VI | 18540-29-9 | ug/L | 70,400 | 10 U | 63,100 | 3,400 | 121,000 | 10 U | 75,200 | 10 U | 3.8 J |
| Cobalt | 7440-48-4 | ug/L | NA | 0.60 J | 69.8 | 2.0 J | NA | NA | 96.8 | 50 U | NA |
| Copper | 7440-50-8 | ug/L | NA | 25 U | 40.7 | 25 U | NA | NA | 22.9 | 25 U | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 139 J | 295 | 619 | NA | NA | 120 J | 100 U | NA |
| Lead | 7439-92-1 | ug/L | NA | 5.0 U | 6.0 U | 5.0 U | NA | NA | 6.0 U | 5.0 U | NA |
| Magnesium | 7439-95-4 | ug/L | NA | 5,000 U | 2,900 J | 239 J | NA | NA | 5,970 | 5,000 U | NA |
| Manganese | 7439-96-5 | ug/L | NA | 1.6 J | 3.0 J | 8.1 J | NA | NA | 15 U | 15 U | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-PZ2I-BL<br>11/06/13<br>GPS-PZ2I | 114-GWPS-PZ2S-BL<br>11/05/13<br>GPS-PZ2S | 114-GWPS-PZ3I-BL<br>11/06/13<br>GPS-PZ3I | 114-GWPS-PZ3S-BL<br>11/05/13<br>GPS-PZ3S | 114-GWPS-PZ4I-BL<br>11/06/13<br>GPS-PZ4I | 114-GWPS-PZ4S-BL<br>11/05/13<br>GPS-PZ4S | 114-GWPS-PZ5I-BL<br>11/06/13<br>GPS-PZ5I | 114-GWPS-PZ5S-BL<br>11/05/13<br>GPS-PZ5S | 114-GWPS-PZ6S-BL<br>10/31/13<br>GPS-PZ6S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.20 U | 0.10 J | 0.20 U | NA | NA | 0.12 J | 0.20 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | 97.2 | 116 | 97.1 | NA | NA | 105 | 25.5 J | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 49,400 | 16,300 | 59,200 | NA | NA | 19,600 | 54,300 | NA |
| Selenium | 7782-49-2 | ug/L | NA | 4.8 J | 20 U | 4.9 J | NA | NA | 20 U | 6.1 J | NA |
| Silver | 7440-22-4 | ug/L | NA | 5.0 U | 10 U | 5.0 U | NA | NA | 10 U | 5.0 U | NA |
| Sodium | 7440-23-5 | ug/L | NA | 213,000 | 209,000 | 1,070,000 | NA | NA | 211,000 | 215,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 2.0 U | 6.0 UJ | 2.0 U | NA | NA | 6.0 UJ | 2.0 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 25.6 | 111 | 62.4 | NA | NA | 106 | 54.3 | NA |
| Zinc | 7440-66-6 | ug/L | NA | 20 U | 40 U | 20 U | NA | NA | 40 U | 20 U | NA |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-PZ2I-BL<br>11/06/13<br>GPS-PZ2I | 114-GWPS-PZ2S-BL<br>11/05/13<br>GPS-PZ2S | 114-GWPS-PZ3I-BL<br>11/06/13<br>GPS-PZ3I | 114-GWPS-PZ3S-BL<br>11/05/13<br>GPS-PZ3S | 114-GWPS-PZ4I-BL<br>11/06/13<br>GPS-PZ4I | 114-GWPS-PZ4S-BL<br>11/05/13<br>GPS-PZ4S | 114-GWPS-PZ5I-BL<br>11/06/13<br>GPS-PZ5I | 114-GWPS-PZ5S-BL<br>11/05/13<br>GPS-PZ5S | 114-GWPS-PZ6S-BL<br>10/31/13<br>GPS-PZ6S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | 266,000 | 160,000 | 234,000 | NA | NA | 171,000 | 220,000 | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | 161,000 | 53,400 | 128,000 | NA | NA | 40,300 | 159,000 | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | 371,000 | 103,000 | 976,000 | NA | NA | 109,000 | 402,000 | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | 200 U | 140 J | 200 U | NA | NA | 200 U | 200 U | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | 620 | 250 | 520 | NA | NA | 220 J | 380 | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | 110 J | 160 J | 600 | NA | NA | 99 J | 300 U | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | 100 U | 590 | 42 J | NA | NA | 280 J | 100 U | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | 110 U | 750 U | 33 J | NA | NA | 750 U | 110 U | NA |
| Nitrite | 14797-65-0 | ug/L | NA | 2.5 J | 740 | 9 J | NA | NA | 370 | 10 U | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 313 | 48.9 | 211 | 95.1 | 284 | 170 | 226 | 67.1 | 76.6 |
| pH | ARC-pH | SU | 7.46 | 10.34 | 9.54 | 10.23 | 7.67 | 10.19 | 9.41 | 10.64 | 11.30 |
| Phosphate | 14265-44-2 | ug/L | NA | 63 | 39 J | 39 J | NA | NA | 27 J | 6 J | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-PZ2I-BL<br>11/06/13<br>GPS-PZ2I | 114-GWPS-PZ2S-BL<br>11/05/13<br>GPS-PZ2S | 114-GWPS-PZ3I-BL<br>11/06/13<br>GPS-PZ3I | 114-GWPS-PZ3S-BL<br>11/05/13<br>GPS-PZ3S | 114-GWPS-PZ4I-BL<br>11/06/13<br>GPS-PZ4I | 114-GWPS-PZ4S-BL<br>11/05/13<br>GPS-PZ4S | 114-GWPS-PZ5I-BL<br>11/06/13<br>GPS-PZ5I | 114-GWPS-PZ5S-BL<br>11/05/13<br>GPS-PZ5S | 114-GWPS-PZ6S-BL<br>10/31/13<br>GPS-PZ6S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 123,000 | 309,000 | 208,000 | NA | NA | 332,000 | 199,000 | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | 4,000 | 3,000 U | 5,000 | NA | NA | 3,000 U | 1,500 J | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | 39,700 | 8,500 | 49,100 | NA | NA | 7,900 | 28,500 | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | 230 | 50 U | 250 | NA | NA | 50 U | 210 | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-IRM1-MW6I-20150511<br>05/11/15<br>GPS-MW6I | 114-IRM1-MW7I-20150511<br>05/11/15<br>GPS-MW7I | 114-IRM1-S-MW1S-20150508<br>05/08/15<br>GPS-MW1S | 114-IRM1-S-MW2S-20150508<br>05/08/15<br>GPS-MW2S | 114-IRM1-S-MW3S-20150508<br>05/08/15<br>GPS-MW3S | 114-IRM1-S-MW4S-20150508<br>05/08/15<br>GPS-MW4S | 114-IRM1-S-MW5I-20150508<br>05/08/15<br>GPS-MW5I |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-IRM1-MW6I-20150511<br>05/11/15<br>GPS-MW6I | 114-IRM1-MW7I-20150511<br>05/11/15<br>GPS-MW7I | 114-IRM1-S-MW1S-20150508<br>05/08/15<br>GPS-MW1S | 114-IRM1-S-MW2S-20150508<br>05/08/15<br>GPS-MW2S | 114-IRM1-S-MW3S-20150508<br>05/08/15<br>GPS-MW3S | 114-IRM1-S-MW4S-20150508<br>05/08/15<br>GPS-MW4S | 114-IRM1-S-MW5I-20150508<br>05/08/15<br>GPS-MW5I |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-IRM1-MW6I-20150511<br>05/11/15<br>GPS-MW6I | 114-IRM1-MW7I-20150511<br>05/11/15<br>GPS-MW7I | 114-IRM1-S-MW1S-20150508<br>05/08/15<br>GPS-MW1S | 114-IRM1-S-MW2S-20150508<br>05/08/15<br>GPS-MW2S | 114-IRM1-S-MW3S-20150508<br>05/08/15<br>GPS-MW3S | 114-IRM1-S-MW4S-20150508<br>05/08/15<br>GPS-MW4S | 114-IRM1-S-MW5I-20150508<br>05/08/15<br>GPS-MW5I |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 385,000 J | 86,600 J | 10,100 J | 298 | 157 | 20.6 | 100,000 J |
| Chromium VI | 18540-29-9 | ug/L | 447,000 J | 77,000 J | 3,400 J | 260 | 85 J | 10 U | 85,800 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-IRM1-MW6I-20150511<br><br>05/11/15<br>GPS-MW6I | 114-IRM1-MW7I-20150511<br><br>05/11/15<br>GPS-MW7I | 114-IRM1-S-MW1S-20150508<br><br>05/08/15<br>GPS-MW1S | 114-IRM1-S-MW2S-20150508<br><br>05/08/15<br>GPS-MW2S | 114-IRM1-S-MW3S-20150508<br><br>05/08/15<br>GPS-MW3S | 114-IRM1-S-MW4S-20150508<br><br>05/08/15<br>GPS-MW4S | 114-IRM1-S-MW5I-20150508<br><br>05/08/15<br>GPS-MW5I |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 400,000 J | 88,100 J | 9,260 J | 286 | 179 | 21.7 | 92,300 J |
| Chromium VI | 18540-29-9 | ug/L | 410,000 J | 76,500 J | 5,800 J | 250 | 85 J | 10 U | 91,500 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-IRM1-MW6I-20150511<br>05/11/15<br>GPS-MW6I | 114-IRM1-MW7I-20150511<br>05/11/15<br>GPS-MW7I | 114-IRM1-S-MW1S-20150508<br>05/08/15<br>GPS-MW1S | 114-IRM1-S-MW2S-20150508<br>05/08/15<br>GPS-MW2S | 114-IRM1-S-MW3S-20150508<br>05/08/15<br>GPS-MW3S | 114-IRM1-S-MW4S-20150508<br>05/08/15<br>GPS-MW4S | 114-IRM1-S-MW5I-20150508<br>05/08/15<br>GPS-MW5I |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 350 | 391 | 288 | 340 | 175 | 62.7 | 372 |
| pH | ARC-pH | SU | 9.26 | 7.52 | 10.01 | 9.47 | 10.72 | 10.83 | 7.20 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-IRM1-MW6I-20150511<br>05/11/15<br>GPS-MW6I | 114-IRM1-MW7I-20150511<br>05/11/15<br>GPS-MW7I | 114-IRM1-S-MW1S-20150508<br>05/08/15<br>GPS-MW1S | 114-IRM1-S-MW2S-20150508<br>05/08/15<br>GPS-MW2S | 114-IRM1-S-MW3S-20150508<br>05/08/15<br>GPS-MW3S | 114-IRM1-S-MW4S-20150508<br>05/08/15<br>GPS-MW4S | 114-IRM1-S-MW5I-20150508<br>05/08/15<br>GPS-MW5I |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-IRMI-S-PZ6S-20150512 | 114-MC-EW103 | 114-MC-EW103-04012015 | 114-MC-EW103-10092014 | 114-MC-EW103-110414 | 114-MC-EW103-11142014 | 114-MC-EW103-20150924 | 114-MC-EW103-20151214 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | |
| Date Collected: | | | 05/12/15 | 06/20/14 | 04/01/15 | 10/09/14 | 11/04/14 | 11/14/14 | 09/24/15 | 12/14/15 |
| Location ID: | CAS Number | Units | GPS-PZ6S | 114-MC-EW103 | 114-MC-EW103 | 114-MC-EW103 | 114-MC-EW103 | 114-MC-EW103 | 114-MC-EW103 | 114-MC-EW103 |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-IRMI-S-PZ6S-20150512<br><br>05/12/15<br>GPS-PZ6S | 114-MC-EW103<br><br>06/20/14<br>114-MC-EW103 | 114-MC-EW103-04012015<br><br>04/01/15<br>114-MC-EW103 | 114-MC-EW103-10092014<br><br>10/09/14<br>114-MC-EW103 | 114-MC-EW103-110414<br><br>11/04/14<br>114-MC-EW103 | 114-MC-EW103-11142014<br><br>11/14/14<br>114-MC-EW103 | 114-MC-EW103-20150924<br><br>09/24/15<br>114-MC-EW103 | 114-MC-EW103-20151214<br><br>12/14/15<br>114-MC-EW103 |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-IRMI-S-PZ6S-20150512<br><br>05/12/15<br>GPS-PZ6S | 114-MC-EW103<br><br>06/20/14<br>114-MC-EW103 | 114-MC-EW103-04012015<br><br>04/01/15<br>114-MC-EW103 | 114-MC-EW103-10092014<br><br>10/09/14<br>114-MC-EW103 | 114-MC-EW103-110414<br><br>11/04/14<br>114-MC-EW103 | 114-MC-EW103-11142014<br><br>11/14/14<br>114-MC-EW103 | 114-MC-EW103-20150924<br><br>09/24/15<br>114-MC-EW103 | 114-MC-EW103-20151214<br><br>12/14/15<br>114-MC-EW103 |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | 200 U | 73.0 J | NA | NA | 385 | 140 J |
| Antimony | 7440-36-0 | ug/L | NA | NA | 6.0 U | 60 U | NA | NA | 6.0 U | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | NA | NA | 153 | 243 | NA | NA | 184 | 172 |
| Barium | 7440-39-3 | ug/L | NA | NA | 88.8 J | 80.0 J | NA | NA | 104 J | 74.8 J |
| Beryllium | 7440-41-7 | ug/L | NA | NA | 1.0 U | 1.0 U | NA | NA | 1.0 U | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | 3.0 U | 0.70 J | NA | NA | 3.6 | 3.0 U |
| Calcium | 7440-70-2 | ug/L | NA | NA | 101,000 | 82,400 | NA | NA | 116,000 | 107,000 |
| Chromium | 7440-47-3 | ug/L | 2,910 J | 7,460 | 8,870 J | 2,810 | 1,790 | 318,000 | 8,950 | 5,070 |
| Chromium VI | 18540-29-9 | ug/L | 150 J | 10 RA | 21 RA | 10 U | 17 | 285,000 | 45 RA | 5.5 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | 21.6 J | 10.7 J | NA | NA | 21.3 J | 18.4 J |
| Copper | 7440-50-8 | ug/L | NA | NA | 10.7 | 3.2 J | NA | NA | 5.1 J | 5.5 JB |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 3,050 | 739 | NA | NA | 4,130 | 3,360 |
| Lead | 7439-92-1 | ug/L | NA | NA | 30 U | 30 U | NA | NA | 30 U | 15 U |
| Magnesium | 7439-95-4 | ug/L | NA | NA | 15,500 | 11,900 | NA | NA | 13,000 | 11,800 |
| Manganese | 7439-96-5 | ug/L | NA | NA | 351 | 295 | NA | NA | 273 | 244 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-IRMI-S-PZ6S-20150512<br>05/12/15<br>GPS-PZ6S | 114-MC-EW103<br>06/20/14<br>114-MC-EW103 | 114-MC-EW103-04012015<br>04/01/15<br>114-MC-EW103 | 114-MC-EW103-10092014<br>10/09/14<br>114-MC-EW103 | 114-MC-EW103-110414<br>11/04/14<br>114-MC-EW103 | 114-MC-EW103-11142014<br>11/14/14<br>114-MC-EW103 | 114-MC-EW103-20150924<br>09/24/15<br>114-MC-EW103 | 114-MC-EW103-20151214<br>12/14/15<br>114-MC-EW103 |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | 0.20 U | 0.077 J | NA | NA | 0.10 J | 0.092 J |
| Nickel | 7440-02-0 | ug/L | NA | NA | 61.6 | 68.7 | NA | NA | 60.6 | 51.8 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | 50,800 J | 55,500 | NA | NA | 40,900 | 41,400 |
| Selenium | 7782-49-2 | ug/L | NA | NA | 100 U | 100 U | NA | NA | 100 U | 50 U |
| Silver | 7440-22-4 | ug/L | NA | NA | 2.9 J | 3.3 J | NA | NA | 10 U | 3.1 J |
| Sodium | 7440-23-5 | ug/L | NA | NA | 2,740,000 | 3,630,000 | NA | NA | 2,890,000 | 2,910,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | 573,000 | 653,000 | NA | NA | 637,000 | 611,000 J |
| Thallium | 7440-28-0 | ug/L | NA | NA | 17.5 J | 20 U | NA | NA | 20 U | 50 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | 3.3 JB | 3.7 J | NA | NA | 1.6 J | 50 UB |
| Zinc | 7440-66-6 | ug/L | NA | NA | 20 UB | 20 U | NA | NA | 6.9 J | 20 UB |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 979 J | 3,200 | 366 J | 933 | 784 | 303,000 | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 120 J | 43 RA | 3.1 RA | 10 U | 10 U | 290,000 | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-IRMI-S-PZ6S-20150512<br>05/12/15<br>GPS-PZ6S | 114-MC-EW103<br>06/20/14<br>114-MC-EW103 | 114-MC-EW103-04012015<br>04/01/15<br>114-MC-EW103 | 114-MC-EW103-10092014<br>10/09/14<br>114-MC-EW103 | 114-MC-EW103-110414<br>11/04/14<br>114-MC-EW103 | 114-MC-EW103-11142014<br>11/14/14<br>114-MC-EW103 | 114-MC-EW103-20150924<br>09/24/15<br>114-MC-EW103 | 114-MC-EW103-20151214<br>12/14/15<br>114-MC-EW103 |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | 4,480,000 | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | 8,900 | NA | NA | NA | 13,000 | 15,700 |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 61.1 | 245 | 266 | 223 | 218 | 356 | 131 | 226 |
| pH | ARC-pH | SU | 10.04 | 8.72 | 7.77 | 8.30 | 8.30 | 8.46 | 7.60 | 7.52 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | 8,000 | NA | NA | NA | 1,070 | 9,650 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-IRMI-S-PZ6S-20150512<br><br>05/12/15<br>GPS-PZ6S | 114-MC-EW103<br><br>06/20/14<br>114-MC-EW103 | 114-MC-EW103-04012015<br><br>04/01/15<br>114-MC-EW103 | 114-MC-EW103-10092014<br><br>10/09/14<br>114-MC-EW103 | 114-MC-EW103-110414<br><br>11/04/14<br>114-MC-EW103 | 114-MC-EW103-11142014<br><br>11/14/14<br>114-MC-EW103 | 114-MC-EW103-20150924<br><br>09/24/15<br>114-MC-EW103 | 114-MC-EW103-20151214<br><br>12/14/15<br>114-MC-EW103 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | 1,500,000 | 1,800,000 | NA | NA | 1,270,000 | 1,270,000 J |
| Sulfide | 18496-25-8 | ug/L | NA | NA | 59,000 | 23,200 | NA | NA | 67,400 | 72,900 |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | 137,000 J | NA | NA | NA | 79,000 J | 148,000 J |
| Temperature | ARC-Temp | deg c | NA | NA | 14.1 | NA | NA | NA | 18.8 | 18.52 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | 15,300 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 3,300 | 260 | 720 | NA | NA | NA | 0 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 263 | 397 | 334.8 | NA | NA | NA | 393 |
| pH | ARC-pH | SU | NA | 9.1 | 7.77 | 8.24 | NA | NA | NA | 7.51 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | 300 |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | 8.49 | NA | 15.14 | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 19.95 | 14.1 | 14.81 | NA | NA | NA | 18.52 |
| Turbidity | ARC-Turb | NTU | NA | 74.4 | 43 | 11.1 | NA | NA | NA | 28 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-EW103-20160322<br><br>03/22/16<br>114-MC-EW103 | 114-MC-EW103-20160623<br><br>06/23/16<br>114-MC-EW103 | 114-MC-EW103-20160623-F<br><br>06/23/16<br>114-MC-EW103 | 114-MC-EW103-F-20150924<br><br>09/24/15<br>114-MC-EW103 | 114-MC-EW103-F-20151214<br><br>12/14/15<br>114-MC-EW103 | 114-MC-EW103-F-20160322<br><br>03/22/16<br>114-MC-EW103 | 114-MC-MW101S<br><br>11/18/14<br>114-MC-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-EW103-20160322<br><br>03/22/16<br>114-MC-EW103 | 114-MC-EW103-20160623<br><br>06/23/16<br>114-MC-EW103 | 114-MC-EW103-20160623-F<br><br>06/23/16<br>114-MC-EW103 | 114-MC-EW103-F-20150924<br><br>09/24/15<br>114-MC-EW103 | 114-MC-EW103-F-20151214<br><br>12/14/15<br>114-MC-EW103 | 114-MC-EW103-F-20160322<br><br>03/22/16<br>114-MC-EW103 | 114-MC-MW101S<br><br>11/18/14<br>114-MC-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-EW103-20160322<br>03/22/16<br>114-MC-EW103 | 114-MC-EW103-20160623<br>06/23/16<br>114-MC-EW103 | 114-MC-EW103-20160623-F<br>06/23/16<br>114-MC-EW103 | 114-MC-EW103-F-20150924<br>09/24/15<br>114-MC-EW103 | 114-MC-EW103-F-20151214<br>12/14/15<br>114-MC-EW103 | 114-MC-EW103-F-20160322<br>03/22/16<br>114-MC-EW103 | 114-MC-MW101S<br>11/18/14<br>114-MC-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 72.9 J | 45.6 J | NA | NA | NA | NA | 261 |
| Antimony | 7440-36-0 | ug/L | 8.6 | 5.3 J | NA | NA | NA | NA | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | 158 | 139 | NA | NA | NA | NA | 30 U |
| Barium | 7440-39-3 | ug/L | 64.6 J | 86.9 J | NA | NA | NA | NA | 38.3 J |
| Beryllium | 7440-41-7 | ug/L | 1.4 | 1.0 U | NA | NA | NA | NA | 1.0 |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 1.8 J | 0.40 J | NA | NA | NA | NA | 3.0 U |
| Calcium | 7440-70-2 | ug/L | 111,000 | 149,000 | NA | NA | NA | NA | 630,000 |
| Chromium | 7440-47-3 | ug/L | 1,070 | 388 | NA | NA | NA | NA | 2.4 J |
| Chromium VI | 18540-29-9 | ug/L | 5.5 U | 10 RA | NA | NA | NA | NA | 10 U |
| Cobalt | 7440-48-4 | ug/L | 15.5 J | 11.8 J | NA | NA | NA | NA | 1.4 J |
| Copper | 7440-50-8 | ug/L | 9.2 J | 35.8 | NA | NA | NA | NA | 23.0 J |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 3,850 | 4,000 | NA | NA | NA | NA | 38,500 |
| Lead | 7439-92-1 | ug/L | 30 U | 15 U | NA | NA | NA | NA | 1.6 J |
| Magnesium | 7439-95-4 | ug/L | 8,500 | 5,290 | NA | NA | NA | NA | 54,300 |
| Manganese | 7439-96-5 | ug/L | 171 | 73.7 | NA | NA | NA | NA | 9,810 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-EW103-20160322<br>03/22/16<br>114-MC-EW103 | 114-MC-EW103-20160623<br>06/23/16<br>114-MC-EW103 | 114-MC-EW103-20160623-F<br>06/23/16<br>114-MC-EW103 | 114-MC-EW103-F-20150924<br>09/24/15<br>114-MC-EW103 | 114-MC-EW103-F-20151214<br>12/14/15<br>114-MC-EW103 | 114-MC-EW103-F-20160322<br>03/22/16<br>114-MC-EW103 | 114-MC-MW101S<br>11/18/14<br>114-MC-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | 0.20 U | NA | NA | NA | NA | 0.20 U |
| Nickel | 7440-02-0 | ug/L | 42.3 | 24.3 | NA | NA | NA | NA | 1.3 J |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 43,000 | 42,800 | NA | NA | NA | NA | 61,000 |
| Selenium | 7782-49-2 | ug/L | 100 U | 50 U | NA | NA | NA | NA | 100 U |
| Silver | 7440-22-4 | ug/L | 3.7 J | 1.2 J | NA | NA | NA | NA | 3.7 J |
| Sodium | 7440-23-5 | ug/L | 2,190,000 | 1,730,000 | NA | NA | NA | NA | 1,340,000 |
| Sulfur | 7704-34-9 | ug/L | 570,000 | 446,000 | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 20 U | 10 U | NA | NA | NA | NA | 20 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 1.8 J | 0.80 J | NA | NA | NA | NA | 5.7 J |
| Zinc | 7440-66-6 | ug/L | 18.6 J | 26.4 | NA | NA | NA | NA | 10.7 J |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 31.3 | 92.0 | 182 | 31.8 | 10 U |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 10 RA | 58 RA | 5.5 UJ | 5.5 U | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | 634,000 | 601,000 J | 532,000 | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-EW103-20160322<br>03/22/16<br>114-MC-EW103 | 114-MC-EW103-20160623<br>06/23/16<br>114-MC-EW103 | 114-MC-EW103-20160623-F<br>06/23/16<br>114-MC-EW103 | 114-MC-EW103-F-20150924<br>09/24/15<br>114-MC-EW103 | 114-MC-EW103-F-20151214<br>12/14/15<br>114-MC-EW103 | 114-MC-EW103-F-20160322<br>03/22/16<br>114-MC-EW103 | 114-MC-MW101S<br>11/18/14<br>114-MC-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | 10,600 | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 3,600 | NA | NA | NA | NA | 3,500 | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 183 | 196 | 189 | 138 | 243 | 5.3 | 203 |
| pH | ARC-pH | SU | 8.52 | 8.35 | 8.22 | 7.99 | 7.51 | 8.52 | 6.84 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 9.6 | NA | NA | NA | 9,650 | 9.6 | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-EW103-20160322<br>03/22/16<br>114-MC-EW103 | 114-MC-EW103-20160623<br>06/23/16<br>114-MC-EW103 | 114-MC-EW103-20160623-F<br>06/23/16<br>114-MC-EW103 | 114-MC-EW103-F-20150924<br>09/24/15<br>114-MC-EW103 | 114-MC-EW103-F-20151214<br>12/14/15<br>114-MC-EW103 | 114-MC-EW103-F-20160322<br>03/22/16<br>114-MC-EW103 | 114-MC-MW101S<br>11/18/14<br>114-MC-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 942,000 | 676,000 | NA | 1,260,000 | 1,240,000 | 969,000 | NA |
| Sulfide | 18496-25-8 | ug/L | 84,800 | 54,500 | NA | 66,900 | 74,400 | 81,500 | NA |
| Sulfite | ARC-SULFITE | ug/L | 281,000 J | 14,100 J | NA | 81,000 J | 84,000 J | 231,000 J | NA |
| Temperature | ARC-Temp | deg c | 11.51 | NA | NA | NA | 18.52 | 11.51 | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 11,800 | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 0 | 80 | NA | NA | NA | NA | 960 |
| Oxidation Reduction Potential | ARC-ORP | mV | 382.7 | 395 | NA | NA | NA | NA | 114 |
| pH | ARC-pH | SU | 8.55 | 8.79 | NA | NA | NA | NA | 7.24 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | 6.39 |
| Temperature | ARC-Temp | deg c | 12.54 | 17.83 | NA | NA | NA | NA | 16.99 |
| Turbidity | ARC-Turb | NTU | 17.5 | 4.27 | NA | NA | NA | NA | 9.88 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-MC-MW101S-03252015 | 114-MC-MW101S-20150616 | 114-MC-MW101S-20150616-F | 114-MC-MW101S-20150921 | 114-MC-MW101S-20151209 | 114-MC-MW101S-20160314 | 114-MC-MW101S-20160622 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | |
| Date Collected: | | | 03/25/15 | 06/16/15 | 06/16/15 | 09/21/15 | 12/09/15 | 03/14/16 | 06/22/16 |
| Location ID: | CAS Number | Units | 114-MC-MW101S | 114-MC-MW101S | 114-MC-MW101S | 114-MC-MW101S | 114-MC-MW101S | 114-MC-MW101S | 114-MC-MW101S |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-MW101S-03252015<br>03/25/15<br>114-MC-MW101S | 114-MC-MW101S-20150616<br>06/16/15<br>114-MC-MW101S | 114-MC-MW101S-20150616-F<br>06/16/15<br>114-MC-MW101S | 114-MC-MW101S-20150921<br>09/21/15<br>114-MC-MW101S | 114-MC-MW101S-20151209<br>12/09/15<br>114-MC-MW101S | 114-MC-MW101S-20160314<br>03/14/16<br>114-MC-MW101S | 114-MC-MW101S-20160622<br>06/22/16<br>114-MC-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-MC-MW101S-03252015<br>03/25/15<br>114-MC-MW101S | 114-MC-MW101S-20150616<br>06/16/15<br>114-MC-MW101S | 114-MC-MW101S-20150616-F<br>06/16/15<br>114-MC-MW101S | 114-MC-MW101S-20150921<br>09/21/15<br>114-MC-MW101S | 114-MC-MW101S-20151209<br>12/09/15<br>114-MC-MW101S | 114-MC-MW101S-20160314<br>03/14/16<br>114-MC-MW101S | 114-MC-MW101S-20160622<br>06/22/16<br>114-MC-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 247 J | 1,000 UB | NA | 259 | 223 | 127 J [200 U] | 70.8 J |
| Antimony | 7440-36-0 | ug/L | 6.0 U | 30 U | NA | 17.1 J | 6.0 U | 6.0 U [6 U] | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | 15 U | 15 U | NA | 30 U | 30 U | 15 U [15 U] | 30 U |
| Barium | 7440-39-3 | ug/L | 22.7 J | 33.8 J | NA | 40.9 J | 32.5 J | 18.1 J [19.5 J] | 28.7 J |
| Beryllium | 7440-41-7 | ug/L | 1.0 U | 5.0 U | NA | 3.0 U | 1.0 U | 0.70 J [0.9 J] | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 3.0 U | 3.0 U | NA | 0.40 J | 3.0 UB | 0.60 J [2.1 J] | 0.80 J |
| Calcium | 7440-70-2 | ug/L | 550,000 J | 634,000 | NA | 600,000 | 496,000 | 469,000 [451,000] | 526,000 |
| Chromium | 7440-47-3 | ug/L | 2.1 J | 10 UB | NA | 28.8 | 7.6 J | 1.0 J [5.9 J] | 14.3 J |
| Chromium VI | 18540-29-9 | ug/L | 10 U | 5.6 RA | NA | 15 | 5.5 U | 5.5 RA [5.5 RA] | 17 RA |
| Cobalt | 7440-48-4 | ug/L | 50 UB | 50 UB | NA | 1.9 J | 50 UB | 50 U [2.3 J] | 50 U |
| Copper | 7440-50-8 | ug/L | 6.7 J | 10 UB | NA | 2.7 J | 6.3 J | 10 U [10 UB] | 4.8 J |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 23,500 | 35,500 | NA | 34,700 | 26,000 | 12,000 J [17,400 J] | 29,800 |
| Lead | 7439-92-1 | ug/L | 15.7 | 15 U | NA | 30 U | 30 U | 15 U [15 U] | 30 U |
| Magnesium | 7439-95-4 | ug/L | 55,100 | 61,800 | NA | 49,300 | 45,100 | 39,300 [39,700] | 43,700 |
| Manganese | 7439-96-5 | ug/L | 5,240 | 7,410 J | NA | 7,670 | 5,970 | 3,270 [3,570] | 4,340 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-MW101S-03252015<br>03/25/15<br>114-MC-MW101S | 114-MC-MW101S-20150616<br>06/16/15<br>114-MC-MW101S | 114-MC-MW101S-20150616-F<br>06/16/15<br>114-MC-MW101S | 114-MC-MW101S-20150921<br>09/21/15<br>114-MC-MW101S | 114-MC-MW101S-20151209<br>12/09/15<br>114-MC-MW101S | 114-MC-MW101S-20160314<br>03/14/16<br>114-MC-MW101S | 114-MC-MW101S-20160622<br>06/22/16<br>114-MC-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | 0.20 U | NA | 0.20 U | 0.20 U | 0.20 U [0.2 U] | 0.20 U |
| Nickel | 7440-02-0 | ug/L | 10 UB | 10 U | NA | 18.4 | 2.9 J | 10 UB [4.9 J] | 10 U |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 33,100 J | 46,000 | NA | 59,800 | 42,800 | 27,500 [27,400] | 35,000 |
| Selenium | 7782-49-2 | ug/L | 10 U | 50 U | NA | 30 U | 30 U | 6.3 J [9.3 J] | 100 U |
| Silver | 7440-22-4 | ug/L | 2.1 J | 1.9 J | NA | 4.1 J | 10 U | 10 U [10 U] | 1.8 J |
| Sodium | 7440-23-5 | ug/L | 729,000 | 1,190,000 | NA | 1,270,000 | 761,000 | 470,000 [474,000] | 702,000 |
| Sulfur | 7704-34-9 | ug/L | 530,000 | 512,000 | NA | 568,000 | 502,000 | 484,000 [481,000] | 495,000 J |
| Thallium | 7440-28-0 | ug/L | 20 UJ | 20 U | NA | 20 U | 20 U | 10 U [10 U] | 20 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 2.9 JB | 50 U | NA | 0.70 J | 1.3 J | 1.7 J [1.8 J] | 1.3 J |
| Zinc | 7440-66-6 | ug/L | 20 UB | 20 U | NA | 6.8 J | 20 UB | 20 UB [20 UB] | 20 UB |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 0.60 J | NA | 10 U | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 U | NA | 7.9 RA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 535,000 | NA | 516,000 | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-MW101S-03252015<br>03/25/15<br>114-MC-MW101S | 114-MC-MW101S-20150616<br>06/16/15<br>114-MC-MW101S | 114-MC-MW101S-20150616-F<br>06/16/15<br>114-MC-MW101S | 114-MC-MW101S-20150921<br>09/21/15<br>114-MC-MW101S | 114-MC-MW101S-20151209<br>12/09/15<br>114-MC-MW101S | 114-MC-MW101S-20160314<br>03/14/16<br>114-MC-MW101S | 114-MC-MW101S-20160622<br>06/22/16<br>114-MC-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | 2,000 U | NA | NA | 2,000 U | 2,000 U [2,000 U] | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 184 | 270 | 266 | 235 | 357 | 340 [337] | 360 |
| pH | ARC-pH | SU | 6.96 | 6.83 | 6.75 | 7.2 | 7.26 | 7.01 [6.96] [7.7] | 2.04 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 6,310 | 8,800 | NA | 8,600 | 8,500 | 4,390 [4,390] | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-MW101S-03252015<br>03/25/15<br>114-MC-MW101S | 114-MC-MW101S-20150616<br>06/16/15<br>114-MC-MW101S | 114-MC-MW101S-20150616-F<br>06/16/15<br>114-MC-MW101S | 114-MC-MW101S-20150921<br>09/21/15<br>114-MC-MW101S | 114-MC-MW101S-20151209<br>12/09/15<br>114-MC-MW101S | 114-MC-MW101S-20160314<br>03/14/16<br>114-MC-MW101S | 114-MC-MW101S-20160622<br>06/22/16<br>114-MC-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 1,530,000 | 2,060,000 | 1,840,000 | 1,530,000 | 1,550,000 | 1,430,000 [1,390,000] | 1,540,000 J |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 U | 2,000 U | 2,000 U | 2,000 U | 2,000 U [2,000 U] | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 3,000 UJ | 3,000 UJ | 2,000 J | 3,000 UJ | 3,000 UJ [3,000 UJ] | 3,000 UJ |
| Temperature | ARC-Temp | deg c | 8.84 | 15.91 | NA | 21.8 | 16.6 | 11.13 [11.13] | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | 7,800 | 4,000 [3,900] | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 950 | 540 | NA | NA | 0 | 540 | 520 |
| Oxidation Reduction Potential | ARC-ORP | mV | 151 | 114 | NA | NA | 88 | 79.8 | 142.6 |
| pH | ARC-pH | SU | 7.33 | 6.78 | NA | NA | 7.26 | 7.72 | 6.71 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | 0 | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 8.84 | 15.01 | NA | NA | 16.6 | 9.67 | 21.11 |
| Turbidity | ARC-Turb | NTU | 11.3 | 2.36 | NA | NA | 30.2 | 11.3 | 32.4 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-MC-MW101S-20160622-F | 114-MC-MW101S-F-20150921 | 114-MC-MW101S-F-20151209 | 114-MC-MW101S-F-20160314 | 114-MC-MW102S | 114-MC-MW102S-03262015 | 114-MC-MW102S-20150617 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | |
| Date Collected: | | | 06/22/16 | 09/21/15 | 12/09/15 | 03/14/16 | 11/18/14 | 03/26/15 | 06/17/15 |
| Location ID: | CAS Number | Units | 114-MC-MW101S | 114-MC-MW101S | 114-MC-MW101S | 114-MC-MW101S | 114-MC-MW102S | 114-MC-MW102S | 114-MC-MW102S |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-MW101S-20160622-F<br>06/22/16<br>114-MC-MW101S | 114-MC-MW101S-F-20150921<br>09/21/15<br>114-MC-MW101S | 114-MC-MW101S-F-20151209<br>12/09/15<br>114-MC-MW101S | 114-MC-MW101S-F-20160314<br>03/14/16<br>114-MC-MW101S | 114-MC-MW102S<br>11/18/14<br>114-MC-MW102S | 114-MC-MW102S-03262015<br>03/26/15<br>114-MC-MW102S | 114-MC-MW102S-20150617<br>06/17/15<br>114-MC-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name: | | | 114-MC-MW101S-20160622-F | 114-MC-MW101S-F-20150921 | 114-MC-MW101S-F-20151209 | 114-MC-MW101S-F-20160314 | 114-MC-MW102S | 114-MC-MW102S-03262015 | 114-MC-MW102S-20150617 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | |
| Date Collected: | | | 06/22/16 | 09/21/15 | 12/09/15 | 03/14/16 | 11/18/14 | 03/26/15 | 06/17/15 |
| Location ID: | CAS Number | Units | 114-MC-MW101S | 114-MC-MW101S | 114-MC-MW101S | 114-MC-MW101S | 114-MC-MW102S | 114-MC-MW102S | 114-MC-MW102S |
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | 1,180 | 535 J | 263 JB |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | 60 U | 30 U | 30 UJ |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | 30 U | 21.8 | 30 U |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | 156 J | 122 J | 116 J |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | 1.1 | 1.0 U | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | 30 U | 15 U | 15 U |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | 1,230,000 | 1,440,000 | 1,550,000 |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | 25.1 J | 8.6 J | 5.4 J |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | 11 | 4.4 RA | 10 RA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | 500 U | 5.5 J | 250 U |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | 25.6 J | 21.0 J | 50 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | 66,600 | 74,100 | 63,600 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | 30 U | 15 U | 30 U |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | 84,000 | 54,300 | 52,900 |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | 22,300 | 19,300 | 19,900 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-MW101S-20160622-F<br>06/22/16<br>114-MC-MW101S | 114-MC-MW101S-F-20150921<br>09/21/15<br>114-MC-MW101S | 114-MC-MW101S-F-20151209<br>12/09/15<br>114-MC-MW101S | 114-MC-MW101S-F-20160314<br>03/14/16<br>114-MC-MW101S | 114-MC-MW102S<br>11/18/14<br>114-MC-MW102S | 114-MC-MW102S-03262015<br>03/26/15<br>114-MC-MW102S | 114-MC-MW102S-20150617<br>06/17/15<br>114-MC-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | 0.20 U | 0.20 U | 0.20 UJ |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | 9.8 J | 11.4 J | 50 U |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | 235,000 | 187,000 | 209,000 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | 100 U | 16.1 J | 50 U |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | 100 U | 50 U | 50 U |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | 5,390,000 | 8,930,000 | 9,000,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | 866,000 | 813,000 |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | 20 U | 20 UJ | 2.0 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | 23.0 J | 13.2 J | 250 U |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | 200 U | 100 U | 45.3 J |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 10 UB | 10.0 J | 5.8 J | 1.8 J [2.2 J] | 8.0 J | 1.2 J | NA |
| Chromium VI | 18540-29-9 | ug/L | 4 RA | 10 U | 5.5 U | 5.5 RA [5.5 RA] | 10 U | 12 RA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | 564,000 | 521,000 | 479,000 [466,000] | NA | 874,000 | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-MW101S-20160622-F<br><br>06/22/16<br>114-MC-MW101S | 114-MC-MW101S-F-20150921<br><br>09/21/15<br>114-MC-MW101S | 114-MC-MW101S-F-20151209<br><br>12/09/15<br>114-MC-MW101S | 114-MC-MW101S-F-20160314<br><br>03/14/16<br>114-MC-MW101S | 114-MC-MW102S<br><br>11/18/14<br>114-MC-MW102S | 114-MC-MW102S-03262015<br><br>03/26/15<br>114-MC-MW102S | 114-MC-MW102S-20150617<br><br>06/17/15<br>114-MC-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | 4,100 [4,000] | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | 2,000 U [2,000 U] | NA | 2,200 | 7,300 J |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 664 | 241 | 341 | 308 [314] | 160 | 204 | 256 |
| pH | ARC-pH | SU | 6.84 | 7.2 | 6.88 | 7.7 [7.7] [6.94] | 6.76 | 6.76 | 6.34 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | 8,600 | NA | 4,390 [4,390] | NA | 374 | 2,170 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-MW101S-20160622-F<br><br>06/22/16<br>114-MC-MW101S | 114-MC-MW101S-F-20150921<br><br>09/21/15<br>114-MC-MW101S | 114-MC-MW101S-F-20151209<br><br>12/09/15<br>114-MC-MW101S | 114-MC-MW101S-F-20160314<br><br>03/14/16<br>114-MC-MW101S | 114-MC-MW102S<br><br>11/18/14<br>114-MC-MW102S | 114-MC-MW102S-03262015<br><br>03/26/15<br>114-MC-MW102S | 114-MC-MW102S-20150617<br><br>06/17/15<br>114-MC-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 1,430,000 | 1,420,000 | 1,400,000 [1,370,000] | NA | 2,600,000 | 198,000 J |
| Sulfide | 18496-25-8 | ug/L | NA | 2,000 U | 2,000 U | 2,000 U [2,000 U] | NA | 3,200 | 8,900 J |
| Sulfite | ARC-SULFITE | ug/L | NA | 1,500 J | 3,000 UJ | 3,000 UJ [3,000 UJ] | NA | 3,500 J | 15,500 J |
| Temperature | ARC-Temp | deg c | NA | 21.8 | NA | 11.13 [11.13] | NA | 9.13 | 17.18 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | 2,590 | 1,530 | 6,100 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | 119 | 371 | 289 |
| pH | ARC-pH | SU | NA | NA | NA | NA | 7.28 | 6.26 | 6.37 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | 27.7 | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | 16.55 | 9.13 | 17.7 |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | 7.9 | 4.53 | 53.1 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-MC-MW102S-20150617-F<br>06/17/15<br>114-MC-MW102S | 114-MC-MW102S-20150921<br>09/21/15<br>114-MC-MW102S | 114-MC-MW102S-20151210<br>12/10/15<br>114-MC-MW102S | 114-MC-MW102S-20160314<br>03/14/16<br>114-MC-MW102S | 114-MC-MW102S-20160624<br>06/24/16<br>114-MC-MW102S | 114-MC-MW102S-20160624-F<br>06/24/16<br>114-MC-MW102S | 114-MC-MW102S-F-20150921<br>09/21/15<br>114-MC-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-MW102S-20150617-F<br>06/17/15<br>114-MC-MW102S | 114-MC-MW102S-20150921<br>09/21/15<br>114-MC-MW102S | 114-MC-MW102S-20151210<br>12/10/15<br>114-MC-MW102S | 114-MC-MW102S-20160314<br>03/14/16<br>114-MC-MW102S | 114-MC-MW102S-20160624<br>06/24/16<br>114-MC-MW102S | 114-MC-MW102S-20160624-F<br>06/24/16<br>114-MC-MW102S | 114-MC-MW102S-F-20150921<br>09/21/15<br>114-MC-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-MW102S-20150617-F<br>06/17/15<br>114-MC-MW102S | 114-MC-MW102S-20150921<br>09/21/15<br>114-MC-MW102S | 114-MC-MW102S-20151210<br>12/10/15<br>114-MC-MW102S | 114-MC-MW102S-20160314<br>03/14/16<br>114-MC-MW102S | 114-MC-MW102S-20160624<br>06/24/16<br>114-MC-MW102S | 114-MC-MW102S-20160624-F<br>06/24/16<br>114-MC-MW102S | 114-MC-MW102S-F-20150921<br>09/21/15<br>114-MC-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 269 J | 200 U | 202 | 81.6 J | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | 33.8 | 30 U | 6.0 U | 30 U | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | 30.4 | 75 U | 75 U | 48.2 J | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | 161 J | 155 J | 76.3 J | 101 J | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | 5.0 U | 1.0 U | 1.0 | 1.0 U | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 15 U | 2.9 JB | 3.0 U | 15 U | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | 1,330,000 | 1,300,000 | 1,150,000 | 1,110,000 | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 13.1 J | 10.5 J | 4.9 J | 5.8 J | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U | 5.8 RA | 5.5 RA | 18 J | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | 250 U | 1,300 U | 4.3 J | 250 U | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | 50 U | 17.7 J | 18.4 J | 50 U | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 10,400 | 4,340 | 31,600 J | 6,560 | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | 30 U | 75 U | 75 U | 15 U | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | 24,900 | 11,800 J | 20,100 | 13,700 | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | 5,350 | 1,870 | 8,470 | 2,460 | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-MW102S-20150617-F<br>06/17/15<br>114-MC-MW102S | 114-MC-MW102S-20150921<br>09/21/15<br>114-MC-MW102S | 114-MC-MW102S-20151210<br>12/10/15<br>114-MC-MW102S | 114-MC-MW102S-20160314<br>03/14/16<br>114-MC-MW102S | 114-MC-MW102S-20160624<br>06/24/16<br>114-MC-MW102S | 114-MC-MW102S-20160624-F<br>06/24/16<br>114-MC-MW102S | 114-MC-MW102S-F-20150921<br>09/21/15<br>114-MC-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.20 U | 0.20 U | 0.20 U | 0.20 U | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | 26.0 J | 250 U | 7.4 J | 15.9 J | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 215,000 | 202,000 | 143,000 | 173,000 | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | 50 U | 50 U | 50 U | 50 U | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | 50 U | 50 U | 50 U | 50 U | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | 8,880,000 | 8,300,000 | 5,980,000 | 7,030,000 | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | 894,000 J | 922,000 | 872,000 | 1,010,000 | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 20 U | 50 U | 50 U | 40 U | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 9.6 J | 7.7 J | 3.6 J | 3.9 J | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | 100 U | 100 U | 20 UB | 100 U | NA | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 50 UB | NA | NA | NA | NA | 50 U | 10.7 J |
| Chromium VI | 18540-29-9 | ug/L | 10 RA | NA | NA | NA | NA | 10 U | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 834,000 | NA | NA | NA | NA | NA | 957,000 J |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-MC-MW102S-20150617-F 06/17/15 114-MC-MW102S | 114-MC-MW102S-20150921 09/21/15 114-MC-MW102S | 114-MC-MW102S-20151210 12/10/15 114-MC-MW102S | 114-MC-MW102S-20160314 03/14/16 114-MC-MW102S | 114-MC-MW102S-20160624 06/24/16 114-MC-MW102S | 114-MC-MW102S-20160624-F 06/24/16 114-MC-MW102S | 114-MC-MW102S-F-20150921 09/21/15 114-MC-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 10,200 J | NA | 1,500 | 2,000 U | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 273 | 242 | 314 | 320 | 228 | 254 | 269 |
| pH | ARC-pH | SU | 6.69 | 7.63 | 8.35 | 6.94 | 8.10 | 7.06 | 7.63 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 2,170 | 3,020 | 43,500 | 34,600 | NA | NA | 3,020 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-MW102S-20150617-F<br>06/17/15<br>114-MC-MW102S | 114-MC-MW102S-20150921<br>09/21/15<br>114-MC-MW102S | 114-MC-MW102S-20151210<br>12/10/15<br>114-MC-MW102S | 114-MC-MW102S-20160314<br>03/14/16<br>114-MC-MW102S | 114-MC-MW102S-20160624<br>06/24/16<br>114-MC-MW102S | 114-MC-MW102S-20160624-F<br>06/24/16<br>114-MC-MW102S | 114-MC-MW102S-F-20150921<br>09/21/15<br>114-MC-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 2,380,000 J | 2,520,000 | 1,850,000 | 2,600,000 | 2,980,000 | NA | 2,330,000 |
| Sulfide | 18496-25-8 | ug/L | 12,300 J | 37,600 | 34,800 RA | 2,000 U | 24,100 | NA | 13,900 |
| Sulfite | ARC-SULFITE | ug/L | 17,500 J | 74,500 | 26,400 J | 3,000 UJ | 24,000 J | NA | 50,000 J |
| Temperature | ARC-Temp | deg c | 17.18 | 21.96 | 18.94 | 7.62 | NA | NA | 21.96 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | 48,700 | 30,300 | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | 0 | 360 | 20 | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 388 | 333.1 | 327.4 | NA | NA |
| pH | ARC-pH | SU | NA | NA | 8.27 | 6.94 | 7.37 | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | 0 | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | 18.94 | 7.62 | 22.73 | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | 6.31 | 6.97 | 6.33 | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-MC-MW102S-F-20151210 | 114-MC-MW102S-F-20160314 | 114-MC-PZ103 | 114-MC-PZ103-04012015 | 114-MC-PZ103-10092014 | 114-MC-PZ103-12022014 | 114-MC-PZ103-20150622 | 114-MC-PZ103-20150924 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | |
| Date Collected: | | | 12/10/15 | 03/14/16 | 06/18/14 | 04/01/15 | 10/09/14 | 12/02/14 | 06/22/15 | 09/24/15 |
| Location ID: | CAS Number | Units | 114-MC-MW102S | 114-MC-MW102S | 114-MC-PZ103 | 114-MC-PZ103 | 114-MC-PZ103 | 114-MC-PZ103 | 114-MC-PZ103 | 114-MC-PZ103 |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-MW102S-F-20151210<br><br>12/10/15<br>114-MC-MW102S | 114-MC-MW102S-F-20160314<br><br>03/14/16<br>114-MC-MW102S | 114-MC-PZ103<br><br>06/18/14<br>114-MC-PZ103 | 114-MC-PZ103-04012015<br><br>04/01/15<br>114-MC-PZ103 | 114-MC-PZ103-10092014<br><br>10/09/14<br>114-MC-PZ103 | 114-MC-PZ103-12022014<br><br>12/02/14<br>114-MC-PZ103 | 114-MC-PZ103-20150622<br><br>06/22/15<br>114-MC-PZ103 | 114-MC-PZ103-20150924<br><br>09/24/15<br>114-MC-PZ103 |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-MW102S-F-20151210<br>12/10/15<br>114-MC-MW102S | 114-MC-MW102S-F-20160314<br>03/14/16<br>114-MC-MW102S | 114-MC-PZ103<br>06/18/14<br>114-MC-PZ103 | 114-MC-PZ103-04012015<br>04/01/15<br>114-MC-PZ103 | 114-MC-PZ103-10092014<br>10/09/14<br>114-MC-PZ103 | 114-MC-PZ103-12022014<br>12/02/14<br>114-MC-PZ103 | 114-MC-PZ103-20150622<br>06/22/15<br>114-MC-PZ103 | 114-MC-PZ103-20150924<br>09/24/15<br>114-MC-PZ103 |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | 1,580 | 37.5 J | 4,350 | 2,560 | 212 |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | 6.0 U | 60 U | 60 U | 60 U | 18 U |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | 20.0 J | 30 U | 18.0 J | 30 U | 30 U |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | 45.9 J | 19.3 J | 71.4 J | 55.1 J | 22.7 J |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | 0.80 J | 1.0 U | 1.0 U | 0.60 J | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | 0.30 J | 3.0 U | 3.4 | 0.80 J | 3.0 U |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | 69,400 | 67,200 | 72,600 | 68,400 | 60,200 |
| Chromium | 7440-47-3 | ug/L | NA | NA | 54,400 | 11,800 J | 8,640 | 16,200 J | 21,800 J | 20,900 J |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 52,200 J | 9,300 RA | 6,900 | 8,000 J | 12,300 J | 14,000 RA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | 7.4 J | 9.1 J | 10.2 J | 6.3 J | 6.6 J |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | 9.0 J | 6.6 J | R | 17.6 U | 6.5 J |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | 1,990 | 159 | 6,740 | 4,720 | 679 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | 30 U | 30 U | 17.0 J | 30 U | 30 U |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | 23,700 | 23,100 | 22,700 | 21,300 | 18,300 |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | 524 | 275 | 885 | 707 | 371 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-MW102S-F-20151210<br>12/10/15<br>114-MC-MW102S | 114-MC-MW102S-F-20160314<br>03/14/16<br>114-MC-MW102S | 114-MC-PZ103<br>06/18/14<br>114-MC-PZ103 | 114-MC-PZ103-04012015<br>04/01/15<br>114-MC-PZ103 | 114-MC-PZ103-10092014<br>10/09/14<br>114-MC-PZ103 | 114-MC-PZ103-12022014<br>12/02/14<br>114-MC-PZ103 | 114-MC-PZ103-20150622<br>06/22/15<br>114-MC-PZ103 | 114-MC-PZ103-20150924<br>09/24/15<br>114-MC-PZ103 |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | 0.20 U | 0.20 U | 0.075 J | 0.087 J | 0.20 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | 81.8 | 99.0 | 95.9 | 68.0 | 85.2 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | 64,500 J | 61,200 | 45,300 | 49,200 | 41,200 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | 36.1 J | 100 U | 9.0 J | 100 U | 30 U |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | 5.1 J | 5.2 J | 10 U | 3.2 J | 10 U |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | 3,660,000 | 4,580,000 | 3,120,000 | 3,670,000 | 3,500,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | 760,000 | 790,000 | NA | 737,000 J | 764,000 |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | 20 U | 20 U | 20 U | 40 U | 20 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | 5.3 JB | 4.7 J | 8.8 J | 14.6 J | 150 U |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | 20 UB | 20 U | 45.8 J | 20 UB | 60 U |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 7.8 J | 10 U | 56,800 | 11,700 J | 7,630 | 12,600 | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 5.8 RA | 5.5 RA | 51,100 J | 6,000 RA | 10 U | 8,300 J | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 912,000 | 881,000 | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-MW102S-F-20151210<br><br>12/10/15<br>114-MC-MW102S | 114-MC-MW102S-F-20160314<br><br>03/14/16<br>114-MC-MW102S | 114-MC-PZ103<br><br>06/18/14<br>114-MC-PZ103 | 114-MC-PZ103-04012015<br><br>04/01/15<br>114-MC-PZ103 | 114-MC-PZ103-10092014<br><br>10/09/14<br>114-MC-PZ103 | 114-MC-PZ103-12022014<br><br>12/02/14<br>114-MC-PZ103 | 114-MC-PZ103-20150622<br><br>06/22/15<br>114-MC-PZ103 | 114-MC-PZ103-20150924<br><br>09/24/15<br>114-MC-PZ103 |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | 5,800,000 | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | 28,800 | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | 2,000 U | NA | 2,000 U | NA | NA | 2,000 U | 2,000 U |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 328 | 292 | 445 | 332 | 214 | 255 | 371 | 245 |
| pH | ARC-pH | SU | 8.31 | 6.94 | 8.78 | 9.11 | 8.81 | 8.58 | 8.81 | 9.53 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | 34,600 | NA | 9,200 | NA | NA | 1,340 | 1,350 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-MW102S-F-20151210<br><br>12/10/15<br>114-MC-MW102S | 114-MC-MW102S-F-20160314<br><br>03/14/16<br>114-MC-MW102S | 114-MC-PZ103<br><br>06/18/14<br>114-MC-PZ103 | 114-MC-PZ103-04012015<br><br>04/01/15<br>114-MC-PZ103 | 114-MC-PZ103-10092014<br><br>10/09/14<br>114-MC-PZ103 | 114-MC-PZ103-12022014<br><br>12/02/14<br>114-MC-PZ103 | 114-MC-PZ103-20150622<br><br>06/22/15<br>114-MC-PZ103 | 114-MC-PZ103-20150924<br><br>09/24/15<br>114-MC-PZ103 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 1,850,000 | 2,480,000 | NA | 2,310,000 | 2,080,000 | NA | 3,220,000 | 2,070,000 |
| Sulfide | 18496-25-8 | ug/L | 22,200 | 2,000 U | NA | 2,300 | 13,500 | NA | 2,100 | 2,400 |
| Sulfite | ARC-SULFITE | ug/L | 17,500 J | 3,000 UJ | NA | 3,000 J | NA | NA | 3,000 UJ | 1,500 J |
| Temperature | ARC-Temp | deg c | NA | 7.62 | NA | 14.37 | NA | NA | 17.37 | 19.58 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | 590 | 300 | 1,460 | 3,000 | 2,740 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 146 | 210 | 2.76 | 314 | 188 | NA |
| pH | ARC-pH | SU | NA | NA | 9.36 | 9.11 | 8.89 | 8.66 | 8.8 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | 13.4 | NA | 18.19 | 14.2 | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | 19.56 | 14.37 | 19.23 | 14.557 | 15.79 | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | 18.6 | 9.51 | 29.3 | 369 | 49.7 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-MC-PZ103-20151214 12/14/15 114-MC-PZ103 | 114-MC-PZ103-20160321 03/21/16 114-MC-PZ103 | 114-MC-PZ103-20160623 06/23/16 114-MC-PZ103 | 114-MC-PZ103-20160623-F 06/23/16 114-MC-PZ103 | 114-MC-PZ103-F-20150622 06/22/15 114-MC-PZ103 | 114-MC-PZ103-F-20150924 09/24/15 114-MC-PZ103 | 114-MC-PZ103-F-20151214 12/14/15 114-MC-PZ103 |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-PZ103-20151214<br><br>12/14/15<br>114-MC-PZ103 | 114-MC-PZ103-20160321<br><br>03/21/16<br>114-MC-PZ103 | 114-MC-PZ103-20160623<br><br>06/23/16<br>114-MC-PZ103 | 114-MC-PZ103-20160623-F<br><br>06/23/16<br>114-MC-PZ103 | 114-MC-PZ103-F-20150622<br><br>06/22/15<br>114-MC-PZ103 | 114-MC-PZ103-F-20150924<br><br>09/24/15<br>114-MC-PZ103 | 114-MC-PZ103-F-20151214<br><br>12/14/15<br>114-MC-PZ103 |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-PZ103-20151214<br>12/14/15<br>114-MC-PZ103 | 114-MC-PZ103-20160321<br>03/21/16<br>114-MC-PZ103 | 114-MC-PZ103-20160623<br>06/23/16<br>114-MC-PZ103 | 114-MC-PZ103-20160623-F<br>06/23/16<br>114-MC-PZ103 | 114-MC-PZ103-F-20150622<br>06/22/15<br>114-MC-PZ103 | 114-MC-PZ103-F-20150924<br>09/24/15<br>114-MC-PZ103 | 114-MC-PZ103-F-20151214<br>12/14/15<br>114-MC-PZ103 |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 1,870 | 200 J | 458 | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 30 U | 60 U | 30 U | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | 13.6 J | 30 U | 18.8 | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | 36.4 J | 17.6 J | 28.7 J | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 1.6 J | 0.60 J | 1.3 J | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | 50,900 | 42,100 | 48,200 | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 16,500 J | 12,400 | 15,000 | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 11,600 J | 5,800 | 10 RA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 4.3 J | 500 U | 7.5 J | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | 34.3 J | 8.3 J | 13.3 | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 2,790 | 637 | 1,520 | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | 75 U | 30 U | 15 U | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | 15,400 | 12,300 | 13,100 | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 463 | 349 | 439 | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-PZ103-20151214<br>12/14/15<br>114-MC-PZ103 | 114-MC-PZ103-20160321<br>03/21/16<br>114-MC-PZ103 | 114-MC-PZ103-20160623<br>06/23/16<br>114-MC-PZ103 | 114-MC-PZ103-20160623-F<br>06/23/16<br>114-MC-PZ103 | 114-MC-PZ103-F-20150622<br>06/22/15<br>114-MC-PZ103 | 114-MC-PZ103-F-20150924<br>09/24/15<br>114-MC-PZ103 | 114-MC-PZ103-F-20151214<br>12/14/15<br>114-MC-PZ103 |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | 0.20 U | 0.20 U | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 62.3 | 58.8 J | 51.6 | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 40,100 | 36,000 | 42,900 | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | 50 U | 100 U | 50 U | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | 8.8 J | 10 U | 10 U | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | 3,400,000 | 3,100,000 | 3,040,000 | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 671,000 J | 629,000 | 628,000 | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 50 U | 20 U | 50 U | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 250 U | 50 U | 3.4 J | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | 31.1 JB | 20 U | 16.2 J | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 6,080 | 12,200 J | 12,600 J | 13,700 J |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | 34 RA | 10,200 J | 11,100 RA | 13,200 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | 779,000 J | 794,000 | 766,000 J |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-PZ103-20151214<br>12/14/15<br>114-MC-PZ103 | 114-MC-PZ103-20160321<br>03/21/16<br>114-MC-PZ103 | 114-MC-PZ103-20160623<br>06/23/16<br>114-MC-PZ103 | 114-MC-PZ103-20160623-F<br>06/23/16<br>114-MC-PZ103 | 114-MC-PZ103-F-20150622<br>06/22/15<br>114-MC-PZ103 | 114-MC-PZ103-F-20150924<br>09/24/15<br>114-MC-PZ103 | 114-MC-PZ103-F-20151214<br>12/14/15<br>114-MC-PZ103 |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,400 | 2,000 U | NA | NA | 2,000 U | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 276 | 244 | 193 | 213 | 377 | 253 | 280 |
| pH | ARC-pH | SU | 6.21 | 8.78 | 8.81 | 8.67 | 8.81 | 8.63 | 6.21 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 1.0 | 14.3 | NA | NA | 1,340 | NA | 1.0 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-PZ103-20151214<br>12/14/15<br>114-MC-PZ103 | 114-MC-PZ103-20160321<br>03/21/16<br>114-MC-PZ103 | 114-MC-PZ103-20160623<br>06/23/16<br>114-MC-PZ103 | 114-MC-PZ103-20160623-F<br>06/23/16<br>114-MC-PZ103 | 114-MC-PZ103-F-20150622<br>06/22/15<br>114-MC-PZ103 | 114-MC-PZ103-F-20150924<br>09/24/15<br>114-MC-PZ103 | 114-MC-PZ103-F-20151214<br>12/14/15<br>114-MC-PZ103 |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 1,940,000 J | 1,950,000 | 1,820,000 | NA | 3,140,000 | 2,090,000 | 2,360,000 |
| Sulfide | 18496-25-8 | ug/L | 2,700 | 7,400 | 11,700 | NA | 1,700 J | 2,900 | 2,400 |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 3,000 U | 12,500 J | NA | 3,000 UJ | 1,500 J | 3,000 UJ |
| Temperature | ARC-Temp | deg c | 16.84 | 13.54 | NA | NA | 17.37 | NA | 16.84 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 14,300 | 12,900 | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 8,440 | 380 | 200 | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 4 | 218.4 | 295 | NA | NA | NA | NA |
| pH | ARC-pH | SU | 6.22 | 9.2 | 9.34 | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | 2,000 | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 16.84 | 14.12 | 18.92 | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | 72.8 | 24.5 | 40.9 | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-MC-PZ103-F-20160321 | 114-MC-PZ203 | 114-MC-PZ203-03312015 | 114-MC-PZ203-11182014 | 114-MC-PZ203-12022014 | 114-MC-PZ203-20150622 | 114-MC-PZ203-20150924 | 114-MC-PZ203-20151214 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | |
| Date Collected: | | | 03/21/16 | 11/03/14 | 03/31/15 | 11/18/14 | 12/02/14 | 06/22/15 | 09/24/15 | 12/14/15 |
| Location ID: | CAS Number | Units | 114-MC-PZ103 | 114-MC-PZ203 | 114-MC-PZ203 | 114-MC-PZ203 | 114-MC-PZ203 | 114-MC-PZ203 | 114-MC-PZ203 | 114-MC-PZ203 |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-PZ103-F-20160321<br><br>03/21/16<br>114-MC-PZ103 | 114-MC-PZ203<br><br>11/03/14<br>114-MC-PZ203 | 114-MC-PZ203-03312015<br><br>03/31/15<br>114-MC-PZ203 | 114-MC-PZ203-11182014<br><br>11/18/14<br>114-MC-PZ203 | 114-MC-PZ203-12022014<br><br>12/02/14<br>114-MC-PZ203 | 114-MC-PZ203-20150622<br><br>06/22/15<br>114-MC-PZ203 | 114-MC-PZ203-20150924<br><br>09/24/15<br>114-MC-PZ203 | 114-MC-PZ203-20151214<br><br>12/14/15<br>114-MC-PZ203 |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-PZ103-F-20160321<br><br>03/21/16<br>114-MC-PZ103 | 114-MC-PZ203<br><br>11/03/14<br>114-MC-PZ203 | 114-MC-PZ203-03312015<br><br>03/31/15<br>114-MC-PZ203 | 114-MC-PZ203-11182014<br><br>11/18/14<br>114-MC-PZ203 | 114-MC-PZ203-12022014<br><br>12/02/14<br>114-MC-PZ203 | 114-MC-PZ203-20150622<br><br>06/22/15<br>114-MC-PZ203 | 114-MC-PZ203-20150924<br><br>09/24/15<br>114-MC-PZ203 | 114-MC-PZ203-20151214<br><br>12/14/15<br>114-MC-PZ203 |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | 238 | 1,100 | 206 | 195 J |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | 51.4 | 31.4 J | 30 U | 150 U |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | R | 30 U | 15 U | 75 U |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | 44.9 J | 40.3 J | 34.7 J | 28.5 J |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | 2.0 U | 5.0 U | 1.0 U | 2.6 J |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | 14.8 | 15 U | 3.0 U | 8.8 J |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | 72,000 | 71,700 | 69,500 | 67,300 |
| Chromium | 7440-47-3 | ug/L | NA | 95,900 [94,300] | 99,700 J | 21,800 | 72,000 J | 127,000 J | 109,000 J | 135,000 J |
| Chromium VI | 18540-29-9 | ug/L | NA | 115,000 [116,000] | 110,000 J | 27,300 | 74,900 J | 130,000 J | 102,000 RA | 133,000 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | 4.8 J | 50 U | 6.3 J | 50 U |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | R | 50 U | 12.2 J | 112 J |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | 237 | 1,670 | 238 J | 265 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | 6.0 U | 25.3 J | 15 U | 75 U |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | 2,950 J | 16,800 | 19,200 | 21,700 |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | 5.6 J | 77.9 | 40.0 | 49.8 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-PZ103-F-20160321<br><br>03/21/16<br>114-MC-PZ103 | 114-MC-PZ203<br><br>11/03/14<br>114-MC-PZ203 | 114-MC-PZ203-03312015<br><br>03/31/15<br>114-MC-PZ203 | 114-MC-PZ203-11182014<br><br>11/18/14<br>114-MC-PZ203 | 114-MC-PZ203-12022014<br><br>12/02/14<br>114-MC-PZ203 | 114-MC-PZ203-20150622<br><br>06/22/15<br>114-MC-PZ203 | 114-MC-PZ203-20150924<br><br>09/24/15<br>114-MC-PZ203 | 114-MC-PZ203-20151214<br><br>12/14/15<br>114-MC-PZ203 |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | 0.20 U | 0.20 U | 1.2 U | 0.60 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | 40.5 | 19.6 | 33.7 | 24.7 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | 24,200 | 25,800 | 25,000 | 24,800 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | 20 U | 50 U | 50 U | 50 U |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | 1.5 J | 10 U | 4.4 J | 16.9 J |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | 1,050,000 | 1,000,000 | 1,080,000 | 1,260,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | 169,000 | NA | NA | 221,000 | 255,000 | 273,000 |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | 10 U | 20 U | 10 U | 50 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | 32.8 J | 29.9 J | 250 U | 1,300 U |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | 44.6 J | 62.8 JB | 100 U | 140 J |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 8,080 | 109,000 [111,000] | 106,000 J | 23,000 | 86,000 | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 7,100 | 105,000 [110,000] | 106,000 J | 25,600 | 81,800 J | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 647,000 | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-PZ103-F-20160321<br><br>03/21/16<br>114-MC-PZ103 | 114-MC-PZ203<br><br>11/03/14<br>114-MC-PZ203 | 114-MC-PZ203-03312015<br><br>03/31/15<br>114-MC-PZ203 | 114-MC-PZ203-11182014<br><br>11/18/14<br>114-MC-PZ203 | 114-MC-PZ203-12022014<br><br>12/02/14<br>114-MC-PZ203 | 114-MC-PZ203-20150622<br><br>06/22/15<br>114-MC-PZ203 | 114-MC-PZ203-20150924<br><br>09/24/15<br>114-MC-PZ203 | 114-MC-PZ203-20151214<br><br>12/14/15<br>114-MC-PZ203 |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | 11,200 | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | NA | 2,000 U | NA | NA | 2,000 U | 2,000 U | 2,000 U |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 244 | 243 [235] [220] | 261 | 258 | 217 | 368 | 269 | 280 |
| pH | ARC-pH | SU | 9.19 | 10.92 [10.93] | 9.10 | 9.89 | 9.98 | 9.03 | 9.12 | 8.82 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 14.3 | NA | 3,270 | NA | NA | 4,380 | 4,440 | 4,070 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-PZ103-F-20160321<br>03/21/16<br>114-MC-PZ103 | 114-MC-PZ203<br>11/03/14<br>114-MC-PZ203 | 114-MC-PZ203-03312015<br>03/31/15<br>114-MC-PZ203 | 114-MC-PZ203-11182014<br>11/18/14<br>114-MC-PZ203 | 114-MC-PZ203-12022014<br>12/02/14<br>114-MC-PZ203 | 114-MC-PZ203-20150622<br>06/22/15<br>114-MC-PZ203 | 114-MC-PZ203-20150924<br>09/24/15<br>114-MC-PZ203 | 114-MC-PZ203-20151214<br>12/14/15<br>114-MC-PZ203 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 1,760,000 | NA | 544,000 | NA | NA | 636,000 | 742,000 | 592,000 J |
| Sulfide | 18496-25-8 | ug/L | 6,300 | NA | 2,000 U | NA | NA | 2,000 U | 2,000 U | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | 3,000 U | NA | 3,000 UJ | NA | NA | 3,000 UJ | 1,000 J | 3,000 UJ |
| Temperature | ARC-Temp | deg c | 13.54 | NA | 14.05 | NA | NA | 16.55 | 17.28 | 18.42 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | 5,400 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | 520 | NA | 4,060 | 10 | NA | 0 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 62 | NA | 186 | 94 | NA | 81 |
| pH | ARC-pH | SU | NA | NA | 9.62 | NA | 10.95 | 8.99 | NA | 8.82 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | 0 |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | 5.35 | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | 14.05 | NA | 13.85 | 15.75 | NA | 18.42 |
| Turbidity | ARC-Turb | NTU | NA | NA | 7.19 | NA | 14.5 | 33 | NA | 5.25 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-MC-PZ203-20160322 | 114-MC-PZ203-20160623 | 114-MC-PZ203-20160623-F | 114-MC-PZ203-F-20150622 | 114-MC-PZ203-F-20150924 | 114-MC-PZ203-F-20151214 | 114-MC-PZ203-F-20160322 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | |
| Date Collected: | | | 03/22/16 | 06/23/16 | 06/23/16 | 06/22/15 | 09/24/15 | 12/14/15 | 03/22/16 |
| Location ID: | CAS Number | Units | 114-MC-PZ203 | 114-MC-PZ203 | 114-MC-PZ203 | 114-MC-PZ203 | 114-MC-PZ203 | 114-MC-PZ203 | 114-MC-PZ203 |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-PZ203-20160322<br>03/22/16<br>114-MC-PZ203 | 114-MC-PZ203-20160623<br>06/23/16<br>114-MC-PZ203 | 114-MC-PZ203-20160623-F<br>06/23/16<br>114-MC-PZ203 | 114-MC-PZ203-F-20150622<br>06/22/15<br>114-MC-PZ203 | 114-MC-PZ203-F-20150924<br>09/24/15<br>114-MC-PZ203 | 114-MC-PZ203-F-20151214<br>12/14/15<br>114-MC-PZ203 | 114-MC-PZ203-F-20160322<br>03/22/16<br>114-MC-PZ203 |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-PZ203-20160322<br>03/22/16<br>114-MC-PZ203 | 114-MC-PZ203-20160623<br>06/23/16<br>114-MC-PZ203 | 114-MC-PZ203-20160623-F<br>06/23/16<br>114-MC-PZ203 | 114-MC-PZ203-F-20150622<br>06/22/15<br>114-MC-PZ203 | 114-MC-PZ203-F-20150924<br>09/24/15<br>114-MC-PZ203 | 114-MC-PZ203-F-20151214<br>12/14/15<br>114-MC-PZ203 | 114-MC-PZ203-F-20160322<br>03/22/16<br>114-MC-PZ203 |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 245 J | 631 | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 89.4 J | 240 U | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | 60 U | 120 U | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | 26.9 J | 28.2 J | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | 4.3 J | 10 U | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 60 U | 5.3 J | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | 75,200 | 81,000 | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 173,000 | 215,000 | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 128,000 | 188,000 RA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 43.0 J | 50 U | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | 200 U | 100 U | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 521 J | 737 | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | 60 U | 120 U | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | 25,000 | 26,900 | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 114 | 102 J | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-PZ203-20160322<br>03/22/16<br>114-MC-PZ203 | 114-MC-PZ203-20160623<br>06/23/16<br>114-MC-PZ203 | 114-MC-PZ203-20160623-F<br>06/23/16<br>114-MC-PZ203 | 114-MC-PZ203-F-20150622<br>06/22/15<br>114-MC-PZ203 | 114-MC-PZ203-F-20150924<br>09/24/15<br>114-MC-PZ203 | 114-MC-PZ203-F-20151214<br>12/14/15<br>114-MC-PZ203 | 114-MC-PZ203-F-20160322<br>03/22/16<br>114-MC-PZ203 |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 1.2 U | 0.40 U | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 53.4 | 20.6 | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 25,900 | 23,300 | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | 200 U | 100 U | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | 4.8 J | 17.4 J | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | 963,000 | 765,000 | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 230,000 | 196,000 | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 2.0 U | 80 U | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 1,000 U | 128 J | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | 400 U | 800 U | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 161,000 | 144,000 J | 111,000 J | 142,000 J | 152,000 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 159,000 RA | 117,000 J | 104,000 RA | 142,000 J | 133,000 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | 223,000 | 261,000 | 266,000 | 227,000 |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-PZ203-20160322<br>03/22/16<br>114-MC-PZ203 | 114-MC-PZ203-20160623<br>06/23/16<br>114-MC-PZ203 | 114-MC-PZ203-20160623-F<br>06/23/16<br>114-MC-PZ203 | 114-MC-PZ203-F-20150622<br>06/22/15<br>114-MC-PZ203 | 114-MC-PZ203-F-20150924<br>09/24/15<br>114-MC-PZ203 | 114-MC-PZ203-F-20151214<br>12/14/15<br>114-MC-PZ203 | 114-MC-PZ203-F-20160322<br>03/22/16<br>114-MC-PZ203 |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | 4,900 |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | NA | NA | 2,000 U | NA | NA | 2,000 U |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 244 | 303 | 268 | 374 | 270 | 292 | 249 |
| pH | ARC-pH | SU | 8.35 | 8.37 | 8.42 | 9.03 | 8.55 | 8.82 | 9.52 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 4.8 | NA | NA | 4,380 | NA | 4,070 | 4.8 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MC-PZ203-20160322<br>03/22/16<br>114-MC-PZ203 | 114-MC-PZ203-20160623<br>06/23/16<br>114-MC-PZ203 | 114-MC-PZ203-20160623-F<br>06/23/16<br>114-MC-PZ203 | 114-MC-PZ203-F-20150622<br>06/22/15<br>114-MC-PZ203 | 114-MC-PZ203-F-20150924<br>09/24/15<br>114-MC-PZ203 | 114-MC-PZ203-F-20151214<br>12/14/15<br>114-MC-PZ203 | 114-MC-PZ203-F-20160322<br>03/22/16<br>114-MC-PZ203 |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 570,000 | 506,000 | NA | 566,000 | 666,000 | 755,000 J | 615,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 U | NA | 2,000 U | 2,000 U | 2,000 U | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 3,000 UJ | NA | 3,000 UJ | 1,000 J | 3,000 UJ | 3,000 UJ |
| Temperature | ARC-Temp | deg c | 13.53 | NA | NA | 16.55 | NA | 18.42 | 13.53 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 4,700 | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 10 | 1,380 | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 57.6 | 29.2 | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | 9.54 | 8.32 | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 14.49 | 18.86 | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | 5.45 | 13.4 | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW1A-GA01-8.0<br>8<br>06/13/11<br>MW1A | 114-MW3A-GA01-5.5<br>5.5<br>06/14/11<br>MW3A | 114-MW4A-GA01-6.5<br>6.5<br>06/15/11<br>MW4A | 114-MW4A-GA01-11.5<br>11.5<br>06/15/11<br>MW4A | 114-MW4B-GA01-30.5<br>30.5<br>06/15/11<br>MW4B | 114-MW4B-GA01-35.5<br>35.5<br>06/15/11<br>MW4B | 114-MW4D-20151215-90<br><br>12/15/15<br>114-MW4D | 114-MW4D-20151215-95<br><br>12/15/15<br>114-MW4D |
|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | 0.020 U | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | 0.020 U | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | 2.0 U | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | 0.22 J | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | 0.69 J | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | 0.30 J | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | 2.0 U | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | 1.0 | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | 2.2 | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW1A-GA01-8.0<br>8<br>06/13/11<br>MW1A | 114-MW3A-GA01-5.5<br>5.5<br>06/14/11<br>MW3A | 114-MW4A-GA01-6.5<br>6.5<br>06/15/11<br>MW4A | 114-MW4A-GA01-11.5<br>11.5<br>06/15/11<br>MW4A | 114-MW4B-GA01-30.5<br>30.5<br>06/15/11<br>MW4B | 114-MW4B-GA01-35.5<br>35.5<br>06/15/11<br>MW4B | 114-MW4D-20151215-90<br><br>12/15/15<br>114-MW4D | 114-MW4D-20151215-95<br><br>12/15/15<br>114-MW4D |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | 33 U | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | 2.2 U | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | 33 U | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | 22 U | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | 22 UJ | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | 22 U | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | 22 U | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | 33 U | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | 0.11 | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | 0.051 J | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | 0.068 | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | 1.1 U | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | 1.1 U | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW1A-GA01-8.0<br>8<br>06/13/11<br>MW1A | 114-MW3A-GA01-5.5<br>5.5<br>06/14/11<br>MW3A | 114-MW4A-GA01-6.5<br>6.5<br>06/15/11<br>MW4A | 114-MW4A-GA01-11.5<br>11.5<br>06/15/11<br>MW4A | 114-MW4B-GA01-30.5<br>30.5<br>06/15/11<br>MW4B | 114-MW4B-GA01-35.5<br>35.5<br>06/15/11<br>MW4B | 114-MW4D-20151215-90<br><br>12/15/15<br>114-MW4D | 114-MW4D-20151215-95<br><br>12/15/15<br>114-MW4D |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | 1.1 U | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | 2.2 U | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | 2.2 U | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | 0.022 U | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | 1.1 U | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | 1.1 U | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | 1.1 U | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | 1.1 U | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | 0.22 U | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | 11 U | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | 0.23 | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 6.5 | 2.5 U | 2.5 U | 3.0 | 2.5 U | 2.5 U | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 5,850 | 236 | 446 | 732 | 744,000 | 723,000 | 4.5 J | 5.6 J |
| Chromium VI | 18540-29-9 | ug/L | 100 U | 10.0 U | 10.0 U | 50.0 U | 814,000 | 7,630,000 | 5.5 U | 5.5 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW1A-GA01-8.0<br>8<br>06/13/11<br>MW1A | 114-MW3A-GA01-5.5<br>5.5<br>06/14/11<br>MW3A | 114-MW4A-GA01-6.5<br>6.5<br>06/15/11<br>MW4A | 114-MW4A-GA01-11.5<br>11.5<br>06/15/11<br>MW4A | 114-MW4B-GA01-30.5<br>30.5<br>06/15/11<br>MW4B | 114-MW4B-GA01-35.5<br>35.5<br>06/15/11<br>MW4B | 114-MW4D-20151215-90<br><br>12/15/15<br>114-MW4D | 114-MW4D-20151215-95<br><br>12/15/15<br>114-MW4D |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 87.4 | 26.1 | 20.5 | 116 | 52.9 | 53.0 | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | 7,090 | 269 | 499 | 928 | 744,000 | 723,000 | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 1,150 | 6.5 | 32.4 | 77.3 | 8.5 | 8.4 | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW1A-GA01-8.0<br>8<br>06/13/11<br>MW1A | 114-MW3A-GA01-5.5<br>5.5<br>06/14/11<br>MW3A | 114-MW4A-GA01-6.5<br>6.5<br>06/15/11<br>MW4A | 114-MW4A-GA01-11.5<br>11.5<br>06/15/11<br>MW4A | 114-MW4B-GA01-30.5<br>30.5<br>06/15/11<br>MW4B | 114-MW4B-GA01-35.5<br>35.5<br>06/15/11<br>MW4B | 114-MW4D-20151215-90<br><br>12/15/15<br>114-MW4D | 114-MW4D-20151215-95<br><br>12/15/15<br>114-MW4D |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 147 | 265 | 207 | 358 | 501 | 404 | 254 | 305 |
| pH | ARC-pH | SU | 9.22 | 7.63 | 9.37 | 8.94 | 6.78 | 6.79 | 8.98 | 9.81 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW1A-GA01-8.0<br>8<br>06/13/11<br>MW1A | 114-MW3A-GA01-5.5<br>5.5<br>06/14/11<br>MW3A | 114-MW4A-GA01-6.5<br>6.5<br>06/15/11<br>MW4A | 114-MW4A-GA01-11.5<br>11.5<br>06/15/11<br>MW4A | 114-MW4B-GA01-30.5<br>30.5<br>06/15/11<br>MW4B | 114-MW4B-GA01-35.5<br>35.5<br>06/15/11<br>MW4B | 114-MW4D-20151215-90<br><br>12/15/15<br>114-MW4D | 114-MW4D-20151215-95<br><br>12/15/15<br>114-MW4D |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | 1,000 U |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 40,000 | 1,080 | 4,080 | 4,120 | 3,460 | 2,570 | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 176 | 99.9 | 99.6 | 101.9 | 281.8 | 290 | NA | NA |
| pH | ARC-pH | SU | 8.65 | 6.5 | 9.16 | 9.22 | 6.32 | 6.33 | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 20.55 | 22.21 | 19.48 | 19.5 | 17.6 | 17.6 | NA | NA |
| Turbidity | ARC-Turb | NTU | 10.53 | 8.9 | 10 | 14.7 | 9.5 | 8.5 | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW4D-20151215-100<br><br>12/15/15<br>114-MW4D | 114-MW4D-20151215-103.5<br><br>12/15/15<br>114-MW4D | 114-MW4D-F-20151215-90<br><br>12/15/15<br>114-MW4D | 114-MW4D-F-20151215-95<br><br>12/15/15<br>114-MW4D | 114-MW4D-F-20151215-100<br><br>12/15/15<br>114-MW4D | 114-MW4D-F-20151215-103.5<br><br>12/15/15<br>114-MW4D | 114-MW4D-GA01-89.5<br>89.5<br>06/22/11<br>114-MW4D |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW4D-20151215-100<br><br>12/15/15<br>114-MW4D | 114-MW4D-20151215-103.5<br><br>12/15/15<br>114-MW4D | 114-MW4D-F-20151215-90<br><br>12/15/15<br>114-MW4D | 114-MW4D-F-20151215-95<br><br>12/15/15<br>114-MW4D | 114-MW4D-F-20151215-100<br><br>12/15/15<br>114-MW4D | 114-MW4D-F-20151215-103.5<br><br>12/15/15<br>114-MW4D | 114-MW4D-GA01-89.5<br>89.5<br>06/22/11<br>114-MW4D |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW4D-20151215-100<br><br>12/15/15<br>114-MW4D | 114-MW4D-20151215-103.5<br><br>12/15/15<br>114-MW4D | 114-MW4D-F-20151215-90<br><br>12/15/15<br>114-MW4D | 114-MW4D-F-20151215-95<br><br>12/15/15<br>114-MW4D | 114-MW4D-F-20151215-100<br><br>12/15/15<br>114-MW4D | 114-MW4D-F-20151215-103.5<br><br>12/15/15<br>114-MW4D | 114-MW4D-GA01-89.5<br>89.5<br>06/22/11<br>114-MW4D |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | 2.5 U |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 14.5 | 6.8 J | NA | NA | NA | NA | 4.6 J |
| Chromium VI | 18540-29-9 | ug/L | 5.5 U | 5.5 U | NA | NA | NA | NA | 10.0 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW4D-20151215-100<br><br>12/15/15<br>114-MW4D | 114-MW4D-20151215-103.5<br><br>12/15/15<br>114-MW4D | 114-MW4D-F-20151215-90<br><br>12/15/15<br>114-MW4D | 114-MW4D-F-20151215-95<br><br>12/15/15<br>114-MW4D | 114-MW4D-F-20151215-100<br><br>12/15/15<br>114-MW4D | 114-MW4D-F-20151215-103.5<br><br>12/15/15<br>114-MW4D | 114-MW4D-GA01-89.5<br>89.5<br>06/22/11<br>114-MW4D |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | 4.1 J |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | 13 |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | 4.2 J |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 10 U | 4.0 J | 10 U | 10 U | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 5.5 U | 5.5 U | 5.5 U | 5.5 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW4D-20151215-100<br><br>12/15/15<br>114-MW4D | 114-MW4D-20151215-103.5<br><br>12/15/15<br>114-MW4D | 114-MW4D-F-20151215-90<br><br>12/15/15<br>114-MW4D | 114-MW4D-F-20151215-95<br><br>12/15/15<br>114-MW4D | 114-MW4D-F-20151215-100<br><br>12/15/15<br>114-MW4D | 114-MW4D-F-20151215-103.5<br><br>12/15/15<br>114-MW4D | 114-MW4D-GA01-89.5<br>89.5<br>06/22/11<br>114-MW4D |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 300 | 308 | 273 | 321 | 310 | 321 | 335 |
| pH | ARC-pH | SU | 8.97 | 9.22 | 9.56 | 9.85 | 9.07 | 9.13 | 10.3 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW4D-20151215-100<br><br>12/15/15<br>114-MW4D | 114-MW4D-20151215-103.5<br><br>12/15/15<br>114-MW4D | 114-MW4D-F-20151215-90<br><br>12/15/15<br>114-MW4D | 114-MW4D-F-20151215-95<br><br>12/15/15<br>114-MW4D | 114-MW4D-F-20151215-100<br><br>12/15/15<br>114-MW4D | 114-MW4D-F-20151215-103.5<br><br>12/15/15<br>114-MW4D | 114-MW4D-GA01-89.5<br>89.5<br>06/22/11<br>114-MW4D |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | 560 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | 67.5 |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | 10.85 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | 23.8 |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | 8.2 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-MW4D-GA01-94.5 | 114-MW4D-GA01-99.5 | 114-MW4D-GA01-104.5 | 114-MW6C-20160321 | 114-MW6C-F-20160321 | 114-MW6D-20151221-88.5 | 114-MW6D-20151221-93.5 | 114-MW6D-20151221-98.5 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 94.5 | 99.5 | 104.5 | | | | | |
| Date Collected: | | | 06/22/11 | 06/22/11 | 06/22/11 | 03/21/16 | 03/21/16 | 12/21/15 | 12/21/15 | 12/21/15 |
| Location ID: | CAS Number | Units | 114-MW4D | 114-MW4D | 114-MW4D | MW6C | MW6C | 114-MW6D | 114-MW6D | 114-MW6D |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW4D-GA01-94.5<br>94.5<br>06/22/11<br>114-MW4D | 114-MW4D-GA01-99.5<br>99.5<br>06/22/11<br>114-MW4D | 114-MW4D-GA01-104.5<br>104.5<br>06/22/11<br>114-MW4D | 114-MW6C-20160321<br><br>03/21/16<br>MW6C | 114-MW6C-F-20160321<br><br>03/21/16<br>MW6C | 114-MW6D-20151221-88.5<br><br>12/21/15<br>114-MW6D | 114-MW6D-20151221-93.5<br><br>12/21/15<br>114-MW6D | 114-MW6D-20151221-98.5<br><br>12/21/15<br>114-MW6D |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW4D-GA01-94.5<br>94.5<br>06/22/11<br>114-MW4D | 114-MW4D-GA01-99.5<br>99.5<br>06/22/11<br>114-MW4D | 114-MW4D-GA01-104.5<br>104.5<br>06/22/11<br>114-MW4D | 114-MW6C-20160321<br><br>03/21/16<br>MW6C | 114-MW6C-F-20160321<br><br>03/21/16<br>MW6C | 114-MW6D-20151221-88.5<br><br>12/21/15<br>114-MW6D | 114-MW6D-20151221-93.5<br><br>12/21/15<br>114-MW6D | 114-MW6D-20151221-98.5<br><br>12/21/15<br>114-MW6D |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | 549 | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 2.5 U | 2.5 U | 2.5 U | 6.0 U | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | 2.4 J | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | 65.1 J | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | 2.0 J | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | 139,000 | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 18.5 | 15.1 | 14.6 | 9,890 | NA | 3.6 J [1.8 J] | 2.6 J | 1.8 J |
| Chromium VI | 18540-29-9 | ug/L | 10.0 U | 10.0 U | 10.0 U | 10,400 | NA | 5.5 U [5.5 U] | 5.5 U | 5.5 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | 14.4 J | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | 45.9 | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | 1,260 | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | 4.6 | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | 33,400 | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | 497 | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW4D-GA01-94.5<br>94.5<br>06/22/11<br>114-MW4D | 114-MW4D-GA01-99.5<br>99.5<br>06/22/11<br>114-MW4D | 114-MW4D-GA01-104.5<br>104.5<br>06/22/11<br>114-MW4D | 114-MW6C-20160321<br><br>03/21/16<br>MW6C | 114-MW6C-F-20160321<br><br>03/21/16<br>MW6C | 114-MW6D-20151221-88.5<br><br>12/21/15<br>114-MW6D | 114-MW6D-20151221-93.5<br><br>12/21/15<br>114-MW6D | 114-MW6D-20151221-98.5<br><br>12/21/15<br>114-MW6D |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | 0.20 U | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 11.5 | 11.7 | 11.3 | 70.2 | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | 7,350 J | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | 6.4 J | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | 124,000 | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | 36,300 | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 1.0 U | 1.0 U | 1.0 U | 2.0 U | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | 39.5 | 35.0 | 34.0 | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 9.5 | 8.2 | 8.1 | 9.8 J | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | 15.3 J | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | 9,650 | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | 9,500 | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | 32,100 | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW4D-GA01-94.5<br>94.5<br>06/22/11<br>114-MW4D | 114-MW4D-GA01-99.5<br>99.5<br>06/22/11<br>114-MW4D | 114-MW4D-GA01-104.5<br>104.5<br>06/22/11<br>114-MW4D | 114-MW6C-20160321<br><br>03/21/16<br>MW6C | 114-MW6C-F-20160321<br><br>03/21/16<br>MW6C | 114-MW6D-20151221-88.5<br><br>12/21/15<br>114-MW6D | 114-MW6D-20151221-93.5<br><br>12/21/15<br>114-MW6D | 114-MW6D-20151221-98.5<br><br>12/21/15<br>114-MW6D |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | 2,800 | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | 2,000 U | 2,000 U | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 337 | 343 | 335 | 270 | 287 | 273 [198] | 223 | 203 |
| pH | ARC-pH | SU | 10.3 | 10.3 | 10.3 | 7.07 | 7.07 | 9.56 [9.69] | 9.60 | 9.67 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | 1.5 | 1.5 | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW4D-GA01-94.5<br>94.5<br>06/22/11<br>114-MW4D | 114-MW4D-GA01-99.5<br>99.5<br>06/22/11<br>114-MW4D | 114-MW4D-GA01-104.5<br>104.5<br>06/22/11<br>114-MW4D | 114-MW6C-20160321<br><br>03/21/16<br>MW6C | 114-MW6C-F-20160321<br><br>03/21/16<br>MW6C | 114-MW6D-20151221-88.5<br><br>12/21/15<br>114-MW6D | 114-MW6D-20151221-93.5<br><br>12/21/15<br>114-MW6D | 114-MW6D-20151221-98.5<br><br>12/21/15<br>114-MW6D |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | 99,700 | 96,100 | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | 2,000 U | 2,000 U | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | 3,000 U | 3,000 U | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | 12.4 | 12.4 | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | 2,800 JB | NA | NA | NA | 1,100 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 1,080 | 6,640 | 460 | 790 | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 117.6 | 153.2 | 174 | 48.1 | NA | NA | NA | NA |
| pH | ARC-pH | SU | 10.89 | 10.92 | 10.95 | 7.06 | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 23.8 | 21.21 | 19.8 | 12.72 | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | 8.82 | 8.6 | 8.4 | 18.8 | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-MW6D-20151221-103.5 | 114-MW6D-20151221-108.5 | 114-MW6D-F-20151221-98.5 | 114-MW6S-GA01-9.5 | 114-MW6S-GA01-12 | 114-MW7D-20151222-60.0 | 114-MW7D-GA01-81.0 | 114-MW14A-20151216-7.5 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | 9.5 | 12 | | 81 | |
| Date Collected: | | | 12/21/15 | 12/21/15 | 12/21/15 | 06/20/11 | 06/20/11 | 12/22/15 | 06/29/11 | 12/16/15 |
| Location ID: | CAS Number | Units | 114-MW6D | 114-MW6D | 114-MW6D | MW6S | MW6S | 114-MW7D | 114-MW7D | 114-MW14A |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | 0.45 J | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | 4.8 | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | 48 | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | 0.020 U | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | 0.020 U | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | 42 | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | 100 | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | 42 | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | 2.0 U | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | 10 | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | 30 | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | 0.87 J | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | 0.76 J | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | 2.0 U | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | 0.56 J | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | 280 | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW6D-20151221-103.5<br><br>12/21/15<br>114-MW6D | 114-MW6D-20151221-108.5<br><br>12/21/15<br>114-MW6D | 114-MW6D-F-20151221-98.5<br><br>12/21/15<br>114-MW6D | 114-MW6S-GA01-9.5<br>9.5<br>06/20/11<br>MW6S | 114-MW6S-GA01-12<br>12<br>06/20/11<br>MW6S | 114-MW7D-20151222-60.0<br><br>12/22/15<br>114-MW7D | 114-MW7D-GA01-81.0<br>81<br>06/29/11<br>114-MW7D | 114-MW14A-20151216-7.5<br><br>12/16/15<br>114-MW14A |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | 0.50 J | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | 0.81 J | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | 30 U | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | 2.0 U | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | 30 U | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | 20 U | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | 20 U | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | 20 U | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | 20 U | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | 30 U | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | 0.050 U | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | 0.050 U | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | 0.050 U | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW6D-20151221-103.5<br><br>12/21/15<br>114-MW6D | 114-MW6D-20151221-108.5<br><br>12/21/15<br>114-MW6D | 114-MW6D-F-20151221-98.5<br><br>12/21/15<br>114-MW6D | 114-MW6S-GA01-9.5<br>9.5<br>06/20/11<br>MW6S | 114-MW6S-GA01-12<br>12<br>06/20/11<br>MW6S | 114-MW7D-20151222-60.0<br><br>12/22/15<br>114-MW7D | 114-MW7D-GA01-81.0<br>81<br>06/29/11<br>114-MW7D | 114-MW14A-20151216-7.5<br><br>12/16/15<br>114-MW14A |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | 2.0 U | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | 2.0 U | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | 0.020 U | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | 0.20 U | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | 7.0 U | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | 2.5 U | 2.5 U | NA | 2.9 | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 2.6 J | 2.5 J | NA | 5.0 U | 5.0 U | 24.5 | 14.2 | 3.9 J |
| Chromium VI | 18540-29-9 | ug/L | 5.5 U | 5.5 U | NA | 10.0 U | 10.0 U | 3.4 RA | 6.4 J | 5.5 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW6D-20151221-103.5<br><br>12/21/15<br>114-MW6D | 114-MW6D-20151221-108.5<br><br>12/21/15<br>114-MW6D | 114-MW6D-F-20151221-98.5<br><br>12/21/15<br>114-MW6D | 114-MW6S-GA01-9.5<br>9.5<br>06/20/11<br>MW6S | 114-MW6S-GA01-12<br>12<br>06/20/11<br>MW6S | 114-MW7D-20151222-60.0<br><br>12/22/15<br>114-MW7D | 114-MW7D-GA01-81.0<br>81<br>06/29/11<br>114-MW7D | 114-MW14A-20151216-7.5<br><br>12/16/15<br>114-MW14A |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | 4.8 J | 4.2 J | NA | 5.6 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | NA | 1.0 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | 4.8 | 4.2 | NA | 27.0 | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | NA | 4.3 J | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 1.1 J [1.1 J] | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 5.5 U [5.5 U] | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW6D-20151221-103.5<br><br>12/21/15<br>114-MW6D | 114-MW6D-20151221-108.5<br><br>12/21/15<br>114-MW6D | 114-MW6D-F-20151221-98.5<br><br>12/21/15<br>114-MW6D | 114-MW6S-GA01-9.5<br>9.5<br>06/20/11<br>MW6S | 114-MW6S-GA01-12<br>12<br>06/20/11<br>MW6S | 114-MW7D-20151222-60.0<br><br>12/22/15<br>114-MW7D | 114-MW7D-GA01-81.0<br>81<br>06/29/11<br>114-MW7D | 114-MW14A-20151216-7.5<br><br>12/16/15<br>114-MW14A |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 195 | 196 | 196 [193] | 316 | 313 | 369 | 252 | 408 |
| pH | ARC-pH | SU | 9.57 | 9.47 | 9.52 [9.55] | 7.06 | 7.10 | 6.29 | 9.99 | 6.81 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW6D-20151221-103.5<br><br>12/21/15<br>114-MW6D | 114-MW6D-20151221-108.5<br><br>12/21/15<br>114-MW6D | 114-MW6D-F-20151221-98.5<br><br>12/21/15<br>114-MW6D | 114-MW6S-GA01-9.5<br>9.5<br>06/20/11<br>MW6S | 114-MW6S-GA01-12<br>12<br>06/20/11<br>MW6S | 114-MW7D-20151222-60.0<br><br>12/22/15<br>114-MW7D | 114-MW7D-GA01-81.0<br>81<br>06/29/11<br>114-MW7D | 114-MW14A-20151216-7.5<br><br>12/16/15<br>114-MW14A |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | 2,300 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | 1,780 | 6,000 | NA | 1,560 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | 125.1 | 48.9 | NA | 38.2 | NA |
| pH | ARC-pH | SU | NA | NA | NA | 5.88 | 6.02 | NA | 10.11 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | 22.6 | 16.75 | NA | 22.58 | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | 51 | 9 | NA | 5.88 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-MW14A-20151216-10.5 | 114-MW14A-F-20151216-7.5 | 114-MW14A-GA01-5.5 | 114-MW14A-GA01-12.0 | 114-MW14B-GA01-30.5 | 114-MW15A-0412 | 114-MW16A-20151214-10.65 | 114-MW16A-20151215-14.65 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | 5.5 | 12 | 30.5 | 4.5 | | |
| Date Collected: | | | 12/16/15 | 12/16/15 | 06/16/11 | 06/16/11 | 06/16/11 | 04/03/12 | 12/14/15 | 12/15/15 |
| Location ID: | CAS Number | Units | 114-MW14A | 114-MW14A | 114-MW14A | 114-MW14A | 114-MW14B | 114-MW15A | 114-MW16A | 114-MW16A |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | 0.020 U | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | 0.020 U | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | 2.0 U | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | 2.0 U | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | 3.4 | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | 3.4 | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW14A-20151216-10.5<br><br>12/16/15<br>114-MW14A | 114-MW14A-F-20151216-7.5<br><br>12/16/15<br>114-MW14A | 114-MW14A-GA01-5.5<br>5.5<br>06/16/11<br>114-MW14A | 114-MW14A-GA01-12.0<br>12<br>06/16/11<br>114-MW14A | 114-MW14B-GA01-30.5<br>30.5<br>06/16/11<br>114-MW14B | 114-MW15A-0412<br>4.5<br>04/03/12<br>114-MW15A | 114-MW16A-20151214-10.65<br><br>12/14/15<br>114-MW16A | 114-MW16A-20151215-14.65<br><br>12/15/15<br>114-MW16A |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | 31 U | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | 2.0 U | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | 31 U | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | 20 U | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | 20 U | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | 20 U | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | 20 U | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | 31 U | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | 0.051 U | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | 0.051 U | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | 0.051 U | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW14A-20151216-10.5<br>12/16/15<br>114-MW14A | 114-MW14A-F-20151216-7.5<br>12/16/15<br>114-MW14A | 114-MW14A-GA01-5.5<br>5.5<br>06/16/11<br>114-MW14A | 114-MW14A-GA01-12.0<br>12<br>06/16/11<br>114-MW14A | 114-MW14B-GA01-30.5<br>30.5<br>06/16/11<br>114-MW14B | 114-MW15A-0412<br>4.5<br>04/03/12<br>114-MW15A | 114-MW16A-20151214-10.65<br>12/14/15<br>114-MW16A | 114-MW16A-20151215-14.65<br>12/15/15<br>114-MW16A |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | 2.0 U | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | 2.0 U | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | 0.020 U | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | 0.20 U | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | 7.1 U | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 27,400 | 286 | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | 2.5 U | 2.5 U | 2.5 U | 12 U | 6.0 U | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 16.4 | 3.0 U | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 232 J | 107 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 2.0 | 1.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 1.0 J | 3.0 U | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 113,000 | 69,200 | NA |
| Chromium | 7440-47-3 | ug/L | 8.4 J | NA | 85.3 | 6.4 | 5.0 U | 234 | 3.1 J | 10 U |
| Chromium VI | 18540-29-9 | ug/L | 5.5 UJ | NA | 20.0 U | 20.0 U | 1.6 J | 2.1 J | 1.1 J | 5.5 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 9.8 J | 50 U | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 58.4 | 10 U | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | 29,700 | 203 | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 53.0 | 3.0 U | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 18,400 | 7,610 J | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | 643 | 95.8 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW14A-20151216-10.5<br><br>12/16/15<br>114-MW14A | 114-MW14A-F-20151216-7.5<br><br>12/16/15<br>114-MW14A | 114-MW14A-GA01-5.5<br>5.5<br>06/16/11<br>114-MW14A | 114-MW14A-GA01-12.0<br>12<br>06/16/11<br>114-MW14A | 114-MW14B-GA01-30.5<br>30.5<br>06/16/11<br>114-MW14B | 114-MW15A-0412<br>4.5<br>04/03/12<br>114-MW15A | 114-MW16A-20151214-10.65<br><br>12/14/15<br>114-MW16A | 114-MW16A-20151215-14.65<br><br>12/15/15<br>114-MW16A |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.48 J | 0.20 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | 40.6 | 5.0 U | 5.5 | 149 | 10 UB | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 11,400 J | 6,690 J | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 20 U | 4.3 J | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 6.6 J | 10 U | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 52,800 | 27,400 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | 12,300 | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | 1.0 U | 1.0 U | 1.0 U | 4.0 U | 2.0 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | 126 | 6.4 | 9.4 | 444 | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | 5.0 U | 5.0 U | 3.9 J | 61.4 J | 1.0 J | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 207 | 21.4 UB | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 5.9 J | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 1.8 J | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW14A-20151216-10.5<br><br>12/16/15<br>114-MW14A | 114-MW14A-F-20151216-7.5<br><br>12/16/15<br>114-MW14A | 114-MW14A-GA01-5.5<br>5.5<br>06/16/11<br>114-MW14A | 114-MW14A-GA01-12.0<br>12<br>06/16/11<br>114-MW14A | 114-MW14B-GA01-30.5<br>30.5<br>06/16/11<br>114-MW14B | 114-MW15A-0412<br>4.5<br>04/03/12<br>114-MW15A | 114-MW16A-20151214-10.65<br><br>12/14/15<br>114-MW16A | 114-MW16A-20151215-14.65<br><br>12/15/15<br>114-MW16A |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | 2,000 U | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 404 | 415 | 384 | 374 | 434 | 265 | 350 | 353 |
| pH | ARC-pH | SU | 6.69 | 6.93 | 7.40 | 7.38 | 7.47 | 6.99 | 6.5 | 6.90 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | 301 | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW14A-20151216-10.5<br><br>12/16/15<br>114-MW14A | 114-MW14A-F-20151216-7.5<br><br>12/16/15<br>114-MW14A | 114-MW14A-GA01-5.5<br>5.5<br>06/16/11<br>114-MW14A | 114-MW14A-GA01-12.0<br>12<br>06/16/11<br>114-MW14A | 114-MW14B-GA01-30.5<br>30.5<br>06/16/11<br>114-MW14B | 114-MW15A-0412<br>4.5<br>04/03/12<br>114-MW15A | 114-MW16A-20151214-10.65<br><br>12/14/15<br>114-MW16A | 114-MW16A-20151215-14.65<br><br>12/15/15<br>114-MW16A |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | 37,600 | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | 2,000 U | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | 3,000 UJ | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | 20.72 | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | 1,600 JB | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | 1,250 | 890 | 620 | 2,410 | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 120 | 102.9 | 330 | 174.5 | NA | NA |
| pH | ARC-pH | SU | NA | NA | 6.49 | 6.5 | 6.22 | 7.19 | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | 24.96 | 20.18 | 19.88 | 19.13 | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | 2.5 | 6.9 | 3.8 | 8.28 | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-MW16A-F-20151214-10.65 | 114-MW16A-F-20151215-14.65 | 114-MW16A-GA01-9.5 | 114-MW16A-GA01-13.5 | 114-MW16B-20151214 | 114-MW16B-F-20151214 | 114-MW16B-GA01-32.5 | 114-MW19A-GA01-6.0 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | 9.5 | 13.5 | | | 32.5 | |
| Date Collected: | | | 12/14/15 | 12/15/15 | 06/16/11 | 06/16/11 | 12/14/15 | 12/14/15 | 06/16/11 | 06/22/11 |
| Location ID: | CAS Number | Units | 114-MW16A | 114-MW16A | 114-MW16A | 114-MW16A | 114-MW16B | 114-MW16B | 114-MW16B | 114-MW19A |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | 0.020 U | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | 0.020 U | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | 2.0 U | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | 2.0 U | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | 2.5 U | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW16A-F-20151214-10.65<br><br>12/14/15<br>114-MW16A | 114-MW16A-F-20151215-14.65<br><br>12/15/15<br>114-MW16A | 114-MW16A-GA01-9.5<br>9.5<br>06/16/11<br>114-MW16A | 114-MW16A-GA01-13.5<br>13.5<br>06/16/11<br>114-MW16A | 114-MW16B-20151214<br><br>12/14/15<br>114-MW16B | 114-MW16B-F-20151214<br><br>12/14/15<br>114-MW16B | 114-MW16B-GA01-32.5<br>32.5<br>06/16/11<br>114-MW16B | 114-MW19A-GA01-6.0<br><br>06/22/11<br>114-MW19A |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | 38 U | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | 2.5 U | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | 38 U | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | 25 U | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | 25 U | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | 25 U | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | 25 U | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | 38 U | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | 0.063 U | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | 0.063 U | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | 0.063 U | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | 1.3 U | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | 1.3 U | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW16A-F-20151214-10.65<br><br>12/14/15<br>114-MW16A | 114-MW16A-F-20151215-14.65<br><br>12/15/15<br>114-MW16A | 114-MW16A-GA01-9.5<br>9.5<br>06/16/11<br>114-MW16A | 114-MW16A-GA01-13.5<br>13.5<br>06/16/11<br>114-MW16A | 114-MW16B-20151214<br><br>12/14/15<br>114-MW16B | 114-MW16B-F-20151214<br><br>12/14/15<br>114-MW16B | 114-MW16B-GA01-32.5<br>32.5<br>06/16/11<br>114-MW16B | 114-MW19A-GA01-6.0<br><br>06/22/11<br>114-MW19A |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | 1.3 U | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | 2.5 U | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | 2.5 U | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | 0.025 U | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | 1.3 U | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | 1.3 U | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | 1.3 U | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | 1.3 U | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | 0.25 U | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | 13 U | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | 8.8 U | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | 105 J | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | 2.5 U | 2.5 U | 6.0 U | NA | 2.5 U | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | 10.5 | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | 15.5 J | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | 1.0 U | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | 2.4 J | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | 36,200 | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 12.5 | 13.7 | 27.0 | NA | 16.8 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 10.0 U | 10.0 U | 22 | NA | 5.1 J | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | 50 U | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | 14.8 J | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | 97.2 J | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | 3.0 U | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | 2,300 J | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | 8.3 J | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW16A-F-20151214-10.65<br><br>12/14/15<br>114-MW16A | 114-MW16A-F-20151215-14.65<br><br>12/15/15<br>114-MW16A | 114-MW16A-GA01-9.5<br>9.5<br>06/16/11<br>114-MW16A | 114-MW16A-GA01-13.5<br>13.5<br>06/16/11<br>114-MW16A | 114-MW16B-20151214<br><br>12/14/15<br>114-MW16B | 114-MW16B-F-20151214<br><br>12/14/15<br>114-MW16B | 114-MW16B-GA01-32.5<br>32.5<br>06/16/11<br>114-MW16B | 114-MW19A-GA01-6.0<br><br>06/22/11<br>114-MW19A |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | 0.20 U | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | 12.1 | 12.1 | 3.1 JB | NA | 9.1 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | 19,200 | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | 10 U | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | 10 U | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | 74,300 | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | 38,300 | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | 1.0 U | 1.0 U | 2.0 U | NA | 1.0 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | 24.6 | 25.8 | NA | NA | 51.0 | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | 5.0 U | 5.0 U | 10.7 J | NA | 25.1 | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | 22.1 UB | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 3.2 J | 10 U | NA | NA | NA | 26.8 | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 5.5 U | 5.5 U | NA | NA | NA | 21 | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 12,600 | NA | NA | NA | NA | 37,600 | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW16A-F-20151214-10.65<br><br>12/14/15<br>114-MW16A | 114-MW16A-F-20151215-14.65<br><br>12/15/15<br>114-MW16A | 114-MW16A-GA01-9.5<br>9.5<br>06/16/11<br>114-MW16A | 114-MW16A-GA01-13.5<br>13.5<br>06/16/11<br>114-MW16A | 114-MW16B-20151214<br><br>12/14/15<br>114-MW16B | 114-MW16B-F-20151214<br><br>12/14/15<br>114-MW16B | 114-MW16B-GA01-32.5<br>32.5<br>06/16/11<br>114-MW16B | 114-MW19A-GA01-6.0<br><br>06/22/11<br>114-MW19A |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | 2,000 U | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 362 | 366 | 425 | 422 | 350 | 359 | 406 | NA |
| pH | ARC-pH | SU | 6.5 | 7.51 | 7.21 | 7.23 | 7.39 | 7.74 | 8.41 | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 301 | NA | NA | NA | 497 | 497 | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW16A-F-20151214-10.65<br><br>12/14/15<br>114-MW16A | 114-MW16A-F-20151215-14.65<br><br>12/15/15<br>114-MW16A | 114-MW16A-GA01-9.5<br>9.5<br>06/16/11<br>114-MW16A | 114-MW16A-GA01-13.5<br>13.5<br>06/16/11<br>114-MW16A | 114-MW16B-20151214<br><br>12/14/15<br>114-MW16B | 114-MW16B-F-20151214<br><br>12/14/15<br>114-MW16B | 114-MW16B-GA01-32.5<br>32.5<br>06/16/11<br>114-MW16B | 114-MW19A-GA01-6.0<br><br>06/22/11<br>114-MW19A |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 37,600 | NA | NA | NA | 109,000 | 109,000 | NA | NA |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | NA | NA | NA | 2,000 U | 2,000 U | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | NA | NA | NA | 3,000 UJ | 3,000 UJ | NA | NA |
| Temperature | ARC-Temp | deg c | 20.72 | NA | NA | NA | 16.95 | 16.95 | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | 1,800 JB | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | 2,670 | 970 | NA | NA | 1,980 | 510 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 311.6 | 324.4 | NA | NA | 321.6 | 124.8 |
| pH | ARC-pH | SU | NA | NA | 5.77 | 5.4 | NA | NA | 8.12 | 7.29 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | 23.58 | 20.58 | NA | NA | 30.28 | 25.41 |
| Turbidity | ARC-Turb | NTU | NA | NA | 1.56 | 4.49 | NA | NA | 3.39 | 110 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW19A-GA01-12.0<br>12<br>06/22/11<br>114-MW19A | 114-MW19B-GA01-47.5<br>47.5<br>06/14/11<br>114-MW19B | 114-MW19C-0412<br>98<br>04/02/12<br>114-MW19C | 114-MW20A-10.5-20151001<br>10.5<br>10/01/15<br>114-MW20A | 114-MW20A-12.5-20151001<br>12.5<br>10/01/15<br>114-MW20A | 114-MW20A-GA01-11.25<br>11.25<br>07/18/11<br>114-MW20A | 114-MW20B-36.0-20151001<br>36<br>10/01/15<br>114-MW20B | 114-MW20B-GA01-37.5<br>37.5<br>06/14/11<br>114-MW20B |
|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 10 U | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 10 U | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | 1.0 U | 50 U | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 10 U | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 10 U | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 10 U | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 10 U | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 10 U | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | 2.0 U | 2.0 U | 0.020 U | 20 U | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 0.020 U | 10 U | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 10 U | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 10 U | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 10 U | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 10 U | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 10 U | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | 2.0 U | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | 10 U | 10 U | 10 U | 100 U | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | 5.0 U | 1.1 J | 0.80 J | 50 U | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | 26.5 | 32.7 | 19 | 100 U | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | 32.6 | 36.8 | 38 | 1,170 | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 10 U | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 10 U | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 10 U | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | 2.0 U | 2.0 U | 1.0 U | 20 U | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | 0.33 J | 0.37 J | 0.49 J | 20 U | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 10 U | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | 2.0 U | 2.0 U | 1.0 U | 20 U | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | 2.0 U | 2.0 U | 1.0 U | 20 U | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 10 U | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 10 U | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 10 U | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 10 U | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 10 U | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 10 U | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 10 U | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | 1.0 U | 3.7 J | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | 2.0 U | 2.0 U | 1.0 U | 20 U | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | 50.5 | 59.0 | 60 | 1,990 | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | 6.3 | 7.4 | 9.2 | 108 | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | 36.7 | 43.2 | 44 | 253 | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | NA | 50 U | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | 10 U | 50 U | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | 1.0 U | 2.6 J | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 10 U | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | 32.4 | 37.5 | 35 | 258 | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 0.23 J | 10 U | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 10 U | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | 15.4 | 18.7 | 20 | 62.5 | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | 230 | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | 69.1 | 80.7 | NA | 510 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW19A-GA01-12.0<br>12<br>06/22/11<br>114-MW19A | 114-MW19B-GA01-47.5<br>47.5<br>06/14/11<br>114-MW19B | 114-MW19C-0412<br>98<br>04/02/12<br>114-MW19C | 114-MW20A-10.5-20151001<br>10.5<br>10/01/15<br>114-MW20A | 114-MW20A-12.5-20151001<br>12.5<br>10/01/15<br>114-MW20A | 114-MW20A-GA01-11.25<br>11.25<br>07/18/11<br>114-MW20A | 114-MW20B-36.0-20151001<br>36<br>10/01/15<br>114-MW20B | 114-MW20B-GA01-37.5<br>37.5<br>06/14/11<br>114-MW20B |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 10 U | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 10 U | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 10 U | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 10 U | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | 0.78 J | 1.2 | 10 U | 23.5 | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | 2.0 U | 2.0 U | 10 U | 2.0 U | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | NA | 1.0 U | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | 2.0 U | 2.0 U | 10 U | 2.0 U | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | 5.1 U | 5.0 U | 10 U | 5.1 U | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | 5.1 U | 5.0 U | 10 U | 5.1 U | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | 5.1 U | 5.0 U | 10 U | 5.1 U | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | 2.0 U | 2.0 U | 10 U | 2.0 U | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | 5.1 U | 5.0 U | 10 U | 5.1 U | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | 10 U | 10 U | 31 U | 10 U | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | NA | 1.0 U | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 2.1 U | 1.0 U | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | 2.0 U | 2.0 U | 10 U | 2.0 U | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | 5.1 U | 5.0 U | 10 U | 5.1 U | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | 0.51 U | 0.50 U | 31 U | 0.51 U | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | 15.2 | 22.5 | 25 | 58.7 | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | 2.0 U | 2.0 U | 10 U | 2.0 U | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | 5.1 U | 5.0 U | 21 U | 5.1 U | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | 5.1 U | 5.0 U | 10 U | 5.1 U | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | 2.0 U | 2.0 U | 21 U | 2.0 U | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | 5.1 U | 5.0 U | 21 U | 5.1 U | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | 2.0 U | 2.0 U | 10 U | 2.0 U | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | 5.1 U | 5.0 U | 10 U | 5.1 U | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | 2.0 U | 2.0 U | 10 U | 2.0 U | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | 4.7 | 5.8 | 7.0 J | 2.0 U | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | 5.1 U | 5.0 U | 21 U | 5.1 U | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | 10 U | 10 U | 31 U | 10 U | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | 4.6 | 7.1 | 9.6 J | 107 | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | 0.45 J | 0.54 J | 10 U | 5.2 | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | 2.0 U | 2.0 U | 10 U | 37.3 | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 10 U | 2.2 | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | 2.0 U | 2.0 U | 10 U | 2.0 U | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | 5.1 U | 5.0 U | 10 U | 5.1 U | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | 0.051 U | 0.050 U | 0.050 J | 0.051 U | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | 0.051 U | 0.050 U | 0.047 J | 0.051 U | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | 0.10 U | 0.10 U | 0.060 | 0.10 U | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 10 U | 1.0 U | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | 0.10 U | 0.10 U | 1.0 U | 0.10 U | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | 2.0 U | 2.0 U | 10 U | 2.0 U | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | 2.0 U | 2.0 U | 1.0 U | 2.0 U | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | 2.0 U | 2.0 U | 10 U | 2.0 U | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | 2.0 U | 2.0 U | 10 U | 2.0 U | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW19A-GA01-12.0<br>12<br>06/22/11<br>114-MW19A | 114-MW19B-GA01-47.5<br>47.5<br>06/14/11<br>114-MW19B | 114-MW19C-0412<br>98<br>04/02/12<br>114-MW19C | 114-MW20A-10.5-20151001<br>10.5<br>10/01/15<br>114-MW20A | 114-MW20A-12.5-20151001<br>12.5<br>10/01/15<br>114-MW20A | 114-MW20A-GA01-11.25<br>11.25<br>07/18/11<br>114-MW20A | 114-MW20B-36.0-20151001<br>36<br>10/01/15<br>114-MW20B | 114-MW20B-GA01-37.5<br>37.5<br>06/14/11<br>114-MW20B |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | 2.0 U | 2.0 U | 10 U | 2.0 U | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 10 U | 3.5 | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 10 U | 1.0 U | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | 0.10 U | 0.10 U | 1.0 U | 0.10 U | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | 5.1 U | 5.0 U | 10 U | 3.3 J | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | 2.0 U | 2.0 U | 10 U | 2.0 U | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | 2.0 U | 2.0 U | 10 U | 2.0 U | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | 2.0 U | 2.0 U | 10 U | 2.0 U | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | 2.1 U | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | 2.0 U | 2.0 U | 10 U | 2.0 U | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 10 U | 1.1 | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | 1.0 | 1.4 | 10 U | 32.0 | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 2.1 U | 1.0 U | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | 0.015 U | 0.015 U | 0.021 U | 0.015 U | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | 10 U | 10 U | 10 U | 10 U | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | 2.0 U | 2.0 U | 1.0 U | 2.0 U | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | 0.10 U | 0.10 U | 1.0 U | 0.10 U | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | 2.0 U | 2.0 U | 10 U | 2.0 U | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | 126 | 165 | 210 | 1,070 J | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | 2.0 U | 2.0 U | 1.0 U | 2.0 U | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | 2.0 U | 2.0 U | 1.0 U | 2.0 U | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | 5.1 U | 5.0 U | 10 U | 5.1 U | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | 5.1 U | 5.0 U | 10 U | 5.1 U | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | 0.25 U | 0.25 U | 0.23 | 0.25 U | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | 0.51 J | 0.57 J | 10 U | 28.6 | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | 6.4 | 8.3 | 13 | 2.0 U | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 10 U | 1.1 | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | 260 | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | 47.2 J [43.7 J] | 240 J | 270 J | NA | 289 J | NA |
| Antimony | 7440-36-0 | ug/L | 4.2 | 2.5 U | 6.0 U [6 U] | 7.0 | 8.0 | 8.3 | 15.0 J | 2.5 U |
| Arsenic | 7440-38-2 | ug/L | NA | NA | 12.7 [15.4] | 55.4 | 66.5 | NA | 119 | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | 170 J [183 J] | 121 J | 104 J | NA | 21.8 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | 1.0 U [1 U] | 1.0 U | 1.0 U | NA | 1.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | 3.0 U [3 U] | 0.40 J | 3.0 U | NA | 3.0 U | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | 124,000 [134,000] | 40,800 | 31,800 | NA | 6,990 | NA |
| Chromium | 7440-47-3 | ug/L | 3,770 | 12.4 | 10.0 [15.5] | 23.5 | 28.1 | 67.4 | 52,000 J | 115,000 |
| Chromium VI | 18540-29-9 | ug/L | 100 U | 6.6 J | 10 U [10 U] | 10 U | 10 U | 10.0 U | 40,800 J | 120,000 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | 50 UJ [50 UJ] | 50 U | 50 U | NA | 8.7 J | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | 10 UJ [10 UJ] | 8.6 J | 10 U | NA | 10 U | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 100 UJ [100 UJ] | 734 | 593 | NA | 245 | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | 3.0 U [3 U] | 23.3 | 30.4 | NA | 15 U | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | 12,200 [13,000] | 4,980 J | 3,580 J | NA | 1,550 J | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | 48.3 [48.3] | 92.8 | 49.8 | NA | 12.5 J | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW19A-GA01-12.0<br>12<br>06/22/11<br>114-MW19A | 114-MW19B-GA01-47.5<br>47.5<br>06/14/11<br>114-MW19B | 114-MW19C-0412<br>98<br>04/02/12<br>114-MW19C | 114-MW20A-10.5-20151001<br>10.5<br>10/01/15<br>114-MW20A | 114-MW20A-12.5-20151001<br>12.5<br>10/01/15<br>114-MW20A | 114-MW20A-GA01-11.25<br>11.25<br>07/18/11<br>114-MW20A | 114-MW20B-36.0-20151001<br>36<br>10/01/15<br>114-MW20B | 114-MW20B-GA01-37.5<br>37.5<br>06/14/11<br>114-MW20B |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | 0.20 U [0.2 U] | 0.20 U | 0.20 U | NA | 0.40 U | NA |
| Nickel | 7440-02-0 | ug/L | 143 | 7.3 | 5.2 J [6.4 J] | 4.4 J | 6.0 J | 10 | 8.0 J | 11.3 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | 37,600 [40,500] | 21,300 | 26,300 | NA | 54,500 | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | 10 U [10 U] | 10 U | 10 U | NA | 10 U | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | 10 U [10 U] | 10 U | 10 U | NA | 10 U | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | 341,000 [369,000] | 436,000 | 519,000 | NA | 436,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 1.0 U | 1.0 U | 2.0 U [2 U] | 2.0 U | 2.0 U | 1.0 U | 10 U | 1.0 U |
| Total CCPW Metals | CCPW-M | ug/L | 4,750 | 24.3 | 18.1 [24.9] | NA | NA | 159 | NA | 115,000 |
| Vanadium | 7440-62-2 | ug/L | 831 | 4.6 J | 2.9 J [3 J] | 20.7 J | 28.0 J | 73.0 | 206 J | 82.4 |
| Zinc | 7440-66-6 | ug/L | NA | NA | 10.8 J [6.3 J] | 18.8 JB | 24.8 JB | NA | 25.0 JB | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW19A-GA01-12.0<br>12<br>06/22/11<br>114-MW19A | 114-MW19B-GA01-47.5<br>47.5<br>06/14/11<br>114-MW19B | 114-MW19C-0412<br>98<br>04/02/12<br>114-MW19C | 114-MW20A-10.5-20151001<br>10.5<br>10/01/15<br>114-MW20A | 114-MW20A-12.5-20151001<br>12.5<br>10/01/15<br>114-MW20A | 114-MW20A-GA01-11.25<br>11.25<br>07/18/11<br>114-MW20A | 114-MW20B-36.0-20151001<br>36<br>10/01/15<br>114-MW20B | 114-MW20B-GA01-37.5<br>37.5<br>06/14/11<br>114-MW20B |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 346 | 358 | 299 [307] | 259 | 235 | 369 | 159 | 108 |
| pH | ARC-pH | SU | 9.74 | 8.00 | 8.74 [8.83] | 9.24 | 9.40 | 10.1 | 9.96 | 10.6 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW19A-GA01-12.0<br>12<br>06/22/11<br>114-MW19A | 114-MW19B-GA01-47.5<br>47.5<br>06/14/11<br>114-MW19B | 114-MW19C-0412<br>98<br>04/02/12<br>114-MW19C | 114-MW20A-10.5-20151001<br>10.5<br>10/01/15<br>114-MW20A | 114-MW20A-12.5-20151001<br>12.5<br>10/01/15<br>114-MW20A | 114-MW20A-GA01-11.25<br>11.25<br>07/18/11<br>114-MW20A | 114-MW20B-36.0-20151001<br>36<br>10/01/15<br>114-MW20B | 114-MW20B-GA01-37.5<br>37.5<br>06/14/11<br>114-MW20B |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 40 | 240 | 490 | NA | NA | 2,050 | NA | 1,060 |
| Oxidation Reduction Potential | ARC-ORP | mV | 142.2 | 163.1 | 111 | NA | NA | 133.8 | NA | 188.8 |
| pH | ARC-pH | SU | 9.59 | 7.51 | 9.2 | NA | NA | 8.26 | NA | 11.75 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 17.43 | 16.17 | 14.07 | NA | NA | 22.6 | NA | 16.06 |
| Turbidity | ARC-Turb | NTU | 2.09 | 4.83 | 4.16 | NA | NA | 3.12 | NA | 2.22 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW20C-78.5-20151001<br>78.5<br>10/01/15<br>114-MW20C | 114-MW21A-GA01-10.5<br>10.5<br>06/30/11<br>114-MW21A | 114-MW21B-GA01-31.5<br>31.5<br>06/14/11<br>114-MW21B | 114-MW22A-GA01-10.0<br>10<br>06/15/11<br>114-MW22A | 114-MW22A-GA01-16.0<br>16<br>06/15/11<br>114-MW22A | 114-MW22B-GA01-29.5<br>29.5<br>06/15/11<br>114-MW22B | 114-MW23A-GA01-5.0<br>5<br>06/24/11<br>114-MW23A | 114-MW23A-GA01-9.5<br>9.5<br>06/24/11<br>114-MW23A |
|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | 1.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | 1.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | 5.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | 1.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | 1.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | 1.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | 1.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | 1.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | 2.0 U | NA | NA | 0.020 U [0.02 U] | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | 1.0 U | NA | NA | 0.020 U [0.02 U] | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | 1.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | 1.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | 1.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | 1.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | 1.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | 2.0 U [2 U] | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | 10 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | 5.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | 10 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | 44.7 | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | 1.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | 1.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | 1.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | 2.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | 2.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | 1.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | 2.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | 2.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | 1.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | 1.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | 1.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | 1.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | 1.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | 1.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | 1.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | 5.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | 2.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | 0.45 J | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | 1.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | 1.0 U | NA | NA | 2.0 U [2 U] | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | 5.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | 5.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | 1.0 U | NA | NA | 4.3 [4.6] | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | 1.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | 1.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | 1.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | 1.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | 4.3 [4.6] | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | 0.21 J | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW20C-78.5-20151001<br>78.5<br>10/01/15<br>114-MW20C | 114-MW21A-GA01-10.5<br>10.5<br>06/30/11<br>114-MW21A | 114-MW21B-GA01-31.5<br>31.5<br>06/14/11<br>114-MW21B | 114-MW22A-GA01-10.0<br>10<br>06/15/11<br>114-MW22A | 114-MW22A-GA01-16.0<br>16<br>06/15/11<br>114-MW22A | 114-MW22B-GA01-29.5<br>29.5<br>06/15/11<br>114-MW22B | 114-MW23A-GA01-5.0<br>5<br>06/24/11<br>114-MW23A | 114-MW23A-GA01-9.5<br>9.5<br>06/24/11<br>114-MW23A |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | 1.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | 1.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | 1.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | 1.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | 1.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | 2.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | 2.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | 5.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | 5.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | 5.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | 2.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | 5.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | 10 U | NA | NA | 30 U [30 U] | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | 1.0 U | NA | NA | 2.0 U [2 U] | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | 2.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | 5.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | 0.50 U | NA | NA | 30 U [30 U] | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | 1.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | 2.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | 5.0 U | NA | NA | 20 U [20 U] | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | 5.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | 2.0 U | NA | NA | 20 U [20 U] | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | 5.0 U | NA | NA | 20 U [20 U] | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | 2.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | 5.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | 2.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | 2.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | 5.0 U | NA | NA | 20 U [20 U] | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | 10 U | NA | NA | 30 U [30 U] | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | 0.53 J | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | 1.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | 2.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | 1.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | 2.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | 5.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | 0.050 U | NA | NA | 0.051 U [0.051 U] | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | 0.050 U | NA | NA | 0.051 U [0.051 U] | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | 0.10 U | NA | NA | 0.051 U [0.051 U] | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | 1.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | 0.10 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | 2.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | 2.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | 2.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | 2.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW20C-78.5-20151001<br>78.5<br>10/01/15<br>114-MW20C | 114-MW21A-GA01-10.5<br>10.5<br>06/30/11<br>114-MW21A | 114-MW21B-GA01-31.5<br>31.5<br>06/14/11<br>114-MW21B | 114-MW22A-GA01-10.0<br>10<br>06/15/11<br>114-MW22A | 114-MW22A-GA01-16.0<br>16<br>06/15/11<br>114-MW22A | 114-MW22B-GA01-29.5<br>29.5<br>06/15/11<br>114-MW22B | 114-MW23A-GA01-5.0<br>5<br>06/24/11<br>114-MW23A | 114-MW23A-GA01-9.5<br>9.5<br>06/24/11<br>114-MW23A |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | 2.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | 1.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | 1.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | 0.10 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | 5.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | 2.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | 2.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | 2.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | 2.0 U [2 U] | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | 2.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | 1.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | 1.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | 1.0 U | NA | NA | 2.0 U [2 U] | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | 0.015 U | NA | NA | 0.020 U [0.02 U] | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | 10 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | 2.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | 0.10 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | 2.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | 1.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | 2.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | 2.0 U | NA | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | 5.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | 5.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | 0.25 U | NA | NA | 0.20 U [0.2 U] | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | 1.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | 2.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | 1.0 U | NA | NA | 10 U [10 U] | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | 7.0 U [7 U] | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 876 | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 6.0 U | 25.0 U | 2.5 U | 2.5 U [2.5 U] | 2.5 U | 2.5 U | 2.5 U | 2.5 U |
| Arsenic | 7440-38-2 | ug/L | 3.7 | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | 289 | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 3.0 U | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | 147,000 | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 17.5 | 1,130,000 | 392,000 | 5.0 U [5 U] | 4.2 J | 38,800 | 5,270 | 6,500 |
| Chromium VI | 18540-29-9 | ug/L | 10 U | 1,280,000 | 472,000 | 20.0 U [20 U] | 10.0 U | 35,100 | 4,840 | 5,900 |
| Cobalt | 7440-48-4 | ug/L | 1.0 J | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | 13.8 J | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 3,260 | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | 4.6 | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | 30,200 | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 541 | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW20C-78.5-20151001<br>78.5<br>10/01/15<br>114-MW20C | 114-MW21A-GA01-10.5<br>10.5<br>06/30/11<br>114-MW21A | 114-MW21B-GA01-31.5<br>31.5<br>06/14/11<br>114-MW21B | 114-MW22A-GA01-10.0<br>10<br>06/15/11<br>114-MW22A | 114-MW22A-GA01-16.0<br>16<br>06/15/11<br>114-MW22A | 114-MW22B-GA01-29.5<br>29.5<br>06/15/11<br>114-MW22B | 114-MW23A-GA01-5.0<br>5<br>06/24/11<br>114-MW23A | 114-MW23A-GA01-9.5<br>9.5<br>06/24/11<br>114-MW23A |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 6.1 J | 56.9 | 319 | 5.0 U [5 U] | 5.0 U | 16.7 | 4.7 J | 4.9 J |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 7,090 J | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | 206,000 | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 2.0 U | 10.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | 1.0 U | 1.0 U | 1.0 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | 1,130,000 | 392,000 | 4.1 U [4.1 U] | 4.2 | 38,800 | 5,560 | 7,000 |
| Vanadium | 7440-62-2 | ug/L | 3.6 J | 119 | 160 | 5.0 U [5 U] | 5.0 U | 5.0 U | 290 | 494 |
| Zinc | 7440-66-6 | ug/L | 6.1 JB | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW20C-78.5-20151001<br>78.5<br>10/01/15<br>114-MW20C | 114-MW21A-GA01-10.5<br>10.5<br>06/30/11<br>114-MW21A | 114-MW21B-GA01-31.5<br>31.5<br>06/14/11<br>114-MW21B | 114-MW22A-GA01-10.0<br>10<br>06/15/11<br>114-MW22A | 114-MW22A-GA01-16.0<br>16<br>06/15/11<br>114-MW22A | 114-MW22B-GA01-29.5<br>29.5<br>06/15/11<br>114-MW22B | 114-MW23A-GA01-5.0<br>5<br>06/24/11<br>114-MW23A | 114-MW23A-GA01-9.5<br>9.5<br>06/24/11<br>114-MW23A |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 327 | 244 | 265 | 245 [290] | 281 | 324 | 342 | 332 |
| pH | ARC-pH | SU | 7.30 | 12.2 | 8.84 | 7.05 [6.99] | 7.00 | 7.46 | 9.39 | 10.1 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW20C-78.5-20151001<br>78.5<br>10/01/15<br>114-MW20C | 114-MW21A-GA01-10.5<br>10.5<br>06/30/11<br>114-MW21A | 114-MW21B-GA01-31.5<br>31.5<br>06/14/11<br>114-MW21B | 114-MW22A-GA01-10.0<br>10<br>06/15/11<br>114-MW22A | 114-MW22A-GA01-16.0<br>16<br>06/15/11<br>114-MW22A | 114-MW22B-GA01-29.5<br>29.5<br>06/15/11<br>114-MW22B | 114-MW23A-GA01-5.0<br>5<br>06/24/11<br>114-MW23A | 114-MW23A-GA01-9.5<br>9.5<br>06/24/11<br>114-MW23A |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 1,750 | 650 | 1,040 | 1,060 | 710 | 690 | 630 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 198.1 | 208.8 | 101.9 | 99.2 | 358.3 | 201.8 | 215.6 |
| pH | ARC-pH | SU | NA | 11.82 | 9.49 | 6.08 | 6.01 | 6.64 | 9.16 | 10.05 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 22.81 | 17.68 | 16.31 | 17.22 | 17.65 | 19.45 | 18.05 |
| Turbidity | ARC-Turb | NTU | NA | 3.71 | 18.9 | 8.05 | 2.27 | 6.22 | 7.96 | 8.59 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-MW23A-GA01-14.5 | 114-MW23B-GA01-37.5 | 114-MW24A | 114-MW24A 022112 | 114-MW24A-09242013 | 114-MW24A-20150722 | 114-MW24A-20170405 | 114-MW24A-20170405-F | 114-MW24B-20150722 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 14.5 | 37.5 | 11.6 | 11.3 | 12.5 | 11.5 | | | 32.5 |
| Date Collected: | | | 06/24/11 | 06/14/11 | 01/04/12 | 02/21/12 | 09/24/13 | 07/22/15 | 04/05/17 | 04/05/17 | 07/22/15 |
| Location ID: | CAS Number | Units | 114-MW23A | 114-MW23B | 114-MW24A | 114-MW24A | 114-MW24A | 114-MW24A | 114-MW24A | 114-MW24A | 114-MW24B |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW23A-GA01-14.5<br>14.5<br>06/24/11<br>114-MW23A | 114-MW23B-GA01-37.5<br>37.5<br>06/14/11<br>114-MW23B | 114-MW24A<br>11.6<br>01/04/12<br>114-MW24A | 114-MW24A 022112<br>11.3<br>02/21/12<br>114-MW24A | 114-MW24A-09242013<br>12.5<br>09/24/13<br>114-MW24A | 114-MW24A-20150722<br>11.5<br>07/22/15<br>114-MW24A | 114-MW24A-20170405<br><br>04/05/17<br>114-MW24A | 114-MW24A-20170405-F<br><br>04/05/17<br>114-MW24A | 114-MW24B-20150722<br>32.5<br>07/22/15<br>114-MW24B |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW23A-GA01-14.5<br>14.5<br>06/24/11<br>114-MW23A | 114-MW23B-GA01-37.5<br>37.5<br>06/14/11<br>114-MW23B | 114-MW24A<br>11.6<br>01/04/12<br>114-MW24A | 114-MW24A 022112<br>11.3<br>02/21/12<br>114-MW24A | 114-MW24A-09242013<br>12.5<br>09/24/13<br>114-MW24A | 114-MW24A-20150722<br>11.5<br>07/22/15<br>114-MW24A | 114-MW24A-20170405<br><br>04/05/17<br>114-MW24A | 114-MW24A-20170405-F<br><br>04/05/17<br>114-MW24A | 114-MW24B-20150722<br>32.5<br>07/22/15<br>114-MW24B |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 2.5 U | 2.5 U | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 6,820 | 9,020 | 31.5 | 42.1 | 83.5 | 37.2 | 15.4 J | NA | 3.9 J |
| Chromium VI | 18540-29-9 | ug/L | 6,780 | 9,660 | 7.6 J | 10 UJ | 12 | 4.4 J | 10 U | NA | 5.5 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW23A-GA01-14.5<br>14.5<br>06/24/11<br>114-MW23A | 114-MW23B-GA01-37.5<br>37.5<br>06/14/11<br>114-MW23B | 114-MW24A<br>11.6<br>01/04/12<br>114-MW24A | 114-MW24A 022112<br>11.3<br>02/21/12<br>114-MW24A | 114-MW24A-09242013<br>12.5<br>09/24/13<br>114-MW24A | 114-MW24A-20150722<br>11.5<br>07/22/15<br>114-MW24A | 114-MW24A-20170405<br><br>04/05/17<br>114-MW24A | 114-MW24A-20170405-F<br><br>04/05/17<br>114-MW24A | 114-MW24B-20150722<br>32.5<br>07/22/15<br>114-MW24B |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 3.8 J | 80.5 | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 1.0 U | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | 7,260 | 9,100 | 31.5 | 42.1 | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 441 | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 7.0 J | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW23A-GA01-14.5<br>14.5<br>06/24/11<br>114-MW23A | 114-MW23B-GA01-37.5<br>37.5<br>06/14/11<br>114-MW23B | 114-MW24A<br>11.6<br>01/04/12<br>114-MW24A | 114-MW24A 022112<br>11.3<br>02/21/12<br>114-MW24A | 114-MW24A-09242013<br>12.5<br>09/24/13<br>114-MW24A | 114-MW24A-20150722<br>11.5<br>07/22/15<br>114-MW24A | 114-MW24A-20170405<br><br>04/05/17<br>114-MW24A | 114-MW24A-20170405-F<br><br>04/05/17<br>114-MW24A | 114-MW24B-20150722<br>32.5<br>07/22/15<br>114-MW24B |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 440 | 288 | 406 | 326 | 276 | 544 | 344 | 345 | 547 |
| pH | ARC-pH | SU | 10.3 | 7.87 | 8.69 | 7.16 | 6.96 | 6.91 | 6.59 | 6.61 | 6.91 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-MW23A-GA01-14.5 | 114-MW23B-GA01-37.5 | 114-MW24A | 114-MW24A 022112 | 114-MW24A-09242013 | 114-MW24A-20150722 | 114-MW24A-20170405 | 114-MW24A-20170405-F | 114-MW24B-20150722 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 14.5 | 37.5 | 11.6 | 11.3 | 12.5 | 11.5 | | | 32.5 |
| Date Collected: | | | 06/24/11 | 06/14/11 | 01/04/12 | 02/21/12 | 09/24/13 | 07/22/15 | 04/05/17 | 04/05/17 | 07/22/15 |
| Location ID: | CAS Number | Units | 114-MW23A | 114-MW23B | 114-MW24A | 114-MW24A | 114-MW24A | 114-MW24A | 114-MW24A | 114-MW24A | 114-MW24B |
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 290 | 540 | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 240.9 | 190.1 | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | 10.78 | 6.73 | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 17.19 | 15.8 | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | 8.45 | 3.81 | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-MW25A | 114-MW25A 022212 | 114-MW25A-09242013 | 114-MW25A-20150720 | 114-MW25A-20160926 | 114-MW25B | 114-MW25B-20150720 | 114-MW26A | 114-MW26A 022112 | 114-MW26A-09252013 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 11.3 | 11 | 12 | 11.5 | | 17 | 32.5 | 12.5 | 12 | 13 |
| Date Collected: | | | 01/05/12 | 02/22/12 | 09/24/13 | 07/20/15 | 09/26/16 | 04/24/14 | 07/20/15 | 01/04/12 | 02/21/12 | 09/25/13 |
| Location ID: | CAS Number | Units | 114-MW25A | 114-MW25A | 114-MW25A | 114-MW25A | 114-MW25A | 114-MW25B | 114-MW25B | 114-MW26A | 114-MW26A | 114-MW26A |
| **Volatile Organics** | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW25A<br>11.3<br>01/05/12<br>114-MW25A | 114-MW25A 022212<br>11<br>02/22/12<br>114-MW25A | 114-MW25A-09242013<br>12<br>09/24/13<br>114-MW25A | 114-MW25A-20150720<br>11.5<br>07/20/15<br>114-MW25A | 114-MW25A-20160926<br><br>09/26/16<br>114-MW25A | 114-MW25B<br>17<br>04/24/14<br>114-MW25B | 114-MW25B-20150720<br>32.5<br>07/20/15<br>114-MW25B | 114-MW26A<br>12.5<br>01/04/12<br>114-MW26A | 114-MW26A 022112<br>12<br>02/21/12<br>114-MW26A | 114-MW26A-09252013<br>13<br>09/25/13<br>114-MW26A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW25A<br>11.3<br>01/05/12<br>114-MW25A | 114-MW25A 022212<br>11<br>02/22/12<br>114-MW25A | 114-MW25A-09242013<br>12<br>09/24/13<br>114-MW25A | 114-MW25A-20150720<br>11.5<br>07/20/15<br>114-MW25A | 114-MW25A-20160926<br><br>09/26/16<br>114-MW25A | 114-MW25B<br>17<br>04/24/14<br>114-MW25B | 114-MW25B-20150720<br>32.5<br>07/20/15<br>114-MW25B | 114-MW26A<br>12.5<br>01/04/12<br>114-MW26A | 114-MW26A 022112<br>12<br>02/21/12<br>114-MW26A | 114-MW26A-09252013<br>13<br>09/25/13<br>114-MW26A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 408,000 | 444,000 | 1,920 | 202 | 165 | 25,100 | 2,940 | 4.8 J [5.6] | 9.1 | 2.4 J [2.4 J] |
| Chromium VI | 18540-29-9 | ug/L | 485,000 | 463,000 | 1,300 | 110 | 98 | 22,600 J | 2,500 | 10.0 U [10 U] | 10 UJ | 9 J [47 J] |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW25A<br>11.3<br>01/05/12<br>114-MW25A | 114-MW25A 022212<br>11<br>02/22/12<br>114-MW25A | 114-MW25A-09242013<br>12<br>09/24/13<br>114-MW25A | 114-MW25A-20150720<br>11.5<br>07/20/15<br>114-MW25A | 114-MW25A-20160926<br><br>09/26/16<br>114-MW25A | 114-MW25B<br>17<br>04/24/14<br>114-MW25B | 114-MW25B-20150720<br>32.5<br>07/20/15<br>114-MW25B | 114-MW26A<br>12.5<br>01/04/12<br>114-MW26A | 114-MW26A 022112<br>12<br>02/21/12<br>114-MW26A | 114-MW26A-09252013<br>13<br>09/25/13<br>114-MW26A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | 408,000 | 444,000 | NA | NA | NA | NA | NA | 4.8 [5.6] | 9.1 | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW25A<br>11.3<br>01/05/12<br>114-MW25A | 114-MW25A 022212<br>11<br>02/22/12<br>114-MW25A | 114-MW25A-09242013<br>12<br>09/24/13<br>114-MW25A | 114-MW25A-20150720<br>11.5<br>07/20/15<br>114-MW25A | 114-MW25A-20160926<br><br>09/26/16<br>114-MW25A | 114-MW25B<br>17<br>04/24/14<br>114-MW25B | 114-MW25B-20150720<br>32.5<br>07/20/15<br>114-MW25B | 114-MW26A<br>12.5<br>01/04/12<br>114-MW26A | 114-MW26A 022112<br>12<br>02/21/12<br>114-MW26A | 114-MW26A-09252013<br>13<br>09/25/13<br>114-MW26A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 477 | 346 | 276 | 459 | 355 | 358 | 512 | 402 [415] | 309 | 305 [283] |
| pH | ARC-pH | SU | 7.28 | 7.07 | 6.65 | 6.54 | 6.86 | 7.94 | 7.42 | 8.30 [8.34] | 7.07 | 7.13 [7.04] |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-MW25A | 114-MW25A 022212 | 114-MW25A-09242013 | 114-MW25A-20150720 | 114-MW25A-20160926 | 114-MW25B | 114-MW25B-20150720 | 114-MW26A | 114-MW26A 022112 | 114-MW26A-09252013 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 11.3 | 11 | 12 | 11.5 | | 17 | 32.5 | 12.5 | 12 | 13 |
| Date Collected: | | | 01/05/12 | 02/22/12 | 09/24/13 | 07/20/15 | 09/26/16 | 04/24/14 | 07/20/15 | 01/04/12 | 02/21/12 | 09/25/13 |
| Location ID: | CAS Number | Units | 114-MW25A | 114-MW25A | 114-MW25A | 114-MW25A | 114-MW25A | 114-MW25B | 114-MW25B | 114-MW26A | 114-MW26A | 114-MW26A |
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-MW26A-20150721 | 114-MW27A | 114-MW27A 022212 | 114-MW27A-09242013 | 114-MW27A-20150720 | 114-MW27B | 114-MW27B-20150720 | 114-MW28A | 114-MW28A 022112 | 114-MW28A-09252013 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 11.5 | 13.5 | 13.75 | 13.5 | 13.5 | 17 | 32.5 | 12.25 | 12 | 13 |
| Date Collected: | | | 07/21/15 | 01/05/12 | 02/22/12 | 09/24/13 | 07/20/15 | 04/24/14 | 07/20/15 | 01/04/12 | 02/21/12 | 09/25/13 |
| Location ID: | CAS Number | Units | 114-MW26A | 114-MW27A | 114-MW27A | 114-MW27A | 114-MW27A | 114-MW27B | 114-MW27B | 114-MW28A | 114-MW28A | 114-MW28A |
| **Volatile Organics** | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW26A-20150721<br>11.5<br>07/21/15<br>114-MW26A | 114-MW27A<br>13.5<br>01/05/12<br>114-MW27A | 114-MW27A 022212<br>13.75<br>02/22/12<br>114-MW27A | 114-MW27A-09242013<br>13.5<br>09/24/13<br>114-MW27A | 114-MW27A-20150720<br>13.5<br>07/20/15<br>114-MW27A | 114-MW27B<br>17<br>04/24/14<br>114-MW27B | 114-MW27B-20150720<br>32.5<br>07/20/15<br>114-MW27B | 114-MW28A<br>12.25<br>01/04/12<br>114-MW28A | 114-MW28A 022112<br>12<br>02/21/12<br>114-MW28A | 114-MW28A-09252013<br>13<br>09/25/13<br>114-MW28A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW26A-20150721<br>11.5<br>07/21/15<br>114-MW26A | 114-MW27A<br>13.5<br>01/05/12<br>114-MW27A | 114-MW27A 022212<br>13.75<br>02/22/12<br>114-MW27A | 114-MW27A-09242013<br>13.5<br>09/24/13<br>114-MW27A | 114-MW27A-20150720<br>13.5<br>07/20/15<br>114-MW27A | 114-MW27B<br>17<br>04/24/14<br>114-MW27B | 114-MW27B-20150720<br>32.5<br>07/20/15<br>114-MW27B | 114-MW28A<br>12.25<br>01/04/12<br>114-MW28A | 114-MW28A 022112<br>12<br>02/21/12<br>114-MW28A | 114-MW28A-09252013<br>13<br>09/25/13<br>114-MW28A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 1.2 J | 26.6 | 11.0 | 4.0 J | 10 U | 6.8 J | 1.2 J | 5.5 | 26.7 | 1.3 J |
| Chromium VI | 18540-29-9 | ug/L | 25 J | 10.0 U | 10 U | 10 U | 10 U | 10 UJ | 10 U | 10.0 U | 10 UJ | 10 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW26A-20150721<br>11.5<br>07/21/15<br>114-MW26A | 114-MW27A<br>13.5<br>01/05/12<br>114-MW27A | 114-MW27A 022212<br>13.75<br>02/22/12<br>114-MW27A | 114-MW27A-09242013<br>13.5<br>09/24/13<br>114-MW27A | 114-MW27A-20150720<br>13.5<br>07/20/15<br>114-MW27A | 114-MW27B<br>17<br>04/24/14<br>114-MW27B | 114-MW27B-20150720<br>32.5<br>07/20/15<br>114-MW27B | 114-MW28A<br>12.25<br>01/04/12<br>114-MW28A | 114-MW28A 022112<br>12<br>02/21/12<br>114-MW28A | 114-MW28A-09252013<br>13<br>09/25/13<br>114-MW28A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | 26.6 | 11.0 | NA | NA | NA | NA | 5.5 | 26.7 | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW26A-20150721<br>11.5<br>07/21/15<br>114-MW26A | 114-MW27A<br>13.5<br>01/05/12<br>114-MW27A | 114-MW27A 022212<br>13.75<br>02/22/12<br>114-MW27A | 114-MW27A-09242013<br>13.5<br>09/24/13<br>114-MW27A | 114-MW27A-20150720<br>13.5<br>07/20/15<br>114-MW27A | 114-MW27B<br>17<br>04/24/14<br>114-MW27B | 114-MW27B-20150720<br>32.5<br>07/20/15<br>114-MW27B | 114-MW28A<br>12.25<br>01/04/12<br>114-MW28A | 114-MW28A 022112<br>12<br>02/21/12<br>114-MW28A | 114-MW28A-09252013<br>13<br>09/25/13<br>114-MW28A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 346 | 465 | 319 | 277 | 563 | 362 | 567 | 392 | 310 | 282 |
| pH | ARC-pH | SU | 6.73 | 7.33 | 6.65 | 6.70 | 6.62 | 7.47 | 6.90 | 8.53 | 6.82 | 6.76 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW26A-20150721<br>11.5<br>07/21/15<br>114-MW26A | 114-MW27A<br>13.5<br>01/05/12<br>114-MW27A | 114-MW27A 022212<br>13.75<br>02/22/12<br>114-MW27A | 114-MW27A-09242013<br>13.5<br>09/24/13<br>114-MW27A | 114-MW27A-20150720<br>13.5<br>07/20/15<br>114-MW27A | 114-MW27B<br>17<br>04/24/14<br>114-MW27B | 114-MW27B-20150720<br>32.5<br>07/20/15<br>114-MW27B | 114-MW28A<br>12.25<br>01/04/12<br>114-MW28A | 114-MW28A 022112<br>12<br>02/21/12<br>114-MW28A | 114-MW28A-09252013<br>13<br>09/25/13<br>114-MW28A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-MW28A-20150721 | 114-MW30A 022212 | 114-MW30A-09252013 | 114-MW30A-20150721 | 114-MW-35-20151215-10.5 | 114-MW-35-20151215-15.5 | 114-MW-35-F-20151215-10.5 | 114-MW-35-F-20151215-15.5 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 11.5 | 10.6 | 12.5 | 12.5 | | | | |
| Date Collected: | | | 07/21/15 | 02/22/12 | 09/25/13 | 07/21/15 | 12/15/15 | 12/15/15 | 12/15/15 | 12/15/15 |
| Location ID: | CAS Number | Units | 114-MW28A | 114-MW30A | 114-MW30A | 114-MW30A | MW-35 | MW-35 | MW-35 | MW-35 |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW28A-20150721<br>11.5<br>07/21/15<br>114-MW28A | 114-MW30A 022212<br>10.6<br>02/22/12<br>114-MW30A | 114-MW30A-09252013<br>12.5<br>09/25/13<br>114-MW30A | 114-MW30A-20150721<br>12.5<br>07/21/15<br>114-MW30A | 114-MW-35-20151215-10.5<br><br>12/15/15<br>MW-35 | 114-MW-35-20151215-15.5<br><br>12/15/15<br>MW-35 | 114-MW-35-F-20151215-10.5<br><br>12/15/15<br>MW-35 | 114-MW-35-F-20151215-15.5<br><br>12/15/15<br>MW-35 |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW28A-20150721<br>11.5<br>07/21/15<br>114-MW28A | 114-MW30A 022212<br>10.6<br>02/22/12<br>114-MW30A | 114-MW30A-09252013<br>12.5<br>09/25/13<br>114-MW30A | 114-MW30A-20150721<br>12.5<br>07/21/15<br>114-MW30A | 114-MW-35-20151215-10.5<br><br>12/15/15<br>MW-35 | 114-MW-35-20151215-15.5<br><br>12/15/15<br>MW-35 | 114-MW-35-F-20151215-10.5<br><br>12/15/15<br>MW-35 | 114-MW-35-F-20151215-15.5<br><br>12/15/15<br>MW-35 |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 1.0 J | 4.5 | 1.8 J | 1.9 J | 961 | 1,460 | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 5 J | 50 U | 11 J | 10 U | 5.5 U | 5.5 U | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW28A-20150721<br>11.5<br>07/21/15<br>114-MW28A | 114-MW30A 022212<br>10.6<br>02/22/12<br>114-MW30A | 114-MW30A-09252013<br>12.5<br>09/25/13<br>114-MW30A | 114-MW30A-20150721<br>12.5<br>07/21/15<br>114-MW30A | 114-MW-35-20151215-10.5<br><br>12/15/15<br>MW-35 | 114-MW-35-20151215-15.5<br><br>12/15/15<br>MW-35 | 114-MW-35-F-20151215-10.5<br><br>12/15/15<br>MW-35 | 114-MW-35-F-20151215-15.5<br><br>12/15/15<br>MW-35 |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | 4.5 | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | 92.9 | 468 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | 5.6 UB | 5.5 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW28A-20150721<br>11.5<br>07/21/15<br>114-MW28A | 114-MW30A 022212<br>10.6<br>02/22/12<br>114-MW30A | 114-MW30A-09252013<br>12.5<br>09/25/13<br>114-MW30A | 114-MW30A-20150721<br>12.5<br>07/21/15<br>114-MW30A | 114-MW-35-20151215-10.5<br><br>12/15/15<br>MW-35 | 114-MW-35-20151215-15.5<br><br>12/15/15<br>MW-35 | 114-MW-35-F-20151215-10.5<br><br>12/15/15<br>MW-35 | 114-MW-35-F-20151215-15.5<br><br>12/15/15<br>MW-35 |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 291 | 318 | 255 | 300 | 311 | 316 | 326 | 330 |
| pH | ARC-pH | SU | 6.38 | 6.37 | 6.81 | 6.45 | 7.74 | 7.65 | 7.00 | 7.78 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW28A-20150721<br>11.5<br>07/21/15<br>114-MW28A | 114-MW30A 022212<br>10.6<br>02/22/12<br>114-MW30A | 114-MW30A-09252013<br>12.5<br>09/25/13<br>114-MW30A | 114-MW30A-20150721<br>12.5<br>07/21/15<br>114-MW30A | 114-MW-35-20151215-10.5<br><br>12/15/15<br>MW-35 | 114-MW-35-20151215-15.5<br><br>12/15/15<br>MW-35 | 114-MW-35-F-20151215-10.5<br><br>12/15/15<br>MW-35 | 114-MW-35-F-20151215-15.5<br><br>12/15/15<br>MW-35 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | 49,800 | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-MW36A-20150721 | 114-MW36A-20160926-8.5 | 114-MW36A-20160926-13.5 | 114-MW36B-20150721 | 114-MW37A-20150722 | 114-MW37B-20150722 | 114-MW38A-20150723 | 114-MW38A-20170331 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 12.5 | | | 32.5 | 12.5 | 32.5 | 22.5 | |
| Date Collected: | | | 07/21/15 | 09/26/16 | 09/26/16 | 07/21/15 | 07/22/15 | 07/22/15 | 07/23/15 | 03/31/17 |
| Location ID: | CAS Number | Units | 114-MW36A | 114-MW36A | 114-MW36A | 114-MW36B | 114-MW37A | 114-MW37B | 114-MW38A | 114-MW38A |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW36A-20150721<br>12.5<br>07/21/15<br>114-MW36A | 114-MW36A-20160926-8.5<br><br>09/26/16<br>114-MW36A | 114-MW36A-20160926-13.5<br><br>09/26/16<br>114-MW36A | 114-MW36B-20150721<br>32.5<br>07/21/15<br>114-MW36B | 114-MW37A-20150722<br>12.5<br>07/22/15<br>114-MW37A | 114-MW37B-20150722<br>32.5<br>07/22/15<br>114-MW37B | 114-MW38A-20150723<br>22.5<br>07/23/15<br>114-MW38A | 114-MW38A-20170331<br><br>03/31/17<br>114-MW38A |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW36A-20150721<br>12.5<br>07/21/15<br>114-MW36A | 114-MW36A-20160926-8.5<br><br>09/26/16<br>114-MW36A | 114-MW36A-20160926-13.5<br><br>09/26/16<br>114-MW36A | 114-MW36B-20150721<br>32.5<br>07/21/15<br>114-MW36B | 114-MW37A-20150722<br>12.5<br>07/22/15<br>114-MW37A | 114-MW37B-20150722<br>32.5<br>07/22/15<br>114-MW37B | 114-MW38A-20150723<br>22.5<br>07/23/15<br>114-MW38A | 114-MW38A-20170331<br><br>03/31/17<br>114-MW38A |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 50.1 | 10 UB | 10 UB | 105 | 1.4 J | 1.9 J [1.4 J] | 6.5 J | 8.0 J |
| Chromium VI | 18540-29-9 | ug/L | 10 U | 10 U | 10 U | 44 | 10 U | 3.2 J [3.2 J] | 10 U | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW36A-20150721<br>12.5<br>07/21/15<br>114-MW36A | 114-MW36A-20160926-8.5<br><br>09/26/16<br>114-MW36A | 114-MW36A-20160926-13.5<br><br>09/26/16<br>114-MW36A | 114-MW36B-20150721<br>32.5<br>07/21/15<br>114-MW36B | 114-MW37A-20150722<br>12.5<br>07/22/15<br>114-MW37A | 114-MW37B-20150722<br>32.5<br>07/22/15<br>114-MW37B | 114-MW38A-20150723<br>22.5<br>07/23/15<br>114-MW38A | 114-MW38A-20170331<br><br>03/31/17<br>114-MW38A |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW36A-20150721<br>12.5<br>07/21/15<br>114-MW36A | 114-MW36A-20160926-8.5<br><br>09/26/16<br>114-MW36A | 114-MW36A-20160926-13.5<br><br>09/26/16<br>114-MW36A | 114-MW36B-20150721<br>32.5<br>07/21/15<br>114-MW36B | 114-MW37A-20150722<br>12.5<br>07/22/15<br>114-MW37A | 114-MW37B-20150722<br>32.5<br>07/22/15<br>114-MW37B | 114-MW38A-20150723<br>22.5<br>07/23/15<br>114-MW38A | 114-MW38A-20170331<br><br>03/31/17<br>114-MW38A |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 317 | 139 | 137 | 355 | 554 | 546 [544] | 558 | 262 |
| pH | ARC-pH | SU | 6.91 | 11.07 | 11.09 | 7.55 | 6.51 | 6.96 [7] | 6.89 | 9.05 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW36A-20150721<br>12.5<br>07/21/15<br>114-MW36A | 114-MW36A-20160926-8.5<br><br>09/26/16<br>114-MW36A | 114-MW36A-20160926-13.5<br><br>09/26/16<br>114-MW36A | 114-MW36B-20150721<br>32.5<br>07/21/15<br>114-MW36B | 114-MW37A-20150722<br>12.5<br>07/22/15<br>114-MW37A | 114-MW37B-20150722<br>32.5<br>07/22/15<br>114-MW37B | 114-MW38A-20150723<br>22.5<br>07/23/15<br>114-MW38A | 114-MW38A-20170331<br><br>03/31/17<br>114-MW38A |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-MW38A-20170331-F | 114-MW38B-20150723 | 114-MW-MORISS1A-03262015 | 114-MW-MORRIS1A-03262015 | 114-MW-MORRIS1A-20160321 | 114-MW-MORRIS1A-F-20160321 | 114-OSB1I20060908 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | 39.5 | | | | | 15 - 20 |
| Date Collected: | | | 03/31/17 | 07/23/15 | 03/26/15 | 03/26/15 | 03/21/16 | 03/21/16 | 09/08/06 |
| Location ID: | CAS Number | Units | 114-MW38A | 114-MW38B | MW-Morris1A | MW-MORRIS1A | MW-Morris1A | MW-Morris1A | OSB-1 |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW38A-20170331-F<br><br>03/31/17<br>114-MW38A | 114-MW38B-20150723<br>39.5<br>07/23/15<br>114-MW38B | 114-MW-MORISS1A-03262015<br><br>03/26/15<br>MW-Morris1A | 114-MW-MORRIS1A-03262015<br><br>03/26/15<br>MW-MORRIS1A | 114-MW-MORRIS1A-20160321<br><br>03/21/16<br>MW-Morris1A | 114-MW-MORRIS1A-F-20160321<br><br>03/21/16<br>MW-Morris1A | 114-OSB1I20060908<br>15 - 20<br>09/08/06<br>OSB-1 |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW38A-20170331-F<br><br>03/31/17<br>114-MW38A | 114-MW38B-20150723<br>39.5<br>07/23/15<br>114-MW38B | 114-MW-MORISS1A-03262015<br><br>03/26/15<br>MW-Morris1A | 114-MW-MORRIS1A-03262015<br><br>03/26/15<br>MW-MORRIS1A | 114-MW-MORRIS1A-20160321<br><br>03/21/16<br>MW-Morris1A | 114-MW-MORRIS1A-F-20160321<br><br>03/21/16<br>MW-Morris1A | 114-OSB1I20060908<br>15 - 20<br>09/08/06<br>OSB-1 |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | 390 | NA | 1,310 |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | 6.0 U | NA | 6 U |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | 15 U | NA | 8 U |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | 80.7 J | NA | 200 U |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | 1.0 U | NA | 1 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | 0.80 J | NA | 4 U |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | 386,000 | NA | 123,000 |
| Chromium | 7440-47-3 | ug/L | NA | 3.7 J | NA | 10 U | 14.6 | NA | 10 U |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U | 10 RA | NA | 5.5 UJ | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | 250 U | NA | 50 U |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | 11.8 | NA | 25 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | 2,700 | NA | 4,290 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | 15 U | NA | 8.8 |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | 233 J | NA | 24,700 |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | 20.2 J | NA | 7,390 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW38A-20170331-F<br><br>03/31/17<br>114-MW38A | 114-MW38B-20150723<br>39.5<br>07/23/15<br>114-MW38B | 114-MW-MORISS1A-03262015<br><br>03/26/15<br>MW-Morris1A | 114-MW-MORRIS1A-03262015<br><br>03/26/15<br>MW-MORRIS1A | 114-MW-MORRIS1A-20160321<br><br>03/21/16<br>MW-Morris1A | 114-MW-MORRIS1A-F-20160321<br><br>03/21/16<br>MW-Morris1A | 114-OSB1I20060908<br>15 - 20<br>09/08/06<br>OSB-1 |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | 0.20 U | NA | 0.2 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | 16.4 J | NA | 40 U |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | 101,000 | NA | 9,900 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | 22.2 | NA | 10 U |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | 10 U | NA | 10 U |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | 2,360,000 | NA | 107,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | 1,130,000 | 555,000 | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | 20 U | NA | 10 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | 50 U |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | 17.0 J | NA | 50 U |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | 15.3 J | NA | 27.1 |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 2.4 J | NA | NA | 1.1 J | NA | 1.2 J | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 U | NA | 10 RA | NA | NA | 5.5 UJ | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | 1,260,000 | NA | 629,000 | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW38A-20170331-F<br><br>03/31/17<br>114-MW38A | 114-MW38B-20150723<br>39.5<br>07/23/15<br>114-MW38B | 114-MW-MORISS1A-03262015<br><br>03/26/15<br>MW-Morris1A | 114-MW-MORRIS1A-03262015<br><br>03/26/15<br>MW-MORRIS1A | 114-MW-MORRIS1A-20160321<br><br>03/21/16<br>MW-Morris1A | 114-MW-MORRIS1A-F-20160321<br><br>03/21/16<br>MW-Morris1A | 114-OSB1I20060908<br>15 - 20<br>09/08/06<br>OSB-1 |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | 31,300 | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | 2,000 U | 2,000 U | 2,000 U | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 243 | 525 | 203 | NA | 203 | 53.1 | NA |
| pH | ARC-pH | SU | 9.36 | 6.84 | 10.61 | 11.7 | 11.04 | 11.04 | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | 197 | 13.5 | 13.5 | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW38A-20170331-F<br><br>03/31/17<br>114-MW38A | 114-MW38B-20150723<br>39.5<br>07/23/15<br>114-MW38B | 114-MW-MORISS1A-03262015<br><br>03/26/15<br>MW-Morris1A | 114-MW-MORRIS1A-03262015<br><br>03/26/15<br>MW-MORRIS1A | 114-MW-MORRIS1A-20160321<br><br>03/21/16<br>MW-Morris1A | 114-MW-MORRIS1A-F-20160321<br><br>03/21/16<br>MW-Morris1A | 114-OSB1I20060908<br>15 - 20<br>09/08/06<br>OSB-1 |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | 585,000 | 930,000 | 846,000 | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | 198,000 | 80,000 | 71,300 | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | 465,000 J | 54,500 | 55,500 | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | 9.97 | 11 | 11 | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | 29,300 | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | 1,790 | NA | 400 | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 421 | NA | 243.5 | NA | NA |
| pH | ARC-pH | SU | NA | NA | 11.7 | NA | 11.07 | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | 9.97 | NA | 13.02 | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | 1.59 | NA | 9.32 | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-OSB1I20060908_J40484-4 | 114-OSB1S20060908 | 114-OSB1SD20060908 | 114-OSB2I20060908 | 114-OSB2I20060908_J40484-5 | 114-OSB2I20060908_J40484-6 | 114-OSB2S20060908 | 114OSB-5I20060921 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 15 - 20 | 7 - 12 | 7 - 12 | 15 - 20 | 15 - 20 | 15 - 20 | 7 - 12 | 12 - 17 |
| Date Collected: | | | 09/08/06 | 09/08/06 | 09/08/06 | 09/08/06 | 09/08/06 | 09/08/06 | 09/08/06 | 09/21/06 |
| Location ID: | CAS Number | Units | OSB-1 | OSB-1 | OSB-1 | OSB-2 | OSB-2 | OSB-2 | OSB-2 | OSB-5 |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 UJ |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.28 U |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-OSB1I20060908_J40484-4<br>15 - 20<br>09/08/06<br>OSB-1 | 114-OSB1S20060908<br>7 - 12<br>09/08/06<br>OSB-1 | 114-OSB1SD20060908<br>7 - 12<br>09/08/06<br>OSB-1 | 114-OSB2I20060908<br>15 - 20<br>09/08/06<br>OSB-2 | 114-OSB2I20060908_J40484-5<br>15 - 20<br>09/08/06<br>OSB-2 | 114-OSB2I20060908_J40484-6<br>15 - 20<br>09/08/06<br>OSB-2 | 114-OSB2S20060908<br>7 - 12<br>09/08/06<br>OSB-2 | 114OSB-5I20060921<br>12 - 17<br>09/21/06<br>OSB-5 |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-OSB1I20060908_J40484-4<br>15 - 20<br>09/08/06<br>OSB-1 | 114-OSB1S20060908<br>7 - 12<br>09/08/06<br>OSB-1 | 114-OSB1SD20060908<br>7 - 12<br>09/08/06<br>OSB-1 | 114-OSB2I20060908<br>15 - 20<br>09/08/06<br>OSB-2 | 114-OSB2I20060908_J40484-5<br>15 - 20<br>09/08/06<br>OSB-2 | 114-OSB2I20060908_J40484-6<br>15 - 20<br>09/08/06<br>OSB-2 | 114-OSB2S20060908<br>7 - 12<br>09/08/06<br>OSB-2 | 114OSB-5I20060921<br>12 - 17<br>09/21/06<br>OSB-5 |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 125,000 | 92,500 | 253,000 | NA | NA | 19,700 | 14,700 J |
| Antimony | 7440-36-0 | ug/L | NA | 6 U | 6 U | 6 U | NA | NA | 6 U | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | NA | 89.9 | 76.7 | 93.6 | NA | NA | 8 U | 9.6 J |
| Barium | 7440-39-3 | ug/L | NA | 751 | 646 | 1,740 | NA | NA | 228 | 200 UJ |
| Beryllium | 7440-41-7 | ug/L | NA | 5.3 | 4.5 | 14.4 | NA | NA | 1 U | 1.3 J |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 4.9 | 4.6 | 10.8 | NA | NA | 4 U | 4.0 U |
| Calcium | 7440-70-2 | ug/L | NA | 144,000 | 143,000 | 223,000 | NA | NA | 138,000 | 95,900 J |
| Chromium | 7440-47-3 | ug/L | NA | 134 | 98.8 | 317 | NA | NA | 10 U | 35.6 J |
| Chromium VI | 18540-29-9 | ug/L | 50 U | 50 U | 50 U | NA | NA | 50 U | 50 U | 50 U |
| Cobalt | 7440-48-4 | ug/L | NA | 65.2 | 52.7 | 148 | NA | NA | 50 U | 50 UJ |
| Copper | 7440-50-8 | ug/L | NA | 218 | 171 | 534 | NA | NA | 48.8 | 67.8 J |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 208,000 | 164,000 | 370,000 | NA | NA | 27,600 | 24,200 J |
| Lead | 7439-92-1 | ug/L | NA | 251 | 229 | 591 | NA | NA | 26.6 | 98.6 J |
| Magnesium | 7439-95-4 | ug/L | NA | 51,700 | 45,300 | 85,800 | NA | NA | 22,100 | 24,900 J |
| Manganese | 7439-96-5 | ug/L | NA | 12,300 | 11,800 | 12,700 | NA | NA | 3,470 | 4,900 J |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-OSB1I20060908_J40484-4<br>15 - 20<br>09/08/06<br>OSB-1 | 114-OSB1S20060908<br>7 - 12<br>09/08/06<br>OSB-1 | 114-OSB1SD20060908<br>7 - 12<br>09/08/06<br>OSB-1 | 114-OSB2I20060908<br>15 - 20<br>09/08/06<br>OSB-2 | 114-OSB2I20060908_J40484-5<br>15 - 20<br>09/08/06<br>OSB-2 | 114-OSB2I20060908_J40484-6<br>15 - 20<br>09/08/06<br>OSB-2 | 114-OSB2S20060908<br>7 - 12<br>09/08/06<br>OSB-2 | 114OSB-5I20060921<br>12 - 17<br>09/21/06<br>OSB-5 |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 1.3 | 1.1 | 5.2 | NA | NA | 0.2 U | 0.21 J |
| Nickel | 7440-02-0 | ug/L | NA | 115 | 86.4 | 255 | NA | NA | 40 U | 40 UJ |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 17,500 | 15,900 | 23,900 | NA | NA | 11,700 | 13,800 J |
| Selenium | 7782-49-2 | ug/L | NA | 10 U | 10 U | 10 U | NA | NA | 10 U | 10 U |
| Silver | 7440-22-4 | ug/L | NA | 10 U | 10 U | 10 U | NA | NA | 10 U | 10 U |
| Sodium | 7440-23-5 | ug/L | NA | 53,400 | 53,200 | 100,000 | NA | NA | 57,800 | 76,500 J |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 10 U | 10 U | 10 U | NA | NA | 10 U | 10 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | 508 | 387 | 1,020 | NA | NA | 50 U | 35.6 |
| Vanadium | 7440-62-2 | ug/L | NA | 259 | 202 | 450 | NA | NA | 50 U | 50 UJ |
| Zinc | 7440-66-6 | ug/L | NA | 781 | 714 | 1,720 | NA | NA | 102 | 114 J |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

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|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | 10 U | NA | 10 U | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

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|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA |

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|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | 1.0 U | 1.0 U | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | 0.28 U | 0.28 U | NA | NA | 0.21 U | 0.21 U | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114OSB-6I20060921<br>12 - 17<br>09/21/06<br>OSB-6 | 114OSB-6S20060921<br>4 - 9<br>09/21/06<br>OSB-6 | 114OSB-7I20060921<br>5 - 15<br>09/21/06<br>OSB-7 | 114OSB-7S20060921<br>2 - 7<br>09/21/06<br>OSB-7 | 114OSB-9I20060921<br>19 - 24<br>09/21/06<br>OSB-9 | 114OSB-9S20060921<br>11 - 16<br>09/21/06<br>OSB-9 | 114-P1A-MC-EW103-20150617<br><br>06/17/15<br>114-MC-EW103 | 114-P1A-MC-EW103-20150617-F<br><br>06/17/15<br>114-MC-EW103 |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

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| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114OSB-6I20060921<br>12 - 17<br>09/21/06<br>OSB-6 | 114OSB-6S20060921<br>4 - 9<br>09/21/06<br>OSB-6 | 114OSB-7I20060921<br>5 - 15<br>09/21/06<br>OSB-7 | 114OSB-7S20060921<br>2 - 7<br>09/21/06<br>OSB-7 | 114OSB-9I20060921<br>19 - 24<br>09/21/06<br>OSB-9 | 114OSB-9S20060921<br>11 - 16<br>09/21/06<br>OSB-9 | 114-P1A-MC-EW103-20150617<br><br>06/17/15<br>114-MC-EW103 | 114-P1A-MC-EW103-20150617-F<br><br>06/17/15<br>114-MC-EW103 |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 1,250,000 J | 153,000 J | 298,000 J | 7,330 J | 1,570,000 J | 1,600,000 J | 704 | NA |
| Antimony | 7440-36-0 | ug/L | 150 U | 6.0 U | 30 U | 6.0 U | 150 U | 150 U | 6.0 U | NA |
| Arsenic | 7440-38-2 | ug/L | 410 J | 43.1 J | 148 J | 8.0 UJ | 964 J | 1,130 J | 160 | NA |
| Barium | 7440-39-3 | ug/L | 5,390 J | 589 J | 1,720 J | 200 UJ | 17,700 J | 21,000 J | 89.8 J | NA |
| Beryllium | 7440-41-7 | ug/L | 80.5 J | 7.0 J | 26.2 J | 1.0 UJ | 101 J | 112 J | 1.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 100 U | 4.0 U | 20 U | 4.0 U | 100 U | 108 | 1.3 J | NA |
| Calcium | 7440-70-2 | ug/L | 254,000 J | 80,700 J | 156,000 J | 26,300 J | 765,000 J | 1,030,000 J | 96,600 | NA |
| Chromium | 7440-47-3 | ug/L | 3,090 J | 344 J | 1,080 J | 11.1 J | 10,600 J | 13,000 J | 11,000 | NA |
| Chromium VI | 18540-29-9 | ug/L | 50 U | 50 U | 400 | 50 U | 50 U | 50 U | 10 RA | NA |
| Cobalt | 7440-48-4 | ug/L | 1,300 U | 78.0 J | 250 UJ | 50 UJ | 1,300 UJ | 1,300 UJ | 18.4 J | NA |
| Copper | 7440-50-8 | ug/L | 1,760 J | 205 J | 470 J | 27.4 J | 5,180 J | 6,580 J | 15.5 JB | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 1,730,000 J | 190,000 J | 422,000 J | 9,230 J | 2,260,000 J | 2,490,000 J | 3,970 | NA |
| Lead | 7439-92-1 | ug/L | 2,450 J | 156 J | 349 J | 7.0 J | 23,700 J | 40,100 J | 15 U | NA |
| Magnesium | 7439-95-4 | ug/L | 413,000 J | 44,900 J | 124,000 J | 5,000 UJ | 654,000 J | 641,000 J | 14,400 | NA |
| Manganese | 7439-96-5 | ug/L | 44,000 J | 5,950 J | 10,300 J | 303 J | 42,100 J | 47,600 J | 369 | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114OSB-6I20060921<br>12 - 17<br>09/21/06<br>OSB-6 | 114OSB-6S20060921<br>4 - 9<br>09/21/06<br>OSB-6 | 114OSB-7I20060921<br>5 - 15<br>09/21/06<br>OSB-7 | 114OSB-7S20060921<br>2 - 7<br>09/21/06<br>OSB-7 | 114OSB-9I20060921<br>19 - 24<br>09/21/06<br>OSB-9 | 114OSB-9S20060921<br>11 - 16<br>09/21/06<br>OSB-9 | 114-P1A-MC-EW103-20150617<br><br>06/17/15<br>114-MC-EW103 | 114-P1A-MC-EW103-20150617-F<br><br>06/17/15<br>114-MC-EW103 |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 2.7 J | 0.48 J | 0.53 J | 0.20 UJ | 104 J | 117 J | 0.20 UJ | NA |
| Nickel | 7440-02-0 | ug/L | 1,580 J | 147 J | 371 J | 40 UJ | 2,280 J | 2,460 J | 56.7 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 130,000 UJ | 22,600 J | 45,300 J | 5,000 UJ | 197,000 J | 181,000 J | 40,600 | NA |
| Selenium | 7782-49-2 | ug/L | 250 U | 10 U | 50 U | 10 U | 250 U | 250 U | 50 U | NA |
| Silver | 7440-22-4 | ug/L | 250 U | 10 U | 50 U | 10 U | 250 U | 250 U | 3.4 J | NA |
| Sodium | 7440-23-5 | ug/L | 250,000 UJ | 306,000 J | 54,800 J | 50,500 J | 793,000 J | 251,000 J | 2,760,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | 535,000 | NA |
| Thallium | 7440-28-0 | ug/L | 250 U | 10 U | 50 U | 10 U | 250 U | 250 U | 20 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | 7,340 | 763 | 2,250 | 11.1 | 16,800 | 19,800 | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 2,670 J | 272 J | 798 J | 50 UJ | 3,900 J | 4,340 J | 5.2 JB | NA |
| Zinc | 7440-66-6 | ug/L | 5,970 J | 484 J | 1,440 J | 24.2 J | 31,800 J | 39,600 J | 20 U | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 152 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 13 RA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 560,000 |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114OSB-6I20060921<br>12 - 17<br>09/21/06<br>OSB-6 | 114OSB-6S20060921<br>4 - 9<br>09/21/06<br>OSB-6 | 114OSB-7I20060921<br>5 - 15<br>09/21/06<br>OSB-7 | 114OSB-7S20060921<br>2 - 7<br>09/21/06<br>OSB-7 | 114OSB-9I20060921<br>19 - 24<br>09/21/06<br>OSB-9 | 114OSB-9S20060921<br>11 - 16<br>09/21/06<br>OSB-9 | 114-P1A-MC-EW103-20150617<br><br>06/17/15<br>114-MC-EW103 | 114-P1A-MC-EW103-20150617-F<br><br>06/17/15<br>114-MC-EW103 |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | 17,600 | 21,500 |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | 360 | 337 |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | 7.39 | 7.39 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | 1,450 | 1,450 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114OSB-6I20060921<br>12 - 17<br>09/21/06<br>OSB-6 | 114OSB-6S20060921<br>4 - 9<br>09/21/06<br>OSB-6 | 114OSB-7I20060921<br>5 - 15<br>09/21/06<br>OSB-7 | 114OSB-7S20060921<br>2 - 7<br>09/21/06<br>OSB-7 | 114OSB-9I20060921<br>19 - 24<br>09/21/06<br>OSB-9 | 114OSB-9S20060921<br>11 - 16<br>09/21/06<br>OSB-9 | 114-P1A-MC-EW103-20150617<br><br>06/17/15<br>114-MC-EW103 | 114-P1A-MC-EW103-20150617-F<br><br>06/17/15<br>114-MC-EW103 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | 113,000 J | 1,440,000 J |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | 54,900 J | 67,000 J |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | 46,500 J | 49,000 J |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | 14.49 | 14.49 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | 890 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | 370.2 | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | 7.39 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | 14.49 | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | 74 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-P1A-MW35-Q2 | 114-P1A-MW101I | 114-P1A-MW101I-03302015 | 114-P1A-MW101I-10072014 | 114-P1A-MW101I-12022014 | 114-P1A-MW101I-20150608 | 114-P1A-MW101I-20150921 | 114-P1A-MW101I-20151211 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | |
| Date Collected: | | | 04/25/13 | 05/29/14 | 03/30/15 | 10/07/14 | 12/02/14 | 06/18/15 | 09/21/15 | 12/11/15 |
| Location ID: | CAS Number | Units | MW-35 | 114-P1A-MW101I | 114-P1A-MW101I | 114-P1A-MW101I | 114-P1A-MW101I | 114-P1A-MW101I | 114-P1A-MW101I | 114-P1A-MW101I |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-MW35-Q2<br>04/25/13<br>MW-35 | 114-P1A-MW101I<br>05/29/14<br>114-P1A-MW101I | 114-P1A-MW101I-03302015<br>03/30/15<br>114-P1A-MW101I | 114-P1A-MW101I-10072014<br>10/07/14<br>114-P1A-MW101I | 114-P1A-MW101I-12022014<br>12/02/14<br>114-P1A-MW101I | 114-P1A-MW101I-20150608<br>06/18/15<br>114-P1A-MW101I | 114-P1A-MW101I-20150921<br>09/21/15<br>114-P1A-MW101I | 114-P1A-MW101I-20151211<br>12/11/15<br>114-P1A-MW101I |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-MW35-Q2<br>04/25/13<br>MW-35 | 114-P1A-MW101I<br>05/29/14<br>114-P1A-MW101I | 114-P1A-MW101I-03302015<br>03/30/15<br>114-P1A-MW101I | 114-P1A-MW101I-10072014<br>10/07/14<br>114-P1A-MW101I | 114-P1A-MW101I-12022014<br>12/02/14<br>114-P1A-MW101I | 114-P1A-MW101I-20150608<br>06/18/15<br>114-P1A-MW101I | 114-P1A-MW101I-20150921<br>09/21/15<br>114-P1A-MW101I | 114-P1A-MW101I-20151211<br>12/11/15<br>114-P1A-MW101I |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | 198 J | 194 J | 16,600 [30,700] | 137 JB | 48.3 J | 200 U |
| Antimony | 7440-36-0 | ug/L | NA | NA | 6 U | 6.0 U | 6.0 U [6 U] | 6.0 U | 12 U | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | NA | NA | 3 U | 2.9 J | R [R] | 3.0 U | 6.0 U | 3.0 U |
| Barium | 7440-39-3 | ug/L | NA | NA | 117 J | 96.4 J | 196 J [294] | 105 J | 92.5 J | 96.7 J |
| Beryllium | 7440-41-7 | ug/L | NA | NA | 1 U | 1.0 U | 1.1 [2.1] | 0.40 J | 0.60 J | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | 0.9 J | 3.0 U | 2.4 J [3] | 1.0 J | 0.70 J | 1.5 JB |
| Calcium | 7440-70-2 | ug/L | NA | NA | 127,000 | 108,000 | 106,000 [117,000] | 129,000 | 130,000 | 122,000 |
| Chromium | 7440-47-3 | ug/L | NA | 26,400 | 6,310 J | 9,340 J | 7,170 J [7,610 J] | 5,760 JB | 17,100 J | 14,000 J |
| Chromium VI | 18540-29-9 | ug/L | 10 UJ [10 UJ] | 23,300 | 5,700 RA | 9,400 J | 7,000 J [7,100 J] | 6,200 J | 16,800 J | 14,400 RA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | 3.6 J | 7.6 J | 17.5 J [29.6 J] | 2.8 J | 28.2 J | 24.1 J |
| Copper | 7440-50-8 | ug/L | NA | NA | 5.8 J | 24.0 | R [80.1 J] | 7.6 J | 38.0 | 30.3 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 151 | 214 | 21,400 [41,000] | 101 | 25.6 J | 149 |
| Lead | 7439-92-1 | ug/L | NA | NA | 3 U | 3.0 U | 30.0 [56.1] | 3.0 U | 3.0 U | 3.0 U |
| Magnesium | 7439-95-4 | ug/L | NA | NA | 20,100 | 19,300 | 23,800 [32,000] | 20,300 | 25,500 | 22,100 |
| Manganese | 7439-96-5 | ug/L | NA | NA | 165 | 204 | 897 [1,490] | 148 | 292 | 276 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-MW35-Q2<br>04/25/13<br>MW-35 | 114-P1A-MW101I<br>05/29/14<br>114-P1A-MW101I | 114-P1A-MW101I-03302015<br>03/30/15<br>114-P1A-MW101I | 114-P1A-MW101I-10072014<br>10/07/14<br>114-P1A-MW101I | 114-P1A-MW101I-12022014<br>12/02/14<br>114-P1A-MW101I | 114-P1A-MW101I-20150608<br>06/18/15<br>114-P1A-MW101I | 114-P1A-MW101I-20150921<br>09/21/15<br>114-P1A-MW101I | 114-P1A-MW101I-20151211<br>12/11/15<br>114-P1A-MW101I |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | 0.2 U | 0.20 U | 0.20 U [0.083 J] | 0.20 U | 0.40 U | 0.20 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | 13.5 | 22.1 | 67.3 [116] | 10.7 J | 33.3 | 38.8 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | 5,550 J | 6,120 J | 8,080 J [11,100] | 5,540 J | 7,110 J | 6,450 J |
| Selenium | 7782-49-2 | ug/L | NA | NA | 4.3 J | 10 U | 14.8 [16] | 3.9 J | 5.8 J | 10 U |
| Silver | 7440-22-4 | ug/L | NA | NA | 2.4 J | 2.2 J | 7.5 J [10.2] | 10 U | 10 U | 1.6 J |
| Sodium | 7440-23-5 | ug/L | NA | NA | 171,000 | 203,000 | 161,000 [167,000] | 167,000 | 170,000 | 175,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | 29,100 | 37,800 | NA | 32,400 | 48,800 | 46,600 J |
| Thallium | 7440-28-0 | ug/L | NA | NA | 2 U | 2.0 U | 2.0 U [2 U] | 2.0 U | 4.0 U | 2.0 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | 2 JB | 8.9 J | 36.8 J [68.5] | 3.0 J | 27.5 J | 50 U |
| Zinc | 7440-66-6 | ug/L | NA | NA | 20 UB | 22.4 | 133 [232] | 10.9 J | 24.1 | 24.5 UB |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 23,200 | 6,330 J | 9,220 J | 8,030 [7,880] | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 12,000 | 5,500 RA | 10,000 J | 7,200 J [7,400 J] | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-MW35-Q2<br>04/25/13<br>MW-35 | 114-P1A-MW101I<br>05/29/14<br>114-P1A-MW101I | 114-P1A-MW101I-03302015<br>03/30/15<br>114-P1A-MW101I | 114-P1A-MW101I-10072014<br>10/07/14<br>114-P1A-MW101I | 114-P1A-MW101I-12022014<br>12/02/14<br>114-P1A-MW101I | 114-P1A-MW101I-20150608<br>06/18/15<br>114-P1A-MW101I | 114-P1A-MW101I-20150921<br>09/21/15<br>114-P1A-MW101I | 114-P1A-MW101I-20151211<br>12/11/15<br>114-P1A-MW101I |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | 196,000 | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | 2,000 U | NA | NA | 2,000 U | NA | 2,000 U |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 291 [293] | 408 | 373 | 350 | 309 [318] [324] | 369 | 299 | 304 |
| pH | ARC-pH | SU | 6.90 [6.89] | 6.99 | 6.77 | 6.88 | 6.70 [6.64] [6.67] | 6.73 | 6.87 | 6.75 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | 1,200 | NA | NA | 1,550 | 1,570 | 843 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-MW35-Q2<br>04/25/13<br>MW-35 | 114-P1A-MW101I<br>05/29/14<br>114-P1A-MW101I | 114-P1A-MW101I-03302015<br>03/30/15<br>114-P1A-MW101I | 114-P1A-MW101I-10072014<br>10/07/14<br>114-P1A-MW101I | 114-P1A-MW101I-12022014<br>12/02/14<br>114-P1A-MW101I | 114-P1A-MW101I-20150608<br>06/18/15<br>114-P1A-MW101I | 114-P1A-MW101I-20150921<br>09/21/15<br>114-P1A-MW101I | 114-P1A-MW101I-20151211<br>12/11/15<br>114-P1A-MW101I |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | 104,000 J | 100,000 | NA | 106,000 | 133,000 | 129,000 |
| Sulfide | 18496-25-8 | ug/L | NA | NA | 2,000 U | 2,000 U | NA | 2,000 U | 2,000 U | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | 3,000 UJ | NA | NA | 3,000 UJ | 1,500 | 3,000 UJ |
| Temperature | ARC-Temp | deg c | NA | NA | 13.26 | NA | NA | 13.72 | 17.9 | 18.54 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | 3,200 JB |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 1,320 | 1,180 | 1,590 | 1,320 | 620 | 1,230 | NA | 0 |
| Oxidation Reduction Potential | ARC-ORP | mV | 131.5 | 168 | 188 | 158.5 | 173 | 216 | NA | 137 |
| pH | ARC-pH | SU | 6.78 | 6.83 | 6.74 | 6.91 | 6.84 | 6.75 | NA | 6.79 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | 0 |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | 5.603 | 1.256 | NA | 1.437 | 1.35 | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 12.7 | 14.9 | 12.24 | 18.26 | 13.96 | 14.25 | NA | 18.64 |
| Turbidity | ARC-Turb | NTU | 56.3 | 2.05 | 2.95 | 9.21 | 7.27 | 3.5 | NA | 1.22 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-MW101I-20160317<br><br>03/17/16<br>114-P1A-MW101I | 114-P1A-MW101I-20160617<br><br>06/17/16<br>114-P1A-MW101I | 114-P1A-MW101I-20160617-F<br><br>06/17/16<br>114-P1A-MW101I | 114-P1A-MW101I-F-20150608<br><br>06/18/15<br>114-P1A-MW101I | 114-P1A-MW101I-F-20150618<br><br>06/18/15<br>114-P1A-MW101I | 114-P1A-MW101I-F-20150921<br><br>09/21/15<br>114-P1A-MW101I | 114-P1A-MW101I-F-20151211<br><br>12/11/15<br>114-P1A-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-MW101I-20160317<br><br>03/17/16<br>114-P1A-MW101I | 114-P1A-MW101I-20160617<br><br>06/17/16<br>114-P1A-MW101I | 114-P1A-MW101I-20160617-F<br><br>06/17/16<br>114-P1A-MW101I | 114-P1A-MW101I-F-20150608<br><br>06/18/15<br>114-P1A-MW101I | 114-P1A-MW101I-F-20150618<br><br>06/18/15<br>114-P1A-MW101I | 114-P1A-MW101I-F-20150921<br><br>09/21/15<br>114-P1A-MW101I | 114-P1A-MW101I-F-20151211<br><br>12/11/15<br>114-P1A-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-MW101I-20160317<br>03/17/16<br>114-P1A-MW101I | 114-P1A-MW101I-20160617<br>06/17/16<br>114-P1A-MW101I | 114-P1A-MW101I-20160617-F<br>06/17/16<br>114-P1A-MW101I | 114-P1A-MW101I-F-20150608<br>06/18/15<br>114-P1A-MW101I | 114-P1A-MW101I-F-20150618<br>06/18/15<br>114-P1A-MW101I | 114-P1A-MW101I-F-20150921<br>09/21/15<br>114-P1A-MW101I | 114-P1A-MW101I-F-20151211<br>12/11/15<br>114-P1A-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 200 U | 200 U [200 U] | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 7.4 | 16.5 [16.7] | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | 3.0 U | 2.3 J [3 U] | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | 96.7 J | 95.6 J [97.5 J] | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | 1.0 U | 1.0 U [1 U] | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 1.7 J | 1.5 J [1.6 J] | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | 131,000 | 122,000 [123,000] | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 10,600 | 8,710 [8,830] | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 11,300 RA | 7,700 [8,000] | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 16.9 J | 12.0 J [12.1 J] | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | 21.4 | 30.1 JB [30.6 JB] | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 177 | 38.8 J [24.1 J] | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | 3.0 U | 3.0 U [3 U] | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | 23,700 | 21,400 [21,800] | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 232 | 173 [175] | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-P1A-MW101I-20160317<br>03/17/16<br>114-P1A-MW101I | 114-P1A-MW101I-20160617<br>06/17/16<br>114-P1A-MW101I | 114-P1A-MW101I-20160617-F<br>06/17/16<br>114-P1A-MW101I | 114-P1A-MW101I-F-20150608<br>06/18/15<br>114-P1A-MW101I | 114-P1A-MW101I-F-20150618<br>06/18/15<br>114-P1A-MW101I | 114-P1A-MW101I-F-20150921<br>09/21/15<br>114-P1A-MW101I | 114-P1A-MW101I-F-20151211<br>12/11/15<br>114-P1A-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.60 U | 0.20 U [0.2 U] | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 34.8 | 23.5 [21.8] | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 6,270 J | 5,800 J [5,840 J] | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | 10 U | 10 U [10 U] | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | 10 U | 1.1 J [10 U] | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | 165,000 | 151,000 [156,000] | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 39,700 | 36,900 [37,600] | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 1.9 J | 2.0 U [2 U] | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 3.4 J | 50 U [50 U] | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | 19.3 J | 27.2 [24.9] | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 8,330 [8,500] | 5,980 J | NA | 16,700 J | 13,700 J |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 7,700 [7,700] | NA | 6,100 J | 16,800 J | 14,400 RA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | 33,300 | NA | 48,300 | 45,100 J |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-MW101I-20160317<br>03/17/16<br>114-P1A-MW101I | 114-P1A-MW101I-20160617<br>06/17/16<br>114-P1A-MW101I | 114-P1A-MW101I-20160617-F<br>06/17/16<br>114-P1A-MW101I | 114-P1A-MW101I-F-20150608<br>06/18/15<br>114-P1A-MW101I | 114-P1A-MW101I-F-20150618<br>06/18/15<br>114-P1A-MW101I | 114-P1A-MW101I-F-20150921<br>09/21/15<br>114-P1A-MW101I | 114-P1A-MW101I-F-20151211<br>12/11/15<br>114-P1A-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | NA | NA | 2,000 U | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 405 | 312 [327] | 313 [322] | NA | 373 | 329 | 322 |
| pH | ARC-pH | SU | 6.53 | 6.86 [6.76] | 6.78 [6.76] | 6.73 | 6.56 | 6.87 | 6.80 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 19.0 | NA | NA | 1,550 | NA | 1,570 | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-P1A-MW101I-20160317<br>03/17/16<br>114-P1A-MW101I | 114-P1A-MW101I-20160617<br>06/17/16<br>114-P1A-MW101I | 114-P1A-MW101I-20160617-F<br>06/17/16<br>114-P1A-MW101I | 114-P1A-MW101I-F-20150608<br>06/18/15<br>114-P1A-MW101I | 114-P1A-MW101I-F-20150618<br>06/18/15<br>114-P1A-MW101I | 114-P1A-MW101I-F-20150921<br>09/21/15<br>114-P1A-MW101I | 114-P1A-MW101I-F-20151211<br>12/11/15<br>114-P1A-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 117,000 | 118,000 [118,000] | NA | 107,000 | NA | 138,000 | 120,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 U [2,000 U] | NA | 2,000 U | NA | 2,000 U | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 3,000 UJ [3,000 UJ] | NA | 3,000 UJ | NA | 1,000 | 3,000 UJ |
| Temperature | ARC-Temp | deg c | 14.17 | NA | NA | 13.72 | NA | 17.9 | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 2,600 J | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 20 | 90 | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 175.4 | 138.5 | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | 7.2 | 6.34 | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 16.92 | 16.62 | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | 7.34 | 0.33 | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-MW101I-F-20160317<br><br>03/17/16<br>114-P1A-MW101I | 114-P1A-MW101S<br><br>05/29/14<br>114-P1A-MW101S | 114-P1A-MW101S-03302015<br><br>03/30/15<br>114-P1A-MW101S | 114-P1A-MW101S-10072014<br><br>10/07/14<br>114-P1A-MW101S | 114-P1A-MW101S-12022014<br><br>12/02/14<br>114-P1A-MW101S | 114-P1A-MW101S-20150618<br><br>06/18/15<br>114-P1A-MW101S | 114-P1A-MW101S-20150921<br><br>09/21/15<br>114-P1A-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-MW101I-F-20160317<br><br>03/17/16<br>114-P1A-MW101I | 114-P1A-MW101S<br><br>05/29/14<br>114-P1A-MW101S | 114-P1A-MW101S-03302015<br><br>03/30/15<br>114-P1A-MW101S | 114-P1A-MW101S-10072014<br><br>10/07/14<br>114-P1A-MW101S | 114-P1A-MW101S-12022014<br><br>12/02/14<br>114-P1A-MW101S | 114-P1A-MW101S-20150618<br><br>06/18/15<br>114-P1A-MW101S | 114-P1A-MW101S-20150921<br><br>09/21/15<br>114-P1A-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-MW101I-F-20160317<br><br>03/17/16<br>114-P1A-MW101I | 114-P1A-MW101S<br><br>05/29/14<br>114-P1A-MW101S | 114-P1A-MW101S-03302015<br><br>03/30/15<br>114-P1A-MW101S | 114-P1A-MW101S-10072014<br><br>10/07/14<br>114-P1A-MW101S | 114-P1A-MW101S-12022014<br><br>12/02/14<br>114-P1A-MW101S | 114-P1A-MW101S-20150618<br><br>06/18/15<br>114-P1A-MW101S | 114-P1A-MW101S-20150921<br><br>09/21/15<br>114-P1A-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | 2,320 [2,260] | 3,280 | 2,320 | 2,050 | 1,390 |
| Antimony | 7440-36-0 | ug/L | NA | NA | 6 U [6 U] | 6.0 U | 6.0 U | 6.0 U | 4.9 J |
| Arsenic | 7440-38-2 | ug/L | NA | NA | 12.8 [6.3] | 9.0 U | R | 6.5 | 7.0 JB |
| Barium | 7440-39-3 | ug/L | NA | NA | 30.5 J [30.6 J] | 28.8 J | 30.1 J | 36.7 J | 43.5 J |
| Beryllium | 7440-41-7 | ug/L | NA | NA | 1 U [1 U] | 0.40 J | 1.0 U | 1.0 U | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | 3 UB [3 UB] | 3.0 U | 1.2 J | 3.0 U | 3.0 U |
| Calcium | 7440-70-2 | ug/L | NA | NA | 64,600 [62,100] | 36,700 | 66,500 | 83,500 | 116,000 |
| Chromium | 7440-47-3 | ug/L | NA | 9,600 | 3,750 J [3,770 J] | 13,000 J | 5,860 J | 1,130 | 40.8 J |
| Chromium VI | 18540-29-9 | ug/L | NA | 12,000 | 2,800 RA [3,000 RA] | 14,000 J | 5,400 J | 850 | 30 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | 1.7 JB [1.6 JB] | 2.7 J | 2.1 J | 0.90 J | 50 U |
| Copper | 7440-50-8 | ug/L | NA | NA | 2.9 J [3.1 J] | 14.9 | R | 10 U | 2.9 J |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 236 [235] | 885 | 101 | 158 | 194 |
| Lead | 7439-92-1 | ug/L | NA | NA | 6 U [3 U] | 3.1 | 3.0 U | 2.3 J | 6.0 U |
| Magnesium | 7439-95-4 | ug/L | NA | NA | 92.4 J [86.8 J] | 444 J | 5,000 U | 5,000 UB | 70.6 J |
| Manganese | 7439-96-5 | ug/L | NA | NA | 1.9 J [2.6 J] | 9.6 J | 15 U | 15 U | 7.0 J |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-MW101I-F-20160317<br><br>03/17/16<br>114-P1A-MW101I | 114-P1A-MW101S<br><br>05/29/14<br>114-P1A-MW101S | 114-P1A-MW101S-03302015<br><br>03/30/15<br>114-P1A-MW101S | 114-P1A-MW101S-10072014<br><br>10/07/14<br>114-P1A-MW101S | 114-P1A-MW101S-12022014<br><br>12/02/14<br>114-P1A-MW101S | 114-P1A-MW101S-20150618<br><br>06/18/15<br>114-P1A-MW101S | 114-P1A-MW101S-20150921<br><br>09/21/15<br>114-P1A-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | 0.2 U [0.2 U] | 0.20 U | 0.20 U | 0.099 J | 0.20 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | 69.3 [68.7] | 103 | 69.3 | 47.3 | 30.7 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | 94,400 [93,700] | 101,000 | 90,500 | 99,900 | 78,200 |
| Selenium | 7782-49-2 | ug/L | NA | NA | 5.7 J [4.7 J] | 6.2 J | 14.5 | 8.5 J | 3.6 J |
| Silver | 7440-22-4 | ug/L | NA | NA | 2.1 J [2.6 J] | 3.3 J | 4.4 J | 10 U | 10 U |
| Sodium | 7440-23-5 | ug/L | NA | NA | 501,000 [518,000] | 520,000 | 487,000 | 565,000 | 487,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | 169,000 [147,000] | 169,000 | NA | 143,000 | 157,000 |
| Thallium | 7440-28-0 | ug/L | NA | NA | 4 U [4 U] | 6.0 U | 6.0 U | 4.0 U | 4.0 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | 176 [173] | 219 | 184 | 139 | 57.0 |
| Zinc | 7440-66-6 | ug/L | NA | NA | 20 UB [9 JB] | 20 U | 11.5 J | 20 U | 20 U |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 10,600 | 9,950 | 3,550 J [3,380 J] | 13,800 J | 5,980 | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 11,800 RA | 10,900 | 2,700 RA [2,700 RA] | 14,400 J | 5,600 J | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 39,500 | NA | 170,000 [151,000] | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-MW101I-F-20160317<br><br>03/17/16<br>114-P1A-MW101I | 114-P1A-MW101S<br><br>05/29/14<br>114-P1A-MW101S | 114-P1A-MW101S-03302015<br><br>03/30/15<br>114-P1A-MW101S | 114-P1A-MW101S-10072014<br><br>10/07/14<br>114-P1A-MW101S | 114-P1A-MW101S-12022014<br><br>12/02/14<br>114-P1A-MW101S | 114-P1A-MW101S-20150618<br><br>06/18/15<br>114-P1A-MW101S | 114-P1A-MW101S-20150921<br><br>09/21/15<br>114-P1A-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | 421,000 | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | 2,800 | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | NA | 2,000 U [2,000 U] [2,000 U] | NA | NA | 2,000 U | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 365 | 392 | 111 [106] [116] | 125 | 129 | 270 | 158 |
| pH | ARC-pH | SU | 7.2 | 11.26 | 11.18 [11.12] [12.26] [11.11] | 11.33 | 11.30 | 11.83 | 11.5 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 19.0 | NA | 260 [2,600] [260] | NA | NA | 1,660 | 3,290 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-MW101I-F-20160317<br><br>03/17/16<br>114-P1A-MW101I | 114-P1A-MW101S<br><br>05/29/14<br>114-P1A-MW101S | 114-P1A-MW101S-03302015<br><br>03/30/15<br>114-P1A-MW101S | 114-P1A-MW101S-10072014<br><br>10/07/14<br>114-P1A-MW101S | 114-P1A-MW101S-12022014<br><br>12/02/14<br>114-P1A-MW101S | 114-P1A-MW101S-20150618<br><br>06/18/15<br>114-P1A-MW101S | 114-P1A-MW101S-20150921<br><br>09/21/15<br>114-P1A-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 117,000 | NA | 437,000 [453,000] [446,000 J] | 497,000 | NA | 445,000 | 476,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | NA | 1,300 J [1,500 J] [1,400 J] | 2,000 U | NA | 2,000 U | 760 J |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | NA | 3,000 UJ [3,000 UJ] [3,000 UJ] | NA | NA | 3,000 UJ | 1,000 |
| Temperature | ARC-Temp | deg c | 14.17 | NA | 8.26 [8.26] [8.26] | NA | NA | 12.02 | 19.38 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 4,180 | 580 | 1,330 | 1,310 | 360 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 118.7 | 136 | 41 | 56 | 170 | NA |
| pH | ARC-pH | SU | NA | 6.76 | 12.24 | 12.2 | 11.97 | 11.92 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | 0.695 | NA | 3.479 | 3.07 | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 16.1 | 8.26 | 20.27 | 13 | 11.35 | NA |
| Turbidity | ARC-Turb | NTU | NA | 5.88 | 5.76 | 9.23 | 1.23 | 7.09 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-MW101S-20151209<br>12/09/15<br>114-P1A-MW101S | 114-P1A-MW101S-20160317<br>03/17/16<br>114-P1A-MW101S | 114-P1A-MW101S-20160617<br>06/17/16<br>114-P1A-MW101S | 114-P1A-MW101S-20160617-F<br>06/17/16<br>114-P1A-MW101S | 114-P1A-MW101S-20160916<br>09/16/16<br>114-P1A-MW101S | 114-P1A-MW101S-20160916-F<br>09/16/16<br>114-P1A-MW101S |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-MW101S-20151209<br>12/09/15<br>114-P1A-MW101S | 114-P1A-MW101S-20160317<br>03/17/16<br>114-P1A-MW101S | 114-P1A-MW101S-20160617<br>06/17/16<br>114-P1A-MW101S | 114-P1A-MW101S-20160617-F<br>06/17/16<br>114-P1A-MW101S | 114-P1A-MW101S-20160916<br>09/16/16<br>114-P1A-MW101S | 114-P1A-MW101S-20160916-F<br>09/16/16<br>114-P1A-MW101S |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-MW101S-20151209<br>12/09/15<br>114-P1A-MW101S | 114-P1A-MW101S-20160317<br>03/17/16<br>114-P1A-MW101S | 114-P1A-MW101S-20160617<br>06/17/16<br>114-P1A-MW101S | 114-P1A-MW101S-20160617-F<br>06/17/16<br>114-P1A-MW101S | 114-P1A-MW101S-20160916<br>09/16/16<br>114-P1A-MW101S | 114-P1A-MW101S-20160916-F<br>09/16/16<br>114-P1A-MW101S |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 200 U | 1,250 | 635 | NA | 802 | NA |
| Antimony | 7440-36-0 | ug/L | 6.0 U | 6.0 U | 6.0 U | NA | 6.0 U | NA |
| Arsenic | 7440-38-2 | ug/L | 3.0 U | 15 U | 6.0 U | NA | 7.2 | NA |
| Barium | 7440-39-3 | ug/L | 102 J | 31.1 J | 35.7 J | NA | 36.2 J | NA |
| Beryllium | 7440-41-7 | ug/L | 1.0 U | 1.0 U | 1.0 U | NA | 1.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 3.0 UB | 0.60 J | 0.80 J | NA | 3.0 U | NA |
| Calcium | 7440-70-2 | ug/L | 125,000 | 109,000 | 129,000 | NA | 126,000 | NA |
| Chromium | 7440-47-3 | ug/L | 10,800 J | 9.1 JB | 5.0 J | NA | 10 U | NA |
| Chromium VI | 18540-29-9 | ug/L | 10,800 RA | 0.75 RA | 10 U | NA | 10 U | NA |
| Cobalt | 7440-48-4 | ug/L | 9.8 J | 0.80 J | 50 U | NA | 50 U | NA |
| Copper | 7440-50-8 | ug/L | 16.0 | 10 U | 10 UB | NA | 10 U | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 49.1 J | 230 | 58.3 J | NA | 43.4 J | NA |
| Lead | 7439-92-1 | ug/L | 3.0 U | 15 U | 6.0 U | NA | 3.0 U | NA |
| Magnesium | 7439-95-4 | ug/L | 20,800 | 261 J | 5,000 U | NA | 5,000 U | NA |
| Manganese | 7439-96-5 | ug/L | 187 | 8.0 J | 15 U | NA | 15 U | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-MW101S-20151209<br>12/09/15<br>114-P1A-MW101S | 114-P1A-MW101S-20160317<br>03/17/16<br>114-P1A-MW101S | 114-P1A-MW101S-20160617<br>06/17/16<br>114-P1A-MW101S | 114-P1A-MW101S-20160617-F<br>06/17/16<br>114-P1A-MW101S | 114-P1A-MW101S-20160916<br>09/16/16<br>114-P1A-MW101S | 114-P1A-MW101S-20160916-F<br>09/16/16<br>114-P1A-MW101S |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | 0.20 U | 0.20 U | NA | 0.20 U | NA |
| Nickel | 7440-02-0 | ug/L | 20.9 | 32.0 | 14.7 J | NA | 15.8 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 5,980 J | 84,700 | 58,400 | NA | 56,700 | NA |
| Selenium | 7782-49-2 | ug/L | 10 U | 7.8 J | 5.2 J | NA | 10 U | NA |
| Silver | 7440-22-4 | ug/L | 10 U | 10 U | 10 U | NA | 1.4 J | NA |
| Sodium | 7440-23-5 | ug/L | 150,000 | 473,000 | 388,000 | NA | 370,000 | NA |
| Sulfur | 7704-34-9 | ug/L | 38,600 | 157,000 | 151,000 | NA | 166,000 | NA |
| Thallium | 7440-28-0 | ug/L | 2.0 U | 10 U | 4.0 U | NA | 4.0 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 50 U | 56.5 | 11.6 J | NA | 7.7 J | NA |
| Zinc | 7440-66-6 | ug/L | 26.9 JB | 6.3 J | 20 U | NA | 20 U | NA |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 3.1 J | NA | 3.0 J |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | 10 U | NA | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-MW101S-20151209<br>12/09/15<br>114-P1A-MW101S | 114-P1A-MW101S-20160317<br>03/17/16<br>114-P1A-MW101S | 114-P1A-MW101S-20160617<br>06/17/16<br>114-P1A-MW101S | 114-P1A-MW101S-20160617-F<br>06/17/16<br>114-P1A-MW101S | 114-P1A-MW101S-20160916<br>09/16/16<br>114-P1A-MW101S | 114-P1A-MW101S-20160916-F<br>09/16/16<br>114-P1A-MW101S |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | 2,000 U | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 371 | 169 | 131 | 107 | 116 | 74.3 |
| pH | ARC-pH | SU | 6.76 | 10.87 | 10.86 | 10.92 | 10.46 | 10.38 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 1,900 | 37.3 | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-MW101S-20151209<br>12/09/15<br>114-P1A-MW101S | 114-P1A-MW101S-20160317<br>03/17/16<br>114-P1A-MW101S | 114-P1A-MW101S-20160617<br>06/17/16<br>114-P1A-MW101S | 114-P1A-MW101S-20160617-F<br>06/17/16<br>114-P1A-MW101S | 114-P1A-MW101S-20160916<br>09/16/16<br>114-P1A-MW101S | 114-P1A-MW101S-20160916-F<br>09/16/16<br>114-P1A-MW101S |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 120,000 | 430,000 | 484,000 | NA | 441,000 | NA |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 U | 2,000 U | NA | 2,000 U | NA |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 3,000 UJ | 3,000 UJ | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 17.3 | 15.07 | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 3,200 J | 17,100 | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 3,480 | 60 | 10,320 | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 171 | 31.4 | 56.9 | NA | NA | NA |
| pH | ARC-pH | SU | 7.36 | 12.07 | 10.37 | NA | NA | NA |
| photoionization detector | PID | ug/L | 0 | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 17.3 | 19.12 | 17.03 | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | 0.28 | 0.83 | 0.73 | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-P1A-MW101S-F-20150618 | 114-P1A-MW101S-F-20150921 | 114-P1A-MW101S-F-20151209 | 114-P1A-MW101S-F-20160317 | 114-P1A-PBR-MW5D-Q1 | 114-P1A-PBR-MW6C-Q3 | 114-P1A-PBR-MW6C-Q4 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | |
| Date Collected: | | | 06/18/15 | 09/21/15 | 12/09/15 | 03/17/16 | 01/03/13 | 07/10/13 | 10/22/13 |
| Location ID: | CAS Number | Units | 114-P1A-MW101S | 114-P1A-MW101S | 114-P1A-MW101S | 114-P1A-MW101S | MW5D | MW6C | MW6C |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-MW101S-F-20150618<br>06/18/15<br>114-P1A-MW101S | 114-P1A-MW101S-F-20150921<br>09/21/15<br>114-P1A-MW101S | 114-P1A-MW101S-F-20151209<br>12/09/15<br>114-P1A-MW101S | 114-P1A-MW101S-F-20160317<br>03/17/16<br>114-P1A-MW101S | 114-P1A-PBR-MW5D-Q1<br>01/03/13<br>MW5D | 114-P1A-PBR-MW6C-Q3<br>07/10/13<br>MW6C | 114-P1A-PBR-MW6C-Q4<br>10/22/13<br>MW6C |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-MW101S-F-20150618<br>06/18/15<br>114-P1A-MW101S | 114-P1A-MW101S-F-20150921<br>09/21/15<br>114-P1A-MW101S | 114-P1A-MW101S-F-20151209<br>12/09/15<br>114-P1A-MW101S | 114-P1A-MW101S-F-20160317<br>03/17/16<br>114-P1A-MW101S | 114-P1A-PBR-MW5D-Q1<br>01/03/13<br>MW5D | 114-P1A-PBR-MW6C-Q3<br>07/10/13<br>MW6C | 114-P1A-PBR-MW6C-Q4<br>10/22/13<br>MW6C |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | 29.1 J | 200 UB | 915 |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | 6.0 U | 124 | 32.8 |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | 1.3 J | 14.3 | 3.0 U |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | 200 U | 43.7 J | 60.1 |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 4.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | 0.30 J | 3.3 | 3.9 J |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | 612 J | 99,700 | 124,000 |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | 2.0 J | 20,800 | 5,850 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | 10 U | 16,100 J | 1,500 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | 50 U | 28.4 J | 32.6 J |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | 10 U | 116 | 114 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | 1,910 | 87.4 J | 1,030 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | 3.0 U | 10.8 | 48.6 |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | 5,000 UJ | 22,900 | 34,500 |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | 18.3 | 254 | 341 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-MW101S-F-20150618<br>06/18/15<br>114-P1A-MW101S | 114-P1A-MW101S-F-20150921<br>09/21/15<br>114-P1A-MW101S | 114-P1A-MW101S-F-20151209<br>12/09/15<br>114-P1A-MW101S | 114-P1A-MW101S-F-20160317<br>03/17/16<br>114-P1A-MW101S | 114-P1A-PBR-MW5D-Q1<br>01/03/13<br>MW5D | 114-P1A-PBR-MW6C-Q3<br>07/10/13<br>MW6C | 114-P1A-PBR-MW6C-Q4<br>10/22/13<br>MW6C |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | 0.10 | 0.20 U | 0.20 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | 6.3 J | 60.1 | 96.5 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | 36,700 | 10,100 | 9,700 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | 10 U | 10 U | 10 U |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | 10 U | 10 U | 5.0 U |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | 71,700 | 99,400 | 88,500 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | 2.0 U | 2.0 U | 2.0 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | 50 U | 2.6 J | 6.8 J |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | 5.4 J | 37.4 | 168 J |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 953 | 70.9 J | 11,600 J | 5.3 JB | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 650 | 51 J | 11,600 RA | 5 RA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 146,000 | 158,000 | 38,800 | 146,000 | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-MW101S-F-20150618<br>06/18/15<br>114-P1A-MW101S | 114-P1A-MW101S-F-20150921<br>09/21/15<br>114-P1A-MW101S | 114-P1A-MW101S-F-20151209<br>12/09/15<br>114-P1A-MW101S | 114-P1A-MW101S-F-20160317<br>03/17/16<br>114-P1A-MW101S | 114-P1A-PBR-MW5D-Q1<br>01/03/13<br>MW5D | 114-P1A-PBR-MW6C-Q3<br>07/10/13<br>MW6C | 114-P1A-PBR-MW6C-Q4<br>10/22/13<br>MW6C |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | 15,900 | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | NA | NA | 2,000 U | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 276 | 150 | 358 | 148 | 83.6 | 241 | 216 |
| pH | ARC-pH | SU | 11.20 | 11.5 | 6.75 | 12.07 | 11.17 | 7.85 | 7.74 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 1,660 | 3,290 | NA | 37.3 | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-MW101S-F-20150618<br>06/18/15<br>114-P1A-MW101S | 114-P1A-MW101S-F-20150921<br>09/21/15<br>114-P1A-MW101S | 114-P1A-MW101S-F-20151209<br>12/09/15<br>114-P1A-MW101S | 114-P1A-MW101S-F-20160317<br>03/17/16<br>114-P1A-MW101S | 114-P1A-PBR-MW5D-Q1<br>01/03/13<br>MW5D | 114-P1A-PBR-MW6C-Q3<br>07/10/13<br>MW6C | 114-P1A-PBR-MW6C-Q4<br>10/22/13<br>MW6C |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 443,000 | 428,000 | 120,000 | 409,000 | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | 930 J | 2,000 U | 2,000 U | 2,000 U | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 1,000 | 3,000 UJ | 3,000 UJ | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 12.02 | 19.38 | NA | 15.07 | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | 37,600 | NA | 6,850 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | 625.8 | NA | 32.1 |
| pH | ARC-pH | SU | NA | NA | NA | NA | 11.17 | NA | 7.93 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | 115.6 | NA | 1.356 |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | 16.86 | NA | 19.88 |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | 62.2 | NA | 9.8 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-P1A-PBR-MW-32-Q2 | 114-P1A-PBR-MW32-Q3 | 114-P1A-PBR-MW32-Q4 | 114-P1A-PBR-MW33-Q2 | 114-P1A-PBR-MW33-Q3 | 114-P1A-PBR-MW33-Q4 | 114-P1A-PBR-MW-34-Q2 | 114-P1A-PBR-MW34-Q3 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | |
| Date Collected: | | | 04/24/13 | 07/10/13 | 10/23/13 | 04/23/13 | 07/10/13 | 10/23/13 | 04/23/13 | 07/11/13 |
| Location ID: | CAS Number | Units | MW-32 | MW-32 | MW-32 | MW-33 | MW-33 | MW-33 | MW-34 | MW-34 |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-PBR-MW-32-Q2<br><br>04/24/13<br>MW-32 | 114-P1A-PBR-MW32-Q3<br><br>07/10/13<br>MW-32 | 114-P1A-PBR-MW32-Q4<br><br>10/23/13<br>MW-32 | 114-P1A-PBR-MW33-Q2<br><br>04/23/13<br>MW-33 | 114-P1A-PBR-MW33-Q3<br><br>07/10/13<br>MW-33 | 114-P1A-PBR-MW33-Q4<br><br>10/23/13<br>MW-33 | 114-P1A-PBR-MW-34-Q2<br><br>04/23/13<br>MW-34 | 114-P1A-PBR-MW34-Q3<br><br>07/11/13<br>MW-34 |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-PBR-MW-32-Q2<br>04/24/13<br>MW-32 | 114-P1A-PBR-MW32-Q3<br>07/10/13<br>MW-32 | 114-P1A-PBR-MW32-Q4<br>10/23/13<br>MW-32 | 114-P1A-PBR-MW33-Q2<br>04/23/13<br>MW-33 | 114-P1A-PBR-MW33-Q3<br>07/10/13<br>MW-33 | 114-P1A-PBR-MW33-Q4<br>10/23/13<br>MW-33 | 114-P1A-PBR-MW-34-Q2<br>04/23/13<br>MW-34 | 114-P1A-PBR-MW34-Q3<br>07/11/13<br>MW-34 |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 UJ | 10 UJ | 10 U | 15 [15] | 10 UJ | 6.8 J | 10 UJ | 10 UJ |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-PBR-MW-32-Q2<br>04/24/13<br>MW-32 | 114-P1A-PBR-MW32-Q3<br>07/10/13<br>MW-32 | 114-P1A-PBR-MW32-Q4<br>10/23/13<br>MW-32 | 114-P1A-PBR-MW33-Q2<br>04/23/13<br>MW-33 | 114-P1A-PBR-MW33-Q3<br>07/10/13<br>MW-33 | 114-P1A-PBR-MW33-Q4<br>10/23/13<br>MW-33 | 114-P1A-PBR-MW-34-Q2<br>04/23/13<br>MW-34 | 114-P1A-PBR-MW34-Q3<br>07/11/13<br>MW-34 |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-PBR-MW-32-Q2<br>04/24/13<br>MW-32 | 114-P1A-PBR-MW32-Q3<br>07/10/13<br>MW-32 | 114-P1A-PBR-MW32-Q4<br>10/23/13<br>MW-32 | 114-P1A-PBR-MW33-Q2<br>04/23/13<br>MW-33 | 114-P1A-PBR-MW33-Q3<br>07/10/13<br>MW-33 | 114-P1A-PBR-MW33-Q4<br>10/23/13<br>MW-33 | 114-P1A-PBR-MW-34-Q2<br>04/23/13<br>MW-34 | 114-P1A-PBR-MW34-Q3<br>07/11/13<br>MW-34 |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 166 | 140 | 125 | 140 [141] | 150 | 196 | 336 | 344 |
| pH | ARC-pH | SU | 11.31 | 11.47 | 10.79 | 11.05 [11.07] | 11.43 | 10.49 | 8.31 | 7.43 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-PBR-MW-32-Q2<br>04/24/13<br>MW-32 | 114-P1A-PBR-MW32-Q3<br>07/10/13<br>MW-32 | 114-P1A-PBR-MW32-Q4<br>10/23/13<br>MW-32 | 114-P1A-PBR-MW33-Q2<br>04/23/13<br>MW-33 | 114-P1A-PBR-MW33-Q3<br>07/10/13<br>MW-33 | 114-P1A-PBR-MW33-Q4<br>10/23/13<br>MW-33 | 114-P1A-PBR-MW-34-Q2<br>04/23/13<br>MW-34 | 114-P1A-PBR-MW34-Q3<br>07/11/13<br>MW-34 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 3,970 | NA | 8,030 | 330 | NA | 5,370 | 1,250 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 48.6 | NA | 200.3 | 158 | NA | 145.2 | 138.6 | NA |
| pH | ARC-pH | SU | 11.58 | NA | 11.94 | 11.81 | NA | 11.55 | 7.71 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | 1.347 | NA | 1.319 | 1.64 | NA | 1.278 | 1.596 | NA |
| Temperature | ARC-Temp | deg c | 18.55 | NA | 19.96 | 12.35 | NA | 18.5 | 14.02 | NA |
| Turbidity | ARC-Turb | NTU | 10.2 | NA | 9.9 | 4 | NA | 9.7 | 5.77 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-P1A-PBR-MW34-Q4 | 114-P1A-PBR-MW35-Q3 | 114-P1A-PBR-MW35-Q4 | 114-P1A-PBR-MWGC-Q2 | 114-P1A-PBR-MWMORRIS1A-Q1 | 114-P1A-PBR-MWMORRIS1A-Q2 | 114-P1A-PBR-MWMORRIS1A-Q3 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | |
| Date Collected: | | | 10/23/13 | 07/11/13 | 10/23/13 | 04/23/13 | 01/03/13 | 04/23/13 | 07/10/13 |
| Location ID: | CAS Number | Units | MW-34 | MW-35 | MW-35 | MW6C | MW-Morris1A | MW-Morris1A | MW-Morris1A |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-PBR-MW34-Q4<br>10/23/13<br>MW-34 | 114-P1A-PBR-MW35-Q3<br>07/11/13<br>MW-35 | 114-P1A-PBR-MW35-Q4<br>10/23/13<br>MW-35 | 114-P1A-PBR-MWGC-Q2<br>04/23/13<br>MW6C | 114-P1A-PBR-MWMORRIS1A-Q1<br>01/03/13<br>MW-Morris1A | 114-P1A-PBR-MWMORRIS1A-Q2<br>04/23/13<br>MW-Morris1A | 114-P1A-PBR-MWMORRIS1A-Q3<br>07/10/13<br>MW-Morris1A |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-PBR-MW34-Q4<br>10/23/13<br>MW-34 | 114-P1A-PBR-MW35-Q3<br>07/11/13<br>MW-35 | 114-P1A-PBR-MW35-Q4<br>10/23/13<br>MW-35 | 114-P1A-PBR-MWGC-Q2<br>04/23/13<br>MW6C | 114-P1A-PBR-MWMORRIS1A-Q1<br>01/03/13<br>MW-Morris1A | 114-P1A-PBR-MWMORRIS1A-Q2<br>04/23/13<br>MW-Morris1A | 114-P1A-PBR-MWMORRIS1A-Q3<br>07/10/13<br>MW-Morris1A |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | 157 J | 2,010 J | 2,490 | 2,160 [2,220] |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | 1.6 J | 120 U | 60 U | 120 U [120 U] |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | 3.0 U | 45.0 J | 54.2 J | 60 U [60 U] |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | 56.6 J | 588 | 790 | 618 [620] |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | 4.8 | 60 U | 30 U | 60 U [60 U] |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | 127,000 | 899,000 | 1,130,000 | 767,000 [744,000] |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 8,210 | 200 U | 100 U | 21.2 J [200 U] |
| Chromium VI | 18540-29-9 | ug/L | 10 U | 6.4 J | 10 U | 7,400 | 10 U | 10 U | 10 UJ [10 UJ] |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | 37.2 J | 1,000 U | 6.4 J | 18.7 J [17.8 J] |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | 159 | 58.6 J | 55.3 J | 200 U [200 U] |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | 76.0 J | 7,720 | 11,100 | 13,000 [12,900] |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | 9.9 | 60 U | 60 U | 48.7 J [60 U] |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | 33,500 | 77.5 J | 102 J | 75.6 J [77.4 J] |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | 428 | 300 U | 6.2 J | 11.4 J [11.6 J] |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-PBR-MW34-Q4<br>10/23/13<br>MW-34 | 114-P1A-PBR-MW35-Q3<br>07/11/13<br>MW-35 | 114-P1A-PBR-MW35-Q4<br>10/23/13<br>MW-35 | 114-P1A-PBR-MWGC-Q2<br>04/23/13<br>MW6C | 114-P1A-PBR-MWMORRIS1A-Q1<br>01/03/13<br>MW-Morris1A | 114-P1A-PBR-MWMORRIS1A-Q2<br>04/23/13<br>MW-Morris1A | 114-P1A-PBR-MWMORRIS1A-Q3<br>07/10/13<br>MW-Morris1A |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | 0.20 U | 0.40 U | 0.20 U | 0.20 U [0.2 U] |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | 67.3 | 50.0 J | 42.7 J | 70.1 J [72.3 J] |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | 7,190 J | 264,000 | 278,000 | 257,000 [265,000] |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | 10 U | 200 U | 100 U | 200 U [200 U] |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | 10 U | 200 U | 100 U | 200 U [200 U] |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | 94,800 | 11,700,000 | 13,400,000 | 10,000,000 [9,860,000] |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | 2.0 U | 40 U | 200 U | 40 U [30.8 J] |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | 6.1 J | 21.3 J | 19.7 J | 29.4 J [39.9 J] |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | 36.5 | 106 J | 129 J | 312 J [299 J] |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-PBR-MW34-Q4<br>10/23/13<br>MW-34 | 114-P1A-PBR-MW35-Q3<br>07/11/13<br>MW-35 | 114-P1A-PBR-MW35-Q4<br>10/23/13<br>MW-35 | 114-P1A-PBR-MWGC-Q2<br>04/23/13<br>MW6C | 114-P1A-PBR-MWMORRIS1A-Q1<br>01/03/13<br>MW-Morris1A | 114-P1A-PBR-MWMORRIS1A-Q2<br>04/23/13<br>MW-Morris1A | 114-P1A-PBR-MWMORRIS1A-Q3<br>07/10/13<br>MW-Morris1A |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 264 | 341 | 243 | 248 | 233 | 212 | 234 [230] |
| pH | ARC-pH | SU | 7.96 | 7.09 | 6.88 | 7.60 | 10.08 | 10.15 | 10.79 [10.89] |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-PBR-MW34-Q4<br>10/23/13<br>MW-34 | 114-P1A-PBR-MW35-Q3<br>07/11/13<br>MW-35 | 114-P1A-PBR-MW35-Q4<br>10/23/13<br>MW-35 | 114-P1A-PBR-MWGC-Q2<br>04/23/13<br>MW6C | 114-P1A-PBR-MWMORRIS1A-Q1<br>01/03/13<br>MW-Morris1A | 114-P1A-PBR-MWMORRIS1A-Q2<br>04/23/13<br>MW-Morris1A | 114-P1A-PBR-MWMORRIS1A-Q3<br>07/10/13<br>MW-Morris1A |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 1,950 | NA | 680 | 5,500 | 6,200 | 50 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 199.7 | NA | 138.9 | 187.9 | 698.3 | 470 | NA |
| pH | ARC-pH | SU | 8.66 | NA | 6.95 | 7.08 | 9.99 | 11.4 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | 1.627 | NA | 6.317 | 1.386 | 115.7 | 61.07 | NA |
| Temperature | ARC-Temp | deg c | 21.6 | NA | 15.98 | 16.6 | 9.99 | 15.16 | NA |
| Turbidity | ARC-Turb | NTU | 30.9 | NA | 52.5 | 1.96 | 76.4 | 5.13 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-PBR-MWMORRIS1A-Q4<br><br>10/22/13<br>MW-Morris1A | 114-P1B-MW101I<br><br>06/18/14<br>114-P1B-MW101I | 114-P1B-MW101I-03312015<br><br>03/31/15<br>114-P1B-MW101I | 114-P1B-MW101I-10072014<br><br>10/07/14<br>114-P1B-MW101I | 114-P1B-MW101I-12032014<br><br>12/03/14<br>114-P1B-MW101I | 114-P1B-MW101I-20150619<br><br>06/19/15<br>114-P1B-MW101I | 114-P1B-MW101I-20150922<br><br>09/22/15<br>114-P1B-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-PBR-MWMORRIS1A-Q4<br><br>10/22/13<br>MW-Morris1A | 114-P1B-MW101I<br><br>06/18/14<br>114-P1B-MW101I | 114-P1B-MW101I-03312015<br><br>03/31/15<br>114-P1B-MW101I | 114-P1B-MW101I-10072014<br><br>10/07/14<br>114-P1B-MW101I | 114-P1B-MW101I-12032014<br><br>12/03/14<br>114-P1B-MW101I | 114-P1B-MW101I-20150619<br><br>06/19/15<br>114-P1B-MW101I | 114-P1B-MW101I-20150922<br><br>09/22/15<br>114-P1B-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-PBR-MWMORRIS1A-Q4<br><br>10/22/13<br>MW-Morris1A | 114-P1B-MW101I<br><br>06/18/14<br>114-P1B-MW101I | 114-P1B-MW101I-03312015<br><br>03/31/15<br>114-P1B-MW101I | 114-P1B-MW101I-10072014<br><br>10/07/14<br>114-P1B-MW101I | 114-P1B-MW101I-12032014<br><br>12/03/14<br>114-P1B-MW101I | 114-P1B-MW101I-20150619<br><br>06/19/15<br>114-P1B-MW101I | 114-P1B-MW101I-20150922<br><br>09/22/15<br>114-P1B-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 2,510 [2,480] | NA | 200 U | 766 | 314 | 309 | 117 J |
| Antimony | 7440-36-0 | ug/L | 12 U [12 U] | NA | 35.5 | 88.1 | 13.6 | 30 U | 60 U |
| Arsenic | 7440-38-2 | ug/L | 6.6 [6 U] | NA | 6.0 U | 5.0 | 14.7 | 15 U | 30 U |
| Barium | 7440-39-3 | ug/L | 408 [381] | NA | 58.0 J | 75.7 J | 67.0 J | 57.1 J | 52.4 J |
| Beryllium | 7440-41-7 | ug/L | 4.0 U [4 U] | NA | 1.0 U | 0.90 J | 1.0 U | 5.0 U | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 8.0 U [8 U] | NA | 1.0 JB | 3.0 U | 9.3 | 2.0 J | 5.6 J |
| Calcium | 7440-70-2 | ug/L | 552,000 [516,000] | NA | 130,000 | 124,000 | 133,000 | 139,000 | 135,000 |
| Chromium | 7440-47-3 | ug/L | 9.9 J [10.1] | 28,200 | 60,000 J | 39,700 J | 50,100 J | 67,300 J | 78,300 J |
| Chromium VI | 18540-29-9 | ug/L | R [R] | 30,300 J | 59,000 J | 46,500 J | 41,500 J | 75,600 J | 82,900 J |
| Cobalt | 7440-48-4 | ug/L | 2.5 J [2.6 J] | NA | 20.1 J | 16.2 J | 13.9 J | 16.6 J | 17.6 J |
| Copper | 7440-50-8 | ug/L | 26.1 [9.8 J] | NA | 28.0 | 57.8 | 37.2 | 59.0 | 54.4 J |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 19,600 [19,100] | NA | 131 | 1,170 | 288 | 289 | 119 |
| Lead | 7439-92-1 | ug/L | 10 U [10 U] | NA | 3.0 U | 5.8 | 3.0 U | 15 U | 30 U |
| Magnesium | 7439-95-4 | ug/L | 60.8 J [5,000 U] | NA | 33,900 | 33,800 | 34,900 | 36,900 | 36,300 |
| Manganese | 7439-96-5 | ug/L | 6.5 J [3.9 J] | NA | 333 | 354 | 291 | 355 | 335 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-PBR-MWMORRIS1A-Q4<br><br>10/22/13<br>MW-Morris1A | 114-P1B-MW101I<br><br>06/18/14<br>114-P1B-MW101I | 114-P1B-MW101I-03312015<br><br>03/31/15<br>114-P1B-MW101I | 114-P1B-MW101I-10072014<br><br>10/07/14<br>114-P1B-MW101I | 114-P1B-MW101I-12032014<br><br>12/03/14<br>114-P1B-MW101I | 114-P1B-MW101I-20150619<br><br>06/19/15<br>114-P1B-MW101I | 114-P1B-MW101I-20150922<br><br>09/22/15<br>114-P1B-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U [0.2 U] | NA | 0.20 U | 0.20 U | 0.20 U | 1.2 U | 1.2 U |
| Nickel | 7440-02-0 | ug/L | 33.5 J [32.5 J] | NA | 28.6 | 52.7 | 29.1 | 27.6 | 27.5 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 194,000 [186,000] | NA | 6,620 J | 8,220 J | 7,750 J | 7,230 J | 7,310 J |
| Selenium | 7782-49-2 | ug/L | 23.9 [22.9] | NA | 8.4 J | 10 U | 10 U | 16.2 J | 100 U |
| Silver | 7440-22-4 | ug/L | 5.0 U [5 U] | NA | 6.5 J | 8.4 J | 2.7 J | 10 U | 10 U |
| Sodium | 7440-23-5 | ug/L | 8,470,000 [7,930,000] | NA | 358,000 | 342,000 | 373,000 | 383,000 | 384,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | 56,900 | 56,700 | NA | 74,700 | 83,700 |
| Thallium | 7440-28-0 | ug/L | 4.0 U [4 U] | NA | 4.0 U | 2.0 U | 4.0 U | 10 U | 20 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 35.4 [36.9] | NA | 3.5 JB | 29.5 J | 19.2 J | 3.7 J | 34.8 J |
| Zinc | 7440-66-6 | ug/L | 221 J [R] | NA | 40 U | 60.7 | 40.0 | 100 U | 689 |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 33,000 | 58,200 J | 41,400 J | 44,600 J | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 31,300 J | 55,800 J | 45,900 J | 46,300 J | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-PBR-MWMORRIS1A-Q4<br><br>10/22/13<br>MW-Morris1A | 114-P1B-MW101I<br><br>06/18/14<br>114-P1B-MW101I | 114-P1B-MW101I-03312015<br><br>03/31/15<br>114-P1B-MW101I | 114-P1B-MW101I-10072014<br><br>10/07/14<br>114-P1B-MW101I | 114-P1B-MW101I-12032014<br><br>12/03/14<br>114-P1B-MW101I | 114-P1B-MW101I-20150619<br><br>06/19/15<br>114-P1B-MW101I | 114-P1B-MW101I-20150922<br><br>09/22/15<br>114-P1B-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | 205,000 | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | 2,000 U | NA | NA | 2,000 U | 2,000 U |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 238 [239] | 643 | 306 | 293 | 273 | 416 | 397 |
| pH | ARC-pH | SU | 10.86 [10.9] | 6.86 | 6.77 | 6.89 | 6.79 | 6.79 | 6.77 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | 1,610 | NA | NA | 1,090 | 2,210 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1A-PBR-MWMORRIS1A-Q4<br><br>10/22/13<br>MW-Morris1A | 114-P1B-MW101I<br><br>06/18/14<br>114-P1B-MW101I | 114-P1B-MW101I-03312015<br><br>03/31/15<br>114-P1B-MW101I | 114-P1B-MW101I-10072014<br><br>10/07/14<br>114-P1B-MW101I | 114-P1B-MW101I-12032014<br><br>12/03/14<br>114-P1B-MW101I | 114-P1B-MW101I-20150619<br><br>06/19/15<br>114-P1B-MW101I | 114-P1B-MW101I-20150922<br><br>09/22/15<br>114-P1B-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | 180,000 | 152,000 | NA | 188,000 | 206,000 |
| Sulfide | 18496-25-8 | ug/L | NA | NA | 2,000 U | 2,000 U | NA | 2,000 U | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | 3,000 UJ | NA | NA | 3,000 UJ | 3,000 UJ |
| Temperature | ARC-Temp | deg c | NA | NA | 13.26 | NA | NA | 13.6 | 16.15 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 1,070 | 680 | 480 | 6,430 | 3,150 | 9,460 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 461.1 | 152 | 199 | 244.8 | 210 | 246 | NA |
| pH | ARC-pH | SU | 11.71 | 7.15 | 6.77 | 6.85 | 6.32 | 6.8 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | 41.54 | 1.5 | NA | 2.21 | 1.94 | NA | NA |
| Temperature | ARC-Temp | deg c | 21.22 | 15.8 | 13.26 | 16.89 | 13.5 | 13.41 | NA |
| Turbidity | ARC-Turb | NTU | 9.27 | 6.27 | 7.25 | 8.85 | 10.4 | 3.36 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-P1B-MW101I-20151216 | 114-P1B-MW101I-20160323 | 114-P1B-MW101I-20160621 | 114-P1B-MW101I-20160621-F | 114-P1B-MW101I-F-20150619 | 114-P1B-MW101I-F-20150922 | 114-P1B-MW101I-F-20151216 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | |
| Date Collected: | | | 12/16/15 | 03/23/16 | 06/21/16 | 06/21/16 | 06/19/15 | 09/22/15 | 12/16/15 |
| Location ID: | CAS Number | Units | 114-P1B-MW101I | 114-P1B-MW101I | 114-P1B-MW101I | 114-P1B-MW101I | 114-P1B-MW101I | 114-P1B-MW101I | 114-P1B-MW101I |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW101I-20151216<br><br>12/16/15<br>114-P1B-MW101I | 114-P1B-MW101I-20160323<br><br>03/23/16<br>114-P1B-MW101I | 114-P1B-MW101I-20160621<br><br>06/21/16<br>114-P1B-MW101I | 114-P1B-MW101I-20160621-F<br><br>06/21/16<br>114-P1B-MW101I | 114-P1B-MW101I-F-20150619<br><br>06/19/15<br>114-P1B-MW101I | 114-P1B-MW101I-F-20150922<br><br>09/22/15<br>114-P1B-MW101I | 114-P1B-MW101I-F-20151216<br><br>12/16/15<br>114-P1B-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW101I-20151216<br><br>12/16/15<br>114-P1B-MW101I | 114-P1B-MW101I-20160323<br><br>03/23/16<br>114-P1B-MW101I | 114-P1B-MW101I-20160621<br><br>06/21/16<br>114-P1B-MW101I | 114-P1B-MW101I-20160621-F<br><br>06/21/16<br>114-P1B-MW101I | 114-P1B-MW101I-F-20150619<br><br>06/19/15<br>114-P1B-MW101I | 114-P1B-MW101I-F-20150922<br><br>09/22/15<br>114-P1B-MW101I | 114-P1B-MW101I-F-20151216<br><br>12/16/15<br>114-P1B-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 304 | 1,000 U | 46.0 J | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 120 U | 150 UJ | 120 U | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | 60 U | 75 UJ | 60 U | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | 59.6 J | 55.9 J | 60.4 J | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | 1.0 U | 5.0 U | 2.0 U | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 1.8 J | 2.3 J | 6.0 U | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | 136,000 | 149,000 | 161,000 | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 107,000 J | 140,000 | 149,000 | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 109,000 J | 131,000 J | 117,000 | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 35.5 J | 31.2 J | 35.8 J | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | 47.1 J | 23.7 J | 51.4 J | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 451 | 116 J | 138 J | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | 60 U | 75 U | 60 U | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | 36,600 | 39,400 | 44,700 | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 406 | 383 | 388 | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW101I-20151216<br>12/16/15<br>114-P1B-MW101I | 114-P1B-MW101I-20160323<br>03/23/16<br>114-P1B-MW101I | 114-P1B-MW101I-20160621<br>06/21/16<br>114-P1B-MW101I | 114-P1B-MW101I-20160621-F<br>06/21/16<br>114-P1B-MW101I | 114-P1B-MW101I-F-20150619<br>06/19/15<br>114-P1B-MW101I | 114-P1B-MW101I-F-20150922<br>09/22/15<br>114-P1B-MW101I | 114-P1B-MW101I-F-20151216<br>12/16/15<br>114-P1B-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 1.2 U | 1.2 U | 1.2 U | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 52.4 J | 40.7 J | 69.4 J | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 7,560 J | 6,990 J | 6,850 J | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | 20 U | 250 U | 20 U | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | 3.4 J | 9.3 J | 7.2 J | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | 390,000 | 415,000 | 402,000 | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 80,100 | 86,400 | 95,100 | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 40 U | 50 U | 40 U | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 69.1 J | 1,300 U | 54.8 J | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | 105 J | 53.4 J | 400 U | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 145,000 | 68,700 J | 84,400 J | 107,000 J |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | 119,000 | 72,700 J | 70,100 J | 115,000 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | 76,800 | 88,000 | 78,600 |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW101I-20151216<br>12/16/15<br>114-P1B-MW101I | 114-P1B-MW101I-20160323<br>03/23/16<br>114-P1B-MW101I | 114-P1B-MW101I-20160621<br>06/21/16<br>114-P1B-MW101I | 114-P1B-MW101I-20160621-F<br>06/21/16<br>114-P1B-MW101I | 114-P1B-MW101I-F-20150619<br>06/19/15<br>114-P1B-MW101I | 114-P1B-MW101I-F-20150922<br>09/22/15<br>114-P1B-MW101I | 114-P1B-MW101I-F-20151216<br>12/16/15<br>114-P1B-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | 2,000 U | NA | NA | 2,000 U | 2,000 U | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 353 | 363 | 288 | 305 | 415 | 400 | 351 |
| pH | ARC-pH | SU | 6.92 | 6.69 | 6.61 | 6.61 | 6.79 | 6.77 | 6.94 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 1,980 | 1.8 | NA | NA | 1,090 | 2,210 | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW101I-20151216<br>12/16/15<br>114-P1B-MW101I | 114-P1B-MW101I-20160323<br>03/23/16<br>114-P1B-MW101I | 114-P1B-MW101I-20160621<br>06/21/16<br>114-P1B-MW101I | 114-P1B-MW101I-20160621-F<br>06/21/16<br>114-P1B-MW101I | 114-P1B-MW101I-F-20150619<br>06/19/15<br>114-P1B-MW101I | 114-P1B-MW101I-F-20150922<br>09/22/15<br>114-P1B-MW101I | 114-P1B-MW101I-F-20151216<br>12/16/15<br>114-P1B-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 232,000 | 235,000 J | 249,000 J | NA | 189,000 | 214,000 | 225,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 UJ | 2,000 U | NA | 2,000 U | 2,000 U | 2,000 UJ |
| Sulfite | ARC-SULFITE | ug/L | 1,500 J | 3,000 UJ | 3,000 UJ | NA | 3,000 UJ | 3,000 UJ | 1,000 J |
| Temperature | ARC-Temp | deg c | 17.35 | 13.79 | NA | NA | 13.6 | 16.15 | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 8,500 | 8,400 | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 0 | 10 | 630 | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 243 | 145.3 | 310 | NA | NA | NA | NA |
| pH | ARC-pH | SU | 6.42 | 6.69 | 6.37 | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | 0 | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 17.38 | 14 | 17 | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | 10.33 | 0.87 | 3.55 | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW101I-F-20160323<br><br>03/23/16<br>114-P1B-MW101I | 114-P1B-MW101S<br><br>06/18/14<br>114-P1B-MW101S | 114-P1B-MW101S-03302015<br><br>03/30/15<br>114-P1B-MW101S | 114-P1B-MW101S-10072014<br><br>10/07/14<br>114-P1B-MW101S | 114-P1B-MW101S-12032014<br><br>12/03/14<br>114-P1B-MW101S | 114-P1B-MW101S-20150619<br><br>06/19/15<br>114-P1B-MW101S | 114-P1B-MW101S-20150922<br><br>09/22/15<br>114-P1B-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW101I-F-20160323<br><br>03/23/16<br>114-P1B-MW101I | 114-P1B-MW101S<br><br>06/18/14<br>114-P1B-MW101S | 114-P1B-MW101S-03302015<br><br>03/30/15<br>114-P1B-MW101S | 114-P1B-MW101S-10072014<br><br>10/07/14<br>114-P1B-MW101S | 114-P1B-MW101S-12032014<br><br>12/03/14<br>114-P1B-MW101S | 114-P1B-MW101S-20150619<br><br>06/19/15<br>114-P1B-MW101S | 114-P1B-MW101S-20150922<br><br>09/22/15<br>114-P1B-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW101I-F-20160323<br><br>03/23/16<br>114-P1B-MW101I | 114-P1B-MW101S<br><br>06/18/14<br>114-P1B-MW101S | 114-P1B-MW101S-03302015<br><br>03/30/15<br>114-P1B-MW101S | 114-P1B-MW101S-10072014<br><br>10/07/14<br>114-P1B-MW101S | 114-P1B-MW101S-12032014<br><br>12/03/14<br>114-P1B-MW101S | 114-P1B-MW101S-20150619<br><br>06/19/15<br>114-P1B-MW101S | 114-P1B-MW101S-20150922<br><br>09/22/15<br>114-P1B-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | 921 | 1,140 | 719 | 494 | 223 |
| Antimony | 7440-36-0 | ug/L | NA | NA | 6 U | 4.2 J | 6.0 U | 6.0 U | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | NA | NA | 7.1 | 15 U | 14.7 | 13.1 | 10.1 |
| Barium | 7440-39-3 | ug/L | NA | NA | 33.5 J | 44.3 J | 37.5 J | 23.2 J | 20.5 J |
| Beryllium | 7440-41-7 | ug/L | NA | NA | 1 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | 3 U | 3.0 U | 3.0 U | 3.0 U | 3.0 UJB |
| Calcium | 7440-70-2 | ug/L | NA | NA | 162,000 | 189,000 | 194,000 | 142,000 | 132,000 |
| Chromium | 7440-47-3 | ug/L | NA | 9.7 J | 10 UB | 11.8 U | 10 U | 29.3 | 37.9 J |
| Chromium VI | 18540-29-9 | ug/L | NA | 9.6 J | 10 RA | 10 U | 10 U | 3.7 J | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | 50 UB | 1.9 J | 1.7 J | 0.90 J | 50 UJB |
| Copper | 7440-50-8 | ug/L | NA | NA | 5.9 J | 9.8 J | 18.6 | 4.6 J | 3.9 J |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 1,000 | 1,290 | 637 | 260 | 93.4 J |
| Lead | 7439-92-1 | ug/L | NA | NA | 1.8 J | 4.2 | 3.0 U | 2.7 J | 3.0 U |
| Magnesium | 7439-95-4 | ug/L | NA | NA | 458 J | 569 J | 248 J | 335 J | 5,000 U |
| Manganese | 7439-96-5 | ug/L | NA | NA | 14 J | 17.8 | 7.5 J | 5.2 J | 15 U |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW101I-F-20160323<br><br>03/23/16<br>114-P1B-MW101I | 114-P1B-MW101S<br><br>06/18/14<br>114-P1B-MW101S | 114-P1B-MW101S-03302015<br><br>03/30/15<br>114-P1B-MW101S | 114-P1B-MW101S-10072014<br><br>10/07/14<br>114-P1B-MW101S | 114-P1B-MW101S-12032014<br><br>12/03/14<br>114-P1B-MW101S | 114-P1B-MW101S-20150619<br><br>06/19/15<br>114-P1B-MW101S | 114-P1B-MW101S-20150922<br><br>09/22/15<br>114-P1B-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | 0.2 U | 0.20 U | 0.20 U | 0.20 U | 0.20 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | 10.9 | 19.6 | 15.7 | 10.5 | 14.4 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | 23,300 | 31,000 | 31,600 J | 24,900 | 26,700 |
| Selenium | 7782-49-2 | ug/L | NA | NA | 3.5 J | 50 U | 7.8 J | 9.7 J | 7.2 J |
| Silver | 7440-22-4 | ug/L | NA | NA | 1.9 J | 2.6 J | 3.4 J | 10 U | 1.3 J |
| Sodium | 7440-23-5 | ug/L | NA | NA | 147,000 | 215,000 | 201,000 | 137,000 | 125,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | 148,000 | 245,000 | NA | 143,000 | 158,000 J |
| Thallium | 7440-28-0 | ug/L | NA | NA | 4 U | 10 U | 6.0 U | 4.0 U | 4.0 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | 31.7 J | 38.3 J | 38.7 J | 38.8 J | 31.9 J |
| Zinc | 7440-66-6 | ug/L | NA | NA | 20 UB | 14.3 J | 8.8 J | 17.4 J | 20 U |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 136,000 | 3.1 U | 10 U | 1.9 J | 10 U | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 133,000 J | 11 J | 10 RA | 10 U | 7.3 J | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 86,300 | NA | 167,000 | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW101I-F-20160323<br><br>03/23/16<br>114-P1B-MW101I | 114-P1B-MW101S<br><br>06/18/14<br>114-P1B-MW101S | 114-P1B-MW101S-03302015<br><br>03/30/15<br>114-P1B-MW101S | 114-P1B-MW101S-10072014<br><br>10/07/14<br>114-P1B-MW101S | 114-P1B-MW101S-12032014<br><br>12/03/14<br>114-P1B-MW101S | 114-P1B-MW101S-20150619<br><br>06/19/15<br>114-P1B-MW101S | 114-P1B-MW101S-20150922<br><br>09/22/15<br>114-P1B-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | 122,000 | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | 9,500 | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | NA | 2,000 U | NA | NA | 2,000 U | 2,000 U |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 372 | 636 | 165 | 192 | 210 | 297 | 348 |
| pH | ARC-pH | SU | 6.69 | 9.70 | 9.95 | 9.77 | 10.13 | 9.76 | 9.97 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 1.8 | NA | 121 | NA | NA | 1,360 | 1,230 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW101I-F-20160323<br><br>03/23/16<br>114-P1B-MW101I | 114-P1B-MW101S<br><br>06/18/14<br>114-P1B-MW101S | 114-P1B-MW101S-03302015<br><br>03/30/15<br>114-P1B-MW101S | 114-P1B-MW101S-10072014<br><br>10/07/14<br>114-P1B-MW101S | 114-P1B-MW101S-12032014<br><br>12/03/14<br>114-P1B-MW101S | 114-P1B-MW101S-20150619<br><br>06/19/15<br>114-P1B-MW101S | 114-P1B-MW101S-20150922<br><br>09/22/15<br>114-P1B-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 234,000 J | NA | 580,000 J | 776,000 | NA | 443,000 | 528,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 UJ | NA | 2,000 U | 2,000 U | NA | 2,000 U | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | NA | 3,000 UJ | NA | NA | 3,000 UJ | 3,000 UJ |
| Temperature | ARC-Temp | deg c | 13.79 | NA | 9.79 | NA | NA | 13.99 | 18.9 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 560 | 2,780 | 200 | 2,790 | 680 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 81 | 68 | 25.6 | 31 | 39 | NA |
| pH | ARC-pH | SU | NA | 10 | 10.6 | 10.17 | 10.5 | 10.47 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | 1.24 | NA | 1.742 | 1.76 | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 17.55 | 9.79 | 21.09 | 12.7 | 13.82 | NA |
| Turbidity | ARC-Turb | NTU | NA | 10.24 | 10.72 | 8.74 | 12.4 | 4.28 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW101S-20151209<br>12/09/15<br>114-P1B-MW101S | 114-P1B-MW101S-20160314<br>03/14/16<br>114-P1B-MW101S | 114-P1B-MW101S-20160621<br>06/21/16<br>114-P1B-MW101S | 114-P1B-MW101S-20160621-F<br>06/21/16<br>114-P1B-MW101S | 114-P1B-MW101S-F-20150619<br>06/19/15<br>114-P1B-MW101S | 114-P1B-MW101S-F-20150922<br>09/22/15<br>114-P1B-MW101S |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW101S-20151209<br>12/09/15<br>114-P1B-MW101S | 114-P1B-MW101S-20160314<br>03/14/16<br>114-P1B-MW101S | 114-P1B-MW101S-20160621<br>06/21/16<br>114-P1B-MW101S | 114-P1B-MW101S-20160621-F<br>06/21/16<br>114-P1B-MW101S | 114-P1B-MW101S-F-20150619<br>06/19/15<br>114-P1B-MW101S | 114-P1B-MW101S-F-20150922<br>09/22/15<br>114-P1B-MW101S |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW101S-20151209<br>12/09/15<br>114-P1B-MW101S | 114-P1B-MW101S-20160314<br>03/14/16<br>114-P1B-MW101S | 114-P1B-MW101S-20160621<br>06/21/16<br>114-P1B-MW101S | 114-P1B-MW101S-20160621-F<br>06/21/16<br>114-P1B-MW101S | 114-P1B-MW101S-F-20150619<br>06/19/15<br>114-P1B-MW101S | 114-P1B-MW101S-F-20150922<br>09/22/15<br>114-P1B-MW101S |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 167 J | 360 | 618 J | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 6.0 U | 6.0 U | 6.0 U | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | 13.5 | 2.8 J | 6.6 | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | 25.4 J | 24.0 J | 33.6 J | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | 1.0 U | 1.0 | 1.0 U | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 3.0 UB | 1.7 J | 3.0 U | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | 157,000 | 123,000 | 158,000 | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 6.4 J | 54.4 | 39.2 J | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 5.5 U | 5.5 RA | 7.8 J | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 50 UB | 2.3 J | 1.3 J | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | 10 U | 10 UB | 8.4 J | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 83.5 J | 807 J | 527 | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | 9.0 U | 3.8 | 6.0 U | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | 117 J | 1,070 J | 394 J | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 7.5 J | 33.1 | 7.4 J | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW101S-20151209<br><br>12/09/15<br>114-P1B-MW101S | 114-P1B-MW101S-20160314<br><br>03/14/16<br>114-P1B-MW101S | 114-P1B-MW101S-20160621<br><br>06/21/16<br>114-P1B-MW101S | 114-P1B-MW101S-20160621-F<br><br>06/21/16<br>114-P1B-MW101S | 114-P1B-MW101S-F-20150619<br><br>06/19/15<br>114-P1B-MW101S | 114-P1B-MW101S-F-20150922<br><br>09/22/15<br>114-P1B-MW101S |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | 0.20 U | 0.20 U | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 8.6 J | 38.9 | 17.9 | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 27,000 | 12,800 | 24,200 | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | 10 U | 4.7 J | 6.4 J | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | 10 U | 10 U | 10 U | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | 127,000 | 58,200 | 131,000 | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 187,000 | 114,000 | 161,000 | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 6.0 U | 4.0 U | 4.0 U | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 9.8 J | 12.7 J | 35.0 J | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | 20 UB | 20 UB | 20 U | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 18.9 J | 16.0 | 7.7 J |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | 21 | 10 U | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | 153,000 | 158,000 |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW101S-20151209<br>12/09/15<br>114-P1B-MW101S | 114-P1B-MW101S-20160314<br>03/14/16<br>114-P1B-MW101S | 114-P1B-MW101S-20160621<br>06/21/16<br>114-P1B-MW101S | 114-P1B-MW101S-20160621-F<br>06/21/16<br>114-P1B-MW101S | 114-P1B-MW101S-F-20150619<br>06/19/15<br>114-P1B-MW101S | 114-P1B-MW101S-F-20150922<br>09/22/15<br>114-P1B-MW101S |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | 2,000 U | NA | NA | 2,000 U | 2,000 U |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 326 | 330 | 251 | 185 | 312 | 340 |
| pH | ARC-pH | SU | 9.77 | 9.9 | 9.78 | 9.90 | 10.44 | 9.97 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 1,100 | 861 | NA | NA | 1,360 | 1,230 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW101S-20151209<br>12/09/15<br>114-P1B-MW101S | 114-P1B-MW101S-20160314<br>03/14/16<br>114-P1B-MW101S | 114-P1B-MW101S-20160621<br>06/21/16<br>114-P1B-MW101S | 114-P1B-MW101S-20160621-F<br>06/21/16<br>114-P1B-MW101S | 114-P1B-MW101S-F-20150619<br>06/19/15<br>114-P1B-MW101S | 114-P1B-MW101S-F-20150922<br>09/22/15<br>114-P1B-MW101S |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 620,000 | 335,000 | 459,000 J | NA | 459,000 | 505,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 U | 2,000 U | NA | 2,000 U | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 3,000 UJ | 3,000 UJ | NA | 3,000 UJ | 3,000 UJ |
| Temperature | ARC-Temp | deg c | 16.59 | 9.83 | NA | NA | 13.99 | 18.9 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 17,800 | 3,600 J | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 0 | 390 | 510 | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 137 | 14.5 | 25.2 | NA | NA | NA |
| pH | ARC-pH | SU | 9.77 | 9.99 | 10.33 | NA | NA | NA |
| photoionization detector | PID | ug/L | 100 | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 16.59 | 9.43 | 19.65 | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | 3.98 | 3.56 | 9.38 | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW101S-F-20151209<br><br>12/09/15<br>114-P1B-MW101S | 114-P1B-MW101S-F-20160314<br><br>03/14/16<br>114-P1B-MW101S | 114-P1B-MW102I<br><br>05/30/14<br>114-P1B-MW102I | 114-P1B-MW102I-04022015<br><br>04/02/15<br>114-P1B-MW102I | 114-P1B-MW102I-10082014<br><br>10/08/14<br>114-P1B-MW102I | 114-P1B-MW102I-12032014<br><br>12/03/14<br>114-P1B-MW102I | 114-P1B-MW102I-20150618<br><br>06/18/15<br>114-P1B-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW101S-F-20151209<br><br>12/09/15<br>114-P1B-MW101S | 114-P1B-MW101S-F-20160314<br><br>03/14/16<br>114-P1B-MW101S | 114-P1B-MW102I<br><br>05/30/14<br>114-P1B-MW102I | 114-P1B-MW102I-04022015<br><br>04/02/15<br>114-P1B-MW102I | 114-P1B-MW102I-10082014<br><br>10/08/14<br>114-P1B-MW102I | 114-P1B-MW102I-12032014<br><br>12/03/14<br>114-P1B-MW102I | 114-P1B-MW102I-20150618<br><br>06/18/15<br>114-P1B-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW101S-F-20151209<br>12/09/15<br>114-P1B-MW101S | 114-P1B-MW101S-F-20160314<br>03/14/16<br>114-P1B-MW101S | 114-P1B-MW102I<br>05/30/14<br>114-P1B-MW102I | 114-P1B-MW102I-04022015<br>04/02/15<br>114-P1B-MW102I | 114-P1B-MW102I-10082014<br>10/08/14<br>114-P1B-MW102I | 114-P1B-MW102I-12032014<br>12/03/14<br>114-P1B-MW102I | 114-P1B-MW102I-20150618<br>06/18/15<br>114-P1B-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | 1,000 U | 64.0 J | 1,710 [2,460] | 200 U |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | 300 U | 979 | 120 U [120 U] | 59.4 J |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | 30 U | 60 U | 211 [229] | 30 U |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | 33.9 J | 33.1 J | 48.4 J [59 J] | 45.7 J |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | 1.0 U | 11.8 J | 20 U [20 U] | 2.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | 2.2 J | 60 U | 121 [137] | 6.0 U |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | 120,000 | 196,000 | 189,000 [210,000] | 97,500 |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 331,000 J | 721,000 J | 624,000 J [698,000 J] | 205,000 J |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 261,000 | 302,000 J | R | 564,000 J [556,000 J] | 301,000 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | 8.9 J | 20.3 J | 100 U [100 U] | 18.4 J |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | 104 | 208 | 200 U [200 U] | 54.4 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | 85.1 J | 172 JB | 2,400 [3,230] | 72.8 J |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | 30 U | 26.9 J | 30.4 J [29.6 J] | 45.2 |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | 39,900 | 64,800 J | 63,100 [69,200] | 38,300 |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | 228 | 271 | 354 [382] | 239 |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW101S-F-20151209<br>12/09/15<br>114-P1B-MW101S | 114-P1B-MW101S-F-20160314<br>03/14/16<br>114-P1B-MW101S | 114-P1B-MW102I<br>05/30/14<br>114-P1B-MW102I | 114-P1B-MW102I-04022015<br>04/02/15<br>114-P1B-MW102I | 114-P1B-MW102I-10082014<br>10/08/14<br>114-P1B-MW102I | 114-P1B-MW102I-12032014<br>12/03/14<br>114-P1B-MW102I | 114-P1B-MW102I-20150618<br>06/18/15<br>114-P1B-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | 0.20 U | 0.086 J | 0.20 U [0.084 J] | 6.0 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | 6.5 J | 200 U | 87.2 J [106 J] | 50.2 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | 16,500 J | 18,700 | 15,700 J [16,500 J] | 17,500 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | 52.2 J | 200 U | 200 U [200 U] | 20 U |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | 50 U | 138 J | 200 U [200 U] | 1.7 J |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | 490,000 | 740,000 | 661,000 [705,000] | 430,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | 130,000 | 197,000 | NA | 114,000 J |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | 20 U | 50 U | 40 U [40 U] | 20 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | 62.7 J | 1,000 U | 277 J [302 J] | 43.9 J |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | 200 U | 400 U | 375 J [420] | 200 U |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 6.3 J | 2.4 J | NA | 348,000 J | 808,000 J | 696,000 J [630,000 J] | NA |
| Chromium VI | 18540-29-9 | ug/L | 5.5 U | 5.5 RA | 252,000 | 467,000 J | R | 656,000 J [735,000 J] | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 194,000 | 109,000 | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW101S-F-20151209<br>12/09/15<br>114-P1B-MW101S | 114-P1B-MW101S-F-20160314<br>03/14/16<br>114-P1B-MW101S | 114-P1B-MW102I<br>05/30/14<br>114-P1B-MW102I | 114-P1B-MW102I-04022015<br>04/02/15<br>114-P1B-MW102I | 114-P1B-MW102I-10082014<br>10/08/14<br>114-P1B-MW102I | 114-P1B-MW102I-12032014<br>12/03/14<br>114-P1B-MW102I | 114-P1B-MW102I-20150618<br>06/18/15<br>114-P1B-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | 213,000 J | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | 4,500 J | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | 2,000 U | NA | 2,000 U | NA | NA | 2,000 U |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 304 | 283 | 419 | 350 | 319 | 302 [345] [303] | 369 |
| pH | ARC-pH | SU | 9.50 | 9.9 | 6.99 | 7.16 | 7.24 | 7.07 [7.05] [7.06] | 7.11 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | 861 | NA | 3,170 | NA | NA | 3,000 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW101S-F-20151209<br>12/09/15<br>114-P1B-MW101S | 114-P1B-MW101S-F-20160314<br>03/14/16<br>114-P1B-MW101S | 114-P1B-MW102I<br>05/30/14<br>114-P1B-MW102I | 114-P1B-MW102I-04022015<br>04/02/15<br>114-P1B-MW102I | 114-P1B-MW102I-10082014<br>10/08/14<br>114-P1B-MW102I | 114-P1B-MW102I-12032014<br>12/03/14<br>114-P1B-MW102I | 114-P1B-MW102I-20150618<br>06/18/15<br>114-P1B-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 526,000 | 332,000 | NA | 365,000 | 615,000 J | NA | 323,000 J |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 U | NA | 2,000 U | 2,000 U | NA | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 3,000 UJ | NA | 3,000 UJ | NA | NA | 2,000 J |
| Temperature | ARC-Temp | deg c | NA | 9.83 | NA | 13.21 | NA | NA | 13.73 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | 1,350 | 2,180 | 2,000 | 640 | 670 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 240 | 159 | 212.5 | 155 | 238 |
| pH | ARC-pH | SU | NA | NA | 7.09 | 7.16 | 7.25 | 7.28 | 7.11 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | 2.613 | NA | 4.118 | 4.31 | NA |
| Temperature | ARC-Temp | deg c | NA | NA | 16.65 | 13.21 | 19.02 | 13.3 | 14.33 |
| Turbidity | ARC-Turb | NTU | NA | NA | 2.3 | 1.85 | 4.59 | NA | 1.5 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-P1B-MW102I-20150924 | 114-P1B-MW102I-20151216 | 114-P1B-MW102I-20160323 | 114-P1B-MW102I-20160622 | 114-P1B-MW102I-20160622-F | 114-P1B-MW102I-20160916 | 114-P1B-MW102I-20160916-F |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | |
| Date Collected: | | | 09/24/15 | 12/16/15 | 03/23/16 | 06/22/16 | 06/22/16 | 09/16/16 | 09/16/16 |
| Location ID: | CAS Number | Units | 114-P1B-MW102I | 114-P1B-MW102I | 114-P1B-MW102I | 114-P1B-MW102I | 114-P1B-MW102I | 114-P1B-MW102I | 114-P1B-MW102I |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW102I-20150924<br>09/24/15<br>114-P1B-MW102I | 114-P1B-MW102I-20151216<br>12/16/15<br>114-P1B-MW102I | 114-P1B-MW102I-20160323<br>03/23/16<br>114-P1B-MW102I | 114-P1B-MW102I-20160622<br>06/22/16<br>114-P1B-MW102I | 114-P1B-MW102I-20160622-F<br>06/22/16<br>114-P1B-MW102I | 114-P1B-MW102I-20160916<br>09/16/16<br>114-P1B-MW102I | 114-P1B-MW102I-20160916-F<br>09/16/16<br>114-P1B-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-P1B-MW102I-20150924 09/24/15 114-P1B-MW102I | 114-P1B-MW102I-20151216 12/16/15 114-P1B-MW102I | 114-P1B-MW102I-20160323 03/23/16 114-P1B-MW102I | 114-P1B-MW102I-20160622 06/22/16 114-P1B-MW102I | 114-P1B-MW102I-20160622-F 06/22/16 114-P1B-MW102I | 114-P1B-MW102I-20160916 09/16/16 114-P1B-MW102I | 114-P1B-MW102I-20160916-F 09/16/16 114-P1B-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 76.3 J | 200 U | 2,000 U | 476 | NA | 400 U | NA |
| Antimony | 7440-36-0 | ug/L | 300 U | 300 U | 300 UJ | 6.0 U | NA | 600 U | NA |
| Arsenic | 7440-38-2 | ug/L | 150 U | 150 U | 150 UJ | 8.9 | NA | 300 U | NA |
| Barium | 7440-39-3 | ug/L | 44.3 J | 36.5 J | 38.2 J | 146 J | NA | 30.0 J | NA |
| Beryllium | 7440-41-7 | ug/L | 25 U | 1.0 U | 10 U | 1.0 U | NA | 10 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 75 U | 4.4 J | 4.6 J | 0.60 J | NA | 30 U | NA |
| Calcium | 7440-70-2 | ug/L | 108,000 | 109,000 | 133,000 | 47,300 | NA | 164,000 | NA |
| Chromium | 7440-47-3 | ug/L | 267,000 J | 321,000 J | 380,000 | 328 | NA | 541,000 | NA |
| Chromium VI | 18540-29-9 | ug/L | 498,000 RA | 366,000 J | 345,000 | 10 RA | NA | 566,000 | NA |
| Cobalt | 7440-48-4 | ug/L | 42.0 J | 63.5 | 53.0 J | 2.6 J | NA | 54.8 J | NA |
| Copper | 7440-50-8 | ug/L | 141 J | 500 U | 100 U | 15.6 | NA | 38.0 | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 2,500 U | 197 | 230 J | 8,790 | NA | 1,000 U | NA |
| Lead | 7439-92-1 | ug/L | 150 U | 150 U | 150 U | 8.3 | NA | 150 U | NA |
| Magnesium | 7439-95-4 | ug/L | 41,100 | 39,600 | 47,400 J | 29,800 | NA | 54,200 | NA |
| Manganese | 7439-96-5 | ug/L | 271 | 292 | 319 | 239 | NA | 309 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW102I-20150924<br><br>09/24/15<br>114-P1B-MW102I | 114-P1B-MW102I-20151216<br><br>12/16/15<br>114-P1B-MW102I | 114-P1B-MW102I-20160323<br><br>03/23/16<br>114-P1B-MW102I | 114-P1B-MW102I-20160622<br><br>06/22/16<br>114-P1B-MW102I | 114-P1B-MW102I-20160622-F<br><br>06/22/16<br>114-P1B-MW102I | 114-P1B-MW102I-20160916<br><br>09/16/16<br>114-P1B-MW102I | 114-P1B-MW102I-20160916-F<br><br>09/16/16<br>114-P1B-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 1.2 U | 1.2 U | 1.2 U | 0.10 J | NA | 1.2 U | NA |
| Nickel | 7440-02-0 | ug/L | 67.5 | 54.1 J | 50.8 J | 14.6 J | NA | 26.2 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 16,500 | 14,000 | 16,900 J | 67,000 | NA | 15,500 J | NA |
| Selenium | 7782-49-2 | ug/L | 500 U | 50 U | 500 U | 14.2 | NA | 500 U | NA |
| Silver | 7440-22-4 | ug/L | 9.0 J | 11.0 J | 22.0 J | 1.6 J | NA | 100 U | NA |
| Sodium | 7440-23-5 | ug/L | 512,000 | 527,000 | 597,000 | 1,650,000 | NA | 715,000 | NA |
| Sulfur | 7704-34-9 | ug/L | 117,000 J | 131,000 | 145,000 | 98,100 J | NA | 179,000 | NA |
| Thallium | 7440-28-0 | ug/L | 100 U | 100 U | 100 U | 4.0 U | NA | 200 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 2,500 U | 193 J | 2,500 U | 73.3 | NA | 5,000 U | NA |
| Zinc | 7440-66-6 | ug/L | 1,000 U | 1,000 U | 105 J | 9.6 JB | NA | 232 J | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | 319 | NA | 515,000 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | 10 RA | NA | 437,000 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW102I-20150924<br>09/24/15<br>114-P1B-MW102I | 114-P1B-MW102I-20151216<br>12/16/15<br>114-P1B-MW102I | 114-P1B-MW102I-20160323<br>03/23/16<br>114-P1B-MW102I | 114-P1B-MW102I-20160622<br>06/22/16<br>114-P1B-MW102I | 114-P1B-MW102I-20160622-F<br>06/22/16<br>114-P1B-MW102I | 114-P1B-MW102I-20160916<br>09/16/16<br>114-P1B-MW102I | 114-P1B-MW102I-20160916-F<br>09/16/16<br>114-P1B-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | 2,000 U | 2,000 U | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 290 | 363 | 351 | 341 | 351 | 322 | 325 |
| pH | ARC-pH | SU | 7.03 | 6.77 | 7 | 7.11 | 7.07 | 6.83 | 6.81 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 3,250 | 3,270 | 2.4 | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW102I-20150924<br>09/24/15<br>114-P1B-MW102I | 114-P1B-MW102I-20151216<br>12/16/15<br>114-P1B-MW102I | 114-P1B-MW102I-20160323<br>03/23/16<br>114-P1B-MW102I | 114-P1B-MW102I-20160622<br>06/22/16<br>114-P1B-MW102I | 114-P1B-MW102I-20160622-F<br>06/22/16<br>114-P1B-MW102I | 114-P1B-MW102I-20160916<br>09/16/16<br>114-P1B-MW102I | 114-P1B-MW102I-20160916-F<br>09/16/16<br>114-P1B-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 350,000 | 390,000 | 362,000 J | 354,000 J | NA | 477,000 | NA |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 UJ | 2,000 UJ | 2,700 | NA | 2,000 U | NA |
| Sulfite | ARC-SULFITE | ug/L | 1,500 J | 1,500 J | 3,000 UJ | 3,000 UJ | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 19.28 | 17.81 | 13.6 | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | 7,000 | 6,700 J | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 0 | 20 | 930 | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 212 | 170.1 | 207.3 | NA | NA | NA |
| pH | ARC-pH | SU | NA | 6.77 | 7.03 | 6.67 | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | 0 | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 17.81 | 13.7 | 17.21 | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | 1.83 | 0.78 | 3.04 | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-P1B-MW102I-F-20150618 | 114-P1B-MW102I-F-20150924 | 114-P1B-MW102I-F-20151216 | 114-P1B-MW102I-F-20160323 | 114-P1B-MW102S | 114-P1B-MW102S-03272015 | 114-P1B-MW102S-053014 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | |
| Date Collected: | | | 06/18/15 | 09/24/15 | 12/16/15 | 03/23/16 | 06/20/14 | 03/27/15 | 05/30/14 |
| Location ID: | CAS Number | Units | 114-P1B-MW102I | 114-P1B-MW102I | 114-P1B-MW102I | 114-P1B-MW102I | 114-P1B-MW102S | 114-P1B-MW102S | 114-P1B-MW102S |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW102I-F-20150618<br><br>06/18/15<br>114-P1B-MW102I | 114-P1B-MW102I-F-20150924<br><br>09/24/15<br>114-P1B-MW102I | 114-P1B-MW102I-F-20151216<br><br>12/16/15<br>114-P1B-MW102I | 114-P1B-MW102I-F-20160323<br><br>03/23/16<br>114-P1B-MW102I | 114-P1B-MW102S<br><br>06/20/14<br>114-P1B-MW102S | 114-P1B-MW102S-03272015<br><br>03/27/15<br>114-P1B-MW102S | 114-P1B-MW102S-053014<br><br>05/30/14<br>114-P1B-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW102I-F-20150618<br><br>06/18/15<br>114-P1B-MW102I | 114-P1B-MW102I-F-20150924<br><br>09/24/15<br>114-P1B-MW102I | 114-P1B-MW102I-F-20151216<br><br>12/16/15<br>114-P1B-MW102I | 114-P1B-MW102I-F-20160323<br><br>03/23/16<br>114-P1B-MW102I | 114-P1B-MW102S<br><br>06/20/14<br>114-P1B-MW102S | 114-P1B-MW102S-03272015<br><br>03/27/15<br>114-P1B-MW102S | 114-P1B-MW102S-053014<br><br>05/30/14<br>114-P1B-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 365 J | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 6.0 U | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 5.0 | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 147 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 0.40 J | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 0.40 J | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 90,800 | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | 1,300 | 137 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | 10 RA | 10 RA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 2.6 J | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 5.1 J | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | 15,200 J | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 13.1 | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 35,700 | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | 455 | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW102I-F-20150618<br>06/18/15<br>114-P1B-MW102I | 114-P1B-MW102I-F-20150924<br>09/24/15<br>114-P1B-MW102I | 114-P1B-MW102I-F-20151216<br>12/16/15<br>114-P1B-MW102I | 114-P1B-MW102I-F-20160323<br>03/23/16<br>114-P1B-MW102I | 114-P1B-MW102S<br>06/20/14<br>114-P1B-MW102S | 114-P1B-MW102S-03272015<br>03/27/15<br>114-P1B-MW102S | 114-P1B-MW102S-053014<br>05/30/14<br>114-P1B-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.29 JB | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | 6.9 J | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 56,400 J | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 3.4 J | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 1.9 J | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 2,620,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | 137,000 J | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | 4.0 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | 30.5 J | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 22.0 JB | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 420,000 J | 426,000 J | 368,000 J | 296,000 | 1,330 | 67.6 | NA |
| Chromium VI | 18540-29-9 | ug/L | 401,000 J | 478,000 RA | 635,000 J | 349,000 | 10 RA | 13 RA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 159,000 J | 158,000 J | 146,000 | 96,500 | NA | 221,000 J | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW102I-F-20150618<br><br>06/18/15<br>114-P1B-MW102I | 114-P1B-MW102I-F-20150924<br><br>09/24/15<br>114-P1B-MW102I | 114-P1B-MW102I-F-20151216<br><br>12/16/15<br>114-P1B-MW102I | 114-P1B-MW102I-F-20160323<br><br>03/23/16<br>114-P1B-MW102I | 114-P1B-MW102S<br><br>06/20/14<br>114-P1B-MW102S | 114-P1B-MW102S-03272015<br><br>03/27/15<br>114-P1B-MW102S | 114-P1B-MW102S-053014<br><br>05/30/14<br>114-P1B-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | 11,800 J | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | NA | NA | 2,000 U | NA | 1,600 J | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 378 | 306 | 366 | 359 | 236 | 302 | NA |
| pH | ARC-pH | SU | 7.00 | 7.00 | 7.26 | 7 | 7.11 | 7.06 | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 3,000 | NA | NA | 2.4 | NA | 180 | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW102I-F-20150618<br><br>06/18/15<br>114-P1B-MW102I | 114-P1B-MW102I-F-20150924<br><br>09/24/15<br>114-P1B-MW102I | 114-P1B-MW102I-F-20151216<br><br>12/16/15<br>114-P1B-MW102I | 114-P1B-MW102I-F-20160323<br><br>03/23/16<br>114-P1B-MW102I | 114-P1B-MW102S<br><br>06/20/14<br>114-P1B-MW102S | 114-P1B-MW102S-03272015<br><br>03/27/15<br>114-P1B-MW102S | 114-P1B-MW102S-053014<br><br>05/30/14<br>114-P1B-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 398,000 J | 406,000 | 366,000 | 363,000 J | NA | 635,000 | NA |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 U | 2,000 UJ | 2,000 UJ | NA | 2,500 | NA |
| Sulfite | ARC-SULFITE | ug/L | 2,000 J | 3,000 UJ | 1,000 J | 3,000 UJ | NA | 3,000 UJ | NA |
| Temperature | ARC-Temp | deg c | 13.73 | NA | NA | 13.6 | NA | 7.46 | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | 1,240 | 4,980 | 120 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | 219 | 195 | 195 |
| pH | ARC-pH | SU | NA | NA | NA | NA | 7.1 | 7.06 | 7.13 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | 6.72 | NA | 10.88 |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | 20.14 | 7.46 | 15.42 |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | 1.19 | 8.88 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-P1B-MW102S-10082014 | 114-P1B-MW102S-12032014 | 114-P1B-MW102S-20150618 | 114-P1B-MW102S-20150922 | 114-P1B-MW102S-20151210 | 114-P1B-MW102S-20160314 | 114-P1B-MW102S-20160622 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | |
| Date Collected: | | | 10/08/14 | 12/03/14 | 06/18/15 | 09/22/15 | 12/10/15 | 03/14/16 | 06/22/16 |
| Location ID: | CAS Number | Units | 114-P1B-MW102S | 114-P1B-MW102S | 114-P1B-MW102S | 114-P1B-MW102S | 114-P1B-MW102S | 114-P1B-MW102S | 114-P1B-MW102S |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW102S-10082014<br>10/08/14<br>114-P1B-MW102S | 114-P1B-MW102S-12032014<br>12/03/14<br>114-P1B-MW102S | 114-P1B-MW102S-20150618<br>06/18/15<br>114-P1B-MW102S | 114-P1B-MW102S-20150922<br>09/22/15<br>114-P1B-MW102S | 114-P1B-MW102S-20151210<br>12/10/15<br>114-P1B-MW102S | 114-P1B-MW102S-20160314<br>03/14/16<br>114-P1B-MW102S | 114-P1B-MW102S-20160622<br>06/22/16<br>114-P1B-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW102S-10082014<br>10/08/14<br>114-P1B-MW102S | 114-P1B-MW102S-12032014<br>12/03/14<br>114-P1B-MW102S | 114-P1B-MW102S-20150618<br>06/18/15<br>114-P1B-MW102S | 114-P1B-MW102S-20150922<br>09/22/15<br>114-P1B-MW102S | 114-P1B-MW102S-20151210<br>12/10/15<br>114-P1B-MW102S | 114-P1B-MW102S-20160314<br>03/14/16<br>114-P1B-MW102S | 114-P1B-MW102S-20160622<br>06/22/16<br>114-P1B-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 721 | 1,850 | 583 | 374 | 549 | 404 | 400 U |
| Antimony | 7440-36-0 | ug/L | 4.0 J | 15 U | 6.0 U | 6.0 U | 6.0 U | 4.2 J | 300 U |
| Arsenic | 7440-38-2 | ug/L | 20.7 | 12.8 | 15 U | 5.8 | 16.1 | 15 U | 150 U |
| Barium | 7440-39-3 | ug/L | 183 J | 173 J | 172 J | 151 J | 207 | 106 J | 35.2 J |
| Beryllium | 7440-41-7 | ug/L | 0.70 J | 2.5 U | 1.0 U | 1.0 U | 1.0 U | 0.80 J | 8.8 J |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 0.80 J | 7.5 U | 3.0 U | 3.0 UJB | 3.0 UB | 1.6 J | 22.4 J |
| Calcium | 7440-70-2 | ug/L | 83,100 | 70,700 | 68,800 | 80,700 | 73,700 | 49,900 | 133,000 |
| Chromium | 7440-47-3 | ug/L | 673 | 465 | 254 | 220 | 277 | 299 | 407,000 J |
| Chromium VI | 18540-29-9 | ug/L | R | 110 | 10 U | 27 | 5.5 RA | 5.5 RA | 333,000 RA |
| Cobalt | 7440-48-4 | ug/L | 6.2 J | 7.5 J | 2.6 J | 2.4 JB | 2.8 J | 4.6 J | 19.8 J |
| Copper | 7440-50-8 | ug/L | 12.7 J | 26.5 | 4.6 J | 3.5 J | 10 U | 10 UB | 129 J |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 19,500 | 20,400 | 21,900 | 15,100 | 14,400 | 8,260 J | 74.6 J |
| Lead | 7439-92-1 | ug/L | 23.1 | 77.8 | 17.3 | 11.1 | 14.3 J | 11.0 J | 150 U |
| Magnesium | 7439-95-4 | ug/L | 59,900 J | 48,800 | 56,000 | 44,100 | 40,200 J | 33,200 | 48,400 |
| Manganese | 7439-96-5 | ug/L | 466 | 432 | 392 | 381 | 474 | 264 | 269 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW102S-10082014<br>10/08/14<br>114-P1B-MW102S | 114-P1B-MW102S-12032014<br>12/03/14<br>114-P1B-MW102S | 114-P1B-MW102S-20150618<br>06/18/15<br>114-P1B-MW102S | 114-P1B-MW102S-20150922<br>09/22/15<br>114-P1B-MW102S | 114-P1B-MW102S-20151210<br>12/10/15<br>114-P1B-MW102S | 114-P1B-MW102S-20160314<br>03/14/16<br>114-P1B-MW102S | 114-P1B-MW102S-20160622<br>06/22/16<br>114-P1B-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.28 | 1.6 | 1.2 U | 0.40 U | 1.2 U | 0.074 J | 0.40 U |
| Nickel | 7440-02-0 | ug/L | 16.6 | 130 | 7.6 J | 16.0 | 8.4 J | 9.2 J | 56.2 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 122,000 | 82,600 J | 99,700 | 91,700 | 76,600 | 66,900 | 16,600 J |
| Selenium | 7782-49-2 | ug/L | 12.1 | 25 U | 10.1 | 8.6 J | 11.9 | 14.9 | 500 U |
| Silver | 7440-22-4 | ug/L | 10 UJ | 5.0 J | 10 U | 10 U | 10 U | 1.1 J | 80.4 J |
| Sodium | 7440-23-5 | ug/L | 2,410,000 | 1,810,000 | 2,060,000 | 1,620,000 | 1,460,000 | 1,670,000 | 618,000 |
| Sulfur | 7704-34-9 | ug/L | 152,000 | NA | 257,000 | 259,000 J | 175,000 | 181,000 | 140,000 J |
| Thallium | 7440-28-0 | ug/L | 10 U | 5.0 U | 10 U | 6.0 U | 10 U | 10 U | 100 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 123 | 69.5 J | 51.1 | 42.0 J | 57.4 | 75.7 | 2,500 U |
| Zinc | 7440-66-6 | ug/L | 32.0 | 153 | 31.6 | 27.9 | 38.3 JB | 20 UB | 332 J |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 492 | 310 | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | R | 10 U | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW102S-10082014<br>10/08/14<br>114-P1B-MW102S | 114-P1B-MW102S-12032014<br>12/03/14<br>114-P1B-MW102S | 114-P1B-MW102S-20150618<br>06/18/15<br>114-P1B-MW102S | 114-P1B-MW102S-20150922<br>09/22/15<br>114-P1B-MW102S | 114-P1B-MW102S-20151210<br>12/10/15<br>114-P1B-MW102S | 114-P1B-MW102S-20160314<br>03/14/16<br>114-P1B-MW102S | 114-P1B-MW102S-20160622<br>06/22/16<br>114-P1B-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | 1,750,000 J | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | 1,900 J | 1,200 J | 2,000 | 2,000 U | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 319 | 254 | 367 | 391 | 295 | 266 | 341 |
| pH | ARC-pH | SU | 7.10 | 6.60 | 7.03 | 7.06 | 6.96 | 7.31 | 7.26 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | 4,640 | 8,880 | 9,170 | 8,800 | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW102S-10082014<br>10/08/14<br>114-P1B-MW102S | 114-P1B-MW102S-12032014<br>12/03/14<br>114-P1B-MW102S | 114-P1B-MW102S-20150618<br>06/18/15<br>114-P1B-MW102S | 114-P1B-MW102S-20150922<br>09/22/15<br>114-P1B-MW102S | 114-P1B-MW102S-20151210<br>12/10/15<br>114-P1B-MW102S | 114-P1B-MW102S-20160314<br>03/14/16<br>114-P1B-MW102S | 114-P1B-MW102S-20160622<br>06/22/16<br>114-P1B-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 396,000 J | NA | 813,000 | 670,000 | 500,000 | 548,000 | 389,000 J |
| Sulfide | 18496-25-8 | ug/L | 4,700 | NA | 3,000 | 2,900 | 3,900 | 1,500 J | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | 1,500 J | 1,000 J | 3,000 UJ | 3,000 UJ | 3,500 J |
| Temperature | ARC-Temp | deg c | NA | NA | 13.96 | 20.81 | 16.15 | 10.04 | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | 109,000 | 88,700 | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 15,220 | 690 | 100 | NA | 0 | 280 | 2,700 |
| Oxidation Reduction Potential | ARC-ORP | mV | 192 | 110 | 174 | NA | 36 | 284.7 | 185.2 |
| pH | ARC-pH | SU | 6.97 | 7.22 | 6.81 | NA | 6.96 | 7.31 | 6.84 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | 100 | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | 12.41 | 8.58 | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 20.52 | 13.92 | 13.96 | NA | 16.15 | 10.04 | 22.42 |
| Turbidity | ARC-Turb | NTU | 6.55 | 84.6 | 6.21 | NA | 19.5 | 1.53 | 3.85 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW102S-20160622-F<br>06/22/16<br>114-P1B-MW102S | 114-P1B-MW102S-20160916<br>09/16/16<br>114-P1B-MW102S | 114-P1B-MW102S-20160916-F<br>09/16/16<br>114-P1B-MW102S | 114-P1B-MW102S-20170412<br>04/12/17<br>114-P1B-MW102S | 114-P1B-MW102S-20170412-F<br>04/12/17<br>114-P1B-MW102S | 114-P1B-MW102S-F-20150618<br>06/18/15<br>114-P1B-MW102S |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW102S-20160622-F<br>06/22/16<br>114-P1B-MW102S | 114-P1B-MW102S-20160916<br>09/16/16<br>114-P1B-MW102S | 114-P1B-MW102S-20160916-F<br>09/16/16<br>114-P1B-MW102S | 114-P1B-MW102S-20170412<br>04/12/17<br>114-P1B-MW102S | 114-P1B-MW102S-20170412-F<br>04/12/17<br>114-P1B-MW102S | 114-P1B-MW102S-F-20150618<br>06/18/15<br>114-P1B-MW102S |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW102S-20160622-F<br>06/22/16<br>114-P1B-MW102S | 114-P1B-MW102S-20160916<br>09/16/16<br>114-P1B-MW102S | 114-P1B-MW102S-20160916-F<br>09/16/16<br>114-P1B-MW102S | 114-P1B-MW102S-20170412<br>04/12/17<br>114-P1B-MW102S | 114-P1B-MW102S-20170412-F<br>04/12/17<br>114-P1B-MW102S | 114-P1B-MW102S-F-20150618<br>06/18/15<br>114-P1B-MW102S |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 675 | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | 12 U | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | 14.0 | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | 149 J | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | 2.0 U | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 6.0 U | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | 40,400 | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 366 | NA | 184 | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 32 J | NA | 10 U | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | 2.2 J | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | 5.6 J | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 5,940 | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | 6.2 | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | 26,500 | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | 247 | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW102S-20160622-F<br>06/22/16<br>114-P1B-MW102S | 114-P1B-MW102S-20160916<br>09/16/16<br>114-P1B-MW102S | 114-P1B-MW102S-20160916-F<br>09/16/16<br>114-P1B-MW102S | 114-P1B-MW102S-20170412<br>04/12/17<br>114-P1B-MW102S | 114-P1B-MW102S-20170412-F<br>04/12/17<br>114-P1B-MW102S | 114-P1B-MW102S-F-20150618<br>06/18/15<br>114-P1B-MW102S |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 1.2 U | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | 10.6 J | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 73,000 | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | 8.2 J | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | 2.2 J | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | 1,740,000 | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | 75,500 | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 4.0 U | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 82.4 J | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | 13.8 JB | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 448,000 J | NA | 306 | NA | 150 | 243 |
| Chromium VI | 18540-29-9 | ug/L | 368,000 RA | NA | 50 J | NA | 10 U | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | 264,000 |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW102S-20160622-F<br>06/22/16<br>114-P1B-MW102S | 114-P1B-MW102S-20160916<br>09/16/16<br>114-P1B-MW102S | 114-P1B-MW102S-20160916-F<br>09/16/16<br>114-P1B-MW102S | 114-P1B-MW102S-20170412<br>04/12/17<br>114-P1B-MW102S | 114-P1B-MW102S-20170412-F<br>04/12/17<br>114-P1B-MW102S | 114-P1B-MW102S-F-20150618<br>06/18/15<br>114-P1B-MW102S |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | 1,300 J |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 325 | 245 | 283 | 298 | 335 | 365 |
| pH | ARC-pH | SU | 7.28 | 7.03 | 7.18 | 7.32 | 7.32 | 6.81 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | 4,640 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW102S-20160622-F<br>06/22/16<br>114-P1B-MW102S | 114-P1B-MW102S-20160916<br>09/16/16<br>114-P1B-MW102S | 114-P1B-MW102S-20160916-F<br>09/16/16<br>114-P1B-MW102S | 114-P1B-MW102S-20170412<br>04/12/17<br>114-P1B-MW102S | 114-P1B-MW102S-20170412-F<br>04/12/17<br>114-P1B-MW102S | 114-P1B-MW102S-F-20150618<br>06/18/15<br>114-P1B-MW102S |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 189,000 | NA | NA | NA | 818,000 |
| Sulfide | 18496-25-8 | ug/L | NA | 4,100 | NA | NA | NA | 2,000 |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | 1,000 J |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | 13.96 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-P1B-MW102S-F-20150922<br>09/22/15<br>114-P1B-MW102S | 114-P1B-MW102S-F-20151210<br>12/10/15<br>114-P1B-MW102S | 114-P1B-MW102S-F-20160314<br>03/14/16<br>114-P1B-MW102S | 114-P1B-MW103S<br>06/18/14<br>114-P1B-MW103S | 114-P1B-MW103S-03252015<br>03/25/15<br>114-P1B-MW103S | 114-P1B-MW103S-10082014<br>10/08/14<br>114-P1B-MW103S | 114-P1B-MW103S-12032014<br>12/03/14<br>114-P1B-MW103S |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW102S-F-20150922<br><br>09/22/15<br>114-P1B-MW102S | 114-P1B-MW102S-F-20151210<br><br>12/10/15<br>114-P1B-MW102S | 114-P1B-MW102S-F-20160314<br><br>03/14/16<br>114-P1B-MW102S | 114-P1B-MW103S<br><br>06/18/14<br>114-P1B-MW103S | 114-P1B-MW103S-03252015<br><br>03/25/15<br>114-P1B-MW103S | 114-P1B-MW103S-10082014<br><br>10/08/14<br>114-P1B-MW103S | 114-P1B-MW103S-12032014<br><br>12/03/14<br>114-P1B-MW103S |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW102S-F-20150922<br>09/22/15<br>114-P1B-MW102S | 114-P1B-MW102S-F-20151210<br>12/10/15<br>114-P1B-MW102S | 114-P1B-MW102S-F-20160314<br>03/14/16<br>114-P1B-MW102S | 114-P1B-MW103S<br>06/18/14<br>114-P1B-MW103S | 114-P1B-MW103S-03252015<br>03/25/15<br>114-P1B-MW103S | 114-P1B-MW103S-10082014<br>10/08/14<br>114-P1B-MW103S | 114-P1B-MW103S-12032014<br>12/03/14<br>114-P1B-MW103S |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | 250 J | 387 | 401 |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | 6.0 U | 6.0 U | 3.5 J |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | 15 U | 30 U | 5.6 J |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | 59.5 J | 75.9 J | 54.2 J |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | 3.0 UB | 3.0 U | 3.0 U |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | 531,000 J | 425,000 | 424,000 |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 23.4 | 2.1 J | 10 U | 10 UJ |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | 5.2 J | 10 U | R | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | 50 UB | 1.1 J | 1.2 J |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | 5.5 J | 14.5 J | 4.8 J |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | 100 U | 194 JB | 59.7 J |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | 9.5 J | 3.0 U | 6.0 U |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | 445 J | 82.9 J | 110 J |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | 15 U | 15 U | 1.3 J |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW102S-F-20150922<br>09/22/15<br>114-P1B-MW102S | 114-P1B-MW102S-F-20151210<br>12/10/15<br>114-P1B-MW102S | 114-P1B-MW102S-F-20160314<br>03/14/16<br>114-P1B-MW102S | 114-P1B-MW103S<br>06/18/14<br>114-P1B-MW103S | 114-P1B-MW103S-03252015<br>03/25/15<br>114-P1B-MW103S | 114-P1B-MW103S-10082014<br>10/08/14<br>114-P1B-MW103S | 114-P1B-MW103S-12032014<br>12/03/14<br>114-P1B-MW103S |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | 0.20 U | 0.16 J | 0.20 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | 5.7 JB | 7.9 J | 5.8 J |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | 56,700 J | 80,100 | 69,600 J |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | 7.7 J | 50 U | 5.2 J |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | 10 U | 5.4 J | 4.2 J |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | 688,000 | 887,000 | 747,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | 510,000 J | 556,000 | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | 10 U | 20 U | 20 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | 3.1 JB | 12.4 J | 11.0 J |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | 20 UB | 20 U | 20 U |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 179 | 203 | 273 | 22.7 | 1.3 J | 10 U | 10 UJ |
| Chromium VI | 18540-29-9 | ug/L | 10 U | 5.5 RA | 5.5 RA | 1.8 J | 10 U | R | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 259,000 | 176,000 | 215,000 | NA | 439,000 J | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW102S-F-20150922<br>09/22/15<br>114-P1B-MW102S | 114-P1B-MW102S-F-20151210<br>12/10/15<br>114-P1B-MW102S | 114-P1B-MW102S-F-20160314<br>03/14/16<br>114-P1B-MW102S | 114-P1B-MW103S<br>06/18/14<br>114-P1B-MW103S | 114-P1B-MW103S-03252015<br>03/25/15<br>114-P1B-MW103S | 114-P1B-MW103S-10082014<br>10/08/14<br>114-P1B-MW103S | 114-P1B-MW103S-12032014<br>12/03/14<br>114-P1B-MW103S |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | 1,070,000 J | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | 42,200 | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 1,200 J | NA | 2,000 U | NA | 2,000 U | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 389 | 311 | 316 | 414 | 55.1 | 71.1 | 16.6 |
| pH | ARC-pH | SU | 7.05 | 6.94 | 7.31 | 11.19 | 10.25 | 10.76 | 10.80 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 8,880 | NA | 8,800 | NA | 5,220 | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW102S-F-20150922<br>09/22/15<br>114-P1B-MW102S | 114-P1B-MW102S-F-20151210<br>12/10/15<br>114-P1B-MW102S | 114-P1B-MW102S-F-20160314<br>03/14/16<br>114-P1B-MW102S | 114-P1B-MW103S<br>06/18/14<br>114-P1B-MW103S | 114-P1B-MW103S-03252015<br>03/25/15<br>114-P1B-MW103S | 114-P1B-MW103S-10082014<br>10/08/14<br>114-P1B-MW103S | 114-P1B-MW103S-12032014<br>12/03/14<br>114-P1B-MW103S |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 729,000 | 448,000 | 608,000 | NA | 1,390,000 | 1,600,000 J | NA |
| Sulfide | 18496-25-8 | ug/L | 2,800 | 2,700 | 2,000 U | NA | 4,200 | 3,200 | NA |
| Sulfite | ARC-SULFITE | ug/L | 2,500 J | 3,000 UJ | 3,000 UJ | NA | 10,000 J | NA | NA |
| Temperature | ARC-Temp | deg c | 20.81 | NA | 10.04 | NA | 9.89 | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | 2,820 | 1,500 | 8,580 | 7,830 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | 84 | 364 | 236.7 | 261 |
| pH | ARC-pH | SU | NA | NA | NA | 12.24 | 11.13 | 10.95 | 12.03 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | 3.9 | NA | 6.351 | 4.23 |
| Temperature | ARC-Temp | deg c | NA | NA | NA | 19.51 | 9.89 | 21.45 | 15.2 |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | 11.78 | 1.61 | 395 | 3.64 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-P1B-MW103S-20150619 | 114-P1B-MW103S-20150922 | 114-P1B-MW103S-20151210 | 114-P1B-MW103S-20160318 | 114-P1B-MW103S-20160622 | 114-P1B-MW103S-20160622-F | 114-P1B-MW103S-F-20150619 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | |
| Date Collected: | | | 06/19/15 | 09/22/15 | 12/10/15 | 03/18/16 | 06/22/16 | 06/22/16 | 06/19/15 |
| Location ID: | CAS Number | Units | 114-P1B-MW103S | 114-P1B-MW103S | 114-P1B-MW103S | 114-P1B-MW103S | 114-P1B-MW103S | 114-P1B-MW103S | 114-P1B-MW103S |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW103S-20150619<br><br>06/19/15<br>114-P1B-MW103S | 114-P1B-MW103S-20150922<br><br>09/22/15<br>114-P1B-MW103S | 114-P1B-MW103S-20151210<br><br>12/10/15<br>114-P1B-MW103S | 114-P1B-MW103S-20160318<br><br>03/18/16<br>114-P1B-MW103S | 114-P1B-MW103S-20160622<br><br>06/22/16<br>114-P1B-MW103S | 114-P1B-MW103S-20160622-F<br><br>06/22/16<br>114-P1B-MW103S | 114-P1B-MW103S-F-20150619<br><br>06/19/15<br>114-P1B-MW103S |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-P1B-MW103S-20150619 06/19/15 114-P1B-MW103S | 114-P1B-MW103S-20150922 09/22/15 114-P1B-MW103S | 114-P1B-MW103S-20151210 12/10/15 114-P1B-MW103S | 114-P1B-MW103S-20160318 03/18/16 114-P1B-MW103S | 114-P1B-MW103S-20160622 06/22/16 114-P1B-MW103S | 114-P1B-MW103S-20160622-F 06/22/16 114-P1B-MW103S | 114-P1B-MW103S-F-20150619 06/19/15 114-P1B-MW103S |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 240 | 183 J | 200 U | 37.7 J | 128 J | NA | NA |
| Antimony | 7440-36-0 | ug/L | 6.0 U | 3.6 J | 6.0 U | 6.0 U | 6.0 U | NA | NA |
| Arsenic | 7440-38-2 | ug/L | 15.2 | 3.0 U | 30 U | 15 U | 27.5 | NA | NA |
| Barium | 7440-39-3 | ug/L | 49.2 J | 43.9 J | 50.3 J | 30.3 J | 30.0 J | NA | NA |
| Beryllium | 7440-41-7 | ug/L | 0.90 J | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 3.0 U | 3.0 UJB | 3.0 UB | 0.80 J | 0.40 J | NA | NA |
| Calcium | 7440-70-2 | ug/L | 446,000 | 386,000 | 411,000 | 363,000 | 341,000 | NA | NA |
| Chromium | 7440-47-3 | ug/L | 5.9 J | 83.7 | 4.6 J | 4.7 J | 9.5 JB | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 U | 10 U | 5.5 RA | 5.5 UJ | 10 RA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 50 U | 0.80 JB | 0.80 J | 1.0 J | 50 U | NA | NA |
| Copper | 7440-50-8 | ug/L | 10 U | 10 U | 2.2 J | 2.6 J | 10 U | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 65.8 J | 442 | 431 | 100 UB | 19.1 J | NA | NA |
| Lead | 7439-92-1 | ug/L | 15 U | 3.1 | 30 U | 15 UJ | 15 U | NA | NA |
| Magnesium | 7439-95-4 | ug/L | 5,000 U | 5,000 UB | 1,240 J | 614 J | 5,000 U | NA | NA |
| Manganese | 7439-96-5 | ug/L | 1.3 J | 30.0 J | 113 | 6.6 J | 15 U | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW103S-20150619<br>06/19/15<br>114-P1B-MW103S | 114-P1B-MW103S-20150922<br>09/22/15<br>114-P1B-MW103S | 114-P1B-MW103S-20151210<br>12/10/15<br>114-P1B-MW103S | 114-P1B-MW103S-20160318<br>03/18/16<br>114-P1B-MW103S | 114-P1B-MW103S-20160622<br>06/22/16<br>114-P1B-MW103S | 114-P1B-MW103S-20160622-F<br>06/22/16<br>114-P1B-MW103S | 114-P1B-MW103S-F-20150619<br>06/19/15<br>114-P1B-MW103S |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | 0.20 U | 0.20 U | 0.20 U | 0.20 U | NA | NA |
| Nickel | 7440-02-0 | ug/L | 4.4 J | 42.0 | 6.8 J | 3.8 JB | 10 U | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 71,100 | 76,600 | 68,800 | 55,500 | 53,700 | NA | NA |
| Selenium | 7782-49-2 | ug/L | 50 U | 50 U | 10 U | 6.5 J | 20.7 | NA | NA |
| Silver | 7440-22-4 | ug/L | 10 U | 4.0 J | 10 U | 10 U | 1.8 J | NA | NA |
| Sodium | 7440-23-5 | ug/L | 752,000 | 604,000 | 457,000 | 331,000 | 303,000 | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 465,000 | 446,000 | 466,000 | 390,000 | 360,000 J | NA | NA |
| Thallium | 7440-28-0 | ug/L | 10 U | 10 U | 20 U | 10 U | 10 U | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 4.1 J | 5.3 JB | 5.0 J | 2.3 J | 3.8 J | NA | NA |
| Zinc | 7440-66-6 | ug/L | 13.8 J | 20 U | 20 UB | 20 U | 20 U | NA | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | 10 UB | 6.2 J |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | 10 RA | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | 479,000 |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW103S-20150619<br>06/19/15<br>114-P1B-MW103S | 114-P1B-MW103S-20150922<br>09/22/15<br>114-P1B-MW103S | 114-P1B-MW103S-20151210<br>12/10/15<br>114-P1B-MW103S | 114-P1B-MW103S-20160318<br>03/18/16<br>114-P1B-MW103S | 114-P1B-MW103S-20160622<br>06/22/16<br>114-P1B-MW103S | 114-P1B-MW103S-20160622-F<br>06/22/16<br>114-P1B-MW103S | 114-P1B-MW103S-F-20150619<br>06/19/15<br>114-P1B-MW103S |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | 2,000 U | 2,000 U | 2,000 U | NA | NA | 2,000 U |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 103 | 226 | 287 | 305 | 167 | 80.0 | 118 |
| pH | ARC-pH | SU | 10.95 | 9.68 | 8.97 | 9.77 | 10.41 | 10.48 | 10.95 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 2,360 | 4,510 | 4,650 | 3.3 | NA | NA | 2,360 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW103S-20150619<br>06/19/15<br>114-P1B-MW103S | 114-P1B-MW103S-20150922<br>09/22/15<br>114-P1B-MW103S | 114-P1B-MW103S-20151210<br>12/10/15<br>114-P1B-MW103S | 114-P1B-MW103S-20160318<br>03/18/16<br>114-P1B-MW103S | 114-P1B-MW103S-20160622<br>06/22/16<br>114-P1B-MW103S | 114-P1B-MW103S-20160622-F<br>06/22/16<br>114-P1B-MW103S | 114-P1B-MW103S-F-20150619<br>06/19/15<br>114-P1B-MW103S |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 1,450,000 J | 1,390,000 | 1,220,000 | 1,190,000 | 1,110,000 J | NA | 2,240,000 J |
| Sulfide | 18496-25-8 | ug/L | 5,500 | 4,100 | 2,000 U | 2,000 U | 1,200 J | NA | 6,400 |
| Sulfite | ARC-SULFITE | ug/L | 3,000 J | 3,000 J | 3,000 UJ | 3,000 UJ | 3,000 UJ | NA | 3,000 J |
| Temperature | ARC-Temp | deg c | 15.63 | 20.44 | 20.93 | 16.36 | NA | NA | 15.63 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | 7,900 | 4,100 JB | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 20,150 | NA | 0 | 200 | 230 | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 300 | NA | 238 | 396.6 | 241.3 | NA | NA |
| pH | ARC-pH | SU | 11.01 | NA | 9.38 | 10.16 | 10.79 | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | 0 | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 15.52 | NA | 20.93 | 16.36 | 19.86 | NA | NA |
| Turbidity | ARC-Turb | NTU | 1.46 | NA | 8.5 | 1.11 | 6.73 | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-P1B-MW103S-F-20150922<br>09/22/15<br>114-P1B-MW103S | 114-P1B-MW103S-F-20151210<br>12/10/15<br>114-P1B-MW103S | 114-P1B-MW103S-F-20160318<br>03/18/16<br>114-P1B-MW103S | 114-P1B-MW104S<br>06/17/14<br>114-P1B-MW104S | 114-P1B-MW104S-03302015<br>03/30/15<br>114-P1B-MW104S | 114-P1B-MW104S071814<br>07/18/14<br>114-P1B-MW104S | 114-P1B-MW104S-10082014<br>10/08/14<br>114-P1B-MW104S |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW103S-F-20150922<br>09/22/15<br>114-P1B-MW103S | 114-P1B-MW103S-F-20151210<br>12/10/15<br>114-P1B-MW103S | 114-P1B-MW103S-F-20160318<br>03/18/16<br>114-P1B-MW103S | 114-P1B-MW104S<br>06/17/14<br>114-P1B-MW104S | 114-P1B-MW104S-03302015<br>03/30/15<br>114-P1B-MW104S | 114-P1B-MW104S071814<br>07/18/14<br>114-P1B-MW104S | 114-P1B-MW104S-10082014<br>10/08/14<br>114-P1B-MW104S |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW103S-F-20150922<br><br>09/22/15<br>114-P1B-MW103S | 114-P1B-MW103S-F-20151210<br><br>12/10/15<br>114-P1B-MW103S | 114-P1B-MW103S-F-20160318<br><br>03/18/16<br>114-P1B-MW103S | 114-P1B-MW104S<br><br>06/17/14<br>114-P1B-MW104S | 114-P1B-MW104S-03302015<br><br>03/30/15<br>114-P1B-MW104S | 114-P1B-MW104S071814<br><br>07/18/14<br>114-P1B-MW104S | 114-P1B-MW104S-10082014<br><br>10/08/14<br>114-P1B-MW104S |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | 1,070 | NA | 2,060 |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | 6 U | NA | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | 6.4 | NA | 14.3 |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | 37 J | NA | 90.5 J |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | 1 U | NA | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | 3 U | NA | 3.0 U |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | 84,900 | NA | 68,700 |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 4.7 J | 83.7 | 2.0 J | 10 U |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | R | 73 RA | 32 RA | R |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | 1.9 JB | NA | 2.3 J |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | 12.8 | NA | 14.0 J |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | 121 | NA | 199 JB |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | 3 U | NA | 3.5 |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | 96.4 J | NA | 5,000 UJ |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | 15 U | NA | 15 UB |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW103S-F-20150922<br>09/22/15<br>114-P1B-MW103S | 114-P1B-MW103S-F-20151210<br>12/10/15<br>114-P1B-MW103S | 114-P1B-MW103S-F-20160318<br>03/18/16<br>114-P1B-MW103S | 114-P1B-MW104S<br>06/17/14<br>114-P1B-MW104S | 114-P1B-MW104S-03302015<br>03/30/15<br>114-P1B-MW104S | 114-P1B-MW104S071814<br>07/18/14<br>114-P1B-MW104S | 114-P1B-MW104S-10082014<br>10/08/14<br>114-P1B-MW104S |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | 0.2 U | NA | 0.11 J |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | 39.1 | NA | 39.6 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | 64,200 | NA | 106,000 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | 10.9 | NA | 9.3 J |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | 1.4 J | NA | 10 UJ |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | 235,000 | NA | 227,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | 53,300 | NA | 80,600 |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | 2 U | NA | 2.0 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | 62.6 | NA | 58.9 |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | 20 UB | NA | 20 U |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 2.1 J | 10 U | 3.5 J | 4.6 J | 57.4 J | 2.3 J | 9.7 J |
| Chromium VI | 18540-29-9 | ug/L | 10 U | 5.5 RA | 4.1 J | R | 71 RA | 38 RA | R |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 449,000 | 444,000 | 415,000 | NA | 51,700 | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW103S-F-20150922<br>09/22/15<br>114-P1B-MW103S | 114-P1B-MW103S-F-20151210<br>12/10/15<br>114-P1B-MW103S | 114-P1B-MW103S-F-20160318<br>03/18/16<br>114-P1B-MW103S | 114-P1B-MW104S<br>06/17/14<br>114-P1B-MW104S | 114-P1B-MW104S-03302015<br>03/30/15<br>114-P1B-MW104S | 114-P1B-MW104S071814<br>07/18/14<br>114-P1B-MW104S | 114-P1B-MW104S-10082014<br>10/08/14<br>114-P1B-MW104S |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | 142,000 J |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | 4,400 | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | NA | 2,000 U | NA | 2,000 U | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 221 | 301 | 324 | 290 | 127 | 142 | 154 |
| pH | ARC-pH | SU | 10.56 | 9.18 | 10.16 | 10.21 | 11.9 | 10.36 | 11.05 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 4,510 | NA | 3.3 | NA | 150 | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW103S-F-20150922<br>09/22/15<br>114-P1B-MW103S | 114-P1B-MW103S-F-20151210<br>12/10/15<br>114-P1B-MW103S | 114-P1B-MW103S-F-20160318<br>03/18/16<br>114-P1B-MW103S | 114-P1B-MW104S<br>06/17/14<br>114-P1B-MW104S | 114-P1B-MW104S-03302015<br>03/30/15<br>114-P1B-MW104S | 114-P1B-MW104S071814<br>07/18/14<br>114-P1B-MW104S | 114-P1B-MW104S-10082014<br>10/08/14<br>114-P1B-MW104S |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 1,420,000 | 1,380,000 | 1,210,000 | NA | 144,000 J | NA | 192,000 J |
| Sulfide | 18496-25-8 | ug/L | 4,200 | 2,000 U | 2,000 U | NA | 2,000 U | NA | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 3,000 UJ | 3,000 UJ | NA | 3,000 UJ | NA | NA |
| Temperature | ARC-Temp | deg c | 20.44 | NA | 16.36 | NA | 8.38 | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | 8,050 | 1,600 | 2,850 | 490 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | 44 | 123 | 138 | 91.6 |
| pH | ARC-pH | SU | NA | NA | NA | 11.45 | 11.9 | 11.24 | 11.66 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | 1.87 | NA | 1.68 | 1.741 |
| Temperature | ARC-Temp | deg c | NA | NA | NA | 17.58 | 8.38 | 18.4 | 22.1 |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | 1.34 | 3.45 | 8.19 | 2.82 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-P1B-MW104S-12032014 | 114-P1B-MW104S-20150619 | 114-P1B-MW104S-20150922 | 114-P1B-MW104S-20151211 | 114-P1B-MW104S-20160322 | 114-P1B-MW104S-20160621 | 114-P1B-MW104S-20160621-F |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | |
| Date Collected: | | | 12/03/14 | 06/19/15 | 09/22/15 | 12/11/15 | 03/22/16 | 06/21/16 | 06/21/16 |
| Location ID: | CAS Number | Units | 114-P1B-MW104S | 114-P1B-MW104S | 114-P1B-MW104S | 114-P1B-MW104S | 114-P1B-MW104S | 114-P1B-MW104S | 114-P1B-MW104S |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW104S-12032014<br><br>12/03/14<br>114-P1B-MW104S | 114-P1B-MW104S-20150619<br><br>06/19/15<br>114-P1B-MW104S | 114-P1B-MW104S-20150922<br><br>09/22/15<br>114-P1B-MW104S | 114-P1B-MW104S-20151211<br><br>12/11/15<br>114-P1B-MW104S | 114-P1B-MW104S-20160322<br><br>03/22/16<br>114-P1B-MW104S | 114-P1B-MW104S-20160621<br><br>06/21/16<br>114-P1B-MW104S | 114-P1B-MW104S-20160621-F<br><br>06/21/16<br>114-P1B-MW104S |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW104S-12032014<br>12/03/14<br>114-P1B-MW104S | 114-P1B-MW104S-20150619<br>06/19/15<br>114-P1B-MW104S | 114-P1B-MW104S-20150922<br>09/22/15<br>114-P1B-MW104S | 114-P1B-MW104S-20151211<br>12/11/15<br>114-P1B-MW104S | 114-P1B-MW104S-20160322<br>03/22/16<br>114-P1B-MW104S | 114-P1B-MW104S-20160621<br>06/21/16<br>114-P1B-MW104S | 114-P1B-MW104S-20160621-F<br>06/21/16<br>114-P1B-MW104S |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 1,260 | 1,060 | 639 | 704 | 669 | 646 J | NA |
| Antimony | 7440-36-0 | ug/L | 6.0 U | 6.0 U | 6.0 U | 6.0 U | 6.0 U | 6.0 U | NA |
| Arsenic | 7440-38-2 | ug/L | 9.5 | 9.4 | 8.5 | 8.5 | 6.0 | 5.0 | NA |
| Barium | 7440-39-3 | ug/L | 49.8 J | 48.9 J | 31.6 J | 34.5 J | 27.8 J | 27.1 J | NA |
| Beryllium | 7440-41-7 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 0.70 J | 1.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 3.0 U | 3.0 U | 3.0 UJB | 3.0 UB | 0.60 J | 3.0 U | NA |
| Calcium | 7440-70-2 | ug/L | 71,000 | 86,500 | 61,200 | 65,300 | 76,700 | 67,200 | NA |
| Chromium | 7440-47-3 | ug/L | 2,990 | 10.1 J | 10 UJ | 5.5 J | 20.3 J | 56.4 | NA |
| Chromium VI | 18540-29-9 | ug/L | 140 | 83 J | 68 J | 8.1 RA | 30 J | 8.8 J | NA |
| Cobalt | 7440-48-4 | ug/L | 2.1 J | 2.0 J | 1.8 JB | 2.5 J | 2.0 J | 2.4 J | NA |
| Copper | 7440-50-8 | ug/L | 15.3 | 13.0 | 8.7 J | 21.7 | 14.9 | 11.4 J | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 56.0 J | 60.8 J | 176 | 147 | 62.0 J | 70.6 J | NA |
| Lead | 7439-92-1 | ug/L | 3.0 U | 3.0 U | 3.0 U | 3.0 U | 3.0 U | 3.0 U | NA |
| Magnesium | 7439-95-4 | ug/L | 45.2 J | 5,000 U | 5,000 UB | 73.1 J | 5,000 U | 5,000 U | NA |
| Manganese | 7439-96-5 | ug/L | 15 U | 0.40 J | 32.5 J | 28.6 | 14.1 J | 15 U | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW104S-12032014<br><br>12/03/14<br>114-P1B-MW104S | 114-P1B-MW104S-20150619<br><br>06/19/15<br>114-P1B-MW104S | 114-P1B-MW104S-20150922<br><br>09/22/15<br>114-P1B-MW104S | 114-P1B-MW104S-20151211<br><br>12/11/15<br>114-P1B-MW104S | 114-P1B-MW104S-20160322<br><br>03/22/16<br>114-P1B-MW104S | 114-P1B-MW104S-20160621<br><br>06/21/16<br>114-P1B-MW104S | 114-P1B-MW104S-20160621-F<br><br>06/21/16<br>114-P1B-MW104S |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | 0.20 U | 0.20 U | 0.20 U | 0.20 U | 0.20 U | NA |
| Nickel | 7440-02-0 | ug/L | 37.0 | 36.8 | 38.5 | 45.8 | 47.0 | 47.0 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 79,800 J | 66,000 | 62,700 | 66,200 | 69,700 | 61,700 | NA |
| Selenium | 7782-49-2 | ug/L | 7.7 J | 10.6 | 10.6 | 12.3 | 14.1 | 11.1 | NA |
| Silver | 7440-22-4 | ug/L | 2.5 J | 10 U | 10 U | 10 U | 10 U | 10 U | NA |
| Sodium | 7440-23-5 | ug/L | 234,000 | 240,000 | 243,000 | 252,000 | 261,000 | 253,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | 61,700 | 65,000 | 71,600 | 64,900 | 67,900 | NA |
| Thallium | 7440-28-0 | ug/L | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 67.1 | 56.7 | 73.7 | 74.8 | 65.7 | 67.8 | NA |
| Zinc | 7440-66-6 | ug/L | 12.3 J | 15.2 J | 20 U | 20.7 UB | 5.5 J | 20 U | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 2,730 | NA | NA | NA | NA | NA | 9.1 J |
| Chromium VI | 18540-29-9 | ug/L | 140 | NA | NA | NA | NA | NA | 9.9 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW104S-12032014<br><br>12/03/14<br>114-P1B-MW104S | 114-P1B-MW104S-20150619<br><br>06/19/15<br>114-P1B-MW104S | 114-P1B-MW104S-20150922<br><br>09/22/15<br>114-P1B-MW104S | 114-P1B-MW104S-20151211<br><br>12/11/15<br>114-P1B-MW104S | 114-P1B-MW104S-20160322<br><br>03/22/16<br>114-P1B-MW104S | 114-P1B-MW104S-20160621<br><br>06/21/16<br>114-P1B-MW104S | 114-P1B-MW104S-20160621-F<br><br>06/21/16<br>114-P1B-MW104S |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | 2,000 U | NA | 2,000 U | 2,000 U | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 155 | 221 | 166 | 178 | 175 | 160 | 155 |
| pH | ARC-pH | SU | 10.84 | 11.52 | 11.5 | 10.69 | 11.16 | 10.40 | 10.41 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | 1,930 | 1,740 | 1,070 | 1.7 | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW104S-12032014<br>12/03/14<br>114-P1B-MW104S | 114-P1B-MW104S-20150619<br>06/19/15<br>114-P1B-MW104S | 114-P1B-MW104S-20150922<br>09/22/15<br>114-P1B-MW104S | 114-P1B-MW104S-20151211<br>12/11/15<br>114-P1B-MW104S | 114-P1B-MW104S-20160322<br>03/22/16<br>114-P1B-MW104S | 114-P1B-MW104S-20160621<br>06/21/16<br>114-P1B-MW104S | 114-P1B-MW104S-20160621-F<br>06/21/16<br>114-P1B-MW104S |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 152,000 | 148,000 J | 160,000 | 155,000 | 166,000 J | NA |
| Sulfide | 18496-25-8 | ug/L | NA | 2,000 U | NA | 2,000 U | 2,000 U | 2,000 U | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | 3,000 UJ | 1,000 J | 3,000 UJ | 3,000 UJ | 2,500 J | NA |
| Temperature | ARC-Temp | deg c | NA | 14.6 | 22.04 | 18.19 | 11.77 | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | 41,700 | 34,500 | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 4,140 | 80 | NA | 0 | 0 | 470 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 0.82 | 101 | NA | 163 | 45.1 | 79.2 | NA |
| pH | ARC-pH | SU | 12.08 | 11.52 | NA | 11.88 | 11.22 | 10.81 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | 400 | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | 1.59 | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 13.53 | 14.6 | NA | 18.19 | 11.46 | 20.91 | NA |
| Turbidity | ARC-Turb | NTU | 2.28 | 5.72 | NA | 1.23 | 1.93 | 3.71 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-P1B-MW104S-F-20150619 | 114-P1B-MW104S-F-20150922 | 114-P1B-MW104S-F-20151211 | 114-P1B-MW104S-F-20160322 | 114-P1C-101I | 114-P1C-EW1 | 114-P1C-EW1-04282015 | 114-P1C-EW1-10092014 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | |
| Date Collected: | | | 06/19/15 | 09/22/15 | 12/11/15 | 03/22/16 | 11/19/14 | 06/20/14 | 04/28/15 | 10/09/14 |
| Location ID: | CAS Number | Units | 114-P1B-MW104S | 114-P1B-MW104S | 114-P1B-MW104S | 114-P1B-MW104S | 114-P1C-MW101I | 114-P1C-EW1 | 114-P1C-EW1 | 114-P1C-EW1 |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW104S-F-20150619<br>06/19/15<br>114-P1B-MW104S | 114-P1B-MW104S-F-20150922<br>09/22/15<br>114-P1B-MW104S | 114-P1B-MW104S-F-20151211<br>12/11/15<br>114-P1B-MW104S | 114-P1B-MW104S-F-20160322<br>03/22/16<br>114-P1B-MW104S | 114-P1C-101I<br>11/19/14<br>114-P1C-MW101I | 114-P1C-EW1<br>06/20/14<br>114-P1C-EW1 | 114-P1C-EW1-04282015<br>04/28/15<br>114-P1C-EW1 | 114-P1C-EW1-10092014<br>10/09/14<br>114-P1C-EW1 |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW104S-F-20150619<br><br>06/19/15<br>114-P1B-MW104S | 114-P1B-MW104S-F-20150922<br><br>09/22/15<br>114-P1B-MW104S | 114-P1B-MW104S-F-20151211<br><br>12/11/15<br>114-P1B-MW104S | 114-P1B-MW104S-F-20160322<br><br>03/22/16<br>114-P1B-MW104S | 114-P1C-101I<br><br>11/19/14<br>114-P1C-MW101I | 114-P1C-EW1<br><br>06/20/14<br>114-P1C-EW1 | 114-P1C-EW1-04282015<br><br>04/28/15<br>114-P1C-EW1 | 114-P1C-EW1-10092014<br><br>10/09/14<br>114-P1C-EW1 |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | 12,800 | 478 | 478 J | 206 |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | 12 U | 6.0 U | 6.0 U | 50.4 |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | 22.2 | 2.7 | 2.7 J | 3.0 U |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | 91.6 J | 75.6 | 75.6 J | 44.5 J |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | 0.80 J | 0.60 | 0.60 J | 0.80 J |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | 2.4 J | 2.0 | 2.0 J | 7.0 |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | 39,200 | 154,000 | 154,000 | 87,600 |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | 2,450 J | 25,300 | 9,590 J | 30,900 J |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | R | 7,300 | 7,300 J | 34,800 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | 29.6 J | 29.7 | 29.7 J | 49.2 J |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | 42.4 | 68.4 | 68.4 | 252 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | 17,600 | 520 | 520 | 363 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | 33.8 | 7.0 | 7.0 | 12.3 |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | 8,630 J | 27,200 | 27,200 | 16,500 |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | 245 | 671 | 671 | 547 |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW104S-F-20150619<br>06/19/15<br>114-P1B-MW104S | 114-P1B-MW104S-F-20150922<br>09/22/15<br>114-P1B-MW104S | 114-P1B-MW104S-F-20151211<br>12/11/15<br>114-P1B-MW104S | 114-P1B-MW104S-F-20160322<br>03/22/16<br>114-P1B-MW104S | 114-P1C-101I<br>11/19/14<br>114-P1C-MW101I | 114-P1C-EW1<br>06/20/14<br>114-P1C-EW1 | 114-P1C-EW1-04282015<br>04/28/15<br>114-P1C-EW1 | 114-P1C-EW1-10092014<br>10/09/14<br>114-P1C-EW1 |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | 0.20 U | 0.20 U | 0.20 U | 0.11 J |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | 59.2 | 47.4 | 47.4 | 131 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | 14,400 J | 16,300 | 16,300 | 13,300 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | 20 U | 5.6 | 10 UB | 4.1 J |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | 20 U | 10 U | 10 U | 7.1 J |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | 320,000 | 238,000 | 238,000 | 219,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | 51,100 | 51,100 | 61,500 |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | 4.0 U | 2.0 U | 2.0 U | 2.0 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | 136 | 7.6 | 7.6 J | 8.5 J |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | 183 | 108 | 108 | 235 |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 7.6 J | 2.9 J | 3.4 J | 11.2 J | 2,360 J | 9,580 | 9,580 J | 30,100 J |
| Chromium VI | 18540-29-9 | ug/L | 91 J | 74 J | 14 RA | 31 J | R | 7,300 | 7,300 J | 33,000 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 67,300 | 65,400 | 75,200 | 62,200 | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW104S-F-20150619<br>06/19/15<br>114-P1B-MW104S | 114-P1B-MW104S-F-20150922<br>09/22/15<br>114-P1B-MW104S | 114-P1B-MW104S-F-20151211<br>12/11/15<br>114-P1B-MW104S | 114-P1B-MW104S-F-20160322<br>03/22/16<br>114-P1B-MW104S | 114-P1C-101I<br>11/19/14<br>114-P1C-MW101I | 114-P1C-EW1<br>06/20/14<br>114-P1C-EW1 | 114-P1C-EW1-04282015<br>04/28/15<br>114-P1C-EW1 | 114-P1C-EW1-10092014<br>10/09/14<br>114-P1C-EW1 |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 152,000 |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | 36,100 | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | NA | NA | 2,000 U | NA | 2,000 U | 2,000 U | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 245 | 169 | 192 | 172 | 174 | 365 | 365 | 293 |
| pH | ARC-pH | SU | 11.52 | 11.5 | 10.73 | 11.16 | 9.81 | 7.03 | 7.03 | 7.27 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 1,930 | 1,740 | NA | 1.7 | NA | 1,930 | 1,930 | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1B-MW104S-F-20150619<br><br>06/19/15<br>114-P1B-MW104S | 114-P1B-MW104S-F-20150922<br><br>09/22/15<br>114-P1B-MW104S | 114-P1B-MW104S-F-20151211<br><br>12/11/15<br>114-P1B-MW104S | 114-P1B-MW104S-F-20160322<br><br>03/22/16<br>114-P1B-MW104S | 114-P1C-101I<br><br>11/19/14<br>114-P1C-MW101I | 114-P1C-EW1<br><br>06/20/14<br>114-P1C-EW1 | 114-P1C-EW1-04282015<br><br>04/28/15<br>114-P1C-EW1 | 114-P1C-EW1-10092014<br><br>10/09/14<br>114-P1C-EW1 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 155,000 | 148,000 | 147,000 | 155,000 | NA | 155,000 | 155,000 | 167,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | NA | 2,000 U | 2,000 U | NA | 2,000 U | 2,000 U | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 3,000 UJ | 3,000 UJ | 3,000 UJ | NA | 3,000 U | 3,000 UJ | NA |
| Temperature | ARC-Temp | deg c | 14.6 | 22.04 | NA | 11.77 | NA | 14.84 | 14.84 | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | 3,510 | 430 | 7,330 | 6,700 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | 122 | 110 | 167 | 24.7 |
| pH | ARC-pH | SU | NA | NA | NA | NA | 10.86 | 7 | 7.03 | 7.27 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | 1.39 | 0.816 | NA | 15.05 |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | 15.3 | 25.12 | 14.84 | 17.55 |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | 710 | 1.9 | 7.61 | 10.6 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-EW1-12022014<br><br>12/02/14<br>114-P1C-EW1 | 114-P1C-EW1-20150618<br><br>06/18/15<br>114-P1C-EW1 | 114-P1C-EW1-F-20150618<br><br>06/18/15<br>114-P1C-EW1 | 114-P1C-GW 052214<br><br>05/22/14<br>114-P1C-EW1 | 114-P1C-MW1<br><br>04/09/14<br>114-P1C-EW1 | 114-P1C-MW1 042214<br><br>04/22/14<br>114-P1C-EW1 | 114-P1C-MW1 051914<br><br>05/19/14<br>114-P1C-EW1 | 114-P1C-MW101I-03312015<br><br>03/31/15<br>114-P1C-MW101I |
|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-EW1-12022014<br><br>12/02/14<br>114-P1C-EW1 | 114-P1C-EW1-20150618<br><br>06/18/15<br>114-P1C-EW1 | 114-P1C-EW1-F-20150618<br><br>06/18/15<br>114-P1C-EW1 | 114-P1C-GW 052214<br><br>05/22/14<br>114-P1C-EW1 | 114-P1C-MW1<br><br>04/09/14<br>114-P1C-EW1 | 114-P1C-MW1 042214<br><br>04/22/14<br>114-P1C-EW1 | 114-P1C-MW1 051914<br><br>05/19/14<br>114-P1C-EW1 | 114-P1C-MW101I-03312015<br><br>03/31/15<br>114-P1C-MW101I |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-EW1-12022014<br>12/02/14<br>114-P1C-EW1 | 114-P1C-EW1-20150618<br>06/18/15<br>114-P1C-EW1 | 114-P1C-EW1-F-20150618<br>06/18/15<br>114-P1C-EW1 | 114-P1C-GW 052214<br>05/22/14<br>114-P1C-EW1 | 114-P1C-MW1<br>04/09/14<br>114-P1C-EW1 | 114-P1C-MW1 042214<br>04/22/14<br>114-P1C-EW1 | 114-P1C-MW1 051914<br>05/19/14<br>114-P1C-EW1 | 114-P1C-MW101I-03312015<br>03/31/15<br>114-P1C-MW101I |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 138 J | 292 JB | NA | 9,570 | NA | NA | 278 | 2,200 |
| Antimony | 7440-36-0 | ug/L | 17.5 | 6.0 U | NA | 3.0 | NA | NA | 75.8 | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | R | 3.0 U | NA | 15 U | NA | NA | 3.0 U | 16.7 |
| Barium | 7440-39-3 | ug/L | 55.0 J | 71.3 J | NA | 59.1 | NA | NA | 74.7 | 29.0 J |
| Beryllium | 7440-41-7 | ug/L | 1.0 U | 0.60 J | NA | 1.0 U | NA | NA | 1.7 | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 13.1 | 2.3 J | NA | 3.0 U | NA | NA | 3.0 U | 3.3 |
| Calcium | 7440-70-2 | ug/L | 113,000 | 152,000 | NA | 132,000 | NA | NA | 145,000 | 22,400 |
| Chromium | 7440-47-3 | ug/L | 35,500 J | 12,800 J | NA | 19,400 | NA | NA | 77,500 | 2,210 J |
| Chromium VI | 18540-29-9 | ug/L | 31,800 J | 13,600 J | NA | NA | 46,700 J | 96,200 | NA | 1,900 J |
| Cobalt | 7440-48-4 | ug/L | 58.4 | 34.6 J | NA | 13.4 | NA | NA | 24.7 | 28.9 J |
| Copper | 7440-50-8 | ug/L | 204 J | 82.2 | NA | 19.6 | NA | NA | 69.9 | 18.9 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 140 | 340 | NA | 15,600 | NA | NA | 166 | 2,350 |
| Lead | 7439-92-1 | ug/L | 11.9 J | 12.0 | NA | 33.9 | NA | NA | 11.9 | 16.7 |
| Magnesium | 7439-95-4 | ug/L | 18,500 | 26,500 | NA | 13,300 | NA | NA | 25,500 | 3,310 J |
| Manganese | 7439-96-5 | ug/L | 640 | 671 | NA | 791 | NA | NA | 683 | 103 |

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| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-EW1-12022014<br>12/02/14<br>114-P1C-EW1 | 114-P1C-EW1-20150618<br>06/18/15<br>114-P1C-EW1 | 114-P1C-EW1-F-20150618<br>06/18/15<br>114-P1C-EW1 | 114-P1C-GW 052214<br>05/22/14<br>114-P1C-EW1 | 114-P1C-MW1<br>04/09/14<br>114-P1C-EW1 | 114-P1C-MW1 042214<br>04/22/14<br>114-P1C-EW1 | 114-P1C-MW1 051914<br>05/19/14<br>114-P1C-EW1 | 114-P1C-MW101I-03312015<br>03/31/15<br>114-P1C-MW101I |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | 1.2 U | NA | 0.94 | NA | NA | 0.11 | 0.20 U |
| Nickel | 7440-02-0 | ug/L | 123 | 58.7 | NA | 49.5 | NA | NA | 64.4 | 81.9 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 13,600 | 16,500 | NA | 19,200 | NA | NA | 16,200 | 26,900 |
| Selenium | 7782-49-2 | ug/L | 17.4 | 7.7 J | NA | 11.3 | NA | NA | 5.9 | 5.8 J |
| Silver | 7440-22-4 | ug/L | 1.5 J | 10 U | NA | 3.1 | NA | NA | 2.3 | 1.8 J |
| Sodium | 7440-23-5 | ug/L | 204,000 | 266,000 | NA | 1,230,000 | NA | NA | 319,000 | 339,000 |
| Sulfur | 7704-34-9 | ug/L | NA | 60,200 | NA | NA | NA | NA | NA | 103,000 |
| Thallium | 7440-28-0 | ug/L | 2.0 U | 1.9 J | NA | 10 U | NA | NA | 6.0 U | 4.0 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 50 U | 4.0 J | NA | 44.4 | NA | NA | 88.7 | 131 |
| Zinc | 7440-66-6 | ug/L | 233 | 87.7 | NA | 92.2 | NA | NA | 121 | 92.7 |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 35,900 | NA | 13,400 J | NA | NA | NA | NA | 2,200 J |
| Chromium VI | 18540-29-9 | ug/L | 34,300 J | NA | 13,200 J | NA | NA | NA | NA | 2,100 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | 62,700 | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

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| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-EW1-12022014<br><br>12/02/14<br>114-P1C-EW1 | 114-P1C-EW1-20150618<br><br>06/18/15<br>114-P1C-EW1 | 114-P1C-EW1-F-20150618<br><br>06/18/15<br>114-P1C-EW1 | 114-P1C-GW 052214<br><br>05/22/14<br>114-P1C-EW1 | 114-P1C-MW1<br><br>04/09/14<br>114-P1C-EW1 | 114-P1C-MW1 042214<br><br>04/22/14<br>114-P1C-EW1 | 114-P1C-MW1 051914<br><br>05/19/14<br>114-P1C-EW1 | 114-P1C-MW101I-03312015<br><br>03/31/15<br>114-P1C-MW101I |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | 2,000 U | 2,000 U | NA | NA | NA | NA | 2,000 U |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 354 | 383 | 382 | NA | 523 | 460 | NA | 208 |
| pH | ARC-pH | SU | 6.96 | 7.08 | 7.07 | NA | 6.83 | 7.00 | NA | 10.49 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | 984 | 984 | NA | NA | NA | NA | 1,490 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-EW1-12022014<br>12/02/14<br>114-P1C-EW1 | 114-P1C-EW1-20150618<br>06/18/15<br>114-P1C-EW1 | 114-P1C-EW1-F-20150618<br>06/18/15<br>114-P1C-EW1 | 114-P1C-GW 052214<br>05/22/14<br>114-P1C-EW1 | 114-P1C-MW1<br>04/09/14<br>114-P1C-EW1 | 114-P1C-MW1 042214<br>04/22/14<br>114-P1C-EW1 | 114-P1C-MW1 051914<br>05/19/14<br>114-P1C-EW1 | 114-P1C-MW101I-03312015<br>03/31/15<br>114-P1C-MW101I |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 185,000 | 184,000 | NA | NA | NA | NA | 392,000 |
| Sulfide | 18496-25-8 | ug/L | NA | 2,000 U | 2,000 U | NA | NA | NA | NA | 1,000 J |
| Sulfite | ARC-SULFITE | ug/L | NA | 3,000 UJ | 3,000 UJ | NA | NA | NA | NA | 3,000 UJ |
| Temperature | ARC-Temp | deg c | NA | 14.17 | 14.17 | NA | NA | NA | NA | 13.63 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | 1,660,000 | NA | NA | 410,000 | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 2,400 | 650 | NA | NA | NA | NA | NA | 1,640 |
| Oxidation Reduction Potential | ARC-ORP | mV | 200 | 114 | NA | NA | NA | NA | NA | 75 |
| pH | ARC-pH | SU | 7.07 | 6.88 | NA | NA | NA | NA | NA | 10.49 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | 1.94 | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 12.25 | 14.17 | NA | NA | NA | NA | NA | 13.63 |
| Turbidity | ARC-Turb | NTU | 7.15 | 8.35 | NA | NA | NA | NA | NA | 50.1 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-P1C-MW101I-20150617<br>06/17/15<br>114-P1C-MW101I | 114-P1C-MW101I-20150617-F<br>06/17/15<br>114-P1C-MW101I | 114-P1C-MW101I-20150923<br>09/23/15<br>114-P1C-MW101I | 114-P1C-MW101I-20151211<br>12/11/15<br>114-P1C-MW101I | 114-P1C-MW101I-20160316<br>03/16/16<br>114-P1C-MW101I | 114-P1C-MW101I-20160620<br>06/20/16<br>114-P1C-MW101I | 114-P1C-MW101I-20160620-F<br>06/20/16<br>114-P1C-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-MW101I-20150617<br><br>06/17/15<br>114-P1C-MW101I | 114-P1C-MW101I-20150617-F<br><br>06/17/15<br>114-P1C-MW101I | 114-P1C-MW101I-20150923<br><br>09/23/15<br>114-P1C-MW101I | 114-P1C-MW101I-20151211<br><br>12/11/15<br>114-P1C-MW101I | 114-P1C-MW101I-20160316<br><br>03/16/16<br>114-P1C-MW101I | 114-P1C-MW101I-20160620<br><br>06/20/16<br>114-P1C-MW101I | 114-P1C-MW101I-20160620-F<br><br>06/20/16<br>114-P1C-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-P1C-MW101I-20150617 06/17/15 114-P1C-MW101I | 114-P1C-MW101I-20150617-F 06/17/15 114-P1C-MW101I | 114-P1C-MW101I-20150923 09/23/15 114-P1C-MW101I | 114-P1C-MW101I-20151211 12/11/15 114-P1C-MW101I | 114-P1C-MW101I-20160316 03/16/16 114-P1C-MW101I | 114-P1C-MW101I-20160620 06/20/16 114-P1C-MW101I | 114-P1C-MW101I-20160620-F 06/20/16 114-P1C-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 815 J [1,130 J] | NA | 678 | 605 | 324 J | 606 | NA |
| Antimony | 7440-36-0 | ug/L | 6.0 U [6 U] | NA | 4.5 J | 6.0 U | 30 U | 5.8 J | NA |
| Arsenic | 7440-38-2 | ug/L | 26.9 [27.5] | NA | 34.7 | 34.6 | 17.3 | 30 U | NA |
| Barium | 7440-39-3 | ug/L | 15.6 J [16.4 J] | NA | 21.8 JB | 13.0 J | 17.2 J | 21.7 J | NA |
| Beryllium | 7440-41-7 | ug/L | 1.0 U [1 U] | NA | 1.0 U | 1.0 U | 5.0 U | 1.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 0.70 J [1 J] | NA | 1.8 J | 4.3 | 4.9 J | 6.5 | NA |
| Calcium | 7440-70-2 | ug/L | 9,930 [11,800] | NA | 15,300 | 11,300 | 15,900 J | 15,200 | NA |
| Chromium | 7440-47-3 | ug/L | 2,440 J [2,350 J] | NA | 1,640 | 7,440 J | 4,990 | 6,230 | NA |
| Chromium VI | 18540-29-9 | ug/L | 1,400 RA [1,400 RA] | NA | 490 RA | 7,300 RA | 5,000 RA | 5,100 RA | NA |
| Cobalt | 7440-48-4 | ug/L | 17.3 J [17.6 J] | NA | 40.8 J | 109 | 78.6 J | 107 | NA |
| Copper | 7440-50-8 | ug/L | 14.8 JB [14.6 JB] | NA | 10.1 JB | 14.0 JB | 50 U | 25.1 | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 645 J [895 J] | NA | 910 | 612 | 1,210 | 927 | NA |
| Lead | 7439-92-1 | ug/L | 15 U [15 U] | NA | 6.2 | 13.1 J | 19.4 | 30 U | NA |
| Magnesium | 7439-95-4 | ug/L | 5,600 [4,700 J] | NA | 8,160 | 3,050 J | 8,890 J | 9,630 | NA |
| Manganese | 7439-96-5 | ug/L | 32.3 J [43.1 J] | NA | 76.0 | 133 | 204 | 195 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-MW101I-20150617<br>06/17/15<br>114-P1C-MW101I | 114-P1C-MW101I-20150617-F<br>06/17/15<br>114-P1C-MW101I | 114-P1C-MW101I-20150923<br>09/23/15<br>114-P1C-MW101I | 114-P1C-MW101I-20151211<br>12/11/15<br>114-P1C-MW101I | 114-P1C-MW101I-20160316<br>03/16/16<br>114-P1C-MW101I | 114-P1C-MW101I-20160620<br>06/20/16<br>114-P1C-MW101I | 114-P1C-MW101I-20160620-F<br>06/20/16<br>114-P1C-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 UJ [0.2 UJ] | NA | 0.20 U | 0.20 U | 0.20 U | 0.20 U | NA |
| Nickel | 7440-02-0 | ug/L | 120 [114] | NA | 172 | 240 | 241 | 268 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 42,600 [36,100] | NA | 23,200 | 20,100 | 23,200 J | 22,900 | NA |
| Selenium | 7782-49-2 | ug/L | 12.4 [9.7 J] | NA | 7.9 J | 12.1 | 50 U | 7.5 J | NA |
| Silver | 7440-22-4 | ug/L | 10.8 [4.1 J] | NA | 10 U | 10 U | 50 U | 10 UB | NA |
| Sodium | 7440-23-5 | ug/L | 517,000 [488,000] | NA | 594,000 | 595,000 | 574,000 | 709,000 | NA |
| Sulfur | 7704-34-9 | ug/L | 194,000 [186,000] | NA | 283,000 | 263,000 | 242,000 | 268,000 | NA |
| Thallium | 7440-28-0 | ug/L | 10 U [10 U] | NA | 10 U | 10 U | 10 U | 20 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 206 [200] | NA | 156 | 114 | 61.6 J | 47.8 J | NA |
| Zinc | 7440-66-6 | ug/L | 11.9 J [15.6 J] | NA | 21.5 JB | 64.9 JB | 103 | 130 | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 1,880 J [2,110 J] | NA | NA | NA | NA | 5,960 |
| Chromium VI | 18540-29-9 | ug/L | NA | 1,300 RA [1,300 RA] | NA | NA | NA | NA | 4,900 RA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | 196,000 [212,000] | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-MW101I-20150617<br>06/17/15<br>114-P1C-MW101I | 114-P1C-MW101I-20150617-F<br>06/17/15<br>114-P1C-MW101I | 114-P1C-MW101I-20150923<br>09/23/15<br>114-P1C-MW101I | 114-P1C-MW101I-20151211<br>12/11/15<br>114-P1C-MW101I | 114-P1C-MW101I-20160316<br>03/16/16<br>114-P1C-MW101I | 114-P1C-MW101I-20160620<br>06/20/16<br>114-P1C-MW101I | 114-P1C-MW101I-20160620-F<br>06/20/16<br>114-P1C-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U [2,000 U] | 2,000 U [2,000 U] | 2,000 U | 2,000 U | 2,000 U | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 341 [346] | 343 [345] | 195 | 243 | 254 | 227 | 220 |
| pH | ARC-pH | SU | 10.47 [10.15] [10.47] | 10.12 [10.12] [10.47] | 10.45 | 9.87 | 9.19 | 8.94 | 9.00 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 1,200 [1,200] | 1,200 [1,200] | 2,450 | 2,090 | 3.1 | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-MW101I-20150617<br>06/17/15<br>114-P1C-MW101I | 114-P1C-MW101I-20150617-F<br>06/17/15<br>114-P1C-MW101I | 114-P1C-MW101I-20150923<br>09/23/15<br>114-P1C-MW101I | 114-P1C-MW101I-20151211<br>12/11/15<br>114-P1C-MW101I | 114-P1C-MW101I-20160316<br>03/16/16<br>114-P1C-MW101I | 114-P1C-MW101I-20160620<br>06/20/16<br>114-P1C-MW101I | 114-P1C-MW101I-20160620-F<br>06/20/16<br>114-P1C-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 616,000 [597,000] | 590,000 [594,000] | 713,000 | 637,000 | 679,000 | 749,000 | NA |
| Sulfide | 18496-25-8 | ug/L | 2,000 U [970 J] | 2,000 U [830 J] | 2,000 U | 860 J | 2,000 U | 2,000 U | NA |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ [3,000 UJ] | 3,000 UJ [3,000 UJ] | 3,000 UJ | 3,000 UJ | 3,000 UJ | 3,000 UJ | NA |
| Temperature | ARC-Temp | deg c | 16.61 [16.61] | 16.61 [16.61] | 21.01 | 18.46 | 13.59 | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | 24,400 | 20,000 | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 760 | NA | NA | 0 | 290 | 630 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 228 | NA | NA | 91 | 326.3 | 4.3 | NA |
| pH | ARC-pH | SU | 10.46 | NA | NA | 9.87 | 9.19 | 9.38 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | 0 | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 16.41 | NA | NA | 18.46 | 13.59 | 17.69 | NA |
| Turbidity | ARC-Turb | NTU | 300 | NA | NA | 21.8 | 9.1 | 12.8 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-P1C-MW101I-F-20150923 | 114-P1C-MW101I-F-20151211 | 114-P1C-MW101I-F-20160316 | 114-P1C-MW101S | 114-P1C-MW101S-03272015 | 114-P1C-MW101S-20150622 | 114-P1C-MW101S-20150923 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | |
| Date Collected: | | | 09/23/15 | 12/11/15 | 03/16/16 | 11/18/14 | 03/27/15 | 06/22/15 | 09/23/15 |
| Location ID: | CAS Number | Units | 114-P1C-MW101I | 114-P1C-MW101I | 114-P1C-MW101I | 114-P1C-MW101S | 114-P1C-MW101S | 114-P1C-MW101S | 114-P1C-MW101S |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-MW101I-F-20150923<br>09/23/15<br>114-P1C-MW101I | 114-P1C-MW101I-F-20151211<br>12/11/15<br>114-P1C-MW101I | 114-P1C-MW101I-F-20160316<br>03/16/16<br>114-P1C-MW101I | 114-P1C-MW101S<br>11/18/14<br>114-P1C-MW101S | 114-P1C-MW101S-03272015<br>03/27/15<br>114-P1C-MW101S | 114-P1C-MW101S-20150622<br>06/22/15<br>114-P1C-MW101S | 114-P1C-MW101S-20150923<br>09/23/15<br>114-P1C-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-P1C-MW101I-F-20150923 09/23/15 114-P1C-MW101I | 114-P1C-MW101I-F-20151211 12/11/15 114-P1C-MW101I | 114-P1C-MW101I-F-20160316 03/16/16 114-P1C-MW101I | 114-P1C-MW101S 11/18/14 114-P1C-MW101S | 114-P1C-MW101S-03272015 03/27/15 114-P1C-MW101S | 114-P1C-MW101S-20150622 06/22/15 114-P1C-MW101S | 114-P1C-MW101S-20150923 09/23/15 114-P1C-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | 1,030 | 582 J | 1,260 | 354 JB [241 JB] |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | 2.8 J | 6.0 U | 6.0 U | 3.4 J [6 U] |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | 30 U | 9.0 U | 30 U | 30 U [30 U] |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | 52.4 J | 47.9 J | 83.8 J | 56.2 J [54.1 J] |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | 1.0 U | 1.0 UJ | 0.80 J | 0.70 J [0.6 J] |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | 3.0 U | 3.0 U | 3.0 U | 3.0 U [3 U] |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | 286,000 | 140,000 | 290,000 | 227,000 [228,000] |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 22.4 | 8.0 J | 622 J | 53.7 [47.6] |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | R | 23 RA | 10 U | 9.3 RA [5.9 RA] |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | 1.8 J | 1.3 J | 1.4 J | 50 UB [50 UB] |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | 2.7 J | 1.9 J | 10 U | 10 UB [10 UB] |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | 26,800 | 9,510 J | 29,200 | 18,100 [16,500] |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | 30 U | 9.0 U | 30 U | 30 U [30 U] |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | 44,100 | 19,700 | 49,800 | 44,100 [44,700] |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | 6,210 | 2,510 | 6,220 | 4,560 [4,530] |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-MW101I-F-20150923<br>09/23/15<br>114-P1C-MW101I | 114-P1C-MW101I-F-20151211<br>12/11/15<br>114-P1C-MW101I | 114-P1C-MW101I-F-20160316<br>03/16/16<br>114-P1C-MW101I | 114-P1C-MW101S<br>11/18/14<br>114-P1C-MW101S | 114-P1C-MW101S-03272015<br>03/27/15<br>114-P1C-MW101S | 114-P1C-MW101S-20150622<br>06/22/15<br>114-P1C-MW101S | 114-P1C-MW101S-20150923<br>09/23/15<br>114-P1C-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | 0.20 U | 0.20 U | 0.20 U | 0.20 U [0.2 U] |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | 15.8 | 9.3 J | 15.2 | 47.6 [40.2] |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | 53,700 J | 19,600 J | 58,600 | 50,300 [50,600] |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | 100 U | 10 U | 100 U | 100 U [100 U] |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | 2.2 J | 2.0 J | 2.2 J | 1.9 J [2.3 J] |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | 2,220,000 | 795,000 | 2,460,000 | 1,790,000 [1,850,000] |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | 255,000 | 695,000 | 672,000 [672,000] |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | 20 U | 6.0 U | 20 U | 20 U [20 U] |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | 2.5 J | 3.2 J | 50 U | 50 UB [50 UB] |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | 17.1 J | 20 UB | 20 UB | 20 U [20 U] |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 1,040 | 7,660 J | 4,980 | 19.8 | 8.2 J | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 580 RA | 7,200 RA | 5,200 RA | R | 24 RA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 293,000 | 273,000 | 253,000 | NA | 286,000 | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-MW101I-F-20150923<br>09/23/15<br>114-P1C-MW101I | 114-P1C-MW101I-F-20151211<br>12/11/15<br>114-P1C-MW101I | 114-P1C-MW101I-F-20160316<br>03/16/16<br>114-P1C-MW101I | 114-P1C-MW101S<br>11/18/14<br>114-P1C-MW101S | 114-P1C-MW101S-03272015<br>03/27/15<br>114-P1C-MW101S | 114-P1C-MW101S-20150622<br>06/22/15<br>114-P1C-MW101S | 114-P1C-MW101S-20150923<br>09/23/15<br>114-P1C-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | 18,700 | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | NA | 2,000 U | NA | 2,000 U | 2,000 U | 2,000 U [2,000 U] |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 194 | 241 | 259 | 272 | 332 | 370 | 256 [266] |
| pH | ARC-pH | SU | 10.45 | 9.55 | 9.19 | 6.79 | 6.95 | 7.04 | 6.58 [7.08] [7.24] |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 2,450 | NA | 3.1 | NA | 340 | 9,750 | 8,490 [8,490] |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-MW101I-F-20150923<br><br>09/23/15<br>114-P1C-MW101I | 114-P1C-MW101I-F-20151211<br><br>12/11/15<br>114-P1C-MW101I | 114-P1C-MW101I-F-20160316<br><br>03/16/16<br>114-P1C-MW101I | 114-P1C-MW101S<br><br>11/18/14<br>114-P1C-MW101S | 114-P1C-MW101S-03272015<br><br>03/27/15<br>114-P1C-MW101S | 114-P1C-MW101S-20150622<br><br>06/22/15<br>114-P1C-MW101S | 114-P1C-MW101S-20150923<br><br>09/23/15<br>114-P1C-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 772,000 | 714,000 | 680,000 | NA | 702,000 | 2,210,000 | 1,920,000 [1,810,000] |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 U | 2,000 U | NA | 2,000 U | 2,000 U | 2,000 U [2,000 U] |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 3,000 UJ | 3,000 UJ | NA | 3,000 UJ | 3,000 UJ | 3,000 UJ [3,000 UJ] |
| Temperature | ARC-Temp | deg c | 21.01 | NA | 13.59 | NA | 8.14 | 15.38 | 19.04 [19.04] |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | 960 | 2,790 | 2,430 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | 114 | 70 | 130 | NA |
| pH | ARC-pH | SU | NA | NA | NA | 7.24 | 7.09 | 7.04 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | 6.39 | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | 16.99 | 8.14 | 15.38 | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | 9.88 | 15.7 | 24.1 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-MW101S-20151211<br>12/11/15<br>114-P1C-MW101S | 114-P1C-MW101S-20160316<br>03/16/16<br>114-P1C-MW101S | 114-P1C-MW101S-20160620<br>06/20/16<br>114-P1C-MW101S | 114-P1C-MW101S-20160620-F<br>06/20/16<br>114-P1C-MW101S | 114-P1C-MW101S-F-20150622<br>06/22/15<br>114-P1C-MW101S | 114-P1C-MW101S-F-20150923<br>09/23/15<br>114-P1C-MW101S |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-MW101S-20151211<br>12/11/15<br>114-P1C-MW101S | 114-P1C-MW101S-20160316<br>03/16/16<br>114-P1C-MW101S | 114-P1C-MW101S-20160620<br>06/20/16<br>114-P1C-MW101S | 114-P1C-MW101S-20160620-F<br>06/20/16<br>114-P1C-MW101S | 114-P1C-MW101S-F-20150622<br>06/22/15<br>114-P1C-MW101S | 114-P1C-MW101S-F-20150923<br>09/23/15<br>114-P1C-MW101S |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-MW101S-20151211<br>12/11/15<br>114-P1C-MW101S | 114-P1C-MW101S-20160316<br>03/16/16<br>114-P1C-MW101S | 114-P1C-MW101S-20160620<br>06/20/16<br>114-P1C-MW101S | 114-P1C-MW101S-20160620-F<br>06/20/16<br>114-P1C-MW101S | 114-P1C-MW101S-F-20150622<br>06/22/15<br>114-P1C-MW101S | 114-P1C-MW101S-F-20150923<br>09/23/15<br>114-P1C-MW101S |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 198 J | 554 J | 368 | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 6.0 U | 30 U | 6.0 U | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | 30 U | 15 U | 30 U | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | 36.5 J | 39.2 J | 48.7 J | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | 1.0 U | 5.0 U | 1.0 U | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 3.0 UB | 15 U | 0.70 J | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | 188,000 | 189,000 | 205,000 | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 17.2 | 30.0 J | 32.2 | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 5.5 RA | 4.6 RA | 13 RA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 250 U | 250 U | 1.8 J | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | 10 U | 50 U | 4.6 J | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 7,100 | 17,400 | 12,900 | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | 30 U | 15 U | 30 U | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | 36,200 | 40,500 | 40,300 | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 3,890 | 3,330 | 3,490 | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-MW101S-20151211<br>12/11/15<br>114-P1C-MW101S | 114-P1C-MW101S-20160316<br>03/16/16<br>114-P1C-MW101S | 114-P1C-MW101S-20160620<br>06/20/16<br>114-P1C-MW101S | 114-P1C-MW101S-20160620-F<br>06/20/16<br>114-P1C-MW101S | 114-P1C-MW101S-F-20150622<br>06/22/15<br>114-P1C-MW101S | 114-P1C-MW101S-F-20150923<br>09/23/15<br>114-P1C-MW101S |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | 0.20 U | 0.20 U | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 16.0 J | 26.7 J | 22.8 | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 43,000 | 34,200 J | 39,100 | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | 50 U | 50 U | 6.3 J | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | 10 U | 50 U | 10 UB | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | 1,550,000 | 1,280,000 | 1,540,000 | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 527,000 | 431,000 | 472,000 | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 20 U | 10 U | 20 U | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 50 U | 4.8 J | 3.1 J | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | 20 UB | 57.5 J | 22.6 | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 12.7 | 620 J | 25.8 JB [22.6 JB] |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | 14 RA | 19 | 5.9 RA [5.9 RA] |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | 711,000 | 692,000 [706,000] |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-MW101S-20151211<br>12/11/15<br>114-P1C-MW101S | 114-P1C-MW101S-20160316<br>03/16/16<br>114-P1C-MW101S | 114-P1C-MW101S-20160620<br>06/20/16<br>114-P1C-MW101S | 114-P1C-MW101S-20160620-F<br>06/20/16<br>114-P1C-MW101S | 114-P1C-MW101S-F-20150622<br>06/22/15<br>114-P1C-MW101S | 114-P1C-MW101S-F-20150923<br>09/23/15<br>114-P1C-MW101S |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | 2,000 U | NA | NA | 2,000 U | 2,000 U [2,000 U] |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 311 | 294 | 372 | 292 | 425 | 270 [277] |
| pH | ARC-pH | SU | 6.99 | 7.09 | 6.93 | 7.00 | 7.04 | 7.24 [7.24] [6.91] |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 6,680 | 8.7 | NA | NA | 9,750 | 8,490 [8,490] |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-MW101S-20151211<br>12/11/15<br>114-P1C-MW101S | 114-P1C-MW101S-20160316<br>03/16/16<br>114-P1C-MW101S | 114-P1C-MW101S-20160620<br>06/20/16<br>114-P1C-MW101S | 114-P1C-MW101S-20160620-F<br>06/20/16<br>114-P1C-MW101S | 114-P1C-MW101S-F-20150622<br>06/22/15<br>114-P1C-MW101S | 114-P1C-MW101S-F-20150923<br>09/23/15<br>114-P1C-MW101S |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 3,390,000 | 1,280,000 | 1,410,000 | NA | 2,170,000 | 1,670,000 [1,900,000] |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 U | 2,000 U | NA | 2,000 U | 2,000 U [2,000 U] |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 3,000 UJ | 3,000 UJ | NA | 3,000 UJ | 3,000 UJ [3,000 UJ] |
| Temperature | ARC-Temp | deg c | 18.12 | 15.81 | NA | NA | 15.38 | 19.04 [19.04] |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 22,100 | 25,400 | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 0 | 3,420 | 1,940 | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 142 | 199.8 | 99.6 | NA | NA | NA |
| pH | ARC-pH | SU | 6.99 | 7.09 | 7.35 | NA | NA | NA |
| photoionization detector | PID | ug/L | 0 | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 18.12 | 15.81 | 19.76 | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | 12.66 | 10.2 | 10.92 | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-MW101S-F-20151211<br>12/11/15<br>114-P1C-MW101S | 114-P1C-MW101S-F-20160316<br>03/16/16<br>114-P1C-MW101S | 114-P1C-MW102S-20170403<br>04/03/17<br>114-P1C-MW102S | 114-P1C-MW102S-20170403-F<br>04/03/17<br>114-P1C-MW102S | 114-P1C-MW103S-20170404<br>04/04/17<br>114-P1C-MW103S | 114-P1C-MW103S-20170404-F<br>04/04/17<br>114-P1C-MW103S |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-MW101S-F-20151211<br>12/11/15<br>114-P1C-MW101S | 114-P1C-MW101S-F-20160316<br>03/16/16<br>114-P1C-MW101S | 114-P1C-MW102S-20170403<br>04/03/17<br>114-P1C-MW102S | 114-P1C-MW102S-20170403-F<br>04/03/17<br>114-P1C-MW102S | 114-P1C-MW103S-20170404<br>04/04/17<br>114-P1C-MW103S | 114-P1C-MW103S-20170404-F<br>04/04/17<br>114-P1C-MW103S |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-MW101S-F-20151211<br>12/11/15<br>114-P1C-MW101S | 114-P1C-MW101S-F-20160316<br>03/16/16<br>114-P1C-MW101S | 114-P1C-MW102S-20170403<br>04/03/17<br>114-P1C-MW102S | 114-P1C-MW102S-20170403-F<br>04/03/17<br>114-P1C-MW102S | 114-P1C-MW103S-20170404<br>04/04/17<br>114-P1C-MW103S | 114-P1C-MW103S-20170404-F<br>04/04/17<br>114-P1C-MW103S |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 5.3 J [4.5 J] | NA | 16.5 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-MW101S-F-20151211<br>12/11/15<br>114-P1C-MW101S | 114-P1C-MW101S-F-20160316<br>03/16/16<br>114-P1C-MW101S | 114-P1C-MW102S-20170403<br>04/03/17<br>114-P1C-MW102S | 114-P1C-MW102S-20170403-F<br>04/03/17<br>114-P1C-MW102S | 114-P1C-MW103S-20170404<br>04/04/17<br>114-P1C-MW103S | 114-P1C-MW103S-20170404-F<br>04/04/17<br>114-P1C-MW103S |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 15.6 | 13.9 J | NA | 5.3 J [4.8 J] | NA | 5.0 J |
| Chromium VI | 18540-29-9 | ug/L | 5.5 RA | 5.5 RA | NA | 10 U [10 U] | NA | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 562,000 | 455,000 | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-MW101S-F-20151211<br>12/11/15<br>114-P1C-MW101S | 114-P1C-MW101S-F-20160316<br>03/16/16<br>114-P1C-MW101S | 114-P1C-MW102S-20170403<br>04/03/17<br>114-P1C-MW102S | 114-P1C-MW102S-20170403-F<br>04/03/17<br>114-P1C-MW102S | 114-P1C-MW103S-20170404<br>04/04/17<br>114-P1C-MW103S | 114-P1C-MW103S-20170404-F<br>04/04/17<br>114-P1C-MW103S |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | 24,000 | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | 2,000 U | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 316 | 289 | 345 [349] | 337 [335] | 316 | 377 |
| pH | ARC-pH | SU | 7.06 | 7.09 | 6.82 [6.87] | 6.87 [6.91] | 6.98 | 6.95 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | 8.7 | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-MW101S-F-20151211<br>12/11/15<br>114-P1C-MW101S | 114-P1C-MW101S-F-20160316<br>03/16/16<br>114-P1C-MW101S | 114-P1C-MW102S-20170403<br>04/03/17<br>114-P1C-MW102S | 114-P1C-MW102S-20170403-F<br>04/03/17<br>114-P1C-MW102S | 114-P1C-MW103S-20170404<br>04/04/17<br>114-P1C-MW103S | 114-P1C-MW103S-20170404-F<br>04/04/17<br>114-P1C-MW103S |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 1,560,000 | 1,270,000 | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 U | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 3,000 UJ | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 15.81 | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-P1C-MW104S-20170404 | 114-P1C-MW104S-20170404-F | 114-P1C-MW-PZ1-20150617 | 114-P1C-MW-PZ1-20150617-F | 114-P1C-PZ | 114-P1C-PZ1 | 114-P1C-PZ1-04282015 | 114-P1C-PZ1-10092014 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | |
| Date Collected: | | | 04/04/17 | 04/04/17 | 06/17/15 | 06/17/15 | 04/01/14 | 04/28/15 | 04/28/15 | 10/09/14 |
| Location ID: | CAS Number | Units | 114-P1C-MW104S | 114-P1C-MW104S | 114-P1C-PZ1 | 114-P1C-PZ1 | 114-P1C-PZ1 | 114-P1C-PZ1 | 114-P1C-PZ1 | 114-P1C-PZ1 |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-MW104S-20170404<br>04/04/17<br>114-P1C-MW104S | 114-P1C-MW104S-20170404-F<br>04/04/17<br>114-P1C-MW104S | 114-P1C-MW-PZ1-20150617<br>06/17/15<br>114-P1C-PZ1 | 114-P1C-MW-PZ1-20150617-F<br>06/17/15<br>114-P1C-PZ1 | 114-P1C-PZ<br>04/01/14<br>114-P1C-PZ1 | 114-P1C-PZ1<br>04/28/15<br>114-P1C-PZ1 | 114-P1C-PZ1-04282015<br>04/28/15<br>114-P1C-PZ1 | 114-P1C-PZ1-10092014<br>10/09/14<br>114-P1C-PZ1 |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-MW104S-20170404<br>04/04/17<br>114-P1C-MW104S | 114-P1C-MW104S-20170404-F<br>04/04/17<br>114-P1C-MW104S | 114-P1C-MW-PZ1-20150617<br>06/17/15<br>114-P1C-PZ1 | 114-P1C-MW-PZ1-20150617-F<br>06/17/15<br>114-P1C-PZ1 | 114-P1C-PZ<br>04/01/14<br>114-P1C-PZ1 | 114-P1C-PZ1<br>04/28/15<br>114-P1C-PZ1 | 114-P1C-PZ1-04282015<br>04/28/15<br>114-P1C-PZ1 | 114-P1C-PZ1-10092014<br>10/09/14<br>114-P1C-PZ1 |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | 266 JB | NA | NA | NA | 200 U | 47.4 J |
| Antimony | 7440-36-0 | ug/L | NA | NA | 6.0 U | NA | NA | NA | 6.0 U | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | NA | NA | 3.5 | NA | NA | NA | 3.1 | 2.7 J |
| Barium | 7440-39-3 | ug/L | NA | NA | 76.4 J | NA | NA | NA | 85.9 J | 111 J |
| Beryllium | 7440-41-7 | ug/L | NA | NA | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | 0.70 J | NA | NA | NA | 0.60 J | 3.0 U |
| Calcium | 7440-70-2 | ug/L | NA | NA | 106,000 | NA | NA | NA | 112,000 | 125,000 |
| Chromium | 7440-47-3 | ug/L | 2.8 J | NA | 3,520 | NA | NA | NA | 2,320 J | 491 |
| Chromium VI | 18540-29-9 | ug/L | 10 U | NA | 3,100 RA | NA | 15,600 | NA | 1,700 J | 450 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | 17.2 J | NA | NA | NA | 14.7 J | 2.6 J |
| Copper | 7440-50-8 | ug/L | NA | NA | 37.6 | NA | NA | NA | 38.3 | 4.4 J |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 462 | NA | NA | NA | 209 | 84.6 JB |
| Lead | 7439-92-1 | ug/L | NA | NA | 6.7 | NA | NA | NA | 4.3 | 3.0 U |
| Magnesium | 7439-95-4 | ug/L | NA | NA | 20,100 | NA | NA | NA | 21,400 | 21,400 |
| Manganese | 7439-96-5 | ug/L | NA | NA | 757 | NA | NA | NA | 769 | 662 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-MW104S-20170404<br>04/04/17<br>114-P1C-MW104S | 114-P1C-MW104S-20170404-F<br>04/04/17<br>114-P1C-MW104S | 114-P1C-MW-PZ1-20150617<br>06/17/15<br>114-P1C-PZ1 | 114-P1C-MW-PZ1-20150617-F<br>06/17/15<br>114-P1C-PZ1 | 114-P1C-PZ<br>04/01/14<br>114-P1C-PZ1 | 114-P1C-PZ1<br>04/28/15<br>114-P1C-PZ1 | 114-P1C-PZ1-04282015<br>04/28/15<br>114-P1C-PZ1 | 114-P1C-PZ1-10092014<br>10/09/14<br>114-P1C-PZ1 |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | 0.20 UJ | NA | NA | NA | 0.20 U | 0.20 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | 28.1 | NA | NA | NA | 26.3 | 4.3 J |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | 15,700 | NA | NA | NA | 16,200 | 13,400 |
| Selenium | 7782-49-2 | ug/L | NA | NA | 5.1 J | NA | NA | NA | 10 UB | 10 U |
| Silver | 7440-22-4 | ug/L | NA | NA | 2.9 J | NA | NA | NA | 10 U | 10 U |
| Sodium | 7440-23-5 | ug/L | NA | NA | 238,000 | NA | NA | NA | 254,000 | 174,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | 35,700 | NA | NA | NA | 37,100 | 19,300 |
| Thallium | 7440-28-0 | ug/L | NA | NA | 2.0 U | NA | NA | NA | 2.0 U | 2.0 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | 50 UB | NA | NA | NA | 2.5 J | 1.3 J |
| Zinc | 7440-66-6 | ug/L | NA | NA | 38.7 | NA | NA | NA | 50.0 JB | 20 UB |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 1.9 J | NA | 3,290 | NA | NA | 2,210 J | 470 |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U | NA | 2,800 RA | NA | NA | 2,400 J | 460 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | 37,000 | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-MW104S-20170404<br>04/04/17<br>114-P1C-MW104S | 114-P1C-MW104S-20170404-F<br>04/04/17<br>114-P1C-MW104S | 114-P1C-MW-PZ1-20150617<br>06/17/15<br>114-P1C-PZ1 | 114-P1C-MW-PZ1-20150617-F<br>06/17/15<br>114-P1C-PZ1 | 114-P1C-PZ<br>04/01/14<br>114-P1C-PZ1 | 114-P1C-PZ1<br>04/28/15<br>114-P1C-PZ1 | 114-P1C-PZ1-04282015<br>04/28/15<br>114-P1C-PZ1 | 114-P1C-PZ1-10092014<br>10/09/14<br>114-P1C-PZ1 |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 282,000 |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | 2,000 U | 2,000 U | NA | 2,000 U | 2,000 U | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 319 | 301 | 368 | 367 | 453 | 360 | 360 | 282 |
| pH | ARC-pH | SU | 6.60 | 6.62 | 6.95 | 6.95 | 6.80 | 7.17 | 7.17 | 7.03 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | 2,120 | 2,120 | NA | 1,720 | 1,720 | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-MW104S-20170404<br>04/04/17<br>114-P1C-MW104S | 114-P1C-MW104S-20170404-F<br>04/04/17<br>114-P1C-MW104S | 114-P1C-MW-PZ1-20150617<br>06/17/15<br>114-P1C-PZ1 | 114-P1C-MW-PZ1-20150617-F<br>06/17/15<br>114-P1C-PZ1 | 114-P1C-PZ<br>04/01/14<br>114-P1C-PZ1 | 114-P1C-PZ1<br>04/28/15<br>114-P1C-PZ1 | 114-P1C-PZ1-04282015<br>04/28/15<br>114-P1C-PZ1 | 114-P1C-PZ1-10092014<br>10/09/14<br>114-P1C-PZ1 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | 112,000 | 113,000 | NA | 113,000 | 113,000 | 49,800 |
| Sulfide | 18496-25-8 | ug/L | NA | NA | 2,000 U | 2,000 U | NA | 2,000 U | 2,000 U | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | 3,000 UJ | 3,000 UJ | NA | 3,000 U | 3,000 UJ | NA |
| Temperature | ARC-Temp | deg c | NA | NA | 14.54 | 14.54 | NA | 17.13 | 17.13 | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | 100 | NA | NA | NA | 6,400 | 320 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 33.9 | NA | NA | NA | 60 | 50.4 |
| pH | ARC-pH | SU | NA | NA | 6.95 | NA | NA | NA | 7.17 | 7.04 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | 1.496 |
| Temperature | ARC-Temp | deg c | NA | NA | 14.54 | NA | NA | NA | 17.13 | 17.4 |
| Turbidity | ARC-Turb | NTU | NA | NA | 7.9 | NA | NA | NA | 1.36 | 0 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-P1C-PZ1-12032014 | 114-P1C-PZ1-20150923 | 114-P1C-PZ1-20151211 | 114-P1C-PZ1-20160325 | 114-P1C-PZ1-20160624 | 114-P1C-PZ1-20160624-F | 114-P1C-PZ1-20160912 | 114-P1C-PZ1-20160912-F |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | |
| Date Collected: | | | 12/03/14 | 09/23/15 | 12/11/15 | 03/25/16 | 06/24/16 | 06/24/16 | 09/12/16 | 09/12/16 |
| Location ID: | CAS Number | Units | 114-P1C-PZ1 | 114-P1C-PZ1 | 114-P1C-PZ1 | 114-P1C-PZ1 | 114-P1C-PZ1 | 114-P1C-PZ1 | 114-P1C-PZ1 | 114-P1C-PZ1 |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-P1C-PZ1-12032014<br>12/03/14<br>114-P1C-PZ1 | 114-P1C-PZ1-20150923<br>09/23/15<br>114-P1C-PZ1 | 114-P1C-PZ1-20151211<br>12/11/15<br>114-P1C-PZ1 | 114-P1C-PZ1-20160325<br>03/25/16<br>114-P1C-PZ1 | 114-P1C-PZ1-20160624<br>06/24/16<br>114-P1C-PZ1 | 114-P1C-PZ1-20160624-F<br>06/24/16<br>114-P1C-PZ1 | 114-P1C-PZ1-20160912<br>09/12/16<br>114-P1C-PZ1 | 114-P1C-PZ1-20160912-F<br>09/12/16<br>114-P1C-PZ1 |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-PZ1-12032014<br>12/03/14<br>114-P1C-PZ1 | 114-P1C-PZ1-20150923<br>09/23/15<br>114-P1C-PZ1 | 114-P1C-PZ1-20151211<br>12/11/15<br>114-P1C-PZ1 | 114-P1C-PZ1-20160325<br>03/25/16<br>114-P1C-PZ1 | 114-P1C-PZ1-20160624<br>06/24/16<br>114-P1C-PZ1 | 114-P1C-PZ1-20160624-F<br>06/24/16<br>114-P1C-PZ1 | 114-P1C-PZ1-20160912<br>09/12/16<br>114-P1C-PZ1 | 114-P1C-PZ1-20160912-F<br>09/12/16<br>114-P1C-PZ1 |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 84.0 JB | 200 UB | 200 U | 415 | 230 | NA | 57.2 J | NA |
| Antimony | 7440-36-0 | ug/L | 6.0 U | 6.0 U | 6.0 U | 6.0 U | 6.0 U | NA | 12 U | NA |
| Arsenic | 7440-38-2 | ug/L | 3.0 U | 3.0 U | 2.0 J | 7.1 | 7.2 | NA | 6.0 U | NA |
| Barium | 7440-39-3 | ug/L | 116 J | 81.1 J | 85.7 J | 90.9 J | 174 J | NA | 160 J | NA |
| Beryllium | 7440-41-7 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | 1.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 3.0 U | 3.0 U | 3.0 UB | 0.70 J | 1.4 J | NA | 0.80 J | NA |
| Calcium | 7440-70-2 | ug/L | 122,000 | 122,000 | 124,000 | 117,000 | 304,000 | NA | 339,000 | NA |
| Chromium | 7440-47-3 | ug/L | 360 | 880 | 2,450 | 494 | 3,720 | NA | 1,620 | NA |
| Chromium VI | 18540-29-9 | ug/L | 190 | 590 RA | 2,300 RA | 200 | 3,200 | NA | 1,300 | NA |
| Cobalt | 7440-48-4 | ug/L | 3.4 J | 11.4 JB | 18.1 J | 14.8 J | 23.5 J | NA | 20.7 J | NA |
| Copper | 7440-50-8 | ug/L | 7.4 J | 15.9 JB | 30.7 | 16.2 | 46.5 | NA | 41.8 | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 183 | 137 JB | 244 | 581 | 1,060 | NA | 366 | NA |
| Lead | 7439-92-1 | ug/L | 3.0 U | 3.0 U | 3.5 | 4.1 | 6.0 U | NA | 6.0 U | NA |
| Magnesium | 7439-95-4 | ug/L | 20,200 | 24,500 | 24,500 | 40,600 | 61,000 | NA | 67,400 | NA |
| Manganese | 7439-96-5 | ug/L | 651 | 863 | 1,050 | 303 | 1,730 | NA | 1,930 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-PZ1-12032014<br>12/03/14<br>114-P1C-PZ1 | 114-P1C-PZ1-20150923<br>09/23/15<br>114-P1C-PZ1 | 114-P1C-PZ1-20151211<br>12/11/15<br>114-P1C-PZ1 | 114-P1C-PZ1-20160325<br>03/25/16<br>114-P1C-PZ1 | 114-P1C-PZ1-20160624<br>06/24/16<br>114-P1C-PZ1 | 114-P1C-PZ1-20160624-F<br>06/24/16<br>114-P1C-PZ1 | 114-P1C-PZ1-20160912<br>09/12/16<br>114-P1C-PZ1 | 114-P1C-PZ1-20160912-F<br>09/12/16<br>114-P1C-PZ1 |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | 0.20 U | 0.20 U | 0.20 U | 0.20 U | NA | 0.20 U | NA |
| Nickel | 7440-02-0 | ug/L | 3.7 J | 19.2 JB | 29.9 | 31.3 | 59.3 | NA | 41.0 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 13,300 J | 16,700 | 18,900 | 32,000 | 25,300 | NA | 26,400 | NA |
| Selenium | 7782-49-2 | ug/L | 10 U | 10 U | 10 U | 10 U | 5.3 J | NA | 4.3 J | NA |
| Silver | 7440-22-4 | ug/L | 2.7 J | 10 U | 10 U | 1.4 J | 1.1 J | NA | 10 UB | NA |
| Sodium | 7440-23-5 | ug/L | 169,000 | 229,000 | 276,000 | 556,000 | 399,000 | NA | 414,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | 26,600 | 47,500 | 36,200 | 153,000 | NA | 141,000 | NA |
| Thallium | 7440-28-0 | ug/L | 1.9 J | 2.0 U | 2.0 U | 2.0 U | 4.0 U | NA | 4.0 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 50 U | 50 UB | 50 U | 4.1 J | 4.0 J | NA | 0.90 J | NA |
| Zinc | 7440-66-6 | ug/L | 12.9 J | 20.6 UB | 40.3 JB | 33.9 | 45.0 | NA | 45.4 | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 287 | NA | NA | NA | NA | 3,520 | NA | 1,550 |
| Chromium VI | 18540-29-9 | ug/L | 200 | NA | NA | NA | NA | 2,700 | NA | 1,400 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-PZ1-12032014<br>12/03/14<br>114-P1C-PZ1 | 114-P1C-PZ1-20150923<br>09/23/15<br>114-P1C-PZ1 | 114-P1C-PZ1-20151211<br>12/11/15<br>114-P1C-PZ1 | 114-P1C-PZ1-20160325<br>03/25/16<br>114-P1C-PZ1 | 114-P1C-PZ1-20160624<br>06/24/16<br>114-P1C-PZ1 | 114-P1C-PZ1-20160624-F<br>06/24/16<br>114-P1C-PZ1 | 114-P1C-PZ1-20160912<br>09/12/16<br>114-P1C-PZ1 | 114-P1C-PZ1-20160912-F<br>09/12/16<br>114-P1C-PZ1 |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | 2,000 U | 2,000 U | 2,000 U | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 295 | 287 | 284 | 322 | 343 | 343 | 327 | 332 |
| pH | ARC-pH | SU | 6.97 | 7.17 | 7.1 | 7.29 | 6.78 | 6.82 | 6.80 | 6.78 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | 1,540 | 1,980 | 1.3 | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-PZ1-12032014<br>12/03/14<br>114-P1C-PZ1 | 114-P1C-PZ1-20150923<br>09/23/15<br>114-P1C-PZ1 | 114-P1C-PZ1-20151211<br>12/11/15<br>114-P1C-PZ1 | 114-P1C-PZ1-20160325<br>03/25/16<br>114-P1C-PZ1 | 114-P1C-PZ1-20160624<br>06/24/16<br>114-P1C-PZ1 | 114-P1C-PZ1-20160624-F<br>06/24/16<br>114-P1C-PZ1 | 114-P1C-PZ1-20160912<br>09/12/16<br>114-P1C-PZ1 | 114-P1C-PZ1-20160912-F<br>09/12/16<br>114-P1C-PZ1 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 72,400 | 129,000 | 107,000 | 441,000 | NA | 442,000 | NA |
| Sulfide | 18496-25-8 | ug/L | NA | 2,000 U | 2,000 U | 2,000 U | 2,000 U | NA | 2,000 U | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | 3,000 UJ | 3,000 UJ | 3,000 UJ | 3,000 UJ | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 20.02 | 19.54 | 30.1 | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | 4,500 | 4,400 | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 1,200 | NA | 0 | NA | NA | NA | 170 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 5 | NA | 69 | NA | NA | NA | 194.1 | NA |
| pH | ARC-pH | SU | 6.81 | NA | 7.1 | NA | NA | NA | 6.71 | NA |
| photoionization detector | PID | ug/L | NA | NA | 0 | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | 1.29 | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 14.2 | NA | 19.54 | NA | NA | NA | 16.43 | NA |
| Turbidity | ARC-Turb | NTU | 7.9 | NA | 1.97 | NA | NA | NA | 3.81 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-PZ1-F-20150923<br><br>09/23/15<br>114-P1C-PZ1 | 114-P1C-PZ1-F-20151211<br><br>12/11/15<br>114-P1C-PZ1 | 114-P1C-PZ1-F-20160325<br><br>03/25/16<br>114-P1C-PZ1 | 114-P1C-PZ1-W1-24.0-26.0<br>24 - 26<br>10/12/16<br>114-P1C-PZ1-S1 | 114-P1C-PZ1-W1-24.0-26.0-F<br>24 - 26<br>10/12/16<br>114-P1C-PZ1 | 114-P1C-PZ1-W1-31.0-33.0<br>31 - 33<br>10/12/16<br>114-P1C-PZ1-S1 | 114-P1C-PZ1-W1-31.0-33.0-F<br>31 - 33<br>10/12/16<br>114-P1C-PZ1 |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-PZ1-F-20150923<br><br>09/23/15<br>114-P1C-PZ1 | 114-P1C-PZ1-F-20151211<br><br>12/11/15<br>114-P1C-PZ1 | 114-P1C-PZ1-F-20160325<br><br>03/25/16<br>114-P1C-PZ1 | 114-P1C-PZ1-W1-24.0-26.0<br>24 - 26<br>10/12/16<br>114-P1C-PZ1-S1 | 114-P1C-PZ1-W1-24.0-26.0-F<br>24 - 26<br>10/12/16<br>114-P1C-PZ1 | 114-P1C-PZ1-W1-31.0-33.0<br>31 - 33<br>10/12/16<br>114-P1C-PZ1-S1 | 114-P1C-PZ1-W1-31.0-33.0-F<br>31 - 33<br>10/12/16<br>114-P1C-PZ1 |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-PZ1-F-20150923<br><br>09/23/15<br>114-P1C-PZ1 | 114-P1C-PZ1-F-20151211<br><br>12/11/15<br>114-P1C-PZ1 | 114-P1C-PZ1-F-20160325<br><br>03/25/16<br>114-P1C-PZ1 | 114-P1C-PZ1-W1-24.0-26.0<br>24 - 26<br>10/12/16<br>114-P1C-PZ1-S1 | 114-P1C-PZ1-W1-24.0-26.0-F<br>24 - 26<br>10/12/16<br>114-P1C-PZ1 | 114-P1C-PZ1-W1-31.0-33.0<br>31 - 33<br>10/12/16<br>114-P1C-PZ1-S1 | 114-P1C-PZ1-W1-31.0-33.0-F<br>31 - 33<br>10/12/16<br>114-P1C-PZ1 |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | 681,000 | NA | 111,000 | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | 60 U | NA | 30 U | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | 286 | NA | 73.0 | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | 3,570 | NA | 894 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | 38.0 | NA | 10.0 | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | 9.0 J | NA | 3.0 J | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | 544,000 | NA | 400,000 | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 7,840 | NA | 1,810 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | 8.4 J | NA | 10 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | 749 | NA | 98.0 J | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | 3,860 | NA | 421 | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | 1,940,000 | NA | 245,000 | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | 546 | NA | 180 | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | 345,000 | NA | 66,400 | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | 18,500 | NA | 10,200 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-PZ1-F-20150923<br><br>09/23/15<br>114-P1C-PZ1 | 114-P1C-PZ1-F-20151211<br><br>12/11/15<br>114-P1C-PZ1 | 114-P1C-PZ1-F-20160325<br><br>03/25/16<br>114-P1C-PZ1 | 114-P1C-PZ1-W1-24.0-26.0<br>24 - 26<br>10/12/16<br>114-P1C-PZ1-S1 | 114-P1C-PZ1-W1-24.0-26.0-F<br>24 - 26<br>10/12/16<br>114-P1C-PZ1 | 114-P1C-PZ1-W1-31.0-33.0<br>31 - 33<br>10/12/16<br>114-P1C-PZ1-S1 | 114-P1C-PZ1-W1-31.0-33.0-F<br>31 - 33<br>10/12/16<br>114-P1C-PZ1 |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | 0.81 J | NA | 1.2 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | 2,670 | NA | 308 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | 183,000 | NA | 38,600 J | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | 100 U | NA | 36.0 J | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | 100 U | NA | 25.0 J | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | 213,000 | NA | 199,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | 20 U | NA | 10 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | 1,880 | NA | 308 | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | 9,470 | NA | 1,210 | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 876 | 2,360 | 381 | NA | 10 U | NA | 96.2 |
| Chromium VI | 18540-29-9 | ug/L | 690 RA | 2,500 RA | 210 | NA | 10 U | NA | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 31,200 | 44,000 | 35,900 | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-PZ1-F-20150923<br><br>09/23/15<br>114-P1C-PZ1 | 114-P1C-PZ1-F-20151211<br><br>12/11/15<br>114-P1C-PZ1 | 114-P1C-PZ1-F-20160325<br><br>03/25/16<br>114-P1C-PZ1 | 114-P1C-PZ1-W1-24.0-26.0<br>24 - 26<br>10/12/16<br>114-P1C-PZ1-S1 | 114-P1C-PZ1-W1-24.0-26.0-F<br>24 - 26<br>10/12/16<br>114-P1C-PZ1 | 114-P1C-PZ1-W1-31.0-33.0<br>31 - 33<br>10/12/16<br>114-P1C-PZ1-S1 | 114-P1C-PZ1-W1-31.0-33.0-F<br>31 - 33<br>10/12/16<br>114-P1C-PZ1 |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | 4,500 | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | NA | 2,000 U | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 298 | 309 | 287 | 372 | 361 | 367 | 387 |
| pH | ARC-pH | SU | 7.17 | 7.04 | 7.01 | 6.87 | 6.86 | 7.74 | 7.71 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 1,540 | NA | 1.3 | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-PZ1-F-20150923<br><br>09/23/15<br>114-P1C-PZ1 | 114-P1C-PZ1-F-20151211<br><br>12/11/15<br>114-P1C-PZ1 | 114-P1C-PZ1-F-20160325<br><br>03/25/16<br>114-P1C-PZ1 | 114-P1C-PZ1-W1-24.0-26.0<br>24 - 26<br>10/12/16<br>114-P1C-PZ1-S1 | 114-P1C-PZ1-W1-24.0-26.0-F<br>24 - 26<br>10/12/16<br>114-P1C-PZ1 | 114-P1C-PZ1-W1-31.0-33.0<br>31 - 33<br>10/12/16<br>114-P1C-PZ1-S1 | 114-P1C-PZ1-W1-31.0-33.0-F<br>31 - 33<br>10/12/16<br>114-P1C-PZ1 |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 71,900 | 118,000 | 107,000 | 1,270,000 | NA | 59,100 | NA |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 U | 2,000 U | 2,000 U | NA | 7,800 | NA |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 3,000 UJ | 3,000 UJ | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 20.02 | NA | 30.1 | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | CAS Number | Units | 114-P1C-PZ1-W2-24.0-26.0 | 114-P1C-PZ1-W2-24.0-26.0-F | 114-P1C-PZ1-W2-27.0-29.0 | 114-P1C-PZ1-W2-27.0-29.0-F | 114-P1C-PZ2 | 114-P1C-PZ2-03272015 | 114-P1C-PZ2-20150618 | 114-P1C-PZ2-20150923 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 24 - 26 | 24 - 26 | 27 - 29 | 27 - 29 | | | | |
| Date Collected: | | | 10/14/16 | 10/14/16 | 10/14/16 | 10/14/16 | 11/20/14 | 03/27/15 | 06/18/15 | 09/23/15 |
| Location ID: | | | 114-P1C-PZ1-S2 | 114-P1C-PZ1 | 114-P1C-PZ1-S2 | 114-P1C-PZ1 | 114-P1C-PZ2 | 114-P1C-PZ2 | 114-P1C-PZ2 | 114-P1C-PZ2 |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-PZ1-W2-24.0-26.0<br>24 - 26<br>10/14/16<br>114-P1C-PZ1-S2 | 114-P1C-PZ1-W2-24.0-26.0-F<br>24 - 26<br>10/14/16<br>114-P1C-PZ1 | 114-P1C-PZ1-W2-27.0-29.0<br>27 - 29<br>10/14/16<br>114-P1C-PZ1-S2 | 114-P1C-PZ1-W2-27.0-29.0-F<br>27 - 29<br>10/14/16<br>114-P1C-PZ1 | 114-P1C-PZ2<br>11/20/14<br>114-P1C-PZ2 | 114-P1C-PZ2-03272015<br>03/27/15<br>114-P1C-PZ2 | 114-P1C-PZ2-20150618<br>06/18/15<br>114-P1C-PZ2 | 114-P1C-PZ2-20150923<br>09/23/15<br>114-P1C-PZ2 |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-PZ1-W2-24.0-26.0<br>24 - 26<br>10/14/16<br>114-P1C-PZ1-S2 | 114-P1C-PZ1-W2-24.0-26.0-F<br>24 - 26<br>10/14/16<br>114-P1C-PZ1 | 114-P1C-PZ1-W2-27.0-29.0<br>27 - 29<br>10/14/16<br>114-P1C-PZ1-S2 | 114-P1C-PZ1-W2-27.0-29.0-F<br>27 - 29<br>10/14/16<br>114-P1C-PZ1 | 114-P1C-PZ2<br>11/20/14<br>114-P1C-PZ2 | 114-P1C-PZ2-03272015<br>03/27/15<br>114-P1C-PZ2 | 114-P1C-PZ2-20150618<br>06/18/15<br>114-P1C-PZ2 | 114-P1C-PZ2-20150923<br>09/23/15<br>114-P1C-PZ2 |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 7,520 | NA | 87,700 | NA | 292 | 200 U | 265 JB | 200 UB |
| Antimony | 7440-36-0 | ug/L | 6.0 U | NA | 30 U | NA | 6.0 U | 3.0 J | 6.0 U | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | 10.3 | NA | 48.0 | NA | 9.8 | 11.4 | 14.0 | 8.2 |
| Barium | 7440-39-3 | ug/L | 73.3 J | NA | 1,150 | NA | 30.1 J | 41.7 J | 34.6 J | 125 J |
| Beryllium | 7440-41-7 | ug/L | 0.40 J | NA | 8.0 | NA | 1.0 U | 1.0 UJ | 1.0 U | 0.40 J |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 3.0 U | NA | 3.0 J | NA | 3.0 U | 0.70 J | 0.60 J | 1.1 J |
| Calcium | 7440-70-2 | ug/L | 113,000 | NA | 678,000 | NA | 58,300 | 60,300 | 56,700 | 152,000 |
| Chromium | 7440-47-3 | ug/L | 161 | NA | 5,040 | NA | 3,780 | 2,730 J | 1,210 | 1,180 |
| Chromium VI | 18540-29-9 | ug/L | 10 UJ | NA | 10 UJ | NA | 4,700 RA | 2,600 RA | 820 | 850 RA |
| Cobalt | 7440-48-4 | ug/L | 8.6 J | NA | 90.5 J | NA | 12.3 J | 11.6 J | 13.5 J | 17.5 JB |
| Copper | 7440-50-8 | ug/L | 32.6 | NA | 255 | NA | 19.4 | 18.5 J | 12.3 | 19.2 JB |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 14,900 | NA | 162,000 | NA | 86.2 J | 137 UJ | 227 | 217 JB |
| Lead | 7439-92-1 | ug/L | 12.4 | NA | 189 | NA | 3.0 U | 5.4 | 3.0 | 4.5 |
| Magnesium | 7439-95-4 | ug/L | 23,000 | NA | 60,300 | NA | 7,950 | 9,760 | 11,800 | 40,800 |
| Manganese | 7439-96-5 | ug/L | 550 | NA | 14,600 | NA | 67.7 | 69.2 | 75.7 | 194 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-PZ1-W2-24.0-26.0<br>24 - 26<br>10/14/16<br>114-P1C-PZ1-S2 | 114-P1C-PZ1-W2-24.0-26.0-F<br>24 - 26<br>10/14/16<br>114-P1C-PZ1 | 114-P1C-PZ1-W2-27.0-29.0<br>27 - 29<br>10/14/16<br>114-P1C-PZ1-S2 | 114-P1C-PZ1-W2-27.0-29.0-F<br>27 - 29<br>10/14/16<br>114-P1C-PZ1 | 114-P1C-PZ2<br>11/20/14<br>114-P1C-PZ2 | 114-P1C-PZ2-03272015<br>03/27/15<br>114-P1C-PZ2 | 114-P1C-PZ2-20150618<br>06/18/15<br>114-P1C-PZ2 | 114-P1C-PZ2-20150923<br>09/23/15<br>114-P1C-PZ2 |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.30 U | NA | 0.68 J | NA | 0.20 U | 0.20 U | 0.20 U | 0.20 U |
| Nickel | 7440-02-0 | ug/L | 39.2 | NA | 223 | NA | 21.1 | 27.6 J | 26.3 | 40.0 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 8,670 J | NA | 41,100 J | NA | 19,300 | 20,700 J | 23,500 | 37,100 |
| Selenium | 7782-49-2 | ug/L | 10 U | NA | 50 U | NA | 4.9 J | 4.1 J | 10 U | 4.8 J |
| Silver | 7440-22-4 | ug/L | 1.3 J | NA | 13.5 J | NA | 2.1 J | 1.6 J | 10 U | 10 U |
| Sodium | 7440-23-5 | ug/L | 626,000 | NA | 1,140,000 | NA | 238,000 | 271,000 | 346,000 | 756,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | 48,700 | 50,700 | 56,700 |
| Thallium | 7440-28-0 | ug/L | 4.0 U | NA | 10 U | NA | 2.0 U | 2.0 U | 2.0 U | 2.0 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 17.6 J | NA | 225 J | NA | 27.6 J | 20.3 J | 13.9 J | 11.0 JB |
| Zinc | 7440-66-6 | ug/L | 78.4 | NA | 759 | NA | 21.3 | 20 UB | 14.3 J | 18.6 JB |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 13.2 | NA | 41.6 | 3,820 | 3,200 J | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 UJ | NA | 10 UJ | 4,300 RA | 2,800 RA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-PZ1-W2-24.0-26.0<br>24 - 26<br>10/14/16<br>114-P1C-PZ1-S2 | 114-P1C-PZ1-W2-24.0-26.0-F<br>24 - 26<br>10/14/16<br>114-P1C-PZ1 | 114-P1C-PZ1-W2-27.0-29.0<br>27 - 29<br>10/14/16<br>114-P1C-PZ1-S2 | 114-P1C-PZ1-W2-27.0-29.0-F<br>27 - 29<br>10/14/16<br>114-P1C-PZ1 | 114-P1C-PZ2<br>11/20/14<br>114-P1C-PZ2 | 114-P1C-PZ2-03272015<br>03/27/15<br>114-P1C-PZ2 | 114-P1C-PZ2-20150618<br>06/18/15<br>114-P1C-PZ2 | 114-P1C-PZ2-20150923<br>09/23/15<br>114-P1C-PZ2 |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | 2,000 U | 2,000 U | 2,000 U |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 561 | 561 | 555 | 583 | 322 | 313 | 331 | 266 |
| pH | ARC-pH | SU | 7.94 | 8.17 | 8.18 | 8.12 | 9.31 | 8.80 | 9.33 | 7.84 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | 1,500 | 1,870 | 4,130 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-PZ1-W2-24.0-26.0<br>24 - 26<br>10/14/16<br>114-P1C-PZ1-S2 | 114-P1C-PZ1-W2-24.0-26.0-F<br>24 - 26<br>10/14/16<br>114-P1C-PZ1 | 114-P1C-PZ1-W2-27.0-29.0<br>27 - 29<br>10/14/16<br>114-P1C-PZ1-S2 | 114-P1C-PZ1-W2-27.0-29.0-F<br>27 - 29<br>10/14/16<br>114-P1C-PZ1 | 114-P1C-PZ2<br>11/20/14<br>114-P1C-PZ2 | 114-P1C-PZ2-03272015<br>03/27/15<br>114-P1C-PZ2 | 114-P1C-PZ2-20150618<br>06/18/15<br>114-P1C-PZ2 | 114-P1C-PZ2-20150923<br>09/23/15<br>114-P1C-PZ2 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 260,000 | NA | 204,000 | NA | NA | 134,000 | 150,000 | 147,000 |
| Sulfide | 18496-25-8 | ug/L | 1,000 J | NA | 14,500 | NA | NA | 690 J | 1,000 J | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | 3,000 UJ | 3,000 UJ | 3,000 UJ |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | 13.8 | 16.39 | 19.16 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | 4,050 | 410 | 610 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | 197 | 172 | 156 | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | 9.89 | 9.34 | 9.33 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | 1.42 | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | 14.3 | 13.18 | 16.29 | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | 5.95 | 4.04 | 15.8 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-P1C-PZ2-20151211 | 114-P1C-PZ2-20160325 | 114-P1C-PZ2-20160624 | 114-P1C-PZ2-20160624-F | 114-P1C-PZ2-20160912 | 114-P1C-PZ2-20160912-F | 114-P1C-PZ2-F-20150618 | 114-P1C-PZ2-F-20150923 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | |
| Date Collected: | | | 12/11/15 | 03/25/16 | 06/24/16 | 06/24/16 | 09/12/16 | 09/12/16 | 06/18/15 | 09/23/15 |
| Location ID: | CAS Number | Units | 114-P1C-PZ2 | 114-P1C-PZ2 | 114-P1C-PZ2 | 114-P1C-PZ2 | 114-P1C-PZ2 | 114-P1C-PZ2 | 114-P1C-PZ2 | 114-P1C-PZ2 |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-PZ2-20151211<br><br>12/11/15<br>114-P1C-PZ2 | 114-P1C-PZ2-20160325<br><br>03/25/16<br>114-P1C-PZ2 | 114-P1C-PZ2-20160624<br><br>06/24/16<br>114-P1C-PZ2 | 114-P1C-PZ2-20160624-F<br><br>06/24/16<br>114-P1C-PZ2 | 114-P1C-PZ2-20160912<br><br>09/12/16<br>114-P1C-PZ2 | 114-P1C-PZ2-20160912-F<br><br>09/12/16<br>114-P1C-PZ2 | 114-P1C-PZ2-F-20150618<br><br>06/18/15<br>114-P1C-PZ2 | 114-P1C-PZ2-F-20150923<br><br>09/23/15<br>114-P1C-PZ2 |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-PZ2-20151211<br>12/11/15<br>114-P1C-PZ2 | 114-P1C-PZ2-20160325<br>03/25/16<br>114-P1C-PZ2 | 114-P1C-PZ2-20160624<br>06/24/16<br>114-P1C-PZ2 | 114-P1C-PZ2-20160624-F<br>06/24/16<br>114-P1C-PZ2 | 114-P1C-PZ2-20160912<br>09/12/16<br>114-P1C-PZ2 | 114-P1C-PZ2-20160912-F<br>09/12/16<br>114-P1C-PZ2 | 114-P1C-PZ2-F-20150618<br>06/18/15<br>114-P1C-PZ2 | 114-P1C-PZ2-F-20150923<br>09/23/15<br>114-P1C-PZ2 |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 539 | 200 U | 426 | NA | 169 J | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 6.0 U | 6.0 U | 6.0 U | NA | 6.0 U | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | 9.5 | 3.0 U | 4.8 | NA | 5.9 | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | 67.2 J | 140 J | 89.8 J | NA | 81.4 J | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | 1.0 U | 0.60 J | 1.0 U | NA | 1.0 U | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 3.0 UB | 1.0 J | 0.90 J | NA | 0.40 J | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | 84,800 | 252,000 | 109,000 | NA | 104,000 | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 678 | 2,450 J | 629 | NA | 615 | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 340 RA | 3,100 J | 170 | NA | 200 J | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 18.2 J | 18.9 J | 17.1 J | NA | 16.4 J | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | 15.5 JB | 36.6 | 17.6 | NA | 12.3 | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 493 | 288 | 1,000 | NA | 469 | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | 4.1 | 5.5 | 5.5 | NA | 2.9 J | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | 28,100 | 47,900 | 38,800 | NA | 36,300 | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 193 | 1,320 | 334 | NA | 310 | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-P1C-PZ2-20151211<br>12/11/15<br>114-P1C-PZ2 | 114-P1C-PZ2-20160325<br>03/25/16<br>114-P1C-PZ2 | 114-P1C-PZ2-20160624<br>06/24/16<br>114-P1C-PZ2 | 114-P1C-PZ2-20160624-F<br>06/24/16<br>114-P1C-PZ2 | 114-P1C-PZ2-20160912<br>09/12/16<br>114-P1C-PZ2 | 114-P1C-PZ2-20160912-F<br>09/12/16<br>114-P1C-PZ2 | 114-P1C-PZ2-F-20150618<br>06/18/15<br>114-P1C-PZ2 | 114-P1C-PZ2-F-20150923<br>09/23/15<br>114-P1C-PZ2 |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | 0.20 U | 0.20 U | NA | 0.20 U | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 28.8 | 37.7 | 50.8 | NA | 28.2 | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 28,700 | 25,800 | 26,900 | NA | 26,100 | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | 10 U | 4.6 J | 4.2 J | NA | 10 U | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | 10 U | 2.6 J | 1.0 J | NA | 10 UB | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | 438,000 | 424,000 | 459,000 | NA | 384,000 | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 41,100 | 78,300 | 37,600 | NA | 33,100 | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 2.0 U | 2.0 U | 2.0 U | NA | 2.0 U | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 5.2 J | 50 U | 4.5 J | NA | 3.8 J | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | 26.1 UB | 48.5 | 13.3 J | NA | 20 UB | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 384 | NA | 475 | 1,090 | 996 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | 200 | NA | 280 J | 610 | 790 RA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | 50,400 | 57,100 |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-P1C-PZ2-20151211<br>12/11/15<br>114-P1C-PZ2 | 114-P1C-PZ2-20160325<br>03/25/16<br>114-P1C-PZ2 | 114-P1C-PZ2-20160624<br>06/24/16<br>114-P1C-PZ2 | 114-P1C-PZ2-20160624-F<br>06/24/16<br>114-P1C-PZ2 | 114-P1C-PZ2-20160912<br>09/12/16<br>114-P1C-PZ2 | 114-P1C-PZ2-20160912-F<br>09/12/16<br>114-P1C-PZ2 | 114-P1C-PZ2-F-20150618<br>06/18/15<br>114-P1C-PZ2 | 114-P1C-PZ2-F-20150923<br>09/23/15<br>114-P1C-PZ2 |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | 2,000 U | NA | NA | NA | NA | 2,000 U | 2,000 U |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 266 | 331 | 323 | 313 | 323 | 321 | 332 | 268 |
| pH | ARC-pH | SU | 7.67 | 8.29 | 7.30 | 7.34 | 7.37 | 7.41 | 9.33 | 7.84 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 2,660 | 2.9 | NA | NA | NA | NA | 1,870 | 4,130 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-PZ2-20151211<br>12/11/15<br>114-P1C-PZ2 | 114-P1C-PZ2-20160325<br>03/25/16<br>114-P1C-PZ2 | 114-P1C-PZ2-20160624<br>06/24/16<br>114-P1C-PZ2 | 114-P1C-PZ2-20160624-F<br>06/24/16<br>114-P1C-PZ2 | 114-P1C-PZ2-20160912<br>09/12/16<br>114-P1C-PZ2 | 114-P1C-PZ2-20160912-F<br>09/12/16<br>114-P1C-PZ2 | 114-P1C-PZ2-F-20150618<br>06/18/15<br>114-P1C-PZ2 | 114-P1C-PZ2-F-20150923<br>09/23/15<br>114-P1C-PZ2 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 121,000 | 242,000 | 108,000 | NA | 104,000 | NA | 152,000 | 143,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 U | 2,000 U | NA | 2,000 U | NA | 760 J | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 3,000 UJ | 3,000 UJ | NA | NA | NA | 3,000 UJ | 3,000 UJ |
| Temperature | ARC-Temp | deg c | 18.18 | 16.48 | NA | NA | NA | NA | 16.39 | 19.16 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 6,800 | 5,400 | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 0 | NA | NA | NA | 130 | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 44 | NA | NA | NA | 120 | NA | NA | NA |
| pH | ARC-pH | SU | 7.67 | NA | NA | NA | 7.06 | NA | NA | NA |
| photoionization detector | PID | ug/L | 0 | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 18.18 | NA | NA | NA | 17.57 | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | 33.2 | NA | NA | NA | 5.02 | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-P1C-PZ2-F-20151211 | 114-P1C-PZ2-F-20160325 | 114-P1C-PZ2-W1-16.5-17.5 | 114-P1C-PZ2-W1-16.5-17.5-F | 114-P1C-PZ2-W1-25.0-27.0 | 114-P1C-PZ2-W1-25.0-27.0-F | 114-P1C-PZ2-W2-25.0-27.0 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | 16.5 - 17.5 | | 25 - 27 | | 25 - 27 |
| Date Collected: | | | 12/11/15 | 03/25/16 | 10/11/16 | 10/11/16 | 10/11/16 | 10/11/16 | 10/13/16 |
| Location ID: | CAS Number | Units | 114-P1C-PZ2 | 114-P1C-PZ2 | 114-P1C-PZ2-S1 | 114-P1C-PZ2 | 114-P1C-PZ2-S1 | 114-P1C-PZ2 | 114-P1C-PZ2-S2 |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-PZ2-F-20151211<br><br>12/11/15<br>114-P1C-PZ2 | 114-P1C-PZ2-F-20160325<br><br>03/25/16<br>114-P1C-PZ2 | 114-P1C-PZ2-W1-16.5-17.5<br>16.5 - 17.5<br>10/11/16<br>114-P1C-PZ2-S1 | 114-P1C-PZ2-W1-16.5-17.5-F<br><br>10/11/16<br>114-P1C-PZ2 | 114-P1C-PZ2-W1-25.0-27.0<br>25 - 27<br>10/11/16<br>114-P1C-PZ2-S1 | 114-P1C-PZ2-W1-25.0-27.0-F<br><br>10/11/16<br>114-P1C-PZ2 | 114-P1C-PZ2-W2-25.0-27.0<br>25 - 27<br>10/13/16<br>114-P1C-PZ2-S2 |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-PZ2-F-20151211<br><br>12/11/15<br>114-P1C-PZ2 | 114-P1C-PZ2-F-20160325<br><br>03/25/16<br>114-P1C-PZ2 | 114-P1C-PZ2-W1-16.5-17.5<br>16.5 - 17.5<br>10/11/16<br>114-P1C-PZ2-S1 | 114-P1C-PZ2-W1-16.5-17.5-F<br><br>10/11/16<br>114-P1C-PZ2 | 114-P1C-PZ2-W1-25.0-27.0<br>25 - 27<br>10/11/16<br>114-P1C-PZ2-S1 | 114-P1C-PZ2-W1-25.0-27.0-F<br><br>10/11/16<br>114-P1C-PZ2 | 114-P1C-PZ2-W2-25.0-27.0<br>25 - 27<br>10/13/16<br>114-P1C-PZ2-S2 |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | 556,000 | NA | 59,800 | NA | 252,000 |
| Antimony | 7440-36-0 | ug/L | NA | NA | 60 U | NA | 30 U | NA | 60 U |
| Arsenic | 7440-38-2 | ug/L | NA | NA | 623 | NA | 137 | NA | 200 |
| Barium | 7440-39-3 | ug/L | NA | NA | 4,750 | NA | 931 J | NA | 3,380 |
| Beryllium | 7440-41-7 | ug/L | NA | NA | 51.0 | NA | 7.5 | NA | 23.0 |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | 8.0 J | NA | 15 U | NA | 30 U |
| Calcium | 7440-70-2 | ug/L | NA | NA | 166,000 | NA | 28,900 | NA | 202,000 |
| Chromium | 7440-47-3 | ug/L | NA | NA | 52,800 | NA | 2,560 | NA | 8,390 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 15 J | NA | 10 UJ | NA | 10 RA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | 310 J | NA | 51.5 J | NA | 261 J |
| Copper | 7440-50-8 | ug/L | NA | NA | 2,140 | NA | 280 | NA | 955 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 982,000 | NA | 127,000 | NA | 572,000 |
| Lead | 7439-92-1 | ug/L | NA | NA | 1,050 | NA | 462 | NA | 669 |
| Magnesium | 7439-95-4 | ug/L | NA | NA | 256,000 | NA | 26,000 | NA | 126,000 |
| Manganese | 7439-96-5 | ug/L | NA | NA | 8,550 | NA | 2,020 | NA | 12,000 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-PZ2-F-20151211<br>12/11/15<br>114-P1C-PZ2 | 114-P1C-PZ2-F-20160325<br>03/25/16<br>114-P1C-PZ2 | 114-P1C-PZ2-W1-16.5-17.5<br>16.5 - 17.5<br>10/11/16<br>114-P1C-PZ2-S1 | 114-P1C-PZ2-W1-16.5-17.5-F<br>10/11/16<br>114-P1C-PZ2 | 114-P1C-PZ2-W1-25.0-27.0<br>25 - 27<br>10/11/16<br>114-P1C-PZ2-S1 | 114-P1C-PZ2-W1-25.0-27.0-F<br>10/11/16<br>114-P1C-PZ2 | 114-P1C-PZ2-W2-25.0-27.0<br>25 - 27<br>10/13/16<br>114-P1C-PZ2-S2 |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | 2.8 | NA | 0.40 JB | NA | 0.39 J |
| Nickel | 7440-02-0 | ug/L | NA | NA | 1,080 | NA | 380 | NA | 1,390 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | 126,000 | NA | 21,500 J | NA | 77,100 J |
| Selenium | 7782-49-2 | ug/L | NA | NA | 100 U | NA | 50 U | NA | 100 U |
| Silver | 7440-22-4 | ug/L | NA | NA | 31.0 J | NA | 7.0 J | NA | 14.0 J |
| Sodium | 7440-23-5 | ug/L | NA | NA | 739,000 | NA | 843,000 | NA | 1,110,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | 40 U | NA | 10 U | NA | 20 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | 2,100 | NA | 190 J | NA | 724 |
| Zinc | 7440-66-6 | ug/L | NA | NA | 13,300 | NA | 908 | NA | 2,410 |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 501 | 2,460 | NA | 61.0 | NA | 26.1 | NA |
| Chromium VI | 18540-29-9 | ug/L | 350 RA | 2,500 | NA | 3.9 J | NA | 10 UJ | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 42,600 | 80,200 | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-PZ2-F-20151211<br>12/11/15<br>114-P1C-PZ2 | 114-P1C-PZ2-F-20160325<br>03/25/16<br>114-P1C-PZ2 | 114-P1C-PZ2-W1-16.5-17.5<br>16.5 - 17.5<br>10/11/16<br>114-P1C-PZ2-S1 | 114-P1C-PZ2-W1-16.5-17.5-F<br>10/11/16<br>114-P1C-PZ2 | 114-P1C-PZ2-W1-25.0-27.0<br>25 - 27<br>10/11/16<br>114-P1C-PZ2-S1 | 114-P1C-PZ2-W1-25.0-27.0-F<br>10/11/16<br>114-P1C-PZ2 | 114-P1C-PZ2-W2-25.0-27.0<br>25 - 27<br>10/13/16<br>114-P1C-PZ2-S2 |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | 5,300 | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | 2,000 U | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 282 | 315 | 551 | 387 | 555 | 396 | 560 |
| pH | ARC-pH | SU | 7.65 | 8.29 | 7.10 | 7.08 | 9.24 | 9.21 | 9.56 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | 2.9 | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-P1C-PZ2-F-20151211 | 114-P1C-PZ2-F-20160325 | 114-P1C-PZ2-W1-16.5-17.5 | 114-P1C-PZ2-W1-16.5-17.5-F | 114-P1C-PZ2-W1-25.0-27.0 | 114-P1C-PZ2-W1-25.0-27.0-F | 114-P1C-PZ2-W2-25.0-27.0 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | 16.5 - 17.5 | | 25 - 27 | | 25 - 27 |
| Date Collected: | | | 12/11/15 | 03/25/16 | 10/11/16 | 10/11/16 | 10/11/16 | 10/11/16 | 10/13/16 |
| Location ID: | CAS Number | Units | 114-P1C-PZ2 | 114-P1C-PZ2 | 114-P1C-PZ2-S1 | 114-P1C-PZ2 | 114-P1C-PZ2-S1 | 114-P1C-PZ2 | 114-P1C-PZ2-S2 |
| Sulfate | 14808-79-8 | ug/L | 111,000 | 243,000 | 121,000 | NA | 691,000 | NA | 127,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 U | 12,900 | NA | 11,300 | NA | 37,400 |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 3,000 UJ | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 16.48 | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-P1C-PZ2-W2-25.0-27.0-F | 114-P1C-PZ2-W2-31.0-33.0 | 114-P1C-PZ2-W2-31.0-33.0-F | 114-P2A-MW101I-20160324 | 114-P2A-MW101I-20160628 | 114-P2A-MW101I-20160628-F | 114-P2A-MW101I-20160914 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | 31 - 33 | | | | | |
| Date Collected: | | | 10/13/16 | 10/13/16 | 10/13/16 | 03/24/16 | 06/28/16 | 06/28/16 | 09/14/16 |
| Location ID: | CAS Number | Units | 114-P1C-PZ2 | 114-P1C-PZ2-S2 | 114-P1C-PZ2 | 114-P2A-MW101I | 114-P2A-MW101I | 114-P2A-MW101I | 114-P2A-MW101I |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-PZ2-W2-25.0-27.0-F<br><br>10/13/16<br>114-P1C-PZ2 | 114-P1C-PZ2-W2-31.0-33.0<br>31 - 33<br>10/13/16<br>114-P1C-PZ2-S2 | 114-P1C-PZ2-W2-31.0-33.0-F<br><br>10/13/16<br>114-P1C-PZ2 | 114-P2A-MW101I-20160324<br><br>03/24/16<br>114-P2A-MW101I | 114-P2A-MW101I-20160628<br><br>06/28/16<br>114-P2A-MW101I | 114-P2A-MW101I-20160628-F<br><br>06/28/16<br>114-P2A-MW101I | 114-P2A-MW101I-20160914<br><br>09/14/16<br>114-P2A-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-PZ2-W2-25.0-27.0-F<br><br>10/13/16<br>114-P1C-PZ2 | 114-P1C-PZ2-W2-31.0-33.0<br>31 - 33<br>10/13/16<br>114-P1C-PZ2-S2 | 114-P1C-PZ2-W2-31.0-33.0-F<br><br>10/13/16<br>114-P1C-PZ2 | 114-P2A-MW101I-20160324<br><br>03/24/16<br>114-P2A-MW101I | 114-P2A-MW101I-20160628<br><br>06/28/16<br>114-P2A-MW101I | 114-P2A-MW101I-20160628-F<br><br>06/28/16<br>114-P2A-MW101I | 114-P2A-MW101I-20160914<br><br>09/14/16<br>114-P2A-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 110,000 | NA | 774 J | 914 | NA | 6,510 |
| Antimony | 7440-36-0 | ug/L | NA | 60 U | NA | 30 U | 6.0 U | NA | 3.3 J |
| Arsenic | 7440-38-2 | ug/L | NA | 77.0 | NA | 15 U | 9.2 | NA | 11.6 |
| Barium | 7440-39-3 | ug/L | NA | 1,150 J | NA | 28.3 J | 24.6 J | NA | 60.3 J |
| Beryllium | 7440-41-7 | ug/L | NA | 10.0 | NA | 1.7 J | 1.0 U | NA | 0.40 J |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 4.0 J | NA | 2.6 J | 3.0 U | NA | 3.0 U |
| Calcium | 7440-70-2 | ug/L | NA | 511,000 | NA | 60,200 | 59,300 | NA | 71,100 |
| Chromium | 7440-47-3 | ug/L | NA | 2,120 | NA | 15.5 J | 4.8 J | NA | 12.4 |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 RA | NA | 4.9 J | 11 | NA | 17 |
| Cobalt | 7440-48-4 | ug/L | NA | 96.0 J | NA | 250 U | 0.90 J | NA | 4.6 J |
| Copper | 7440-50-8 | ug/L | NA | 309 | NA | 50 UJ | 8.1 J | NA | 12.5 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 221,000 | NA | 1,120 | 1,120 | NA | 9,010 |
| Lead | 7439-92-1 | ug/L | NA | 298 | NA | 15 U | 3.0 U | NA | 6.3 |
| Magnesium | 7439-95-4 | ug/L | NA | 67,200 | NA | 7,220 J | 7,770 | NA | 11,200 |
| Manganese | 7439-96-5 | ug/L | NA | 11,600 | NA | 45.0 J | 56.9 | NA | 275 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-PZ2-W2-25.0-27.0-F<br><br>10/13/16<br>114-P1C-PZ2 | 114-P1C-PZ2-W2-31.0-33.0<br>31 - 33<br>10/13/16<br>114-P1C-PZ2-S2 | 114-P1C-PZ2-W2-31.0-33.0-F<br><br>10/13/16<br>114-P1C-PZ2 | 114-P2A-MW101I-20160324<br><br>03/24/16<br>114-P2A-MW101I | 114-P2A-MW101I-20160628<br><br>06/28/16<br>114-P2A-MW101I | 114-P2A-MW101I-20160628-F<br><br>06/28/16<br>114-P2A-MW101I | 114-P2A-MW101I-20160914<br><br>09/14/16<br>114-P2A-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.51 J | NA | 0.20 U | 0.20 U | NA | 0.20 U |
| Nickel | 7440-02-0 | ug/L | NA | 370 | NA | 5.1 J | 10 U | NA | 16.2 J |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 46,400 J | NA | 9,050 J | 7,010 J | NA | 8,780 J |
| Selenium | 7782-49-2 | ug/L | NA | 100 U | NA | 50 U | 10 U | NA | 10 U |
| Silver | 7440-22-4 | ug/L | NA | 100 U | NA | 50 UJ | 10 U | NA | 10 U |
| Sodium | 7440-23-5 | ug/L | NA | 790,000 | NA | 212,000 | 210,000 | NA | 206,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | 142,000 | 149,000 | NA | 130,000 |
| Thallium | 7440-28-0 | ug/L | NA | 20 U | NA | 10 U | 4.0 U | NA | 4.0 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 288 J | NA | 14.8 J | 9.5 J | NA | 18.4 J |
| Zinc | 7440-66-6 | ug/L | NA | 952 | NA | 54.8 J | 5.7 JB | NA | 33.0 J |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 40.2 | NA | 39.8 | NA | NA | 2.4 J | NA |
| Chromium VI | 18540-29-9 | ug/L | 4.8 RA | NA | 10 RA | NA | NA | 10 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-PZ2-W2-25.0-27.0-F<br><br>10/13/16<br>114-P1C-PZ2 | 114-P1C-PZ2-W2-31.0-33.0<br>31 - 33<br>10/13/16<br>114-P1C-PZ2-S2 | 114-P1C-PZ2-W2-31.0-33.0-F<br><br>10/13/16<br>114-P1C-PZ2 | 114-P2A-MW101I-20160324<br><br>03/24/16<br>114-P2A-MW101I | 114-P2A-MW101I-20160628<br><br>06/28/16<br>114-P2A-MW101I | 114-P2A-MW101I-20160628-F<br><br>06/28/16<br>114-P2A-MW101I | 114-P2A-MW101I-20160914<br><br>09/14/16<br>114-P2A-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | 2,000 U | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 568 | 550 | 564 | 272 | 298 | 294 | 305 |
| pH | ARC-pH | SU | 9.93 | 8.92 | 9.38 | 9.92 | 8.28 | 8.30 | 8.35 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | 1.2 | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-PZ2-W2-25.0-27.0-F<br><br>10/13/16<br>114-P1C-PZ2 | 114-P1C-PZ2-W2-31.0-33.0<br>31 - 33<br>10/13/16<br>114-P1C-PZ2-S2 | 114-P1C-PZ2-W2-31.0-33.0-F<br><br>10/13/16<br>114-P1C-PZ2 | 114-P2A-MW101I-20160324<br><br>03/24/16<br>114-P2A-MW101I | 114-P2A-MW101I-20160628<br><br>06/28/16<br>114-P2A-MW101I | 114-P2A-MW101I-20160628-F<br><br>06/28/16<br>114-P2A-MW101I | 114-P2A-MW101I-20160914<br><br>09/14/16<br>114-P2A-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 86,200 | NA | 410,000 | 428,000 | NA | 428,000 |
| Sulfide | 18496-25-8 | ug/L | NA | 28,500 | NA | 2,000 U | 2,000 U | NA | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | 3,000 UJ | 3,000 UJ | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | 13.42 | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | 2,500 JB | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | 190 | 190 | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | 41.1 | 48.6 | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | 9.96 | 9.14 | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | 15.69 | 15.25 | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | 22.5 | 27.7 | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-P2A-MW101I-20160914-F | 114-P2A-MW101I-20161212 | 114-P2A-MW101I-20161212-F | 114-P2A-MW101I-F-20160324 | 114-P2A-MW101S-20160324 | 114-P2A-MW101S-20160628 | 114-P2A-MW101S-20160628-F |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | |
| Date Collected: | | | 09/14/16 | 12/12/16 | 12/12/16 | 03/24/16 | 03/24/16 | 06/28/16 | 06/28/16 |
| Location ID: | CAS Number | Units | 114-P2A-MW101I | 114-P2A-MW101I | 114-P2A-MW101I | 114-P2A-MW101I | 114-P2A-MW101S | 114-P2A-MW101S | 114-P2A-MW101S |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW101I-20160914-F<br><br>09/14/16<br>114-P2A-MW101I | 114-P2A-MW101I-20161212<br><br>12/12/16<br>114-P2A-MW101I | 114-P2A-MW101I-20161212-F<br><br>12/12/16<br>114-P2A-MW101I | 114-P2A-MW101I-F-20160324<br><br>03/24/16<br>114-P2A-MW101I | 114-P2A-MW101S-20160324<br><br>03/24/16<br>114-P2A-MW101S | 114-P2A-MW101S-20160628<br><br>06/28/16<br>114-P2A-MW101S | 114-P2A-MW101S-20160628-F<br><br>06/28/16<br>114-P2A-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-P2A-MW101I-20160914-F<br>09/14/16<br>114-P2A-MW101I | 114-P2A-MW101I-20161212<br>12/12/16<br>114-P2A-MW101I | 114-P2A-MW101I-20161212-F<br>12/12/16<br>114-P2A-MW101I | 114-P2A-MW101I-F-20160324<br>03/24/16<br>114-P2A-MW101I | 114-P2A-MW101S-20160324<br>03/24/16<br>114-P2A-MW101S | 114-P2A-MW101S-20160628<br>06/28/16<br>114-P2A-MW101S | 114-P2A-MW101S-20160628-F<br>06/28/16<br>114-P2A-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 994 | NA | NA | 1,920 | 497 | NA |
| Antimony | 7440-36-0 | ug/L | NA | 6.0 U | NA | NA | 30 U | 6.0 U | NA |
| Arsenic | 7440-38-2 | ug/L | NA | 7.7 | NA | NA | 15 U | 35.0 | NA |
| Barium | 7440-39-3 | ug/L | NA | 24.7 J | NA | NA | 48.9 J | 185 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | 1.0 UB | NA | NA | 5.0 U | 0.40 J | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 3.0 U | NA | NA | 15 U | 3.0 U | NA |
| Calcium | 7440-70-2 | ug/L | NA | 41,800 | NA | NA | 121,000 | 263,000 | NA |
| Chromium | 7440-47-3 | ug/L | NA | 4.6 J | NA | NA | 15.5 J | 28.0 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 6.5 J | NA | NA | 5.5 UJ | 6.9 J | NA |
| Cobalt | 7440-48-4 | ug/L | NA | 0.70 J | NA | NA | 250 U | 1.5 J | NA |
| Copper | 7440-50-8 | ug/L | NA | 10 U | NA | NA | 50 UJ | 9.3 J | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 1,240 | NA | NA | 2,440 | 13,300 | NA |
| Lead | 7439-92-1 | ug/L | NA | 6.0 U | NA | NA | 15 U | 15 U | NA |
| Magnesium | 7439-95-4 | ug/L | NA | 8,380 | NA | NA | 897 J | 61,100 | NA |
| Manganese | 7439-96-5 | ug/L | NA | 50.3 | NA | NA | 36.9 J | 29,100 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW101I-20160914-F<br><br>09/14/16<br>114-P2A-MW101I | 114-P2A-MW101I-20161212<br><br>12/12/16<br>114-P2A-MW101I | 114-P2A-MW101I-20161212-F<br><br>12/12/16<br>114-P2A-MW101I | 114-P2A-MW101I-F-20160324<br><br>03/24/16<br>114-P2A-MW101I | 114-P2A-MW101S-20160324<br><br>03/24/16<br>114-P2A-MW101S | 114-P2A-MW101S-20160628<br><br>06/28/16<br>114-P2A-MW101S | 114-P2A-MW101S-20160628-F<br><br>06/28/16<br>114-P2A-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.20 U | NA | NA | 0.20 U | 0.20 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | 4.3 J | NA | NA | 11.1 J | 49.6 J | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 66,400 | NA | NA | 26,800 J | 18,600 | NA |
| Selenium | 7782-49-2 | ug/L | NA | 10 U | NA | NA | 50 U | 50 U | NA |
| Silver | 7440-22-4 | ug/L | NA | 10 U | NA | NA | 50 UJ | 10 U | NA |
| Sodium | 7440-23-5 | ug/L | NA | 238,000 | NA | NA | 109,000 | 423,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | 145,000 | NA | NA | 89,900 | 117,000 | NA |
| Thallium | 7440-28-0 | ug/L | NA | 2.0 U | NA | NA | 10 U | 10 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 6.3 J | NA | NA | 6.6 J | 50 U | NA |
| Zinc | 7440-66-6 | ug/L | NA | 68.0 | NA | NA | 9.4 J | 4.1 JB | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 10 U | NA | 1.3 J | 6.3 JB | NA | NA | 15.3 |
| Chromium VI | 18540-29-9 | ug/L | 10 U | NA | 10 U | 5.5 UJ | NA | NA | 12 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | 146,000 | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW101I-20160914-F<br><br>09/14/16<br>114-P2A-MW101I | 114-P2A-MW101I-20161212<br><br>12/12/16<br>114-P2A-MW101I | 114-P2A-MW101I-20161212-F<br><br>12/12/16<br>114-P2A-MW101I | 114-P2A-MW101I-F-20160324<br><br>03/24/16<br>114-P2A-MW101I | 114-P2A-MW101S-20160324<br><br>03/24/16<br>114-P2A-MW101S | 114-P2A-MW101S-20160628<br><br>06/28/16<br>114-P2A-MW101S | 114-P2A-MW101S-20160628-F<br><br>06/28/16<br>114-P2A-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | 2,500 | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | 2,000 U | 2,000 U | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 284 | 344 | 325 | 271 | 110 | 329 | 327 |
| pH | ARC-pH | SU | 8.40 | 8.96 | 9.13 | 9.92 | 12.46 | 6.69 | 6.79 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | 1.2 | 1.4 | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW101I-20160914-F<br>09/14/16<br>114-P2A-MW101I | 114-P2A-MW101I-20161212<br>12/12/16<br>114-P2A-MW101I | 114-P2A-MW101I-20161212-F<br>12/12/16<br>114-P2A-MW101I | 114-P2A-MW101I-F-20160324<br>03/24/16<br>114-P2A-MW101I | 114-P2A-MW101S-20160324<br>03/24/16<br>114-P2A-MW101S | 114-P2A-MW101S-20160628<br>06/28/16<br>114-P2A-MW101S | 114-P2A-MW101S-20160628-F<br>06/28/16<br>114-P2A-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 460,000 | NA | 421,000 | 251,000 | 325,000 | NA |
| Sulfide | 18496-25-8 | ug/L | NA | 2,000 U | NA | 2,000 U | 1,400 J | 2,000 U | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | 3,000 UJ | 6,500 J | 2,000 J | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | 13.42 | 11.88 | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | 6,700 | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 860 | NA | NA | 250 | 210 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 30.7 | NA | NA | 244.5 | 138.1 | NA |
| pH | ARC-pH | SU | NA | 9.74 | NA | NA | 12.47 | 8.82 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 12.43 | NA | NA | 12.73 | 17.27 | NA |
| Turbidity | ARC-Turb | NTU | NA | 11 | NA | NA | 14.8 | 9.44 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-P2A-MW101S-20160914 | 114-P2A-MW101S-20160914-F | 114-P2A-MW101S-20161212 | 114-P2A-MW101S-20161212-F | 114-P2A-MW101S-F-20160324 | 114-P2A-MW102I-20160324 | 114-P2A-MW102I-20160628 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | |
| Date Collected: | | | 09/14/16 | 09/14/16 | 12/12/16 | 12/12/16 | 03/24/16 | 03/24/16 | 06/28/16 |
| Location ID: | CAS Number | Units | 114-P2A-MW101S | 114-P2A-MW101S | 114-P2A-MW101S | 114-P2A-MW101S | 114-P2A-MW101S | 114-P2A-MW102I | 114-P2A-MW102I |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW101S-20160914<br><br>09/14/16<br>114-P2A-MW101S | 114-P2A-MW101S-20160914-F<br><br>09/14/16<br>114-P2A-MW101S | 114-P2A-MW101S-20161212<br><br>12/12/16<br>114-P2A-MW101S | 114-P2A-MW101S-20161212-F<br><br>12/12/16<br>114-P2A-MW101S | 114-P2A-MW101S-F-20160324<br><br>03/24/16<br>114-P2A-MW101S | 114-P2A-MW102I-20160324<br><br>03/24/16<br>114-P2A-MW102I | 114-P2A-MW102I-20160628<br><br>06/28/16<br>114-P2A-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW101S-20160914<br><br>09/14/16<br>114-P2A-MW101S | 114-P2A-MW101S-20160914-F<br><br>09/14/16<br>114-P2A-MW101S | 114-P2A-MW101S-20161212<br><br>12/12/16<br>114-P2A-MW101S | 114-P2A-MW101S-20161212-F<br><br>12/12/16<br>114-P2A-MW101S | 114-P2A-MW101S-F-20160324<br><br>03/24/16<br>114-P2A-MW101S | 114-P2A-MW102I-20160324<br><br>03/24/16<br>114-P2A-MW102I | 114-P2A-MW102I-20160628<br><br>06/28/16<br>114-P2A-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 1,220 [1,330] | NA | 902 J [566 J] | NA | NA | 446 J | 1,310 |
| Antimony | 7440-36-0 | ug/L | 6.0 U [4 J] | NA | 6.0 U [6 U] | NA | NA | 30 U | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | 4.4 [4.1] | NA | 3.0 U [3 U] | NA | NA | NA | 4.3 |
| Barium | 7440-39-3 | ug/L | 43.3 J [44.1 J] | NA | 35.0 J [30.8 J] | NA | NA | 132 J | 43.6 J |
| Beryllium | 7440-41-7 | ug/L | 1.0 U [1 U] | NA | 1.0 U [1 U] | NA | NA | 2.4 J | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 3.0 U [3 U] | NA | 3.0 U [3 U] | NA | NA | 15 U | 3.0 U |
| Calcium | 7440-70-2 | ug/L | 110,000 [112,000] | NA | 82,700 [82,900] | NA | NA | 198,000 | 122,000 |
| Chromium | 7440-47-3 | ug/L | 4.1 J [3.7 J] | NA | 3.8 J [10 U] | NA | NA | 30.4 J | 6.2 J |
| Chromium VI | 18540-29-9 | ug/L | 10 U [5.6 J] | NA | 7.6 J [4.4 J] | NA | NA | 5.5 UJ | 10 U |
| Cobalt | 7440-48-4 | ug/L | 0.70 J [50 U] | NA | 50 U [50 U] | NA | NA | 250 U | 0.80 J |
| Copper | 7440-50-8 | ug/L | 10 U [10 U] | NA | 10 U [10 U] | NA | NA | 50 UJ | 10 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 1,050 [1,190] | NA | 735 J [355 J] | NA | NA | 10,400 | 1,170 |
| Lead | 7439-92-1 | ug/L | 3.0 U [3 U] | NA | 3.0 U [2.7 J] | NA | NA | 15.0 | 3.0 U |
| Magnesium | 7439-95-4 | ug/L | 373 J [467 J] | NA | 362 J [277 J] | NA | NA | 51,800 | 404 J |
| Manganese | 7439-96-5 | ug/L | 14.2 J [16.1 J] | NA | 10.9 J [5 J] | NA | NA | 23,000 | 16.8 J |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW101S-20160914<br><br>09/14/16<br>114-P2A-MW101S | 114-P2A-MW101S-20160914-F<br><br>09/14/16<br>114-P2A-MW101S | 114-P2A-MW101S-20161212<br><br>12/12/16<br>114-P2A-MW101S | 114-P2A-MW101S-20161212-F<br><br>12/12/16<br>114-P2A-MW101S | 114-P2A-MW101S-F-20160324<br><br>03/24/16<br>114-P2A-MW101S | 114-P2A-MW102I-20160324<br><br>03/24/16<br>114-P2A-MW102I | 114-P2A-MW102I-20160628<br><br>06/28/16<br>114-P2A-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 UB [0.2 UB] | NA | 0.20 U [0.2 UB] | NA | NA | 0.20 U | 0.20 U |
| Nickel | 7440-02-0 | ug/L | 10 U [5.7 J] | NA | 2.3 J [1.5 J] | NA | NA | 44.9 J | 10 U |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 22,200 [22,900] | NA | 15,600 [15,200] | NA | NA | 13,100 J | 25,400 |
| Selenium | 7782-49-2 | ug/L | 10 U [10 U] | NA | 10 U [10 U] | NA | NA | 50 U | 4.5 J |
| Silver | 7440-22-4 | ug/L | 10 U [10 U] | NA | 1.3 J [1.1 J] | NA | NA | 50 UJ | 10 U |
| Sodium | 7440-23-5 | ug/L | 69,100 [71,000] | NA | 32,500 [32,300] | NA | NA | 336,000 | 59,400 |
| Sulfur | 7704-34-9 | ug/L | 79,600 [81,700] | NA | 59,100 [60,400] | NA | NA | 85,700 | 102,000 |
| Thallium | 7440-28-0 | ug/L | 2.0 U [2 U] | NA | 2.0 U [2 U] | NA | NA | 10 U | 4.0 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 4.4 J [4.3 J] | NA | 3.1 J [2.3 J] | NA | NA | 250 U | 4.4 J |
| Zinc | 7440-66-6 | ug/L | 20 U [20 U] | NA | 10.7 JB [20 UB] | NA | NA | 8.0 J | 20 UB |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 10 U [10 U] | NA | 0.90 J [0.9 J] | 10.8 J | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U [10 U] | NA | 10 U [10 U] | 5.5 UJ | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | 93,100 | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW101S-20160914<br>09/14/16<br>114-P2A-MW101S | 114-P2A-MW101S-20160914-F<br>09/14/16<br>114-P2A-MW101S | 114-P2A-MW101S-20161212<br>12/12/16<br>114-P2A-MW101S | 114-P2A-MW101S-20161212-F<br>12/12/16<br>114-P2A-MW101S | 114-P2A-MW101S-F-20160324<br>03/24/16<br>114-P2A-MW101S | 114-P2A-MW102I-20160324<br>03/24/16<br>114-P2A-MW102I | 114-P2A-MW102I-20160628<br>06/28/16<br>114-P2A-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | 5,400 | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | 2,000 U | 2,000 U | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 102 [94] | 87.8 [79.1] | 269 [246] | 268 [203] | 87.9 | 298 | 116 |
| pH | ARC-pH | SU | 10.47 [10.56] | 10.45 [10.54] | 11.04 [11.12] | 10.85 [11.03] | 12.46 | 7.69 | 10.77 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | 1.4 | 2.8 | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW101S-20160914<br>09/14/16<br>114-P2A-MW101S | 114-P2A-MW101S-20160914-F<br>09/14/16<br>114-P2A-MW101S | 114-P2A-MW101S-20161212<br>12/12/16<br>114-P2A-MW101S | 114-P2A-MW101S-20161212-F<br>12/12/16<br>114-P2A-MW101S | 114-P2A-MW101S-F-20160324<br>03/24/16<br>114-P2A-MW101S | 114-P2A-MW102I-20160324<br>03/24/16<br>114-P2A-MW102I | 114-P2A-MW102I-20160628<br>06/28/16<br>114-P2A-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 229,000 [231,000] | NA | 199,000 [201,000] | NA | 278,000 | 269,000 | 303,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 U [2,000 U] | NA | 2,000 U [1,000 J] | NA | 1,400 J | 2,000 U | 800 J |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | 6,500 J | 3,000 UJ | 3,000 UJ |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | 11.88 | 14.08 | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | 10,900 | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | 710 | NA | NA | 480 | 460 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 94.3 | NA | NA | 42.7 | 90.3 |
| pH | ARC-pH | SU | NA | NA | 11.25 | NA | NA | 7.71 | 7 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | 11.37 | NA | NA | 15.45 | 16.15 |
| Turbidity | ARC-Turb | NTU | NA | NA | 13.8 | NA | NA | 20.8 | 12.7 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-P2A-MW102I-20160628-F<br>06/28/16<br>114-P2A-MW102I | 114-P2A-MW102I-20160914<br>09/14/16<br>114-P2A-MW102I | 114-P2A-MW102I-20160914-F<br>09/14/16<br>114-P2A-MW102I | 114-P2A-MW102I-20161219<br>12/19/16<br>114-P2A-MW102I | 114-P2A-MW102I-20161219-F<br>12/19/16<br>114-P2A-MW102I | 114-P2A-MW102I-F-20160324<br>03/24/16<br>114-P2A-MW102I | 114-P2A-MW102S-20160324<br>03/24/16<br>114-P2A-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW102I-20160628-F<br>06/28/16<br>114-P2A-MW102I | 114-P2A-MW102I-20160914<br>09/14/16<br>114-P2A-MW102I | 114-P2A-MW102I-20160914-F<br>09/14/16<br>114-P2A-MW102I | 114-P2A-MW102I-20161219<br>12/19/16<br>114-P2A-MW102I | 114-P2A-MW102I-20161219-F<br>12/19/16<br>114-P2A-MW102I | 114-P2A-MW102I-F-20160324<br>03/24/16<br>114-P2A-MW102I | 114-P2A-MW102S-20160324<br>03/24/16<br>114-P2A-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW102I-20160628-F<br>06/28/16<br>114-P2A-MW102I | 114-P2A-MW102I-20160914<br>09/14/16<br>114-P2A-MW102I | 114-P2A-MW102I-20160914-F<br>09/14/16<br>114-P2A-MW102I | 114-P2A-MW102I-20161219<br>12/19/16<br>114-P2A-MW102I | 114-P2A-MW102I-20161219-F<br>12/19/16<br>114-P2A-MW102I | 114-P2A-MW102I-F-20160324<br>03/24/16<br>114-P2A-MW102I | 114-P2A-MW102S-20160324<br>03/24/16<br>114-P2A-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 23.4 J | NA | 254 | NA | NA | 1,170 |
| Antimony | 7440-36-0 | ug/L | NA | 6.0 U | NA | 6.0 U | NA | NA | 30 U |
| Arsenic | 7440-38-2 | ug/L | NA | 33.3 | NA | 35.9 | NA | NA | 15 U |
| Barium | 7440-39-3 | ug/L | NA | 199 J | NA | 169 J | NA | NA | 48.4 J |
| Beryllium | 7440-41-7 | ug/L | NA | 1.0 U | NA | 0.30 J | NA | NA | 2.1 J |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 3.0 U | NA | 3.0 U | NA | NA | 15 U |
| Calcium | 7440-70-2 | ug/L | NA | 344,000 | NA | 333,000 | NA | NA | 272,000 |
| Chromium | 7440-47-3 | ug/L | NA | 8.8 J | NA | 7.7 JB | NA | NA | 12.3 J |
| Chromium VI | 18540-29-9 | ug/L | NA | 16 | NA | 17 | NA | NA | 5.5 UJ |
| Cobalt | 7440-48-4 | ug/L | NA | 0.90 J | NA | 1.3 J | NA | NA | 3.6 J |
| Copper | 7440-50-8 | ug/L | NA | 10 U | NA | 20 U | NA | NA | 50 UJ |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 12,800 | NA | 14,000 | NA | NA | 1,900 |
| Lead | 7439-92-1 | ug/L | NA | 3.0 U | NA | 30 U | NA | NA | 15 U |
| Magnesium | 7439-95-4 | ug/L | NA | 68,200 | NA | 68,300 | NA | NA | 1,410 J |
| Manganese | 7439-96-5 | ug/L | NA | 28,100 | NA | 34,000 | NA | NA | 41.2 J |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW102I-20160628-F<br>06/28/16<br>114-P2A-MW102I | 114-P2A-MW102I-20160914<br>09/14/16<br>114-P2A-MW102I | 114-P2A-MW102I-20160914-F<br>09/14/16<br>114-P2A-MW102I | 114-P2A-MW102I-20161219<br>12/19/16<br>114-P2A-MW102I | 114-P2A-MW102I-20161219-F<br>12/19/16<br>114-P2A-MW102I | 114-P2A-MW102I-F-20160324<br>03/24/16<br>114-P2A-MW102I | 114-P2A-MW102S-20160324<br>03/24/16<br>114-P2A-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.20 UB | NA | 0.059 J | NA | NA | 0.20 U |
| Nickel | 7440-02-0 | ug/L | NA | 37.1 | NA | 36.7 | NA | NA | 14.6 J |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 17,800 | NA | 19,100 | NA | NA | 46,100 J |
| Selenium | 7782-49-2 | ug/L | NA | 8.7 J | NA | 100 U | NA | NA | 50 U |
| Silver | 7440-22-4 | ug/L | NA | 10 U | NA | 5.4 J | NA | NA | 50 UJ |
| Sodium | 7440-23-5 | ug/L | NA | 422,000 | NA | 500,000 | NA | NA | 390,000 |
| Sulfur | 7704-34-9 | ug/L | NA | 94,900 | NA | 130,000 | NA | NA | 218,000 |
| Thallium | 7440-28-0 | ug/L | NA | 6.0 U | NA | 20 U | NA | NA | 10 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 50 U | NA | 1.9 J | NA | NA | 15.2 J |
| Zinc | 7440-66-6 | ug/L | NA | 20 U | NA | 270 | NA | NA | 8.2 J |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 10 U | NA | 8.8 J | NA | 11.6 | 30.2 J | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 U | NA | 16 U | NA | 13 | 5.5 UJ | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | 89,500 | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW102I-20160628-F<br>06/28/16<br>114-P2A-MW102I | 114-P2A-MW102I-20160914<br>09/14/16<br>114-P2A-MW102I | 114-P2A-MW102I-20160914-F<br>09/14/16<br>114-P2A-MW102I | 114-P2A-MW102I-20161219<br>12/19/16<br>114-P2A-MW102I | 114-P2A-MW102I-20161219-F<br>12/19/16<br>114-P2A-MW102I | 114-P2A-MW102I-F-20160324<br>03/24/16<br>114-P2A-MW102I | 114-P2A-MW102S-20160324<br>03/24/16<br>114-P2A-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | 10,100 | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | 2,000 U | 2,000 U |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 92.4 | 325 | 337 | 369 | 366 | 303 | 249 |
| pH | ARC-pH | SU | 10.77 | 6.73 | 6.70 | 6.93 | 6.84 | 7.69 | 9.24 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | 2.8 | 3.1 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW102I-20160628-F<br>06/28/16<br>114-P2A-MW102I | 114-P2A-MW102I-20160914<br>09/14/16<br>114-P2A-MW102I | 114-P2A-MW102I-20160914-F<br>09/14/16<br>114-P2A-MW102I | 114-P2A-MW102I-20161219<br>12/19/16<br>114-P2A-MW102I | 114-P2A-MW102I-20161219-F<br>12/19/16<br>114-P2A-MW102I | 114-P2A-MW102I-F-20160324<br>03/24/16<br>114-P2A-MW102I | 114-P2A-MW102S-20160324<br>03/24/16<br>114-P2A-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 305,000 | NA | 391,000 | NA | 270,000 | 676,000 |
| Sulfide | 18496-25-8 | ug/L | NA | 2,000 U | NA | 2,000 U | NA | 2,000 U | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | 3,000 UJ | 3,000 UJ |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | 14.08 | 15.4 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | 21,200 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | 350 | NA | NA | 170 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | 138.2 | NA | NA | 33.4 |
| pH | ARC-pH | SU | NA | NA | NA | 6.88 | NA | NA | 10.4 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | 11.45 | NA | NA | 16.74 |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | 6.34 | NA | NA | 34.5 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW102S-20160628<br><br>06/28/16<br>114-P2A-MW102S | 114-P2A-MW102S-20160628-F<br><br>06/28/16<br>114-P2A-MW102S | 114-P2A-MW102S-20160914<br><br>09/14/16<br>114-P2A-MW102S | 114-P2A-MW102S-20160914-F<br><br>09/14/16<br>114-P2A-MW102S | 114-P2A-MW102S-20160927-13.5<br><br>09/27/16<br>114-P2A-MW102S | 114-P2A-MW102S-20160927-18.5<br><br>09/27/16<br>114-P2A-MW102S |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW102S-20160628<br>06/28/16<br>114-P2A-MW102S | 114-P2A-MW102S-20160628-F<br>06/28/16<br>114-P2A-MW102S | 114-P2A-MW102S-20160914<br>09/14/16<br>114-P2A-MW102S | 114-P2A-MW102S-20160914-F<br>09/14/16<br>114-P2A-MW102S | 114-P2A-MW102S-20160927-13.5<br>09/27/16<br>114-P2A-MW102S | 114-P2A-MW102S-20160927-18.5<br>09/27/16<br>114-P2A-MW102S |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW102S-20160628<br>06/28/16<br>114-P2A-MW102S | 114-P2A-MW102S-20160628-F<br>06/28/16<br>114-P2A-MW102S | 114-P2A-MW102S-20160914<br>09/14/16<br>114-P2A-MW102S | 114-P2A-MW102S-20160914-F<br>09/14/16<br>114-P2A-MW102S | 114-P2A-MW102S-20160927-13.5<br>09/27/16<br>114-P2A-MW102S | 114-P2A-MW102S-20160927-18.5<br>09/27/16<br>114-P2A-MW102S |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 7,150 | NA | 1,750 | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 6.0 U | NA | 6.6 | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | 11.9 | NA | 16.2 | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | 95.3 J | NA | 40.7 J | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | 0.30 J | NA | 1.0 U | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 0.60 J | NA | 3.0 U | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | 206,000 | NA | 184,000 | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 49.3 | NA | 5.0 J | NA | 5.1 J | 7.0 J |
| Chromium VI | 18540-29-9 | ug/L | 10 U | NA | 6.7 J | NA | 5.7 J | 10 |
| Cobalt | 7440-48-4 | ug/L | 8.3 J | NA | 2.0 J | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | 79.4 | NA | 5.5 J | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 11,000 | NA | 2,410 | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | 13.5 | NA | 3.0 U | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | 6,370 | NA | 1,520 J | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 180 | NA | 67.8 | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW102S-20160628<br>06/28/16<br>114-P2A-MW102S | 114-P2A-MW102S-20160628-F<br>06/28/16<br>114-P2A-MW102S | 114-P2A-MW102S-20160914<br>09/14/16<br>114-P2A-MW102S | 114-P2A-MW102S-20160914-F<br>09/14/16<br>114-P2A-MW102S | 114-P2A-MW102S-20160927-13.5<br>09/27/16<br>114-P2A-MW102S | 114-P2A-MW102S-20160927-18.5<br>09/27/16<br>114-P2A-MW102S |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | NA | 0.20 UB | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 72.0 | NA | 16.8 J | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 52,700 | NA | 48,800 | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | 7.1 J | NA | 5.7 J | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | 1.3 J | NA | 10 U | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | 384,000 | NA | 332,000 | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 240,000 | NA | 207,000 | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 6.0 U | NA | 6.0 U | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 32.3 J | NA | 14.7 J | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | 39.8 | NA | 20 U | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 10 U | NA | 10 U | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U | NA | 10 U | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW102S-20160628<br>06/28/16<br>114-P2A-MW102S | 114-P2A-MW102S-20160628-F<br>06/28/16<br>114-P2A-MW102S | 114-P2A-MW102S-20160914<br>09/14/16<br>114-P2A-MW102S | 114-P2A-MW102S-20160914-F<br>09/14/16<br>114-P2A-MW102S | 114-P2A-MW102S-20160927-13.5<br>09/27/16<br>114-P2A-MW102S | 114-P2A-MW102S-20160927-18.5<br>09/27/16<br>114-P2A-MW102S |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 255 | 245 | 222 | 222 | 198 | 192 |
| pH | ARC-pH | SU | 9.50 | 9.57 | 9.75 | 9.73 | 9.88 | 9.78 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW102S-20160628<br>06/28/16<br>114-P2A-MW102S | 114-P2A-MW102S-20160628-F<br>06/28/16<br>114-P2A-MW102S | 114-P2A-MW102S-20160914<br>09/14/16<br>114-P2A-MW102S | 114-P2A-MW102S-20160914-F<br>09/14/16<br>114-P2A-MW102S | 114-P2A-MW102S-20160927-13.5<br>09/27/16<br>114-P2A-MW102S | 114-P2A-MW102S-20160927-18.5<br>09/27/16<br>114-P2A-MW102S |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 649,000 | NA | 679,000 | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | NA | 2,000 U | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 500 | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 53.1 | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | 10.15 | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 17.75 | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | 49.5 | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW102S-20161212<br><br>12/12/16<br>114-P2A-MW102S | 114-P2A-MW102S-20161212-F<br><br>12/12/16<br>114-P2A-MW102S | 114-P2A-MW102S-F-20160324<br><br>03/24/16<br>114-P2A-MW102S | 114-P2A-MW103I-20160325<br><br>03/25/16<br>114-P2A-MW103I | 114-P2A-MW103I-20160627<br><br>06/27/16<br>114-P2A-MW103I | 114-P2A-MW103I-20160627-F<br><br>06/27/16<br>114-P2A-MW103I | 114-P2A-MW103I-20160915<br><br>09/15/16<br>114-P2A-MW103I |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW102S-20161212<br><br>12/12/16<br>114-P2A-MW102S | 114-P2A-MW102S-20161212-F<br><br>12/12/16<br>114-P2A-MW102S | 114-P2A-MW102S-F-20160324<br><br>03/24/16<br>114-P2A-MW102S | 114-P2A-MW103I-20160325<br><br>03/25/16<br>114-P2A-MW103I | 114-P2A-MW103I-20160627<br><br>06/27/16<br>114-P2A-MW103I | 114-P2A-MW103I-20160627-F<br><br>06/27/16<br>114-P2A-MW103I | 114-P2A-MW103I-20160915<br><br>09/15/16<br>114-P2A-MW103I |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW102S-20161212<br><br>12/12/16<br>114-P2A-MW102S | 114-P2A-MW102S-20161212-F<br><br>12/12/16<br>114-P2A-MW102S | 114-P2A-MW102S-F-20160324<br><br>03/24/16<br>114-P2A-MW102S | 114-P2A-MW103I-20160325<br><br>03/25/16<br>114-P2A-MW103I | 114-P2A-MW103I-20160627<br><br>06/27/16<br>114-P2A-MW103I | 114-P2A-MW103I-20160627-F<br><br>06/27/16<br>114-P2A-MW103I | 114-P2A-MW103I-20160915<br><br>09/15/16<br>114-P2A-MW103I |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 2,970 | NA | NA | 10,400 J [17,700 J] | 2,130 | NA | 3,970 |
| Antimony | 7440-36-0 | ug/L | 6.0 U | NA | NA | 6.0 U [6 U] | 6.0 U | NA | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | 19.2 | NA | NA | 5.1 [8.3] | 3.0 U | NA | 2.2 J |
| Barium | 7440-39-3 | ug/L | 45.7 J | NA | NA | 111 J [162 J] | 48.6 J | NA | 84.2 J |
| Beryllium | 7440-41-7 | ug/L | 1.0 U | NA | NA | 1.1 J [1.6 J] | 1.0 U | NA | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 3.0 U | NA | NA | 0.70 J [0.9 J] | 3.0 U | NA | 3.0 U |
| Calcium | 7440-70-2 | ug/L | 130,000 | NA | NA | 88,300 J [99,100 J] | 53,000 | NA | 89,400 |
| Chromium | 7440-47-3 | ug/L | 8.4 J | NA | NA | 77.1 [77.8] | 33.5 | NA | 7.2 J |
| Chromium VI | 18540-29-9 | ug/L | 14 | NA | NA | 5.5 U [5.5 U] | 16 | NA | 10 UB |
| Cobalt | 7440-48-4 | ug/L | 2.3 J | NA | NA | 7.7 J [13.3 J] | 1.1 J | NA | 2.3 J |
| Copper | 7440-50-8 | ug/L | 4.6 J | NA | NA | 15.9 J [28.1 J] | 7.2 J | NA | 4.5 J |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 3,850 | NA | NA | 15,200 J [26,900 J] | 3,040 | NA | 4,540 |
| Lead | 7439-92-1 | ug/L | 9.0 U | NA | NA | 14.5 J [27.2 J] | 4.6 | NA | 3.0 |
| Magnesium | 7439-95-4 | ug/L | 2,460 J | NA | NA | 23,300 [27,400] | 19,900 | NA | 25,300 |
| Manganese | 7439-96-5 | ug/L | 82.0 | NA | NA | 641 J [928 J] | 106 | NA | 220 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW102S-20161212<br><br>12/12/16<br>114-P2A-MW102S | 114-P2A-MW102S-20161212-F<br><br>12/12/16<br>114-P2A-MW102S | 114-P2A-MW102S-F-20160324<br><br>03/24/16<br>114-P2A-MW102S | 114-P2A-MW103I-20160325<br><br>03/25/16<br>114-P2A-MW103I | 114-P2A-MW103I-20160627<br><br>06/27/16<br>114-P2A-MW103I | 114-P2A-MW103I-20160627-F<br><br>06/27/16<br>114-P2A-MW103I | 114-P2A-MW103I-20160915<br><br>09/15/16<br>114-P2A-MW103I |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 UB | NA | NA | 0.20 U [0.062 J] | 0.20 U | NA | 0.14 J |
| Nickel | 7440-02-0 | ug/L | 24.0 | NA | NA | 51.4 [56.7] | 6.0 J | NA | 6.2 J |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 41,100 | NA | NA | 8,020 J [9,790 J] | 30,100 | NA | 5,410 J |
| Selenium | 7782-49-2 | ug/L | 10 U | NA | NA | 5.9 J [6.9 J] | 10 U | NA | 10 U |
| Silver | 7440-22-4 | ug/L | 1.7 J | NA | NA | 10 U [0.9 J] | 1.1 J | NA | 2.2 J |
| Sodium | 7440-23-5 | ug/L | 299,000 | NA | NA | 27,000 [26,600] | 37,100 | NA | 25,500 |
| Sulfur | 7704-34-9 | ug/L | 206,000 | NA | NA | 40,000 [38,100 J] | 49,600 | NA | 51,500 |
| Thallium | 7440-28-0 | ug/L | 6.0 U | NA | NA | 2.0 U [2 U] | 2.0 U | NA | 2.0 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 16.4 J | NA | NA | 25.9 J [42 J] | 5.2 J | NA | 8.0 J |
| Zinc | 7440-66-6 | ug/L | 46.8 | NA | NA | 54.1 J [102 J] | 18.3 J | NA | 17.5 J |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 1.0 J | 6.0 JB | NA | NA | 4.7 J | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U | 5.5 UJ | NA | NA | 10 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | 229,000 | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW102S-20161212<br><br>12/12/16<br>114-P2A-MW102S | 114-P2A-MW102S-20161212-F<br><br>12/12/16<br>114-P2A-MW102S | 114-P2A-MW102S-F-20160324<br><br>03/24/16<br>114-P2A-MW102S | 114-P2A-MW103I-20160325<br><br>03/25/16<br>114-P2A-MW103I | 114-P2A-MW103I-20160627<br><br>06/27/16<br>114-P2A-MW103I | 114-P2A-MW103I-20160627-F<br><br>06/27/16<br>114-P2A-MW103I | 114-P2A-MW103I-20160915<br><br>09/15/16<br>114-P2A-MW103I |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | 17,800 | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | 2,000 U | 2,000 U [2,000 U] | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 266 | 247 | 253 | 298 [301] | 263 | 290 | 307 |
| pH | ARC-pH | SU | 9.10 | 9.05 | 10.41 | 7.68 [7.73] [8.58] | 8.07 | 7.61 | 7.73 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | 3.1 | 0.54 [0.54] | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW102S-20161212<br>12/12/16<br>114-P2A-MW102S | 114-P2A-MW102S-20161212-F<br>12/12/16<br>114-P2A-MW102S | 114-P2A-MW102S-F-20160324<br>03/24/16<br>114-P2A-MW102S | 114-P2A-MW103I-20160325<br>03/25/16<br>114-P2A-MW103I | 114-P2A-MW103I-20160627<br>06/27/16<br>114-P2A-MW103I | 114-P2A-MW103I-20160627-F<br>06/27/16<br>114-P2A-MW103I | 114-P2A-MW103I-20160915<br>09/15/16<br>114-P2A-MW103I |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 673,000 | NA | 688,000 | 154,000 [149,000] | 155,000 | NA | 157,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | NA | 2,000 U | 2,000 U [2,000 U] | 2,000 U | NA | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | 3,000 UJ | 3,000 UJ [3,000 UJ] | 3,000 UJ | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | 15.4 | 17.52 [17.52] | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | 1,300 JB [1,300 JB] | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 570 | NA | NA | 20 | 2,260 | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 51.4 | NA | NA | 45.9 | 67 | NA | NA |
| pH | ARC-pH | SU | 10.4 | NA | NA | 8.57 | 8.37 | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 14.03 | NA | NA | 17.57 | 20.25 | NA | NA |
| Turbidity | ARC-Turb | NTU | 39.9 | NA | NA | 48.8 | 28 | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW103I-20160915-F<br><br>09/15/16<br>114-P2A-MW103I | 114-P2A-MW103I-20161214<br><br>12/14/16<br>114-P2A-MW103I | 114-P2A-MW103I-20161214-F<br><br>12/14/16<br>114-P2A-MW103I | 114-P2A-MW103I-F-20160325<br><br>03/25/16<br>114-P2A-MW103I | 114-P2A-MW103S-20160325<br><br>03/25/16<br>114-P2A-MW103S | 114-P2A-MW103S-20160627<br><br>06/27/16<br>114-P2A-MW103S | 114-P2A-MW103S-20160627-F<br><br>06/27/16<br>114-P2A-MW103S |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW103I-20160915-F<br><br>09/15/16<br>114-P2A-MW103I | 114-P2A-MW103I-20161214<br><br>12/14/16<br>114-P2A-MW103I | 114-P2A-MW103I-20161214-F<br><br>12/14/16<br>114-P2A-MW103I | 114-P2A-MW103I-F-20160325<br><br>03/25/16<br>114-P2A-MW103I | 114-P2A-MW103S-20160325<br><br>03/25/16<br>114-P2A-MW103S | 114-P2A-MW103S-20160627<br><br>06/27/16<br>114-P2A-MW103S | 114-P2A-MW103S-20160627-F<br><br>06/27/16<br>114-P2A-MW103S |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW103I-20160915-F<br><br>09/15/16<br>114-P2A-MW103I | 114-P2A-MW103I-20161214<br><br>12/14/16<br>114-P2A-MW103I | 114-P2A-MW103I-20161214-F<br><br>12/14/16<br>114-P2A-MW103I | 114-P2A-MW103I-F-20160325<br><br>03/25/16<br>114-P2A-MW103I | 114-P2A-MW103S-20160325<br><br>03/25/16<br>114-P2A-MW103S | 114-P2A-MW103S-20160627<br><br>06/27/16<br>114-P2A-MW103S | 114-P2A-MW103S-20160627-F<br><br>06/27/16<br>114-P2A-MW103S |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 14,300 | NA | NA | 7,600 J | 7,410 | NA |
| Antimony | 7440-36-0 | ug/L | NA | 12 U | NA | NA | 30 U | 6.0 U | NA |
| Arsenic | 7440-38-2 | ug/L | NA | 6.0 U | NA | NA | 15 U | 30 U | NA |
| Barium | 7440-39-3 | ug/L | NA | 164 J | NA | NA | 66.1 J | 82.0 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | 1.0 J | NA | NA | 2.7 J | 1.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 6.0 U | NA | NA | 15 U | 0.40 J | NA |
| Calcium | 7440-70-2 | ug/L | NA | 100,000 | NA | NA | 480,000 J | 584,000 | NA |
| Chromium | 7440-47-3 | ug/L | NA | 23.2 | NA | NA | 28.8 J | 35.2 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U | NA | NA | 5.5 U | 10 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | 7.0 J | NA | NA | 11.1 J | 10.0 J | NA |
| Copper | 7440-50-8 | ug/L | NA | 17.2 J | NA | NA | 19.2 J | 36.7 | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 17,100 | NA | NA | 19,600 J | 24,000 | NA |
| Lead | 7439-92-1 | ug/L | NA | 26.4 | NA | NA | 75 UJ | 30 U | NA |
| Magnesium | 7439-95-4 | ug/L | NA | 30,900 | NA | NA | 194,000 | 257,000 | NA |
| Manganese | 7439-96-5 | ug/L | NA | 418 | NA | NA | 35,100 J | 43,400 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW103I-20160915-F<br><br>09/15/16<br>114-P2A-MW103I | 114-P2A-MW103I-20161214<br><br>12/14/16<br>114-P2A-MW103I | 114-P2A-MW103I-20161214-F<br><br>12/14/16<br>114-P2A-MW103I | 114-P2A-MW103I-F-20160325<br><br>03/25/16<br>114-P2A-MW103I | 114-P2A-MW103S-20160325<br><br>03/25/16<br>114-P2A-MW103S | 114-P2A-MW103S-20160627<br><br>06/27/16<br>114-P2A-MW103S | 114-P2A-MW103S-20160627-F<br><br>06/27/16<br>114-P2A-MW103S |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.40 UB | NA | NA | 0.20 U | 0.20 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | 19.8 J | NA | NA | 32.2 J | 31.6 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 9,600 J | NA | NA | 87,800 | 109,000 | NA |
| Selenium | 7782-49-2 | ug/L | NA | 20 U | NA | NA | 50 U | 50 U | NA |
| Silver | 7440-22-4 | ug/L | NA | 5.0 J | NA | NA | 4.5 J | 10.7 | NA |
| Sodium | 7440-23-5 | ug/L | NA | 28,700 | NA | NA | 449,000 | 642,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | 52,200 | NA | NA | 678,000 | 839,000 | NA |
| Thallium | 7440-28-0 | ug/L | NA | 4.0 U | NA | NA | 50 U | 20 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 26.2 J | NA | NA | 39.2 J | 20.4 J | NA |
| Zinc | 7440-66-6 | ug/L | NA | 142 | NA | NA | 51.3 J | 35.7 | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 10.9 | NA | 10 UB | 10 U [10 U] | NA | NA | 2.4 J |
| Chromium VI | 18540-29-9 | ug/L | 12 UB | NA | 10 U | 5.5 UJ [5.5 UJ] | NA | NA | 8 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | 47,600 [47,000 J] | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW103I-20160915-F<br><br>09/15/16<br>114-P2A-MW103I | 114-P2A-MW103I-20161214<br><br>12/14/16<br>114-P2A-MW103I | 114-P2A-MW103I-20161214-F<br><br>12/14/16<br>114-P2A-MW103I | 114-P2A-MW103I-F-20160325<br><br>03/25/16<br>114-P2A-MW103I | 114-P2A-MW103S-20160325<br><br>03/25/16<br>114-P2A-MW103S | 114-P2A-MW103S-20160627<br><br>06/27/16<br>114-P2A-MW103S | 114-P2A-MW103S-20160627-F<br><br>06/27/16<br>114-P2A-MW103S |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | 2,100 JB [1,500 JB] | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | 2,000 U [2,000 U] | 2,000 U | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 335 | 391 | 382 | 323 [331] | 307 | 323 | 291 |
| pH | ARC-pH | SU | 7.91 | 7.54 | 7.47 | 7.72 [7.66] [8.58] | 7.59 | 6.59 | 6.63 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | 0.54 [0.54] | 4.4 | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW103I-20160915-F<br><br>09/15/16<br>114-P2A-MW103I | 114-P2A-MW103I-20161214<br><br>12/14/16<br>114-P2A-MW103I | 114-P2A-MW103I-20161214-F<br><br>12/14/16<br>114-P2A-MW103I | 114-P2A-MW103I-F-20160325<br><br>03/25/16<br>114-P2A-MW103I | 114-P2A-MW103S-20160325<br><br>03/25/16<br>114-P2A-MW103S | 114-P2A-MW103S-20160627<br><br>06/27/16<br>114-P2A-MW103S | 114-P2A-MW103S-20160627-F<br><br>06/27/16<br>114-P2A-MW103S |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 160,000 | NA | 157,000 [152,000] | 2,280,000 | 2,450,000 | NA |
| Sulfide | 18496-25-8 | ug/L | NA | 2,000 U | NA | 2,000 U [2,000 U] | 2,000 U | 2,000 U | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | 3,000 UJ [3,000 UJ] | 3,000 UJ | 3,000 UJ | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | 17.52 [17.52] | 17 | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | 13,400 | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 1,980 | NA | NA | 10 | 290 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 178.2 | NA | NA | 46.1 | 18.7 | NA |
| pH | ARC-pH | SU | NA | 7.79 | NA | NA | 7.6 | 6.77 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 12.92 | NA | NA | 17.32 | 21.12 | NA |
| Turbidity | ARC-Turb | NTU | NA | 40 | NA | NA | 8.5 | 8.65 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-P2A-MW103S-20160915 | 114-P2A-MW103S-20160915-F | 114-P2A-MW103S-20161213 | 114-P2A-MW103S-20161213-F | 114-P2A-MW103S-F-20160325 | 114-P2A-MW104I-20160325 | 114-P2A-MW104I-20160629 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | |
| Date Collected: | | | 09/15/16 | 09/15/16 | 12/13/16 | 12/13/16 | 03/25/16 | 03/25/16 | 06/29/16 |
| Location ID: | CAS Number | Units | 114-P2A-MW103S | 114-P2A-MW103S | 114-P2A-MW103S | 114-P2A-MW103S | 114-P2A-MW103S | 114-P2A-MW104I | 114-P2A-MW104I |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW103S-20160915<br><br>09/15/16<br>114-P2A-MW103S | 114-P2A-MW103S-20160915-F<br><br>09/15/16<br>114-P2A-MW103S | 114-P2A-MW103S-20161213<br><br>12/13/16<br>114-P2A-MW103S | 114-P2A-MW103S-20161213-F<br><br>12/13/16<br>114-P2A-MW103S | 114-P2A-MW103S-F-20160325<br><br>03/25/16<br>114-P2A-MW103S | 114-P2A-MW104I-20160325<br><br>03/25/16<br>114-P2A-MW104I | 114-P2A-MW104I-20160629<br><br>06/29/16<br>114-P2A-MW104I |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW103S-20160915<br><br>09/15/16<br>114-P2A-MW103S | 114-P2A-MW103S-20160915-F<br><br>09/15/16<br>114-P2A-MW103S | 114-P2A-MW103S-20161213<br><br>12/13/16<br>114-P2A-MW103S | 114-P2A-MW103S-20161213-F<br><br>12/13/16<br>114-P2A-MW103S | 114-P2A-MW103S-F-20160325<br><br>03/25/16<br>114-P2A-MW103S | 114-P2A-MW104I-20160325<br><br>03/25/16<br>114-P2A-MW104I | 114-P2A-MW104I-20160629<br><br>06/29/16<br>114-P2A-MW104I |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 6,330 | NA | 2,470 | NA | NA | 1,820 J | 1,270 J [946 J] |
| Antimony | 7440-36-0 | ug/L | 12 U | NA | 6.0 U | NA | NA | 30 U | 6.0 U [6 U] |
| Arsenic | 7440-38-2 | ug/L | 30 U | NA | 15 U | NA | NA | 15 U | 14.7 J [12 J] |
| Barium | 7440-39-3 | ug/L | 86.0 J | NA | 49.0 J | NA | NA | 80.1 J | 103 J [102 J] |
| Beryllium | 7440-41-7 | ug/L | 2.0 U | NA | 1.0 U | NA | NA | 1.5 J | 1.0 U [1 U] |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | 22.1 |
| Cadmium | 7440-43-9 | ug/L | 6.0 U | NA | 3.0 U | NA | NA | 15 U | 3.0 U [0.7 J] |
| Calcium | 7440-70-2 | ug/L | 597,000 | NA | 538,000 | NA | NA | 481,000 J | 606,000 [581,000] |
| Chromium | 7440-47-3 | ug/L | 26.8 | NA | 50 U | NA | NA | 7.4 J | 13.5 [7.3 J] |
| Chromium VI | 18540-29-9 | ug/L | 23 JB | NA | 10 U | NA | NA | 5.5 U | 10 U [10 U] |
| Cobalt | 7440-48-4 | ug/L | 7.2 J | NA | 5.3 J | NA | NA | 250 U | 250 U [2.7 J] |
| Copper | 7440-50-8 | ug/L | 24.0 | NA | 6.4 J | NA | NA | 50 UJ | 22.4 J [184 J] |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 22,300 | NA | 9,470 | NA | NA | 4,260 J | 5,060 [4,230] |
| Lead | 7439-92-1 | ug/L | 30 U | NA | 30 U | NA | NA | 15 UJ | 15 U [15 U] |
| Magnesium | 7439-95-4 | ug/L | 246,000 | NA | 207,000 | NA | NA | 59,100 | 64,700 [62,600] |
| Manganese | 7439-96-5 | ug/L | 44,400 | NA | 38,500 | NA | NA | 2,030 J | 2,340 [2,200] |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW103S-20160915<br><br>09/15/16<br>114-P2A-MW103S | 114-P2A-MW103S-20160915-F<br><br>09/15/16<br>114-P2A-MW103S | 114-P2A-MW103S-20161213<br><br>12/13/16<br>114-P2A-MW103S | 114-P2A-MW103S-20161213-F<br><br>12/13/16<br>114-P2A-MW103S | 114-P2A-MW103S-F-20160325<br><br>03/25/16<br>114-P2A-MW103S | 114-P2A-MW104I-20160325<br><br>03/25/16<br>114-P2A-MW104I | 114-P2A-MW104I-20160629<br><br>06/29/16<br>114-P2A-MW104I |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | NA | 0.064 J | NA | NA | 0.20 U | 0.20 U [0.2 U] |
| Nickel | 7440-02-0 | ug/L | 26.6 | NA | 14.0 | NA | NA | 6.2 J | 50 U [10 U] |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 116,000 | NA | 97,500 | NA | NA | 37,100 J | 47,400 [45,700] |
| Selenium | 7782-49-2 | ug/L | 100 U | NA | 50 U | NA | NA | 20.8 J | 11.5 [10.9] |
| Silver | 7440-22-4 | ug/L | 11.2 J | NA | 6.1 J | NA | NA | 50 U | 10 U [10 U] |
| Sodium | 7440-23-5 | ug/L | 666,000 | NA | 546,000 | NA | NA | 1,200,000 | 1,450,000 [1,400,000] |
| Sulfur | 7704-34-9 | ug/L | 829,000 | NA | 824,000 | NA | NA | 240,000 | 326,000 [319,000] |
| Thallium | 7440-28-0 | ug/L | 20 U | NA | 20 U | NA | NA | 10 U | 10 U [10 U] |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 46.6 J | NA | 50 U | NA | NA | 7.4 J | NA |
| Zinc | 7440-66-6 | ug/L | 22.2 J | NA | 480 | NA | NA | 34.5 J | 20 U [20 U] |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 9.6 J | NA | 50 U | 50 U | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 19 JB | NA | 10 U | 17 J | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | 713,000 | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW103S-20160915<br>09/15/16<br>114-P2A-MW103S | 114-P2A-MW103S-20160915-F<br>09/15/16<br>114-P2A-MW103S | 114-P2A-MW103S-20161213<br>12/13/16<br>114-P2A-MW103S | 114-P2A-MW103S-20161213-F<br>12/13/16<br>114-P2A-MW103S | 114-P2A-MW103S-F-20160325<br>03/25/16<br>114-P2A-MW103S | 114-P2A-MW104I-20160325<br>03/25/16<br>114-P2A-MW104I | 114-P2A-MW104I-20160629<br>06/29/16<br>114-P2A-MW104I |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | 12,200 | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | 2,000 U | 2,000 U | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 320 | 363 | 423 | 439 | 314 | 303 | 283 [342] |
| pH | ARC-pH | SU | 6.73 | 6.70 | 6.60 | 6.61 | 7.59 | 7.36 | 7.19 [7.16] |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | 4.4 | 4.4 | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW103S-20160915<br>09/15/16<br>114-P2A-MW103S | 114-P2A-MW103S-20160915-F<br>09/15/16<br>114-P2A-MW103S | 114-P2A-MW103S-20161213<br>12/13/16<br>114-P2A-MW103S | 114-P2A-MW103S-20161213-F<br>12/13/16<br>114-P2A-MW103S | 114-P2A-MW103S-F-20160325<br>03/25/16<br>114-P2A-MW103S | 114-P2A-MW104I-20160325<br>03/25/16<br>114-P2A-MW104I | 114-P2A-MW104I-20160629<br>06/29/16<br>114-P2A-MW104I |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 2,390,000 | NA | 2,590,000 | NA | 2,400,000 | 790,000 | 839,000 [857,000] |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | NA | 2,000 U | NA | 2,000 U | 2,000 U | 2,000 U [2,000 U] |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | 3,000 UJ | 3,000 UJ | 3,000 UJ [3,000 UJ] |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | 17 | 6.88 | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | 7,600 | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | 5,330 | NA | NA | 0 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 215.1 | NA | NA | 134.5 | NA |
| pH | ARC-pH | SU | NA | NA | 9.52 | NA | NA | 7.98 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | 15.48 | NA | NA | 16.68 | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | 41.3 | NA | NA | 11.3 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-P2A-MW104I-20160629-F<br>06/29/16<br>114-P2A-MW104I | 114-P2A-MW104I-20160915<br>09/15/16<br>114-P2A-MW104I | 114-P2A-MW104I-20160915-F<br>09/15/16<br>114-P2A-MW104I | 114-P2A-MW104I-20161219<br>12/19/16<br>114-P2A-MW104I | 114-P2A-MW104I-20161219-F<br>12/19/16<br>114-P2A-MW104I | 114-P2A-MW104I-F-20160325<br>03/25/16<br>114-P2A-MW104I | 114-P2A-MW104S-20160325<br>03/25/16<br>114-P2A-MW104S |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW104I-20160629-F<br>06/29/16<br>114-P2A-MW104I | 114-P2A-MW104I-20160915<br>09/15/16<br>114-P2A-MW104I | 114-P2A-MW104I-20160915-F<br>09/15/16<br>114-P2A-MW104I | 114-P2A-MW104I-20161219<br>12/19/16<br>114-P2A-MW104I | 114-P2A-MW104I-20161219-F<br>12/19/16<br>114-P2A-MW104I | 114-P2A-MW104I-F-20160325<br>03/25/16<br>114-P2A-MW104I | 114-P2A-MW104S-20160325<br>03/25/16<br>114-P2A-MW104S |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW104I-20160629-F<br>06/29/16<br>114-P2A-MW104I | 114-P2A-MW104I-20160915<br>09/15/16<br>114-P2A-MW104I | 114-P2A-MW104I-20160915-F<br>09/15/16<br>114-P2A-MW104I | 114-P2A-MW104I-20161219<br>12/19/16<br>114-P2A-MW104I | 114-P2A-MW104I-20161219-F<br>12/19/16<br>114-P2A-MW104I | 114-P2A-MW104I-F-20160325<br>03/25/16<br>114-P2A-MW104I | 114-P2A-MW104S-20160325<br>03/25/16<br>114-P2A-MW104S |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 1,030 | NA | 55.0 J | NA | NA | 2,360 J |
| Antimony | 7440-36-0 | ug/L | NA | 6.0 U | NA | 6.0 U | NA | NA | 30 U |
| Arsenic | 7440-38-2 | ug/L | NA | 15 U | NA | 14.5 J | NA | NA | 15.3 |
| Barium | 7440-39-3 | ug/L | NA | 93.5 J | NA | 66.7 J | NA | NA | 38.8 J |
| Beryllium | 7440-41-7 | ug/L | NA | 1.0 U | NA | 1.0 U | NA | NA | 5.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 3.0 U | NA | 0.70 J | NA | NA | 15 U |
| Calcium | 7440-70-2 | ug/L | NA | 803,000 | NA | 877,000 | NA | NA | 206,000 J |
| Chromium | 7440-47-3 | ug/L | NA | 4.0 J | NA | 10 UB | NA | NA | 12.7 J |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 UB | NA | 10 U | NA | NA | 5.5 U |
| Cobalt | 7440-48-4 | ug/L | NA | 2.6 J | NA | 2.7 J | NA | NA | 4.7 J |
| Copper | 7440-50-8 | ug/L | NA | 4.1 J | NA | 50 U | NA | NA | 50 UJ |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 4,220 | NA | 1,810 | NA | NA | 3,450 J |
| Lead | 7439-92-1 | ug/L | NA | 15 U | NA | 15 U | NA | NA | 15 UJ |
| Magnesium | 7439-95-4 | ug/L | NA | 53,900 | NA | 36,200 | NA | NA | 2,920 J |
| Manganese | 7439-96-5 | ug/L | NA | 2,290 | NA | 1,890 | NA | NA | 104 J |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW104I-20160629-F<br>06/29/16<br>114-P2A-MW104I | 114-P2A-MW104I-20160915<br>09/15/16<br>114-P2A-MW104I | 114-P2A-MW104I-20160915-F<br>09/15/16<br>114-P2A-MW104I | 114-P2A-MW104I-20161219<br>12/19/16<br>114-P2A-MW104I | 114-P2A-MW104I-20161219-F<br>12/19/16<br>114-P2A-MW104I | 114-P2A-MW104I-F-20160325<br>03/25/16<br>114-P2A-MW104I | 114-P2A-MW104S-20160325<br>03/25/16<br>114-P2A-MW104S |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.20 U | NA | 0.050 J | NA | NA | 0.20 U |
| Nickel | 7440-02-0 | ug/L | NA | 7.7 J | NA | 10 U | NA | NA | 16.8 J |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 63,600 | NA | 77,300 | NA | NA | 25,200 J |
| Selenium | 7782-49-2 | ug/L | NA | 10 U | NA | 50 U | NA | NA | 50 U |
| Silver | 7440-22-4 | ug/L | NA | 2.2 J | NA | 10 U | NA | NA | 50 U |
| Sodium | 7440-23-5 | ug/L | NA | 1,810,000 | NA | 1,980,000 | NA | NA | 521,000 |
| Sulfur | 7704-34-9 | ug/L | NA | 402,000 | NA | 458,000 | NA | NA | 246,000 |
| Thallium | 7440-28-0 | ug/L | NA | 10 U | NA | 50 U | NA | NA | 10 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 4.6 J | NA | 1.5 J | NA | NA | 14.4 J |
| Zinc | 7440-66-6 | ug/L | NA | 9.2 JB | NA | 134 | NA | NA | 23.3 J |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 6.0 J [1.1 J] | NA | 1.1 J | NA | 10 U | 50 U | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 UJ [10 UJ] | NA | 10 UB | NA | 10 U | 5.5 UJ | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | 240,000 | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW104I-20160629-F<br>06/29/16<br>114-P2A-MW104I | 114-P2A-MW104I-20160915<br>09/15/16<br>114-P2A-MW104I | 114-P2A-MW104I-20160915-F<br>09/15/16<br>114-P2A-MW104I | 114-P2A-MW104I-20161219<br>12/19/16<br>114-P2A-MW104I | 114-P2A-MW104I-20161219-F<br>12/19/16<br>114-P2A-MW104I | 114-P2A-MW104I-F-20160325<br>03/25/16<br>114-P2A-MW104I | 114-P2A-MW104S-20160325<br>03/25/16<br>114-P2A-MW104S |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | 8,600 | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | 2,000 U | 2,000 U |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 302 [309] | 296 | 304 | 342 | 335 | 322 | 234 |
| pH | ARC-pH | SU | 7.15 [7.19] | 7.22 | 7.26 | 7.12 | 7.19 | 7.36 | 9.4 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | 4.4 | 2.4 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW104I-20160629-F<br>06/29/16<br>114-P2A-MW104I | 114-P2A-MW104I-20160915<br>09/15/16<br>114-P2A-MW104I | 114-P2A-MW104I-20160915-F<br>09/15/16<br>114-P2A-MW104I | 114-P2A-MW104I-20161219<br>12/19/16<br>114-P2A-MW104I | 114-P2A-MW104I-20161219-F<br>12/19/16<br>114-P2A-MW104I | 114-P2A-MW104I-F-20160325<br>03/25/16<br>114-P2A-MW104I | 114-P2A-MW104S-20160325<br>03/25/16<br>114-P2A-MW104S |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 1,110,000 | NA | 1,130,000 J | NA | 828,000 | 829,000 |
| Sulfide | 18496-25-8 | ug/L | NA | 2,000 U | NA | 2,000 U | NA | 2,000 U | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | 3,000 UJ | 3,000 UJ |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | 6.88 | 15.11 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | 20,600 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | 90 | NA | NA | 0 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | 123.4 | NA | NA | 48.9 |
| pH | ARC-pH | SU | NA | NA | NA | 7.29 | NA | NA | 9.35 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | 12.31 | NA | NA | 15.01 |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | 8.45 | NA | NA | 28 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW104S-20160629<br><br>06/29/16<br>114-P2A-MW104S | 114-P2A-MW104S-20160629-F<br><br>06/29/16<br>114-P2A-MW104S | 114-P2A-MW104S-20160915<br><br>09/15/16<br>114-P2A-MW104S | 114-P2A-MW104S-20160915-F<br><br>09/15/16<br>114-P2A-MW104S | 114-P2A-MW104S-20161214<br><br>12/14/16<br>114-P2A-MW104S | 114-P2A-MW104S-20161214-F<br><br>12/14/16<br>114-P2A-MW104S |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW104S-20160629<br><br>06/29/16<br>114-P2A-MW104S | 114-P2A-MW104S-20160629-F<br><br>06/29/16<br>114-P2A-MW104S | 114-P2A-MW104S-20160915<br><br>09/15/16<br>114-P2A-MW104S | 114-P2A-MW104S-20160915-F<br><br>09/15/16<br>114-P2A-MW104S | 114-P2A-MW104S-20161214<br><br>12/14/16<br>114-P2A-MW104S | 114-P2A-MW104S-20161214-F<br><br>12/14/16<br>114-P2A-MW104S |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW104S-20160629<br><br>06/29/16<br>114-P2A-MW104S | 114-P2A-MW104S-20160629-F<br><br>06/29/16<br>114-P2A-MW104S | 114-P2A-MW104S-20160915<br><br>09/15/16<br>114-P2A-MW104S | 114-P2A-MW104S-20160915-F<br><br>09/15/16<br>114-P2A-MW104S | 114-P2A-MW104S-20161214<br><br>12/14/16<br>114-P2A-MW104S | 114-P2A-MW104S-20161214-F<br><br>12/14/16<br>114-P2A-MW104S |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 5,640 J | NA | 281 | NA | 1,410 | NA |
| Antimony | 7440-36-0 | ug/L | 6.0 U | NA | 6.0 U | NA | 3.5 J | NA |
| Arsenic | 7440-38-2 | ug/L | 27.2 | NA | 29.4 | NA | 26.4 | NA |
| Barium | 7440-39-3 | ug/L | 66.7 J | NA | 22.2 J | NA | 35.1 J | NA |
| Beryllium | 7440-41-7 | ug/L | 1.0 U | NA | 1.0 U | NA | 1.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 3.0 U | NA | 3.0 U | NA | 3.0 U | NA |
| Calcium | 7440-70-2 | ug/L | 199,000 | NA | 164,000 | NA | 196,000 | NA |
| Chromium | 7440-47-3 | ug/L | 32.5 | NA | 10 U | NA | 5.1 JB | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 U | NA | 10 UB | NA | 10 U | NA |
| Cobalt | 7440-48-4 | ug/L | 8.2 J | NA | 3.8 J | NA | 5.2 J | NA |
| Copper | 7440-50-8 | ug/L | 64.2 J | NA | 6.0 J | NA | 4.5 J | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 9,220 | NA | 491 | NA | 2,010 | NA |
| Lead | 7439-92-1 | ug/L | 13.4 J | NA | 3.0 U | NA | 15 U | NA |
| Magnesium | 7439-95-4 | ug/L | 3,450 J | NA | 321 J | NA | 1,720 J | NA |
| Manganese | 7439-96-5 | ug/L | 145 | NA | 8.7 J | NA | 32.0 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW104S-20160629<br><br>06/29/16<br>114-P2A-MW104S | 114-P2A-MW104S-20160629-F<br><br>06/29/16<br>114-P2A-MW104S | 114-P2A-MW104S-20160915<br><br>09/15/16<br>114-P2A-MW104S | 114-P2A-MW104S-20160915-F<br><br>09/15/16<br>114-P2A-MW104S | 114-P2A-MW104S-20161214<br><br>12/14/16<br>114-P2A-MW104S | 114-P2A-MW104S-20161214-F<br><br>12/14/16<br>114-P2A-MW104S |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | NA | 0.20 U | NA | 0.20 U | NA |
| Nickel | 7440-02-0 | ug/L | 34.4 J | NA | 13.4 J | NA | 13.8 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 26,100 | NA | 24,400 | NA | 27,600 | NA |
| Selenium | 7782-49-2 | ug/L | 10.6 | NA | 10 U | NA | 10 U | NA |
| Silver | 7440-22-4 | ug/L | 10 U | NA | 1.3 J | NA | 2.6 J | NA |
| Sodium | 7440-23-5 | ug/L | 532,000 | NA | 519,000 | NA | 549,000 | NA |
| Sulfur | 7704-34-9 | ug/L | 277,000 | NA | 277,000 | NA | 318,000 | NA |
| Thallium | 7440-28-0 | ug/L | 10 U | NA | 6.0 U | NA | 10 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 26.7 J | NA | 9.9 J | NA | 11.8 J | NA |
| Zinc | 7440-66-6 | ug/L | 27.0 U | NA | 20 UB | NA | 58.0 | NA |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 1.8 J | NA | 2.2 J | NA | 10 UB |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 UJ | NA | 10 UB | NA | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW104S-20160629<br><br>06/29/16<br>114-P2A-MW104S | 114-P2A-MW104S-20160629-F<br><br>06/29/16<br>114-P2A-MW104S | 114-P2A-MW104S-20160915<br><br>09/15/16<br>114-P2A-MW104S | 114-P2A-MW104S-20160915-F<br><br>09/15/16<br>114-P2A-MW104S | 114-P2A-MW104S-20161214<br><br>12/14/16<br>114-P2A-MW104S | 114-P2A-MW104S-20161214-F<br><br>12/14/16<br>114-P2A-MW104S |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 209 | 245 | 204 | 231 | 335 | 312 |
| pH | ARC-pH | SU | 9.01 | 9.16 | 9.58 | 9.55 | 9.39 | 9.50 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW104S-20160629<br>06/29/16<br>114-P2A-MW104S | 114-P2A-MW104S-20160629-F<br>06/29/16<br>114-P2A-MW104S | 114-P2A-MW104S-20160915<br>09/15/16<br>114-P2A-MW104S | 114-P2A-MW104S-20160915-F<br>09/15/16<br>114-P2A-MW104S | 114-P2A-MW104S-20161214<br>12/14/16<br>114-P2A-MW104S | 114-P2A-MW104S-20161214-F<br>12/14/16<br>114-P2A-MW104S |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 816,000 | NA | 773,000 | NA | 928,000 | NA |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | NA | 510 J | NA | 1,100 J | NA |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 250 | NA | NA | NA | 2,120 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 77.8 | NA | NA | NA | 74.1 | NA |
| pH | ARC-pH | SU | 9.88 | NA | NA | NA | 9.91 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 20.67 | NA | NA | NA | 16.07 | NA |
| Turbidity | ARC-Turb | NTU | 26.7 | NA | NA | NA | 10.5 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-P2A-MW104S-F-20160325<br>03/25/16<br>114-P2A-MW104S | 114-P2B1-MW101I<br>11/20/14<br>114-P2B1-MW101I | 114-P2B1-MW101I-04012015<br>04/01/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-20150622<br>06/22/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-20150925<br>09/25/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-20151216<br>12/16/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-20160322<br>03/22/16<br>114-P2B1-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW104S-F-20160325<br><br>03/25/16<br>114-P2A-MW104S | 114-P2B1-MW101I<br><br>11/20/14<br>114-P2B1-MW101I | 114-P2B1-MW101I-04012015<br><br>04/01/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-20150622<br><br>06/22/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-20150925<br><br>09/25/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-20151216<br><br>12/16/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-20160322<br><br>03/22/16<br>114-P2B1-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW104S-F-20160325<br><br>03/25/16<br>114-P2A-MW104S | 114-P2B1-MW101I<br><br>11/20/14<br>114-P2B1-MW101I | 114-P2B1-MW101I-04012015<br><br>04/01/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-20150622<br><br>06/22/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-20150925<br><br>09/25/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-20151216<br><br>12/16/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-20160322<br><br>03/22/16<br>114-P2B1-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 7,090 | 3,330 | 2,200 | 235 JB | 285 [81.6 J] | 5,000 U |
| Antimony | 7440-36-0 | ug/L | NA | 27.5 | 600 U | 551 | 600 U | 3,000 U [3,000 U] | 1,160 J |
| Arsenic | 7440-38-2 | ug/L | NA | 8.3 | 2,080 | 287 | 300 U | 1,500 U [1,500 U] | 750 U |
| Barium | 7440-39-3 | ug/L | NA | 65.8 J | 43.2 J | 36.3 J | 14.6 J | 26.3 J [26.2 J] | 28.0 J |
| Beryllium | 7440-41-7 | ug/L | NA | 1.0 U | 25 U | 5.0 U | 100 U | 1.0 U [1 U] | 34.5 |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 4.2 | 49.5 J | 19.4 J | 18.7 | 81.3 J [89.6 J] | 149 |
| Calcium | 7440-70-2 | ug/L | NA | 84,900 | 241,000 | 271,000 | 150,000 | 218,000 [218,000] | 247,000 |
| Chromium | 7440-47-3 | ug/L | NA | 43,800 J | 1,010,000 J | 1,000,000 J | 444,000 J | 1,510,000 J [1,490,000 J] | 1,520,000 |
| Chromium VI | 18540-29-9 | ug/L | NA | 120,000 RA | 812,000 RA | 1,030,000 J | 425,000 RA | 1,630,000 J [1,700,000 J] | 1,450,000 |
| Cobalt | 7440-48-4 | ug/L | NA | 41.6 J | 221 J | 17.5 J | 153 | 385 [380] | 682 J |
| Copper | 7440-50-8 | ug/L | NA | 234 | 1,350 | 1,300 | 926 J | 1,750 J [1,890 J] | 2,290 J |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 7,700 | 3,060 | 3,170 J | 142 J | 250 [268] | 1,000 J |
| Lead | 7439-92-1 | ug/L | NA | 3.0 U | 150 U | 158 | 300 U | 1,500 U [1,500 U] | 75 U |
| Magnesium | 7439-95-4 | ug/L | NA | 23,700 | 53,000 | 61,500 | 36,100 | 46,000 [45,000] | 49,200 J |
| Manganese | 7439-96-5 | ug/L | NA | 367 | 126 | NA | 78.0 | 50.1 [47.4] | 85.0 J |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW104S-F-20160325<br><br>03/25/16<br>114-P2A-MW104S | 114-P2B1-MW101I<br><br>11/20/14<br>114-P2B1-MW101I | 114-P2B1-MW101I-04012015<br><br>04/01/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-20150622<br><br>06/22/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-20150925<br><br>09/25/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-20151216<br><br>12/16/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-20160322<br><br>03/22/16<br>114-P2B1-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.20 U | 0.20 U | 0.20 U | 1.2 U | 1.2 U [1.2 U] | 1.2 U |
| Nickel | 7440-02-0 | ug/L | NA | 167 | 609 | 638 | 440 | 969 J [1,010 J] | 875 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 4,300 J | 29,300 J | 22,600 J | 18,100 | 30,800 [30,400] | 33,300 J |
| Selenium | 7782-49-2 | ug/L | NA | 10 U | 193 J | 500 U | 1,000 U | 1,000 U [1,000 U] | 2,500 U |
| Silver | 7440-22-4 | ug/L | NA | 3.5 J | 500 U | 9.4 J | 1,000 U | 16.6 J [1,000 UJ] | 23.5 J |
| Sodium | 7440-23-5 | ug/L | NA | 70,300 | 824,000 | 1,070,000 | 529,000 | 1,760,000 [1,730,000] | 1,570,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | 324,000 | 282,000 | 192,000 | 406,000 [401,000 J] | 407,000 |
| Thallium | 7440-28-0 | ug/L | NA | 2.0 U | 100 U | 100 U | 200 U | 1,000 U [1,000 U] | 500 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 14.4 J | 2,500 U | 182 J | 5,000 U | 717 J [496 J] | 13,000 U |
| Zinc | 7440-66-6 | ug/L | NA | 105 | 500 U | 303 J | 2,000 U | 10,000 U [10,000 U] | 1,160 J |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 50 U | 99,800 J | 979,000 J | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 5.5 UJ | 113,000 RA | 728,000 RA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 267,000 | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW104S-F-20160325<br><br>03/25/16<br>114-P2A-MW104S | 114-P2B1-MW101I<br><br>11/20/14<br>114-P2B1-MW101I | 114-P2B1-MW101I-04012015<br><br>04/01/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-20150622<br><br>06/22/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-20150925<br><br>09/25/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-20151216<br><br>12/16/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-20160322<br><br>03/22/16<br>114-P2B1-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | 20,000 | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | NA | 2,000 U | 2,000 U | 2,000 U | 2,000 U [2,000 U] | 2,000 U |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 246 | 302 | 314 | 401 | 506 | 342 [343] | 319 |
| pH | ARC-pH | SU | 8.39 | 7.41 | 7.45 | 7.58 | 7.17 | 7.53 [7.53] [7.53] | 8.34 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 2.4 | NA | 3,500 | 4,860 | 3,040 | 9,010 [9,010] | 6.8 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW104S-F-20160325<br><br>03/25/16<br>114-P2A-MW104S | 114-P2B1-MW101I<br><br>11/20/14<br>114-P2B1-MW101I | 114-P2B1-MW101I-04012015<br><br>04/01/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-20150622<br><br>06/22/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-20150925<br><br>09/25/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-20151216<br><br>12/16/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-20160322<br><br>03/22/16<br>114-P2B1-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 841,000 | NA | 772,000 | 780,000 | 456,000 | 962,000 J [988,000] | 982,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | NA | 2,000 U | 2,000 U | 2,000 U | 2,000 U [2,000 U] | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | NA | 4,000 J | 3,000 UJ | 3,000 UJ | 1,500 J [1,000 J] | 3,000 UJ |
| Temperature | ARC-Temp | deg c | 15.11 | NA | 13 | 13.89 | 18.82 | 17.91 [17.91] | 13.79 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | 19,500 [19,600] | 21,600 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 3,060 | 1,500 | 310 | NA | 0 | 0 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 105 | 198 | 157 | NA | 139 | 75.4 |
| pH | ARC-pH | SU | NA | 7.29 | 7.59 | 7.63 | NA | 7.53 | 8.36 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | 0 | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | 1.48 | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 13.71 | 13 | 14.31 | NA | 17.91 | 15.93 |
| Turbidity | ARC-Turb | NTU | NA | 918 | 55.4 | 40 | NA | 3 | 2.06 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-P2B1-MW101I-20160620 | 114-P2B1-MW101I-20160620-F | 114-P2B1-MW101I-F-20150622 | 114-P2B1-MW101I-F-20150925 | 114-P2B1-MW101I-F-20151216 | 114-P2B1-MW101I-F-20160322 | 114-P2B1-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | |
| Date Collected: | | | 06/20/16 | 06/20/16 | 06/22/15 | 09/25/15 | 12/16/15 | 03/22/16 | 11/20/14 |
| Location ID: | CAS Number | Units | 114-P2B1-MW101I | 114-P2B1-MW101I | 114-P2B1-MW101I | 114-P2B1-MW101I | 114-P2B1-MW101I | 114-P2B1-MW101I | 114-P2B1-MW101S |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW101I-20160620<br>06/20/16<br>114-P2B1-MW101I | 114-P2B1-MW101I-20160620-F<br>06/20/16<br>114-P2B1-MW101I | 114-P2B1-MW101I-F-20150622<br>06/22/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-F-20150925<br>09/25/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-F-20151216<br>12/16/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-F-20160322<br>03/22/16<br>114-P2B1-MW101I | 114-P2B1-MW101S<br>11/20/14<br>114-P2B1-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW101I-20160620<br>06/20/16<br>114-P2B1-MW101I | 114-P2B1-MW101I-20160620-F<br>06/20/16<br>114-P2B1-MW101I | 114-P2B1-MW101I-F-20150622<br>06/22/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-F-20150925<br>09/25/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-F-20151216<br>12/16/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-F-20160322<br>03/22/16<br>114-P2B1-MW101I | 114-P2B1-MW101S<br>11/20/14<br>114-P2B1-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 1,200 | NA | NA | NA | NA | NA | 1,420 |
| Antimony | 7440-36-0 | ug/L | 1,200 U | NA | NA | NA | NA | NA | 3.3 J |
| Arsenic | 7440-38-2 | ug/L | 600 U | NA | NA | NA | NA | NA | 15 U |
| Barium | 7440-39-3 | ug/L | 23.2 J | NA | NA | NA | NA | NA | 72.7 J |
| Beryllium | 7440-41-7 | ug/L | 9.2 | NA | NA | NA | NA | NA | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 84.4 | NA | NA | NA | NA | NA | 3.0 U |
| Calcium | 7440-70-2 | ug/L | 198,000 | NA | NA | NA | NA | NA | 840,000 |
| Chromium | 7440-47-3 | ug/L | 1,320,000 | NA | NA | NA | NA | NA | 24.1 J |
| Chromium VI | 18540-29-9 | ug/L | 891,000 RA | NA | NA | NA | NA | NA | 32 RA |
| Cobalt | 7440-48-4 | ug/L | 321 | NA | NA | NA | NA | NA | 6.6 J |
| Copper | 7440-50-8 | ug/L | 2,020 | NA | NA | NA | NA | NA | 9.8 J |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 1,370 | NA | NA | NA | NA | NA | 176,000 |
| Lead | 7439-92-1 | ug/L | 300 U | NA | NA | NA | NA | NA | 60 U |
| Magnesium | 7439-95-4 | ug/L | 44,300 | NA | NA | NA | NA | NA | 138,000 |
| Manganese | 7439-96-5 | ug/L | 96.4 | NA | NA | NA | NA | NA | 30,700 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW101I-20160620<br>06/20/16<br>114-P2B1-MW101I | 114-P2B1-MW101I-20160620-F<br>06/20/16<br>114-P2B1-MW101I | 114-P2B1-MW101I-F-20150622<br>06/22/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-F-20150925<br>09/25/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-F-20151216<br>12/16/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-F-20160322<br>03/22/16<br>114-P2B1-MW101I | 114-P2B1-MW101S<br>11/20/14<br>114-P2B1-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 1.2 U | NA | NA | NA | NA | NA | 0.20 U |
| Nickel | 7440-02-0 | ug/L | 945 J | NA | NA | NA | NA | NA | 33.7 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 27,400 | NA | NA | NA | NA | NA | 156,000 |
| Selenium | 7782-49-2 | ug/L | 1,000 U | NA | NA | NA | NA | NA | 50 U |
| Silver | 7440-22-4 | ug/L | 2,000 U | NA | NA | NA | NA | NA | 50 U |
| Sodium | 7440-23-5 | ug/L | 1,480,000 | NA | NA | NA | NA | NA | 6,210,000 |
| Sulfur | 7704-34-9 | ug/L | 476,000 | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 400 U | NA | NA | NA | NA | NA | 10 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 434 J | NA | NA | NA | NA | NA | 50 U |
| Zinc | 7440-66-6 | ug/L | 1,170 J | NA | NA | NA | NA | NA | 94.0 |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 1,400,000 | 1,030,000 J | 446,000 J | 1,510,000 J [1,520,000 J] | 1,640,000 | 21.6 J |
| Chromium VI | 18540-29-9 | ug/L | NA | 1,070,000 RA | 1,010,000 J | 434,000 RA | 1,750,000 J [1,690,000 J] | 1,520,000 | 43 RA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | 299,000 | 178,000 | 404,000 [383,000 J] | 426,000 | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

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| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW101I-20160620<br>06/20/16<br>114-P2B1-MW101I | 114-P2B1-MW101I-20160620-F<br>06/20/16<br>114-P2B1-MW101I | 114-P2B1-MW101I-F-20150622<br>06/22/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-F-20150925<br>09/25/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-F-20151216<br>12/16/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-F-20160322<br>03/22/16<br>114-P2B1-MW101I | 114-P2B1-MW101S<br>11/20/14<br>114-P2B1-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | 21,700 | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | 2,000 U | NA | NA | 2,000 U | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 366 | 346 | 403 | 498 | 351 [350] | 321 | 211 |
| pH | ARC-pH | SU | 7.40 | 7.41 | 7.56 | 7.18 | 7.46 [7.69] | 7.43 | 6.45 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | 4,860 | NA | NA | 6.8 | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW101I-20160620<br>06/20/16<br>114-P2B1-MW101I | 114-P2B1-MW101I-20160620-F<br>06/20/16<br>114-P2B1-MW101I | 114-P2B1-MW101I-F-20150622<br>06/22/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-F-20150925<br>09/25/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-F-20151216<br>12/16/15<br>114-P2B1-MW101I | 114-P2B1-MW101I-F-20160322<br>03/22/16<br>114-P2B1-MW101I | 114-P2B1-MW101S<br>11/20/14<br>114-P2B1-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 998,000 | NA | 916,000 | 454,000 | 1,370,000 J [1,130,000] | 1,090,000 | NA |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | NA | 2,000 U | 2,000 U | 2,000 UJ [2,000 UJ] | 1,100 J | NA |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | NA | 1,000 J | 3,000 UJ | 1,500 J [1,500 J] | 3,000 UJ | NA |
| Temperature | ARC-Temp | deg c | NA | NA | 13.89 | NA | NA | 13.79 | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 1,290 | NA | NA | NA | NA | NA | 2,190 |
| Oxidation Reduction Potential | ARC-ORP | mV | 180.4 | NA | NA | NA | NA | NA | 82 |
| pH | ARC-pH | SU | 7.4 | NA | NA | NA | NA | NA | 6.45 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | 25.8 |
| Temperature | ARC-Temp | deg c | 17.54 | NA | NA | NA | NA | NA | 14.09 |
| Turbidity | ARC-Turb | NTU | 25.1 | NA | NA | NA | NA | NA | 32.4 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW101S-03272015<br>03/27/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-20150622<br>06/22/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-20150922<br>09/22/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-20151210<br>12/10/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-20160315<br>03/15/16<br>114-P2B1-MW101S | 114-P2B1-MW101S-20160620<br>06/20/16<br>114-P2B1-MW101S |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW101S-03272015<br>03/27/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-20150622<br>06/22/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-20150922<br>09/22/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-20151210<br>12/10/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-20160315<br>03/15/16<br>114-P2B1-MW101S | 114-P2B1-MW101S-20160620<br>06/20/16<br>114-P2B1-MW101S |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW101S-03272015<br>03/27/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-20150622<br>06/22/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-20150922<br>09/22/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-20151210<br>12/10/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-20160315<br>03/15/16<br>114-P2B1-MW101S | 114-P2B1-MW101S-20160620<br>06/20/16<br>114-P2B1-MW101S |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 221 J | 172 J | 194 J | 200 U [200 U] | 200 U | 57.0 J |
| Antimony | 7440-36-0 | ug/L | 6.0 U | 6.0 U | 60 U | 6.0 U [6 U] | 6.0 U | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | 30 U | 30 U | 30 U | 20.3 J [30 U] | 30 U | 30 U |
| Barium | 7440-39-3 | ug/L | 16.4 J | 23.4 J | 23.8 J | 19.8 JB [18.6 JB] | 14.5 J | 24.6 J |
| Beryllium | 7440-41-7 | ug/L | 1.0 UJ | 1.4 | 0.40 J | 1.0 U [1 U] | 1.0 U | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 0.70 J | 3.0 U | 3.0 UJB | 3.0 UB [3 UB] | 1.0 J | 0.80 J |
| Calcium | 7440-70-2 | ug/L | 455,000 | 480,000 | 403,000 | 459,000 [451,000] | 462,000 | 532,000 |
| Chromium | 7440-47-3 | ug/L | 100 UJ | 2,560 J | 97.1 | 5.3 J [3.8 J] | 4.1 J | 37.5 |
| Chromium VI | 18540-29-9 | ug/L | 10 RA | 4.7 J | 10 U | 5.5 RA [5.5 RA] | R | 10 RA |
| Cobalt | 7440-48-4 | ug/L | 78.8 J | 3.1 J | 2.8 JB | 2.1 J [2.3 J] | 1.6 J | 4.3 J |
| Copper | 7440-50-8 | ug/L | 10 UJ | 10 U | 10 U | 1.9 J [1.9 J] | 10 UB | 10 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 3,370 J | 16,300 | 51,900 | 46,800 [41,500] | 6,920 | 16,900 |
| Lead | 7439-92-1 | ug/L | 30 U | 30 U | 30 U | 30 U [30 U] | 30 U | 30 U |
| Magnesium | 7439-95-4 | ug/L | 119,000 | 68,900 | 59,600 | 63,300 J [62,700 J] | 61,900 | 40,500 |
| Manganese | 7439-96-5 | ug/L | 30,600 | 6,760 | 17,100 | 17,200 [16,600] | 197 | 5,050 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW101S-03272015<br>03/27/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-20150622<br>06/22/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-20150922<br>09/22/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-20151210<br>12/10/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-20160315<br>03/15/16<br>114-P2B1-MW101S | 114-P2B1-MW101S-20160620<br>06/20/16<br>114-P2B1-MW101S |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | 0.20 U | 0.20 U | 0.20 U [0.2 U] | 0.20 U | 0.20 U |
| Nickel | 7440-02-0 | ug/L | 210 J | 10.2 J | 60.7 | 5.0 J [5.3 J] | 9.4 J | 10.5 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 42,600 J | 39,900 | 52,400 | 33,100 [32,500] | 21,000 | 20,100 |
| Selenium | 7782-49-2 | ug/L | 100 U | 18.7 J | 100 U | 100 U [100 U] | 30 U | 30 U |
| Silver | 7440-22-4 | ug/L | 11.1 | 3.1 J | 6.2 J | 10 U [10 U] | 4.2 J | 10 UB |
| Sodium | 7440-23-5 | ug/L | 1,120,000 | 2,800,000 | 1,190,000 | 567,000 [553,000] | 319,000 | 197,000 |
| Sulfur | 7704-34-9 | ug/L | 871,000 | 952,000 | 808,000 | 726,000 [713,000] | 594,000 | 579,000 |
| Thallium | 7440-28-0 | ug/L | 20 U | 20 U | 20 U | 20 U [20 U] | 20 U | 20 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 18.8 J | 50 U | 0.90 JB | 50 U [50 U] | 50 U | 0.80 J |
| Zinc | 7440-66-6 | ug/L | 362 | 23.1 JB | 18.8 J | 24.3 UB [21.5 UB] | 30.6 JB | 13.4 J |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 10 UJB | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 4.4 RA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 872,000 | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW101S-03272015<br>03/27/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-20150622<br>06/22/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-20150922<br>09/22/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-20151210<br>12/10/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-20160315<br>03/15/16<br>114-P2B1-MW101S | 114-P2B1-MW101S-20160620<br>06/20/16<br>114-P2B1-MW101S |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | 2,000 U | 2,000 U | 2,000 U [2,000 U] | 2,000 U | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 339 | 410 | 235 | 215 [200] | 312 | 373 |
| pH | ARC-pH | SU | 5.74 | 6.88 | 6.75 | 6.55 [6.68] | 7.29 | 6.47 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 590 | 1,250 | 6,960 | 4,800 | 3.8 | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW101S-03272015<br>03/27/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-20150622<br>06/22/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-20150922<br>09/22/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-20151210<br>12/10/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-20160315<br>03/15/16<br>114-P2B1-MW101S | 114-P2B1-MW101S-20160620<br>06/20/16<br>114-P2B1-MW101S |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 2,570,000 | 2,380,000 | 2,430,000 J | 2,040,000 J [2,070,000] | 1,870,000 | 1,710,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 U | 2,000 U | 2,000 U [2,000 U] | 2,000 U | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 3,000 UJ | 3,000 UJ | 3,000 UJ [3,000 UJ] | 3,000 UJ | 3,000 UJ |
| Temperature | ARC-Temp | deg c | 5.74 | 17.76 | 22.06 | 20.03 | 11.14 | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | 4,400 [4,100] | 2,000 | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 5,830 | 11,010 | NA | 0 | 190 | 390 |
| Oxidation Reduction Potential | ARC-ORP | mV | 47 | 1 | NA | 67 | 131.8 | 73.4 |
| pH | ARC-pH | SU | 6.49 | 6.43 | NA | 6.55 | 7.25 | 6.47 |
| photoionization detector | PID | ug/L | NA | NA | NA | 0 | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 5.74 | 17.88 | NA | 20.03 | 10.73 | 19.48 |
| Turbidity | ARC-Turb | NTU | 2.94 | 68.8 | NA | 54.6 | 70.5 | 15.7 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW101S-20160620-F<br><br>06/20/16<br>114-P2B1-MW101S | 114-P2B1-MW101S-F-20150622<br><br>06/22/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-F-20150922<br><br>09/22/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-F-20151210<br><br>12/10/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-F-20160315<br><br>03/15/16<br>114-P2B1-MW101S | 114-P2B1-MW102S<br><br>11/20/14<br>114-P2B1-MW102S |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW101S-20160620-F<br><br>06/20/16<br>114-P2B1-MW101S | 114-P2B1-MW101S-F-20150622<br><br>06/22/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-F-20150922<br><br>09/22/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-F-20151210<br><br>12/10/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-F-20160315<br><br>03/15/16<br>114-P2B1-MW101S | 114-P2B1-MW102S<br><br>11/20/14<br>114-P2B1-MW102S |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW101S-20160620-F<br><br>06/20/16<br>114-P2B1-MW101S | 114-P2B1-MW101S-F-20150622<br><br>06/22/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-F-20150922<br><br>09/22/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-F-20151210<br><br>12/10/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-F-20160315<br><br>03/15/16<br>114-P2B1-MW101S | 114-P2B1-MW102S<br><br>11/20/14<br>114-P2B1-MW102S |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 477 |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 46.7 |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 15 U |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 66.4 J |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 3.0 U |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 563,000 |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | 3,990 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | 10 RA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 50 U |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 10 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | 183,000 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 60 U |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 106,000 |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | 29,700 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW101S-20160620-F<br><br>06/20/16<br>114-P2B1-MW101S | 114-P2B1-MW101S-F-20150622<br><br>06/22/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-F-20150922<br><br>09/22/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-F-20151210<br><br>12/10/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-F-20160315<br><br>03/15/16<br>114-P2B1-MW101S | 114-P2B1-MW102S<br><br>11/20/14<br>114-P2B1-MW102S |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.20 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | 12.9 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 84,900 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 50 U |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 8.9 J |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 4,680,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | 10 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | 50 U |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 12.3 J |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 10 U | 583 J | 32.9 | 3.2 J [3.3 J] | 1.7 J | 34.7 J |
| Chromium VI | 18540-29-9 | ug/L | 10 RA | 10 U | 32 | 5.5 RA [5.5 RA] | R | 10 RA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | 914,000 | 791,000 | 709,000 [727,000] | 585,000 | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW101S-20160620-F<br><br>06/20/16<br>114-P2B1-MW101S | 114-P2B1-MW101S-F-20150622<br><br>06/22/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-F-20150922<br><br>09/22/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-F-20151210<br><br>12/10/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-F-20160315<br><br>03/15/16<br>114-P2B1-MW101S | 114-P2B1-MW102S<br><br>11/20/14<br>114-P2B1-MW102S |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | 2,200 | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | 2,000 U | 2,000 U | NA | 2,000 U | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 296 | 359 | 230 | 209 [209] | 318 | 207 |
| pH | ARC-pH | SU | 6.55 | 6.35 | 6.75 | 6.66 [6.69] | 6.76 | 6.46 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | 1,250 | 6,960 | NA | 3.8 | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW101S-20160620-F<br><br>06/20/16<br>114-P2B1-MW101S | 114-P2B1-MW101S-F-20150622<br><br>06/22/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-F-20150922<br><br>09/22/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-F-20151210<br><br>12/10/15<br>114-P2B1-MW101S | 114-P2B1-MW101S-F-20160315<br><br>03/15/16<br>114-P2B1-MW101S | 114-P2B1-MW102S<br><br>11/20/14<br>114-P2B1-MW102S |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 2,970,000 | 2,430,000 | 2,630,000 J [2,510,000] | 1,590,000 | NA |
| Sulfide | 18496-25-8 | ug/L | NA | 2,000 U | 2,000 U | 2,000 U [2,000 U] | 2,000 U | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | 3,000 UJ | 3,000 UJ | 3,000 UJ [3,000 UJ] | 3,000 UJ | NA |
| Temperature | ARC-Temp | deg c | NA | 17.76 | 22.06 | NA | 11.14 | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | 3,060 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | 124 |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | 6.54 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | 19.2 |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | 13.76 |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | 72.2 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW102S-03262015<br>03/26/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-20150622<br>06/22/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-20150923<br>09/23/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-20151211<br>12/11/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-20160316<br>03/16/16<br>114-P2B1-MW102S | 114-P2B1-MW102S-20160623<br>06/23/16<br>114-P2B1-MW102S |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW102S-03262015<br>03/26/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-20150622<br>06/22/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-20150923<br>09/23/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-20151211<br>12/11/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-20160316<br>03/16/16<br>114-P2B1-MW102S | 114-P2B1-MW102S-20160623<br>06/23/16<br>114-P2B1-MW102S |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW102S-03262015<br>03/26/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-20150622<br>06/22/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-20150923<br>09/23/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-20151211<br>12/11/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-20160316<br>03/16/16<br>114-P2B1-MW102S | 114-P2B1-MW102S-20160623<br>06/23/16<br>114-P2B1-MW102S |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 535 J | 199 J | 723 | 300 | 1,000 U | 911 |
| Antimony | 7440-36-0 | ug/L | 6.0 U | 6.0 U | 30 U | 6.0 U | 30 U | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | 30 U | NA | 15 U | 75 U | 60 U | 11.6 J |
| Barium | 7440-39-3 | ug/L | 26.2 J | 32.2 J | 42.5 J | 34.6 J | 24.6 J | 34.0 J |
| Beryllium | 7440-41-7 | ug/L | 1.0 U | 1.4 | 1.4 | 1.0 U | 5.0 U | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 3.0 UB | 3.0 U | 3.0 U | 1.3 JB | 3.4 J | 0.50 J |
| Calcium | 7440-70-2 | ug/L | 437,000 | NA | 424,000 | 479,000 | 545,000 | 454,000 |
| Chromium | 7440-47-3 | ug/L | 201 | 1,310 J | 412 | 244 | 22.9 J | 484 |
| Chromium VI | 18540-29-9 | ug/L | 22 RA | 10 U | 19 RA | 5.5 RA | 5.5 RA | 10 RA |
| Cobalt | 7440-48-4 | ug/L | 0.40 J | 0.70 J | 250 UB | 250 U | 250 U | 1.6 J |
| Copper | 7440-50-8 | ug/L | 9.4 J | 10 U | 10 UB | 10 UB | 50 U | 61.7 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 68,700 | 60,500 | 37,700 | 23,900 | 101,000 | 38,400 |
| Lead | 7439-92-1 | ug/L | 30 U | NA | 15 U | 75 U | 60 U | 15 U |
| Magnesium | 7439-95-4 | ug/L | 74,100 | 68,500 | 66,000 | 59,400 | 58,700 | 70,000 |
| Manganese | 7439-96-5 | ug/L | 18,900 | NA | 14,600 | 14,400 | 9,680 | 10,100 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW102S-03262015<br>03/26/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-20150622<br>06/22/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-20150923<br>09/23/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-20151211<br>12/11/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-20160316<br>03/16/16<br>114-P2B1-MW102S | 114-P2B1-MW102S-20160623<br>06/23/16<br>114-P2B1-MW102S |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | NA | 0.20 U | 0.20 U | 0.20 U | 0.051 J |
| Nickel | 7440-02-0 | ug/L | 2.9 J | 10 U | 46.7 J | 4.9 J | 4.7 J | 9.0 J |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 38,500 | 55,400 | 59,000 | 46,000 | 49,400 J | 31,700 |
| Selenium | 7782-49-2 | ug/L | 18.5 J | NA | 50 U | 50 U | 50 U | 50 U |
| Silver | 7440-22-4 | ug/L | 6.2 J | 4.0 J | 4.7 J | 10 U | 50 U | 3.6 J |
| Sodium | 7440-23-5 | ug/L | 2,190,000 | NA | 2,720,000 | 1,860,000 | 1,900,000 | 1,090,000 |
| Sulfur | 7704-34-9 | ug/L | 899,000 J | NA | 863,000 J | 827,000 | 990,000 | 687,000 |
| Thallium | 7440-28-0 | ug/L | 20 UJ | NA | 20 U | 50 U | 40 U | 50 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 9.5 J | 50 U | 50 U | 50 U | 250 U | 4.9 J |
| Zinc | 7440-66-6 | ug/L | 20 UB | 20 U | 20 U | 20 UB | 100 U | 9.2 J |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 30 UJ | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 22 RA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 948,000 | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW102S-03262015<br>03/26/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-20150622<br>06/22/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-20150923<br>09/23/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-20151211<br>12/11/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-20160316<br>03/16/16<br>114-P2B1-MW102S | 114-P2B1-MW102S-20160623<br>06/23/16<br>114-P2B1-MW102S |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | NA | 2,000 U | 2,000 U | 2,000 U | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 195 | 254 | 260 | 309 | 204 | 282 |
| pH | ARC-pH | SU | 6.70 | 6.57 | 6.84 | 6.66 | 7.71 | 6.54 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 118 | NA | 13,300 | 9,130 | 8.4 | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW102S-03262015<br>03/26/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-20150622<br>06/22/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-20150923<br>09/23/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-20151211<br>12/11/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-20160316<br>03/16/16<br>114-P2B1-MW102S | 114-P2B1-MW102S-20160623<br>06/23/16<br>114-P2B1-MW102S |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 2,730,000 | NA | 2,670,000 | 2,650,000 | 2,990,000 | 2,080,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | NA | 2,000 U | 2,000 U | 2,000 U | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | 6,000 J | NA | 3,000 UJ | 3,000 UJ | 3,000 UJ | 3,000 UJ |
| Temperature | ARC-Temp | deg c | 8.95 | NA | 19.07 | 17.73 | 16.84 | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | 4,000 | 8,800 | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 500 | 5,850 | NA | 0 | 50 | 200 |
| Oxidation Reduction Potential | ARC-ORP | mV | 114 | 108 | NA | 88 | 101.8 | 96.1 |
| pH | ARC-pH | SU | 6.77 | 6.74 | NA | 6.66 | 7.01 | 6.81 |
| photoionization detector | PID | ug/L | NA | NA | NA | 0 | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 8.95 | 15.28 | NA | 17.73 | 17.13 | 18.6 |
| Turbidity | ARC-Turb | NTU | 31.2 | 10.17 | NA | 43.1 | 9.66 | 0 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-P2B1-MW102S-20160623-F<br>06/23/16<br>114-P2B1-MW102S | 114-P2B1-MW102S-20170412<br>04/12/17<br>114-P2B1-MW102S | 114-P2B1-MW102S-20170412-F<br>04/12/17<br>114-P2B1-MW102S | 114-P2B1-MW102S-F-20150622<br>06/22/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-F-20150923<br>09/23/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-F-20151211<br>12/11/15<br>114-P2B1-MW102S |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA |

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-P2B1-MW102S-20160623-F<br>06/23/16<br>114-P2B1-MW102S | 114-P2B1-MW102S-20170412<br>04/12/17<br>114-P2B1-MW102S | 114-P2B1-MW102S-20170412-F<br>04/12/17<br>114-P2B1-MW102S | 114-P2B1-MW102S-F-20150622<br>06/22/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-F-20150923<br>09/23/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-F-20151211<br>12/11/15<br>114-P2B1-MW102S |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW102S-20160623-F<br>06/23/16<br>114-P2B1-MW102S | 114-P2B1-MW102S-20170412<br>04/12/17<br>114-P2B1-MW102S | 114-P2B1-MW102S-20170412-F<br>04/12/17<br>114-P2B1-MW102S | 114-P2B1-MW102S-F-20150622<br>06/22/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-F-20150923<br>09/23/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-F-20151211<br>12/11/15<br>114-P2B1-MW102S |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 2.9 J | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW102S-20160623-F<br>06/23/16<br>114-P2B1-MW102S | 114-P2B1-MW102S-20170412<br>04/12/17<br>114-P2B1-MW102S | 114-P2B1-MW102S-20170412-F<br>04/12/17<br>114-P2B1-MW102S | 114-P2B1-MW102S-F-20150622<br>06/22/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-F-20150923<br>09/23/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-F-20151211<br>12/11/15<br>114-P2B1-MW102S |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 4.7 J | NA | 1.9 J | 555 J | 31.9 JB | 7.0 J |
| Chromium VI | 18540-29-9 | ug/L | 11 RA | NA | 10 U | 8.2 J | 44 RA | 5.5 RA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | 852,000 J | 830,000 |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW102S-20160623-F<br>06/23/16<br>114-P2B1-MW102S | 114-P2B1-MW102S-20170412<br>04/12/17<br>114-P2B1-MW102S | 114-P2B1-MW102S-20170412-F<br>04/12/17<br>114-P2B1-MW102S | 114-P2B1-MW102S-F-20150622<br>06/22/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-F-20150923<br>09/23/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-F-20151211<br>12/11/15<br>114-P2B1-MW102S |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | 2,000 U | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 287 | 281 | 262 | 252 | 247 | 295 |
| pH | ARC-pH | SU | 6.66 | 6.84 | 6.87 | 6.57 | 6.84 | 6.66 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | 13,300 | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW102S-20160623-F<br>06/23/16<br>114-P2B1-MW102S | 114-P2B1-MW102S-20170412<br>04/12/17<br>114-P2B1-MW102S | 114-P2B1-MW102S-20170412-F<br>04/12/17<br>114-P2B1-MW102S | 114-P2B1-MW102S-F-20150622<br>06/22/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-F-20150923<br>09/23/15<br>114-P2B1-MW102S | 114-P2B1-MW102S-F-20151211<br>12/11/15<br>114-P2B1-MW102S |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | 2,350,000 | 2,630,000 |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | 2,000 U | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | 3,000 UJ | 3,000 UJ |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | 19.07 | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-P2B1-MW102S-F-20160316<br>03/16/16<br>114-P2B1-MW102S | 114-P2B1-MW103S<br>05/29/14<br>114-P2B1-MW103S | 114-P2B1-MW103S-03262015<br>03/26/15<br>114-P2B1-MW103S | 114-P2B1-MW103S-10092014<br>10/09/14<br>114-P2B1-MW103S | 114-P2B1-MW103S-12032014<br>12/03/14<br>114-P2B1-MW103S | 114-P2B1-MW103S-20150622<br>06/22/15<br>114-P2B1-MW103S | 114-P2B1-MW103S-20150923<br>09/23/15<br>114-P2B1-MW103S |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW102S-F-20160316<br><br>03/16/16<br>114-P2B1-MW102S | 114-P2B1-MW103S<br><br>05/29/14<br>114-P2B1-MW103S | 114-P2B1-MW103S-03262015<br><br>03/26/15<br>114-P2B1-MW103S | 114-P2B1-MW103S-10092014<br><br>10/09/14<br>114-P2B1-MW103S | 114-P2B1-MW103S-12032014<br><br>12/03/14<br>114-P2B1-MW103S | 114-P2B1-MW103S-20150622<br><br>06/22/15<br>114-P2B1-MW103S | 114-P2B1-MW103S-20150923<br><br>09/23/15<br>114-P2B1-MW103S |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW102S-F-20160316<br><br>03/16/16<br>114-P2B1-MW102S | 114-P2B1-MW103S<br><br>05/29/14<br>114-P2B1-MW103S | 114-P2B1-MW103S-03262015<br><br>03/26/15<br>114-P2B1-MW103S | 114-P2B1-MW103S-10092014<br><br>10/09/14<br>114-P2B1-MW103S | 114-P2B1-MW103S-12032014<br><br>12/03/14<br>114-P2B1-MW103S | 114-P2B1-MW103S-20150622<br><br>06/22/15<br>114-P2B1-MW103S | 114-P2B1-MW103S-20150923<br><br>09/23/15<br>114-P2B1-MW103S |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | 702 | 314 | 257 | 597 [627] | 200 UB |
| Antimony | 7440-36-0 | ug/L | NA | NA | 6.0 U | 30 U | 3.6 J | 6.0 U [6 U] | 30 U |
| Arsenic | 7440-38-2 | ug/L | NA | NA | 30.9 | 15 U | 30 U | 60 U [60 U] | 15 U |
| Barium | 7440-39-3 | ug/L | NA | NA | 43.4 J | 39.0 J | 41.1 J | 39.2 J [40.3 J] | 32.2 JB |
| Beryllium | 7440-41-7 | ug/L | NA | NA | 1.0 U | 0.80 J | 1.0 U | 1.6 [1.6] | 1.3 |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | 3.0 U | 3.0 U | 1.5 J | 3.0 U [3 U] | 1.0 J |
| Calcium | 7440-70-2 | ug/L | NA | NA | 572,000 | 748,000 | 544,000 | 682,000 [688,000] | 565,000 |
| Chromium | 7440-47-3 | ug/L | NA | 23.8 J | 12.4 J | 11.0 J | 10 U | 566 J [335 J] | 48.1 |
| Chromium VI | 18540-29-9 | ug/L | NA | 60 | 39 RA | 10 U | 8.8 J | 11 [4.7 J] | 10 RA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | 250 U | 2.9 J | 1.2 J | 50 U [0.6 J] | 250 UB |
| Copper | 7440-50-8 | ug/L | NA | NA | 9.0 J | 6.7 J | 8.7 J | 10 U [10 U] | 10 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 194,000 | 144,000 | 116,000 | 157,000 [162,000] | 96,000 |
| Lead | 7439-92-1 | ug/L | NA | NA | 30 U | 60 U | 30 U | 60 U [60 U] | 15 U |
| Magnesium | 7439-95-4 | ug/L | NA | NA | 71,800 | 91,900 | 53,800 | 63,500 [65,600] | 58,900 |
| Manganese | 7439-96-5 | ug/L | NA | NA | 25,100 | 28,900 | 15,300 | 20,700 [20,600] | 13,100 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW102S-F-20160316<br><br>03/16/16<br>114-P2B1-MW102S | 114-P2B1-MW103S<br><br>05/29/14<br>114-P2B1-MW103S | 114-P2B1-MW103S-03262015<br><br>03/26/15<br>114-P2B1-MW103S | 114-P2B1-MW103S-10092014<br><br>10/09/14<br>114-P2B1-MW103S | 114-P2B1-MW103S-12032014<br><br>12/03/14<br>114-P2B1-MW103S | 114-P2B1-MW103S-20150622<br><br>06/22/15<br>114-P2B1-MW103S | 114-P2B1-MW103S-20150923<br><br>09/23/15<br>114-P2B1-MW103S |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | 0.20 U | 0.20 U | 0.20 U | 0.20 U [0.075 J] | 0.20 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | 10.9 J | 13.4 | 7.0 J | 10 U [10 U] | 36.2 J |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | 97,100 | 129,000 | 57,900 J | 72,600 [74,700] | 65,900 |
| Selenium | 7782-49-2 | ug/L | NA | NA | 16.8 J | 200 U | 10 U | 19.2 J [50 U] | 22.9 J |
| Silver | 7440-22-4 | ug/L | NA | NA | 12.9 | 11.9 | 1.7 J | 10 U [10 U] | 2.5 J |
| Sodium | 7440-23-5 | ug/L | NA | NA | 3,050,000 | 5,580,000 | 2,120,000 | 2,820,000 [2,850,000] | 2,310,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | 1,260,000 | 1,410,000 | NA | 1,090,000 [1,070,000] | 1,020,000 |
| Thallium | 7440-28-0 | ug/L | NA | NA | 50 UJ | 40 U | 20 U | 40 U [40 U] | 40 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | 10.8 J | 7.9 J | 50 U | 50 U [50 U] | 50 U |
| Zinc | 7440-66-6 | ug/L | NA | NA | 20 UB | 20 UB | 20 U | 20 U [20 U] | 20 U |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 6.1 J | 17.8 J | 6.2 J | 19.3 J | 10 UJ | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 5.5 RA | 31 | 21 RA | 10 U | 29 J | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 1,010,000 | NA | 1,280,000 | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW102S-F-20160316<br><br>03/16/16<br>114-P2B1-MW102S | 114-P2B1-MW103S<br><br>05/29/14<br>114-P2B1-MW103S | 114-P2B1-MW103S-03262015<br><br>03/26/15<br>114-P2B1-MW103S | 114-P2B1-MW103S-10092014<br><br>10/09/14<br>114-P2B1-MW103S | 114-P2B1-MW103S-12032014<br><br>12/03/14<br>114-P2B1-MW103S | 114-P2B1-MW103S-20150622<br><br>06/22/15<br>114-P2B1-MW103S | 114-P2B1-MW103S-20150923<br><br>09/23/15<br>114-P2B1-MW103S |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | 7,130,000 | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | 8,600 | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | NA | 370 J | NA | NA | 2,000 U [2,000 U] | 2,000 U |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 210 | 259 | 166 | 255 | 198 | 243 [240] | 225 |
| pH | ARC-pH | SU | 7.71 | 6.18 | 6.66 | 6.41 | 6.70 | 6.35 [6.31] [6.66] | 6.53 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 8.4 | NA | 163 | NA | NA | 1,340 [1,340] | 10,600 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW102S-F-20160316<br><br>03/16/16<br>114-P2B1-MW102S | 114-P2B1-MW103S<br><br>05/29/14<br>114-P2B1-MW103S | 114-P2B1-MW103S-03262015<br><br>03/26/15<br>114-P2B1-MW103S | 114-P2B1-MW103S-10092014<br><br>10/09/14<br>114-P2B1-MW103S | 114-P2B1-MW103S-12032014<br><br>12/03/14<br>114-P2B1-MW103S | 114-P2B1-MW103S-20150622<br><br>06/22/15<br>114-P2B1-MW103S | 114-P2B1-MW103S-20150923<br><br>09/23/15<br>114-P2B1-MW103S |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 2,980,000 | NA | 3,590,000 | 4,430,000 | NA | 3,310,000 [3,320,000] | 2,800,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | NA | 540 J | 440 J | NA | 2,000 U [2,000 U] | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | NA | 3,000 UJ | NA | NA | 3,000 UJ [3,000 UJ] | 3,000 UJ |
| Temperature | ARC-Temp | deg c | 16.84 | NA | 9.97 | NA | NA | 14.98 [14.98] | 23.5 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 1,180 | 690 | 1,290 | 4,400 | 30 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 70.4 | 113 | 126.7 | 143 | 110 | NA |
| pH | ARC-pH | SU | NA | 6.23 | 6.73 | 6.53 | 6.53 | 6.66 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | 34.88 | NA | 23.05 | 9.11 | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 15.75 | 9.97 | 19.19 | 16.08 | 14.98 | NA |
| Turbidity | ARC-Turb | NTU | NA | 3.48 | 8.98 | 9.39 | 3.21 | 12.8 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW103S-20151211<br><br>12/11/15<br>114-P2B1-MW103S | 114-P2B1-MW103S-20160316<br><br>03/16/16<br>114-P2B1-MW103S | 114-P2B1-MW103S-20160623<br><br>06/23/16<br>114-P2B1-MW103S | 114-P2B1-MW103S-20160623-F<br><br>06/23/16<br>114-P2B1-MW103S | 114-P2B1-MW103S-F-20150622<br><br>06/22/15<br>114-P2B1-MW103S | 114-P2B1-MW103S-F-20150923<br><br>09/23/15<br>114-P2B1-MW103S |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW103S-20151211<br>12/11/15<br>114-P2B1-MW103S | 114-P2B1-MW103S-20160316<br>03/16/16<br>114-P2B1-MW103S | 114-P2B1-MW103S-20160623<br>06/23/16<br>114-P2B1-MW103S | 114-P2B1-MW103S-20160623-F<br>06/23/16<br>114-P2B1-MW103S | 114-P2B1-MW103S-F-20150622<br>06/22/15<br>114-P2B1-MW103S | 114-P2B1-MW103S-F-20150923<br>09/23/15<br>114-P2B1-MW103S |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW103S-20151211<br>12/11/15<br>114-P2B1-MW103S | 114-P2B1-MW103S-20160316<br>03/16/16<br>114-P2B1-MW103S | 114-P2B1-MW103S-20160623<br>06/23/16<br>114-P2B1-MW103S | 114-P2B1-MW103S-20160623-F<br>06/23/16<br>114-P2B1-MW103S | 114-P2B1-MW103S-F-20150622<br>06/22/15<br>114-P2B1-MW103S | 114-P2B1-MW103S-F-20150923<br>09/23/15<br>114-P2B1-MW103S |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 200 U | 1,000 U | 1,340 | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 6.0 U | 30 U | 6.0 U | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | 75 U | 15 U | 75 U | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | 33.3 J | 21.3 J | 40.7 J | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | 1.0 U | 5.0 U | 1.0 U | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 1.5 JB | 15 U | 0.70 J | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | 569,000 | 474,000 | 511,000 | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 7.9 J | 43.2 J | 43.9 | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 5.5 RA | 5.5 RA | 19 RA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 3.1 J | 250 U | 1.5 J | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | 10 U | 50 U | 12.3 | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 72,700 | 26,700 | 88,700 | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | 75 U | 15 U | 15 U | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | 50,000 | 69,800 | 53,600 | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 8,790 | 10,900 | 7,740 | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW103S-20151211<br>12/11/15<br>114-P2B1-MW103S | 114-P2B1-MW103S-20160316<br>03/16/16<br>114-P2B1-MW103S | 114-P2B1-MW103S-20160623<br>06/23/16<br>114-P2B1-MW103S | 114-P2B1-MW103S-20160623-F<br>06/23/16<br>114-P2B1-MW103S | 114-P2B1-MW103S-F-20150622<br>06/22/15<br>114-P2B1-MW103S | 114-P2B1-MW103S-F-20150923<br>09/23/15<br>114-P2B1-MW103S |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | 0.20 U | 0.20 U | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 6.2 J | 6.3 J | 29.5 | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 57,900 | 28,900 J | 50,700 | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | 50 U | 50 U | 50 U | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | 10 U | 50 U | 2.0 J | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | 2,050,000 | 1,200,000 | 1,700,000 | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 922,000 | 707,000 | 864,000 | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 50 U | 20 U | 50 U | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 50 U | 250 U | 5.2 J | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | 20 UB | 100 UB | 6.8 J | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 9.1 J | 273 J [94.1 J] | 17.5 JB |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | 26 RA | 8.2 J [4.7 J] | 13 RA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | 1,170,000 [1,160,000] | 1,060,000 |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW103S-20151211<br>12/11/15<br>114-P2B1-MW103S | 114-P2B1-MW103S-20160316<br>03/16/16<br>114-P2B1-MW103S | 114-P2B1-MW103S-20160623<br>06/23/16<br>114-P2B1-MW103S | 114-P2B1-MW103S-20160623-F<br>06/23/16<br>114-P2B1-MW103S | 114-P2B1-MW103S-F-20150622<br>06/22/15<br>114-P2B1-MW103S | 114-P2B1-MW103S-F-20150923<br>09/23/15<br>114-P2B1-MW103S |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | 2,000 U | NA | NA | 2,000 U [2,000 U] | 2,000 U |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 325 | 245 | 302 | 261 | 255 [241] | 215 |
| pH | ARC-pH | SU | 6.57 | 6.72 | 6.54 | 6.57 | 6.66 [6.34] [6.66] | 6.91 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 9,820 | 10.4 | NA | NA | 1,340 [1,340] | 10,600 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW103S-20151211<br>12/11/15<br>114-P2B1-MW103S | 114-P2B1-MW103S-20160316<br>03/16/16<br>114-P2B1-MW103S | 114-P2B1-MW103S-20160623<br>06/23/16<br>114-P2B1-MW103S | 114-P2B1-MW103S-20160623-F<br>06/23/16<br>114-P2B1-MW103S | 114-P2B1-MW103S-F-20150622<br>06/22/15<br>114-P2B1-MW103S | 114-P2B1-MW103S-F-20150923<br>09/23/15<br>114-P2B1-MW103S |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 3,310,000 | 2,150,000 | 2,480,000 | NA | 3,610,000 [3,560,000] | 2,850,000 |
| Sulfide | 18496-25-8 | ug/L | 800 J | 2,000 U | 2,000 U | NA | 2,000 U [2,000 U] | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 3,000 UJ | 3,000 UJ | NA | 3,000 UJ [3,000 UJ] | 3,000 UJ |
| Temperature | ARC-Temp | deg c | 18.48 | 13.31 | NA | NA | 14.98 [14.98] | 23.5 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 10,900 | 3,400 | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 0 | 20 | 350 | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 95 | 90.1 | 113.1 | NA | NA | NA |
| pH | ARC-pH | SU | 6.76 | 7.71 | 6.72 | NA | NA | NA |
| photoionization detector | PID | ug/L | 100 | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 18.48 | 16.84 | 23.55 | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | 13.6 | 33 | 27.1 | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW103S-F-20151211<br><br>12/11/15<br>114-P2B1-MW103S | 114-P2B1-MW103S-F-20160316<br><br>03/16/16<br>114-P2B1-MW103S | 114-P2B2-MW101I-04032015<br><br>04/03/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-20150619<br><br>06/19/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-20150925<br><br>09/25/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-20151216<br><br>12/16/15<br>114-P2B2-MW101I |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW103S-F-20151211<br>12/11/15<br>114-P2B1-MW103S | 114-P2B1-MW103S-F-20160316<br>03/16/16<br>114-P2B1-MW103S | 114-P2B2-MW101I-04032015<br>04/03/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-20150619<br>06/19/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-20150925<br>09/25/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-20151216<br>12/16/15<br>114-P2B2-MW101I |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW103S-F-20151211<br>12/11/15<br>114-P2B1-MW103S | 114-P2B1-MW103S-F-20160316<br>03/16/16<br>114-P2B1-MW103S | 114-P2B2-MW101I-04032015<br>04/03/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-20150619<br>06/19/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-20150925<br>09/25/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-20151216<br>12/16/15<br>114-P2B2-MW101I |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | 200 J [159 J] | 1,000 U | 200 UB | 54.5 J |
| Antimony | 7440-36-0 | ug/L | NA | NA | 184 [166] | 247 | 600 U | 600 U |
| Arsenic | 7440-38-2 | ug/L | NA | NA | 75 U [75 U] | 77.3 | 300 U | 300 U |
| Barium | 7440-39-3 | ug/L | NA | NA | 48.7 J [48.2 J] | 31.4 J | 31.8 J | 30.8 J |
| Beryllium | 7440-41-7 | ug/L | NA | NA | 1.0 U [1 U] | 20 U | 100 U | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | 30 U [30 U] | 15 U | 3.0 J | 4.5 J |
| Calcium | 7440-70-2 | ug/L | NA | NA | 94,500 [93,100] | 119,000 | 135,000 | 157,000 |
| Chromium | 7440-47-3 | ug/L | NA | NA | 245,000 J [228,000 J] | 350,000 J | 463,000 J | 551,000 J |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 234,000 RA [232,000 RA] | 359,000 J | 399,000 RA | 552,000 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | 50 U [50 U] | 250 U | 11.5 J | 54.4 |
| Copper | 7440-50-8 | ug/L | NA | NA | 53.0 J [50.2 J] | 87.0 J | 1,000 U | 1,000 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 415 J [322 J] | 500 U | 500 U | 127 |
| Lead | 7439-92-1 | ug/L | NA | NA | 30 U [30 U] | 60 U | 300 U | 300 U |
| Magnesium | 7439-95-4 | ug/L | NA | NA | 22,400 [22,200] | 30,800 | 33,000 | 41,600 |
| Manganese | 7439-96-5 | ug/L | NA | NA | 122 [111] | 133 | 200 | 241 |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW103S-F-20151211<br>12/11/15<br>114-P2B1-MW103S | 114-P2B1-MW103S-F-20160316<br>03/16/16<br>114-P2B1-MW103S | 114-P2B2-MW101I-04032015<br>04/03/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-20150619<br>06/19/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-20150925<br>09/25/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-20151216<br>12/16/15<br>114-P2B2-MW101I |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | 0.20 U [0.2 U] | 6.0 U | 1.2 U | 1.2 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | 10 U [10 U] | 50 U | 10 U | 1,000 U |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | 13,900 J [13,700 J] | 9,870 J | 10,900 | 9,810 J |
| Selenium | 7782-49-2 | ug/L | NA | NA | 49.9 J [44 J] | 70.3 J | 1,000 U | 50 U |
| Silver | 7440-22-4 | ug/L | NA | NA | 100 U [100 U] | 50 U | 1,000 U | 16.9 J |
| Sodium | 7440-23-5 | ug/L | NA | NA | 370,000 [368,000] | 421,000 | 450,000 | 486,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | 97,600 [97,700] | 109,000 J | 111,000 | 116,000 |
| Thallium | 7440-28-0 | ug/L | NA | NA | 20 U [20 U] | 40 U | 200 U | 179 J |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | 177 J [172 J] | 28.1 J | 5,000 U | 321 J |
| Zinc | 7440-66-6 | ug/L | NA | NA | 200 U [200 U] | 400 U | 2,000 U | 2,000 U |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 8.7 J | 4.1 J | 244,000 [247,000] | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 5.5 RA | 5.5 RA | 229,000 RA [220,000 RA] | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 942,000 | 750,000 | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW103S-F-20151211<br>12/11/15<br>114-P2B1-MW103S | 114-P2B1-MW103S-F-20160316<br>03/16/16<br>114-P2B1-MW103S | 114-P2B2-MW101I-04032015<br>04/03/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-20150619<br>06/19/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-20150925<br>09/25/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-20151216<br>12/16/15<br>114-P2B2-MW101I |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | 2,400 JB | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | 2,000 U | 2,000 U [2,000 U] | 2,000 U | 2,000 U | 2,000 U |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 314 | 219 | 313 [327] [332] | 369 | 512 | 330 |
| pH | ARC-pH | SU | 6.60 | 7.65 | 7.96 [7.61] [7.96] [7.58] | 7.66 | 7.67 | 7.50 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | 10.4 | 144 [141] | 1,150 | 2,650 | 3,240 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B1-MW103S-F-20151211<br>12/11/15<br>114-P2B1-MW103S | 114-P2B1-MW103S-F-20160316<br>03/16/16<br>114-P2B1-MW103S | 114-P2B2-MW101I-04032015<br>04/03/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-20150619<br>06/19/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-20150925<br>09/25/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-20151216<br>12/16/15<br>114-P2B2-MW101I |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 2,780,000 | 2,250,000 | 283,000 [281,000] | 277,000 | 263,000 | 290,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 U | 2,000 UJ [2,000 UJ] | 2,000 U | 2,000 U | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 3,000 UJ | 3,000 UJ [3,000 UJ] [3,000 UJ] | 3,000 UJ | 3,000 UJ | 3,000 UJ |
| Temperature | ARC-Temp | deg c | NA | 13.31 | 13.4 [13.4] | 14.54 | 17.89 | 18.47 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | 4,800 JB |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | 620 | 790 | NA | 0 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 110 | 208 | NA | 135 |
| pH | ARC-pH | SU | NA | NA | 7.96 | 7.67 | NA | 7.57 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | 0 |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | 13.4 | 14.25 | NA | 18.47 |
| Turbidity | ARC-Turb | NTU | NA | NA | 6.83 | 3.01 | NA | 2.6 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B2-MW101I-20160323<br><br>03/23/16<br>114-P2B2-MW101I | 114-P2B2-MW101I-20160620<br><br>06/20/16<br>114-P2B2-MW101I | 114-P2B2-MW101I-20160620-F<br><br>06/20/16<br>114-P2B2-MW101I | 114-P2B2-MW101I-F-20150619<br><br>06/19/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-F-20150925<br><br>09/25/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-F-20151216<br><br>12/16/15<br>114-P2B2-MW101I |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B2-MW101I-20160323<br><br>03/23/16<br>114-P2B2-MW101I | 114-P2B2-MW101I-20160620<br><br>06/20/16<br>114-P2B2-MW101I | 114-P2B2-MW101I-20160620-F<br><br>06/20/16<br>114-P2B2-MW101I | 114-P2B2-MW101I-F-20150619<br><br>06/19/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-F-20150925<br><br>09/25/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-F-20151216<br><br>12/16/15<br>114-P2B2-MW101I |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B2-MW101I-20160323<br><br>03/23/16<br>114-P2B2-MW101I | 114-P2B2-MW101I-20160620<br><br>06/20/16<br>114-P2B2-MW101I | 114-P2B2-MW101I-20160620-F<br><br>06/20/16<br>114-P2B2-MW101I | 114-P2B2-MW101I-F-20150619<br><br>06/19/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-F-20150925<br><br>09/25/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-F-20151216<br><br>12/16/15<br>114-P2B2-MW101I |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 220 J [2,000 U] | 400 U | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 300 UJ [440 J] | 600 U | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | 150 UJ [150 UJ] | 300 U | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | 22.8 J [23 J] | 20.2 J | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | 10 U [10 U] | 0.80 J | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 4.4 J [4.8 J] | 6.2 J | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | 128,000 [139,000] | 147,000 | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 413,000 [410,000] | 473,000 | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 408,000 J [412,000 J] | 403,000 RA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 20.2 J [20 J] | 25.2 J | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | 100 U [100 U] | 100 U | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 1,420 J [263 J] | 239 | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | 150 U [150 U] | 300 U | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | 33,600 J [36,000 J] | 39,800 | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 210 [212] | 189 | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B2-MW101I-20160323<br>03/23/16<br>114-P2B2-MW101I | 114-P2B2-MW101I-20160620<br>06/20/16<br>114-P2B2-MW101I | 114-P2B2-MW101I-20160620-F<br>06/20/16<br>114-P2B2-MW101I | 114-P2B2-MW101I-F-20150619<br>06/19/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-F-20150925<br>09/25/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-F-20151216<br>12/16/15<br>114-P2B2-MW101I |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 1.2 U [1.2 U] | 0.20 U | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 100 U [7.6 J] | 1,000 U | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 9,550 J [10,400 J] | 9,020 J | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | 500 U [500 U] | 100 U | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | 25.6 J [22.8 J] | 13.8 J | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | 435,000 [482,000] | 441,000 | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 97,000 [104,000] | 108,000 | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 100 U [100 U] | 200 U | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 2,500 U [2,500 U] | 5,000 U | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | 1,000 U [1,000 U] | 2,000 U | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 492,000 | 346,000 J | 443,000 J | 505,000 J |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 379,000 RA | 369,000 J | 395,000 RA | 753,000 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | 87,000 J | 108,000 | 115,000 |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B2-MW101I-20160323<br>03/23/16<br>114-P2B2-MW101I | 114-P2B2-MW101I-20160620<br>06/20/16<br>114-P2B2-MW101I | 114-P2B2-MW101I-20160620-F<br>06/20/16<br>114-P2B2-MW101I | 114-P2B2-MW101I-F-20150619<br>06/19/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-F-20150925<br>09/25/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-F-20151216<br>12/16/15<br>114-P2B2-MW101I |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U [2,000 U] | NA | NA | 2,000 U | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 334 [350] | 364 | 330 | 383 | 514 | 315 |
| pH | ARC-pH | SU | 7.44 [7.75] [7.4] | 7.47 | 7.45 | 7.66 | 7.16 | 8.00 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 2.8 [2.8] | NA | NA | 1,150 | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B2-MW101I-20160323<br>03/23/16<br>114-P2B2-MW101I | 114-P2B2-MW101I-20160620<br>06/20/16<br>114-P2B2-MW101I | 114-P2B2-MW101I-20160620-F<br>06/20/16<br>114-P2B2-MW101I | 114-P2B2-MW101I-F-20150619<br>06/19/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-F-20150925<br>09/25/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-F-20151216<br>12/16/15<br>114-P2B2-MW101I |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 266,000 J [266,000 J] | 298,000 | NA | 274,000 | 262,000 | 293,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 UJ [2,000 UJ] | 2,000 U | NA | 2,000 U | 2,000 U | 2,000 UJ |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ [3,000 UJ] | 3,000 UJ | NA | 3,000 UJ | 3,000 UJ | 1,500 J |
| Temperature | ARC-Temp | deg c | 12.5 [12.5] | NA | NA | 14.54 | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 4,600 [4,300 J] | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 30 | 340 | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 116.2 | 219.1 | NA | NA | NA | NA |
| pH | ARC-pH | SU | 7.89 | 7.43 | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 15.96 | 16.61 | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | 3.62 | 2.8 | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B2-MW101I-F-20160323<br><br>03/23/16<br>114-P2B2-MW101I | 114-P2B2-MW101S-04032015<br><br>04/03/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-20150619<br><br>06/19/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-20150921<br><br>09/21/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-20151209<br><br>12/09/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-20160315<br><br>03/15/16<br>114-P2B2-MW101S |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B2-MW101I-F-20160323<br><br>03/23/16<br>114-P2B2-MW101I | 114-P2B2-MW101S-04032015<br><br>04/03/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-20150619<br><br>06/19/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-20150921<br><br>09/21/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-20151209<br><br>12/09/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-20160315<br><br>03/15/16<br>114-P2B2-MW101S |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B2-MW101I-F-20160323<br><br>03/23/16<br>114-P2B2-MW101I | 114-P2B2-MW101S-04032015<br><br>04/03/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-20150619<br><br>06/19/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-20150921<br><br>09/21/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-20151209<br><br>12/09/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-20160315<br><br>03/15/16<br>114-P2B2-MW101S |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 491 | 474 | 467 | 385 | 200 U |
| Antimony | 7440-36-0 | ug/L | NA | 6.0 U | 6.0 U | 18.6 | 6.0 U | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | NA | 28.8 J | 10.7 J | 30 U | 21.2 J | 30 U |
| Barium | 7440-39-3 | ug/L | NA | 33.2 J | 47.2 J | 60.5 J | 47.4 J | 19.8 J |
| Beryllium | 7440-41-7 | ug/L | NA | 1.0 U | 1.3 | 2.0 U | 1.0 U | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 3.0 U | 3.0 U | 3.0 U | 3.0 UB | 1.1 J |
| Calcium | 7440-70-2 | ug/L | NA | 539,000 | 474,000 | 423,000 | 384,000 | 400,000 |
| Chromium | 7440-47-3 | ug/L | NA | 666 J | 31.8 | 12.8 | 13.1 | 10.9 |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 RA | 10 U | 10 U | 5.5 U | R |
| Cobalt | 7440-48-4 | ug/L | NA | 14.8 J | 5.2 J | 4.6 J | 3.5 JB | 2.2 J |
| Copper | 7440-50-8 | ug/L | NA | 6.7 J | 10 U | 10 U | 10 U | 10 UB |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 41,300 | 46,300 | 57,600 | 63,800 | 29,000 |
| Lead | 7439-92-1 | ug/L | NA | 15 U | 15 U | 30 U | 30 U | 30 U |
| Magnesium | 7439-95-4 | ug/L | NA | 89,600 | 84,900 | 80,400 | 71,400 | 55,000 |
| Manganese | 7439-96-5 | ug/L | NA | 20,300 | 18,400 | 16,100 | 15,900 | 10,500 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B2-MW101I-F-20160323<br><br>03/23/16<br>114-P2B2-MW101I | 114-P2B2-MW101S-04032015<br><br>04/03/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-20150619<br><br>06/19/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-20150921<br><br>09/21/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-20151209<br><br>12/09/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-20160315<br><br>03/15/16<br>114-P2B2-MW101S |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.20 U | 0.20 U | 0.20 U | 0.20 U | 0.063 J |
| Nickel | 7440-02-0 | ug/L | NA | 18.2 | 4.7 J | 10.2 | 5.9 J | 6.8 JB |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 40,800 J | 43,300 | 51,700 | 40,700 | 25,900 |
| Selenium | 7782-49-2 | ug/L | NA | 50 U | 50 U | 100 U | 30 U | 30 U |
| Silver | 7440-22-4 | ug/L | NA | 3.7 J | 3.9 J | 4.6 J | 1.3 J | 10 U |
| Sodium | 7440-23-5 | ug/L | NA | 1,200,000 | 1,230,000 | 1,290,000 | 1,060,000 | 630,000 |
| Sulfur | 7704-34-9 | ug/L | NA | 624,000 | 612,000 | 632,000 | 582,000 | 548,000 |
| Thallium | 7440-28-0 | ug/L | NA | 10 U | 20 U | 20 U | 20 U | 20 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 1.1 J | 50 U | 2.1 J | 2.9 J | 2.1 J |
| Zinc | 7440-66-6 | ug/L | NA | 20 UB | 14.7 J | 20 U | 20 UB | 20 UB |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 402,000 [395,000] | 203 | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 391,000 J [384,000 J] | 10 RA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 88,100 [87,300] | 636,000 | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B2-MW101I-F-20160323<br>03/23/16<br>114-P2B2-MW101I | 114-P2B2-MW101S-04032015<br>04/03/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-20150619<br>06/19/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-20150921<br>09/21/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-20151209<br>12/09/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-20160315<br>03/15/16<br>114-P2B2-MW101S |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | 4,500 [4,400] | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U [2,000 U] | 2,000 U | 2,000 U | NA | 2,000 U | 2,000 U |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 339 [346] | 232 | 267 | 222 | 403 | 243 |
| pH | ARC-pH | SU | 7.47 [7.47] [7.75] | 6.75 | 7.03 | 6.78 | 6.65 | 6.77 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 2.8 [2.8] | 545 | 8,730 | 8,680 | 7,400 | 5.0 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B2-MW101I-F-20160323<br><br>03/23/16<br>114-P2B2-MW101I | 114-P2B2-MW101S-04032015<br><br>04/03/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-20150619<br><br>06/19/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-20150921<br><br>09/21/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-20151209<br><br>12/09/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-20160315<br><br>03/15/16<br>114-P2B2-MW101S |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 266,000 J [266,000 J] | 2,620,000 | 1,890,000 | 1,640,000 | 2,000,000 | 1,460,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 UJ [2,000 UJ] | 2,000 UJ | 2,000 U | 2,000 U | 2,000 U | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ [3,000 UJ] | 3,000 UJ | 3,000 UJ | 1,500 J | 3,000 UJ | 3,000 UJ |
| Temperature | ARC-Temp | deg c | 12.5 [12.5] | 9.47 | 16.8 | 21.75 | 17.49 | 8.55 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | 10,700 | 6,300 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 410 | 120 | NA | 0 | 20 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 124 | 141 | NA | 116 | 100.7 |
| pH | ARC-pH | SU | NA | 7.04 | 7.03 | NA | 6.77 | 7.23 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | 0 | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 9.97 | 16.8 | NA | 17.49 | 9.42 |
| Turbidity | ARC-Turb | NTU | NA | 12.4 | 12.3 | NA | 25 | 0.3 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B2-MW101S-20160620<br><br>06/20/16<br>114-P2B2-MW101S | 114-P2B2-MW101S-20160620-F<br><br>06/20/16<br>114-P2B2-MW101S | 114-P2B2-MW101S-F-20150619<br><br>06/19/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-F-20150921<br><br>09/21/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-F-20151209<br><br>12/09/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-F-20160315<br><br>03/15/16<br>114-P2B2-MW101S |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B2-MW101S-20160620<br>06/20/16<br>114-P2B2-MW101S | 114-P2B2-MW101S-20160620-F<br>06/20/16<br>114-P2B2-MW101S | 114-P2B2-MW101S-F-20150619<br>06/19/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-F-20150921<br>09/21/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-F-20151209<br>12/09/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-F-20160315<br>03/15/16<br>114-P2B2-MW101S |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B2-MW101S-20160620<br><br>06/20/16<br>114-P2B2-MW101S | 114-P2B2-MW101S-20160620-F<br><br>06/20/16<br>114-P2B2-MW101S | 114-P2B2-MW101S-F-20150619<br><br>06/19/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-F-20150921<br><br>09/21/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-F-20151209<br><br>12/09/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-F-20160315<br><br>03/15/16<br>114-P2B2-MW101S |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 82.6 J | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 6.0 U | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | 30 U | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | 27.5 J | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | 1.0 U | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 1.1 J | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | 366,000 | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 19.3 | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 13 RA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 3.9 J | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | 10 U | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 30,800 | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | 30 U | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | 48,300 | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 8,260 | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B2-MW101S-20160620<br>06/20/16<br>114-P2B2-MW101S | 114-P2B2-MW101S-20160620-F<br>06/20/16<br>114-P2B2-MW101S | 114-P2B2-MW101S-F-20150619<br>06/19/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-F-20150921<br>09/21/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-F-20151209<br>12/09/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-F-20160315<br>03/15/16<br>114-P2B2-MW101S |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 5.7 J | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 25,600 | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | 6.7 J | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | 10 UB | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | 504,000 | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 481,000 | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 20 U | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 1.7 J | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | 20 U | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 5.7 J | 18.9 | 6.1 J | 9.6 J | 4.8 J |
| Chromium VI | 18540-29-9 | ug/L | NA | 12 RA | 10 U | 10 U | 5.5 U | R |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | 627,000 | 658,000 | 583,000 | 553,000 |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B2-MW101S-20160620<br>06/20/16<br>114-P2B2-MW101S | 114-P2B2-MW101S-20160620-F<br>06/20/16<br>114-P2B2-MW101S | 114-P2B2-MW101S-F-20150619<br>06/19/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-F-20150921<br>09/21/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-F-20151209<br>12/09/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-F-20160315<br>03/15/16<br>114-P2B2-MW101S |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | 5,500 |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | 2,000 U | NA | NA | 2,000 U |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 379 | 304 | 292 | 221 | 379 | 222 |
| pH | ARC-pH | SU | 6.64 | 6.64 | 7.03 | 6.88 | 6.63 | 7.2 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | 8,730 | 8,680 | NA | 5.0 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B2-MW101S-20160620<br>06/20/16<br>114-P2B2-MW101S | 114-P2B2-MW101S-20160620-F<br>06/20/16<br>114-P2B2-MW101S | 114-P2B2-MW101S-F-20150619<br>06/19/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-F-20150921<br>09/21/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-F-20151209<br>12/09/15<br>114-P2B2-MW101S | 114-P2B2-MW101S-F-20160315<br>03/15/16<br>114-P2B2-MW101S |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 1,400,000 | NA | 2,150,000 | 1,690,000 | 1,940,000 | 1,670,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | NA | 2,000 U | 2,000 U | 2,000 U | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | NA | 3,000 UJ | 1,000 J | 3,000 UJ | 3,000 UJ |
| Temperature | ARC-Temp | deg c | NA | NA | 16.8 | 21.75 | NA | 8.55 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 890 | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 119.5 | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | 6.67 | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 20.94 | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | 6.93 | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B3-MW101I-04022015<br>04/02/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-20150623<br>06/23/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-20150925<br>09/25/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-20151216<br>12/16/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-20160323<br>03/23/16<br>114-P2B3-MW101I | 114-P2B3-MW101I-20160622<br>06/22/16<br>114-P2B3-MW101I | 114-P2B3-MW101I-20160622-F<br>06/22/16<br>114-P2B3-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B3-MW101I-04022015<br>04/02/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-20150623<br>06/23/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-20150925<br>09/25/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-20151216<br>12/16/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-20160323<br>03/23/16<br>114-P2B3-MW101I | 114-P2B3-MW101I-20160622<br>06/22/16<br>114-P2B3-MW101I | 114-P2B3-MW101I-20160622-F<br>06/22/16<br>114-P2B3-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B3-MW101I-04022015<br>04/02/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-20150623<br>06/23/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-20150925<br>09/25/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-20151216<br>12/16/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-20160323<br>03/23/16<br>114-P2B3-MW101I | 114-P2B3-MW101I-20160622<br>06/22/16<br>114-P2B3-MW101I | 114-P2B3-MW101I-20160622-F<br>06/22/16<br>114-P2B3-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 649 J | 214 | 200 UB | 120 J | 2,000 U | 108 J | NA |
| Antimony | 7440-36-0 | ug/L | 300 U | 300 UJ | 600 U | 300 U | 300 UJ | 120 U | NA |
| Arsenic | 7440-38-2 | ug/L | 15 U | 150 U | 300 U | 150 U | 150 UJ | 60 U | NA |
| Barium | 7440-39-3 | ug/L | 45.6 J | 21.9 J | 17.7 J | 13.4 J | 16.0 J | 5.8 J | NA |
| Beryllium | 7440-41-7 | ug/L | 5.0 U | 1.0 U | 100 U | 0.80 J | 10 U | 2.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 7.6 J | 150 U | 7.9 J | 25.9 J | 5.8 J | 3.2 J | NA |
| Calcium | 7440-70-2 | ug/L | 15,800 J | 13,300 | 8,580 | 7,530 | 5,800 J | 12,500 | NA |
| Chromium | 7440-47-3 | ug/L | 388,000 J | 503,000 J | 478,000 J | 400,000 J | 365,000 | 142,000 J | NA |
| Chromium VI | 18540-29-9 | ug/L | 395,000 J | 492,000 J | 402,000 RA | 415,000 J | 358,000 | 136,000 RA | NA |
| Cobalt | 7440-48-4 | ug/L | 58.3 | 50 U | 91.2 | 32.7 J | 60.4 J | 20.4 J | NA |
| Copper | 7440-50-8 | ug/L | 210 | 339 J | 231 J | 197 J | 41.2 J | 49.4 J | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 711 | 542 | 500 U | 2,500 U | 313 J | 155 J | NA |
| Lead | 7439-92-1 | ug/L | 30 U | 150 U | 300 U | 150 U | 150 U | 60 U | NA |
| Magnesium | 7439-95-4 | ug/L | 4,350 J | 4,030 J | 2,580 J | 2,430 J | 2,010 J | 2,880 J | NA |
| Manganese | 7439-96-5 | ug/L | 172 | 246 | 61.4 | 19.7 | 36.0 J | 19.4 J | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B3-MW101I-04022015<br><br>04/02/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-20150623<br><br>06/23/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-20150925<br><br>09/25/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-20151216<br><br>12/16/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-20160323<br><br>03/23/16<br>114-P2B3-MW101I | 114-P2B3-MW101I-20160622<br><br>06/22/16<br>114-P2B3-MW101I | 114-P2B3-MW101I-20160622-F<br><br>06/22/16<br>114-P2B3-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | 0.20 U | 1.2 U | 0.20 U | 1.2 U | 0.30 U | NA |
| Nickel | 7440-02-0 | ug/L | 52.9 | 86.9 | 74.2 | 61.4 | 58.6 J | 30.8 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 19,700 J | 23,600 | 25,400 | 22,700 | 17,700 J | 10,600 J | NA |
| Selenium | 7782-49-2 | ug/L | 100 U | 500 U | 1,000 U | 500 UJB | 500 U | 200 U | NA |
| Silver | 7440-22-4 | ug/L | 50 U | 4.9 J | 10 U | 250 U | 20.2 J | 18.4 J | NA |
| Sodium | 7440-23-5 | ug/L | 848,000 | 983,000 | 990,000 | 967,000 | 945,000 | 486,000 | NA |
| Sulfur | 7704-34-9 | ug/L | 190,000 | 178,000 | 202,000 | 158,000 | 137,000 | 79,200 J | NA |
| Thallium | 7440-28-0 | ug/L | 40 U | 100 U | 200 U | 100 U | 100 U | 40 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 54.5 J | 2,500 U | 239 J | 279 J | 2,500 U | 1,000 U | NA |
| Zinc | 7440-66-6 | ug/L | 400 U | 1,000 U | 2,000 U | 1,000 U | 1,000 U | 152 J | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 435,000 J | NA | NA | NA | NA | NA | 156,000 J |
| Chromium VI | 18540-29-9 | ug/L | 346,000 J | NA | NA | NA | NA | NA | 183,000 RA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B3-MW101I-04022015<br>04/02/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-20150623<br>06/23/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-20150925<br>09/25/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-20151216<br>12/16/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-20160323<br>03/23/16<br>114-P2B3-MW101I | 114-P2B3-MW101I-20160622<br>06/22/16<br>114-P2B3-MW101I | 114-P2B3-MW101I-20160622-F<br>06/22/16<br>114-P2B3-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | 2,000 U | 2,000 U | 2,000 U | 2,000 U | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 307 | 545 | 270 | 341 | 316 | 286 | 295 |
| pH | ARC-pH | SU | 9.4 | 8.74 | 9.11 | 9.11 | 9.05 | 8.93 | 9.32 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 3,770 | 4,250 | 4,460 | 3,590 | 4.1 | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-P2B3-MW101I-04022015<br>04/02/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-20150623<br>06/23/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-20150925<br>09/25/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-20151216<br>12/16/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-20160323<br>03/23/16<br>114-P2B3-MW101I | 114-P2B3-MW101I-20160622<br>06/22/16<br>114-P2B3-MW101I | 114-P2B3-MW101I-20160622-F<br>06/22/16<br>114-P2B3-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 505,000 | 493,000 | 444,000 | 410,000 | 365,000 J | 213,000 J | NA |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 U | 2,000 U | 2,000 U | 2,000 UJ | 2,000 U | NA |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | R | 3,000 UJ | 3,000 UJ | 3,000 UJ | 3,000 UJ | NA |
| Temperature | ARC-Temp | deg c | 13.79 | 17.86 | 18.85 | 18 | 14.62 | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | 15,600 | 13,200 | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 1,220 | 220 | NA | 0 | 20 | 890 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 58 | 89.2 | NA | 126 | 4.4 | 30.6 | NA |
| pH | ARC-pH | SU | 9.4 | 8.91 | NA | 9.42 | 9.53 | 9.01 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | 0 | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 13.79 | 17 | NA | 18 | 16.32 | 19.11 | NA |
| Turbidity | ARC-Turb | NTU | 13.5 | 3.35 | NA | 3 | 2.13 | 3.89 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B3-MW101I-F-20150623<br><br>06/23/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-F-20150925<br><br>09/25/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-F-20151216<br><br>12/16/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-F-20160323<br><br>03/23/16<br>114-P2B3-MW101I | 114-P2B3-MW101S-04022015<br><br>04/02/15<br>114-P2B3-MW101S | 114-P2B3-MW101S-20150623<br><br>06/23/15<br>114-P2B3-MW101S |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B3-MW101I-F-20150623<br><br>06/23/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-F-20150925<br><br>09/25/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-F-20151216<br><br>12/16/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-F-20160323<br><br>03/23/16<br>114-P2B3-MW101I | 114-P2B3-MW101S-04022015<br><br>04/02/15<br>114-P2B3-MW101S | 114-P2B3-MW101S-20150623<br><br>06/23/15<br>114-P2B3-MW101S |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B3-MW101I-F-20150623<br><br>06/23/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-F-20150925<br><br>09/25/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-F-20151216<br><br>12/16/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-F-20160323<br><br>03/23/16<br>114-P2B3-MW101I | 114-P2B3-MW101S-04022015<br><br>04/02/15<br>114-P2B3-MW101S | 114-P2B3-MW101S-20150623<br><br>06/23/15<br>114-P2B3-MW101S |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | 1,180 | 380 |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | 6.0 U | 12 UJ |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | 15 U | 30 U |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | 32.1 J | 31.5 J |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | 1.0 U | 0.40 J |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | 3.0 U | 0.60 J |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | 555,000 | 523,000 |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | 47.1 J | 22.6 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | 10 U | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | 250 U | 50 U |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | 5.2 J | 4.8 J |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | 57,000 | 48,500 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | 15 U | 30 U |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | 76,700 | 77,700 |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | 21,900 | 18,400 |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B3-MW101I-F-20150623<br>06/23/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-F-20150925<br>09/25/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-F-20151216<br>12/16/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-F-20160323<br>03/23/16<br>114-P2B3-MW101I | 114-P2B3-MW101S-04022015<br>04/02/15<br>114-P2B3-MW101S | 114-P2B3-MW101S-20150623<br>06/23/15<br>114-P2B3-MW101S |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | 0.20 U | 0.20 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | 50 U | 4.9 J |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | 45,600 J | 47,400 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | 21.6 J | 100 U |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | 4.5 J | 2.1 J |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | 1,370,000 | 1,360,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | 714,000 | 723,000 |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | 20 U | 20 UJ |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | 1.1 J | 100 U |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | 100 U | 7.3 J |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 510,000 J | 472,000 J | 417,000 J | 394,000 | 188 J | NA |
| Chromium VI | 18540-29-9 | ug/L | 464,000 J | 405,000 RA | 647,000 J | 380,000 | 10 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 185,000 | 173,000 | 172,000 | 132,000 | 696,000 | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B3-MW101I-F-20150623<br>06/23/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-F-20150925<br>09/25/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-F-20151216<br>12/16/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-F-20160323<br>03/23/16<br>114-P2B3-MW101I | 114-P2B3-MW101S-04022015<br>04/02/15<br>114-P2B3-MW101S | 114-P2B3-MW101S-20150623<br>06/23/15<br>114-P2B3-MW101S |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | 10,500 | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | NA | NA | 2,000 U | 2,000 U | 2,000 U |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 551 | 282 | 348 | 314 | 262 | 318 |
| pH | ARC-pH | SU | 9.15 | 9.11 | 9.05 | 9.53 | 7.18 | 6.76 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 4,250 | NA | NA | 4.1 | 7,810 | 7,920 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B3-MW101I-F-20150623<br>06/23/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-F-20150925<br>09/25/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-F-20151216<br>12/16/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-F-20160323<br>03/23/16<br>114-P2B3-MW101I | 114-P2B3-MW101S-04022015<br>04/02/15<br>114-P2B3-MW101S | 114-P2B3-MW101S-20150623<br>06/23/15<br>114-P2B3-MW101S |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 549,000 | 478,000 | 462,000 | 372,000 J | 2,230,000 | 2,150,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 U | 2,000 UJ | 2,000 UJ | 2,000 U | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | R | 3,000 UJ | 1,000 J | 3,000 UJ | 3,000 UJ | R |
| Temperature | ARC-Temp | deg c | 17.86 | NA | NA | 14.62 | 9.81 | 17.07 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | 1,250 | 20 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | 131 | 108.1 |
| pH | ARC-pH | SU | NA | NA | NA | NA | 7.18 | 6.76 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | 9.81 | 17.07 |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | 26.7 | 5.06 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B3-MW101S-20150925<br>09/25/15<br>114-P2B3-MW101S | 114-P2B3-MW101S-20151210<br>12/10/15<br>114-P2B3-MW101S | 114-P2B3-MW101S-20160315<br>03/15/16<br>114-P2B3-MW101S | 114-P2B3-MW101S-20160622<br>06/22/16<br>114-P2B3-MW101S | 114-P2B3-MW101S-20160622-F<br>06/22/16<br>114-P2B3-MW101S | 114-P2B3-MW101S-F-20150623<br>06/23/15<br>114-P2B3-MW101S |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B3-MW101S-20150925<br>09/25/15<br>114-P2B3-MW101S | 114-P2B3-MW101S-20151210<br>12/10/15<br>114-P2B3-MW101S | 114-P2B3-MW101S-20160315<br>03/15/16<br>114-P2B3-MW101S | 114-P2B3-MW101S-20160622<br>06/22/16<br>114-P2B3-MW101S | 114-P2B3-MW101S-20160622-F<br>06/22/16<br>114-P2B3-MW101S | 114-P2B3-MW101S-F-20150623<br>06/23/15<br>114-P2B3-MW101S |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B3-MW101S-20150925<br>09/25/15<br>114-P2B3-MW101S | 114-P2B3-MW101S-20151210<br>12/10/15<br>114-P2B3-MW101S | 114-P2B3-MW101S-20160315<br>03/15/16<br>114-P2B3-MW101S | 114-P2B3-MW101S-20160622<br>06/22/16<br>114-P2B3-MW101S | 114-P2B3-MW101S-20160622-F<br>06/22/16<br>114-P2B3-MW101S | 114-P2B3-MW101S-F-20150623<br>06/23/15<br>114-P2B3-MW101S |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 742 JB | 1,010 | 291 | 230 | NA | NA |
| Antimony | 7440-36-0 | ug/L | 30 U | 6.0 U | 6.0 U | 6.0 U | NA | NA |
| Arsenic | 7440-38-2 | ug/L | 15 U | 30 U | 12.4 J | 33.7 | NA | NA |
| Barium | 7440-39-3 | ug/L | 37.9 J | 54.1 J | 22.0 J | 42.8 J | NA | NA |
| Beryllium | 7440-41-7 | ug/L | 1.8 | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 3.0 U | 3.0 UB | 1.1 J | 0.90 J | NA | NA |
| Calcium | 7440-70-2 | ug/L | 462,000 | 501,000 | 257,000 | 536,000 | NA | NA |
| Chromium | 7440-47-3 | ug/L | 7.1 JB | 14.3 | 4.7 J | 9.5 JB | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 RA | 5.5 RA | 5.5 UJ | 33 RA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 1.3 J | 1.7 J | 0.70 J | 0.80 J | NA | NA |
| Copper | 7440-50-8 | ug/L | 10 U | 4.0 J | 10 U | 5.8 J | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 31,500 | 38,100 | 28,100 | 49,400 | NA | NA |
| Lead | 7439-92-1 | ug/L | 15 U | 30 U | 15 U | 30 U | NA | NA |
| Magnesium | 7439-95-4 | ug/L | 54,400 | 43,800 J | 27,800 | 53,600 | NA | NA |
| Manganese | 7439-96-5 | ug/L | 16,300 | 12,000 | 8,460 | 16,500 | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B3-MW101S-20150925<br>09/25/15<br>114-P2B3-MW101S | 114-P2B3-MW101S-20151210<br>12/10/15<br>114-P2B3-MW101S | 114-P2B3-MW101S-20160315<br>03/15/16<br>114-P2B3-MW101S | 114-P2B3-MW101S-20160622<br>06/22/16<br>114-P2B3-MW101S | 114-P2B3-MW101S-20160622-F<br>06/22/16<br>114-P2B3-MW101S | 114-P2B3-MW101S-F-20150623<br>06/23/15<br>114-P2B3-MW101S |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | 0.20 U | 0.20 U | 0.20 U | NA | NA |
| Nickel | 7440-02-0 | ug/L | 2.2 J | 5.6 J | 10 UB | 10 U | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 50,600 | 43,700 | 19,800 | 35,100 | NA | NA |
| Selenium | 7782-49-2 | ug/L | 19.2 J | 100 U | 6.8 J | 100 U | NA | NA |
| Silver | 7440-22-4 | ug/L | 7.8 J | 10 U | 10 U | 3.6 J | NA | NA |
| Sodium | 7440-23-5 | ug/L | 1,030,000 | 1,190,000 | 526,000 | 1,010,000 | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 671,000 | 559,000 | 338,000 | 570,000 J | NA | NA |
| Thallium | 7440-28-0 | ug/L | 20 U | 20 U | 10 U | 20 U | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 3.0 J | 3.5 J | 3.3 J | 3.5 J | NA | NA |
| Zinc | 7440-66-6 | ug/L | 20 U | 20 UB | 20 UB | 20 U | NA | NA |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | 10 UB | 13.8 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | 10 RA | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | 738,000 |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B3-MW101S-20150925<br>09/25/15<br>114-P2B3-MW101S | 114-P2B3-MW101S-20151210<br>12/10/15<br>114-P2B3-MW101S | 114-P2B3-MW101S-20160315<br>03/15/16<br>114-P2B3-MW101S | 114-P2B3-MW101S-20160622<br>06/22/16<br>114-P2B3-MW101S | 114-P2B3-MW101S-20160622-F<br>06/22/16<br>114-P2B3-MW101S | 114-P2B3-MW101S-F-20150623<br>06/23/15<br>114-P2B3-MW101S |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | 2,000 U | 2,000 U | NA | NA | 2,000 U |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 225 | 198 | 217 | 306 | 274 | 345 |
| pH | ARC-pH | SU | 6.79 | 6.82 | 7.36 | 6.68 | 6.76 | 6.51 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 6,660 | 9,760 | 4.7 | NA | NA | 7,920 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B3-MW101S-20150925<br>09/25/15<br>114-P2B3-MW101S | 114-P2B3-MW101S-20151210<br>12/10/15<br>114-P2B3-MW101S | 114-P2B3-MW101S-20160315<br>03/15/16<br>114-P2B3-MW101S | 114-P2B3-MW101S-20160622<br>06/22/16<br>114-P2B3-MW101S | 114-P2B3-MW101S-20160622-F<br>06/22/16<br>114-P2B3-MW101S | 114-P2B3-MW101S-F-20150623<br>06/23/15<br>114-P2B3-MW101S |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 2,000,000 | 1,940,000 | 1,130,000 | 1,570,000 J | NA | 2,180,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 U | 2,000 U | 2,000 U | NA | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 3,000 UJ | 3,000 UJ | 3,000 UJ | NA | R |
| Temperature | ARC-Temp | deg c | 21.73 | 20.18 | 12.1 | NA | NA | 17.07 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | 7,600 | 3,200 | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 0 | 20 | 780 | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 111 | 122.7 | 121.6 | NA | NA |
| pH | ARC-pH | SU | NA | 6.73 | 7.34 | 6.9 | NA | NA |
| photoionization detector | PID | ug/L | NA | 0 | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 20.18 | 12.37 | 19.21 | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | 5.3 | 0.57 | 4.6 | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B3-MW101S-F-20150925<br><br>09/25/15<br>114-P2B3-MW101S | 114-P2B3-MW101S-F-20151210<br><br>12/10/15<br>114-P2B3-MW101S | 114-P2B3-MW101S-F-20160315<br><br>03/15/16<br>114-P2B3-MW101S | 114-P2B4-MW101I-04032015<br><br>04/03/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-20150624<br><br>06/24/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-20150928<br><br>09/28/15<br>114-P2B4-MW101I |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B3-MW101S-F-20150925<br><br>09/25/15<br>114-P2B3-MW101S | 114-P2B3-MW101S-F-20151210<br><br>12/10/15<br>114-P2B3-MW101S | 114-P2B3-MW101S-F-20160315<br><br>03/15/16<br>114-P2B3-MW101S | 114-P2B4-MW101I-04032015<br><br>04/03/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-20150624<br><br>06/24/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-20150928<br><br>09/28/15<br>114-P2B4-MW101I |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA |

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-P2B3-MW101S-F-20150925<br>09/25/15<br>114-P2B3-MW101S | 114-P2B3-MW101S-F-20151210<br>12/10/15<br>114-P2B3-MW101S | 114-P2B3-MW101S-F-20160315<br>03/15/16<br>114-P2B3-MW101S | 114-P2B4-MW101I-04032015<br>04/03/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-20150624<br>06/24/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-20150928<br>09/28/15<br>114-P2B4-MW101I |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | 1,610 J | 67,700 | 528 J |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | 689 | 161 | 508 |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | 75 U | 117 | 150 U |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | 29.6 J | 216 | 25.3 J |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | 0.70 J | 14.2 | 50 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | 3.8 J | 9.6 J | 32.2 J |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | 40,700 | 34,600 | 39,300 |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 648,000 J | 365,000 J | 666,000 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | 638,000 RA | 1,280,000 J | 694,000 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | 50 U | 37.2 J | 253 |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | 758 | 770 | 974 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | 1,540 J | 64,000 | 5,620 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | 83.8 | 174 | 150 U |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | 37,900 | 49,500 | 39,000 |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | 174 | 710 | 609 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B3-MW101S-F-20150925<br><br>09/25/15<br>114-P2B3-MW101S | 114-P2B3-MW101S-F-20151210<br><br>12/10/15<br>114-P2B3-MW101S | 114-P2B3-MW101S-F-20160315<br><br>03/15/16<br>114-P2B3-MW101S | 114-P2B4-MW101I-04032015<br><br>04/03/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-20150624<br><br>06/24/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-20150928<br><br>09/28/15<br>114-P2B4-MW101I |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | 0.20 U | 0.31 | 1.2 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | 10 U | 84.2 | 19.7 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | 49,100 J | 42,700 | 46,100 J |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | 137 J | 200 U | 200 J |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | 100 U | 28.4 J | 500 U |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | 1,410,000 | 957,000 | 1,480,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | 381,000 | 258,000 J | 367,000 |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | 50 U | 100 U | 89.9 J |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | 486 J | 136 J | 399 J |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | 500 U | 676 | 1,000 U |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 4.8 JB | 3.4 J | 4.5 J | 641,000 | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 8.2 RA | 5.5 RA | 5.5 UJ | 539,000 RA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 701,000 | 654,000 | 229,000 | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B3-MW101S-F-20150925<br><br>09/25/15<br>114-P2B3-MW101S | 114-P2B3-MW101S-F-20151210<br><br>12/10/15<br>114-P2B3-MW101S | 114-P2B3-MW101S-F-20160315<br><br>03/15/16<br>114-P2B3-MW101S | 114-P2B4-MW101I-04032015<br><br>04/03/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-20150624<br><br>06/24/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-20150928<br><br>09/28/15<br>114-P2B4-MW101I |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | 3,800 | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | 2,000 U | 2,000 U | 2,000 U | 2,000 U |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 231 | 199 | 199 | 302 | 495 | 28.3 |
| pH | ARC-pH | SU | 6.78 | 6.78 | 6.81 | 8.60 | 8.60 | 8.94 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | 4.7 | 415 | 6,040 | 6,040 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B3-MW101S-F-20150925<br><br>09/25/15<br>114-P2B3-MW101S | 114-P2B3-MW101S-F-20151210<br><br>12/10/15<br>114-P2B3-MW101S | 114-P2B3-MW101S-F-20160315<br><br>03/15/16<br>114-P2B3-MW101S | 114-P2B4-MW101I-04032015<br><br>04/03/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-20150624<br><br>06/24/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-20150928<br><br>09/28/15<br>114-P2B4-MW101I |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 1,900,000 | 1,760,000 | 1,350,000 | 973,000 | 846,000 | 1,110,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 U | 2,000 U | 2,000 UJ | 2,000 U | 2,000 UJ |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 3,000 UJ | 3,000 UJ | 3,000 UJ | 3,000 UJ | 3,000 UB |
| Temperature | ARC-Temp | deg c | NA | NA | 12.1 | 9.67 | 16.74 | 19.34 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | 1,000 | 550 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | 34 | 79.1 | NA |
| pH | ARC-pH | SU | NA | NA | NA | 8.97 | 8.89 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | 19.5 | 17.83 | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | 33.2 | 33 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-P2B4-MW101I-20151216 | 114-P2B4-MW101I-20160323 | 114-P2B4-MW101I-20160621 | 114-P2B4-MW101I-20160621-F | 114-P2B4-MW101I-F-20150624 | 114-P2B4-MW101I-F-20150928 |
|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | |
| Date Collected: | | | 12/16/15 | 03/23/16 | 06/21/16 | 06/21/16 | 06/24/15 | 09/28/15 |
| Location ID: | CAS Number | Units | 114-P2B4-MW101I | 114-P2B4-MW101I | 114-P2B4-MW101I | 114-P2B4-MW101I | 114-P2B4-MW101I | 114-P2B4-MW101I |
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW101I-20151216<br>12/16/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-20160323<br>03/23/16<br>114-P2B4-MW101I | 114-P2B4-MW101I-20160621<br>06/21/16<br>114-P2B4-MW101I | 114-P2B4-MW101I-20160621-F<br>06/21/16<br>114-P2B4-MW101I | 114-P2B4-MW101I-F-20150624<br>06/24/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-F-20150928<br>09/28/15<br>114-P2B4-MW101I |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW101I-20151216<br>12/16/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-20160323<br>03/23/16<br>114-P2B4-MW101I | 114-P2B4-MW101I-20160621<br>06/21/16<br>114-P2B4-MW101I | 114-P2B4-MW101I-20160621-F<br>06/21/16<br>114-P2B4-MW101I | 114-P2B4-MW101I-F-20150624<br>06/24/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-F-20150928<br>09/28/15<br>114-P2B4-MW101I |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 810 | 1,910 J | 4,330 J [5,350 J] | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 600 U | 300 UJ | 240 U [240 U] | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | 300 U | 150 UJ | 120 U [120 U] | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | 26.6 J | 25.4 J | 21.4 J [25.2 J] | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | 1.0 U | 10 U | 2.0 U [2 U] | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 150 U | 10.6 J | 5.0 J [4.4 J] | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | 35,400 | 28,500 J | 21,300 [22,700] | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 744,000 J | 500,000 J | 224,000 [221,000 J] | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 776,000 J | 488,000 J | 142,000 J [171,000 J] | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 96.1 | 48.2 J | 27.6 J [29.4 J] | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | 614 | 497 | 302 J [176 J] | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 488 | 1,220 J | 2,310 [2,760] | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | 300 U | 156 | 120 U [120 U] | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | 37,300 | 27,400 J | 19,800 [20,800] | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 309 | 396 | 175 [168] | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW101I-20151216<br>12/16/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-20160323<br>03/23/16<br>114-P2B4-MW101I | 114-P2B4-MW101I-20160621<br>06/21/16<br>114-P2B4-MW101I | 114-P2B4-MW101I-20160621-F<br>06/21/16<br>114-P2B4-MW101I | 114-P2B4-MW101I-F-20150624<br>06/24/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-F-20150928<br>09/28/15<br>114-P2B4-MW101I |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 1.2 U | 1.2 U | 1.2 U [1.2 U] | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 120 J | 57.0 J | 59.6 J [51.2 J] | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 47,400 | 36,200 J | 29,200 [32,200] | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | 500 U | 500 U | 9.0 J [20 U] | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | 23.3 J | 28.6 J | 8.0 J [9 J] | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | 1,610,000 | 1,350,000 | 809,000 [839,000] | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 385,000 | 429,000 | 284,000 [285,000] | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 200 U | 100 U | 80 U [80 U] | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 274 J | 36.4 J | 87.8 J [118 J] | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | 2,000 U | 79.0 J | 76.4 J [92.2 J] | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 269,000 [311,000 J] | 657,000 J | 762,000 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | 244,000 J [262,000 J] | 1,410,000 J | 722,000 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | 402,000 J | 367,000 |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW101I-20151216<br>12/16/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-20160323<br>03/23/16<br>114-P2B4-MW101I | 114-P2B4-MW101I-20160621<br>06/21/16<br>114-P2B4-MW101I | 114-P2B4-MW101I-20160621-F<br>06/21/16<br>114-P2B4-MW101I | 114-P2B4-MW101I-F-20150624<br>06/24/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-F-20150928<br>09/28/15<br>114-P2B4-MW101I |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | 2,000 U | NA | NA | 2,000 U | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 339 | 325 | 245 [296] | 246 [288] | 504 | 292 |
| pH | ARC-pH | SU | 8.84 | 9.04 | 8.59 [8.6] | 8.82 [8.79] | 8.89 | 8.67 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 3,920 | 6.0 | NA | NA | 6,040 | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW101I-20151216<br>12/16/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-20160323<br>03/23/16<br>114-P2B4-MW101I | 114-P2B4-MW101I-20160621<br>06/21/16<br>114-P2B4-MW101I | 114-P2B4-MW101I-20160621-F<br>06/21/16<br>114-P2B4-MW101I | 114-P2B4-MW101I-F-20150624<br>06/24/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-F-20150928<br>09/28/15<br>114-P2B4-MW101I |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 1,200,000 | 1,140,000 J | 590,000 J [742,000 J] | NA | 944,000 | 1,110,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 UJ | 2,000 U [2,000 U] | NA | 2,000 U | 2,000 UJ |
| Sulfite | ARC-SULFITE | ug/L | 1,500 J | 3,000 UJ | 3,000 UJ [3,000 UJ] | NA | 3,000 UJ | 1,500 J |
| Temperature | ARC-Temp | deg c | 16.99 | 15.04 | NA | NA | 16.74 | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 31,900 | 32,200 | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 5,950 | 0 | 1,390 | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 107 | 41.1 | 16.3 | NA | NA | NA |
| pH | ARC-pH | SU | 8.84 | 9.06 | 8.74 | NA | NA | NA |
| photoionization detector | PID | ug/L | 3,000 | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 16.99 | 17.67 | 21.13 | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | 28.7 | 40.5 | 92.3 | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-P2B4-MW101I-F-20151216 | 114-P2B4-MW101I-F-20160323 | 114-P2B4-MW101S-04032015 | 114-P2B4-MW101S-20150623 | 114-P2B4-MW101S-20150928 | 114-P2B4-MW101S-20151210 |
|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | |
| Date Collected: | | | 12/16/15 | 03/23/16 | 04/03/15 | 06/23/15 | 09/28/15 | 12/10/15 |
| Location ID: | CAS Number | Units | 114-P2B4-MW101I | 114-P2B4-MW101I | 114-P2B4-MW101S | 114-P2B4-MW101S | 114-P2B4-MW101S | 114-P2B4-MW101S |
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW101I-F-20151216<br><br>12/16/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-F-20160323<br><br>03/23/16<br>114-P2B4-MW101I | 114-P2B4-MW101S-04032015<br><br>04/03/15<br>114-P2B4-MW101S | 114-P2B4-MW101S-20150623<br><br>06/23/15<br>114-P2B4-MW101S | 114-P2B4-MW101S-20150928<br><br>09/28/15<br>114-P2B4-MW101S | 114-P2B4-MW101S-20151210<br><br>12/10/15<br>114-P2B4-MW101S |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW101I-F-20151216<br><br>12/16/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-F-20160323<br><br>03/23/16<br>114-P2B4-MW101I | 114-P2B4-MW101S-04032015<br><br>04/03/15<br>114-P2B4-MW101S | 114-P2B4-MW101S-20150623<br><br>06/23/15<br>114-P2B4-MW101S | 114-P2B4-MW101S-20150928<br><br>09/28/15<br>114-P2B4-MW101S | 114-P2B4-MW101S-20151210<br><br>12/10/15<br>114-P2B4-MW101S |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | 963 | 734 J | 684 J | 200 U |
| Antimony | 7440-36-0 | ug/L | NA | NA | 60 U | 30 UJ | 300 U | 30 U |
| Arsenic | 7440-38-2 | ug/L | NA | NA | 28.7 J | 60 U | 150 U | 75 U |
| Barium | 7440-39-3 | ug/L | NA | NA | 83.7 J | 77.0 J | 87.5 J | 67.9 J |
| Beryllium | 7440-41-7 | ug/L | NA | NA | 0.70 J | 2.0 J | 50 U | 1.0 UB |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | 30 U | 1.2 J | 3.0 U | 2.4 JB |
| Calcium | 7440-70-2 | ug/L | NA | NA | 1,080,000 | 1,020,000 | 1,090,000 | 951,000 |
| Chromium | 7440-47-3 | ug/L | NA | NA | 384 J | 959 | 76.0 | 17.2 J |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 39 RA | 10 UJ | 26 | 5.8 RA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | 500 U | 250 U | 250 U | 250 U |
| Copper | 7440-50-8 | ug/L | NA | NA | 30.1 J | 50 U | 500 U | 16.1 J |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 257,000 | 199,000 | 168,000 | 124,000 |
| Lead | 7439-92-1 | ug/L | NA | NA | 30 U | 13.6 J | 150 U | 75 U |
| Magnesium | 7439-95-4 | ug/L | NA | NA | 383,000 | 400,000 | 408,000 | 338,000 J |
| Manganese | 7439-96-5 | ug/L | NA | NA | 107,000 | 102,000 | 103,000 | 77,300 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW101I-F-20151216<br><br>12/16/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-F-20160323<br><br>03/23/16<br>114-P2B4-MW101I | 114-P2B4-MW101S-04032015<br><br>04/03/15<br>114-P2B4-MW101S | 114-P2B4-MW101S-20150623<br><br>06/23/15<br>114-P2B4-MW101S | 114-P2B4-MW101S-20150928<br><br>09/28/15<br>114-P2B4-MW101S | 114-P2B4-MW101S-20151210<br><br>12/10/15<br>114-P2B4-MW101S |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | 0.20 U | 0.20 U | 0.20 U | 0.20 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | 16.1 J | 12.7 J | 12.6 J | 50 U |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | 139,000 J | 131,000 | 143,000 | 112,000 |
| Selenium | 7782-49-2 | ug/L | NA | NA | 29.9 J | 200 U | 500 U | 17.1 J |
| Silver | 7440-22-4 | ug/L | NA | NA | 10.5 J | 16.0 J | 23.5 | 50 U |
| Sodium | 7440-23-5 | ug/L | NA | NA | 5,040,000 | 5,460,000 | 5,840,000 | 4,320,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | 975,000 | 948,000 | 956,000 | 930,000 |
| Thallium | 7440-28-0 | ug/L | NA | NA | 40 U | 40 U | 200 U | 50 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | 12.8 J | 250 U | 2,500 U | 3.8 J |
| Zinc | 7440-66-6 | ug/L | NA | NA | 200 U | 100 U | 1,000 U | 100 U |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 767,000 J | 702,000 J | 156 | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 1,640,000 J | 735,000 J | 7.3 RA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 393,000 | 394,000 | 922,000 | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW101I-F-20151216<br><br>12/16/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-F-20160323<br><br>03/23/16<br>114-P2B4-MW101I | 114-P2B4-MW101S-04032015<br><br>04/03/15<br>114-P2B4-MW101S | 114-P2B4-MW101S-20150623<br><br>06/23/15<br>114-P2B4-MW101S | 114-P2B4-MW101S-20150928<br><br>09/28/15<br>114-P2B4-MW101S | 114-P2B4-MW101S-20151210<br><br>12/10/15<br>114-P2B4-MW101S |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | 25,900 | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | 2,000 U | 2,000 U | 2,000 U | 2,000 U | 2,000 U |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 349 | 322 | 186 | 367 | 252 | 205 |
| pH | ARC-pH | SU | 8.54 | 8.62 | 6.29 | 6.38 | 6.29 | 6.33 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | 6.0 | 168 | 2,670 | 3,300 | 36,000 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW101I-F-20151216<br><br>12/16/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-F-20160323<br><br>03/23/16<br>114-P2B4-MW101I | 114-P2B4-MW101S-04032015<br><br>04/03/15<br>114-P2B4-MW101S | 114-P2B4-MW101S-20150623<br><br>06/23/15<br>114-P2B4-MW101S | 114-P2B4-MW101S-20150928<br><br>09/28/15<br>114-P2B4-MW101S | 114-P2B4-MW101S-20151210<br><br>12/10/15<br>114-P2B4-MW101S |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 1,010,000 | 1,100,000 J | 2,800,000 | 2,930,000 | 3,010,000 | 3,150,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 UJ | 2,000 UJ | 2,000 UJ | 2,000 U | 2,000 UJ | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | 1,500 J | 3,000 UJ | 3,000 UJ | R | 3,000 UB | 3,000 UJ |
| Temperature | ARC-Temp | deg c | NA | 15.04 | 11.99 | 18.44 | 22.04 | 21.69 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | 19,400 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | 1,020 | 290 | NA | 0 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 111 | 58 | NA | 68 |
| pH | ARC-pH | SU | NA | NA | 6.75 | 6.38 | NA | 6.45 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | 3,500 |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | 11.99 | 18.44 | NA | 21.69 |
| Turbidity | ARC-Turb | NTU | NA | NA | 25.2 | 38.7 | NA | 95.2 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-P2B4-MW101S-20160316 | 114-P2B4-MW101S-20160621 | 114-P2B4-MW101S-20160621-F | 114-P2B4-MW101S-F-20150623 | 114-P2B4-MW101S-F-20150928 | 114-P2B4-MW101S-F-20151210 |
|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | |
| Date Collected: | | | 03/16/16 | 06/21/16 | 06/21/16 | 06/23/15 | 09/28/15 | 12/10/15 |
| Location ID: | CAS Number | Units | 114-P2B4-MW101S | 114-P2B4-MW101S | 114-P2B4-MW101S | 114-P2B4-MW101S | 114-P2B4-MW101S | 114-P2B4-MW101S |
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW101S-20160316<br><br>03/16/16<br>114-P2B4-MW101S | 114-P2B4-MW101S-20160621<br><br>06/21/16<br>114-P2B4-MW101S | 114-P2B4-MW101S-20160621-F<br><br>06/21/16<br>114-P2B4-MW101S | 114-P2B4-MW101S-F-20150623<br><br>06/23/15<br>114-P2B4-MW101S | 114-P2B4-MW101S-F-20150928<br><br>09/28/15<br>114-P2B4-MW101S | 114-P2B4-MW101S-F-20151210<br><br>12/10/15<br>114-P2B4-MW101S |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW101S-20160316<br>03/16/16<br>114-P2B4-MW101S | 114-P2B4-MW101S-20160621<br>06/21/16<br>114-P2B4-MW101S | 114-P2B4-MW101S-20160621-F<br>06/21/16<br>114-P2B4-MW101S | 114-P2B4-MW101S-F-20150623<br>06/23/15<br>114-P2B4-MW101S | 114-P2B4-MW101S-F-20150928<br>09/28/15<br>114-P2B4-MW101S | 114-P2B4-MW101S-F-20151210<br>12/10/15<br>114-P2B4-MW101S |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 1,000 U | 422 J | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 30 U | 30 U | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | 60 U | 30 U | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | 47.6 J | 46.3 J | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | 2.8 J | 1.0 U | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 5.0 J | 3.0 U | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | 879,000 | 805,000 | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 16.4 J | 29.3 J | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 5.5 RA | 26 | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 250 U | 250 U | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | 50 U | 39.1 | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 123,000 | 87,700 | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | 60 U | 53.8 | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | 329,000 | 243,000 | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 62,600 | 51,100 | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW101S-20160316<br>03/16/16<br>114-P2B4-MW101S | 114-P2B4-MW101S-20160621<br>06/21/16<br>114-P2B4-MW101S | 114-P2B4-MW101S-20160621-F<br>06/21/16<br>114-P2B4-MW101S | 114-P2B4-MW101S-F-20150623<br>06/23/15<br>114-P2B4-MW101S | 114-P2B4-MW101S-F-20150928<br>09/28/15<br>114-P2B4-MW101S | 114-P2B4-MW101S-F-20151210<br>12/10/15<br>114-P2B4-MW101S |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | 0.20 U | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 4.3 J | 11.1 J | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 89,200 | 73,200 | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | 50 U | 50 U | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | 50 U | 50 U | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | 3,960,000 | 2,990,000 | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 888,000 | 892,000 | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 40 U | 20 U | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 250 U | 250 U | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | 100 U | 25.3 | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 12.0 J | 702 J | 50 U | 22.4 J |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 22 | 43 J | 12 | 5.8 RA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | 1,000,000 | 994,000 | 979,000 |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW101S-20160316<br>03/16/16<br>114-P2B4-MW101S | 114-P2B4-MW101S-20160621<br>06/21/16<br>114-P2B4-MW101S | 114-P2B4-MW101S-20160621-F<br>06/21/16<br>114-P2B4-MW101S | 114-P2B4-MW101S-F-20150623<br>06/23/15<br>114-P2B4-MW101S | 114-P2B4-MW101S-F-20150928<br>09/28/15<br>114-P2B4-MW101S | 114-P2B4-MW101S-F-20151210<br>12/10/15<br>114-P2B4-MW101S |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | NA | NA | 2,000 U | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 224 | 309 | 223 | 437 | 250 | 213 |
| pH | ARC-pH | SU | 7.34 | 6.39 | 6.45 | 6.38 | 6.31 | 6.38 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 23.9 | NA | NA | 2,670 | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW101S-20160316<br>03/16/16<br>114-P2B4-MW101S | 114-P2B4-MW101S-20160621<br>06/21/16<br>114-P2B4-MW101S | 114-P2B4-MW101S-20160621-F<br>06/21/16<br>114-P2B4-MW101S | 114-P2B4-MW101S-F-20150623<br>06/23/15<br>114-P2B4-MW101S | 114-P2B4-MW101S-F-20150928<br>09/28/15<br>114-P2B4-MW101S | 114-P2B4-MW101S-F-20151210<br>12/10/15<br>114-P2B4-MW101S |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 2,550,000 | 2,520,000 J | NA | 2,890,000 | 2,970,000 | 3,250,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 U | NA | 2,000 U | 2,000 UJ | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 3,000 UJ | NA | R | 3,000 UJ | 3,000 UJ |
| Temperature | ARC-Temp | deg c | 13.35 | NA | NA | 18.44 | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 16,600 | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 10 | 1,120 | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 83.8 | 55.6 | NA | NA | NA | NA |
| pH | ARC-pH | SU | 7.33 | 6.6 | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 13.34 | 15.42 | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | 64.1 | 109 | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW101S-F-20160316<br><br>03/16/16<br>114-P2B4-MW101S | 114-P2B4-MW102I-04022015<br><br>04/02/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-20150624<br><br>06/24/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-20150925<br><br>09/25/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-20151216<br><br>12/16/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-20160322<br><br>03/22/16<br>114-P2B4-MW102I | 114-P2B4-MW102I-20160621<br><br>06/21/16<br>114-P2B4-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW101S-F-20160316<br><br>03/16/16<br>114-P2B4-MW101S | 114-P2B4-MW102I-04022015<br><br>04/02/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-20150624<br><br>06/24/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-20150925<br><br>09/25/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-20151216<br><br>12/16/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-20160322<br><br>03/22/16<br>114-P2B4-MW102I | 114-P2B4-MW102I-20160621<br><br>06/21/16<br>114-P2B4-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW101S-F-20160316<br><br>03/16/16<br>114-P2B4-MW101S | 114-P2B4-MW102I-04022015<br><br>04/02/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-20150624<br><br>06/24/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-20150925<br><br>09/25/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-20151216<br><br>12/16/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-20160322<br><br>03/22/16<br>114-P2B4-MW102I | 114-P2B4-MW102I-20160621<br><br>06/21/16<br>114-P2B4-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 660 | 283 JB | 217 UB | 74.8 J | 98.4 J | 89.9 J |
| Antimony | 7440-36-0 | ug/L | NA | 120 U | 162 | 60 U | 120 U | 60 U | 12 U |
| Arsenic | 7440-38-2 | ug/L | NA | 15 U | 45.9 J | 30 U | 60 U | 30 U | 6.0 U |
| Barium | 7440-39-3 | ug/L | NA | 45.9 J | 33.1 J | 29.5 J | 26.7 J | 19.2 J | 13.6 J |
| Beryllium | 7440-41-7 | ug/L | NA | 1.0 U | 6.5 J | 10 U | 1.0 U | 2.3 | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 1.4 J | 5.7 J | 5.5 | 15 U | 1.8 J | 3.0 U |
| Calcium | 7440-70-2 | ug/L | NA | 24,000 | 18,700 | 24,400 | 20,800 | 22,400 | 25,400 |
| Chromium | 7440-47-3 | ug/L | NA | 206,000 J | 313,000 | 57,000 J | 171,000 J | 89,700 J | 16,200 J |
| Chromium VI | 18540-29-9 | ug/L | NA | 264,000 J | 346,000 J | 65,900 RA | 135,000 J | 71,500 J | 15,300 |
| Cobalt | 7440-48-4 | ug/L | NA | 50 U | 50 U | 6.8 J | 24.6 J | 21.0 J | 2.3 J |
| Copper | 7440-50-8 | ug/L | NA | 14.9 J | 167 J | 26.1 J | 50 U | 100 U | 21.2 J |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 660 | 124 J | 714 | 1,280 | 959 | 626 |
| Lead | 7439-92-1 | ug/L | NA | 30 U | 60 U | 30 U | 49.8 J | 30 U | 3.0 U |
| Magnesium | 7439-95-4 | ug/L | NA | 32,300 | 23,300 | 41,600 | 36,500 | 33,600 | 44,500 |
| Manganese | 7439-96-5 | ug/L | NA | 225 | 150 U | 94.5 | 114 | 88.4 | 89.5 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW101S-F-20160316<br><br>03/16/16<br>114-P2B4-MW101S | 114-P2B4-MW102I-04022015<br><br>04/02/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-20150624<br><br>06/24/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-20150925<br><br>09/25/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-20151216<br><br>12/16/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-20160322<br><br>03/22/16<br>114-P2B4-MW102I | 114-P2B4-MW102I-20160621<br><br>06/21/16<br>114-P2B4-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.20 U | 0.20 U | 1.2 U | 1.2 U | 1.2 U | 0.20 U |
| Nickel | 7440-02-0 | ug/L | NA | 10 U | 100 U | 9.5 J | 20.7 J | 11.6 | 17.2 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 39,600 J | 50,900 | 58,000 | 43,800 | 48,500 | 44,300 |
| Selenium | 7782-49-2 | ug/L | NA | 50 U | 200 U | 100 U | 50 U | 10 U | 5.4 J |
| Silver | 7440-22-4 | ug/L | NA | 10 U | 50 U | 2.7 J | 8.6 J | 2.7 J | 10 U |
| Sodium | 7440-23-5 | ug/L | NA | 848,000 | 1,410,000 | 916,000 | 923,000 | 735,000 | 639,000 |
| Sulfur | 7704-34-9 | ug/L | NA | 261,000 | 312,000 | 124,000 | 168,000 | 146,000 | 91,800 |
| Thallium | 7440-28-0 | ug/L | NA | 20 U | 40 U | 20 U | 40 U | 20 U | 4.0 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 68.7 J | 1,000 U | 45.8 J | 126 J | 500 U | 14.5 J |
| Zinc | 7440-66-6 | ug/L | NA | 200 U | 400 U | 200 U | 400 U | 200 U | 7.4 J |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 13.3 J | 235,000 J | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 5.5 RA | 247,000 J | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 919,000 | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW101S-F-20160316<br><br>03/16/16<br>114-P2B4-MW101S | 114-P2B4-MW102I-04022015<br><br>04/02/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-20150624<br><br>06/24/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-20150925<br><br>09/25/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-20151216<br><br>12/16/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-20160322<br><br>03/22/16<br>114-P2B4-MW102I | 114-P2B4-MW102I-20160621<br><br>06/21/16<br>114-P2B4-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | 14,200 | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | 2,000 U | 2,000 U | 2,000 U | 2,000 U | 2,000 U | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 202 | 309 | 446 | 329 | 331 | 269 | 264 |
| pH | ARC-pH | SU | 6.37 | 9.5 | 8.65 | 7.73 | 7.37 | 4.59 | 7.32 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 23.9 | 4,500 | 6,220 | 4,950 | 4,390 | 3.5 | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW101S-F-20160316<br><br>03/16/16<br>114-P2B4-MW101S | 114-P2B4-MW102I-04022015<br><br>04/02/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-20150624<br><br>06/24/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-20150925<br><br>09/25/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-20151216<br><br>12/16/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-20160322<br><br>03/22/16<br>114-P2B4-MW102I | 114-P2B4-MW102I-20160621<br><br>06/21/16<br>114-P2B4-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 2,640,000 | 751,000 | 826,000 | 350,000 J | 457,000 | 432,000 | 273,000 J |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 U | 2,000 U | 2,000 U | 2,000 U | 1,100 J | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 5,000 J | 3,000 UJ | 3,000 UJ | 1,000 J | 3,000 UJ | 3,000 UJ |
| Temperature | ARC-Temp | deg c | 13.35 | 12.39 | 15.25 | 21.2 | 15.89 | 12.34 | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | 15,400 | 12,700 | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 360 | 2,990 | NA | 2,240 | 0 | 850 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 126 | 141.5 | NA | 131 | 91.5 | 42.4 |
| pH | ARC-pH | SU | NA | 9.5 | 8.53 | NA | 7.38 | 7.79 | 7.01 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | 0 | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 12.39 | 15.2 | NA | 15.89 | 14.04 | 19.6 |
| Turbidity | ARC-Turb | NTU | NA | 14.75 | 5.75 | NA | 5.09 | 4.73 | 8.08 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW102I-20160621-F<br><br>06/21/16<br>114-P2B4-MW102I | 114-P2B4-MW102I-F-20150624<br><br>06/24/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-F-20150925<br><br>09/25/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-F-20151216<br><br>12/16/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-F-20160322<br><br>03/22/16<br>114-P2B4-MW102I | 114-P2B4-MW102S-04022015<br><br>04/02/15<br>114-P2B4-MW102S |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW102I-20160621-F<br><br>06/21/16<br>114-P2B4-MW102I | 114-P2B4-MW102I-F-20150624<br><br>06/24/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-F-20150925<br><br>09/25/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-F-20151216<br><br>12/16/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-F-20160322<br><br>03/22/16<br>114-P2B4-MW102I | 114-P2B4-MW102S-04022015<br><br>04/02/15<br>114-P2B4-MW102S |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW102I-20160621-F<br><br>06/21/16<br>114-P2B4-MW102I | 114-P2B4-MW102I-F-20150624<br><br>06/24/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-F-20150925<br><br>09/25/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-F-20151216<br><br>12/16/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-F-20160322<br><br>03/22/16<br>114-P2B4-MW102I | 114-P2B4-MW102S-04022015<br><br>04/02/15<br>114-P2B4-MW102S |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 411 |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 30 U |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 15 U |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 252 |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 15 U |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 573,000 |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | 50 UB |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 2.2 J |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 50 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | 15,300 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 15 U |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 39,200 |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | 6,990 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW102I-20160621-F<br><br>06/21/16<br>114-P2B4-MW102I | 114-P2B4-MW102I-F-20150624<br><br>06/24/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-F-20150925<br><br>09/25/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-F-20151216<br><br>12/16/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-F-20160322<br><br>03/22/16<br>114-P2B4-MW102I | 114-P2B4-MW102S-04022015<br><br>04/02/15<br>114-P2B4-MW102S |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.20 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | 3.1 J |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 197,000 J |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 50 U |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 50 U |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 8,320,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | 666,000 |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | 16.7 J |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | 3.8 J |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 100 U |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 20,600 J | 247,000 | 87,700 J | 192,000 J | 124,000 J | 15.7 JB |
| Chromium VI | 18540-29-9 | ug/L | 15,800 | 315,000 J | 83,500 RA | 157,000 J | 136,000 J | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | 288,000 | 141,000 | 192,000 | 173,000 | 751,000 |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW102I-20160621-F<br>06/21/16<br>114-P2B4-MW102I | 114-P2B4-MW102I-F-20150624<br>06/24/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-F-20150925<br>09/25/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-F-20151216<br>12/16/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-F-20160322<br>03/22/16<br>114-P2B4-MW102I | 114-P2B4-MW102S-04022015<br>04/02/15<br>114-P2B4-MW102S |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | 7,500 | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | 2,000 U | NA | NA | 2,000 U | 2,000 U |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 285 | 480 | 328 | 345 | 275 | 286 |
| pH | ARC-pH | SU | 7.30 | 8.53 | 7.41 | 7.60 | 7.77 | 7 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | 6,220 | NA | NA | 3.5 | 42,600 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW102I-20160621-F<br>06/21/16<br>114-P2B4-MW102I | 114-P2B4-MW102I-F-20150624<br>06/24/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-F-20150925<br>09/25/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-F-20151216<br>12/16/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-F-20160322<br>03/22/16<br>114-P2B4-MW102I | 114-P2B4-MW102S-04022015<br>04/02/15<br>114-P2B4-MW102S |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 765,000 | 433,000 J | 468,000 | 418,000 | 2,090,000 |
| Sulfide | 18496-25-8 | ug/L | NA | 2,000 U | 2,000 U | 2,000 UJ | 2,000 U | 1,700 J |
| Sulfite | ARC-SULFITE | ug/L | NA | 3,000 UJ | 3,000 UJ | 3,000 UJ | 3,000 UJ | 45,000 J |
| Temperature | ARC-Temp | deg c | NA | 15.25 | NA | NA | 12.34 | 8.43 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | 270 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | 173 |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | 7 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | 8.48 |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | 8.4 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW102S-20150623<br><br>06/23/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-20150925<br><br>09/25/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-20151211<br><br>12/11/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-20160322<br><br>03/22/16<br>114-P2B4-MW102S | 114-P2B4-MW102S-20160621<br><br>06/21/16<br>114-P2B4-MW102S | 114-P2B4-MW102S-20160621-F<br><br>06/21/16<br>114-P2B4-MW102S |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW102S-20150623<br>06/23/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-20150925<br>09/25/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-20151211<br>12/11/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-20160322<br>03/22/16<br>114-P2B4-MW102S | 114-P2B4-MW102S-20160621<br>06/21/16<br>114-P2B4-MW102S | 114-P2B4-MW102S-20160621-F<br>06/21/16<br>114-P2B4-MW102S |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW102S-20150623<br>06/23/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-20150925<br>09/25/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-20151211<br>12/11/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-20160322<br>03/22/16<br>114-P2B4-MW102S | 114-P2B4-MW102S-20160621<br>06/21/16<br>114-P2B4-MW102S | 114-P2B4-MW102S-20160621-F<br>06/21/16<br>114-P2B4-MW102S |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 810 J | 4,570 | 75.7 J | 136 J | 243 J | NA |
| Antimony | 7440-36-0 | ug/L | 30 UJ | 15.4 J | 30 U | 5.0 J | 30 U | NA |
| Arsenic | 7440-38-2 | ug/L | 60 U | 15 U | 75 U | 60 U | 75 U | NA |
| Barium | 7440-39-3 | ug/L | 153 J | 128 J | 96.9 J | 49.1 J | 73.4 J | NA |
| Beryllium | 7440-41-7 | ug/L | 2.2 J | 3.1 | 1.0 U | 2.0 | 1.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 0.70 J | 15 U | 15 U | 3.0 U | 3.0 U | NA |
| Calcium | 7440-70-2 | ug/L | 923,000 | 900,000 | 835,000 | 711,000 | 758,000 | NA |
| Chromium | 7440-47-3 | ug/L | 49.6 J | 20.7 | 11.1 J | 45.3 J | 18.1 J | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 U | 10 RA | 5.5 RA | 5.5 U | 24 J | NA |
| Cobalt | 7440-48-4 | ug/L | 250 U | 250 U | 1,300 U | 250 U | 3.6 J | NA |
| Copper | 7440-50-8 | ug/L | 50 U | 50 U | 15.5 JB | 10 U | 26.4 J | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 133,000 | 79,200 | 87,100 | 73,700 | 74,300 | NA |
| Lead | 7439-92-1 | ug/L | 13.5 J | 15 U | 75 U | 60 U | 63.6 J | NA |
| Magnesium | 7439-95-4 | ug/L | 77,900 | 85,300 | 81,800 | 77,000 | 91,600 | NA |
| Manganese | 7439-96-5 | ug/L | 28,700 | 30,300 | 34,600 | 31,900 | 30,700 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW102S-20150623<br>06/23/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-20150925<br>09/25/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-20151211<br>12/11/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-20160322<br>03/22/16<br>114-P2B4-MW102S | 114-P2B4-MW102S-20160621<br>06/21/16<br>114-P2B4-MW102S | 114-P2B4-MW102S-20160621-F<br>06/21/16<br>114-P2B4-MW102S |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | 0.20 U | 0.20 U | 0.20 U | 0.20 U | NA |
| Nickel | 7440-02-0 | ug/L | 50 U | 6.5 J | 250 U | 2.2 J | 5.0 J | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 180,000 | 245,000 | 146,000 | 95,700 | 112,000 | NA |
| Selenium | 7782-49-2 | ug/L | 200 U | 38.1 J | 26.5 J | 50 U | 50 U | NA |
| Silver | 7440-22-4 | ug/L | 50 U | 13.2 J | 50 U | 50 U | 50 U | NA |
| Sodium | 7440-23-5 | ug/L | 10,400,000 | 11,200,000 | 9,060,000 | 6,130,000 | 7,600,000 | NA |
| Sulfur | 7704-34-9 | ug/L | 1,280,000 | 1,340,000 | 1,270,000 | 1,060,000 | 1,200,000 | NA |
| Thallium | 7440-28-0 | ug/L | 40 U | 50 U | 50 U | 10 U | 50 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 250 U | 250 U | 5.3 J | 5.3 J | 250 U | NA |
| Zinc | 7440-66-6 | ug/L | 100 U | 100 U | 100 U | 20 U | 100 U | NA |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | 6.1 J |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | 58 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW102S-20150623<br>06/23/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-20150925<br>09/25/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-20151211<br>12/11/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-20160322<br>03/22/16<br>114-P2B4-MW102S | 114-P2B4-MW102S-20160621<br>06/21/16<br>114-P2B4-MW102S | 114-P2B4-MW102S-20160621-F<br>06/21/16<br>114-P2B4-MW102S |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 1,400 J | 2,000 U | 2,000 U | 2,000 U | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 462 | 251 | 175 | 231 | 230 | 228 |
| pH | ARC-pH | SU | 6.19 | 6.24 | 6.51 | 6.39 | 6.41 | 6.46 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 4,740 | 5,020 | 41,800 | 23.2 | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW102S-20150623<br>06/23/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-20150925<br>09/25/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-20151211<br>12/11/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-20160322<br>03/22/16<br>114-P2B4-MW102S | 114-P2B4-MW102S-20160621<br>06/21/16<br>114-P2B4-MW102S | 114-P2B4-MW102S-20160621-F<br>06/21/16<br>114-P2B4-MW102S |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 3,920,000 | 4,110,000 | 3,960,000 | 2,790,000 | 3,800,000 J | NA |
| Sulfide | 18496-25-8 | ug/L | 1,600 J | 2,000 U | 2,000 U | 2,000 U | 2,000 U | NA |
| Sulfite | ARC-SULFITE | ug/L | R | 3,000 UJ | 3,000 UJ | 3,000 UJ | 3,000 UJ | NA |
| Temperature | ARC-Temp | deg c | 16.44 | 21.77 | 19.08 | 9.63 | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | 20,300 | 10,400 | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 120 | NA | 2,180 | 0 | 300 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 61.2 | NA | 66 | 44.7 | 83.6 | NA |
| pH | ARC-pH | SU | 6.33 | NA | 6.51 | 6.44 | 6.64 | NA |
| photoionization detector | PID | ug/L | NA | NA | 0 | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 16.46 | NA | 19.08 | 9.7 | 16.73 | NA |
| Turbidity | ARC-Turb | NTU | 20.6 | NA | 42.8 | 29.5 | 14.8 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW102S-F-20150623<br><br>06/23/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-F-20150925<br><br>09/25/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-F-20151211<br><br>12/11/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-F-20160322<br><br>03/22/16<br>114-P2B4-MW102S | 114-P2B4-MW103I-04022015<br><br>04/02/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-20150623<br><br>06/23/15<br>114-P2B4-MW103I |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW102S-F-20150623<br><br>06/23/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-F-20150925<br><br>09/25/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-F-20151211<br><br>12/11/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-F-20160322<br><br>03/22/16<br>114-P2B4-MW102S | 114-P2B4-MW103I-04022015<br><br>04/02/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-20150623<br><br>06/23/15<br>114-P2B4-MW103I |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW102S-F-20150623<br>06/23/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-F-20150925<br>09/25/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-F-20151211<br>12/11/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-F-20160322<br>03/22/16<br>114-P2B4-MW102S | 114-P2B4-MW103I-04022015<br>04/02/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-20150623<br>06/23/15<br>114-P2B4-MW103I |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | 280 | 278 |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | 6.0 U | 30 UJ |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | 35.4 | 84.7 |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | 179 J | 157 J |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | 3.0 U | 1.1 J |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | 436,000 | 241,000 |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | 43.0 JB | 103 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | 10 U | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | 1.5 J | 1.2 J |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | 7.0 J | 3.7 J |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | 804 | 3,360 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | 15 U | 15 U |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | 105,000 | 61,500 |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | 14,300 | 8,990 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW102S-F-20150623<br><br>06/23/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-F-20150925<br><br>09/25/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-F-20151211<br><br>12/11/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-F-20160322<br><br>03/22/16<br>114-P2B4-MW102S | 114-P2B4-MW103I-04022015<br><br>04/02/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-20150623<br><br>06/23/15<br>114-P2B4-MW103I |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | 0.20 U | 0.20 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | 10.4 J | 11.8 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | 36,000 J | 25,300 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | 13.3 J | 10 U |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | 1.3 J | 10 U |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | 1,700,000 | 1,630,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | 409,000 | 335,000 |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | 10 U | 10 UJ |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | 2.6 J | 35.3 J |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | 20 UB | 15.2 J |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 53.9 J | 14.4 | 11.8 J | 49.1 J | 50.0 | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 UJ | 10 RA | 5.5 RA | 5.5 U | 10 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 1,340,000 | 1,300,000 | 1,260,000 | 1,020,000 | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW102S-F-20150623<br><br>06/23/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-F-20150925<br><br>09/25/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-F-20151211<br><br>12/11/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-F-20160322<br><br>03/22/16<br>114-P2B4-MW102S | 114-P2B4-MW103I-04022015<br><br>04/02/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-20150623<br><br>06/23/15<br>114-P2B4-MW103I |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | 11,100 | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | NA | NA | 2,000 U | 2,000 U | 2,000 U |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 442 | 244 | 171 | 225 | 293 | 517 |
| pH | ARC-pH | SU | 6.33 | 6.30 | 6.35 | 6.44 | 7.06 | 7.08 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 4,740 | NA | NA | 23.2 | 9,800 | 9,510 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW102S-F-20150623<br><br>06/23/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-F-20150925<br><br>09/25/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-F-20151211<br><br>12/11/15<br>114-P2B4-MW102S | 114-P2B4-MW102S-F-20160322<br><br>03/22/16<br>114-P2B4-MW102S | 114-P2B4-MW103I-04022015<br><br>04/02/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-20150623<br><br>06/23/15<br>114-P2B4-MW103I |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 3,750,000 | 4,010,000 | 3,720,000 | 2,760,000 | 1,410,000 | 947,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 U | 2,000 U | 2,000 U | 2,000 U | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | R | 3,000 UJ | 3,000 UJ | 3,000 UJ | 3,000 UJ | R |
| Temperature | ARC-Temp | deg c | 16.44 | NA | NA | 9.63 | 14.94 | 17.43 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | 1,030 | 1,680 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | 57 | 30 |
| pH | ARC-pH | SU | NA | NA | NA | NA | 7.29 | 7.11 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | 14.94 | 18.4 |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | 2.96 | 7.63 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW103I-20150928<br><br>09/28/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-20151210<br><br>12/10/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-20160316<br><br>03/16/16<br>114-P2B4-MW103I | 114-P2B4-MW103I-20160622<br><br>06/22/16<br>114-P2B4-MW103I | 114-P2B4-MW103I-20160622-F<br><br>06/22/16<br>114-P2B4-MW103I | 114-P2B4-MW103I-F-20150623<br><br>06/23/15<br>114-P2B4-MW103I |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW103I-20150928<br><br>09/28/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-20151210<br><br>12/10/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-20160316<br><br>03/16/16<br>114-P2B4-MW103I | 114-P2B4-MW103I-20160622<br><br>06/22/16<br>114-P2B4-MW103I | 114-P2B4-MW103I-20160622-F<br><br>06/22/16<br>114-P2B4-MW103I | 114-P2B4-MW103I-F-20150623<br><br>06/23/15<br>114-P2B4-MW103I |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW103I-20150928<br><br>09/28/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-20151210<br><br>12/10/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-20160316<br><br>03/16/16<br>114-P2B4-MW103I | 114-P2B4-MW103I-20160622<br><br>06/22/16<br>114-P2B4-MW103I | 114-P2B4-MW103I-20160622-F<br><br>06/22/16<br>114-P2B4-MW103I | 114-P2B4-MW103I-F-20150623<br><br>06/23/15<br>114-P2B4-MW103I |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 182 J | 277 J | 1,000 U | 36.3 J [29.6 J] | NA | NA |
| Antimony | 7440-36-0 | ug/L | 5.1 J | 6.0 U | 30 U | 6.0 U [6 U] | NA | NA |
| Arsenic | 7440-38-2 | ug/L | 102 | 105 | 117 | 157 [155] | NA | NA |
| Barium | 7440-39-3 | ug/L | 131 J | 161 J | 240 J | 97.3 J [128 J] | NA | NA |
| Beryllium | 7440-41-7 | ug/L | 1.2 | 1.0 U | 5.0 U | 1.0 U [1 U] | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 3.0 U | 3.0 U | 15 U | 3.0 U [3 U] | NA | NA |
| Calcium | 7440-70-2 | ug/L | 235,000 | 240,000 | 224,000 | 84,400 [100,000] | NA | NA |
| Chromium | 7440-47-3 | ug/L | 13.5 | 13.6 | 19.5 J | 9.2 JB [6.3 JB] | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 U | 5.5 RA | 5.5 RA | 9.3 RA [8.2 RA] | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 1.4 J | 0.80 J | 250 U | 0.70 J [50 U] | NA | NA |
| Copper | 7440-50-8 | ug/L | 2.8 J | 3.4 J | 50 U | 10 U [10 U] | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 5,430 | 5,660 | 5,000 | 6,340 [5,920] | NA | NA |
| Lead | 7439-92-1 | ug/L | 15 U | 30 U | 15 U | 3.0 U [3 U] | NA | NA |
| Magnesium | 7439-95-4 | ug/L | 57,200 | 66,000 J | 61,600 | 35,200 [35,500] | NA | NA |
| Manganese | 7439-96-5 | ug/L | 9,350 | 7,360 | 5,850 | 4,410 [4,800] | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW103I-20150928<br><br>09/28/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-20151210<br><br>12/10/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-20160316<br><br>03/16/16<br>114-P2B4-MW103I | 114-P2B4-MW103I-20160622<br><br>06/22/16<br>114-P2B4-MW103I | 114-P2B4-MW103I-20160622-F<br><br>06/22/16<br>114-P2B4-MW103I | 114-P2B4-MW103I-F-20150623<br><br>06/23/15<br>114-P2B4-MW103I |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | 0.26 | 0.20 U | 0.20 U [0.2 U] | NA | NA |
| Nickel | 7440-02-0 | ug/L | 9.2 J | 7.8 J | 18.6 J | 10 U [10 U] | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 25,600 | 22,800 | 19,700 J | 14,600 [15,400] | NA | NA |
| Selenium | 7782-49-2 | ug/L | 8.6 J | 10 U | 50 U | 10 U [5 J] | NA | NA |
| Silver | 7440-22-4 | ug/L | 5.0 J | 10 U | 50 U | 1.5 J [1.7 J] | NA | NA |
| Sodium | 7440-23-5 | ug/L | 1,610,000 | 1,210,000 | 1,010,000 | 753,000 [818,000] | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 298,000 | 246,000 | 174,000 | 29,600 J [37,600 J] | NA | NA |
| Thallium | 7440-28-0 | ug/L | 9.2 J | 20 U | 10 U | 2.0 U [2 U] | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 2.5 J | 2.8 J | 250 U | 4.0 J [3.9 J] | NA | NA |
| Zinc | 7440-66-6 | ug/L | 20 U | 20 UB | 100 U | 20 U [20 U] | NA | NA |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | 10 UB [10 UB] | 56.9 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | 6.1 RA [6.1 RA] | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | 366,000 |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW103I-20150928<br><br>09/28/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-20151210<br><br>12/10/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-20160316<br><br>03/16/16<br>114-P2B4-MW103I | 114-P2B4-MW103I-20160622<br><br>06/22/16<br>114-P2B4-MW103I | 114-P2B4-MW103I-20160622-F<br><br>06/22/16<br>114-P2B4-MW103I | 114-P2B4-MW103I-F-20150623<br><br>06/23/15<br>114-P2B4-MW103I |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | 2,000 U | 2,000 U | NA | NA | 2,000 U |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 332 | 303 | 287 | 294 [308] | 303 [340] | 531 |
| pH | ARC-pH | SU | 7.14 | 7.22 | 7.43 | 7.33 [7.29] | 7.26 [7.29] | 7.03 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 7,820 | 7,720 | 7.4 | NA | NA | 9,500 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW103I-20150928<br><br>09/28/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-20151210<br><br>12/10/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-20160316<br><br>03/16/16<br>114-P2B4-MW103I | 114-P2B4-MW103I-20160622<br><br>06/22/16<br>114-P2B4-MW103I | 114-P2B4-MW103I-20160622-F<br><br>06/22/16<br>114-P2B4-MW103I | 114-P2B4-MW103I-F-20150623<br><br>06/23/15<br>114-P2B4-MW103I |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 860,000 | 770,000 | 464,000 J | 66,200 J [136,000 J] | NA | 1,010,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 UJ | 2,000 U | 2,000 U | 2,000 U [2,000 U] | NA | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 3,000 UJ | 3,000 UJ | 3,000 UJ [3,000 UJ] | NA | R |
| Temperature | ARC-Temp | deg c | 18.86 | 19.02 | 15.08 | NA | NA | 17.43 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | 15,900 | 16,100 | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 0 | 280 | 150 | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 215 | 329.7 | 189 | NA | NA |
| pH | ARC-pH | SU | NA | 7.34 | 7.43 | 7.52 | NA | NA |
| photoionization detector | PID | ug/L | NA | 0 | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 19.02 | 15.08 | 18.7 | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | 4.35 | 10.8 | 2.2 | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW103I-F-20150928<br><br>09/28/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-F-20151210<br><br>12/10/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-F-20160316<br><br>03/16/16<br>114-P2B4-MW103I | 114-P2B4-MW103S-04022015<br><br>04/02/15<br>114-P2B4-MW103S | 114-P2B4-MW103S-20150623<br><br>06/23/15<br>114-P2B4-MW103S | 114-P2B4-MW103S-20150928<br><br>09/28/15<br>114-P2B4-MW103S |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW103I-F-20150928<br><br>09/28/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-F-20151210<br><br>12/10/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-F-20160316<br><br>03/16/16<br>114-P2B4-MW103I | 114-P2B4-MW103S-04022015<br><br>04/02/15<br>114-P2B4-MW103S | 114-P2B4-MW103S-20150623<br><br>06/23/15<br>114-P2B4-MW103S | 114-P2B4-MW103S-20150928<br><br>09/28/15<br>114-P2B4-MW103S |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW103I-F-20150928<br>09/28/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-F-20151210<br>12/10/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-F-20160316<br>03/16/16<br>114-P2B4-MW103I | 114-P2B4-MW103S-04022015<br>04/02/15<br>114-P2B4-MW103S | 114-P2B4-MW103S-20150623<br>06/23/15<br>114-P2B4-MW103S | 114-P2B4-MW103S-20150928<br>09/28/15<br>114-P2B4-MW103S |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | 1,160 | 633 J | 521 J |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | 30 U | 30 UJ | 30 U |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | 15 U | 60 U | 15 U |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | 54.1 J | 60.3 J | 53.0 J |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | 0.60 J | 2.7 J | 4.2 J |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | 15 U | 1.9 J | 15 U |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | 863,000 | 928,000 | 814,000 |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 58.7 J | 313 J | 7.9 J |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | 10 U | 10 U | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | 102 J | 94.9 J | 45.7 J |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | 11.7 J | 10 U | 50 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | 39,800 | 102,000 | 51,400 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | 15 U | 15 U | 15 U |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | 163,000 | 201,000 | 145,000 |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | 47,900 | 64,900 | 52,200 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW103I-F-20150928<br>09/28/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-F-20151210<br>12/10/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-F-20160316<br>03/16/16<br>114-P2B4-MW103I | 114-P2B4-MW103S-04022015<br>04/02/15<br>114-P2B4-MW103S | 114-P2B4-MW103S-20150623<br>06/23/15<br>114-P2B4-MW103S | 114-P2B4-MW103S-20150928<br>09/28/15<br>114-P2B4-MW103S |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | 0.20 U | 0.20 U | 0.20 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | 207 | 176 | 91.4 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | 110,000 J | 129,000 | 108,000 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | 27.9 J | 200 U | 30.2 J |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | 50 U | 17.1 J | 15.9 |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | 3,760,000 | 5,670,000 | 4,450,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | 907,000 | 1,160,000 | 1,060,000 |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | 20 U | 40 U | 50 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | 11.1 J | 250 U | 8.3 J |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | 52.8 JB | 53.4 J | 100 U |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 8.2 J | 3.8 J | 50 U | 45.4 JB | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 U | 5.5 RA | 5.5 RA | 10 U | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 354,000 | 248,000 | 195,000 | 904,000 | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW103I-F-20150928<br>09/28/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-F-20151210<br>12/10/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-F-20160316<br>03/16/16<br>114-P2B4-MW103I | 114-P2B4-MW103S-04022015<br>04/02/15<br>114-P2B4-MW103S | 114-P2B4-MW103S-20150623<br>06/23/15<br>114-P2B4-MW103S | 114-P2B4-MW103S-20150928<br>09/28/15<br>114-P2B4-MW103S |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | 14,600 | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | 2,000 U | 2,000 U | 2,000 U | 2,000 U |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 328 | 293 | 274 | 246 | 314 | 278 |
| pH | ARC-pH | SU | 7.30 | 7.21 | 7.43 | 6.57 | 6.15 | 6.58 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | 7.4 | 19,100 | 2,620 | 2,510 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW103I-F-20150928<br>09/28/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-F-20151210<br>12/10/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-F-20160316<br>03/16/16<br>114-P2B4-MW103I | 114-P2B4-MW103S-04022015<br>04/02/15<br>114-P2B4-MW103S | 114-P2B4-MW103S-20150623<br>06/23/15<br>114-P2B4-MW103S | 114-P2B4-MW103S-20150928<br>09/28/15<br>114-P2B4-MW103S |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 1,020,000 | 792,000 | 661,000 J | 2,910,000 | 3,500,000 | 3,390,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 UJ | 2,000 U | 2,000 U | 2,000 U | 2,000 U | 2,000 UJ |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 3,000 UJ | 3,000 UJ | 3,000 UJ | R | 4,500 JB |
| Temperature | ARC-Temp | deg c | NA | NA | 15.08 | 10.32 | 18.34 | 22.78 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | 1,210 | 290 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | 13 | 2 | NA |
| pH | ARC-pH | SU | NA | NA | NA | 6.57 | 6.15 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | 10.32 | 18.34 | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | 15 | 12.7 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW103S-20151210<br>12/10/15<br>114-P2B4-MW103S | 114-P2B4-MW103S-20160316<br>03/16/16<br>114-P2B4-MW103S | 114-P2B4-MW103S-20160622<br>06/22/16<br>114-P2B4-MW103S | 114-P2B4-MW103S-20160622-F<br>06/22/16<br>114-P2B4-MW103S | 114-P2B4-MW103S-F-20150623<br>06/23/15<br>114-P2B4-MW103S | 114-P2B4-MW103S-F-20150928<br>09/28/15<br>114-P2B4-MW103S |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW103S-20151210<br><br>12/10/15<br>114-P2B4-MW103S | 114-P2B4-MW103S-20160316<br><br>03/16/16<br>114-P2B4-MW103S | 114-P2B4-MW103S-20160622<br><br>06/22/16<br>114-P2B4-MW103S | 114-P2B4-MW103S-20160622-F<br><br>06/22/16<br>114-P2B4-MW103S | 114-P2B4-MW103S-F-20150623<br><br>06/23/15<br>114-P2B4-MW103S | 114-P2B4-MW103S-F-20150928<br><br>09/28/15<br>114-P2B4-MW103S |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW103S-20151210<br>12/10/15<br>114-P2B4-MW103S | 114-P2B4-MW103S-20160316<br>03/16/16<br>114-P2B4-MW103S | 114-P2B4-MW103S-20160622<br>06/22/16<br>114-P2B4-MW103S | 114-P2B4-MW103S-20160622-F<br>06/22/16<br>114-P2B4-MW103S | 114-P2B4-MW103S-F-20150623<br>06/23/15<br>114-P2B4-MW103S | 114-P2B4-MW103S-F-20150928<br>09/28/15<br>114-P2B4-MW103S |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 601 | 363 J | 578 | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 30 U | 30 U | 30 U | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | 75 U | 60 U | 31.0 | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | 57.3 J | 33.8 J | 40.4 J | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | 1.0 UB | 3.0 J | 1.0 U | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 15 U | 3.6 J | 1.4 J | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | 809,000 | 717,000 | 757,000 | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 17.9 J | 20.0 J | 16.1 JB | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 5.8 RA | 5.5 RA | 70 RA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 61.9 J | 37.0 J | 32.7 J | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | 20.3 J | 50 U | 51.8 | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 93,800 | 52,700 | 99,000 | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | 75 U | 60 U | 30 U | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | 203,000 J | 136,000 | 122,000 | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 80,700 | 50,400 | 56,400 | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW103S-20151210<br><br>12/10/15<br>114-P2B4-MW103S | 114-P2B4-MW103S-20160316<br><br>03/16/16<br>114-P2B4-MW103S | 114-P2B4-MW103S-20160622<br><br>06/22/16<br>114-P2B4-MW103S | 114-P2B4-MW103S-20160622-F<br><br>06/22/16<br>114-P2B4-MW103S | 114-P2B4-MW103S-F-20150623<br><br>06/23/15<br>114-P2B4-MW103S | 114-P2B4-MW103S-F-20150928<br><br>09/28/15<br>114-P2B4-MW103S |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | 0.20 U | 0.20 U | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 105 | 64.7 | 57.1 | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 112,000 | 70,900 | 76,900 | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | 20.7 J | 50 U | 50 U | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | 50 U | 50 U | 6.1 J | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | 4,680,000 | 3,470,000 | 3,610,000 | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 1,120,000 | 1,010,000 | 1,090,000 J | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 50 U | 40 U | 50 U | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 7.2 J | 250 U | 19.5 J | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | 36.0 JB | 100 UB | 16.9 JB | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 100 U | 153 J | 35.0 J |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | 8.2 RA | 10 UJ | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | 1,030,000 | 1,120,000 |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW103S-20151210<br>12/10/15<br>114-P2B4-MW103S | 114-P2B4-MW103S-20160316<br>03/16/16<br>114-P2B4-MW103S | 114-P2B4-MW103S-20160622<br>06/22/16<br>114-P2B4-MW103S | 114-P2B4-MW103S-20160622-F<br>06/22/16<br>114-P2B4-MW103S | 114-P2B4-MW103S-F-20150623<br>06/23/15<br>114-P2B4-MW103S | 114-P2B4-MW103S-F-20150928<br>09/28/15<br>114-P2B4-MW103S |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | 2,000 U | NA | NA | 2,000 U | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 191 | 231 | 242 | 252 | 459 | 275 |
| pH | ARC-pH | SU | 6.08 | 6.39 | 6.29 | 6.37 | 6.21 | 6.30 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 27,700 | 16.4 | NA | NA | 2,620 | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW103S-20151210<br>12/10/15<br>114-P2B4-MW103S | 114-P2B4-MW103S-20160316<br>03/16/16<br>114-P2B4-MW103S | 114-P2B4-MW103S-20160622<br>06/22/16<br>114-P2B4-MW103S | 114-P2B4-MW103S-20160622-F<br>06/22/16<br>114-P2B4-MW103S | 114-P2B4-MW103S-F-20150623<br>06/23/15<br>114-P2B4-MW103S | 114-P2B4-MW103S-F-20150928<br>09/28/15<br>114-P2B4-MW103S |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 4,810,000 | 3,090,000 | 3,510,000 J | NA | 3,420,000 | 3,450,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 U | 2,000 U | NA | 2,000 U | 2,000 UJ |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 3,000 UJ | 3,000 UJ | NA | R | 3,000 UJ |
| Temperature | ARC-Temp | deg c | 19.15 | 14.54 | NA | NA | 18.34 | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 11,100 | 8,200 | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 0 | 2,790 | 450 | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 38 | 115.7 | 46.6 | NA | NA | NA |
| pH | ARC-pH | SU | 6.08 | 6.37 | 6.22 | NA | NA | NA |
| photoionization detector | PID | ug/L | 0 | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 19.15 | 14.54 | 23.79 | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | 17.9 | 40.1 | 13 | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW103S-F-20151210<br>12/10/15<br>114-P2B4-MW103S | 114-P2B4-MW103S-F-20160316<br>03/16/16<br>114-P2B4-MW103S | 114-PLT1-1-20160624<br>06/24/16<br>PZ1-1 | 114-PLT1-1-20160916<br>09/16/16<br>PZ1-1 | 114-PLT1-1-20170403<br>04/03/17<br>PZ1-1 | 114-PLT1-1-20170403-F<br>04/03/17<br>PZ1-1 | 114-PLT-1-20160329<br>03/29/16<br>PZ1-1 | 114-PLT2-1-20160624<br>06/24/16<br>PZ2-1 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW103S-F-20151210<br><br>12/10/15<br>114-P2B4-MW103S | 114-P2B4-MW103S-F-20160316<br><br>03/16/16<br>114-P2B4-MW103S | 114-PLT1-1-20160624<br><br>06/24/16<br>PZ1-1 | 114-PLT1-1-20160916<br><br>09/16/16<br>PZ1-1 | 114-PLT1-1-20170403<br><br>04/03/17<br>PZ1-1 | 114-PLT1-1-20170403-F<br><br>04/03/17<br>PZ1-1 | 114-PLT-1-20160329<br><br>03/29/16<br>PZ1-1 | 114-PLT2-1-20160624<br><br>06/24/16<br>PZ2-1 |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW103S-F-20151210<br><br>12/10/15<br>114-P2B4-MW103S | 114-P2B4-MW103S-F-20160316<br><br>03/16/16<br>114-P2B4-MW103S | 114-PLT1-1-20160624<br><br>06/24/16<br>PZ1-1 | 114-PLT1-1-20160916<br><br>09/16/16<br>PZ1-1 | 114-PLT1-1-20170403<br><br>04/03/17<br>PZ1-1 | 114-PLT1-1-20170403-F<br><br>04/03/17<br>PZ1-1 | 114-PLT-1-20160329<br><br>03/29/16<br>PZ1-1 | 114-PLT2-1-20160624<br><br>06/24/16<br>PZ2-1 |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 1.6 J | 2,770 | 2.2 J | NA | 27.3 | 10 U [10 U] |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 7.8 J | 49 J | NA | NA | 10 U | 10 UJ [10 UJ] |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW103S-F-20151210<br>12/10/15<br>114-P2B4-MW103S | 114-P2B4-MW103S-F-20160316<br>03/16/16<br>114-P2B4-MW103S | 114-PLT1-1-20160624<br>06/24/16<br>PZ1-1 | 114-PLT1-1-20160916<br>09/16/16<br>PZ1-1 | 114-PLT1-1-20170403<br>04/03/17<br>PZ1-1 | 114-PLT1-1-20170403-F<br>04/03/17<br>PZ1-1 | 114-PLT-1-20160329<br>03/29/16<br>PZ1-1 | 114-PLT2-1-20160624<br>06/24/16<br>PZ2-1 |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 200 UJ | 13.8 J | NA | NA | NA | 0.90 J | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 5.8 RA | 5.5 RA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 1,150,000 | 1,080,000 | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW103S-F-20151210<br>12/10/15<br>114-P2B4-MW103S | 114-P2B4-MW103S-F-20160316<br>03/16/16<br>114-P2B4-MW103S | 114-PLT1-1-20160624<br>06/24/16<br>PZ1-1 | 114-PLT1-1-20160916<br>09/16/16<br>PZ1-1 | 114-PLT1-1-20170403<br>04/03/17<br>PZ1-1 | 114-PLT1-1-20170403-F<br>04/03/17<br>PZ1-1 | 114-PLT-1-20160329<br>03/29/16<br>PZ1-1 | 114-PLT2-1-20160624<br>06/24/16<br>PZ2-1 |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | 7,600 | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | 2,000 U | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 204 | 189 | 311 | 355 | NA | NA | 301 | 307 [310] |
| pH | ARC-pH | SU | 6.21 | 6.37 | 7.32 | 7.27 | NA | NA | 6.80 | 7.14 [7.09] |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | 16.4 | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW103S-F-20151210<br><br>12/10/15<br>114-P2B4-MW103S | 114-P2B4-MW103S-F-20160316<br><br>03/16/16<br>114-P2B4-MW103S | 114-PLT1-1-20160624<br><br>06/24/16<br>PZ1-1 | 114-PLT1-1-20160916<br><br>09/16/16<br>PZ1-1 | 114-PLT1-1-20170403<br><br>04/03/17<br>PZ1-1 | 114-PLT1-1-20170403-F<br><br>04/03/17<br>PZ1-1 | 114-PLT-1-20160329<br><br>03/29/16<br>PZ1-1 | 114-PLT2-1-20160624<br><br>06/24/16<br>PZ2-1 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 4,710,000 | 3,160,000 | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 U | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 3,000 UJ | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 14.54 | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-PLT2-1-20160916 | 114-PLT-2-20160329 | 114-PLT3-1-20160624 | 114-PLT3-1-20160916 | 114-PLT-3-20160329 | 114-PLT4-1-20160624 | 114-PLT4-1-20160916 | 114-PLT-4-20160329 | 114-PLT5-1-20160624 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | | |
| Date Collected: | | | 09/16/16 | 03/29/16 | 06/24/16 | 09/16/16 | 03/29/16 | 06/24/16 | 09/16/16 | 03/29/16 | 06/24/16 |
| Location ID: | CAS Number | Units | PZ2-1 | PZ2-1 | PZ3-1 | PZ3-1 | PZ3-1 | PZ4-1 | PZ4-1 | PZ4-1 | PZ5-1 |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-PLT2-1-20160916 09/16/16 PZ2-1 | 114-PLT-2-20160329 03/29/16 PZ2-1 | 114-PLT3-1-20160624 06/24/16 PZ3-1 | 114-PLT3-1-20160916 09/16/16 PZ3-1 | 114-PLT-3-20160329 03/29/16 PZ3-1 | 114-PLT4-1-20160624 06/24/16 PZ4-1 | 114-PLT4-1-20160916 09/16/16 PZ4-1 | 114-PLT-4-20160329 03/29/16 PZ4-1 | 114-PLT5-1-20160624 06/24/16 PZ5-1 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-PLT2-1-20160916<br>09/16/16<br>PZ2-1 | 114-PLT-2-20160329<br>03/29/16<br>PZ2-1 | 114-PLT3-1-20160624<br>06/24/16<br>PZ3-1 | 114-PLT3-1-20160916<br>09/16/16<br>PZ3-1 | 114-PLT-3-20160329<br>03/29/16<br>PZ3-1 | 114-PLT4-1-20160624<br>06/24/16<br>PZ4-1 | 114-PLT4-1-20160916<br>09/16/16<br>PZ4-1 | 114-PLT-4-20160329<br>03/29/16<br>PZ4-1 | 114-PLT5-1-20160624<br>06/24/16<br>PZ5-1 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 5.1 J [5.2 J] | 22.0 | 1.6 J | 10 U | 3.8 J [2.5 J] | 3.6 J | 1.4 J | 35.5 | 10 U |
| Chromium VI | 18540-29-9 | ug/L | 57 J [49 J] | 11 | 14 J | 28 J | 9.3 J [13 J] | 10 UJ | 7.7 J | 10 U | 10 UJ |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-PLT2-1-20160916 09/16/16 PZ2-1 | 114-PLT-2-20160329 03/29/16 PZ2-1 | 114-PLT3-1-20160624 06/24/16 PZ3-1 | 114-PLT3-1-20160916 09/16/16 PZ3-1 | 114-PLT-3-20160329 03/29/16 PZ3-1 | 114-PLT4-1-20160624 06/24/16 PZ4-1 | 114-PLT4-1-20160916 09/16/16 PZ4-1 | 114-PLT-4-20160329 03/29/16 PZ4-1 | 114-PLT5-1-20160624 06/24/16 PZ5-1 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-PLT2-1-20160916 09/16/16 PZ2-1 | 114-PLT-2-20160329 03/29/16 PZ2-1 | 114-PLT3-1-20160624 06/24/16 PZ3-1 | 114-PLT3-1-20160916 09/16/16 PZ3-1 | 114-PLT-3-20160329 03/29/16 PZ3-1 | 114-PLT4-1-20160624 06/24/16 PZ4-1 | 114-PLT4-1-20160916 09/16/16 PZ4-1 | 114-PLT-4-20160329 03/29/16 PZ4-1 | 114-PLT5-1-20160624 06/24/16 PZ5-1 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 327 [377] | 284 | 294 | 286 | 268 [258] | 302 | 288 | 266 | 308 |
| pH | ARC-pH | SU | 7.02 [6.99] | 7.12 | 6.52 | 6.53 | 6.58 [6.55] | 6.94 | 6.94 | 6.79 | 6.86 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-PLT2-1-20160916 09/16/16 PZ2-1 | 114-PLT-2-20160329 03/29/16 PZ2-1 | 114-PLT3-1-20160624 06/24/16 PZ3-1 | 114-PLT3-1-20160916 09/16/16 PZ3-1 | 114-PLT-3-20160329 03/29/16 PZ3-1 | 114-PLT4-1-20160624 06/24/16 PZ4-1 | 114-PLT4-1-20160916 09/16/16 PZ4-1 | 114-PLT-4-20160329 03/29/16 PZ4-1 | 114-PLT5-1-20160624 06/24/16 PZ5-1 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-PLT5-1-20160916 | 114-PLT-5-20160329 | 114-SUMP6-20130108 | 114-TANKAUX_050211 | 114-TP2-GW | 114-TP2-GWF | 114-TP3-GW | 114-TP3-GWF | 114-TP4-GW | 114-TP4-GWF | 114-TP5-GW |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | | | | |
| Date Collected: | | | 09/16/16 | 03/29/16 | 01/08/13 | 05/02/11 | 07/20/11 | 07/21/11 | 07/20/11 | 07/20/11 | 07/19/11 | 07/19/11 | 07/21/11 |
| Location ID: | CAS Number | Units | PZ5-1 | PZ5-1 | SUMP6 | 114-TANKAUX | 114-TP2 | 114-TP2 | 114-TP3 | 114-TP3 | 114-TP4 | 114-TP4 | 114-TP5 |
| **Volatile Organics** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | 130 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | 39.7 | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | 0.91 | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | 4.0 U | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | 0.99 | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | 2.5 | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | 0.87 | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | 7.6 | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | 3.4 | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-PLT5-1-20160916 09/16/16 PZ5-1 | 114-PLT-5-20160329 03/29/16 PZ5-1 | 114-SUMP6-20130108 01/08/13 SUMP6 | 114-TANKAUX_050211 05/02/11 114-TANKAUX | 114-TP2-GW 07/20/11 114-TP2 | 114-TP2-GWF 07/21/11 114-TP2 | 114-TP3-GW 07/20/11 114-TP3 | 114-TP3-GWF 07/20/11 114-TP3 | 114-TP4-GW 07/19/11 114-TP4 | 114-TP4-GWF 07/19/11 114-TP4 | 114-TP5-GW 07/21/11 114-TP5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | 20 U | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | 20 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | 2.4 | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | 0.10 U | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | 0.10 U | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | 0.10 U | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | 0.10 U | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | 0.10 U | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | 0.10 U | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | 0.10 U | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | 0.10 U | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | 2.0 | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-PLT5-1-20160916 09/16/16 PZ5-1 | 114-PLT-5-20160329 03/29/16 PZ5-1 | 114-SUMP6-20130108 01/08/13 SUMP6 | 114-TANKAUX_050211 05/02/11 114-TANKAUX | 114-TP2-GW 07/20/11 114-TP2 | 114-TP2-GWF 07/21/11 114-TP2 | 114-TP3-GW 07/20/11 114-TP3 | 114-TP3-GWF 07/20/11 114-TP3 | 114-TP4-GW 07/19/11 114-TP4 | 114-TP4-GWF 07/19/11 114-TP4 | 114-TP5-GW 07/21/11 114-TP5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | 0.10 U | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | 0.10 U | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | 0.210 | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | 0.191 | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | 0.020 U | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | 20 U | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | 0.10 U | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | 0.10 U | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | 6.78 | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | 0.644 | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | 1.4 | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | 0.207 | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | 13.8 | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | 1,580,000 [1,790,000] | 2,490 | 34,000 | 5,730 | 408,000 | 1,560,000 | 351,000 |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | 756 [881] | 10.0 | 176 | 109 | 863 | 4,120 | 671 |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | 4,720 [4,440] | 349 | 49.2 | 22.4 | 325 | 1,330 | 174 |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | 26,200 [29,600] | 149 | 354 | 3.1 | 4,510 | 20,000 | 1,080 |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | 131 [146] | 5.0 U | 2.8 | 0.70 | 27.0 | 108 | 4.0 |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | 135 [146] | 15 U | 1.4 | 3.0 U | 35.0 | 175 | 7.0 |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | 563,000 [638,000] | 12,200 | 31,900 | 14,900 | 231,000 | 1,740,000 | 4,300,000 |
| Chromium | 7440-47-3 | ug/L | 10 U | 1.8 J | NA | NA | 126,000 [154,000] | 5,150 | 30,800 | 19,000 | 151,000 | 672,000 | 256,000 |
| Chromium VI | 18540-29-9 | ug/L | 13 J | 3.7 J | 140 | 54,800 | 1,000 U [1,000 U] | 32 | 19,400 | 19,100 | 5,000 U | 50 U | 55,900 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | 1,160 [1,250] | 12.0 | 7.2 | 50 U | 202 | 1,190 | 1,550 |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | 14,100 [15,400] | 33.0 | 125 | 5.2 | 2,000 | 9,520 | 265 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | 1,880,000 [1,980,000] | 6,060 | 30,200 | 78.9 | 416,000 | 1,760,000 | 498,000 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | 71,800 [79,900] | 75.5 | 848 | 11.1 | 9,840 | 42,700 | 531 |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | 312,000 [361,000] | 3,750 | 7,350 | 5,000 U | 83,000 | 423,000 | 374,000 |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | 30,500 [34,600] | 195 | 475 | 15 U | 5,590 | 28,400 | 7,930 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-PLT5-1-20160916<br>09/16/16<br>PZ5-1 | 114-PLT-5-20160329<br>03/29/16<br>PZ5-1 | 114-SUMP6-20130108<br>01/08/13<br>SUMP6 | 114-TANKAUX_050211<br>05/02/11<br>114-TANKAUX | 114-TP2-GW<br>07/20/11<br>114-TP2 | 114-TP2-GWF<br>07/21/11<br>114-TP2 | 114-TP3-GW<br>07/20/11<br>114-TP3 | 114-TP3-GWF<br>07/20/11<br>114-TP3 | 114-TP4-GW<br>07/19/11<br>114-TP4 | 114-TP4-GWF<br>07/19/11<br>114-TP4 | 114-TP5-GW<br>07/21/11<br>114-TP5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | 115 [340] | 0.80 | 7.8 | 0.40 U | 325 | 49.4 | 2.7 |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | 3,290 [3,640] | 130 | 76.2 | 7.3 | 825 | 4,550 | 5,150 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | 223,000 [248,000] | 72,600 | 26,800 | 29,100 | 85,200 | 214,000 | 33,700 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | 396 [407] | 39.0 | 20 U | 10 U | 100 U | 100 U | 50 U |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | 110 [115] | 50 U | 2.0 | 10 U | 21.0 | 74.0 | 8.0 |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | 3,030,000 [3,350,000] | 3,580,000 | 456,000 | 541,000 | 574,000 | 726,000 | 317,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | 40 U [40 U] | 20 U | 3.0 | 0.50 | 8.0 | 38.0 | 13.0 |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | 138,000 [166,000] | 6,020 | 31,500 | 19,400 | 155,000 | 689,000 | 267,000 |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | 7,470 [7,620] | 726 | 451 | 328 | 1,880 | 8,180 | 5,080 |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | 70,300 [76,200] | 207 | 840 | 5.0 | 11,400 | 52,600 | 1,970 |
| **Metals-Filtered** | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | 500 U | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | 8.1 | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | 0.85 | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 59,600 | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | 10 | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | 0.2 U | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | 500 U | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | 3.8 | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | 59,600 | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | 0.53 U | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-PLT5-1-20160916<br>09/16/16<br>PZ5-1 | 114-PLT-5-20160329<br>03/29/16<br>PZ5-1 | 114-SUMP6-20130108<br>01/08/13<br>SUMP6 | 114-TANKAUX_050211<br>05/02/11<br>114-TANKAUX | 114-TP2-GW<br>07/20/11<br>114-TP2 | 114-TP2-GWF<br>07/21/11<br>114-TP2 | 114-TP3-GW<br>07/20/11<br>114-TP3 | 114-TP3-GWF<br>07/20/11<br>114-TP3 | 114-TP4-GW<br>07/19/11<br>114-TP4 | 114-TP4-GWF<br>07/19/11<br>114-TP4 | 114-TP5-GW<br>07/21/11<br>114-TP5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | 0.53 U | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | 0.53 U | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | 0.53 U | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | 0.53 U | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | 0.53 U | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | 0.53 U | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | 0.53 U | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | 0.53 U | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | 1,100 | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | 150 | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | 10,000 U | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | 3,200 | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 291 | 256 | 207 | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | 6.80 | 6.88 | 9.86 | 10.76 | 9.22 [9.17] | 9.33 | 11.78 | 11.69 | 11.02 | 10.97 | 12.41 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | 100,000 U | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-PLT5-1-20160916<br>09/16/16<br>PZ5-1 | 114-PLT-5-20160329<br>03/29/16<br>PZ5-1 | 114-SUMP6-20130108<br>01/08/13<br>SUMP6 | 114-TANKAUX_050211<br>05/02/11<br>114-TANKAUX | 114-TP2-GW<br>07/20/11<br>114-TP2 | 114-TP2-GWF<br>07/21/11<br>114-TP2 | 114-TP3-GW<br>07/20/11<br>114-TP3 | 114-TP3-GWF<br>07/20/11<br>114-TP3 | 114-TP4-GW<br>07/19/11<br>114-TP4 | 114-TP4-GWF<br>07/19/11<br>114-TP4 | 114-TP5-GW<br>07/21/11<br>114-TP5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-TP5-GWF | 114-VAP-5-9.0-13.0 | 114-VAP-5-13.0-17.0 | 114-VAP-5-18.0-22.0 | 114-VAP-5-25.0-29.0 | 114-VAP-5-31.0-35.0 | 114-VAP-5-40.0-44.0 | 114-VAP-5-45.0-49.0 | 114-VAP-6-9.0-13.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | 9 - 13 | 13 - 17 | 18 - 22 | 25 - 29 | 31 - 35 | 40 - 44 | 45 - 49 | 9 - 13 |
| Date Collected: | | | 07/21/11 | 05/29/15 | 05/29/15 | 05/29/15 | 05/29/15 | 05/29/15 | 05/29/15 | 05/29/15 | 05/27/15 |
| Location ID: | CAS Number | Units | 114-TP5 | 114-VAP-5 | 114-VAP-5 | 114-VAP-5 | 114-VAP-5 | 114-VAP-5 | 114-VAP-5 | 114-VAP-5 | 114-VAP-6 |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-TP5-GWF<br><br>07/21/11<br>114-TP5 | 114-VAP-5-9.0-13.0<br>9 - 13<br>05/29/15<br>114-VAP-5 | 114-VAP-5-13.0-17.0<br>13 - 17<br>05/29/15<br>114-VAP-5 | 114-VAP-5-18.0-22.0<br>18 - 22<br>05/29/15<br>114-VAP-5 | 114-VAP-5-25.0-29.0<br>25 - 29<br>05/29/15<br>114-VAP-5 | 114-VAP-5-31.0-35.0<br>31 - 35<br>05/29/15<br>114-VAP-5 | 114-VAP-5-40.0-44.0<br>40 - 44<br>05/29/15<br>114-VAP-5 | 114-VAP-5-45.0-49.0<br>45 - 49<br>05/29/15<br>114-VAP-5 | 114-VAP-6-9.0-13.0<br>9 - 13<br>05/27/15<br>114-VAP-6 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-TP5-GWF<br><br>07/21/11<br>114-TP5 | 114-VAP-5-9.0-13.0<br>9 - 13<br>05/29/15<br>114-VAP-5 | 114-VAP-5-13.0-17.0<br>13 - 17<br>05/29/15<br>114-VAP-5 | 114-VAP-5-18.0-22.0<br>18 - 22<br>05/29/15<br>114-VAP-5 | 114-VAP-5-25.0-29.0<br>25 - 29<br>05/29/15<br>114-VAP-5 | 114-VAP-5-31.0-35.0<br>31 - 35<br>05/29/15<br>114-VAP-5 | 114-VAP-5-40.0-44.0<br>40 - 44<br>05/29/15<br>114-VAP-5 | 114-VAP-5-45.0-49.0<br>45 - 49<br>05/29/15<br>114-VAP-5 | 114-VAP-6-9.0-13.0<br>9 - 13<br>05/27/15<br>114-VAP-6 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 400 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 658 | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | 24.9 | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | 97.5 | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 3.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | 710,000 | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 50,600 | 21.1 J | 120,000 J | 664,000 J | 1,290,000 J | 1,270,000 J | 158,000 J | 627 | 43.7 |
| Chromium VI | 18540-29-9 | ug/L | 57,900 | 58 J | 118,000 J | 721,000 J | 1,800,000 J | 1,680,000 J | 208,000 J | 5.4 J | 5.7 RA |
| Cobalt | 7440-48-4 | ug/L | 50 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | 4.6 | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 100 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | 6.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | 5,000 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 15 U | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-TP5-GWF 07/21/11 114-TP5 | 114-VAP-5-9.0-13.0 9 - 13 05/29/15 114-VAP-5 | 114-VAP-5-13.0-17.0 13 - 17 05/29/15 114-VAP-5 | 114-VAP-5-18.0-22.0 18 - 22 05/29/15 114-VAP-5 | 114-VAP-5-25.0-29.0 25 - 29 05/29/15 114-VAP-5 | 114-VAP-5-31.0-35.0 31 - 35 05/29/15 114-VAP-5 | 114-VAP-5-40.0-44.0 40 - 44 05/29/15 114-VAP-5 | 114-VAP-5-45.0-49.0 45 - 49 05/29/15 114-VAP-5 | 114-VAP-6-9.0-13.0 9 - 13 05/27/15 114-VAP-6 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.098 | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 24.0 | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 26,100 | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | 2.8 | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | 295,000 | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 4.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | 51,300 | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 250 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | 40 U | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 7.1 J | NA | 544,000 J | 1,680,000 J | 1,320,000 J | NA | 4.8 J | 1.9 J |
| Chromium VI | 18540-29-9 | ug/L | NA | 150 J | NA | 688,000 J | 2,090,000 J | 786,000 | NA | 10 U | 6.8 RA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-TP5-GWF<br><br>07/21/11<br>114-TP5 | 114-VAP-5-9.0-13.0<br>9 - 13<br>05/29/15<br>114-VAP-5 | 114-VAP-5-13.0-17.0<br>13 - 17<br>05/29/15<br>114-VAP-5 | 114-VAP-5-18.0-22.0<br>18 - 22<br>05/29/15<br>114-VAP-5 | 114-VAP-5-25.0-29.0<br>25 - 29<br>05/29/15<br>114-VAP-5 | 114-VAP-5-31.0-35.0<br>31 - 35<br>05/29/15<br>114-VAP-5 | 114-VAP-5-40.0-44.0<br>40 - 44<br>05/29/15<br>114-VAP-5 | 114-VAP-5-45.0-49.0<br>45 - 49<br>05/29/15<br>114-VAP-5 | 114-VAP-6-9.0-13.0<br>9 - 13<br>05/27/15<br>114-VAP-6 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 251 | 370 | 352 | 400 | 430 | 432 | 366 | 238 |
| pH | ARC-pH | SU | 12.45 | 6.43 | 8.54 | 9.15 | 9.57 | 8.15 | 8.07 | 7.81 | 6.73 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-TP5-GWF<br><br>07/21/11<br>114-TP5 | 114-VAP-5-9.0-13.0<br>9 - 13<br>05/29/15<br>114-VAP-5 | 114-VAP-5-13.0-17.0<br>13 - 17<br>05/29/15<br>114-VAP-5 | 114-VAP-5-18.0-22.0<br>18 - 22<br>05/29/15<br>114-VAP-5 | 114-VAP-5-25.0-29.0<br>25 - 29<br>05/29/15<br>114-VAP-5 | 114-VAP-5-31.0-35.0<br>31 - 35<br>05/29/15<br>114-VAP-5 | 114-VAP-5-40.0-44.0<br>40 - 44<br>05/29/15<br>114-VAP-5 | 114-VAP-5-45.0-49.0<br>45 - 49<br>05/29/15<br>114-VAP-5 | 114-VAP-6-9.0-13.0<br>9 - 13<br>05/27/15<br>114-VAP-6 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 1,470 | 2,500 | 280 | 50 | NA | NA | NA | 570 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 111 | 38 | 50 | 39 | 206 | 139 | 37 | 150 |
| pH | ARC-pH | SU | NA | 6.48 | 8.63 | 9.35 | 9.88 | 8.34 | 8.22 | 7.93 | 6.87 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 17.93 | 18.79 | 19.16 | 21.85 | 20.6 | 22.24 | 21 | 18.95 |
| Turbidity | ARC-Turb | NTU | NA | 30 | NA | NA | 77 | NA | 42 | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-6-13.0-17.0<br>13 - 17<br>05/27/15<br>114-VAP-6 | 114-VAP-6-18.0-22.0<br>18 - 22<br>05/28/15<br>114-VAP-6 | 114-VAP-6-24.0-28.0<br>24 - 28<br>05/28/15<br>114-VAP-6 | 114-VAP-6-28.0-32.0<br>28 - 32<br>05/28/15<br>114-VAP-6 | 114-VAP-6-32.0-36.0<br>32 - 36<br>05/28/15<br>114-VAP-6 | 114-VAP-6-36.0-40.0<br>36 - 40<br>05/28/15<br>114-VAP-6 | 114-VAP-6-41.0-45.0<br>41 - 45<br>05/28/15<br>114-VAP-6 | 114-VAP-6-45.0-49.0<br>45 - 49<br>05/28/15<br>114-VAP-6 | 114-VAP-6-61.0-65.0<br>61 - 65<br>06/16/15<br>114-VAP-6 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-6-13.0-17.0<br>13 - 17<br>05/27/15<br>114-VAP-6 | 114-VAP-6-18.0-22.0<br>18 - 22<br>05/28/15<br>114-VAP-6 | 114-VAP-6-24.0-28.0<br>24 - 28<br>05/28/15<br>114-VAP-6 | 114-VAP-6-28.0-32.0<br>28 - 32<br>05/28/15<br>114-VAP-6 | 114-VAP-6-32.0-36.0<br>32 - 36<br>05/28/15<br>114-VAP-6 | 114-VAP-6-36.0-40.0<br>36 - 40<br>05/28/15<br>114-VAP-6 | 114-VAP-6-41.0-45.0<br>41 - 45<br>05/28/15<br>114-VAP-6 | 114-VAP-6-45.0-49.0<br>45 - 49<br>05/28/15<br>114-VAP-6 | 114-VAP-6-61.0-65.0<br>61 - 65<br>06/16/15<br>114-VAP-6 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-6-13.0-17.0<br>13 - 17<br>05/27/15<br>114-VAP-6 | 114-VAP-6-18.0-22.0<br>18 - 22<br>05/28/15<br>114-VAP-6 | 114-VAP-6-24.0-28.0<br>24 - 28<br>05/28/15<br>114-VAP-6 | 114-VAP-6-28.0-32.0<br>28 - 32<br>05/28/15<br>114-VAP-6 | 114-VAP-6-32.0-36.0<br>32 - 36<br>05/28/15<br>114-VAP-6 | 114-VAP-6-36.0-40.0<br>36 - 40<br>05/28/15<br>114-VAP-6 | 114-VAP-6-41.0-45.0<br>41 - 45<br>05/28/15<br>114-VAP-6 | 114-VAP-6-45.0-49.0<br>45 - 49<br>05/28/15<br>114-VAP-6 | 114-VAP-6-61.0-65.0<br>61 - 65<br>06/16/15<br>114-VAP-6 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 67.8 | 61,400 J | 333,000 J | 2,400,000 J | 2,670,000 J | 5,720,000 | 2,910,000 J | 2,990,000 J [3,030,000 J] | 111 |
| Chromium VI | 18540-29-9 | ug/L | 10 RA | 83,000 J | 446,000 J | 2,580,000 J | 3,130,000 J | 5,370,000 | 2,940,000 J | 3,160,000 J [3,240,000 J] | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-6-13.0-17.0<br>13 - 17<br>05/27/15<br>114-VAP-6 | 114-VAP-6-18.0-22.0<br>18 - 22<br>05/28/15<br>114-VAP-6 | 114-VAP-6-24.0-28.0<br>24 - 28<br>05/28/15<br>114-VAP-6 | 114-VAP-6-28.0-32.0<br>28 - 32<br>05/28/15<br>114-VAP-6 | 114-VAP-6-32.0-36.0<br>32 - 36<br>05/28/15<br>114-VAP-6 | 114-VAP-6-36.0-40.0<br>36 - 40<br>05/28/15<br>114-VAP-6 | 114-VAP-6-41.0-45.0<br>41 - 45<br>05/28/15<br>114-VAP-6 | 114-VAP-6-45.0-49.0<br>45 - 49<br>05/28/15<br>114-VAP-6 | 114-VAP-6-61.0-65.0<br>61 - 65<br>06/16/15<br>114-VAP-6 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 14.0 | NA | NA | NA | NA | 4,690,000 J | NA | NA | 15.7 |
| Chromium VI | 18540-29-9 | ug/L | 26 RA | NA | NA | NA | NA | 5,240,000 J | NA | NA | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-6-13.0-17.0<br>13 - 17<br>05/27/15<br>114-VAP-6 | 114-VAP-6-18.0-22.0<br>18 - 22<br>05/28/15<br>114-VAP-6 | 114-VAP-6-24.0-28.0<br>24 - 28<br>05/28/15<br>114-VAP-6 | 114-VAP-6-28.0-32.0<br>28 - 32<br>05/28/15<br>114-VAP-6 | 114-VAP-6-32.0-36.0<br>32 - 36<br>05/28/15<br>114-VAP-6 | 114-VAP-6-36.0-40.0<br>36 - 40<br>05/28/15<br>114-VAP-6 | 114-VAP-6-41.0-45.0<br>41 - 45<br>05/28/15<br>114-VAP-6 | 114-VAP-6-45.0-49.0<br>45 - 49<br>05/28/15<br>114-VAP-6 | 114-VAP-6-61.0-65.0<br>61 - 65<br>06/16/15<br>114-VAP-6 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 202 | 410 | 428 | 430 | 437 | 441 | 437 | 438 [437] | 364 |
| pH | ARC-pH | SU | 6.84 | 7.62 | 7.31 | 7.19 | 6.89 | 6.89 | 7.09 | 7.15 [7.14] | 7.21 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-6-13.0-17.0<br>13 - 17<br>05/27/15<br>114-VAP-6 | 114-VAP-6-18.0-22.0<br>18 - 22<br>05/28/15<br>114-VAP-6 | 114-VAP-6-24.0-28.0<br>24 - 28<br>05/28/15<br>114-VAP-6 | 114-VAP-6-28.0-32.0<br>28 - 32<br>05/28/15<br>114-VAP-6 | 114-VAP-6-32.0-36.0<br>32 - 36<br>05/28/15<br>114-VAP-6 | 114-VAP-6-36.0-40.0<br>36 - 40<br>05/28/15<br>114-VAP-6 | 114-VAP-6-41.0-45.0<br>41 - 45<br>05/28/15<br>114-VAP-6 | 114-VAP-6-45.0-49.0<br>45 - 49<br>05/28/15<br>114-VAP-6 | 114-VAP-6-61.0-65.0<br>61 - 65<br>06/16/15<br>114-VAP-6 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 370 | 650 | 200 | 1,910 | 1,340 | 630 | 360 | 700 | 180 |
| Oxidation Reduction Potential | ARC-ORP | mV | 114 | 23 | 188 | 154 | 188 | 270 | 173 | 185 | 192 |
| pH | ARC-pH | SU | 6.68 | 7.71 | 7.21 | 7.19 | 6.84 | 6.75 | 7.02 | 7.1 | 8.07 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 18.29 | 16.24 | 21.68 | 17.65 | 17.78 | 21.98 | 19.89 | 20.66 | 18.75 |
| Turbidity | ARC-Turb | NTU | NA | 36 | 14 | 776 | 27 | NA | 27 | 63 | 1,182 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-VAP-7-10.0-14.0 | 114-VAP-7-14.0-18.0 | 114-VAP-7-20.0-24.0 | 114-VAP-7-27.0-31.0 | 114-VAP-7-34.0-37.5 | 114-VAP-7-41.0-45.0 | 114-VAP-7-45.0-49.0 | 114-VAP-8-9.0-13.0 | 114-VAP-8-13.0-17.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 10 - 14 | 14 - 18 | 20 - 24 | 27 - 31 | 34 - 37.5 | 41 - 45 | 45 - 49 | 9 - 13 | 13 - 17 |
| Date Collected: | | | 05/22/15 | 05/22/15 | 05/22/15 | 05/22/15 | 05/22/15 | 05/22/15 | 05/26/15 | 05/26/15 | 05/26/15 |
| Location ID: | CAS Number | Units | 114-VAP-7 | 114-VAP-7 | 114-VAP-7 | 114-VAP-7 | 114-VAP-7 | 114-VAP-7 | 114-VAP-7 | 114-VAP-8 | 114-VAP-8 |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-7-10.0-14.0<br>10 - 14<br>05/22/15<br>114-VAP-7 | 114-VAP-7-14.0-18.0<br>14 - 18<br>05/22/15<br>114-VAP-7 | 114-VAP-7-20.0-24.0<br>20 - 24<br>05/22/15<br>114-VAP-7 | 114-VAP-7-27.0-31.0<br>27 - 31<br>05/22/15<br>114-VAP-7 | 114-VAP-7-34.0-37.5<br>34 - 37.5<br>05/22/15<br>114-VAP-7 | 114-VAP-7-41.0-45.0<br>41 - 45<br>05/22/15<br>114-VAP-7 | 114-VAP-7-45.0-49.0<br>45 - 49<br>05/26/15<br>114-VAP-7 | 114-VAP-8-9.0-13.0<br>9 - 13<br>05/26/15<br>114-VAP-8 | 114-VAP-8-13.0-17.0<br>13 - 17<br>05/26/15<br>114-VAP-8 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-7-10.0-14.0<br>10 - 14<br>05/22/15<br>114-VAP-7 | 114-VAP-7-14.0-18.0<br>14 - 18<br>05/22/15<br>114-VAP-7 | 114-VAP-7-20.0-24.0<br>20 - 24<br>05/22/15<br>114-VAP-7 | 114-VAP-7-27.0-31.0<br>27 - 31<br>05/22/15<br>114-VAP-7 | 114-VAP-7-34.0-37.5<br>34 - 37.5<br>05/22/15<br>114-VAP-7 | 114-VAP-7-41.0-45.0<br>41 - 45<br>05/22/15<br>114-VAP-7 | 114-VAP-7-45.0-49.0<br>45 - 49<br>05/26/15<br>114-VAP-7 | 114-VAP-8-9.0-13.0<br>9 - 13<br>05/26/15<br>114-VAP-8 | 114-VAP-8-13.0-17.0<br>13 - 17<br>05/26/15<br>114-VAP-8 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 76.0 | 256 | 424,000 J | 1,650,000 J | 1,240,000 J | 341,000 J | 1,150,000 J | 124 J | 7,930 J |
| Chromium VI | 18540-29-9 | ug/L | 10 U | 10 U | 498,000 J | 1,670,000 J | 1,410,000 J | 401,000 J | 1,230,000 RA | 10 RA | 4,000 RA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-7-10.0-14.0<br>10 - 14<br>05/22/15<br>114-VAP-7 | 114-VAP-7-14.0-18.0<br>14 - 18<br>05/22/15<br>114-VAP-7 | 114-VAP-7-20.0-24.0<br>20 - 24<br>05/22/15<br>114-VAP-7 | 114-VAP-7-27.0-31.0<br>27 - 31<br>05/22/15<br>114-VAP-7 | 114-VAP-7-34.0-37.5<br>34 - 37.5<br>05/22/15<br>114-VAP-7 | 114-VAP-7-41.0-45.0<br>41 - 45<br>05/22/15<br>114-VAP-7 | 114-VAP-7-45.0-49.0<br>45 - 49<br>05/26/15<br>114-VAP-7 | 114-VAP-8-9.0-13.0<br>9 - 13<br>05/26/15<br>114-VAP-8 | 114-VAP-8-13.0-17.0<br>13 - 17<br>05/26/15<br>114-VAP-8 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 10 UB | 58.3 | NA | NA | NA | NA | NA | 9.3 J | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 U | 10 U | NA | NA | NA | NA | NA | 10 RA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-7-10.0-14.0<br>10 - 14<br>05/22/15<br>114-VAP-7 | 114-VAP-7-14.0-18.0<br>14 - 18<br>05/22/15<br>114-VAP-7 | 114-VAP-7-20.0-24.0<br>20 - 24<br>05/22/15<br>114-VAP-7 | 114-VAP-7-27.0-31.0<br>27 - 31<br>05/22/15<br>114-VAP-7 | 114-VAP-7-34.0-37.5<br>34 - 37.5<br>05/22/15<br>114-VAP-7 | 114-VAP-7-41.0-45.0<br>41 - 45<br>05/22/15<br>114-VAP-7 | 114-VAP-7-45.0-49.0<br>45 - 49<br>05/26/15<br>114-VAP-7 | 114-VAP-8-9.0-13.0<br>9 - 13<br>05/26/15<br>114-VAP-8 | 114-VAP-8-13.0-17.0<br>13 - 17<br>05/26/15<br>114-VAP-8 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 277 | 305 | 327 | 408 | 413 | 409 | 386 | 256 | 351 |
| pH | ARC-pH | SU | 6.53 | 7.47 | 7.28 | 7.24 | 7.23 | 7.56 | 7.21 | 6.67 | 7.73 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-7-10.0-14.0<br>10 - 14<br>05/22/15<br>114-VAP-7 | 114-VAP-7-14.0-18.0<br>14 - 18<br>05/22/15<br>114-VAP-7 | 114-VAP-7-20.0-24.0<br>20 - 24<br>05/22/15<br>114-VAP-7 | 114-VAP-7-27.0-31.0<br>27 - 31<br>05/22/15<br>114-VAP-7 | 114-VAP-7-34.0-37.5<br>34 - 37.5<br>05/22/15<br>114-VAP-7 | 114-VAP-7-41.0-45.0<br>41 - 45<br>05/22/15<br>114-VAP-7 | 114-VAP-7-45.0-49.0<br>45 - 49<br>05/26/15<br>114-VAP-7 | 114-VAP-8-9.0-13.0<br>9 - 13<br>05/26/15<br>114-VAP-8 | 114-VAP-8-13.0-17.0<br>13 - 17<br>05/26/15<br>114-VAP-8 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 250 | 270 | 540 | 620 | 860 | 630 | NA | 100 | 30 |
| Oxidation Reduction Potential | ARC-ORP | mV | 114 | 75 | 88 | 94 | 107 | 57 | NA | 139 | 29.7 |
| pH | ARC-pH | SU | 6.15 | 6.88 | 6.91 | 7.27 | 7.27 | 7.66 | NA | 6.73 | 7.81 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 14.58 | 18.35 | 17.76 | 19.26 | 18.54 | 19.16 | NA | 17.95 | 18.95 |
| Turbidity | ARC-Turb | NTU | 985 | 2,409 | 843 | 74 | 3,966 | 38 | NA | 39 | 2,929 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-VAP-8-23.0-27.0 | 114-VAP-8-31.0-35.0 | 114-VAP-8-35.0-39.0 | 114-VAP-8-41.0-45.0 | 114-VAP-8-45.0-49.0 | 114-VAP-8-61.0-65.0 | 114-VAP-8-66.0-70.0 | 114-VAP-9-9.0-13.0 | 114-VAP-9-13.0-17.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 23 - 27 | 31 - 35 | 35 - 39 | 41 - 45 | 45 - 49 | 61 - 65 | 66 - 70 | 9 - 13 | 13 - 17 |
| Date Collected: | | | 05/26/15 | 05/26/15 | 05/27/15 | 05/27/15 | 05/27/15 | 06/16/15 | 06/16/15 | 06/02/15 | 06/02/15 |
| Location ID: | CAS Number | Units | 114-VAP-8 | 114-VAP-8 | 114-VAP-8 | 114-VAP-8 | 114-VAP-8 | 114-VAP-8 | 114-VAP-8 | 114-VAP-9 | 114-VAP-9 |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-8-23.0-27.0<br>23 - 27<br>05/26/15<br>114-VAP-8 | 114-VAP-8-31.0-35.0<br>31 - 35<br>05/26/15<br>114-VAP-8 | 114-VAP-8-35.0-39.0<br>35 - 39<br>05/27/15<br>114-VAP-8 | 114-VAP-8-41.0-45.0<br>41 - 45<br>05/27/15<br>114-VAP-8 | 114-VAP-8-45.0-49.0<br>45 - 49<br>05/27/15<br>114-VAP-8 | 114-VAP-8-61.0-65.0<br>61 - 65<br>06/16/15<br>114-VAP-8 | 114-VAP-8-66.0-70.0<br>66 - 70<br>06/16/15<br>114-VAP-8 | 114-VAP-9-9.0-13.0<br>9 - 13<br>06/02/15<br>114-VAP-9 | 114-VAP-9-13.0-17.0<br>13 - 17<br>06/02/15<br>114-VAP-9 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-8-23.0-27.0<br>23 - 27<br>05/26/15<br>114-VAP-8 | 114-VAP-8-31.0-35.0<br>31 - 35<br>05/26/15<br>114-VAP-8 | 114-VAP-8-35.0-39.0<br>35 - 39<br>05/27/15<br>114-VAP-8 | 114-VAP-8-41.0-45.0<br>41 - 45<br>05/27/15<br>114-VAP-8 | 114-VAP-8-45.0-49.0<br>45 - 49<br>05/27/15<br>114-VAP-8 | 114-VAP-8-61.0-65.0<br>61 - 65<br>06/16/15<br>114-VAP-8 | 114-VAP-8-66.0-70.0<br>66 - 70<br>06/16/15<br>114-VAP-8 | 114-VAP-9-9.0-13.0<br>9 - 13<br>06/02/15<br>114-VAP-9 | 114-VAP-9-13.0-17.0<br>13 - 17<br>06/02/15<br>114-VAP-9 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 908,000 J | 862,000 J | 1,270,000 J | 23,900 J | 59,500 J | 116 | 4,190 | 628 | 48,500 J |
| Chromium VI | 18540-29-9 | ug/L | 876,000 RA | 1,040,000 RA | 1,530,000 RA | 31,700 RA | 108,000 RA | 10 U | 10 U | 10 U | 45,700 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-8-23.0-27.0<br>23 - 27<br>05/26/15<br>114-VAP-8 | 114-VAP-8-31.0-35.0<br>31 - 35<br>05/26/15<br>114-VAP-8 | 114-VAP-8-35.0-39.0<br>35 - 39<br>05/27/15<br>114-VAP-8 | 114-VAP-8-41.0-45.0<br>41 - 45<br>05/27/15<br>114-VAP-8 | 114-VAP-8-45.0-49.0<br>45 - 49<br>05/27/15<br>114-VAP-8 | 114-VAP-8-61.0-65.0<br>61 - 65<br>06/16/15<br>114-VAP-8 | 114-VAP-8-66.0-70.0<br>66 - 70<br>06/16/15<br>114-VAP-8 | 114-VAP-9-9.0-13.0<br>9 - 13<br>06/02/15<br>114-VAP-9 | 114-VAP-9-13.0-17.0<br>13 - 17<br>06/02/15<br>114-VAP-9 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | 3.7 J | 2.3 J | 6.4 J | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | 10 U | 10 U | 14 J | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-8-23.0-27.0<br>23 - 27<br>05/26/15<br>114-VAP-8 | 114-VAP-8-31.0-35.0<br>31 - 35<br>05/26/15<br>114-VAP-8 | 114-VAP-8-35.0-39.0<br>35 - 39<br>05/27/15<br>114-VAP-8 | 114-VAP-8-41.0-45.0<br>41 - 45<br>05/27/15<br>114-VAP-8 | 114-VAP-8-45.0-49.0<br>45 - 49<br>05/27/15<br>114-VAP-8 | 114-VAP-8-61.0-65.0<br>61 - 65<br>06/16/15<br>114-VAP-8 | 114-VAP-8-66.0-70.0<br>66 - 70<br>06/16/15<br>114-VAP-8 | 114-VAP-9-9.0-13.0<br>9 - 13<br>06/02/15<br>114-VAP-9 | 114-VAP-9-13.0-17.0<br>13 - 17<br>06/02/15<br>114-VAP-9 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 367 | 370 | 394 | 393 | 369 | 351 | 360 | 287 | 399 |
| pH | ARC-pH | SU | 7.39 | 7.38 | 7.02 | 7.13 | 6.71 | 7.37 | 7.43 | 6.50 | 8.63 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-8-23.0-27.0<br>23 - 27<br>05/26/15<br>114-VAP-8 | 114-VAP-8-31.0-35.0<br>31 - 35<br>05/26/15<br>114-VAP-8 | 114-VAP-8-35.0-39.0<br>35 - 39<br>05/27/15<br>114-VAP-8 | 114-VAP-8-41.0-45.0<br>41 - 45<br>05/27/15<br>114-VAP-8 | 114-VAP-8-45.0-49.0<br>45 - 49<br>05/27/15<br>114-VAP-8 | 114-VAP-8-61.0-65.0<br>61 - 65<br>06/16/15<br>114-VAP-8 | 114-VAP-8-66.0-70.0<br>66 - 70<br>06/16/15<br>114-VAP-8 | 114-VAP-9-9.0-13.0<br>9 - 13<br>06/02/15<br>114-VAP-9 | 114-VAP-9-13.0-17.0<br>13 - 17<br>06/02/15<br>114-VAP-9 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 40 | 40 | 1,110 | 1,680 | NA | 200 | 220 | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 111 | 67 | 184 | 98 | NA | 176 | 145 | 94 | 10 |
| pH | ARC-pH | SU | 7.4 | 7.51 | 7.06 | 7.28 | NA | 8.28 | 8.21 | 6.26 | 8.61 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 19.55 | 21.51 | 18.01 | 19.36 | NA | 17.13 | 18.11 | 12.74 | 13.17 |
| Turbidity | ARC-Turb | NTU | 1,540 | NA | 10 | 19 | NA | 1,552 | NA | NA | 2 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-VAP-9-18.0-22.0 | 114-VAP-9-25.0-29.0 | 114-VAP-9-31.0-35.0 | 114-VAP-9-40.0-44.0 | 114-VAP-9-45.0-49.0 | 114-VAP-9-54.0-58.0 | 114-VAP-9-61.0-65.0 | 114-VAP-9-66.0-70.0 | 114-VAP-9-71.0-75.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 18 - 22 | 25 - 29 | 31 - 35 | 40 - 44 | 45 - 49 | 54 - 58 | 61 - 65 | 66 - 70 | 71 - 75 |
| Date Collected: | | | 06/02/15 | 06/02/15 | 06/02/15 | 06/02/15 | 06/03/15 | 06/12/15 | 06/12/15 | 06/15/15 | 06/15/15 |
| Location ID: | CAS Number | Units | 114-VAP-9 | 114-VAP-9 | 114-VAP-9 | 114-VAP-9 | 114-VAP-9 | 114-VAP-9 | 114-VAP-9 | 114-VAP-9 | 114-VAP-9 |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-9-18.0-22.0<br>18 - 22<br>06/02/15<br>114-VAP-9 | 114-VAP-9-25.0-29.0<br>25 - 29<br>06/02/15<br>114-VAP-9 | 114-VAP-9-31.0-35.0<br>31 - 35<br>06/02/15<br>114-VAP-9 | 114-VAP-9-40.0-44.0<br>40 - 44<br>06/02/15<br>114-VAP-9 | 114-VAP-9-45.0-49.0<br>45 - 49<br>06/03/15<br>114-VAP-9 | 114-VAP-9-54.0-58.0<br>54 - 58<br>06/12/15<br>114-VAP-9 | 114-VAP-9-61.0-65.0<br>61 - 65<br>06/12/15<br>114-VAP-9 | 114-VAP-9-66.0-70.0<br>66 - 70<br>06/15/15<br>114-VAP-9 | 114-VAP-9-71.0-75.0<br>71 - 75<br>06/15/15<br>114-VAP-9 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-9-18.0-22.0<br>18 - 22<br>06/02/15<br>114-VAP-9 | 114-VAP-9-25.0-29.0<br>25 - 29<br>06/02/15<br>114-VAP-9 | 114-VAP-9-31.0-35.0<br>31 - 35<br>06/02/15<br>114-VAP-9 | 114-VAP-9-40.0-44.0<br>40 - 44<br>06/02/15<br>114-VAP-9 | 114-VAP-9-45.0-49.0<br>45 - 49<br>06/03/15<br>114-VAP-9 | 114-VAP-9-54.0-58.0<br>54 - 58<br>06/12/15<br>114-VAP-9 | 114-VAP-9-61.0-65.0<br>61 - 65<br>06/12/15<br>114-VAP-9 | 114-VAP-9-66.0-70.0<br>66 - 70<br>06/15/15<br>114-VAP-9 | 114-VAP-9-71.0-75.0<br>71 - 75<br>06/15/15<br>114-VAP-9 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 285,000 J | 1,090,000 J [1,050,000 J] | 902,000 J | 588,000 J | 2,600 J | 1,660 J | 9,290 J | 1,450 | 2,950 |
| Chromium VI | 18540-29-9 | ug/L | 307,000 J | 1,290,000 J [1,160,000 J] | 1,120,000 J | 614,000 J | 3,700 J | 2,000 J | 10,800 J | 67 | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-9-18.0-22.0<br>18 - 22<br>06/02/15<br>114-VAP-9 | 114-VAP-9-25.0-29.0<br>25 - 29<br>06/02/15<br>114-VAP-9 | 114-VAP-9-31.0-35.0<br>31 - 35<br>06/02/15<br>114-VAP-9 | 114-VAP-9-40.0-44.0<br>40 - 44<br>06/02/15<br>114-VAP-9 | 114-VAP-9-45.0-49.0<br>45 - 49<br>06/03/15<br>114-VAP-9 | 114-VAP-9-54.0-58.0<br>54 - 58<br>06/12/15<br>114-VAP-9 | 114-VAP-9-61.0-65.0<br>61 - 65<br>06/12/15<br>114-VAP-9 | 114-VAP-9-66.0-70.0<br>66 - 70<br>06/15/15<br>114-VAP-9 | 114-VAP-9-71.0-75.0<br>71 - 75<br>06/15/15<br>114-VAP-9 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 285,000 J | 1,220,000 J [1,240,000 J] | 1,030,000 J | NA | 3,030 J | 1,650 J | NA | 112 | 3.2 J |
| Chromium VI | 18540-29-9 | ug/L | 294,000 J | 1,230,000 J [1,260,000 J] | 1,090,000 J | NA | 3,200 J | 1,200 J | NA | 100 | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-9-18.0-22.0<br>18 - 22<br>06/02/15<br>114-VAP-9 | 114-VAP-9-25.0-29.0<br>25 - 29<br>06/02/15<br>114-VAP-9 | 114-VAP-9-31.0-35.0<br>31 - 35<br>06/02/15<br>114-VAP-9 | 114-VAP-9-40.0-44.0<br>40 - 44<br>06/02/15<br>114-VAP-9 | 114-VAP-9-45.0-49.0<br>45 - 49<br>06/03/15<br>114-VAP-9 | 114-VAP-9-54.0-58.0<br>54 - 58<br>06/12/15<br>114-VAP-9 | 114-VAP-9-61.0-65.0<br>61 - 65<br>06/12/15<br>114-VAP-9 | 114-VAP-9-66.0-70.0<br>66 - 70<br>06/15/15<br>114-VAP-9 | 114-VAP-9-71.0-75.0<br>71 - 75<br>06/15/15<br>114-VAP-9 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 415 | 422 [427] [431] | 452 | 466 | 422 | 423 | 434 | 333 | 316 |
| pH | ARC-pH | SU | 8.56 | 9.09 [9.12] [9.07] | 8.37 | 7.85 | 8.00 | 7.25 | 7.18 | 7.34 | 7.47 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-9-18.0-22.0<br>18 - 22<br>06/02/15<br>114-VAP-9 | 114-VAP-9-25.0-29.0<br>25 - 29<br>06/02/15<br>114-VAP-9 | 114-VAP-9-31.0-35.0<br>31 - 35<br>06/02/15<br>114-VAP-9 | 114-VAP-9-40.0-44.0<br>40 - 44<br>06/02/15<br>114-VAP-9 | 114-VAP-9-45.0-49.0<br>45 - 49<br>06/03/15<br>114-VAP-9 | 114-VAP-9-54.0-58.0<br>54 - 58<br>06/12/15<br>114-VAP-9 | 114-VAP-9-61.0-65.0<br>61 - 65<br>06/12/15<br>114-VAP-9 | 114-VAP-9-66.0-70.0<br>66 - 70<br>06/15/15<br>114-VAP-9 | 114-VAP-9-71.0-75.0<br>71 - 75<br>06/15/15<br>114-VAP-9 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | 1,930 | 1,020 | 1,270 | 860 | 390 | 2,100 | 40 |
| Oxidation Reduction Potential | ARC-ORP | mV | 44 | 42 | 34 | 2 | 87 | 85 | 152 | 236 | 299 |
| pH | ARC-pH | SU | 8.58 | 9.24 | 8.79 | 7.97 | 8.43 | 7.45 | 7.41 | 7.84 | 8.01 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 13.43 | 13.64 | 13.94 | 14.13 | 15.41 | 20.25 | 20.85 | 18.41 | 19.6 |
| Turbidity | ARC-Turb | NTU | NA | 59 | NA | 1,317 | 3,696 | 9 | 26 | 1,700 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-10-10.0-14.0<br>10 - 14<br>05/13/15<br>114-VAP-10 | 114-VAP-10-21.0-25.0<br>21 - 25<br>05/13/15<br>114-VAP-10 | 114-VAP-10-25.0-29.0<br>25 - 29<br>05/13/15<br>114-VAP-10 | 114-VAP-10-30.0-34.0<br>30 - 34<br>05/13/15<br>114-VAP-10 | 114-VAP-10-36.0-40.0<br>36 - 40<br>05/13/15<br>114-VAP-10 | 114-VAP-10-44.5-48.5<br>44.5 - 48.5<br>05/21/15<br>114-VAP-10 | 114-VAP-12-10.0-14.0<br>10 - 14<br>05/12/15<br>114-VAP-12 | 114-VAP-12-16.0-20.0<br>16 - 20<br>05/12/15<br>114-VAP-12 | 114-VAP-12-20.0-24.0<br>20 - 24<br>05/12/15<br>114-VAP-12 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-10-10.0-14.0<br>10 - 14<br>05/13/15<br>114-VAP-10 | 114-VAP-10-21.0-25.0<br>21 - 25<br>05/13/15<br>114-VAP-10 | 114-VAP-10-25.0-29.0<br>25 - 29<br>05/13/15<br>114-VAP-10 | 114-VAP-10-30.0-34.0<br>30 - 34<br>05/13/15<br>114-VAP-10 | 114-VAP-10-36.0-40.0<br>36 - 40<br>05/13/15<br>114-VAP-10 | 114-VAP-10-44.5-48.5<br>44.5 - 48.5<br>05/21/15<br>114-VAP-10 | 114-VAP-12-10.0-14.0<br>10 - 14<br>05/12/15<br>114-VAP-12 | 114-VAP-12-16.0-20.0<br>16 - 20<br>05/12/15<br>114-VAP-12 | 114-VAP-12-20.0-24.0<br>20 - 24<br>05/12/15<br>114-VAP-12 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-10-10.0-14.0<br>10 - 14<br>05/13/15<br>114-VAP-10 | 114-VAP-10-21.0-25.0<br>21 - 25<br>05/13/15<br>114-VAP-10 | 114-VAP-10-25.0-29.0<br>25 - 29<br>05/13/15<br>114-VAP-10 | 114-VAP-10-30.0-34.0<br>30 - 34<br>05/13/15<br>114-VAP-10 | 114-VAP-10-36.0-40.0<br>36 - 40<br>05/13/15<br>114-VAP-10 | 114-VAP-10-44.5-48.5<br>44.5 - 48.5<br>05/21/15<br>114-VAP-10 | 114-VAP-12-10.0-14.0<br>10 - 14<br>05/12/15<br>114-VAP-12 | 114-VAP-12-16.0-20.0<br>16 - 20<br>05/12/15<br>114-VAP-12 | 114-VAP-12-20.0-24.0<br>20 - 24<br>05/12/15<br>114-VAP-12 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 14.5 U | 80,700 | 143,000 | 720,000 | 806,000 | 71.0 | 10.5 | NA | 14,300 |
| Chromium VI | 18540-29-9 | ug/L | 10 U | 81,600 | 162,000 | 572,000 | 799,000 | 10 U | 11 | 180 | 11,400 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-10-10.0-14.0<br>10 - 14<br>05/13/15<br>114-VAP-10 | 114-VAP-10-21.0-25.0<br>21 - 25<br>05/13/15<br>114-VAP-10 | 114-VAP-10-25.0-29.0<br>25 - 29<br>05/13/15<br>114-VAP-10 | 114-VAP-10-30.0-34.0<br>30 - 34<br>05/13/15<br>114-VAP-10 | 114-VAP-10-36.0-40.0<br>36 - 40<br>05/13/15<br>114-VAP-10 | 114-VAP-10-44.5-48.5<br>44.5 - 48.5<br>05/21/15<br>114-VAP-10 | 114-VAP-12-10.0-14.0<br>10 - 14<br>05/12/15<br>114-VAP-12 | 114-VAP-12-16.0-20.0<br>16 - 20<br>05/12/15<br>114-VAP-12 | 114-VAP-12-20.0-24.0<br>20 - 24<br>05/12/15<br>114-VAP-12 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 10.3 U | NA | NA | NA | NA | 1.8 J | 0.80 J | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 U | NA | NA | NA | NA | 10 U | 3.4 J | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-10-10.0-14.0<br>10 - 14<br>05/13/15<br>114-VAP-10 | 114-VAP-10-21.0-25.0<br>21 - 25<br>05/13/15<br>114-VAP-10 | 114-VAP-10-25.0-29.0<br>25 - 29<br>05/13/15<br>114-VAP-10 | 114-VAP-10-30.0-34.0<br>30 - 34<br>05/13/15<br>114-VAP-10 | 114-VAP-10-36.0-40.0<br>36 - 40<br>05/13/15<br>114-VAP-10 | 114-VAP-10-44.5-48.5<br>44.5 - 48.5<br>05/21/15<br>114-VAP-10 | 114-VAP-12-10.0-14.0<br>10 - 14<br>05/12/15<br>114-VAP-12 | 114-VAP-12-16.0-20.0<br>16 - 20<br>05/12/15<br>114-VAP-12 | 114-VAP-12-20.0-24.0<br>20 - 24<br>05/12/15<br>114-VAP-12 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 222 | 329 | 334 | 399 | 400 | 387 | 262 | 371 | 359 |
| pH | ARC-pH | SU | 10.31 | 6.71 | 6.63 | 6.62 | 6.75 | 6.85 | 10.55 | 7.94 | 6.88 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-10-10.0-14.0<br>10 - 14<br>05/13/15<br>114-VAP-10 | 114-VAP-10-21.0-25.0<br>21 - 25<br>05/13/15<br>114-VAP-10 | 114-VAP-10-25.0-29.0<br>25 - 29<br>05/13/15<br>114-VAP-10 | 114-VAP-10-30.0-34.0<br>30 - 34<br>05/13/15<br>114-VAP-10 | 114-VAP-10-36.0-40.0<br>36 - 40<br>05/13/15<br>114-VAP-10 | 114-VAP-10-44.5-48.5<br>44.5 - 48.5<br>05/21/15<br>114-VAP-10 | 114-VAP-12-10.0-14.0<br>10 - 14<br>05/12/15<br>114-VAP-12 | 114-VAP-12-16.0-20.0<br>16 - 20<br>05/12/15<br>114-VAP-12 | 114-VAP-12-20.0-24.0<br>20 - 24<br>05/12/15<br>114-VAP-12 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 2,070 | 270 | 160 | 180 | 190 | 2,090 | 380 | NA | 900 |
| Oxidation Reduction Potential | ARC-ORP | mV | 127 | 46 | 36 | 170 | 116 | 39 | 37 | NA | 166 |
| pH | ARC-pH | SU | 10.64 | 6.66 | 6.58 | 6.47 | 6.69 | 8.72 | 11.02 | NA | 6.75 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 17.51 | 16.17 | 16.72 | 18.45 | 18.02 | 16.59 | 15.68 | NA | 17.82 |
| Turbidity | ARC-Turb | NTU | 6.42 | 33 | NA | 10 | 32 | NA | 28.1 | NA | 818 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-VAP-12-30.0-34.0 | 114-VAP-12-35.0-39.0 | 114-VAP-12-45.5-49.5 | 114-VAP-13-9.0-13.0 | 114-VAP-13-13.0-17.0 | 114-VAP-13-17.0-21.0 | 114-VAP-13-22.0-26.0 | 114-VAP-13-28.0-32.0 | 114-VAP-13-34.0-38.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 30 - 34 | 35 - 39 | 45.5 - 49.5 | 9 - 13 | 13 - 17 | 17 - 21 | 22 - 26 | 28 - 32 | 34 - 38 |
| Date Collected: | | | 05/12/15 | 05/12/15 | 05/21/15 | 06/08/15 | 06/08/15 | 06/08/15 | 06/09/15 | 06/09/15 | 06/09/15 |
| Location ID: | CAS Number | Units | 114-VAP-12 | 114-VAP-12 | 114-VAP-12 | 114-VAP-13 | 114-VAP-13 | 114-VAP-13 | 114-VAP-13 | 114-VAP-13 | 114-VAP-13 |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-12-30.0-34.0<br>30 - 34<br>05/12/15<br>114-VAP-12 | 114-VAP-12-35.0-39.0<br>35 - 39<br>05/12/15<br>114-VAP-12 | 114-VAP-12-45.5-49.5<br>45.5 - 49.5<br>05/21/15<br>114-VAP-12 | 114-VAP-13-9.0-13.0<br>9 - 13<br>06/08/15<br>114-VAP-13 | 114-VAP-13-13.0-17.0<br>13 - 17<br>06/08/15<br>114-VAP-13 | 114-VAP-13-17.0-21.0<br>17 - 21<br>06/08/15<br>114-VAP-13 | 114-VAP-13-22.0-26.0<br>22 - 26<br>06/09/15<br>114-VAP-13 | 114-VAP-13-28.0-32.0<br>28 - 32<br>06/09/15<br>114-VAP-13 | 114-VAP-13-34.0-38.0<br>34 - 38<br>06/09/15<br>114-VAP-13 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-12-30.0-34.0<br>30 - 34<br>05/12/15<br>114-VAP-12 | 114-VAP-12-35.0-39.0<br>35 - 39<br>05/12/15<br>114-VAP-12 | 114-VAP-12-45.5-49.5<br>45.5 - 49.5<br>05/21/15<br>114-VAP-12 | 114-VAP-13-9.0-13.0<br>9 - 13<br>06/08/15<br>114-VAP-13 | 114-VAP-13-13.0-17.0<br>13 - 17<br>06/08/15<br>114-VAP-13 | 114-VAP-13-17.0-21.0<br>17 - 21<br>06/08/15<br>114-VAP-13 | 114-VAP-13-22.0-26.0<br>22 - 26<br>06/09/15<br>114-VAP-13 | 114-VAP-13-28.0-32.0<br>28 - 32<br>06/09/15<br>114-VAP-13 | 114-VAP-13-34.0-38.0<br>34 - 38<br>06/09/15<br>114-VAP-13 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 241,000 [236,000] | 217,000 | 1,230 J | 18.2 | 41.0 [37.1] | NA | 1,020 | 20,700 | 20,900 |
| Chromium VI | 18540-29-9 | ug/L | 252,000 [251,000] | 237,000 | 1,300 J | 10 U | 10 U [10 U] | 250 U | 10 UJ | 28,800 | 28,000 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-12-30.0-34.0<br>30 - 34<br>05/12/15<br>114-VAP-12 | 114-VAP-12-35.0-39.0<br>35 - 39<br>05/12/15<br>114-VAP-12 | 114-VAP-12-45.5-49.5<br>45.5 - 49.5<br>05/21/15<br>114-VAP-12 | 114-VAP-13-9.0-13.0<br>9 - 13<br>06/08/15<br>114-VAP-13 | 114-VAP-13-13.0-17.0<br>13 - 17<br>06/08/15<br>114-VAP-13 | 114-VAP-13-17.0-21.0<br>17 - 21<br>06/08/15<br>114-VAP-13 | 114-VAP-13-22.0-26.0<br>22 - 26<br>06/09/15<br>114-VAP-13 | 114-VAP-13-28.0-32.0<br>28 - 32<br>06/09/15<br>114-VAP-13 | 114-VAP-13-34.0-38.0<br>34 - 38<br>06/09/15<br>114-VAP-13 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 1,470 J | 1.7 J | 11.5 [12.4] | NA | 704 | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 1,200 | 10 U | 4.3 J [3.2 J] | NA | 700 J | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-12-30.0-34.0<br>30 - 34<br>05/12/15<br>114-VAP-12 | 114-VAP-12-35.0-39.0<br>35 - 39<br>05/12/15<br>114-VAP-12 | 114-VAP-12-45.5-49.5<br>45.5 - 49.5<br>05/21/15<br>114-VAP-12 | 114-VAP-13-9.0-13.0<br>9 - 13<br>06/08/15<br>114-VAP-13 | 114-VAP-13-13.0-17.0<br>13 - 17<br>06/08/15<br>114-VAP-13 | 114-VAP-13-17.0-21.0<br>17 - 21<br>06/08/15<br>114-VAP-13 | 114-VAP-13-22.0-26.0<br>22 - 26<br>06/09/15<br>114-VAP-13 | 114-VAP-13-28.0-32.0<br>28 - 32<br>06/09/15<br>114-VAP-13 | 114-VAP-13-34.0-38.0<br>34 - 38<br>06/09/15<br>114-VAP-13 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 365 [371] | 292 | 371 | 138 | 69.7 [113] [69.3] | 276 | 333 | 346 | 350 |
| pH | ARC-pH | SU | 6.91 [6.88] | 7.78 | 7.92 | 10.80 | 10.97 [10.96] [10.96] | 8.58 | 6.96 | 6.78 | 6.69 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-12-30.0-34.0<br>30 - 34<br>05/12/15<br>114-VAP-12 | 114-VAP-12-35.0-39.0<br>35 - 39<br>05/12/15<br>114-VAP-12 | 114-VAP-12-45.5-49.5<br>45.5 - 49.5<br>05/21/15<br>114-VAP-12 | 114-VAP-13-9.0-13.0<br>9 - 13<br>06/08/15<br>114-VAP-13 | 114-VAP-13-13.0-17.0<br>13 - 17<br>06/08/15<br>114-VAP-13 | 114-VAP-13-17.0-21.0<br>17 - 21<br>06/08/15<br>114-VAP-13 | 114-VAP-13-22.0-26.0<br>22 - 26<br>06/09/15<br>114-VAP-13 | 114-VAP-13-28.0-32.0<br>28 - 32<br>06/09/15<br>114-VAP-13 | 114-VAP-13-34.0-38.0<br>34 - 38<br>06/09/15<br>114-VAP-13 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 640 | 270 | 1,320 | 7,760 | 90 | 1,070 | 250 | 1,560 | 260 |
| Oxidation Reduction Potential | ARC-ORP | mV | 38 | 171.5 | 73 | 125 | 211 | 107 | 349 | 119 | 139 |
| pH | ARC-pH | SU | 6.81 | 8.18 | 8.75 | 10.8 | 11.04 | 8.36 | 6.8 | 6.89 | 6.85 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 18.73 | 21.61 | 16.14 | 23.03 | 19.76 | 20.87 | 16.32 | 17.81 | 17.85 |
| Turbidity | ARC-Turb | NTU | 38 | NA | NA | 6 | 36 | NA | 18 | 69 | 37 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-VAP-13-41.0-45.0 | 114-VAP-13-45.0-49.0 | 114-VAP-13-56.0-60.0 | 114-VAP-14-9.0-13.0 | 114-VAP-14-13.0-17.0 | 114-VAP-14-17.0-21.0 | 114-VAP-14-21.0-25.0 | 114-VAP-14-26.0-30.0 | 114-VAP-14-31.0-35.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 41 - 45 | 45 - 49 | 56 - 60 | 9 - 13 | 13 - 17 | 17 - 21 | 21 - 25 | 26 - 30 | 31 - 35 |
| Date Collected: | | | 06/09/15 | 06/09/15 | 06/17/15 | 06/05/15 | 06/05/15 | 06/05/15 | 06/05/15 | 06/05/15 | 06/05/15 |
| Location ID: | CAS Number | Units | 114-VAP-13 | 114-VAP-13 | 114-VAP-13 | 114-VAP-14 | 114-VAP-14 | 114-VAP-14 | 114-VAP-14 | 114-VAP-14 | 114-VAP-14 |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-13-41.0-45.0<br>41 - 45<br>06/09/15<br>114-VAP-13 | 114-VAP-13-45.0-49.0<br>45 - 49<br>06/09/15<br>114-VAP-13 | 114-VAP-13-56.0-60.0<br>56 - 60<br>06/17/15<br>114-VAP-13 | 114-VAP-14-9.0-13.0<br>9 - 13<br>06/05/15<br>114-VAP-14 | 114-VAP-14-13.0-17.0<br>13 - 17<br>06/05/15<br>114-VAP-14 | 114-VAP-14-17.0-21.0<br>17 - 21<br>06/05/15<br>114-VAP-14 | 114-VAP-14-21.0-25.0<br>21 - 25<br>06/05/15<br>114-VAP-14 | 114-VAP-14-26.0-30.0<br>26 - 30<br>06/05/15<br>114-VAP-14 | 114-VAP-14-31.0-35.0<br>31 - 35<br>06/05/15<br>114-VAP-14 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-13-41.0-45.0<br>41 - 45<br>06/09/15<br>114-VAP-13 | 114-VAP-13-45.0-49.0<br>45 - 49<br>06/09/15<br>114-VAP-13 | 114-VAP-13-56.0-60.0<br>56 - 60<br>06/17/15<br>114-VAP-13 | 114-VAP-14-9.0-13.0<br>9 - 13<br>06/05/15<br>114-VAP-14 | 114-VAP-14-13.0-17.0<br>13 - 17<br>06/05/15<br>114-VAP-14 | 114-VAP-14-17.0-21.0<br>17 - 21<br>06/05/15<br>114-VAP-14 | 114-VAP-14-21.0-25.0<br>21 - 25<br>06/05/15<br>114-VAP-14 | 114-VAP-14-26.0-30.0<br>26 - 30<br>06/05/15<br>114-VAP-14 | 114-VAP-14-31.0-35.0<br>31 - 35<br>06/05/15<br>114-VAP-14 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 36,000 J | 48,700 | 222 [223] | 192 | 6,200 | 3,330 | 2,110 J | 26,500 | 25,800 |
| Chromium VI | 18540-29-9 | ug/L | 42,400 J | 61,600 | 13 [14] | 24 J | 6,700 | 87 J | 1,400 J | 32,300 | 33,300 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-13-41.0-45.0<br>41 - 45<br>06/09/15<br>114-VAP-13 | 114-VAP-13-45.0-49.0<br>45 - 49<br>06/09/15<br>114-VAP-13 | 114-VAP-13-56.0-60.0<br>56 - 60<br>06/17/15<br>114-VAP-13 | 114-VAP-14-9.0-13.0<br>9 - 13<br>06/05/15<br>114-VAP-14 | 114-VAP-14-13.0-17.0<br>13 - 17<br>06/05/15<br>114-VAP-14 | 114-VAP-14-17.0-21.0<br>17 - 21<br>06/05/15<br>114-VAP-14 | 114-VAP-14-21.0-25.0<br>21 - 25<br>06/05/15<br>114-VAP-14 | 114-VAP-14-26.0-30.0<br>26 - 30<br>06/05/15<br>114-VAP-14 | 114-VAP-14-31.0-35.0<br>31 - 35<br>06/05/15<br>114-VAP-14 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 37,800 J | NA | 0.90 J [0.9 J] | 87.2 | NA | 2,740 | 1,530 J | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 40,200 J | NA | 10 U [10 U] | 44 J | NA | 140 J | 1,300 J | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-13-41.0-45.0<br>41 - 45<br>06/09/15<br>114-VAP-13 | 114-VAP-13-45.0-49.0<br>45 - 49<br>06/09/15<br>114-VAP-13 | 114-VAP-13-56.0-60.0<br>56 - 60<br>06/17/15<br>114-VAP-13 | 114-VAP-14-9.0-13.0<br>9 - 13<br>06/05/15<br>114-VAP-14 | 114-VAP-14-13.0-17.0<br>13 - 17<br>06/05/15<br>114-VAP-14 | 114-VAP-14-17.0-21.0<br>17 - 21<br>06/05/15<br>114-VAP-14 | 114-VAP-14-21.0-25.0<br>21 - 25<br>06/05/15<br>114-VAP-14 | 114-VAP-14-26.0-30.0<br>26 - 30<br>06/05/15<br>114-VAP-14 | 114-VAP-14-31.0-35.0<br>31 - 35<br>06/05/15<br>114-VAP-14 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 348 | 353 | 432 [434] [437] | 150 | 170 | 322 | 389 | 396 | 399 |
| pH | ARC-pH | SU | 6.94 | 6.74 | 6.61 [6.63] [6.74] | 11.16 | 11.12 | 9.74 | 6.94 | 7.01 | 7.17 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-13-41.0-45.0<br>41 - 45<br>06/09/15<br>114-VAP-13 | 114-VAP-13-45.0-49.0<br>45 - 49<br>06/09/15<br>114-VAP-13 | 114-VAP-13-56.0-60.0<br>56 - 60<br>06/17/15<br>114-VAP-13 | 114-VAP-14-9.0-13.0<br>9 - 13<br>06/05/15<br>114-VAP-14 | 114-VAP-14-13.0-17.0<br>13 - 17<br>06/05/15<br>114-VAP-14 | 114-VAP-14-17.0-21.0<br>17 - 21<br>06/05/15<br>114-VAP-14 | 114-VAP-14-21.0-25.0<br>21 - 25<br>06/05/15<br>114-VAP-14 | 114-VAP-14-26.0-30.0<br>26 - 30<br>06/05/15<br>114-VAP-14 | 114-VAP-14-31.0-35.0<br>31 - 35<br>06/05/15<br>114-VAP-14 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 750 | 400 | 200 | 210 | 20 | 10 | 320 | 2,550 | 690 |
| Oxidation Reduction Potential | ARC-ORP | mV | 236 | 219 | 114 | 171 | 299 | 367 | 58 | 11 | 53 |
| pH | ARC-pH | SU | 7.06 | 6.82 | 7.01 | 11.53 | 11.51 | 9.79 | 6.88 | 7.07 | 7.14 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 20.7 | 18.62 | 20.1 | 15 | 14.54 | 14.37 | 14.96 | 15.05 | 15.75 |
| Turbidity | ARC-Turb | NTU | 1,169 | 46 | NA | 895 | 54 | NA | NA | 15 | 25 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-14-36.0-40.0<br>36 - 40<br>06/05/15<br>114-VAP-14 | 114-VAP-14-41.0-44.0<br>41 - 44<br>06/08/15<br>114-VAP-14 | 114-VAP-14-45.0-49.0<br>45 - 49<br>06/08/15<br>114-VAP-14 | 114-VAP-15-10.0-14.0<br>10 - 14<br>06/04/15<br>114-VAP-15 | 114-VAP-15-14.0-18.0<br>14 - 18<br>06/04/15<br>114-VAP-15 | 114-VAP-15-20.0-24.0<br>20 - 24<br>06/04/15<br>114-VAP-15 | 114-VAP-15-28.0-32.0<br>28 - 32<br>06/04/15<br>114-VAP-15 | 114-VAP-15-33.0-37.0<br>33 - 37<br>06/04/15<br>114-VAP-15 | 114-VAP-15-38.0-41.0<br>38 - 41<br>06/04/15<br>114-VAP-15 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-14-36.0-40.0<br>36 - 40<br>06/05/15<br>114-VAP-14 | 114-VAP-14-41.0-44.0<br>41 - 44<br>06/08/15<br>114-VAP-14 | 114-VAP-14-45.0-49.0<br>45 - 49<br>06/08/15<br>114-VAP-14 | 114-VAP-15-10.0-14.0<br>10 - 14<br>06/04/15<br>114-VAP-15 | 114-VAP-15-14.0-18.0<br>14 - 18<br>06/04/15<br>114-VAP-15 | 114-VAP-15-20.0-24.0<br>20 - 24<br>06/04/15<br>114-VAP-15 | 114-VAP-15-28.0-32.0<br>28 - 32<br>06/04/15<br>114-VAP-15 | 114-VAP-15-33.0-37.0<br>33 - 37<br>06/04/15<br>114-VAP-15 | 114-VAP-15-38.0-41.0<br>38 - 41<br>06/04/15<br>114-VAP-15 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-14-36.0-40.0<br>36 - 40<br>06/05/15<br>114-VAP-14 | 114-VAP-14-41.0-44.0<br>41 - 44<br>06/08/15<br>114-VAP-14 | 114-VAP-14-45.0-49.0<br>45 - 49<br>06/08/15<br>114-VAP-14 | 114-VAP-15-10.0-14.0<br>10 - 14<br>06/04/15<br>114-VAP-15 | 114-VAP-15-14.0-18.0<br>14 - 18<br>06/04/15<br>114-VAP-15 | 114-VAP-15-20.0-24.0<br>20 - 24<br>06/04/15<br>114-VAP-15 | 114-VAP-15-28.0-32.0<br>28 - 32<br>06/04/15<br>114-VAP-15 | 114-VAP-15-33.0-37.0<br>33 - 37<br>06/04/15<br>114-VAP-15 | 114-VAP-15-38.0-41.0<br>38 - 41<br>06/04/15<br>114-VAP-15 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 1,920 J | 1,710 J | 2,070 J | 408 | 14,800 J | 30,800 J | 21,900 | 3,780 | 5,040 |
| Chromium VI | 18540-29-9 | ug/L | 1,800 J | 1,500 J | 1,500 J | 41 | 270 J | 5,400 J | 25,200 | 10 U | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-14-36.0-40.0<br>36 - 40<br>06/05/15<br>114-VAP-14 | 114-VAP-14-41.0-44.0<br>41 - 44<br>06/08/15<br>114-VAP-14 | 114-VAP-14-45.0-49.0<br>45 - 49<br>06/08/15<br>114-VAP-14 | 114-VAP-15-10.0-14.0<br>10 - 14<br>06/04/15<br>114-VAP-15 | 114-VAP-15-14.0-18.0<br>14 - 18<br>06/04/15<br>114-VAP-15 | 114-VAP-15-20.0-24.0<br>20 - 24<br>06/04/15<br>114-VAP-15 | 114-VAP-15-28.0-32.0<br>28 - 32<br>06/04/15<br>114-VAP-15 | 114-VAP-15-33.0-37.0<br>33 - 37<br>06/04/15<br>114-VAP-15 | 114-VAP-15-38.0-41.0<br>38 - 41<br>06/04/15<br>114-VAP-15 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 2,030 J | 1,520 J | 1,530 J | 78.9 | 191 | 4,970 J | NA | 1.7 J | 7.1 J |
| Chromium VI | 18540-29-9 | ug/L | 1,900 J | 1,300 J | 1,300 J | 39 | 100 U | 4,500 J | NA | 10 U | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-14-36.0-40.0<br>36 - 40<br>06/05/15<br>114-VAP-14 | 114-VAP-14-41.0-44.0<br>41 - 44<br>06/08/15<br>114-VAP-14 | 114-VAP-14-45.0-49.0<br>45 - 49<br>06/08/15<br>114-VAP-14 | 114-VAP-15-10.0-14.0<br>10 - 14<br>06/04/15<br>114-VAP-15 | 114-VAP-15-14.0-18.0<br>14 - 18<br>06/04/15<br>114-VAP-15 | 114-VAP-15-20.0-24.0<br>20 - 24<br>06/04/15<br>114-VAP-15 | 114-VAP-15-28.0-32.0<br>28 - 32<br>06/04/15<br>114-VAP-15 | 114-VAP-15-33.0-37.0<br>33 - 37<br>06/04/15<br>114-VAP-15 | 114-VAP-15-38.0-41.0<br>38 - 41<br>06/04/15<br>114-VAP-15 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 396 | 392 | 397 | 397 | 358 | 387 | 394 | 407 | 374 |
| pH | ARC-pH | SU | 7.25 | 7.06 | 6.63 | 7.79 | 8.31 | 7.05 | 6.92 | 7.21 | 7.24 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-14-36.0-40.0<br>36 - 40<br>06/05/15<br>114-VAP-14 | 114-VAP-14-41.0-44.0<br>41 - 44<br>06/08/15<br>114-VAP-14 | 114-VAP-14-45.0-49.0<br>45 - 49<br>06/08/15<br>114-VAP-14 | 114-VAP-15-10.0-14.0<br>10 - 14<br>06/04/15<br>114-VAP-15 | 114-VAP-15-14.0-18.0<br>14 - 18<br>06/04/15<br>114-VAP-15 | 114-VAP-15-20.0-24.0<br>20 - 24<br>06/04/15<br>114-VAP-15 | 114-VAP-15-28.0-32.0<br>28 - 32<br>06/04/15<br>114-VAP-15 | 114-VAP-15-33.0-37.0<br>33 - 37<br>06/04/15<br>114-VAP-15 | 114-VAP-15-38.0-41.0<br>38 - 41<br>06/04/15<br>114-VAP-15 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 1,460 | 3,540 | 310 | 260 | NA | 520 | 230 | 40 | 110 |
| Oxidation Reduction Potential | ARC-ORP | mV | 160 | 88 | 149 | 83 | 12 | 171 | 44 | 525 | 525 |
| pH | ARC-pH | SU | 7.29 | 6.87 | 6.5 | 7.94 | 8.19 | 6.53 | 6.43 | 6.54 | 6.59 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 16.64 | 16.9 | 19.37 | 14.12 | 16.38 | 16.18 | 17 | 18.81 | 18.47 |
| Turbidity | ARC-Turb | NTU | 69 | 18 | NA | 3,637 | NA | NA | 51 | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-16-8.0-12.0<br>8 - 12<br>06/11/15<br>114-VAP-16 | 114-VAP-16-12.0-16.0<br>12 - 16<br>06/11/15<br>114-VAP-16 | 114-VAP-16-20.0-24.0<br>20 - 24<br>06/11/15<br>114-VAP-16 | 114-VAP-16-26.0-30.0<br>26 - 30<br>06/11/15<br>114-VAP-16 | 114-VAP-16-37.0-41.0<br>37 - 41<br>06/11/15<br>114-VAP-16 | 114-VAP-16-41.0-45.0<br>41 - 45<br>06/11/15<br>114-VAP-16 | 114-VAP-16-45.0-48.0<br>45 - 48<br>06/11/15<br>114-VAP-16 | 114-VAP-17-34.0-38.0<br>34 - 38<br>06/03/15<br>114-VAP-17 | 114-VAP-17-39.0-43.0<br>39 - 43<br>06/03/15<br>114-VAP-17 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-16-8.0-12.0<br>8 - 12<br>06/11/15<br>114-VAP-16 | 114-VAP-16-12.0-16.0<br>12 - 16<br>06/11/15<br>114-VAP-16 | 114-VAP-16-20.0-24.0<br>20 - 24<br>06/11/15<br>114-VAP-16 | 114-VAP-16-26.0-30.0<br>26 - 30<br>06/11/15<br>114-VAP-16 | 114-VAP-16-37.0-41.0<br>37 - 41<br>06/11/15<br>114-VAP-16 | 114-VAP-16-41.0-45.0<br>41 - 45<br>06/11/15<br>114-VAP-16 | 114-VAP-16-45.0-48.0<br>45 - 48<br>06/11/15<br>114-VAP-16 | 114-VAP-17-34.0-38.0<br>34 - 38<br>06/03/15<br>114-VAP-17 | 114-VAP-17-39.0-43.0<br>39 - 43<br>06/03/15<br>114-VAP-17 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-16-8.0-12.0<br>8 - 12<br>06/11/15<br>114-VAP-16 | 114-VAP-16-12.0-16.0<br>12 - 16<br>06/11/15<br>114-VAP-16 | 114-VAP-16-20.0-24.0<br>20 - 24<br>06/11/15<br>114-VAP-16 | 114-VAP-16-26.0-30.0<br>26 - 30<br>06/11/15<br>114-VAP-16 | 114-VAP-16-37.0-41.0<br>37 - 41<br>06/11/15<br>114-VAP-16 | 114-VAP-16-41.0-45.0<br>41 - 45<br>06/11/15<br>114-VAP-16 | 114-VAP-16-45.0-48.0<br>45 - 48<br>06/11/15<br>114-VAP-16 | 114-VAP-17-34.0-38.0<br>34 - 38<br>06/03/15<br>114-VAP-17 | 114-VAP-17-39.0-43.0<br>39 - 43<br>06/03/15<br>114-VAP-17 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 16.4 J | 104 | 44,900 J | 221,000 [218,000] | 591 | 2,380 | 5,720 J | 115,000 J | 955 |
| Chromium VI | 18540-29-9 | ug/L | 41 J | 10 U | 53,500 J | 291,000 [304,000] | 10 U | 2,700 | 4,800 J | 458,000 J | 10 UJ |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-16-8.0-12.0<br>8 - 12<br>06/11/15<br>114-VAP-16 | 114-VAP-16-12.0-16.0<br>12 - 16<br>06/11/15<br>114-VAP-16 | 114-VAP-16-20.0-24.0<br>20 - 24<br>06/11/15<br>114-VAP-16 | 114-VAP-16-26.0-30.0<br>26 - 30<br>06/11/15<br>114-VAP-16 | 114-VAP-16-37.0-41.0<br>37 - 41<br>06/11/15<br>114-VAP-16 | 114-VAP-16-41.0-45.0<br>41 - 45<br>06/11/15<br>114-VAP-16 | 114-VAP-16-45.0-48.0<br>45 - 48<br>06/11/15<br>114-VAP-16 | 114-VAP-17-34.0-38.0<br>34 - 38<br>06/03/15<br>114-VAP-17 | 114-VAP-17-39.0-43.0<br>39 - 43<br>06/03/15<br>114-VAP-17 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 3.1 J | NA | 53,000 J | NA | 2.1 J | NA | 6,400 J | 139,000 J | 16.8 |
| Chromium VI | 18540-29-9 | ug/L | 6.2 J | NA | 52,200 J | NA | 10 U | NA | 12,000 J | 452,000 J | 10 UJ |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-16-8.0-12.0<br>8 - 12<br>06/11/15<br>114-VAP-16 | 114-VAP-16-12.0-16.0<br>12 - 16<br>06/11/15<br>114-VAP-16 | 114-VAP-16-20.0-24.0<br>20 - 24<br>06/11/15<br>114-VAP-16 | 114-VAP-16-26.0-30.0<br>26 - 30<br>06/11/15<br>114-VAP-16 | 114-VAP-16-37.0-41.0<br>37 - 41<br>06/11/15<br>114-VAP-16 | 114-VAP-16-41.0-45.0<br>41 - 45<br>06/11/15<br>114-VAP-16 | 114-VAP-16-45.0-48.0<br>45 - 48<br>06/11/15<br>114-VAP-16 | 114-VAP-17-34.0-38.0<br>34 - 38<br>06/03/15<br>114-VAP-17 | 114-VAP-17-39.0-43.0<br>39 - 43<br>06/03/15<br>114-VAP-17 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 245 | 321 | 327 | 267 [267] | 326 | 342 | 356 | 449 | 439 |
| pH | ARC-pH | SU | 6.40 | 7.12 | 8.08 | 9.67 [9.68] | 7.83 | 7.74 | 7.41 | 6.81 | 6.69 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-16-8.0-12.0<br>8 - 12<br>06/11/15<br>114-VAP-16 | 114-VAP-16-12.0-16.0<br>12 - 16<br>06/11/15<br>114-VAP-16 | 114-VAP-16-20.0-24.0<br>20 - 24<br>06/11/15<br>114-VAP-16 | 114-VAP-16-26.0-30.0<br>26 - 30<br>06/11/15<br>114-VAP-16 | 114-VAP-16-37.0-41.0<br>37 - 41<br>06/11/15<br>114-VAP-16 | 114-VAP-16-41.0-45.0<br>41 - 45<br>06/11/15<br>114-VAP-16 | 114-VAP-16-45.0-48.0<br>45 - 48<br>06/11/15<br>114-VAP-16 | 114-VAP-17-34.0-38.0<br>34 - 38<br>06/03/15<br>114-VAP-17 | 114-VAP-17-39.0-43.0<br>39 - 43<br>06/03/15<br>114-VAP-17 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 150 | 470 | 150 | 340 | 20 | 530 | 140 | 450 | 70 |
| Oxidation Reduction Potential | ARC-ORP | mV | 88 | 148 | 84 | 120 | 197 | 156 | 292 | 60 | 452 |
| pH | ARC-pH | SU | 6.59 | 7.3 | 8.2 | 9.96 | 8.1 | 8.01 | 7.57 | 6.75 | 6.43 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 16.95 | 18.88 | 17.54 | 21.98 | 20.85 | 20.55 | 19.77 | 17.8 | 18.32 |
| Turbidity | ARC-Turb | NTU | 11 | 2,932 | 1,017 | 16 | NA | 43 | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-VAP-17-45.0-49.0 | 114-XOSB-10I20060915 | 114-XOSB-10S20060915 | 114-XOSB-12I20060914 | 114-XOSB-12S20060914 | 114-XOSB-13I20060914 | 114-XOSB-13S20060914 | 114-XOSB-15I20060913 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 45 - 49 | 21 - 26 | 9 - 14 | 22 - 27 | 17 - 19 | 22 - 27 | 17 - 19 | 22 - 27 |
| Date Collected: | | | 06/03/15 | 09/15/06 | 09/15/06 | 09/14/06 | 09/14/06 | 09/14/06 | 09/14/06 | 09/13/06 |
| Location ID: | CAS Number | Units | 114-VAP-17 | XOSB-10 | XOSB-10 | XOSB-12 | XOSB-12 | XOSB-13 | XOSB-13 | XOSB-15 |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-17-45.0-49.0<br>45 - 49<br>06/03/15<br>114-VAP-17 | 114-XOSB-10I20060915<br>21 - 26<br>09/15/06<br>XOSB-10 | 114-XOSB-10S20060915<br>9 - 14<br>09/15/06<br>XOSB-10 | 114-XOSB-12I20060914<br>22 - 27<br>09/14/06<br>XOSB-12 | 114-XOSB-12S20060914<br>17 - 19<br>09/14/06<br>XOSB-12 | 114-XOSB-13I20060914<br>22 - 27<br>09/14/06<br>XOSB-13 | 114-XOSB-13S20060914<br>17 - 19<br>09/14/06<br>XOSB-13 | 114-XOSB-15I20060913<br>22 - 27<br>09/13/06<br>XOSB-15 |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-17-45.0-49.0<br>45 - 49<br>06/03/15<br>114-VAP-17 | 114-XOSB-10I20060915<br>21 - 26<br>09/15/06<br>XOSB-10 | 114-XOSB-10S20060915<br>9 - 14<br>09/15/06<br>XOSB-10 | 114-XOSB-12I20060914<br>22 - 27<br>09/14/06<br>XOSB-12 | 114-XOSB-12S20060914<br>17 - 19<br>09/14/06<br>XOSB-12 | 114-XOSB-13I20060914<br>22 - 27<br>09/14/06<br>XOSB-13 | 114-XOSB-13S20060914<br>17 - 19<br>09/14/06<br>XOSB-13 | 114-XOSB-15I20060913<br>22 - 27<br>09/13/06<br>XOSB-15 |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 995 | 30,100 | 2,570 | 29,400 | 1,550 | 1,110 | 25,600 |
| Antimony | 7440-36-0 | ug/L | NA | 6.0 U | 6.0 U | 22.8 | 22.8 | 6.0 U | 6.0 U | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | NA | 8.0 U | 13.0 | 8.0 U | 8.0 U | 8.0 U | 8.0 U | 20.5 |
| Barium | 7440-39-3 | ug/L | NA | 200 U | 309 | 200 U | 521 | 200 U | 253 | 557 |
| Beryllium | 7440-41-7 | ug/L | NA | 1.0 U | 1.9 | 1.0 U | 1.0 | 1.0 U | 1.0 U | 1.5 |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 4.0 U | 4.0 U | 4.0 U | 4.0 U | 4.0 U | 4.0 U | 4.0 U |
| Calcium | 7440-70-2 | ug/L | NA | 54,700 | 74,800 | 99,400 | 477,000 | 70,200 | 602,000 | 70,800 |
| Chromium | 7440-47-3 | ug/L | 1,980 | 670 | 291 | 48,800 | 40,200 | 10,700 | 9,190 | 2,970 |
| Chromium VI | 18540-29-9 | ug/L | 10 UJ | 570 | 50 U | 56,300 | 35,000 | 11,000 | 9,700 | 50 U |
| Cobalt | 7440-48-4 | ug/L | NA | 50 U | 50 U | 50 U | 117 | 50 U | 50 U | 50 U |
| Copper | 7440-50-8 | ug/L | NA | 33.2 | 103 | 40.8 | 95.4 | 25 U | 25 U | 108 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 1,630 | 36,200 | 2,180 | 29,500 | 1,660 | 795 | 33,200 |
| Lead | 7439-92-1 | ug/L | NA | 8.7 | 97.2 | 9.1 | 77.7 | 4.1 | 9.2 | 125 |
| Magnesium | 7439-95-4 | ug/L | NA | 63,300 | 50,700 | 17,600 | 16,300 | 39,300 | 5,000 U | 123,000 |
| Manganese | 7439-96-5 | ug/L | NA | 126 | 943 | 34.5 | 403 | 28.9 | 15 U | 629 |

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| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-17-45.0-49.0<br>45 - 49<br>06/03/15<br>114-VAP-17 | 114-XOSB-10I20060915<br>21 - 26<br>09/15/06<br>XOSB-10 | 114-XOSB-10S20060915<br>9 - 14<br>09/15/06<br>XOSB-10 | 114-XOSB-12I20060914<br>22 - 27<br>09/14/06<br>XOSB-12 | 114-XOSB-12S20060914<br>17 - 19<br>09/14/06<br>XOSB-12 | 114-XOSB-13I20060914<br>22 - 27<br>09/14/06<br>XOSB-13 | 114-XOSB-13S20060914<br>17 - 19<br>09/14/06<br>XOSB-13 | 114-XOSB-15I20060913<br>22 - 27<br>09/13/06<br>XOSB-15 |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.20 U | 0.40 | 0.20 U | 1.2 | 0.20 U | 0.20 U | 0.73 |
| Nickel | 7440-02-0 | ug/L | NA | 40 U | 50.3 | 40 U | 627 | 40 U | 44.6 | 46.3 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 19,400 | 31,900 | 18,300 | 191,000 | 33,500 | 33,200 | 70,400 |
| Selenium | 7782-49-2 | ug/L | NA | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Silver | 7440-22-4 | ug/L | NA | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Sodium | 7440-23-5 | ug/L | NA | 283,000 | 328,000 | 449,000 | 3,860,000 | 614,000 | 504,000 | 816,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | 670 | 418 | 48,800 | 41,000 | 10,700 | 9,230 | 3,110 |
| Vanadium | 7440-62-2 | ug/L | NA | 50 U | 76.9 | 50 U | 146 | 50 U | 50 U | 97.4 |
| Zinc | 7440-66-6 | ug/L | NA | 20 U | 269 | 20 U | 257 | 20 U | 20 U | 289 |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 5.2 J | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 UJ | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-17-45.0-49.0<br>45 - 49<br>06/03/15<br>114-VAP-17 | 114-XOSB-10I20060915<br>21 - 26<br>09/15/06<br>XOSB-10 | 114-XOSB-10S20060915<br>9 - 14<br>09/15/06<br>XOSB-10 | 114-XOSB-12I20060914<br>22 - 27<br>09/14/06<br>XOSB-12 | 114-XOSB-12S20060914<br>17 - 19<br>09/14/06<br>XOSB-12 | 114-XOSB-13I20060914<br>22 - 27<br>09/14/06<br>XOSB-13 | 114-XOSB-13S20060914<br>17 - 19<br>09/14/06<br>XOSB-13 | 114-XOSB-15I20060913<br>22 - 27<br>09/13/06<br>XOSB-15 |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 411 | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | 6.81 | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-VAP-17-45.0-49.0<br>45 - 49<br>06/03/15<br>114-VAP-17 | 114-XOSB-10I20060915<br>21 - 26<br>09/15/06<br>XOSB-10 | 114-XOSB-10S20060915<br>9 - 14<br>09/15/06<br>XOSB-10 | 114-XOSB-12I20060914<br>22 - 27<br>09/14/06<br>XOSB-12 | 114-XOSB-12S20060914<br>17 - 19<br>09/14/06<br>XOSB-12 | 114-XOSB-13I20060914<br>22 - 27<br>09/14/06<br>XOSB-13 | 114-XOSB-13S20060914<br>17 - 19<br>09/14/06<br>XOSB-13 | 114-XOSB-15I20060913<br>22 - 27<br>09/13/06<br>XOSB-15 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 210 | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 348 | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | 6.56 | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 18.75 | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 114-XOSB-15S20060913 | 114-XOSB-17I20060913 | 114-XOSB-17S20060913 | 114-XOSB-19I20060912 | 114-XOSB-19S20060912 | 114-XOSB-21I20060912 | 114-XOSB-21S20060912 | 132-MW2A-GA01-10.5 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 9 - 14 | 23 - 28 | 10.5 - 15.5 | 22 - 27 | 12 - 17 | 24 - 29 | 12 - 17 | 10.5 |
| Date Collected: | | | 09/13/06 | 09/13/06 | 09/13/06 | 09/12/06 | 09/12/06 | 09/12/06 | 09/12/06 | 06/17/11 |
| Location ID: | CAS Number | Units | XOSB-15 | XOSB-17 | XOSB-17 | XOSB-19 | XOSB-19 | XOSB-21 | XOSB-21 | 132-MW2A |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.020 U |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.020 U |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 31 |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | 31 |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-XOSB-15S20060913<br>9 - 14<br>09/13/06<br>XOSB-15 | 114-XOSB-17I20060913<br>23 - 28<br>09/13/06<br>XOSB-17 | 114-XOSB-17S20060913<br>10.5 - 15.5<br>09/13/06<br>XOSB-17 | 114-XOSB-19I20060912<br>22 - 27<br>09/12/06<br>XOSB-19 | 114-XOSB-19S20060912<br>12 - 17<br>09/12/06<br>XOSB-19 | 114-XOSB-21I20060912<br>24 - 29<br>09/12/06<br>XOSB-21 | 114-XOSB-21S20060912<br>12 - 17<br>09/12/06<br>XOSB-21 | 132-MW2A-GA01-10.5<br>10.5<br>06/17/11<br>132-MW2A |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 30 U |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 30 U |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 20 U |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 20 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 20 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 20 U |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 30 U |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.050 U |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.050 U |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.050 U |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-XOSB-15S20060913<br>9 - 14<br>09/13/06<br>XOSB-15 | 114-XOSB-17I20060913<br>23 - 28<br>09/13/06<br>XOSB-17 | 114-XOSB-17S20060913<br>10.5 - 15.5<br>09/13/06<br>XOSB-17 | 114-XOSB-19I20060912<br>22 - 27<br>09/12/06<br>XOSB-19 | 114-XOSB-19S20060912<br>12 - 17<br>09/12/06<br>XOSB-19 | 114-XOSB-21I20060912<br>24 - 29<br>09/12/06<br>XOSB-21 | 114-XOSB-21S20060912<br>12 - 17<br>09/12/06<br>XOSB-21 | 132-MW2A-GA01-10.5<br>10.5<br>06/17/11<br>132-MW2A |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.020 U |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.20 U |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | 7.0 U |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 850,000 | 15,400 | 1,760,000 | 61,900 | 2,290,000 | 15,000 | 65,900 | NA |
| Antimony | 7440-36-0 | ug/L | 105 | 6.0 U | 210 | 6 U | 150 U | 6 U | 8.9 | 2.5 U |
| Arsenic | 7440-38-2 | ug/L | 481 | 10.9 | 1,060 | 24.5 | 836 | 15.2 | 65 | NA |
| Barium | 7440-39-3 | ug/L | 7,800 | 389 | 24,500 | 499 | 15,600 | 200 U | 506 | NA |
| Beryllium | 7440-41-7 | ug/L | 62.4 | 1.4 | 107 | 4.5 | 178 | 1.4 | 3.9 | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 20.2 | 4.0 U | 100 U | 4 U | 100 U | 4 U | 4 U | NA |
| Calcium | 7440-70-2 | ug/L | 130,000 | 66,700 | 766,000 | 67,100 | 523,000 | 50,500 | 163,000 | NA |
| Chromium | 7440-47-3 | ug/L | 63,500 | 1,620 | 195,000 | 3,000 | 109,000 | 704 | 5,200 | 5.0 U |
| Chromium VI | 18540-29-9 | ug/L | 250 U | 50 U | 250 U | 50 U | 250 U | 50 U | 2,700 | 10.0 UJ |
| Cobalt | 7440-48-4 | ug/L | 494 | 50 U | 1,300 U | 50 U | 1,360 | 50 U | 59.6 | NA |
| Copper | 7440-50-8 | ug/L | 1,780 | 110 | 7,340 | 227 | 7,330 | 72.7 | 196 | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 835,000 | 16,700 | 1,720,000 | 56,200 | 2,440,000 | 17,700 | 54,900 | NA |
| Lead | 7439-92-1 | ug/L | 3,230 | 163 | 17,400 | 354 | 13,300 | 48.2 | 213 | NA |
| Magnesium | 7439-95-4 | ug/L | 231,000 | 91,800 | 518,000 | 98,800 | 728,000 | 47,400 | 19,900 | NA |
| Manganese | 7439-96-5 | ug/L | 8,910 | 497 | 29,000 | 847 | 39,100 | 213 | 621 | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-XOSB-15S20060913<br>9 - 14<br>09/13/06<br>XOSB-15 | 114-XOSB-17I20060913<br>23 - 28<br>09/13/06<br>XOSB-17 | 114-XOSB-17S20060913<br>10.5 - 15.5<br>09/13/06<br>XOSB-17 | 114-XOSB-19I20060912<br>22 - 27<br>09/12/06<br>XOSB-19 | 114-XOSB-19S20060912<br>12 - 17<br>09/12/06<br>XOSB-19 | 114-XOSB-21I20060912<br>24 - 29<br>09/12/06<br>XOSB-21 | 114-XOSB-21S20060912<br>12 - 17<br>09/12/06<br>XOSB-21 | 132-MW2A-GA01-10.5<br>10.5<br>06/17/11<br>132-MW2A |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 19.5 | 0.35 | 55.2 | 0.57 | 22.5 | 0.2 U | 0.75 | NA |
| Nickel | 7440-02-0 | ug/L | 1,060 | 40 U | 1,960 | 73.5 | 2,850 | 40 U | 272 | 5.0 U |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 136,000 | 47,300 | 242,000 | 51,900 J | 308,000 J | 54,900 J | 76,600 J | NA |
| Selenium | 7782-49-2 | ug/L | 50 U | 10 U | 250 U | 10 U | 250 U | 10 U | 10 U | NA |
| Silver | 7440-22-4 | ug/L | 50 U | 10 U | 250 U | 10 U | 250 U | 10 U | 10 U | NA |
| Sodium | 7440-23-5 | ug/L | 988,000 | 422,000 | 1,090,000 | 385,000 | 982,000 | 651,000 | 1,510,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 50 U | 10 U | 250 U | 10 U | 250 U | 10 U | 10 U | 1.0 U |
| Total CCPW Metals | CCPW-M | ug/L | 67,800 | 1,620 | 202,000 | 3,240 | 118,000 | 765 | 5,690 | 4.1 U |
| Vanadium | 7440-62-2 | ug/L | 3,100 | 50 U | 4,630 | 166 | 6,500 | 60.7 | 212 | 5.0 U |
| Zinc | 7440-66-6 | ug/L | 7,650 | 343 | 36,100 | 1,080 | 41,300 | 142 JF | 639 | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

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| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-XOSB-15S20060913<br>9 - 14<br>09/13/06<br>XOSB-15 | 114-XOSB-17I20060913<br>23 - 28<br>09/13/06<br>XOSB-17 | 114-XOSB-17S20060913<br>10.5 - 15.5<br>09/13/06<br>XOSB-17 | 114-XOSB-19I20060912<br>22 - 27<br>09/12/06<br>XOSB-19 | 114-XOSB-19S20060912<br>12 - 17<br>09/12/06<br>XOSB-19 | 114-XOSB-21I20060912<br>24 - 29<br>09/12/06<br>XOSB-21 | 114-XOSB-21S20060912<br>12 - 17<br>09/12/06<br>XOSB-21 | 132-MW2A-GA01-10.5<br>10.5<br>06/17/11<br>132-MW2A |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | 408 |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | 7.42 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

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| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-XOSB-15S20060913<br>9 - 14<br>09/13/06<br>XOSB-15 | 114-XOSB-17I20060913<br>23 - 28<br>09/13/06<br>XOSB-17 | 114-XOSB-17S20060913<br>10.5 - 15.5<br>09/13/06<br>XOSB-17 | 114-XOSB-19I20060912<br>22 - 27<br>09/12/06<br>XOSB-19 | 114-XOSB-19S20060912<br>12 - 17<br>09/12/06<br>XOSB-19 | 114-XOSB-21I20060912<br>24 - 29<br>09/12/06<br>XOSB-21 | 114-XOSB-21S20060912<br>12 - 17<br>09/12/06<br>XOSB-21 | 132-MW2A-GA01-10.5<br>10.5<br>06/17/11<br>132-MW2A |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | 1,440 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | 93.7 |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | 6.44 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | 16.58 |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | 2.3 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 132-MW2A-GA01-15.5 | 132-MW2B-GA01-27.5 | 132-P3A-DPT-7 | 132-P3A-DPT-9 | 132-P3A-DPT-12 | 132-P3A-DPT-12-F | 132-P3A-MW3-20151215-10.0 | 132-P3A-MW3-20151215-15.0 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 15.5 | 27.5 | | | | | | |
| Date Collected: | | | 06/17/11 | 06/17/11 | 09/10/13 | 09/10/13 | 09/11/13 | 09/11/13 | 12/15/15 | 12/15/15 |
| Location ID: | CAS Number | Units | 132-MW2A | 132-MW2B | DPT-7 | DPT-9 | DPT-12 | DPT-12 | 132-P3A-MW3 | 132-P3A-MW3 |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-MW2A-GA01-15.5<br>15.5<br>06/17/11<br>132-MW2A | 132-MW2B-GA01-27.5<br>27.5<br>06/17/11<br>132-MW2B | 132-P3A-DPT-7<br><br>09/10/13<br>DPT-7 | 132-P3A-DPT-9<br><br>09/10/13<br>DPT-9 | 132-P3A-DPT-12<br><br>09/11/13<br>DPT-12 | 132-P3A-DPT-12-F<br><br>09/11/13<br>DPT-12 | 132-P3A-MW3-20151215-10.0<br><br>12/15/15<br>132-P3A-MW3 | 132-P3A-MW3-20151215-15.0<br><br>12/15/15<br>132-P3A-MW3 |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-MW2A-GA01-15.5<br>15.5<br>06/17/11<br>132-MW2A | 132-MW2B-GA01-27.5<br>27.5<br>06/17/11<br>132-MW2B | 132-P3A-DPT-7<br><br>09/10/13<br>DPT-7 | 132-P3A-DPT-9<br><br>09/10/13<br>DPT-9 | 132-P3A-DPT-12<br><br>09/11/13<br>DPT-12 | 132-P3A-DPT-12-F<br><br>09/11/13<br>DPT-12 | 132-P3A-MW3-20151215-10.0<br><br>12/15/15<br>132-P3A-MW3 | 132-P3A-MW3-20151215-15.0<br><br>12/15/15<br>132-P3A-MW3 |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 2.5 U | 2.5 U | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 4.1 J | 9.4 | NA | NA | NA | NA | 8.8 J [12.8] | 16.4 |
| Chromium VI | 18540-29-9 | ug/L | 10.0 UJ | 10.0 UJ | NA | 19 | 10 UJ | NA | 5.5 U [5.5 U] | 5.5 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-MW2A-GA01-15.5<br>15.5<br>06/17/11<br>132-MW2A | 132-MW2B-GA01-27.5<br>27.5<br>06/17/11<br>132-MW2B | 132-P3A-DPT-7<br><br>09/10/13<br>DPT-7 | 132-P3A-DPT-9<br><br>09/10/13<br>DPT-9 | 132-P3A-DPT-12<br><br>09/11/13<br>DPT-12 | 132-P3A-DPT-12-F<br><br>09/11/13<br>DPT-12 | 132-P3A-MW3-20151215-10.0<br><br>12/15/15<br>132-P3A-MW3 | 132-P3A-MW3-20151215-15.0<br><br>12/15/15<br>132-P3A-MW3 |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 3.8 J | 8.6 | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 1.0 U | 1.0 U | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | 7.9 | 98.6 | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 5.0 U | 80.6 | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 850 | NA | NA | 10 UJ | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-MW2A-GA01-15.5<br>15.5<br>06/17/11<br>132-MW2A | 132-MW2B-GA01-27.5<br>27.5<br>06/17/11<br>132-MW2B | 132-P3A-DPT-7<br><br>09/10/13<br>DPT-7 | 132-P3A-DPT-9<br><br>09/10/13<br>DPT-9 | 132-P3A-DPT-12<br><br>09/11/13<br>DPT-12 | 132-P3A-DPT-12-F<br><br>09/11/13<br>DPT-12 | 132-P3A-MW3-20151215-10.0<br><br>12/15/15<br>132-P3A-MW3 | 132-P3A-MW3-20151215-15.0<br><br>12/15/15<br>132-P3A-MW3 |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 411 | 336 | 86.5 | 35.5 | NA | NA | 351 [353] | 355 |
| pH | ARC-pH | SU | 7.47 | 9.95 | 11.91 | 11.21 | NA | NA | 7.41 [7.25] | 7.51 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-MW2A-GA01-15.5<br>15.5<br>06/17/11<br>132-MW2A | 132-MW2B-GA01-27.5<br>27.5<br>06/17/11<br>132-MW2B | 132-P3A-DPT-7<br><br>09/10/13<br>DPT-7 | 132-P3A-DPT-9<br><br>09/10/13<br>DPT-9 | 132-P3A-DPT-12<br><br>09/11/13<br>DPT-12 | 132-P3A-DPT-12-F<br><br>09/11/13<br>DPT-12 | 132-P3A-MW3-20151215-10.0<br><br>12/15/15<br>132-P3A-MW3 | 132-P3A-MW3-20151215-15.0<br><br>12/15/15<br>132-P3A-MW3 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | 17,400 [18,200] | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 1,080 | 2,970 | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 91.6 | 109.5 | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | 6.44 | 10.43 | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 16.77 | 16.07 | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | 7.6 | 10 | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW3-F-20151215-10.0<br>12/15/15<br>132-P3A-MW3 | 132-P3A-MW3-F-20151215-15.0<br>12/15/15<br>132-P3A-MW3 | 132-P3A-MW4-20151215-13.0<br>12/15/15<br>132-P3A-MW4 | 132-P3A-MW4-20151215-17.0<br>12/15/15<br>132-P3A-MW4 | 132-P3A-MW4-F-20151215-13.0<br>12/15/15<br>132-P3A-MW4 | 132-P3A-MW4-F-20151215-17.0<br>12/15/15<br>132-P3A-MW4 |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW3-F-20151215-10.0<br>12/15/15<br>132-P3A-MW3 | 132-P3A-MW3-F-20151215-15.0<br>12/15/15<br>132-P3A-MW3 | 132-P3A-MW4-20151215-13.0<br>12/15/15<br>132-P3A-MW4 | 132-P3A-MW4-20151215-17.0<br>12/15/15<br>132-P3A-MW4 | 132-P3A-MW4-F-20151215-13.0<br>12/15/15<br>132-P3A-MW4 | 132-P3A-MW4-F-20151215-17.0<br>12/15/15<br>132-P3A-MW4 |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW3-F-20151215-10.0<br>12/15/15<br>132-P3A-MW3 | 132-P3A-MW3-F-20151215-15.0<br>12/15/15<br>132-P3A-MW3 | 132-P3A-MW4-20151215-13.0<br>12/15/15<br>132-P3A-MW4 | 132-P3A-MW4-20151215-17.0<br>12/15/15<br>132-P3A-MW4 | 132-P3A-MW4-F-20151215-13.0<br>12/15/15<br>132-P3A-MW4 | 132-P3A-MW4-F-20151215-17.0<br>12/15/15<br>132-P3A-MW4 |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 8,750 J | 7,770 J | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 7,700 J | 7,500 J | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW3-F-20151215-10.0<br>12/15/15<br>132-P3A-MW3 | 132-P3A-MW3-F-20151215-15.0<br>12/15/15<br>132-P3A-MW3 | 132-P3A-MW4-20151215-13.0<br>12/15/15<br>132-P3A-MW4 | 132-P3A-MW4-20151215-17.0<br>12/15/15<br>132-P3A-MW4 | 132-P3A-MW4-F-20151215-13.0<br>12/15/15<br>132-P3A-MW4 | 132-P3A-MW4-F-20151215-17.0<br>12/15/15<br>132-P3A-MW4 |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 12.3 | 6.5 J [11 J] | NA | NA | 7,720 J | 7,280 J |
| Chromium VI | 18540-29-9 | ug/L | 5.5 U | 5.5 U [5.5 U] | NA | NA | 8,000 J | 7,300 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW3-F-20151215-10.0<br>12/15/15<br>132-P3A-MW3 | 132-P3A-MW3-F-20151215-15.0<br>12/15/15<br>132-P3A-MW3 | 132-P3A-MW4-20151215-13.0<br>12/15/15<br>132-P3A-MW4 | 132-P3A-MW4-20151215-17.0<br>12/15/15<br>132-P3A-MW4 | 132-P3A-MW4-F-20151215-13.0<br>12/15/15<br>132-P3A-MW4 | 132-P3A-MW4-F-20151215-17.0<br>12/15/15<br>132-P3A-MW4 |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 367 | 361 [356] | 151 | 160 | 157 | 144 |
| pH | ARC-pH | SU | 7.36 | 7.55 [7.27] | 11.40 | 10.92 | 11.60 | 10.45 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW3-F-20151215-10.0<br>12/15/15<br>132-P3A-MW3 | 132-P3A-MW3-F-20151215-15.0<br>12/15/15<br>132-P3A-MW3 | 132-P3A-MW4-20151215-13.0<br>12/15/15<br>132-P3A-MW4 | 132-P3A-MW4-20151215-17.0<br>12/15/15<br>132-P3A-MW4 | 132-P3A-MW4-F-20151215-13.0<br>12/15/15<br>132-P3A-MW4 | 132-P3A-MW4-F-20151215-17.0<br>12/15/15<br>132-P3A-MW4 |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | 18,300 | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW102I-20150929<br><br>09/29/15<br>132-P3A-MW102I | 132-P3A-MW102I-20151215<br><br>12/15/15<br>132-P3A-MW102I | 132-P3A-MW102I-20160317<br><br>03/17/16<br>132-P3A-MW102I | 132-P3A-MW102I-20160617<br><br>06/17/16<br>132-P3A-MW102I | 132-P3A-MW102I-20160617-F<br><br>06/17/16<br>132-P3A-MW102I | 132-P3A-MW102I-F-20150929<br><br>09/29/15<br>132-P3A-MW102I | 132-P3A-MW102I-F-20151215<br><br>12/15/15<br>132-P3A-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW102I-20150929<br><br>09/29/15<br>132-P3A-MW102I | 132-P3A-MW102I-20151215<br><br>12/15/15<br>132-P3A-MW102I | 132-P3A-MW102I-20160317<br><br>03/17/16<br>132-P3A-MW102I | 132-P3A-MW102I-20160617<br><br>06/17/16<br>132-P3A-MW102I | 132-P3A-MW102I-20160617-F<br><br>06/17/16<br>132-P3A-MW102I | 132-P3A-MW102I-F-20150929<br><br>09/29/15<br>132-P3A-MW102I | 132-P3A-MW102I-F-20151215<br><br>12/15/15<br>132-P3A-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW102I-20150929<br>09/29/15<br>132-P3A-MW102I | 132-P3A-MW102I-20151215<br>12/15/15<br>132-P3A-MW102I | 132-P3A-MW102I-20160317<br>03/17/16<br>132-P3A-MW102I | 132-P3A-MW102I-20160617<br>06/17/16<br>132-P3A-MW102I | 132-P3A-MW102I-20160617-F<br>06/17/16<br>132-P3A-MW102I | 132-P3A-MW102I-F-20150929<br>09/29/15<br>132-P3A-MW102I | 132-P3A-MW102I-F-20151215<br>12/15/15<br>132-P3A-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 613 J | 98.7 J | 200 U | 85.1 J | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 6.0 U | 6.0 U | 6.0 U | 6.0 U | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | 5.6 | 72.2 | 59.5 | 59.0 | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | 135 J | 305 | 214 | 279 | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | 0.50 J | 0.50 J | 1.0 U | 1.0 U | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 3.0 U | 3.0 U | 0.50 J | 3.0 U | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | 121,000 | 142,000 | 113,000 | 129,000 | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 420 | 23.4 J | 68.1 | 10.2 J | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 270 | 5.5 U | 5.5 RA | 21 J | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 2.2 JB | 2.7 J | 2.7 J | 2.7 J | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | 3.4 J | 2.1 J | 10 U | 10 UB | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 1,570 | 27,300 J | 22,700 | 28,900 | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | 3.0 U | 3.0 U | 3.0 U | 3.0 U | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | 38,300 | 47,500 | 36,400 | 41,900 | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 830 | 8,010 | 12,100 | 14,600 | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW102I-20150929<br><br>09/29/15<br>132-P3A-MW102I | 132-P3A-MW102I-20151215<br><br>12/15/15<br>132-P3A-MW102I | 132-P3A-MW102I-20160317<br><br>03/17/16<br>132-P3A-MW102I | 132-P3A-MW102I-20160617<br><br>06/17/16<br>132-P3A-MW102I | 132-P3A-MW102I-20160617-F<br><br>06/17/16<br>132-P3A-MW102I | 132-P3A-MW102I-F-20150929<br><br>09/29/15<br>132-P3A-MW102I | 132-P3A-MW102I-F-20151215<br><br>12/15/15<br>132-P3A-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | 0.20 U | 0.20 U | 0.20 U | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 8.9 J | 3.9 J | 43.6 | 10 U | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 7,430 J | 12,400 | 19,600 | 10,300 | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | 10 U | 10 U | 50 U | 20 U | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | 10 U | 3.1 J | 10 U | 1.4 J | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | 45,200 | 84,100 | 73,200 | 83,400 | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 34,300 | 5,810 | 10,400 | 14,600 | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 2.0 U | 2.0 U | 10 U | 4.0 U | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 3.7 J | 50 U | 50 U | 50 U | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | 10.7 J | 20 UB | 17.1 J | 20 U | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | 2.7 J | 354 | 10 U |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | 23 J | 310 | 5.5 RA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | 34,700 | 6,480 |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW102I-20150929<br>09/29/15<br>132-P3A-MW102I | 132-P3A-MW102I-20151215<br>12/15/15<br>132-P3A-MW102I | 132-P3A-MW102I-20160317<br>03/17/16<br>132-P3A-MW102I | 132-P3A-MW102I-20160617<br>06/17/16<br>132-P3A-MW102I | 132-P3A-MW102I-20160617-F<br>06/17/16<br>132-P3A-MW102I | 132-P3A-MW102I-F-20150929<br>09/29/15<br>132-P3A-MW102I | 132-P3A-MW102I-F-20151215<br>12/15/15<br>132-P3A-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | 2,000 U | 2,000 U | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 327 | 341 | 400 | 299 | 308 | 326 | 355 |
| pH | ARC-pH | SU | 6.69 | 6.40 | 6.84 | 6.84 | 6.76 | 6.65 | 6.38 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 771 | 718 | 15.4 | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 132-P3A-MW102I-20150929 | 132-P3A-MW102I-20151215 | 132-P3A-MW102I-20160317 | 132-P3A-MW102I-20160617 | 132-P3A-MW102I-20160617-F | 132-P3A-MW102I-F-20150929 | 132-P3A-MW102I-F-20151215 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | |
| Date Collected: | | | 09/29/15 | 12/15/15 | 03/17/16 | 06/17/16 | 06/17/16 | 09/29/15 | 12/15/15 |
| Location ID: | CAS Number | Units | 132-P3A-MW102I | 132-P3A-MW102I | 132-P3A-MW102I | 132-P3A-MW102I | 132-P3A-MW102I | 132-P3A-MW102I | 132-P3A-MW102I |
| Sulfate | 14808-79-8 | ug/L | 105,000 | 17,500 | 32,400 J | 49,000 | NA | 104,000 | 22,200 |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 U | 2,000 U | 2,000 U | NA | 2,000 U | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | 1,000 J | 3,000 UJ | 3,000 UJ | 3,000 UJ | NA | 3,000 UJ | 3,000 UJ |
| Temperature | ARC-Temp | deg c | 18.5 | 17.52 | 9.55 | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | 9,900 | 6,400 | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 6,960 | 3,390 | 360 | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 146 | 243.6 | 105.8 | NA | NA | NA |
| pH | ARC-pH | SU | NA | 6.82 | 6.84 | 6.27 | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | 0 | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 17.52 | 14.02 | 16.52 | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | 8.55 | 3.07 | 11.2 | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 132-P3A-MW102I-F-20160317 | 132-P3A-MW102S-20150929 | 132-P3A-MW102S-20151215 | 132-P3A-MW102S-20160317 | 132-P3A-MW102S-20160617 | 132-P3A-MW102S-20160617-F | 132-P3A-MW102S-20170313 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | |
| Date Collected: | | | 03/17/16 | 09/29/15 | 12/15/15 | 03/17/16 | 06/17/16 | 06/17/16 | 03/13/17 |
| Location ID: | CAS Number | Units | 132-P3A-MW102I | 132-P3A-MW102S | 132-P3A-MW102S | 132-P3A-MW102S | 132-P3A-MW102S | 132-P3A-MW102S | 132-P3A-MW102S |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW102I-F-20160317<br><br>03/17/16<br>132-P3A-MW102I | 132-P3A-MW102S-20150929<br><br>09/29/15<br>132-P3A-MW102S | 132-P3A-MW102S-20151215<br><br>12/15/15<br>132-P3A-MW102S | 132-P3A-MW102S-20160317<br><br>03/17/16<br>132-P3A-MW102S | 132-P3A-MW102S-20160617<br><br>06/17/16<br>132-P3A-MW102S | 132-P3A-MW102S-20160617-F<br><br>06/17/16<br>132-P3A-MW102S | 132-P3A-MW102S-20170313<br><br>03/13/17<br>132-P3A-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW102I-F-20160317<br><br>03/17/16<br>132-P3A-MW102I | 132-P3A-MW102S-20150929<br><br>09/29/15<br>132-P3A-MW102S | 132-P3A-MW102S-20151215<br><br>12/15/15<br>132-P3A-MW102S | 132-P3A-MW102S-20160317<br><br>03/17/16<br>132-P3A-MW102S | 132-P3A-MW102S-20160617<br><br>06/17/16<br>132-P3A-MW102S | 132-P3A-MW102S-20160617-F<br><br>06/17/16<br>132-P3A-MW102S | 132-P3A-MW102S-20170313<br><br>03/13/17<br>132-P3A-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 134,000 | 41,400 | 2,330 | 2,280 | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | 6.0 U | 6.0 U | 6.0 U | 6.0 U | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | 54.0 | 22.4 | 15 U | 6.0 U | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | 921 | 457 | 43.1 J | 81.5 J | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | 7.8 | 2.3 | 1.0 U | 1.0 U | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 4.3 | 2.1 J | 3.9 | 2.4 J | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | 92,100 | 174,000 | 223,000 | 224,000 | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 263 | 85.2 | 93.0 | 27.2 | NA | 2.4 J |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U | 5.5 U | 5.5 RA | 10 U | NA | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | 76.1 | 22.6 J | 3.1 J | 3.5 J | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | 292 | 113 | 9.4 J | 11.8 UB | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 155,000 | 56,200 J | 3,380 | 3,250 | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | 828 | 288 | 15 U | 12.2 | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | 53,900 | 53,500 | 36,300 | 39,600 | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | 2,860 | 2,550 | 756 | 883 | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW102I-F-20160317<br><br>03/17/16<br>132-P3A-MW102I | 132-P3A-MW102S-20150929<br><br>09/29/15<br>132-P3A-MW102S | 132-P3A-MW102S-20151215<br><br>12/15/15<br>132-P3A-MW102S | 132-P3A-MW102S-20160317<br><br>03/17/16<br>132-P3A-MW102S | 132-P3A-MW102S-20160617<br><br>06/17/16<br>132-P3A-MW102S | 132-P3A-MW102S-20160617-F<br><br>06/17/16<br>132-P3A-MW102S | 132-P3A-MW102S-20170313<br><br>03/13/17<br>132-P3A-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.20 U | 0.20 U | 0.069 J | 0.20 U | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | 189 | 53.8 | 78.1 | 16.8 J | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 20,000 | 19,200 | 7,510 J | 10,700 | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | 15.2 | 6.2 J | 4.7 J | 4.6 J | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | 6.7 J | 3.9 J | 10 U | 10 U | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | 70,800 | 117,000 | 45,900 | 86,100 | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | 20,600 | 62,500 | 184,000 | 180,000 | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 2.0 U | 6.0 U | 10 U | 4.0 U | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 304 | 99.3 | 5.8 J | 5.3 J | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | 2,630 | 933 | 1,600 | 724 | NA | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 10 UB | NA | NA | NA | NA | 1.6 J | NA |
| Chromium VI | 18540-29-9 | ug/L | 5.5 RA | NA | NA | NA | NA | 10 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 10,300 | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW102I-F-20160317<br><br>03/17/16<br>132-P3A-MW102I | 132-P3A-MW102S-20150929<br><br>09/29/15<br>132-P3A-MW102S | 132-P3A-MW102S-20151215<br><br>12/15/15<br>132-P3A-MW102S | 132-P3A-MW102S-20160317<br><br>03/17/16<br>132-P3A-MW102S | 132-P3A-MW102S-20160617<br><br>06/17/16<br>132-P3A-MW102S | 132-P3A-MW102S-20160617-F<br><br>06/17/16<br>132-P3A-MW102S | 132-P3A-MW102S-20170313<br><br>03/13/17<br>132-P3A-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | 7,400 | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | 2,900 | 2,000 U | 2,000 U | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 372 | 320 | 371 | 340 | 305 | 311 | 354 |
| pH | ARC-pH | SU | 6.84 | 6.84 | 6.71 | 6.66 | 6.82 | 6.61 | 6.60 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 15.4 | 688 | 935 | 15.5 | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW102I-F-20160317<br><br>03/17/16<br>132-P3A-MW102I | 132-P3A-MW102S-20150929<br><br>09/29/15<br>132-P3A-MW102S | 132-P3A-MW102S-20151215<br><br>12/15/15<br>132-P3A-MW102S | 132-P3A-MW102S-20160317<br><br>03/17/16<br>132-P3A-MW102S | 132-P3A-MW102S-20160617<br><br>06/17/16<br>132-P3A-MW102S | 132-P3A-MW102S-20160617-F<br><br>06/17/16<br>132-P3A-MW102S | 132-P3A-MW102S-20170313<br><br>03/13/17<br>132-P3A-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 32,200 J | 76,700 | 228,000 | 578,000 | 601,000 | NA | NA |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 5,000 | 2,000 U | 2,000 U | 2,000 U | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 1,000 J | 3,000 UJ | 3,000 UJ | 3,000 UJ | NA | NA |
| Temperature | ARC-Temp | deg c | 9.55 | 21.6 | 19.04 | 17.15 | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | 23,200 | 5,400 | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | 4,090 | 3,170 | 290 | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 104 | 219 | 3.2 | NA | NA |
| pH | ARC-pH | SU | NA | NA | 6.71 | 6.66 | 6.52 | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | 0 | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | 19.04 | 17.15 | 20.63 | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | 0 O | 24.9 | 41.7 | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 132-P3A-MW102S-20170313-F<br>03/13/17<br>132-P3A-MW102S | 132-P3A-MW102S-F-20150929<br>09/29/15<br>132-P3A-MW102S | 132-P3A-MW102S-F-20151215<br>12/15/15<br>132-P3A-MW102S | 132-P3A-MW102S-F-20160317<br>03/17/16<br>132-P3A-MW102S | 132-P3A-MW103I-20150930<br>09/30/15<br>132-P3A-MW103I | 132-P3A-MW103I-20151215<br>12/15/15<br>132-P3A-MW103I | 132-P3A-MW103I-20160318<br>03/18/16<br>132-P3A-MW103I |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW102S-20170313-F<br><br>03/13/17<br>132-P3A-MW102S | 132-P3A-MW102S-F-20150929<br><br>09/29/15<br>132-P3A-MW102S | 132-P3A-MW102S-F-20151215<br><br>12/15/15<br>132-P3A-MW102S | 132-P3A-MW102S-F-20160317<br><br>03/17/16<br>132-P3A-MW102S | 132-P3A-MW103I-20150930<br><br>09/30/15<br>132-P3A-MW103I | 132-P3A-MW103I-20151215<br><br>12/15/15<br>132-P3A-MW103I | 132-P3A-MW103I-20160318<br><br>03/18/16<br>132-P3A-MW103I |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW102S-20170313-F<br><br>03/13/17<br>132-P3A-MW102S | 132-P3A-MW102S-F-20150929<br><br>09/29/15<br>132-P3A-MW102S | 132-P3A-MW102S-F-20151215<br><br>12/15/15<br>132-P3A-MW102S | 132-P3A-MW102S-F-20160317<br><br>03/17/16<br>132-P3A-MW102S | 132-P3A-MW103I-20150930<br><br>09/30/15<br>132-P3A-MW103I | 132-P3A-MW103I-20151215<br><br>12/15/15<br>132-P3A-MW103I | 132-P3A-MW103I-20160318<br><br>03/18/16<br>132-P3A-MW103I |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | 152 J | 178 J | 51.8 J |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | 30 U | 30 U | 30 U |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | 15 U | 15 U | 15 U |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | 46.6 J | 51.9 J | 45.4 J |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | 5.1 | 1.1 | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | 2.0 J | 2.1 J | 0.40 J |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | 103,000 | 136,000 | 125,000 |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | 30,700 J | 43,800 J | 30,400 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | 28,500 RA | 40,200 J | 31,700 RA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | 14.6 J | 50 U | 4.0 J |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | 111 | 10.5 J | 10 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | 460 | 299 J | 109 JB |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | 15 U | 13.1 J | 3.0 UJ |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | 38,000 | 54,900 | 59,500 |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | 563 | 808 | 894 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW102S-20170313-F<br><br>03/13/17<br>132-P3A-MW102S | 132-P3A-MW102S-F-20150929<br><br>09/29/15<br>132-P3A-MW102S | 132-P3A-MW102S-F-20151215<br><br>12/15/15<br>132-P3A-MW102S | 132-P3A-MW102S-F-20160317<br><br>03/17/16<br>132-P3A-MW102S | 132-P3A-MW103I-20150930<br><br>09/30/15<br>132-P3A-MW103I | 132-P3A-MW103I-20151215<br><br>12/15/15<br>132-P3A-MW103I | 132-P3A-MW103I-20160318<br><br>03/18/16<br>132-P3A-MW103I |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | 0.40 U | 0.40 U | 0.60 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | 10.2 | 4.2 J | 9.8 J |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | 10,500 | 11,500 | 16,100 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | 50 U | 50 U | 10 U |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | 1.3 J | 50 U | 0.90 J |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | 362,000 | 447,000 | 425,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | 88,100 | 91,400 | 91,800 |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | 2.0 U | 10 U | 2.0 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | 250 U | 250 U | 12.0 J |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | 95.9 | 39.9 JB | 4.7 J |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 1.1 J | 6.6 J | 10 U | 10 U | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 U | 8.5 J | 5.5 RA | 5.5 RA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | 20,300 | 68,500 | 172,000 | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW102S-20170313-F<br><br>03/13/17<br>132-P3A-MW102S | 132-P3A-MW102S-F-20150929<br><br>09/29/15<br>132-P3A-MW102S | 132-P3A-MW102S-F-20151215<br><br>12/15/15<br>132-P3A-MW102S | 132-P3A-MW102S-F-20160317<br><br>03/17/16<br>132-P3A-MW102S | 132-P3A-MW103I-20150930<br><br>09/30/15<br>132-P3A-MW103I | 132-P3A-MW103I-20151215<br><br>12/15/15<br>132-P3A-MW103I | 132-P3A-MW103I-20160318<br><br>03/18/16<br>132-P3A-MW103I |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | 4,000 | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | 2,000 U | 2,000 U | 2,000 U | 2,000 U |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 361 | 308 | 373 | 355 | 293 | 367 | 369 |
| pH | ARC-pH | SU | 6.53 | 6.88 | 6.50 | 6.51 | 7.22 | 6.31 | 8.82 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | 15.5 | 1,580 | 2,090 | 2.8 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW102S-20170313-F<br><br>03/13/17<br>132-P3A-MW102S | 132-P3A-MW102S-F-20150929<br><br>09/29/15<br>132-P3A-MW102S | 132-P3A-MW102S-F-20151215<br><br>12/15/15<br>132-P3A-MW102S | 132-P3A-MW102S-F-20160317<br><br>03/17/16<br>132-P3A-MW102S | 132-P3A-MW103I-20150930<br><br>09/30/15<br>132-P3A-MW103I | 132-P3A-MW103I-20151215<br><br>12/15/15<br>132-P3A-MW103I | 132-P3A-MW103I-20160318<br><br>03/18/16<br>132-P3A-MW103I |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 64,000 | 216,000 | 511,000 | 243,000 | 276,000 | 260,000 |
| Sulfide | 18496-25-8 | ug/L | NA | 5,000 | 2,000 U | 2,000 U | 2,000 U | 2,000 U | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | NA | 1,500 J | 3,000 UJ | 3,000 UJ | 3,000 UJ | 3,000 UJ | 3,000 UJ |
| Temperature | ARC-Temp | deg c | NA | NA | NA | 17.15 | 18.15 | 18.48 | 12.45 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | 3,900 | 3,900 JB |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | 0 | 20 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | 115 | 160.8 |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | 7.08 | 8.7 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | 0 | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | 18.48 | 13.76 |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | 6.38 | 0.65 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 132-P3A-MW103I-20160616 | 132-P3A-MW103I-20160616-F | 132-P3A-MW103I-F-20150930 | 132-P3A-MW103I-F-20151215 | 132-P3A-MW103I-F-20160318 | 132-P3A-MW103S-20150930 | 132-P3A-MW103S-20151215 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | |
| Date Collected: | | | 06/16/16 | 06/16/16 | 09/30/15 | 12/15/15 | 03/18/16 | 09/30/15 | 12/15/15 |
| Location ID: | CAS Number | Units | 132-P3A-MW103I | 132-P3A-MW103I | 132-P3A-MW103I | 132-P3A-MW103I | 132-P3A-MW103I | 132-P3A-MW103S | 132-P3A-MW103S |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW103I-20160616<br><br>06/16/16<br>132-P3A-MW103I | 132-P3A-MW103I-20160616-F<br><br>06/16/16<br>132-P3A-MW103I | 132-P3A-MW103I-F-20150930<br><br>09/30/15<br>132-P3A-MW103I | 132-P3A-MW103I-F-20151215<br><br>12/15/15<br>132-P3A-MW103I | 132-P3A-MW103I-F-20160318<br><br>03/18/16<br>132-P3A-MW103I | 132-P3A-MW103S-20150930<br><br>09/30/15<br>132-P3A-MW103S | 132-P3A-MW103S-20151215<br><br>12/15/15<br>132-P3A-MW103S |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW103I-20160616<br><br>06/16/16<br>132-P3A-MW103I | 132-P3A-MW103I-20160616-F<br><br>06/16/16<br>132-P3A-MW103I | 132-P3A-MW103I-F-20150930<br><br>09/30/15<br>132-P3A-MW103I | 132-P3A-MW103I-F-20151215<br><br>12/15/15<br>132-P3A-MW103I | 132-P3A-MW103I-F-20160318<br><br>03/18/16<br>132-P3A-MW103I | 132-P3A-MW103S-20150930<br><br>09/30/15<br>132-P3A-MW103S | 132-P3A-MW103S-20151215<br><br>12/15/15<br>132-P3A-MW103S |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 200 U | NA | NA | NA | NA | 1,720 | 3,430 |
| Antimony | 7440-36-0 | ug/L | 18 U | NA | NA | NA | NA | 30 U | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | 9.0 U | NA | NA | NA | NA | 30 U | 15 U |
| Barium | 7440-39-3 | ug/L | 33.2 J | NA | NA | NA | NA | 99.1 J | 49.1 J |
| Beryllium | 7440-41-7 | ug/L | 1.0 UJ | NA | NA | NA | NA | 6.6 | 0.60 J |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 3.0 U | NA | NA | NA | NA | 3.0 U | 3.0 U |
| Calcium | 7440-70-2 | ug/L | 9,940 | NA | NA | NA | NA | 821,000 | 351,000 |
| Chromium | 7440-47-3 | ug/L | 20,900 J | NA | NA | NA | NA | 72.7 J | 23.7 J |
| Chromium VI | 18540-29-9 | ug/L | 21,700 | NA | NA | NA | NA | 10 RA | 5.5 U |
| Cobalt | 7440-48-4 | ug/L | 1.3 J | NA | NA | NA | NA | 250 U | 3.4 J |
| Copper | 7440-50-8 | ug/L | 4.0 J | NA | NA | NA | NA | 50 U | 17.2 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 176 | NA | NA | NA | NA | 480,000 | 7,860 J |
| Lead | 7439-92-1 | ug/L | 3.0 U | NA | NA | NA | NA | 34.5 | 21.0 |
| Magnesium | 7439-95-4 | ug/L | 59,500 | NA | NA | NA | NA | 174,000 | 12,400 |
| Manganese | 7439-96-5 | ug/L | 51.3 | NA | NA | NA | NA | 85,300 | 575 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 132-P3A-MW103I-20160616<br>06/16/16<br>132-P3A-MW103I | 132-P3A-MW103I-20160616-F<br>06/16/16<br>132-P3A-MW103I | 132-P3A-MW103I-F-20150930<br>09/30/15<br>132-P3A-MW103I | 132-P3A-MW103I-F-20151215<br>12/15/15<br>132-P3A-MW103I | 132-P3A-MW103I-F-20160318<br>03/18/16<br>132-P3A-MW103I | 132-P3A-MW103S-20150930<br>09/30/15<br>132-P3A-MW103S | 132-P3A-MW103S-20151215<br>12/15/15<br>132-P3A-MW103S |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | NA | NA | NA | NA | 0.20 U | 0.20 U |
| Nickel | 7440-02-0 | ug/L | 4.6 J | NA | NA | NA | NA | 27.0 J | 13.8 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 240,000 | NA | NA | NA | NA | 135,000 | 14,800 |
| Selenium | 7782-49-2 | ug/L | 10 U | NA | NA | NA | NA | 100 U | 50 U |
| Silver | 7440-22-4 | ug/L | 10 UJ | NA | NA | NA | NA | 8.8 J | 2.4 J |
| Sodium | 7440-23-5 | ug/L | 320,000 | NA | NA | NA | NA | 5,470,000 | 267,000 |
| Sulfur | 7704-34-9 | ug/L | 60,100 | NA | NA | NA | NA | 1,440,000 | 314,000 J |
| Thallium | 7440-28-0 | ug/L | 6.0 U | NA | NA | NA | NA | 50 U | 10 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 5.1 J | NA | NA | NA | NA | 12.8 J | 8.6 J |
| Zinc | 7440-66-6 | ug/L | 15.6 J | NA | NA | NA | NA | 29.3 | 76.2 J |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 26,400 J | 32,500 J | 44,700 J | 35,800 | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 22,000 | 30,800 RA | 42,400 RA | 34,500 RA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | 86,700 | 85,100 | 87,500 | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW103I-20160616<br><br>06/16/16<br>132-P3A-MW103I | 132-P3A-MW103I-20160616-F<br><br>06/16/16<br>132-P3A-MW103I | 132-P3A-MW103I-F-20150930<br><br>09/30/15<br>132-P3A-MW103I | 132-P3A-MW103I-F-20151215<br><br>12/15/15<br>132-P3A-MW103I | 132-P3A-MW103I-F-20160318<br><br>03/18/16<br>132-P3A-MW103I | 132-P3A-MW103S-20150930<br><br>09/30/15<br>132-P3A-MW103S | 132-P3A-MW103S-20151215<br><br>12/15/15<br>132-P3A-MW103S |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | 3,500 | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | 2,000 U | 2,000 U | 2,000 U |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 215 | 220 | 289 | 364 | 386 | 257 | 361 |
| pH | ARC-pH | SU | 9.40 | 9.38 | 7.24 | 6.84 | 8.82 | 6.09 | 6.60 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | 2.8 | 19,500 | 2,170 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW103I-20160616<br><br>06/16/16<br>132-P3A-MW103I | 132-P3A-MW103I-20160616-F<br><br>06/16/16<br>132-P3A-MW103I | 132-P3A-MW103I-F-20150930<br><br>09/30/15<br>132-P3A-MW103I | 132-P3A-MW103I-F-20151215<br><br>12/15/15<br>132-P3A-MW103I | 132-P3A-MW103I-F-20160318<br><br>03/18/16<br>132-P3A-MW103I | 132-P3A-MW103S-20150930<br><br>09/30/15<br>132-P3A-MW103S | 132-P3A-MW103S-20151215<br><br>12/15/15<br>132-P3A-MW103S |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 172,000 | NA | 240,000 | 267,000 | 253,000 | 3,860,000 | 1,160,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 UJ | NA | 2,000 U | 2,000 U | 2,000 U | 2,000 U | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | NA | 3,000 UJ | 3,000 UJ | 3,000 UJ | 1,000 J | 3,000 UJ |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | 12.45 | 22.59 | 16.37 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | 2,300 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 420 | NA | NA | NA | NA | NA | 7,760 |
| Oxidation Reduction Potential | ARC-ORP | mV | 58.9 | NA | NA | NA | NA | NA | 6 |
| pH | ARC-pH | SU | 12.29 | NA | NA | NA | NA | NA | 6.99 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | 0 |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 16 | NA | NA | NA | NA | NA | 16.37 |
| Turbidity | ARC-Turb | NTU | 1.47 | NA | NA | NA | NA | NA | 52 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW103S-20160318<br>03/18/16<br>132-P3A-MW103S | 132-P3A-MW103S-20160616<br>06/16/16<br>132-P3A-MW103S | 132-P3A-MW103S-20160616-F<br>06/16/16<br>132-P3A-MW103S | 132-P3A-MW103S-F-20150930<br>09/30/15<br>132-P3A-MW103S | 132-P3A-MW103S-F-20151215<br>12/15/15<br>132-P3A-MW103S | 132-P3A-MW103S-F-20160318<br>03/18/16<br>132-P3A-MW103S |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW103S-20160318<br>03/18/16<br>132-P3A-MW103S | 132-P3A-MW103S-20160616<br>06/16/16<br>132-P3A-MW103S | 132-P3A-MW103S-20160616-F<br>06/16/16<br>132-P3A-MW103S | 132-P3A-MW103S-F-20150930<br>09/30/15<br>132-P3A-MW103S | 132-P3A-MW103S-F-20151215<br>12/15/15<br>132-P3A-MW103S | 132-P3A-MW103S-F-20160318<br>03/18/16<br>132-P3A-MW103S |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW103S-20160318<br>03/18/16<br>132-P3A-MW103S | 132-P3A-MW103S-20160616<br>06/16/16<br>132-P3A-MW103S | 132-P3A-MW103S-20160616-F<br>06/16/16<br>132-P3A-MW103S | 132-P3A-MW103S-F-20150930<br>09/30/15<br>132-P3A-MW103S | 132-P3A-MW103S-F-20151215<br>12/15/15<br>132-P3A-MW103S | 132-P3A-MW103S-F-20160318<br>03/18/16<br>132-P3A-MW103S |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 1,160 J | 475 | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 6.0 U | 6.0 U | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | 15 U | 30 U | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | 41.6 J | 62.3 J | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | 1.0 U | 10 UJ | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 0.70 J | 0.40 J | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | 429,000 | 635,000 | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 6.7 J | 6.6 J | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 5.5 UJ | 4.3 J | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 2.3 J | 500 U | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | 10.6 | 17.8 | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 2,530 J | 256,000 | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | 15 UJ | 30 U | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | 18,700 | 111,000 | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 454 | 41,900 | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW103S-20160318<br>03/18/16<br>132-P3A-MW103S | 132-P3A-MW103S-20160616<br>06/16/16<br>132-P3A-MW103S | 132-P3A-MW103S-20160616-F<br>06/16/16<br>132-P3A-MW103S | 132-P3A-MW103S-F-20150930<br>09/30/15<br>132-P3A-MW103S | 132-P3A-MW103S-F-20151215<br>12/15/15<br>132-P3A-MW103S | 132-P3A-MW103S-F-20160318<br>03/18/16<br>132-P3A-MW103S |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | 0.20 U | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 8.9 JB | 15.2 J | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 9,610 J | 61,200 | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | 10 U | 10 U | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | 10 U | 10.3 J | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | 132,000 | 2,560,000 | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 361,000 | 890,000 | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 10 U | 20 U | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 2.6 J | 50 U | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | 14.3 J | 46.6 | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 8.9 J | 37.0 | 10 U | 1.2 J |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 44 J | 10 RA | 5.5 RA | 5.5 UJ |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | 1,130,000 | 390,000 J | 386,000 |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW103S-20160318<br>03/18/16<br>132-P3A-MW103S | 132-P3A-MW103S-20160616<br>06/16/16<br>132-P3A-MW103S | 132-P3A-MW103S-20160616-F<br>06/16/16<br>132-P3A-MW103S | 132-P3A-MW103S-F-20150930<br>09/30/15<br>132-P3A-MW103S | 132-P3A-MW103S-F-20151215<br>12/15/15<br>132-P3A-MW103S | 132-P3A-MW103S-F-20160318<br>03/18/16<br>132-P3A-MW103S |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | 1,200 |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | NA | NA | NA | NA | 2,000 U |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 421 | 226 | 203 | 262 | 375 | 432 |
| pH | ARC-pH | SU | 8.68 | 6.17 | 6.14 | 6.08 | 6.72 | 6.86 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 2.4 | NA | NA | NA | NA | 2.4 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW103S-20160318<br>03/18/16<br>132-P3A-MW103S | 132-P3A-MW103S-20160616<br>06/16/16<br>132-P3A-MW103S | 132-P3A-MW103S-20160616-F<br>06/16/16<br>132-P3A-MW103S | 132-P3A-MW103S-F-20150930<br>09/30/15<br>132-P3A-MW103S | 132-P3A-MW103S-F-20151215<br>12/15/15<br>132-P3A-MW103S | 132-P3A-MW103S-F-20160318<br>03/18/16<br>132-P3A-MW103S |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 1,170,000 | 3,150,000 | NA | 3,180,000 | 1,160,000 | 1,180,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 UJ | NA | 2,000 U | 2,000 U | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 3,000 UJ | NA | 3,000 UJ | 3,000 UJ | 3,000 UJ |
| Temperature | ARC-Temp | deg c | 9.77 | NA | NA | NA | NA | 9.77 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 2,200 UB | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 350 | 1,150 | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 193.3 | 26.4 | NA | NA | NA | NA |
| pH | ARC-pH | SU | 8.6 | 6.85 | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 10.32 | 16.45 | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | 15.4 | 0.98 | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW104I-20150929<br>09/29/15<br>132-P3A-MW104I | 132-P3A-MW104I-20151215<br>12/15/15<br>132-P3A-MW104I | 132-P3A-MW104I-20160318<br>03/18/16<br>132-P3A-MW104I | 132-P3A-MW104I-20160616<br>06/16/16<br>132-P3A-MW104I | 132-P3A-MW104I-20160616-F<br>06/16/16<br>132-P3A-MW104I | 132-P3A-MW104I-F-20150929<br>09/29/15<br>132-P3A-MW104I | 132-P3A-MW104I-F-20151215<br>12/15/15<br>132-P3A-MW104I |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW104I-20150929<br>09/29/15<br>132-P3A-MW104I | 132-P3A-MW104I-20151215<br>12/15/15<br>132-P3A-MW104I | 132-P3A-MW104I-20160318<br>03/18/16<br>132-P3A-MW104I | 132-P3A-MW104I-20160616<br>06/16/16<br>132-P3A-MW104I | 132-P3A-MW104I-20160616-F<br>06/16/16<br>132-P3A-MW104I | 132-P3A-MW104I-F-20150929<br>09/29/15<br>132-P3A-MW104I | 132-P3A-MW104I-F-20151215<br>12/15/15<br>132-P3A-MW104I |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW104I-20150929<br>09/29/15<br>132-P3A-MW104I | 132-P3A-MW104I-20151215<br>12/15/15<br>132-P3A-MW104I | 132-P3A-MW104I-20160318<br>03/18/16<br>132-P3A-MW104I | 132-P3A-MW104I-20160616<br>06/16/16<br>132-P3A-MW104I | 132-P3A-MW104I-20160616-F<br>06/16/16<br>132-P3A-MW104I | 132-P3A-MW104I-F-20150929<br>09/29/15<br>132-P3A-MW104I | 132-P3A-MW104I-F-20151215<br>12/15/15<br>132-P3A-MW104I |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 916 | 744 [541] | 33.3 J | 26.8 J | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 6.0 U | 6.0 U [6 U] | 6.0 U | 6.0 U | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | 3.0 U | 3.0 U [3 U] | 3.0 U | 3.0 U | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | 65.3 J | 85.3 J [78.6 J] | 46.8 J | 55.9 J | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | 1.0 U | 0.40 J [1 U] | 1.0 U | 1.0 UJ | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 3.0 U | 3.0 U [3 U] | 0.50 J | 3.0 U | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | 68,600 | 86,300 [85,600] | 62,500 | 80,300 | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 2.6 J | 10 U [10 U] | 2.9 J | 1.5 J | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 U | 5.5 U [5.5 U] | 5.5 UJ | 10 U | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 50 UB | 0.90 J [0.9 J] | 0.80 J | 50 U | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | 3.7 J | 6.6 J [8.9 J] | 3.6 J | 5.7 J | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 837 | 1,000 J [684 J] | 81.3 J | 78.2 J | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | 3.0 U | 3.0 U [2.7 J] | 3.0 UJ | 3.0 U | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | 34,900 | 47,000 [44,400] | 27,900 | 34,600 | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 1,540 | 2,780 [2,620] | 1,280 | 1,940 | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW104I-20150929<br>09/29/15<br>132-P3A-MW104I | 132-P3A-MW104I-20151215<br>12/15/15<br>132-P3A-MW104I | 132-P3A-MW104I-20160318<br>03/18/16<br>132-P3A-MW104I | 132-P3A-MW104I-20160616<br>06/16/16<br>132-P3A-MW104I | 132-P3A-MW104I-20160616-F<br>06/16/16<br>132-P3A-MW104I | 132-P3A-MW104I-F-20150929<br>09/29/15<br>132-P3A-MW104I | 132-P3A-MW104I-F-20151215<br>12/15/15<br>132-P3A-MW104I |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | 0.20 U [0.2 U] | 0.20 U | 0.20 U | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 2.7 J | 2.7 J [2.3 J] | 3.1 JB | 10 U | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 9,660 J | 10,900 [9,780 J] | 23,000 | 13,000 | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | 10 U | 4.6 J [10 U] | 4.9 J | 10 U | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | 1.9 J | 10 U [1.9 J] | 10 U | 10 UJ | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | 229,000 | 313,000 [257,000] | 108,000 | 98,000 | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 68,000 | 74,900 [70,300] | 43,900 | 45,400 | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 2.0 U | 2.0 U [2 U] | 2.0 U | 2.0 U | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 1.8 J | 1.0 J [50 U] | 50 U | 50 U | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | 20.1 | 26 UB [20.5 UB] | 14.8 J | 12.2 J | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | 0.90 J | 10 U | 10 U [10 U] |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | 10 U | 10 U | 5.5 RA [5.5 RA] |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | 68,000 | 71,200 [73,200] |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW104I-20150929<br>09/29/15<br>132-P3A-MW104I | 132-P3A-MW104I-20151215<br>12/15/15<br>132-P3A-MW104I | 132-P3A-MW104I-20160318<br>03/18/16<br>132-P3A-MW104I | 132-P3A-MW104I-20160616<br>06/16/16<br>132-P3A-MW104I | 132-P3A-MW104I-20160616-F<br>06/16/16<br>132-P3A-MW104I | 132-P3A-MW104I-F-20150929<br>09/29/15<br>132-P3A-MW104I | 132-P3A-MW104I-F-20151215<br>12/15/15<br>132-P3A-MW104I |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | 2,000 U [2,000 U] | 2,000 U | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 327 | 353 [358] | 345 | 273 | 281 | 325 | 368 [369] |
| pH | ARC-pH | SU | 7.07 | 7.1 [7.1] [6.76] | 7.74 | 6.78 | 6.83 | 7.06 | 6.73 [6.76] |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 1,890 | 1,510 [1,510] | 1.2 | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW104I-20150929<br>09/29/15<br>132-P3A-MW104I | 132-P3A-MW104I-20151215<br>12/15/15<br>132-P3A-MW104I | 132-P3A-MW104I-20160318<br>03/18/16<br>132-P3A-MW104I | 132-P3A-MW104I-20160616<br>06/16/16<br>132-P3A-MW104I | 132-P3A-MW104I-20160616-F<br>06/16/16<br>132-P3A-MW104I | 132-P3A-MW104I-F-20150929<br>09/29/15<br>132-P3A-MW104I | 132-P3A-MW104I-F-20151215<br>12/15/15<br>132-P3A-MW104I |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 206,000 | 228,000 [212,000] | 132,000 | 149,000 | NA | 195,000 | 208,000 [214,000] |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 U [2,000 U] | 2,000 U | 2,000 UJ | NA | 2,000 U | 2,000 U [2,000 U] |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 3,000 UJ [3,000 UJ] | 3,000 UJ | 3,000 UJ | NA | 3,000 UJ | 3,000 UJ [3,000 UJ] |
| Temperature | ARC-Temp | deg c | 21.19 | 17.55 [17.55] | 14.02 | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | 2,300 [2,400] | 2,100 UB | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 6,310 | 1,600 | 1,720 | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 38 | 382.3 | 139.7 | NA | NA | NA |
| pH | ARC-pH | SU | NA | 7.1 | 7 | 10.35 | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | 0 | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 17.55 | 14.02 | 17.31 | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | 21.5 | 0.48 | 1.21 | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 132-P3A-MW104I-F-20160318<br>03/18/16<br>132-P3A-MW104I | 132-P3A-MW104S-20150929<br>09/29/15<br>132-P3A-MW104S | 132-P3A-MW104S-20151215<br>12/15/15<br>132-P3A-MW104S | 132-P3A-MW104S-20160318<br>03/18/16<br>132-P3A-MW104S | 132-P3A-MW104S-20160616<br>06/16/16<br>132-P3A-MW104S | 132-P3A-MW104S-20160616-F<br>06/16/16<br>132-P3A-MW104S | 132-P3A-MW104S-F-20150929<br>09/29/15<br>132-P3A-MW104S |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW104I-F-20160318<br><br>03/18/16<br>132-P3A-MW104I | 132-P3A-MW104S-20150929<br><br>09/29/15<br>132-P3A-MW104S | 132-P3A-MW104S-20151215<br><br>12/15/15<br>132-P3A-MW104S | 132-P3A-MW104S-20160318<br><br>03/18/16<br>132-P3A-MW104S | 132-P3A-MW104S-20160616<br><br>06/16/16<br>132-P3A-MW104S | 132-P3A-MW104S-20160616-F<br><br>06/16/16<br>132-P3A-MW104S | 132-P3A-MW104S-F-20150929<br><br>09/29/15<br>132-P3A-MW104S |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW104I-F-20160318<br><br>03/18/16<br>132-P3A-MW104I | 132-P3A-MW104S-20150929<br><br>09/29/15<br>132-P3A-MW104S | 132-P3A-MW104S-20151215<br><br>12/15/15<br>132-P3A-MW104S | 132-P3A-MW104S-20160318<br><br>03/18/16<br>132-P3A-MW104S | 132-P3A-MW104S-20160616<br><br>06/16/16<br>132-P3A-MW104S | 132-P3A-MW104S-20160616-F<br><br>06/16/16<br>132-P3A-MW104S | 132-P3A-MW104S-F-20150929<br><br>09/29/15<br>132-P3A-MW104S |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 259 J [337 J] | 450 | 338 J | 217 | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | 6.0 U [6 U] | 6.0 U | 6.0 U | 6.0 U | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | 8.0 [8.4] | 9.0 U | 3.0 U | 3.0 U | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | 129 J [123 J] | 49.2 J | 41.4 J | 23.9 J | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | 1.0 U [1 U] | 0.50 J | 1.0 U | 1.0 UJ | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 3.0 U [3 U] | 0.40 J | 3.0 U | 3.0 U | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | 84,400 [80,900] | 307,000 | 99,500 | 126,000 | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 4.1 J [3.7 J] | 11.9 U | 3.5 J | 1.7 J | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U [10 U] | 5.5 U | 5.5 UJ | 10 U | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | 2.8 JB [2.5 JB] | 1.3 J | 3.1 J | 1.5 J | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | 2.7 J [2.7 J] | 2.4 J | 8.7 J | 6.4 J | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 2,690 [2,740] | 752 J | 1,120 J | 568 | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | 5.9 [6.9] | 7.4 J | 3.2 J | 2.7 J | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | 17,300 [16,600] | 16,200 | 11,000 | 3,370 J | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | 609 [583] | 242 | 398 | 69.5 | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW104I-F-20160318<br><br>03/18/16<br>132-P3A-MW104I | 132-P3A-MW104S-20150929<br><br>09/29/15<br>132-P3A-MW104S | 132-P3A-MW104S-20151215<br><br>12/15/15<br>132-P3A-MW104S | 132-P3A-MW104S-20160318<br><br>03/18/16<br>132-P3A-MW104S | 132-P3A-MW104S-20160616<br><br>06/16/16<br>132-P3A-MW104S | 132-P3A-MW104S-20160616-F<br><br>06/16/16<br>132-P3A-MW104S | 132-P3A-MW104S-F-20150929<br><br>09/29/15<br>132-P3A-MW104S |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.20 U [0.2 U] | 0.20 U | 0.14 J | 0.20 U | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | 7.6 J [7.1 J] | 7.3 J | 9.0 JB | 5.6 J | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 20,000 [19,200] | 10,200 | 11,400 | 5,350 J | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | 10 U [10 U] | 30 U | 10 U | 10 U | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | 10 U [1.3 J] | 2.8 J | 10 U | 10 UJ | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | 225,000 [216,000] | 69,100 | 191,000 | 18,800 | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | 81,700 [81,800] | 256,000 | 73,900 | 97,700 | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 2.0 U [2 U] | 6.0 U | 2.0 U | 2.0 U | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 1.3 J [1.5 J] | 0.80 J | 1.0 J | 50 U | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | 10.8 J [10.3 J] | 40.7 JB | 48.9 | 25.8 | NA | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 1.2 J | NA | NA | NA | NA | 10 U | 1.3 J [1.1 J] |
| Chromium VI | 18540-29-9 | ug/L | 5.5 UJ | NA | NA | NA | NA | 10 U | 10 U [10 U] |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 47,700 | NA | NA | NA | NA | NA | 87,600 [89,400] |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW104I-F-20160318<br><br>03/18/16<br>132-P3A-MW104I | 132-P3A-MW104S-20150929<br><br>09/29/15<br>132-P3A-MW104S | 132-P3A-MW104S-20151215<br><br>12/15/15<br>132-P3A-MW104S | 132-P3A-MW104S-20160318<br><br>03/18/16<br>132-P3A-MW104S | 132-P3A-MW104S-20160616<br><br>06/16/16<br>132-P3A-MW104S | 132-P3A-MW104S-20160616-F<br><br>06/16/16<br>132-P3A-MW104S | 132-P3A-MW104S-F-20150929<br><br>09/29/15<br>132-P3A-MW104S |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | 2,000 | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | 2,000 U [2,000 U] | 2,000 U | 2,000 U | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 354 | 316 [318] | 362 | 344 | 333 | 339 | 316 [318] |
| pH | ARC-pH | SU | 7 | 6.74 [6.83] [7.12] | 6.6 | 6.75 | 6.43 | 6.37 | 6.85 [6.89] |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 1.2 | 1,380 [1,380] | 804 | 1.5 | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW104I-F-20160318<br><br>03/18/16<br>132-P3A-MW104I | 132-P3A-MW104S-20150929<br><br>09/29/15<br>132-P3A-MW104S | 132-P3A-MW104S-20151215<br><br>12/15/15<br>132-P3A-MW104S | 132-P3A-MW104S-20160318<br><br>03/18/16<br>132-P3A-MW104S | 132-P3A-MW104S-20160616<br><br>06/16/16<br>132-P3A-MW104S | 132-P3A-MW104S-20160616-F<br><br>06/16/16<br>132-P3A-MW104S | 132-P3A-MW104S-F-20150929<br><br>09/29/15<br>132-P3A-MW104S |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 152,000 | 246,000 [249,000] | 783,000 | 217,000 J | 330,000 | NA | 258,000 [265,000] |
| Sulfide | 18496-25-8 | ug/L | 880 J | 2,000 U [2,000 U] | 2,000 U | 2,000 U | 2,000 UJ | NA | 2,000 U [2,000 U] |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 3,000 UJ [1,000 J] | 3,000 UJ | 3,000 UJ | 3,000 UJ | NA | 1,000 J [1,000 J] |
| Temperature | ARC-Temp | deg c | 14.02 | 24.59 [24.59] | 18.08 | 11.89 | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | 1,700 U | 16,400 J | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | 8,090 | 30 | 720 | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 114 | 71.9 | 141 | NA | NA |
| pH | ARC-pH | SU | NA | NA | 6.59 | 8.34 | 7.36 | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | 0 | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | 18.32 | 15.21 | 17.75 | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | 27.9 | 8.34 | 8.1 | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 132-P3A-MW104S-F-20151215 | 132-P3A-MW104S-F-20160318 | 133-MW1A | 133-MW1A-GA01-5.5 | 133-MW1A-GA01-10.5 | 133-MW1B | 133-MW1B-GA01-34.0 | 133-MW1C | 133-MW1C-GA01-74.5 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | 5.5 | 10.5 | | 34 | | 74.5 |
| Date Collected: | | | 12/15/15 | 03/18/16 | 01/20/12 | 06/28/11 | 06/28/11 | 01/20/12 | 06/22/11 | 01/19/12 | 06/22/11 |
| Location ID: | CAS Number | Units | 132-P3A-MW104S | 132-P3A-MW104S | 133-MW1A | 133-MW1A | 133-MW1A | 133-MW1B | 133-MW1B | 133-MW1C | 133-MW1C |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | 0.020 U | NA | NA | 0.020 U [0.02 U] | NA | 0.020 U | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | 0.020 U | NA | NA | 0.020 U [0.02 U] | NA | 0.020 U | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | 2.0 U | NA | NA | 2.0 U [2 U] | NA | 2.0 U | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | 5.0 U | NA | NA | 5.0 U [5 U] | NA | 5.0 U | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | 5.0 U | NA | NA | 5.0 U [5 U] | NA | 5.0 U | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | 5.0 U | NA | NA | 5.0 U [5 U] | NA | 5.0 U | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | 1.0 UJ | NA | NA | 1.0 UJ [1 UJ] | NA | 1.0 U | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | 1.0 U | NA | NA | 0.48 J [0.41 J] | NA | 1.0 U | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | 2.0 U | NA | NA | 2.0 U [2 U] | NA | 2.0 U | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | 5.0 U | NA | NA | 5.0 U [5 U] | NA | 5.0 U | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | 1.0 U | NA | NA | 2.0 [1.9] | NA | 0.42 J | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | 2.5 U | NA | NA | 2.5 [2.3] | NA | 0.42 | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW104S-F-20151215<br><br>12/15/15<br>132-P3A-MW104S | 132-P3A-MW104S-F-20160318<br><br>03/18/16<br>132-P3A-MW104S | 133-MW1A<br><br>01/20/12<br>133-MW1A | 133-MW1A-GA01-5.5<br>5.5<br>06/28/11<br>133-MW1A | 133-MW1A-GA01-10.5<br>10.5<br>06/28/11<br>133-MW1A | 133-MW1B<br><br>01/20/12<br>133-MW1B | 133-MW1B-GA01-34.0<br>34<br>06/22/11<br>133-MW1B | 133-MW1C<br><br>01/19/12<br>133-MW1C | 133-MW1C-GA01-74.5<br>74.5<br>06/22/11<br>133-MW1C |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | 31 U | NA | NA | 30 U [30 U] | NA | 30 U | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | 2.1 U | NA | NA | 2.0 U [2 U] | NA | 2.0 U | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | 31 U | NA | NA | 30 U [30 U] | NA | 30 U | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | 21 U | NA | NA | 20 U [20 U] | NA | 20 U | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | 21 U | NA | NA | 20 U [20 U] | NA | 20 UJ | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | 21 U | NA | NA | 20 U [20 U] | NA | 20 U | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | 21 U | NA | NA | 20 U [20 U] | NA | 20 U | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | 31 U | NA | NA | 30 U [30 U] | NA | 30 U | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | 0.052 U | NA | NA | 0.051 U [0.05 U] | NA | 0.050 U | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | 0.052 U | NA | NA | 0.051 U [0.05 U] | NA | 0.050 U | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | 0.052 U | NA | NA | 0.051 U [0.05 U] | NA | 0.050 U | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW104S-F-20151215<br><br>12/15/15<br>132-P3A-MW104S | 132-P3A-MW104S-F-20160318<br><br>03/18/16<br>132-P3A-MW104S | 133-MW1A<br><br>01/20/12<br>133-MW1A | 133-MW1A-GA01-5.5<br>5.5<br>06/28/11<br>133-MW1A | 133-MW1A-GA01-10.5<br>10.5<br>06/28/11<br>133-MW1A | 133-MW1B<br><br>01/20/12<br>133-MW1B | 133-MW1B-GA01-34.0<br>34<br>06/22/11<br>133-MW1B | 133-MW1C<br><br>01/19/12<br>133-MW1C | 133-MW1C-GA01-74.5<br>74.5<br>06/22/11<br>133-MW1C |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | 1.0 U | NA | NA | 0.26 J [1 U] | NA | 1.0 U | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | 2.1 U | NA | NA | 2.0 U [2 U] | NA | 2.0 U | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | 2.1 U | NA | NA | 2.0 U [2 U] | NA | 2.0 U | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | 0.021 U | NA | NA | 0.020 U [0.026] | NA | 0.020 U | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | 1.0 UJ | NA | NA | 1.0 UJ [1 UJ] | NA | 1.0 U | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | 0.21 U | NA | NA | 0.20 U [0.2 U] | NA | 0.20 U | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | 10 U | NA | NA | 10 U [10 U] | NA | 10 U | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | 6.9 U | NA | NA | 0.26 [0.026] | NA | 6.7 U | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | 0.56 U | NA | NA | 0.56 U [0.56 U] | NA | 0.51 U | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | 0.56 U | NA | NA | 0.56 U [0.56 U] | NA | 0.51 U | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | 0.56 U | NA | NA | 0.56 U [0.56 U] | NA | 0.51 U | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | 50.0 UJ | NA | NA | 351 J [230 J] | NA | 570 | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | 2.5 U | 2.5 U [2.5 U] | 3.1 | 2.5 U [2.5 U] | 2.5 U | 2.5 U | 2.5 U |
| Arsenic | 7440-38-2 | ug/L | NA | NA | 4.1 | NA | NA | 18.7 [18.2] | NA | 8.4 | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | 464 | NA | NA | 266 [266] | NA | 90.2 | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | 1.0 U | NA | NA | 1.0 U [1 U] | NA | 1.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | 2.5 U | NA | NA | 2.5 U [2.5 U] | NA | 2.5 U | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | 96,900 | NA | NA | 91,300 [91,000] | NA | 103,000 | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 18.3 | 28.2 J [15.8 J] | 332 | 5.0 U [5 U] | 7.8 | 5.0 U | 5.0 U |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 10.0 U | 10.0 U [10 U] | 10.0 U | 3.6 J [8.2 J] | 10.0 U | 10.0 U | 10.0 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | 4.3 J | NA | NA | 5.0 U [5 U] | NA | 5.0 U | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | 11.1 U | NA | NA | 5.0 U [5 U] | NA | 5.2 U | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 2,020 | NA | NA | 876 [773] | NA | 586 | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | 24.3 | NA | NA | 3.3 [2.6] | NA | 2.3 | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | 6,540 | NA | NA | 24,500 [24,500] | NA | 32,200 | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | 374 | NA | NA | 1,070 [1,070] | NA | 735 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW104S-F-20151215<br><br>12/15/15<br>132-P3A-MW104S | 132-P3A-MW104S-F-20160318<br><br>03/18/16<br>132-P3A-MW104S | 133-MW1A<br><br>01/20/12<br>133-MW1A | 133-MW1A-GA01-5.5<br>5.5<br>06/28/11<br>133-MW1A | 133-MW1A-GA01-10.5<br>10.5<br>06/28/11<br>133-MW1A | 133-MW1B<br><br>01/20/12<br>133-MW1B | 133-MW1B-GA01-34.0<br>34<br>06/22/11<br>133-MW1B | 133-MW1C<br><br>01/19/12<br>133-MW1C | 133-MW1C-GA01-74.5<br>74.5<br>06/22/11<br>133-MW1C |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | 0.20 U | NA | NA | 0.20 U [0.2 U] | NA | 0.20 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | 4.1 J | 8.1 [7.8] | 11.0 | 5.8 [5.6] | 9.4 | 5.7 | 6.7 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | 1,490 | NA | NA | 18,900 [18,600] | NA | 11,100 | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | 2.5 U | NA | NA | 2.5 U [2.5 U] | NA | 2.0 J | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | 5.0 U | NA | NA | 5.0 U [5 U] | NA | 5.0 U | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | 7,720 | NA | NA | 234,000 [232,000] | NA | 76,300 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | 1.0 U | 1.0 U [1 U] | 1.0 U | 1.0 U [1 U] | 1.0 U | 1.0 U | 1.0 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | 22.4 | 44.3 [29] | 370 | 10 [9.9] | 23 | 15 | 20.6 |
| Vanadium | 7440-62-2 | ug/L | NA | NA | 5.0 U | 8.0 [5.4] | 23.9 | 4.6 J [4.3 J] | 5.6 | 9.5 | 13.9 |
| Zinc | 7440-66-6 | ug/L | NA | NA | 264 | NA | NA | 20.0 U [20 U] | NA | 20.0 U | NA |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 10 U | 2.0 J | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 5.5 RA | 5.5 UJ | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 268,000 | 74,500 | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | 61 U | NA | NA | 62 U [61 U] | NA | 63 U | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | 0.51 U | NA | NA | 0.51 U [0.51 U] | NA | 0.51 U | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW104S-F-20151215<br><br>12/15/15<br>132-P3A-MW104S | 132-P3A-MW104S-F-20160318<br><br>03/18/16<br>132-P3A-MW104S | 133-MW1A<br><br>01/20/12<br>133-MW1A | 133-MW1A-GA01-5.5<br>5.5<br>06/28/11<br>133-MW1A | 133-MW1A-GA01-10.5<br>10.5<br>06/28/11<br>133-MW1A | 133-MW1B<br><br>01/20/12<br>133-MW1B | 133-MW1B-GA01-34.0<br>34<br>06/22/11<br>133-MW1B | 133-MW1C<br><br>01/19/12<br>133-MW1C | 133-MW1C-GA01-74.5<br>74.5<br>06/22/11<br>133-MW1C |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | 0.51 U | NA | NA | 0.51 U [0.51 U] | NA | 0.51 U | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | 0.51 U | NA | NA | 0.51 U [0.51 U] | NA | 0.51 U | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | 0.51 U | NA | NA | 0.51 U [0.51 U] | NA | 0.51 U | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | 0.51 U | NA | NA | 0.51 U [0.51 U] | NA | 0.51 U | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | 0.51 U | NA | NA | 0.51 U [0.51 U] | NA | 0.51 U | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | 0.51 U | NA | NA | 0.51 U [0.51 U] | NA | 0.51 U | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | 0.51 U | NA | NA | 0.51 U [0.51 U] | NA | 0.51 U | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | 0.51 U | NA | NA | 0.51 U [0.51 U] | NA | 0.51 U | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | 0.28 U | NA | NA | 0.28 U [0.28 U] | NA | 0.28 U | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | 0.051 U | NA | NA | 0.051 U [0.051 U] | NA | 0.051 U | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | 0.051 U | NA | NA | 0.051 U [0.051 U] | NA | 0.051 U | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | 0.051 U | NA | NA | 0.051 U [0.051 U] | NA | 0.051 U | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | 0.051 U | NA | NA | 0.051 U [0.051 U] | NA | 0.051 U | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | 0.051 U | NA | NA | 0.051 U [0.051 U] | NA | 0.051 U | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | 0.051 U | NA | NA | 0.051 U [0.051 U] | NA | 0.051 U | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | 0.51 U | NA | NA | 0.51 U [0.51 U] | NA | 0.51 U | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | 0.051 U | NA | NA | 0.051 U [0.051 U] | NA | 0.051 U | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | 0.051 U | NA | NA | 0.051 U [0.051 U] | NA | 0.051 U | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | 0.051 U | NA | NA | 0.051 U [0.051 U] | NA | 0.051 U | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | 0.051 U | NA | NA | 0.051 U [0.051 U] | NA | 0.051 U | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | 0.051 U | NA | NA | 0.051 U [0.051 U] | NA | 0.051 U | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | 0.051 U | NA | NA | 0.051 U [0.051 U] | NA | 0.051 U | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | 0.051 U | NA | NA | 0.051 U [0.051 U] | NA | 0.051 U | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | 0.051 U | NA | NA | 0.051 U [0.051 U] | NA | 0.051 U | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | 0.051 U | NA | NA | 0.051 U [0.051 U] | NA | 0.051 U | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | 0.051 U | NA | NA | 0.051 U [0.051 U] | NA | 0.051 U | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | 0.051 U | NA | NA | 0.051 U [0.051 U] | NA | 0.051 U | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | 0.051 U | NA | NA | 0.051 U [0.051 U] | NA | 0.051 U | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | 0.51 U | NA | NA | 0.51 U [0.51 U] | NA | 0.51 U | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | 11,300 | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | 2,000 U | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 363 | 351 | 472 | 385 [388] | 386 | 440 [442] | 391 | 448 | 510 |
| pH | ARC-pH | SU | 6.67 | 8.56 | 7.78 | 7.30 [7.25] | 7.27 | 7.62 [7.76] | 7.62 | 8.30 | 8.12 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | 1.5 | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 132-P3A-MW104S-F-20151215<br><br>12/15/15<br>132-P3A-MW104S | 132-P3A-MW104S-F-20160318<br><br>03/18/16<br>132-P3A-MW104S | 133-MW1A<br><br>01/20/12<br>133-MW1A | 133-MW1A-GA01-5.5<br>5.5<br>06/28/11<br>133-MW1A | 133-MW1A-GA01-10.5<br>10.5<br>06/28/11<br>133-MW1A | 133-MW1B<br><br>01/20/12<br>133-MW1B | 133-MW1B-GA01-34.0<br>34<br>06/22/11<br>133-MW1B | 133-MW1C<br><br>01/19/12<br>133-MW1C | 133-MW1C-GA01-74.5<br>74.5<br>06/22/11<br>133-MW1C |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 795,000 | 294,000 J | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 U | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 3,000 UJ | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 11.89 | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | 4,590 | 4,520 | NA | 4,200 | NA | 1,340 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | 75.3 | 83 | NA | 7.4 | NA | 222.6 |
| pH | ARC-pH | SU | NA | NA | NA | 6.46 | 6.2 | NA | 6.8 | NA | 7.41 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | 17.87 | 17.15 | NA | 16.4 | NA | 16.3 |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | 8.68 | 8.96 | NA | 16.5 | NA | 4.29 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 133-MW2A-GA01-5.5 | 133-MW2A-GA01-10.5 | 133-MW2B-GA01-32.5 | 133-MW2C-GA01-96.5 | 133-MW3A | 133-MW4A | 133-MW5A | 133-MW6A-20151217-9.0 | 133-MW6A-20151217-12.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 5.5 | 10.5 | 32.5 | 96.5 | | | | | |
| Date Collected: | | | 06/20/11 | 06/20/11 | 06/20/11 | 06/21/11 | 01/26/12 | 01/26/12 | 01/26/12 | 12/17/15 | 12/17/15 |
| Location ID: | CAS Number | Units | 133-MW2A | 133-MW2A | 133-MW2B | 133-MW2C | 133-MW3A | 133-MW4A | 133-MW5A | 133-MW6A | 133-MW6A |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | 0.020 U | NA | NA | NA | 0.020 U | 0.020 U | 0.020 U | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | 0.020 U | NA | NA | NA | 0.020 U | 0.020 U | 0.020 U | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | 2.0 U | NA | NA | NA | 2.0 U | 2.0 U | 2.0 U | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | 10 U | NA | NA | NA | 5.0 U | 5.0 U | 2.5 J | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | 10 U | NA | NA | NA | 5.0 U | 11 | 5.0 U | NA | NA |
| Acetone | 67-64-1 | ug/L | 10 U | NA | NA | NA | 5.0 U | 5.0 | 12 | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 10 | 7.0 | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| Bromoform | 75-25-2 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| Bromomethane | 74-83-9 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| CFC-11 | 75-69-4 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| CFC-12 | 75-71-8 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| Chloroethane | 75-00-3 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| Chloroform | 67-66-3 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| Chloromethane | 74-87-3 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 0.37 J | 0.27 J | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | 1.0 U | NA | NA | NA | 0.50 J | 110 | 6.4 | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | 1.0 U | NA | NA | NA | 1.9 | 9.6 | 3.3 | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | 2.0 U | NA | NA | NA | 2.0 U | 14 | 12 | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | 10 U | NA | NA | NA | 5.0 U | 5.0 U | 5.0 U | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | 1.0 U | NA | NA | NA | 0.90 J | 0.70 J | 1.5 | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 14 | 13 | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| Toluene | 108-88-3 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 52 | 37 | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | 2.5 U | NA | NA | NA | 3.3 | 230 | 95 | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-MW2A-GA01-5.5<br>5.5<br>06/20/11<br>133-MW2A | 133-MW2A-GA01-10.5<br>10.5<br>06/20/11<br>133-MW2A | 133-MW2B-GA01-32.5<br>32.5<br>06/20/11<br>133-MW2B | 133-MW2C-GA01-96.5<br>96.5<br>06/21/11<br>133-MW2C | 133-MW3A<br>01/26/12<br>133-MW3A | 133-MW4A<br>01/26/12<br>133-MW4A | 133-MW5A<br>01/26/12<br>133-MW5A | 133-MW6A-20151217-9.0<br>12/17/15<br>133-MW6A | 133-MW6A-20151217-12.0<br>12/17/15<br>133-MW6A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | 30 U | NA | NA | NA | 30 U | 30 U | 30 U | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | 2.0 U | NA | NA | NA | 2.0 U | 2.0 U | 2.0 U | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | 30 U | NA | NA | NA | 30 U | 30 U | 30 U | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | 10 U | NA | NA | NA | 33 | 3.5 J | 4.5 J | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 3.1 J | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | 20 U | NA | NA | NA | 20 U | 20 U | 20 U | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | 20 U | NA | NA | NA | 20 U | 20 U | 20 U | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | 20 U | NA | NA | NA | 20 U | 20 U | 20 U | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 11 | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | 20 U | NA | NA | NA | 20 U | 20 U | 20 U | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | 30 U | NA | NA | NA | 30 U | 30 U | 30 U | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| Acetophenone | 98-86-2 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| Anthracene | 120-12-7 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| Atrazine | 1912-24-9 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | 0.050 U | NA | NA | NA | 0.050 U | 0.054 | 0.13 | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | 0.050 U | NA | NA | NA | 0.050 U | 0.050 U | 0.069 | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | 0.050 U | NA | NA | NA | 0.050 UJ | 0.065 J | 0.12 J | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-MW2A-GA01-5.5<br>5.5<br>06/20/11<br>133-MW2A | 133-MW2A-GA01-10.5<br>10.5<br>06/20/11<br>133-MW2A | 133-MW2B-GA01-32.5<br>32.5<br>06/20/11<br>133-MW2B | 133-MW2C-GA01-96.5<br>96.5<br>06/21/11<br>133-MW2C | 133-MW3A<br>01/26/12<br>133-MW3A | 133-MW4A<br>01/26/12<br>133-MW4A | 133-MW5A<br>01/26/12<br>133-MW5A | 133-MW6A-20151217-9.0<br>12/17/15<br>133-MW6A | 133-MW6A-20151217-12.0<br>12/17/15<br>133-MW6A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| Carbazole | 86-74-8 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| Chrysene | 218-01-9 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | 2.0 U | NA | NA | NA | 2.0 U | 2.0 U | 2.0 U | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| Fluorene | 86-73-7 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | 2.0 U | NA | NA | NA | 2.0 U | 2.0 U | 2.0 U | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | 0.020 U | NA | NA | NA | 0.020 U | 0.020 U | 0.020 U | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| Isophorone | 78-59-1 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| Naphthalene | 91-20-3 | ug/L | 10 U | NA | NA | NA | 39 | 9.9 J | 9.6 J | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | 0.20 U | NA | NA | NA | 0.20 U | 1.1 | 5.7 | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| Phenol | 108-95-2 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 1.1 J | NA | NA |
| Pyrene | 129-00-0 | ug/L | 10 U | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | 7.0 U | NA | NA | NA | 72 | 15 | 35 | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | 0.50 U | 0.51 U | 0.51 U | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | 0.50 U | 0.51 U | 0.51 U | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | 0.50 U | 0.51 U | 0.51 U | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | 209 | 8,250 | 3,460 | NA | NA |
| Antimony | 7440-36-0 | ug/L | 1.9 J | 2.5 U | 2.5 U | 2.5 U | 2.5 U | 3.0 | 6.9 | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | 2.5 U | 47.4 | 24.6 | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | 5.0 U | 301 | 1,670 | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | 2.5 U | 2.5 U | 2.5 U | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | 22,200 | 8,760 | 6,680 | NA | NA |
| Chromium | 7440-47-3 | ug/L | 7.0 | 8.4 | 5.0 U | 12.6 | 108 | 299 | 813 | 46.3 | 263 |
| Chromium VI | 18540-29-9 | ug/L | 10.0 U | 10.0 U | 10.0 U | 10.0 U | 96.4 | 16.7 | 123 | 5.5 UJ | 5.5 UJ |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | 5.0 U | 5.8 | 7.9 | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | 5.0 U | 14.8 | 84.4 | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | 467 | 2,640 | 4,020 | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | 8.4 | 117 | 1,600 | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | 19,600 | 1,650 | 5,970 | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | 10.0 U | 15.6 | 83.0 | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-MW2A-GA01-5.5<br>5.5<br>06/20/11<br>133-MW2A | 133-MW2A-GA01-10.5<br>10.5<br>06/20/11<br>133-MW2A | 133-MW2B-GA01-32.5<br>32.5<br>06/20/11<br>133-MW2B | 133-MW2C-GA01-96.5<br>96.5<br>06/21/11<br>133-MW2C | 133-MW3A<br>01/26/12<br>133-MW3A | 133-MW4A<br>01/26/12<br>133-MW4A | 133-MW5A<br>01/26/12<br>133-MW5A | 133-MW6A-20151217-9.0<br>12/17/15<br>133-MW6A | 133-MW6A-20151217-12.0<br>12/17/15<br>133-MW6A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | 0.20 U | 0.20 U | 12.5 | NA | NA |
| Nickel | 7440-02-0 | ug/L | 7.0 | 9.4 | 5.0 U | 10.1 | 5.0 U | 25.7 | 26.2 | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | 253 | 5,840 | 7,180 | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | 2.5 U | 2.5 U | 2.5 U | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | 5.0 U | 5.0 U | 5.0 U | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | 1,300 | 126,000 | 137,000 | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | 16 | 18 | 4.1 U | 29.4 | 121 | 570 | 993 | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 5.0 U | 5.0 U | 5.0 U | 6.7 | 13.2 | 242 | 147 | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | 20.0 U | 193 | 1,590 | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | 250 | 2,500 | 6,200 | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | 0.51 U | 0.52 UJ | 0.51 UJ | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-MW2A-GA01-5.5<br>5.5<br>06/20/11<br>133-MW2A | 133-MW2A-GA01-10.5<br>10.5<br>06/20/11<br>133-MW2A | 133-MW2B-GA01-32.5<br>32.5<br>06/20/11<br>133-MW2B | 133-MW2C-GA01-96.5<br>96.5<br>06/21/11<br>133-MW2C | 133-MW3A<br>01/26/12<br>133-MW3A | 133-MW4A<br>01/26/12<br>133-MW4A | 133-MW5A<br>01/26/12<br>133-MW5A | 133-MW6A-20151217-9.0<br>12/17/15<br>133-MW6A | 133-MW6A-20151217-12.0<br>12/17/15<br>133-MW6A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | 0.51 U | 0.52 UJ | 0.51 UJ | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | 0.51 U | 0.52 UJ | 0.51 UJ | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | 0.51 U | 0.52 UJ | 0.51 UJ | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | 0.51 U | 0.52 UJ | 0.51 UJ | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | 0.51 U | 0.52 UJ | 0.51 UJ | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | 0.51 U | 0.52 UJ | 0.51 UJ | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | 0.51 U | 0.52 UJ | 0.51 UJ | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | 0.51 U | 0.52 UJ | 0.51 UJ | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | 0.29 U | 0.29 U | 0.28 U | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | 0.051 U | 0.052 UJ | 0.051 U | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | 0.051 U | 0.052 UJ | 0.051 U | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | 0.051 U | 0.052 UJ | 0.051 U | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | 0.051 U | 0.052 UJ | 0.051 U | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | 0.051 U | 0.052 UJ | 0.051 U | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | 0.051 U | 0.052 UJ | 0.051 U | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | 0.51 U | 0.52 UJ | 0.51 U | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | 0.051 U | 0.052 UJ | 0.051 U | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | 0.051 U | 0.052 UJ | 0.051 U | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | 0.051 U | 0.052 UJ | 0.051 U | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | 0.051 U | 0.052 UJ | 0.051 U | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | 0.051 U | 0.052 UJ | 0.051 U | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | 0.051 U | 0.052 UJ | 0.051 U | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | 0.051 U | 0.052 UJ | 0.051 U | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | 0.051 U | 0.052 UJ | 0.051 U | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | 0.051 U | 0.052 UJ | 0.051 U | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | 0.051 U | 0.052 UJ | 0.051 U | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | 0.051 U | 0.052 UJ | 0.051 U | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | 0.051 U | 0.052 UJ | 0.051 U | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | 0.51 U | 0.52 UJ | 0.51 U | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 367 | 344 | 333 | 438 | 466 | 281 | 320 | 385 | 286 |
| pH | ARC-pH | SU | 6.91 | 7.09 | 7.44 | 9.27 | 8.42 | 10.9 | 10.2 | 6.56 | 6.54 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-MW2A-GA01-5.5<br>5.5<br>06/20/11<br>133-MW2A | 133-MW2A-GA01-10.5<br>10.5<br>06/20/11<br>133-MW2A | 133-MW2B-GA01-32.5<br>32.5<br>06/20/11<br>133-MW2B | 133-MW2C-GA01-96.5<br>96.5<br>06/21/11<br>133-MW2C | 133-MW3A<br><br>01/26/12<br>133-MW3A | 133-MW4A<br><br>01/26/12<br>133-MW4A | 133-MW5A<br><br>01/26/12<br>133-MW5A | 133-MW6A-20151217-9.0<br><br>12/17/15<br>133-MW6A | 133-MW6A-20151217-12.0<br><br>12/17/15<br>133-MW6A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | 12,700 | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 1,080 | 990 | NA | 1,520 | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 164.5 | 116.5 | NA | 240.3 | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | 5.83 | 5.82 | NA | 9.29 | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 23.1 | 18.73 | NA | 17.29 | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | 0.31 | 0.31 | NA | 9.6 | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-MW6A-F-20151217-9.0<br><br>12/17/15<br>133-MW6A | 133-P3B-VAP-4-11.0-15.0<br>11 - 15<br>05/19/15<br>133-P3B-VAP-4 | 133-P3B-VAP-4-16.0-20.0<br>16 - 20<br>05/19/15<br>133-P3B-VAP-4 | 133-P3B-VAP-4-20.0-24.0<br>20 - 24<br>05/19/15<br>133-P3B-VAP-4 | 133-P3B-VAP-4-25.0-29.0<br>25 - 29<br>05/19/15<br>133-P3B-VAP-4 | 133-P3B-VAP-4-36.0-40.0<br>36 - 40<br>05/19/15<br>133-P3B-VAP-4 | 133-P3B-VAP-4-45.0-49.0<br>45 - 49<br>05/19/15<br>133-P3B-VAP-4 |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-MW6A-F-20151217-9.0<br><br>12/17/15<br>133-MW6A | 133-P3B-VAP-4-11.0-15.0<br>11 - 15<br>05/19/15<br>133-P3B-VAP-4 | 133-P3B-VAP-4-16.0-20.0<br>16 - 20<br>05/19/15<br>133-P3B-VAP-4 | 133-P3B-VAP-4-20.0-24.0<br>20 - 24<br>05/19/15<br>133-P3B-VAP-4 | 133-P3B-VAP-4-25.0-29.0<br>25 - 29<br>05/19/15<br>133-P3B-VAP-4 | 133-P3B-VAP-4-36.0-40.0<br>36 - 40<br>05/19/15<br>133-P3B-VAP-4 | 133-P3B-VAP-4-45.0-49.0<br>45 - 49<br>05/19/15<br>133-P3B-VAP-4 |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-MW6A-F-20151217-9.0<br><br>12/17/15<br>133-MW6A | 133-P3B-VAP-4-11.0-15.0<br>11 - 15<br>05/19/15<br>133-P3B-VAP-4 | 133-P3B-VAP-4-16.0-20.0<br>16 - 20<br>05/19/15<br>133-P3B-VAP-4 | 133-P3B-VAP-4-20.0-24.0<br>20 - 24<br>05/19/15<br>133-P3B-VAP-4 | 133-P3B-VAP-4-25.0-29.0<br>25 - 29<br>05/19/15<br>133-P3B-VAP-4 | 133-P3B-VAP-4-36.0-40.0<br>36 - 40<br>05/19/15<br>133-P3B-VAP-4 | 133-P3B-VAP-4-45.0-49.0<br>45 - 49<br>05/19/15<br>133-P3B-VAP-4 |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 10,700 | 3,640 [4,340] | 186 | 28.6 | 36.4 |
| Chromium VI | 18540-29-9 | ug/L | NA | 1,900 | 390 | 27 [20] | 20 U | 10 U | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-MW6A-F-20151217-9.0<br><br>12/17/15<br>133-MW6A | 133-P3B-VAP-4-11.0-15.0<br>11 - 15<br>05/19/15<br>133-P3B-VAP-4 | 133-P3B-VAP-4-16.0-20.0<br>16 - 20<br>05/19/15<br>133-P3B-VAP-4 | 133-P3B-VAP-4-20.0-24.0<br>20 - 24<br>05/19/15<br>133-P3B-VAP-4 | 133-P3B-VAP-4-25.0-29.0<br>25 - 29<br>05/19/15<br>133-P3B-VAP-4 | 133-P3B-VAP-4-36.0-40.0<br>36 - 40<br>05/19/15<br>133-P3B-VAP-4 | 133-P3B-VAP-4-45.0-49.0<br>45 - 49<br>05/19/15<br>133-P3B-VAP-4 |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 10 U | NA | 139 J | 554 J [330 J] | 10.0 J | 1.6 J | 10 UJ |
| Chromium VI | 18540-29-9 | ug/L | 5.5 RA | NA | 9.7 J | 47 J [33 J] | 10 UJ | 10 UJ | 10 UJ |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-MW6A-F-20151217-9.0<br><br>12/17/15<br>133-MW6A | 133-P3B-VAP-4-11.0-15.0<br>11 - 15<br>05/19/15<br>133-P3B-VAP-4 | 133-P3B-VAP-4-16.0-20.0<br>16 - 20<br>05/19/15<br>133-P3B-VAP-4 | 133-P3B-VAP-4-20.0-24.0<br>20 - 24<br>05/19/15<br>133-P3B-VAP-4 | 133-P3B-VAP-4-25.0-29.0<br>25 - 29<br>05/19/15<br>133-P3B-VAP-4 | 133-P3B-VAP-4-36.0-40.0<br>36 - 40<br>05/19/15<br>133-P3B-VAP-4 | 133-P3B-VAP-4-45.0-49.0<br>45 - 49<br>05/19/15<br>133-P3B-VAP-4 |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 339 | 142 | 31.7 | 23.9 [38] [16.7] | 323 | 319 | 315 |
| pH | ARC-pH | SU | 6.59 | 11.26 | 10.81 | 10.47 [10.46] [10.45] | 6.83 | 7.14 | 7.68 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-MW6A-F-20151217-9.0<br><br>12/17/15<br>133-MW6A | 133-P3B-VAP-4-11.0-15.0<br>11 - 15<br>05/19/15<br>133-P3B-VAP-4 | 133-P3B-VAP-4-16.0-20.0<br>16 - 20<br>05/19/15<br>133-P3B-VAP-4 | 133-P3B-VAP-4-20.0-24.0<br>20 - 24<br>05/19/15<br>133-P3B-VAP-4 | 133-P3B-VAP-4-25.0-29.0<br>25 - 29<br>05/19/15<br>133-P3B-VAP-4 | 133-P3B-VAP-4-36.0-40.0<br>36 - 40<br>05/19/15<br>133-P3B-VAP-4 | 133-P3B-VAP-4-45.0-49.0<br>45 - 49<br>05/19/15<br>133-P3B-VAP-4 |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 5,000 | 1,280 | 1,230 | 1,370 | 1,770 | 1,280 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 45 | 365 | 325 | 233 | 194 | 248 |
| pH | ARC-pH | SU | NA | 12.08 | 11.31 | 11.01 | 6.77 | 7.17 | 7.95 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 16.07 | 14.91 | 14.95 | 16.33 | 17.25 | 19.1 |
| Turbidity | ARC-Turb | NTU | NA | 734 | NA | 664 | NA | 13 | 25 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-P3C-MW101I-20160324<br><br>03/24/16<br>133-P3C-MW101I | 133-P3C-MW101I-20160616<br><br>06/16/16<br>133-P3C-MW101I | 133-P3C-MW101I-20160616-F<br><br>06/16/16<br>133-P3C-MW101I | 133-P3C-MW101I-20160913<br><br>09/13/16<br>133-P3C-MW101I | 133-P3C-MW101I-20160913-F<br><br>09/13/16<br>133-P3C-MW101I | 133-P3C-MW101I-20161215<br><br>12/15/16<br>133-P3C-MW101I | 133-P3C-MW101I-20161215-F<br><br>12/15/16<br>133-P3C-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-P3C-MW101I-20160324<br>03/24/16<br>133-P3C-MW101I | 133-P3C-MW101I-20160616<br>06/16/16<br>133-P3C-MW101I | 133-P3C-MW101I-20160616-F<br>06/16/16<br>133-P3C-MW101I | 133-P3C-MW101I-20160913<br>09/13/16<br>133-P3C-MW101I | 133-P3C-MW101I-20160913-F<br>09/13/16<br>133-P3C-MW101I | 133-P3C-MW101I-20161215<br>12/15/16<br>133-P3C-MW101I | 133-P3C-MW101I-20161215-F<br>12/15/16<br>133-P3C-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-P3C-MW101I-20160324<br><br>03/24/16<br>133-P3C-MW101I | 133-P3C-MW101I-20160616<br><br>06/16/16<br>133-P3C-MW101I | 133-P3C-MW101I-20160616-F<br><br>06/16/16<br>133-P3C-MW101I | 133-P3C-MW101I-20160913<br><br>09/13/16<br>133-P3C-MW101I | 133-P3C-MW101I-20160913-F<br><br>09/13/16<br>133-P3C-MW101I | 133-P3C-MW101I-20161215<br><br>12/15/16<br>133-P3C-MW101I | 133-P3C-MW101I-20161215-F<br><br>12/15/16<br>133-P3C-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 411 J | 700 | NA | 494 | NA | 366 | NA |
| Antimony | 7440-36-0 | ug/L | 30 U | 6.0 U | NA | 6.0 U | NA | 6.0 U | NA |
| Arsenic | 7440-38-2 | ug/L | 15 U | 20.3 | NA | 13.8 | NA | 16.6 | NA |
| Barium | 7440-39-3 | ug/L | 108 J | 59.0 J | NA | 54.7 J | NA | 53.3 J | NA |
| Beryllium | 7440-41-7 | ug/L | 5.0 U | 1.0 UJ | NA | 1.0 U | NA | 1.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 15 U | 3.0 U | NA | 3.0 U | NA | 3.0 U | NA |
| Calcium | 7440-70-2 | ug/L | 87,800 | 87,500 | NA | 86,900 | NA | 82,300 | NA |
| Chromium | 7440-47-3 | ug/L | 5.7 JB | 21.1 | NA | 2.9 J | NA | 4.0 JB | NA |
| Chromium VI | 18540-29-9 | ug/L | 5.5 U | 7.6 J | NA | 10 RA | NA | 13 | NA |
| Cobalt | 7440-48-4 | ug/L | 250 U | 7.5 J | NA | 1.4 J | NA | 50 U | NA |
| Copper | 7440-50-8 | ug/L | 50 UJ | 19.0 | NA | 4.1 J | NA | 10 U | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 3,730 | 6,150 | NA | 5,640 | NA | 5,330 | NA |
| Lead | 7439-92-1 | ug/L | 15 U | 15 U | NA | 3.0 U | NA | 4.2 | NA |
| Magnesium | 7439-95-4 | ug/L | 227,000 J | 256,000 | NA | 249,000 | NA | 233,000 | NA |
| Manganese | 7439-96-5 | ug/L | 220 | 175 | NA | 180 | NA | 144 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-P3C-MW101I-20160324<br><br>03/24/16<br>133-P3C-MW101I | 133-P3C-MW101I-20160616<br><br>06/16/16<br>133-P3C-MW101I | 133-P3C-MW101I-20160616-F<br><br>06/16/16<br>133-P3C-MW101I | 133-P3C-MW101I-20160913<br><br>09/13/16<br>133-P3C-MW101I | 133-P3C-MW101I-20160913-F<br><br>09/13/16<br>133-P3C-MW101I | 133-P3C-MW101I-20161215<br><br>12/15/16<br>133-P3C-MW101I | 133-P3C-MW101I-20161215-F<br><br>12/15/16<br>133-P3C-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | 0.20 U | NA | 0.20 U | NA | 0.20 UB | NA |
| Nickel | 7440-02-0 | ug/L | 5.1 J | 16.2 J | NA | 10 U | NA | 3.9 JB | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 65,700 J | 87,000 | NA | 79,900 J | NA | 85,600 | NA |
| Selenium | 7782-49-2 | ug/L | 50 U | 9.6 J | NA | 10 U | NA | 10 U | NA |
| Silver | 7440-22-4 | ug/L | 50 UJ | 10 UJ | NA | 10 U | NA | 1.2 J | NA |
| Sodium | 7440-23-5 | ug/L | 2,250,000 | 2,150,000 | NA | 2,380,000 | NA | 2,100,000 | NA |
| Sulfur | 7704-34-9 | ug/L | 136,000 | 147,000 | NA | 166,000 | NA | 155,000 | NA |
| Thallium | 7440-28-0 | ug/L | 10 U | 10 U | NA | 4.0 U | NA | 4.0 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 250 U | 4.0 J | NA | 3.0 J | NA | 3.2 JB | NA |
| Zinc | 7440-66-6 | ug/L | 100 U | 3.8 J | NA | 20 UB | NA | 226 | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 10 U | NA | 10 U | NA | 10 UB |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 10 U | NA | 10 RA | NA | 5.8 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-P3C-MW101I-20160324<br><br>03/24/16<br>133-P3C-MW101I | 133-P3C-MW101I-20160616<br><br>06/16/16<br>133-P3C-MW101I | 133-P3C-MW101I-20160616-F<br><br>06/16/16<br>133-P3C-MW101I | 133-P3C-MW101I-20160913<br><br>09/13/16<br>133-P3C-MW101I | 133-P3C-MW101I-20160913-F<br><br>09/13/16<br>133-P3C-MW101I | 133-P3C-MW101I-20161215<br><br>12/15/16<br>133-P3C-MW101I | 133-P3C-MW101I-20161215-F<br><br>12/15/16<br>133-P3C-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 262 | 287 | 289 | 276 | 305 | 345 | 343 |
| pH | ARC-pH | SU | 7.09 | 7.65 | 7.63 | 7.21 | 7.18 | 7.08 | 7.14 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 12.7 | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-P3C-MW101I-20160324<br><br>03/24/16<br>133-P3C-MW101I | 133-P3C-MW101I-20160616<br><br>06/16/16<br>133-P3C-MW101I | 133-P3C-MW101I-20160616-F<br><br>06/16/16<br>133-P3C-MW101I | 133-P3C-MW101I-20160913<br><br>09/13/16<br>133-P3C-MW101I | 133-P3C-MW101I-20160913-F<br><br>09/13/16<br>133-P3C-MW101I | 133-P3C-MW101I-20161215<br><br>12/15/16<br>133-P3C-MW101I | 133-P3C-MW101I-20161215-F<br><br>12/15/16<br>133-P3C-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 434,000 | 489,000 | NA | 430,000 | NA | 401,000 | NA |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 UJ | NA | 2,000 U | NA | 2,000 U | NA |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 3,000 UJ | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 13.97 | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 8,800 | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 190 | 310 | NA | NA | NA | 180 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 129.6 | 126.5 | NA | NA | NA | 152.7 | NA |
| pH | ARC-pH | SU | 7.44 | 7.17 | NA | NA | NA | 7.39 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 14.1 | 17.6 | NA | NA | NA | 12 | NA |
| Turbidity | ARC-Turb | NTU | 12.7 | 20.8 | NA | NA | NA | 1.28 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 133-P3C-MW101I-F-20160324 | 133-P3C-MW101S-20160324 | 133-P3C-MW101S-20160616 | 133-P3C-MW101S-20160616-F | 133-P3C-MW101S-20160913 | 133-P3C-MW101S-20160913-F | 133-P3C-MW101S-20161216 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | |
| Date Collected: | | | 03/24/16 | 03/24/16 | 06/16/16 | 06/16/16 | 09/13/16 | 09/13/16 | 12/16/16 |
| Location ID: | CAS Number | Units | 133-P3C-MW101I | 133-P3C-MW101S | 133-P3C-MW101S | 133-P3C-MW101S | 133-P3C-MW101S | 133-P3C-MW101S | 133-P3C-MW101S |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-P3C-MW101I-F-20160324<br><br>03/24/16<br>133-P3C-MW101I | 133-P3C-MW101S-20160324<br><br>03/24/16<br>133-P3C-MW101S | 133-P3C-MW101S-20160616<br><br>06/16/16<br>133-P3C-MW101S | 133-P3C-MW101S-20160616-F<br><br>06/16/16<br>133-P3C-MW101S | 133-P3C-MW101S-20160913<br><br>09/13/16<br>133-P3C-MW101S | 133-P3C-MW101S-20160913-F<br><br>09/13/16<br>133-P3C-MW101S | 133-P3C-MW101S-20161216<br><br>12/16/16<br>133-P3C-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-P3C-MW101I-F-20160324<br><br>03/24/16<br>133-P3C-MW101I | 133-P3C-MW101S-20160324<br><br>03/24/16<br>133-P3C-MW101S | 133-P3C-MW101S-20160616<br><br>06/16/16<br>133-P3C-MW101S | 133-P3C-MW101S-20160616-F<br><br>06/16/16<br>133-P3C-MW101S | 133-P3C-MW101S-20160913<br><br>09/13/16<br>133-P3C-MW101S | 133-P3C-MW101S-20160913-F<br><br>09/13/16<br>133-P3C-MW101S | 133-P3C-MW101S-20161216<br><br>12/16/16<br>133-P3C-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 308 J | 606 | NA | 26.6 J [31.7 J] | NA | 26.9 J |
| Antimony | 7440-36-0 | ug/L | NA | 30 U | 6.0 U | NA | 12 U [6 U] | NA | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | NA | 15 U | 15 U | NA | 6.0 U [6 U] | NA | 30 U |
| Barium | 7440-39-3 | ug/L | NA | 31.6 J | 46.2 J | NA | 47.0 J [46.2 J] | NA | 40.5 J |
| Beryllium | 7440-41-7 | ug/L | NA | 5.0 U | 1.0 UJ | NA | 1.0 U [1 U] | NA | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 15 U | 3.0 U | NA | 3.0 U [3 U] | NA | 3.0 U |
| Calcium | 7440-70-2 | ug/L | NA | 337,000 | 224,000 | NA | 421,000 [416,000] | NA | 507,000 |
| Chromium | 7440-47-3 | ug/L | NA | 7.4 JB | 36.2 | NA | 3.2 J [3.3 J] | NA | 10 UB |
| Chromium VI | 18540-29-9 | ug/L | NA | 5.5 U | 10 U | NA | 10 RA [10 RA] | NA | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | 8.0 J | 5.2 J | NA | 5.1 J [4.9 J] | NA | 4.9 J |
| Copper | 7440-50-8 | ug/L | NA | 50 UJ | 16.6 | NA | 2.5 J [2.8 J] | NA | 10 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 941 | 5,440 | NA | 9,510 [10,200] | NA | 275 |
| Lead | 7439-92-1 | ug/L | NA | 15 U | 15 U | NA | 30 U [30 U] | NA | 30 U |
| Magnesium | 7439-95-4 | ug/L | NA | 72,100 J | 48,300 | NA | 73,900 [72,000] | NA | 62,600 |
| Manganese | 7439-96-5 | ug/L | NA | 7,420 | 6,180 | NA | 8,790 [9,550] | NA | 5,320 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-P3C-MW101I-F-20160324<br><br>03/24/16<br>133-P3C-MW101I | 133-P3C-MW101S-20160324<br><br>03/24/16<br>133-P3C-MW101S | 133-P3C-MW101S-20160616<br><br>06/16/16<br>133-P3C-MW101S | 133-P3C-MW101S-20160616-F<br><br>06/16/16<br>133-P3C-MW101S | 133-P3C-MW101S-20160913<br><br>09/13/16<br>133-P3C-MW101S | 133-P3C-MW101S-20160913-F<br><br>09/13/16<br>133-P3C-MW101S | 133-P3C-MW101S-20161216<br><br>12/16/16<br>133-P3C-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.20 U | 0.20 U | NA | 0.20 U [0.2 U] | NA | 0.20 U |
| Nickel | 7440-02-0 | ug/L | NA | 12.8 J | 27.8 | NA | 9.6 J [7.4 J] | NA | 12.8 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 53,000 J | 46,200 | NA | 62,400 J [60,900 J] | NA | 56,800 |
| Selenium | 7782-49-2 | ug/L | NA | 50 U | 5.2 J | NA | 9.6 J [10.2 J] | NA | 100 U |
| Silver | 7440-22-4 | ug/L | NA | 50 UJ | 10 UJ | NA | 2.8 JB [3 JB] | NA | 4.0 J |
| Sodium | 7440-23-5 | ug/L | NA | 1,210,000 | 1,030,000 | NA | 1,950,000 [1,960,000] | NA | 1,420,000 |
| Sulfur | 7704-34-9 | ug/L | NA | 455,000 | 364,000 | NA | 736,000 [721,000] | NA | 687,000 |
| Thallium | 7440-28-0 | ug/L | NA | 10 U | 10 U | NA | 20 U [20 U] | NA | 20 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 250 U | 1.4 J | NA | 50 U [50 U] | NA | 50 U |
| Zinc | 7440-66-6 | ug/L | NA | 25.6 J | 50.1 | NA | 20 UB [20 UB] | NA | 401 |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 6.5 JB | NA | NA | 4.4 J | NA | 3.0 J [3 J] | NA |
| Chromium VI | 18540-29-9 | ug/L | 5.5 U | NA | NA | 10 U | NA | 10 RA [5.5 RA] | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 154,000 | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-P3C-MW101I-F-20160324<br>03/24/16<br>133-P3C-MW101I | 133-P3C-MW101S-20160324<br>03/24/16<br>133-P3C-MW101S | 133-P3C-MW101S-20160616<br>06/16/16<br>133-P3C-MW101S | 133-P3C-MW101S-20160616-F<br>06/16/16<br>133-P3C-MW101S | 133-P3C-MW101S-20160913<br>09/13/16<br>133-P3C-MW101S | 133-P3C-MW101S-20160913-F<br>09/13/16<br>133-P3C-MW101S | 133-P3C-MW101S-20161216<br>12/16/16<br>133-P3C-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | 9,100 | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | 2,000 U | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 272 | 288 | 299 | 302 | 301 [314] | 309 [328] | 320 |
| pH | ARC-pH | SU | 7.48 | 7.16 | 7.04 | 7.01 | 6.78 [6.79] | 6.76 [6.77] | 6.85 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 12.7 | 7.2 | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-P3C-MW101I-F-20160324<br><br>03/24/16<br>133-P3C-MW101I | 133-P3C-MW101S-20160324<br><br>03/24/16<br>133-P3C-MW101S | 133-P3C-MW101S-20160616<br><br>06/16/16<br>133-P3C-MW101S | 133-P3C-MW101S-20160616-F<br><br>06/16/16<br>133-P3C-MW101S | 133-P3C-MW101S-20160913<br><br>09/13/16<br>133-P3C-MW101S | 133-P3C-MW101S-20160913-F<br><br>09/13/16<br>133-P3C-MW101S | 133-P3C-MW101S-20161216<br><br>12/16/16<br>133-P3C-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 448,000 | 1,470,000 | 1,180,000 | NA | 2,140,000 [1,990,000] | NA | 1,860,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 U | 2,000 UJ | NA | 2,000 U [2,000 U] | NA | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 3,000 UJ | 3,000 UJ | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 13.97 | 10.57 | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | 6,000 | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 690 | 480 | NA | NA | NA | 340 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 46.9 | 58.7 | NA | NA | NA | 22.2 |
| pH | ARC-pH | SU | NA | 7.17 | 7.63 | NA | NA | NA | 6.8 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 10.56 | 19.51 | NA | NA | NA | 13.22 |
| Turbidity | ARC-Turb | NTU | NA | 3.93 | 20.1 | NA | NA | NA | 0.71 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-P3C-MW101S-20161216-F<br>12/16/16<br>133-P3C-MW101S | 133-P3C-MW101S-F-20160324<br>03/24/16<br>133-P3C-MW101S | 133-P3C-MW102I-20160324<br>03/24/16<br>133-P3C-MW102I | 133-P3C-MW102I-20160615<br>06/15/16<br>133-P3C-MW102I | 133-P3C-MW102I-20160615-F<br>06/15/16<br>133-P3C-MW102I | 133-P3C-MW102I-20160913<br>09/13/16<br>133-P3C-MW102I | 133-P3C-MW102I-20160913-F<br>09/13/16<br>133-P3C-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-P3C-MW101S-20161216-F<br>12/16/16<br>133-P3C-MW101S | 133-P3C-MW101S-F-20160324<br>03/24/16<br>133-P3C-MW101S | 133-P3C-MW102I-20160324<br>03/24/16<br>133-P3C-MW102I | 133-P3C-MW102I-20160615<br>06/15/16<br>133-P3C-MW102I | 133-P3C-MW102I-20160615-F<br>06/15/16<br>133-P3C-MW102I | 133-P3C-MW102I-20160913<br>09/13/16<br>133-P3C-MW102I | 133-P3C-MW102I-20160913-F<br>09/13/16<br>133-P3C-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-P3C-MW101S-20161216-F<br>12/16/16<br>133-P3C-MW101S | 133-P3C-MW101S-F-20160324<br>03/24/16<br>133-P3C-MW101S | 133-P3C-MW102I-20160324<br>03/24/16<br>133-P3C-MW102I | 133-P3C-MW102I-20160615<br>06/15/16<br>133-P3C-MW102I | 133-P3C-MW102I-20160615-F<br>06/15/16<br>133-P3C-MW102I | 133-P3C-MW102I-20160913<br>09/13/16<br>133-P3C-MW102I | 133-P3C-MW102I-20160913-F<br>09/13/16<br>133-P3C-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | 346 J | 340 J | NA | 92.1 J | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | 30 U | 6.0 U | NA | 6.0 U | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | 12.4 J | 13.2 | NA | 13.2 | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | 367 J | 270 | NA | 198 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | 5.0 U | 1.0 U | NA | 1.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | 15 U | 3.0 U | NA | 3.0 U | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | 65,900 | 63,300 | NA | 66,500 | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 9.0 J | 2.7 J | NA | 1.8 J | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 5.5 U | 10 U | NA | 10 RA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | 250 U | 50 U | NA | 50 U | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | 50 UJ | 10 U | NA | 10 U | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 2,080 | 2,970 J | NA | 3,200 | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | 15 U | 2.3 J | NA | 3.0 U | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | 58,700 J | 75,300 J | NA | 77,200 | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | 616 | 606 | NA | 710 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-P3C-MW101S-20161216-F<br>12/16/16<br>133-P3C-MW101S | 133-P3C-MW101S-F-20160324<br>03/24/16<br>133-P3C-MW101S | 133-P3C-MW102I-20160324<br>03/24/16<br>133-P3C-MW102I | 133-P3C-MW102I-20160615<br>06/15/16<br>133-P3C-MW102I | 133-P3C-MW102I-20160615-F<br>06/15/16<br>133-P3C-MW102I | 133-P3C-MW102I-20160913<br>09/13/16<br>133-P3C-MW102I | 133-P3C-MW102I-20160913-F<br>09/13/16<br>133-P3C-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | 0.20 U | 0.20 U | NA | 0.051 J | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | 5.3 J | 10 U | NA | 10 U | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | 35,900 J | 48,700 J | NA | 46,300 J | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | 50 U | 10 U | NA | 10 U | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | 50 UJ | 1.6 J | NA | 10 UB | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | 824,000 | 931,000 J | NA | 797,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | 55,000 | 44,500 | NA | 38,900 | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | 10 U | 2.0 U | NA | 2.0 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | 4.7 J | 4.9 J | NA | 2.7 J | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | 100 U | 5.7 J | NA | 20 UB | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 10 UB | 8.7 JB | NA | NA | 3.1 J | NA | 1.4 J |
| Chromium VI | 18540-29-9 | ug/L | 10 U | 5.5 U | NA | NA | 10 U | NA | 10 RA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-P3C-MW101S-20161216-F<br>12/16/16<br>133-P3C-MW101S | 133-P3C-MW101S-F-20160324<br>03/24/16<br>133-P3C-MW101S | 133-P3C-MW102I-20160324<br>03/24/16<br>133-P3C-MW102I | 133-P3C-MW102I-20160615<br>06/15/16<br>133-P3C-MW102I | 133-P3C-MW102I-20160615-F<br>06/15/16<br>133-P3C-MW102I | 133-P3C-MW102I-20160913<br>09/13/16<br>133-P3C-MW102I | 133-P3C-MW102I-20160913-F<br>09/13/16<br>133-P3C-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | 6,600 | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | 2,000 U | 2,000 U | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 296 | 302 | 283 | 327 | 327 | 317 | 297 |
| pH | ARC-pH | SU | 6.98 | 6.82 | 7.33 | 6.99 | 7.05 | 7.09 | 7.06 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | 7.2 | 2.5 | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-P3C-MW101S-20161216-F<br>12/16/16<br>133-P3C-MW101S | 133-P3C-MW101S-F-20160324<br>03/24/16<br>133-P3C-MW101S | 133-P3C-MW102I-20160324<br>03/24/16<br>133-P3C-MW102I | 133-P3C-MW102I-20160615<br>06/15/16<br>133-P3C-MW102I | 133-P3C-MW102I-20160615-F<br>06/15/16<br>133-P3C-MW102I | 133-P3C-MW102I-20160913<br>09/13/16<br>133-P3C-MW102I | 133-P3C-MW102I-20160913-F<br>09/13/16<br>133-P3C-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 1,380,000 | 172,000 | 140,000 | NA | 108,000 | NA |
| Sulfide | 18496-25-8 | ug/L | NA | 2,000 U | 2,000 U | 2,000 U | NA | 2,000 U | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | 3,000 UJ | 3,000 UJ | 3,000 UJ | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 10.57 | 8.57 | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | 7,100 | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | 50 | 810 | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 102.7 | 70.6 | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | 7.33 | 7.24 | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | 17.88 | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | 28.3 | 13.1 | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 133-P3C-MW102I-20161216 | 133-P3C-MW102I-20161216-F | 133-P3C-MW102I-F-20160324 | 133-P3C-MW102S-20160324 | 133-P3C-MW102S-20160615 | 133-P3C-MW102S-20160615-F | 133-P3C-MW102S-20160913 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | |
| Date Collected: | | | 12/16/16 | 12/16/16 | 03/24/16 | 03/24/16 | 06/15/16 | 06/15/16 | 09/13/16 |
| Location ID: | CAS Number | Units | 133-P3C-MW102I | 133-P3C-MW102I | 133-P3C-MW102I | 133-P3C-MW102S | 133-P3C-MW102S | 133-P3C-MW102S | 133-P3C-MW102S |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-P3C-MW102I-20161216<br><br>12/16/16<br>133-P3C-MW102I | 133-P3C-MW102I-20161216-F<br><br>12/16/16<br>133-P3C-MW102I | 133-P3C-MW102I-F-20160324<br><br>03/24/16<br>133-P3C-MW102I | 133-P3C-MW102S-20160324<br><br>03/24/16<br>133-P3C-MW102S | 133-P3C-MW102S-20160615<br><br>06/15/16<br>133-P3C-MW102S | 133-P3C-MW102S-20160615-F<br><br>06/15/16<br>133-P3C-MW102S | 133-P3C-MW102S-20160913<br><br>09/13/16<br>133-P3C-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-P3C-MW102I-20161216<br><br>12/16/16<br>133-P3C-MW102I | 133-P3C-MW102I-20161216-F<br><br>12/16/16<br>133-P3C-MW102I | 133-P3C-MW102I-F-20160324<br><br>03/24/16<br>133-P3C-MW102I | 133-P3C-MW102S-20160324<br><br>03/24/16<br>133-P3C-MW102S | 133-P3C-MW102S-20160615<br><br>06/15/16<br>133-P3C-MW102S | 133-P3C-MW102S-20160615-F<br><br>06/15/16<br>133-P3C-MW102S | 133-P3C-MW102S-20160913<br><br>09/13/16<br>133-P3C-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 1,390 | NA | NA | 588 J | 353 J | NA | 1,030 |
| Antimony | 7440-36-0 | ug/L | 6.0 U | NA | NA | 30 U | 6.0 U | NA | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | 12.4 | NA | NA | 15 U | 9.0 U | NA | 4.8 |
| Barium | 7440-39-3 | ug/L | 202 | NA | NA | 75.6 J | 65.4 J | NA | 72.3 J |
| Beryllium | 7440-41-7 | ug/L | 0.40 J | NA | NA | 1.6 J | 0.50 J | NA | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 3.0 U | NA | NA | 15 U | 3.0 U | NA | 3.0 U |
| Calcium | 7440-70-2 | ug/L | 64,700 J | NA | NA | 201,000 | 165,000 | NA | 171,000 |
| Chromium | 7440-47-3 | ug/L | 6.0 JB | NA | NA | 12.0 J | 4.3 J | NA | 10.6 |
| Chromium VI | 18540-29-9 | ug/L | 10 U | NA | NA | 5.5 U | 10 U | NA | 10 RA |
| Cobalt | 7440-48-4 | ug/L | 0.90 J | NA | NA | 3.8 J | 3.9 J | NA | 3.8 J |
| Copper | 7440-50-8 | ug/L | 10 U | NA | NA | 50 UJ | 3.8 J | NA | 3.3 J |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 5,600 | NA | NA | 2,240 | 681 J | NA | 3,530 |
| Lead | 7439-92-1 | ug/L | 3.7 | NA | NA | 15 U | 2.8 J | NA | 2.5 J |
| Magnesium | 7439-95-4 | ug/L | 75,600 J | NA | NA | 43,100 J | 30,700 J | NA | 37,600 |
| Manganese | 7439-96-5 | ug/L | 647 | NA | NA | 5,230 | 4,020 | NA | 4,590 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 133-P3C-MW102I-20161216<br>12/16/16<br>133-P3C-MW102I | 133-P3C-MW102I-20161216-F<br>12/16/16<br>133-P3C-MW102I | 133-P3C-MW102I-F-20160324<br>03/24/16<br>133-P3C-MW102I | 133-P3C-MW102S-20160324<br>03/24/16<br>133-P3C-MW102S | 133-P3C-MW102S-20160615<br>06/15/16<br>133-P3C-MW102S | 133-P3C-MW102S-20160615-F<br>06/15/16<br>133-P3C-MW102S | 133-P3C-MW102S-20160913<br>09/13/16<br>133-P3C-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.30 U | NA | NA | 0.20 U | 0.20 U | NA | 0.055 J |
| Nickel | 7440-02-0 | ug/L | 4.6 JB | NA | NA | 6.8 J | 9.6 J | NA | 8.0 J |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 46,300 | NA | NA | 34,500 J | 38,200 J | NA | 36,700 J |
| Selenium | 7782-49-2 | ug/L | 10 U | NA | NA | 50 U | 10 U | NA | 10 U |
| Silver | 7440-22-4 | ug/L | 1.9 J | NA | NA | 50 UJ | 1.6 J | NA | 10 UB |
| Sodium | 7440-23-5 | ug/L | 754,000 | NA | NA | 830,000 | 429,000 J | NA | 337,000 |
| Sulfur | 7704-34-9 | ug/L | 39,800 | NA | NA | 228,000 | 219,000 | NA | 110,000 |
| Thallium | 7440-28-0 | ug/L | 2.0 U | NA | NA | 10 U | 6.0 U | NA | 2.0 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 5.8 JB | NA | NA | 250 U | 1.8 J | NA | 4.7 J |
| Zinc | 7440-66-6 | ug/L | 365 | NA | NA | 100 U | 23.6 | NA | 20 UB |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 10 UB | 16.9 J | NA | NA | 3.2 J | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U | 5.5 U | NA | NA | 10 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | 59,800 | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-P3C-MW102I-20161216<br><br>12/16/16<br>133-P3C-MW102I | 133-P3C-MW102I-20161216-F<br><br>12/16/16<br>133-P3C-MW102I | 133-P3C-MW102I-F-20160324<br><br>03/24/16<br>133-P3C-MW102I | 133-P3C-MW102S-20160324<br><br>03/24/16<br>133-P3C-MW102S | 133-P3C-MW102S-20160615<br><br>06/15/16<br>133-P3C-MW102S | 133-P3C-MW102S-20160615-F<br><br>06/15/16<br>133-P3C-MW102S | 133-P3C-MW102S-20160913<br><br>09/13/16<br>133-P3C-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | 7,200 | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | 2,000 U | 2,000 U | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 319 | 327 | 294 | 291 | 321 | 325 | 327 |
| pH | ARC-pH | SU | 6.94 | 6.96 | 7.33 | 7.44 | 6.94 | 6.97 | 7.02 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | 2.5 | 2.1 | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-P3C-MW102I-20161216<br><br>12/16/16<br>133-P3C-MW102I | 133-P3C-MW102I-20161216-F<br><br>12/16/16<br>133-P3C-MW102I | 133-P3C-MW102I-F-20160324<br><br>03/24/16<br>133-P3C-MW102I | 133-P3C-MW102S-20160324<br><br>03/24/16<br>133-P3C-MW102S | 133-P3C-MW102S-20160615<br><br>06/15/16<br>133-P3C-MW102S | 133-P3C-MW102S-20160615-F<br><br>06/15/16<br>133-P3C-MW102S | 133-P3C-MW102S-20160913<br><br>09/13/16<br>133-P3C-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 112,000 | NA | 173,000 | 637,000 | 679,000 | NA | 309,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | NA | 2,000 U | 2,000 U | 2,000 U | NA | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | 3,000 UJ | 3,000 UJ | 3,000 UJ | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | 8.57 | 11.6 | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | 8,600 | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 290 | NA | NA | 10 | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 100.9 | NA | NA | 46.4 | NA | NA | NA |
| pH | ARC-pH | SU | 7.1 | NA | NA | 7.39 | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 13.46 | NA | NA | 11.53 | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | 15.82 | NA | NA | 2.79 | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 133-P3C-MW102S-20160913-F | 133-P3C-MW102S-20161216 | 133-P3C-MW102S-20161216-F | 133-P3C-MW102S-F-20160324 | 133-P3C-VAP-3-10.0-14.0 | 133-P3C-VAP-3-22.0-26.0 | 133-P3C-VAP-3-30.0-34.0 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | 10 - 14 | 22 - 26 | 30 - 34 |
| Date Collected: | | | 09/13/16 | 12/16/16 | 12/16/16 | 03/24/16 | 05/15/15 | 05/18/15 | 05/18/15 |
| Location ID: | CAS Number | Units | 133-P3C-MW102S | 133-P3C-MW102S | 133-P3C-MW102S | 133-P3C-MW102S | 133-P3C-VAP-3 | 133-P3C-VAP-3 | 133-P3C-VAP-3 |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-P3C-MW102S-20160913-F<br><br>09/13/16<br>133-P3C-MW102S | 133-P3C-MW102S-20161216<br><br>12/16/16<br>133-P3C-MW102S | 133-P3C-MW102S-20161216-F<br><br>12/16/16<br>133-P3C-MW102S | 133-P3C-MW102S-F-20160324<br><br>03/24/16<br>133-P3C-MW102S | 133-P3C-VAP-3-10.0-14.0<br>10 - 14<br>05/15/15<br>133-P3C-VAP-3 | 133-P3C-VAP-3-22.0-26.0<br>22 - 26<br>05/18/15<br>133-P3C-VAP-3 | 133-P3C-VAP-3-30.0-34.0<br>30 - 34<br>05/18/15<br>133-P3C-VAP-3 |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-P3C-MW102S-20160913-F<br><br>09/13/16<br>133-P3C-MW102S | 133-P3C-MW102S-20161216<br><br>12/16/16<br>133-P3C-MW102S | 133-P3C-MW102S-20161216-F<br><br>12/16/16<br>133-P3C-MW102S | 133-P3C-MW102S-F-20160324<br><br>03/24/16<br>133-P3C-MW102S | 133-P3C-VAP-3-10.0-14.0<br>10 - 14<br>05/15/15<br>133-P3C-VAP-3 | 133-P3C-VAP-3-22.0-26.0<br>22 - 26<br>05/18/15<br>133-P3C-VAP-3 | 133-P3C-VAP-3-30.0-34.0<br>30 - 34<br>05/18/15<br>133-P3C-VAP-3 |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 71.5 J [59 J] | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | 6.0 U [6 U] | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | 3.0 U [3 U] | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | 44.6 J [43.3 J] | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | 1.0 U [1 U] | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 3.0 U [3 U] | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | 245,000 [236,000] | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 4.4 JB [4.7 JB] | NA | NA | 201 | 244 | 40.9 |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U [10 U] | NA | NA | 84 RA | 20 | 36 |
| Cobalt | 7440-48-4 | ug/L | NA | 0.90 J [1.1 J] | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | 3.3 J [3.1 J] | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 886 [833] | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | 15 U [15 U] | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | 35,900 [34,600] | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | 1,520 [1,510] | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-P3C-MW102S-20160913-F<br><br>09/13/16<br>133-P3C-MW102S | 133-P3C-MW102S-20161216<br><br>12/16/16<br>133-P3C-MW102S | 133-P3C-MW102S-20161216-F<br><br>12/16/16<br>133-P3C-MW102S | 133-P3C-MW102S-F-20160324<br><br>03/24/16<br>133-P3C-MW102S | 133-P3C-VAP-3-10.0-14.0<br>10 - 14<br>05/15/15<br>133-P3C-VAP-3 | 133-P3C-VAP-3-22.0-26.0<br>22 - 26<br>05/18/15<br>133-P3C-VAP-3 | 133-P3C-VAP-3-30.0-34.0<br>30 - 34<br>05/18/15<br>133-P3C-VAP-3 |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.20 UB [0.2 UB] | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | 6.7 JB [6.7 JB] | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 43,600 [42,200] | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | 50 U [50 U] | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | 3.1 J [3.4 J] | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | 514,000 [506,000] | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | 326,000 [317,000] | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 10 U [10 U] | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 50 UB [50 U] | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | 372 J [515 J] | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 4.3 J | NA | 3.8 JB [3.8 JB] | 10.1 J | 51.4 | 73.6 | 4.1 J |
| Chromium VI | 18540-29-9 | ug/L | 10 RA | NA | 10 U [10 U] | 5.5 U | 7.2 RA | 10 U | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | 180,000 | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-P3C-MW102S-20160913-F<br><br>09/13/16<br>133-P3C-MW102S | 133-P3C-MW102S-20161216<br><br>12/16/16<br>133-P3C-MW102S | 133-P3C-MW102S-20161216-F<br><br>12/16/16<br>133-P3C-MW102S | 133-P3C-MW102S-F-20160324<br><br>03/24/16<br>133-P3C-MW102S | 133-P3C-VAP-3-10.0-14.0<br>10 - 14<br>05/15/15<br>133-P3C-VAP-3 | 133-P3C-VAP-3-22.0-26.0<br>22 - 26<br>05/18/15<br>133-P3C-VAP-3 | 133-P3C-VAP-3-30.0-34.0<br>30 - 34<br>05/18/15<br>133-P3C-VAP-3 |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | 6,800 | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | 2,000 U | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 312 | 324 [326] | 331 [322] | 298 | 377 | 351 | 368 |
| pH | ARC-pH | SU | 7.00 | 7.05 [7.01] | 6.71 [7.02] | 7.44 | 6.95 | 6.52 | 7.07 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | 2.1 | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-P3C-MW102S-20160913-F<br><br>09/13/16<br>133-P3C-MW102S | 133-P3C-MW102S-20161216<br><br>12/16/16<br>133-P3C-MW102S | 133-P3C-MW102S-20161216-F<br><br>12/16/16<br>133-P3C-MW102S | 133-P3C-MW102S-F-20160324<br><br>03/24/16<br>133-P3C-MW102S | 133-P3C-VAP-3-10.0-14.0<br>10 - 14<br>05/15/15<br>133-P3C-VAP-3 | 133-P3C-VAP-3-22.0-26.0<br>22 - 26<br>05/18/15<br>133-P3C-VAP-3 | 133-P3C-VAP-3-30.0-34.0<br>30 - 34<br>05/18/15<br>133-P3C-VAP-3 |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 935,000 [940,000] | NA | 460,000 | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | 2,000 U [2,000 U] | NA | 2,000 U | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | 3,000 UJ | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | 11.6 | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 120 | NA | NA | 10,590 | 170 | 2,880 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 77.1 | NA | NA | 156 | 314 | 106 |
| pH | ARC-pH | SU | NA | 6.8 | NA | NA | 7.09 | 6.61 | 7.27 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 12.76 | NA | NA | 16.4 | 16.67 | 16.77 |
| Turbidity | ARC-Turb | NTU | NA | 3.57 | NA | NA | 1,048 | 2,203 | 31 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 133-P3C-VAP-3-41.0-45.0 | 133-Y22ASUMP-20160204 | 135-MW1A-GA01-7.0 | 135-MW1A-GA01-13.0 | 135-MW1B-GA01-30.0 | 135-MW1C-20151216 | 135-MW1C-F-20151216 | 135-MW2A-8.5 | 135-MW2A-12.5 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 41 - 45 | | 7 | 13 | 30 | | | 8.5 | 12.5 |
| Date Collected: | | | 05/18/15 | 02/04/16 | 06/27/11 | 06/27/11 | 06/27/11 | 12/16/15 | 12/16/15 | 10/06/15 | 10/06/15 |
| Location ID: | CAS Number | Units | 133-P3C-VAP-3 | 133-Y22A-SUMP | 135-MW1A | 135-MW1A | 135-MW1B | 135-MW1C | 135-MW1C | 135-MW2A | 135-MW2A |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 5.0 U |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U | 2.0 U |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U | 10 U |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 5.0 U |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U | 10 U |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 14.9 | 29.6 |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U | 2.0 U |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.29 J | 0.44 J |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U | 2.0 U |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U | 2.0 U |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 5.0 U |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U | 2.0 U |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 5.0 U |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 5.0 U |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 5.0 U |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 0.21 J |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-P3C-VAP-3-41.0-45.0<br>41 - 45<br>05/18/15<br>133-P3C-VAP-3 | 133-Y22ASUMP-20160204<br><br>02/04/16<br>133-Y22A-SUMP | 135-MW1A-GA01-7.0<br>7<br>06/27/11<br>135-MW1A | 135-MW1A-GA01-13.0<br>13<br>06/27/11<br>135-MW1A | 135-MW1B-GA01-30.0<br>30<br>06/27/11<br>135-MW1B | 135-MW1C-20151216<br><br>12/16/15<br>135-MW1C | 135-MW1C-F-20151216<br><br>12/16/15<br>135-MW1C | 135-MW2A-8.5<br>8.5<br>10/06/15<br>135-MW2A | 135-MW2A-12.5<br>12.5<br>10/06/15<br>135-MW2A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.1 U |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U | 2.2 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.1 U |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U | 2.2 U |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 5.4 U |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 5.4 U |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 5.4 U |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U | 2.2 U |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 5.4 U |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U | 11 U |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.1 U |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.1 U |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U | 2.2 U |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 5.4 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.50 U | 0.54 U |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.1 U |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U | 2.2 U |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 5.4 U |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 5.4 U |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U | 2.2 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 5.4 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U | 2.2 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 5.4 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U | 2.2 U |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U | 2.2 U |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 5.4 U |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U | 11 U |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.1 U |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.1 U |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U | 2.2 U |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.1 U |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U | 2.2 U |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 5.4 U |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.050 U | 0.054 U |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.050 U | 0.054 U |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.10 U | 0.11 U |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.1 U |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.10 U | 0.11 U |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U | 2.2 U |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U | 2.2 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U | 2.2 U |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U | 2.2 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-P3C-VAP-3-41.0-45.0<br>41 - 45<br>05/18/15<br>133-P3C-VAP-3 | 133-Y22ASUMP-20160204<br><br>02/04/16<br>133-Y22A-SUMP | 135-MW1A-GA01-7.0<br>7<br>06/27/11<br>135-MW1A | 135-MW1A-GA01-13.0<br>13<br>06/27/11<br>135-MW1A | 135-MW1B-GA01-30.0<br>30<br>06/27/11<br>135-MW1B | 135-MW1C-20151216<br><br>12/16/15<br>135-MW1C | 135-MW1C-F-20151216<br><br>12/16/15<br>135-MW1C | 135-MW2A-8.5<br>8.5<br>10/06/15<br>135-MW2A | 135-MW2A-12.5<br>12.5<br>10/06/15<br>135-MW2A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U | 2.2 U |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.1 U |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.1 U |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.10 U | 0.11 U |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 5.4 U |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U | 2.2 U |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U | 2.2 U |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U | 2.2 U |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U | 2.2 U |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.1 U |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.1 U |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.1 U |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.015 U | 0.016 U |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U | 11 U |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U | 2.2 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.10 U | 0.11 U |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U | 2.2 U |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.1 U |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U | 2.2 U |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U | 2.2 U |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 5.4 U |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 5.4 U |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.25 U | 0.27 U |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.1 U |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U | 2.2 U |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.1 U |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 765 | 463 |
| Antimony | 7440-36-0 | ug/L | NA | NA | 2.5 U | 2.5 U | 2.5 U | NA | NA | 6.0 U | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 49.6 | 28.5 |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 289 | 275 |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.30 J | 3.0 U |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 80,800 | 74,600 |
| Chromium | 7440-47-3 | ug/L | 28.2 | 3.9 J | 19.1 J | 5.0 U | 17.7 J | 5.2 J | NA | 5.1 J | 2.9 J |
| Chromium VI | 18540-29-9 | ug/L | 6.1 J | 21 RA | 10.0 U | 10.0 U | 10.0 U | 5.5 U | NA | 10 U | 10 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.6 J | 0.70 J |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 8.5 J | 6.6 J |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 9,520 | 6,460 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 9.1 | 4.7 |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 20,700 | 24,100 |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 735 | 648 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-P3C-VAP-3-41.0-45.0<br>41 - 45<br>05/18/15<br>133-P3C-VAP-3 | 133-Y22ASUMP-20160204<br><br>02/04/16<br>133-Y22A-SUMP | 135-MW1A-GA01-7.0<br>7<br>06/27/11<br>135-MW1A | 135-MW1A-GA01-13.0<br>13<br>06/27/11<br>135-MW1A | 135-MW1B-GA01-30.0<br>30<br>06/27/11<br>135-MW1B | 135-MW1C-20151216<br><br>12/16/15<br>135-MW1C | 135-MW1C-F-20151216<br><br>12/16/15<br>135-MW1C | 135-MW2A-8.5<br>8.5<br>10/06/15<br>135-MW2A | 135-MW2A-12.5<br>12.5<br>10/06/15<br>135-MW2A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.20 U | 0.20 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | 5.2 | 5.0 U | 3.7 J | NA | NA | 5.3 J | 3.3 J |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 17,200 | 18,300 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U | 10 U |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U | 10 U |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 431,000 | 473,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | 2.0 U | 2.0 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | 24.3 | 4.1 U | 33.0 | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | 5.0 U | 5.0 U | 11.6 | NA | NA | 3.3 J | 2.5 J |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 34.5 | 21.7 |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 2.3 J | NA | NA | NA | NA | NA | 3.9 J | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 U | NA | NA | NA | NA | NA | 5.5 U | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-P3C-VAP-3-41.0-45.0<br>41 - 45<br>05/18/15<br>133-P3C-VAP-3 | 133-Y22ASUMP-20160204<br><br>02/04/16<br>133-Y22A-SUMP | 135-MW1A-GA01-7.0<br>7<br>06/27/11<br>135-MW1A | 135-MW1A-GA01-13.0<br>13<br>06/27/11<br>135-MW1A | 135-MW1B-GA01-30.0<br>30<br>06/27/11<br>135-MW1B | 135-MW1C-20151216<br><br>12/16/15<br>135-MW1C | 135-MW1C-F-20151216<br><br>12/16/15<br>135-MW1C | 135-MW2A-8.5<br>8.5<br>10/06/15<br>135-MW2A | 135-MW2A-12.5<br>12.5<br>10/06/15<br>135-MW2A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 352 | 216 | 356 | 361 | 356 | 321 | 338 | 304 | 300 |
| pH | ARC-pH | SU | 7.21 | 6.71 | 7.22 | 7.17 | 7.98 | 9.92 | 9.98 | 6.22 | 6.15 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 133-P3C-VAP-3-41.0-45.0<br>41 - 45<br>05/18/15<br>133-P3C-VAP-3 | 133-Y22ASUMP-20160204<br><br>02/04/16<br>133-Y22A-SUMP | 135-MW1A-GA01-7.0<br>7<br>06/27/11<br>135-MW1A | 135-MW1A-GA01-13.0<br>13<br>06/27/11<br>135-MW1A | 135-MW1B-GA01-30.0<br>30<br>06/27/11<br>135-MW1B | 135-MW1C-20151216<br><br>12/16/15<br>135-MW1C | 135-MW1C-F-20151216<br><br>12/16/15<br>135-MW1C | 135-MW2A-8.5<br>8.5<br>10/06/15<br>135-MW2A | 135-MW2A-12.5<br>12.5<br>10/06/15<br>135-MW2A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | 2,700 | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 2,080 | NA | 2,740 | 2,710 | 640 | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 167 | NA | 66 | 83.5 | 32.4 | NA | NA | NA | NA |
| pH | ARC-pH | SU | 7.59 | NA | 6.44 | 6.66 | 7.34 | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 16.39 | NA | 26.28 | 21 | 20.38 | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | 56 | NA | 7.18 | 2.7 | 8.74 | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 135-MW2A-14.7 | 135-MW2A-0412 | 135-MW2A-20170316 | 135-MW2A-20170316-F | 135-MW2B-30.5 | 135-MW2B-GA01-30.5 | 137B-SW-20170405 | 137-DRUM-WG | 137-MRCE-WP3-2014-09-09 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 14.7 | 13.75 | | | 30.5 | 30.5 | | | |
| Date Collected: | | | 10/06/15 | 04/02/12 | 03/16/17 | 03/16/17 | 10/06/15 | 06/17/11 | 04/05/17 | 07/09/13 | 09/09/14 |
| Location ID: | CAS Number | Units | 135-MW2A | 135-MW2A | 135-MW2A | 135-MW2A | 135-MW2B | 135-MW2B | 137B-SW | 137-DRUM | 137-MRCE-WP3 |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | 5.0 U | NA | NA | NA | 5.0 U | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | 2.0 U | NA | NA | NA | 2.0 U | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | 10 U | NA | NA | NA | 10 U | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | 5.0 U | NA | NA | NA | 5.0 U | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | 10 U | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | 182 | NA | NA | NA | 0.50 U | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | 2.0 U | NA | NA | NA | 2.0 U | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | 1.4 J | NA | NA | NA | 2.0 U | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | 2.0 U | NA | NA | NA | 2.0 U | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | 2.0 U | NA | NA | NA | 2.0 U | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | 5.0 U | NA | NA | NA | 5.0 U | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | 2.0 U | NA | NA | NA | 2.0 U | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | 0.27 J | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | 1.0 U | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | 5.0 U | NA | NA | NA | 5.0 U | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | 5.0 U | NA | NA | NA | 5.0 U | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | 5.0 U | NA | NA | NA | 5.0 U | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | 0.25 J | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | 0.34 J | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | 0.45 J | NA | NA | NA | 1.0 U | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 135-MW2A-14.7<br>14.7<br>10/06/15<br>135-MW2A | 135-MW2A-0412<br>13.75<br>04/02/12<br>135-MW2A | 135-MW2A-20170316<br><br>03/16/17<br>135-MW2A | 135-MW2A-20170316-F<br><br>03/16/17<br>135-MW2A | 135-MW2B-30.5<br>30.5<br>10/06/15<br>135-MW2B | 135-MW2B-GA01-30.5<br>30.5<br>06/17/11<br>135-MW2B | 137B-SW-20170405<br><br>04/05/17<br>137B-SW | 137-DRUM-WG<br><br>07/09/13<br>137-DRUM | 137-MRCE-WP3-2014-09-09<br><br>09/09/14<br>137-MRCE-WP3 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | 1.0 U | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | 1.1 U | NA | NA | NA | 1.1 U | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | 2.2 U | NA | NA | NA | 2.1 U | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | 1.1 U | NA | NA | NA | 1.1 U | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | 2.2 U | NA | NA | NA | 2.1 U | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | 5.4 U | NA | NA | NA | 5.3 U | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | 5.4 U | NA | NA | NA | 5.3 U | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | 5.4 U | NA | NA | NA | 5.3 U | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | 2.2 U | NA | NA | NA | 2.1 U | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | 5.4 U | NA | NA | NA | 5.3 U | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | 11 U | NA | NA | NA | 11 U | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | 1.1 U | NA | NA | NA | 1.1 U | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | 1.1 U | NA | NA | NA | 1.1 U | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | 2.2 U | NA | NA | NA | 2.1 U | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | 5.4 U | NA | NA | NA | 5.3 U | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | 0.54 U | NA | NA | NA | 0.53 U | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | 1.1 U | NA | NA | NA | 1.1 U | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | 2.2 U | NA | NA | NA | 2.1 U | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | 5.4 U | NA | NA | NA | 5.3 U | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | 5.4 U | NA | NA | NA | 5.3 U | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | 2.2 U | NA | NA | NA | 2.1 U | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | 5.4 U | NA | NA | NA | 5.3 U | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | 2.2 U | NA | NA | NA | 2.1 U | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | 5.4 U | NA | NA | NA | 5.3 U | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | 2.2 U | NA | NA | NA | 2.1 U | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | 2.2 U | NA | NA | NA | 2.1 U | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | 5.4 U | NA | NA | NA | 5.3 U | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | 11 U | NA | NA | NA | 11 U | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | 1.1 U | NA | NA | NA | 3.2 | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | 1.1 U | NA | NA | NA | 1.1 U | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | 2.2 U | NA | NA | NA | 2.1 U | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | 1.1 U | NA | NA | NA | 1.1 U | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | 2.2 U | NA | NA | NA | 2.1 U | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | 5.4 U | NA | NA | NA | 5.3 U | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | 0.054 U | NA | NA | NA | 0.053 U | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | 0.054 U | NA | NA | NA | 0.053 U | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | 0.11 U | NA | NA | NA | 0.11 U | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | 1.1 U | NA | NA | NA | 1.1 U | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | 0.11 U | NA | NA | NA | 0.11 U | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | 2.2 U | NA | NA | NA | 2.1 U | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | 2.2 U | NA | NA | NA | 2.1 U | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | 2.2 U | NA | NA | NA | 2.1 U | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | 2.2 U | NA | NA | NA | 2.1 U | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 135-MW2A-14.7<br>14.7<br>10/06/15<br>135-MW2A | 135-MW2A-0412<br>13.75<br>04/02/12<br>135-MW2A | 135-MW2A-20170316<br><br>03/16/17<br>135-MW2A | 135-MW2A-20170316-F<br><br>03/16/17<br>135-MW2A | 135-MW2B-30.5<br>30.5<br>10/06/15<br>135-MW2B | 135-MW2B-GA01-30.5<br>30.5<br>06/17/11<br>135-MW2B | 137B-SW-20170405<br><br>04/05/17<br>137B-SW | 137-DRUM-WG<br><br>07/09/13<br>137-DRUM | 137-MRCE-WP3-2014-09-09<br><br>09/09/14<br>137-MRCE-WP3 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | 2.2 U | NA | NA | NA | 2.1 U | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | 1.1 U | NA | NA | NA | 1.1 U | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | 1.1 U | NA | NA | NA | 1.1 U | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | 0.11 U | NA | NA | NA | 0.11 U | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | 5.4 U | NA | NA | NA | 2.5 J | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | 2.2 U | NA | NA | NA | 2.1 U | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | 2.2 U | NA | NA | NA | 2.1 U | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | 2.2 U | NA | NA | NA | 2.1 U | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | 2.2 U | NA | NA | NA | 2.1 U | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | 1.1 U | NA | NA | NA | 1.1 U | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | 1.1 U | NA | NA | NA | 1.1 U | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | 1.1 U | NA | NA | NA | 1.1 U | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | 0.016 U | NA | NA | NA | 0.016 U | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | 11 U | NA | NA | NA | 11 U | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | 2.2 U | NA | NA | NA | 2.1 U | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | 0.11 U | NA | NA | NA | 0.11 U | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | 2.2 U | NA | NA | NA | 2.1 U | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | 1.1 U | NA | NA | NA | 1.1 U | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | 2.2 U | NA | NA | NA | 2.1 U | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | 2.2 U | NA | NA | NA | 2.1 U | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | 5.4 U | NA | NA | NA | 5.3 U | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | 5.4 U | NA | NA | NA | 5.3 U | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | 0.27 U | NA | NA | NA | 0.27 U | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | 1.1 U | NA | NA | NA | 1.1 U | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | 2.2 U | NA | NA | NA | 2.1 U | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | 1.1 U | NA | NA | NA | 1.1 U | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 1,080 | 1,010 J | NA | NA | 2,320 | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 6.0 U | 6.0 U | NA | NA | 6.0 U | 2.5 U | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | 66.5 | 239 | NA | NA | 3.0 U | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | 333 | 416 | NA | NA | 447 | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | 1.0 U | 0.40 J | NA | NA | 1.0 U | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 3.0 U | 3.0 U | NA | NA | 0.50 J | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | 95,200 | 121,000 | NA | NA | 49,900 | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 5.5 J | 76.2 | 1.5 J | NA | 5.7 J | 7.7 | 10,900 | NA | 432,000 |
| Chromium VI | 18540-29-9 | ug/L | 25 | 10 | 10 U | NA | 10 U | 10.0 UJ | 10,800 | NA | 407,000 |
| Cobalt | 7440-48-4 | ug/L | 1.0 J | 1.7 J | NA | NA | 0.60 J | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | 6.4 J | 13.2 J | NA | NA | 8.3 J | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 9,430 | 27,200 J | NA | NA | 3,280 | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | 13.5 | 19.2 | NA | NA | 9.4 | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | 48,500 | 85,900 | NA | NA | 132,000 | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 775 | 1,320 | NA | NA | 104 | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 135-MW2A-14.7<br>14.7<br>10/06/15<br>135-MW2A | 135-MW2A-0412<br>13.75<br>04/02/12<br>135-MW2A | 135-MW2A-20170316<br><br>03/16/17<br>135-MW2A | 135-MW2A-20170316-F<br><br>03/16/17<br>135-MW2A | 135-MW2B-30.5<br>30.5<br>10/06/15<br>135-MW2B | 135-MW2B-GA01-30.5<br>30.5<br>06/17/11<br>135-MW2B | 137B-SW-20170405<br><br>04/05/17<br>137B-SW | 137-DRUM-WG<br><br>07/09/13<br>137-DRUM | 137-MRCE-WP3-2014-09-09<br><br>09/09/14<br>137-MRCE-WP3 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | 0.20 U | NA | NA | 0.20 U | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 3.4 J | 50.9 | NA | NA | 3.0 J | 3.9 J | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 30,300 | 36,900 | NA | NA | 69,100 | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | 10 U | 10 U | NA | NA | 3.9 J | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | 10 U | 10 U | NA | NA | 10 U | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | 747,000 | 1,090,000 | NA | NA | 886,000 | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 2.0 U | 2.0 U | NA | NA | 2.0 U | 1.0 U | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | 140 | NA | NA | NA | 20 | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 5.7 J | 12.6 J | NA | NA | 7.7 J | 8.2 | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | 24.2 | 86.5 | NA | NA | 21.9 | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 1.2 J | NA | NA | NA | NA | 446,000 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA | 392,000 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.52 U | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 135-MW2A-14.7<br>14.7<br>10/06/15<br>135-MW2A | 135-MW2A-0412<br>13.75<br>04/02/12<br>135-MW2A | 135-MW2A-20170316<br><br>03/16/17<br>135-MW2A | 135-MW2A-20170316-F<br><br>03/16/17<br>135-MW2A | 135-MW2B-30.5<br>30.5<br>10/06/15<br>135-MW2B | 135-MW2B-GA01-30.5<br>30.5<br>06/17/11<br>135-MW2B | 137B-SW-20170405<br><br>04/05/17<br>137B-SW | 137-DRUM-WG<br><br>07/09/13<br>137-DRUM | 137-MRCE-WP3-2014-09-09<br><br>09/09/14<br>137-MRCE-WP3 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.52 U | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.52 U | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.52 U | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.52 U | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.52 U | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.52 U | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.52 U | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.52 U | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.40 U | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 297 | 316 | 321 | 321 | 318 | 419 | 300 | NA | 43.8 |
| pH | ARC-pH | SU | 6.27 | 6.81 | 6.70 | 6.72 | 7.06 | 7.80 | 7.74 | NA | 12.23 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 135-MW2A-14.7<br>14.7<br>10/06/15<br>135-MW2A | 135-MW2A-0412<br>13.75<br>04/02/12<br>135-MW2A | 135-MW2A-20170316<br><br>03/16/17<br>135-MW2A | 135-MW2A-20170316-F<br><br>03/16/17<br>135-MW2A | 135-MW2B-30.5<br>30.5<br>10/06/15<br>135-MW2B | 135-MW2B-GA01-30.5<br>30.5<br>06/17/11<br>135-MW2B | 137B-SW-20170405<br><br>04/05/17<br>137B-SW | 137-DRUM-WG<br><br>07/09/13<br>137-DRUM | 137-MRCE-WP3-2014-09-09<br><br>09/09/14<br>137-MRCE-WP3 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 790 | NA | NA | NA | 3,300 | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 157.7 | NA | NA | NA | 30.8 | NA | NA | NA |
| pH | ARC-pH | SU | NA | 6.78 | NA | NA | NA | 7.01 | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 15.72 | NA | NA | NA | 17.91 | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | 7.38 | NA | NA | NA | 0.82 | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 137-MRCE-WP11-2014-09-09 | 137-MRCE-WP14-2014-09-09 | 137-MRCE-WP20-2014-09-10 | 137-MW1A-GA01-6.0 | 137-MW1A-GA01-11.5 | 137-MW1B-GA01-30.5 | 137-MW1C-20151218-42.0 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | 6 | 11.5 | 30.5 | |
| Date Collected: | | | 09/09/14 | 09/09/14 | 09/10/14 | 06/23/11 | 06/23/11 | 06/23/11 | 12/18/15 |
| Location ID: | CAS Number | Units | 137-MRCE-WP11 | 137-MRCE-WP14 | 137-MRCE-WP20 | 137-MW1A | 137-MW1A | 137-MW1B | 137-MW1C |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-MRCE-WP11-2014-09-09<br><br>09/09/14<br>137-MRCE-WP11 | 137-MRCE-WP14-2014-09-09<br><br>09/09/14<br>137-MRCE-WP14 | 137-MRCE-WP20-2014-09-10<br><br>09/10/14<br>137-MRCE-WP20 | 137-MW1A-GA01-6.0<br>6<br>06/23/11<br>137-MW1A | 137-MW1A-GA01-11.5<br>11.5<br>06/23/11<br>137-MW1A | 137-MW1B-GA01-30.5<br>30.5<br>06/23/11<br>137-MW1B | 137-MW1C-20151218-42.0<br><br>12/18/15<br>137-MW1C |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-MRCE-WP11-2014-09-09<br><br>09/09/14<br>137-MRCE-WP11 | 137-MRCE-WP14-2014-09-09<br><br>09/09/14<br>137-MRCE-WP14 | 137-MRCE-WP20-2014-09-10<br><br>09/10/14<br>137-MRCE-WP20 | 137-MW1A-GA01-6.0<br>6<br>06/23/11<br>137-MW1A | 137-MW1A-GA01-11.5<br>11.5<br>06/23/11<br>137-MW1A | 137-MW1B-GA01-30.5<br>30.5<br>06/23/11<br>137-MW1B | 137-MW1C-20151218-42.0<br><br>12/18/15<br>137-MW1C |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | 2.5 U | 2.5 U | 2.5 U | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 136,000 | 28,000 | 33,600 [35,200] | 11,400 | 11,500 | 15.6 | 92.4 |
| Chromium VI | 18540-29-9 | ug/L | 112,000 | 26,100 | 35,000 [32,500] | 9,280 | 11,300 | 10.0 U | 1.4 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-MRCE-WP11-2014-09-09<br><br>09/09/14<br>137-MRCE-WP11 | 137-MRCE-WP14-2014-09-09<br><br>09/09/14<br>137-MRCE-WP14 | 137-MRCE-WP20-2014-09-10<br><br>09/10/14<br>137-MRCE-WP20 | 137-MW1A-GA01-6.0<br>6<br>06/23/11<br>137-MW1A | 137-MW1A-GA01-11.5<br>11.5<br>06/23/11<br>137-MW1A | 137-MW1B-GA01-30.5<br>30.5<br>06/23/11<br>137-MW1B | 137-MW1C-20151218-42.0<br><br>12/18/15<br>137-MW1C |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | 128 | 85.1 | 9.4 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | 11,600 | 11,600 | 30.2 | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | 85.1 | 59.3 | 5.2 | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 130,000 | 27,400 | 34,000 [34,800] | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 110,000 | 24,900 | 33,300 [34,200] | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-MRCE-WP11-2014-09-09<br><br>09/09/14<br>137-MRCE-WP11 | 137-MRCE-WP14-2014-09-09<br><br>09/09/14<br>137-MRCE-WP14 | 137-MRCE-WP20-2014-09-10<br><br>09/10/14<br>137-MRCE-WP20 | 137-MW1A-GA01-6.0<br>6<br>06/23/11<br>137-MW1A | 137-MW1A-GA01-11.5<br>11.5<br>06/23/11<br>137-MW1A | 137-MW1B-GA01-30.5<br>30.5<br>06/23/11<br>137-MW1B | 137-MW1C-20151218-42.0<br><br>12/18/15<br>137-MW1C |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 42.8 | 55.9 | 128 [93.6] [115] | 342 | 338 | 378 | 326 |
| pH | ARC-pH | SU | 12.12 | 12.08 | 12.07 [12.07] [12.19] | 12.5 | 12.4 | 7.56 | 7.55 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-MRCE-WP11-2014-09-09<br><br>09/09/14<br>137-MRCE-WP11 | 137-MRCE-WP14-2014-09-09<br><br>09/09/14<br>137-MRCE-WP14 | 137-MRCE-WP20-2014-09-10<br><br>09/10/14<br>137-MRCE-WP20 | 137-MW1A-GA01-6.0<br>6<br>06/23/11<br>137-MW1A | 137-MW1A-GA01-11.5<br>11.5<br>06/23/11<br>137-MW1A | 137-MW1B-GA01-30.5<br>30.5<br>06/23/11<br>137-MW1B | 137-MW1C-20151218-42.0<br><br>12/18/15<br>137-MW1C |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | 3,000 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | 40 | 0 | 620 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | 0.2 | 21.8 | 153.9 | NA |
| pH | ARC-pH | SU | NA | NA | NA | 12.46 | 12.58 | 7.02 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | 21.42 | 18.12 | 17.5 | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | 7.12 | 4 | 3.94 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-MW1C-F-20151218-42.0<br><br>12/18/15<br>137-MW1C | 137-MW1C-GA01-70.5<br>70.5<br>06/23/11<br>137-MW1C | 137-MW2A-GA01-5.5<br>5.5<br>06/29/11<br>137-MW2A | 137-MW2A-GA01-10.5<br>10.5<br>06/29/11<br>137-MW2A | 137-MW2A-GA01-13.5<br>13.5<br>06/29/11<br>137-MW2A | 137-MW2B-GA01-30.5<br>30.5<br>06/29/11<br>137-MW2B | 137-MW2C-20151214<br><br>12/14/15<br>137-MW2C | 137-MW2C-F-20151214<br><br>12/14/15<br>137-MW2C |
|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-MW1C-F-20151218-42.0<br><br>12/18/15<br>137-MW1C | 137-MW1C-GA01-70.5<br>70.5<br>06/23/11<br>137-MW1C | 137-MW2A-GA01-5.5<br>5.5<br>06/29/11<br>137-MW2A | 137-MW2A-GA01-10.5<br>10.5<br>06/29/11<br>137-MW2A | 137-MW2A-GA01-13.5<br>13.5<br>06/29/11<br>137-MW2A | 137-MW2B-GA01-30.5<br>30.5<br>06/29/11<br>137-MW2B | 137-MW2C-20151214<br><br>12/14/15<br>137-MW2C | 137-MW2C-F-20151214<br><br>12/14/15<br>137-MW2C |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-MW1C-F-20151218-42.0<br><br>12/18/15<br>137-MW1C | 137-MW1C-GA01-70.5<br>70.5<br>06/23/11<br>137-MW1C | 137-MW2A-GA01-5.5<br>5.5<br>06/29/11<br>137-MW2A | 137-MW2A-GA01-10.5<br>10.5<br>06/29/11<br>137-MW2A | 137-MW2A-GA01-13.5<br>13.5<br>06/29/11<br>137-MW2A | 137-MW2B-GA01-30.5<br>30.5<br>06/29/11<br>137-MW2B | 137-MW2C-20151214<br><br>12/14/15<br>137-MW2C | 137-MW2C-F-20151214<br><br>12/14/15<br>137-MW2C |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | 1,340 | NA |
| Antimony | 7440-36-0 | ug/L | NA | 2.5 U | 2.5 U | 2.5 U | 6.5 | 2.5 U | 6.0 U | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | 2.5 J | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | 75.2 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | 3.0 U | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | 213,000 | NA |
| Chromium | 7440-47-3 | ug/L | NA | 569 | 18,600 | 21,300 | 130,000 | 641 | 271 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 3.7 J | 19,600 | 23,100 | 102,000 | 10.0 U | 5.6 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | 50 U | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | 991 | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | 3.0 U | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | 42,900 J | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | 168 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-MW1C-F-20151218-42.0<br><br>12/18/15<br>137-MW1C | 137-MW1C-GA01-70.5<br>70.5<br>06/23/11<br>137-MW1C | 137-MW2A-GA01-5.5<br>5.5<br>06/29/11<br>137-MW2A | 137-MW2A-GA01-10.5<br>10.5<br>06/29/11<br>137-MW2A | 137-MW2A-GA01-13.5<br>13.5<br>06/29/11<br>137-MW2A | 137-MW2B-GA01-30.5<br>30.5<br>06/29/11<br>137-MW2B | 137-MW2C-20151214<br><br>12/14/15<br>137-MW2C | 137-MW2C-F-20151214<br><br>12/14/15<br>137-MW2C |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | 0.20 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | 12.1 | 17.3 | 49.4 | 1,490 | 28.5 | 4.3 JB | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | 6,160 J | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | 3.3 J | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | 842,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | 64,000 | NA |
| Thallium | 7440-28-0 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 2.0 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | 617 | 18,600 | 21,400 | 132,000 | 679 | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 35.8 | 5.0 U | 3.5 J | 21.3 | 9.0 | 2.2 J | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | 20 UB | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 96.7 | NA | NA | NA | NA | NA | NA | 2.6 J |
| Chromium VI | 18540-29-9 | ug/L | 3.3 J | NA | NA | NA | NA | NA | NA | 5.5 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 64,200 |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-MW1C-F-20151218-42.0<br><br>12/18/15<br>137-MW1C | 137-MW1C-GA01-70.5<br>70.5<br>06/23/11<br>137-MW1C | 137-MW2A-GA01-5.5<br>5.5<br>06/29/11<br>137-MW2A | 137-MW2A-GA01-10.5<br>10.5<br>06/29/11<br>137-MW2A | 137-MW2A-GA01-13.5<br>13.5<br>06/29/11<br>137-MW2A | 137-MW2B-GA01-30.5<br>30.5<br>06/29/11<br>137-MW2B | 137-MW2C-20151214<br><br>12/14/15<br>137-MW2C | 137-MW2C-F-20151214<br><br>12/14/15<br>137-MW2C |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | 2,000 U | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 363 | 380 | 281 | 245 | 167 | 322 | 345 | 356 |
| pH | ARC-pH | SU | 7.57 | 9.88 | 12.4 | 12.4 | 12.8 | 7.99 | 8.01 | 8.01 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | 5,690 | 5,690 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-MW1C-F-20151218-42.0<br><br>12/18/15<br>137-MW1C | 137-MW1C-GA01-70.5<br>70.5<br>06/23/11<br>137-MW1C | 137-MW2A-GA01-5.5<br>5.5<br>06/29/11<br>137-MW2A | 137-MW2A-GA01-10.5<br>10.5<br>06/29/11<br>137-MW2A | 137-MW2A-GA01-13.5<br>13.5<br>06/29/11<br>137-MW2A | 137-MW2B-GA01-30.5<br>30.5<br>06/29/11<br>137-MW2B | 137-MW2C-20151214<br><br>12/14/15<br>137-MW2C | 137-MW2C-F-20151214<br><br>12/14/15<br>137-MW2C |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | 167,000 | 168,000 |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | 2,000 U | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | 3,000 UJ | 3,000 UJ |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | 17.78 | 17.78 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | 1,800 JB | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 310 | 4,760 | 3,810 | 980 | 2,210 | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 188.1 | 119.1 | 189.6 | 134.6 | 77.3 | NA | NA |
| pH | ARC-pH | SU | NA | 10.16 | 12.59 | 12.57 | 12.21 | 6.92 | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 17.45 | 30.41 | 21.35 | 23.13 | 19.15 | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | 5.76 | 4.71 | 1.78 | 5.5 | 16.8 | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 137-MW2C-GA01-77.0 | 137-MW4A-0512 | 137-MW4A-GA01-6.9 | 137-MW4A-GA01-11.4 | 137-MW4A-GA01-15.7 | 137-MW4B-0412 | 137-MW4B-0512 | 137-MW4B-GA01-30.5 | 137-P3B-MW101I-20150930 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 77 | 15.5 | 6.9 | 11.4 | 15.7 | 28.75 | 28.75 | 30.5 | |
| Date Collected: | | | 06/29/11 | 05/18/12 | 06/24/11 | 06/24/11 | 06/24/11 | 04/02/12 | 05/18/12 | 06/24/11 | 09/30/15 |
| Location ID: | CAS Number | Units | 137-MW2C | 137-MW4A | 137-MW4A | 137-MW4A | 137-MW4A | 137-MW4B | 137-MW4B | 137-MW4B | 137-P3B-MW101I |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 1.0 U | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 1.0 U | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | 25 U [25 U] | NA | NA | NA | NA | 5.0 U | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 1.0 U | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 1.0 U | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 1.0 U | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | 25 U [25 U] | NA | NA | NA | NA | 5.0 U | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | 25 U [25 U] | NA | NA | NA | NA | 5.0 U | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | 50 U [50 U] | NA | NA | NA | NA | 10 U | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | 10 U [10 U] | NA | NA | NA | NA | 2.0 U | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 1.0 U | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 1.0 U | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 1.0 U | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 1.0 U | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 1.0 U | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | 630 U [630 U] | NA | NA | NA | NA | 130 U | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | 50 U [50 U] | NA | NA | NA | NA | 10 U | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | 25 U [25 U] | NA | NA | NA | NA | 5.0 U | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | 46.9 J [49.7 J] | NA | NA | NA | NA | 10 U | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 1.0 U | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | 25 U [25 U] | NA | NA | NA | NA | 5.0 U | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 1.0 U | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | 20 U [20 U] | NA | NA | NA | NA | 4.0 U | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | 10 U [10 U] | NA | NA | NA | NA | 2.0 U | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | 1.4 J [1.5 J] | NA | NA | NA | NA | 2.0 U | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 1.0 U | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | 25 U [25 U] | NA | NA | NA | NA | 5.0 U | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | 25 U [25 U] | NA | NA | NA | NA | 5.0 U | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 1.0 U | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 1.0 U | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 1.0 U | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 1.0 U | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 1.0 U | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 1.0 U | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 1.0 U | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | 25 U [25 U] | NA | NA | NA | NA | 5.0 U | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | 1.5 J [10 U] | NA | NA | NA | NA | 2.0 U | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 1.0 U | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | 10 U [10 U] | NA | NA | NA | NA | 2.0 U | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 1.0 U | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | 25 U [25 U] | NA | NA | NA | NA | 5.0 U | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | 25 U [25 U] | NA | NA | NA | NA | 5.0 U | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | 25 U [25 U] | NA | NA | NA | NA | 5.0 U | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 0.75 J | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 1.0 U | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | 25 U [25 U] | NA | NA | NA | NA | 5.0 U | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 1.0 U | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 1.0 U | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 1.0 U | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-MW2C-GA01-77.0<br>77<br>06/29/11<br>137-MW2C | 137-MW4A-0512<br>15.5<br>05/18/12<br>137-MW4A | 137-MW4A-GA01-6.9<br>6.9<br>06/24/11<br>137-MW4A | 137-MW4A-GA01-11.4<br>11.4<br>06/24/11<br>137-MW4A | 137-MW4A-GA01-15.7<br>15.7<br>06/24/11<br>137-MW4A | 137-MW4B-0412<br>28.75<br>04/02/12<br>137-MW4B | 137-MW4B-0512<br>28.75<br>05/18/12<br>137-MW4B | 137-MW4B-GA01-30.5<br>30.5<br>06/24/11<br>137-MW4B | 137-P3B-MW101I-20150930<br><br>09/30/15<br>137-P3B-MW101I |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 1.0 U | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 1.0 U | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 1.0 U | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 1.0 U | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | 1.0 U [1 U] | NA | NA | NA | NA | 1.0 U | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | 2.0 U [2 U] | NA | NA | NA | NA | 2.0 U | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | 2.0 U [2 U] | NA | NA | NA | NA | 2.0 U | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 5.0 U | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 5.0 U | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 5.0 U | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 5.0 U | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 5.0 U | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | 20 U [20 U] | NA | NA | NA | NA | 20 U | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | 2.0 U [2 U] | NA | NA | NA | NA | 2.0 U | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | 2.0 U [2 U] | NA | NA | NA | NA | 2.0 U | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | 2.0 U [2 U] | NA | NA | NA | NA | 2.0 U | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 5.0 U | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | 20 U [20 U] | NA | NA | NA | NA | 20 U | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | 1.0 U [1 U] | NA | NA | NA | NA | 1.0 U | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | 2.0 U [2 U] | NA | NA | NA | NA | 2.0 U | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 5.0 U | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 5.0 U | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 5.0 U | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 5.0 U | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | 2.0 U [2 U] | NA | NA | NA | NA | 2.0 U | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 5.0 U | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | 2.0 U [2 U] | NA | NA | NA | NA | 2.0 U | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | 15.2 [12.9] | NA | NA | NA | NA | 2.0 U | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 5.0 U | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | 10 U [10 U] | NA | NA | NA | NA | 10 U | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | 0.431 [0.502] | NA | NA | NA | NA | 0.10 U | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | 0.10 U [0.1 U] | NA | NA | NA | NA | 0.10 U | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | 2.0 U [2 U] | NA | NA | NA | NA | 2.0 U | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | 0.155 [0.182] | NA | NA | NA | NA | 0.10 U | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 5.0 U | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 5.0 U | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | 0.188 [0.177] | NA | NA | NA | NA | 0.10 U | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | 0.10 U [0.1 U] | NA | NA | NA | NA | 0.10 U | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | 0.10 U [0.1 U] | NA | NA | NA | NA | 0.10 U | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | 0.10 U [0.1 U] | NA | NA | NA | NA | 0.10 U | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | 0.10 U [0.1 U] | NA | NA | NA | NA | 0.10 U | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | 2.0 U [2 U] | NA | NA | NA | NA | 2.0 U | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | 2.0 U [2 U] | NA | NA | NA | NA | 2.0 U | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | 2.0 U [2 U] | NA | NA | NA | NA | 2.0 U | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | 2.0 U [2 U] | NA | NA | NA | NA | 2.0 U | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-MW2C-GA01-77.0<br>77<br>06/29/11<br>137-MW2C | 137-MW4A-0512<br>15.5<br>05/18/12<br>137-MW4A | 137-MW4A-GA01-6.9<br>6.9<br>06/24/11<br>137-MW4A | 137-MW4A-GA01-11.4<br>11.4<br>06/24/11<br>137-MW4A | 137-MW4A-GA01-15.7<br>15.7<br>06/24/11<br>137-MW4A | 137-MW4B-0412<br>28.75<br>04/02/12<br>137-MW4B | 137-MW4B-0512<br>28.75<br>05/18/12<br>137-MW4B | 137-MW4B-GA01-30.5<br>30.5<br>06/24/11<br>137-MW4B | 137-P3B-MW101I-20150930<br><br>09/30/15<br>137-P3B-MW101I |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | 2.0 U [2 U] | NA | NA | NA | NA | 2.0 U | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | 1.0 U [1 U] | NA | NA | NA | NA | 1.0 U | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | 0.10 U [0.1 U] | NA | NA | NA | NA | 0.10 U | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | 0.10 U [0.1 U] | NA | NA | NA | NA | 0.10 U | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 5.0 U | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | 2.0 U [2 U] | NA | NA | NA | NA | 2.0 U | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | 2.0 U [2 U] | NA | NA | NA | NA | 2.0 U | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | 2.0 U [2 U] | NA | NA | NA | NA | 2.0 U | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | 2.0 U [2 U] | NA | NA | NA | NA | 2.0 U | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | 0.319 [0.349] | NA | NA | NA | NA | 0.10 U | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | 0.311 [0.37] | NA | NA | NA | NA | 0.10 U | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | 1.0 U [1 U] | NA | NA | NA | NA | 1.0 U | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | 0.020 U [0.02 U] | NA | NA | NA | NA | 0.020 U | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | 10 U [10 U] | NA | NA | NA | NA | 10 U | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | 2.0 U [2 U] | NA | NA | NA | NA | 2.0 U | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | 0.10 U [0.1 U] | NA | NA | NA | NA | 0.10 U | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | 2.0 U [2 U] | NA | NA | NA | NA | 2.0 U | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | 2.10 [2.36] | NA | NA | NA | NA | 0.10 UJ | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | 2.0 U [2 U] | NA | NA | NA | NA | 2.0 U | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | 2.0 U [2 U] | NA | NA | NA | NA | 2.0 U | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 5.0 U | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | 5.0 U [5 U] | NA | NA | NA | NA | 5.0 U | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | 0.30 U [0.3 U] | NA | NA | NA | NA | 0.30 U | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | 1.06 [1.18] | NA | NA | NA | NA | 0.10 U | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | 16.3 [16.7] | NA | NA | NA | NA | 2.0 U | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | 0.337 [0.366] | NA | NA | NA | NA | 0.10 U | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | 36.4 [35.1] | NA | NA | NA | NA | 17 U | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 869 J | NA | NA | 229 |
| Antimony | 7440-36-0 | ug/L | 9.1 | NA | 28.2 | 32.8 | 32.5 | 6.0 U | NA | 2.5 U | 3.3 J |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 3.5 | NA | NA | 3.0 U |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 463 | NA | NA | 171 J |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 1.0 U | NA | NA | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 3.0 U | NA | NA | 0.40 J |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 29,400 | NA | NA | 90,100 |
| Chromium | 7440-47-3 | ug/L | 4,250 | NA | 1,440 | 1,060 | 869 | 40.0 | NA | 24.1 | 164 J |
| Chromium VI | 18540-29-9 | ug/L | 2,020 | NA | 12.6 J | 20.0 U | 20.0 U | 10 U | NA | 10.0 U | 130 RA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 50 UJ | NA | NA | 1.7 J |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 10 UJ | NA | NA | 10 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | 1,820 J | NA | NA | 954 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 3.1 | NA | NA | 3.0 U |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 64,700 | NA | NA | 84,700 |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | 56.0 | NA | NA | 781 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-MW2C-GA01-77.0<br>77<br>06/29/11<br>137-MW2C | 137-MW4A-0512<br>15.5<br>05/18/12<br>137-MW4A | 137-MW4A-GA01-6.9<br>6.9<br>06/24/11<br>137-MW4A | 137-MW4A-GA01-11.4<br>11.4<br>06/24/11<br>137-MW4A | 137-MW4A-GA01-15.7<br>15.7<br>06/24/11<br>137-MW4A | 137-MW4B-0412<br>28.75<br>04/02/12<br>137-MW4B | 137-MW4B-0512<br>28.75<br>05/18/12<br>137-MW4B | 137-MW4B-GA01-30.5<br>30.5<br>06/24/11<br>137-MW4B | 137-P3B-MW101I-20150930<br><br>09/30/15<br>137-P3B-MW101I |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.20 U | NA | NA | 0.20 U |
| Nickel | 7440-02-0 | ug/L | 23.2 | NA | 46.5 | 48.3 | 49.1 | 9.3 J | NA | 6.2 | 3.1 J |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 41,000 | NA | NA | 35,600 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 10 U | NA | NA | 4.6 J |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 10 U | NA | NA | 1.4 J |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 370,000 | NA | NA | 1,020,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 159,000 |
| Thallium | 7440-28-0 | ug/L | 1.0 U | NA | 1.0 U | 1.0 U | 1.0 U | 2.0 U | NA | 1.0 U | 4.0 U |
| Total CCPW Metals | CCPW-M | ug/L | 4,290 | NA | 1,830 | 1,470 | 1,270 | 58.9 | NA | 39.0 | NA |
| Vanadium | 7440-62-2 | ug/L | 12.6 | NA | 316 | 324 | 321 | 9.6 J | NA | 8.7 | 1.1 J |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 25.7 | NA | NA | 20 U |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | 3,300 [3,240] | NA | NA | NA | NA | 40 U | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | 1,230 [1,240] | NA | NA | NA | NA | 40 U | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | 2,070 [1,990] | NA | NA | NA | NA | 40 U | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-MW2C-GA01-77.0<br>77<br>06/29/11<br>137-MW2C | 137-MW4A-0512<br>15.5<br>05/18/12<br>137-MW4A | 137-MW4A-GA01-6.9<br>6.9<br>06/24/11<br>137-MW4A | 137-MW4A-GA01-11.4<br>11.4<br>06/24/11<br>137-MW4A | 137-MW4A-GA01-15.7<br>15.7<br>06/24/11<br>137-MW4A | 137-MW4B-0412<br>28.75<br>04/02/12<br>137-MW4B | 137-MW4B-0512<br>28.75<br>05/18/12<br>137-MW4B | 137-MW4B-GA01-30.5<br>30.5<br>06/24/11<br>137-MW4B | 137-P3B-MW101I-20150930<br><br>09/30/15<br>137-P3B-MW101I |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 2,000 U |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 245 | NA | 297 | 275 | 250 | 296 | NA | 510 | 250 |
| pH | ARC-pH | SU | 11.2 | NA | 11.2 | 11.1 | 11.2 | 6.84 | NA | 7.09 | 7.56 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | 3,740 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-MW2C-GA01-77.0<br>77<br>06/29/11<br>137-MW2C | 137-MW4A-0512<br>15.5<br>05/18/12<br>137-MW4A | 137-MW4A-GA01-6.9<br>6.9<br>06/24/11<br>137-MW4A | 137-MW4A-GA01-11.4<br>11.4<br>06/24/11<br>137-MW4A | 137-MW4A-GA01-15.7<br>15.7<br>06/24/11<br>137-MW4A | 137-MW4B-0412<br>28.75<br>04/02/12<br>137-MW4B | 137-MW4B-0512<br>28.75<br>05/18/12<br>137-MW4B | 137-MW4B-GA01-30.5<br>30.5<br>06/24/11<br>137-MW4B | 137-P3B-MW101I-20150930<br><br>09/30/15<br>137-P3B-MW101I |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 412,000 |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 3,000 UJ |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | 18.16 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 1,780 | NA | 790 | 2,790 | 5,760 | 790 | NA | 1,810 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 0.24 | NA | 179.8 | 226.5 | 223.9 | 148.1 | NA | 111.2 | NA |
| pH | ARC-pH | SU | 11.66 | NA | 11.76 | 11.55 | 11.77 | 6.91 | NA | 6.44 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 17.36 | NA | 18.11 | 18.83 | 20.18 | 15.37 | NA | 17.49 | NA |
| Turbidity | ARC-Turb | NTU | 28 | NA | 4.01 | 9.83 | 16.46 | 9.1 | NA | 2.57 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-P3B-MW101I-20151218<br>12/18/15<br>137-P3B-MW101I | 137-P3B-MW101I-20160323<br>03/23/16<br>137-P3B-MW101I | 137-P3B-MW101I-20160624<br>06/24/16<br>137-P3B-MW101I | 137-P3B-MW101I-20160624-F<br>06/24/16<br>137-P3B-MW101I | 137-P3B-MW101I-F-20150930<br>09/30/15<br>137-P3B-MW101I | 137-P3B-MW101I-F-20151218<br>12/18/15<br>137-P3B-MW101I | 137-P3B-MW101I-F-20160323<br>03/23/16<br>137-P3B-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-P3B-MW101I-20151218<br>12/18/15<br>137-P3B-MW101I | 137-P3B-MW101I-20160323<br>03/23/16<br>137-P3B-MW101I | 137-P3B-MW101I-20160624<br>06/24/16<br>137-P3B-MW101I | 137-P3B-MW101I-20160624-F<br>06/24/16<br>137-P3B-MW101I | 137-P3B-MW101I-F-20150930<br>09/30/15<br>137-P3B-MW101I | 137-P3B-MW101I-F-20151218<br>12/18/15<br>137-P3B-MW101I | 137-P3B-MW101I-F-20160323<br>03/23/16<br>137-P3B-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-P3B-MW101I-20151218<br>12/18/15<br>137-P3B-MW101I | 137-P3B-MW101I-20160323<br>03/23/16<br>137-P3B-MW101I | 137-P3B-MW101I-20160624<br>06/24/16<br>137-P3B-MW101I | 137-P3B-MW101I-20160624-F<br>06/24/16<br>137-P3B-MW101I | 137-P3B-MW101I-F-20150930<br>09/30/15<br>137-P3B-MW101I | 137-P3B-MW101I-F-20151218<br>12/18/15<br>137-P3B-MW101I | 137-P3B-MW101I-F-20160323<br>03/23/16<br>137-P3B-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 119 J | 126 J | 41.3 J | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 3.8 J | 6.0 UJ | 6.0 U | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | 6.0 U | 6.8 J | 4.0 | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | 139 J | 112 J | 65.7 J | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 3.0 U | 3.0 U | 3.0 U | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | 77,000 | 71,600 | 37,900 | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 2,120 | 7,960 | 140 | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 1,200 J | 4,400 J | 10 U | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 50 U | 0.70 J | 50 U | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | 10.8 | 10 U | 5.9 J | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 1,710 | 1,610 J | 784 | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | 6.0 U | 5.0 | 3.0 U | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | 61,200 | 72,200 | 35,500 | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 699 | 437 | 321 | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-P3B-MW101I-20151218<br><br>12/18/15<br>137-P3B-MW101I | 137-P3B-MW101I-20160323<br><br>03/23/16<br>137-P3B-MW101I | 137-P3B-MW101I-20160624<br><br>06/24/16<br>137-P3B-MW101I | 137-P3B-MW101I-20160624-F<br><br>06/24/16<br>137-P3B-MW101I | 137-P3B-MW101I-F-20150930<br><br>09/30/15<br>137-P3B-MW101I | 137-P3B-MW101I-F-20151218<br><br>12/18/15<br>137-P3B-MW101I | 137-P3B-MW101I-F-20160323<br><br>03/23/16<br>137-P3B-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | 0.20 U | 0.20 U | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 8.0 JB | 10 UB | 6.0 J | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 33,400 | 29,800 | 43,100 | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | 3.7 J | 5.5 J | 10 U | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | 10 U | 10 U | 10 U | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | 827,000 | 800,000 | 438,000 | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 145,000 | 115,000 | 59,600 | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 4.0 U | 10 U | 2.0 U | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 50 U | 3.1 J | 1.7 J | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | 136 | 20 UB | 20 U | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 51.7 | 242 J | 2,370 | 8,570 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | 10 U | 160 RA | 1,900 J | 7,400 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | 155,000 | 143,000 | 105,000 |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-P3B-MW101I-20151218<br>12/18/15<br>137-P3B-MW101I | 137-P3B-MW101I-20160323<br>03/23/16<br>137-P3B-MW101I | 137-P3B-MW101I-20160624<br>06/24/16<br>137-P3B-MW101I | 137-P3B-MW101I-20160624-F<br>06/24/16<br>137-P3B-MW101I | 137-P3B-MW101I-F-20150930<br>09/30/15<br>137-P3B-MW101I | 137-P3B-MW101I-F-20151218<br>12/18/15<br>137-P3B-MW101I | 137-P3B-MW101I-F-20160323<br>03/23/16<br>137-P3B-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | 9,900 |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | 2,000 U | NA | NA | NA | NA | 2,000 U |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 287 | 333 | 240 | 238 | 253 | 349 | 339 |
| pH | ARC-pH | SU | 7.22 | 7.4 | 7.77 | 7.69 | 7.55 | 7.29 | 7.48 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 3,420 | 2.9 | NA | NA | NA | NA | 2.9 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-P3B-MW101I-20151218<br>12/18/15<br>137-P3B-MW101I | 137-P3B-MW101I-20160323<br>03/23/16<br>137-P3B-MW101I | 137-P3B-MW101I-20160624<br>06/24/16<br>137-P3B-MW101I | 137-P3B-MW101I-20160624-F<br>06/24/16<br>137-P3B-MW101I | 137-P3B-MW101I-F-20150930<br>09/30/15<br>137-P3B-MW101I | 137-P3B-MW101I-F-20151218<br>12/18/15<br>137-P3B-MW101I | 137-P3B-MW101I-F-20160323<br>03/23/16<br>137-P3B-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 374,000 | 265,000 J | 174,000 | NA | 437,000 | 386,000 | 361,000 J |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 UJ | 2,000 U | NA | 810 J | 2,000 U | 2,000 UJ |
| Sulfite | ARC-SULFITE | ug/L | 3,000 U | 3,000 UJ | 3,000 UJ | NA | 3,000 UJ | 3,000 U | 3,000 UJ |
| Temperature | ARC-Temp | deg c | 14.65 | 15.57 | NA | NA | NA | NA | 15.57 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 10,300 | 15,200 | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 0 | 0 | 330 | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 54 | 84.3 | 193.5 | NA | NA | NA | NA |
| pH | ARC-pH | SU | 7.22 | 7.53 | 7.65 | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | 0 | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 14.65 | 16.1 | 18.42 | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | 11 | 5.46 | 3.71 | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 137-P3B-MW101S-20150930 | 137-P3B-MW101S-20151216 | 137-P3B-MW101S-20160321 | 137-P3B-MW101S-20160615 | 137-P3B-MW101S-20160615-F | 137-P3B-MW101S-20170316 | 137-P3B-MW101S-20170316-F |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | |
| Date Collected: | | | 09/30/15 | 12/16/15 | 03/21/16 | 06/15/16 | 06/15/16 | 03/16/17 | 03/16/17 |
| Location ID: | CAS Number | Units | 137-P3B-MW101S | 137-P3B-MW101S | 137-P3B-MW101S | 137-P3B-MW101S | 137-P3B-MW101S | 137-P3B-MW101S | 137-P3B-MW101S |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-P3B-MW101S-20150930<br>09/30/15<br>137-P3B-MW101S | 137-P3B-MW101S-20151216<br>12/16/15<br>137-P3B-MW101S | 137-P3B-MW101S-20160321<br>03/21/16<br>137-P3B-MW101S | 137-P3B-MW101S-20160615<br>06/15/16<br>137-P3B-MW101S | 137-P3B-MW101S-20160615-F<br>06/15/16<br>137-P3B-MW101S | 137-P3B-MW101S-20170316<br>03/16/17<br>137-P3B-MW101S | 137-P3B-MW101S-20170316-F<br>03/16/17<br>137-P3B-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-P3B-MW101S-20150930<br><br>09/30/15<br>137-P3B-MW101S | 137-P3B-MW101S-20151216<br><br>12/16/15<br>137-P3B-MW101S | 137-P3B-MW101S-20160321<br><br>03/21/16<br>137-P3B-MW101S | 137-P3B-MW101S-20160615<br><br>06/15/16<br>137-P3B-MW101S | 137-P3B-MW101S-20160615-F<br><br>06/15/16<br>137-P3B-MW101S | 137-P3B-MW101S-20170316<br><br>03/16/17<br>137-P3B-MW101S | 137-P3B-MW101S-20170316-F<br><br>03/16/17<br>137-P3B-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 594 J | 121 J | 200 U | 473 J | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 30 U | 30 U | 6.0 U | 12 U | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | 15 U | 60 U | 30 U | 60 U | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | 105 J | 59.7 J | 92.5 J | 73.6 J | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | 4.6 J | 1.0 U | 0.30 J | 2.2 | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 3.0 U | 15 U | 1.7 J | 6.0 U | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | 758,000 | 786,000 | 553,000 | 632,000 | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 172 J | 380 JB | 121 | 78.8 | NA | 100 U [100 UJ] | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 RA | 5.5 UJ | 5.5 U | 50 | NA | 37 J [190 J] | NA |
| Cobalt | 7440-48-4 | ug/L | 4.8 J | 12.9 J | 250 U | 7.6 J | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | 10 U | 29.9 J | 13.8 | 7.0 J | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 182,000 | 239,000 | 105,000 | 168,000 J | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | 13.7 J | 60 U | 30 U | 60 U | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | 95,200 | 124,000 | 66,800 | 99,200 J | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 40,500 | 67,900 | 21,100 | 38,200 | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-P3B-MW101S-20150930<br><br>09/30/15<br>137-P3B-MW101S | 137-P3B-MW101S-20151216<br><br>12/16/15<br>137-P3B-MW101S | 137-P3B-MW101S-20160321<br><br>03/21/16<br>137-P3B-MW101S | 137-P3B-MW101S-20160615<br><br>06/15/16<br>137-P3B-MW101S | 137-P3B-MW101S-20160615-F<br><br>06/15/16<br>137-P3B-MW101S | 137-P3B-MW101S-20170316<br><br>03/16/17<br>137-P3B-MW101S | 137-P3B-MW101S-20170316-F<br><br>03/16/17<br>137-P3B-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | 0.20 U | 0.20 U | 0.20 U | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 31.4 J | 14.9 J | 50 U | 6.6 J | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 100,000 | 87,600 | 88,200 | 97,600 J | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | 29.2 J | 36.8 J | 50 U | 16.4 J | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | 13.7 | 50 U | 10 U | 83.2 | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | 3,590,000 | 4,210,000 | 3,620,000 | 4,000,000 J | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 1,090,000 | 1,180,000 | 807,000 | 991,000 | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 50 U | 40 U | 20 U | 40 U | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 16.2 J | 250 U | 7.0 J | 100 U | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | 20 U | 100 U | 20 U | 40 U | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | 75.4 | NA | 100 U [100 U] |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | 52 | NA | 31 [37] |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-P3B-MW101S-20150930<br>09/30/15<br>137-P3B-MW101S | 137-P3B-MW101S-20151216<br>12/16/15<br>137-P3B-MW101S | 137-P3B-MW101S-20160321<br>03/21/16<br>137-P3B-MW101S | 137-P3B-MW101S-20160615<br>06/15/16<br>137-P3B-MW101S | 137-P3B-MW101S-20160615-F<br>06/15/16<br>137-P3B-MW101S | 137-P3B-MW101S-20170316<br>03/16/17<br>137-P3B-MW101S | 137-P3B-MW101S-20170316-F<br>03/16/17<br>137-P3B-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | 2,000 U | 3,900 | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 205 | 185 | 179 | 238 | 195 | 258 [255] | 247 [239] |
| pH | ARC-pH | SU | 6.45 | 6.32 | 6.64 | 6.53 | 6.57 | 6.37 [6.5] | 6.42 [6.31] |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 1,450 | 22,400 | 20.4 | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-P3B-MW101S-20150930<br>09/30/15<br>137-P3B-MW101S | 137-P3B-MW101S-20151216<br>12/16/15<br>137-P3B-MW101S | 137-P3B-MW101S-20160321<br>03/21/16<br>137-P3B-MW101S | 137-P3B-MW101S-20160615<br>06/15/16<br>137-P3B-MW101S | 137-P3B-MW101S-20160615-F<br>06/15/16<br>137-P3B-MW101S | 137-P3B-MW101S-20170316<br>03/16/17<br>137-P3B-MW101S | 137-P3B-MW101S-20170316-F<br>03/16/17<br>137-P3B-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 3,100,000 | 4,050,000 | 2,500,000 | 2,920,000 | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 U | 5,100 | 960 J | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | 1,000 J | 3,000 UJ | 3,000 U | 3,000 UJ | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 22.59 | 16.35 | 11.29 | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | 15,700 | 64,900 | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 1,450 | 440 | 2,400 | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 75 | 76.9 | 88.5 | NA | NA | NA |
| pH | ARC-pH | SU | NA | 6.32 | 6.8 | 6.33 | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | 200 | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 16.35 | 11.06 | 16.12 | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | 17.8 | 12.9 | 6.72 | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-P3B-MW101S-F-20150930<br><br>09/30/15<br>137-P3B-MW101S | 137-P3B-MW101S-F-20151216<br><br>12/16/15<br>137-P3B-MW101S | 137-P3B-MW101S-F-20160321<br><br>03/21/16<br>137-P3B-MW101S | 137-P3B-MW102I-20150930<br><br>09/30/15<br>137-P3B-MW102I | 137-P3B-MW102I-20151216<br><br>12/16/15<br>137-P3B-MW102I | 137-P3B-MW102I-20160321<br><br>03/21/16<br>137-P3B-MW102I | 137-P3B-MW102I-20160615<br><br>06/15/16<br>137-P3B-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-P3B-MW101S-F-20150930<br><br>09/30/15<br>137-P3B-MW101S | 137-P3B-MW101S-F-20151216<br><br>12/16/15<br>137-P3B-MW101S | 137-P3B-MW101S-F-20160321<br><br>03/21/16<br>137-P3B-MW101S | 137-P3B-MW102I-20150930<br><br>09/30/15<br>137-P3B-MW102I | 137-P3B-MW102I-20151216<br><br>12/16/15<br>137-P3B-MW102I | 137-P3B-MW102I-20160321<br><br>03/21/16<br>137-P3B-MW102I | 137-P3B-MW102I-20160615<br><br>06/15/16<br>137-P3B-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-P3B-MW101S-F-20150930<br><br>09/30/15<br>137-P3B-MW101S | 137-P3B-MW101S-F-20151216<br><br>12/16/15<br>137-P3B-MW101S | 137-P3B-MW101S-F-20160321<br><br>03/21/16<br>137-P3B-MW101S | 137-P3B-MW102I-20150930<br><br>09/30/15<br>137-P3B-MW102I | 137-P3B-MW102I-20151216<br><br>12/16/15<br>137-P3B-MW102I | 137-P3B-MW102I-20160321<br><br>03/21/16<br>137-P3B-MW102I | 137-P3B-MW102I-20160615<br><br>06/15/16<br>137-P3B-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | 460 [357] | 38.9 J | 200 U | 30.6 J |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | 5.1 J [6 U] | 6.0 U | 6.0 U | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | 11.2 [10.3] | 5.9 J | 5.6 | 9.3 |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | 196 J [176 J] | 161 J | 149 J | 136 J |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | 2.0 U [1 U] | 1.0 U | 1.0 U | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | 0.60 J [0.7 J] | 3.0 U | 3.0 U | 3.0 U |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | 84,300 [81,700] | 78,600 | 75,400 | 61,100 |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 15.8 J [4.9 J] | 589 JB | 18.4 | 1.5 J |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | 10 RA [10 RA] | 5.5 UJ | 5.5 U | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | 1.4 J [1.3 J] | 50 U | 50 U | 50 U |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | 12.4 J [10 U] | 2.1 J | 10 U | 10 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | 1,200 [1,320] | 1,160 | 1,180 | 934 J |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | 3.0 U [3 U] | 6.0 U | 2.5 J | 3.0 U |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | 105,000 [96,200] | 104,000 | 103,000 | 77,600 J |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | 645 [698] | 784 | 709 | 583 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-P3B-MW101S-F-20150930<br>09/30/15<br>137-P3B-MW101S | 137-P3B-MW101S-F-20151216<br>12/16/15<br>137-P3B-MW101S | 137-P3B-MW101S-F-20160321<br>03/21/16<br>137-P3B-MW101S | 137-P3B-MW102I-20150930<br>09/30/15<br>137-P3B-MW102I | 137-P3B-MW102I-20151216<br>12/16/15<br>137-P3B-MW102I | 137-P3B-MW102I-20160321<br>03/21/16<br>137-P3B-MW102I | 137-P3B-MW102I-20160615<br>06/15/16<br>137-P3B-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | 0.20 U [0.2 U] | 0.20 U | 0.20 U | 0.20 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | 10 U [10 U] | 2.5 J | 10 U | 10 U |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | 49,200 [50,900] | 59,400 | 50,200 | 47,600 J |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | 10 U [10 U] | 10.3 J | 4.1 J | 4.1 J |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | 10 U [10 U] | 10 U | 10 U | 1.4 J |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | 983,000 [889,000] | 998,000 | 869,000 | 774,000 J |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | 118,000 [114,000] | 106,000 | 96,000 | 71,200 |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | 20 U [20 U] | 4.0 U | 2.0 U | 2.0 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | 1.7 J [2.1 J] | 1.1 J | 50 U | 1.3 J |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | 13.4 J [9.2 J] | 20 UB | 20 U | 3.5 J |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 112 | 273 JB | 98.2 | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 RA | 5.5 UJ | 5.5 U | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 1,120,000 | 1,210,000 | 802,000 | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-P3B-MW101S-F-20150930<br><br>09/30/15<br>137-P3B-MW101S | 137-P3B-MW101S-F-20151216<br><br>12/16/15<br>137-P3B-MW101S | 137-P3B-MW101S-F-20160321<br><br>03/21/16<br>137-P3B-MW101S | 137-P3B-MW102I-20150930<br><br>09/30/15<br>137-P3B-MW102I | 137-P3B-MW102I-20151216<br><br>12/16/15<br>137-P3B-MW102I | 137-P3B-MW102I-20160321<br><br>03/21/16<br>137-P3B-MW102I | 137-P3B-MW102I-20160615<br><br>06/15/16<br>137-P3B-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | 48,500 | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | 2,000 U | 2,000 U [2,000 U] | 2,000 U | 2,000 U | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 217 | 169 | 188 | 270 [277] | 286 | 227 | 308 |
| pH | ARC-pH | SU | 6.48 | 5.97 | 6.65 | 8.06 [7.97] [8.06] | 7.65 | 7.19 | 7.23 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | 20.4 | 4,900 [4,900] | 3,520 | 6.3 | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-P3B-MW101S-F-20150930<br><br>09/30/15<br>137-P3B-MW101S | 137-P3B-MW101S-F-20151216<br><br>12/16/15<br>137-P3B-MW101S | 137-P3B-MW101S-F-20160321<br><br>03/21/16<br>137-P3B-MW101S | 137-P3B-MW102I-20150930<br><br>09/30/15<br>137-P3B-MW102I | 137-P3B-MW102I-20151216<br><br>12/16/15<br>137-P3B-MW102I | 137-P3B-MW102I-20160321<br><br>03/21/16<br>137-P3B-MW102I | 137-P3B-MW102I-20160615<br><br>06/15/16<br>137-P3B-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 3,070,000 | 4,310,000 | 2,390,000 | 300,000 [287,000] | 322,000 | 292,000 | 241,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 UJ | 2,000 U | 2,000 U [2,000 U] | 2,000 U | 2,000 U | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 3,000 UJ | 3,000 U | 3,000 UJ [3,000 UJ] | 3,000 UJ | 3,000 U | 3,000 UJ |
| Temperature | ARC-Temp | deg c | NA | NA | 11.29 | 23.15 [23.15] | 18.75 | 14.16 | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | 4,600 JB | 32,700 | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | 4,630 | 250 | 490 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | 113 | 46.8 | 68.2 |
| pH | ARC-pH | SU | NA | NA | NA | NA | 7.33 | 7.22 | 7.41 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | 0 | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | 18.75 | 15.9 | 19.39 |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | 5.48 | 2.25 | 0.97 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-P3B-MW102I-20160615-F<br><br>06/15/16<br>137-P3B-MW102I | 137-P3B-MW102I-F-20150930<br><br>09/30/15<br>137-P3B-MW102I | 137-P3B-MW102I-F-20151216<br><br>12/16/15<br>137-P3B-MW102I | 137-P3B-MW102I-F-20160321<br><br>03/21/16<br>137-P3B-MW102I | 137-P3B-MW102S-20150930<br><br>09/30/15<br>137-P3B-MW102S | 137-P3B-MW102S-20151216<br><br>12/16/15<br>137-P3B-MW102S | 137-P3B-MW102S-20160321<br><br>03/21/16<br>137-P3B-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-P3B-MW102I-20160615-F<br><br>06/15/16<br>137-P3B-MW102I | 137-P3B-MW102I-F-20150930<br><br>09/30/15<br>137-P3B-MW102I | 137-P3B-MW102I-F-20151216<br><br>12/16/15<br>137-P3B-MW102I | 137-P3B-MW102I-F-20160321<br><br>03/21/16<br>137-P3B-MW102I | 137-P3B-MW102S-20150930<br><br>09/30/15<br>137-P3B-MW102S | 137-P3B-MW102S-20151216<br><br>12/16/15<br>137-P3B-MW102S | 137-P3B-MW102S-20160321<br><br>03/21/16<br>137-P3B-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-P3B-MW102I-20160615-F<br><br>06/15/16<br>137-P3B-MW102I | 137-P3B-MW102I-F-20150930<br><br>09/30/15<br>137-P3B-MW102I | 137-P3B-MW102I-F-20151216<br><br>12/16/15<br>137-P3B-MW102I | 137-P3B-MW102I-F-20160321<br><br>03/21/16<br>137-P3B-MW102I | 137-P3B-MW102S-20150930<br><br>09/30/15<br>137-P3B-MW102S | 137-P3B-MW102S-20151216<br><br>12/16/15<br>137-P3B-MW102S | 137-P3B-MW102S-20160321<br><br>03/21/16<br>137-P3B-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | 570 J | 200 U | 200 U |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | 30 U | 30 U | 30 U |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | 30 U | 60 U | 75 U |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | 110 J | 50.1 J | 47.6 J |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | 5.5 | 1.0 U | 0.50 J |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | 15 U | 15 U | 15 U |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | 961,000 | 623,000 | 738,000 |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | 73.7 J | 98.3 UB | 89.2 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | 6.2 RA | 5.5 UJ | 5.5 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | 250 U | 250 U | 250 U |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | 50 U | 18.5 J | 57.2 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | 114,000 | 66,500 | 134,000 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | 30 U | 60 U | 75 U |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | 262,000 | 142,000 | 196,000 |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | 70,100 | 35,800 | 38,100 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-P3B-MW102I-20160615-F<br><br>06/15/16<br>137-P3B-MW102I | 137-P3B-MW102I-F-20150930<br><br>09/30/15<br>137-P3B-MW102I | 137-P3B-MW102I-F-20151216<br><br>12/16/15<br>137-P3B-MW102I | 137-P3B-MW102I-F-20160321<br><br>03/21/16<br>137-P3B-MW102I | 137-P3B-MW102S-20150930<br><br>09/30/15<br>137-P3B-MW102S | 137-P3B-MW102S-20151216<br><br>12/16/15<br>137-P3B-MW102S | 137-P3B-MW102S-20160321<br><br>03/21/16<br>137-P3B-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | 0.20 U | 0.20 U | 0.20 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | 7.0 J | 50 U | 50 U |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | 154,000 | 88,700 | 130,000 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | 33.2 J | 19.0 J | 40.2 J |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | 22.2 J | 50 U | 50 U |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | 6,530,000 | 3,390,000 | 8,040,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | 1,480,000 | 1,310,000 | 1,380,000 J |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | 45.4 J | 40 U | 50 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | 12.2 J | 250 U | 250 U |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | 100 U | 100 U | 100 U |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 1.6 J | 5.1 J [10 U] | 103 UB | 3.4 J | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 U | 10 RA [10 RA] | 5.5 UJ | 5.5 U | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | 103,000 [113,000] | 109,000 | 94,300 | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-P3B-MW102I-20160615-F<br><br>06/15/16<br>137-P3B-MW102I | 137-P3B-MW102I-F-20150930<br><br>09/30/15<br>137-P3B-MW102I | 137-P3B-MW102I-F-20151216<br><br>12/16/15<br>137-P3B-MW102I | 137-P3B-MW102I-F-20160321<br><br>03/21/16<br>137-P3B-MW102I | 137-P3B-MW102S-20150930<br><br>09/30/15<br>137-P3B-MW102S | 137-P3B-MW102S-20151216<br><br>12/16/15<br>137-P3B-MW102S | 137-P3B-MW102S-20160321<br><br>03/21/16<br>137-P3B-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | 4,000 | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | 2,000 U | 2,000 U | 2,000 U | 2,000 U |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 317 | 282 [286] | 299 | 242 | 238 | 174 | 223 |
| pH | ARC-pH | SU | 7.24 | 8.17 [7.6] | 7.60 | 7.19 | 6.35 | 6.56 | 6.27 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | 6.3 | 31,300 | 10,200 | 61.5 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-P3B-MW102I-20160615-F<br><br>06/15/16<br>137-P3B-MW102I | 137-P3B-MW102I-F-20150930<br><br>09/30/15<br>137-P3B-MW102I | 137-P3B-MW102I-F-20151216<br><br>12/16/15<br>137-P3B-MW102I | 137-P3B-MW102I-F-20160321<br><br>03/21/16<br>137-P3B-MW102I | 137-P3B-MW102S-20150930<br><br>09/30/15<br>137-P3B-MW102S | 137-P3B-MW102S-20151216<br><br>12/16/15<br>137-P3B-MW102S | 137-P3B-MW102S-20160321<br><br>03/21/16<br>137-P3B-MW102S |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 308,000 [310,000] | 330,000 | 313,000 | 4,450,000 | 3,670,000 J | 4,580,000 J |
| Sulfide | 18496-25-8 | ug/L | NA | 2,000 U [2,000 U] | 2,000 UJ | 2,000 U | 2,000 U | 2,000 U | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | NA | 3,000 UJ [3,000 UJ] | 3,000 UJ | 3,000 U | 1,000 J | 3,000 UJ | 3,000 U |
| Temperature | ARC-Temp | deg c | NA | NA | NA | 14.16 | 26.32 | 19.79 | 12.63 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | 12,200 | 19,500 J |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | 4,870 | 2,590 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | 88 | 43.6 |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | 6.56 | 6.34 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | 0 | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | 19.79 | 12.97 |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | 17.94 | 5.78 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-P3B-MW102S-20160615<br><br>06/15/16<br>137-P3B-MW102S | 137-P3B-MW102S-20160615-F<br><br>06/15/16<br>137-P3B-MW102S | 137-P3B-MW102S-20170317<br><br>03/17/17<br>137-P3B-MW102S | 137-P3B-MW102S-20170317-F<br><br>03/17/17<br>137-P3B-MW102S | 137-P3B-MW102S-F-20150930<br><br>09/30/15<br>137-P3B-MW102S | 137-P3B-MW102S-F-20151216<br><br>12/16/15<br>137-P3B-MW102S |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-P3B-MW102S-20160615<br><br>06/15/16<br>137-P3B-MW102S | 137-P3B-MW102S-20160615-F<br><br>06/15/16<br>137-P3B-MW102S | 137-P3B-MW102S-20170317<br><br>03/17/17<br>137-P3B-MW102S | 137-P3B-MW102S-20170317-F<br><br>03/17/17<br>137-P3B-MW102S | 137-P3B-MW102S-F-20150930<br><br>09/30/15<br>137-P3B-MW102S | 137-P3B-MW102S-F-20151216<br><br>12/16/15<br>137-P3B-MW102S |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-P3B-MW102S-20160615<br>06/15/16<br>137-P3B-MW102S | 137-P3B-MW102S-20160615-F<br>06/15/16<br>137-P3B-MW102S | 137-P3B-MW102S-20170317<br>03/17/17<br>137-P3B-MW102S | 137-P3B-MW102S-20170317-F<br>03/17/17<br>137-P3B-MW102S | 137-P3B-MW102S-F-20150930<br>09/30/15<br>137-P3B-MW102S | 137-P3B-MW102S-F-20151216<br>12/16/15<br>137-P3B-MW102S |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 309 J [28.3 J] | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 120 U [120 U] | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | 60 U [60 U] | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | 48.3 J [40 J] | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | 1.9 [1.3] | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 3.0 U [3 U] | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | 656,000 [650,000] | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 200 UJ [200 UJ] | NA | 10 U | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 72 J [71 J] | NA | 13 RA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 1,000 U [1,000 U] | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | 6.5 J [10 U] | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 106,000 J [72,300 J] | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | 60 U [60 U] | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | 151,000 J [113,000 J] | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 28,500 [26,000] | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-P3B-MW102S-20160615<br>06/15/16<br>137-P3B-MW102S | 137-P3B-MW102S-20160615-F<br>06/15/16<br>137-P3B-MW102S | 137-P3B-MW102S-20170317<br>03/17/17<br>137-P3B-MW102S | 137-P3B-MW102S-20170317-F<br>03/17/17<br>137-P3B-MW102S | 137-P3B-MW102S-F-20150930<br>09/30/15<br>137-P3B-MW102S | 137-P3B-MW102S-F-20151216<br>12/16/15<br>137-P3B-MW102S |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U [0.2 U] | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 200 U [200 U] | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 115,000 J [82,300 J] | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | 200 U [200 U] | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | 18.3 J [200 U] | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | 5,720,000 J [3,650,000 J] | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 1,220,000 [1,030,000] | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 40 U [40 U] | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 50 U [50 U] | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | 14.7 J [20 U] | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 6.2 J [6.3 J] | NA | 10 U | 42.6 J | 50 UB |
| Chromium VI | 18540-29-9 | ug/L | NA | 63 J [64 J] | NA | 10 RA | 10 RA | 5.5 UJ |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | 1,450,000 | 1,330,000 |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-P3B-MW102S-20160615<br>06/15/16<br>137-P3B-MW102S | 137-P3B-MW102S-20160615-F<br>06/15/16<br>137-P3B-MW102S | 137-P3B-MW102S-20170317<br>03/17/17<br>137-P3B-MW102S | 137-P3B-MW102S-20170317-F<br>03/17/17<br>137-P3B-MW102S | 137-P3B-MW102S-F-20150930<br>09/30/15<br>137-P3B-MW102S | 137-P3B-MW102S-F-20151216<br>12/16/15<br>137-P3B-MW102S |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 251 [221] | 256 [230] | 259 | 247 | 233 | 154 |
| pH | ARC-pH | SU | 6.39 [6.52] | 6.44 [6.51] | 6.65 | 6.67 | 6.34 | 6.37 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-P3B-MW102S-20160615<br>06/15/16<br>137-P3B-MW102S | 137-P3B-MW102S-20160615-F<br>06/15/16<br>137-P3B-MW102S | 137-P3B-MW102S-20170317<br>03/17/17<br>137-P3B-MW102S | 137-P3B-MW102S-20170317-F<br>03/17/17<br>137-P3B-MW102S | 137-P3B-MW102S-F-20150930<br>09/30/15<br>137-P3B-MW102S | 137-P3B-MW102S-F-20151216<br>12/16/15<br>137-P3B-MW102S |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 3,640,000 [3,340,000] | NA | NA | NA | 4,280,000 | 4,770,000 J |
| Sulfide | 18496-25-8 | ug/L | 2,000 U [2,000 U] | NA | NA | NA | 2,000 U | 2,000 UJ |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ [3,000 UJ] | NA | NA | NA | 3,000 UJ | 1,000 J |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 320 | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 40.5 | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | 6.3 | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 17.71 | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | 9.7 | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 137-P3B-MW102S-F-20160321 | 143-P3A-MW101I-20150928 | 143-P3A-MW101I-20151214 | 143-P3A-MW101I-20160318 | 143-P3A-MW101I-20160620 | 143-P3A-MW101I-20160620-F | 143-P3A-MW101I-F-20150928 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | |
| Date Collected: | | | 03/21/16 | 09/28/15 | 12/14/15 | 03/18/16 | 06/20/16 | 06/20/16 | 09/28/15 |
| Location ID: | CAS Number | Units | 137-P3B-MW102S | 143-P3A-MW101I | 143-P3A-MW101I | 143-P3A-MW101I | 143-P3A-MW101I | 143-P3A-MW101I | 143-P3A-MW101I |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-P3B-MW102S-F-20160321<br><br>03/21/16<br>137-P3B-MW102S | 143-P3A-MW101I-20150928<br><br>09/28/15<br>143-P3A-MW101I | 143-P3A-MW101I-20151214<br><br>12/14/15<br>143-P3A-MW101I | 143-P3A-MW101I-20160318<br><br>03/18/16<br>143-P3A-MW101I | 143-P3A-MW101I-20160620<br><br>06/20/16<br>143-P3A-MW101I | 143-P3A-MW101I-20160620-F<br><br>06/20/16<br>143-P3A-MW101I | 143-P3A-MW101I-F-20150928<br><br>09/28/15<br>143-P3A-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-P3B-MW102S-F-20160321<br><br>03/21/16<br>137-P3B-MW102S | 143-P3A-MW101I-20150928<br><br>09/28/15<br>143-P3A-MW101I | 143-P3A-MW101I-20151214<br><br>12/14/15<br>143-P3A-MW101I | 143-P3A-MW101I-20160318<br><br>03/18/16<br>143-P3A-MW101I | 143-P3A-MW101I-20160620<br><br>06/20/16<br>143-P3A-MW101I | 143-P3A-MW101I-20160620-F<br><br>06/20/16<br>143-P3A-MW101I | 143-P3A-MW101I-F-20150928<br><br>09/28/15<br>143-P3A-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 429 | 1,160 | 81.0 J | 251 | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | 300 U | 30 U | 12 U | 9.3 J | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | 3.0 U | 15 U | 6.0 U | 6.0 U | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | 37.7 J | 46.2 J | 40.0 J | 66.4 J | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | 5.0 U | 1.3 J | 1.0 U | 1.0 U | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 15 U | 1.7 J | 0.40 J | 0.40 J | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | 79,900 | 88,000 | 82,800 | 87,600 | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 12,700 | 11,700 J | 14,100 | 10,700 | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 12,100 J | 8,600 J | 15,000 J | 9,800 RA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | 5.6 J | 0.70 J | 1.1 J | 1.3 J | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | 4.1 J | 6.5 JB | 10 U | 10 U | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 801 | 1,430 | 133 J | 398 | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | 15 U | 15 U | 3.0 J | 3.4 | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | 23,000 | 25,500 | 24,300 | 26,700 | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | 70.1 | 82.8 | 23.0 | 158 | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-P3B-MW102S-F-20160321<br><br>03/21/16<br>137-P3B-MW102S | 143-P3A-MW101I-20150928<br><br>09/28/15<br>143-P3A-MW101I | 143-P3A-MW101I-20151214<br><br>12/14/15<br>143-P3A-MW101I | 143-P3A-MW101I-20160318<br><br>03/18/16<br>143-P3A-MW101I | 143-P3A-MW101I-20160620<br><br>06/20/16<br>143-P3A-MW101I | 143-P3A-MW101I-20160620-F<br><br>06/20/16<br>143-P3A-MW101I | 143-P3A-MW101I-F-20150928<br><br>09/28/15<br>143-P3A-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.20 U | 0.20 U | 0.60 U | 0.20 U | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | 7.3 J | 3.8 J | 3.2 JB | 3.1 J | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 2,520 J | 3,090 J | 10,600 | 4,050 J | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | 50 U | 10 U | 10 U | 10 U | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | 10 U | 10 U | 1.0 J | 10 UB | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | 33,900 | 32,300 | 36,100 | 84,300 | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | 46,400 | 44,700 | 50,000 | 47,600 | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 10 U | 10 U | 2.0 U | 4.0 U | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 11.1 J | 250 U | 6.2 J | 50 U | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | 100 U | 34.8 JB | 8.4 J | 4.1 J | NA | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 33.7 J | NA | NA | NA | NA | 11,000 | 12,400 |
| Chromium VI | 18540-29-9 | ug/L | 5.5 U | NA | NA | NA | NA | 8,800 RA | 12,100 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 1,850,000 J | NA | NA | NA | NA | NA | 48,500 |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-P3B-MW102S-F-20160321<br><br>03/21/16<br>137-P3B-MW102S | 143-P3A-MW101I-20150928<br><br>09/28/15<br>143-P3A-MW101I | 143-P3A-MW101I-20151214<br><br>12/14/15<br>143-P3A-MW101I | 143-P3A-MW101I-20160318<br><br>03/18/16<br>143-P3A-MW101I | 143-P3A-MW101I-20160620<br><br>06/20/16<br>143-P3A-MW101I | 143-P3A-MW101I-20160620-F<br><br>06/20/16<br>143-P3A-MW101I | 143-P3A-MW101I-F-20150928<br><br>09/28/15<br>143-P3A-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | 24,800 J | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | 2,000 U | 2,000 U | 2,000 U | 2,000 U | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 216 | 330 | 292 | 376 | 309 | 311 | 329 |
| pH | ARC-pH | SU | 6.32 | 7.25 | 7.12 | 7.18 | 7.10 | 7.14 | 7.29 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 61.5 | 529 | 597 | 0.81 | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 137-P3B-MW102S-F-20160321<br><br>03/21/16<br>137-P3B-MW102S | 143-P3A-MW101I-20150928<br><br>09/28/15<br>143-P3A-MW101I | 143-P3A-MW101I-20151214<br><br>12/14/15<br>143-P3A-MW101I | 143-P3A-MW101I-20160318<br><br>03/18/16<br>143-P3A-MW101I | 143-P3A-MW101I-20160620<br><br>06/20/16<br>143-P3A-MW101I | 143-P3A-MW101I-20160620-F<br><br>06/20/16<br>143-P3A-MW101I | 143-P3A-MW101I-F-20150928<br><br>09/28/15<br>143-P3A-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 5,820,000 J | 144,000 | 143,000 J | 145,000 | 155,000 | NA | 143,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 UJ | 2,000 U | 2,000 U | 2,000 U | NA | 2,000 UJ |
| Sulfite | ARC-SULFITE | ug/L | 3,000 U | 3,000 UB | 3,000 UJ | 3,000 UJ | 3,000 UJ | NA | 3,000 UJ |
| Temperature | ARC-Temp | deg c | 12.43 | 19.62 | 18.13 | 13.53 | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | 1,700 JB | 1,400 UB | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | 6,830 | 730 | 390 | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 180 | 344.6 | 69.2 | NA | NA |
| pH | ARC-pH | SU | NA | NA | 7.12 | 7 | 7.45 | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | 0 | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | 18.13 | 13.53 | 16.19 | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | 24.4 | 6.46 | 10.84 | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 143-P3A-MW101I-F-20151214 | 143-P3A-MW101I-F-20160318 | 143-P3A-MW101S-20150928 | 143-P3A-MW101S-20151214 | 143-P3A-MW101S-20160318 | 143-P3A-MW101S-20160620 | 143-P3A-MW101S-20160620-F |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | |
| Date Collected: | | | 12/14/15 | 03/18/16 | 09/28/15 | 12/14/15 | 03/18/16 | 06/20/16 | 06/20/16 |
| Location ID: | CAS Number | Units | 143-P3A-MW101I | 143-P3A-MW101I | 143-P3A-MW101S | 143-P3A-MW101S | 143-P3A-MW101S | 143-P3A-MW101S | 143-P3A-MW101S |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 143-P3A-MW101I-F-20151214<br><br>12/14/15<br>143-P3A-MW101I | 143-P3A-MW101I-F-20160318<br><br>03/18/16<br>143-P3A-MW101I | 143-P3A-MW101S-20150928<br><br>09/28/15<br>143-P3A-MW101S | 143-P3A-MW101S-20151214<br><br>12/14/15<br>143-P3A-MW101S | 143-P3A-MW101S-20160318<br><br>03/18/16<br>143-P3A-MW101S | 143-P3A-MW101S-20160620<br><br>06/20/16<br>143-P3A-MW101S | 143-P3A-MW101S-20160620-F<br><br>06/20/16<br>143-P3A-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 143-P3A-MW101I-F-20151214<br><br>12/14/15<br>143-P3A-MW101I | 143-P3A-MW101I-F-20160318<br><br>03/18/16<br>143-P3A-MW101I | 143-P3A-MW101S-20150928<br><br>09/28/15<br>143-P3A-MW101S | 143-P3A-MW101S-20151214<br><br>12/14/15<br>143-P3A-MW101S | 143-P3A-MW101S-20160318<br><br>03/18/16<br>143-P3A-MW101S | 143-P3A-MW101S-20160620<br><br>06/20/16<br>143-P3A-MW101S | 143-P3A-MW101S-20160620-F<br><br>06/20/16<br>143-P3A-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | 255 | 339 | 199 J [1,010 J] | 392 | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | 6.0 U | 6.0 U | 6.0 U [6 U] | 6.0 U | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | 6.3 | 11.0 | 3.0 U [3 U] | 3.0 | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | 239 | 168 J | 59.1 J [61.7 J] | 118 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | 0.40 J | 1.0 U | 1.0 U [1 U] | 1.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | 0.50 J | 3.0 U | 0.50 J [0.4 J] | 1.0 J | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | 175,000 | 172,000 | 145,000 [138,000] | 164,000 | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 2.8 J | 93.4 | 3.0 J [6.6 J] | 20.0 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 200 J | 5.5 U | 5.5 UJ [5.5 UJ] | 10 RA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | 1.2 J | 0.70 J | 1.1 J [1.4 J] | 1.2 J | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | 10 U | 13.8 JB | 4.4 J [6.9 J] | 3.4 J | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 19,300 | 12,400 | 1,780 J [3,320 J] | 6,520 | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | 3.0 U | 3.7 | 2.9 J [11.1 J] | 3.5 | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | 50,300 | 44,000 | 23,800 [23,300] | 33,000 | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | 1,140 | 751 | 356 [364] | 609 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 143-P3A-MW101I-F-20151214<br><br>12/14/15<br>143-P3A-MW101I | 143-P3A-MW101I-F-20160318<br><br>03/18/16<br>143-P3A-MW101I | 143-P3A-MW101S-20150928<br><br>09/28/15<br>143-P3A-MW101S | 143-P3A-MW101S-20151214<br><br>12/14/15<br>143-P3A-MW101S | 143-P3A-MW101S-20160318<br><br>03/18/16<br>143-P3A-MW101S | 143-P3A-MW101S-20160620<br><br>06/20/16<br>143-P3A-MW101S | 143-P3A-MW101S-20160620-F<br><br>06/20/16<br>143-P3A-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | 0.20 U | 0.20 U | 0.20 U [0.068 J] | 0.20 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | 2.7 J | 9.7 J | 4.1 JB [4.9 JB] | 3.9 J | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | 22,700 | 18,700 | 8,680 J [8,380 J] | 13,600 | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | 4.1 J | 10 U | 4.1 J [10 U] | 5.2 J | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | 10 U | 2.6 J | 0.90 J [1.1 J] | 10 UB | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | 248,000 | 246,000 | 88,700 [84,800] | 126,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | 104,000 | 101,000 J | 110,000 [104,000] | 104,000 | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | 3.6 J | 10 U | 4.0 U [4 U] | 4.0 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | 50 U | 50 UB | 50 U [1.9 J] | 1.8 J | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | 5.0 J | 20 UB | 73.7 [75.2] | 49.0 | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 9,590 J | 12,800 | NA | NA | NA | NA | 1.3 J |
| Chromium VI | 18540-29-9 | ug/L | 9,700 J | 13,500 J | NA | NA | NA | NA | 10 RA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 44,600 | 49,100 | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 143-P3A-MW101I-F-20151214<br><br>12/14/15<br>143-P3A-MW101I | 143-P3A-MW101I-F-20160318<br><br>03/18/16<br>143-P3A-MW101I | 143-P3A-MW101S-20150928<br><br>09/28/15<br>143-P3A-MW101S | 143-P3A-MW101S-20151214<br><br>12/14/15<br>143-P3A-MW101S | 143-P3A-MW101S-20160318<br><br>03/18/16<br>143-P3A-MW101S | 143-P3A-MW101S-20160620<br><br>06/20/16<br>143-P3A-MW101S | 143-P3A-MW101S-20160620-F<br><br>06/20/16<br>143-P3A-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | 1,400 | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | 2,000 U | 2,000 U | 2,000 U | 2,000 U [2,000 U] | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 299 | 390 | 350 | 275 | 379 [380] | 306 | 321 |
| pH | ARC-pH | SU | 7.12 | 7 | 6.82 | 7.09 | 6.63 [6.85] [6.63] | 6.95 | 6.85 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | 597 | 0.81 | 2,420 | 1,610 | 1.3 [1.3] | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 143-P3A-MW101I-F-20151214<br><br>12/14/15<br>143-P3A-MW101I | 143-P3A-MW101I-F-20160318<br><br>03/18/16<br>143-P3A-MW101I | 143-P3A-MW101S-20150928<br><br>09/28/15<br>143-P3A-MW101S | 143-P3A-MW101S-20151214<br><br>12/14/15<br>143-P3A-MW101S | 143-P3A-MW101S-20160318<br><br>03/18/16<br>143-P3A-MW101S | 143-P3A-MW101S-20160620<br><br>06/20/16<br>143-P3A-MW101S | 143-P3A-MW101S-20160620-F<br><br>06/20/16<br>143-P3A-MW101S |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 153,000 | 146,000 | 326,000 | 293,000 J | 331,000 [329,000] | 326,000 | NA |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,000 U | 2,000 UJ | 2,000 U | 2,000 U [2,000 U] | 2,000 U | NA |
| Sulfite | ARC-SULFITE | ug/L | 3,000 UJ | 3,000 UJ | 3,000 UB | 3,000 UJ | 3,000 UJ [3,000 UJ] | 3,000 UJ | NA |
| Temperature | ARC-Temp | deg c | 18.13 | 13.53 | 22.14 | 18.7 | 12.07 [12.07] | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | 9,500 | 3,600 JB [4,400 JB] | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | 1,280 | 480 | 1,040 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | 166 | 334 | 73.1 | NA |
| pH | ARC-pH | SU | NA | NA | NA | 7.09 | 6.63 | 7.33 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | 0 | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | 18.7 | 12.07 | 18.77 | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | 24 | 15.1 | 54.2 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 143-P3A-MW101S-F-20150928 | 143-P3A-MW101S-F-20151214 | 143-P3A-MW101S-F-20160318 | 174-MW1-DCPO1-8.7 | 174-MW1-DCPO1-12.3 | 174-MW2-DCPO1-9.1 | 174-MW3-DCPO1-8.4 | 174-MW3-DCPO1-12.1 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | 8.7 | 12.3 | 9.1 | 8.4 | 12.1 |
| Date Collected: | | | 09/28/15 | 12/14/15 | 03/18/16 | 11/29/12 | 11/29/12 | 11/29/12 | 11/29/12 | 11/29/12 |
| Location ID: | CAS Number | Units | 143-P3A-MW101S | 143-P3A-MW101S | 143-P3A-MW101S | 174-MW1-DCPO1 | 174-MW1-DCPO1 | 174-MW2-DCPO1 | 174-MW3-DCPO1 | 174-MW3-DCPO1 |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 143-P3A-MW101S-F-20150928<br><br>09/28/15<br>143-P3A-MW101S | 143-P3A-MW101S-F-20151214<br><br>12/14/15<br>143-P3A-MW101S | 143-P3A-MW101S-F-20160318<br><br>03/18/16<br>143-P3A-MW101S | 174-MW1-DCPO1-8.7<br>8.7<br>11/29/12<br>174-MW1-DCPO1 | 174-MW1-DCPO1-12.3<br>12.3<br>11/29/12<br>174-MW1-DCPO1 | 174-MW2-DCPO1-9.1<br>9.1<br>11/29/12<br>174-MW2-DCPO1 | 174-MW3-DCPO1-8.4<br>8.4<br>11/29/12<br>174-MW3-DCPO1 | 174-MW3-DCPO1-12.1<br>12.1<br>11/29/12<br>174-MW3-DCPO1 |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 143-P3A-MW101S-F-20150928<br><br>09/28/15<br>143-P3A-MW101S | 143-P3A-MW101S-F-20151214<br><br>12/14/15<br>143-P3A-MW101S | 143-P3A-MW101S-F-20160318<br><br>03/18/16<br>143-P3A-MW101S | 174-MW1-DCPO1-8.7<br>8.7<br>11/29/12<br>174-MW1-DCPO1 | 174-MW1-DCPO1-12.3<br>12.3<br>11/29/12<br>174-MW1-DCPO1 | 174-MW2-DCPO1-9.1<br>9.1<br>11/29/12<br>174-MW2-DCPO1 | 174-MW3-DCPO1-8.4<br>8.4<br>11/29/12<br>174-MW3-DCPO1 | 174-MW3-DCPO1-12.1<br>12.1<br>11/29/12<br>174-MW3-DCPO1 |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | 200 U [200 U] | 200 U | 200 U | 200 U | 200 U |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | 6.0 U [6 U] | 6.0 U | 6.0 U | 30 U | 30 U |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | 15 U [9 U] | 3.0 U | 3.0 U | 30 U | 30 U |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | 381 [374] | 742 | 785 | 200 U | 200 U |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | 1.0 U [1 U] | 1.0 U | 1.0 U | 1.0 U | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | 3.0 U [3 U] | 3.0 U | 3.0 U | 15 U | 15 U |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | 419,000 [407,000] | 171,000 | 194,000 | 264,000 | 268,000 |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 27.4 [22.5] | 20.3 | 10 U | 50 U | 10 U |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | 10 U [10 U] | 10 U | 10 U | 10 U | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | 50 U [50 U] | 50 U | 50 U | 250 U | 250 U |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | 10.2 [10 U] | 14.7 | 10 U | 50 U | 10 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | 10,900 [11,600] | 1,650 | 1,430 | 100 U | 100 U |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | 15 U [9 U] | 3.0 U | 3.0 U | 15 U | 15 U |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | 428,000 [422,000] | 345,000 | 333,000 | 861,000 | 767,000 |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | 903 [929] | 164 | 193 | 75 U | 15 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 143-P3A-MW101S-F-20150928<br><br>09/28/15<br>143-P3A-MW101S | 143-P3A-MW101S-F-20151214<br><br>12/14/15<br>143-P3A-MW101S | 143-P3A-MW101S-F-20160318<br><br>03/18/16<br>143-P3A-MW101S | 174-MW1-DCPO1-8.7<br>8.7<br>11/29/12<br>174-MW1-DCPO1 | 174-MW1-DCPO1-12.3<br>12.3<br>11/29/12<br>174-MW1-DCPO1 | 174-MW2-DCPO1-9.1<br>9.1<br>11/29/12<br>174-MW2-DCPO1 | 174-MW3-DCPO1-8.4<br>8.4<br>11/29/12<br>174-MW3-DCPO1 | 174-MW3-DCPO1-12.1<br>12.1<br>11/29/12<br>174-MW3-DCPO1 |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | 0.20 U [0.2 U] | 0.20 U | 0.20 U | 0.20 U | 0.20 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | 50 U [30 U] | 10 U | 10 U | 179 | 204 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | 84,900 [85,800] | 94,700 | 89,400 | 200,000 | 201,000 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | 10 U [10 U] | 10 U | 10 U | 50 U | 50 U |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | 10 U [10 U] | 10 U | 10 U | 50 U | 10 U |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | 3,000,000 [2,970,000] | 2,500,000 | 2,350,000 | 6,420,000 | 6,410,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | 10 U [6 U] | 2.0 U | 2.0 U | 20 U | 20 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | 27.4 [22.5] | 20.3 | 50 U | 179 | 204 |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | 50 U [50 U] | 50 U | 50 U | 250 U | 50 U |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | 29.5 [29.1] | 32.6 | 20 U | 100 U | 100 U |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 2.1 J | 38.7 | 1.2 J [1.7 J] | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 18 | 5.5 UJ | 5.5 UJ [5.5 UJ] | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | 107,000 | 88,800 J | 109,000 [111,000] | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 143-P3A-MW101S-F-20150928<br><br>09/28/15<br>143-P3A-MW101S | 143-P3A-MW101S-F-20151214<br><br>12/14/15<br>143-P3A-MW101S | 143-P3A-MW101S-F-20160318<br><br>03/18/16<br>143-P3A-MW101S | 174-MW1-DCPO1-8.7<br>8.7<br>11/29/12<br>174-MW1-DCPO1 | 174-MW1-DCPO1-12.3<br>12.3<br>11/29/12<br>174-MW1-DCPO1 | 174-MW2-DCPO1-9.1<br>9.1<br>11/29/12<br>174-MW2-DCPO1 | 174-MW3-DCPO1-8.4<br>8.4<br>11/29/12<br>174-MW3-DCPO1 | 174-MW3-DCPO1-12.1<br>12.1<br>11/29/12<br>174-MW3-DCPO1 |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | 2,400 [2,400] | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | 2,000 U [2,000 U] | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 349 | 284 | 401 [406] | 260 [260] | 298 | 298 | 303 | 306 |
| pH | ARC-pH | SU | 6.83 | 6.89 | 6.63 [6.63] [6.9] | 6.83 [6.96] | 7.59 | 7.71 | 7.13 | 7.08 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | 1,610 | 1.3 [1.3] | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 143-P3A-MW101S-F-20150928<br><br>09/28/15<br>143-P3A-MW101S | 143-P3A-MW101S-F-20151214<br><br>12/14/15<br>143-P3A-MW101S | 143-P3A-MW101S-F-20160318<br><br>03/18/16<br>143-P3A-MW101S | 174-MW1-DCPO1-8.7<br>8.7<br>11/29/12<br>174-MW1-DCPO1 | 174-MW1-DCPO1-12.3<br>12.3<br>11/29/12<br>174-MW1-DCPO1 | 174-MW2-DCPO1-9.1<br>9.1<br>11/29/12<br>174-MW2-DCPO1 | 174-MW3-DCPO1-8.4<br>8.4<br>11/29/12<br>174-MW3-DCPO1 | 174-MW3-DCPO1-12.1<br>12.1<br>11/29/12<br>174-MW3-DCPO1 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 329,000 | 306,000 | 335,000 [329,000] | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | 2,000 UJ | 2,000 U | 2,000 U [2,000 U] | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | 1,000 J | 3,000 UJ | 3,000 UJ [3,000 UJ] | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 18.7 | 12.07 [12.07] | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | 186-MW01 | 186-MW01-GA01-13.5 | 186-MW02-GA01-8.0 | 186-MW02-GA01-13.0 | 186MW0101 | 186MW0102 | DD1-TW1 | DD1-TW2 | DD3-TW1 | DD3-TW2 | DUP-1 | DUP-1-041514 | DUP-2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | 13.5 | 8 | 13 | 0 | 0 | 7.5 - 8 | 7.5 - 8 | | | | | |
| Date Collected: | | | 12/17/15 | 06/29/11 | 06/29/11 | 06/29/11 | 10/22/97 | 10/22/97 | 12/06/11 | 12/06/11 | 05/21/12 | 05/21/12 | 03/13/14 | 04/15/14 | 03/13/14 |
| Location ID: | CAS Number | Units | 186-MW01 | 186-MW01 | 186-MW02 | 186-MW02 | 186-MW01 | 186-MW02 | 143-DD1-TW1 | 143-DD1-TW2 | DD3-B1/TW1 | DD3-B2/TW2 | noloc | noloc | noloc |
| **Volatile Organics** | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 5.0 U | 5.0 U | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 5.0 U | 5.0 U | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 5.0 U | 5.0 U | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | 0.020 U | 0.020 U | 10 U | 10 U | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | 0.020 U | 0.020 U | 2.0 U | 2.0 U | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | 2.0 U | 2.0 U | 130 U | 130 U | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 10 U | 4.7 J | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 5.0 U | 5.0 U | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 37 | 14.3 | 31.4 | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 0.34 J | 1.9 | 5.3 | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 5.0 U | 5.0 U | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 4.0 U | 4.0 U | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 2.0 U | 2.0 U | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 0.23 J | 2.0 U | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 5.0 U | 5.0 U | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 5.0 U | 5.0 U | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 0.33 J | 5.0 U | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 2.0 U | 2.0 U | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 19.3 | 77.3 | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 45.1 | 71.4 | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | 2.0 U | 0.48 J | 202 | 547 | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 5.0 U | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 5.0 U | 5.0 U | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 2.4 J | 1.6 J | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | 9.2 | 19 | 1.0 U | 1.0 U | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 0.61 J | 138 | 457 | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 5.0 U | 5.0 U | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 0.78 J | 20.4 | 462 | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | 0.29 U | 1.1 | 340 | 1,000 | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 186-MW01<br>12/17/15<br>186-MW01 | 186-MW01-GA01-13.5<br>13.5<br>06/29/11<br>186-MW01 | 186-MW02-GA01-8.0<br>8<br>06/29/11<br>186-MW02 | 186-MW02-GA01-13.0<br>13<br>06/29/11<br>186-MW02 | 186MW0101<br>0<br>10/22/97<br>186-MW01 | 186MW0102<br>0<br>10/22/97<br>186-MW02 | DD1-TW1<br>7.5 - 8<br>12/06/11<br>143-DD1-TW1 | DD1-TW2<br>7.5 - 8<br>12/06/11<br>143-DD1-TW2 | DD3-TW1<br>05/21/12<br>DD3-B1/TW1 | DD3-TW2<br>05/21/12<br>DD3-B2/TW2 | DUP-1<br>03/13/14<br>noloc | DUP-1-041514<br>04/15/14<br>noloc | DUP-2<br>03/13/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 1.2 | 0.49 J | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 2.3 U | 2.0 U | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 2.3 U | 2.0 U | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 5.6 UJ | 5.0 U | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 5.6 UJ | 5.0 U | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 5.6 UJ | 5.0 U | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 5.6 UJ | 5.0 U | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 5.6 UJ | 5.0 U | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | 31 U | 31 U | 23 UJ | 20 U | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 2.3 U | 2.0 U | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | 2.1 U | 2.0 U | 2.3 U | 2.0 U | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 2.3 U | 2.0 U | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 5.6 UJ | 5.0 U | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | 31 U | 31 U | 23 UJ | 20 U | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 19.9 | 9.3 | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 2.3 UJ | 2.0 U | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | 21 U | 20 U | 5.6 U | 5.0 U | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 5.6 UJ | 5.0 U | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | 21 U | 20 U | 5.6 U | 5.0 U | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | 21 U | 20 U | 5.6 U | 5.0 U | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 2.3 U | 2.0 U | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 5.6 UJ | 5.0 U | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 2.3 U | 2.0 U | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 2.3 UJ | 2.0 U | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | 21 U | 20 U | 5.6 U | 5.0 U | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | 31 U | 31 U | 11 UJ | 10 U | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 0.644 | 0.240 | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 0.11 U | 0.10 U | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 2.3 U | 2.0 U | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 0.11 U | 0.10 U | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 5.6 U | 5.0 U | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | R | 5.0 U | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | 0.27 | 0.17 | 0.11 UJ | 0.10 U | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | 0.27 | 0.19 | 0.11 UJ | 0.10 U | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | 0.47 | 0.25 | 0.11 U | 0.10 U | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 0.11 U | 0.10 U | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | 0.36 J | 1.0 U | 0.11 U | 0.10 U | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 2.3 U | 2.0 U | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 2.3 U | 2.0 U | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 2.3 U | 2.0 U | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 2.3 U | 2.0 U | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 186-MW01<br><br>12/17/15<br>186-MW01 | 186-MW01-GA01-13.5<br>13.5<br>06/29/11<br>186-MW01 | 186-MW02-GA01-8.0<br>8<br>06/29/11<br>186-MW02 | 186-MW02-GA01-13.0<br>13<br>06/29/11<br>186-MW02 | 186MW0101<br>0<br>10/22/97<br>186-MW01 | 186MW0102<br>0<br>10/22/97<br>186-MW02 | DD1-TW1<br>7.5 - 8<br>12/06/11<br>143-DD1-TW1 | DD1-TW2<br>7.5 - 8<br>12/06/11<br>143-DD1-TW2 | DD3-TW1<br><br>05/21/12<br>DD3-B1/TW1 | DD3-TW2<br><br>05/21/12<br>DD3-B2/TW2 | DUP-1<br><br>03/13/14<br>noloc | DUP-1-041514<br><br>04/15/14<br>noloc | DUP-2<br><br>03/13/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 2.3 UJ | 2.0 U | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 0.56 J | 1.0 U | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 0.11 UJ | 0.10 U | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | 0.22 J | 1.0 U | 0.11 U | 0.10 U | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 0.56 J | 5.0 U | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 2.3 U | 2.0 U | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 2.3 U | 2.0 U | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 2.3 U | 2.0 U | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | 2.1 U | 2.0 U | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 2.3 UJ | 2.0 U | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 0.11 UJ | 0.10 U | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 0.11 U | 0.10 U | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | 2.1 U | 2.0 U | 1.1 U | 1.0 U | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | 0.021 U | 0.12 | 0.023 UJ | 0.020 U | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 11 U | 10 U | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 2.3 U | 2.0 U | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | 0.33 J | 0.23 J | 0.11 U | 0.10 U | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 2.3 U | 2.0 U | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 51.2 | 93.5 | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 2.3 U | 2.0 U | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 2.3 U | 2.0 U | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 5.6 U | 5.0 U | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 5.6 U | 5.0 U | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | 0.21 U | 0.20 U | 0.34 UJ | 0.30 U | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 0.912 | 0.138 | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 2.4 J | 5.5 | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 10 U | 0.11 U | 0.10 U | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | 1.9 | 0.96 | 77.4 | 109 | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | 0.52 U | 0.52 U | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | 0.52 U | 0.52 U | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | 0.52 U | 0.52 U | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | 14,500 | 1,370 | NA | NA | 200 U | NA | 3,140 |
| Antimony | 7440-36-0 | ug/L | NA | 2.5 U | 2.6 | 2.8 | 0 U [0 U] | 0 U | 3.0 | 5.7 | NA | NA | 6.0 U | NA | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | 31.9 | 15.2 | NA | NA | 13.1 | NA | 10.9 |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | 341 | 146 | NA | NA | 200 U | NA | 200 U |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | 0.99 J | 1.0 U | NA | NA | 1.0 U | NA | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | 2.5 U | 2.5 U | NA | NA | 7.2 | NA | 3.0 U |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | 29,000 | 50,100 | NA | NA | 125,000 | NA | 54,700 |
| Chromium | 7440-47-3 | ug/L | NA | 8.9 | 22.4 | 93.1 | 11.1 [0 U] | 24.8 | 328 | 6,850 | NA | NA | 21,300 | NA | 641 |
| Chromium VI | 18540-29-9 | ug/L | 1.8 J | 10.0 U | 10.0 U | 10.0 U | 25 U [25 U] | 25 U | 50.0 U | 2,880 | NA | NA | 21,300 | NA | 260 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | 10.7 | 5.0 U | NA | NA | 50.1 | NA | 50 U |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | 98.2 | 16.2 | NA | NA | 112 | NA | 10 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | 20,900 | 15,000 | NA | NA | 100 U | NA | 100 U |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | 694 | 53.5 | NA | NA | 8.9 | NA | 3.0 U |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | 8,840 | 10,400 | NA | NA | 32,400 | NA | 5,000 U |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | 524 | 727 | NA | NA | 172 | NA | 15 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 186-MW01<br>12/17/15<br>186-MW01 | 186-MW01-GA01-13.5<br>13.5<br>06/29/11<br>186-MW01 | 186-MW02-GA01-8.0<br>8<br>06/29/11<br>186-MW02 | 186-MW02-GA01-13.0<br>13<br>06/29/11<br>186-MW02 | 186MW0101<br>0<br>10/22/97<br>186-MW01 | 186MW0102<br>0<br>10/22/97<br>186-MW02 | DD1-TW1<br>7.5 - 8<br>12/06/11<br>143-DD1-TW1 | DD1-TW2<br>7.5 - 8<br>12/06/11<br>143-DD1-TW2 | DD3-TW1<br>05/21/12<br>DD3-B1/TW1 | DD3-TW2<br>05/21/12<br>DD3-B2/TW2 | DUP-1<br>03/13/14<br>noloc | DUP-1-041514<br>04/15/14<br>noloc | DUP-2<br>03/13/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | 5.5 | 0.20 U | NA | NA | 0.20 U | NA | 0.20 U |
| Nickel | 7440-02-0 | ug/L | NA | 7.8 | 20.0 | 75.6 | 20.2 J [0 U] | 17.6 J | 28.1 | 8.3 | NA | NA | 58.8 | NA | 149 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | 33,900 | 25,800 | NA | NA | 10,000 U | NA | 42,500 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | 5.7 | 2.8 | NA | NA | 31.9 | NA | 10 U |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | 11.4 | 5.0 U | NA | NA | 10 U | NA | 10 U |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | 182,000 | 740,000 | NA | NA | 130,000 | NA | 406,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U | 0 U [0 U] | 0 U | 1.0 U | 1.0 U | NA | NA | 2.0 U | NA | 2.0 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | 22 | 54.5 | 185 | NA | NA | 422 | 6,910 | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 4.8 J | 9.5 | 13.9 | 0 U [0 U] | 18.6 J | 62.7 | 43.0 | NA | NA | 50.2 | NA | 84.9 |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | 503 | 85.2 | NA | NA | 83.0 | NA | 20 U |
| **Metals-Filtered** | | | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 200 U | NA | 3,160 |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | 0 U [0 U] | 0 U | NA | NA | NA | NA | 6.0 U | NA | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 13.0 | NA | 8.9 |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 200 U | NA | 200 U |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 1.0 U | NA | 1.0 U |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 7.1 | NA | 3.0 U |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 128,000 | NA | 52,700 |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | 0 U [0 U] | 7.7 J | NA | NA | NA | NA | 21,500 | NA | 719 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | 25 U [25 U] | 25 U | NA | NA | NA | NA | 19,600 | NA | 370 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 50.7 | NA | 50 U |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 113 | NA | 10 U |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 100 U | NA | 100 U |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 8.6 | NA | 3.0 U |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 33,100 | NA | 5,000 U |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 168 | NA | 15 U |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.20 U | NA | 0.20 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | 0 U [0 U] | 0 U | NA | NA | NA | NA | 58.8 | NA | 144 |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 10,000 U | NA | 42,900 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 31.8 | NA | 10 U |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 10 U | NA | 10 U |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 133,000 | NA | 415,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | 0 U [0 U] | 0 U | NA | NA | NA | NA | 2.0 U | NA | 2.0 U |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | 0 U [0 U] | 0 U | NA | NA | NA | NA | 50.8 | NA | 84.2 |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 82.0 | NA | 20 U |
| **Metals-TCLP** | | | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 2,390 | 2,980 | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 130 | 121 | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 2,260 | 2,860 | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | 0.52 UJ | 0.51 UJ | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 186-MW01<br><br>12/17/15<br>186-MW01 | 186-MW01-GA01-13.5<br>13.5<br>06/29/11<br>186-MW01 | 186-MW02-GA01-8.0<br>8<br>06/29/11<br>186-MW02 | 186-MW02-GA01-13.0<br>13<br>06/29/11<br>186-MW02 | 186MW0101<br>0<br>10/22/97<br>186-MW01 | 186MW0102<br>0<br>10/22/97<br>186-MW02 | DD1-TW1<br>7.5 - 8<br>12/06/11<br>143-DD1-TW1 | DD1-TW2<br>7.5 - 8<br>12/06/11<br>143-DD1-TW2 | DD3-TW1<br><br>05/21/12<br>DD3-B1/TW1 | DD3-TW2<br><br>05/21/12<br>DD3-B2/TW2 | DUP-1<br><br>03/13/14<br>noloc | DUP-1-041514<br><br>04/15/14<br>noloc | DUP-2<br><br>03/13/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | 0.52 UJ | 0.51 UJ | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | 0.52 UJ | 0.51 UJ | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | 0.52 UJ | 0.51 UJ | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | 0.52 UJ | 0.51 UJ | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | 0.52 UJ | 0.51 UJ | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | 0.52 UJ | 0.51 UJ | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | 0.52 UJ | 0.51 UJ | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | 0.52 UJ | 0.51 UJ | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | 0.29 U | 0.29 U | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | 0.051 UJ | 0.051 U | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | 0.051 UJ | 0.051 U | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | 0.051 UJ | 0.051 U | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | 0.051 UJ | 0.051 U | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | 0.051 UJ | 0.051 U | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | 0.051 UJ | 0.051 U | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | 0.51 UJ | 0.51 U | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | 0.051 UJ | 0.051 U | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | 0.051 UJ | 0.051 U | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | 0.051 UJ | 0.044 J | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | 0.051 UJ | 0.051 U | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | 0.051 UJ | 0.051 U | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | 0.051 UJ | 0.051 U | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | 0.051 UJ | 0.051 U | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | 0.051 UJ | 0.051 U | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | 0.051 UJ | 0.051 U | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | 0.051 UJ | 0.051 U | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | 0.051 UJ | 0.051 U | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | 0.051 UJ | 0.051 U | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | 0.51 UJ | 0.51 U | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5,000 U | NA | 5,000 U |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5,000 U | NA | 5,100 U |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 95 | NA | 630 |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 286 | 483 | 485 | 487 | NA | NA | 414 | 418 | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | 6.98 | 8.00 | 7.74 | 7.69 | NA | NA | 8.39 | 8.06 | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 186-MW01<br>12/17/15<br>186-MW01 | 186-MW01-GA01-13.5<br>13.5<br>06/29/11<br>186-MW01 | 186-MW02-GA01-8.0<br>8<br>06/29/11<br>186-MW02 | 186-MW02-GA01-13.0<br>13<br>06/29/11<br>186-MW02 | 186MW0101<br>0<br>10/22/97<br>186-MW01 | 186MW0102<br>0<br>10/22/97<br>186-MW02 | DD1-TW1<br>7.5 - 8<br>12/06/11<br>143-DD1-TW1 | DD1-TW2<br>7.5 - 8<br>12/06/11<br>143-DD1-TW2 | DD3-TW1<br>05/21/12<br>DD3-B1/TW1 | DD3-TW2<br>05/21/12<br>DD3-B2/TW2 | DUP-1<br>03/13/14<br>noloc | DUP-1-041514<br>04/15/14<br>noloc | DUP-2<br>03/13/14<br>noloc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 136,000 | NA | 200,000 |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 2,000 U | NA | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 3,600 | 8,300 | 40,800 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 1,600 | 8,650 | 7,630 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 458.2 | 304.4 | 319.9 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | 6.56 | 6.8 | 6.78 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 24.01 | 29.83 | 25.59 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | 2.57 | 9.81 | 31.7 | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | EF-57A-10.0-14.0 | EF-57A-20.0-24.0 | EF-57A-30.0-34.0 | EF-57A-40.0-44.0 | EF-73A-GWF-10.0-14.0 | EF-73A-GWF20.0-24.0 | EF-73A-GWF-30.0-34.0 | EF-73A-GWF-40.0-44.0 | EF-73A-GWU-10.0-14.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 10 - 14 | 20 - 24 | 30 - 34 | 40 - 44 | 10 - 14 | 20 - 24 | 30 - 34 | 40 - 44 | 10 - 14 |
| Date Collected: | | | 03/10/14 | 03/10/14 | 03/10/14 | 03/10/14 | 06/01/15 | 06/01/15 | 06/02/15 | 06/02/15 | 06/01/15 |
| Location ID: | CAS Number | Units | EF-57A | EF-57A | EF-57A | EF-57A | EF-73A | EF-73A | EF-73A | EF-73A | EF-73A |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | EF-57A-10.0-14.0<br>10 - 14<br>03/10/14<br>EF-57A | EF-57A-20.0-24.0<br>20 - 24<br>03/10/14<br>EF-57A | EF-57A-30.0-34.0<br>30 - 34<br>03/10/14<br>EF-57A | EF-57A-40.0-44.0<br>40 - 44<br>03/10/14<br>EF-57A | EF-73A-GWF-10.0-14.0<br>10 - 14<br>06/01/15<br>EF-73A | EF-73A-GWF20.0-24.0<br>20 - 24<br>06/01/15<br>EF-73A | EF-73A-GWF-30.0-34.0<br>30 - 34<br>06/02/15<br>EF-73A | EF-73A-GWF-40.0-44.0<br>40 - 44<br>06/02/15<br>EF-73A | EF-73A-GWU-10.0-14.0<br>10 - 14<br>06/01/15<br>EF-73A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | EF-57A-10.0-14.0<br>10 - 14<br>03/10/14<br>EF-57A | EF-57A-20.0-24.0<br>20 - 24<br>03/10/14<br>EF-57A | EF-57A-30.0-34.0<br>30 - 34<br>03/10/14<br>EF-57A | EF-57A-40.0-44.0<br>40 - 44<br>03/10/14<br>EF-57A | EF-73A-GWF-10.0-14.0<br>10 - 14<br>06/01/15<br>EF-73A | EF-73A-GWF20.0-24.0<br>20 - 24<br>06/01/15<br>EF-73A | EF-73A-GWF-30.0-34.0<br>30 - 34<br>06/02/15<br>EF-73A | EF-73A-GWF-40.0-44.0<br>40 - 44<br>06/02/15<br>EF-73A | EF-73A-GWU-10.0-14.0<br>10 - 14<br>06/01/15<br>EF-73A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 15,600 J | 3,220 J | 3,110 J | 7,020 J [4,610 J] | NA | NA | NA | NA | 1,710 J |
| Chromium VI | 18540-29-9 | ug/L | 67 J | 10 UJ | 10 UJ | 10 UJ [10 UJ] | NA | NA | NA | NA | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | EF-57A-10.0-14.0<br>10 - 14<br>03/10/14<br>EF-57A | EF-57A-20.0-24.0<br>20 - 24<br>03/10/14<br>EF-57A | EF-57A-30.0-34.0<br>30 - 34<br>03/10/14<br>EF-57A | EF-57A-40.0-44.0<br>40 - 44<br>03/10/14<br>EF-57A | EF-73A-GWF-10.0-14.0<br>10 - 14<br>06/01/15<br>EF-73A | EF-73A-GWF20.0-24.0<br>20 - 24<br>06/01/15<br>EF-73A | EF-73A-GWF-30.0-34.0<br>30 - 34<br>06/02/15<br>EF-73A | EF-73A-GWF-40.0-44.0<br>40 - 44<br>06/02/15<br>EF-73A | EF-73A-GWU-10.0-14.0<br>10 - 14<br>06/01/15<br>EF-73A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | 1.0 J | 16,500 | 8,730 | 19.8 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | 10 U | 11,700 | 40,600 | 5,700 | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | EF-57A-10.0-14.0<br>10 - 14<br>03/10/14<br>EF-57A | EF-57A-20.0-24.0<br>20 - 24<br>03/10/14<br>EF-57A | EF-57A-30.0-34.0<br>30 - 34<br>03/10/14<br>EF-57A | EF-57A-40.0-44.0<br>40 - 44<br>03/10/14<br>EF-57A | EF-73A-GWF-10.0-14.0<br>10 - 14<br>06/01/15<br>EF-73A | EF-73A-GWF20.0-24.0<br>20 - 24<br>06/01/15<br>EF-73A | EF-73A-GWF-30.0-34.0<br>30 - 34<br>06/02/15<br>EF-73A | EF-73A-GWF-40.0-44.0<br>40 - 44<br>06/02/15<br>EF-73A | EF-73A-GWU-10.0-14.0<br>10 - 14<br>06/01/15<br>EF-73A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 323 | 355 | 340 | 263 [266] | 430 | 448 | 405 | 432 | 417 |
| pH | ARC-pH | SU | 7.94 | 7.87 | 7.92 | 8.07 [8.09] | 6.40 | 7.41 | 7.77 | 8.20 | 6.52 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | EF-57A-10.0-14.0<br>10 - 14<br>03/10/14<br>EF-57A | EF-57A-20.0-24.0<br>20 - 24<br>03/10/14<br>EF-57A | EF-57A-30.0-34.0<br>30 - 34<br>03/10/14<br>EF-57A | EF-57A-40.0-44.0<br>40 - 44<br>03/10/14<br>EF-57A | EF-73A-GWF-10.0-14.0<br>10 - 14<br>06/01/15<br>EF-73A | EF-73A-GWF20.0-24.0<br>20 - 24<br>06/01/15<br>EF-73A | EF-73A-GWF-30.0-34.0<br>30 - 34<br>06/02/15<br>EF-73A | EF-73A-GWF-40.0-44.0<br>40 - 44<br>06/02/15<br>EF-73A | EF-73A-GWU-10.0-14.0<br>10 - 14<br>06/01/15<br>EF-73A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | EF-73A-GWU-20.0-24.0 | EF-73A-GWU-30.0-34.0 | EF-73A-GWU-40.0-44.0 | EF110A-GWF-10.0-14.0 | EF110A-GWF-20.0-24.0 | EF110A-GWF-30.0-34.0 | EF110A-GWF-40.0-44.0 | EF110A-GWU-10.0-14.0 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 20 - 24 | 30 - 34 | 40 - 44 | 10 - 14 | 20 - 24 | 30 - 34 | 40 - 44 | 10 - 14 |
| Date Collected: | | | 06/01/15 | 06/02/15 | 06/02/15 | 06/20/15 | 06/20/15 | 06/20/15 | 06/20/15 | 06/20/15 |
| Location ID: | CAS Number | Units | EF-73A | EF-73A | EF-73A | EF-110A | EF-110A | EF-110A | EF-110A | EF-110A |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | EF-73A-GWU-20.0-24.0<br>20 - 24<br>06/01/15<br>EF-73A | EF-73A-GWU-30.0-34.0<br>30 - 34<br>06/02/15<br>EF-73A | EF-73A-GWU-40.0-44.0<br>40 - 44<br>06/02/15<br>EF-73A | EF110A-GWF-10.0-14.0<br>10 - 14<br>06/20/15<br>EF-110A | EF110A-GWF-20.0-24.0<br>20 - 24<br>06/20/15<br>EF-110A | EF110A-GWF-30.0-34.0<br>30 - 34<br>06/20/15<br>EF-110A | EF110A-GWF-40.0-44.0<br>40 - 44<br>06/20/15<br>EF-110A | EF110A-GWU-10.0-14.0<br>10 - 14<br>06/20/15<br>EF-110A |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | EF-73A-GWU-20.0-24.0 | EF-73A-GWU-30.0-34.0 | EF-73A-GWU-40.0-44.0 | EF110A-GWF-10.0-14.0 | EF110A-GWF-20.0-24.0 | EF110A-GWF-30.0-34.0 | EF110A-GWF-40.0-44.0 | EF110A-GWU-10.0-14.0 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 20 - 24 | 30 - 34 | 40 - 44 | 10 - 14 | 20 - 24 | 30 - 34 | 40 - 44 | 10 - 14 |
| Date Collected: | | | 06/01/15 | 06/02/15 | 06/02/15 | 06/20/15 | 06/20/15 | 06/20/15 | 06/20/15 | 06/20/15 |
| Location ID: | CAS Number | Units | EF-73A | EF-73A | EF-73A | EF-110A | EF-110A | EF-110A | EF-110A | EF-110A |
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 12,500 J | 3,700 | 4,590 | NA | NA | NA | NA | 3,510 J |
| Chromium VI | 18540-29-9 | ug/L | 6,300 | 22,600 | 5,300 | NA | NA | NA | NA | R |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | EF-73A-GWU-20.0-24.0<br>20 - 24<br>06/01/15<br>EF-73A | EF-73A-GWU-30.0-34.0<br>30 - 34<br>06/02/15<br>EF-73A | EF-73A-GWU-40.0-44.0<br>40 - 44<br>06/02/15<br>EF-73A | EF110A-GWF-10.0-14.0<br>10 - 14<br>06/20/15<br>EF-110A | EF110A-GWF-20.0-24.0<br>20 - 24<br>06/20/15<br>EF-110A | EF110A-GWF-30.0-34.0<br>30 - 34<br>06/20/15<br>EF-110A | EF110A-GWF-40.0-44.0<br>40 - 44<br>06/20/15<br>EF-110A | EF110A-GWU-10.0-14.0<br>10 - 14<br>06/20/15<br>EF-110A |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 1,160 J | 94,800 J | 667 J | 1,670 J | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | R | R | R | R | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | EF-73A-GWU-20.0-24.0<br>20 - 24<br>06/01/15<br>EF-73A | EF-73A-GWU-30.0-34.0<br>30 - 34<br>06/02/15<br>EF-73A | EF-73A-GWU-40.0-44.0<br>40 - 44<br>06/02/15<br>EF-73A | EF110A-GWF-10.0-14.0<br>10 - 14<br>06/20/15<br>EF-110A | EF110A-GWF-20.0-24.0<br>20 - 24<br>06/20/15<br>EF-110A | EF110A-GWF-30.0-34.0<br>30 - 34<br>06/20/15<br>EF-110A | EF110A-GWF-40.0-44.0<br>40 - 44<br>06/20/15<br>EF-110A | EF110A-GWU-10.0-14.0<br>10 - 14<br>06/20/15<br>EF-110A |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 418 | 397 | 261 | 369 | 370 | 355 | 312 | 362 |
| pH | ARC-pH | SU | 7.36 | 8.04 | 8.23 | 7.22 | 7.41 | 7.67 | 8.67 | 7.15 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | EF-73A-GWU-20.0-24.0<br>20 - 24<br>06/01/15<br>EF-73A | EF-73A-GWU-30.0-34.0<br>30 - 34<br>06/02/15<br>EF-73A | EF-73A-GWU-40.0-44.0<br>40 - 44<br>06/02/15<br>EF-73A | EF110A-GWF-10.0-14.0<br>10 - 14<br>06/20/15<br>EF-110A | EF110A-GWF-20.0-24.0<br>20 - 24<br>06/20/15<br>EF-110A | EF110A-GWF-30.0-34.0<br>30 - 34<br>06/20/15<br>EF-110A | EF110A-GWF-40.0-44.0<br>40 - 44<br>06/20/15<br>EF-110A | EF110A-GWU-10.0-14.0<br>10 - 14<br>06/20/15<br>EF-110A |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | EF110A-GWU-20.0-24.0<br>20 - 24<br>06/20/15<br>EF-110A | EF110A-GWU-30.0-34.0<br>30 - 34<br>06/20/15<br>EF-110A | EF110A-GWU-40.0-44.0<br>40 - 44<br>06/20/15<br>EF-110A | EF-111A-GWF-10.0-14.0<br>10 - 14<br>06/27/15<br>EF-111A | EF-111A-GWF-20.0-24.0<br>20 - 24<br>06/27/15<br>EF-111A | EF-111A-GWF-30.0-34.0<br>30 - 34<br>06/27/15<br>EF-111A | EF-111A-GWF-40.0-44.0<br>40 - 44<br>06/27/15<br>EF-111A | EF-111A-GWU-10.0-14.0<br>10 - 14<br>06/27/15<br>EF-111A |
|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | EF110A-GWU-20.0-24.0<br>20 - 24<br>06/20/15<br>EF-110A | EF110A-GWU-30.0-34.0<br>30 - 34<br>06/20/15<br>EF-110A | EF110A-GWU-40.0-44.0<br>40 - 44<br>06/20/15<br>EF-110A | EF-111A-GWF-10.0-14.0<br>10 - 14<br>06/27/15<br>EF-111A | EF-111A-GWF-20.0-24.0<br>20 - 24<br>06/27/15<br>EF-111A | EF-111A-GWF-30.0-34.0<br>30 - 34<br>06/27/15<br>EF-111A | EF-111A-GWF-40.0-44.0<br>40 - 44<br>06/27/15<br>EF-111A | EF-111A-GWU-10.0-14.0<br>10 - 14<br>06/27/15<br>EF-111A |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | EF110A-GWU-20.0-24.0<br>20 - 24<br>06/20/15<br>EF-110A | EF110A-GWU-30.0-34.0<br>30 - 34<br>06/20/15<br>EF-110A | EF110A-GWU-40.0-44.0<br>40 - 44<br>06/20/15<br>EF-110A | EF-111A-GWF-10.0-14.0<br>10 - 14<br>06/27/15<br>EF-111A | EF-111A-GWF-20.0-24.0<br>20 - 24<br>06/27/15<br>EF-111A | EF-111A-GWF-30.0-34.0<br>30 - 34<br>06/27/15<br>EF-111A | EF-111A-GWF-40.0-44.0<br>40 - 44<br>06/27/15<br>EF-111A | EF-111A-GWU-10.0-14.0<br>10 - 14<br>06/27/15<br>EF-111A |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 101,000 J | 264 J [1,430 J] | 10 UB | NA | NA | NA | NA | 7,410 |
| Chromium VI | 18540-29-9 | ug/L | R | R [R] | R | NA | NA | NA | NA | R |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | EF110A-GWU-20.0-24.0<br>20 - 24<br>06/20/15<br>EF-110A | EF110A-GWU-30.0-34.0<br>30 - 34<br>06/20/15<br>EF-110A | EF110A-GWU-40.0-44.0<br>40 - 44<br>06/20/15<br>EF-110A | EF-111A-GWF-10.0-14.0<br>10 - 14<br>06/27/15<br>EF-111A | EF-111A-GWF-20.0-24.0<br>20 - 24<br>06/27/15<br>EF-111A | EF-111A-GWF-30.0-34.0<br>30 - 34<br>06/27/15<br>EF-111A | EF-111A-GWF-40.0-44.0<br>40 - 44<br>06/27/15<br>EF-111A | EF-111A-GWU-10.0-14.0<br>10 - 14<br>06/27/15<br>EF-111A |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 81.0 | 38,700 | 4.9 J | 10 U | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | R | R | R | 10 UJ | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

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| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | EF110A-GWU-20.0-24.0<br>20 - 24<br>06/20/15<br>EF-110A | EF110A-GWU-30.0-34.0<br>30 - 34<br>06/20/15<br>EF-110A | EF110A-GWU-40.0-44.0<br>40 - 44<br>06/20/15<br>EF-110A | EF-111A-GWF-10.0-14.0<br>10 - 14<br>06/27/15<br>EF-111A | EF-111A-GWF-20.0-24.0<br>20 - 24<br>06/27/15<br>EF-111A | EF-111A-GWF-30.0-34.0<br>30 - 34<br>06/27/15<br>EF-111A | EF-111A-GWF-40.0-44.0<br>40 - 44<br>06/27/15<br>EF-111A | EF-111A-GWU-10.0-14.0<br>10 - 14<br>06/27/15<br>EF-111A |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 333 | 347 [348] [356] | 280 | 492 | 492 | 490 | 480 | 493 |
| pH | ARC-pH | SU | 7.37 | 7.36 [7.78] [7.37] | 7.71 | 7.07 | 7.20 | 7.52 | 7.56 | 6.83 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | EF110A-GWU-20.0-24.0<br>20 - 24<br>06/20/15<br>EF-110A | EF110A-GWU-30.0-34.0<br>30 - 34<br>06/20/15<br>EF-110A | EF110A-GWU-40.0-44.0<br>40 - 44<br>06/20/15<br>EF-110A | EF-111A-GWF-10.0-14.0<br>10 - 14<br>06/27/15<br>EF-111A | EF-111A-GWF-20.0-24.0<br>20 - 24<br>06/27/15<br>EF-111A | EF-111A-GWF-30.0-34.0<br>30 - 34<br>06/27/15<br>EF-111A | EF-111A-GWF-40.0-44.0<br>40 - 44<br>06/27/15<br>EF-111A | EF-111A-GWU-10.0-14.0<br>10 - 14<br>06/27/15<br>EF-111A |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | EF-111A-GWU-20.0-24.0 | EF-111A-GWU-30.0-34.0 | EF-111A-GWU-40.0-44.0 | EF-112A-10.0-14.0 | EF-112A-20.0-24.0 | EF-112A-30.0-34.0 | EF-112A-40.0-44.0 | FORREST-SUMP-E | FORREST-SUMP-E-04242014 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 20 - 24 | 30 - 34 | 40 - 44 | 10 - 14 | 20 - 24 | 30 - 34 | 40 - 44 | | |
| Date Collected: | | | 06/27/15 | 06/27/15 | 06/27/15 | 03/12/14 | 03/12/14 | 03/12/14 | 03/12/14 | 01/03/12 | 04/24/14 |
| Location ID: | CAS Number | Units | EF-111A | EF-111A | EF-111A | EF-112A | EF-112A | EF-112A | EF-112A | Forrest-Sump-E | Forrest-Sump-E |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | EF-111A-GWU-20.0-24.0<br>20 - 24<br>06/27/15<br>EF-111A | EF-111A-GWU-30.0-34.0<br>30 - 34<br>06/27/15<br>EF-111A | EF-111A-GWU-40.0-44.0<br>40 - 44<br>06/27/15<br>EF-111A | EF-112A-10.0-14.0<br>10 - 14<br>03/12/14<br>EF-112A | EF-112A-20.0-24.0<br>20 - 24<br>03/12/14<br>EF-112A | EF-112A-30.0-34.0<br>30 - 34<br>03/12/14<br>EF-112A | EF-112A-40.0-44.0<br>40 - 44<br>03/12/14<br>EF-112A | FORREST-SUMP-E<br><br>01/03/12<br>Forrest-Sump-E | FORREST-SUMP-E-04242014<br><br>04/24/14<br>Forrest-Sump-E |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | EF-111A-GWU-20.0-24.0<br>20 - 24<br>06/27/15<br>EF-111A | EF-111A-GWU-30.0-34.0<br>30 - 34<br>06/27/15<br>EF-111A | EF-111A-GWU-40.0-44.0<br>40 - 44<br>06/27/15<br>EF-111A | EF-112A-10.0-14.0<br>10 - 14<br>03/12/14<br>EF-112A | EF-112A-20.0-24.0<br>20 - 24<br>03/12/14<br>EF-112A | EF-112A-30.0-34.0<br>30 - 34<br>03/12/14<br>EF-112A | EF-112A-40.0-44.0<br>40 - 44<br>03/12/14<br>EF-112A | FORREST-SUMP-E<br><br>01/03/12<br>Forrest-Sump-E | FORREST-SUMP-E-04242014<br><br>04/24/14<br>Forrest-Sump-E |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 58,100 | 1,630 | 3,280 | 845 | 4,440 | 9,750 | 5,700 | 15,100 | 2,210 |
| Chromium VI | 18540-29-9 | ug/L | R | R | 10 UJ | 10 UJ | 61 J | 660 J | 10 UJ | 15,600 | 1,500 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | EF-111A-GWU-20.0-24.0<br>20 - 24<br>06/27/15<br>EF-111A | EF-111A-GWU-30.0-34.0<br>30 - 34<br>06/27/15<br>EF-111A | EF-111A-GWU-40.0-44.0<br>40 - 44<br>06/27/15<br>EF-111A | EF-112A-10.0-14.0<br>10 - 14<br>03/12/14<br>EF-112A | EF-112A-20.0-24.0<br>20 - 24<br>03/12/14<br>EF-112A | EF-112A-30.0-34.0<br>30 - 34<br>03/12/14<br>EF-112A | EF-112A-40.0-44.0<br>40 - 44<br>03/12/14<br>EF-112A | FORREST-SUMP-E<br><br>01/03/12<br>Forrest-Sump-E | FORREST-SUMP-E-04242014<br><br>04/24/14<br>Forrest-Sump-E |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | 15,100 | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | EF-111A-GWU-20.0-24.0<br>20 - 24<br>06/27/15<br>EF-111A | EF-111A-GWU-30.0-34.0<br>30 - 34<br>06/27/15<br>EF-111A | EF-111A-GWU-40.0-44.0<br>40 - 44<br>06/27/15<br>EF-111A | EF-112A-10.0-14.0<br>10 - 14<br>03/12/14<br>EF-112A | EF-112A-20.0-24.0<br>20 - 24<br>03/12/14<br>EF-112A | EF-112A-30.0-34.0<br>30 - 34<br>03/12/14<br>EF-112A | EF-112A-40.0-44.0<br>40 - 44<br>03/12/14<br>EF-112A | FORREST-SUMP-E<br><br>01/03/12<br>Forrest-Sump-E | FORREST-SUMP-E-04242014<br><br>04/24/14<br>Forrest-Sump-E |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 490 | 489 | 463 | 358 | 325 | 338 | 252 | 358 | 360 |
| pH | ARC-pH | SU | 7.25 | 7.39 | 7.77 | 7.03 | 7.76 | 7.83 | 7.83 | 8.54 | 6.61 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | EF-111A-GWU-20.0-24.0<br>20 - 24<br>06/27/15<br>EF-111A | EF-111A-GWU-30.0-34.0<br>30 - 34<br>06/27/15<br>EF-111A | EF-111A-GWU-40.0-44.0<br>40 - 44<br>06/27/15<br>EF-111A | EF-112A-10.0-14.0<br>10 - 14<br>03/12/14<br>EF-112A | EF-112A-20.0-24.0<br>20 - 24<br>03/12/14<br>EF-112A | EF-112A-30.0-34.0<br>30 - 34<br>03/12/14<br>EF-112A | EF-112A-40.0-44.0<br>40 - 44<br>03/12/14<br>EF-112A | FORREST-SUMP-E<br><br>01/03/12<br>Forrest-Sump-E | FORREST-SUMP-E-04242014<br><br>04/24/14<br>Forrest-Sump-E |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | FORREST-SUMP-E-09232013 09/23/13 Forrest-Sump-E | FORREST-SUMP-E-20150723 07/23/15 FORREST-SUMP-E | FORREST-SUMP-E-20160926 09/26/16 Forrest-Sump-E | FORREST-SUMP-S-09232013 09/23/13 Forrest-Sump-S | FORREST-SUMP-S-20150723 07/23/15 FORREST-SUMP-S | FORREST-SUMP-S-20160926 09/26/16 Forrest-Sump-S | FORREST-SUMP-W 01/03/12 Forrest-Sump-W |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FORREST-SUMP-E-09232013<br>09/23/13<br>Forrest-Sump-E | FORREST-SUMP-E-20150723<br>07/23/15<br>FORREST-SUMP-E | FORREST-SUMP-E-20160926<br>09/26/16<br>Forrest-Sump-E | FORREST-SUMP-S-09232013<br>09/23/13<br>Forrest-Sump-S | FORREST-SUMP-S-20150723<br>07/23/15<br>FORREST-SUMP-S | FORREST-SUMP-S-20160926<br>09/26/16<br>Forrest-Sump-S | FORREST-SUMP-W<br>01/03/12<br>Forrest-Sump-W |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FORREST-SUMP-E-09232013<br>09/23/13<br>Forrest-Sump-E | FORREST-SUMP-E-20150723<br>07/23/15<br>FORREST-SUMP-E | FORREST-SUMP-E-20160926<br>09/26/16<br>Forrest-Sump-E | FORREST-SUMP-S-09232013<br>09/23/13<br>Forrest-Sump-S | FORREST-SUMP-S-20150723<br>07/23/15<br>FORREST-SUMP-S | FORREST-SUMP-S-20160926<br>09/26/16<br>Forrest-Sump-S | FORREST-SUMP-W<br>01/03/12<br>Forrest-Sump-W |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 28,600 | 429 | 346 J [273 J] | 52,300 | 32,700 | 12,900 | 23,600 |
| Chromium VI | 18540-29-9 | ug/L | 1,500 | 310 | 160 [170] | 10,000 | 7,900 | 2,900 | 22,200 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FORREST-SUMP-E-09232013<br>09/23/13<br>Forrest-Sump-E | FORREST-SUMP-E-20150723<br>07/23/15<br>FORREST-SUMP-E | FORREST-SUMP-E-20160926<br>09/26/16<br>Forrest-Sump-E | FORREST-SUMP-S-09232013<br>09/23/13<br>Forrest-Sump-S | FORREST-SUMP-S-20150723<br>07/23/15<br>FORREST-SUMP-S | FORREST-SUMP-S-20160926<br>09/26/16<br>Forrest-Sump-S | FORREST-SUMP-W<br>01/03/12<br>Forrest-Sump-W |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | 23,600 |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

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| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FORREST-SUMP-E-09232013<br>09/23/13<br>Forrest-Sump-E | FORREST-SUMP-E-20150723<br>07/23/15<br>FORREST-SUMP-E | FORREST-SUMP-E-20160926<br>09/26/16<br>Forrest-Sump-E | FORREST-SUMP-S-09232013<br>09/23/13<br>Forrest-Sump-S | FORREST-SUMP-S-20150723<br>07/23/15<br>FORREST-SUMP-S | FORREST-SUMP-S-20160926<br>09/26/16<br>Forrest-Sump-S | FORREST-SUMP-W<br>01/03/12<br>Forrest-Sump-W |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 272 | 553 | 369 [374] | 266 | 554 | 341 | 393 |
| pH | ARC-pH | SU | 6.83 | 6.57 | 6.53 [6.52] | 7.45 | 6.97 | 7.15 | 8.41 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FORREST-SUMP-E-09232013<br>09/23/13<br>Forrest-Sump-E | FORREST-SUMP-E-20150723<br>07/23/15<br>FORREST-SUMP-E | FORREST-SUMP-E-20160926<br>09/26/16<br>Forrest-Sump-E | FORREST-SUMP-S-09232013<br>09/23/13<br>Forrest-Sump-S | FORREST-SUMP-S-20150723<br>07/23/15<br>FORREST-SUMP-S | FORREST-SUMP-S-20160926<br>09/26/16<br>Forrest-Sump-S | FORREST-SUMP-W<br>01/03/12<br>Forrest-Sump-W |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FORREST-SUMP-W-04242014<br>04/24/14<br>Forrest-Sump-W | FORREST-SUMP-W-09232013<br>09/23/13<br>Forrest-Sump-W | FORREST-SUMP-W-20150723<br>07/23/15<br>FORREST-SUMP-W | FORREST-SUMP-W-20160926<br>09/26/16<br>Forrest-Sump-W | FS1GW-10.0-14.0<br>10 - 14<br>04/01/14<br>FS1 | FS1GW-20.0-24.0<br>20 - 24<br>04/01/14<br>FS1 | FS1GW-30.0-34.0<br>30 - 34<br>04/01/14<br>FS1 | FS1GW-40.0-44.0<br>40 - 44<br>04/01/14<br>FS1 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FORREST-SUMP-W-04242014<br>04/24/14<br>Forrest-Sump-W | FORREST-SUMP-W-09232013<br>09/23/13<br>Forrest-Sump-W | FORREST-SUMP-W-20150723<br>07/23/15<br>FORREST-SUMP-W | FORREST-SUMP-W-20160926<br>09/26/16<br>Forrest-Sump-W | FS1GW-10.0-14.0<br>10 - 14<br>04/01/14<br>FS1 | FS1GW-20.0-24.0<br>20 - 24<br>04/01/14<br>FS1 | FS1GW-30.0-34.0<br>30 - 34<br>04/01/14<br>FS1 | FS1GW-40.0-44.0<br>40 - 44<br>04/01/14<br>FS1 |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FORREST-SUMP-W-04242014<br>04/24/14<br>Forrest-Sump-W | FORREST-SUMP-W-09232013<br>09/23/13<br>Forrest-Sump-W | FORREST-SUMP-W-20150723<br>07/23/15<br>FORREST-SUMP-W | FORREST-SUMP-W-20160926<br>09/26/16<br>Forrest-Sump-W | FS1GW-10.0-14.0<br>10 - 14<br>04/01/14<br>FS1 | FS1GW-20.0-24.0<br>20 - 24<br>04/01/14<br>FS1 | FS1GW-30.0-34.0<br>30 - 34<br>04/01/14<br>FS1 | FS1GW-40.0-44.0<br>40 - 44<br>04/01/14<br>FS1 |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 1,690 | 41,700 | 336 | 100 | 3,260 | 24,000 | 2,930 | 4,580 |
| Chromium VI | 18540-29-9 | ug/L | 1,300 J | 680 | 290 | 10 U | 10 UJ | 2.4 J | 6.6 J | 1.9 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FORREST-SUMP-W-04242014<br>04/24/14<br>Forrest-Sump-W | FORREST-SUMP-W-09232013<br>09/23/13<br>Forrest-Sump-W | FORREST-SUMP-W-20150723<br>07/23/15<br>FORREST-SUMP-W | FORREST-SUMP-W-20160926<br>09/26/16<br>Forrest-Sump-W | FS1GW-10.0-14.0<br>10 - 14<br>04/01/14<br>FS1 | FS1GW-20.0-24.0<br>20 - 24<br>04/01/14<br>FS1 | FS1GW-30.0-34.0<br>30 - 34<br>04/01/14<br>FS1 | FS1GW-40.0-44.0<br>40 - 44<br>04/01/14<br>FS1 |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FORREST-SUMP-W-04242014<br>04/24/14<br>Forrest-Sump-W | FORREST-SUMP-W-09232013<br>09/23/13<br>Forrest-Sump-W | FORREST-SUMP-W-20150723<br>07/23/15<br>FORREST-SUMP-W | FORREST-SUMP-W-20160926<br>09/26/16<br>Forrest-Sump-W | FS1GW-10.0-14.0<br>10 - 14<br>04/01/14<br>FS1 | FS1GW-20.0-24.0<br>20 - 24<br>04/01/14<br>FS1 | FS1GW-30.0-34.0<br>30 - 34<br>04/01/14<br>FS1 | FS1GW-40.0-44.0<br>40 - 44<br>04/01/14<br>FS1 |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 353 | 267 | 552 | 367 | 330 | 327 | 323 | 331 |
| pH | ARC-pH | SU | 6.99 | 7.28 | 7.22 | 7.08 | 7.25 | 7.45 | 7.78 | 7.34 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FORREST-SUMP-W-04242014<br>04/24/14<br>Forrest-Sump-W | FORREST-SUMP-W-09232013<br>09/23/13<br>Forrest-Sump-W | FORREST-SUMP-W-20150723<br>07/23/15<br>FORREST-SUMP-W | FORREST-SUMP-W-20160926<br>09/26/16<br>Forrest-Sump-W | FS1GW-10.0-14.0<br>10 - 14<br>04/01/14<br>FS1 | FS1GW-20.0-24.0<br>20 - 24<br>04/01/14<br>FS1 | FS1GW-30.0-34.0<br>30 - 34<br>04/01/14<br>FS1 | FS1GW-40.0-44.0<br>40 - 44<br>04/01/14<br>FS1 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | FS2GW-10.0-14.0 | FS2GW-20.0-24.0 | FS2GW-30.0-34.0 | FS2GW-40.0-44.0 | FS3GW-10.0-14.0 | FS3GW-20.0-24.0 | FS3GW-30.0-34.0 | FS3GW-40.0-44.0 | FS4GW-10.0-14.0 | FS4GW-20.0-24.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 10 - 14 | 20 - 24 | 30 - 34 | 40 - 44 | 10 - 14 | 20 - 24 | 30 - 34 | 40 - 44 | 10 - 14 | 20 - 24 |
| Date Collected: | | | 03/24/14 | 03/24/14 | 03/24/14 | 03/24/14 | 03/20/14 | 03/20/14 | 03/20/14 | 03/20/14 | 03/21/14 | 03/21/14 |
| Location ID: | CAS Number | Units | FS2 | FS2 | FS2 | FS2 | FS3 | FS3 | FS3 | FS3 | FS4 | FS4 |
| **Volatile Organics** | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS2GW-10.0-14.0<br>10 - 14<br>03/24/14<br>FS2 | FS2GW-20.0-24.0<br>20 - 24<br>03/24/14<br>FS2 | FS2GW-30.0-34.0<br>30 - 34<br>03/24/14<br>FS2 | FS2GW-40.0-44.0<br>40 - 44<br>03/24/14<br>FS2 | FS3GW-10.0-14.0<br>10 - 14<br>03/20/14<br>FS3 | FS3GW-20.0-24.0<br>20 - 24<br>03/20/14<br>FS3 | FS3GW-30.0-34.0<br>30 - 34<br>03/20/14<br>FS3 | FS3GW-40.0-44.0<br>40 - 44<br>03/20/14<br>FS3 | FS4GW-10.0-14.0<br>10 - 14<br>03/21/14<br>FS4 | FS4GW-20.0-24.0<br>20 - 24<br>03/21/14<br>FS4 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS2GW-10.0-14.0<br>10 - 14<br>03/24/14<br>FS2 | FS2GW-20.0-24.0<br>20 - 24<br>03/24/14<br>FS2 | FS2GW-30.0-34.0<br>30 - 34<br>03/24/14<br>FS2 | FS2GW-40.0-44.0<br>40 - 44<br>03/24/14<br>FS2 | FS3GW-10.0-14.0<br>10 - 14<br>03/20/14<br>FS3 | FS3GW-20.0-24.0<br>20 - 24<br>03/20/14<br>FS3 | FS3GW-30.0-34.0<br>30 - 34<br>03/20/14<br>FS3 | FS3GW-40.0-44.0<br>40 - 44<br>03/20/14<br>FS3 | FS4GW-10.0-14.0<br>10 - 14<br>03/21/14<br>FS4 | FS4GW-20.0-24.0<br>20 - 24<br>03/21/14<br>FS4 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 3,330 | 3,860 | 2,930 | 2,240 | 3,990 | 9,100 | 7,460 | 7,200 | 4,960 | 18,300 |
| Chromium VI | 18540-29-9 | ug/L | 290 J | 1,300 J | 260 J | 10 UJ | 10 U | 10 U | 70 | 10 U | 10 UJ | 10 UJ |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS2GW-10.0-14.0<br>10 - 14<br>03/24/14<br>FS2 | FS2GW-20.0-24.0<br>20 - 24<br>03/24/14<br>FS2 | FS2GW-30.0-34.0<br>30 - 34<br>03/24/14<br>FS2 | FS2GW-40.0-44.0<br>40 - 44<br>03/24/14<br>FS2 | FS3GW-10.0-14.0<br>10 - 14<br>03/20/14<br>FS3 | FS3GW-20.0-24.0<br>20 - 24<br>03/20/14<br>FS3 | FS3GW-30.0-34.0<br>30 - 34<br>03/20/14<br>FS3 | FS3GW-40.0-44.0<br>40 - 44<br>03/20/14<br>FS3 | FS4GW-10.0-14.0<br>10 - 14<br>03/21/14<br>FS4 | FS4GW-20.0-24.0<br>20 - 24<br>03/21/14<br>FS4 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS2GW-10.0-14.0<br>10 - 14<br>03/24/14<br>FS2 | FS2GW-20.0-24.0<br>20 - 24<br>03/24/14<br>FS2 | FS2GW-30.0-34.0<br>30 - 34<br>03/24/14<br>FS2 | FS2GW-40.0-44.0<br>40 - 44<br>03/24/14<br>FS2 | FS3GW-10.0-14.0<br>10 - 14<br>03/20/14<br>FS3 | FS3GW-20.0-24.0<br>20 - 24<br>03/20/14<br>FS3 | FS3GW-30.0-34.0<br>30 - 34<br>03/20/14<br>FS3 | FS3GW-40.0-44.0<br>40 - 44<br>03/20/14<br>FS3 | FS4GW-10.0-14.0<br>10 - 14<br>03/21/14<br>FS4 | FS4GW-20.0-24.0<br>20 - 24<br>03/21/14<br>FS4 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 464 | 448 | 440 | 348 | 355 | 257 | 328 | 304 | 758 | 765 |
| pH | ARC-pH | SU | 7.00 | 7.57 | 7.74 | 7.83 | 7.70 | 7.82 | 8.19 | 8.28 | 8.27 | 7.61 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS2GW-10.0-14.0<br>10 - 14<br>03/24/14<br>FS2 | FS2GW-20.0-24.0<br>20 - 24<br>03/24/14<br>FS2 | FS2GW-30.0-34.0<br>30 - 34<br>03/24/14<br>FS2 | FS2GW-40.0-44.0<br>40 - 44<br>03/24/14<br>FS2 | FS3GW-10.0-14.0<br>10 - 14<br>03/20/14<br>FS3 | FS3GW-20.0-24.0<br>20 - 24<br>03/20/14<br>FS3 | FS3GW-30.0-34.0<br>30 - 34<br>03/20/14<br>FS3 | FS3GW-40.0-44.0<br>40 - 44<br>03/20/14<br>FS3 | FS4GW-10.0-14.0<br>10 - 14<br>03/21/14<br>FS4 | FS4GW-20.0-24.0<br>20 - 24<br>03/21/14<br>FS4 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | FS4GW-30.0-34.0 | FS4GW-40.0-44.0 | FS5GW-10.0-14.0 | FS5GW-20.0-24.0 | FS5GW-30.0-34.0 | FS5GW-40.0-44.0 | FS6GW-10.0-14.0 | FS6GW-20.0-24.0 | FS6GW-25.0-29.0 | FS6GW-30.0-34.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 30 - 34 | 40 - 44 | 10 - 14 | 20 - 24 | 30 - 34 | 40 - 44.5 | 10 - 14 | 20 - 24 | 25 - 29 | 30 - 34 |
| Date Collected: | | | 03/21/14 | 03/21/14 | 03/28/14 | 03/28/14 | 03/28/14 | 03/28/14 | 02/24/14 | 02/24/14 | 03/28/14 | 02/25/14 |
| Location ID: | CAS Number | Units | FS4 | FS4 | FS5 | FS5 | FS5 | FS5 | FS6 | FS6 | FS6 | FS6 |
| **Volatile Organics** | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS4GW-30.0-34.0<br>30 - 34<br>03/21/14<br>FS4 | FS4GW-40.0-44.0<br>40 - 44<br>03/21/14<br>FS4 | FS5GW-10.0-14.0<br>10 - 14<br>03/28/14<br>FS5 | FS5GW-20.0-24.0<br>20 - 24<br>03/28/14<br>FS5 | FS5GW-30.0-34.0<br>30 - 34<br>03/28/14<br>FS5 | FS5GW-40.0-44.0<br>40 - 44.5<br>03/28/14<br>FS5 | FS6GW-10.0-14.0<br>10 - 14<br>02/24/14<br>FS6 | FS6GW-20.0-24.0<br>20 - 24<br>02/24/14<br>FS6 | FS6GW-25.0-29.0<br>25 - 29<br>03/28/14<br>FS6 | FS6GW-30.0-34.0<br>30 - 34<br>02/25/14<br>FS6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS4GW-30.0-34.0<br>30 - 34<br>03/21/14<br>FS4 | FS4GW-40.0-44.0<br>40 - 44<br>03/21/14<br>FS4 | FS5GW-10.0-14.0<br>10 - 14<br>03/28/14<br>FS5 | FS5GW-20.0-24.0<br>20 - 24<br>03/28/14<br>FS5 | FS5GW-30.0-34.0<br>30 - 34<br>03/28/14<br>FS5 | FS5GW-40.0-44.0<br>40 - 44.5<br>03/28/14<br>FS5 | FS6GW-10.0-14.0<br>10 - 14<br>02/24/14<br>FS6 | FS6GW-20.0-24.0<br>20 - 24<br>02/24/14<br>FS6 | FS6GW-25.0-29.0<br>25 - 29<br>03/28/14<br>FS6 | FS6GW-30.0-34.0<br>30 - 34<br>02/25/14<br>FS6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 19,800 | 10,300 | 17,800 | 20,400 | 20,800 | 27,600 | 4,660 | 6,570 | 17,800 | 3,940 |
| Chromium VI | 18540-29-9 | ug/L | 660 J | 10 UJ | 23 J | 8.4 J | 9.5 J | 57 J | 10 U | 17 | 260 J | 14 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS4GW-30.0-34.0<br>30 - 34<br>03/21/14<br>FS4 | FS4GW-40.0-44.0<br>40 - 44<br>03/21/14<br>FS4 | FS5GW-10.0-14.0<br>10 - 14<br>03/28/14<br>FS5 | FS5GW-20.0-24.0<br>20 - 24<br>03/28/14<br>FS5 | FS5GW-30.0-34.0<br>30 - 34<br>03/28/14<br>FS5 | FS5GW-40.0-44.0<br>40 - 44.5<br>03/28/14<br>FS5 | FS6GW-10.0-14.0<br>10 - 14<br>02/24/14<br>FS6 | FS6GW-20.0-24.0<br>20 - 24<br>02/24/14<br>FS6 | FS6GW-25.0-29.0<br>25 - 29<br>03/28/14<br>FS6 | FS6GW-30.0-34.0<br>30 - 34<br>02/25/14<br>FS6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS4GW-30.0-34.0<br>30 - 34<br>03/21/14<br>FS4 | FS4GW-40.0-44.0<br>40 - 44<br>03/21/14<br>FS4 | FS5GW-10.0-14.0<br>10 - 14<br>03/28/14<br>FS5 | FS5GW-20.0-24.0<br>20 - 24<br>03/28/14<br>FS5 | FS5GW-30.0-34.0<br>30 - 34<br>03/28/14<br>FS5 | FS5GW-40.0-44.0<br>40 - 44.5<br>03/28/14<br>FS5 | FS6GW-10.0-14.0<br>10 - 14<br>02/24/14<br>FS6 | FS6GW-20.0-24.0<br>20 - 24<br>02/24/14<br>FS6 | FS6GW-25.0-29.0<br>25 - 29<br>03/28/14<br>FS6 | FS6GW-30.0-34.0<br>30 - 34<br>02/25/14<br>FS6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 375 | 306 | 400 | 385 | 402 | 340 | 301 | 229 | 363 | 197 |
| pH | ARC-pH | SU | 7.91 | 7.41 | 7.68 | 7.39 | 7.71 | 7.90 | 7.15 | 7.23 | 8.88 | 7.42 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS4GW-30.0-34.0<br>30 - 34<br>03/21/14<br>FS4 | FS4GW-40.0-44.0<br>40 - 44<br>03/21/14<br>FS4 | FS5GW-10.0-14.0<br>10 - 14<br>03/28/14<br>FS5 | FS5GW-20.0-24.0<br>20 - 24<br>03/28/14<br>FS5 | FS5GW-30.0-34.0<br>30 - 34<br>03/28/14<br>FS5 | FS5GW-40.0-44.0<br>40 - 44.5<br>03/28/14<br>FS5 | FS6GW-10.0-14.0<br>10 - 14<br>02/24/14<br>FS6 | FS6GW-20.0-24.0<br>20 - 24<br>02/24/14<br>FS6 | FS6GW-25.0-29.0<br>25 - 29<br>03/28/14<br>FS6 | FS6GW-30.0-34.0<br>30 - 34<br>02/25/14<br>FS6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | FS6GW-40.0-44.0 | FS7GW-10.0-14.0 | FS7GW-20.0-24.0 | FS7GW-30.0-34.0 | FS7GW-40.0-44.0 | FS8GW-10.0-14.0 | FS8GW-20.0-24.0 | FS8GW-30.0-34.0 | FS8GW-40.0-44.0 | FS9GW-10.0-14.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 40 - 44 | 10 - 14 | 20 - 24 | 30 - 34 | 40 - 44 | 10 - 14 | 20 - 24 | 30 - 34 | 40 - 44 | 10 - 14 |
| Date Collected: | | | 02/25/14 | 02/24/14 | 02/24/14 | 02/24/14 | 02/24/14 | 02/28/14 | 02/28/14 | 02/28/14 | 02/28/14 | 03/05/14 |
| Location ID: | CAS Number | Units | FS6 | FS7 | FS7 | FS7 | FS7 | FS8 | FS8 | FS8 | FS8 | FS9 |
| **Volatile Organics** | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS6GW-40.0-44.0<br>40 - 44<br>02/25/14<br>FS6 | FS7GW-10.0-14.0<br>10 - 14<br>02/24/14<br>FS7 | FS7GW-20.0-24.0<br>20 - 24<br>02/24/14<br>FS7 | FS7GW-30.0-34.0<br>30 - 34<br>02/24/14<br>FS7 | FS7GW-40.0-44.0<br>40 - 44<br>02/24/14<br>FS7 | FS8GW-10.0-14.0<br>10 - 14<br>02/28/14<br>FS8 | FS8GW-20.0-24.0<br>20 - 24<br>02/28/14<br>FS8 | FS8GW-30.0-34.0<br>30 - 34<br>02/28/14<br>FS8 | FS8GW-40.0-44.0<br>40 - 44<br>02/28/14<br>FS8 | FS9GW-10.0-14.0<br>10 - 14<br>03/05/14<br>FS9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS6GW-40.0-44.0<br>40 - 44<br>02/25/14<br>FS6 | FS7GW-10.0-14.0<br>10 - 14<br>02/24/14<br>FS7 | FS7GW-20.0-24.0<br>20 - 24<br>02/24/14<br>FS7 | FS7GW-30.0-34.0<br>30 - 34<br>02/24/14<br>FS7 | FS7GW-40.0-44.0<br>40 - 44<br>02/24/14<br>FS7 | FS8GW-10.0-14.0<br>10 - 14<br>02/28/14<br>FS8 | FS8GW-20.0-24.0<br>20 - 24<br>02/28/14<br>FS8 | FS8GW-30.0-34.0<br>30 - 34<br>02/28/14<br>FS8 | FS8GW-40.0-44.0<br>40 - 44<br>02/28/14<br>FS8 | FS9GW-10.0-14.0<br>10 - 14<br>03/05/14<br>FS9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 4,980 | 7,070 | 26,600 | 10,000 | 17,300 | 2,250 | 2,200 | 2,700 | 6,090 | 1,580 |
| Chromium VI | 18540-29-9 | ug/L | 10 U | 13 | 4,600 | 23 | 8.1 J | 10 UJ | 10 UJ | 10 UJ | 10 UJ | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS6GW-40.0-44.0<br>40 - 44<br>02/25/14<br>FS6 | FS7GW-10.0-14.0<br>10 - 14<br>02/24/14<br>FS7 | FS7GW-20.0-24.0<br>20 - 24<br>02/24/14<br>FS7 | FS7GW-30.0-34.0<br>30 - 34<br>02/24/14<br>FS7 | FS7GW-40.0-44.0<br>40 - 44<br>02/24/14<br>FS7 | FS8GW-10.0-14.0<br>10 - 14<br>02/28/14<br>FS8 | FS8GW-20.0-24.0<br>20 - 24<br>02/28/14<br>FS8 | FS8GW-30.0-34.0<br>30 - 34<br>02/28/14<br>FS8 | FS8GW-40.0-44.0<br>40 - 44<br>02/28/14<br>FS8 | FS9GW-10.0-14.0<br>10 - 14<br>03/05/14<br>FS9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS6GW-40.0-44.0<br>40 - 44<br>02/25/14<br>FS6 | FS7GW-10.0-14.0<br>10 - 14<br>02/24/14<br>FS7 | FS7GW-20.0-24.0<br>20 - 24<br>02/24/14<br>FS7 | FS7GW-30.0-34.0<br>30 - 34<br>02/24/14<br>FS7 | FS7GW-40.0-44.0<br>40 - 44<br>02/24/14<br>FS7 | FS8GW-10.0-14.0<br>10 - 14<br>02/28/14<br>FS8 | FS8GW-20.0-24.0<br>20 - 24<br>02/28/14<br>FS8 | FS8GW-30.0-34.0<br>30 - 34<br>02/28/14<br>FS8 | FS8GW-40.0-44.0<br>40 - 44<br>02/28/14<br>FS8 | FS9GW-10.0-14.0<br>10 - 14<br>03/05/14<br>FS9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 248 | 331 | 297 | 281 | 251 | 308 | 273 | 246 | 166 | 330 |
| pH | ARC-pH | SU | 7.58 | 6.88 | 7.73 | 7.65 | 7.41 | 7.19 | 7.62 | 7.64 | 7.69 | 7.40 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS6GW-40.0-44.0<br>40 - 44<br>02/25/14<br>FS6 | FS7GW-10.0-14.0<br>10 - 14<br>02/24/14<br>FS7 | FS7GW-20.0-24.0<br>20 - 24<br>02/24/14<br>FS7 | FS7GW-30.0-34.0<br>30 - 34<br>02/24/14<br>FS7 | FS7GW-40.0-44.0<br>40 - 44<br>02/24/14<br>FS7 | FS8GW-10.0-14.0<br>10 - 14<br>02/28/14<br>FS8 | FS8GW-20.0-24.0<br>20 - 24<br>02/28/14<br>FS8 | FS8GW-30.0-34.0<br>30 - 34<br>02/28/14<br>FS8 | FS8GW-40.0-44.0<br>40 - 44<br>02/28/14<br>FS8 | FS9GW-10.0-14.0<br>10 - 14<br>03/05/14<br>FS9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | FS9GW-20.0-24.0 | FS9GW-30.0-34.0 | FS9GW-40.0-44.0 | FS10GW-10.0-14.0 | FS10GW-20.0-24.0 | FS10GW-30.0-34.0 | FS10GW-40.0-44.0 | FS11GW-10.0-14.0 | FS11GW-20.0-24.0 | FS11GW-30.0-34.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 20 - 24 | 30 - 34 | 40 - 44 | 10 - 14 | 20 - 24 | 30 - 34 | 40 - 44 | 10 - 14 | 20 - 24 | 30 - 34 |
| Date Collected: | | | 03/05/14 | 03/05/14 | 03/05/14 | 03/04/14 | 03/04/14 | 03/04/14 | 03/04/14 | 02/12/14 | 02/12/14 | 02/12/14 |
| Location ID: | CAS Number | Units | FS9 | FS9 | FS9 | FS10 | FS10 | FS10 | FS10 | FS11 | FS11 | FS11 |
| **Volatile Organics** | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS9GW-20.0-24.0<br>20 - 24<br>03/05/14<br>FS9 | FS9GW-30.0-34.0<br>30 - 34<br>03/05/14<br>FS9 | FS9GW-40.0-44.0<br>40 - 44<br>03/05/14<br>FS9 | FS10GW-10.0-14.0<br>10 - 14<br>03/04/14<br>FS10 | FS10GW-20.0-24.0<br>20 - 24<br>03/04/14<br>FS10 | FS10GW-30.0-34.0<br>30 - 34<br>03/04/14<br>FS10 | FS10GW-40.0-44.0<br>40 - 44<br>03/04/14<br>FS10 | FS11GW-10.0-14.0<br>10 - 14<br>02/12/14<br>FS11 | FS11GW-20.0-24.0<br>20 - 24<br>02/12/14<br>FS11 | FS11GW-30.0-34.0<br>30 - 34<br>02/12/14<br>FS11 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS9GW-20.0-24.0<br>20 - 24<br>03/05/14<br>FS9 | FS9GW-30.0-34.0<br>30 - 34<br>03/05/14<br>FS9 | FS9GW-40.0-44.0<br>40 - 44<br>03/05/14<br>FS9 | FS10GW-10.0-14.0<br>10 - 14<br>03/04/14<br>FS10 | FS10GW-20.0-24.0<br>20 - 24<br>03/04/14<br>FS10 | FS10GW-30.0-34.0<br>30 - 34<br>03/04/14<br>FS10 | FS10GW-40.0-44.0<br>40 - 44<br>03/04/14<br>FS10 | FS11GW-10.0-14.0<br>10 - 14<br>02/12/14<br>FS11 | FS11GW-20.0-24.0<br>20 - 24<br>02/12/14<br>FS11 | FS11GW-30.0-34.0<br>30 - 34<br>02/12/14<br>FS11 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 1,620 | 2,230 | 1,960 | 768 | 1,380 | 577 | 1,450 | 1,400 | 7,800 | 5,310 |
| Chromium VI | 18540-29-9 | ug/L | 10 U | 3.4 J | 10 U | 10 UJ | 10 UJ | 10 UJ | 3.6 J | 10 U | 10 U | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | FS9GW-20.0-24.0 20 - 24 03/05/14 FS9 | FS9GW-30.0-34.0 30 - 34 03/05/14 FS9 | FS9GW-40.0-44.0 40 - 44 03/05/14 FS9 | FS10GW-10.0-14.0 10 - 14 03/04/14 FS10 | FS10GW-20.0-24.0 20 - 24 03/04/14 FS10 | FS10GW-30.0-34.0 30 - 34 03/04/14 FS10 | FS10GW-40.0-44.0 40 - 44 03/04/14 FS10 | FS11GW-10.0-14.0 10 - 14 02/12/14 FS11 | FS11GW-20.0-24.0 20 - 24 02/12/14 FS11 | FS11GW-30.0-34.0 30 - 34 02/12/14 FS11 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS9GW-20.0-24.0<br>20 - 24<br>03/05/14<br>FS9 | FS9GW-30.0-34.0<br>30 - 34<br>03/05/14<br>FS9 | FS9GW-40.0-44.0<br>40 - 44<br>03/05/14<br>FS9 | FS10GW-10.0-14.0<br>10 - 14<br>03/04/14<br>FS10 | FS10GW-20.0-24.0<br>20 - 24<br>03/04/14<br>FS10 | FS10GW-30.0-34.0<br>30 - 34<br>03/04/14<br>FS10 | FS10GW-40.0-44.0<br>40 - 44<br>03/04/14<br>FS10 | FS11GW-10.0-14.0<br>10 - 14<br>02/12/14<br>FS11 | FS11GW-20.0-24.0<br>20 - 24<br>02/12/14<br>FS11 | FS11GW-30.0-34.0<br>30 - 34<br>02/12/14<br>FS11 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 331 | 290 | 276 | 347 | 358 | 361 | 344 | 299 | 175 | 133 |
| pH | ARC-pH | SU | 7.66 | 7.88 | 7.87 | 7.18 | 7.48 | 7.51 | 6.93 | 7.28 | 6.94 | 7.15 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS9GW-20.0-24.0<br>20 - 24<br>03/05/14<br>FS9 | FS9GW-30.0-34.0<br>30 - 34<br>03/05/14<br>FS9 | FS9GW-40.0-44.0<br>40 - 44<br>03/05/14<br>FS9 | FS10GW-10.0-14.0<br>10 - 14<br>03/04/14<br>FS10 | FS10GW-20.0-24.0<br>20 - 24<br>03/04/14<br>FS10 | FS10GW-30.0-34.0<br>30 - 34<br>03/04/14<br>FS10 | FS10GW-40.0-44.0<br>40 - 44<br>03/04/14<br>FS10 | FS11GW-10.0-14.0<br>10 - 14<br>02/12/14<br>FS11 | FS11GW-20.0-24.0<br>20 - 24<br>02/12/14<br>FS11 | FS11GW-30.0-34.0<br>30 - 34<br>02/12/14<br>FS11 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | FS11GW-40.0-44.0 | FS12GW-10.0-14.0 | FS12GW-20.0-24.0 | FS12GW-30.0-34.0 | FS12GW-40.0-44.0 | FS13GW-10.0-14.0 | FS13GW-20.0-24.0 | FS13GW-30.0-34.0 | FS13GW-40.0-44.0 | FS14GW-20.0-24.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 40 - 44 | 10 - 14 | 20 - 24 | 30 - 34 | 40 - 44 | 10 - 14 | 20 - 24 | 30 - 34 | 40 - 44 | 20 - 24 |
| Date Collected: | | | 02/12/14 | 02/11/14 | 02/11/14 | 02/11/14 | 02/12/14 | 02/07/14 | 02/07/14 | 02/10/14 | 02/10/14 | 03/19/14 |
| Location ID: | CAS Number | Units | FS11 | FS12 | FS12 | FS12 | FS12 | FS13 | FS13 | FS13 | FS13 | FS14 |
| **Volatile Organics** | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS11GW-40.0-44.0<br>40 - 44<br>02/12/14<br>FS11 | FS12GW-10.0-14.0<br>10 - 14<br>02/11/14<br>FS12 | FS12GW-20.0-24.0<br>20 - 24<br>02/11/14<br>FS12 | FS12GW-30.0-34.0<br>30 - 34<br>02/11/14<br>FS12 | FS12GW-40.0-44.0<br>40 - 44<br>02/12/14<br>FS12 | FS13GW-10.0-14.0<br>10 - 14<br>02/07/14<br>FS13 | FS13GW-20.0-24.0<br>20 - 24<br>02/07/14<br>FS13 | FS13GW-30.0-34.0<br>30 - 34<br>02/10/14<br>FS13 | FS13GW-40.0-44.0<br>40 - 44<br>02/10/14<br>FS13 | FS14GW-20.0-24.0<br>20 - 24<br>03/19/14<br>FS14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS11GW-40.0-44.0<br>40 - 44<br>02/12/14<br>FS11 | FS12GW-10.0-14.0<br>10 - 14<br>02/11/14<br>FS12 | FS12GW-20.0-24.0<br>20 - 24<br>02/11/14<br>FS12 | FS12GW-30.0-34.0<br>30 - 34<br>02/11/14<br>FS12 | FS12GW-40.0-44.0<br>40 - 44<br>02/12/14<br>FS12 | FS13GW-10.0-14.0<br>10 - 14<br>02/07/14<br>FS13 | FS13GW-20.0-24.0<br>20 - 24<br>02/07/14<br>FS13 | FS13GW-30.0-34.0<br>30 - 34<br>02/10/14<br>FS13 | FS13GW-40.0-44.0<br>40 - 44<br>02/10/14<br>FS13 | FS14GW-20.0-24.0<br>20 - 24<br>03/19/14<br>FS14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 10,700 | 378 J | 3,830 J | 4,280 J | 9,240 | 290 | 1,830 | 3,510 J | 3,420 J | 3,250 |
| Chromium VI | 18540-29-9 | ug/L | 2.1 J | 10 U | 10 U | 10 U | 10 U | 10 UJ | 22 J | 10 UJ | 10 UJ | 110 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS11GW-40.0-44.0<br>40 - 44<br>02/12/14<br>FS11 | FS12GW-10.0-14.0<br>10 - 14<br>02/11/14<br>FS12 | FS12GW-20.0-24.0<br>20 - 24<br>02/11/14<br>FS12 | FS12GW-30.0-34.0<br>30 - 34<br>02/11/14<br>FS12 | FS12GW-40.0-44.0<br>40 - 44<br>02/12/14<br>FS12 | FS13GW-10.0-14.0<br>10 - 14<br>02/07/14<br>FS13 | FS13GW-20.0-24.0<br>20 - 24<br>02/07/14<br>FS13 | FS13GW-30.0-34.0<br>30 - 34<br>02/10/14<br>FS13 | FS13GW-40.0-44.0<br>40 - 44<br>02/10/14<br>FS13 | FS14GW-20.0-24.0<br>20 - 24<br>03/19/14<br>FS14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS11GW-40.0-44.0<br>40 - 44<br>02/12/14<br>FS11 | FS12GW-10.0-14.0<br>10 - 14<br>02/11/14<br>FS12 | FS12GW-20.0-24.0<br>20 - 24<br>02/11/14<br>FS12 | FS12GW-30.0-34.0<br>30 - 34<br>02/11/14<br>FS12 | FS12GW-40.0-44.0<br>40 - 44<br>02/12/14<br>FS12 | FS13GW-10.0-14.0<br>10 - 14<br>02/07/14<br>FS13 | FS13GW-20.0-24.0<br>20 - 24<br>02/07/14<br>FS13 | FS13GW-30.0-34.0<br>30 - 34<br>02/10/14<br>FS13 | FS13GW-40.0-44.0<br>40 - 44<br>02/10/14<br>FS13 | FS14GW-20.0-24.0<br>20 - 24<br>03/19/14<br>FS14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 116 | 302 | 63.2 | 81.7 | 168 | 309 | 21.4 | 77.3 | 206 | 330 |
| pH | ARC-pH | SU | 7.10 | 6.92 | 7.42 | 7.50 | 7.20 | 5.91 | 6.73 | 6.89 | 7.10 | 7.94 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS11GW-40.0-44.0<br>40 - 44<br>02/12/14<br>FS11 | FS12GW-10.0-14.0<br>10 - 14<br>02/11/14<br>FS12 | FS12GW-20.0-24.0<br>20 - 24<br>02/11/14<br>FS12 | FS12GW-30.0-34.0<br>30 - 34<br>02/11/14<br>FS12 | FS12GW-40.0-44.0<br>40 - 44<br>02/12/14<br>FS12 | FS13GW-10.0-14.0<br>10 - 14<br>02/07/14<br>FS13 | FS13GW-20.0-24.0<br>20 - 24<br>02/07/14<br>FS13 | FS13GW-30.0-34.0<br>30 - 34<br>02/10/14<br>FS13 | FS13GW-40.0-44.0<br>40 - 44<br>02/10/14<br>FS13 | FS14GW-20.0-24.0<br>20 - 24<br>03/19/14<br>FS14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | FS14GW-30.0-34.0 | FS14GW-40.0-44.0 | FS15GW-10.0-14.0 | FS15GW-20.0-24.0 | FS15GW-30.0-34.0 | FS15GW-40.0-44.0 | FS16A-GWF-10.0-14.0 | FS16A-GWF-20.0-24.0 | FS16A-GWF-30.0-34.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 30 - 34 | 40 - 44 | 10 - 14 | 20 - 24 | 30 - 34 | 40 - 44 | 10 - 14 | 20 - 24 | 30 - 34 |
| Date Collected: | | | 03/19/14 | 03/19/14 | 03/27/14 | 03/27/14 | 03/27/14 | 03/27/14 | 06/11/15 | 06/11/15 | 06/11/15 |
| Location ID: | CAS Number | Units | FS14 | FS14 | FS15 | FS15 | FS15 | FS15 | FS16A | FS16A | FS16A |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | FS14GW-30.0-34.0 | FS14GW-40.0-44.0 | FS15GW-10.0-14.0 | FS15GW-20.0-24.0 | FS15GW-30.0-34.0 | FS15GW-40.0-44.0 | FS16A-GWF-10.0-14.0 | FS16A-GWF-20.0-24.0 | FS16A-GWF-30.0-34.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 30 - 34 | 40 - 44 | 10 - 14 | 20 - 24 | 30 - 34 | 40 - 44 | 10 - 14 | 20 - 24 | 30 - 34 |
| Date Collected: | | | 03/19/14 | 03/19/14 | 03/27/14 | 03/27/14 | 03/27/14 | 03/27/14 | 06/11/15 | 06/11/15 | 06/11/15 |
| Location ID: | CAS Number | Units | FS14 | FS14 | FS15 | FS15 | FS15 | FS15 | FS16A | FS16A | FS16A |
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | FS14GW-30.0-34.0 | FS14GW-40.0-44.0 | FS15GW-10.0-14.0 | FS15GW-20.0-24.0 | FS15GW-30.0-34.0 | FS15GW-40.0-44.0 | FS16A-GWF-10.0-14.0 | FS16A-GWF-20.0-24.0 | FS16A-GWF-30.0-34.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 30 - 34 | 40 - 44 | 10 - 14 | 20 - 24 | 30 - 34 | 40 - 44 | 10 - 14 | 20 - 24 | 30 - 34 |
| Date Collected: | | | 03/19/14 | 03/19/14 | 03/27/14 | 03/27/14 | 03/27/14 | 03/27/14 | 06/11/15 | 06/11/15 | 06/11/15 |
| Location ID: | CAS Number | Units | FS14 | FS14 | FS15 | FS15 | FS15 | FS15 | FS16A | FS16A | FS16A |
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 1,180 | 2,290 | 6,420 | 23,100 | 8,770 | 8,360 | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 3.1 J | 10 U | 1,000 J | 10 UJ | 18 J | 10 UJ | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS14GW-30.0-34.0<br>30 - 34<br>03/19/14<br>FS14 | FS14GW-40.0-44.0<br>40 - 44<br>03/19/14<br>FS14 | FS15GW-10.0-14.0<br>10 - 14<br>03/27/14<br>FS15 | FS15GW-20.0-24.0<br>20 - 24<br>03/27/14<br>FS15 | FS15GW-30.0-34.0<br>30 - 34<br>03/27/14<br>FS15 | FS15GW-40.0-44.0<br>40 - 44<br>03/27/14<br>FS15 | FS16A-GWF-10.0-14.0<br>10 - 14<br>06/11/15<br>FS16A | FS16A-GWF-20.0-24.0<br>20 - 24<br>06/11/15<br>FS16A | FS16A-GWF-30.0-34.0<br>30 - 34<br>06/11/15<br>FS16A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | 1.8 J | 4,450 J | 92.2 J |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | 10 UJ | 2,900 J | 121,000 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS14GW-30.0-34.0<br>30 - 34<br>03/19/14<br>FS14 | FS14GW-40.0-44.0<br>40 - 44<br>03/19/14<br>FS14 | FS15GW-10.0-14.0<br>10 - 14<br>03/27/14<br>FS15 | FS15GW-20.0-24.0<br>20 - 24<br>03/27/14<br>FS15 | FS15GW-30.0-34.0<br>30 - 34<br>03/27/14<br>FS15 | FS15GW-40.0-44.0<br>40 - 44<br>03/27/14<br>FS15 | FS16A-GWF-10.0-14.0<br>10 - 14<br>06/11/15<br>FS16A | FS16A-GWF-20.0-24.0<br>20 - 24<br>06/11/15<br>FS16A | FS16A-GWF-30.0-34.0<br>30 - 34<br>06/11/15<br>FS16A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 403 | 358 | 366 | 186 | 278 | 254 | 381 | 390 | 372 |
| pH | ARC-pH | SU | 5.12 | 7.67 | 7.25 | 8.05 | 7.70 | 7.64 | 8.29 | 7.44 | 8.07 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS14GW-30.0-34.0<br>30 - 34<br>03/19/14<br>FS14 | FS14GW-40.0-44.0<br>40 - 44<br>03/19/14<br>FS14 | FS15GW-10.0-14.0<br>10 - 14<br>03/27/14<br>FS15 | FS15GW-20.0-24.0<br>20 - 24<br>03/27/14<br>FS15 | FS15GW-30.0-34.0<br>30 - 34<br>03/27/14<br>FS15 | FS15GW-40.0-44.0<br>40 - 44<br>03/27/14<br>FS15 | FS16A-GWF-10.0-14.0<br>10 - 14<br>06/11/15<br>FS16A | FS16A-GWF-20.0-24.0<br>20 - 24<br>06/11/15<br>FS16A | FS16A-GWF-30.0-34.0<br>30 - 34<br>06/11/15<br>FS16A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | FS16A-GWF-45.0-49.0 | FS16A-GWU-10.0-14.0 | FS16A-GWU-20.0-24.0 | FS16A-GWU-30.0-34.0 | FS16A-GWU-45.0-49.0 | FS16GW-10.0-14.0 | FS16GW-20.0-24.0 | FS16GW-30.0-34.0 | FS16GW-40.0-44.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 45 - 49 | 10 - 14 | 20 - 24 | 30 - 34 | 45 - 49 | 10 - 14 | 20 - 24 | 30 - 34 | 40 - 44 |
| Date Collected: | | | 06/11/15 | 06/11/15 | 06/11/15 | 06/11/15 | 06/11/15 | 04/02/14 | 04/02/14 | 04/02/14 | 04/02/14 |
| Location ID: | CAS Number | Units | FS16A | FS16A | FS16A | FS16A | FS16A | FS16 | FS16 | FS16 | FS16 |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS16A-GWF-45.0-49.0<br>45 - 49<br>06/11/15<br>FS16A | FS16A-GWU-10.0-14.0<br>10 - 14<br>06/11/15<br>FS16A | FS16A-GWU-20.0-24.0<br>20 - 24<br>06/11/15<br>FS16A | FS16A-GWU-30.0-34.0<br>30 - 34<br>06/11/15<br>FS16A | FS16A-GWU-45.0-49.0<br>45 - 49<br>06/11/15<br>FS16A | FS16GW-10.0-14.0<br>10 - 14<br>04/02/14<br>FS16 | FS16GW-20.0-24.0<br>20 - 24<br>04/02/14<br>FS16 | FS16GW-30.0-34.0<br>30 - 34<br>04/02/14<br>FS16 | FS16GW-40.0-44.0<br>40 - 44<br>04/02/14<br>FS16 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS16A-GWF-45.0-49.0<br>45 - 49<br>06/11/15<br>FS16A | FS16A-GWU-10.0-14.0<br>10 - 14<br>06/11/15<br>FS16A | FS16A-GWU-20.0-24.0<br>20 - 24<br>06/11/15<br>FS16A | FS16A-GWU-30.0-34.0<br>30 - 34<br>06/11/15<br>FS16A | FS16A-GWU-45.0-49.0<br>45 - 49<br>06/11/15<br>FS16A | FS16GW-10.0-14.0<br>10 - 14<br>04/02/14<br>FS16 | FS16GW-20.0-24.0<br>20 - 24<br>04/02/14<br>FS16 | FS16GW-30.0-34.0<br>30 - 34<br>04/02/14<br>FS16 | FS16GW-40.0-44.0<br>40 - 44<br>04/02/14<br>FS16 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 708 J | 11,600 J | 17,400 J [19,100 J] | 404 J | 4,040 | 22,500 | 29,700 [25,100] | 12,500 |
| Chromium VI | 18540-29-9 | ug/L | NA | 510 | 10 U | 10 U [10 U] | 10 U | 10 UJ | 10 UJ | 10 UJ [10 UJ] | 10 UJ |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS16A-GWF-45.0-49.0<br>45 - 49<br>06/11/15<br>FS16A | FS16A-GWU-10.0-14.0<br>10 - 14<br>06/11/15<br>FS16A | FS16A-GWU-20.0-24.0<br>20 - 24<br>06/11/15<br>FS16A | FS16A-GWU-30.0-34.0<br>30 - 34<br>06/11/15<br>FS16A | FS16A-GWU-45.0-49.0<br>45 - 49<br>06/11/15<br>FS16A | FS16GW-10.0-14.0<br>10 - 14<br>04/02/14<br>FS16 | FS16GW-20.0-24.0<br>20 - 24<br>04/02/14<br>FS16 | FS16GW-30.0-34.0<br>30 - 34<br>04/02/14<br>FS16 | FS16GW-40.0-44.0<br>40 - 44<br>04/02/14<br>FS16 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 0.90 J | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS16A-GWF-45.0-49.0<br>45 - 49<br>06/11/15<br>FS16A | FS16A-GWU-10.0-14.0<br>10 - 14<br>06/11/15<br>FS16A | FS16A-GWU-20.0-24.0<br>20 - 24<br>06/11/15<br>FS16A | FS16A-GWU-30.0-34.0<br>30 - 34<br>06/11/15<br>FS16A | FS16A-GWU-45.0-49.0<br>45 - 49<br>06/11/15<br>FS16A | FS16GW-10.0-14.0<br>10 - 14<br>04/02/14<br>FS16 | FS16GW-20.0-24.0<br>20 - 24<br>04/02/14<br>FS16 | FS16GW-30.0-34.0<br>30 - 34<br>04/02/14<br>FS16 | FS16GW-40.0-44.0<br>40 - 44<br>04/02/14<br>FS16 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 412 | 375 | 314 | 229 [384] [241] | 411 | 399 | 370 | 381 [371] | 374 |
| pH | ARC-pH | SU | 7.99 | 8.46 | 7.57 | 7.89 [8.04] [7.91] | 8.43 | 7.21 | 7.25 | 7.83 [7.81] | 7.70 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS17GW-10.0-14.0<br>10 - 14<br>03/31/14<br>FS17 | FS17GW-20.0-24.0<br>20 - 24<br>03/31/14<br>FS17 | FS17GW-30.0-34.0<br>30 - 34<br>03/31/14<br>FS17 | FS17GW-40.0-44.0<br>40 - 44<br>03/31/14<br>FS17 | FS18GW-10.0-14.0<br>10 - 14<br>03/17/14<br>FS18 | FS18GW-20.0-24.0<br>20 - 24<br>03/17/14<br>FS18 | FS18GW-30.0-34.0<br>30 - 34<br>03/17/14<br>FS18 | FS18GW-40.0-44.0<br>40 - 44<br>03/17/14<br>FS18 | FS21-GWF-40.0-44.0<br>40 - 44<br>06/04/15<br>FS21 | FS21-GWU-40.0-44.0<br>40 - 44<br>06/04/15<br>FS21 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS17GW-10.0-14.0<br>10 - 14<br>03/31/14<br>FS17 | FS17GW-20.0-24.0<br>20 - 24<br>03/31/14<br>FS17 | FS17GW-30.0-34.0<br>30 - 34<br>03/31/14<br>FS17 | FS17GW-40.0-44.0<br>40 - 44<br>03/31/14<br>FS17 | FS18GW-10.0-14.0<br>10 - 14<br>03/17/14<br>FS18 | FS18GW-20.0-24.0<br>20 - 24<br>03/17/14<br>FS18 | FS18GW-30.0-34.0<br>30 - 34<br>03/17/14<br>FS18 | FS18GW-40.0-44.0<br>40 - 44<br>03/17/14<br>FS18 | FS21-GWF-40.0-44.0<br>40 - 44<br>06/04/15<br>FS21 | FS21-GWU-40.0-44.0<br>40 - 44<br>06/04/15<br>FS21 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS17GW-10.0-14.0<br>10 - 14<br>03/31/14<br>FS17 | FS17GW-20.0-24.0<br>20 - 24<br>03/31/14<br>FS17 | FS17GW-30.0-34.0<br>30 - 34<br>03/31/14<br>FS17 | FS17GW-40.0-44.0<br>40 - 44<br>03/31/14<br>FS17 | FS18GW-10.0-14.0<br>10 - 14<br>03/17/14<br>FS18 | FS18GW-20.0-24.0<br>20 - 24<br>03/17/14<br>FS18 | FS18GW-30.0-34.0<br>30 - 34<br>03/17/14<br>FS18 | FS18GW-40.0-44.0<br>40 - 44<br>03/17/14<br>FS18 | FS21-GWF-40.0-44.0<br>40 - 44<br>06/04/15<br>FS21 | FS21-GWU-40.0-44.0<br>40 - 44<br>06/04/15<br>FS21 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 4,190 | 4,240 | 1,390 | 3,220 | 34,400 | 33,900 | 53,600 | 29,700 | NA | 2,370 J |
| Chromium VI | 18540-29-9 | ug/L | 3.1 J | 10 UJ | 10 UJ | 10 UJ | 5,900 J | 2,700 J | 5,700 J | 2,900 J | NA | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS17GW-10.0-14.0<br>10 - 14<br>03/31/14<br>FS17 | FS17GW-20.0-24.0<br>20 - 24<br>03/31/14<br>FS17 | FS17GW-30.0-34.0<br>30 - 34<br>03/31/14<br>FS17 | FS17GW-40.0-44.0<br>40 - 44<br>03/31/14<br>FS17 | FS18GW-10.0-14.0<br>10 - 14<br>03/17/14<br>FS18 | FS18GW-20.0-24.0<br>20 - 24<br>03/17/14<br>FS18 | FS18GW-30.0-34.0<br>30 - 34<br>03/17/14<br>FS18 | FS18GW-40.0-44.0<br>40 - 44<br>03/17/14<br>FS18 | FS21-GWF-40.0-44.0<br>40 - 44<br>06/04/15<br>FS21 | FS21-GWU-40.0-44.0<br>40 - 44<br>06/04/15<br>FS21 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 10 UJ | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 10 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS17GW-10.0-14.0<br>10 - 14<br>03/31/14<br>FS17 | FS17GW-20.0-24.0<br>20 - 24<br>03/31/14<br>FS17 | FS17GW-30.0-34.0<br>30 - 34<br>03/31/14<br>FS17 | FS17GW-40.0-44.0<br>40 - 44<br>03/31/14<br>FS17 | FS18GW-10.0-14.0<br>10 - 14<br>03/17/14<br>FS18 | FS18GW-20.0-24.0<br>20 - 24<br>03/17/14<br>FS18 | FS18GW-30.0-34.0<br>30 - 34<br>03/17/14<br>FS18 | FS18GW-40.0-44.0<br>40 - 44<br>03/17/14<br>FS18 | FS21-GWF-40.0-44.0<br>40 - 44<br>06/04/15<br>FS21 | FS21-GWU-40.0-44.0<br>40 - 44<br>06/04/15<br>FS21 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 612 | 600 | 592 | 583 | 263 | 290 | 192 | 224 | 304 | 323 |
| pH | ARC-pH | SU | 6.88 | 6.87 | 7.32 | 2.01 | 9.28 | 9.08 | 10.61 | 9.87 | 8.94 | 9.21 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS17GW-10.0-14.0<br>10 - 14<br>03/31/14<br>FS17 | FS17GW-20.0-24.0<br>20 - 24<br>03/31/14<br>FS17 | FS17GW-30.0-34.0<br>30 - 34<br>03/31/14<br>FS17 | FS17GW-40.0-44.0<br>40 - 44<br>03/31/14<br>FS17 | FS18GW-10.0-14.0<br>10 - 14<br>03/17/14<br>FS18 | FS18GW-20.0-24.0<br>20 - 24<br>03/17/14<br>FS18 | FS18GW-30.0-34.0<br>30 - 34<br>03/17/14<br>FS18 | FS18GW-40.0-44.0<br>40 - 44<br>03/17/14<br>FS18 | FS21-GWF-40.0-44.0<br>40 - 44<br>06/04/15<br>FS21 | FS21-GWU-40.0-44.0<br>40 - 44<br>06/04/15<br>FS21 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | FS22-GWF-10.0-14.0 | FS22-GWF-40.0-44.0 | FS22-GWU-10.0-14.0 | FS22-GWU-40.0-44.0 | FS23-GWF-10.0-14.0 | FS23-GWF-20.0-24.0 | FS23-GWF-30.0-34.0 | FS23-GWF-40.0-44.0 | FS23-GWU-10.0-14.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 10 - 14 | 40 - 44 | 10 - 14 | 40 - 44 | 10 - 14 | 20 - 24 | 30 - 34 | 40 - 44 | 10 - 14 |
| Date Collected: | | | 06/02/15 | 06/03/15 | 06/02/15 | 06/03/15 | 07/11/15 | 07/11/15 | 07/11/15 | 07/11/15 | 07/11/15 |
| Location ID: | CAS Number | Units | FS22 | FS22 | FS22 | FS22 | FS23 | FS23 | FS23 | FS23 | FS23 |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS22-GWF-10.0-14.0<br>10 - 14<br>06/02/15<br>FS22 | FS22-GWF-40.0-44.0<br>40 - 44<br>06/03/15<br>FS22 | FS22-GWU-10.0-14.0<br>10 - 14<br>06/02/15<br>FS22 | FS22-GWU-40.0-44.0<br>40 - 44<br>06/03/15<br>FS22 | FS23-GWF-10.0-14.0<br>10 - 14<br>07/11/15<br>FS23 | FS23-GWF-20.0-24.0<br>20 - 24<br>07/11/15<br>FS23 | FS23-GWF-30.0-34.0<br>30 - 34<br>07/11/15<br>FS23 | FS23-GWF-40.0-44.0<br>40 - 44<br>07/11/15<br>FS23 | FS23-GWU-10.0-14.0<br>10 - 14<br>07/11/15<br>FS23 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS22-GWF-10.0-14.0<br>10 - 14<br>06/02/15<br>FS22 | FS22-GWF-40.0-44.0<br>40 - 44<br>06/03/15<br>FS22 | FS22-GWU-10.0-14.0<br>10 - 14<br>06/02/15<br>FS22 | FS22-GWU-40.0-44.0<br>40 - 44<br>06/03/15<br>FS22 | FS23-GWF-10.0-14.0<br>10 - 14<br>07/11/15<br>FS23 | FS23-GWF-20.0-24.0<br>20 - 24<br>07/11/15<br>FS23 | FS23-GWF-30.0-34.0<br>30 - 34<br>07/11/15<br>FS23 | FS23-GWF-40.0-44.0<br>40 - 44<br>07/11/15<br>FS23 | FS23-GWU-10.0-14.0<br>10 - 14<br>07/11/15<br>FS23 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | 30 UJ | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 4,930 | 1,600 J | NA | NA | NA | NA | 755 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 13 | R | NA | NA | NA | NA | R |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS22-GWF-10.0-14.0<br>10 - 14<br>06/02/15<br>FS22 | FS22-GWF-40.0-44.0<br>40 - 44<br>06/03/15<br>FS22 | FS22-GWU-10.0-14.0<br>10 - 14<br>06/02/15<br>FS22 | FS22-GWU-40.0-44.0<br>40 - 44<br>06/03/15<br>FS22 | FS23-GWF-10.0-14.0<br>10 - 14<br>07/11/15<br>FS23 | FS23-GWF-20.0-24.0<br>20 - 24<br>07/11/15<br>FS23 | FS23-GWF-30.0-34.0<br>30 - 34<br>07/11/15<br>FS23 | FS23-GWF-40.0-44.0<br>40 - 44<br>07/11/15<br>FS23 | FS23-GWU-10.0-14.0<br>10 - 14<br>07/11/15<br>FS23 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | 642 | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | 574 | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | 6.0 UJ | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 14.7 | 0.90 J | NA | NA | 10 UB | 10 U | 10 U | 10 U | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 U | 10 U | NA | NA | R | R | R | 10 UJ | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | 4.5 J | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 0.70 J | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 392 | 373 | 402 | 370 | 514 | 533 | 533 | 513 | 386 |
| pH | ARC-pH | SU | 6.92 | 7.43 | 5.20 | 7.68 | 7.10 | 7.43 | 7.55 | 7.36 | 7.17 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | FS23-GWU-20.0-24.0 | FS23-GWU-30.0-34.0 | FS23-GWU-40.0-44.0 | FS25-GWF-10.0-14.0 | FS25-GWF-20.0-24.0 | FS25-GWF-30.0-34.0 | FS25-GWF-40.0-44.0 | FS25-GWU-10.0-14.0 | FS25-GWU-20.0-24.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 20 - 24 | 30 - 34 | 40 - 44 | 10 - 14 | 20 - 24 | 30 - 34 | 40 - 44 | 10 - 14 | 20 - 24 |
| Date Collected: | | | 07/11/15 | 07/11/15 | 07/11/15 | 06/15/15 | 06/15/15 | 06/15/15 | 06/16/15 | 06/15/15 | 06/15/15 |
| Location ID: | CAS Number | Units | FS23 | FS23 | FS23 | FS25 | FS25 | FS25 | FS25 | FS25 | FS25 |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS23-GWU-20.0-24.0<br>20 - 24<br>07/11/15<br>FS23 | FS23-GWU-30.0-34.0<br>30 - 34<br>07/11/15<br>FS23 | FS23-GWU-40.0-44.0<br>40 - 44<br>07/11/15<br>FS23 | FS25-GWF-10.0-14.0<br>10 - 14<br>06/15/15<br>FS25 | FS25-GWF-20.0-24.0<br>20 - 24<br>06/15/15<br>FS25 | FS25-GWF-30.0-34.0<br>30 - 34<br>06/15/15<br>FS25 | FS25-GWF-40.0-44.0<br>40 - 44<br>06/16/15<br>FS25 | FS25-GWU-10.0-14.0<br>10 - 14<br>06/15/15<br>FS25 | FS25-GWU-20.0-24.0<br>20 - 24<br>06/15/15<br>FS25 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS23-GWU-20.0-24.0<br>20 - 24<br>07/11/15<br>FS23 | FS23-GWU-30.0-34.0<br>30 - 34<br>07/11/15<br>FS23 | FS23-GWU-40.0-44.0<br>40 - 44<br>07/11/15<br>FS23 | FS25-GWF-10.0-14.0<br>10 - 14<br>06/15/15<br>FS25 | FS25-GWF-20.0-24.0<br>20 - 24<br>06/15/15<br>FS25 | FS25-GWF-30.0-34.0<br>30 - 34<br>06/15/15<br>FS25 | FS25-GWF-40.0-44.0<br>40 - 44<br>06/16/15<br>FS25 | FS25-GWU-10.0-14.0<br>10 - 14<br>06/15/15<br>FS25 | FS25-GWU-20.0-24.0<br>20 - 24<br>06/15/15<br>FS25 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 273 | 1,110 J | 2,860 | NA | NA | NA | NA | 1,980 | 1,740 |
| Chromium VI | 18540-29-9 | ug/L | R | R | 25 J | NA | NA | NA | NA | 10 U | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS23-GWU-20.0-24.0<br>20 - 24<br>07/11/15<br>FS23 | FS23-GWU-30.0-34.0<br>30 - 34<br>07/11/15<br>FS23 | FS23-GWU-40.0-44.0<br>40 - 44<br>07/11/15<br>FS23 | FS25-GWF-10.0-14.0<br>10 - 14<br>06/15/15<br>FS25 | FS25-GWF-20.0-24.0<br>20 - 24<br>06/15/15<br>FS25 | FS25-GWF-30.0-34.0<br>30 - 34<br>06/15/15<br>FS25 | FS25-GWF-40.0-44.0<br>40 - 44<br>06/16/15<br>FS25 | FS25-GWU-10.0-14.0<br>10 - 14<br>06/15/15<br>FS25 | FS25-GWU-20.0-24.0<br>20 - 24<br>06/15/15<br>FS25 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 6.5 J | 10 U | 10 U | 10 U | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | 10 U | 10 U | 10 U | 10 U | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS23-GWU-20.0-24.0<br>20 - 24<br>07/11/15<br>FS23 | FS23-GWU-30.0-34.0<br>30 - 34<br>07/11/15<br>FS23 | FS23-GWU-40.0-44.0<br>40 - 44<br>07/11/15<br>FS23 | FS25-GWF-10.0-14.0<br>10 - 14<br>06/15/15<br>FS25 | FS25-GWF-20.0-24.0<br>20 - 24<br>06/15/15<br>FS25 | FS25-GWF-30.0-34.0<br>30 - 34<br>06/15/15<br>FS25 | FS25-GWF-40.0-44.0<br>40 - 44<br>06/16/15<br>FS25 | FS25-GWU-10.0-14.0<br>10 - 14<br>06/15/15<br>FS25 | FS25-GWU-20.0-24.0<br>20 - 24<br>06/15/15<br>FS25 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 383 | 371 | 304 | 424 | 412 | 408 | 386 | 424 | 402 |
| pH | ARC-pH | SU | 7.23 | 7.57 | 6.85 | 6.95 | 7.72 | 7.85 | 7.26 | 6.87 | 7.89 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS23-GWU-20.0-24.0<br>20 - 24<br>07/11/15<br>FS23 | FS23-GWU-30.0-34.0<br>30 - 34<br>07/11/15<br>FS23 | FS23-GWU-40.0-44.0<br>40 - 44<br>07/11/15<br>FS23 | FS25-GWF-10.0-14.0<br>10 - 14<br>06/15/15<br>FS25 | FS25-GWF-20.0-24.0<br>20 - 24<br>06/15/15<br>FS25 | FS25-GWF-30.0-34.0<br>30 - 34<br>06/15/15<br>FS25 | FS25-GWF-40.0-44.0<br>40 - 44<br>06/16/15<br>FS25 | FS25-GWU-10.0-14.0<br>10 - 14<br>06/15/15<br>FS25 | FS25-GWU-20.0-24.0<br>20 - 24<br>06/15/15<br>FS25 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS25-GWU-30.0-34.0<br>30 - 34<br>06/15/15<br>FS25 | FS25-GWU-40.0-44.0<br>40 - 44<br>06/16/15<br>FS25 | FSI1A-GWF-1.0-2.5<br>1 - 2.5<br>06/08/15<br>FSI1A | FSI1A-GWU-1.0-2.5<br>1 - 2.5<br>06/08/15<br>FSI1A | FSI2GW<br><br>04/09/14<br>FSI2 | G000005480-2/27/2014-MW-10S<br><br>02/27/14<br>MW10S | G000005480-2/27/2014-PPG-114-MW-20A<br><br>02/27/14<br>114-MW20A |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | 0.25 U | 0.25 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | 0.2 U | 0.2 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | 0.77 U | 0.77 U |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | 0.21 U | 0.21 U |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | 0.26 U | 0.26 U |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | 0.34 U | 0.34 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | 0.24 U | 0.24 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | 0.22 U | 0.22 U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | 1.3 U | 1.3 U |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | 0.16 U | 0.16 U |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | 0.2 U | 0.2 U |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | 0.22 U | 0.22 U |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | 0.28 U | 0.28 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | 0.31 U | 0.31 U |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | 0.3 U | 0.3 U |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | 73 U | 73 U |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | 3.2 U | 3.2 U |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | 1.5 U | 1.5 U |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | 3.3 U | 7.9 J |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | 0.43 J | 17.6 |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | 0.42 U | 0.42 U |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | 0.21 U | 0.21 U |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | 0.3 U | 0.3 U |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | 0.56 U | 0.56 U |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | 0.18 U | 0.32 J |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | 0.23 U | 0.23 U |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | 0.33 U | 0.33 U |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | 0.63 U | 0.63 U |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | 0.35 U | 0.35 U |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | 0.19 U | 0.19 U |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | 0.39 U | 0.39 U |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | 0.25 U | 0.25 U |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | 0.36 U | 0.36 U |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | 1.2 | 0.24 U |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | 0.15 U | 0.15 U |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | 0.18 U | 0.18 U |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | 0.86 U | 0.86 U |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | 0.21 U | 18 |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | 0.22 U | 4 |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | 0.4 U | 15.4 |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | 1.5 U | 1.5 U |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | 1.7 U | 1.7 U |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | 0.15 U | 0.15 U |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | 0.29 U | 0.29 U |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | 0.19 U | 14.1 |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | 0.3 U | 0.3 U |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | 0.25 U | 0.25 U |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | 0.44 U | 7.4 |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | 0.19 U | 29.5 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS25-GWU-30.0-34.0<br>30 - 34<br>06/15/15<br>FS25 | FS25-GWU-40.0-44.0<br>40 - 44<br>06/16/15<br>FS25 | FSI1A-GWF-1.0-2.5<br>1 - 2.5<br>06/08/15<br>FSI1A | FSI1A-GWU-1.0-2.5<br>1 - 2.5<br>06/08/15<br>FSI1A | FSI2GW<br><br>04/09/14<br>FSI2 | G000005480-2/27/2014-MW-10S<br><br>02/27/14<br>MW10S | G000005480-2/27/2014-PPG-114-MW-20A<br><br>02/27/14<br>114-MW20A |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | 0.38 U | 0.38 U |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | 0.21 U | 0.21 U |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | 0.5 U | 0.5 U |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | 0.41 U | 0.41 U |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | 0.3 U | 0.76 J |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | 0.31 U | 0.31 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | 0.94 U | 0.94 U |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | 1.6 U | 1.6 U |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | 1.3 U | 1.3 U |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | 1.2 U | 1.2 U |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | 1.5 U | 1.5 U |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | 17 U | 17 U |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | 0.43 U | 0.43 U |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | 0.46 U | 0.46 U |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | 0.3 U | 0.3 U |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | 0.97 U | 0.97 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | 0.99 U | 0.99 U |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | 0.38 U | 12.2 |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | 1 U | 1 U |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | 1.1 U | 1.1 U |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | 1.5 U | 1.5 U |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | 0.36 U | 0.36 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | 0.93 U | 5.4 |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | 1.3 U | 1.3 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | 0.36 U | 0.36 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | 1.8 U | 1.8 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | 0.31 U | 0.31 U |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | 1.7 U | 1.7 U |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | 5.2 U | 5.2 U |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | 0.02 U | 4.44 |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | 0.024 U | 0.286 |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | 0.29 U | 0.29 U |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | 0.02 U | 0.119 |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | 0.49 U | 0.49 U |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | 3.3 U | 3.3 U |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | 0.012 U | 0.012 U |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | 0.012 U | 0.012 U |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | 0.01 U | 0.01 U |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | 0.016 U | 0.016 U |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | 0.015 U | 0.015 U |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | 0.31 U | 0.31 U |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | 0.31 U | 0.31 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | 0.45 U | 0.45 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | 0.59 U | 0.59 U |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | 0.29 U | 0.29 U |

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|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | 0.69 U | 0.69 U |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | 0.36 U | 0.36 U |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | 0.012 U | 0.012 U |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | 0.017 U | 0.017 U |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | 0.27 U | 0.27 U |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | 0.33 U | 0.33 U |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | 0.28 U | 0.28 U |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | 0.56 U | 0.56 U |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | 0.31 U | 0.31 U |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | 0.013 U | 0.013 U |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | 0.017 U | 0.969 |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | 0.51 U | 0.51 U |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | 0.017 U | 0.017 U |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | 7.1 U | 7.1 U |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | 0.55 U | 0.55 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | 0.014 U | 0.014 U |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | 0.27 U | 0.27 U |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | 0.283 | 74.7 |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | 0.42 U | 0.42 U |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | 0.3 U | 0.3 U |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | 0.31 U | 0.31 U |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | 0.53 U | 0.53 U |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | 0.1 U | 0.1 U |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | 0.021 U | 0.501 |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | 1.3 U | 6.4 |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | 0.015 U | 0.015 U |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 681 | 644 |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 1.8 U | 1.8 U |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 23.5 | 30.4 |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 250 | 0.36 U |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 0.17 U | 0.17 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 0.24 U | 0.24 U |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 185,000 | 34,300 |
| Chromium | 7440-47-3 | ug/L | 7,260 | 2,100 J | NA | 10.9 | 14,200 | 0.92 U | 63.6 |
| Chromium VI | 18540-29-9 | ug/L | 10 U | 16 | NA | 10 RA | 11,700 J | 21 | 1.5 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 0.48 U | 0.48 U |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 1 U | 25.2 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | 11,500 | 752 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 2.4 U | 136 |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 16,700 | 5,440 |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | 2,610 | 29.5 |

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|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.089 U | 0.72 |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | 1.6 U | 1.6 U |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 15,900 | 11,200 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 2.4 U | 2.4 U |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 1.5 U | 1.5 U |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 582,000 | 356,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | 1.3 U | 1.3 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | 0.72 U | 0.72 U |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 4.4 U | 130 |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 10 U | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 10 U | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | 113 | 650 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | 2,740 | 25.3 |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

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|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | 400,000 | 325,000 |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | 1,000 | 4,800 |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | 12 | 4.8 U |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | 890 | 390 |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | 10,600 | 360 |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | 520 | 24 U |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | 520 | 26 U |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | 2.4 U | 2.4 U |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 369 | 290 | 391 | 377 | 434 | NA | NA |
| pH | ARC-pH | SU | 7.86 | 7.23 | 6.55 | 6.44 | 9.78 | 6.43 | 9.42 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | FS25-GWU-30.0-34.0<br>30 - 34<br>06/15/15<br>FS25 | FS25-GWU-40.0-44.0<br>40 - 44<br>06/16/15<br>FS25 | FSI1A-GWF-1.0-2.5<br>1 - 2.5<br>06/08/15<br>FSI1A | FSI1A-GWU-1.0-2.5<br>1 - 2.5<br>06/08/15<br>FSI1A | FSI2GW<br><br>04/09/14<br>FSI2 | G000005480-2/27/2014-MW-10S<br><br>02/27/14<br>MW10S | G000005480-2/27/2014-PPG-114-MW-20A<br><br>02/27/14<br>114-MW20A |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | 39,300 | 20,400 |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | 340 U | 4,400 |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-2/27/2014-PPG-114-MW-20B<br>02/27/14<br>114-MW20B | G000005480-2/27/2014-PPG-114-MW-20C<br>02/27/14<br>114-MW20C | G000005480-2/28/2014-PPG-135-MW1A<br>02/28/14<br>135-MW1A | G000005480-2/28/2014-PPG-135-MW1B<br>02/28/14<br>135-MW1B | G000005480-2/28/2014-PPG-135-MW2A<br>02/28/14<br>135-MW2A |
|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | 5 U | 1.2 U | 1 U | 1 U | 1 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | 3.9 U | 0.98 U | 1 U | 1 U | 1 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | 15 U | 3.8 U | 5 U | 5 U | 5 U |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | 4.2 U | 1.1 U | 1 U | 1 U | 1 U |
| 1,1-Dichloroethane | 75-34-3 | ug/L | 5.2 U | 1.3 U | 1 U | 1 U | 1 U |
| 1,1-Dichloroethene | 75-35-4 | ug/L | 6.9 U | 1.7 U | 1 U | 1 U | 1 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | 4.9 U | 1.2 U | 5 U | 5 U | 5 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | 4.3 U | 1.1 U | 5 U | 5 U | 5 U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | 25 U | 6.3 U | 10 U | 10 U | 10 U |
| 1,2-Dibromoethane | 106-93-4 | ug/L | 3.2 U | 0.8 U | 1 U | 1 U | 1 U |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | 4.1 U | 1 U | 1 U | 1 U | 1 U |
| 1,2-Dichloroethane | 107-06-2 | ug/L | 4.4 U | 1.1 U | 1 U | 1 U | 1 U |
| 1,2-Dichloropropane | 78-87-5 | ug/L | 5.6 U | 1.4 U | 1 U | 1 U | 1 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | 6.3 U | 1.6 U | 1 U | 1 U | 1 U |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | 6 U | 1.5 U | 1 U | 1 U | 1 U |
| 1,4-Dioxane | 123-91-1 | ug/L | 1,500 U | 360 U | 130 U | 130 U | 130 U |
| 2-Butanone (MEK) | 78-93-3 | ug/L | 64 U | 16 U | 10 U | 10 U | 10 U |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | 30 U | 7.4 U | 5 U | 5 U | 5 U |
| Acetone | 67-64-1 | ug/L | 67 U | 17 U | 10 U | 10 U | 10 U |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | 3,460 | 663 | 1 U | 1 U | 13.5 |
| Bromochloromethane | 74-97-5 | ug/L | 8.3 U | 2.1 U | 5 U | 5 U | 5 U |
| Bromodichloromethane | 75-27-4 | ug/L | 4.2 U | 1.1 U | 1 U | 1 U | 1 U |
| Bromoform | 75-25-2 | ug/L | 6 U | 1.5 U | 4 U | 4 U | 4 U |
| Bromomethane | 74-83-9 | ug/L | 11 U | 2.8 U | 2 U | 2 U | 2 U |
| Carbon Disulfide | 75-15-0 | ug/L | 3.6 U | 0.91 U | 2 U | 2 U | 2 U |
| Carbon Tetrachloride | 56-23-5 | ug/L | 4.5 U | 1.1 U | 1 U | 1 U | 1 U |
| CFC-11 | 75-69-4 | ug/L | 6.7 U | 1.7 U | 5 U | 5 U | 5 U |
| CFC-12 | 75-71-8 | ug/L | 13 U | 3.2 U | 5 U | 5 U | 5 U |
| Chlorobenzene | 108-90-7 | ug/L | 6.9 U | 1.7 U | 1 U | 1 U | 1 U |
| Chlorodibromomethane | 124-48-1 | ug/L | 3.8 U | 0.96 U | 1 U | 1 U | 1 U |
| Chloroethane | 75-00-3 | ug/L | 7.8 U | 1.9 U | 1 U | 1 U | 1 U |
| Chloroform | 67-66-3 | ug/L | 4.9 U | 1.2 U | 1 U | 1 U | 1 U |
| Chloromethane | 74-87-3 | ug/L | 7.3 U | 1.8 U | 1 U | 1 U | 1 U |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | 4.8 U | 1.2 U | 1 U | 1 U | 1 U |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | 3 U | 0.76 U | 1 U | 1 U | 1 U |
| Cyclohexane | 110-82-7 | ug/L | 3.6 U | 0.9 U | 5 U | 5 U | 5 U |
| Dichloromethane | 75-09-2 | ug/L | 17 U | 4.3 U | 2 U | 2 U | 2 U |
| Ethylbenzene | 100-41-4 | ug/L | 2,520 | 6.1 | 1 U | 1 U | 0.25 J |
| Isopropylbenzene | 98-82-8 | ug/L | 129 | 1.1 U | 2 U | 2 U | 0.42 J |
| m&p-Xylenes | ARC-mpXyl | ug/L | 1,190 | 2 U | 1 U | 1 U | 1 U |
| Methyl Acetate | 79-20-9 | ug/L | 30 U | 7.5 U | 5 U | 5 U | 5 U |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | 34 U | 8.5 U | 5 U | 5 U | 5 U |
| Methylcyclohexane | 108-87-2 | ug/L | 3.1 U | 0.77 U | 5 U | 5 U | 5 U |
| Methyl-tert-butylether | 1634-04-4 | ug/L | 5.7 U | 1.4 U | 1 U | 1 U | 1 U |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | 961 | 0.97 U | 1 U | 1 U | 0.27 J |
| Styrene (Monomer) | 100-42-5 | ug/L | 6 U | 1.5 U | 5 U | 5 U | 5 U |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | 5 U | 1.3 U | 1 U | 1 U | 1 U |
| Toluene | 108-88-3 | ug/L | 838 | 2.2 U | 1 U | 1 U | 1 U |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | 2,150 | 0.97 U | 1 U | 1 U | 0.56 J |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-2/27/2014-PPG-114-MW-20B<br>02/27/14<br>114-MW20B | G000005480-2/27/2014-PPG-114-MW-20C<br>02/27/14<br>114-MW20C | G000005480-2/28/2014-PPG-135-MW1A<br>02/28/14<br>135-MW1A | G000005480-2/28/2014-PPG-135-MW1B<br>02/28/14<br>135-MW1B | G000005480-2/28/2014-PPG-135-MW2A<br>02/28/14<br>135-MW2A |
|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | 7.6 U | 1.9 U | 1 U | 1 U | 1 U |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | 4.1 U | 1 U | 1 U | 1 U | 1 U |
| Trichloroethene | 79-01-6 | ug/L | 10 U | 2.5 U | 1 U | 1 U | 1 U |
| Vinyl chloride | 75-01-4 | ug/L | 8.3 U | 2.1 U | 1 U | 1 U | 1 U |
| **Semivolatile Organics** | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | 43.2 | 0.3 U | 1 U | 1 U | 1 U |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | 0.31 U | 0.31 U | 2 U | 2 U | 2 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | 0.94 U | 0.94 U | 5 U | 5 U | 5 U |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | 1.6 U | 1.6 U | 5 U | 5 U | 5 U |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | 1.3 U | 1.3 U | 5 U | 5 U | 5 U |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | 1.2 U | 1.2 U | 2 U | 2 U | 2 U |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | 1.5 U | 1.5 U | 5 U | 5 U | 5 U |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | 17 U | 17 U | 20 U | 20 U | 20 U |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | 0.43 U | 0.43 U | 1 U | 1 U | 1 U |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | 0.46 U | 0.46 U | 1 U | 1 U | 1 U |
| 2-Chloronaphthalene | 91-58-7 | ug/L | 0.3 U | 0.3 U | 2 U | 2 U | 2 U |
| 2-Chlorophenol | 95-57-8 | ug/L | 0.97 U | 0.97 U | 5 U | 5 U | 5 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | 0.99 U | 0.99 U | 20 U | 20 U | 20 U |
| 2-Methylnaphthalene | 91-57-6 | ug/L | 268 | 0.38 U | 1 U | 1 U | 1 U |
| 2-Methylphenol | 95-48-7 | ug/L | 1 U | 1 U | 2 U | 2 U | 2 U |
| 2-Nitroaniline | 88-74-4 | ug/L | 1.1 U | 1.1 U | 5 U | 5 U | 5 U |
| 2-Nitrophenol | 88-75-5 | ug/L | 1.5 U | 1.5 U | 5 U | 5 U | 5 U |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | 0.36 U | 0.36 U | 2 U | 2 U | 2 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | 0.93 U | 0.93 U | 2 U | 2 U | 2 U |
| 3-Nitroaniline | 99-09-2 | ug/L | 1.3 U | 1.3 U | 5 U | 5 U | 5 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | 0.36 U | 0.36 U | 2 U | 2 U | 2 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | 1.8 U | 1.8 U | 5 U | 5 U | 5 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | 0.31 U | 0.31 U | 2 U | 2 U | 2 U |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | 1.7 U | 1.7 U | 5 U | 5 U | 5 U |
| 4-Nitrophenol | 100-02-7 | ug/L | 5.2 U | 5.2 U | 10 U | 10 U | 10 U |
| Acenaphthene | 83-32-9 | ug/L | 197 | 0.498 | 0.127 | 18.4 | 0.179 |
| Acenaphthylene | 208-96-8 | ug/L | 12 | 0.146 | 0.1 U | 0.1 U | 0.1 U |
| Acetophenone | 98-86-2 | ug/L | 148 | 0.29 U | 2 U | 2 U | 2 U |
| Anthracene | 120-12-7 | ug/L | 4.41 | 0.02 U | 0.1 U | 0.1 U | 0.1 U |
| Atrazine | 1912-24-9 | ug/L | 0.49 U | 0.49 U | 2 U | 2 U | 2 U |
| Benzaldehyde | 100-52-7 | ug/L | 3.3 U | 3.3 U | 5 U | 5 U | 5 U |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | 0.012 U | 0.012 U | 0.1 U | 0.1 U | 0.1 U |
| Benzo(a)pyrene | 50-32-8 | ug/L | 0.012 U | 0.012 U | 0.1 U | 0.1 U | 0.1 U |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | 0.01 U | 0.01 U | 0.1 U | 0.1 U | 0.1 U |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | 0.016 U | 0.016 U | 0.1 U | 0.1 U | 0.1 U |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | 0.015 U | 0.015 U | 0.1 U | 0.1 U | 0.1 U |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | 0.31 U | 0.31 U | 2 U | 2 U | 2 U |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | 0.31 U | 0.31 U | 2 U | 2 U | 2 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | 0.45 U | 0.45 U | 2 U | 2 U | 2 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | 1.8 J | 0.59 U | 2 U | 2 U | 2 U |
| Butyl benzyl phthalate | 85-68-7 | ug/L | 0.29 U | 0.29 U | 2 U | 2 U | 2 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-2/27/2014-PPG-114-MW-20B<br>02/27/14<br>114-MW20B | G000005480-2/27/2014-PPG-114-MW-20C<br>02/27/14<br>114-MW20C | G000005480-2/28/2014-PPG-135-MW1A<br>02/28/14<br>135-MW1A | G000005480-2/28/2014-PPG-135-MW1B<br>02/28/14<br>135-MW1B | G000005480-2/28/2014-PPG-135-MW2A<br>02/28/14<br>135-MW2A |
|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | 0.69 U | 0.69 U | 2 U | 2 U | 2 U |
| Carbazole | 86-74-8 | ug/L | 5.8 | 0.36 U | 1 U | 1 U | 1 U |
| Chrysene | 218-01-9 | ug/L | 0.012 U | 0.012 U | 0.1 U | 0.1 U | 0.1 U |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | 0.017 U | 0.017 U | 0.1 U | 0.1 U | 0.1 U |
| Dibenzofuran | 132-64-9 | ug/L | 8.2 | 0.27 U | 5 U | 5 U | 5 U |
| Diethyl phthalate | 84-66-2 | ug/L | 0.33 U | 0.33 U | 2 U | 2 U | 2 U |
| Dimethyl phthalate | 131-11-3 | ug/L | 0.28 U | 0.28 U | 2 U | 2 U | 2 U |
| Di-n-butyl phthalate | 84-74-2 | ug/L | 0.56 U | 0.56 U | 2 U | 2 U | 2 U |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | 0.31 U | 0.31 U | 2 U | 2 U | 2 U |
| Fluoranthene | 206-44-0 | ug/L | 1.77 | 0.013 U | 0.1 U | 0.1 U | 0.1 U |
| Fluorene | 86-73-7 | ug/L | 59.5 | 0.157 | 0.1 U | 0.115 | 0.147 |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | 0.51 U | 0.51 U | 1 U | 1 U | 1 U |
| Hexachlorobenzene | 118-74-1 | ug/L | 0.017 U | 0.017 U | 0.02 U | 0.02 U | 0.02 U |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | 7.1 U | 7.1 U | 10 U | 10 U | 10 U |
| Hexachloroethane | 67-72-1 | ug/L | 0.55 U | 0.55 U | 2 U | 2 U | 2 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | 0.014 U | 0.014 U | 0.1 U | 0.1 U | 0.1 U |
| Isophorone | 78-59-1 | ug/L | 0.27 U | 0.27 U | 2 U | 2 U | 2 U |
| Naphthalene | 91-20-3 | ug/L | 3,240 | 1.65 | 0.1 U | 0.154 | 0.858 |
| Nitrobenzene | 98-95-3 | ug/L | 0.42 U | 0.42 U | 2 U | 2 U | 2 U |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | 0.3 U | 0.3 U | 2 U | 2 U | 2 U |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | 0.31 U | 0.31 U | 5 U | 5 U | 5 U |
| p-Chloroaniline | 106-47-8 | ug/L | 0.53 U | 0.53 U | 5 U | 5 U | 5 U |
| Pentachlorophenol | 87-86-5 | ug/L | 0.1 U | 0.1 U | 0.3 U | 0.3 U | 0.3 U |
| Phenanthrene | 85-01-8 | ug/L | 51.8 | 0.375 | 0.1 U | 0.1 U | 0.226 |
| Phenol | 108-95-2 | ug/L | 1.3 U | 1.3 U | 2 U | 2 U | 2 U |
| Pyrene | 129-00-0 | ug/L | 1.93 | 0.015 U | 0.1 U | 0.1 U | 0.1 U |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 328 | 11 U | 200 U | 798 | 41,000 |
| Antimony | 7440-36-0 | ug/L | 471 | 1.8 U | 6 U | 6 U | 30 U |
| Arsenic | 7440-38-2 | ug/L | 120 | 6.4 | 13.5 | 27.3 | 340 |
| Barium | 7440-39-3 | ug/L | 0.36 U | 605 | 510 | 473 | 1,420 |
| Beryllium | 7440-41-7 | ug/L | 0.85 U | 0.17 U | 1 U | 1 U | 5 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 1.2 U | 0.24 U | 3 U | 3 U | 15 U |
| Calcium | 7440-70-2 | ug/L | 16,300 | 143,000 | 146,000 | 35,600 | 186,000 |
| Chromium | 7440-47-3 | ug/L | 203,000 | 0.92 U | 10 U | 10 U | 114 |
| Chromium VI | 18540-29-9 | ug/L | 215,000 | 1.5 U | 10 U | 10 U | 10 U |
| Cobalt | 7440-48-4 | ug/L | 0.48 U | 0.48 U | 50 U | 50 U | 250 U |
| Copper | 7440-50-8 | ug/L | 119 | 1 U | 10 U | 10 U | 159 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 744 | 1,530 | 15,500 | 576 | 179,000 |
| Lead | 7439-92-1 | ug/L | 35.3 | 2.4 U | 3 U | 3 U | 377 |
| Magnesium | 7439-95-4 | ug/L | 5,200 | 30,100 | 18,800 | 92,700 | 100,000 |
| Manganese | 7439-96-5 | ug/L | 50.3 | 424 | 695 | 34.1 | 2,580 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-2/27/2014-PPG-114-MW-20B<br>02/27/14<br>114-MW20B | G000005480-2/27/2014-PPG-114-MW-20C<br>02/27/14<br>114-MW20C | G000005480-2/28/2014-PPG-135-MW1A<br>02/28/14<br>135-MW1A | G000005480-2/28/2014-PPG-135-MW1B<br>02/28/14<br>135-MW1B | G000005480-2/28/2014-PPG-135-MW2A<br>02/28/14<br>135-MW2A |
|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.089 U | 0.089 U | 0.2 U | 0.2 U | 1.2 |
| Nickel | 7440-02-0 | ug/L | 38.3 | 1.6 U | 10 U | 10 U | 64 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 44,700 | 41 U | 15,000 | 79,900 | 50,000 U |
| Selenium | 7782-49-2 | ug/L | 53.6 | 2.4 U | 10 U | 10 U | 50 U |
| Silver | 7440-22-4 | ug/L | 7.3 U | 1.5 U | 10 U | 10 U | 50 U |
| Sodium | 7440-23-5 | ug/L | 440,000 | 208,000 | 73,000 | 1,110,000 | 1,200,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 13 U | 1.3 U | 2 U | 10 U | 10 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 3.6 U | 0.72 U | 50 U | 50 U | 250 U |
| Zinc | 7440-66-6 | ug/L | 22 U | 4.4 U | 20 U | 20 U | 675 |
| **Metals-Filtered** | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 67 U | 173 | 725 | 264 | 10,200 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 0.18 U | 425 | 643 | 33.3 | 1,790 |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-2/27/2014-PPG-114-MW-20B<br>02/27/14<br>114-MW20B | G000005480-2/27/2014-PPG-114-MW-20C<br>02/27/14<br>114-MW20C | G000005480-2/28/2014-PPG-135-MW1A<br>02/28/14<br>135-MW1A | G000005480-2/28/2014-PPG-135-MW1B<br>02/28/14<br>135-MW1B | G000005480-2/28/2014-PPG-135-MW2A<br>02/28/14<br>135-MW2A |
|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | 507,000 | 205,000 | 487,000 | 757,000 | 362,000 |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | 1,800 | 280 | 880 | 4,300 | 7,700 |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | 29 | 4.8 U | 10 U | 10 U | 10 U |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | 17 U | 17 U | 8,400 | 270 | 3,800 |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | 740 | 1,400 | 7,100 | 310 | 175,000 |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | 24 U | 24 U | 100 U | 100 U | 100 U |
| Nitrate-N | 14797-55-8 | ug/L | 26 U | 26 U | 110 U | 110 U | 110 U |
| Nitrite | 14797-65-0 | ug/L | 120 | 2.4 U | 10 U | 10 U | 10 U |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | 10.15 | 7.21 | 6.69 | 7.18 | 6.23 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-2/27/2014-PPG-114-MW-20B<br>02/27/14<br>114-MW20B | G000005480-2/27/2014-PPG-114-MW-20C<br>02/27/14<br>114-MW20C | G000005480-2/28/2014-PPG-135-MW1A<br>02/28/14<br>135-MW1A | G000005480-2/28/2014-PPG-135-MW1B<br>02/28/14<br>135-MW1B | G000005480-2/28/2014-PPG-135-MW2A<br>02/28/14<br>135-MW2A |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 382,000 | 31,400 | 18,900 | 11,900 | 10,900 |
| Sulfide | 18496-25-8 | ug/L | 340 U | 340 U | 2,000 U | 2,000 U | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | G000005480-2/28/2014-PPG-135-MW2B 02/28/14 135-MW2B | G000005480-2/28/2014-PPG-135-MW3A 02/28/14 135-MW3A | G000005480-2/28/2014-PPG-135-MW3B 02/28/14 135-MW3B | G000005480-3/4/2014-PPG-137-MW2A 03/04/14 137-MW2A | G000005480-3/5/2014-PPG-114-MW-19A 03/05/14 114-MW19A |
|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | 1 U [1 U] | 1 U | 1 U | 2.5 U | 2.5 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | 1 U [1 U] | 1 U | 1 U | 2 U | 2 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | 5 U [5 U] | 5 U | 5 U | 7.7 U | 7.7 U |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | 1 U [1 U] | 1 U | 1 U | 2.1 U | 2.1 U |
| 1,1-Dichloroethane | 75-34-3 | ug/L | 1 U [1 U] | 1 U | 1 U | 2.6 U | 2.6 U |
| 1,1-Dichloroethene | 75-35-4 | ug/L | 1 U [1 U] | 1 U | 1 U | 3.4 U | 3.4 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | 5 U [5 U] | 5 U | 5 U | 2.4 U | 2.4 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | 5 U [5 U] | 5 U | 5 U | 2.2 U | 2.2 U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | 10 U [10 U] | 10 U | 10 U | 13 U | 13 U |
| 1,2-Dibromoethane | 106-93-4 | ug/L | 1 U [1 U] | 1 U | 1 U | 1.6 U | 1.6 U |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | 1 U [1 U] | 1 U | 1 U | 2 U | 2 U |
| 1,2-Dichloroethane | 107-06-2 | ug/L | 1 U [1 U] | 1 U | 1 U | 2.2 U | 2.2 U |
| 1,2-Dichloropropane | 78-87-5 | ug/L | 1 U [1 U] | 1 U | 1 U | 2.8 U | 2.8 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | 1 U [1 U] | 1 U | 1 U | 3.1 U | 3.1 U |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | 1 U [1 U] | 1 U | 1 U | 3 U | 3 U |
| 1,4-Dioxane | 123-91-1 | ug/L | 130 U [130 U] | 130 U | 130 U | 730 U | 730 U |
| 2-Butanone (MEK) | 78-93-3 | ug/L | 10 U [10 U] | 10 U | 10 U | 32 U | 32 U |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | 5 U [5 U] | 5 U | 5 U | 15 U | 15 U |
| Acetone | 67-64-1 | ug/L | 10 U [10 U] | 10 U | 10 U | 131 | 33 U |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | 1 U [1 U] | 1 U | 1 U | 2.8 U | 2.8 U |
| Bromochloromethane | 74-97-5 | ug/L | 5 U [5 U] | 5 U | 5 U | 4.2 U | 4.2 U |
| Bromodichloromethane | 75-27-4 | ug/L | 1 U [1 U] | 1 U | 1 U | 2.1 U | 2.1 U |
| Bromoform | 75-25-2 | ug/L | 4 U [4 U] | 4 U | 4 U | 3 U | 3 U |
| Bromomethane | 74-83-9 | ug/L | 2 U [2 U] | 2 U | 2 U | 5.6 U | 5.6 U |
| Carbon Disulfide | 75-15-0 | ug/L | 2 U [2 U] | 2 U | 2 U | 1.8 U | 1.8 U |
| Carbon Tetrachloride | 56-23-5 | ug/L | 1 U [1 U] | 1 U | 1 U | 2.3 U | 2.3 U |
| CFC-11 | 75-69-4 | ug/L | 5 U [5 U] | 5 U | 5 U | 3.3 U | 3.3 U |
| CFC-12 | 75-71-8 | ug/L | 5 U [5 U] | 5 U | 5 U | 6.3 U | 6.3 U |
| Chlorobenzene | 108-90-7 | ug/L | 1 U [1 U] | 1 U | 1 U | 3.5 U | 3.5 U |
| Chlorodibromomethane | 124-48-1 | ug/L | 1 U [1 U] | 1 U | 1 U | 1.9 U | 1.9 U |
| Chloroethane | 75-00-3 | ug/L | 1 U [1 U] | 1 U | 1 U | 3.9 U | 3.9 U |
| Chloroform | 67-66-3 | ug/L | 1 U [1 U] | 1 U | 1 U | 2.5 U | 2.5 U |
| Chloromethane | 74-87-3 | ug/L | 1 U [1 U] | 1 U | 1 U | 3.6 U | 3.6 U |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | 1 U [1 U] | 1 U | 1 U | 2.4 U | 2.4 U |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | 1 U [1 U] | 1 U | 1 U | 1.5 U | 1.5 U |
| Cyclohexane | 110-82-7 | ug/L | 5 U [5 U] | 5 U | 5 U | 1.8 U | 1.8 U |
| Dichloromethane | 75-09-2 | ug/L | 2 U [2 U] | 2 U | 2 U | 8.6 U | 8.6 U |
| Ethylbenzene | 100-41-4 | ug/L | 1 U [1 U] | 1 U | 1 U | 2.1 U | 2.1 U |
| Isopropylbenzene | 98-82-8 | ug/L | 0.57 J [0.59 J] | 2 U | 2 U | 2.2 U | 2.2 U |
| m&p-Xylenes | ARC-mpXyl | ug/L | 1 U [1 U] | 1 U | 1 U | 4 J | 4 U |
| Methyl Acetate | 79-20-9 | ug/L | 5 U [5 U] | 5 U | 5 U | 15 U | 15 U |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | 5 U [5 U] | 5 U | 5 U | 17 U | 17 U |
| Methylcyclohexane | 108-87-2 | ug/L | 5 U [5 U] | 5 U | 5 U | 1.5 U | 1.5 U |
| Methyl-tert-butylether | 1634-04-4 | ug/L | 0.52 J [0.57 J] | 1 U | 3.1 | 2.9 U | 2.9 U |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | 1 U [1 U] | 1 U | 1 U | 2.7 J | 1.9 U |
| Styrene (Monomer) | 100-42-5 | ug/L | 5 U [5 U] | 5 U | 5 U | 3 U | 3 U |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | 1 U [1 U] | 1 U | 1 U | 2.5 U | 2.5 U |
| Toluene | 108-88-3 | ug/L | 1 U [1 U] | 1 U | 1 U | 18.9 | 4.4 U |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | 0.23 J [0.24 J] | 1 U | 1 U | 6.7 J | 1.9 U |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-2/28/2014-PPG-135-MW2B<br><br>02/28/14<br>135-MW2B | G000005480-2/28/2014-PPG-135-MW3A<br><br>02/28/14<br>135-MW3A | G000005480-2/28/2014-PPG-135-MW3B<br><br>02/28/14<br>135-MW3B | G000005480-3/4/2014-PPG-137-MW2A<br><br>03/04/14<br>137-MW2A | G000005480-3/5/2014-PPG-114-MW-19A<br><br>03/05/14<br>114-MW19A |
|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | 1 U [1 U] | 1 U | 1 U | 3.8 U | 3.8 U |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | 1 U [1 U] | 1 U | 1 U | 2.1 U | 2.1 U |
| Trichloroethene | 79-01-6 | ug/L | 1 U [1 U] | 1 U | 1 U | 5 U | 5 U |
| Vinyl chloride | 75-01-4 | ug/L | 1 U [1 U] | 1 U | 1 U | 4.1 U | 4.1 U |
| **Semivolatile Organics** | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | 1 U [1 U] | 1 U | 1 U | 0.5 J | 3 U |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | 2 U [2 U] | 2 U | 2 U | 0.31 U | 3.1 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | 5 U [5 U] | 5 U | 5 U | 0.94 U | 9.4 U |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | 5 U [5 U] | 5 U | 5 U | 1.6 U | 16 U |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | 5 U [5 U] | 5 U | 5 U | 1.3 U | 13 U |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | 2 U [2 U] | 2 U | 2 U | 1.2 U | 12 U |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | 5 U [5 U] | 5 U | 5 U | 1.5 U | 15 U |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | 20 U [20 U] | 20 U | 20 U | 17 U | 170 U |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | 1 U [1 U] | 1 U | 1 U | 0.43 U | 4.3 U |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | 1 U [1 U] | 1 U | 1 U | 0.46 U | 4.6 U |
| 2-Chloronaphthalene | 91-58-7 | ug/L | 2 U [2 U] | 2 U | 2 U | 0.3 U | 3 U |
| 2-Chlorophenol | 95-57-8 | ug/L | 5 U [5 U] | 5 U | 5 U | 0.97 U | 9.7 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | 20 U [20 U] | 20 U | 20 U | 0.99 U | 9.9 U |
| 2-Methylnaphthalene | 91-57-6 | ug/L | 1 U [1 U] | 1 U | 1 U | 5 | 3.8 U |
| 2-Methylphenol | 95-48-7 | ug/L | 2 U [2 U] | 2 U | 2 U | 1 U | 10 U |
| 2-Nitroaniline | 88-74-4 | ug/L | 5 U [5 U] | 5 U | 5 U | 1.1 U | 11 U |
| 2-Nitrophenol | 88-75-5 | ug/L | 5 U [5 U] | 5 U | 5 U | 1.5 U | 15 U |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | 2 U [2 U] | 2 U | 2 U | 0.36 U | 3.6 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | 2 U [2 U] | 2 U | 2 U | 5.2 | 9.3 U |
| 3-Nitroaniline | 99-09-2 | ug/L | 5 U [5 U] | 5 U | 5 U | 1.3 U | 13 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | 2 U [2 U] | 2 U | 2 U | 0.36 U | 3.6 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | 5 U [5 U] | 5 U | 5 U | 1.8 U | 18 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | 2 U [2 U] | 2 U | 2 U | 0.31 U | 3.1 U |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | 5 U [5 U] | 5 U | 5 U | 1.7 U | 17 U |
| 4-Nitrophenol | 100-02-7 | ug/L | 10 U [10 U] | 10 U | 10 U | 5.2 U | 52 U |
| Acenaphthene | 83-32-9 | ug/L | 35.5 [40.2] | 0.1 U | 0.1 U | 0.814 | 2.6 U |
| Acenaphthylene | 208-96-8 | ug/L | 0.1 U [0.1 U] | 0.1 U | 0.1 U | 0.335 | 2.3 U |
| Acetophenone | 98-86-2 | ug/L | 2 U [2 U] | 2 U | 2 U | 1.1 J | 2.9 U |
| Anthracene | 120-12-7 | ug/L | 0.276 [0.231] | 0.1 U | 0.1 U | 0.767 | 2.9 U |
| Atrazine | 1912-24-9 | ug/L | 2 U [2 U] | 2 U | 2 U | 0.49 U | 4.9 U |
| Benzaldehyde | 100-52-7 | ug/L | 5 U [5 U] | 5 U | 5 U | 3.3 U | 33 U |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | 0.275 [0.1 U] | 0.1 U | 0.1 U | 0.502 | 2.3 U |
| Benzo(a)pyrene | 50-32-8 | ug/L | 0.135 [0.1 U] | 0.1 U | 0.1 U | 0.133 | 2.3 U |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | 0.156 [0.1 U] | 0.1 U | 0.1 U | 0.151 | 4.6 U |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | 0.1 U [0.1 U] | 0.1 U | 0.1 U | 0.016 U | 3.2 U |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | 0.1 U [0.1 U] | 0.1 U | 0.1 U | 0.015 U | 5.1 U |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | 2 U [2 U] | 2 U | 2 U | 0.31 U | 3.1 U |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | 2 U [2 U] | 2 U | 2 U | 0.31 U | 3.1 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | 2 U [2 U] | 2 U | 2 U | 0.45 U | 4.5 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | 2 U [2 U] | 2 U | 2 U | 3.5 | 5.9 U |
| Butyl benzyl phthalate | 85-68-7 | ug/L | 2 U [2 U] | 2 U | 2 U | 0.29 U | 2.9 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-2/28/2014-PPG-135-MW2B<br><br>02/28/14<br>135-MW2B | G000005480-2/28/2014-PPG-135-MW3A<br><br>02/28/14<br>135-MW3A | G000005480-2/28/2014-PPG-135-MW3B<br><br>02/28/14<br>135-MW3B | G000005480-3/4/2014-PPG-137-MW2A<br><br>03/04/14<br>137-MW2A | G000005480-3/5/2014-PPG-114-MW-19A<br><br>03/05/14<br>114-MW19A |
|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | 2 U [2 U] | 2 U | 2 U | 0.69 U | 6.9 U |
| Carbazole | 86-74-8 | ug/L | 3 [3.1] | 1 U | 1 U | 0.36 U | 3.6 U |
| Chrysene | 218-01-9 | ug/L | 0.139 [0.1 U] | 0.1 U | 0.1 U | 0.333 | 2.9 U |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | 0.1 U [0.1 U] | 0.1 U | 0.1 U | 0.017 U | 3.8 U |
| Dibenzofuran | 132-64-9 | ug/L | 16.5 [19] | 5 U | 5 U | 0.27 U | 2.7 U |
| Diethyl phthalate | 84-66-2 | ug/L | 2 U [2 U] | 2 U | 2 U | 0.33 U | 3.3 U |
| Dimethyl phthalate | 131-11-3 | ug/L | 2 U [2 U] | 2 U | 2 U | 0.28 U | 2.8 U |
| Di-n-butyl phthalate | 84-74-2 | ug/L | 2 U [2 U] | 2 U | 2 U | 0.56 U | 5.6 U |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | 2 U [2 U] | 2 U | 2 U | 0.31 U | 3.1 U |
| Fluoranthene | 206-44-0 | ug/L | 0.388 [0.1 U] | 0.1 U | 0.1 U | 0.781 | 3.2 U |
| Fluorene | 86-73-7 | ug/L | 11.4 [12.8] | 0.1 U | 0.1 U | 0.017 U | 2.8 U |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | 1 U [1 U] | 1 U | 1 U | 0.51 U | 5.1 U |
| Hexachlorobenzene | 118-74-1 | ug/L | 0.02 U [0.02 U] | 0.02 U | 0.02 U | 0.017 U | 3.4 U |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | 10 U [10 U] | 10 U | 10 U | 7.1 U | 71 U |
| Hexachloroethane | 67-72-1 | ug/L | 2 U [2 U] | 2 U | 2 U | 0.55 U | 5.5 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | 0.1 U [0.1 U] | 0.1 U | 0.1 U | 0.014 U | 3.7 U |
| Isophorone | 78-59-1 | ug/L | 2 U [2 U] | 2 U | 2 U | 0.27 U | 2.7 U |
| Naphthalene | 91-20-3 | ug/L | 0.169 [0.214] | 0.1 U | 0.205 | 20.1 | 2.6 U |
| Nitrobenzene | 98-95-3 | ug/L | 2 U [2 U] | 2 U | 2 U | 0.42 U | 4.2 U |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | 2 U [2 U] | 2 U | 2 U | 0.3 U | 3 U |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | 5 U [5 U] | 5 U | 5 U | 0.31 U | 3.1 U |
| p-Chloroaniline | 106-47-8 | ug/L | 5 U [5 U] | 5 U | 5 U | 0.53 U | 5.3 U |
| Pentachlorophenol | 87-86-5 | ug/L | 0.3 U [0.3 U] | 0.3 U | 0.3 U | 0.1 U | 14 U |
| Phenanthrene | 85-01-8 | ug/L | 2.29 [2.07] | 0.1 U | 0.1 U | 3.11 | 2.9 U |
| Phenol | 108-95-2 | ug/L | 2 U [2 U] | 2 U | 2 U | 5.6 | 13 U |
| Pyrene | 129-00-0 | ug/L | 0.358 [0.1 U] | 0.1 U | 0.1 U | 1.16 | 2.7 U |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 200 U [200 U] | 224 | 201 | 3,220 | 4,110 |
| Antimony | 7440-36-0 | ug/L | 6 U [6 U] | 6 U | 6 U | 23.7 | 1.8 U |
| Arsenic | 7440-38-2 | ug/L | 25.8 [27.8] | 5.3 | 38.1 | 16.6 | 66 |
| Barium | 7440-39-3 | ug/L | 438 [449] | 200 U | 257 | 0.36 U | 419 |
| Beryllium | 7440-41-7 | ug/L | 1 U [1 U] | 1 U | 1 U | 0.17 U | 2.4 |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 3 U [3 U] | 3 U | 3 U | 0.24 U | 0.24 U |
| Calcium | 7440-70-2 | ug/L | 46,600 [46,800] | 93,300 | 47,900 | 232,000 | 73,500 |
| Chromium | 7440-47-3 | ug/L | 10 U [10 U] | 10 U | 10 U | 29,100 | 2,850 |
| Chromium VI | 18540-29-9 | ug/L | 10 U [10 U] | 10 U | 10 U | 30,600 | 32 |
| Cobalt | 7440-48-4 | ug/L | 50 U [50 U] | 50 U | 50 U | 0.48 U | 2.4 U |
| Copper | 7440-50-8 | ug/L | 10 U [10 U] | 10 U | 10 U | 28.4 | 34.4 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 591 [527] | 639 | 2,640 | 506 | 21,400 |
| Lead | 7439-92-1 | ug/L | 3 U [3 U] | 3 U | 3 U | 2.4 U | 107 |
| Magnesium | 7439-95-4 | ug/L | 123,000 [123,000] | 8,760 | 116,000 | 23 U | 42,000 |
| Manganese | 7439-96-5 | ug/L | 74.7 [73.9] | 595 | 144 | 0.18 U | 350 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-2/28/2014-PPG-135-MW2B<br><br>02/28/14<br>135-MW2B | G000005480-2/28/2014-PPG-135-MW3A<br><br>02/28/14<br>135-MW3A | G000005480-2/28/2014-PPG-135-MW3B<br><br>02/28/14<br>135-MW3B | G000005480-3/4/2014-PPG-137-MW2A<br><br>03/04/14<br>137-MW2A | G000005480-3/5/2014-PPG-114-MW-19A<br><br>03/05/14<br>114-MW19A |
|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.2 U [0.2 U] | 0.2 U | 0.2 U | 0.089 U | 1.2 |
| Nickel | 7440-02-0 | ug/L | 10 U [10 U] | 10 U | 10 U | 204 | 92 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 75,900 [77,900] | 10,900 | 84,800 | 26,600 | 92,900 |
| Selenium | 7782-49-2 | ug/L | 10 U [10 U] | 10 U | 10 U | 2.4 U | 2.4 U |
| Silver | 7440-22-4 | ug/L | 10 U [10 U] | 10 U | 10 U | 1.5 U | 1.5 U |
| Sodium | 7440-23-5 | ug/L | 975,000 [953,000] | 95,800 | 962,000 | 785,000 | 2,540,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 10 U [10 U] | 2 U | 10 U | 1.3 U | 13 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 50 U [50 U] | 50 U | 50 U | 0.72 U | 398 |
| Zinc | 7440-66-6 | ug/L | 20 U [20 U] | 28.8 | 20 U | 4.4 U | 190 |
| **Metals-Filtered** | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 103 [157] | 100 U | 100 U | 13 U | 2,920 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 73.4 [67.6] | 691 | 140 | 0.18 U | 103 |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-2/28/2014-PPG-135-MW2B<br><br>02/28/14<br>135-MW2B | G000005480-2/28/2014-PPG-135-MW3A<br><br>02/28/14<br>135-MW3A | G000005480-2/28/2014-PPG-135-MW3B<br><br>02/28/14<br>135-MW3B | G000005480-3/4/2014-PPG-137-MW2A<br><br>03/04/14<br>137-MW2A | G000005480-3/5/2014-PPG-114-MW-19A<br><br>03/05/14<br>114-MW19A |
|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | 673,000 [672,000] | 279,000 | 618,000 | 1,810,000 | 3,740,000 |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | 2,400 [3,000] | 1,200 | 5,600 | 19,200 | 41,800 |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | 10 U [10 U] | 10 U | 10 U | 4.8 U | 340 |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | 200 U [200 U] | 320 | 260 | 330 | 1,900 |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | 520 [400] | 320 | 2,400 | 30 U | 19,500 |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | 100 U [100 U] | 670 | 100 U | 510 | 230 |
| Nitrate-N | 14797-55-8 | ug/L | 110 U [110 U] | 670 | 110 U | 380 | 230 |
| Nitrite | 14797-65-0 | ug/L | 10 U [10 U] | 10 U | 10 U | 130 | 2.4 U |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | 6.84 [6.82] | 6.61 | 6.92 | 12.03 | 9.15 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-2/28/2014-PPG-135-MW2B<br><br>02/28/14<br>135-MW2B | G000005480-2/28/2014-PPG-135-MW3A<br><br>02/28/14<br>135-MW3A | G000005480-2/28/2014-PPG-135-MW3B<br><br>02/28/14<br>135-MW3B | G000005480-3/4/2014-PPG-137-MW2A<br><br>03/04/14<br>137-MW2A | G000005480-3/5/2014-PPG-114-MW-19A<br><br>03/05/14<br>114-MW19A |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 28,200 [27,700] | 145,000 | 45,600 | 30,400 | 3,900 U |
| Sulfide | 18496-25-8 | ug/L | 2,000 U [2,000 U] | 2,000 U | 2,000 U | 5,300 | 5,300 |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-3/5/2014-PPG-114-MW-19B<br><br>03/05/14<br>114-MW19B | G000005480-3/5/2014-PPG-114-MW-19C<br><br>03/05/14<br>114-MW19C | G000005480-3/6/2014-MW-7D<br><br>03/06/14<br>MW7D | G000005480-3/6/2014-MW-7S<br><br>03/06/14<br>MW7S | G000005480-3/6/2014-PPG-137-MW-4A<br><br>03/06/14<br>137-MW4A |
|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 1.2 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.98 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | 0.77 U | 0.77 U | 0.77 U | 0.77 U | 3.8 U |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 1.1 U |
| 1,1-Dichloroethane | 75-34-3 | ug/L | 0.26 U | 0.26 U | 0.46 J | 0.26 U | 1.3 U |
| 1,1-Dichloroethene | 75-35-4 | ug/L | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 1.7 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 1.2 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 1.1 U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 6.3 U |
| 1,2-Dibromoethane | 106-93-4 | ug/L | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.8 U |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 1 U |
| 1,2-Dichloroethane | 107-06-2 | ug/L | 0.22 U | 0.22 U | 5 | 0.22 U | 1.1 U |
| 1,2-Dichloropropane | 78-87-5 | ug/L | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 1.4 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | 0.31 U | 0.31 U | 0.31 U | 0.31 U | 1.6 U |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 1.5 U |
| 1,4-Dioxane | 123-91-1 | ug/L | 73 U | 73 U | 73 U | 73 U | 360 U |
| 2-Butanone (MEK) | 78-93-3 | ug/L | 3.2 U | 3.2 U | 3.2 U | 3.2 U | 16 U |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | 1.5 U | 1.5 U | 1.5 U | 1.5 U | 7.4 U |
| Acetone | 67-64-1 | ug/L | 3.3 U | 3.3 U | 3.3 U | 3.3 U | 46.1 J |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | 0.28 U | 0.28 U | 0.69 J | 0.28 U | 1.4 U |
| Bromochloromethane | 74-97-5 | ug/L | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 2.1 U |
| Bromodichloromethane | 75-27-4 | ug/L | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 1.1 U |
| Bromoform | 75-25-2 | ug/L | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 1.5 U |
| Bromomethane | 74-83-9 | ug/L | 0.56 U | 0.56 U | 0.56 U | 0.56 U | 2.8 U |
| Carbon Disulfide | 75-15-0 | ug/L | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 3.3 J |
| Carbon Tetrachloride | 56-23-5 | ug/L | 0.23 U | 0.23 U | 0.23 U | 0.23 U | 1.1 U |
| CFC-11 | 75-69-4 | ug/L | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 1.7 U |
| CFC-12 | 75-71-8 | ug/L | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 3.2 U |
| Chlorobenzene | 108-90-7 | ug/L | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 1.7 U |
| Chlorodibromomethane | 124-48-1 | ug/L | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.96 U |
| Chloroethane | 75-00-3 | ug/L | 0.39 U | 0.39 U | 0.39 U | 0.39 U | 1.9 U |
| Chloroform | 67-66-3 | ug/L | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 1.2 U |
| Chloromethane | 74-87-3 | ug/L | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 1.8 U |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | 0.24 U | 0.24 U | 2.1 | 0.24 U | 1.2 U |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.76 U |
| Cyclohexane | 110-82-7 | ug/L | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.9 U |
| Dichloromethane | 75-09-2 | ug/L | 0.86 U | 0.86 U | 0.86 U | 0.86 U | 4.3 U |
| Ethylbenzene | 100-41-4 | ug/L | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 1 U |
| Isopropylbenzene | 98-82-8 | ug/L | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 1.1 U |
| m&p-Xylenes | ARC-mpXyl | ug/L | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 2 U |
| Methyl Acetate | 79-20-9 | ug/L | 1.5 U | 1.5 U | 1.5 U | 1.5 U | 7.5 U |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | 1.7 U | 1.7 U | 1.7 U | 1.7 U | 8.5 U |
| Methylcyclohexane | 108-87-2 | ug/L | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.77 U |
| Methyl-tert-butylether | 1634-04-4 | ug/L | 0.29 U | 0.29 U | 3.5 | 0.29 U | 1.4 U |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.97 U |
| Styrene (Monomer) | 100-42-5 | ug/L | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 1.5 U |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 1.3 U |
| Toluene | 108-88-3 | ug/L | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 2.2 U |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.97 U |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-3/5/2014-PPG-114-MW-19B<br><br>03/05/14<br>114-MW19B | G000005480-3/5/2014-PPG-114-MW-19C<br><br>03/05/14<br>114-MW19C | G000005480-3/6/2014-MW-7D<br><br>03/06/14<br>MW7D | G000005480-3/6/2014-MW-7S<br><br>03/06/14<br>MW7S | G000005480-3/6/2014-PPG-137-MW-4A<br><br>03/06/14<br>137-MW4A |
|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | 0.38 U | 0.38 U | 1.8 | 0.38 U | 1.9 U |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 1 U |
| Trichloroethene | 79-01-6 | ug/L | 0.5 U | 0.5 U | 1.2 | 0.5 U | 2.5 U |
| Vinyl chloride | 75-01-4 | ug/L | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 2.1 U |
| **Semivolatile Organics** | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | 0.32 U | 0.32 U | 0.33 U | 0.33 U | 0.32 U |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | 0.32 U | 0.32 U | 0.33 U | 0.34 U | 0.32 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | 0.98 U | 1 U | 1 U | 1 U | 1 U |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | 1.6 U | 1.7 U | 1.7 U | 1.7 U | 1.7 U |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | 1.3 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | 1.2 U | 1.2 U | 1.2 U | 1.3 U | 1.2 U |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | 1.6 U | 1.6 U | 1.6 U | 1.7 U | 1.6 U |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | 17 U | 18 U | 18 U | 18 U | 18 U |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | 0.44 U | 0.45 U | 0.46 U | 0.47 U | 0.45 U |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | 0.48 U | 0.49 U | 0.5 U | 0.51 U | 0.49 U |
| 2-Chloronaphthalene | 91-58-7 | ug/L | 0.31 U | 0.32 U | 0.32 U | 0.33 U | 0.32 U |
| 2-Chlorophenol | 95-57-8 | ug/L | 1 U | 1 U | 1 U | 1.1 U | 1 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | 1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| 2-Methylnaphthalene | 91-57-6 | ug/L | 0.4 U | 0.41 U | 0.41 U | 0.42 U | 0.41 U |
| 2-Methylphenol | 95-48-7 | ug/L | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| 2-Nitroaniline | 88-74-4 | ug/L | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U |
| 2-Nitrophenol | 88-75-5 | ug/L | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | 0.38 U | 0.38 U | 0.39 U | 0.4 U | 0.38 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | 0.96 U | 0.98 U | 0.99 U | 1 U | 21.8 |
| 3-Nitroaniline | 99-09-2 | ug/L | 1.3 U | 1.3 U | 1.4 U | 1.4 U | 1.3 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | 0.37 U | 0.38 U | 0.38 U | 0.39 U | 0.38 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | 1.9 U | 1.9 U | 2 U | 2 U | 1.9 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | 0.33 U | 0.33 U | 0.34 U | 0.34 U | 0.33 U |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | 1.7 U | 1.8 U | 1.8 U | 1.8 U | 1.8 U |
| 4-Nitrophenol | 100-02-7 | ug/L | 5.4 U | 5.5 U | 5.6 U | 5.7 U | 5.5 U |
| Acenaphthene | 83-32-9 | ug/L | 0.021 U | 0.022 U | 0.022 U | 0.022 U | 0.653 |
| Acenaphthylene | 208-96-8 | ug/L | 0.025 U | 0.025 U | 0.025 U | 0.026 U | 0.025 U |
| Acetophenone | 98-86-2 | ug/L | 0.3 U | 0.3 U | 0.31 U | 0.31 U | 0.3 U |
| Anthracene | 120-12-7 | ug/L | 0.021 U | 0.022 U | 0.022 U | 0.022 U | 0.194 |
| Atrazine | 1912-24-9 | ug/L | 0.51 U | 0.52 U | 0.52 U | 0.54 U | 0.52 U |
| Benzaldehyde | 100-52-7 | ug/L | 3.4 U | 3.5 U | 3.5 U | 3.6 U | 3.5 U |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | 0.196 | 0.276 | 0.012 U | 0.013 U | 0.012 U |
| Benzo(a)pyrene | 50-32-8 | ug/L | 0.013 U | 0.124 | 0.013 U | 0.014 U | 0.013 U |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | 0.011 U | 0.141 | 0.011 U | 0.011 U | 0.011 U |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | 0.016 U | 0.117 | 0.017 U | 0.017 U | 0.017 U |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | 0.015 U | 0.016 U | 0.016 U | 0.016 U | 0.016 U |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | 0.32 U | 0.33 U | 0.33 U | 0.34 U | 0.33 U |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | 0.32 U | 0.33 U | 0.33 U | 0.34 U | 0.33 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | 0.47 U | 0.48 U | 0.49 U | 0.5 U | 0.48 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | 0.61 U | 0.62 U | 0.63 U | 0.64 U | 0.62 U |
| Butyl benzyl phthalate | 85-68-7 | ug/L | 0.3 U | 0.31 U | 0.31 U | 0.32 U | 0.31 U |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-3/5/2014-PPG-114-MW-19B<br><br>03/05/14<br>114-MW19B | G000005480-3/5/2014-PPG-114-MW-19C<br><br>03/05/14<br>114-MW19C | G000005480-3/6/2014-MW-7D<br><br>03/06/14<br>MW7D | G000005480-3/6/2014-MW-7S<br><br>03/06/14<br>MW7S | G000005480-3/6/2014-PPG-137-MW-4A<br><br>03/06/14<br>137-MW4A |
|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | 0.72 U | 0.73 U | 0.74 U | 0.76 U | 0.73 U |
| Carbazole | 86-74-8 | ug/L | 0.38 U | 0.38 U | 0.39 U | 0.4 U | 0.38 U |
| Chrysene | 218-01-9 | ug/L | 0.012 U | 0.14 | 0.013 U | 0.013 U | 0.013 U |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | 0.017 U | 0.018 U | 0.018 U | 0.018 U | 0.018 U |
| Dibenzofuran | 132-64-9 | ug/L | 0.28 U | 0.28 U | 0.28 U | 0.29 U | 0.28 U |
| Diethyl phthalate | 84-66-2 | ug/L | 0.34 U | 0.35 U | 0.35 U | 0.36 U | 0.35 U |
| Dimethyl phthalate | 131-11-3 | ug/L | 0.29 U | 0.3 U | 0.3 U | 0.31 U | 0.3 U |
| Di-n-butyl phthalate | 84-74-2 | ug/L | 0.58 U | 0.59 U | 0.6 U | 0.61 U | 0.59 U |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | 0.32 U | 0.33 U | 0.33 U | 0.34 U | 0.33 U |
| Fluoranthene | 206-44-0 | ug/L | 0.014 U | 0.014 U | 0.014 U | 0.015 U | 0.385 |
| Fluorene | 86-73-7 | ug/L | 0.018 U | 0.018 U | 0.018 U | 0.019 U | 0.43 |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | 0.53 U | 0.54 U | 0.55 U | 0.56 U | 0.54 U |
| Hexachlorobenzene | 118-74-1 | ug/L | 0.017 U | 0.018 U | 0.018 U | 0.018 U | 0.018 U |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | 7.4 U | 7.6 U | 7.6 U | 7.8 U | 7.6 U |
| Hexachloroethane | 67-72-1 | ug/L | 0.57 U | 0.59 U | 0.59 U | 0.6 U | 0.59 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | 0.015 U | 0.015 U | 0.015 U | 0.016 U | 0.015 U |
| Isophorone | 78-59-1 | ug/L | 0.28 U | 0.29 U | 0.29 U | 0.3 U | 0.29 U |
| Naphthalene | 91-20-3 | ug/L | 0.037 U | 0.038 U | 0.038 U | 0.039 U | 2.43 |
| Nitrobenzene | 98-95-3 | ug/L | 0.44 U | 0.45 U | 0.45 U | 0.46 U | 0.45 U |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | 0.31 U | 0.32 U | 0.32 U | 0.33 U | 0.32 U |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | 0.32 U | 0.32 U | 0.33 U | 0.34 U | 0.32 U |
| p-Chloroaniline | 106-47-8 | ug/L | 0.55 U | 0.56 U | 0.57 U | 0.58 U | 0.56 U |
| Pentachlorophenol | 87-86-5 | ug/L | 0.1 U | 0.11 U | 0.11 U | 0.11 U | 0.11 U |
| Phenanthrene | 85-01-8 | ug/L | 0.022 U | 0.022 U | 0.022 U | 0.023 U | 1.36 |
| Phenol | 108-95-2 | ug/L | 1.3 U | 1.4 U | 1.4 U | 1.4 U | 28.9 |
| Pyrene | 129-00-0 | ug/L | 0.016 U | 0.126 | 0.016 U | 0.016 U | 0.405 |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 233 | 11 U | 81,300 | 1,040 | 11 U |
| Antimony | 7440-36-0 | ug/L | 9.2 U | 1.8 U | 1.8 U | 1.8 U | 20.2 |
| Arsenic | 7440-38-2 | ug/L | 7.4 U | 14.5 | 158 | 26.2 | 253 |
| Barium | 7440-39-3 | ug/L | 0.36 U | 0.36 U | 784 | 0.36 U | 0.36 U |
| Beryllium | 7440-41-7 | ug/L | 0.17 U | 0.17 U | 5.1 | 0.17 U | 0.17 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 1.2 U | 0.24 U | 4 | 19.5 | 0.24 U |
| Calcium | 7440-70-2 | ug/L | 162,000 | 198,000 | 308,000 | 110,000 | 55 U |
| Chromium | 7440-47-3 | ug/L | 0.92 U | 0.92 U | 158 | 0.92 U | 828 |
| Chromium VI | 18540-29-9 | ug/L | 10 | 1.5 U | 1.5 U | 1.5 U | 1.5 U |
| Cobalt | 7440-48-4 | ug/L | 2.4 U | 0.48 U | 71 | 0.48 U | 0.48 U |
| Copper | 7440-50-8 | ug/L | 1 U | 1 U | 160 | 34 | 82.5 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 8,460 | 352 | 156,000 | 10,100 | 446 |
| Lead | 7439-92-1 | ug/L | 12 U | 3.3 | 81.9 | 80.6 | 181 |
| Magnesium | 7439-95-4 | ug/L | 449,000 | 30,500 | 94,500 | 12,200 | 23 U |
| Manganese | 7439-96-5 | ug/L | 365 | 248 | 9,930 | 986 | 1.8 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-3/5/2014-PPG-114-MW-19B<br><br>03/05/14<br>114-MW19B | G000005480-3/5/2014-PPG-114-MW-19C<br><br>03/05/14<br>114-MW19C | G000005480-3/6/2014-MW-7D<br><br>03/06/14<br>MW7D | G000005480-3/6/2014-MW-7S<br><br>03/06/14<br>MW7S | G000005480-3/6/2014-PPG-137-MW-4A<br><br>03/06/14<br>137-MW4A |
|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.089 U | 0.089 U | 0.18 U | 0.089 U | 0.75 |
| Nickel | 7440-02-0 | ug/L | 7.8 U | 1.6 U | 177 | 1.6 U | 44.6 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 111,000 | 11,600 | 26,000 | 41 U | 28,000 |
| Selenium | 7782-49-2 | ug/L | 12 U | 2.4 U | 2.4 U | 2.4 U | 11.5 |
| Silver | 7440-22-4 | ug/L | 1.5 U | 1.5 U | 12.3 | 1.5 U | 1.5 U |
| Sodium | 7440-23-5 | ug/L | 3,440,000 | 365,000 | 41,600 | 66,100 | 862,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 6.6 U | 1.3 U | 4 U | 4 U | 13 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 0.72 U | 0.72 U | 189 | 0.72 U | 305 |
| Zinc | 7440-66-6 | ug/L | 22 U | 51.7 | 381 | 1,660 | 290 |
| **Metals-Filtered** | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 150 | 13 U | 1,290 | 236 | 456 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 353 | 253 | 5,950 | 804 | 1.8 U |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-3/5/2014-PPG-114-MW-19B<br><br>03/05/14<br>114-MW19B | G000005480-3/5/2014-PPG-114-MW-19C<br><br>03/05/14<br>114-MW19C | G000005480-3/6/2014-MW-7D<br><br>03/06/14<br>MW7D | G000005480-3/6/2014-MW-7S<br><br>03/06/14<br>MW7S | G000005480-3/6/2014-PPG-137-MW-4A<br><br>03/06/14<br>137-MW4A |
|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | 589,000 | 61,500 | 299,000 | 197,000 | 2,000,000 |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | 3,900 | 250 | 30 U | 1,500 | 11,400 |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | 4.8 U | 4.8 U | 11 | 4.8 U | 22 |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | 17 U | 17 U | 360 | 17 U | 350 |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | 8,300 | 350 | 156,000 | 9,900 | 30 U |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | 24 U | 24 U | 24 U | 24 U | 24 U |
| Nitrate-N | 14797-55-8 | ug/L | 26 U | 26 U | 26 U | 26 U | 26 U |
| Nitrite | 14797-65-0 | ug/L | 2.4 U | 2.4 U | 2.4 U | 2.4 U | 2.4 U |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | 7 | 7.84 | 6.62 | 6.43 | 10.89 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-3/5/2014-PPG-114-MW-19B<br><br>03/05/14<br>114-MW19B | G000005480-3/5/2014-PPG-114-MW-19C<br><br>03/05/14<br>114-MW19C | G000005480-3/6/2014-MW-7D<br><br>03/06/14<br>MW7D | G000005480-3/6/2014-MW-7S<br><br>03/06/14<br>MW7S | G000005480-3/6/2014-PPG-137-MW-4A<br><br>03/06/14<br>137-MW4A |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 849,000 | 97,100 | 85,400 | 116,000 | 77 U |
| Sulfide | 18496-25-8 | ug/L | 340 U | 340 U | 340 U | 340 U | 14,300 |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-3/6/2014-PPG-137-MW-4B<br>03/06/14<br>137-MW4B | G000005480-3/7/2014-MW-8D<br>03/07/14<br>MW8D | G000005480-3/7/2014-MW-8F<br>03/07/14<br>MW8F | G000005480-3/7/2014-MW-8S<br>03/07/14<br>MW8S | G000005480-3/31/2014-MW-15D<br>03/31/14<br>MW15D | G000005480-3/31/2014-MW-15S<br>03/31/14<br>MW15S |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | 0.25 U | 6.2 U [6.2 U] | 0.25 U | 0.25 U | 0.25 U | 0.25 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | 0.2 U | 4.9 U [4.9 U] | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | 0.77 U | 19 U [19 U] | 0.77 U | 0.77 U | 0.77 U | 0.77 U |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | 0.21 U | 5.3 U [5.3 U] | 0.21 U | 0.21 U | 0.21 U | 0.21 U |
| 1,1-Dichloroethane | 75-34-3 | ug/L | 0.26 U | 6.5 U [6.5 U] | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| 1,1-Dichloroethene | 75-35-4 | ug/L | 0.34 U | 8.6 U [8.6 U] | 0.34 U | 0.34 U | 0.34 U | 0.34 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | 0.24 U | 6.1 U [6.1 U] | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | 0.22 U | 5.4 U [5.4 U] | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | 1.3 U | 32 U [32 U] | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| 1,2-Dibromoethane | 106-93-4 | ug/L | 0.16 U | 4 U [4 U] | 0.16 U | 0.16 U | 0.16 U | 0.16 U |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | 0.2 U | 5.1 U [5.1 U] | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 1,2-Dichloroethane | 107-06-2 | ug/L | 0.22 U | 5.5 U [5.5 U] | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| 1,2-Dichloropropane | 78-87-5 | ug/L | 0.28 U | 7 U [7 U] | 0.28 U | 0.28 U | 0.28 U | 0.28 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | 0.31 U | 7.9 U [7.9 U] | 0.31 U | 0.31 U | 0.31 U | 0.31 U |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | 0.3 U | 7.5 U [7.5 U] | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| 1,4-Dioxane | 123-91-1 | ug/L | 73 U | 1,800 U [1,800 U] | 73 U | 73 U | 73 U | 73 U |
| 2-Butanone (MEK) | 78-93-3 | ug/L | 3.2 U | 80 U [80 U] | 3.2 U | 3.2 U | 3.2 U | 3.2 U |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | 1.5 U | 37 U [37 U] | 1.5 U | 1.5 U | 1.5 U | 1.5 U |
| Acetone | 67-64-1 | ug/L | 3.3 U | 84 U [84 U] | 3.3 U | 3.3 U | 3.3 U | 3.3 U |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | 0.28 U | 3,360 [2,980] | 1.3 | 0.28 U | 0.28 U | 0.28 U |
| Bromochloromethane | 74-97-5 | ug/L | 0.42 U | 10 U [10 U] | 0.42 U | 0.42 U | 0.42 U | 0.42 U |
| Bromodichloromethane | 75-27-4 | ug/L | 0.21 U | 5.3 U [5.3 U] | 0.21 U | 0.21 U | 0.21 U | 0.21 U |
| Bromoform | 75-25-2 | ug/L | 0.3 U | 7.5 U [7.5 U] | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| Bromomethane | 74-83-9 | ug/L | 0.56 U | 14 U [14 U] | 0.56 U | 0.56 U | 0.56 U | 0.56 U |
| Carbon Disulfide | 75-15-0 | ug/L | 0.18 U | 4.6 U [4.6 U] | 0.18 U | 0.18 U | 0.18 U | 0.18 U |
| Carbon Tetrachloride | 56-23-5 | ug/L | 0.23 U | 5.7 U [5.7 U] | 0.23 U | 0.23 U | 0.23 U | 0.23 U |
| CFC-11 | 75-69-4 | ug/L | 0.33 U | 8.4 U [8.4 U] | 0.33 U | 0.33 U | 0.33 U | 0.33 U |
| CFC-12 | 75-71-8 | ug/L | 0.63 U | 16 U [16 U] | 0.63 U | 0.63 U | 0.63 U | 0.63 U |
| Chlorobenzene | 108-90-7 | ug/L | 0.35 U | 8.7 U [8.7 U] | 0.35 U | 0.35 U | 0.35 U | 0.35 U |
| Chlorodibromomethane | 124-48-1 | ug/L | 0.19 U | 4.8 U [4.8 U] | 0.19 U | 0.19 U | 0.19 U | 0.19 U |
| Chloroethane | 75-00-3 | ug/L | 0.39 U | 9.7 U [9.7 U] | 0.39 U | 0.39 U | 0.39 U | 0.39 U |
| Chloroform | 67-66-3 | ug/L | 0.25 U | 6.1 U [6.1 U] | 0.25 U | 0.25 U | 0.25 U | 0.25 U |
| Chloromethane | 74-87-3 | ug/L | 0.36 U | 9.1 U [9.1 U] | 0.36 U | 0.36 U | 0.36 U | 0.36 U |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | 0.24 U | 6 U [6 U] | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | 0.15 U | 3.8 U [3.8 U] | 0.15 U | 0.15 U | 0.15 U | 0.15 U |
| Cyclohexane | 110-82-7 | ug/L | 0.18 U | 4.5 U [4.5 U] | 0.18 U | 0.18 U | 0.18 U | 0.18 U |
| Dichloromethane | 75-09-2 | ug/L | 0.86 U | 22 U [22 U] | 0.86 U | 0.86 U | 0.86 U | 0.86 U |
| Ethylbenzene | 100-41-4 | ug/L | 0.21 U | 475 [420] | 0.21 U | 0.21 U | 0.21 U | 0.21 U |
| Isopropylbenzene | 98-82-8 | ug/L | 0.22 U | 23.2 J [19.5 J] | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| m&p-Xylenes | ARC-mpXyl | ug/L | 0.4 U | 484 [426] | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| Methyl Acetate | 79-20-9 | ug/L | 1.5 U | 38 U [38 U] | 1.5 U | 1.5 U | 1.5 U | 1.5 U |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | 1.7 U | 43 U [43 U] | 1.7 U | 1.7 U | 1.7 U | 1.7 U |
| Methylcyclohexane | 108-87-2 | ug/L | 0.15 U | 3.9 U [3.9 U] | 0.15 U | 0.15 U | 0.15 U | 0.15 U |
| Methyl-tert-butylether | 1634-04-4 | ug/L | 392 | 7.1 U [7.1 U] | 0.29 U | 0.29 U | 0.29 U | 0.29 U |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | 0.19 U | 242 [217] | 0.19 U | 0.19 U | 0.19 U | 0.19 U |
| Styrene (Monomer) | 100-42-5 | ug/L | 0.3 U | 7.6 U [7.6 U] | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | 0.25 U | 6.3 U [6.3 U] | 0.25 U | 0.25 U | 0.25 U | 0.25 U |
| Toluene | 108-88-3 | ug/L | 0.44 U | 484 [437] | 0.44 U | 0.44 U | 0.44 U | 0.44 U |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | 0.19 U | 727 [643] | 0.19 U | 0.19 U | 0.19 U | 0.19 U |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-3/6/2014-PPG-137-MW-4B<br>03/06/14<br>137-MW4B | G000005480-3/7/2014-MW-8D<br>03/07/14<br>MW8D | G000005480-3/7/2014-MW-8F<br>03/07/14<br>MW8F | G000005480-3/7/2014-MW-8S<br>03/07/14<br>MW8S | G000005480-3/31/2014-MW-15D<br>03/31/14<br>MW15D | G000005480-3/31/2014-MW-15S<br>03/31/14<br>MW15S |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | 0.38 U | 9.5 U [9.5 U] | 0.38 U | 0.38 U | 0.38 U | 0.38 U |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | 0.21 U | 5.2 U [5.2 U] | 0.21 U | 0.21 U | 0.21 U | 0.21 U |
| Trichloroethene | 79-01-6 | ug/L | 0.5 U | 13 U [13 U] | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| Vinyl chloride | 75-01-4 | ug/L | 0.41 U | 10 U [10 U] | 0.41 U | 0.41 U | 0.41 U | 0.41 U |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | 0.31 U | 10.5 [16.4] | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | 0.31 U | 0.31 U [0.31 U] | 0.31 U | 0.31 U | 0.31 U | 0.31 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | 0.97 U | 0.94 U [0.94 U] | 0.94 U | 0.94 U | 0.94 U | 0.94 U |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | 1.6 U | 1.6 U [1.6 U] | 1.6 U | 1.6 U | 1.6 U | 1.6 U |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | 1.3 U | 1.3 U [1.3 U] | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | 1.2 U | 1.2 U [1.2 U] | 1.2 U | 1.2 U | 1.2 U | 1.2 U |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | 1.6 U | 1.5 U [1.5 U] | 1.5 U | 1.5 U | 1.5 U | 1.5 U |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | 17 U | 17 U [17 U] | 17 U | 17 U | 17 U | 17 U |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | 0.44 U | 0.43 U [0.43 U] | 0.43 U | 0.43 U | 0.43 U | 0.43 U |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | 0.48 U | 0.46 U [0.46 U] | 0.46 U | 0.46 U | 0.46 U | 0.46 U |
| 2-Chloronaphthalene | 91-58-7 | ug/L | 0.31 U | 0.3 U [0.3 U] | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| 2-Chlorophenol | 95-57-8 | ug/L | 1 U | 0.97 U [0.97 U] | 0.97 U | 0.97 U | 0.97 U | 0.97 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | 1 U | 0.99 U [0.99 U] | 0.99 U | 0.99 U | 0.99 U | 0.99 U |
| 2-Methylnaphthalene | 91-57-6 | ug/L | 0.4 U | 130 [210] | 0.38 U | 0.38 U | 0.38 U | 0.38 U |
| 2-Methylphenol | 95-48-7 | ug/L | 1.1 U | 1 U [1 U] | 1 U | 1 U | 1 U | 1 U |
| 2-Nitroaniline | 88-74-4 | ug/L | 1.1 U | 1.1 U [1.1 U] | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| 2-Nitrophenol | 88-75-5 | ug/L | 1.5 U | 1.5 U [1.5 U] | 1.5 U | 1.5 U | 1.5 U | 1.5 U |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | 0.37 U | 0.36 U [0.36 U] | 0.36 U | 0.36 U | 0.36 U | 0.36 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | 0.95 U | 0.93 U [0.93 U] | 0.93 U | 0.93 U | 0.93 U | 0.93 U |
| 3-Nitroaniline | 99-09-2 | ug/L | 1.3 U | 1.3 U [1.3 U] | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | 0.37 U | 0.36 U [0.36 U] | 0.36 U | 0.36 U | 0.36 U | 0.36 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | 1.9 U | 1.8 U [1.8 U] | 1.8 U | 1.8 U | 1.8 U | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | 0.32 U | 0.31 U [0.31 U] | 0.31 U | 0.31 U | 0.31 U | 0.31 U |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | 1.7 U | 1.7 U [1.7 U] | 1.7 U | 1.7 U | 1.7 U | 1.7 U |
| 4-Nitrophenol | 100-02-7 | ug/L | 5.4 U | 5.2 U [5.2 U] | 5.2 U | 5.2 U | 5.2 U | 5.2 U |
| Acenaphthene | 83-32-9 | ug/L | 0.021 U | 26.7 [41.7] | 0.188 | 0.02 U | 0.02 U | 0.02 U |
| Acenaphthylene | 208-96-8 | ug/L | 0.024 U | 1.57 [2.61] | 0.024 U | 0.024 U | 0.024 U | 0.024 U |
| Acetophenone | 98-86-2 | ug/L | 0.29 U | 0.29 U [0.29 U] | 0.29 U | 0.29 U | 0.29 U | 0.29 U |
| Anthracene | 120-12-7 | ug/L | 0.021 U | 0.408 [0.703] | 0.02 U | 0.02 U | 0.02 U | 0.02 U |
| Atrazine | 1912-24-9 | ug/L | 0.5 U | 0.49 U [0.49 U] | 0.49 U | 0.49 U | 0.49 U | 0.49 U |
| Benzaldehyde | 100-52-7 | ug/L | 3.4 U | 3.3 U [3.3 U] | 3.3 U | 3.3 U | 3.3 U | 3.3 U |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | 0.012 U | 0.012 U [0.012 U] | 0.012 U | 0.012 U | 0.012 U | 0.012 U |
| Benzo(a)pyrene | 50-32-8 | ug/L | 0.013 U | 0.012 U [0.012 U] | 0.012 U | 0.012 U | 0.241 | 0.012 U |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | 0.01 U | 0.01 U [0.01 U] | 0.01 U | 0.01 U | 0.218 | 0.01 U |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | 0.016 U | 0.016 U [0.016 U] | 0.016 U | 0.016 U | 0.438 | 0.016 U |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | 0.015 U | 0.015 U [0.015 U] | 0.015 U | 0.015 U | 0.192 | 0.015 U |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | 0.32 U | 0.31 U [0.31 U] | 0.31 U | 0.31 U | 0.31 U | 0.31 U |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | 0.32 U | 0.31 U [0.31 U] | 0.31 U | 0.31 U | 0.31 U | 0.31 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | 0.47 U | 0.45 U [0.45 U] | 0.45 U | 0.45 U | 0.45 U | 0.45 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | 0.6 U | 0.59 U [0.59 U] | 0.59 U | 0.59 U | 4.9 | 4.3 |
| Butyl benzyl phthalate | 85-68-7 | ug/L | 0.3 U | 0.29 U [0.29 U] | 0.29 U | 0.29 U | 0.29 U | 0.29 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-3/6/2014-PPG-137-MW-4B<br>03/06/14<br>137-MW4B | G000005480-3/7/2014-MW-8D<br>03/07/14<br>MW8D | G000005480-3/7/2014-MW-8F<br>03/07/14<br>MW8F | G000005480-3/7/2014-MW-8S<br>03/07/14<br>MW8S | G000005480-3/31/2014-MW-15D<br>03/31/14<br>MW15D | G000005480-3/31/2014-MW-15S<br>03/31/14<br>MW15S |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | 0.71 U | 0.69 U [0.69 U] | 0.69 U | 0.69 U | 0.69 U | 0.69 U |
| Carbazole | 86-74-8 | ug/L | 0.37 U | 1.1 [1.7] | 0.36 U | 0.36 U | 0.36 U | 0.36 U |
| Chrysene | 218-01-9 | ug/L | 0.012 U | 0.012 U [0.012 U] | 0.012 U | 0.012 U | 0.012 U | 0.012 U |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | 0.017 U | 0.017 U [0.017 U] | 0.017 U | 0.017 U | 0.412 | 0.017 U |
| Dibenzofuran | 132-64-9 | ug/L | 0.27 U | 1.9 J [3.1 J] | 0.27 U | 0.27 U | 0.27 U | 0.27 U |
| Diethyl phthalate | 84-66-2 | ug/L | 0.34 U | 0.33 U [0.33 U] | 0.33 U | 0.33 U | 0.33 U | 0.33 U |
| Dimethyl phthalate | 131-11-3 | ug/L | 0.29 U | 0.28 U [0.28 U] | 0.28 U | 0.28 U | 0.28 U | 0.28 U |
| Di-n-butyl phthalate | 84-74-2 | ug/L | 0.57 U | 0.56 U [0.56 U] | 0.56 U | 0.56 U | 0.56 U | 0.56 U |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | 0.32 U | 0.31 U [0.31 U] | 0.31 U | 0.31 U | 0.31 U | 0.31 U |
| Fluoranthene | 206-44-0 | ug/L | 0.014 U | 0.013 U [0.013 U] | 0.013 U | 0.013 U | 0.013 U | 0.013 U |
| Fluorene | 86-73-7 | ug/L | 0.018 U | 8.8 [13.6] | 0.017 U | 0.017 U | 0.017 U | 0.017 U |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | 0.53 U | 0.51 U [0.51 U] | 0.51 U | 0.51 U | 0.51 U | 0.51 U |
| Hexachlorobenzene | 118-74-1 | ug/L | 0.017 U | 0.017 U [0.017 U] | 0.017 U | 0.017 U | 0.017 U | 0.017 U |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | 7.3 U | 7.1 U [7.1 U] | 7.1 U | 7.1 U | 7.1 U | 7.1 U |
| Hexachloroethane | 67-72-1 | ug/L | 0.57 U | 0.55 U [0.55 U] | 0.55 U | 0.55 U | 0.55 U | 0.55 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | 0.015 U | 0.014 U [0.014 U] | 0.014 U | 0.014 U | 0.416 | 0.014 U |
| Isophorone | 78-59-1 | ug/L | 0.28 U | 0.27 U [0.27 U] | 0.27 U | 0.27 U | 0.27 U | 0.27 U |
| Naphthalene | 91-20-3 | ug/L | 0.168 | 812 [1,380] | 0.246 | 0.036 U | 0.036 U | 0.036 U |
| Nitrobenzene | 98-95-3 | ug/L | 0.43 U | 0.42 U [0.42 U] | 0.42 U | 0.42 U | 0.42 U | 0.42 U |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | 0.31 U | 0.3 U [0.3 U] | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | 0.31 U | 0.31 U [0.31 U] | 0.31 U | 0.31 U | 0.31 U | 0.31 U |
| p-Chloroaniline | 106-47-8 | ug/L | 0.54 U | 0.53 U [0.53 U] | 0.53 U | 0.53 U | 0.53 U | 0.53 U |
| Pentachlorophenol | 87-86-5 | ug/L | 0.1 U | 0.1 U [0.1 U] | 0.1 U | 0.1 U | 0.1 U | 0.1 U |
| Phenanthrene | 85-01-8 | ug/L | 0.022 U | 8.5 [12.8] | 0.021 U | 0.021 U | 0.021 U | 0.021 U |
| Phenol | 108-95-2 | ug/L | 1.3 U | 1.3 U [1.3 U] | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| Pyrene | 129-00-0 | ug/L | 0.015 U | 0.154 [0.237] | 0.015 U | 0.015 U | 0.015 U | 0.015 U |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | 1.8 U |
| Aluminum | 7429-90-5 | ug/L | 371 | 813 [482] | 11 U | 1,690 | 9,960 | 11 U |
| Antimony | 7440-36-0 | ug/L | 1.8 U | 145 [165] | 1.8 U | 1.8 U | 1.8 U | 1.8 U |
| Arsenic | 7440-38-2 | ug/L | 1.5 U | 18.9 [17] | 21 | 10.9 | 30.2 | 3.4 |
| Barium | 7440-39-3 | ug/L | 262 | 0.36 U [0.36 U] | 436 | 298 | 0.36 U | 0.36 U |
| Beryllium | 7440-41-7 | ug/L | 0.17 U | 0.17 U [0.17 U] | 0.17 U | 0.17 U | 0.17 U | 0.17 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 0.24 U | 1.2 U [1.2 U] | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| Calcium | 7440-70-2 | ug/L | 28,600 | 190,000 [198,000] | 221,000 | 129,000 | 12,700 | 61,300 |
| Chromium | 7440-47-3 | ug/L | 20.6 | 150,000 [146,000] | 0.92 U | 16.3 | 22.3 | 0.92 U |
| Chromium VI | 18540-29-9 | ug/L | 1.5 U | 161,000 [194,000] | 1.5 U | 1.5 U | 1.5 U | 1.5 U |
| Cobalt | 7440-48-4 | ug/L | 0.48 U | 2.4 U [2.4 U] | 0.48 U | 0.48 U | 0.48 U | 0.48 U |
| Copper | 7440-50-8 | ug/L | 1 U | 1 U [5.1 U] | 1 U | 11.7 | 19.4 | 1 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 1,520 | 7,900 [7,410] | 336 | 71,000 | 12,900 | 713 |
| Lead | 7439-92-1 | ug/L | 2.4 U | 12 U [12 U] | 2.4 U | 14.7 | 27.7 | 2.4 U |
| Magnesium | 7439-95-4 | ug/L | 63,000 | 406,000 [430,000] | 49,000 | 17,300 | 10,800 | 23,900 |
| Manganese | 7439-96-5 | ug/L | 61.4 | 614 [607] | 441 | 1,700 | 389 | 652 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-3/6/2014-PPG-137-MW-4B<br><br>03/06/14<br>137-MW4B | G000005480-3/7/2014-MW-8D<br><br>03/07/14<br>MW8D | G000005480-3/7/2014-MW-8F<br><br>03/07/14<br>MW8F | G000005480-3/7/2014-MW-8S<br><br>03/07/14<br>MW8S | G000005480-3/31/2014-MW-15D<br><br>03/31/14<br>MW15D | G000005480-3/31/2014-MW-15S<br><br>03/31/14<br>MW15S |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.089 U | 0.27 U [0.27 U] | 0.089 U | 0.22 | 0.048 U | 0.048 U |
| Nickel | 7440-02-0 | ug/L | 1.6 U | 7.8 U [1.6 U] | 1.6 U | 1.6 U | 19.3 | 1.6 U |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 38,100 | 102,000 [103,000] | 10,700 | 19,700 | 16,800 | 41 U |
| Selenium | 7782-49-2 | ug/L | 2.4 U | 12 U [12 U] | 2.4 U | 2.4 U | 2.4 U | 2.4 U |
| Silver | 7440-22-4 | ug/L | 1.5 U | 1.5 U [1.5 U] | 1.5 U | 1.5 U | 1.5 U | 1.5 U |
| Sodium | 7440-23-5 | ug/L | 320,000 | 3,130,000 [3,470,000] | 314,000 | 1,220,000 | 415,000 | 201,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 4 U | 6.6 U [6.6 U] | 1.3 U | 6.6 U | 1.3 U | 1.3 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 0.72 U | 3.6 U [3.6 U] | 0.72 U | 0.72 U | 0.72 U | 0.72 U |
| Zinc | 7440-66-6 | ug/L | 4.4 U | 22 U [22 U] | 4.4 U | 41.3 | 81.4 | 4.4 U |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 1,290 | 67 U [67 U] | 13 U | 59,200 | 13 U | 13 U |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 61 | 594 [602] | 410 | 2,010 | 72.6 | 588 |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-3/6/2014-PPG-137-MW-4B<br><br>03/06/14<br>137-MW4B | G000005480-3/7/2014-MW-8D<br><br>03/07/14<br>MW8D | G000005480-3/7/2014-MW-8F<br><br>03/07/14<br>MW8F | G000005480-3/7/2014-MW-8S<br><br>03/07/14<br>MW8S | G000005480-3/31/2014-MW-15D<br><br>03/31/14<br>MW15D | G000005480-3/31/2014-MW-15S<br><br>03/31/14<br>MW15S |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | 450,000 | 723,000 [724,000] | 91,200 | 431,000 | 387,000 | 263,000 |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | 960 | 4,500 [4,300] | 660 | 8,500 | 430 | 290 |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | 4.8 U | 4.8 U [4.8 U] | 4.8 U | 4.8 U | 4.2 U | 4.2 U |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | 230 | 17 U [17 U] | 17 U | 52,600 | 370 | 17 U |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | 1,300 | 7,800 [7,300] | 320 | 18,400 | 12,500 | 710 |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | 24 U | 24 U [24 U] | 24 U | 24 U | 24 U | 140 |
| Nitrate-N | 14797-55-8 | ug/L | 26 U | 26 U [26 U] | 26 U | 26 U | 26 U | 140 |
| Nitrite | 14797-65-0 | ug/L | 2.4 U | 97 [90] | 2.4 U | 2.4 U | 2.4 U | 2.4 U |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | 6.56 | 7.29 [7.31] | 7.35 | 6.52 | 8.26 | 7.44 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-3/6/2014-PPG-137-MW-4B<br><br>03/06/14<br>137-MW4B | G000005480-3/7/2014-MW-8D<br><br>03/07/14<br>MW8D | G000005480-3/7/2014-MW-8F<br><br>03/07/14<br>MW8F | G000005480-3/7/2014-MW-8S<br><br>03/07/14<br>MW8S | G000005480-3/31/2014-MW-15D<br><br>03/31/14<br>MW15D | G000005480-3/31/2014-MW-15S<br><br>03/31/14<br>MW15S |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 43,600 | 850,000 [806,000] | 59,300 | 95,400 | 4,950,000 | 17,300 |
| Sulfide | 18496-25-8 | ug/L | 340 U | 340 U [340 U] | 340 U | 340 U | 340 U | 340 U |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-4/1/2014-PPG-114-MW-22A<br><br>04/01/14<br>114-MW22A | G000005480-4/1/2014-PPG-114-MW-22B<br><br>04/01/14<br>114-MW22B | G000005480-4/1/2014-PPG-137-MW-1A<br><br>04/01/14<br>137-MW1A | G000005480-4/1/2014-PPG-137-MW-1B<br><br>04/01/14<br>137-MW1B | G000005480-4/2/2014-PPG-114-MW-15A<br><br>04/02/14<br>114-MW15A |
|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | 0.25 U | 0.25 U | 0.25 U | 0.25 U [0.25 U] | 0.25 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | 0.2 U | 0.2 U | 0.2 U | 0.2 U [0.2 U] | 0.2 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | 0.77 U | 0.77 U | 0.77 U | 0.77 U [0.77 U] | 0.77 U |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | 0.21 U | 0.21 U | 0.21 U | 0.21 U [0.21 U] | 0.21 U |
| 1,1-Dichloroethane | 75-34-3 | ug/L | 0.26 U | 0.26 U | 0.26 U | 0.26 U [0.26 U] | 0.26 U |
| 1,1-Dichloroethene | 75-35-4 | ug/L | 0.34 U | 0.34 U | 0.34 U | 0.34 U [0.34 U] | 0.34 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | 0.24 U | 0.24 U | 0.24 U | 0.24 U [0.24 U] | 0.24 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | 0.22 U | 0.22 U | 0.22 U | 0.22 U [0.22 U] | 0.22 U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | 1.3 U | 1.3 U | 1.3 U | 1.3 U [1.3 U] | 1.3 U |
| 1,2-Dibromoethane | 106-93-4 | ug/L | 0.16 U | 0.16 U | 0.16 U | 0.16 U [0.16 U] | 0.16 U |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | 0.2 U | 0.2 U | 0.2 U | 0.2 U [0.2 U] | 0.2 U |
| 1,2-Dichloroethane | 107-06-2 | ug/L | 0.22 U | 0.22 U | 0.22 U | 0.22 U [0.22 U] | 0.22 U |
| 1,2-Dichloropropane | 78-87-5 | ug/L | 0.28 U | 0.28 U | 0.28 U | 0.28 U [0.28 U] | 0.28 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | 0.31 U | 0.31 U | 0.31 U | 0.31 U [0.31 U] | 0.31 U |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | 0.3 U | 0.3 U | 0.3 U | 0.3 U [0.3 U] | 0.3 U |
| 1,4-Dioxane | 123-91-1 | ug/L | 73 U | 73 U | 73 U | 73 U [73 U] | 73 U |
| 2-Butanone (MEK) | 78-93-3 | ug/L | 3.2 U | 3.2 U | 22.6 | 3.2 U [3.2 U] | 3.2 U |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | 1.5 U | 1.5 U | 1.5 U | 1.5 U [1.5 U] | 1.5 U |
| Acetone | 67-64-1 | ug/L | 3.3 U | 3.3 U | 166 | 3.3 U [3.3 U] | 3.3 U |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | 0.28 U | 0.28 U | 1.2 | 0.28 U [0.28 U] | 0.28 U |
| Bromochloromethane | 74-97-5 | ug/L | 0.42 U | 0.42 U | 0.42 U | 0.42 U [0.42 U] | 0.42 U |
| Bromodichloromethane | 75-27-4 | ug/L | 0.21 U | 0.21 U | 0.21 U | 0.21 U [0.21 U] | 0.21 U |
| Bromoform | 75-25-2 | ug/L | 0.3 U | 0.3 U | 0.3 U | 0.3 U [0.3 U] | 0.3 U |
| Bromomethane | 74-83-9 | ug/L | 0.56 U | 0.56 U | 0.56 U | 0.56 U [0.56 U] | 0.56 U |
| Carbon Disulfide | 75-15-0 | ug/L | 0.18 U | 0.18 U | 0.18 U | 0.18 U [0.18 U] | 0.18 U |
| Carbon Tetrachloride | 56-23-5 | ug/L | 0.23 U | 0.23 U | 0.23 U | 0.23 U [0.23 U] | 0.23 U |
| CFC-11 | 75-69-4 | ug/L | 0.33 U | 0.33 U | 0.33 U | 0.33 U [0.33 U] | 0.33 U |
| CFC-12 | 75-71-8 | ug/L | 0.63 U | 0.63 U | 0.63 U | 0.63 U [0.63 U] | 0.63 U |
| Chlorobenzene | 108-90-7 | ug/L | 0.35 U | 0.35 U | 0.61 J | 0.35 U [0.35 U] | 0.35 U |
| Chlorodibromomethane | 124-48-1 | ug/L | 0.19 U | 0.19 U | 0.19 U | 0.19 U [0.19 U] | 0.19 U |
| Chloroethane | 75-00-3 | ug/L | 0.39 U | 0.39 U | 0.39 U | 0.39 U [0.39 U] | 0.39 U |
| Chloroform | 67-66-3 | ug/L | 0.25 U | 0.82 J | 0.4 J | 0.25 U [0.25 U] | 0.25 U |
| Chloromethane | 74-87-3 | ug/L | 0.36 U | 0.36 U | 0.65 J | 0.36 U [0.36 U] | 0.36 U |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | 0.24 U | 0.24 U | 0.24 U | 0.24 U [0.24 U] | 0.24 U |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | 0.15 U | 0.15 U | 0.15 U | 0.15 U [0.15 U] | 0.15 U |
| Cyclohexane | 110-82-7 | ug/L | 0.18 U | 0.18 U | 0.18 U | 0.18 U [0.18 U] | 0.18 U |
| Dichloromethane | 75-09-2 | ug/L | 0.86 U | 0.86 U | 1.9 J | 0.86 U [0.86 U] | 0.86 U |
| Ethylbenzene | 100-41-4 | ug/L | 0.21 U | 0.21 U | 0.47 J | 0.21 U [0.21 U] | 0.21 U |
| Isopropylbenzene | 98-82-8 | ug/L | 0.22 U | 0.22 U | 0.22 U | 0.22 U [0.22 U] | 0.22 U |
| m&p-Xylenes | ARC-mpXyl | ug/L | 0.4 U | 0.4 U | 0.65 J | 0.4 U [0.4 U] | 0.4 U |
| Methyl Acetate | 79-20-9 | ug/L | 1.5 U | 1.5 U | 1.5 U | 1.5 U [1.5 U] | 1.5 U |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | 1.7 U | 1.7 U | 1.7 U | 1.7 U [1.7 U] | 1.7 U |
| Methylcyclohexane | 108-87-2 | ug/L | 0.15 U | 0.15 U | 0.15 U | 0.15 U [0.15 U] | 0.15 U |
| Methyl-tert-butylether | 1634-04-4 | ug/L | 3.2 | 0.29 U | 0.43 J | 3.4 [3.6] | 0.29 U |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | 0.19 U | 0.19 U | 0.77 J | 0.19 U [0.19 U] | 0.19 U |
| Styrene (Monomer) | 100-42-5 | ug/L | 0.3 U | 0.3 U | 0.3 U | 0.3 U [0.3 U] | 0.3 U |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | 0.25 U | 0.25 U | 0.25 U | 0.25 U [0.25 U] | 0.25 U |
| Toluene | 108-88-3 | ug/L | 0.44 U | 0.44 U | 0.84 J | 0.44 U [0.44 U] | 0.44 U |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | 0 U | 0.19 U | 1.4 | 0.19 U [0.19 U] | 0.19 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-4/1/2014-PPG-114-MW-22A<br><br>04/01/14<br>114-MW22A | G000005480-4/1/2014-PPG-114-MW-22B<br><br>04/01/14<br>114-MW22B | G000005480-4/1/2014-PPG-137-MW-1A<br><br>04/01/14<br>137-MW1A | G000005480-4/1/2014-PPG-137-MW-1B<br><br>04/01/14<br>137-MW1B | G000005480-4/2/2014-PPG-114-MW-15A<br><br>04/02/14<br>114-MW15A |
|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | 0.38 U | 0.38 U | 0.38 U | 0.38 U [0.38 U] | 0.38 U |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | 0.21 U | 0.21 U | 0.21 U | 0.21 U [0.21 U] | 0.21 U |
| Trichloroethene | 79-01-6 | ug/L | 0.5 U | 0.5 U | 1.1 | 0.5 U [0.5 U] | 0.5 U |
| Vinyl chloride | 75-01-4 | ug/L | 0.41 U | 0.41 U | 0.41 U | 0.41 U [0.41 U] | 0.41 U |
| **Semivolatile Organics** | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | 0.31 U | 0.3 U | 0.91 J | 0.32 U [0.3 U] | 0.34 U |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | 0.31 U | 0.31 U | 0.31 U | 0.32 U [0.31 U] | 0.35 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | 0.95 U | 0.94 U | 0.94 U | 0.98 U [0.94 U] | 1.1 U |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | 1.6 U | 1.6 U | 1.6 U | 1.6 U [1.6 U] | 1.8 U |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | 1.3 U | 1.3 U | 1.3 U | 1.3 U [1.3 U] | 1.5 U |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | 1.2 U | 1.2 U | 1.2 U | 1.2 U [1.2 U] | 1.3 U |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | 1.5 U | 1.5 U | 1.5 U | 1.6 U [1.5 U] | 1.7 U |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | 17 U | 17 U | 17 U | 17 U [17 U] | 19 U |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | 0.43 U | 0.43 U | 0.43 U | 0.44 U [0.43 U] | 0.48 U |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | 0.47 U | 0.46 U | 0.46 U | 0.48 U [0.46 U] | 0.52 U |
| 2-Chloronaphthalene | 91-58-7 | ug/L | 0.3 U | 0.3 U | 0.3 U | 0.31 U [0.3 U] | 0.34 U |
| 2-Chlorophenol | 95-57-8 | ug/L | 0.98 U | 0.97 U | 0.97 U | 1 U [0.97 U] | 1.1 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | 1 U | 0.99 U | 0.99 U | 1 U [0.99 U] | 1.1 U |
| 2-Methylnaphthalene | 91-57-6 | ug/L | 0.39 U | 0.38 U | 9.7 | 0.4 U [0.38 U] | 0.44 U |
| 2-Methylphenol | 95-48-7 | ug/L | 1.1 U | 1 U | 1 U | 1.1 U [1 U] | 1.2 U |
| 2-Nitroaniline | 88-74-4 | ug/L | 1.1 U | 1.1 U | 1.1 U | 1.2 U [1.1 U] | 1.3 U |
| 2-Nitrophenol | 88-75-5 | ug/L | 1.5 U | 1.5 U | 1.5 U | 1.6 U [1.5 U] | 1.7 U |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | 0.36 U | 0.36 U | 0.36 U | 0.38 U [0.36 U] | 0.41 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | 0.93 U | 0.93 U | 50.3 | 0.96 U [0.93 U] | 1.1 U |
| 3-Nitroaniline | 99-09-2 | ug/L | 1.3 U | 1.3 U | 1.3 U | 1.3 U [1.3 U] | 1.4 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | 0.36 U | 0.36 U | 0.36 U | 0.37 U [0.36 U] | 0.41 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | 1.8 U | 1.8 U | 1.8 U | 1.9 U [1.8 U] | 2.1 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | 0.32 U | 0.31 U | 0.31 U | 0.33 U [0.31 U] | 0.35 U |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | 1.7 U | 1.7 U | 1.7 U | 1.7 U [1.7 U] | 1.9 U |
| 4-Nitrophenol | 100-02-7 | ug/L | 5.3 U | 5.2 U | 5.2 U | 5.4 U [5.2 U] | 5.9 U |
| Acenaphthene | 83-32-9 | ug/L | 0.158 | 0.02 U | 7.6 | 0.021 U [0.02 U] | 0.023 U |
| Acenaphthylene | 208-96-8 | ug/L | 0.024 U | 0.024 U | 0.891 | 0.025 U [0.024 U] | 0.027 U |
| Acetophenone | 98-86-2 | ug/L | 0.29 U | 0.29 U | 0.29 U | 0.3 U [0.29 U] | 0.32 U |
| Anthracene | 120-12-7 | ug/L | 0.021 U | 0.02 U | 4.01 | 0.021 U [0.02 U] | 0.023 U |
| Atrazine | 1912-24-9 | ug/L | 0.49 U | 0.49 U | 0.49 U | 0.51 U [0.49 U] | 0.55 U |
| Benzaldehyde | 100-52-7 | ug/L | 3.3 U | 3.3 U | 3.3 U | 3.4 U [3.3 U] | 3.7 U |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | 0.012 U | 0.012 U | 1.34 | 0.156 [0.012 U] | 0.013 U |
| Benzo(a)pyrene | 50-32-8 | ug/L | 0.012 U | 0.012 U | 0.225 | 0.013 U [0.012 U] | 0.014 U |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | 0.01 U | 0.01 U | 0.371 | 0.011 U [0.01 U] | 0.011 U |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | 0.016 U | 0.016 U | 0.016 U | 0.016 U [0.016 U] | 0.018 U |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | 0.015 U | 0.015 U | 0.015 U | 0.015 U [0.015 U] | 0.017 U |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | 0.31 U | 0.31 U | 0.31 U | 0.32 U [0.31 U] | 0.35 U |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | 0.31 U | 0.31 U | 0.31 U | 0.32 U [0.31 U] | 0.35 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | 0.46 U | 0.45 U | 0.45 U | 0.47 U [0.45 U] | 0.52 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | 0.59 U | 0.59 U | 0.59 U | 7.8 [7.2] | 0.67 U |
| Butyl benzyl phthalate | 85-68-7 | ug/L | 0.29 U | 0.29 U | 0.29 U | 0.3 U [0.29 U] | 0.33 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-4/1/2014-PPG-114-MW-22A<br><br>04/01/14<br>114-MW22A | G000005480-4/1/2014-PPG-114-MW-22B<br><br>04/01/14<br>114-MW22B | G000005480-4/1/2014-PPG-137-MW-1A<br><br>04/01/14<br>137-MW1A | G000005480-4/1/2014-PPG-137-MW-1B<br><br>04/01/14<br>137-MW1B | G000005480-4/2/2014-PPG-114-MW-15A<br><br>04/02/14<br>114-MW15A |
|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | 0.7 U | 0.69 U | 0.69 U | 0.72 U [0.69 U] | 0.78 U |
| Carbazole | 86-74-8 | ug/L | 0.36 U | 0.36 U | 0.79 J | 0.38 U [0.36 U] | 0.41 U |
| Chrysene | 218-01-9 | ug/L | 0.012 U | 0.012 U | 1.21 | 0.012 U [0.012 U] | 0.013 U |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | 0.017 U | 0.017 U | 0.017 U | 0.017 U [0.017 U] | 0.019 U |
| Dibenzofuran | 132-64-9 | ug/L | 0.27 U | 0.27 U | 0.94 J | 0.28 U [0.27 U] | 0.3 U |
| Diethyl phthalate | 84-66-2 | ug/L | 0.33 U | 0.33 U | 0.33 U | 0.34 U [0.33 U] | 0.37 U |
| Dimethyl phthalate | 131-11-3 | ug/L | 0.29 U | 0.28 U | 0.28 U | 0.29 U [0.28 U] | 0.32 U |
| Di-n-butyl phthalate | 84-74-2 | ug/L | 0.56 U | 0.56 U | 0.56 U | 0.58 U [0.56 U] | 0.63 U |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | 0.31 U | 0.31 U | 0.31 U | 0.32 U [0.31 U] | 0.35 U |
| Fluoranthene | 206-44-0 | ug/L | 0.013 U | 0.013 U | 3.86 | 0.014 U [0.013 U] | 0.015 U |
| Fluorene | 86-73-7 | ug/L | 0.017 U | 0.017 U | 5.1 | 0.018 U [0.017 U] | 0.019 U |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | 0.52 U | 0.51 U | 0.51 U | 0.53 U [0.51 U] | 0.58 U |
| Hexachlorobenzene | 118-74-1 | ug/L | 0.017 U | 0.017 U | 0.017 U | 0.0537 [0.0203] | 0.019 U |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | 7.2 U | 7.1 U | 7.1 U | 7.4 U [7.1 U] | 8.1 U |
| Hexachloroethane | 67-72-1 | ug/L | 0.56 U | 0.55 U | 0.55 U | 0.57 U [0.55 U] | 0.62 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | 0.015 U | 0.014 U | 0.014 U | 0.015 U [0.014 U] | 0.016 U |
| Isophorone | 78-59-1 | ug/L | 0.28 U | 0.27 U | 0.27 U | 0.28 U [0.27 U] | 0.31 U |
| Naphthalene | 91-20-3 | ug/L | 0.036 U | 0.036 U | 8.2 | 0.037 U [0.036 U] | 0.04 U |
| Nitrobenzene | 98-95-3 | ug/L | 0.42 U | 0.42 U | 0.42 U | 0.44 U [0.42 U] | 0.48 U |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | 0.31 U | 0.3 U | 0.3 U | 0.31 U [0.3 U] | 0.34 U |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | 0.31 U | 0.31 U | 0.31 U | 0.32 U [0.31 U] | 0.35 U |
| p-Chloroaniline | 106-47-8 | ug/L | 0.53 U | 0.53 U | 0.53 U | 0.55 U [0.53 U] | 0.6 U |
| Pentachlorophenol | 87-86-5 | ug/L | 0.1 U | 0.1 U | 0.1 U | 0.1 U [0.1 U] | 0.11 U |
| Phenanthrene | 85-01-8 | ug/L | 0.137 | 0.021 U | 15.3 | 0.022 U [0.021 U] | 0.024 U |
| Phenol | 108-95-2 | ug/L | 1.3 U | 1.3 U | 32.2 | 1.3 U [1.3 U] | 1.5 U |
| Pyrene | 129-00-0 | ug/L | 0.015 U | 0.015 U | 6.6 | 0.016 U [0.015 U] | 0.017 U |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 304 | 11 U | 3,070 | 233 [11 U] | 4,170 |
| Antimony | 7440-36-0 | ug/L | 1.8 U | 1.8 U | 1.8 U | 1.8 U [1.8 U] | 1.8 U |
| Arsenic | 7440-38-2 | ug/L | 47.3 | 4 | 16.3 | 13.5 [6.5] | 3.5 |
| Barium | 7440-39-3 | ug/L | 243 | 0.36 U | 0.36 U | 201 [204] | 0.36 U |
| Beryllium | 7440-41-7 | ug/L | 0.17 U | 0.17 U | 0.17 U | 0.17 U [0.17 U] | 0.17 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 0.24 U | 0.24 U | 0.24 U | 0.24 U [0.24 U] | 0.24 U |
| Calcium | 7440-70-2 | ug/L | 97,800 | 103,000 | 344,000 | 79,800 [80,700] | 52,900 |
| Chromium | 7440-47-3 | ug/L | 0.92 U | 2,510 | 10,000 | 41.2 [31.8] | 0.92 U |
| Chromium VI | 18540-29-9 | ug/L | 1.5 U | 1,900 | 9,200 | 1.5 U [1.5 U] | 1.5 U |
| Cobalt | 7440-48-4 | ug/L | 0.48 U | 0.48 U | 0.48 U | 0.48 U [0.48 U] | 0.48 U |
| Copper | 7440-50-8 | ug/L | 1 U | 1 U | 19.7 | 1 U [1 U] | 1 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 9,050 | 13 U | 729 | 3,450 [3,370] | 3,780 |
| Lead | 7439-92-1 | ug/L | 2.4 U | 2.4 U | 4.7 | 2.4 U [2.4 U] | 7 |
| Magnesium | 7439-95-4 | ug/L | 28,600 | 26,300 | 23 U | 106,000 [108,000] | 6,590 |
| Manganese | 7439-96-5 | ug/L | 1,880 | 0.18 U | 0.18 U | 196 [198] | 90 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-4/1/2014-PPG-114-MW-22A<br><br>04/01/14<br>114-MW22A | G000005480-4/1/2014-PPG-114-MW-22B<br><br>04/01/14<br>114-MW22B | G000005480-4/1/2014-PPG-137-MW-1A<br><br>04/01/14<br>137-MW1A | G000005480-4/1/2014-PPG-137-MW-1B<br><br>04/01/14<br>137-MW1B | G000005480-4/2/2014-PPG-114-MW-15A<br><br>04/02/14<br>114-MW15A |
|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.048 U | 0.048 U | 0.25 | 0.048 U [0.048 U] | 0.048 U |
| Nickel | 7440-02-0 | ug/L | 1.6 U | 1.6 U | 89 | 1.6 U [1.6 U] | 1.6 U |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 10,400 | 41 U | 27,200 | 26,500 [27,100] | 41 U |
| Selenium | 7782-49-2 | ug/L | 2.4 U | 2.4 U | 2.4 U | 2.4 U [2.4 U] | 2.4 U |
| Silver | 7440-22-4 | ug/L | 1.5 U | 1.5 U | 1.5 U | 59.3 [1.5 U] | 1.5 U |
| Sodium | 7440-23-5 | ug/L | 106,000 | 67,300 | 537,000 | 437,000 [443,000] | 30,900 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 1.3 U | 1.3 U | 6.6 U | 1.3 U [1.3 U] | 1.8 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 0.72 U | 0.72 U | 0.72 U | 0.72 U [0.72 U] | 0.72 U |
| Zinc | 7440-66-6 | ug/L | 4.4 U | 4.4 U | 23 | 4.4 U [4.4 U] | 22.6 |
| **Metals-Filtered** | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 2,010 | 13 U | 13 U | 145 [117] | 13 U |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 1,740 | 0.18 U | 0.18 U | 190 [196] | 0.18 U |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-4/1/2014-PPG-114-MW-22A<br><br>04/01/14<br>114-MW22A | G000005480-4/1/2014-PPG-114-MW-22B<br><br>04/01/14<br>114-MW22B | G000005480-4/1/2014-PPG-137-MW-1A<br><br>04/01/14<br>137-MW1A | G000005480-4/1/2014-PPG-137-MW-1B<br><br>04/01/14<br>137-MW1B | G000005480-4/2/2014-PPG-114-MW-15A<br><br>04/02/14<br>114-MW15A |
|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | 441,000 | 179,000 | 653,000 | 984,000 [1,040,000] | 154,000 |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | 2,700 | 30 U | 9,400 | 1,300 [1,200] | 30 U |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | 4.2 U | 4.2 U | 4.2 U | 4.2 U [4.2 U] | 4.2 U |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | 17 U | 17 U | 760 | 17 U [17 U] | 17 U |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | 9,000 | 30 U | 30 U | 3,400 [3,300] | 3,800 |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | 24 U | 5,700 | 1,200 | 24 U [24 U] | 2,600 |
| Nitrate-N | 14797-55-8 | ug/L | 26 U | 5,700 | 530 | 26 U [26 U] | 2,600 |
| Nitrite | 14797-65-0 | ug/L | 2.4 U | 28 | 670 | 2.4 U [2.4 U] | 2.4 U |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | 6.78 | 7.6 | 11.89 | 6.81 [6.76] | 6.8 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-4/1/2014-PPG-114-MW-22A<br><br>04/01/14<br>114-MW22A | G000005480-4/1/2014-PPG-114-MW-22B<br><br>04/01/14<br>114-MW22B | G000005480-4/1/2014-PPG-137-MW-1A<br><br>04/01/14<br>137-MW1A | G000005480-4/1/2014-PPG-137-MW-1B<br><br>04/01/14<br>137-MW1B | G000005480-4/2/2014-PPG-114-MW-15A<br><br>04/02/14<br>114-MW15A |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 11,900 | 74,500 | 77 U | 88,000 [87,600] | 37,500 |
| Sulfide | 18496-25-8 | ug/L | 340 U | 340 U | 3,100 | 340 U [340 U] | 340 U |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-4/2/2014-PPG-114-MW-25A<br>11.5<br>04/02/14<br>114-MW25A | G000005480-4/2/2014-PPG-114-MW-25B<br>32.5<br>04/02/14<br>114-MW25B | G000005480-4/2/2014-PPG-114-MW-27A<br>13.5<br>04/02/14<br>114-MW27A | G000005480-4/3/2014-MW-9D<br><br>04/03/14<br>MW9D | G000005480-4/3/2014-PPG-114-MW-16A<br><br>04/03/14<br>114-MW16A |
|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | 0.77 U | 0.77 U | 0.77 U | 0.77 U | 0.77 U |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U |
| 1,1-Dichloroethane | 75-34-3 | ug/L | 1.2 | 0.26 U | 1.8 | 0.26 U | 0.26 U |
| 1,1-Dichloroethene | 75-35-4 | ug/L | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | 0.7 J | 0.22 U | 0.62 J | 0.22 U | 0.22 U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| 1,2-Dibromoethane | 106-93-4 | ug/L | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | 4.4 | 0.2 U | 6.2 | 0.2 U | 0.2 U |
| 1,2-Dichloroethane | 107-06-2 | ug/L | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| 1,2-Dichloropropane | 78-87-5 | ug/L | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | 1.1 | 0.31 U | 1.9 | 0.31 U | 0.31 U |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | 4 | 0.3 U | 6.7 | 0.3 U | 0.3 U |
| 1,4-Dioxane | 123-91-1 | ug/L | 73 U | 73 U | 73 U | 73 U | 73 U |
| 2-Butanone (MEK) | 78-93-3 | ug/L | 3.2 U | 3.2 U | 3.2 U | 3.2 U | 3.2 U |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | 1.5 U | 1.5 U | 1.5 U | 1.5 U | 1.5 U |
| Acetone | 67-64-1 | ug/L | 3.3 U | 3.3 U | 3.3 U | 3.3 U | 3.3 U |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U |
| Bromochloromethane | 74-97-5 | ug/L | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 0.42 U |
| Bromodichloromethane | 75-27-4 | ug/L | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U |
| Bromoform | 75-25-2 | ug/L | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| Bromomethane | 74-83-9 | ug/L | 0.56 U | 0.56 U | 0.56 U | 0.56 U | 0.56 U |
| Carbon Disulfide | 75-15-0 | ug/L | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |
| Carbon Tetrachloride | 56-23-5 | ug/L | 0.23 U | 0.23 U | 0.23 U | 0.23 U | 0.23 U |
| CFC-11 | 75-69-4 | ug/L | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U |
| CFC-12 | 75-71-8 | ug/L | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U |
| Chlorobenzene | 108-90-7 | ug/L | 3.7 | 0.35 U | 5.2 | 0.35 U | 0.35 U |
| Chlorodibromomethane | 124-48-1 | ug/L | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U |
| Chloroethane | 75-00-3 | ug/L | 0.39 U | 0.39 U | 0.39 U | 0.39 U | 0.39 U |
| Chloroform | 67-66-3 | ug/L | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U |
| Chloromethane | 74-87-3 | ug/L | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | 1.3 | 0.24 U | 2.7 | 0.24 U | 0.24 U |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U |
| Cyclohexane | 110-82-7 | ug/L | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |
| Dichloromethane | 75-09-2 | ug/L | 0.86 U | 0.86 U | 0.86 U | 0.86 U | 0.86 U |
| Ethylbenzene | 100-41-4 | ug/L | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U |
| Isopropylbenzene | 98-82-8 | ug/L | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| m&p-Xylenes | ARC-mpXyl | ug/L | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| Methyl Acetate | 79-20-9 | ug/L | 1.5 U | 1.5 U | 1.5 U | 1.5 U | 1.5 U |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | 1.7 U | 1.7 U | 1.7 U | 1.7 U | 1.7 U |
| Methylcyclohexane | 108-87-2 | ug/L | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U |
| Methyl-tert-butylether | 1634-04-4 | ug/L | 0.7 J | 0.29 U | 0.29 U | 0.29 U | 0.29 U |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U |
| Styrene (Monomer) | 100-42-5 | ug/L | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | 0.97 J | 0.25 U | 0.93 J | 0.25 U | 0.25 U |
| Toluene | 108-88-3 | ug/L | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-4/2/2014-PPG-114-MW-25A<br>11.5<br>04/02/14<br>114-MW25A | G000005480-4/2/2014-PPG-114-MW-25B<br>32.5<br>04/02/14<br>114-MW25B | G000005480-4/2/2014-PPG-114-MW-27A<br>13.5<br>04/02/14<br>114-MW27A | G000005480-4/3/2014-MW-9D<br><br>04/03/14<br>MW9D | G000005480-4/3/2014-PPG-114-MW-16A<br><br>04/03/14<br>114-MW16A |
|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | 0.38 U | 0.38 U | 0.43 J | 0.38 U | 0.38 U |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U |
| Trichloroethene | 79-01-6 | ug/L | 0.5 U | 0.5 U | 0.91 J | 0.5 U | 0.5 U |
| Vinyl chloride | 75-01-4 | ug/L | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U |
| **Semivolatile Organics** | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | 0.3 U | 0.3 U | 0.31 U | 0.42 U | 0.3 U |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | 0.31 U | 0.31 U | 0.31 U | 0.42 U | 0.31 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | 0.94 U | 0.94 U | 0.97 U | 1.3 U | 0.94 U |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | 1.6 U | 1.6 U | 1.6 U | 2.2 U | 1.6 U |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | 1.3 U | 1.3 U | 1.3 U | 1.8 U | 1.3 U |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | 1.2 U | 1.2 U | 1.2 U | 1.6 U | 1.2 U |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | 1.5 U | 1.5 U | 1.6 U | 2.1 U | 1.5 U |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | 17 U | 17 U | 17 U | 23 U | 17 U |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | 0.43 U | 0.43 U | 0.44 U | 0.59 U | 0.43 U |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | 0.46 U | 0.46 U | 0.48 U | 0.64 U | 0.46 U |
| 2-Chloronaphthalene | 91-58-7 | ug/L | 0.3 U | 0.3 U | 0.31 U | 0.41 U | 0.3 U |
| 2-Chlorophenol | 95-57-8 | ug/L | 0.97 U | 0.97 U | 1 U | 1.4 U | 0.97 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | 0.99 U | 0.99 U | 1 U | 1.4 U | 0.99 U |
| 2-Methylnaphthalene | 91-57-6 | ug/L | 0.38 U | 0.38 U | 0.4 U | 0.53 U | 0.38 U |
| 2-Methylphenol | 95-48-7 | ug/L | 1 U | 1 U | 1.1 U | 1.4 U | 1 U |
| 2-Nitroaniline | 88-74-4 | ug/L | 1.1 U | 1.1 U | 1.1 U | 1.5 U | 1.1 U |
| 2-Nitrophenol | 88-75-5 | ug/L | 1.5 U | 1.5 U | 1.5 U | 2.1 U | 1.5 U |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | 0.36 U | 0.36 U | 0.37 U | 0.5 U | 0.36 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | 0.93 U | 0.93 U | 0.95 U | 1.3 U | 0.93 U |
| 3-Nitroaniline | 99-09-2 | ug/L | 1.3 U | 1.3 U | 1.3 U | 1.8 U | 1.3 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | 0.36 U | 0.36 U | 0.37 U | 0.5 U | 0.36 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | 1.8 U | 1.8 U | 1.9 U | 2.5 U | 1.8 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | 0.31 U | 0.31 U | 0.32 U | 0.43 U | 0.31 U |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | 1.7 U | 1.7 U | 1.7 U | 2.3 U | 1.7 U |
| 4-Nitrophenol | 100-02-7 | ug/L | 5.2 U | 5.2 U | 5.4 U | 7.2 U | 5.2 U |
| Acenaphthene | 83-32-9 | ug/L | 0.284 | 0.02 U | 0.021 U | 0.028 U | 0.02 U |
| Acenaphthylene | 208-96-8 | ug/L | 0.595 | 0.024 U | 0.024 U | 0.033 U | 0.024 U |
| Acetophenone | 98-86-2 | ug/L | 0.29 U | 0.29 U | 0.29 U | 0.4 U | 0.29 U |
| Anthracene | 120-12-7 | ug/L | 1.07 | 0.02 U | 0.021 U | 0.028 U | 0.02 U |
| Atrazine | 1912-24-9 | ug/L | 0.49 U | 0.49 U | 0.5 U | 0.68 U | 0.49 U |
| Benzaldehyde | 100-52-7 | ug/L | 3.3 U | 3.3 U | 3.4 U | 4.5 U | 3.3 U |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | 0.225 | 0.012 U | 0.012 U | 0.016 U | 0.012 U |
| Benzo(a)pyrene | 50-32-8 | ug/L | 0.012 U | 0.012 U | 0.013 U | 0.017 U | 0.012 U |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | 0.01 U | 0.01 U | 0.01 U | 0.014 U | 0.01 U |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | 0.016 U | 0.016 U | 0.016 U | 0.022 U | 0.016 U |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | 0.015 U | 0.015 U | 0.015 U | 0.021 U | 0.015 U |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | 0.31 U | 0.31 U | 0.32 U | 0.43 U | 0.31 U |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | 0.31 U | 0.31 U | 0.32 U | 0.43 U | 0.31 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | 0.45 U | 0.45 U | 0.47 U | 0.63 U | 0.45 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | 0.59 U | 0.59 U | 0.6 U | 0.81 U | 0.59 U |
| Butyl benzyl phthalate | 85-68-7 | ug/L | 0.29 U | 0.29 U | 0.3 U | 0.4 U | 0.29 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-4/2/2014-PPG-114-MW-25A<br>11.5<br>04/02/14<br>114-MW25A | G000005480-4/2/2014-PPG-114-MW-25B<br>32.5<br>04/02/14<br>114-MW25B | G000005480-4/2/2014-PPG-114-MW-27A<br>13.5<br>04/02/14<br>114-MW27A | G000005480-4/3/2014-MW-9D<br><br>04/03/14<br>MW9D | G000005480-4/3/2014-PPG-114-MW-16A<br><br>04/03/14<br>114-MW16A |
|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | 0.69 U | 0.69 U | 0.71 U | 0.96 U | 0.69 U |
| Carbazole | 86-74-8 | ug/L | 0.36 U | 0.36 U | 0.37 U | 0.5 U | 0.36 U |
| Chrysene | 218-01-9 | ug/L | 0.012 U | 0.012 U | 0.012 U | 0.016 U | 0.012 U |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | 0.017 U | 0.017 U | 0.017 U | 0.023 U | 0.017 U |
| Dibenzofuran | 132-64-9 | ug/L | 0.27 U | 0.27 U | 0.27 U | 0.37 U | 0.27 U |
| Diethyl phthalate | 84-66-2 | ug/L | 0.33 U | 0.33 U | 0.34 U | 0.45 U | 0.33 U |
| Dimethyl phthalate | 131-11-3 | ug/L | 0.28 U | 0.28 U | 0.29 U | 0.39 U | 0.28 U |
| Di-n-butyl phthalate | 84-74-2 | ug/L | 0.56 U | 0.56 U | 0.57 U | 0.77 U | 0.56 U |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | 0.31 U | 0.31 U | 0.32 U | 0.43 U | 0.31 U |
| Fluoranthene | 206-44-0 | ug/L | 1.53 | 0.013 U | 0.014 U | 0.018 U | 0.013 U |
| Fluorene | 86-73-7 | ug/L | 1.51 | 0.017 U | 0.018 U | 0.024 U | 0.017 U |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | 0.51 U | 0.51 U | 0.53 U | 0.71 U | 0.51 U |
| Hexachlorobenzene | 118-74-1 | ug/L | 0.017 U | 0.017 U | 0.017 U | 0.023 U | 0.017 U |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | 7.1 U | 7.1 U | 7.3 U | 9.9 U | 7.1 U |
| Hexachloroethane | 67-72-1 | ug/L | 0.55 U | 0.55 U | 0.57 U | 0.76 U | 0.55 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | 0.014 U | 0.014 U | 0.015 U | 0.02 U | 0.014 U |
| Isophorone | 78-59-1 | ug/L | 0.27 U | 0.27 U | 0.28 U | 0.38 U | 0.27 U |
| Naphthalene | 91-20-3 | ug/L | 0.259 | 1.13 | 0.037 U | 0.298 | 0.036 U |
| Nitrobenzene | 98-95-3 | ug/L | 0.42 U | 0.42 U | 0.43 U | 0.58 U | 0.42 U |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | 0.3 U | 0.3 U | 0.31 U | 0.42 U | 0.3 U |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | 0.31 U | 0.31 U | 0.31 U | 0.42 U | 0.31 U |
| p-Chloroaniline | 106-47-8 | ug/L | 0.53 U | 0.53 U | 0.54 U | 0.73 U | 0.53 U |
| Pentachlorophenol | 87-86-5 | ug/L | 0.1 U | 0.1 U | 0.1 U | 0.14 U | 0.1 U |
| Phenanthrene | 85-01-8 | ug/L | 3.02 | 0.101 | 0.022 U | 0.029 U | 0.021 U |
| Phenol | 108-95-2 | ug/L | 1.3 U | 1.3 U | 1.3 U | 1.8 U | 1.3 U |
| Pyrene | 129-00-0 | ug/L | 2.55 | 0.015 U | 0.015 U | 0.021 U | 0.015 U |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 450 | 4,690 | 11 U | 11 U | 684 |
| Antimony | 7440-36-0 | ug/L | 1.8 U | 21.1 | 1.8 U | 1.8 U | 1.8 U |
| Arsenic | 7440-38-2 | ug/L | 3.2 | 7.4 | 1.5 U | 10.8 | 1.5 U |
| Barium | 7440-39-3 | ug/L | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 0.36 U |
| Beryllium | 7440-41-7 | ug/L | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| Calcium | 7440-70-2 | ug/L | 124,000 | 76,200 | 127,000 | 51,000 | 41,100 |
| Chromium | 7440-47-3 | ug/L | 894 | 34,700 | 0.92 U | 0.92 U | 0.92 U |
| Chromium VI | 18540-29-9 | ug/L | 720 | 46,200 | 33 | 29 | 1.5 U |
| Cobalt | 7440-48-4 | ug/L | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U |
| Copper | 7440-50-8 | ug/L | 1 U | 1 U | 1 U | 1 U | 1 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 497 | 4,500 | 13 U | 4,430 | 863 |
| Lead | 7439-92-1 | ug/L | 2.4 U | 8 | 2.4 U | 2.4 U | 3.6 |
| Magnesium | 7439-95-4 | ug/L | 28,500 | 12,300 | 21,800 | 111,000 | 23 U |
| Manganese | 7439-96-5 | ug/L | 228 | 330 | 4,000 | 239 | 872 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-4/2/2014-PPG-114-MW-25A<br>11.5<br>04/02/14<br>114-MW25A | G000005480-4/2/2014-PPG-114-MW-25B<br>32.5<br>04/02/14<br>114-MW25B | G000005480-4/2/2014-PPG-114-MW-27A<br>13.5<br>04/02/14<br>114-MW27A | G000005480-4/3/2014-MW-9D<br><br>04/03/14<br>MW9D | G000005480-4/3/2014-PPG-114-MW-16A<br><br>04/03/14<br>114-MW16A |
|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.048 U | 0.048 U | 0.048 U | 0.048 U | 0.048 U |
| Nickel | 7440-02-0 | ug/L | 1.6 U | 1.6 U | 10 | 1.6 U | 1.6 U |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 41 U | 41 U | 41 U | 49,200 | 41 U |
| Selenium | 7782-49-2 | ug/L | 2.4 U | 14.8 | 2.4 U | 2.4 U | 2.4 U |
| Silver | 7440-22-4 | ug/L | 1.5 U | 1.5 U | 1.5 U | 1.5 U | 1.5 U |
| Sodium | 7440-23-5 | ug/L | 67,500 | 29,000 | 88,700 | 688,000 | 10,400 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 1.3 U | 1.3 U | 1.3 U | 9.2 U | 1.3 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U |
| Zinc | 7440-66-6 | ug/L | 4.4 U | 33.5 | 4.4 U | 4.4 U | 36.6 |
| **Metals-Filtered** | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 13 U | 13 U | 13 U | 111 | 13 U |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 219 | 50.9 | 3,950 | 233 | 0.18 U |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-4/2/2014-PPG-114-MW-25A<br>11.5<br>04/02/14<br>114-MW25A | G000005480-4/2/2014-PPG-114-MW-25B<br>32.5<br>04/02/14<br>114-MW25B | G000005480-4/2/2014-PPG-114-MW-27A<br>13.5<br>04/02/14<br>114-MW27A | G000005480-4/3/2014-MW-9D<br><br>04/03/14<br>MW9D | G000005480-4/3/2014-PPG-114-MW-16A<br><br>04/03/14<br>114-MW16A |
|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | 313,000 | 123,000 | 255,000 | 587,000 | 296,000 |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | 30 U | 30 U | 30 U | 1,300 | 30 U |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | 4.2 U | 4.2 U | 4.2 U | 21 | 13 |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | 17 U | 17 U | 17 U | 540 | 17 U |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | 500 | 4,500 | 30 U | 3,900 | 860 |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | 140 | 24 U | 560 | 24 U | 3,500 |
| Nitrate-N | 14797-55-8 | ug/L | 140 | 26 U | 560 | 26 U | 3,500 |
| Nitrite | 14797-65-0 | ug/L | 2.4 U | 74 | 2.4 U | 2.4 U | 2.4 U |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | 6.66 | 8.14 | 6.63 | 7.07 | 6.51 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-4/2/2014-PPG-114-MW-25A<br>11.5<br>04/02/14<br>114-MW25A | G000005480-4/2/2014-PPG-114-MW-25B<br>32.5<br>04/02/14<br>114-MW25B | G000005480-4/2/2014-PPG-114-MW-27A<br>13.5<br>04/02/14<br>114-MW27A | G000005480-4/3/2014-MW-9D<br><br>04/03/14<br>MW9D | G000005480-4/3/2014-PPG-114-MW-16A<br><br>04/03/14<br>114-MW16A |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 81,800 | 82,100 | 83,200 | 153,000 | 25,800 |
| Sulfide | 18496-25-8 | ug/L | 340 U | 340 U | 340 U | 340 U | 340 U |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | G000005480-4/3/2014-PPG-132-MW-2A | G000005480-4/4/2014-PPG-133-MW-1A | G000005480-4/4/2014-PPG-133-MW-1B | G000005480-4/4/2014-PPG-133-MW-1C | G1A001 | G1A001A | G1A002 | G1A003 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | 2.5 | 2.5 | 4 | 4.2 |
| Date Collected: | | | 04/03/14 | 04/04/14 | 04/04/14 | 04/04/14 | 12/19/03 | 12/19/03 | 12/23/03 | 01/12/04 |
| Location ID: | CAS Number | Units | 132-MW2A | 133-MW1A | 133-MW1B | 133-MW1C | MW1A | MW1A | MW1A | MW1A |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | 0.25 U | 0.25 U | 0.25 U | 0.25 U | NA | 5.0 U | NA | 5.0 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | 0.2 U | 0.2 U | 0.2 U | 0.2 U | NA | 5.0 U | NA | 5.0 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | 0.77 U | 0.77 U | 0.77 U | 0.77 U | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | 0.21 U | 0.21 U | 0.21 U | 0.21 U | NA | 5.0 U | NA | 5.0 U |
| 1,1-Dichloroethane | 75-34-3 | ug/L | 0.26 U | 0.26 U | 0.26 U | 0.26 U | NA | 5.0 U | NA | 5.0 U |
| 1,1-Dichloroethene | 75-35-4 | ug/L | 0.34 U | 0.34 U | 0.34 U | 0.34 U | NA | 5.0 U | NA | 5.0 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | 0.24 U | 0.24 U | 0.24 U | 0.24 U | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | 0.22 U | 0.22 U | 0.22 U | 0.22 U | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | 1.3 U | 1.3 U | 1.3 U | 1.3 U | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | 0.16 U | 0.16 U | 0.16 U | 0.16 U | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | 0.2 U | 0.2 U | 0.2 U | 0.2 U | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | 0.22 U | 0.22 U | 0.22 U | 0.22 U | NA | 5.0 U | NA | 5.0 U |
| 1,2-Dichloropropane | 78-87-5 | ug/L | 0.28 U | 0.28 U | 0.28 U | 0.28 U | NA | 5.0 U | NA | 5.0 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | 0.31 U | 0.31 U | 0.31 U | 0.31 U | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | 0.3 U | 0.3 U | 0.3 U | 0.3 U | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | 73 U | 73 U | 73 U | 73 U | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | 3.2 U | 3.2 U | 3.2 U | 3.2 U | NA | 50.0 U | NA | 50 U |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | 1.5 U | 1.5 U | 1.5 U | 1.5 U | NA | 50.0 U | NA | 50 U |
| Acetone | 67-64-1 | ug/L | 3.3 U | 3.3 U | 3.3 U | 3.3 U | NA | 50.0 U | NA | 50 U |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | 0.28 U | 0.28 U | 0.28 U | 0.28 U | NA | 5.0 U | NA | 5.0 U |
| Bromochloromethane | 74-97-5 | ug/L | 0.42 U | 0.42 U | 0.42 U | 0.42 U | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | 0.21 U | 0.21 U | 0.21 U | 0.21 U | NA | 5.0 U | NA | 5.0 U |
| Bromoform | 75-25-2 | ug/L | 0.3 U | 0.3 U | 0.3 U | 0.3 U | NA | 5.0 U | NA | 5.0 U |
| Bromomethane | 74-83-9 | ug/L | 0.56 U | 0.56 U | 0.56 U | 0.56 U | NA | 5.0 U | NA | 5.0 U |
| Carbon Disulfide | 75-15-0 | ug/L | 0.18 U | 0.18 U | 0.18 U | 0.18 U | NA | 50.0 U | NA | 50 U |
| Carbon Tetrachloride | 56-23-5 | ug/L | 0.23 U | 0.23 U | 0.23 U | 0.23 U | NA | 5.0 U | NA | 5.0 U |
| CFC-11 | 75-69-4 | ug/L | 0.33 U | 0.33 U | 0.33 U | 0.33 U | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | 0.63 U | 0.63 U | 0.63 U | 0.63 U | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | 0.35 U | 0.35 U | 0.35 U | 0.35 U | NA | 5.0 U | NA | 5.0 U |
| Chlorodibromomethane | 124-48-1 | ug/L | 0.19 U | 0.19 U | 0.19 U | 0.19 U | NA | 5.0 U | NA | 5.0 U |
| Chloroethane | 75-00-3 | ug/L | 0.39 U | 0.39 U | 0.39 U | 0.39 U | NA | 5.0 U | NA | 5.0 U |
| Chloroform | 67-66-3 | ug/L | 0.25 U | 0.25 U | 0.25 U | 0.25 U | NA | 5.0 U | NA | 5.0 U |
| Chloromethane | 74-87-3 | ug/L | 0.36 U | 0.36 U | 0.36 U | 0.36 U | NA | 5.0 U | NA | 5.0 U |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | 0.24 U | 0.24 U | 0.24 U | 0.24 U | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | 0.15 U | 0.15 U | 0.15 U | 0.15 U | NA | 5.0 U | NA | 5.0 U |
| Cyclohexane | 110-82-7 | ug/L | 0.18 U | 0.18 U | 0.18 U | 0.18 U | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | 0.86 U | 0.86 U | 0.86 U | 0.86 U | NA | 5.0 U | NA | 5.0 U |
| Ethylbenzene | 100-41-4 | ug/L | 0.21 U | 0.21 U | 0.21 U | 0.21 U | NA | 5.0 U | NA | 5.0 U |
| Isopropylbenzene | 98-82-8 | ug/L | 0.22 U | 0.22 U | 0.22 U | 0.22 U | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | 0.4 U | 0.4 U | 0.4 U | 0.4 U | NA | 10.0 U | NA | 5.0 U |
| Methyl Acetate | 79-20-9 | ug/L | 1.5 U | 1.5 U | 1.5 U | 1.5 U | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | 1.7 U | 1.7 U | 1.7 U | 1.7 U | NA | 50.0 U | NA | 50 U |
| Methylcyclohexane | 108-87-2 | ug/L | 0.15 U | 0.15 U | 0.15 U | 0.15 U | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | 5.1 | 0.29 U | 1.5 | 0.29 U | NA | 5.0 U | NA | 5.0 U |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | 0.19 U | 0.19 U | 0.19 U | 0.19 U | NA | 5.0 U | NA | 5.0 U |
| Styrene (Monomer) | 100-42-5 | ug/L | 0.3 U | 0.3 U | 0.3 U | 0.3 U | NA | 5.0 U | NA | 5.0 U |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | 250 U | NA | 250 U |
| Tetrachloroethene | 127-18-4 | ug/L | 0.25 U | 0.25 U | 0.25 U | 0.25 U | NA | 5.0 U | NA | 5.0 U |
| Toluene | 108-88-3 | ug/L | 0.44 U | 0.44 U | 0.44 U | 0.44 U | NA | 5.0 U | NA | 5.0 U |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | 250 U | NA | 250 U |
| Total Xylenes | 1330-20-7 | ug/L | 0.19 U | 0.19 U | 0.19 U | 0.19 U | NA | 10 U | NA | 5.0 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-4/3/2014-PPG-132-MW-2A<br><br>04/03/14<br>132-MW2A | G000005480-4/4/2014-PPG-133-MW-1A<br><br>04/04/14<br>133-MW1A | G000005480-4/4/2014-PPG-133-MW-1B<br><br>04/04/14<br>133-MW1B | G000005480-4/4/2014-PPG-133-MW-1C<br><br>04/04/14<br>133-MW1C | G1A001<br>2.5<br>12/19/03<br>MW1A | G1A001A<br>2.5<br>12/19/03<br>MW1A | G1A002<br>4<br>12/23/03<br>MW1A | G1A003<br>4.2<br>01/12/04<br>MW1A |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | 0.38 U | 0.38 U | 0.38 U | 0.38 U | NA | 5.0 U | NA | 5.0 U |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | 0.21 U | 0.21 U | 0.21 U | 0.21 U | NA | 5.0 U | NA | 5.0 U |
| Trichloroethene | 79-01-6 | ug/L | 0.5 U | 0.5 U | 0.5 U | 0.5 U | NA | 5.0 U | NA | 5.0 U |
| Vinyl chloride | 75-01-4 | ug/L | 0.41 U | 0.41 U | 0.41 U | 0.41 U | NA | 5.0 U | NA | 5.0 U |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | 0.3 U | 0.31 U | 0.31 U | 0.31 U | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | 0.31 U | 0.31 U | 0.31 U | 0.31 U | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | 10 U | NA | NA | 10 U |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | 10 U | NA | NA | 10 U |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | 10 U | NA | NA | 10 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | 10 U | NA | NA | 10 U |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | 10 U | NA | NA | 10 U |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | 10 U | NA | NA | 10 U |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | 0.94 U | 0.95 U | 0.95 U | 0.95 U | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 20 U | NA | NA | 20 U |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 10 U | NA | NA | 10 U |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 10 U | NA | NA | 10 U |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | 1.5 U | 1.5 U | 1.5 U | 1.5 U | 10 U | NA | NA | 10 U |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | 17 U | 17 U | 17 U | 17 U | 100 U | NA | NA | 100 U |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 10 U | NA | NA | 10 U |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | 0.46 U | 0.47 U | 0.47 U | 0.47 U | 10 U | NA | NA | 10 U |
| 2-Chloronaphthalene | 91-58-7 | ug/L | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 10 U | NA | NA | 10 U |
| 2-Chlorophenol | 95-57-8 | ug/L | 0.97 U | 0.98 U | 0.98 U | 0.98 U | 10 U | NA | NA | 10 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | 0.99 U | 1 U | 1 U | 1 U | 100 U | NA | NA | 100 U |
| 2-Methylnaphthalene | 91-57-6 | ug/L | 0.38 U | 0.39 U | 0.39 U | 0.39 U | 20 U | NA | NA | 20 U |
| 2-Methylphenol | 95-48-7 | ug/L | 1 U | 1.1 U | 1.1 U | 1.1 U | 10 U | NA | NA | 20 U |
| 2-Nitroaniline | 88-74-4 | ug/L | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 40 U | NA | NA | 40 U |
| 2-Nitrophenol | 88-75-5 | ug/L | 1.5 U | 1.5 U | 1.5 U | 1.5 U | 10 U | NA | NA | 10 U |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 10 U | NA | NA | 10 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | 0.93 U | 0.93 U | 0.93 U | 0.93 U | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 40 U | NA | NA | 40 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 10 U | NA | NA | 10 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | 1.8 U | 1.8 U | 1.8 U | 1.8 U | 10 U | NA | NA | 10 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | 0.31 U | 0.32 U | 0.32 U | 0.32 U | 10 U | NA | NA | 10 U |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | 10 U | NA | NA | 20 U |
| 4-Nitroaniline | 100-01-6 | ug/L | 1.7 U | 1.7 U | 1.7 U | 1.7 U | 100 U | NA | NA | 100 U |
| 4-Nitrophenol | 100-02-7 | ug/L | 5.2 U | 5.3 U | 5.3 U | 5.3 U | 100 U | NA | NA | 100 U |
| Acenaphthene | 83-32-9 | ug/L | 0.02 U | 0.021 U | 0.021 U | 0.021 U | 10 U | NA | NA | 10 U |
| Acenaphthylene | 208-96-8 | ug/L | 0.024 U | 0.024 U | 0.024 U | 0.024 U | 10 U | NA | NA | 10 U |
| Acetophenone | 98-86-2 | ug/L | 0.29 U | 0.29 U | 0.29 U | 0.29 U | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | 0.02 U | 0.021 U | 0.021 U | 0.021 U | 10 U | NA | NA | 10 U |
| Atrazine | 1912-24-9 | ug/L | 0.49 U | 0.49 U | 0.49 U | 0.49 U | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | 3.3 U | 3.3 U | 3.3 U | 3.3 U | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | 0.012 U | 0.012 U | 0.012 U | 0.012 U | 10 U | NA | NA | 10 U |
| Benzo(a)pyrene | 50-32-8 | ug/L | 0.012 U | 0.012 U | 0.012 U | 0.012 U | 10 U | NA | NA | 10 U |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 10 U | NA | NA | 10 U |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | 0.016 U | 0.016 U | 0.016 U | 0.016 U | 10 U | NA | NA | 10 U |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | 0.015 U | 0.015 U | 0.015 U | 0.015 U | 10 U | NA | NA | 10 U |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | 40 U | NA | NA | 40 U |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | 0.31 U | 0.31 U | 0.31 U | 0.31 U | 10 U | NA | NA | 10 U |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | 0.31 U | 0.31 U | 0.31 U | 0.31 U | 10 U | NA | NA | 10 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | 0.45 U | 0.46 U | 0.46 U | 0.46 U | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | 0.59 U | 1 J | 0.59 U | 0.59 U | 10 U | NA | NA | 10 U |
| Butyl benzyl phthalate | 85-68-7 | ug/L | 0.29 U | 0.29 U | 0.29 U | 0.29 U | 10 U | NA | NA | 10 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-4/3/2014-PPG-132-MW-2A<br><br>04/03/14<br>132-MW2A | G000005480-4/4/2014-PPG-133-MW-1A<br><br>04/04/14<br>133-MW1A | G000005480-4/4/2014-PPG-133-MW-1B<br><br>04/04/14<br>133-MW1B | G000005480-4/4/2014-PPG-133-MW-1C<br><br>04/04/14<br>133-MW1C | G1A001<br>2.5<br>12/19/03<br>MW1A | G1A001A<br>2.5<br>12/19/03<br>MW1A | G1A002<br>4<br>12/23/03<br>MW1A | G1A003<br>4.2<br>01/12/04<br>MW1A |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | 0.69 U | 0.7 U | 0.7 U | 0.7 U | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | 0.36 U | 0.36 U | 0.36 U | 0.36 U | 10 U | NA | NA | 20 U |
| Chrysene | 218-01-9 | ug/L | 0.012 U | 0.012 U | 0.012 U | 0.012 U | 10 U | NA | NA | 10 U |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | 0.017 U | 0.017 U | 0.017 U | 0.017 U | 10 U | NA | NA | 10 U |
| Dibenzofuran | 132-64-9 | ug/L | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 20 U | NA | NA | 20 U |
| Diethyl phthalate | 84-66-2 | ug/L | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 10 U | NA | NA | 10 U |
| Dimethyl phthalate | 131-11-3 | ug/L | 0.28 U | 0.29 U | 0.29 U | 0.29 U | 10 U | NA | NA | 10 U |
| Di-n-butyl phthalate | 84-74-2 | ug/L | 0.56 U | 0.56 U | 0.56 U | 0.56 U | 6.6 J | NA | NA | 10 U |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | 0.31 U | 0.31 U | 0.31 U | 0.31 U | 10 U | NA | NA | 10 U |
| Fluoranthene | 206-44-0 | ug/L | 0.013 U | 0.013 U | 0.013 U | 0.013 U | 10 U | NA | NA | 10 U |
| Fluorene | 86-73-7 | ug/L | 0.017 U | 0.017 U | 0.017 U | 0.017 U | 10 U | NA | NA | 10 U |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | 0.51 U | 0.52 U | 0.52 U | 0.52 U | 10 U | NA | NA | 10 U |
| Hexachlorobenzene | 118-74-1 | ug/L | 0.017 U | 0.017 U | 0.017 U | 0.017 U | 10 U | NA | NA | 10 U |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | 7.1 U | 7.2 U | 7.2 U | 7.2 U | 10 U | NA | NA | 10 U |
| Hexachloroethane | 67-72-1 | ug/L | 0.55 U | 0.56 U | 0.56 U | 0.56 U | 10 U | NA | NA | 10 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | 0.014 U | 0.015 U | 0.015 U | 0.015 U | 10 U | NA | NA | 10 U |
| Isophorone | 78-59-1 | ug/L | 0.27 U | 0.28 U | 0.28 U | 0.28 U | 10 U | NA | NA | 10 U |
| Naphthalene | 91-20-3 | ug/L | 0.036 U | 0.036 U | 0.036 U | 0.036 U | 10 U | NA | NA | 10 U |
| Nitrobenzene | 98-95-3 | ug/L | 0.42 U | 0.42 U | 0.42 U | 0.42 U | 10 U | NA | NA | 10 U |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | 10 U | NA | NA | 10 U |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | 0.3 U | 0.31 U | 0.31 U | 0.31 U | 10 U | NA | NA | 10 U |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | 0.31 U | 0.31 U | 0.31 U | 0.31 U | 10 U | NA | NA | 10 U |
| p-Chloroaniline | 106-47-8 | ug/L | 0.53 U | 0.53 U | 0.53 U | 0.53 U | 10 U | NA | NA | 20 U |
| Pentachlorophenol | 87-86-5 | ug/L | 0.1 U | 0.1 U | 0.1 U | 0.1 U | 100 U | NA | NA | 100 U |
| Phenanthrene | 85-01-8 | ug/L | 0.021 U | 0.021 U | 0.021 U | 0.021 U | 10 U | NA | NA | 10 U |
| Phenol | 108-95-2 | ug/L | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 10 U | NA | NA | 10 U |
| Pyrene | 129-00-0 | ug/L | 0.015 U | 0.015 U | 0.015 U | 0.015 U | 10 U | NA | NA | 10 U |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | 6.6 | NA | NA | 100 U |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 11 U | 11 U | 1,060 | 11 U | 23,100 J | NA | NA | 9,950 |
| Antimony | 7440-36-0 | ug/L | 1.8 U | 2.6 U | 2.6 U | 2.6 U | 111 BJ | NA | NA | 43 BJ |
| Arsenic | 7440-38-2 | ug/L | 1.5 U | 2.8 U | 13.9 | 9.6 | 97.6 B | NA | NA | 55 J |
| Barium | 7440-39-3 | ug/L | 0.36 U | 1 U | 411 | 1 U | 525 J | NA | NA | 360 |
| Beryllium | 7440-41-7 | ug/L | 0.17 U | 0.4 U | 0.4 U | 0.4 U | 0.13 UJ | NA | NA | 0.22 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 0.24 U | 0.7 U | 0.7 U | 0.7 U | 4.9 J | NA | NA | 1.5 |
| Calcium | 7440-70-2 | ug/L | 114,000 | 47,900 | 136,000 | 107,000 | 25,200 J | NA | NA | 20,200 |
| Chromium | 7440-47-3 | ug/L | 0.92 U | 81.9 | 0.89 U | 0.89 U | 13,100 J | NA | NA | 8,150 |
| Chromium VI | 18540-29-9 | ug/L | 15 | 69 | 1.5 U | 1.5 U | R | NA | 1,000 UJ | 400 UJ |
| Cobalt | 7440-48-4 | ug/L | 0.48 U | 0.83 U | 0.83 U | 0.83 U | 27.8 BJ | NA | NA | 21.8 BJ |
| Copper | 7440-50-8 | ug/L | 1 U | 14.5 | 1.2 U | 1.2 U | 157 BJ | NA | NA | 98 BJ |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 16,600 | 205 | 4,520 | 12 U | 44,100 J | NA | NA | 26,900 |
| Lead | 7439-92-1 | ug/L | 2.4 U | 18.4 | 7.3 | 1.3 U | 853 J | NA | NA | 423 |
| Magnesium | 7439-95-4 | ug/L | 13,000 | 41 U | 38,100 | 34,900 | 9,610 J | NA | NA | 7,170 |
| Manganese | 7439-96-5 | ug/L | 1,780 | 0.48 U | 2,520 | 803 | 1,730 J | NA | NA | 970 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-4/3/2014-PPG-132-MW-2A<br><br>04/03/14<br>132-MW2A | G000005480-4/4/2014-PPG-133-MW-1A<br><br>04/04/14<br>133-MW1A | G000005480-4/4/2014-PPG-133-MW-1B<br><br>04/04/14<br>133-MW1B | G000005480-4/4/2014-PPG-133-MW-1C<br><br>04/04/14<br>133-MW1C | G1A001<br>2.5<br>12/19/03<br>MW1A | G1A001A<br>2.5<br>12/19/03<br>MW1A | G1A002<br>4<br>12/23/03<br>MW1A | G1A003<br>4.2<br>01/12/04<br>MW1A |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.048 U | 0.048 U | 0.048 U | 0.048 U | 1.9 J | NA | NA | 1.3 |
| Nickel | 7440-02-0 | ug/L | 1.6 U | 0.75 U | 0.75 U | 0.75 U | 137 J | NA | NA | 120 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 41 U | 50 U | 17,800 | 50 U | 60,700 J | NA | NA | 78,400 |
| Selenium | 7782-49-2 | ug/L | 2.4 U | 3.6 U | 3.6 U | 3.6 U | 34.1 J | NA | NA | 30.1 J |
| Silver | 7440-22-4 | ug/L | 1.5 U | 1.2 U | 1.2 U | 1.2 U | 0.53 UJ | NA | NA | 0.97 U |
| Sodium | 7440-23-5 | ug/L | 67,100 | 101,000 | 116,000 | 79,100 | 2,330,000 J | NA | NA | 2,600,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 1.3 U | 1.8 U | 1.8 U | 1.8 U | 4 UJ | NA | NA | 3.3 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | 14,800 | NA | NA | 9,710 |
| Vanadium | 7440-62-2 | ug/L | 0.72 U | 0.87 U | 0.87 U | 0.87 U | 1,450 J | NA | NA | 1,400 J |
| Zinc | 7440-66-6 | ug/L | 50.5 | 286 | 32.5 | 7.6 U | 3,890 J | NA | NA | 1,860 J |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 11,900 | 12 U | 959 | 12 U | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 1,710 | 0.48 U | 2,540 | 823 | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-4/3/2014-PPG-132-MW-2A<br>04/03/14<br>132-MW2A | G000005480-4/4/2014-PPG-133-MW-1A<br>04/04/14<br>133-MW1A | G000005480-4/4/2014-PPG-133-MW-1B<br>04/04/14<br>133-MW1B | G000005480-4/4/2014-PPG-133-MW-1C<br>04/04/14<br>133-MW1C | G1A001<br>2.5<br>12/19/03<br>MW1A | G1A001A<br>2.5<br>12/19/03<br>MW1A | G1A002<br>4<br>12/23/03<br>MW1A | G1A003<br>4.2<br>01/12/04<br>MW1A |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | 653,000 | 213,000 | 293,000 | 277,000 | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | 1,700 | 30 U | 3,500 | 30 U | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | 258,000 | NA | NA | 244,000 |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | 10 | 4.2 U | 4.2 U | 4.2 U | 61.7 | NA | NA | 52.5 J |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | 410 | 17 U | 410 | 17 U | 4,350,000 J | NA | 1,500,000 J | 7,280,000 J |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | 16,200 | 29 U | 4,100 | 29 U | 39,800 J | NA | NA | 19,600 J |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | 24 U | 330 | 24 U | 2,200 | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | 26 U | 320 | 26 U | 1,900 | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | 2.4 U | 2.4 U | 2.4 U | 300 | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | 6.54 | 6.88 | 6.58 | 6.04 | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G000005480-4/3/2014-PPG-132-MW-2A<br><br>04/03/14<br>132-MW2A | G000005480-4/4/2014-PPG-133-MW-1A<br><br>04/04/14<br>133-MW1A | G000005480-4/4/2014-PPG-133-MW-1B<br><br>04/04/14<br>133-MW1B | G000005480-4/4/2014-PPG-133-MW-1C<br><br>04/04/14<br>133-MW1C | G1A001<br>2.5<br>12/19/03<br>MW1A | G1A001A<br>2.5<br>12/19/03<br>MW1A | G1A002<br>4<br>12/23/03<br>MW1A | G1A003<br>4.2<br>01/12/04<br>MW1A |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 113,000 | 25,300 | 39,000 | 113,000 | 58,000 | NA | NA | 64,400 |
| Sulfide | 18496-25-8 | ug/L | 340 U | 340 U | 340 U | 340 U | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | 32,000 J | NA | 20,000 UJ | 20,000 UJ |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | 625,000 | NA | NA | 238,000 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | G1B001 | G1B002 | G1B003 | G2A001 | G2A003 | G2A004 | G2B001 | G2B002 | G3A001 | G3A002 | G3B001 | G3B002 | G3B004 | G4A001 | G4A002 | G4A004 | G4B001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 6.5 | 6.9 | 7.1 | 0.3 | 0.1 | 0.7 | 1.6 | 2.4 | 1.9 | 3 | 5.1 | 5.6 | 36.1 | 2.3 | 2.2 | 2 | 4.8 |
| Date Collected: | | | 12/19/03 | 12/23/03 | 01/12/04 | 12/18/03 | 01/19/04 | 02/09/04 | 12/18/03 | 01/19/04 | 12/17/03 | 01/13/04 | 12/22/03 | 01/13/04 | 02/09/04 | 12/22/03 | 01/13/04 | 02/09/04 | 12/22/03 |
| Location ID: | CAS Number | Units | MW1B | MW1B | MW1B | MW2A | MW2A | MW2A | MW2B | MW2B | MW3A | MW3A | MW3B | MW3B | MW3B | MW4A | MW4A | MW4A | MW4B |
| **Volatile Organics** | | | | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | 1 U | NA | 1.0 U | 5.0 U | 5.0 U | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | 1.0 U | 1.0 U | NA | 1.0 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | 1 U | NA | 1.0 U | 5.0 U | 5.0 U | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | 1.0 U | 1.0 U | NA | 1.0 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | 1 U | NA | 1.0 U | 5.0 U | 5.0 U | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | 1.0 U | 1.0 U | NA | 1.0 U |
| 1,1-Dichloroethane | 75-34-3 | ug/L | 1.0 U | NA | 1.0 U | 5.0 U | 5.0 U | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | 1.0 U | 1.0 U | NA | 1.0 U |
| 1,1-Dichloroethene | 75-35-4 | ug/L | 1.0 U | NA | 1.0 U | 5.0 U | 5.0 U | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | 1.0 U | 1.0 U | NA | 1.0 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | 1.0 U | NA | 1.0 U | 5.0 U | 5.0 U | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | 1.0 U | 1.0 U | NA | 1.0 U |
| 1,2-Dichloropropane | 78-87-5 | ug/L | 1 U | NA | 1.0 U | 5.0 U | 5.0 U | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | 1.0 U | 1.0 U | NA | 1.0 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | 10.0 U | NA | 10.0 U | 50.0 U | 50 U | NA | 10.0 U | 10.0 U | 10.0 U | 10.0 U | 10.0 U | 10.0 U | NA | 10.0 U | 10.0 U | NA | 10.0 U |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | 10.0 U | NA | 10.0 U | 50.0 U | 50 U | NA | 10.0 U | 10.0 U | 10.0 U | 10.0 U | 10.0 U | 10.0 U | NA | 10.0 U | 10.0 U | NA | 10.0 U |
| Acetone | 67-64-1 | ug/L | 10.0 U | NA | 10.0 U | 150 | 130 | NA | 10.0 U | 33 | 10.0 U | 10.0 U | 10.0 U | 10.0 U | NA | 10.0 U | 10.0 U | NA | 10.0 U |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | 1.0 U | NA | 1.0 U | 5.0 U | 5.0 U | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | 1.0 U | 1.0 U | NA | 1.0 U |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | 1.0 U | NA | 1.0 U | 5.0 U | 5.0 U | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | 1.0 U | 1.0 U | NA | 1.0 U |
| Bromoform | 75-25-2 | ug/L | 1.0 U | NA | 1.0 U | 5.0 U | 5.0 U | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | 1.0 U | 1.0 U | NA | 1.0 U |
| Bromomethane | 74-83-9 | ug/L | 1.0 U | NA | 1.0 U | 5.0 U | 5.0 U | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | 1.0 U | 1.0 U | NA | 1.0 U |
| Carbon Disulfide | 75-15-0 | ug/L | 10.0 U | NA | 10.0 U | 50.0 U | 50 U | NA | 10.0 U | 10.0 U | 10.0 U | 10.0 U | 10.0 U | 10.0 U | NA | 10.0 U | 10.0 U | NA | 10.0 U |
| Carbon Tetrachloride | 56-23-5 | ug/L | 1.0 U | NA | 1.0 U | 5.0 U | 5.0 U | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | 1.0 U | 1.0 U | NA | 1.0 U |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | 1.0 U | NA | 1.0 U | 5.0 U | 5.0 U | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | 1.0 U | 1.0 U | NA | 1.0 U |
| Chlorodibromomethane | 124-48-1 | ug/L | 1.0 U | NA | 1.0 U | 5.0 U | 5.0 U | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | 1.0 U | 1.0 U | NA | 1.0 U |
| Chloroethane | 75-00-3 | ug/L | 1.0 U | NA | 1.0 U | 5.0 U | 5.0 U | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | 1.0 U | 1.0 U | NA | 1.0 U |
| Chloroform | 67-66-3 | ug/L | 1.0 U | NA | 1.0 U | 5.0 U | 5.0 U | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | 1.0 U | 1.0 U | NA | 1.0 U |
| Chloromethane | 74-87-3 | ug/L | 1.0 U | NA | 1.0 U | 5.0 U | 5.0 U | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | 1.0 U | 1.0 U | NA | 1.0 U |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | 1.0 U | NA | 1.0 U | 5.0 U | 5.0 U | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | 1.0 U | 1.0 U | NA | 1.0 U |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | 1.0 U | NA | 1.0 U | 5.0 U | 5.0 U | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | 1.0 U | 1.0 U | NA | 1.0 U |
| Ethylbenzene | 100-41-4 | ug/L | 1.0 U | NA | 1.0 U | 5.0 U | 5.0 U | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | 1.0 U | 1.0 U | NA | 1.0 U |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | 2.0 U | NA | 2.0 U | 10.0 U | 10.0 U | NA | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U | NA | 2.0 U | 2.0 U | NA | 2.0 U |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | 10.0 U | NA | 10.0 U | 50.0 U | 50 U | NA | 10.0 U | 10.0 U | 10.0 U | 10.0 U | 10.0 U | 10.0 U | NA | 10.0 U | 10.0 U | NA | 10.0 U |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | 1.2 | NA | 2.9 BF | 5.0 U | 5.0 U | NA | 33 | 38 | 1.0 U | 1.0 U | 4.9 | 5.4 BF | NA | 16 | 1.0 U | NA | 1.4 |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | 1.0 U | NA | 1.0 U | 5.0 U | 5.0 U | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | 1.0 U | 1.0 U | NA | 1.0 U |
| Styrene (Monomer) | 100-42-5 | ug/L | 1.0 U | NA | 1.0 U | 5.0 U | 5.0 U | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | 1.0 U | 1.0 U | NA | 1.0 U |
| tert-Butyl alcohol | 75-65-0 | ug/L | 50.0 U | NA | 50 U | 250 U | 250 U | NA | 50.0 U | 50 U | 50.0 U | 50 U | 50.0 U | 50 U | NA | 50.0 U | 50 U | NA | 50.0 U |
| Tetrachloroethene | 127-18-4 | ug/L | 1.0 U | NA | 1.0 U | 5.0 U | 5.0 U | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | 1.0 U | 1.0 U | NA | 1.0 U |
| Toluene | 108-88-3 | ug/L | 1.0 U | NA | 1.0 U | 5.0 U | 5.0 U | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | 1.0 U | 1.0 U | NA | 1.0 U |
| Total VOCs | ARC-TVOC | ug/L | 1.2 | NA | 2.9 | 150 | 130 | NA | 33 | 71 | 50 U | 50 U | 4.9 | 5.4 | NA | 16 | 50 U | NA | 1.4 |
| Total Xylenes | 1330-20-7 | ug/L | 2.0 U | NA | 2.0 U | 10 U | 10 U | NA | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U | NA | 2.0 U | 2.0 U | NA | 2.0 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | G1B001 6.5 12/19/03 MW1B | G1B002 6.9 12/23/03 MW1B | G1B003 7.1 01/12/04 MW1B | G2A001 0.3 12/18/03 MW2A | G2A003 0.1 01/19/04 MW2A | G2A004 0.7 02/09/04 MW2A | G2B001 1.6 12/18/03 MW2B | G2B002 2.4 01/19/04 MW2B | G3A001 1.9 12/17/03 MW3A | G3A002 3 01/13/04 MW3A | G3B001 5.1 12/22/03 MW3B | G3B002 5.6 01/13/04 MW3B | G3B004 36.1 02/09/04 MW3B | G4A001 2.3 12/22/03 MW4A | G4A002 2.2 01/13/04 MW4A | G4A004 2 02/09/04 MW4A | G4B001 4.8 12/22/03 MW4B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | 1.0 U | NA | 1.0 U | 5.0 U | 5.0 U | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | 1.0 U | 1.0 U | NA | 1.0 U |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | 1.0 U | NA | 1.0 U | 5.0 U | 5.0 U | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | 1.0 U | 1.0 U | NA | 1.0 U |
| Trichloroethene | 79-01-6 | ug/L | 1.0 U | NA | 1.0 U | 5.0 U | 5.0 U | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | 1.0 U | 1.0 U | NA | 1.0 U |
| Vinyl chloride | 75-01-4 | ug/L | 1.0 U | NA | 1.0 U | 5.0 U | 5.0 U | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA | 1.0 U | 1.0 U | NA | 1.0 U |
| **Semivolatile Organics** | | | | | | | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | 10 U | NA | 10 U | 10 U | 11 U | NA | 11 U | 10 U | 9.3 U | 10 U | 13 U | 11 U | NA | 11 U | 11 U | NA | 10 U |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | 50 U | NA | 50 U | 50 U | 53 U | NA | 55 U | 52 U | 47 U | 51 U | 63 U | 53 U | NA | 55 U | 53 U | NA | 50 U |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| 2-Chloronaphthalene | 91-58-7 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| 2-Chlorophenol | 95-57-8 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | 50 U | NA | 50 U | 50 U | 53 U | NA | 55 U | 52 U | 47 U | 51 U | 63 U | 53 U | NA | 55 U | 53 U | NA | 50 U |
| 2-Methylnaphthalene | 91-57-6 | ug/L | 10 U | NA | 10 U | 10 U | 11 U | NA | 11 U | 10 U | 9.3 U | 10 U | 13 U | 11 U | NA | 11 U | 11 U | NA | 10 U |
| 2-Methylphenol | 95-48-7 | ug/L | 10 U | NA | 10 U | 1.3 J | 1.4 J | NA | 11 U | 10 U | 9.3 U | 10 U | 13 U | 11 U | NA | 11 U | 11 U | NA | 10 U |
| 2-Nitroaniline | 88-74-4 | ug/L | 20 U | NA | 20 U | 20 U | 20 U | NA | 22 U | 21 U | 19 U | 20 U | 25 U | 21 U | NA | 22 U | 21 U | NA | 20 U |
| 2-Nitrophenol | 88-75-5 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | 20 U | NA | 20 U | 20 U | 20 U | NA | 22 U | 21 U | 19 U | 20 U | 25 U | 21 U | NA | 22 U | 21 U | NA | 20 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| 4-Methylphenol | 106-44-5 | ug/L | 10 U | NA | 10 U | 19 | 20 | NA | 11 U | 10 U | 9.3 U | 10 U | 13 U | 11 U | NA | 11 U | 11 U | NA | 10 U |
| 4-Nitroaniline | 100-01-6 | ug/L | 50 U | NA | 50 U | 50 U | 53 U | NA | 55 U | 52 U | 47 U | 51 U | 63 U | 53 U | NA | 55 U | 53 U | NA | 50 U |
| 4-Nitrophenol | 100-02-7 | ug/L | 50 U | NA | 50 U | 50 U | 53 U | NA | 55 U | 52 U | 47 U | 51 U | 63 U | 53 U | NA | 55 U | 53 U | NA | 50 U |
| Acenaphthene | 83-32-9 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| Acenaphthylene | 208-96-8 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| Benzo(a)pyrene | 50-32-8 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| Benzyl Alcohol | 100-51-6 | ug/L | 20 U | NA | 20 U | 2.8 J | 3.3 | NA | 22 U | 21 U | 19 U | 20 U | 25 U | 21 U | NA | 22 U | 21 U | NA | 20 U |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | 1.5 J | NA | 5 U | 2.2 J | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 2.4 J | 3.9 J | NA | 5.5 U | 5.3 U | NA | 4.8 J |
| Butyl benzyl phthalate | 85-68-7 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | G1B001 6.5 12/19/03 MW1B | G1B002 6.9 12/23/03 MW1B | G1B003 7.1 01/12/04 MW1B | G2A001 0.3 12/18/03 MW2A | G2A003 0.1 01/19/04 MW2A | G2A004 0.7 02/09/04 MW2A | G2B001 1.6 12/18/03 MW2B | G2B002 2.4 01/19/04 MW2B | G3A001 1.9 12/17/03 MW3A | G3A002 3 01/13/04 MW3A | G3B001 5.1 12/22/03 MW3B | G3B002 5.6 01/13/04 MW3B | G3B004 36.1 02/09/04 MW3B | G4A001 2.3 12/22/03 MW4A | G4A002 2.2 01/13/04 MW4A | G4A004 2 02/09/04 MW4A | G4B001 4.8 12/22/03 MW4B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | 10 U | NA | 10 U | 10 U | 11 U | NA | 11 U | 10 U | 9.3 U | 10 U | 13 U | 11 U | NA | 11 U | 11 U | NA | 10 U |
| Chrysene | 218-01-9 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| Dibenzofuran | 132-64-9 | ug/L | 10 U | NA | 10 U | 10 U | 11 U | NA | 11 U | 10 U | 9.3 U | 10 U | 13 U | 11 U | NA | 11 U | 11 U | NA | 10 U |
| Diethyl phthalate | 84-66-2 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| Dimethyl phthalate | 131-11-3 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| Di-n-butyl phthalate | 84-74-2 | ug/L | 5 U | NA | 5 U | 1.3 J | 1.9 J | NA | 5.5 U | 1.5 J | 4.7 U | 3 B | 1.6 J | 2 B | NA | 1.6 J | 2.3 B | NA | 1.6 J |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| Fluoranthene | 206-44-0 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| Fluorene | 86-73-7 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| Hexachlorobenzene | 118-74-1 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| Hexachloroethane | 67-72-1 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| Isophorone | 78-59-1 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| Naphthalene | 91-20-3 | ug/L | 5 U | NA | 5 U | 16 | 7.1 | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| Nitrobenzene | 98-95-3 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| p-Chloroaniline | 106-47-8 | ug/L | 10 U | NA | 10 U | 10 U | 11 U | NA | 11 U | 10 U | 9.3 U | 10 U | 13 U | 11 U | NA | 11 U | 11 U | NA | 10 U |
| Pentachlorophenol | 87-86-5 | ug/L | 50 U | NA | 50 U | 50 U | 53 U | NA | 55 U | 52 U | 47 U | 51 U | 63 U | 53 U | NA | 55 U | 53 U | NA | 50 U |
| Phenanthrene | 85-01-8 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 1.2 J | 1.4 J | NA | 5 U |
| Phenol | 108-95-2 | ug/L | 5 U | NA | 5 U | 140 | 150 | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| Pyrene | 129-00-0 | ug/L | 5 U | NA | 5 U | 5.1 U | 5.3 U | NA | 5.5 U | 5.2 U | 4.7 U | 5.1 U | 6.3 U | 5.3 U | NA | 5.5 U | 5.3 U | NA | 5 U |
| Total SVOCs | ARC-TSVOC | ug/L | 1.5 | NA | 50 U | 180 | 180 | NA | 55 U | 1.5 | 47 U | 3 | 4.0 | 5.9 | NA | 2.8 | 3.7 | NA | 6.4 |
| **Metals** | | | | | | | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 293 | NA | 3,630 | 13,900 | 9,920 | NA | 81.8 BJ | 204 JF | 150 BJ | 347 | 895 | 2,540 | NA | 3,210 | 3,750 | NA | 776 |
| Antimony | 7440-36-0 | ug/L | 3,390 | NA | 2,580 | 4,450 | 2,220 | NA | 3.1 U | 2.7 U | 3.1 U | 15.3 B | 3.1 U | 2.7 U | NA | 3.1 U | 3.1 B | NA | 4,370 |
| Arsenic | 7440-38-2 | ug/L | 1,250 U | NA | R | 2,490 U | R | NA | 6.7 B | 9.8 J | 30.7 BJ | 4.6 J | 2.5 U | R | NA | 6.6 B | 5.1 J | NA | 1,250 U |
| Barium | 7440-39-3 | ug/L | 19.8 BJ | NA | 39.7 BJ | 7 B | 6.6 B | NA | 88.3 | 71.3 | 27.1 BJ | 38.7 BJ | 129 | 153 | NA | 40.4 BJ | 58.8 BJ | NA | 53.9 |
| Beryllium | 7440-41-7 | ug/L | 0.13 U | NA | 0.22 U | 0.13 U | 0.22 U | NA | 0.13 U | 0.22 U | 0.13 U | 0.22 U | 0.13 U | 0.22 U | NA | 0.13 U | 0.22 U | NA | 0.13 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 0.15 U | NA | 1.2 | 0.015 U | 0.45 | NA | 0.43 B | 0.46 | 0.66 B | 0.29 U | 1.1 BJ | 1.1 | NA | 0.74 B | 1.2 | NA | 0.15 U |
| Calcium | 7440-70-2 | ug/L | 330,000 | NA | 320,000 | 29,200 | 22,400 | NA | 196,000 | 171,000 | 291,000 | 248,000 | 138,000 | 145,000 | NA | 4,120 | 5,210 | NA | 237,000 |
| Chromium | 7440-47-3 | ug/L | 492,000 | NA | 544,000 | 678,000 | 514,000 JF | NA | 62.3 | 140 BF | 80.3 | 3,410 | 176 | 94 B | NA | 347 | 573 JF | NA | 765,000 |
| Chromium VI | 18540-29-9 | ug/L | R | 578,000 | 603,000 J | R | 528,000 J | 468,000 J | 10 UJ | 10 UJ | 10 UJ | 40 UJ | NA | 66.9 BF | 38.3 | NA | 10 UJ | 10 UJ | NA |
| Cobalt | 7440-48-4 | ug/L | 0.64 U | NA | 2.1 U | 0.64 U | 2.1 U | NA | 23.6 BJ | 42.6 | 1.5 B | 3.9 B | 1.3 B | 3.4 B | NA | 1.5 B | 2.6 B | NA | 1.9 U |
| Copper | 7440-50-8 | ug/L | 2.3 U | NA | 26 B | 23.1 B | 18.8 B | NA | 5.7 B | 19.6 B | 2.3 U | 2.5 B | 2.7 B | 10.2 B | NA | 15.2 B | 18.2 B | NA | 6.8 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 755 | NA | 3,850 | 292 BJ | 307 | NA | 278 BJ | 566 | 27,700 | 25,700 | 742 | 3,200 | NA | 3,270 | 4,810 | NA | 838 |
| Lead | 7439-92-1 | ug/L | 2.5 U | NA | 11.8 U | 130 | 83.4 | NA | 13.7 BJ | 25.5 | 5 B | 5.8 BJ | 3.9 B | 10.4 B | NA | 95.9 | 106 | NA | 3.8 U |
| Magnesium | 7439-95-4 | ug/L | 78,500 | NA | 73,300 | 41.6 U | 37.4 U | NA | 33,500 | 31,300 | 16,200 | 14,000 | 27,200 | 37.4 U | NA | 4,250 | 4,350 | NA | 84,800 |
| Manganese | 7439-96-5 | ug/L | 19.9 B | NA | 113 | 191 | 328 | NA | 1,440 | 1,530 | 250 | 211 | 1,420 | 1,630 | NA | 47.4 BJ | 91.7 | NA | 228 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | G1B001 6.5 12/19/03 MW1B | G1B002 6.9 12/23/03 MW1B | G1B003 7.1 01/12/04 MW1B | G2A001 0.3 12/18/03 MW2A | G2A003 0.1 01/19/04 MW2A | G2A004 0.7 02/09/04 MW2A | G2B001 1.6 12/18/03 MW2B | G2B002 2.4 01/19/04 MW2B | G3A001 1.9 12/17/03 MW3A | G3A002 3 01/13/04 MW3A | G3B001 5.1 12/22/03 MW3B | G3B002 5.6 01/13/04 MW3B | G3B004 36.1 02/09/04 MW3B | G4A001 2.3 12/22/03 MW4A | G4A002 2.2 01/13/04 MW4A | G4A004 2 02/09/04 MW4A | G4B001 4.8 12/22/03 MW4B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.03 U | NA | 0.03 U | 0.33 | 0.51 | NA | 0.03 U | 0.05 | 0.03 U | 0.04 | 0.03 U | 0.03 U | NA | 0.2 | 0.31 | NA | 0.03 U |
| Nickel | 7440-02-0 | ug/L | 181 | NA | 188 | 502 | 437 | NA | 48 | 99.7 | 3.4 B | 19.2 | 4.1 B | 9.7 | NA | 3 B | 6.9 | NA | 44.5 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 6,910 J | NA | 8,020 | 514,000 J | 418,000 | NA | 57,600 J | 91,600 | 14,900 | 33,200 | 5,550 | 6,200 | NA | 13,100 J | 14,300 | NA | 13,800 J |
| Selenium | 7782-49-2 | ug/L | 34.6 U | NA | 46.6 U | 13.4 | 14 U | NA | 3.5 U | 4.7 UJ | 3.5 U | 4.7 UJ | 3.5 U | 4.7 UJ | NA | 3.5 U | 4.7 UJ | NA | 69.2 U |
| Silver | 7440-22-4 | ug/L | 0.75 B | NA | 1.9 | 2.7 B | 3 | NA | 0.53 U | 0.97 U | 0.53 U | 0.97 U | 0.95 B | 0.97 U | NA | 0.82 B | 0.97 U | NA | 4.6 B |
| Sodium | 7440-23-5 | ug/L | 436,000 | NA | 495,000 | 3,800,000 | 3,100,000 | NA | 276,000 | 386,000 | 178,000 | 1,470,000 | 64,500 | 62,600 | NA | 251,000 | 273,000 | NA | 811,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 134 | NA | 125 | 171 | 110 | NA | 4 U | 3.3 U | 4 U | 3.3 U | 4 U | 3.3 U | NA | 4 U | 3.3 U | NA | 185 |
| Total CCPW Metals | CCPW-M | ug/L | 496,000 | NA | 547,000 | 683,000 | 517,000 | NA | 134 | 305 | 89.8 | 3,530 | 181 | 110 | NA | 374 | 618 | NA | 770,000 |
| Vanadium | 7440-62-2 | ug/L | 98.9 U | NA | R | 98.9 U | R | NA | 23.5 | 65 J | 6.1 BJ | 83.2 J | 1.1 B | 9.4 J | NA | 24.2 | 35.3 J | NA | 198 U |
| Zinc | 7440-66-6 | ug/L | 201 U | NA | 147 UJ | 201 U | 147 UJ | NA | 12.9 B | 16.3 BJ | 11.9 B | 20.6 J | 12.4 B | 20.8 J | NA | 90.1 | 96.4 J | NA | 402 U |
| **Metals-Filtered** | | | | | | | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | G1B001 6.5 12/19/03 MW1B | G1B002 6.9 12/23/03 MW1B | G1B003 7.1 01/12/04 MW1B | G2A001 0.3 12/18/03 MW2A | G2A003 0.1 01/19/04 MW2A | G2A004 0.7 02/09/04 MW2A | G2B001 1.6 12/18/03 MW2B | G2B002 2.4 01/19/04 MW2B | G3A001 1.9 12/17/03 MW3A | G3A002 3 01/13/04 MW3A | G3B001 5.1 12/22/03 MW3B | G3B002 5.6 01/13/04 MW3B | G3B004 36.1 02/09/04 MW3B | G4A001 2.3 12/22/03 MW4A | G4A002 2.2 01/13/04 MW4A | G4A004 2 02/09/04 MW4A | G4B001 4.8 12/22/03 MW4B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | 264,000 | NA | 237,000 | 1,260,000 | 954,000 | NA | 281,000 | 348,000 | 22,500 | 116,000 | 176,000 | 161,000 | NA | 136,000 | 121,000 | NA | 526,000 |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | 10 U | NA | 10 UJ | 540 | 376 J | NA | 10 U | 13.4 J | 10 U | 101 J | 10 U | 10 UJ | NA | 11.6 | 10 UJ | NA | 10 U |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | 116,000 BJ | 100,000 UJ | 1,530,000 J | 2,140,000 J | 854,000 J | 1,580 | 100,000 UJ | 114,000 J | 6,950,000 J | 3,480,000 J | NA | 465,000 | NA | NA | 319,000 J | 2,020 J | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | 639 BJ | NA | 2,320 J | 100 UJ | 100 UJ | NA | 278 J | 452 J | 20,800 J | 22,200 J | NA | 2,740 J | NA | NA | 4,490 J | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | G1B001 | G1B002 | G1B003 | G2A001 | G2A003 | G2A004 | G2B001 | G2B002 | G3A001 | G3A002 | G3B001 | G3B002 | G3B004 | G4A001 | G4A002 | G4A004 | G4B001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 6.5 | 6.9 | 7.1 | 0.3 | 0.1 | 0.7 | 1.6 | 2.4 | 1.9 | 3 | 5.1 | 5.6 | 36.1 | 2.3 | 2.2 | 2 | 4.8 |
| Date Collected: | | | 12/19/03 | 12/23/03 | 01/12/04 | 12/18/03 | 01/19/04 | 02/09/04 | 12/18/03 | 01/19/04 | 12/17/03 | 01/13/04 | 12/22/03 | 01/13/04 | 02/09/04 | 12/22/03 | 01/13/04 | 02/09/04 | 12/22/03 |
| Location ID: | CAS Number | Units | MW1B | MW1B | MW1B | MW2A | MW2A | MW2A | MW2B | MW2B | MW3A | MW3A | MW3B | MW3B | MW3B | MW4A | MW4A | MW4A | MW4B |
| Sulfate | 14808-79-8 | ug/L | 560,000 | NA | 545,000 | 2,430,000 | 1,890,000 | NA | 428,000 | 588,000 | 716,000 | 1,430,000 | 56,300 | 52,600 J | NA | 13,600 | 14,600 | NA | 612,000 |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | 5,700 J | 2,000 UJ | 20,000 UJ | 2,000 UJ | 6,100 J | 5,700 | 2,000 UJ | 2,000 UJ | 2,000 UJ | 20,000 UJ | NA | 2,000 UJ | NA | NA | 2,000 UJ | 2,000 UJ | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 4,910 | NA | 6,800 | 214,000 | 106,000 | NA | 4,790 | 20,800 | 4,420 | 8,910 | 4,100 | 4,460 | NA | 12,100 | 14,400 | NA | 3,010 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | G4B002 5 01/13/04 MW4B | G4B004 5.3 02/09/04 MW4B | G5A001 2.6 12/17/03 MW5A | G5A002 4 01/14/04 MW5A | G5B001 8.5 12/22/03 MW5B | G5B002 5 01/14/04 MW5B | G5B004 0 02/09/04 MW5B | G6A001 0.9 12/17/03 MW6A | G6A002 1.5 01/14/04 MW6A | G6B001 4.4 12/16/03 MW6B | G6B002 5.3 01/14/04 MW6B | G7A001 8 12/17/03 MW7A | G7A002 1.7 01/19/04 MW7A | G7B001 4.9 12/19/03 MW7B | G7B002 5.3 12/23/03 MW7B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | 1.0 U | NA | 4.8 | 20 | 1 U | 1 U | NA | 24 | 9.7 [9.6] | 2.2 [2.2] | 3.5 | 1 U | 1 U | 1 U | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | 1.0 U | NA | 1.0 U | 2.0 U | 1 U | 1 U | NA | 1 U | 1 U [1 U] | 1 U [1 U] | 1 U | 1 U | 1 U | 1 U | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | 1.0 U | NA | 1.0 U | 2.0 U | 1 U | 1 U | NA | 1 U | 1 U [1 U] | 1 U [1 U] | 1 U | 1 U | 1 U | 1 U | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | 1.0 U | NA | 1.0 U | 4.1 | 1 U | 1 U | NA | 4.6 | 1.6 [1.8] | 1 U [1 U] | 1.3 | 1 U | 1 U | 1 U | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | 1.0 U | NA | 1.0 U | 2.2 | 1 U | 1 U | NA | 4.7 | 2.2 [2.2] | 1.3 [1.4] | 2.4 | 1 U | 1 U | 1 U | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | 1.0 U | NA | 1.0 U | 2.0 U | 1 U | 1 U | NA | 1 U | 1 U [1 U] | 1 U [1 U] | 1 U | 1 U | 1 U | 1 U | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | 1.0 U | NA | 1.0 U | 2.0 U | 1 U | 1 U | NA | 1 U | 1 U [1 U] | 1 U [1 U] | 1 U | 1 U | 1 U | 1 U | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | 10.0 U | NA | 10.0 U | 20.0 U | 10 U | 10 U | NA | 10 U | 10 U [10 U] | 10 U [10 U] | 10 U | 10 U | 10 U | 10 U | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | 10.0 U | NA | 10.0 U | 20.0 U | 10 U | 10 U | NA | 10 U | 10 U [10 U] | 10 U [10 U] | 10 U | 10 U | 10 U | 10 U | NA |
| Acetone | 67-64-1 | ug/L | 10.0 U | NA | 67 | 100 | 10 U | 10 U | NA | 91 | 73 [80] | 18 J [18 J] | 24 | 27 J | 28 | 10 U | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | 1.0 U | NA | 1.1 | 2.9 | 1 U | 1 U | NA | 1 U | 1 U [1 U] | 1 U [1 U] | 1 U | 1.2 | 1.1 | 1 U | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | 1.0 U | NA | 1.0 U | 2.0 U | 1 U | 1 U | NA | 1 U | 1 U [1 U] | 1 U [1 U] | 1 U | 1 U | 1 U | 1 U | NA |
| Bromoform | 75-25-2 | ug/L | 1.0 U | NA | 1.0 U | 2.0 U | 1 U | 1 U | NA | 1 U | 1 U [1 U] | 1 U [1 U] | 1 U | 1 U | 1 U | 1 U | NA |
| Bromomethane | 74-83-9 | ug/L | 1.0 U | NA | 1.0 U | 2.0 U | 1 U | 1 U | NA | 1 U | 1 U [1 U] | 1 UJ [1 UJ] | 1 U | 1 UJ | 1 U | 1 U | NA |
| Carbon Disulfide | 75-15-0 | ug/L | 10.0 U | NA | 10.0 U | 20.0 U | 10 U | 10 U | NA | 10 U | 10 U [10 U] | 10 U [10 U] | 10 U | 10 U | 10 U | 10 U | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | 1.0 U | NA | 1.0 U | 2.0 U | 1 U | 1 U | NA | 1 U | 1 U [1 U] | 1 UJ [1 UJ] | 1 U | 1 UJ | 1 U | 1 U | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | 1.0 U | NA | 1.0 U | 2.0 U | 1 U | 1 U | NA | 1 U | 1 U [1 U] | 1 U [1 U] | 1 U | 1 U | 1 U | 1 U | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | 1.0 U | NA | 1.0 U | 2.0 U | 1 U | 1 U | NA | 1 U | 1 U [1 U] | 1 U [1 U] | 1 U | 1 U | 1 U | 1 U | NA |
| Chloroethane | 75-00-3 | ug/L | 1.0 U | NA | 1.0 U | 2.0 U | 1 U | 1 U | NA | 1 U | 1 U [1 U] | 1 U [1 U] | 1 U | 1 U | 1 U | 1 U | NA |
| Chloroform | 67-66-3 | ug/L | 1.0 U | NA | 1.0 U | 2.0 U | 1 U | 1 U | NA | 1 U | 1 U [1 U] | 1 U [1 U] | 1 U | 1 U | 1 U | 1 U | NA |
| Chloromethane | 74-87-3 | ug/L | 1.0 U | NA | 1.0 U | 2.0 U | 1 U | 1 U | NA | 1 U | 1 U [1 U] | 1 U [1 U] | 1 U | 1 U | 1 U | 1 U | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | 1.0 U | NA | 1.0 U | 2.0 U | 1 U | 1 U | NA | 1 U | 1 U [1 U] | 1 U [1 U] | 1 U | 1 U | 1 U | 1 U | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | 1.0 U | NA | 1.0 U | 2.0 U | 1 U | 1 U | NA | 1 U | 1 U [1 U] | 1 U [1 U] | 1 U | 1 U | 1 U | 1 U | NA |
| Ethylbenzene | 100-41-4 | ug/L | 1.0 U | NA | 1.0 U | 3.8 | 1 U | 1 U | NA | 1 U | 1 U [1 U] | 1 U [1 U] | 1 U | 6.6 | 2.8 | 1 U | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | 2.0 U | NA | 2.4 | 4.0 U | 2 U | 2 U | NA | 2 U | 2.1 [2 U] | 2 U [2 U] | 2 U | 10 | 4.6 | 2 U | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | 10.0 U | NA | 10.0 U | 20.0 U | 10 U | 10 U | NA | 10 U | 10 U [10 U] | 10 U [10 U] | 10 U | 10 U | 10 U | 10 U | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | 2 | NA | 1.0 U | 2.0 U | 1 U | 1.9 | NA | 1 U | 1 U [1 U] | 9.4 [9.7] | 16 | 1 U | 1 U | 1.4 | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | 1.0 U | NA | 2 | 2.0 U | 1 U | 1 U | NA | 1 U | 1.1 [1 U] | 1 U [1 U] | 1 U | 6.5 | 3.2 | 1 U | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | 1.0 U | NA | 1.0 U | 2.0 U | 1 U | 1 U | NA | 1 U | 1 U [1 U] | 1 U [1 U] | 1 U | 1 U | 1 U | 1 U | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | 50 U | NA | 50.0 U | 100 U | 50 U | 50 U | NA | 50 U | 50 U [50 U] | 50 U [50 U] | 50 U | 50 U | 50 U | 50 U | NA |
| Tetrachloroethene | 127-18-4 | ug/L | 1.0 U | NA | 1.0 U | 2.0 U | 1 U | 1 U | NA | 4.3 | 3.2 [3] | 1 U [1 U] | 1 U | 1 U | 1.8 | 1 U | NA |
| Toluene | 108-88-3 | ug/L | 1.0 U | NA | 1.7 | 8 | 1 U | 1 U | NA | 1 U | 1 U [1 U] | 1 U [1 U] | 1 U | 3.4 | 2.9 | 1 U | NA |
| Total VOCs | ARC-TVOC | ug/L | 2 | NA | 79 | 140 | 50 U | 1.9 | NA | 130 | 93 [97] | 31 [31] | 47 | 55 | 44 | 1.4 | NA |
| Total Xylenes | 1330-20-7 | ug/L | 2.0 U | NA | 4.4 | 4.0 U | 2.0 U | 2.0 U | NA | 2.0 U | 3.2 [2 U] | 2.0 U [2 U] | 2.0 U | 16 | 7.8 | 2.0 U | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | G4B002 5 01/13/04 MW4B | G4B004 5.3 02/09/04 MW4B | G5A001 2.6 12/17/03 MW5A | G5A002 4 01/14/04 MW5A | G5B001 8.5 12/22/03 MW5B | G5B002 5 01/14/04 MW5B | G5B004 0 02/09/04 MW5B | G6A001 0.9 12/17/03 MW6A | G6A002 1.5 01/14/04 MW6A | G6B001 4.4 12/16/03 MW6B | G6B002 5.3 01/14/04 MW6B | G7A001 8 12/17/03 MW7A | G7A002 1.7 01/19/04 MW7A | G7B001 4.9 12/19/03 MW7B | G7B002 5.3 12/23/03 MW7B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | 1.0 U | NA | 1.0 U | 2.0 U | 1 U | 1 U | NA | 1 U | 1 U [1 U] | 1 U [1 U] | 1 U | 1 U | 1 U | 1 U | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | 1.0 U | NA | 1.0 U | 2.0 U | 1 U | 1 U | NA | 1 U | 1 U [1 U] | 1 U [1 U] | 1 U | 1 U | 1 U | 1 U | NA |
| Trichloroethene | 79-01-6 | ug/L | 1.0 U | NA | 1.0 U | 2.0 U | 1 U | 1 U | NA | 1 U | 1 U [1 U] | 1 U [1 U] | 1 U | 1 U | 1 U | 1 U | NA |
| Vinyl chloride | 75-01-4 | ug/L | 1.0 U | NA | 1.0 U | 2.0 U | 1 U | 1 U | NA | 1 U | 1 U [1 U] | 1 U [1 U] | 1 U | 1 U | 1 U | 1 U | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | NA | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | 11 U | NA | 9.3 U | 49 U | 9.6 U | 11 U | NA | 9.3 U | 10 U [11 U] | 50 U [50 U] | 11 U | 41 U | 11 U | 9.8 U | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [2 J] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | 56 U | NA | 47 U | 240 U | 48 U | 53 U | NA | 47 U | 31 J [31 J] | 250 U [250 U] | 53 U | 210 U | 53 U | 49 U | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | 56 U | NA | 47 U | 240 U | 48 U | 53 U | NA | 47 U | 51 U [54 U] | 250 U [250 U] | 53 U | 210 U | 53 U | 49 U | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | 11 U | NA | 9.3 U | 49 U | 9.6 U | 11 U | NA | 9.3 U | 10 U [11 U] | 50 U [50 U] | 11 U | 41 U | 65 | 9.8 U | NA |
| 2-Methylphenol | 95-48-7 | ug/L | 11 U | NA | 9.3 U | 49 U | 9.6 U | 11 U | NA | 9.3 U | 10 U [11 U] | 50 U [50 U] | 11 U | 41 U | 11 U | 9.8 U | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | 22 U | NA | 23 U | 97 U | 19 U | 21 U | NA | 19 U | 20 U [21 U] | 100 U [100 U] | 21 U | 81 U | 21 U | 20 U | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 8.5 | 22 [20] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | 22 U | NA | 23 U | 97 U | 19 U | 21 U | NA | 19 U | 20 U [21 U] | 100 U [100 U] | 21 U | 81 U | 21 U | 20 U | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| 4-Methylphenol | 106-44-5 | ug/L | 11 U | NA | 9.3 U | 38 J | 9.6 U | 11 U | NA | 12 J | 10 U [11 U] | 50 U [50 U] | 1.5 J | 9 J | 33 | 9.8 U | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | 56 U | NA | 47 U | 240 U | 48 U | 53 U | NA | 47 U | 51 U [54 U] | 250 U [250 U] | 53 U | 210 U | 53 U | 49 U | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | 56 U | NA | 47 U | 240 U | 48 U | 53 U | NA | 47 U | 20 J [20 J] | 250 U [250 U] | 53 U | 210 U | 53 U | 49 U | NA |
| Acenaphthene | 83-32-9 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 22 D | 17 | 4.9 U | NA |
| Acenaphthylene | 208-96-8 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 9.6 J | 6 | 4.9 U | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 7.5 J | 4.4 J | 4.9 U | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | 22 U | NA | 240 D | 97 U | 19 U | 21 U | NA | 1.1 J | 1.2 J [1.2 J] | 100 U [100 U] | 21 U | 81 U | 21 U | 20 U | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | 3 J | NA | 4.7 U | 24 U | 11 | 8.4 | NA | 4.7 U | 5.1 U [5.4 U] | 27 [20 J] | 3.9 J | 21 U | 5.3 U | 1.00 J | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | G4B002 5 01/13/04 MW4B | G4B004 5.3 02/09/04 MW4B | G5A001 2.6 12/17/03 MW5A | G5A002 4 01/14/04 MW5A | G5B001 8.5 12/22/03 MW5B | G5B002 5 01/14/04 MW5B | G5B004 0 02/09/04 MW5B | G6A001 0.9 12/17/03 MW6A | G6A002 1.5 01/14/04 MW6A | G6B001 4.4 12/16/03 MW6B | G6B002 5.3 01/14/04 MW6B | G7A001 8 12/17/03 MW7A | G7A002 1.7 01/19/04 MW7A | G7B001 4.9 12/19/03 MW7B | G7B002 5.3 12/23/03 MW7B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | 11 U | NA | 9.3 U | 49 U | 9.6 U | 11 U | NA | 9.3 U | 10 U [11 U] | 50 U [50 U] | 11 U | 41 U | 3.5 J | 9.8 U | NA |
| Chrysene | 218-01-9 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| Dibenzofuran | 132-64-9 | ug/L | 11 U | NA | 9.3 U | 49 U | 9.6 U | 11 U | NA | 9.3 U | 10 U [11 U] | 50 U [50 U] | 11 U | 4.4 J | 3.5 J | 9.8 U | NA |
| Diethyl phthalate | 84-66-2 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 1.1 J | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 1.6 J | 21 U | 1.5 J | 4.9 U | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| Fluoranthene | 206-44-0 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 4.4 J | 4.6 J | 4.9 U | NA |
| Fluorene | 86-73-7 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 22 D | 5.3 U | 4.9 U | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| Hexachloroethane | 67-72-1 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| Isophorone | 78-59-1 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| Naphthalene | 91-20-3 | ug/L | 5.6 U | NA | 4.7 U | 5 J | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 220 D | 110 | 4.9 U | NA |
| Nitrobenzene | 98-95-3 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 6.6 [5.8] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 21 U | 5.3 U | 4.9 U | NA |
| p-Chloroaniline | 106-47-8 | ug/L | 11 U | NA | 9.3 U | 49 U | 9.6 U | 11 U | NA | 9.3 U | 10 U [11 U] | 50 U [50 U] | 11 U | 41 U | 11 U | 9.8 U | NA |
| Pentachlorophenol | 87-86-5 | ug/L | 56 U | NA | 47 U | 240 U | 48 U | 53 U | NA | 47 U | 51 U [54 U] | 250 U [250 U] | 53 U | 210 U | 53 U | 49 U | NA |
| Phenanthrene | 85-01-8 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 54 D | 46 | 4.9 U | NA |
| Phenol | 108-95-2 | ug/L | 5.6 U | NA | 48 | 110 | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 8 [7.4 J] | 7.2 | 12 J | 38 | 4.9 U | NA |
| Pyrene | 129-00-0 | ug/L | 5.6 U | NA | 4.7 U | 24 U | 4.8 U | 5.3 U | NA | 4.7 U | 5.1 U [5.4 U] | 25 U [25 U] | 5.3 U | 5.8 J | 5.1 J | 4.9 U | NA |
| Total SVOCs | ARC-TSVOC | ug/L | 3 | NA | 290 | 150 | 12 | 8.4 | NA | 22 | 81 [80] | 35 [27] | 14 | 370 | 340 | 1.00 | NA |
| **Metals** | | | | | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 472 | NA | 411 | 1,220 | 745 | 562 | NA | 362 | 500 [501] | 3,350 J [3,200 J] | 1,670 | 5,620 | 5,830 | 736 | NA |
| Antimony | 7440-36-0 | ug/L | 2,830 | NA | 491 | 1,090 | 3,580 | 2,830 | NA | 947 | 699 [685] | 37,600 J [37,200 J] | 23,700 | 186 BJ | 151 | 925 | NA |
| Arsenic | 7440-38-2 | ug/L | R | NA | 249 U | R | 1,250 U | R | NA | 498 U | R [R] | 12,500 UJ [12,500 UJ] | R | 74.7 U | R | 249 U | NA |
| Barium | 7440-39-3 | ug/L | 100 | NA | 19.3 BJ | 20.6 U | 33.9 BJ | 31.1 BJ | NA | 23.6 | 18.4 B [18.5 B] | 19.2 BJ [16.9 BJ] | 9.5 B | 33.3 BJ | 25.4 BJ | 50.9 | NA |
| Beryllium | 7440-41-7 | ug/L | 0.22 U | NA | 0.13 U | 1.1 U | 0.13 U | 0.22 U | NA | 0.13 U | 0.22 U [0.22 U] | 1.3 UJ [1.3 UJ] | 2.2 U | 0.13 U | 0.22 U | 0.13 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 0.29 U | NA | 3.7 | 1.4 U | 0.15 U | 0.29 U | NA | 0.15 U | 0.29 U [0.29 U] | 0.75 UJ [0.75 UJ] | 0.29 U | 0.15 U | 0.29 U | 4.8 | NA |
| Calcium | 7440-70-2 | ug/L | 242,000 | NA | 48,400 | 58,300 | 163,000 | 178,000 | NA | 156,000 | 110,000 [108,000] | 6,420 J [6,340 J] | 8,100 | 86,500 | 75.7 U | 74,400 | NA |
| Chromium | 7440-47-3 | ug/L | 655,000 | NA | 71,400 | 239,000 | 602,000 | 659,000 | NA | 136,000 | 284 U [154,000] | 6,060,000 J [5,420,000 J] | 5,430,000 | 25,500 | 31,300 JF | 129,000 | NA |
| Chromium VI | 18540-29-9 | ug/L | 695,000 J | 857,000 J | 66,300 J | 237,000 J | NA | 684,000 J | 643,000 J | 136,000 J | 151,000 J [150,000 J] | 6,310,000 [6,330,000] | 5,870,000 J | 26,700 J | 31,200 J | R | 153,000 |
| Cobalt | 7440-48-4 | ug/L | 6.4 U | NA | 8.9 BJ | 15.5 BJ | 1.9 U | 6.4 U | NA | 0.64 U | 2.1 U [2.1 U] | 6.4 UJ [6.4 UJ] | 21.4 U | 1.9 B | 6.8 B | 0.64 U | NA |
| Copper | 7440-50-8 | ug/L | 7.2 U | NA | 8.7 B | 45.7 BJ | 6.8 U | 7.2 U | NA | 2.3 U | 7.5 B [6.8 B] | 114 UJ [114 UJ] | 120 U | 2.3 U | 2.4 U | 69.4 BJ | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 460 | NA | 177 BJ | 575 | 570 | 483 B | NA | 132 B | 239 B [245 B] | 2,190 J [2,000 J] | 1,300 | 570 | 4.63 U | 1,120 | NA |
| Lead | 7439-92-1 | ug/L | 3.5 U | NA | 6.2 B | 7.4 BJ | 3.8 U | 3.5 U | NA | 1.3 U | 1.2 U [1.2 U] | 63 UJ [63 UJ] | 59 U | 1.3 U | 1.2 U | 1.3 U | NA |
| Magnesium | 7439-95-4 | ug/L | 102,000 | NA | 62.7 B | 187 U | 51,400 | 54,200 | NA | 41.6 U | 37.4 U [37.4 U] | 2,200 J [2,110 J] | 2,650 | 407 B | 90.3 | 51,100 | NA |
| Manganese | 7439-96-5 | ug/L | 408 | NA | 0.81 U | 12.8 | 137 | 281 | NA | 0.81 U | 1.1 U [1.1 U] | 40.3 UJ [40.3 UJ] | 29.8 | 4.5 B | 1.9 | 84.1 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | G4B002 5 01/13/04 MW4B | G4B004 5.3 02/09/04 MW4B | G5A001 2.6 12/17/03 MW5A | G5A002 4 01/14/04 MW5A | G5B001 8.5 12/22/03 MW5B | G5B002 5 01/14/04 MW5B | G5B004 0 02/09/04 MW5B | G6A001 0.9 12/17/03 MW6A | G6A002 1.5 01/14/04 MW6A | G6B001 4.4 12/16/03 MW6B | G6B002 5.3 01/14/04 MW6B | G7A001 8 12/17/03 MW7A | G7A002 1.7 01/19/04 MW7A | G7B001 4.9 12/19/03 MW7B | G7B002 5.3 12/23/03 MW7B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.03 | NA | 0.22 | 0.69 | 0.03 U | 0.03 U | NA | 0.03 U | 0.03 U [0.03 U] | 0.08 J [0.03 UJ] | 0.03 U | 0.03 U | 0.03 | 0.03 U | NA |
| Nickel | 7440-02-0 | ug/L | 22.2 | NA | 291 | 815 | 13.3 BJ | 17.5 | NA | 246 | 466 [464] | 110 J [111 J] | 131 | 30.8 BJ | 66.7 | 71.3 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 20,000 | NA | 91,700 J | 143,000 | 19,500 J | 20,700 | NA | 130,000 J | 147,000 [148,000] | 167,000 J [168,000 J] | 164,000 | 18,600 J | 18,500 | 19,700 J | NA |
| Selenium | 7782-49-2 | ug/L | 93.2 U | NA | 3.5 U | 23.3 U | 34.6 U | 93.2 U | NA | 10.4 U | 23.3 U [23.3 U] | 346 UJ [346 UJ] | 466 U | 3.5 U | 4.7 U | 10.4 U | NA |
| Silver | 7440-22-4 | ug/L | 3 | NA | 0.53 U | 4.9 U | 3.9 B | 2.8 | NA | 0.53 U | 0.97 U [0.97 U] | 36.6 J [36.4 J] | 38.7 | 0.53 U | 0.97 U | 0.53 U | NA |
| Sodium | 7440-23-5 | ug/L | 905,000 | NA | 3,090,000 | 9,220,000 | 793,000 | 910,000 | NA | 606,000 | 813,000 [789,000] | 10,090,000 J [9,760,000 J] | 7,910,000 | 335,000 | 435,000 | 709,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 144 | NA | 15.5 BJ | 56.3 | 155 | 142 | NA | 39 BJ | 36.2 [37.3] | 1,400 J [1,400 J] | 1,240 | 8.8 B | 10.3 | 34 BJ | NA |
| Total CCPW Metals | CCPW-M | ug/L | 658,000 | NA | 72,600 | 241,000 | 606,000 | 662,000 | NA | 137,000 | 1,200 [155,000] | 6,100,000 [5,460,000] | 5,460,000 | 25,700 | 31,500 | 130,000 | NA |
| Vanadium | 7440-62-2 | ug/L | R | NA | 404 | R | 198 U | R | NA | 29.7 U | R [R] | 989 UJ [495 UJ] | R | 3 U | R | 29.7 U | NA |
| Zinc | 7440-66-6 | ug/L | 147 U | NA | 20.1 U | 73.5 UJ | 402 U | 73.5 UJ | NA | 60.3 U | 73.5 U [73.5 UJ] | 2,010 UJ [1,000 UJ] | 1,470 UJ | 6 U | 14.7 UJ | 60.3 U | NA |
| **Metals-Filtered** | | | | | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | G4B002 5 01/13/04 MW4B | G4B004 5.3 02/09/04 MW4B | G5A001 2.6 12/17/03 MW5A | G5A002 4 01/14/04 MW5A | G5B001 8.5 12/22/03 MW5B | G5B002 5 01/14/04 MW5B | G5B004 0 02/09/04 MW5B | G6A001 0.9 12/17/03 MW6A | G6A002 1.5 01/14/04 MW6A | G6B001 4.4 12/16/03 MW6B | G6B002 5.3 01/14/04 MW6B | G7A001 8 12/17/03 MW7A | G7A002 1.7 01/19/04 MW7A | G7B001 4.9 12/19/03 MW7B | G7B002 5.3 12/23/03 MW7B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | 626,000 | NA | 370,000 | 910,000 | 353,000 | 361,000 | NA | 192,000 | 224,000 [232,000] | 1,540,000 [1,620,000] | 1,190,000 | 33,000 | 50,700 | 341,000 | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | 10 UJ | NA | 77.2 | 598 J | 10 U | 10 UJ | NA | 10 U | 75.9 J [10 UJ] | 586 [595] | 591 J | 10 U | 14.5 J | 10 U | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | 1,410,000 J | 1,170 J | 156,000 | 270,000 J | NA | R | 1,660 | 100,000 UJ | R [R] | 19,500,000 J [14,600,000 J] | R | 100,000 UJ | 163,000 J | 365,000 J | 100,000 UJ |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | 100 UJ | NA | 100 U | 305 J | NA | 483 J | NA | 132 J | 239 J [245 J] | 100 UJ [100 UJ] | 1,300 J | 570 J | 100 UJ | 755 J | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G4B002<br>5<br>01/13/04<br>MW4B | G4B004<br>5.3<br>02/09/04<br>MW4B | G5A001<br>2.6<br>12/17/03<br>MW5A | G5A002<br>4<br>01/14/04<br>MW5A | G5B001<br>8.5<br>12/22/03<br>MW5B | G5B002<br>5<br>01/14/04<br>MW5B | G5B004<br>0<br>02/09/04<br>MW5B | G6A001<br>0.9<br>12/17/03<br>MW6A | G6A002<br>1.5<br>01/14/04<br>MW6A | G6B001<br>4.4<br>12/16/03<br>MW6B | G6B002<br>5.3<br>01/14/04<br>MW6B | G7A001<br>8<br>12/17/03<br>MW7A | G7A002<br>1.7<br>01/19/04<br>MW7A | G7B001<br>4.9<br>12/19/03<br>MW7B | G7B002<br>5.3<br>12/23/03<br>MW7B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 580,000 | NA | 2,050,000 | 5,840,000 | 511,000 | 592,000 | NA | 154,000 | 152,000 [155,000] | 3,120,000 [3,200,000] | 2,890,000 | 37,500 | 51,700 | 659,000 | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | 2,000 UJ | 2,000 UJ | 2,000 U | 36,000 J | NA | 2,000 UJ | 2,000 U | 5,800 J | 5,200 J [5,900 J] | 19,100 J [21,200 J] | 26,000 J | 2,000 UJ | 2,000 UJ | 4,800 J | 2,000 UJ |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 3,840 | NA | 38,000 | 228,000 | 4,210 | 4,620 | NA | 64,000 | 21,700 [21,200] [22,200] | 29,000 [27,400] [27,200] | 1,000 U | 9,730 | 11,500 | 2,980 | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | G7B003 | G8A001 | G8A002 | G8A003 | G8B001 | G8B001_10 | G8B002 | G8B002_10 | GAR-RI-B'2A-GW-2.0-7.0 | GAR-RI-B'2A-GWFF-2.0-7.0 | GAR-RI-B'3A-GW-4.0-9.0 | GAR-RI-B'3A-GWFF-4.0-9.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 8.7 | 3.3 | 4.1 | 4.7 | 7.5 | 0 | 8 | 0 | 2 - 7 | 2 - 7 | 4 - 9 | 4 - 9 |
| Date Collected: | | | 01/19/04 | 12/18/03 | 12/23/03 | 01/20/04 | 12/23/03 | 12/23/03 | 01/20/04 | 01/20/04 | 12/11/16 | 12/11/16 | 12/11/16 | 12/11/16 |
| Location ID: | CAS Number | Units | MW7B | MW8A | MW8A | MW8A | MW8B | MW8B | MW8B | MW8B | GAR-PDI-B'2A | GAR-PDI-B'2A | GAR-PDI-B'3A | GAR-PDI-B'3A |
| **Volatile Organics** | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | 1 U | 5 U | NA | 1 U | 1 U | NA | 1 U | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | 1 U | 5 U | NA | 1 U | 1 U | NA | 1 U | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | 1 U | 5 U | NA | 1 U | 1 U | NA | 1 U | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | 1 U | 5 U | NA | 1 U | 1 U | NA | 1 U | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | 1 U | 5 U | NA | 1 U | 1 U | NA | 1 U | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | 1 U | 5 U | NA | 1 U | 1 U | NA | 1 U | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | 1 U | 5 U | NA | 1 U | 1 U | NA | 1 U | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | 10 U | 50 U | NA | 10 U | 10 U | NA | 10 U | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | 10 U | 50 U | NA | 10 U | 10 U | NA | 10 U | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | 10 U | 71 | NA | 52 | 17 | NA | 10 U | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | 1 U | 5 U | NA | 1.3 | 5.6 | NA | 180 | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | 1 U | 5 U | NA | 1 U | 1 U | NA | 1 U | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | 1 U | 5 U | NA | 1 U | 1 U | NA | 1 U | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | 1 U | 5 U | NA | 1 U | 1 U | NA | 1 U | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | 10 U | 50 U | NA | 10 U | 10 U | NA | 10 U | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | 1 U | 5 U | NA | 1 U | 1 U | NA | 1 U | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | 1 U | 5 U | NA | 1 U | 1 U | NA | 1 U | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | 1 U | 5 U | NA | 1 U | 1 U | NA | 1 U | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | 1 U | 5 U | NA | 1 U | 1 U | NA | 1 U | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | 1 U | 5 U | NA | 1 U | 1 U | NA | 1 U | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | 1 U | 5 U | NA | 1 U | 1 U | NA | 1 U | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | 1 U | 5 U | NA | 1 U | 1 U | NA | 1 U | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | 1 U | 5 U | NA | 1 U | 1 U | NA | 1 U | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | 1 U | 45 | NA | 54 | 2.5 | NA | 15 | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | 2 U | 72 | NA | 89 | 3.1 | NA | 30 | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | 10 U | 50 U | NA | 10 U | 10 U | NA | 10 U | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | 2.6 | 16 | NA | 20 | 3.9 | NA | 3.6 | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | 1 U | 45 | NA | 55 | 2.2 | NA | 21 | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | 1 U | 5 U | NA | 7.4 | 1 U | NA | 1 U | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | 50 U | 250 U | NA | 50 U | 50 U | NA | 50 U | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | 1 U | 5 U | NA | 1 U | 1 U | NA | 1 U | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | 1 U | 18 | NA | 18 | 6.2 | NA | 4.4 | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | 2.6 | 270 | NA | 300 | 41 | NA | 250 | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | 2.0 U | 120 | NA | 140 | 5.3 | NA | 51 | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G7B003<br>8.7<br>01/19/04<br>MW7B | G8A001<br>3.3<br>12/18/03<br>MW8A | G8A002<br>4.1<br>12/23/03<br>MW8A | G8A003<br>4.7<br>01/20/04<br>MW8A | G8B001<br>7.5<br>12/23/03<br>MW8B | G8B001_1<br>0<br>12/23/03<br>MW8B | G8B002<br>8<br>01/20/04<br>MW8B | G8B002_1<br>0<br>01/20/04<br>MW8B | GAR-RI-B'2A-GW-2.0-7.0<br>2 - 7<br>12/11/16<br>GAR-PDI-B'2A | GAR-RI-B'2A-GWFF-2.0-7.0<br>2 - 7<br>12/11/16<br>GAR-PDI-B'2A | GAR-RI-B'3A-GW-4.0-9.0<br>4 - 9<br>12/11/16<br>GAR-PDI-B'3A | GAR-RI-B'3A-GWFF-4.0-9.0<br>4 - 9<br>12/11/16<br>GAR-PDI-B'3A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | 1 U | 5 U | NA | 1 U | 1 U | NA | 1 U | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | 1 U | 5 U | NA | 1 U | 1 U | NA | 1 U | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | 1 U | 5 U | NA | 1 U | 1 U | NA | 1 U | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | 1 U | 5 U | NA | 1 U | 1 U | NA | 1 U | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | 9.3 U | 210 U | NA | 110 U | 490 U | NA | 51 U | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | 47 U | 1,000 U | NA | 530 U | 2,500 U | NA | 260 U | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | 47 U | 1,000 U | NA | 530 U | 2,500 U | NA | 260 U | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | 9.3 U | 310 D | NA | 300 | 410 J | NA | 490 | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | 9.3 U | 210 U | NA | 110 U | 490 U | NA | 51 U | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | 19 U | 420 U | NA | 210 U | 980 U | NA | 100 U | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | 19 U | 420 U | NA | 210 U | 980 U | NA | 100 U | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | 9.3 U | 15 | NA | 17 J | 490 U | NA | 51 U | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | 47 U | 1,000 U | NA | 530 U | 2,500 U | NA | 260 U | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | 47 U | 1,000 U | NA | 530 U | 2,500 U | NA | 260 U | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | 4.7 U | 52 J | NA | 47 J | 130 J | NA | 140 | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | 4.7 U | 26 J | NA | 24 J | 250 U | NA | 23 J | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | 4.7 U | 100 U | NA | 53 U | 65 J | NA | 5.8 J | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | 19 U | 420 U | NA | 210 U | 980 U | NA | 100 U | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | 4.7 U | 100 U | NA | 53 U | 6.5 | NA | 26 U | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G7B003<br>8.7<br>01/19/04<br>MW7B | G8A001<br>3.3<br>12/18/03<br>MW8A | G8A002<br>4.1<br>12/23/03<br>MW8A | G8A003<br>4.7<br>01/20/04<br>MW8A | G8B001<br>7.5<br>12/23/03<br>MW8B | G8B001_10<br>12/23/03<br>MW8B | G8B002<br>8<br>01/20/04<br>MW8B | G8B002_10<br>01/20/04<br>MW8B | GAR-RI-B'2A-GW-2.0-7.0<br>2 - 7<br>12/11/16<br>GAR-PDI-B'2A | GAR-RI-B'2A-GWFF-2.0-7.0<br>2 - 7<br>12/11/16<br>GAR-PDI-B'2A | GAR-RI-B'3A-GW-4.0-9.0<br>4 - 9<br>12/11/16<br>GAR-PDI-B'3A | GAR-RI-B'3A-GWFF-4.0-9.0<br>4 - 9<br>12/11/16<br>GAR-PDI-B'3A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | 9.3 U | 210 U | NA | 110 U | 5.4 | NA | 51 U | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | 9.3 U | 210 U | NA | 110 U | 8.5 | NA | 9.6 J | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | 1.5 J | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | 4.7 U | 27 J | NA | 29 J | 42 | NA | 43 | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | 4.7 U | 1,200 D | NA | 1,100 | 4,000 D | NA | 4,300 | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | 9.3 U | 210 U | NA | 110 U | 490 U | NA | 51 U | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | 47 U | 1,000 U | NA | 530 U | 2,500 U | NA | 260 U | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | 4.7 U | 50 J | NA | 49 J | 65 J | NA | 72 | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | 4.7 U | 24 J | NA | 76 | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | 4.7 U | 100 U | NA | 53 U | 250 U | NA | 26 U | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | 1.5 | 1,700 | NA | 1,600 | 4,700 | NA | 5,100 | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 1,640 | 438 | NA | 124 | NA | 447 | 4,980 | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 771 | 800 | NA | 1,580 | 5,640 | NA | 3,790 | NA | 30 U | NA | 30 U | NA |
| Arsenic | 7440-38-2 | ug/L | R | 149 U | NA | R | 2,490 U | NA | R | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | 57.4 BJ | 122 | NA | 118 | 34.9 BJ | NA | 72.8 | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | 0.22 U | 0.13 U | NA | 0.22 U | 0.39 U | NA | 0.66 U | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 6.7 | 0.15 U | NA | 0.29 U | 0.15 U | NA | 0.29 U | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | 90,300 | 562,000 | NA | 562,000 | NA | 23,900 | 28,200 | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 180,000 JF | 119,000 | NA | 426 U | 871,000 | NA | 867,000 | NA | 3,160 | NA | 477 | NA |
| Chromium VI | 18540-29-9 | ug/L | 164,000 J | R | 174,000 J | 338,000 J | 952,000 J | NA | 756,000 J | NA | 8.6 J | NA | 6.5 J | NA |
| Cobalt | 7440-48-4 | ug/L | 2.1 U | 0.64 U | NA | 2.1 U | 1.9 U | NA | 6.4 U | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | 97.6 BJ | 2.3 U | NA | 2.4 U | 6.8 U | NA | 7.2 U | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 4.63 U | 452 BJ | NA | 34.4 BJ | 339 BJ | NA | 6,000 | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | 1.2 U | 617 | NA | 869 | 3.8 U | NA | 11.8 U | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | 61,800 | 298 B | NA | 38.4 | 13,300 | NA | 26,400 | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 125 | 0.81 U | NA | 1.1 U | 8.1 U | NA | 51.6 | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G7B003<br>8.7<br>01/19/04<br>MW7B | G8A001<br>3.3<br>12/18/03<br>MW8A | G8A002<br>4.1<br>12/23/03<br>MW8A | G8A003<br>4.7<br>01/20/04<br>MW8A | G8B001<br>7.5<br>12/23/03<br>MW8B | G8B001_10<br>12/23/03<br>MW8B | G8B002<br>8<br>01/20/04<br>MW8B | G8B002_10<br>01/20/04<br>MW8B | GAR-RI-B'2A-GW-2.0-7.0<br>2 - 7<br>12/11/16<br>GAR-PDI-B'2A | GAR-RI-B'2A-GWFF-2.0-7.0<br>2 - 7<br>12/11/16<br>GAR-PDI-B'2A | GAR-RI-B'3A-GW-4.0-9.0<br>4 - 9<br>12/11/16<br>GAR-PDI-B'3A | GAR-RI-B'3A-GWFF-4.0-9.0<br>4 - 9<br>12/11/16<br>GAR-PDI-B'3A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.03 | 0.03 U | NA | 0.03 U | 0.03 U | NA | 0.03 U | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 42.1 | 72 | NA | 266 | 9 B | NA | 17.5 | NA | 1,540 | NA | 249 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 25,100 | 38,900 J | NA | 67,000 | 83,400 J | NA | 97,500 | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | 23.3 U | 10.4 U | NA | 46.6 U | 34.6 U | NA | 93.2 U | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | 0.97 U | 0.53 UJ | NA | 0.97 UJ | 4.3 B | NA | 4.6 | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | 869,000 | 794 U | NA | 2,600,000 | 1,370,000 | NA | 345 U | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 39.6 | 29.7 BJ | NA | 76.5 J | 218 | NA | 3.32 U | NA | 20 U | NA | 9.5 J | NA |
| Total CCPW Metals | CCPW-M | ug/L | 181,000 | 120,000 | NA | 1,920 | 877,000 | NA | 871,000 | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | R | 19.8 U | NA | R | 98.9 U | NA | R | NA | 2,950 | NA | 528 | NA |
| Zinc | 7440-66-6 | ug/L | 73.5 UJ | 40.2 U | NA | 73.5 UJ | 201 U | NA | 147 U | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 6.0 U [6 U] | NA | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 1.1 J [10 U] | NA | 1.0 J |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 10 UJ [10 UJ] | NA | 10 UJ |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 4.0 J [4 J] | NA | 3.1 J |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 2.0 U [2 U] | NA | 2.0 U |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 1.8 J [1.2 J] | NA | 1.3 J |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G7B003<br>8.7<br>01/19/04<br>MW7B | G8A001<br>3.3<br>12/18/03<br>MW8A | G8A002<br>4.1<br>12/23/03<br>MW8A | G8A003<br>4.7<br>01/20/04<br>MW8A | G8B001<br>7.5<br>12/23/03<br>MW8B | G8B001_1<br>0<br>12/23/03<br>MW8B | G8B002<br>8<br>01/20/04<br>MW8B | G8B002_1<br>0<br>01/20/04<br>MW8B | GAR-RI-B'2A-GW-2.0-7.0<br>2 - 7<br>12/11/16<br>GAR-PDI-B'2A | GAR-RI-B'2A-GWFF-2.0-7.0<br>2 - 7<br>12/11/16<br>GAR-PDI-B'2A | GAR-RI-B'3A-GW-4.0-9.0<br>4 - 9<br>12/11/16<br>GAR-PDI-B'3A | GAR-RI-B'3A-GWFF-4.0-9.0<br>4 - 9<br>12/11/16<br>GAR-PDI-B'3A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | 387,000 | 121,000 | NA | 201,000 | 4,870,000 | NA | 516,000 | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | 10 UJ | 10 U | NA | 21.6 J | 10 U | NA | NA | 10 U | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | 319,000 J | NA | 100,000 UJ | 1,100,000 J | 100,000 UJ | NA | 2,300,000 J | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | 1,520 J | NA | NA | 100 UJ | 339 J | NA | 3,700 J | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | 360 | 364 [353] [373] | 367 | 372 |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | 7.04 | 6.87 [6.98] [6.9] | 6.70 | 6.80 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | G7B003<br>8.7<br>01/19/04<br>MW7B | G8A001<br>3.3<br>12/18/03<br>MW8A | G8A002<br>4.1<br>12/23/03<br>MW8A | G8A003<br>4.7<br>01/20/04<br>MW8A | G8B001<br>7.5<br>12/23/03<br>MW8B | G8B001_10<br>12/23/03<br>MW8B | G8B002<br>8<br>01/20/04<br>MW8B | G8B002_10<br>01/20/04<br>MW8B | GAR-RI-B'2A-GW-2.0-7.0<br>2 - 7<br>12/11/16<br>GAR-PDI-B'2A | GAR-RI-B'2A-GWFF-2.0-7.0<br>2 - 7<br>12/11/16<br>GAR-PDI-B'2A | GAR-RI-B'3A-GW-4.0-9.0<br>4 - 9<br>12/11/16<br>GAR-PDI-B'3A | GAR-RI-B'3A-GWFF-4.0-9.0<br>4 - 9<br>12/11/16<br>GAR-PDI-B'3A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 777,000 | 160,000 | NA | 474,000 | 635,000 | NA | 515,000 | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | 2,000 UJ | 2,000 UJ | 2,000 UJ | 2,000 J | 2,000 UJ | NA | 2,000 UJ | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 5,230 | 8,920 | NA | 8,580 | 3,260 | NA | 3,770 | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GAR-RI-C13B-GW-22.0-22.5<br>22 - 22.5<br>12/18/16<br>GAR-PDI-C13B | GAR-RI-C13B-GWFF-22.0-22.5<br>22 - 22.5<br>12/18/16<br>GAR-PDI-C13B | GAR-RI-D14B-GW-0.0-5.0<br>0 - 5<br>12/11/16<br>GAR-PDI-D14B | GAR-RI-D14B-GWFF-0.0-5.0<br>0 - 5<br>12/11/16<br>GAR-PDI-D14B | GE3B001<br>3.3<br>12/18/03<br>MW3B | GPS-EW1I-010616<br><br>01/06/16<br>GPS-EW1I | GPS-EW1I-010616-F<br><br>01/06/16<br>GPS-EW1I | GPS-EW1I-040616<br><br>04/06/16<br>GPS-EW1I |
|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GAR-RI-C13B-GW-22.0-22.5<br>22 - 22.5<br>12/18/16<br>GAR-PDI-C13B | GAR-RI-C13B-GWFF-22.0-22.5<br>22 - 22.5<br>12/18/16<br>GAR-PDI-C13B | GAR-RI-D14B-GW-0.0-5.0<br>0 - 5<br>12/11/16<br>GAR-PDI-D14B | GAR-RI-D14B-GWFF-0.0-5.0<br>0 - 5<br>12/11/16<br>GAR-PDI-D14B | GE3B001<br>3.3<br>12/18/03<br>MW3B | GPS-EW1I-010616<br><br>01/06/16<br>GPS-EW1I | GPS-EW1I-010616-F<br><br>01/06/16<br>GPS-EW1I | GPS-EW1I-040616<br><br>04/06/16<br>GPS-EW1I |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GAR-RI-C13B-GW-22.0-22.5<br>22 - 22.5<br>12/18/16<br>GAR-PDI-C13B | GAR-RI-C13B-GWFF-22.0-22.5<br>22 - 22.5<br>12/18/16<br>GAR-PDI-C13B | GAR-RI-D14B-GW-0.0-5.0<br>0 - 5<br>12/11/16<br>GAR-PDI-D14B | GAR-RI-D14B-GWFF-0.0-5.0<br>0 - 5<br>12/11/16<br>GAR-PDI-D14B | GE3B001<br>3.3<br>12/18/03<br>MW3B | GPS-EW1I-010616<br><br>01/06/16<br>GPS-EW1I | GPS-EW1I-010616-F<br><br>01/06/16<br>GPS-EW1I | GPS-EW1I-040616<br><br>04/06/16<br>GPS-EW1I |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | 85.5 | 200 U | NA | 200 U |
| Antimony | 7440-36-0 | ug/L | 30 U | NA | 60 U | NA | 3.1 U | 30 U | NA | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | 14.5 b | 76.4 | NA | 20.1 |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | 236 | 37.2 J | NA | 38.8 J |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | 0.13 U | 1.0 U | NA | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | 1.7 BJ | 3.0 U | NA | 0.50 J |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | 111,000 | 231,000 | NA | 266,000 |
| Chromium | 7440-47-3 | ug/L | 801 | NA | 49,700 | NA | 61.5 | 272 | NA | 87.9 |
| Chromium VI | 18540-29-9 | ug/L | 10 U | NA | 260 J | NA | 20 UJ | 10 RA | NA | 50 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | 26 BJ | 13.1 J | NA | 7.7 J |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | 2.3 U | 10 U | NA | 10 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | 12,100 | 33.7 J | NA | 29.3 J |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | 4.6 B | 15 U | NA | 15 U |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | 117,000 | 59,700 | NA | 60,200 J |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | 361 | 341 | NA | 1,160 |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GAR-RI-C13B-GW-22.0-22.5<br>22 - 22.5<br>12/18/16<br>GAR-PDI-C13B | GAR-RI-C13B-GWFF-22.0-22.5<br>22 - 22.5<br>12/18/16<br>GAR-PDI-C13B | GAR-RI-D14B-GW-0.0-5.0<br>0 - 5<br>12/11/16<br>GAR-PDI-D14B | GAR-RI-D14B-GWFF-0.0-5.0<br>0 - 5<br>12/11/16<br>GAR-PDI-D14B | GE3B001<br>3.3<br>12/18/03<br>MW3B | GPS-EW1I-010616<br><br>01/06/16<br>GPS-EW1I | GPS-EW1I-010616-F<br><br>01/06/16<br>GPS-EW1I | GPS-EW1I-040616<br><br>04/06/16<br>GPS-EW1I |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | 0.03 U | 0.20 U | NA | 0.20 U |
| Nickel | 7440-02-0 | ug/L | 187 | NA | 2,140 | NA | 47.1 | 57.3 | NA | 86.9 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | 70,300 J | 11,300 | NA | 10,400 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | 3.5 U | 10.7 | NA | 7.2 J |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | 0.53 U | 10 U | NA | 10 U |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | 745,000 | 137,000 | NA | 194,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 10 U | NA | 20 U | NA | 4 U | 10 U | NA | 2.0 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | 139 | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 215 J | NA | 1,860 | NA | 30.1 | 2.7 J | NA | 16.5 J |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | 5.5 B | 38.5 JB | NA | 14.8 J |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | 6.0 U | NA | 6.0 U | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 1.9 J | NA | 359 | NA | NA | 20.3 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 UJ | NA | 290 J | NA | NA | 10 RA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | 37.7 | NA | 11.8 | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 2.0 U | NA | 10 U | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 50 U | NA | 2.4 J | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GAR-RI-C13B-GW-22.0-22.5<br>22 - 22.5<br>12/18/16<br>GAR-PDI-C13B | GAR-RI-C13B-GWFF-22.0-22.5<br>22 - 22.5<br>12/18/16<br>GAR-PDI-C13B | GAR-RI-D14B-GW-0.0-5.0<br>0 - 5<br>12/11/16<br>GAR-PDI-D14B | GAR-RI-D14B-GWFF-0.0-5.0<br>0 - 5<br>12/11/16<br>GAR-PDI-D14B | GE3B001<br>3.3<br>12/18/03<br>MW3B | GPS-EW1I-010616<br><br>01/06/16<br>GPS-EW1I | GPS-EW1I-010616-F<br><br>01/06/16<br>GPS-EW1I | GPS-EW1I-040616<br><br>04/06/16<br>GPS-EW1I |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | 686,000 | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | 13,700 | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | 225,000 J | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | 11,900 J | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 342 | 341 | 329 | 341 | NA | 166 | 160 | 86.5 |
| pH | ARC-pH | SU | 7.18 | 6.94 | 8.29 | 8.81 | NA | 8.32 | 7.95 | 7.93 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GAR-RI-C13B-GW-22.0-22.5<br>22 - 22.5<br>12/18/16<br>GAR-PDI-C13B | GAR-RI-C13B-GWFF-22.0-22.5<br>22 - 22.5<br>12/18/16<br>GAR-PDI-C13B | GAR-RI-D14B-GW-0.0-5.0<br>0 - 5<br>12/11/16<br>GAR-PDI-D14B | GAR-RI-D14B-GWFF-0.0-5.0<br>0 - 5<br>12/11/16<br>GAR-PDI-D14B | GE3B001<br>3.3<br>12/18/03<br>MW3B | GPS-EW1I-010616<br><br>01/06/16<br>GPS-EW1I | GPS-EW1I-010616-F<br><br>01/06/16<br>GPS-EW1I | GPS-EW1I-040616<br><br>04/06/16<br>GPS-EW1I |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | 2,000 U | 520,000 | NA | 689,000 |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | 90,400 | NA | 319,000 |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | 2,000 J | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | 171,000 | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | 0 | NA | 0 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | 411.6 | NA | 397.9 |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | 7.82 | NA | 7.35 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | 13.77 | NA | 14.87 |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | 6.62 | NA | 19.6 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | GPS-EW1I-040616-F | GPS-EW1I-071216 | GPS-EW1I-071216-F | GPS-EW1I-100616 | GPS-EW1I-100616-F | GPS-EW1S-022516 | GPS-EW1S-022516-F | GPS-EW1S-060316 | GPS-EW1S-060316-F |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | | |
| Date Collected: | | | 04/06/16 | 07/12/16 | 07/12/16 | 10/06/16 | 10/06/16 | 02/25/16 | 02/25/16 | 06/03/16 | 06/03/16 |
| Location ID: | CAS Number | Units | GPS-EW1I | GPS-EW1I | GPS-EW1I | GPS-EW1I | GPS-EW1I | GPS-EW1S | GPS-EW1S | GPS-EW1S | GPS-EW1S |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-EW1I-040616-F<br>04/06/16<br>GPS-EW1I | GPS-EW1I-071216<br>07/12/16<br>GPS-EW1I | GPS-EW1I-071216-F<br>07/12/16<br>GPS-EW1I | GPS-EW1I-100616<br>10/06/16<br>GPS-EW1I | GPS-EW1I-100616-F<br>10/06/16<br>GPS-EW1I | GPS-EW1S-022516<br>02/25/16<br>GPS-EW1S | GPS-EW1S-022516-F<br>02/25/16<br>GPS-EW1S | GPS-EW1S-060316<br>06/03/16<br>GPS-EW1S | GPS-EW1S-060316-F<br>06/03/16<br>GPS-EW1S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-EW1I-040616-F<br>04/06/16<br>GPS-EW1I | GPS-EW1I-071216<br>07/12/16<br>GPS-EW1I | GPS-EW1I-071216-F<br>07/12/16<br>GPS-EW1I | GPS-EW1I-100616<br>10/06/16<br>GPS-EW1I | GPS-EW1I-100616-F<br>10/06/16<br>GPS-EW1I | GPS-EW1S-022516<br>02/25/16<br>GPS-EW1S | GPS-EW1S-022516-F<br>02/25/16<br>GPS-EW1S | GPS-EW1S-060316<br>06/03/16<br>GPS-EW1S | GPS-EW1S-060316-F<br>06/03/16<br>GPS-EW1S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 33.6 J | NA | 200 U | NA | 440 | NA | 199 J | NA |
| Antimony | 7440-36-0 | ug/L | NA | 6.0 U | NA | 30 U | NA | 6.0 U | NA | 6.0 U | NA |
| Arsenic | 7440-38-2 | ug/L | NA | 17.0 | NA | 15.0 | NA | 6.8 J | NA | 8.8 | NA |
| Barium | 7440-39-3 | ug/L | NA | 34.4 J | NA | 33.3 J | NA | 85.0 J | NA | 88.9 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | 1.0 U | NA | 1.0 U | NA | 1.0 U | NA | 1.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 3.0 U | NA | 3.0 U | NA | 0.70 J | NA | 3.0 U | NA |
| Calcium | 7440-70-2 | ug/L | NA | 238,000 | NA | 226,000 | NA | 376,000 | NA | 398,000 | NA |
| Chromium | 7440-47-3 | ug/L | NA | 74.6 | NA | 121 | NA | 170 | NA | 193 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U | NA | 10 RA | NA | 130 | NA | 170 | NA |
| Cobalt | 7440-48-4 | ug/L | NA | 4.6 J | NA | 4.1 J | NA | 1.7 J | NA | 50 U | NA |
| Copper | 7440-50-8 | ug/L | NA | 10 U | NA | 10 U | NA | 21.0 JB | NA | 3.1 J | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 14.1 J | NA | 100 UB | NA | 39.1 J | NA | 18.1 J | NA |
| Lead | 7439-92-1 | ug/L | NA | 15 U | NA | 15 U | NA | 9.0 U | NA | 9.0 U | NA |
| Magnesium | 7439-95-4 | ug/L | NA | 61,300 | NA | 56,900 | NA | 5,000 U | NA | 5,000 U | NA |
| Manganese | 7439-96-5 | ug/L | NA | 1,190 | NA | 1,890 | NA | 15 U | NA | 15 U | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-EW1I-040616-F<br>04/06/16<br>GPS-EW1I | GPS-EW1I-071216<br>07/12/16<br>GPS-EW1I | GPS-EW1I-071216-F<br>07/12/16<br>GPS-EW1I | GPS-EW1I-100616<br>10/06/16<br>GPS-EW1I | GPS-EW1I-100616-F<br>10/06/16<br>GPS-EW1I | GPS-EW1S-022516<br>02/25/16<br>GPS-EW1S | GPS-EW1S-022516-F<br>02/25/16<br>GPS-EW1S | GPS-EW1S-060316<br>06/03/16<br>GPS-EW1S | GPS-EW1S-060316-F<br>06/03/16<br>GPS-EW1S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.14 J | NA | 0.20 U | NA | 0.20 U | NA | 0.20 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | 92.3 | NA | 106 | NA | 16.3 | NA | 15.7 J | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 9,520 J | NA | 9,290 J | NA | 106,000 | NA | 91,700 | NA |
| Selenium | 7782-49-2 | ug/L | NA | 10 U | NA | 5.7 J | NA | 9.3 J | NA | 12.4 J | NA |
| Silver | 7440-22-4 | ug/L | NA | 1.2 J | NA | 7.2 JB | NA | 10 U | NA | 10 U | NA |
| Sodium | 7440-23-5 | ug/L | NA | 213,000 | NA | 238,000 | NA | 489,000 | NA | 360,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 10 U | NA | 10 U | NA | 6.0 U | NA | 6.0 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 15.4 J | NA | 15.9 J | NA | 32.2 J | NA | 33.8 J | NA |
| Zinc | 7440-66-6 | ug/L | NA | 20 UB | NA | 2.0 J | NA | 20 U | NA | 20 U | NA |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 59.7 | NA | 70.0 | NA | 61.5 | NA | 157 | NA | 210 |
| Chromium VI | 18540-29-9 | ug/L | 41 | NA | 12 | NA | 10 RA | NA | 120 | NA | 160 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-EW1I-040616-F<br>04/06/16<br>GPS-EW1I | GPS-EW1I-071216<br>07/12/16<br>GPS-EW1I | GPS-EW1I-071216-F<br>07/12/16<br>GPS-EW1I | GPS-EW1I-100616<br>10/06/16<br>GPS-EW1I | GPS-EW1I-100616-F<br>10/06/16<br>GPS-EW1I | GPS-EW1S-022516<br>02/25/16<br>GPS-EW1S | GPS-EW1S-022516-F<br>02/25/16<br>GPS-EW1S | GPS-EW1S-060316<br>06/03/16<br>GPS-EW1S | GPS-EW1S-060316-F<br>06/03/16<br>GPS-EW1S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 110 | 166 | 288 | 215 | 246 | 169 | 154 | 139 | 137 |
| pH | ARC-pH | SU | 7.99 | 7.38 | 7.44 | 7.32 | 7.25 | 11.08 | 11.13 | 10.63 | 10.66 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-EW1I-040616-F<br>04/06/16<br>GPS-EW1I | GPS-EW1I-071216<br>07/12/16<br>GPS-EW1I | GPS-EW1I-071216-F<br>07/12/16<br>GPS-EW1I | GPS-EW1I-100616<br>10/06/16<br>GPS-EW1I | GPS-EW1I-100616-F<br>10/06/16<br>GPS-EW1I | GPS-EW1S-022516<br>02/25/16<br>GPS-EW1S | GPS-EW1S-022516-F<br>02/25/16<br>GPS-EW1S | GPS-EW1S-060316<br>06/03/16<br>GPS-EW1S | GPS-EW1S-060316-F<br>06/03/16<br>GPS-EW1S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 826,000 | NA | 1,010,000 | NA | 725,000 | NA | 759,000 | NA |
| Sulfide | 18496-25-8 | ug/L | NA | 64,000 | NA | 36,700 | NA | 2,000 U | NA | 2,000 U | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 1,230 | NA | 450 | NA | 250 | NA | 290 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 348.9 | NA | 354.6 | NA | 25.4 | NA | 62.7 | NA |
| pH | ARC-pH | SU | NA | 7.24 | NA | 7.15 | NA | 13.38 | NA | 11.29 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 18.86 | NA | 19.44 | NA | 11.15 | NA | 15.43 | NA |
| Turbidity | ARC-Turb | NTU | NA | 0.57 | NA | 0.44 | NA | 0.39 | NA | 0.71 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | GPS-EW1S-083016 | GPS-EW1S-083016-F | GPS-EW1S-111715 | GPS-EW1S-111715F | GPS-EW2I-010616 | GPS-EW2I-010616-F | GPS-EW2I-040616 | GPS-EW2I-040616-F | GPS-EW2I-071216 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | | |
| Date Collected: | | | 08/30/16 | 08/30/16 | 11/17/15 | 11/17/15 | 01/06/16 | 01/06/16 | 04/06/16 | 04/06/16 | 07/12/16 |
| Location ID: | CAS Number | Units | GPS-EW1S | GPS-EW1S | GPS-EW1S | GPS-EW1S | GPS-EW2I | GPS-EW2I | GPS-EW2I | GPS-EW2I | GPS-EW2I |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | GPS-EW1S-083016 08/30/16 GPS-EW1S | GPS-EW1S-083016-F 08/30/16 GPS-EW1S | GPS-EW1S-111715 11/17/15 GPS-EW1S | GPS-EW1S-111715F 11/17/15 GPS-EW1S | GPS-EW2I-010616 01/06/16 GPS-EW2I | GPS-EW2I-010616-F 01/06/16 GPS-EW2I | GPS-EW2I-040616 04/06/16 GPS-EW2I | GPS-EW2I-040616-F 04/06/16 GPS-EW2I | GPS-EW2I-071216 07/12/16 GPS-EW2I |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-EW1S-083016<br>08/30/16<br>GPS-EW1S | GPS-EW1S-083016-F<br>08/30/16<br>GPS-EW1S | GPS-EW1S-111715<br>11/17/15<br>GPS-EW1S | GPS-EW1S-111715F<br>11/17/15<br>GPS-EW1S | GPS-EW2I-010616<br>01/06/16<br>GPS-EW2I | GPS-EW2I-010616-F<br>01/06/16<br>GPS-EW2I | GPS-EW2I-040616<br>04/06/16<br>GPS-EW2I | GPS-EW2I-040616-F<br>04/06/16<br>GPS-EW2I | GPS-EW2I-071216<br>07/12/16<br>GPS-EW2I |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 165 J | NA | 370 | NA | 200 U | NA | 200 U | NA | 61.4 J |
| Antimony | 7440-36-0 | ug/L | 3.4 J | NA | 5.8 J | NA | 6.8 | NA | 6.0 U | NA | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | 15 U | NA | 6.0 J | NA | 14.9 | NA | 15 U | NA | 15 U |
| Barium | 7440-39-3 | ug/L | 98.0 J | NA | 66.5 J | NA | 13.9 J | NA | 29.9 J | NA | 24.0 J |
| Beryllium | 7440-41-7 | ug/L | 0.30 J | NA | 1.0 U | NA | 1.0 U | NA | 1.0 U | NA | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 0.40 J | NA | 3.0 UB | NA | 5.2 | NA | 1.6 J | NA | 0.60 J |
| Calcium | 7440-70-2 | ug/L | 386,000 | NA | 239,000 | NA | 105,000 | NA | 239,000 | NA | 185,000 |
| Chromium | 7440-47-3 | ug/L | 20.8 | NA | 219 | NA | 379 | NA | 334 | NA | 342 |
| Chromium VI | 18540-29-9 | ug/L | 10 U | NA | 200 | NA | 10 RA | NA | 500 U | NA | 10 UJ |
| Cobalt | 7440-48-4 | ug/L | 1.4 J | NA | 1.5 J | NA | 17.8 J | NA | 3.8 J | NA | 2.2 J |
| Copper | 7440-50-8 | ug/L | 10 U | NA | 18.9 JB | NA | 40.3 | NA | 13.1 | NA | 10 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 100 U | NA | 32.3 J | NA | 61.3 J | NA | 50.6 J | NA | 45.4 J |
| Lead | 7439-92-1 | ug/L | 3.0 U | NA | 9.0 U | NA | 4.7 | NA | 15 U | NA | 15 U |
| Magnesium | 7439-95-4 | ug/L | 5,000 U | NA | 5,000 U | NA | 36,800 | NA | 47,100 J | NA | 46,800 |
| Manganese | 7439-96-5 | ug/L | 15 U | NA | 15 U | NA | 231 | NA | 220 | NA | 216 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | GPS-EW1S-083016 08/30/16 GPS-EW1S | GPS-EW1S-083016-F 08/30/16 GPS-EW1S | GPS-EW1S-111715 11/17/15 GPS-EW1S | GPS-EW1S-111715F 11/17/15 GPS-EW1S | GPS-EW2I-010616 01/06/16 GPS-EW2I | GPS-EW2I-010616-F 01/06/16 GPS-EW2I | GPS-EW2I-040616 04/06/16 GPS-EW2I | GPS-EW2I-040616-F 04/06/16 GPS-EW2I | GPS-EW2I-071216 07/12/16 GPS-EW2I |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | NA | 0.20 U | NA | 0.22 | NA | 0.086 J | NA | 0.20 U |
| Nickel | 7440-02-0 | ug/L | 19.4 | NA | 21.1 | NA | 53.3 | NA | 25.8 | NA | 26.6 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 108,000 | NA | 87,100 | NA | 14,800 | NA | 13,100 | NA | 12,900 |
| Selenium | 7782-49-2 | ug/L | 7.5 J | NA | 9.8 J | NA | 7.3 J | NA | 6.2 J | NA | 10 U |
| Silver | 7440-22-4 | ug/L | 1.6 J | NA | 10 U | NA | 1.3 J | NA | 10 U | NA | 10 U |
| Sodium | 7440-23-5 | ug/L | 419,000 | NA | 334,000 | NA | 377,000 | NA | 286,000 | NA | 287,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 10 U | NA | 6.0 U | NA | 2.0 U | NA | 2.0 U | NA | 10 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 30.8 J | NA | 48.2 J | NA | 0.80 J | NA | 1.1 J | NA | 2.8 J |
| Zinc | 7440-66-6 | ug/L | 20 U | NA | 20 U | NA | 242 | NA | 145 | NA | 76.8 |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 15.2 | NA | 211 | NA | 36.7 | NA | 17.1 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 5.6 J | NA | 190 | NA | 45 RA | NA | 500 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | GPS-EW1S-083016 08/30/16 GPS-EW1S | GPS-EW1S-083016-F 08/30/16 GPS-EW1S | GPS-EW1S-111715 11/17/15 GPS-EW1S | GPS-EW1S-111715F 11/17/15 GPS-EW1S | GPS-EW2I-010616 01/06/16 GPS-EW2I | GPS-EW2I-010616-F 01/06/16 GPS-EW2I | GPS-EW2I-040616 04/06/16 GPS-EW2I | GPS-EW2I-040616-F 04/06/16 GPS-EW2I | GPS-EW2I-071216 07/12/16 GPS-EW2I |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 163 | 142 | 158 | 200 | 59.7 | 40.1 | 119 | 110 | 195 |
| pH | ARC-pH | SU | 10.94 | 10.97 | 10.78 | 10.78 | 8.55 | 8.40 | 8.52 | 8.55 | 8.16 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | GPS-EW1S-083016 | GPS-EW1S-083016-F | GPS-EW1S-111715 | GPS-EW1S-111715F | GPS-EW2I-010616 | GPS-EW2I-010616-F | GPS-EW2I-040616 | GPS-EW2I-040616-F | GPS-EW2I-071216 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | | |
| Date Collected: | | | 08/30/16 | 08/30/16 | 11/17/15 | 11/17/15 | 01/06/16 | 01/06/16 | 04/06/16 | 04/06/16 | 07/12/16 |
| Location ID: | CAS Number | Units | GPS-EW1S | GPS-EW1S | GPS-EW1S | GPS-EW1S | GPS-EW2I | GPS-EW2I | GPS-EW2I | GPS-EW2I | GPS-EW2I |
| Sulfate | 14808-79-8 | ug/L | 736,000 | NA | 937,000 | NA | 578,000 | NA | 444,000 | NA | 586,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | NA | 2,000 U | NA | 115,000 | NA | 279,000 | NA | 136,000 |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 670 | NA | 0 | NA | 0 | NA | 30 | NA | 1,060 |
| Oxidation Reduction Potential | ARC-ORP | mV | 10.5 | NA | 56.3 | NA | 427.4 | NA | 398 | NA | 413.7 |
| pH | ARC-pH | SU | 10.55 | NA | 10.91 | NA | 8.35 | NA | 8.59 | NA | 7.93 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 23.64 | NA | 18.64 | NA | 14.06 | NA | 14.79 | NA | 21.01 |
| Turbidity | ARC-Turb | NTU | 0.6 | NA | 0.95 | NA | 31.5 | NA | 195 | NA | 12.1 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | GPS-EW2I-071216-F | GPS-EW2I-100616 | GPS-EW2I-100616-F | GPS-EW2S-022516 | GPS-EW2S-022516-F | GPS-EW2S-060316 | GPS-EW2S-060316-F | GPS-EW2S-083016 | GPS-EW2S-083016-F |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | | |
| Date Collected: | | | 07/12/16 | 10/06/16 | 10/06/16 | 02/25/16 | 02/25/16 | 06/03/16 | 06/03/16 | 08/30/16 | 08/30/16 |
| Location ID: | CAS Number | Units | GPS-EW2I | GPS-EW2I | GPS-EW2I | GPS-EW2S | GPS-EW2S | GPS-EW2S | GPS-EW2S | GPS-EW2S | GPS-EW2S |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-EW2I-071216-F<br><br>07/12/16<br>GPS-EW2I | GPS-EW2I-100616<br><br>10/06/16<br>GPS-EW2I | GPS-EW2I-100616-F<br><br>10/06/16<br>GPS-EW2I | GPS-EW2S-022516<br><br>02/25/16<br>GPS-EW2S | GPS-EW2S-022516-F<br><br>02/25/16<br>GPS-EW2S | GPS-EW2S-060316<br><br>06/03/16<br>GPS-EW2S | GPS-EW2S-060316-F<br><br>06/03/16<br>GPS-EW2S | GPS-EW2S-083016<br><br>08/30/16<br>GPS-EW2S | GPS-EW2S-083016-F<br><br>08/30/16<br>GPS-EW2S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-EW2I-071216-F<br>07/12/16<br>GPS-EW2I | GPS-EW2I-100616<br>10/06/16<br>GPS-EW2I | GPS-EW2I-100616-F<br>10/06/16<br>GPS-EW2I | GPS-EW2S-022516<br>02/25/16<br>GPS-EW2S | GPS-EW2S-022516-F<br>02/25/16<br>GPS-EW2S | GPS-EW2S-060316<br>06/03/16<br>GPS-EW2S | GPS-EW2S-060316-F<br>06/03/16<br>GPS-EW2S | GPS-EW2S-083016<br>08/30/16<br>GPS-EW2S | GPS-EW2S-083016-F<br>08/30/16<br>GPS-EW2S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 200 U | NA | 746 | NA | 116 J | NA | 342 | NA |
| Antimony | 7440-36-0 | ug/L | NA | 18 U | NA | 6.0 U | NA | 6.0 U | NA | 3.7 J | NA |
| Arsenic | 7440-38-2 | ug/L | NA | 4.9 | NA | 5.8 | NA | 7.8 | NA | 5.0 J | NA |
| Barium | 7440-39-3 | ug/L | NA | 15.4 J | NA | 200 U | NA | 42.9 J | NA | 45.8 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | 1.0 U | NA | 1.0 U | NA | 1.0 U | NA | 1.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 3.0 U | NA | 0.60 J | NA | 3.0 U | NA | 3.0 U | NA |
| Calcium | 7440-70-2 | ug/L | NA | 158,000 | NA | 198,000 | NA | 270,000 | NA | 211,000 | NA |
| Chromium | 7440-47-3 | ug/L | NA | 287 | NA | 152 | NA | 3.4 J | NA | 1.4 J | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 RA | NA | 120 J | NA | 10 U | NA | 10 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | 2.0 J | NA | 1.6 J | NA | 50 U | NA | 0.80 J | NA |
| Copper | 7440-50-8 | ug/L | NA | 10 UB | NA | 21.0 JB | NA | 10 UJ | NA | 10 U | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 100 UB | NA | 51.3 J | NA | 23.3 J | NA | 100 U | NA |
| Lead | 7439-92-1 | ug/L | NA | 3.0 U | NA | 3.0 U | NA | 6.0 U | NA | 3.0 U | NA |
| Magnesium | 7439-95-4 | ug/L | NA | 33,800 | NA | 5,000 U | NA | 5,000 U | NA | 5,000 U | NA |
| Manganese | 7439-96-5 | ug/L | NA | 155 | NA | 15 U | NA | 15 U | NA | 15 U | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | GPS-EW2I-071216-F 07/12/16 GPS-EW2I | GPS-EW2I-100616 10/06/16 GPS-EW2I | GPS-EW2I-100616-F 10/06/16 GPS-EW2I | GPS-EW2S-022516 02/25/16 GPS-EW2S | GPS-EW2S-022516-F 02/25/16 GPS-EW2S | GPS-EW2S-060316 06/03/16 GPS-EW2S | GPS-EW2S-060316-F 06/03/16 GPS-EW2S | GPS-EW2S-083016 08/30/16 GPS-EW2S | GPS-EW2S-083016-F 08/30/16 GPS-EW2S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.20 U | NA | 0.20 U | NA | 0.20 U | NA | 0.20 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | 36.9 | NA | 10.6 | NA | 11.5 J | NA | 25.9 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 12,100 | NA | 65,700 | NA | 56,200 | NA | 64,600 | NA |
| Selenium | 7782-49-2 | ug/L | NA | 6.4 J | NA | 7.4 J | NA | 10.9 | NA | 5.3 J | NA |
| Silver | 7440-22-4 | ug/L | NA | 5.7 JB | NA | 10 U | NA | 10 U | NA | 1.0 J | NA |
| Sodium | 7440-23-5 | ug/L | NA | 233,000 | NA | 229,000 | NA | 284,000 | NA | 250,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 6.0 U | NA | 4.0 U | NA | 4.0 U | NA | 2.0 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 2.7 J | NA | 50.0 | NA | 5.6 J | NA | 41.4 J | NA |
| Zinc | 7440-66-6 | ug/L | NA | 12.9 J | NA | 20 U | NA | 5.0 J | NA | 20 U | NA |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 20.8 J | NA | 34.6 | NA | 152 | NA | 2.3 J | NA | 10 U |
| Chromium VI | 18540-29-9 | ug/L | 58 J | NA | 10 RA | NA | 120 J | NA | 10 U | NA | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-EW2I-071216-F<br>07/12/16<br>GPS-EW2I | GPS-EW2I-100616<br>10/06/16<br>GPS-EW2I | GPS-EW2I-100616-F<br>10/06/16<br>GPS-EW2I | GPS-EW2S-022516<br>02/25/16<br>GPS-EW2S | GPS-EW2S-022516-F<br>02/25/16<br>GPS-EW2S | GPS-EW2S-060316<br>06/03/16<br>GPS-EW2S | GPS-EW2S-060316-F<br>06/03/16<br>GPS-EW2S | GPS-EW2S-083016<br>08/30/16<br>GPS-EW2S | GPS-EW2S-083016-F<br>08/30/16<br>GPS-EW2S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 229 | 230 | 235 | 171 | 163 | 166 | 166 | 150 | 127 |
| pH | ARC-pH | SU | 8.26 | 7.61 | 7.56 | 11.18 | 11.12 | 9.94 | 9.99 | 11.00 | 11.03 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-EW2I-071216-F<br>07/12/16<br>GPS-EW2I | GPS-EW2I-100616<br>10/06/16<br>GPS-EW2I | GPS-EW2I-100616-F<br>10/06/16<br>GPS-EW2I | GPS-EW2S-022516<br>02/25/16<br>GPS-EW2S | GPS-EW2S-022516-F<br>02/25/16<br>GPS-EW2S | GPS-EW2S-060316<br>06/03/16<br>GPS-EW2S | GPS-EW2S-060316-F<br>06/03/16<br>GPS-EW2S | GPS-EW2S-083016<br>08/30/16<br>GPS-EW2S | GPS-EW2S-083016-F<br>08/30/16<br>GPS-EW2S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 580,000 | NA | 359,000 | NA | 425,000 | NA | 400,000 | NA |
| Sulfide | 18496-25-8 | ug/L | NA | 72,500 | NA | 2,000 U | NA | 2,000 U | NA | 1,600 JB | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 340 | NA | 980 | NA | 1,150 | NA | 400 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 368.4 | NA | 33.8 | NA | 99.6 | NA | 82.9 | NA |
| pH | ARC-pH | SU | NA | 7.32 | NA | 13.5 | NA | 11.37 | NA | 10.48 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 15.61 | NA | 16.64 | NA | 17.21 | NA | 18.99 | NA |
| Turbidity | ARC-Turb | NTU | NA | 5.62 | NA | 0.43 | NA | 2.25 | NA | 0.52 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | GPS-EW2S-111715 | GPS-EW2S-111715F | GPS-EW3S-022516 | GPS-EW3S-022516-F | GPS-EW3S-060316 | GPS-EW3S-060316-F | GPS-EW3S-083016 | GPS-EW3S-083016-F | GPS-EW3S-111715 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | | |
| Date Collected: | | | 11/17/15 | 11/17/15 | 02/25/16 | 02/25/16 | 06/03/16 | 06/03/16 | 08/30/16 | 08/30/16 | 11/17/15 |
| Location ID: | CAS Number | Units | GPS-EW2S | GPS-EW2S | GPS-EW3S | GPS-EW3S | GPS-EW3S | GPS-EW3S | GPS-EW3S | GPS-EW3S | GPS-EW3S |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-EW2S-111715<br><br>11/17/15<br>GPS-EW2S | GPS-EW2S-111715F<br><br>11/17/15<br>GPS-EW2S | GPS-EW3S-022516<br><br>02/25/16<br>GPS-EW3S | GPS-EW3S-022516-F<br><br>02/25/16<br>GPS-EW3S | GPS-EW3S-060316<br><br>06/03/16<br>GPS-EW3S | GPS-EW3S-060316-F<br><br>06/03/16<br>GPS-EW3S | GPS-EW3S-083016<br><br>08/30/16<br>GPS-EW3S | GPS-EW3S-083016-F<br><br>08/30/16<br>GPS-EW3S | GPS-EW3S-111715<br><br>11/17/15<br>GPS-EW3S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-EW2S-111715<br><br>11/17/15<br>GPS-EW2S | GPS-EW2S-111715F<br><br>11/17/15<br>GPS-EW2S | GPS-EW3S-022516<br><br>02/25/16<br>GPS-EW3S | GPS-EW3S-022516-F<br><br>02/25/16<br>GPS-EW3S | GPS-EW3S-060316<br><br>06/03/16<br>GPS-EW3S | GPS-EW3S-060316-F<br><br>06/03/16<br>GPS-EW3S | GPS-EW3S-083016<br><br>08/30/16<br>GPS-EW3S | GPS-EW3S-083016-F<br><br>08/30/16<br>GPS-EW3S | GPS-EW3S-111715<br><br>11/17/15<br>GPS-EW3S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 269 | NA | 79.3 J | NA | 335 | NA | 101 J | NA | 48.8 J |
| Antimony | 7440-36-0 | ug/L | 5.7 J | NA | 6.0 U | NA | 6.0 U | NA | 4.8 J | NA | 5.2 J |
| Arsenic | 7440-38-2 | ug/L | 4.4 J | NA | 4.6 J | NA | 8.7 | NA | 5.8 J | NA | 6.5 |
| Barium | 7440-39-3 | ug/L | 64.8 J | NA | 200 U | NA | 46.8 J | NA | 43.8 J | NA | 49.5 J |
| Beryllium | 7440-41-7 | ug/L | 1.0 U | NA | 1.0 U | NA | 1.0 U | NA | 1.0 U | NA | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 3.0 UB | NA | 0.40 J | NA | 3.0 U | NA | 3.0 U | NA | 3.0 UB |
| Calcium | 7440-70-2 | ug/L | 310,000 | NA | 327,000 | NA | 257,000 | NA | 219,000 | NA | 226,000 |
| Chromium | 7440-47-3 | ug/L | 109 | NA | 3,470 | NA | 108 | NA | 9.2 J | NA | 70.5 |
| Chromium VI | 18540-29-9 | ug/L | 98 | NA | 2,900 | NA | 81 | NA | 10 U | NA | 65 |
| Cobalt | 7440-48-4 | ug/L | 1.3 J | NA | 1.3 J | NA | 50 U | NA | 50 U | NA | 1.0 J |
| Copper | 7440-50-8 | ug/L | 9.7 JB | NA | 9.7 JB | NA | 10 UJ | NA | 10 U | NA | 10 UB |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 33.2 J | NA | 100 U | NA | 22.9 J | NA | 100 U | NA | 23.5 J |
| Lead | 7439-92-1 | ug/L | 6.0 U | NA | 6.0 U | NA | 3.0 U | NA | 3.0 U | NA | 6.0 U |
| Magnesium | 7439-95-4 | ug/L | 5,000 U | NA | 110 J | NA | 5,000 U | NA | 5,000 U | NA | 121 J |
| Manganese | 7439-96-5 | ug/L | 15 U | NA | 15 U | NA | 15 U | NA | 15 U | NA | 15 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | GPS-EW2S-111715 11/17/15 GPS-EW2S | GPS-EW2S-111715F 11/17/15 GPS-EW2S | GPS-EW3S-022516 02/25/16 GPS-EW3S | GPS-EW3S-022516-F 02/25/16 GPS-EW3S | GPS-EW3S-060316 06/03/16 GPS-EW3S | GPS-EW3S-060316-F 06/03/16 GPS-EW3S | GPS-EW3S-083016 08/30/16 GPS-EW3S | GPS-EW3S-083016-F 08/30/16 GPS-EW3S | GPS-EW3S-111715 11/17/15 GPS-EW3S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | NA | 0.20 U | NA | 0.20 U | NA | 0.20 U | NA | 0.20 U |
| Nickel | 7440-02-0 | ug/L | 20.9 | NA | 8.6 J | NA | 27.3 J | NA | 12.2 | NA | 10.9 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 89,300 | NA | 68,900 | NA | 65,500 | NA | 63,900 | NA | 65,100 |
| Selenium | 7782-49-2 | ug/L | 8.3 J | NA | 8.6 J | NA | 10.1 | NA | 5.1 J | NA | 4.8 J |
| Silver | 7440-22-4 | ug/L | 10 U | NA | 10 U | NA | 10 U | NA | 10 U | NA | 10 U |
| Sodium | 7440-23-5 | ug/L | 390,000 | NA | 365,000 | NA | 265,000 | NA | 298,000 | NA | 342,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 4.0 U | NA | 3.9 J | NA | 4.0 U | NA | 2.0 U | NA | 2.0 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 39.4 J | NA | 22.7 J | NA | 51.1 | NA | 4.3 J | NA | 19.3 J |
| Zinc | 7440-66-6 | ug/L | 20 U | NA | 20 U | NA | 20 U | NA | 20 U | NA | 20 U |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 106 | NA | 3,490 | NA | 115 | NA | 10 U | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 100 | NA | 3,100 | NA | 80 | NA | 10 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | GPS-EW2S-111715 11/17/15 GPS-EW2S | GPS-EW2S-111715F 11/17/15 GPS-EW2S | GPS-EW3S-022516 02/25/16 GPS-EW3S | GPS-EW3S-022516-F 02/25/16 GPS-EW3S | GPS-EW3S-060316 06/03/16 GPS-EW3S | GPS-EW3S-060316-F 06/03/16 GPS-EW3S | GPS-EW3S-083016 08/30/16 GPS-EW3S | GPS-EW3S-083016-F 08/30/16 GPS-EW3S | GPS-EW3S-111715 11/17/15 GPS-EW3S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 178 | 185 | 220 | 199 | 156 | 154 | 135 | 147 | 198 |
| pH | ARC-pH | SU | 10.65 | 10.65 | 10.08 | 10.12 | 10.56 | 10.50 | 10.35 | 10.41 | 9.71 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-EW2S-111715<br><br>11/17/15<br>GPS-EW2S | GPS-EW2S-111715F<br><br>11/17/15<br>GPS-EW2S | GPS-EW3S-022516<br><br>02/25/16<br>GPS-EW3S | GPS-EW3S-022516-F<br><br>02/25/16<br>GPS-EW3S | GPS-EW3S-060316<br><br>06/03/16<br>GPS-EW3S | GPS-EW3S-060316-F<br><br>06/03/16<br>GPS-EW3S | GPS-EW3S-083016<br><br>08/30/16<br>GPS-EW3S | GPS-EW3S-083016-F<br><br>08/30/16<br>GPS-EW3S | GPS-EW3S-111715<br><br>11/17/15<br>GPS-EW3S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 607,000 | NA | 493,000 | NA | 379,000 | NA | 415,000 | NA | 486,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | NA | 2,000 U | NA | 2,000 U | NA | 2,000 UB | NA | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 0 | NA | 280 | NA | 200 | NA | 260 | NA | 0 |
| Oxidation Reduction Potential | ARC-ORP | mV | 31.4 | NA | 22.1 | NA | 204 | NA | 114 | NA | 64.8 |
| pH | ARC-pH | SU | 11.07 | NA | 11.91 | NA | 10.81 | NA | 10.43 | NA | 9.94 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 18.32 | NA | 10.39 | NA | 10.54 | NA | 18.48 | NA | 17.38 |
| Turbidity | ARC-Turb | NTU | 0.79 | NA | 0.31 | NA | 1.5 | NA | 0.79 | NA | 0.49 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | GPS-EW3S-111715F | GPS-IW3I-010616 | GPS-IW3I-010616-F | GPS-IW3I-040616 | GPS-IW3I-040616-F | GPS-IW3I-071216 | GPS-IW3I-071216-F | GPS-IW3I-100616 | GPS-IW3I-100616-F | GPS-IW4I-010616 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | | | |
| Date Collected: | | | 11/17/15 | 01/06/16 | 01/06/16 | 04/06/16 | 04/06/16 | 07/12/16 | 07/12/16 | 10/06/16 | 10/06/16 | 01/06/16 |
| Location ID: | CAS Number | Units | GPS-EW3S | GPS-IW3I | GPS-IW3I | GPS-IW3I | GPS-IW3I | GPS-IW3I | GPS-IW3I | GPS-IW3I | GPS-IW3I | GPS-IW4I |
| **Volatile Organics** | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-EW3S-111715F<br><br>11/17/15<br>GPS-EW3S | GPS-IW3I-010616<br><br>01/06/16<br>GPS-IW3I | GPS-IW3I-010616-F<br><br>01/06/16<br>GPS-IW3I | GPS-IW3I-040616<br><br>04/06/16<br>GPS-IW3I | GPS-IW3I-040616-F<br><br>04/06/16<br>GPS-IW3I | GPS-IW3I-071216<br><br>07/12/16<br>GPS-IW3I | GPS-IW3I-071216-F<br><br>07/12/16<br>GPS-IW3I | GPS-IW3I-100616<br><br>10/06/16<br>GPS-IW3I | GPS-IW3I-100616-F<br><br>10/06/16<br>GPS-IW3I | GPS-IW4I-010616<br><br>01/06/16<br>GPS-IW4I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | GPS-EW3S-111715F 11/17/15 GPS-EW3S | GPS-IW3I-010616 01/06/16 GPS-IW3I | GPS-IW3I-010616-F 01/06/16 GPS-IW3I | GPS-IW3I-040616 04/06/16 GPS-IW3I | GPS-IW3I-040616-F 04/06/16 GPS-IW3I | GPS-IW3I-071216 07/12/16 GPS-IW3I | GPS-IW3I-071216-F 07/12/16 GPS-IW3I | GPS-IW3I-100616 10/06/16 GPS-IW3I | GPS-IW3I-100616-F 10/06/16 GPS-IW3I | GPS-IW4I-010616 01/06/16 GPS-IW4I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 407 | NA | 200 U | NA | 50.4 J | NA | 200 U | NA | 200 U |
| Antimony | 7440-36-0 | ug/L | NA | 60 U | NA | 6.0 U | NA | 6.0 U | NA | 60 U | NA | 30 U |
| Arsenic | 7440-38-2 | ug/L | NA | 10.9 | NA | 75 U | NA | 157 | NA | 30 U | NA | 252 |
| Barium | 7440-39-3 | ug/L | NA | 99.5 J | NA | 71.9 J | NA | 40.5 J | NA | 51.2 J | NA | 67.9 J |
| Beryllium | 7440-41-7 | ug/L | NA | 1.0 U | NA | 1.0 U | NA | 1.0 U | NA | 1.0 U | NA | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 3.0 U | NA | 1.1 J | NA | 2.3 J | NA | 0.50 J | NA | 3.0 U |
| Calcium | 7440-70-2 | ug/L | NA | 118,000 | NA | 397,000 | NA | 19,200 | NA | 508,000 | NA | 16,800 |
| Chromium | 7440-47-3 | ug/L | NA | 103 | NA | 121 | NA | 70.8 | NA | 108 | NA | 48.8 |
| Chromium VI | 18540-29-9 | ug/L | NA | 3.7 RA | NA | 18 | NA | 10 U | NA | 19 RA | NA | 10 RA |
| Cobalt | 7440-48-4 | ug/L | NA | 2.5 J | NA | 250 U | NA | 10.7 J | NA | 1.5 J | NA | 10.8 J |
| Copper | 7440-50-8 | ug/L | NA | 8.7 J | NA | 10 U | NA | 10 U | NA | 10 U | NA | 10 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 2,380 | NA | 41,400 | NA | 148 | NA | 46,900 | NA | 57.2 J |
| Lead | 7439-92-1 | ug/L | NA | 30 U | NA | 75 U | NA | 15 U | NA | 30 U | NA | 15 U |
| Magnesium | 7439-95-4 | ug/L | NA | 55,300 | NA | 81,800 J | NA | 20,200 | NA | 93,800 | NA | 13,500 |
| Manganese | 7439-96-5 | ug/L | NA | 2,640 | NA | 7,900 | NA | 364 | NA | 6,510 J | NA | 341 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | GPS-EW3S-111715F<br>11/17/15<br>GPS-EW3S | GPS-IW3I-010616<br>01/06/16<br>GPS-IW3I | GPS-IW3I-010616-F<br>01/06/16<br>GPS-IW3I | GPS-IW3I-040616<br>04/06/16<br>GPS-IW3I | GPS-IW3I-040616-F<br>04/06/16<br>GPS-IW3I | GPS-IW3I-071216<br>07/12/16<br>GPS-IW3I | GPS-IW3I-071216-F<br>07/12/16<br>GPS-IW3I | GPS-IW3I-100616<br>10/06/16<br>GPS-IW3I | GPS-IW3I-100616-F<br>10/06/16<br>GPS-IW3I | GPS-IW4I-010616<br>01/06/16<br>GPS-IW4I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.20 U | NA | 0.20 U | NA | 0.20 U | NA | 0.20 U | NA | 0.20 U |
| Nickel | 7440-02-0 | ug/L | NA | 18.4 | NA | 59.6 | NA | 52.5 | NA | 112 | NA | 24.3 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 4,770 J | NA | 7,390 J | NA | 1,170 J | NA | 11,600 | NA | 2,390 J |
| Selenium | 7782-49-2 | ug/L | NA | 100 U | NA | 38.4 J | NA | 10 U | NA | 100 U | NA | 50 U |
| Silver | 7440-22-4 | ug/L | NA | 1.5 J | NA | 10 U | NA | 10 U | NA | 15.4 JB | NA | 10 U |
| Sodium | 7440-23-5 | ug/L | NA | 1,590,000 | NA | 1,670,000 | NA | 1,490,000 | NA | 1,050,000 | NA | 1,640,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 20 U | NA | 20 U | NA | 10 U | NA | 20 U | NA | 10 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 8.5 J | NA | 23.6 J | NA | 9.6 J | NA | 44.2 J | NA | 4.0 J |
| Zinc | 7440-66-6 | ug/L | NA | 24.2 JB | NA | 12.4 J | NA | 20 U | NA | 20 U | NA | 20 UB |
| **Metals-Filtered** | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 79.1 | NA | 105 | NA | 118 | NA | 61.5 | NA | 102 | NA |
| Chromium VI | 18540-29-9 | ug/L | 63 | NA | 10 RA | NA | 21 | NA | 10 U | NA | 15 RA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | GPS-EW3S-111715F<br>11/17/15<br>GPS-EW3S | GPS-IW3I-010616<br>01/06/16<br>GPS-IW3I | GPS-IW3I-010616-F<br>01/06/16<br>GPS-IW3I | GPS-IW3I-040616<br>04/06/16<br>GPS-IW3I | GPS-IW3I-040616-F<br>04/06/16<br>GPS-IW3I | GPS-IW3I-071216<br>07/12/16<br>GPS-IW3I | GPS-IW3I-071216-F<br>07/12/16<br>GPS-IW3I | GPS-IW3I-100616<br>10/06/16<br>GPS-IW3I | GPS-IW3I-100616-F<br>10/06/16<br>GPS-IW3I | GPS-IW4I-010616<br>01/06/16<br>GPS-IW4I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 201 | 194 | 204 | 257 | 251 | 72.6 | 2.4 | 204 | 284 | 45.8 |
| pH | ARC-pH | SU | 9.70 | 6.85 | 6.79 | 6.67 | 6.71 | 7.81 | 7.80 | 6.50 | 6.56 | 7.77 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | GPS-EW3S-111715F | GPS-IW3I-010616 | GPS-IW3I-010616-F | GPS-IW3I-040616 | GPS-IW3I-040616-F | GPS-IW3I-071216 | GPS-IW3I-071216-F | GPS-IW3I-100616 | GPS-IW3I-100616-F | GPS-IW4I-010616 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | | | |
| Date Collected: | | | 11/17/15 | 01/06/16 | 01/06/16 | 04/06/16 | 04/06/16 | 07/12/16 | 07/12/16 | 10/06/16 | 10/06/16 | 01/06/16 |
| Location ID: | CAS Number | Units | GPS-EW3S | GPS-IW3I | GPS-IW3I | GPS-IW3I | GPS-IW3I | GPS-IW3I | GPS-IW3I | GPS-IW3I | GPS-IW3I | GPS-IW4I |
| Sulfate | 14808-79-8 | ug/L | NA | 2,770,000 | NA | 2,460,000 | NA | 912,000 | NA | 2,640,000 | NA | 466,000 |
| Sulfide | 18496-25-8 | ug/L | NA | 24,400 | NA | 2,000 U | NA | 63,000 | NA | 2,000 U | NA | 133,000 |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 0 | NA | 0 | NA | 730 | NA | 250 | NA | 0 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 347.8 | NA | 251 | NA | 91.6 | NA | 76.9 | NA | 407.5 |
| pH | ARC-pH | SU | NA | 6.89 | NA | 6.44 | NA | 6.52 | NA | 6.56 | NA | 7.84 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 14.48 | NA | 14.03 | NA | 17.38 | NA | 16.4 | NA | 14.45 |
| Turbidity | ARC-Turb | NTU | NA | 9.89 | NA | 1.21 | NA | 1.13 | NA | 0.59 | NA | 5.6 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | GPS-IW4I-010616-F 01/06/16 GPS-IW4I | GPS-IW4I-040616 04/06/16 GPS-IW4I | GPS-IW4I-040616-F 04/06/16 GPS-IW4I | GPS-IW4I-071216 07/12/16 GPS-IW4I | GPS-IW4I-071216-F 07/12/16 GPS-IW4I | GPS-IW4I-100616 10/06/16 GPS-IW4I | GPS-IW4I-100616-F 10/06/16 GPS-IW4I | GPS-IW6I-010616 01/06/16 GPS-IW6I | GPS-IW6I-010616-F 01/06/16 GPS-IW6I | GPS-IW6I-040616 04/06/16 GPS-IW6I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-IW4I-010616-F<br>01/06/16<br>GPS-IW4I | GPS-IW4I-040616<br>04/06/16<br>GPS-IW4I | GPS-IW4I-040616-F<br>04/06/16<br>GPS-IW4I | GPS-IW4I-071216<br>07/12/16<br>GPS-IW4I | GPS-IW4I-071216-F<br>07/12/16<br>GPS-IW4I | GPS-IW4I-100616<br>10/06/16<br>GPS-IW4I | GPS-IW4I-100616-F<br>10/06/16<br>GPS-IW4I | GPS-IW6I-010616<br>01/06/16<br>GPS-IW6I | GPS-IW6I-010616-F<br>01/06/16<br>GPS-IW6I | GPS-IW6I-040616<br>04/06/16<br>GPS-IW6I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-IW4I-010616-F<br>01/06/16<br>GPS-IW4I | GPS-IW4I-040616<br>04/06/16<br>GPS-IW4I | GPS-IW4I-040616-F<br>04/06/16<br>GPS-IW4I | GPS-IW4I-071216<br>07/12/16<br>GPS-IW4I | GPS-IW4I-071216-F<br>07/12/16<br>GPS-IW4I | GPS-IW4I-100616<br>10/06/16<br>GPS-IW4I | GPS-IW4I-100616-F<br>10/06/16<br>GPS-IW4I | GPS-IW6I-010616<br>01/06/16<br>GPS-IW6I | GPS-IW6I-010616-F<br>01/06/16<br>GPS-IW6I | GPS-IW6I-040616<br>04/06/16<br>GPS-IW6I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 400 U | NA | 70.0 J | NA | 1,000 U | NA | 141 J | NA | 52.6 J |
| Antimony | 7440-36-0 | ug/L | NA | 12 U | NA | 8.6 J | NA | 30 U | NA | 30 U | NA | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | NA | 484 | NA | 477 | NA | 449 | NA | 81.8 | NA | 31.7 |
| Barium | 7440-39-3 | ug/L | NA | 86.8 J | NA | 114 J | NA | 109 J | NA | 44.7 J | NA | 55.1 J |
| Beryllium | 7440-41-7 | ug/L | NA | 2.0 U | NA | 2.0 U | NA | 5.0 U | NA | 1.0 U | NA | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 6.0 U | NA | 6.8 | NA | 15 U | NA | 3.0 U | NA | 3.0 U |
| Calcium | 7440-70-2 | ug/L | NA | 68,900 | NA | 162,000 | NA | 228,000 | NA | 15,800 | NA | 23,000 |
| Chromium | 7440-47-3 | ug/L | NA | 69.2 | NA | 63.8 | NA | 72.5 | NA | 81.3 | NA | 101 |
| Chromium VI | 18540-29-9 | ug/L | NA | 500 U | NA | 10 U | NA | 10 RA | NA | 10 RA | NA | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | 42.2 J | NA | 42.4 J | NA | 43.5 J | NA | 5.0 J | NA | 5.0 J |
| Copper | 7440-50-8 | ug/L | NA | 20 U | NA | 20 U | NA | 19.0 JB | NA | 10 U | NA | 10 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 703 | NA | 421 | NA | 316 J | NA | 222 | NA | 153 |
| Lead | 7439-92-1 | ug/L | NA | 120 U | NA | 30 U | NA | 15 U | NA | 15 U | NA | 30 U |
| Magnesium | 7439-95-4 | ug/L | NA | 13,900 J | NA | 20,100 | NA | 19,300 J | NA | 16,500 | NA | 11,700 J |
| Manganese | 7439-96-5 | ug/L | NA | 279 | NA | 352 | NA | 712 | NA | 426 | NA | 581 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-IW4I-010616-F<br>01/06/16<br>GPS-IW4I | GPS-IW4I-040616<br>04/06/16<br>GPS-IW4I | GPS-IW4I-040616-F<br>04/06/16<br>GPS-IW4I | GPS-IW4I-071216<br>07/12/16<br>GPS-IW4I | GPS-IW4I-071216-F<br>07/12/16<br>GPS-IW4I | GPS-IW4I-100616<br>10/06/16<br>GPS-IW4I | GPS-IW4I-100616-F<br>10/06/16<br>GPS-IW4I | GPS-IW6I-010616<br>01/06/16<br>GPS-IW6I | GPS-IW6I-010616-F<br>01/06/16<br>GPS-IW6I | GPS-IW6I-040616<br>04/06/16<br>GPS-IW6I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.60 U | NA | 0.098 J | NA | 0.30 UB | NA | 0.20 U | NA | 0.20 U |
| Nickel | 7440-02-0 | ug/L | NA | 89.4 | NA | 94.4 | NA | 98.0 | NA | 26.5 | NA | 72.9 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 1,420 J | NA | 232 J | NA | 4,090 J | NA | 2,590 J | NA | 1,650 J |
| Selenium | 7782-49-2 | ug/L | NA | 20 U | NA | 20 U | NA | 50 U | NA | 8.8 J | NA | 5.5 J |
| Silver | 7440-22-4 | ug/L | NA | 20 U | NA | 20 U | NA | 20.5 J | NA | 10 U | NA | 10 U |
| Sodium | 7440-23-5 | ug/L | NA | 1,460,000 | NA | 1,060,000 | NA | 1,020,000 | NA | 1,490,000 | NA | 1,800,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 4.0 U | NA | 20 U | NA | 20 U | NA | 8.8 J | NA | 2.0 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 11.2 J | NA | 21.0 J | NA | 26.0 J | NA | 6.3 J | NA | 12.0 J |
| Zinc | 7440-66-6 | ug/L | NA | 35.0 J | NA | 45.8 | NA | 42.5 J | NA | 35.5 JB | NA | 9.5 J |
| **Metals-Filtered** | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 47.9 | NA | 60.2 | NA | 64.0 | NA | 61.1 | NA | 80.6 | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 RA | NA | 500 U | NA | 10 U | NA | 10 RA | NA | 10 RA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | GPS-IW4I-010616-F 01/06/16 GPS-IW4I | GPS-IW4I-040616 04/06/16 GPS-IW4I | GPS-IW4I-040616-F 04/06/16 GPS-IW4I | GPS-IW4I-071216 07/12/16 GPS-IW4I | GPS-IW4I-071216-F 07/12/16 GPS-IW4I | GPS-IW4I-100616 10/06/16 GPS-IW4I | GPS-IW4I-100616-F 10/06/16 GPS-IW4I | GPS-IW6I-010616 01/06/16 GPS-IW6I | GPS-IW6I-010616-F 01/06/16 GPS-IW6I | GPS-IW6I-040616 04/06/16 GPS-IW6I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 49.4 | 126 | 120 | 217 | 218 | 290 | 150 | 112 | 116 | 169 |
| pH | ARC-pH | SU | 7.78 | 7.99 | 8.06 | 7.98 | 8.06 | 8.23 | 8.24 | 7.56 | 7.59 | 7.84 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-IW4I-010616-F<br>01/06/16<br>GPS-IW4I | GPS-IW4I-040616<br>04/06/16<br>GPS-IW4I | GPS-IW4I-040616-F<br>04/06/16<br>GPS-IW4I | GPS-IW4I-071216<br>07/12/16<br>GPS-IW4I | GPS-IW4I-071216-F<br>07/12/16<br>GPS-IW4I | GPS-IW4I-100616<br>10/06/16<br>GPS-IW4I | GPS-IW4I-100616-F<br>10/06/16<br>GPS-IW4I | GPS-IW6I-010616<br>01/06/16<br>GPS-IW6I | GPS-IW6I-010616-F<br>01/06/16<br>GPS-IW6I | GPS-IW6I-040616<br>04/06/16<br>GPS-IW6I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 856,000 | NA | 1,250,000 | NA | 1,200,000 | NA | 513,000 | NA | 910,000 |
| Sulfide | 18496-25-8 | ug/L | NA | 339,000 | NA | 346,000 | NA | 340,000 | NA | 21,700 | NA | 15,700 |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 0 | NA | 1,250 | NA | 740 | NA | 0 | NA | 430 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 422.1 | NA | 414.6 | NA | 424 | NA | 427.3 | NA | 364.5 |
| pH | ARC-pH | SU | NA | 7.83 | NA | 7.64 | NA | 7.97 | NA | 7.74 | NA | 7.66 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 14.84 | NA | 17.94 | NA | 11.8 | NA | 13.45 | NA | 14.39 |
| Turbidity | ARC-Turb | NTU | NA | 14.1 | NA | 34.1 | NA | 25.2 | NA | 2.1 | NA | 5.54 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | GPS-IW6I-040616-F 04/06/16 GPS-IW6I | GPS-IW6I-071216 07/12/16 GPS-IW6I | GPS-IW6I-071216-F 07/12/16 GPS-IW6I | GPS-IW6I-100616 10/06/16 GPS-IW6I | GPS-IW6I-100616-F 10/06/16 GPS-IW6I | GPS-IW9I-010616 01/06/16 GPS-IW9I | GPS-IW9I-010616-F 01/06/16 GPS-IW9I | GPS-IW9I-040616 04/06/16 GPS-IW9I | GPS-IW9I-040616-F 04/06/16 GPS-IW9I | GPS-IW9I-071216 07/12/16 GPS-IW9I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-IW6I-040616-F<br><br>04/06/16<br>GPS-IW6I | GPS-IW6I-071216<br><br>07/12/16<br>GPS-IW6I | GPS-IW6I-071216-F<br><br>07/12/16<br>GPS-IW6I | GPS-IW6I-100616<br><br>10/06/16<br>GPS-IW6I | GPS-IW6I-100616-F<br><br>10/06/16<br>GPS-IW6I | GPS-IW9I-010616<br><br>01/06/16<br>GPS-IW9I | GPS-IW9I-010616-F<br><br>01/06/16<br>GPS-IW9I | GPS-IW9I-040616<br><br>04/06/16<br>GPS-IW9I | GPS-IW9I-040616-F<br><br>04/06/16<br>GPS-IW9I | GPS-IW9I-071216<br><br>07/12/16<br>GPS-IW9I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-IW6I-040616-F<br>04/06/16<br>GPS-IW6I | GPS-IW6I-071216<br>07/12/16<br>GPS-IW6I | GPS-IW6I-071216-F<br>07/12/16<br>GPS-IW6I | GPS-IW6I-100616<br>10/06/16<br>GPS-IW6I | GPS-IW6I-100616-F<br>10/06/16<br>GPS-IW6I | GPS-IW9I-010616<br>01/06/16<br>GPS-IW9I | GPS-IW9I-010616-F<br>01/06/16<br>GPS-IW9I | GPS-IW9I-040616<br>04/06/16<br>GPS-IW9I | GPS-IW9I-040616-F<br>04/06/16<br>GPS-IW9I | GPS-IW9I-071216<br>07/12/16<br>GPS-IW9I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 47.0 J | NA | 200 U | NA | 46.7 J | NA | 24.4 J | NA | 74.4 J |
| Antimony | 7440-36-0 | ug/L | NA | 6.0 U | NA | 30 U | NA | 30 U | NA | 6.0 U | NA | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | NA | 27.7 | NA | 52.5 | NA | 158 | NA | 192 | NA | 60 U |
| Barium | 7440-39-3 | ug/L | NA | 77.0 J | NA | 77.0 J | NA | 43.1 J | NA | 36.3 J | NA | 58.9 J |
| Beryllium | 7440-41-7 | ug/L | NA | 1.0 U | NA | 1.0 U | NA | 1.0 U | NA | 1.0 U | NA | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 0.40 J | NA | 3.0 U | NA | 0.30 J | NA | 3.0 U | NA | 0.90 J |
| Calcium | 7440-70-2 | ug/L | NA | 61,600 | NA | 86,700 | NA | 15,700 | NA | 13,700 | NA | 471,000 |
| Chromium | 7440-47-3 | ug/L | NA | 80.4 | NA | 85.2 | NA | 54.6 | NA | 73.8 | NA | 106 |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U | NA | 50 RA | NA | 10 RA | NA | 10 U | NA | 37 |
| Cobalt | 7440-48-4 | ug/L | NA | 6.3 J | NA | 4.6 J | NA | 6.5 J | NA | 8.7 J | NA | 0.90 J |
| Copper | 7440-50-8 | ug/L | NA | 10 U | NA | 10 UB | NA | 10 U | NA | 10 U | NA | 10 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 128 | NA | 151 JB | NA | 375 | NA | 271 | NA | 53,500 |
| Lead | 7439-92-1 | ug/L | NA | 15 U | NA | 15 U | NA | 15 U | NA | 15 U | NA | 15 U |
| Magnesium | 7439-95-4 | ug/L | NA | 30,600 | NA | 29,000 | NA | 15,900 | NA | 16,600 J | NA | 105,000 |
| Manganese | 7439-96-5 | ug/L | NA | 848 | NA | 1,810 | NA | 228 | NA | 336 | NA | 7,280 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | GPS-IW6I-040616-F 04/06/16 GPS-IW6I | GPS-IW6I-071216 07/12/16 GPS-IW6I | GPS-IW6I-071216-F 07/12/16 GPS-IW6I | GPS-IW6I-100616 10/06/16 GPS-IW6I | GPS-IW6I-100616-F 10/06/16 GPS-IW6I | GPS-IW9I-010616 01/06/16 GPS-IW9I | GPS-IW9I-010616-F 01/06/16 GPS-IW9I | GPS-IW9I-040616 04/06/16 GPS-IW9I | GPS-IW9I-040616-F 04/06/16 GPS-IW9I | GPS-IW9I-071216 07/12/16 GPS-IW9I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.062 J | NA | 0.20 U | NA | 0.20 U | NA | 0.20 U | NA | 0.20 U |
| Nickel | 7440-02-0 | ug/L | NA | 84.7 | NA | 83.3 | NA | 26.9 | NA | 39.2 | NA | 102 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 10,000 U | NA | 4,390 J | NA | 3,480 J | NA | 2,490 J | NA | 7,900 J |
| Selenium | 7782-49-2 | ug/L | NA | 10 U | NA | 8.4 J | NA | 10 U | NA | 10 U | NA | 50 U |
| Silver | 7440-22-4 | ug/L | NA | 10 U | NA | 9.1 JB | NA | 10 U | NA | 10 U | NA | 3.5 J |
| Sodium | 7440-23-5 | ug/L | NA | 1,580,000 | NA | 1,480,000 | NA | 1,830,000 | NA | 1,610,000 | NA | 1,160,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 10 U | NA | 10 U | NA | 10 U | NA | 6.0 U | NA | 40 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 13.8 J | NA | 17.2 J | NA | 4.6 J | NA | 8.9 J | NA | 30.1 J |
| Zinc | 7440-66-6 | ug/L | NA | 20 U | NA | 20 U | NA | 40.0 JB | NA | 4.3 J | NA | 20 U |
| **Metals-Filtered** | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 93.5 | NA | 72.8 | NA | 81.5 | NA | 50.9 | NA | 71.7 | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 U | NA | 10 U | NA | 10 RA | NA | 10 RA | NA | 10 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-IW6I-040616-F<br>04/06/16<br>GPS-IW6I | GPS-IW6I-071216<br>07/12/16<br>GPS-IW6I | GPS-IW6I-071216-F<br>07/12/16<br>GPS-IW6I | GPS-IW6I-100616<br>10/06/16<br>GPS-IW6I | GPS-IW6I-100616-F<br>10/06/16<br>GPS-IW6I | GPS-IW9I-010616<br>01/06/16<br>GPS-IW9I | GPS-IW9I-010616-F<br>01/06/16<br>GPS-IW9I | GPS-IW9I-040616<br>04/06/16<br>GPS-IW9I | GPS-IW9I-040616-F<br>04/06/16<br>GPS-IW9I | GPS-IW9I-071216<br>07/12/16<br>GPS-IW9I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 153 | 203 | 181 | 14.5 | 216 | 131 | 140 | 109 | 86.4 | 274 |
| pH | ARC-pH | SU | 7.85 | 7.69 | 7.71 | 7.48 | 7.49 | 7.82 | 7.81 | 7.83 | 7.86 | 6.64 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-IW6I-040616-F<br>04/06/16<br>GPS-IW6I | GPS-IW6I-071216<br>07/12/16<br>GPS-IW6I | GPS-IW6I-071216-F<br>07/12/16<br>GPS-IW6I | GPS-IW6I-100616<br>10/06/16<br>GPS-IW6I | GPS-IW6I-100616-F<br>10/06/16<br>GPS-IW6I | GPS-IW9I-010616<br>01/06/16<br>GPS-IW9I | GPS-IW9I-010616-F<br>01/06/16<br>GPS-IW9I | GPS-IW9I-040616<br>04/06/16<br>GPS-IW9I | GPS-IW9I-040616-F<br>04/06/16<br>GPS-IW9I | GPS-IW9I-071216<br>07/12/16<br>GPS-IW9I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 1,340,000 | NA | 1,430,000 | NA | 471,000 | NA | 604,000 | NA | 3,060,000 |
| Sulfide | 18496-25-8 | ug/L | NA | 18,200 | NA | 6,100 | NA | 24,600 | NA | 22,900 | NA | 57,500 |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 360 | NA | 810 | NA | 0 | NA | 70 | NA | 2,970 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 351.5 | NA | 345.5 | NA | 380.5 | NA | 390 | NA | 368.5 |
| pH | ARC-pH | SU | NA | 7.64 | NA | 7.44 | NA | 7.89 | NA | 7.64 | NA | 8.13 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 19.7 | NA | 13.01 | NA | 13.19 | NA | 13.69 | NA | 17.58 |
| Turbidity | ARC-Turb | NTU | NA | 2.7 | NA | 7.9 | NA | 4.2 | NA | 1.15 | NA | 2.54 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | GPS-IW9I-071216-F | GPS-IW9I-100616 | GPS-IW9I-100616-F | GPS-IW12I-010616 | GPS-IW12I-010616-F | GPS-IW12I-040616 | GPS-IW12I-040616-F | GPS-IW12I-071216 | GPS-IW12I-071216-F | GPS-IW12I-100616 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | | | |
| Date Collected: | | | 07/12/16 | 10/06/16 | 10/06/16 | 01/06/16 | 01/06/16 | 04/06/16 | 04/06/16 | 07/12/16 | 07/12/16 | 10/06/16 |
| Location ID: | CAS Number | Units | GPS-IW9I | GPS-IW9I | GPS-IW9I | GPS-IW12I | GPS-IW12I | GPS-IW12I | GPS-IW12I | GPS-IW12I | GPS-IW12I | GPS-IW12I |
| **Volatile Organics** | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | GPS-IW9I-071216-F 07/12/16 GPS-IW9I | GPS-IW9I-100616 10/06/16 GPS-IW9I | GPS-IW9I-100616-F 10/06/16 GPS-IW9I | GPS-IW12I-010616 01/06/16 GPS-IW12I | GPS-IW12I-010616-F 01/06/16 GPS-IW12I | GPS-IW12I-040616 04/06/16 GPS-IW12I | GPS-IW12I-040616-F 04/06/16 GPS-IW12I | GPS-IW12I-071216 07/12/16 GPS-IW12I | GPS-IW12I-071216-F 07/12/16 GPS-IW12I | GPS-IW12I-100616 10/06/16 GPS-IW12I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-IW9I-071216-F<br><br>07/12/16<br>GPS-IW9I | GPS-IW9I-100616<br><br>10/06/16<br>GPS-IW9I | GPS-IW9I-100616-F<br><br>10/06/16<br>GPS-IW9I | GPS-IW12I-010616<br><br>01/06/16<br>GPS-IW12I | GPS-IW12I-010616-F<br><br>01/06/16<br>GPS-IW12I | GPS-IW12I-040616<br><br>04/06/16<br>GPS-IW12I | GPS-IW12I-040616-F<br><br>04/06/16<br>GPS-IW12I | GPS-IW12I-071216<br><br>07/12/16<br>GPS-IW12I | GPS-IW12I-071216-F<br><br>07/12/16<br>GPS-IW12I | GPS-IW12I-100616<br><br>10/06/16<br>GPS-IW12I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 200 U | NA | 64.1 J | NA | 107 J | NA | 86.3 J | NA | 200 UB |
| Antimony | 7440-36-0 | ug/L | NA | 6.8 | NA | 18 U | NA | 6.0 U | NA | 6.0 U | NA | 30 U |
| Arsenic | 7440-38-2 | ug/L | NA | 187 | NA | 84.3 | NA | 37.3 | NA | 29.9 | NA | 12.7 |
| Barium | 7440-39-3 | ug/L | NA | 40.9 J | NA | 31.7 J | NA | 30.4 J | NA | 30.5 J | NA | 57.0 J |
| Beryllium | 7440-41-7 | ug/L | NA | 1.0 U | NA | 1.0 U | NA | 1.0 U | NA | 1.0 U | NA | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 3.0 U | NA | 3.0 U | NA | 0.40 J | NA | 0.40 J | NA | 3.0 U |
| Calcium | 7440-70-2 | ug/L | NA | 24,500 | NA | 13,300 | NA | 12,100 | NA | 17,800 | NA | 42,100 |
| Chromium | 7440-47-3 | ug/L | NA | 56.2 | NA | 137 | NA | 160 | NA | 166 | NA | 215 |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 RA | NA | 10 RA | NA | 10 U | NA | 12 | NA | 10 RA |
| Cobalt | 7440-48-4 | ug/L | NA | 2.0 J | NA | 6.4 J | NA | 4.0 J | NA | 3.5 J | NA | 2.2 J |
| Copper | 7440-50-8 | ug/L | NA | 10 UB | NA | 10 U | NA | 10 U | NA | 10 U | NA | 10 UB |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 100 UB | NA | 219 | NA | 325 | NA | 320 | NA | 340 |
| Lead | 7439-92-1 | ug/L | NA | 15 U | NA | 9.0 U | NA | 15 U | NA | 15 U | NA | 15 U |
| Magnesium | 7439-95-4 | ug/L | NA | 17,900 | NA | 17,300 | NA | 11,800 J | NA | 17,200 | NA | 26,200 |
| Manganese | 7439-96-5 | ug/L | NA | 390 | NA | 265 | NA | 172 | NA | 252 | NA | 657 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | GPS-IW9I-071216-F 07/12/16 GPS-IW9I | GPS-IW9I-100616 10/06/16 GPS-IW9I | GPS-IW9I-100616-F 10/06/16 GPS-IW9I | GPS-IW12I-010616 01/06/16 GPS-IW12I | GPS-IW12I-010616-F 01/06/16 GPS-IW12I | GPS-IW12I-040616 04/06/16 GPS-IW12I | GPS-IW12I-040616-F 04/06/16 GPS-IW12I | GPS-IW12I-071216 07/12/16 GPS-IW12I | GPS-IW12I-071216-F 07/12/16 GPS-IW12I | GPS-IW12I-100616 10/06/16 GPS-IW12I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.20 U | NA | 0.20 U | NA | 0.20 U | NA | 0.083 J | NA | 0.20 UB |
| Nickel | 7440-02-0 | ug/L | NA | 58.6 | NA | 25.8 | NA | 14.6 | NA | 22.9 | NA | 34.1 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 4,510 J | NA | 3,900 J | NA | 2,800 J | NA | 1,280 J | NA | 6,400 J |
| Selenium | 7782-49-2 | ug/L | NA | 7.3 J | NA | 6.7 J | NA | 10 U | NA | 10 U | NA | 7.8 J |
| Silver | 7440-22-4 | ug/L | NA | 7.8 JB | NA | 10 U | NA | 10 U | NA | 10 U | NA | 10.9 JB |
| Sodium | 7440-23-5 | ug/L | NA | 1,280,000 | NA | 1,680,000 | NA | 1,790,000 | NA | 1,680,000 | NA | 1,580,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 10 U | NA | 6.0 U | NA | 2.0 U | NA | 10 U | NA | 10 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 13.3 J | NA | 8.0 J | NA | 6.9 J | NA | 17.5 J | NA | 33.2 J |
| Zinc | 7440-66-6 | ug/L | NA | 20 U | NA | 32.3 JB | NA | 39.5 | NA | 20 UB | NA | 4.6 J |
| **Metals-Filtered** | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 88.6 | NA | 60.9 | NA | 95.4 | NA | 62.9 | NA | 62.4 | NA |
| Chromium VI | 18540-29-9 | ug/L | 18 | NA | 10 RA | NA | 10 RA | NA | 17 | NA | 19 | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | GPS-IW9I-071216-F 07/12/16 GPS-IW9I | GPS-IW9I-100616 10/06/16 GPS-IW9I | GPS-IW9I-100616-F 10/06/16 GPS-IW9I | GPS-IW12I-010616 01/06/16 GPS-IW12I | GPS-IW12I-010616-F 01/06/16 GPS-IW12I | GPS-IW12I-040616 04/06/16 GPS-IW12I | GPS-IW12I-040616-F 04/06/16 GPS-IW12I | GPS-IW12I-071216 07/12/16 GPS-IW12I | GPS-IW12I-071216-F 07/12/16 GPS-IW12I | GPS-IW12I-100616 10/06/16 GPS-IW12I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 243 | 213 | 215 | 70.0 | 77.3 | 28.0 | 16.4 | 193 | 5.3 | 197 |
| pH | ARC-pH | SU | 6.79 | 7.79 | 7.85 | 7.63 | 7.68 | 7.97 | 7.93 | 8.00 | 7.83 | 7.59 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | GPS-IW9I-071216-F | GPS-IW9I-100616 | GPS-IW9I-100616-F | GPS-IW12I-010616 | GPS-IW12I-010616-F | GPS-IW12I-040616 | GPS-IW12I-040616-F | GPS-IW12I-071216 | GPS-IW12I-071216-F | GPS-IW12I-100616 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | | | |
| Date Collected: | | | 07/12/16 | 10/06/16 | 10/06/16 | 01/06/16 | 01/06/16 | 04/06/16 | 04/06/16 | 07/12/16 | 07/12/16 | 10/06/16 |
| Location ID: | CAS Number | Units | GPS-IW9I | GPS-IW9I | GPS-IW9I | GPS-IW12I | GPS-IW12I | GPS-IW12I | GPS-IW12I | GPS-IW12I | GPS-IW12I | GPS-IW12I |
| Sulfate | 14808-79-8 | ug/L | NA | 986,000 | NA | 500,000 | NA | 527,000 | NA | 1,080,000 | NA | 1,820,000 |
| Sulfide | 18496-25-8 | ug/L | NA | 34,900 | NA | 50,900 | NA | 22,100 | NA | 178,000 | NA | 35,200 |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 520 | NA | 0 | NA | 360 | NA | 1,840 | NA | 590 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 392.4 | NA | 380.4 | NA | 399 | NA | 377.9 | NA | 362.9 |
| pH | ARC-pH | SU | NA | 7.85 | NA | 7.84 | NA | 7.92 | NA | 8.45 | NA | 7.46 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 20.29 | NA | 14.36 | NA | 14.43 | NA | 17.75 | NA | 15.03 |
| Turbidity | ARC-Turb | NTU | NA | 0.39 | NA | 2.42 | NA | 4.81 | NA | 2.47 | NA | 3.99 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | GPS-IW12I-100616-F | GPS-MW1S-022516 | GPS-MW1S-022516-F | GPS-MW1S-060316 | GPS-MW1S-060316-F | GPS-MW1S-083016 | GPS-MW1S-083016-F | GPS-MW1S-111715 | GPS-MW1S-111715F |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | | |
| Date Collected: | | | 10/06/16 | 02/25/16 | 02/25/16 | 06/03/16 | 06/03/16 | 08/30/16 | 08/30/16 | 11/17/15 | 11/17/15 |
| Location ID: | CAS Number | Units | GPS-IW12I | GPS-MW1S | GPS-MW1S | GPS-MW1S | GPS-MW1S | GPS-MW1S | GPS-MW1S | GPS-MW1S | GPS-MW1S |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-IW12I-100616-F<br>10/06/16<br>GPS-IW12I | GPS-MW1S-022516<br>02/25/16<br>GPS-MW1S | GPS-MW1S-022516-F<br>02/25/16<br>GPS-MW1S | GPS-MW1S-060316<br>06/03/16<br>GPS-MW1S | GPS-MW1S-060316-F<br>06/03/16<br>GPS-MW1S | GPS-MW1S-083016<br>08/30/16<br>GPS-MW1S | GPS-MW1S-083016-F<br>08/30/16<br>GPS-MW1S | GPS-MW1S-111715<br>11/17/15<br>GPS-MW1S | GPS-MW1S-111715F<br>11/17/15<br>GPS-MW1S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-IW12I-100616-F<br>10/06/16<br>GPS-IW12I | GPS-MW1S-022516<br>02/25/16<br>GPS-MW1S | GPS-MW1S-022516-F<br>02/25/16<br>GPS-MW1S | GPS-MW1S-060316<br>06/03/16<br>GPS-MW1S | GPS-MW1S-060316-F<br>06/03/16<br>GPS-MW1S | GPS-MW1S-083016<br>08/30/16<br>GPS-MW1S | GPS-MW1S-083016-F<br>08/30/16<br>GPS-MW1S | GPS-MW1S-111715<br>11/17/15<br>GPS-MW1S | GPS-MW1S-111715F<br>11/17/15<br>GPS-MW1S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 996 | NA | 933 | NA | 1,070 | NA | 452 | NA |
| Antimony | 7440-36-0 | ug/L | NA | 14.8 | NA | 15.2 | NA | 9.1 | NA | 6.2 | NA |
| Arsenic | 7440-38-2 | ug/L | NA | 30.0 | NA | 39.2 | NA | 15.7 | NA | 13.2 J | NA |
| Barium | 7440-39-3 | ug/L | NA | 400 U | NA | 25.0 J | NA | 20.6 J | NA | 23.2 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | 2.0 U | NA | 2.0 U | NA | 1.0 U | NA | 1.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 0.60 J | NA | 6.0 U | NA | 3.0 U | NA | 3.0 UB | NA |
| Calcium | 7440-70-2 | ug/L | NA | 129,000 | NA | 120,000 | NA | 85,900 | NA | 109,000 | NA |
| Chromium | 7440-47-3 | ug/L | NA | 673 | NA | 839 | NA | 373 | NA | 749 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U | NA | 10 U | NA | 10 U | NA | 100 J | NA |
| Cobalt | 7440-48-4 | ug/L | NA | 7.6 J | NA | 8.0 J | NA | 4.3 J | NA | 2.7 J | NA |
| Copper | 7440-50-8 | ug/L | NA | 16.6 JB | NA | 20 UJ | NA | 10 U | NA | 10 UB | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 184 J | NA | 337 | NA | 100 U | NA | 39.0 J | NA |
| Lead | 7439-92-1 | ug/L | NA | 6.0 U | NA | 6.0 U | NA | 3.0 U | NA | 15 U | NA |
| Magnesium | 7439-95-4 | ug/L | NA | 874 J | NA | 988 J | NA | 729 J | NA | 465 J | NA |
| Manganese | 7439-96-5 | ug/L | NA | 9.4 J | NA | 15.8 J | NA | 6.1 J | NA | 1.6 JB | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-IW12I-100616-F<br>10/06/16<br>GPS-IW12I | GPS-MW1S-022516<br>02/25/16<br>GPS-MW1S | GPS-MW1S-022516-F<br>02/25/16<br>GPS-MW1S | GPS-MW1S-060316<br>06/03/16<br>GPS-MW1S | GPS-MW1S-060316-F<br>06/03/16<br>GPS-MW1S | GPS-MW1S-083016<br>08/30/16<br>GPS-MW1S | GPS-MW1S-083016-F<br>08/30/16<br>GPS-MW1S | GPS-MW1S-111715<br>11/17/15<br>GPS-MW1S | GPS-MW1S-111715F<br>11/17/15<br>GPS-MW1S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.21 J | NA | 0.36 J | NA | 0.32 J | NA | 0.20 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | 76.6 | NA | 94.2 | NA | 65.0 | NA | 70.6 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 99,600 | NA | 95,900 | NA | 74,300 | NA | 66,700 | NA |
| Selenium | 7782-49-2 | ug/L | NA | 8.6 J | NA | 16.4 J | NA | 6.6 J | NA | 7.4 J | NA |
| Silver | 7440-22-4 | ug/L | NA | 20 U | NA | 20 U | NA | 1.4 J | NA | 10 U | NA |
| Sodium | 7440-23-5 | ug/L | NA | 1,480,000 | NA | 1,480,000 | NA | 1,020,000 | NA | 611,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 20 U | NA | 20 U | NA | 2.0 U | NA | 10 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 91.2 J | NA | 99.0 J | NA | 86.1 | NA | 52.4 | NA |
| Zinc | 7440-66-6 | ug/L | NA | 40 U | NA | 5.2 J | NA | 7.1 J | NA | 20 U | NA |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 61.1 | NA | 736 | NA | 885 | NA | 401 | NA | 410 |
| Chromium VI | 18540-29-9 | ug/L | 10 RA | NA | 10 U | NA | 10 U | NA | 10 U | NA | 330 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-IW12I-100616-F<br>10/06/16<br>GPS-IW12I | GPS-MW1S-022516<br>02/25/16<br>GPS-MW1S | GPS-MW1S-022516-F<br>02/25/16<br>GPS-MW1S | GPS-MW1S-060316<br>06/03/16<br>GPS-MW1S | GPS-MW1S-060316-F<br>06/03/16<br>GPS-MW1S | GPS-MW1S-083016<br>08/30/16<br>GPS-MW1S | GPS-MW1S-083016-F<br>08/30/16<br>GPS-MW1S | GPS-MW1S-111715<br>11/17/15<br>GPS-MW1S | GPS-MW1S-111715F<br>11/17/15<br>GPS-MW1S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 241 | 216 | 220 | 54.0 | 38.2 | 148 | 215 | 200 | 128 |
| pH | ARC-pH | SU | 7.65 | 10.20 | 10.03 | 9.65 | 9.73 | 10.36 | 9.81 | 10.00 | 10.24 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-IW12I-100616-F<br>10/06/16<br>GPS-IW12I | GPS-MW1S-022516<br>02/25/16<br>GPS-MW1S | GPS-MW1S-022516-F<br>02/25/16<br>GPS-MW1S | GPS-MW1S-060316<br>06/03/16<br>GPS-MW1S | GPS-MW1S-060316-F<br>06/03/16<br>GPS-MW1S | GPS-MW1S-083016<br>08/30/16<br>GPS-MW1S | GPS-MW1S-083016-F<br>08/30/16<br>GPS-MW1S | GPS-MW1S-111715<br>11/17/15<br>GPS-MW1S | GPS-MW1S-111715F<br>11/17/15<br>GPS-MW1S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 606,000 | NA | 487,000 | NA | 549,000 | NA | 572,000 | NA |
| Sulfide | 18496-25-8 | ug/L | NA | 33,400 | NA | 31,600 | NA | 41,400 | NA | 2,100 | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 60 | NA | 190 | NA | 40 | NA | 0 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 320.7 | NA | 265 | NA | 301.3 | NA | 135.8 | NA |
| pH | ARC-pH | SU | NA | 12.2 | NA | 10.42 | NA | 10.52 | NA | 10.25 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 11.99 | NA | 13.9 | NA | 21.2 | NA | 18.01 | NA |
| Turbidity | ARC-Turb | NTU | NA | 0.94 | NA | 1.92 | NA | 2.45 | NA | 9.97 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | GPS-MW2S-022516 02/25/16 GPS-MW2S | GPS-MW2S-022516-F 02/25/16 GPS-MW2S | GPS-MW2S-060316 06/03/16 GPS-MW2S | GPS-MW2S-060316-F 06/03/16 GPS-MW2S | GPS-MW2S-083016 08/30/16 GPS-MW2S | GPS-MW2S-083016-F 08/30/16 GPS-MW2S | GPS-MW2S-111715 11/17/15 GPS-MW2S | GPS-MW2S-111715F 11/17/15 GPS-MW2S | GPS-MW3S-022516 02/25/16 GPS-MW3S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-MW2S-022516<br><br>02/25/16<br>GPS-MW2S | GPS-MW2S-022516-F<br><br>02/25/16<br>GPS-MW2S | GPS-MW2S-060316<br><br>06/03/16<br>GPS-MW2S | GPS-MW2S-060316-F<br><br>06/03/16<br>GPS-MW2S | GPS-MW2S-083016<br><br>08/30/16<br>GPS-MW2S | GPS-MW2S-083016-F<br><br>08/30/16<br>GPS-MW2S | GPS-MW2S-111715<br><br>11/17/15<br>GPS-MW2S | GPS-MW2S-111715F<br><br>11/17/15<br>GPS-MW2S | GPS-MW3S-022516<br><br>02/25/16<br>GPS-MW3S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-MW2S-022516<br><br>02/25/16<br>GPS-MW2S | GPS-MW2S-022516-F<br><br>02/25/16<br>GPS-MW2S | GPS-MW2S-060316<br><br>06/03/16<br>GPS-MW2S | GPS-MW2S-060316-F<br><br>06/03/16<br>GPS-MW2S | GPS-MW2S-083016<br><br>08/30/16<br>GPS-MW2S | GPS-MW2S-083016-F<br><br>08/30/16<br>GPS-MW2S | GPS-MW2S-111715<br><br>11/17/15<br>GPS-MW2S | GPS-MW2S-111715F<br><br>11/17/15<br>GPS-MW2S | GPS-MW3S-022516<br><br>02/25/16<br>GPS-MW3S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 1,120 | NA | 1,010 | NA | 922 | NA | 1,140 | NA | 851 |
| Antimony | 7440-36-0 | ug/L | 6.0 U | NA | 6.0 U | NA | 3.9 J | NA | 6.0 | NA | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | 3.4 | NA | 10.4 | NA | 15 U | NA | 12.5 J | NA | 15 U |
| Barium | 7440-39-3 | ug/L | 200 U | NA | 28.0 J | NA | 41.1 J | NA | 78.0 J | NA | 104 J |
| Beryllium | 7440-41-7 | ug/L | 1.0 U | NA | 1.0 U | NA | 1.0 U | NA | 1.0 U | NA | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 0.50 J | NA | 3.0 U | NA | 3.0 U | NA | 3.0 UB | NA | 0.70 J |
| Calcium | 7440-70-2 | ug/L | 87,800 | NA | 142,000 | NA | 173,000 | NA | 341,000 | NA | 398,000 |
| Chromium | 7440-47-3 | ug/L | 7.9 J | NA | 21.2 | NA | 10.2 | NA | 9.7 J | NA | 35.0 |
| Chromium VI | 18540-29-9 | ug/L | 10 U | NA | 15 | NA | 10 U | NA | 10 U | NA | 10 U |
| Cobalt | 7440-48-4 | ug/L | 50 U | NA | 50 U | NA | 1.1 J | NA | 1.8 J | NA | 1.0 J |
| Copper | 7440-50-8 | ug/L | 18.4 JB | NA | 16.0 J | NA | 7.8 J | NA | 22.4 JB | NA | 9.8 JB |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 100 U | NA | 13.9 J | NA | 100 U | NA | 139 | NA | 184 |
| Lead | 7439-92-1 | ug/L | 3.0 U | NA | 9.0 U | NA | 3.0 U | NA | 15 U | NA | 15 U |
| Magnesium | 7439-95-4 | ug/L | 5,000 U | NA | 5,000 U | NA | 5,000 U | NA | 129 J | NA | 54.9 J |
| Manganese | 7439-96-5 | ug/L | 15 U | NA | 15 U | NA | 15 U | NA | 2.2 JB | NA | 0.90 J |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-MW2S-022516<br><br>02/25/16<br>GPS-MW2S | GPS-MW2S-022516-F<br><br>02/25/16<br>GPS-MW2S | GPS-MW2S-060316<br><br>06/03/16<br>GPS-MW2S | GPS-MW2S-060316-F<br><br>06/03/16<br>GPS-MW2S | GPS-MW2S-083016<br><br>08/30/16<br>GPS-MW2S | GPS-MW2S-083016-F<br><br>08/30/16<br>GPS-MW2S | GPS-MW2S-111715<br><br>11/17/15<br>GPS-MW2S | GPS-MW2S-111715F<br><br>11/17/15<br>GPS-MW2S | GPS-MW3S-022516<br><br>02/25/16<br>GPS-MW3S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | NA | 0.055 J | NA | 0.64 | NA | 0.30 | NA | 0.20 U |
| Nickel | 7440-02-0 | ug/L | 2.9 J | NA | 10 U | NA | 22.2 | NA | 20.7 | NA | 28.4 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 22,400 | NA | 38,000 | NA | 49,200 | NA | 72,900 | NA | 79,800 |
| Selenium | 7782-49-2 | ug/L | 4.2 J | NA | 14.2 | NA | 9.2 J | NA | 7.1 J | NA | 8.1 J |
| Silver | 7440-22-4 | ug/L | 10 U | NA | 10 U | NA | 1.5 J | NA | 10 U | NA | 10 U |
| Sodium | 7440-23-5 | ug/L | 239,000 | NA | 335,000 | NA | 329,000 | NA | 798,000 | NA | 586,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 4.0 U | NA | 6.0 U | NA | 2.0 U | NA | 10 U | NA | 10 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 77.7 | NA | 73.5 | NA | 48.1 J | NA | 46.0 J | NA | 27.4 J |
| Zinc | 7440-66-6 | ug/L | 20 U | NA | 20 U | NA | 20 U | NA | 20 U | NA | 20 U |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 8.0 J | NA | 20.7 | NA | 7.3 J | NA | 6.3 J | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U | NA | 18 | NA | 10 U | NA | 10 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-MW2S-022516<br><br>02/25/16<br>GPS-MW2S | GPS-MW2S-022516-F<br><br>02/25/16<br>GPS-MW2S | GPS-MW2S-060316<br><br>06/03/16<br>GPS-MW2S | GPS-MW2S-060316-F<br><br>06/03/16<br>GPS-MW2S | GPS-MW2S-083016<br><br>08/30/16<br>GPS-MW2S | GPS-MW2S-083016-F<br><br>08/30/16<br>GPS-MW2S | GPS-MW2S-111715<br><br>11/17/15<br>GPS-MW2S | GPS-MW2S-111715F<br><br>11/17/15<br>GPS-MW2S | GPS-MW3S-022516<br><br>02/25/16<br>GPS-MW3S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 232 | 209 | 136 | 133 | 160 | 123 | 159 | 116 | 163 |
| pH | ARC-pH | SU | 10.97 | 10.91 | 10.77 | 10.86 | 10.82 | 10.82 | 10.45 | 10.46 | 10.68 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-MW2S-022516<br>02/25/16<br>GPS-MW2S | GPS-MW2S-022516-F<br>02/25/16<br>GPS-MW2S | GPS-MW2S-060316<br>06/03/16<br>GPS-MW2S | GPS-MW2S-060316-F<br>06/03/16<br>GPS-MW2S | GPS-MW2S-083016<br>08/30/16<br>GPS-MW2S | GPS-MW2S-083016-F<br>08/30/16<br>GPS-MW2S | GPS-MW2S-111715<br>11/17/15<br>GPS-MW2S | GPS-MW2S-111715F<br>11/17/15<br>GPS-MW2S | GPS-MW3S-022516<br>02/25/16<br>GPS-MW3S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 309,000 | NA | 591,000 | NA | 685,000 | NA | 900,000 | NA | 544,000 |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | NA | 2,000 U | NA | 2,600 JB | NA | 2,000 U | NA | 3,100 |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 690 | NA | 1,270 | NA | 570 | NA | 0 | NA | 20 |
| Oxidation Reduction Potential | ARC-ORP | mV | 66.1 | NA | 101.2 | NA | 192.4 | NA | 178.1 | NA | 204.2 |
| pH | ARC-pH | SU | 13.13 | NA | 11.26 | NA | 10.7 | NA | 10.68 | NA | 12.2 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 9.3 | NA | 14.91 | NA | 21.25 | NA | 18.73 | NA | 10.01 |
| Turbidity | ARC-Turb | NTU | 0.36 | NA | 0.94 | NA | 1.26 | NA | 1.56 | NA | 1.54 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | GPS-MW3S-022516-F | GPS-MW3S-060316 | GPS-MW3S-060316-F | GPS-MW3S-083016 | GPS-MW3S-083016-F | GPS-MW3S-111715 | GPS-MW3S-111715F | GPS-MW4S-022516 | GPS-MW4S-022516-F |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | | |
| Date Collected: | | | 02/25/16 | 06/03/16 | 06/03/16 | 08/30/16 | 08/30/16 | 11/17/15 | 11/17/15 | 02/25/16 | 02/25/16 |
| Location ID: | CAS Number | Units | GPS-MW3S | GPS-MW3S | GPS-MW3S | GPS-MW3S | GPS-MW3S | GPS-MW3S | GPS-MW3S | GPS-MW4S | GPS-MW4S |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | GPS-MW3S-022516-F 02/25/16 GPS-MW3S | GPS-MW3S-060316 06/03/16 GPS-MW3S | GPS-MW3S-060316-F 06/03/16 GPS-MW3S | GPS-MW3S-083016 08/30/16 GPS-MW3S | GPS-MW3S-083016-F 08/30/16 GPS-MW3S | GPS-MW3S-111715 11/17/15 GPS-MW3S | GPS-MW3S-111715F 11/17/15 GPS-MW3S | GPS-MW4S-022516 02/25/16 GPS-MW4S | GPS-MW4S-022516-F 02/25/16 GPS-MW4S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-MW3S-022516-F<br>02/25/16<br>GPS-MW3S | GPS-MW3S-060316<br>06/03/16<br>GPS-MW3S | GPS-MW3S-060316-F<br>06/03/16<br>GPS-MW3S | GPS-MW3S-083016<br>08/30/16<br>GPS-MW3S | GPS-MW3S-083016-F<br>08/30/16<br>GPS-MW3S | GPS-MW3S-111715<br>11/17/15<br>GPS-MW3S | GPS-MW3S-111715F<br>11/17/15<br>GPS-MW3S | GPS-MW4S-022516<br>02/25/16<br>GPS-MW4S | GPS-MW4S-022516-F<br>02/25/16<br>GPS-MW4S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 883 | NA | 1,030 | NA | 1,660 | NA | 1,580 | NA |
| Antimony | 7440-36-0 | ug/L | NA | 6.0 U | NA | 6.0 U | NA | 5.8 J | NA | 6.0 U | NA |
| Arsenic | 7440-38-2 | ug/L | NA | 11.2 | NA | 9.0 U | NA | 9.6 | NA | 9.5 | NA |
| Barium | 7440-39-3 | ug/L | NA | 98.9 J | NA | 88.9 J | NA | 71.7 J | NA | 200 U | NA |
| Beryllium | 7440-41-7 | ug/L | NA | 1.0 U | NA | 1.0 U | NA | 1.0 U | NA | 1.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 3.0 U | NA | 3.0 U | NA | 3.0 UB | NA | 1.0 J | NA |
| Calcium | 7440-70-2 | ug/L | NA | 369,000 | NA | 263,000 | NA | 238,000 | NA | 60,100 | NA |
| Chromium | 7440-47-3 | ug/L | NA | 1.7 J | NA | 4.2 J | NA | 24.0 | NA | 2.4 J | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U | NA | 10 U | NA | 10 U | NA | 10 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | 50 U | NA | 0.90 J | NA | 1.5 J | NA | 0.90 J | NA |
| Copper | 7440-50-8 | ug/L | NA | 10 UJ | NA | 10 U | NA | 10 UB | NA | 9.0 JB | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 74.1 J | NA | 100 U | NA | 439 | NA | 108 | NA |
| Lead | 7439-92-1 | ug/L | NA | 15 U | NA | 3.0 U | NA | 6.0 U | NA | 3.0 U | NA |
| Magnesium | 7439-95-4 | ug/L | NA | 5,000 U | NA | 5,000 U | NA | 146 J | NA | 5,000 U | NA |
| Manganese | 7439-96-5 | ug/L | NA | 15 U | NA | 15 U | NA | 3.5 J | NA | 15 U | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | GPS-MW3S-022516-F 02/25/16 GPS-MW3S | GPS-MW3S-060316 06/03/16 GPS-MW3S | GPS-MW3S-060316-F 06/03/16 GPS-MW3S | GPS-MW3S-083016 08/30/16 GPS-MW3S | GPS-MW3S-083016-F 08/30/16 GPS-MW3S | GPS-MW3S-111715 11/17/15 GPS-MW3S | GPS-MW3S-111715F 11/17/15 GPS-MW3S | GPS-MW4S-022516 02/25/16 GPS-MW4S | GPS-MW4S-022516-F 02/25/16 GPS-MW4S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.20 U | NA | 0.20 U | NA | 0.20 U | NA | 0.20 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | 26.2 J | NA | 33.3 | NA | 37.8 | NA | 85.3 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 84,400 | NA | 83,000 | NA | 72,800 | NA | 62,800 | NA |
| Selenium | 7782-49-2 | ug/L | NA | 50 U | NA | 7.0 J | NA | 8.5 J | NA | 6.2 J | NA |
| Silver | 7440-22-4 | ug/L | NA | 10 U | NA | 1.4 J | NA | 10 U | NA | 10 U | NA |
| Sodium | 7440-23-5 | ug/L | NA | 535,000 | NA | 608,000 | NA | 462,000 | NA | 259,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 10 U | NA | 2.0 U | NA | 2.0 U | NA | 2.0 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 24.5 J | NA | 23.4 J | NA | 33.8 J | NA | 41.9 J | NA |
| Zinc | 7440-66-6 | ug/L | NA | 20 U | NA | 20 U | NA | 20 U | NA | 20 U | NA |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 30.0 | NA | 10 U | NA | 10 U | NA | 8.1 J | NA | 1.2 J |
| Chromium VI | 18540-29-9 | ug/L | 10 U | NA | 10 U | NA | 10 U | NA | 10 U | NA | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | GPS-MW3S-022516-F 02/25/16 GPS-MW3S | GPS-MW3S-060316 06/03/16 GPS-MW3S | GPS-MW3S-060316-F 06/03/16 GPS-MW3S | GPS-MW3S-083016 08/30/16 GPS-MW3S | GPS-MW3S-083016-F 08/30/16 GPS-MW3S | GPS-MW3S-111715 11/17/15 GPS-MW3S | GPS-MW3S-111715F 11/17/15 GPS-MW3S | GPS-MW4S-022516 02/25/16 GPS-MW4S | GPS-MW4S-022516-F 02/25/16 GPS-MW4S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 122 | 78.4 | 86.8 | 117 | 105 | 98.1 | 84.4 | 115 | 110 |
| pH | ARC-pH | SU | 10.69 | 10.56 | 10.68 | 10.95 | 10.97 | 10.81 | 10.80 | 11.02 | 10.99 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | GPS-MW3S-022516-F 02/25/16 GPS-MW3S | GPS-MW3S-060316 06/03/16 GPS-MW3S | GPS-MW3S-060316-F 06/03/16 GPS-MW3S | GPS-MW3S-083016 08/30/16 GPS-MW3S | GPS-MW3S-083016-F 08/30/16 GPS-MW3S | GPS-MW3S-111715 11/17/15 GPS-MW3S | GPS-MW3S-111715F 11/17/15 GPS-MW3S | GPS-MW4S-022516 02/25/16 GPS-MW4S | GPS-MW4S-022516-F 02/25/16 GPS-MW4S |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 681,000 | NA | 610,000 | NA | 578,000 | NA | 77,000 | NA |
| Sulfide | 18496-25-8 | ug/L | NA | 2,000 U | NA | 2,200 JB | NA | 4,500 | NA | 4,100 | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 120 | NA | 0 | NA | 0 | NA | 530 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 190 | NA | 240.2 | NA | 262.6 | NA | 205.9 | NA |
| pH | ARC-pH | SU | NA | 11.37 | NA | 10.95 | NA | 11.1 | NA | 13.9 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 16 | NA | 22.86 | NA | 17.96 | NA | 10.08 | NA |
| Turbidity | ARC-Turb | NTU | NA | 0.51 | NA | 3.05 | NA | 17.7 | NA | 0.91 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | GPS-MW4S-060316 | GPS-MW4S-060316-F | GPS-MW4S-083016 | GPS-MW4S-083016-F | GPS-MW4S-111715 | GPS-MW4S-111715F | GPS-MW5I-010616 | GPS-MW5I-010616-F | GPS-MW5I-040616 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | | |
| Date Collected: | | | 06/03/16 | 06/03/16 | 08/30/16 | 08/30/16 | 11/17/15 | 11/17/15 | 01/06/16 | 01/06/16 | 04/06/16 |
| Location ID: | CAS Number | Units | GPS-MW4S | GPS-MW4S | GPS-MW4S | GPS-MW4S | GPS-MW4S | GPS-MW4S | GPS-MW5I | GPS-MW5I | GPS-MW5I |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-MW4S-060316<br>06/03/16<br>GPS-MW4S | GPS-MW4S-060316-F<br>06/03/16<br>GPS-MW4S | GPS-MW4S-083016<br>08/30/16<br>GPS-MW4S | GPS-MW4S-083016-F<br>08/30/16<br>GPS-MW4S | GPS-MW4S-111715<br>11/17/15<br>GPS-MW4S | GPS-MW4S-111715F<br>11/17/15<br>GPS-MW4S | GPS-MW5I-010616<br>01/06/16<br>GPS-MW5I | GPS-MW5I-010616-F<br>01/06/16<br>GPS-MW5I | GPS-MW5I-040616<br>04/06/16<br>GPS-MW5I |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-MW4S-060316<br>06/03/16<br>GPS-MW4S | GPS-MW4S-060316-F<br>06/03/16<br>GPS-MW4S | GPS-MW4S-083016<br>08/30/16<br>GPS-MW4S | GPS-MW4S-083016-F<br>08/30/16<br>GPS-MW4S | GPS-MW4S-111715<br>11/17/15<br>GPS-MW4S | GPS-MW4S-111715F<br>11/17/15<br>GPS-MW4S | GPS-MW5I-010616<br>01/06/16<br>GPS-MW5I | GPS-MW5I-010616-F<br>01/06/16<br>GPS-MW5I | GPS-MW5I-040616<br>04/06/16<br>GPS-MW5I |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 1,680 | NA | 1,690 | NA | 2,080 | NA | 9,970 | NA | 49,800 |
| Antimony | 7440-36-0 | ug/L | 6.0 U | NA | 6.0 U | NA | 6.0 U | NA | 30 U | NA | 12 U |
| Arsenic | 7440-38-2 | ug/L | 12.8 | NA | 13.0 | NA | 6.8 | NA | 33.5 | NA | 60 U |
| Barium | 7440-39-3 | ug/L | 20.2 J | NA | 21.1 J | NA | 21.0 J | NA | 154 J | NA | 339 J |
| Beryllium | 7440-41-7 | ug/L | 1.0 U | NA | 1.0 U | NA | 1.0 U | NA | 0.70 J | NA | 3.0 |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 3.0 U | NA | 3.0 U | NA | 3.0 UB | NA | 3.0 U | NA | 1.8 J |
| Calcium | 7440-70-2 | ug/L | 64,500 | NA | 53,400 | NA | 47,500 | NA | 101,000 | NA | 160,000 |
| Chromium | 7440-47-3 | ug/L | 2.0 J | NA | 1.3 J | NA | 9.9 J | NA | 291 | NA | 1,150 |
| Chromium VI | 18540-29-9 | ug/L | 10 U | NA | 10 U | NA | 10 U | NA | 10 RA | NA | 160 |
| Cobalt | 7440-48-4 | ug/L | 50 U | NA | 50 U | NA | 0.80 J | NA | 9.8 J | NA | 46.0 J |
| Copper | 7440-50-8 | ug/L | 10 UJ | NA | 10 U | NA | 10 UB | NA | 22.3 | NA | 56.2 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 116 | NA | 100 U | NA | 414 | NA | 15,500 | NA | 80,200 |
| Lead | 7439-92-1 | ug/L | 3.0 U | NA | 3.0 U | NA | 3.0 U | NA | 16.3 | NA | 71.4 |
| Magnesium | 7439-95-4 | ug/L | 5,000 U | NA | 5,000 U | NA | 146 J | NA | 28,900 | NA | 57,700 J |
| Manganese | 7439-96-5 | ug/L | 15 U | NA | 15 U | NA | 4.5 J | NA | 1,640 | NA | 3,500 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-MW4S-060316<br>06/03/16<br>GPS-MW4S | GPS-MW4S-060316-F<br>06/03/16<br>GPS-MW4S | GPS-MW4S-083016<br>08/30/16<br>GPS-MW4S | GPS-MW4S-083016-F<br>08/30/16<br>GPS-MW4S | GPS-MW4S-111715<br>11/17/15<br>GPS-MW4S | GPS-MW4S-111715F<br>11/17/15<br>GPS-MW4S | GPS-MW5I-010616<br>01/06/16<br>GPS-MW5I | GPS-MW5I-010616-F<br>01/06/16<br>GPS-MW5I | GPS-MW5I-040616<br>04/06/16<br>GPS-MW5I |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | NA | 0.20 U | NA | 0.20 U | NA | 0.20 U | NA | 1.2 U |
| Nickel | 7440-02-0 | ug/L | 88.6 | NA | 86.6 | NA | 77.7 | NA | 24.8 | NA | 108 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 61,000 | NA | 61,900 | NA | 66,500 | NA | 5,570 J | NA | 12,900 J |
| Selenium | 7782-49-2 | ug/L | 4.7 J | NA | 6.3 J | NA | 4.8 J | NA | 13.9 | NA | 9.8 J |
| Silver | 7440-22-4 | ug/L | 10 U | NA | 10 U | NA | 10 U | NA | 52.1 | NA | 6.6 J |
| Sodium | 7440-23-5 | ug/L | 278,000 | NA | 245,000 | NA | 229,000 | NA | 1,170,000 | NA | 1,300,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 2.0 U | NA | 2.0 U | NA | 2.0 U | NA | 10 U | NA | 4.0 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 47.4 J | NA | 44.2 J | NA | 61.3 | NA | 20.2 J | NA | 107 |
| Zinc | 7440-66-6 | ug/L | 20 U | NA | 20 U | NA | 20 U | NA | 64.0 JB | NA | 305 |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 0.90 J | NA | 10 U | NA | 0.90 J | NA | 35.4 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U | NA | 10 U | NA | 10 U | NA | 10 RA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | GPS-MW4S-060316 06/03/16 GPS-MW4S | GPS-MW4S-060316-F 06/03/16 GPS-MW4S | GPS-MW4S-083016 08/30/16 GPS-MW4S | GPS-MW4S-083016-F 08/30/16 GPS-MW4S | GPS-MW4S-111715 11/17/15 GPS-MW4S | GPS-MW4S-111715F 11/17/15 GPS-MW4S | GPS-MW5I-010616 01/06/16 GPS-MW5I | GPS-MW5I-010616-F 01/06/16 GPS-MW5I | GPS-MW5I-040616 04/06/16 GPS-MW5I |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 80.3 | 84.4 | 100 | 86.2 | 93.9 | 81.5 | 68.8 | 87.8 | 100 |
| pH | ARC-pH | SU | 10.92 | 10.98 | 11.25 | 11.23 | 11.01 | 11.00 | 7.32 | 5.86 | 7.34 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-MW4S-060316<br>06/03/16<br>GPS-MW4S | GPS-MW4S-060316-F<br>06/03/16<br>GPS-MW4S | GPS-MW4S-083016<br>08/30/16<br>GPS-MW4S | GPS-MW4S-083016-F<br>08/30/16<br>GPS-MW4S | GPS-MW4S-111715<br>11/17/15<br>GPS-MW4S | GPS-MW4S-111715F<br>11/17/15<br>GPS-MW4S | GPS-MW5I-010616<br>01/06/16<br>GPS-MW5I | GPS-MW5I-010616-F<br>01/06/16<br>GPS-MW5I | GPS-MW5I-040616<br>04/06/16<br>GPS-MW5I |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 75,700 | NA | 72,900 | NA | 78,100 | NA | 740,000 | NA | 942,000 |
| Sulfide | 18496-25-8 | ug/L | 2,300 | NA | 2,700 JB | NA | 3,800 | NA | 38,700 | NA | 44,200 |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 300 | NA | 1,100 | NA | 0 | NA | 0 | NA | 30 |
| Oxidation Reduction Potential | ARC-ORP | mV | 262 | NA | 149 | NA | 206.3 | NA | 385.9 | NA | 372 |
| pH | ARC-pH | SU | 11.96 | NA | 11.31 | NA | 11.57 | NA | 7.75 | NA | 7.1 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 16.9 | NA | 16.46 | NA | 17.2 | NA | 15.11 | NA | 14.46 |
| Turbidity | ARC-Turb | NTU | 2.81 | NA | 2.31 | NA | 6.16 | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-MW5I-040616-F<br>04/06/16<br>GPS-MW5I | GPS-MW5I-071216<br>07/12/16<br>GPS-MW5I | GPS-MW5I-071216-F<br>07/12/16<br>GPS-MW5I | GPS-MW5I-100616<br>10/06/16<br>GPS-MW5I | GPS-MW5I-100616-F<br>10/06/16<br>GPS-MW5I | GPS-MW6I-010616<br>01/06/16<br>GPS-MW6I | GPS-MW6I-010616-F<br>01/06/16<br>GPS-MW6I | GPS-MW6I-040616<br>04/06/16<br>GPS-MW6I | GPS-MW6I-040616-F<br>04/06/16<br>GPS-MW6I |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-MW5I-040616-F<br>04/06/16<br>GPS-MW5I | GPS-MW5I-071216<br>07/12/16<br>GPS-MW5I | GPS-MW5I-071216-F<br>07/12/16<br>GPS-MW5I | GPS-MW5I-100616<br>10/06/16<br>GPS-MW5I | GPS-MW5I-100616-F<br>10/06/16<br>GPS-MW5I | GPS-MW6I-010616<br>01/06/16<br>GPS-MW6I | GPS-MW6I-010616-F<br>01/06/16<br>GPS-MW6I | GPS-MW6I-040616<br>04/06/16<br>GPS-MW6I | GPS-MW6I-040616-F<br>04/06/16<br>GPS-MW6I |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-MW5I-040616-F<br>04/06/16<br>GPS-MW5I | GPS-MW5I-071216<br>07/12/16<br>GPS-MW5I | GPS-MW5I-071216-F<br>07/12/16<br>GPS-MW5I | GPS-MW5I-100616<br>10/06/16<br>GPS-MW5I | GPS-MW5I-100616-F<br>10/06/16<br>GPS-MW5I | GPS-MW6I-010616<br>01/06/16<br>GPS-MW6I | GPS-MW6I-010616-F<br>01/06/16<br>GPS-MW6I | GPS-MW6I-040616<br>04/06/16<br>GPS-MW6I | GPS-MW6I-040616-F<br>04/06/16<br>GPS-MW6I |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 3,630 | NA | 436 | NA | 200 U | NA | 400 U | NA |
| Antimony | 7440-36-0 | ug/L | NA | 12 U | NA | 30 U | NA | 60 U | NA | 12 U | NA |
| Arsenic | 7440-38-2 | ug/L | NA | 37.8 | NA | 22.1 | NA | 30 U | NA | 60 U | NA |
| Barium | 7440-39-3 | ug/L | NA | 111 J | NA | 60.4 J | NA | 128 J | NA | 134 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | 2.0 U | NA | 1.0 U | NA | 1.0 U | NA | 2.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 0.80 J | NA | 3.0 U | NA | 3.6 | NA | 21.2 | NA |
| Calcium | 7440-70-2 | ug/L | NA | 129,000 | NA | 130,000 | NA | 595,000 | NA | 531,000 | NA |
| Chromium | 7440-47-3 | ug/L | NA | 236 | NA | 92.4 | NA | 4,020 | NA | 3,380 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 UJ | NA | 10 RA | NA | 10 RA | NA | 500 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | 10.0 J | NA | 4.5 J | NA | 4.6 J | NA | 6.0 J | NA |
| Copper | 7440-50-8 | ug/L | NA | 20 U | NA | 14.7 JB | NA | 51.4 | NA | 61.0 | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 5,970 | NA | 1,920 | NA | 23.9 J | NA | 200 U | NA |
| Lead | 7439-92-1 | ug/L | NA | 30 U | NA | 15 U | NA | 30 U | NA | 60 U | NA |
| Magnesium | 7439-95-4 | ug/L | NA | 38,500 | NA | 29,600 | NA | 218 J | NA | 10,000 UJ | NA |
| Manganese | 7439-96-5 | ug/L | NA | 605 | NA | 472 | NA | 0.80 J | NA | 30 U | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-MW5I-040616-F<br>04/06/16<br>GPS-MW5I | GPS-MW5I-071216<br>07/12/16<br>GPS-MW5I | GPS-MW5I-071216-F<br>07/12/16<br>GPS-MW5I | GPS-MW5I-100616<br>10/06/16<br>GPS-MW5I | GPS-MW5I-100616-F<br>10/06/16<br>GPS-MW5I | GPS-MW6I-010616<br>01/06/16<br>GPS-MW6I | GPS-MW6I-010616-F<br>01/06/16<br>GPS-MW6I | GPS-MW6I-040616<br>04/06/16<br>GPS-MW6I | GPS-MW6I-040616-F<br>04/06/16<br>GPS-MW6I |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.090 J | NA | 0.20 UB | NA | 0.20 U | NA | 1.2 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | 24.4 | NA | 21.3 | NA | 35.5 | NA | 48.4 | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 2,640 J | NA | 5,080 J | NA | 22,400 | NA | 19,900 J | NA |
| Selenium | 7782-49-2 | ug/L | NA | 20 U | NA | 7.5 J | NA | 54.4 J | NA | 11.4 J | NA |
| Silver | 7440-22-4 | ug/L | NA | 20 U | NA | 10.0 JB | NA | 4.2 J | NA | 20 U | NA |
| Sodium | 7440-23-5 | ug/L | NA | 1,210,000 | NA | 994,000 | NA | 625,000 | NA | 853,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 20 U | NA | 10 U | NA | 20 U | NA | 4.0 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 16.2 J | NA | 11.1 J | NA | 50 U | NA | 100 UJ | NA |
| Zinc | 7440-66-6 | ug/L | NA | 54.6 | NA | 32.1 | NA | 168 | NA | 367 | NA |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 38.4 | NA | 33.1 J | NA | 30.6 | NA | 838 | NA | 2,200 |
| Chromium VI | 18540-29-9 | ug/L | 10 U | NA | 48 J | NA | 10 RA | NA | 10 RA | NA | 500 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-MW5I-040616-F<br>04/06/16<br>GPS-MW5I | GPS-MW5I-071216<br>07/12/16<br>GPS-MW5I | GPS-MW5I-071216-F<br>07/12/16<br>GPS-MW5I | GPS-MW5I-100616<br>10/06/16<br>GPS-MW5I | GPS-MW5I-100616-F<br>10/06/16<br>GPS-MW5I | GPS-MW6I-010616<br>01/06/16<br>GPS-MW6I | GPS-MW6I-010616-F<br>01/06/16<br>GPS-MW6I | GPS-MW6I-040616<br>04/06/16<br>GPS-MW6I | GPS-MW6I-040616-F<br>04/06/16<br>GPS-MW6I |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 118 | 70.8 | 18.6 | 220 | 263 | 241 | 239 | 118 | 99 |
| pH | ARC-pH | SU | 7.44 | 7.33 | 7.37 | 7.30 | 7.43 | 10.79 | 10.79 | 10.24 | 10.39 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-MW5I-040616-F<br>04/06/16<br>GPS-MW5I | GPS-MW5I-071216<br>07/12/16<br>GPS-MW5I | GPS-MW5I-071216-F<br>07/12/16<br>GPS-MW5I | GPS-MW5I-100616<br>10/06/16<br>GPS-MW5I | GPS-MW5I-100616-F<br>10/06/16<br>GPS-MW5I | GPS-MW6I-010616<br>01/06/16<br>GPS-MW6I | GPS-MW6I-010616-F<br>01/06/16<br>GPS-MW6I | GPS-MW6I-040616<br>04/06/16<br>GPS-MW6I | GPS-MW6I-040616-F<br>04/06/16<br>GPS-MW6I |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 1,360,000 | NA | 1,390,000 | NA | 506,000 | NA | 574,000 | NA |
| Sulfide | 18496-25-8 | ug/L | NA | 104,000 | NA | 103,000 | NA | 558,000 | NA | 558,000 | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 4,770 | NA | 16,340 | NA | 0 | NA | 240 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 369 | NA | 380 | NA | 482.9 | NA | 467.7 | NA |
| pH | ARC-pH | SU | NA | 7.99 | NA | 7.2 | NA | 11.66 | NA | 11.1 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 17.2 | NA | 18.42 | NA | 12.17 | NA | 14.75 | NA |
| Turbidity | ARC-Turb | NTU | NA | 14.2 | NA | 238 | NA | 25.5 | NA | 5.89 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | GPS-MW6I-071216 | GPS-MW6I-071216-F | GPS-MW6I-100616 | GPS-MW6I-100616-F | GPS-MW7I-010616 | GPS-MW7I-010616-F | GPS-MW7I-040616 | GPS-MW7I-040616-F | GPS-MW7I-071216 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | | |
| Date Collected: | | | 07/12/16 | 07/12/16 | 10/06/16 | 10/06/16 | 01/06/16 | 01/06/16 | 04/06/16 | 04/06/16 | 07/12/16 |
| Location ID: | CAS Number | Units | GPS-MW6I | GPS-MW6I | GPS-MW6I | GPS-MW6I | GPS-MW7I | GPS-MW7I | GPS-MW7I | GPS-MW7I | GPS-MW7I |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-MW6I-071216<br><br>07/12/16<br>GPS-MW6I | GPS-MW6I-071216-F<br><br>07/12/16<br>GPS-MW6I | GPS-MW6I-100616<br><br>10/06/16<br>GPS-MW6I | GPS-MW6I-100616-F<br><br>10/06/16<br>GPS-MW6I | GPS-MW7I-010616<br><br>01/06/16<br>GPS-MW7I | GPS-MW7I-010616-F<br><br>01/06/16<br>GPS-MW7I | GPS-MW7I-040616<br><br>04/06/16<br>GPS-MW7I | GPS-MW7I-040616-F<br><br>04/06/16<br>GPS-MW7I | GPS-MW7I-071216<br><br>07/12/16<br>GPS-MW7I |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-MW6I-071216<br>07/12/16<br>GPS-MW6I | GPS-MW6I-071216-F<br>07/12/16<br>GPS-MW6I | GPS-MW6I-100616<br>10/06/16<br>GPS-MW6I | GPS-MW6I-100616-F<br>10/06/16<br>GPS-MW6I | GPS-MW7I-010616<br>01/06/16<br>GPS-MW7I | GPS-MW7I-010616-F<br>01/06/16<br>GPS-MW7I | GPS-MW7I-040616<br>04/06/16<br>GPS-MW7I | GPS-MW7I-040616-F<br>04/06/16<br>GPS-MW7I | GPS-MW7I-071216<br>07/12/16<br>GPS-MW7I |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 1,000 U | NA | 1,000 U | NA | 50.5 J | NA | 200 U | NA | 71.9 J |
| Antimony | 7440-36-0 | ug/L | 233 | NA | 60 U | NA | 30 U | NA | 6.0 U | NA | 3.6 J |
| Arsenic | 7440-38-2 | ug/L | 15 U | NA | 30 U | NA | 10.2 J | NA | 78.9 | NA | 146 |
| Barium | 7440-39-3 | ug/L | 80.0 J | NA | 48.5 J | NA | 79.4 J | NA | 53.7 J | NA | 46.6 J |
| Beryllium | 7440-41-7 | ug/L | 5.0 U | NA | 5.0 U | NA | 1.0 U | NA | 1.0 U | NA | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 13.5 J | NA | 9.5 J | NA | 2.9 J | NA | 1.5 J | NA | 2.2 J |
| Calcium | 7440-70-2 | ug/L | 313,000 | NA | 200,000 | NA | 575,000 | NA | 398,000 | NA | 223,000 |
| Chromium | 7440-47-3 | ug/L | 34,800 | NA | 91,300 | NA | 3,300 | NA | 122 | NA | 125 |
| Chromium VI | 18540-29-9 | ug/L | 8.3 J | NA | 27 RA | NA | 10 RA | NA | 500 U | NA | 8.3 J |
| Cobalt | 7440-48-4 | ug/L | 4.5 J | NA | 250 U | NA | 13.9 J | NA | 36.6 J | NA | 52.8 |
| Copper | 7440-50-8 | ug/L | 43.0 J | NA | 72.5 | NA | 10.8 J | NA | 10 U | NA | 10 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 85.5 J | NA | 500 U | NA | 65.7 J | NA | 100 U | NA | 27.0 J |
| Lead | 7439-92-1 | ug/L | 30 U | NA | 15 U | NA | 15 U | NA | 30 U | NA | 15 U |
| Magnesium | 7439-95-4 | ug/L | 25,000 U | NA | 25,000 U | NA | 23,600 | NA | 11,000 J | NA | 20,100 |
| Manganese | 7439-96-5 | ug/L | 4.5 J | NA | 5.0 J | NA | 34.7 | NA | 9.2 J | NA | 25.5 |

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | GPS-MW6I-071216 07/12/16 GPS-MW6I | GPS-MW6I-071216-F 07/12/16 GPS-MW6I | GPS-MW6I-100616 10/06/16 GPS-MW6I | GPS-MW6I-100616-F 10/06/16 GPS-MW6I | GPS-MW7I-010616 01/06/16 GPS-MW7I | GPS-MW7I-010616-F 01/06/16 GPS-MW7I | GPS-MW7I-040616 04/06/16 GPS-MW7I | GPS-MW7I-040616-F 04/06/16 GPS-MW7I | GPS-MW7I-071216 07/12/16 GPS-MW7I |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.22 J | NA | 0.40 JB | NA | 0.21 | NA | 0.20 U | NA | 0.20 U |
| Nickel | 7440-02-0 | ug/L | 69.5 | NA | 82.5 | NA | 68.5 | NA | 69.7 | NA | 79.1 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 16,700 J | NA | 20,800 J | NA | 15,600 | NA | 11,900 | NA | 10,300 |
| Selenium | 7782-49-2 | ug/L | 50 U | NA | 100 U | NA | 14.3 | NA | 6.0 J | NA | 10 U |
| Silver | 7440-22-4 | ug/L | 50 U | NA | 32.0 J | NA | 3.4 J | NA | 10 U | NA | 10 U |
| Sodium | 7440-23-5 | ug/L | 1,000,000 | NA | 990,000 | NA | 198,000 | NA | 268,000 | NA | 330,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 20 U | NA | 20 U | NA | 10 U | NA | 2.0 U | NA | 10 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 5.0 J | NA | 12.0 J | NA | 50 U | NA | 50 UJ | NA | 1.6 J |
| Zinc | 7440-66-6 | ug/L | 227 | NA | 154 | NA | 327 | NA | 116 | NA | 53.9 |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 31,200 | NA | 95,300 | NA | 170 | NA | 12.7 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U | NA | 15 RA | NA | 10 RA | NA | 500 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-MW6I-071216<br>07/12/16<br>GPS-MW6I | GPS-MW6I-071216-F<br>07/12/16<br>GPS-MW6I | GPS-MW6I-100616<br>10/06/16<br>GPS-MW6I | GPS-MW6I-100616-F<br>10/06/16<br>GPS-MW6I | GPS-MW7I-010616<br>01/06/16<br>GPS-MW7I | GPS-MW7I-010616-F<br>01/06/16<br>GPS-MW7I | GPS-MW7I-040616<br>04/06/16<br>GPS-MW7I | GPS-MW7I-040616-F<br>04/06/16<br>GPS-MW7I | GPS-MW7I-071216<br>07/12/16<br>GPS-MW7I |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 235 | 231 | 211 | 211 | 235 | 232 | 182 | 173 | 195 |
| pH | ARC-pH | SU | 10.80 | 10.74 | 10.35 | 9.71 | 9.04 | 8.98 | 9.15 | 8.98 | 8.31 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-MW6I-071216<br>07/12/16<br>GPS-MW6I | GPS-MW6I-071216-F<br>07/12/16<br>GPS-MW6I | GPS-MW6I-100616<br>10/06/16<br>GPS-MW6I | GPS-MW6I-100616-F<br>10/06/16<br>GPS-MW6I | GPS-MW7I-010616<br>01/06/16<br>GPS-MW7I | GPS-MW7I-010616-F<br>01/06/16<br>GPS-MW7I | GPS-MW7I-040616<br>04/06/16<br>GPS-MW7I | GPS-MW7I-040616-F<br>04/06/16<br>GPS-MW7I | GPS-MW7I-071216<br>07/12/16<br>GPS-MW7I |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 860,000 | NA | 911,000 | NA | 294,000 | NA | 291,000 | NA | 314,000 |
| Sulfide | 18496-25-8 | ug/L | 351,000 | NA | 276,000 | NA | 418,000 | NA | 319,000 | NA | 226,000 |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 490 | NA | 220 | NA | 0 | NA | 4,990 | NA | 1,520 |
| Oxidation Reduction Potential | ARC-ORP | mV | 403.1 | NA | 419.2 | NA | 461.7 | NA | 446 | NA | 406.8 |
| pH | ARC-pH | SU | 11.93 | NA | 11.09 | NA | 9.61 | NA | 9.23 | NA | 9.23 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 16.77 | NA | 13.46 | NA | 14.56 | NA | 14.46 | NA | 16.47 |
| Turbidity | ARC-Turb | NTU | 22.8 | NA | 21 | NA | 23.9 | NA | 21.9 | NA | 13.6 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | GPS-MW7I-071216-F | GPS-MW7I-100616 | GPS-MW7I-100616-F | HAL-B-SUMP | HALST-SUMP 0 | HP-1 (10-15) 10 - 15 | HP-2 (10-15) 10 - 15 | HP-3 (5-10) 5 - 10 | HP-3 (10-15) 10 - 15 | HP-4 (5-10) 5 - 10 | HP-4 (10-15) 10 - 15 | HSD-CC18A-GW |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | | | | | |
| Date Collected: | | | 07/12/16 | 10/06/16 | 10/06/16 | 03/03/14 | 12/07/11 | 08/10/15 | 08/10/15 | 08/10/15 | 08/10/15 | 08/10/15 | 08/10/15 | 06/02/16 |
| Location ID: | CAS Number | Units | GPS-MW7I | GPS-MW7I | GPS-MW7I | HALST-SUMP | HALST-SUMP | HP-1 | HP-2 | HP-3 | HP-3 | HP-4 | HP-4 | HSD-CC18A-GW |
| **Volatile Organics** | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | 1.5 | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.0 U | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | 0.49 J | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | 2.0 UJ | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.0 U | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | 10 U | 6.5 J | 6.1 J | 8.0 J | 10 U | 6.3 J | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | 0.50 U | 2.2 | 64.9 | 0.95 | 0.46 J | 0.62 | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | 0.56 J | 0.82 J | 0.31 J | 0.26 J | 0.51 J | 0.77 J | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 UJ | 1.0 U | 1.0 U | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | 2.5 | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | 5.0 U | 1.9 J | 52.6 | 5.0 U | 5.0 U | 5.0 U | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 11.9 | 0.29 J | 1.0 U | 1.0 U | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 4.3 | 19.9 | 0.31 J | 1.0 U | 1.0 U | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 34.0 | 0.63 J | 1.0 U | 1.0 U | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.0 U | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.0 U | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | 5.0 U | 3.1 J | 76.9 | 0.51 J | 5.0 U | 5.0 U | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.9 | 1.0 U | 0.32 J | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 1.5 | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 16.4 | 0.22 J | 1.0 U | 1.0 U | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | 48.8 | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 10.1 | 0.25 J | 1.0 U | 1.0 U | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 50.5 | 0.86 J | 1.0 U | 1.0 U | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-MW7I-071216-F<br><br>07/12/16<br>GPS-MW7I | GPS-MW7I-100616<br><br>10/06/16<br>GPS-MW7I | GPS-MW7I-100616-F<br><br>10/06/16<br>GPS-MW7I | HAL-B-SUMP<br><br>03/03/14<br>HALST-SUMP | HALST-SUMP<br>0<br>12/07/11<br>HALST-SUMP | HP-1 (10-15)<br>10 - 15<br>08/10/15<br>HP-1 | HP-2 (10-15)<br>10 - 15<br>08/10/15<br>HP-2 | HP-3 (5-10)<br>5 - 10<br>08/10/15<br>HP-3 | HP-3 (10-15)<br>10 - 15<br>08/10/15<br>HP-3 | HP-4 (5-10)<br>5 - 10<br>08/10/15<br>HP-4 | HP-4 (10-15)<br>10 - 15<br>08/10/15<br>HP-4 | HSD-CC18A-GW<br><br>06/02/16<br>HSD-CC18A-GW |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | 19.5 | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-MW7I-071216-F<br><br>07/12/16<br>GPS-MW7I | GPS-MW7I-100616<br><br>10/06/16<br>GPS-MW7I | GPS-MW7I-100616-F<br><br>10/06/16<br>GPS-MW7I | HAL-B-SUMP<br><br>03/03/14<br>HALST-SUMP | HALST-SUMP<br>0<br>12/07/11<br>HALST-SUMP | HP-1 (10-15)<br>10 - 15<br>08/10/15<br>HP-1 | HP-2 (10-15)<br>10 - 15<br>08/10/15<br>HP-2 | HP-3 (5-10)<br>5 - 10<br>08/10/15<br>HP-3 | HP-3 (10-15)<br>10 - 15<br>08/10/15<br>HP-3 | HP-4 (5-10)<br>5 - 10<br>08/10/15<br>HP-4 | HP-4 (10-15)<br>10 - 15<br>08/10/15<br>HP-4 | HSD-CC18A-GW<br><br>06/02/16<br>HSD-CC18A-GW |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 200 UB | NA | NA | 46.5 J | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | 30 U | NA | NA | 2.5 U | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | 162 | NA | NA | 4.2 | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | 44.6 J | NA | NA | 43.5 | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | 1.0 U | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 0.70 J | NA | NA | 2.5 U | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | 198,000 | NA | NA | 28,000 | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 74.5 | NA | 22.3 | 4.2 J | NA | NA | NA | NA | NA | NA | 14.3 |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 RA | NA | 2.9 J | 10.0 U | NA | NA | NA | NA | NA | NA | 7.2 J |
| Cobalt | 7440-48-4 | ug/L | NA | 59.6 | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | 10 U | NA | NA | 7.2 | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 100 UB | NA | NA | 134 J | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | 15 U | NA | NA | 2.5 | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | 20,100 | NA | NA | 2,660 | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | 32.4 | NA | NA | 18.6 | NA | NA | NA | NA | NA | NA | NA |

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| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-MW7I-071216-F<br><br>07/12/16<br>GPS-MW7I | GPS-MW7I-100616<br><br>10/06/16<br>GPS-MW7I | GPS-MW7I-100616-F<br><br>10/06/16<br>GPS-MW7I | HAL-B-SUMP<br><br>03/03/14<br>HALST-SUMP | HALST-SUMP<br>0<br>12/07/11<br>HALST-SUMP | HP-1 (10-15)<br>10 - 15<br>08/10/15<br>HP-1 | HP-2 (10-15)<br>10 - 15<br>08/10/15<br>HP-2 | HP-3 (5-10)<br>5 - 10<br>08/10/15<br>HP-3 | HP-3 (10-15)<br>10 - 15<br>08/10/15<br>HP-3 | HP-4 (5-10)<br>5 - 10<br>08/10/15<br>HP-4 | HP-4 (10-15)<br>10 - 15<br>08/10/15<br>HP-4 | HSD-CC18A-GW<br><br>06/02/16<br>HSD-CC18A-GW |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.40 UB | NA | NA | 0.20 U | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | 70.5 | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 10,200 | NA | NA | 6,390 | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | 8.9 J | NA | NA | 2.5 U | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | 9.0 JB | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | 385,000 | NA | NA | 28,000 | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 10 U | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | 11 | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 3.2 J | NA | NA | 6.4 | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | 39.8 | NA | NA | 20.0 U | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 16.6 | NA | 17.9 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 6.2 J | NA | 10 RA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-MW7I-071216-F<br><br>07/12/16<br>GPS-MW7I | GPS-MW7I-100616<br><br>10/06/16<br>GPS-MW7I | GPS-MW7I-100616-F<br><br>10/06/16<br>GPS-MW7I | HAL-B-SUMP<br><br>03/03/14<br>HALST-SUMP | HALST-SUMP<br>0<br>12/07/11<br>HALST-SUMP | HP-1 (10-15)<br>10 - 15<br>08/10/15<br>HP-1 | HP-2 (10-15)<br>10 - 15<br>08/10/15<br>HP-2 | HP-3 (5-10)<br>5 - 10<br>08/10/15<br>HP-3 | HP-3 (10-15)<br>10 - 15<br>08/10/15<br>HP-3 | HP-4 (5-10)<br>5 - 10<br>08/10/15<br>HP-4 | HP-4 (10-15)<br>10 - 15<br>08/10/15<br>HP-4 | HSD-CC18A-GW<br><br>06/02/16<br>HSD-CC18A-GW |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 200 | 186 | 150 | 437 | 458 | NA | NA | NA | NA | NA | NA | 276 |
| pH | ARC-pH | SU | 8.30 | 8.16 | 8.11 | 7.61 | 7.81 | NA | NA | NA | NA | NA | NA | 6.84 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | GPS-MW7I-071216-F<br><br>07/12/16<br>GPS-MW7I | GPS-MW7I-100616<br><br>10/06/16<br>GPS-MW7I | GPS-MW7I-100616-F<br><br>10/06/16<br>GPS-MW7I | HAL-B-SUMP<br><br>03/03/14<br>HALST-SUMP | HALST-SUMP<br>0<br>12/07/11<br>HALST-SUMP | HP-1 (10-15)<br>10 - 15<br>08/10/15<br>HP-1 | HP-2 (10-15)<br>10 - 15<br>08/10/15<br>HP-2 | HP-3 (5-10)<br>5 - 10<br>08/10/15<br>HP-3 | HP-3 (10-15)<br>10 - 15<br>08/10/15<br>HP-3 | HP-4 (5-10)<br>5 - 10<br>08/10/15<br>HP-4 | HP-4 (10-15)<br>10 - 15<br>08/10/15<br>HP-4 | HSD-CC18A-GW<br><br>06/02/16<br>HSD-CC18A-GW |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 363,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | 218,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 390 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 411.1 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | 8.54 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 19.66 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | 0.95 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | HSD-CC18A-GW-F 06/02/16 HSD-CC18A-GW | HSD-DD11A-GW 06/02/16 HSD-DD11A-GW | HSD-DD11A-GW-F 06/02/16 HSD-DD11A-GW | HSS-P3C-MW1S-20160617 06/17/16 HSS-P3C-MW1S | HSS-P3C-MW1S-20160617-F 06/17/16 HSS-P3C-MW1S | HSS-P3C-MW1S-20161219 12/19/16 HSS-P3C-MW1S | HSS-P3C-MW1S-20161219-F 12/19/16 HSS-P3C-MW1S | HSS-P3C-MW1S-20170316 03/16/17 HSS-P3C-MW1S |
|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | HSD-CC18A-GW-F<br><br>06/02/16<br>HSD-CC18A-GW | HSD-DD11A-GW<br><br>06/02/16<br>HSD-DD11A-GW | HSD-DD11A-GW-F<br><br>06/02/16<br>HSD-DD11A-GW | HSS-P3C-MW1S-20160617<br><br>06/17/16<br>HSS-P3C-MW1S | HSS-P3C-MW1S-20160617-F<br><br>06/17/16<br>HSS-P3C-MW1S | HSS-P3C-MW1S-20161219<br><br>12/19/16<br>HSS-P3C-MW1S | HSS-P3C-MW1S-20161219-F<br><br>12/19/16<br>HSS-P3C-MW1S | HSS-P3C-MW1S-20170316<br><br>03/16/17<br>HSS-P3C-MW1S |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | HSD-CC18A-GW-F<br>06/02/16<br>HSD-CC18A-GW | HSD-DD11A-GW<br>06/02/16<br>HSD-DD11A-GW | HSD-DD11A-GW-F<br>06/02/16<br>HSD-DD11A-GW | HSS-P3C-MW1S-20160617<br>06/17/16<br>HSS-P3C-MW1S | HSS-P3C-MW1S-20160617-F<br>06/17/16<br>HSS-P3C-MW1S | HSS-P3C-MW1S-20161219<br>12/19/16<br>HSS-P3C-MW1S | HSS-P3C-MW1S-20161219-F<br>12/19/16<br>HSS-P3C-MW1S | HSS-P3C-MW1S-20170316<br>03/16/17<br>HSS-P3C-MW1S |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | 124,000 | NA | 200 U | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | 12 U | NA | 6.0 U | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | 30 U | NA | 30 U | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | 728 | NA | 34.0 J | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | 6.4 | NA | 1.0 U | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | 3.6 J | NA | 0.60 J | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | 748,000 | NA | 548,000 | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 52.8 [45.3] | NA | 1,050 | NA | 10 UB | NA | 1.2 J |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 UJ [10 UJ] | NA | 15 | NA | 10 U | NA | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | 161 J | NA | 5.9 J | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | 824 | NA | 100 U | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | 296,000 | NA | 4,790 | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | 102 | NA | 30 U | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | 190,000 | NA | 49,900 | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | 27,200 | NA | 4,870 | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | HSD-CC18A-GW-F<br>06/02/16<br>HSD-CC18A-GW | HSD-DD11A-GW<br>06/02/16<br>HSD-DD11A-GW | HSD-DD11A-GW-F<br>06/02/16<br>HSD-DD11A-GW | HSS-P3C-MW1S-20160617<br>06/17/16<br>HSS-P3C-MW1S | HSS-P3C-MW1S-20160617-F<br>06/17/16<br>HSS-P3C-MW1S | HSS-P3C-MW1S-20161219<br>12/19/16<br>HSS-P3C-MW1S | HSS-P3C-MW1S-20161219-F<br>12/19/16<br>HSS-P3C-MW1S | HSS-P3C-MW1S-20170316<br>03/16/17<br>HSS-P3C-MW1S |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | 0.20 U | NA | 0.20 U | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | 531 | NA | 17.7 | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | 140,000 | NA | 40,800 | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | 21.0 | NA | 100 U | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | 5.4 J | NA | 10 U | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | 4,180,000 | NA | 1,630,000 | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | 1,130,000 | NA | 719,000 | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | 100 U | NA | 20 U | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | 402 | NA | 50 U | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | 957 | NA | 325 | NA | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 2.8 J | NA | 21.9 [22.1] | NA | 7.2 J | NA | 10 U | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 UJ | NA | 10 UJ [10 UJ] | NA | 23 J | NA | 10 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | HSD-CC18A-GW-F<br><br>06/02/16<br>HSD-CC18A-GW | HSD-DD11A-GW<br><br>06/02/16<br>HSD-DD11A-GW | HSD-DD11A-GW-F<br><br>06/02/16<br>HSD-DD11A-GW | HSS-P3C-MW1S-20160617<br><br>06/17/16<br>HSS-P3C-MW1S | HSS-P3C-MW1S-20160617-F<br><br>06/17/16<br>HSS-P3C-MW1S | HSS-P3C-MW1S-20161219<br><br>12/19/16<br>HSS-P3C-MW1S | HSS-P3C-MW1S-20161219-F<br><br>12/19/16<br>HSS-P3C-MW1S | HSS-P3C-MW1S-20170316<br><br>03/16/17<br>HSS-P3C-MW1S |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 283 | 240 [240] | 237 [239] | 292 | 246 | 374 | 371 | 265 |
| pH | ARC-pH | SU | 6.90 | 8.74 [8.76] | 8.79 [8.76] | 6.29 | 6.44 | 6.81 | 6.98 | 6.56 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | HSD-CC18A-GW-F<br>06/02/16<br>HSD-CC18A-GW | HSD-DD11A-GW<br>06/02/16<br>HSD-DD11A-GW | HSD-DD11A-GW-F<br>06/02/16<br>HSD-DD11A-GW | HSS-P3C-MW1S-20160617<br>06/17/16<br>HSS-P3C-MW1S | HSS-P3C-MW1S-20160617-F<br>06/17/16<br>HSS-P3C-MW1S | HSS-P3C-MW1S-20161219<br>12/19/16<br>HSS-P3C-MW1S | HSS-P3C-MW1S-20161219-F<br>12/19/16<br>HSS-P3C-MW1S | HSS-P3C-MW1S-20170316<br>03/16/17<br>HSS-P3C-MW1S |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | 4,050,000 | NA | 1,770,000 | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | 2,000 U | NA | 2,000 U | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | 2,500 J | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | 620 | NA | 600 | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | 71.2 | NA | 53.2 | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | 5.78 | NA | 6.66 | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | 21.01 | NA | 11.95 | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | 9.07 | NA | 1.85 | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | HSS-P3C-MW1S-20170316-F | HSS-P3C-MW2S-20160616 | HSS-P3C-MW2S-20160616-F | HSS-P3C-MW2S-20161215 | HSS-P3C-MW2S-20161215-F | IW-1I | IW-1I-040714 | IW-1I-041514 | IW-1I-042214 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | | |
| Date Collected: | | | 03/16/17 | 06/16/16 | 06/16/16 | 12/15/16 | 12/15/16 | 03/13/14 | 04/07/14 | 04/15/14 | 04/22/14 |
| Location ID: | CAS Number | Units | HSS-P3C-MW1S | HSS-P3C-MW2S | HSS-P3C-MW2S | HSS-P3C-MW2S | HSS-P3C-MW2S | GPS-IW1I | GPS-IW1I | GPS-IW1I | GPS-IW1I |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | HSS-P3C-MW1S-20170316-F<br>03/16/17<br>HSS-P3C-MW1S | HSS-P3C-MW2S-20160616<br>06/16/16<br>HSS-P3C-MW2S | HSS-P3C-MW2S-20160616-F<br>06/16/16<br>HSS-P3C-MW2S | HSS-P3C-MW2S-20161215<br>12/15/16<br>HSS-P3C-MW2S | HSS-P3C-MW2S-20161215-F<br>12/15/16<br>HSS-P3C-MW2S | IW-1I<br>03/13/14<br>GPS-IW1I | IW-1I-040714<br>04/07/14<br>GPS-IW1I | IW-1I-041514<br>04/15/14<br>GPS-IW1I | IW-1I-042214<br>04/22/14<br>GPS-IW1I |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | HSS-P3C-MW1S-20170316-F<br>03/16/17<br>HSS-P3C-MW1S | HSS-P3C-MW2S-20160616<br>06/16/16<br>HSS-P3C-MW2S | HSS-P3C-MW2S-20160616-F<br>06/16/16<br>HSS-P3C-MW2S | HSS-P3C-MW2S-20161215<br>12/15/16<br>HSS-P3C-MW2S | HSS-P3C-MW2S-20161215-F<br>12/15/16<br>HSS-P3C-MW2S | IW-1I<br>03/13/14<br>GPS-IW1I | IW-1I-040714<br>04/07/14<br>GPS-IW1I | IW-1I-041514<br>04/15/14<br>GPS-IW1I | IW-1I-042214<br>04/22/14<br>GPS-IW1I |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 237 | NA | 1,130 | NA | 200 U | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | 6.0 U | NA | 6.0 U | NA | 69.9 | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | 15 U | NA | 30 U | NA | 75.9 | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | 76.5 J | NA | 63.8 J | NA | 200 U | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | 1.0 UJ | NA | 1.0 U | NA | 1.0 U | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 3.0 U | NA | 0.60 J | NA | 9.7 | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | 82,900 | NA | 480,000 | NA | 104,000 | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 26.3 | NA | 6.0 JB | NA | 126,000 | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U | NA | 17 J | NA | 108,000 | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | 1.1 J | NA | 4.8 J | NA | 50 U | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | 5.0 J | NA | 6.0 J | NA | 202 | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 832 | NA | 3,300 | NA | 100 U | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | 15 U | NA | 30 U | NA | 20.1 | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | 20,100 | NA | 64,200 | NA | 26,100 | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | 1,010 | NA | 3,700 | NA | 137 | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | HSS-P3C-MW1S-20170316-F<br>03/16/17<br>HSS-P3C-MW1S | HSS-P3C-MW2S-20160616<br>06/16/16<br>HSS-P3C-MW2S | HSS-P3C-MW2S-20160616-F<br>06/16/16<br>HSS-P3C-MW2S | HSS-P3C-MW2S-20161215<br>12/15/16<br>HSS-P3C-MW2S | HSS-P3C-MW2S-20161215-F<br>12/15/16<br>HSS-P3C-MW2S | IW-1I<br>03/13/14<br>GPS-IW1I | IW-1I-040714<br>04/07/14<br>GPS-IW1I | IW-1I-041514<br>04/15/14<br>GPS-IW1I | IW-1I-042214<br>04/22/14<br>GPS-IW1I |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.20 U | NA | 0.20 UB | NA | 0.20 U | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | 5.6 J | NA | 17.1 | NA | 87.7 | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 32,500 | NA | 68,000 | NA | 11,400 | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | 7.3 J | NA | 100 U | NA | 185 | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | 10 UJ | NA | 12.0 J | NA | 10 U | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | 592,000 | NA | 970,000 | NA | 260,000 | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | 262,000 | NA | 554,000 | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 10 U | NA | 20 U | NA | 10 U | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 12.5 J | NA | 3.9 JB | NA | 250 U | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | 20 U | NA | 1,030 | NA | 163 | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 200 U | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 75.6 | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 15 U | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 200 U | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 1.0 U | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 9.4 | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 105,000 | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 10 U | NA | 17.0 | NA | 10 UB | 108,000 | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 U | NA | 10 U | NA | 4.7 J | 107,000 | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 50 U | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 205 | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | 100 U | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 15.1 | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 26,600 | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | 137 | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.20 U | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | 86.6 | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 11,300 | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 151 | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 10 U | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 255,000 | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | 10 U | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | 250 U | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 141 | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | HSS-P3C-MW1S-20170316-F<br>03/16/17<br>HSS-P3C-MW1S | HSS-P3C-MW2S-20160616<br>06/16/16<br>HSS-P3C-MW2S | HSS-P3C-MW2S-20160616-F<br>06/16/16<br>HSS-P3C-MW2S | HSS-P3C-MW2S-20161215<br>12/15/16<br>HSS-P3C-MW2S | HSS-P3C-MW2S-20161215-F<br>12/15/16<br>HSS-P3C-MW2S | IW-1I<br>03/13/14<br>GPS-IW1I | IW-1I-040714<br>04/07/14<br>GPS-IW1I | IW-1I-041514<br>04/15/14<br>GPS-IW1I | IW-1I-042214<br>04/22/14<br>GPS-IW1I |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | 5,000 U | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | 5,000 U | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | 180 | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 242 | 277 | 277 | 344 | 356 | NA | NA | NA | NA |
| pH | ARC-pH | SU | 6.61 | 7.21 | 7.24 | 6.99 | 7.00 | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | HSS-P3C-MW1S-20170316-F<br>03/16/17<br>HSS-P3C-MW1S | HSS-P3C-MW2S-20160616<br>06/16/16<br>HSS-P3C-MW2S | HSS-P3C-MW2S-20160616-F<br>06/16/16<br>HSS-P3C-MW2S | HSS-P3C-MW2S-20161215<br>12/15/16<br>HSS-P3C-MW2S | HSS-P3C-MW2S-20161215-F<br>12/15/16<br>HSS-P3C-MW2S | IW-1I<br>03/13/14<br>GPS-IW1I | IW-1I-040714<br>04/07/14<br>GPS-IW1I | IW-1I-041514<br>04/15/14<br>GPS-IW1I | IW-1I-042214<br>04/22/14<br>GPS-IW1I |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 864,000 | NA | 1,430,000 | NA | 279,000 | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | 2,000 UJ | NA | 2,000 U | NA | 2,000 U | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | 3,000 UJ | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | 9,000 | 4,580,000 | 5,520,000 | 4,760,000 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 340 | NA | 4,300 | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 93.7 | NA | 66.1 | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | 7.65 | NA | 6.91 | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 17.55 | NA | 12.66 | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | 30 | NA | 7.9 | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | IW-1I-050114 | IW-1I-050614 | IW-1I-050714 | IW-1S-031314 | IW-1S-040714 | IW-1S-041514 | IW-1S-050114 | IW-1S-050714 | IW-2I | IW-2I-040714 | IW-2I-041514 | IW-2I-042214 | IW-2I-050114 | IW-2I-050614 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | | | | | | | |
| Date Collected: | | | 05/01/14 | 05/06/14 | 05/07/14 | 03/12/14 | 04/07/14 | 04/15/14 | 05/01/14 | 05/07/14 | 03/13/14 | 04/07/14 | 04/15/14 | 04/22/14 | 05/01/14 | 05/06/14 |
| Location ID: | CAS Number | Units | GPS-IW1I | GPS-IW1I | GPS-IW1I | GPS-IW1S | GPS-IW1S | GPS-IW1S | GPS-IW1S | GPS-IW1S | GPS-IW2I | GPS-IW2I | GPS-IW2I | GPS-IW2I | GPS-IW2I | GPS-IW2I |
| **Volatile Organics** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | IW-1I-050114 05/01/14 GPS-IW1I | IW-1I-050614 05/06/14 GPS-IW1I | IW-1I-050714 05/07/14 GPS-IW1I | IW-1S-031314 03/12/14 GPS-IW1S | IW-1S-040714 04/07/14 GPS-IW1S | IW-1S-041514 04/15/14 GPS-IW1S | IW-1S-050114 05/01/14 GPS-IW1S | IW-1S-050714 05/07/14 GPS-IW1S | IW-2I 03/13/14 GPS-IW2I | IW-2I-040714 04/07/14 GPS-IW2I | IW-2I-041514 04/15/14 GPS-IW2I | IW-2I-042214 04/22/14 GPS-IW2I | IW-2I-050114 05/01/14 GPS-IW2I | IW-2I-050614 05/06/14 GPS-IW2I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | IW-1I-050114 05/01/14 GPS-IW1I | IW-1I-050614 05/06/14 GPS-IW1I | IW-1I-050714 05/07/14 GPS-IW1I | IW-1S-031314 03/12/14 GPS-IW1S | IW-1S-040714 04/07/14 GPS-IW1S | IW-1S-041514 04/15/14 GPS-IW1S | IW-1S-050114 05/01/14 GPS-IW1S | IW-1S-050714 05/07/14 GPS-IW1S | IW-2I 03/13/14 GPS-IW2I | IW-2I-040714 04/07/14 GPS-IW2I | IW-2I-041514 04/15/14 GPS-IW2I | IW-2I-042214 04/22/14 GPS-IW2I | IW-2I-050114 05/01/14 GPS-IW2I | IW-2I-050614 05/06/14 GPS-IW2I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | 1,230 | NA | NA | NA | NA | 200 U | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | 6.0 U | NA | NA | NA | NA | 37.5 | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | 3.0 U | NA | NA | NA | NA | 8.2 | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | 200 U | NA | NA | NA | NA | 200 U | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | 3.0 U | NA | NA | NA | NA | 10.8 | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | 107,000 | NA | NA | NA | NA | 104,000 | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 27,700 | NA | 3,960 | NA | NA | NA | 1,690 | 81,100 | NA | NA | NA | NA | 2,150 |
| Chromium VI | 18540-29-9 | ug/L | NA | 240 | NA | 2,600 | NA | NA | NA | 230 | 90,800 | NA | NA | NA | NA | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | 72.4 | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA | 198 | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 171,000 | NA | 997 | NA | NA | NA | 166,000 | 178 | NA | NA | NA | NA | 65,500 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | 3.0 U | NA | NA | NA | NA | 14.2 | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | 5,000 U | NA | NA | NA | NA | 34,000 | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | 39,000 | NA | 19.3 | NA | NA | NA | 15,400 | 196 | NA | NA | NA | NA | 14,100 |

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**Summary of Historical Groundwater Sample Analytical Results**

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | 0.20 U | NA | NA | NA | NA | 0.20 U | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | 108 | NA | NA | NA | NA | 80.5 | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | 40,400 | NA | NA | NA | NA | 10,200 | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA | 20 U | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA | 20 U | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | 239,000 | NA | NA | NA | NA | 210,000 | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | 2.0 U | NA | NA | NA | NA | 4.0 U | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | 100 U | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | 20 U | NA | NA | NA | NA | 122 | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | 815 | NA | NA | NA | NA | 200 U | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | 6.0 U | NA | NA | NA | NA | 65.7 | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | 3.0 U | NA | NA | NA | NA | 9.0 U | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | 200 U | NA | NA | NA | NA | 200 U | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | 3.0 U | NA | NA | NA | NA | 11.9 | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | 121,000 | NA | NA | NA | NA | 109,000 | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 23,700 | 2,090 | NA | NA | NA | 1,560 | 89,900 | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 88 | 1,800 | NA | NA | NA | 260 | 79,600 | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | 77.4 | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA | 224 | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 126,000 | 100 U | NA | NA | NA | 177,000 | 300 U | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | 3.0 U | NA | NA | NA | NA | 16.9 | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | 5,000 U | NA | NA | NA | NA | 34,000 | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | 31,700 | 15 U | NA | NA | NA | 18,300 | 220 | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | 0.20 U | NA | NA | NA | NA | 0.20 U | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | 114 | NA | NA | NA | NA | 88.4 | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | 46,500 | NA | NA | NA | NA | 10,900 | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA | 30 U | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA | 30 U | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | 244,000 | NA | NA | NA | NA | 234,000 | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | 2.0 U | NA | NA | NA | NA | 6.0 U | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | 150 U | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | 20 U | NA | NA | NA | NA | 123 | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | IW-1I-050114 05/01/14 GPS-IW1I | IW-1I-050614 05/06/14 GPS-IW1I | IW-1I-050714 05/07/14 GPS-IW1I | IW-1S-031314 03/12/14 GPS-IW1S | IW-1S-040714 04/07/14 GPS-IW1S | IW-1S-041514 04/15/14 GPS-IW1S | IW-1S-050114 05/01/14 GPS-IW1S | IW-1S-050714 05/07/14 GPS-IW1S | IW-2I 03/13/14 GPS-IW2I | IW-2I-040714 04/07/14 GPS-IW2I | IW-2I-041514 04/15/14 GPS-IW2I | IW-2I-042214 04/22/14 GPS-IW2I | IW-2I-050114 05/01/14 GPS-IW2I | IW-2I-050614 05/06/14 GPS-IW2I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | 100 U | NA | 5,000 U | NA | NA | NA | 100 U | 5,000 U | NA | NA | NA | NA | 100 U |
| Nitrate-N | 14797-55-8 | ug/L | NA | 200 U | NA | 5,000 U | NA | NA | NA | 200 U | 5,000 U | NA | NA | NA | NA | 110 U |
| Nitrite | 14797-65-0 | ug/L | NA | 100 U | NA | 10 U | NA | NA | NA | 100 U | 260 | NA | NA | NA | NA | 10 U |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | IW-1I-050114 05/01/14 GPS-IW1I | IW-1I-050614 05/06/14 GPS-IW1I | IW-1I-050714 05/07/14 GPS-IW1I | IW-1S-031314 03/12/14 GPS-IW1S | IW-1S-040714 04/07/14 GPS-IW1S | IW-1S-041514 04/15/14 GPS-IW1S | IW-1S-050114 05/01/14 GPS-IW1S | IW-1S-050714 05/07/14 GPS-IW1S | IW-2I 03/13/14 GPS-IW2I | IW-2I-040714 04/07/14 GPS-IW2I | IW-2I-041514 04/15/14 GPS-IW2I | IW-2I-042214 04/22/14 GPS-IW2I | IW-2I-050114 05/01/14 GPS-IW2I | IW-2I-050614 05/06/14 GPS-IW2I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 465,000 | NA | 151,000 | NA | NA | NA | 748,000 | 252,000 | NA | NA | NA | NA | 98,800 |
| Sulfide | 18496-25-8 | ug/L | NA | 9,400 | NA | 3,700 | NA | NA | NA | 2,000 U | 2,000 U | NA | NA | NA | NA | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 4,960,000 | 4,610,000 | NA | 96,500 | 5,570,000 | 6,270,000 | 5,430,000 | 4,320,000 | 6,500 | 5,540,000 | 5,320,000 | 3,540,000 | 1,920,000 | 1,270,000 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | IW-2I-050714 | IW-2S | IW-2S-040714 | IW-2S-041514 | IW-2S-042214 | IW-2S-050114 | IW-2S-050714 | M1CELL GW | M1NORTH GW | M1SOUTH GW | M3 CELL GW | M3 NORTH GW | M3 SOUTH GW |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | | | | | | |
| Date Collected: | | | 05/07/14 | 03/12/14 | 04/07/14 | 04/15/14 | 04/22/14 | 05/01/14 | 05/07/14 | 11/14/11 | 11/14/11 | 11/14/11 | 07/18/12 | 07/18/12 | 07/18/12 |
| Location ID: | CAS Number | Units | GPS-IW2I | GPS-IW2S | GPS-IW2S | GPS-IW2S | GPS-IW2S | GPS-IW2S | GPS-IW2S | M1CELL | M1NORTH | M1SOUTH | M3CELL | M3NORTH | M3SOUTH |
| **Volatile Organics** | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | IW-2I-050714 05/07/14 GPS-IW2I | IW-2S 03/12/14 GPS-IW2S | IW-2S-040714 04/07/14 GPS-IW2S | IW-2S-041514 04/15/14 GPS-IW2S | IW-2S-042214 04/22/14 GPS-IW2S | IW-2S-050114 05/01/14 GPS-IW2S | IW-2S-050714 05/07/14 GPS-IW2S | M1CELL GW 11/14/11 M1CELL | M1NORTH GW 11/14/11 M1NORTH | M1SOUTH GW 11/14/11 M1SOUTH | M3 CELL GW 07/18/12 M3CELL | M3 NORTH GW 07/18/12 M3NORTH | M3 SOUTH GW 07/18/12 M3SOUTH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | IW-2I-050714 05/07/14 GPS-IW2I | IW-2S 03/12/14 GPS-IW2S | IW-2S-040714 04/07/14 GPS-IW2S | IW-2S-041514 04/15/14 GPS-IW2S | IW-2S-042214 04/22/14 GPS-IW2S | IW-2S-050114 05/01/14 GPS-IW2S | IW-2S-050714 05/07/14 GPS-IW2S | M1CELL GW 11/14/11 M1CELL | M1NORTH GW 11/14/11 M1NORTH | M1SOUTH GW 11/14/11 M1SOUTH | M3 CELL GW 07/18/12 M3CELL | M3 NORTH GW 07/18/12 M3NORTH | M3 SOUTH GW 07/18/12 M3SOUTH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 930 | NA | NA | NA | NA | NA | 8,450 | 1,440 | 892 | 3,820 | 1,000 U | 4,470 |
| Antimony | 7440-36-0 | ug/L | NA | 6.0 U | NA | NA | NA | NA | NA | 30 U | 2,600 | 16,100 | 5.0 UJ | 10.0 * | 1.80 * |
| Arsenic | 7440-38-2 | ug/L | NA | 12.5 | NA | NA | NA | NA | NA | 21.5 | 1,810 | 1,840 | 2.0 U | 100 U | 200 U |
| Barium | 7440-39-3 | ug/L | NA | 200 U | NA | NA | NA | NA | NA | 300 | 66.0 | 149 | 412 J | 100 UJ | 200 UJ |
| Beryllium | 7440-41-7 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | 5.0 U | 5.0 U | 5.5 | 2.0 UJ | 20.0 UJ | 40.0 UJ |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 3.0 U | NA | NA | NA | NA | NA | 15 U | 9.0 | 750 U | 0.08 U | 50.0 UJ | 8.00 U |
| Calcium | 7440-70-2 | ug/L | NA | 87,700 | NA | NA | NA | NA | NA | 242,000 | 19,600 | 281,000 | 329,000 | 51,100 | 140,000 |
| Chromium | 7440-47-3 | ug/L | NA | 452 | NA | NA | NA | NA | 851 | 18,200 | 1,850,000 | 15,700,000 | 422 | 323,000 | 1,760,000 |
| Chromium VI | 18540-29-9 | ug/L | NA | 130 | NA | NA | NA | NA | 65 | 10 U | 2,120,000 | 16,400,000 | 100 UJ | 240,000 J | 1,020,000 J |
| Cobalt | 7440-48-4 | ug/L | NA | 50 U | NA | NA | NA | NA | NA | 250 U | 149 | 789 | 2.25 | 5.89 | 200 UJ |
| Copper | 7440-50-8 | ug/L | NA | 10 U | NA | NA | NA | NA | NA | 195 | 972 | 1,390 | 266 | 122 | 376 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 1,030 | NA | NA | NA | NA | 174,000 | 175 | 686 | 5,440 | 1,060 | 3,000 U | 7,480 |
| Lead | 7439-92-1 | ug/L | NA | 4.6 | NA | NA | NA | NA | NA | 15 U | 711 | 750 U | 7.86 | 25.5 | 36.2 |
| Magnesium | 7439-95-4 | ug/L | NA | 5,000 U | NA | NA | NA | NA | NA | 88.5 | 4,960 | 162,000 | 500 U | 16,700 | 20,900 |
| Manganese | 7439-96-5 | ug/L | NA | 15 U | NA | NA | NA | NA | 12,700 | 75 U | 75 U | 750 U | 20.0 U | 200 U | 431 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | IW-2I-050714 05/07/14 GPS-IW2I | IW-2S 03/12/14 GPS-IW2S | IW-2S-040714 04/07/14 GPS-IW2S | IW-2S-041514 04/15/14 GPS-IW2S | IW-2S-042214 04/22/14 GPS-IW2S | IW-2S-050114 05/01/14 GPS-IW2S | IW-2S-050714 05/07/14 GPS-IW2S | M1CELL GW 11/14/11 M1CELL | M1NORTH GW 11/14/11 M1NORTH | M1SOUTH GW 11/14/11 M1SOUTH | M3 CELL GW 07/18/12 M3CELL | M3 NORTH GW 07/18/12 M3NORTH | M3 SOUTH GW 07/18/12 M3SOUTH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.20 U | NA | NA | NA | NA | NA | 0.32 | 1.3 | 1.8 | 0.8 U | 0.4 | 2.3 |
| Nickel | 7440-02-0 | ug/L | NA | 73.6 | NA | NA | NA | NA | NA | 143 | 534 | 451 | 58.2 | 100 U | 347 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 37,700 | NA | NA | NA | NA | NA | 280,000 | 64,100 | 239,000 | 165,000 | 21,800 | 43,400 |
| Selenium | 7782-49-2 | ug/L | NA | 10 U | NA | NA | NA | NA | NA | 50 U | 500 U | 2,500 U | 16.8 J | 50.0 UJ | 100 UJ |
| Silver | 7440-22-4 | ug/L | NA | 10 U | NA | NA | NA | NA | NA | 4.0 | 17.5 | 165 | 10.0 UJ | 100 UJ | 200 UJ |
| Sodium | 7440-23-5 | ug/L | NA | 263,000 | NA | NA | NA | NA | NA | 9,400,000 | 3,550,000 | 13,500,000 | 8,650,000 | 833,000 | 2,660,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1,980,000 | 1,460,000 | 3,190,000 | 1,130,000 | 189,000 | 483,000 |
| Thallium | 7440-28-0 | ug/L | NA | 2.0 U | NA | NA | NA | NA | NA | 50 U | 100 U | 1,000 U | 2.0 UJ | 4.00 U | 8.00 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 15,700,000 | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 50 U | NA | NA | NA | NA | NA | 17.0 | 438 | 4,060 | 32.7 | 100 U | 235 |
| Zinc | 7440-66-6 | ug/L | NA | 20 U | NA | NA | NA | NA | NA | 100 | 1,760 | 2,270 | 45.7 | 182 | 2,440 |
| **Metals-Filtered** | | | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | 300 | NA | NA | NA | NA | NA | 9,190 | 1,000 U | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | 6.0 U | NA | NA | NA | NA | NA | 30 U | 1,460 | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | 7.9 | NA | NA | NA | NA | NA | 23.5 | 1,980 | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | 200 U | NA | NA | NA | NA | NA | 325 | 32.0 | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | 5.0 U | 5.0 U | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 3.0 U | NA | NA | NA | NA | NA | 15 U | 18.0 | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | 97,000 | NA | NA | NA | NA | NA | 264,000 | 24,800 | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 2,040 | 524 | NA | NA | NA | NA | 1,140 | 19,800 | 2,540,000 | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 11 | 300 | NA | NA | NA | NA | 82 | 10 U | 2,060,000 | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | 50 U | NA | NA | NA | NA | NA | 250 U | 184 | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | 10 U | NA | NA | NA | NA | NA | 149 | 1,220 | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 48,000 | 100 U | NA | NA | NA | NA | 189,000 | 79.5 | 10,000 U | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | 3.0 U | NA | NA | NA | NA | NA | 15 U | 755 | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | 5,000 U | NA | NA | NA | NA | NA | 25,000 U | 6,370 | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 8,840 | 15 U | NA | NA | NA | NA | 14,300 | 75 U | 750 U | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.20 U | NA | NA | NA | NA | NA | 0.082 | 0.20 U | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | 83.3 | NA | NA | NA | NA | NA | 151 | 644 | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 41,900 | NA | NA | NA | NA | NA | 307,000 | 87,600 | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | 10 U | NA | NA | NA | NA | NA | 12.5 | 500 U | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | 10 U | NA | NA | NA | NA | NA | 50 U | 25.0 | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | 311,000 | NA | NA | NA | NA | NA | 10,100,000 | 5,220,000 | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 2.0 U | NA | NA | NA | NA | NA | 100 U | 200 U | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 50 U | NA | NA | NA | NA | NA | 17.5 | 703 | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | 20 U | NA | NA | NA | NA | NA | 70.0 | 1,310 | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | IW-2I-050714 05/07/14 GPS-IW2I | IW-2S 03/12/14 GPS-IW2S | IW-2S-040714 04/07/14 GPS-IW2S | IW-2S-041514 04/15/14 GPS-IW2S | IW-2S-042214 04/22/14 GPS-IW2S | IW-2S-050114 05/01/14 GPS-IW2S | IW-2S-050714 05/07/14 GPS-IW2S | M1CELL GW 11/14/11 M1CELL | M1NORTH GW 11/14/11 M1NORTH | M1SOUTH GW 11/14/11 M1SOUTH | M3 CELL GW 07/18/12 M3CELL | M3 NORTH GW 07/18/12 M3NORTH | M3 SOUTH GW 07/18/12 M3SOUTH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | 100 U | NA | NA | NA | NA | 100 U | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | 110 U | NA | NA | NA | NA | 200 U | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | 10 U | NA | NA | NA | NA | 100 U | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | 280 | 361 | 407 | 258 | 436 | 468 |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | 11.47 | 8.96 | 6.73 | 11.0 | 8.57 | 6.68 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | IW-2I-050714 05/07/14 GPS-IW2I | IW-2S 03/12/14 GPS-IW2S | IW-2S-040714 04/07/14 GPS-IW2S | IW-2S-041514 04/15/14 GPS-IW2S | IW-2S-042214 04/22/14 GPS-IW2S | IW-2S-050114 05/01/14 GPS-IW2S | IW-2S-050714 05/07/14 GPS-IW2S | M1CELL GW 11/14/11 M1CELL | M1NORTH GW 11/14/11 M1NORTH | M1SOUTH GW 11/14/11 M1SOUTH | M3 CELL GW 07/18/12 M3CELL | M3 NORTH GW 07/18/12 M3NORTH | M3 SOUTH GW 07/18/12 M3SOUTH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 154,000 | NA | NA | NA | NA | 822,000 | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | 3,300 | NA | NA | NA | NA | 2,000 U | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | 45,400 | 5,220,000 | 6,550,000 | 5,630,000 | 5,840,000 | 4,760,000 | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | M4CELLGW | M4NORTHGW | M4SOUTHGW | MW1A-090903 | MW1A-101303 | MW1B-GA01-21.5 | MW1B-GA01-26.5 | MW1C-3-20151217 | MW1C-4-20141217-15.5 | MW1C-4-20151217-12.5 | MW1D-101303 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | 0 | 0 | 21.5 | 26.5 | | | | 0 |
| Date Collected: | | | 10/16/12 | 10/16/12 | 10/16/12 | 09/09/03 | 10/13/03 | 06/28/11 | 06/28/11 | 12/17/15 | 12/17/15 | 12/17/15 | 10/13/03 |
| Location ID: | CAS Number | Units | M4CELL | M4NORTH | M4SOUTH | MW1A | MW1A | MW1B | MW1B | MW1C-3 | MW1C-4 | MW1C-4 | MW1D |
| **Volatile Organics** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | 5 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | 5 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | 5 U |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | 5 U |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | 5 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | 5 U |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | 5 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | 10 U | NA | NA | NA | NA | NA | 10 U |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | 10 U |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | 20 U | NA | NA | NA | NA | NA | NA | 20 U |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | 5 U |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | 5 U |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | 5 U |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | 5 U |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | 10 U |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | 5 U |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | 5 U |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | 5 U |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | 5 U |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | 5 U |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | 5 U |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | 5 U |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | 5 U |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | 5 U |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | 5 U |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | 5 U |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | 10 U |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | 5 U |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | 5 U |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | 64 | NA | NA | NA | NA | NA | NA | 1.6 J |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | 5 U |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | 64 | NA | NA | NA | NA | NA | NA | 1.6 |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | 5.0 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | M4CELLGW 10/16/12 M4CELL | M4NORTHGW 10/16/12 M4NORTH | M4SOUTHGW 10/16/12 M4SOUTH | MW1A-090903 0 09/09/03 MW1A | MW1A-101303 0 10/13/03 MW1A | MW1B-GA01-21.5 21.5 06/28/11 MW1B | MW1B-GA01-26.5 26.5 06/28/11 MW1B | MW1C-3-20151217 12/17/15 MW1C-3 | MW1C-4-20141217-15.5 12/17/15 MW1C-4 | MW1C-4-20151217-12.5 12/17/15 MW1C-4 | MW1D-101303 0 10/13/03 MW1D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | 5 U |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | 5 U |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | 5 U |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | 5 U |
| **Semivolatile Organics** | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | 47 U | NA | NA | NA | NA | NA | NA | 49 U |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | 47 U | NA | NA | NA | NA | NA | NA | 49 U |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | 47 U | NA | NA | NA | NA | NA | NA | 49 U |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | 47 U | NA | NA | NA | NA | NA | NA | 49 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | 47 U | NA | NA | NA | NA | NA | NA | 49 U |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | 47 U | NA | NA | NA | NA | NA | NA | 49 U |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 7 J |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | M4CELLGW<br><br>10/16/12<br>M4CELL | M4NORTHGW<br><br>10/16/12<br>M4NORTH | M4SOUTHGW<br><br>10/16/12<br>M4SOUTH | MW1A-090903<br>0<br>09/09/03<br>MW1A | MW1A-101303<br>0<br>10/13/03<br>MW1A | MW1B-GA01-21.5<br>21.5<br>06/28/11<br>MW1B | MW1B-GA01-26.5<br>26.5<br>06/28/11<br>MW1B | MW1C-3-20151217<br><br>12/17/15<br>MW1C-3 | MW1C-4-20141217-15.5<br><br>12/17/15<br>MW1C-4 | MW1C-4-20151217-12.5<br><br>12/17/15<br>MW1C-4 | MW1D-101303<br>0<br>10/13/03<br>MW1D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 1.4 J |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | 47 U | NA | NA | NA | NA | NA | NA | 49 U |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | 9.7 U |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | 47 U | NA | NA | NA | NA | NA | NA | 8.4 |
| **Metals** | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 3,510 | 500 U | 2,000 U | NA | 6,650 | NA | NA | NA | NA | NA | 639 |
| Antimony | 7440-36-0 | ug/L | 6.48 | 25.0 U | 100 U | NA | 60 U | 25.0 U | 25.0 U | NA | NA | NA | 60 U |
| Arsenic | 7440-38-2 | ug/L | 2.0 U | 69.1 | 20.0 U | NA | 10 U | NA | NA | NA | NA | NA | 10 U |
| Barium | 7440-39-3 | ug/L | 487 | 50.0 U | 200 U | NA | 20 U | NA | NA | NA | NA | NA | 76.5 |
| Beryllium | 7440-41-7 | ug/L | 0.08 UJ | 0.80 UJ | 0.80 UJ | NA | 5 U | NA | NA | NA | NA | NA | 5 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 0.08 U | 25.0 U | 1.38 | NA | 5 U | NA | NA | NA | NA | NA | 5 U |
| Calcium | 7440-70-2 | ug/L | 394,000 | 69,300 | 149,000 | NA | 51,700 | NA | NA | NA | NA | NA | 150,000 |
| Chromium | 7440-47-3 | ug/L | 341 | 454,000 | 1,920,000 | NA | 19,300 | 436,000 | 436,000 | 6,690 J | 637,000 J | 157,000 J | 38,000 |
| Chromium VI | 18540-29-9 | ug/L | 10 UJ | 685,000 J | 2,160,000 | NA | R | 484,000 | 554,000 | 6,300 J | 618,000 J | 252,000 J | R |
| Cobalt | 7440-48-4 | ug/L | 20.0 U | 6.37 J | 39.7 J | NA | 50 U | NA | NA | NA | NA | NA | 50 U |
| Copper | 7440-50-8 | ug/L | 45.2 | 189 | 446 | NA | 20 U | NA | NA | NA | NA | NA | 20.7 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 1,270 | 1,500 U | 6,000 U | NA | 895 | NA | NA | NA | NA | NA | 474 |
| Lead | 7439-92-1 | ug/L | 0.70 J | 21.3 J | 30.8 J | NA | 50 U | NA | NA | NA | NA | NA | 50 U |
| Magnesium | 7439-95-4 | ug/L | 1,000 U | 13,900 | 21,200 | NA | 607 | NA | NA | NA | NA | NA | 28,100 |
| Manganese | 7439-96-5 | ug/L | 40.0 U | 100 U | 353 J | NA | 10 U | NA | NA | NA | NA | NA | 189 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | M4CELLGW 10/16/12 M4CELL | M4NORTHGW 10/16/12 M4NORTH | M4SOUTHGW 10/16/12 M4SOUTH | MW1A-090903 0 09/09/03 MW1A | MW1A-101303 0 10/13/03 MW1A | MW1B-GA01-21.5 21.5 06/28/11 MW1B | MW1B-GA01-26.5 26.5 06/28/11 MW1B | MW1C-3-20151217 12/17/15 MW1C-3 | MW1C-4-20141217-15.5 12/17/15 MW1C-4 | MW1C-4-20151217-12.5 12/17/15 MW1C-4 | MW1D-101303 0 10/13/03 MW1D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | 0.56 | 0.2 | NA | 0.2 U | NA | NA | NA | NA | NA | 0.2 U |
| Nickel | 7440-02-0 | ug/L | 80.1 | 49.7 J | 14.9 J | NA | 40 U | 50.0 U | 50.0 U | NA | NA | NA | 40 U |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 195,000 | 24,600 | 49,600 | NA | 7,210 | NA | NA | NA | NA | NA | 12,500 |
| Selenium | 7782-49-2 | ug/L | 19.4 | 25.0 U | 100 U | NA | 5 U | NA | NA | NA | NA | NA | 5 U |
| Silver | 7440-22-4 | ug/L | 20.0 U | 50.0 U | 0.80 U | NA | 10 U | NA | NA | NA | NA | NA | 10 U |
| Sodium | 7440-23-5 | ug/L | 10,600,000 | 985,000 | 2,880,000 | NA | 127,000 | NA | NA | NA | NA | NA | 120,000 |
| Sulfur | 7704-34-9 | ug/L | 1,180,000 | 404,000 | 830,000 | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 4.0 U | 0.80 U | 40.0 U | NA | 10 U | 10.0 U | 10.0 U | NA | NA | NA | 10 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | 19,300 | 436,000 | 436,000 | NA | NA | NA | 38,000 |
| Vanadium | 7440-62-2 | ug/L | 40.4 | 50.0 U | 200 U | NA | 50 U | 50.0 U | 50.0 U | NA | NA | NA | 50 U |
| Zinc | 7440-66-6 | ug/L | 89.9 | 20.0 UJ | 2,390 | NA | 20 U | NA | NA | NA | NA | NA | 100 U |
| **Metals-Filtered** | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | M4CELLGW<br><br>10/16/12<br>M4CELL | M4NORTHGW<br><br>10/16/12<br>M4NORTH | M4SOUTHGW<br><br>10/16/12<br>M4SOUTH | MW1A-090903<br>0<br>09/09/03<br>MW1A | MW1A-101303<br>0<br>10/13/03<br>MW1A | MW1B-GA01-21.5<br>21.5<br>06/28/11<br>MW1B | MW1B-GA01-26.5<br>26.5<br>06/28/11<br>MW1B | MW1C-3-20151217<br><br>12/17/15<br>MW1C-3 | MW1C-4-20141217-15.5<br><br>12/17/15<br>MW1C-4 | MW1C-4-20151217-12.5<br><br>12/17/15<br>MW1C-4 | MW1D-101303<br>0<br>10/13/03<br>MW1D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | 405,000 | 366,000 | NA | NA | NA | NA | NA | 318,000 |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | 97 | 50 U | NA | NA | NA | NA | NA | 50 U |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | 7,030 | 5,130 | NA | NA | NA | NA | NA | 4,000 U |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | 10 U | 10 U | NA | NA | NA | NA | NA | 10 U |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | 100,000 | 100,000 | NA | NA | NA | NA | NA | 100,000 |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | 1,390,000 | 895 | NA | NA | NA | NA | NA | 474 |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | 2,440 | 2,600 | NA | NA | NA | NA | NA | 50 U |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 296 | 394 | 420 | NA | NA | 424 | 432 | 278 | 272 | 268 | NA |
| pH | ARC-pH | SU | 11.02 | 8.41 | 6.99 | NA | NA | 7.22 | 7.23 | 7.39 | 8.73 | 7.06 | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | M4CELLGW<br><br>10/16/12<br>M4CELL | M4NORTHGW<br><br>10/16/12<br>M4NORTH | M4SOUTHGW<br><br>10/16/12<br>M4SOUTH | MW1A-090903<br>0<br>09/09/03<br>MW1A | MW1A-101303<br>0<br>10/13/03<br>MW1A | MW1B-GA01-21.5<br>21.5<br>06/28/11<br>MW1B | MW1B-GA01-26.5<br>26.5<br>06/28/11<br>MW1B | MW1C-3-20151217<br><br>12/17/15<br>MW1C-3 | MW1C-4-20141217-15.5<br><br>12/17/15<br>MW1C-4 | MW1C-4-20151217-12.5<br><br>12/17/15<br>MW1C-4 | MW1D-101303<br>0<br>10/13/03<br>MW1D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | 39,000 | 36,700 | NA | NA | NA | NA | NA | 8,000 U |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | 2,000 U | 2,000 U | NA | NA | NA | NA | NA | 2,000 U |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | 2,880 | 2,380 | NA | NA | 7,900 | NA | 68,600 | 3,380 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | 50 U | 50 U | NA | NA | NA | NA | NA | 50 U |
| **FIELD** | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | 5,250 | 2,270 | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | 422.8 | 480.2 | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | 6.86 | 6.36 | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | 23.79 | 17.88 | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | 0.05 | 0.1 | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | MW1D-GA01-36.5 | MW1D-GA01-42.5 | MW1S-GA01-9.5 | MW2D-101303 | MW2D-GA01-35.5 | MW2D-GA01-40.5 | MW-2I | MW-2I (082914) | MW-2I (090814) | MW-2I (091214) | MW-2I(090314) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 36.5 | 42.5 | 9.5 | 0 | 35.5 | 40.5 | | | | | |
| Date Collected: | | | 06/24/11 | 06/24/11 | 06/24/11 | 10/13/03 | 06/30/11 | 06/30/11 | 03/13/14 | 08/29/14 | 09/08/14 | 09/12/14 | 09/03/14 |
| Location ID: | CAS Number | Units | MW1D | MW1D | MW1S | MW2D | MW2D | MW2D | GPS-MW2I | GPS-MW2I | GPS-MW2I | GPS-MW2I | GPS-MW2I |
| **Volatile Organics** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | 7.6 J | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | 32 | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | 5.7 | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | 7.8 | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | 4.9 J | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | 16 | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | 75 | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | 13 | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW1D-GA01-36.5<br>36.5<br>06/24/11<br>MW1D | MW1D-GA01-42.5<br>42.5<br>06/24/11<br>MW1D | MW1S-GA01-9.5<br>9.5<br>06/24/11<br>MW1S | MW2D-101303<br>0<br>10/13/03<br>MW2D | MW2D-GA01-35.5<br>35.5<br>06/30/11<br>MW2D | MW2D-GA01-40.5<br>40.5<br>06/30/11<br>MW2D | MW-2I<br>03/13/14<br>GPS-MW2I | MW-2I (082914)<br>08/29/14<br>GPS-MW2I | MW-2I (090814)<br>09/08/14<br>GPS-MW2I | MW-2I (091214)<br>09/12/14<br>GPS-MW2I | MW-2I(090314)<br>09/03/14<br>GPS-MW2I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | 1 J | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | 5 U | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | 190 U | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | 190 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | 41 | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | 9.3 J | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | 190 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | 190 U | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | 190 U | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | 190 U | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | 8.3 J | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW1D-GA01-36.5<br>36.5<br>06/24/11<br>MW1D | MW1D-GA01-42.5<br>42.5<br>06/24/11<br>MW1D | MW1S-GA01-9.5<br>9.5<br>06/24/11<br>MW1S | MW2D-101303<br>0<br>10/13/03<br>MW2D | MW2D-GA01-35.5<br>35.5<br>06/30/11<br>MW2D | MW2D-GA01-40.5<br>40.5<br>06/30/11<br>MW2D | MW-2I<br><br>03/13/14<br>GPS-MW2I | MW-2I (082914)<br><br>08/29/14<br>GPS-MW2I | MW-2I (090814)<br><br>09/08/14<br>GPS-MW2I | MW-2I (091214)<br><br>09/12/14<br>GPS-MW2I | MW-2I(090314)<br><br>09/03/14<br>GPS-MW2I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | 15 J | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | 7.2 J | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | 580 | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | 190 U | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | 39 U | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | 660 | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | 1,350 | NA | NA | 200 U | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 25.0 U | 25.0 U | 2.5 U | 2,120 | 25.0 U | 25.0 U | 156 | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | 1,000 U | NA | NA | 93.1 | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | 45 | NA | NA | 200 U | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | 5 U | NA | NA | 1.0 U | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | 5 U | NA | NA | 19.5 | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | 181,000 | NA | NA | 131,000 | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 582,000 | 576,000 | 18,600 | 458,000 | 446,000 | 462,000 | 160,000 | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 603,000 | 631,000 | 17,100 | R | 561,000 | 549,000 | 159,000 | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | 50 U | NA | NA | 59.0 | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | 78.3 | NA | NA | 309 | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | 1,300 | NA | NA | 249 | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | 250 U | NA | NA | 20.1 | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | 71,400 | NA | NA | 26,900 | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | 643 | NA | NA | 300 | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | MW1D-GA01-36.5 | MW1D-GA01-42.5 | MW1S-GA01-9.5 | MW2D-101303 | MW2D-GA01-35.5 | MW2D-GA01-40.5 | MW-2I | MW-2I (082914) | MW-2I (090814) | MW-2I (091214) | MW-2I(090314) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 36.5 | 42.5 | 9.5 | 0 | 35.5 | 40.5 | | | | | |
| Date Collected: | | | 06/24/11 | 06/24/11 | 06/24/11 | 10/13/03 | 06/30/11 | 06/30/11 | 03/13/14 | 08/29/14 | 09/08/14 | 09/12/14 | 09/03/14 |
| Location ID: | CAS Number | Units | MW1D | MW1D | MW1S | MW2D | MW2D | MW2D | GPS-MW2I | GPS-MW2I | GPS-MW2I | GPS-MW2I | GPS-MW2I |
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | 0.2 U | NA | NA | 0.20 U | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 662 | 603 | 47.7 | 40 U | 50.0 U | 50.0 U | 125 | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | 21,800 | NA | NA | 14,600 | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | 25 U | NA | NA | 227 | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | 10 U | NA | NA | 10 U | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | 549,000 | NA | NA | 280,000 | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 10.0 U | 10.0 U | 1.0 U | 96.3 | 10.0 U | 10.0 U | 10 U | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | 583,000 | 577,000 | 18,800 | 460,000 | 446,000 | 462,000 | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 50.0 U | 50.0 U | 166 | 250 U | 50.0 U | 50.0 U | 250 U | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | 2,000 U | NA | NA | 252 | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | 30 U | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | 105 | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | 15 U | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | 138,000 | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | 157,000 | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | 160,000 | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | 61.6 | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | 319 | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | 100 U | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | 20.9 | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | 28,600 | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | 308 | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | 0.20 U | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | 131 | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | 14,400 | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | 217 | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | 306,000 | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | 250 U | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | 251 | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | MW1D-GA01-36.5 | MW1D-GA01-42.5 | MW1S-GA01-9.5 | MW2D-101303 | MW2D-GA01-35.5 | MW2D-GA01-40.5 | MW-2I | MW-2I (082914) | MW-2I (090814) | MW-2I (091214) | MW-2I(090314) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 36.5 | 42.5 | 9.5 | 0 | 35.5 | 40.5 | | | | | |
| Date Collected: | | | 06/24/11 | 06/24/11 | 06/24/11 | 10/13/03 | 06/30/11 | 06/30/11 | 03/13/14 | 08/29/14 | 09/08/14 | 09/12/14 | 09/03/14 |
| Location ID: | CAS Number | Units | MW1D | MW1D | MW1S | MW2D | MW2D | MW2D | GPS-MW2I | GPS-MW2I | GPS-MW2I | GPS-MW2I | GPS-MW2I |
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | 762,000 | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | 8,000 U | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | 1,260,000 | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | 100 | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | 5,000 U | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | 50 U | NA | NA | 5,000 U | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | 180 | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 343 | 372 | 255 | NA | 411 | 418 | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | 7.58 | 7.54 | 11.7 | NA | 7.43 | 7.36 | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | MW1D-GA01-36.5 | MW1D-GA01-42.5 | MW1S-GA01-9.5 | MW2D-101303 | MW2D-GA01-35.5 | MW2D-GA01-40.5 | MW-2I | MW-2I (082914) | MW-2I (090814) | MW-2I (091214) | MW-2I(090314) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 36.5 | 42.5 | 9.5 | 0 | 35.5 | 40.5 | | | | | |
| Date Collected: | | | 06/24/11 | 06/24/11 | 06/24/11 | 10/13/03 | 06/30/11 | 06/30/11 | 03/13/14 | 08/29/14 | 09/08/14 | 09/12/14 | 09/03/14 |
| Location ID: | CAS Number | Units | MW1D | MW1D | MW1S | MW2D | MW2D | MW2D | GPS-MW2I | GPS-MW2I | GPS-MW2I | GPS-MW2I | GPS-MW2I |
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | 463,000 | NA | NA | 386,000 | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | 2,000 U | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | 2,000 U | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | 7,220 | NA | NA | 9,800 | 13,900 | 17,400 | 18,100 | 13,900 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 550 | 1,660 | 1,380 | NA | 2,150 | 1,560 | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 16.88 | 188.9 | 11.6 | NA | 127.4 | 146.1 | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | 7.12 | 7.16 | 11.99 | NA | 6.64 | 6.6 | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 16.99 | 17.89 | 20.21 | NA | 19.12 | 18.27 | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | 9.8 | 9.89 | 6.21 | NA | 2.19 | 2.24 | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | MW-2I-032114 | MW-2I-032614 | MW-2I-040714 | MW-2I-041514 | MW-2I-042214 | MW-2I-050114 | MW-2I-050614 | MW2S-090903 | MW2S-101303 | MW2S-GA01-4.5 | MW2S-GA01-9.5 | MW3B-GA01-34.5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | 0 | 0 | 4.5 | 9.5 | 34.5 |
| Date Collected: | | | 03/21/14 | 03/26/14 | 04/07/14 | 04/15/14 | 04/22/14 | 05/01/14 | 05/06/14 | 09/09/03 | 10/13/03 | 06/28/11 | 06/28/11 | 06/27/11 |
| Location ID: | CAS Number | Units | GPS-MW2I | GPS-MW2I | GPS-MW2I | GPS-MW2I | GPS-MW2I | GPS-MW2I | GPS-MW2I | MW2S | MW2S | MW2S | MW2S | MW3B |
| **Volatile Organics** | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 16 | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.3 J | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 120 | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 13 | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.9 J | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 5.5 | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | 160 | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW-2I-032114<br><br>03/21/14<br>GPS-MW2I | MW-2I-032614<br><br>03/26/14<br>GPS-MW2I | MW-2I-040714<br><br>04/07/14<br>GPS-MW2I | MW-2I-041514<br><br>04/15/14<br>GPS-MW2I | MW-2I-042214<br><br>04/22/14<br>GPS-MW2I | MW-2I-050114<br><br>05/01/14<br>GPS-MW2I | MW-2I-050614<br><br>05/06/14<br>GPS-MW2I | MW2S-090903<br>0<br>09/09/03<br>MW2S | MW2S-101303<br>0<br>10/13/03<br>MW2S | MW2S-GA01-4.5<br>4.5<br>06/28/11<br>MW2S | MW2S-GA01-9.5<br>9.5<br>06/28/11<br>MW2S | MW3B-GA01-34.5<br>34.5<br>06/27/11<br>MW3B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 8.9 | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 93 U | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 93 U | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 35 | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 45 | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 93 U | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 3.7 | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 93 U | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 93 U | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 93 U | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 23 | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW-2I-032114<br><br>03/21/14<br>GPS-MW2I | MW-2I-032614<br><br>03/26/14<br>GPS-MW2I | MW-2I-040714<br><br>04/07/14<br>GPS-MW2I | MW-2I-041514<br><br>04/15/14<br>GPS-MW2I | MW-2I-042214<br><br>04/22/14<br>GPS-MW2I | MW-2I-050114<br><br>05/01/14<br>GPS-MW2I | MW-2I-050614<br><br>05/06/14<br>GPS-MW2I | MW2S-090903<br>0<br>09/09/03<br>MW2S | MW2S-101303<br>0<br>10/13/03<br>MW2S | MW2S-GA01-4.5<br>4.5<br>06/28/11<br>MW2S | MW2S-GA01-9.5<br>9.5<br>06/28/11<br>MW2S | MW3B-GA01-34.5<br>34.5<br>06/27/11<br>MW3B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 7.1 | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 3.7 | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 93 U | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 85 | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19 U | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | 210 | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 294 | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 60 U | 2.5 U | 2.5 U | 2.5 U |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 10 U | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 298 | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 500 U | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | 220,000 | NA | 31,700 | 55.1 | 420 | 64.6 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | 179,000 | NA | R | 18.5 | 361 | 10.0 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 50 U | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 20 U | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | 500 U | NA | 100 U | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 50 U | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 500 U | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | 442 | NA | 10 U | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | MW-2I-032114 03/21/14 GPS-MW2I | MW-2I-032614 03/26/14 GPS-MW2I | MW-2I-040714 04/07/14 GPS-MW2I | MW-2I-041514 04/15/14 GPS-MW2I | MW-2I-042214 04/22/14 GPS-MW2I | MW-2I-050114 05/01/14 GPS-MW2I | MW-2I-050614 05/06/14 GPS-MW2I | MW2S-090903 0 09/09/03 MW2S | MW2S-101303 0 10/13/03 MW2S | MW2S-GA01-4.5 4.5 06/28/11 MW2S | MW2S-GA01-9.5 9.5 06/28/11 MW2S | MW3B-GA01-34.5 34.5 06/27/11 MW3B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 0.2 U | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 40 U | 5.0 | 6.0 | 7.5 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 2,000 U | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 10 U | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 427,000 | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 10 U | 1.0 U | 1.0 U | 1.0 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 31,700 | 67.4 | 441 | 78.9 |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 50 U | 7.3 | 14.7 | 6.8 |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 100 U | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | 190,000 | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | 162,000 | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | 500 U | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | 441 | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | MW-2I-032114 03/21/14 GPS-MW2I | MW-2I-032614 03/26/14 GPS-MW2I | MW-2I-040714 04/07/14 GPS-MW2I | MW-2I-041514 04/15/14 GPS-MW2I | MW-2I-042214 04/22/14 GPS-MW2I | MW-2I-050114 05/01/14 GPS-MW2I | MW-2I-050614 05/06/14 GPS-MW2I | MW2S-090903 0 09/09/03 MW2S | MW2S-101303 0 10/13/03 MW2S | MW2S-GA01-4.5 4.5 06/28/11 MW2S | MW2S-GA01-9.5 9.5 06/28/11 MW2S | MW3B-GA01-34.5 34.5 06/27/11 MW3B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2,080,000 | 2,090,000 | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 6,280 | 6,520 | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 67,900 | 60,100 | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U | 10 U | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | 100,000 | 116,000 | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 100 | 100 | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | 600 | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | 510 | 50 U | 50 U | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | 90 | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | 383 | 355 | 475 |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | 7.69 | 7.79 | 7.43 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | MW-2I-032114 03/21/14 GPS-MW2I | MW-2I-032614 03/26/14 GPS-MW2I | MW-2I-040714 04/07/14 GPS-MW2I | MW-2I-041514 04/15/14 GPS-MW2I | MW-2I-042214 04/22/14 GPS-MW2I | MW-2I-050114 05/01/14 GPS-MW2I | MW-2I-050614 05/06/14 GPS-MW2I | MW2S-090903 0 09/09/03 MW2S | MW2S-101303 0 10/13/03 MW2S | MW2S-GA01-4.5 4.5 06/28/11 MW2S | MW2S-GA01-9.5 9.5 06/28/11 MW2S | MW3B-GA01-34.5 34.5 06/27/11 MW3B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | 399,000 | 5,940 | 4,300 | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | 2,000 U | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | 2,000 U | 2,000 U | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 8,900 | 9,700 | 7,900 | 9,000 | 10,700 | 10,500 | 9,600 | 16,200 | 15,800 | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | 50 U | 50 U | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 1,130 | 550 | 370 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | 305.2 | 187.2 | 274.1 |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | 7.33 | 10.37 | 6.63 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | 25.06 | 23.16 | 25.55 |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.89 | 2.83 | 8.6 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | MW3B-GA01-39.5 | MW-3D 022012 | MW3D-010612 | MW3D-090903 | MW3D-101303 | MW3D-GA01-51.0 | MW-3I | MW-3S 022012 | MW3S-010612 | MW3S-090903 | MW3S-101303 | MW3S-GA01-7.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 39.5 | 53 | 53 | 0 | 0 | 51 | | 9.1 | 9.1 | 0 | 0 | 7 |
| Date Collected: | | | 06/27/11 | 02/20/12 | 01/06/12 | 09/09/03 | 10/13/03 | 06/27/11 | 03/13/14 | 02/20/12 | 01/06/12 | 09/09/03 | 10/13/03 | 06/28/11 |
| Location ID: | CAS Number | Units | MW3B | MW3D | MW3D | MW3D | MW3D | MW3D | GPS-MW3I | MW3S | MW3S | MW3S | MW3S | MW3S |
| **Volatile Organics** | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | 25 U | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | NA | 25 U | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | NA | 25 U | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | NA | 25 U | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | 25 U | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | NA | 25 U | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | 25 U | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | 100 U | NA | NA | NA | NA | NA | NA | 50 U | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | 100 U | NA | NA | NA | NA | NA | 50 U | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | 200 U | NA | NA | NA | NA | NA | 100 U | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | 750 | NA | NA | NA | NA | NA | NA | 780 | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | NA | 25 U | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | 25 U | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | 25 U | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | 100 U | NA | NA | NA | NA | NA | 50 U | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | 25 U | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | NA | 25 U | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | NA | 25 U | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | 25 U | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | 25 U | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | NA | 25 U | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | NA | 25 U | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | NA | 25 U | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | NA | 25 U | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | 670 | NA | NA | NA | NA | NA | NA | 360 | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | 530 | NA | NA | NA | NA | NA | NA | 320 | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | 100 U | NA | NA | NA | NA | NA | 50 U | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | 25 U | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | NA | 25 U | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | 25 U | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | NA | 370 | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | 2,000 | NA | NA | NA | NA | NA | 1,800 | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | 530 | NA | NA | NA | NA | NA | 320 | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW3B-GA01-39.5<br>39.5<br>06/27/11<br>MW3B | MW-3D 022012<br>53<br>02/20/12<br>MW3D | MW3D-010612<br>53<br>01/06/12<br>MW3D | MW3D-090903<br>0<br>09/09/03<br>MW3D | MW3D-101303<br>0<br>10/13/03<br>MW3D | MW3D-GA01-51.0<br>51<br>06/27/11<br>MW3D | MW-3I<br><br>03/13/14<br>GPS-MW3I | MW-3S 022012<br>9.1<br>02/20/12<br>MW3S | MW3S-010612<br>9.1<br>01/06/12<br>MW3S | MW3S-090903<br>0<br>09/09/03<br>MW3S | MW3S-101303<br>0<br>10/13/03<br>MW3S | MW3S-GA01-7.0<br>7<br>06/28/11<br>MW3S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | 25 U | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | 25 U | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | 25 U | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | 25 U | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | 370 U | NA | NA | NA | NA | NA | 470 U | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | 370 U | NA | NA | NA | NA | NA | 470 U | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | 370 U | NA | NA | NA | NA | NA | 470 U | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | 370 U | NA | NA | NA | NA | NA | 470 U | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | 370 U | NA | NA | NA | NA | NA | 470 U | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | 370 U | NA | NA | NA | NA | NA | 470 U | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW3B-GA01-39.5<br>39.5<br>06/27/11<br>MW3B | MW-3D 022012<br>53<br>02/20/12<br>MW3D | MW3D-010612<br>53<br>01/06/12<br>MW3D | MW3D-090903<br>0<br>09/09/03<br>MW3D | MW3D-101303<br>0<br>10/13/03<br>MW3D | MW3D-GA01-51.0<br>51<br>06/27/11<br>MW3D | MW-3I<br><br>03/13/14<br>GPS-MW3I | MW-3S 022012<br>9.1<br>02/20/12<br>MW3S | MW3S-010612<br>9.1<br>01/06/12<br>MW3S | MW3S-090903<br>0<br>09/09/03<br>MW3S | MW3S-101303<br>0<br>10/13/03<br>MW3S | MW3S-GA01-7.0<br>7<br>06/28/11<br>MW3S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | 370 U | NA | NA | NA | NA | NA | 470 U | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | 74 U | NA | NA | NA | NA | NA | 93 U | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | 370 U | NA | NA | NA | NA | NA | 470 U | NA | NA |
| **Metals** | | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | 869 | NA | 667 | NA | NA | NA | 2,410 | NA |
| Antimony | 7440-36-0 | ug/L | 2.5 U | NA | NA | NA | 60 U | 2.5 U | 12 U | NA | NA | NA | 60 U | 2.5 U |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | 21.7 | NA | 3.7 | NA | NA | NA | 46.7 | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | 38.2 | NA | 200 U | NA | NA | NA | 52.8 | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | 5 U | NA | 1.0 U | NA | NA | NA | 5 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | 5 U | NA | 9.0 | NA | NA | NA | 5 U | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | 500 U | NA | 112,000 | NA | NA | NA | 6,290 | NA |
| Chromium | 7440-47-3 | ug/L | 61.2 | 19.9 [15.9] | 43.2 | NA | 10 U | 47.0 | 50,000 | 1,010 | 403 | NA | 6,340 | 1,130 |
| Chromium VI | 18540-29-9 | ug/L | 46.0 | 10 U [10 U] | 10.0 U | NA | R | 10.0 U | 53,400 | 10 U | 10.0 U | NA | R | 10.0 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | 50 U | NA | 72.7 | NA | NA | NA | 50 U | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | 20 U | NA | 261 | NA | NA | NA | 23.7 | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | 446 | NA | 864 | NA | NA | NA | 1,930 | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | 50 U | NA | 7.5 | NA | NA | NA | 50 U | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | 500 U | NA | 29,900 | NA | NA | NA | 5,190 | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | 16.8 | NA | 359 | NA | NA | NA | 61 | NA |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | 0.2 U | NA | 0.20 U | NA | NA | NA | 0.97 | NA |
| Nickel | 7440-02-0 | ug/L | 7.4 | NA | NA | NA | 40 U | 5.0 U | 116 | NA | NA | NA | 40 U | 50.6 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | 2,000 U | NA | 10,000 U | NA | NA | NA | 2,000 U | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | 5 U | NA | 11.1 | NA | NA | NA | 5 U | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | 10 U | NA | 10 U | NA | NA | NA | 10 U | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | 126,000 | NA | 156,000 | NA | NA | NA | 344,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 1.0 U | NA | NA | NA | 10 U | 1.0 U | 4.0 U | NA | NA | NA | 10 U | 1.0 U |
| Total CCPW Metals | CCPW-M | ug/L | 74.4 | 19.9 [15.9] | 43.2 | NA | 60 U | 47.0 | NA | 1,010 | 403 | NA | 6,340 | 1,230 |
| Vanadium | 7440-62-2 | ug/L | 5.8 | NA | NA | NA | 50 U | 5.0 U | 50 U | NA | NA | NA | 50 U | 45.5 |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | 20 U | NA | 79.4 | NA | NA | NA | 61.1 | NA |
| **Metals-Filtered** | | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | 61.2 | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | 3.0 U | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | 10.5 | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | 123,000 | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | 52,000 | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | 49,000 | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | 80.5 | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | 282 | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | 100 U | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | 6.8 | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | 33,000 | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | 356 | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | 0.20 U | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | 129 | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | 10,000 U | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | 11.7 | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | 161,000 | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | 2.0 U | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | 50 U | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | 60.8 | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | 270,000 | 2,000 U | NA | NA | NA | NA | 595,000 | 633,000 | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | 50 U | 50 U | NA | NA | NA | NA | 4,420 | 4,430 | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | 55,100 | 59,500 | NA | NA | NA | NA | 21,600 | 2,000 U | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | 74.3 | 10 U | NA | NA | NA | NA | 104 | 67.8 | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | 100,000 | 100,000 | NA | NA | NA | NA | 100,000 | 100,000 | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | 1,510,000 | 446 | NA | NA | NA | NA | 995,000 | 1,930 | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | 5,000 U | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | 62.3 | 50 U | NA | 5,000 U | NA | NA | 58.7 | 92.4 | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | 160 | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 466 | 39.8 [355] | 177 | NA | NA | 43.0 | NA | 382 | 296 | NA | NA | 364 |
| pH | ARC-pH | SU | 7.49 | 10.09 [10.04] | 10.2 | NA | NA | 9.89 | NA | 9.32 | 9.44 | NA | NA | 9.78 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW3B-GA01-39.5<br>39.5<br>06/27/11<br>MW3B | MW-3D 022012<br>53<br>02/20/12<br>MW3D | MW3D-010612<br>53<br>01/06/12<br>MW3D | MW3D-090903<br>0<br>09/09/03<br>MW3D | MW3D-101303<br>0<br>10/13/03<br>MW3D | MW3D-GA01-51.0<br>51<br>06/27/11<br>MW3D | MW-3I<br><br>03/13/14<br>GPS-MW3I | MW-3S 022012<br>9.1<br>02/20/12<br>MW3S | MW3S-010612<br>9.1<br>01/06/12<br>MW3S | MW3S-090903<br>0<br>09/09/03<br>MW3S | MW3S-101303<br>0<br>10/13/03<br>MW3S | MW3S-GA01-7.0<br>7<br>06/28/11<br>MW3S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | 8,000 U | 4,000 U | NA | 244,000 | NA | NA | 97,100 | 4,000 U | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | 2,000 U | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | 2,000 U | 2,000 U | NA | NA | NA | NA | 2,000 U | 2,000 U | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | 11,400 | 7,130 | NA | 5,700 | NA | NA | 29,200 | 20,000 | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | 50 U | 68.6 | NA | NA | NA | NA | 759 | 895 | NA |
| **FIELD** | | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 180 | NA | NA | NA | NA | 170 | NA | NA | NA | NA | NA | 530 |
| Oxidation Reduction Potential | ARC-ORP | mV | 326 | NA | NA | NA | NA | 199.9 | NA | NA | NA | NA | NA | 53.2 |
| pH | ARC-pH | SU | 6.66 | NA | NA | NA | NA | 10.9 | NA | NA | NA | NA | NA | 9.54 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 19.21 | NA | NA | NA | NA | 15.82 | NA | NA | NA | NA | NA | 23.57 |
| Turbidity | ARC-Turb | NTU | 8.5 | NA | NA | NA | NA | 9.71 | NA | NA | NA | NA | NA | 5.89 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | MW4C-GA01-62.0 | MW4C-GA01-66.5 | MW4D-090903 | MW4D-101403 | MW-4D-GA01-43.0 | MW-4F-GA01-72.0 | MW-4I | MW-4I (082914) | MW-4I (090814) | MW-4I (091214) | MW-4I(090314) | MW-4I-032114 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 62 | 66.5 | 0 | 0 | 43 | 72 | | | | | | |
| Date Collected: | | | 06/22/11 | 06/22/11 | 09/09/03 | 10/14/03 | 06/21/11 | 06/21/11 | 03/13/14 | 08/29/14 | 09/08/14 | 09/12/14 | 09/03/14 | 03/21/14 |
| Location ID: | CAS Number | Units | MW4C | MW4C | MW4D | MW4D | MW4D | MW4F | GPS-MW4I | GPS-MW4I | GPS-MW4I | GPS-MW4I | GPS-MW4I | GPS-MW4I |
| **Volatile Organics** | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | 130 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | 130 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | 130 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | 130 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | 130 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | 130 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | 130 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | 250 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | 250 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | 500 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | 4,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | 130 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | 130 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | 130 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | 250 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | 130 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | 130 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | 130 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | 130 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | 130 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | 130 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | 130 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | 130 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | 130 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | 3,100 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | 2,100 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | 250 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | 1,300 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | 130 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | 130 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | 98 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | 11,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | 3,400 | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW4C-GA01-62.0<br>62<br>06/22/11<br>MW4C | MW4C-GA01-66.5<br>66.5<br>06/22/11<br>MW4C | MW4D-090903<br>0<br>09/09/03<br>MW4D | MW4D-101403<br>0<br>10/14/03<br>MW4D | MW-4D-GA01-43.0<br>43<br>06/21/11<br>MW4D | MW-4F-GA01-72.0<br>72<br>06/21/11<br>MW4F | MW-4I<br>03/13/14<br>GPS-MW4I | MW-4I (082914)<br>08/29/14<br>GPS-MW4I | MW-4I (090814)<br>09/08/14<br>GPS-MW4I | MW-4I (091214)<br>09/12/14<br>GPS-MW4I | MW-4I(090314)<br>09/03/14<br>GPS-MW4I | MW-4I-032114<br>03/21/14<br>GPS-MW4I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | 130 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | 130 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | 130 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | 130 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | 47 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | 47 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | 47 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | 47 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | 47 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | 47 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW4C-GA01-62.0<br>62<br>06/22/11<br>MW4C | MW4C-GA01-66.5<br>66.5<br>06/22/11<br>MW4C | MW4D-090903<br>0<br>09/09/03<br>MW4D | MW4D-101403<br>0<br>10/14/03<br>MW4D | MW-4D-GA01-43.0<br>43<br>06/21/11<br>MW4D | MW-4F-GA01-72.0<br>72<br>06/21/11<br>MW4F | MW-4I<br>03/13/14<br>GPS-MW4I | MW-4I (082914)<br>08/29/14<br>GPS-MW4I | MW-4I (090814)<br>09/08/14<br>GPS-MW4I | MW-4I (091214)<br>09/12/14<br>GPS-MW4I | MW-4I(090314)<br>09/03/14<br>GPS-MW4I | MW-4I-032114<br>03/21/14<br>GPS-MW4I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | 47 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | 9.3 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | 47 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | 255 | NA | NA | 200 U | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 2.5 U | 2.5 U | NA | 60 U | 2.5 U | 2.5 U | 6.0 U | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | 22.9 | NA | NA | 13.2 | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | 208 | NA | NA | 200 U | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | 5 U | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | 5 U | NA | NA | 7.2 | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | 70,500 | NA | NA | 127,000 | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 380 | 697 | NA | 10 U | 5.0 U | 5.0 U | 21,600 | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 338 | 676 | NA | R | 10.0 U | 10.0 U | 22,300 | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | 50 U | NA | NA | 50.2 | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | 20 U | NA | NA | 113 | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | 1,370 | NA | NA | 100 U | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | 50 U | NA | NA | 9.2 | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | 500 U | NA | NA | 32,400 | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | 2,320 | NA | NA | 174 | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW4C-GA01-62.0<br>62<br>06/22/11<br>MW4C | MW4C-GA01-66.5<br>66.5<br>06/22/11<br>MW4C | MW4D-090903<br>0<br>09/09/03<br>MW4D | MW4D-101403<br>0<br>10/14/03<br>MW4D | MW-4D-GA01-43.0<br>43<br>06/21/11<br>MW4D | MW-4F-GA01-72.0<br>72<br>06/21/11<br>MW4F | MW-4I<br><br>03/13/14<br>GPS-MW4I | MW-4I (082914)<br><br>08/29/14<br>GPS-MW4I | MW-4I (090814)<br><br>09/08/14<br>GPS-MW4I | MW-4I (091214)<br><br>09/12/14<br>GPS-MW4I | MW-4I(090314)<br><br>09/03/14<br>GPS-MW4I | MW-4I-032114<br><br>03/21/14<br>GPS-MW4I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | 0.2 U | NA | NA | 0.20 U | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 5.9 | 5.0 U | NA | 40 U | 9.2 | 12.7 | 58.7 | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | 9,820 | NA | NA | 10,000 U | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | 5 U | NA | NA | 32.0 | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | 10 U | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | 104,000 | NA | NA | 132,000 | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 1.0 U | 1.0 U | NA | 30 U | 1.0 U | 1.0 U | 2.0 U | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | 390 | 706 | NA | 60 U | 9.2 | 12.7 | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 7.0 | 8.5 | NA | 50 U | 5.0 U | 5.0 U | 51.0 | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | 20 U | NA | NA | 83.2 | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | 6.0 U | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | 12.4 | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | 200 U | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | 6.9 | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | 122,000 | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | 20,400 | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | 19,900 | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | 50 U | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | 107 | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | 100 U | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | 8.7 | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | 31,600 | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | 159 | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | 0.20 U | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | 56.1 | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | 10,000 U | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | 32.2 | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | 127,000 | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | 2.0 U | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | 50 U | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | 78.4 | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW4C-GA01-62.0<br>62<br>06/22/11<br>MW4C | MW4C-GA01-66.5<br>66.5<br>06/22/11<br>MW4C | MW4D-090903<br>0<br>09/09/03<br>MW4D | MW4D-101403<br>0<br>10/14/03<br>MW4D | MW-4D-GA01-43.0<br>43<br>06/21/11<br>MW4D | MW-4F-GA01-72.0<br>72<br>06/21/11<br>MW4F | MW-4I<br>03/13/14<br>GPS-MW4I | MW-4I (082914)<br>08/29/14<br>GPS-MW4I | MW-4I (090814)<br>09/08/14<br>GPS-MW4I | MW-4I (091214)<br>09/12/14<br>GPS-MW4I | MW-4I(090314)<br>09/03/14<br>GPS-MW4I | MW-4I-032114<br>03/21/14<br>GPS-MW4I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | 292,000 | 428,000 | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | 67.6 | 60.8 | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | 35,600 | 38,900 | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | 36.3 | 202 | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | 100,000 | 146,000 | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | 740,000 | 1,220 | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | 5,000 U | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | 62.2 | 50 U | NA | NA | 5,000 U | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | 83 | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 425 | 392 | NA | NA | 409 | 419 | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | 8.16 | 8.04 | NA | NA | 7.44 | 7.83 | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW4C-GA01-62.0<br>62<br>06/22/11<br>MW4C | MW4C-GA01-66.5<br>66.5<br>06/22/11<br>MW4C | MW4D-090903<br>0<br>09/09/03<br>MW4D | MW4D-101403<br>0<br>10/14/03<br>MW4D | MW-4D-GA01-43.0<br>43<br>06/21/11<br>MW4D | MW-4F-GA01-72.0<br>72<br>06/21/11<br>MW4F | MW-4I<br>03/13/14<br>GPS-MW4I | MW-4I (082914)<br>08/29/14<br>GPS-MW4I | MW-4I (090814)<br>09/08/14<br>GPS-MW4I | MW-4I (091214)<br>09/12/14<br>GPS-MW4I | MW-4I(090314)<br>09/03/14<br>GPS-MW4I | MW-4I-032114<br>03/21/14<br>GPS-MW4I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | 78,500 | 2,000 U | NA | NA | 136,000 | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | 2,000 U | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | 2,000 U | 2,000 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | 9,160 | 10,800 | NA | NA | 3,900 | 18,100 | 7,700 | 7,600 | 9,200 | 3,800 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | 50 U | 717 | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 1,600 | 940 | NA | NA | 520 | 950 | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 287.3 | 310.8 | NA | NA | 125.3 | 190.2 | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | 7.39 | 7.23 | NA | NA | 6.84 | 7.84 | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 17.23 | 17.75 | NA | NA | 16.3 | 16.66 | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | 7.95 | 9.3 | NA | NA | 0.05 | 4.33 | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | MW-4I-040714 | MW-4I-041514 | MW-4I-042214 | MW-4I-050114 | MW-4I-050614 | MW-4S-032114 | MW4S-090903 | MW4S-101403 | MW-4S-GA01-9.0 | MW5A-GA01-10.5 | MW5B-GA01-36.0 | MW5D-090903 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | 0 | 0 | 9 | 10.5 | 36 | 0 |
| Date Collected: | | | 04/07/14 | 04/15/14 | 04/22/14 | 05/01/14 | 05/06/14 | 03/21/14 | 09/09/03 | 10/14/03 | 06/21/11 | 06/28/11 | 06/28/11 | 09/09/03 |
| Location ID: | CAS Number | Units | GPS-MW4I | GPS-MW4I | GPS-MW4I | GPS-MW4I | GPS-MW4I | GPS-MW4S | MW4S | MW4S | MW4S | MW5A | MW5B | MW5D |
| **Volatile Organics** | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | NA | 1.0 U | NA | NA | 5 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | NA | 1.0 U | NA | NA | 5 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 1.0 U | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | NA | 1.0 U | NA | NA | 5 U |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | NA | 1.0 U | NA | NA | 5 U |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | NA | 1.0 U | NA | NA | 5 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 1.0 U | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 1.0 U | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 0.020 U | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 0.020 U | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 1.0 U | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | NA | 1.0 U | NA | NA | 5 U |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | NA | 1.0 U | NA | NA | 5 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 1.0 U | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 1.0 U | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 2.0 U | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | NA | 10 U | NA | NA | 10 U |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | NA | 10 U | NA | NA | 10 U |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | 20 U | NA | 10 U | NA | NA | 5.9 |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | NA | 1.0 U | NA | NA | 5 U |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 1.0 U | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | NA | 1.0 U | NA | NA | 5 U |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | NA | 1.0 U | NA | NA | 5 U |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | NA | 1.0 U | NA | NA | 5 U |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | NA | 1.0 U | NA | NA | 10 U |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | NA | 1.0 U | NA | NA | 5 U |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 1.0 U | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 1.0 U | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | NA | 1.0 U | NA | NA | 5 U |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | NA | 1.0 U | NA | NA | 5 U |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | NA | 1.0 U | NA | NA | 5 U |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | NA | 1.0 U | NA | NA | 5 U |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | NA | 1.0 U | NA | NA | 5 U |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | NA | 1.0 U | NA | NA | 5 U |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | NA | 1.0 U | NA | NA | 5 U |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 1.0 U | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | NA | 1.0 U | NA | NA | 5 U |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | NA | 1.0 U | NA | NA | 60 |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 1.0 U | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | 5 U | NA | 2.0 U | NA | NA | 5 U |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | NA | 10 U | NA | NA | 10 U |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 1.0 U | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 1.0 U | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | NA | 1.0 U | NA | NA | 5 U |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | NA | 1.0 U | NA | NA | 5 U |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | NA | 1.0 U | NA | NA | 5 U |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | NA | 1.0 U | NA | NA | 6.3 |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | 20 U | NA | 2.5 U | NA | NA | 77 |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | 5.0 U | NA | NA | NA | NA | 5.0 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW-4I-040714<br><br>04/07/14<br>GPS-MW4I | MW-4I-041514<br><br>04/15/14<br>GPS-MW4I | MW-4I-042214<br><br>04/22/14<br>GPS-MW4I | MW-4I-050114<br><br>05/01/14<br>GPS-MW4I | MW-4I-050614<br><br>05/06/14<br>GPS-MW4I | MW-4S-032114<br><br>03/21/14<br>GPS-MW4S | MW4S-090903<br>0<br>09/09/03<br>MW4S | MW4S-101403<br>0<br>10/14/03<br>MW4S | MW-4S-GA01-9.0<br>9<br>06/21/11<br>MW4S | MW5A-GA01-10.5<br>10.5<br>06/28/11<br>MW5A | MW5B-GA01-36.0<br>36<br>06/28/11<br>MW5B | MW5D-090903<br>0<br>09/09/03<br>MW5D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | NA | 1.0 U | NA | NA | 5 U |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | NA | 1.0 U | NA | NA | 5 U |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | NA | 1.0 U | NA | NA | 5.2 |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | NA | 1.0 U | NA | NA | 5 U |
| **Semivolatile Organics** | | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 10 U | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 10 U | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA | 9.3 U |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA | 9.3 U |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA | 9.3 U |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA | 9.3 U |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 10 U | NA | NA | 9.3 U |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 10 U | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 10 U | NA | NA | 9.3 U |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 10 U | NA | NA | 9.3 U |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 10 U | NA | NA | 9.3 U |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 10 U | NA | NA | 9.3 U |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | 47 U | NA | 30 U | NA | NA | 47 U |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA | 9.3 U |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 2.0 U | NA | NA | 9.3 U |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 10 U | NA | NA | 9.3 U |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 10 U | NA | NA | 9.3 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | 47 U | NA | 30 U | NA | NA | 47 U |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 130 | NA | NA | 9.3 U |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 10 U | NA | NA | 9.3 U |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | 47 U | NA | 20 U | NA | NA | 47 U |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 10 U | NA | NA | 9.3 U |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 20 U | NA | NA | 9.3 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | 47 U | NA | 20 U | NA | NA | 47 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 10 U | NA | NA | 9.3 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 10 U | NA | NA | 9.3 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 10 U | NA | NA | 9.3 U |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 10 U | NA | NA | 9.3 U |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | 47 U | NA | 20 U | NA | NA | 47 U |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | 47 U | NA | 30 U | NA | NA | 47 U |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 8.7 J | NA | NA | 9.3 U |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 10 U | NA | NA | 9.3 U |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 10 U | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 10 U | NA | NA | 9.3 U |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 10 U | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 10 U | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 0.050 U | NA | NA | 9.3 U |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 0.050 U | NA | NA | 9.3 U |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 0.050 U | NA | NA | 9.3 U |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 10 U | NA | NA | 9.3 U |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 1.0 U | NA | NA | 9.3 U |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA | 9.3 U |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 10 U | NA | NA | 9.3 U |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 1.0 U | NA | NA | 9.3 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 10 U | NA | NA | 9.3 U |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 10 U | NA | NA | 9.3 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW-4I-040714<br><br>04/07/14<br>GPS-MW4I | MW-4I-041514<br><br>04/15/14<br>GPS-MW4I | MW-4I-042214<br><br>04/22/14<br>GPS-MW4I | MW-4I-050114<br><br>05/01/14<br>GPS-MW4I | MW-4I-050614<br><br>05/06/14<br>GPS-MW4I | MW-4S-032114<br><br>03/21/14<br>GPS-MW4S | MW4S-090903<br>0<br>09/09/03<br>MW4S | MW4S-101403<br>0<br>10/14/03<br>MW4S | MW-4S-GA01-9.0<br>9<br>06/21/11<br>MW4S | MW5A-GA01-10.5<br>10.5<br>06/28/11<br>MW5A | MW5B-GA01-36.0<br>36<br>06/28/11<br>MW5B | MW5D-090903<br>0<br>09/09/03<br>MW5D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 10 U | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 14 | NA | NA | 9.3 U |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 10 U | NA | NA | 9.3 U |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 1.0 U | NA | NA | 9.3 U |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 10 U | NA | NA | 9.3 U |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 10 U | NA | NA | 9.3 U |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 10 U | NA | NA | 9.3 U |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 10 U | NA | NA | 9.3 U |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 2.0 U | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 10 U | NA | NA | 9.3 U |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 10 U | NA | NA | 9.3 U |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 9.2 J | NA | NA | 9.3 U |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 2.0 U | NA | NA | 9.3 U |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 0.020 U | NA | NA | 9.3 U |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 10 U | NA | NA | 9.3 U |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 1.0 U | NA | NA | 9.3 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 1.0 U | NA | NA | 9.3 U |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 10 U | NA | NA | 9.3 U |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 74 | NA | NA | 9.3 U |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 1.0 U | NA | NA | 9.3 U |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA | 9.3 U |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 1.0 U | NA | NA | 9.3 U |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 10 U | NA | NA | 9.3 U |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 10 U | NA | NA | 9.3 U |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | 47 U | NA | 0.20 U | NA | NA | 47 U |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 11 | NA | NA | 9.3 U |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 10 U | NA | NA | 9.3 U |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | 10 U | NA | NA | 9.3 U |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | 47 U | NA | 250 | NA | NA | 47 U |
| **Metals** | | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 415 | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | 60 U | 2.5 U | 4.1 | 25.0 U | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 20 U | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 500 U | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | 370 | NA | NA | 11.3 | 18.9 | 46,000 | 459,000 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | 140 | NA | NA | R | 3.1 J | 36,100 | 706,000 | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 50 U | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 20 U | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | 184 | NA | NA | 951 | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 50 U | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 500 U | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | 4,500 | NA | NA | 38.6 | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW-4I-040714<br><br>04/07/14<br>GPS-MW4I | MW-4I-041514<br><br>04/15/14<br>GPS-MW4I | MW-4I-042214<br><br>04/22/14<br>GPS-MW4I | MW-4I-050114<br><br>05/01/14<br>GPS-MW4I | MW-4I-050614<br><br>05/06/14<br>GPS-MW4I | MW-4S-032114<br><br>03/21/14<br>GPS-MW4S | MW4S-090903<br>0<br>09/09/03<br>MW4S | MW4S-101403<br>0<br>10/14/03<br>MW4S | MW-4S-GA01-9.0<br>9<br>06/21/11<br>MW4S | MW5A-GA01-10.5<br>10.5<br>06/28/11<br>MW5A | MW5B-GA01-36.0<br>36<br>06/28/11<br>MW5B | MW5D-090903<br>0<br>09/09/03<br>MW5D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.2 U | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | 40 U | 4.4 J | 246 | 50.0 U | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 4,760 | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 19,000 | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U | 1.0 U | 1.0 U | 10.0 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | 11.3 | 36.8 | 47,300 | 459,000 | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 50 U | 13.5 | 1,060 | 50.0 U | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 20 U | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | 420 | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | 230 | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | 122 | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | 4,510 | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW-4I-040714<br><br>04/07/14<br>GPS-MW4I | MW-4I-041514<br><br>04/15/14<br>GPS-MW4I | MW-4I-042214<br><br>04/22/14<br>GPS-MW4I | MW-4I-050114<br><br>05/01/14<br>GPS-MW4I | MW-4I-050614<br><br>05/06/14<br>GPS-MW4I | MW-4S-032114<br><br>03/21/14<br>GPS-MW4S | MW4S-090903<br>0<br>09/09/03<br>MW4S | MW4S-101403<br>0<br>10/14/03<br>MW4S | MW-4S-GA01-9.0<br>9<br>06/21/11<br>MW4S | MW5A-GA01-10.5<br>10.5<br>06/28/11<br>MW5A | MW5B-GA01-36.0<br>36<br>06/28/11<br>MW5B | MW5D-090903<br>0<br>09/09/03<br>MW5D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | 230,000 | 216,000 | NA | NA | NA | 2,000 U |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | 70.9 | 52.2 | NA | NA | NA | 71.5 |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | 4,910 | 5,060 | NA | NA | NA | 8,000 U |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 117 | NA | NA | NA | 10 U |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | 100,000 | 106,000 | NA | NA | NA | 100,000 |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | 396,000 | 845 | NA | NA | NA | 10,000,000 |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | 100 U | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | 110 U | NA | 50 U | 50 U | NA | NA | NA | 50 U |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | 425 | 199 | 360 | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | 7.63 | 12.4 | 7.45 | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW-4I-040714<br><br>04/07/14<br>GPS-MW4I | MW-4I-041514<br><br>04/15/14<br>GPS-MW4I | MW-4I-042214<br><br>04/22/14<br>GPS-MW4I | MW-4I-050114<br><br>05/01/14<br>GPS-MW4I | MW-4I-050614<br><br>05/06/14<br>GPS-MW4I | MW-4S-032114<br><br>03/21/14<br>GPS-MW4S | MW4S-090903<br>0<br>09/09/03<br>MW4S | MW4S-101403<br>0<br>10/14/03<br>MW4S | MW-4S-GA01-9.0<br>9<br>06/21/11<br>MW4S | MW5A-GA01-10.5<br>10.5<br>06/28/11<br>MW5A | MW5B-GA01-36.0<br>36<br>06/28/11<br>MW5B | MW5D-090903<br>0<br>09/09/03<br>MW5D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | 152,000 | NA | 57,800 | 45,800 | NA | NA | NA | 8,000 U |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | 2,000 U | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | 2,000 U | 2,000 U | NA | NA | NA | 2,000 U |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 5,500 | 11,100 | 16,200 | 9,200 | 9,400 | 3,890,000 | 5,020 | 4,130 | NA | NA | NA | 2,400 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | 76.7 | 50.5 | NA | NA | NA | 50 U |
| **FIELD** | | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 1,220 | 250 | 410 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | 280.2 | 280 | 415.3 | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | 7.16 | 11.58 | 6.5 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | 23.74 | 22.93 | 19.62 | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | 7.5 | 348.1 | 8.06 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | MW5D-101403 | MW5D-GA01-63.5 | MW5D-GA01-68.5 | MW-5S (082914) | MW-5S (090814) | MW-5S (091214) | MW-5S(090314) | MW-5S-031314 | MW-5S-040314 | MW-5S-040714 | MW-5S-041514 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 0 | 63.5 | 68.5 | | | | | | | | |
| Date Collected: | | | 10/14/03 | 06/23/11 | 06/23/11 | 08/29/14 | 09/08/14 | 09/12/14 | 09/03/14 | 03/13/14 | 04/03/14 | 04/07/14 | 04/15/14 |
| Location ID: | CAS Number | Units | MW5D | MW5D | MW5D | GPS-MW5S | GPS-MW5S | GPS-MW5S | GPS-MW5S | GPS-MW5S | GPS-MW5S | GPS-MW5S | GPS-MW5S |
| **Volatile Organics** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW5D-101403<br>0<br>10/14/03<br>MW5D | MW5D-GA01-63.5<br>63.5<br>06/23/11<br>MW5D | MW5D-GA01-68.5<br>68.5<br>06/23/11<br>MW5D | MW-5S (082914)<br><br>08/29/14<br>GPS-MW5S | MW-5S (090814)<br><br>09/08/14<br>GPS-MW5S | MW-5S (091214)<br><br>09/12/14<br>GPS-MW5S | MW-5S(090314)<br><br>09/03/14<br>GPS-MW5S | MW-5S-031314<br><br>03/13/14<br>GPS-MW5S | MW-5S-040314<br><br>04/03/14<br>GPS-MW5S | MW-5S-040714<br><br>04/07/14<br>GPS-MW5S | MW-5S-041514<br><br>04/15/14<br>GPS-MW5S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW5D-101403<br>0<br>10/14/03<br>MW5D | MW5D-GA01-63.5<br>63.5<br>06/23/11<br>MW5D | MW5D-GA01-68.5<br>68.5<br>06/23/11<br>MW5D | MW-5S (082914)<br><br>08/29/14<br>GPS-MW5S | MW-5S (090814)<br><br>09/08/14<br>GPS-MW5S | MW-5S (091214)<br><br>09/12/14<br>GPS-MW5S | MW-5S(090314)<br><br>09/03/14<br>GPS-MW5S | MW-5S-031314<br><br>03/13/14<br>GPS-MW5S | MW-5S-040314<br><br>04/03/14<br>GPS-MW5S | MW-5S-040714<br><br>04/07/14<br>GPS-MW5S | MW-5S-041514<br><br>04/15/14<br>GPS-MW5S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 4,120 [3,620] | NA | NA | NA | NA | NA | NA | 3,100 | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 60 U [60 U] | 2.5 U | 2.5 U | NA | NA | NA | NA | 6.0 U | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | 21.2 [22.6] | NA | NA | NA | NA | NA | NA | 11.3 | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | 20 U [99.6] | NA | NA | NA | NA | NA | NA | 200 U | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | 5 U [5 U] | NA | NA | NA | NA | NA | NA | 1.0 U | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 5 U [5 U] | NA | NA | NA | NA | NA | NA | 3.0 U | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | 86,900 [86,400] | NA | NA | NA | NA | NA | NA | 53,400 | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 11.2 [10.4] | 5.0 U | 5.0 U | NA | NA | NA | NA | 607 | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 UJ [10 UJ] | 10.0 U | 10.0 U | NA | NA | NA | NA | 280 | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 50 U [50 U] | NA | NA | NA | NA | NA | NA | 50 U | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | 20 U [20 U] | NA | NA | NA | NA | NA | NA | 10 U | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 3,380 [2,990] | NA | NA | NA | NA | NA | NA | 100 U | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | 50 U [50 U] | NA | NA | NA | NA | NA | NA | 3.0 U | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | 500 U [500 U] | NA | NA | NA | NA | NA | NA | 5,000 U | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 510 [492] | NA | NA | NA | NA | NA | NA | 15 U | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | MW5D-101403 | MW5D-GA01-63.5 | MW5D-GA01-68.5 | MW-5S (082914) | MW-5S (090814) | MW-5S (091214) | MW-5S(090314) | MW-5S-031314 | MW-5S-040314 | MW-5S-040714 | MW-5S-041514 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 0 | 63.5 | 68.5 | | | | | | | | |
| Date Collected: | | | 10/14/03 | 06/23/11 | 06/23/11 | 08/29/14 | 09/08/14 | 09/12/14 | 09/03/14 | 03/13/14 | 04/03/14 | 04/07/14 | 04/15/14 |
| Location ID: | CAS Number | Units | MW5D | MW5D | MW5D | GPS-MW5S | GPS-MW5S | GPS-MW5S | GPS-MW5S | GPS-MW5S | GPS-MW5S | GPS-MW5S | GPS-MW5S |
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.2 U [0.2 U] | NA | NA | NA | NA | NA | NA | 0.20 U | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 40 U [40 U] | 5.0 U | 16.2 | NA | NA | NA | NA | 151 | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 2,000 U [2,000 U] | NA | NA | NA | NA | NA | NA | 41,700 | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | 5 U [5 U] | NA | NA | NA | NA | NA | NA | 10 U | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | 10 U [10 U] | NA | NA | NA | NA | NA | NA | 10 U | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | 205,000 [205,000] | NA | NA | NA | NA | NA | NA | 412,000 | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 10 U [10 U] | 1.0 U | 1.0 U | NA | NA | NA | NA | 2.0 U | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | 11.2 [10.4] | 4.1 U | 16.2 | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 50 U [50 U] | 5.0 U | 5.0 U | NA | NA | NA | NA | 85.5 | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | 20.1 [20 U] | NA | NA | NA | NA | NA | NA | 20 U | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 3,160 | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | 6.0 U | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 9.9 | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 200 U | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 3.0 U | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 52,900 | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 719 | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 260 | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 50 U | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 100 U | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 3.0 U | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5,000 U | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 15 U | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.20 U | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | 142 | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 42,800 | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 420,000 | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 U | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 84.1 | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 20 U | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW5D-101403<br>0<br>10/14/03<br>MW5D | MW5D-GA01-63.5<br>63.5<br>06/23/11<br>MW5D | MW5D-GA01-68.5<br>68.5<br>06/23/11<br>MW5D | MW-5S (082914)<br><br>08/29/14<br>GPS-MW5S | MW-5S (090814)<br><br>09/08/14<br>GPS-MW5S | MW-5S (091214)<br><br>09/12/14<br>GPS-MW5S | MW-5S(090314)<br><br>09/03/14<br>GPS-MW5S | MW-5S-031314<br><br>03/13/14<br>GPS-MW5S | MW-5S-040314<br><br>04/03/14<br>GPS-MW5S | MW-5S-040714<br><br>04/07/14<br>GPS-MW5S | MW-5S-041514<br><br>04/15/14<br>GPS-MW5S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | 2,000 U [2,000 U] | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | 66.6 [73.4] | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | 8,000 U [8,000 U] | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | 10 U [10 U] [10 U] | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | 100,000 [100,000] | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | 3,380 [2,990] | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | 5,000 U | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | 50 U [50 U] | NA | NA | NA | NA | NA | NA | 5,100 U | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | 520 | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 422 | 422 | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | 7.99 | 7.98 | NA | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | MW5D-101403 | MW5D-GA01-63.5 | MW5D-GA01-68.5 | MW-5S (082914) | MW-5S (090814) | MW-5S (091214) | MW-5S(090314) | MW-5S-031314 | MW-5S-040314 | MW-5S-040714 | MW-5S-041514 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 0 | 63.5 | 68.5 | | | | | | | | |
| Date Collected: | | | 10/14/03 | 06/23/11 | 06/23/11 | 08/29/14 | 09/08/14 | 09/12/14 | 09/03/14 | 03/13/14 | 04/03/14 | 04/07/14 | 04/15/14 |
| Location ID: | CAS Number | Units | MW5D | MW5D | MW5D | GPS-MW5S | GPS-MW5S | GPS-MW5S | GPS-MW5S | GPS-MW5S | GPS-MW5S | GPS-MW5S | GPS-MW5S |
| Sulfate | 14808-79-8 | ug/L | 8,000 U [8,000 U] | NA | NA | NA | NA | NA | NA | 201,000 | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2,000 U | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | 2,000 U [2,000 U] | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 2,310 [1,830] | NA | NA | 235,000 | 153,000 | 225,000 | 22,400 | 42,900 | 32,200 | 50,800 | 46,300 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | 50 U [50 U] | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 15,870 | 12,930 | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 173.5 | 143.2 | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | 7.99 | 7.77 | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 17.11 | 16.21 | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | 1.01 | 4.1 | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | MW-5S-042214 | MW-5S-050114 | MW-5S-050614 | MW5S-090903 | MW5S-101403 | MW5S-GA01-4.5 | MW5S-GA01-9.5 | MW6C-03312015 | MW-6C-10092014 | MW-6C-20150924 | MW6C-20151218-57.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | 0 | 0 | 4.5 | 9.5 | | | | |
| Date Collected: | | | 04/22/14 | 05/01/14 | 05/06/14 | 09/09/03 | 10/14/03 | 06/23/11 | 06/23/11 | 03/31/15 | 10/09/14 | 09/24/15 | 12/18/15 |
| Location ID: | CAS Number | Units | GPS-MW5S | GPS-MW5S | GPS-MW5S | MW5S | MW5S | MW5S | MW5S | MW6C | MW6C | MW6C | MW6C |
| **Volatile Organics** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | 100 U | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | 100 U | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | 100 U | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | 100 U | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | 100 U | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | 100 U | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | 100 U | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | 200 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | 200 U | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | 400 U | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | 2,600 | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | 100 U | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | 100 U | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | 100 U | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | 200 U | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | 100 U | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | 100 U | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | 100 U | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | 100 U | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | 100 U | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | 100 U | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | 100 U | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | 100 U | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | 100 U | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | 1,700 | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | 1,400 | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | 200 U | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | 1,400 | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | 100 U | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | 100 U | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | 570 | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | 7,700 | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | 2,800 | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW-5S-042214<br><br>04/22/14<br>GPS-MW5S | MW-5S-050114<br><br>05/01/14<br>GPS-MW5S | MW-5S-050614<br><br>05/06/14<br>GPS-MW5S | MW5S-090903<br>0<br>09/09/03<br>MW5S | MW5S-101403<br>0<br>10/14/03<br>MW5S | MW5S-GA01-4.5<br>4.5<br>06/23/11<br>MW5S | MW5S-GA01-9.5<br>9.5<br>06/23/11<br>MW5S | MW6C-03312015<br><br>03/31/15<br>MW6C | MW-6C-10092014<br><br>10/09/14<br>MW6C | MW-6C-20150924<br><br>09/24/15<br>MW6C | MW6C-20151218-57.0<br><br>12/18/15<br>MW6C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | 100 U | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | 100 U | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | 100 U | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | 100 U | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | 470 U | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | 470 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | 470 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | 470 U | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | 470 U | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | 470 U | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW-5S-042214<br><br>04/22/14<br>GPS-MW5S | MW-5S-050114<br><br>05/01/14<br>GPS-MW5S | MW-5S-050614<br><br>05/06/14<br>GPS-MW5S | MW5S-090903<br>0<br>09/09/03<br>MW5S | MW5S-101403<br>0<br>10/14/03<br>MW5S | MW5S-GA01-4.5<br>4.5<br>06/23/11<br>MW5S | MW5S-GA01-9.5<br>9.5<br>06/23/11<br>MW5S | MW6C-03312015<br><br>03/31/15<br>MW6C | MW-6C-10092014<br><br>10/09/14<br>MW6C | MW-6C-20150924<br><br>09/24/15<br>MW6C | MW6C-20151218-57.0<br><br>12/18/15<br>MW6C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | 470 U | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | 93 U | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | 470 U | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | 3,860 | NA | NA | NA | 161 J | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | 60 U | 2.5 U | 2.5 U | NA | 6.0 U | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | 62.3 | NA | NA | NA | 3.0 U | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | 43.6 | NA | NA | NA | 59.0 J | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | 5 U | NA | NA | NA | 1.0 U | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | 5 U | NA | NA | NA | 3.0 | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | 5,980 | NA | NA | NA | 104,000 | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 171 | NA | 523 | 204 | 150 | 8,440 J | 8,100 J | 2,090 J | 6,130 J |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 76 | 10 U | 10 U | 10.0 U | 10.0 U | 6,200 J | 8,500 J | 2,100 RA | 8,200 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | 50 U | NA | NA | NA | 16.5 J | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | 41.7 | NA | NA | NA | 91.1 | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 707 | NA | 3,870 | NA | NA | NA | 157 | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | 50 U | NA | NA | NA | 6.6 | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | 500 U | NA | NA | NA | 29,500 | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | 16.2 | NA | 66.9 | NA | NA | NA | 266 | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | MW-5S-042214 04/22/14 GPS-MW5S | MW-5S-050114 05/01/14 GPS-MW5S | MW-5S-050614 05/06/14 GPS-MW5S | MW5S-090903 0 09/09/03 MW5S | MW5S-101403 0 10/14/03 MW5S | MW5S-GA01-4.5 4.5 06/23/11 MW5S | MW5S-GA01-9.5 9.5 06/23/11 MW5S | MW6C-03312015 03/31/15 MW6C | MW-6C-10092014 10/09/14 MW6C | MW-6C-20150924 09/24/15 MW6C | MW6C-20151218-57.0 12/18/15 MW6C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | 0.32 | NA | NA | NA | 0.20 U | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | 40 U | 13.2 | 15.7 | NA | 62.6 | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | 2,000 U | NA | NA | NA | 8,850 J | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | 5 U | NA | NA | NA | 10 U | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | 10 U | NA | NA | NA | 1.2 J | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | 241,000 | NA | NA | NA | 131,000 | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 30,200 | 44,900 | 35,300 | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | 10 U | 1.0 U | 1.0 U | NA | 2.0 U | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | 1,090 | 409 | 478 | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | 571 | 192 | 312 | NA | 9.4 J | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | 220 | NA | NA | NA | 42.9 JB | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 443 | NA | NA | NA | NA | 6,410 J | 5,450 J | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 180 | NA | NA | NA | NA | 6,600 J | 6,600 J | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 100 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | 15 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | MW-5S-042214 04/22/14 GPS-MW5S | MW-5S-050114 05/01/14 GPS-MW5S | MW-5S-050614 05/06/14 GPS-MW5S | MW5S-090903 0 09/09/03 MW5S | MW5S-101403 0 10/14/03 MW5S | MW5S-GA01-4.5 4.5 06/23/11 MW5S | MW5S-GA01-9.5 9.5 06/23/11 MW5S | MW6C-03312015 03/31/15 MW6C | MW-6C-10092014 10/09/14 MW6C | MW-6C-20150924 09/24/15 MW6C | MW6C-20151218-57.0 12/18/15 MW6C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | 510,000 | 505,000 | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | 8,900 | 8,870 | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | 23,400 | 23,000 | NA | NA | NA | 172,000 | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | 97.6 | 10 U | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | 904,000 | 485,000 | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2,000 U | NA | 2,000 U | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | 10,400,000 | 3,380 | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | 100 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | 110 U | 50 U | 50 U | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | 427 | 402 | 278 | 228 | 256 | 323 |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | 8.27 | 8.91 | 6.97 | 7.57 | 7.27 | 7.01 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | 1,030 | NA | 731 | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | MW-5S-042214 04/22/14 GPS-MW5S | MW-5S-050114 05/01/14 GPS-MW5S | MW-5S-050614 05/06/14 GPS-MW5S | MW5S-090903 0 09/09/03 MW5S | MW5S-101403 0 10/14/03 MW5S | MW5S-GA01-4.5 4.5 06/23/11 MW5S | MW5S-GA01-9.5 9.5 06/23/11 MW5S | MW6C-03312015 03/31/15 MW6C | MW-6C-10092014 10/09/14 MW6C | MW-6C-20150924 09/24/15 MW6C | MW6C-20151218-57.0 12/18/15 MW6C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | 38,600 | 2,000 U | 2,000 U | NA | NA | 98,200 | 131,000 | 88,800 | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | 2,000 U | NA | NA | NA | NA | 2,000 U | 2,000 U | 2,000 U | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | 2,500 | 2,900 | NA | NA | 3,000 UJ | NA | 3,000 UJ | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | 13.99 | NA | 19.8 | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 53,000 | 2,400 | 15,000 | 25,200 | 24,000 | NA | NA | NA | NA | NA | 2,200 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | 11,800 | 11,200 | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | 120 | 130 | 1,330 | 3,570 | NA | 5,470 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | 187 | 129 | 157 | 103.2 | NA | 217 |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | 8.32 | 5.58 | 7.31 | 7.5 | NA | 7.13 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0 |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | 1.73 | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | 18.05 | 15.91 | 13.9 | 17.95 | NA | 17.26 |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | 3.09 | 4 | 6.29 | 9.39 | NA | 5.85 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | MW6C-20151218-60.0 | MW-6C-F-20150924 | MW6C-F-20151218-57.0 | MW-6D | MW-6D 022012 | MW6D-090903 | MW6D-101303 | MW-6D-GA01-42.5 | MW-6D-GA01-46.0 | MW-6S | MW-6S (082914) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | 44.75 | 44.5 | | | 42.5 | 46 | 12.45 | |
| Date Collected: | | | 12/18/15 | 09/24/15 | 12/18/15 | 01/05/12 | 02/20/12 | 09/09/03 | 10/13/03 | 06/21/11 | 06/21/11 | 01/05/12 | 08/29/14 |
| Location ID: | CAS Number | Units | MW6C | MW6C | MW6C | MW6D | MW6D | MW6D | MW6D | MW6D | MW6D | MW6S | GPS-MW6S |
| **Volatile Organics** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | 25 U | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | 25 U | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | 25 U | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | 6 | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | 5.2 | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | 25 U | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | 25 U | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | 50 U | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | 50 U | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | 100 U | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | 25 U | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | 25 U | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | 25 U | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | 25 U | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | 50 U | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | 25 U | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | 25 U | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | 25 U | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | 25 U | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | 25 U | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | 25 U | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | 520 | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | 25 U | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | 25 U | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | 25 U | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | 25 U | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | 50 U | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | 25 U | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | 25 U | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | 25 U | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | 25 U | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | 620 | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | 25 U | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW6C-20151218-60.0<br><br>12/18/15<br>MW6C | MW-6C-F-20150924<br><br>09/24/15<br>MW6C | MW6C-F-20151218-57.0<br><br>12/18/15<br>MW6C | MW-6D<br>44.75<br>01/05/12<br>MW6D | MW-6D 022012<br>44.5<br>02/20/12<br>MW6D | MW6D-090903<br><br>09/09/03<br>MW6D | MW6D-101303<br><br>10/13/03<br>MW6D | MW-6D-GA01-42.5<br>42.5<br>06/21/11<br>MW6D | MW-6D-GA01-46.0<br>46<br>06/21/11<br>MW6D | MW-6S<br>12.45<br>01/05/12<br>MW6S | MW-6S (082914)<br><br>08/29/14<br>GPS-MW6S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | 25 U | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | 25 U | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | 81 | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | 9 | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | 40 | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | 6.8 J | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | 47 U | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | 47 U | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | 47 U | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | 47 U | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | 47 U | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | 47 U | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | 1.8 J | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | 47 U | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | 9.3 U | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | 49 | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | 588 | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | 60 U | 2.5 U [2.5 U] | 2.5 U | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | 11.5 | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | 43.4 | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | 56,800 | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 5,680 | NA | NA | 13.3 | 31.9 | NA | 10 U | 5.0 [4.4 J] | 5.0 U | 5.0 U | NA |
| Chromium VI | 18540-29-9 | ug/L | 5,300 J | NA | NA | 10.0 U | 10 U | NA | R | 10.0 U [10 U] | 10.0 U | 10.0 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | 50 U | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | 20 U | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | 654 | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | 50 U | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | 500 U | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | 133 | NA | NA | NA | NA |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | 0.2 U | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | 40 U | 60.0 [60] | 61.9 | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | 49,500 | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | 5 U | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | 44,300 | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | 1.0 U [1 U] | 1.0 U | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | 13.3 | 31.9 | NA | 60 U | 69.7 [69.3] | 67.4 | 3.9 U | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | 50 U | 4.7 J [4.9 J] | 5.5 | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | 20 U | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 2,070 J | 6,560 J | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 1,800 RA | 6,100 J | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | 40,100 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW6C-20151218-60.0<br><br>12/18/15<br>MW6C | MW-6C-F-20150924<br><br>09/24/15<br>MW6C | MW6C-F-20151218-57.0<br><br>12/18/15<br>MW6C | MW-6D<br>44.75<br>01/05/12<br>MW6D | MW-6D 022012<br>44.5<br>02/20/12<br>MW6D | MW6D-090903<br><br>09/09/03<br>MW6D | MW6D-101303<br><br>10/13/03<br>MW6D | MW-6D-GA01-42.5<br>42.5<br>06/21/11<br>MW6D | MW-6D-GA01-46.0<br>46<br>06/21/11<br>MW6D | MW-6S<br>12.45<br>01/05/12<br>MW6S | MW-6S (082914)<br><br>08/29/14<br>GPS-MW6S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | 2,000 U | 98,700 | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | 50 U | 50 U | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | 35,000 | 38,200 | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | 10 U | 10 U | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | 100,000 | 100,000 | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | 1,230,000 | 654 | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | 50 U | 50 U | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 321 | 265 | 350 | 443 | 288 | NA | NA | 440 [446] | 443 | 465 | NA |
| pH | ARC-pH | SU | 7.09 | 7.33 | 7.09 | 8.17 | 7.57 | NA | NA | 8.06 [7.87] | 7.84 | 6.90 | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW6C-20151218-60.0<br><br>12/18/15<br>MW6C | MW-6C-F-20150924<br><br>09/24/15<br>MW6C | MW6C-F-20151218-57.0<br><br>12/18/15<br>MW6C | MW-6D<br>44.75<br>01/05/12<br>MW6D | MW-6D 022012<br>44.5<br>02/20/12<br>MW6D | MW6D-090903<br><br>09/09/03<br>MW6D | MW6D-101303<br><br>10/13/03<br>MW6D | MW-6D-GA01-42.5<br>42.5<br>06/21/11<br>MW6D | MW-6D-GA01-46.0<br>46<br>06/21/11<br>MW6D | MW-6S<br>12.45<br>01/05/12<br>MW6S | MW-6S (082914)<br><br>08/29/14<br>GPS-MW6S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 85,000 | NA | NA | NA | 8,000 U | 4,000 U | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | 2,000 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | 3,000 UJ | NA | NA | NA | 2,000 U | 2,000 U | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | 4,380 | 2,180 | NA | NA | NA | 158,000 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | 50 U | 50 U | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | 2,790 | 4,350 | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | 99.1 | 74.2 | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | 7 | 7.19 | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | 16.58 | 17.94 | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | 1.82 | 4.83 | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | MW-6S (090814) 09/08/14 GPS-MW6S | MW-6S (091214) 09/12/14 GPS-MW6S | MW-6S 022012 12 02/20/12 MW6S | MW-6S(090314) 09/03/14 GPS-MW6S | MW-6S-031314 03/13/14 GPS-MW6S | MW-6S-032114 03/21/14 GPS-MW6S | MW-6S-040714 04/07/14 GPS-MW6S | MW-6S-041514 04/15/14 GPS-MW6S | MW-6S-042214 04/22/14 GPS-MW6S | MW-6S-050114 05/01/14 GPS-MW6S | MW-6S-050714 05/07/14 GPS-MW6S | MW6S-090903 09/09/03 MW6S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 10 U |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 7.1 |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 69 |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 7.8 |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 90 |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5.0 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW-6S (090814)<br><br>09/08/14<br>GPS-MW6S | MW-6S (091214)<br><br>09/12/14<br>GPS-MW6S | MW-6S 022012<br>12<br>02/20/12<br>MW6S | MW-6S(090314)<br><br>09/03/14<br>GPS-MW6S | MW-6S-031314<br><br>03/13/14<br>GPS-MW6S | MW-6S-032114<br><br>03/21/14<br>GPS-MW6S | MW-6S-040714<br><br>04/07/14<br>GPS-MW6S | MW-6S-041514<br><br>04/15/14<br>GPS-MW6S | MW-6S-042214<br><br>04/22/14<br>GPS-MW6S | MW-6S-050114<br><br>05/01/14<br>GPS-MW6S | MW-6S-050714<br><br>05/07/14<br>GPS-MW6S | MW6S-090903<br><br>09/09/03<br>MW6S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5.9 |
| **Semivolatile Organics** | | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 200 |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 73 |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 98 U |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 98 U |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 98 U |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 98 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 98 U |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 98 U |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.5 |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW-6S (090814)<br><br>09/08/14<br>GPS-MW6S | MW-6S (091214)<br><br>09/12/14<br>GPS-MW6S | MW-6S 022012<br>12<br>02/20/12<br>MW6S | MW-6S(090314)<br><br>09/03/14<br>GPS-MW6S | MW-6S-031314<br><br>03/13/14<br>GPS-MW6S | MW-6S-032114<br><br>03/21/14<br>GPS-MW6S | MW-6S-040714<br><br>04/07/14<br>GPS-MW6S | MW-6S-041514<br><br>04/15/14<br>GPS-MW6S | MW-6S-042214<br><br>04/22/14<br>GPS-MW6S | MW-6S-050114<br><br>05/01/14<br>GPS-MW6S | MW-6S-050714<br><br>05/07/14<br>GPS-MW6S | MW6S-090903<br><br>09/09/03<br>MW6S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 98 U |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 280 |
| **Metals** | | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | 4,660 | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | 6.0 U | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | 6.0 U | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | 200 U | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | 3.0 U | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | 236,000 | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 5.5 | NA | 36.5 | NA | NA | NA | NA | NA | 42.3 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 10 U | NA | 10 U | NA | NA | NA | NA | NA | 18 | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | 16.1 | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | 7,410 | NA | NA | NA | NA | NA | 9,170 | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | 6.1 | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | 5,000 U | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | 70.9 | NA | NA | NA | NA | NA | 106 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW-6S (090814)<br><br>09/08/14<br>GPS-MW6S | MW-6S (091214)<br><br>09/12/14<br>GPS-MW6S | MW-6S 022012<br>12<br>02/20/12<br>MW6S | MW-6S(090314)<br><br>09/03/14<br>GPS-MW6S | MW-6S-031314<br><br>03/13/14<br>GPS-MW6S | MW-6S-032114<br><br>03/21/14<br>GPS-MW6S | MW-6S-040714<br><br>04/07/14<br>GPS-MW6S | MW-6S-041514<br><br>04/15/14<br>GPS-MW6S | MW-6S-042214<br><br>04/22/14<br>GPS-MW6S | MW-6S-050114<br><br>05/01/14<br>GPS-MW6S | MW-6S-050714<br><br>05/07/14<br>GPS-MW6S | MW6S-090903<br><br>09/09/03<br>MW6S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | 0.20 U | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | 27.5 | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | 40,300 | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | 229,000 | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | 4.0 U | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | 5.5 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | 47.5 | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | 200 U | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | 6.0 U | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | 3.5 | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | 200 U | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | 3.0 U | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | 229,000 | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | 10 U | NA | NA | NA | NA | NA | 10 U | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | 10 U | NA | NA | NA | NA | NA | 10 U | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | 100 U | NA | NA | NA | NA | NA | 100 U | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | 3.0 U | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | 5,000 U | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | 15 U | NA | NA | NA | NA | NA | 16.1 | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | 0.20 U | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | 40,700 | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | 282,000 | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | 20 U | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW-6S (090814)<br><br>09/08/14<br>GPS-MW6S | MW-6S (091214)<br><br>09/12/14<br>GPS-MW6S | MW-6S 022012<br>12<br>02/20/12<br>MW6S | MW-6S(090314)<br><br>09/03/14<br>GPS-MW6S | MW-6S-031314<br><br>03/13/14<br>GPS-MW6S | MW-6S-032114<br><br>03/21/14<br>GPS-MW6S | MW-6S-040714<br><br>04/07/14<br>GPS-MW6S | MW-6S-041514<br><br>04/15/14<br>GPS-MW6S | MW-6S-042214<br><br>04/22/14<br>GPS-MW6S | MW-6S-050114<br><br>05/01/14<br>GPS-MW6S | MW-6S-050714<br><br>05/07/14<br>GPS-MW6S | MW6S-090903<br><br>09/09/03<br>MW6S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 220,000 |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 50 U |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 99,800 |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 130 |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 116,000 |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 6,300,000 |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | 5,000 U | NA | NA | NA | NA | NA | 770 | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | 5,500 U | NA | NA | NA | NA | NA | 760 | 50 U |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | 2,200 | NA | NA | NA | NA | NA | 14 | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 294 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | 6.56 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW-6S (090814)<br><br>09/08/14<br>GPS-MW6S | MW-6S (091214)<br><br>09/12/14<br>GPS-MW6S | MW-6S 022012<br>12<br>02/20/12<br>MW6S | MW-6S(090314)<br><br>09/03/14<br>GPS-MW6S | MW-6S-031314<br><br>03/13/14<br>GPS-MW6S | MW-6S-032114<br><br>03/21/14<br>GPS-MW6S | MW-6S-040714<br><br>04/07/14<br>GPS-MW6S | MW-6S-041514<br><br>04/15/14<br>GPS-MW6S | MW-6S-042214<br><br>04/22/14<br>GPS-MW6S | MW-6S-050114<br><br>05/01/14<br>GPS-MW6S | MW-6S-050714<br><br>05/07/14<br>GPS-MW6S | MW6S-090903<br><br>09/09/03<br>MW6S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | 275,000 | NA | NA | NA | NA | NA | 189,000 | 83,700 |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | 2,000 U | NA | NA | NA | NA | NA | 2,000 U | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 2,000 U |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 19,600 | 51,600 | NA | 37,300 | 7,500 | 11,900 | 13,900 | 10,200 | 7,500 | 18,000 | 3,600 | 7,200 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 83.3 |
| **FIELD** | | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | MW6S-101303 | MW7B-GA01-28.0 | MW7C-GA01-47.5 | MW7D-40.5-20150930 | MW7D-0412 | MW7D-45.5-20150930 | MW7D-20151217-41.0 | MW7D-20151217-43.0 | MW7D-F-20151217-43.0 | MW-7S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | 28 | 47.5 | 40.5 | 45.15 | 45.5 | | | | |
| Date Collected: | | | 10/13/03 | 06/29/11 | 06/29/11 | 09/30/15 | 04/03/12 | 09/30/15 | 12/17/15 | 12/17/15 | 12/17/15 | 03/12/14 |
| Location ID: | CAS Number | Units | MW6S | MW7B | MW7C | MW7D | MW7D | MW7D | MW7D | MW7D | MW7D | GPS-MW7S |
| **Volatile Organics** | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | 1.0 U | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | 1.0 U | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | 5.0 U | NA | 5.0 U [5 U] | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | 1.0 U | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | 1.0 U | NA | 0.29 J [0.21 J] | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | 1.0 U | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | 1.0 U | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | 1.0 U | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | 2.0 U | NA | 2.0 U [2 U] | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | 1.0 U | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | 0.39 J | NA | 0.42 J [0.35 J] | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | 0.93 J | NA | 1.3 [1] | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | 1.0 U | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | 1.0 U | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | 0.30 J | NA | 0.28 J [1 U] | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | 10 U | NA | 10 U [10 U] | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | 5.0 U | NA | 5.0 U [5 U] | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | 10 U | NA | 10 U [10 U] | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | 0.48 J | NA | 0.52 [0.42 J] | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | 1.0 U | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | 1.0 U | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | 1.0 U | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | 2.0 U | NA | 2.0 U [2 U] | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | 2.0 U | NA | 2.0 U [2 U] | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | 1.0 U | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | 2.0 U | NA | 2.0 U [2 U] | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | 2.0 U | NA | 2.0 U [2 U] | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | 0.21 J | NA | 0.27 J [1 U] | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | 1.0 U | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | 1.0 U | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | 1.0 U | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | 1.0 U | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | 1.4 | NA | 1.8 [1.5] | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | 1.0 U | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | 5.0 U | NA | 5.0 U [5 U] | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | 2.0 U | NA | 2.0 U [2 U] | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | 1.0 U | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | 1.0 U | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | 1.0 U | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | 5.0 U | NA | 5.0 U [5 U] | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | 5.0 U | NA | 5.0 U [5 U] | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | 5.0 U | NA | 5.0 U [5 U] | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | 6.1 | NA | 7.3 [5.7] | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | 1.0 U | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | 1.0 U | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | 1.0 U | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | 1.0 U | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | 1.0 U | NA | 1.0 U [1 U] | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW6S-101303<br><br>10/13/03<br>MW6S | MW7B-GA01-28.0<br>28<br>06/29/11<br>MW7B | MW7C-GA01-47.5<br>47.5<br>06/29/11<br>MW7C | MW7D-40.5-20150930<br>40.5<br>09/30/15<br>MW7D | MW7D-0412<br>45.15<br>04/03/12<br>MW7D | MW7D-45.5-20150930<br>45.5<br>09/30/15<br>MW7D | MW7D-20151217-41.0<br><br>12/17/15<br>MW7D | MW7D-20151217-43.0<br><br>12/17/15<br>MW7D | MW7D-F-20151217-43.0<br><br>12/17/15<br>MW7D | MW-7S<br><br>03/12/14<br>GPS-MW7S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | 0.99 J | NA | 1.3 [1.1] | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | 1.0 U | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | 3.3 | NA | 3.6 [3.1] | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | 1.0 U | NA | 1.0 U [1 U] | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | 1.1 U | NA | 1.1 U [1 U] | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | 2.2 U | NA | 2.2 U [2 U] | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | 1.1 U | NA | 1.1 U [1 U] | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | 2.2 U | NA | 2.2 U [2 U] | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | 5.4 U | NA | 5.6 U [5.1 U] | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | 5.4 U | NA | 5.6 U [5.1 U] | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | 5.4 U | NA | 5.6 U [5.1 U] | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | 2.2 U | NA | 2.2 U [2 U] | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | 5.4 U | NA | 5.6 U [5.1 U] | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | 11 U | NA | 11 U [10 U] | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | 1.1 U | NA | 1.1 U [1 U] | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | 1.1 U | NA | 1.1 U [1 U] | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | 2.2 U | NA | 2.2 U [2 U] | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | 5.4 U | NA | 5.6 U [5.1 U] | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | 0.54 U | NA | 0.56 U [0.51 U] | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | 1.1 U | NA | 1.1 U [1 U] | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | 2.2 U | NA | 2.2 U [2 U] | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | 5.4 U | NA | 5.6 U [5.1 U] | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | 5.4 U | NA | 5.6 U [5.1 U] | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | 2.2 U | NA | 2.2 U [2 U] | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | 5.4 UJ | NA | 5.6 U [5.1 U] | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | 2.2 U | NA | 2.2 U [2 U] | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | 5.4 U | NA | 5.6 U [5.1 U] | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | 2.2 U | NA | 2.2 U [2 U] | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | 2.2 U | NA | 2.2 U [2 U] | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | 5.4 U | NA | 5.6 U [5.1 U] | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | 11 U | NA | 11 U [10 U] | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | 1.1 U | NA | 1.1 U [1 U] | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | 1.1 U | NA | 1.1 U [1 U] | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | 2.2 U | NA | 2.2 U [2 U] | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | 1.1 U | NA | 1.1 U [1 U] | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | 2.2 U | NA | 2.2 U [2 U] | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | 5.4 U | NA | 5.6 U [5.1 U] | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | 0.054 U | NA | 0.056 U [0.051 U] | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | 0.054 U | NA | 0.056 U [0.051 U] | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | 0.11 U | NA | 0.11 U [0.1 U] | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | 1.1 U | NA | 1.1 U [1 U] | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | 0.11 U | NA | 0.11 U [0.1 U] | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | 2.2 U | NA | 2.2 U [2 U] | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | 2.2 U | NA | 2.2 U [2 U] | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | 2.2 U | NA | 2.2 U [2 U] | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | 2.2 U | NA | 2.2 U [2 U] | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW6S-101303<br><br>10/13/03<br>MW6S | MW7B-GA01-28.0<br>28<br>06/29/11<br>MW7B | MW7C-GA01-47.5<br>47.5<br>06/29/11<br>MW7C | MW7D-40.5-20150930<br>40.5<br>09/30/15<br>MW7D | MW7D-0412<br>45.15<br>04/03/12<br>MW7D | MW7D-45.5-20150930<br>45.5<br>09/30/15<br>MW7D | MW7D-20151217-41.0<br><br>12/17/15<br>MW7D | MW7D-20151217-43.0<br><br>12/17/15<br>MW7D | MW7D-F-20151217-43.0<br><br>12/17/15<br>MW7D | MW-7S<br><br>03/12/14<br>GPS-MW7S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | 2.2 U | NA | 2.2 U [2 U] | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | 1.1 U | NA | 1.1 U [1 U] | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | 1.1 U | NA | 1.1 U [1 U] | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | 0.11 U | NA | 0.11 U [0.1 U] | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | 5.4 U | NA | 5.6 U [5.1 U] | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | 2.2 U | NA | 2.2 U [2 U] | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | 2.2 U | NA | 2.2 U [2 U] | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | 2.2 U | NA | 2.2 U [2 U] | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | 2.2 U | NA | 2.2 U [2 U] | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | 1.1 U | NA | 1.1 U [1 U] | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | 1.1 U | NA | 1.1 U [1 U] | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | 1.1 U | NA | 1.1 U [1 U] | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | 0.016 U | NA | 0.017 U [0.015 U] | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | 11 U | NA | 11 U [10 U] | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | 2.2 U | NA | 2.2 U [2 U] | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | 0.11 U | NA | 0.11 U [0.1 U] | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | 2.2 U | NA | 2.2 U [2 U] | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | 1.1 U | NA | 1.1 U [1 U] | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | 2.2 U | NA | 2.2 U [2 U] | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | 2.2 U | NA | 2.2 U [2 U] | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | 5.4 U | NA | 5.6 U [5.1 U] | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | 5.4 UJ | NA | 5.6 U [5.1 U] | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | 0.27 U | NA | 0.28 U [0.26 U] | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | 1.1 U | NA | 1.1 U [1 U] | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | 2.2 U | NA | 2.2 U [2 U] | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | 1.1 U | NA | 1.1 U [1 U] | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 100 U | NA | NA | 247 JB | 2,780 | 7,120 [6,120] | NA | NA | NA | 3,760 |
| Antimony | 7440-36-0 | ug/L | 60 U | 2.5 U | 2.5 U | 6.0 U | 6.0 U | 6.0 U [6 U] | NA | NA | NA | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | 20.1 | NA | NA | 565 | 100 | 406 [451] | NA | NA | NA | 4.6 |
| Barium | 7440-39-3 | ug/L | 20 U | NA | NA | 304 | 178 J | 281 [296] | NA | NA | NA | 200 U |
| Beryllium | 7440-41-7 | ug/L | 5 U | NA | NA | 1.0 U | 1.0 U | 0.40 J [0.5 J] | NA | NA | NA | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 5 U | NA | NA | 0.30 J | 0.50 J | 3.0 U [0.5 J] | NA | NA | NA | 3.0 U |
| Calcium | 7440-70-2 | ug/L | 96,800 | NA | NA | 146,000 | 120,000 | 138,000 [147,000] | NA | NA | NA | 87,400 |
| Chromium | 7440-47-3 | ug/L | 10 U | 96,500 | 2,910 | 1.1 J | 33.8 | 10.8 [9.6 J] | 10 U | 10 U | NA | 10 U |
| Chromium VI | 18540-29-9 | ug/L | R | 57,000 | 3,010 | 10 U | 10 U | 10 U [10 U] | 5.5 UJ | 5.5 UJ | NA | 10 U |
| Cobalt | 7440-48-4 | ug/L | 50 U | NA | NA | 50 UB | 1.9 J | 6.1 J [5 JB] | NA | NA | NA | 50 U |
| Copper | 7440-50-8 | ug/L | 20 U | NA | NA | 10 U | 10.2 | 19.9 J [19.4 J] | NA | NA | NA | 10 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 6,820 | NA | NA | 9,870 | 4,920 | 16,200 [15,400] | NA | NA | NA | 3,910 |
| Lead | 7439-92-1 | ug/L | 50 U | NA | NA | 4.1 | 5.8 | 9.8 [9] | NA | NA | NA | 7.9 |
| Magnesium | 7439-95-4 | ug/L | 500 U | NA | NA | 25,100 | 21,100 | 26,400 [27,600] | NA | NA | NA | 5,000 U |
| Manganese | 7439-96-5 | ug/L | 3,380 | NA | NA | 7,680 J | 6,820 | 6,740 J [7,150 J] | NA | NA | NA | 51.0 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW6S-101303<br><br>10/13/03<br>MW6S | MW7B-GA01-28.0<br>28<br>06/29/11<br>MW7B | MW7C-GA01-47.5<br>47.5<br>06/29/11<br>MW7C | MW7D-40.5-20150930<br>40.5<br>09/30/15<br>MW7D | MW7D-0412<br>45.15<br>04/03/12<br>MW7D | MW7D-45.5-20150930<br>45.5<br>09/30/15<br>MW7D | MW7D-20151217-41.0<br><br>12/17/15<br>MW7D | MW7D-20151217-43.0<br><br>12/17/15<br>MW7D | MW7D-F-20151217-43.0<br><br>12/17/15<br>MW7D | MW-7S<br><br>03/12/14<br>GPS-MW7S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.2 U | NA | NA | 0.20 U | 0.079 J | 0.20 U [0.2 U] | NA | NA | NA | 0.20 U |
| Nickel | 7440-02-0 | ug/L | 40 U | 51.7 | 12.4 | 8.1 J | 28.2 | 17.6 [16.6] | NA | NA | NA | 54.6 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 7,100 | NA | NA | 6,500 J | 5,810 J | 7,810 J [7,820 J] | NA | NA | NA | 38,700 |
| Selenium | 7782-49-2 | ug/L | 5 U | NA | NA | 10 U | 10 U | 4.2 J [10 U] | NA | NA | NA | 10 U |
| Silver | 7440-22-4 | ug/L | 10 U | NA | NA | 7.5 J | 2.5 J | 8.0 J [8.2 J] | NA | NA | NA | 10 U |
| Sodium | 7440-23-5 | ug/L | 75,000 | NA | NA | 56,600 | 40,400 | 49,600 [52,500] | NA | NA | NA | 186,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 30 U | 1.0 U | 1.0 U | 2.0 U | 2.0 U | 2.0 U [2 U] | NA | NA | NA | 2.0 U |
| Total CCPW Metals | CCPW-M | ug/L | 60 U | 96,600 | 2,930 | NA | 67.5 | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 50 U | 16.5 | 6.6 | 50 U | 5.5 J | 13.8 J [12.8 J] | NA | NA | NA | 50 U |
| Zinc | 7440-66-6 | ug/L | 20 U | NA | NA | 9.8 J | 49.4 J | 32.3 [30.6] | NA | NA | NA | 20.1 |
| **Metals-Filtered** | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 910 |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 3.5 |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 200 U |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 1.0 U |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 3.0 U |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 93,200 |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 10 U | 10 U |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 5.5 RA | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 50 U |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 100 U |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 3.0 U |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5,000 U |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 15 U |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.20 U |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 56.1 |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 43,100 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 205,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 2.0 U |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 50 U |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 20 U |
| **Metals-TCLP** | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW6S-101303<br><br>10/13/03<br>MW6S | MW7B-GA01-28.0<br>28<br>06/29/11<br>MW7B | MW7C-GA01-47.5<br>47.5<br>06/29/11<br>MW7C | MW7D-40.5-20150930<br>40.5<br>09/30/15<br>MW7D | MW7D-0412<br>45.15<br>04/03/12<br>MW7D | MW7D-45.5-20150930<br>45.5<br>09/30/15<br>MW7D | MW7D-20151217-41.0<br><br>12/17/15<br>MW7D | MW7D-20151217-43.0<br><br>12/17/15<br>MW7D | MW7D-F-20151217-43.0<br><br>12/17/15<br>MW7D | MW-7S<br><br>03/12/14<br>GPS-MW7S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | 250,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | 520 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | 4,000 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | 67.8 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | 625,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | 6,200 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 100 U |
| Nitrate-N | 14797-55-8 | ug/L | 50 U | NA | NA | NA | NA | NA | NA | NA | NA | 110 U |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 120 |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 461 | 317 | 299 | 259 | 319 [347] | 363 | 391 | 328 | NA |
| pH | ARC-pH | SU | NA | 8.43 | 8.34 | 6.74 | 6.88 | 6.76 [6.58] | 6.47 | 6.53 | 6.54 | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | MW6S-101303 | MW7B-GA01-28.0 | MW7C-GA01-47.5 | MW7D-40.5-20150930 | MW7D-0412 | MW7D-45.5-20150930 | MW7D-20151217-41.0 | MW7D-20151217-43.0 | MW7D-F-20151217-43.0 | MW-7S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | 28 | 47.5 | 40.5 | 45.15 | 45.5 | | | | |
| Date Collected: | | | 10/13/03 | 06/29/11 | 06/29/11 | 09/30/15 | 04/03/12 | 09/30/15 | 12/17/15 | 12/17/15 | 12/17/15 | 03/12/14 |
| Location ID: | CAS Number | Units | MW6S | MW7B | MW7C | MW7D | MW7D | MW7D | MW7D | MW7D | MW7D | GPS-MW7S |
| Sulfate | 14808-79-8 | ug/L | 65,500 | NA | NA | NA | NA | NA | NA | NA | NA | 223,000 |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | 2,000 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 6,370 | NA | NA | NA | NA | NA | 3,700 J | 3,600 J | NA | 31,200 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | 50 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | 4,800 | 200 | NA | 990 | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 392 | 359.1 | NA | 82.8 | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | 7.59 | 7.49 | NA | 7.03 | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | 19.07 | 18.92 | NA | 15.01 | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | 9.53 | 27.1 | NA | 7.62 | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | MW-7S (082914) 08/29/14 GPS-MW7S | MW-7S (090814) 09/08/14 GPS-MW7S | MW-7S (091214) 09/12/14 GPS-MW7S | MW-7S(090314) 09/03/14 GPS-MW7S | MW-7S_ 08/10/15 MW7S | MW7S-7.2-20150930 7.2 09/30/15 MW7S | MW7S-10.2-20150930 10.2 09/30/15 MW7S | MW-7S-032114 03/21/14 GPS-MW7S | MW-7S-040714 04/07/14 GPS-MW7S | MW-7S-041514 04/15/14 GPS-MW7S | MW-7S-042214 04/22/14 GPS-MW7S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | 5.0 U | 5.0 U | 5.0 U | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | 2.0 U | 2.0 U | 2.0 U | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | 10 U | 10 U | 10 U | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | 5.0 U | 5.0 U | 5.0 U | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | 3.9 J | 10.7 | 6.6 J | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | 0.40 J | 1.2 | 1.6 | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | 2.0 U | 2.0 U | 2.0 U | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | 2.0 U | 2.0 U | 2.0 U | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | 2.0 U | 2.0 U | 2.0 U | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | 2.0 U | 2.0 U | 2.0 U | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | 1.0 UJ | 1.0 U | 1.0 U | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | 5.0 U | 5.0 U | 5.0 U | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | 2.0 U | 2.0 U | 2.0 U | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | 5.0 U | 5.0 U | 5.0 U | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | 5.0 U | 5.0 U | 5.0 U | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | 5.0 U | 5.0 U | 5.0 U | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | 10 U | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | 1.0 U | 0.22 J | 0.25 J | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW-7S (082914)<br><br>08/29/14<br>GPS-MW7S | MW-7S (090814)<br><br>09/08/14<br>GPS-MW7S | MW-7S (091214)<br><br>09/12/14<br>GPS-MW7S | MW-7S(090314)<br><br>09/03/14<br>GPS-MW7S | MW-7S_<br><br>08/10/15<br>MW7S | MW7S-7.2-20150930<br>7.2<br>09/30/15<br>MW7S | MW7S-10.2-20150930<br>10.2<br>09/30/15<br>MW7S | MW-7S-032114<br><br>03/21/14<br>GPS-MW7S | MW-7S-040714<br><br>04/07/14<br>GPS-MW7S | MW-7S-041514<br><br>04/15/14<br>GPS-MW7S | MW-7S-042214<br><br>04/22/14<br>GPS-MW7S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.1 U | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.1 U | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | 5.1 U | 5.2 U | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | 5.1 U | 5.2 U | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | 5.1 U | 5.2 U | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.1 U | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | 5.1 U | 5.2 U | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | 10 U | 10 U | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.1 U | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | 5.1 U | 5.2 U | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | 0.51 U | 0.52 U | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.1 U | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | 5.1 U | 5.2 U | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | 5.1 U | 5.2 U | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.1 U | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | 5.1 U | 5.2 U | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.1 U | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | 5.1 U | 5.2 U | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.1 U | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.1 U | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | 5.1 U | 5.2 U | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | 10 U | 10 U | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.1 U | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.1 U | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | 5.1 U | 5.2 U | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | 0.051 U | 0.052 U | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | 0.051 U | 0.052 U | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | 0.10 U | 0.10 U | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | 0.10 U | 0.10 U | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.1 U | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.1 U | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.1 U | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.1 U | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW-7S (082914)<br><br>08/29/14<br>GPS-MW7S | MW-7S (090814)<br><br>09/08/14<br>GPS-MW7S | MW-7S (091214)<br><br>09/12/14<br>GPS-MW7S | MW-7S(090314)<br><br>09/03/14<br>GPS-MW7S | MW-7S_<br><br>08/10/15<br>MW7S | MW7S-7.2-20150930<br>7.2<br>09/30/15<br>MW7S | MW7S-10.2-20150930<br>10.2<br>09/30/15<br>MW7S | MW-7S-032114<br><br>03/21/14<br>GPS-MW7S | MW-7S-040714<br><br>04/07/14<br>GPS-MW7S | MW-7S-041514<br><br>04/15/14<br>GPS-MW7S | MW-7S-042214<br><br>04/22/14<br>GPS-MW7S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.1 U | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | 0.10 U | 0.10 U | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | 5.1 U | 5.2 U | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.1 U | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.1 U | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.1 U | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.1 U | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | 0.015 U | 0.016 U | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | 10 U | 10 U | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.1 U | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | 0.10 U | 0.10 U | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.1 U | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.1 U | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.1 U | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | 5.1 U | 5.2 U | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | 5.1 U | 5.2 U | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | 0.26 U | 0.26 U | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.1 U | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 117 JB | 200 UB | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 6.0 U | 6.0 U | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 29.4 | 32.4 | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 589 | 631 | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 0.90 J | 0.80 J | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 238,000 | 237,000 | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | 2.3 J | 1.2 J | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | 28 J | 10 U | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 2.9 JB | 50 UB | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 14.7 J | 10.2 J | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | 42,200 | 43,300 | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 11.3 | 6.4 | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 58,100 | 56,600 | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | 4,850 J | 4,930 J | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW-7S (082914)<br><br>08/29/14<br>GPS-MW7S | MW-7S (090814)<br><br>09/08/14<br>GPS-MW7S | MW-7S (091214)<br><br>09/12/14<br>GPS-MW7S | MW-7S(090314)<br><br>09/03/14<br>GPS-MW7S | MW-7S_<br><br>08/10/15<br>MW7S | MW7S-7.2-20150930<br>7.2<br>09/30/15<br>MW7S | MW7S-10.2-20150930<br>10.2<br>09/30/15<br>MW7S | MW-7S-032114<br><br>03/21/14<br>GPS-MW7S | MW-7S-040714<br><br>04/07/14<br>GPS-MW7S | MW-7S-041514<br><br>04/15/14<br>GPS-MW7S | MW-7S-042214<br><br>04/22/14<br>GPS-MW7S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.20 U | 0.20 U | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | 13.0 | 4.3 J | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 46,000 | 46,900 | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 10 U | 3.4 J | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 8.4 J | 8.3 J | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 320,000 | 350,000 | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | 2.0 U | 2.0 U | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | 50 U | 50 U | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 549 | 639 | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW-7S (082914)<br><br>08/29/14<br>GPS-MW7S | MW-7S (090814)<br><br>09/08/14<br>GPS-MW7S | MW-7S (091214)<br><br>09/12/14<br>GPS-MW7S | MW-7S(090314)<br><br>09/03/14<br>GPS-MW7S | MW-7S_<br><br>08/10/15<br>MW7S | MW7S-7.2-20150930<br>7.2<br>09/30/15<br>MW7S | MW7S-10.2-20150930<br>10.2<br>09/30/15<br>MW7S | MW-7S-032114<br><br>03/21/14<br>GPS-MW7S | MW-7S-040714<br><br>04/07/14<br>GPS-MW7S | MW-7S-041514<br><br>04/15/14<br>GPS-MW7S | MW-7S-042214<br><br>04/22/14<br>GPS-MW7S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | 339 | 289 | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | 6.49 | 6.51 | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW-7S (082914)<br><br>08/29/14<br>GPS-MW7S | MW-7S (090814)<br><br>09/08/14<br>GPS-MW7S | MW-7S (091214)<br><br>09/12/14<br>GPS-MW7S | MW-7S(090314)<br><br>09/03/14<br>GPS-MW7S | MW-7S_<br><br>08/10/15<br>MW7S | MW7S-7.2-20150930<br>7.2<br>09/30/15<br>MW7S | MW7S-10.2-20150930<br>10.2<br>09/30/15<br>MW7S | MW-7S-032114<br><br>03/21/14<br>GPS-MW7S | MW-7S-040714<br><br>04/07/14<br>GPS-MW7S | MW-7S-041514<br><br>04/15/14<br>GPS-MW7S | MW-7S-042214<br><br>04/22/14<br>GPS-MW7S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 43,200 | 42,700 | 45,400 | 43,800 | NA | NA | NA | 28,100 | 59,400 | 38,500 | 38,200 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | MW-7S-050114 | MW-7S-050714 | MW7S-GA01-9.0 | MW8A-GA01-8.0 | MW8A-GA01-14.0 | MW8B-GA01-41.5 | MW8B-GA01-46.5 | MW8D-41.5-20150929 | MW8D-46.5-20150929 | MW8D-GA01-41.5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | 9 | 8 | 14 | 41.5 | 46.5 | 41.5 | 46.5 | 41.5 |
| Date Collected: | | | 05/01/14 | 05/07/14 | 06/28/11 | 06/27/11 | 06/27/11 | 06/27/11 | 06/27/11 | 09/29/15 | 09/29/15 | 06/28/11 |
| Location ID: | CAS Number | Units | GPS-MW7S | GPS-MW7S | MW7S | MW8A | MW8A | MW8B | MW8B | MW8D | MW8D | MW8D |
| **Volatile Organics** | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 1.0 U | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 1.0 U | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 25 U | 5.0 U | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 1.0 U | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 1.0 U | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 1.0 U | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 1.0 U | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 1.0 U | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U | 2.0 U | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 1.0 U | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 1.0 U | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 1.0 U | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 1.0 U | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 1.0 U | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 1.0 U | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 50 U | 10 U | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 25 U | 5.0 U | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 50 U | 4.5 J | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 945 J | 68.3 | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 1.0 U | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 1.0 U | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 1.0 U | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U | 2.0 U | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U | 2.0 U | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 1.0 U | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U | 2.0 U | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U | 2.0 U | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 1.0 U | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 1.0 U | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 1.0 U | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 1.0 U | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 1.0 U | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 1.0 U | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 1.0 U | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 25 U | 5.0 U | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U | 2.0 U | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 122 | 17.4 | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.7 | 0.93 J | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | 116 | 8.5 | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 25 U | 5.0 U | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 25 U | 5.0 U | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 25 U | 5.0 U | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 1.0 U | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 51.7 | 3.9 | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 1.0 U | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 1.0 U | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 29.2 | 2.3 | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 168 | 12.4 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW-7S-050114<br><br>05/01/14<br>GPS-MW7S | MW-7S-050714<br><br>05/07/14<br>GPS-MW7S | MW7S-GA01-9.0<br>9<br>06/28/11<br>MW7S | MW8A-GA01-8.0<br>8<br>06/27/11<br>MW8A | MW8A-GA01-14.0<br>14<br>06/27/11<br>MW8A | MW8B-GA01-41.5<br>41.5<br>06/27/11<br>MW8B | MW8B-GA01-46.5<br>46.5<br>06/27/11<br>MW8B | MW8D-41.5-20150929<br>41.5<br>09/29/15<br>MW8D | MW8D-46.5-20150929<br>46.5<br>09/29/15<br>MW8D | MW8D-GA01-41.5<br>41.5<br>06/28/11<br>MW8D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 1.0 U | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 1.0 U | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 1.0 U | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.0 U | 1.0 U | NA |
| **Semivolatile Organics** | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.5 | 1.1 U | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.1 U | 2.2 U | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.1 U | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.1 U | 2.2 U | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.2 U | 5.6 U | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.2 U | 5.6 U | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.2 U | 5.6 U | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.1 U | 2.2 U | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.2 U | 5.6 U | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U | 11 U | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.1 U | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.1 U | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.1 U | 2.2 U | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.2 U | 5.6 U | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.52 U | 0.56 U | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 34.4 | 1.6 | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.1 U | 2.2 U | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.2 U | 5.6 U | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.2 U | 5.6 U | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.1 U | 2.2 U | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.2 U | 5.6 U | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.1 U | 2.2 U | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.2 U | 5.6 U | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.1 U | 2.2 U | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.1 U | 2.2 U | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.2 U | 5.6 U | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U | 11 U | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 7.3 | 1.0 J | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.57 J | 1.1 U | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.1 U | 2.2 U | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.1 U | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.1 U | 2.2 U | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.2 U | 5.6 U | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.446 | 0.545 | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.297 | 0.419 | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.448 | 0.565 | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.1 U | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.134 | 0.287 | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.1 U | 2.2 U | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.1 U | 2.2 U | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.1 U | 3.8 | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.1 U | 2.2 U | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW-7S-050114<br><br>05/01/14<br>GPS-MW7S | MW-7S-050714<br><br>05/07/14<br>GPS-MW7S | MW7S-GA01-9.0<br>9<br>06/28/11<br>MW7S | MW8A-GA01-8.0<br>8<br>06/27/11<br>MW8A | MW8A-GA01-14.0<br>14<br>06/27/11<br>MW8A | MW8B-GA01-41.5<br>41.5<br>06/27/11<br>MW8B | MW8B-GA01-46.5<br>46.5<br>06/27/11<br>MW8B | MW8D-41.5-20150929<br>41.5<br>09/29/15<br>MW8D | MW8D-46.5-20150929<br>46.5<br>09/29/15<br>MW8D | MW8D-GA01-41.5<br>41.5<br>06/28/11<br>MW8D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.1 U | 2.2 U | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.1 U | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.1 U | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.10 U | 0.11 U | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.51 J | 5.6 U | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.1 U | 2.2 U | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.1 U | 2.2 U | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.1 U | 2.2 U | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.1 U | 2.2 U | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.53 J | 0.73 J | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.0 | 1.1 U | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.1 U | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.016 U | 0.017 U | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 10 U | 11 U | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.1 U | 2.2 U | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.169 | 0.241 | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.1 U | 2.2 U | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 298 | 11.7 | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.1 U | 2.2 U | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.1 U | 2.2 U | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.2 U | 5.6 U | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 5.2 U | 5.6 U | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.26 U | 0.28 U | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.8 | 0.45 J | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 2.1 U | 2.2 U | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.46 J | 0.61 J | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 200 U | 241 J | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | 2.5 U | 2.5 U | 25.0 U | 25.0 U | 25.0 U | 150 U | 6.0 U | 2.5 U |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 75 U | 15 U | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 39.2 J | 50.9 J | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.0 U | 1.0 U | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 1.3 J | 0.50 J | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 191,000 | 292,000 | NA |
| Chromium | 7440-47-3 | ug/L | NA | 10 U | 17.1 | 81,700 | 377,000 | 1,070,000 | 1,070,000 | 65,600 J | 3,120 J | 24,300 |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U | 10.0 U | 88,300 | 365,000 | 1,400,000 | 1,390,000 | 71,300 J | 3,900 J | 22,800 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 250 U | 250 U | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | 7.5 J | 19.1 J | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 390 | NA | NA | NA | NA | NA | 346 | 1,080 | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 13.5 J | 15 U | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 456,000 | 619,000 | NA |
| Manganese | 7439-96-5 | ug/L | NA | 31.5 | NA | NA | NA | NA | NA | 389 | 695 | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW-7S-050114<br><br>05/01/14<br>GPS-MW7S | MW-7S-050714<br><br>05/07/14<br>GPS-MW7S | MW7S-GA01-9.0<br>9<br>06/28/11<br>MW7S | MW8A-GA01-8.0<br>8<br>06/27/11<br>MW8A | MW8A-GA01-14.0<br>14<br>06/27/11<br>MW8A | MW8B-GA01-41.5<br>41.5<br>06/27/11<br>MW8B | MW8B-GA01-46.5<br>46.5<br>06/27/11<br>MW8B | MW8D-41.5-20150929<br>41.5<br>09/29/15<br>MW8D | MW8D-46.5-20150929<br>46.5<br>09/29/15<br>MW8D | MW8D-GA01-41.5<br>41.5<br>06/28/11<br>MW8D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.60 U | 0.20 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | 16.1 | 36.6 | 282 | 67.5 | 50.0 U | 50 U | 50 U | 6.4 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | 115,000 | 128,000 | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 7.5 J | 14.0 | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 250 U | 4.8 J | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | 3,640,000 | 4,570,000 | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | 1.0 U | 1.0 U | 10.0 U | 10.0 U | 10.0 U | 50 U | 10 U | 1.0 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | 33.2 | 81,700 | 377,000 | 1,070,000 | 1,070,000 | NA | NA | 24,300 |
| Vanadium | 7440-62-2 | ug/L | NA | NA | 5.0 U | 5.0 U | 50.0 U | 50.0 U | 50.0 U | 1,300 U | 4.0 J | 3.8 J |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 500 U | 30.6 | NA |
| **Metals-Filtered** | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 10 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 100 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | 15 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | MW-7S-050114 05/01/14 GPS-MW7S | MW-7S-050714 05/07/14 GPS-MW7S | MW7S-GA01-9.09 06/28/11 MW7S | MW8A-GA01-8.08 06/27/11 MW8A | MW8A-GA01-14.014 06/27/11 MW8A | MW8B-GA01-41.541.5 06/27/11 MW8B | MW8B-GA01-46.546.5 06/27/11 MW8B | MW8D-41.5-20150929 41.5 09/29/15 MW8D | MW8D-46.5-20150929 46.5 09/29/15 MW8D | MW8D-GA01-41.541.5 06/28/11 MW8D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | 110 | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | 110 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | 120 | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 391 | 259 | 219 | 314 | 338 | 272 | 282 | 388 |
| pH | ARC-pH | SU | NA | NA | 7.08 | 12.7 | 13.0 | 8.56 | 8.42 | 7.38 | 7.13 | 7.44 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | MW-7S-050114 05/01/14 GPS-MW7S | MW-7S-050714 05/07/14 GPS-MW7S | MW7S-GA01-9.09 06/28/11 MW7S | MW8A-GA01-8.08 06/27/11 MW8A | MW8A-GA01-14.014 06/27/11 MW8A | MW8B-GA01-41.541.5 06/27/11 MW8B | MW8B-GA01-46.546.5 06/27/11 MW8B | MW8D-41.5-20150929 41.5 09/29/15 MW8D | MW8D-46.5-20150929 46.5 09/29/15 MW8D | MW8D-GA01-41.541.5 06/28/11 MW8D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 202,000 | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | 2,000 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 40,200 | 32,400 | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | 7,100 | 510 | 1,720 | 280 | 550 | NA | NA | 100 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 118.4 | 27 | 16.7 | 141.1 | 131 | NA | NA | 104.5 |
| pH | ARC-pH | SU | NA | NA | 6.71 | 17.75 | 13.11 | 7.95 | 8.43 | NA | NA | 6.82 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | 25.38 | 18.41 | 20.4 | 16.68 | 17.6 | NA | NA | 20.38 |
| Turbidity | ARC-Turb | NTU | NA | NA | 9.9 | 3.22 | 1.35 | 0.29 | 0.72 | NA | NA | 27.6 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | MW8D-GA01-46.5 | MW8F-79.5-20151001 | MW8F-82.0-20151001 | MW-8S | MW8S-9.5-20151001 | MW9B-GA01-31.5 | MW9C-GA01-53.0 | MW9D-GA01-37.5 | MW9D-GA01-42.5 | MW9S-GA01-6.5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 46.5 | 79.5 | 82 | | 9.5 | 31.5 | 53 | 37.5 | 42.5 | 6.5 |
| Date Collected: | | | 06/28/11 | 10/01/15 | 10/01/15 | 08/10/15 | 10/01/15 | 06/30/11 | 06/30/11 | 06/28/11 | 06/28/11 | 07/18/11 |
| Location ID: | CAS Number | Units | MW8D | MW8F | MW8F | MW8S | MW8S | MW9B | MW9C | MW9D | MW9D | MW9S |
| **Volatile Organics** | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | 5.0 U | 5.0 U | 5.0 U [5 U] | 5.0 U | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | 2.0 U | 2.0 U | 2.0 U [2 U] | 2.0 U | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | 10 U | 10 U | 10 U [10 U] | 10 U | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | 5.0 U | 5.0 U | 5.0 U [5 U] | 5.0 U | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | 10 U | 10 U | 10 U [10 U] | 3.9 J | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | 0.50 U | 0.50 U | 0.50 U [0.5 U] | 0.50 U | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | 2.0 U | 2.0 U | 2.0 U [2 U] | 2.0 U | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | 2.0 U | 2.0 U | 1.7 J [0.87 J] | 2.0 U | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | 2.0 U | 2.0 U | 2.0 U [2 U] | 2.0 U | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | 2.0 U | 2.0 U | 2.0 U [2 U] | 2.0 U | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | 1.0 U | 1.0 U | 1.0 UJ [1 UJ] | 1.0 U | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | 5.0 U | 5.0 U | 5.0 U [5 U] | 5.0 U | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | 2.0 U | 2.0 U | 2.0 U [2 U] | 2.0 U | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | 5.0 U | 5.0 U | 5.0 U [5 U] | 5.0 U | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | 5.0 U | 5.0 U | 5.0 U [5 U] | 5.0 U | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | 5.0 U | 5.0 U | 5.0 U [5 U] | 5.0 U | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | 5.0 U [5 U] | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | 10 U [10 U] | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |

| Sample Name: | | | MW8D-GA01-46.5 | MW8F-79.5-20151001 | MW8F-82.0-20151001 | MW-8S | MW8S-9.5-20151001 | MW9B-GA01-31.5 | MW9C-GA01-53.0 | MW9D-GA01-37.5 | MW9D-GA01-42.5 | MW9S-GA01-6.5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 46.5 | 79.5 | 82 | | 9.5 | 31.5 | 53 | 37.5 | 42.5 | 6.5 |
| Date Collected: | | | 06/28/11 | 10/01/15 | 10/01/15 | 08/10/15 | 10/01/15 | 06/30/11 | 06/30/11 | 06/28/11 | 06/28/11 | 07/18/11 |
| Location ID: | CAS Number | Units | MW8D | MW8F | MW8F | MW8S | MW8S | MW9B | MW9C | MW9D | MW9D | MW9S |
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | 1.1 U | 1.0 U | NA | 1.0 U | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | 2.2 U | 2.0 U | NA | 2.0 U | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | 1.1 U | 1.0 U | NA | 1.0 U | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | 2.2 U | 2.0 U | NA | 2.0 U | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | 5.6 U | 5.1 U | NA | 5.0 U | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | 5.6 U | 5.1 U | NA | 5.0 U | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | 5.6 U | 5.1 U | NA | 5.0 U | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | 2.2 U | 2.0 U | NA | 2.0 U | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | 5.6 U | 5.1 U | NA | 5.0 U | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | 11 U | 10 U | NA | 10 U | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | 1.1 U | 1.0 U | NA | 1.0 U | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | 1.1 U | 1.0 U | NA | 1.0 U | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | 2.2 U | 2.0 U | NA | 2.0 U | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | 5.6 U | 5.1 U | NA | 5.0 U | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | 0.56 U | 0.51 U | NA | 0.50 U | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | 1.1 U | 1.0 U | NA | 1.0 U | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | 2.2 U | 2.0 U | NA | 2.0 U | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | 5.6 U | 5.1 U | NA | 5.0 U | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | 5.6 U | 5.1 U | NA | 5.0 U | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | 2.2 U | 2.0 U | NA | R | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | 5.6 U | 5.1 U | NA | 5.0 U | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | 2.2 U | 2.0 U | NA | 2.0 U | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | 5.6 U | 5.1 U | NA | 5.0 U | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | 2.2 U | 2.0 U | NA | 2.0 U | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | 2.2 U | 2.0 U | NA | 2.0 U | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | 5.6 U | 5.1 U | NA | 5.0 U | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | 11 U | 10 U | NA | 10 U | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | 1.1 U | 1.0 U | NA | 1.0 U | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | 1.1 U | 1.0 U | NA | 1.0 U | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | 2.2 U | 2.0 U | NA | 2.0 U | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | 1.1 U | 1.0 U | NA | 1.0 U | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | 2.2 U | 2.0 U | NA | 2.0 U | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | 5.6 U | 5.1 U | NA | 5.0 U | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | 0.056 U | 0.051 U | NA | 0.050 U | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | 0.056 U | 0.051 U | NA | 0.050 U | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | 0.11 U | 0.10 U | NA | 0.10 U | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | 1.1 U | 1.0 U | NA | 1.0 U | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | 0.11 U | 0.10 U | NA | 0.10 U | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | 2.2 U | 2.0 U | NA | 2.0 U | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | 2.2 U | 2.0 U | NA | 2.0 U | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | 2.2 U | 2.0 U | NA | 2.0 U | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | 2.2 U | 2.0 U | NA | 2.0 U | NA | NA | NA | NA | NA |

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | MW8D-GA01-46.5 46.5 06/28/11 MW8D | MW8F-79.5-20151001 79.5 10/01/15 MW8F | MW8F-82.0-20151001 82 10/01/15 MW8F | MW-8S 08/10/15 MW8S | MW8S-9.5-20151001 9.5 10/01/15 MW8S | MW9B-GA01-31.5 31.5 06/30/11 MW9B | MW9C-GA01-53.0 53 06/30/11 MW9C | MW9D-GA01-37.5 37.5 06/28/11 MW9D | MW9D-GA01-42.5 42.5 06/28/11 MW9D | MW9S-GA01-6.5 6.5 07/18/11 MW9S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | 2.2 U | 2.0 U | NA | 2.0 U | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | 1.1 U | 1.0 U | NA | 1.0 U | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | 1.1 U | 1.0 U | NA | 1.0 U | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | 0.11 U | 0.10 U | NA | 0.10 U | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | 5.6 U | 5.1 U | NA | 5.0 U | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | 2.2 U | 2.0 U | NA | 2.0 U | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | 2.2 U | 2.0 U | NA | 2.0 U | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | 2.2 U | 2.0 U | NA | 2.0 U | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | 2.2 U | 2.0 U | NA | 2.0 U | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | 1.1 U | 1.0 U | NA | 1.0 U | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | 1.1 U | 1.0 U | NA | 1.0 U | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | 1.1 U | 1.0 U | NA | 1.0 U | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | 0.017 U | 0.015 U | NA | 0.015 U | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | 11 U | 10 U | NA | 10 U | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | 2.2 U | 2.0 U | NA | 2.0 U | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | 0.11 U | 0.10 U | NA | 0.10 U | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | 2.2 U | 2.0 U | NA | 2.0 U | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | 1.1 U | 1.0 U | NA | 1.0 U | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | 2.2 U | 2.0 U | NA | 2.0 U | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | 2.2 U | 2.0 U | NA | 2.0 U | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | 5.6 U | 5.1 U | NA | 5.0 U | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | 5.6 U | 5.1 U | NA | 5.0 U | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | 0.28 U | 0.26 U | NA | 0.25 U | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | 1.1 U | 1.0 U | NA | 1.0 U | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | 2.2 U | 2.0 U | NA | 2.0 U | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | 1.1 U | 1.0 U | NA | 1.0 U | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 2,120 | 6,000 | NA | 364 J | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 2.5 U | 6.0 U | 6.0 U | NA | 6.0 U | 2.9 | 2.5 U | 2.5 U | 2.5 U | 25.9 |
| Arsenic | 7440-38-2 | ug/L | NA | 23.4 | 20.6 | NA | 10.2 | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | 181 J | 205 | NA | 123 J | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | 1.0 U | 1.0 U | NA | 1.0 U | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 3.0 U | 3.0 U | NA | 0.30 J | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | 176,000 | 155,000 | NA | 61,400 | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 35,200 | 6.1 J | 34.1 | NA | 1.9 J | 112,000 | 24.8 | 16.2 | 8.7 | 15,100 |
| Chromium VI | 18540-29-9 | ug/L | 43,700 | 10 U | 10 U | NA | 10 U | 403,000 | 8.4 J | 2.2 J | 10.0 U | 18,300 |
| Cobalt | 7440-48-4 | ug/L | NA | 1.0 J | 4.3 J | NA | 0.60 J | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | 10 U | 14.5 J | NA | 11.5 J | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 2,860 | 9,600 | NA | 11,800 | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | 5.2 | 18.5 | NA | 4.0 | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | 29,400 | 26,900 | NA | 6,850 | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | 458 | 559 | NA | 495 | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | MW8D-GA01-46.5<br>46.5<br>06/28/11<br>MW8D | MW8F-79.5-20151001<br>79.5<br>10/01/15<br>MW8F | MW8F-82.0-20151001<br>82<br>10/01/15<br>MW8F | MW-8S<br><br>08/10/15<br>MW8S | MW8S-9.5-20151001<br>9.5<br>10/01/15<br>MW8S | MW9B-GA01-31.5<br>31.5<br>06/30/11<br>MW9B | MW9C-GA01-53.0<br>53<br>06/30/11<br>MW9C | MW9D-GA01-37.5<br>37.5<br>06/28/11<br>MW9D | MW9D-GA01-42.5<br>42.5<br>06/28/11<br>MW9D | MW9S-GA01-6.5<br>6.5<br>07/18/11<br>MW9S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.20 U | 0.20 U | NA | 0.20 U | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 9.4 | 3.5 J | 17.6 | NA | 2.8 J | 116 | 10.2 | 7.4 | 4.3 J | 153 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 7,180 J | 6,980 J | NA | 15,800 | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | 10 U | 10 U | NA | 10 U | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | 10 U | 1.3 J | NA | 10 U | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | 454,000 | 361,000 | NA | 455,000 | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 1.0 U | 2.0 U | 2.0 U | NA | 2.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U |
| Total CCPW Metals | CCPW-M | ug/L | 35,200 | NA | NA | NA | NA | 112,000 | 35.0 | 30.3 | 21 | 15,400 |
| Vanadium | 7440-62-2 | ug/L | 3.6 J | 4.2 J | 14.2 J | NA | 2.5 J | 159 | 5.0 U | 6.7 | 7.9 | 145 |
| Zinc | 7440-66-6 | ug/L | NA | 6.8 JB | 52.4 JB | NA | 46.0 JB | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW8D-GA01-46.5<br>46.5<br>06/28/11<br>MW8D | MW8F-79.5-20151001<br>79.5<br>10/01/15<br>MW8F | MW8F-82.0-20151001<br>82<br>10/01/15<br>MW8F | MW-8S<br><br>08/10/15<br>MW8S | MW8S-9.5-20151001<br>9.5<br>10/01/15<br>MW8S | MW9B-GA01-31.5<br>31.5<br>06/30/11<br>MW9B | MW9C-GA01-53.0<br>53<br>06/30/11<br>MW9C | MW9D-GA01-37.5<br>37.5<br>06/28/11<br>MW9D | MW9D-GA01-42.5<br>42.5<br>06/28/11<br>MW9D | MW9S-GA01-6.5<br>6.5<br>07/18/11<br>MW9S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 419 | 326 | 327 | NA | 314 | 370 | 470 | 387 | 393 | 265 |
| pH | ARC-pH | SU | 7.59 | 7.40 | 7.49 | NA | 6.45 | 9.70 | 7.99 | 7.73 | 7.60 | 12.3 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW8D-GA01-46.5<br>46.5<br>06/28/11<br>MW8D | MW8F-79.5-20151001<br>79.5<br>10/01/15<br>MW8F | MW8F-82.0-20151001<br>82<br>10/01/15<br>MW8F | MW-8S<br><br>08/10/15<br>MW8S | MW8S-9.5-20151001<br>9.5<br>10/01/15<br>MW8S | MW9B-GA01-31.5<br>31.5<br>06/30/11<br>MW9B | MW9C-GA01-53.0<br>53<br>06/30/11<br>MW9C | MW9D-GA01-37.5<br>37.5<br>06/28/11<br>MW9D | MW9D-GA01-42.5<br>42.5<br>06/28/11<br>MW9D | MW9S-GA01-6.5<br>6.5<br>07/18/11<br>MW9S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 110 | NA | NA | NA | NA | 1,600 | 7,330 | 2,530 | 2,520 | 1,350 |
| Oxidation Reduction Potential | ARC-ORP | mV | 136.4 | NA | NA | NA | NA | 211.1 | 338.7 | 118.3 | 110.6 | 79.6 |
| pH | ARC-pH | SU | 6.75 | NA | NA | NA | NA | 9.32 | 6.27 | 7.35 | 7.17 | 10.92 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 19.64 | NA | NA | NA | NA | 18.76 | 19.31 | 18.1 | 18.02 | 19.4 |
| Turbidity | ARC-Turb | NTU | 27.1 | NA | NA | NA | NA | 39 | 6.18 | 9.6 | 7.77 | 7.89 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | MW9S-GA01-11.5 | MW10A-GA01-8.5 | MW-10S | MW10S-0412 | MW10S-GA01-9.0 | MW10S-GA01-12.75 | MW11B-GA01-31.0 | MW12A-GA01-9.0 | MW12B-GA01-31.0 | MW13A-GA01-8.5 | MW13B-GA01-38.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 11.5 | 8.5 | | 12 | 9 | 12.75 | 31 | 9 | 31 | 8.5 | 38 |
| Date Collected: | | | 07/18/11 | 06/29/11 | 08/10/15 | 04/03/12 | 07/19/11 | 07/19/11 | 06/27/11 | 06/23/11 | 06/23/11 | 06/30/11 | 06/30/11 |
| Location ID: | CAS Number | Units | MW9S | MW10A | MW10S | MW10S | MW10S | MW10S | MW11B | MW12A | MW12B | MW13A | MW13B |
| **Volatile Organics** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | 2.4 | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | 0.23 J | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | 1.0 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | 21.5 | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | 0.66 J | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | 5.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | 5.3 | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | MW9S-GA01-11.5 | MW10A-GA01-8.5 | MW-10S | MW10S-0412 | MW10S-GA01-9.0 | MW10S-GA01-12.75 | MW11B-GA01-31.0 | MW12A-GA01-9.0 | MW12B-GA01-31.0 | MW13A-GA01-8.5 | MW13B-GA01-38.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 11.5 | 8.5 | | 12 | 9 | 12.75 | 31 | 9 | 31 | 8.5 | 38 |
| Date Collected: | | | 07/18/11 | 06/29/11 | 08/10/15 | 04/03/12 | 07/19/11 | 07/19/11 | 06/27/11 | 06/23/11 | 06/23/11 | 06/30/11 | 06/30/11 |
| Location ID: | CAS Number | Units | MW9S | MW10A | MW10S | MW10S | MW10S | MW10S | MW11B | MW12A | MW12B | MW13A | MW13B |
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | 13.3 | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | 0.48 J | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW9S-GA01-11.5<br>11.5<br>07/18/11<br>MW9S | MW10A-GA01-8.5<br>8.5<br>06/29/11<br>MW10A | MW-10S<br><br>08/10/15<br>MW10S | MW10S-0412<br>12<br>04/03/12<br>MW10S | MW10S-GA01-9.0<br>9<br>07/19/11<br>MW10S | MW10S-GA01-12.75<br>12.75<br>07/19/11<br>MW10S | MW11B-GA01-31.0<br>31<br>06/27/11<br>MW11B | MW12A-GA01-9.0<br>9<br>06/23/11<br>MW12A | MW12B-GA01-31.0<br>31<br>06/23/11<br>MW12B | MW13A-GA01-8.5<br>8.5<br>06/30/11<br>MW13A | MW13B-GA01-38.0<br>38<br>06/30/11<br>MW13B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | 408 | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 29.6 | 1.9 J | NA | 6.0 U | 2.5 U | 2.5 U | 25.0 U | 2.8 | 25.0 U | 2.5 U | 2.5 U |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | 5.5 | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | 140 J | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | 0.60 J | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | 95,200 | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 18,900 | 990 | NA | 6.1 J | 68.7 | 6.9 | 1,380,000 | 16,300 | 219,000 | 127,000 | 70.8 |
| Chromium VI | 18540-29-9 | ug/L | 18,800 | 10.0 U | NA | 10 U | 20.0 U | 10.0 U | 2,330,000 | 16,200 | 210,000 | 151,000 | 10.0 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | 1.1 J | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | 5.1 J | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | 3,850 | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | 2.6 J | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | 11,200 | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | 2,680 | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | MW9S-GA01-11.5 | MW10A-GA01-8.5 | MW-10S | MW10S-0412 | MW10S-GA01-9.0 | MW10S-GA01-12.75 | MW11B-GA01-31.0 | MW12A-GA01-9.0 | MW12B-GA01-31.0 | MW13A-GA01-8.5 | MW13B-GA01-38.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 11.5 | 8.5 | | 12 | 9 | 12.75 | 31 | 9 | 31 | 8.5 | 38 |
| Date Collected: | | | 07/18/11 | 06/29/11 | 08/10/15 | 04/03/12 | 07/19/11 | 07/19/11 | 06/27/11 | 06/23/11 | 06/23/11 | 06/30/11 | 06/30/11 |
| Location ID: | CAS Number | Units | MW9S | MW10A | MW10S | MW10S | MW10S | MW10S | MW11B | MW12A | MW12B | MW13A | MW13B |
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | 0.20 U | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 182 | 88.9 | NA | 15.0 | 53.1 | 15.4 | 509 | 13.9 | 46.0 J | 566 | 80.3 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | 14,900 | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | 327,000 | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 1.0 U | 1.0 U | NA | 2.0 U | 1.0 U | 1.0 U | 10.0 U | 1.0 U | 10.0 U | 1.0 U | 1.0 U |
| Total CCPW Metals | CCPW-M | ug/L | 19,300 | 1,600 | NA | 21.8 | 134 | 26.5 | 1,380,000 | 16,600 | 219,000 | 128,000 | 190 |
| Vanadium | 7440-62-2 | ug/L | 182 | 524 | NA | 0.70 J | 11.7 | 4.2 J | 50.0 U | 303 | 50.0 U | 19.7 | 39.2 |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | 17.9 J | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | MW9S-GA01-11.5 | MW10A-GA01-8.5 | MW-10S | MW10S-0412 | MW10S-GA01-9.0 | MW10S-GA01-12.75 | MW11B-GA01-31.0 | MW12A-GA01-9.0 | MW12B-GA01-31.0 | MW13A-GA01-8.5 | MW13B-GA01-38.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 11.5 | 8.5 | | 12 | 9 | 12.75 | 31 | 9 | 31 | 8.5 | 38 |
| Date Collected: | | | 07/18/11 | 06/29/11 | 08/10/15 | 04/03/12 | 07/19/11 | 07/19/11 | 06/27/11 | 06/23/11 | 06/23/11 | 06/30/11 | 06/30/11 |
| Location ID: | CAS Number | Units | MW9S | MW10A | MW10S | MW10S | MW10S | MW10S | MW11B | MW12A | MW12B | MW13A | MW13B |
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 253 | 241 | NA | 265 | 466 | 461 | 496 | 399 | 481 | 221 | 333 |
| pH | ARC-pH | SU | 12.5 | 10.4 | NA | 6.71 | 7.21 | 7.18 | 7.39 | 9.37 | 7.20 | 12.9 | 7.71 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | MW9S-GA01-11.5 | MW10A-GA01-8.5 | MW-10S | MW10S-0412 | MW10S-GA01-9.0 | MW10S-GA01-12.75 | MW11B-GA01-31.0 | MW12A-GA01-9.0 | MW12B-GA01-31.0 | MW13A-GA01-8.5 | MW13B-GA01-38.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sample Depth(ft):** | | | **11.5** | **8.5** | | **12** | **9** | **12.75** | **31** | **9** | **31** | **8.5** | **38** |
| **Date Collected:** | | | **07/18/11** | **06/29/11** | **08/10/15** | **04/03/12** | **07/19/11** | **07/19/11** | **06/27/11** | **06/23/11** | **06/23/11** | **06/30/11** | **06/30/11** |
| **Location ID:** | **CAS Number** | **Units** | **MW9S** | **MW10A** | **MW10S** | **MW10S** | **MW10S** | **MW10S** | **MW11B** | **MW12A** | **MW12B** | **MW13A** | **MW13B** |
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 1,100 | 1,860 | NA | 600 | 6,270 | 4,100 | 380 | 320 | 2,460 | 570 | 5,840 |
| Oxidation Reduction Potential | ARC-ORP | mV | 65.8 | 127.6 | NA | 20.3 | 59.8 | 46.3 | 387.5 | 199.8 | 281.3 | 69.6 | 247 |
| pH | ARC-pH | SU | 10.98 | 10.59 | NA | 6.93 | 6.41 | 6.34 | 6.92 | 9.36 | 6.59 | 13.06 | 6.95 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 19.54 | 27.02 | NA | 16.73 | 26.2 | 22.49 | 18.51 | 20.09 | 20.15 | 23.91 | 19.69 |
| Turbidity | ARC-Turb | NTU | 1.87 | 6.68 | NA | 8.5 | 43.9 | 51.7 | 3.21 | 7.76 | 0.76 | 14.8 | 9.32 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | MW14D-GA01-32.5 | MW14D-GA01-36.5 | MW14S-GA01-11.0 | MW23A | MW-23A 022012 | MW23B | MW-23B 022012 | MW31A-20151217-13.0 | MW-31A-20151217-15.0 | MW-31A-20170403 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 32.5 | 36.5 | 11 | 15.3 | 15.2 | 37 | 37 | | | |
| Date Collected: | | | 07/20/11 | 07/20/11 | 07/20/11 | 01/06/12 | 02/20/12 | 01/06/12 | 02/20/12 | 12/17/15 | 12/17/15 | 04/03/17 |
| Location ID: | CAS Number | Units | MW14D | MW14D | MW14S | 114-MW23A | 114-MW23A | 114-MW23B | 114-MW23B | MW-31A | MW-31A | MW-31A |
| **Volatile Organics** | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW14D-GA01-32.5<br>32.5<br>07/20/11<br>MW14D | MW14D-GA01-36.5<br>36.5<br>07/20/11<br>MW14D | MW14S-GA01-11.0<br>11<br>07/20/11<br>MW14S | MW23A<br>15.3<br>01/06/12<br>114-MW23A | MW-23A 022012<br>15.2<br>02/20/12<br>114-MW23A | MW23B<br>37<br>01/06/12<br>114-MW23B | MW-23B 022012<br>37<br>02/20/12<br>114-MW23B | MW31A-20151217-13.0<br>12/17/15<br>MW-31A | MW-31A-20151217-15.0<br>12/17/15<br>MW-31A | MW-31A-20170403<br>04/03/17<br>MW-31A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW14D-GA01-32.5<br>32.5<br>07/20/11<br>MW14D | MW14D-GA01-36.5<br>36.5<br>07/20/11<br>MW14D | MW14S-GA01-11.0<br>11<br>07/20/11<br>MW14S | MW23A<br>15.3<br>01/06/12<br>114-MW23A | MW-23A 022012<br>15.2<br>02/20/12<br>114-MW23A | MW23B<br>37<br>01/06/12<br>114-MW23B | MW-23B 022012<br>37<br>02/20/12<br>114-MW23B | MW31A-20151217-13.0<br>12/17/15<br>MW-31A | MW-31A-20151217-15.0<br>12/17/15<br>MW-31A | MW-31A-20170403<br>04/03/17<br>MW-31A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 2.5 U | 2.5 U | 2.5 U | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 7.3 | 7.3 | 17.0 | 2,550 | 5,420 | 25,800 | 35,300 | 9.0 J | 39.9 J | 1.2 J |
| Chromium VI | 18540-29-9 | ug/L | 2.7 J | 1.5 J | 10.0 U | 2,580 | 4,900 | 25,800 | 40,000 | 5.5 UJ | 5.5 UJ | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | CAS Number | Units | MW14D-GA01-32.5 | MW14D-GA01-36.5 | MW14S-GA01-11.0 | MW23A | MW-23A 022012 | MW23B | MW-23B 022012 | MW31A-20151217-13.0 | MW-31A-20151217-15.0 | MW-31A-20170403 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 32.5 | 36.5 | 11 | 15.3 | 15.2 | 37 | 37 | | | |
| Date Collected: | | | 07/20/11 | 07/20/11 | 07/20/11 | 01/06/12 | 02/20/12 | 01/06/12 | 02/20/12 | 12/17/15 | 12/17/15 | 04/03/17 |
| Location ID: | | | MW14D | MW14D | MW14S | 114-MW23A | 114-MW23A | 114-MW23B | 114-MW23B | MW-31A | MW-31A | MW-31A |
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 6.8 | 9.5 | 15.5 | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | 14 | 22 | 36.1 | 2,550 | 5,420 | 25,800 | 35,300 | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 5.0 U | 5.2 | 3.6 J | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | MW14D-GA01-32.5 | MW14D-GA01-36.5 | MW14S-GA01-11.0 | MW23A | MW-23A 022012 | MW23B | MW-23B 022012 | MW31A-20151217-13.0 | MW-31A-20151217-15.0 | MW-31A-20170403 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 32.5 | 36.5 | 11 | 15.3 | 15.2 | 37 | 37 | | | |
| Date Collected: | | | 07/20/11 | 07/20/11 | 07/20/11 | 01/06/12 | 02/20/12 | 01/06/12 | 02/20/12 | 12/17/15 | 12/17/15 | 04/03/17 |
| Location ID: | CAS Number | Units | MW14D | MW14D | MW14S | 114-MW23A | 114-MW23A | 114-MW23B | 114-MW23B | MW-31A | MW-31A | MW-31A |
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 529 | 518 | 520 | 450 | 206 | 390 | 336 | 183 | 82.1 | 231 |
| pH | ARC-pH | SU | 7.67 | 7.49 | 7.54 | 9.04 | 9.76 | 7.35 | 7.15 | 10.33 | 10.58 | 10.14 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW14D-GA01-32.5<br>32.5<br>07/20/11<br>MW14D | MW14D-GA01-36.5<br>36.5<br>07/20/11<br>MW14D | MW14S-GA01-11.0<br>11<br>07/20/11<br>MW14S | MW23A<br>15.3<br>01/06/12<br>114-MW23A | MW-23A 022012<br>15.2<br>02/20/12<br>114-MW23A | MW23B<br>37<br>01/06/12<br>114-MW23B | MW-23B 022012<br>37<br>02/20/12<br>114-MW23B | MW31A-20151217-13.0<br><br>12/17/15<br>MW-31A | MW-31A-20151217-15.0<br><br>12/17/15<br>MW-31A | MW-31A-20170403<br><br>04/03/17<br>MW-31A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 23,500 | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 1,890 | 1,600 | 5,000 | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 262.1 | 282.3 | 103 | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | 6.7 | 6.68 | 6.89 | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 17.49 | 15.1 | 20.91 | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | 8.9 | 9.8 | 3.7 | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | MW-31A-20170403-F | MW-31A-F-20151217-15.0 | MW34-20151214-10.5 | MW34-20151214-15.5 | MW34-F-20151214-10.5 | MW34-F-20151214-15.5 | MW-MORRIS1A-10092014 | MW-MORRIS-1A-20150924 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | |
| Date Collected: | | | 04/03/17 | 12/17/15 | 12/14/15 | 12/14/15 | 12/14/15 | 12/14/15 | 10/09/14 | 09/24/15 |
| Location ID: | CAS Number | Units | MW-31A | MW-31A | MW-34 | MW-34 | MW-34 | MW-34 | MW-Morris1A | MW-Morris1A |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | MW-31A-20170403-F<br>04/03/17<br>MW-31A | MW-31A-F-20151217-15.0<br>12/17/15<br>MW-31A | MW34-20151214-10.5<br>12/14/15<br>MW-34 | MW34-20151214-15.5<br>12/14/15<br>MW-34 | MW34-F-20151214-10.5<br>12/14/15<br>MW-34 | MW34-F-20151214-15.5<br>12/14/15<br>MW-34 | MW-MORRIS1A-10092014<br>10/09/14<br>MW-Morris1A | MW-MORRIS-1A-20150924<br>09/24/15<br>MW-Morris1A |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW-31A-20170403-F<br><br>04/03/17<br>MW-31A | MW-31A-F-20151217-15.0<br><br>12/17/15<br>MW-31A | MW34-20151214-10.5<br><br>12/14/15<br>MW-34 | MW34-20151214-15.5<br><br>12/14/15<br>MW-34 | MW34-F-20151214-10.5<br><br>12/14/15<br>MW-34 | MW34-F-20151214-15.5<br><br>12/14/15<br>MW-34 | MW-MORRIS1A-10092014<br><br>10/09/14<br>MW-Morris1A | MW-MORRIS-1A-20150924<br><br>09/24/15<br>MW-Morris1A |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | 672 | 740 | NA | NA | 1,510 [1,660] | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | 6.0 U | 6.0 U | NA | NA | 120 U [120 U] | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | 3.0 U | 3.0 U | NA | NA | 60 U [60 U] | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | 91.8 J | 99.4 J | NA | NA | 454 [360 J] | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | 1.0 U | 1.0 U | NA | NA | 2.0 U [2 U] | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | 0.40 J | 3.0 U | NA | NA | 6.0 U [6 U] | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | 89,600 | 94,200 | NA | NA | 682,000 [583,000] | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 209 | 191 | NA | NA | 6.0 J [3.8 J] | 72.6 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 5.5 U | 5.5 U | NA | NA | 6.1 J [10 U] | 60 RA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | 50 U | 50 U | NA | NA | 5.0 J [4.8 J] | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | 16.9 J | 9.9 J | NA | NA | 295 [139] | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 2,240 | 1,780 | NA | NA | 23,800 [20,100] | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | 8.8 | 8.8 | NA | NA | 60 U [60 U] | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | 37,500 J | 38,400 J | NA | NA | 10,000 U [10,000 U] | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | 386 | 358 | NA | NA | 30 U [4.2 J] | NA |

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | MW-31A-20170403-F<br>04/03/17<br>MW-31A | MW-31A-F-20151217-15.0<br>12/17/15<br>MW-31A | MW34-20151214-10.5<br>12/14/15<br>MW-34 | MW34-20151214-15.5<br>12/14/15<br>MW-34 | MW34-F-20151214-10.5<br>12/14/15<br>MW-34 | MW34-F-20151214-15.5<br>12/14/15<br>MW-34 | MW-MORRIS1A-10092014<br>10/09/14<br>MW-Morris1A | MW-MORRIS-1A-20150924<br>09/24/15<br>MW-Morris1A |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | 0.20 U | 0.20 U | NA | NA | 1.2 U [0.41 J] | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | 12.5 | 4.6 JB | NA | NA | 30.6 [33.6] | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | 19,100 | 19,600 | NA | NA | 224,000 [216,000] | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | 3.9 J | 10 U | NA | NA | 200 U [200 U] | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | 10 U | 10 U | NA | NA | 12.4 J [11 J] | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | 117,000 | 122,000 | NA | NA | 9,970,000 [9,670,000] | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | 84,900 | 76,200 | NA | NA | 1,870,000 [1,810,000] | 1,760,000 J |
| Thallium | 7440-28-0 | ug/L | NA | NA | 2.0 U | 2.0 U | NA | NA | 40 U [40 U] | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | 7.4 J | 7.0 J | NA | NA | 35.2 J [41.4 J] | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | 38.5 JB | 37.6 JB | NA | NA | 90.6 JB [69 JB] | NA |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 10 U | 72.8 J | NA | NA | 4.5 J | 2.9 J | 11.2 J [4.6 J] | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 U | 5.5 RA | NA | NA | 5.5 U | R | 10 U [10 U] | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | 89,600 | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW-31A-20170403-F<br><br>04/03/17<br>MW-31A | MW-31A-F-20151217-15.0<br><br>12/17/15<br>MW-31A | MW34-20151214-10.5<br><br>12/14/15<br>MW-34 | MW34-20151214-15.5<br><br>12/14/15<br>MW-34 | MW34-F-20151214-10.5<br><br>12/14/15<br>MW-34 | MW34-F-20151214-15.5<br><br>12/14/15<br>MW-34 | MW-MORRIS1A-10092014<br><br>10/09/14<br>MW-Morris1A | MW-MORRIS-1A-20150924<br><br>09/24/15<br>MW-Morris1A |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | 15,400,000 [15,400,000] | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | 2,000 U | NA | NA | NA | NA | 2,000 U |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 132 | 88.6 | 355 | 350 | 364 | 345 | 161 [198] [141] | 231 |
| pH | ARC-pH | SU | 10.25 | 10.59 | 7.30 | 7.24 | 7.46 | 7.25 | 10.58 [10.69] [10.73] | 12.17 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | 1,260 | NA | 1,260 | NA | NA | 3,550 |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW-31A-20170403-F<br>04/03/17<br>MW-31A | MW-31A-F-20151217-15.0<br>12/17/15<br>MW-31A | MW34-20151214-10.5<br>12/14/15<br>MW-34 | MW34-20151214-15.5<br>12/14/15<br>MW-34 | MW34-F-20151214-10.5<br>12/14/15<br>MW-34 | MW34-F-20151214-15.5<br>12/14/15<br>MW-34 | MW-MORRIS1A-10092014<br>10/09/14<br>MW-Morris1A | MW-MORRIS-1A-20150924<br>09/24/15<br>MW-Morris1A |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | 251,000 | NA | 250,000 | NA | 800,000 U [800,000 U] | 226,000 |
| Sulfide | 18496-25-8 | ug/L | NA | NA | 2,000 U | NA | 2,000 U | NA | 294,000 [280,000] | 356,000 |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | 3,000 UJ | NA | 3,000 UJ | NA | NA | 825,000 J |
| Temperature | ARC-Temp | deg c | NA | NA | 15.82 | NA | 15.82 | NA | NA | 21.7 |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | 6,500 | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | 2,200 | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | 474.9 | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | 11.26 | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | 4.08 | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | 21.26 | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | 2.9 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW-MORRIS1A-20170331<br><br>03/31/17<br>MW-Morris1A | MW-MORRIS1A-20170331-F<br><br>03/31/17<br>MW-Morris1A | MW-MORRIS-1A-F-20150924<br><br>09/24/15<br>MW-Morris1A | NJD981084668-4/12/2005-3<br>10<br>04/12/05<br>PSEG-SB29 | NJD981084668-4/13/2005-4<br>50<br>04/13/05<br>PSEG-SB29 | NJD981084668-4/13/2005-5<br>56.5 - 57<br>04/13/05<br>PSEG-SB29 | NJD981084668-4/13/2005-6<br>28<br>04/13/05<br>PSEG-SB29 |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | 540 U | 5.0 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 110 U | 1.0 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | 540 U | 5.0 U |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | 3.0 U | 3.0 U | 330 U | 3.0 U |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | 540 U | 5.0 U |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | 2.0 U | 2.0 U | 220 U | 2.0 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | 540 U | 5.0 U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | 540 U | 5.0 U |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | 540 U | 5.0 U |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | 540 U | 5.0 U |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | 2.0 U | 2.0 U | 220 U | 2.0 U |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 110 U | 1.0 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | 540 U | 5.0 U |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | 540 U | 5.0 U |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | 5.0 | 5.0 U | 540 U | 5.0 U |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | 540 U | 5.0 U |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | 44 | 5.0 U | 540 U | 12 |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | 0.7 J | 1.0 U | 110 U | 0.5 J |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 110 U | 1.0 U |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | 4.0 U | 4.0 U | 440 U | 4.0 U |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | 540 U | 5.0 U |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | 540 U | 1.0 J |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | 2.0 U | 2.0 U | 220 U | 2.0 U |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | 540 U | 5.0 U |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | 540 U | 5.0 U |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | 540 U | 5.0 U |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | 540 U | 5.0 U |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | 540 U | 5.0 U |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | 540 U | 5.0 U |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | 540 U | 5.0 U |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | 540 U | 5.0 U |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | 540 U | 5.0 U |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | 540 U | 5.0 U |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | 1.0 J | 3.0 U | 330 U | 3.0 U |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | 0.7 J | 4.0 U | 440 U | 4.0 U |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | 540 U | 5.0 U |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | 540 U | 5.0 U |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | 540 U | 5.0 U |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | 540 U | 5.0 U |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | 1.3 J | 5.0 U | 540 U | 2.3 J |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | 540 U | 5.0 U |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 110 U | 1.0 U |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | 0.6 J | 5.0 U | 540 U | 3.3 J |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | 1.8 J | 5.0 U | 540 U | 5.0 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW-MORRIS1A-20170331<br><br>03/31/17<br>MW-Morris1A | MW-MORRIS1A-20170331-F<br><br>03/31/17<br>MW-Morris1A | MW-MORRIS-1A-F-20150924<br><br>09/24/15<br>MW-Morris1A | NJD981084668-4/12/2005-3<br>10<br>04/12/05<br>PSEG-SB29 | NJD981084668-4/13/2005-4<br>50<br>04/13/05<br>PSEG-SB29 | NJD981084668-4/13/2005-5<br>56.5 - 57<br>04/13/05<br>PSEG-SB29 | NJD981084668-4/13/2005-6<br>28<br>04/13/05<br>PSEG-SB29 |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | 540 U | 5.0 U |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | 540 U | 5.0 U |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 110 U | 1.0 U |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | 5.0 U | 5.0 U | 540 U | 5.0 U |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | 0.4 U | 0.4 U | 400 U | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | 0.6 U | 0.6 U | 400 U | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | 0.7 U | 0.7 U | 400 U | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | 0.8 U | 0.7 U | 400 U | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | 1.3 U | 1.2 U | 400 U | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | 1.1 U | 1.0 U | 400 U | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | 1.8 U | 1.7 U | 1,600 U | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | 0.5 U | 0.4 U | 80 U | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | 0.7 U | 0.6 U | 80 U | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | 0.4 U | 0.4 U | 400 U | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | 1.4 U | 1.2 U | 400 U | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | 0.3 U | 0.2 U | 1,600 U | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | 4.0 | 0.8 | 400 U | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | 0.8 U | 0.8 U | 400 U | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | 0.9 U | 0.8 U | 800 U | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | 1.8 U | 1.6 U | 400 U | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | 2.7 U | 2.4 U | 800 U | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | 0.4 U | 0.4 U | 800 U | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | 0.4 U | 0.4 U | 400 U | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | 1.2 U | 1.1 U | 400 U | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | 0.3 U | 0.3 U | 400 U | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | 0.9 J | 1.2 U | 400 U | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | 0.6 U | 0.5 U | 800 U | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | 0.7 U | 0.7 U | 1,600 U | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | 4.8 | 0.8 | 400 U | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | 1.4 | 0.073 U | 400 U | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | 0.9 U | 0.8 U | 400 U | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | 2.3 | 0.2 | 400 U | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | 0.6 U | 0.6 U | 400 U | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | 1.0 U | 0.9 U | 400 U | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | 2.2 | 0.094 U | 40 U | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | 1.5 | 0.073 U | 40 U | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | 0.9 | 0.094 U | 40 U | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | 1.2 | 0.073 U | 400 U | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | 1.5 | 0.062 U | 40 U | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | 0.7 U | 0.6 U | 400 U | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 40 U | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | 32 | 28 | 400 U | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | 2.7 | 21 | 400 U | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW-MORRIS1A-20170331<br><br>03/31/17<br>MW-Morris1A | MW-MORRIS1A-20170331-F<br><br>03/31/17<br>MW-Morris1A | MW-MORRIS-1A-F-20150924<br><br>09/24/15<br>MW-Morris1A | NJD981084668-4/12/2005-3<br>10<br>04/12/05<br>PSEG-SB29 | NJD981084668-4/13/2005-4<br>50<br>04/13/05<br>PSEG-SB29 | NJD981084668-4/13/2005-5<br>56.5 - 57<br>04/13/05<br>PSEG-SB29 | NJD981084668-4/13/2005-6<br>28<br>04/13/05<br>PSEG-SB29 |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | 1.1 U | 1.0 U | 400 U | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | 0.5 | 0.031 U | 400 U | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | 3.0 | 0.3 | 400 U | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | 0.1 U | 0.1 U | 40 U | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | 0.6 | 0.4 U | 400 U | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | 0.3 U | 0.6 | 400 U | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | 0.4 U | 0.3 U | 400 U | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | 0.5 U | 0.5 U | 400 U | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | 0.6 U | 0.5 U | 400 U | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | 5.4 | 0.6 | 400 U | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | 3.1 | 0.7 | 400 U | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | 1.5 U | 1.4 U | 80 U | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | 0.3 U | 0.3 U | 40 U | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | 0.5 U | 0.4 U | 400 U | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | 0.8 U | 0.8 U | 40 U | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | 0.7 | 0.094 U | 40 U | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | 0.4 U | 0.4 U | 400 U | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | 9.3 | 1.0 | 400 U | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | 0.6 U | 0.6 U | 40 U | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | 0.7 U | 0.6 U | 40 U | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | 0.3 U | 0.2 U | 400 U | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | 0.6 U | 0.6 U | 400 U | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | 2.8 U | 2.6 U | 1,600 U | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | 14 | 3.1 | 400 U | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | 3.1 | 0.9 | 400 U | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | 9.3 | 1.0 | 400 U | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | 100 | 59 | 0 U | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | 923,000 | 55,700 | 1,160,000 | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | 116 U | 11.6 U | 930 U | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | 767 | 74.9 | 1,200 | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | 30,100 | 752 | 6,700 B | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | 68.7 | 5.8 | 170 B | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | 53.5 | 0.80 U | 96 U | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | 1,630,000 | 237,000 | 4,040,000 | NA |
| Chromium | 7440-47-3 | ug/L | 1.3 J | NA | NA | 401,000 | 1,200 | 3,800 | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 U | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | 2,000 | 43.7 | 1,300 B | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | 24,800 | 278 | 5,100 B | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | 1,510,000 | 99,000 | 3,960,000 | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | 59,700 | 247 | 3,200 | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | 470,000 | 508,000 | 1,190,000 | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | 70,700 | 2,310 | 111,000 | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW-MORRIS1A-20170331<br><br>03/31/17<br>MW-Morris1A | MW-MORRIS1A-20170331-F<br><br>03/31/17<br>MW-Morris1A | MW-MORRIS-1A-F-20150924<br><br>09/24/15<br>MW-Morris1A | NJD981084668-4/12/2005-3<br>10<br>04/12/05<br>PSEG-SB29 | NJD981084668-4/13/2005-4<br>50<br>04/13/05<br>PSEG-SB29 | NJD981084668-4/13/2005-5<br>56.5 - 57<br>04/13/05<br>PSEG-SB29 | NJD981084668-4/13/2005-6<br>28<br>04/13/05<br>PSEG-SB29 |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | 7.3 | 0.23 | 20 U | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | 4,620 | 243 | 3,400 B | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | 148,000 | 136,000 | 362,000 B | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | 42.0 U | 8.4 U | 1,100 U | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | 136 | 2.8 U | 380 B | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | 523,000 | 3,620,000 | 1,110,000 B | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | 47.0 U | 9.4 U | 1,100 U | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | 411,000 | 1,580 | 13,000 | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | 5,440 | 140 | 5,400 B | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | 73,800 | 673 | 14,300 | NA |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 1.0 J | 11.9 J | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U | 40 RA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | 1,650,000 J | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW-MORRIS1A-20170331<br><br>03/31/17<br>MW-Morris1A | MW-MORRIS1A-20170331-F<br><br>03/31/17<br>MW-Morris1A | MW-MORRIS-1A-F-20150924<br><br>09/24/15<br>MW-Morris1A | NJD981084668-4/12/2005-3<br>10<br>04/12/05<br>PSEG-SB29 | NJD981084668-4/13/2005-4<br>50<br>04/13/05<br>PSEG-SB29 | NJD981084668-4/13/2005-5<br>56.5 - 57<br>04/13/05<br>PSEG-SB29 | NJD981084668-4/13/2005-6<br>28<br>04/13/05<br>PSEG-SB29 |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | 500 U | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | 500 U | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 340 | 366 | 234 | NA | NA | NA | NA |
| pH | ARC-pH | SU | 6.86 | 6.88 | 10.63 | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW-MORRIS1A-20170331<br><br>03/31/17<br>MW-Morris1A | MW-MORRIS1A-20170331-F<br><br>03/31/17<br>MW-Morris1A | MW-MORRIS-1A-F-20150924<br><br>09/24/15<br>MW-Morris1A | NJD981084668-4/12/2005-3<br>10<br>04/12/05<br>PSEG-SB29 | NJD981084668-4/13/2005-4<br>50<br>04/13/05<br>PSEG-SB29 | NJD981084668-4/13/2005-5<br>56.5 - 57<br>04/13/05<br>PSEG-SB29 | NJD981084668-4/13/2005-6<br>28<br>04/13/05<br>PSEG-SB29 |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | 195,000 | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | 366,000 | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | 825,000 J | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-4/18/2005-4<br>14<br>04/18/05<br>PSEG-SB33 | NJD981084668-4/21/2005-5<br>10<br>04/21/05<br>PSEG-SB27 | NJD981084668-4/21/2005-6<br>34<br>04/21/05<br>PSEG-SB27 | NJD981084668-4/22/2005-7<br>54<br>04/22/05<br>PSEG-SB27 | NJD981084668-4/26/2005-3<br>28<br>04/26/05<br>PSEG-SB30 | NJD981084668-4/26/2005-4<br>10<br>04/26/05<br>PSEG-SB30 | NJD981084668-8/4/2005-2<br>3.95<br>08/04/05<br>MW3S |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | 5.0 U | 3.1 | 0.3 U | 1.4 U | 2.9 U | 0.3 U | 1.7 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | 1.0 U | 2.3 U | 0.5 U | 2.3 U | 4.6 U | 0.5 U | 1.7 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | 5.0 U | 1.6 U | 0.3 U | 1.6 U | 3.1 U | 0.3 U | 1.8 U |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | 3.0 U | 1.4 U | 0.3 U | 1.4 U | 2.8 U | 0.3 U | 1.6 U |
| 1,1-Dichloroethane | 75-34-3 | ug/L | 5.0 U | 1.8 U | 0.4 U | 1.8 U | 3.6 U | 0.4 U | 1.6 U |
| 1,1-Dichloroethene | 75-35-4 | ug/L | 2.0 U | 1.7 U | 0.3 U | 1.7 U | 3.4 U | 0.3 U | 1.8 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | 5.0 U | 1.4 U | 0.3 U | 1.4 U | 2.8 U | 0.3 U | 1.8 U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | 5.0 U | 1.9 U | 0.4 U | 1.9 U | 3.8 U | 0.4 U | 1.5 U |
| 1,2-Dibromoethane | 106-93-4 | ug/L | 5.0 U | 1.7 U | 0.3 U | 1.7 U | 3.4 U | 0.3 U | 1.8 U |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | 5.0 U | 1.6 U | 0.3 U | 1.6 U | 3.3 U | 0.3 U | 2.0 U |
| 1,2-Dichloroethane | 107-06-2 | ug/L | 2.0 U | 1.8 U | 0.4 U | 1.8 U | 3.6 U | 0.4 U | 1.4 U |
| 1,2-Dichloropropane | 78-87-5 | ug/L | 1.0 U | 1.8 U | 0.4 U | 1.8 U | 3.7 U | 0.4 U | 1.4 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | 5.0 U | 2.0 U | 0.4 U | 2.0 U | 4.0 U | 0.4 U | 2.0 U |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | 5.0 U | 1.9 U | 0.4 U | 1.9 U | 3.8 U | 0.4 U | 2.4 U |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | 5.0 U | 16 | 0.9 U | 4.6 U | 9.2 U | 0.9 U | 4.7 U |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | 5.0 U | 2.1 U | 0.4 U | 2.1 U | 4.2 U | 0.4 U | 2.6 U |
| Acetone | 67-64-1 | ug/L | 5.0 U | 260 | 1.0 U | 4.8 U | 9.6 U | 1.0 U | 6.3 U |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | 1.0 U | 1.6 U | 0.3 U | 1.6 U | 320 | 0.8 | 500 |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | 1.0 U | 1.4 U | 0.3 U | 1.4 U | 2.9 U | 0.3 U | 1.6 U |
| Bromoform | 75-25-2 | ug/L | 4.0 U | 1.4 U | 0.3 U | 1.4 U | 2.7 U | 0.3 U | 1.1 U |
| Bromomethane | 74-83-9 | ug/L | 5.0 U | 1.6 U | 0.3 U | 1.6 U | 3.3 U | 0.3 U | 1.6 U |
| Carbon Disulfide | 75-15-0 | ug/L | 5.0 U | 2.0 | 0.2 U | 1.2 U | 4.0 | 4.3 | 1.7 U |
| Carbon Tetrachloride | 56-23-5 | ug/L | 2.0 U | 1.5 U | 0.3 U | 1.5 U | 3.0 U | 0.3 U | 1.6 U |
| CFC-11 | 75-69-4 | ug/L | 5.0 U | 1.8 U | 0.4 U | 1.8 U | 3.5 U | 0.4 U | 1.2 U |
| CFC-12 | 75-71-8 | ug/L | 5.0 U | 1.6 U | 0.3 U | 1.6 U | 3.1 U | 0.3 U | 2.4 U |
| Chlorobenzene | 108-90-7 | ug/L | 5.0 U | 1.3 U | 0.3 U | 1.3 U | 2.6 U | 0.3 U | 2.2 U |
| Chlorodibromomethane | 124-48-1 | ug/L | 5.0 U | 1.0 U | 0.2 U | 1.0 U | 2.1 U | 0.2 U | 1.4 U |
| Chloroethane | 75-00-3 | ug/L | 5.0 U | 1.8 U | 0.4 U | 1.8 U | 3.7 U | 0.4 U | 1.2 U |
| Chloroform | 67-66-3 | ug/L | 5.0 U | 1.7 U | 0.3 U | 1.7 U | 3.4 U | 0.3 U | 2.6 U |
| Chloromethane | 74-87-3 | ug/L | 5.0 U | 1.9 U | 0.4 U | 1.9 U | 3.8 U | 0.4 U | 1.4 U |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | 1.5 J | 1.8 U | 0.4 U | 1.8 U | 3.5 U | 0.4 U | 2.2 U |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | 5.0 U | 1.4 U | 0.3 U | 1.4 U | 2.7 U | 0.3 U | 1.2 U |
| Cyclohexane | 110-82-7 | ug/L | 5.0 U | 2.0 U | 0.4 U | 2.0 U | 3.9 U | 0.7 | 1.4 U |
| Dichloromethane | 75-09-2 | ug/L | 3.0 U | 4.6 U | 0.9 U | 4.6 U | 9.1 U | 0.9 U | 2.6 U |
| Ethylbenzene | 100-41-4 | ug/L | 4.0 U | 1.6 U | 0.3 U | 1.6 U | 580 | 0.3 U | 260 |
| Isopropylbenzene | 98-82-8 | ug/L | 5.0 U | 1.6 U | 0.3 U | 1.6 U | 23 | 0.3 U | 18 |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | 5.0 U | 2.4 U | 0.5 U | 2.4 U | 4.7 U | 0.5 U | 1.5 U |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | 5.0 U | 4.6 U | 0.9 U | 4.6 U | 9.3 U | 0.9 U | 2.6 U |
| Methylcyclohexane | 108-87-2 | ug/L | 5.0 U | 1.0 U | 0.2 U | 1.0 U | 1.9 U | 0.2 U | 1.7 U |
| Methyl-tert-butylether | 1634-04-4 | ug/L | 16 | 1.4 U | 2.3 | 1.4 U | 2.8 U | 2.5 | 1.1 U |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | 5.0 U | 1.4 U | 0.3 U | 1.4 U | 2.8 U | 0.3 U | 2.0 U |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | 9.6 | 1.8 U | 0.4 U | 1.8 U | 3.6 U | 0.4 U | 2.2 U |
| Toluene | 108-88-3 | ug/L | 5.0 U | 1.4 U | 1.3 | 2.6 | 9.4 | 0.3 | 260 |
| Total VOCs | ARC-TVOC | ug/L | NA | 280 | 3.6 | 2.6 | 1,500 | 8.6 | 1,400 |
| Total Xylenes | 1330-20-7 | ug/L | 5.0 U | 0.9 U | 0.2 U | 0.9 U | 540 | 0.2 U | 390 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-4/18/2005-4<br>14<br>04/18/05<br>PSEG-SB33 | NJD981084668-4/21/2005-5<br>10<br>04/21/05<br>PSEG-SB27 | NJD981084668-4/21/2005-6<br>34<br>04/21/05<br>PSEG-SB27 | NJD981084668-4/22/2005-7<br>54<br>04/22/05<br>PSEG-SB27 | NJD981084668-4/26/2005-3<br>28<br>04/26/05<br>PSEG-SB30 | NJD981084668-4/26/2005-4<br>10<br>04/26/05<br>PSEG-SB30 | NJD981084668-8/4/2005-2<br>3.95<br>08/04/05<br>MW3S |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | 5.0 U | 1.6 U | 0.3 U | 1.6 U | 3.3 U | 0.3 U | 2.2 U |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | 5.0 U | 1.8 U | 0.4 U | 1.8 U | 3.5 U | 0.4 U | 1.2 U |
| Trichloroethene | 79-01-6 | ug/L | 2.8 | 2.0 U | 0.4 U | 2.0 U | 4.0 U | 0.4 U | 1.8 U |
| Vinyl chloride | 75-01-4 | ug/L | 5.0 U | 1.8 U | 0.4 U | 1.8 U | 3.5 U | 0.4 U | 1.4 U |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | 0.4 U | 2.8 U | 1.7 U | 7.0 U | 9.9 | 0.6 U | 60 |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | 0.6 U | 2.3 U | 1.4 U | 5.7 U | 7.7 U | 0.8 U | 9.8 U |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | 0.7 U | 3.2 U | 1.9 U | 8.0 U | 9.0 U | 0.9 U | 14 U |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | 0.8 U | 5.8 U | 3.5 U | 15 U | 10 U | 1.0 U | 25 U |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | 1.3 U | 3.8 U | 2.3 U | 9.7 U | 16 U | 1.6 U | 16 U |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | 1.1 U | 5.4 U | 3.2 U | 14 U | 14 U | 1.4 U | 23 U |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | 1.8 U | 2.3 U | 1.4 U | 5.9 U | 23 U | 2.3 U | 10 U |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | 0.4 U | 3.0 U | 1.8 U | 7.7 U | 5.7 U | 0.6 U | 13 U |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | 0.6 U | 3.4 U | 2.1 U | 8.6 U | 8.1 U | 0.8 U | 15 U |
| 2-Chloronaphthalene | 91-58-7 | ug/L | 0.4 U | 2.8 U | 1.7 U | 7.2 U | 5.6 U | 0.6 U | 12 U |
| 2-Chlorophenol | 95-57-8 | ug/L | 1.3 U | 2.9 U | 1.7 U | 7.3 U | 17 U | 1.7 U | 12 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | 0.3 U | 3.3 U | 2.0 U | 8.3 U | 3.4 U | 0.3 U | 14 U |
| 2-Methylnaphthalene | 91-57-6 | ug/L | 0.5 U | 3.0 U | 1.8 U | 7.6 U | 150 | 0.6 U | 560 |
| 2-Methylphenol | 95-48-7 | ug/L | 0.8 U | 3.6 U | 2.2 U | 9.2 U | 10 U | 1.0 U | 16 U |
| 2-Nitroaniline | 88-74-4 | ug/L | 0.8 U | 1.8 U | 1.1 U | 4.4 U | 11 U | 1.1 U | 7.6 U |
| 2-Nitrophenol | 88-75-5 | ug/L | 1.7 U | 4.2 U | 2.5 U | 10 U | 22 U | 2.2 U | 18 U |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | 2.6 U | 13 U | 7.9 U | 33 U | 34 U | 3.4 U | 56 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | 0.4 U | 2.7 U | 1.6 U | 6.8 U | 4.8 U | 0.5 U | 11 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | 0.4 U | 3.2 U | 1.9 U | 8.1 U | 5.4 U | 0.5 U | 14 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | 1.2 U | 4.4 U | 2.6 U | 11 U | 16 U | 1.6 U | 19 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | 0.3 U | 2.8 U | 1.7 U | 7.1 U | 4.0 U | 0.4 U | 12 U |
| 4-Methylphenol | 106-44-5 | ug/L | 1.2 U | 42 | 1.8 U | 7.8 U | 16 U | 1.6 U | 13 U |
| 4-Nitroaniline | 100-01-6 | ug/L | 0.6 U | 1.7 U | 1.0 U | 4.2 U | 7.4 U | 0.7 U | 7.2 U |
| 4-Nitrophenol | 100-02-7 | ug/L | 0.7 U | 2.3 U | 1.4 U | 5.9 U | 9.0 U | 0.9 U | 10 U |
| Acenaphthene | 83-32-9 | ug/L | 0.1 U | 0.3 U | 0.2 | 0.9 U | 38 | 0.5 | 170 |
| Acenaphthylene | 208-96-8 | ug/L | 0.078 U | 0.3 U | 0.2 U | 0.8 U | 1.0 U | 0.1 U | 84 |
| Acetophenone | 98-86-2 | ug/L | 0.8 U | 2.7 U | 1.6 U | 6.8 U | 11 U | 1.1 U | 12 |
| Anthracene | 120-12-7 | ug/L | 0.1 U | 0.3 U | 0.2 U | 0.8 U | 1.3 U | 0.2 | 31 |
| Atrazine | 1912-24-9 | ug/L | 0.6 U | 3.3 U | 2.0 U | 8.4 U | 8.0 U | 0.8 U | 14 U |
| Benzaldehyde | 100-52-7 | ug/L | 1.0 U | 23 | 2.3 U | 9.8 U | 12 U | 1.2 U | 17 U |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | 0.1 U | 0.5 U | 0.3 U | 1.1 U | 1.3 U | 0.1 U | 8.4 |
| Benzo(a)pyrene | 50-32-8 | ug/L | 0.078 U | 0.2 | 0.097 U | 0.4 U | 1.0 U | 0.1 U | 4.5 |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | 0.1 U | 0.3 U | 0.2 U | 0.9 U | 1.3 U | 0.1 U | 2.0 |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | 0.078 U | 0.2 U | 0.1 U | 0.6 U | 1.0 U | 0.1 U | 1.0 U |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | 0.067 U | 0.2 U | 0.1 U | 0.6 U | 0.9 U | 0.086 U | 3.5 |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | 0.7 U | 2.3 U | 1.4 U | 5.8 U | 8.6 U | 0.9 U | 9.9 U |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | 1.0 U | 2.3 U | 1.4 U | 5.9 U | 13 U | 1.3 U | 10 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | 11 | 3.0 | 19 | 490 | 71 | 19 | 12 U |
| Butyl benzyl phthalate | 85-68-7 | ug/L | 19 | 2.8 U | 8.2 | 17 | 79 | 3.4 | 12 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-4/18/2005-4<br>14<br>04/18/05<br>PSEG-SB33 | NJD981084668-4/21/2005-5<br>10<br>04/21/05<br>PSEG-SB27 | NJD981084668-4/21/2005-6<br>34<br>04/21/05<br>PSEG-SB27 | NJD981084668-4/22/2005-7<br>54<br>04/22/05<br>PSEG-SB27 | NJD981084668-4/26/2005-3<br>28<br>04/26/05<br>PSEG-SB30 | NJD981084668-4/26/2005-4<br>10<br>04/26/05<br>PSEG-SB30 | NJD981084668-8/4/2005-2<br>3.95<br>08/04/05<br>MW3S |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | 1.1 U | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | 0.033 U | 2.4 U | 1.5 U | 6.1 U | 2.1 | 0.043 U | 13 |
| Chrysene | 218-01-9 | ug/L | 0.1 U | 0.5 U | 0.3 U | 1.3 U | 1.3 U | 0.4 | 9.4 |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | 0.1 U | 0.3 U | 0.2 U | 0.7 U | 1.4 U | 0.1 U | 1.1 U |
| Dibenzofuran | 132-64-9 | ug/L | 0.4 U | 2.4 U | 1.5 U | 6.1 U | 4.8 U | 0.5 U | 10 J |
| Diethyl phthalate | 84-66-2 | ug/L | 1.2 | 2.1 U | 1.2 U | 5.3 U | 3.4 U | 0.7 | 11 |
| Dimethyl phthalate | 131-11-3 | ug/L | 0.3 U | 2.9 U | 1.8 U | 7.4 U | 4.4 U | 0.4 U | 12 U |
| Di-n-butyl phthalate | 84-74-2 | ug/L | 0.5 | 2.7 U | 1.6 U | 6.8 U | 6.3 U | 0.6 U | 12 U |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | 0.6 U | 2.7 U | 1.6 U | 6.8 U | 7.4 U | 0.7 U | 11 U |
| Fluoranthene | 206-44-0 | ug/L | 0.078 U | 0.6 | 0.6 | 0.9 U | 1.0 U | 0.4 | 21 |
| Fluorene | 86-73-7 | ug/L | 0.1 U | 0.4 U | 0.4 | 1.1 U | 8.6 | 0.2 U | 89 |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | 1.5 U | 1.6 U | 1.0 U | 4.0 U | 19 U | 1.9 U | 6.9 U |
| Hexachlorobenzene | 118-74-1 | ug/L | 0.3 U | 3.6 U | 2.2 U | 9.2 U | 4.3 U | 0.4 U | 3.7 U |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | 0.5 U | 1.7 U | 1.0 U | 4.2 U | 6.1 U | 0.6 U | 7.2 U |
| Hexachloroethane | 67-72-1 | ug/L | 0.8 U | 2.4 U | 1.4 U | 6.1 U | 10 U | 1.0 U | 10 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | 0.1 U | 0.2 U | 0.1 U | 0.5 U | 1.3 U | 0.1 U | 0.9 U |
| Isophorone | 78-59-1 | ug/L | 0.4 U | 2.5 U | 1.5 U | 6.4 U | 5.1 U | 0.5 U | 11 U |
| Naphthalene | 91-20-3 | ug/L | 0.044 U | 0.6 U | 0.6 | 1.4 U | 1,700 | 0.057 U | 1,800 |
| Nitrobenzene | 98-95-3 | ug/L | 1.5 | 2.6 U | 1.5 U | 6.5 U | 8.0 U | 0.8 U | 11 U |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | 0.7 U | 2.0 U | 1.2 U | 5.0 U | 8.4 U | 0.8 U | 8.5 U |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | 0.3 U | 2.8 U | 1.7 U | 7.2 U | 3.4 U | 0.3 U | 12 U |
| p-Chloroaniline | 106-47-8 | ug/L | 0.6 U | 1.8 U | 1.1 U | 4.6 U | 7.8 U | 0.8 U | 7.8 U |
| Pentachlorophenol | 87-86-5 | ug/L | 2.7 U | 5.5 U | 3.4 U | 14 U | 35 U | 3.5 U | 24 U |
| Phenanthrene | 85-01-8 | ug/L | 0.9 | 0.9 | 1.7 | 0.7 | 5.2 | 0.7 | 130 |
| Phenol | 108-95-2 | ug/L | 0.6 U | 95 | 1.0 U | 4.1 U | 7.3 U | 0.7 U | 10 |
| Pyrene | 129-00-0 | ug/L | 0.078 U | 0.7 | 0.7 | 0.9 U | 1.0 U | 0.5 | 31 |
| Total SVOCs | ARC-TSVOC | ug/L | 34 | 170 | 31 | 510 | 2,100 | 26 | 3,100 |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 21,600 | 3,280,000 | 344,000 | NA | NA | 97,200 | 13,600 |
| Antimony | 7440-36-0 | ug/L | 5.8 U | 970 | 11.6 U | NA | NA | 49.3 | 6.7 |
| Arsenic | 7440-38-2 | ug/L | 28.5 | 878 | 135 | NA | NA | 2,900 | 16.7 |
| Barium | 7440-39-3 | ug/L | 226 | 11,700 | 4,160 | NA | NA | 37,800 | 1,650 |
| Beryllium | 7440-41-7 | ug/L | 3.5 | 30.0 U | 27.9 | NA | NA | 6.4 | 0.53 |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 0.40 U | 40.0 U | 4.0 U | NA | NA | 195 | 1.8 |
| Calcium | 7440-70-2 | ug/L | 71,000 | 24,000,000 | 710,000 | NA | NA | 424,000 | 87,300 |
| Chromium | 7440-47-3 | ug/L | 122 | 3,380,000 | 43,300 | NA | NA | 2,590 | 4,930 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 15.4 | 15,000 | 426 | NA | NA | 102 | 12.1 |
| Copper | 7440-50-8 | ug/L | 62.7 | 5,510 | 826 | NA | NA | 5,150 | 58.0 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 34,000 | 5,550,000 | 558,000 | NA | NA | 714,000 | 20,900 |
| Lead | 7439-92-1 | ug/L | 117 | 5,230 | 754 | NA | NA | 67,500 | 748 |
| Magnesium | 7439-95-4 | ug/L | 22,400 | 3,600,000 | 242,000 | NA | NA | 61,400 | 25,200 |
| Manganese | 7439-96-5 | ug/L | 2,110 | 119,000 | 12,900 | NA | NA | 6,580 | 573 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-4/18/2005-4<br>14<br>04/18/05<br>PSEG-SB33 | NJD981084668-4/21/2005-5<br>10<br>04/21/05<br>PSEG-SB27 | NJD981084668-4/21/2005-6<br>34<br>04/21/05<br>PSEG-SB27 | NJD981084668-4/22/2005-7<br>54<br>04/22/05<br>PSEG-SB27 | NJD981084668-4/26/2005-3<br>28<br>04/26/05<br>PSEG-SB30 | NJD981084668-4/26/2005-4<br>10<br>04/26/05<br>PSEG-SB30 | NJD981084668-8/4/2005-2<br>3.95<br>08/04/05<br>MW3S |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.10 U | 54.0 | 2.5 | NA | NA | 15.7 | 11.1 |
| Nickel | 7440-02-0 | ug/L | 47.6 | 59,500 | 1,110 | NA | NA | 832 | 57.1 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 12,700 | 89,700 | 59,600 | NA | NA | 42,800 | 24,900 |
| Selenium | 7782-49-2 | ug/L | 4.2 U | 420 U | 42.0 U | NA | NA | 28.7 | 4.2 U |
| Silver | 7440-22-4 | ug/L | 1.4 U | 140 U | 14.0 U | NA | NA | 35.6 | 1.4 U |
| Sodium | 7440-23-5 | ug/L | 102,000 | 3,100,000 | 124,000 | NA | NA | 278,000 | 322,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 4.7 U | 470 U | 9.4 U | NA | NA | 9.4 U | 4.7 U |
| Total CCPW Metals | CCPW-M | ug/L | 250 | 3,480,000 | 45,400 | NA | NA | 3,820 | 5,170 |
| Vanadium | 7440-62-2 | ug/L | 80.1 | 38,700 | 1,000 | NA | NA | 345 | 172 |
| Zinc | 7440-66-6 | ug/L | 266 | 25,500 | 3,160 | NA | NA | 110,000 | 1,540 |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-4/18/2005-4<br>14<br>04/18/05<br>PSEG-SB33 | NJD981084668-4/21/2005-5<br>10<br>04/21/05<br>PSEG-SB27 | NJD981084668-4/21/2005-6<br>34<br>04/21/05<br>PSEG-SB27 | NJD981084668-4/22/2005-7<br>54<br>04/22/05<br>PSEG-SB27 | NJD981084668-4/26/2005-3<br>28<br>04/26/05<br>PSEG-SB30 | NJD981084668-4/26/2005-4<br>10<br>04/26/05<br>PSEG-SB30 | NJD981084668-8/4/2005-2<br>3.95<br>08/04/05<br>MW3S |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | 19 |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | 10 |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-4/18/2005-4<br>14<br>04/18/05<br>PSEG-SB33 | NJD981084668-4/21/2005-5<br>10<br>04/21/05<br>PSEG-SB27 | NJD981084668-4/21/2005-6<br>34<br>04/21/05<br>PSEG-SB27 | NJD981084668-4/22/2005-7<br>54<br>04/22/05<br>PSEG-SB27 | NJD981084668-4/26/2005-3<br>28<br>04/26/05<br>PSEG-SB30 | NJD981084668-4/26/2005-4<br>10<br>04/26/05<br>PSEG-SB30 | NJD981084668-8/4/2005-2<br>3.95<br>08/04/05<br>MW3S |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-8/4/2005-3<br>67<br>08/04/05<br>MW4F | NJD981084668-8/4/2005-4<br>9.76<br>08/04/05<br>MW4S | NJD981084668-8/4/2005-5<br>4.72<br>08/04/05<br>MW5S | NJD981084668-8/4/2005-6<br>8.86<br>08/04/05<br>MW6S | NJD981084668-8/5/2005-2<br>3.27<br>08/05/05<br>MW2S | NJD981084668-8/5/2005-3<br>46<br>08/05/05<br>MW3D | NJD981084668-8/5/2005-4<br>38<br>08/05/05<br>MW4D |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | 0.3 U | 0.3 U | 1.7 U | 0.3 U | 3.4 U | 0.3 U | 8.5 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | 0.3 U | 0.3 U | 1.7 U | 0.3 U | 3.4 U | 0.3 U | 8.5 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | 0.4 U | 0.4 U | 1.8 U | 0.4 U | 3.5 U | 0.4 U | 8.8 U |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | 0.3 U | 0.3 U | 1.6 U | 0.3 U | 3.3 U | 0.3 U | 8.2 U |
| 1,1-Dichloroethane | 75-34-3 | ug/L | 0.3 U | 0.3 U | 1.6 U | 0.7 | 3.2 U | 0.3 U | 8 U |
| 1,1-Dichloroethene | 75-35-4 | ug/L | 0.4 U | 0.4 U | 1.8 U | 0.4 U | 3.5 U | 0.4 U | 8.8 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | 0.4 U | 0.4 U | 1.8 U | 100 | 3.5 U | 0.4 U | 8.8 U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | 0.3 U | 0.3 U | 1.5 U | 0.3 U | 3 U | 0.3 U | 7.5 U |
| 1,2-Dibromoethane | 106-93-4 | ug/L | 0.4 U | 0.4 U | 1.8 U | 0.4 U | 3.5 U | 0.4 U | 8.8 U |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | 0.4 U | 0.4 U | 2.0 U | 62 | 4.1 U | 0.4 U | 10 U |
| 1,2-Dichloroethane | 107-06-2 | ug/L | 41 | 0.3 U | 1.4 U | 0.3 U | 2.9 U | 0.3 U | 7.2 U |
| 1,2-Dichloropropane | 78-87-5 | ug/L | 0.3 U | 0.3 U | 1.4 U | 0.3 U | 2.9 U | 0.3 U | 7.2 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | 0.4 U | 0.4 U | 2.0 U | 86 | 4.1 U | 0.4 U | 10 U |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | 0.5 U | 0.5 U | 2.4 U | 57 | 4.9 U | 0.5 U | 12 U |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | 0.9 U | 0.9 U | 4.7 U | 0.9 U | 9.4 U | 0.9 U | 24 U |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | 0.5 U | 0.5 U | 2.6 U | 0.5 U | 5.2 U | 0.5 U | 13 U |
| Acetone | 67-64-1 | ug/L | 1.3 U | 1.3 U | 6.3 U | 1.3 U | 13 U | 1.3 U | 32 U |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | 120 | 0.3 U | 500 | 6.0 | 7 | 61 | 2,000 |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | 0.3 U | 0.3 U | 1.6 U | 0.3 U | 3.2 U | 0.3 U | 8 U |
| Bromoform | 75-25-2 | ug/L | 0.2 U | 0.2 U | 1.1 U | 0.2 U | 2.2 U | 0.2 U | 5.5 U |
| Bromomethane | 74-83-9 | ug/L | 0.3 U | 0.3 U | 1.6 U | 0.3 U | 3.2 U | 0.3 U | 8 U |
| Carbon Disulfide | 75-15-0 | ug/L | 0.3 U | 0.3 U | 1.7 U | 0.3 U | 3.4 U | 0.3 U | 8.5 U |
| Carbon Tetrachloride | 56-23-5 | ug/L | 0.3 U | 0.3 U | 1.6 U | 0.3 U | 3.1 U | 0.3 U | 7.8 U |
| CFC-11 | 75-69-4 | ug/L | 0.2 U | 0.2 U | 1.2 U | 0.2 U | 2.5 U | 0.2 U | 6.2 U |
| CFC-12 | 75-71-8 | ug/L | 0.5 U | 0.5 U | 2.4 U | 0.5 U | 4.8 U | 0.5 U | 12 U |
| Chlorobenzene | 108-90-7 | ug/L | 0.4 U | 0.4 U | 2.2 U | 57 | 4.5 U | 0.4 U | 11 U |
| Chlorodibromomethane | 124-48-1 | ug/L | 0.3 U | 0.3 U | 1.4 U | 0.3 U | 2.7 U | 0.3 U | 6.8 U |
| Chloroethane | 75-00-3 | ug/L | 0.2 U | 0.2 U | 1.2 U | 0.2 U | 2.4 U | 0.2 U | 6 U |
| Chloroform | 67-66-3 | ug/L | 0.5 U | 0.5 U | 2.6 U | 0.5 U | 5.2 U | 0.5 U | 13 U |
| Chloromethane | 74-87-3 | ug/L | 0.3 U | 0.3 U | 1.4 U | 0.3 U | 2.9 U | 0.3 U | 7.2 U |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | 2.9 | 0.4 U | 2.2 U | 3.9 | 4.3 U | 0.4 U | 11 U |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | 0.2 U | 0.2 U | 1.2 U | 0.2 U | 2.4 U | 0.2 U | 6 U |
| Cyclohexane | 110-82-7 | ug/L | 0.3 U | 0.3 U | 1.4 U | 0.7 | 2.7 U | 0.7 | 6.8 U |
| Dichloromethane | 75-09-2 | ug/L | 0.5 U | 0.5 U | 2.6 U | 0.5 U | 5.1 U | 0.5 U | 13 U |
| Ethylbenzene | 100-41-4 | ug/L | 7.8 | 0.5 U | 380 | 0.5 U | 4.6 U | 74 | 880 |
| Isopropylbenzene | 98-82-8 | ug/L | 0.5 U | 0.5 U | 37 | 0.5 U | 4.9 U | 2 | 18 |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | 0.3 U | 0.3 U | 1.5 U | 0.3 U | 3 U | 0.3 U | 7.5 U |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | 0.5 U | 0.5 U | 2.6 U | 0.5 U | 5.2 U | 0.5 U | 13 U |
| Methylcyclohexane | 108-87-2 | ug/L | 0.3 U | 0.3 U | 1.7 U | 0.3 U | 3.4 U | 0.3 U | 8.5 U |
| Methyl-tert-butylether | 1634-04-4 | ug/L | 0.2 U | 0.2 U | 1.1 U | 1.7 | 2.2 U | 0.2 U | 5.5 U |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | 0.4 U | 0.4 U | 2.0 U | 0.4 U | 3.9 U | 0.4 U | 9.8 U |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | 0.4 U | 0.4 U | 2.2 U | 1.3 | 4.5 U | 3 | 11 U |
| Toluene | 108-88-3 | ug/L | 2.2 | 0.4 U | 140 | 0.4 U | 4 U | 56 | 26 |
| Total VOCs | ARC-TVOC | ug/L | 180 | 1.3 U | 2,000 | 380 | 7 | 270 | 4,500 |
| Total Xylenes | 1330-20-7 | ug/L | 8.3 | 0.4 U | 940 | 0.4 U | 3.8 U | 68 | 1,600 |

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| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-8/4/2005-3<br>67<br>08/04/05<br>MW4F | NJD981084668-8/4/2005-4<br>9.76<br>08/04/05<br>MW4S | NJD981084668-8/4/2005-5<br>4.72<br>08/04/05<br>MW5S | NJD981084668-8/4/2005-6<br>8.86<br>08/04/05<br>MW6S | NJD981084668-8/5/2005-2<br>3.27<br>08/05/05<br>MW2S | NJD981084668-8/5/2005-3<br>46<br>08/05/05<br>MW3D | NJD981084668-8/5/2005-4<br>38<br>08/05/05<br>MW4D |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | 0.4 U | 0.4 U | 2.2 U | 0.8 | 4.3 U | 0.4 U | 11 U |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | 0.2 U | 0.2 U | 1.2 U | 0.2 U | 2.4 U | 0.2 U | 6 U |
| Trichloroethene | 79-01-6 | ug/L | 0.4 U | 0.4 U | 1.8 U | 1.3 | 3.7 U | 0.8 | 9.2 U |
| Vinyl chloride | 75-01-4 | ug/L | 0.3 U | 0.3 U | 1.4 U | 4.7 | 2.8 U | 0.3 U | 7 U |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | 1.2 U | 1.1 U | 35 | 1.2 U | 1.2 U | 2.4 U | 2.3 U |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | 1.0 U | 0.9 U | 22 U | 1.0 U | 1 U | 2 U | 1.9 U |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | 1.4 U | 1.2 U | 31 U | 1.4 U | 1.4 U | 2.7 U | 2.6 U |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | 2.5 U | 2.3 U | 57 U | 2.5 U | 2.5 U | 5 U | 4.8 U |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | 1.6 U | 1.5 U | 38 U | 1.8 | 1.6 U | 3.3 U | 3.2 U |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | 2.3 U | 2.1 U | 53 U | 2.3 U | 24 | 4.6 U | 59 |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | 1.0 U | 0.9 U | 23 U | 1.0 U | 1 U | 2 U | 2 U |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | 1.3 U | 1.2 U | 30 U | 1.3 U | 1.3 U | 2.6 U | 2.5 U |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | 1.5 U | 1.3 U | 33 U | 1.5 U | 1.5 U | 2.9 U | 2.8 U |
| 2-Chloronaphthalene | 91-58-7 | ug/L | 1.2 U | 1.1 U | 28 U | 1.2 U | 1.2 U | 2.4 U | 2.4 U |
| 2-Chlorophenol | 95-57-8 | ug/L | 1.2 U | 1.1 U | 28 U | 1.2 U | 1.2 U | 2.5 U | 2.4 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | 1.4 U | 1.3 U | 32 U | 1.4 U | 1.4 U | 2.8 U | 2.7 U |
| 2-Methylnaphthalene | 91-57-6 | ug/L | 1.3 U | 1.2 U | 500 | 1.3 U | 12 | 17 | 12 |
| 2-Methylphenol | 95-48-7 | ug/L | 1.6 U | 1.4 U | 36 U | 1.6 U | 24 | 3.1 U | 3 U |
| 2-Nitroaniline | 88-74-4 | ug/L | 0.8 U | 0.7 U | 17 U | 0.8 U | 0.8 U | 1.5 U | 1.5 U |
| 2-Nitrophenol | 88-75-5 | ug/L | 1.8 U | 1.6 U | 41 U | 1.8 U | 1.8 U | 3.6 U | 3.5 U |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | 5.6 U | 5.1 U | 130 U | 5.6 U | 5.6 U | 11 U | 11 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | 1.1 U | 1.0 U | 26 U | 1.1 U | 1.1 U | 2.3 U | 2.2 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | 1.4 U | 1.2 U | 31 U | 1.4 U | 1.4 U | 2.8 U | 2.7 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | 1.9 U | 1.7 U | 43 U | 1.9 U | 1.9 U | 3.8 U | 3.6 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | 1.2 U | 1.1 U | 27 U | 1.2 U | 1.2 U | 2.4 U | 2.3 U |
| 4-Methylphenol | 106-44-5 | ug/L | 1.3 U | 1.2 U | 30 U | 1.3 U | 70 | 2.6 U | 2.6 U |
| 4-Nitroaniline | 100-01-6 | ug/L | 0.7 U | 0.7 U | 16 U | 0.7 U | 0.7 U | 1.4 U | 1.4 U |
| 4-Nitrophenol | 100-02-7 | ug/L | 1.0 U | 0.9 U | 23 U | 1.0 U | 1 U | 2 U | 1.9 U |
| Acenaphthene | 83-32-9 | ug/L | 0.8 | 3.4 | 190 | 0.1 U | 7 | 7.3 | 78 |
| Acenaphthylene | 208-96-8 | ug/L | 0.9 | 1.6 | 28 | 0.1 U | 0.1 U | 6.8 | 0.3 U |
| Acetophenone | 98-86-2 | ug/L | 1.1 U | 1.0 U | 33 | 1.1 U | 1.1 U | 2.3 U | 2.2 U |
| Anthracene | 120-12-7 | ug/L | 0.6 | 0.4 | 24 | 0.1 U | 0.5 | 0.8 | 1.4 |
| Atrazine | 1912-24-9 | ug/L | 1.4 U | 1.3 U | 32 U | 1.4 U | 1.4 U | 2.9 U | 2.8 U |
| Benzaldehyde | 100-52-7 | ug/L | 1.7 U | 1.5 U | 38 U | 1.7 U | 1.7 U | 3.3 U | 3.2 U |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | 0.2 U | 0.6 | 8.2 | 0.2 U | 0.2 U | 0.4 U | 0.4 U |
| Benzo(a)pyrene | 50-32-8 | ug/L | 0.069 U | 1.0 | 1.6 U | 0.069 U | 0.069 U | 0.1 U | 0.1 U |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | 0.1 U | 0.3 | 3.4 U | 0.1 U | 0.2 U | 0.3 U | 0.3 U |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | 0.1 U | 0.6 | 2.3 U | 0.1 U | 0.1 U | 0.2 U | 0.2 U |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | 0.1 U | 0.5 | 2.3 U | 0.1 U | 0.1 U | 0.2 U | 0.2 U |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | 1.0 U | 0.9 U | 22 U | 1.0 U | 1 U | 2 U | 1.9 U |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | 1.0 U | 0.9 U | 23 U | 1.0 U | 1 U | 2 U | 1.9 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | 3.4 | 3.4 | 27 U | 1.2 U | 1.3 | 4.7 | 2.3 U |
| Butyl benzyl phthalate | 85-68-7 | ug/L | 1.2 U | 1.1 U | 27 U | 1.2 U | 1.2 U | 2.4 U | 2.3 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-8/4/2005-3<br>67<br>08/04/05<br>MW4F | NJD981084668-8/4/2005-4<br>9.76<br>08/04/05<br>MW4S | NJD981084668-8/4/2005-5<br>4.72<br>08/04/05<br>MW5S | NJD981084668-8/4/2005-6<br>8.86<br>08/04/05<br>MW6S | NJD981084668-8/5/2005-2<br>3.27<br>08/05/05<br>MW2S | NJD981084668-8/5/2005-3<br>46<br>08/05/05<br>MW3D | NJD981084668-8/5/2005-4<br>38<br>08/05/05<br>MW4D |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | 1.0 U | 1.0 U | 24 U | 1.0 U | 2.2 | 2.1 U | 2 U |
| Chrysene | 218-01-9 | ug/L | 0.2 U | 0.6 | 9.1 | 0.2 U | 0.2 U | 0.4 U | 0.4 U |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | 0.1 U | 0.1 U | 2.6 U | 0.1 U | 0.1 U | 0.2 U | 0.2 U |
| Dibenzofuran | 132-64-9 | ug/L | 1.0 U | 0.9 U | 24 U | 1.0 U | 1.1 | 2.1 U | 2 U |
| Diethyl phthalate | 84-66-2 | ug/L | 0.9 U | 0.8 U | 20 U | 4.2 | 0.9 U | 37 | 1.7 U |
| Dimethyl phthalate | 131-11-3 | ug/L | 1.2 U | 1.1 U | 28 U | 1.2 U | 1.2 U | 2.5 U | 2.4 U |
| Di-n-butyl phthalate | 84-74-2 | ug/L | 4.1 | 0.9 U | 26 U | 1.2 U | 1.2 U | 2.3 U | 2.2 U |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | 1.1 U | 1.0 U | 26 U | 1.1 U | 1.1 U | 2.3 U | 2.2 U |
| Fluoranthene | 206-44-0 | ug/L | 0.5 | 0.8 | 20 | 0.1 U | 0.7 | 0.3 U | 0.3 U |
| Fluorene | 86-73-7 | ug/L | 0.2 U | 0.5 | 61 | 0.2 U | 0.2 U | 2.3 | 13 |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | 0.7 U | 0.6 U | 16 U | 0.7 U | 0.7 U | 1.4 U | 1.3 U |
| Hexachlorobenzene | 118-74-1 | ug/L | 0.4 U | 0.3 U | 8.3 U | 0.4 U | 0.4 U | 0.7 U | 0.7 U |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | 0.7 U | 0.7 U | 16 U | 0.7 U | 0.7 U | 1.4 U | 1.4 U |
| Hexachloroethane | 67-72-1 | ug/L | 1.0 U | 0.9 U | 23 U | 1.0 U | 1 U | 2.1 U | 2 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | 0.092 U | 0.4 | 2.1 U | 0.092 U | 0.092 U | 0.2 U | 0.2 U |
| Isophorone | 78-59-1 | ug/L | 1.1 U | 1.0 U | 24 U | 1.1 U | 1.1 U | 2.2 U | 2.1 U |
| Naphthalene | 91-20-3 | ug/L | 0.2 U | 0.2 U | 2,400 | 0.2 U | 81 | 200 | 0.5 U |
| Nitrobenzene | 98-95-3 | ug/L | 1.1 U | 1.0 U | 25 U | 1.1 U | 1.1 U | 2.2 U | 2.1 U |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | 0.9 U | 0.8 U | 19 U | 0.9 U | 0.9 U | 1.7 U | 1.6 U |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | 1.2 U | 1.1 U | 28 U | 1.2 U | 1.2 U | 2.4 U | 2.4 U |
| p-Chloroaniline | 106-47-8 | ug/L | 0.8 U | 0.7 U | 18 U | 0.8 U | 0.8 U | 1.6 U | 1.5 U |
| Pentachlorophenol | 87-86-5 | ug/L | 2.4 U | 2.2 U | 54 U | 2.4 U | 2.4 U | 4.8 U | 4.6 U |
| Phenanthrene | 85-01-8 | ug/L | 0.4 | 0.083 U | 66 | 0.092 U | 3.4 | 2.9 | 6.9 |
| Phenol | 108-95-2 | ug/L | 0.7 U | 0.6 U | 16 U | 0.7 U | 40 | 1.4 U | 41 |
| Pyrene | 129-00-0 | ug/L | 0.8 | 1.4 | 27 | 0.2 | 0.8 | 0.5 | 0.3 U |
| Total SVOCs | ARC-TSVOC | ug/L | 12 | 16 | 3,400 | 6.2 | 270 | 280 | 210 |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 207 | 10,000 | 7,430 | 2,110 | 4,820 | 3,790 | 176 |
| Antimony | 7440-36-0 | ug/L | 5.8 U | 5.8 U | 7.1 | 5.8 U | 11.6 U | 5.8 U | 8.8 |
| Arsenic | 7440-38-2 | ug/L | 17.8 | 5.4 | 20.7 | 50.5 | 6.4 U | 11.3 | 15.3 |
| Barium | 7440-39-3 | ug/L | 106 | 97.2 | 159 | 137 | 246 | 124 | 133 |
| Beryllium | 7440-41-7 | ug/L | 0.30 U | 0.30 U | 0.31 | 0.30 U | 0.6 U | 0.3 U | 0.3 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 0.40 U | 0.40 U | 0.69 | 0.40 U | 0.8 U | 0.4 U | 0.4 U |
| Calcium | 7440-70-2 | ug/L | 80,800 | 44,400 | 27,600 | 75,400 | 381,000 | 45,000 | 52,500 |
| Chromium | 7440-47-3 | ug/L | 1.6 U | 922 | 2,140 | 6.7 | 16,500 | 16.6 | 30 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 1.7 U | 11.0 | 8.4 | 2.2 | 3.4 U | 1.7 | 1.7 U |
| Copper | 7440-50-8 | ug/L | 3.7 U | 40.9 | 109 | 8.2 | 14.5 | 14.3 | 8.1 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 362 | 16,600 | 14,700 | 25,700 | 1,250 | 4,210 | 902 |
| Lead | 7439-92-1 | ug/L | 2.7 U | 24.3 | 323 | 7.0 | 8.4 | 7.1 | 5.6 |
| Magnesium | 7439-95-4 | ug/L | 13,800 | 36,600 | 13,700 | 17,800 | 11,700 | 13,700 | 13,500 |
| Manganese | 7439-96-5 | ug/L | 92.2 | 468 | 342 | 3,280 | 17.6 | 359 | 1,790 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-8/4/2005-3<br>67<br>08/04/05<br>MW4F | NJD981084668-8/4/2005-4<br>9.76<br>08/04/05<br>MW4S | NJD981084668-8/4/2005-5<br>4.72<br>08/04/05<br>MW5S | NJD981084668-8/4/2005-6<br>8.86<br>08/04/05<br>MW6S | NJD981084668-8/5/2005-2<br>3.27<br>08/05/05<br>MW2S | NJD981084668-8/5/2005-3<br>46<br>08/05/05<br>MW3D | NJD981084668-8/5/2005-4<br>38<br>08/05/05<br>MW4D |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.10 U | 0.31 | 0.46 | 0.10 U | 0.1 U | 0.1 U | 0.1 U |
| Nickel | 7440-02-0 | ug/L | 2.4 U | 20.5 | 38.2 | 5.0 | 26.3 | 6.1 | 4.9 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 10,700 | 5,600 | 11,500 | 7,440 | 20,400 | 47,600 | 6,500 |
| Selenium | 7782-49-2 | ug/L | 4.2 U | 4.2 U | 4.2 U | 4.2 U | 8.4 U | 4.2 U | 4.2 U |
| Silver | 7440-22-4 | ug/L | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 2.8 U | 1.4 U | 1.4 U |
| Sodium | 7440-23-5 | ug/L | 36,700 | 19,300 | 70,600 | 38,200 | 334,000 | 55,700 | 68,800 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 4.7 U | 4.7 U | 4.7 U | 4.7 U | 9.4 U | 4.7 U | 4.7 U |
| Total CCPW Metals | CCPW-M | ug/L | 0 U | 1,070 | 2,390 | 20 | 16,600 | 27.6 | 44 |
| Vanadium | 7440-62-2 | ug/L | 4.7 U | 127 | 203 | 8.2 | 32.1 | 4.9 | 4.7 U |
| Zinc | 7440-66-6 | ug/L | 17.1 | 125 | 747 | 48.7 | 43.4 | 301 | 37.2 |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-8/4/2005-3<br>67<br>08/04/05<br>MW4F | NJD981084668-8/4/2005-4<br>9.76<br>08/04/05<br>MW4S | NJD981084668-8/4/2005-5<br>4.72<br>08/04/05<br>MW5S | NJD981084668-8/4/2005-6<br>8.86<br>08/04/05<br>MW6S | NJD981084668-8/5/2005-2<br>3.27<br>08/05/05<br>MW2S | NJD981084668-8/5/2005-3<br>46<br>08/05/05<br>MW3D | NJD981084668-8/5/2005-4<br>38<br>08/05/05<br>MW4D |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | 1,100 | 1,200 | 13 | 30 | 10 U | 56 | 170 |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | 1,100 | 730 | 10 U | 300 | 10 U | 31 | 100 |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-8/4/2005-3<br>67<br>08/04/05<br>MW4F | NJD981084668-8/4/2005-4<br>9.76<br>08/04/05<br>MW4S | NJD981084668-8/4/2005-5<br>4.72<br>08/04/05<br>MW5S | NJD981084668-8/4/2005-6<br>8.86<br>08/04/05<br>MW6S | NJD981084668-8/5/2005-2<br>3.27<br>08/05/05<br>MW2S | NJD981084668-8/5/2005-3<br>46<br>08/05/05<br>MW3D | NJD981084668-8/5/2005-4<br>38<br>08/05/05<br>MW4D |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-8/5/2005-5<br>61<br>08/05/05<br>MW5D | NJD981084668-8/5/2005-6<br>40<br>08/05/05<br>MW6D | NJD981084668-8/5/2005-10<br>6.35<br>08/05/05<br>MW1S | NJD981084668-9/25/2007-2<br>39<br>09/25/07<br>MW1D | NJD981084668-9/25/2007-3<br>8<br>09/25/07<br>MW1S | NJD981084668-9/25/2007-4<br>38<br>09/25/07<br>MW2D | NJD981084668-9/25/2007-5<br>7<br>09/25/07<br>MW2S |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | 0.3 U | 4 [4] | 0.7 U | 0.4 | 0.5 | 3.8 U | 0.4 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | 0.3 U | 3.4 U [3.4 U] | 0.7 U | 0.4 U | 0.4 U | 3.5 U | 0.4 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | 0.4 U | 3.5 U [3.5 U] | 0.7 U | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | 0.3 U | 3.3 U [3.3 U] | 0.7 U | 0.2 U | 0.2 U | 2.2 U | 0.2 U |
| 1,1-Dichloroethane | 75-34-3 | ug/L | 0.3 U | 20 [19] | 0.6 U | 0.3 U | 0.3 U | 2.6 U | 0.3 U |
| 1,1-Dichloroethene | 75-35-4 | ug/L | 0.4 U | 19 [19] | 0.7 U | 0.5 U | 0.5 U | 4.6 U | 0.5 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | 0.4 U | 3.5 U [3.5 U] | 0.7 U | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | 0.3 U | 3 U [3 U] | 0.6 U | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | 0.4 U | 3.5 U [3.5 U] | 0.7 U | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | 0.4 U | 4.1 U [4.1 U] | 0.8 U | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | 0.3 U | 2.9 U [2.9 U] | 0.6 U | 0.3 U | 0.3 U | 2.7 U | 0.3 U |
| 1,2-Dichloropropane | 78-87-5 | ug/L | 0.3 U | 2.9 U [2.9 U] | 0.6 U | 0.5 U | 0.5 U | 4.9 U | 0.5 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | 0.4 U | 4.1 U [4.1 U] | 0.8 U | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | 0.5 U | 4.9 U [4.9 U] | 1 U | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | 0.9 U | 9.4 U [9.4 U] | 1.9 U | 1.3 U | 1.3 U | 13 U | 6.9 |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | 0.5 U | 5.2 U [5.2 U] | 1 U | 0.7 U | 0.7 U | 7.3 U | 0.7 U |
| Acetone | 67-64-1 | ug/L | 1.3 U | 13 U [13 U] | 2.5 U | 7.0 | 6.2 | 15 U | 47 |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | 1.6 | 3.3 U [3.3 U] | 0.7 U | 0.2 U | 0.3 | 26 | 6.7 |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | 0.3 U | 3.2 U [3.2 U] | 0.6 U | 0.2 U | 0.2 U | 2.5 U | 0.2 U |
| Bromoform | 75-25-2 | ug/L | 0.2 U | 2.2 U [2.2 U] | 0.4 U | 0.2 U | 0.2 U | 2.1 U | 0.2 U |
| Bromomethane | 74-83-9 | ug/L | 0.3 U | 3.2 U [3.2 U] | 0.6 U | 0.4 U | 0.4 U | 4.4 U | 0.4 U |
| Carbon Disulfide | 75-15-0 | ug/L | 0.3 U | 3.4 U [3.4 U] | 0.7 U | 0.4 U | 0.4 U | 4.4 U | 0.4 U |
| Carbon Tetrachloride | 56-23-5 | ug/L | 0.3 U | 3.1 U [3.1 U] | 0.6 U | 0.3 U | 0.3 U | 3.4 U | 0.3 U |
| CFC-11 | 75-69-4 | ug/L | 0.2 U | 2.5 U [2.5 U] | 0.5 U | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | 0.5 U | 4.8 U [4.8 U] | 1 U | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | 0.4 U | 4.5 U [4.5 U] | 0.9 U | 0.2 U | 0.2 U | 2.5 U | 0.3 |
| Chlorodibromomethane | 124-48-1 | ug/L | 0.3 U | 2.7 U [2.7 U] | 0.5 U | 0.3 U | 0.3 U | 2.7 U | 0.3 U |
| Chloroethane | 75-00-3 | ug/L | 0.2 U | 2.4 U [2.4 U] | 0.5 U | 0.4 U | 0.4 U | 4.3 U | 0.4 U |
| Chloroform | 67-66-3 | ug/L | 0.5 U | 5.2 U [5.2 U] | 1 U | 0.2 U | 0.2 U | 2.0 U | 0.2 U |
| Chloromethane | 74-87-3 | ug/L | 0.3 U | 2.9 U [2.9 U] | 0.6 U | 0.4 U | 0.4 U | 4.4 U | 0.4 U |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | 0.4 U | 1,600 [1,700] | 0.9 U | 0.3 U | 0.3 U | 2.8 U | 0.3 U |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | 0.2 U | 2.4 U [2.4 U] | 0.5 U | 0.1 U | 0.1 U | 1.3 U | 0.1 U |
| Cyclohexane | 110-82-7 | ug/L | 0.3 U | 2.7 U [2.7 U] | 0.5 U | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | 0.5 U | 5.1 U [5.1 U] | 1 U | 0.4 U | 0.4 U | 4.0 U | 0.4 U |
| Ethylbenzene | 100-41-4 | ug/L | 0.5 U | 4.6 U [4.6 U] | 0.9 U | 0.4 U | 0.4 U | 7.8 | 0.9 |
| Isopropylbenzene | 98-82-8 | ug/L | 0.5 U | 4.9 U [4.9 U] | 1 U | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | 0.3 U | 3 U [3 U] | 0.6 U | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | 0.5 U | 5.2 U [5.2 U] | 1 U | 0.7 U | 0.7 U | 7.0 U | 0.7 U |
| Methylcyclohexane | 108-87-2 | ug/L | 0.3 U | 3.4 U [3.4 U] | 0.7 U | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | 13 | 2.2 U [2.2 U] | 0.4 U | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | 0.4 U | 3.9 U [3.9 U] | 0.8 U | 0.4 U | 0.4 U | 4.0 U | 0.4 U |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | 0.4 U | 670 [650] | 34 | 1.0 | 98 | 4.2 U | 0.4 U |
| Toluene | 108-88-3 | ug/L | 0.4 U | 4 U [4 U] | 0.8 U | 0.3 U | 0.3 U | 19 | 2.2 |
| Total VOCs | ARC-TVOC | ug/L | 15 | 2,600 [2,700] | 34 | 8.4 | 110 | 66 | 67 |
| Total Xylenes | 1330-20-7 | ug/L | 0.4 U | 3.8 U [3.8 U] | 0.8 U | 0.4 U | 0.4 U | 13 | 2.6 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-8/5/2005-5<br>61<br>08/05/05<br>MW5D | NJD981084668-8/5/2005-6<br>40<br>08/05/05<br>MW6D | NJD981084668-8/5/2005-10<br>6.35<br>08/05/05<br>MW1S | NJD981084668-9/25/2007-2<br>39<br>09/25/07<br>MW1D | NJD981084668-9/25/2007-3<br>8<br>09/25/07<br>MW1S | NJD981084668-9/25/2007-4<br>38<br>09/25/07<br>MW2D | NJD981084668-9/25/2007-5<br>7<br>09/25/07<br>MW2S |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | 0.4 U | 12 [11] | 0.9 U | 0.4 U | 0.4 U | 3.9 U | 0.4 U |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | 0.2 U | 2.4 U [2.4 U] | 0.5 U | 0.2 U | 0.2 U | 1.6 U | 0.2 U |
| Trichloroethene | 79-01-6 | ug/L | 0.4 U | 290 [300] | 0.7 U | 0.4 U | 0.6 | 3.6 U | 0.4 U |
| Vinyl chloride | 75-01-4 | ug/L | 0.3 U | 27 [29] | 0.6 U | 0.2 U | 0.2 U | 2.4 U | 0.2 U |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | 1.2 U | 1.5 U [1.5 U] | 1.7 | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 4.7 U | 0.9 U |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | 1.2 U | 1.2 U | 5.6 U | 1.1 U |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | 1.0 U | 1.1 U | 4.9 U | 1.0 U |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | 1.0 U | 1.0 U | 4.6 U | 0.9 U |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | 1 U | 1.2 U [1.2 U] | 0.9 U | 0.9 U | 0.9 U | 4.4 U | 0.9 U |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | 1.4 U | 1.8 U [1.7 U] | 1.2 U | 1.3 U | 1.3 U | 6.1 U | 1.2 U |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | 2.5 U | 3.2 U [3.1 U] | 2.3 U | 2.3 U | 2.4 U | 11 U | 2.2 U |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | 1.6 U | 2.1 U [2 U] | 1.5 U | 1.5 U | 1.6 U | 7.4 U | 1.5 U |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | 2.3 U | 3 U [2.9 U] | 2.1 U | 2.2 U | 2.2 U | 10 U | 28 |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | 1 U | 1.3 U [1.2 U] | 0.9 U | 1.0 U | 1.0 U | 4.5 U | 0.9 U |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | 1.3 U | 1.7 U [1.6 U] | 1.2 U | 1.2 U | 1.3 U | 5.9 U | 1.2 U |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | 1.5 U | 1.9 U [1.8 U] | 1.3 U | 1.4 U | 1.4 U | 6.6 U | 1.3 U |
| 2-Chloronaphthalene | 91-58-7 | ug/L | 1.2 U | 1.6 U [1.5 U] | 1.1 U | 1.2 U | 1.2 U | 5.5 U | 1.1 U |
| 2-Chlorophenol | 95-57-8 | ug/L | 1.2 U | 1.6 U [1.5 U] | 1.1 U | 1.2 U | 1.2 U | 5.6 U | 1.1 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | 1.4 U | 1.8 U [1.8 U] | 1.3 U | 1.3 U | 1.4 U | 6.3 U | 1.2 U |
| 2-Methylnaphthalene | 91-57-6 | ug/L | 1.3 U | 1.6 U [1.6 U] | 6.4 | 1.2 U | 1.2 U | 140 | 5.8 |
| 2-Methylphenol | 95-48-7 | ug/L | 1.6 U | 2 U [2 U] | 1.4 U | 1.5 U | 1.5 U | 7.1 U | 23 |
| 2-Nitroaniline | 88-74-4 | ug/L | 0.8 U | 1 U [0.9 U] | 0.7 U | 0.7 U | 0.7 U | 3.4 U | 0.7 U |
| 2-Nitrophenol | 88-75-5 | ug/L | 1.8 U | 2.3 U [2.2 U] | 1.6 U | 1.7 U | 1.7 U | 8.0 U | 1.6 U |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | 5.6 U | 7.2 U [7 U] | 5.1 U | 5.3 U | 5.5 U | 25 U | 5.0 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | 1.1 U | 1.5 U [1.4 U] | 1 U | 1.1 U | 1.1 U | 5.2 U | 1.0 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | 1.4 U | 1.8 U [1.7 U] | 1.2 U | 3.9 | 1.3 U | 6.2 U | 1.2 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | 1.9 U | 2.4 U [2.3 U] | 1.7 U | 1.8 U | 1.8 U | 8.4 U | 1.7 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | 1.2 U | 1.5 U [1.5 U] | 1.1 U | 1.1 U | 1.2 U | 5.4 U | 1.1 U |
| 4-Methylphenol | 106-44-5 | ug/L | 1.3 U | 1.7 U [1.6 U] | 1.2 U | 1.2 U | 1.3 U | 5.9 U | 61 |
| 4-Nitroaniline | 100-01-6 | ug/L | 0.7 U | 0.9 U [0.9 U] | 0.7 U | 0.7 U | 0.7 U | 3.2 U | 0.6 U |
| 4-Nitrophenol | 100-02-7 | ug/L | 1 U | 1.3 U [1.2 U] | 0.9 U | 0.9 U | 1.0 U | 4.5 U | 0.9 U |
| Acenaphthene | 83-32-9 | ug/L | 0.7 | 0.2 U [0.2 U] | 14 | 0.054 U | 0.7 | 21 | 1.7 |
| Acenaphthylene | 208-96-8 | ug/L | 0.3 | 0.2 U [0.2 U] | 0.1 U | 0.054 U | 0.1 | 1.1 | 0.069 J |
| Acetophenone | 98-86-2 | ug/L | 1.1 U | 1.5 U [1.4 U] | 1 U | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | 0.1 U | 0.2 U [0.2 U] | 2.7 | 0.054 U | 0.2 | 1.2 | 0.1 |
| Atrazine | 1912-24-9 | ug/L | 1.4 U | 1.8 U [1.8 U] | 1.3 U | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | 1.7 U | 2.1 U [2.1 U] | 1.5 U | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | 0.2 U | 0.2 U [0.2 U] | 1.2 | 0.054 U | 0.1 | 0.1 U | 0.1 U |
| Benzo(a)pyrene | 50-32-8 | ug/L | 0.069 U | 0.088 U [0.086 U] | 0.7 | 0.054 U | 0.056 U | 0.1 U | 0.1 U |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | 0.1 U | 0.2 U [0.2 U] | 0.4 | 0.054 U | 0.056 U | 0.1 U | 0.1 U |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | 0.1 U | 0.1 U [0.1 U] | 0.3 | 0.054 U | 0.056 U | 0.1 U | 0.1 U |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | 0.1 U | 0.1 U [0.1 U] | 0.7 | 0.054 U | 0.056 U | 0.1 U | 0.1 U |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | 1 U | 1.3 U [1.2 U] | 0.9 U | 0.9 U | 1.0 U | 4.4 U | 0.9 U |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | 1 U | 1.3 U [1.2 U] | 0.9 U | 0.9 U | 1.0 U | 4.5 U | 0.9 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | 4.7 | 3.2 [1.8] | 1.1 U | 1.1 U | 1.2 U | 5.4 U | 1.1 U |
| Butyl benzyl phthalate | 85-68-7 | ug/L | 1.2 U | 1.5 U [1.5 U] | 1.1 U | 1.1 U | 1.2 U | 5.4 U | 1.1 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-8/5/2005-5<br>61<br>08/05/05<br>MW5D | NJD981084668-8/5/2005-6<br>40<br>08/05/05<br>MW6D | NJD981084668-8/5/2005-10<br>6.35<br>08/05/05<br>MW1S | NJD981084668-9/25/2007-2<br>39<br>09/25/07<br>MW1D | NJD981084668-9/25/2007-3<br>8<br>09/25/07<br>MW1S | NJD981084668-9/25/2007-4<br>38<br>09/25/07<br>MW2D | NJD981084668-9/25/2007-5<br>7<br>09/25/07<br>MW2S |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | 1 U | 1.3 U [1.3 U] | 1 U | 1.0 U | 1.0 U | 35 | 1.0 |
| Chrysene | 218-01-9 | ug/L | 0.2 U | 0.3 U [0.3 U] | 1.5 | 0.054 U | 0.2 | 0.1 U | 0.1 U |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | 0.1 U | 0.1 U [0.1 U] | 0.1 U | 0.054 U | 0.056 U | 0.1 U | 0.1 U |
| Dibenzofuran | 132-64-9 | ug/L | 1 U | 1.3 U [1.3 U] | 1 U | 1.0 U | 1.0 U | 35 | 0.9 U |
| Diethyl phthalate | 84-66-2 | ug/L | 0.9 U | 1.1 U [1.1 U] | 0.8 U | 0.8 U | 0.9 U | 4.0 U | 0.8 U |
| Dimethyl phthalate | 131-11-3 | ug/L | 1.2 U | 1.6 U [1.6 U] | 1.1 U | 1.2 U | 1.2 U | 5.6 U | 1.1 U |
| Di-n-butyl phthalate | 84-74-2 | ug/L | 1.2 U | 9.5 [7] | 1 U | 1.1 U | 1.1 U | 5.2 U | 1.0 U |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | 1.1 U | 1.5 U [1.4 U] | 1 U | 1.1 U | 1.1 U | 5.2 U | 1.0 U |
| Fluoranthene | 206-44-0 | ug/L | 0.2 | 0.2 U [0.2 U] | 2.8 | 0.054 U | 0.4 | 0.4 | 0.1 U |
| Fluorene | 86-73-7 | ug/L | 0.3 | 0.2 U [0.2 U] | 7.3 | 0.054 U | 0.4 | 1.1 | 0.1 U |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | 0.7 U | 0.9 U [0.9 U] | 0.6 U | 0.6 U | 0.7 U | 3.1 U | 0.6 U |
| Hexachlorobenzene | 118-74-1 | ug/L | 0.4 U | 0.5 U [0.5 U] | 0.3 U | 0.022 U | 0.022 U | 0.041 U | 0.041 U |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | 0.7 U | 0.9 U [0.9 U] | 0.7 U | 0.7 U | 0.7 U | 3.2 U | 0.6 U |
| Hexachloroethane | 67-72-1 | ug/L | 1 U | 1.3 U [1.3 U] | 0.9 U | 1.0 U | 1.0 U | 4.6 U | 0.9 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | 0.092 U | 0.1 U [0.1 U] | 0.083 U | 0.054 U | 0.056 U | 0.1 U | 0.1 U |
| Isophorone | 78-59-1 | ug/L | 1.1 U | 1.4 U [1.3 U] | 1 U | 1.0 U | 1.0 U | 4.8 U | 1.0 U |
| Naphthalene | 91-20-3 | ug/L | 2.1 | 0.3 U [0.3 U] | 5.2 | 1.6 B | 0.056 U | 1,000 | 57 |
| Nitrobenzene | 98-95-3 | ug/L | 1.1 U | 1.4 U [1.4 U] | 1 U | 1.0 U | 1.1 U | 4.9 U | 1.0 U |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | 0.9 U | 1.1 U [1 U] | 0.8 U | 0.8 U | 0.8 U | 3.8 U | 0.8 U |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | 1.2 U | 1.6 U [1.5 U] | 1.1 U | 1.1 U | 1.2 U | 5.5 U | 1.1 U |
| p-Chloroaniline | 106-47-8 | ug/L | 0.8 U | 1 U [1 U] | 0.7 U | 0.7 U | 0.8 U | 3.5 U | 0.7 U |
| Pentachlorophenol | 87-86-5 | ug/L | 2.4 U | 3 U [3 U] | 2.2 U | 0.2 U | 0.1 J | 2.4 | 0.4 U |
| Phenanthrene | 85-01-8 | ug/L | 0.9 | 0.3 [0.1 U] | 13 | 0.054 U | 0.3 | 12 | 0.3 |
| Phenol | 108-95-2 | ug/L | 0.7 U | 0.9 U [0.9 U] | 3.1 | 0.7 U | 0.7 U | 3.1 U | 29 |
| Pyrene | 129-00-0 | ug/L | 0.4 | 0.2 [0.2] | 5.9 | 0.054 U | 1.7 | 0.1 | 0.1 U |
| Total SVOCs | ARC-TSVOC | ug/L | 9.6 | 13 [9] | 67 | 5.5 | 4.2 | 1,200 | 210 |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 803 | 7,740 [8,780] | 11,800 | 125 U | 3,150 | 128 B | 1,320 |
| Antimony | 7440-36-0 | ug/L | 5.8 U | 6.8 [5.8 U] | 11.6 U | 116 U | 11.6 U | 116 U | 11.6 U |
| Arsenic | 7440-38-2 | ug/L | 3.2 U | 3.2 U [3.2 U] | 6.4 U | 2.8 U | 2.8 U | 5.6 U | 2.8 U |
| Barium | 7440-39-3 | ug/L | 26.8 | 95.4 [103] | 26.1 | 17.5 B | 3.4 U | 26.1 B | 141 B |
| Beryllium | 7440-41-7 | ug/L | 0.3 U | 0.32 [0.38] | 0.6 U | 0.60 U | 0.60 U | 0.60 U | 0.60 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 0.4 U | 2 [2.1] | 0.8 U | 21.6 | 0.80 U | 0.80 U | 0.80 U |
| Calcium | 7440-70-2 | ug/L | 12,100 | 55,100 [51,800] | 166,000 | 265,000 | 71,900 | 204,000 | 220,000 |
| Chromium | 7440-47-3 | ug/L | 36 | 27.8 [32] | 42,300 | 411,000 | 29,200 | 529,000 | 2,830 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 1.7 U | 4.6 [5.9] | 75.8 | 87.2 B | 3.4 U | 34.0 U | 3.4 U |
| Copper | 7440-50-8 | ug/L | 11.8 | 21.5 [26.4] | 23.2 | 830 | 7.4 U | 7.4 U | 8.6 B |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 1,270 | 11,300 [12,400] | 31,400 | 78.4 U | 78.4 U | 78.4 U | 78.4 U |
| Lead | 7439-92-1 | ug/L | 2.7 U | 14.9 [17.8] | 39.2 | 5.4 U | 5.4 U | 5.4 U | 5.4 U |
| Magnesium | 7439-95-4 | ug/L | 4,910 | 17,700 [18,000] | 27,700 | 45,800 | 83.2 U | 60,700 | 686 B |
| Manganese | 7439-96-5 | ug/L | 87.9 | 416 [424] | 219 | 224 | 2.4 U | 802 | 2.4 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-8/5/2005-5<br>61<br>08/05/05<br>MW5D | NJD981084668-8/5/2005-6<br>40<br>08/05/05<br>MW6D | NJD981084668-8/5/2005-10<br>6.35<br>08/05/05<br>MW1S | NJD981084668-9/25/2007-2<br>39<br>09/25/07<br>MW1D | NJD981084668-9/25/2007-3<br>8<br>09/25/07<br>MW1S | NJD981084668-9/25/2007-4<br>38<br>09/25/07<br>MW2D | NJD981084668-9/25/2007-5<br>7<br>09/25/07<br>MW2S |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.1 U | 0.1 U [0.1 U] | 0.1 | 0.10 U | 0.10 U | 0.10 U | 0.10 U |
| Nickel | 7440-02-0 | ug/L | 2.4 U | 37.6 [40.1] | 347 | 275 | 6.0 B | 10.5 B | 15.7 B |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 93,700 | 50,600 [61,100] | 8,950 | 17,600 | 11,100 | 15,100 | 14,400 |
| Selenium | 7782-49-2 | ug/L | 4.2 U | 4.2 U [4.2 U] | 8.4 U | 8.4 U | 8.4 U | 8.4 U | 8.4 U |
| Silver | 7440-22-4 | ug/L | 1.4 U | 1.4 U [1.4 U] | 2.8 U | 2.8 U | 2.8 U | 2.8 U | 2.8 U |
| Sodium | 7440-23-5 | ug/L | 73,900 | 32,600 [38,400] | 113,000 | 352,000 | 135,000 | 520,000 | 255,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 4.7 U | 4.7 U [4.7 U] | 9.4 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U |
| Total CCPW Metals | CCPW-M | ug/L | 36 | 88.1 [92.2] | 43,200 | 411,000 | 29,400 | 529,000 | 2,900 |
| Vanadium | 7440-62-2 | ug/L | 4.7 U | 15.9 [20.1] | 599 | 11.0 B | 233 | 9.4 U | 49.7 B |
| Zinc | 7440-66-6 | ug/L | 45.9 | 89.8 [95.4] | 215 | 154 | 11.6 U | 63.2 | 11.6 U |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-8/5/2005-561<br>08/05/05<br>MW5D | NJD981084668-8/5/2005-640<br>08/05/05<br>MW6D | NJD981084668-8/5/2005-106.35<br>08/05/05<br>MW1S | NJD981084668-9/25/2007-239<br>09/25/07<br>MW1D | NJD981084668-9/25/2007-38<br>09/25/07<br>MW1S | NJD981084668-9/25/2007-438<br>09/25/07<br>MW2D | NJD981084668-9/25/2007-57<br>09/25/07<br>MW2S |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | 10 U | 10 U [10 U] | 10 U | 10 U | 10 U | 10 U | 10 U |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | 10 U | 10 U [10 U] | 10 U | 10 U | 10 U | 10 U | 10 U |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-8/5/2005-5<br>61<br>08/05/05<br>MW5D | NJD981084668-8/5/2005-6<br>40<br>08/05/05<br>MW6D | NJD981084668-8/5/2005-10<br>6.35<br>08/05/05<br>MW1S | NJD981084668-9/25/2007-2<br>39<br>09/25/07<br>MW1D | NJD981084668-9/25/2007-3<br>8<br>09/25/07<br>MW1S | NJD981084668-9/25/2007-4<br>38<br>09/25/07<br>MW2D | NJD981084668-9/25/2007-5<br>7<br>09/25/07<br>MW2S |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-9/25/2007-6<br>63<br>09/25/07<br>MW5D | NJD981084668-9/25/2007-7<br>9.5<br>09/25/07<br>MW5S | NJD981084668-9/26/2007-3<br>0<br>09/26/07<br>MW9D | NJD981084668-9/26/2007-4<br>0<br>09/26/07<br>MW9S | NJD981084668-9/26/2007-5<br>0<br>09/26/07<br>114-MW20A | NJD981084668-9/26/2007-6<br>0<br>09/26/07<br>114-MW20B | NJD981084668-9/26/2007-7<br>0<br>09/26/07<br>135-MW2A |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | 0.4 U | 7.6 U | 0.4 U | 1.9 U | 1.9 U | 9.5 U | 0.8 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | 0.4 U | 7.0 U | 0.4 U | 1.8 U | 1.8 U | 8.8 U | 0.7 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | 0.2 U | 4.4 U | 0.2 U | 1.1 U | 1.1 U | 5.5 U | 0.4 U |
| 1,1-Dichloroethane | 75-34-3 | ug/L | 0.3 U | 5.2 U | 0.3 U | 1.3 U | 1.3 U | 6.5 U | 0.5 U |
| 1,1-Dichloroethene | 75-35-4 | ug/L | 0.5 U | 9.2 U | 0.5 U | 2.3 U | 2.3 U | 12 U | 0.9 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | 0.3 U | 20 | 0.3 U | 1.4 U | 1.4 U | 6.8 U | 0.5 U |
| 1,2-Dichloropropane | 78-87-5 | ug/L | 0.5 U | 9.8 U | 0.5 U | 2.4 U | 2.4 U | 12 U | 1.0 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | 1.3 U | 26 U | 1.3 U | 38 | 6.4 U | 32 U | 2.6 U |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | 0.7 U | 15 U | 0.7 U | 3.6 U | 3.6 U | 18 U | 1.5 U |
| Acetone | 67-64-1 | ug/L | 1.5 U | 30 U | 1.5 U | 450 | 17 | 38 U | 7.8 |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | 0.8 | 1,400 | 0.2 U | 16 | 110 | 2,300 | 260 |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | 0.2 U | 5.0 U | 0.2 U | 1.2 U | 1.2 U | 6.2 U | 0.5 U |
| Bromoform | 75-25-2 | ug/L | 0.2 U | 4.2 U | 0.2 U | 1.0 U | 1.0 U | 5.2 U | 0.4 U |
| Bromomethane | 74-83-9 | ug/L | 0.4 U | 8.8 U | 0.4 U | 2.2 U | 2.2 U | 11 U | 0.9 U |
| Carbon Disulfide | 75-15-0 | ug/L | 0.4 U | 8.8 U | 0.4 U | 2.2 U | 2.2 U | 11 U | 1.2 |
| Carbon Tetrachloride | 56-23-5 | ug/L | 0.3 U | 6.8 U | 0.3 U | 1.7 U | 1.7 U | 8.5 U | 0.7 U |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | 0.2 U | 5.0 U | 0.2 U | 1.2 U | 1.2 U | 6.2 U | 0.5 U |
| Chlorodibromomethane | 124-48-1 | ug/L | 0.3 U | 5.4 U | 0.3 U | 1.4 U | 1.4 U | 6.8 U | 0.5 U |
| Chloroethane | 75-00-3 | ug/L | 0.4 U | 8.6 U | 0.4 U | 2.2 U | 2.2 U | 11 U | 0.9 U |
| Chloroform | 67-66-3 | ug/L | 0.2 U | 4.0 U | 0.2 U | 1.0 U | 1.0 U | 5.0 U | 0.4 U |
| Chloromethane | 74-87-3 | ug/L | 0.4 U | 8.8 U | 0.4 U | 2.2 U | 2.2 U | 11 U | 0.9 U |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | 0.3 U | 5.6 U | 0.3 U | 1.4 U | 1.4 U | 7.0 U | 0.6 U |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | 0.1 U | 2.6 U | 0.1 U | 0.6 U | 0.6 U | 3.2 U | 0.3 U |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | 0.4 U | 8.0 U | 0.4 U | 2.6 | 2.0 U | 10 U | 0.8 U |
| Ethylbenzene | 100-41-4 | ug/L | 0.4 U | 730 | 0.4 U | 68 | 140 | 4,200 | 13 |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | 0.7 U | 14 U | 0.7 U | 3.5 U | 3.5 U | 18 U | 1.4 U |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | 0.4 U | 8.0 U | 0.4 U | 2.0 U | 2.0 U | 10 U | 0.8 U |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | 0.4 U | 8.4 U | 0.4 U | 2.1 U | 2.1 U | 10 U | 0.8 U |
| Toluene | 108-88-3 | ug/L | 0.3 U | 320 | 0.3 U | 28 | 70 | 390 | 1.3 |
| Total VOCs | ARC-TVOC | ug/L | 0.8 | 3,700 | 1.5 U | 740 | 540 | 9,600 | 290 |
| Total Xylenes | 1330-20-7 | ug/L | 0.4 U | 1,200 | 0.4 U | 140 | 200 | 2,700 | 3.0 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-9/25/2007-6<br>63<br>09/25/07<br>MW5D | NJD981084668-9/25/2007-7<br>9.5<br>09/25/07<br>MW5S | NJD981084668-9/26/2007-3<br>0<br>09/26/07<br>MW9D | NJD981084668-9/26/2007-4<br>0<br>09/26/07<br>MW9S | NJD981084668-9/26/2007-5<br>0<br>09/26/07<br>114-MW20A | NJD981084668-9/26/2007-6<br>0<br>09/26/07<br>114-MW20B | NJD981084668-9/26/2007-7<br>0<br>09/26/07<br>135-MW2A |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | 0.4 U | 7.8 U | 0.4 U | 2.0 U | 2.0 U | 9.8 U | 0.8 U |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | 0.2 U | 3.2 U | 0.2 U | 0.8 U | 0.8 U | 4.0 U | 0.3 U |
| Trichloroethene | 79-01-6 | ug/L | 0.4 U | 7.2 U | 0.4 U | 1.8 U | 1.8 U | 9.0 U | 0.7 U |
| Vinyl chloride | 75-01-4 | ug/L | 0.2 U | 4.8 U | 0.2 U | 1.2 U | 1.2 U | 6.0 U | 0.5 U |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | 1.0 U | 4.6 U | 0.9 U | 0.9 U | 1.8 U | 46 U | 0.9 U |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | 1.1 U | 5.6 U | 1.1 U | 1.1 U | 2.2 U | 54 U | 1.1 U |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | 1.0 U | 4.9 U | 1.0 U | 1.0 U | 1.9 U | 48 U | 1.0 U |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | 1.0 U | 4.6 U | 0.9 U | 0.9 U | 1.8 U | 45 U | 0.9 U |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | 0.9 U | 4.3 U | 0.8 U | 0.8 U | 1.7 U | 42 U | 0.8 U |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | 1.2 U | 6.1 U | 1.2 U | 1.2 U | 2.4 U | 60 U | 1.2 U |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | 2.3 U | 11 U | 2.2 U | 2.2 U | 4.4 U | 110 U | 2.2 U |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | 1.5 U | 7.3 U | 1.4 U | 1.4 U | 2.9 U | 72 U | 1.4 U |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | 2.1 U | 10 U | 2.0 U | 2.0 U | 4.0 U | 100 U | 2.0 U |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | 0.9 U | 4.5 U | 0.9 U | 0.9 U | 1.8 U | 44 U | 0.9 U |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | 1.2 U | 5.8 U | 1.1 U | 1.1 U | 2.3 U | 57 U | 1.1 U |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | 1.3 U | 6.5 U | 1.3 U | 1.3 U | 2.6 U | 64 U | 1.3 U |
| 2-Chloronaphthalene | 91-58-7 | ug/L | 1.1 U | 5.4 U | 1.1 U | 1.1 U | 2.1 U | 54 U | 1.1 U |
| 2-Chlorophenol | 95-57-8 | ug/L | 1.1 U | 5.5 U | 1.1 U | 1.1 U | 2.2 U | 54 U | 1.1 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | 1.3 U | 6.3 U | 1.2 U | 1.2 U | 2.5 U | 62 U | 1.2 U |
| 2-Methylnaphthalene | 91-57-6 | ug/L | 1.2 U | 180 | 1.1 U | 34 | 44 | 94 | 1.1 U |
| 2-Methylphenol | 95-48-7 | ug/L | 1.4 U | 7.0 U | 1.4 U | 1.4 U | 2.7 U | 68 U | 1.4 U |
| 2-Nitroaniline | 88-74-4 | ug/L | 0.7 U | 3.4 U | 0.7 U | 0.7 U | 1.3 U | 33 U | 0.7 U |
| 2-Nitrophenol | 88-75-5 | ug/L | 1.6 U | 8.0 U | 1.6 U | 1.6 U | 3.1 U | 78 U | 1.6 U |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | 5.2 U | 25 U | 4.9 U | 4.9 U | 9.8 U | 250 U | 4.9 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | 1.0 U | 5.1 U | 1.0 U | 1.0 U | 2.0 U | 50 U | 1.0 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | 1.3 U | 6.1 U | 1.2 U | 1.2 U | 2.4 U | 60 U | 1.2 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | 1.7 U | 8.4 U | 1.6 U | 1.6 U | 3.3 U | 82 U | 1.6 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | 1.1 U | 5.4 U | 1.0 U | 1.0 U | 2.1 U | 52 U | 1.0 U |
| 4-Methylphenol | 106-44-5 | ug/L | 1.2 U | 6.7 | 1.2 U | 39 | 14 | 58 U | 1.2 U |
| 4-Nitroaniline | 100-01-6 | ug/L | 0.7 U | 3.2 U | 0.6 U | 0.6 U | 1.3 U | 32 U | 0.6 U |
| 4-Nitrophenol | 100-02-7 | ug/L | 0.9 U | 4.4 U | 0.9 U | 0.9 U | 1.7 U | 44 U | 0.9 U |
| Acenaphthene | 83-32-9 | ug/L | 0.5 | 69 | 0.095 | 11 | 14 | 110 | 0.1 |
| Acenaphthylene | 208-96-8 | ug/L | 0.4 | 7.8 | 0.050 U | 3.1 | 2.2 | 12 | 0.1 U |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | 0.066 | 7.3 | 0.050 U | 9.1 | 0.4 | 4.0 | 0.1 U |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | 0.053 U | 1.4 | 0.050 U | 1.6 | 0.2 U | 0.2 U | 0.1 U |
| Benzo(a)pyrene | 50-32-8 | ug/L | 0.053 U | 0.7 | 0.050 U | 0.7 | 0.2 U | 0.2 U | 0.1 U |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | 0.053 U | 0.4 J | 0.050 U | 0.4 | 0.2 U | 0.2 U | 0.1 U |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | 0.053 U | 0.3 J | 0.050 U | 0.1 J | 0.2 U | 0.2 U | 0.1 U |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | 0.053 U | 0.5 J | 0.050 U | 0.5 | 0.2 U | 0.2 U | 0.1 U |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | 0.9 U | 4.4 U | 0.9 U | 0.9 U | 1.7 U | 43 U | 0.9 U |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | 0.9 U | 4.4 U | 0.9 U | 0.9 U | 1.7 U | 44 U | 0.9 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | 1.1 U | 5.3 U | 1.0 U | 1.0 U | 2.1 U | 52 U | 1.0 U |
| Butyl benzyl phthalate | 85-68-7 | ug/L | 1.1 U | 5.4 U | 1.0 U | 1.0 U | 2.1 U | 52 U | 1.0 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-9/25/2007-6<br>63<br>09/25/07<br>MW5D | NJD981084668-9/25/2007-7<br>9.5<br>09/25/07<br>MW5S | NJD981084668-9/26/2007-3<br>0<br>09/26/07<br>MW9D | NJD981084668-9/26/2007-4<br>0<br>09/26/07<br>MW9S | NJD981084668-9/26/2007-5<br>0<br>09/26/07<br>114-MW20A | NJD981084668-9/26/2007-6<br>0<br>09/26/07<br>114-MW20B | NJD981084668-9/26/2007-7<br>0<br>09/26/07<br>135-MW2A |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | 1.0 U | 4.6 U | 0.9 U | 0.9 U | 1.8 U | 46 U | 0.9 U |
| Chrysene | 218-01-9 | ug/L | 0.053 U | 1.6 | 0.026 J | 1.6 | 0.2 U | 0.2 U | 0.1 U |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | 0.053 U | 0.5 U | 0.050 U | 0.2 U | 0.2 U | 0.2 U | 0.1 U |
| Dibenzofuran | 132-64-9 | ug/L | 1.0 U | 4.6 U | 0.9 U | 0.9 U | 1.8 U | 46 U | 0.9 U |
| Diethyl phthalate | 84-66-2 | ug/L | 0.8 U | 4.0 U | 0.8 U | 0.8 U | 1.6 U | 39 U | 0.8 U |
| Dimethyl phthalate | 131-11-3 | ug/L | 1.1 U | 5.6 U | 1.1 U | 1.1 U | 2.2 U | 54 U | 1.1 U |
| Di-n-butyl phthalate | 84-74-2 | ug/L | 1.1 U | 5.2 U | 1.0 U | 1.0 U | 2.0 U | 50 U | 1.0 U |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | 1.0 U | 5.1 U | 1.0 U | 1.0 U | 2.0 U | 50 U | 1.0 U |
| Fluoranthene | 206-44-0 | ug/L | 0.081 | 6.0 | 0.5 | 8.7 | 0.4 | 1.8 | 0.1 U |
| Fluorene | 86-73-7 | ug/L | 0.2 | 22 | 0.076 | 4.3 | 5.6 | 26 | 0.099 J |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | 0.6 U | 3.1 U | 0.6 U | 0.6 U | 1.2 U | 30 U | 0.6 U |
| Hexachlorobenzene | 118-74-1 | ug/L | 0.021 U | 0.2 U | 0.020 U | 0.1 U | 0.1 U | 0.1 U | 0.040 U |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | 0.7 U | 3.2 U | 0.6 U | 0.6 U | 1.3 U | 32 U | 0.6 U |
| Hexachloroethane | 67-72-1 | ug/L | 1.0 U | 4.6 U | 0.9 U | 0.9 U | 1.8 U | 45 U | 0.9 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | 0.053 U | 0.2 J | 0.050 U | 0.1 J | 0.2 U | 0.2 U | 0.1 U |
| Isophorone | 78-59-1 | ug/L | 1.0 U | 4.8 U | 0.9 U | 0.9 U | 1.9 U | 47 U | 0.9 U |
| Naphthalene | 91-20-3 | ug/L | 0.2 B | 1,200 | 0.044 J | 110 | 340 | 5,700 | 2.7 |
| Nitrobenzene | 98-95-3 | ug/L | 1.0 U | 4.9 U | 1.0 U | 1.0 U | 1.9 U | 48 U | 1.0 U |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | 0.8 U | 3.8 U | 0.7 U | 0.7 U | 1.5 U | 37 U | 0.7 U |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | 1.1 U | 5.4 U | 1.1 U | 1.1 U | 2.1 U | 53 U | 1.1 U |
| p-Chloroaniline | 106-47-8 | ug/L | 0.7 U | 3.5 U | 0.7 U | 0.7 U | 1.4 U | 34 U | 0.7 U |
| Pentachlorophenol | 87-86-5 | ug/L | 0.2 U | 2.0 U | 0.2 U | 1.0 U | 1.0 U | 1.0 U | 0.4 U |
| Phenanthrene | 85-01-8 | ug/L | 0.3 | 25 | 0.4 | 11 | 2.1 | 26 | 0.1 |
| Phenol | 108-95-2 | ug/L | 0.6 U | 3.1 U | 0.6 U | 55 | 33 | 30 U | 1.4 |
| Pyrene | 129-00-0 | ug/L | 0.090 | 5.3 | 0.4 | 6.8 | 0.2 J | 1.3 | 0.052 J |
| Total SVOCs | ARC-TSVOC | ug/L | 1.8 | 1,500 | 1.5 | 300 | 460 | 6,000 | 4.5 |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 62.6 U | 632 | 62.6 U | 4,920 | 8,210 | 547 | 427 |
| Antimony | 7440-36-0 | ug/L | 5.8 U | 5.8 U | 5.8 U | 9.5 B | 11.7 | 17.4 U | 5.8 U |
| Arsenic | 7440-38-2 | ug/L | 18.1 | 42.2 | 9.5 | 43.1 | 118 | 112 | 26.0 |
| Barium | 7440-39-3 | ug/L | 39.6 B | 23.3 B | 75.4 B | 46.9 B | 32.1 B | 44.8 B | 232 |
| Beryllium | 7440-41-7 | ug/L | 0.30 U | 0.30 U | 0.30 U | 0.30 U | 0.30 U | 0.30 U | 0.30 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 0.40 U | 0.40 U | 0.40 U | 0.84 B | 0.44 B | 0.40 U | 0.40 U |
| Calcium | 7440-70-2 | ug/L | 84,300 | 9,510 | 78,400 | 10,600 | 4,430 B | 30,000 | 62,500 |
| Chromium | 7440-47-3 | ug/L | 3.8 B | 159 | 51.0 | 19,600 | 147 | 87,600 | 2.4 J |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 1.7 U | 2.1 B | 1.7 U | 17.6 B | 2.0 B | 1.7 U | 1.7 U |
| Copper | 7440-50-8 | ug/L | 3.7 U | 17.6 B | 3.7 U | 48.8 | 103 | 6.2 B | 3.7 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 924 | 582 | 4,320 | 1,270 | 1,480 | 49.4 B | 16,200 |
| Lead | 7439-92-1 | ug/L | 2.7 U | 70.8 | 5.4 U | 141 | 461 | 8.1 U | 10.5 |
| Magnesium | 7439-95-4 | ug/L | 17,300 | 1,870 B | 221,000 | 6,380 | 566 B | 2,700 B | 59,800 |
| Manganese | 7439-96-5 | ug/L | 647 | 21.6 | 148 | 23.5 | 18.2 | 18.3 | 500 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-9/25/2007-6<br>63<br>09/25/07<br>MW5D | NJD981084668-9/25/2007-7<br>9.5<br>09/25/07<br>MW5S | NJD981084668-9/26/2007-3<br>0<br>09/26/07<br>MW9D | NJD981084668-9/26/2007-4<br>0<br>09/26/07<br>MW9S | NJD981084668-9/26/2007-5<br>0<br>09/26/07<br>114-MW20A | NJD981084668-9/26/2007-6<br>0<br>09/26/07<br>114-MW20B | NJD981084668-9/26/2007-7<br>0<br>09/26/07<br>135-MW2A |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.10 U | 0.15 B | 0.10 U | 2.1 | 2.0 | 0.10 U | 0.10 U |
| Nickel | 7440-02-0 | ug/L | 2.4 U | 17.8 B | 5.0 B | 169 | 15.9 B | 14.1 B | 2.5 B |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 8,650 | 9,540 | 91,700 B | 69,800 | 33,400 | 233,000 | 50,500 |
| Selenium | 7782-49-2 | ug/L | 4.2 U | 4.2 U | 4.2 U | 4.2 U | 4.9 B | 4.2 U | 4.2 U |
| Silver | 7440-22-4 | ug/L | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U |
| Sodium | 7440-23-5 | ug/L | 177,000 | 181,000 | 1,750,000 | 1,590,000 | 393,000 | 327,000 | 875,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U |
| Total CCPW Metals | CCPW-M | ug/L | 3.8 | 628 | 56.0 | 20,000 | 271 | 87,800 | 12 |
| Vanadium | 7440-62-2 | ug/L | 4.7 U | 451 | 4.7 U | 176 | 96.7 | 159 | 7.0 B |
| Zinc | 7440-66-6 | ug/L | 8.7 B | 40.4 | 5.8 U | 489 | 333 | 21.5 B | 6.5 B |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-9/25/2007-6<br>63<br>09/25/07<br>MW5D | NJD981084668-9/25/2007-7<br>9.5<br>09/25/07<br>MW5S | NJD981084668-9/26/2007-3<br>0<br>09/26/07<br>MW9D | NJD981084668-9/26/2007-4<br>0<br>09/26/07<br>MW9S | NJD981084668-9/26/2007-5<br>0<br>09/26/07<br>114-MW20A | NJD981084668-9/26/2007-6<br>0<br>09/26/07<br>114-MW20B | NJD981084668-9/26/2007-7<br>0<br>09/26/07<br>135-MW2A |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | 10 U | 66 | 10 U | 69 | 10 U | 77 | 10 U |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | 10 U | 10 U | 10 U | 10 U | 10 U | 21 | 10 U |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-9/25/2007-6<br>63<br>09/25/07<br>MW5D | NJD981084668-9/25/2007-7<br>9.5<br>09/25/07<br>MW5S | NJD981084668-9/26/2007-3<br>0<br>09/26/07<br>MW9D | NJD981084668-9/26/2007-4<br>0<br>09/26/07<br>MW9S | NJD981084668-9/26/2007-5<br>0<br>09/26/07<br>114-MW20A | NJD981084668-9/26/2007-6<br>0<br>09/26/07<br>114-MW20B | NJD981084668-9/26/2007-7<br>0<br>09/26/07<br>135-MW2A |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-9/26/2007-8<br>0<br>09/26/07<br>135-MW2B | NJD981084668-9/27/2007-2<br>10<br>09/27/07<br>MW10S | NJD981084668-9/27/2007-3<br>36.1<br>09/27/07<br>MW14D | NJD981084668-9/27/2007-4<br>10.5<br>09/27/07<br>MW14S | NJD981084668-9/27/2007-5<br>43<br>09/27/07<br>MW7D | NJD981084668-9/27/2007-6<br>10<br>09/27/07<br>MW7S | NJD981084668-9/27/2007-7<br>44<br>09/27/07<br>MW8D |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | 0.4 U [0.4 U] | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | 0.4 U [0.4 U] | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | 0.2 U [0.2 U] | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 1,1-Dichloroethane | 75-34-3 | ug/L | 0.3 U [0.3 U] | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| 1,1-Dichloroethene | 75-35-4 | ug/L | 0.5 U [0.5 U] | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | 0.3 U [0.3 U] | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| 1,2-Dichloropropane | 78-87-5 | ug/L | 0.5 U [0.5 U] | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | 1.3 U [1.3 U] | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | 0.7 U [0.7 U] | 0.7 U | 0.7 U | 0.7 U | 0.7 U | 0.7 U | 0.7 U |
| Acetone | 67-64-1 | ug/L | 1.5 U [1.5 U] | 1.5 U | 1.5 U | 1.5 U | 5.5 | 9.8 | 1.5 U |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | 0.2 U [0.2 U] | 0.6 | 0.5 | 0.2 U | 0.7 | 160 | 0.7 |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | 0.2 U [0.2 U] | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Bromoform | 75-25-2 | ug/L | 0.2 U [0.2 U] | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Bromomethane | 74-83-9 | ug/L | 0.4 U [0.4 U] | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| Carbon Disulfide | 75-15-0 | ug/L | 0.4 U [0.4 U] | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| Carbon Tetrachloride | 56-23-5 | ug/L | 0.3 U [0.3 U] | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | 0.2 U [0.2 U] | 0.3 | 0.7 | 0.2 U | 0.2 | 0.2 U | 0.2 U |
| Chlorodibromomethane | 124-48-1 | ug/L | 0.3 U [0.3 U] | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| Chloroethane | 75-00-3 | ug/L | 0.4 U [0.4 U] | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| Chloroform | 67-66-3 | ug/L | 0.2 U [0.2 U] | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Chloromethane | 74-87-3 | ug/L | 0.4 U [0.4 U] | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | 0.3 U [0.3 U] | 3.3 | 3.7 | 0.3 U | 2.2 | 0.3 U | 0.3 U |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | 0.1 U [0.1 U] | 0.1 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | 0.4 U [0.4 U] | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| Ethylbenzene | 100-41-4 | ug/L | 0.4 U [0.4 U] | 0.4 U | 0.4 | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | 0.7 U [0.7 U] | 0.7 U | 0.7 U | 0.7 U | 0.7 U | 0.7 U | 0.7 U |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | 0.4 U [0.4 U] | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | 0.4 U [0.4 U] | 1.6 | 72 | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| Toluene | 108-88-3 | ug/L | 0.3 U [0.3 U] | 0.3 U | 1.6 | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| Total VOCs | ARC-TVOC | ug/L | 1.5 U [1.5 U] | 9.6 | 84 | 1.5 U | 13 | 170 | 0.7 |
| Total Xylenes | 1330-20-7 | ug/L | 0.4 U [0.4 U] | 0.4 U | 1.5 | 0.4 U | 0.4 U | 0.4 U | 0.4 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-9/26/2007-80<br>09/26/07<br>135-MW2B | NJD981084668-9/27/2007-210<br>09/27/07<br>MW10S | NJD981084668-9/27/2007-336.1<br>09/27/07<br>MW14D | NJD981084668-9/27/2007-410.5<br>09/27/07<br>MW14S | NJD981084668-9/27/2007-543<br>09/27/07<br>MW7D | NJD981084668-9/27/2007-610<br>09/27/07<br>MW7S | NJD981084668-9/27/2007-744<br>09/27/07<br>MW8D |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | 0.4 U [0.4 U] | 0.4 U | 0.4 U | 0.4 U | 2.4 | 0.4 U | 0.4 U |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | 0.2 U [0.2 U] | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Trichloroethene | 79-01-6 | ug/L | 0.4 U [0.4 U] | 3.2 | 3.3 | 0.4 U | 1.8 | 0.4 U | 0.4 U |
| Vinyl chloride | 75-01-4 | ug/L | 0.2 U [0.2 U] | 0.6 | 0.2 U | 0.2 U | 0.3 | 0.2 U | 0.2 U |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | 0.9 U [0.9 U] | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | 1.1 U [1.1 U] | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | 1.0 U [1 U] | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | 0.9 U [0.9 U] | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | 0.8 U [0.8 U] | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | 1.2 U [1.2 U] | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | 2.2 U [2.2 U] | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | 1.4 U [1.4 U] | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | 2.0 U [2 U] | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | 0.9 U [0.9 U] | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | 1.1 U [1.1 U] | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | 1.3 U [1.3 U] | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| 2-Chloronaphthalene | 91-58-7 | ug/L | 1.1 U [1.1 U] | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| 2-Chlorophenol | 95-57-8 | ug/L | 1.1 U [1.1 U] | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | 1.2 U [1.2 U] | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U |
| 2-Methylnaphthalene | 91-57-6 | ug/L | 1.1 U [1.1 U] | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| 2-Methylphenol | 95-48-7 | ug/L | 1.4 U [1.4 U] | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U |
| 2-Nitroaniline | 88-74-4 | ug/L | 0.7 U [0.7 U] | 0.7 U | 0.7 U | 0.7 U | 0.7 U | 0.7 U | 0.7 U |
| 2-Nitrophenol | 88-75-5 | ug/L | 1.6 U [1.6 U] | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | 4.9 U [4.9 U] | 4.9 U | 4.9 U | 4.9 U | 4.9 U | 4.9 U | 4.9 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | 1.0 U [1 U] | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | 1.2 U [1.2 U] | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | 1.6 U [1.6 U] | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | 1.0 U [1 U] | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U |
| 4-Methylphenol | 106-44-5 | ug/L | 1.2 U [1.2 U] | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U |
| 4-Nitroaniline | 100-01-6 | ug/L | 0.6 U [0.6 U] | 0.6 U | 0.6 U | 0.6 U | 0.6 U | 0.6 U | 0.6 U |
| 4-Nitrophenol | 100-02-7 | ug/L | 0.9 U [0.9 U] | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U |
| Acenaphthene | 83-32-9 | ug/L | 0.050 U [0.05 U] | 0.050 U | 0.3 | 0.039 J | 0.078 | 0.1 | 0.037 J |
| Acenaphthylene | 208-96-8 | ug/L | 0.050 U [0.05 U] | 0.050 U | 0.074 | 0.050 U | 0.050 U | 0.050 U | 0.050 U |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | 0.050 U [0.05 U] | 0.050 U | 0.022 J | 0.050 U | 0.050 U | 0.050 U | 0.021 J |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | 0.050 U [0.05 U] | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U |
| Benzo(a)pyrene | 50-32-8 | ug/L | 0.050 U [0.05 U] | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | 0.050 U [0.05 U] | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | 0.050 U [0.05 U] | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | 0.050 U [0.05 U] | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | 0.9 U [0.9 U] | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | 0.9 U [0.9 U] | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | 1.0 U [1 U] | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U |
| Butyl benzyl phthalate | 85-68-7 | ug/L | 1.0 U [1 U] | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-9/26/2007-8<br>0<br>09/26/07<br>135-MW2B | NJD981084668-9/27/2007-2<br>10<br>09/27/07<br>MW10S | NJD981084668-9/27/2007-3<br>36.1<br>09/27/07<br>MW14D | NJD981084668-9/27/2007-4<br>10.5<br>09/27/07<br>MW14S | NJD981084668-9/27/2007-5<br>43<br>09/27/07<br>MW7D | NJD981084668-9/27/2007-6<br>10<br>09/27/07<br>MW7S | NJD981084668-9/27/2007-7<br>44<br>09/27/07<br>MW8D |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | 0.9 U [0.9 U] | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U |
| Chrysene | 218-01-9 | ug/L | 0.050 U [0.05 U] | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | 0.050 U [0.05 U] | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U |
| Dibenzofuran | 132-64-9 | ug/L | 2.0 [1.1] | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U |
| Diethyl phthalate | 84-66-2 | ug/L | 0.8 U [0.8 U] | 0.8 U | 0.8 U | 1.2 | 0.8 U | 0.8 U | 0.8 U |
| Dimethyl phthalate | 131-11-3 | ug/L | 1.1 U [1.1 U] | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| Di-n-butyl phthalate | 84-74-2 | ug/L | 1.0 U [1 U] | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | 1.0 U [1 U] | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U |
| Fluoranthene | 206-44-0 | ug/L | 0.050 U [0.05 U] | 0.8 | 0.050 U | 0.050 U | 0.050 U | 0.3 | 0.4 |
| Fluorene | 86-73-7 | ug/L | 0.050 U [0.027 J] | 0.050 U | 0.1 | 0.050 U | 0.042 J | 0.050 U | 0.050 U |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | 0.6 U [0.6 U] | 0.6 U | 0.6 U | 0.6 U | 0.6 U | 0.6 U | 0.6 U |
| Hexachlorobenzene | 118-74-1 | ug/L | 0.020 U [0.02 U] | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | 0.6 U [0.6 U] | 0.6 U | 0.6 U | 0.6 U | 0.6 U | 0.6 U | 0.6 U |
| Hexachloroethane | 67-72-1 | ug/L | 0.9 U [0.9 U] | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | 0.050 U [0.05 U] | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U |
| Isophorone | 78-59-1 | ug/L | 0.9 U [0.9 U] | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U |
| Naphthalene | 91-20-3 | ug/L | 0.025 J [0.034 J] | 0.031 J | 0.050 U | 0.050 U | 0.054 | 0.066 | 0.050 U |
| Nitrobenzene | 98-95-3 | ug/L | 1.0 U [1 U] | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | 0.7 U [0.7 U] | 0.7 U | 0.7 U | 0.7 U | 0.7 U | 0.7 U | 0.7 U |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | 1.1 U [1.1 U] | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| p-Chloroaniline | 106-47-8 | ug/L | 0.7 U [0.7 U] | 0.7 U | 0.7 U | 0.7 U | 0.7 U | 0.7 U | 0.7 U |
| Pentachlorophenol | 87-86-5 | ug/L | 0.2 U [0.2 U] | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Phenanthrene | 85-01-8 | ug/L | 0.050 U [0.05 U] | 0.1 | 0.2 | 0.064 | 0.050 U | 0.061 | 0.058 |
| Phenol | 108-95-2 | ug/L | 0.6 U [0.6 U] | 0.6 U | 0.6 U | 0.6 U | 0.6 U | 1.4 | 0.6 U |
| Pyrene | 129-00-0 | ug/L | 0.050 U [0.05 U] | 0.2 | 0.028 J | 0.050 U | 0.050 U | 0.1 | 0.3 |
| Total SVOCs | ARC-TSVOC | ug/L | 2.0 [1.2] | 1.1 | 0.72 | 1.3 | 0.17 | 2.0 | 0.82 |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 62.6 U [126 B] | 1,110 | 7,160 | 62.6 U | 850 | 1,260 | 138 B |
| Antimony | 7440-36-0 | ug/L | 5.8 U [5.8 U] | 5.8 U | 5.8 U | 5.8 U | 5.8 U | 5.8 U | 5.8 U |
| Arsenic | 7440-38-2 | ug/L | 2.8 U [2.8 U] | 10.2 | 4.6 B | 3.0 B | 498 | 33.9 | 25.5 |
| Barium | 7440-39-3 | ug/L | 326 [339] | 307 | 243 | 108 B | 235 | 415 | 81.4 B |
| Beryllium | 7440-41-7 | ug/L | 0.30 U [0.3 U] | 0.30 U | 0.30 U | 0.30 U | 0.30 U | 0.30 U | 0.30 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 0.40 U [0.4 U] | 0.40 U | 0.40 U | 0.40 U | 0.40 U | 0.40 U | 0.40 U |
| Calcium | 7440-70-2 | ug/L | 44,200 [45,900] | 147,000 | 101,000 | 33,300 | 125,000 | 198,000 | 388,000 |
| Chromium | 7440-47-3 | ug/L | 2.2 B [4 B] | 1.6 U | 18.5 | 1.6 U | 3.8 B | 2.6 B | 1.9 B |
| Chromium VI | 18540-29-9 | ug/L | NA | 10.0 U | 20.0 U | 10.0 U | 10.0 U | 10.0 U | 10.0 U |
| Cobalt | 7440-48-4 | ug/L | 1.7 U [1.7 U] | 6.6 B | 7.9 B | 1.7 U | 2.7 B | 3.0 B | 3.0 B |
| Copper | 7440-50-8 | ug/L | 3.7 U [3.7 U] | 3.7 U | 14.1 B | 3.7 U | 5.3 B | 3.7 U | 3.7 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 153 [177] | 3,500 | 8,590 | 2,180 | 9,740 | 28,800 | 14,400 |
| Lead | 7439-92-1 | ug/L | 2.7 U [2.7 U] | 8.1 U | 14.0 | 2.7 U | 2.7 U | 2.7 U | 2.7 U |
| Magnesium | 7439-95-4 | ug/L | 117,000 [122,000] | 19,600 | 28,200 | 18,400 | 20,800 | 74,100 | 741,000 |
| Manganese | 7439-96-5 | ug/L | 108 [113] | 6,100 | 3,820 | 378 | 8,940 | 3,400 | 1,030 |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-9/26/2007-80<br>09/26/07<br>135-MW2B | NJD981084668-9/27/2007-210<br>09/27/07<br>MW10S | NJD981084668-9/27/2007-336.1<br>09/27/07<br>MW14D | NJD981084668-9/27/2007-410.5<br>09/27/07<br>MW14S | NJD981084668-9/27/2007-543<br>09/27/07<br>MW7D | NJD981084668-9/27/2007-610<br>09/27/07<br>MW7S | NJD981084668-9/27/2007-744<br>09/27/07<br>MW8D |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.10 U [0.1 U] | 0.10 U | 0.10 U | 0.10 U | 0.10 U | 0.10 U | 0.10 U |
| Nickel | 7440-02-0 | ug/L | 2.4 U [3 B] | 18.6 B | 13.5 B | 6.2 B | 5.2 B | 5.6 B | 3.3 B |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 68,100 [70,900] | 24,800 | 56,600 | 38,100 | 5,840 | 48,900 | 162,000 |
| Selenium | 7782-49-2 | ug/L | 4.2 U [4.2 U] | 4.2 U | 4.2 U | 4.2 U | 4.2 U | 4.2 U | 4.2 U |
| Silver | 7440-22-4 | ug/L | 1.4 U [1.4 U] | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U |
| Sodium | 7440-23-5 | ug/L | 844,000 [870,000] | 456,000 | 115,000 | 83,200 | 47,200 | 163,000 | 4,610,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 1.9 U [1.9 U] | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 3.8 U |
| Total CCPW Metals | CCPW-M | ug/L | 7.7 [15] | 18.6 | 50.2 | 6.2 | 9.0 | 8.2 | 5.2 |
| Vanadium | 7440-62-2 | ug/L | 5.5 B [7.8 B] | 4.7 U | 18.2 B | 4.7 U | 4.7 U | 4.7 U | 4.7 U |
| Zinc | 7440-66-6 | ug/L | 12.8 B [10.7 B] | 10.1 B | 57.3 | 5.8 U | 7.6 B | 87.0 | 5.8 U |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-9/26/2007-80<br>0<br>09/26/07<br>135-MW2B | NJD981084668-9/27/2007-210<br>10<br>09/27/07<br>MW10S | NJD981084668-9/27/2007-336.1<br>36.1<br>09/27/07<br>MW14D | NJD981084668-9/27/2007-410.5<br>10.5<br>09/27/07<br>MW14S | NJD981084668-9/27/2007-543<br>43<br>09/27/07<br>MW7D | NJD981084668-9/27/2007-610<br>10<br>09/27/07<br>MW7S | NJD981084668-9/27/2007-744<br>44<br>09/27/07<br>MW8D |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | 10 U [10 U] | 42 | 10 U | 10 U | 10 U | 10 U | 10 U |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | 10 U [10 U] | 17 | 10 U | 10 U | 10 U | 10 U | 10 U |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-9/26/2007-8<br>0<br>09/26/07<br>135-MW2B | NJD981084668-9/27/2007-2<br>10<br>09/27/07<br>MW10S | NJD981084668-9/27/2007-3<br>36.1<br>09/27/07<br>MW14D | NJD981084668-9/27/2007-4<br>10.5<br>09/27/07<br>MW14S | NJD981084668-9/27/2007-5<br>43<br>09/27/07<br>MW7D | NJD981084668-9/27/2007-6<br>10<br>09/27/07<br>MW7S | NJD981084668-9/27/2007-7<br>44<br>09/27/07<br>MW8D |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | NJD981084668-9/28/2007-3 | NJD981084668-9/28/2007-4 | NJD981084668-9/28/2007-5 | NJD981084668-9/28/2007-6 | NJD981084668-10/1/2007-2 | NJD981084668-10/1/2007-3 | NJD981084668-10/1/2007-4 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 50 | 10.5 | 45 | 11 | 43.5 | 74 | 7.5 |
| Date Collected: | | | 09/28/07 | 09/28/07 | 09/28/07 | 09/28/07 | 10/01/07 | 10/01/07 | 10/01/07 |
| Location ID: | CAS Number | Units | MW3D | MW3S | MW6D | MW6S | MW4D | MW4F | MW4S |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | 0.4 U [0.4 U] | 1.9 U | 7.2 | 0.8 U | 19 U | 0.4 U | 0.4 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | 0.4 U [0.4 U] | 1.8 U | 1.8 U | 0.7 U | 18 U | 0.4 U | 0.4 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | 0.2 U [0.2 U] | 1.1 U | 4.2 | 0.4 U | 11 U | 0.2 U | 0.2 U |
| 1,1-Dichloroethane | 75-34-3 | ug/L | 0.3 U [0.3 U] | 1.3 U | 39 | 1.3 | 13 U | 0.7 | 0.3 U |
| 1,1-Dichloroethene | 75-35-4 | ug/L | 0.5 U [0.5 U] | 2.3 U | 52 | 0.9 U | 23 U | 0.7 | 0.5 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | 0.3 U [0.3 U] | 1.4 U | 1.4 U | 0.5 U | 14 U | 48 | 0.3 U |
| 1,2-Dichloropropane | 78-87-5 | ug/L | 0.5 U [0.5 U] | 2.4 U | 2.4 U | 1.0 U | 24 U | 0.5 U | 0.5 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | 1.3 U [1.3 U] | 6.4 U | 6.4 U | 2.6 U | 64 U | 1.3 U | 1.3 U |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | 0.7 U [0.7 U] | 3.6 U | 3.6 U | 1.5 U | 36 U | 0.7 U | 0.7 U |
| Acetone | 67-64-1 | ug/L | 1.5 U [1.5 U] | 20 | 7.6 U | 3.0 U | 76 U | 1.5 U | 1.5 U |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | 140 [130] | 1,800 | 1.7 | 8.6 | 3,600 | 0.5 | 0.2 U |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | 0.2 U [0.2 U] | 1.2 U | 1.2 U | 0.5 U | 12 U | 0.2 U | 0.2 U |
| Bromoform | 75-25-2 | ug/L | 0.2 U [0.2 U] | 1.0 U | 1.0 U | 0.4 U | 10 U | 0.2 U | 0.2 U |
| Bromomethane | 74-83-9 | ug/L | 0.4 U [0.4 U] | 2.2 U | 2.2 U | 0.9 U | 22 U | 0.4 U | 0.4 U |
| Carbon Disulfide | 75-15-0 | ug/L | 0.4 U [0.4 U] | 2.2 U | 2.2 U | 0.9 U | 22 U | 0.4 U | 0.5 |
| Carbon Tetrachloride | 56-23-5 | ug/L | 0.3 U [0.3 U] | 1.7 U | 1.7 U | 0.7 U | 17 U | 0.3 U | 0.3 U |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | 0.2 U [0.2 U] | 1.2 U | 2.5 | 210 | 12 U | 0.2 U | 0.2 U |
| Chlorodibromomethane | 124-48-1 | ug/L | 0.3 U [0.3 U] | 1.4 U | 1.4 U | 0.5 U | 14 U | 0.3 U | 0.3 U |
| Chloroethane | 75-00-3 | ug/L | 0.4 U [0.4 U] | 2.2 U | 2.2 U | 0.9 U | 22 U | 0.4 U | 0.4 U |
| Chloroform | 67-66-3 | ug/L | 0.2 U [0.2 U] | 1.0 U | 2.3 | 0.4 U | 10 U | 0.2 U | 0.2 U |
| Chloromethane | 74-87-3 | ug/L | 0.4 U [0.4 U] | 2.2 U | 2.2 U | 0.9 U | 22 U | 0.4 U | 0.4 U |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | 1.1 [1.3] | 1.4 U | 3,700 | 10 | 14 U | 62 | 0.3 U |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | 0.1 U [0.1 U] | 0.6 U | 0.6 U | 0.3 U | 6.5 U | 0.1 U | 0.1 U |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | 0.4 U [0.4 U] | 2.0 U | 2.0 U | 0.8 U | 20 U | 0.4 U | 0.4 U |
| Ethylbenzene | 100-41-4 | ug/L | 130 [120] | 610 | 2.0 U | 0.8 U | 5,200 | 0.4 U | 0.4 U |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | 0.7 U [0.7 U] | 3.5 U | 3.5 U | 1.4 U | 35 U | 0.7 U | 0.7 U |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | 4.9 [4.2] | 64 | 2.0 U | 0.8 U | 20 U | 0.4 U | 0.4 U |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | 0.4 U [0.4 U] | 2.1 U | 2,300 | 2.7 | 21 U | 2.9 | 0.4 U |
| Toluene | 108-88-3 | ug/L | 47 [43] | 930 | 1.5 U | 0.6 U | 120 | 0.3 U | 0.3 U |
| Total VOCs | ARC-TVOC | ug/L | 440 [400] | 4,400 | 6,900 | 240 | 14,000 | 120 | 0.5 |
| Total Xylenes | 1330-20-7 | ug/L | 110 [98] | 1,000 | 2.0 U | 0.8 U | 4,900 | 0.4 U | 0.4 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-9/28/2007-3<br>50<br>09/28/07<br>MW3D | NJD981084668-9/28/2007-4<br>10.5<br>09/28/07<br>MW3S | NJD981084668-9/28/2007-5<br>45<br>09/28/07<br>MW6D | NJD981084668-9/28/2007-6<br>11<br>09/28/07<br>MW6S | NJD981084668-10/1/2007-2<br>43.5<br>10/01/07<br>MW4D | NJD981084668-10/1/2007-3<br>74<br>10/01/07<br>MW4F | NJD981084668-10/1/2007-4<br>7.5<br>10/01/07<br>MW4S |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | 2.5 [2.7] | 2.0 U | 30 | 1.0 | 20 U | 0.4 | 0.4 U |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | 0.2 U [0.2 U] | 0.8 U | 0.8 U | 0.3 U | 8.0 U | 0.2 U | 0.2 U |
| Trichloroethene | 79-01-6 | ug/L | 0.4 U [0.4 U] | 1.8 U | 730 | 2.6 | 18 U | 3.7 | 0.4 U |
| Vinyl chloride | 75-01-4 | ug/L | 0.2 U [0.2 U] | 1.2 U | 46 | 0.5 U | 12 U | 1.5 | 0.2 U |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | 0.9 U [0.9 U] | 18 U | 7.2 | 200 | 46 U | 0.9 U | 0.9 U |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | 1.1 U [1.1 U] | 22 U | 1.1 U | 58 | 54 U | 1.1 U | 1.1 U |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | 1.0 U [1 U] | 19 U | 1.0 U | 72 | 48 U | 1.0 U | 1.0 U |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | 0.9 U [0.9 U] | 18 U | 0.9 U | 49 | 45 U | 0.9 U | 0.9 U |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | 0.9 U [0.9 U] | 17 U | 0.9 U | 0.9 U | 42 U | 0.8 U | 0.8 U |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | 1.2 U [1.2 U] | 24 U | 1.2 U | 1.2 U | 60 U | 1.2 U | 1.2 U |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | 2.2 U [2.2 U] | 44 U | 2.2 U | 2.2 U | 110 U | 2.2 U | 2.2 U |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | 1.4 U [1.4 U] | 29 U | 1.4 U | 1.4 U | 72 U | 1.4 U | 1.4 U |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | 2.0 U [2 U] | 40 U | 2.0 U | 2.0 U | 100 U | 2.0 U | 2.0 U |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | 0.9 U [0.9 U] | 18 U | 0.9 U | 0.9 U | 44 U | 0.9 U | 0.9 U |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | 1.2 U [1.2 U] | 23 U | 1.2 U | 1.2 U | 57 U | 1.1 U | 1.1 U |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | 1.3 U [1.3 U] | 26 U | 1.3 U | 1.3 U | 64 U | 1.3 U | 1.3 U |
| 2-Chloronaphthalene | 91-58-7 | ug/L | 1.1 U [1.1 U] | 21 U | 1.1 U | 1.1 U | 54 U | 1.1 U | 1.1 U |
| 2-Chlorophenol | 95-57-8 | ug/L | 1.1 U [1.1 U] | 22 U | 1.1 U | 1.1 U | 54 U | 1.1 U | 1.1 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | 1.2 U [1.2 U] | 25 U | 1.2 U | 1.2 U | 62 U | 1.2 U | 1.2 U |
| 2-Methylnaphthalene | 91-57-6 | ug/L | 2.8 [3.2] | 390 | 1.1 U | 1.1 U | 370 | 1.1 U | 1.1 U |
| 2-Methylphenol | 95-48-7 | ug/L | 1.4 U [1.4 U] | 27 U | 1.4 U | 1.4 U | 68 U | 1.4 U | 1.4 U |
| 2-Nitroaniline | 88-74-4 | ug/L | 0.7 U [0.7 U] | 13 U | 0.7 U | 0.7 U | 33 U | 0.7 U | 0.7 U |
| 2-Nitrophenol | 88-75-5 | ug/L | 1.6 U [1.6 U] | 31 U | 1.6 U | 1.6 U | 78 U | 1.6 U | 1.6 U |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | 5.0 U [5 U] | 98 U | 5.0 U | 5.0 U | 250 U | 4.9 U | 4.9 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | 1.0 U [1 U] | 20 U | 1.0 U | 1.0 U | 50 U | 1.0 U | 1.0 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | 1.2 U [1.2 U] | 24 U | 1.2 U | 1.2 U | 60 U | 1.2 U | 1.2 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | 1.6 U [1.6 U] | 33 U | 1.6 U | 1.6 U | 82 U | 1.6 U | 1.6 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | 1.1 U [1.1 U] | 21 U | 1.1 U | 1.1 U | 52 U | 1.0 U | 1.0 U |
| 4-Methylphenol | 106-44-5 | ug/L | 1.2 U [1.2 U] | 23 U | 1.2 U | 1.2 U | 58 U | 1.2 U | 1.2 U |
| 4-Nitroaniline | 100-01-6 | ug/L | 0.6 U [0.6 U] | 13 U | 0.6 U | 0.6 U | 32 U | 0.6 U | 0.6 U |
| 4-Nitrophenol | 100-02-7 | ug/L | 0.9 U [0.9 U] | 17 U | 0.9 U | 0.9 U | 44 U | 0.9 U | 0.9 U |
| Acenaphthene | 83-32-9 | ug/L | 4.9 [5] | 61 | 0.050 U | 0.041 J | 130 | 0.084 | 0.9 |
| Acenaphthylene | 208-96-8 | ug/L | 4.1 [4.4] | 66 | 0.050 U | 0.050 U | 7.0 | 0.2 | 0.1 |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | 0.3 [0.3] | 18 | 0.050 U | 0.032 J | 7.8 | 0.2 | 0.083 |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | 0.050 U [0.05 U] | 3.0 | 0.050 U | 0.051 | 0.2 U | 0.053 | 0.050 U |
| Benzo(a)pyrene | 50-32-8 | ug/L | 0.050 U [0.05 U] | 2.4 | 0.050 U | 0.050 U | 0.2 U | 0.050 U | 0.050 U |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | 0.050 U [0.05 U] | 1.1 | 0.050 U | 0.050 U | 0.2 U | 0.050 U | 0.050 U |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | 0.050 U [0.05 U] | 1.0 | 0.050 U | 0.050 U | 0.2 U | 0.050 U | 0.050 U |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | 0.050 U [0.05 U] | 1.7 | 0.050 U | 0.050 U | 0.2 U | 0.050 U | 0.050 U |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | 0.9 U [0.9 U] | 17 U | 0.9 U | 0.9 U | 43 U | 0.9 U | 0.9 U |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | 0.9 U [0.9 U] | 17 U | 0.9 U | 0.9 U | 44 U | 0.9 U | 0.9 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | 1.0 U [1 U] | 21 U | 1.0 U | 1.0 U | 52 U | 1.0 U | 1.0 U |
| Butyl benzyl phthalate | 85-68-7 | ug/L | 1.1 U [1.1 U] | 21 U | 1.1 U | 1.1 U | 52 U | 1.0 U | 1.0 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-9/28/2007-3<br>50<br>09/28/07<br>MW3D | NJD981084668-9/28/2007-4<br>10.5<br>09/28/07<br>MW3S | NJD981084668-9/28/2007-5<br>45<br>09/28/07<br>MW6D | NJD981084668-9/28/2007-6<br>11<br>09/28/07<br>MW6S | NJD981084668-10/1/2007-2<br>43.5<br>10/01/07<br>MW4D | NJD981084668-10/1/2007-3<br>74<br>10/01/07<br>MW4F | NJD981084668-10/1/2007-4<br>7.5<br>10/01/07<br>MW4S |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | 0.9 U [0.9 U] | 18 U | 0.9 U | 0.9 U | 46 U | 0.9 U | 0.9 U |
| Chrysene | 218-01-9 | ug/L | 0.050 U [0.05 U] | 3.2 | 0.050 U | 0.094 | 0.2 U | 0.055 | 0.050 U |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | 0.050 U [0.05 U] | 0.3 | 0.050 U | 0.050 U | 0.2 U | 0.050 U | 0.050 U |
| Dibenzofuran | 132-64-9 | ug/L | 0.9 U [0.9 U] | 18 U | 0.9 U | 0.9 U | 46 U | 0.9 U | 0.9 U |
| Diethyl phthalate | 84-66-2 | ug/L | 0.8 U [0.8 U] | 16 U | 0.8 U | 0.8 U | 39 U | 0.8 U | 0.8 U |
| Dimethyl phthalate | 131-11-3 | ug/L | 1.1 U [1.1 U] | 22 U | 1.1 U | 1.1 U | 54 U | 1.1 U | 1.1 U |
| Di-n-butyl phthalate | 84-74-2 | ug/L | 1.0 U [1 U] | 20 U | 1.0 U | 1.0 U | 50 U | 1.0 U | 1.0 U |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | 1.0 U [1 U] | 20 U | 1.0 U | 1.0 U | 50 U | 1.0 U | 1.0 U |
| Fluoranthene | 206-44-0 | ug/L | 0.2 [0.2] | 11 | 0.050 U | 0.048 J | 0.5 | 0.2 | 0.039 J |
| Fluorene | 86-73-7 | ug/L | 0.9 [1] | 43 | 0.050 U | 0.050 U | 15 | 0.2 | 0.2 |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | 0.6 U [0.6 U] | 12 U | 0.6 U | 0.6 U | 30 U | 0.6 U | 0.6 U |
| Hexachlorobenzene | 118-74-1 | ug/L | 0.020 U [0.02 U] | 0.1 U | 0.020 U | 0.020 U | 0.1 U | 0.020 U | 0.020 U |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | 0.6 U [0.6 U] | 13 U | 0.6 U | 0.6 U | 32 U | 0.6 U | 0.6 U |
| Hexachloroethane | 67-72-1 | ug/L | 0.9 U [0.9 U] | 18 U | 0.9 U | 0.9 U | 45 U | 0.9 U | 0.9 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | 0.050 U [0.05 U] | 0.7 | 0.050 U | 0.050 U | 0.2 U | 0.050 U | 0.050 U |
| Isophorone | 78-59-1 | ug/L | 0.9 U [0.9 U] | 19 U | 0.9 U | 0.9 U | 47 U | 0.9 U | 0.9 U |
| Naphthalene | 91-20-3 | ug/L | 180 [230] | 3,300 | 0.043 J | 0.06 | 7,400 | 0.5 | 0.052 |
| Nitrobenzene | 98-95-3 | ug/L | 1.0 U [1 U] | 19 U | 1.0 U | 1.0 U | 48 U | 1.0 U | 1.0 U |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | 0.7 U [0.7 U] | 15 U | 0.7 U | 0.7 U | 37 U | 0.7 U | 0.7 U |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | 1.1 U [1.1 U] | 21 U | 1.1 U | 1.1 U | 53 U | 1.1 U | 1.1 U |
| p-Chloroaniline | 106-47-8 | ug/L | 0.7 U [0.7 U] | 14 U | 0.7 U | 0.7 U | 34 U | 0.7 U | 0.7 U |
| Pentachlorophenol | 87-86-5 | ug/L | 0.2 U [0.2] | 1.0 U | 0.2 U | 0.2 U | 1.0 U | 0.2 U | 0.2 U |
| Phenanthrene | 85-01-8 | ug/L | 1.6 [2] | 54 | 0.046 J | 0.050 U | 20 | 0.5 | 0.1 |
| Phenol | 108-95-2 | ug/L | 0.6 U [0.6 U] | 12 U | 0.6 U | 0.6 U | 30 U | 0.6 U | 0.6 U |
| Pyrene | 129-00-0 | ug/L | 0.2 [0.3] | 13 | 0.044 J | 0.8 | 0.3 | 0.3 | 0.055 |
| Total SVOCs | ARC-TSVOC | ug/L | 200 [250] | 4,000 | 7.3 | 380 | 8,000 | 2.3 | 1.5 |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 120 B [62.6 U] | 332 | 66.4 B | 62.6 U | 62.6 U | 62.6 U | 63.1 B |
| Antimony | 7440-36-0 | ug/L | 5.8 U [5.8 U] | 5.8 U | 5.8 U | 5.8 U | 5.8 U | 5.8 U | 5.8 U |
| Arsenic | 7440-38-2 | ug/L | 7.0 [7] | 5.6 U | 2.8 U | 89.5 | 17.7 | 21.5 | 3.7 |
| Barium | 7440-39-3 | ug/L | 94.2 B [95.9 B] | 28.3 B | 47.2 B | 164 B | 177 B | 47.6 B | 25.1 B |
| Beryllium | 7440-41-7 | ug/L | 0.40 B [0.3 U] | 0.30 U | 0.44 B | 0.44 B | 0.30 U | 0.30 U | 0.30 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 0.40 U [0.4 U] | 0.40 U | 0.40 U | 0.40 U | 0.40 U | 0.40 U | 0.40 U |
| Calcium | 7440-70-2 | ug/L | 53,400 [53,400] | 5,790 | 84,700 | 99,500 | 74,500 | 115,000 | 37,200 |
| Chromium | 7440-47-3 | ug/L | 3.7 B [4 B] | 104 | 1.6 U | 1.6 U | 3.4 B | 3.7 B | 15.4 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 1.7 U [1.7 U] | 1.7 U | 1.7 U | 3.4 B | 2.0 B | 1.7 U | 1.7 U |
| Copper | 7440-50-8 | ug/L | 3.7 U [3.7 U] | 6.9 B | 3.7 U | 3.8 B | 3.7 U | 3.7 U | 3.7 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 439 [436] | 463 | 131 B | 17,100 | 1,250 | 124 B | 442 |
| Lead | 7439-92-1 | ug/L | 2.7 U [2.7 U] | 14.3 | 2.7 U | 2.7 U | 2.7 U | 2.7 U | 2.7 U |
| Magnesium | 7439-95-4 | ug/L | 16,700 [16,900] | 1,160 B | 19,100 | 16,100 | 22,300 | 22,000 | 30,400 |
| Manganese | 7439-96-5 | ug/L | 367 [362] | 23.0 | 284 | 6,450 | 3,020 | 153 | 68.4 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-9/28/2007-3<br>50<br>09/28/07<br>MW3D | NJD981084668-9/28/2007-4<br>10.5<br>09/28/07<br>MW3S | NJD981084668-9/28/2007-5<br>45<br>09/28/07<br>MW6D | NJD981084668-9/28/2007-6<br>11<br>09/28/07<br>MW6S | NJD981084668-10/1/2007-2<br>43.5<br>10/01/07<br>MW4D | NJD981084668-10/1/2007-3<br>74<br>10/01/07<br>MW4F | NJD981084668-10/1/2007-4<br>7.5<br>10/01/07<br>MW4S |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.10 U [0.1 U] | 0.30 | 0.10 U | 0.10 U | 0.10 U | 0.10 U | 0.10 U |
| Nickel | 7440-02-0 | ug/L | 5.5 B [2.4 U] | 10.2 B | 44.9 | 3.7 B | 4.2 B | 2.8 B | 3.1 B |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 21,400 [22,200] | 21,500 | 10,200 | 10,500 | 6,080 | 6,590 | 4,390 B |
| Selenium | 7782-49-2 | ug/L | 4.2 U [4.2 U] | 4.2 U | 4.2 U | 4.2 U | 4.2 U | 4.2 U | 5.7 |
| Silver | 7440-22-4 | ug/L | 1.4 U [1.4 U] | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U |
| Sodium | 7440-23-5 | ug/L | 51,200 [52,500] | 294,000 | 18,300 | 61,300 | 76,000 | 22,100 | 11,600 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 1.9 U [1.9 U] | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U |
| Total CCPW Metals | CCPW-M | ug/L | 9.2 [4] | 170 | 44.9 | 3.7 | 7.6 | 6.5 | 18.5 |
| Vanadium | 7440-62-2 | ug/L | 4.7 U [4.7 U] | 56.0 | 4.7 U | 4.7 U | 4.7 U | 4.7 U | 4.7 U |
| Zinc | 7440-66-6 | ug/L | 48.5 [45.2] | 18.6 B | 5.8 U | 11.9 B | 5.8 U | 5.8 U | 5.8 U |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-9/28/2007-3<br>50<br>09/28/07<br>MW3D | NJD981084668-9/28/2007-4<br>10.5<br>09/28/07<br>MW3S | NJD981084668-9/28/2007-5<br>45<br>09/28/07<br>MW6D | NJD981084668-9/28/2007-6<br>11<br>09/28/07<br>MW6S | NJD981084668-10/1/2007-2<br>43.5<br>10/01/07<br>MW4D | NJD981084668-10/1/2007-3<br>74<br>10/01/07<br>MW4F | NJD981084668-10/1/2007-4<br>7.5<br>10/01/07<br>MW4S |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | 92 [71] | 63 | 10 U | 16 | 570 | 10 U | 400 |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | 43 [17] | 18 | 10 U | 10 U | 280 | 10 U | 330 |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-9/28/2007-3<br>50<br>09/28/07<br>MW3D | NJD981084668-9/28/2007-4<br>10.5<br>09/28/07<br>MW3S | NJD981084668-9/28/2007-5<br>45<br>09/28/07<br>MW6D | NJD981084668-9/28/2007-6<br>11<br>09/28/07<br>MW6S | NJD981084668-10/1/2007-2<br>43.5<br>10/01/07<br>MW4D | NJD981084668-10/1/2007-3<br>74<br>10/01/07<br>MW4F | NJD981084668-10/1/2007-4<br>7.5<br>10/01/07<br>MW4S |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | NJD981084668-10/1/2007-5 | NJD981084668-10/1/2007-6 | NJD981084668-10/1/2007-7 | NJD981084668-10/23/2007-3 | NJD981084668-10/23/2007-4 | NJD981084668-10/23/2007-5 | NJD981084668-10/23/2007-6 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 33 | 8.5 | 70.5 | 39 | 8 | 38 | 7 |
| Date Collected: | | | 10/01/07 | 10/01/07 | 10/01/07 | 10/23/07 | 10/23/07 | 10/23/07 | 10/23/07 |
| Location ID: | CAS Number | Units | MW4B | 137-MW1A | 137-MW1C | MW1D | MW1S | MW2D | MW2S |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | 0.4 U | 0.8 U | 0.8 U | 0.6 [0.5] | 0.4 U | 0.4 U | 0.4 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | 0.4 U | 0.7 U | 0.7 U | 0.4 U [0.4 U] | 0.4 U | 0.4 U | 0.4 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | 0.2 U | 0.4 U | 0.4 U | 0.2 U [0.2 U] | 0.2 U | 0.2 U | 0.2 U |
| 1,1-Dichloroethane | 75-34-3 | ug/L | 0.3 U | 0.5 U | 0.5 U | 0.3 U [0.3 U] | 0.3 U | 0.3 U | 0.3 U |
| 1,1-Dichloroethene | 75-35-4 | ug/L | 0.5 U | 0.9 U | 0.9 U | 0.5 U [0.5 U] | 0.5 U | 0.5 U | 0.5 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | 0.3 U | 0.5 U | 0.5 U | 0.3 U [0.3 U] | 0.3 U | 0.3 U | 0.3 U |
| 1,2-Dichloropropane | 78-87-5 | ug/L | 0.5 U | 1.0 U | 1.0 U | 0.5 U [0.5 U] | 0.5 U | 0.5 U | 0.5 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | 1.3 U | 12 | 2.6 U | 1.3 U [1.3 U] | 1.3 U | 1.3 U | 4.6 |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | 0.7 U | 3.8 | 1.5 U | 0.7 U [0.7 U] | 0.7 U | 0.7 U | 1.0 |
| Acetone | 67-64-1 | ug/L | 9.1 | 140 | 3.0 U | 6.1 [6] | 1.5 U | 7.1 | 68 |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | 2.4 | 1.7 | 0.5 U | 0.2 U [0.2 U] | 0.3 | 28 | 6.9 |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | 0.2 U | 0.5 U | 0.5 U | 0.2 U [0.2 U] | 0.2 U | 0.2 U | 0.2 U |
| Bromoform | 75-25-2 | ug/L | 0.2 U | 0.4 U | 0.4 U | 0.2 U [0.2 U] | 0.2 U | 0.2 U | 0.2 U |
| Bromomethane | 74-83-9 | ug/L | 0.4 U | 0.9 U | 0.9 U | 0.4 U [0.4 U] | 0.4 U | 0.4 U | 0.4 U |
| Carbon Disulfide | 75-15-0 | ug/L | 44 | 0.9 U | 0.9 U | 3.7 [2.4] | 0.4 U | 3.8 | 0.4 U |
| Carbon Tetrachloride | 56-23-5 | ug/L | 0.3 U | 0.7 U | 0.7 U | 0.3 U [0.3 U] | 0.3 U | 0.3 U | 0.3 U |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | 0.2 U | 0.7 | 0.5 U | 0.2 U [0.2 U] | 0.2 U | 0.2 U | 0.3 |
| Chlorodibromomethane | 124-48-1 | ug/L | 0.3 U | 0.5 U | 0.5 U | 0.3 U [0.3 U] | 0.3 U | 0.3 U | 0.3 U |
| Chloroethane | 75-00-3 | ug/L | 0.4 U | 0.9 U | 0.9 U | 0.4 U [0.4 U] | 0.4 U | 0.4 U | 0.4 U |
| Chloroform | 67-66-3 | ug/L | 0.2 U | 0.4 U | 0.6 | 0.2 U [0.2 U] | 0.2 U | 0.2 U | 0.2 U |
| Chloromethane | 74-87-3 | ug/L | 0.4 U | 0.9 U | 0.9 U | 0.4 U [0.4 U] | 0.4 U | 0.4 U | 0.4 U |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | 0.3 U | 0.6 U | 0.6 U | 0.3 U [0.3 U] | 0.3 U | 0.3 U | 0.3 U |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | 0.1 U | 0.3 U | 0.3 U | 0.1 U [0.1 U] | 0.1 U | 0.1 U | 0.1 U |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | 0.4 U | 0.8 | 0.8 U | 0.4 U [0.4 U] | 0.4 U | 0.4 U | 0.4 U |
| Ethylbenzene | 100-41-4 | ug/L | 0.4 U | 0.8 U | 0.8 U | 0.4 U [0.4 U] | 0.4 U | 8.1 | 1.0 |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | 0.7 U | 1.4 U | 1.4 U | 0.7 U [0.7 U] | 0.7 U | 0.7 U | 0.7 U |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | 0.4 U | 0.8 U | 0.8 U | 0.4 U [0.4 U] | 0.4 U | 0.4 U | 0.4 U |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | 0.4 U | 0.8 U | 0.8 U | 1.1 [1.1] | 120 | 0.4 U | 0.4 U |
| Toluene | 108-88-3 | ug/L | 0.3 U | 1.1 | 3.2 | 0.3 U [0.3 U] | 0.3 U | 21 | 2.6 |
| Total VOCs | ARC-TVOC | ug/L | 56 | 160 | 3.8 | 12 [10] | 120 | 86 | 87 |
| Total Xylenes | 1330-20-7 | ug/L | 0.4 U | 0.8 U | 0.8 U | 0.4 U [0.4 U] | 0.4 U | 18 | 2.7 |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-10/1/2007-5<br>33<br>10/01/07<br>MW4B | NJD981084668-10/1/2007-6<br>8.5<br>10/01/07<br>137-MW1A | NJD981084668-10/1/2007-7<br>70.5<br>10/01/07<br>137-MW1C | NJD981084668-10/23/2007-3<br>39<br>10/23/07<br>MW1D | NJD981084668-10/23/2007-4<br>8<br>10/23/07<br>MW1S | NJD981084668-10/23/2007-5<br>38<br>10/23/07<br>MW2D | NJD981084668-10/23/2007-6<br>7<br>10/23/07<br>MW2S |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | 0.4 U | 0.8 U | 0.8 U | 0.4 U [0.4 U] | 0.4 U | 0.4 U | 0.4 U |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | 0.2 U | 0.3 U | 0.3 U | 0.2 U [0.2 U] | 0.2 U | 0.2 U | 0.2 U |
| Trichloroethene | 79-01-6 | ug/L | 0.4 U | 1.2 | 0.7 U | 0.4 U [0.4 U] | 0.8 | 0.4 U | 0.4 U |
| Vinyl chloride | 75-01-4 | ug/L | 0.2 U | 0.5 U | 0.5 U | 0.2 U [0.2 U] | 0.2 U | 0.2 U | 0.2 U |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | 0.9 U | 0.9 U | 0.9 U | 0.9 U [0.9 U] | 0.9 U | 9.1 U | 0.9 U |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | 1.1 U | 1.1 U | 1.1 U | 1.1 U [1.1 U] | 1.1 U | 11 U | 1.1 U |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | 9.6 U | 1.0 U |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | 0.9 U | 0.9 U | 0.9 U | 0.9 U [0.9 U] | 0.9 U | 9.0 U | 0.9 U |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | 0.8 U | 0.8 U | 0.8 U | 0.9 U [0.8 U] | 0.8 U | 8.5 U | 0.8 U |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | 1.2 U | 1.2 U | 1.2 U | 1.2 U [1.2 U] | 1.2 U | 12 U | 1.2 U |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | 2.2 U | 2.2 U | 2.2 U | 2.2 U [2.2 U] | 2.2 U | 22 U | 2.2 U |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | 1.4 U | 1.4 U | 1.4 U | 1.5 U [1.4 U] | 1.4 U | 14 U | 1.4 U |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | 2.0 U | 2.0 U | 2.0 U | 2.1 U [2 U] | 2.0 U | 20 U | 25 |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | 0.9 U | 0.9 U | 0.9 U | 0.9 U [0.9 U] | 0.9 U | 8.8 U | 0.9 U |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | 1.1 U | 1.1 U | 1.1 U | 1.2 U [1.1 U] | 1.1 U | 11 U | 1.1 U |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | 1.3 U | 1.3 U | 1.3 U | 1.3 U [1.3 U] | 1.3 U | 13 U | 1.3 U |
| 2-Chloronaphthalene | 91-58-7 | ug/L | 1.1 U | 1.1 U | 1.1 U | 1.1 U [1.1 U] | 1.1 U | 11 U | 1.1 U |
| 2-Chlorophenol | 95-57-8 | ug/L | 1.1 U | 1.1 U | 1.1 U | 1.1 U [1.1 U] | 1.1 U | 11 U | 1.1 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | 1.2 U | 1.2 U | 1.2 U | 1.3 U [1.2 U] | 1.2 U | 12 U | 1.2 U |
| 2-Methylnaphthalene | 91-57-6 | ug/L | 1.1 U | 5.3 | 1.1 U | 1.2 U [1.1 U] | 1.1 U | 90 | 6.0 |
| 2-Methylphenol | 95-48-7 | ug/L | 1.4 U | 1.4 U | 1.4 U | 1.4 U [1.4 U] | 1.4 U | 14 U | 24 |
| 2-Nitroaniline | 88-74-4 | ug/L | 0.7 U | 0.7 U | 0.7 U | 0.7 U [0.7 U] | 0.7 U | 6.6 U | 0.7 U |
| 2-Nitrophenol | 88-75-5 | ug/L | 1.6 U | 1.6 U | 1.6 U | 1.6 U [1.6 U] | 1.6 U | 16 U | 1.6 U |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | 4.9 U | 4.9 U | 4.9 U | 5.1 U [4.9 U] | 4.9 U | 49 U | 4.9 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | 10 U | 1.0 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | 1.2 U | 1.2 U | 1.2 U | 1.2 U [1.2 U] | 1.2 U | 12 U | 1.2 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | 1.6 U | 1.6 U | 1.6 U | 1.7 U [1.6 U] | 1.6 U | 16 U | 1.6 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.1 U [1 U] | 1.0 U | 10 U | 1.0 U |
| 4-Methylphenol | 106-44-5 | ug/L | 1.2 U | 58 | 1.2 U | 1.2 U [1.2 U] | 1.2 U | 12 U | 69 |
| 4-Nitroaniline | 100-01-6 | ug/L | 0.6 U | 0.6 U | 0.6 U | 0.6 U [0.6 U] | 0.6 U | 6.3 U | 0.6 U |
| 4-Nitrophenol | 100-02-7 | ug/L | 0.9 U | 0.9 U | 0.9 U | 0.9 U [0.9 U] | 0.9 U | 8.7 U | 0.9 U |
| Acenaphthene | 83-32-9 | ug/L | 0.050 U | 3.2 | 0.1 | 0.052 U [0.05 U] | 1.8 | 13 | 2.8 |
| Acenaphthylene | 208-96-8 | ug/L | 0.050 U | 0.3 | 0.050 U | 0.052 U [0.05 U] | 0.1 | 0.8 | 0.087 J |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | 0.050 U | 1.3 | 0.050 U | 0.052 U [0.05 U] | 0.3 | 1.1 | 0.2 |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | 0.050 U | 0.2 | 0.050 U | 0.052 U [0.05 U] | 0.2 | 0.050 U | 0.1 U |
| Benzo(a)pyrene | 50-32-8 | ug/L | 0.050 U | 0.050 U | 0.050 U | 0.052 U [0.05 U] | 0.050 U | 0.050 U | 0.1 U |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | 0.050 U | 0.050 U | 0.050 U | 0.052 U [0.05 U] | 0.02 J | 0.050 U | 0.1 U |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | 0.050 U | 0.050 U | 0.050 U | 0.052 U [0.05 U] | 0.050 U | 0.050 U | 0.1 U |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | 0.050 U | 0.050 U | 0.050 U | 0.052 U [0.05 U] | 0.025 J | 0.050 U | 0.1 U |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | 0.9 U | 0.9 U | 0.9 U | 0.9 U [0.9 U] | 0.9 U | 8.6 U | 0.9 U |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | 0.9 U | 0.9 U | 0.9 U | 0.9 U [0.9 U] | 0.9 U | 8.7 U | 0.9 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.1 U [1 U] | 1.0 U | 10 U | 1.0 U |
| Butyl benzyl phthalate | 85-68-7 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.1 U [1 U] | 1.0 U | 10 U | 1.0 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-10/1/2007-5<br>33<br>10/01/07<br>MW4B | NJD981084668-10/1/2007-6<br>8.5<br>10/01/07<br>137-MW1A | NJD981084668-10/1/2007-7<br>70.5<br>10/01/07<br>137-MW1C | NJD981084668-10/23/2007-3<br>39<br>10/23/07<br>MW1D | NJD981084668-10/23/2007-4<br>8<br>10/23/07<br>MW1S | NJD981084668-10/23/2007-5<br>38<br>10/23/07<br>MW2D | NJD981084668-10/23/2007-6<br>7<br>10/23/07<br>MW2S |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | 0.9 U | 0.9 U | 0.9 U | 0.9 U [0.9 U] | 0.9 U | 26 | 1.1 |
| Chrysene | 218-01-9 | ug/L | 0.050 U | 0.3 | 0.050 U | 0.052 U [0.05 U] | 0.2 | 0.050 U | 0.1 U |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | 0.050 U | 0.050 U | 0.050 U | 0.052 U [0.05 U] | 0.050 U | 0.050 U | 0.1 U |
| Dibenzofuran | 132-64-9 | ug/L | 0.9 U | 0.9 U | 0.9 U | 0.9 U [0.9 U] | 0.9 U | 21 | 0.9 U |
| Diethyl phthalate | 84-66-2 | ug/L | 0.8 U | 0.8 U | 0.8 U | 0.8 U [0.8 U] | 0.8 U | 7.8 U | 0.8 U |
| Dimethyl phthalate | 131-11-3 | ug/L | 1.1 U | 1.1 U | 1.1 U | 1.1 U [1.1 U] | 1.1 U | 11 U | 1.1 U |
| Di-n-butyl phthalate | 84-74-2 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | 10 U | 1.0 U |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | 10 U | 1.0 U |
| Fluoranthene | 206-44-0 | ug/L | 0.050 U | 1.5 | 0.050 U | 0.052 U [0.05 U] | 0.6 | 0.4 | 0.053 J |
| Fluorene | 86-73-7 | ug/L | 0.050 U | 2.4 | 0.039 J | 0.052 U [0.05 U] | 1.0 | 1.0 | 0.1 U |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | 0.6 U | 0.6 U | 0.6 U | 0.6 U [0.6 U] | 0.6 U | 6.0 U | 0.6 U |
| Hexachlorobenzene | 118-74-1 | ug/L | 0.020 U | 0.020 U | 0.020 U | 0.021 U [0.02 U] | 0.020 U | 0.020 U | 0.040 U |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | 0.6 U | 0.6 U | 0.6 U | 0.6 U [0.6 U] | 0.6 U | 6.3 U | 0.6 U |
| Hexachloroethane | 67-72-1 | ug/L | 0.9 U | 0.9 U | 0.9 U | 0.9 U [0.9 U] | 0.9 U | 9.0 U | 0.9 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | 0.050 U | 0.050 U | 0.050 U | 0.052 U [0.05 U] | 0.050 U | 0.050 U | 0.1 U |
| Isophorone | 78-59-1 | ug/L | 0.9 U | 0.9 U | 0.9 U | 1.0 U [0.9 U] | 0.9 U | 9.4 U | 0.9 U |
| Naphthalene | 91-20-3 | ug/L | 0.050 U | 4.6 | 0.2 | 0.6 [0.6] | 0.8 | 1,000 | 74 |
| Nitrobenzene | 98-95-3 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U [1 U] | 1.0 U | 9.6 U | 1.0 U |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | 0.7 U | 0.7 U | 0.7 U | 0.8 U [0.7 U] | 0.7 U | 7.4 U | 0.7 U |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | 1.1 U | 1.1 U | 1.1 U | 1.1 U [1.1 U] | 1.1 U | 11 U | 1.1 U |
| p-Chloroaniline | 106-47-8 | ug/L | 0.7 U | 0.7 U | 0.7 U | 0.7 U [0.7 U] | 0.7 U | 6.8 U | 0.7 U |
| Pentachlorophenol | 87-86-5 | ug/L | 0.2 U | 0.2 J | 0.2 U | 0.2 U [0.2 U] | 0.2 U | 2.1 | 0.1 J |
| Phenanthrene | 85-01-8 | ug/L | 0.050 U | 6.1 | 0.071 | 0.052 U [0.05 U] | 0.9 | 9.3 | 0.5 |
| Phenol | 108-95-2 | ug/L | 0.6 U | 37 | 5.8 | 0.6 U [0.6 U] | 1.0 | 6.1 U | 34 |
| Pyrene | 129-00-0 | ug/L | 0.050 U | 1.8 | 0.050 U | 0.052 U [0.05 U] | 2.4 | 0.2 | 0.041 J |
| Total SVOCs | ARC-TSVOC | ug/L | 4.9 U | 120 | 6.2 | 0.6 [0.6] | 9.3 | 1,200 | 240 |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 214 B | 1,120 | 676 | 187 B [197 B] | 2,550 | 62.6 U | 1,130 |
| Antimony | 7440-36-0 | ug/L | 116 U | 5.8 U | 5.8 U | 116 U [116 U] | 29.0 U | 116 U | 5.8 U |
| Arsenic | 7440-38-2 | ug/L | 56.0 U | 2.8 U | 15.8 | 2.8 U [2.8 U] | 2.8 U | 2.8 U | 2.8 U |
| Barium | 7440-39-3 | ug/L | 23.7 B | 335 | 18.4 B | 17.0 B [17.6 B] | 2.0 B | 25.3 B | 166 B |
| Beryllium | 7440-41-7 | ug/L | 0.60 U | 0.30 U | 0.41 B | 0.30 U [0.3 U] | 0.30 U | 0.30 U | 0.30 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 0.80 U | 0.40 U | 0.40 U | 27.5 [28.2] | 0.40 U | 0.40 U | 0.40 U |
| Calcium | 7440-70-2 | ug/L | 267,000 | 501,000 | 21,300 | 292,000 [294,000] | 92,000 | 213,000 | 240,000 |
| Chromium | 7440-47-3 | ug/L | 1,140,000 | 12,900 | 5,850 | 434,000 [434,000] | 37,000 | 516,000 | 3,080 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 34.0 U | 8.0 B | 1.7 U | 142 [144] | 1.7 U | 1.7 U | 3.0 B |
| Copper | 7440-50-8 | ug/L | 7.4 U | 7.0 B | 16.1 B | 1,070 [1,080] | 3.7 U | 3.7 U | 6.6 B |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 140 B | 101 B | 755 | 784 U [784 U] | 39.2 U | 784 U | 39.2 U |
| Lead | 7439-92-1 | ug/L | 5.4 U | 3.8 | 2.7 U | 2.7 U [2.7 U] | 2.7 U | 2.7 U | 2.7 U |
| Magnesium | 7439-95-4 | ug/L | 73,700 | 41.6 U | 2,010 B | 46,200 [46,500] | 41.6 U | 60,800 | 271 B |
| Manganese | 7439-96-5 | ug/L | 94.1 | 1.6 B | 16.8 | 215 [217] | 1.2 U | 756 | 1.2 U |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-10/1/2007-5<br>33<br>10/01/07<br>MW4B | NJD981084668-10/1/2007-6<br>8.5<br>10/01/07<br>137-MW1A | NJD981084668-10/1/2007-7<br>70.5<br>10/01/07<br>137-MW1C | NJD981084668-10/23/2007-3<br>39<br>10/23/07<br>MW1D | NJD981084668-10/23/2007-4<br>8<br>10/23/07<br>MW1S | NJD981084668-10/23/2007-5<br>38<br>10/23/07<br>MW2D | NJD981084668-10/23/2007-6<br>7<br>10/23/07<br>MW2S |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.10 U | 0.10 U | 0.10 U | 0.10 U [0.1 U] | 0.10 U | 0.10 U | 0.10 U |
| Nickel | 7440-02-0 | ug/L | 117 | 57.5 | 10.4 B | 305 [305] | 2.4 U | 4.1 B | 12.5 B |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 12,800 | 34,000 | 6,250 | 22,200 B [21,800 B] | 12,000 B | 21,400 B | 15,600 B |
| Selenium | 7782-49-2 | ug/L | 8.4 U | 4.2 U | 4.2 U | 84.0 U [84 U] | 4.2 U | 84.0 U | 4.2 U |
| Silver | 7440-22-4 | ug/L | 2.8 U | 1.4 U | 1.4 U | 1.4 U [1.4 U] | 1.4 U | 1.4 U | 1.4 U |
| Sodium | 7440-23-5 | ug/L | 1,050,000 | 508,000 | 211,000 | 352,000 [353,000] | 144,000 | 528,000 | 268,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 1.9 U | 1.9 U | 1.9 U | 1.9 U [1.9 U] | 1.9 U | 1.9 U | 1.9 U |
| Total CCPW Metals | CCPW-M | ug/L | 1,140,000 | 13,000 | 6,010 | 434,000 [434,000] | 37,200 | 516,000 | 3,120 |
| Vanadium | 7440-62-2 | ug/L | 9.4 U | 54.1 | 152 | 11.5 B [12.1 B] | 175 | 3.0 U | 30.7 B |
| Zinc | 7440-66-6 | ug/L | 11.6 U | 5.8 U | 26.1 B | 211 [207] | 11.8 B | 90.7 | 5.8 U |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

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| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-10/1/2007-5<br>33<br>10/01/07<br>MW4B | NJD981084668-10/1/2007-6<br>8.5<br>10/01/07<br>137-MW1A | NJD981084668-10/1/2007-7<br>70.5<br>10/01/07<br>137-MW1C | NJD981084668-10/23/2007-3<br>39<br>10/23/07<br>MW1D | NJD981084668-10/23/2007-4<br>8<br>10/23/07<br>MW1S | NJD981084668-10/23/2007-5<br>38<br>10/23/07<br>MW2D | NJD981084668-10/23/2007-6<br>7<br>10/23/07<br>MW2S |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | 10 U | 21 | 10 U | 10 U [10 U] | 10 U | 10 U | 10 U |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | 10 U | 21 | 10 U | 10 U [10 U] | 10 U | 10 U | 10 U |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

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|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | NJD981084668-10/23/2007-7 | NJD981084668-10/23/2007-8 | NJD981084668-10/24/2007-2 | NJD981084668-10/24/2007-4 | NJD981084668-10/24/2007-5 | NJD981084668-10/24/2007-6 | NJD981084668-10/24/2007-7 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 50 | 10.5 | 43.5 | 7.5 | 63 | 9.5 | 45 |
| Date Collected: | | | 10/23/07 | 10/23/07 | 10/24/07 | 10/24/07 | 10/24/07 | 10/24/07 | 10/24/07 |
| Location ID: | CAS Number | Units | MW3D | MW3S | MW4D | MW4S | MW5D | MW5S | MW6D |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | 0.4 U | 3.8 U | 19 U | 0.4 U | 0.4 U | 3.8 U | 9.5 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | 0.4 U | 3.5 U | 18 U | 0.4 U | 0.4 U | 3.5 U | 8.8 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | 0.2 U | 2.2 U | 11 U | 0.2 U | 0.2 U | 2.2 U | 5.5 U |
| 1,1-Dichloroethane | 75-34-3 | ug/L | 0.3 U | 2.6 U | 13 U | 0.3 U | 0.3 U | 2.6 U | 36 |
| 1,1-Dichloroethene | 75-35-4 | ug/L | 0.5 U | 4.6 U | 23 U | 0.5 U | 0.5 U | 4.6 U | 41 |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | 0.3 U | 2.7 U | 14 U | 0.3 U | 0.3 U | 2.7 U | 6.8 U |
| 1,2-Dichloropropane | 78-87-5 | ug/L | 0.5 U | 4.9 U | 24 U | 0.5 U | 0.5 U | 4.9 U | 12 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | 1.3 U | 13 U | 64 U | 1.3 U | 1.3 U | 13 U | 32 U |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | 0.7 U | 7.3 U | 36 U | 0.7 U | 0.7 U | 7.3 U | 18 U |
| Acetone | 67-64-1 | ug/L | 1.5 U | 15 U | 76 U | 1.5 U | 1.5 U | 15 U | 38 U |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | 110 | 1,100 | 4,000 | 0.2 U | 0.7 | 1,700 | 6.0 U |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | 0.2 U | 2.5 U | 12 U | 0.2 U | 0.2 U | 2.5 U | 6.2 U |
| Bromoform | 75-25-2 | ug/L | 0.2 U | 2.1 U | 10 U | 0.2 U | 0.2 U | 2.1 U | 5.2 U |
| Bromomethane | 74-83-9 | ug/L | 0.4 U | 4.4 U | 22 U | 0.4 U | 0.4 U | 4.4 U | 11 U |
| Carbon Disulfide | 75-15-0 | ug/L | 0.4 U | 4.4 U | 22 U | 0.4 U | 0.4 U | 4.4 U | 11 U |
| Carbon Tetrachloride | 56-23-5 | ug/L | 0.3 U | 3.4 U | 17 U | 0.3 U | 0.3 U | 3.4 U | 8.5 U |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | 0.2 U | 2.5 U | 12 U | 0.2 U | 0.2 U | 2.5 U | 6.2 U |
| Chlorodibromomethane | 124-48-1 | ug/L | 0.3 U | 2.7 U | 14 U | 0.3 U | 0.3 U | 2.7 U | 6.8 U |
| Chloroethane | 75-00-3 | ug/L | 0.4 U | 4.3 U | 22 U | 0.4 U | 0.4 U | 4.3 U | 11 U |
| Chloroform | 67-66-3 | ug/L | 0.2 U | 2.0 U | 10 U | 0.2 U | 0.2 U | 2.0 U | 5.0 U |
| Chloromethane | 74-87-3 | ug/L | 0.4 U | 4.4 U | 22 U | 0.4 U | 0.4 U | 4.4 U | 11 U |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | 0.9 | 2.8 U | 14 U | 0.3 U | 0.3 U | 2.8 U | 2,800 |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | 0.1 U | 1.3 U | 6.5 U | 0.1 U | 0.1 U | 1.3 U | 3.2 U |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | 0.4 U | 4.0 U | 20 U | 0.4 U | 0.4 U | 4.0 U | 10 U |
| Ethylbenzene | 100-41-4 | ug/L | 130 | 420 | 5,800 | 0.4 U | 0.4 U | 1,000 | 10 U |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | 0.7 U | 7.0 U | 35 U | 0.7 U | 0.7 U | 7.0 U | 18 U |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | 4.2 | 37 | 20 U | 0.4 U | 0.4 U | 12 | 10 U |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | 0.4 U | 4.2 U | 21 U | 0.4 U | 0.4 U | 4.2 U | 1,900 |
| Toluene | 108-88-3 | ug/L | 38 | 600 | 140 | 0.3 U | 0.3 U | 440 | 7.5 U |
| Total VOCs | ARC-TVOC | ug/L | 390 | 2,800 | 15,000 | 1.5 U | 0.7 | 5,100 | 5,500 |
| Total Xylenes | 1330-20-7 | ug/L | 100 | 660 | 5,100 | 0.4 U | 0.4 U | 1,900 | 10 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-10/23/2007-7<br>50<br>10/23/07<br>MW3D | NJD981084668-10/23/2007-8<br>10.5<br>10/23/07<br>MW3S | NJD981084668-10/24/2007-2<br>43.5<br>10/24/07<br>MW4D | NJD981084668-10/24/2007-4<br>7.5<br>10/24/07<br>MW4S | NJD981084668-10/24/2007-5<br>63<br>10/24/07<br>MW5D | NJD981084668-10/24/2007-6<br>9.5<br>10/24/07<br>MW5S | NJD981084668-10/24/2007-7<br>45<br>10/24/07<br>MW6D |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | 2.3 | 3.9 U | 20 U | 0.4 U | 0.4 U | 3.9 U | 72 |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | 0.2 U | 1.6 U | 8.0 U | 0.2 U | 0.2 U | 1.6 U | 4.0 U |
| Trichloroethene | 79-01-6 | ug/L | 0.4 U | 3.6 U | 18 U | 0.4 U | 0.4 U | 3.6 U | 650 |
| Vinyl chloride | 75-01-4 | ug/L | 0.2 U | 2.4 U | 12 U | 0.2 U | 0.2 U | 2.4 U | 38 |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | 0.9 U | 23 U | 46 U | 1.4 | 0.9 U | 18 U | 8.6 |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | 1.1 U | 28 U | 54 U | 1.1 U | 1.1 U | 22 U | 1.6 |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | 1.0 U | 25 U | 48 U | 1.0 U | 1.0 U | 19 U | 1.0 U |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | 0.9 U | 23 U | 45 U | 0.9 U | 0.9 U | 18 U | 0.9 U |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | 0.8 U | 22 U | 42 U | 0.8 U | 0.8 U | 17 U | 0.8 U |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | 1.2 U | 31 U | 60 U | 1.2 U | 1.2 U | 24 U | 1.2 U |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | 2.2 U | 56 U | 110 U | 2.2 U | 2.2 U | 44 U | 2.2 U |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | 1.4 U | 37 U | 72 U | 1.4 U | 1.4 U | 29 U | 1.4 U |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | 2.0 U | 52 U | 100 U | 2.0 U | 2.0 U | 40 U | 2.0 U |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | 0.9 U | 23 U | 44 U | 0.9 U | 0.9 U | 18 U | 0.9 U |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | 1.1 U | 29 U | 57 U | 1.1 U | 1.1 U | 23 U | 1.1 U |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | 1.3 U | 33 U | 64 U | 1.3 U | 1.3 U | 26 U | 1.3 U |
| 2-Chloronaphthalene | 91-58-7 | ug/L | 1.1 U | 28 U | 54 U | 1.1 U | 1.1 U | 21 U | 1.1 U |
| 2-Chlorophenol | 95-57-8 | ug/L | 1.1 U | 28 U | 54 U | 1.1 U | 1.1 U | 22 U | 1.1 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | 1.2 U | 32 U | 62 U | 1.2 U | 1.2 U | 25 U | 1.2 U |
| 2-Methylnaphthalene | 91-57-6 | ug/L | 4.0 | 410 | 370 | 1.1 U | 1.1 U | 180 | 1.1 U |
| 2-Methylphenol | 95-48-7 | ug/L | 1.4 U | 35 U | 68 U | 1.4 U | 1.4 U | 27 U | 1.4 U |
| 2-Nitroaniline | 88-74-4 | ug/L | 0.7 U | 17 U | 33 U | 0.7 U | 0.7 U | 13 U | 0.7 U |
| 2-Nitrophenol | 88-75-5 | ug/L | 1.6 U | 40 U | 78 U | 1.6 U | 1.6 U | 31 U | 1.6 U |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | 4.9 U | 130 U | 250 U | 4.9 U | 4.9 U | 98 U | 4.9 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | 1.0 U | 26 U | 50 U | 1.0 U | 1.0 U | 20 U | 1.0 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | 1.2 U | 31 U | 60 U | 1.2 U | 1.2 U | 24 U | 1.2 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | 1.6 U | 42 U | 82 U | 1.6 U | 1.6 U | 33 U | 1.6 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | 1.0 U | 27 U | 52 U | 1.0 U | 1.0 U | 21 U | 1.0 U |
| 4-Methylphenol | 106-44-5 | ug/L | 1.2 U | 30 U | 58 U | 1.2 U | 1.2 U | 23 U | 1.2 U |
| 4-Nitroaniline | 100-01-6 | ug/L | 0.6 U | 16 U | 32 U | 0.6 U | 0.6 U | 13 U | 0.6 U |
| 4-Nitrophenol | 100-02-7 | ug/L | 0.9 U | 22 U | 44 U | 0.9 U | 0.9 U | 17 U | 0.9 U |
| Acenaphthene | 83-32-9 | ug/L | 5.0 | 86 | 110 | 1.0 | 0.4 | 71 | 0.050 U |
| Acenaphthylene | 208-96-8 | ug/L | 4.5 | 72 | 2.9 | 0.1 | 0.3 | 10 | 0.050 U |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | 0.3 | 16 | 3.1 | 0.1 | 0.051 | 7.6 | 0.050 U |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | 0.050 U | 4.0 | 0.1 U | 0.050 U | 0.050 U | 1.4 | 0.050 U |
| Benzo(a)pyrene | 50-32-8 | ug/L | 0.050 U | 2.9 | 0.1 U | 0.050 U | 0.050 U | 0.8 | 0.050 U |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | 0.050 U | 1.4 | 0.1 U | 0.050 U | 0.050 U | 0.5 | 0.050 U |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | 0.050 U | 0.7 | 0.1 U | 0.050 U | 0.050 U | 0.2 | 0.050 U |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | 0.050 U | 2.0 | 0.1 U | 0.050 U | 0.050 U | 0.6 | 0.050 U |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | 0.9 U | 22 U | 43 U | 0.9 U | 0.9 U | 17 U | 0.9 U |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | 0.9 U | 22 U | 44 U | 0.9 U | 0.9 U | 17 U | 0.9 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | 1.0 U | 27 U | 52 U | 2.2 | 1.8 | 21 U | 1.0 U |
| Butyl benzyl phthalate | 85-68-7 | ug/L | 1.0 U | 27 U | 52 U | 1.0 U | 1.0 U | 21 U | 1.0 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-10/23/2007-7<br>50<br>10/23/07<br>MW3D | NJD981084668-10/23/2007-8<br>10.5<br>10/23/07<br>MW3S | NJD981084668-10/24/2007-2<br>43.5<br>10/24/07<br>MW4D | NJD981084668-10/24/2007-4<br>7.5<br>10/24/07<br>MW4S | NJD981084668-10/24/2007-5<br>63<br>10/24/07<br>MW5D | NJD981084668-10/24/2007-6<br>9.5<br>10/24/07<br>MW5S | NJD981084668-10/24/2007-7<br>45<br>10/24/07<br>MW6D |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | 0.9 U | 23 U | 46 U | 0.9 U | 0.9 U | 18 U | 0.9 U |
| Chrysene | 218-01-9 | ug/L | 0.050 U | 8.3 | 0.1 U | 0.050 U | 0.050 U | 1.4 | 0.050 U |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | 0.050 U | 0.3 | 0.1 U | 0.050 U | 0.050 U | 0.1 | 0.050 U |
| Dibenzofuran | 132-64-9 | ug/L | 0.9 U | 23 U | 46 U | 0.9 U | 0.9 U | 18 U | 0.9 U |
| Diethyl phthalate | 84-66-2 | ug/L | 0.8 U | 20 U | 39 U | 0.8 U | 0.8 U | 16 U | 0.8 U |
| Dimethyl phthalate | 131-11-3 | ug/L | 1.1 U | 28 U | 54 U | 1.1 U | 1.1 U | 22 U | 1.1 U |
| Di-n-butyl phthalate | 84-74-2 | ug/L | 1.0 U | 26 U | 50 U | 1.0 U | 1.0 U | 20 U | 1.0 U |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | 1.0 U | 26 U | 50 U | 1.0 U | 1.0 U | 20 U | 1.0 U |
| Fluoranthene | 206-44-0 | ug/L | 0.2 | 11 | 0.2 | 0.1 | 0.052 | 4.7 | 0.050 U |
| Fluorene | 86-73-7 | ug/L | 1.3 | 44 | 15 | 0.1 | 0.1 | 22 | 0.050 U |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | 0.6 U | 15 U | 30 U | 0.6 U | 0.6 U | 12 U | 0.6 U |
| Hexachlorobenzene | 118-74-1 | ug/L | 0.020 U | 0.021 U | 0.040 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | 0.6 U | 16 U | 32 U | 0.6 U | 0.6 U | 13 U | 0.6 U |
| Hexachloroethane | 67-72-1 | ug/L | 0.9 U | 23 U | 45 U | 0.9 U | 0.9 U | 18 U | 0.9 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | 0.050 U | 0.6 | 0.1 U | 0.050 U | 0.050 U | 0.2 | 0.050 U |
| Isophorone | 78-59-1 | ug/L | 0.9 U | 24 U | 47 U | 0.9 U | 0.9 U | 19 U | 0.9 U |
| Naphthalene | 91-20-3 | ug/L | 140 | 2,600 | 5,700 | 0.1 B | 0.2 B | 2,400 | 0.099 B |
| Nitrobenzene | 98-95-3 | ug/L | 1.0 U | 25 U | 48 U | 1.0 U | 1.0 U | 19 U | 1.0 U |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | 0.7 U | 19 U | 37 U | 0.7 U | 0.7 U | 15 U | 0.7 U |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | 1.1 U | 27 U | 53 U | 1.1 U | 1.1 U | 21 U | 1.1 U |
| p-Chloroaniline | 106-47-8 | ug/L | 0.7 U | 18 U | 34 U | 0.7 U | 0.7 U | 14 U | 0.7 U |
| Pentachlorophenol | 87-86-5 | ug/L | 0.2 U | 0.2 U | 0.4 U | 0.2 U | 0.2 U | 0.2 J | 0.2 U |
| Phenanthrene | 85-01-8 | ug/L | 1.6 | 71 | 21 | 0.097 | 0.3 | 31 | 0.046 J |
| Phenol | 108-95-2 | ug/L | 0.6 U | 16 U | 30 U | 0.6 U | 0.6 U | 12 U | 0.6 U |
| Pyrene | 129-00-0 | ug/L | 0.2 | 15 | 0.1 | 0.2 | 0.064 | 6.4 | 0.026 J |
| Total SVOCs | ARC-TSVOC | ug/L | 160 | 3,300 | 6,200 | 5.4 | 3.3 | 2,700 | 10 |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 62.6 U | 1,520 | 62.6 U | 62.6 U | 62.6 U | 495 | 62.6 U |
| Antimony | 7440-36-0 | ug/L | 5.8 U | 5.8 U | 5.8 U | 5.8 U | 5.8 U | 5.8 U | 5.8 U |
| Arsenic | 7440-38-2 | ug/L | 7.2 | 10.8 | 19.2 | 3.9 B | 17.8 | 43.5 | 3.4 B |
| Barium | 7440-39-3 | ug/L | 97.5 B | 157 B | 163 B | 28.3 B | 40.8 B | 25.1 B | 48.5 B |
| Beryllium | 7440-41-7 | ug/L | 0.30 U | 0.30 U | 0.30 U | 0.32 B | 0.35 B | 0.40 B | 0.30 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 0.40 U | 0.40 U | 0.40 U | 0.40 U | 0.40 U | 0.40 U | 0.40 U |
| Calcium | 7440-70-2 | ug/L | 49,700 | 9,960 | 80,100 | 59,700 | 86,500 | 9,950 | 94,000 |
| Chromium | 7440-47-3 | ug/L | 4.2 B | 579 | 1.6 U | 6.9 B | 3.3 B | 177 | 2.5 B |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 1.7 U | 2.5 B | 1.7 U | 3.2 B | 1.7 U | 2.6 B | 1.8 B |
| Copper | 7440-50-8 | ug/L | 3.7 U | 10.4 B | 3.7 U | 3.7 U | 3.7 U | 17.7 B | 3.7 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 236 | 2,120 | 1,410 | 1,120 | 888 | 689 | 221 |
| Lead | 7439-92-1 | ug/L | 2.7 U | 65.0 | 2.7 U | 2.7 U | 2.7 U | 70.9 | 2.7 U |
| Magnesium | 7439-95-4 | ug/L | 16,500 | 3,810 B | 24,200 | 48,800 | 18,200 | 1,990 B | 20,600 |
| Manganese | 7439-96-5 | ug/L | 309 | 62.6 | 2,980 | 74.6 | 618 | 28.1 | 309 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-10/23/2007-7<br>50<br>10/23/07<br>MW3D | NJD981084668-10/23/2007-8<br>10.5<br>10/23/07<br>MW3S | NJD981084668-10/24/2007-2<br>43.5<br>10/24/07<br>MW4D | NJD981084668-10/24/2007-4<br>7.5<br>10/24/07<br>MW4S | NJD981084668-10/24/2007-5<br>63<br>10/24/07<br>MW5D | NJD981084668-10/24/2007-6<br>9.5<br>10/24/07<br>MW5S | NJD981084668-10/24/2007-7<br>45<br>10/24/07<br>MW6D |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.10 U | 1.0 | 0.10 U | 0.10 U | 0.10 U | 0.15 B | 0.10 U |
| Nickel | 7440-02-0 | ug/L | 2.4 U | 7.5 B | 3.3 B | 3.2 B | 2.4 U | 18.9 B | 50.6 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 18,300 | 21,100 B | 6,320 | 5,340 | 11,800 | 10,000 | 11,600 |
| Selenium | 7782-49-2 | ug/L | 4.2 U | 4.8 B | 4.2 U | 4.2 U | 4.2 U | 4.5 B | 4.2 U |
| Silver | 7440-22-4 | ug/L | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U |
| Sodium | 7440-23-5 | ug/L | 48,900 | 281,000 | 77,200 | 15,100 | 177,000 | 190,000 | 19,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U |
| Total CCPW Metals | CCPW-M | ug/L | 4.2 | 692 | 3.3 | 20 | 3.3 | 702 | 53.1 |
| Vanadium | 7440-62-2 | ug/L | 3.0 U | 105 | 3.0 U | 9.4 B | 3.0 U | 506 | 3.0 U |
| Zinc | 7440-66-6 | ug/L | 12.4 B | 146 | 5.8 U | 5.8 U | 5.8 U | 47.2 | 5.8 U |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-10/23/2007-7<br>50<br>10/23/07<br>MW3D | NJD981084668-10/23/2007-8<br>10.5<br>10/23/07<br>MW3S | NJD981084668-10/24/2007-2<br>43.5<br>10/24/07<br>MW4D | NJD981084668-10/24/2007-4<br>7.5<br>10/24/07<br>MW4S | NJD981084668-10/24/2007-5<br>63<br>10/24/07<br>MW5D | NJD981084668-10/24/2007-6<br>9.5<br>10/24/07<br>MW5S | NJD981084668-10/24/2007-7<br>45<br>10/24/07<br>MW6D |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | 100 | 72 | 330 | 1,900 | 10 U | 55 | 10 U |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | 49 | 23 | 66 | 980 | 10 U | 13 | 10 U |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-10/23/2007-7<br>50<br>10/23/07<br>MW3D | NJD981084668-10/23/2007-8<br>10.5<br>10/23/07<br>MW3S | NJD981084668-10/24/2007-2<br>43.5<br>10/24/07<br>MW4D | NJD981084668-10/24/2007-4<br>7.5<br>10/24/07<br>MW4S | NJD981084668-10/24/2007-5<br>63<br>10/24/07<br>MW5D | NJD981084668-10/24/2007-6<br>9.5<br>10/24/07<br>MW5S | NJD981084668-10/24/2007-7<br>45<br>10/24/07<br>MW6D |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | NJD981084668-10/24/2007-8 | NJD981084668-10/25/2007-2 | NJD981084668-10/25/2007-3 | NJD981084668-10/25/2007-4 | NJD981084668-10/25/2007-5 | NJD981084668-10/25/2007-6 | NJD981084668-10/25/2007-7 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 11 | 10 | 36 | 10 | 74 | 43 | 11 |
| Date Collected: | | | 10/24/07 | 10/25/07 | 10/25/07 | 10/25/07 | 10/25/07 | 10/25/07 | 10/25/07 |
| Location ID: | CAS Number | Units | MW6S | MW10S | MW14D | MW14S | MW4F | MW7D | MW7S |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| 1,1-Dichloroethane | 75-34-3 | ug/L | 1.4 | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| 1,1-Dichloroethene | 75-35-4 | ug/L | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | 0.3 U | 0.3 U | 0.4 | 0.3 U | 27 | 0.3 U | 0.3 U |
| 1,2-Dichloropropane | 78-87-5 | ug/L | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | 0.7 U | 0.7 U | 0.7 U | 0.7 U | 0.7 U | 0.7 U | 0.7 U |
| Acetone | 67-64-1 | ug/L | 1.5 U | 1.5 U | 1.5 U | 1.5 U | 1.5 U | 1.5 U | 7.1 |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | 6.2 | 0.6 | 0.2 U | 0.2 U | 6.3 | 1.0 | 200 |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Bromoform | 75-25-2 | ug/L | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Bromomethane | 74-83-9 | ug/L | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| Carbon Disulfide | 75-15-0 | ug/L | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| Carbon Tetrachloride | 56-23-5 | ug/L | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | 150 | 0.3 | 0.9 | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Chlorodibromomethane | 124-48-1 | ug/L | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| Chloroethane | 75-00-3 | ug/L | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| Chloroform | 67-66-3 | ug/L | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Chloromethane | 74-87-3 | ug/L | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | 7.7 | 3.5 | 5.5 | 0.3 U | 0.3 U | 2.1 | 0.3 U |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | 0.1 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| Ethylbenzene | 100-41-4 | ug/L | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 14 | 0.4 U | 0.4 U |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | 0.7 U | 0.7 U | 0.7 U | 0.7 U | 0.7 U | 0.7 U | 0.7 U |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | 1.9 | 1.6 | 120 | 0.4 U | 0.4 U | 0.4 U | 0.4 U |
| Toluene | 108-88-3 | ug/L | 0.3 U | 0.3 U | 0.3 | 0.3 U | 0.5 | 0.3 U | 0.3 U |
| Total VOCs | ARC-TVOC | ug/L | 170 | 10 | 130 | 1.5 U | 63 | 8.2 | 210 |
| Total Xylenes | 1330-20-7 | ug/L | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 15 | 0.4 U | 0.4 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-10/24/2007-8<br>11<br>10/24/07<br>MW6S | NJD981084668-10/25/2007-2<br>10<br>10/25/07<br>MW10S | NJD981084668-10/25/2007-3<br>36<br>10/25/07<br>MW14D | NJD981084668-10/25/2007-4<br>10<br>10/25/07<br>MW14S | NJD981084668-10/25/2007-5<br>74<br>10/25/07<br>MW4F | NJD981084668-10/25/2007-6<br>43<br>10/25/07<br>MW7D | NJD981084668-10/25/2007-7<br>11<br>10/25/07<br>MW7S |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | 0.8 | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 2.9 | 0.4 U |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Trichloroethene | 79-01-6 | ug/L | 1.6 | 3.0 | 5.4 | 0.4 U | 0.4 U | 1.9 | 0.4 U |
| Vinyl chloride | 75-01-4 | ug/L | 1.7 | 1.1 | 0.2 U | 0.2 U | 0.2 U | 0.3 | 0.2 U |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | 200 | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | 39 | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | 52 | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | 34 | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | 0.8 U | 0.9 U | 0.9 U | 0.9 U | 0.8 U | 0.9 U | 0.9 U |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | 1.4 U | 1.4 U | 1.5 U | 1.4 U | 1.4 U | 1.5 U | 1.5 U |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | 2.0 U | 2.0 U | 2.1 U | 2.0 U | 2.0 U | 2.1 U | 2.1 U |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | 1.1 U | 1.2 U | 1.2 U | 1.2 U | 1.1 U | 1.2 U | 1.2 U |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| 2-Chloronaphthalene | 91-58-7 | ug/L | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| 2-Chlorophenol | 95-57-8 | ug/L | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | 1.2 U | 1.2 U | 1.3 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U |
| 2-Methylnaphthalene | 91-57-6 | ug/L | 1.1 U | 1.1 U | 1.2 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| 2-Methylphenol | 95-48-7 | ug/L | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U |
| 2-Nitroaniline | 88-74-4 | ug/L | 0.7 U | 0.7 U | 0.7 U | 0.7 U | 0.7 U | 0.7 U | 0.7 U |
| 2-Nitrophenol | 88-75-5 | ug/L | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | 4.9 U | 5.0 U | 5.1 U | 5.0 U | 4.9 U | 5.0 U | 5.0 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | 1.6 U | 1.6 U | 1.7 U | 1.6 U | 1.6 U | 1.7 U | 1.7 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | 1.0 U | 1.1 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U | 1.1 U |
| 4-Methylphenol | 106-44-5 | ug/L | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U |
| 4-Nitroaniline | 100-01-6 | ug/L | 0.6 U | 0.6 U | 0.6 U | 0.6 U | 0.6 U | 0.6 U | 0.6 U |
| 4-Nitrophenol | 100-02-7 | ug/L | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U |
| Acenaphthene | 83-32-9 | ug/L | 0.05 | 0.050 U | 0.2 | 0.029 J | 0.1 | 0.096 | 0.051 U |
| Acenaphthylene | 208-96-8 | ug/L | 0.050 U | 0.050 U | 0.058 | 0.050 U | 0.050 U | 0.051 U | 0.051 U |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | 0.023 J | 0.023 J | 0.028 J | 0.050 U | 0.050 U | 0.026 J | 0.051 U |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | 0.033 J | 0.050 U | 0.077 | 0.050 U | 0.050 U | 0.051 U | 0.051 U |
| Benzo(a)pyrene | 50-32-8 | ug/L | 0.050 U | 0.050 U | 0.083 | 0.050 U | 0.050 U | 0.051 U | 0.051 U |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | 0.050 U | 0.050 U | 0.061 | 0.050 U | 0.050 U | 0.051 U | 0.051 U |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | 0.050 U | 0.050 U | 0.055 | 0.050 U | 0.050 U | 0.051 U | 0.051 U |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | 0.050 U | 0.050 U | 0.087 | 0.050 U | 0.050 U | 0.051 U | 0.051 U |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | 1.0 U | 1.0 U | 1.1 U | 1.0 U | 1.0 U | 1.1 U | 1.1 U |
| Butyl benzyl phthalate | 85-68-7 | ug/L | 1.0 U | 1.1 U | 1.1 U | 1.1 U | 1.0 U | 1.1 U | 1.1 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-10/24/2007-8<br>11<br>10/24/07<br>MW6S | NJD981084668-10/25/2007-2<br>10<br>10/25/07<br>MW10S | NJD981084668-10/25/2007-3<br>36<br>10/25/07<br>MW14D | NJD981084668-10/25/2007-4<br>10<br>10/25/07<br>MW14S | NJD981084668-10/25/2007-5<br>74<br>10/25/07<br>MW4F | NJD981084668-10/25/2007-6<br>43<br>10/25/07<br>MW7D | NJD981084668-10/25/2007-7<br>11<br>10/25/07<br>MW7S |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U |
| Chrysene | 218-01-9 | ug/L | 0.063 | 0.050 U | 0.083 | 0.050 U | 0.050 U | 0.051 U | 0.051 U |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | 0.050 U | 0.050 U | 0.052 U | 0.050 U | 0.050 U | 0.051 U | 0.051 U |
| Dibenzofuran | 132-64-9 | ug/L | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U |
| Diethyl phthalate | 84-66-2 | ug/L | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U |
| Dimethyl phthalate | 131-11-3 | ug/L | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| Di-n-butyl phthalate | 84-74-2 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U |
| Fluoranthene | 206-44-0 | ug/L | 0.042 J | 0.3 | 0.08 | 0.03 J | 0.050 U | 0.031 J | 0.4 |
| Fluorene | 86-73-7 | ug/L | 0.043 J | 0.024 J | 0.074 | 0.050 U | 0.037 J | 0.06 | 0.051 U |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | 0.6 U | 0.6 U | 0.6 U | 0.6 U | 0.6 U | 0.6 U | 0.6 U |
| Hexachlorobenzene | 118-74-1 | ug/L | 0.020 U | 0.020 U | 0.021 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | 0.6 U | 0.6 U | 0.6 U | 0.6 U | 0.6 U | 0.6 U | 0.6 U |
| Hexachloroethane | 67-72-1 | ug/L | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | 0.050 U | 0.050 U | 0.049 J | 0.050 U | 0.050 U | 0.051 U | 0.051 U |
| Isophorone | 78-59-1 | ug/L | 0.9 U | 0.9 U | 1.0 U | 0.9 U | 0.9 U | 1.0 U | 1.0 U |
| Naphthalene | 91-20-3 | ug/L | 0.094 B | 0.093 B | 1.1 B | 0.046 JB | 11 | 0.073 B | 0.2 B |
| Nitrobenzene | 98-95-3 | ug/L | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U | 1.0 U |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | 0.7 U | 0.7 U | 0.8 U | 0.7 U | 0.7 U | 0.8 U | 0.8 U |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| p-Chloroaniline | 106-47-8 | ug/L | 0.7 U | 0.7 U | 0.7 U | 0.7 U | 0.7 U | 0.7 U | 0.7 U |
| Pentachlorophenol | 87-86-5 | ug/L | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Phenanthrene | 85-01-8 | ug/L | 0.050 U | 0.1 | 0.2 | 0.052 | 0.052 | 0.025 J | 0.1 |
| Phenol | 108-95-2 | ug/L | 0.6 U | 0.6 U | 0.6 U | 0.6 U | 0.6 U | 0.6 U | 1.1 |
| Pyrene | 129-00-0 | ug/L | 0.5 | 0.2 | 0.092 | 0.03 J | 0.021 J | 0.032 J | 0.1 |
| Total SVOCs | ARC-TSVOC | ug/L | 330 | 0.74 | 2.3 | 0.19 | 11 | 0.34 | 1.9 |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 62.6 U | 148 B | 177 B | 62.6 U | 62.6 U | 3,040 | 237 |
| Antimony | 7440-36-0 | ug/L | 5.8 U | 5.8 U | 5.8 U | 5.8 U | 5.8 U | 5.8 U | 5.8 U |
| Arsenic | 7440-38-2 | ug/L | 73.1 | 11.9 | 2.8 U | 3.2 | 14.6 | 305 | 50.2 |
| Barium | 7440-39-3 | ug/L | 143 B | 272 | 216 | 114 B | 65.9 B | 230 | 403 |
| Beryllium | 7440-41-7 | ug/L | 0.30 U | 0.30 U | 0.30 B | 0.30 U | 0.40 B | 0.36 B | 0.30 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 0.40 U | 0.40 U | 0.40 U | 0.40 U | 0.40 U | 0.40 U | 0.40 U |
| Calcium | 7440-70-2 | ug/L | 92,300 | 136,000 | 133,000 | 45,600 | 30,300 | 138,000 | 196,000 |
| Chromium | 7440-47-3 | ug/L | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 2.4 B | 5.1 B | 1.6 U |
| Chromium VI | 18540-29-9 | ug/L | NA | 10.0 U | 10.0 U | 10.0 U | NA | 10.0 U | 10.0 U |
| Cobalt | 7440-48-4 | ug/L | 2.5 B | 6.6 B | 3.3 B | 1.7 U | 1.7 U | 4.3 B | 2.3 B |
| Copper | 7440-50-8 | ug/L | 3.7 U | 4.4 B | 3.8 B | 3.7 U | 4.5 B | 9.2 B | 3.7 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 13,100 | 5,570 | 604 | 4,130 | 39.2 U | 10,300 | 37,400 |
| Lead | 7439-92-1 | ug/L | 2.7 U | 2.7 U | 2.7 U | 2.7 U | 2.7 U | 2.7 U | 2.7 U |
| Magnesium | 7439-95-4 | ug/L | 14,500 | 18,100 | 27,800 | 20,800 | 12,900 | 23,600 | 75,800 |
| Manganese | 7439-96-5 | ug/L | 5,840 | 5,700 | 5,480 | 535 | 4.0 B | 9,210 | 3,400 |

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| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-10/24/2007-8<br>11<br>10/24/07<br>MW6S | NJD981084668-10/25/2007-2<br>10<br>10/25/07<br>MW10S | NJD981084668-10/25/2007-3<br>36<br>10/25/07<br>MW14D | NJD981084668-10/25/2007-4<br>10<br>10/25/07<br>MW14S | NJD981084668-10/25/2007-5<br>74<br>10/25/07<br>MW4F | NJD981084668-10/25/2007-6<br>43<br>10/25/07<br>MW7D | NJD981084668-10/25/2007-7<br>11<br>10/25/07<br>MW7S |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.10 U | 0.10 U | 0.10 U | 0.10 U | 0.10 U | 0.10 U | 0.10 U |
| Nickel | 7440-02-0 | ug/L | 3.6 B | 18.8 B | 5.6 B | 2.4 U | 2.4 U | 6.8 B | 4.2 B |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 9,570 | 22,600 | 23,300 | 42,300 | 58,800 | 6,270 | 47,500 |
| Selenium | 7782-49-2 | ug/L | 4.2 U | 4.2 U | 4.2 U | 4.2 U | 4.2 U | 4.2 U | 4.2 U |
| Silver | 7440-22-4 | ug/L | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U |
| Sodium | 7440-23-5 | ug/L | 56,000 | 427,000 | 87,200 | 40,500 | 47,600 | 48,300 | 152,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U |
| Total CCPW Metals | CCPW-M | ug/L | 3.6 | 18.8 | 5.6 | 0 U | 2.4 | 16 | 4.2 |
| Vanadium | 7440-62-2 | ug/L | 3.0 U | 3.0 U | 3.0 U | 3.0 U | 3.0 U | 4.5 B | 3.0 U |
| Zinc | 7440-66-6 | ug/L | 6.0 B | 29.0 U | 5.8 U | 5.8 U | 5.8 U | 17.2 B | 68.1 |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-10/24/2007-8<br>11<br>10/24/07<br>MW6S | NJD981084668-10/25/2007-2<br>10<br>10/25/07<br>MW10S | NJD981084668-10/25/2007-3<br>36<br>10/25/07<br>MW14D | NJD981084668-10/25/2007-4<br>10<br>10/25/07<br>MW14S | NJD981084668-10/25/2007-5<br>74<br>10/25/07<br>MW4F | NJD981084668-10/25/2007-6<br>43<br>10/25/07<br>MW7D | NJD981084668-10/25/2007-7<br>11<br>10/25/07<br>MW7S |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | 10 | 51 | 10 U | 10 U | 10 U | 10 U | 10 U |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | 10 | 27 | 10 U | 10 U | 10 U | 10 U | 10 U |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-10/24/2007-8<br>11<br>10/24/07<br>MW6S | NJD981084668-10/25/2007-2<br>10<br>10/25/07<br>MW10S | NJD981084668-10/25/2007-3<br>36<br>10/25/07<br>MW14D | NJD981084668-10/25/2007-4<br>10<br>10/25/07<br>MW14S | NJD981084668-10/25/2007-5<br>74<br>10/25/07<br>MW4F | NJD981084668-10/25/2007-6<br>43<br>10/25/07<br>MW7D | NJD981084668-10/25/2007-7<br>11<br>10/25/07<br>MW7S |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | NJD981084668-10/25/2007-8 | NJD981084668-10/26/2007-3 | NJD981084668-10/26/2007-4 | NJD981084668-10/26/2007-5 | NJD981084668-10/26/2007-6 | NJD981084668-10/26/2007-7 | NJD981084668-10/26/2007-8 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 44 | 40 | 11.5 | 9 | 39 | 8 | 30.5 |
| Date Collected: | | | 10/25/07 | 10/26/07 | 10/26/07 | 10/26/07 | 10/26/07 | 10/26/07 | 10/26/07 |
| Location ID: | CAS Number | Units | MW8D | MW9D | MW9S | 114-MW20A | 114-MW20B | 135-MW2A | 135-MW2B |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | 0.4 U | 0.4 U | 0.8 U | 0.8 U | 9.5 U [9.5 U] | 0.8 U | 0.4 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | 0.4 U | 0.4 U | 0.7 U | 0.7 U | 8.8 U [8.8 U] | 0.7 U | 0.4 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | 0.2 U | 0.2 U | 0.4 U | 0.4 U | 5.5 U [5.5 U] | 0.4 U | 0.2 U |
| 1,1-Dichloroethane | 75-34-3 | ug/L | 0.3 U | 0.3 U | 0.5 U | 0.5 U | 6.5 U [6.5 U] | 0.5 U | 0.3 U |
| 1,1-Dichloroethene | 75-35-4 | ug/L | 0.5 U | 0.5 U | 0.9 U | 0.9 U | 12 U [12 U] | 0.9 U | 0.5 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | 0.3 U | 0.3 U | 0.5 U | 0.5 U | 6.8 U [6.8 U] | 0.5 U | 0.3 U |
| 1,2-Dichloropropane | 78-87-5 | ug/L | 0.5 U | 0.5 U | 1.0 U | 1.0 U | 12 U [12 U] | 1.0 U | 0.5 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | 1.3 U | 1.3 U | 27 | 2.6 U | 32 U [32 U] | 2.6 U | 1.3 U |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | 0.7 U | 0.7 U | 1.5 U | 1.5 U | 18 U [18 U] | 1.5 U | 0.7 U |
| Acetone | 67-64-1 | ug/L | 1.5 U | 1.5 U | 230 | 6.5 | 38 U [38 U] | 13 | 1.5 U |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | 3.9 | 0.2 U | 16 | 70 | 1,100 [960] | 190 | 0.2 U |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | 0.2 U | 0.2 U | 0.5 U | 0.5 U | 6.2 U [6.2 U] | 0.5 U | 0.2 U |
| Bromoform | 75-25-2 | ug/L | 0.2 U | 0.2 U | 0.4 U | 0.4 U | 5.2 U [5.2 U] | 0.4 U | 0.2 U |
| Bromomethane | 74-83-9 | ug/L | 0.4 U | 0.4 U | 0.9 U | 0.9 U | 11 U [11 U] | 0.9 U | 0.4 U |
| Carbon Disulfide | 75-15-0 | ug/L | 0.4 U | 0.4 U | 0.9 U | 0.9 U | 11 U [11 U] | 0.9 U | 0.4 U |
| Carbon Tetrachloride | 56-23-5 | ug/L | 0.3 U | 0.3 U | 0.7 U | 0.7 U | 8.5 U [8.5 U] | 0.7 U | 0.3 U |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | 0.2 U | 0.2 U | 0.5 U | 0.5 U | 6.2 U [6.2 U] | 0.5 U | 0.2 U |
| Chlorodibromomethane | 124-48-1 | ug/L | 0.3 U | 0.3 U | 0.5 U | 0.5 U | 6.8 U [6.8 U] | 0.5 U | 0.3 U |
| Chloroethane | 75-00-3 | ug/L | 0.4 U | 0.4 U | 0.9 U | 0.9 U | 11 U [11 U] | 0.9 U | 0.4 U |
| Chloroform | 67-66-3 | ug/L | 0.2 U | 0.2 U | 0.4 U | 0.4 U | 5.0 U [5 U] | 0.4 U | 0.2 U |
| Chloromethane | 74-87-3 | ug/L | 0.4 U | 0.4 U | 0.9 U | 0.9 U | 11 U [11 U] | 0.9 U | 0.4 U |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | 0.3 U | 0.3 U | 0.6 U | 0.6 U | 7.0 U [7 U] | 0.6 U | 0.3 U |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | 0.1 U | 0.1 U | 0.3 U | 0.3 U | 3.2 U [3.2 U] | 0.3 U | 0.1 U |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | 0.4 U | 0.4 U | 1.5 | 0.8 U | 10 U [10 U] | 0.8 U | 0.4 U |
| Ethylbenzene | 100-41-4 | ug/L | 0.5 | 0.4 U | 80 | 96 | 2,800 [2,500] | 15 | 0.4 U |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | 0.7 U | 0.7 U | 1.4 U | 1.4 U | 18 U [18 U] | 1.4 U | 0.7 U |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | 0.4 U | 0.4 U | 0.8 U | 0.8 U | 10 U [10 U] | 0.8 U | 0.4 U |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | 0.4 U | 0.4 U | 0.8 U | 0.8 U | 10 U [10 U] | 0.8 U | 0.4 U |
| Toluene | 108-88-3 | ug/L | 0.3 U | 0.3 U | 27 | 44 | 170 [160] | 1.4 | 0.3 U |
| Total VOCs | ARC-TVOC | ug/L | 4.4 | 1.5 U | 540 | 350 | 5,500 [4,900] | 220 | 1.5 U |
| Total Xylenes | 1330-20-7 | ug/L | 0.4 U | 0.4 U | 160 | 130 | 1,400 [1,300] | 2.8 | 0.4 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-10/25/2007-8<br>44<br>10/25/07<br>MW8D | NJD981084668-10/26/2007-3<br>40<br>10/26/07<br>MW9D | NJD981084668-10/26/2007-4<br>11.5<br>10/26/07<br>MW9S | NJD981084668-10/26/2007-5<br>9<br>10/26/07<br>114-MW20A | NJD981084668-10/26/2007-6<br>39<br>10/26/07<br>114-MW20B | NJD981084668-10/26/2007-7<br>8<br>10/26/07<br>135-MW2A | NJD981084668-10/26/2007-8<br>30.5<br>10/26/07<br>135-MW2B |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | 0.4 U | 0.4 U | 0.8 U | 0.8 U | 9.8 U [9.8 U] | 0.8 U | 0.4 U |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | 0.2 U | 0.2 U | 0.3 U | 0.3 U | 4.0 U [4 U] | 0.3 U | 0.2 U |
| Trichloroethene | 79-01-6 | ug/L | 0.4 U | 0.4 U | 0.8 | 0.7 U | 9.0 U [9 U] | 0.7 U | 0.4 U |
| Vinyl chloride | 75-01-4 | ug/L | 0.2 U | 0.2 U | 0.5 U | 0.5 U | 6.0 U [6 U] | 0.5 U | 0.2 U |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | 1.0 U | 0.9 U | 1.8 U | 4.6 U | 46 U [46 U] | 0.9 U | 0.9 U |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | 1.1 U | 1.1 U | 2.2 U | 5.5 U | 55 U [55 U] | 1.1 U | 1.1 U |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | 1.0 U | 1.0 U | 1.9 U | 4.8 U | 48 U [48 U] | 1.0 U | 1.0 U |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | 0.9 U | 0.9 U | 1.8 U | 4.5 U | 45 U [45 U] | 0.9 U | 0.9 U |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | 0.9 U | 0.9 U | 1.7 U | 4.3 U | 43 U [43 U] | 0.8 U | 0.9 U |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | 1.2 U | 1.2 U | 2.4 U | 6.0 U | 60 U [60 U] | 1.2 U | 1.2 U |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | 2.3 U | 2.2 U | 4.4 U | 11 U | 110 U [110 U] | 2.2 U | 2.2 U |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | 1.5 U | 1.5 U | 2.9 U | 7.3 U | 73 U [73 U] | 1.4 U | 1.4 U |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | 2.1 U | 2.1 U | 4.1 U | 10 U | 100 U [100 U] | 2.0 U | 2.0 U |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | 0.9 U | 0.9 U | 1.8 U | 4.4 U | 44 U [44 U] | 0.9 U | 0.9 U |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | 1.2 U | 1.2 U | 2.3 U | 5.8 U | 58 U [58 U] | 1.1 U | 1.2 U |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | 1.3 U | 1.3 U | 2.6 U | 6.5 U | 65 U [65 U] | 1.3 U | 1.3 U |
| 2-Chloronaphthalene | 91-58-7 | ug/L | 1.1 U | 1.1 U | 2.2 U | 5.4 U | 54 U [54 U] | 1.1 U | 1.1 U |
| 2-Chlorophenol | 95-57-8 | ug/L | 1.1 U | 1.1 U | 2.2 U | 5.4 U | 54 U [54 U] | 1.1 U | 1.1 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | 1.3 U | 1.2 U | 2.5 U | 6.2 U | 62 U [62 U] | 1.2 U | 1.2 U |
| 2-Methylnaphthalene | 91-57-6 | ug/L | 1.2 U | 1.1 U | 130 | 65 | 100 [84] | 1.1 U | 1.1 U |
| 2-Methylphenol | 95-48-7 | ug/L | 1.4 U | 1.4 U | 2.8 U | 6.9 U | 69 U [69 U] | 1.4 U | 1.4 U |
| 2-Nitroaniline | 88-74-4 | ug/L | 0.7 U | 0.7 U | 1.3 U | 3.3 U | 33 U [33 U] | 0.7 U | 0.7 U |
| 2-Nitrophenol | 88-75-5 | ug/L | 1.6 U | 1.6 U | 3.2 U | 7.9 U | 79 U [79 U] | 1.6 U | 1.6 U |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | 5.2 U | 5.0 U | 9.9 U | 25 U | 250 U [250 U] | 4.9 U | 5.0 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | 1.0 U | 1.0 U | 2.0 U | 5.0 U | 50 U [50 U] | 1.0 U | 1.0 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | 1.3 U | 1.2 U | 2.4 U | 6.1 U | 61 U [61 U] | 1.2 U | 1.2 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | 1.7 U | 1.7 U | 3.3 U | 8.3 U | 83 U [83 U] | 1.6 U | 1.6 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | 1.1 U | 1.1 U | 2.1 U | 5.3 U | 53 U [53 U] | 1.0 U | 1.1 U |
| 4-Methylphenol | 106-44-5 | ug/L | 1.2 U | 1.2 U | 120 | 13 | 58 U [58 U] | 4.3 | 1.2 U |
| 4-Nitroaniline | 100-01-6 | ug/L | 0.7 U | 0.6 U | 1.3 U | 3.2 U | 32 U [32 U] | 0.6 U | 0.6 U |
| 4-Nitrophenol | 100-02-7 | ug/L | 0.9 U | 0.9 U | 1.8 U | 4.4 U | 44 U [44 U] | 0.9 U | 0.9 U |
| Acenaphthene | 83-32-9 | ug/L | 0.074 | 0.1 | 47 | 21 | 120 [130] | 0.3 | 0.050 U |
| Acenaphthylene | 208-96-8 | ug/L | 0.049 J | 0.051 U | 2.9 | 2.1 | 10 [10] | 0.029 J | 0.050 U |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | 0.031 J | 0.069 | 8.3 | 0.4 | 2.5 [2.3] | 0.073 | 0.028 J |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | 0.053 U | 0.026 J | 1.8 | 0.04 J | 0.038 J [0.053] | 0.050 U | 0.050 U |
| Benzo(a)pyrene | 50-32-8 | ug/L | 0.053 U | 0.051 U | 0.9 | 0.050 U | 0.050 U [0.05 U] | 0.050 U | 0.050 U |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | 0.053 U | 0.051 U | 0.4 | 0.050 U | 0.050 U [0.05 U] | 0.050 U | 0.050 U |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | 0.053 U | 0.051 U | 0.2 | 0.050 U | 0.050 U [0.05 U] | 0.053 | 0.050 U |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | 0.053 U | 0.051 U | 0.7 | 0.050 U | 0.050 U [0.05 U] | 0.050 U | 0.050 U |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | 0.9 U | 0.9 U | 1.7 U | 4.3 U | 43 U [43 U] | 0.9 U | 0.9 U |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | 0.9 U | 0.9 U | 1.8 U | 4.4 U | 44 U [44 U] | 0.9 U | 0.9 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | 1.1 U | 1.1 U | 2.1 U | 5.2 U | 52 U [52 U] | 1.0 U | 1.0 U |
| Butyl benzyl phthalate | 85-68-7 | ug/L | 1.1 U | 1.1 U | 2.1 U | 5.3 U | 53 U [53 U] | 1.0 U | 1.1 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-10/25/2007-8<br>44<br>10/25/07<br>MW8D | NJD981084668-10/26/2007-3<br>40<br>10/26/07<br>MW9D | NJD981084668-10/26/2007-4<br>11.5<br>10/26/07<br>MW9S | NJD981084668-10/26/2007-5<br>9<br>10/26/07<br>114-MW20A | NJD981084668-10/26/2007-6<br>39<br>10/26/07<br>114-MW20B | NJD981084668-10/26/2007-7<br>8<br>10/26/07<br>135-MW2A | NJD981084668-10/26/2007-8<br>30.5<br>10/26/07<br>135-MW2B |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | 1.0 U | 0.9 U | 2.1 | 4.6 U | 46 U [46 U] | 0.9 U | 0.9 U |
| Chrysene | 218-01-9 | ug/L | 0.053 U | 0.036 J | 1.9 | 0.046 J | 0.042 J [0.057] | 0.050 U | 0.050 U |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | 0.053 U | 0.051 U | 0.082 | 0.050 U | 0.050 U [0.05 U] | 0.050 U | 0.050 U |
| Dibenzofuran | 132-64-9 | ug/L | 1.0 U | 0.9 U | 2.7 | 4.6 U | 46 U [46 U] | 0.9 U | 1.1 |
| Diethyl phthalate | 84-66-2 | ug/L | 0.8 U | 0.8 U | 1.6 U | 3.9 U | 39 U [39 U] | 0.8 U | 0.8 U |
| Dimethyl phthalate | 131-11-3 | ug/L | 1.1 U | 1.1 U | 2.2 U | 5.5 U | 55 U [55 U] | 1.1 U | 1.1 U |
| Di-n-butyl phthalate | 84-74-2 | ug/L | 1.1 U | 1.0 U | 2.0 U | 5.1 U | 51 U [51 U] | 1.0 U | 1.0 U |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | 1.0 U | 1.0 U | 2.0 U | 5.0 U | 50 U [50 U] | 1.0 U | 1.0 U |
| Fluoranthene | 206-44-0 | ug/L | 0.3 | 0.3 | 6.1 | 0.3 | 1.6 [1.5] | 0.096 | 0.050 U |
| Fluorene | 86-73-7 | ug/L | 0.026 J | 0.079 | 18 | 5.1 | 34 [42] | 0.2 | 0.026 J |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | 0.6 U | 0.6 U | 1.2 U | 3.0 U | 30 U [30 U] | 0.6 U | 0.6 U |
| Hexachlorobenzene | 118-74-1 | ug/L | 0.021 U | 0.020 U | 0.020 U | 0.020 U | 0.020 U [0.02 U] | 0.020 U | 0.020 U |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | 0.7 U | 0.6 U | 1.3 U | 3.2 U | 32 U [32 U] | 0.6 U | 0.6 U |
| Hexachloroethane | 67-72-1 | ug/L | 0.9 U | 0.9 U | 1.8 U | 4.5 U | 45 U [45 U] | 0.9 U | 0.9 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | 0.053 U | 0.051 U | 0.2 | 0.050 U | 0.050 U [0.05 U] | 0.050 U | 0.050 U |
| Isophorone | 78-59-1 | ug/L | 1.0 U | 1.0 U | 1.9 U | 4.7 U | 47 U [47 U] | 0.9 U | 1.0 U |
| Naphthalene | 91-20-3 | ug/L | 0.1 B | 0.2 B | 440 | 390 | 5,500 [4,800] | 3.8 | 0.092 B |
| Nitrobenzene | 98-95-3 | ug/L | 1.0 U | 1.0 U | 1.9 U | 4.8 U | 48 U [48 U] | 1.0 U | 1.0 U |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | 0.8 U | 0.8 U | 1.5 U | 3.7 U | 37 U [37 U] | 0.7 U | 0.8 U |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | 1.1 U | 1.1 U | 2.1 U | 5.4 U | 54 U [54 U] | 1.1 U | 1.1 U |
| p-Chloroaniline | 106-47-8 | ug/L | 0.7 U | 0.7 U | 1.4 U | 3.4 U | 34 U [34 U] | 0.7 U | 0.7 U |
| Pentachlorophenol | 87-86-5 | ug/L | 0.2 U | 0.2 U | 0.6 | 0.3 | 0.3 [0.1 J] | 0.2 U | 0.2 U |
| Phenanthrene | 85-01-8 | ug/L | 0.064 | 0.3 | 40 | 2.1 | 32 [31] | 0.4 | 0.050 U |
| Phenol | 108-95-2 | ug/L | 0.6 U | 0.6 U | 160 | 26 | 31 U [31 U] | 0.7 | 0.6 U |
| Pyrene | 129-00-0 | ug/L | 0.3 | 0.3 | 11 | 0.2 | 1.4 [1.6] | 0.091 | 0.050 U |
| Total SVOCs | ARC-TSVOC | ug/L | 0.94 | 1.4 | 990 | 530 | 5,800 [5,100] | 10 | 1.2 |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 62.6 U | 125 U | 6,950 | 5,950 | 452 [315 B] | 84.3 B | 1,030 |
| Antimony | 7440-36-0 | ug/L | 5.8 U | 11.6 U | 37.9 | 15.2 B | 11.6 U [11.6 U] | 5.8 U | 5.8 U |
| Arsenic | 7440-38-2 | ug/L | 19.4 | 12.0 | 56.7 | 105 | 131 [126] | 26.7 | 2.8 U |
| Barium | 7440-39-3 | ug/L | 95.7 B | 69.7 B | 71.0 B | 27.7 B | 39.7 B [39.5 B] | 218 | 320 |
| Beryllium | 7440-41-7 | ug/L | 0.30 U | 0.79 B | 1.2 B | 0.95 B | 0.60 B [0.64 B] | 0.47 B | 0.57 B |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 0.40 U | 0.80 U | 1.1 B | 0.80 U | 0.80 U [0.8 U] | 0.40 U | 0.40 U |
| Calcium | 7440-70-2 | ug/L | 340,000 | 95,900 | 20,900 | 8,980 B | 23,900 [24,100] | 67,500 | 49,200 |
| Chromium | 7440-47-3 | ug/L | 1.6 U | 13.4 B | 24,100 | 162 | 71,700 [72,700] | 5.2 J | 4.3 B |
| Chromium VI | 18540-29-9 | ug/L | 10.0 U | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 2.1 B | 3.4 U | 23.0 B | 3.4 U | 3.4 U [3.4 U] | 2.2 B | 1.7 U |
| Copper | 7440-50-8 | ug/L | 3.7 U | 7.4 U | 92.9 | 96.0 | 7.4 U [7.4 U] | 6.3 B | 5.3 B |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 12,300 | 5,800 | 2,200 | 953 | 124 B [168 B] | 13,700 | 1,500 |
| Lead | 7439-92-1 | ug/L | 2.7 U | 5.4 U | 251 | 420 | 5.4 U [5.4 U] | 4.7 | 2.7 U |
| Magnesium | 7439-95-4 | ug/L | 632,000 | 244,000 | 6,420 B | 905 B | 4,490 B [3,930 B] | 56,300 | 124,000 |
| Manganese | 7439-96-5 | ug/L | 879 | 166 | 41.9 | 16.6 B | 117 [98.1] | 549 | 122 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-10/25/2007-8<br>44<br>10/25/07<br>MW8D | NJD981084668-10/26/2007-3<br>40<br>10/26/07<br>MW9D | NJD981084668-10/26/2007-4<br>11.5<br>10/26/07<br>MW9S | NJD981084668-10/26/2007-5<br>9<br>10/26/07<br>114-MW20A | NJD981084668-10/26/2007-6<br>39<br>10/26/07<br>114-MW20B | NJD981084668-10/26/2007-7<br>8<br>10/26/07<br>135-MW2A | NJD981084668-10/26/2007-8<br>30.5<br>10/26/07<br>135-MW2B |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.10 U | 0.10 U | 3.4 | 1.9 | 0.10 U [0.1 U] | 0.10 U | 0.10 U |
| Nickel | 7440-02-0 | ug/L | 3.6 B | 5.6 B | 211 | 15.1 B | 11.1 B [13.3 B] | 2.6 B | 3.9 B |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 124,000 | 92,500 | 71,900 | 28,100 | 141,000 [145,000] | 46,800 | 68,000 |
| Selenium | 7782-49-2 | ug/L | 4.2 U | 8.4 U | 10.1 | 8.4 U | 8.4 U [8.4 U] | 4.2 U | 4.2 U |
| Silver | 7440-22-4 | ug/L | 1.4 U | 2.8 U | 2.8 U | 2.8 U | 2.8 U [2.8 U] | 1.4 U | 1.4 U |
| Sodium | 7440-23-5 | ug/L | 4,300,000 | 2,160,000 | 1,830,000 | 360,000 | 310,000 [312,000] | 777,000 | 907,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 3.8 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U [1.9 U] | 1.9 U | 1.9 U |
| Total CCPW Metals | CCPW-M | ug/L | 3.6 | 19.0 | 24,600 | 277 | 71,900 [72,900] | 13 | 15 |
| Vanadium | 7440-62-2 | ug/L | 3.0 U | 6.0 U | 243 | 84.5 B | 155 [158] | 4.8 B | 7.1 B |
| Zinc | 7440-66-6 | ug/L | 29.0 U | 58.0 U | 482 | 284 | 29.0 U [29 U] | 29.0 U | 58.0 U |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-10/25/2007-8<br>44<br>10/25/07<br>MW8D | NJD981084668-10/26/2007-3<br>40<br>10/26/07<br>MW9D | NJD981084668-10/26/2007-4<br>11.5<br>10/26/07<br>MW9S | NJD981084668-10/26/2007-5<br>9<br>10/26/07<br>114-MW20A | NJD981084668-10/26/2007-6<br>39<br>10/26/07<br>114-MW20B | NJD981084668-10/26/2007-7<br>8<br>10/26/07<br>135-MW2A | NJD981084668-10/26/2007-8<br>30.5<br>10/26/07<br>135-MW2B |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | 10 U | 10 U | 68 | 15 | 86 [95] | 10 U | 10 U |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | 10 U | 10 U | 33 | 10 U | 35 [43] | 10 U | 10 U |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-10/25/2007-8<br>44<br>10/25/07<br>MW8D | NJD981084668-10/26/2007-3<br>40<br>10/26/07<br>MW9D | NJD981084668-10/26/2007-4<br>11.5<br>10/26/07<br>MW9S | NJD981084668-10/26/2007-5<br>9<br>10/26/07<br>114-MW20A | NJD981084668-10/26/2007-6<br>39<br>10/26/07<br>114-MW20B | NJD981084668-10/26/2007-7<br>8<br>10/26/07<br>135-MW2A | NJD981084668-10/26/2007-8<br>30.5<br>10/26/07<br>135-MW2B |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-10/29/2007-2<br>33<br>10/29/07<br>MW4B | NJD981084668-10/29/2007-3<br>8.5<br>10/29/07<br>137-MW1A | NJD981084668-10/29/2007-4<br>70.5<br>10/29/07<br>137-MW1C | NJD981084668-12/1/2009-114MW8A<br>14<br>12/01/09<br>MW8A | NJD981084668-12/1/2009-114MW8B<br>36<br>12/01/09<br>MW8B | NJD981084668-12/1/2009-MW-5D<br>63<br>12/01/09<br>MW5D |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | 0.4 U | 1.9 U | 0.4 U | 20 U | 20 U | 1 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | 0.4 U | 1.8 U | 0.4 U | 20 U | 20 U | 1 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | 20 U | 20 U | 1 U |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | 0.2 U | 1.1 U | 0.2 U | 20 U | 20 U | 1 U |
| 1,1-Dichloroethane | 75-34-3 | ug/L | 0.3 U | 1.3 U | 0.3 U | 20 U | 20 U | 1 U |
| 1,1-Dichloroethene | 75-35-4 | ug/L | 0.5 U | 2.3 U | 0.5 U | 20 U | 20 U | 1 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | 20 U | 20 U | 1 U |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | 20 U | 20 U | 1 U |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | 20 U | 20 U | 1 U |
| 1,2-Dichloroethane | 107-06-2 | ug/L | 0.3 U | 1.4 U | 0.3 U | 10 U | 10 U | 0.5 U |
| 1,2-Dichloropropane | 78-87-5 | ug/L | 0.5 U | 2.4 U | 0.5 U | 20 U | 20 U | 1 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | 20 U | 20 U | 1 U |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | 20 U | 20 U | 1 U |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | 1.3 U | 9.1 | 2.6 | 20 U | 20 U | 1 U |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | 20 U | 20 U | 1 U |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | 0.7 U | 4.4 | 0.7 U | 20 U | 20 U | 1 U |
| Acetone | 67-64-1 | ug/L | 13 | 220 | 1.5 U | 100 U | 100 U | 5 U |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | 100 U | 100 U | 5 U |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | 20 U | 20 U | 1 U |
| Benzene | 71-43-2 | ug/L | 1.5 | 2.5 | 0.2 U | 15 | 3,500 | 0.96 |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | 0.2 U | 1.2 U | 0.2 U | 20 U | 20 U | 1 U |
| Bromoform | 75-25-2 | ug/L | 0.2 U | 1.0 U | 0.2 U | 20 U | 20 U | 1 U |
| Bromomethane | 74-83-9 | ug/L | 0.4 U | 2.2 U | 0.4 U | 20 U | 20 U | 1 U |
| Carbon Disulfide | 75-15-0 | ug/L | 60 | 2.2 U | 6.2 | 20 U | 20 U | 1 U |
| Carbon Tetrachloride | 56-23-5 | ug/L | 0.3 U | 1.7 U | 0.3 U | 20 U | 20 U | 1 U |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | 20 U | 20 U | 1 U |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | 20 U | 20 U | 1 U |
| Chlorobenzene | 108-90-7 | ug/L | 0.2 U | 1.2 U | 0.2 U | 20 U | 20 U | 1 U |
| Chlorodibromomethane | 124-48-1 | ug/L | 0.3 U | 1.4 U | 0.3 U | 20 U | 20 U | 1 U |
| Chloroethane | 75-00-3 | ug/L | 0.4 U | 2.2 U | 0.4 U | 20 U | 20 U | 1 U |
| Chloroform | 67-66-3 | ug/L | 0.2 U | 1.0 U | 0.4 | 20 U | 20 U | 1 U |
| Chloromethane | 74-87-3 | ug/L | 0.4 U | 2.2 U | 0.4 U | 20 U | 20 U | 1 U |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | 0.3 U | 1.4 U | 0.3 U | 20 U | 20 U | 1 U |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | 0.1 U | 0.6 U | 0.1 U | 20 U | 20 U | 1 U |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | 0.4 U | 2.0 U | 0.5 | 20 U | 20 U | 1 U |
| Ethylbenzene | 100-41-4 | ug/L | 0.4 U | 2.0 U | 0.4 U | 38 | 34 | 1 U |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | 63 | 220 | 1 U |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | 20 U | 20 U | 1 U |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | 0.7 U | 3.5 U | 0.7 U | 20 U | 20 U | 1 U |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | 10 U | 10 U | 16 |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | 33 | 280 | 1 U |
| Styrene (Monomer) | 100-42-5 | ug/L | 0.4 U | 2.0 U | 0.4 U | 20 U | 20 U | 1 U |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | 100 U | 100 U | 5 U |
| Tetrachloroethene | 127-18-4 | ug/L | 0.4 U | 2.1 U | 0.4 U | 20 U | 20 U | 1 U |
| Toluene | 108-88-3 | ug/L | 0.3 U | 1.5 U | 2.5 | 38 | 21 | 1 U |
| Total VOCs | ARC-TVOC | ug/L | 75 | 240 | 12 | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | 0.4 U | 2.0 U | 0.4 U | 96 | 500 | 1 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-10/29/2007-2<br>33<br>10/29/07<br>MW4B | NJD981084668-10/29/2007-3<br>8.5<br>10/29/07<br>137-MW1A | NJD981084668-10/29/2007-4<br>70.5<br>10/29/07<br>137-MW1C | NJD981084668-12/1/2009-114MW8A<br>14<br>12/01/09<br>MW8A | NJD981084668-12/1/2009-114MW8B<br>36<br>12/01/09<br>MW8B | NJD981084668-12/1/2009-MW-5D<br>63<br>12/01/09<br>MW5D |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | 0.4 U | 2.0 U | 0.4 U | 20 U | 20 U | 1 U |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | 0.2 U | 0.8 U | 0.2 U | 20 U | 20 U | 1 U |
| Trichloroethene | 79-01-6 | ug/L | 0.4 U | 1.8 U | 0.4 U | 20 U | 20 U | 1 U |
| Vinyl chloride | 75-01-4 | ug/L | 0.2 U | 1.2 U | 0.2 U | 20 U | 20 U | 1 U |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | 41 U | 60 U | 2 U |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | 0.9 U | 0.9 U | 0.9 U | 41 U | 60 U | 2 U |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | 1.1 U | 1.1 U | 1.1 U | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | 1 U | 1.5 U | 0.051 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | 1.0 U | 1.0 U | 1.0 U | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | 0.9 U | 0.9 U | 0.9 U | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | 0.8 U | 0.8 U | 0.8 U | 41 U | 60 U | 2 U |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | 1.2 U | 1.2 U | 1.2 U | 41 U | 60 U | 2 U |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | 2.2 U | 2.2 U | 2.2 U | 41 U | 60 U | 2 U |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | 1.4 U | 1.4 U | 1.4 U | 41 U | 60 U | 2 U |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | 2.0 U | 2.0 U | 2.0 U | 41 U | 60 U | 2 U |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | 0.9 U | 0.9 U | 0.9 U | 200 U | 300 U | 10 U |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | 1.1 U | 1.1 U | 1.1 U | 41 U | 60 U | 2 U |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | 1.3 U | 1.3 U | 1.3 U | 41 U | 60 U | 2 U |
| 2-Chloronaphthalene | 91-58-7 | ug/L | 1.1 U | 1.1 U | 1.1 U | 41 U | 60 U | 2 U |
| 2-Chlorophenol | 95-57-8 | ug/L | 1.1 U | 1.1 U | 1.1 U | 41 U | 60 U | 2 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | 1.2 U | 1.2 U | 1.2 U | 200 U | 300 U | 10 U |
| 2-Methylnaphthalene | 91-57-6 | ug/L | 1.1 U | 5.1 | 1.1 U | 370 | 430 | 2 U |
| 2-Methylphenol | 95-48-7 | ug/L | 1.4 U | 1.7 | 1.4 U | 41 U | 60 U | 2 U |
| 2-Nitroaniline | 88-74-4 | ug/L | 0.7 U | 0.7 U | 0.7 U | 41 U | 60 U | 2 U |
| 2-Nitrophenol | 88-75-5 | ug/L | 1.6 U | 1.6 U | 1.6 U | 41 U | 60 U | 2 U |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | 4.9 U | 4.9 U | 4.9 U | 41 U | 60 U | 2 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | 1.0 U | 1.0 U | 1.0 U | 41 U | 60 U | 2 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | 1.2 U | 1.2 U | 1.2 U | 41 U | 60 U | 2 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | 1.6 U | 1.6 U | 1.6 U | 41 U | 60 U | 2 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | 1.0 U | 1.0 U | 1.0 U | 41 U | 60 U | 2 U |
| 4-Methylphenol | 106-44-5 | ug/L | 1.2 U | 57 | 1.2 U | 41 U | 60 U | 2 U |
| 4-Nitroaniline | 100-01-6 | ug/L | 0.6 U | 0.6 U | 0.6 U | 41 U | 60 U | 2 U |
| 4-Nitrophenol | 100-02-7 | ug/L | 0.9 U | 0.9 U | 0.9 U | 41 U | 60 U | 2 U |
| Acenaphthene | 83-32-9 | ug/L | 0.050 U | 4.2 | 0.2 | 59 | 100 | 2 U |
| Acenaphthylene | 208-96-8 | ug/L | 0.050 U | 0.4 | 0.048 J | 41 U | 60 U | 2 U |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | 41 U | 60 U | 2 U |
| Anthracene | 120-12-7 | ug/L | 0.050 U | 1.5 | 0.050 U | 41 U | 60 U | 2 U |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | 41 U | 60 U | 2 U |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | 41 U | 60 U | 2 U |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | 200 U | 300 U | 10 U |
| Benzo(a)anthracene | 56-55-3 | ug/L | 0.050 U | 0.2 | 0.050 U | 1.2 | 0.6 U | 0.051 |
| Benzo(a)pyrene | 50-32-8 | ug/L | 0.050 U | 0.065 | 0.050 U | 0.41 U | 0.6 U | 0.02 U |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | 0.050 U | 0.053 | 0.050 U | 0.41 U | 0.6 U | 0.02 U |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | 0.050 U | 0.050 U | 0.050 U | 41 U | 60 U | 2 U |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | 0.050 U | 0.066 | 0.050 U | 0.41 U | 0.6 U | 0.02 U |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | 0.9 U | 0.9 U | 0.9 U | 41 U | 60 U | 2 U |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | 0.9 U | 0.9 U | 0.9 U | 41 U | 60 U | 2 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | 1.0 U | 1.0 U | 1.0 U | 41 U | 60 U | 2 U |
| Butyl benzyl phthalate | 85-68-7 | ug/L | 1.0 U | 1.0 U | 1.0 U | 41 U | 60 U | 2 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-10/29/2007-2<br>33<br>10/29/07<br>MW4B | NJD981084668-10/29/2007-3<br>8.5<br>10/29/07<br>137-MW1A | NJD981084668-10/29/2007-4<br>70.5<br>10/29/07<br>137-MW1C | NJD981084668-12/1/2009-114MW8A<br>14<br>12/01/09<br>MW8A | NJD981084668-12/1/2009-114MW8B<br>36<br>12/01/09<br>MW8B | NJD981084668-12/1/2009-MW-5D<br>63<br>12/01/09<br>MW5D |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | 41 U | 60 U | 2 U |
| Carbazole | 86-74-8 | ug/L | 0.9 U | 0.9 U | 0.9 U | 41 U | 60 U | 2 U |
| Chrysene | 218-01-9 | ug/L | 0.050 U | 0.3 | 0.050 U | 41 U | 60 U | 2 U |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | 0.050 U | 0.050 U | 0.050 U | 0.41 U | 0.6 U | 0.02 U |
| Dibenzofuran | 132-64-9 | ug/L | 0.9 U | 0.9 U | 0.9 U | 41 U | 60 U | 2 U |
| Diethyl phthalate | 84-66-2 | ug/L | 0.8 U | 0.8 U | 0.8 U | 41 U | 60 U | 2 U |
| Dimethyl phthalate | 131-11-3 | ug/L | 1.1 U | 1.1 U | 1.1 U | 41 U | 60 U | 2 U |
| Di-n-butyl phthalate | 84-74-2 | ug/L | 1.0 U | 1.0 U | 1.0 U | 41 U | 60 U | 2 U |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | 1.0 U | 1.0 U | 1.0 U | 41 U | 60 U | 2 U |
| Fluoranthene | 206-44-0 | ug/L | 0.050 U | 1.8 | 0.03 J | 41 U | 60 U | 2 U |
| Fluorene | 86-73-7 | ug/L | 0.050 U | 1.6 | 0.063 | 41 U | 60 U | 2 U |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | 0.6 U | 0.6 U | 0.6 U | 0.41 U | 0.6 U | 0.02 U |
| Hexachlorobenzene | 118-74-1 | ug/L | 0.020 U | 0.020 U | 0.020 U | 0.41 U | 0.6 U | 0.02 U |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | 0.6 U | 0.6 U | 0.6 U | 200 U | 300 U | 10 U |
| Hexachloroethane | 67-72-1 | ug/L | 0.9 U | 0.9 U | 0.9 U | 0.41 U | 0.6 U | 0.02 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | 0.050 U | 0.050 U | 0.050 U | 0.41 U | 0.6 U | 0.02 U |
| Isophorone | 78-59-1 | ug/L | 0.9 U | 0.9 U | 0.9 U | 41 U | 60 U | 2 U |
| Naphthalene | 91-20-3 | ug/L | 0.058 B | 5.5 | 0.3 B | 1,300 | 3,900 | 3.3 |
| Nitrobenzene | 98-95-3 | ug/L | 1.0 U | 1.0 U | 1.0 U | 41 U | 60 U | 2 U |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | 4.1 U | 6 U | 0.2 U |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | 0.7 U | 0.7 U | 0.7 U | 41 U | 60 U | 2 U |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | 1.1 U | 1.1 U | 1.1 U | 41 U | 60 U | 2 U |
| p-Chloroaniline | 106-47-8 | ug/L | 0.7 U | 0.7 U | 0.7 U | 41 U | 60 U | 2 U |
| Pentachlorophenol | 87-86-5 | ug/L | 0.2 U | 0.9 | 0.2 U | 4.9 U | 7.2 U | 0.24 U |
| Phenanthrene | 85-01-8 | ug/L | 0.050 U | 6.7 | 0.1 | 58 | 61 | 2 U |
| Phenol | 108-95-2 | ug/L | 0.6 U | 26 | 5.7 | 69 | 60 U | 2 U |
| Pyrene | 129-00-0 | ug/L | 0.037 J | 2.0 | 0.047 J | 41 U | 60 U | 2 U |
| Total SVOCs | ARC-TSVOC | ug/L | 0.095 | 120 | 6.5 | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 1,252 U | 1,410 | 185 B | 340 | 880 | 770 |
| Antimony | 7440-36-0 | ug/L | 116 U | 11.6 U | 5.8 U | 25 U | 25 U | 2.5 U |
| Arsenic | 7440-38-2 | ug/L | 5.6 U | 2.8 U | 12.9 | 10 U | 10 U | 11 |
| Barium | 7440-39-3 | ug/L | 41.0 B | 272 B | 12.7 B | 84 | 200 U | 50 U |
| Beryllium | 7440-41-7 | ug/L | 7.9 B | 0.64 B | 0.49 B | 7.5 U | 7.5 U | 0.75 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 8.0 U | 0.80 U | 0.40 U | 3.5 U | 14 U | 3.5 U |
| Calcium | 7440-70-2 | ug/L | 271,000 | 425,000 | 23,800 | 470,000 | 39,000 | 60,000 |
| Chromium | 7440-47-3 | ug/L | 1,020,000 | 12,300 | 2,350 | 310,000 | 940,000 | 50 U |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 34.0 U | 8.1 B | 1.7 U | 61 | 80 U | 20 U |
| Copper | 7440-50-8 | ug/L | 74.0 U | 8.7 B | 9.5 B | 50 U | 200 U | 50 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 1,340 B | 91.0 B | 295 | 660 | 2,300 | 1,400 |
| Lead | 7439-92-1 | ug/L | 54.0 U | 5.4 U | 2.7 U | 1,400 | 16 U | 4 U |
| Magnesium | 7439-95-4 | ug/L | 63,500 B | 83.2 U | 1,300 B | 2,000 U | 63,000 | 20,000 |
| Manganese | 7439-96-5 | ug/L | 91.6 B | 2.4 U | 7.8 B | 40 U | 160 U | 360 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-10/29/2007-2<br>33<br>10/29/07<br>MW4B | NJD981084668-10/29/2007-3<br>8.5<br>10/29/07<br>137-MW1A | NJD981084668-10/29/2007-4<br>70.5<br>10/29/07<br>137-MW1C | NJD981084668-12/1/2009-114MW8A<br>14<br>12/01/09<br>MW8A | NJD981084668-12/1/2009-114MW8B<br>36<br>12/01/09<br>MW8B | NJD981084668-12/1/2009-MW-5D<br>63<br>12/01/09<br>MW5D |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.10 U | 0.10 U | 0.10 U | 0.7 U | 0.7 U | 0.7 U |
| Nickel | 7440-02-0 | ug/L | 90.4 B | 63.4 B | 8.8 B | 220 | 200 U | 50 U |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 27,500 B | 31,500 | 5,610 | 54,000 | 83,000 | 35,000 |
| Selenium | 7782-49-2 | ug/L | 84.0 U | 8.4 U | 4.2 U | 40 U | 160 U | 40 U |
| Silver | 7440-22-4 | ug/L | 28.0 U | 2.8 U | 1.4 U | 20 U | 80 U | 20 U |
| Sodium | 7440-23-5 | ug/L | 768,000 | 571,000 | 204,000 | 2,300,000 | 1,400,000 | 180,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 3.8 U | 1.9 U | 1.9 U | 15 U | 10 U | 1.5 U |
| Total CCPW Metals | CCPW-M | ug/L | 1,020,000 | 12,400 | 2,430 | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 60.0 U | 74.5 B | 74.8 | 50 U | 200 U | 50 U |
| Zinc | 7440-66-6 | ug/L | 116 U | 29.0 U | 10.8 B | 290 | 200 U | 50 U |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-10/29/2007-2<br>33<br>10/29/07<br>MW4B | NJD981084668-10/29/2007-3<br>8.5<br>10/29/07<br>137-MW1A | NJD981084668-10/29/2007-4<br>70.5<br>10/29/07<br>137-MW1C | NJD981084668-12/1/2009-114MW8A<br>14<br>12/01/09<br>MW8A | NJD981084668-12/1/2009-114MW8B<br>36<br>12/01/09<br>MW8B | NJD981084668-12/1/2009-MW-5D<br>63<br>12/01/09<br>MW5D |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | 13,000 | 1,800 | 480 |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | 10 U | 22 | 10 U | 42 | 11 | 10 U |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | 10 U | 22 | 10 U | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

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| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-10/29/2007-2<br>33<br>10/29/07<br>MW4B | NJD981084668-10/29/2007-3<br>8.5<br>10/29/07<br>137-MW1A | NJD981084668-10/29/2007-4<br>70.5<br>10/29/07<br>137-MW1C | NJD981084668-12/1/2009-114MW8A<br>14<br>12/01/09<br>MW8A | NJD981084668-12/1/2009-114MW8B<br>36<br>12/01/09<br>MW8B | NJD981084668-12/1/2009-MW-5D<br>63<br>12/01/09<br>MW5D |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-12/1/2009-MW-5S<br>9.5<br>12/01/09<br>MW5S | NJD981084668-12/2/2009-114-20A<br>9<br>12/02/09<br>114-MW20A | NJD981084668-12/2/2009-114-20B<br>39<br>12/02/09<br>114-MW20B | NJD981084668-12/2/2009-135MW2A<br>8<br>12/02/09<br>135-MW2A | NJD981084668-12/2/2009-135MW2B<br>30.5<br>12/02/09<br>135-MW2B | NJD981084668-12/2/2009-MW-7D<br>43<br>12/02/09<br>MW7D |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| 1,1-Dichloroethane | 75-34-3 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| 1,1-Dichloroethene | 75-35-4 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| 1,2-Dibromoethane | 106-93-4 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| 1,2-Dichloroethane | 107-06-2 | ug/L | 5 U | 0.5 U | 10 U | 0.5 U | 0.5 U [0.5 U] | 0.5 U |
| 1,2-Dichloropropane | 78-87-5 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| Acetone | 67-64-1 | ug/L | 50 U | 5 U | 100 U | 5 U | 5 U [5 U] | 5 U |
| Acrolein | 107-02-8 | ug/L | 50 U | 5 U | 100 U | 5 U | 5 U [5 U] | 5 U |
| Acrylonitrile | 107-13-1 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| Benzene | 71-43-2 | ug/L | 2,400 | 70 | 1,600 | 57 | 0.5 U [0.5 U] | 0.86 |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| Bromoform | 75-25-2 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| Bromomethane | 74-83-9 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| Carbon Disulfide | 75-15-0 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| Carbon Tetrachloride | 56-23-5 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| CFC-11 | 75-69-4 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| CFC-12 | 75-71-8 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| Chlorobenzene | 108-90-7 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| Chlorodibromomethane | 124-48-1 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| Chloroethane | 75-00-3 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| Chloroform | 67-66-3 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| Chloromethane | 74-87-3 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1.4 |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| Ethylbenzene | 100-41-4 | ug/L | 1,300 | 69 | 2,500 | 1 U | 1 U [1 U] | 1 U |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | 1,200 | 53 | 790 | 1 U | 1 U [1 U] | 1 U |
| Methyl Acetate | 79-20-9 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | 5 U | 0.5 U | 10 U | 0.5 U | 0.5 U [0.5 U] | 9.5 |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | 1,300 | 41 | 850 | 1.5 | 1 U [1 U] | 1 U |
| Styrene (Monomer) | 100-42-5 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| tert-Butyl alcohol | 75-65-0 | ug/L | 50 U | 5 U | 100 U | 5 U | 5 U [5 U] | 5 U |
| Tetrachloroethene | 127-18-4 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| Toluene | 108-88-3 | ug/L | 630 | 25 | 250 | 1 U | 1 U [1 U] | 1 U |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | 2,500 | 94 | 1,640 | 1.5 | 1 U [1 U] | 1 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-12/1/2009-MW-5S<br>9.5<br>12/01/09<br>MW5S | NJD981084668-12/2/2009-114-20A<br>9<br>12/02/09<br>114-MW20A | NJD981084668-12/2/2009-114-20B<br>39<br>12/02/09<br>114-MW20B | NJD981084668-12/2/2009-135MW2A<br>8<br>12/02/09<br>135-MW2A | NJD981084668-12/2/2009-135MW2B<br>30.5<br>12/02/09<br>135-MW2B | NJD981084668-12/2/2009-MW-7D<br>43<br>12/02/09<br>MW7D |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 2.8 |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| Trichloroethene | 79-01-6 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1.7 |
| Vinyl chloride | 75-01-4 | ug/L | 10 U | 1 U | 20 U | 1 U | 1 U [1 U] | 1 U |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | 1 U | 2.2 U | 44 U | 2.2 U | 2.2 U [0.056 U] [2.2 U] | 2 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | 210 U | 11 U | 220 U | 11 U | 11 U [11 U] | 10 U |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| 2-Chloronaphthalene | 91-58-7 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| 2-Chlorophenol | 95-57-8 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | 210 U | 11 U | 220 U | 11 U | 11 U [11 U] | 10 U |
| 2-Methylnaphthalene | 91-57-6 | ug/L | 110 | 21 | 69 | 2.2 U | 2.2 U [2.2 U] | 2 U |
| 2-Methylphenol | 95-48-7 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| 2-Nitroaniline | 88-74-4 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| 2-Nitrophenol | 88-75-5 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| 4-Methylphenol | 106-44-5 | ug/L | 42 U | 12 | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| 4-Nitroaniline | 100-01-6 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| 4-Nitrophenol | 100-02-7 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| Acenaphthene | 83-32-9 | ug/L | 51 | 9.3 | 84 | 2.2 U | 2.2 U [2.2 U] | 2 U |
| Acenaphthylene | 208-96-8 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| Acetophenone | 98-86-2 | ug/L | 57 | 2.2 U | 110 | 2.2 U | 2.2 U [2.2 U] | 2 U |
| Anthracene | 120-12-7 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| Atrazine | 1912-24-9 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| Benzaldehyde | 100-52-7 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| Benzidine | 92-87-5 | ug/L | 210 U | 11 U | 220 U | 11 U | 11 U [11 U] | 10 U |
| Benzo(a)anthracene | 56-55-3 | ug/L | 4.4 | 0.1 | 0.44 U | 0.033 | 0.022 U [2.2 U] [0.022 U] | 0.02 U |
| Benzo(a)pyrene | 50-32-8 | ug/L | 1.5 | 0.044 | 0.44 U | 0.022 U | 0.022 U [2.2 U] [0.022 U] | 0.02 U |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | 1.5 | 0.067 | 0.44 U | 0.022 U | 0.022 U [2.2 U] [0.022 U] | 0.02 U |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | 0.42 U | 0.033 | 0.44 U | 0.022 U | 0.022 U [2.2 U] [0.022 U] | 0.02 U |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| Butyl benzyl phthalate | 85-68-7 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-12/1/2009-MW-5S<br>9.5<br>12/01/09<br>MW5S | NJD981084668-12/2/2009-114-20A<br>9<br>12/02/09<br>114-MW20A | NJD981084668-12/2/2009-114-20B<br>39<br>12/02/09<br>114-MW20B | NJD981084668-12/2/2009-135MW2A<br>8<br>12/02/09<br>135-MW2A | NJD981084668-12/2/2009-135MW2B<br>30.5<br>12/02/09<br>135-MW2B | NJD981084668-12/2/2009-MW-7D<br>43<br>12/02/09<br>MW7D |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| Carbazole | 86-74-8 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| Chrysene | 218-01-9 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | 0.42 U | 0.022 U | 0.44 U | 0.022 U | 0.022 U [0.022 U] [2.2 U] | 0.02 U |
| Dibenzofuran | 132-64-9 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| Diethyl phthalate | 84-66-2 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| Dimethyl phthalate | 131-11-3 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| Di-n-butyl phthalate | 84-74-2 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| Fluoranthene | 206-44-0 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| Fluorene | 86-73-7 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | 0.42 U | 0.022 U | 0.44 U | 0.022 U | 0.022 U [2.2 U] [0.022 U] | 0.02 U |
| Hexachlorobenzene | 118-74-1 | ug/L | 0.42 U | 0.022 U | 0.44 U | 0.022 U | 0.022 U [2.2 U] [0.022 U] | 0.02 U |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | 210 U | 2.2 U | 44 U | 11 U | 11 U [11 U] | 10 U |
| Hexachloroethane | 67-72-1 | ug/L | 0.42 U | 0.022 U | 0.44 U | 0.022 U | 0.022 U [2.2 U] [0.022 U] | 0.02 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | 0.42 | 0.022 | 0.44 U | 0.022 U | 0.022 U [2.2 U] [0.022 U] | 0.02 U |
| Isophorone | 78-59-1 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| Naphthalene | 91-20-3 | ug/L | 1,500 | 160 | 2,300 | 2.2 U | 2.2 U [2.2 U] | 2 U |
| Nitrobenzene | 98-95-3 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | 4.2 U | 2.2 U | 44 U | 2.2 U | 2.2 U [0.22 U] [2.2 U] | 2 U |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| p-Chloroaniline | 106-47-8 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| Pentachlorophenol | 87-86-5 | ug/L | 5 U | 0.27 U | 5.3 U | 0.27 U | 0.27 U [11 U] [0.27 U] | 0.24 U |
| Phenanthrene | 85-01-8 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| Phenol | 108-95-2 | ug/L | 42 U | 23 | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| Pyrene | 129-00-0 | ug/L | 42 U | 2.2 U | 44 U | 2.2 U | 2.2 U [2.2 U] | 2 U |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 570 | 4,000 | 680 | 180 U | 4,000 [3,500] | 240 |
| Antimony | 7440-36-0 | ug/L | 2.5 U | 5.1 | 2.5 U | 2.5 U | 2.5 U [2.5 U] | 2.5 U |
| Arsenic | 7440-38-2 | ug/L | 53 | 75 | 91 | 66 | 2.2 [2.2] | 260 |
| Barium | 7440-39-3 | ug/L | 50 U | 50 U | 50 U | 260 | 330 [320] | 210 |
| Beryllium | 7440-41-7 | ug/L | 0.75 U | 0.75 U | 0.75 U | 0.75 U | 0.75 U [0.75 U] | 0.75 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 3.5 U | 4.6 | 4.8 | 3.5 U | 3.5 U [3.5 U] | 11 |
| Calcium | 7440-70-2 | ug/L | 9,500 | 5,600 | 13,000 | 80,000 | 41,000 [39,000] | 120,000 |
| Chromium | 7440-47-3 | ug/L | 220 | 56 | 130,000 | 50 U | 50 U [50 U] | 50 U |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 20 U | 20 U | 20 U | 20 U | 20 U [20 U] | 20 U |
| Copper | 7440-50-8 | ug/L | 50 U | 69 | 50 U | 50 U | 50 U [50 U] | 50 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 740 | 1,400 | 420 | 11,000 | 7,500 [6,500] | 5,700 |
| Lead | 7439-92-1 | ug/L | 76 | 250 | 4 U | 4 U | 7.6 [5.8] | 4 U |
| Magnesium | 7439-95-4 | ug/L | 2,000 U | 2,000 U | 2,800 | 50,000 | 110,000 [110,000] | 20,000 |
| Manganese | 7439-96-5 | ug/L | 40 U | 40 U | 40 U | 770 | 120 [110] | 9,100 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-12/1/2009-MW-5S<br>9.5<br>12/01/09<br>MW5S | NJD981084668-12/2/2009-114-20A<br>9<br>12/02/09<br>114-MW20A | NJD981084668-12/2/2009-114-20B<br>39<br>12/02/09<br>114-MW20B | NJD981084668-12/2/2009-135MW2A<br>8<br>12/02/09<br>135-MW2A | NJD981084668-12/2/2009-135MW2B<br>30.5<br>12/02/09<br>135-MW2B | NJD981084668-12/2/2009-MW-7D<br>43<br>12/02/09<br>MW7D |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.7 U | 0.91 | 0.7 U | 0.7 U | 0.7 U [0.7 U] | 0.7 U |
| Nickel | 7440-02-0 | ug/L | 50 U | 50 U | 50 U | 50 U | 50 U [50 U] | 50 U |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 8,100 | 16,000 | 230,000 | 37,000 | 68,000 [65,000] | 5,000 U |
| Selenium | 7782-49-2 | ug/L | 40 U | 40 U | 40 U | 40 U | 40 U [40 U] | 40 U |
| Silver | 7440-22-4 | ug/L | 20 U | 20 U | 20 U | 20 U | 20 U [20 U] | 20 U |
| Sodium | 7440-23-5 | ug/L | 160,000 | 340,000 | 420,000 | 720,000 | 960,000 [920,000] | 47,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 1.5 U | 1.5 U | 1.5 U | 1.5 U | 1.5 U [1.5 U] | 1.5 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 380 | 64 | 190 | 50 U | 50 U [50 U] | 50 U |
| Zinc | 7440-66-6 | ug/L | 50 U | 190 | 50 U | 50 U | 50 U [50 U] | 50 U |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-12/1/2009-MW-5S<br>9.5<br>12/01/09<br>MW5S | NJD981084668-12/2/2009-114-20A<br>9<br>12/02/09<br>114-MW20A | NJD981084668-12/2/2009-114-20B<br>39<br>12/02/09<br>114-MW20B | NJD981084668-12/2/2009-135MW2A<br>8<br>12/02/09<br>135-MW2A | NJD981084668-12/2/2009-135MW2B<br>30.5<br>12/02/09<br>135-MW2B | NJD981084668-12/2/2009-MW-7D<br>43<br>12/02/09<br>MW7D |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | 6,200 | 14,000 | 3,200 | 24,000 | 3,500 [3,300] | 530 |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | 49 | 10 U | 80 | 10 U | 10 U [10 U] | 10 U |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | 10 U | 80 | 10 U | 10 U [10 U] | 10 U |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-12/1/2009-MW-5S<br>9.5<br>12/01/09<br>MW5S | NJD981084668-12/2/2009-114-20A<br>9<br>12/02/09<br>114-MW20A | NJD981084668-12/2/2009-114-20B<br>39<br>12/02/09<br>114-MW20B | NJD981084668-12/2/2009-135MW2A<br>8<br>12/02/09<br>135-MW2A | NJD981084668-12/2/2009-135MW2B<br>30.5<br>12/02/09<br>135-MW2B | NJD981084668-12/2/2009-MW-7D<br>43<br>12/02/09<br>MW7D |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | NJD981084668-12/2/2009-MW-7S | NJD981084668-12/3/2009-114-19A | NJD981084668-12/3/2009-114-19B | NJD981084668-12/3/2009-MW-8D | NJD981084668-12/3/2009-MW-15D | NJD981084668-12/3/2009-MW-15S |
|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 11 | 9 | 47.5 | 44 | 39 | 6 |
| Date Collected: | | | 12/02/09 | 12/03/09 | 12/03/09 | 12/03/09 | 12/03/09 | 12/03/09 |
| Location ID: | CAS Number | Units | MW7S | 114-MW19A | 114-MW19B | MW8D | MW15D | MW15S |
| **Volatile Organics** | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | 1 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | 1 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | 1 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | 1 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| 1,1-Dichloroethane | 75-34-3 | ug/L | 1 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| 1,1-Dichloroethene | 75-35-4 | ug/L | 1 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U |
| 1,2-Dibromoethane | 106-93-4 | ug/L | 1 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | 1 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| 1,2-Dichloroethane | 107-06-2 | ug/L | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| 1,2-Dichloropropane | 78-87-5 | ug/L | 1 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | 1 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | 1 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | 1 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U |
| Acetone | 67-64-1 | ug/L | 5 U | 5 U | 33 | 5 U | 5 U | 5 U |
| Acrolein | 107-02-8 | ug/L | 5 U | 2.5 U | 2.5 U | 2.5 U | 2.5 U | 2.5 U |
| Acrylonitrile | 107-13-1 | ug/L | 1 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| Benzene | 71-43-2 | ug/L | 140 | 3.7 | 0.5 U | 2.4 | 0.5 U | 0.5 U |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | 1 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| Bromoform | 75-25-2 | ug/L | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U |
| Bromomethane | 74-83-9 | ug/L | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U |
| Carbon Disulfide | 75-15-0 | ug/L | 1 U | 0.5 U | 0.5 U | 0.5 U | 1.3 | 0.5 U |
| Carbon Tetrachloride | 56-23-5 | ug/L | 1 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| CFC-11 | 75-69-4 | ug/L | 1 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| CFC-12 | 75-71-8 | ug/L | 1 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| Chlorobenzene | 108-90-7 | ug/L | 1 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| Chlorodibromomethane | 124-48-1 | ug/L | 1 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| Chloroethane | 75-00-3 | ug/L | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U |
| Chloroform | 67-66-3 | ug/L | 1 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| Chloromethane | 74-87-3 | ug/L | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | 1 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | 1 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U |
| Ethylbenzene | 100-41-4 | ug/L | 1 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | 1 U | 1.3 | 1 U | 1 U | 1 U | 1 U |
| Methyl Acetate | 79-20-9 | ug/L | 1 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | 1 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| Styrene (Monomer) | 100-42-5 | ug/L | 1 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| tert-Butyl alcohol | 75-65-0 | ug/L | 5 U | 2.5 U | 2.5 U | 2.5 U | 2.5 U | 2.5 U |
| Tetrachloroethene | 127-18-4 | ug/L | 1 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| Toluene | 108-88-3 | ug/L | 1 U | 2.8 | 0.5 U | 1.1 | 0.5 U | 0.5 U |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | 1 U | 1.3 | 0.5 U | 0.5 U | 0.5 U | 0.5 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-12/2/2009-MW-7S<br>11<br>12/02/09<br>MW7S | NJD981084668-12/3/2009-114-19A<br>9<br>12/03/09<br>114-MW19A | NJD981084668-12/3/2009-114-19B<br>47.5<br>12/03/09<br>114-MW19B | NJD981084668-12/3/2009-MW-8D<br>44<br>12/03/09<br>MW8D | NJD981084668-12/3/2009-MW-15D<br>39<br>12/03/09<br>MW15D | NJD981084668-12/3/2009-MW-15S<br>6<br>12/03/09<br>MW15S |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | 1 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | 1 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| Trichloroethene | 79-01-6 | ug/L | 1 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| Vinyl chloride | 75-01-4 | ug/L | 1 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U |
| **Semivolatile Organics** | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | 2.2 U | 0.05 U | 0.05 U | 0.05 U | 0.056 U | 0.05 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | 11 U | 11 U | 10 U | 10 U | 10 U | 10 U |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| 2-Chloronaphthalene | 91-58-7 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| 2-Chlorophenol | 95-57-8 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | 11 U | 11 U | 10 U | 10 U | 10 U | 10 U |
| 2-Methylnaphthalene | 91-57-6 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| 2-Methylphenol | 95-48-7 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| 2-Nitroaniline | 88-74-4 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| 2-Nitrophenol | 88-75-5 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| 4-Methylphenol | 106-44-5 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| 4-Nitroaniline | 100-01-6 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| 4-Nitrophenol | 100-02-7 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| Acenaphthene | 83-32-9 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| Acenaphthylene | 208-96-8 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| Acetophenone | 98-86-2 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| Anthracene | 120-12-7 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| Atrazine | 1912-24-9 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| Benzaldehyde | 100-52-7 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| Benzidine | 92-87-5 | ug/L | 11 U | 11 U | 10 U | 10 U | 10 U | 10 U |
| Benzo(a)anthracene | 56-55-3 | ug/L | 0.033 | 1.1 | 0.02 U | 0.08 | 0.089 | 0.02 U |
| Benzo(a)pyrene | 50-32-8 | ug/L | 0.022 U | 0.38 | 0.02 U | 0.04 | 0.056 | 0.02 U |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | 0.022 U | 0.54 | 0.02 U | 0.06 | 0.056 | 0.02 |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | 0.022 U | 0.16 | 0.02 U | 0.02 | 0.022 | 0.02 U |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 6.7 | 2 U |
| Butyl benzyl phthalate | 85-68-7 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-12/2/2009-MW-7S<br>11<br>12/02/09<br>MW7S | NJD981084668-12/3/2009-114-19A<br>9<br>12/03/09<br>114-MW19A | NJD981084668-12/3/2009-114-19B<br>47.5<br>12/03/09<br>114-MW19B | NJD981084668-12/3/2009-MW-8D<br>44<br>12/03/09<br>MW8D | NJD981084668-12/3/2009-MW-15D<br>39<br>12/03/09<br>MW15D | NJD981084668-12/3/2009-MW-15S<br>6<br>12/03/09<br>MW15S |
|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| Carbazole | 86-74-8 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| Chrysene | 218-01-9 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | 0.022 U | 0.05 | 0.02 U | 0.02 U | 0.022 U | 0.02 U |
| Dibenzofuran | 132-64-9 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| Diethyl phthalate | 84-66-2 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| Dimethyl phthalate | 131-11-3 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| Di-n-butyl phthalate | 84-74-2 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| Fluoranthene | 206-44-0 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| Fluorene | 86-73-7 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | 0.022 U | 0.02 U | 0.02 U | 0.02 U | 0.022 U | 0.02 U |
| Hexachlorobenzene | 118-74-1 | ug/L | 0.022 U | 0.02 U | 0.02 U | 0.02 U | 0.022 U | 0.02 U |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | 11 U | 2.2 U | 2 U | 10 U | 10 U | 10 U |
| Hexachloroethane | 67-72-1 | ug/L | 0.022 U | 0.02 U | 0.02 U | 0.02 U | 0.022 U | 0.02 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | 0.022 U | 0.12 | 0.02 U | 0.02 | 0.033 | 0.02 U |
| Isophorone | 78-59-1 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| Naphthalene | 91-20-3 | ug/L | 3 | 3 | 2 U | 2 U | 2 U | 2 U |
| Nitrobenzene | 98-95-3 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | 2.2 U | 0.2 U | 0.2 U | 0.2 U | 0.22 U | 0.2 U |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| p-Chloroaniline | 106-47-8 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| Pentachlorophenol | 87-86-5 | ug/L | 0.27 U | 0.24 U | 0.24 U | 0.24 U | 0.27 U | 0.24 U |
| Phenanthrene | 85-01-8 | ug/L | 2.2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| Phenol | 108-95-2 | ug/L | 8.3 | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| Pyrene | 129-00-0 | ug/L | 2.2 U | 2.6 | 2 U | 2 U | 2 U | 2 U |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 180 U | 2,000 | 470 | 290 | 6,900 | 180 U |
| Antimony | 7440-36-0 | ug/L | 2.5 U | 12 U | 25 U | 2.5 U | 2.5 U | 2.5 U |
| Arsenic | 7440-38-2 | ug/L | 14 | 110 | 10 U | 1.1 | 11 | 1.7 |
| Barium | 7440-39-3 | ug/L | 330 | 150 | 71 | 50 U | 95 | 68 |
| Beryllium | 7440-41-7 | ug/L | 0.75 U | 6.4 | 0.75 U | 0.75 U | 0.93 | 0.75 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 3.5 U | 6 | 3.5 U | 3.5 U | 3.5 U | 3.5 U |
| Calcium | 7440-70-2 | ug/L | 160,000 | 18,000 | 200,000 | 7,300 | 19,000 | 69,000 |
| Chromium | 7440-47-3 | ug/L | 50 U | 4,700 | 50 U | 50 U | 50 U | 50 U |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U |
| Copper | 7440-50-8 | ug/L | 50 U | 50 U | 50 U | 50 U | 50 U | 50 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 28,000 | 5,800 | 3,700 | 290 | 8,800 | 1,500 |
| Lead | 7439-92-1 | ug/L | 4 U | 100 | 4 U | 4 U | 9 | 4 U |
| Magnesium | 7439-95-4 | ug/L | 45,000 | 46,000 | 500,000 | 2,000 U | 16,000 | 22,000 |
| Manganese | 7439-96-5 | ug/L | 3,700 | 230 | 300 | 40 U | 410 | 510 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-12/2/2009-MW-7S<br>11<br>12/02/09<br>MW7S | NJD981084668-12/3/2009-114-19A<br>9<br>12/03/09<br>114-MW19A | NJD981084668-12/3/2009-114-19B<br>47.5<br>12/03/09<br>114-MW19B | NJD981084668-12/3/2009-MW-8D<br>44<br>12/03/09<br>MW8D | NJD981084668-12/3/2009-MW-15D<br>39<br>12/03/09<br>MW15D | NJD981084668-12/3/2009-MW-15S<br>6<br>12/03/09<br>MW15S |
|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.7 U | 1 | 0.7 U | 0.7 U | 0.7 U | 0.7 U |
| Nickel | 7440-02-0 | ug/L | 50 U | 170 | 50 U | 50 U | 50 U | 50 U |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 34,000 | 230,000 | 220,000 | 17,000 | 27,000 | 6,800 |
| Selenium | 7782-49-2 | ug/L | 40 U | 40 U | 40 U | 40 U | 40 U | 40 U |
| Silver | 7440-22-4 | ug/L | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U |
| Sodium | 7440-23-5 | ug/L | 130,000 | 4,100,000 | 3,800,000 | 14,000 | 580,000 | 81,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 1.5 U | 7.5 U | 1.5 U | 1.5 U | 1.5 U | 1.5 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 50 U | 1,200 | 50 U | 50 U | 50 U | 50 U |
| Zinc | 7440-66-6 | ug/L | 150 | 210 | 50 U | 50 U | 63 | 50 U |
| **Metals-Filtered** | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-12/2/2009-MW-7S<br>11<br>12/02/09<br>MW7S | NJD981084668-12/3/2009-114-19A<br>9<br>12/03/09<br>114-MW19A | NJD981084668-12/3/2009-114-19B<br>47.5<br>12/03/09<br>114-MW19B | NJD981084668-12/3/2009-MW-8D<br>44<br>12/03/09<br>MW8D | NJD981084668-12/3/2009-MW-15D<br>39<br>12/03/09<br>MW15D | NJD981084668-12/3/2009-MW-15S<br>6<br>12/03/09<br>MW15S |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | 29,000 | 67,000 | 3,500 | 230 | 590 | 1,100 |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | 10 U | 80 | 10 U | 10 U | 10 U | 10 U |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | 10 U | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-12/2/2009-MW-7S<br>11<br>12/02/09<br>MW7S | NJD981084668-12/3/2009-114-19A<br>9<br>12/03/09<br>114-MW19A | NJD981084668-12/3/2009-114-19B<br>47.5<br>12/03/09<br>114-MW19B | NJD981084668-12/3/2009-MW-8D<br>44<br>12/03/09<br>MW8D | NJD981084668-12/3/2009-MW-15D<br>39<br>12/03/09<br>MW15D | NJD981084668-12/3/2009-MW-15S<br>6<br>12/03/09<br>MW15S |
|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | OSB-22I20060726 | OSB-22S20060727 | OSB-26I20060727 | OSB-26S20060727 | OSB-27I20060727 | OSB-27S20060727 | P4-VAP-1-19.0-23.0 | P4-VAP-1-30.0-32.0 | P4-VAP-2-13.0-17.0 | P4-VAP-2-22.0-26.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | 11 - 16 | 30 - 35 | 12 - 17 | 15 - 20 | 7 - 12 | 19 - 23 | 30 - 32 | 13 - 17 | 22 - 26 |
| Date Collected: | | | 07/26/06 | 07/27/06 | 07/27/06 | 07/27/06 | 07/27/06 | 07/27/06 | 05/10/15 | 05/10/15 | 05/14/15 | 05/14/15 |
| Location ID: | CAS Number | Units | OSB-22 | OSB-22 | OSB-26 | OSB-26 | OSB-27 | OSB-27 | P4-VAP-1 | P4-VAP-1 | P4-VAP-2 | P4-VAP-2 |
| **Volatile Organics** | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | OSB-22I20060726<br><br>07/26/06<br>OSB-22 | OSB-22S20060727<br>11 - 16<br>07/27/06<br>OSB-22 | OSB-26I20060727<br>30 - 35<br>07/27/06<br>OSB-26 | OSB-26S20060727<br>12 - 17<br>07/27/06<br>OSB-26 | OSB-27I20060727<br>15 - 20<br>07/27/06<br>OSB-27 | OSB-27S20060727<br>7 - 12<br>07/27/06<br>OSB-27 | P4-VAP-1-19.0-23.0<br>19 - 23<br>05/10/15<br>P4-VAP-1 | P4-VAP-1-30.0-32.0<br>30 - 32<br>05/10/15<br>P4-VAP-1 | P4-VAP-2-13.0-17.0<br>13 - 17<br>05/14/15<br>P4-VAP-2 | P4-VAP-2-22.0-26.0<br>22 - 26<br>05/14/15<br>P4-VAP-2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | OSB-22I20060726<br><br>07/26/06<br>OSB-22 | OSB-22S20060727<br>11 - 16<br>07/27/06<br>OSB-22 | OSB-26I20060727<br>30 - 35<br>07/27/06<br>OSB-26 | OSB-26S20060727<br>12 - 17<br>07/27/06<br>OSB-26 | OSB-27I20060727<br>15 - 20<br>07/27/06<br>OSB-27 | OSB-27S20060727<br>7 - 12<br>07/27/06<br>OSB-27 | P4-VAP-1-19.0-23.0<br>19 - 23<br>05/10/15<br>P4-VAP-1 | P4-VAP-1-30.0-32.0<br>30 - 32<br>05/10/15<br>P4-VAP-1 | P4-VAP-2-13.0-17.0<br>13 - 17<br>05/14/15<br>P4-VAP-2 | P4-VAP-2-22.0-26.0<br>22 - 26<br>05/14/15<br>P4-VAP-2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 84,000 | 12,400 | 74,600 | 139,000 | 18,300 | 6,460 | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 30 U | 30 U | 30 U | 35.2 | 6.0 U | 8.6 | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | 40 U | 85.0 | 40 U | 40 U | 38.5 | 8.0 U | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | 1,000 U | 1,000 U | 1,000 U | 1,000 U | 200 U | 200 U | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | 5.0 U | 5.0 U | 5.0 U | 6.8 | 1.0 U | 1.0 U | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 20 U | 20 U | 20 U | 20 U | 4.0 U | 4.0 U | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | 57,300 | 89,900 | 160,000 | 341,000 | 22,500 | 15,800 | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 7,010 | 1,080 | 2,980 | 20,600 | 181 | 13,600 | 143 | NA | 11,500 | 381 |
| Chromium VI | 18540-29-9 | ug/L | 50 U | 50 U | 510 | 10,500 | 50 U | 12,500 | 10 U | 510 | 5,600 | 10 U |
| Cobalt | 7440-48-4 | ug/L | 250 U | 250 U | 250 U | 683 | 50 U | 50 U | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | 366 | 164 | 372 | 406 | 55.9 | 25 U | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 99,700 J | 21,300 J | 163,000 J | 334,000 J | 36,600 J | 1,850 J | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | 330 | 124 | 192 | 365 | 20.4 | 3.5 | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | 148,000 | 168,000 | 116,000 | 293,000 | 27,500 | 5,000 U | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 1,510 | 621 | 4,680 | 4,190 | 1,260 | 15 U | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | OSB-22I20060726<br><br>07/26/06<br>OSB-22 | OSB-22S20060727<br>11 - 16<br>07/27/06<br>OSB-22 | OSB-26I20060727<br>30 - 35<br>07/27/06<br>OSB-26 | OSB-26S20060727<br>12 - 17<br>07/27/06<br>OSB-26 | OSB-27I20060727<br>15 - 20<br>07/27/06<br>OSB-27 | OSB-27S20060727<br>7 - 12<br>07/27/06<br>OSB-27 | P4-VAP-1-19.0-23.0<br>19 - 23<br>05/10/15<br>P4-VAP-1 | P4-VAP-1-30.0-32.0<br>30 - 32<br>05/10/15<br>P4-VAP-1 | P4-VAP-2-13.0-17.0<br>13 - 17<br>05/14/15<br>P4-VAP-2 | P4-VAP-2-22.0-26.0<br>22 - 26<br>05/14/15<br>P4-VAP-2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.44 | 0.40 U | 0.40 U | 0.64 | 0.20 U | 0.20 U | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 200 U | 200 U | 739 | 2,700 | 40.8 | 40 U | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 83,700 | 133,000 | 30,300 | 25,000 U | 16,100 | 9,220 | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | 50 U | 50 U | 50 U | 50 U | 10 U | 10 U | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | 50 U | 50 U | 50 U | 50 U | 10 U | 10 U | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | 1,280,000 | 2,500,000 | 178,000 | 109,000 | 162,000 | 115,000 | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 50 U | 50 U | 50 U | 50 U | 10 U | 10 U | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | 7,010 | 1,450 | 4,520 | 26,700 | 284 | 14,100 | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 250 U | 374 | 799 | 3,400 | 62.4 | 510 | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | 1,700 | 456 | 1,030 | 2,130 | 93.2 | 20 U | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 12.4 J |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 10 U |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | OSB-22I20060726<br><br>07/26/06<br>OSB-22 | OSB-22S20060727<br>11 - 16<br>07/27/06<br>OSB-22 | OSB-26I20060727<br>30 - 35<br>07/27/06<br>OSB-26 | OSB-26S20060727<br>12 - 17<br>07/27/06<br>OSB-26 | OSB-27I20060727<br>15 - 20<br>07/27/06<br>OSB-27 | OSB-27S20060727<br>7 - 12<br>07/27/06<br>OSB-27 | P4-VAP-1-19.0-23.0<br>19 - 23<br>05/10/15<br>P4-VAP-1 | P4-VAP-1-30.0-32.0<br>30 - 32<br>05/10/15<br>P4-VAP-1 | P4-VAP-2-13.0-17.0<br>13 - 17<br>05/14/15<br>P4-VAP-2 | P4-VAP-2-22.0-26.0<br>22 - 26<br>05/14/15<br>P4-VAP-2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | 322 | 321 | 327 | 372 |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | 7.76 | 8.64 | 8.01 | 7.09 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | CAS Number | Units | OSB-22I20060726 | OSB-22S20060727 | OSB-26I20060727 | OSB-26S20060727 | OSB-27I20060727 | OSB-27S20060727 | P4-VAP-1-19.0-23.0 | P4-VAP-1-30.0-32.0 | P4-VAP-2-13.0-17.0 | P4-VAP-2-22.0-26.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | 11 - 16 | 30 - 35 | 12 - 17 | 15 - 20 | 7 - 12 | 19 - 23 | 30 - 32 | 13 - 17 | 22 - 26 |
| Date Collected: | | | 07/26/06 | 07/27/06 | 07/27/06 | 07/27/06 | 07/27/06 | 07/27/06 | 05/10/15 | 05/10/15 | 05/14/15 | 05/14/15 |
| Location ID: | | | OSB-22 | OSB-22 | OSB-26 | OSB-26 | OSB-27 | OSB-27 | P4-VAP-1 | P4-VAP-1 | P4-VAP-2 | P4-VAP-2 |
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | 7,310 | 1,450 | 2,930 | 270 |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | 3 | 135 | 17 | 210 |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | 7.55 | 9.95 | 7.4 | 7.03 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | 22.43 | 18.21 | 17.59 | 16.72 |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | 3,114 | 130 | 3,466 | 2,859 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | P4-VAP-2-31.0-35.0 | P4-VAP-2-36.0-40.0 | P4-VAP-2-45.0-49.0 | P4-VAP-11-9.0-13.0 | P4-VAP-11-13.0-17.0 | P4-VAP-11-20.0-24.0 | P4-VAP-11-28.0-32.0 | P4-VAP-11-34.0-37.0 | P4-VAP-11-41.0-45.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 31 - 35 | 36 - 40 | 45 - 49 | 9 - 13 | 13 - 17 | 20 - 24 | 28 - 32 | 34 - 37 | 41 - 45 |
| Date Collected: | | | 05/14/15 | 05/15/15 | 05/15/15 | 06/10/15 | 06/10/15 | 06/10/15 | 06/10/15 | 06/10/15 | 06/10/15 |
| Location ID: | CAS Number | Units | P4-VAP-2 | P4-VAP-2 | P4-VAP-2 | P4-VAP-11 | P4-VAP-11 | P4-VAP-11 | P4-VAP-11 | P4-VAP-11 | P4-VAP-11 |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | P4-VAP-2-31.0-35.0<br>31 - 35<br>05/14/15<br>P4-VAP-2 | P4-VAP-2-36.0-40.0<br>36 - 40<br>05/15/15<br>P4-VAP-2 | P4-VAP-2-45.0-49.0<br>45 - 49<br>05/15/15<br>P4-VAP-2 | P4-VAP-11-9.0-13.0<br>9 - 13<br>06/10/15<br>P4-VAP-11 | P4-VAP-11-13.0-17.0<br>13 - 17<br>06/10/15<br>P4-VAP-11 | P4-VAP-11-20.0-24.0<br>20 - 24<br>06/10/15<br>P4-VAP-11 | P4-VAP-11-28.0-32.0<br>28 - 32<br>06/10/15<br>P4-VAP-11 | P4-VAP-11-34.0-37.0<br>34 - 37<br>06/10/15<br>P4-VAP-11 | P4-VAP-11-41.0-45.0<br>41 - 45<br>06/10/15<br>P4-VAP-11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | P4-VAP-2-31.0-35.0<br>31 - 35<br>05/14/15<br>P4-VAP-2 | P4-VAP-2-36.0-40.0<br>36 - 40<br>05/15/15<br>P4-VAP-2 | P4-VAP-2-45.0-49.0<br>45 - 49<br>05/15/15<br>P4-VAP-2 | P4-VAP-11-9.0-13.0<br>9 - 13<br>06/10/15<br>P4-VAP-11 | P4-VAP-11-13.0-17.0<br>13 - 17<br>06/10/15<br>P4-VAP-11 | P4-VAP-11-20.0-24.0<br>20 - 24<br>06/10/15<br>P4-VAP-11 | P4-VAP-11-28.0-32.0<br>28 - 32<br>06/10/15<br>P4-VAP-11 | P4-VAP-11-34.0-37.0<br>34 - 37<br>06/10/15<br>P4-VAP-11 | P4-VAP-11-41.0-45.0<br>41 - 45<br>06/10/15<br>P4-VAP-11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 95.1 | 54,500 | 1,350 | 68.4 | NA | 261 | 1,030 | 232,000 J | 334,000 J |
| Chromium VI | 18540-29-9 | ug/L | 10 U | 48,900 | 14 | 10 U | 210 | 10 U | 73 | 300,000 J | 409,000 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | P4-VAP-2-31.0-35.0<br>31 - 35<br>05/14/15<br>P4-VAP-2 | P4-VAP-2-36.0-40.0<br>36 - 40<br>05/15/15<br>P4-VAP-2 | P4-VAP-2-45.0-49.0<br>45 - 49<br>05/15/15<br>P4-VAP-2 | P4-VAP-11-9.0-13.0<br>9 - 13<br>06/10/15<br>P4-VAP-11 | P4-VAP-11-13.0-17.0<br>13 - 17<br>06/10/15<br>P4-VAP-11 | P4-VAP-11-20.0-24.0<br>20 - 24<br>06/10/15<br>P4-VAP-11 | P4-VAP-11-28.0-32.0<br>28 - 32<br>06/10/15<br>P4-VAP-11 | P4-VAP-11-34.0-37.0<br>34 - 37<br>06/10/15<br>P4-VAP-11 | P4-VAP-11-41.0-45.0<br>41 - 45<br>06/10/15<br>P4-VAP-11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 17.8 | NA | 17.2 J | 12.7 J | NA | 76.3 | 164 | 282,000 J | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 U | NA | 10 U | 6.1 J | NA | 10 U | 54 | 264,000 J | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | P4-VAP-2-31.0-35.0<br>31 - 35<br>05/14/15<br>P4-VAP-2 | P4-VAP-2-36.0-40.0<br>36 - 40<br>05/15/15<br>P4-VAP-2 | P4-VAP-2-45.0-49.0<br>45 - 49<br>05/15/15<br>P4-VAP-2 | P4-VAP-11-9.0-13.0<br>9 - 13<br>06/10/15<br>P4-VAP-11 | P4-VAP-11-13.0-17.0<br>13 - 17<br>06/10/15<br>P4-VAP-11 | P4-VAP-11-20.0-24.0<br>20 - 24<br>06/10/15<br>P4-VAP-11 | P4-VAP-11-28.0-32.0<br>28 - 32<br>06/10/15<br>P4-VAP-11 | P4-VAP-11-34.0-37.0<br>34 - 37<br>06/10/15<br>P4-VAP-11 | P4-VAP-11-41.0-45.0<br>41 - 45<br>06/10/15<br>P4-VAP-11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 378 | 392 | 416 | 401 | 364 | 408 | 415 | 424 | 425 |
| pH | ARC-pH | SU | 7.12 | 7.61 | 7.63 | 7.09 | 9.40 | 6.82 | 7.09 | 7.09 | 6.89 |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | P4-VAP-2-31.0-35.0<br>31 - 35<br>05/14/15<br>P4-VAP-2 | P4-VAP-2-36.0-40.0<br>36 - 40<br>05/15/15<br>P4-VAP-2 | P4-VAP-2-45.0-49.0<br>45 - 49<br>05/15/15<br>P4-VAP-2 | P4-VAP-11-9.0-13.0<br>9 - 13<br>06/10/15<br>P4-VAP-11 | P4-VAP-11-13.0-17.0<br>13 - 17<br>06/10/15<br>P4-VAP-11 | P4-VAP-11-20.0-24.0<br>20 - 24<br>06/10/15<br>P4-VAP-11 | P4-VAP-11-28.0-32.0<br>28 - 32<br>06/10/15<br>P4-VAP-11 | P4-VAP-11-34.0-37.0<br>34 - 37<br>06/10/15<br>P4-VAP-11 | P4-VAP-11-41.0-45.0<br>41 - 45<br>06/10/15<br>P4-VAP-11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 50 | 1,970 | 1,640 | 90 | 2,600 | 160 | 740 | 400 | 370 |
| Oxidation Reduction Potential | ARC-ORP | mV | 334 | 371 | 576 | 181 | 120 | 275 | 108 | 118 | 102 |
| pH | ARC-pH | SU | 7.14 | 8.32 | 8.16 | 7.37 | 9.96 | 6.83 | 7.16 | 7.29 | 7.05 |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 17.42 | 14.82 | 17.44 | 16.03 | 20.73 | 18.04 | 19.46 | 20.95 | 21.27 |
| Turbidity | ARC-Turb | NTU | 54 | 32 | 1,028 | 1,141 | NA | 1,992 | 2,663 | NA | 357 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | P4-VAP-11-45.0-48.0<br>45 - 48<br>06/10/15<br>P4-VAP-11 | PPG-114-MW4DJ53993-5<br>86.5 - 107<br>02/15/07<br>114-MW4D | PPG114-MW4DJ60618-4<br>86.5 - 107<br>05/09/07<br>114-MW4D | PPG-114-MW6D-108.5J53993-1<br>86 - 111<br>02/15/07<br>114-MW6D | PPG114-MW6DJ60618-5<br>86 - 111<br>05/09/07<br>114-MW6D | PPG-114-MW7DJ53993-2<br>85 - 90<br>02/15/07<br>114-MW7D | PPG114-MW7DJ60618-7<br>85 - 90<br>05/09/07<br>114-MW7D |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | P4-VAP-11-45.0-48.0<br>45 - 48<br>06/10/15<br>P4-VAP-11 | PPG-114-MW4DJ53993-5<br>86.5 - 107<br>02/15/07<br>114-MW4D | PPG114-MW4DJ60618-4<br>86.5 - 107<br>05/09/07<br>114-MW4D | PPG-114-MW6D-108.5J53993-1<br>86 - 111<br>02/15/07<br>114-MW6D | PPG114-MW6DJ60618-5<br>86 - 111<br>05/09/07<br>114-MW6D | PPG-114-MW7DJ53993-2<br>85 - 90<br>02/15/07<br>114-MW7D | PPG114-MW7DJ60618-7<br>85 - 90<br>05/09/07<br>114-MW7D |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | P4-VAP-11-45.0-48.0<br>45 - 48<br>06/10/15<br>P4-VAP-11 | PPG-114-MW4DJ53993-5<br>86.5 - 107<br>02/15/07<br>114-MW4D | PPG114-MW4DJ60618-4<br>86.5 - 107<br>05/09/07<br>114-MW4D | PPG-114-MW6D-108.5J53993-1<br>86 - 111<br>02/15/07<br>114-MW6D | PPG114-MW6DJ60618-5<br>86 - 111<br>05/09/07<br>114-MW6D | PPG-114-MW7DJ53993-2<br>85 - 90<br>02/15/07<br>114-MW7D | PPG114-MW7DJ60618-7<br>85 - 90<br>05/09/07<br>114-MW7D |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 34,100 | 4,990 | 832 | 200 U | 3,870 [4,860] | 200 U |
| Antimony | 7440-36-0 | ug/L | NA | 6.0 U | 6 U | 6.0 U | 6 U | 6.0 U [6.9] | 6 U |
| Arsenic | 7440-38-2 | ug/L | NA | 8.0 U | 8 U | 11.5 | 8 U | 22.0 [25.2] | 26.2 |
| Barium | 7440-39-3 | ug/L | NA | 200 U | 200 U | 200 U | 200 U | 200 U [200 U] | 200 U |
| Beryllium | 7440-41-7 | ug/L | NA | 1.0 U | 1 U | 1.0 U | 1 U | 1.0 U [1 U] | 1 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 4.0 U | 4 U | 4.0 U | 4 U | 4.0 U [4 U] | 4 U |
| Calcium | 7440-70-2 | ug/L | NA | 67,700 | 23,000 J | 5,000 U | 5,000 UJ | 91,300 [90,500] | 76,800 J |
| Chromium | 7440-47-3 | ug/L | 75,700 J | 278 | 44.4 J | 22.1 | 10 UJ | 25.2 [29.5] | 15.5 J |
| Chromium VI | 18540-29-9 | ug/L | 77,600 J | 10 U | 10 UJ | 10 U | 10 U | 10 U [10 U] | 10 UJ |
| Cobalt | 7440-48-4 | ug/L | NA | 50 U | 50 U | 50 U | 50 U | 50 U [50 U] | 50 U |
| Copper | 7440-50-8 | ug/L | NA | 104 | 25 UJ | 25 U | 25 UJ | 25 U [25 U] | 25 UJ |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 73,400 | 11,400 | 1,610 | 1,440 | 4,710 [5,580] | 209 |
| Lead | 7439-92-1 | ug/L | NA | 3.0 U | 3 UJ | 3.0 U | 3 UJ | 25.2 [29.9] | 3 UJ |
| Magnesium | 7439-95-4 | ug/L | NA | 57,900 | 8,570 J | 5,000 U | 5,000 UJ | 26,600 [27,500] | 26,500 J |
| Manganese | 7439-96-5 | ug/L | NA | 1,100 | 190 | 19.0 | 15 U | 229 [246] | 71.5 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | P4-VAP-11-45.0-48.0<br>45 - 48<br>06/10/15<br>P4-VAP-11 | PPG-114-MW4DJ53993-5<br>86.5 - 107<br>02/15/07<br>114-MW4D | PPG114-MW4DJ60618-4<br>86.5 - 107<br>05/09/07<br>114-MW4D | PPG-114-MW6D-108.5J53993-1<br>86 - 111<br>02/15/07<br>114-MW6D | PPG114-MW6DJ60618-5<br>86 - 111<br>05/09/07<br>114-MW6D | PPG-114-MW7DJ53993-2<br>85 - 90<br>02/15/07<br>114-MW7D | PPG114-MW7DJ60618-7<br>85 - 90<br>05/09/07<br>114-MW7D |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.20 U | 0.2 U | 0.20 U | 0.2 U | 0.20 U [0.2 U] | 0.2 U |
| Nickel | 7440-02-0 | ug/L | NA | 121 | 40 U | 40 U | 40 U | 40 U [40 U] | 40 U |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 16,100 | 10,900 | 81,100 | 56,600 | 9,220 [9,620] | 10,200 |
| Selenium | 7782-49-2 | ug/L | NA | 10 U | 10 U | 10 U | 10 U | 10 U [10 U] | 10 U |
| Silver | 7440-22-4 | ug/L | NA | 10 U | 10 U | 10 U | 10 U | 10 U [10 U] | 10 U |
| Sodium | 7440-23-5 | ug/L | NA | 44,200 | 46,000 J | 116,000 | 114,000 J | 76,200 [78,700] | 87,900 J |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 10 U | 10 U | 10 U | 10 U | 10 U [10 U] | 10 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | 501 | 44.4 | 22.1 | 50 U | 25.2 [36.4] | 15.5 |
| Vanadium | 7440-62-2 | ug/L | NA | 102 | 50 U | 50 U | 50 U | 50 U [50 U] | 50 U |
| Zinc | 7440-66-6 | ug/L | NA | 71.9 | 20 J | 20 U | 20 UJ | 56.2 [73.6] | 20 UJ |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | P4-VAP-11-45.0-48.0<br>45 - 48<br>06/10/15<br>P4-VAP-11 | PPG-114-MW4DJ53993-5<br>86.5 - 107<br>02/15/07<br>114-MW4D | PPG114-MW4DJ60618-4<br>86.5 - 107<br>05/09/07<br>114-MW4D | PPG-114-MW6D-108.5J53993-1<br>86 - 111<br>02/15/07<br>114-MW6D | PPG114-MW6DJ60618-5<br>86 - 111<br>05/09/07<br>114-MW6D | PPG-114-MW7DJ53993-2<br>85 - 90<br>02/15/07<br>114-MW7D | PPG114-MW7DJ60618-7<br>85 - 90<br>05/09/07<br>114-MW7D |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 418 | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | 7.50 | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | P4-VAP-11-45.0-48.0<br>45 - 48<br>06/10/15<br>P4-VAP-11 | PPG-114-MW4DJ53993-5<br>86.5 - 107<br>02/15/07<br>114-MW4D | PPG114-MW4DJ60618-4<br>86.5 - 107<br>05/09/07<br>114-MW4D | PPG-114-MW6D-108.5J53993-1<br>86 - 111<br>02/15/07<br>114-MW6D | PPG114-MW6DJ60618-5<br>86 - 111<br>05/09/07<br>114-MW6D | PPG-114-MW7DJ53993-2<br>85 - 90<br>02/15/07<br>114-MW7D | PPG114-MW7DJ60618-7<br>85 - 90<br>05/09/07<br>114-MW7D |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | 330 | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 260 | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | 7.85 | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | 19.21 | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | 48 | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW-14AJ53807-1<br>2.5 - 12<br>02/13/07<br>114-MW14A | PPG114-MW14AJ61161-2<br>2.5 - 12.5<br>05/14/07<br>114-MW14A | PPG-114-MW-14BJ53807-2<br>28 - 33<br>02/13/07<br>114-MW14B | PPG114-MW14BJ61161-3<br>28 - 33<br>05/14/07<br>114-MW14B | PPG-114-MW-15AJ53807-3<br>2.5 - 6<br>02/13/07<br>114-MW15A | PPG114-MW15AJ60618-22<br>2.5 - 6<br>05/11/07<br>114-MW15A | PPG114-MW16AJ54227-4<br>7.25 - 14.5<br>02/20/07<br>114-MW16A |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | 0.28 U |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW-14AJ53807-1<br>2.5 - 12<br>02/13/07<br>114-MW14A | PPG114-MW14AJ61161-2<br>2.5 - 12.5<br>05/14/07<br>114-MW14A | PPG-114-MW-14BJ53807-2<br>28 - 33<br>02/13/07<br>114-MW14B | PPG114-MW14BJ61161-3<br>28 - 33<br>05/14/07<br>114-MW14B | PPG-114-MW-15AJ53807-3<br>2.5 - 6<br>02/13/07<br>114-MW15A | PPG114-MW15AJ60618-22<br>2.5 - 6<br>05/11/07<br>114-MW15A | PPG114-MW16AJ54227-4<br>7.25 - 14.5<br>02/20/07<br>114-MW16A |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW-14AJ53807-1<br>2.5 - 12<br>02/13/07<br>114-MW14A | PPG114-MW14AJ61161-2<br>2.5 - 12.5<br>05/14/07<br>114-MW14A | PPG-114-MW-14BJ53807-2<br>28 - 33<br>02/13/07<br>114-MW14B | PPG114-MW14BJ61161-3<br>28 - 33<br>05/14/07<br>114-MW14B | PPG-114-MW-15AJ53807-3<br>2.5 - 6<br>02/13/07<br>114-MW15A | PPG114-MW15AJ60618-22<br>2.5 - 6<br>05/11/07<br>114-MW15A | PPG114-MW16AJ54227-4<br>7.25 - 14.5<br>02/20/07<br>114-MW16A |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 438 | 1,030 | 200 U | 200 U | 10,000 | 1,650 JF | 3,330 |
| Antimony | 7440-36-0 | ug/L | 6.0 U | 6 U | 6.0 U | 6 U | 6.0 U | 6 U | 6.0 U |
| Arsenic | 7440-38-2 | ug/L | 8.7 | 8 U | 10.2 | 8 U | 8.0 U | 8 U | 8.3 |
| Barium | 7440-39-3 | ug/L | 200 U | 200 U | 200 U | 200 U | 200 U | 200 U | 200 U |
| Beryllium | 7440-41-7 | ug/L | 1.0 U | 1 U | 1.0 U | 1 U | 1.0 U | 1 U | 1.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 4.0 U | 4 U | 4.0 U | 4 U | 4.0 U | 4 U | 4.0 U |
| Calcium | 7440-70-2 | ug/L | 82,300 | 86,500 | 51,800 | 156,000 | 167,000 | 86,700 J | 75,200 |
| Chromium | 7440-47-3 | ug/L | 10 U | 15.3 J | 240 | 11 J | 304 | 156 J | 69.1 |
| Chromium VI | 18540-29-9 | ug/L | 10 U | 17 | 200 | 10 U | 10 U | 10 UJ | 66 |
| Cobalt | 7440-48-4 | ug/L | 50 U | 50 U | 50 U | 50 U | 50 U | 50 U | 50 U |
| Copper | 7440-50-8 | ug/L | 25 U | 25 U | 25 U | 25 U | 43.0 | 44.6 J | 25 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 4,710 | 6,880 | 100 U | 124 | 12,800 | 2,300 | 4,220 |
| Lead | 7439-92-1 | ug/L | 3.0 U | 3 U | 3.0 U | 3 U | 11.6 | 6.4 J | 10.8 |
| Magnesium | 7439-95-4 | ug/L | 7,280 | 5,000 U | 5,380 | 28,000 | 23,400 | 9,680 J | 14,400 |
| Manganese | 7439-96-5 | ug/L | 1,880 | 2,360 | 228 | 2,980 | 543 | 77.7 | 1,440 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW-14AJ53807-1<br>2.5 - 12<br>02/13/07<br>114-MW14A | PPG114-MW14AJ61161-2<br>2.5 - 12.5<br>05/14/07<br>114-MW14A | PPG-114-MW-14BJ53807-2<br>28 - 33<br>02/13/07<br>114-MW14B | PPG114-MW14BJ61161-3<br>28 - 33<br>05/14/07<br>114-MW14B | PPG-114-MW-15AJ53807-3<br>2.5 - 6<br>02/13/07<br>114-MW15A | PPG114-MW15AJ60618-22<br>2.5 - 6<br>05/11/07<br>114-MW15A | PPG114-MW16AJ54227-4<br>7.25 - 14.5<br>02/20/07<br>114-MW16A |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | 0.2 U | 0.20 U | 0.2 U | 0.20 U | 0.2 U | 0.20 U |
| Nickel | 7440-02-0 | ug/L | 40 U | 40 U | 40 U | 40 U | 199 | 87.7 | 40 U |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 23,000 | 30,800 J | 32,300 | 13,300 J | 6,560 | 8,070 | 5,180 |
| Selenium | 7782-49-2 | ug/L | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Silver | 7440-22-4 | ug/L | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Sodium | 7440-23-5 | ug/L | 37,900 | 64,500 | 89,300 | 65,600 | 40,900 | 26,600 J | 34,800 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Total CCPW Metals | CCPW-M | ug/L | 50 U | 15.3 | 293 | 11 | 503 | 244 | 69.1 |
| Vanadium | 7440-62-2 | ug/L | 50 U | 50 U | 52.6 | 50 U | 50 U | 50 U | 50 U |
| Zinc | 7440-66-6 | ug/L | 20 U | 20 U | 20 U | 67.4 | 114 | 83.1 J | 37.7 |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW-14AJ53807-1<br>2.5 - 12<br>02/13/07<br>114-MW14A | PPG114-MW14AJ61161-2<br>2.5 - 12.5<br>05/14/07<br>114-MW14A | PPG-114-MW-14BJ53807-2<br>28 - 33<br>02/13/07<br>114-MW14B | PPG114-MW14BJ61161-3<br>28 - 33<br>05/14/07<br>114-MW14B | PPG-114-MW-15AJ53807-3<br>2.5 - 6<br>02/13/07<br>114-MW15A | PPG114-MW15AJ60618-22<br>2.5 - 6<br>05/11/07<br>114-MW15A | PPG114-MW16AJ54227-4<br>7.25 - 14.5<br>02/20/07<br>114-MW16A |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | 10 U | NA | 10 U | NA | 10 U | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW-14AJ53807-1<br>2.5 - 12<br>02/13/07<br>114-MW14A | PPG114-MW14AJ61161-2<br>2.5 - 12.5<br>05/14/07<br>114-MW14A | PPG-114-MW-14BJ53807-2<br>28 - 33<br>02/13/07<br>114-MW14B | PPG114-MW14BJ61161-3<br>28 - 33<br>05/14/07<br>114-MW14B | PPG-114-MW-15AJ53807-3<br>2.5 - 6<br>02/13/07<br>114-MW15A | PPG114-MW15AJ60618-22<br>2.5 - 6<br>05/11/07<br>114-MW15A | PPG114-MW16AJ54227-4<br>7.25 - 14.5<br>02/20/07<br>114-MW16A |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG114-MW16AJ60618-21<br>2 - 17<br>05/11/07<br>114-MW16A | PPG114-MW16BJ54227-3<br>31.29 - 33<br>02/20/07<br>114-MW16B | PPG114-MW16BJ60618-20<br>30 - 35<br>05/11/07<br>114-MW16B | PPG-114-MW19AJ54090-3<br><br>02/16/07<br>114-MW19A | PPG114-MW19AJ60618-13<br>3 - 15<br>05/10/07<br>114-MW19A | PPG-114-MW19BJ54090-2<br><br>02/16/07<br>114-MW19B | PPG114-MW19BJ60618-15<br>45 - 50<br>05/10/07<br>114-MW19B |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | 0.28 U | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG114-MW16AJ60618-21<br>2 - 17<br>05/11/07<br>114-MW16A | PPG114-MW16BJ54227-3<br>31.29 - 33<br>02/20/07<br>114-MW16B | PPG114-MW16BJ60618-20<br>30 - 35<br>05/11/07<br>114-MW16B | PPG-114-MW19AJ54090-3<br><br>02/16/07<br>114-MW19A | PPG114-MW19AJ60618-13<br>3 - 15<br>05/10/07<br>114-MW19A | PPG-114-MW19BJ54090-2<br><br>02/16/07<br>114-MW19B | PPG114-MW19BJ60618-15<br>45 - 50<br>05/10/07<br>114-MW19B |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG114-MW16AJ60618-21<br>2 - 17<br>05/11/07<br>114-MW16A | PPG114-MW16BJ54227-3<br>31.29 - 33<br>02/20/07<br>114-MW16B | PPG114-MW16BJ60618-20<br>30 - 35<br>05/11/07<br>114-MW16B | PPG-114-MW19AJ54090-3<br><br>02/16/07<br>114-MW19A | PPG114-MW19AJ60618-13<br>3 - 15<br>05/10/07<br>114-MW19A | PPG-114-MW19BJ54090-2<br><br>02/16/07<br>114-MW19B | PPG114-MW19BJ60618-15<br>45 - 50<br>05/10/07<br>114-MW19B |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 3,740 | 3,310 | 1,070 JF | 1,910 | 2,120 JF | 200 U | 232 BF |
| Antimony | 7440-36-0 | ug/L | 6 U | 6.0 U | 6 U | 30 U | 30 U | 6.0 U | 6 U |
| Arsenic | 7440-38-2 | ug/L | 8 U | 18.6 | 23.5 | 76.3 | 137 | 14.9 U | 8 U |
| Barium | 7440-39-3 | ug/L | 200 U | 200 U | 200 U | 1,000 U | 1,000 U | 200 U | 200 U |
| Beryllium | 7440-41-7 | ug/L | 1 U | 1.0 U | 1 U | 5.0 U | 5 U | 1.0 U | 1 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 4 U | 4.0 U | 4 U | 20 U | 20 U | 4.0 U | 4 U |
| Calcium | 7440-70-2 | ug/L | 74,600 J | 34,700 | 15,000 | 101,000 | 82,400 J | 449,000 | 262,000 J |
| Chromium | 7440-47-3 | ug/L | 32.6 J | 1,820 | 104 | 3,490 | 5,260 J | 10 U | 269 J |
| Chromium VI | 18540-29-9 | ug/L | 10 UJ | 3,000 | 200 J | 330 J | 10 UJ | 10 UJ | 10 UJ |
| Cobalt | 7440-48-4 | ug/L | 50 UJ | 50 U | 50 U | 250 U | 250 U | 50 U | 50 U |
| Copper | 7440-50-8 | ug/L | 25 UJ | 34.6 | 25 U | 130 U | 309 J | 25 U | 25 UJ |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 3,890 | 4,110 | 610 JF | 2,700 | 6,230 | 2,240 | 3,010 |
| Lead | 7439-92-1 | ug/L | 16.6 J | 6.7 | 3 UJ | 28.4 | 84 J | 3.0 U | 3 UJ |
| Magnesium | 7439-95-4 | ug/L | 9,640 J | 5,000 U | 5,000 U | 31,300 | 54,200 J | 410,000 | 454,000 J |
| Manganese | 7439-96-5 | ug/L | 631 | 95.3 | 19 | 75 U | 196 | 151 | 206 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG114-MW16AJ60618-21<br>2 - 17<br>05/11/07<br>114-MW16A | PPG114-MW16BJ54227-3<br>31.29 - 33<br>02/20/07<br>114-MW16B | PPG114-MW16BJ60618-20<br>30 - 35<br>05/11/07<br>114-MW16B | PPG-114-MW19AJ54090-3<br><br>02/16/07<br>114-MW19A | PPG114-MW19AJ60618-13<br>3 - 15<br>05/10/07<br>114-MW19A | PPG-114-MW19BJ54090-2<br><br>02/16/07<br>114-MW19B | PPG114-MW19BJ60618-15<br>45 - 50<br>05/10/07<br>114-MW19B |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.2 U | 0.20 U | 0.2 U | 0.58 | 1.2 | 0.20 U | 0.2 U |
| Nickel | 7440-02-0 | ug/L | 40 U | 212 | 56.5 | 200 U | 253 | 40 U | 83.7 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 6,830 | 111,000 | 53,000 | 102,000 | 201,000 | 230,000 | 163,000 |
| Selenium | 7782-49-2 | ug/L | 10 U | 10 U | 10 U | 50 U | 50 U | 10 U | 10 U |
| Silver | 7440-22-4 | ug/L | 10 U | 10 U | 10 U | 50 U | 50 U | 10 U | 10 U |
| Sodium | 7440-23-5 | ug/L | 31,100 J | 141,000 | 71,100 | 2,270,000 | 4,170,000 J | 4,010,000 | 4,450,000 J |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 10 U | 10 U | 10 U | 50 U | 50 U | 10 U | 10 U |
| Total CCPW Metals | CCPW-M | ug/L | 32.6 | 2,130 | 241 | 4,080 | 6,860 | 50 U | 353 |
| Vanadium | 7440-62-2 | ug/L | 50 U | 102 | 80.6 | 591 | 1,350 | 50 U | 50 U |
| Zinc | 7440-66-6 | ug/L | 49.7 J | 26.4 | 20 U | 118 | 313 J | 20 U | 20 UJ |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

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|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

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|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

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| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW19CJ54090-1<br><br>02/16/07<br>114-MW19C | PPG114-MW19CJ60618-14<br>96 - 102<br>05/10/07<br>114-MW19C | PPG-114-MW-20A<br><br>08/10/15<br>114-MW20A | PPG-114-MW20AJ54090-5<br><br>02/16/07<br>114-MW20A | PPG114-MW20AJ60618-18<br>3 - 15<br>05/11/07<br>114-MW20A | PPG-114-MW20BJ54090-4<br><br>02/16/07<br>114-MW20B | PPG114-MW20BJ60618-17<br>35 - 40<br>05/11/07<br>114-MW20B |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | 5.0 U | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | 2.0 U | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | 10 U | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | 5.0 U | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | 10 U | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | 0.50 U | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | 2.0 U | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | 2.0 U | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | 2.0 U | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | 2.0 U | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | 1.0 UJ | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | 5.0 U | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | 2.0 U | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | 5.0 U | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | 5.0 U | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | 5.0 U | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | 5.0 U | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | 10 U | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW19CJ54090-1<br><br>02/16/07<br>114-MW19C | PPG114-MW19CJ60618-14<br>96 - 102<br>05/10/07<br>114-MW19C | PPG-114-MW-20A<br><br>08/10/15<br>114-MW20A | PPG-114-MW20AJ54090-5<br><br>02/16/07<br>114-MW20A | PPG114-MW20AJ60618-18<br>3 - 15<br>05/11/07<br>114-MW20A | PPG-114-MW20BJ54090-4<br><br>02/16/07<br>114-MW20B | PPG114-MW20BJ60618-17<br>35 - 40<br>05/11/07<br>114-MW20B |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW19CJ54090-1<br><br>02/16/07<br>114-MW19C | PPG114-MW19CJ60618-14<br>96 - 102<br>05/10/07<br>114-MW19C | PPG-114-MW-20A<br><br>08/10/15<br>114-MW20A | PPG-114-MW20AJ54090-5<br><br>02/16/07<br>114-MW20A | PPG114-MW20AJ60618-18<br>3 - 15<br>05/11/07<br>114-MW20A | PPG-114-MW20BJ54090-4<br><br>02/16/07<br>114-MW20B | PPG114-MW20BJ60618-17<br>35 - 40<br>05/11/07<br>114-MW20B |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 262,000 | 24,800 | NA | 5,600 | 2,590 [2,170 JF] | 972 | 670 U |
| Antimony | 7440-36-0 | ug/L | 30 U | 6 U | NA | 6.0 U | 6 U [6 U] | 12 U | 21 |
| Arsenic | 7440-38-2 | ug/L | 93.4 | 28.2 | NA | 75.4 | 45.9 [40.2] | 78.4 | 102 |
| Barium | 7440-39-3 | ug/L | 1,110 | 282 | NA | 200 U | 200 U [200 U] | 400 U | 670 U |
| Beryllium | 7440-41-7 | ug/L | 22.2 | 2.2 | NA | 1.0 U | 1 U [1 U] | 2.0 U | 3.3 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 20 U | 4 U | NA | 4.0 U | 4 U [4 U] | 8.0 U | 13 U |
| Calcium | 7440-70-2 | ug/L | 192,000 | 163,000 J | NA | 5,000 U | 27,600 J [26,000 J] | 80,600 | 34,700 J |
| Chromium | 7440-47-3 | ug/L | 440 | 55.9 J | NA | 84.7 | 46.8 J [54.9 J] | 66,500 | 56,500 J |
| Chromium VI | 18540-29-9 | ug/L | 10 UJ | 10 U | NA | 10 UJ | 10 UJ [10 UJ] | 47,800 J | 54,100 J |
| Cobalt | 7440-48-4 | ug/L | 250 U | 50 U | NA | 50 U | 50 U [50 U] | 100 U | 170 U |
| Copper | 7440-50-8 | ug/L | 264 | 64.1 J | NA | 51.8 | 35.4 J [25 UJ] | 50 U | 83 UJ |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 260,000 | 27,000 | NA | 893 | 312 BF [278 BF] | 200 U | 330 U |
| Lead | 7439-92-1 | ug/L | 321 | 50.7 J | NA | 184 | 108 J [63.1 J] | 6.0 U | 10 UJ |
| Magnesium | 7439-95-4 | ug/L | 110,000 | 35,500 J | NA | 5,000 U | 5,000 UJ [5,000 UJ] | 10,000 U | 17,000 UJ |
| Manganese | 7439-96-5 | ug/L | 5,410 | 1,230 | NA | 15 U | 37.6 [28.4] | 30 U | 50 U |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW19CJ54090-1<br><br>02/16/07<br>114-MW19C | PPG114-MW19CJ60618-14<br>96 - 102<br>05/10/07<br>114-MW19C | PPG-114-MW-20A<br><br>08/10/15<br>114-MW20A | PPG-114-MW20AJ54090-5<br><br>02/16/07<br>114-MW20A | PPG114-MW20AJ60618-18<br>3 - 15<br>05/11/07<br>114-MW20A | PPG-114-MW20BJ54090-4<br><br>02/16/07<br>114-MW20B | PPG114-MW20BJ60618-17<br>35 - 40<br>05/11/07<br>114-MW20B |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 8.0 U | 0.2 U | NA | 1.1 | 0.41 [0.54] | 0.20 U | 0.2 U |
| Nickel | 7440-02-0 | ug/L | 238 | 40 U | NA | 40 U | 40 U [40 U] | 80 U | 130 U |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 107,000 | 17,800 | NA | 27,100 | 15,500 [14,200] | 138,000 | 229,000 |
| Selenium | 7782-49-2 | ug/L | 50 U | 10 U | NA | 10 U | 10 U [10 U] | 20 U | 33 U |
| Silver | 7440-22-4 | ug/L | 50 U | 10 U | NA | 10 U | 10 U [10 U] | 20 U | 33 U |
| Sodium | 7440-23-5 | ug/L | 164,000 | 343,000 J | NA | 319,000 | 247,000 J [218,000 J] | 314,000 | 288,000 J |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 50 U | 10 U | NA | 10 U | 10 U [10 U] | 20 U | 33 U |
| Total CCPW Metals | CCPW-M | ug/L | 934 | 55.9 | NA | 84.7 | 104 [124] | 66,600 | 56,500 |
| Vanadium | 7440-62-2 | ug/L | 256 | 50 U | NA | 50 U | 57.1 [69.4] | 100 | 170 U |
| Zinc | 7440-66-6 | ug/L | 983 | 161 J | NA | 135 | 80.7 J [46.4 J] | 40 U | 67 UJ |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW19CJ54090-1<br><br>02/16/07<br>114-MW19C | PPG114-MW19CJ60618-14<br>96 - 102<br>05/10/07<br>114-MW19C | PPG-114-MW-20A<br><br>08/10/15<br>114-MW20A | PPG-114-MW20AJ54090-5<br><br>02/16/07<br>114-MW20A | PPG114-MW20AJ60618-18<br>3 - 15<br>05/11/07<br>114-MW20A | PPG-114-MW20BJ54090-4<br><br>02/16/07<br>114-MW20B | PPG114-MW20BJ60618-17<br>35 - 40<br>05/11/07<br>114-MW20B |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW19CJ54090-1<br><br>02/16/07<br>114-MW19C | PPG114-MW19CJ60618-14<br>96 - 102<br>05/10/07<br>114-MW19C | PPG-114-MW-20A<br><br>08/10/15<br>114-MW20A | PPG-114-MW20AJ54090-5<br><br>02/16/07<br>114-MW20A | PPG114-MW20AJ60618-18<br>3 - 15<br>05/11/07<br>114-MW20A | PPG-114-MW20BJ54090-4<br><br>02/16/07<br>114-MW20B | PPG114-MW20BJ60618-17<br>35 - 40<br>05/11/07<br>114-MW20B |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG114-MW21AJ54227-2<br>6.41 - 15.5<br>02/20/07<br>114-MW21A | PPG114-MW21AJ60618-12<br>3 - 18<br>05/10/07<br>114-MW21A | PPG114-MW21BJ54227-1<br>8.41 - 31.5<br>02/20/07<br>114-MW21B | PPG114-MW21BJ60618-11<br>29 - 34<br>05/10/07<br>114-MW21B | PPG-114-MW22AJ54090-6<br><br>02/16/07<br>114-MW22A | PPG114-MW22AJ60618-9<br>7 - 19<br>05/10/07<br>114-MW22A | PPG-114-MW22BJ54090-7<br><br>02/16/07<br>114-MW22B |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | 1.0 U | NA | 1.0 U |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | 0.21 U | NA | 0.21 U |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG114-MW21AJ54227-2<br>6.41 - 15.5<br>02/20/07<br>114-MW21A | PPG114-MW21AJ60618-12<br>3 - 18<br>05/10/07<br>114-MW21A | PPG114-MW21BJ54227-1<br>8.41 - 31.5<br>02/20/07<br>114-MW21B | PPG114-MW21BJ60618-11<br>29 - 34<br>05/10/07<br>114-MW21B | PPG-114-MW22AJ54090-6<br><br>02/16/07<br>114-MW22A | PPG114-MW22AJ60618-9<br>7 - 19<br>05/10/07<br>114-MW22A | PPG-114-MW22BJ54090-7<br><br>02/16/07<br>114-MW22B |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG114-MW21AJ54227-2<br>6.41 - 15.5<br>02/20/07<br>114-MW21A | PPG114-MW21AJ60618-12<br>3 - 18<br>05/10/07<br>114-MW21A | PPG114-MW21BJ54227-1<br>8.41 - 31.5<br>02/20/07<br>114-MW21B | PPG114-MW21BJ60618-11<br>29 - 34<br>05/10/07<br>114-MW21B | PPG-114-MW22AJ54090-6<br><br>02/16/07<br>114-MW22A | PPG114-MW22AJ60618-9<br>7 - 19<br>05/10/07<br>114-MW22A | PPG-114-MW22BJ54090-7<br><br>02/16/07<br>114-MW22B |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 10,000 U | 1,000 U | 10,000 U | 1,000 U | 31,000 | 200 U | 400 U |
| Antimony | 7440-36-0 | ug/L | 1,500 U | 300 U | 888 | 15,500 | 12 U | 6 U | 12 U |
| Arsenic | 7440-38-2 | ug/L | 2,000 U | 40 U | 400 U | 126 | 182 | 141 | 16 U |
| Barium | 7440-39-3 | ug/L | 10,000 U | 1,000 U | 10,000 U | 1,000 U | 604 | 307 | 400 U |
| Beryllium | 7440-41-7 | ug/L | 250 U | 5 U | 50 U | 50 U | 2.5 | 1 U | 2.0 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 1,000 U | 20 U | 200 U | 36 | 8.0 U | 4 U | 8.0 U |
| Calcium | 7440-70-2 | ug/L | 1,420,000 | 191,000 J | 250,000 U | 138,000 J | 107,000 | 101,000 J | 119,000 |
| Chromium | 7440-47-3 | ug/L | 6,990,000 | 566,000 J | 1,840,000 | 1,840,000 J | 1,750 | 19.4 J | 25,000 |
| Chromium VI | 18540-29-9 | ug/L | 8,100,000 | 586,000 J | 1,920,000 | 2,010,000 J | 10 UJ | 10 UJ | 23,000 J |
| Cobalt | 7440-48-4 | ug/L | 2,500 U | 250 U | 2,500 U | 250 U | 100 U | 50 U | 100 U |
| Copper | 7440-50-8 | ug/L | 1,300 U | 130 UJ | 1,300 U | 841 J | 89.8 | 25 UJ | 50 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 25,000 U | 5,000 U | 5,000 U | 561 | 59,600 | 9,920 | 200 U |
| Lead | 7439-92-1 | ug/L | 750 U | 150 UJ | 150 U | 15 UJ | 73.2 | 3 UJ | 6.0 U |
| Magnesium | 7439-95-4 | ug/L | 250,000 U | 25,000 UJ | 250,000 U | 25,000 UJ | 54,300 | 40,400 J | 29,700 |
| Manganese | 7439-96-5 | ug/L | 3,800 U | 75 U | 750 U | 377 | 3,420 | 1,510 | 30 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG114-MW21AJ54227-2<br>6.41 - 15.5<br>02/20/07<br>114-MW21A | PPG114-MW21AJ60618-12<br>3 - 18<br>05/10/07<br>114-MW21A | PPG114-MW21BJ54227-1<br>8.41 - 31.5<br>02/20/07<br>114-MW21B | PPG114-MW21BJ60618-11<br>29 - 34<br>05/10/07<br>114-MW21B | PPG-114-MW22AJ54090-6<br><br>02/16/07<br>114-MW22A | PPG114-MW22AJ60618-9<br>7 - 19<br>05/10/07<br>114-MW22A | PPG-114-MW22BJ54090-7<br><br>02/16/07<br>114-MW22B |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.40 U | 0.2 U | 0.40 U | 0.2 U | 0.40 U | 0.2 U | 0.20 U |
| Nickel | 7440-02-0 | ug/L | 2,000 U | 200 U | 2,000 U | 860 | 80 U | 40 U | 80 U |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 250,000 U | 25,000 U | 250,000 U | 66,800 | 27,300 | 21,100 | 10,000 U |
| Selenium | 7782-49-2 | ug/L | 2,500 U | 500 U | 500 U | 500 U | 20 U | 10 U | 20 U |
| Silver | 7440-22-4 | ug/L | 500 U | 50 U | 500 U | 50 U | 20 U | 10 U | 20 U |
| Sodium | 7440-23-5 | ug/L | 6,720,000 | 577,000 J | 2,500,000 | 2,320,000 J | 159,000 | 160,000 J | 89,800 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 2,500 U | 500 U | 500 U | 500 U | 20 U | 10 U | 20 U |
| Total CCPW Metals | CCPW-M | ug/L | 6,990,000 | 566,000 | 1,840,000 | 1,860,000 | 1,750 | 19.4 | 25,000 |
| Vanadium | 7440-62-2 | ug/L | 2,500 U | 250 U | 2,500 U | 250 U | 100 U | 50 U | 100 U |
| Zinc | 7440-66-6 | ug/L | 5,000 U | 100 UJ | 1,000 U | 252 J | 191 | 20 UJ | 40 U |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG114-MW21AJ54227-2<br>6.41 - 15.5<br>02/20/07<br>114-MW21A | PPG114-MW21AJ60618-12<br>3 - 18<br>05/10/07<br>114-MW21A | PPG114-MW21BJ54227-1<br>8.41 - 31.5<br>02/20/07<br>114-MW21B | PPG114-MW21BJ60618-11<br>29 - 34<br>05/10/07<br>114-MW21B | PPG-114-MW22AJ54090-6<br><br>02/16/07<br>114-MW22A | PPG114-MW22AJ60618-9<br>7 - 19<br>05/10/07<br>114-MW22A | PPG-114-MW22BJ54090-7<br><br>02/16/07<br>114-MW22B |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG114-MW21AJ54227-2<br>6.41 - 15.5<br>02/20/07<br>114-MW21A | PPG114-MW21AJ60618-12<br>3 - 18<br>05/10/07<br>114-MW21A | PPG114-MW21BJ54227-1<br>8.41 - 31.5<br>02/20/07<br>114-MW21B | PPG114-MW21BJ60618-11<br>29 - 34<br>05/10/07<br>114-MW21B | PPG-114-MW22AJ54090-6<br><br>02/16/07<br>114-MW22A | PPG114-MW22AJ60618-9<br>7 - 19<br>05/10/07<br>114-MW22A | PPG-114-MW22BJ54090-7<br><br>02/16/07<br>114-MW22B |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG114-MW22BJ60618-10<br>28 - 33<br>05/10/07<br>114-MW22B | PPG-114-MW23AJ53993-4<br>2 - 18<br>02/15/07<br>114-MW23A | PPG114-MW23AJ60618-1<br>2 - 18<br>05/08/07<br>114-MW23A | PPG-114-MW23BJ53993-6<br>35 - 40<br>02/15/07<br>114-MW23B | PPG114-MW23BJ60618-2<br>35 - 40<br>05/08/07<br>114-MW23B | PPG-114-OSB-3I20060920<br>12 - 17<br>09/20/06<br>OSB-3 | PPG-114-OSB-3S20060920<br>4 - 9<br>09/20/06<br>OSB-3 |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG114-MW22BJ60618-10<br>28 - 33<br>05/10/07<br>114-MW22B | PPG-114-MW23AJ53993-4<br>2 - 18<br>02/15/07<br>114-MW23A | PPG114-MW23AJ60618-1<br>2 - 18<br>05/08/07<br>114-MW23A | PPG-114-MW23BJ53993-6<br>35 - 40<br>02/15/07<br>114-MW23B | PPG114-MW23BJ60618-2<br>35 - 40<br>05/08/07<br>114-MW23B | PPG-114-OSB-3I20060920<br>12 - 17<br>09/20/06<br>OSB-3 | PPG-114-OSB-3S20060920<br>4 - 9<br>09/20/06<br>OSB-3 |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG114-MW22BJ60618-10<br>28 - 33<br>05/10/07<br>114-MW22B | PPG-114-MW23AJ53993-4<br>2 - 18<br>02/15/07<br>114-MW23A | PPG114-MW23AJ60618-1<br>2 - 18<br>05/08/07<br>114-MW23A | PPG-114-MW23BJ53993-6<br>35 - 40<br>02/15/07<br>114-MW23B | PPG114-MW23BJ60618-2<br>35 - 40<br>05/08/07<br>114-MW23B | PPG-114-OSB-3I20060920<br>12 - 17<br>09/20/06<br>OSB-3 | PPG-114-OSB-3S20060920<br>4 - 9<br>09/20/06<br>OSB-3 |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 499 BF | 5,090 | 1,150 | 353 | 200 U | 518,000 J | 5,220 J |
| Antimony | 7440-36-0 | ug/L | 6 U | 6.0 U | 6 U | 6.0 U | 6 U | 30 UJ | 6.0 UJ |
| Arsenic | 7440-38-2 | ug/L | 8 U | 8.0 U | 8 U | 8.0 U | 8 U | 246 J | 8.0 UJ |
| Barium | 7440-39-3 | ug/L | 200 U | 200 U | 200 U | 200 U | 200 U | 3,740 J | 200 UJ |
| Beryllium | 7440-41-7 | ug/L | 1 U | 1.0 U | 1 U | 1.0 U | 1 U | 43.5 J | 1.0 UJ |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 4 U | 4.0 U | 4 U | 4.0 U | 4 U | 20 U | 4.0 U |
| Calcium | 7440-70-2 | ug/L | 42,300 J | 37,600 | 38,900 J | 135,000 | 107,000 J | 294,000 J | 170,000 J |
| Chromium | 7440-47-3 | ug/L | 20,000 J | 11,900 | 9,300 J | 1,300 | 1,770 J | 892 J | 10 UJ |
| Chromium VI | 18540-29-9 | ug/L | 25,200 J | 11,100 | 8,700 J | 1,200 | 1,900 | 50 U | 50 U |
| Cobalt | 7440-48-4 | ug/L | 50 U | 50 U | 50 U | 50 U | 50 U | 400 J | 50 UJ |
| Copper | 7440-50-8 | ug/L | 25 UJ | 25 U | 25 UJ | 25 U | 25 UJ | 1,080 J | 31.2 J |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 105 | 3,140 | 100 U | 425 | 100 U | 832,000 J | 7,380 J |
| Lead | 7439-92-1 | ug/L | 3 UJ | 6.5 | 3 UJ | 3.0 U | 3 UJ | 862 J | 13.3 J |
| Magnesium | 7439-95-4 | ug/L | 13,000 J | 5,000 U | 5,000 UJ | 26,200 | 20,900 J | 192,000 J | 27,600 J |
| Manganese | 7439-96-5 | ug/L | 15 U | 49.2 | 15 U | 198 | 109 | 27,800 J | 2,700 J |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG114-MW22BJ60618-10<br>28 - 33<br>05/10/07<br>114-MW22B | PPG-114-MW23AJ53993-4<br>2 - 18<br>02/15/07<br>114-MW23A | PPG114-MW23AJ60618-1<br>2 - 18<br>05/08/07<br>114-MW23A | PPG-114-MW23BJ53993-6<br>35 - 40<br>02/15/07<br>114-MW23B | PPG114-MW23BJ60618-2<br>35 - 40<br>05/08/07<br>114-MW23B | PPG-114-OSB-3I20060920<br>12 - 17<br>09/20/06<br>OSB-3 | PPG-114-OSB-3S20060920<br>4 - 9<br>09/20/06<br>OSB-3 |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.2 U | 0.20 U | 0.2 U | 0.20 U | 0.2 U | 3.2 J | 0.20 UJ |
| Nickel | 7440-02-0 | ug/L | 40 U | 40 U | 40 U | 40 U | 40 U | 700 J | 40 UJ |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 94,400 | 13,100 | 7,450 | 36,900 | 56,800 | 55,400 J | 5,210 J |
| Selenium | 7782-49-2 | ug/L | 10 U | 10 U | 10 U | 10 U | 10 U | 50 U | 10 U |
| Silver | 7440-22-4 | ug/L | 10 U | 10 U | 10 U | 10 U | 10 U | 50 U | 10 U |
| Sodium | 7440-23-5 | ug/L | 108,000 J | 87,600 | 21,600 J | 85,600 | 94,200 J | 109,000 J | 97,800 J |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 10 U | 10 U | 10 U | 10 U | 10 U | 50 U | 10 U |
| Total CCPW Metals | CCPW-M | ug/L | 20,000 | 12,200 | 9,550 | 1,300 | 1,770 | 2,890 | 50 U |
| Vanadium | 7440-62-2 | ug/L | 50 U | 273 | 246 | 50 U | 50 U | 1,300 J | 50 UJ |
| Zinc | 7440-66-6 | ug/L | 20 UJ | 20 U | 20 UJ | 21.1 | 23.8 J | 2,910 J | 23.6 J |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG114-MW22BJ60618-10<br>28 - 33<br>05/10/07<br>114-MW22B | PPG-114-MW23AJ53993-4<br>2 - 18<br>02/15/07<br>114-MW23A | PPG114-MW23AJ60618-1<br>2 - 18<br>05/08/07<br>114-MW23A | PPG-114-MW23BJ53993-6<br>35 - 40<br>02/15/07<br>114-MW23B | PPG114-MW23BJ60618-2<br>35 - 40<br>05/08/07<br>114-MW23B | PPG-114-OSB-3I20060920<br>12 - 17<br>09/20/06<br>OSB-3 | PPG-114-OSB-3S20060920<br>4 - 9<br>09/20/06<br>OSB-3 |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | 10 U | 10 U |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG114-MW22BJ60618-10<br>28 - 33<br>05/10/07<br>114-MW22B | PPG-114-MW23AJ53993-4<br>2 - 18<br>02/15/07<br>114-MW23A | PPG114-MW23AJ60618-1<br>2 - 18<br>05/08/07<br>114-MW23A | PPG-114-MW23BJ53993-6<br>35 - 40<br>02/15/07<br>114-MW23B | PPG114-MW23BJ60618-2<br>35 - 40<br>05/08/07<br>114-MW23B | PPG-114-OSB-3I20060920<br>12 - 17<br>09/20/06<br>OSB-3 | PPG-114-OSB-3S20060920<br>4 - 9<br>09/20/06<br>OSB-3 |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | PPG-114-OSB-4I20060920 | PPG-114-OSB-4S20060920 | PPG132-MW2AJ61161-10 | PPG132-MW2BJ61161-11 | PPG133-MW1AJ61161-26 | PPG133-MW1BJ61161-25 | PPG133-MW1CJ61161-24 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 12 - 17 | 4 - 9 | 4 - 18 | 25 - 30 | 3 - 13 | 32 - 37 | 72 - 77 |
| Date Collected: | | | 09/20/06 | 09/20/06 | 05/15/07 | 05/15/07 | 05/17/07 | 05/17/07 | 05/17/07 |
| Location ID: | CAS Number | Units | OSB-4 | OSB-4 | 132-MW2A | 132-MW2B | 133-MW1A | 133-MW1B | 133-MW1C |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-OSB-4I20060920<br>12 - 17<br>09/20/06<br>OSB-4 | PPG-114-OSB-4S20060920<br>4 - 9<br>09/20/06<br>OSB-4 | PPG132-MW2AJ61161-10<br>4 - 18<br>05/15/07<br>132-MW2A | PPG132-MW2BJ61161-11<br>25 - 30<br>05/15/07<br>132-MW2B | PPG133-MW1AJ61161-26<br>3 - 13<br>05/17/07<br>133-MW1A | PPG133-MW1BJ61161-25<br>32 - 37<br>05/17/07<br>133-MW1B | PPG133-MW1CJ61161-24<br>72 - 77<br>05/17/07<br>133-MW1C |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-OSB-4I20060920<br>12 - 17<br>09/20/06<br>OSB-4 | PPG-114-OSB-4S20060920<br>4 - 9<br>09/20/06<br>OSB-4 | PPG132-MW2AJ61161-10<br>4 - 18<br>05/15/07<br>132-MW2A | PPG132-MW2BJ61161-11<br>25 - 30<br>05/15/07<br>132-MW2B | PPG133-MW1AJ61161-26<br>3 - 13<br>05/17/07<br>133-MW1A | PPG133-MW1BJ61161-25<br>32 - 37<br>05/17/07<br>133-MW1B | PPG133-MW1CJ61161-24<br>72 - 77<br>05/17/07<br>133-MW1C |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 498,000 J [126,000 J] | 58,900 J | 200 U | 1,410 | 200 U | 322 | 200 U |
| Antimony | 7440-36-0 | ug/L | 30 UJ [6 UJ] | 6.0 UJ | 6 U | 6 U | 6 U | 6 U | 6 U |
| Arsenic | 7440-38-2 | ug/L | 200 J [52.9 J] | 17.9 J | 8 U | 8 U | 8 U | 8 U | 8 U |
| Barium | 7440-39-3 | ug/L | 2,930 J [966 J] | 555 J | 200 U | 200 U | 340 | 323 | 200 U |
| Beryllium | 7440-41-7 | ug/L | 39.3 J [10.4 J] | 4.1 J | 1 U | 1 U | 1 U | 1 U | 1 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 20 U [4 U] | 4.0 U | 4 U | 4 U | 4 U | 4 U | 4 U |
| Calcium | 7440-70-2 | ug/L | 206,000 J [136,000 J] | 136,000 J | 135,000 | 127,000 | 86,200 | 152,000 | 91,900 |
| Chromium | 7440-47-3 | ug/L | 947 J [248 J] | 93.0 J | 10 UJ | 84.6 BF | 10 UJ | 33.3 J | 10 UJ |
| Chromium VI | 18540-29-9 | ug/L | 50 U [50 U] | 50 U | 13 | 10 U | 10 U | 10 U | 10 U |
| Cobalt | 7440-48-4 | ug/L | 294 J [84.6 J] | 50 UJ | 50 U | 50 U | 50 U | 50 U | 50 U |
| Copper | 7440-50-8 | ug/L | 710 J [176 J] | 69.0 J | 25 U | 25 U | 25 U | 25 U | 25 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 631,000 J [176,000 J] | 65,700 J | 17,800 | 856 JF | 659 | 1,950 | 100 U |
| Lead | 7439-92-1 | ug/L | 1,300 J [321 J] | 92.6 J | 3 U | 6.9 BF | 14.7 | 3 U | 3 U |
| Magnesium | 7439-95-4 | ug/L | 180,000 J [66,800 J] | 43,400 J | 30,700 | 5,000 U | 5,000 U | 41,900 | 34,800 |
| Manganese | 7439-96-5 | ug/L | 19,300 J [6,710 J] | 5,580 J | 1,860 | 27.8 | 186 | 1,680 | 737 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-OSB-4I20060920<br>12 - 17<br>09/20/06<br>OSB-4 | PPG-114-OSB-4S20060920<br>4 - 9<br>09/20/06<br>OSB-4 | PPG132-MW2AJ61161-10<br>4 - 18<br>05/15/07<br>132-MW2A | PPG132-MW2BJ61161-11<br>25 - 30<br>05/15/07<br>132-MW2B | PPG133-MW1AJ61161-26<br>3 - 13<br>05/17/07<br>133-MW1A | PPG133-MW1BJ61161-25<br>32 - 37<br>05/17/07<br>133-MW1B | PPG133-MW1CJ61161-24<br>72 - 77<br>05/17/07<br>133-MW1C |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 5.0 J [1.2 J] | 0.35 J | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Nickel | 7440-02-0 | ug/L | 578 J [161 J] | 59.8 J | 40 U | 42.5 | 40 U | 40 U | 40 U |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 47,900 J [14,900 J] | 7,800 J | 10,400 J | 22,100 J | 5,000 U | 30,100 J | 11,000 J |
| Selenium | 7782-49-2 | ug/L | 50 U [10 U] | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Silver | 7440-22-4 | ug/L | 50 U [10 U] | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Sodium | 7440-23-5 | ug/L | 91,400 J [64,300 J] | 72,700 J | 45,300 | 101,000 | 19,000 | 312,000 | 106,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 50 U [10 U] | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Total CCPW Metals | CCPW-M | ug/L | 2,730 [728] | 279 | 50 U | 127 | 50 U | 33.3 | 50 U |
| Vanadium | 7440-62-2 | ug/L | 1,200 J [319 J] | 126 J | 50 U | 50 U | 50 U | 50 U | 50 U |
| Zinc | 7440-66-6 | ug/L | 3,220 J [909 J] | 277 J | 20 U | 24.7 | 261 | 49 | 24.9 |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-OSB-4I20060920<br>12 - 17<br>09/20/06<br>OSB-4 | PPG-114-OSB-4S20060920<br>4 - 9<br>09/20/06<br>OSB-4 | PPG132-MW2AJ61161-10<br>4 - 18<br>05/15/07<br>132-MW2A | PPG132-MW2BJ61161-11<br>25 - 30<br>05/15/07<br>132-MW2B | PPG133-MW1AJ61161-26<br>3 - 13<br>05/17/07<br>133-MW1A | PPG133-MW1BJ61161-25<br>32 - 37<br>05/17/07<br>133-MW1B | PPG133-MW1CJ61161-24<br>72 - 77<br>05/17/07<br>133-MW1C |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-OSB-4I20060920<br>12 - 17<br>09/20/06<br>OSB-4 | PPG-114-OSB-4S20060920<br>4 - 9<br>09/20/06<br>OSB-4 | PPG132-MW2AJ61161-10<br>4 - 18<br>05/15/07<br>132-MW2A | PPG132-MW2BJ61161-11<br>25 - 30<br>05/15/07<br>132-MW2B | PPG133-MW1AJ61161-26<br>3 - 13<br>05/17/07<br>133-MW1A | PPG133-MW1BJ61161-25<br>32 - 37<br>05/17/07<br>133-MW1B | PPG133-MW1CJ61161-24<br>72 - 77<br>05/17/07<br>133-MW1C |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG133-MW2AJ61161-19<br>3 - 13<br>05/16/07<br>133-MW2A | PPG133-MW2BJ61161-16<br>29 - 34<br>05/16/07<br>133-MW2B | PPG133-MW2CJ61161-17<br>94 - 99<br>05/16/07<br>133-MW2C | PPG135-MW1AJ61161-20<br>4 - 16<br>05/16/07<br>135-MW1A | PPG135-MW1BJ61161-21<br>27.5 - 32.5<br>05/16/07<br>135-MW1B | PPG135-MW1CJ61161-22<br>98 - 103<br>05/16/07<br>135-MW1C | PPG-135-MW-2A<br><br>08/10/15<br>135-MW2A | PPG135-MW2AJ61161-28<br>3 - 16.5<br>05/17/07<br>135-MW2A |
|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | 5.0 U | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | 2.0 U | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | 5.0 U | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | 20.1 | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | 2.0 U | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | 2.0 U | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | 2.0 U | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | 2.0 U | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 UJ | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | 5.0 U | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | 2.0 U | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | 0.49 J | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | 5.0 U | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | 5.0 U | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | 5.0 U | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | 5.0 U | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | 10 U | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | 0.49 J | NA |

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG133-MW2AJ61161-19<br>3 - 13<br>05/16/07<br>133-MW2A | PPG133-MW2BJ61161-16<br>29 - 34<br>05/16/07<br>133-MW2B | PPG133-MW2CJ61161-17<br>94 - 99<br>05/16/07<br>133-MW2C | PPG135-MW1AJ61161-20<br>4 - 16<br>05/16/07<br>135-MW1A | PPG135-MW1BJ61161-21<br>27.5 - 32.5<br>05/16/07<br>135-MW1B | PPG135-MW1CJ61161-22<br>98 - 103<br>05/16/07<br>135-MW1C | PPG-135-MW-2A<br><br>08/10/15<br>135-MW2A | PPG135-MW2AJ61161-28<br>3 - 16.5<br>05/17/07<br>135-MW2A |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | 1.0 U | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG133-MW2AJ61161-19<br>3 - 13<br>05/16/07<br>133-MW2A | PPG133-MW2BJ61161-16<br>29 - 34<br>05/16/07<br>133-MW2B | PPG133-MW2CJ61161-17<br>94 - 99<br>05/16/07<br>133-MW2C | PPG135-MW1AJ61161-20<br>4 - 16<br>05/16/07<br>135-MW1A | PPG135-MW1BJ61161-21<br>27.5 - 32.5<br>05/16/07<br>135-MW1B | PPG135-MW1CJ61161-22<br>98 - 103<br>05/16/07<br>135-MW1C | PPG-135-MW-2A<br><br>08/10/15<br>135-MW2A | PPG135-MW2AJ61161-28<br>3 - 16.5<br>05/17/07<br>135-MW2A |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 200 U | 200 U | 1,570 [1,360] | 984 | 377 | 200 U | NA | 928 |
| Antimony | 7440-36-0 | ug/L | 6 U | 6 U | 6 U [6 U] | 6 U | 6 U | 6 U | NA | 6 U |
| Arsenic | 7440-38-2 | ug/L | 8 U | 8 U | 8 U [8 U] | 8 U | 8 U | 8 U | NA | 29.9 |
| Barium | 7440-39-3 | ug/L | 200 U | 378 | 200 U [200 U] | 374 | 425 | 200 U | NA | 257 |
| Beryllium | 7440-41-7 | ug/L | 1 U | 1 U | 1 U [1 U] | 1 U | 1 U | 1 U | NA | 1 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 4 U | 4 U | 4 U [4 U] | 4 U | 4 U | 4 U | NA | 4 U |
| Calcium | 7440-70-2 | ug/L | 45,700 | 83,300 | 27,800 [31,000] | 126,000 | 53,400 | 17,000 | NA | 66,700 |
| Chromium | 7440-47-3 | ug/L | 10 UJ | 10 UJ | 101 JF [179 J] | 53.7 JF | 114 JF | 25.8 BF | NA | 73.5 J |
| Chromium VI | 18540-29-9 | ug/L | 10 U | 10 U | 10 U [10 U] | 10 U | 10 U | 10 U | NA | 10 U |
| Cobalt | 7440-48-4 | ug/L | 50 U | 50 U | 50 U [50 U] | 50 U | 50 U | 50 U | NA | 50 U |
| Copper | 7440-50-8 | ug/L | 25 U | 25 U | 31.6 [51.5] | 25 U | 25 U | 25 U | NA | 26.7 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 2,680 | 4,470 | 2,320 [2,390] | 12,000 | 1,250 | 290 | NA | 14,100 |
| Lead | 7439-92-1 | ug/L | 26.6 | 3 U | 6.9 [6.2] | 10.5 | 3.5 | 4.5 | NA | 38.9 |
| Magnesium | 7439-95-4 | ug/L | 5,000 U | 59,000 | 10,700 [11,200] | 17,800 | 126,000 | 13,100 | NA | 64,800 |
| Manganese | 7439-96-5 | ug/L | 938 | 666 | 84 [90.1] | 859 | 204 | 57.6 | NA | 528 |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG133-MW2AJ61161-19<br>3 - 13<br>05/16/07<br>133-MW2A | PPG133-MW2BJ61161-16<br>29 - 34<br>05/16/07<br>133-MW2B | PPG133-MW2CJ61161-17<br>94 - 99<br>05/16/07<br>133-MW2C | PPG135-MW1AJ61161-20<br>4 - 16<br>05/16/07<br>135-MW1A | PPG135-MW1BJ61161-21<br>27.5 - 32.5<br>05/16/07<br>135-MW1B | PPG135-MW1CJ61161-22<br>98 - 103<br>05/16/07<br>135-MW1C | PPG-135-MW-2A<br><br>08/10/15<br>135-MW2A | PPG135-MW2AJ61161-28<br>3 - 16.5<br>05/17/07<br>135-MW2A |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.2 U | 0.2 U | 0.2 U [0.2 U] | 0.2 U | 0.2 U | 0.2 U | NA | 0.2 U |
| Nickel | 7440-02-0 | ug/L | 40 U | 40 U | 63.4 [112] | 40 U | 73.7 | 40 U | NA | 40 U |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 5,000 U | 38,800 J | 21,200 J [22,000 J] | 16,200 J | 129,000 J | 65,400 J | NA | 79,800 J |
| Selenium | 7782-49-2 | ug/L | 10 U | 10 U | 10 U [10 U] | 10 U | 10 U | 10 U | NA | 10 U |
| Silver | 7440-22-4 | ug/L | 10 U | 10 U | 10 U [10 U] | 10 U | 10 U | 10 U | NA | 10 U |
| Sodium | 7440-23-5 | ug/L | 10,000 U | 285,000 | 358,000 [374,000] | 76,400 | 1,270,000 | 633,000 | NA | 1,110,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 10 U | 10 U | 10 U [10 U] | 10 U | 10 U | 10 U | NA | 10 U |
| Total CCPW Metals | CCPW-M | ug/L | 50 U | 50 U | 164 [291] | 53.7 | 188 | 25.8 | NA | 73.5 |
| Vanadium | 7440-62-2 | ug/L | 50 U | 50 U | 50 U [50 U] | 50 U | 50 U | 50 U | NA | 50 U |
| Zinc | 7440-66-6 | ug/L | 229 | 32.8 | 34.9 [34.6] | 44.8 | 20 U | 20 U | NA | 78.3 |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG133-MW2AJ61161-19<br>3 - 13<br>05/16/07<br>133-MW2A | PPG133-MW2BJ61161-16<br>29 - 34<br>05/16/07<br>133-MW2B | PPG133-MW2CJ61161-17<br>94 - 99<br>05/16/07<br>133-MW2C | PPG135-MW1AJ61161-20<br>4 - 16<br>05/16/07<br>135-MW1A | PPG135-MW1BJ61161-21<br>27.5 - 32.5<br>05/16/07<br>135-MW1B | PPG135-MW1CJ61161-22<br>98 - 103<br>05/16/07<br>135-MW1C | PPG-135-MW-2A<br><br>08/10/15<br>135-MW2A | PPG135-MW2AJ61161-28<br>3 - 16.5<br>05/17/07<br>135-MW2A |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG133-MW2AJ61161-19<br>3 - 13<br>05/16/07<br>133-MW2A | PPG133-MW2BJ61161-16<br>29 - 34<br>05/16/07<br>133-MW2B | PPG133-MW2CJ61161-17<br>94 - 99<br>05/16/07<br>133-MW2C | PPG135-MW1AJ61161-20<br>4 - 16<br>05/16/07<br>135-MW1A | PPG135-MW1BJ61161-21<br>27.5 - 32.5<br>05/16/07<br>135-MW1B | PPG135-MW1CJ61161-22<br>98 - 103<br>05/16/07<br>135-MW1C | PPG-135-MW-2A<br><br>08/10/15<br>135-MW2A | PPG135-MW2AJ61161-28<br>3 - 16.5<br>05/17/07<br>135-MW2A |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG135-MW2BJ61161-27<br>28 - 33<br>05/17/07<br>135-MW2B | PPG-135-MW-3A<br><br>08/10/15<br>135-MW3A | PPG137-MW1AJ61161-4<br>3 - 14<br>05/14/07<br>137-MW1A | PPG137-MW1BJ61161-5<br>28 - 33<br>05/14/07<br>137-MW1B | PPG137-MW1CJ61161-6<br>68 - 73<br>05/14/07<br>137-MW1C | PPG137-MW2AJ61161-12<br>3 - 18<br>05/15/07<br>137-MW2A | PPG137-MW2BJ61161-14<br>28 - 33<br>05/15/07<br>137-MW2B | PPG137-MW2CJ61161-13<br>78 - 83<br>05/15/07<br>137-MW2C |
|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | 5.0 U | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | 2.0 U | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | 10 U | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | 5.0 U | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | 20.5 | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | 52.6 | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | 2.0 U | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | 0.33 J | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | 2.0 U | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | 2.0 U | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | 1.0 UJ | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | 5.0 U | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | 2.0 U | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | 69.0 | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | 9.4 | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | 46.8 | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | 5.0 U | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | 5.0 U | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | 5.0 U | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | 117 | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | 46.4 | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | 10 U | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | 21.5 | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | 93.2 | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG135-MW2BJ61161-27<br>28 - 33<br>05/17/07<br>135-MW2B | PPG-135-MW-3A<br><br>08/10/15<br>135-MW3A | PPG137-MW1AJ61161-4<br>3 - 14<br>05/14/07<br>137-MW1A | PPG137-MW1BJ61161-5<br>28 - 33<br>05/14/07<br>137-MW1B | PPG137-MW1CJ61161-6<br>68 - 73<br>05/14/07<br>137-MW1C | PPG137-MW2AJ61161-12<br>3 - 18<br>05/15/07<br>137-MW2A | PPG137-MW2BJ61161-14<br>28 - 33<br>05/15/07<br>137-MW2B | PPG137-MW2CJ61161-13<br>78 - 83<br>05/15/07<br>137-MW2C |
|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG135-MW2BJ61161-27<br>28 - 33<br>05/17/07<br>135-MW2B | PPG-135-MW-3A<br><br>08/10/15<br>135-MW3A | PPG137-MW1AJ61161-4<br>3 - 14<br>05/14/07<br>137-MW1A | PPG137-MW1BJ61161-5<br>28 - 33<br>05/14/07<br>137-MW1B | PPG137-MW1CJ61161-6<br>68 - 73<br>05/14/07<br>137-MW1C | PPG137-MW2AJ61161-12<br>3 - 18<br>05/15/07<br>137-MW2A | PPG137-MW2BJ61161-14<br>28 - 33<br>05/15/07<br>137-MW2B | PPG137-MW2CJ61161-13<br>78 - 83<br>05/15/07<br>137-MW2C |
|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 200 U | NA | 859 | 200 U | 753 | 1,010 | 725 | 1,030 |
| Antimony | 7440-36-0 | ug/L | 6 U | NA | 10.2 | 6 U | 6 U | 27.9 | 6 U | 14 |
| Arsenic | 7440-38-2 | ug/L | 8 U | NA | 8 U | 8 U | 16.6 | 8 U | 10.2 | 8 U |
| Barium | 7440-39-3 | ug/L | 319 | NA | 264 | 200 U | 200 U | 200 U | 200 U | 200 U |
| Beryllium | 7440-41-7 | ug/L | 1 U | NA | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 4 U | NA | 4 U | 4 U | 4 U | 4 U | 4 U | 4 U |
| Calcium | 7440-70-2 | ug/L | 44,500 | NA | 448,000 | 63,100 | 26,200 | 441,000 | 51,300 | 180,000 |
| Chromium | 7440-47-3 | ug/L | 10 uj | NA | 8,280 J | 18.9 J | 5,390 J | 19,000 J | 1,210 J | 8,820 J |
| Chromium VI | 18540-29-9 | ug/L | 10 U | NA | 9,600 | 10 U | 5,100 | 21,800 | 10 U | 9,500 |
| Cobalt | 7440-48-4 | ug/L | 50 U | NA | 50 U | 50 U | 50 U | 50 U | 50 U | 50 U |
| Copper | 7440-50-8 | ug/L | 25 U | NA | 25 U | 25 U | 39.3 | 25 U | 25 U | 126 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 159 | NA | 218 | 1,510 | 1,060 | 418 JF | 2,530 | 1,190 JF |
| Lead | 7439-92-1 | ug/L | 3.8 | NA | 4.2 | 3 U | 3 U | 3 U | 3.5 BF | 3.4 BF |
| Magnesium | 7439-95-4 | ug/L | 101,000 | NA | 5,000 U | 79,900 | 5,000 U | 5,000 U | 59,000 | 5,000 U |
| Manganese | 7439-96-5 | ug/L | 264 | NA | 15 U | 328 | 25.5 | 15 U | 226 | 18.7 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG135-MW2BJ61161-27<br>28 - 33<br>05/17/07<br>135-MW2B | PPG-135-MW-3A<br><br>08/10/15<br>135-MW3A | PPG137-MW1AJ61161-4<br>3 - 14<br>05/14/07<br>137-MW1A | PPG137-MW1BJ61161-5<br>28 - 33<br>05/14/07<br>137-MW1B | PPG137-MW1CJ61161-6<br>68 - 73<br>05/14/07<br>137-MW1C | PPG137-MW2AJ61161-12<br>3 - 18<br>05/15/07<br>137-MW2A | PPG137-MW2BJ61161-14<br>28 - 33<br>05/15/07<br>137-MW2B | PPG137-MW2CJ61161-13<br>78 - 83<br>05/15/07<br>137-MW2C |
|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.2 U | NA | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U |
| Nickel | 7440-02-0 | ug/L | 40 U | NA | 40 U | 40 U | 40 U | 45.9 | 52.6 | 61.1 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 90,800 j | NA | 30,800 J | 33,900 J | 6,550 J | 20,100 J | 32,400 J | 25,800 J |
| Selenium | 7782-49-2 | ug/L | 10 U | NA | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Silver | 7440-22-4 | ug/L | 10 U | NA | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Sodium | 7440-23-5 | ug/L | 945,000 | NA | 383,000 | 598,000 | 204,000 | 414,000 | 337,000 | 551,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 10 U | NA | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| Total CCPW Metals | CCPW-M | ug/L | 50 U | NA | 8,360 | 18.9 | 5,520 | 19,100 | 1,260 | 8,900 |
| Vanadium | 7440-62-2 | ug/L | 50 U | NA | 66.5 | 50 U | 129 | 50 U | 50 U | 50 U |
| Zinc | 7440-66-6 | ug/L | 23.5 | NA | 20 U | 20 U | 20 U | 20 U | 20 U | 27.6 |
| **Metals-Filtered** | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG135-MW2BJ61161-27<br>28 - 33<br>05/17/07<br>135-MW2B | PPG-135-MW-3A<br><br>08/10/15<br>135-MW3A | PPG137-MW1AJ61161-4<br>3 - 14<br>05/14/07<br>137-MW1A | PPG137-MW1BJ61161-5<br>28 - 33<br>05/14/07<br>137-MW1B | PPG137-MW1CJ61161-6<br>68 - 73<br>05/14/07<br>137-MW1C | PPG137-MW2AJ61161-12<br>3 - 18<br>05/15/07<br>137-MW2A | PPG137-MW2BJ61161-14<br>28 - 33<br>05/15/07<br>137-MW2B | PPG137-MW2CJ61161-13<br>78 - 83<br>05/15/07<br>137-MW2C |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG135-MW2BJ61161-27<br>28 - 33<br>05/17/07<br>135-MW2B | PPG-135-MW-3A<br><br>08/10/15<br>135-MW3A | PPG137-MW1AJ61161-4<br>3 - 14<br>05/14/07<br>137-MW1A | PPG137-MW1BJ61161-5<br>28 - 33<br>05/14/07<br>137-MW1B | PPG137-MW1CJ61161-6<br>68 - 73<br>05/14/07<br>137-MW1C | PPG137-MW2AJ61161-12<br>3 - 18<br>05/15/07<br>137-MW2A | PPG137-MW2BJ61161-14<br>28 - 33<br>05/15/07<br>137-MW2B | PPG137-MW2CJ61161-13<br>78 - 83<br>05/15/07<br>137-MW2C |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | PPG137-MW4AJ61161-8 | PPG137-MW4BJ61161-7 | PSEG HALLADAY-8/8/2005-1 | PSEG HALLADAY-8/8/2005-2 | PSEG HALLADAY-8/8/2005-3 | PSEG HALLADAY-8/8/2005-4 | PSEG HALLADAY-8/8/2005-5 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 4 - 18 | 28 - 33 | 34 | 33 | 38 | 39 | 35 |
| Date Collected: | | | 05/14/07 | 05/14/07 | 08/08/05 | 08/08/05 | 08/08/05 | 08/08/05 | 08/08/05 |
| Location ID: | CAS Number | Units | 137-MW4A | 137-MW4B | MW1D | MW2D | MW7D | MW8D | MW9D |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U [0.3 U] |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U [0.3 U] |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U [0.4 U] |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U [0.3 U] |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U [0.3 U] |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U [0.4 U] |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U [0.4 U] |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U [0.3 U] |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U [0.4 U] |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U [0.4 U] |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | 0.3 U | 0.3 U | 5.9 | 0.3 U | 0.3 U [0.3 U] |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U [0.3 U] |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U [0.4 U] |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U [0.5 U] |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 0.9 U [0.9 U] |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U [0.5 U] |
| Acetone | 67-64-1 | ug/L | NA | NA | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 27 [23] |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | 0.3 U | 1.4 | 0.4 | 10 | 1.0 [0.9] |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U [0.3 U] |
| Bromoform | 75-25-2 | ug/L | NA | NA | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U [0.2 U] |
| Bromomethane | 74-83-9 | ug/L | NA | NA | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U [0.3 U] |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | 0.3 U | 0.8 | 0.3 U | 0.3 U | 0.3 U [0.3 U] |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U [0.3 U] |
| CFC-11 | 75-69-4 | ug/L | NA | NA | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U [0.2 U] |
| CFC-12 | 75-71-8 | ug/L | NA | NA | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U [0.5 U] |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U [0.4 U] |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U [0.3 U] |
| Chloroethane | 75-00-3 | ug/L | NA | NA | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U [0.2 U] |
| Chloroform | 67-66-3 | ug/L | NA | NA | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U [0.5 U] |
| Chloromethane | 74-87-3 | ug/L | NA | NA | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U [0.3 U] |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | 0.4 U | 0.4 U | 1.2 | 0.4 U | 0.4 U [0.4 U] |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U [0.2 U] |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U [0.3 U] |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U [0.5 U] |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | 0.5 U | 0.5 U | 0.5 U | 2.8 | 6.2 [4.8] |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | 0.5 U | 0.5 U | 0.5 U | 0.5 | 1.0 [0.9] |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U [0.3 U] |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | 0.5 U | 0.5 U | 0.5 U | 0.5 U | 0.5 U [0.5 U] |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U [0.3 U] |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | 36 | 0.9 | 8.2 | 1.7 | 1.4 [1.5] |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U [0.4 U] |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.4 U [0.4 U] |
| Toluene | 108-88-3 | ug/L | NA | NA | 0.4 U | 1.1 | 0.4 U | 0.4 U | 1.7 [1.6] |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | 36 | 6.5 | 18 | 15 | 48 [42] |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | 0.4 U | 0.6 | 0.4 U | 0.4 | 10 [8.8] |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG137-MW4AJ61161-8<br>4 - 18<br>05/14/07<br>137-MW4A | PPG137-MW4BJ61161-7<br>28 - 33<br>05/14/07<br>137-MW4B | PSEG HALLADAY-8/8/2005-1<br>34<br>08/08/05<br>MW1D | PSEG HALLADAY-8/8/2005-2<br>33<br>08/08/05<br>MW2D | PSEG HALLADAY-8/8/2005-3<br>38<br>08/08/05<br>MW7D | PSEG HALLADAY-8/8/2005-4<br>39<br>08/08/05<br>MW8D | PSEG HALLADAY-8/8/2005-5<br>35<br>08/08/05<br>MW9D |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | 0.4 U | 0.4 U | 1.3 | 0.4 U | 0.4 U [0.4 U] |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U [0.2 U] |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | 0.4 U | 1.7 | 0.6 | 0.4 U | 0.4 U [0.4 U] |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U [0.3 U] |
| **Semivolatile Organics** | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.5 U [1.5 U] |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.2 U [1.2 U] |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | 1.5 U | 1.5 U | 1.5 U | 1.5 U | 1.7 U [1.7 U] |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | 2.7 U | 2.7 U | 2.7 U | 2.7 U | 3.2 U [3.2 U] |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | 1.8 U | 1.8 U | 1.8 U | 1.8 U | 2.1 U [2.1 U] |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | 2.5 U | 2.5 U | 2.5 U | 2.5 U | 2.9 U [2.9 U] |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.3 U [1.3 U] |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.6 U [1.6 U] |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.8 U [1.8 U] |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.6 U [1.6 U] |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.6 U [1.6 U] |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | 1.5 U | 1.5 U | 1.5 U | 1.5 U | 1.8 U [1.8 U] |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | 1.4 U | 4.0 | 1.4 U | 1.4 U | 12 [16] |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | 1.7 U | 1.7 U | 1.7 U | 1.7 U | 2.0 U [2 U] |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 1.0 U [1 U] |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.3 U [2.3 U] |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | 6.2 U | 6.2 U | 6.2 U | 6.2 U | 7.1 U [7.1 U] |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.4 U [1.4 U] |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | 1.5 U | 1.5 U | 1.5 U | 1.5 U | 1.7 U [1.7 U] |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.4 U [2.4 U] |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.5 U [1.5 U] |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 4.4 [5.4] |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.9 U [0.9 U] |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.3 U [1.3 U] |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | 0.2 U | 0.8 | 0.2 U | 2.0 | 8.3 [9.9] |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U [0.2 U] |
| Acetophenone | 98-86-2 | ug/L | NA | NA | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 4.2 [4.1] |
| Anthracene | 120-12-7 | ug/L | NA | NA | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.8 [0.9] |
| Atrazine | 1912-24-9 | ug/L | NA | NA | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.8 U [1.8 U] |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | 1.8 U | 1.8 U | 1.8 U | 1.8 U | 2.1 U [2.1 U] |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U [0.2 U] |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | 0.075 U | 0.075 U | 0.075 U | 0.075 U | 0.087 U [0.087 U] |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.2 U [0.2 U] |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | 0.1 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U [0.1 U] |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | 0.1 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U [0.1 U] |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.2 U [1.2 U] |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.3 U [1.3 U] |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | 2.4 | 2.0 | 1.3 U | 2.7 | 4.0 [4.5] |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.5 U [1.5 U] |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG137-MW4AJ61161-8<br>4 - 18<br>05/14/07<br>137-MW4A | PPG137-MW4BJ61161-7<br>28 - 33<br>05/14/07<br>137-MW4B | PSEG HALLADAY-8/8/2005-1<br>34<br>08/08/05<br>MW1D | PSEG HALLADAY-8/8/2005-2<br>33<br>08/08/05<br>MW2D | PSEG HALLADAY-8/8/2005-3<br>38<br>08/08/05<br>MW7D | PSEG HALLADAY-8/8/2005-4<br>39<br>08/08/05<br>MW8D | PSEG HALLADAY-8/8/2005-5<br>35<br>08/08/05<br>MW9D |
|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | 1.1 U | 1.5 | 1.1 U | 1.1 U | 1.3 U [1.3 U] |
| Chrysene | 218-01-9 | ug/L | NA | NA | 0.2 U | 0.2 U | 0.2 U | 0.2 U | 0.3 U [0.3 U] |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | 0.1 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U [0.1 U] |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.3 U [1.3 U] |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | 3.9 | 1.0 U | 1.0 U | 1.0 U | 1.1 U [1.1 U] |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.6 U [1.6 U] |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.5 U [1.5 U] |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.4 U [1.4 U] |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | 0.2 U | 0.2 U | 0.2 U | 0.4 | 0.6 [0.7] |
| Fluorene | 86-73-7 | ug/L | NA | NA | 0.2 U | 0.2 U | 0.2 U | 0.8 | 2.7 [3] |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.9 U [0.9 U] |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | 0.4 U | 0.4 U | 0.4 U | 0.4 U | 0.5 U [0.5 U] |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.9 U [0.9 U] |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.3 U [1.3 U] |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | 0.1 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U [0.1 U] |
| Isophorone | 78-59-1 | ug/L | NA | NA | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.4 U [1.4 U] |
| Naphthalene | 91-20-3 | ug/L | NA | NA | 0.3 U | 49 | 0.3 U | 0.3 U | 30 [38] |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.4 U [1.4 U] |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | 0.9 U | 0.9 U | 0.9 U | 0.9 U | 1.1 U [1.1 U] |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.5 U [1.5 U] |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 1.0 U [1 U] |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | 2.6 U | 2.6 U | 2.6 U | 2.6 U | 3.0 U [3 U] |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | 0.1 U | 0.4 | 0.1 U | 1.0 | 4.4 [5] |
| Phenol | 108-95-2 | ug/L | NA | NA | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 5.4 [6.3] |
| Pyrene | 129-00-0 | ug/L | NA | NA | 0.2 U | 0.2 U | 0.2 U | 0.5 | 0.7 [0.7] |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | 6.3 | 58 | 6.2 U | 7.4 | 78 [95] |
| **Metals** | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 200 U | 554 | 907 | 417 | 85,200 | 662 | 211 [269] |
| Antimony | 7440-36-0 | ug/L | 6 U | 28.7 | 11.6 U | 13.0 | 12.7 | 7.9 | 5.8 U [5.8 U] |
| Arsenic | 7440-38-2 | ug/L | 8 U | 287 | 6.4 U | 13.9 | 199 | 10.5 | 3.2 U [3.2 U] |
| Barium | 7440-39-3 | ug/L | 524 | 200 U | 25.5 | 44.7 | 898 | 221 | 123 [141] |
| Beryllium | 7440-41-7 | ug/L | 1 U | 1 U | 0.60 U | 0.60 U | 6.6 | 0.30 U | 0.30 U [0.3 U] |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 4 U | 4 U | 0.80 U | 0.80 U | 0.80 U | 0.40 U | 0.40 U [0.4 U] |
| Calcium | 7440-70-2 | ug/L | 39,400 | 5,000 U | 19,100 | 83,100 | 349,000 | 45,700 | 47,700 [47,000] |
| Chromium | 7440-47-3 | ug/L | 33.9 J | 1,490 J | 22,300 | 166,000 | 142 | 17.5 | 422 [409] |
| Chromium VI | 18540-29-9 | ug/L | 10 U | 18 | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 50 U | 50 U | 7.8 | 5.3 | 74.4 | 1.7 U | 1.7 U [1.7 U] |
| Copper | 7440-50-8 | ug/L | 25 U | 84.5 | 12.7 | 7.4 U | 187 | 11.4 | 12.3 [11.1] |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 5,300 | 687 | 1,290 | 647 | 139,000 | 1,330 | 184 [196] |
| Lead | 7439-92-1 | ug/L | 3 U | 113 | 5.4 U | 5.4 U | 111 | 7.4 | 2.7 U [2.7 U] |
| Magnesium | 7439-95-4 | ug/L | 64,100 | 5,000 U | 7,200 | 27,200 | 96,300 | 48,300 | 1,530 [1,610] |
| Manganese | 7439-96-5 | ug/L | 431 | 18.7 | 80.7 | 180 | 10,800 | 65.0 | 5.7 [5.1] |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG137-MW4AJ61161-8<br>4 - 18<br>05/14/07<br>137-MW4A | PPG137-MW4BJ61161-7<br>28 - 33<br>05/14/07<br>137-MW4B | PSEG HALLADAY-8/8/2005-1<br>34<br>08/08/05<br>MW1D | PSEG HALLADAY-8/8/2005-2<br>33<br>08/08/05<br>MW2D | PSEG HALLADAY-8/8/2005-3<br>38<br>08/08/05<br>MW7D | PSEG HALLADAY-8/8/2005-4<br>39<br>08/08/05<br>MW8D | PSEG HALLADAY-8/8/2005-5<br>35<br>08/08/05<br>MW9D |
|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.2 U | 0.89 | 0.10 U | 0.10 U | 0.17 | 0.10 U | 0.10 U [0.1 U] |
| Nickel | 7440-02-0 | ug/L | 40 U | 45.3 | 21.8 | 8.4 | 177 | 3.8 | 10.7 [10.5] |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 56,700 J | 50,100 J | 90,200 | 45,400 | 30,200 | 47,700 | 392,000 [459,000] |
| Selenium | 7782-49-2 | ug/L | 10 U | 10 U | 8.4 U | 8.4 U | 8.4 U | 4.2 U | 4.2 U [4.2 U] |
| Silver | 7440-22-4 | ug/L | 10 U | 10 U | 2.8 U | 2.8 U | 2.8 U | 1.4 U | 1.4 U [1.4 U] |
| Sodium | 7440-23-5 | ug/L | 519,000 | 1,190,000 | 136,000 | 270,000 | 51,000 | 404,000 | 291,000 [340,000] |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 10 U | 10 U | 9.4 U | 94.0 U | 9.4 U | 4.7 U | 4.7 U [4.7 U] |
| Total CCPW Metals | CCPW-M | ug/L | 33.9 | 1,950 | 22,300 | 166,000 | 507 | 41.0 | 445 [433] |
| Vanadium | 7440-62-2 | ug/L | 50 U | 386 | 9.4 U | 9.4 U | 175 | 11.8 | 12.3 [13.1] |
| Zinc | 7440-66-6 | ug/L | 20 U | 221 | 74.3 | 124 | 556 | 34.1 | 20.3 [25.3] |
| **Metals-Filtered** | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG137-MW4AJ61161-8<br>4 - 18<br>05/14/07<br>137-MW4A | PPG137-MW4BJ61161-7<br>28 - 33<br>05/14/07<br>137-MW4B | PSEG HALLADAY-8/8/2005-1<br>34<br>08/08/05<br>MW1D | PSEG HALLADAY-8/8/2005-2<br>33<br>08/08/05<br>MW2D | PSEG HALLADAY-8/8/2005-3<br>38<br>08/08/05<br>MW7D | PSEG HALLADAY-8/8/2005-4<br>39<br>08/08/05<br>MW8D | PSEG HALLADAY-8/8/2005-5<br>35<br>08/08/05<br>MW9D |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | 10 U | 10 U | 19 | 10 U | 10 U [10 U] |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | 10 U | 10 U | 10 U | 10 U | 10 U [10 U] |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG137-MW4AJ61161-8<br>4 - 18<br>05/14/07<br>137-MW4A | PPG137-MW4BJ61161-7<br>28 - 33<br>05/14/07<br>137-MW4B | PSEG HALLADAY-8/8/2005-1<br>34<br>08/08/05<br>MW1D | PSEG HALLADAY-8/8/2005-2<br>33<br>08/08/05<br>MW2D | PSEG HALLADAY-8/8/2005-3<br>38<br>08/08/05<br>MW7D | PSEG HALLADAY-8/8/2005-4<br>39<br>08/08/05<br>MW8D | PSEG HALLADAY-8/8/2005-5<br>35<br>08/08/05<br>MW9D |
|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-1I 03/13/14 GPS-PZ1I | PZ-1I (082114) 08/21/14 GPS-PZ1I | PZ-1I (082614) 08/26/14 GPS-PZ1I | PZ-1I (082914) 08/29/14 GPS-PZ1I | PZ-1I (090814) 09/08/14 GPS-PZ1I | PZ-1I (091214) 09/12/14 GPS-PZ1I | PZ-1I(090314) 09/03/14 GPS-PZ1I | PZ-1I-032614 03/26/14 GPS-PZ1I | PZ-1I-040314 04/03/14 GPS-PZ1I | PZ-1I-040714 04/07/14 GPS-PZ1I | PZ-1I-041514 04/15/14 GPS-PZ1I | PZ-1I-042214 04/22/14 GPS-PZ1I | PZ-1I-050114 05/01/14 GPS-PZ1I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PZ-1I<br>03/13/14<br>GPS-PZ1I | PZ-1I (082114)<br>08/21/14<br>GPS-PZ1I | PZ-1I (082614)<br>08/26/14<br>GPS-PZ1I | PZ-1I (082914)<br>08/29/14<br>GPS-PZ1I | PZ-1I (090814)<br>09/08/14<br>GPS-PZ1I | PZ-1I (091214)<br>09/12/14<br>GPS-PZ1I | PZ-1I(090314)<br>09/03/14<br>GPS-PZ1I | PZ-1I-032614<br>03/26/14<br>GPS-PZ1I | PZ-1I-040314<br>04/03/14<br>GPS-PZ1I | PZ-1I-040714<br>04/07/14<br>GPS-PZ1I | PZ-1I-041514<br>04/15/14<br>GPS-PZ1I | PZ-1I-042214<br>04/22/14<br>GPS-PZ1I | PZ-1I-050114<br>05/01/14<br>GPS-PZ1I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-1I 03/13/14 GPS-PZ1I | PZ-1I (082114) 08/21/14 GPS-PZ1I | PZ-1I (082614) 08/26/14 GPS-PZ1I | PZ-1I (082914) 08/29/14 GPS-PZ1I | PZ-1I (090814) 09/08/14 GPS-PZ1I | PZ-1I (091214) 09/12/14 GPS-PZ1I | PZ-1I(090314) 09/03/14 GPS-PZ1I | PZ-1I-032614 03/26/14 GPS-PZ1I | PZ-1I-040314 04/03/14 GPS-PZ1I | PZ-1I-040714 04/07/14 GPS-PZ1I | PZ-1I-041514 04/15/14 GPS-PZ1I | PZ-1I-042214 04/22/14 GPS-PZ1I | PZ-1I-050114 05/01/14 GPS-PZ1I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 200 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 90.7 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | 75.0 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | 200 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 18.7 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | 124,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 132,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 115,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 76.7 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | 334 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 133 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | 20.4 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | 22,400 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 266 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PZ-1I<br>03/13/14<br>GPS-PZ1I | PZ-1I (082114)<br>08/21/14<br>GPS-PZ1I | PZ-1I (082614)<br>08/26/14<br>GPS-PZ1I | PZ-1I (082914)<br>08/29/14<br>GPS-PZ1I | PZ-1I (090814)<br>09/08/14<br>GPS-PZ1I | PZ-1I (091214)<br>09/12/14<br>GPS-PZ1I | PZ-1I(090314)<br>09/03/14<br>GPS-PZ1I | PZ-1I-032614<br>03/26/14<br>GPS-PZ1I | PZ-1I-040314<br>04/03/14<br>GPS-PZ1I | PZ-1I-040714<br>04/07/14<br>GPS-PZ1I | PZ-1I-041514<br>04/15/14<br>GPS-PZ1I | PZ-1I-042214<br>04/22/14<br>GPS-PZ1I | PZ-1I-050114<br>05/01/14<br>GPS-PZ1I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 160 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 10,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | 198 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | 239,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 250 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | 246 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | 200 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | 88.5 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | 76.1 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | 200 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 17.3 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | 121,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 117,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 117,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | 69.9 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | 313 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 100 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | 16.2 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | 21,600 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 259 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.20 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | 150 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 10,000 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | 163 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | 236,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | 250 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | 228 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-1I 03/13/14 GPS-PZ1I | PZ-1I (082114) 08/21/14 GPS-PZ1I | PZ-1I (082614) 08/26/14 GPS-PZ1I | PZ-1I (082914) 08/29/14 GPS-PZ1I | PZ-1I (090814) 09/08/14 GPS-PZ1I | PZ-1I (091214) 09/12/14 GPS-PZ1I | PZ-1I(090314) 09/03/14 GPS-PZ1I | PZ-1I-032614 03/26/14 GPS-PZ1I | PZ-1I-040314 04/03/14 GPS-PZ1I | PZ-1I-040714 04/07/14 GPS-PZ1I | PZ-1I-041514 04/15/14 GPS-PZ1I | PZ-1I-042214 04/22/14 GPS-PZ1I | PZ-1I-050114 05/01/14 GPS-PZ1I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | 5,000 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | 5,000 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | 190 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-1I 03/13/14 GPS-PZ1I | PZ-1I (082114) 08/21/14 GPS-PZ1I | PZ-1I (082614) 08/26/14 GPS-PZ1I | PZ-1I (082914) 08/29/14 GPS-PZ1I | PZ-1I (090814) 09/08/14 GPS-PZ1I | PZ-1I (091214) 09/12/14 GPS-PZ1I | PZ-1I(090314) 09/03/14 GPS-PZ1I | PZ-1I-032614 03/26/14 GPS-PZ1I | PZ-1I-040314 04/03/14 GPS-PZ1I | PZ-1I-040714 04/07/14 GPS-PZ1I | PZ-1I-041514 04/15/14 GPS-PZ1I | PZ-1I-042214 04/22/14 GPS-PZ1I | PZ-1I-050114 05/01/14 GPS-PZ1I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 294,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 7,900 | 6,100 | 6,800 | 6,100 | 7,000 | 6,400 | 6,100 | 7,800 | 8,900 | 7,700 | 8,200 | 8,900 | 9,200 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | PZ-1I-050614 | PZ-1S | PZ-1S (082114) | PZ-1S (082614) | PZ-1S (082914) | PZ-1S (090814) | PZ-1S (091214) | PZ-1S(090314) | PZ-1S-040314 | PZ-1S-040714 | PZ-1S-041514 | PZ-1S-042214 | PZ-1S-050114 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | | | | | | |
| Date Collected: | | | 05/06/14 | 03/13/14 | 08/21/14 | 08/26/14 | 08/29/14 | 09/08/14 | 09/12/14 | 09/03/14 | 04/03/14 | 04/07/14 | 04/15/14 | 04/22/14 | 05/01/14 |
| Location ID: | CAS Number | Units | GPS-PZ1I | GPS-PZ1S | GPS-PZ1S | GPS-PZ1S | GPS-PZ1S | GPS-PZ1S | GPS-PZ1S | GPS-PZ1S | GPS-PZ1S | GPS-PZ1S | GPS-PZ1S | GPS-PZ1S | GPS-PZ1S |
| **Volatile Organics** | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-1I-050614 05/06/14 GPS-PZ1I | PZ-1S 03/13/14 GPS-PZ1S | PZ-1S (082114) 08/21/14 GPS-PZ1S | PZ-1S (082614) 08/26/14 GPS-PZ1S | PZ-1S (082914) 08/29/14 GPS-PZ1S | PZ-1S (090814) 09/08/14 GPS-PZ1S | PZ-1S (091214) 09/12/14 GPS-PZ1S | PZ-1S(090314) 09/03/14 GPS-PZ1S | PZ-1S-040314 04/03/14 GPS-PZ1S | PZ-1S-040714 04/07/14 GPS-PZ1S | PZ-1S-041514 04/15/14 GPS-PZ1S | PZ-1S-042214 04/22/14 GPS-PZ1S | PZ-1S-050114 05/01/14 GPS-PZ1S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-1I-050614 05/06/14 GPS-PZ1I | PZ-1S 03/13/14 GPS-PZ1S | PZ-1S (082114) 08/21/14 GPS-PZ1S | PZ-1S (082614) 08/26/14 GPS-PZ1S | PZ-1S (082914) 08/29/14 GPS-PZ1S | PZ-1S (090814) 09/08/14 GPS-PZ1S | PZ-1S (091214) 09/12/14 GPS-PZ1S | PZ-1S(090314) 09/03/14 GPS-PZ1S | PZ-1S-040314 04/03/14 GPS-PZ1S | PZ-1S-040714 04/07/14 GPS-PZ1S | PZ-1S-041514 04/15/14 GPS-PZ1S | PZ-1S-042214 04/22/14 GPS-PZ1S | PZ-1S-050114 05/01/14 GPS-PZ1S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 643 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | 6.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | 5.0 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | 200 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 3.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | 53,800 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 179,000 | 11,100 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 151,000 | 10,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | 50 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 500 U | 100 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | 3.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | 5,000 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 293 | 15 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.20 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | 72.0 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 35,300 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | 222,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 50 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | 20 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | 666 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | 6.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | 3.7 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | 200 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 3.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | 52,300 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 166,000 | 10,800 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 127,000 | 10,800 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | 50 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 500 U | 100 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | 3.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | 5,000 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 295 | 15 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.20 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | 70.6 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 35,700 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | 221,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 50 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | 20 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-1I-050614 05/06/14 GPS-PZ1I | PZ-1S 03/13/14 GPS-PZ1S | PZ-1S (082114) 08/21/14 GPS-PZ1S | PZ-1S (082614) 08/26/14 GPS-PZ1S | PZ-1S (082914) 08/29/14 GPS-PZ1S | PZ-1S (090814) 09/08/14 GPS-PZ1S | PZ-1S (091214) 09/12/14 GPS-PZ1S | PZ-1S(090314) 09/03/14 GPS-PZ1S | PZ-1S-040314 04/03/14 GPS-PZ1S | PZ-1S-040714 04/07/14 GPS-PZ1S | PZ-1S-041514 04/15/14 GPS-PZ1S | PZ-1S-042214 04/22/14 GPS-PZ1S | PZ-1S-050114 05/01/14 GPS-PZ1S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | 830 | 5,000 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | 710 | 5,000 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | 120 | 10 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-1I-050614 05/06/14 GPS-PZ1I | PZ-1S 03/13/14 GPS-PZ1S | PZ-1S (082114) 08/21/14 GPS-PZ1S | PZ-1S (082614) 08/26/14 GPS-PZ1S | PZ-1S (082914) 08/29/14 GPS-PZ1S | PZ-1S (090814) 09/08/14 GPS-PZ1S | PZ-1S (091214) 09/12/14 GPS-PZ1S | PZ-1S(090314) 09/03/14 GPS-PZ1S | PZ-1S-040314 04/03/14 GPS-PZ1S | PZ-1S-040714 04/07/14 GPS-PZ1S | PZ-1S-041514 04/15/14 GPS-PZ1S | PZ-1S-042214 04/22/14 GPS-PZ1S | PZ-1S-050114 05/01/14 GPS-PZ1S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 347,000 | 122,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | 2,000 U | 2,600 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 8,500 | 46,900 | 1,890,000 | 1,590,000 | 1,640,000 | 629,000 | 1,160,000 | 1,350,000 | 1,060,000 | 1,160,000 | 524,000 | 591,000 | 534,000 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | PZ-1S-050614 | PZ-2I | PZ-2I (082114) | PZ-2I (082614) | PZ-2I (082914) | PZ-2I (090814) | PZ-2I (091214) | PZ-2I(090314) | PZ-2I-032614 | PZ-2I-040314 | PZ-2I-040714 | PZ-2I-041514 | PZ-2I-042214 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | | | | | | |
| Date Collected: | | | 05/06/14 | 03/13/14 | 08/21/14 | 08/26/14 | 08/29/14 | 09/08/14 | 09/12/14 | 09/03/14 | 03/26/14 | 04/03/14 | 04/07/14 | 04/15/14 | 04/22/14 |
| Location ID: | CAS Number | Units | GPS-PZ1S | GPS-PZ2I | GPS-PZ2I | GPS-PZ2I | GPS-PZ2I | GPS-PZ2I | GPS-PZ2I | GPS-PZ2I | GPS-PZ2I | GPS-PZ2I | GPS-PZ2I | GPS-PZ2I | GPS-PZ2I |
| **Volatile Organics** | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-1S-050614 05/06/14 GPS-PZ1S | PZ-2I 03/13/14 GPS-PZ2I | PZ-2I (082114) 08/21/14 GPS-PZ2I | PZ-2I (082614) 08/26/14 GPS-PZ2I | PZ-2I (082914) 08/29/14 GPS-PZ2I | PZ-2I (090814) 09/08/14 GPS-PZ2I | PZ-2I (091214) 09/12/14 GPS-PZ2I | PZ-2I(090314) 09/03/14 GPS-PZ2I | PZ-2I-032614 03/26/14 GPS-PZ2I | PZ-2I-040314 04/03/14 GPS-PZ2I | PZ-2I-040714 04/07/14 GPS-PZ2I | PZ-2I-041514 04/15/14 GPS-PZ2I | PZ-2I-042214 04/22/14 GPS-PZ2I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PZ-1S-050614<br>05/06/14<br>GPS-PZ1S | PZ-2I<br>03/13/14<br>GPS-PZ2I | PZ-2I (082114)<br>08/21/14<br>GPS-PZ2I | PZ-2I (082614)<br>08/26/14<br>GPS-PZ2I | PZ-2I (082914)<br>08/29/14<br>GPS-PZ2I | PZ-2I (090814)<br>09/08/14<br>GPS-PZ2I | PZ-2I (091214)<br>09/12/14<br>GPS-PZ2I | PZ-2I(090314)<br>09/03/14<br>GPS-PZ2I | PZ-2I-032614<br>03/26/14<br>GPS-PZ2I | PZ-2I-040314<br>04/03/14<br>GPS-PZ2I | PZ-2I-040714<br>04/07/14<br>GPS-PZ2I | PZ-2I-041514<br>04/15/14<br>GPS-PZ2I | PZ-2I-042214<br>04/22/14<br>GPS-PZ2I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 3,590 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | 12 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | 6.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | 200 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 12.1 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | 97,500 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 1,040 | 54,200 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 79 | 62,800 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | 89.8 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | 273 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 104 | 4,730 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | 15.2 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | 22,900 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 15 U | 370 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-1S-050614 05/06/14 GPS-PZ1S | PZ-2I 03/13/14 GPS-PZ2I | PZ-2I (082114) 08/21/14 GPS-PZ2I | PZ-2I (082614) 08/26/14 GPS-PZ2I | PZ-2I (082914) 08/29/14 GPS-PZ2I | PZ-2I (090814) 09/08/14 GPS-PZ2I | PZ-2I (091214) 09/12/14 GPS-PZ2I | PZ-2I(090314) 09/03/14 GPS-PZ2I | PZ-2I-032614 03/26/14 GPS-PZ2I | PZ-2I-040314 04/03/14 GPS-PZ2I | PZ-2I-040714 04/07/14 GPS-PZ2I | PZ-2I-041514 04/15/14 GPS-PZ2I | PZ-2I-042214 04/22/14 GPS-PZ2I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.20 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | 128 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 10,000 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | 20 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | 20 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | 176,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 4.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 100 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | 153 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | 200 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | 41.8 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | 6.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | 200 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 12.9 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | 105,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 1,120 | 59,300 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 57 | 53,600 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | 94.7 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | 285 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 100 U | 200 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | 7.5 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | 24,100 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 15 U | 276 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.20 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | 132 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 10,000 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | 61.5 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | 20 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | 186,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 4.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 100 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | 132 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-1S-050614 05/06/14 GPS-PZ1S | PZ-2I 03/13/14 GPS-PZ2I | PZ-2I (082114) 08/21/14 GPS-PZ2I | PZ-2I (082614) 08/26/14 GPS-PZ2I | PZ-2I (082914) 08/29/14 GPS-PZ2I | PZ-2I (090814) 09/08/14 GPS-PZ2I | PZ-2I (091214) 09/12/14 GPS-PZ2I | PZ-2I(090314) 09/03/14 GPS-PZ2I | PZ-2I-032614 03/26/14 GPS-PZ2I | PZ-2I-040314 04/03/14 GPS-PZ2I | PZ-2I-040714 04/07/14 GPS-PZ2I | PZ-2I-041514 04/15/14 GPS-PZ2I | PZ-2I-042214 04/22/14 GPS-PZ2I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | 100 U | 5,000 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | 110 U | 5,000 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | 10 U | 120 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-1S-050614 05/06/14 GPS-PZ1S | PZ-2I 03/13/14 GPS-PZ2I | PZ-2I (082114) 08/21/14 GPS-PZ2I | PZ-2I (082614) 08/26/14 GPS-PZ2I | PZ-2I (082914) 08/29/14 GPS-PZ2I | PZ-2I (090814) 09/08/14 GPS-PZ2I | PZ-2I (091214) 09/12/14 GPS-PZ2I | PZ-2I(090314) 09/03/14 GPS-PZ2I | PZ-2I-032614 03/26/14 GPS-PZ2I | PZ-2I-040314 04/03/14 GPS-PZ2I | PZ-2I-040714 04/07/14 GPS-PZ2I | PZ-2I-041514 04/15/14 GPS-PZ2I | PZ-2I-042214 04/22/14 GPS-PZ2I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 280,000 | 245,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | 3,800 | 2,000 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 580,000 | 9,000 | 6,800 | 5,400 | 5,200 | 6,500 | 8,400 | 5,700 | 6,900 | 19,100 | 4,600 | 7,100 | 5,800 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-2I-050114 05/01/14 GPS-PZ2I | PZ-2I-050614 05/06/14 GPS-PZ2I | PZ-2S 03/13/14 GPS-PZ2S | PZ-2S (082114) 08/21/14 GPS-PZ2S | PZ-2S (082614) 08/26/14 GPS-PZ2S | PZ-2S (082914) 08/29/14 GPS-PZ2S | PZ-2S (090814) 09/08/14 GPS-PZ2S | PZ-2S (091214) 09/12/14 GPS-PZ2S | PZ-2S(090314) 09/03/14 GPS-PZ2S | PZ-2S-040314 04/03/14 GPS-PZ2S | PZ-2S-040714 04/07/14 GPS-PZ2S | PZ-2S-041514 04/15/14 GPS-PZ2S | PZ-2S-042214 04/22/14 GPS-PZ2S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-2I-050114 05/01/14 GPS-PZ2I | PZ-2I-050614 05/06/14 GPS-PZ2I | PZ-2S 03/13/14 GPS-PZ2S | PZ-2S (082114) 08/21/14 GPS-PZ2S | PZ-2S (082614) 08/26/14 GPS-PZ2S | PZ-2S (082914) 08/29/14 GPS-PZ2S | PZ-2S (090814) 09/08/14 GPS-PZ2S | PZ-2S (091214) 09/12/14 GPS-PZ2S | PZ-2S(090314) 09/03/14 GPS-PZ2S | PZ-2S-040314 04/03/14 GPS-PZ2S | PZ-2S-040714 04/07/14 GPS-PZ2S | PZ-2S-041514 04/15/14 GPS-PZ2S | PZ-2S-042214 04/22/14 GPS-PZ2S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-2I-050114 05/01/14 GPS-PZ2I | PZ-2I-050614 05/06/14 GPS-PZ2I | PZ-2S 03/13/14 GPS-PZ2S | PZ-2S (082114) 08/21/14 GPS-PZ2S | PZ-2S (082614) 08/26/14 GPS-PZ2S | PZ-2S (082914) 08/29/14 GPS-PZ2S | PZ-2S (090814) 09/08/14 GPS-PZ2S | PZ-2S (091214) 09/12/14 GPS-PZ2S | PZ-2S(090314) 09/03/14 GPS-PZ2S | PZ-2S-040314 04/03/14 GPS-PZ2S | PZ-2S-040714 04/07/14 GPS-PZ2S | PZ-2S-041514 04/15/14 GPS-PZ2S | PZ-2S-042214 04/22/14 GPS-PZ2S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | 1,470 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | 6.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | 12.6 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | 200 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | 3.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | 81,100 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 47,500 | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 36,300 | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | 50 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 235 | 1,360 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | 3.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | 5,000 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | 293 | 15 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PZ-2I-050114<br>05/01/14<br>GPS-PZ2I | PZ-2I-050614<br>05/06/14<br>GPS-PZ2I | PZ-2S<br>03/13/14<br>GPS-PZ2S | PZ-2S (082114)<br>08/21/14<br>GPS-PZ2S | PZ-2S (082614)<br>08/26/14<br>GPS-PZ2S | PZ-2S (082914)<br>08/29/14<br>GPS-PZ2S | PZ-2S (090814)<br>09/08/14<br>GPS-PZ2S | PZ-2S (091214)<br>09/12/14<br>GPS-PZ2S | PZ-2S(090314)<br>09/03/14<br>GPS-PZ2S | PZ-2S-040314<br>04/03/14<br>GPS-PZ2S | PZ-2S-040714<br>04/07/14<br>GPS-PZ2S | PZ-2S-041514<br>04/15/14<br>GPS-PZ2S | PZ-2S-042214<br>04/22/14<br>GPS-PZ2S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | 0.20 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | 86.1 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | 38,600 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | 210,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | 50 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | 20 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | 516 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | 6.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | 12.5 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | 200 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | 3.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | 86,500 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 48,600 | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 38,200 | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | 50 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 100 U | 100 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | 3.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | 5,000 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | 286 | 15 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | 0.20 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | 86.9 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | 41,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | 226,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | 50 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | 20 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PZ-2I-050114<br>05/01/14<br>GPS-PZ2I | PZ-2I-050614<br>05/06/14<br>GPS-PZ2I | PZ-2S<br>03/13/14<br>GPS-PZ2S | PZ-2S (082114)<br>08/21/14<br>GPS-PZ2S | PZ-2S (082614)<br>08/26/14<br>GPS-PZ2S | PZ-2S (082914)<br>08/29/14<br>GPS-PZ2S | PZ-2S (090814)<br>09/08/14<br>GPS-PZ2S | PZ-2S (091214)<br>09/12/14<br>GPS-PZ2S | PZ-2S(090314)<br>09/03/14<br>GPS-PZ2S | PZ-2S-040314<br>04/03/14<br>GPS-PZ2S | PZ-2S-040714<br>04/07/14<br>GPS-PZ2S | PZ-2S-041514<br>04/15/14<br>GPS-PZ2S | PZ-2S-042214<br>04/22/14<br>GPS-PZ2S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | 960 | 5,000 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | 940 | 5,000 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | 24 | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PZ-2I-050114<br>05/01/14<br>GPS-PZ2I | PZ-2I-050614<br>05/06/14<br>GPS-PZ2I | PZ-2S<br>03/13/14<br>GPS-PZ2S | PZ-2S (082114)<br>08/21/14<br>GPS-PZ2S | PZ-2S (082614)<br>08/26/14<br>GPS-PZ2S | PZ-2S (082914)<br>08/29/14<br>GPS-PZ2S | PZ-2S (090814)<br>09/08/14<br>GPS-PZ2S | PZ-2S (091214)<br>09/12/14<br>GPS-PZ2S | PZ-2S(090314)<br>09/03/14<br>GPS-PZ2S | PZ-2S-040314<br>04/03/14<br>GPS-PZ2S | PZ-2S-040714<br>04/07/14<br>GPS-PZ2S | PZ-2S-041514<br>04/15/14<br>GPS-PZ2S | PZ-2S-042214<br>04/22/14<br>GPS-PZ2S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 253,000 | 190,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | 2,000 U | 4,300 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 5,900 | 5,700 | 42,500 | 196,000 | 206,000 | 286,000 | 270,000 | 438,000 | 32,400 | 73,300 | 104,000 | 68,400 | 79,300 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-2S-050114 05/01/14 GPS-PZ2S | PZ-2S-050614 05/06/14 GPS-PZ2S | PZ-3I 03/13/14 GPS-PZ3I | PZ-3I-032114 03/21/14 GPS-PZ3I | PZ-3I-032614 03/26/14 GPS-PZ3I | PZ-3I-040314 04/03/14 GPS-PZ3I | PZ-3I-040714 04/07/14 GPS-PZ3I | PZ-3I-041514 04/15/14 GPS-PZ3I | PZ-3I-042214 04/22/14 GPS-PZ3I | PZ-3I-050114 05/01/14 GPS-PZ3I | PZ-3I-050614 05/06/14 GPS-PZ3I | PZ-3S 03/12/14 GPS-PZ3S | PZ-3S (082114) 08/21/14 GPS-PZ3S | PZ-3S (082614) 08/26/14 GPS-PZ3S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-2S-050114 05/01/14 GPS-PZ2S | PZ-2S-050614 05/06/14 GPS-PZ2S | PZ-3I 03/13/14 GPS-PZ3I | PZ-3I-032114 03/21/14 GPS-PZ3I | PZ-3I-032614 03/26/14 GPS-PZ3I | PZ-3I-040314 04/03/14 GPS-PZ3I | PZ-3I-040714 04/07/14 GPS-PZ3I | PZ-3I-041514 04/15/14 GPS-PZ3I | PZ-3I-042214 04/22/14 GPS-PZ3I | PZ-3I-050114 05/01/14 GPS-PZ3I | PZ-3I-050614 05/06/14 GPS-PZ3I | PZ-3S 03/12/14 GPS-PZ3S | PZ-3S (082114) 08/21/14 GPS-PZ3S | PZ-3S (082614) 08/26/14 GPS-PZ3S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-2S-050114 05/01/14 GPS-PZ2S | PZ-2S-050614 05/06/14 GPS-PZ2S | PZ-3I 03/13/14 GPS-PZ3I | PZ-3I-032114 03/21/14 GPS-PZ3I | PZ-3I-032614 03/26/14 GPS-PZ3I | PZ-3I-040314 04/03/14 GPS-PZ3I | PZ-3I-040714 04/07/14 GPS-PZ3I | PZ-3I-041514 04/15/14 GPS-PZ3I | PZ-3I-042214 04/22/14 GPS-PZ3I | PZ-3I-050114 05/01/14 GPS-PZ3I | PZ-3I-050614 05/06/14 GPS-PZ3I | PZ-3S 03/12/14 GPS-PZ3S | PZ-3S (082114) 08/21/14 GPS-PZ3S | PZ-3S (082614) 08/26/14 GPS-PZ3S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | 461 | NA | NA | NA | NA | NA | NA | NA | NA | 1,710 | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | 12 U | NA | NA | NA | NA | NA | NA | NA | NA | 6.0 U | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | 6.0 U | NA | NA | NA | NA | NA | NA | NA | NA | 8.9 | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | 200 U | NA | NA | NA | NA | NA | NA | NA | NA | 200 U | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA | 1.0 U | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | 10.3 | NA | NA | NA | NA | NA | NA | NA | NA | 3.0 U | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | 122,000 | NA | NA | NA | NA | NA | NA | NA | NA | 97,700 | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 10 U | 56,100 | NA | NA | NA | NA | NA | NA | NA | 16,600 | 8,220 | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U | 66,000 | NA | NA | NA | NA | NA | NA | NA | 14,100 | 9,100 | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | 105 | NA | NA | NA | NA | NA | NA | NA | NA | 50 U | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | 223 | NA | NA | NA | NA | NA | NA | NA | NA | 10 U | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 389 | 670 | NA | NA | NA | NA | NA | NA | NA | 180 | 1,060 | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | 11.3 | NA | NA | NA | NA | NA | NA | NA | NA | 3.0 U | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | 28,700 | NA | NA | NA | NA | NA | NA | NA | NA | 5,000 U | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | 15 U | 308 | NA | NA | NA | NA | NA | NA | NA | 521 | 15 U | NA | NA |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | 0.20 U | NA | NA | NA | NA | NA | NA | NA | NA | 0.20 U | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | 117 | NA | NA | NA | NA | NA | NA | NA | NA | 131 | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | 10,000 U | NA | NA | NA | NA | NA | NA | NA | NA | 42,200 | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | 20 U | NA | NA | NA | NA | NA | NA | NA | NA | 10 U | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | 20 U | NA | NA | NA | NA | NA | NA | NA | NA | 10 U | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | 153,000 | NA | NA | NA | NA | NA | NA | NA | NA | 322,000 | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | 4.0 U | NA | NA | NA | NA | NA | NA | NA | NA | 2.0 U | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | 100 U | NA | NA | NA | NA | NA | NA | NA | NA | 51.0 | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | 76.0 | NA | NA | NA | NA | NA | NA | NA | NA | 20 U | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | 200 U | NA | NA | NA | NA | NA | NA | NA | NA | 1,090 | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | 28.2 | NA | NA | NA | NA | NA | NA | NA | NA | 6.0 U | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | 6.0 U | NA | NA | NA | NA | NA | NA | NA | NA | 8.5 | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | 200 U | NA | NA | NA | NA | NA | NA | NA | NA | 200 U | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA | 1.0 U | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | 10.4 | NA | NA | NA | NA | NA | NA | NA | NA | 3.0 U | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | 132,000 | NA | NA | NA | NA | NA | NA | NA | NA | 110,000 | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 10 U | 56,200 | NA | NA | NA | NA | NA | NA | NA | 13,700 | 9,070 | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 10 U | 49,300 | NA | NA | NA | NA | NA | NA | NA | 10,500 | 9,400 | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | 102 | NA | NA | NA | NA | NA | NA | NA | NA | 50 U | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | 209 | NA | NA | NA | NA | NA | NA | NA | NA | 10 U | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 100 U | 100 U | NA | NA | NA | NA | NA | NA | NA | 100 U | 100 U | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | 9.0 | NA | NA | NA | NA | NA | NA | NA | NA | 3.0 U | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | 32,900 | NA | NA | NA | NA | NA | NA | NA | NA | 5,000 U | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | 15 U | 287 | NA | NA | NA | NA | NA | NA | NA | 560 | 15 U | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | 0.20 U | NA | NA | NA | NA | NA | NA | NA | NA | 0.20 U | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | 112 | NA | NA | NA | NA | NA | NA | NA | NA | 136 | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | 10,000 U | NA | NA | NA | NA | NA | NA | NA | NA | 46,100 | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | 20 U | NA | NA | NA | NA | NA | NA | NA | NA | 10 U | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | 20 U | NA | NA | NA | NA | NA | NA | NA | NA | 10 U | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | 157,000 | NA | NA | NA | NA | NA | NA | NA | NA | 356,000 | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | 4.0 U | NA | NA | NA | NA | NA | NA | NA | NA | 2.0 U | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | 100 U | NA | NA | NA | NA | NA | NA | NA | NA | 54.3 | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | 80.3 | NA | NA | NA | NA | NA | NA | NA | NA | 20 U | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-2S-050114 05/01/14 GPS-PZ2S | PZ-2S-050614 05/06/14 GPS-PZ2S | PZ-3I 03/13/14 GPS-PZ3I | PZ-3I-032114 03/21/14 GPS-PZ3I | PZ-3I-032614 03/26/14 GPS-PZ3I | PZ-3I-040314 04/03/14 GPS-PZ3I | PZ-3I-040714 04/07/14 GPS-PZ3I | PZ-3I-041514 04/15/14 GPS-PZ3I | PZ-3I-042214 04/22/14 GPS-PZ3I | PZ-3I-050114 05/01/14 GPS-PZ3I | PZ-3I-050614 05/06/14 GPS-PZ3I | PZ-3S 03/12/14 GPS-PZ3S | PZ-3S (082114) 08/21/14 GPS-PZ3S | PZ-3S (082614) 08/26/14 GPS-PZ3S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | 100 U | 5,000 U | NA | NA | NA | NA | NA | NA | NA | 350 | 100 U | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | 110 U | 5,000 U | NA | NA | NA | NA | NA | NA | NA | 340 | 110 U | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | 10 U | 170 | NA | NA | NA | NA | NA | NA | NA | 11 | 10 U | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | PZ-2S-050114 | PZ-2S-050614 | PZ-3I | PZ-3I-032114 | PZ-3I-032614 | PZ-3I-040314 | PZ-3I-040714 | PZ-3I-041514 | PZ-3I-042214 | PZ-3I-050114 | PZ-3I-050614 | PZ-3S | PZ-3S (082114) | PZ-3S (082614) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | | | | | | | |
| Date Collected: | | | 05/01/14 | 05/06/14 | 03/13/14 | 03/21/14 | 03/26/14 | 04/03/14 | 04/07/14 | 04/15/14 | 04/22/14 | 05/01/14 | 05/06/14 | 03/12/14 | 08/21/14 | 08/26/14 |
| Location ID: | CAS Number | Units | GPS-PZ2S | GPS-PZ2S | GPS-PZ3I | GPS-PZ3I | GPS-PZ3I | GPS-PZ3I | GPS-PZ3I | GPS-PZ3I | GPS-PZ3I | GPS-PZ3I | GPS-PZ3I | GPS-PZ3S | GPS-PZ3S | GPS-PZ3S |
| Sulfate | 14808-79-8 | ug/L | NA | 233,000 | 273,000 | NA | NA | NA | NA | NA | NA | NA | 143,000 | 194,000 | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | 2,000 U | 2,000 U | NA | NA | NA | NA | NA | NA | NA | 2,000 U | 2,100 | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 79,900 | 72,300 | 6,700 | 6,800 | 8,600 | 5,300 | 14,700 | 6,700 | 6,400 | 5,400 | 4,600 | 68,900 | 2,220,000 | 2,740,000 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-3S (082914) 08/29/14 GPS-PZ3S | PZ-3S (090814) 09/08/14 GPS-PZ3S | PZ-3S (091214) 09/12/14 GPS-PZ3S | PZ-3S(090314) 09/03/14 GPS-PZ3S | PZ-3S-032114 03/21/14 GPS-PZ3S | PZ-3S-040314 04/03/14 GPS-PZ3S | PZ-3S-040714 04/07/14 GPS-PZ3S | PZ-3S-041514 04/15/14 GPS-PZ3S | PZ-3S-042214 04/22/14 GPS-PZ3S | PZ-3S-050114 05/01/14 GPS-PZ3S | PZ-3S-050714 05/07/14 GPS-PZ3S | PZ-4I 03/19/14 GPS-PZ4I | PZ-4I (082114) 08/21/14 GPS-PZ4I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PZ-3S (082914)<br>08/29/14<br>GPS-PZ3S | PZ-3S (090814)<br>09/08/14<br>GPS-PZ3S | PZ-3S (091214)<br>09/12/14<br>GPS-PZ3S | PZ-3S(090314)<br>09/03/14<br>GPS-PZ3S | PZ-3S-032114<br>03/21/14<br>GPS-PZ3S | PZ-3S-040314<br>04/03/14<br>GPS-PZ3S | PZ-3S-040714<br>04/07/14<br>GPS-PZ3S | PZ-3S-041514<br>04/15/14<br>GPS-PZ3S | PZ-3S-042214<br>04/22/14<br>GPS-PZ3S | PZ-3S-050114<br>05/01/14<br>GPS-PZ3S | PZ-3S-050714<br>05/07/14<br>GPS-PZ3S | PZ-4I<br>03/19/14<br>GPS-PZ4I | PZ-4I (082114)<br>08/21/14<br>GPS-PZ4I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PZ-3S (082914)<br>08/29/14<br>GPS-PZ3S | PZ-3S (090814)<br>09/08/14<br>GPS-PZ3S | PZ-3S (091214)<br>09/12/14<br>GPS-PZ3S | PZ-3S(090314)<br>09/03/14<br>GPS-PZ3S | PZ-3S-032114<br>03/21/14<br>GPS-PZ3S | PZ-3S-040314<br>04/03/14<br>GPS-PZ3S | PZ-3S-040714<br>04/07/14<br>GPS-PZ3S | PZ-3S-041514<br>04/15/14<br>GPS-PZ3S | PZ-3S-042214<br>04/22/14<br>GPS-PZ3S | PZ-3S-050114<br>05/01/14<br>GPS-PZ3S | PZ-3S-050714<br>05/07/14<br>GPS-PZ3S | PZ-4I<br>03/19/14<br>GPS-PZ4I | PZ-4I (082114)<br>08/21/14<br>GPS-PZ4I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 1,060 | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 97 | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 87,800 | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 11,200 | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-3S (082914) 08/29/14 GPS-PZ3S | PZ-3S (090814) 09/08/14 GPS-PZ3S | PZ-3S (091214) 09/12/14 GPS-PZ3S | PZ-3S(090314) 09/03/14 GPS-PZ3S | PZ-3S-032114 03/21/14 GPS-PZ3S | PZ-3S-040314 04/03/14 GPS-PZ3S | PZ-3S-040714 04/07/14 GPS-PZ3S | PZ-3S-041514 04/15/14 GPS-PZ3S | PZ-3S-042214 04/22/14 GPS-PZ3S | PZ-3S-050114 05/01/14 GPS-PZ3S | PZ-3S-050714 05/07/14 GPS-PZ3S | PZ-4I 03/19/14 GPS-PZ4I | PZ-4I (082114) 08/21/14 GPS-PZ4I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 1,530 | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 410 | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 97,300 | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 11,900 | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PZ-3S (082914)<br>08/29/14<br>GPS-PZ3S | PZ-3S (090814)<br>09/08/14<br>GPS-PZ3S | PZ-3S (091214)<br>09/12/14<br>GPS-PZ3S | PZ-3S(090314)<br>09/03/14<br>GPS-PZ3S | PZ-3S-032114<br>03/21/14<br>GPS-PZ3S | PZ-3S-040314<br>04/03/14<br>GPS-PZ3S | PZ-3S-040714<br>04/07/14<br>GPS-PZ3S | PZ-3S-041514<br>04/15/14<br>GPS-PZ3S | PZ-3S-042214<br>04/22/14<br>GPS-PZ3S | PZ-3S-050114<br>05/01/14<br>GPS-PZ3S | PZ-3S-050714<br>05/07/14<br>GPS-PZ3S | PZ-4I<br>03/19/14<br>GPS-PZ4I | PZ-4I (082114)<br>08/21/14<br>GPS-PZ4I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 100 U | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 200 U | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 100 U | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-3S (082914) 08/29/14 GPS-PZ3S | PZ-3S (090814) 09/08/14 GPS-PZ3S | PZ-3S (091214) 09/12/14 GPS-PZ3S | PZ-3S(090314) 09/03/14 GPS-PZ3S | PZ-3S-032114 03/21/14 GPS-PZ3S | PZ-3S-040314 04/03/14 GPS-PZ3S | PZ-3S-040714 04/07/14 GPS-PZ3S | PZ-3S-041514 04/15/14 GPS-PZ3S | PZ-3S-042214 04/22/14 GPS-PZ3S | PZ-3S-050114 05/01/14 GPS-PZ3S | PZ-3S-050714 05/07/14 GPS-PZ3S | PZ-4I 03/19/14 GPS-PZ4I | PZ-4I (082114) 08/21/14 GPS-PZ4I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 459,000 | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 2,000 U | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 2,330,000 | 2,470,000 | 2,230,000 | 2,690,000 | 1,680,000 | 4,840,000 | 5,380,000 | 6,830,000 | 5,590,000 | 3,710,000 | 2,670,000 | 15,900 | 4,600 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-4I (082614) 08/26/14 GPS-PZ4I | PZ-4I (082914) 08/29/14 GPS-PZ4I | PZ-4I (090814) 09/08/14 GPS-PZ4I | PZ-4I (091214) 09/12/14 GPS-PZ4I | PZ-4I(090314) 09/03/14 GPS-PZ4I | PZ-4I-031314 03/13/14 GPS-PZ4I | PZ-4I-032114 03/21/14 GPS-PZ4I | PZ-4I-040314 04/03/14 GPS-PZ4I | PZ-4I-040714 04/07/14 GPS-PZ4I | PZ-4I-041514 04/15/14 GPS-PZ4I | PZ-4I-042214 04/22/14 GPS-PZ4I | PZ-4I-050114 05/01/14 GPS-PZ4I | PZ-4I-050614 05/06/14 GPS-PZ4I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-4I (082614) 08/26/14 GPS-PZ4I | PZ-4I (082914) 08/29/14 GPS-PZ4I | PZ-4I (090814) 09/08/14 GPS-PZ4I | PZ-4I (091214) 09/12/14 GPS-PZ4I | PZ-4I(090314) 09/03/14 GPS-PZ4I | PZ-4I-031314 03/13/14 GPS-PZ4I | PZ-4I-032114 03/21/14 GPS-PZ4I | PZ-4I-040314 04/03/14 GPS-PZ4I | PZ-4I-040714 04/07/14 GPS-PZ4I | PZ-4I-041514 04/15/14 GPS-PZ4I | PZ-4I-042214 04/22/14 GPS-PZ4I | PZ-4I-050114 05/01/14 GPS-PZ4I | PZ-4I-050614 05/06/14 GPS-PZ4I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PZ-4I (082614)<br>08/26/14<br>GPS-PZ4I | PZ-4I (082914)<br>08/29/14<br>GPS-PZ4I | PZ-4I (090814)<br>09/08/14<br>GPS-PZ4I | PZ-4I (091214)<br>09/12/14<br>GPS-PZ4I | PZ-4I(090314)<br>09/03/14<br>GPS-PZ4I | PZ-4I-031314<br>03/13/14<br>GPS-PZ4I | PZ-4I-032114<br>03/21/14<br>GPS-PZ4I | PZ-4I-040314<br>04/03/14<br>GPS-PZ4I | PZ-4I-040714<br>04/07/14<br>GPS-PZ4I | PZ-4I-041514<br>04/15/14<br>GPS-PZ4I | PZ-4I-042214<br>04/22/14<br>GPS-PZ4I | PZ-4I-050114<br>05/01/14<br>GPS-PZ4I | PZ-4I-050614<br>05/06/14<br>GPS-PZ4I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 3,290 | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 141 | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 12.6 | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 200 U | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 12.1 | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 146,000 | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | 116,000 | NA | NA | NA | NA | NA | NA | 583 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | 114,000 | NA | NA | NA | NA | NA | NA | 360 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 150 | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 271 | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | 4,650 | NA | NA | NA | NA | NA | NA | 287 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 16.2 | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 36,800 | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | 543 | NA | NA | NA | NA | NA | NA | 369 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-4I (082614) 08/26/14 GPS-PZ4I | PZ-4I (082914) 08/29/14 GPS-PZ4I | PZ-4I (090814) 09/08/14 GPS-PZ4I | PZ-4I (091214) 09/12/14 GPS-PZ4I | PZ-4I(090314) 09/03/14 GPS-PZ4I | PZ-4I-031314 03/13/14 GPS-PZ4I | PZ-4I-032114 03/21/14 GPS-PZ4I | PZ-4I-040314 04/03/14 GPS-PZ4I | PZ-4I-040714 04/07/14 GPS-PZ4I | PZ-4I-041514 04/15/14 GPS-PZ4I | PZ-4I-042214 04/22/14 GPS-PZ4I | PZ-4I-050114 05/01/14 GPS-PZ4I | PZ-4I-050614 05/06/14 GPS-PZ4I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.20 U | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | 141 | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 10,100 | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 30.8 | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 30 U | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 190,000 | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | 6.0 U | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | 150 U | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 114 | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | 200 U | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | 55.9 | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | 9.9 | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | 200 U | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | 12.5 | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | 149,000 | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | 131,000 | NA | NA | NA | NA | NA | NA | 466 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | 111,000 | NA | NA | NA | NA | NA | NA | 340 |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | 152 | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | 294 | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | 300 U | NA | NA | NA | NA | NA | NA | 100 U |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | 13.9 | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | 35,700 | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | 525 | NA | NA | NA | NA | NA | NA | 401 |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | 0.20 U | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | 143 | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | 10,500 | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | 31.6 | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | 30 U | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | 204,000 | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | 6.0 U | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | 150 U | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | 85.1 | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-4I (082614) 08/26/14 GPS-PZ4I | PZ-4I (082914) 08/29/14 GPS-PZ4I | PZ-4I (090814) 09/08/14 GPS-PZ4I | PZ-4I (091214) 09/12/14 GPS-PZ4I | PZ-4I(090314) 09/03/14 GPS-PZ4I | PZ-4I-031314 03/13/14 GPS-PZ4I | PZ-4I-032114 03/21/14 GPS-PZ4I | PZ-4I-040314 04/03/14 GPS-PZ4I | PZ-4I-040714 04/07/14 GPS-PZ4I | PZ-4I-041514 04/15/14 GPS-PZ4I | PZ-4I-042214 04/22/14 GPS-PZ4I | PZ-4I-050114 05/01/14 GPS-PZ4I | PZ-4I-050614 05/06/14 GPS-PZ4I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | 5,000 U | NA | NA | NA | NA | NA | NA | 100 U |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | 5,000 U | NA | NA | NA | NA | NA | NA | 110 U |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | 320 | NA | NA | NA | NA | NA | NA | 10 U |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-4I (082614) 08/26/14 GPS-PZ4I | PZ-4I (082914) 08/29/14 GPS-PZ4I | PZ-4I (090814) 09/08/14 GPS-PZ4I | PZ-4I (091214) 09/12/14 GPS-PZ4I | PZ-4I(090314) 09/03/14 GPS-PZ4I | PZ-4I-031314 03/13/14 GPS-PZ4I | PZ-4I-032114 03/21/14 GPS-PZ4I | PZ-4I-040314 04/03/14 GPS-PZ4I | PZ-4I-040714 04/07/14 GPS-PZ4I | PZ-4I-041514 04/15/14 GPS-PZ4I | PZ-4I-042214 04/22/14 GPS-PZ4I | PZ-4I-050114 05/01/14 GPS-PZ4I | PZ-4I-050614 05/06/14 GPS-PZ4I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | 351,000 | NA | NA | NA | NA | NA | NA | 76,100 |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | 2,000 U | NA | NA | NA | NA | NA | NA | 2,000 U |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 21,800 | 60,600 | 187,000 | 294,000 | 138,000 | 9,000 | 22,800 | 17,300 | 47,500 | 12,800 | 13,500 | 1,200 | 3,400 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | PZ-4S | PZ-4S (082114) | PZ-4S (082614) | PZ-4S (082914) | PZ-4S (090814) | PZ-4S (091214) | PZ-4S(090314) | PZ-4S-032014 | PZ-4S-040314 | PZ-4S-040714 | PZ-4S-041514 | PZ-4S-042214 | PZ-4S-050114 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | | | | | | |
| Date Collected: | | | 03/19/14 | 08/21/14 | 08/26/14 | 08/29/14 | 09/08/14 | 09/12/14 | 09/03/14 | 03/20/14 | 04/03/14 | 04/07/14 | 04/15/14 | 04/22/14 | 05/01/14 |
| Location ID: | CAS Number | Units | GPS-PZ4S | GPS-PZ4S | GPS-PZ4S | GPS-PZ4S | GPS-PZ4S | GPS-PZ4S | GPS-PZ4S | GPS-PZ4S | GPS-PZ4S | GPS-PZ4S | GPS-PZ4S | GPS-PZ4S | GPS-PZ4S |
| **Volatile Organics** | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-4S 03/19/14 GPS-PZ4S | PZ-4S (082114) 08/21/14 GPS-PZ4S | PZ-4S (082614) 08/26/14 GPS-PZ4S | PZ-4S (082914) 08/29/14 GPS-PZ4S | PZ-4S (090814) 09/08/14 GPS-PZ4S | PZ-4S (091214) 09/12/14 GPS-PZ4S | PZ-4S(090314) 09/03/14 GPS-PZ4S | PZ-4S-032014 03/20/14 GPS-PZ4S | PZ-4S-040314 04/03/14 GPS-PZ4S | PZ-4S-040714 04/07/14 GPS-PZ4S | PZ-4S-041514 04/15/14 GPS-PZ4S | PZ-4S-042214 04/22/14 GPS-PZ4S | PZ-4S-050114 05/01/14 GPS-PZ4S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-4S 03/19/14 GPS-PZ4S | PZ-4S (082114) 08/21/14 GPS-PZ4S | PZ-4S (082614) 08/26/14 GPS-PZ4S | PZ-4S (082914) 08/29/14 GPS-PZ4S | PZ-4S (090814) 09/08/14 GPS-PZ4S | PZ-4S (091214) 09/12/14 GPS-PZ4S | PZ-4S(090314) 09/03/14 GPS-PZ4S | PZ-4S-032014 03/20/14 GPS-PZ4S | PZ-4S-040314 04/03/14 GPS-PZ4S | PZ-4S-040714 04/07/14 GPS-PZ4S | PZ-4S-041514 04/15/14 GPS-PZ4S | PZ-4S-042214 04/22/14 GPS-PZ4S | PZ-4S-050114 05/01/14 GPS-PZ4S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-4S 03/19/14 GPS-PZ4S | PZ-4S (082114) 08/21/14 GPS-PZ4S | PZ-4S (082614) 08/26/14 GPS-PZ4S | PZ-4S (082914) 08/29/14 GPS-PZ4S | PZ-4S (090814) 09/08/14 GPS-PZ4S | PZ-4S (091214) 09/12/14 GPS-PZ4S | PZ-4S(090314) 09/03/14 GPS-PZ4S | PZ-4S-032014 03/20/14 GPS-PZ4S | PZ-4S-040314 04/03/14 GPS-PZ4S | PZ-4S-040714 04/07/14 GPS-PZ4S | PZ-4S-041514 04/15/14 GPS-PZ4S | PZ-4S-042214 04/22/14 GPS-PZ4S | PZ-4S-050114 05/01/14 GPS-PZ4S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-4S 03/19/14 GPS-PZ4S | PZ-4S (082114) 08/21/14 GPS-PZ4S | PZ-4S (082614) 08/26/14 GPS-PZ4S | PZ-4S (082914) 08/29/14 GPS-PZ4S | PZ-4S (090814) 09/08/14 GPS-PZ4S | PZ-4S (091214) 09/12/14 GPS-PZ4S | PZ-4S(090314) 09/03/14 GPS-PZ4S | PZ-4S-032014 03/20/14 GPS-PZ4S | PZ-4S-040314 04/03/14 GPS-PZ4S | PZ-4S-040714 04/07/14 GPS-PZ4S | PZ-4S-041514 04/15/14 GPS-PZ4S | PZ-4S-042214 04/22/14 GPS-PZ4S | PZ-4S-050114 05/01/14 GPS-PZ4S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-4S 03/19/14 GPS-PZ4S | PZ-4S (082114) 08/21/14 GPS-PZ4S | PZ-4S (082614) 08/26/14 GPS-PZ4S | PZ-4S (082914) 08/29/14 GPS-PZ4S | PZ-4S (090814) 09/08/14 GPS-PZ4S | PZ-4S (091214) 09/12/14 GPS-PZ4S | PZ-4S(090314) 09/03/14 GPS-PZ4S | PZ-4S-032014 03/20/14 GPS-PZ4S | PZ-4S-040314 04/03/14 GPS-PZ4S | PZ-4S-040714 04/07/14 GPS-PZ4S | PZ-4S-041514 04/15/14 GPS-PZ4S | PZ-4S-042214 04/22/14 GPS-PZ4S | PZ-4S-050114 05/01/14 GPS-PZ4S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 2,280,000 | 430,000 | 1,210,000 | 1,940,000 | 1,000,000 | 2,060,000 | 1,940,000 | 3,600,000 | 1,600,000 | 1,320,000 | 1,940,000 | 1,750,000 | 1,810,000 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | PZ-4S-050714 | PZ-5I | PZ-5I (082114) | PZ-5I (082614) | PZ-5I (082914) | PZ-5I (090814) | PZ-5I (091214) | PZ-5I(090314) | PZ-5I-032114 | PZ-5I-040314 | PZ-5I-040714 | PZ-5I-041514 | PZ-5I-042214 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | | | | | | |
| Date Collected: | | | 05/07/14 | 03/13/14 | 08/21/14 | 08/26/14 | 08/29/14 | 09/08/14 | 09/12/14 | 09/03/14 | 03/21/14 | 04/03/14 | 04/07/14 | 04/15/14 | 04/22/14 |
| Location ID: | CAS Number | Units | GPS-PZ4S | GPS-PZ5I | GPS-PZ5I | GPS-PZ5I | GPS-PZ5I | GPS-PZ5I | GPS-PZ5I | GPS-PZ5I | GPS-PZ5I | GPS-PZ5I | GPS-PZ5I | GPS-PZ5I | GPS-PZ5I |
| **Volatile Organics** | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-4S-050714 05/07/14 GPS-PZ4S | PZ-5I 03/13/14 GPS-PZ5I | PZ-5I (082114) 08/21/14 GPS-PZ5I | PZ-5I (082614) 08/26/14 GPS-PZ5I | PZ-5I (082914) 08/29/14 GPS-PZ5I | PZ-5I (090814) 09/08/14 GPS-PZ5I | PZ-5I (091214) 09/12/14 GPS-PZ5I | PZ-5I(090314) 09/03/14 GPS-PZ5I | PZ-5I-032114 03/21/14 GPS-PZ5I | PZ-5I-040314 04/03/14 GPS-PZ5I | PZ-5I-040714 04/07/14 GPS-PZ5I | PZ-5I-041514 04/15/14 GPS-PZ5I | PZ-5I-042214 04/22/14 GPS-PZ5I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-4S-050714 05/07/14 GPS-PZ4S | PZ-5I 03/13/14 GPS-PZ5I | PZ-5I (082114) 08/21/14 GPS-PZ5I | PZ-5I (082614) 08/26/14 GPS-PZ5I | PZ-5I (082914) 08/29/14 GPS-PZ5I | PZ-5I (090814) 09/08/14 GPS-PZ5I | PZ-5I (091214) 09/12/14 GPS-PZ5I | PZ-5I(090314) 09/03/14 GPS-PZ5I | PZ-5I-032114 03/21/14 GPS-PZ5I | PZ-5I-040314 04/03/14 GPS-PZ5I | PZ-5I-040714 04/07/14 GPS-PZ5I | PZ-5I-041514 04/15/14 GPS-PZ5I | PZ-5I-042214 04/22/14 GPS-PZ5I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | 515 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | 18 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | 9.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | 200 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 15.4 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | 85,500 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 89.3 | 96,500 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 10 U | 91,800 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | 109 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | 295 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 1,730 | 756 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | 14.2 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | 38,500 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 844 | 225 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-4S-050714 05/07/14 GPS-PZ4S | PZ-5I 03/13/14 GPS-PZ5I | PZ-5I (082114) 08/21/14 GPS-PZ5I | PZ-5I (082614) 08/26/14 GPS-PZ5I | PZ-5I (082914) 08/29/14 GPS-PZ5I | PZ-5I (090814) 09/08/14 GPS-PZ5I | PZ-5I (091214) 09/12/14 GPS-PZ5I | PZ-5I(090314) 09/03/14 GPS-PZ5I | PZ-5I-032114 03/21/14 GPS-PZ5I | PZ-5I-040314 04/03/14 GPS-PZ5I | PZ-5I-040714 04/07/14 GPS-PZ5I | PZ-5I-041514 04/15/14 GPS-PZ5I | PZ-5I-042214 04/22/14 GPS-PZ5I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.20 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | 130 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 14,300 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | 30 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | 30 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | 337,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 6.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 150 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | 155 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | 200 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | 80.8 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | 9.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | 200 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | 17.9 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | 94,700 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 105 | 116,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 150 | 101,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | 123 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | 354 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 1,100 | 300 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | 22.3 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | 41,500 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | 1,410 | 245 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | 0.20 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | 149 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | 16,800 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | 30 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | 30 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | 380,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | 6.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | 150 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | 155 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-4S-050714 05/07/14 GPS-PZ4S | PZ-5I 03/13/14 GPS-PZ5I | PZ-5I (082114) 08/21/14 GPS-PZ5I | PZ-5I (082614) 08/26/14 GPS-PZ5I | PZ-5I (082914) 08/29/14 GPS-PZ5I | PZ-5I (090814) 09/08/14 GPS-PZ5I | PZ-5I (091214) 09/12/14 GPS-PZ5I | PZ-5I(090314) 09/03/14 GPS-PZ5I | PZ-5I-032114 03/21/14 GPS-PZ5I | PZ-5I-040314 04/03/14 GPS-PZ5I | PZ-5I-040714 04/07/14 GPS-PZ5I | PZ-5I-041514 04/15/14 GPS-PZ5I | PZ-5I-042214 04/22/14 GPS-PZ5I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | 100 U | 5,000 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | 110 U | 5,000 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | 10 U | 320 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-4S-050714 05/07/14 GPS-PZ4S | PZ-5I 03/13/14 GPS-PZ5I | PZ-5I (082114) 08/21/14 GPS-PZ5I | PZ-5I (082614) 08/26/14 GPS-PZ5I | PZ-5I (082914) 08/29/14 GPS-PZ5I | PZ-5I (090814) 09/08/14 GPS-PZ5I | PZ-5I (091214) 09/12/14 GPS-PZ5I | PZ-5I(090314) 09/03/14 GPS-PZ5I | PZ-5I-032114 03/21/14 GPS-PZ5I | PZ-5I-040314 04/03/14 GPS-PZ5I | PZ-5I-040714 04/07/14 GPS-PZ5I | PZ-5I-041514 04/15/14 GPS-PZ5I | PZ-5I-042214 04/22/14 GPS-PZ5I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | 109,000 | 446,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | 21,400 | 2,000 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 2,240,000 | 11,300 | 12,100 | 11,600 | 14,700 | 14,000 | 16,200 | 14,800 | 9,300 | 14,400 | 13,700 | 17,000 | 17,600 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-5I-050114 05/01/14 GPS-PZ5I | PZ-5I-050614 05/06/14 GPS-PZ5I | PZ-5S 03/12/14 GPS-PZ5S | PZ-5S (082114) 08/21/14 GPS-PZ5S | PZ-5S (082614) 08/26/14 GPS-PZ5S | PZ-5S (082914) 08/29/14 GPS-PZ5S | PZ-5S (090814) 09/08/14 GPS-PZ5S | PZ-5S (091214) 09/12/14 GPS-PZ5S | PZ-5S(090314) 09/03/14 GPS-PZ5S | PZ-5S-032114 03/21/14 GPS-PZ5S | PZ-5S-040314 04/03/14 GPS-PZ5S | PZ-5S-040714 04/07/14 GPS-PZ5S | PZ-5S-041514 04/15/14 GPS-PZ5S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-5I-050114 05/01/14 GPS-PZ5I | PZ-5I-050614 05/06/14 GPS-PZ5I | PZ-5S 03/12/14 GPS-PZ5S | PZ-5S (082114) 08/21/14 GPS-PZ5S | PZ-5S (082614) 08/26/14 GPS-PZ5S | PZ-5S (082914) 08/29/14 GPS-PZ5S | PZ-5S (090814) 09/08/14 GPS-PZ5S | PZ-5S (091214) 09/12/14 GPS-PZ5S | PZ-5S(090314) 09/03/14 GPS-PZ5S | PZ-5S-032114 03/21/14 GPS-PZ5S | PZ-5S-040314 04/03/14 GPS-PZ5S | PZ-5S-040714 04/07/14 GPS-PZ5S | PZ-5S-041514 04/15/14 GPS-PZ5S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PZ-5I-050114<br>05/01/14<br>GPS-PZ5I | PZ-5I-050614<br>05/06/14<br>GPS-PZ5I | PZ-5S<br>03/12/14<br>GPS-PZ5S | PZ-5S (082114)<br>08/21/14<br>GPS-PZ5S | PZ-5S (082614)<br>08/26/14<br>GPS-PZ5S | PZ-5S (082914)<br>08/29/14<br>GPS-PZ5S | PZ-5S (090814)<br>09/08/14<br>GPS-PZ5S | PZ-5S (091214)<br>09/12/14<br>GPS-PZ5S | PZ-5S(090314)<br>09/03/14<br>GPS-PZ5S | PZ-5S-032114<br>03/21/14<br>GPS-PZ5S | PZ-5S-040314<br>04/03/14<br>GPS-PZ5S | PZ-5S-040714<br>04/07/14<br>GPS-PZ5S | PZ-5S-041514<br>04/15/14<br>GPS-PZ5S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | 1,150 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | 6.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | 9.6 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | 200 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | 3.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | 64,200 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 118,000 | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 107,000 | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | 50 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 551 | 408 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | 3.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | 5,000 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | 141 | 15 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PZ-5I-050114<br><br>05/01/14<br>GPS-PZ5I | PZ-5I-050614<br><br>05/06/14<br>GPS-PZ5I | PZ-5S<br><br>03/12/14<br>GPS-PZ5S | PZ-5S (082114)<br><br>08/21/14<br>GPS-PZ5S | PZ-5S (082614)<br><br>08/26/14<br>GPS-PZ5S | PZ-5S (082914)<br><br>08/29/14<br>GPS-PZ5S | PZ-5S (090814)<br><br>09/08/14<br>GPS-PZ5S | PZ-5S (091214)<br><br>09/12/14<br>GPS-PZ5S | PZ-5S(090314)<br><br>09/03/14<br>GPS-PZ5S | PZ-5S-032114<br><br>03/21/14<br>GPS-PZ5S | PZ-5S-040314<br><br>04/03/14<br>GPS-PZ5S | PZ-5S-040714<br><br>04/07/14<br>GPS-PZ5S | PZ-5S-041514<br><br>04/15/14<br>GPS-PZ5S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | 0.20 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | 119 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | 38,600 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | 235,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | 50 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | 20 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-Filtered** | | | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | 1,010 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | 6.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | 9.6 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | 200 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | 3.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | 76,300 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | 123,000 | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | 101,000 | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | 50 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | 300 U | 100 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | 3.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | 5,000 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | 144 | 15 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | 0.20 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | 128 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | 44,500 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | 262,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | 50 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | 20 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

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**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PZ-5I-050114<br>05/01/14<br>GPS-PZ5I | PZ-5I-050614<br>05/06/14<br>GPS-PZ5I | PZ-5S<br>03/12/14<br>GPS-PZ5S | PZ-5S (082114)<br>08/21/14<br>GPS-PZ5S | PZ-5S (082614)<br>08/26/14<br>GPS-PZ5S | PZ-5S (082914)<br>08/29/14<br>GPS-PZ5S | PZ-5S (090814)<br>09/08/14<br>GPS-PZ5S | PZ-5S (091214)<br>09/12/14<br>GPS-PZ5S | PZ-5S(090314)<br>09/03/14<br>GPS-PZ5S | PZ-5S-032114<br>03/21/14<br>GPS-PZ5S | PZ-5S-040314<br>04/03/14<br>GPS-PZ5S | PZ-5S-040714<br>04/07/14<br>GPS-PZ5S | PZ-5S-041514<br>04/15/14<br>GPS-PZ5S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | 230 | 100 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | 120 | 110 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | 110 | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PZ-5I-050114<br>05/01/14<br>GPS-PZ5I | PZ-5I-050614<br>05/06/14<br>GPS-PZ5I | PZ-5S<br>03/12/14<br>GPS-PZ5S | PZ-5S (082114)<br>08/21/14<br>GPS-PZ5S | PZ-5S (082614)<br>08/26/14<br>GPS-PZ5S | PZ-5S (082914)<br>08/29/14<br>GPS-PZ5S | PZ-5S (090814)<br>09/08/14<br>GPS-PZ5S | PZ-5S (091214)<br>09/12/14<br>GPS-PZ5S | PZ-5S(090314)<br>09/03/14<br>GPS-PZ5S | PZ-5S-032114<br>03/21/14<br>GPS-PZ5S | PZ-5S-040314<br>04/03/14<br>GPS-PZ5S | PZ-5S-040714<br>04/07/14<br>GPS-PZ5S | PZ-5S-041514<br>04/15/14<br>GPS-PZ5S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | 483,000 | 141,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | 2,000 U | 4,800 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 14,400 | 12,800 | 59,700 | 36,100 | 30,800 | 29,600 | 37,400 | 74,600 | 33,000 | 38,300 | 33,900 | 38,400 | 29,500 |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: | | | PZ-5S-042214 | PZ-5S-050114 | PZ-5S-050714 | PZ-43 | SENT-I-050114 | SENT-I-050714 | SENT-S-050114 | SENT-S-050714 | SOLUTION 2 | SOLUTION 4 | SOLUTION 5 | TP1G01 | TP2G01 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | | | | | | | | | | | | 3.3 | 5.6 |
| Date Collected: | | | 04/22/14 | 05/01/14 | 05/07/14 | 03/12/14 | 05/01/14 | 05/07/14 | 05/01/14 | 05/07/14 | 03/21/14 | 03/27/14 | 04/03/14 | 09/04/03 | 09/04/03 |
| Location ID: | CAS Number | Units | GPS-PZ5S | GPS-PZ5S | GPS-PZ5S | GPS-PZ4S | GPS-SENT-I | GPS-SENT-I | GPS-SENT-S | GPS-SENT-S | noloc | noloc | noloc | TP1 | TP2 |
| **Volatile Organics** | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U [5 U] | 5 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U [5 U] | 5 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U [5 U] | 5 U |
| 1,1-Dichloroethane | 75-34-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U [5 U] | 5 U |
| 1,1-Dichloroethene | 75-35-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U [5 U] | 5 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U [5 U] | 5 U |
| 1,2-Dichloropropane | 78-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U [5 U] | 5 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 2.6 [3.8] | 11 |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 10 U [10 U] | 10 U |
| Acetone | 67-64-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 23 [29] | 20 U |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U [5 U] | 5 U |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U [5 U] | 5 U |
| Bromoform | 75-25-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U [5 U] | 5 U |
| Bromomethane | 74-83-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U [5 U] | 5 U |
| Carbon Disulfide | 75-15-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 10 U [10 U] | 17 |
| Carbon Tetrachloride | 56-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U [5 U] | 5 U |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U [5 U] | 5 U |
| Chlorodibromomethane | 124-48-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U [5 U] | 5 U |
| Chloroethane | 75-00-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U [5 U] | 5 U |
| Chloroform | 67-66-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U [5 U] | 5 U |
| Chloromethane | 74-87-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U [5 U] | 5 U |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U [5 U] | 5 U |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U [5 U] | 5 U |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U [5 U] | 5 U |
| Ethylbenzene | 100-41-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U [5 U] | 5 U |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U [5 U] | 5 U |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 10 U [10 U] | 10 U |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U [5 U] | 7 |
| Styrene (Monomer) | 100-42-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U [5 U] | 5 U |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U [5 U] | 5 U |
| Toluene | 108-88-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U [5 U] | 5 U |
| Total VOCs | ARC-TVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 26 [33] | 35 |
| Total Xylenes | 1330-20-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5.0 U [5 U] | 7.0 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-5S-042214 04/22/14 GPS-PZ5S | PZ-5S-050114 05/01/14 GPS-PZ5S | PZ-5S-050714 05/07/14 GPS-PZ5S | PZ-43 03/12/14 GPS-PZ4S | SENT-I-050114 05/01/14 GPS-SENT-I | SENT-I-050714 05/07/14 GPS-SENT-I | SENT-S-050114 05/01/14 GPS-SENT-S | SENT-S-050714 05/07/14 GPS-SENT-S | SOLUTION 2 03/21/14 noloc | SOLUTION 4 03/27/14 noloc | SOLUTION 5 04/03/14 noloc | TP1G01 3.3 09/04/03 TP1 | TP2G01 5.6 09/04/03 TP2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U [5 U] | 5 U |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U [5 U] | 5 U |
| Trichloroethene | 79-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U [5 U] | 5 U |
| Vinyl chloride | 75-01-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5 U [5 U] | 5 U |
| **Semivolatile Organics** | | | | | | | | | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 4.4 J |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 47 U [47 U] | 47 U |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| 2-Chloronaphthalene | 91-58-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| 2-Chlorophenol | 95-57-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 47 U [47 U] | 47 U |
| 2-Methylnaphthalene | 91-57-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| 2-Methylphenol | 95-48-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 3.6 J |
| 2-Nitroaniline | 88-74-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 47 U [47 U] | 47 U |
| 2-Nitrophenol | 88-75-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 47 U [47 U] | 47 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| 4-Methylphenol | 106-44-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 36 |
| 4-Nitroaniline | 100-01-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 47 U [47 U] | 47 U |
| 4-Nitrophenol | 100-02-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 47 U [47 U] | 47 U |
| Acenaphthene | 83-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 1.4 J |
| Acenaphthylene | 208-96-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| Benzo(a)pyrene | 50-32-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| Benzyl Alcohol | 100-51-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 1.4 J |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 1.3 J [9.3 U] | 0.95 J |
| Butyl benzyl phthalate | 85-68-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PZ-5S-042214<br><br>04/22/14<br>GPS-PZ5S | PZ-5S-050114<br><br>05/01/14<br>GPS-PZ5S | PZ-5S-050714<br><br>05/07/14<br>GPS-PZ5S | PZ-43<br><br>03/12/14<br>GPS-PZ4S | SENT-I-050114<br><br>05/01/14<br>GPS-SENT-I | SENT-I-050714<br><br>05/07/14<br>GPS-SENT-I | SENT-S-050114<br><br>05/01/14<br>GPS-SENT-S | SENT-S-050714<br><br>05/07/14<br>GPS-SENT-S | SOLUTION 2<br><br>03/21/14<br>noloc | SOLUTION 4<br><br>03/27/14<br>noloc | SOLUTION 5<br><br>04/03/14<br>noloc | TP1G01<br>3.3<br>09/04/03<br>TP1 | TP2G01<br>5.6<br>09/04/03<br>TP2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 1.3 J |
| Chrysene | 218-01-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| Dibenzofuran | 132-64-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| Diethyl phthalate | 84-66-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| Dimethyl phthalate | 131-11-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| Di-n-butyl phthalate | 84-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 1.2 B [0.95 B] | 1.5 B |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| Fluoranthene | 206-44-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| Fluorene | 86-73-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| Hexachlorobenzene | 118-74-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| Hexachloroethane | 67-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| Isophorone | 78-59-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 5.1 J |
| Nitrobenzene | 98-95-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| p-Chloroaniline | 106-47-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 47 U [47 U] | 47 U |
| Phenanthrene | 85-01-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 1.2 J [1.1 J] | 1.3 J |
| Phenol | 108-95-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 84 |
| Pyrene | 129-00-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.3 U [9.3 U] | 9.3 U |
| Total SVOCs | ARC-TSVOC | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 3.7 [2.1] | 140 |
| **Metals** | | | | | | | | | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | 445 | NA | NA | NA | NA | NA | NA | NA | 38,600 [32,300] | 12,200 |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | 6.0 U | NA | NA | NA | NA | NA | NA | NA | 18.4 U [18.4 U] | 20 B |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | 3.8 | NA | NA | NA | NA | NA | NA | NA | 20.1 UJ [20.1 UJ] | 172 |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | 200 U | NA | NA | NA | NA | NA | NA | NA | 40 [36.4] | 25.3 |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | 2.3 U [1.7] | 1.6 |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | 3.0 U | NA | NA | NA | NA | NA | NA | NA | 4 U [4 U] | 4 U |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | 201,000 | NA | NA | NA | NA | NA | NA | NA | 582,000 [545,000] | 34,100 |
| Chromium | 7440-47-3 | ug/L | NA | NA | 10 U | 10 U | NA | 18,100 | NA | 15,300 | NA | NA | NA | 15,200 [12,600] | 12,100 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 10 U | 10 U | NA | 14,400 | NA | 15,700 | NA | NA | NA | 1,990 J [2,240 J] | 9,180 J |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | NA | NA | 231 [194] | 50.0 U |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA | 20 U [20 U] | 20 U |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 162 | 206 | NA | 100 U | NA | 1,090 | NA | NA | NA | 155,000 [130,000] | 1,950 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | 3.0 U | NA | NA | NA | NA | NA | NA | NA | 138 [107] | 47.3 |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | 5,000 U | NA | NA | NA | NA | NA | NA | NA | 146,000 [121,000] | 650 |
| Manganese | 7439-96-5 | ug/L | NA | NA | 15 U | 15 U | NA | 240 | NA | 18.8 | NA | NA | NA | 1,550 [1,300] | 196 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-5S-042214 04/22/14 GPS-PZ5S | PZ-5S-050114 05/01/14 GPS-PZ5S | PZ-5S-050714 05/07/14 GPS-PZ5S | PZ-43 03/12/14 GPS-PZ4S | SENT-I-050114 05/01/14 GPS-SENT-I | SENT-I-050714 05/07/14 GPS-SENT-I | SENT-S-050114 05/01/14 GPS-SENT-S | SENT-S-050714 05/07/14 GPS-SENT-S | SOLUTION 2 03/21/14 noloc | SOLUTION 4 03/27/14 noloc | SOLUTION 5 04/03/14 noloc | TP1G01 3.3 09/04/03 TP1 | TP2G01 5.6 09/04/03 TP2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | 0.20 U | NA | NA | NA | NA | NA | NA | NA | 0.2 U [0.2 U] | 2.2 |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | 65.9 | NA | NA | NA | NA | NA | NA | NA | 733 [618] | 613 |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | 38,400 | NA | NA | NA | NA | NA | NA | NA | 5,670 [5,750] | 189,000 |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA | 5 U [5 U] | 9.4 |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA | 10.0 U [10 U] | 10.0 U |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | 219,000 | NA | NA | NA | NA | NA | NA | NA | 82,600 [85,600] | 1,760,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA | 3.5 U [3.5 U] | 3.5 U |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 17,600 [14,600] | 13,900 |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | NA | NA | 1,690 [1,420] | 1,160 |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | 20 U | NA | NA | NA | NA | NA | NA | NA | 307 [275] | 355 |
| **Metals-Filtered** | | | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | 331 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | 6.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | 5.1 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | 200 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | 1.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | 3.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | 218,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 10 U | 10 U | NA | 18,200 | NA | 15,200 | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | 10 U | 10 U | NA | 16,700 | NA | 16,100 | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | 100 U | 100 U | NA | 100 U | NA | 156 | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | 3.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | 5,000 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | 15 U | 15 U | NA | 243 | NA | 15 U | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | 0.20 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | 71.5 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | 42,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | 10 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | 242,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | 2.0 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | 50 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | 20 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | | | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-5S-042214 04/22/14 GPS-PZ5S | PZ-5S-050114 05/01/14 GPS-PZ5S | PZ-5S-050714 05/07/14 GPS-PZ5S | PZ-43 03/12/14 GPS-PZ4S | SENT-I-050114 05/01/14 GPS-SENT-I | SENT-I-050714 05/07/14 GPS-SENT-I | SENT-S-050114 05/01/14 GPS-SENT-S | SENT-S-050714 05/07/14 GPS-SENT-S | SOLUTION 2 03/21/14 noloc | SOLUTION 4 03/27/14 noloc | SOLUTION 5 04/03/14 noloc | TP1G01 3.3 09/04/03 TP1 | TP2G01 5.6 09/04/03 TP2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 10,900 [11,600] | 502,000 |
| Chlorine | 7782-50-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | 100 U | 100 U | NA | 3,600 | NA | 100 U | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | 110 U | 110 U | NA | 3,500 | NA | 110 U | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | 10 U | 10 U | NA | 140 | NA | 29 | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | PZ-5S-042214 04/22/14 GPS-PZ5S | PZ-5S-050114 05/01/14 GPS-PZ5S | PZ-5S-050714 05/07/14 GPS-PZ5S | PZ-43 03/12/14 GPS-PZ4S | SENT-I-050114 05/01/14 GPS-SENT-I | SENT-I-050714 05/07/14 GPS-SENT-I | SENT-S-050114 05/01/14 GPS-SENT-S | SENT-S-050714 05/07/14 GPS-SENT-S | SOLUTION 2 03/21/14 noloc | SOLUTION 4 03/27/14 noloc | SOLUTION 5 04/03/14 noloc | TP1G01 3.3 09/04/03 TP1 | TP2G01 5.6 09/04/03 TP2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | 180,000 | 133,000 | NA | 136,000 | NA | 539,000 | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | 2,000 U | 2,800 | NA | 2,000 U | NA | 2,000 U | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | 29,100 | 30,600 | 30,500 | 35,000 | 4,400 | 3,900 | 41,300 | 38,000 | 7,250,000 | 5,270,000 | 5,380,000 | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | | | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | TP3G01 1.2 09/04/03 TP3 | TP4G01 0.2 09/04/03 TP4 | TP5G01 5.8 09/05/03 TP5 | TP6G01 9.3 09/05/03 TP6 | TP7G01 4.5 09/05/03 TP7 |
|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | ug/L | 5 U | 5 U | 5 U | 10 U | 100 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | ug/L | 5 U | 5 U | 5 U | 10 U | 100 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | ug/L | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | ug/L | 5 U | 5 U | 5 U | 10 U | 100 U |
| 1,1-Dichloroethane | 75-34-3 | ug/L | 5 U | 5 U | 5 U | 10 U | 100 U |
| 1,1-Dichloroethene | 75-35-4 | ug/L | 5 U | 5 U | 5 U | 10 U | 100 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | ug/L | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | ug/L | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | ug/L | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | ug/L | 5 U | 5 U | 5 U | 10 U | 100 U |
| 1,2-Dichloropropane | 78-87-5 | ug/L | 5 U | 5 U | 5 U | 10 U | 100 U |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | ug/L | 3.6 | 10 U | 2 | 20 U | 200 U |
| 2-Chloroethyl vinyl ether | 110-75-8 | ug/L | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | ug/L | 10 U | 10 U | 10 U | 3.4 | 200 U |
| Acetone | 67-64-1 | ug/L | 99 | 20 U | 20 U | 40 U | 400 U |
| Acrolein | 107-02-8 | ug/L | NA | NA | NA | NA | NA |
| Acrylonitrile | 107-13-1 | ug/L | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | ug/L | 5 U | 5 U | 5 U | 18 | 3,700 |
| Bromochloromethane | 74-97-5 | ug/L | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | ug/L | 5 U | 5 U | 5 U | 10 U | 100 U |
| Bromoform | 75-25-2 | ug/L | 5 U | 5 U | 5 U | 10 U | 100 U |
| Bromomethane | 74-83-9 | ug/L | 5 U | 5 U | 5 U | 10 U | 100 U |
| Carbon Disulfide | 75-15-0 | ug/L | 10 U | 10 U | 10 U | 20 U | 200 U |
| Carbon Tetrachloride | 56-23-5 | ug/L | 5 U | 5 U | 5 U | 10 U | 100 U |
| CFC-11 | 75-69-4 | ug/L | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | ug/L | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | ug/L | 5 U | 5 U | 5 U | 10 U | 100 U |
| Chlorodibromomethane | 124-48-1 | ug/L | 5 U | 5 U | 5 U | 10 U | 100 U |
| Chloroethane | 75-00-3 | ug/L | 5 U | 5 U | 5 U | 10 U | 100 U |
| Chloroform | 67-66-3 | ug/L | 5 U | 5 U | 5 U | 10 U | 100 U |
| Chloromethane | 74-87-3 | ug/L | 5 U | 5 U | 5 U | 10 U | 100 U |
| cis-1,2-Dichloroethene | 156-59-2 | ug/L | 5 U | 5 U | 5 U | 10 U | 100 U |
| cis-1,3-Dichloropropene | 10061-01-5 | ug/L | 5 U | 5 U | 5 U | 10 U | 100 U |
| Cyclohexane | 110-82-7 | ug/L | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | ug/L | 5 U | 5 U | 5 U | 10 U | 100 U |
| Ethylbenzene | 100-41-4 | ug/L | 5 U | 5 U | 5 U | 43 | 1,200 |
| Isopropylbenzene | 98-82-8 | ug/L | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | ug/L | 5 U | 5 U | 5 U | 46 | 1,300 |
| Methyl Acetate | 79-20-9 | ug/L | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | ug/L | 10 U | 10 U | 10 U | 20 U | 200 U |
| Methylcyclohexane | 108-87-2 | ug/L | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | ug/L | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | ug/L | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | ug/L | 5 U | 5 U | 5 U | 30 | 790 |
| Styrene (Monomer) | 100-42-5 | ug/L | 5 U | 5 U | 5 U | 10 U | 180 |
| tert-Butyl alcohol | 75-65-0 | ug/L | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | ug/L | 5 U | 5 U | 5 U | 10 U | 100 U |
| Toluene | 108-88-3 | ug/L | 5 U | 5 U | 5 U | 59 | 2,800 |
| Total VOCs | ARC-TVOC | ug/L | 100 | 20 U | 2 | 200 | 10,000 |
| Total Xylenes | 1330-20-7 | ug/L | 5.0 U | 5.0 U | 5.0 U | 76 | 2,100 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | TP3G01<br>1.2<br>09/04/03<br>TP3 | TP4G01<br>0.2<br>09/04/03<br>TP4 | TP5G01<br>5.8<br>09/05/03<br>TP5 | TP6G01<br>9.3<br>09/05/03<br>TP6 | TP7G01<br>4.5<br>09/05/03<br>TP7 |
|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 156-60-5 | ug/L | 5 U | 5 U | 5 U | 10 U | 100 U |
| trans-1,3-Dichloropropene | 10061-02-6 | ug/L | 5 U | 5 U | 5 U | 10 U | 100 U |
| Trichloroethene | 79-01-6 | ug/L | 5 U | 5 U | 5 U | 10 U | 100 U |
| Vinyl chloride | 75-01-4 | ug/L | 5 U | 5 U | 5 U | 10 U | 100 U |
| **Semivolatile Organics** | | | | | | | |
| 1,1-Biphenyl | 92-52-4 | ug/L | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | ug/L | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 190 UJ | 480 UJ |
| 1,2-Dichlorobenzene | 95-50-1 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 190 UJ | 480 UJ |
| 1,2-Diphenylhydrazine | 122-66-7 | ug/L | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 190 U | 480 UJ |
| 1,4-Dichlorobenzene | 106-46-7 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 190 UJ | 480 UJ |
| 1,4-Dioxane | 123-91-1 | ug/L | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 190 U | 480 UJ |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | ug/L | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 190 UJ | 480 UJ |
| 2,4,6-Trichlorophenol | 88-06-2 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 190 UJ | 480 UJ |
| 2,4-Dichlorophenol | 120-83-2 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 190 UJ | 480 UJ |
| 2,4-Dimethylphenol | 105-67-9 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 36 J | 75 J |
| 2,4-Dinitrophenol | 51-28-5 | ug/L | 47 UJ [47 UJ] | 47 U | 190 UJ | 930 UJ | 2,400 UJ |
| 2,4-Dinitrotoluene | 121-14-2 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 190 UJ | 480 UJ |
| 2,6-Dinitrotoluene | 606-20-2 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 190 UJ | 480 UJ |
| 2-Chloronaphthalene | 91-58-7 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 190 UJ | 480 UJ |
| 2-Chlorophenol | 95-57-8 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 190 UJ | 480 UJ |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | ug/L | 47 UJ [47 UJ] | 47 U | 190 UJ | 930 UJ | 2,400 UJ |
| 2-Methylnaphthalene | 91-57-6 | ug/L | 9.3 UJ [9.3 UJ] | 18 | 120 J | 740 J | 620 J |
| 2-Methylphenol | 95-48-7 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 85 J | 480 UJ |
| 2-Nitroaniline | 88-74-4 | ug/L | 47 UJ [47 UJ] | 47 U | 190 UJ | 930 UJ | 2,400 UJ |
| 2-Nitrophenol | 88-75-5 | ug/L | 9.3 UJ [27 J] | 9.3 U | 6.3 J | 190 UJ | 480 UJ |
| 3,3-Dichlorobenzidine | 91-94-1 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 190 UJ | 480 UJ |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | ug/L | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | ug/L | 47 UJ [47 UJ] | 47 U | 190 UJ | 930 UJ | 2,400 UJ |
| 4-Bromophenyl phenyl ether | 101-55-3 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 190 UJ | 480 UJ |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 190 UJ | 480 UJ |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 190 UJ | 480 UJ |
| 4-Methylphenol | 106-44-5 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 1,200 J | 58 J |
| 4-Nitroaniline | 100-01-6 | ug/L | 47 UJ [47 UJ] | 47 U | 190 UJ | 930 U | 2,400 UJ |
| 4-Nitrophenol | 100-02-7 | ug/L | 47 UJ [26 J] | 47 U | 8.9 J | 930 UJ | 2,400 UJ |
| Acenaphthene | 83-32-9 | ug/L | 9.3 UJ [9.3 UJ] | 11 | 26 J | 250 J | 150 J |
| Acenaphthylene | 208-96-8 | ug/L | 9.3 UJ [9.3 UJ] | 2.8 J | 38 UJ | 50 J | 85 J |
| Acetophenone | 98-86-2 | ug/L | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | ug/L | 9.3 UJ [9.3 UJ] | 2.2 J | 38 UJ | 90 J | 480 UJ |
| Atrazine | 1912-24-9 | ug/L | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | ug/L | NA | NA | NA | NA | NA |
| Benzidine | 92-87-5 | ug/L | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 57 J | 480 UJ |
| Benzo(a)pyrene | 50-32-8 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 39 J | 480 UJ |
| Benzo(b)fluoranthene | 205-99-2 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 20 J | 480 UJ |
| Benzo(g,h,i)perylene | 191-24-2 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 190 UJ | 480 UJ |
| Benzo(k)fluoranthene | 207-08-9 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 21 J | 480 UJ |
| Benzyl Alcohol | 100-51-6 | ug/L | 21 J [24 J] | 9.3 U | 38 UJ | 190 UJ | 480 UJ |
| bis(2-Chloroethoxy)methane | 111-91-1 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 190 UJ | 480 UJ |
| bis(2-Chloroethyl)ether | 111-44-4 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 190 UJ | 480 UJ |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | ug/L | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 190 UJ | 480 UJ |
| Butyl benzyl phthalate | 85-68-7 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 190 UJ | 480 UJ |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | TP3G01<br>1.2<br>09/04/03<br>TP3 | TP4G01<br>0.2<br>09/04/03<br>TP4 | TP5G01<br>5.8<br>09/05/03<br>TP5 | TP6G01<br>9.3<br>09/05/03<br>TP6 | TP7G01<br>4.5<br>09/05/03<br>TP7 |
|---|---|---|---|---|---|---|---|
| Caprolactam | 105-60-2 | ug/L | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 190 UJ | 480 UJ |
| Chrysene | 218-01-9 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 67 J | 480 UJ |
| Dibenzo(a,h)anthracene | 53-70-3 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 190 UJ | 480 UJ |
| Dibenzofuran | 132-64-9 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 3.9 J | 21 J | 480 UJ |
| Diethyl phthalate | 84-66-2 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 190 UJ | 480 UJ |
| Dimethyl phthalate | 131-11-3 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 190 UJ | 480 UJ |
| Di-n-butyl phthalate | 84-74-2 | ug/L | 9.3 UJ [1 B] | 9.3 U | 38 UJ | 190 UJ | 480 UJ |
| Dinitrotoluene mixture | 25321-14-6 | ug/L | NA | NA | NA | NA | NA |
| Di-n-octyl phthalate | 117-84-0 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 190 UJ | 480 UJ |
| Fluoranthene | 206-44-0 | ug/L | 9.3 UJ [9.3 UJ] | 1.1 J | 38 UJ | 110 J | 480 UJ |
| Fluorene | 86-73-7 | ug/L | 9.3 UJ [9.3 UJ] | 6.4 J | 16 J | 130 J | 59 J |
| Hexachloro-1,3-butadiene | 87-68-3 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 190 U | 480 UJ |
| Hexachlorobenzene | 118-74-1 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 190 UJ | 480 UJ |
| Hexachlorocyclopentadiene | 77-47-4 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 190 UJ | 480 UJ |
| Hexachloroethane | 67-72-1 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 190 UJ | 480 UJ |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 190 UJ | 480 UJ |
| Isophorone | 78-59-1 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 190 U | 480 UJ |
| Naphthalene | 91-20-3 | ug/L | 9.3 UJ [9.3 UJ] | 17 | 380 J | 1,800 J | 5,500 J |
| Nitrobenzene | 98-95-3 | ug/L | 6.2 J [3.6 J] | 9.3 U | 38 UJ | 190 UJ | 480 UJ |
| N-Nitrosodimethylamine | 62-75-9 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 190 U | 480 UJ |
| N-Nitrosodi-n-propylamine | 621-64-7 | ug/L | 26 J [9.3 UJ] | 9.3 U | 38 UJ | 190 U | 480 UJ |
| N-Nitrosodiphenylamine | 86-30-6 | ug/L | 28 J [9.3 UJ] | 9.3 U | 38 UJ | 190 UJ | 480 UJ |
| p-Chloroaniline | 106-47-8 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 190 U | 480 UJ |
| Pentachlorophenol | 87-86-5 | ug/L | 47 UJ [47 UJ] | 47 U | 190 UJ | 930 UJ | 2,400 UJ |
| Phenanthrene | 85-01-8 | ug/L | 1.1 J [1.1 J] | 12 | 24 J | 190 U | 130 J |
| Phenol | 108-95-2 | ug/L | 9.3 UJ [9.3 UJ] | 9.3 U | 38 UJ | 700 J | 480 UJ |
| Pyrene | 129-00-0 | ug/L | 9.3 UJ [9.3 UJ] | 1.4 J | 38 UJ | 190 J | 480 UJ |
| Total SVOCs | ARC-TSVOC | ug/L | 82 [83] | 72 | 590 | 5,600 | 6,700 |
| **Metals** | | | | | | | |
| 2,2-Dichloropropionic acid, Dalapon | 75-99-0 | ug/L | NA | NA | NA | NA | NA |
| 2,4,5-T | 93-76-5 | ug/L | NA | NA | NA | NA | NA |
| 2,4,5-TP (Silvex) | 93-72-1 | ug/L | NA | NA | NA | NA | NA |
| 2,4-D | 94-75-7 | ug/L | NA | NA | NA | NA | NA |
| 2,4-DB | 94-82-6 | ug/L | NA | NA | NA | NA | NA |
| 2-Methyl-4-chlorophenoxyacetic Acid | 94-74-6 | ug/L | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | ug/L | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | ug/L | 153 | 162 | 4,010 | 19,000 J | 4,040 |
| Antimony | 7440-36-0 | ug/L | 141 BJ | 18.4 U | 18.4 U | 18.4 UJ | 18.4 U |
| Arsenic | 7440-38-2 | ug/L | 402 UJ | 2.9 B | 100 UJ | 201 UJ | 21.2 BJ |
| Barium | 7440-39-3 | ug/L | 28.1 | 20 U | 24.6 | 296 J | 401 |
| Beryllium | 7440-41-7 | ug/L | 1 | 0.38 U | 0.38 U | 0.93 J | 0.38 U |
| Bismuth | 7440-69-9 | ug/L | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | 4 U | 4 U | 4 U | 4 UJ | 4 U |
| Calcium | 7440-70-2 | ug/L | 217,000 | 32,400 | 61,800 | 711,000 J | 89,500 |
| Chromium | 7440-47-3 | ug/L | 322,000 | 21.8 | 64,100 | 92,100 J | 161 |
| Chromium VI | 18540-29-9 | ug/L | 273,000 J | 10 UJ | 68,100 J | 81,800 J | 10 UJ |
| Cobalt | 7440-48-4 | ug/L | 50.0 U | 50.0 U | 50.0 U | 118 J | 50.0 U |
| Copper | 7440-50-8 | ug/L | 20 U | 20 U | 20 U | 87.9 J | 34.5 |
| Dicamba | 1918-00-9 | ug/L | NA | NA | NA | NA | NA |
| Dichlorprop | 120-36-5 | ug/L | NA | NA | NA | NA | NA |
| Dinoseb | 88-85-7 | ug/L | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | 142 | 211 | 270 | 35,200 J | 14,200 |
| Lead | 7439-92-1 | ug/L | 53.3 | 5 U | 71.6 | 156 J | 407 |
| Magnesium | 7439-95-4 | ug/L | 500 U | 6,070 | 500 U | 30,400 J | 97,000 |
| Manganese | 7439-96-5 | ug/L | 10 U | 10 U | 10 U | 709 J | 226 |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | TP3G01<br>1.2<br>09/04/03<br>TP3 | TP4G01<br>0.2<br>09/04/03<br>TP4 | TP5G01<br>5.8<br>09/05/03<br>TP5 | TP6G01<br>9.3<br>09/05/03<br>TP6 | TP7G01<br>4.5<br>09/05/03<br>TP7 |
|---|---|---|---|---|---|---|---|
| MCPP | 93-65-2 | ug/L | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | 0.2 U | 0.2 U | 0.2 U | 0.46 J | 0.2 |
| Nickel | 7440-02-0 | ug/L | 149 | 40 U | 41.6 | 658 J | 40 U |
| Pentachlorophenol | 87-86-5 | ug/L | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | 88,400 | 2,440 | 18,400 | 86,100 J | 61,500 |
| Selenium | 7782-49-2 | ug/L | 25 U | 5 U | 5 U | 5 UJ | 5 U |
| Silver | 7440-22-4 | ug/L | 10.0 U | 10.0 U | 10.0 U | 10.0 UJ | 10.0 U |
| Sodium | 7440-23-5 | ug/L | 1,240,000 | 7,950 | 723,000 | 2,480,000 J | 669,000 |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | 70 | 3.5 U | 13.2 | 10.7 J | 3.5 U |
| Total CCPW Metals | CCPW-M | ug/L | 322,000 | 21.8 | 64,300 | 93,300 | 161 |
| Vanadium | 7440-62-2 | ug/L | 50.0 U | 50.0 U | 135 | 521 J | 50.0 U |
| Zinc | 7440-66-6 | ug/L | 4,000 U | 20 U | 200 U | 20 UJ | 264 |
| **Metals-Filtered** | | | | | | | |
| Aluminum | 7429-90-5 | ug/L | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | ug/L | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | ug/L | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | ug/L | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | ug/L | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | ug/L | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | ug/L | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | ug/L | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | ug/L | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | ug/L | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | ug/L | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | ug/L | NA | NA | NA | NA | NA |
| Sulfur | 7704-34-9 | ug/L | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | ug/L | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | ug/L | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | ug/L | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA |
| Total CCPW Metals | CCPW-M | ug/L | NA | NA | NA | NA | NA |
| **TPH** | | | | | | | |
| C9-C40 Total Petroleum Hydrocarbons | ARC-C9C40 | ug/L | NA | NA | NA | NA | NA |
| EPH (>C28-C40) | ARC-C28C40 | ug/L | NA | NA | NA | NA | NA |
| EPH (C9-C28) | ARC-C9C28 | ug/L | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | |
| Aroclor 1016 | 12674-11-2 | ug/L | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | TP3G01<br>1.2<br>09/04/03<br>TP3 | TP4G01<br>0.2<br>09/04/03<br>TP4 | TP5G01<br>5.8<br>09/05/03<br>TP5 | TP6G01<br>9.3<br>09/05/03<br>TP6 | TP7G01<br>4.5<br>09/05/03<br>TP7 |
|---|---|---|---|---|---|---|---|
| Aroclor 1221 | 11104-28-2 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | ug/L | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | ug/L | NA | NA | NA | NA | NA |
| Total PCBs | ARC-TPCB | ug/L | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | |
| 4,4-DDD | 72-54-8 | ug/L | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | ug/L | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | ug/L | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | ug/L | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | ug/L | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | ug/L | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | ug/L | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | ug/L | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | ug/L | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | ug/L | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | ug/L | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | ug/L | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | ug/L | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | ug/L | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | ug/L | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | ug/L | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | ug/L | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | ug/L | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | ug/L | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | ug/L | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | ug/L | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | ug/L | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | ug/L | NA | NA | NA | NA | NA |
| Alkalinity, Carbonate | ARC-CO3 | ug/L | NA | NA | NA | NA | NA |
| Ammonia Nitrogen | 7664-41-7 | ug/L | NA | NA | NA | NA | NA |
| Chloride | 16887-00-6 | ug/L | 121,000 | 2,520 J | 58,400 | 452,000 | 727,000 |
| Chlorine | 7782-50-5 | ug/L | NA | 100 U | NA | NA | NA |
| Cyanide | 57-12-5 | ug/L | NA | NA | NA | NA | NA |
| Cyanide Reactivity | ARC-CYREA | ug/L | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | ug/L | NA | NA | NA | NA | NA |
| Dissolved Organic Carbon | 13-11-6 | ug/L | NA | NA | NA | NA | NA |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | ug/L | NA | NA | NA | NA | NA |
| Fluoride (F-, Anion) | 16984-48-8 | ug/L | NA | NA | NA | NA | NA |
| Hydrogen Sulfide | 7783-06-4 | ug/L | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | ug/L | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | ug/L | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | ug/L | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | ug/L | NA | NA | NA | NA | NA |
| Oil & Grease | ARC-OG | ug/L | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA |
| Phosphate | 14265-44-2 | ug/L | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | umhos/cm | NA | NA | NA | NA | NA |
| Sufide Reactivity | ARC-SUREA | ug/L | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | TP3G01<br>1.2<br>09/04/03<br>TP3 | TP4G01<br>0.2<br>09/04/03<br>TP4 | TP5G01<br>5.8<br>09/05/03<br>TP5 | TP6G01<br>9.3<br>09/05/03<br>TP6 | TP7G01<br>4.5<br>09/05/03<br>TP7 |
|---|---|---|---|---|---|---|---|
| Sulfate | 14808-79-8 | ug/L | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | ug/L | NA | NA | NA | NA | NA |
| Sulfite | ARC-SULFITE | ug/L | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA |
| Total Dissolved Solids | ARC-TDS | ug/L | NA | NA | NA | NA | NA |
| Total Hardness | Hard | ug/L | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | ug/L | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | ug/L | NA | NA | NA | NA | NA |
| **FIELD** | | | | | | | |
| Dissolved Oxygen | ARC-DO | ug/L | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA |
| photoionization detector | PID | ug/L | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | | NA | NA | NA | NA | NA |
| Specific Conductivity | ARC-SCond | mS/cm | NA | NA | NA | NA | NA |
| Temperature | ARC-Temp | deg c | NA | NA | NA | NA | NA |
| Turbidity | ARC-Turb | NTU | NA | NA | NA | NA | NA |

**Appendix B-1**
**Summary of Historical Groundwater Sample Analytical Results**

| Lab Qualifiers | Definition |
|---|---|
| * | Laboratory duplicate analysis was outside control limits. |
| B | Indicates an estimated value between the instrument detection limit and the Reporting Limit (RL). |
| D | Compound quantitated using a secondary dilution. |
| J | Indicates an estimated value. |
| N | Spike sample recovery not within control limits. |
| R | Rejected. |
| U | The compound was analyzed for but not detected. The associated value is the compound quantitation limit. |

**Notes:**
% = percent.
°C = degrees Celsius.
ft btoc = feet below top of casing.
$H_2$ = hydrogen.
mg/l = milligrams per liter.
mV = millivolts.
NA = not analyzed
ND = analyte not detected.
NTU = nephelometric turbidity units.
ORP = oxidation reduction potential.
ppb = parts per billion.
S.U. = Standard Units.
µg/l = micrograms per liter.

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114 CAN11_13.5-14.0 | 114 MON14_34.5-35.0 | 114 MON31_21.5-22.0 | 114 MON31_25.5-26.0 | 114 MON31_27.5-28.0 | 114 MON31_29.5-30.0 | 114 MON31_31.5-32.0 | 114 MON31_33.5-34.0 | 114 MON31_34.5-35.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 13.5 - 14 | 34.5 - 35 | 21.5 - 22 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 |
| Date Collected: | | | 02/21/12 | 02/21/12 | 02/07/12 | 02/07/12 | 02/07/12 | 02/07/12 | 02/07/12 | 02/07/12 | 02/07/12 |
| Location ID: | CAS Number | Units | 114CAN11 | 114MON14 | 114MON31 | 114MON31 | 114MON31 | 114MON31 | 114MON31 | 114MON31 | 114MON31 |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114 CAN11_13.5-14.0<br>13.5 - 14<br>02/21/12<br>114CAN11 | 114 MON14_34.5-35.0<br>34.5 - 35<br>02/21/12<br>114MON14 | 114 MON31_21.5-22.0<br>21.5 - 22<br>02/07/12<br>114MON31 | 114 MON31_25.5-26.0<br>25.5 - 26<br>02/07/12<br>114MON31 | 114 MON31_27.5-28.0<br>27.5 - 28<br>02/07/12<br>114MON31 | 114 MON31_29.5-30.0<br>29.5 - 30<br>02/07/12<br>114MON31 | 114 MON31_31.5-32.0<br>31.5 - 32<br>02/07/12<br>114MON31 | 114 MON31_33.5-34.0<br>33.5 - 34<br>02/07/12<br>114MON31 | 114 MON31_34.5-35.0<br>34.5 - 35<br>02/07/12<br>114MON31 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114 CAN11_13.5-14.0<br>13.5 - 14<br>02/21/12<br>114CAN11 | 114 MON14_34.5-35.0<br>34.5 - 35<br>02/21/12<br>114MON14 | 114 MON31_21.5-22.0<br>21.5 - 22<br>02/07/12<br>114MON31 | 114 MON31_25.5-26.0<br>25.5 - 26<br>02/07/12<br>114MON31 | 114 MON31_27.5-28.0<br>27.5 - 28<br>02/07/12<br>114MON31 | 114 MON31_29.5-30.0<br>29.5 - 30<br>02/07/12<br>114MON31 | 114 MON31_31.5-32.0<br>31.5 - 32<br>02/07/12<br>114MON31 | 114 MON31_33.5-34.0<br>33.5 - 34<br>02/07/12<br>114MON31 | 114 MON31_34.5-35.0<br>34.5 - 35<br>02/07/12<br>114MON31 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | NA | NA | 359 | NA | NA | NA | NA | NA | NA |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | NA | NA | NA | 211 | 119 | 61.2 | 90.5 | 85.3 | 45.9 |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114 CAN11_13.5-14.0<br>13.5 - 14<br>02/21/12<br>114CAN11 | 114 MON14_34.5-35.0<br>34.5 - 35<br>02/21/12<br>114MON14 | 114 MON31_21.5-22.0<br>21.5 - 22<br>02/07/12<br>114MON31 | 114 MON31_25.5-26.0<br>25.5 - 26<br>02/07/12<br>114MON31 | 114 MON31_27.5-28.0<br>27.5 - 28<br>02/07/12<br>114MON31 | 114 MON31_29.5-30.0<br>29.5 - 30<br>02/07/12<br>114MON31 | 114 MON31_31.5-32.0<br>31.5 - 32<br>02/07/12<br>114MON31 | 114 MON31_33.5-34.0<br>33.5 - 34<br>02/07/12<br>114MON31 | 114 MON31_34.5-35.0<br>34.5 - 35<br>02/07/12<br>114MON31 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114 CAN11_13.5-14.0<br>13.5 - 14<br>02/21/12<br>114CAN11 | 114 MON14_34.5-35.0<br>34.5 - 35<br>02/21/12<br>114MON14 | 114 MON31_21.5-22.0<br>21.5 - 22<br>02/07/12<br>114MON31 | 114 MON31_25.5-26.0<br>25.5 - 26<br>02/07/12<br>114MON31 | 114 MON31_27.5-28.0<br>27.5 - 28<br>02/07/12<br>114MON31 | 114 MON31_29.5-30.0<br>29.5 - 30<br>02/07/12<br>114MON31 | 114 MON31_31.5-32.0<br>31.5 - 32<br>02/07/12<br>114MON31 | 114 MON31_33.5-34.0<br>33.5 - 34<br>02/07/12<br>114MON31 | 114 MON31_34.5-35.0<br>34.5 - 35<br>02/07/12<br>114MON31 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 114 | 227 | NA | 251 | 301 | 311 | 316 | 320 | 311 |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 516,000 | 785,000 | NA | 788,000 | 791,000 | 742,000 | 746,000 | 666,000 | 806,000 |
| pH | ARC-pH | SU | 8.68 | 9.51 | NA | 9.60 | 8.04 | 8.07 | 8.43 | 8.40 | 8.76 |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114 REL11_20.5-21.0 | 114-21BA (0.6-1.0)20060711 | 114-21BB (2.7-3.1)20060711 | 114-AA5-VB21-21.5 | 114CAN2_13.5-14.0 | 114CAN3_25.5-26.0 | 114CAN3_27.5-28.0 | 114CAN3_29.5-30.0 | 114CAN3_31.5-32.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 20.5 - 21 | 0.6 - 1 | 2.7 - 3.1 | 21 - 21.5 | 13.5 - 14 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 |
| Date Collected: | | | 02/07/12 | 07/11/06 | 07/11/06 | 10/03/05 | 02/15/12 | 02/13/12 | 02/13/12 | 02/13/12 | 02/13/12 |
| Location ID: | CAS Number | Units | 114REL11 | 114-MW21B | 114-MW21B | AA5V | 114CAN2 | 114CAN3 | 114CAN3 | 114CAN3 | 114CAN3 |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114 REL11_20.5-21.0<br>20.5 - 21<br>02/07/12<br>114REL11 | 114-21BA (0.6-1.0)20060711<br>0.6 - 1<br>07/11/06<br>114-MW21B | 114-21BB (2.7-3.1)20060711<br>2.7 - 3.1<br>07/11/06<br>114-MW21B | 114-AA5-VB21-21.5<br>21 - 21.5<br>10/03/05<br>AA5V | 114CAN2_13.5-14.0<br>13.5 - 14<br>02/15/12<br>114CAN2 | 114CAN3_25.5-26.0<br>25.5 - 26<br>02/13/12<br>114CAN3 | 114CAN3_27.5-28.0<br>27.5 - 28<br>02/13/12<br>114CAN3 | 114CAN3_29.5-30.0<br>29.5 - 30<br>02/13/12<br>114CAN3 | 114CAN3_31.5-32.0<br>31.5 - 32<br>02/13/12<br>114CAN3 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114 REL11_20.5-21.0<br>20.5 - 21<br>02/07/12<br>114REL11 | 114-21BA (0.6-1.0)20060711<br>0.6 - 1<br>07/11/06<br>114-MW21B | 114-21BB (2.7-3.1)20060711<br>2.7 - 3.1<br>07/11/06<br>114-MW21B | 114-AA5-VB21-21.5<br>21 - 21.5<br>10/03/05<br>AA5V | 114CAN2_13.5-14.0<br>13.5 - 14<br>02/15/12<br>114CAN2 | 114CAN3_25.5-26.0<br>25.5 - 26<br>02/13/12<br>114CAN3 | 114CAN3_27.5-28.0<br>27.5 - 28<br>02/13/12<br>114CAN3 | 114CAN3_29.5-30.0<br>29.5 - 30<br>02/13/12<br>114CAN3 | 114CAN3_31.5-32.0<br>31.5 - 32<br>02/13/12<br>114CAN3 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | 10,700 J | 5,060 J | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | mg/kg | NA | 6.6 J | 2.6 UJ | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | mg/kg | NA | 24.9 J | 60.7 J | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | mg/kg | NA | 112 J | 183 J | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | mg/kg | NA | 0.63 UJ | 0.65 UJ | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | mg/kg | NA | 0.92 J | 0.68 J | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | mg/kg | NA | 31,100 | 4,510 | NA | NA | NA | NA | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | NA | 2,380 | 1,110 | NA | 34.4 J | 1,000 | NA | NA | NA |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 1,160 | 39.7 J | 12 J | 10.9 J | 1.3 U | 266 | 324 | 307 | 138 |
| Cobalt | 7440-48-4 | mg/kg | NA | 39.7 J | 52.5 J | NA | NA | NA | NA | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | 141 | 595 | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | 31,600 | 34,500 | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | mg/kg | NA | 285 J | 626 J | NA | NA | NA | NA | NA | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | 6,840 | 2,670 | NA | NA | NA | NA | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | 282 | 200 | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | mg/kg | NA | 0.41 J | 0.44 J | NA | NA | NA | NA | NA | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | 93.3 J | 104 J | NA | NA | NA | NA | NA | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | 955 J | 662 J | NA | NA | NA | NA | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | 2.5 UJ | 3.1 J | NA | NA | NA | NA | NA | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | 1.3 U | 1.3 U | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | mg/kg | NA | 861 J | 650 UJ | NA | NA | NA | NA | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114 REL11_20.5-21.0<br>20.5 - 21<br>02/07/12<br>114REL11 | 114-21BA (0.6-1.0)20060711<br>0.6 - 1<br>07/11/06<br>114-MW21B | 114-21BB (2.7-3.1)20060711<br>2.7 - 3.1<br>07/11/06<br>114-MW21B | 114-AA5-VB21-21.5<br>21 - 21.5<br>10/03/05<br>AA5V | 114CAN2_13.5-14.0<br>13.5 - 14<br>02/15/12<br>114CAN2 | 114CAN3_25.5-26.0<br>25.5 - 26<br>02/13/12<br>114CAN3 | 114CAN3_27.5-28.0<br>27.5 - 28<br>02/13/12<br>114CAN3 | 114CAN3_29.5-30.0<br>29.5 - 30<br>02/13/12<br>114CAN3 | 114CAN3_31.5-32.0<br>31.5 - 32<br>02/13/12<br>114CAN3 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | 1.3 UJ | 1.3 UJ | NA | NA | NA | NA | NA | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | 165 | 309 | NA | NA | NA | NA | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | 460 J | 1,090 J | NA | NA | NA | NA | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114 REL11_20.5-21.0<br>20.5 - 21<br>02/07/12<br>114REL11 | 114-21BA (0.6-1.0)20060711<br>0.6 - 1<br>07/11/06<br>114-MW21B | 114-21BB (2.7-3.1)20060711<br>2.7 - 3.1<br>07/11/06<br>114-MW21B | 114-AA5-VB21-21.5<br>21 - 21.5<br>10/03/05<br>AA5V | 114CAN2_13.5-14.0<br>13.5 - 14<br>02/15/12<br>114CAN2 | 114CAN3_25.5-26.0<br>25.5 - 26<br>02/13/12<br>114CAN3 | 114CAN3_27.5-28.0<br>27.5 - 28<br>02/13/12<br>114CAN3 | 114CAN3_29.5-30.0<br>29.5 - 30<br>02/13/12<br>114CAN3 | 114CAN3_31.5-32.0<br>31.5 - 32<br>02/13/12<br>114CAN3 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 187 | NA | NA | NA | 172 | 187 | 190 | 204 | 274 |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 818,000 | 851,000 | 738,000 | 880,000 | 320,000 | 769,000 | 776,000 | 782,000 | 838,000 |
| pH | ARC-pH | SU | 10.52 | NA | NA | NA | 8.89 | 10.89 | 10.22 | 10.59 | 9.20 |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114CAN3_33.5-34.0 | 114CAN3_34.5-35.0 | 114CAN5_1.5-2.0 | 114CAN5_23.5-24.0 | 114CAN5_25.5-26.0 | 114CAN5_29.5-30.0 | 114CAN5_31.5-32.0 | 114CAN5_33.5-34.0 | 114CAN5_34.5-35.0 | 114CAN6_1.5-2.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 33.5 - 34 | 34.5 - 35 | 1.5 - 2 | 23.5 - 24 | 25.5 - 26 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 1.5 - 2 |
| Date Collected: | | | 02/13/12 | 02/13/12 | 02/14/12 | 02/14/12 | 02/14/12 | 02/14/12 | 02/14/12 | 02/14/12 | 02/14/12 | 02/17/12 |
| Location ID: | CAS Number | Units | 114CAN3 | 114CAN3 | 114CAN5 | 114CAN5 | 114CAN5 | 114CAN5 | 114CAN5 | 114CAN5 | 114CAN5 | 114CAN6 |
| **Volatile Organics** | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114CAN3_33.5-34.0<br>33.5 - 34<br>02/13/12<br>114CAN3 | 114CAN3_34.5-35.0<br>34.5 - 35<br>02/13/12<br>114CAN3 | 114CAN5_1.5-2.0<br>1.5 - 2<br>02/14/12<br>114CAN5 | 114CAN5_23.5-24.0<br>23.5 - 24<br>02/14/12<br>114CAN5 | 114CAN5_25.5-26.0<br>25.5 - 26<br>02/14/12<br>114CAN5 | 114CAN5_29.5-30.0<br>29.5 - 30<br>02/14/12<br>114CAN5 | 114CAN5_31.5-32.0<br>31.5 - 32<br>02/14/12<br>114CAN5 | 114CAN5_33.5-34.0<br>33.5 - 34<br>02/14/12<br>114CAN5 | 114CAN5_34.5-35.0<br>34.5 - 35<br>02/14/12<br>114CAN5 | 114CAN6_1.5-2.0<br>1.5 - 2<br>02/17/12<br>114CAN6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114CAN3_33.5-34.0<br>33.5 - 34<br>02/13/12<br>114CAN3 | 114CAN3_34.5-35.0<br>34.5 - 35<br>02/13/12<br>114CAN3 | 114CAN5_1.5-2.0<br>1.5 - 2<br>02/14/12<br>114CAN5 | 114CAN5_23.5-24.0<br>23.5 - 24<br>02/14/12<br>114CAN5 | 114CAN5_25.5-26.0<br>25.5 - 26<br>02/14/12<br>114CAN5 | 114CAN5_29.5-30.0<br>29.5 - 30<br>02/14/12<br>114CAN5 | 114CAN5_31.5-32.0<br>31.5 - 32<br>02/14/12<br>114CAN5 | 114CAN5_33.5-34.0<br>33.5 - 34<br>02/14/12<br>114CAN5 | 114CAN5_34.5-35.0<br>34.5 - 35<br>02/14/12<br>114CAN5 | 114CAN6_1.5-2.0<br>1.5 - 2<br>02/17/12<br>114CAN6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 113 | 115 | NA | 316 RA | 400 RA | 674 RA | 265 RA | 223 RA | 254 RA | NA |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114CAN3_33.5-34.0<br>33.5 - 34<br>02/13/12<br>114CAN3 | 114CAN3_34.5-35.0<br>34.5 - 35<br>02/13/12<br>114CAN3 | 114CAN5_1.5-2.0<br>1.5 - 2<br>02/14/12<br>114CAN5 | 114CAN5_23.5-24.0<br>23.5 - 24<br>02/14/12<br>114CAN5 | 114CAN5_25.5-26.0<br>25.5 - 26<br>02/14/12<br>114CAN5 | 114CAN5_29.5-30.0<br>29.5 - 30<br>02/14/12<br>114CAN5 | 114CAN5_31.5-32.0<br>31.5 - 32<br>02/14/12<br>114CAN5 | 114CAN5_33.5-34.0<br>33.5 - 34<br>02/14/12<br>114CAN5 | 114CAN5_34.5-35.0<br>34.5 - 35<br>02/14/12<br>114CAN5 | 114CAN6_1.5-2.0<br>1.5 - 2<br>02/17/12<br>114CAN6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | 67,500 | NA | NA | NA | NA | NA | NA | 8,300 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114CAN3_33.5-34.0 | 114CAN3_34.5-35.0 | 114CAN5_1.5-2.0 | 114CAN5_23.5-24.0 | 114CAN5_25.5-26.0 | 114CAN5_29.5-30.0 | 114CAN5_31.5-32.0 | 114CAN5_33.5-34.0 | 114CAN5_34.5-35.0 | 114CAN6_1.5-2.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 33.5 - 34 | 34.5 - 35 | 1.5 - 2 | 23.5 - 24 | 25.5 - 26 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 1.5 - 2 |
| Date Collected: | | | 02/13/12 | 02/13/12 | 02/14/12 | 02/14/12 | 02/14/12 | 02/14/12 | 02/14/12 | 02/14/12 | 02/14/12 | 02/17/12 |
| Location ID: | CAS Number | Units | 114CAN3 | 114CAN3 | 114CAN5 | 114CAN5 | 114CAN5 | 114CAN5 | 114CAN5 | 114CAN5 | 114CAN5 | 114CAN6 |
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 285 | 306 | NA | 208 | 262 | 690 | 692 | 691 | 217 | NA |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 764,000 | 752,000 | NA | 746,000 | 750,000 | 791,000 | 792,000 | 769,000 | 738,000 | NA |
| pH | ARC-pH | SU | 9.38 | 9.07 | NA | 10.29 | 9.53 | 8.89 | 8.98 | 9.56 | 9.16 | NA |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114CAN6_15.5-16.0 | 114CAN7_15.5-16.0 | 114CAN7_17.5-18.0 | 114CAN7_19.5-20.0 | 114CAN7_21.5-22.0 | 114CAN7_23.5-24.0 | 114CAN7_25.5-26.0 | 114CAN7_27.5-28.0 | 114CAN7_29.5-30.0 | 114CAN7_31.5-32.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 15.5 - 16 | 15.5 - 16 | 17.5 - 18 | 19.5 - 20 | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 |
| Date Collected: | | | 02/17/12 | 02/15/12 | 02/15/12 | 02/15/12 | 02/15/12 | 02/15/12 | 02/15/12 | 02/15/12 | 02/15/12 | 02/15/12 |
| Location ID: | CAS Number | Units | 114CAN6 | 114CAN7 | 114CAN7 | 114CAN7 | 114CAN7 | 114CAN7 | 114CAN7 | 114CAN7 | 114CAN7 | 114CAN7 |
| **Volatile Organics** | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114CAN6_15.5-16.0<br>15.5 - 16<br>02/17/12<br>114CAN6 | 114CAN7_15.5-16.0<br>15.5 - 16<br>02/15/12<br>114CAN7 | 114CAN7_17.5-18.0<br>17.5 - 18<br>02/15/12<br>114CAN7 | 114CAN7_19.5-20.0<br>19.5 - 20<br>02/15/12<br>114CAN7 | 114CAN7_21.5-22.0<br>21.5 - 22<br>02/15/12<br>114CAN7 | 114CAN7_23.5-24.0<br>23.5 - 24<br>02/15/12<br>114CAN7 | 114CAN7_25.5-26.0<br>25.5 - 26<br>02/15/12<br>114CAN7 | 114CAN7_27.5-28.0<br>27.5 - 28<br>02/15/12<br>114CAN7 | 114CAN7_29.5-30.0<br>29.5 - 30<br>02/15/12<br>114CAN7 | 114CAN7_31.5-32.0<br>31.5 - 32<br>02/15/12<br>114CAN7 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114CAN6_15.5-16.0<br>15.5 - 16<br>02/17/12<br>114CAN6 | 114CAN7_15.5-16.0<br>15.5 - 16<br>02/15/12<br>114CAN7 | 114CAN7_17.5-18.0<br>17.5 - 18<br>02/15/12<br>114CAN7 | 114CAN7_19.5-20.0<br>19.5 - 20<br>02/15/12<br>114CAN7 | 114CAN7_21.5-22.0<br>21.5 - 22<br>02/15/12<br>114CAN7 | 114CAN7_23.5-24.0<br>23.5 - 24<br>02/15/12<br>114CAN7 | 114CAN7_25.5-26.0<br>25.5 - 26<br>02/15/12<br>114CAN7 | 114CAN7_27.5-28.0<br>27.5 - 28<br>02/15/12<br>114CAN7 | 114CAN7_29.5-30.0<br>29.5 - 30<br>02/15/12<br>114CAN7 | 114CAN7_31.5-32.0<br>31.5 - 32<br>02/15/12<br>114CAN7 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | 702 J [90.4 J] | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 0.99 J [1.4 UJ] | 0.52 RA | 38.5 RA | 16 RA | 20.7 RA | 86.9 RA | 242 RA | 223 RA | 186 RA | 4.2 RA |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114CAN6_15.5-16.0<br>15.5 - 16<br>02/17/12<br>114CAN6 | 114CAN7_15.5-16.0<br>15.5 - 16<br>02/15/12<br>114CAN7 | 114CAN7_17.5-18.0<br>17.5 - 18<br>02/15/12<br>114CAN7 | 114CAN7_19.5-20.0<br>19.5 - 20<br>02/15/12<br>114CAN7 | 114CAN7_21.5-22.0<br>21.5 - 22<br>02/15/12<br>114CAN7 | 114CAN7_23.5-24.0<br>23.5 - 24<br>02/15/12<br>114CAN7 | 114CAN7_25.5-26.0<br>25.5 - 26<br>02/15/12<br>114CAN7 | 114CAN7_27.5-28.0<br>27.5 - 28<br>02/15/12<br>114CAN7 | 114CAN7_29.5-30.0<br>29.5 - 30<br>02/15/12<br>114CAN7 | 114CAN7_31.5-32.0<br>31.5 - 32<br>02/15/12<br>114CAN7 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114CAN6_15.5-16.0<br>15.5 - 16<br>02/17/12<br>114CAN6 | 114CAN7_15.5-16.0<br>15.5 - 16<br>02/15/12<br>114CAN7 | 114CAN7_17.5-18.0<br>17.5 - 18<br>02/15/12<br>114CAN7 | 114CAN7_19.5-20.0<br>19.5 - 20<br>02/15/12<br>114CAN7 | 114CAN7_21.5-22.0<br>21.5 - 22<br>02/15/12<br>114CAN7 | 114CAN7_23.5-24.0<br>23.5 - 24<br>02/15/12<br>114CAN7 | 114CAN7_25.5-26.0<br>25.5 - 26<br>02/15/12<br>114CAN7 | 114CAN7_27.5-28.0<br>27.5 - 28<br>02/15/12<br>114CAN7 | 114CAN7_29.5-30.0<br>29.5 - 30<br>02/15/12<br>114CAN7 | 114CAN7_31.5-32.0<br>31.5 - 32<br>02/15/12<br>114CAN7 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | 31,000 | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 204 [191] | 134 | 109 | 47.2 | 54.8 | 127 | 167 | 204 | 200 | 136 |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 329,000 [276,000] | 591,000 | 863,000 | 873,000 | 872,000 | 800,000 | 752,000 | 741,000 | 695,000 | 733,000 |
| pH | ARC-pH | SU | 8.65 [8.58] | 10.05 | 10.65 | 10.07 | 10.30 | 10.66 | 9.97 | 8.94 | 9.33 | 9.73 |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | 0 | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | 21,200 | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114CAN7_33.5-34.0 | 114CAN7_34.5-35.0 | 114CAN9_15.5-16.0 | 114CAN9_17.5-18.0 | 114CAN9_19.5-20.0 | 114CAN9_21.5-22.0 | 114CAN9_23.5-24.0 | 114CAN9_25.5-26.0 | 114CAN9_27.5-28.0 | 114CAN9_29.5-30.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 33.5 - 34 | 34.5 - 35 | 15.5 - 16 | 17.5 - 18 | 19.5 - 20 | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 |
| Date Collected: | | | 02/15/12 | 02/15/12 | 02/15/12 | 02/16/12 | 02/16/12 | 02/16/12 | 02/16/12 | 02/16/12 | 02/16/12 | 02/16/12 |
| Location ID: | CAS Number | Units | 114CAN7 | 114CAN7 | 114CAN9 | 114CAN9 | 114CAN9 | 114CAN9 | 114CAN9 | 114CAN9 | 114CAN9 | 114CAN9 |
| **Volatile Organics** | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114CAN7_33.5-34.0<br>33.5 - 34<br>02/15/12<br>114CAN7 | 114CAN7_34.5-35.0<br>34.5 - 35<br>02/15/12<br>114CAN7 | 114CAN9_15.5-16.0<br>15.5 - 16<br>02/15/12<br>114CAN9 | 114CAN9_17.5-18.0<br>17.5 - 18<br>02/16/12<br>114CAN9 | 114CAN9_19.5-20.0<br>19.5 - 20<br>02/16/12<br>114CAN9 | 114CAN9_21.5-22.0<br>21.5 - 22<br>02/16/12<br>114CAN9 | 114CAN9_23.5-24.0<br>23.5 - 24<br>02/16/12<br>114CAN9 | 114CAN9_25.5-26.0<br>25.5 - 26<br>02/16/12<br>114CAN9 | 114CAN9_27.5-28.0<br>27.5 - 28<br>02/16/12<br>114CAN9 | 114CAN9_29.5-30.0<br>29.5 - 30<br>02/16/12<br>114CAN9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114CAN7_33.5-34.0<br>33.5 - 34<br>02/15/12<br>114CAN7 | 114CAN7_34.5-35.0<br>34.5 - 35<br>02/15/12<br>114CAN7 | 114CAN9_15.5-16.0<br>15.5 - 16<br>02/15/12<br>114CAN9 | 114CAN9_17.5-18.0<br>17.5 - 18<br>02/16/12<br>114CAN9 | 114CAN9_19.5-20.0<br>19.5 - 20<br>02/16/12<br>114CAN9 | 114CAN9_21.5-22.0<br>21.5 - 22<br>02/16/12<br>114CAN9 | 114CAN9_23.5-24.0<br>23.5 - 24<br>02/16/12<br>114CAN9 | 114CAN9_25.5-26.0<br>25.5 - 26<br>02/16/12<br>114CAN9 | 114CAN9_27.5-28.0<br>27.5 - 28<br>02/16/12<br>114CAN9 | 114CAN9_29.5-30.0<br>29.5 - 30<br>02/16/12<br>114CAN9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | NA | NA | 29.7 J | NA | NA | NA | NA | NA | NA | NA |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 27.8 RA | 0.47 RA | 0.35 RA | 8.3 | 0.45 U | 19 | 95.1 | 57.2 | 85.4 | 101 |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114CAN7_33.5-34.0<br>33.5 - 34<br>02/15/12<br>114CAN7 | 114CAN7_34.5-35.0<br>34.5 - 35<br>02/15/12<br>114CAN7 | 114CAN9_15.5-16.0<br>15.5 - 16<br>02/15/12<br>114CAN9 | 114CAN9_17.5-18.0<br>17.5 - 18<br>02/16/12<br>114CAN9 | 114CAN9_19.5-20.0<br>19.5 - 20<br>02/16/12<br>114CAN9 | 114CAN9_21.5-22.0<br>21.5 - 22<br>02/16/12<br>114CAN9 | 114CAN9_23.5-24.0<br>23.5 - 24<br>02/16/12<br>114CAN9 | 114CAN9_25.5-26.0<br>25.5 - 26<br>02/16/12<br>114CAN9 | 114CAN9_27.5-28.0<br>27.5 - 28<br>02/16/12<br>114CAN9 | 114CAN9_29.5-30.0<br>29.5 - 30<br>02/16/12<br>114CAN9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114CAN7_33.5-34.0 | 114CAN7_34.5-35.0 | 114CAN9_15.5-16.0 | 114CAN9_17.5-18.0 | 114CAN9_19.5-20.0 | 114CAN9_21.5-22.0 | 114CAN9_23.5-24.0 | 114CAN9_25.5-26.0 | 114CAN9_27.5-28.0 | 114CAN9_29.5-30.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 33.5 - 34 | 34.5 - 35 | 15.5 - 16 | 17.5 - 18 | 19.5 - 20 | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 |
| Date Collected: | | | 02/15/12 | 02/15/12 | 02/15/12 | 02/16/12 | 02/16/12 | 02/16/12 | 02/16/12 | 02/16/12 | 02/16/12 | 02/16/12 |
| Location ID: | CAS Number | Units | 114CAN7 | 114CAN7 | 114CAN9 | 114CAN9 | 114CAN9 | 114CAN9 | 114CAN9 | 114CAN9 | 114CAN9 | 114CAN9 |
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 140 | 194 | 4.9 | 162 | 135 | 129 | 146 | 237 | 217 | 174 |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 768,000 | 745,000 | 716,000 | 807,000 | 887,000 | 766,000 | 773,000 | 767,000 | 801,000 | 749,000 |
| pH | ARC-pH | SU | 10.96 | 9.07 | 9.41 | 9.94 | 10.32 | 10.31 | 10.01 | 8.80 | 9.89 | 9.61 |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114CAN9_31.5-32.0 | 114CAN9_33.5-34.0 | 114CAN9_34.5-35.0 | 114CAN10_1.5-2.0 | 114CAN10_19.5-20.0 | 114CAN10_21.5-22.0 | 114CAN10_23.5-24.0 | 114CAN10_25.5-26.0 | 114CAN10_27.5-28.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 1.5 - 2 | 19.5 - 20 | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 |
| Date Collected: | | | 02/16/12 | 02/16/12 | 02/16/12 | 02/16/12 | 02/17/12 | 02/17/12 | 02/17/12 | 02/17/12 | 02/17/12 |
| Location ID: | CAS Number | Units | 114CAN9 | 114CAN9 | 114CAN9 | 114CAN10 | 114CAN10 | 114CAN10 | 114CAN10 | 114CAN10 | 114CAN10 |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114CAN9_31.5-32.0<br>31.5 - 32<br>02/16/12<br>114CAN9 | 114CAN9_33.5-34.0<br>33.5 - 34<br>02/16/12<br>114CAN9 | 114CAN9_34.5-35.0<br>34.5 - 35<br>02/16/12<br>114CAN9 | 114CAN10_1.5-2.0<br>1.5 - 2<br>02/16/12<br>114CAN10 | 114CAN10_19.5-20.0<br>19.5 - 20<br>02/17/12<br>114CAN10 | 114CAN10_21.5-22.0<br>21.5 - 22<br>02/17/12<br>114CAN10 | 114CAN10_23.5-24.0<br>23.5 - 24<br>02/17/12<br>114CAN10 | 114CAN10_25.5-26.0<br>25.5 - 26<br>02/17/12<br>114CAN10 | 114CAN10_27.5-28.0<br>27.5 - 28<br>02/17/12<br>114CAN10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114CAN9_31.5-32.0<br>31.5 - 32<br>02/16/12<br>114CAN9 | 114CAN9_33.5-34.0<br>33.5 - 34<br>02/16/12<br>114CAN9 | 114CAN9_34.5-35.0<br>34.5 - 35<br>02/16/12<br>114CAN9 | 114CAN10_1.5-2.0<br>1.5 - 2<br>02/16/12<br>114CAN10 | 114CAN10_19.5-20.0<br>19.5 - 20<br>02/17/12<br>114CAN10 | 114CAN10_21.5-22.0<br>21.5 - 22<br>02/17/12<br>114CAN10 | 114CAN10_23.5-24.0<br>23.5 - 24<br>02/17/12<br>114CAN10 | 114CAN10_25.5-26.0<br>25.5 - 26<br>02/17/12<br>114CAN10 | 114CAN10_27.5-28.0<br>27.5 - 28<br>02/17/12<br>114CAN10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | NA | NA | NA | NA | 35.6 | 304 J | NA | NA | NA |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 1.6 | 0.37 J | 0.49 U | NA | 1.2 | 0.49 U | 1.9 | 12.7 | 12.2 |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114CAN9_31.5-32.0<br>31.5 - 32<br>02/16/12<br>114CAN9 | 114CAN9_33.5-34.0<br>33.5 - 34<br>02/16/12<br>114CAN9 | 114CAN9_34.5-35.0<br>34.5 - 35<br>02/16/12<br>114CAN9 | 114CAN10_1.5-2.0<br>1.5 - 2<br>02/16/12<br>114CAN10 | 114CAN10_19.5-20.0<br>19.5 - 20<br>02/17/12<br>114CAN10 | 114CAN10_21.5-22.0<br>21.5 - 22<br>02/17/12<br>114CAN10 | 114CAN10_23.5-24.0<br>23.5 - 24<br>02/17/12<br>114CAN10 | 114CAN10_25.5-26.0<br>25.5 - 26<br>02/17/12<br>114CAN10 | 114CAN10_27.5-28.0<br>27.5 - 28<br>02/17/12<br>114CAN10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | 50,600 | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114CAN9_31.5-32.0<br>31.5 - 32<br>02/16/12<br>114CAN9 | 114CAN9_33.5-34.0<br>33.5 - 34<br>02/16/12<br>114CAN9 | 114CAN9_34.5-35.0<br>34.5 - 35<br>02/16/12<br>114CAN9 | 114CAN10_1.5-2.0<br>1.5 - 2<br>02/16/12<br>114CAN10 | 114CAN10_19.5-20.0<br>19.5 - 20<br>02/17/12<br>114CAN10 | 114CAN10_21.5-22.0<br>21.5 - 22<br>02/17/12<br>114CAN10 | 114CAN10_23.5-24.0<br>23.5 - 24<br>02/17/12<br>114CAN10 | 114CAN10_25.5-26.0<br>25.5 - 26<br>02/17/12<br>114CAN10 | 114CAN10_27.5-28.0<br>27.5 - 28<br>02/17/12<br>114CAN10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 173 | 174 | 182 | NA | 119 | 159 | 166 | 188 | 199 |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 772,000 | 805,000 | 809,000 | NA | 870,000 | 821,000 | 763,000 | 796,000 | 782,000 |
| pH | ARC-pH | SU | 9.54 | 9.03 | 8.99 | NA | 10.08 | 10.18 | 9.56 | 9.60 | 9.68 |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114CAN10_29.5-30.0 | 114CAN10_31.5-32.0 | 114CAN10_33.5-34.0 | 114CAN10_34.5-35.0 | 114CAN11_1.5-.20 | 114CAN11_13.5-14.0 | 114CAN11_14.5-15.0 | 114CAN12_17.5-18 | 114CAN12_19.5-20 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 1.5 - 2 | 13.5 - 14 | 14.5 - 15 | 17.5 - 18 | 19.5 - 20 |
| Date Collected: | | | 02/17/12 | 02/17/12 | 02/17/12 | 02/17/12 | 02/21/12 | 02/21/12 | 02/21/12 | 02/02/12 | 02/02/12 |
| Location ID: | CAS Number | Units | 114CAN10 | 114CAN10 | 114CAN10 | 114CAN10 | 114CAN11 | 114CAN11 | 114CAN11 | 114CAN12 | 114CAN12 |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114CAN10_29.5-30.0<br>29.5 - 30<br>02/17/12<br>114CAN10 | 114CAN10_31.5-32.0<br>31.5 - 32<br>02/17/12<br>114CAN10 | 114CAN10_33.5-34.0<br>33.5 - 34<br>02/17/12<br>114CAN10 | 114CAN10_34.5-35.0<br>34.5 - 35<br>02/17/12<br>114CAN10 | 114CAN11_1.5-.20<br>1.5 - 2<br>02/21/12<br>114CAN11 | 114CAN11_13.5-14.0<br>13.5 - 14<br>02/21/12<br>114CAN11 | 114CAN11_14.5-15.0<br>14.5 - 15<br>02/21/12<br>114CAN11 | 114CAN12_17.5-18<br>17.5 - 18<br>02/02/12<br>114CAN12 | 114CAN12_19.5-20<br>19.5 - 20<br>02/02/12<br>114CAN12 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114CAN10_29.5-30.0<br>29.5 - 30<br>02/17/12<br>114CAN10 | 114CAN10_31.5-32.0<br>31.5 - 32<br>02/17/12<br>114CAN10 | 114CAN10_33.5-34.0<br>33.5 - 34<br>02/17/12<br>114CAN10 | 114CAN10_34.5-35.0<br>34.5 - 35<br>02/17/12<br>114CAN10 | 114CAN11_1.5-.20<br>1.5 - 2<br>02/21/12<br>114CAN11 | 114CAN11_13.5-14.0<br>13.5 - 14<br>02/21/12<br>114CAN11 | 114CAN11_14.5-15.0<br>14.5 - 15<br>02/21/12<br>114CAN11 | 114CAN12_17.5-18<br>17.5 - 18<br>02/02/12<br>114CAN12 | 114CAN12_19.5-20<br>19.5 - 20<br>02/02/12<br>114CAN12 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | NA | NA | NA | NA | NA | NA | 377 J [86.2 J] | 128 J | NA |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 53.5 | 0.47 J | 5 | 18.5 | NA | 3.9 UJ | 0.77 UJ [0.76 UJ] | 0.49 UJ | 0.46 UJ |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114CAN10_29.5-30.0<br>29.5 - 30<br>02/17/12<br>114CAN10 | 114CAN10_31.5-32.0<br>31.5 - 32<br>02/17/12<br>114CAN10 | 114CAN10_33.5-34.0<br>33.5 - 34<br>02/17/12<br>114CAN10 | 114CAN10_34.5-35.0<br>34.5 - 35<br>02/17/12<br>114CAN10 | 114CAN11_1.5-.20<br>1.5 - 2<br>02/21/12<br>114CAN11 | 114CAN11_13.5-14.0<br>13.5 - 14<br>02/21/12<br>114CAN11 | 114CAN11_14.5-15.0<br>14.5 - 15<br>02/21/12<br>114CAN11 | 114CAN12_17.5-18<br>17.5 - 18<br>02/02/12<br>114CAN12 | 114CAN12_19.5-20<br>19.5 - 20<br>02/02/12<br>114CAN12 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | 2,900 | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114CAN10_29.5-30.0<br>29.5 - 30<br>02/17/12<br>114CAN10 | 114CAN10_31.5-32.0<br>31.5 - 32<br>02/17/12<br>114CAN10 | 114CAN10_33.5-34.0<br>33.5 - 34<br>02/17/12<br>114CAN10 | 114CAN10_34.5-35.0<br>34.5 - 35<br>02/17/12<br>114CAN10 | 114CAN11_1.5-.20<br>1.5 - 2<br>02/21/12<br>114CAN11 | 114CAN11_13.5-14.0<br>13.5 - 14<br>02/21/12<br>114CAN11 | 114CAN11_14.5-15.0<br>14.5 - 15<br>02/21/12<br>114CAN11 | 114CAN12_17.5-18<br>17.5 - 18<br>02/02/12<br>114CAN12 | 114CAN12_19.5-20<br>19.5 - 20<br>02/02/12<br>114CAN12 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 225 | 189 | 216 | 268 | NA | 129 | 169 [180] [225] | 80.1 | 19.7 |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 738,000 | 792,000 | 826,000 | 789,000 | NA | NA | 519,000 [521,000] | 820,000 | 865,000 |
| pH | ARC-pH | SU | 9.61 | 9.55 | 9.04 | 8.45 | NA | 8.99 | 8.39 [8.4] [8.16] | 10.10 | 10.12 |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114CAN12_21.5-20 | 114CAN12_21.5-22 | 114CAN12_23.5-24 | 114CAN12_25.5-26 | 114CAN12_27.5-28 | 114CAN12_29.5-30 | 114CAN12_31.5-32 | 114CAN12_33.5-34 | 114CAN12_34.5-35 | 114CAN13_3.5-4.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 20 - 21.5 | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 3.5 - 4 |
| Date Collected: | | | 02/02/12 | 02/02/12 | 02/02/12 | 02/02/12 | 02/02/12 | 02/02/12 | 02/02/12 | 02/02/12 | 02/02/12 | 01/30/12 |
| Location ID: | CAS Number | Units | 114CAN12 | 114CAN12 | 114CAN12 | 114CAN12 | 114CAN12 | 114CAN12 | 114CAN12 | 114CAN12 | 114CAN12 | 114CAN13 |
| **Volatile Organics** | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114CAN12_21.5-20<br>20 - 21.5<br>02/02/12<br>114CAN12 | 114CAN12_21.5-22<br>21.5 - 22<br>02/02/12<br>114CAN12 | 114CAN12_23.5-24<br>23.5 - 24<br>02/02/12<br>114CAN12 | 114CAN12_25.5-26<br>25.5 - 26<br>02/02/12<br>114CAN12 | 114CAN12_27.5-28<br>27.5 - 28<br>02/02/12<br>114CAN12 | 114CAN12_29.5-30<br>29.5 - 30<br>02/02/12<br>114CAN12 | 114CAN12_31.5-32<br>31.5 - 32<br>02/02/12<br>114CAN12 | 114CAN12_33.5-34<br>33.5 - 34<br>02/02/12<br>114CAN12 | 114CAN12_34.5-35<br>34.5 - 35<br>02/02/12<br>114CAN12 | 114CAN13_3.5-4.0<br>3.5 - 4<br>01/30/12<br>114CAN13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114CAN12_21.5-20<br>20 - 21.5<br>02/02/12<br>114CAN12 | 114CAN12_21.5-22<br>21.5 - 22<br>02/02/12<br>114CAN12 | 114CAN12_23.5-24<br>23.5 - 24<br>02/02/12<br>114CAN12 | 114CAN12_25.5-26<br>25.5 - 26<br>02/02/12<br>114CAN12 | 114CAN12_27.5-28<br>27.5 - 28<br>02/02/12<br>114CAN12 | 114CAN12_29.5-30<br>29.5 - 30<br>02/02/12<br>114CAN12 | 114CAN12_31.5-32<br>31.5 - 32<br>02/02/12<br>114CAN12 | 114CAN12_33.5-34<br>33.5 - 34<br>02/02/12<br>114CAN12 | 114CAN12_34.5-35<br>34.5 - 35<br>02/02/12<br>114CAN12 | 114CAN13_3.5-4.0<br>3.5 - 4<br>01/30/12<br>114CAN13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | NA | 21.7 J | 48.9 J | 178 J | 42.5 J | 2.1 J | 1.8 J | 2.6 J | 1.9 J | NA |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114CAN12_21.5-20<br>20 - 21.5<br>02/02/12<br>114CAN12 | 114CAN12_21.5-22<br>21.5 - 22<br>02/02/12<br>114CAN12 | 114CAN12_23.5-24<br>23.5 - 24<br>02/02/12<br>114CAN12 | 114CAN12_25.5-26<br>25.5 - 26<br>02/02/12<br>114CAN12 | 114CAN12_27.5-28<br>27.5 - 28<br>02/02/12<br>114CAN12 | 114CAN12_29.5-30<br>29.5 - 30<br>02/02/12<br>114CAN12 | 114CAN12_31.5-32<br>31.5 - 32<br>02/02/12<br>114CAN12 | 114CAN12_33.5-34<br>33.5 - 34<br>02/02/12<br>114CAN12 | 114CAN12_34.5-35<br>34.5 - 35<br>02/02/12<br>114CAN12 | 114CAN13_3.5-4.0<br>3.5 - 4<br>01/30/12<br>114CAN13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5,400 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114CAN12_21.5-20<br>20 - 21.5<br>02/02/12<br>114CAN12 | 114CAN12_21.5-22<br>21.5 - 22<br>02/02/12<br>114CAN12 | 114CAN12_23.5-24<br>23.5 - 24<br>02/02/12<br>114CAN12 | 114CAN12_25.5-26<br>25.5 - 26<br>02/02/12<br>114CAN12 | 114CAN12_27.5-28<br>27.5 - 28<br>02/02/12<br>114CAN12 | 114CAN12_29.5-30<br>29.5 - 30<br>02/02/12<br>114CAN12 | 114CAN12_31.5-32<br>31.5 - 32<br>02/02/12<br>114CAN12 | 114CAN12_33.5-34<br>33.5 - 34<br>02/02/12<br>114CAN12 | 114CAN12_34.5-35<br>34.5 - 35<br>02/02/12<br>114CAN12 | 114CAN13_3.5-4.0<br>3.5 - 4<br>01/30/12<br>114CAN13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 144 | NA | 158 | 150 | 243 | 253 | 269 | 278 | 293 | NA |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 754,000 | NA | 748,000 | 751,000 | 779,000 | 796,000 | 747,000 | 781,000 | 911,000 | NA |
| pH | ARC-pH | SU | 9.40 | NA | 9.73 | 10.68 | 9.32 | 8.90 | 8.67 | 8.63 | 8.04 | NA |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114CAN13_15.5-16.0 | 114CAN13_17.5-18.0 | 114CAN13_19.5-20.0 | 114CAN14_15.5-16 | 114CAN14_17.5-18 | 114CAN14_19.5-20 | 114CAN14_21.5-22 | 114CAN14_23.5-24 | 114CAN14_25.5-26 | 114CAN14_27.5-28 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 15.5 - 16 | 17.5 - 18 | 19.5 - 20 | 15.5 - 16 | 17.5 - 18 | 19.5 - 20 | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 |
| Date Collected: | | | 01/30/12 | 01/30/12 | 01/30/12 | 01/16/12 | 01/16/12 | 01/16/12 | 01/16/12 | 01/16/12 | 01/16/12 | 01/16/12 |
| Location ID: | CAS Number | Units | 114CAN13 | 114CAN13 | 114CAN13 | 114CAN14 | 114CAN14 | 114CAN14 | 114CAN14 | 114CAN14 | 114CAN14 | 114CAN14 |
| **Volatile Organics** | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114CAN13_15.5-16.0<br>15.5 - 16<br>01/30/12<br>114CAN13 | 114CAN13_17.5-18.0<br>17.5 - 18<br>01/30/12<br>114CAN13 | 114CAN13_19.5-20.0<br>19.5 - 20<br>01/30/12<br>114CAN13 | 114CAN14_15.5-16<br>15.5 - 16<br>01/16/12<br>114CAN14 | 114CAN14_17.5-18<br>17.5 - 18<br>01/16/12<br>114CAN14 | 114CAN14_19.5-20<br>19.5 - 20<br>01/16/12<br>114CAN14 | 114CAN14_21.5-22<br>21.5 - 22<br>01/16/12<br>114CAN14 | 114CAN14_23.5-24<br>23.5 - 24<br>01/16/12<br>114CAN14 | 114CAN14_25.5-26<br>25.5 - 26<br>01/16/12<br>114CAN14 | 114CAN14_27.5-28<br>27.5 - 28<br>01/16/12<br>114CAN14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114CAN13_15.5-16.0<br>15.5 - 16<br>01/30/12<br>114CAN13 | 114CAN13_17.5-18.0<br>17.5 - 18<br>01/30/12<br>114CAN13 | 114CAN13_19.5-20.0<br>19.5 - 20<br>01/30/12<br>114CAN13 | 114CAN14_15.5-16<br>15.5 - 16<br>01/16/12<br>114CAN14 | 114CAN14_17.5-18<br>17.5 - 18<br>01/16/12<br>114CAN14 | 114CAN14_19.5-20<br>19.5 - 20<br>01/16/12<br>114CAN14 | 114CAN14_21.5-22<br>21.5 - 22<br>01/16/12<br>114CAN14 | 114CAN14_23.5-24<br>23.5 - 24<br>01/16/12<br>114CAN14 | 114CAN14_25.5-26<br>25.5 - 26<br>01/16/12<br>114CAN14 | 114CAN14_27.5-28<br>27.5 - 28<br>01/16/12<br>114CAN14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | 314 | NA | NA | NA | NA | NA | 1,290 J | NA | NA | NA |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 0.86 J | 0.95 J [0.52 UJ] | 2.9 J | 313 J | 1,800 J | 1,890 J | 160 J | 14.3 J | 15 J | 66.5 J |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114CAN13_15.5-16.0<br>15.5 - 16<br>01/30/12<br>114CAN13 | 114CAN13_17.5-18.0<br>17.5 - 18<br>01/30/12<br>114CAN13 | 114CAN13_19.5-20.0<br>19.5 - 20<br>01/30/12<br>114CAN13 | 114CAN14_15.5-16<br>15.5 - 16<br>01/16/12<br>114CAN14 | 114CAN14_17.5-18<br>17.5 - 18<br>01/16/12<br>114CAN14 | 114CAN14_19.5-20<br>19.5 - 20<br>01/16/12<br>114CAN14 | 114CAN14_21.5-22<br>21.5 - 22<br>01/16/12<br>114CAN14 | 114CAN14_23.5-24<br>23.5 - 24<br>01/16/12<br>114CAN14 | 114CAN14_25.5-26<br>25.5 - 26<br>01/16/12<br>114CAN14 | 114CAN14_27.5-28<br>27.5 - 28<br>01/16/12<br>114CAN14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | 34 | NA | NA | 2,300 | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114CAN13_15.5-16.0<br>15.5 - 16<br>01/30/12<br>114CAN13 | 114CAN13_17.5-18.0<br>17.5 - 18<br>01/30/12<br>114CAN13 | 114CAN13_19.5-20.0<br>19.5 - 20<br>01/30/12<br>114CAN13 | 114CAN14_15.5-16<br>15.5 - 16<br>01/16/12<br>114CAN14 | 114CAN14_17.5-18<br>17.5 - 18<br>01/16/12<br>114CAN14 | 114CAN14_19.5-20<br>19.5 - 20<br>01/16/12<br>114CAN14 | 114CAN14_21.5-22<br>21.5 - 22<br>01/16/12<br>114CAN14 | 114CAN14_23.5-24<br>23.5 - 24<br>01/16/12<br>114CAN14 | 114CAN14_25.5-26<br>25.5 - 26<br>01/16/12<br>114CAN14 | 114CAN14_27.5-28<br>27.5 - 28<br>01/16/12<br>114CAN14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | 17,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 306 | 302 [295] | 277 | 54.4 | 98.9 | 96.6 | 153 | 185 | 184 | 178 |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 540,000 | 669,000 [771,000] | 892,000 | 613,000 | 467,000 | 556,000 | 837,000 | 825,000 | 773,000 | 780,000 |
| pH | ARC-pH | SU | 8.19 | 8.55 [8.52] | 9.02 | 11.62 | 11.61 | 11.65 | 9.58 | 9.47 | 10.07 | 9.25 |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | 0 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | 36,400 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114CAN14_29.5-30 | 114CAN14_31.5-32 | 114CAN14_34.5-35 | 114CAN17_14-14.5 | 114CAN19_17.5-18 | 114CAN19_19.5-20 | 114CAN19_21.5-22 | 114CAN19_23.5-24 | 114CAN19_25.5-26 | 114CAN19_27.5-28 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 29.5 - 30 | 31.5 - 32 | 34.5 - 35 | 14 - 14.5 | 17.5 - 18 | 19.5 - 20 | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 |
| Date Collected: | | | 01/16/12 | 01/16/12 | 01/17/12 | 01/13/12 | 01/25/12 | 01/25/12 | 01/25/12 | 01/25/12 | 01/25/12 | 01/25/12 |
| Location ID: | CAS Number | Units | 114CAN14 | 114CAN14 | 114Can14 | 114CAN17 | 114CAN19 | 114CAN19 | 114CAN19 | 114CAN19 | 114CAN19 | 114CAN19 |
| **Volatile Organics** | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114CAN14_29.5-30<br>29.5 - 30<br>01/16/12<br>114CAN14 | 114CAN14_31.5-32<br>31.5 - 32<br>01/16/12<br>114CAN14 | 114CAN14_34.5-35<br>34.5 - 35<br>01/17/12<br>114Can14 | 114CAN17_14-14.5<br>14 - 14.5<br>01/13/12<br>114CAN17 | 114CAN19_17.5-18<br>17.5 - 18<br>01/25/12<br>114CAN19 | 114CAN19_19.5-20<br>19.5 - 20<br>01/25/12<br>114CAN19 | 114CAN19_21.5-22<br>21.5 - 22<br>01/25/12<br>114CAN19 | 114CAN19_23.5-24<br>23.5 - 24<br>01/25/12<br>114CAN19 | 114CAN19_25.5-26<br>25.5 - 26<br>01/25/12<br>114CAN19 | 114CAN19_27.5-28<br>27.5 - 28<br>01/25/12<br>114CAN19 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114CAN14_29.5-30<br>29.5 - 30<br>01/16/12<br>114CAN14 | 114CAN14_31.5-32<br>31.5 - 32<br>01/16/12<br>114CAN14 | 114CAN14_34.5-35<br>34.5 - 35<br>01/17/12<br>114Can14 | 114CAN17_14-14.5<br>14 - 14.5<br>01/13/12<br>114CAN17 | 114CAN19_17.5-18<br>17.5 - 18<br>01/25/12<br>114CAN19 | 114CAN19_19.5-20<br>19.5 - 20<br>01/25/12<br>114CAN19 | 114CAN19_21.5-22<br>21.5 - 22<br>01/25/12<br>114CAN19 | 114CAN19_23.5-24<br>23.5 - 24<br>01/25/12<br>114CAN19 | 114CAN19_25.5-26<br>25.5 - 26<br>01/25/12<br>114CAN19 | 114CAN19_27.5-28<br>27.5 - 28<br>01/25/12<br>114CAN19 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | 44.1 J [53.1 J] | 144 J | 74.9 | 1,860 J | 149 J | NA | NA | NA | NA | NA |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 1.1 J [0.48 UJ] | 2.2 J | 19.3 J | 17.4 J | 1.5 J | 17.9 J | 42.7 J | 47.3 J | 38.7 J [49.2 J] | 2.7 J |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114CAN14_29.5-30<br>29.5 - 30<br>01/16/12<br>114CAN14 | 114CAN14_31.5-32<br>31.5 - 32<br>01/16/12<br>114CAN14 | 114CAN14_34.5-35<br>34.5 - 35<br>01/17/12<br>114Can14 | 114CAN17_14-14.5<br>14 - 14.5<br>01/13/12<br>114CAN17 | 114CAN19_17.5-18<br>17.5 - 18<br>01/25/12<br>114CAN19 | 114CAN19_19.5-20<br>19.5 - 20<br>01/25/12<br>114CAN19 | 114CAN19_21.5-22<br>21.5 - 22<br>01/25/12<br>114CAN19 | 114CAN19_23.5-24<br>23.5 - 24<br>01/25/12<br>114CAN19 | 114CAN19_25.5-26<br>25.5 - 26<br>01/25/12<br>114CAN19 | 114CAN19_27.5-28<br>27.5 - 28<br>01/25/12<br>114CAN19 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114CAN14_29.5-30 | 114CAN14_31.5-32 | 114CAN14_34.5-35 | 114CAN17_14-14.5 | 114CAN19_17.5-18 | 114CAN19_19.5-20 | 114CAN19_21.5-22 | 114CAN19_23.5-24 | 114CAN19_25.5-26 | 114CAN19_27.5-28 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 29.5 - 30 | 31.5 - 32 | 34.5 - 35 | 14 - 14.5 | 17.5 - 18 | 19.5 - 20 | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 |
| Date Collected: | | | 01/16/12 | 01/16/12 | 01/17/12 | 01/13/12 | 01/25/12 | 01/25/12 | 01/25/12 | 01/25/12 | 01/25/12 | 01/25/12 |
| Location ID: | CAS Number | Units | 114CAN14 | 114CAN14 | 114Can14 | 114CAN17 | 114CAN19 | 114CAN19 | 114CAN19 | 114CAN19 | 114CAN19 | 114CAN19 |
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 183 [186] | 288 | 271 | 137 | 168 | 223 | 172 | 181 | 196 [201] | 202 |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 830,000 [830,000] | 779,000 | 882,000 | 503,000 | 556,000 | 834,000 | 850,000 | 789,000 | 772,000 [765,000] | 819,000 |
| pH | ARC-pH | SU | 9.35 [9.15] | 9.15 | 8.96 | 9.58 | 9.58 | 9.80 | 9.90 | 9.82 | 9.49 [9.48] | 9.09 |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114CAN19_29.5-30 | 114CAN19_31.5-32 | 114CAN19_33.5-34 | 114CAN19_34.5-35 | 114CAN20_27.5-28 | 114CAN20_29.5-30 | 114CAN20_31.5-32 | 114CAN20_33.5-34 | 114CAN20_34.5-35 | 114CAN33_20.5-21 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 20.5 - 21 |
| Date Collected: | | | 01/25/12 | 01/25/12 | 01/25/12 | 01/25/12 | 01/18/12 | 01/18/12 | 01/18/12 | 01/18/12 | 01/18/12 | 01/25/12 |
| Location ID: | CAS Number | Units | 114CAN19 | 114CAN19 | 114CAN19 | 114CAN19 | 114CAN20 | 114CAN20 | 114CAN20 | 114CAN20 | 114CAN20 | 114CAN33 |
| **Volatile Organics** | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.02 U |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.002 U |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.002 U |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.25 U |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.02 U |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0224 |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.002 U |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0049 J |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.002 U |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.002 U |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.002 U |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.002 U |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.002 U |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.002 U |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0098 U |
| **Semivolatile Organics** | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114CAN19_29.5-30<br>29.5 - 30<br>01/25/12<br>114CAN19 | 114CAN19_31.5-32<br>31.5 - 32<br>01/25/12<br>114CAN19 | 114CAN19_33.5-34<br>33.5 - 34<br>01/25/12<br>114CAN19 | 114CAN19_34.5-35<br>34.5 - 35<br>01/25/12<br>114CAN19 | 114CAN20_27.5-28<br>27.5 - 28<br>01/18/12<br>114CAN20 | 114CAN20_29.5-30<br>29.5 - 30<br>01/18/12<br>114CAN20 | 114CAN20_31.5-32<br>31.5 - 32<br>01/18/12<br>114CAN20 | 114CAN20_33.5-34<br>33.5 - 34<br>01/18/12<br>114CAN20 | 114CAN20_34.5-35<br>34.5 - 35<br>01/18/12<br>114CAN20 | 114CAN33_20.5-21<br>20.5 - 21<br>01/25/12<br>114CAN33 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.094 U |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.23 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.094 U |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.23 U |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.23 U |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.23 U |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.23 U |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.23 U |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.94 U |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.094 U |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.094 U |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.094 U |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.23 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.94 U |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.094 U |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.094 U |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.23 U |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.23 U |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.23 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.23 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.094 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.23 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.094 U |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.094 U |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.23 U |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.47 U |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.047 U |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.047 U |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.23 U |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.047 U |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.23 U |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.23 U |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.047 U |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.047 U |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.047 U |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.047 U |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.047 U |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.094 U |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.094 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.094 U |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.094 U |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.094 U |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.094 U |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.047 U |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.047 U |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.094 U |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.094 U |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.094 U |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.094 U |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114CAN19_29.5-30<br>29.5 - 30<br>01/25/12<br>114CAN19 | 114CAN19_31.5-32<br>31.5 - 32<br>01/25/12<br>114CAN19 | 114CAN19_33.5-34<br>33.5 - 34<br>01/25/12<br>114CAN19 | 114CAN19_34.5-35<br>34.5 - 35<br>01/25/12<br>114CAN19 | 114CAN20_27.5-28<br>27.5 - 28<br>01/18/12<br>114CAN20 | 114CAN20_29.5-30<br>29.5 - 30<br>01/18/12<br>114CAN20 | 114CAN20_31.5-32<br>31.5 - 32<br>01/18/12<br>114CAN20 | 114CAN20_33.5-34<br>33.5 - 34<br>01/18/12<br>114CAN20 | 114CAN20_34.5-35<br>34.5 - 35<br>01/18/12<br>114CAN20 | 114CAN33_20.5-21<br>20.5 - 21<br>01/25/12<br>114CAN33 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.094 U |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.047 U |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.047 U |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.047 U |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.094 U |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.94 U |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.23 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.047 U |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.094 U |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.047 U |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.094 U |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.094 U |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.23 U |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.23 U |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.47 U |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.047 U |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.094 U |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.047 U |
| **Metals** | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 18,100 |
| Antimony | 7440-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 3.3 U |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 12.7 |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 47.3 |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.82 |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.83 U |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 3,510 |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | NA | NA | NA | NA | 399 J | NA | NA | NA | NA | 347 |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 33.1 J | 12.4 J | 5.9 J | 0.5 U | 215 | 49.3 | 122 | 31.2 | 365 | 0.66 U |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 11 |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 16.3 |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 30,500 |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 12.6 |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 6,030 |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 397 |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.055 U |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 29 |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 4,080 |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 3.3 U |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.83 U |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5,820 |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114CAN19_29.5-30<br>29.5 - 30<br>01/25/12<br>114CAN19 | 114CAN19_31.5-32<br>31.5 - 32<br>01/25/12<br>114CAN19 | 114CAN19_33.5-34<br>33.5 - 34<br>01/25/12<br>114CAN19 | 114CAN19_34.5-35<br>34.5 - 35<br>01/25/12<br>114CAN19 | 114CAN20_27.5-28<br>27.5 - 28<br>01/18/12<br>114CAN20 | 114CAN20_29.5-30<br>29.5 - 30<br>01/18/12<br>114CAN20 | 114CAN20_31.5-32<br>31.5 - 32<br>01/18/12<br>114CAN20 | 114CAN20_33.5-34<br>33.5 - 34<br>01/18/12<br>114CAN20 | 114CAN20_34.5-35<br>34.5 - 35<br>01/18/12<br>114CAN20 | 114CAN33_20.5-21<br>20.5 - 21<br>01/25/12<br>114CAN33 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 1.7 U |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 42 |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 73.1 |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114CAN19_29.5-30 | 114CAN19_31.5-32 | 114CAN19_33.5-34 | 114CAN19_34.5-35 | 114CAN20_27.5-28 | 114CAN20_29.5-30 | 114CAN20_31.5-32 | 114CAN20_33.5-34 | 114CAN20_34.5-35 | 114CAN33_20.5-21 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 20.5 - 21 |
| Date Collected: | | | 01/25/12 | 01/25/12 | 01/25/12 | 01/25/12 | 01/18/12 | 01/18/12 | 01/18/12 | 01/18/12 | 01/18/12 | 01/25/12 |
| Location ID: | CAS Number | Units | 114CAN19 | 114CAN19 | 114CAN19 | 114CAN19 | 114CAN20 | 114CAN20 | 114CAN20 | 114CAN20 | 114CAN20 | 114CAN33 |
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 211 | 217 | 245 | 244 | 273 | 258 | 259 | 256 | 252 | 174 |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 779,000 | 811,000 | 803,000 | 799,000 | 794,000 | 808,000 | 775,000 | 806,000 | 856,000 | 606,000 |
| pH | ARC-pH | SU | 8.56 | 8.84 | 8.66 | 8.81 | 11.53 | 11.40 | 10.43 | 11.07 | 12.27 | 9.04 |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114-D3VC-23.5-24.0 | 114-D5VF-21.5-22 | 114-F2A20.1 | 114-F2A20.25-20.55 | 114-G2S23-23.5 | 114-G8B_19B | 114-G8VA-25.0-25.5 | 114-G8VB-29-29.5 | 114-G8VC-33-33.5 | 114-GPS-MW-2I (24.5-25.0) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 23.5 - 24 | 21.5 - 22 | 20.1 - 21.1 | 20.25 - 20.55 | 23 - 23.5 | 20.03 - 20.53 | 25 - 25.5 | 29 - 29.5 | 33 - 33.5 | 24.5 - 25 |
| Date Collected: | | | 10/20/05 | 10/05/05 | 09/07/05 | 09/07/05 | 08/22/03 | 02/15/11 | 10/07/05 | 10/07/05 | 10/07/05 | 04/23/13 |
| Location ID: | CAS Number | Units | D3V | D5V | F2A | F2A | G2 | 114-G8B | G8V | G8V | G8V | GPS-MW2I |
| **Volatile Organics** | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | 1 U | NA | 1.1 U | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | 1 U | NA | 1.1 U | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | 1 U | NA | 1.1 U | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | 1 U | NA | 1.1 U | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | 1 U | NA | 1.1 U | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | 1 U | NA | 1.1 U | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | 1 U | NA | 1.1 U | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | 2.1 U | NA | 2.3 U | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | 1 U | NA | 2.3 U | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | 2.1 U | NA | 4.5 U | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | 7.83 | NA | 0.83 J | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | 1 U | NA | 1.1 U | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | 1 U | NA | 1.1 U | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | 1 U | NA | 1.1 U | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | 1 U | NA | 2.3 U | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | 1 U | NA | 1.1 U | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | 1 U | NA | 1.1 U | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | 1 U | NA | 1.1 U | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | 1 U | NA | 1.1 U | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | 1 U | NA | 1.1 U | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | 1 U | NA | 1.1 U | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | 1 U | NA | 1.1 U | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | 1 U | NA | 1.1 U | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | 1 U | NA | 1.1 U | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | 19 | NA | 1.1 U | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | 1.1 U | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | 1 U | NA | 2.3 U | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | 1.1 U | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | 1 U | NA | 1.1 U | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | 1 U | NA | 1.1 U | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | 33.9 | NA | 1.1 U | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | 39 | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | 1 U | NA | 1.1 U | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | 1 U | NA | 1.1 U | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | 1 U | NA | 1.1 U | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | 1 U | NA | 1.1 U | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-D3VC-23.5-24.0<br>23.5 - 24<br>10/20/05<br>D3V | 114-D5VF-21.5-22<br>21.5 - 22<br>10/05/05<br>D5V | 114-F2A20.1<br>20.1 - 21.1<br>09/07/05<br>F2A | 114-F2A20.25-20.55<br>20.25 - 20.55<br>09/07/05<br>F2A | 114-G2S23-23.5<br>23 - 23.5<br>08/22/03<br>G2 | 114-G8B_19B<br>20.03 - 20.53<br>02/15/11<br>114-G8B | 114-G8VA-25.0-25.5<br>25 - 25.5<br>10/07/05<br>G8V | 114-G8VB-29-29.5<br>29 - 29.5<br>10/07/05<br>G8V | 114-G8VC-33-33.5<br>33 - 33.5<br>10/07/05<br>G8V | 114-GPS-MW-2I (24.5-25.0)<br>24.5 - 25<br>04/23/13<br>GPS-MW2I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | 0.74 U | 0.39 U | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | 0.74 U | 0.39 U | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | 0.74 U | 0.39 U | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | 0.74 U | 0.39 U | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | 0.74 U | 0.39 U | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | 1.9 U | 0.39 U | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | 1.9 U | 0.39 U | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | 1.9 U | 0.39 U | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | 1.9 U | 0.39 U | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | 7.4 U | 2 U | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | 0.74 U | 0.39 U | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | 0.74 U | 0.39 U | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | 0.74 U | 0.39 U | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | 1.9 U | 0.39 U | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | 7.4 U | 2 U | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | 672 | 0.39 U | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | 1.9 U | 0.39 U | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | 1.9 U | 2 U | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | 1.9 U | 0.39 U | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | 1.9 U | 0.39 U | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | 1.9 U | 2 U | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | 0.74 U | 0.39 U | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | 1.9 U | 0.39 U | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | 0.74 U | 0.39 U | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | 1.9 U | 0.39 U | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | 1.9 U | 2 U | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | 7.4 U | 2 U | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | 273 | 0.39 U | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | 36.3 | 0.39 U | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | 135 | 0.39 U | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | 55.3 | 0.39 U | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | 36.9 | 0.39 U | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | 16.9 | 0.39 U | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | 8.67 | 0.39 U | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | 28.9 | 0.39 U | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | 0.39 U | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | 0.74 U | 0.39 U | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | 0.74 U | 0.39 U | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | 0.74 U | 0.39 U | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | 0.74 U | 0.39 U | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | 0.74 U | 0.39 U | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | 59 | 0.39 U | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | 3.27 | 0.39 U | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | 16.1 | 0.39 U | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | 0.74 U | 0.39 U | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | 0.74 U | 0.39 UJ | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | 0.74 U | 0.39 U | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-D3VC-23.5-24.0<br>23.5 - 24<br>10/20/05<br>D3V | 114-D5VF-21.5-22<br>21.5 - 22<br>10/05/05<br>D5V | 114-F2A20.1<br>20.1 - 21.1<br>09/07/05<br>F2A | 114-F2A20.25-20.55<br>20.25 - 20.55<br>09/07/05<br>F2A | 114-G2S23-23.5<br>23 - 23.5<br>08/22/03<br>G2 | 114-G8B_19B<br>20.03 - 20.53<br>02/15/11<br>114-G8B | 114-G8VA-25.0-25.5<br>25 - 25.5<br>10/07/05<br>G8V | 114-G8VB-29-29.5<br>29 - 29.5<br>10/07/05<br>G8V | 114-G8VC-33-33.5<br>33 - 33.5<br>10/07/05<br>G8V | 114-GPS-MW-2I (24.5-25.0)<br>24.5 - 25<br>04/23/13<br>GPS-MW2I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | 0.74 U | 0.39 U | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | 113 | 0.39 U | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | 146 | 0.39 U | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | 0.74 U | 0.39 U | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | 0.74 U | 0.39 U | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | 7.4 U | 0.39 U | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | 1.9 U | 0.39 U | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | 10.3 | 0.39 U | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | 0.74 U | 0.39 U | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | 971 | 0.045 J | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | 0.74 U | 0.39 U | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | 0.39 U | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | 0.74 U | 0.39 U | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | 1.9 U | 0.39 U | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | 1.9 U | 0.39 U | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | 7.4 U | 2 U | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | 474 | 0.39 U | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | 3.54 | 0.39 U | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | 169 | 0.39 U | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | 3,700 | 7,450 J | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | mg/kg | NA | NA | NA | 2.1 U | 0.44 UJ | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | NA | 10.7 | 3.5 J | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | 43 U | 68.4 J | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | 1.1 U | 0.01 UJ | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | 1.1 U | 0.57 U | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | 4,850 | 1,250 J | NA | NA | NA | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | NA | NA | NA | 695 | 18.5 J | 24.6 | NA | NA | NA | NA |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 5.37 U | 1.5 UJ | NA | 7.7 | NA | 0.69 UJ | 24.4 | R | R | 56.4 |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | 11 U | 6.2 J | NA | NA | NA | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | 10 | 19.3 J | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | 4,570 | 13,200 J | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | 8.6 | 17.5 J | NA | NA | NA | NA | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | 1,420 | 4,050 J | NA | NA | NA | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | 39.9 | 78.8 J | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | 0.26 | 0.04 U | NA | NA | NA | NA | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | 15.1 | 12.9 J | NA | NA | NA | NA | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | 1,100 U | 2,020 | NA | NA | NA | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | 2.1 U | 0.57 U | NA | NA | NA | NA | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | 2.1 U | 1.1 UJ | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | 2,090 | 185 J | NA | NA | NA | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-D3VC-23.5-24.0<br>23.5 - 24<br>10/20/05<br>D3V | 114-D5VF-21.5-22<br>21.5 - 22<br>10/05/05<br>D5V | 114-F2A20.1<br>20.1 - 21.1<br>09/07/05<br>F2A | 114-F2A20.25-20.55<br>20.25 - 20.55<br>09/07/05<br>F2A | 114-G2S23-23.5<br>23 - 23.5<br>08/22/03<br>G2 | 114-G8B_19B<br>20.03 - 20.53<br>02/15/11<br>114-G8B | 114-G8VA-25.0-25.5<br>25 - 25.5<br>10/07/05<br>G8V | 114-G8VB-29-29.5<br>29 - 29.5<br>10/07/05<br>G8V | 114-G8VC-33-33.5<br>33 - 33.5<br>10/07/05<br>G8V | 114-GPS-MW-2I (24.5-25.0)<br>24.5 - 25<br>04/23/13<br>GPS-MW2I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | NA | 2.1 U | 0.4 U | NA | NA | NA | NA | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | NA | 13.5 | 26.6 J | NA | NA | NA | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | 26.9 | 65.7 J | NA | NA | NA | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | 0.039 U | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | 0.039 U | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | 0.039 U | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | 0.039 U | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | 0.039 U | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | 0.039 U | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | 0.039 U | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-D3VC-23.5-24.0<br>23.5 - 24<br>10/20/05<br>D3V | 114-D5VF-21.5-22<br>21.5 - 22<br>10/05/05<br>D5V | 114-F2A20.1<br>20.1 - 21.1<br>09/07/05<br>F2A | 114-F2A20.25-20.55<br>20.25 - 20.55<br>09/07/05<br>F2A | 114-G2S23-23.5<br>23 - 23.5<br>08/22/03<br>G2 | 114-G8B_19B<br>20.03 - 20.53<br>02/15/11<br>114-G8B | 114-G8VA-25.0-25.5<br>25 - 25.5<br>10/07/05<br>G8V | 114-G8VB-29-29.5<br>29 - 29.5<br>10/07/05<br>G8V | 114-G8VC-33-33.5<br>33 - 33.5<br>10/07/05<br>G8V | 114-GPS-MW-2I (24.5-25.0)<br>24.5 - 25<br>04/23/13<br>GPS-MW2I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | 17,600 | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | 1.19 U | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | 54.2 | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | 35.6 | NA | 398 | NA | NA | NA | 306 |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 745,000 | NA | NA | 444,000 | NA | 581,000 | 874,000 | 824,000 | 818,000 | 808,000 |
| pH | ARC-pH | SU | NA | NA | NA | 11.69 | NA | 9.23 | NA | NA | NA | 8.20 |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | 158,000 | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114-GPS-MW-2I (35.0-35.5) | 114-GWPS-EW1I-22-24 | 114-GWPS-EW1I-24-26 | 114-GWPS-EW1I-26-28 | 114-GWPS-EW1I-28-30 | 114-GWPS-EW1I-30-32 | 114-GWPS-IW1I-3D-32 | 114-GWPS-IW1I-34-36 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 35 - 35.5 | 22 - 24 | 24 - 26 | 26 - 28 | 28 - 30 | 30 - 32 | 30 - 32 | 34 - 36 |
| Date Collected: | | | 04/23/13 | 09/17/13 | 09/17/13 | 09/17/13 | 09/17/13 | 09/17/13 | 10/02/13 | 10/02/13 |
| Location ID: | CAS Number | Units | GPS-MW2I | GPS-EW1I | GPS-EW1I | GPS-EW1I | GPS-EW1I | GPS-EW1I | GPS-IW1I | GPS-IW1I |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GPS-MW-2I (35.0-35.5)<br>35 - 35.5<br>04/23/13<br>GPS-MW2I | 114-GWPS-EW1I-22-24<br>22 - 24<br>09/17/13<br>GPS-EW1I | 114-GWPS-EW1I-24-26<br>24 - 26<br>09/17/13<br>GPS-EW1I | 114-GWPS-EW1I-26-28<br>26 - 28<br>09/17/13<br>GPS-EW1I | 114-GWPS-EW1I-28-30<br>28 - 30<br>09/17/13<br>GPS-EW1I | 114-GWPS-EW1I-30-32<br>30 - 32<br>09/17/13<br>GPS-EW1I | 114-GWPS-IW1I-3D-32<br>30 - 32<br>10/02/13<br>GPS-IW1I | 114-GWPS-IW1I-34-36<br>34 - 36<br>10/02/13<br>GPS-IW1I |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GPS-MW-2I (35.0-35.5)<br>35 - 35.5<br>04/23/13<br>GPS-MW2I | 114-GWPS-EW1I-22-24<br>22 - 24<br>09/17/13<br>GPS-EW1I | 114-GWPS-EW1I-24-26<br>24 - 26<br>09/17/13<br>GPS-EW1I | 114-GWPS-EW1I-26-28<br>26 - 28<br>09/17/13<br>GPS-EW1I | 114-GWPS-EW1I-28-30<br>28 - 30<br>09/17/13<br>GPS-EW1I | 114-GWPS-EW1I-30-32<br>30 - 32<br>09/17/13<br>GPS-EW1I | 114-GWPS-IW1I-3D-32<br>30 - 32<br>10/02/13<br>GPS-IW1I | 114-GWPS-IW1I-34-36<br>34 - 36<br>10/02/13<br>GPS-IW1I |
|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | 5,290 | 2,940 | 3,550 | 2,820 [3,510] | 9,620 | 4,540 J | 8,460 J |
| Antimony | 7440-36-0 | mg/kg | NA | 2.4 UJ | 2.5 UJ | 2.4 UJ | 2.5 UJ [2.6 UJ] | 2.3 UJ | 2.4 UJ | 2.3 UJ |
| Arsenic | 7440-38-2 | mg/kg | NA | 3.5 | 3.2 | 3 | 3.1 [2.7] | 3.5 | 2.6 | 12.5 |
| Barium | 7440-39-3 | mg/kg | NA | 36.8 | 33.4 | 20.8 J | 45.8 [42.7] | 96 | 47.7 | 68.1 |
| Beryllium | 7440-41-7 | mg/kg | NA | 0.57 | 0.31 | 0.37 | 0.3 [0.36] | 0.59 | 0.38 | 0.67 |
| Cadmium | 7440-43-9 | mg/kg | NA | 0.17 J | 0.13 J | 0.11 J | 0.62 U [0.17 J] | 0.27 J | 0.61 U | 0.59 U |
| Calcium | 7440-70-2 | mg/kg | NA | 1,350 J | 1,290 J | 1,480 J | 1,930 J [7,970] | 9,120 | 1,410 | 10,100 |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | NA | 268 | 108 | 93.5 | 77.8 [64.5] | 47 | 36.9 J | 39.2 J |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 7.1 | 39.7 J | 45.2 J | 45.4 J | 48.6 J [32.7 J] | 1.3 J | 26.5 J | 5.8 J |
| Cobalt | 7440-48-4 | mg/kg | NA | 4 J | 2 J | 2.2 J | 2.4 J [3.3 J] | 7.5 | 3.5 J | 6.9 |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | 13 | 5.8 | 6.3 | 6.4 [6.3] | 12.5 | 6 | 11.3 |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | 11,100 J | 7,300 J | 8,150 J | 7,500 J [8,170 J] | 17,200 J | 8,880 J | 15,000 J |
| Lead | 7439-92-1 | mg/kg | NA | 8.7 | 4.7 | 5 | 4.1 [4.8] | 10.9 | 6.5 | 9.6 |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | 2,530 J | 1,030 J | 1,230 J | 1,130 J [2,110 J] | 4,940 J | 1,710 J | 4,520 J |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | 78.5 J | 72.2 J | 75.2 J | 102 J [299 J] | 466 J | 175 J | 365 J |
| Mercury | 7439-97-6 | mg/kg | NA | 0.036 U | 0.043 U | 0.039 U | 0.04 U [0.04 U] | 0.039 U | 0.04 UJ | 0.038 UJ |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | 8.9 | 4.4 J | 5.3 | 5.1 [6.3] | 16.8 | 7.7 | 13.7 |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | 1,400 J | 917 J | 1,100 J | 913 J [1,250 J] | 2,350 J | 1,250 J | 2,310 J |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | 0.66 J | 0.35 J | 2.4 U | 2.5 U [0.46 J] | 0.93 J | 2.4 UJ | 2.3 UJ |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | 0.6 U | 0.63 U | 0.51 J | 0.62 U [0.64 U] | 0.15 J | 0.23 J | 0.48 J |
| Sodium | 7440-23-5 | mg/kg | NA | 413 J | 271 J | 245 J | 241 J [249 J] | 214 J | 166 J | 217 J |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GPS-MW-2I (35.0-35.5)<br>35 - 35.5<br>04/23/13<br>GPS-MW2I | 114-GWPS-EW1I-22-24<br>22 - 24<br>09/17/13<br>GPS-EW1I | 114-GWPS-EW1I-24-26<br>24 - 26<br>09/17/13<br>GPS-EW1I | 114-GWPS-EW1I-26-28<br>26 - 28<br>09/17/13<br>GPS-EW1I | 114-GWPS-EW1I-28-30<br>28 - 30<br>09/17/13<br>GPS-EW1I | 114-GWPS-EW1I-30-32<br>30 - 32<br>09/17/13<br>GPS-EW1I | 114-GWPS-IW1I-3D-32<br>30 - 32<br>10/02/13<br>GPS-IW1I | 114-GWPS-IW1I-34-36<br>34 - 36<br>10/02/13<br>GPS-IW1I |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | 140 J | 65.4 J | 84.3 J | 50.4 J [55.3 J] | 293 J | 31.6 J | 481 J |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | 0.48 J | 1.3 U | 1.2 U | 1.2 U [0.55 J] | 0.83 J | 1.2 U | 0.41 J |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | 20 | 11.5 | 13.5 | 11.7 [12] | 20.4 | 12.5 | 19.1 |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | 51.2 | 15.7 | 18.9 | 16.7 [19.5] | 42.9 | 20.8 | 38 |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GPS-MW-2I (35.0-35.5)<br>35 - 35.5<br>04/23/13<br>GPS-MW2I | 114-GWPS-EW1I-22-24<br>22 - 24<br>09/17/13<br>GPS-EW1I | 114-GWPS-EW1I-24-26<br>24 - 26<br>09/17/13<br>GPS-EW1I | 114-GWPS-EW1I-26-28<br>26 - 28<br>09/17/13<br>GPS-EW1I | 114-GWPS-EW1I-28-30<br>28 - 30<br>09/17/13<br>GPS-EW1I | 114-GWPS-EW1I-30-32<br>30 - 32<br>09/17/13<br>GPS-EW1I | 114-GWPS-IW1I-3D-32<br>30 - 32<br>10/02/13<br>GPS-IW1I | 114-GWPS-IW1I-34-36<br>34 - 36<br>10/02/13<br>GPS-IW1I |
|---|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | 0.94 J | 1.1 J | 0.96 J | 1.1 J [0.89 J] | 1.1 J | NA | 6,800 |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | 11,100 | 7,300 | 8,150 | 7,500 [8,170] | 17,200 | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | 23 UJ | 24 UJ | 6.6 J | 35.5 J [25 UJ] | 41.7 J | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | 23 U | 24 U | 6.5 J | 35.3 [25 U] | 41.5 | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | 0.18 J | 0.17 J | 0.15 J | 0.18 J [0.13 J] | 0.17 J | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 216 | 235 | 266 | 263 | 263 [311] | 236 | 341 | 305 |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 798,000 | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | 8.42 | 8.47 | 7.87 | 8.16 | 8.30 [8.32] | 8.58 | 8.13 | 8.79 |
| Sulfate | 14808-79-8 | mg/kg | NA | 106 J | 112 J | 117 J | 102 J [86.5 J] | 85.4 J | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | 4.9 U | 5.1 U | 5.1 U | 5 U [4.9 U] | 4.8 U | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | 0 U |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | 283 | 130 U | 130 U | 130 U [130 U] | 741 | 244 | 836 |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | 204 | 219 | 272 | 285 [236] | 198 | 2,510 | 2,300 |
| **Geotechnical** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114-GWPS-IW1I-PS-30.0-32.0 | 114-GWPS-IW1I-PS-34.0-36.0 | 114-GWPS-IW2I-23-24 | 114-GWPS-IW2I-25-26 | 114-GWPS-IW2I-27-28 | 114-GWPS-IW2I-28-29 | 114-GWPS-IW2I-30-31 | 114-GWPS-IW2I-PS-23.0-24.0 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 30 - 32 | 34 - 36 | 23 - 24 | 25 - 26 | 27 - 28 | 28 - 29 | 30 - 31 | 23 - 24 |
| Date Collected: | | | 04/21/15 | 04/21/15 | 10/08/13 | 10/08/13 | 10/08/13 | 10/08/13 | 10/08/13 | 04/20/15 |
| Location ID: | CAS Number | Units | 114-GWPS-IW1I-PS | 114-GWPS-IW1I-PS | GPS-IW2I | GPS-IW2I | GPS-IW2I | GPS-IW2I | GPS-IW2I | 114-GWPS-IW2I-PS |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-IW1I-PS-30.0-32.0<br>30 - 32<br>04/21/15<br>114-GWPS-IW1I-PS | 114-GWPS-IW1I-PS-34.0-36.0<br>34 - 36<br>04/21/15<br>114-GWPS-IW1I-PS | 114-GWPS-IW2I-23-24<br>23 - 24<br>10/08/13<br>GPS-IW2I | 114-GWPS-IW2I-25-26<br>25 - 26<br>10/08/13<br>GPS-IW2I | 114-GWPS-IW2I-27-28<br>27 - 28<br>10/08/13<br>GPS-IW2I | 114-GWPS-IW2I-28-29<br>28 - 29<br>10/08/13<br>GPS-IW2I | 114-GWPS-IW2I-30-31<br>30 - 31<br>10/08/13<br>GPS-IW2I | 114-GWPS-IW2I-PS-23.0-24.0<br>23 - 24<br>04/20/15<br>114-GWPS-IW2I-PS |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-IW1I-PS-30.0-32.0<br>30 - 32<br>04/21/15<br>114-GWPS-IW1I-PS | 114-GWPS-IW1I-PS-34.0-36.0<br>34 - 36<br>04/21/15<br>114-GWPS-IW1I-PS | 114-GWPS-IW2I-23-24<br>23 - 24<br>10/08/13<br>GPS-IW2I | 114-GWPS-IW2I-25-26<br>25 - 26<br>10/08/13<br>GPS-IW2I | 114-GWPS-IW2I-27-28<br>27 - 28<br>10/08/13<br>GPS-IW2I | 114-GWPS-IW2I-28-29<br>28 - 29<br>10/08/13<br>GPS-IW2I | 114-GWPS-IW2I-30-31<br>30 - 31<br>10/08/13<br>GPS-IW2I | 114-GWPS-IW2I-PS-23.0-24.0<br>23 - 24<br>04/20/15<br>114-GWPS-IW2I-PS |
|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | 7,090 | 5,340 | 5,140 | 2,080 | 1,830 | 6,950 | 7,660 | 3,920 J |
| Antimony | 7440-36-0 | mg/kg | 2.5 U | 2.4 U | 2.5 UJ | 2 UJ | 2 UJ | 2 UJ | 2.4 UJ | 2.5 U |
| Arsenic | 7440-38-2 | mg/kg | 4.7 | 3.7 | 4.6 | 2.2 | 2.1 | 3.4 | 3.6 | 2.3 J |
| Barium | 7440-39-3 | mg/kg | 49.8 | 50.6 | 21.7 J | 8.4 J | 11.3 J | 65.9 | 44.3 | 22.7 J |
| Beryllium | 7440-41-7 | mg/kg | 0.59 | 0.38 JB | 0.57 | 0.22 | 0.23 | 0.53 | 0.57 | 0.39 JB |
| Cadmium | 7440-43-9 | mg/kg | 0.2 JB | 0.6 UB | 0.62 U | 0.51 U | 0.5 U | 0.49 U | 0.61 U | 0.24 JB |
| Calcium | 7440-70-2 | mg/kg | 1,620 | 3,870 | 1,070 | 966 | 1,140 | 3,440 | 1,760 | 929 |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | 121 | 56.3 | 194 J | 117 J | 89.4 J | 119 J | 58.8 J | 217 |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 60.7 | 7.5 | 90.9 | 48.9 | 51.5 | 30.6 | 23.7 | 17.7 |
| Cobalt | 7440-48-4 | mg/kg | 5.9 J | 5 J | 4.4 J | 1.5 J | 1.8 J | 6.5 | 6.3 | 3.7 J |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | 11 | 9.5 | 9.3 | 4.2 | 3.9 | 10.3 | 11.8 | 10.8 |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | 13,100 | 10,600 | 11,000 J | 4,650 J | 5,340 J | 14,900 J | 14,800 J | 8,230 |
| Lead | 7439-92-1 | mg/kg | 7.9 | 7.5 | 9.8 | 4.1 | 3.5 | 9.2 | 9.1 | 7.5 |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | 2,700 | 2,370 | 3,210 J | 803 J | 753 J | 3,260 J | 3,260 J | 2,170 |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | 304 | 218 | 80.3 | 39.1 | 83.7 | 208 | 276 | 67.4 |
| Mercury | 7439-97-6 | mg/kg | 0.0039 J | 0.006 J | 0.036 U | 0.0075 J | 0.041 U | 0.0089 J | 0.0083 J | 0.036 UB |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | 12.7 | 10.9 | 9.7 | 3.2 J | 3.1 J | 14 | 13.7 | 6.8 |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | 1,960 | 1,390 | 1,390 | 520 J | 537 J | 1,490 | 1,820 | 1,110 J |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | 0.69 J | 2.4 U | 2.5 UJ | 2 UJ | 2 UJ | 2 UJ | 0.79 J | 2.5 U |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | 0.62 U | 0.6 U | 0.34 J | 0.15 J | 0.17 J | 0.71 | 0.59 J | 0.62 U |
| Sodium | 7440-23-5 | mg/kg | 297 J | 196 J | 330 J | 141 J | 142 J | 176 J | 195 J | 381 J |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-IW1I-PS-30.0-32.0<br>30 - 32<br>04/21/15<br>114-GWPS-IW1I-PS | 114-GWPS-IW1I-PS-34.0-36.0<br>34 - 36<br>04/21/15<br>114-GWPS-IW1I-PS | 114-GWPS-IW2I-23-24<br>23 - 24<br>10/08/13<br>GPS-IW2I | 114-GWPS-IW2I-25-26<br>25 - 26<br>10/08/13<br>GPS-IW2I | 114-GWPS-IW2I-27-28<br>27 - 28<br>10/08/13<br>GPS-IW2I | 114-GWPS-IW2I-28-29<br>28 - 29<br>10/08/13<br>GPS-IW2I | 114-GWPS-IW2I-30-31<br>30 - 31<br>10/08/13<br>GPS-IW2I | 114-GWPS-IW2I-PS-23.0-24.0<br>23 - 24<br>04/20/15<br>114-GWPS-IW2I-PS |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | 52.8 J | 73.6 J | 57.4 | 40.3 | 41.5 | 59.7 | 63.7 | 86.3 |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | 1.2 U | 1.2 U | 1.2 U | 1 U | 1 U | 0.98 U | 0.48 J | 1.2 U |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | 17.3 | 14 | 17.5 | 8.6 | 7.4 | 16.2 | 18.6 | 13 |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | 39.7 | 34 | 42.6 | 14 | 12.7 | 34.7 | 36.1 | 37.8 |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-IW1I-PS-30.0-32.0<br>30 - 32<br>04/21/15<br>114-GWPS-IW1I-PS | 114-GWPS-IW1I-PS-34.0-36.0<br>34 - 36<br>04/21/15<br>114-GWPS-IW1I-PS | 114-GWPS-IW2I-23-24<br>23 - 24<br>10/08/13<br>GPS-IW2I | 114-GWPS-IW2I-25-26<br>25 - 26<br>10/08/13<br>GPS-IW2I | 114-GWPS-IW2I-27-28<br>27 - 28<br>10/08/13<br>GPS-IW2I | 114-GWPS-IW2I-28-29<br>28 - 29<br>10/08/13<br>GPS-IW2I | 114-GWPS-IW2I-30-31<br>30 - 31<br>10/08/13<br>GPS-IW2I | 114-GWPS-IW2I-PS-23.0-24.0<br>23 - 24<br>04/20/15<br>114-GWPS-IW2I-PS |
|---|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | 1.3 U | 1.3 U | 0.075 J | 0.08 J | 0.078 J | 0.079 J | 0.39 J | 1 U |
| Iron (Ferric) | ARC-FE3 | mg/kg | 13,100 | 10,600 | 11,000 | 4,650 | 5,340 | 14,900 | 14,800 | 8,230 |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | 24 UB | 26 U | 23 U | 25 U | 25 U | 24 U | 24 U | 5.5 J |
| Nitrate-N | 14797-55-8 | mg/kg | 24 UB | 26 U | 23 U | 25 U | 25 U | 24 U | 24 U | 5.4 J |
| Nitrite | 14797-65-0 | mg/kg | 0.11 J | 0.11 J | 0.55 | 0.28 | 0.22 J | 0.33 | 0.3 | 0.065 J |
| Oxidation Reduction Potential | ARC-ORP | mV | 386 | 372 | 354 | 362 | 357 | 351 | 354 | 361 |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 818,000 | 794,000 | NA | NA | NA | NA | NA | 828,000 |
| pH | ARC-pH | SU | 8.3 | 8.3 | 7.78 | 7.55 | 7.64 | 7.55 | 8.01 | 8.46 |
| Sulfate | 14808-79-8 | mg/kg | 94 | 54.7 | 206 | 93 J | 114 J | 132 | 83 J | 169 |
| Sulfide | 18496-25-8 | mg/kg | 4.8 U | 5 U | 4.8 U | 5.1 U | 5 U | 4.9 U | 4.8 U | 4.7 U |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | 120 U | 140 U | 328 | 182 | 129 J | 582 | 347 | 214 JB |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | 719 | 436 | 2,380 | 1,900 | 2,150 | 2,870 | 2,580 | 261 |
| **Geotechnical** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-IW2I-PS-25.0-26.0<br>25 - 26<br>04/20/15<br>114-GWPS-IW2I-PS | 114-GWPS-IW2I-PS-27.0-28.0<br>27 - 28<br>04/20/15<br>114-GWPS-IW2I-PS | 114-GWPS-IW2I-PS-28.0-29.0<br>28 - 29<br>04/20/15<br>114-GWPS-IW2I-PS | 114-GWPS-IW2I-PS-30.0-31.0<br>30 - 31<br>04/20/15<br>114-GWPS-IW2I-PS | 114-GWPS-MW2I-PS-24.5-25.0<br>24.5 - 25<br>04/21/15<br>114-GWPS-MW2I-PS | 114-GWPS-MW2I-PS-35.0-35.5<br>35 - 35.5<br>04/21/15<br>114-GWPS-MW2I-PS | 114-H7B_20B<br>20.3 - 20.8<br>03/17/11<br>114-H7B |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-IW2I-PS-25.0-26.0<br>25 - 26<br>04/20/15<br>114-GWPS-IW2I-PS | 114-GWPS-IW2I-PS-27.0-28.0<br>27 - 28<br>04/20/15<br>114-GWPS-IW2I-PS | 114-GWPS-IW2I-PS-28.0-29.0<br>28 - 29<br>04/20/15<br>114-GWPS-IW2I-PS | 114-GWPS-IW2I-PS-30.0-31.0<br>30 - 31<br>04/20/15<br>114-GWPS-IW2I-PS | 114-GWPS-MW2I-PS-24.5-25.0<br>24.5 - 25<br>04/21/15<br>114-GWPS-MW2I-PS | 114-GWPS-MW2I-PS-35.0-35.5<br>35 - 35.5<br>04/21/15<br>114-GWPS-MW2I-PS | 114-H7B_20B<br>20.3 - 20.8<br>03/17/11<br>114-H7B |
|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-IW2I-PS-25.0-26.0<br>25 - 26<br>04/20/15<br>114-GWPS-IW2I-PS | 114-GWPS-IW2I-PS-27.0-28.0<br>27 - 28<br>04/20/15<br>114-GWPS-IW2I-PS | 114-GWPS-IW2I-PS-28.0-29.0<br>28 - 29<br>04/20/15<br>114-GWPS-IW2I-PS | 114-GWPS-IW2I-PS-30.0-31.0<br>30 - 31<br>04/20/15<br>114-GWPS-IW2I-PS | 114-GWPS-MW2I-PS-24.5-25.0<br>24.5 - 25<br>04/21/15<br>114-GWPS-MW2I-PS | 114-GWPS-MW2I-PS-35.0-35.5<br>35 - 35.5<br>04/21/15<br>114-GWPS-MW2I-PS | 114-H7B_20B<br>20.3 - 20.8<br>03/17/11<br>114-H7B |
|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | 5,100 J | 1,950 J | 1,760 J | 12,700 J | 3,460 | 3,950 | NA |
| Antimony | 7440-36-0 | mg/kg | 2.4 U | 2.7 U | 2.6 U | 2.7 U | 2.4 U | 2.4 U | NA |
| Arsenic | 7440-38-2 | mg/kg | 2.3 J | 1.6 J | 1.5 J | 3.9 | 3.1 | 3.1 | NA |
| Barium | 7440-39-3 | mg/kg | 23 J | 7.4 J | 10.3 J | 51.5 | 13 J | 49 | NA |
| Beryllium | 7440-41-7 | mg/kg | 0.43 JB | 0.19 JB | 0.19 JB | 0.78 | 0.27 JB | 0.35 JB | NA |
| Cadmium | 7440-43-9 | mg/kg | 0.61 UB | 0.67 U | 0.64 U | 0.28 JB | 0.6 UB | 0.61 UB | NA |
| Calcium | 7440-70-2 | mg/kg | 1,080 | 789 | 977 | 7,430 | 916 | 12,900 | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | 153 | 88.6 | 108 | 587 | 194 | 91.2 | 33.3 |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 51.5 | 21.9 | 11.7 | 42.8 | 56.2 | 9.5 | 1.8 J |
| Cobalt | 7440-48-4 | mg/kg | 4.4 J | 1.2 J | 1.4 J | 10.8 | 2.4 J | 3.6 J | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | 10.4 | 4.1 | 3.8 | 16.3 | 6.8 | 6.3 | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | 9,940 | 3,850 | 4,110 | 20,800 | 6,350 | 8,300 | NA |
| Lead | 7439-92-1 | mg/kg | 10.3 | 3.2 | 2.7 | 12.1 | 5.4 | 6.7 | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | 2,730 | 711 | 686 | 6,560 | 1,510 | 2,840 | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | 75.4 | 31.3 | 57 | 374 | 64.5 | 318 | NA |
| Mercury | 7439-97-6 | mg/kg | 0.036 UB | 0.037 UB | 0.038 UB | 0.041 UB | 0.037 U | 0.0051 J | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | 9.5 | 2.7 J | 2.8 J | 23.5 | 5.2 | 7.1 | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | 1,540 | 553 J | 566 J | 2,780 | 967 J | 1,280 | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | 0.48 J | 0.35 J | 0.44 J | 0.84 J | 0.39 J | 0.69 J | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | 0.23 J | 0.67 U | 0.64 U | 0.63 J | 0.6 U | 0.61 U | NA |
| Sodium | 7440-23-5 | mg/kg | 370 J | 260 J | 203 J | 221 J | 607 J | 178 J | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-IW2I-PS-25.0-26.0<br>25 - 26<br>04/20/15<br>114-GWPS-IW2I-PS | 114-GWPS-IW2I-PS-27.0-28.0<br>27 - 28<br>04/20/15<br>114-GWPS-IW2I-PS | 114-GWPS-IW2I-PS-28.0-29.0<br>28 - 29<br>04/20/15<br>114-GWPS-IW2I-PS | 114-GWPS-IW2I-PS-30.0-31.0<br>30 - 31<br>04/20/15<br>114-GWPS-IW2I-PS | 114-GWPS-MW2I-PS-24.5-25.0<br>24.5 - 25<br>04/21/15<br>114-GWPS-MW2I-PS | 114-GWPS-MW2I-PS-35.0-35.5<br>35 - 35.5<br>04/21/15<br>114-GWPS-MW2I-PS | 114-H7B_20B<br>20.3 - 20.8<br>03/17/11<br>114-H7B |
|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | 133 | 56.6 | 53.9 | 316 | 58.6 J | 108 J | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | 1.2 U | 1.3 U | 1.3 U | 1.3 U | 1.2 U | 1.2 U | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | 15 | 6.1 J | 5.7 J | 23.2 | 19.1 | 12.9 | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | 41.2 | 13.1 JB | 10.7 JB | 58.7 | 18.4 JB | 17.8 JB | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-GWPS-IW2I-PS-25.0-26.0<br>25 - 26<br>04/20/15<br>114-GWPS-IW2I-PS | 114-GWPS-IW2I-PS-27.0-28.0<br>27 - 28<br>04/20/15<br>114-GWPS-IW2I-PS | 114-GWPS-IW2I-PS-28.0-29.0<br>28 - 29<br>04/20/15<br>114-GWPS-IW2I-PS | 114-GWPS-IW2I-PS-30.0-31.0<br>30 - 31<br>04/20/15<br>114-GWPS-IW2I-PS | 114-GWPS-MW2I-PS-24.5-25.0<br>24.5 - 25<br>04/21/15<br>114-GWPS-MW2I-PS | 114-GWPS-MW2I-PS-35.0-35.5<br>35 - 35.5<br>04/21/15<br>114-GWPS-MW2I-PS | 114-H7B_20B<br>20.3 - 20.8<br>03/17/11<br>114-H7B |
|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | 1.2 U | 1.2 U | 0.78 J | 1.3 U | 1.2 U | 1.2 U | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | 9,940 | 3,850 | 4,110 | 20,800 | 6,350 | 8,300 | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | 22 U | 24 U | 26 U | 25 U | 22 U | 22 U | NA |
| Nitrate-N | 14797-55-8 | mg/kg | 22 U | 24 U | 26 U | 25 U | 22 U | 22 U | NA |
| Nitrite | 14797-65-0 | mg/kg | 0.15 J | 0.11 J | 0.041 J | 0.084 J | 0.083 J | 0.044 J | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 363 | 382 | 370 | 391 | 338 | 360 | 6.4 |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 835,000 | 772,000 | 755,000 | 763,000 | 833,000 | 815,000 | 623,000 |
| pH | ARC-pH | SU | 8.67 | 8.49 | 7.43 | 7.90 | 9.7 | 8.6 | 9.26 |
| Sulfate | 14808-79-8 | mg/kg | 131 | 158 | 85.3 | 53.3 | 159 | 69.8 | NA |
| Sulfide | 18496-25-8 | mg/kg | 4.8 U | 5.2 U | 5.1 U | 5.2 U | 4.6 U | 4.9 U | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | 257 JB | 130 UB | 158 JB | 821 | 120 U | 151 U | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | 267 | 133 | 432 | 180 | 378 | 230 | NA |
| **Geotechnical** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114-K9B_23 SOLIDS FROM CENTRIFUGE | 114-K9B_23E | 114-K9B_23W | 114-K9B_25E | 114-K9B_25W | 114L1A_21.5-22.0 | 114L1A_23.5-24.0 | 114L1A_25.5-26.0 | 114L1A_27.5-28.0 | 114L1A_29.5-30.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 23 - 23.5 | 22.5 - 23 | 22.5 - 23.5 | 24.5 - 25 | 24.5 - 25 | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 |
| Date Collected: | | | 05/06/11 | 05/06/11 | 05/06/11 | 05/11/11 | 05/11/11 | 03/06/12 | 03/06/12 | 03/06/12 | 03/06/12 | 03/06/12 |
| Location ID: | CAS Number | Units | 114-K9B | 114-K9B | 114-K9B | 114-K9B | 114-K9B | 114L1A | 114L1A | 114L1A | 114L1A | 114L1A |
| **Volatile Organics** | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-K9B_23 SOLIDS FROM CENTRIFUGE<br>23 - 23.5<br>05/06/11<br>114-K9B | 114-K9B_23E<br>22.5 - 23<br>05/06/11<br>114-K9B | 114-K9B_23W<br>22.5 - 23.5<br>05/06/11<br>114-K9B | 114-K9B_25E<br>24.5 - 25<br>05/11/11<br>114-K9B | 114-K9B_25W<br>24.5 - 25<br>05/11/11<br>114-K9B | 114L1A_21.5-22.0<br>21.5 - 22<br>03/06/12<br>114L1A | 114L1A_23.5-24.0<br>23.5 - 24<br>03/06/12<br>114L1A | 114L1A_25.5-26.0<br>25.5 - 26<br>03/06/12<br>114L1A | 114L1A_27.5-28.0<br>27.5 - 28<br>03/06/12<br>114L1A | 114L1A_29.5-30.0<br>29.5 - 30<br>03/06/12<br>114L1A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-K9B_23 SOLIDS FROM CENTRIFUGE<br>23 - 23.5<br>05/06/11<br>114-K9B | 114-K9B_23E<br>22.5 - 23<br>05/06/11<br>114-K9B | 114-K9B_23W<br>22.5 - 23.5<br>05/06/11<br>114-K9B | 114-K9B_25E<br>24.5 - 25<br>05/11/11<br>114-K9B | 114-K9B_25W<br>24.5 - 25<br>05/11/11<br>114-K9B | 114L1A_21.5-22.0<br>21.5 - 22<br>03/06/12<br>114L1A | 114L1A_23.5-24.0<br>23.5 - 24<br>03/06/12<br>114L1A | 114L1A_25.5-26.0<br>25.5 - 26<br>03/06/12<br>114L1A | 114L1A_27.5-28.0<br>27.5 - 28<br>03/06/12<br>114L1A | 114L1A_29.5-30.0<br>29.5 - 30<br>03/06/12<br>114L1A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | 2,250 | 17,500 | 1,830 | 1,910 | 3,040 | NA | NA | NA | NA | NA |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 728 | 13,500 J | 852 | 748 J | 654 J | 1.1 | 28.7 | 32.8 | 0.51 U | 13.3 |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-K9B_23 SOLIDS FROM CENTRIFUGE<br>23 - 23.5<br>05/06/11<br>114-K9B | 114-K9B_23E<br>22.5 - 23<br>05/06/11<br>114-K9B | 114-K9B_23W<br>22.5 - 23.5<br>05/06/11<br>114-K9B | 114-K9B_25E<br>24.5 - 25<br>05/11/11<br>114-K9B | 114-K9B_25W<br>24.5 - 25<br>05/11/11<br>114-K9B | 114L1A_21.5-22.0<br>21.5 - 22<br>03/06/12<br>114L1A | 114L1A_23.5-24.0<br>23.5 - 24<br>03/06/12<br>114L1A | 114L1A_25.5-26.0<br>25.5 - 26<br>03/06/12<br>114L1A | 114L1A_27.5-28.0<br>27.5 - 28<br>03/06/12<br>114L1A | 114L1A_29.5-30.0<br>29.5 - 30<br>03/06/12<br>114L1A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | 18,600 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | 19,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-K9B_23 SOLIDS FROM CENTRIFUGE<br>23 - 23.5<br>05/06/11<br>114-K9B | 114-K9B_23E<br>22.5 - 23<br>05/06/11<br>114-K9B | 114-K9B_23W<br>22.5 - 23.5<br>05/06/11<br>114-K9B | 114-K9B_25E<br>24.5 - 25<br>05/11/11<br>114-K9B | 114-K9B_25W<br>24.5 - 25<br>05/11/11<br>114-K9B | 114L1A_21.5-22.0<br>21.5 - 22<br>03/06/12<br>114L1A | 114L1A_23.5-24.0<br>23.5 - 24<br>03/06/12<br>114L1A | 114L1A_25.5-26.0<br>25.5 - 26<br>03/06/12<br>114L1A | 114L1A_27.5-28.0<br>27.5 - 28<br>03/06/12<br>114L1A | 114L1A_29.5-30.0<br>29.5 - 30<br>03/06/12<br>114L1A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 125 | 253 | 102 | 215 | 212 | 142 | 170 | 216 | 210 | 215 |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 827,000 | 796,000 | 811,000 | 837,000 | 787,000 | 851,000 | 799,000 | 798,000 | 788,000 | 830,000 |
| pH | ARC-pH | SU | 10.78 | 9.45 | 10.84 | 9.58 | 9.89 | 9.95 | 9.27 | 8.94 | 8.67 | 8.95 |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114L1A_31.5-32.0 | 114L1A_33.5-34.0 | 114L1A_34.5-35.0 | 114L1B_21.5-22.0 | 114L1B_23.5-24.0 | 114L1B_25.5-26.0 | 114L1B_27.5-28.0 | 114L1B_29.5-30.0 | 114L1B_31.5-32.0 | 114L1B_33.5-34.0 | 114L1B_34.5-35.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 |
| Date Collected: | | | 03/06/12 | 03/06/12 | 03/06/12 | 03/05/12 | 03/05/12 | 03/05/12 | 03/05/12 | 03/05/12 | 03/05/12 | 03/05/12 | 03/05/12 |
| Location ID: | CAS Number | Units | 114L1A | 114L1A | 114L1A | 114L1B | 114L1B | 114L1B | 114L1B | 114L1B | 114L1B | 114L1B | 114L1B |
| **Volatile Organics** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114L1A_31.5-32.0<br>31.5 - 32<br>03/06/12<br>114L1A | 114L1A_33.5-34.0<br>33.5 - 34<br>03/06/12<br>114L1A | 114L1A_34.5-35.0<br>34.5 - 35<br>03/06/12<br>114L1A | 114L1B_21.5-22.0<br>21.5 - 22<br>03/05/12<br>114L1B | 114L1B_23.5-24.0<br>23.5 - 24<br>03/05/12<br>114L1B | 114L1B_25.5-26.0<br>25.5 - 26<br>03/05/12<br>114L1B | 114L1B_27.5-28.0<br>27.5 - 28<br>03/05/12<br>114L1B | 114L1B_29.5-30.0<br>29.5 - 30<br>03/05/12<br>114L1B | 114L1B_31.5-32.0<br>31.5 - 32<br>03/05/12<br>114L1B | 114L1B_33.5-34.0<br>33.5 - 34<br>03/05/12<br>114L1B | 114L1B_34.5-35.0<br>34.5 - 35<br>03/05/12<br>114L1B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114L1A_31.5-32.0<br>31.5 - 32<br>03/06/12<br>114L1A | 114L1A_33.5-34.0<br>33.5 - 34<br>03/06/12<br>114L1A | 114L1A_34.5-35.0<br>34.5 - 35<br>03/06/12<br>114L1A | 114L1B_21.5-22.0<br>21.5 - 22<br>03/05/12<br>114L1B | 114L1B_23.5-24.0<br>23.5 - 24<br>03/05/12<br>114L1B | 114L1B_25.5-26.0<br>25.5 - 26<br>03/05/12<br>114L1B | 114L1B_27.5-28.0<br>27.5 - 28<br>03/05/12<br>114L1B | 114L1B_29.5-30.0<br>29.5 - 30<br>03/05/12<br>114L1B | 114L1B_31.5-32.0<br>31.5 - 32<br>03/05/12<br>114L1B | 114L1B_33.5-34.0<br>33.5 - 34<br>03/05/12<br>114L1B | 114L1B_34.5-35.0<br>34.5 - 35<br>03/05/12<br>114L1B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 3.3 | 4.1 | 10.8 | 60.3 J | 34.5 J | 16.9 J | 5.3 J | 32.4 J | 10.1 J | 4.6 J | 2.4 J |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114L1A_31.5-32.0 | 114L1A_33.5-34.0 | 114L1A_34.5-35.0 | 114L1B_21.5-22.0 | 114L1B_23.5-24.0 | 114L1B_25.5-26.0 | 114L1B_27.5-28.0 | 114L1B_29.5-30.0 | 114L1B_31.5-32.0 | 114L1B_33.5-34.0 | 114L1B_34.5-35.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 |
| Date Collected: | | | 03/06/12 | 03/06/12 | 03/06/12 | 03/05/12 | 03/05/12 | 03/05/12 | 03/05/12 | 03/05/12 | 03/05/12 | 03/05/12 | 03/05/12 |
| Location ID: | CAS Number | Units | 114L1A | 114L1A | 114L1A | 114L1B | 114L1B | 114L1B | 114L1B | 114L1B | 114L1B | 114L1B | 114L1B |
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114L1A_31.5-32.0 | 114L1A_33.5-34.0 | 114L1A_34.5-35.0 | 114L1B_21.5-22.0 | 114L1B_23.5-24.0 | 114L1B_25.5-26.0 | 114L1B_27.5-28.0 | 114L1B_29.5-30.0 | 114L1B_31.5-32.0 | 114L1B_33.5-34.0 | 114L1B_34.5-35.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 |
| Date Collected: | | | 03/06/12 | 03/06/12 | 03/06/12 | 03/05/12 | 03/05/12 | 03/05/12 | 03/05/12 | 03/05/12 | 03/05/12 | 03/05/12 | 03/05/12 |
| Location ID: | CAS Number | Units | 114L1A | 114L1A | 114L1A | 114L1B | 114L1B | 114L1B | 114L1B | 114L1B | 114L1B | 114L1B | 114L1B |
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 220 | 222 | 216 | 77.7 | 147 | 179 | 200 | 236 | 242 | 264 | 236 |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 837,000 | 790,000 | 848,000 | 880,000 | 764,000 | 795,000 | 747,000 | 772,000 | 809,000 | 818,000 | 829,000 |
| pH | ARC-pH | SU | 8.58 | 8.62 | 9.11 | 11.66 | 9.98 | 9.44 | 9.48 | 8.50 | 8.97 | 8.36 | 9.28 |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114L1B-34.5-35.0 | 114L2A_21.5-22.0 | 114L2A_23.5-24.0 | 114L2A_25.5-26.0 | 114L2A_27.5-28.0 | 114L2A_29.5-30.0 | 114L2A_31.5-32.0 | 114L2A_33.5-34.0 | 114L2A_34.5-35.0 | 114L3A_21.5-22.0 | 114L3A_23.5-24.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 34.5 - 35 | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 21.5 - 22 | 23.5 - 24 |
| Date Collected: | | | 03/05/12 | 03/07/12 | 03/07/12 | 03/07/12 | 03/08/12 | 03/08/12 | 03/08/12 | 03/08/12 | 03/08/12 | 03/08/12 | 03/08/12 |
| Location ID: | CAS Number | Units | 114L1B | 114L2A | 114L2A | 114L2A | 114L2A | 114L2A | 114L2A | 114L2A | 114L2A | 114L3A | 114L3A |
| **Volatile Organics** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114L1B-34.5-35.0 | 114L2A_21.5-22.0 | 114L2A_23.5-24.0 | 114L2A_25.5-26.0 | 114L2A_27.5-28.0 | 114L2A_29.5-30.0 | 114L2A_31.5-32.0 | 114L2A_33.5-34.0 | 114L2A_34.5-35.0 | 114L3A_21.5-22.0 | 114L3A_23.5-24.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 34.5 - 35 | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 21.5 - 22 | 23.5 - 24 |
| Date Collected: | | | 03/05/12 | 03/07/12 | 03/07/12 | 03/07/12 | 03/08/12 | 03/08/12 | 03/08/12 | 03/08/12 | 03/08/12 | 03/08/12 | 03/08/12 |
| Location ID: | CAS Number | Units | 114L1B | 114L2A | 114L2A | 114L2A | 114L2A | 114L2A | 114L2A | 114L2A | 114L2A | 114L3A | 114L3A |
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114L1B-34.5-35.0 | 114L2A_21.5-22.0 | 114L2A_23.5-24.0 | 114L2A_25.5-26.0 | 114L2A_27.5-28.0 | 114L2A_29.5-30.0 | 114L2A_31.5-32.0 | 114L2A_33.5-34.0 | 114L2A_34.5-35.0 | 114L3A_21.5-22.0 | 114L3A_23.5-24.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 34.5 - 35 | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 21.5 - 22 | 23.5 - 24 |
| Date Collected: | | | 03/05/12 | 03/07/12 | 03/07/12 | 03/07/12 | 03/08/12 | 03/08/12 | 03/08/12 | 03/08/12 | 03/08/12 | 03/08/12 | 03/08/12 |
| Location ID: | CAS Number | Units | 114L1B | 114L2A | 114L2A | 114L2A | 114L2A | 114L2A | 114L2A | 114L2A | 114L2A | 114L3A | 114L3A |
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | NA | 101 | NA | NA | NA | NA | NA | NA | NA | 153 | NA |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 2.4 J | 10 J | 23.2 J | 46.8 J | 32.5 J | 0.68 J | 3.2 J | 0.64 J | 6.8 J | 106 J | 274 J |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114L1B-34.5-35.0<br>34.5 - 35<br>03/05/12<br>114L1B | 114L2A_21.5-22.0<br>21.5 - 22<br>03/07/12<br>114L2A | 114L2A_23.5-24.0<br>23.5 - 24<br>03/07/12<br>114L2A | 114L2A_25.5-26.0<br>25.5 - 26<br>03/07/12<br>114L2A | 114L2A_27.5-28.0<br>27.5 - 28<br>03/08/12<br>114L2A | 114L2A_29.5-30.0<br>29.5 - 30<br>03/08/12<br>114L2A | 114L2A_31.5-32.0<br>31.5 - 32<br>03/08/12<br>114L2A | 114L2A_33.5-34.0<br>33.5 - 34<br>03/08/12<br>114L2A | 114L2A_34.5-35.0<br>34.5 - 35<br>03/08/12<br>114L2A | 114L3A_21.5-22.0<br>21.5 - 22<br>03/08/12<br>114L3A | 114L3A_23.5-24.0<br>23.5 - 24<br>03/08/12<br>114L3A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114L1B-34.5-35.0 | 114L2A_21.5-22.0 | 114L2A_23.5-24.0 | 114L2A_25.5-26.0 | 114L2A_27.5-28.0 | 114L2A_29.5-30.0 | 114L2A_31.5-32.0 | 114L2A_33.5-34.0 | 114L2A_34.5-35.0 | 114L3A_21.5-22.0 | 114L3A_23.5-24.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 34.5 - 35 | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 21.5 - 22 | 23.5 - 24 |
| Date Collected: | | | 03/05/12 | 03/07/12 | 03/07/12 | 03/07/12 | 03/08/12 | 03/08/12 | 03/08/12 | 03/08/12 | 03/08/12 | 03/08/12 | 03/08/12 |
| Location ID: | CAS Number | Units | 114L1B | 114L2A | 114L2A | 114L2A | 114L2A | 114L2A | 114L2A | 114L2A | 114L2A | 114L3A | 114L3A |
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 236 | 86.2 | 155 | 173 | 208 | 208 | 197 | 193 | 190 | 118 | 106 |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 829,000 | 867,000 | 849,000 | 795,000 | 810,000 | 815,000 | 788,000 | 776,000 | 779,000 | 874,000 | 763,000 |
| pH | ARC-pH | SU | 9.28 | 9.85 | 9.37 | 9.07 | 8.77 | 8.98 | 9.19 | 9.63 | 9.45 | 10.93 | 11.39 |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114L3A_25.5-26.0 | 114L3A_27.5-28.0 | 114L3A_29.5-30.0 | 114L3A_31.5-32.0 | 114L3A_33.5-34.0 | 114L3A_34.5-35.0 | 114L3B_21.5-22.0 | 114L3B_23.5-24.0 | 114L3B_25.5-26.0 | 114L3B_27.5-28.0 | 114L3B_29.5-30.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 |
| Date Collected: | | | 03/08/12 | 03/09/12 | 03/09/12 | 03/09/12 | 03/09/12 | 03/09/12 | 02/23/12 | 02/23/12 | 02/23/12 | 02/24/12 | 02/24/12 |
| Location ID: | CAS Number | Units | 114L3A | 114L3A | 114L3A | 114L3A | 114L3A | 114L3A | 114L3B | 114L3B | 114L3B | 114L3B | 114L3B |
| **Volatile Organics** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114L3A_25.5-26.0 | 114L3A_27.5-28.0 | 114L3A_29.5-30.0 | 114L3A_31.5-32.0 | 114L3A_33.5-34.0 | 114L3A_34.5-35.0 | 114L3B_21.5-22.0 | 114L3B_23.5-24.0 | 114L3B_25.5-26.0 | 114L3B_27.5-28.0 | 114L3B_29.5-30.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 |
| Date Collected: | | | 03/08/12 | 03/09/12 | 03/09/12 | 03/09/12 | 03/09/12 | 03/09/12 | 02/23/12 | 02/23/12 | 02/23/12 | 02/24/12 | 02/24/12 |
| Location ID: | CAS Number | Units | 114L3A | 114L3A | 114L3A | 114L3A | 114L3A | 114L3A | 114L3B | 114L3B | 114L3B | 114L3B | 114L3B |
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114L3A_25.5-26.0 | 114L3A_27.5-28.0 | 114L3A_29.5-30.0 | 114L3A_31.5-32.0 | 114L3A_33.5-34.0 | 114L3A_34.5-35.0 | 114L3B_21.5-22.0 | 114L3B_23.5-24.0 | 114L3B_25.5-26.0 | 114L3B_27.5-28.0 | 114L3B_29.5-30.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 |
| Date Collected: | | | 03/08/12 | 03/09/12 | 03/09/12 | 03/09/12 | 03/09/12 | 03/09/12 | 02/23/12 | 02/23/12 | 02/23/12 | 02/24/12 | 02/24/12 |
| Location ID: | CAS Number | Units | 114L3A | 114L3A | 114L3A | 114L3A | 114L3A | 114L3A | 114L3B | 114L3B | 114L3B | 114L3B | 114L3B |
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | NA | NA | NA | NA | NA | NA | 840 | NA | NA | NA | NA |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 45.6 J | 0.5 U | 0.5 U | 0.49 U | 0.52 U | 0.53 U | 44.6 J | 76.5 J | 47.1 J [77.3 J] | 323 J | 255 J |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114L3A_25.5-26.0 | 114L3A_27.5-28.0 | 114L3A_29.5-30.0 | 114L3A_31.5-32.0 | 114L3A_33.5-34.0 | 114L3A_34.5-35.0 | 114L3B_21.5-22.0 | 114L3B_23.5-24.0 | 114L3B_25.5-26.0 | 114L3B_27.5-28.0 | 114L3B_29.5-30.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 |
| Date Collected: | | | 03/08/12 | 03/09/12 | 03/09/12 | 03/09/12 | 03/09/12 | 03/09/12 | 02/23/12 | 02/23/12 | 02/23/12 | 02/24/12 | 02/24/12 |
| Location ID: | CAS Number | Units | 114L3A | 114L3A | 114L3A | 114L3A | 114L3A | 114L3A | 114L3B | 114L3B | 114L3B | 114L3B | 114L3B |
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114L3A_25.5-26.0 | 114L3A_27.5-28.0 | 114L3A_29.5-30.0 | 114L3A_31.5-32.0 | 114L3A_33.5-34.0 | 114L3A_34.5-35.0 | 114L3B_21.5-22.0 | 114L3B_23.5-24.0 | 114L3B_25.5-26.0 | 114L3B_27.5-28.0 | 114L3B_29.5-30.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 |
| Date Collected: | | | 03/08/12 | 03/09/12 | 03/09/12 | 03/09/12 | 03/09/12 | 03/09/12 | 02/23/12 | 02/23/12 | 02/23/12 | 02/24/12 | 02/24/12 |
| Location ID: | CAS Number | Units | 114L3A | 114L3A | 114L3A | 114L3A | 114L3A | 114L3A | 114L3B | 114L3B | 114L3B | 114L3B | 114L3B |
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 193 | 229 | 199 | 202 | 225 | 216 | 122 | 131 | 160 [164] | 197 | 144 |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 805,000 | 799,000 | 802,000 | 821,000 | 774,000 | 760,000 | 861,000 | 775,000 | 810,000 [808,000] | 767,000 | 776,000 |
| pH | ARC-pH | SU | 9.18 | 8.87 | 9.10 | 9.02 | 8.80 | 9.38 | 11.74 | 11.75 | 11.27 [11.15] | 10.04 | 11.34 |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114L3B_31.5-32.0 | 114L3B_33.5-34.0 | 114L3B_34.5-35.0 | 114L4A_21.5-22.0 | 114L4A_23.5-24.0 | 114L4A_25.5-26.0 | 114L4A_27.5-28.0 | 114L4A_29.5-30.0 | 114L4A_31.5-32.0 | 114L4A_33.5-34.0 | 114L4A_34.5-35.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 |
| Date Collected: | | | 02/24/12 | 02/24/12 | 02/24/12 | 03/09/12 | 03/09/12 | 03/09/12 | 03/09/12 | 03/12/12 | 03/12/12 | 03/12/12 | 03/12/12 |
| Location ID: | CAS Number | Units | 114L3B | 114L3B | 114L3B | 114L4A | 114L4A | 114L4A | 114L4A | 114L4A | 114L4A | 114L4A | 114L4A |
| **Volatile Organics** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114L3B_31.5-32.0 | 114L3B_33.5-34.0 | 114L3B_34.5-35.0 | 114L4A_21.5-22.0 | 114L4A_23.5-24.0 | 114L4A_25.5-26.0 | 114L4A_27.5-28.0 | 114L4A_29.5-30.0 | 114L4A_31.5-32.0 | 114L4A_33.5-34.0 | 114L4A_34.5-35.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 |
| Date Collected: | | | 02/24/12 | 02/24/12 | 02/24/12 | 03/09/12 | 03/09/12 | 03/09/12 | 03/09/12 | 03/12/12 | 03/12/12 | 03/12/12 | 03/12/12 |
| Location ID: | CAS Number | Units | 114L3B | 114L3B | 114L3B | 114L4A | 114L4A | 114L4A | 114L4A | 114L4A | 114L4A | 114L4A | 114L4A |
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114L3B_31.5-32.0<br>31.5 - 32<br>02/24/12<br>114L3B | 114L3B_33.5-34.0<br>33.5 - 34<br>02/24/12<br>114L3B | 114L3B_34.5-35.0<br>34.5 - 35<br>02/24/12<br>114L3B | 114L4A_21.5-22.0<br>21.5 - 22<br>03/09/12<br>114L4A | 114L4A_23.5-24.0<br>23.5 - 24<br>03/09/12<br>114L4A | 114L4A_25.5-26.0<br>25.5 - 26<br>03/09/12<br>114L4A | 114L4A_27.5-28.0<br>27.5 - 28<br>03/09/12<br>114L4A | 114L4A_29.5-30.0<br>29.5 - 30<br>03/12/12<br>114L4A | 114L4A_31.5-32.0<br>31.5 - 32<br>03/12/12<br>114L4A | 114L4A_33.5-34.0<br>33.5 - 34<br>03/12/12<br>114L4A | 114L4A_34.5-35.0<br>34.5 - 35<br>03/12/12<br>114L4A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 45.4 J | 26.6 J | 0.49 J | 0.58 U | 0.46 U | 0.49 U | 0.51 U | 0.84 | 19.8 | 3.6 | 56.7 |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114L3B_31.5-32.0 | 114L3B_33.5-34.0 | 114L3B_34.5-35.0 | 114L4A_21.5-22.0 | 114L4A_23.5-24.0 | 114L4A_25.5-26.0 | 114L4A_27.5-28.0 | 114L4A_29.5-30.0 | 114L4A_31.5-32.0 | 114L4A_33.5-34.0 | 114L4A_34.5-35.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 |
| Date Collected: | | | 02/24/12 | 02/24/12 | 02/24/12 | 03/09/12 | 03/09/12 | 03/09/12 | 03/09/12 | 03/12/12 | 03/12/12 | 03/12/12 | 03/12/12 |
| Location ID: | CAS Number | Units | 114L3B | 114L3B | 114L3B | 114L4A | 114L4A | 114L4A | 114L4A | 114L4A | 114L4A | 114L4A | 114L4A |
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114L3B_31.5-32.0 | 114L3B_33.5-34.0 | 114L3B_34.5-35.0 | 114L4A_21.5-22.0 | 114L4A_23.5-24.0 | 114L4A_25.5-26.0 | 114L4A_27.5-28.0 | 114L4A_29.5-30.0 | 114L4A_31.5-32.0 | 114L4A_33.5-34.0 | 114L4A_34.5-35.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 |
| Date Collected: | | | 02/24/12 | 02/24/12 | 02/24/12 | 03/09/12 | 03/09/12 | 03/09/12 | 03/09/12 | 03/12/12 | 03/12/12 | 03/12/12 | 03/12/12 |
| Location ID: | CAS Number | Units | 114L3B | 114L3B | 114L3B | 114L4A | 114L4A | 114L4A | 114L4A | 114L4A | 114L4A | 114L4A | 114L4A |
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 249 | 261 | 282 | 163 | 191 | 205 | 215 | 272 | 225 | 244 | 193 |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 781,000 | 794,000 | 743,000 | 684,000 | 879,000 | 813,000 | 782,000 | 815,000 | 733,000 | 812,000 | 813,000 |
| pH | ARC-pH | SU | 9.41 | 9.50 | 9.09 | 8.65 | 9.43 | 9.06 | 8.68 | 8.57 | 9.81 | 9.47 | 10.45 |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114L5A-21.5-22.0 | 114L5A-23.5-24.0 | 114L5A-25.5-26.0 | 114L5A-27.5-28.0 | 114L5A-29.5-30.0 | 114L5A-31.5-32.0 | 114L5A-33.5-34.0 | 114L5A-34.5-35.0 | 114L5B_25.5-26.0 | 114L5B_27.5-28.0 | 114L5B_29.5-30.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 |
| Date Collected: | | | 03/13/12 | 03/13/12 | 03/13/12 | 03/13/12 | 03/13/12 | 03/13/12 | 03/13/12 | 03/13/12 | 02/24/12 | 02/24/12 | 02/24/12 |
| Location ID: | CAS Number | Units | 114L5A | 114L5A | 114L5A | 114L5A | 114L5A | 114L5A | 114L5A | 114L5A | 114L5B | 114L5B | 114L5B |
| **Volatile Organics** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114L5A-21.5-22.0 | 114L5A-23.5-24.0 | 114L5A-25.5-26.0 | 114L5A-27.5-28.0 | 114L5A-29.5-30.0 | 114L5A-31.5-32.0 | 114L5A-33.5-34.0 | 114L5A-34.5-35.0 | 114L5B_25.5-26.0 | 114L5B_27.5-28.0 | 114L5B_29.5-30.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 |
| Date Collected: | | | 03/13/12 | 03/13/12 | 03/13/12 | 03/13/12 | 03/13/12 | 03/13/12 | 03/13/12 | 03/13/12 | 02/24/12 | 02/24/12 | 02/24/12 |
| Location ID: | CAS Number | Units | 114L5A | 114L5A | 114L5A | 114L5A | 114L5A | 114L5A | 114L5A | 114L5A | 114L5B | 114L5B | 114L5B |
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114L5A-21.5-22.0 | 114L5A-23.5-24.0 | 114L5A-25.5-26.0 | 114L5A-27.5-28.0 | 114L5A-29.5-30.0 | 114L5A-31.5-32.0 | 114L5A-33.5-34.0 | 114L5A-34.5-35.0 | 114L5B_25.5-26.0 | 114L5B_27.5-28.0 | 114L5B_29.5-30.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 |
| Date Collected: | | | 03/13/12 | 03/13/12 | 03/13/12 | 03/13/12 | 03/13/12 | 03/13/12 | 03/13/12 | 03/13/12 | 02/24/12 | 02/24/12 | 02/24/12 |
| Location ID: | CAS Number | Units | 114L5A | 114L5A | 114L5A | 114L5A | 114L5A | 114L5A | 114L5A | 114L5A | 114L5B | 114L5B | 114L5B |
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | 1,140 J | NA | NA |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 0.65 U | 3.5 | 0.94 | 35 | 0.48 U | 5.8 | 35.4 | 5.8 | 320 J | 190 J | 475 J |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114L5A-21.5-22.0 | 114L5A-23.5-24.0 | 114L5A-25.5-26.0 | 114L5A-27.5-28.0 | 114L5A-29.5-30.0 | 114L5A-31.5-32.0 | 114L5A-33.5-34.0 | 114L5A-34.5-35.0 | 114L5B_25.5-26.0 | 114L5B_27.5-28.0 | 114L5B_29.5-30.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 |
| Date Collected: | | | 03/13/12 | 03/13/12 | 03/13/12 | 03/13/12 | 03/13/12 | 03/13/12 | 03/13/12 | 03/13/12 | 02/24/12 | 02/24/12 | 02/24/12 |
| Location ID: | CAS Number | Units | 114L5A | 114L5A | 114L5A | 114L5A | 114L5A | 114L5A | 114L5A | 114L5A | 114L5B | 114L5B | 114L5B |
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114L5A-21.5-22.0 | 114L5A-23.5-24.0 | 114L5A-25.5-26.0 | 114L5A-27.5-28.0 | 114L5A-29.5-30.0 | 114L5A-31.5-32.0 | 114L5A-33.5-34.0 | 114L5A-34.5-35.0 | 114L5B_25.5-26.0 | 114L5B_27.5-28.0 | 114L5B_29.5-30.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 |
| Date Collected: | | | 03/13/12 | 03/13/12 | 03/13/12 | 03/13/12 | 03/13/12 | 03/13/12 | 03/13/12 | 03/13/12 | 02/24/12 | 02/24/12 | 02/24/12 |
| Location ID: | CAS Number | Units | 114L5A | 114L5A | 114L5A | 114L5A | 114L5A | 114L5A | 114L5A | 114L5A | 114L5B | 114L5B | 114L5B |
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 107 | 163 | 174 | 182 | 219 | 210 | 176 | 219 | 160 | 228 | 245 |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 617,000 | 878,000 | 857,000 | 869,000 | 830,000 | 818,000 | 814,000 | 802,000 | 766,000 | 758,000 | 781,000 |
| pH | ARC-pH | SU | 9.12 | 9.72 | 9.19 | 9.32 | 8.65 | 9.51 | 10.66 | 9.13 | 10.72 | 9.33 | 9.16 |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114L5B_31.5-32.0 | 114L5B_33.5-34.0 | 114L5B_34.5-35.0 | 114L6A_21.5-22.0 | 114L6A_23.5-24.0 | 114L6A_25.5-26.0 | 114L6A_27.5-28.0 | 114L6A_29.5-30.0 | 114L6A_31.5-32.0 | 114L6A_33.5-34.0 | 114L6A_34.5-35.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 |
| Date Collected: | | | 02/24/12 | 02/24/12 | 02/24/12 | 03/08/12 | 03/09/12 | 03/09/12 | 03/09/12 | 03/09/12 | 03/09/12 | 03/09/12 | 03/09/12 |
| Location ID: | CAS Number | Units | 114L5B | 114L5B | 114L5B | 114L6A | 114L6A | 114L6A | 114L6A | 114L6A | 114L6A | 114L6A | 114L6A |
| **Volatile Organics** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | 0.021 U | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | 0.0021 U | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | 0.0021 U | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | 0.27 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | 0.021 U | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | 0.021 U | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | 0.0021 U | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | 0.0063 J | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | 0.0021 U | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | 0.0021 U | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | 0.0021 U | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | 0.0021 U | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | 0.0021 U | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | 0.0021 U | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114L5B_31.5-32.0 | 114L5B_33.5-34.0 | 114L5B_34.5-35.0 | 114L6A_21.5-22.0 | 114L6A_23.5-24.0 | 114L6A_25.5-26.0 | 114L6A_27.5-28.0 | 114L6A_29.5-30.0 | 114L6A_31.5-32.0 | 114L6A_33.5-34.0 | 114L6A_34.5-35.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 |
| Date Collected: | | | 02/24/12 | 02/24/12 | 02/24/12 | 03/08/12 | 03/09/12 | 03/09/12 | 03/09/12 | 03/09/12 | 03/09/12 | 03/09/12 | 03/09/12 |
| Location ID: | CAS Number | Units | 114L5B | 114L5B | 114L5B | 114L6A | 114L6A | 114L6A | 114L6A | 114L6A | 114L6A | 114L6A | 114L6A |
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | 0.097 U | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | 0.24 U | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | 0.097 U | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | 0.24 U | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | 0.24 U | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | 0.24 U | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | 0.24 U | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | 0.24 U | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | 0.97 U | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | 0.097 U | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | 0.097 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | 0.097 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | 0.24 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | 0.97 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | 0.097 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | 0.097 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | 0.24 U | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | 0.24 U | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | 0.24 U | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | 0.24 U | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | 0.097 U | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | 0.24 U | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | 0.097 U | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | 0.097 U | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | 0.24 U | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | 0.49 U | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | 0.049 U | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | 0.049 U | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | 0.24 U | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | 0.049 U | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | 0.24 U | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | 0.24 U | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | 0.049 U | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | 0.049 U | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | 0.049 U | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | 0.049 U | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | 0.049 U | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | 0.097 U | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | 0.097 U | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | 0.097 U | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | 0.097 U | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | 0.097 U | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | 0.097 U | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | 0.049 U | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | 0.049 U | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | 0.097 U | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | 0.097 U | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | 0.097 U | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | 0.097 U | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114L5B_31.5-32.0<br>31.5 - 32<br>02/24/12<br>114L5B | 114L5B_33.5-34.0<br>33.5 - 34<br>02/24/12<br>114L5B | 114L5B_34.5-35.0<br>34.5 - 35<br>02/24/12<br>114L5B | 114L6A_21.5-22.0<br>21.5 - 22<br>03/08/12<br>114L6A | 114L6A_23.5-24.0<br>23.5 - 24<br>03/09/12<br>114L6A | 114L6A_25.5-26.0<br>25.5 - 26<br>03/09/12<br>114L6A | 114L6A_27.5-28.0<br>27.5 - 28<br>03/09/12<br>114L6A | 114L6A_29.5-30.0<br>29.5 - 30<br>03/09/12<br>114L6A | 114L6A_31.5-32.0<br>31.5 - 32<br>03/09/12<br>114L6A | 114L6A_33.5-34.0<br>33.5 - 34<br>03/09/12<br>114L6A | 114L6A_34.5-35.0<br>34.5 - 35<br>03/09/12<br>114L6A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | 0.097 U | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | 0.049 U | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | 0.049 U | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | 0.049 U | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | 0.097 U | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | 0.49 U | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | 0.24 U | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | 0.049 U | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | 0.097 U | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | 0.049 U | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | 0.097 U | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | 0.097 U | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | 0.24 U | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | 0.24 U | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | 0.49 U | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | 0.049 U | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | 0.097 U | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | 0.049 U | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | 18,800 J | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | mg/kg | NA | NA | NA | 2 UJ | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | NA | 7.9 | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | 46.5 | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | 1.5 | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | 0.18 J | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | 2,400 | NA | NA | NA | NA | NA | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | NA | NA | NA | 105 J | NA | NA | NA | NA | NA | NA | NA |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 562 J | 513 J | 1,400 J | 2.7 J | 0.7 U | 0.48 U | 0.51 U | 84.8 | 0.5 U | 0.5 U | 0.53 U |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | 9.7 | NA | NA | NA | NA | NA | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | 12.7 | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | 31,100 | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | 14.8 | NA | NA | NA | NA | NA | NA | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | 6,870 | NA | NA | NA | NA | NA | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | 546 | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | 0.032 J | NA | NA | NA | NA | NA | NA | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | 29 | NA | NA | NA | NA | NA | NA | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | 4,260 J | NA | NA | NA | NA | NA | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | 0.69 J | NA | NA | NA | NA | NA | NA | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | 0.5 U | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | 2,520 | NA | NA | NA | NA | NA | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114L5B_31.5-32.0<br>31.5 - 32<br>02/24/12<br>114L5B | 114L5B_33.5-34.0<br>33.5 - 34<br>02/24/12<br>114L5B | 114L5B_34.5-35.0<br>34.5 - 35<br>02/24/12<br>114L5B | 114L6A_21.5-22.0<br>21.5 - 22<br>03/08/12<br>114L6A | 114L6A_23.5-24.0<br>23.5 - 24<br>03/09/12<br>114L6A | 114L6A_25.5-26.0<br>25.5 - 26<br>03/09/12<br>114L6A | 114L6A_27.5-28.0<br>27.5 - 28<br>03/09/12<br>114L6A | 114L6A_29.5-30.0<br>29.5 - 30<br>03/09/12<br>114L6A | 114L6A_31.5-32.0<br>31.5 - 32<br>03/09/12<br>114L6A | 114L6A_33.5-34.0<br>33.5 - 34<br>03/09/12<br>114L6A | 114L6A_34.5-35.0<br>34.5 - 35<br>03/09/12<br>114L6A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | NA | 1 U | NA | NA | NA | NA | NA | NA | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | NA | 38.6 | NA | NA | NA | NA | NA | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | 84.3 | NA | NA | NA | NA | NA | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114L5B_31.5-32.0 | 114L5B_33.5-34.0 | 114L5B_34.5-35.0 | 114L6A_21.5-22.0 | 114L6A_23.5-24.0 | 114L6A_25.5-26.0 | 114L6A_27.5-28.0 | 114L6A_29.5-30.0 | 114L6A_31.5-32.0 | 114L6A_33.5-34.0 | 114L6A_34.5-35.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 |
| Date Collected: | | | 02/24/12 | 02/24/12 | 02/24/12 | 03/08/12 | 03/09/12 | 03/09/12 | 03/09/12 | 03/09/12 | 03/09/12 | 03/09/12 | 03/09/12 |
| Location ID: | CAS Number | Units | 114L5B | 114L5B | 114L5B | 114L6A | 114L6A | 114L6A | 114L6A | 114L6A | 114L6A | 114L6A | 114L6A |
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | 19,000 | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 240 | 261 | 332 | 131 | 199 | 75.7 | 255 | 252 | 217 | 202 | 207 |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 726,000 | 728,000 | 722,000 | 584,000 | 570,000 | 827,000 | 781,000 | 771,000 | 800,000 | 793,000 | 750,000 |
| pH | ARC-pH | SU | 9.24 | 8.76 | 8.06 | 8.95 | 8.74 | 11.57 | 8.79 | 8.65 | 8.77 | 9.87 | 9.66 |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | 30,400 | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114L7A_21.5-22.0 | 114L7A_23.5-24.0 | 114L7A_25.5-26.0 | 114L7A_27.5-28.0 | 114L7A_29.5-30.0 | 114L7A_31.5-32.0 | 114L7A_33.5-34.0 | 114L7A_34.5-35.0 | 114L7B_23.5-24.0 | 114L7B_25.5-26.0 | 114L7B_27.5-28.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 |
| Date Collected: | | | 03/08/12 | 03/08/12 | 03/08/12 | 03/08/12 | 03/08/12 | 03/08/12 | 03/08/12 | 03/08/12 | 02/22/12 | 02/22/12 | 02/22/12 |
| Location ID: | CAS Number | Units | 114L7A | 114L7A | 114L7A | 114L7A | 114L7A | 114L7A | 114L7A | 114L7A | 114L7B | 114L7B | 114L7B |
| **Volatile Organics** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114L7A_21.5-22.0<br>21.5 - 22<br>03/08/12<br>114L7A | 114L7A_23.5-24.0<br>23.5 - 24<br>03/08/12<br>114L7A | 114L7A_25.5-26.0<br>25.5 - 26<br>03/08/12<br>114L7A | 114L7A_27.5-28.0<br>27.5 - 28<br>03/08/12<br>114L7A | 114L7A_29.5-30.0<br>29.5 - 30<br>03/08/12<br>114L7A | 114L7A_31.5-32.0<br>31.5 - 32<br>03/08/12<br>114L7A | 114L7A_33.5-34.0<br>33.5 - 34<br>03/08/12<br>114L7A | 114L7A_34.5-35.0<br>34.5 - 35<br>03/08/12<br>114L7A | 114L7B_23.5-24.0<br>23.5 - 24<br>02/22/12<br>114L7B | 114L7B_25.5-26.0<br>25.5 - 26<br>02/22/12<br>114L7B | 114L7B_27.5-28.0<br>27.5 - 28<br>02/22/12<br>114L7B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114L7A_21.5-22.0<br>21.5 - 22<br>03/08/12<br>114L7A | 114L7A_23.5-24.0<br>23.5 - 24<br>03/08/12<br>114L7A | 114L7A_25.5-26.0<br>25.5 - 26<br>03/08/12<br>114L7A | 114L7A_27.5-28.0<br>27.5 - 28<br>03/08/12<br>114L7A | 114L7A_29.5-30.0<br>29.5 - 30<br>03/08/12<br>114L7A | 114L7A_31.5-32.0<br>31.5 - 32<br>03/08/12<br>114L7A | 114L7A_33.5-34.0<br>33.5 - 34<br>03/08/12<br>114L7A | 114L7A_34.5-35.0<br>34.5 - 35<br>03/08/12<br>114L7A | 114L7B_23.5-24.0<br>23.5 - 24<br>02/22/12<br>114L7B | 114L7B_25.5-26.0<br>25.5 - 26<br>02/22/12<br>114L7B | 114L7B_27.5-28.0<br>27.5 - 28<br>02/22/12<br>114L7B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 1.9 J | 2.1 J | 274 J | 178 J | 95.3 J | 150 J | 129 J | 37.7 J | 152 | 343 | 288 |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114L7A_21.5-22.0 21.5 - 22 03/08/12 114L7A | 114L7A_23.5-24.0 23.5 - 24 03/08/12 114L7A | 114L7A_25.5-26.0 25.5 - 26 03/08/12 114L7A | 114L7A_27.5-28.0 27.5 - 28 03/08/12 114L7A | 114L7A_29.5-30.0 29.5 - 30 03/08/12 114L7A | 114L7A_31.5-32.0 31.5 - 32 03/08/12 114L7A | 114L7A_33.5-34.0 33.5 - 34 03/08/12 114L7A | 114L7A_34.5-35.0 34.5 - 35 03/08/12 114L7A | 114L7B_23.5-24.0 23.5 - 24 02/22/12 114L7B | 114L7B_25.5-26.0 25.5 - 26 02/22/12 114L7B | 114L7B_27.5-28.0 27.5 - 28 02/22/12 114L7B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114L7A_21.5-22.0 | 114L7A_23.5-24.0 | 114L7A_25.5-26.0 | 114L7A_27.5-28.0 | 114L7A_29.5-30.0 | 114L7A_31.5-32.0 | 114L7A_33.5-34.0 | 114L7A_34.5-35.0 | 114L7B_23.5-24.0 | 114L7B_25.5-26.0 | 114L7B_27.5-28.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 |
| Date Collected: | | | 03/08/12 | 03/08/12 | 03/08/12 | 03/08/12 | 03/08/12 | 03/08/12 | 03/08/12 | 03/08/12 | 02/22/12 | 02/22/12 | 02/22/12 |
| Location ID: | CAS Number | Units | 114L7A | 114L7A | 114L7A | 114L7A | 114L7A | 114L7A | 114L7A | 114L7A | 114L7B | 114L7B | 114L7B |
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 207 | 173 | 48.0 | 124 | 192 | 163 | 252 | 222 | 201 | 213 | 190 |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 662,000 | 874,000 | 741,000 | 825,000 | 797,000 | 760,000 | 748,000 | 727,000 | 817,000 | 765,000 | 776,000 |
| pH | ARC-pH | SU | 8.81 | 9.44 | 12.25 | 11.18 | 9.39 | 10.31 | 8.41 | 9.11 | 9.27 | 9.77 | 10.57 |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114L7B_29.5-30.0 | 114L7B_31.5-32.0 | 114L7B_33.5-34.0 | 114L7B_34.5-35.0 | 114L8B_25.5-26.0 | 114L8B_27.5-28.0 | 114L8B_29.5-30.0 | 114L8B_31.5-32.0 | 114L8B_33.5-34.0 | 114L8B_34.5-35.0 | 114L10A_20.0-20.5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 20 - 20.5 |
| Date Collected: | | | 02/22/12 | 02/22/12 | 02/22/12 | 02/22/12 | 02/23/12 | 02/23/12 | 02/23/12 | 02/23/12 | 02/23/12 | 02/23/12 | 03/01/12 |
| Location ID: | CAS Number | Units | 114L7B | 114L7B | 114L7B | 114L7B | 114L8B | 114L8B | 114L8B | 114L8B | 114L8B | 114L8B | 114L10A |
| **Volatile Organics** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | 0.0018 J | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | 0.00094 J | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | 0.012 U | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | 0.0012 U | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | 0.0012 U | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | 0.16 U | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | 0.012 U | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | 0.012 U | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | 0.0041 | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | 0.00063 J | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | 0.0012 U | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | 0.0012 U | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | 0.00071 J | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | 0.0342 | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | 0.00083 J | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | 0.00071 J | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | 0.0062 U | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114L7B_29.5-30.0 | 114L7B_31.5-32.0 | 114L7B_33.5-34.0 | 114L7B_34.5-35.0 | 114L8B_25.5-26.0 | 114L8B_27.5-28.0 | 114L8B_29.5-30.0 | 114L8B_31.5-32.0 | 114L8B_33.5-34.0 | 114L8B_34.5-35.0 | 114L10A_20.0-20.5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 20 - 20.5 |
| Date Collected: | | | 02/22/12 | 02/22/12 | 02/22/12 | 02/22/12 | 02/23/12 | 02/23/12 | 02/23/12 | 02/23/12 | 02/23/12 | 02/23/12 | 03/01/12 |
| Location ID: | CAS Number | Units | 114L7B | 114L7B | 114L7B | 114L7B | 114L8B | 114L8B | 114L8B | 114L8B | 114L8B | 114L8B | 114L10A |
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | 0.075 U | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | 0.19 U | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | 0.075 U | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | 0.19 U | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | 0.19 U | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | 0.19 U | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | 0.19 U | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | 0.19 U | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | 0.75 U | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | 0.075 U | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | 0.075 U | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | 0.075 U | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | 0.19 U | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | 0.75 U | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | 0.075 U | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | 0.075 U | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | 0.19 U | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | 0.19 U | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | 0.19 U | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | 0.19 U | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | 0.075 U | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | 0.19 U | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | 0.075 U | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | 0.075 U | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | 0.19 U | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | 0.38 U | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | 0.038 U | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | 0.038 U | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | 0.19 U | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | 0.038 U | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | 0.19 U | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | 0.19 U | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | 0.038 U | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | 0.038 U | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | 0.038 U | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | 0.038 U | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | 0.038 U | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | 0.075 U | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | 0.075 U | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | 0.075 U | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | 0.075 U | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | 0.075 U | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | 0.075 U | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | 0.038 U | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | 0.038 U | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | 0.075 U | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | 0.075 U | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | 0.075 U | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | 0.075 U | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114L7B_29.5-30.0 | 114L7B_31.5-32.0 | 114L7B_33.5-34.0 | 114L7B_34.5-35.0 | 114L8B_25.5-26.0 | 114L8B_27.5-28.0 | 114L8B_29.5-30.0 | 114L8B_31.5-32.0 | 114L8B_33.5-34.0 | 114L8B_34.5-35.0 | 114L10A_20.0-20.5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 20 - 20.5 |
| Date Collected: | | | 02/22/12 | 02/22/12 | 02/22/12 | 02/22/12 | 02/23/12 | 02/23/12 | 02/23/12 | 02/23/12 | 02/23/12 | 02/23/12 | 03/01/12 |
| Location ID: | CAS Number | Units | 114L7B | 114L7B | 114L7B | 114L7B | 114L8B | 114L8B | 114L8B | 114L8B | 114L8B | 114L8B | 114L10A |
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | 0.075 U | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | 0.038 U | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | 0.038 U | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | 0.038 U | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | 0.075 U | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | 0.38 U | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | 0.19 U | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | 0.038 U | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | 0.075 U | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | 0.038 U | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | 0.075 U | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | 0.075 U | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | 0.19 U | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | 0.19 U | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | 0.38 U | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | 0.038 U | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | 0.075 U | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | 0.038 U | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | NA | 2,270 | NA | NA | NA | NA | 3,040 | NA |
| Antimony | 7440-36-0 | mg/kg | NA | NA | NA | NA | 1.3 U | NA | NA | NA | NA | 3.8 | NA |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | NA | NA | 1.9 | NA | NA | NA | NA | 1.7 | NA |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | NA | 15.5 | NA | NA | NA | NA | 47.8 | NA |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | NA | 0.53 | NA | NA | NA | NA | 0.28 | NA |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | NA | 0.026 J | NA | NA | NA | NA | 0.1 | NA |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | NA | 685 | NA | NA | NA | NA | 12,200 | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | NA | NA | NA | NA | 396 | NA | NA | NA | NA | 1,030 | NA |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 466 | 716 | 647 | 518 | 16 J | 270 J | 255 J | 366 J | 661 J | 773 J | 26.3 RA |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | NA | 1.1 J | NA | NA | NA | NA | 2.8 | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | NA | 8 | NA | NA | NA | NA | 6.8 | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | NA | 5,730 | NA | NA | NA | NA | 7,820 | NA |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | NA | 4.8 | NA | NA | NA | NA | 6 | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | NA | 1,020 | NA | NA | NA | NA | 2,310 | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | NA | 66.9 | NA | NA | NA | NA | 322 | NA |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | NA | 0.042 U | NA | NA | NA | NA | 0.043 U | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | NA | 4.1 | NA | NA | NA | NA | 5.7 | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | NA | 703 | NA | NA | NA | NA | 1,030 | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | NA | 1.3 U | NA | NA | NA | NA | 1.9 U | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | NA | 0.38 | NA | NA | NA | NA | 0.32 | NA |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | NA | 599 J | NA | NA | NA | NA | 1,330 | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114L7B_29.5-30.0<br>29.5 - 30<br>02/22/12<br>114L7B | 114L7B_31.5-32.0<br>31.5 - 32<br>02/22/12<br>114L7B | 114L7B_33.5-34.0<br>33.5 - 34<br>02/22/12<br>114L7B | 114L7B_34.5-35.0<br>34.5 - 35<br>02/22/12<br>114L7B | 114L8B_25.5-26.0<br>25.5 - 26<br>02/23/12<br>114L8B | 114L8B_27.5-28.0<br>27.5 - 28<br>02/23/12<br>114L8B | 114L8B_29.5-30.0<br>29.5 - 30<br>02/23/12<br>114L8B | 114L8B_31.5-32.0<br>31.5 - 32<br>02/23/12<br>114L8B | 114L8B_33.5-34.0<br>33.5 - 34<br>02/23/12<br>114L8B | 114L8B_34.5-35.0<br>34.5 - 35<br>02/23/12<br>114L8B | 114L10A_20.0-20.5<br>20 - 20.5<br>03/01/12<br>114L10A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | NA | NA | 0.65 U | NA | NA | NA | NA | 0.45 | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | NA | NA | 9.9 | NA | NA | NA | NA | 14.5 | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | NA | 19.7 | NA | NA | NA | NA | 17.5 | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114L7B_29.5-30.0 | 114L7B_31.5-32.0 | 114L7B_33.5-34.0 | 114L7B_34.5-35.0 | 114L8B_25.5-26.0 | 114L8B_27.5-28.0 | 114L8B_29.5-30.0 | 114L8B_31.5-32.0 | 114L8B_33.5-34.0 | 114L8B_34.5-35.0 | 114L10A_20.0-20.5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 20 - 20.5 |
| Date Collected: | | | 02/22/12 | 02/22/12 | 02/22/12 | 02/22/12 | 02/23/12 | 02/23/12 | 02/23/12 | 02/23/12 | 02/23/12 | 02/23/12 | 03/01/12 |
| Location ID: | CAS Number | Units | 114L7B | 114L7B | 114L7B | 114L7B | 114L8B | 114L8B | 114L8B | 114L8B | 114L8B | 114L8B | 114L10A |
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 274 | 292 | 304 | 266 | 239 | 249 | 259 | 231 | 262 | 259 | 38.1 |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 810,000 | 791,000 | 729,000 | 780,000 | 758,000 | 735,000 | 818,000 | 735,000 | 716,000 | 722,000 | 564,000 |
| pH | ARC-pH | SU | 8.96 | 8.82 | 8.62 | 8.55 | 9.35 | 9.42 | 9.17 | 8.84 | 8.63 | 8.86 | 8.74 |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114L12A_20.0-20.5 | 114-MC-EW103-40.0-40.5 | 114-MC-EW103-44.8-45.3 | 114-MC-PZ103-40.5-41.0 | 114-MC-PZ203-38.0-38.5 | 114-MC-PZ203-40.0-40.5 | 114MON8_18.5-19 | 114MON8_20.5-21 | 114MON8_22.5-23 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 20 - 20.5 | 40 - 40.5 | 44.8 - 45.3 | 40.5 - 41 | 38 - 38.5 | 40 - 40.5 | 18.5 - 19 | 20.5 - 21 | 22.5 - 23 |
| Date Collected: | | | 02/09/12 | 05/28/14 | 05/28/14 | 06/02/14 | 10/02/14 | 10/02/14 | 01/31/12 | 01/31/12 | 01/31/12 |
| Location ID: | CAS Number | Units | 114L12A | 114-MC-EW103 | 114-MC-EW103 | 114-MC-PZ103 | 114-MC-PZ203 | 114-MC-PZ203 | 114MON8 | 114MON8 | 114MON8 |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114L12A_20.0-20.5<br>20 - 20.5<br>02/09/12<br>114L12A | 114-MC-EW103-40.0-40.5<br>40 - 40.5<br>05/28/14<br>114-MC-EW103 | 114-MC-EW103-44.8-45.3<br>44.8 - 45.3<br>05/28/14<br>114-MC-EW103 | 114-MC-PZ103-40.5-41.0<br>40.5 - 41<br>06/02/14<br>114-MC-PZ103 | 114-MC-PZ203-38.0-38.5<br>38 - 38.5<br>10/02/14<br>114-MC-PZ203 | 114-MC-PZ203-40.0-40.5<br>40 - 40.5<br>10/02/14<br>114-MC-PZ203 | 114MON8_18.5-19<br>18.5 - 19<br>01/31/12<br>114MON8 | 114MON8_20.5-21<br>20.5 - 21<br>01/31/12<br>114MON8 | 114MON8_22.5-23<br>22.5 - 23<br>01/31/12<br>114MON8 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114L12A_20.0-20.5<br>20 - 20.5<br>02/09/12<br>114L12A | 114-MC-EW103-40.0-40.5<br>40 - 40.5<br>05/28/14<br>114-MC-EW103 | 114-MC-EW103-44.8-45.3<br>44.8 - 45.3<br>05/28/14<br>114-MC-EW103 | 114-MC-PZ103-40.5-41.0<br>40.5 - 41<br>06/02/14<br>114-MC-PZ103 | 114-MC-PZ203-38.0-38.5<br>38 - 38.5<br>10/02/14<br>114-MC-PZ203 | 114-MC-PZ203-40.0-40.5<br>40 - 40.5<br>10/02/14<br>114-MC-PZ203 | 114MON8_18.5-19<br>18.5 - 19<br>01/31/12<br>114MON8 | 114MON8_20.5-21<br>20.5 - 21<br>01/31/12<br>114MON8 | 114MON8_22.5-23<br>22.5 - 23<br>01/31/12<br>114MON8 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | 145 J [157 J] | 84.9 | 569 | 674 | 17.4 | 10 | 480 | NA | NA |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 1.1 J [3 J] | 13.8 | 45.5 | 501 | 0.45 J | 0.6 | 1.2 J | 1.9 J | 0.97 J |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114L12A_20.0-20.5<br>20 - 20.5<br>02/09/12<br>114L12A | 114-MC-EW103-40.0-40.5<br>40 - 40.5<br>05/28/14<br>114-MC-EW103 | 114-MC-EW103-44.8-45.3<br>44.8 - 45.3<br>05/28/14<br>114-MC-EW103 | 114-MC-PZ103-40.5-41.0<br>40.5 - 41<br>06/02/14<br>114-MC-PZ103 | 114-MC-PZ203-38.0-38.5<br>38 - 38.5<br>10/02/14<br>114-MC-PZ203 | 114-MC-PZ203-40.0-40.5<br>40 - 40.5<br>10/02/14<br>114-MC-PZ203 | 114MON8_18.5-19<br>18.5 - 19<br>01/31/12<br>114MON8 | 114MON8_20.5-21<br>20.5 - 21<br>01/31/12<br>114MON8 | 114MON8_22.5-23<br>22.5 - 23<br>01/31/12<br>114MON8 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114L12A_20.0-20.5<br>20 - 20.5<br>02/09/12<br>114L12A | 114-MC-EW103-40.0-40.5<br>40 - 40.5<br>05/28/14<br>114-MC-EW103 | 114-MC-EW103-44.8-45.3<br>44.8 - 45.3<br>05/28/14<br>114-MC-EW103 | 114-MC-PZ103-40.5-41.0<br>40.5 - 41<br>06/02/14<br>114-MC-PZ103 | 114-MC-PZ203-38.0-38.5<br>38 - 38.5<br>10/02/14<br>114-MC-PZ203 | 114-MC-PZ203-40.0-40.5<br>40 - 40.5<br>10/02/14<br>114-MC-PZ203 | 114MON8_18.5-19<br>18.5 - 19<br>01/31/12<br>114MON8 | 114MON8_20.5-21<br>20.5 - 21<br>01/31/12<br>114MON8 | 114MON8_22.5-23<br>22.5 - 23<br>01/31/12<br>114MON8 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | 27,000 | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 182 [178] | 367 | 402 | 412 | 297 | 300 | 255 | 240 | 222 |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 563,000 [539,000] | 811,000 | 760,000 | 798,000 | 809,000 | 817,000 | 567,000 | 623,000 | 812,000 |
| pH | ARC-pH | SU | 9.34 [9.42] | 8.78 | 8.28 | 8.55 | 9.11 | 9.18 | 9.65 | 8.55 | 8.85 |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | 0 | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | 29,500 | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114MON8_24.5-25 | 114MON8_26.5-27.0 | 114MON8_28.5-29.0 | 114MON8_30.5-31.0 | 114MON8_32.5-33.0 | 114MON8_34.5-35.0 | 114MON12_21.5-22.0 | 114MON12_23.5-24.0 | 114MON13_19.5-20.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 24.5 - 25 | 26.5 - 27 | 28.5 - 29 | 30.5 - 31 | 32.5 - 33 | 34.5 - 35 | 21.5 - 22 | 23.5 - 24 | 19.5 - 20 |
| Date Collected: | | | 01/31/12 | 01/31/12 | 01/31/12 | 01/31/12 | 01/31/12 | 01/31/12 | 02/01/12 | 02/01/12 | 02/22/12 |
| Location ID: | CAS Number | Units | 114MON8 | 114MON8 | 114MON8 | 114MON8 | 114MON8 | 114MON8 | 114MON12 | 114MON12 | 114MON13 |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114MON8_24.5-25<br>24.5 - 25<br>01/31/12<br>114MON8 | 114MON8_26.5-27.0<br>26.5 - 27<br>01/31/12<br>114MON8 | 114MON8_28.5-29.0<br>28.5 - 29<br>01/31/12<br>114MON8 | 114MON8_30.5-31.0<br>30.5 - 31<br>01/31/12<br>114MON8 | 114MON8_32.5-33.0<br>32.5 - 33<br>01/31/12<br>114MON8 | 114MON8_34.5-35.0<br>34.5 - 35<br>01/31/12<br>114MON8 | 114MON12_21.5-22.0<br>21.5 - 22<br>02/01/12<br>114MON12 | 114MON12_23.5-24.0<br>23.5 - 24<br>02/01/12<br>114MON12 | 114MON13_19.5-20.0<br>19.5 - 20<br>02/22/12<br>114MON13 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114MON8_24.5-25<br>24.5 - 25<br>01/31/12<br>114MON8 | 114MON8_26.5-27.0<br>26.5 - 27<br>01/31/12<br>114MON8 | 114MON8_28.5-29.0<br>28.5 - 29<br>01/31/12<br>114MON8 | 114MON8_30.5-31.0<br>30.5 - 31<br>01/31/12<br>114MON8 | 114MON8_32.5-33.0<br>32.5 - 33<br>01/31/12<br>114MON8 | 114MON8_34.5-35.0<br>34.5 - 35<br>01/31/12<br>114MON8 | 114MON12_21.5-22.0<br>21.5 - 22<br>02/01/12<br>114MON12 | 114MON12_23.5-24.0<br>23.5 - 24<br>02/01/12<br>114MON12 | 114MON13_19.5-20.0<br>19.5 - 20<br>02/22/12<br>114MON13 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | NA | NA | NA | NA | 206 [192] | NA | 2,090 | 216 [205] | NA |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 0.65 J | 14.5 J | 63.9 J | 130 J | 138 J [110 J] | 71.9 J | 127 J | 33.3 J [44.5 J] | 44.4 |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114MON8_24.5-25<br>24.5 - 25<br>01/31/12<br>114MON8 | 114MON8_26.5-27.0<br>26.5 - 27<br>01/31/12<br>114MON8 | 114MON8_28.5-29.0<br>28.5 - 29<br>01/31/12<br>114MON8 | 114MON8_30.5-31.0<br>30.5 - 31<br>01/31/12<br>114MON8 | 114MON8_32.5-33.0<br>32.5 - 33<br>01/31/12<br>114MON8 | 114MON8_34.5-35.0<br>34.5 - 35<br>01/31/12<br>114MON8 | 114MON12_21.5-22.0<br>21.5 - 22<br>02/01/12<br>114MON12 | 114MON12_23.5-24.0<br>23.5 - 24<br>02/01/12<br>114MON12 | 114MON13_19.5-20.0<br>19.5 - 20<br>02/22/12<br>114MON13 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 1,400 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114MON8_24.5-25<br>24.5 - 25<br>01/31/12<br>114MON8 | 114MON8_26.5-27.0<br>26.5 - 27<br>01/31/12<br>114MON8 | 114MON8_28.5-29.0<br>28.5 - 29<br>01/31/12<br>114MON8 | 114MON8_30.5-31.0<br>30.5 - 31<br>01/31/12<br>114MON8 | 114MON8_32.5-33.0<br>32.5 - 33<br>01/31/12<br>114MON8 | 114MON8_34.5-35.0<br>34.5 - 35<br>01/31/12<br>114MON8 | 114MON12_21.5-22.0<br>21.5 - 22<br>02/01/12<br>114MON12 | 114MON12_23.5-24.0<br>23.5 - 24<br>02/01/12<br>114MON12 | 114MON13_19.5-20.0<br>19.5 - 20<br>02/22/12<br>114MON13 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 213 | 412 | 316 | 257 | 272 [265] | 203 | 53.8 | 143 [153] | 20.4 |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 803,000 | 776,000 | 760,000 | 776,000 | 772,000 [780,000] | 846,000 | 785,000 | 799,000 [765,000] | 845,000 |
| pH | ARC-pH | SU | 9.36 | 8.92 | 8.56 | 7.86 | 8.57 [8.15] | 10.00 | 11.91 | 10.36 [10.74] | 12.27 |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114MON13_21.5-22.0 | 114MON13_23.5-24.0 | 114MON13_25.5-26.0 | 114MON13_27.5-28.0 | 114MON13_29.5-30.0 | 114MON13_31.5-32.0 | 114MON13_33.5-34.0 | 114MON13_34.5-35.0 | 114MON14_1.5-2.0 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 21.5 - 22 | 23.5 - 24 | 25.5 - 26 | 27.5 - 28 | 29.5 - 30 | 31.5 - 32 | 33.5 - 34 | 34.5 - 35 | 1.5 - 2 |
| Date Collected: | | | 02/22/12 | 02/22/12 | 02/22/12 | 02/22/12 | 02/22/12 | 02/22/12 | 02/22/12 | 02/22/12 | 02/21/12 |
| Location ID: | CAS Number | Units | 114MON13 | 114MON13 | 114MON13 | 114MON13 | 114MON13 | 114MON13 | 114MON13 | 114MON13 | 114MON14 |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | 0.00086 J | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | 0.0023 J | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | 0.0013 J | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | 0.013 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | 0.0013 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | 0.0013 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | 0.16 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | 0.013 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | 0.0461 J | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | 0.00026 J | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | 0.0013 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | 0.0013 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | 0.0013 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | 0.0013 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | 0.0013 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | 0.0013 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | 0.0064 UJ | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114MON13_21.5-22.0<br>21.5 - 22<br>02/22/12<br>114MON13 | 114MON13_23.5-24.0<br>23.5 - 24<br>02/22/12<br>114MON13 | 114MON13_25.5-26.0<br>25.5 - 26<br>02/22/12<br>114MON13 | 114MON13_27.5-28.0<br>27.5 - 28<br>02/22/12<br>114MON13 | 114MON13_29.5-30.0<br>29.5 - 30<br>02/22/12<br>114MON13 | 114MON13_31.5-32.0<br>31.5 - 32<br>02/22/12<br>114MON13 | 114MON13_33.5-34.0<br>33.5 - 34<br>02/22/12<br>114MON13 | 114MON13_34.5-35.0<br>34.5 - 35<br>02/22/12<br>114MON13 | 114MON14_1.5-2.0<br>1.5 - 2<br>02/21/12<br>114MON14 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | 0.074 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | 0.19 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | 0.074 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | 0.19 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | 0.19 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | 0.19 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | 0.19 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | 0.19 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | 0.74 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | 0.074 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | 0.074 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | 0.074 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | 0.19 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | 0.74 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | 0.074 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | 0.074 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | 0.19 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | 0.19 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | 0.19 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | 0.19 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | 0.074 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | 0.19 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | 0.074 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | 0.074 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | 0.19 U | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | 0.37 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | 0.037 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | 0.037 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | 0.19 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | 0.037 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | 0.19 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | 0.19 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | 0.037 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | 0.037 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | 0.037 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | 0.037 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | 0.037 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | 0.074 U | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | 0.074 U | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | 0.074 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | 0.074 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | 0.074 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | 0.074 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | 0.037 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | 0.037 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | 0.074 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | 0.074 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | 0.074 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | 0.074 U | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114MON13_21.5-22.0<br>21.5 - 22<br>02/22/12<br>114MON13 | 114MON13_23.5-24.0<br>23.5 - 24<br>02/22/12<br>114MON13 | 114MON13_25.5-26.0<br>25.5 - 26<br>02/22/12<br>114MON13 | 114MON13_27.5-28.0<br>27.5 - 28<br>02/22/12<br>114MON13 | 114MON13_29.5-30.0<br>29.5 - 30<br>02/22/12<br>114MON13 | 114MON13_31.5-32.0<br>31.5 - 32<br>02/22/12<br>114MON13 | 114MON13_33.5-34.0<br>33.5 - 34<br>02/22/12<br>114MON13 | 114MON13_34.5-35.0<br>34.5 - 35<br>02/22/12<br>114MON13 | 114MON14_1.5-2.0<br>1.5 - 2<br>02/21/12<br>114MON14 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | 0.074 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | 0.037 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | 0.037 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | 0.037 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | 0.074 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | 0.37 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | 0.19 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | 0.037 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | 0.074 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | 0.037 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | 0.074 U | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | 0.074 U | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | 0.19 U | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | 0.19 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | 0.37 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | 0.037 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | 0.0459 J | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | 0.037 U | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | 16,800 | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | mg/kg | 0.24 J | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | mg/kg | 11.8 | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | mg/kg | 46.9 | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | mg/kg | 1.7 | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | mg/kg | 0.24 J | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | mg/kg | 5,210 | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | 32.4 | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 36.7 | 63.3 | 99.7 | 415 | 125 | 27.2 | 0.58 | 3.3 | NA |
| Cobalt | 7440-48-4 | mg/kg | 4.6 | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | 17.2 | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | 18,700 | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | mg/kg | 43.5 | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | 4,960 | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | 269 | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | mg/kg | 0.042 U | NA | NA | NA | NA | NA | NA | NA | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | 19.8 | NA | NA | NA | NA | NA | NA | NA | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | 2,290 | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | 0.62 J | NA | NA | NA | NA | NA | NA | NA | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | 0.44 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | mg/kg | 5,480 | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114MON13_21.5-22.0<br>21.5 - 22<br>02/22/12<br>114MON13 | 114MON13_23.5-24.0<br>23.5 - 24<br>02/22/12<br>114MON13 | 114MON13_25.5-26.0<br>25.5 - 26<br>02/22/12<br>114MON13 | 114MON13_27.5-28.0<br>27.5 - 28<br>02/22/12<br>114MON13 | 114MON13_29.5-30.0<br>29.5 - 30<br>02/22/12<br>114MON13 | 114MON13_31.5-32.0<br>31.5 - 32<br>02/22/12<br>114MON13 | 114MON13_33.5-34.0<br>33.5 - 34<br>02/22/12<br>114MON13 | 114MON13_34.5-35.0<br>34.5 - 35<br>02/22/12<br>114MON13 | 114MON14_1.5-2.0<br>1.5 - 2<br>02/21/12<br>114MON14 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | 0.89 U | NA | NA | NA | NA | NA | NA | NA | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | 50.7 | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | 67.2 | NA | NA | NA | NA | NA | NA | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 6,100 |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114MON13_21.5-22.0<br>21.5 - 22<br>02/22/12<br>114MON13 | 114MON13_23.5-24.0<br>23.5 - 24<br>02/22/12<br>114MON13 | 114MON13_25.5-26.0<br>25.5 - 26<br>02/22/12<br>114MON13 | 114MON13_27.5-28.0<br>27.5 - 28<br>02/22/12<br>114MON13 | 114MON13_29.5-30.0<br>29.5 - 30<br>02/22/12<br>114MON13 | 114MON13_31.5-32.0<br>31.5 - 32<br>02/22/12<br>114MON13 | 114MON13_33.5-34.0<br>33.5 - 34<br>02/22/12<br>114MON13 | 114MON13_34.5-35.0<br>34.5 - 35<br>02/22/12<br>114MON13 | 114MON14_1.5-2.0<br>1.5 - 2<br>02/21/12<br>114MON14 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 105 | 119 | 228 | 266 | 261 | 213 | 225 | 190 | NA |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 753,000 | 749,000 | 763,000 | 757,000 | 772,000 | 738,000 | 834,000 | 760,000 | NA |
| pH | ARC-pH | SU | 12.18 | 12.01 | 9.27 | 8.84 | 9.10 | 9.76 | 9.25 | 10.28 | NA |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114MON14_19.5-20.0 | 114MON14_34.5-35.0 | 114MON17_15.5-16.0 | 114MON17_17.5-18.0 | 114MON17_19.5-20.0 | 114MON17_21.5-22.0 | 114MON31_21.5-22.0 | 114MON31_23.5-24.0 | 114-MW1ABVD-28-28.5 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 19.5 - 20 | 34.5 - 35 | 15.5 - 16 | 17.5 - 18 | 19.5 - 20 | 21.5 - 22 | 21.5 - 22 | 23.5 - 24 | 28 - 28.5 |
| Date Collected: | | | 02/21/12 | 02/21/12 | 02/03/12 | 02/03/12 | 02/03/12 | 02/03/12 | 02/07/12 | 02/07/12 | 10/04/05 |
| Location ID: | CAS Number | Units | 114MON14 | 114MON14 | 114MON17 | 114MON17 | 114MON17 | 114MON17 | 114MON31 | 114MON31 | MW1ABV |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114MON14_19.5-20.0<br>19.5 - 20<br>02/21/12<br>114MON14 | 114MON14_34.5-35.0<br>34.5 - 35<br>02/21/12<br>114MON14 | 114MON17_15.5-16.0<br>15.5 - 16<br>02/03/12<br>114MON17 | 114MON17_17.5-18.0<br>17.5 - 18<br>02/03/12<br>114MON17 | 114MON17_19.5-20.0<br>19.5 - 20<br>02/03/12<br>114MON17 | 114MON17_21.5-22.0<br>21.5 - 22<br>02/03/12<br>114MON17 | 114MON31_21.5-22.0<br>21.5 - 22<br>02/07/12<br>114MON31 | 114MON31_23.5-24.0<br>23.5 - 24<br>02/07/12<br>114MON31 | 114-MW1ABVD-28-28.5<br>28 - 28.5<br>10/04/05<br>MW1ABV |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114MON14_19.5-20.0<br>19.5 - 20<br>02/21/12<br>114MON14 | 114MON14_34.5-35.0<br>34.5 - 35<br>02/21/12<br>114MON14 | 114MON17_15.5-16.0<br>15.5 - 16<br>02/03/12<br>114MON17 | 114MON17_17.5-18.0<br>17.5 - 18<br>02/03/12<br>114MON17 | 114MON17_19.5-20.0<br>19.5 - 20<br>02/03/12<br>114MON17 | 114MON17_21.5-22.0<br>21.5 - 22<br>02/03/12<br>114MON17 | 114MON31_21.5-22.0<br>21.5 - 22<br>02/07/12<br>114MON31 | 114MON31_23.5-24.0<br>23.5 - 24<br>02/07/12<br>114MON31 | 114-MW1ABVD-28-28.5<br>28 - 28.5<br>10/04/05<br>MW1ABV |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | NA | NA | 76.9 J | 110 J | NA | NA | NA | NA | NA |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 16.2 J | 778 J | 4.2 RA | 0.38 RA | 0.46 U | 1.6 RA | 90.1 | 46.5 | 1.1 UJ |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114MON14_19.5-20.0<br>19.5 - 20<br>02/21/12<br>114MON14 | 114MON14_34.5-35.0<br>34.5 - 35<br>02/21/12<br>114MON14 | 114MON17_15.5-16.0<br>15.5 - 16<br>02/03/12<br>114MON17 | 114MON17_17.5-18.0<br>17.5 - 18<br>02/03/12<br>114MON17 | 114MON17_19.5-20.0<br>19.5 - 20<br>02/03/12<br>114MON17 | 114MON17_21.5-22.0<br>21.5 - 22<br>02/03/12<br>114MON17 | 114MON31_21.5-22.0<br>21.5 - 22<br>02/07/12<br>114MON31 | 114MON31_23.5-24.0<br>23.5 - 24<br>02/07/12<br>114MON31 | 114-MW1ABVD-28-28.5<br>28 - 28.5<br>10/04/05<br>MW1ABV |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114MON14_19.5-20.0<br>19.5 - 20<br>02/21/12<br>114MON14 | 114MON14_34.5-35.0<br>34.5 - 35<br>02/21/12<br>114MON14 | 114MON17_15.5-16.0<br>15.5 - 16<br>02/03/12<br>114MON17 | 114MON17_17.5-18.0<br>17.5 - 18<br>02/03/12<br>114MON17 | 114MON17_19.5-20.0<br>19.5 - 20<br>02/03/12<br>114MON17 | 114MON17_21.5-22.0<br>21.5 - 22<br>02/03/12<br>114MON17 | 114MON31_21.5-22.0<br>21.5 - 22<br>02/07/12<br>114MON31 | 114MON31_23.5-24.0<br>23.5 - 24<br>02/07/12<br>114MON31 | 114-MW1ABVD-28-28.5<br>28 - 28.5<br>10/04/05<br>MW1ABV |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | 14,000 | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 200 | 160 | 83.7 | 14.1 | 209 | 210 | 320 | 232 | NA |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 873,000 | NA | 686,000 | 766,000 | 875,000 | 817,000 | 812,000 | 773,000 | NA |
| pH | ARC-pH | SU | 9.58 | 9.52 | 9.96 | 9.43 | 8.94 | 9.45 | 9.51 | 9.93 | NA |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | 0 | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | 21,100 | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114-MW6CA-34-34.5 | 114-MW6CB-36-36.5 | 114-MW6CC-40-40.5 | 114-MW6CD-44-44.5 | 114-MW6CE-48-48.5 | 114-MW6CF-52-52.5 | 114-MW6CG-56-56.5 | 114-MW6CH-60-60.5 | 114-MW6CI-64-64.5 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 34 - 34.5 | 36 - 36.5 | 40 - 40.5 | 44 - 44.5 | 48 - 48.5 | 52 - 52.5 | 56 - 56.5 | 60 - 60.5 | 64 - 64.5 |
| Date Collected: | | | 12/06/05 | 12/06/05 | 12/06/05 | 12/06/05 | 12/07/05 | 12/08/05 | 12/06/05 | 12/06/05 | 12/06/05 |
| Location ID: | CAS Number | Units | MW6C | MW6C | MW6C | MW6C | MW6C | MW6C | MW6C | MW6C | MW6C |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW6CA-34-34.5<br>34 - 34.5<br>12/06/05<br>MW6C | 114-MW6CB-36-36.5<br>36 - 36.5<br>12/06/05<br>MW6C | 114-MW6CC-40-40.5<br>40 - 40.5<br>12/06/05<br>MW6C | 114-MW6CD-44-44.5<br>44 - 44.5<br>12/06/05<br>MW6C | 114-MW6CE-48-48.5<br>48 - 48.5<br>12/07/05<br>MW6C | 114-MW6CF-52-52.5<br>52 - 52.5<br>12/08/05<br>MW6C | 114-MW6CG-56-56.5<br>56 - 56.5<br>12/06/05<br>MW6C | 114-MW6CH-60-60.5<br>60 - 60.5<br>12/06/05<br>MW6C | 114-MW6CI-64-64.5<br>64 - 64.5<br>12/06/05<br>MW6C |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW6CA-34-34.5<br>34 - 34.5<br>12/06/05<br>MW6C | 114-MW6CB-36-36.5<br>36 - 36.5<br>12/06/05<br>MW6C | 114-MW6CC-40-40.5<br>40 - 40.5<br>12/06/05<br>MW6C | 114-MW6CD-44-44.5<br>44 - 44.5<br>12/06/05<br>MW6C | 114-MW6CE-48-48.5<br>48 - 48.5<br>12/07/05<br>MW6C | 114-MW6CF-52-52.5<br>52 - 52.5<br>12/08/05<br>MW6C | 114-MW6CG-56-56.5<br>56 - 56.5<br>12/06/05<br>MW6C | 114-MW6CH-60-60.5<br>60 - 60.5<br>12/06/05<br>MW6C | 114-MW6CI-64-64.5<br>64 - 64.5<br>12/06/05<br>MW6C |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 1,180 [1,300] | 1,610 | 2,730 | 1,370 | 631 | 49.6 | 970 | 72.6 | 62.7 |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW6CA-34-34.5<br>34 - 34.5<br>12/06/05<br>MW6C | 114-MW6CB-36-36.5<br>36 - 36.5<br>12/06/05<br>MW6C | 114-MW6CC-40-40.5<br>40 - 40.5<br>12/06/05<br>MW6C | 114-MW6CD-44-44.5<br>44 - 44.5<br>12/06/05<br>MW6C | 114-MW6CE-48-48.5<br>48 - 48.5<br>12/07/05<br>MW6C | 114-MW6CF-52-52.5<br>52 - 52.5<br>12/08/05<br>MW6C | 114-MW6CG-56-56.5<br>56 - 56.5<br>12/06/05<br>MW6C | 114-MW6CH-60-60.5<br>60 - 60.5<br>12/06/05<br>MW6C | 114-MW6CI-64-64.5<br>64 - 64.5<br>12/06/05<br>MW6C |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW6CA-34-34.5<br>34 - 34.5<br>12/06/05<br>MW6C | 114-MW6CB-36-36.5<br>36 - 36.5<br>12/06/05<br>MW6C | 114-MW6CC-40-40.5<br>40 - 40.5<br>12/06/05<br>MW6C | 114-MW6CD-44-44.5<br>44 - 44.5<br>12/06/05<br>MW6C | 114-MW6CE-48-48.5<br>48 - 48.5<br>12/07/05<br>MW6C | 114-MW6CF-52-52.5<br>52 - 52.5<br>12/08/05<br>MW6C | 114-MW6CG-56-56.5<br>56 - 56.5<br>12/06/05<br>MW6C | 114-MW6CH-60-60.5<br>60 - 60.5<br>12/06/05<br>MW6C | 114-MW6CI-64-64.5<br>64 - 64.5<br>12/06/05<br>MW6C |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 800,000 [787,000] | 797,000 | 788,000 | 779,000 | 773,000 | 831,000 | 834,000 | 872,000 | 876,000 |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114-MW7CVC-38-38.5 | 114-MW7CVD-42-42.5 | 114-MW7CVE-46-46.5 | 114-MW-8ABVC-20-20.5 | 114-MW8ABVE-46-46.5 | 114-MW9AVC-20-20.5 | 114-MW9CB-20-20.5 | 114-MW9CC-22-22.5 | 114-MW9CD-26-26.5 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 38 - 38.5 | 42 - 42.5 | 46 - 46.5 | 20 - 20.5 | 46 - 46.5 | 20 - 20.5 | 20 - 20.5 | 22 - 22.5 | 26 - 26.5 |
| Date Collected: | | | 11/17/05 | 11/17/05 | 11/17/05 | 10/24/05 | 11/01/05 | 10/24/05 | 11/03/05 | 11/03/05 | 11/03/05 |
| Location ID: | CAS Number | Units | MW7CV | MW7CV | MW7CV | MW8ABV | MW8ABV | MW8ABV | MW9C | MW9C | MW9C |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114-MW7CVC-38-38.5 | 114-MW7CVD-42-42.5 | 114-MW7CVE-46-46.5 | 114-MW-8ABVC-20-20.5 | 114-MW8ABVE-46-46.5 | 114-MW9AVC-20-20.5 | 114-MW9CB-20-20.5 | 114-MW9CC-22-22.5 | 114-MW9CD-26-26.5 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 38 - 38.5 | 42 - 42.5 | 46 - 46.5 | 20 - 20.5 | 46 - 46.5 | 20 - 20.5 | 20 - 20.5 | 22 - 22.5 | 26 - 26.5 |
| Date Collected: | | | 11/17/05 | 11/17/05 | 11/17/05 | 10/24/05 | 11/01/05 | 10/24/05 | 11/03/05 | 11/03/05 | 11/03/05 |
| Location ID: | CAS Number | Units | MW7CV | MW7CV | MW7CV | MW8ABV | MW8ABV | MW8ABV | MW9C | MW9C | MW9C |
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW7CVC-38-38.5<br>38 - 38.5<br>11/17/05<br>MW7CV | 114-MW7CVD-42-42.5<br>42 - 42.5<br>11/17/05<br>MW7CV | 114-MW7CVE-46-46.5<br>46 - 46.5<br>11/17/05<br>MW7CV | 114-MW-8ABVC-20-20.5<br>20 - 20.5<br>10/24/05<br>MW8ABV | 114-MW8ABVE-46-46.5<br>46 - 46.5<br>11/01/05<br>MW8ABV | 114-MW9AVC-20-20.5<br>20 - 20.5<br>10/24/05<br>MW8ABV | 114-MW9CB-20-20.5<br>20 - 20.5<br>11/03/05<br>MW9C | 114-MW9CC-22-22.5<br>22 - 22.5<br>11/03/05<br>MW9C | 114-MW9CD-26-26.5<br>26 - 26.5<br>11/03/05<br>MW9C |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | NA | NA | NA | 16,300 [15,900] | 12,300 | 7,310 |
| Antimony | 7440-36-0 | mg/kg | NA | NA | NA | 3.4 J | NA | NA | 1.8 U [1.8 U] | 1.7 U | 1.2 U |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | NA | NA | NA | NA | 9.2 [7.6] | 8.6 | 2.4 |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | NA | NA | NA | 67.6 [56.4] | 55 | 31.7 |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | NA | NA | NA | 0.9 U [0.9] | 0.86 U | 0.63 |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | NA | NA | NA | 0.9 U [0.9 U] | 0.86 U | 0.59 U |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | NA | NA | NA | 17,600 [8,760] | 4,010 | 2,750 |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | 41,600 | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | 3,800 | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | NA | NA | NA | NA | NA | NA | 1,440 [434] | 394 | 253 |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | 5,900 | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 5.06 UJ | 5.22 UJ [5.1 UJ] | 22.8 J | NA | 4.88 U | NA | 7.03 U [7.17 U] | 7.53 U | 55.3 |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | 19.7 [13.6] | 10.7 | 6.1 |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | 100 U | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | NA | NA | NA | 19.4 [14.4] | 11.4 | 15.9 |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | 115,000 | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | 100 U | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | 30,100 | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | NA | NA | NA | 32,300 [28,800] | 25,500 | 12,300 |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | NA | NA | NA | 62.2 [18.4] | 10.6 | 9.9 |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | 7,180 [6,230] | 5,140 | 3,380 |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | 17,800 | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | 453 [355] | 332 | 122 |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | NA | NA | NA | 0.04 B [0.03 B] | 0.04 B | 0.01 B |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | 300 | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | 132 | NA | NA | 49.7 [31.6] | 23.5 | 12.7 |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | 1,200 | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | NA | NA | NA | 3,030 [3,160] | 2,540 | 1,230 |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | 14,600 | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | NA | NA | NA | 1.8 U [1.8 U] | 1.7 U | 1.2 U |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | 568,000 | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | NA | NA | NA | 1.8 U [1.8 U] | 1.7 U | 1.2 U |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | 6,680 [6,290] | 6,380 | 617 |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | 30,400 | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | 100 | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW7CVC-38-38.5<br>38 - 38.5<br>11/17/05<br>MW7CV | 114-MW7CVD-42-42.5<br>42 - 42.5<br>11/17/05<br>MW7CV | 114-MW7CVE-46-46.5<br>46 - 46.5<br>11/17/05<br>MW7CV | 114-MW-8ABVC-20-20.5<br>20 - 20.5<br>10/24/05<br>MW8ABV | 114-MW8ABVE-46-46.5<br>46 - 46.5<br>11/01/05<br>MW8ABV | 114-MW9AVC-20-20.5<br>20 - 20.5<br>10/24/05<br>MW8ABV | 114-MW9CB-20-20.5<br>20 - 20.5<br>11/03/05<br>MW9C | 114-MW9CC-22-22.5<br>22 - 22.5<br>11/03/05<br>MW9C | 114-MW9CD-26-26.5<br>26 - 26.5<br>11/03/05<br>MW9C |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | 55,300 | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | NA | NA | NA | NA | 1.8 U [1.8 U] | 1.7 U | 1.2 U |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | 6,500 | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | NA | 162 | NA | NA | 46 [40.7] | 41.1 | 20.3 |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | 100 U | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | NA | NA | NA | 104 [74.4] | 62.3 | 78.7 |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | 700 | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | 100 | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | CAS Number | Units | 114-MW7CVC-38-38.5 | 114-MW7CVD-42-42.5 | 114-MW7CVE-46-46.5 | 114-MW-8ABVC-20-20.5 | 114-MW8ABVE-46-46.5 | 114-MW9AVC-20-20.5 | 114-MW9CB-20-20.5 | 114-MW9CC-22-22.5 | 114-MW9CD-26-26.5 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 38 - 38.5 | 42 - 42.5 | 46 - 46.5 | 20 - 20.5 | 46 - 46.5 | 20 - 20.5 | 20 - 20.5 | 22 - 22.5 | 26 - 26.5 |
| Date Collected: | | | 11/17/05 | 11/17/05 | 11/17/05 | 10/24/05 | 11/01/05 | 10/24/05 | 11/03/05 | 11/03/05 | 11/03/05 |
| Location ID: | | | MW7CV | MW7CV | MW7CV | MW8ABV | MW8ABV | MW8ABV | MW9C | MW9C | MW9C |
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 790,000 | 766,000 [785,000] | 812,000 | 563,000 | 820,000 | NA | 549,000 [558,000] | 531,000 | 848,000 |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | 10,000 | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | 10,000 | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | 10,000 U | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | 10,000 | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | 10,000 U | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | 10,000 U | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | 30,000 | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | 10,000 U | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | 10,000 U | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | 2,000 U | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | 10,000 U | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | 10,000 U | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | 10,000 U | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | 10,000 U | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | 10,000 U | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | 10,000 U | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | 10,000 U | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | 10,000 U | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | 10,000 U | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | 10,000 U | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | 30,000 | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | 10,000 U | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | 10,000 U | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | 10,000 U | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | 200,000 | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | 10,000 U | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | 30,000 | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | 382,000 | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | 10,000 U | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | 10,000 U | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | 10,000 U | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | 10,000 U | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114-MW9CE-30-30.5 | 114-MW9CF-34-34.5 | 114-MW-9CG-38-38.5 | 114-MW-9CH-42-42.4 | 114-MW-9CI-46-46.5 | 114-MW-9CJ-50-50.5 | 114-MW9CK-54-54.5 | 114-MW-11BA-17-17.5 | 114-MW11BC-25-25.5 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 30 - 30.5 | 34 - 34.5 | 38 - 38.5 | 42 - 42.4 | 46 - 46.5 | 50 - 50.5 | 54 - 54.5 | 17 - 17.5 | 25 - 25.5 |
| Date Collected: | | | 11/03/05 | 11/03/05 | 11/08/05 | 11/08/05 | 11/08/05 | 11/08/05 | 11/09/05 | 10/18/05 | 11/07/05 |
| Location ID: | CAS Number | Units | MW9C | MW9C | MW9C | MW9C | MW9C | MW9C | MW9C | MW11B | MW11B |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW9CE-30-30.5<br>30 - 30.5<br>11/03/05<br>MW9C | 114-MW9CF-34-34.5<br>34 - 34.5<br>11/03/05<br>MW9C | 114-MW-9CG-38-38.5<br>38 - 38.5<br>11/08/05<br>MW9C | 114-MW-9CH-42-42.4<br>42 - 42.4<br>11/08/05<br>MW9C | 114-MW-9CI-46-46.5<br>46 - 46.5<br>11/08/05<br>MW9C | 114-MW-9CJ-50-50.5<br>50 - 50.5<br>11/08/05<br>MW9C | 114-MW9CK-54-54.5<br>54 - 54.5<br>11/09/05<br>MW9C | 114-MW-11BA-17-17.5<br>17 - 17.5<br>10/18/05<br>MW11B | 114-MW11BC-25-25.5<br>25 - 25.5<br>11/07/05<br>MW11B |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW9CE-30-30.5<br>30 - 30.5<br>11/03/05<br>MW9C | 114-MW9CF-34-34.5<br>34 - 34.5<br>11/03/05<br>MW9C | 114-MW-9CG-38-38.5<br>38 - 38.5<br>11/08/05<br>MW9C | 114-MW-9CH-42-42.4<br>42 - 42.4<br>11/08/05<br>MW9C | 114-MW-9CI-46-46.5<br>46 - 46.5<br>11/08/05<br>MW9C | 114-MW-9CJ-50-50.5<br>50 - 50.5<br>11/08/05<br>MW9C | 114-MW9CK-54-54.5<br>54 - 54.5<br>11/09/05<br>MW9C | 114-MW-11BA-17-17.5<br>17 - 17.5<br>10/18/05<br>MW11B | 114-MW11BC-25-25.5<br>25 - 25.5<br>11/07/05<br>MW11B |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | 2,110 | 2,010 | 5,490 J | 14,700 J | 4,450 J | 5,510 J | 7,110 J | 14,300 | NA |
| Antimony | 7440-36-0 | mg/kg | 1.3 U | 1.2 U | 1.1 U | 1.2 B | 1 UJ | 1.1 B | 1.4 B | 112 J | NA |
| Arsenic | 7440-38-2 | mg/kg | 1.3 U | 1.2 U | 4 B | 4.3 J | 3.1 J | 6.6 | 6.3 | 0.72 U | NA |
| Barium | 7440-39-3 | mg/kg | 25 U | 24 U | 59 J | 114 J | 66.4 J | 44.1 J | 44.7 J | 51.6 J | NA |
| Beryllium | 7440-41-7 | mg/kg | 0.63 U | 0.59 U | 0.07 UJ | 0.03 UJ | 0.07 UJ | 0.3 UJ | 0.3 UJ | 0.4 UJ | NA |
| Cadmium | 7440-43-9 | mg/kg | 0.63 U | 0.59 U | 0.05 UJ | 0.05 UJ | 0.05 UJ | 0.05 UJ | 0.05 UJ | 1.1 B | NA |
| Calcium | 7440-70-2 | mg/kg | 3,550 | 6,050 | 17,200 J | 9,530 J | 15,500 J | 2,890 J | 2,790 J | 16,000 J | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | 439 | 286 | 13.2 J | 21.1 J | 50.3 J | 24.5 J | 25.6 J | 3,900 J | NA |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 115 | 273 | NA | 5.41 U | 5.08 U | 6.59 | 4.5 U | 12.4 U | 262 [245] |
| Cobalt | 7440-48-4 | mg/kg | 6.3 U | 5.9 U | 5.5 B | 11.9 J | 4.4 B | 8.8 J | 10.2 J | 41.8 J | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | 8.1 | 6.5 | 8.1 J | 21.1 J | 6.8 J | 75.7 J | 8.8 J | 19.7 B | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | 5,420 | 5,310 | 13,700 J | 26,500 J | 10,700 J | 12,500 J | 16,800 J | 30,000 J | NA |
| Lead | 7439-92-1 | mg/kg | 5.7 | 4.8 | 8.8 J | 14.3 J | 7.7 J | 10.2 J | 16.5 J | 56.7 J | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | 1,160 | 1,210 | 3,950 | 7,590 | 3,270 | 4,320 | 4,880 | 15,400 J | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | 45.8 | 135 | 405 | 503 | 344 | 242 | 434 | 244 J | NA |
| Mercury | 7439-97-6 | mg/kg | 0.004 U | 0.004 U | 0.004 | 0.01 | 0.004 U | 0.004 U | 0.004 U | 0.04 J | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | 11.8 | 5.5 | 9.4 | 23.8 | 6.9 | 10 | 15.7 | 165 J | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | 630 U | 611 | 1,500 J | 3,140 J | 1,460 J | 1,890 J | 1,880 J | 2,840 E | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | 1.3 U | 1.2 U | 0.52 UJ | 0.5 UJ | 0.84 B | 0.44 UJ | 0.44 UJ | 3 | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | 1.3 U | 1.2 U | 0.15 UJ | 0.15 UJ | 0.14 UJ | 0.13 UJ | 0.13 UJ | 0.38 B | NA |
| Sodium | 7440-23-5 | mg/kg | 630 U | 590 U | 318 | 215 | 196 | 183 | 296 | 7,320 | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW9CE-30-30.5<br>30 - 30.5<br>11/03/05<br>MW9C | 114-MW9CF-34-34.5<br>34 - 34.5<br>11/03/05<br>MW9C | 114-MW-9CG-38-38.5<br>38 - 38.5<br>11/08/05<br>MW9C | 114-MW-9CH-42-42.4<br>42 - 42.4<br>11/08/05<br>MW9C | 114-MW-9CI-46-46.5<br>46 - 46.5<br>11/08/05<br>MW9C | 114-MW-9CJ-50-50.5<br>50 - 50.5<br>11/08/05<br>MW9C | 114-MW9CK-54-54.5<br>54 - 54.5<br>11/09/05<br>MW9C | 114-MW-11BA-17-17.5<br>17 - 17.5<br>10/18/05<br>MW11B | 114-MW11BC-25-25.5<br>25 - 25.5<br>11/07/05<br>MW11B |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | 1.3 U | 1.2 U | 0.43 U | 0.41 U | 0.41 U | 0.74 B | 0.69 B | 0.98 U | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | 10.9 | 8.3 | 20.7 | 29.1 | 20.3 | 29.7 | 34.6 | 154 J | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | 19.4 | 15.5 | 28.4 | 60.1 | 23 | 49 | 63.1 | 137 J | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114-MW9CE-30-30.5 | 114-MW9CF-34-34.5 | 114-MW-9CG-38-38.5 | 114-MW-9CH-42-42.4 | 114-MW-9CI-46-46.5 | 114-MW-9CJ-50-50.5 | 114-MW9CK-54-54.5 | 114-MW-11BA-17-17.5 | 114-MW11BC-25-25.5 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 30 - 30.5 | 34 - 34.5 | 38 - 38.5 | 42 - 42.4 | 46 - 46.5 | 50 - 50.5 | 54 - 54.5 | 17 - 17.5 | 25 - 25.5 |
| Date Collected: | | | 11/03/05 | 11/03/05 | 11/08/05 | 11/08/05 | 11/08/05 | 11/08/05 | 11/09/05 | 10/18/05 | 11/07/05 |
| Location ID: | CAS Number | Units | MW9C | MW9C | MW9C | MW9C | MW9C | MW9C | MW9C | MW11B | MW11B |
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 798,000 | 802,000 | NA | 739,000 | 788,000 | 891,000 | 888,000 | 322,000 | 865,000 [867,000] |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114-MW11BD-30-30.5 | 114-MW11BF-34-34.5 | 114-MW-12BA-0-0.5 | 114-MW-12BB-2-2.5 | 114-MW-12BC-6-6.5 | 114-MW-12BD-10-10.5 | 114-MW-12BE-14-14.5 | 114-MW21BC(5-6)20061005 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 30 - 30.5 | 34 - 34.5 | 0 - 0.5 | 2 - 2.5 | 6 - 6.5 | 10 - 10.5 | 14 - 14.5 | 5 - 6 |
| Date Collected: | | | 11/07/05 | 11/07/05 | 10/18/05 | 10/18/05 | 10/18/05 | 10/18/05 | 10/18/05 | 10/05/06 |
| Location ID: | CAS Number | Units | MW11B | MW11B | MW12B | MW12B | MW12B | MW12B | MW12B | 114-MW21B |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW11BD-30-30.5<br>30 - 30.5<br>11/07/05<br>MW11B | 114-MW11BF-34-34.5<br>34 - 34.5<br>11/07/05<br>MW11B | 114-MW-12BA-0-0.5<br>0 - 0.5<br>10/18/05<br>MW12B | 114-MW-12BB-2-2.5<br>2 - 2.5<br>10/18/05<br>MW12B | 114-MW-12BC-6-6.5<br>6 - 6.5<br>10/18/05<br>MW12B | 114-MW-12BD-10-10.5<br>10 - 10.5<br>10/18/05<br>MW12B | 114-MW-12BE-14-14.5<br>14 - 14.5<br>10/18/05<br>MW12B | 114-MW21BC(5-6)20061005<br>5 - 6<br>10/05/06<br>114-MW21B |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW11BD-30-30.5<br>30 - 30.5<br>11/07/05<br>MW11B | 114-MW11BF-34-34.5<br>34 - 34.5<br>11/07/05<br>MW11B | 114-MW-12BA-0-0.5<br>0 - 0.5<br>10/18/05<br>MW12B | 114-MW-12BB-2-2.5<br>2 - 2.5<br>10/18/05<br>MW12B | 114-MW-12BC-6-6.5<br>6 - 6.5<br>10/18/05<br>MW12B | 114-MW-12BD-10-10.5<br>10 - 10.5<br>10/18/05<br>MW12B | 114-MW-12BE-14-14.5<br>14 - 14.5<br>10/18/05<br>MW12B | 114-MW21BC(5-6)20061005<br>5 - 6<br>10/05/06<br>114-MW21B |
|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | 2,640 [2,650] | 39,800 | 19,000 | 8,070 | 12,300 [9,860] | 20,700 |
| Antimony | 7440-36-0 | mg/kg | NA | NA | 11.6 B [7.4 B] | 696 J | 285 J | 35.2 J | 8.8 J [16.9 J] | 7.8 J |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | 2.4 B [3.7 B] | 35.8 UJ | 16.2 UJ | 2.6 BJ | 19.5 J [20.9 J] | 29.3 J |
| Barium | 7440-39-3 | mg/kg | NA | NA | 11.4 J [11 J] | 28.3 J | 57 J | 50.6 J | 68.9 J [138 J] | 122 J |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | 0.03 UJ [0.03 UJ] | 0.2 UJ | 0.18 UJ | 0.16 J | 0.18 UJ [0.04 UJ] | 0.44 UJ |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | 0.38 B [0.28 B] | 2.9 | 1.2 B | 0.56 J | 0.95 [1.1] | 2 J |
| Calcium | 7440-70-2 | mg/kg | NA | NA | 3,240 J [1,470 J] | 189,000 J | 97,000 J | 12,400 J | 4,820 J [21,000 J] | 129,000 |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | NA | NA | 450 J [284 J] | 27,400 J | 11,000 J | 1,280 J | 283 J [547 J] | 7,630 |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 709 | 1,090 J | 22.8 [29.5] | 8,360 | 1,620 | 52.3 | 5.57 UJ [5.87 UJ] | 850 J |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | 5.6 B [2.3 B] | 125 J | 45.5 J | 10.4 J | 8.4 [9] | 83.7 J |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | 6.4 B [6.3 B] | 21.9 B | 18.3 B | 26.7 BJ | 43.5 J [112 J] | 135 J |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | 9,080 J [10,500 J] | 77,500 J | 32,900 J | 14,700 J | 17,900 [21,300] | 40,200 J |
| Lead | 7439-92-1 | mg/kg | NA | NA | 13.8 J [10.4 J] | 11.2 J | 13.2 J | 32.8 J | 314 J [1,060 J] | 166 J |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | 1,810 J [826 J] | 107,000 J | 45,000 J | 6,240 J | 3,630 [4,300] | 27,500 |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | 36.3 J [19.4 J] | 1,030 J | 464 J | 262 J | 227 J [527 J] | 711 |
| Mercury | 7439-97-6 | mg/kg | NA | NA | 0.01 B [0.01 B] | 0.005 UJ | 0.02 J | 0.08 J | 1 J [10.3 J] | 0.15 |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | 19.4 J [6.1 B] | 753 J | 269 J | 32.1 J | 18.9 [26.1] | 357 |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | 295 B [347 B] | 298 B | 567 B | 1,230 E | 1,320 [1,240] | 440 UJ |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | 0.45 U [0.44 U] | 0.6 U | 0.97 B | 0.9 B | 1.4 J [1.1 J] | 1.8 UJ |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | 0.13 U [0.13 U] | 0.68 B | 0.36 B | 0.14 B | 0.57 B [0.73 B] | 0.88 UJ |
| Sodium | 7440-23-5 | mg/kg | NA | NA | 88.4 B [81.9 B] | 2,500 | 1,400 | 1,830 | 4,470 [4,300] | 880 UJ |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW11BD-30-30.5<br>30 - 30.5<br>11/07/05<br>MW11B | 114-MW11BF-34-34.5<br>34 - 34.5<br>11/07/05<br>MW11B | 114-MW-12BA-0-0.5<br>0 - 0.5<br>10/18/05<br>MW12B | 114-MW-12BB-2-2.5<br>2 - 2.5<br>10/18/05<br>MW12B | 114-MW-12BC-6-6.5<br>6 - 6.5<br>10/18/05<br>MW12B | 114-MW-12BD-10-10.5<br>10 - 10.5<br>10/18/05<br>MW12B | 114-MW-12BE-14-14.5<br>14 - 14.5<br>10/18/05<br>MW12B | 114-MW21BC(5-6)20061005<br>5 - 6<br>10/05/06<br>114-MW21B |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | 0.37 U [0.36 U] | 4.8 | 1.8 | 0.38 U | 0.43 U [0.46 U] | 2.6 UJ |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | 40.7 J [30.3 J] | 240 J | 159 J | 34.7 J | 31.8 E [34] | 236 J |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | 26.1 J [15.7 B] | 141 J | 58.7 J | 93.6 J | 676 J [981 J] | 377 J |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW11BD-30-30.5<br>30 - 30.5<br>11/07/05<br>MW11B | 114-MW11BF-34-34.5<br>34 - 34.5<br>11/07/05<br>MW11B | 114-MW-12BA-0-0.5<br>0 - 0.5<br>10/18/05<br>MW12B | 114-MW-12BB-2-2.5<br>2 - 2.5<br>10/18/05<br>MW12B | 114-MW-12BC-6-6.5<br>6 - 6.5<br>10/18/05<br>MW12B | 114-MW-12BD-10-10.5<br>10 - 10.5<br>10/18/05<br>MW12B | 114-MW-12BE-14-14.5<br>14 - 14.5<br>10/18/05<br>MW12B | 114-MW21BC(5-6)20061005<br>5 - 6<br>10/05/06<br>114-MW21B |
|---|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 815,000 | 789,000 | 876,000 [861,000] | 663,000 | 740,000 | 845,000 | 718,000 [681,000] | 558,000 |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114-MW21BD(7-7.5)20061005 | 114-MW21BE(11-11.5)20061005 | 114-MW21BF(15-15.5)20061005 | 114-MW21BG(18.3-18.8)20061005 | 114-MW21BH(22-23)J43122-1R | 114-NW-B8B-16.5-17.0 | 114-NW-B8B-17.0-17.5 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 7 - 7.5 | 11 - 11.5 | 15 - 15.5 | 18.3 - 18.8 | 22 - 23 | 21.3 - 21.8 | 21.8 - 22.3 |
| Date Collected: | | | 10/05/06 | 10/05/06 | 10/05/06 | 10/05/06 | 10/06/06 | 12/30/13 | 12/30/13 |
| Location ID: | CAS Number | Units | 114-MW21B | 114-MW21B | 114-MW21B | 114-MW21B | 114-MW21B | 114-NW-B8B | 114-NW-B8B |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW21BD(7-7.5)20061005<br>7 - 7.5<br>10/05/06<br>114-MW21B | 114-MW21BE(11-11.5)20061005<br>11 - 11.5<br>10/05/06<br>114-MW21B | 114-MW21BF(15-15.5)20061005<br>15 - 15.5<br>10/05/06<br>114-MW21B | 114-MW21BG(18.3-18.8)20061005<br>18.3 - 18.8<br>10/05/06<br>114-MW21B | 114-MW21BH(22-23)J43122-1R<br>22 - 23<br>10/06/06<br>114-MW21B | 114-NW-B8B-16.5-17.0<br>21.3 - 21.8<br>12/30/13<br>114-NW-B8B | 114-NW-B8B-17.0-17.5<br>21.8 - 22.3<br>12/30/13<br>114-NW-B8B |
|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW21BD(7-7.5)20061005<br>7 - 7.5<br>10/05/06<br>114-MW21B | 114-MW21BE(11-11.5)20061005<br>11 - 11.5<br>10/05/06<br>114-MW21B | 114-MW21BF(15-15.5)20061005<br>15 - 15.5<br>10/05/06<br>114-MW21B | 114-MW21BG(18.3-18.8)20061005<br>18.3 - 18.8<br>10/05/06<br>114-MW21B | 114-MW21BH(22-23)J43122-1R<br>22 - 23<br>10/06/06<br>114-MW21B | 114-NW-B8B-16.5-17.0<br>21.3 - 21.8<br>12/30/13<br>114-NW-B8B | 114-NW-B8B-17.0-17.5<br>21.8 - 22.3<br>12/30/13<br>114-NW-B8B |
|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | 34,900 [32,700] | 23,900 | 28,900 | 8,750 | 3,610 | NA | NA |
| Antimony | 7440-36-0 | mg/kg | 19 UJ [19 UJ] | 33 UJ | 32 UJ | 3.5 UJ | 3.3 J | NA | NA |
| Arsenic | 7440-38-2 | mg/kg | 19 UJ [19 UJ] | 33 UJ | 32 UJ | 5.4 J | 8.6 | NA | NA |
| Barium | 7440-39-3 | mg/kg | 80.7 J [81.6 J] | 53.2 J | 71.4 J | 35 UJ | 23 U | NA | NA |
| Beryllium | 7440-41-7 | mg/kg | 0.47 UJ [0.47 UJ] | 0.82 UJ | 0.81 UJ | 0.87 UJ | 0.58 U | NA | NA |
| Cadmium | 7440-43-9 | mg/kg | 2.8 J [2.7 J] | 1.7 J | 2.4 J | 0.87 UJ | 0.58 U | NA | NA |
| Calcium | 7440-70-2 | mg/kg | 231,000 [217,000] | 269,000 | 299,000 | 2,150 | 4,160 J | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | 28,100 [26,700] | 30,200 | 43,400 | 3,420 | 4,340 | NA | NA |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 15,200 J [16,100 J] | 13,600 J | 28,900 J | 661 J | 883 | 6.7 | 14.6 |
| Cobalt | 7440-48-4 | mg/kg | 141 J [136 J] | 104 J | 130 J | 8.7 UJ | 5.8 U | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | 55.5 J [54.3 J] | 37.4 J | 35.6 J | 20.4 J | 12.6 | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | 66,700 J [61,300 J] | 48,100 J | 60,800 J | 18,400 J | 8,770 | NA | NA |
| Lead | 7439-92-1 | mg/kg | 19 UJ [19 UJ] | 33 UJ | 32 UJ | 31.1 J | 14.2 | NA | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | 46,200 [44,900] | 33,500 | 39,500 | 3,100 | 2,790 J | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | 1,290 [1,240] | 935 | 1,140 | 103 | 120 | NA | NA |
| Mercury | 7439-97-6 | mg/kg | 0.057 U [0.061 U] | 0.048 U | 0.071 | 0.079 | 0.037 U | NA | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | 688 [668] | 498 | 629 | 15.3 | 10 | NA | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | 470 UJ [470 UJ] | 820 UJ | 810 UJ | 1,630 J | 856 | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | 19 UJ [19 UJ] | 33 UJ | 32 UJ | 3.5 UJ | 2.3 U | NA | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | 0.95 UJ [0.94 UJ] | 1.6 UJ | 1.6 UJ | 1.7 UJ | 1.2 U | NA | NA |
| Sodium | 7440-23-5 | mg/kg | 2,420 J [2,260 J] | 2,890 J | 5,910 J | 4,170 J | 1,780 | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW21BD(7-7.5)20061005<br>7 - 7.5<br>10/05/06<br>114-MW21B | 114-MW21BE(11-11.5)20061005<br>11 - 11.5<br>10/05/06<br>114-MW21B | 114-MW21BF(15-15.5)20061005<br>15 - 15.5<br>10/05/06<br>114-MW21B | 114-MW21BG(18.3-18.8)20061005<br>18.3 - 18.8<br>10/05/06<br>114-MW21B | 114-MW21BH(22-23)J43122-1R<br>22 - 23<br>10/06/06<br>114-MW21B | 114-NW-B8B-16.5-17.0<br>21.3 - 21.8<br>12/30/13<br>114-NW-B8B | 114-NW-B8B-17.0-17.5<br>21.8 - 22.3<br>12/30/13<br>114-NW-B8B |
|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | 9.5 UJ [9.4 UJ] | 16 UJ | 16 UJ | 1.7 UJ | 1.2 U | NA | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | 458 J [452 J] | 325 J | 423 J | 39.2 J | 17.8 | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | 304 J [284 J] | 218 J | 267 J | 74 J | 44.2 | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-MW21BD(7-7.5)20061005<br>7 - 7.5<br>10/05/06<br>114-MW21B | 114-MW21BE(11-11.5)20061005<br>11 - 11.5<br>10/05/06<br>114-MW21B | 114-MW21BF(15-15.5)20061005<br>15 - 15.5<br>10/05/06<br>114-MW21B | 114-MW21BG(18.3-18.8)20061005<br>18.3 - 18.8<br>10/05/06<br>114-MW21B | 114-MW21BH(22-23)J43122-1R<br>22 - 23<br>10/06/06<br>114-MW21B | 114-NW-B8B-16.5-17.0<br>21.3 - 21.8<br>12/30/13<br>114-NW-B8B | 114-NW-B8B-17.0-17.5<br>21.8 - 22.3<br>12/30/13<br>114-NW-B8B |
|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | 224 | 255 |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 525,000 [530,000] | 637,000 | 593,000 | 567,000 | 860,000 | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | 8.46 | 8.41 |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114-NW-B8B-17.5-18.0 | 114-P1A-MW101I-19.5-20.0 | 114-P1A-MW101I-33.5-34.0 | 114-P1B-MW101I-32.0-32.5 | 114-P1B-MW102I-20.0-20.5 | 114-P1B-MW102I-32.0-33.0 | 114-P1C-MW101I-26.0-26.5 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 22.3 - 22.8 | 19.5 - 20 | 33.5 - 34 | 32 - 32.5 | 20 - 20.5 | 32 - 33 | 26 - 26.5 |
| Date Collected: | | | 12/30/13 | 04/24/14 | 04/24/14 | 05/21/14 | 05/06/14 | 05/06/14 | 10/07/14 |
| Location ID: | CAS Number | Units | 114-NW-B8B | 114-P1A-MW101I | 114-P1A-MW101I | 114-P1B-MW101I | 114-P1B-MW102I | 114-P1B-MW102I | 114-P1C-MW101I |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-NW-B8B-17.5-18.0<br>22.3 - 22.8<br>12/30/13<br>114-NW-B8B | 114-P1A-MW101I-19.5-20.0<br>19.5 - 20<br>04/24/14<br>114-P1A-MW101I | 114-P1A-MW101I-33.5-34.0<br>33.5 - 34<br>04/24/14<br>114-P1A-MW101I | 114-P1B-MW101I-32.0-32.5<br>32 - 32.5<br>05/21/14<br>114-P1B-MW101I | 114-P1B-MW102I-20.0-20.5<br>20 - 20.5<br>05/06/14<br>114-P1B-MW102I | 114-P1B-MW102I-32.0-33.0<br>32 - 33<br>05/06/14<br>114-P1B-MW102I | 114-P1C-MW101I-26.0-26.5<br>26 - 26.5<br>10/07/14<br>114-P1C-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-NW-B8B-17.5-18.0<br>22.3 - 22.8<br>12/30/13<br>114-NW-B8B | 114-P1A-MW101I-19.5-20.0<br>19.5 - 20<br>04/24/14<br>114-P1A-MW101I | 114-P1A-MW101I-33.5-34.0<br>33.5 - 34<br>04/24/14<br>114-P1A-MW101I | 114-P1B-MW101I-32.0-32.5<br>32 - 32.5<br>05/21/14<br>114-P1B-MW101I | 114-P1B-MW102I-20.0-20.5<br>20 - 20.5<br>05/06/14<br>114-P1B-MW102I | 114-P1B-MW102I-32.0-33.0<br>32 - 33<br>05/06/14<br>114-P1B-MW102I | 114-P1C-MW101I-26.0-26.5<br>26 - 26.5<br>10/07/14<br>114-P1C-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | NA | 171 | 42.9 | 17.3 | 17.7 | 718 | 327 |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 19.9 | 9.2 | 9.5 | 0.47 U | 0.47 U | 192 | 25.2 |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-NW-B8B-17.5-18.0<br>22.3 - 22.8<br>12/30/13<br>114-NW-B8B | 114-P1A-MW101I-19.5-20.0<br>19.5 - 20<br>04/24/14<br>114-P1A-MW101I | 114-P1A-MW101I-33.5-34.0<br>33.5 - 34<br>04/24/14<br>114-P1A-MW101I | 114-P1B-MW101I-32.0-32.5<br>32 - 32.5<br>05/21/14<br>114-P1B-MW101I | 114-P1B-MW102I-20.0-20.5<br>20 - 20.5<br>05/06/14<br>114-P1B-MW102I | 114-P1B-MW102I-32.0-33.0<br>32 - 33<br>05/06/14<br>114-P1B-MW102I | 114-P1C-MW101I-26.0-26.5<br>26 - 26.5<br>10/07/14<br>114-P1C-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-NW-B8B-17.5-18.0<br>22.3 - 22.8<br>12/30/13<br>114-NW-B8B | 114-P1A-MW101I-19.5-20.0<br>19.5 - 20<br>04/24/14<br>114-P1A-MW101I | 114-P1A-MW101I-33.5-34.0<br>33.5 - 34<br>04/24/14<br>114-P1A-MW101I | 114-P1B-MW101I-32.0-32.5<br>32 - 32.5<br>05/21/14<br>114-P1B-MW101I | 114-P1B-MW102I-20.0-20.5<br>20 - 20.5<br>05/06/14<br>114-P1B-MW102I | 114-P1B-MW102I-32.0-33.0<br>32 - 33<br>05/06/14<br>114-P1B-MW102I | 114-P1C-MW101I-26.0-26.5<br>26 - 26.5<br>10/07/14<br>114-P1C-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 279 | 238 | 252 | 411 | 462 | 425 | 272 |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | NA | 886,000 | 862,000 | 850,000 | 858,000 | 757,000 | 860,000 |
| pH | ARC-pH | SU | 8.49 | 8.64 | 8.50 | 8.27 | 3.64 | 8.27 | 9.50 |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-MW101I-34.0-35.0<br>34 - 35<br>10/07/14<br>114-P1C-MW101I | 114-P1C-PZ1-S1-24.0-26.0<br>24 - 26<br>10/12/16<br>114-P1C-PZ1-S1 | 114-P1C-PZ1-S1-31.0-33.0<br>31 - 33<br>10/12/16<br>114-P1C-PZ1-S1 | 114-P1C-PZ1-S2-24.0-26.0<br>24 - 26<br>10/14/16<br>114-P1C-PZ1-S2 | 114-P1C-PZ1-S2-27.0-29.0<br>27 - 29<br>10/14/16<br>114-P1C-PZ1-S2 | 114-P1C-PZ2-23.0-23.5<br>23 - 23.5<br>10/13/14<br>114-P1C-PZ2 | 114-P1C-PZ2-28.5-29.5<br>28.5 - 29.5<br>10/13/14<br>114-P1C-PZ2 | 114-P1C-PZ2-S1-25.0-27.0<br>25 - 27<br>10/11/16<br>114-P1C-PZ2-S1 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-MW101I-34.0-35.0<br>34 - 35<br>10/07/14<br>114-P1C-MW101I | 114-P1C-PZ1-S1-24.0-26.0<br>24 - 26<br>10/12/16<br>114-P1C-PZ1-S1 | 114-P1C-PZ1-S1-31.0-33.0<br>31 - 33<br>10/12/16<br>114-P1C-PZ1-S1 | 114-P1C-PZ1-S2-24.0-26.0<br>24 - 26<br>10/14/16<br>114-P1C-PZ1-S2 | 114-P1C-PZ1-S2-27.0-29.0<br>27 - 29<br>10/14/16<br>114-P1C-PZ1-S2 | 114-P1C-PZ2-23.0-23.5<br>23 - 23.5<br>10/13/14<br>114-P1C-PZ2 | 114-P1C-PZ2-28.5-29.5<br>28.5 - 29.5<br>10/13/14<br>114-P1C-PZ2 | 114-P1C-PZ2-S1-25.0-27.0<br>25 - 27<br>10/11/16<br>114-P1C-PZ2-S1 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-MW101I-34.0-35.0<br>34 - 35<br>10/07/14<br>114-P1C-MW101I | 114-P1C-PZ1-S1-24.0-26.0<br>24 - 26<br>10/12/16<br>114-P1C-PZ1-S1 | 114-P1C-PZ1-S1-31.0-33.0<br>31 - 33<br>10/12/16<br>114-P1C-PZ1-S1 | 114-P1C-PZ1-S2-24.0-26.0<br>24 - 26<br>10/14/16<br>114-P1C-PZ1-S2 | 114-P1C-PZ1-S2-27.0-29.0<br>27 - 29<br>10/14/16<br>114-P1C-PZ1-S2 | 114-P1C-PZ2-23.0-23.5<br>23 - 23.5<br>10/13/14<br>114-P1C-PZ2 | 114-P1C-PZ2-28.5-29.5<br>28.5 - 29.5<br>10/13/14<br>114-P1C-PZ2 | 114-P1C-PZ2-S1-25.0-27.0<br>25 - 27<br>10/11/16<br>114-P1C-PZ2-S1 |
|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | 879 | 27.9 | 24.3 | 32.1 | 18.1 | 39.5 | 47 | 132 |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 67.3 | 13.6 | 4 | 4.8 J | 2.3 J | 15.8 | 11.8 | 7 J |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-MW101I-34.0-35.0<br>34 - 35<br>10/07/14<br>114-P1C-MW101I | 114-P1C-PZ1-S1-24.0-26.0<br>24 - 26<br>10/12/16<br>114-P1C-PZ1-S1 | 114-P1C-PZ1-S1-31.0-33.0<br>31 - 33<br>10/12/16<br>114-P1C-PZ1-S1 | 114-P1C-PZ1-S2-24.0-26.0<br>24 - 26<br>10/14/16<br>114-P1C-PZ1-S2 | 114-P1C-PZ1-S2-27.0-29.0<br>27 - 29<br>10/14/16<br>114-P1C-PZ1-S2 | 114-P1C-PZ2-23.0-23.5<br>23 - 23.5<br>10/13/14<br>114-P1C-PZ2 | 114-P1C-PZ2-28.5-29.5<br>28.5 - 29.5<br>10/13/14<br>114-P1C-PZ2 | 114-P1C-PZ2-S1-25.0-27.0<br>25 - 27<br>10/11/16<br>114-P1C-PZ2-S1 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-MW101I-34.0-35.0<br>34 - 35<br>10/07/14<br>114-P1C-MW101I | 114-P1C-PZ1-S1-24.0-26.0<br>24 - 26<br>10/12/16<br>114-P1C-PZ1-S1 | 114-P1C-PZ1-S1-31.0-33.0<br>31 - 33<br>10/12/16<br>114-P1C-PZ1-S1 | 114-P1C-PZ1-S2-24.0-26.0<br>24 - 26<br>10/14/16<br>114-P1C-PZ1-S2 | 114-P1C-PZ1-S2-27.0-29.0<br>27 - 29<br>10/14/16<br>114-P1C-PZ1-S2 | 114-P1C-PZ2-23.0-23.5<br>23 - 23.5<br>10/13/14<br>114-P1C-PZ2 | 114-P1C-PZ2-28.5-29.5<br>28.5 - 29.5<br>10/13/14<br>114-P1C-PZ2 | 114-P1C-PZ2-S1-25.0-27.0<br>25 - 27<br>10/11/16<br>114-P1C-PZ2-S1 |
|---|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | 2,600 | NA | NA | 2,100 |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 305 | 540 | 547 | 568 | 563 | 302 | 295 | 317 |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 900,000 | 833,000 | 824,000 | 808,000 | 814,000 | 815,000 | 791,000 | 797,000 |
| pH | ARC-pH | SU | 8.65 | 9.10 | 9.06 | 9.25 | 9.12 | 8.81 | 9.16 | 8.71 |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | 0 U | NA | NA | 0 U |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | 72 | NA | NA | 132 |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-PZ2-S2-25.0-27.0<br>25 - 27<br>10/13/16<br>114-P1C-PZ2-S2 | 114-P1C-PZ2-S2-31.0-33.0<br>31 - 33<br>10/13/16<br>114-P1C-PZ2-S2 | 114-P1C-PZ-25-27<br>25 - 27<br>03/31/14<br>114-P1C-PZ1 | 114-P1C-PZ-30-32<br>30 - 32<br>03/31/14<br>114-P1C-PZ1 | 114-P1C-PZ-34-36<br>34 - 36<br>03/31/14<br>114-P1C-PZ1 | 114-P2A-MW101I-30.0-30.5<br>30 - 30.5<br>02/03/16<br>114-P2A-MW101I | 114-P2A-MW101I-37.0-37.5<br>37 - 37.5<br>02/03/16<br>114-P2A-MW101I | 114-P2A-MW101I-39.0-39.5<br>39 - 39.5<br>02/03/16<br>114-P2A-MW101I |
|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-PZ2-S2-25.0-27.0<br>25 - 27<br>10/13/16<br>114-P1C-PZ2-S2 | 114-P1C-PZ2-S2-31.0-33.0<br>31 - 33<br>10/13/16<br>114-P1C-PZ2-S2 | 114-P1C-PZ-25-27<br>25 - 27<br>03/31/14<br>114-P1C-PZ1 | 114-P1C-PZ-30-32<br>30 - 32<br>03/31/14<br>114-P1C-PZ1 | 114-P1C-PZ-34-36<br>34 - 36<br>03/31/14<br>114-P1C-PZ1 | 114-P2A-MW101I-30.0-30.5<br>30 - 30.5<br>02/03/16<br>114-P2A-MW101I | 114-P2A-MW101I-37.0-37.5<br>37 - 37.5<br>02/03/16<br>114-P2A-MW101I | 114-P2A-MW101I-39.0-39.5<br>39 - 39.5<br>02/03/16<br>114-P2A-MW101I |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-PZ2-S2-25.0-27.0<br>25 - 27<br>10/13/16<br>114-P1C-PZ2-S2 | 114-P1C-PZ2-S2-31.0-33.0<br>31 - 33<br>10/13/16<br>114-P1C-PZ2-S2 | 114-P1C-PZ-25-27<br>25 - 27<br>03/31/14<br>114-P1C-PZ1 | 114-P1C-PZ-30-32<br>30 - 32<br>03/31/14<br>114-P1C-PZ1 | 114-P1C-PZ-34-36<br>34 - 36<br>03/31/14<br>114-P1C-PZ1 | 114-P2A-MW101I-30.0-30.5<br>30 - 30.5<br>02/03/16<br>114-P2A-MW101I | 114-P2A-MW101I-37.0-37.5<br>37 - 37.5<br>02/03/16<br>114-P2A-MW101I | 114-P2A-MW101I-39.0-39.5<br>39 - 39.5<br>02/03/16<br>114-P2A-MW101I |
|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | NA | NA | 6,860 J | 4,930 J | 6,160 J |
| Antimony | 7440-36-0 | mg/kg | NA | NA | NA | NA | NA | 2.4 U | 2.4 U | 2.5 U |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | NA | NA | NA | 3.3 | 3 | 3.2 |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | NA | NA | 48.7 | 48.7 | 57.7 |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | NA | NA | 0.55 | 0.38 | 0.44 |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | NA | NA | 0.11 J | 0.085 J | 0.075 J |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | NA | NA | 13,800 | 12,200 | 15,100 |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | 33.2 | 55.7 | 67.1 | 32.9 | 25.8 | 177 | 9.4 | 11.4 |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 1.9 J | 3.4 J | 18.2 | 2 | 9.3 | 1.5 | 0.49 U | 0.51 U |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | NA | NA | 5.5 J | 3.9 J | 4.8 J |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | NA | NA | 10.6 | 7.9 | 9 |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | NA | NA | 12,500 | 9,400 | 11,200 |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | NA | NA | 9.6 | 6.9 | 7.3 |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | NA | NA | 4,520 | 3,320 | 4,110 |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | NA | NA | 345 | 268 | 331 |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | NA | NA | 0.035 UB | 0.017 JB | 0.035 UB |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | NA | NA | 12 | 7.8 | 9.8 |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | NA | NA | 2,040 | 1,360 | 1,750 |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | NA | NA | 2.4 U | 2.4 U | 2.5 U |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | NA | NA | 0.43 J | 0.42 J | 0.39 J |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | NA | NA | 356 J | 165 J | 194 J |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-PZ2-S2-25.0-27.0<br>25 - 27<br>10/13/16<br>114-P1C-PZ2-S2 | 114-P1C-PZ2-S2-31.0-33.0<br>31 - 33<br>10/13/16<br>114-P1C-PZ2-S2 | 114-P1C-PZ-25-27<br>25 - 27<br>03/31/14<br>114-P1C-PZ1 | 114-P1C-PZ-30-32<br>30 - 32<br>03/31/14<br>114-P1C-PZ1 | 114-P1C-PZ-34-36<br>34 - 36<br>03/31/14<br>114-P1C-PZ1 | 114-P2A-MW101I-30.0-30.5<br>30 - 30.5<br>02/03/16<br>114-P2A-MW101I | 114-P2A-MW101I-37.0-37.5<br>37 - 37.5<br>02/03/16<br>114-P2A-MW101I | 114-P2A-MW101I-39.0-39.5<br>39 - 39.5<br>02/03/16<br>114-P2A-MW101I |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | NA | NA | NA | 0.32 J | 1.2 U | 1.3 U |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | NA | NA | NA | 18.8 | 15.1 | 18 |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | NA | NA | 38.7 | 26.3 | 27.8 |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P1C-PZ2-S2-25.0-27.0<br>25 - 27<br>10/13/16<br>114-P1C-PZ2-S2 | 114-P1C-PZ2-S2-31.0-33.0<br>31 - 33<br>10/13/16<br>114-P1C-PZ2-S2 | 114-P1C-PZ-25-27<br>25 - 27<br>03/31/14<br>114-P1C-PZ1 | 114-P1C-PZ-30-32<br>30 - 32<br>03/31/14<br>114-P1C-PZ1 | 114-P1C-PZ-34-36<br>34 - 36<br>03/31/14<br>114-P1C-PZ1 | 114-P2A-MW101I-30.0-30.5<br>30 - 30.5<br>02/03/16<br>114-P2A-MW101I | 114-P2A-MW101I-37.0-37.5<br>37 - 37.5<br>02/03/16<br>114-P2A-MW101I | 114-P2A-MW101I-39.0-39.5<br>39 - 39.5<br>02/03/16<br>114-P2A-MW101I |
|---|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | 1,800 | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 563 | 566 | 342 | 345 | 359 | 311 | 332 | 316 |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 827,000 | 795,000 | 833,000 | 812,000 | 821,000 | 782,000 | 810,000 | 790,000 |
| pH | ARC-pH | SU | 9.33 | 9.06 | 8.18 | 8.14 | 8.21 | 8.96 | 8.50 | 8.61 |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | 0 U | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | 73.1 | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114-P2A-MW102I-30.0-30.5 | 114-P2A-MW102I-35.0-35.5 | 114-P2A-MW102I-37.0-37.5 | 114-P2A-MW103I-30.0-30.5 | 114-P2A-MW103I-35.0-35.5 | 114-P2A-MW103I-40.0-40.5 | 114-P2A-MW104I-33.0-33.5 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 30 - 30.5 | 35 - 35.5 | 37 - 37.5 | 30 - 30.5 | 35 - 35.5 | 40 - 40.5 | 33 - 33.5 |
| Date Collected: | | | 02/03/16 | 02/03/16 | 02/03/16 | 01/29/16 | 01/29/16 | 01/29/16 | 02/04/16 |
| Location ID: | CAS Number | Units | 114-P2A-MW102I | 114-P2A-MW102I | 114-P2A-MW102I | 114-P2A-MW103I | 114-P2A-MW103I | 114-P2A-MW103I | 114-P2A-MW104I |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW102I-30.0-30.5<br>30 - 30.5<br>02/03/16<br>114-P2A-MW102I | 114-P2A-MW102I-35.0-35.5<br>35 - 35.5<br>02/03/16<br>114-P2A-MW102I | 114-P2A-MW102I-37.0-37.5<br>37 - 37.5<br>02/03/16<br>114-P2A-MW102I | 114-P2A-MW103I-30.0-30.5<br>30 - 30.5<br>01/29/16<br>114-P2A-MW103I | 114-P2A-MW103I-35.0-35.5<br>35 - 35.5<br>01/29/16<br>114-P2A-MW103I | 114-P2A-MW103I-40.0-40.5<br>40 - 40.5<br>01/29/16<br>114-P2A-MW103I | 114-P2A-MW104I-33.0-33.5<br>33 - 33.5<br>02/04/16<br>114-P2A-MW104I |
|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW102I-30.0-30.5<br>30 - 30.5<br>02/03/16<br>114-P2A-MW102I | 114-P2A-MW102I-35.0-35.5<br>35 - 35.5<br>02/03/16<br>114-P2A-MW102I | 114-P2A-MW102I-37.0-37.5<br>37 - 37.5<br>02/03/16<br>114-P2A-MW102I | 114-P2A-MW103I-30.0-30.5<br>30 - 30.5<br>01/29/16<br>114-P2A-MW103I | 114-P2A-MW103I-35.0-35.5<br>35 - 35.5<br>01/29/16<br>114-P2A-MW103I | 114-P2A-MW103I-40.0-40.5<br>40 - 40.5<br>01/29/16<br>114-P2A-MW103I | 114-P2A-MW104I-33.0-33.5<br>33 - 33.5<br>02/04/16<br>114-P2A-MW104I |
|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | 4,130 J | 3,420 J | 5,570 J | 6,690 J | 5,150 J | 5,400 J [4,850 J] | 7,660 J |
| Antimony | 7440-36-0 | mg/kg | 2.4 U | 2.4 U | 2.4 U | 2.6 U | 2.4 U | 2.5 U [2.4 U] | 2.4 U |
| Arsenic | 7440-38-2 | mg/kg | 3.8 | 4 | 3.8 | 2.9 | 2.7 | 2.7 [2.8] | 2.7 |
| Barium | 7440-39-3 | mg/kg | 30.3 | 40.6 | 63.8 | 46.2 | 39.6 | 39.5 [36.4] | 72.2 |
| Beryllium | 7440-41-7 | mg/kg | 0.45 | 0.31 | 0.43 | 0.51 | 0.42 | 0.44 [0.44] | 0.47 |
| Cadmium | 7440-43-9 | mg/kg | 0.12 J | 0.072 J | 0.12 J | 0.64 U | 0.11 J | 0.086 J [0.094 J] | 0.61 U |
| Calcium | 7440-70-2 | mg/kg | 1,710 | 1,530 | 11,400 | 14,300 | 13,600 | 13,300 [12,500] | 7,120 |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | 12.4 | 7.8 | 10.6 | 12.8 | 9.9 | 11 [10.2] | 12.8 |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 0.5 U | 0.49 U | 0.5 U | 0.52 U | 0.49 U | 0.51 U [0.5 U] | 0.5 U |
| Cobalt | 7440-48-4 | mg/kg | 3.9 J | 2.7 J | 4.2 J | 4.9 J | 4 J | 4.1 J [3.8 J] | 5.9 J |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | 7.4 | 6.7 | 8.6 | 8.8 | 8.4 | 7.6 [7.3] | 9.7 |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | 7,260 | 6,640 | 9,780 | 11,400 | 9,220 | 9,700 [9,080] | 13,000 |
| Lead | 7439-92-1 | mg/kg | 10 | 8.2 | 9.2 | 8.4 | 9.5 | 8.8 [8.9] | 7.2 |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | 2,680 | 1,740 | 3,370 | 4,310 | 3,520 | 3,750 [3,510] | 4,060 |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | 182 | 187 | 306 | 307 | 285 | 303 [289] | 304 |
| Mercury | 7439-97-6 | mg/kg | 0.041 UB | 0.039 UB | 0.034 UB | 0.031 UB | 0.016 JB | 0.026 JB [0.022 JB] | 0.014 JB |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | 7.2 | 5.1 | 8.5 | 10.8 | 7.9 | 8.5 [7.9] | 12.5 |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | 1,130 J | 835 J | 1,550 | 1,920 | 1,440 | 1,610 [1,420] | 1,880 |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | 2.4 U | 2.4 U | 2.4 U | 2.6 U | 2.4 U | 2.5 U [2.4 U] | 2.4 U |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | 0.34 J | 0.6 U | 0.35 J | 0.42 J | 0.5 J | 0.39 J [0.37 J] | 0.63 |
| Sodium | 7440-23-5 | mg/kg | 197 J | 196 J | 186 J | 213 J | 188 J | 183 J [160 J] | 276 J |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW102I-30.0-30.5<br>30 - 30.5<br>02/03/16<br>114-P2A-MW102I | 114-P2A-MW102I-35.0-35.5<br>35 - 35.5<br>02/03/16<br>114-P2A-MW102I | 114-P2A-MW102I-37.0-37.5<br>37 - 37.5<br>02/03/16<br>114-P2A-MW102I | 114-P2A-MW103I-30.0-30.5<br>30 - 30.5<br>01/29/16<br>114-P2A-MW103I | 114-P2A-MW103I-35.0-35.5<br>35 - 35.5<br>01/29/16<br>114-P2A-MW103I | 114-P2A-MW103I-40.0-40.5<br>40 - 40.5<br>01/29/16<br>114-P2A-MW103I | 114-P2A-MW104I-33.0-33.5<br>33 - 33.5<br>02/04/16<br>114-P2A-MW104I |
|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | 1.2 U | 1.2 U | 1.2 U | 1.3 U | 1.2 U | 1.2 U [1.2 U] | 1.2 U |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | 19.6 | 12.7 | 16.1 | 18.3 | 15 | 16.5 [15.5] | 16.9 |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | 43.1 | 35.6 | 33 | 29.3 | 32.5 | 31.2 [31.2] | 33.5 |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW102I-30.0-30.5<br>30 - 30.5<br>02/03/16<br>114-P2A-MW102I | 114-P2A-MW102I-35.0-35.5<br>35 - 35.5<br>02/03/16<br>114-P2A-MW102I | 114-P2A-MW102I-37.0-37.5<br>37 - 37.5<br>02/03/16<br>114-P2A-MW102I | 114-P2A-MW103I-30.0-30.5<br>30 - 30.5<br>01/29/16<br>114-P2A-MW103I | 114-P2A-MW103I-35.0-35.5<br>35 - 35.5<br>01/29/16<br>114-P2A-MW103I | 114-P2A-MW103I-40.0-40.5<br>40 - 40.5<br>01/29/16<br>114-P2A-MW103I | 114-P2A-MW104I-33.0-33.5<br>33 - 33.5<br>02/04/16<br>114-P2A-MW104I |
|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 299 | 312 | 315 | 329 | 330 | 350 [334] | 322 |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 807,000 | 812,000 | 798,000 | 768,000 | 817,000 | 779,000 [807,000] | 807,000 |
| pH | ARC-pH | SU | 7.85 | 8.19 | 8.12 | 8.31 | 8.28 | 8.32 [8.37] | 8.55 |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114-P2A-MW104I-38.0-38.5 | 114-P2B1-MW101I-14.0-14.5 | 114-P2B1-MW101I-32.0-32.5 | 114-P2B1-MW101I-36.0-37.0 | 114-P2B2-MW101I-27.0-27.5 | 114-P2B2-MW101I-31.0-31.5 | 114-P2B2-MW101I-33.0-33.5 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 38 - 38.5 | 14 - 14.5 | 32 - 32.5 | 36 - 37 | 27 - 27.5 | 31 - 31.5 | 33 - 33.5 |
| Date Collected: | | | 02/04/16 | 10/15/14 | 10/15/14 | 10/15/14 | 02/26/15 | 02/26/15 | 02/26/15 |
| Location ID: | CAS Number | Units | 114-P2A-MW104I | 114-P2B1-MW101I | 114-P2B1-MW101I | 114-P2B1-MW101I | 114-P2B2-MW101I | 114-P2B2-MW101I | 114-P2B2-MW101I |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW104I-38.0-38.5<br>38 - 38.5<br>02/04/16<br>114-P2A-MW104I | 114-P2B1-MW101I-14.0-14.5<br>14 - 14.5<br>10/15/14<br>114-P2B1-MW101I | 114-P2B1-MW101I-32.0-32.5<br>32 - 32.5<br>10/15/14<br>114-P2B1-MW101I | 114-P2B1-MW101I-36.0-37.0<br>36 - 37<br>10/15/14<br>114-P2B1-MW101I | 114-P2B2-MW101I-27.0-27.5<br>27 - 27.5<br>02/26/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-31.0-31.5<br>31 - 31.5<br>02/26/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-33.0-33.5<br>33 - 33.5<br>02/26/15<br>114-P2B2-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW104I-38.0-38.5<br>38 - 38.5<br>02/04/16<br>114-P2A-MW104I | 114-P2B1-MW101I-14.0-14.5<br>14 - 14.5<br>10/15/14<br>114-P2B1-MW101I | 114-P2B1-MW101I-32.0-32.5<br>32 - 32.5<br>10/15/14<br>114-P2B1-MW101I | 114-P2B1-MW101I-36.0-37.0<br>36 - 37<br>10/15/14<br>114-P2B1-MW101I | 114-P2B2-MW101I-27.0-27.5<br>27 - 27.5<br>02/26/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-31.0-31.5<br>31 - 31.5<br>02/26/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-33.0-33.5<br>33 - 33.5<br>02/26/15<br>114-P2B2-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | 12,100 J | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | mg/kg | 2.5 U | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | mg/kg | 4.6 | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | mg/kg | 72.6 | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | mg/kg | 0.86 | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | mg/kg | 0.11 J | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | mg/kg | 19,500 | NA | NA | NA | NA | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | 21.2 | 58.6 | 443 | 66.5 | 153 | 18.3 | 25.4 |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 0.5 U | 1.6 | 377 | 35.6 | 8.7 | 6.2 | 3.3 |
| Cobalt | 7440-48-4 | mg/kg | 8.9 | NA | NA | NA | NA | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | 15 | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | 19,800 | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | mg/kg | 12.5 | NA | NA | NA | NA | NA | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | 7,400 | NA | NA | NA | NA | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | 496 | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | mg/kg | 0.025 JB | NA | NA | NA | NA | NA | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | 19.2 | NA | NA | NA | NA | NA | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | 3,520 | NA | NA | NA | NA | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | 2.5 U | NA | NA | NA | NA | NA | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | 0.41 J | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | mg/kg | 512 J | NA | NA | NA | NA | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW104I-38.0-38.5<br>38 - 38.5<br>02/04/16<br>114-P2A-MW104I | 114-P2B1-MW101I-14.0-14.5<br>14 - 14.5<br>10/15/14<br>114-P2B1-MW101I | 114-P2B1-MW101I-32.0-32.5<br>32 - 32.5<br>10/15/14<br>114-P2B1-MW101I | 114-P2B1-MW101I-36.0-37.0<br>36 - 37<br>10/15/14<br>114-P2B1-MW101I | 114-P2B2-MW101I-27.0-27.5<br>27 - 27.5<br>02/26/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-31.0-31.5<br>31 - 31.5<br>02/26/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-33.0-33.5<br>33 - 33.5<br>02/26/15<br>114-P2B2-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | 0.36 J | NA | NA | NA | NA | NA | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | 29.5 | NA | NA | NA | NA | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | 52.4 | NA | NA | NA | NA | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2A-MW104I-38.0-38.5<br>38 - 38.5<br>02/04/16<br>114-P2A-MW104I | 114-P2B1-MW101I-14.0-14.5<br>14 - 14.5<br>10/15/14<br>114-P2B1-MW101I | 114-P2B1-MW101I-32.0-32.5<br>32 - 32.5<br>10/15/14<br>114-P2B1-MW101I | 114-P2B1-MW101I-36.0-37.0<br>36 - 37<br>10/15/14<br>114-P2B1-MW101I | 114-P2B2-MW101I-27.0-27.5<br>27 - 27.5<br>02/26/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-31.0-31.5<br>31 - 31.5<br>02/26/15<br>114-P2B2-MW101I | 114-P2B2-MW101I-33.0-33.5<br>33 - 33.5<br>02/26/15<br>114-P2B2-MW101I |
|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 333 | 261 | 260 | 261 | 260 | 259 | 258 |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 802,000 | 854,000 | 794,000 | 772,000 | 848,000 | 818,000 | 810,000 |
| pH | ARC-pH | SU | 8.50 | 9.02 | 9.14 | 9.23 | 8.87 | 8.82 | 8.93 |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B3-MW101I-25.0-25.5<br>25 - 25.5<br>03/03/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-30.5-31.0<br>30.5 - 31<br>03/03/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-33.5-34.0<br>33.5 - 34<br>03/03/15<br>114-P2B3-MW101I | 114-P2B4-MW101I-39.0-39.5<br>39 - 39.5<br>03/02/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-41.5-42.0<br>41.5 - 42<br>03/02/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-47.5-48.0<br>47.5 - 48<br>03/02/15<br>114-P2B4-MW101I | 114-P2B4-MW102I-24.5-25.0<br>24.5 - 25<br>02/06/15<br>114-P2B4-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B3-MW101I-25.0-25.5<br>25 - 25.5<br>03/03/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-30.5-31.0<br>30.5 - 31<br>03/03/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-33.5-34.0<br>33.5 - 34<br>03/03/15<br>114-P2B3-MW101I | 114-P2B4-MW101I-39.0-39.5<br>39 - 39.5<br>03/02/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-41.5-42.0<br>41.5 - 42<br>03/02/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-47.5-48.0<br>47.5 - 48<br>03/02/15<br>114-P2B4-MW101I | 114-P2B4-MW102I-24.5-25.0<br>24.5 - 25<br>02/06/15<br>114-P2B4-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B3-MW101I-25.0-25.5<br>25 - 25.5<br>03/03/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-30.5-31.0<br>30.5 - 31<br>03/03/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-33.5-34.0<br>33.5 - 34<br>03/03/15<br>114-P2B3-MW101I | 114-P2B4-MW101I-39.0-39.5<br>39 - 39.5<br>03/02/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-41.5-42.0<br>41.5 - 42<br>03/02/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-47.5-48.0<br>47.5 - 48<br>03/02/15<br>114-P2B4-MW101I | 114-P2B4-MW102I-24.5-25.0<br>24.5 - 25<br>02/06/15<br>114-P2B4-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | 277 | 933 | 1,360 | 6.9 | 210 | 389 | 16.5 |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 15.8 | 147 | 165 | 0.2 J | 78.1 | 287 | 0.46 U |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B3-MW101I-25.0-25.5<br>25 - 25.5<br>03/03/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-30.5-31.0<br>30.5 - 31<br>03/03/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-33.5-34.0<br>33.5 - 34<br>03/03/15<br>114-P2B3-MW101I | 114-P2B4-MW101I-39.0-39.5<br>39 - 39.5<br>03/02/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-41.5-42.0<br>41.5 - 42<br>03/02/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-47.5-48.0<br>47.5 - 48<br>03/02/15<br>114-P2B4-MW101I | 114-P2B4-MW102I-24.5-25.0<br>24.5 - 25<br>02/06/15<br>114-P2B4-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B3-MW101I-25.0-25.5<br>25 - 25.5<br>03/03/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-30.5-31.0<br>30.5 - 31<br>03/03/15<br>114-P2B3-MW101I | 114-P2B3-MW101I-33.5-34.0<br>33.5 - 34<br>03/03/15<br>114-P2B3-MW101I | 114-P2B4-MW101I-39.0-39.5<br>39 - 39.5<br>03/02/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-41.5-42.0<br>41.5 - 42<br>03/02/15<br>114-P2B4-MW101I | 114-P2B4-MW101I-47.5-48.0<br>47.5 - 48<br>03/02/15<br>114-P2B4-MW101I | 114-P2B4-MW102I-24.5-25.0<br>24.5 - 25<br>02/06/15<br>114-P2B4-MW102I |
|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 249 | 257 | 262 | 252 | 260 | 269 | 240 |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 830,000 | 804,000 | 822,000 | 810,000 | 808,000 | 815,000 | 863,000 |
| pH | ARC-pH | SU | 9.86 | 9.20 | 9.26 | 8.95 | 9.01 | 8.59 | 8.14 |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114-P2B4-MW102I-30.0-30.5 | 114-P2B4-MW102I-32.0-32.5 | 114-P2B4-MW103I-22.0-22.5 | 114-P2B4-MW103I-26.5-27.0 | 114-P2B4-MW103I-30.0-30.5 | 114-P22F-21.5-22.0 | 114-PZ-1F-22-22.5 | 114-PZ-1G-23.5-24 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 30 - 30.5 | 32 - 32.5 | 22 - 22.5 | 26.5 - 27 | 30 - 30.5 | 21.5 - 22 | 22 - 22.5 | 23.5 - 24 |
| Date Collected: | | | 02/06/15 | 02/06/15 | 02/11/15 | 02/11/15 | 02/11/15 | 10/11/05 | 10/20/05 | 10/20/05 |
| Location ID: | CAS Number | Units | 114-P2B4-MW102I | 114-P2B4-MW102I | 114-P2B4-MW103I | 114-P2B4-MW103I | 114-P2B4-MW103I | PZ2 | PZ1 | PZ1 |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW102I-30.0-30.5<br>30 - 30.5<br>02/06/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-32.0-32.5<br>32 - 32.5<br>02/06/15<br>114-P2B4-MW102I | 114-P2B4-MW103I-22.0-22.5<br>22 - 22.5<br>02/11/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-26.5-27.0<br>26.5 - 27<br>02/11/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-30.0-30.5<br>30 - 30.5<br>02/11/15<br>114-P2B4-MW103I | 114-P22F-21.5-22.0<br>21.5 - 22<br>10/11/05<br>PZ2 | 114-PZ-1F-22-22.5<br>22 - 22.5<br>10/20/05<br>PZ1 | 114-PZ-1G-23.5-24<br>23.5 - 24<br>10/20/05<br>PZ1 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW102I-30.0-30.5<br>30 - 30.5<br>02/06/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-32.0-32.5<br>32 - 32.5<br>02/06/15<br>114-P2B4-MW102I | 114-P2B4-MW103I-22.0-22.5<br>22 - 22.5<br>02/11/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-26.5-27.0<br>26.5 - 27<br>02/11/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-30.0-30.5<br>30 - 30.5<br>02/11/15<br>114-P2B4-MW103I | 114-P22F-21.5-22.0<br>21.5 - 22<br>10/11/05<br>PZ2 | 114-PZ-1F-22-22.5<br>22 - 22.5<br>10/20/05<br>PZ1 | 114-PZ-1G-23.5-24<br>23.5 - 24<br>10/20/05<br>PZ1 |
|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | mg/kg | NA | NA | NA | NA | NA | 1.5 UJ | 2 UJ | NA |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | NA | NA | NA | 0.99 U | NA |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | 11.4 | 7.4 | 33.6 | 11.3 | 35.9 | NA | NA | NA |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 0.46 U | 0.25 J | 0.54 | 0.2 J | 0.8 | NA | 24.1 J | 7.37 U |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | NA | NA | NA | 62.2 | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW102I-30.0-30.5<br>30 - 30.5<br>02/06/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-32.0-32.5<br>32 - 32.5<br>02/06/15<br>114-P2B4-MW102I | 114-P2B4-MW103I-22.0-22.5<br>22 - 22.5<br>02/11/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-26.5-27.0<br>26.5 - 27<br>02/11/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-30.0-30.5<br>30 - 30.5<br>02/11/15<br>114-P2B4-MW103I | 114-P22F-21.5-22.0<br>21.5 - 22<br>10/11/05<br>PZ2 | 114-PZ-1F-22-22.5<br>22 - 22.5<br>10/20/05<br>PZ1 | 114-PZ-1G-23.5-24<br>23.5 - 24<br>10/20/05<br>PZ1 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | NA | NA | NA | NA | 2 U | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-P2B4-MW102I-30.0-30.5<br>30 - 30.5<br>02/06/15<br>114-P2B4-MW102I | 114-P2B4-MW102I-32.0-32.5<br>32 - 32.5<br>02/06/15<br>114-P2B4-MW102I | 114-P2B4-MW103I-22.0-22.5<br>22 - 22.5<br>02/11/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-26.5-27.0<br>26.5 - 27<br>02/11/15<br>114-P2B4-MW103I | 114-P2B4-MW103I-30.0-30.5<br>30 - 30.5<br>02/11/15<br>114-P2B4-MW103I | 114-P22F-21.5-22.0<br>21.5 - 22<br>10/11/05<br>PZ2 | 114-PZ-1F-22-22.5<br>22 - 22.5<br>10/20/05<br>PZ1 | 114-PZ-1G-23.5-24<br>23.5 - 24<br>10/20/05<br>PZ1 |
|---|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 252 | 254 | 254 | 268 | 271 | NA | NA | NA |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 870,000 | 823,000 | 834,000 | 842,000 | 795,000 | 675,000 | 491,000 | 543,000 |
| pH | ARC-pH | SU | 8.30 | 8.67 | 7.65 | 8.05 | 8.11 | NA | NA | NA |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114-PZ2E-20-20.5 | 114-PZ2F-21.5-22.0 | 114-PZ3E-20-20.5 | 114-PZ-14G-21.5-22 | 114-WS-B8B-18.0-18.5 | 114-WS-B8B-19.0-19.5 | 114-WS-B8B-19.5-20.0 | 114-X3G-20-20.5 | 114-X3H-22.5-23 | 114-X11H-21.9-22.4 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 20 - 20.5 | 21.5 - 22 | 20 - 20.5 | 21.5 - 22 | 20.3 - 20.8 | 21.3 - 21.8 | 21.8 - 22.3 | 20 - 20.5 | 22.5 - 23 | 21.9 - 22.4 |
| Date Collected: | | | 10/11/05 | 10/11/05 | 10/11/05 | 10/19/05 | 01/07/14 | 01/07/14 | 01/07/14 | 10/05/05 | 10/05/05 | 10/05/05 |
| Location ID: | CAS Number | Units | PZ2 | PZ2 | PZ3 | PZ14 | 114-WS-B8B | 114-WS-B8B | 114-WS-B8B | X3 | X3 | X11 |
| **Volatile Organics** | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-PZ2E-20-20.5<br>20 - 20.5<br>10/11/05<br>PZ2 | 114-PZ2F-21.5-22.0<br>21.5 - 22<br>10/11/05<br>PZ2 | 114-PZ3E-20-20.5<br>20 - 20.5<br>10/11/05<br>PZ3 | 114-PZ-14G-21.5-22<br>21.5 - 22<br>10/19/05<br>PZ14 | 114-WS-B8B-18.0-18.5<br>20.3 - 20.8<br>01/07/14<br>114-WS-B8B | 114-WS-B8B-19.0-19.5<br>21.3 - 21.8<br>01/07/14<br>114-WS-B8B | 114-WS-B8B-19.5-20.0<br>21.8 - 22.3<br>01/07/14<br>114-WS-B8B | 114-X3G-20-20.5<br>20 - 20.5<br>10/05/05<br>X3 | 114-X3H-22.5-23<br>22.5 - 23<br>10/05/05<br>X3 | 114-X11H-21.9-22.4<br>21.9 - 22.4<br>10/05/05<br>X11 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-PZ2E-20-20.5<br>20 - 20.5<br>10/11/05<br>PZ2 | 114-PZ2F-21.5-22.0<br>21.5 - 22<br>10/11/05<br>PZ2 | 114-PZ3E-20-20.5<br>20 - 20.5<br>10/11/05<br>PZ3 | 114-PZ-14G-21.5-22<br>21.5 - 22<br>10/19/05<br>PZ14 | 114-WS-B8B-18.0-18.5<br>20.3 - 20.8<br>01/07/14<br>114-WS-B8B | 114-WS-B8B-19.0-19.5<br>21.3 - 21.8<br>01/07/14<br>114-WS-B8B | 114-WS-B8B-19.5-20.0<br>21.8 - 22.3<br>01/07/14<br>114-WS-B8B | 114-X3G-20-20.5<br>20 - 20.5<br>10/05/05<br>X3 | 114-X3H-22.5-23<br>22.5 - 23<br>10/05/05<br>X3 | 114-X11H-21.9-22.4<br>21.9 - 22.4<br>10/05/05<br>X11 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | 19,100 | NA | 10,900 | 29,900 | NA | NA | NA | NA | NA | 5,680 * |
| Antimony | 7440-36-0 | mg/kg | 28 | NA | 0.88 U | 29.5 | NA | NA | NA | 1.7 UJ | NA | 7.4 * |
| Arsenic | 7440-38-2 | mg/kg | 8.4 | NA | 5.9 | 25.8 | NA | NA | NA | NA | NA | 9.7 N* |
| Barium | 7440-39-3 | mg/kg | 55.3 | NA | 137 | 340 U | NA | NA | NA | NA | NA | 31.6 |
| Beryllium | 7440-41-7 | mg/kg | 0.05 U | NA | 0.03 U | 8.4 U | NA | NA | NA | NA | NA | 0.09 U |
| Cadmium | 7440-43-9 | mg/kg | 0.94 | NA | 0.64 | 8.4 U | NA | NA | NA | NA | NA | 0.4 B |
| Calcium | 7440-70-2 | mg/kg | 7,040 J | NA | 1,480 J | 115,000 | NA | NA | NA | NA | NA | 1,380 |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | 895 J | NA | 50.1 J | 40,300 | NA | NA | NA | NA | NA | 253 * |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 7.26 UJ | 6.42 UJ | 4.63 UJ | 17,500 J | 98.5 | 99.9 | 73.3 | 1.7 UJ | 1.3 UJ | 38.2 |
| Cobalt | 7440-48-4 | mg/kg | 15.5 | NA | 10.1 | 86 | NA | NA | NA | NA | NA | 8.6 * |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | 16.1 J | NA | 17.3 J | 42 U | NA | NA | NA | NA | NA | 22.8 * |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | 37,000 | NA | 19,400 | 38,000 | NA | NA | NA | NA | NA | 16,500 * |
| Lead | 7439-92-1 | mg/kg | 294 J | NA | 13.3 J | 38.7 | NA | NA | NA | NA | NA | 18.1 |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | 8,670 | NA | 3,810 | 42,900 | NA | NA | NA | NA | NA | 3,590 * |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | 416 | NA | 106 | 549 | NA | NA | NA | NA | NA | 94.5 N* |
| Mercury | 7439-97-6 | mg/kg | 0.2 | NA | 0.02 | 0.02 | NA | NA | NA | NA | NA | 0.009 B |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | 39.9 J | NA | 18.8 J | 405 | NA | NA | NA | 26.5 | NA | 15 |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | 4,470 | NA | 2,150 | 8,400 U | NA | NA | NA | NA | NA | 1,550 |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | 1.1 | NA | 0.43 U | 17 U | NA | NA | NA | NA | NA | 0.42 U |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | 0.75 B | NA | 0.33 B | 17 U | NA | NA | NA | NA | NA | 0.18 B |
| Sodium | 7440-23-5 | mg/kg | 12,800 | NA | 913 | 16,100 | NA | NA | NA | NA | NA | 486 |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-PZ2E-20-20.5<br>20 - 20.5<br>10/11/05<br>PZ2 | 114-PZ2F-21.5-22.0<br>21.5 - 22<br>10/11/05<br>PZ2 | 114-PZ3E-20-20.5<br>20 - 20.5<br>10/11/05<br>PZ3 | 114-PZ-14G-21.5-22<br>21.5 - 22<br>10/19/05<br>PZ14 | 114-WS-B8B-18.0-18.5<br>20.3 - 20.8<br>01/07/14<br>114-WS-B8B | 114-WS-B8B-19.0-19.5<br>21.3 - 21.8<br>01/07/14<br>114-WS-B8B | 114-WS-B8B-19.5-20.0<br>21.8 - 22.3<br>01/07/14<br>114-WS-B8B | 114-X3G-20-20.5<br>20 - 20.5<br>10/05/05<br>X3 | 114-X3H-22.5-23<br>22.5 - 23<br>10/05/05<br>X3 | 114-X11H-21.9-22.4<br>21.9 - 22.4<br>10/05/05<br>X11 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | 0.59 U | NA | 0.35 U | 17 U | NA | NA | NA | 1.7 U | NA | 0.35 U |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | 38.7 | NA | 26.9 | 1,180 | NA | NA | NA | NA | NA | 23.6 |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | 97.3 J | NA | 68.2 J | 261 | NA | NA | NA | NA | NA | 76.8 * |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-PZ2E-20-20.5<br>20 - 20.5<br>10/11/05<br>PZ2 | 114-PZ2F-21.5-22.0<br>21.5 - 22<br>10/11/05<br>PZ2 | 114-PZ3E-20-20.5<br>20 - 20.5<br>10/11/05<br>PZ3 | 114-PZ-14G-21.5-22<br>21.5 - 22<br>10/19/05<br>PZ14 | 114-WS-B8B-18.0-18.5<br>20.3 - 20.8<br>01/07/14<br>114-WS-B8B | 114-WS-B8B-19.0-19.5<br>21.3 - 21.8<br>01/07/14<br>114-WS-B8B | 114-WS-B8B-19.5-20.0<br>21.8 - 22.3<br>01/07/14<br>114-WS-B8B | 114-X3G-20-20.5<br>20 - 20.5<br>10/05/05<br>X3 | 114-X3H-22.5-23<br>22.5 - 23<br>10/05/05<br>X3 | 114-X11H-21.9-22.4<br>21.9 - 22.4<br>10/05/05<br>X11 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | 256 | 305 | 233 | NA | 304 | NA |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | NA | 623,000 | 863,000 | 595,000 | NA | NA | NA | 588,000 | NA | 870,000 |
| pH | ARC-pH | SU | NA | NA | NA | NA | 8.24 | 6.28 | 8.85 | NA | 7.47 | NA |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | 11,900 | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | CAS Number | Units | 114-X12G-20-20.5 | 114-X12H-21.6-22.1 | 114-X14G-21.8-22.3 | 114-X17E-22-22.5 | 114-X18G 20-20.5 | 114-X18H 24-24.5 | 114-X18I 25.5-26 | 114-X18J-28-28.5 | 114-X19F-21.1-21.6 | 114-X22G-20-20.5 | 114-X26G-20.0-20.5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 20 - 20.5 | 21.6 - 22.1 | 21.8 - 22.3 | 22 - 22.5 | 20 - 20.5 | 24 - 24.5 | 25.5 - 26 | 28 - 28.5 | 21.1 - 21.6 | 20 - 20.5 | 20 - 20.5 |
| Date Collected: | | | 10/06/05 | 10/06/05 | 10/06/05 | 10/20/05 | 10/06/05 | 10/06/05 | 10/06/05 | 10/21/05 | 10/05/05 | 10/07/05 | 10/10/05 |
| Location ID: | | | X12 | X12 | X14 | X17 | X18 | X18 | X18 | X18 | X19 | X22 | X26 |
| **Volatile Organics** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | 114-X12G-20-20.5<br>20 - 20.5<br>10/06/05<br>X12 | 114-X12H-21.6-22.1<br>21.6 - 22.1<br>10/06/05<br>X12 | 114-X14G-21.8-22.3<br>21.8 - 22.3<br>10/06/05<br>X14 | 114-X17E-22-22.5<br>22 - 22.5<br>10/20/05<br>X17 | 114-X18G 20-20.5<br>20 - 20.5<br>10/06/05<br>X18 | 114-X18H 24-24.5<br>24 - 24.5<br>10/06/05<br>X18 | 114-X18I 25.5-26<br>25.5 - 26<br>10/06/05<br>X18 | 114-X18J-28-28.5<br>28 - 28.5<br>10/21/05<br>X18 | 114-X19F-21.1-21.6<br>21.1 - 21.6<br>10/05/05<br>X19 | 114-X22G-20-20.5<br>20 - 20.5<br>10/07/05<br>X22 | 114-X26G-20.0-20.5<br>20 - 20.5<br>10/10/05<br>X26 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-X12G-20-20.5<br>20 - 20.5<br>10/06/05<br>X12 | 114-X12H-21.6-22.1<br>21.6 - 22.1<br>10/06/05<br>X12 | 114-X14G-21.8-22.3<br>21.8 - 22.3<br>10/06/05<br>X14 | 114-X17E-22-22.5<br>22 - 22.5<br>10/20/05<br>X17 | 114-X18G 20-20.5<br>20 - 20.5<br>10/06/05<br>X18 | 114-X18H 24-24.5<br>24 - 24.5<br>10/06/05<br>X18 | 114-X18I 25.5-26<br>25.5 - 26<br>10/06/05<br>X18 | 114-X18J-28-28.5<br>28 - 28.5<br>10/21/05<br>X18 | 114-X19F-21.1-21.6<br>21.1 - 21.6<br>10/05/05<br>X19 | 114-X22G-20-20.5<br>20 - 20.5<br>10/07/05<br>X22 | 114-X26G-20.0-20.5<br>20 - 20.5<br>10/10/05<br>X26 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | NA | 27,500 J | 11,300 J | NA | 7,960 | 10,500 | NA | 14,600 |
| Antimony | 7440-36-0 | mg/kg | 3.6 J | NA | 1.1 UJ | NA | 41.9 J | 1.3 J | NA | 1.2 UJ | 0.91 U | 1.2 UJ | 2.5 U |
| Arsenic | 7440-38-2 | mg/kg | 6.2 | NA | 3.2 | NA | 18 U | 5.9 | NA | 2.3 | 6.4 J | 2.1 | 6.1 |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | NA | 56.3 | 176 | NA | 54.7 | 101 | NA | 39.7 |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | NA | 0.88 U | 0.65 | NA | 0.58 U | 0.06 UJ | NA | 0.08 U |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | NA | 0.88 U | 0.6 U | NA | 0.58 U | 0.51 BJ | NA | 1.2 |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | NA | 332,000 | 4,900 | NA | 12,900 | 1,170 | NA | 4,430 J |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | 7,200 | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | 1,800 | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | NA | NA | NA | NA | 32,900 J | 3,200 J | NA | 133 | 34.2 | NA | 112 |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | 600 | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | R | NA | NA | 4.63 U | 22,000 | 160 | 114 | 15.4 J | 4.65 U | NA | R |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | NA | 107 | 9.5 | NA | 7.8 | 6.9 | NA | 9.2 |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | 100 | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | NA | 127 | 14.7 | NA | 12.7 | 16 J | NA | 8.9 J |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | 168,000 | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | 200 | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | 50,100 | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | NA | 55,600 | 15,700 | NA | 16,700 | 11,900 | NA | 17,300 |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | NA | 19.1 | 10.5 | NA | 9.3 | 14.3 J | NA | 12.9 J |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | 100 U | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | NA | 36,200 | 3,410 | NA | 4,980 | 2,780 | NA | 5,580 |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | 24,500 | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | NA | 1,020 | 86.6 | NA | 379 | 78.8 J | NA | 123 |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | NA | 0.057 UJ | 0.12 | NA | 0.005 | 0.01 | NA | 0.04 |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | 1,000 | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | NA | 540 J | 25.5 J | NA | 14.9 | 13.9 | NA | 24.6 J |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | 1,200 | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | NA | 880 U | 1,790 | NA | 1,960 | 1,760 | NA | 3,390 |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | 46,500 | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | NA | 18 U | 1.2 U | NA | 1.2 U | 0.45 U | NA | 3 |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | 603,000 | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | NA | 1.8 U | 1.2 U | NA | 1.2 U | 0.13 U | NA | 0.36 U |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | NA | 7,350 | 5,180 | NA | 580 U | 971 | NA | 10,800 |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | 30,000 | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | 200 | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-X12G-20-20.5<br>20 - 20.5<br>10/06/05<br>X12 | 114-X12H-21.6-22.1<br>21.6 - 22.1<br>10/06/05<br>X12 | 114-X14G-21.8-22.3<br>21.8 - 22.3<br>10/06/05<br>X14 | 114-X17E-22-22.5<br>22 - 22.5<br>10/20/05<br>X17 | 114-X18G 20-20.5<br>20 - 20.5<br>10/06/05<br>X18 | 114-X18H 24-24.5<br>24 - 24.5<br>10/06/05<br>X18 | 114-X18I 25.5-26<br>25.5 - 26<br>10/06/05<br>X18 | 114-X18J-28-28.5<br>28 - 28.5<br>10/21/05<br>X18 | 114-X19F-21.1-21.6<br>21.1 - 21.6<br>10/05/05<br>X19 | 114-X22G-20-20.5<br>20 - 20.5<br>10/07/05<br>X22 | 114-X26G-20.0-20.5<br>20 - 20.5<br>10/10/05<br>X26 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | 38,300 | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | 1.4 UJ | NA | 1.1 UJ | NA | 18 U | 1.2 U | NA | 1.2 U | 0.37 U | 1.2 U | 1 U |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | 9,400 | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | 64.3 | NA | 16.1 | NA | 393 J | 30.7 J | NA | 20.8 | 26.9 J | 16.2 | 42 |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | 100 U | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | NA | 215 J | 61.1 J | NA | 39.2 | 88.9 J | NA | 26.5 BJ |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | 600 | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | 200 | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114-X12G-20-20.5 | 114-X12H-21.6-22.1 | 114-X14G-21.8-22.3 | 114-X17E-22-22.5 | 114-X18G 20-20.5 | 114-X18H 24-24.5 | 114-X18I 25.5-26 | 114-X18J-28-28.5 | 114-X19F-21.1-21.6 | 114-X22G-20-20.5 | 114-X26G-20.0-20.5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 20 - 20.5 | 21.6 - 22.1 | 21.8 - 22.3 | 22 - 22.5 | 20 - 20.5 | 24 - 24.5 | 25.5 - 26 | 28 - 28.5 | 21.1 - 21.6 | 20 - 20.5 | 20 - 20.5 |
| Date Collected: | | | 10/06/05 | 10/06/05 | 10/06/05 | 10/20/05 | 10/06/05 | 10/06/05 | 10/06/05 | 10/21/05 | 10/05/05 | 10/07/05 | 10/10/05 |
| Location ID: | CAS Number | Units | X12 | X12 | X14 | X17 | X18 | X18 | X18 | X18 | X19 | X22 | X26 |
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 690,000 | 854,000 | 873,000 | 863,000 | 553,000 | 864,000 | 847,000 | 836,000 | 861,000 | 862,000 | 319,000 |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | 10,000 U | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | 10,000 | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | 10,000 U | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | 30,000 | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | 10,000 U | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | 10,000 U | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | 30,000 | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | 10,000 U | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | 10,000 U | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | 2,000 U | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | 10,000 U | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | 10,000 U | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | 10,000 U | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | 10,000 U | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | 10,000 U | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | 10,000 U | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | 10,000 U | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | 10,000 U | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | 10,000 U | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | 10,000 U | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | 50,000 | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | 10,000 U | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | 10,000 U | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | 10,000 U | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | 350,000 | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | 10,000 U | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | 10,000 U | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | 262,000 | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | 10,000 U | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | 10,000 U | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | 10,000 U | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | 10,000 U | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | 114-X26H-21.5-22.0 | 114-X27G-20-20.5 | 114-X27H-21.2-21.7 | 114-X28H 22-22.5 | 114-X30G-20-20.5 | 114-X31G-20.0-20.5 | 114-X31H-21.9-22.4 | 114-X34G-20.0-20.5 | 114-X34H-21.7-22.2 | B-103-2 | B-104-2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 21.5 - 22 | 20 - 20.5 | 21.2 - 21.7 | 22 - 22.5 | 20 - 20.5 | 20 - 20.5 | 21.9 - 22.4 | 20 - 20.5 | 21.7 - 22.2 | 20.5 - 21 | 24 - 24.5 |
| Date Collected: | | | 10/10/05 | 10/07/05 | 10/07/05 | 10/07/05 | 10/21/05 | 10/10/05 | 10/10/05 | 10/10/05 | 10/10/05 | 08/11/03 | 08/11/03 |
| Location ID: | CAS Number | Units | X26 | X27 | X27 | X28 | X30 | X31 | X31 | X34 | X34 | B103 | B104 |
| **Volatile Organics** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 11 U | 0.0054 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 11 U | 0.0054 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 11 U | 0.0054 U |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 11 U | 0.0054 U |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 11 U | 0.0054 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 11 U | 0.0054 U |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 11 U | 0.0054 U |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 22 U | 0.011 U |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 22 U | 0.011 U |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.022 U |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 230 | 0.23 |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 11 U | 0.0054 U |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 11 U | 0.0054 U |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 11 U | 0.0054 U |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 22 U | 0.011 U |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 11 U | 0.0054 U |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 11 U | 0.0054 U |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 11 U | 0.0054 U |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 11 U | 0.0054 U |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 11 U | 0.0054 U |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 11 U | 0.0054 U |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 11 U | 0.0054 U |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 11 U | 0.0054 U |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 11 U | 0.0054 U |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 190 | 0.38 |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 250 | 0.14 |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 22 U | 0.011 U |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 120 | 0.15 |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 19 | 0.0063 U |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 11 U | 0.0054 U |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 320 | 0.0063 U |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 11 U | 0.0054 U |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 11 U | 0.0054 U |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 11 U | 0.0054 U |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 11 U | 0.0054 U |
| **Semivolatile Organics** | | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-X26H-21.5-22.0<br>21.5 - 22<br>10/10/05<br>X26 | 114-X27G-20-20.5<br>20 - 20.5<br>10/07/05<br>X27 | 114-X27H-21.2-21.7<br>21.2 - 21.7<br>10/07/05<br>X27 | 114-X28H 22-22.5<br>22 - 22.5<br>10/07/05<br>X28 | 114-X30G-20-20.5<br>20 - 20.5<br>10/21/05<br>X30 | 114-X31G-20.0-20.5<br>20 - 20.5<br>10/10/05<br>X31 | 114-X31H-21.9-22.4<br>21.9 - 22.4<br>10/10/05<br>X31 | 114-X34G-20.0-20.5<br>20 - 20.5<br>10/10/05<br>X34 | 114-X34H-21.7-22.2<br>21.7 - 22.2<br>10/10/05<br>X34 | B-103-2<br>20.5 - 21<br>08/11/03<br>B103 | B-104-2<br>24 - 24.5<br>08/11/03<br>B104 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 230 U | 2 U |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 230 U | 2 U |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 800 | 0.4 U |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 230 U | 2 U |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 230 U | 2 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 230 U | 2 U |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 230 U | 2 U |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 85 | 0.4 U |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 61 | 0.4 U |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 7 | 0.4 U |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 87 | 0.4 U |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 8.7 | 0.4 U |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-X26H-21.5-22.0<br>21.5 - 22<br>10/10/05<br>X26 | 114-X27G-20-20.5<br>20 - 20.5<br>10/07/05<br>X27 | 114-X27H-21.2-21.7<br>21.2 - 21.7<br>10/07/05<br>X27 | 114-X28H 22-22.5<br>22 - 22.5<br>10/07/05<br>X28 | 114-X30G-20-20.5<br>20 - 20.5<br>10/21/05<br>X30 | 114-X31G-20.0-20.5<br>20 - 20.5<br>10/10/05<br>X31 | 114-X31H-21.9-22.4<br>21.9 - 22.4<br>10/10/05<br>X31 | 114-X34G-20.0-20.5<br>20 - 20.5<br>10/10/05<br>X34 | 114-X34H-21.7-22.2<br>21.7 - 22.2<br>10/10/05<br>X34 | B-103-2<br>20.5 - 21<br>08/11/03<br>B103 | B-104-2<br>24 - 24.5<br>08/11/03<br>B104 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 230 U | 2 U |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.48 |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45 U | 0.4 U |
| **Metals** | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | 15,800 | NA | 6,260 * | 5,270 * |
| Antimony | 7440-36-0 | mg/kg | 1.2 UJ | 1.6 J | NA | NA | 1.1 UJ | NA | NA | 2 U | 0.83 U | 14.3 N | 7.1 U |
| Arsenic | 7440-38-2 | mg/kg | NA | 1.2 UJ | NA | NA | 2.2 | NA | NA | 6.2 | NA | 13.9 * | 3.8 |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | 50.5 | NA | 461 | 24.2 |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | NA | 0.57 U | NA | NA | 0.07 U | NA | 0.66 U | 0.59 U |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | 0.77 | NA | 12.5 N* | 0.59 U |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | 6,210 J | NA | 18,000 * | 60.2 U |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | 29.8 | NA | 1,520 | 16.5 |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 4.84 UJ | 48.9 RA | NA | NA | NA | 22.9 J | 60.4 J | R | 4.73 UJ | 5.51 UJ | 4.8 UJ |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | 4.9 | NA | 14.7 * | 6 U |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | 14 J | NA | 229 | 8.2 |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | 9,710 | NA | 64,100 | 637,000 |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | 26.7 J | NA | 866 | 8.8 |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | 4,140 | NA | 5,280 * | 60.2 U |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | 211 | NA | 471 | 219 |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | 0.06 | NA | 0.51 | 0.04 U |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | NA | 12.7 | NA | NA | 12.9 J | NA | 57.3 N* | 10.9 N* |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | 2,820 | NA | 676 * | 81,700 * |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | 1.5 | NA | 2.1 * | 0.59 U* |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | 0.29 U | NA | 1.7 | 1.2 U |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | 10,500 | NA | 2,400 * | 7,280 * |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-X26H-21.5-22.0<br>21.5 - 22<br>10/10/05<br>X26 | 114-X27G-20-20.5<br>20 - 20.5<br>10/07/05<br>X27 | 114-X27H-21.2-21.7<br>21.2 - 21.7<br>10/07/05<br>X27 | 114-X28H 22-22.5<br>22 - 22.5<br>10/07/05<br>X28 | 114-X30G-20-20.5<br>20 - 20.5<br>10/21/05<br>X30 | 114-X31G-20.0-20.5<br>20 - 20.5<br>10/10/05<br>X31 | 114-X31H-21.9-22.4<br>21.9 - 22.4<br>10/10/05<br>X31 | 114-X34G-20.0-20.5<br>20 - 20.5<br>10/10/05<br>X34 | 114-X34H-21.7-22.2<br>21.7 - 22.2<br>10/10/05<br>X34 | B-103-2<br>20.5 - 21<br>08/11/03<br>B103 | B-104-2<br>24 - 24.5<br>08/11/03<br>B104 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | 1.2 U | 1.2 U | NA | 1.2 U | 1.1 U | NA | NA | 0.81 U | 0.44 U | 13.1 U | 1.2 U |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | 12.7 | NA | NA | NA | NA | NA | 37.6 | NA | 51.7 N* | 20.3 N* |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | 75.8 J | NA | 567 | 30 |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.033 U |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.033 U |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.033 U |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.033 U |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.033 U |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.033 U |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.033 U |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | 114-X26H-21.5-22.0<br>21.5 - 22<br>10/10/05<br>X26 | 114-X27G-20-20.5<br>20 - 20.5<br>10/07/05<br>X27 | 114-X27H-21.2-21.7<br>21.2 - 21.7<br>10/07/05<br>X27 | 114-X28H 22-22.5<br>22 - 22.5<br>10/07/05<br>X28 | 114-X30G-20-20.5<br>20 - 20.5<br>10/21/05<br>X30 | 114-X31G-20.0-20.5<br>20 - 20.5<br>10/10/05<br>X31 | 114-X31H-21.9-22.4<br>21.9 - 22.4<br>10/10/05<br>X31 | 114-X34G-20.0-20.5<br>20 - 20.5<br>10/10/05<br>X34 | 114-X34H-21.7-22.2<br>21.7 - 22.2<br>10/10/05<br>X34 | B-103-2<br>20.5 - 21<br>08/11/03<br>B103 | B-104-2<br>24 - 24.5<br>08/11/03<br>B104 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 31.3 | 1.26 U |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 856,000 | 855,000 | 869,000 | 837,000 | 874,000 | 837,000 | 858,000 | 390,000 | 872,000 | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | B-104-6 | B1304B-_665725 | B1401-2_665437 | B1402-2_665449 | B302-21 | B302-26 | B305A-2 | B306C-2_664331 | CB-15(30.0-30.5) | CB-16(30.0-30.5) | CB-16(48.0-48.5) | D4S20-20.5 | D5S23-23.5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 28 - 28.5 | 22 - 22.5 | 20 - 20.5 | 22 - 22.5 | 21 - 21.5 | 26 - 26.5 | 20 - 20.5 | 22 - 22.5 | 30 - 30.5 | 30 - 30.5 | 48 - 48.5 | 20 - 20.5 | 23 - 23.5 |
| Date Collected: | | | 08/11/03 | 08/20/03 | 08/19/03 | 08/19/03 | 08/13/03 | 08/13/03 | 08/13/03 | 08/14/03 | 03/01/12 | 02/23/12 | 02/23/12 | 12/02/03 | 08/20/03 |
| Location ID: | CAS Number | Units | B104 | B1304B | B1401 | B1402 | B302 | B302 | B305A | B306C | CB-15 | CB-16 | CB-16 | D4 | D5 |
| **Volatile Organics** | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | 0.0052 U | 0.0065 U | 0.0048 U | 0.0058 U | NA | 0.0077 U | 0.0078 U [0.0069 U] | 0.0063 U | 0.0059 U | 0.0057 U | NA | 0.87 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | 0.0052 U | 0.0065 U | 0.0048 U | 0.57 U | NA | 0.0077 U | 0.0078 U [0.0069 U] | 0.0063 U | 0.0059 U | 0.0057 U | NA | 0.87 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | 0.0063 U | 0.0059 U | 0.0057 U | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | 0.0052 U | 0.0065 U | 0.0048 U | 0.0058 U | NA | 0.0077 U | 0.0078 U [0.0069 U] | 0.0063 U | 0.0059 U | 0.0057 U | NA | 0.87 U |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | 0.0052 U | 0.0065 U | 0.0048 U | 0.0058 U | NA | 0.0077 U | 0.0078 U [0.0069 U] | 0.0063 U | 0.0059 U | 0.00062 J | NA | 0.87 U |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | 0.0052 U | 0.0065 U | 0.0048 U | 0.0058 U | NA | 0.0077 U | 0.0078 U [0.0069 U] | 0.0063 U | 0.0059 U | 0.0041 J | NA | 0.87 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | 0.0063 U | 0.0059 U | 0.0057 U | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | 0.0063 U | 0.0059 U | 0.0057 U | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | 0.013 U | 0.012 U | 0.011 U | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | 0.0013 U | 0.0012 U | 0.0011 U | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | 0.0063 U | 0.0059 U | 0.0057 U | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | 0.0052 U | 0.0065 U | 0.0048 U | 0.0058 U | NA | 0.0077 U | 0.0078 U [0.0069 U] | 0.0013 U | 0.0012 U | 0.0011 U | NA | 0.87 U |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | 0.0052 U | 0.0065 U | 0.0048 U | 0.0058 U | NA | 0.0077 U | 0.0078 U [0.0069 U] | 0.0063 U | 0.0059 U | 0.0057 U | NA | 0.87 U |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | 0.0063 U | 0.0059 U | 0.0057 U | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | 0.0063 U | 0.0059 U | 0.0057 U | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | 0.16 U | 0.15 U | 0.14 U | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | 0.01 U | 0.013 U | 0.0097 U | 0.012 U | NA | 0.015 U | 0.016 U [0.014 U] | R | R | R | NA | 1.7 U |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | 0.01 U | 0.013 U | 0.0097 U | 0.012 U | NA | 0.015 U | 0.016 U [0.014 U] | 0.0063 U | 0.0059 U | 0.0057 U | NA | 1.7 U |
| Acetone | 67-64-1 | mg/kg | NA | 0.021 U | 0.026 U | 0.019 U | 0.023 U | NA | 0.031 U | 0.031 U [0.027 U] | R | 0.012 U | 0.011 U | NA | 3.5 U |
| Benzene | 71-43-2 | mg/kg | NA | 0.0052 U | 0.0065 U | 0.0048 U | 0.0058 U | NA | 0.0077 U | 0.0078 U [0.0069 U] | 0.0035 | 0.95 | 0.0777 | NA | 0.87 U |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | 0.0063 U | 0.0059 U | 0.0057 U | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | 0.0052 U | 0.0065 U | 0.0048 U | 0.0058 U | NA | 0.0077 U | 0.0078 U [0.0069 U] | 0.0063 U | 0.0059 U | 0.0057 U | NA | 0.87 U |
| Bromoform | 75-25-2 | mg/kg | NA | 0.0052 U | 0.0065 U | 0.0048 U | 0.0058 U | NA | 0.0077 U | 0.0078 U [0.0069 U] | 0.0063 U | 0.0059 U | 0.0057 U | NA | 0.87 U |
| Bromomethane | 74-83-9 | mg/kg | NA | 0.0052 U | 0.0065 U | 0.0048 U | 0.0058 U | NA | 0.0077 U | 0.0078 U [0.0069 U] | 0.0063 U | 0.0059 U | 0.0057 U | NA | 0.87 U |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | 0.01 U | 0.013 U | 0.0097 U | 0.012 U | NA | 0.015 U | 0.016 U [0.014 U] | 0.0063 U | 0.00042 J | 0.0057 U | NA | 1.7 U |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | 0.0052 U | 0.0065 U | 0.0048 U | 0.0058 U | NA | 0.0077 U | 0.0078 U [0.0069 U] | 0.0063 U | 0.0059 U | 0.0057 U | NA | 0.87 U |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | 0.0063 U | 0.0059 U | 0.0057 U | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | 0.0063 U | 0.0059 UJ | 0.0057 UJ | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | 0.0052 U | 0.0065 U | 0.0048 U | 0.26 | NA | 0.0077 U | 0.0078 U [0.0069 U] | 0.0063 U | 0.0059 U | 0.0057 U | NA | 0.87 U |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | 0.0052 U | 0.0065 U | 0.0048 U | 0.0058 U | NA | 0.0077 U | 0.0078 U [0.0069 U] | 0.0063 U | 0.0059 U | 0.0057 U | NA | 0.87 U |
| Chloroethane | 75-00-3 | mg/kg | NA | 0.0052 U | 0.0065 U | 0.0048 U | 0.0058 U | NA | 0.0077 U | 0.0078 U [0.0069 U] | 0.0063 U | 0.0059 U | 0.0057 U | NA | 0.87 U |
| Chloroform | 67-66-3 | mg/kg | NA | 0.0052 U | 0.0065 U | 0.0048 U | 0.0058 U | NA | 0.0077 U | 0.0078 U [0.0069 U] | 0.0063 U | 0.0059 U | 0.0057 U | NA | 0.87 U |
| Chloromethane | 74-87-3 | mg/kg | NA | 0.0052 U | 0.0065 U | 0.0048 U | 0.0058 U | NA | 0.0077 U | 0.0078 U [0.0069 U] | 0.0063 U | 0.0059 U | 0.0057 U | NA | 0.87 U |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | 0.0052 U | 0.0065 U | 0.0048 U | 0.0058 U | NA | 0.0077 U | 0.0078 U [0.0069 U] | 0.0063 U | 0.0059 U | 0.0057 U | NA | 0.87 U |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | 0.0052 U | 0.0065 U | 0.0048 U | 0.0058 U | NA | 0.0077 U | 0.0078 U [0.0069 U] | 0.0063 U | 0.0059 U | 0.0057 U | NA | 0.87 U |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | 0.0063 U | 0.0059 U | 0.0057 U | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | 0.0052 U | 0.0065 U | 0.0048 U | 0.0058 U | NA | 0.0077 U | 0.0078 U [0.0069 U] | 0.0063 U | 0.0059 U | 0.0023 J | NA | 0.87 U |
| Ethylbenzene | 100-41-4 | mg/kg | NA | 0.0052 U | 0.033 | 0.0065 | 0.1 | NA | 0.0077 U | 0.15 [0.0069 U] | 0.00098 J | 0.189 | 0.0089 | NA | 0.87 U |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | 0.0063 U | 0.0077 | 0.0055 J | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | 0.0055 | 0.0065 U | 0.0055 | 0.14 | NA | 0.0077 U | 0.0098 [0.0069 U] | 0.00042 J | 0.0032 | 0.0343 | NA | 0.87 U |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | 0.0063 U | 0.0059 U | 0.0057 U | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | 0.01 U | 0.013 U | 0.0097 U | 0.012 U | NA | 0.015 U | 0.016 U [0.014 U] | 0.0063 U | 0.0059 U | 0.0057 U | NA | 1.7 U |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | 0.0063 U | 0.0059 U | 0.0057 U | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | 0.0013 U | 0.0012 U | 0.0011 U | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | 0.0052 U | 0.013 | 0.0048 U | 0.11 | NA | 0.0077 U | 0.04 [0.0069 U] | 0.00042 J | 0.0536 | 0.041 | NA | 0.87 U |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | 0.0052 U | 0.0065 U | 0.0048 U | 0.0058 U | NA | 0.0077 U | 0.0078 U [0.0069 U] | 0.0063 U | 0.0059 U | 0.0057 U | NA | 0.87 U |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | 0.0052 U | 0.0065 U | 0.0048 U | 0.0058 U | NA | 0.0077 U | 0.0078 U [0.0069 U] | 0.0063 U | 0.0059 U | 0.0057 U | NA | 0.87 U |
| Toluene | 108-88-3 | mg/kg | NA | 0.0052 U | 0.0065 U | 0.0048 U | 0.0058 U | NA | 0.0077 U | 0.0078 U [0.0069 U] | 0.0013 U | 0.0076 | 0.0268 | NA | 0.87 U |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | 0.00084 J | 0.0568 | 0.0753 | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | 0.0052 U | 0.0065 U | 0.0048 U | 0.0058 U | NA | 0.0077 U | 0.0078 U [0.0069 U] | 0.0063 U | 0.0059 U | 0.0057 U | NA | 0.87 U |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | 0.0052 U | 0.0065 U | 0.0048 U | 0.0058 U | NA | 0.0077 U | 0.0078 U [0.0069 U] | 0.0063 U | 0.0059 U | 0.0057 U | NA | 0.87 U |
| Trichloroethene | 79-01-6 | mg/kg | NA | 0.0052 U | 0.0065 U | 0.0048 U | 0.0058 U | NA | 0.0077 U | 0.0078 U [0.0069 U] | 0.0063 U | 0.0059 U | 0.0057 U | NA | 0.87 U |
| Vinyl chloride | 75-01-4 | mg/kg | NA | 0.0052 U | 0.0065 U | 0.0048 U | 0.0058 U | NA | 0.0077 U | 0.0078 U [0.0069 U] | 0.0063 U | 0.0059 U | 0.0057 U | NA | 0.87 U |
| **Semivolatile Organics** | | | | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | B-104-6<br>28 - 28.5<br>08/11/03<br>B104 | B1304B-_665725<br>22 - 22.5<br>08/20/03<br>B1304B | B1401-2_665437<br>20 - 20.5<br>08/19/03<br>B1401 | B1402-2_665449<br>22 - 22.5<br>08/19/03<br>B1402 | B302-21<br>21 - 21.5<br>08/13/03<br>B302 | B302-26<br>26 - 26.5<br>08/13/03<br>B302 | B305A-2<br>20 - 20.5<br>08/13/03<br>B305A | B306C-2_664331<br>22 - 22.5<br>08/14/03<br>B306C | CB-15(30.0-30.5)<br>30 - 30.5<br>03/01/12<br>CB-15 | CB-16(30.0-30.5)<br>30 - 30.5<br>02/23/12<br>CB-16 | CB-16(48.0-48.5)<br>48 - 48.5<br>02/23/12<br>CB-16 | D4S20-20.5<br>20 - 20.5<br>12/02/03<br>D4 | D5S23-23.5<br>23 - 23.5<br>08/20/03<br>D5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | 0.068 U | 0.071 U | 0.075 U | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | 0.17 U | 0.18 U | 0.19 U | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | NA | NA | NA | NA | 0.33 U |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | NA | NA | NA | NA | 0.33 U |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | NA | NA | NA | NA | 0.38 U |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 3.6 | 0.4 U | 0.4 U | 0.4 U [0.39 U] | NA | NA | NA | NA | 0.38 U |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | NA | NA | NA | NA | 0.38 U |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | 0.17 U | 0.18 U | 0.19 U | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.17 U | 0.18 U | 0.19 U | NA | 0.38 U |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.17 U | 0.18 U | 0.19 U | NA | 0.38 U |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.17 U | 0.18 U | 0.19 U | NA | 0.38 U |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.17 U | 0.18 U | 0.19 U | NA | 0.38 U |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | 2 U | 2 U | 2 U | 1.9 U | 2.1 U | 2.1 U | 2.1 U [2 U] | 0.68 U | 0.71 U | 0.75 U | NA | 1.9 UJ |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.068 U | 0.071 U | 0.075 U | NA | 0.38 U |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.068 U | 0.071 U | 0.075 U | NA | 0.38 U |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.068 U | 0.071 U | 0.075 U | NA | 0.38 U |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.17 U | 0.18 U | 0.19 U | NA | 0.38 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | 2 U | 2 U | 2 U | 1.9 U | 2.1 U | 2.1 U | 2.1 U [2 U] | 0.68 U | 0.71 U | 0.75 U | NA | 1.9 U |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | 0.4 U | 0.39 U | 1.3 | 32 | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.0423 J | 0.071 U | 0.075 U | NA | 0.33 U |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.068 U | 0.071 U | 0.075 U | NA | 0.38 U |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | 2 U | 2 U | 2 U | 1.9 U | 2.1 U | 2.1 U | 2.1 U [2 U] | 0.17 U | 0.18 UJ | 0.19 UJ | NA | 1.9 U |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.17 U | 0.18 U | 0.19 U | NA | 0.38 U |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.17 U | 0.18 UJ | 0.19 UJ | NA | 0.38 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | 0.068 U | 0.071 U | 0.075 U | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | 2 U | 2 U | 2 U | 1.9 U | 2.1 U | 2.1 U | 2.1 U [2 U] | 0.17 U | 0.18 U | 0.19 U | NA | 1.9 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.068 U | 0.071 U | 0.075 U | NA | 0.38 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.17 U | 0.18 U | 0.19 U | NA | 0.38 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.068 U | 0.071 U | 0.075 U | NA | 0.38 U |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | NA | NA | NA | NA | 0.38 U |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | 2 U | 2 U | 2 U | 1.9 U | 2.1 U | 2.1 U | 2.1 U [2 U] | 0.17 U | 0.18 U | 0.19 U | NA | 1.9 U |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | 2 U | 2 U | 2 U | 1.9 U | 2.1 U | 2.1 U | 2.1 U [2 U] | 0.34 U | 0.35 U | 0.38 U | NA | 1.9 UJ |
| Acenaphthene | 83-32-9 | mg/kg | NA | 0.4 U | 0.39 U | 0.66 | 13 | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.0603 | 0.0214 J | 0.038 U | NA | 0.38 U |
| Acenaphthylene | 208-96-8 | mg/kg | NA | 0.4 U | 0.39 U | 0.61 | 4 | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.0332 J | 0.035 U | 0.038 U | NA | 0.38 U |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | 0.17 U | 0.18 U | 0.19 U | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | 0.4 U | 0.39 U | 1.1 | 9.7 | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.0647 | 0.0143 J | 0.038 U | NA | 0.38 U |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | 0.17 U | 0.18 U | 0.19 U | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | 0.17 U | 0.18 U | 0.19 U | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | 0.4 U | 0.39 U | 0.69 | 6.6 | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.0429 | 0.035 U | 0.038 U | NA | 0.38 U |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | 0.4 U | 0.39 U | 0.45 | 4.9 | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.0264 J | 0.035 U | 0.038 U | NA | 0.38 U |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 2.2 | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.034 U | 0.035 U | 0.038 U | NA | 0.38 U |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 1.9 | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.034 U | 0.035 U | 0.038 U | NA | 0.38 U |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 2.7 | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.034 U | 0.035 U | 0.038 U | NA | 0.38 U |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | NA | NA | NA | NA | 0.38 U |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.068 U | 0.071 U | 0.075 U | NA | 0.38 U |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.068 U | 0.071 U | 0.075 U | NA | 0.38 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | 0.068 U | 0.071 U | 0.075 U | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.0622 J | 0.0643 J | 0.149 | NA | 0.38 U |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.068 U | 0.071 U | 0.075 U | NA | 0.38 U |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | 0.068 U | 0.071 U | 0.075 U | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.068 U | 0.071 U | 0.075 U | NA | 0.38 U |
| Chrysene | 218-01-9 | mg/kg | NA | 0.4 U | 0.39 U | 0.65 | 6.3 | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.0343 | 0.035 U | 0.038 U | NA | 0.33 U |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.78 | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.034 U | 0.035 U | 0.038 U | NA | 0.38 U |
| Dibenzofuran | 132-64-9 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.78 | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.068 U | 0.071 U | 0.075 U | NA | 0.38 U |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.068 U | 0.071 U | 0.075 U | NA | 0.38 U |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.068 U | 0.071 U | 0.075 U | NA | 0.38 U |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.068 U | 0.071 U | 0.075 U | NA | 0.38 U |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | B-104-6<br>28 - 28.5<br>08/11/03<br>B104 | B1304B-_665725<br>22 - 22.5<br>08/20/03<br>B1304B | B1401-2_665437<br>20 - 20.5<br>08/19/03<br>B1401 | B1402-2_665449<br>22 - 22.5<br>08/19/03<br>B1402 | B302-21<br>21 - 21.5<br>08/13/03<br>B302 | B302-26<br>26 - 26.5<br>08/13/03<br>B302 | B305A-2<br>20 - 20.5<br>08/13/03<br>B305A | B306C-2_664331<br>22 - 22.5<br>08/14/03<br>B306C | CB-15(30.0-30.5)<br>30 - 30.5<br>03/01/12<br>CB-15 | CB-16(30.0-30.5)<br>30 - 30.5<br>02/23/12<br>CB-16 | CB-16(48.0-48.5)<br>48 - 48.5<br>02/23/12<br>CB-16 | D4S20-20.5<br>20 - 20.5<br>12/02/03<br>D4 | D5S23-23.5<br>23 - 23.5<br>08/20/03<br>D5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.068 U | 0.071 U | 0.075 U | NA | 0.38 U |
| Fluoranthene | 206-44-0 | mg/kg | NA | 0.4 U | 0.44 | 1.2 | 9.9 | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.0558 | 0.0181 J | 0.038 U | NA | 0.38 U |
| Fluorene | 86-73-7 | mg/kg | NA | 0.4 U | 0.39 U | 0.86 | 9.5 | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.05 | 0.035 U | 0.038 U | NA | 0.38 U |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.034 U | 0.035 U | 0.038 U | NA | 0.38 U |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.068 U | 0.071 U | 0.075 U | NA | 0.38 U |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.34 U | 0.35 UJ | 0.38 UJ | NA | 0.38 U |
| Hexachloroethane | 67-72-1 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.17 U | 0.18 U | 0.19 U | NA | 0.38 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 1.6 | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.034 U | 0.035 U | 0.038 U | NA | 0.38 U |
| Isophorone | 78-59-1 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.068 U | 0.071 U | 0.075 U | NA | 0.38 U |
| Naphthalene | 91-20-3 | mg/kg | NA | 0.4 U | 0.39 U | 1.2 | 26 | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.0216 J | 0.035 U | 0.213 | NA | 0.38 U |
| Nitrobenzene | 98-95-3 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.068 U | 0.071 U | 0.075 U | NA | 0.38 U |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | NA | NA | NA | NA | 0.38 U |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.068 U | 0.071 U | 0.075 U | NA | 0.38 U |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.17 U | 0.18 U | 0.19 U | NA | 0.38 U |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.17 U | 0.18 U | 0.19 U | NA | 0.38 U |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | 2 U | 2 U | 2 U | 1.9 U | 2.1 U | 2.1 U | 2.1 U [2 U] | 0.34 U | 0.35 U | 0.38 U | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | 0.4 U | 0.56 | 3.8 | 21 | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.211 | 0.0508 | 0.0384 | NA | 0.38 U |
| Phenol | 108-95-2 | mg/kg | NA | 0.4 U | 0.39 U | 0.39 U | 0.38 U | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.068 U | 0.071 U | 0.075 U | NA | 0.38 U |
| Pyrene | 129-00-0 | mg/kg | NA | 0.4 U | 0.62 | 1.8 | 11 | 0.4 U | 0.4 U | 0.4 U [0.39 U] | 0.112 | 0.0216 J | 0.0222 J | NA | 0.38 U |
| **Metals** | | | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | 22,600 * [4,220 *] | 6,300 | 9,690 * | 9,330 * | 3,310 | 2,570 | 3,300 | 2,190 [1,970] | 2,410 | 2,390 | 18,600 | 15,900 | 14,200 |
| Antimony | 7440-36-0 | mg/kg | 39 N [7.5 UN] | 7.1 UN | 6.8 U | 7 U | 6.55 UN | 7.1 UN | 7.17 UN | 7.3 U [6.9 U] | 2.4 U | 2.5 U | 2.7 U | 0.55 UJ | 0.43 U |
| Arsenic | 7440-38-2 | mg/kg | 24.9 U* [4.2 *] | 1.2 U | 1.5 | 2.2 | 2.1 | 1.7 | 1.6 | 1.7 [1.6] | 2.4 U | 3 | 5.3 | 7.5 | 4.5 |
| Barium | 7440-39-3 | mg/kg | 179 [28.5] | 13.9 * | 28.5 | 72.3 | 16.7 | 20.5 | 22.5 | 13.6 [12.6] | 24 U | 25 U | 174 | 40.3 | 93.7 |
| Beryllium | 7440-41-7 | mg/kg | 12.4 U [0.63 U] | 0.59 U | 0.57 UN | 0.59 UN | 0.55 U | 0.59 U | 0.6 U | 0.61 U [0.57 U] | 0.33 | 0.29 | 1.3 | 0.02 U | 0.01 U |
| Cadmium | 7440-43-9 | mg/kg | 0.98 N* [0.63 U] | 0.59 U | 0.57 U | 0.59 U | 0.55 U | 0.59 U | 0.6 U | 0.61 U [0.57 U] | 0.59 U | 0.61 U | 0.68 U | 0.03 U | 0.56 U |
| Calcium | 7440-70-2 | mg/kg | 40,700 * [1,080 *] | 630 | 1,280 * | 705 * | 1,060 | 1,590 | 1,070 | 791 [788 N] | 1,020 | 1,000 | 7,090 | 3,550 | 1,730 |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | 6,280 [12.8] | 254 | 223 | 23.1 | 12.5 | 19.6 | 8.9 | 4.8 [4.3] | 7.5 | 6.9 | 625 | 226 | 31.4 |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 82.9 J [5.16 UJ] | 34.8 | 51.7 J | 4.78 UJ | 4.59 UJ | 4.87 UJ | 4.88 UJ | 4.89 UJ [4.73 UJ] | NA | NA | NA | 7.33 U | NA |
| Cobalt | 7440-48-4 | mg/kg | 102 * [6.3 U*] | 5.9 UJ | 9.4 | 6.4 | 5.46 U | 5.91 U | 5.98 U | 6.1 U [5.7 U] | 5.9 U | 6.1 U | 13.8 | 10.4 | 13.8 |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | 49.4 [8.6] | 6.4 | 11.7 | 10.2 | 9.4 | 7.7 | 7.1 | 4.9 [4.4] | 5.9 | 5.4 | 23.9 | 13.7 | 15.2 |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | 74,800 [10,700] | 9,290 | 21,900 * | 12,000 * | 6,450 | 6,620 | 6,740 | 4,430 [4,240] | 6,010 | 6,710 | 32,500 | 30,400 | 18,700 |
| Lead | 7439-92-1 | mg/kg | 295 [10.7] | 10.8 * | 28 | 8.1 | 11.6 | 7.1 | 6 | 3.2 [3] | 5.5 | 5.6 | 19.5 | 12.4 | 13.3 |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | 36,800 * [2,590 *] | 3,080 | 4,530 | 2,710 | 1,860 | 1,580 | 2,120 | 904 N [810 N] | 1,120 | 1,150 | 9,180 | 6,740 | 4,440 |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | 619 [205] | 56.4 | 163 N* | 72.8 N* | 75.8 * | 554 * | 116 * | 206 * [215 *] | 40.4 | 54.3 | 675 | 375 | 169 |
| Mercury | 7439-97-6 | mg/kg | 0.26 [0.04 U] | 0.04 U | 0.04 U | 0.04 U | 0.04 U | 0.04 U | 0.04 U | 0.04 U [0.04 U] | 0.039 U | 0.038 U | 0.04 U | 0.03 | 0.04 U |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | 374 N* [10.3 N*] | 15.3 | 15.2 N | 13.3 N | 5.2 | 5.9 | 6 | 4.8 U [4.6 U] | 4.7 U | 4.9 U | 32.9 | 26 | 25.2 |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | 1,010 * [1,410 *] | 1,150 | 1,870 | 1,080 | 784 | 685 | 870 | 540 [477] | 1,200 U | 1,200 U | 4,290 | 3,540 | 2,520 |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | 0.62 U* [0.63 U*] | 0.59 U | 0.57 U | 0.59 U | 0.55 U | 0.59 U | 0.6 U | 0.61 U [0.57 U] | 2.4 U | 2.5 U | 2.7 U | 0.62 U | 0.56 U |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | 1.2 U [1.3 U] | 1.2 U | 1.1 U | 1.2 U | 1.09 U | 1.18 U | 1.2 U | 1.2 U [1.1 U] | 0.59 U | 0.61 U | 0.68 | 0.09 U | 1.1 U |
| Sodium | 7440-23-5 | mg/kg | 4,140 * [141 *] | 118 U | 449 | 595 | 109 U | 118 U | 120 U | 121 U [115 U] | 1,200 U | 1,200 U | 1,400 U | 5,120 | 1,040 |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | B-104-6<br>28 - 28.5<br>08/11/03<br>B104 | B1304B-_665725<br>22 - 22.5<br>08/20/03<br>B1304B | B1401-2_665437<br>20 - 20.5<br>08/19/03<br>B1401 | B1402-2_665449<br>22 - 22.5<br>08/19/03<br>B1402 | B302-21<br>21 - 21.5<br>08/13/03<br>B302 | B302-26<br>26 - 26.5<br>08/13/03<br>B302 | B305A-2<br>20 - 20.5<br>08/13/03<br>B305A | B306C-2_664331<br>22 - 22.5<br>08/14/03<br>B306C | CB-15(30.0-30.5)<br>30 - 30.5<br>03/01/12<br>CB-15 | CB-16(30.0-30.5)<br>30 - 30.5<br>02/23/12<br>CB-16 | CB-16(48.0-48.5)<br>48 - 48.5<br>02/23/12<br>CB-16 | D4S20-20.5<br>20 - 20.5<br>12/02/03<br>D4 | D5S23-23.5<br>23 - 23.5<br>08/20/03<br>D5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | 24.9 U [1.3 U] | 2.4 U | 1.1 U | 1.2 U | 1.09 U | 5.91 U | 1.2 U | 1.2 U [5.7 U] | 1.2 U | 1.2 U | 1.4 U | 0.71 U | 0.39 U |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | 751 N* [18.5 N*] | 23.3 | 33.3 N | 21.4 N | 15.9 | 11.2 | 14.6 | 8.8 [8.3] | 10.6 | 9.5 | 32.6 | 41 | 39.4 |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | 355 [32.8] | 526 | 53.9 | 46.1 | 73.6 | 45.8 | 33.4 | 18.7 [17.5] | 21.2 | 19.6 | 79.1 | 75.8 J | 74.8 |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | 0.042 U [0.043 U] | 0.079 U | 0.078 U | 0.079 U | 0.076 U | 0.08 U | 0.08 U | 0.04 U [0.039 U] | NA | NA | NA | NA | 0.075 U |
| Aroclor 1221 | 11104-28-2 | mg/kg | 0.042 U [0.043 U] | 0.079 U | 0.078 U | 0.079 U | 0.076 U | 0.08 U | 0.08 U | 0.04 U [0.039 U] | NA | NA | NA | NA | 0.075 U |
| Aroclor 1232 | 11141-16-5 | mg/kg | 0.042 U [0.043 U] | 0.079 U | 0.078 U | 0.079 U | 0.076 U | 0.08 U | 0.08 U | 0.04 U [0.039 U] | NA | NA | NA | NA | 0.075 U |
| Aroclor 1242 | 53469-21-9 | mg/kg | 0.042 U [0.043 U] | 0.079 U | 0.078 U | 0.079 U | 0.076 U | 0.08 U | 0.08 U | 0.04 U [0.039 U] | NA | NA | NA | NA | 0.075 U |
| Aroclor 1248 | 12672-29-6 | mg/kg | 0.042 U [0.043 U] | 0.079 U | 0.078 U | 0.079 U | 0.076 U | 0.08 U | 0.08 U | 0.04 U [0.039 U] | NA | NA | NA | NA | 0.075 U |
| Aroclor 1254 | 11097-69-1 | mg/kg | 0.042 U [0.043 U] | 0.079 U | 0.093 | 0.079 U | 0.076 U | 0.08 U | 0.08 U | 0.04 U [0.039 U] | NA | NA | NA | NA | 0.075 U |
| Aroclor 1260 | 11096-82-5 | mg/kg | 0.042 U [0.043 U] | 0.079 U | 0.078 U | 0.079 U | 0.076 U | 0.08 U | 0.08 U | 0.04 U [0.039 U] | NA | NA | NA | NA | 0.075 U |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | B-104-6 | B1304B-_665725 | B1401-2_665437 | B1402-2_665449 | B302-21 | B302-26 | B305A-2 | B306C-2_664331 | CB-15(30.0-30.5) | CB-16(30.0-30.5) | CB-16(48.0-48.5) | D4S20-20.5 | D5S23-23.5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 28 - 28.5 | 22 - 22.5 | 20 - 20.5 | 22 - 22.5 | 21 - 21.5 | 26 - 26.5 | 20 - 20.5 | 22 - 22.5 | 30 - 30.5 | 30 - 30.5 | 48 - 48.5 | 20 - 20.5 | 23 - 23.5 |
| Date Collected: | | | 08/11/03 | 08/20/03 | 08/19/03 | 08/19/03 | 08/13/03 | 08/13/03 | 08/13/03 | 08/14/03 | 03/01/12 | 02/23/12 | 02/23/12 | 12/02/03 | 08/20/03 |
| Location ID: | CAS Number | Units | B104 | B1304B | B1401 | B1402 | B302 | B302 | B305A | B306C | CB-15 | CB-16 | CB-16 | D4 | D5 |
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | 1.2 U | 1.19 U | 1.19 U | NA | NA | NA | 1.22 U [1.18 U] | 0.27 U | 0.3 U | 0.3 U | 1.83 U | 1.14 U |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | 252,000 | 323,000 | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | 822,000 | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | E2S24.5<br>24.5 - 25<br>08/25/03<br>E2 | E2S24.5-25<br>24.5 - 25<br>08/27/03<br>E2 | E7S28<br>28 - 28.5<br>09/04/03<br>E7 | E7S30.5<br>30.5 - 31<br>09/04/03<br>E7 | E8S(20-20.5)<br>20 - 20.5<br>08/27/03<br>E8 | E8S(22-22.5)<br>22 - 22.5<br>08/27/03<br>E8 | E8S20-20.5<br>20 - 20.5<br>08/27/03<br>E8 | E8S22-22.5<br>22 - 22.5<br>08/27/03<br>E8 | E9S(27.5-28)<br>27.5 - 28<br>12/05/03<br>E9 | E9S(27.5-28)-694877<br>27.5 - 28<br>12/05/03<br>E9 | E9S(29.5-30)<br>29.5 - 30<br>12/05/03<br>E9 | E9S(29.5-30)-694878<br>29.5 - 30<br>12/05/03<br>E9 | E9S(31.5-32)-694879<br>31.5 - 32<br>12/05/03<br>E9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | 1 UJ | NA | 1.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | 1 UJ | NA | 1.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | 1 UJ | NA | 1.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | 1 UJ | NA | 1.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | 1 UJ | NA | 1.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | 1 UJ | NA | 1.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | 1 UJ | NA | 1.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | 2 UJ | NA | 2.4 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | 2 UJ | NA | 2.4 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | 4 UJ | NA | 4.8 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | 0.45 J | NA | 1.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | 1 UJ | NA | 1.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | 1 UJ | NA | 1.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | 1 UJ | NA | 1.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | 2 UJ | NA | 2.4 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | 1 UJ | NA | 1.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | 1 UJ | NA | 1.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | 1 UJ | NA | 1.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | 1 UJ | NA | 1.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | 1 UJ | NA | 1.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | 1 UJ | NA | 1.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | 1 UJ | NA | 1.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | 1 UJ | NA | 1.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | 1 UJ | NA | 1.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | 0.31 J | NA | 1.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | 0.27 J | NA | 1.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | 2 UJ | NA | 2.4 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | 1 UJ | NA | 1.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | 1 UJ | NA | 1.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | 1 UJ | NA | 1.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | 1 UJ | NA | 1.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | 1 UJ | NA | 1.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | 1 UJ | NA | 1.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | 1 UJ | NA | 1.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | 1 UJ | NA | 1.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | E2S24.5<br>24.5 - 25<br>08/25/03<br>E2 | E2S24.5-25<br>24.5 - 25<br>08/27/03<br>E2 | E7S28<br>28 - 28.5<br>09/04/03<br>E7 | E7S30.5<br>30.5 - 31<br>09/04/03<br>E7 | E8S(20-20.5)<br>20 - 20.5<br>08/27/03<br>E8 | E8S(22-22.5)<br>22 - 22.5<br>08/27/03<br>E8 | E8S20-20.5<br>20 - 20.5<br>08/27/03<br>E8 | E8S22-22.5<br>22 - 22.5<br>08/27/03<br>E8 | E9S(27.5-28)<br>27.5 - 28<br>12/05/03<br>E9 | E9S(27.5-28)-694877<br>27.5 - 28<br>12/05/03<br>E9 | E9S(29.5-30)<br>29.5 - 30<br>12/05/03<br>E9 | E9S(29.5-30)-694878<br>29.5 - 30<br>12/05/03<br>E9 | E9S(31.5-32)-694879<br>31.5 - 32<br>12/05/03<br>E9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | 5.8 U | NA | 0.43 UJ | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | 30 U | NA | 2.2 UJ | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | 30 U | NA | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | 52 J | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | 30 U | NA | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | 30 U | NA | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | 30 U | NA | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | 30 U | NA | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | 38 J | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | 3.4 J | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | 20 J | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | 12 J | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | 7.9 J | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | 3.3 J | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | 2.9 J | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | 4.6 J | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | 11 J | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | 1.7 J | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | E2S24.5<br>24.5 - 25<br>08/25/03<br>E2 | E2S24.5-25<br>24.5 - 25<br>08/27/03<br>E2 | E7S28<br>28 - 28.5<br>09/04/03<br>E7 | E7S30.5<br>30.5 - 31<br>09/04/03<br>E7 | E8S(20-20.5)<br>20 - 20.5<br>08/27/03<br>E8 | E8S(22-22.5)<br>22 - 22.5<br>08/27/03<br>E8 | E8S20-20.5<br>20 - 20.5<br>08/27/03<br>E8 | E8S22-22.5<br>22 - 22.5<br>08/27/03<br>E8 | E9S(27.5-28)<br>27.5 - 28<br>12/05/03<br>E9 | E9S(27.5-28)-694877<br>27.5 - 28<br>12/05/03<br>E9 | E9S(29.5-30)<br>29.5 - 30<br>12/05/03<br>E9 | E9S(29.5-30)-694878<br>29.5 - 30<br>12/05/03<br>E9 | E9S(31.5-32)-694879<br>31.5 - 32<br>12/05/03<br>E9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | 5.8 U | NA | 0.43 UJ | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | 21 J | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | 19 J | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | 2.3 J | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | 48 J | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | 30 U | NA | 2.2 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | 65 J | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | 5.8 U | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | 32 J | NA | 0.43 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | 4,990 | NA | 1,780 [1,630] | 2,400 | NA | NA | 12,200 J | 16,000 J | NA | 6,360 | NA | 1,630 | 1,450 |
| Antimony | 7440-36-0 | mg/kg | 0.43 U | NA | 1.6 B [1.3 B] | 0.8 U | NA | NA | 0.47 UJ | 0.43 UJ | NA | 4.3 B | NA | 1.2 B | 0.91 B |
| Arsenic | 7440-38-2 | mg/kg | 3.1 J | NA | 0.26 UJ [0.26 UJ] | 0.59 J | NA | NA | 6.6 J | 4.1 J | 3 | NA | 1.3 | NA | NA |
| Barium | 7440-39-3 | mg/kg | 15.9 | NA | 16.4 [14.7] | 14.6 | NA | NA | 77.8 | 50.4 | NA | 112 | NA | 14.2 | 36.5 |
| Beryllium | 7440-41-7 | mg/kg | NA | 0.6 J | 0.01 U [0.01 U] | 0.01 U | NA | NA | 0.04 B | 0.06 BJ | NA | 0.02 U | NA | 0.02 U | 0.02 U |
| Cadmium | 7440-43-9 | mg/kg | 0.55 U | NA | 0.03 U [0.03 U] | 0.03 U | NA | NA | 0.61 U | 0.55 U | NA | 0.02 U | NA | 0.02 U | 0.02 U |
| Calcium | 7440-70-2 | mg/kg | 753 | NA | 770 [815] | 1,850 | NA | NA | 469 | 1,540 | NA | 1,780 | NA | 1,100 | 8,070 |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | 19.4 | NA | 282 [264] | 200 | NA | NA | 26.1 | 56.8 | NA | 1,190 | NA | 232 | 178 |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | NA | NA | 73 [66.9] | 149 | NA | NA | 4.91 U | 4.65 U | NA | 574 | NA | 117 | 48.1 |
| Cobalt | 7440-48-4 | mg/kg | 5.5 U | NA | 6.4 U [6.5 U] | 6.1 U | NA | NA | 6.1 U | 10.8 | NA | 5.2 | NA | 1.4 BJ | 1.9 BJ |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | 8.8 J | NA | 4 [3.4] | 5.1 | NA | NA | 15.5 J | 24.9 J | NA | 16.1 BJ | NA | 4.5 B | 3.5 B |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | 10,600 | NA | 5,070 [4,770] | 7,060 | NA | NA | 10,900 | 25,100 | NA | 15,100 | NA | 4,890 | 5,250 |
| Lead | 7439-92-1 | mg/kg | 9.4 | NA | 3.7 [3.3] | 4.9 | NA | NA | 10.6 J | 22.9 J | NA | 11.4 | NA | 4 | 4.9 |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | 2,820 | NA | 946 [877] | 1,480 | NA | NA | 1,470 | 8,920 | NA | 3,300 | NA | 847 | 1,540 |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | 69.9 | NA | 41.6 [37.9] | 61 | NA | NA | 21.5 J | 234 J | NA | 185 J | NA | 67.7 J | 198 J |
| Mercury | 7439-97-6 | mg/kg | 0.04 UJ | NA | 0.04 U [0.04 U] | 0.04 U | NA | NA | 0.04 UJ | 0.03 UJ | NA | 0.01 J | NA | 0.005 UJ | 0.005 UJ |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | 8.5 | NA | 5.1 U [5.2 U] | 5 | NA | NA | 8 | 18.6 | NA | 11.7 | NA | 3.2 BJ | 3.5 BJ |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | 1,440 | NA | 585 [534] | 818 | NA | NA | 1,640 J | 3,210 J | NA | 2,040 | NA | 535 | 492 |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | 0.55 UJ | NA | 0.64 U [0.65 U] | 0.61 U | NA | NA | 0.61 U | 0.55 U | NA | 0.4 UJ | NA | 0.42 UJ | 0.43 UJ |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | 1.1 U | NA | 1.3 U [1.3 U] | 1.2 U | 1.9 U | 1.8 UJ | NA | NA | NA | 0.06 UJ | NA | 0.06 UJ | 0.07 UJ |
| Sodium | 7440-23-5 | mg/kg | 257 | NA | 463 [451] | 500 | NA | NA | 1,410 | 1,100 | NA | 1,030 | NA | 248 BJ | 200 B |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | E2S24.5<br>24.5 - 25<br>08/25/03<br>E2 | E2S24.5-25<br>24.5 - 25<br>08/27/03<br>E2 | E7S28<br>28 - 28.5<br>09/04/03<br>E7 | E7S30.5<br>30.5 - 31<br>09/04/03<br>E7 | E8S(20-20.5)<br>20 - 20.5<br>08/27/03<br>E8 | E8S(22-22.5)<br>22 - 22.5<br>08/27/03<br>E8 | E8S20-20.5<br>20 - 20.5<br>08/27/03<br>E8 | E8S22-22.5<br>22 - 22.5<br>08/27/03<br>E8 | E9S(27.5-28)<br>27.5 - 28<br>12/05/03<br>E9 | E9S(27.5-28)-694877<br>27.5 - 28<br>12/05/03<br>E9 | E9S(29.5-30)<br>29.5 - 30<br>12/05/03<br>E9 | E9S(29.5-30)-694878<br>29.5 - 30<br>12/05/03<br>E9 | E9S(31.5-32)-694879<br>31.5 - 32<br>12/05/03<br>E9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | 1.1 U | NA | 0.45 U [0.45 U] | 0.43 U | NA | NA | 0.43 U | 0.39 U | NA | 0.46 U | NA | 0.48 U | 0.49 U |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | 19.5 J | NA | 6.4 U [6.5 U] | 9.7 | NA | NA | 29.6 | 57.9 | NA | 13.3 J | NA | 6.7 J | 8.3 J |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | 39.3 J | NA | 14.5 [14.2] | 21.6 | NA | NA | 85 | 115 | NA | 62.2 J | NA | 15.6 J | 14.7 J |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | 0.038 UJ | NA | 0.043 UJ | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | 0.038 UJ | NA | 0.043 UJ | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | 0.038 UJ | NA | 0.043 UJ | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | 0.038 UJ | NA | 0.043 UJ | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | 0.038 UJ | NA | 0.043 UJ | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | 0.038 UJ | NA | 0.043 UJ | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | 0.038 UJ | NA | 0.043 UJ | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | 0.0043 U [0.0041 U] | 0.0033 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | 0.0043 U [0.0041 U] | 0.0033 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | 0.0043 U [0.0041 U] | 0.0033 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | 0.0022 U [0.0023 U] | 0.0021 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | 0.0022 UJ [0.0023 UJ] | 0.0021 UJ | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | 0.0022 U [0.0023 U] | 0.0021 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | 0.0017 U [0.0023 U] | 0.0021 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | 0.0022 U [0.0023 U] | 0.0021 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | 0.0043 U [0.0044 U] | 0.0041 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | 0.0017 U [0.0023 U] | 0.0021 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | 0.0043 U [0.0044 U] | 0.0041 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | 0.0043 U [0.0044 U] | 0.0041 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | 0.0043 U [0.0044 U] | 0.0041 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | 0.0043 U [0.0044 U] | 0.0041 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | 0.0043 U [0.0041 U] | 0.0041 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | 0.0022 U [0.0023 U] | 0.0021 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | 0.0022 U [0.0023 U] | 0.0021 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | 0.0022 U [0.0023 U] | 0.0021 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | 0.023 U [0.017 U] | 0.021 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | 0.043 U [0.023 U] | 0.041 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | 0.0022 U [0.0023 U] | 0.0021 U | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | E2S24.5<br>24.5 - 25<br>08/25/03<br>E2 | E2S24.5-25<br>24.5 - 25<br>08/27/03<br>E2 | E7S28<br>28 - 28.5<br>09/04/03<br>E7 | E7S30.5<br>30.5 - 31<br>09/04/03<br>E7 | E8S(20-20.5)<br>20 - 20.5<br>08/27/03<br>E8 | E8S(22-22.5)<br>22 - 22.5<br>08/27/03<br>E8 | E8S20-20.5<br>20 - 20.5<br>08/27/03<br>E8 | E8S22-22.5<br>22 - 22.5<br>08/27/03<br>E8 | E9S(27.5-28)<br>27.5 - 28<br>12/05/03<br>E9 | E9S(27.5-28)-694877<br>27.5 - 28<br>12/05/03<br>E9 | E9S(29.5-30)<br>29.5 - 30<br>12/05/03<br>E9 | E9S(29.5-30)-694878<br>29.5 - 30<br>12/05/03<br>E9 | E9S(31.5-32)-694879<br>31.5 - 32<br>12/05/03<br>E9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | 1.16 U | NA | 1.29 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | E9S(33.5-34) | E9S(33.5-34)-694880 | EF-B02-22.0 | EF-B02-27.0 | EF-B02-30.5 | EF-B44-21.0 | F01-22-_662780 | F01-26-_662781 | F01-30-_662782 | F01-34-_662783 | F01-38-_662784 | F01-46-_662785 | F1S21-21.5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 33.5 - 34 | 33.5 - 34 | 22 - 22.5 | 27 - 27.5 | 30.5 - 31 | 21 - 21.5 | 22 - 22.5 | 26 - 26.5 | 30 - 30.5 | 34 - 34.5 | 38 - 38.5 | 46 - 46.5 | 21 - 21.5 |
| Date Collected: | | | 12/05/03 | 12/05/03 | 04/28/11 | 04/28/11 | 04/28/11 | 05/02/11 | 08/08/03 | 08/08/03 | 08/08/03 | 08/08/03 | 08/08/03 | 08/08/03 | 08/22/03 |
| Location ID: | CAS Number | Units | E9 | E9 | EF-02 | EF-02 | EF-02 | EF-44 | F01 | F01 | F01 | F01 | F01 | F01 | F1 |
| **Volatile Organics** | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.007 U | 1.1 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.007 U | 1.1 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.007 U | 1.1 U |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.007 U | 1.1 U |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.007 U | 1.1 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.007 U | 1.1 U |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.007 U | 1.1 U |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.014 U | 2.1 U |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.014 U | 2.1 U |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.028 U | 4.2 U |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.007 U | 0.35 J |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.007 U | 1.1 U |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.007 U | 1.1 U |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.007 U | 1.1 U |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.014 U | 2.1 U |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.007 U | 1.1 U |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.007 U | 1.1 U |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.007 U | 1.1 U |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.007 U | 1.1 U |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.007 U | 1.1 U |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.007 U | 1.1 U |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.007 U | 1.1 U |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.007 U | 1.1 U |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.007 U | 1.1 U |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.007 U | 1.1 U |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.007 U | 1.1 U |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.014 U | 2.1 U |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.007 U | 1.1 U |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.007 U | 1.1 U |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.007 U | 1.1 U |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.007 U | 1.1 U |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.007 U | 1.1 U |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.007 U | 1.1 U |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.007 U | 1.1 U |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.007 U | 1.1 U |
| **Semivolatile Organics** | | | | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | E9S(33.5-34) | E9S(33.5-34)-694880 | EF-B02-22.0 | EF-B02-27.0 | EF-B02-30.5 | EF-B44-21.0 | F01-22-_662780 | F01-26-_662781 | F01-30-_662782 | F01-34-_662783 | F01-38-_662784 | F01-46-_662785 | F1S21-21.5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 33.5 - 34 | 33.5 - 34 | 22 - 22.5 | 27 - 27.5 | 30.5 - 31 | 21 - 21.5 | 22 - 22.5 | 26 - 26.5 | 30 - 30.5 | 34 - 34.5 | 38 - 38.5 | 46 - 46.5 | 21 - 21.5 |
| Date Collected: | | | 12/05/03 | 12/05/03 | 04/28/11 | 04/28/11 | 04/28/11 | 05/02/11 | 08/08/03 | 08/08/03 | 08/08/03 | 08/08/03 | 08/08/03 | 08/08/03 | 08/22/03 |
| Location ID: | CAS Number | Units | E9 | E9 | EF-02 | EF-02 | EF-02 | EF-44 | F01 | F01 | F01 | F01 | F01 | F01 | F1 |
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 UJ |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 2.3 U | 1.9 U |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 2.3 U | 1.9 U |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.048 J |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 2.3 U | 1.9 U |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 2.3 U | 1.9 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 2.3 U | 1.9 U |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 2.3 U | 1.9 U |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.05 J |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.063 BF |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | E9S(33.5-34)<br>33.5 - 34<br>12/05/03<br>E9 | E9S(33.5-34)-694880<br>33.5 - 34<br>12/05/03<br>E9 | EF-B02-22.0<br>22 - 22.5<br>04/28/11<br>EF-02 | EF-B02-27.0<br>27 - 27.5<br>04/28/11<br>EF-02 | EF-B02-30.5<br>30.5 - 31<br>04/28/11<br>EF-02 | EF-B44-21.0<br>21 - 21.5<br>05/02/11<br>EF-44 | F01-22-_662780<br>22 - 22.5<br>08/08/03<br>F01 | F01-26-_662781<br>26 - 26.5<br>08/08/03<br>F01 | F01-30-_662782<br>30 - 30.5<br>08/08/03<br>F01 | F01-34-_662783<br>34 - 34.5<br>08/08/03<br>F01 | F01-38-_662784<br>38 - 38.5<br>08/08/03<br>F01 | F01-46-_662785<br>46 - 46.5<br>08/08/03<br>F01 | F1S21-21.5<br>21 - 21.5<br>08/22/03<br>F1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 2.3 U | 1.9 U |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.11 J |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.45 U | 0.38 U |
| **Metals** | | | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | 1,410 | 5,430 | 4,400 | 2,620 | NA | 5,870 * | 2,740 * | 1,700 * | 2,820 * | 1,710 * | 18,100 * | 7,570 J |
| Antimony | 7440-36-0 | mg/kg | NA | 0.83 B | 2.3 UJ | 2.4 UJ | 2.3 UJ | NA | 7 U | 7 U | 7.3 U | 7.3 U | 7.2 U | 7.9 U | 0.43 UJ |
| Arsenic | 7440-38-2 | mg/kg | 0.86 | NA | 3.6 | 2.2 | 2.4 | NA | 4.2 | 1.4 | 2.1 | 2.3 | 1.2 U | 8.3 | 1.6 J |
| Barium | 7440-39-3 | mg/kg | NA | 11.6 | 19.6 J | 25 J | 39 J | NA | 34.3 | 31.3 | 22.7 | 23 | 17.6 | 175 | 53.5 J |
| Beryllium | 7440-41-7 | mg/kg | NA | 0.02 U | 0.46 U | 0.43 J | 0.27 J | NA | 0.58 U | 0.58 U | 0.61 U | 0.61 U | 0.6 U | 0.66 U | 0.01 UJ |
| Cadmium | 7440-43-9 | mg/kg | NA | 0.02 U | 1.2 U | 1.2 U | 1.1 U | NA | 0.58 U | 0.58 U | 0.61 U | 0.61 U | 0.6 U | 0.66 U | 0.56 U |
| Calcium | 7440-70-2 | mg/kg | NA | 8,990 | 1,620 J | 3,910 J | 1,110 J | NA | 2,490 | 1,000 | 1,310 | 11,100 | 1,190 | 12,800 | 913 J |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | NA | 154 | 200 J | 336 J | 194 J | NA | 64.4 | 97.3 | 40.9 | 21.6 | 46.7 | 124 | 23.2 J |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | NA | 15.1 | 6.2 | 35.6 | 162 [145] | 2.3 UJ | 20 J | 54.6 J | 23.6 J | 5.01 UJ | 21.9 J | 5.51 UJ | NA |
| Cobalt | 7440-48-4 | mg/kg | NA | 1.8 BJ | 7.9 J | 9.9 J | 3.3 J | NA | 5.9 * | 5.8 U | 6.1 U* | 6.1 U* | 6 U* | 15.3 * | 5.6 UJ |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | 4.6 B | 16.9 | 9.1 | 5.4 J | NA | 20.1 N | 8.2 N | 5.9 N | 6.8 N | 5.1 N | 26.3 N | 16.8 J |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | 4,600 | 10,800 | 12,100 | 6,500 | NA | 13,200 * | 7,030 * | 5,480 * | 7,600 * | 5,110 * | 38,200 | 12,000 J |
| Lead | 7439-92-1 | mg/kg | NA | 4 | 24.5 | 11.4 | 6.7 | NA | 62.9 N | 6.5 N | 5.2 N | 5.7 N | 4.5 N | 18.4 N | 11.5 J |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | 1,470 | 2,770 J | 3,880 J | 1,650 J | NA | 4,990 * | 1,630 * | 818 * | 2,130 * | 950 * | 9,240 * | 2,850 J |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | 193 J | 197 | 224 J | 204 J | NA | 313 N* | 243 N* | 202 N* | 266 N* | 201 N* | 832 N* | 84.5 J |
| Mercury | 7439-97-6 | mg/kg | NA | 0.005 UJ | 0.038 U | 0.04 U | 0.035 U | NA | 0.04 U | 0.04 U | 0.04 U | 0.04 U | 0.04 U | 0.04 U | 0.04 U |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | 3.3 BJ | 10.6 J | 33.9 J | 6.5 J | NA | 10.5 * | 5.8 * | 4.8 U | 5.2 * | 4.8 U* | 31.7 * | 11 J |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | 480 | 1,150 J | 855 J | 830 J | NA | 1,620 | 859 | 527 | 903 | 543 | 3,850 | 1,480 |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | 0.42 UJ | 2.3 U | 1.1 J | 2.3 U | NA | 0.58 U | 0.58 U | 0.61 U | 0.61 U | 0.6 U | 0.66 U | 0.56 U |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | 0.06 UJ | 2.3 U | 2.4 U | 2.3 U | NA | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.3 U | 1.1 UJ |
| Sodium | 7440-23-5 | mg/kg | NA | 172 B | 738 J | 391 J | 510 J | NA | 263 | 167 | 145 | 139 | 120 U | 287 | 642 J |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | E9S(33.5-34)<br>33.5 - 34<br>12/05/03<br>E9 | E9S(33.5-34)-694880<br>33.5 - 34<br>12/05/03<br>E9 | EF-B02-22.0<br>22 - 22.5<br>04/28/11<br>EF-02 | EF-B02-27.0<br>27 - 27.5<br>04/28/11<br>EF-02 | EF-B02-30.5<br>30.5 - 31<br>04/28/11<br>EF-02 | EF-B44-21.0<br>21 - 21.5<br>05/02/11<br>EF-44 | F01-22-_662780<br>22 - 22.5<br>08/08/03<br>F01 | F01-26-_662781<br>26 - 26.5<br>08/08/03<br>F01 | F01-30-_662782<br>30 - 30.5<br>08/08/03<br>F01 | F01-34-_662783<br>34 - 34.5<br>08/08/03<br>F01 | F01-38-_662784<br>38 - 38.5<br>08/08/03<br>F01 | F01-46-_662785<br>46 - 46.5<br>08/08/03<br>F01 | F1S21-21.5<br>21 - 21.5<br>08/22/03<br>F1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | 0.48 U | 2.3 U | 2.4 U | 2.3 U | 2.3 U | 3.5 U | 3.5 U | 1.2 U | 3.6 U | 1.2 U | 13.1 U | 0.39 U |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | 7 J | 20.2 | 39.6 J | 9.6 J | NA | 24.4 * | 10.3 * | 8.7 * | 11.7 * | 9.2 * | 38.2 * | 26 J |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | 12.9 BJ | 73.7 J | 45.8 | 25.1 J | NA | 94.2 | 32 | 20.2 | 21.8 | 16.4 | 86.1 | 56.4 J |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | 0.077 U | NA | NA | NA | NA | NA | 0.045 U | 0.038 UJ |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | 0.077 U | NA | NA | NA | NA | NA | 0.045 U | 0.038 UJ |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | 0.077 U | NA | NA | NA | NA | NA | 0.045 U | 0.038 UJ |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | 0.077 U | NA | NA | NA | NA | NA | 0.045 U | 0.038 UJ |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | 0.077 U | NA | NA | NA | NA | NA | 0.045 U | 0.038 UJ |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | 0.077 U | NA | NA | NA | NA | NA | 0.045 U | 0.038 UJ |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | 0.077 U | NA | NA | NA | NA | NA | 0.045 U | 0.038 UJ |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | 0.077 U | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | 0.077 U | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | E9S(33.5-34) | E9S(33.5-34)-694880 | EF-B02-22.0 | EF-B02-27.0 | EF-B02-30.5 | EF-B44-21.0 | F01-22-_662780 | F01-26-_662781 | F01-30-_662782 | F01-34-_662783 | F01-38-_662784 | F01-46-_662785 | F1S21-21.5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 33.5 - 34 | 33.5 - 34 | 22 - 22.5 | 27 - 27.5 | 30.5 - 31 | 21 - 21.5 | 22 - 22.5 | 26 - 26.5 | 30 - 30.5 | 34 - 34.5 | 38 - 38.5 | 46 - 46.5 | 21 - 21.5 |
| Date Collected: | | | 12/05/03 | 12/05/03 | 04/28/11 | 04/28/11 | 04/28/11 | 05/02/11 | 08/08/03 | 08/08/03 | 08/08/03 | 08/08/03 | 08/08/03 | 08/08/03 | 08/22/03 |
| Location ID: | CAS Number | Units | E9 | E9 | EF-02 | EF-02 | EF-02 | EF-44 | F01 | F01 | F01 | F01 | F01 | F01 | F1 |
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 1.38 U | 1.14 U |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 275 | 337 | 328 [337] | 373 | NA | NA | NA | NA | NA | NA | NA |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | 9.89 | 9.94 | 9.37 [9.22] | 9.02 | NA | NA | NA | NA | NA | NA | NA |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | F2S21-21.5<br>21 - 21.5<br>08/22/03<br>F2 | F2S28-28.5<br>28 - 28.5<br>08/22/03<br>F2 | F3-S(24.5-25)<br>24.5 - 25<br>08/25/03<br>F3 | F3S24.5<br>24.5 - 25<br>08/25/03<br>F3 | F05-42.<br>42.5 - 43<br>08/12/03<br>F05 | F9S(27.5-28)<br>27.5 - 28<br>08/29/03<br>F9 | F9S23.5-24<br>23.5 - 24<br>08/29/03<br>F9 | F9S27.5-28<br>27.5 - 28<br>08/29/03<br>F9 | G-3-31-<br>31 - 31.5<br>08/11/03<br>G3 | G-3-42-<br>42 - 42.5<br>08/11/03<br>G3 | G8S(23.5-24)<br>23.5 - 24<br>09/02/03<br>G8 | G8S23.5-24<br>23.5 - 24<br>09/02/03<br>G8 | GB-15 (58-60)<br>58 - 60<br>04/03/12<br>GB-15 | MW1B (25-27)-693427<br>25 - 27<br>12/03/03<br>MW1B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | 6.7 UJ | 1.1 U [1.1 U] | NA | 1.6 UJ | 0.023 U | NA | NA | NA | 1.1 U | 0.0063 U | NA | NA | 0.0051 U | 1.2 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | 6.7 UJ | 1.1 U [1.1 U] | NA | 1.6 UJ | 0.023 U | NA | NA | NA | 1.1 U | 0.0063 U | NA | NA | 0.0051 U | 1.2 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0051 U | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | 6.7 UJ | 1.1 U [1.1 U] | NA | 1.6 UJ | 0.023 U | NA | NA | NA | 1.1 U | 0.0063 U | NA | NA | 0.0051 U | 1.2 U |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | 6.7 UJ | 1.1 U [1.1 U] | NA | 1.6 UJ | 0.023 U | NA | NA | NA | 1.1 U | 0.0063 U | NA | NA | 0.0051 U | 1.2 U |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | 6.7 UJ | 1.1 U [1.1 U] | NA | 1.6 UJ | 0.023 U | NA | NA | NA | 1.1 U | 0.0063 U | NA | NA | 0.0051 U | 1.2 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0051 U | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0051 U | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.01 U | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.001 U | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0051 U | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | 6.7 UJ | 1.1 U [1.1 U] | NA | 1.6 UJ | 0.023 U | NA | NA | NA | 1.1 U | 0.0063 U | NA | NA | 0.001 U | 1.2 U |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | 6.7 UJ | 1.1 U [1.1 U] | NA | 1.6 UJ | 0.023 U | NA | NA | NA | 1.1 U | 0.0063 U | NA | NA | 0.0051 U | 1.2 U |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0051 U | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0051 U | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.13 U | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | 13 UJ | 2.1 U [2 U] | NA | 3.2 UJ | 0.045 U | NA | NA | NA | 2.3 U | 0.013 U | NA | NA | R | 2.5 U |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | 13 UJ | 2.1 U [2 U] | NA | 3.2 UJ | 0.045 U | NA | NA | NA | 2.3 U | 0.013 U | NA | NA | 0.0051 U | 2.5 U |
| Acetone | 67-64-1 | mg/kg | 27 UJ | 4.2 U [4 U] | NA | 6.5 UJ | 0.058 J | NA | NA | NA | 4.6 U | 0.03 | NA | NA | 0.01 U | 4.9 U |
| Benzene | 71-43-2 | mg/kg | 12 J | 0.25 J [0.26 J] | NA | 1 J | 0.023 U | NA | NA | NA | 1.1 U | 0.013 | NA | NA | 0.001 U | 1.2 U |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0051 U | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | 6.7 UJ | 1.1 U [1.1 U] | NA | 1.6 UJ | 0.023 U | NA | NA | NA | 1.1 U | 0.0063 U | NA | NA | 0.0051 U | 1.2 U |
| Bromoform | 75-25-2 | mg/kg | 6.7 UJ | 1.1 U [1.1 U] | NA | 1.6 UJ | 0.023 U | NA | NA | NA | 1.1 U | 0.0063 U | NA | NA | 0.0051 U | 1.2 U |
| Bromomethane | 74-83-9 | mg/kg | 6.7 UJ | 1.1 U [1.1 U] | NA | 1.6 UJ | 0.023 U | NA | NA | NA | 1.1 U | 0.0063 U | NA | NA | 0.0051 U | 1.2 U |
| Carbon Disulfide | 75-15-0 | mg/kg | 13 UJ | 2.1 U [2 U] | NA | 3.2 UJ | 0.045 U | NA | NA | NA | 2.3 U | 0.013 U | NA | NA | 0.0006 J | 2.5 U |
| Carbon Tetrachloride | 56-23-5 | mg/kg | 6.7 UJ | 1.1 U [1.1 U] | NA | 1.6 UJ | 0.023 U | NA | NA | NA | 1.1 U | 0.0063 U | NA | NA | 0.0051 U | 1.2 U |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0051 U | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0051 U | NA |
| Chlorobenzene | 108-90-7 | mg/kg | 6.7 UJ | 1.1 U [1.1 U] | NA | 1.6 UJ | 0.023 U | NA | NA | NA | 1.1 U | 0.0063 U | NA | NA | 0.0051 U | 1.2 U |
| Chlorodibromomethane | 124-48-1 | mg/kg | 6.7 UJ | 1.1 U [1.1 U] | NA | 1.6 UJ | 0.023 U | NA | NA | NA | 1.1 U | 0.0063 U | NA | NA | 0.0051 U | 1.2 U |
| Chloroethane | 75-00-3 | mg/kg | 6.7 UJ | 1.1 U [1.1 U] | NA | 1.6 UJ | 0.023 U | NA | NA | NA | 1.1 U | 0.0063 U | NA | NA | 0.0051 U | 1.2 U |
| Chloroform | 67-66-3 | mg/kg | 6.7 UJ | 1.1 U [1.1 U] | NA | 1.6 UJ | 0.023 U | NA | NA | NA | 1.1 U | 0.0063 U | NA | NA | 0.0051 U | 1.2 U |
| Chloromethane | 74-87-3 | mg/kg | 6.7 UJ | 1.1 U [1.1 U] | NA | 1.6 UJ | 0.023 U | NA | NA | NA | 1.1 U | 0.0063 U | NA | NA | 0.0051 U | 1.2 U |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | 6.7 UJ | 1.1 U [1.1 U] | NA | 1.6 UJ | 0.023 U | NA | NA | NA | 1.1 U | 0.0063 U | NA | NA | 0.0051 U | 1.2 U |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | 6.7 UJ | 1.1 U [1.1 U] | NA | 1.6 UJ | 0.023 U | NA | NA | NA | 1.1 U | 0.0063 U | NA | NA | 0.0051 U | 1.2 U |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0051 U | NA |
| Dichloromethane | 75-09-2 | mg/kg | 6.7 UJ | 1.1 U [1.1 U] | NA | 1.6 UJ | 0.0045 J | NA | NA | NA | 1.1 U | 0.0063 U | NA | NA | 0.0051 U | 1.2 U |
| Ethylbenzene | 100-41-4 | mg/kg | 35 J | 0.41 J [0.3 J] | NA | 11 J | 0.011 J | NA | NA | NA | 42 | 0.012 | NA | NA | 0.0021 | 1.2 U |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.00051 J | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | 35 J | 0.23 J [1.1 u] | NA | 10 J | 0.094 | NA | NA | NA | 46 | 0.016 | NA | NA | 0.001 | 1.2 U |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0051 U | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | 13 UJ | 2.1 U [2 U] | NA | 3.2 UJ | 0.045 U | NA | NA | NA | 2.3 U | 0.013 U | NA | NA | 0.0051 U | 2.5 U |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0051 U | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.001 U | NA |
| o-Xylene | 95-47-6 | mg/kg | 18 J | 1.1 U [1.1 U] | NA | 6.4 J | 0.01 J | NA | NA | NA | 30 | 0.047 | NA | NA | 0.00082 J | 1.2 U |
| Styrene (Monomer) | 100-42-5 | mg/kg | 6.7 UJ | 1.1 U [1.1 U] | NA | 1.6 UJ | 0.023 U | NA | NA | NA | 1.1 U | 0.0063 U | NA | NA | 0.0051 U | 1.2 U |
| Tetrachloroethene | 127-18-4 | mg/kg | 6.7 UJ | 1.1 U [1.1 U] | NA | 1.6 UJ | 0.023 U | NA | NA | NA | 1.1 U | 0.0063 U | NA | NA | 0.0051 U | 1.2 U |
| Toluene | 108-88-3 | mg/kg | 8.1 J | 1.1 U [1.1 U] | NA | 1.6 UJ | 0.023 U | NA | NA | NA | 1.1 U | 0.0063 U | NA | NA | 0.001 U | 1.2 U |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0018 | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | 6.7 UJ | 1.1 U [1.1 U] | NA | 1.6 UJ | 0.023 U | NA | NA | NA | 1.1 U | 0.0063 U | NA | NA | 0.0051 U | 1.2 U |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | 6.7 UJ | 1.1 U [1.1 U] | NA | 1.6 UJ | 0.023 U | NA | NA | NA | 1.1 U | 0.0063 U | NA | NA | 0.0051 U | 1.2 U |
| Trichloroethene | 79-01-6 | mg/kg | 6.7 UJ | 1.1 U [1.1 U] | NA | 1.6 UJ | 0.023 U | NA | NA | NA | 1.1 U | 0.0063 U | NA | NA | 0.0051 UJ | 1.2 U |
| Vinyl chloride | 75-01-4 | mg/kg | 6.7 UJ | 1.1 U [1.1 U] | NA | 1.6 UJ | 0.023 U | NA | NA | NA | 1.1 U | 0.0063 U | NA | NA | 0.0051 U | 1.2 U |
| **Semivolatile Organics** | | | | | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | F2S21-21.5<br>21 - 21.5<br>08/22/03<br>F2 | F2S28-28.5<br>28 - 28.5<br>08/22/03<br>F2 | F3-S(24.5-25)<br>24.5 - 25<br>08/25/03<br>F3 | F3S24.5<br>24.5 - 25<br>08/25/03<br>F3 | F05-42.<br>42.5 - 43<br>08/12/03<br>F05 | F9S(27.5-28)<br>27.5 - 28<br>08/29/03<br>F9 | F9S23.5-24<br>23.5 - 24<br>08/29/03<br>F9 | F9S27.5-28<br>27.5 - 28<br>08/29/03<br>F9 | G-3-31-<br>31 - 31.5<br>08/11/03<br>G3 | G-3-42-<br>42 - 42.5<br>08/11/03<br>G3 | G8S(23.5-24)<br>23.5 - 24<br>09/02/03<br>G8 | G8S23.5-24<br>23.5 - 24<br>09/02/03<br>G8 | GB-15 (58-60)<br>58 - 60<br>04/03/12<br>GB-15 | MW1B (25-27)-693427<br>25 - 27<br>12/03/03<br>MW1B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.0474 J | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.17 U | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | NA | 0.39 U |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | NA | 0.39 U |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | NA | 0.39 U |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | NA | 0.39 U |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | NA | 0.39 U |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.17 U | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.17 U | 0.39 U |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.17 U | 0.39 U |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.17 U | 0.39 U |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | 190 UJ | 0.4 UJ [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.17 U | 0.39 U |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | 980 UJ | 2 U [2.1 U] | NA | 47 UJ | 2.4 U | NA | NA | NA | 2.1 U | 2.1 U | NA | NA | 0.67 U | 2 U |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.067 U | 0.39 U |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.067 U | 0.39 U |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.067 U | 0.39 U |
| 2-Chlorophenol | 95-57-8 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.17 U | 0.39 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | 980 UJ | 2 U [2.1 U] | NA | 47 UJ | 2.4 U | NA | NA | NA | 2.1 U | 2.1 U | NA | NA | 0.67 U | 2 U |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | 2,100 J | 0.4 U [0.4 U] | NA | 93 J | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.122 | 0.39 U |
| 2-Methylphenol | 95-48-7 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.067 U | 0.39 U |
| 2-Nitroaniline | 88-74-4 | mg/kg | 980 UJ | 2 U [2.1 U] | NA | 47 UJ | 2.4 U | NA | NA | NA | 2.1 U | 2.1 U | NA | NA | 0.17 U | 2 U |
| 2-Nitrophenol | 88-75-5 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.17 U | 0.39 U |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.17 U | 0.39 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.067 U | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | 980 UJ | 2 U [2.1 U] | NA | 47 UJ | 2.4 U | NA | NA | NA | 2.1 U | 2.1 U | NA | NA | 0.17 U | 2 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.067 U | 0.39 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.17 U | 0.39 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.067 U | 0.39 U |
| 4-Methylphenol | 106-44-5 | mg/kg | 25 J | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | NA | 0.39 U |
| 4-Nitroaniline | 100-01-6 | mg/kg | 980 UJ | 2 U [2.1 U] | NA | 47 UJ | 2.4 U | NA | NA | NA | 2.1 U | 2.1 U | NA | NA | 0.17 U | 2 U |
| 4-Nitrophenol | 100-02-7 | mg/kg | 980 UJ | 2 U [2.1 U] | NA | 47 UJ | 2.4 U | NA | NA | NA | 2.1 U | 2.1 U | NA | NA | 0.33 U | 2 U |
| Acenaphthene | 83-32-9 | mg/kg | 890 J | 0.4 U [0.042 J] | NA | 53 J | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.24 | 0.39 U |
| Acenaphthylene | 208-96-8 | mg/kg | 150 J | 0.4 U [0.4 U] | NA | 6.6 J | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.0584 | 0.39 U |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.17 U | NA |
| Anthracene | 120-12-7 | mg/kg | 450 J | 0.4 U [0.085 J] | NA | 25 J | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.229 | 0.39 U |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.17 U | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.17 U | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | 190 J | 0.089 J [0.053 J] | NA | 11 J | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.116 | 0.39 U |
| Benzo(a)pyrene | 50-32-8 | mg/kg | 110 J | 0.059 J [0.4 U] | NA | 6.8 J | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.0839 | 0.39 U |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | 42 J | 0.4 U [0.4 U] | NA | 2.7 J | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.0458 | 0.39 U |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | 42 J | 0.4 U [0.4 U] | NA | 2.5 J | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.0382 | 0.39 U |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | 61 J | 0.4 U [0.4 U] | NA | 4.1 J | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.0349 | 0.39 U |
| Benzyl Alcohol | 100-51-6 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | NA | 0.39 U |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.067 U | 0.39 U |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.067 U | 0.39 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.067 U | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.067 U | 0.052 BF |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.067 U | 0.39 U |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.067 U | NA |
| Carbazole | 86-74-8 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.067 U | 0.39 U |
| Chrysene | 218-01-9 | mg/kg | 200 J | 0.053 J [0.055 J] | NA | 11 J | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.114 | 0.39 U |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.033 U | 0.39 U |
| Dibenzofuran | 132-64-9 | mg/kg | 82 J | 0.4 U [0.4 U] | NA | 4.1 J | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.016 J | 0.39 U |
| Diethyl phthalate | 84-66-2 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.067 U | 0.39 U |
| Dimethyl phthalate | 131-11-3 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.067 U | 0.39 U |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | 190 UJ | 0.062 BF [0.069 BF] | NA | 9.1 UJ | 0.058 J | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.067 U | 0.39 U |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | F2S21-21.5<br>21 - 21.5<br>08/22/03<br>F2 | F2S28-28.5<br>28 - 28.5<br>08/22/03<br>F2 | F3-S(24.5-25)<br>24.5 - 25<br>08/25/03<br>F3 | F3S24.5<br>24.5 - 25<br>08/25/03<br>F3 | F05-42.<br>42.5 - 43<br>08/12/03<br>F05 | F9S(27.5-28)<br>27.5 - 28<br>08/29/03<br>F9 | F9S23.5-24<br>23.5 - 24<br>08/29/03<br>F9 | F9S27.5-28<br>27.5 - 28<br>08/29/03<br>F9 | G-3-31-<br>31 - 31.5<br>08/11/03<br>G3 | G-3-42-<br>42 - 42.5<br>08/11/03<br>G3 | G8S(23.5-24)<br>23.5 - 24<br>09/02/03<br>G8 | G8S23.5-24<br>23.5 - 24<br>09/02/03<br>G8 | GB-15 (58-60)<br>58 - 60<br>04/03/12<br>GB-15 | MW1B (25-27)-693427<br>25 - 27<br>12/03/03<br>MW1B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.067 U | 0.39 U |
| Fluoranthene | 206-44-0 | mg/kg | 360 J | 0.094 J [0.1 J] | NA | 20 J | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.245 | 0.39 U |
| Fluorene | 86-73-7 | mg/kg | 500 J | 0.045 J [0.052 J] | NA | 28 J | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.186 | 0.39 U |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.033 U | 0.39 U |
| Hexachlorobenzene | 118-74-1 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.067 U | 0.39 U |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.33 U | 0.39 U |
| Hexachloroethane | 67-72-1 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.17 U | 0.39 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | 33 J | 0.4 U [0.4 U] | NA | 2.1 J | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.0288 J | 0.39 U |
| Isophorone | 78-59-1 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.067 U | 0.39 U |
| Naphthalene | 91-20-3 | mg/kg | 2,500 J | 0.4 U [0.4 U] | NA | 92 | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.0615 | 0.39 U |
| Nitrobenzene | 98-95-3 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.067 U | 0.39 U |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | NA | 0.39 U |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.067 U | 0.39 U |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.17 U | 0.39 U |
| p-Chloroaniline | 106-47-8 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.17 U | 0.39 U |
| Pentachlorophenol | 87-86-5 | mg/kg | 980 UJ | 2 U [2.1 U] | NA | 47 UJ | 2.4 U | NA | NA | NA | 2.1 U | 2.1 U | NA | NA | 0.33 U | 2 U |
| Phenanthrene | 85-01-8 | mg/kg | 1,500 J | 0.3 J [0.3 J] | NA | 79 J | 0.47 U | NA | NA | NA | 0.66 | 0.59 | NA | NA | 0.776 | 0.39 U |
| Phenol | 108-95-2 | mg/kg | 190 UJ | 0.4 U [0.4 U] | NA | 9.1 UJ | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.067 U | 0.39 U |
| Pyrene | 129-00-0 | mg/kg | 550 J | 0.13 J [0.14 J] | NA | 29 J | 0.47 U | NA | NA | NA | 0.41 U | 0.4 U | NA | NA | 0.363 | 0.39 U |
| **Metals** | | | | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | 10,400 J | 3,970 [3,830 J] | NA | 7,040 | 17,800 | NA | 7,000 | 12,300 | 3,520 * | 2,060 * | NA | 7,550 | 4,470 | 3,440 |
| Antimony | 7440-36-0 | mg/kg | 69.8 BJ | 0.44 U [0.46 UJ] | NA | 0.42 U | 8.43 U | NA | 55.3 J | 3.4 B | 7.3 UN | 7.1 UN | NA | 0.44 UJ | 2.4 U | 0.35 U |
| Arsenic | 7440-38-2 | mg/kg | 62.9 J | 3.4 [4.4 J] | NA | 3.8 J | 6.1 | NA | 11.2 U | 0.51 B | 3.7 * | 1.4 * | NA | 3.7 J | 2.8 | 2 BJ |
| Barium | 7440-39-3 | mg/kg | 77.4 J | 12.7 [11.8] | NA | 20.5 | 185 | NA | 76.3 J | 154 J | 12.8 | 26.2 | NA | 74.4 | 48 | 18.7 |
| Beryllium | 7440-41-7 | mg/kg | 0.02 UJ | 0.01 U [0.01 UJ] | 0.71 J | NA | 0.7 U | NA | 0.01 U | 0.01 U | 0.61 U | 0.59 U | NA | 0.01 UJ | 0.31 | 0.01 U |
| Cadmium | 7440-43-9 | mg/kg | 2.3 J | 0.57 U [0.59 U] | NA | 0.54 U | 0.7 U | NA | 0.56 U | 0.6 U | 0.61 U | 0.59 U | NA | 0.56 U | 0.6 U | 0.02 U |
| Calcium | 7440-70-2 | mg/kg | 43,200 J | 846 J [893 J] | NA | 1,300 | 17,000 | NA | 3,130 | 2,420 | 773 * | 853 * | NA | 1,990 | 12,200 | 8,780 |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | 9,550 J | 12.3 [11.4 J] | NA | 23.4 | 27.6 | NA | 9,150 | 568 | 11.9 | 344 | NA | 70.5 J | 29.8 | 65.6 |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 9.24 UJ | 4.81 UJ [4.87 UJ] | NA | 4.42 UJ | 5.67 UJ | NA | 1,500 J | 320 J | 4.99 UJ | 189 J | NA | 26.1 J | NA | 42.5 |
| Cobalt | 7440-48-4 | mg/kg | 22.3 J | 5.7 U [5.9 UJ] | NA | 6.2 | 15.8 | NA | 6.2 J | 9.1 J | 6.1 U* | 5.9 U* | NA | 10.6 | 6 U | 4 |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | 99.5 J | 6.9 [7.3 J] | NA | 16 J | 24.2 | NA | 14.3 | 18.9 | 8.5 | 5.8 | NA | 18.1 J | 7.7 | 8.1 BJ |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | 24,300 J | 9,020 [9,260 J] | NA | 14,000 | 35,900 | NA | 16,600 | 28,000 | 9,110 | 5,160 | NA | 16,800 J | 9,610 | 8,800 |
| Lead | 7439-92-1 | mg/kg | 142 J | 8.5 [8.8 J] | NA | 21.7 | 17.6 | NA | 28 J | 17.2 J | 7.9 | 4 | NA | 21.5 J | 8 | 8.2 |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | 7,450 J | 2,360 [2,480 J] | NA | 4,070 | 10,500 | NA | 4,790 | 5,550 | 2,000 * | 948 * | NA | 5,670 J | 3,630 | 2,540 |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | 227 J | 121 [134 J] | NA | 153 | 941 | NA | 234 | 271 | 110 | 49.6 | NA | 881 J | 262 | 205 J |
| Mercury | 7439-97-6 | mg/kg | 0.09 | 0.04 U [0.04 U] | NA | 0.03 UJ | 0.05 U | NA | 0.04 UJ | 0.04 UJ | 0.04 U | 0.04 U | NA | 0.03 U | 0.038 U | 0.005 U |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | 110 J | 6.7 [7.4 J] | NA | 10.2 | 32.8 | NA | 13 J | 18.4 J | 6 N* | 4.8 U | NA | 16 J | 8.7 | 7.2 |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | 2,180 | 1,320 [1,240] | NA | 1,620 | 3,860 | NA | 2,410 | 3,800 | 1,160 * | 622 * | NA | 2,050 | 1,300 | 866 |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | 11.4 U | 0.57 U [0.59 U] | NA | 0.54 U | 0.7 U | NA | 0.56 U | 0.6 U | 0.61 U* | 0.59 U* | NA | 0.56 U | 2.4 U | 0.4 UJ |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | 2.3 UJ | 1.2 U [1.2 UJ] | NA | 1.1 U | 1.4 U | NA | 1.1 U | 1.2 U | 1.2 U | 1.2 U | NA | 1.1 UJ | 0.6 U | 0.06 UJ |
| Sodium | 7440-23-5 | mg/kg | 10,900 J | 200 [203 J] | NA | 216 | 660 | NA | 1,240 J | 1,110 J | 121 U* | 255 * | NA | 264 J | 1,200 U | 242 BJ |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | F2S21-21.5<br>21 - 21.5<br>08/22/03<br>F2 | F2S28-28.5<br>28 - 28.5<br>08/22/03<br>F2 | F3-S(24.5-25)<br>24.5 - 25<br>08/25/03<br>F3 | F3S24.5<br>24.5 - 25<br>08/25/03<br>F3 | F05-42.<br>42.5 - 43<br>08/12/03<br>F05 | F9S(27.5-28)<br>27.5 - 28<br>08/29/03<br>F9 | F9S23.5-24<br>23.5 - 24<br>08/29/03<br>F9 | F9S27.5-28<br>27.5 - 28<br>08/29/03<br>F9 | G-3-31-<br>31 - 31.5<br>08/11/03<br>G3 | G-3-42-<br>42 - 42.5<br>08/11/03<br>G3 | G8S(23.5-24)<br>23.5 - 24<br>09/02/03<br>G8 | G8S23.5-24<br>23.5 - 24<br>09/02/03<br>G8 | GB-15 (58-60)<br>58 - 60<br>04/03/12<br>GB-15 | MW1B (25-27)-693427<br>25 - 27<br>12/03/03<br>MW1B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | 0.8 U | 1.1 U [0.42 U] | NA | 0.38 U | 14 U | 0.21 UJ | 0.39 U | NA | 1.2 U | 1.2 U | 0.19 U | NA | 1.2 U | 0.45 U |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | 30.1 J | 17.6 [17.7] | NA | 28.9 J | 40 | NA | 7.8 U | 30.9 | 13.6 N* | 6.4 N* | NA | 25.5 J | 14 | 15.5 |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | 417 J | 33.4 [36.4 J] | NA | 72.1 | 77.6 | NA | 46.2 J | 88 J | 25.9 | 15.3 | NA | 97.2 J | 31.8 | 27.2 |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | 0.76 U | 0.04 U [0.04 U] | NA | 0.037 U | 0.094 U | NA | NA | NA | 0.041 U | 0.04 U | NA | NA | NA | 0.039 U |
| Aroclor 1221 | 11104-28-2 | mg/kg | 0.76 U | 0.04 U [0.04 U] | NA | 0.037 U | 0.094 U | NA | NA | NA | 0.041 U | 0.04 U | NA | NA | NA | 0.039 U |
| Aroclor 1232 | 11141-16-5 | mg/kg | 0.76 U | 0.04 U [0.04 U] | NA | 0.037 U | 0.094 U | NA | NA | NA | 0.041 U | 0.04 U | NA | NA | NA | 0.039 U |
| Aroclor 1242 | 53469-21-9 | mg/kg | 0.76 U | 0.04 U [0.04 U] | NA | 0.037 U | 0.094 U | NA | NA | NA | 0.041 U | 0.04 U | NA | NA | NA | 0.039 U |
| Aroclor 1248 | 12672-29-6 | mg/kg | 0.76 U | 0.04 U [0.04 U] | NA | 0.037 U | 0.094 U | NA | NA | NA | 0.041 U | 0.04 U | NA | NA | NA | 0.039 U |
| Aroclor 1254 | 11097-69-1 | mg/kg | 0.76 U | 0.04 U [0.04 U] | NA | 0.037 U | 0.094 U | NA | NA | NA | 0.041 U | 0.04 U | NA | NA | NA | 0.039 U |
| Aroclor 1260 | 11096-82-5 | mg/kg | 0.76 U | 0.04 U [0.04 U] | NA | 0.037 U | 0.094 U | NA | NA | NA | 0.041 U | 0.04 U | NA | NA | NA | 0.039 U |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | 0.0037 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | 0.0037 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | 0.0037 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | 0.0019 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | 0.0019 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | 0.0019 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | 0.0019 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | 0.0019 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | 0.0037 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | 0.0019 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | 0.0037 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | 0.0037 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | 0.0037 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | 0.0037 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | 0.0037 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | 0.0019 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | 0.0019 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | 0.0019 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | 0.02 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | 0.04 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | 0.0019 U | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | 2.31 U | 1.2 U [1.22 U] | NA | 1.11 UJ | 1.42 U | NA | NA | NA | 1.25 U | 1.21 U | NA | NA | 0.28 U | 1.19 U |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | NA | NA | NA | NA | 705,000 | NA | NA | NA | NA | NA | NA | NA | 847,000 | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | MW2B(25-27) | MW2B(25-27)-715859 | MW3B-0-_664542 | MW3B-1._664543 | MW3B-2._664544 | MW3B-6-_664545 | MW3B-17_664546 | MW3B-28_665407 | MW3B-35_665408 | MW4B (30-32)-693428 | MW4B(30-32) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 25 - 27 | 25 - 27 | 0 - 0.5 | 1.5 - 2 | 2.6 - 3.1 | 6 - 6.5 | 17.5 - 18 | 28 - 28.5 | 35.5 - 36 | 30 - 32 | 30 - 32 |
| Date Collected: | | | 11/25/03 | 11/25/03 | 08/15/03 | 08/15/03 | 08/15/03 | 08/15/03 | 08/15/03 | 08/19/03 | 08/19/03 | 12/03/03 | 12/03/03 |
| Location ID: | CAS Number | Units | MW2B | MW2B | MW3B | MW3B | MW3B | MW3B | MW3B | MW3B | MW3B | MW4B | MW4B |
| **Volatile Organics** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | 0.99 U | NA | NA | 0.0065 U | NA | NA | 0.5 U | 0.0077 U | 0.0062 U | 1.2 U | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | 0.99 U | NA | NA | 0.0065 U | NA | NA | 0.5 U | 0.0077 U | 0.0062 U | 1.2 U | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | 0.99 U | NA | NA | 0.0065 U | NA | NA | 0.5 U | 0.0077 U | 0.0062 U | 1.2 U | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | 0.99 U | NA | NA | 0.0065 U | NA | NA | 0.5 U | 0.0077 U | 0.0062 U | 1.2 U | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | 0.99 U | NA | NA | 0.0065 U | NA | NA | 0.5 U | 0.0077 U | 0.0062 U | 1.2 U | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | 0.99 U | NA | NA | 0.0065 U | NA | NA | 0.5 U | 0.0077 U | 0.0062 U | 1.2 U | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | 0.99 U | NA | NA | 0.0065 U | NA | NA | 0.5 U | 0.0077 U | 0.0062 U | 1.2 U | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | 2 U | NA | NA | 0.013 U | NA | NA | 1 U | 0.015 U | 0.012 U | 2.3 U | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | 2 U | NA | NA | 0.013 U | NA | NA | 1 U | 0.015 U | 0.012 U | 2.3 U | NA |
| Acetone | 67-64-1 | mg/kg | 4 U | NA | NA | 0.037 | NA | NA | 2 U | 0.008 | 0.03 | 4.7 U | NA |
| Benzene | 71-43-2 | mg/kg | 0.99 U | NA | NA | 0.0065 U | NA | NA | 0.13 | 0.0077 U | 0.0062 U | 1.2 U | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | 0.99 U | NA | NA | 0.0065 U | NA | NA | 0.5 U | 0.0077 U | 0.0062 U | 1.2 U | NA |
| Bromoform | 75-25-2 | mg/kg | 0.99 U | NA | NA | 0.0065 U | NA | NA | 0.5 U | 0.0077 U | 0.0062 U | 1.2 U | NA |
| Bromomethane | 74-83-9 | mg/kg | 0.99 U | NA | NA | 0.0065 U | NA | NA | 0.5 U | 0.0077 U | 0.0062 U | 1.2 U | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | 2 U | NA | NA | 0.013 U | NA | NA | 0.13 | 0.015 U | 0.012 U | 2.3 U | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | 0.99 U | NA | NA | 0.0065 U | NA | NA | 0.5 U | 0.0077 U | 0.0062 U | 1.2 U | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | 0.99 U | NA | NA | 0.0065 U | NA | NA | 0.5 U | 0.0077 U | 0.0062 U | 1.2 U | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | 0.99 U | NA | NA | 0.0065 U | NA | NA | 0.5 U | 0.0077 U | 0.0062 U | 1.2 U | NA |
| Chloroethane | 75-00-3 | mg/kg | 0.99 U | NA | NA | 0.0065 U | NA | NA | 0.5 U | 0.0077 U | 0.0062 U | 1.2 U | NA |
| Chloroform | 67-66-3 | mg/kg | 0.99 U | NA | NA | 0.0065 U | NA | NA | 0.5 U | 0.0077 U | 0.0062 U | 1.2 U | NA |
| Chloromethane | 74-87-3 | mg/kg | 0.99 U | NA | NA | 0.0065 U | NA | NA | 0.5 U | 0.0077 U | 0.0062 U | 1.2 U | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | 0.99 U | NA | NA | 0.0065 U | NA | NA | 0.5 U | 0.0077 U | 0.0062 U | 1.2 U | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | 0.99 U | NA | NA | 0.0065 U | NA | NA | 0.5 U | 0.0077 U | 0.0062 U | 1.2 U | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | 0.99 U | NA | NA | 0.0065 U | NA | NA | 0.5 U | 0.0025 | 0.0018 | 1.2 U | NA |
| Ethylbenzene | 100-41-4 | mg/kg | 0.99 U | NA | NA | 0.0065 U | NA | NA | 20 | 0.0099 | 0.0036 | 1.2 U | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | 0.99 U | NA | NA | 0.0065 U | NA | NA | 3 | 0.0051 | 0.0019 | 1.2 U | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | 2 U | NA | NA | 0.013 U | NA | NA | 1 U | 0.015 U | 0.012 U | 2.3 U | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | 0.99 U | NA | NA | 0.0065 U | NA | NA | 10 | 0.0046 | 0.0016 | 1.2 U | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | 0.99 U | NA | NA | 0.0065 U | NA | NA | 0.5 U | 0.0077 U | 0.0062 U | 1.2 U | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | 0.99 U | NA | NA | 0.0065 U | NA | NA | 0.5 U | 0.0077 U | 0.0062 U | 1.2 U | NA |
| Toluene | 108-88-3 | mg/kg | 0.99 U | NA | NA | 0.0065 U | NA | NA | 0.5 U | 0.0077 U | 0.0062 U | 1.2 U | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | 0.99 U | NA | NA | 0.0065 U | NA | NA | 0.5 U | 0.0077 U | 0.0062 U | 1.2 U | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | 0.99 U | NA | NA | 0.0065 U | NA | NA | 0.5 U | 0.0077 U | 0.0062 U | 1.2 U | NA |
| Trichloroethene | 79-01-6 | mg/kg | 0.99 U | NA | NA | 0.0065 U | NA | NA | 0.5 U | 0.0077 U | 0.0062 U | 1.2 U | NA |
| Vinyl chloride | 75-01-4 | mg/kg | 0.99 U | NA | NA | 0.0065 U | NA | NA | 0.5 U | 0.0077 U | 0.0062 U | 1.2 U | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | MW2B(25-27) 25 - 27 11/25/03 MW2B | MW2B(25-27)-715859 25 - 27 11/25/03 MW2B | MW3B-0-_664542 0 - 0.5 08/15/03 MW3B | MW3B-1._664543 1.5 - 2 08/15/03 MW3B | MW3B-2._664544 2.6 - 3.1 08/15/03 MW3B | MW3B-6-_664545 6 - 6.5 08/15/03 MW3B | MW3B-17_664546 17.5 - 18 08/15/03 MW3B | MW3B-28_665407 28 - 28.5 08/19/03 MW3B | MW3B-35_665408 35.5 - 36 08/19/03 MW3B | MW4B (30-32)-693428 30 - 32 12/03/03 MW4B | MW4B(30-32) 30 - 32 12/03/03 MW4B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | 1.9 U | NA | 10 U | NA | NA | NA | 47 U | 2.2 U | 2.1 U | 2.2 U | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | 1.9 U | NA | 10 U | NA | NA | NA | 47 U | 2.2 U | 2.1 U | 2.2 U | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 53 | 0.11 | 0.4 U | 0.42 U | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | 1.9 U | NA | 10 U | NA | NA | NA | 47 U | 2.2 U | 2.1 U | 2.2 U | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | 1.9 U | NA | 10 U | NA | NA | NA | 47 U | 2.2 U | 2.1 U | 2.2 U | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | 1.9 U | NA | 10 U | NA | NA | NA | 47 U | 2.2 U | 2.1 U | 2.2 U | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | 1.9 U | NA | 10 U | NA | NA | NA | 47 U | 2.2 U | 2.1 U | 2.2 U | NA |
| Acenaphthene | 83-32-9 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 57 | 0.35 | 0.4 U | 0.42 U | NA |
| Acenaphthylene | 208-96-8 | mg/kg | 0.38 U | NA | 0.73 | NA | NA | NA | 9.1 U | 0.17 | 0.4 U | 0.42 U | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | 0.38 U | NA | 0.39 | NA | NA | NA | 27 | 0.42 U | 0.4 U | 0.42 U | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | 0.38 U | NA | 0.7 | NA | NA | NA | 14 | 0.31 | 0.4 U | 0.42 U | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | 0.38 U | NA | 1.1 | NA | NA | NA | 9.6 | 0.2 | 0.4 U | 0.42 U | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | 0.38 U | NA | 0.75 | NA | NA | NA | 4.2 | 0.091 | 0.4 U | 0.42 U | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | 0.38 U | NA | 1 | NA | NA | NA | 3.4 | 0.074 | 0.4 U | 0.42 U | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | 0.38 U | NA | 0.66 | NA | NA | NA | 5.4 | 0.13 | 0.4 U | 0.42 U | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | 0.35 JF | NA | 2 U | NA | NA | NA | 9.1 U | 0.093 | 0.075 | 0.042 BF | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| Chrysene | 218-01-9 | mg/kg | 0.38 U | NA | 0.89 | NA | NA | NA | 14 | 0.31 | 0.4 U | 0.42 U | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | 0.38 U | NA | 0.29 | NA | NA | NA | 1 | 0.42 U | 0.4 U | 0.42 U | NA |
| Dibenzofuran | 132-64-9 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 3 | 0.42 U | 0.4 U | 0.42 U | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW2B(25-27)<br>25 - 27<br>11/25/03<br>MW2B | MW2B(25-27)-715859<br>25 - 27<br>11/25/03<br>MW2B | MW3B-0-_664542<br>0 - 0.5<br>08/15/03<br>MW3B | MW3B-1._664543<br>1.5 - 2<br>08/15/03<br>MW3B | MW3B-2._664544<br>2.6 - 3.1<br>08/15/03<br>MW3B | MW3B-6-_664545<br>6 - 6.5<br>08/15/03<br>MW3B | MW3B-17_664546<br>17.5 - 18<br>08/15/03<br>MW3B | MW3B-28_665407<br>28 - 28.5<br>08/19/03<br>MW3B | MW3B-35_665408<br>35.5 - 36<br>08/19/03<br>MW3B | MW4B (30-32)-693428<br>30 - 32<br>12/03/03<br>MW4B | MW4B(30-32)<br>30 - 32<br>12/03/03<br>MW4B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| Fluoranthene | 206-44-0 | mg/kg | 0.38 U | NA | 1.2 | NA | NA | NA | 28 | 0.58 | 0.049 | 0.42 U | NA |
| Fluorene | 86-73-7 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 28 | 0.35 | 0.4 U | 0.42 U | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| Hexachloroethane | 67-72-1 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | 0.38 U | NA | 0.74 | NA | NA | NA | 2.7 | 0.061 | 0.4 U | 0.42 U | NA |
| Isophorone | 78-59-1 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| Naphthalene | 91-20-3 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 110 | 0.051 | 0.4 U | 0.42 U | NA |
| Nitrobenzene | 98-95-3 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | 1.9 U | NA | 10 U | NA | NA | NA | 47 U | 2.2 U | 2.1 U | 2.2 U | NA |
| Phenanthrene | 85-01-8 | mg/kg | 0.38 U | NA | 0.9 | NA | NA | NA | 94 | 1.7 | 0.13 | 0.42 U | NA |
| Phenol | 108-95-2 | mg/kg | 0.38 U | NA | 2 U | NA | NA | NA | 9.1 U | 0.42 U | 0.4 U | 0.42 U | NA |
| Pyrene | 129-00-0 | mg/kg | 0.38 U | NA | 1.2 | NA | NA | NA | 38 | 0.74 | 0.061 | 0.42 U | NA |
| **Metals** | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | 6,470 | NA | 9,760 | NA | 9,400 | 10,900 | 8,580 * | 2,790 * | 3,560 * | 1,880 | NA |
| Antimony | 7440-36-0 | mg/kg | 0.33 UJ | NA | 7 UN | NA | 6.6 UN | 7.1 U | 6.3 U | 7.4 U | 7.2 U | 1.4 B | NA |
| Arsenic | 7440-38-2 | mg/kg | 5.1 J | NA | 3.1 N | NA | 5.2 N | 3.9 N | 6 | 2.3 | 2.1 | NA | 1.4 |
| Barium | 7440-39-3 | mg/kg | 45.6 | NA | 81.9 | NA | 60 | 49.2 | 45.6 * | 21.6 * | 25.4 * | 15.2 | NA |
| Beryllium | 7440-41-7 | mg/kg | 0.07 U | NA | 0.59 U | NA | 0.55 U | 0.59 U | 0.52 U | 0.62 U | 0.6 U | 0.02 U | NA |
| Cadmium | 7440-43-9 | mg/kg | 0.22 BJ | NA | 0.59 U | NA | 0.55 U | 0.59 U | 0.52 U | 0.62 U | 0.6 U | 0.02 U | NA |
| Calcium | 7440-70-2 | mg/kg | 2,830 J | NA | 5,380 | NA | 1,250 | 1,110 | 2,100 * | 1,660 | 10,200 | 1,100 | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | 23.3 J | NA | 627 N | NA | 280 N | 206 N | 23.3 * | 11.7 * | 10.9 * | 355 | NA |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 4.58 UJ | NA | 222 J | NA | 27.8 J | 40.8 J | 4.4 UJ | 5.06 UJ | 4.83 UJ | 360 | NA |
| Cobalt | 7440-48-4 | mg/kg | 9.5 | NA | 15.6 | NA | 8 | 7.2 | 6.9 | 6.2 U | 6 U | 2.1 BJ | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | 15.3 | NA | 69.7 | NA | 27.4 | 18.3 | 14.7 N | 4.6 | 6 | 4.5 B | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | 13,100 | NA | 25,200 | NA | 18,500 | 15,500 | 15,700 | 7,040 * | 8,270 * | 5,290 | NA |
| Lead | 7439-92-1 | mg/kg | 16.1 J | NA | 147 | NA | 53.6 | 21.6 | 21.7 N* | 6.7 | 8.5 | 4.5 | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | 4,380 | NA | 5,990 | NA | 3,450 | 3,320 | 6,410 | 1,190 * | 2,530 * | 793 | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | 390 | NA | 488 | NA | 303 | 300 | 387 N | 214 | 236 | 206 J | NA |
| Mercury | 7439-97-6 | mg/kg | 0.005 U | NA | 0.41 | NA | 0.06 | 0.05 | 0.04 U | 0.04 U | 0.04 U | 0.005 UJ | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | 15.5 | NA | 43.4 | NA | 16.2 | 15.3 | 12.8 | 5 U | 6.1 | 3 BJ | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | 1,500 | NA | 1,330 | NA | 1,420 | 1,150 | 1,610 | 784 * | 1,130 * | 468 | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | 0.38 U | NA | 0.59 U | NA | 0.55 U | 0.59 U | 0.52 U | 0.62 U | 0.6 U | 0.43 UJ | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | 0.06 U | NA | 1.2 U | NA | 1.1 U | 1.2 U | 1 U | 1.2 U | 1.2 U | 0.07 UJ | NA |
| Sodium | 7440-23-5 | mg/kg | 174 | NA | 130 | NA | 140 | 118 U | 348 | 176 | 158 | 467 BJ | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | MW2B(25-27) 25 - 27 11/25/03 MW2B | MW2B(25-27)-715859 25 - 27 11/25/03 MW2B | MW3B-0-_664542 0 - 0.5 08/15/03 MW3B | MW3B-1._664543 1.5 - 2 08/15/03 MW3B | MW3B-2._664544 2.6 - 3.1 08/15/03 MW3B | MW3B-6-_664545 6 - 6.5 08/15/03 MW3B | MW3B-17_664546 17.5 - 18 08/15/03 MW3B | MW3B-28_665407 28 - 28.5 08/19/03 MW3B | MW3B-35_665408 35.5 - 36 08/19/03 MW3B | MW4B (30-32)-693428 30 - 32 12/03/03 MW4B | MW4B(30-32) 30 - 32 12/03/03 MW4B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | 0.19 U | 3.5 U | NA | 2.2 U | 2.4 U | 3.1 U | 2.5 U | 3.6 U | 0.49 U | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | 33.9 | NA | 70.2 | NA | 32 | 23.3 | 36.1 | 12.6 | 14.4 | 6.4 J | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | 49.9 | NA | 126 | NA | 435 | 526 | 63 N | 22.1 | 29.5 | 13.1 BJ | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | 0.038 U | NA | 0.079 U | NA | 0.76 U | NA | 0.073 U | 0.084 U | 0.08 U | 0.042 U | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | 0.038 U | NA | 0.079 U | NA | 0.76 U | NA | 0.073 U | 0.084 U | 0.08 U | 0.042 U | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | 0.038 U | NA | 0.079 U | NA | 0.76 U | NA | 0.073 U | 0.084 U | 0.08 U | 0.042 U | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | 0.038 U | NA | 0.079 U | NA | 0.76 U | NA | 0.073 U | 0.084 U | 0.08 U | 0.042 U | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | 0.038 U | NA | 0.079 U | NA | 0.76 U | NA | 0.073 U | 0.084 U | 0.08 U | 0.042 U | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | 0.038 U | NA | 0.079 U | NA | 0.76 U | NA | 0.073 U | 0.084 U | 0.08 U | 0.042 U | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | 0.038 U | NA | 0.079 U | NA | 0.76 U | NA | 0.073 U | 0.084 U | 0.08 U | 0.042 U | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW2B(25-27)<br>25 - 27<br>11/25/03<br>MW2B | MW2B(25-27)-715859<br>25 - 27<br>11/25/03<br>MW2B | MW3B-0-_664542<br>0 - 0.5<br>08/15/03<br>MW3B | MW3B-1._664543<br>1.5 - 2<br>08/15/03<br>MW3B | MW3B-2._664544<br>2.6 - 3.1<br>08/15/03<br>MW3B | MW3B-6-_664545<br>6 - 6.5<br>08/15/03<br>MW3B | MW3B-17_664546<br>17.5 - 18<br>08/15/03<br>MW3B | MW3B-28_665407<br>28 - 28.5<br>08/19/03<br>MW3B | MW3B-35_665408<br>35.5 - 36<br>08/19/03<br>MW3B | MW4B (30-32)-693428<br>30 - 32<br>12/03/03<br>MW4B | MW4B(30-32)<br>30 - 32<br>12/03/03<br>MW4B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | 1.15 U | NA | 1.65 | NA | NA | NA | 1.1 U | 1.27 U | 1.21 U | 1.27 U | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | MW4D-0-_665390 | MW4D-1._665395 | MW4D-1._665396 | MW4D-2._665397 | MW4D-4-_665398 | MW4D-8-_665399 | MW4D-13_665400 | MW4D-28_665730 | MW4D-30_665731 | MW5B(36-38) | MW5B(41-42) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 0 - 0.5 | 1.5 - 2 | 1.5 - 2 | 2.5 - 3 | 4 - 4.5 | 8 - 8.5 | 13.8 - 14.3 | 28 - 28.5 | 30 - 30.5 | 36 - 38 | 41 - 42 |
| Date Collected: | | | 08/19/03 | 08/19/03 | 08/19/03 | 08/19/03 | 08/19/03 | 08/19/03 | 08/19/03 | 08/20/03 | 08/20/03 | 12/01/03 | 12/01/03 |
| Location ID: | CAS Number | Units | MW4D | MW4D | MW4D | MW4D | MW4D | MW4D | MW4D | MW4D | MW4D | MW5B | MW5B |
| **Volatile Organics** | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | 0.0074 U | NA | NA | NA | 0.72 U | 0.0046 U | 0.0071 U | 0.0051 U | 0.9 U | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | 0.0074 U | NA | NA | NA | 0.72 U | 0.0046 U | 0.0071 U | 0.0051 U | 0.9 U | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | 0.0074 U | NA | NA | NA | 0.72 U | 0.0046 U | 0.0071 U | 0.0051 U | 0.9 U | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | 0.0074 U | NA | NA | NA | 0.72 U | 0.0046 U | 0.0071 U | 0.0051 U | 0.9 U | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | 0.0074 U | NA | NA | NA | 0.72 U | 0.0046 U | 0.0071 U | 0.0051 U | 0.9 U | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | 0.0074 U | NA | NA | NA | 0.72 U | 0.0046 U | 0.0071 U | 0.0051 U | 0.9 U | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | 0.0074 U | NA | NA | NA | 0.72 U | 0.0046 U | 0.0071 U | 0.0051 U | 0.9 U | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | 0.015 U | NA | NA | NA | 1.4 U | 0.0092 U | 0.014 U | 0.01 U | 1.8 U | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | 0.015 U | NA | NA | NA | 1.4 U | 0.0092 U | 0.014 U | 0.0016 | 1.8 U | NA |
| Acetone | 67-64-1 | mg/kg | NA | 0.0089 | NA | NA | NA | 2.9 U | 0.01 J | 0.0081 | 0.019 | 3.6 U | NA |
| Benzene | 71-43-2 | mg/kg | NA | 0.36 | NA | NA | NA | 0.72 U | 0.0052 | 0.011 | 0.0071 | 0.9 U | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | 0.0074 U | NA | NA | NA | 0.72 U | 0.0046 U | 0.0071 U | 0.0051 U | 0.9 U | NA |
| Bromoform | 75-25-2 | mg/kg | NA | 0.0074 U | NA | NA | NA | 0.72 U | 0.0046 U | 0.0071 U | 0.0051 U | 0.9 U | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | 0.0074 U | NA | NA | NA | 0.72 U | 0.0046 U | 0.0071 U | 0.0051 U | 0.9 U | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | 0.015 U | NA | NA | NA | 1.4 U | 0.0042 | 0.014 U | 0.01 U | 1.8 U | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | 0.0074 U | NA | NA | NA | 0.72 U | 0.0046 U | 0.0071 U | 0.0051 U | 0.9 U | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | 0.0074 U | NA | NA | NA | 0.72 U | 0.0046 U | 0.0071 U | 0.0051 U | 0.9 U | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | 0.0074 U | NA | NA | NA | 0.72 U | 0.0046 U | 0.0071 U | 0.0051 U | 0.9 U | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | 0.0074 U | NA | NA | NA | 0.72 U | 0.0046 U | 0.0071 U | 0.0051 U | 0.9 U | NA |
| Chloroform | 67-66-3 | mg/kg | NA | 0.0074 U | NA | NA | NA | 0.72 U | 0.0046 U | 0.0071 U | 0.0051 U | 0.9 U | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | 0.0074 U | NA | NA | NA | 0.72 U | 0.0046 U | 0.0071 U | 0.0051 U | 0.9 U | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | 0.0074 U | NA | NA | NA | 0.72 U | 0.0046 U | 0.0071 U | 0.0051 U | 0.9 U | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | 0.0074 U | NA | NA | NA | 0.72 U | 0.0046 U | 0.0071 U | 0.0051 U | 0.9 U | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | 0.003 | NA | NA | NA | 0.72 U | 0.0029 | 0.0071 U | 0.0051 U | 0.9 U | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | 0.0065 | NA | NA | NA | 0.72 U | 0.14 | 0.0089 | 0.0094 | 0.9 U | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | 0.039 | NA | NA | NA | 0.72 U | 0.0089 | 0.0016 | 0.0051 U | 0.9 U | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | 0.015 U | NA | NA | NA | 1.4 U | 0.0092 U | 0.014 U | 0.01 U | 1.8 U | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | 0.015 | NA | NA | NA | 0.72 U | 0.03 | 0.0071 U | 0.0051 U | 0.9 U | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | 0.0099 | NA | NA | NA | 0.72 U | 0.0023 | 0.0071 U | 0.0051 U | 0.9 U | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | 0.0074 U | NA | NA | NA | 0.72 U | 0.0046 U | 0.0071 U | 0.0051 U | 0.9 U | NA |
| Toluene | 108-88-3 | mg/kg | NA | 0.19 | NA | NA | NA | 0.72 U | 0.0018 | 0.0024 | 0.0016 | 0.9 U | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | 0.0074 U | NA | NA | NA | 0.72 U | 0.0046 U | 0.0071 U | 0.0051 U | 0.9 U | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | 0.0074 U | NA | NA | NA | 0.72 U | 0.0046 U | 0.0071 U | 0.0051 U | 0.9 U | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | 0.0074 U | NA | NA | NA | 0.72 U | 0.0046 U | 0.0071 U | 0.0051 U | 0.9 U | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | 0.0074 U | NA | NA | NA | 0.72 U | 0.0046 U | 0.0071 U | 0.0051 U | 0.9 U | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW4D-0-_665390<br>0 - 0.5<br>08/19/03<br>MW4D | MW4D-1._665395<br>1.5 - 2<br>08/19/03<br>MW4D | MW4D-1._665396<br>1.5 - 2<br>08/19/03<br>MW4D | MW4D-2._665397<br>2.5 - 3<br>08/19/03<br>MW4D | MW4D-4-_665398<br>4 - 4.5<br>08/19/03<br>MW4D | MW4D-8-_665399<br>8 - 8.5<br>08/19/03<br>MW4D | MW4D-13_665400<br>13.8 - 14.3<br>08/19/03<br>MW4D | MW4D-28_665730<br>28 - 28.5<br>08/20/03<br>MW4D | MW4D-30_665731<br>30 - 30.5<br>08/20/03<br>MW4D | MW5B(36-38)<br>36 - 38<br>12/01/03<br>MW5B | MW5B(41-42)<br>41 - 42<br>12/01/03<br>MW5B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | 100 U | NA | NA | NA | NA | 22 U | 39 U | 2 U | 1.9 U | 2.1 U | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | 100 U | NA | NA | NA | NA | 22 U | 39 U | 2 U | 1.9 U | 2.1 U | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | 100 U | NA | NA | NA | NA | 22 U | 39 U | 2 U | 1.9 U | 2.1 U | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | 100 U | NA | NA | NA | NA | 22 U | 39 U | 2 U | 1.9 U | 2.1 U | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | 100 U | NA | NA | NA | NA | 22 U | 39 U | 2 U | 1.9 U | 2.1 U | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | 100 U | NA | NA | NA | NA | 22 U | 39 U | 2 U | 1.9 U | 2.1 U | NA |
| Acenaphthene | 83-32-9 | mg/kg | 20 U | NA | NA | NA | NA | 29 | 25 | 0.38 U | 0.37 U | 0.4 U | NA |
| Acenaphthylene | 208-96-8 | mg/kg | 13 | NA | NA | NA | NA | 3.6 | 6.5 | 0.38 U | 0.37 U | 0.4 U | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | 5.9 | NA | NA | NA | NA | 13 | 30 | 0.38 U | 0.37 U | 0.4 U | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | 9.7 | NA | NA | NA | NA | 6.1 | 19 | 0.38 U | 0.37 U | 0.4 U | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | 19 | NA | NA | NA | NA | 4 | 12 | 0.38 U | 0.37 U | 0.4 U | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | 12 | NA | NA | NA | NA | 1.7 | 5.2 | 0.38 U | 0.37 U | 0.4 U | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | 8.7 | NA | NA | NA | NA | 1.3 | 3.8 | 0.38 U | 0.37 U | 0.4 U | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | 11 | NA | NA | NA | NA | 2.4 | 6.9 | 0.38 U | 0.37 U | 0.4 U | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 1.1 | 1.3 | 0.051 J | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| Chrysene | 218-01-9 | mg/kg | 12 | NA | NA | NA | NA | 6.2 | 18 | 0.38 U | 0.37 U | 0.4 U | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | 2.6 | NA | NA | NA | NA | 0.55 | 1.6 | 0.38 U | 0.37 U | 0.4 U | NA |
| Dibenzofuran | 132-64-9 | mg/kg | 20 U | NA | NA | NA | NA | 2 | 1.5 | 0.38 U | 0.37 U | 0.4 U | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW4D-0-_665390<br>0 - 0.5<br>08/19/03<br>MW4D | MW4D-1._665395<br>1.5 - 2<br>08/19/03<br>MW4D | MW4D-1._665396<br>1.5 - 2<br>08/19/03<br>MW4D | MW4D-2._665397<br>2.5 - 3<br>08/19/03<br>MW4D | MW4D-4-_665398<br>4 - 4.5<br>08/19/03<br>MW4D | MW4D-8-_665399<br>8 - 8.5<br>08/19/03<br>MW4D | MW4D-13_665400<br>13.8 - 14.3<br>08/19/03<br>MW4D | MW4D-28_665730<br>28 - 28.5<br>08/20/03<br>MW4D | MW4D-30_665731<br>30 - 30.5<br>08/20/03<br>MW4D | MW5B(36-38)<br>36 - 38<br>12/01/03<br>MW5B | MW5B(41-42)<br>41 - 42<br>12/01/03<br>MW5B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| Fluoranthene | 206-44-0 | mg/kg | 23 | NA | NA | NA | NA | 12 | 29 | 0.38 U | 0.37 U | 0.4 U | NA |
| Fluorene | 86-73-7 | mg/kg | 20 U | NA | NA | NA | NA | 11 | 22 | 0.38 U | 0.37 U | 0.4 U | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| Hexachloroethane | 67-72-1 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | 7.1 | NA | NA | NA | NA | 1.1 | 3.3 | 0.38 U | 0.37 U | 0.4 U | NA |
| Isophorone | 78-59-1 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| Naphthalene | 91-20-3 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| Nitrobenzene | 98-95-3 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | 100 U | NA | NA | NA | NA | 22 U | 39 U | 2 U | 1.9 U | 2.1 U | NA |
| Phenanthrene | 85-01-8 | mg/kg | 13 | NA | NA | NA | NA | 47 | 93 | 0.041 | 0.048 | 0.4 U | NA |
| Phenol | 108-95-2 | mg/kg | 20 U | NA | NA | NA | NA | 4.2 U | 7.6 U | 0.38 U | 0.37 U | 0.4 U | NA |
| Pyrene | 129-00-0 | mg/kg | 20 U | NA | NA | NA | NA | 18 | 45 | 0.38 U | 0.37 U | 0.4 U | NA |
| **Metals** | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | 11,500 * | NA | 8,440 * | 8,850 * | 9,180 * | 11,800 * | 7,840 * | 4,130 | 4,790 | 1,800 | 3,660 |
| Antimony | 7440-36-0 | mg/kg | 15.4 | NA | 8.4 | 7.1 U | 7.3 U | 7.6 U | 6.9 U | 6.7 UN | 6.7 UN | 1.2 BN | 0.74 B |
| Arsenic | 7440-38-2 | mg/kg | 1.2 U | NA | 36.3 | 1.2 U | 2 | 4.2 | 4.4 | 4 | 3.3 | 0.3 UJ | 0.35 J |
| Barium | 7440-39-3 | mg/kg | 133 * | NA | 120 * | 45.9 * | 40.7 * | 36.8 * | 39.9 * | 37.9 * | 38.9 * | 11.8 | 27 |
| Beryllium | 7440-41-7 | mg/kg | 6.1 U | NA | 0.57 U | 0.59 U | 0.61 U | 0.63 U | 0.58 U | 0.56 U | 0.56 U | 0.02 U | 0.02 U |
| Cadmium | 7440-43-9 | mg/kg | 1.2 | NA | 1.6 | 1.6 | 0.61 U | 0.63 U | 0.58 U | 0.56 U | 0.56 U | 0.02 U | 0.02 U |
| Calcium | 7440-70-2 | mg/kg | 28,900 | NA | 2,090 | 1,790 | 1,460 | 784 | 1,380 | 1,950 | 11,000 | 8,090 | 13,500 |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | 2,100 * | NA | 967 * | 508 * | 388 * | 15.4 * | 16.6 * | 20.7 | 12.6 | 342 | 291 |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 32.6 J | NA | 61.3 J | 57.5 J | 24.9 J | 5.12 UJ | 4.62 UJ | 4.63 UJ | 4.46 UJ | 299 | 318 |
| Cobalt | 7440-48-4 | mg/kg | 48 | NA | 7 | 5.9 U | 6.9 | 9.5 | 7.5 | 5.6 U | 5.6 U | 1.7 BJ | 3.9 |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | 48.7 | NA | 49 | 15.7 | 12.1 | 23.3 | 10.3 | 6.7 | 7.7 | 3.7 | 7 |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | 50,400 * | NA | 18,900 * | 11,200 * | 11,700 * | 21,100 * | 14,200 * | 10,100 | 11,600 | 5,380 | 9,420 |
| Lead | 7439-92-1 | mg/kg | 368 | NA | 313 | 100 | 16.4 | 9.2 | 14.9 | 9.4 * | 8.4 * | 4 | 7.2 |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | 12,800 | NA | 2,680 * | 3,070 * | 2,650 * | 4,050 * | 4,010 * | 2,260 | 3,440 | 1,600 | 2,950 |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | 912 | NA | 143 | 120 | 101 | 465 | 265 | 414 | 427 | 185 | 305 |
| Mercury | 7439-97-6 | mg/kg | 0.95 | NA | 1.2 | 0.15 | 0.04 U | 0.04 U | 0.04 U | 0.04 U | 0.04 U | 0.005 U | 0.006 U |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | 166 | NA | 17.3 | 11.9 | 11.6 | 15.9 | 12.8 | 15.6 | 12.7 | 3.1 | 7.3 |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | 710 * | NA | 909 * | 1,350 * | 1,040 * | 1,300 * | 1,540 * | 1,080 | 1,000 | 576 | 1,180 |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | 1.7 | NA | 2.9 | 0.59 U | 0.61 U | 0.63 U | 0.58 U | 1.1 | 0.64 | 0.41 U | 0.43 U |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | 1.2 U | NA | 1.1 U | 1.2 U | 1.2 U | 1.3 U | 1.2 U | 1.1 U | 1.1 U | 0.06 U | 0.07 U |
| Sodium | 7440-23-5 | mg/kg | 407 | NA | 186 | 381 | 123 | 127 U | 127 | 799 | 522 | 525 BJ | 454 BJ |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW4D-0-_665390<br>0 - 0.5<br>08/19/03<br>MW4D | MW4D-1._665395<br>1.5 - 2<br>08/19/03<br>MW4D | MW4D-1._665396<br>1.5 - 2<br>08/19/03<br>MW4D | MW4D-2._665397<br>2.5 - 3<br>08/19/03<br>MW4D | MW4D-4-_665398<br>4 - 4.5<br>08/19/03<br>MW4D | MW4D-8-_665399<br>8 - 8.5<br>08/19/03<br>MW4D | MW4D-13_665400<br>13.8 - 14.3<br>08/19/03<br>MW4D | MW4D-28_665730<br>28 - 28.5<br>08/20/03<br>MW4D | MW4D-30_665731<br>30 - 30.5<br>08/20/03<br>MW4D | MW5B(36-38)<br>36 - 38<br>12/01/03<br>MW5B | MW5B(41-42)<br>41 - 42<br>12/01/03<br>MW5B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | 12.2 U | NA | 3.4 U | 1.2 U | 1.2 U | 6.3 U | 3.5 U | 5.6 U | 5.6 U | 0.47 U | 0.49 U |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | 336 | NA | 32.5 | 22.1 | 17.9 | 20.8 | 27.5 | 24.5 | 29.3 | 6 | 14.6 |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | 567 | NA | 1,060 | 1,380 | 578 | 58.6 | 38.7 | 111 | 32.9 | 10.7 JF | 22.2 JF |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | 0.081 U | NA | 0.077 U | NA | NA | 0.085 U | 0.076 U | 0.076 U | 0.074 U | 0.04 U | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | 0.081 U | NA | 0.077 U | NA | NA | 0.085 U | 0.076 U | 0.076 U | 0.074 U | 0.04 U | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | 0.081 U | NA | 0.077 U | NA | NA | 0.085 U | 0.076 U | 0.076 U | 0.074 U | 0.04 U | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | 0.081 U | NA | 0.077 U | NA | NA | 0.085 U | 0.076 U | 0.076 U | 0.074 U | 0.04 U | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | 0.081 U | NA | 0.077 U | NA | NA | 0.085 U | 0.076 U | 0.076 U | 0.074 U | 0.04 U | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | 0.081 U | NA | 0.077 U | NA | NA | 0.085 U | 0.076 U | 0.076 U | 0.074 U | 0.04 U | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | 0.081 U | NA | 0.077 U | NA | NA | 0.085 U | 0.076 U | 0.076 U | 0.074 U | 0.04 U | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW4D-0-_665390<br>0 - 0.5<br>08/19/03<br>MW4D | MW4D-1._665395<br>1.5 - 2<br>08/19/03<br>MW4D | MW4D-1._665396<br>1.5 - 2<br>08/19/03<br>MW4D | MW4D-2._665397<br>2.5 - 3<br>08/19/03<br>MW4D | MW4D-4-_665398<br>4 - 4.5<br>08/19/03<br>MW4D | MW4D-8-_665399<br>8 - 8.5<br>08/19/03<br>MW4D | MW4D-13_665400<br>13.8 - 14.3<br>08/19/03<br>MW4D | MW4D-28_665730<br>28 - 28.5<br>08/20/03<br>MW4D | MW4D-30_665731<br>30 - 30.5<br>08/20/03<br>MW4D | MW5B(36-38)<br>36 - 38<br>12/01/03<br>MW5B | MW5B(41-42)<br>41 - 42<br>12/01/03<br>MW5B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | 12.3 | NA | NA | NA | NA | 1.28 U | 1.15 U | 1.16 U | 1.12 U | 1.21 | 1.27 |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | MW5D-20 | MW5D-26 | MW6B(28-30) | MW6B(28-30)-715865 | MW6B-32_665106 | MW6D-0- | MW6D-1. | MW6D-2. | MW6D-6. | MW7B(32-33) | MW8B(40-42)-693717 | MW8B(40-42)-715870 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 20 - 20.5 | 26 - 26.5 | 28 - 30 | 28 - 30 | 32.5 - 33 | 0 - 0.5 | 1 - 1.5 | 2 - 2.5 | 6 - 6.5 | 32 - 33 | 40 - 42 | 40 - 42 |
| Date Collected: | | | 08/12/03 | 08/12/03 | 11/20/03 | 11/20/03 | 08/18/03 | 08/13/03 | 08/13/03 | 08/13/03 | 08/13/03 | 12/01/03 | 12/04/03 | 12/04/03 |
| Location ID: | CAS Number | Units | MW5D | MW5D | MW6B | MW6B | MW6B | MW6D | MW6D | MW6D | MW6D | MW7B | MW8B | MW8B |
| **Volatile Organics** | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | 0.02 U | 0.028 U | 0.95 U | NA | 0.0054 U | NA | 0.013 U | NA | 0.0074 U [0.0078 U] | 1.1 U | 0.92 U | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | 0.02 U | 0.028 U | 0.95 U | NA | 0.0054 U | NA | 0.013 U | NA | 0.0074 U [0.0078 U] | 1.1 U | 0.92 U | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | 0.02 U | 0.028 U | 0.95 U | NA | 0.0054 U | NA | 0.013 U | NA | 0.0074 U [0.0078 U] | 1.1 U | 0.92 U | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | 0.02 U | 0.028 U | 0.95 U | NA | 0.0054 U | NA | 0.013 U | NA | 0.0074 U [0.0078 U] | 1.1 U | 0.92 U | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | 0.02 U | 0.028 U | 0.95 U | NA | 0.0054 U | NA | 0.013 U | NA | 0.0074 U [0.0078 U] | 1.1 U | 0.92 U | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | 0.02 U | 0.028 U | 0.95 U | NA | 0.0011 | NA | 0.013 U | NA | 0.0074 U [0.0078 U] | 1.1 U | 0.92 U | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | 0.02 U | 0.028 U | 0.95 U | NA | 0.0054 U | NA | 0.013 U | NA | 0.0074 U [0.0078 U] | 1.1 U | 0.92 U | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | 0.04 U | 0.056 U | 1.9 U | NA | 0.011 U | NA | 0.03 | NA | 0.015 U [0.016 U] | 2.2 U | 1.8 U | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | 0.04 U | 0.0067 J | 1.9 U | NA | 0.011 U | NA | 0.03 | NA | 0.015 U [0.016 U] | 2.2 U | 1.8 U | NA |
| Acetone | 67-64-1 | mg/kg | 0.022 J | 0.029 J | 3.8 U | NA | 0.022 U | NA | 0.041 | NA | 0.011 [0.0093] | 4.4 U | 3.7 U | NA |
| Benzene | 71-43-2 | mg/kg | 0.13 | 0.006 J | 0.95 U | NA | 0.0054 U | NA | 0.013 U | NA | 0.0074 U [0.0078 U] | 1.1 U | 0.22 J | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | 0.02 U | 0.028 U | 0.95 U | NA | 0.0054 U | NA | 0.013 U | NA | 0.0074 U [0.0078 U] | 1.1 U | 0.92 U | NA |
| Bromoform | 75-25-2 | mg/kg | 0.02 U | 0.028 U | 0.95 U | NA | 0.0054 U | NA | 0.013 U | NA | 0.0074 U [0.0078 U] | 1.1 U | 0.92 U | NA |
| Bromomethane | 74-83-9 | mg/kg | 0.02 U | 0.028 U | 0.95 U | NA | 0.0054 U | NA | 0.013 U | NA | 0.0074 U [0.0078 U] | 1.1 U | 0.92 U | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | 0.0054 J | 0.056 U | 0.95 U | NA | 0.011 U | NA | 0.03 | NA | 0.015 U [0.016 U] | 2.2 U | 1.8 U | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | 0.02 U | 0.028 U | 0.95 U | NA | 0.0054 U | NA | 0.013 U | NA | 0.0074 U [0.0078 U] | 1.1 U | 0.92 U | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | 0.02 U | 0.028 U | 0.95 U | NA | 0.0054 U | NA | 0.013 U | NA | 0.0074 U [0.0078 U] | 1.1 U | 0.92 U | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | 0.02 U | 0.028 U | 0.95 U | NA | 0.0054 U | NA | 0.013 U | NA | 0.0074 U [0.0078 U] | 1.1 U | 0.92 U | NA |
| Chloroethane | 75-00-3 | mg/kg | 0.02 U | 0.028 U | 0.95 U | NA | 0.0054 U | NA | 0.013 U | NA | 0.0074 U [0.0078 U] | 1.1 U | 0.92 U | NA |
| Chloroform | 67-66-3 | mg/kg | 0.02 U | 0.028 U | 0.95 U | NA | 0.0054 U | NA | 0.013 U | NA | 0.0074 U [0.0078 U] | 1.1 U | 0.92 U | NA |
| Chloromethane | 74-87-3 | mg/kg | 0.02 U | 0.028 U | 0.95 U | NA | 0.0054 U | NA | 0.013 U | NA | 0.0074 U [0.0078 U] | 1.1 U | 0.92 U | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | 0.02 U | 0.028 U | 0.95 U | NA | 0.0054 U | NA | 0.013 U | NA | 0.0074 U [0.0078 U] | 1.1 U | 0.92 U | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | 0.02 U | 0.028 U | 0.95 U | NA | 0.0054 U | NA | 0.013 U | NA | 0.0074 U [0.0078 U] | 1.1 U | 0.92 U | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | 0.02 U | 0.028 U | 0.95 U | NA | 0.0014 | NA | 0.013 U | NA | 0.0074 U [0.0078 U] | 1.1 U | 0.92 U | NA |
| Ethylbenzene | 100-41-4 | mg/kg | 0.068 | 0.0079 J | 0.95 U | NA | 0.0054 U | NA | 0.029 | NA | 0.0074 U [0.0078 U] | 1.1 U | 0.92 U | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | 0.015 J | 0.015 J | 0.95 U | NA | 0.0032 | NA | 0.32 | NA | 0.0074 U [0.0078 U] | 1.1 U | 0.92 U | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | 0.04 U | 0.056 U | 1.9 U | NA | 0.011 U | NA | 0.03 | NA | 0.015 U [0.016 U] | 2.2 U | 1.8 U | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | 0.037 | 0.028 U | 0.95 U | NA | 0.0054 U | NA | 0.024 | NA | 0.0074 U [0.0078 U] | 1.1 U | 0.92 U | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | 0.02 U | 0.028 U | 0.95 U | NA | 0.0054 U | NA | 0.013 U | NA | 0.0074 U [0.0078 U] | 1.1 U | 0.92 U | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | 0.02 U | 0.028 U | 0.95 U | NA | 0.0054 U | NA | 0.032 | NA | 0.0074 U [0.0078 U] | 1.1 U | 0.92 U | NA |
| Toluene | 108-88-3 | mg/kg | 0.0066 J | 0.028 U | 0.95 U | NA | 0.0054 U | NA | 0.013 U | NA | 0.0074 U [0.0078 U] | 1.1 U | 0.92 U | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | 0.02 U | 0.028 U | 0.95 U | NA | 0.0054 U | NA | 0.013 U | NA | 0.0074 U [0.0078 U] | 1.1 U | 0.92 U | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | 0.02 U | 0.028 U | 0.95 U | NA | 0.0054 U | NA | 0.013 U | NA | 0.0074 U [0.0078 U] | 1.1 U | 0.92 U | NA |
| Trichloroethene | 79-01-6 | mg/kg | 0.02 U | 0.028 U | 0.95 U | NA | 0.0054 U | NA | 0.013 U | NA | 0.0074 U [0.0078 U] | 1.1 U | 0.92 U | NA |
| Vinyl chloride | 75-01-4 | mg/kg | 0.02 U | 0.028 U | 0.95 U | NA | 0.0054 U | NA | 0.013 U | NA | 0.0074 U [0.0078 U] | 1.1 U | 0.92 U | NA |
| **Semivolatile Organics** | | | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW5D-20<br>20 - 20.5<br>08/12/03<br>MW5D | MW5D-26<br>26 - 26.5<br>08/12/03<br>MW5D | MW6B(28-30)<br>28 - 30<br>11/20/03<br>MW6B | MW6B(28-30)-715865<br>28 - 30<br>11/20/03<br>MW6B | MW6B-32_665106<br>32.5 - 33<br>08/18/03<br>MW6B | MW6D-0-<br>0 - 0.5<br>08/13/03<br>MW6D | MW6D-1.<br>1 - 1.5<br>08/13/03<br>MW6D | MW6D-2.<br>2 - 2.5<br>08/13/03<br>MW6D | MW6D-6.<br>6 - 6.5<br>08/13/03<br>MW6D | MW7B(32-33)<br>32 - 33<br>12/01/03<br>MW7B | MW8B(40-42)-693717<br>40 - 42<br>12/04/03<br>MW8B | MW8B(40-42)-715870<br>40 - 42<br>12/04/03<br>MW8B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 3.5 | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.17 | 1.1 | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 1.5 | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | 2.1 U | 2.1 U | 2.2 U | NA | 2 U | 43 U | NA | NA | 2.1 U [2.1 U] | 2.2 U | 2.1 U | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | 2.1 U | 2.1 U | 2.2 U | NA | 2 U | 43 U | NA | NA | 2.1 U [2.1 U] | 2.2 U | 2.1 U | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | 0.091 J | 0.42 U | 0.42 U | NA | 0.044 | 7.3 | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | 2.1 U | 2.1 U | 2.2 U | NA | 2 U | 43 U | NA | NA | 2.1 U [2.1 U] | 2.2 U | 2.1 U | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | 2.1 U | 2.1 U | 2.2 U | NA | 2 U | 43 U | NA | NA | 2.1 U [2.1 U] | 2.2 U | 2.1 U | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | 2.1 U | 2.1 U | 2.2 U | NA | 2 U | 43 U | NA | NA | 2.1 U [2.1 U] | 2.2 U | 2.1 U | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | 2.1 U | 2.1 U | 2.2 U | NA | 2 U | 43 U | NA | NA | 2.1 U [2.1 U] | 2.2 U | 2.1 U | NA |
| Acenaphthene | 83-32-9 | mg/kg | 0.1 J | 0.046 J | 0.42 U | NA | 0.4 U | 0.85 | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| Acenaphthylene | 208-96-8 | mg/kg | 0.05 J | 0.42 U | 0.42 U | NA | 0.4 U | 6.2 | NA | NA | 0.78 [0.44] | 0.43 U | 0.41 U | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | 0.13 J | 0.12 J | 0.42 U | NA | 0.4 U | 2.3 | NA | NA | 0.067 [0.4 U] | 0.43 U | 0.41 U | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | 0.1 J | 0.1 J | 0.42 U | NA | 0.046 | 4.5 | NA | NA | 0.82 [0.32] | 0.43 U | 0.41 U | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | 0.064 J | 0.071 J | 0.42 U | NA | 0.4 U | 3.1 | NA | NA | 0.51 [0.24] | 0.43 U | 0.41 U | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.049 | 5.2 | NA | NA | 1.3 [0.64] | 0.43 U | 0.41 U | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 6.7 | NA | NA | 2.4 [1.3] | 0.43 U | 0.41 U | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | 0.044 J | 0.043 J | 0.42 U | NA | 0.054 | 4.7 | NA | NA | 1.4 [0.7] | 0.43 U | 0.41 U | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | 0.4 U | 0.42 U | 0.086 BF | NA | 0.2 | 0.85 | NA | NA | 0.4 U [0.063] | 0.054 J | 0.072 BF | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| Chrysene | 218-01-9 | mg/kg | 0.1 J | 0.11 J | 0.42 U | NA | 0.07 | 5.6 | NA | NA | 1.3 [0.52] | 0.43 U | 0.41 U | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 2.1 | NA | NA | 0.33 U [0.17] | 0.43 U | 0.41 U | NA |
| Dibenzofuran | 132-64-9 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW5D-20<br>20 - 20.5<br>08/12/03<br>MW5D | MW5D-26<br>26 - 26.5<br>08/12/03<br>MW5D | MW6B(28-30)<br>28 - 30<br>11/20/03<br>MW6B | MW6B(28-30)-715865<br>28 - 30<br>11/20/03<br>MW6B | MW6B-32_665106<br>32.5 - 33<br>08/18/03<br>MW6B | MW6D-0-<br>0 - 0.5<br>08/13/03<br>MW6D | MW6D-1.<br>1 - 1.5<br>08/13/03<br>MW6D | MW6D-2.<br>2 - 2.5<br>08/13/03<br>MW6D | MW6D-6.<br>6 - 6.5<br>08/13/03<br>MW6D | MW7B(32-33)<br>32 - 33<br>12/01/03<br>MW7B | MW8B(40-42)-693717<br>40 - 42<br>12/04/03<br>MW8B | MW8B(40-42)-715870<br>40 - 42<br>12/04/03<br>MW8B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| Fluoranthene | 206-44-0 | mg/kg | 0.16 J | 0.16 J | 0.42 U | NA | 0.11 | 5.6 | NA | NA | 1 [0.36] | 0.43 U | 0.41 U | NA |
| Fluorene | 86-73-7 | mg/kg | 0.088 J | 0.061 J | 0.42 U | NA | 0.4 U | 1.5 | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| Hexachloroethane | 67-72-1 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 5.3 | NA | NA | 1.6 [0.87] | 0.43 U | 0.41 U | NA |
| Isophorone | 78-59-1 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| Naphthalene | 91-20-3 | mg/kg | 0.14 J | 0.065 J | 0.42 U | NA | 0.4 U | 8.7 | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| Nitrobenzene | 98-95-3 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | 2.1 U | 2.1 U | 2.2 U | NA | 2 U | 43 U | NA | NA | 2.1 U [2.1 U] | 2.2 U | 2.1 U | NA |
| Phenanthrene | 85-01-8 | mg/kg | 0.45 | 0.39 J | 0.42 U | NA | 0.11 | 7.2 | NA | NA | 0.085 [0.049] | 0.43 U | 0.15 J | NA |
| Phenol | 108-95-2 | mg/kg | 0.4 U | 0.42 U | 0.42 U | NA | 0.4 U | 8.4 U | NA | NA | 0.4 U [0.4 U] | 0.43 U | 0.41 U | NA |
| Pyrene | 129-00-0 | mg/kg | 0.22 J | 0.24 J | 0.42 U | NA | 0.13 | 10 | NA | NA | 2.3 [1.1] | 0.43 U | 0.055 J | NA |
| **Metals** | | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | 9,090 | 4,090 | 7,840 | NA | 5,270 | 8,750 | NA | 16,400 | 3,420 [3,340] | 11,700 | 1,590 | NA |
| Antimony | 7440-36-0 | mg/kg | 7.24 U | 7.2 U | 9.8 BJ | NA | 7 UN | 8.4 N | NA | 7.45 UN | 7.08 UN [7.2 UN] | 0.47 B | 1.5 B | NA |
| Arsenic | 7440-38-2 | mg/kg | 4.3 | 1.8 | 3.1 UJ | NA | 2.4 | 12.5 | NA | 5.6 | 1.5 [1.4] | 10.8 | NA | 0.63 |
| Barium | 7440-39-3 | mg/kg | 20.1 | 10.8 | 144 | NA | 36.9 | 325 | NA | 52.2 | 15.7 [13.3] | 133 | 15.4 | NA |
| Beryllium | 7440-41-7 | mg/kg | 0.6 U | 0.6 U | 0.02 U | NA | 0.58 U | 0.61 U | NA | 0.62 U | 0.59 U [0.6 U] | 0.02 U | 0.02 U | NA |
| Cadmium | 7440-43-9 | mg/kg | 0.6 U | 0.6 U | 0.02 UJ | NA | 0.58 U | 0.92 | NA | 0.62 U | 0.59 U [0.6 U] | 0.02 U | 0.02 U | NA |
| Calcium | 7440-70-2 | mg/kg | 659 | 741 | 9,190 J | NA | 10,100 | 12,200 | NA | 836 | 685 [684] | 4,000 | 894 | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | 18.7 | 15.5 | 1,840 J | NA | 21.9 | 1,150 | NA | 17.4 | 6.9 [6.8] | 364 | 296 | NA |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 4.88 UJ | 5.04 UJ | 1,500 J | NA | 4.79 UJ | 14.2 J | NA | 5.17 UJ | 4.91 UJ [4.9 UJ] | 52.2 U | 197 | NA |
| Cobalt | 7440-48-4 | mg/kg | 6.8 | 6 U | 7.8 | NA | 5.8 U | 17.7 | NA | 9 | 5.9 U [6 U] | 13.2 | 1.5 BJ | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | 17.6 | 5.1 | 12.9 | NA | 8.1 | 114 | NA | 20.3 | 7.1 [7.8] | 17.7 | 5.1 B | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | 14,200 | 8,420 | 16,600 | NA | 12,500 | 28,700 | NA | 20,800 | 5,690 [5,420] | 27,200 | 4,570 | NA |
| Lead | 7439-92-1 | mg/kg | 17.8 | 6.4 | 9.9 J | NA | 9.1 | 863 | NA | 12.9 | 6.5 [6.5] | 14.6 | 3.9 | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | 3,800 | 2,220 | 4,420 | NA | 3,430 | 4,890 | NA | 3,080 | 1,120 [1,080] | 6,710 | 958 | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | 118 | 77.2 | 425 | NA | 319 | 401 * | NA | 438 * | 97.9 * [82.4 *] | 405 | 27 J | NA |
| Mercury | 7439-97-6 | mg/kg | 0.04 U | 0.04 U | 0.01 B | NA | 0.04 U | 0.66 | NA | 0.04 U | 0.04 U [0.04 U] | 0.01 | 0.03 J | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | 12.7 | 6.3 | 15.3 | NA | 10.1 | 120 | NA | 16.6 | 4.72 U [4.8 U] | 26 | 3 BJ | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | 1,990 | 1,250 | 1,960 | NA | 1,470 | 743 | NA | 1,060 | 504 [585] | 2,200 | 634 | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | 0.6 U | 0.6 U | 0.43 U | NA | 0.58 U | 0.61 U | NA | 0.62 U | 0.59 U [0.6 U] | 0.9 U | 0.42 UJ | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | 1.21 U | 1.2 U | 0.07 U | NA | 1.2 U | 1.23 U | NA | 1.24 U | 1.18 U [1.2 U] | 0.07 U | 0.06 UJ | NA |
| Sodium | 7440-23-5 | mg/kg | 354 | 296 | 2,280 | NA | 170 | 201 | NA | 124 U | 118 U [147] | 777 BJ | 617 BJ | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW5D-20<br>20 - 20.5<br>08/12/03<br>MW5D | MW5D-26<br>26 - 26.5<br>08/12/03<br>MW5D | MW6B(28-30)<br>28 - 30<br>11/20/03<br>MW6B | MW6B(28-30)-715865<br>28 - 30<br>11/20/03<br>MW6B | MW6B-32_665106<br>32.5 - 33<br>08/18/03<br>MW6B | MW6D-0-<br>0 - 0.5<br>08/13/03<br>MW6D | MW6D-1.<br>1 - 1.5<br>08/13/03<br>MW6D | MW6D-2.<br>2 - 2.5<br>08/13/03<br>MW6D | MW6D-6.<br>6 - 6.5<br>08/13/03<br>MW6D | MW7B(32-33)<br>32 - 33<br>12/01/03<br>MW7B | MW8B(40-42)-693717<br>40 - 42<br>12/04/03<br>MW8B | MW8B(40-42)-715870<br>40 - 42<br>12/04/03<br>MW8B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | 1.21 U | 1.2 U | NA | 0.2 U | 3.5 U | 6.14 U | NA | 3.73 U | 1.18 U [1.2 U] | 0.52 U | 0.48 U | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | 23.7 | 15.8 | 7.2 | NA | 18.2 | 93.5 | NA | 25.2 | 10.2 [9.3] | 23.8 | 5.1 J | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | 60.9 | 31.7 | 30.3 | NA | 30.1 | 473 | NA | 106 | 22.5 [27.3] | 65.1 J | 16.7 J | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | 0.08 U | 0.083 U | 0.042 U | NA | 0.079 U | 0.84 U | NA | 0.085 U | 0.081 U [0.081 U] | 0.043 U | 0.041 U | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | 0.08 U | 0.083 U | 0.042 U | NA | 0.079 U | 0.84 U | NA | 0.085 U | 0.081 U [0.081 U] | 0.043 U | 0.041 U | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | 0.08 U | 0.083 U | 0.042 U | NA | 0.079 U | 0.84 U | NA | 0.085 U | 0.081 U [0.081 U] | 0.043 U | 0.041 U | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | 0.08 U | 0.083 U | 0.042 U | NA | 0.079 U | 0.84 U | NA | 0.085 U | 0.081 U [0.081 U] | 0.043 U | 0.041 U | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | 0.08 U | 0.083 U | 0.042 U | NA | 0.079 U | 0.84 U | NA | 0.085 U | 0.081 U [0.081 U] | 0.043 U | 0.041 U | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | 0.08 U | 0.083 U | 0.042 U | NA | 0.079 U | 0.84 U | NA | 0.085 U | 0.081 U [0.081 U] | 0.043 U | 0.041 U | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | 0.08 U | 0.083 U | 0.042 U | NA | 0.079 U | 0.84 U | NA | 0.085 U | 0.081 U [0.081 U] | 0.043 U | 0.041 U | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW5D-20<br>20 - 20.5<br>08/12/03<br>MW5D | MW5D-26<br>26 - 26.5<br>08/12/03<br>MW5D | MW6B(28-30)<br>28 - 30<br>11/20/03<br>MW6B | MW6B(28-30)-715865<br>28 - 30<br>11/20/03<br>MW6B | MW6B-32_665106<br>32.5 - 33<br>08/18/03<br>MW6B | MW6D-0-<br>0 - 0.5<br>08/13/03<br>MW6D | MW6D-1.<br>1 - 1.5<br>08/13/03<br>MW6D | MW6D-2.<br>2 - 2.5<br>08/13/03<br>MW6D | MW6D-6.<br>6 - 6.5<br>08/13/03<br>MW6D | MW7B(32-33)<br>32 - 33<br>12/01/03<br>MW7B | MW8B(40-42)-693717<br>40 - 42<br>12/04/03<br>MW8B | MW8B(40-42)-715870<br>40 - 42<br>12/04/03<br>MW8B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | 1.22 U | 1.26 U | 1.28 U | NA | 1.2 U | NA | NA | NA | NA | 1.3 | 1.23 U | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 820,000 | 794,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | MW11BE-32-32.5 | MW11BG-34.9-35.4 | NJD981084668-4/6/2004-002 | NJD981084668-4/7/2005-9 | NJD981084668-4/9/2004-003 | NJD981084668-4/9/2004-004 | NJD981084668-4/9/2004-005 | NJD981084668-4/12/2004-001 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 32 - 32.5 | 34.9 - 35.4 | 68 - 68.5 | 48 - 48.5 | 25.5 - 26 | 25.5 - 26 | 36 - 36.5 | 54 - 54.5 |
| Date Collected: | | | 11/07/05 | 11/07/05 | 04/06/04 | 04/07/05 | 04/09/04 | 04/09/04 | 04/09/04 | 04/12/04 |
| Location ID: | CAS Number | Units | MW11B | MW11B | PSEG-SB24 | PSEG-SB36 | PSEG-SB23 | PSEG-SB23 | PSEG-SB23 | PSEG-SB23 |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | 0.416 U | 0.76 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | 0.416 U | 0.15 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | 0.416 U | 0.76 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | 0.416 U | 0.46 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | 0.416 U | 0.76 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | 0.416 U | 0.3 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | 0.416 U | NA | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | 0.416 U | 0.76 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | 0.416 U | 0.76 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | 0.416 U | 0.76 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | 0.416 U | 0.76 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | 0.416 U | 0.3 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | 0.416 U | 0.15 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | 0.416 U | 0.76 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | 0.416 U | 0.76 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | 0.833 U | 0.76 U | 1.22 U | 1.47 U | 1.17 U | 1.13 U |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | 0.833 U | 0.76 U | 1.22 U | 1.47 U | 1.17 U | 1.13 U |
| Acetone | 67-64-1 | mg/kg | NA | NA | 0.833 U | 0.76 U | 1.22 U | 1.47 U | 1.17 U | 1.13 U |
| Benzene | 71-43-2 | mg/kg | NA | NA | 0.416 U | 0.15 U | 0.162 J | 0.214 J | 0.585 U | 0.188 J |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | 0.416 U | NA | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | 0.416 U | 0.15 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| Bromoform | 75-25-2 | mg/kg | NA | NA | 0.416 U | 0.61 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | 0.416 U | 0.76 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | 0.416 U | 0.76 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | 0.416 U | 0.3 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | 0.416 U | 0.76 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | 0.416 U | 0.76 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | 0.416 U | 0.76 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | 0.416 U | 0.76 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | 0.416 U | 0.76 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| Chloroform | 67-66-3 | mg/kg | NA | NA | 0.416 U | 0.76 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | 0.416 U | 0.76 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | 0.416 U | 0.76 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | 0.416 U | 0.76 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | 0.416 U | 0.76 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | 0.416 U | 0.46 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | 0.416 U | 0.61 U | 0.725 | 0.733 U | 0.585 U | 0.567 U |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | 0.416 U | 0.76 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | 0.416 U | 0.76 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | 0.833 U | 0.76 U | 1.22 U | 1.47 U | 1.17 U | 1.13 U |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | 0.416 U | 0.76 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | 0.416 U | 0.76 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | 0.416 U | 0.76 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | 0.416 U | 0.15 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| Toluene | 108-88-3 | mg/kg | NA | NA | 0.416 U | 0.76 U | 0.61 U | 0.733 U | 0.585 U | 0.138 J |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | 0.416 U | 0.76 U | 0.415 J | 0.733 U | 0.585 U | 0.567 U |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | 0.416 U | 0.76 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | 0.416 U | 0.76 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | 0.416 U | 0.15 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | 0.416 U | 0.76 U | 0.61 U | 0.733 U | 0.585 U | 0.567 U |
| **Semivolatile Organics** | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW11BE-32-32.5<br>32 - 32.5<br>11/07/05<br>MW11B | MW11BG-34.9-35.4<br>34.9 - 35.4<br>11/07/05<br>MW11B | NJD981084668-4/6/2004-002<br>68 - 68.5<br>04/06/04<br>PSEG-SB24 | NJD981084668-4/7/2005-9<br>48 - 48.5<br>04/07/05<br>PSEG-SB36 | NJD981084668-4/9/2004-003<br>25.5 - 26<br>04/09/04<br>PSEG-SB23 | NJD981084668-4/9/2004-004<br>25.5 - 26<br>04/09/04<br>PSEG-SB23 | NJD981084668-4/9/2004-005<br>36 - 36.5<br>04/09/04<br>PSEG-SB23 | NJD981084668-4/12/2004-001<br>54 - 54.5<br>04/12/04<br>PSEG-SB23 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | 0.037 U | 0.55 U | 0.486 U | 4.17 | 0.118 U | 0.119 U |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | 0.037 U | NA | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | 0.55 U | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | 0.037 U | 0.55 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | 0.037 U | 0.55 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | 0.037 U | 0.55 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | 0.037 U | 0.55 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | 0.037 U | 2.2 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | 0.037 U | 0.11 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | 0.037 U | 0.11 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | 0.037 U | 0.55 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | 0.037 U | 0.55 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | 0.037 U | 2.2 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | 0.037 U | 0.55 U | 54.6 | 58.5 | 0.118 U | 0.119 U |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | 0.037 U | 0.55 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | 0.037 U | 1.1 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | 0.037 U | 0.55 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | 0.037 U | 1.1 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | 0.037 U | 1.1 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | 0.037 U | 0.55 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | 0.037 U | 0.55 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | 0.037 U | 0.55 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | 0.037 U | 0.55 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | 0.037 U | 1.1 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | 0.037 U | 2.2 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | 0.037 U | 0.55 U | 37.1 | 35.2 | 0.118 U | 0.119 U |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | 0.037 U | 0.55 U | 3.23 | 2.88 | 0.118 U | 0.119 U |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | 0.037 U | 0.55 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| Anthracene | 120-12-7 | mg/kg | NA | NA | 0.037 U | 0.55 U | 11.7 | 10.1 | 0.118 U | 0.119 U |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | 0.037 U | 0.55 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | 0.037 U | 0.55 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | 0.037 U | 0.055 U | 6.11 | 5.75 | 0.118 U | 0.119 U |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | 0.037 U | 0.055 U | 3.8 | 3.64 | 0.118 U | 0.119 U |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | 0.037 U | 0.055 U | 1.69 | 1.67 | 0.118 U | 0.119 U |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | 0.037 U | 0.55 U | 1.35 | 1.34 | 0.118 U | 0.119 U |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | 0.037 U | 0.055 U | 2.08 | 2.15 | 0.118 U | 0.119 U |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | 0.037 U | 0.55 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | 0.037 U | 0.055 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | 0.037 U | NA | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | 0.022 J | 0.15 J | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | 0.037 U | 0.55 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | 0.037 U | 0.55 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| Carbazole | 86-74-8 | mg/kg | NA | NA | 0.037 U | 0.55 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| Chrysene | 218-01-9 | mg/kg | NA | NA | 0.037 U | 0.55 U | 6.02 | 5.52 | 0.118 U | 0.119 U |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | 0.037 U | 0.055 U | 0.689 | 0.534 | 0.118 U | 0.119 U |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | 0.037 U | 0.55 U | 1.95 | 1.78 | 0.118 U | 0.119 U |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | 0.037 U | 0.55 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | 0.037 U | 0.55 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | 0.037 U | 0.55 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW11BE-32-32.5<br>32 - 32.5<br>11/07/05<br>MW11B | MW11BG-34.9-35.4<br>34.9 - 35.4<br>11/07/05<br>MW11B | NJD981084668-4/6/2004-002<br>68 - 68.5<br>04/06/04<br>PSEG-SB24 | NJD981084668-4/7/2005-9<br>48 - 48.5<br>04/07/05<br>PSEG-SB36 | NJD981084668-4/9/2004-003<br>25.5 - 26<br>04/09/04<br>PSEG-SB23 | NJD981084668-4/9/2004-004<br>25.5 - 26<br>04/09/04<br>PSEG-SB23 | NJD981084668-4/9/2004-005<br>36 - 36.5<br>04/09/04<br>PSEG-SB23 | NJD981084668-4/12/2004-001<br>54 - 54.5<br>04/12/04<br>PSEG-SB23 |
|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | 0.037 U | 0.55 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | 0.037 U | 0.55 U | 9.2 | 7.98 | 0.118 U | 0.119 U |
| Fluorene | 86-73-7 | mg/kg | NA | NA | 0.037 U | 0.55 U | 19.4 | 19.2 | 0.118 U | 0.119 U |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | 0.037 U | 0.11 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | 0.037 U | 0.055 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | 0.037 U | 0.55 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | 0.037 U | 0.055 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | 0.037 U | 0.055 U | 1.24 | 1.08 | 0.118 U | 0.119 U |
| Isophorone | 78-59-1 | mg/kg | NA | NA | 0.037 U | 0.55 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | 0.037 U | 0.55 U | 64.7 | 68.4 | 0.118 U | 0.119 U |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | 0.037 U | 0.055 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | 0.037 U | 0.055 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | 0.037 U | 0.55 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | 0.037 U | 0.55 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | 0.037 U | 2.2 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | 0.037 U | 0.55 U | 68 | 58.5 | 0.118 U | 0.119 U |
| Phenol | 108-95-2 | mg/kg | NA | NA | 0.037 U | 0.55 U | 0.486 U | 0.5 U | 0.118 U | 0.119 U |
| Pyrene | 129-00-0 | mg/kg | NA | NA | 0.037 U | 0.016 J | 14.6 | 13.9 | 0.118 U | 0.119 U |
| **Metals** | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | 6,360 | 2,390 | 7,710 | 7,650 | 2,340 | 1,880 |
| Antimony | 7440-36-0 | mg/kg | NA | NA | 1.12 U | 1.2 U | 1.25 U | 1.27 U | 1.24 U | 1.23 U |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | 2.82 | 3 | 5.13 | 6.72 | 1.24 U | 1.23 U |
| Barium | 7440-39-3 | mg/kg | NA | NA | 49.2 | 36 B | 17.6 | 18 | 20.1 | 16.4 |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | 0.56 U | 0.32 B | 0.816 | 0.896 | 0.62 U | 0.613 U |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | 0.28 U | 0.12 U | 0.311 U | 0.316 U | 0.31 U | 0.306 U |
| Calcium | 7440-70-2 | mg/kg | NA | NA | 11,800 | 1,910 | 18,800 | 22,700 | 1,170 | 8,100 |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | NA | NA | 16.8 | 8 | 1,960 | 2,350 | 268 | 492 |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 454 | 1,590 J | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | 5.33 | 2.7 B | 12.5 | 14.4 | 2.48 U | 2.45 U |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | 13 | 6.5 B | 19.7 | 22.5 | 6.4 | 4.6 |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | 10,500 | 7,380 | 15,000 | 17,000 | 4,060 | 3,890 |
| Lead | 7439-92-1 | mg/kg | NA | NA | 10.8 | 7.1 | 18.2 | 18.4 | 4.95 | 2.89 |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | 5,620 | 1,690 | 6,410 | 6,490 | 1,200 | 1,550 |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | 276 | 212 | 191 | 207 | 43.2 | 186 |
| Mercury | 7439-97-6 | mg/kg | NA | NA | 0.014 U | 0.028 U | 0.018 | 0.016 U | 0.016 U | 0.015 U |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | 11.7 | 6 B | 49.8 | 59.4 | 3.73 | 3.96 |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | 1,890 | 641 B | 1,950 | 1,890 | 832 | 622 |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | 2.24 U | 1.4 U | 2.49 U | 2.53 U | 2.48 U | 2.45 U |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | 0.56 U | 0.24 U | 0.623 U | 0.633 U | 0.62 U | 0.613 U |
| Sodium | 7440-23-5 | mg/kg | NA | NA | 467 | 109 U | 628 | 654 | 415 | 835 |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW11BE-32-32.5<br>32 - 32.5<br>11/07/05<br>MW11B | MW11BG-34.9-35.4<br>34.9 - 35.4<br>11/07/05<br>MW11B | NJD981084668-4/6/2004-002<br>68 - 68.5<br>04/06/04<br>PSEG-SB24 | NJD981084668-4/7/2005-9<br>48 - 48.5<br>04/07/05<br>PSEG-SB36 | NJD981084668-4/9/2004-003<br>25.5 - 26<br>04/09/04<br>PSEG-SB23 | NJD981084668-4/9/2004-004<br>25.5 - 26<br>04/09/04<br>PSEG-SB23 | NJD981084668-4/9/2004-005<br>36 - 36.5<br>04/09/04<br>PSEG-SB23 | NJD981084668-4/12/2004-001<br>54 - 54.5<br>04/12/04<br>PSEG-SB23 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | 0.134 | 1.3 U | 0.134 | 0.127 U | 0.124 U | 0.123 U |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | 21.9 | 10.8 B | 8.29 | 2.53 U | 5.11 | 2.45 U |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | 45.5 | 36.2 | 61 | 80.4 | 17.4 | 17.6 |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | 0.11 U | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | 0.011 U | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | 0.11 U | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | MW11BE-32-32.5<br>32 - 32.5<br>11/07/05<br>MW11B | MW11BG-34.9-35.4<br>34.9 - 35.4<br>11/07/05<br>MW11B | NJD981084668-4/6/2004-002<br>68 - 68.5<br>04/06/04<br>PSEG-SB24 | NJD981084668-4/7/2005-9<br>48 - 48.5<br>04/07/05<br>PSEG-SB36 | NJD981084668-4/9/2004-003<br>25.5 - 26<br>04/09/04<br>PSEG-SB23 | NJD981084668-4/9/2004-004<br>25.5 - 26<br>04/09/04<br>PSEG-SB23 | NJD981084668-4/9/2004-005<br>36 - 36.5<br>04/09/04<br>PSEG-SB23 | NJD981084668-4/12/2004-001<br>54 - 54.5<br>04/12/04<br>PSEG-SB23 |
|---|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | 1.12 U | 0.5 U | 1.25 U | 1.26 U | 1.24 U | 1.23 U |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | 0.5 U | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 769,000 | 774,000 | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-4/12/2004-003<br>78.5 - 79<br>04/12/04<br>PSEG-SB23 | NJD981084668-4/21/2005-2<br>23.5 - 24<br>04/21/05<br>PSEG-SB27 | NJD981084668-4/21/2005-3<br>34 - 34.5<br>04/21/05<br>PSEG-SB27 | NJD981084668-4/21/2005-4<br>53.5 - 54<br>04/21/05<br>PSEG-SB27 | NJD981084668-7/6/2005-1<br>20 - 20.5<br>07/06/05<br>4F | NJD981084668-7/7/2005-2<br>43.5 - 44<br>07/07/05<br>4F | NJD981084668-7/26/2006-OSB26D3<br>29 - 29.5<br>07/26/06<br>OSB-26 |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | 0.644 U | 0.6 U | 0.56 U | 0.49 U | 19 U | 0.55 U | 0.0071 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | 0.644 U | 0.12 U | 0.11 U | 0.098 U | 3.8 U | 0.11 U | 0.0014 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | 0.644 U | 0.6 U | 0.56 U | 0.49 U | 19 U | 0.55 U | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | 0.644 U | 0.36 U | 0.34 U | 0.29 U | 11 U | 0.33 U | 0.0043 U |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | 0.644 U | 0.6 U | 0.56 U | 0.49 U | 19 U | 0.55 U | 0.0071 U |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | 0.644 U | 0.24 U | 0.22 U | 0.2 U | 7.5 U | 0.22 U | 0.0028 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | 0.644 U | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | 0.644 U | 0.6 U | 0.56 U | 0.49 U | 19 U | 0.55 U | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | 0.644 U | 0.6 U | 0.56 U | 0.49 U | 19 U | 0.55 U | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | 0.644 U | 0.6 U | 0.56 U | 0.49 U | 19 U | 0.55 U | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | 0.644 U | 0.6 U | 0.56 U | 0.49 U | 19 U | 0.55 U | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | 0.644 U | 0.24 U | 0.22 U | 0.2 U | 7.5 U | 0.22 U | 0.0028 U |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | 0.644 U | 0.12 U | 0.11 U | 0.098 U | 3.8 U | 0.11 U | 0.0014 U |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | 0.644 U | 0.6 U | 0.56 U | 0.49 U | 19 U | 0.55 U | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | 0.644 U | 0.6 U | 0.56 U | 0.49 U | 19 U | 0.55 U | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | 1.29 U | 0.6 U | 0.56 U | 0.49 U | 19 U | 0.55 U | 0.0071 U |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | 1.29 U | 0.6 U | 0.56 U | 0.49 U | 19 U | 0.55 U | 0.0071 U |
| Acetone | 67-64-1 | mg/kg | 1.29 U | 0.6 U | 0.56 U | 0.49 U | 19 U | 0.55 U | 0.025 |
| Benzene | 71-43-2 | mg/kg | 0.644 U | 0.12 U | 0.11 U | 0.098 U | 520 | 0.3 | 0.0014 U |
| Bromochloromethane | 74-97-5 | mg/kg | 0.644 U | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | 0.644 U | 0.12 U | 0.11 U | 0.098 U | 3.8 U | 0.11 U | 0.0014 U |
| Bromoform | 75-25-2 | mg/kg | 0.644 U | 0.48 U | 0.45 U | 0.39 U | 15 U | 0.44 U | 0.0057 U |
| Bromomethane | 74-83-9 | mg/kg | 0.644 U | 0.6 U | 0.56 U | 0.49 U | 19 U | 0.55 U | 0.0071 U |
| Carbon Disulfide | 75-15-0 | mg/kg | 0.644 U | 0.6 U | 0.56 U | 0.49 U | 19 U | 0.55 U | 0.0017 J |
| Carbon Tetrachloride | 56-23-5 | mg/kg | 0.644 U | 0.24 U | 0.22 U | 0.2 U | 7.5 U | 0.22 U | 0.0028 U |
| CFC-11 | 75-69-4 | mg/kg | 0.644 U | 0.6 U | 0.56 U | 0.49 U | 19 U | 0.55 U | NA |
| CFC-12 | 75-71-8 | mg/kg | 0.644 U | 0.6 U | 0.56 U | 0.49 U | 19 U | 0.55 U | NA |
| Chlorobenzene | 108-90-7 | mg/kg | 0.644 U | 0.6 U | 0.56 U | 0.49 U | 19 U | 0.55 U | 0.0071 U |
| Chlorodibromomethane | 124-48-1 | mg/kg | 0.644 U | 0.6 U | 0.56 U | 0.49 U | 19 U | 0.55 U | 0.0071 U |
| Chloroethane | 75-00-3 | mg/kg | 0.644 U | 0.6 U | 0.56 U | 0.49 U | 19 U | 0.55 U | 0.0071 U |
| Chloroform | 67-66-3 | mg/kg | 0.644 U | 0.6 U | 0.56 U | 0.49 U | 19 U | 0.55 U | 0.0071 U |
| Chloromethane | 74-87-3 | mg/kg | 0.644 U | 0.6 U | 0.56 U | 0.49 U | 19 U | 0.55 U | 0.0071 U |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | 0.644 U | 0.6 U | 0.56 U | 0.49 U | 19 U | 0.55 U | 0.0071 U |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | 0.644 U | 0.6 U | 0.56 U | 0.49 U | 19 U | 0.55 U | 0.0071 U |
| Cyclohexane | 110-82-7 | mg/kg | 0.644 U | 0.6 U | 0.56 U | 0.49 U | 19 U | 0.55 U | NA |
| Dichloromethane | 75-09-2 | mg/kg | 0.644 U | 0.36 U | 0.34 U | 0.29 U | 11 U | 0.33 U | 0.0043 U |
| Ethylbenzene | 100-41-4 | mg/kg | 0.644 U | 0.48 U | 0.45 U | 0.39 U | 460 | 0.38 J | 0.0057 U |
| Isopropylbenzene | 98-82-8 | mg/kg | 0.644 U | 0.6 U | 0.56 U | 0.49 U | 47 | 0.55 U | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | 0.644 U | 0.6 U | 0.56 U | 0.49 U | 19 U | 0.55 U | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | 1.29 U | 0.6 U | 0.56 U | 0.49 U | 19 U | 0.55 U | 0.0071 U |
| Methylcyclohexane | 108-87-2 | mg/kg | 0.644 U | 0.6 U | 0.56 U | 0.49 U | 19 U | 0.55 U | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | 0.644 U | 0.6 U | 0.56 U | 0.49 U | 19 U | 0.55 U | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | 0.644 U | 0.6 U | 0.56 U | 0.49 U | 19 U | 0.55 U | 0.0071 U |
| Tetrachloroethene | 127-18-4 | mg/kg | 0.644 U | 0.12 U | 0.11 U | 0.098 U | 3.8 U | 0.11 U | 0.0014 U |
| Toluene | 108-88-3 | mg/kg | 0.644 U | 0.6 U | 0.56 U | 0.49 U | 84 | 0.55 U | 0.0071 U |
| Total Xylenes | 1330-20-7 | mg/kg | 0.644 U | 0.6 U | 0.56 U | 0.49 U | 710 | 0.13 J | 0.0071 U |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | 0.644 U | 0.6 U | 0.56 U | 0.49 U | 19 U | 0.55 U | 0.0071 U |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | 0.644 U | 0.6 U | 0.56 U | 0.49 U | 19 U | 0.55 U | 0.0071 U |
| Trichloroethene | 79-01-6 | mg/kg | 0.644 U | 0.12 U | 0.11 U | 0.098 U | 3.8 U | 0.11 U | 0.0014 U |
| Vinyl chloride | 75-01-4 | mg/kg | 0.644 U | 0.6 U | 0.56 U | 0.49 U | 19 U | 0.55 U | 0.0071 U |
| **Semivolatile Organics** | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-4/12/2004-003<br>78.5 - 79<br>04/12/04<br>PSEG-SB23 | NJD981084668-4/21/2005-2<br>23.5 - 24<br>04/21/05<br>PSEG-SB27 | NJD981084668-4/21/2005-3<br>34 - 34.5<br>04/21/05<br>PSEG-SB27 | NJD981084668-4/21/2005-4<br>53.5 - 54<br>04/21/05<br>PSEG-SB27 | NJD981084668-7/6/2005-1<br>20 - 20.5<br>07/06/05<br>4F | NJD981084668-7/7/2005-2<br>43.5 - 44<br>07/07/05<br>4F | NJD981084668-7/26/2006-OSB26D3<br>29 - 29.5<br>07/26/06<br>OSB-26 |
|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | 0.133 U | NA | NA | NA | 75 J | 0.079 J | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | 0.133 U | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | 0.047 U |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | 0.47 U |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | 0.47 U |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | 0.47 U |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | 0.43 U | 0.4 U | 0.38 U | 97 U | 0.4 U | 0.47 U |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 97 U | 0.4 U | 0.47 U |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 97 U | 0.4 U | 0.47 U |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 97 U | 0.4 U | 0.47 U |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 97 U | 0.4 U | 0.47 U |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | 0.133 U | 1.7 U | 1.6 U | 1.5 U | 390 U | 1.6 U | 1.4 U |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | 0.133 U | 0.087 U | 0.079 U | 0.076 U | 19 U | 0.08 U | 0.095 U |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | 0.133 U | 0.087 U | 0.079 U | 0.076 U | 19 U | 0.08 U | 0.095 U |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 97 U | 0.4 U | 0.47 U |
| 2-Chlorophenol | 95-57-8 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 97 U | 0.4 U | 0.47 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | 0.133 U | 1.7 U | 1.6 U | 1.5 U | 390 U | 1.6 U | 1.4 U |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 750 | 0.24 J | 0.47 U |
| 2-Methylphenol | 95-48-7 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 97 U | 0.4 U | 0.47 U |
| 2-Nitroaniline | 88-74-4 | mg/kg | 0.133 U | 0.87 U | 0.79 U | 0.76 U | 190 U | 0.8 U | 0.95 U |
| 2-Nitrophenol | 88-75-5 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 97 U | 0.4 U | 0.47 U |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | 0.133 U | 0.87 U | 0.79 U | 0.76 U | 190 U | 0.8 U | 0.95 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | 0.133 U | 0.87 U | 0.79 U | 0.76 U | 190 U | 0.8 U | 0.95 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 97 U | 0.4 U | 0.47 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 97 U | 0.4 U | 0.47 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 97 U | 0.4 U | 0.47 U |
| 4-Methylphenol | 106-44-5 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 97 U | 0.4 U | 0.47 U |
| 4-Nitroaniline | 100-01-6 | mg/kg | 0.133 U | 0.87 U | 0.79 U | 0.76 U | 190 U | 0.8 U | 0.95 U |
| 4-Nitrophenol | 100-02-7 | mg/kg | 0.133 U | 1.7 U | 1.6 U | 1.5 U | 390 U | 1.6 U | 1.4 U |
| Acenaphthene | 83-32-9 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 180 | 0.14 J | 0.47 U |
| Acenaphthylene | 208-96-8 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 58 J | 0.15 J | 0.47 U |
| Acetophenone | 98-86-2 | mg/kg | 0.133 U | NA | NA | NA | 11 J | 0.4 U | NA |
| Anthracene | 120-12-7 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 130 | 0.22 J | 0.47 U |
| Atrazine | 1912-24-9 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 97 U | 0.4 U | NA |
| Benzaldehyde | 100-52-7 | mg/kg | 0.133 U | NA | NA | NA | 97 U | 0.4 U | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | 0.133 U | 0.043 U | 0.04 U | 0.038 U | 64 | 0.13 | 0.047 U |
| Benzo(a)pyrene | 50-32-8 | mg/kg | 0.133 U | 0.043 U | 0.04 U | 0.038 U | 49 | 0.09 | 0.047 U |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | 0.133 U | 0.043 U | 0.04 U | 0.038 U | 22 | 0.036 J | 0.047 U |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 16 J | 0.036 J | 0.47 U |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | 0.133 U | 0.043 U | 0.04 U | 0.038 U | 31 | 0.058 | 0.047 U |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 97 U | 0.4 U | 0.47 U |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | 0.133 U | 0.043 U | 0.04 U | 0.038 U | 9.7 U | 0.04 U | 0.047 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | 0.133 U | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | 0.133 U | 0.21 J | 0.27 J | 0.38 U | 97 U | 0.42 | 0.34 J |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 97 U | 0.4 U | 0.47 U |
| Caprolactam | 105-60-2 | mg/kg | 0.133 U | NA | NA | NA | 97 U | 0.4 U | NA |
| Carbazole | 86-74-8 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 5.5 J | 0.4 U | 0.47 U |
| Chrysene | 218-01-9 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 73 J | 0.16 J | 0.47 U |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | 0.133 U | 0.043 U | 0.04 U | 0.038 U | 9 J | 0.04 U | 0.047 U |
| Dibenzofuran | 132-64-9 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 14 J | 0.016 J | 0.47 U |
| Diethyl phthalate | 84-66-2 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 97 U | 0.4 U | 0.47 U |
| Dimethyl phthalate | 131-11-3 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 97 U | 0.4 U | 0.47 U |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 97 U | 0.4 U | 0.47 U |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-4/12/2004-003<br>78.5 - 79<br>04/12/04<br>PSEG-SB23 | NJD981084668-4/21/2005-2<br>23.5 - 24<br>04/21/05<br>PSEG-SB27 | NJD981084668-4/21/2005-3<br>34 - 34.5<br>04/21/05<br>PSEG-SB27 | NJD981084668-4/21/2005-4<br>53.5 - 54<br>04/21/05<br>PSEG-SB27 | NJD981084668-7/6/2005-1<br>20 - 20.5<br>07/06/05<br>4F | NJD981084668-7/7/2005-2<br>43.5 - 44<br>07/07/05<br>4F | NJD981084668-7/26/2006-OSB26D3<br>29 - 29.5<br>07/26/06<br>OSB-26 |
|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 97 U | 0.4 U | 0.47 U |
| Fluoranthene | 206-44-0 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 120 | 0.24 J | 0.47 U |
| Fluorene | 86-73-7 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 130 | 0.21 J | 0.47 U |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | 0.133 U | 0.087 U | 0.079 U | 0.076 U | 19 U | 0.08 U | 0.095 U |
| Hexachlorobenzene | 118-74-1 | mg/kg | 0.133 U | 0.043 U | 0.04 U | 0.038 U | 9.7 U | 0.04 U | 0.047 U |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 97 U | 0.4 U | 0.47 U |
| Hexachloroethane | 67-72-1 | mg/kg | 0.133 U | 0.043 U | 0.04 U | 0.038 U | 9.7 U | 0.04 U | 0.047 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | 0.133 U | 0.043 U | 0.04 U | 0.038 U | 14 | 0.027 J | 0.047 U |
| Isophorone | 78-59-1 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 97 U | 0.4 U | 0.47 U |
| Naphthalene | 91-20-3 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 1,600 | 0.18 J | 0.47 U |
| Nitrobenzene | 98-95-3 | mg/kg | 0.133 U | 0.043 U | 0.04 U | 0.038 U | 9.7 U | 0.04 U | 0.047 U |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | 0.133 U | 0.043 U | 0.04 U | 0.038 U | 9.7 U | 0.04 U | 0.047 U |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 97 U | 0.4 U | 0.47 U |
| p-Chloroaniline | 106-47-8 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 97 U | 0.4 U | 0.47 U |
| Pentachlorophenol | 87-86-5 | mg/kg | 0.133 U | 1.7 U | 1.6 U | 1.5 U | 390 U | 1.6 U | 1.4 U |
| Phenanthrene | 85-01-8 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 390 | 0.71 | 0.47 U |
| Phenol | 108-95-2 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 97 U | 0.4 U | 0.47 U |
| Pyrene | 129-00-0 | mg/kg | 0.133 U | 0.43 U | 0.4 U | 0.38 U | 160 | 0.33 J | 0.47 U |
| **Metals** | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | 8,250 | 1,430 | 2,710 | 3,800 | 7,110 | 2,570 | 8,250 |
| Antimony | 7440-36-0 | mg/kg | 1.36 U | 1.5 U | 1.3 U | 1.3 U | 1.7 U | 1.2 U | 1.6 U |
| Arsenic | 7440-38-2 | mg/kg | 2.76 | 0.83 U | 1.8 | 2.5 | 11.3 | 2.9 | 3.3 |
| Barium | 7440-39-3 | mg/kg | 68.1 | 15.5 B | 18.1 B | 32.1 B | 111 | 23.4 B | 66.5 |
| Beryllium | 7440-41-7 | mg/kg | 0.847 | 0.09 B | 0.31 B | 0.33 B | 0.44 B | 0.27 B | 0.47 B |
| Cadmium | 7440-43-9 | mg/kg | 0.339 U | 0.1 U | 0.087 U | 0.091 U | 0.8 B | 0.12 U | 0.11 U |
| Calcium | 7440-70-2 | mg/kg | 20,900 | 981 B | 8,230 | 8,910 | 4,930 | 1,420 | 1,490 |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | 18.6 | 143 | 97.4 | 178 | 59.8 | 6.8 | 14.9 |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | mg/kg | 7.9 | 1.4 B | 3.9 B | 5.4 B | 8.6 B | 2.6 B | 6.8 B |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | 13.2 | 3.7 B | 7.4 | 10 | 191 | 6.7 | 12.8 |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | 14,400 | 4,620 | 8,480 | 8,470 | 21,800 | 6,710 | 17,500 |
| Lead | 7439-92-1 | mg/kg | 10.4 | 3.5 | 5.7 | 12.3 | 431 | 5.7 | 8.2 |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | 6,850 | 771 B | 2,670 | 4,340 | 2,640 | 1,410 | 3,390 |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | 491 | 28.2 | 184 | 192 | 326 | 225 | 288 |
| Mercury | 7439-97-6 | mg/kg | 0.017 U | 0.022 U | 0.017 U | 0.019 U | 0.96 | 0.02 U | 0.02 U |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | 16.6 | 3.1 B | 7.9 B | 11 | 24.2 | 4.9 B | 13.2 |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | 2,440 | 387 B | 657 B | 1,050 B | 831 B | 627 B | 941 B |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | 2.71 U | 1.1 U | 0.91 U | 0.95 U | 1.7 | 1.1 U | 1.2 U |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | 0.678 U | 0.37 U | 0.3 U | 0.32 U | 0.41 U | 0.29 U | 0.4 U |
| Sodium | 7440-23-5 | mg/kg | 620 | 714 B | 130 B | 200 B | 265 B | 88.6 B | 1,300 B |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-4/12/2004-003<br>78.5 - 79<br>04/12/04<br>PSEG-SB23 | NJD981084668-4/21/2005-2<br>23.5 - 24<br>04/21/05<br>PSEG-SB27 | NJD981084668-4/21/2005-3<br>34 - 34.5<br>04/21/05<br>PSEG-SB27 | NJD981084668-4/21/2005-4<br>53.5 - 54<br>04/21/05<br>PSEG-SB27 | NJD981084668-7/6/2005-1<br>20 - 20.5<br>07/06/05<br>4F | NJD981084668-7/7/2005-2<br>43.5 - 44<br>07/07/05<br>4F | NJD981084668-7/26/2006-OSB26D3<br>29 - 29.5<br>07/26/06<br>OSB-26 |
|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | 0.158 | 1.2 U | 1 U | 1.1 U | 1.6 B | 1.1 U | 1.3 U |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | 27.1 | 7.4 B | 12.9 | 21.5 | 24.5 | 10.4 B | 21.4 |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | 45.2 | 13.6 | 26.1 | 40.1 | 512 | 28.7 | 67.3 |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | 0.0087 U | 0.008 U | 0.0076 U | 0.075 P* | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | 0.0087 U | 0.008 U | 0.0076 U | 0.18 | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | 0.0087 U | 0.008 U | 0.0076 U | 0.47 | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | 0.0087 U | 0.008 U | 0.0076 U | 0.0097 U | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | 0.0087 U | 0.008 U | 0.0076 U | 0.0097 U | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | 0.0087 U | 0.008 U | 0.0076 U | 0.0097 U | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | 0.087 U | 0.08 U | 0.076 U | 0.097 U | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | 0.0087 U | 0.008 U | 0.0076 U | 0.0097 U | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | 0.0087 U | 0.008 U | 0.0076 U | 0.024 P* | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | 0.0087 U | 0.008 U | 0.0076 U | 0.0097 U | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | 0.0087 U | 0.008 U | 0.0076 U | 0.28 | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | 0.0087 U | 0.008 U | 0.0076 U | 0.0097 U | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | 0.0087 U | 0.008 U | 0.0076 U | 0.022 P* | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | 0.0087 U | 0.008 U | 0.0076 U | 0.098 P* | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | 0.0087 U | 0.008 U | 0.0076 U | 0.0097 U | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | 0.0087 U | 0.008 U | 0.0076 U | 0.018 P* | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | 0.0087 U | 0.008 U | 0.0076 U | 0.0097 U | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | 0.0087 U | 0.008 U | 0.0076 U | 0.076 | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | 0.0087 U | 0.008 U | 0.0076 U | 0.0097 U | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | 0.087 U | 0.08 U | 0.076 U | 0.097 U | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-4/12/2004-003<br>78.5 - 79<br>04/12/04<br>PSEG-SB23 | NJD981084668-4/21/2005-2<br>23.5 - 24<br>04/21/05<br>PSEG-SB27 | NJD981084668-4/21/2005-3<br>34 - 34.5<br>04/21/05<br>PSEG-SB27 | NJD981084668-4/21/2005-4<br>53.5 - 54<br>04/21/05<br>PSEG-SB27 | NJD981084668-7/6/2005-1<br>20 - 20.5<br>07/06/05<br>4F | NJD981084668-7/7/2005-2<br>43.5 - 44<br>07/07/05<br>4F | NJD981084668-7/26/2006-OSB26D3<br>29 - 29.5<br>07/26/06<br>OSB-26 |
|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | 1.34 U | 0.5 U | 0.5 U | 0.5 U | 1.5 | 0.5 U | 0.5 U |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | 0.5 U | 0.5 U | 0.5 U | 1.5 | 0.5 U | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | NJD981084668-7/26/2006-OSB26D4 | NJD981084668-8/28/2007-1 | NJD981084668-8/28/2007-2 | NJD981084668-8/30/2007-1 | NJD981084668-8/30/2007-2 | NJD981084668-8/30/2007-3 | PPG-41 | PPG-114-23BA(2-2.5) |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 34.5 - 35 | 58.5 - 59 | 69 - 69.5 | 39 - 39.5 | 50 - 50.5 | 71.5 - 72 | 21 | 2 - 2.5 |
| Date Collected: | | | 07/26/06 | 08/28/07 | 08/28/07 | 08/30/07 | 08/30/07 | 08/30/07 | 05/17/12 | 12/19/06 |
| Location ID: | CAS Number | Units | OSB-26 | PSEG-SB58 | PSEG-SB58 | PSEG-SB57 | PSEG-SB57 | PSEG-SB57 | PPG-41 | 114-MW23B |
| **Volatile Organics** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | 0.012 U | 0.62 U | 0.0059 U | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | 0.0023 U | 0.12 U | 0.0012 U | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | 0.0069 U | 0.37 U | 0.0036 U | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | 0.012 U | 0.62 U | 0.0059 U | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | 0.0046 U | 0.25 U | 0.0024 U | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | 0.0046 U | 0.25 U | 0.0024 U | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | 0.0023 U | 0.12 U | 0.0012 U | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | 0.012 U | 0.62 U | 0.0059 U | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | 0.012 U | 0.62 U | 0.0059 U | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | 0.012 U | 0.62 U | 0.014 B | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | 0.0023 U | 0.13 | 0.0012 | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | 0.0023 U | 0.12 U | 0.0012 U | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | 0.0092 U | 0.49 U | 0.0047 U | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | 0.012 U | 0.62 U | 0.0059 U | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | 0.012 U | 0.62 U | 0.0008 J | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | 0.0046 U | 0.25 U | 0.0024 U | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | 0.012 U | 0.62 U | 0.0059 U | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | 0.012 U | 0.62 U | 0.0059 U | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | 0.012 U | 0.62 U | 0.0059 U | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | 0.012 U | 0.62 U | 0.0059 U | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | 0.012 U | 0.62 U | 0.0059 U | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | 0.012 U | 0.62 U | 0.0059 U | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | 0.012 U | 0.62 U | 0.0059 U | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | 0.0069 U | 0.37 U | 0.0036 U | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | 0.0092 U | 0.49 U | 0.001 J | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | 0.012 U | 0.62 U | 0.0059 U | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | 0.012 U | 0.62 U | 0.0059 U | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | 0.0023 U | 0.38 | 0.0012 U | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | 0.012 U | 0.62 U | 0.0059 U | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | 0.012 U | 0.62 U | 0.0059 U | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | 0.012 U | 0.62 U | 0.0059 U | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | 0.012 U | 0.62 U | 0.0059 U | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | 0.0023 U | 0.12 U | 0.0012 U | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | 0.012 U | 0.62 U | 0.0059 U | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-7/26/2006-OSB26D4<br>34.5 - 35<br>07/26/06<br>OSB-26 | NJD981084668-8/28/2007-1<br>58.5 - 59<br>08/28/07<br>PSEG-SB58 | NJD981084668-8/28/2007-2<br>69 - 69.5<br>08/28/07<br>PSEG-SB58 | NJD981084668-8/30/2007-1<br>39 - 39.5<br>08/30/07<br>PSEG-SB57 | NJD981084668-8/30/2007-2<br>50 - 50.5<br>08/30/07<br>PSEG-SB57 | NJD981084668-8/30/2007-3<br>71.5 - 72<br>08/30/07<br>PSEG-SB57 | PPG-41<br>21<br>05/17/12<br>PPG-41 | PPG-114-23BA(2-2.5)<br>2 - 2.5<br>12/19/06<br>114-MW23B |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | 0.038 U | 0.041 U | 0.042 U | 0.042 U | 0.044 U | 0.039 U | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | 0.38 U | 0.41 U | 0.42 U | 0.42 U | 0.44 U | 0.39 U | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | 0.38 U | 0.41 U | 0.42 U | 0.42 U | 0.44 U | 0.39 U | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | 0.38 U | 0.41 U | 0.42 U | 0.42 U | 0.44 U | 0.39 U | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | 0.38 U | 0.41 U | 0.42 U | 0.42 U | 0.44 U | 0.39 U | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | 0.38 U | 0.41 U | 0.42 U | 0.42 U | 0.44 U | 0.39 U | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | 0.38 U | 0.41 U | 0.42 U | 0.42 U | 0.44 U | 0.39 U | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | 0.38 U | 0.41 U | 0.42 U | 0.42 U | 0.44 U | 0.39 U | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | 0.38 U | 0.41 U | 0.42 U | 0.42 U | 0.44 U | 0.39 U | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | 1.1 U | 1.2 U | 1.2 U | 1.3 U | 1.3 U | 1.2 U | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | 0.076 U | 0.082 U | 0.083 U | 0.085 U | 0.087 U | 0.078 U | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | 0.076 U | 0.082 U | 0.083 U | 0.085 U | 0.087 U | 0.078 U | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | 0.38 U | 0.41 U | 0.42 U | 0.42 U | 0.44 U | 0.39 U | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | 0.38 U | 0.41 U | 0.42 U | 0.42 U | 0.44 U | 0.39 U | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | 1.1 U | 1.2 U | 1.2 U | 1.3 U | 1.3 U | 1.2 U | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | 0.38 U | 0.013 J | 0.24 J | 0.42 U | 0.016 J | 0.0086 J | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | 0.38 U | 0.41 U | 0.42 U | 0.42 U | 0.44 U | 0.39 U | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | 0.76 U | 0.82 U | 0.83 U | 0.85 U | 0.87 U | 0.78 U | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | 0.38 U | 0.41 U | 0.42 U | 0.42 U | 0.44 U | 0.39 U | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | 0.76 U | 0.82 U | 0.83 U | 0.85 U | 0.87 U | 0.78 U | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | 0.76 U | 0.82 U | 0.83 U | 0.85 U | 0.87 U | 0.78 U | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | 0.38 U | 0.41 U | 0.42 U | 0.42 U | 0.44 U | 0.39 U | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | 0.38 U | 0.41 U | 0.42 U | 0.42 U | 0.44 U | 0.39 U | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | 0.38 U | 0.41 U | 0.42 U | 0.42 U | 0.44 U | 0.39 U | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | 0.38 U | 0.41 U | 0.42 U | 0.42 U | 0.44 U | 0.39 U | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | 0.76 U | 0.82 U | 0.83 U | 0.85 U | 0.87 U | 0.78 U | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | 1.1 U | 0.025 J | 1.2 U | 1.3 U | 1.3 U | 1.2 U | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | 0.38 U | 0.41 U | 0.0086 J | 0.033 J | 0.44 U | 0.39 U | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | 0.38 U | 0.41 U | 0.099 J | 0.017 J | 0.44 U | 0.39 U | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | 0.38 U | 0.41 U | 0.044 J | 0.017 J | 0.44 U | 0.39 U | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | 0.038 U | 0.041 U | 0.037 J | 0.042 U | 0.044 U | 0.039 U | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | 0.038 U | 0.041 U | 0.025 J | 0.042 U | 0.044 U | 0.039 U | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | 0.038 U | 0.041 U | 0.014 J | 0.042 U | 0.044 U | 0.039 U | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | 0.38 U | 0.41 U | 0.42 U | 0.42 U | 0.44 U | 0.39 U | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | 0.038 U | 0.041 U | 0.02 J | 0.013 J | 0.044 U | 0.039 U | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | 0.38 U | 0.41 U | 0.42 U | 0.42 U | 0.44 U | 0.39 U | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | 0.038 U | 0.041 U | 0.042 U | 0.042 U | 0.044 U | 0.039 U | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | 1.2 | 0.41 U | 0.42 U | 0.42 U | 0.44 U | 0.39 U | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | 0.38 U | 0.41 U | 0.42 U | 0.42 U | 0.44 U | 0.39 U | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | 0.38 U | 0.41 U | 0.42 U | 0.42 U | 0.44 U | 0.39 U | NA | NA |
| Chrysene | 218-01-9 | mg/kg | 0.38 U | 0.41 U | 0.048 J | 0.021 J | 0.44 U | 0.39 U | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | 0.038 U | 0.041 U | 0.042 U | 0.042 U | 0.044 U | 0.039 U | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | 0.38 U | 0.41 U | 0.42 U | 0.42 U | 0.44 U | 0.39 U | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | 0.38 U | 0.41 U | 0.42 U | 0.42 U | 0.44 U | 0.39 U | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | 0.38 U | 0.41 U | 0.42 U | 0.42 U | 0.44 U | 0.39 U | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | 0.38 U | 0.41 U | 0.42 U | 0.42 U | 0.44 U | 0.39 U | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-7/26/2006-OSB26D4<br>34.5 - 35<br>07/26/06<br>OSB-26 | NJD981084668-8/28/2007-1<br>58.5 - 59<br>08/28/07<br>PSEG-SB58 | NJD981084668-8/28/2007-2<br>69 - 69.5<br>08/28/07<br>PSEG-SB58 | NJD981084668-8/30/2007-1<br>39 - 39.5<br>08/30/07<br>PSEG-SB57 | NJD981084668-8/30/2007-2<br>50 - 50.5<br>08/30/07<br>PSEG-SB57 | NJD981084668-8/30/2007-3<br>71.5 - 72<br>08/30/07<br>PSEG-SB57 | PPG-41<br>21<br>05/17/12<br>PPG-41 | PPG-114-23BA(2-2.5)<br>2 - 2.5<br>12/19/06<br>114-MW23B |
|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | 0.38 U | 0.41 U | 0.42 U | 0.42 U | 0.44 U | 0.39 U | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | 0.38 U | 0.41 U | 0.059 J | 0.041 J | 0.44 U | 0.39 U | NA | NA |
| Fluorene | 86-73-7 | mg/kg | 0.38 U | 0.41 U | 0.056 J | 0.034 J | 0.44 U | 0.39 U | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | 0.076 U | 0.082 U | 0.083 U | 0.085 U | 0.087 U | 0.078 U | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | 0.038 U | 0.041 U | 0.042 U | 0.042 U | 0.044 U | 0.039 U | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | 0.38 U | 0.41 U | 0.42 U | 0.42 U | 0.44 U | 0.39 U | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | 0.038 U | 0.041 U | 0.042 U | 0.042 U | 0.044 U | 0.039 U | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | 0.038 U | 0.041 U | 0.042 U | 0.042 U | 0.044 U | 0.039 U | NA | NA |
| Isophorone | 78-59-1 | mg/kg | 0.38 U | 0.41 U | 0.42 U | 0.42 U | 0.44 U | 0.39 U | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | 0.38 U | 0.41 U | 0.58 | 0.02 J | 0.033 J | 0.062 J | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | 0.038 U | 0.041 U | 0.042 U | 0.042 U | 0.044 U | 0.039 U | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | 0.038 U | 0.041 U | 0.042 U | 0.042 U | 0.044 U | 0.039 U | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | 0.38 U | 0.41 U | 0.42 U | 0.42 U | 0.44 U | 0.39 U | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | 0.38 U | 0.41 U | 0.42 U | 0.42 U | 0.44 U | 0.39 U | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | 1.1 U | 1.2 U | 1.2 U | 1.3 U | 1.3 U | 1.2 U | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | 0.38 U | 0.41 U | 0.18 J | 0.13 J | 0.44 U | 0.015 J | NA | NA |
| Phenol | 108-95-2 | mg/kg | 0.38 U | 0.41 U | 0.42 U | 0.42 U | 0.44 U | 0.39 U | NA | NA |
| Pyrene | 129-00-0 | mg/kg | 0.38 U | 0.41 U | 0.1 J | 0.066 J | 0.44 U | 0.39 U | NA | NA |
| **Metals** | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | 4,740 | NA | NA | NA | NA | NA | NA | 15,200 |
| Antimony | 7440-36-0 | mg/kg | 1.3 U | NA | NA | NA | NA | NA | NA | 1.4 UJ |
| Arsenic | 7440-38-2 | mg/kg | 3 | NA | NA | NA | NA | NA | NA | 1.2 U |
| Barium | 7440-39-3 | mg/kg | 31.1 B | NA | NA | NA | NA | NA | NA | 15.7 B |
| Beryllium | 7440-41-7 | mg/kg | 0.62 | NA | NA | NA | NA | NA | NA | 0.07 B |
| Cadmium | 7440-43-9 | mg/kg | 0.091 U | NA | NA | NA | NA | NA | NA | 0.14 U |
| Calcium | 7440-70-2 | mg/kg | 1,480 | NA | NA | NA | NA | NA | NA | 34,900 |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | 14.2 | NA | NA | NA | NA | NA | 13,200 | 2,830 |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | NA | NA | NA | NA | NA | NA | 541 | 46.8 |
| Cobalt | 7440-48-4 | mg/kg | 5.9 B | NA | NA | NA | NA | NA | NA | 165 |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | 14.9 | NA | NA | NA | NA | NA | NA | 22.8 |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | 15,900 | NA | NA | NA | NA | NA | NA | 89,800 |
| Lead | 7439-92-1 | mg/kg | 18.6 | NA | NA | NA | NA | NA | NA | 22.9 |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | 3,270 | NA | NA | NA | NA | NA | NA | 57,000 |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | 2,030 | NA | NA | NA | NA | NA | NA | 491 J |
| Mercury | 7439-97-6 | mg/kg | 0.016 U | NA | NA | NA | NA | NA | NA | 0.023 UJ |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | 10.3 | NA | NA | NA | NA | NA | NA | 675 |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | 1,530 | NA | NA | NA | NA | NA | NA | 35.9 UJ |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | 0.96 U | NA | NA | NA | NA | NA | NA | 1.3 U |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | 0.32 U | NA | NA | NA | NA | NA | NA | 0.33 U |
| Sodium | 7440-23-5 | mg/kg | 219 B | NA | NA | NA | NA | NA | NA | 850 B |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-7/26/2006-OSB26D4<br>34.5 - 35<br>07/26/06<br>OSB-26 | NJD981084668-8/28/2007-1<br>58.5 - 59<br>08/28/07<br>PSEG-SB58 | NJD981084668-8/28/2007-2<br>69 - 69.5<br>08/28/07<br>PSEG-SB58 | NJD981084668-8/30/2007-1<br>39 - 39.5<br>08/30/07<br>PSEG-SB57 | NJD981084668-8/30/2007-2<br>50 - 50.5<br>08/30/07<br>PSEG-SB57 | NJD981084668-8/30/2007-3<br>71.5 - 72<br>08/30/07<br>PSEG-SB57 | PPG-41<br>21<br>05/17/12<br>PPG-41 | PPG-114-23BA(2-2.5)<br>2 - 2.5<br>12/19/06<br>114-MW23B |
|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | 1.1 U | NA | NA | NA | NA | NA | NA | 1.3 U |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | 20.5 | NA | NA | NA | NA | NA | NA | 744 |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | 76.8 | NA | NA | NA | NA | NA | NA | 295 |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | 91,700 | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | NJD981084668-7/26/2006-OSB26D4<br>34.5 - 35<br>07/26/06<br>OSB-26 | NJD981084668-8/28/2007-1<br>58.5 - 59<br>08/28/07<br>PSEG-SB58 | NJD981084668-8/28/2007-2<br>69 - 69.5<br>08/28/07<br>PSEG-SB58 | NJD981084668-8/30/2007-1<br>39 - 39.5<br>08/30/07<br>PSEG-SB57 | NJD981084668-8/30/2007-2<br>50 - 50.5<br>08/30/07<br>PSEG-SB57 | NJD981084668-8/30/2007-3<br>71.5 - 72<br>08/30/07<br>PSEG-SB57 | PPG-41<br>21<br>05/17/12<br>PPG-41 | PPG-114-23BA(2-2.5)<br>2 - 2.5<br>12/19/06<br>114-MW23B |
|---|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | 0.5 U | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | PPG-114-23BB(6-7) | PPG-114-23BC(10-10.5) | PPG-114-23BD(16-16.5) | PPG-114-23BE(16.5-17) | PPG-114-23BF(20.0-21.0)795143 | PPG-114-23BG_21.0-21.5_795144 | PPG-114-MW4DC(30.0-32.0)J47850-3 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 6 - 7 | 10 - 10.5 | 16 - 16.5 | 16.5 - 17 | 20 - 21 | 21 - 21.5 | 30 - 32 |
| Date Collected: | | | 12/19/06 | 12/19/06 | 12/19/06 | 12/19/06 | 12/20/06 | 12/20/06 | 12/01/06 |
| Location ID: | CAS Number | Units | 114-MW23B | 114-MW23B | 114-MW23B | 114-MW23B | 114-MW23B | 114-MW23B | 114-MW4D |
| **Volatile Organics** | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-23BB(6-7)<br>6 - 7<br>12/19/06<br>114-MW23B | PPG-114-23BC(10-10.5)<br>10 - 10.5<br>12/19/06<br>114-MW23B | PPG-114-23BD(16-16.5)<br>16 - 16.5<br>12/19/06<br>114-MW23B | PPG-114-23BE(16.5-17)<br>16.5 - 17<br>12/19/06<br>114-MW23B | PPG-114-23BF(20.0-21.0)795143<br>20 - 21<br>12/20/06<br>114-MW23B | PPG-114-23BG_21.0-21.5_795144<br>21 - 21.5<br>12/20/06<br>114-MW23B | PPG-114-MW4DC(30.0-32.0)J47850-3<br>30 - 32<br>12/01/06<br>114-MW4D |
|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-23BB(6-7)<br>6 - 7<br>12/19/06<br>114-MW23B | PPG-114-23BC(10-10.5)<br>10 - 10.5<br>12/19/06<br>114-MW23B | PPG-114-23BD(16-16.5)<br>16 - 16.5<br>12/19/06<br>114-MW23B | PPG-114-23BE(16.5-17)<br>16.5 - 17<br>12/19/06<br>114-MW23B | PPG-114-23BF(20.0-21.0)795143<br>20 - 21<br>12/20/06<br>114-MW23B | PPG-114-23BG_21.0-21.5_795144<br>21 - 21.5<br>12/20/06<br>114-MW23B | PPG-114-MW4DC(30.0-32.0)J47850-3<br>30 - 32<br>12/01/06<br>114-MW4D |
|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | 13,200 [15,400] | 4,350 | 5,380 | 18,500 | 11,700 | 8,810 | NA |
| Antimony | 7440-36-0 | mg/kg | 1.4 UJ [1.4 UJ] | 1.2 UJ | 1.1 UJ | 2.6 UJ | 1.6 UJ | 1.2 UJ | NA |
| Arsenic | 7440-38-2 | mg/kg | 3.5 [2.8] | 1.8 | 2.2 | 3.2 J | 0.87 UJ | 2.6 | NA |
| Barium | 7440-39-3 | mg/kg | 88.3 [112] | 47.8 | 51.1 | 112 | 172 | 151 | NA |
| Beryllium | 7440-41-7 | mg/kg | 0.4 BJ [0.37 BJ] | 0.59 | 0.6 | 0.88 J | 0.89 J | 0.68 | NA |
| Cadmium | 7440-43-9 | mg/kg | 0.35 B [0.24 B] | 0.12 U | 0.12 U | 0.18 U | 0.11 U | 0.12 U | NA |
| Calcium | 7440-70-2 | mg/kg | 31,200 [38,900] | 8,740 | 8,970 | 5,100 | 1,870 | 1,570 | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | 4,450 [4,530] | 194 | 21 | 39.9 | 15.6 | 16.5 | 250 |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 290 [364] | 103 | 2.34 U | 5.7 | 2.71 UJ | 2.46 UJ | NA |
| Cobalt | 7440-48-4 | mg/kg | 75.8 [90.2] | 4.2 B | 5 B | 7.7 B | 3.4 B | 5.7 B | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | 44 [46] | 8.5 BJ | 9.7 | 15.4 | 6.9 | 14.3 | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | 53,200 [68,200] | 9,990 | 12,100 | 19,600 | 6,210 | 14,000 | NA |
| Lead | 7439-92-1 | mg/kg | 112 [100] | 11.4 | 9.2 | 27.2 | 9 | 8.5 | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | 23,500 [27,100] | 3,620 | 3,910 | 4,560 | 1,670 | 2,740 | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | 457 J [483 J] | 232 J | 292 J | 297 J | 36.3 | 83.3 | NA |
| Mercury | 7439-97-6 | mg/kg | 0.24 J [0.28 J] | 0.02 J | 0.017 UJ | 0.14 | 0.023 U | 0.04 B | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | 323 [389] | 9.2 | 11.2 | 18.6 | 8.5 B | 15.5 | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | 493 J [482 J] | 1,190 J | 1,320 J | 2,270 | 1,320 B | 1,760 J | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | 1.4 U [1.4 U] | 1.1 U | 1.1 U | 1.9 U | 1.1 U | 1.2 U | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | 0.35 U [0.36 U] | 0.29 U | 0.28 U | 0.63 U | 0.38 U | 0.3 U | NA |
| Sodium | 7440-23-5 | mg/kg | 798 B [951 B] | 908 B | 259 B | 2,080 BJ | 1,670 | 1,100 B | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-23BB(6-7)<br>6 - 7<br>12/19/06<br>114-MW23B | PPG-114-23BC(10-10.5)<br>10 - 10.5<br>12/19/06<br>114-MW23B | PPG-114-23BD(16-16.5)<br>16 - 16.5<br>12/19/06<br>114-MW23B | PPG-114-23BE(16.5-17)<br>16.5 - 17<br>12/19/06<br>114-MW23B | PPG-114-23BF(20.0-21.0)795143<br>20 - 21<br>12/20/06<br>114-MW23B | PPG-114-23BG_21.0-21.5_795144<br>21 - 21.5<br>12/20/06<br>114-MW23B | PPG-114-MW4DC(30.0-32.0)J47850-3<br>30 - 32<br>12/01/06<br>114-MW4D |
|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | 1.4 U [1.4 U] | 1.1 U | 1.1 U | 1.1 U | 1.3 U | 1.2 U | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | 428 [556] | 25 | 19.6 | 38.5 | 15.8 | 18.5 | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | 299 [289] | 41.9 | 35.9 | 91.8 | 27.7 | 54.9 | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-23BB(6-7)<br>6 - 7<br>12/19/06<br>114-MW23B | PPG-114-23BC(10-10.5)<br>10 - 10.5<br>12/19/06<br>114-MW23B | PPG-114-23BD(16-16.5)<br>16 - 16.5<br>12/19/06<br>114-MW23B | PPG-114-23BE(16.5-17)<br>16.5 - 17<br>12/19/06<br>114-MW23B | PPG-114-23BF(20.0-21.0)795143<br>20 - 21<br>12/20/06<br>114-MW23B | PPG-114-23BG_21.0-21.5_795144<br>21 - 21.5<br>12/20/06<br>114-MW23B | PPG-114-MW4DC(30.0-32.0)J47850-3<br>30 - 32<br>12/01/06<br>114-MW4D |
|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | 4.5 | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | 343 | 346 | NA |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | NA | NA | NA | NA | NA | NA | 805,000 |
| pH | ARC-pH | SU | NA | NA | NA | NA | 7.72 | 8.11 | NA |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | 10 U | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | 47,300 | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW4DC(30.0-32.0)J47850-3A<br>30 - 32<br>12/01/06<br>114-MW4D | PPG-114-MW4DC(30.0-32.0)J47850-3R<br>30 - 32<br>12/01/06<br>114-MW4D | PPG-114-MW6DA(36-36.5)J48513-1<br>36 - 36.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DA(36-36.5)J48513-1A<br>36 - 36.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DA(36-36.5)J48513-1R<br>36 - 36.5<br>12/07/06<br>114-MW6D |
|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW4DC(30.0-32.0)J47850-3A<br>30 - 32<br>12/01/06<br>114-MW4D | PPG-114-MW4DC(30.0-32.0)J47850-3R<br>30 - 32<br>12/01/06<br>114-MW4D | PPG-114-MW6DA(36-36.5)J48513-1<br>36 - 36.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DA(36-36.5)J48513-1A<br>36 - 36.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DA(36-36.5)J48513-1R<br>36 - 36.5<br>12/07/06<br>114-MW6D |
|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW4DC(30.0-32.0)J47850-3A<br>30 - 32<br>12/01/06<br>114-MW4D | PPG-114-MW4DC(30.0-32.0)J47850-3R<br>30 - 32<br>12/01/06<br>114-MW4D | PPG-114-MW6DA(36-36.5)J48513-1<br>36 - 36.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DA(36-36.5)J48513-1A<br>36 - 36.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DA(36-36.5)J48513-1R<br>36 - 36.5<br>12/07/06<br>114-MW6D |
|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | mg/kg | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | NA | NA | 1,100 J | NA | NA |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | NA | 264 J | NA | NA | 1,470 |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | NA | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | NA | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | NA | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | NA | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW4DC(30.0-32.0)J47850-3A<br>30 - 32<br>12/01/06<br>114-MW4D | PPG-114-MW4DC(30.0-32.0)J47850-3R<br>30 - 32<br>12/01/06<br>114-MW4D | PPG-114-MW6DA(36-36.5)J48513-1<br>36 - 36.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DA(36-36.5)J48513-1A<br>36 - 36.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DA(36-36.5)J48513-1R<br>36 - 36.5<br>12/07/06<br>114-MW6D |
|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | NA | NA | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | NA | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | |
| Chromium | 7440-47-3 | ug/L | 11,400 | NA | NA | 57,600 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW4DC(30.0-32.0)J47850-3A<br>30 - 32<br>12/01/06<br>114-MW4D | PPG-114-MW4DC(30.0-32.0)J47850-3R<br>30 - 32<br>12/01/06<br>114-MW4D | PPG-114-MW6DA(36-36.5)J48513-1<br>36 - 36.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DA(36-36.5)J48513-1A<br>36 - 36.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DA(36-36.5)J48513-1R<br>36 - 36.5<br>12/07/06<br>114-MW6D |
|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 321 | NA | NA | 381 |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | NA | NA | 777,000 | NA | NA |
| pH | ARC-pH | SU | NA | 7.91 | NA | NA | 8.26 |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW6DB(40-40.5)J48513-2<br>40 - 40.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DB(40-40.5)J48513-2A<br>40 - 40.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DB(40-40.5)J48513-2R<br>40 - 40.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DC(44-44.5)J48513-3<br>44 - 44.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DC(44-44.5)J48513-3A<br>44 - 44.5<br>12/07/06<br>114-MW6D |
|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW6DB(40-40.5)J48513-2<br>40 - 40.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DB(40-40.5)J48513-2A<br>40 - 40.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DB(40-40.5)J48513-2R<br>40 - 40.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DC(44-44.5)J48513-3<br>44 - 44.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DC(44-44.5)J48513-3A<br>44 - 44.5<br>12/07/06<br>114-MW6D |
|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW6DB(40-40.5)J48513-2<br>40 - 40.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DB(40-40.5)J48513-2A<br>40 - 40.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DB(40-40.5)J48513-2R<br>40 - 40.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DC(44-44.5)J48513-3<br>44 - 44.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DC(44-44.5)J48513-3A<br>44 - 44.5<br>12/07/06<br>114-MW6D |
|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | mg/kg | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | 1,670 J | NA | NA | 630 J | NA |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | NA | NA | 2,150 | NA | NA |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | NA | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | NA | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | NA | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | NA | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW6DB(40-40.5)J48513-2<br>40 - 40.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DB(40-40.5)J48513-2A<br>40 - 40.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DB(40-40.5)J48513-2R<br>40 - 40.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DC(44-44.5)J48513-3<br>44 - 44.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DC(44-44.5)J48513-3A<br>44 - 44.5<br>12/07/06<br>114-MW6D |
|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | NA | NA | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | NA | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | 67,800 | NA | NA | 23,100 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW6DB(40-40.5)J48513-2<br>40 - 40.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DB(40-40.5)J48513-2A<br>40 - 40.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DB(40-40.5)J48513-2R<br>40 - 40.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DC(44-44.5)J48513-3<br>44 - 44.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DC(44-44.5)J48513-3A<br>44 - 44.5<br>12/07/06<br>114-MW6D |
|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 417 | NA | NA |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 791,000 | NA | NA | 760,000 | NA |
| pH | ARC-pH | SU | NA | NA | 7.73 | NA | NA |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW6DC(44-44.5)J48513-3R<br>44 - 44.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DD(48-48.5)J48513-4<br>48 - 48.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DD(48-48.5)J48513-4A<br>48 - 48.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DD(48-48.5)J48513-4R<br>48 - 48.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DE(52-52.5)J48731-1<br>52 - 52.5<br>12/08/06<br>114-MW6D |
|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW6DC(44-44.5)J48513-3R<br>44 - 44.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DD(48-48.5)J48513-4<br>48 - 48.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DD(48-48.5)J48513-4A<br>48 - 48.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DD(48-48.5)J48513-4R<br>48 - 48.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DE(52-52.5)J48731-1<br>52 - 52.5<br>12/08/06<br>114-MW6D |
|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW6DC(44-44.5)J48513-3R<br>44 - 44.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DD(48-48.5)J48513-4<br>48 - 48.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DD(48-48.5)J48513-4A<br>48 - 48.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DD(48-48.5)J48513-4R<br>48 - 48.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DE(52-52.5)J48731-1<br>52 - 52.5<br>12/08/06<br>114-MW6D |
|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | mg/kg | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | NA | 720 J | NA | NA | 147 |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 749 | NA | NA | 736 | 11.3 J |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | NA | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | NA | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | NA | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | NA | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW6DC(44-44.5)J48513-3R<br>44 - 44.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DD(48-48.5)J48513-4<br>48 - 48.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DD(48-48.5)J48513-4A<br>48 - 48.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DD(48-48.5)J48513-4R<br>48 - 48.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DE(52-52.5)J48731-1<br>52 - 52.5<br>12/08/06<br>114-MW6D |
|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | NA | NA | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | NA | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | 20,000 | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW6DC(44-44.5)J48513-3R<br>44 - 44.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DD(48-48.5)J48513-4<br>48 - 48.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DD(48-48.5)J48513-4A<br>48 - 48.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DD(48-48.5)J48513-4R<br>48 - 48.5<br>12/07/06<br>114-MW6D | PPG-114-MW6DE(52-52.5)J48731-1<br>52 - 52.5<br>12/08/06<br>114-MW6D |
|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 416 | NA | NA | 433 | NA |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | NA | 644,000 | NA | NA | 764,000 |
| pH | ARC-pH | SU | 8.27 | NA | NA | 8.32 | NA |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW6DE(52-52.5)J48731-1A<br>52 - 52.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DE(52-52.5)J48731-1R<br>52 - 52.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DF(56-56.5)J48731-2<br>56 - 56.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DF(56-56.5)J48731-2A<br>56 - 56.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DF(56-56.5)J48731-2R<br>56 - 56.5<br>12/08/06<br>114-MW6D |
|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW6DE(52-52.5)J48731-1A<br>52 - 52.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DE(52-52.5)J48731-1R<br>52 - 52.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DF(56-56.5)J48731-2<br>56 - 56.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DF(56-56.5)J48731-2A<br>56 - 56.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DF(56-56.5)J48731-2R<br>56 - 56.5<br>12/08/06<br>114-MW6D |
|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW6DE(52-52.5)J48731-1A<br>52 - 52.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DE(52-52.5)J48731-1R<br>52 - 52.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DF(56-56.5)J48731-2<br>56 - 56.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DF(56-56.5)J48731-2A<br>56 - 56.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DF(56-56.5)J48731-2R<br>56 - 56.5<br>12/08/06<br>114-MW6D |
|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | mg/kg | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | NA | NA | 199 | NA | NA |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | NA | NA | 10.8 J | NA | NA |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | NA | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | NA | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | NA | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | NA | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW6DE(52-52.5)J48731-1A<br>52 - 52.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DE(52-52.5)J48731-1R<br>52 - 52.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DF(56-56.5)J48731-2<br>56 - 56.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DF(56-56.5)J48731-2A<br>56 - 56.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DF(56-56.5)J48731-2R<br>56 - 56.5<br>12/08/06<br>114-MW6D |
|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | NA | NA | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | NA | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | |
| Chromium | 7440-47-3 | ug/L | 140 | NA | NA | 110 | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW6DE(52-52.5)J48731-1A<br>52 - 52.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DE(52-52.5)J48731-1R<br>52 - 52.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DF(56-56.5)J48731-2<br>56 - 56.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DF(56-56.5)J48731-2A<br>56 - 56.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DF(56-56.5)J48731-2R<br>56 - 56.5<br>12/08/06<br>114-MW6D |
|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | 326 | NA | NA | 352 |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | NA | NA | 760,000 | NA | NA |
| pH | ARC-pH | SU | NA | 10.29 | NA | NA | 9.71 |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW6DG(60-60.5)J48731-3<br>60 - 60.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DG(60-60.5)J48731-3A<br>60 - 60.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DG(60-60.5)J48731-3R<br>60 - 60.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DH(64-64.5)J48731-4<br>64 - 64.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DH(64-64.5)J48731-4A<br>64 - 64.5<br>12/08/06<br>114-MW6D |
|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | NA | NA | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | NA | NA | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | NA | NA | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | NA | NA | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | NA | NA | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | NA | NA | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | NA | NA | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | NA | NA | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | NA | NA | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | NA | NA | NA | NA |
| Acetone | 67-64-1 | mg/kg | NA | NA | NA | NA | NA |
| Benzene | 71-43-2 | mg/kg | NA | NA | NA | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | NA | NA | NA | NA |
| Bromoform | 75-25-2 | mg/kg | NA | NA | NA | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | NA | NA | NA | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | NA | NA | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | NA | NA | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | NA | NA | NA | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | NA | NA | NA | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | NA | NA | NA | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | NA | NA | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | NA | NA | NA | NA | NA |
| Chloroform | 67-66-3 | mg/kg | NA | NA | NA | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | NA | NA | NA | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | NA | NA | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | NA | NA | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | NA | NA | NA | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | NA | NA | NA | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | NA | NA | NA | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | NA | NA | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | NA | NA | NA | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | NA | NA | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | NA | NA | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | NA | NA | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | NA | NA | NA | NA |
| Toluene | 108-88-3 | mg/kg | NA | NA | NA | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | NA | NA | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | NA | NA | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | NA | NA | NA | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | NA | NA | NA | NA | NA |
| **Semivolatile Organics** | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW6DG(60-60.5)J48731-3<br>60 - 60.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DG(60-60.5)J48731-3A<br>60 - 60.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DG(60-60.5)J48731-3R<br>60 - 60.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DH(64-64.5)J48731-4<br>64 - 64.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DH(64-64.5)J48731-4A<br>64 - 64.5<br>12/08/06<br>114-MW6D |
|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | NA | NA | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | NA | NA | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | NA | NA | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | NA | NA | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | NA | NA | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | NA | NA | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | NA | NA | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | NA | NA | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | NA | NA | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | NA | NA | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | NA | NA | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | NA | NA | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | NA | NA | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | NA | NA | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | NA | NA | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | NA | NA | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | NA | NA | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | NA | NA | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | NA | NA | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | NA | NA | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | NA | NA | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | NA | NA | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | NA | NA | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | NA | NA | NA | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | NA | NA | NA | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | NA | NA | NA | NA | NA |
| Anthracene | 120-12-7 | mg/kg | NA | NA | NA | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | NA | NA | NA | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | NA | NA | NA | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | NA | NA | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | NA | NA | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | NA | NA | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | NA | NA | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | NA | NA | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | NA | NA | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | NA | NA | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | NA | NA | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | NA | NA | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | NA | NA | NA | NA | NA |
| Carbazole | 86-74-8 | mg/kg | NA | NA | NA | NA | NA |
| Chrysene | 218-01-9 | mg/kg | NA | NA | NA | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | NA | NA | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | NA | NA | NA | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | NA | NA | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | NA | NA | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW6DG(60-60.5)J48731-3<br>60 - 60.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DG(60-60.5)J48731-3A<br>60 - 60.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DG(60-60.5)J48731-3R<br>60 - 60.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DH(64-64.5)J48731-4<br>64 - 64.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DH(64-64.5)J48731-4A<br>64 - 64.5<br>12/08/06<br>114-MW6D |
|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | NA | NA | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | NA | NA | NA | NA | NA |
| Fluorene | 86-73-7 | mg/kg | NA | NA | NA | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | NA | NA | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | NA | NA | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | NA | NA | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | NA | NA | NA | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | NA | NA | NA | NA |
| Isophorone | 78-59-1 | mg/kg | NA | NA | NA | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | NA | NA | NA | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | NA | NA | NA | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | NA | NA | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | NA | NA | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | NA | NA | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | NA | NA | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | NA | NA | NA | NA | NA |
| Phenol | 108-95-2 | mg/kg | NA | NA | NA | NA | NA |
| Pyrene | 129-00-0 | mg/kg | NA | NA | NA | NA | NA |
| **Metals** | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | mg/kg | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | mg/kg | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | mg/kg | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | mg/kg | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | mg/kg | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | mg/kg | NA | NA | NA | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | 154 | NA | NA | 127 | NA |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | 8.6 J | NA | NA | 4.7 J | NA |
| Cobalt | 7440-48-4 | mg/kg | NA | NA | NA | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | mg/kg | NA | NA | NA | NA | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | NA | NA | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | mg/kg | NA | NA | NA | NA | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | NA | NA | NA | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | NA | NA | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | NA | NA | NA | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | mg/kg | NA | NA | NA | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW6DG(60-60.5)J48731-3<br>60 - 60.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DG(60-60.5)J48731-3A<br>60 - 60.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DG(60-60.5)J48731-3R<br>60 - 60.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DH(64-64.5)J48731-4<br>64 - 64.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DH(64-64.5)J48731-4A<br>64 - 64.5<br>12/08/06<br>114-MW6D |
|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | NA | NA | NA | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | NA | NA | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | NA | NA | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | 42 | NA | NA | 60 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW6DG(60-60.5)J48731-3<br>60 - 60.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DG(60-60.5)J48731-3A<br>60 - 60.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DG(60-60.5)J48731-3R<br>60 - 60.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DH(64-64.5)J48731-4<br>64 - 64.5<br>12/08/06<br>114-MW6D | PPG-114-MW6DH(64-64.5)J48731-4A<br>64 - 64.5<br>12/08/06<br>114-MW6D |
|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | NA | NA | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | 407 | NA | NA |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | 807,000 | NA | NA | 886,000 | NA |
| pH | ARC-pH | SU | NA | NA | 9.57 | NA | NA |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | PPG-114-MW6DH(64-64.5)J48731-4R | PSEG HALLADAY-7/8/2005-1 | PSEG HALLADAY-7/8/2005-2 | PSEG HALLADAY-7/8/2005-3 | SB-1(21.5-22) | SB2(26-26.5) | SB-3(27.5-28) | SB-4(22.0-22) | SB-5(20.0-20) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 64 - 64.5 | 53 - 53.5 | 63 - 63.5 | 64 - 67.5 | 21.5 - 22 | 26 - 26.5 | 27.5 - 28 | 22 - 22.5 | 20 - 20.5 |
| Date Collected: | | | 12/08/06 | 07/08/05 | 07/08/05 | 07/08/05 | 11/10/03 | 11/10/03 | 11/12/03 | 11/11/03 | 11/11/03 |
| Location ID: | CAS Number | Units | 114-MW6D | 4F | 4F | 4F | SB1 | SB2 | SB3 | SB4 | SB5 |
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | NA | 0.0053 U | 0.0055 U | 0.0068 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | NA | 0.001 U | 0.0011 U | 0.0014 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | NA | 0.0053 U | 0.0055 U | 0.0068 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | NA | 0.0032 U | 0.0033 U | 0.0041 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | NA | 0.0053 U | 0.0055 U | 0.0068 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | NA | 0.0021 U | 0.0022 U | 0.0027 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | NA | NA | NA | NA | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | 0.0053 U | 0.0055 U | 0.0068 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | NA | 0.0053 U | 0.0055 U | 0.0068 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | NA | 0.0053 U | 0.0055 U | 0.0068 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | 0.0053 U | 0.0055 U | 0.0068 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | NA | 0.002 J | 0.0022 U | 0.0027 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | NA | 0.001 U | 0.0011 U | 0.0014 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | 0.0053 U | 0.0055 U | 0.0068 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | 0.0053 U | 0.0055 U | 0.0068 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | NA | 0.0061 B | 0.003 JB | 0.0033 BJ | 1.25 U | NA | 1.43 U [1.37 U] | 1.32 U | 1.52 U |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | NA | 0.0053 U | 0.0055 U | 0.0068 U | 1.25 U | NA | 1.43 U [1.37 U] | 1.32 U | 1.52 U |
| Acetone | 67-64-1 | mg/kg | NA | 0.035 B | 0.012 B | 0.014 B | 1.25 U | NA | 1.43 U [1.37 U] | 1.32 U | 1.52 U |
| Benzene | 71-43-2 | mg/kg | NA | 0.026 | 0.081 | 0.0014 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| Bromochloromethane | 74-97-5 | mg/kg | NA | NA | NA | NA | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| Bromodichloromethane | 75-27-4 | mg/kg | NA | 0.001 U | 0.0011 U | 0.0014 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| Bromoform | 75-25-2 | mg/kg | NA | 0.0042 U | 0.0044 U | 0.0054 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| Bromomethane | 74-83-9 | mg/kg | NA | 0.0053 U | 0.0055 U | 0.0068 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| Carbon Disulfide | 75-15-0 | mg/kg | NA | 0.0008 J | 0.0055 U | 0.0068 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| Carbon Tetrachloride | 56-23-5 | mg/kg | NA | 0.0021 U | 0.0022 U | 0.0027 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| CFC-11 | 75-69-4 | mg/kg | NA | 0.0053 U | 0.0055 U | 0.0068 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| CFC-12 | 75-71-8 | mg/kg | NA | 0.0053 U | 0.0055 U | 0.0068 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| Chlorobenzene | 108-90-7 | mg/kg | NA | 0.0053 U | 0.0055 U | 0.0068 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| Chlorodibromomethane | 124-48-1 | mg/kg | NA | 0.0053 U | 0.0055 U | 0.0068 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| Chloroethane | 75-00-3 | mg/kg | NA | 0.0053 U | 0.0055 U | 0.0068 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| Chloroform | 67-66-3 | mg/kg | NA | 0.0053 U | 0.0055 U | 0.0068 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| Chloromethane | 74-87-3 | mg/kg | NA | 0.0053 U | 0.0055 U | 0.0068 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | NA | 0.0053 U | 0.0055 U | 0.0068 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | NA | 0.0053 U | 0.0055 U | 0.0068 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| Cyclohexane | 110-82-7 | mg/kg | NA | 0.0053 U | 0.0055 U | 0.0068 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| Dichloromethane | 75-09-2 | mg/kg | NA | 0.001 JB | 0.0007 JB | 0.0041 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| Ethylbenzene | 100-41-4 | mg/kg | NA | 0.026 | 0.011 | 0.0054 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| Isopropylbenzene | 98-82-8 | mg/kg | NA | 0.0026 J | 0.0055 U | 0.0068 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| m&p-Xylenes | ARC-mpXyl | mg/kg | NA | NA | NA | NA | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| Methyl Acetate | 79-20-9 | mg/kg | NA | 0.0053 U | 0.0055 U | 0.0068 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | NA | 0.0053 U | 0.0055 U | 0.0068 U | 1.25 U | NA | 1.43 U [1.37 U] | 1.32 U | 1.52 U |
| Methylcyclohexane | 108-87-2 | mg/kg | NA | NA | NA | NA | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | NA | 0.0053 U | 0.0055 U | 0.0068 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | NA | 0.0053 U | 0.0055 U | 0.0068 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| Tetrachloroethene | 127-18-4 | mg/kg | NA | 0.0014 B | 0.0013 B | 0.0014 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| Toluene | 108-88-3 | mg/kg | NA | 0.0016 J | 0.0043 J | 0.0068 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| Total Xylenes | 1330-20-7 | mg/kg | NA | 0.0034 J | 0.013 | 0.0068 U | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | NA | 0.0053 U | 0.0055 U | 0.0068 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | NA | 0.0053 U | 0.0055 U | 0.0068 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| Trichloroethene | 79-01-6 | mg/kg | NA | 0.001 U | 0.0011 U | 0.0014 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| Vinyl chloride | 75-01-4 | mg/kg | NA | 0.0053 U | 0.0055 U | 0.0068 U | 0.625 U | NA | 0.715 U [0.687 U] | 0.658 U | 0.762 U |
| **Semivolatile Organics** | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW6DH(64-64.5)J48731-4R<br>64 - 64.5<br>12/08/06<br>114-MW6D | PSEG HALLADAY-7/8/2005-1<br>53 - 53.5<br>07/08/05<br>4F | PSEG HALLADAY-7/8/2005-2<br>63 - 63.5<br>07/08/05<br>4F | PSEG HALLADAY-7/8/2005-3<br>64 - 67.5<br>07/08/05<br>4F | SB-1(21.5-22)<br>21.5 - 22<br>11/10/03<br>SB1 | SB2(26-26.5)<br>26 - 26.5<br>11/10/03<br>SB2 | SB-3(27.5-28)<br>27.5 - 28<br>11/12/03<br>SB3 | SB-4(22.0-22)<br>22 - 22.5<br>11/11/03<br>SB4 | SB-5(20.0-20)<br>20 - 20.5<br>11/11/03<br>SB5 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | NA | 0.42 U | 0.41 U | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | NA | NA | NA | NA | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | 0.42 U | 0.41 U | 0.47 U | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | NA | 0.42 U | 0.41 U | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | NA | 0.42 U | 0.41 U | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | NA | 0.42 U | 0.41 U | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | NA | 0.42 U | 0.41 U | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | NA | 1.7 U | 1.6 U | 1.9 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | NA | 0.084 U | 0.083 U | 0.094 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | NA | 0.084 U | 0.083 U | 0.094 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | NA | 0.42 U | 0.41 U | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| 2-Chlorophenol | 95-57-8 | mg/kg | NA | 0.42 U | 0.41 U | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | NA | 1.7 U | 1.6 U | 1.9 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | NA | 0.015 J | 0.062 J | 0.04 J | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| 2-Methylphenol | 95-48-7 | mg/kg | NA | 0.42 U | 0.41 U | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| 2-Nitroaniline | 88-74-4 | mg/kg | NA | 0.84 U | 0.83 U | 0.94 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| 2-Nitrophenol | 88-75-5 | mg/kg | NA | 0.42 U | 0.41 U | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | NA | 0.84 U | 0.83 U | 0.94 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | NA | 0.84 U | 0.83 U | 0.94 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | NA | 0.42 U | 0.41 U | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | NA | 0.42 U | 0.41 U | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | NA | 0.42 U | 0.41 U | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| 4-Methylphenol | 106-44-5 | mg/kg | NA | 0.42 U | 0.41 U | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| 4-Nitroaniline | 100-01-6 | mg/kg | NA | 0.84 U | 0.83 U | 0.94 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| 4-Nitrophenol | 100-02-7 | mg/kg | NA | 1.7 U | 1.6 U | 1.9 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| Acenaphthene | 83-32-9 | mg/kg | NA | 0.031 J | 0.41 U | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| Acenaphthylene | 208-96-8 | mg/kg | NA | 0.037 J | 0.022 J | 0.014 J | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| Acetophenone | 98-86-2 | mg/kg | NA | 0.42 U | 0.41 U | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| Anthracene | 120-12-7 | mg/kg | NA | 0.05 J | 0.022 J | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| Atrazine | 1912-24-9 | mg/kg | NA | 0.42 U | 0.41 U | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| Benzaldehyde | 100-52-7 | mg/kg | NA | 0.42 U | 0.41 U | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| Benzo(a)anthracene | 56-55-3 | mg/kg | NA | 0.034 J | 0.016 J | 0.047 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| Benzo(a)pyrene | 50-32-8 | mg/kg | NA | 0.023 J | 0.0093 J | 0.047 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | NA | 0.0094 J | 0.041 U | 0.047 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | NA | 0.0095 J | 0.41 U | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | NA | 0.016 J | 0.041 U | 0.047 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | NA | 0.42 U | 0.41 U | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | NA | 0.042 U | 0.041 U | 0.047 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | NA | NA | NA | NA | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | NA | 0.16 J | 0.1 J | 0.23 J | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | NA | 0.42 U | 0.41 U | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| Caprolactam | 105-60-2 | mg/kg | NA | 0.42 U | 0.41 U | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| Carbazole | 86-74-8 | mg/kg | NA | 0.42 U | 0.41 U | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| Chrysene | 218-01-9 | mg/kg | NA | 0.036 J | 0.014 J | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | NA | 0.042 U | 0.041 U | 0.047 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| Dibenzofuran | 132-64-9 | mg/kg | NA | 0.42 U | 0.41 U | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| Diethyl phthalate | 84-66-2 | mg/kg | NA | 0.42 U | 0.41 U | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| Dimethyl phthalate | 131-11-3 | mg/kg | NA | 0.42 U | 0.41 U | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | NA | 0.42 U | 0.41 U | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW6DH(64-64.5)J48731-4R<br>64 - 64.5<br>12/08/06<br>114-MW6D | PSEG HALLADAY-7/8/2005-1<br>53 - 53.5<br>07/08/05<br>4F | PSEG HALLADAY-7/8/2005-2<br>63 - 63.5<br>07/08/05<br>4F | PSEG HALLADAY-7/8/2005-3<br>64 - 67.5<br>07/08/05<br>4F | SB-1(21.5-22)<br>21.5 - 22<br>11/10/03<br>SB1 | SB2(26-26.5)<br>26 - 26.5<br>11/10/03<br>SB2 | SB-3(27.5-28)<br>27.5 - 28<br>11/12/03<br>SB3 | SB-4(22.0-22)<br>22 - 22.5<br>11/11/03<br>SB4 | SB-5(20.0-20)<br>20 - 20.5<br>11/11/03<br>SB5 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | NA | 0.42 U | 0.41 U | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| Fluoranthene | 206-44-0 | mg/kg | NA | 0.058 J | 0.025 J | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| Fluorene | 86-73-7 | mg/kg | NA | 0.031 J | 0.017 J | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | NA | 0.084 U | 0.083 U | 0.094 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| Hexachlorobenzene | 118-74-1 | mg/kg | NA | 0.042 U | 0.041 U | 0.047 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | NA | 0.42 U | 0.41 U | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| Hexachloroethane | 67-72-1 | mg/kg | NA | 0.042 U | 0.041 U | 0.047 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | NA | 0.042 U | 0.041 U | 0.047 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| Isophorone | 78-59-1 | mg/kg | NA | 0.42 U | 0.41 U | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| Naphthalene | 91-20-3 | mg/kg | NA | 0.02 J | 0.11 J | 0.13 J | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| Nitrobenzene | 98-95-3 | mg/kg | NA | 0.042 U | 0.041 U | 0.047 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | NA | 0.042 U | 0.041 U | 0.047 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | NA | 0.42 U | 0.41 U | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| p-Chloroaniline | 106-47-8 | mg/kg | NA | 0.42 U | 0.41 U | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| Pentachlorophenol | 87-86-5 | mg/kg | NA | 1.7 U | 1.6 U | 1.9 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| Phenanthrene | 85-01-8 | mg/kg | NA | 0.16 J | 0.07 J | 0.029 J | 0.156 U | NA | 0.116 U [0.074 J] | 0.104 J | 0.109 U |
| Phenol | 108-95-2 | mg/kg | NA | 0.42 U | 0.41 U | 0.47 U | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| Pyrene | 129-00-0 | mg/kg | NA | 0.088 J | 0.038 J | 0.012 J | 0.156 U | NA | 0.116 U [0.113 U] | 0.109 U | 0.109 U |
| **Metals** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | NA | 1,620 | 2,190 | 10,900 | 12,500 | 4,530 | 7,150 [5,540] | 5,730 | 5,690 |
| Antimony | 7440-36-0 | mg/kg | NA | 1.5 U | 1.4 U | 1.6 U | 1.66 U | 0.39 B | 1.2 U [1.21 U] | 1.12 U | 1.88 |
| Arsenic | 7440-38-2 | mg/kg | NA | 0.8 U | 1.2 B | 2.1 | 12.5 | 0.52 J | 1.2 U [1.21 U] | 1.69 | 30.1 |
| Barium | 7440-39-3 | mg/kg | NA | 14.9 B | 33.8 B | 122 | 60.3 | 22.2 | 15 [12.1] | 37.3 | 57 |
| Beryllium | 7440-41-7 | mg/kg | NA | 0.21 B | 0.26 B | 0.79 | 0.843 | 0.01 U | 0.752 [0.603 U] | 0.561 U | 1.55 |
| Cadmium | 7440-43-9 | mg/kg | NA | 0.1 U | 0.099 U | 0.11 U | 0.414 U | 0.02 U | 0.299 U [0.301 U] | 0.28 U | 0.295 U |
| Calcium | 7440-70-2 | mg/kg | NA | 7,900 | 11,100 | 21,100 | 2,080 | 1,680 J | 984 [936] | 943 | 1,690 |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | NA | 4.6 | 6.5 | 21.4 | 51.1 | 134 J | 46.8 [41.1] | 25.7 | 75.7 |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | NA | NA | NA | NA | NA | 13 J | NA | NA | NA |
| Cobalt | 7440-48-4 | mg/kg | NA | 1.6 B | 1.9 B | 10.1 B | 13.6 | 4 | 4.8 [3.79] | 4.56 | 6.44 |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | NA | 4.1 B | 4.3 B | 19.8 | 18.2 | 9.2 BJ | 19.1 [12.6] | 2.24 U | 18.6 |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | NA | 4,370 | 6,010 | 23,600 | 38,400 | 8,530 | 9,180 [7,220] | 7,600 | 29,100 |
| Lead | 7439-92-1 | mg/kg | NA | 6.3 | 5.8 | 12.5 | 14.2 | 7.3 | 18.9 [15.5] | 16.2 | 15.5 |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | NA | 1,720 | 2,410 | 8,760 | 7,180 | 2,500 | 4,880 [3,490] | 56.1 U | 3,780 |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | NA | 153 | 226 | 524 | 355 | 58.1 | 215 [145] | 93.5 | 142 |
| Mercury | 7439-97-6 | mg/kg | NA | 0.018 U | 0.021 U | 0.02 U | 0.024 | 0.005 U | 0.015 U [0.015 U] | 0.014 U | 0.015 U |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | NA | 3.4 B | 4.7 B | 24.8 | 28.9 | 9.5 | 11.6 [9.7] | 11.2 | 16.6 |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | NA | 559 B | 765 B | 2,540 | 3,360 | 1,150 J | 1,790 [1,490] | 1,500 | 1,340 |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | NA | 1.1 U | 1 U | 1.2 U | 3.31 U | 0.39 U | 2.39 U [2.41 U] | 2.24 U | 2.36 U |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | NA | 0.35 U | 0.35 U | 0.39 U | 0.828 U | 0.06 U | 0.598 U [0.603 U] | 0.561 U | 0.59 U |
| Sodium | 7440-23-5 | mg/kg | NA | 161 B | 162 B | 244 B | 4,060 | 327 JF | 477 [332] | 453 | 707 |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW6DH(64-64.5)J48731-4R<br>64 - 64.5<br>12/08/06<br>114-MW6D | PSEG HALLADAY-7/8/2005-1<br>53 - 53.5<br>07/08/05<br>4F | PSEG HALLADAY-7/8/2005-2<br>63 - 63.5<br>07/08/05<br>4F | PSEG HALLADAY-7/8/2005-3<br>64 - 67.5<br>07/08/05<br>4F | SB-1(21.5-22)<br>21.5 - 22<br>11/10/03<br>SB1 | SB2(26-26.5)<br>26 - 26.5<br>11/10/03<br>SB2 | SB-3(27.5-28)<br>27.5 - 28<br>11/12/03<br>SB3 | SB-4(22.0-22)<br>22 - 22.5<br>11/11/03<br>SB4 | SB-5(20.0-20)<br>20 - 20.5<br>11/11/03<br>SB5 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | NA | 1.2 U | 1.2 U | 1.3 U | 0.221 | 0.45 U | 0.12 U [0.121 U] | 0.112 U | 0.118 U |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | NA | 7.2 B | 8.8 B | 24.9 | 47 | 17.2 | 26 [17.8] | 19 | 84.1 |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | NA | 26 | 20 | 56 | 85.5 | 40 | 59.5 [40.8] | 58.7 | 78.1 |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | 0.0084 U | 0.0083 U | 0.0094 U | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | 0.0084 U | 0.0083 U | 0.0094 U | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | 0.0084 U | 0.0083 U | 0.0094 U | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | 0.0084 U | 0.0083 U | 0.0094 U | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | 0.0084 U | 0.0083 U | 0.0094 U | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | 0.0084 U | 0.0083 U | 0.0094 U | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | 0.084 U | 0.083 U | 0.094 U | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | 0.0084 U | 0.0083 U | 0.0094 U | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | 0.0084 U | 0.0083 U | 0.0094 U | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | 0.0084 U | 0.0083 U | 0.0094 U | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | 0.0084 U | 0.0083 U | 0.0094 U | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | 0.0084 U | 0.0083 U | 0.0094 U | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | 0.0084 U | 0.0083 U | 0.0094 U | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | 0.0084 U | 0.0083 U | 0.0094 U | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | 0.0084 U | 0.0083 U | 0.0094 U | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | 0.0084 U | 0.0083 U | 0.0094 U | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | 0.0084 U | 0.0083 U | 0.0094 U | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | 0.0084 U | 0.0083 U | 0.0094 U | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | 0.0084 U | 0.0083 U | 0.0094 U | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | 0.084 U | 0.083 U | 0.094 U | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | PPG-114-MW6DH(64-64.5)J48731-4R<br>64 - 64.5<br>12/08/06<br>114-MW6D | PSEG HALLADAY-7/8/2005-1<br>53 - 53.5<br>07/08/05<br>4F | PSEG HALLADAY-7/8/2005-2<br>63 - 63.5<br>07/08/05<br>4F | PSEG HALLADAY-7/8/2005-3<br>64 - 67.5<br>07/08/05<br>4F | SB-1(21.5-22)<br>21.5 - 22<br>11/10/03<br>SB1 | SB2(26-26.5)<br>26 - 26.5<br>11/10/03<br>SB2 | SB-3(27.5-28)<br>27.5 - 28<br>11/12/03<br>SB3 | SB-4(22.0-22)<br>22 - 22.5<br>11/11/03<br>SB4 | SB-5(20.0-20)<br>20 - 20.5<br>11/11/03<br>SB5 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | NA | 0.5 U | 0.5 U | 0.5 U | 1.65 U | NA | 2.4 U [1.21 U] | 1.13 U | 1.19 U |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | 0.5 U | 0.5 U | 0.5 U | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | 373 | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | 9.60 | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | SB-6(22.5-23) | SB-7(29.0-29.5) | SB-8(29.0-29) | SB-9(24-24.5) | SB-9(50.5-51) | SB-10(48-48.0) | SB-11(48.0-48.5) | SB-13C(34-34.5) | SB-13C(49.5-50.0) | SB-14(25.0-25.5) | SB-15(20.0-20.5) | SB15(21.5-22) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 22.5 - 23 | 29 - 29.5 | 29 - 29.5 | 24 - 24.5 | 50.5 - 51 | 48 - 48.5 | 48 - 48.5 | 34 - 34.5 | 49.5 - 50 | 25 - 25.5 | 20 - 20.5 | 21.5 - 22 |
| Date Collected: | | | 11/12/03 | 11/13/03 | 11/13/03 | 11/14/03 | 11/14/03 | 11/18/03 | 11/17/03 | 11/19/03 | 11/19/03 | 11/13/03 | 11/17/03 | 11/14/03 |
| Location ID: | CAS Number | Units | SB6 | SB7 | SB8 | SB9 | SB9 | SB10 | SB11 | SB13C | SB13C | SB14 | SB15 | SB15 |
| **Volatile Organics** | | | | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | 1.21 U | 0.886 U | 0.902 U | 1.16 U | 1.3 U | 1.98 U | 1.35 U | 1.12 U | 1.09 U | 1.19 U | 1.04 U | 1.22 U |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | 1.21 U | 0.886 U | 0.902 U | 1.16 U | 1.3 U | 1.98 U | 1.35 U | 1.12 U | 1.09 U | 1.19 U | 1.04 U | 1.22 U |
| Acetone | 67-64-1 | mg/kg | 1.21 U | 0.886 U | 0.902 U | 1.16 U | 1.3 U | 1.98 U | 1.35 U | 1.12 U | 1.09 U | 1.19 U | 1.04 U | 1.22 U |
| Benzene | 71-43-2 | mg/kg | 0.603 U | 0.443 U | 1.87 | 5.75 | 2.49 | 0.991 U | 0.158 J | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| Bromochloromethane | 74-97-5 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| Bromodichloromethane | 75-27-4 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| Bromoform | 75-25-2 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| Bromomethane | 74-83-9 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| Carbon Disulfide | 75-15-0 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| Carbon Tetrachloride | 56-23-5 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| CFC-11 | 75-69-4 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| CFC-12 | 75-71-8 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| Chlorobenzene | 108-90-7 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| Chlorodibromomethane | 124-48-1 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| Chloroethane | 75-00-3 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| Chloroform | 67-66-3 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| Chloromethane | 74-87-3 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| Cyclohexane | 110-82-7 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| Dichloromethane | 75-09-2 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| Ethylbenzene | 100-41-4 | mg/kg | 0.603 U | 0.443 U | 0.183 J | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| Isopropylbenzene | 98-82-8 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| m&p-Xylenes | ARC-mpXyl | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.689 | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| Methyl Acetate | 79-20-9 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | 1.21 U | 0.886 U | 0.902 U | 1.16 U | 1.3 U | 1.98 U | 1.35 U | 1.12 U | 1.09 U | 1.19 U | 1.04 U | 1.22 U |
| Methylcyclohexane | 108-87-2 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| Tetrachloroethene | 127-18-4 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| Toluene | 108-88-3 | mg/kg | 0.603 U | 0.443 U | 0.209 J | 1.88 | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| Trichloroethene | 79-01-6 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| Vinyl chloride | 75-01-4 | mg/kg | 0.603 U | 0.443 U | 0.451 U | 0.581 U | 0.649 U | 0.991 U | 0.673 U | 0.558 U | 0.545 U | 0.594 U | 0.518 U | 0.612 U |
| **Semivolatile Organics** | | | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | SB-6(22.5-23)<br>22.5 - 23<br>11/12/03<br>SB6 | SB-7(29.0-29.5)<br>29 - 29.5<br>11/13/03<br>SB7 | SB-8(29.0-29)<br>29 - 29.5<br>11/13/03<br>SB8 | SB-9(24-24.5)<br>24 - 24.5<br>11/14/03<br>SB9 | SB-9(50.5-51)<br>50.5 - 51<br>11/14/03<br>SB9 | SB-10(48-48.0)<br>48 - 48.5<br>11/18/03<br>SB10 | SB-11(48.0-48.5)<br>48 - 48.5<br>11/17/03<br>SB11 | SB-13C(34-34.5)<br>34 - 34.5<br>11/19/03<br>SB13C | SB-13C(49.5-50.0)<br>49.5 - 50<br>11/19/03<br>SB13C | SB-14(25.0-25.5)<br>25 - 25.5<br>11/13/03<br>SB14 | SB-15(20.0-20.5)<br>20 - 20.5<br>11/17/03<br>SB15 | SB15(21.5-22)<br>21.5 - 22<br>11/14/03<br>SB15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| 2-Chlorophenol | 95-57-8 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| 2-Methylphenol | 95-48-7 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| 2-Nitroaniline | 88-74-4 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| 2-Nitrophenol | 88-75-5 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| 4-Methylphenol | 106-44-5 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| 4-Nitroaniline | 100-01-6 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| 4-Nitrophenol | 100-02-7 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| Acenaphthene | 83-32-9 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| Acenaphthylene | 208-96-8 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| Acetophenone | 98-86-2 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| Anthracene | 120-12-7 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| Atrazine | 1912-24-9 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| Benzaldehyde | 100-52-7 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| Benzo(a)anthracene | 56-55-3 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| Benzo(a)pyrene | 50-32-8 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.135 | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| Caprolactam | 105-60-2 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| Carbazole | 86-74-8 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| Chrysene | 218-01-9 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| Dibenzofuran | 132-64-9 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| Diethyl phthalate | 84-66-2 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| Dimethyl phthalate | 131-11-3 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | | | SB-6(22.5-23) | SB-7(29.0-29.5) | SB-8(29.0-29) | SB-9(24-24.5) | SB-9(50.5-51) | SB-10(48-48.0) | SB-11(48.0-48.5) | SB-13C(34-34.5) | SB-13C(49.5-50.0) | SB-14(25.0-25.5) | SB-15(20.0-20.5) | SB15(21.5-22) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 22.5 - 23 | 29 - 29.5 | 29 - 29.5 | 24 - 24.5 | 50.5 - 51 | 48 - 48.5 | 48 - 48.5 | 34 - 34.5 | 49.5 - 50 | 25 - 25.5 | 20 - 20.5 | 21.5 - 22 |
| Date Collected: | | | 11/12/03 | 11/13/03 | 11/13/03 | 11/14/03 | 11/14/03 | 11/18/03 | 11/17/03 | 11/19/03 | 11/19/03 | 11/13/03 | 11/17/03 | 11/14/03 |
| Location ID: | CAS Number | Units | SB6 | SB7 | SB8 | SB9 | SB9 | SB10 | SB11 | SB13C | SB13C | SB14 | SB15 | SB15 |
| Di-n-octyl phthalate | 117-84-0 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| Fluoranthene | 206-44-0 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| Fluorene | 86-73-7 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| Hexachlorobenzene | 118-74-1 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| Hexachloroethane | 67-72-1 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| Isophorone | 78-59-1 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| Naphthalene | 91-20-3 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.109 J | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| Nitrobenzene | 98-95-3 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| p-Chloroaniline | 106-47-8 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| Pentachlorophenol | 87-86-5 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| Phenanthrene | 85-01-8 | mg/kg | 0.174 J | 0.097 J | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.125 | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| Phenol | 108-95-2 | mg/kg | 0.117 U | 0.109 U | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| Pyrene | 129-00-0 | mg/kg | 0.117 U | 0.075 J | 0.11 U | 0.116 U | 0.116 U | 0.116 U | 0.116 U | 0.12 U | 0.113 U | 0.115 U | 0.108 U | 0.113 U |
| **Metals** | | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | 6,240 | 2,400 | 3,800 | 3,000 | 1,820 | 3,140 | 3,630 | 3,070 | 2,540 | 8,330 | 7,140 | 3,530 |
| Antimony | 7440-36-0 | mg/kg | 1.18 U | 1.19 U | 1.2 U | 1.21 U | 1.22 U | 1.18 U | 1.18 U | 1.21 U | 1.18 U | 1.23 U | 1.14 U | 1.22 U |
| Arsenic | 7440-38-2 | mg/kg | 3.26 | 1.19 U | 1.2 U | 1.27 | 1.22 U | 4.43 | 1.47 | 1.32 | 1.18 | 1.5 | 3.57 | 1.22 U |
| Barium | 7440-39-3 | mg/kg | 38.9 | 28.7 | 23.3 | 18.2 | 66.1 | 35.9 | 45.9 | 46.9 | 37.6 | 59.9 | 78.9 | 12.2 U |
| Beryllium | 7440-41-7 | mg/kg | 0.662 | 0.595 U | 0.598 U | 0.607 U | 0.612 U | 0.59 U | 0.588 U | 0.603 U | 0.59 U | 0.71 | 0.57 U | 0.612 U |
| Cadmium | 7440-43-9 | mg/kg | 0.294 U | 0.298 U | 0.299 U | 0.304 U | 0.306 U | 0.295 U | 0.294 U | 0.301 U | 0.295 U | 0.308 U | 0.285 U | 0.306 U |
| Calcium | 7440-70-2 | mg/kg | 1,700 | 7,080 | 12,500 | 1,440 | 8,130 | 59 U | 11,900 | 9,850 | 12,400 | 2,720 | 1,210 | 775 |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | 369 | 12.3 | 10.4 | 10.1 | 3.47 | 8.11 | 7.5 | 9.93 | 5.96 | 88.2 | 41.9 | 21.5 |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | mg/kg | 6.19 | 2.38 U | 3.07 | 2.43 | 2.45 U | 3.54 | 3.03 | 3.35 | 2.73 | 6.71 | 6.63 | 2.45 U |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | 16.6 | 4.91 | 6.43 | 9.55 | 6.7 | 2.36 U | 11 | 12.4 | 10.2 | 13.7 | 16.5 | 12.9 |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | 9,080 | 4,020 | 5,580 | 4,810 | 3,160 | 7,260 | 5,960 | 6,380 | 5,260 | 12,200 | 16,300 | 4,790 |
| Lead | 7439-92-1 | mg/kg | 15.4 | 3.17 | 5.7 | 6.31 | 4.49 | 12.9 | 9.55 | 6.99 | 7.19 | 8.58 | 17.6 | 9.14 |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | 4,240 | 1,810 | 2,990 | 1,780 | 1,800 | 59 U | 3,620 | 2,970 | 3,110 | 4,080 | 3,260 | 1,790 |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | 108 | 168 | 284 | 187 | 175 | 5.9 U | 244 | 299 | 254 | 418 | 97.2 | 38.9 |
| Mercury | 7439-97-6 | mg/kg | 0.016 | 0.015 U | 0.015 U | 0.015 U | 0.015 U | 0.015 U | 0.015 U | 0.015 U | 0.015 U | 0.015 U | 0.014 U | 0.015 U |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | 10.9 | 4.67 | 6.77 | 4.75 | 2.81 | 7.36 | 6.97 | 7.02 | 5.51 | 15.5 | 15 | 4.54 |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | 1,910 | 633 | 1,190 | 839 | 526 | 59 U | 1,130 | 921 | 852 | 2,280 | 1,300 | 928 |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | 2.35 U | 2.38 U | 2.39 U | 2.43 U | 2.45 U | 2.36 U | 2.35 U | 2.41 U | 2.36 U | 2.46 U | 2.28 U | 2.45 U |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | 0.588 U | 0.595 U | 0.598 U | 0.607 U | 0.612 U | 0.59 U | 0.588 U | 0.603 U | 0.59 U | 0.615 U | 0.57 U | 0.612 U |
| Sodium | 7440-23-5 | mg/kg | 566 | 176 | 326 | 199 | 220 | 244 | 265 | 199 | 182 | 393 | 518 | 213 |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | SB-6(22.5-23)<br>22.5 - 23<br>11/12/03<br>SB6 | SB-7(29.0-29.5)<br>29 - 29.5<br>11/13/03<br>SB7 | SB-8(29.0-29)<br>29 - 29.5<br>11/13/03<br>SB8 | SB-9(24-24.5)<br>24 - 24.5<br>11/14/03<br>SB9 | SB-9(50.5-51)<br>50.5 - 51<br>11/14/03<br>SB9 | SB-10(48-48.0)<br>48 - 48.5<br>11/18/03<br>SB10 | SB-11(48.0-48.5)<br>48 - 48.5<br>11/17/03<br>SB11 | SB-13C(34-34.5)<br>34 - 34.5<br>11/19/03<br>SB13C | SB-13C(49.5-50.0)<br>49.5 - 50<br>11/19/03<br>SB13C | SB-14(25.0-25.5)<br>25 - 25.5<br>11/13/03<br>SB14 | SB-15(20.0-20.5)<br>20 - 20.5<br>11/17/03<br>SB15 | SB15(21.5-22)<br>21.5 - 22<br>11/14/03<br>SB15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | 0.118 U | 0.119 U | 0.12 U | 0.121 U | 0.122 U | 0.118 U | 0.118 U | 0.121 U | 0.118 U | 0.123 U | 0.114 U | 0.122 U |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | 16.3 | 6.59 | 10.6 | 10.7 | 5.98 | 2.36 U | 10.7 | 9.6 | 9.18 | 17.6 | 25.6 | 9.88 |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | 59.2 | 16.9 | 22.6 | 36.4 | 15.5 | 58.1 | 39.9 | 32.8 | 31.8 | 43.5 | 49.5 | 35.7 |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **PCBs** | | | | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: | CAS Number | Units | SB-6(22.5-23) | SB-7(29.0-29.5) | SB-8(29.0-29) | SB-9(24-24.5) | SB-9(50.5-51) | SB-10(48-48.0) | SB-11(48.0-48.5) | SB-13C(34-34.5) | SB-13C(49.5-50.0) | SB-14(25.0-25.5) | SB-15(20.0-20.5) | SB15(21.5-22) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Depth(ft): | | | 22.5 - 23 | 29 - 29.5 | 29 - 29.5 | 24 - 24.5 | 50.5 - 51 | 48 - 48.5 | 48 - 48.5 | 34 - 34.5 | 49.5 - 50 | 25 - 25.5 | 20 - 20.5 | 21.5 - 22 |
| Date Collected: | | | 11/12/03 | 11/13/03 | 11/13/03 | 11/14/03 | 11/14/03 | 11/18/03 | 11/17/03 | 11/19/03 | 11/19/03 | 11/13/03 | 11/17/03 | 11/14/03 |
| Location ID: | | | SB6 | SB7 | SB8 | SB9 | SB9 | SB10 | SB11 | SB13C | SB13C | SB14 | SB15 | SB15 |
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | 1.18 U | 1.19 U | 1.2 U | 1.21 U | 2.27 | 1.19 U | 1.18 U | 1.21 U | 1.18 U | 1.24 U | 1.14 U | 2.45 U |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name: / Sample Depth(ft): / Date Collected: / Location ID: | CAS Number | Units | SB-16(21-21.5) 21 - 21.5 11/14/03 SB16 | SB-17(23-23.0) 23 - 23.5 11/18/03 SB17 | SB-19(49.5-50.0) 49.5 - 50 11/18/03 SB19 | SB-20(22-22.5) 22 - 22.5 11/14/03 SB20 | SB20(24-24.5) 24 - 24.5 11/14/03 SB20 | SB-21(21-21.5) 21 - 21.5 11/19/03 SB21 | SB-22(20-20.0) 20 - 20.5 11/18/03 SB22 | X-27_20.0-20.5_856524 20 - 20.5 08/27/07 X27 | X-27_20.0-20.5-S_856535 20 - 20.5 08/27/07 X27 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organics** | | | | | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| 1,1,2-trichloro-1,2,2-trifluoroethane | 76-13-1 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| 1,1,2-Trichloroethane | 79-00-5 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| 1,1-Dichloroethane | 75-34-3 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| 1,1-Dichloroethene | 75-35-4 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| 1,2,3-Trichlorobenzene | 87-61-6 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| 1,2-Dibromo-3-chloropropane | 96-12-8 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| 1,2-Dibromoethane | 106-93-4 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| 1,2-Dichloroethane | 107-06-2 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| 1,2-Dichloropropane | 78-87-5 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| 1,4-Dioxane | 123-91-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2-Butanone (MEK) | 78-93-3 | mg/kg | 1.7 U | 1.2 U | 1.25 U [1.19 U] | 1.29 U | NA | 1.16 U | 0.956 U | NA | NA |
| 4-Methyl-2-Pentanone | 108-10-1 | mg/kg | 1.7 U | 1.2 U | 1.25 U [1.19 U] | 1.29 U | NA | 1.16 U | 0.956 U | NA | NA |
| Acetone | 67-64-1 | mg/kg | 1.7 U | 1.2 U | 1.25 U [1.19 U] | 1.29 U | NA | 1.16 U | 0.956 U | NA | NA |
| Benzene | 71-43-2 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| Bromochloromethane | 74-97-5 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| Bromodichloromethane | 75-27-4 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| Bromoform | 75-25-2 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| Bromomethane | 74-83-9 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| Carbon Disulfide | 75-15-0 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| Carbon Tetrachloride | 56-23-5 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| CFC-11 | 75-69-4 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| CFC-12 | 75-71-8 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| Chlorobenzene | 108-90-7 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| Chlorodibromomethane | 124-48-1 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| Chloroethane | 75-00-3 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| Chloroform | 67-66-3 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| Chloromethane | 74-87-3 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| cis-1,2-Dichloroethene | 156-59-2 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| cis-1,3-Dichloropropene | 10061-01-5 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| Cyclohexane | 110-82-7 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| Dichloromethane | 75-09-2 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| Ethylbenzene | 100-41-4 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| Isopropylbenzene | 98-82-8 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| m&p-Xylenes | ARC-mpXyl | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| Methyl Acetate | 79-20-9 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| Methyl N-Butyl Ketone (2-Hexanone) | 591-78-6 | mg/kg | 1.7 U | 1.2 U | 1.25 U [1.19 U] | 1.29 U | NA | 1.16 U | 0.956 U | NA | NA |
| Methylcyclohexane | 108-87-2 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| Methyl-tert-butylether | 1634-04-4 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| o-Xylene | 95-47-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Styrene (Monomer) | 100-42-5 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| Tetrachloroethene | 127-18-4 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| Toluene | 108-88-3 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| Total Xylenes | 1330-20-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-1,2-Dichloroethene | 156-60-5 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| trans-1,3-Dichloropropene | 10061-02-6 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| Trichloroethene | 79-01-6 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| Vinyl chloride | 75-01-4 | mg/kg | 0.85 U | 0.6 U | 0.623 U [0.593 U] | 0.644 U | NA | 0.582 U | 0.478 U | NA | NA |
| **Semivolatile Organics** | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | SB-16(21-21.5)<br>21 - 21.5<br>11/14/03<br>SB16 | SB-17(23-23.0)<br>23 - 23.5<br>11/18/03<br>SB17 | SB-19(49.5-50.0)<br>49.5 - 50<br>11/18/03<br>SB19 | SB-20(22-22.5)<br>22 - 22.5<br>11/14/03<br>SB20 | SB20(24-24.5)<br>24 - 24.5<br>11/14/03<br>SB20 | SB-21(21-21.5)<br>21 - 21.5<br>11/19/03<br>SB21 | SB-22(20-20.0)<br>20 - 20.5<br>11/18/03<br>SB22 | X-27_20.0-20.5_856524<br>20 - 20.5<br>08/27/07<br>X27 | X-27_20.0-20.5-S_856535<br>20 - 20.5<br>08/27/07<br>X27 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | 92-52-4 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| 1,2,4,5-Tetrachlorobenzene | 95-94-3 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| 1,2,4-Trichlorobenzene | 120-82-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,2-Dichlorobenzene | 95-50-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,3-Dichlorobenzene | 541-73-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 1,4-Dichlorobenzene | 106-46-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,2-Oxybis(1-Chloropropane) | 108-60-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 2,4,5-Trichlorophenol | 95-95-4 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| 2,4,6-Trichlorophenol | 88-06-2 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| 2,4-Dichlorophenol | 120-83-2 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| 2,4-Dimethylphenol | 105-67-9 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| 2,4-Dinitrophenol | 51-28-5 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| 2,4-Dinitrotoluene | 121-14-2 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| 2,6-Dinitrotoluene | 606-20-2 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| 2-Chloronaphthalene | 91-58-7 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| 2-Chlorophenol | 95-57-8 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| 2-Methyl-4,6-dinitrophenol | 534-52-1 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| 2-Methylnaphthalene | 91-57-6 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| 2-Methylphenol | 95-48-7 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| 2-Nitroaniline | 88-74-4 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| 2-Nitrophenol | 88-75-5 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| 3,3-Dichlorobenzidine | 91-94-1 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| 3-Methylphenol, 4-Methylphenol | 65794-96-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 3-Nitroaniline | 99-09-2 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| 4-Bromophenyl phenyl ether | 101-55-3 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| 4-Chloro-3-Methylphenol | 59-50-7 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| 4-Methylphenol | 106-44-5 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| 4-Nitroaniline | 100-01-6 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| 4-Nitrophenol | 100-02-7 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| Acenaphthene | 83-32-9 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| Acenaphthylene | 208-96-8 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| Acetophenone | 98-86-2 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| Anthracene | 120-12-7 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| Atrazine | 1912-24-9 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| Benzaldehyde | 100-52-7 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| Benzo(a)anthracene | 56-55-3 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| Benzo(a)pyrene | 50-32-8 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| Benzo(b)fluoranthene | 205-99-2 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| Benzo(g,h,i)perylene | 191-24-2 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| Benzo(k)fluoranthene | 207-08-9 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| Benzyl Alcohol | 100-51-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| bis(2-Chloroethoxy)methane | 111-91-1 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| bis(2-Chloroethyl)ether | 111-44-4 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| bis(2-Chloroisopropyl)ether | 39638-32-9 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.104 J] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| Butyl benzyl phthalate | 85-68-7 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| Caprolactam | 105-60-2 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| Carbazole | 86-74-8 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| Chrysene | 218-01-9 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| Dibenzo(a,h)anthracene | 53-70-3 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| Dibenzofuran | 132-64-9 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| Diethyl phthalate | 84-66-2 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| Dimethyl phthalate | 131-11-3 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| Di-n-butyl phthalate | 84-74-2 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | SB-16(21-21.5)<br>21 - 21.5<br>11/14/03<br>SB16 | SB-17(23-23.0)<br>23 - 23.5<br>11/18/03<br>SB17 | SB-19(49.5-50.0)<br>49.5 - 50<br>11/18/03<br>SB19 | SB-20(22-22.5)<br>22 - 22.5<br>11/14/03<br>SB20 | SB20(24-24.5)<br>24 - 24.5<br>11/14/03<br>SB20 | SB-21(21-21.5)<br>21 - 21.5<br>11/19/03<br>SB21 | SB-22(20-20.0)<br>20 - 20.5<br>11/18/03<br>SB22 | X-27_20.0-20.5_856524<br>20 - 20.5<br>08/27/07<br>X27 | X-27_20.0-20.5-S_856535<br>20 - 20.5<br>08/27/07<br>X27 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Di-n-octyl phthalate | 117-84-0 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| Fluoranthene | 206-44-0 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| Fluorene | 86-73-7 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| Hexachloro-1,3-butadiene | 87-68-3 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| Hexachlorobenzene | 118-74-1 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| Hexachlorocyclopentadiene | 77-47-4 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| Hexachloroethane | 67-72-1 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| Isophorone | 78-59-1 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| Naphthalene | 91-20-3 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| Nitrobenzene | 98-95-3 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| N-Nitrosodimethylamine | 62-75-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| N-Nitrosodi-n-propylamine | 621-64-7 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| N-Nitrosodiphenylamine | 86-30-6 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| p-Chloroaniline | 106-47-8 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| Pentachlorophenol | 87-86-5 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| Phenanthrene | 85-01-8 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| Phenol | 108-95-2 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| Pyrene | 129-00-0 | mg/kg | 0.11 U | 0.117 U | 0.117 U [0.107 U] | 0.118 U | NA | 0.123 U | 0.11 U | NA | NA |
| **Metals** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | mg/kg | 7,780 | 4,340 | 2,350 [2,680] | 8,620 | 7,630 | 4,610 | 7,290 | NA | NA |
| Antimony | 7440-36-0 | mg/kg | 1.13 U | 1.17 U | 1.17 U [1.16 U] | 1.27 U | 0.35 U | 1.23 U | 1.18 U | NA | NA |
| Arsenic | 7440-38-2 | mg/kg | 1.41 | 1.17 U | 1.17 U [1.16 U] | 5.1 | 5.3 J | 1.23 U | 1.18 U | 2.2 | NA |
| Barium | 7440-39-3 | mg/kg | 14.2 | 17.7 | 19.3 [22.3] | 62.3 | 49.5 | 22.9 | 64.6 | 24.6 | NA |
| Beryllium | 7440-41-7 | mg/kg | 0.565 U | 0.585 U | 0.587 U [0.582 U] | 0.637 U | 0.01 UJ | 0.615 U | 0.592 U | NA | NA |
| Cadmium | 7440-43-9 | mg/kg | 0.282 U | 0.293 U | 0.294 U [0.291 U] | 0.319 U | 0.02 U | 0.308 U | 0.296 U | 0.14 U | NA |
| Calcium | 7440-70-2 | mg/kg | 801 | 1,210 | 58.7 U [58.2 U] | 1,510 | 1,160 | 1,200 | 866 | NA | NA |
| Calcium oxide | 1305-78-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorine | 7782-50-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | mg/kg | 50.4 | 227 | 9.98 [4,070] | 29.5 | 24.5 | 217 | 51.4 | 809 | NA |
| Chromium trioxide | 1333-82-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium VI | 18540-29-9 | mg/kg | NA | NA | NA | NA | 4.7 UJ | NA | NA | 27.1 | NA |
| Cobalt | 7440-48-4 | mg/kg | 3.82 | 3.25 | 3.05 [3.01] | 7.54 | 6.9 | 3.99 | 6.17 | NA | NA |
| Cobalt oxide | 1307-96-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | mg/kg | 15.1 | 9.22 | 7.65 [8.98] | 25.3 | 13.4 BJ | 6.43 | 15 | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cupric oxide | 1317-38-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferric oxide | 1309-37-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | mg/kg | 8,690 | 6,270 | 4,990 [5,530] | 21,600 | 12,700 | 8,000 | 11,300 | NA | NA |
| Lead | 7439-92-1 | mg/kg | 14.7 | 15.7 | 4.71 [4.77] | 7.23 | 7.8 J | 10.5 | 5.92 | 19.9 | NA |
| Lead oxide | 1317-36-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | mg/kg | 4,200 | 3,000 | 58.7 U [58.2 U] | 3,860 | 2,810 | 2,890 | 2,310 | NA | NA |
| Magnesium oxide | 1309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | mg/kg | 74.2 | 65.4 | 5.87 U [5.82 U] | 291 | 91.7 | 51.9 | 54.3 | NA | NA |
| Mercury | 7439-97-6 | mg/kg | 0.014 U | 0.015 U | 0.014 U [0.014 U] | 0.068 | 0.05 | 0.016 U | 0.015 U | 0.016 U | NA |
| MnO | 1344-43-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | mg/kg | 10.7 | 8.01 | 5.98 [6.46] | 18.5 | 12.3 | 10.4 | 13.4 | NA | NA |
| P2O5 | 1314-56-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | mg/kg | 1,590 | 1,380 | 797 [874] | 1,620 | 998 | 1,230 | 1,190 | NA | NA |
| Potassium oxide | 12136-45-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | mg/kg | 2.26 U | 2.34 U | 2.35 U [2.33 U] | 2.55 U | 0.39 U | 2.46 U | 2.37 U | 1.1 U | NA |
| Silicon dioxide | 112945-52-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | mg/kg | 0.565 U | 0.585 U | 0.587 U [0.582 U] | 0.637 U | 0.06 U | 0.615 U | 0.592 U | 0.57 U | NA |
| Sodium | 7440-23-5 | mg/kg | 414 | 961 | 166 [181] | 750 | 449 | 334 | 776 | NA | NA |
| Sodium monoxide | 12401-86-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Strontium oxide | 1314-11-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | SB-16(21-21.5)<br>21 - 21.5<br>11/14/03<br>SB16 | SB-17(23-23.0)<br>23 - 23.5<br>11/18/03<br>SB17 | SB-19(49.5-50.0)<br>49.5 - 50<br>11/18/03<br>SB19 | SB-20(22-22.5)<br>22 - 22.5<br>11/14/03<br>SB20 | SB20(24-24.5)<br>24 - 24.5<br>11/14/03<br>SB20 | SB-21(21-21.5)<br>21 - 21.5<br>11/19/03<br>SB21 | SB-22(20-20.0)<br>20 - 20.5<br>11/18/03<br>SB22 | X-27_20.0-20.5_856524<br>20 - 20.5<br>08/27/07<br>X27 | X-27_20.0-20.5-S_856535<br>20 - 20.5<br>08/27/07<br>X27 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulfur | 7704-34-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfur Trioxide | 7446-11-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | mg/kg | 0.113 U | 0.117 U | 0.117 U [0.116 U] | 0.127 U | 0.45 U | 0.123 U | 0.118 U | NA | NA |
| Titanium Dioxide | 13463-67-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | mg/kg | 21.3 | 12.7 | 9.35 [9.55] | 18.6 | 25.9 | 17.6 | 17.7 | NA | NA |
| Vanadium pentoxide (as Vanadium) | 1314-62-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | mg/kg | 49.9 | 41.6 | 28.6 [23.5] | 53.1 | 31.7 J | 41.4 | 36.3 | NA | NA |
| Zirconium dioxide | 1314-23-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| ZnO | 1314-13-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-SPLP** | | | | | | | | | | | |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | 670 |
| Chromium VI | 18540-29-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Metals-TCLP** | | | | | | | | | | | |
| Arsenic | 7440-38-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 24 U | NA |
| Barium | 7440-39-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 110 | NA |
| Cadmium | 7440-43-9 | ug/L | NA | NA | NA | NA | NA | NA | NA | 3 U | NA |
| Chromium | 7440-47-3 | ug/L | NA | NA | NA | NA | NA | NA | NA | 760 | NA |
| Lead | 7439-92-1 | ug/L | NA | NA | NA | NA | NA | NA | NA | 13 U | NA |
| Mercury | 7439-97-6 | ug/L | NA | NA | NA | NA | NA | NA | NA | 0.1 U | NA |
| Selenium | 7782-49-2 | ug/L | NA | NA | NA | NA | NA | NA | NA | 25 U | NA |
| Silver | 7440-22-4 | ug/L | NA | NA | NA | NA | NA | NA | NA | 13 U | NA |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | 12674-11-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1221 | 11104-28-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1232 | 11141-16-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1242 | 53469-21-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1248 | 12672-29-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1254 | 11097-69-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1260 | 11096-82-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1262 | 37324-23-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aroclor 1268 | 11100-14-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Pesticides** | | | | | | | | | | | |
| 4,4-DDD | 72-54-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDE | 72-55-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 4,4-DDT | 50-29-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aldrin | 309-00-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-BHC | 319-84-6 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Alpha-chlordane | 5103-71-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beta-BHC | 319-85-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlordane | 57-74-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Delta-BHC | 319-86-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dieldrin | 60-57-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan I | 959-98-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan II | 33213-65-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endosulfan sulfate | 1031-07-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin | 72-20-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin aldehyde | 7421-93-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Endrin ketone | 53494-70-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gamma-BHC | 58-89-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor | 76-44-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Heptachlor epoxide | 1024-57-3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methoxychlor | 72-43-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Toxaphene | 8001-35-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| trans-chlordane | 5103-74-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Sample Name:<br>Sample Depth(ft):<br>Date Collected:<br>Location ID: | CAS Number | Units | SB-16(21-21.5)<br>21 - 21.5<br>11/14/03<br>SB16 | SB-17(23-23.0)<br>23 - 23.5<br>11/18/03<br>SB17 | SB-19(49.5-50.0)<br>49.5 - 50<br>11/18/03<br>SB19 | SB-20(22-22.5)<br>22 - 22.5<br>11/14/03<br>SB20 | SB20(24-24.5)<br>24 - 24.5<br>11/14/03<br>SB20 | SB-21(21-21.5)<br>21 - 21.5<br>11/19/03<br>SB21 | SB-22(20-20.0)<br>20 - 20.5<br>11/18/03<br>SB22 | X-27_20.0-20.5_856524<br>20 - 20.5<br>08/27/07<br>X27 | X-27_20.0-20.5-S_856535<br>20 - 20.5<br>08/27/07<br>X27 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Cation Exchange Capacity | ARC-CAT | | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cation Exchange Capacity | ARC-CAT | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cyanide | 57-12-5 | mg/kg | 1.12 U | 1.18 U | 1.17 U [1.16 U] | 1.29 U | NA | 1.24 U | 1.18 U | NA | NA |
| Cyanide, amenable | ARC-CYAM | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous iron | 15438-31-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron (Ferric) | ARC-FE3 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate/Nitrite | ARC-NO3NO2N | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrate-N | 14797-55-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nitrite | 14797-65-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Oxidation Reduction Potential | ARC-ORP | mV | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Moisture | ARC-Moist | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Percent Solids | ARC-PSOL | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| pH | ARC-pH | SU | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfate | 14808-79-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | 18496-25-8 | none | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | ARC-TOC | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Total Phosphorus as PO4 | 7723-14-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Geotechnical** | | | | | | | | | | | |
| Alkalinity (as CaCO3) | 471-34-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Amphibole | 14567-73-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Bassanite | 7778-18-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Biotite | 12001-26-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brownmillerite | 12068-35-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Brucite | 1309-42-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chlorite | 1318-59-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromite | 12068-77-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Corundum | 1344-28-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cristobalite | 14464-46-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Dolomite | 16389-88-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Eskolaite | 1308-38-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ettringite | 12252-15-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Gibbsite | 21645-51-2 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hematite | 1317-60-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Hydrogarnet | Hydrogarnet | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Jarosite | Jarosite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kaolinite | 1332-58-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Kosmochlor | Kosmochlor | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesioferrite | Magnesioferrite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Microcline | 68475-25-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mullite | 1302-93-8 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nepheline | 37244-96-5 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Periclase | 01309-48-4 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Plagioclase Feldspar | 12174-07-1 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Portlandite | 1305-62-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Pyrite | 1309-36-0 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Quartz | 14808-60-7 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sjogrenite | 12211-53-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodalite | Sodalite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thaumasite | Thaumasite | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vermiculite | 1318-00-9 | mg/kg | NA | NA | NA | NA | NA | NA | NA | NA | NA |

**Appendix B-2**
**Summary of Historical Soil Sample Analytical Results**

| Lab Qualifiers | Definition |
|---|---|
| * | Laboratory duplicate analysis was outside control limits. |
| B | Indicates an estimated value between the instrument detection limit and the Reporting Limit (RL). |
| E | Serial dilution results not within 10%. Applicable only if analyte concentration is at least 50X the IDL in original sample. |
| J | Indicates an estimated value. |
| N | Spike sample recovery not within control limits. |
| R | Rejected. |
| U | The compound was analyzed for but not detected. The associated value is the compound quantitation limit. |

**Notes:**
**Bold indicates parameter is detected above Reporting Limit**.
% = percent.
$H_2$ - hydrogen.
meq/100g = milliequivalents per 100 grams.
mg/kg = milligrams per kilogram.
mV = millivolts.
NA = not analyzed.
S.U. = Standard Units.
(a) Calculated as: (iron) - (iron, ferrous).
(b) Calculated as: (nitrogen, nitrate + nitrite) - (nitrogen, nitrite).
(c) The ferrous iron test was analyzed after completion fo hexavalent chromium testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on hexavalent chromium recoveries.
(d) Thesulfide screen was analyzed after completion fo hexavalent chromium testing (outside of normal hold times for this parameter) in order to provide more information about the possible impact of the sample matrix on hexavalent chromium recoveries.

# APPENDIX C

## Pumping Test Standard Operating Procedures

ARCADIS
Infrastructure, environment, facilities

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# PUMPING TEST
# STANDARD OPERATING PROCEUDRES

Rev. #: 01

Rev Date: September 2008

**Approval Signatures**



Prepared by: _____ Date: September 29, 2008



Reviewed by: _____ Date: September 29, 2008
(Technical Expert)

## I. Test Design

In general conventional hydraulic testing is conducted to provide answers to questions related to water supply problems. Tests are conducted over longer periods of time and provide estimates of hydraulic conductivity values averaged over large aquifer volumes. These tests tend to underestimate the highest hydraulic conductivity values and overestimate the lowest.

When conducting tests for remediation hydrogeology purposes it is important to indentify aquifer heterogeneities which ultimately control the transport of contaminants and reagents distribution within the aquifer. Short-term tests may help identify particular depositional elements and hydraulic conductivity trends and variability associated with facies changes in the aquifer. Data collected from short-term test can then be correlated with detailed hydrostratigraphic information to assist in the development of conceptual site models that describe the transport of contaminants and distribution of reagents.

### 1. Understand Aquifer Conditions

An aquifer (or permeable zone) pumping test is conducted in order to determine the hydraulic properties (transmissivity, hydraulic conductivity, storage coefficient, leakage, boundaries, anisotropy) of a water-bearing zone or system (including confining beds). Proper design of a pumping test requires a general understanding of the potential hydrologic system prior to the test, so that suitable data are collected to evaluate system parameters. The designer of the test must first develop an appropriate set of assumptions (conceptual model), either taken from previous tests in the immediate area or from well logs and an assessment of the site features that can affect the test (soil or rock types, depth to water, surface- water bodies, existing wells, storm drains). This conceptual model will then help the designer anticipate the necessary design factors such as: number of wells, depth and placement of wells; pumping rate(s); frequency of water-level measurements; and length of pumping. These factors will help the designer determine from the test results the effects of recharge and restrictive boundaries, aquifer geometry, secondary porosity effects (fractures, solution channels), the nature and extent of potentially confining layers, and aquifer interconnections.

### 2. Estimate Aquifer Parameters

Although the objective of a pumping test is to determine the principal aquifer parameters, the conceptual model requires a prediction of some of these parameters for the design process (i.e., observation well number and spacing requires approximate transmissivity and storage coefficient values). Hydraulic conductivity may be estimated from textural or hydraulic testing of aquifer materials in the laboratory, or from data collected and observations made during drilling or well development (see Driscoll, 1986). Considerable experience is needed to apply these methods for anything but preliminary estimating purposes. Therefore, use as many approaches

as possible when making these estimates and remember that they are only estimates. Be ready to adjust preliminary estimates as more information becomes available throughout the process.

For larger tests (and thus larger pumping wells), potential casing storage effects and well (friction and formation) loss may need to be calculated prior to the test. Also, optimum pump size may need to be calculated. These will require an estimate of specific capacity, which is the well discharge rate per unit of drawdown measured at a given time. Specific capacity is typically determined from a step-drawdown test. An added benefit to conducting a step-drawdown test is the graphical results can also be used to calculate transmissivity (but not storage coefficient) in addition to well losses (see Section B.9).

**3. Locate the Pumped Well**

At many sites, the pumping well location is predetermined because an existing well suits the needs of the test, or the hydraulic properties of a specific location must be measured. If the pumping well location can be selected with relative freedom, the following criteria can be used as a guide for its installation:

a) where the hydrogeology represents the area of interest;

b) proximity to existing wells that could be used as observation wells (see guidelines 5, 6 and 7 below);

c) within the targeted contaminant plume whenever possible;

d) outside the contaminant plume if the system is areally homogeneous (or nearly so) and pumping of contaminated water poses an insurmountable problem;

e) away from groundwater system boundaries (assuming their approximate position is known) when the test purpose is solely to measure aquifer storage and transmission properties;

f) close to groundwater system boundaries (assuming their approximate position is known) when requiring boundary location, orientation (both positive and negative boundaries), or degree of connection (positive boundaries);

g) away from surface features that could obscure the data (for example, surface-water bodies) and away from areas subject to heavy-equipment traffic (i.e., railways and highways) that would put unpredictable stress on the aquifer, unless desiring specific information about the interrelationship of the groundwater system and surface features;

h) away from other producing wells that may not be shut down and may affect test data; and

i) where the site is safely and easily accessible to equipment and personnel.

Although these guidelines generally support test success, strictly adhering to them may produce conflicting test designs. Resolving these design conflicts requires good judgment based on a clear understanding of the test priorities and an appropriate knowledge of the local groundwater system.

**4. Design the Pumped Well**

a) The casing must accommodate the pump used for the test and allow ample additional space for measuring equipment.

b) The pumped well should be as efficient as possible through sound drilling practices, installation, and construction. A wire-wrapped screen and site-specific filter pack, designed from a sieve analysis, should be used to reduce factors that will mask true aquifer response.

c) If possible, a stilling pipe should be installed in the pumped well for making water- level measurements. The stilling pipe will dampen water-level fluctuations caused by pump vibration, eliminate measurement errors associated with cascading water, and isolate pressure transducers from pressure transients near the pump intake.

d) Generally, the screen in the pumped well should fully penetrate the tested zone to eliminate the complicated data analysis and interpretation required to correct for partial penetration effects (induced vertical flow component in addition to radial flow), with the following two exceptions:

   1) if the screen would form a conduit capable of transmitting chemicals from a contaminated horizon to a clean horizon; or

   2) when attempting to determine an aquifer's vertical anisotropy (ratio of vertical to horizontal hydraulic conductivity). This determination is necessary if remediation well capture zones will not affect the full thickness of the aquifer.

For these two conditions, the pumped well should only penetrate the contaminated portion of the aquifer. In addition, cost considerations may limit full penetration of the tested zone.

e) The pumped well must be fully developed to maximize the pumping rate from wells with limited available drawdown, simplify data interpretation and assure that no additional development occurs during the test.

f) Often, pumping wells are later used as monitoring or recovery wells. Such wells should be designed according to the requirements of the particular application without compromising the aforementioned standards for pumped wells.

**5. Determine the Number of Observation Wells**

Observation wells help quantify the size, shape, position, and rate of change of the cone of depression formed by pumping, making it possible to determine aquifer parameters. Adding wells increases the amount and accuracy of information acquired, and improves confidence in the data. The number of observation wells selected, however, must balance the information needs with the cost of constructing them.

Without observation wells, only transient analysis (time-drawdown) methods may be used to determine aquifer properties, and only transmissivity and hydraulic conductivity can be determined. A single observation well makes it possible to determine storage coefficient, but data analysis is still restricted to transient methods. Two or more observation wells permit the use of distance-drawdown methods of analysis, greatly improving the accuracy of aquifer parameter estimates. Distance-drawdown analysis is especially important whenever transient analysis methods are apt to produce erroneous results, as often occurs in unconfined aquifers, tight sediments, leaky aquifers, and aquifers with boundaries near the pumped well. Therefore, when possible, use at least two observation wells during a pumping test. Determining parameters such as leakage/delayed yield and anisotropy usually require more than two observation wells.

**6. Design the Observation Wells**

a) The observation well diameter must be large enough to accommodate instrumentation used to measure water levels and small enough that the volume of water in the well does not cause a time lag in responding to aquifer drawdown changes.

b) Unlike the pumped well, observation wells need not be highly efficient, just open enough to reflect pressure changes that occur in the aquifer. Thus, inexpensive construction materials such as slotted screens may be used (unless they will be used later as monitoring, recovery, or injection wells). Yet, to accurately represent the potentiometric changes that may differ vertically in the aquifer, the well intake must be open to the aquifer from top to bottom. This objective can be achieved with moderate well development. Techniques such as surging and bailing, which provide modestly effective development, can be used.

c) Generally, observation well screens should be fully penetrating to eliminate complications in data interpretation caused by partial penetration. As with the pumping well, the exceptions to this rule are:

    1) Avoid fully penetrating screens where they would create a conduit capable of spreading contamination;

2) Use short screens to assess vertical anisotropy at discrete elevations in the aquifer.

Short screens are appropriate for observation wells installed in aquitards that are being used to assess connectivity, recharge, or delayed yield factors.

As stated above, fully penetrating wells will simplify the data analysis because hydraulic theory for fully penetrating systems is simpler than that for partially penetrating ones. Theory also predicts that, for a confined aquifer, an observation well will show fully penetrating response if either it or the pumped well is fully penetrating. That is, in theory, both need not be fully penetrating --it is sufficient that just one or the other be fully penetrating to observe the simplified fully-penetrating response. In practice, however, it is preferable that both the pumped well and the observation well be fully penetrating, if possible. In aquifers where hydraulic conductivity varies substantially with depth, it is possible that a fully penetrating response would not actually occur unless both the pumped well and observation well were fully penetrating.

**7. Situate the Observation Wells**

a) Lateral Distribution

When using two observation wells, they should be positioned along a straight line radiating from the well. Accurately assessing horizontal anisotropy or near-well boundaries requires three pairs or sets of observation wells positioned along three different lines emanating from the well. If the principal axis of anisotropy is known, two sets of observation wells will suffice, one along the principal direction of anisotropy and one perpendicular to it. For example, if a fractured rock aquifer is known to be more permeable north-south than east-west, one set of two or more observation wells would be installed on a line north (or south) of the pumped well and another set along a line east (or west) of the pumped well.

In theory, single wells placed on three different lines emanating from the pumped well are sufficient to assess horizontal anisotropy. In practice, however, other heterogeneities can influence drawdown readings enough to bias the calculated anisotropy if just a single well is used along each line. Therefore, it is preferable to use pairs of wells whenever possible.

b) Well Spacing

Observation wells along a particular line from the pumped well should be spaced logarithmically with the distance to each successive observation well approximately double that to the preceding well. For example, three observation wells may be placed at distances of 10 ft, 20 ft, and 40 ft from the pumped well, or 50 ft, 100 ft, and 200 ft from the pumped well.

There are advantages and disadvantages to locating observation wells either near to, or far from, the pumped well. Distance drawdown analysis methods tend to integrate aquifer properties over the area spanned by the observation wells, so distant wells tend to yield aquifer parameters representative of a broad area of aquifer. At great distances, however, wells may exhibit drawdowns so small that they are difficult to measure accurately or analyze confidently. On the other hand, observation wells installed near the pumped well show more substantial drawdown but tend to reveal aquifer properties on a smaller scale. Situating observation wells, therefore, depends on the type of information required. For contamination investigations of small plumes, closely spaced observation wells provide satisfactory data.

The data set will be more reliable if substantial drawdowns can be attained in the observation wells. This is accomplished by maximizing the flow rate and locating the observation wells sufficiently close to the pumped well. As a rule of thumb, the distance from the pumped well to the nearest observation well should not exceed the square root of the expected radius of influence of the pumped well. R can be determined from:

$$R = \sqrt{\frac{0.04Tt}{S}}$$

where

R = radius of influence in ft

T = estimated transmissivity in $ft^2$/day

t = pumping test duration in days

S = storage coefficient

For example, in tight sediments, if the expected radius of influence is less than 100 ft, at least one observation well should be located within 10ft of the pumped well.

Be aware that the oft-repeated recommendation to locate the nearest observation well one or two aquifer thicknesses from the pumped well is actually a generalization (not entirely correct) for locating partially-penetrating observation wells away from a partially-penetrating pumping well. The actual radial distance for a partially-penetrating observation well must take into account anisotropy, as follows:

$$r = \frac{1.5b}{\sqrt{\frac{K_z}{K_{xy}}}}$$

where

r = radius from pumping well

b = thickness of aquifer

$K_z$ = vertical hydraulic conductivity

$K_{xy}$ = horizontal hydraulic conductivity

In most instances, and especially in unconfined or tight sediments, use closely spaced observation wells and eliminate partial penetration effects by using fully penetrating wells, or compensate for partial penetration effects by determining the anisotropy of the aquifer.

c) Vertical Distribution of Observation Wells

Generally, make sure that observation well screens are located in the pumped aquifer and fully penetrate it. To determine vertical anisotropy, however, screens must only partially penetrate the aquifer. For this determination, install observation wells in pairs at the same location, with one well screened in the pumped interval and the other screened in an unpumped interval of the aquifer to get a three-dimensional view of the pressure reductions caused by pumping.

If pumping is expected to induce leakage across an aquitard and if the leakance must be determined, place one or two piezometers in the aquitard to assess the magnitude of the drawdown, if any, created by the pumped well. Aquitard-monitoring wells should have short screens approximately centered in the aquitard, to keep the screen as far as possible from the top and bottom of the aquitard. Ideally, an aquitard observation well should be drilled at the same location as an observation well completed in the pumped aquifer.

**8. Establish the Pumping Test Duration**

a) The duration of pumping tests can range from a few hours to a few weeks depending upon the nature of the formation and the type of information required. For example, in highly transmissive confined sediments, if only near-well transmissivity must be known, a 2-hour test might suffice. However, to acquire information about boundaries or leakage, or if sediments are tight or unconfined, a much longer test is required. The preliminary test of the pumped well (Section B.9) will help in planning the test length.

b) For confined aquifers, a test duration of 24 to 48 hours will generally provide the information required.

c) Longer tests are required for unconfined aquifers because the cone of depression expands more slowly and delayed-drainage effects retard the response of the aquifer to pumping. Plan to conduct pumping tests in unconfined aquifers for 3 days or longer.

d) If leakage effects among aquifers must be determined, a longer test is appropriate. For example, under confined conditions, it may be desirable to extend the test to two or three days.

e) Economics may dictate curtailing the length of the pumping test if treating or storing pumped water is expensive. If water disposal is inexpensive, however, it makes sense to extend the test because the cost of the additional pumping and monitoring required is generally nominal.

**9. Select the Appropriate Flow Rate and Measurement Device**

a) The objective of the pumping test is to stress the aquifer sufficiently to obtain a meaningful, measurable response. Generally, the magnitude of the drawdown response in most observation wells is small. Thus, in most aquifer tests, design the well and pump intake in such a way that a sufficient stress is placed on the aquifer system that can be measured at a distance.

b) Select the pumping rate on the basis of a preliminary test (such as a step-drawdown test, Section B.9) so that the rate can be sustained by the pump for the duration of the test. The rate should not be so large that the water level is drawn down into the screen area, causing cascading effects and entrained air; under no circumstances should the water level be drawn down to the water entry of the pump or tail pipe.

c) Small variations in the discharge rate create large errors in the calculation of aquifer parameters. Therefore, sustaining a constant discharge rate is more important than knowing the exact rate with great accuracy. Accordingly, maintain the flow rate as closely as practical to a constant value, usually within $\pm$1 percent or less. This can be achieved only if the flow rate can be measured precisely and adjusted easily as needed.

d) Always operate the pump against a partially closed valve so that, as drawdown increases during the test, a compensating reduction in back pressure is achieved by gradually opening the valve. The correct valve and flow measurement method are critical to this requirement. Select a valve that can be opened or closed in tiny increments to ease flow-rate control. A ball valve that opens fully or closes fully with a single 90-degree turn of a handle is undesirable because careful adjustments are difficult to achieve. A better choice is a gate valve that requires several 360-degree turns to open or close.

e) Flow measurement devices are typically based on three principles; head-type (orifice, venturi), velocity-type (magnetic, ultrasonic), and displacement-type (rotor, paddlewheel). Measurement devices/methods for a pumping test, in order of preference, are as follows:

1) Orifice weir with manometer (see Driscoll, pg 537): This is the best method of measuring the flow rate because it is precise, allows instantaneous reading of the flow rate so that adjustments can be made readily, and is relatively "low-tech". While most orifice weirs accommodate higher flow rates, small-scale versions can be made for flows as small as a few gallons per minute. Such custom-made meters can be calibrated easily in the field with a bucket and stop watch. Installing a totalizing meter in line with and upstream from the orifice weir provides assurance that the total discharge for the test is calculated accurately. After completing the test, total discharge volume is divided by test duration to determine average flow rate.

2) Instantaneous (ultrasonic) flow meter: non-invasive, can be equipped with a data logger. Some meters may not respond properly when pumping sediment-laden water or two-phase fluids like hydrocarbons and water.

3) Paddlewheel totalizing meter: shows total volume pumped. When using this type of meter, flow rate must be determined by taking consecutive readings and dividing by the time between them. Accuracy may vary from one meter to another. Also may not respond properly when pumping sediment-laden water or two-phase fluids. Meter inaccuracy at low flow rates can be allayed by installing a flow restrictor (such as manufactured by Clack Corporation) upstream of the meter. The restrictor creates enough back pressure on the pumping unit to minimize flow rate fluctuations.

4) Bucket, or other container of known volume, and stop watch. For low flows, this procedure is about as accurate as any for determining the flow rate. It also serves as a reliable calibration tool for other flow measurement devices.

Other methods of measuring flow rate involve using various types of weirs, flumes, and open-discharge pipes generally do not provide the precision required for controlling the flow rate during a constant-rate pumping test.

**10. Select the Pump**

a) The pump used must have sufficient capacity to maintain the required discharge throughout the constant-rate portion of the test and to produce the various flow rates required for the step-drawdown test.

b) The pump should be capable of delivering the planned discharge rate at pressures substantially higher than the apparent nominal pressure required to lift water to the surface and overcome friction losses in the piping system. Pumping against a high head such as 60 to 100 psi tends to reduce discharge rate variations. It also permits operating the pump against a partially closed valve, creating additional head to help minimize flow-rate fluctuations during the test.

c) Submersible or turbine pumps driven by electric motors are ideal for conducting pumping tests because (barring spikes or storms) they run at nearly constant rates, producing generally uniform flow. Turbine pumps driven by gasoline or diesel engines, however, cause greater flow-rate variations because engine output can vary with fuel mixture, and air temperature and pressure.

d) The pump should be equipped with a check valve so that water in the column pipe and discharge pipes doesn't siphon back into the well following pump shut off. This prevents a sudden charge of water from obscuring the early recovery data and making analysis more difficult.

**11. Plan for Pumped Water Disposal**

a) Discharge pumped water so that pumped aquifer zones are not recharged. To accomplish this, pipe water to nearby storm or sanitary sewers, or lined surface-water bodies. If these options are not available, arrange to spread the discharge water on the ground sufficiently far from the pumping test site so that infiltration will not affect the test results.

b) If the water quality is such that direct discharge is not permitted, treatment may be necessary. Occasionally, water treatment facilities are already available on site. Alternatively, it may be possible to arrange for temporary treatment equipment just for the pumping test. If disposal during the test is not possible, the fluid can be discharged to containers such as frac tanks temporarily. Provisions must be made for the appropriate number and size of containers to handle the volume of water pumped during well development, step-drawdown testing, and constant-rate testing, plus a safety margin.

c) Discharge water must be disposed according to all applicable laws and regu1ations. Contact the governing agencies to determine which restrictions apply.

d) ARCADIS should not be responsible for signing manifests and should not "take possession" of discharged water.

**12. Check for Casing Storage**

Casing storage effects will render useless the early time/drawdown data from pumping tests. The larger the well diameter and the lower the specific capacity, the longer casing storage effects persist. Data recorded before casing storage effects end (at $t_c$) cannot be analyzed by any method.

The duration of the casing-storage affected portion of the test can be estimated as follows:

$$t_c = \frac{0.6\left(D^2 - d^2\right)}{Q/s}$$

where

$t_c$ = duration of casing storage effect ('critical time'), in minutes

D = inside diameter of well casing, in inches

d = outside diameter of pump column pipe, in inches

Q = flow rate, in gpm

s = expected drawdown in the pumped well, in ft

Before conducting the test, it is important to estimate $t_c$. If the value is large, take steps to minimize storage effects if possible. For example, a packer may be installed with the pump column pipe to keep the water standing in the well casing from being removed from the well. If this is done, the packer must be specially designed to permit measurement of the hydraulic pressure in the well just under the packer. Alternatively, it may be possible to install ballast material alongside the column pipe to take up space and reduce the volume of water stored in the casing. For example, a 3.5-inch OD PVC pipe run alongside the column pipe in a low-yielding, 4-inch well, can reduce the duration of casing storage effects by 75 percent.

To demonstrate the significance of casing storage, a 4-inch test well in tight sediments with 1.25-inch column pipe producing 2 gpm with 30 ft of drawdown results in the following calculation:

$$t_c = \frac{0.6\left(4.026^2 - 1.66^2\right)}{2/30}$$

= 121 minutes

Thus, the first two hours of test data from this well cannot be analyzed.

In filter-packed wells, if water in the filter pack can drain quickly into the well (such as in wells that are screened across the water table), the equation for $t_c$ must be modified to account for filter pack storage. The accomplish this, the term

$$D^2 - d^2$$

is replaced by

$$\left(D^2 - d^2\right) + S_y\left(B_d{}^2 - C_d{}^2\right)$$

where

$B_d$ = diameter of borehole, in inches

$C_d$ = outside diameter of casing, in inches

$S_y$ = short-term specific yield of filter pack material --approximately 0.1 or 0.15

## II. Pretest Activities

a) Unless installed specifically for the test, sound all wells for use in the test to verify well depth. (Do not use water level meters for this purpose, because some meters have probes that leak and trap water when subjected to excessive pressure.) Also, if adequate connection to the aquifer is suspect, conduct a slug test (either 'in' or 'out' - attempt to change the water level by at least 2 feet) in the observation wells. If the water-level response is too sluggish or no response is apparent, redevelop the well.

b) Label all wells (temporarily, if necessary) for quick and easy identification throughout the test.

c) Unless previously verified, measure the distance of all observation wells from the pumping well to the nearest foot.

### 2. Select Appropriate Water Level Measuring Devices

a) Pressure Transducers and Data Logger Combination

Transducers connected to electronic data loggers provide rapid water-level measurements with accuracy and ease. Some electronic data loggers (i.e.,

Hermit) collect and store data from a number of input channels (downhole pressure transducers plus atmospheric pressure) to provide water-level measurements in multiple within several hundred feet radius of the data logger, while others consist of a single logging transducer (i.e., Troll™, Levelogger™). Typical loggers take readings at preprogrammed linear or logarithmic intervals. If desired, data can be transferred to a personal computer for processing.

Small-diameter transducers (typically 0.5 to 0.75 in) are available that cover a range of pressures. Because they yield readings accurate to a percentage of their pressure range (usually about ±0.1 percent of the range in the center of that range, and ±0.2 percent near the limits) transducers that span a wide pressure range have lower absolute accuracies than those that span a narrow range. For example, a typical transducer with a 5 psi range detects water-level changes over a 11.6 ft with an accuracy of ±0.01 ft, whereas, a transducer with a 15 psi range detects changes over a 34.7 ft with an accuracy of ±0.03 ft. Thus, to ensure the greatest accuracy, select the transducer with the pressure range that most closely encompasses the anticipated drawdown or water-level change. Furthermore, confirm transducer water-level measurements throughout a test by manually taking regular water-level readings with a water level meter.

Caution: To prevent transducer malfunction, do not submerge transducers in excess of their operating range.

b) Water Level Meters, Interface Probes

These devices provide quick and easy water-level measurements with reasonable accuracy. They employ a sensor that is lowered into a well on the end of a marked cable (typically imprinted in feet and hundredths of a foot). When the sensor contacts water, a circuit is completed, activating a light, audio signal, ammeter, or digital display in the cable reel or housing. However, because the measurements are manual, the speed of readings cannot match those of a pressure transducer with a data logger. Thus, a water level meter is most useful in taking correlative, manual measurements in wells as a backup and for data checking, as well as measuring wells outside the active observation well network.

When appropriate, one water level meter should be used to take readings in all wells. If more than one meter is used to make site-wide water-level measurements, record the serial numbers and make comparison measurements within a single well to calibrate to a common standard.

c) Wetted Steel Tape

When using a steel tape, attach a weight to the bottom, wipe dry and coat the lower 2 to 3 feet with carpenter's chalk or water-soluble ink from a felt-tip marker, lower the tape into the well until part of the coated section extends below the water level, hold one of the major division (e.g., foot) markings at the predetermined measuring point, and record this reading. After withdrawal, read the wetted line on the coated section to the nearest 0.01 ft. Subtract this reading from the mark held at the measuring point; the difference is the actual depth to water.

A wetted steel tape is accurate and reliable, and is useful to verify and calibrate readings from other instruments. The procedure, however, is more time-consuming than others, limiting its usefulness during the early portion of pumping test when many rapid measurements are required. Furthermore, the approximate depth to water must be known in advance to ensure that part of the chalked section is submerged to produce the wetted line.

**3. Verify Measuring Device Accuracy**

Test pressure transducers and data logger readings using a bucket or barrel filled with water. Submerge each transducer, accurately measure the water head above the transducer, and compare the measurement to the data-logger reading. Check transducer response to changing heads by raising the transducer a certain distance, observing the change in the datalogger reading, and then measuring the distance with a standard steel tape. Water level meters should be in good working condition and calibrated, ensuring there are no breaks or splices in the cable.

**4. Establish a Reference Point for Measuring Water Levels**

At each well, establish and clearly mark the position of the selected reference point (often the north side, top of the casing). Determine the elevation of this point, record it, and state how this elevation was determined. This elevation point is important to establish the position of the piezometric surface, so it must be determined accurately.

**5. Record Background Water Levels**

To establish local trends, measure groundwater levels in all test wells and on-site surface water levels at regular intervals for several days before pumping any of the test wells. Although two days preceding the test may be enough (this meets the standards of some regulators), ideally the period of time should be at least equal to the length of the pumping test (three days to a week is optimum). Unless

extreme variations are expected, such as significantly increased stream discharge in response to off-site precipitation, only surface water bodies within the radius of influence of the pumping well need to be monitored. A well outside the radius of influence may provide valuable information about water-level trends if monitored before, during, and after the pumping test. In areas that could be influenced by tidal fluctuations, collect information regarding local tidal variations before, during, and after the test.

If levels in the zones to be monitored during the test might be affected by pumping of other nearby wells, gather information about the discharge rates and operating times of those wells. Also, monitor water levels for a sufficient period before the test to evaluate the influence of nearby wells. Water-level monitoring should be done far enough in advance to allow time to negotiate with well owners and take appropriate action. If possible, arrange to have nearby wells shut down or pumped at a constant rate to ease data interpretation.

**6. Record Barometric Pressure**

Atmospheric-pressure changes can cause water level changes in confined or semi-confined aquifers, leading to erroneous conclusions about aquifer parameters. To correct for these changes, the barometric efficiency of each appropriate aquifer must be determined. Aquifer barometric efficiency (BE), a ratio of aquifer head change to atmospheric pressure change, can be calculated using:

$$BE = \left( \frac{\Delta h}{\Delta B_p} \right) 100\,\%$$

where

BE = barometric efficiency, in percent

$\Delta h$ = change in water level resulting from change in atmospheric pressure, in feet

$\Delta B_p$, = change in atmospheric pressure, in feet of water

To measure atmospheric pressure changes, either ensure that the dataloggers being used also measure barometric pressure, or obtain data from a nearby source. Barometric pressure must be recorded throughout the background water-level-measurement period and throughout the test. Ideally, barometric pressure and water-level measurements should be made during a time of significant atmospheric pressure change so their relationship can be more easily correlated.

Logging transducers with vented cables (e.g.: Troll, miniTroll) already account for barometric pressure and no additional adjustment is required.

**7. Install a Rain Gauge**

Heavy precipitation can cause a significant water-table rise in shallow aquifers. Note that rainfall data from nearby weather stations or airports may not be representative, because precipitation patterns may vary greatly over short distances. Therefore, when testing shallow aquifers, a rain gauge should be installed at the test site and monitored during rainfall. Keep in mind that storm sewers can channel large volumes of water rapidly to shallow aquifers.

**8. Set-up: Remaining Equipment Required for Test**

a) Keep sensitive electronic equipment away from devices that generate significant magnetic fields. For example, do not place data loggers near electric power generators or electric pump motors. Likewise, radio signals may cause dataloggers or computers to malfunction.

b) Secure data logger and transducer cables at the well head to prevent movement that would affect measurements. Mark a reference point on transducer cables and check regularly to detect slippage.

c) Provide adequate lighting for night readings.

d) Identify all equipment to be used in the test that will affect data. For example, describe (by serial number or otherwise) the pump, any isolation packers, water level meters, data loggers, rain gauges, barometers, flow meters, buckets or volumetric containers, watches, and steel tapes used.

e) Consider having backups for key equipment such as data loggers, generators, water level meters, etc.

**9. Perform a Job Safety Analysis**

To ensure that everyone is aware of the hazards associated with the work, and that each person knows his/her responsibilities during the preliminary and full-scale test, run through a JSA of the test before the start of pumping.

**10. Conduct a Preliminary Pumping (Step-Drawdown) Test**

Conduct a short-term preliminary test of the pumping well to estimate the hydraulic properties of the aquifer, estimate the duration of the test, and establish a pumping rate. A step-drawdown test is the most efficient preliminary test to use. If other

constraints determine flow rate and the flow rate is sustainable, a step test is unnecessary.

The concept of step-drawdown testing in wells was first developed by Jacob (1947). He proposed that drawdown in a well has two components: formation loss (laminar, proportional to the discharge), and well loss (turbulent, proportional approximately to the square of the discharge). Jacob outlined a multiple-step drawdown test where discharge was increased at specific times, as if pumping of the well was held constant and additional wells were introduced at corresponding increases in pumping rates. Rorbaugh (1953) later noted that Jacob's assumption of second-order turbulent flow did not take into account that turbulence at low rates of discharge is not fully developed. Thus the exponent for turbulent flow should be expressed as an unknown constant. Taking this into consideration, the arithmetically-plotted results of a step-drawdown test can be used to select the discharge rate for a pumping test, determine drawdown for a given pumping rate and optimum pump depth, and even (with some minor calculations) estimate the transmissivity of the formation prior to the test. (This is also a good test for reliability of the flow meter.)

a) Select the pumping rates for the step-drawdown test based on:
    1) production capability estimates made during well development,
    2) prior pumping information,
    3) slug test data (for small wells), or
    4) a brief, preliminary rate test.

Step tests are most commonly run with three steps at 33, 67 and 100 percent or four steps at 25, 50, 75, and 100 percent of the anticipated maximum rate. Sometimes a step is added at 133 percent for a three-step test or 125 percent for a four-step test and the first step is dropped.

b) Conduct the step test, pumping at each level for 30 to 60 minutes. It is important to run the initial step long enough to establish that the effects of well storage have dissipated, with the remaining steps run for the same duration as the initial step. Although standard practice is to allow a recovery period after each step, practical experience shows that these individual recoveries are not necessary.

c) At the end of the step test, mark the setting of the discharge control valve corresponding to the flow rate for the full-scale pumping test. Secure the valve in that position with wire or tape to prevent inadvertent changes.

d) Allow sufficient time after completion for drawdown to return to static level. Although the time may vary, allow at least one day of recovery after the step-drawdown test has been completed before starting the constant-rate test.

### 11. Synchronize Watches

Just before the constant-rate test, watches and other time-measurement devices (i.e., dataloggers) should be synchronized so that the time of each reading, electronic and manual, can be referenced to the exact minute and hour that pumping started.

## III. CONDUCTING THE TEST

### 1. Record Information

a) Use appropriate data forms

b) Record all required background information on logs before beginning the test

c) Record time as military (24-hour) time.

d) Ensure that everyone taking manual water-level measurements understands the units of measurement on the device or devices they will use.

### 2. Keep Pertinent Well Construction Details at Hand

To evaluate data plotted during the test, it may be necessary to have access to well construction information, such as the following:

- Lithologic logs;
- Well depths;
- Screen lengths
- Screen type (slotted, wrapped, opening size)
- Filter pack thickness and length
- Pumped well diameter
- Pump characteristics (performance, unit dimensions)
- Pump setting depth
- Topographic maps

**3. Start the Test**

a) Check all wells to confirm that water is at static level. Record the time since last pumping.

b) Make sure all field personnel are aware of predetermined starting time.

c) Start the pump and timing devices simultaneously. Use both an audible and visible signal to indicate the start of the test, especially if the distance between the pumped well and observation wells is large.

**4. Measure Drawdown at Established Times**

The widespread use of data loggers with extended memory precludes the older standard of using logarithmic time measurements. However, remember that rapid-frequency readings are needed early in the test in order to observe early effects of pumping and formation storage, plus effects of well construction. Water level measurements should be taken at least every five seconds.

Early time data are of greater importance when conducting pumping tests to identify aquifer heterogeneities and should be collected at short time intervals (< 1 sec) and considered as part of the pumping test analysis. Large data files can be generated and may need to be manipulated with text editors prior to importing data to other software such as Excel.

For manual observation well readings, the following schedule is suggested:

| Elapsed Time | Interval Between (minutes) Measurements (minutes) |
|---|---|
| 0-5 | 1 |
| 5-15 | 2 |
| 15-60 | 5 |
| 60-120 | 10 |
| 120-300 | 30 |
| 300-1440 | 60 |
| 1440-end of test | 240 |

Drawdown readings are sometimes difficult to record at the exact time required by the above schedules. If the designated time for a drawdown reading is missed, take a reading anyway and record the actual time. However, try to follow the established schedule as closely as possible to ease data plotting. Use the following table as a guideline for time measurement accuracy.

**5. Check the Flow Measuring Device**

Unrecorded fluctuations of pumped well discharge rate can make the test data difficult to interpret. Measure and record discharge every 5 minutes during the beginning of the test. When discharge becomes stable, reduce the frequency to hourly checks.

As water levels decline, the discharge rate may decrease, thus requiring adjustment. Whenever adjusting the flow rate, record water levels in the pumped well before and after each adjustment.

**6. Monitor Fuel Levels**

When using liquid-fuel-driven engines or generators, monitor and refill fuel tanks as needed to prevent premature termination of the test.

**7. Plot Data to Evaluate Trends and Catch Aberrations**

a) Begin to tabulate and graph the elapsed time, discharge rate, and pumped well drawdown as early as possible in the test, usually after the first hour of testing.

b) Prepare a plot of the log of drawdown (log10s) versus the log of the ratio of time since pumping started to the square of the distance from the pumped well to the observation well (log10t/r2) on arithmetic graph paper and maintain during the test. Compare this data to basic type curves to detect deviations that may be due to discharge variations or other changes in field conditions that need to be documented. A portable computer and printer ease this plotting for tests with many wells.

c) Keep the plots current throughout the test. This information supports informed, intelligent decisions about test progress and may signal anomalies such as equipment malfunctions or unacceptable flow rate variations. Analysis of these plots may suggest that more data is needed to substantiate conclusions about the groundwater system.

**8. Collect Groundwater Samples and Measure Field Parameters**

Samples of discharge water may provide valuable information about the nature of aquifer water quality as it changes during the pumping test. Depending on the site conditions, samples collected regularly throughout the test may signal proximity to a contaminant source, connection with surface water bodies, or other contributors to water quality change. The number of water samples needed and the frequency and time of their collection depends on both nearness to suspected or known water quality influences and the test budget.

### 9. Verify Measuring Device Accuracy

Recheck the accuracy of hand-held electronic water-level sounders before starting the recovery portion of the test. During pumping and recovery, check transducer accuracy periodically with reliable manual devices. Every hour or few hours is sufficient for most tests.

### 10. Measure Water Levels during the Recovery Phase at Established Times

Recovery of water levels following the pumping phase should be measured immediately upon pump shut down and recorded for a period of time equal to the pumping time, or until the water levels have reached 95 percent of the initial, pre-pumping static water level. Use the same drawdown measurement schedule that was used during pumping. A check valve should be used to prevent backflow of water in the riser pipe into the well, which could result in unreliable recovery data.

Recovery phase data may be easier to analyze because no discharge fluctuations occur, and pump-induced turbulence is not a concern in the pumping well. However, note that typically the calculated transmissivity from the pumping phase will be lower than that of the recovery phase due to the added turbulence and vertical flow components during pumping.

### 11. Record Observation of Pertinent Phenomena

Record any unusual events occurring just before or during the test that may affect test data, such as:

- Weather changes
- Heavy equipment (trains, etc.) passing through area
- Operation times of other wells
- Changes in pumping rate
- Equipment problems, and
- Earthquakes

## IV. POST-TEST PROCEDURES

### 1. Document the "As-Built" Configuration of the Test

Describe the configuration of the test, the observation well locations versus the pumping well, water discharge, outside influences detected during the test, and any modifications to the original plan.

**2. Verify Timing Device Agreement and Measuring Device Accuracy**

Compare all clocks, watches, and data recorders for agreement and note any discrepancies, identifying the devices and where they were used. Compare manual measurements to datalogger measurements within wells to confirm accuracy of measuring devices.

**3. Sound the Pumped Well**

Determine if any aquifer material accumulated in the pumped well during the test. Sand or other material accumulating in the well during the test progressively blocks screen areas, reducing the effective aquifer penetration. If the effect of this condition is not taken into account, aquifer parameters calculated from test data will be wrong. Gradually decreasing aquifer penetration in a pumped well significantly complicates test data analysis. The wisest strategy, therefore, is to prevent infilling of screens by sufficient development of the pumped well.

**4. Decontaminate All Equipment Contacting Site Groundwater and Soil**

Use appropriate decontamination procedures.

**5. Monitor Background Information as Long as Possible**

If possible, continue to monitor groundwater levels, surface water levels, and barometric pressure data for several days after test completion. This information may reveal trends or relationships undetected before or during the test.

## V. SPECIAL CONSIDERATIONS

**1. Wells Containing Floating Nonaqueous Phase Liquids**

It is best to use pressure transducers to measure water levels in wells containing floating product such as gasoline. Contact with floating product, however, may make transducers and cable unsuitable for future use. Thus, include the cost of replacing transducers (and perhaps cable) when calculating pumping test budgets. Otherwise, protect each transducer and cable assembly by encasing it in plastic tubing or pipe. Be sure that each protected transducer still can respond accurately to any pressure changes.

As an alternative to pressure transducers, make manual measurements (using a interface probe) of both the fuel level and water level individually. Then correct the observed thickness of floating product by its density to arrive at an effective pumping level. Measure product density in the field using a simple density balance (such as drilling fluid balance) or consult an appropriate API table. This manual procedure will work, but takes time and introduces additional measurement and computation errors.

**2. Fill Materials**

Occasionally, pumping tests are conducted in or adjacent to fill materials. In these circumstances, it is essential that the nature of the fill and possible extremes in heterogeneity be understood and incorporated into the design of the pumping test so that the resulting data set can provide the required information.

**3. Karst and Cavernous Aquifers**

Flow through the fractures and conduits within a karst aquifer system ranges from conduit to diffuse. Conduit flow describes flow through dissolution channels with velocities commonly high and turbulent. (The presence of conduits typically requires a dual-porosity model for characterization). Diffuse flow, on the other hand, refers to a slow, mostly laminar to slightly turbulent flow through a series of small, discrete pathways that are being enlarged through dissolution. Karst aquifers do not lend themselves to conventional pumping test layout, procedures, and analysis because flow can be dominated by discrete channels. The discrete nature of high-conductivity zones can range several orders of magnitude and thus hydraulic conductivity values vary according to the scale of measurement, from local to regional. Interpretation of pumping tests must take into consideration the portion of the aquifer being tested.

Additional background investigations may need to be conducted before a pumping test is conducted, in order to predict the connectivity of the wells within the test network. This may include borehole and surface geophysics, tracer (natural and introduced) testing, spring flow and water chemistry analysis, slug testing, and lineament analysis.

**4. Fractured Aquifers**

The challenge to conducting a pumping test within a fractured-rock aquifer is the continuity of fractures can vary significantly within an area and affect its ability to provide water in a consistent manner. Many fractured aquifers also exhibit a preferred permeability direction based on predominant fracture orientations. Recharge may also vary seasonally and cause production problems in low flow periods (low water level and low recharge). During these periods excessive drawdown may occur. Typically, sources completed in bedrock composed of shale, basalt, granite or any consolidated material can have fractured flow concerns.

For these aquifer systems, although a conventional pumping test approach is generally appropriate, more observation wells will be required to determine the anisotropy and to discern both near-well and distant responses. Also, step-drawdown test data provide valuable information in fractured aquifers because flow near the well in fractured aquifers may be mostly turbulent.

## VI. REFERENCES

ASTM D4050, *Standard Test Method (Field Procedure) for Withdrawal and Injection Well Tests for Determining Hydraulic Properties of Aquifer Systems*. ASTM 04-08, Soil and Rock.

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# APPENDIX D

## Recirculation Flow and Solute Transport Modeling

## Recirculation Flow and Solute Transport Modeling

Historical geologic and hydraulic information was utilized to develop an appropriate design well network capable of establishing a complete reactive zone within targeted intermediate and deep water-bearing zones over an initial 6-month period within the Phase I IRM treatment footprint. A groundwater flow and solute transport model was constructed for Site 114 to assess the necessary spacing, orientation, and operational sequencing of the Phase I well network. The modeling approach allowed verification of the combination of extraction and injection at Site 114 that avoids excessive hydraulic mounding within the sheet pile walls while achieving organic carbon distribution during the Phase I operational timeframe. Finally, the model serves as a tool for future optimization of the Phase I program based on additional groundwater extraction and injection information generated over the course of operation.

## Hydrogeology Implications for Groundwater Recirculation

The local hydrogeology discussed in Section 2.3 has been considered when designing and constructing the injection and extraction well network. Several key geologic conditions for the design include the following:

- Utilization of fine-grained soils associated with the meadow mat (where present) to ensure a good seal between the shallow and intermediate aquifers.
- Consideration of the hydraulic control necessary for both higher chromium (Cr) mass and volumetric flux within the intermediate water-bearing zone.
- The expected contrast in hydraulic conductivity between the intermediate and deep water-baring zones that may require discretely-screened remediation wells to address both intervals.

Existing information from Site 114 has been utilized to develop the Phase I conceptual well network, with confirmatory testing activities detailed in Section 2.5 intended to reduce uncertainties associated with the above listed observations and support final construction needs.

## Model Development and Calibration

The simulation program MODFLOW was selected for the construction of the numerical groundwater flow model at the site. MODFLOW is a publicly available groundwater flow simulation program developed by the U.S. Geological Survey (McDonald and Harbaugh 1988). MODFLOW simulates transient or steady-state, saturated groundwater flow in three dimensions. The program is designed to simplify the specification of boundary conditions by designing the data input to align with common field variables. The boundary conditions supported by MODFLOW include specified head, precipitation recharge, injection or extraction wells, evapotranspiration, horizontal flow barriers, drains, and rivers or streams. Aquifers simulated by MODFLOW can be confined, unconfined, or convertible between conditions. For the site, which consists of a heterogeneous geologic system with variable unit thicknesses and boundary conditions, MODFLOW's three-dimensional capability and boundary condition versatility are essential for the proper simulation of groundwater flow conditions.

MODFLOW uses the method of finite differences to solve the equations of groundwater flow. Using a block-centered finite-difference approach, MODFLOW replaces the continuous system represented by the equations of flow with a system of discrete blocks in space. The solution of the finite-difference equations

produces time-varying values of hydraulic head at each of the discrete points representing the real aquifer system.

The model extents are limited to the Site 114 boundary that follows the perimeter sheet pile walls as they effectively hydraulically control the majority of the site. The model is composed of four vertical layers that discretely represent the shallow fill, meadow mat, intermediate, and deep aquifers. The base of the model represents the contact between the bottom of the deep aquifer and the underlying till and/or bedrock. The thickness of each model layer was initialized based upon hydrogeologic unit contacts identified in site boring logs, geophysical surveys, and interpolated cross-sections. Hydraulic parameters, such as hydraulic conductivity and recharge, were assigned within ranges of observed values based on site slug tests, aquifer tests, and literature values. Model boundary conditions include no-flow cells to represent the perimeter sheet pile walls, hydraulic flow boundaries to represent interior sheet pile walls, head boundaries to represent the portions of the site perimeter where the existing sheet pile walls do not fully extend to the underlying till and/or bedrock, and wells to represent the proposed remedial injection and extraction wells. Figures showing the flow model construction, calibration, and results are presented in **Figure 1** shows the simulated model domain extents and boundary conditions. The model was first qualitatively calibrated to the anticipated steady state conditions of the static site groundwater elevations, accounting for a 3-foot head difference from shallow to intermediate water-bearing zones across the meadow mat. Remedy simulations were then conducted transiently to evaluate the temporal change in heads during remedy operations.

Upon completion of the construction of the groundwater flow model, the solute transport modeling was performed using the modular three-dimensional transport model referred to as Modular 3-D Transport Model (MT3D). MT3D was originally developed by Zheng (1990) at S.S. Papadopulos & Associates, Inc. for the Robert S. Kerr, Environmental Research Laboratory of the U.S. Environmental Protection Agency (USEPA). The MT3D code uses the flows computed by MODFLOW in its transport calculations. MT3D also uses the same finite-difference grid structure and boundary conditions as MODFLOW, simplifying the effort to construct the solute transport model. MT3D is regularly updated (Zheng and Wang 1999), and the most recent version is referred to in the literature as MT3D Multi-Species (MT3DMS), where MS denotes the Multi-Species structure for accommodating add-on reaction packages. MT3DMS has a comprehensive set of options and capabilities for simulating advection, dispersion/diffusion, and chemical reactions of contaminants in groundwater flow systems under a range of hydrogeologic conditions. Recent updates to MT3DMS have included the dual-domain formulation and the ability to incorporate site-specific processes.

To represent the development of the reactive zone over time, the injection of a carbon substrate was simulated. The carbon substrate is not readily sorbed in the subsurface so there was no sorption parameter simulated. Based on the pilot test data, a conservative (i.e., faster) carbon degradation half-life of 20-days was simulated. The solute transport model is simulated as dual domain with an average mobile porosity of 10% and immobile porosity of 20%. A constant organic carbon injection concentration of 100 milligrams per liter (mg/L) was assumed so it can be easily scaled to represent different proposed injection concentrations. While constant carbon delivery was assumed for model purposes, it is anticipated that Phase I operations will rely on a pulsed carbon delivery program. Phase I carbon pulsing will include total organic carbon (TOC) concentrations between 1,000 to 7,000 mg/L over a subset of the operational time, so the 100 mg/L assumption used in the model is considered a low estimate of total Phase I delivery for conservative purposes.

## Remedy Simulation

Once constructed, the groundwater flow and solute transport model was utilized to iterate a combination of remedial well infrastructure, flow rates, and operational sequencing to establish an optimal remedy design. The final design consists of 35 injection well locations and 7 extraction well locations as shown on **Figure 2**. The injection wells are located on the southern half of Site 114 within the Phase I area. The southern well network includes variable sequencing that utilizes wells operated for injection purposes and wells that are shifted from extraction to injection purposes to control hydraulic mounding during different steps of the Phase I program. Dedicated Phase I extraction wells are located on the northern half of Site 114 and are in areas of highest observed Cr concentrations to maximize mass removal. At each well location, the well location was simulated to allow access to both model layers 3 and 4 (intermediate and deep aquifers, respectively). This process allows development of a total number of well locations for the PBR and allows for modification of the actual number of discrete well intervals necessary based on observations pertaining to the local aquifer heterogeneity, saturated thickness, and Cr concentrations during confirmatory sampling and construction activities.

Iterations of the site-specific injection and extraction flow rates and the Phase I well network indicated that a combined total injection and extraction rate of 17 gallons per minute (gpm) can achieve organic carbon distribution within the southern area of Site 114 during the first 6-month period. While this flow rate was acceptable for modelling purposes, it is anticipated that wells will behave differently based on unique geologic heterogeneities in different areas of the site. It is also assumed that where achievable, injection and extraction rates will be increased to maximize the total quantity of groundwater extracted and injected, within permit specifications. The design simulation entails initiations of injection activities within the southern end of Site 114 followed by gradual northward shifts in operating wells during 8-week cycles. This modelled sequencing allows for complete carbon coverage and reactive zone development for Cr reduction throughout the Phase I injection area. **Figure 2** shows the simulated well locations and rates over the simulated 6-month period. **Figure 3** shows the active injection and extraction wells locations during each of the three stages of remedy operation.

The resulting reactive zone development at weeks 8, 16, and 26 (days 56, 112, and 182) is shown on **Figure 4**. This reactive zone is defined as the extent of the simulated relative injected carbon substrate concentration above a relative concentration of 0.1%, which reflects the combined influence of both TOC distribution and reduced groundwater geochemical extent. This allows for the simulated carbon concentration results to be directly scalable to the final proposed injection concentrations to evaluate carbon concentration distributions during active remedy conditions. The simulated reactive zone development indicates that within a 6-month period, the Phase I area will be effectively addressed with either available TOC or reduced metals – both of which work to reduce Cr.

To evaluate the drawdown and mounding, the simulated active remedy transient water levels were also reviewed in detail. The simulated steady-state water level starting conditions for model layer 1 (shallow fill) and model layer 3 (intermediate aquifer) are shown on **Figure 5**. The active remedy transient simulated water levels for model layers 1 and 3 at weeks 8, 16, and 26 are shown on **Figures 6** and **7**, respectively. These transient water levels were then directly compared to the starting steady state water levels to determine the relative hydraulic mounding and drawdown that occurs during remedy operation. **Figures 8** and **9** show the relative changes in water levels over time for model layers 1 and 3, respectively. The maximum hydraulic mounding is approximately 3.5 feet in model layer 3 and 1.5 feet in model layer 1. This indicates that simulated mounding water levels will not exceed land surface and that a neutral to downward vertical gradient is preserved between the shallow fill and the underlying intermediate and deep aquifers.

## Model Update

Through additional hydrogeologic testing, hydraulic monitoring, and water quality monitoring during confirmatory testing activities, remedial well infrastructure installation, and Phase I operation, the groundwater flow and solute transport model can be updated periodically to more accurately reflect encountered conditions. This will allow the model to be further used as predictive tools to evaluate remedy performance and assist in providing recommendations for optimization of the remedial system (i.e., injection/extraction rates and frequency, carbon dosing frequency and concentration, and need for provisional wells).

As with all mathematical models of natural systems, the groundwater flow and solute transport model is limited by factors, such as scale, accuracy of the estimated hydraulic properties and/or boundary conditions, and the underlying simplifications and assumptions incorporated into the model. These factors result in limitations to the model's appropriate uses and to the interpretations that may be made of the simulation results. The proposed remedy design and operation were based on the conceptual site model, calibrated groundwater flow model, the predictive solute transport modeling, and professional expertise related to similar remedial designs and modelling bases. This model is intended to serve as the initial basis for IRM design, considering that additional data collection prior to and during the Phase I implementation will all be used to adapt and refine treatment operations.

## Figures

Figure 1. Model Domain Extents and Boundary Conditions

Figure 2. Proposed Well Layout

Figure 3. Simulated Well Operation Schedule

Figure 4. Simulated Reactive Zone Development

Figure 5. Simulated Initial Steady State Water Levels

Figure 6. Simulated Transient Water Levels in Model Layer 1 (Shallow Fill)

Figure 7. Simulated Transient Water Levels in Model Layer 3 (Intermediate Aquifer)

Figure 8. Simulated Change in Water Levels in Model Layer 1 (Shallow Fill)

Figure 9. Simulated Change in Water Levels in Model Layer 3 (Intermediate Aquifer)

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McDonald, M. G., and A. W. Harbaugh, 1988. *A Modular Three-Dimensional Finite-Difference Ground-Water Flow Model, Techniques of Water-Resources Investigations, Book 6, Chapter A1*. U. S. Geological Survey. Reston, Virginia.

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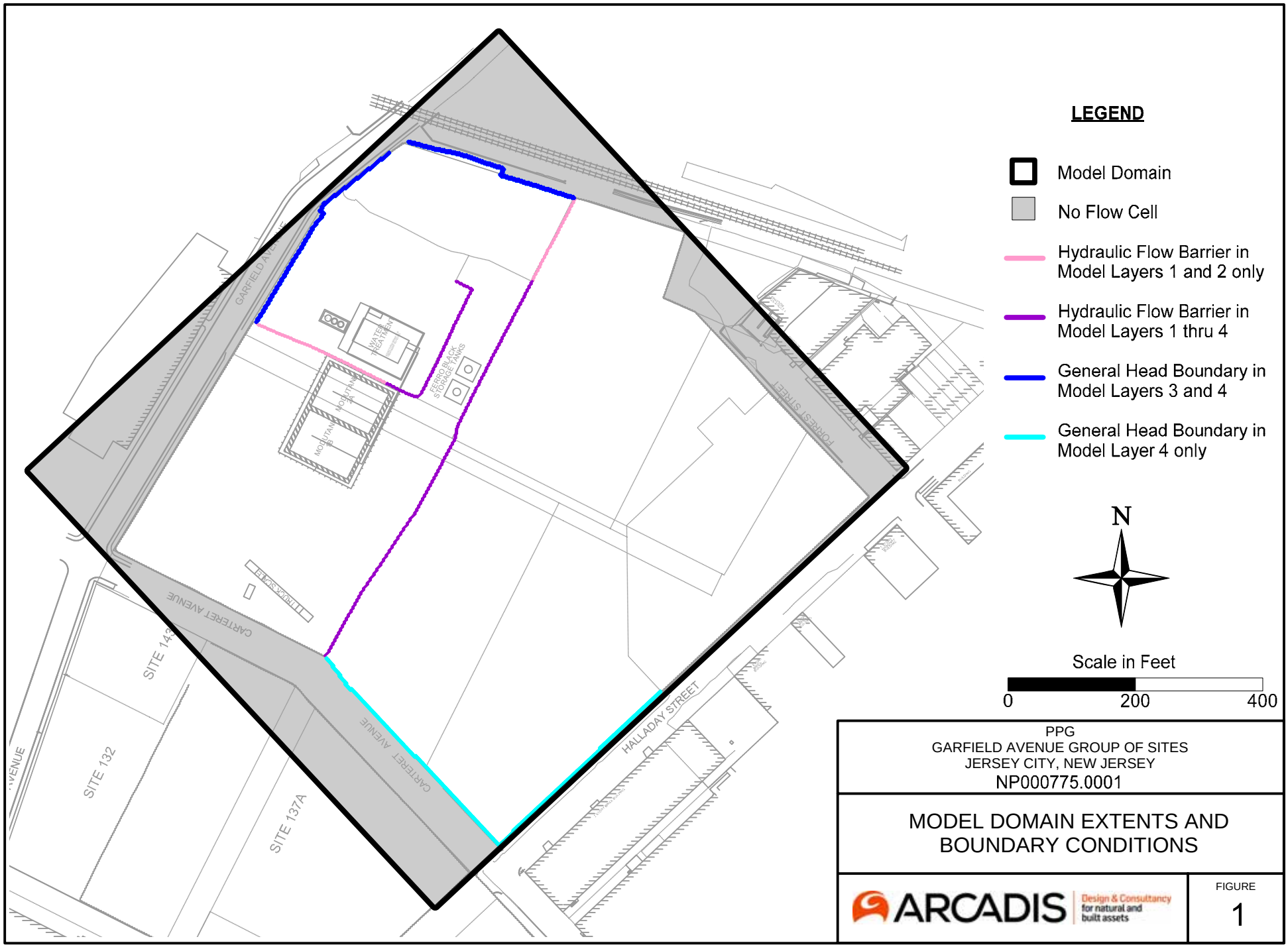


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# MODEL DOMAIN EXTENTS AND BOUNDARY CONDITIONS

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FIGURE
1

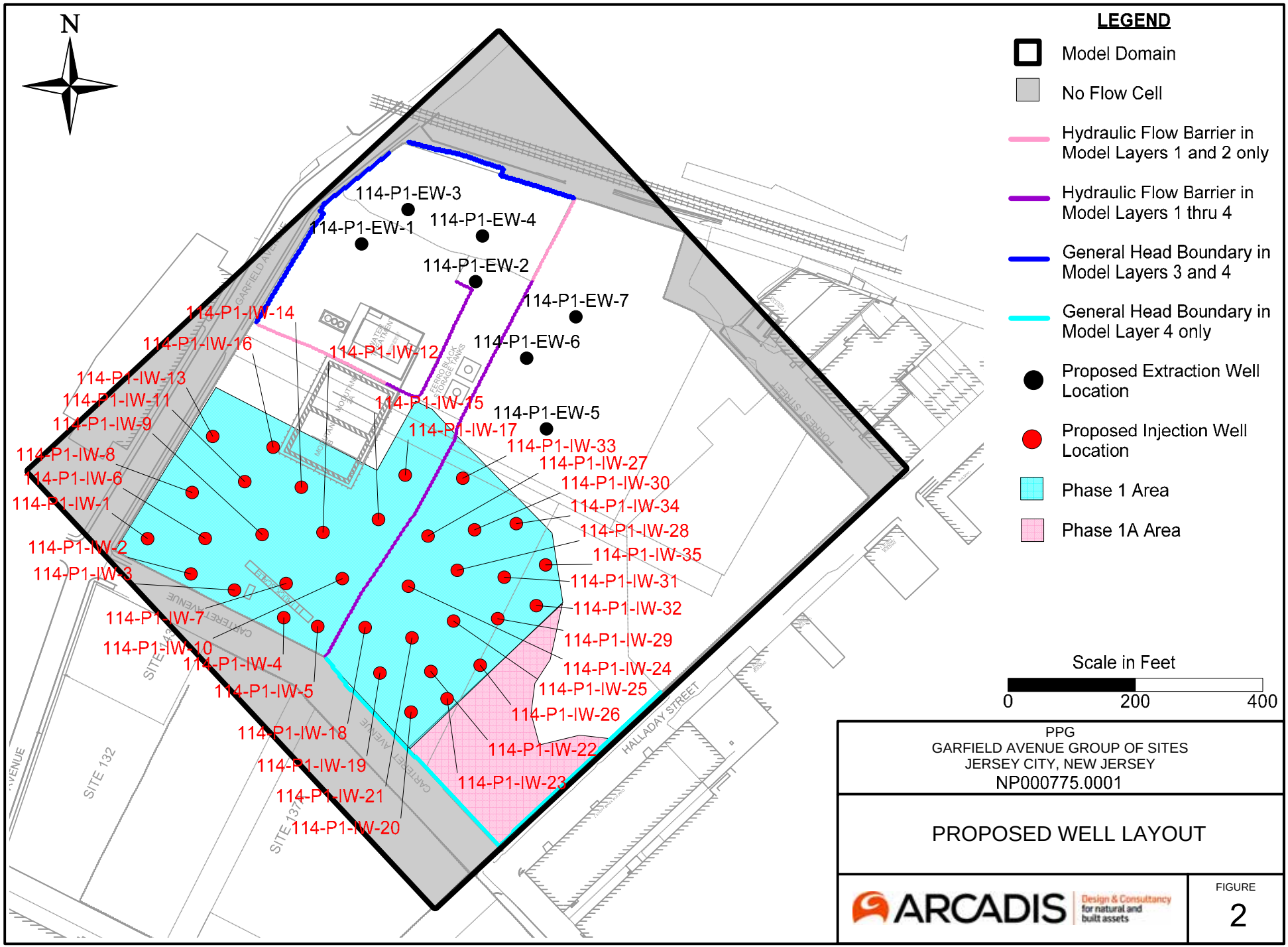
N
LEGEND
Model Domain
No Flow Cell
Hydraulic Flow Barrier in Model Layers 1 and 2 only
Hydraulic Flow Barrier in Model Layers 1 thru 4
General Head Boundary in Model Layers 3 and 4
General Head Boundary in Model Layer 4 only
Proposed Extraction Well Location
Proposed Injection Well Location
Phase 1 Area
Phase 1A Area
114-P1-EW-3
114-P1-EW-1
114-P1-EW-4
114-P1-EW-2
114-P1-EW-7
114-P1-EW-6
114-P1-EW-5
114-P1-IW-14
114-P1-IW-16
114-P1-IW-12
114-P1-IW-13
114-P1-IW-11
114-P1-IW-9
114-P1-IW-15
114-P1-IW-17
114-P1-IW-8
114-P1-IW-6
114-P1-IW-1
114-P1-IW-2
114-P1-IW-3
114-P1-IW-7
114-P1-IW-10
114-P1-IW-4
114-P1-IW-5
114-P1-IW-18
114-P1-IW-19
114-P1-IW-21
114-P1-IW-20
114-P1-IW-33
114-P1-IW-27
114-P1-IW-30
114-P1-IW-34
114-P1-IW-28
114-P1-IW-35
114-P1-IW-31
114-P1-IW-32
114-P1-IW-29
114-P1-IW-24
114-P1-IW-25
114-P1-IW-26
114-P1-IW-22
114-P1-IW-23
GARFIELD AVENUE
CARTERET AVENUE
HALLADAY STREET
FOREST STREET
SITE 132
SITE 137
Scale in Feet
0
200
400
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PROPOSED WELL LAYOUT
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FIGURE
2

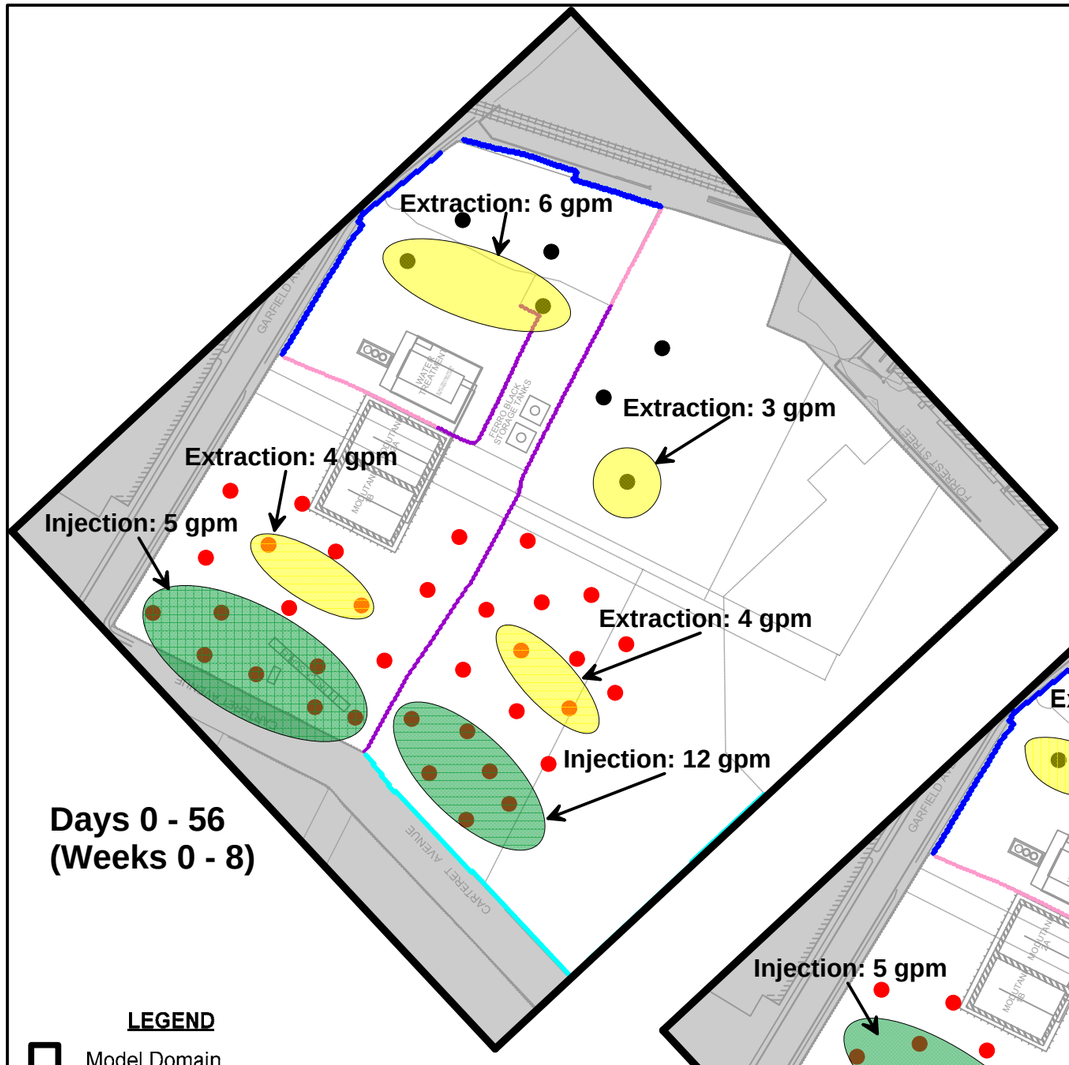


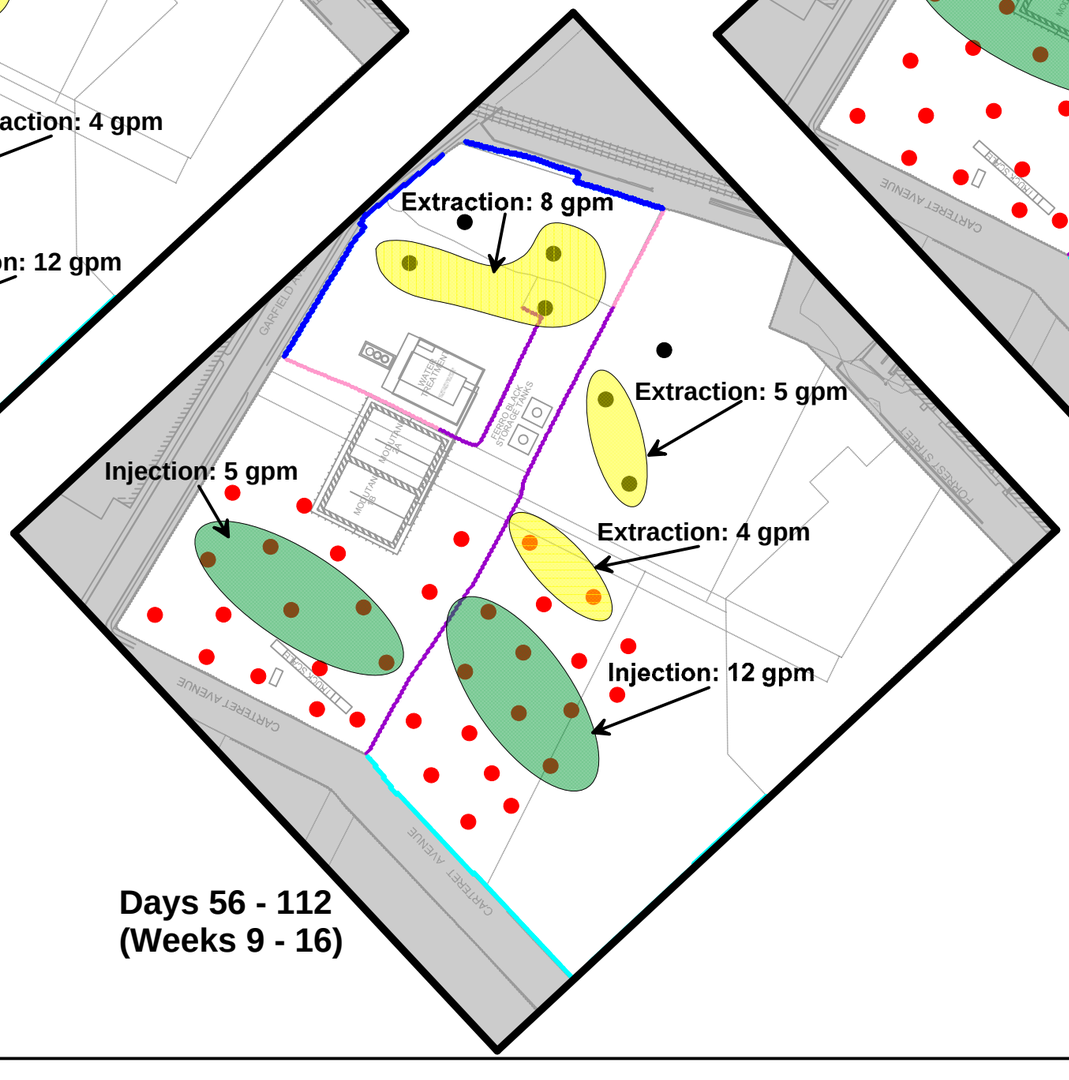


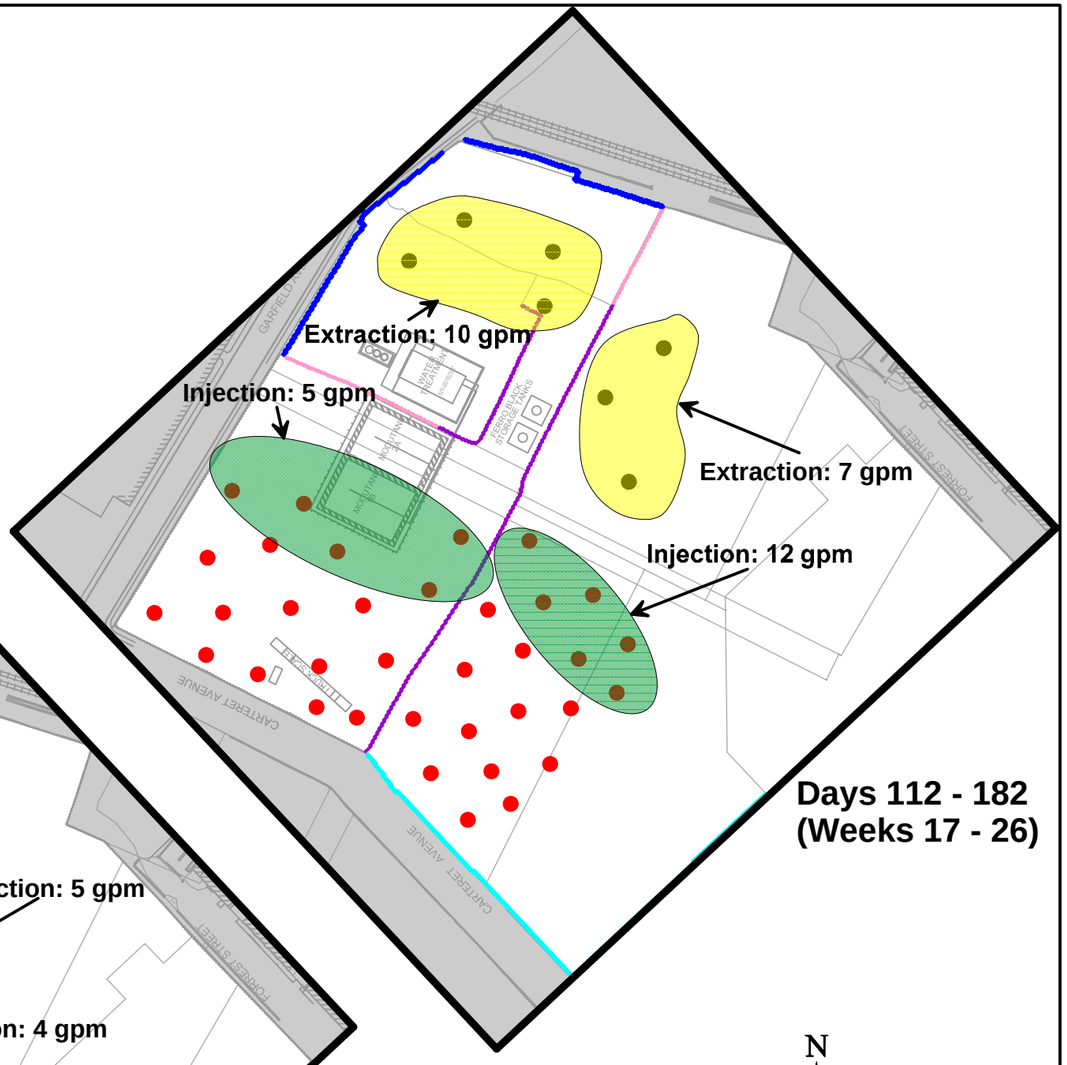


**LEGEND**

- Model Domain
- No Flow Cell
- Hydraulic Flow Barrier in Model Layers 1 and 2 only
- Hydraulic Flow Barrier in Model Layers 1 thru 4
- General Head Boundary in Model Layers 3 and 4
- General Head Boundary in Model Layer 4 only
- Proposed Extraction Well Location
- Proposed Injection Well Location
- Active Extraction Well Locations
- Active Injection Well Locations

N

Scale in Feet

0 200 400

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SIMULATED WELL OPERATION SCHEDULE

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FIGURE
3

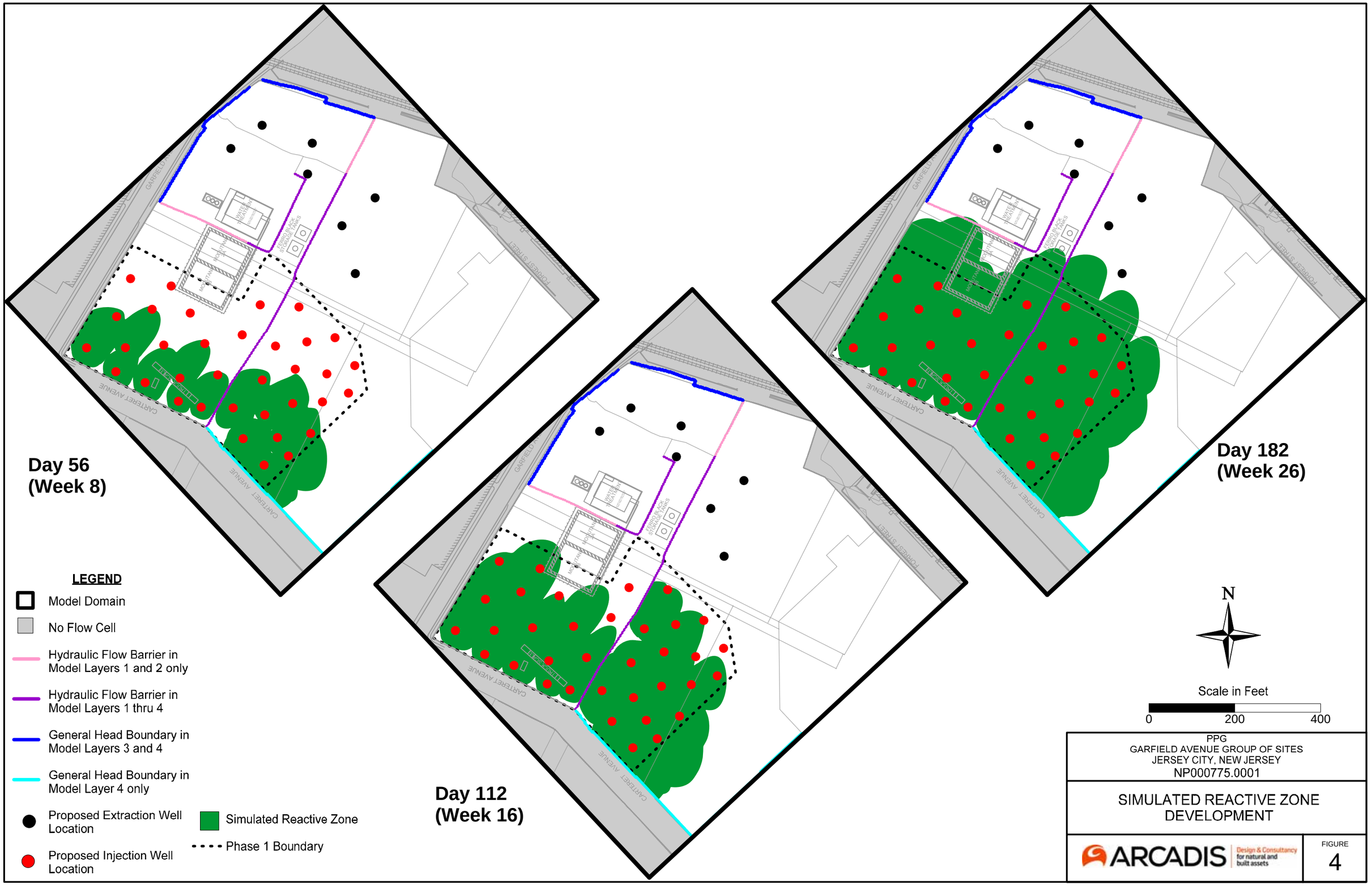
Day 56
(Week 8)
Day 112
(Week 16)
Day 182
(Week 26)
LEGEND
Model Domain
No Flow Cell
Hydraulic Flow Barrier in Model Layers 1 and 2 only
Hydraulic Flow Barrier in Model Layers 1 thru 4
General Head Boundary in Model Layers 3 and 4
General Head Boundary in Model Layer 4 only
Proposed Extraction Well Location
Proposed Injection Well Location
Simulated Reactive Zone
Phase 1 Boundary
N
Scale in Feet
0
200
400
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SIMULATED REACTIVE ZONE DEVELOPMENT
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FIGURE
4

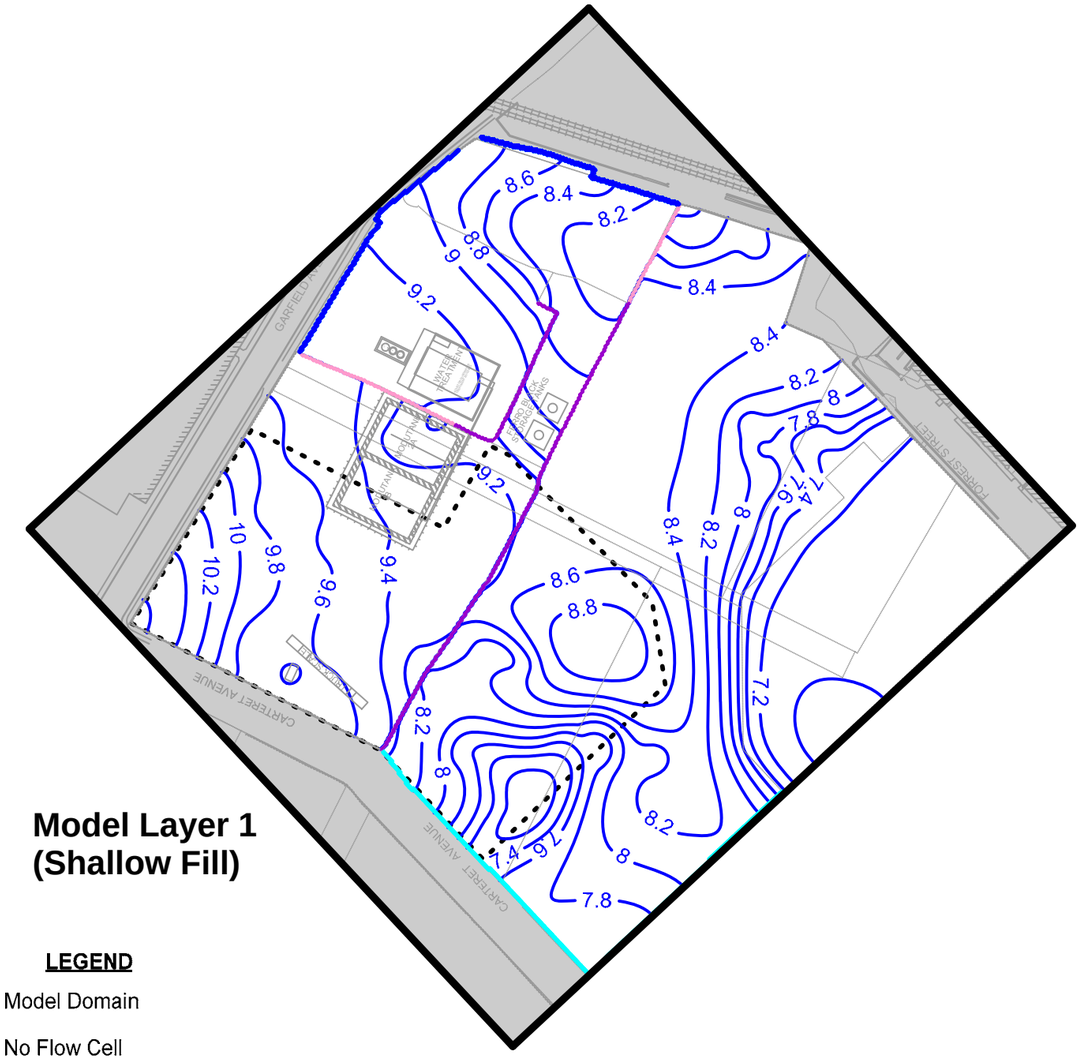


## Model Layer 1 (Shallow Fill)

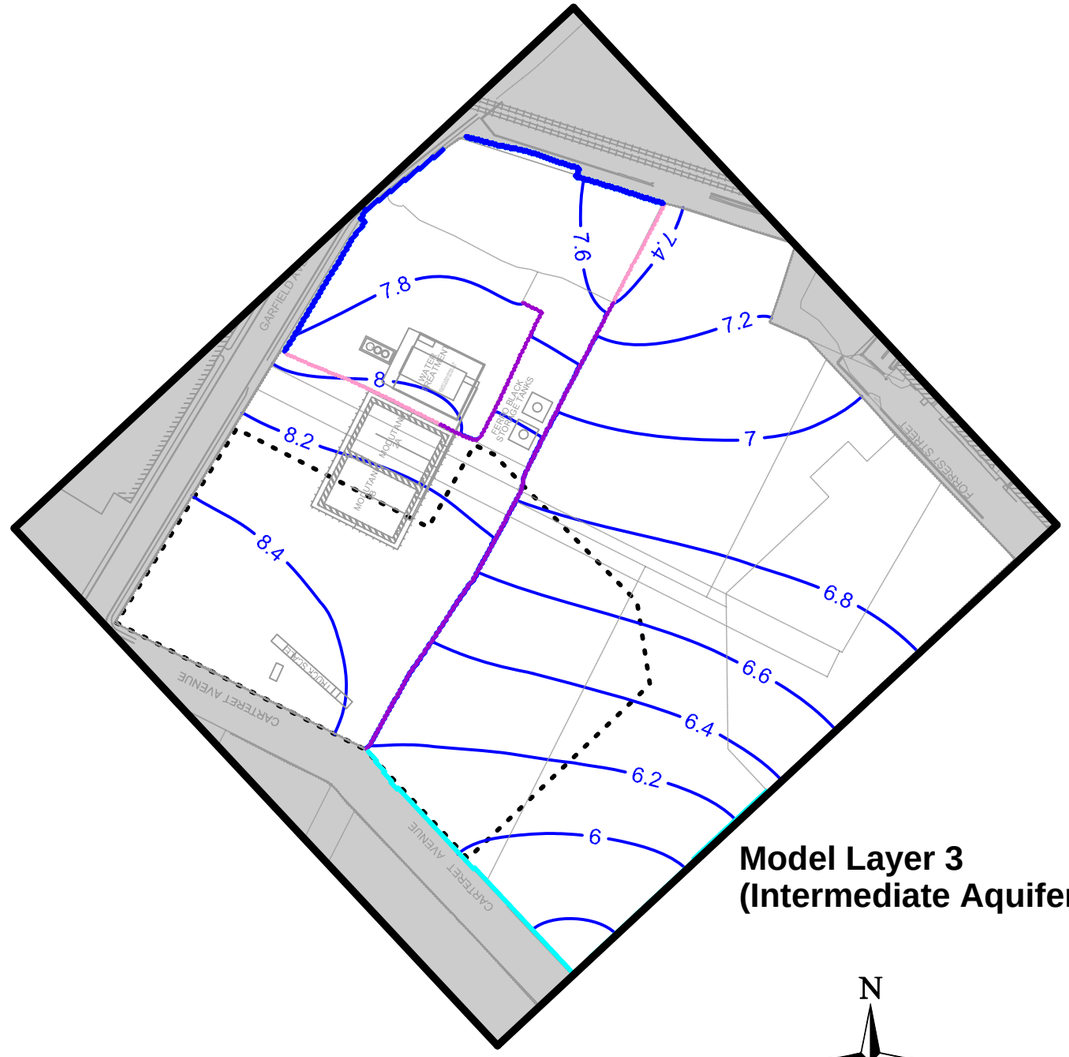


## Model Layer 3 (Intermediate Aquifer)

**LEGEND**

- Model Domain
- No Flow Cell
- Hydraulic Flow Barrier in Model Layers 1 and 2 only
- Hydraulic Flow Barrier in Model Layers 1 thru 4
- General Head Boundary in Model Layers 3 and 4
- General Head Boundary in Model Layer 4 only
- — 5 — Simulated Water Level Elevation (ft msl)
- Phase 1 Boundary

N

Scale in Feet

0 200 400

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SIMULATED INITIAL STEADY STATE WATER LEVELS

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FIGURE 5

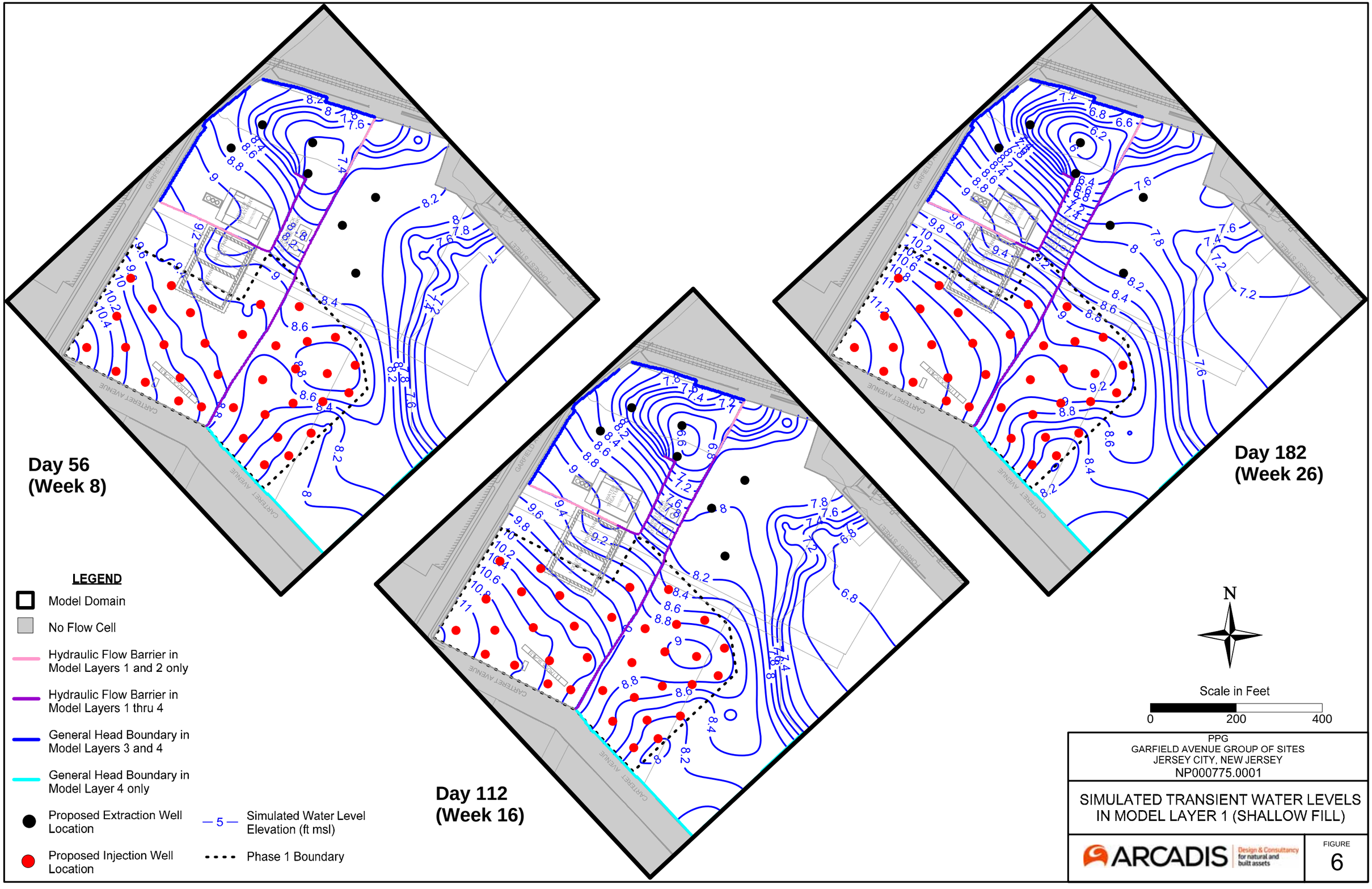


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SIMULATED TRANSIENT WATER LEVELS IN MODEL LAYER 1 (SHALLOW FILL)

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FIGURE
6

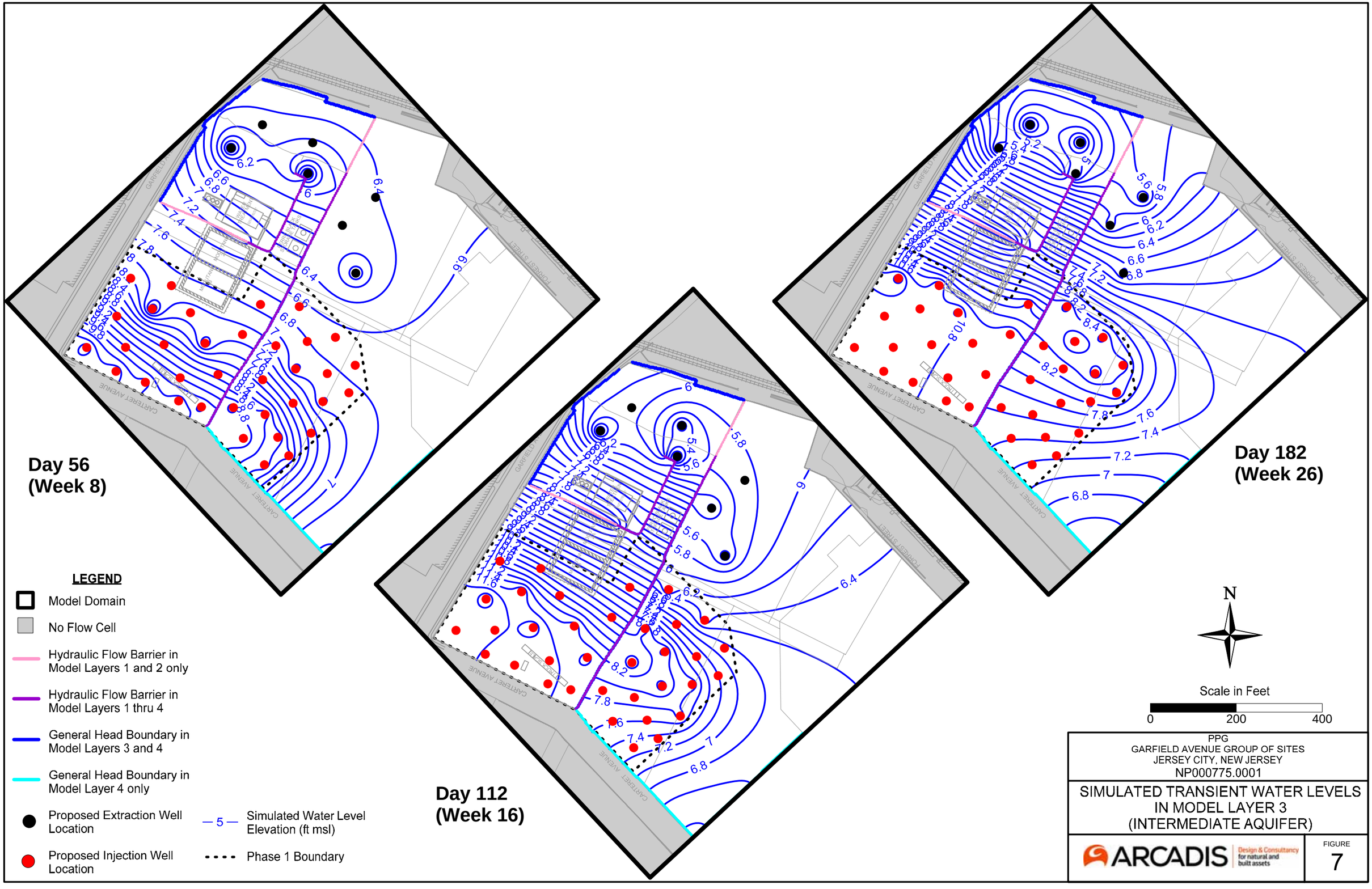


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SIMULATED TRANSIENT WATER LEVELS IN MODEL LAYER 3 (INTERMEDIATE AQUIFER)

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FIGURE 7

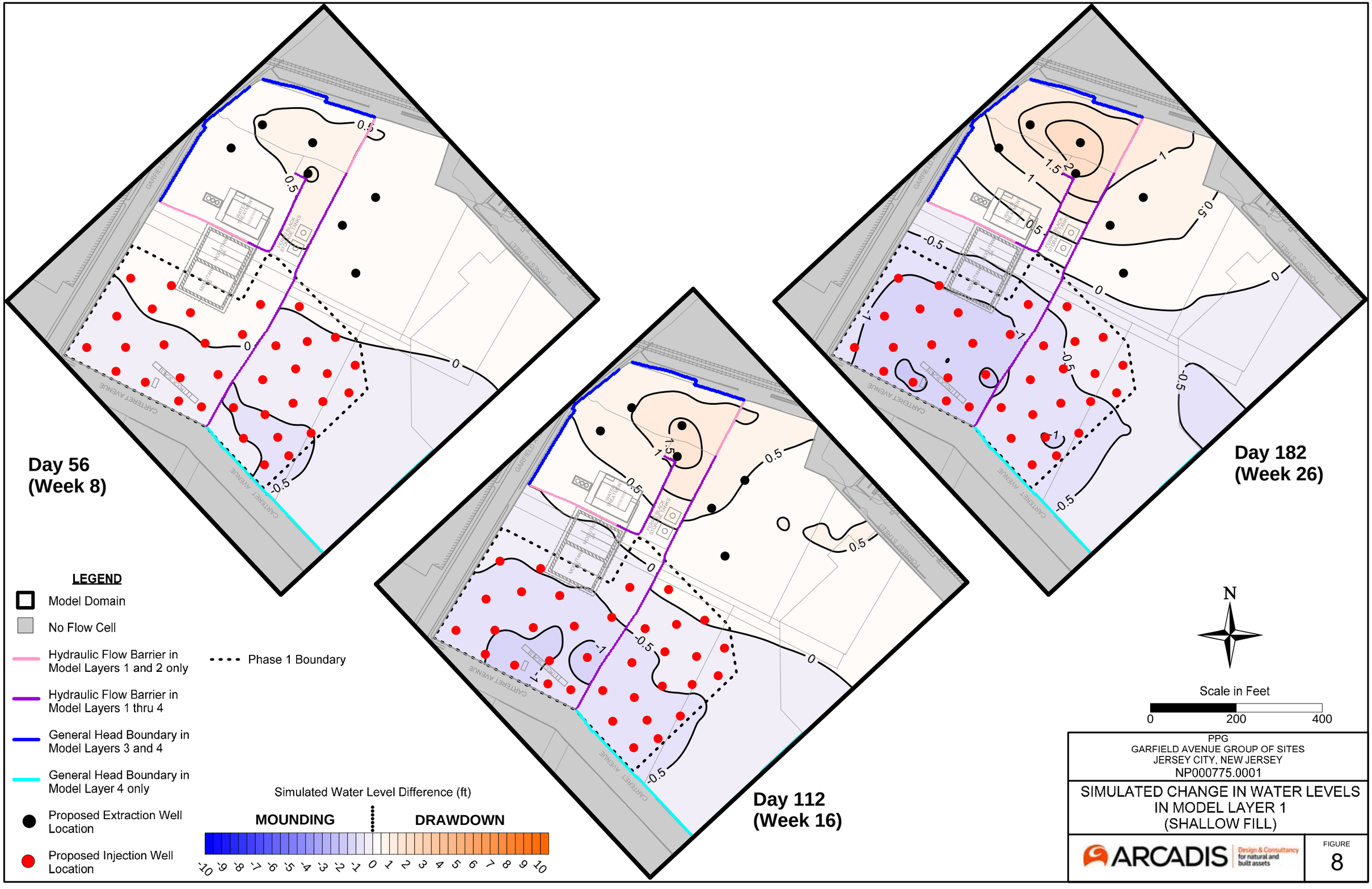
Day 56
(Week 8)
Day 112
(Week 16)
Day 182
(Week 26)
LEGEND
Model Domain
No Flow Cell
Hydraulic Flow Barrier in Model Layers 1 and 2 only
Hydraulic Flow Barrier in Model Layers 1 thru 4
General Head Boundary in Model Layers 3 and 4
General Head Boundary in Model Layer 4 only
Proposed Extraction Well Location
Proposed Injection Well Location
Phase 1 Boundary
Simulated Water Level Difference (ft)
MOUNDING
DRAWDOWN
-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10
N
Scale in Feet
0
200
400
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SIMULATED CHANGE IN WATER LEVELS IN MODEL LAYER 1 (SHALLOW FILL)
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FIGURE
8

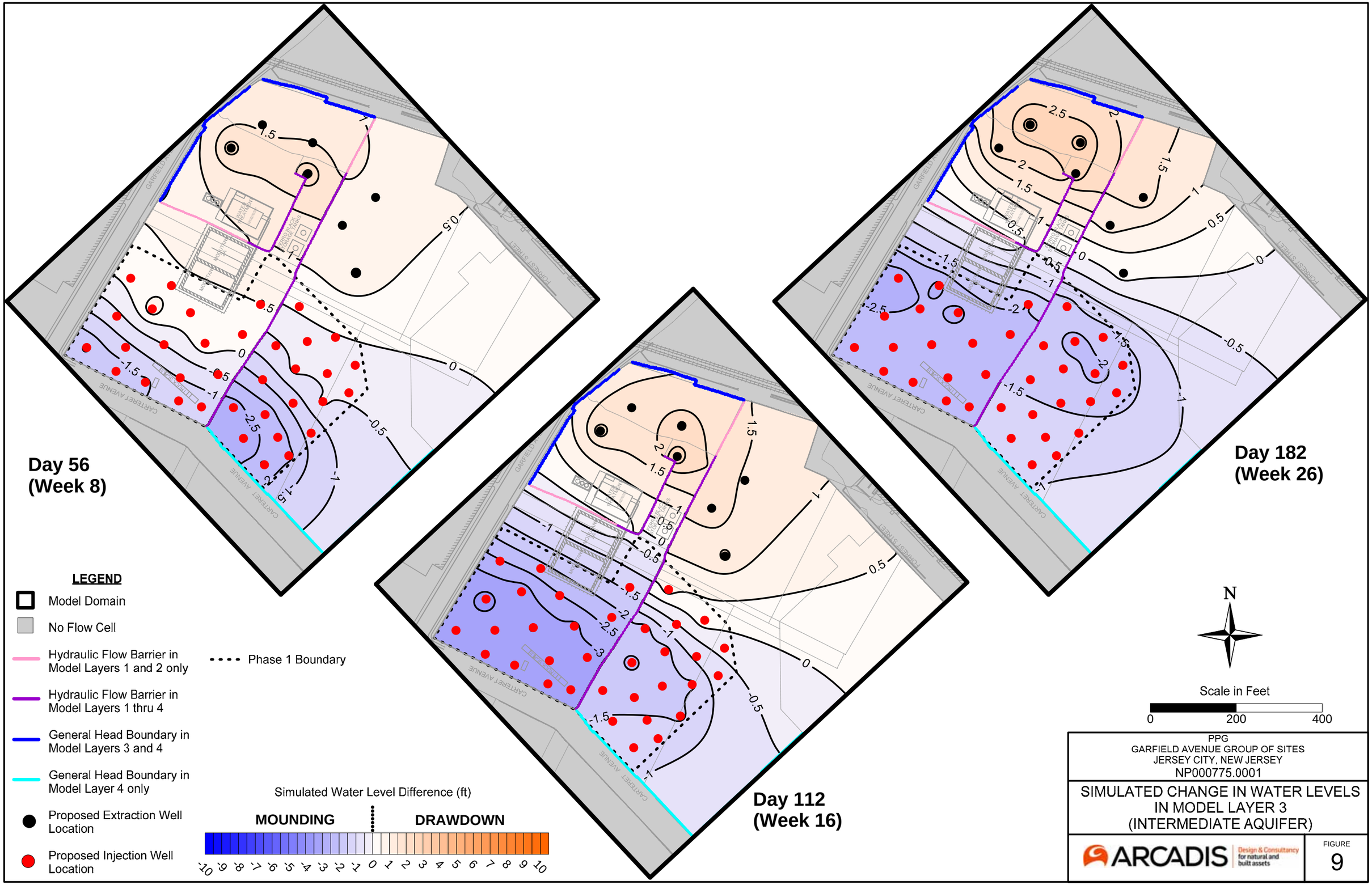
Day 56
(Week 8)
Day 112
(Week 16)
Day 182
(Week 26)
LEGEND
Model Domain
No Flow Cell
Hydraulic Flow Barrier in Model Layers 1 and 2 only
Hydraulic Flow Barrier in Model Layers 1 thru 4
General Head Boundary in Model Layers 3 and 4
General Head Boundary in Model Layer 4 only
Proposed Extraction Well Location
Proposed Injection Well Location
Phase 1 Boundary
Simulated Water Level Difference (ft)
MOUNDING
DRAWDOWN
-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10
N
Scale in Feet
0
200
400
PPG
GARFIELD AVENUE GROUP OF SITES
JERSEY CITY, NEW JERSEY
NP000775.0001
SIMULATED CHANGE IN WATER LEVELS IN MODEL LAYER 3 (INTERMEDIATE AQUIFER)
ARCADIS
Design & Consultancy for natural and built assets
FIGURE
9

# APPENDIX E

## Safety Data Sheets for Reagents and Substrates

**MATERIAL SAFETY DATA SHEET**
**MOLASSES/MOLASSES BLENDS/BINDERS**

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

| Chemical Name | Chemical Formula | Molecular Weight |
|---|---|---|
| N/A | Mixture of liquid Agricultural commodities | No data |

Trade Name – Molasses/Molasses Blends

Synonyms: DOT Identification No.

Liquid animal supplement: N/A

Company Identification:
Westway Trading Corporation
365 Canal Street, Suite 2900
New Orleans, Louisiana 70130
(504) 525-9741

## 2. COMPOSITION, INFORMATION ON INGREDIENTS

| Component(s), Chemical Name | CAS Registry No. | %(Approx.) | ACGIH TLV-TWA |
|---|---|---|---|
| Proprietary **See ingredient tag** | NA | No data | No data |

## 3. HAZARDS IDENTIFICATION

Emergency Overview

This material should be stored in a vented tank designed to contain a material with a specific gravity of 1.3 or greater. Material can ferment if excessive moisture contamination is allowed. Fermentation can yield carbon dioxide with possible traces of ethanol or volatile fatty acids (e.g. acetic, propionic, lactic, or butyric) and if exposed to a spark or flame may result in an explosion. These conditions should be avoided. If maintenance of tank requires entry by personnel, OSHA's Confined Space standard (29CFR1910.146) shall be complied with. If welding is to be performed, the tank should be gas freed and only certified welders shall perform welding operations.

Potential Health Effects

Eyes - Mild irritant

Skin - None

Inhalation – Insufficient oxygen may be present in vessels containing the product due to the generation of carbon monoxide during fermentation

## 4. FIRST AID MEASURES

Eyes: Flush eyes for 15 minutes.

Skin: Wash with soap and water.

Ingestion: No data

## 5. FIRE FIGHTING MEASURES

| Flashpoint (Method used) | Flammable Limits in Air |
|---|---|
| Non-flammable<br>Non-combustible | Non-flammable<br>Non-combustible |

Extinguishing Agents - NA

Unusual Fire and Explosion Hazards – Fermentation occurs when diluted with water and is accelerated by heat. During fermentation, carbon monoxide with possible traces of ethanol or volatile fatty acids (e.g., acetic, propionic, lactic, or butyric) is given off, which produces inhalation hazards and possible explosion hazards.

## 6. ACCIDENTAL RELEASE MEASURES

Steps to be Taken in Case Material is Released or Spilled

Small spills - Stop the source of the spill. Recover as much product as possible for reuse. Absorb remaining spill and dispose solids in waste container.

Large spills - Stop the source of the spill. Create diversionary structures to minimize the extent of the release. Prevent the release from entering a waterway or sewer. Recover useable product. Absorb remaining spill and dispose of at an approved facility such as a municipal landfill or land application site.

## 7. HANDLING AND STORAGE

This material should be stored in a vented tank designed to contain a material with a specific gravity of 1.3 or greater. Material can ferment if excessive moisture contamination is allowed.

## 8. EXPOSURE CONTROLS, PERSONAL PROTECTION

Respiratory Protection - None

Ventilation – Provide adequate ventilation to prevent accumulation of vapors.

Skin Protection - Rubber gloves

Eye Protection - Safety glasses

Hygiene - Wash any exposed area promptly with soap and water. Launder contaminated clothing.

Other Control Measures - None

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| Appearance<br>Dark brown syrupy liquid | Odor<br>Sweet |
| Physical State<br>Liquid | Specific Gravity<br>1.45 |
| Boiling Point<br>Very high | Freezing/Melting Point<br>Varies |
| Vapor Pressure<br>Low | % Volatile, by Volume<br>No data |
| Evaporation Rate<br>No data | Vapor Density in Air<br>Water vapor only |
| Solubility in Water<br>Soluble | pH<br>2.25 to 6.0 |

## 10. STABILITY AND REACTIVITY

Chemical Stability - Stable

Conditions to Avoid – Excess moisture or heat. Unventilated containers.

Incompatibility with Other Materials - Reacts with concentrated nitric acid or concentrated Sulphuric acid. Ferments when diluted with water.

Hazard Decomposition Products – Carbon monoxide, alcohol or fatty acid vapors

Hazardous Polymerization - NA

## 11. ECOLOGICAL INFORMATION

Prevent releases to land or water. Results in high Biological Oxygen Demand (BOD) and potential oxygen depletion of aquatic systems.

## 12. DISPOSAL CONSIDERATIONS

Dispose of waste material at an approved municipal landfill or land application site.

## 13. TRANSPORT INFORMATION

Hazardous Materials Description/ Proper Shipping Name - NA

DOT Hazard Class - NA

DOT Identification Number - NA

X  This product is not a DOT hazardous material.

## 14. REGULATORY INFORMATION

Discharges to a water of the U.S. are regulated by the Environmental Protection Agency.

## 15. OTHER INFORMATION

None.

Date of Preparation: 3/15/96 **REVISED: 10/12/01**

Prepared by: Jane Besch, Director - HSE

Disclaimer:
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EOS Remediation, LLC

# EOS PRO

## SAFETY DATA SHEET

| Section 1: Identification | |
|---|---|
| Product Name: | **EOS Pro** |
| Chemical Description: | Mixture; vegetable oil emulsion |
| Manufacturer: | EOS Remediation<br>1101 Nowell Road<br>Raleigh, NC 27607<br>(P): 919-873-2204<br>www.eosremediation.com |
| Recommended Use: | Groundwater bioremediation (environmental applications) |
| Restricted Use: | Not for human consumption. |
| 24-Hour Emergency Contact: | ChemTel: United States<br>(P): 800-255-3924<br>ChemTel: International<br>(P): 813-248-0585 |

| Section 2: Hazard(s) Identification | |
|---|---|
| Hazard Classification: | Irritant (skin and eye) |
| Signal Word: | Warning |
| Hazard Statement(s): | Potential eye and skin irritant. |
| Pictograms: |  |
| Precautionary Statement(s): | Not for human consumption. Do not store near excessive heat or oxidizers. Avoid contact with eyes and skin. Wear protective gloves and eye protection. |

| Section 3: Composition/Information on Ingredients | | |
|---|---|---|
| **Common Name(s)** | **CAS NO.** | **% by Weight** |
| Soybean Oil | 8001-22-7 | 59.8 |
| Food Grade Emulsifiers<br>Trade Secret[1,2] | Proprietary | 10 |
| Soluble Substrates<br>Trade Secret[1,2] | Proprietary | 4 |
| Food Additives/Preservatives<br>Trade Secret[1] | Proprietary | 0.3 |
| Nutrients/Extracts<br>Trade Secret[1,2] | Proprietary | 1 |
| Water | 7732-18-5 | Balance |

1 – The precise composition of this product is proprietary information. A more complete disclosure will be provided to a physician in the event of a medical emergency.

2 – The soluble substrates and emulsifiers are generally recognized as safe for food contact.

| Section 4: First-Aid Measures | |
|---|---|
| **Routes of Exposure** | **Emergency First-Aid Procedures** |
| Inhalation | Remove to fresh air. |
| Eye Contact | Flush with water for 15 minutes; if irritation persists see a physician. |
| Skin Contact | Wash with mild soap and water. |
| Ingestion | Product is non-toxic. If nausea occurs, induce vomiting and seek medical attention. |

| Section 5: Fire-Fighting Measures | |
|---|---|
| Extinguishing Media: | $CO_2$, foam, dry chemical<br>Note: Water, fog and foam may cause frothing and spattering. |
| Special Fire Fighting Procedures: | Wear self-contained breathing apparatus and chemical resistant clothing. Use water spray to cool fire exposed containers. |
| Fire Hazard(s): | Burning will cause oxides of carbon. |

| Section 6: Accidental Release Measures | |
|---|---|
| Personal Precautions: | Avoid contact with eyes and skin. Do not consume. |
| Emergency Procedures: | N/A |
| Methods & Materials used for Containment: | Compatible granular absorbent |
| Cleanup Procedures: | Spread compatible granular absorbent over spill area and sweep using broom and pan; dispose in appropriate receptacle. Clean area with water. |

| Section 7: Handling and Storage | |
|---|---|
| Safe Handling & Storage: | Do not store near excessive heat or oxidizers. |
| Other Precautions: | Consumption of food and beverages should be prevented in work area where product is being used. After handling product, always wash hands and face thoroughly with soap and water before eating, drinking, or smoking. |

| Section 8: Exposure Controls/Personal Protection | | |
|---|---|---|
| **Exposure Limits** | | |
| OSHA PEL: | NE | |
| ACGIH TLV: | NE | |
| NIOSH REL: | NE | |
| **Personal Protective Measures** | | |
| Respiratory Protection: | Not normally required. P95 respirator if aerosols might be generated. | |
| Hand Protection: | Protective gloves are recommended | |
| Eye Protection: | Recommended | |
| Engineering Measures: | Local exhaust ventilation if aerosols are generated | |
| Hygiene Measures: | Wash promptly with soap & water if skin becomes irritated from contact. | |
| Other Protection: | Wear appropriate clothing to prevent skin contact. | |

| Section 9: Physical and Chemical Properties | | | |
|---|---|---|---|
| Appearance: | White Liquid | Explosive Limits: | NE |
| Odor: | Vegetable Oil | Vapor Pressure: | NE |
| Odor Threshold: | NE | Vapor Density: | Heavier than air |
| pH: | Neutral | Relative Density: | 0.96-0.98 |
| Melting Point/Freezing Point: | Liquid at room temperature | Solubility: | Dispersible |
| Boiling Point: | 212°F (100°C) | Partition coefficient: | NE |
| Flash Point: | >300°F (149°C) | Auto-ignition Temperature: | NE |
| Evaporation Rate: | NE | Decomposition Temperature: | N/A |
| Flammability (solid, gas): | NE | Viscosity: | 500-1500 cP |

NE – Not Established

| Section 10: Stability and Reactivity | |
|---|---|
| Stability: | Stable |
| Incompatibility: | Strong acids and oxidizers |
| Hazardous Decomposition Products: | Thermal decomposition may produce oxides of carbon |
| Hazardous Reactions/Polymerization: | Will not occur |
| Conditions to Avoid: | None known |

| Section 11: Toxicological Information | | |
|---|---|---|
| Likely Routes of Exposure: | | Ingestion, dermal and eye contact |
| Signs and Symptoms of Exposure: | | None known |
| Health Hazards | | |
| | Acute: | Potential eye and skin irritant |
| | Chronic: | None known |
| Carcinogenicity | | |
| | NTP: | No |
| | IARC: | No |
| | OSHA: | No |

| Section 12: Ecological Information (non-mandatory) |
|---|
| There is no data on the ecotoxicity of this product. |

| Section 13: Disposal Considerations (non-mandatory) | |
|---|---|
| Waste Disposal Methods: | Dispose of according to Federal and local regulations for non-hazardous waste. Recycle, if practical. |

| Section 14: Transport Information (non-mandatory) |
|---|
| The product is not covered by international regulation on the transport of dangerous goods. |
| No transport warning required. |

| Section 15: Regulatory Information (non-mandatory) |
|---|
| N/A |

| Section 16: Other Information | |
|---|---|
| Date of Preparation: | 29 May 2014 |
| Last Modified Date: | 5 September 2014 |
| The information contained herein is based on available data and is believed to be correct. However, EOS Remediation, LLC makes no warranty, expressed or implied, regarding the accuracy of this data or the results to be obtained thereof. This information and product are furnished on the condition that the person receiving them shall make his/her own determination as to the suitability of the product for his/her particular purpose. | |

# Safety Data Sheet
# Calmet®

**SDS Number:** 1535 **Revision:** March 19, 2015

## Section 1: IDENTIFICATION

**1.1 Product Name:** **Calmet®**

**1.2 Other Identification:**

Chemical Family: Inorganic salt solution
Formula: $CaS_x$

**1.3 Recommended Use of Chemical:** Metal precipitant

**1.4 Manufacturer:** Tessenderlo Kerley, Inc.
2255 N. 44th Street, Suite 300
Phoenix, Arizona 85008-3279

Information: (602) 889-8300

**1.5 Emergency Contact:**

| | |
|---|---|
| Tessenderlo Kerley, Inc. | (800) 877-1737 |
| CHEMTREC | (800) 424-9300 (Domestic) |
| | (703) 527-3887 (International) |

## Section 2: HAZARD(S) IDENTIFICATION

**2.1 Hazard Classification:**

| | | |
|---|---|---|
| Health | Acute Oral Toxicity | Category 4 |
| | Acute Dermal Toxicity | Category 4 |
| | Acute Inhalation Toxicity | Category 4 |
| | Skin Corrosion/Irritation | Category 2 |
| | Eye Damage/Irritation | Category 2B |
| Physical | None | |

**2.2 Signal Word:** Warning

**2.2.1 Hazard Statement(s):**

Harmful if swallowed.
Harmful in contact with skin.
Harmful if inhaled.
Causes skin irritation.
Causes eye irritation.

**2.2.2 Symbol(s):**



**2.2.3 Precautionary Statement(s):**

**If swallowed**: Rinse mouth. Call a poison center/doctor/regional medical center if you feel unwell.
**If on skin**: Wash with plenty of water. Take off contaminated clothing and wash before reuse. Continue rinsing. Call a poison center/doctor/regional medical center if you feel unwell.
**If inhaled**: Remove person to fresh air and make comfortable for breathing. Call poison center/doctor/regional medical center if you feel unwell.
**If in eyes**: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. If eye irritation occurs: Get medical advice/attention.
Wash hands and face thoroughly with water after handling. Do not eat, drink or smoke when using this product.
Wear neoprene rubber chemical suit, gloves, goggles/full-face shield when handling product.
Avoid breathing product fume/gas/mist/vapors/spray.
Use only outdoors or in well-ventilated area.
Dispose of contents/container to chemical waste facility in accordance with local/regional/federal regulations.
Do not allow release to waterways (potential aquatic toxicity).

**2.3 Unclassified Hazard(s):** Aquatic toxicity.

**2.4 Unknown Toxicity Ingredient:** None

## Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

**3.1 Chemical Ingredients** (See Section 8 for exposure guidelines):

| Chemical | Synonym Common Name | CAS No. | EINECS No. | % by Wt. |
|---|---|---|---|---|
| Calcium polysulfide, $CaS_x$ | Lime sulfur, calcium sulfide | 1344-81-6 | 215-709-2 | 24 - 29 |
| Water | Water | 7732-18-5 | 231-791-2 | Remaining % |

## Section 4: FIRST AID MEASURES

**4.1 Symptoms/Effects:**

Acute: Eye contact may cause eye irritation. Repeated or prolonged skin contact may cause skin irritation. Ingestion may irritate the gastrointestinal tract.

Chronic: No known chronic effects.

**4.2 Eyes:** Immediately flush with large quantities of water for 15 minutes. Hold eyelids apart during irrigation to insure thorough flushing of the entire area of the eye and lids. Obtain medical attention if irritation occurs.

**4.3 Skin:** Immediately flush with large quantities of water. Remove contaminated clothing under a safety shower. Continue rinsing. Obtain medical attention if irritation occurs.

**4.4 Ingestion:** If victim is conscious, give 2 to 4 glasses of water and induce vomiting by touching finger to back of throat. Obtain immediate medical attention.

**4.5 Inhalation:** Remove victim from contaminated atmosphere. If breathing is labored, administer oxygen. If breathing has ceased, clear airway and start CPR. Obtain immediate medical attention.

## Section 5: FIRE FIGHTING MEASURES

**5.1 Flammable Properties:** (See Section 9, for additional flammable properties)

**NFPA: Health – 2 Flammability – 0 Reactivity - 0**

Heating this product will evolve hydrogen sulfide vapors.

**5.2 Extinguishing Media:**

**5.2.1 Suitable Extinguishing Media:** Not flammable, use media suitable for combustibles involved in fire.

**5.2.2 Unsuitable Extinguishing Media:** Not applicable.

**5.3 Protection of Firefighters:**

**5.3.1 Specific Hazards Arising from the Chemical:**

**Physical Hazards:** Heating (flames) of closed or sealed containers may cause violent rupture of container due to thermal expansion of compressed gases.

**Chemical Hazards:** Heating causes release of hydrogen sulfide vapors. Vapors are irritating to eyes, skin and respiratory tract.

**5.3.2 Protective Equipment and Precautions for Firefighters:**

Firefighters should wear self-contained breathing apparatus (SCBA) and full fire-fighting turnout gear. Keep containers/storage vessels in fire area cooled with water spray.

## Section 6: ACCIDENTAL RELEASE MEASURES

**6.1 Personal Precautions:** Use personal protective equipment specified in Section 8. Isolate the release area and deny entry to unnecessary, unprotected and untrained personnel.

**6.2 Environmental Precautions:**

Keep out of “waters of the United States” because of potential aquatic toxicity (See Section 12).

**6.3 Methods of Containment:**

**Small Release:** Confine and absorb small releases on sand, earth or other inert absorbents.

**Large Release:** Shut off release if safe to do so. Dike spill area with earth, sand or other inert absorbents to prevent runoff into surface waterways (potential aquatic toxicity).

**6.4 Method for Cleanup:**

**Small Release:** For small areas shovel up absorbed material and place in drums for disposal as a chemical waste.

**Large Release:** Recover as much of the spilled product using portable pump and hoses. Treat remaining material as a small release (above).

## Section 7: HANDLING and STORAGE

**7.1 Handling:** Avoid contact with eyes. Use only in a well-ventilated area. Wash thoroughly after handling. Avoid prolonged or repeated breathing of vapors. Avoid prolonged or repeated contact with the skin.

**7.2 Storage:** Store in well-ventilated areas. Do not store combustibles in the area of storage vessels. Keep away from any sources of heat or flame. Store totes and smaller containers out of direct sunlight at moderate temperatures.

## Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

**8.1 Exposure Guidelines:**

| Chemical | OSHA PELs | | ACGIH TLVs | |
|---|---|---|---|---|
| | TWA | STEL | TLV | STEL |
| Hydrogen sulfide | 20 ppm (Ceiling) | ---- | 1 ppm | 5 ppm |

**8.2 Engineering Controls:** Use adequate exhaust ventilation to prevent inhalation of product vapors. Keep eye wash/safety shower in areas where product is commonly handled.

**8.3 Personal Protective Equipment (PPE):**

**8.3.1 Eye/Face Protection:** Chemical goggles and a full face shield.

**8.3.2 Skin Protection:** Neoprene rubber gloves and suit should be worn to prevent repeated or prolonged contact with the liquid. Wash contaminated clothing prior to reuse.

**8.3.3 Respiratory Protection:**

Have self-contained breathing apparatus (SCBA), positive pressure, MSHA/NIOSH (approved or equivalent) available in case of spillage or equipment failure.

**8.3.4 Hygiene Considerations:**

Common good industrial hygiene practices should be followed, such as washing thoroughly after handling and before eating or drinking.

## Section 9: PHYSICAL and CHEMICAL PROPERTIES

| | |
|---|---|
| **9.1 Appearance:** | Ruby-red liquid |
| **9.2 Odor:** | Odor of rotten eggs |
| **9.3 Odor Threshold:** | 4.7 ppb (hydrogen sulfide) |
| **9.4 pH:** | 11.5 – 11.7, Typical |
| **9.5 Melting Point/Freezing Point:** | 18 to 25°F (-7.7 to -3.9°C), Typical |
| **9.6 Boiling Point:** | Not determined |
| **9.7 Flash Point:** | Not applicable |
| **9.8 Evaporation Rate:** | Not determined |
| **9.9 Flammability:** | Not applicable |
| **9.10 Upper/Lower Flammability Limits:** | Not applicable |
| **9.11 Vapor Pressure:** | Not determined |
| **9.12 Vapor Density:** | Not determined |
| **9.13 Relative Density:** | 1.27 (10.6 lbs/gal), Typical |
| **9.14 Solubility:** | Miscible |
| **9.15 Partition Coefficient:** | Data not available. |
| **9.16 Auto-ignition Temperature:** | Not applicable. |
| **9.17 Decomposition Temperature:** | Not determined. |
| **9.18 Viscosity:** | 2.95 cSt @ 20°C, 2.5 cSt @ 30°C. |

## Section 10: STABILITY and REACTIVITY

| | |
|---|---|
| **10.1 Reactivity:** | Strong oxidizers and acids. |
| **10.2 Chemical Stability:** | This is a stable product under conditions of ambient temperature and pressure. |
| **10.3 Possibility of Hazardous Reactions:** | Interaction with strong oxidizers, acids or acidic materials. |
| **10.4 Conditions to Avoid:** | Interaction with strong oxidizers or acidic materials (evolution of hydrogen sulfide vapors). |
| **10.5 Incompatible:** | Strong oxidizers can cause explosive mixtures if heated to dryness. Acids, acidic materials and dilution with water will cause the release of highly toxic hydrogen sulfide vapors. |
| **10.6 Hazardous Decomposition Products:** | Hydrogen sulfide and oxides of sulfur. |

## Section 11: TOXICOLOGICAL INFORMATION

| | |
|---|---|
| **11.1 Oral:** | Oral Rat $LD_{50}$: 820 mg/kg. |
| **11.2 Dermal:** | Dermal Rabbit $LD_{50}$: > 2,000 mg/kg. |
| **11.3 Inhalation:** | INH-Rat $LC_{50}$: 3.6 mg/L (4 hr. exposure). |
| **11.4 Eye:** | Data not available. |
| **11.5 Chronic/Carcinogenicity:** | Not listed in NTP, IARC or by OSHA. |
| **11.6 Teratology:** | Data not available. |
| **11.7 Reproduction:** | Data not available. |

**11.8 Mutagenicity:** Data not available.

## Section 12: ECOLOGICAL INFORMATION

**12.1 Ecotoxicity:** Green Algae, $EC_{50}$: 16.4 mg/l.

Water Flea, $EC_{50}$: 13.7 mg/l.

Bluegill, $LC_{50}$: 52.9 mg/l.

Fathead Minnow, $LC_{50}$: 42.9 mg/l.

Rainbow Trout, $LC_{50}$: 8.8mg/l.

**12.2 Persistence & Degradability:** No data is available.

**12.3 Bioaccumulative Potential:** This product is not bioaccumulative.

**12.4 Mobility in Soil:** No data available.

**12.5 Other Adverse Effects:** None

## Section 13: DISPOSAL CONSIDERATIONS

Consult federal, state and local regulations for disposal regulations.

## Section 14: TRANSPORT INFORMATION

**14.1 Basic Shipping Description:**

**14.1.1 Proper Shipping Name:** Calcium polysulfide solution *(Not regulated by DOT)*
**14.1.2 Hazard Classes:** Not applicable
**14.1.3 Identification Number:** Not applicable
**14.1.4 Packing Group:** Not applicable
**14.1.5 Hazardous Substance:** No
**14.1.6 Marine Pollutant:** No

**14.2 Additional Information:**

**14.2.1 Other DOT Requirements:**

**14.2.1.1 Reportable Quantity:** No
**14.2.1.2 Placard(s):** Not applicable
**14.2.1.3 Label(s):** Not applicable
**14.2.2 USCG Classification:** Not determined.

**14.2.3 International Transportation:**

**14.2.3.1 IMO:** Environmentally hazardous substance, liquid, n.o.s. (calcium polysulfide)

| | |
|---|---|
| **14.2.3.2 IATA:** | Non-hazardous under IATA regulations. |
| **14.2.3.3 TDG (Canada):** | Not regulated – See US DOT Section 14.1.1. |
| **14.2.3.4 ADR (Europe):** | Environmentally hazardous substance, liquid, n.o.s. (calcium polysulfide) |
| **14.2.3.5 ADG (Australia):** | Environmentally hazardous substance, liquid, n.o.s. (calcium polysulfide) |
| **14.2.4 Emergency Response Guide:** | Not applicable |
| **14.2.5 ERAP - Canada:** | Not applicable |
| **14.2.6 Special Precautions:** | Not applicable |
| **14.2.7 RR STCC** | 2899991 |

## Section 15: REGULATORY INFORMATION

### 15.1 U.S. Federal Regulations:

**15.1.1 OSHA:** This product meets the criteria of the Federal OSHA Hazard Communication Standard (29 CFR 1910.1200).

**15.1.2 TSCA:** Product is contained in USEPA Toxic Substance Control Act Inventory.

**15.1.3 CERCLA:** Reportable Quantity – Not applicable

**15.1.4 SARA Title III:**

**15.1.4.1 Extremely Hazardous Substance (EHS):** No

**15.1.4.2 Section 312 (Tier II) Ratings:**

| | |
|---|---|
| Immediate (acute) | Yes |
| Fire | No |
| Sudden Release | No |
| Reactivity | No |
| Delayed (chronic) | No |

**15.1.4.3 Section 313 (FORM R):** Not applicable

**15.1.5 RCRA**: Not applicable

**15.1.6 CAA** (Hazardous Air Pollutant/HAP): Not applicable

### 15.2 International Regulations:

**15.2.1 Canada:**

**15.2.1.1 WHMIS:** Not determined

**15.2.1.2 DSL/NDSL:** Listed in NDSL, Record No. 28636

### 15.3 State Regulations:

**CA Proposition 65:** No

## Section 16: OTHER INFORMATION

**REVISIONS:** This SDS was reformatted to comply with the new Hazard Communication Standard dated March 26, 2012, by the Regulatory Affairs Department of Tessenderlo Kerley, Inc. 7/1/2014.

Revised multiple sections for formatting and wording. 3/19/15.

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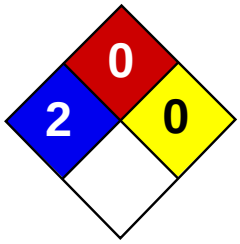





# Material Safety Data Sheet
## Ferrous sulfate MSDS

## Section 1: Chemical Product and Company Identification

**Product Name:** Ferrous sulfate

**Catalog Codes:** SLF1516

**CAS#:** 13463-43-9

**RTECS:** Not available.

**TSCA:** TSCA 8(b) inventory: No products were found.

**CI#:** Not available.

**Synonym:** Ferrous Sulfate Hydrate; Ferrous Sulfate Dried Powder

**Chemical Name:** Ferrous Sulfate

**Chemical Formula:** FeSO4.xH2O

**Contact Information:**

**Sciencelab.com, Inc.**
14025 Smith Rd.
Houston, Texas 77396

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## Section 2: Composition and Information on Ingredients

**Composition:**

| Name | CAS # | % by Weight |
|---|---|---|
| Ferrous sulfate | 13463-43-9 | 100 |

**Toxicological Data on Ingredients:** Ferrous sulfate LD50: Not available. LC50: Not available.

## Section 3: Hazards Identification

**Potential Acute Health Effects:** Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

**Potential Chronic Health Effects:**
CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to kidneys, liver, cardiovascular system, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage.

## Section 4: First Aid Measures

**Eye Contact:**
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

**Skin Contact:**
In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

**Serious Skin Contact:**
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

**Inhalation:**
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**Serious Inhalation:** Not available.

**Ingestion:**
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

**Serious Ingestion:** Not available.

## Section 5: Fire and Explosion Data

**Flammability of the Product:** Non-flammable.

**Auto-Ignition Temperature:** Not applicable.

**Flash Points:** Not applicable.

**Flammable Limits:** Not applicable.

**Products of Combustion:** Not available.

**Fire Hazards in Presence of Various Substances:** Not applicable.

**Explosion Hazards in Presence of Various Substances:**
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

**Fire Fighting Media and Instructions:** Not applicable.

**Special Remarks on Fire Hazards:** Not available.

**Special Remarks on Explosion Hazards:** Not available.

## Section 6: Accidental Release Measures

**Small Spill:**
Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

**Large Spill:**
Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

## Section 7: Handling and Storage

**Precautions:**
Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If you feel unwell, seek medical attention and show the label when possible. Avoid contact with skin and eyes.

**Storage:**
Hygroscopic. Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 24°C (75.2°F).

## Section 8: Exposure Controls/Personal Protection

**Engineering Controls:**
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

**Personal Protection:**
Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

**Personal Protection in Case of a Large Spill:**
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Exposure Limits:** Not available.

## Section 9: Physical and Chemical Properties

**Physical state and appearance:** Solid.

**Odor:** Not available.

**Taste:** Not available.

**Molecular Weight:** 151.9 g/mole + H20

**Color:** Grayish -white to yellowish. (Light.)

**pH (1% soln/water):** Not available.

**Boiling Point:** Not available.

**Melting Point:** Not available.

**Critical Temperature:** Not available.

**Specific Gravity:** Not available.

**Vapor Pressure:** Not applicable.

**Vapor Density:** Not available.

**Volatility:** Not available.

**Odor Threshold:** Not available.

**Water/Oil Dist. Coeff.:** Not available.

**Ionicity (in Water):** Not available.

**Dispersion Properties:** See solubility in water.

**Solubility:** Soluble in cold water.

## Section 10: Stability and Reactivity Data

**Stability:** The product is stable.

**Instability Temperature:** Not available.

**Conditions of Instability:** Incompatibles

**Incompatibility with various substances:** Not available.

**Corrosivity:** Not available.

**Special Remarks on Reactivity:**
Hygroscopic. Loses water at about 300 C. No other information found.

**Special Remarks on Corrosivity:** Not available.

**Polymerization:** Will not occur.

## Section 11: Toxicological Information

**Routes of Entry:** Inhalation. Ingestion.

**Toxicity to Animals:**
LD50: Not available. LC50: Not available.

**Chronic Effects on Humans:** May cause damage to the following organs: kidneys, liver, cardiovascular system, central nervous system (CNS).

**Other Toxic Effects on Humans:** Hazardous in case of skin contact (irritant), of ingestion, of inhalation.

**Special Remarks on Toxicity to Animals:** Not available.

**Special Remarks on Chronic Effects on Humans:** May affect genetic material (mutagenic)

**Special Remarks on other Toxic Effects on Humans:**
Acute Potential Health Effects: Skin: May cause skin irritation. Eyes: May cause eye irritation. Inhalation: May cause respiratory tract irritation. Ingestion: Harmful if swallowed. May cause gastrointestinal tract distrubances and irritation with nausea, vomiting, colic, constipation, diarrhea, black stool. May also affect behavior/Central Nervous System (somnolence -general depressed activity), respiration, cardiovascular system, liver, kidneys (pink urine discoloration). Chronic Potential Health Effects: Repeated exposure via ingestion may increase iron levels in the liver, and spleen. Damage may occur to spleen and liver.

## Section 12: Ecological Information

**Ecotoxicity:** Not available.

**BOD5 and COD:** Not available.

**Products of Biodegradation:**
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

**Toxicity of the Products of Biodegradation:** The product itself and its products of degradation are not toxic.

**Special Remarks on the Products of Biodegradation:** Not available.

## Section 13: Disposal Considerations

**Waste Disposal:**
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

## Section 14: Transport Information

**DOT Classification:** Not a DOT controlled material (United States).

**Identification:** Not applicable.

**Special Provisions for Transport:** Not applicable.

## Section 15: Other Regulatory Information

**Federal and State Regulations:** No products were found.

**Other Regulations:** OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

**Other Classifications:**

**WHMIS (Canada):** Not controlled under WHMIS (Canada).

**DSCL (EEC):**
R36/38- Irritating to eyes and skin. S2- Keep out of the reach of children. S46- If swallowed, seek medical advice immediately and show this container or label.

**HMIS (U.S.A.):**

**Health Hazard:** 2

**Fire Hazard:** 0

**Reactivity:** 0

**Personal Protection:** E

**National Fire Protection Association (U.S.A.):**

**Health:** 2

**Flammability:** 0

**Reactivity:** 0

**Specific hazard:**

**Protective Equipment:**
Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Splash goggles.

## Section 16: Other Information

**References:** Not available.

**Other Special Considerations:** Not available.

**Created:** 10/09/2005 05:33 PM

**Last Updated:** 05/21/2013 12:00 PM

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State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Site Remediation and Waste Management Program
Mail Code: 401-06
*P.O. Box 420*
Trenton, NJ 08625-0420

CHRIS CHRISTIE
*Governor*

KIM GUADAGNO
*Lt. Governor*

BOB MARTIN
*Commissioner*

21 September 2017

Mark Terril, Corporate Director Environmental Affairs
PPG Industries, Inc.
One PPG Place
Pittsburgh, PA 15222

Re: Discharge Approval and Monitoring Requirements Associated with
Permit-By-Rule Discharge Authorization for PPG Industries (COPR)
Garfield Avenue Group and Former Halladay Street Gas Works
900 Garfield Avenue; Block: 21501, Lots: 16,17,18, 19, and 20
NJ Program Interest Numbers: G000008791
Jersey City, Hudson County

Dear Mr. Terril:

This New Jersey Pollutant Discharge Elimination System/Discharge to Ground Water (NJPDES/DGW) authorization is hereby issued under the authority of the New Jersey Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq. and the implementing regulations, N.J.A.C. 7:14A-1 et seq. N.J.A.C. 7:14A-7.5 authorizes the discharge described below which will allow the recovery and treatment of contaminated ground water, as well as implementation of in-situ remediation of contaminated ground water at the above referenced site.

Pursuant to N.J.A.C. 7:14A-22.4(b)5, a Treatment Works Approval is not required for discharges to ground water authorized pursuant to N.J.A.C. 7:14A-7.5 or 8.5 and a licensed operator is not required pursuant to N.J.A.C. 7:10A-1.10(c)1. The discharge shall be conducted as proposed in the June 2017 *Groundwater Interim Remedial Measure (IRM): Phase I Design and Permit-By-Rule (PBR) Authorization Request*, received on 30 June 2017 and clarified and revised as described in meeting minutes circulated on 11 September 2017, and the email correspondence of 14 September 2017. This document and supporting clarification information was submitted by James McLaughlin, Matthew Schnobrich, and John Horst of Arcadis U.S. Inc., on behalf of PPG Industries.

A public notice describing this discharge was published in The Jersey Journal on 29 July 2017 which initiated a 30-day public comment period. In addition, a copy of the public notice has been sent to the Municipal Clerk and designated local health official for Jersey City and Hudson County. The Department did not receive any comments on the DGW proposal.

Pursuant to N.J.A.C. 7:14A-2.7 the maximum approved discharge duration is five (5) years from the date of this letter, regardless of the date when the discharge first occurs. The Department shall be notified of the date when the discharge begins as instructed in section IV of this letter. Only the discharge described in Section I below is authorized. The discharge shall be conducted in conformance with the above mentioned DGW proposal and shall comply with the requirements of Sections II, III, and IV, farther below.

## I. DISCHARGE DESCRIPTION

The authorized discharge includes organic carbon substrate (e.g., molasses and/or emulsified vegetable oil [EVO]) which will be mixed with treated groundwater recovered from the site. Groundwater will be recovered from the northern portion of Site 114, from an area containing the highest total chromium (Cr) and hexavalent chromium (Cr[VI]) concentrations, and will also be recovered from areas in southern Site 114 to enhance the organic carbon recirculation program. Groundwater will be treated using an on-site water treatment plant to provide direct treatment of Cr and Cr(VI). Treatment of the recovered water will also make it suitable for re-injection with organic carbon substrate.

The treated water will be amended with substrates to provide a degradable source of organic carbon within the subsurface to support an in situ anaerobic bioprecipitation (ISAB) approach. Both dilute organic carbon and treated water will be reinjected in the southern portion of Site 114, where concentrations of Cr are lower and more amenable to rapid bioremediation. The organic carbon will stimulate several primary mechanisms that: (1) promote the in-situ reduction of Cr(VI) to trivalent Cr (Cr[III]); and (2) support the development of an environment that enables the precipitation and fixation of Cr within the aquifer matrix.

The combination of groundwater extraction from the northern area of Site 114 and portions of southern Site 114 with reinjection in southern Site 114 will help maintain the hydraulic balance inside the sheet pile enclosure around Site 114 and may also support flushing of Cr mass toward the extraction wells to speed up the reduction of Cr concentrations in the groundwater.

The IRM Phase I operation is anticipated to start in fourth quarter of 2017 and last for a duration of up to approximately 12 months, followed by a post-operational monitoring of 2 years. However, this will be evaluated as the program proceeds, and modifications may be requested.

It is expected that the average organic carbon dosing over the course of the 12-month Phase I program is 0.5% by volume. Based on the projected total recirculation volume of 21 million gallons of groundwater, the organic carbon demands for Phase I will be no more than 105,000 gallons of substrate (either molasses, EVO, or a combination of both). The actual dosing strength of these organic carbon substrates, the dosing durations per day (or per week), and the timing of molasses and EVO use will be determined based on monitoring observations.

Reagent flexibility is considered a key consideration for maximizing overall treatment during the IRM Program. While the carbon substrates above will serve as the primary reagents for use, other reagents are being included in this PBR to allow flexibility in the event that unique areas of the site are better suited to their application. Both FerroBlack®-H (a water based suspension of 7 to 8% by weight ferrous sulfide and 1 to 2% by weight sodium hydrosulfide) and $CaS_x$ (calcium

polysulfide) were used to achieve treatment during prior pilot test activities, and these reagents are retained for potential consideration during Phase I. $CaS_x$ could be delivered via the recirculation network as a soluble reagent for ISCR in select areas of Site 114 in lieu of, prior to, or following use of carbon substrate. In addition to these two reagents, ferrous sulfate heptahydrate ($FeSO_4$ x 7 $H_2O$) may also be used as a supplement to the carbon substrate source to provide additional iron and sulfide to further enhance Cr abiotic reduction mechanisms.

The planned IRM design consists of 35 injection and 7 extraction well positions. Each position is assumed to entail discrete screened intervals in both the intermediate and deep water-bearing units, resulting in 70 total injection wells and 14 extraction wells. However, up to 100 total injection wells and 25 total extraction wells may be installed if needed. Using hollow stem auger (HSA) drilling techniques (or similar equivalent drilling technologies), intermediate water-bearing zone wells will be constructed with 4-inch stainless steel, 10-slot, 20-foot screens at approximate depths between 20 to 40 feet below ground surface (bgs). Deep water-bearing zone wells will be constructed with 4-inch stainless steel, 10-slot, 20-foot screens between 45 to 65 feet bgs. Actual length of screen and screen size will be based on pre-design testing and field observations.

While a combined total injection and extraction rate of 17 gpm is expected to achieve organic carbon distribution within the southern area of Site 114 during the first 6-month period, extraction rates may be increased to maximize the total quantity of groundwater extracted and injected within system capabilities (40 gpm) and up to permit specifications. Over the first 6 months of operation, the Phase I design entails initiation of injection activities within the southern end of Site 114, followed by gradual northward shifts in operating wells during three, 8-week cycles. Injection wells may temporarily or permanently be converted to extraction wells to enhance hydraulic control, mass removal, and/or overcome aquifer heterogeneities. Following this first 6-month period, additional cycles are anticipated through the end of the planned 12-month operational period to replenish organic carbon substrates and address residual Cr concentrations.

In addition to the intermediate and deep groundwater treatment, a shallow water-bearing zone polishing treatment for Cr-impacted groundwater will be implemented in the vicinity of the current water treatment plant and pilot testing areas located in the north-western portion of the site. The shallow treatment will be completed as part of one injection event using temporary injection points. Injection points will be placed throughout an area estimated to be approximately 20,000 square feet ($ft^2$). Within this area, an estimated 70 total injection points will be installed on 20-foot on-center spacing. Using direct-push drilling methods, the injection points will be constructed using 1-inch PVC casing materials and a 10-foot 0.020-slot injection screen. The screen interval will be placed at depths between 5 to 15 feet bgs or with a terminal depth consistent with the observed top of the meadow mat. The selected carbon substrate for shallow water-bearing zone treatment is EVO. A total volume of up to 235,000 gallons of 2% EVO solution and up to approximately 5,000 gallons of as-delivered EVO material will be injected within the target shallow treatment area. During injection, multiple injection points/piezometers will be manifolded together for simultaneous injection.

The treatment of groundwater used for reinjection will be sufficient to achieve either 95% reduction of influent levels (e.g., primarily for Cr and Cr[VI]) or concentrations below the

applicable Ground Water Quality Standard (GWQS) values (e.g., for Cr, Cr[VI], and other compounds with historical detections) in the effluent of the water treatment plant, whichever is less stringent. A temporary permit-related ground water Classification Exception Area (CEA) is hereby established to allow the discharge of water containing Cr, Cr(VI), metals, volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs) which may not be treated to levels below the GWQS by the water treatment plant prior to re-injection. The compounds other than Cr and Cr(VI) that were historically detected above the respective GWQS in the shallow, intermediate, and deep water-bearing zones are listed in the table below. Groundwater generated from the shallow water-bearing zone during soil excavation dewatering will be combined with groundwater extracted from the intermediate and deep water-bearing zones and treated with the water treatment plant. The permit-equivalent CEA comprises the entirety of the project area (Block 21501, Lots 16 through 20), and extends to a depth of 100 feet below ground surface.

| METALs | VOCs | SVOCs |
|---|---|---|
| ALUMINUM | 1,1-DICHLOROETHYLENE | 1,2,4-TRICHLOROBENZENE |
| ANTIMONY | 1,1,2-TRICHLOROETHANE | 2,4-DIMETHYLPHENOL |
| ARSENIC | 1,2-DICHLOROETHANE | 2-METHYLNAPHTHALENE |
| BARIUM | 1,2,4-TRICHLOROBENZENE | 2-METHYLPHENOL |
| BERYLLIUM | BENZENE | 3+4-METHYLPHENOL |
| CADMIUM | CHLOROBENZENE | ACENAPHTHENE |
| COBALT | CIS-1,2-DICHLOROETHENE | BENZO(A)ANTHRACENE |
| COPPER | DICHLOROMETHANE | BENZO(A)PYRENE |
| IRON | ETHYLBENZENE | BENZO(B)FLUORANTHENE |
| LEAD | METHYL-TERT-BUTYL ETHER | BENZO(K)FLUORANTHENE |
| MANGANESE | STYRENE (MONOMER) | BIS(2-ETHYLHEXYL)PHTHALATE |
| MERCURY | TETRACHLOROETHENE | CHRYSENE |
| NICKEL | TOLUENE | DIBENZO(A,H)ANTHRACENE |
| SELENIUM | TRICHLOROETHENE | FLUORENE |
| SILVER | VINYL CHLORIDE | HEXACHLOROBENZENE |
| SODIUM | XYLENES | INDENO(1,2,3-CD)PYRENE |
| THALLIUM | | NAPHTHALENE |
| VANADIUM | | NITROBENZENE |
| ZINC | | N-NITROSO-DI-N-PROPYLAMINE |
| | | N-NITROSODIPHENYLAMINE |
| | | PENTACHLOROPHENOL |
| | | PHENANTHRENE |
| | | PHENOL |

## II. SYSTEM OPERATION AND MONITORING

The area of discharge shall be monitored for evidence of malfunction. Said evidence shall include, but is not limited to: injection solution observation at land surface, wet areas, ponding, odors, and elevated photoionization detector (PID) readings in the nearby work area or building. If encountered, appropriate controls and system modification will be implemented.

The discharge shall not cause any of the following negative impacts: adverse impact on the behavior of free product or the plume; adverse impacts to a water supply well or have a long term adverse impact on ground water quality; create an unpermitted discharge to any surface water of the State or violation of Surface Water Quality Standards; create a persistent standing, ponded or surface-flowing fluid condition; or cause adverse vapor intrusion to occur.

Pursuant to N.J.A.C. 7:14A-6.2(a)5 and 11, if free product in ground water, vapors or odors in any building, or any malfunction resulting in a potential impact to a receptor are detected and are a result of the discharge authorized by this approval, the discharger will immediately: (1) cease the discharge or make necessary adjustments to the discharge rate or system operation; and (2) repair or mitigate any negative impacts.

After completion of the discharge, the property returned to its previous condition, or as agreed to with property owner if the permittee is not the property owner. All UIC-Class V injection wells shall be properly abandoned in accordance with N.J.A.C. 7:14A-8.16(d)1 as applicable. The permittee will comply with any applicable provisions of the Additional Conditions Applicable to Class I, II, III and V UIC Permits of the NJPDES regulations, N.J.A.C. 7:14A-8.9, et seq. when UIC-Class V injection well units (i.e., the injection points) are used.

## III. GROUND WATER MONITORING REQUIREMENTS

The Permittee shall perform the following ground water sampling as was specified in the DGW proposal (including all addendums and modifications) for the purpose of complying with this Discharge to Ground Water Permit-By-Rule authorization.

Baseline Sampling, before injection:

Prior to the startup of Phase I operations, but following the installation of the remediation well network and new monitoring well locations, samples will be collected for baseline analysis to establish the starting conditions for IRM treatment performance review. In accordance with Table 1, baseline samples will be collected for TAL metals (total and dissolved); Cr(VI) (total and dissolved); key geochemical parameters (sulfate/sulfide and methane); total organic carbon (TOC), field parameters (pH, specific conductivity, dissolved oxygen (DO), oxidation-reduction potential (ORP), turbidity, and temperature); and depth to groundwater.

Baseline samples will be collected using the low-flow sampling method. Purge water generated during sampling will be temporarily stored and then transferred to the groundwater treatment system. Prior to the start of purging, depth to water will be gauged at each well location. Following purging, field parameter measurements will be recorded. Samples collected for dissolved metal analyses will be filtered using 0.45 micrometer (μm) filters in the field.

Operational and Treatment Monitoring, during the injections:

The operational monitoring program will be used to assess ongoing remedial system performance in support of guiding potential modifications to injection and extraction flow rates, recirculation well balancing, carbon dosing and timing, and to pre-emptively guide potential biofouling management and well redevelopment.

Operational monitoring will be performed at variable frequencies (weekly, biweekly, or monthly), as necessary, over the course of operation pursuant to Table 1. Measurements may be periodically performed more frequently than specified in Table

1 to support potential troubleshooting activities over the course of operation. Given the adaptive nature of the recirculation program and the sequencing of different groupings of injection and extraction wells during operation, it is anticipated that the operational sampling frequency of existing monitoring wells will be adapted over time. As an example, monitoring wells located within the southernmost area of Site 114 are most relevant for operational monitoring during the first step of recirculation activities. Following this initial 8-week period and the transition to more northerly injection wells, the frequency and parameter list of the initial monitoring locations may be reduced to maintain remedial efficiency, as applicable, subject to NJDEP approval. For the operational monitoring, analytical data and field parameter measurements for extracted and treated groundwater will be collected at operating extraction wells from sampling ports located at the wellheads or at the influent to the water treatment system.

Overall Phase I remedial performance will be documented via ongoing treatment monitoring during the 12-month IRM program. Sampling parameters will be collected to verify organic carbon distribution, assess the development of reduced geochemical groundwater conditions within the subsurface, and confirm corresponding declines in total Cr and Cr(VI). Evaluation of these parameters will confirm development of the subsurface reactive zone and will be used to guide carbon substrate dosing strength and frequency. This will enable treatment optimization and confirmation prior to transitioning the operating recirculation wells to subsequent steps. A summary of the analytical and field parameter measurements for treatment sampling is provided in Table 1.

Similar to the operational monitoring specifications, treatment monitoring parameters will be collected at specified frequency based on the relevance of a given parameter to operation and optimization activities. TOC and field parameter sampling is proposed most frequently (biweekly to monthly) to effectively gauge propagation of both carbon substrate and geochemical influence within the subsurface. Total Cr and Cr(VI) and select geochemical parameters (ferrous [dissolved] iron, dissolved manganese, sulfate) will be collected monthly to enable the collection of at least one to two samples between recirculation well steps. Methane sampling is also proposed, albeit less frequently, to confirm the overall extent of reduced groundwater conditions. Similar to the sampling frequency considerations presented for the operational monitoring program, select well locations or parameters may be collected more frequently for system optimization purposes, as applicable.

Treatment monitoring samples will be collected using the low-flow sampling method. Purge water generated during sampling will be temporarily stored and then transferred to the groundwater treatment system. Prior to the start of purging, depth to water will be gauged at each well location. Following purging, field parameter measurements will be recorded. Samples collected for dissolved metal analyses will be filtered using 0.45 μm filters in the field.

Post Treatment Sampling, after completion of injections:

> Following the 12-month Phase I operational program, post-treatment monitoring will be used to document overall Cr treatment performance, confirm the residual reactive zone reduction capacity (via residual TOC and reduced geochemistry species), and develop an appropriate data set to demonstrate ongoing natural attenuation of any residual total Cr and Cr(VI). Post-treatment sampling will be performed in accordance with Table 1.
>
> Treatment monitoring samples will be collected using the low-flow sampling method. Purge water generated during sampling will be temporarily stored and then transferred to the groundwater treatment system – or containerized and disposed of off-site, as appropriate. Prior to the start of purging, depth to water will be gauged at each well location. Following purging, field parameter measurements will be recorded. Samples collected for dissolved metal analyses will be filtered using 0.45 µm filters in the field.
>
> Post-treatment sampling activities will be performed on a quarterly basis over a total duration of two years.

Pursuant to the Tech Regs, the Permittee shall measure ground water elevations at all sampled wells upon each sampling event and shall construct ground water flow maps with the water elevation data to document the direction of ground water flow. Any product observed, including sheen, shall be documented and the NJDEP shall be notified. If measurable product is observed, injections shall be suspended until all of the recoverable product is removed from the treatment area.

All sampling shall be performed as proposed and consistent with the methods specified in the most current edition of the Department's Field Sampling Procedures Manual. All samples shall be analyzed by a New Jersey Certified Laboratory certified for the methods being used to analyze groundwater samples. Analytical method MDLs shall be less than or equal to the ground water quality standards (N.J.A.C. 7:9C-1.7). Parameters determined in the field (pH, specific conductance, dissolved oxygen, temperature) are to be measured by a certified contractor or laboratory.

Comparison to the VI screening levels is necessary in order to monitor whether or not the discharge activities have the potential to cause VI issues within any nearby structures by means of adversely impacting the behavior of the ground-water contaminants (e.g., unexpected contaminant movement). If there are any exceedances of the VI screening levels caused by the authorized discharge, a VI evaluation shall be conducted of any potentially impacted structures.

Compliance with N.J.A.C. 7:26E-5.7(b) requires that the Permittee satisfy the post-injection ground water monitoring requirements that are set forth in this letter before applying for any Remedial Action Permit for Ground Water. If a Remedial Action Permit application is submitted before the required ground water sampling has been completed, the application will be denied.

Additionally, contingency compliance ground water sampling is required if ground water sampling results indicate that GWQS have been contravened because of the authorized discharge (e.g., the GWQS for sulfate is exceeded as a result of calcium polysulfide injection, or the GWQS for iron is

exceeded as a result of FerroBlack®-H injection), or that ground water quality has not returned to baseline conditions (when baseline concentrations are greater than GWQS) in the expected timeframe. Ground water sampling must continue until it can be demonstrated that the GWQS have been met or until the ground water quality has returned to baseline conditions. To demonstrate either of these conditions, a minimum of two consecutive ground water sampling events spaced far enough apart to account for seasonal fluctuations, must be conducted.

Furthermore, if the Permittee is planning to apply for a Ground Water Remedial Action Permit for Natural Attenuation in the future, and exceedances of the GWQS that are due to the discharge remain, those exceedances must be treated similarly to any other site related contaminants (i.e., a sufficient number of samples is required and a decreasing concentration trend must be evident) consistent with the Department's Remedial Action Permits for Ground Water Guidance.

## IV. REPORTING REQUIREMENTS AND INFORMATION SUBMITTALS

Details of the supplemental pre-design testing, well and system installation, system operation, and performance monitoring results associated with the IRM Phase I program will be documented as part of a quarterly technical status reports submitted to the NJDEP. These quarterly status reports will include succinct, high-level summaries of activities performed, data collected, adaptive steps taken to modify or optimize Phase I treatment, and an overview of activities planned for the subsequent quarter.

Succinct performance summary results will be submitted as part of quarterly status reports. All information, including a complete summary of the work performed under the PBR, a complete set of the data collected, a summary of data trends, an evaluation and interpretation of the data, and conclusions reached (as well as the QA/QC package specified at N.J.A.C. 7:26E-2.1(a)15) shall be submitted as part of the completion report following cessation active operation. All information shall be submitted to:

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CASE ASSIGNMENT & INITIAL NOTICE
MAILCODE 401-05H
P.O. BOX 420
TRENTON, NJ 08625-0420
ATTN: COPR

Consistent with N.J.A.C. 7:14A-2.11(a) and 6.2(a)14, within 90 days after initiation of the discharge, notify the Department of the "start date" of the discharge. To report this date, send an email to Tom.Cozzi@dep.nj.gov stating the start date of the discharge.

Consistent with N.J.A.C. 7:14A-2.11(a) and 6.2(a)14, any malfunctions or non-compliance should be reported by fax or telephone within 24 hours to Tom Cozzi of the Site Remediation Program at (609) 984-2905, and in writing within 7 days to the above address using the subject line "DGW Permit-by-Rule Compliance Report - COPR." Written submissions must include the facility name

and PI Number. Failure to report this information is a violation of N.J.A.C. 7:14A and the permit-by-rule.

If you have any questions or concerns, please contact Tom Cozzi of the Site Remediation Program at (609) 984-2905.

Sincerely,

Thomas Cozzi, Assistant Director
NJDEP Site Remediation Program, Office of the Assistant Commissioner

Attachment

c: John Horst, Arcadis U.S. Inc.
Rolando R. Lavarro, Jersey City Redevelopment Agency
Carrie Nawrocki, Health Officer, Hudson Regional Health Commission
Stacey Flanagan, Director, Department of Health and Human Services
Robert Byrne, Jersey City Clerk

**Table 1:**
IRM Phase I Groundwater Monitoring Program, PPG Garfield Avenue Group Sites, Jersey City, New Jersey

| Monitoring Program | Monitoring Well Network | Monitoring Parameters | Monitoring Frequency |
|---|---|---|---|
| Baseline Monitoring | New extraction, injection, monitoring wells and existing monitoring wells | 1. **Field Parameters**: DTW, pH, conductivity, DO, ORP, turbidity, and temperature<br>2. **Lab Analytical**: Total/dissolved TAL metals, total/dissolved Cr(VI), TOC, sulfate/sulfide, and methane | Prior to operation start |
| Operational Monitoring | New extraction and monitoring wells, existing shallow, intermediate and deep monitoring wells, and system sampling port (influent and effluent) | 1. **Field Parameters**: DTW | Weekly - Biweekly |
| | | 2. **System Parameters**<br>- Injection / extraction well flow rates | Weekly |
| | | - Wellhead pressures | Weekly |
| | | - Water treatment system monitoring | Weekly - Monthly (as appropriate) |
| Treatment Monitoring | New extraction and monitoring wells, and existing intermediate and deep monitoring wells | 1. **Field Parameters**: DTW, pH, conductivity, DO, ORP, turbidity, and temperature | Biweekly - Monthly |
| | | **2. Lab Analytical:**<br>- Total/dissolved Cr and Cr(VI) | Monthly |
| | | - TOC | Biweekly - Monthly |
| | | - Supplemental geochemical parameters (sulfate, ferrous [dissolved] iron, dissolved manganese) | Monthly |
| | | - Methane | Monthly-Quarterly |
| Post-Treatment Monitoring | New monitoring wells and existing shallow, intermediate and deep monitoring wells | 1. **Field Parameters**: DTW, pH, conductivity, DO, ORP, turbidity, and temperature<br>2. **Lab Analytical**: Total/dissolved TAL metals, total/dissolved Cr and Cr(VI), VOCs, SVOCs, TOC, sulfate/sulfide, dissolved iron, dissolved manganese, and methane. | Quarterly following system shutdown for up to 2 years |

**Notes:**

1. The monitoring locations, parameters, and frequencies provided in this table serve as a general guidance for IRM-related monitoring activities and may be adjusted or changed based on IRM Phase I performance, injection and extraction areas in operation, and observed monitoring results.
2. Dissolved metal samples are to be field filtered prior to sample collection.

Cr - chromium
Cr(VI) - hexavalent chromium
DO - dissolved oxygen
DTW - depth-to-water
IRM - Interim Remedial Measures
ORP - oxidation-reduction potential
PBR - Permit-by-Rule
SVOCs - semi-volatile organic compounds
TAL - target analyte list
TOC - total organic carbon
VOCs - volatile organic compounds

# MEMO

To:

Dave VanEck

NJDEP

Copies:

Jody Overmyer (PPG)

Richard Feinberg (PPG)

Arcadis U.S., Inc.
6041 Wallace Road Extension
Suite 300
Wexford
Pennsylvania 15090
Tel 724 742 9180
Fax 724 742 9189

From:

Cullen Flanders (Arcadis)

Date:

May 22, 2019

Arcadis Project No.:

NP000776.0001

Subject:

Discharge to Groundwater Permit-by-Rule Modification Request
PPG Industries Garfield Avenue Site 114 and Former Halladay Street Gas Works
900 Garfield Avenue; Block 21501; Lots 16, 17, 18, 19 and 20
Jersey City, Hudson County, New Jersey
NJ Program Interest Number G000005480

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This memorandum (memo) presents the request for the proposed modification of the Groundwater Interim Remedial Measure (IRM) Phase I Design Permit-By-Rule (PBR) that was approved by the New Jersey Department of Environmental (NJDEP) on 21 September 2017 for the Garfield Avenue Group (GAG) Sites located in Jersey City, New Jersey. As discussed in the sections below, this IRM Phase I PBR modification requests adjustment of the current PBR approach for the following two planned site activities:

- The first of the planned site activities addresses IRM treatment in the shallow water-bearing zone. This PBR modification includes the proposed installation of two multipurpose wells that can be used for both extraction and injection operations within the vicinity of the one compliance well (GPS-MW1S) where both total chromium (Cr) and hexavalent chromium (Cr[VI]) have been detected in exceedance of the Groundwater Quality Standard (GWQS) of 70 micrograms per liter (µg/L) (**Figure 1**).
- The second activity is pilot testing of hydraulic fracturing techniques to emplace FerroBlack®-H (FerroBlack) chemical reductant and to enhance permeability to treat chromium in the low permeability transitional intermediate/deep water bearing zone below the meadow mat at Site 114. The pilot test(s) may be implemented in more than one phase, with the first pilot test scheduled to start in June 2019. This PBR modification includes potential injections over multiple phases during the fracturing process. Up to 10,000 gallons of FerroBlack and 10,000 gallons of potable water and clean sand slurry may be injected to open and maintain the fracture lenses.

## General Introduction

IRM Treatment in the Shallow Water-Bearing Zone

In accordance with the Phase I PBR, shallow water-bearing zone treatment using in situ anaerobic bioprecipitation (ISAB) was performed between December 28, 2017 and April 6, 2018 utilizing SRS®-SD (Terra Systems, Inc.) emulsified vegetable oil (EVO) injection into a network of temporary injection wells. These wells are spaced approximately 20-feet on-center throughout the target treatment area (**Figure 1**). The stock EVO product was diluted in the field with potable water from the on-site hot box. The shallow water-bearing zone treatment area was originally identified based on previous investigation data and was further refined prior to ISAB implementation using information obtained during the baseline monitoring event.

The shallow water-bearing zone treatment program is comprised of the following:

- 94 one-inch diameter remediation wells screened from approximately 5 to 15 ft below ground surface (bgs) in the shallow water-bearing zone.
- 9 previously existing two-inch diameter wells screened between approximately 5 and 16 ft bgs.
- 3 new one-inch diameter injection dose response monitoring wells screened between 5 and 15 ft bgs.
- A temporary mixing system including an above-ground water storage tank, the concentrated EVO storage totes, a transfer pump, an inline mixer, a flow regulating manifold, and temporary hose to connect the manifold to the individual well heads.

During the shallow water-bearing zone injection program, intermittent stoppages occurred due to inclement operational conditions (e.g., freezing conditions, saturated soils, and pooled water from precipitation events) and to minimize surfacing of the EVO solution at certain locations in the treatment area. Multiple injection wells were manifolded together to achieve simultaneous injection at 20 or more locations, and field observations dictated the need for modifications to the delivery program based on feasible injection flow rates at each location. Where select locations exhibited limited overall injectability, additional volume was delivered into adjacent or proximal points to optimize and balance shallow water-bearing zone EVO distribution.

The EVO dosing rate of about 2% by volume was increased to 4% by volume in accordance with the PBR modification request approved by NJDEP via email dated March 19, 2018. By the end of the injection program, a total of approximately 111,000 gallons of at least 2% EVO solution (approximately 3,020 gallons of as-delivered SRS®-SD EVO material) was injected in the treatment area. This volume was within the total maximum estimated volume allowed by the PBR of 235,000 gallons of at least 2% EVO solution (up to 5,000 gallons of as-delivered SRS®-SD EVO material).

Ongoing treatment monitoring in the shallow water-bearing zone treatment area has documented reductions in Cr(VI) levels to below the GWQS at all wells except GPS-MW1S. While Cr and Cr(VI) concentrations have declined, they are currently above the GWQS. In order to accelerate Cr treatment in the vicinity of GPS-MW1S, additional injections under the Phase I PBR are planned. To minimize the possibility of daylighting in the treatment area, reduce groundwater elevations in the shallow water-bearing zone, and enhance organic carbon substrate delivery, this Phase I PBR modification is being submitted to cover installation and operation of two new multipurpose extraction / injection wells (**Figure 1**).

Pilot Testing of Hydraulic Fracturing Techniques in the Transitional Intermediate/Deep Water-Bearing Zone

The first significant step in groundwater remediation of the intermediate and deep water-bearing zones at the GAG sites was implementation of the Phase I IRM that was conducted at Site 114 utilizing a combination of groundwater extraction and amended water reinjection with organic carbon substrate (molasses). The remedial strategy was designed to reduce Cr(VI) and precipitate trivalent chromium (Cr[III]) out of solution, establishing conditions conducive to continued attenuation of Cr(VI). Phase I of the injections occurred in 2018 and is continuing in 2019; the injections will be followed by post-treatment monitoring. Analysis of the results of the Phase I IRM revealed challenges with distribution of the reducing reagent for Cr precipitation in intervals of low permeability soils in the intermediate and deep water-bearing zones, which lessened the effectiveness of remediation.

In response to the challenges observed with reagent distribution during the Phase I GW IRM, hydraulic fracturing was identified as a potential technology to enhance the permeability of more massive low permeability soil intervals and increase reagent distribution. To test this method, a fracturing pilot test will be performed in one area of the Site in the transitioning intermediate to deep water-bearing zone. Given the heterogeneous nature of the subsurface at Site 114, additional areas of the Site may be considered for future applications based on the results of initial testing. The pilot test will evaluate the ability to create a network of fractures in the saturated geologic formation below the meadow mat in the low permeability unconsolidated soils to facilitate reagent delivery. The proposed initial location to conduct the pilot test is in the southwest area of the Site near Monitoring Well cluster 114-P1B-MW-103S and 114-P1B-MW-103D (Figure 2). This location was selected based on the known presence of low permeability soils, as evidenced during the Phase I GW IRM and the ability to use existing monitoring well infrastructure and Site data in this area of the Site.

The fracturing process is designed to facilitate reagent distribution in the treatment zone resulting in more expedient remediation of Cr(VI). Once fractures have been established to improve delivery and distribution, the introduction of FerroBlack facilitates reduction of Cr(VI) to Cr(III) which is subsequently filtered out by the formation as a precipitate. A proppant, such as sand, and a thickening or suspending agent (e.g. guar gum) maybe evaluated to maximize the ROI during FerroBlack injections.

**Proposed Modification for Shallow Zone Treatment**

Existing Phase I IRM injection wells and the two new multipurpose extraction / injection wells (**Figure 1**) are planned for use during the supplemental shallow water-bearing zone injection event. In addition to this modification, an update to the shallow water-bearing zone organic carbon substrate for ISAB is also proposed to include both molasses and EVO for subsurface injections. The two new multipurpose wells are proposed to allow operation as extraction locations in order to limit mounding influence and potential daylighting risk, enhance subsurface transport through the DGA, and support Cr removal.

The new extraction wells will be connected to existing Phase I IRM infrastructure for conveyance to the on-site water treatment plant. The existing mobile injection unit (MIU) will be used to dose dilute carbon source to select injection wells (shown in **Figure 1**) using above-grade conveyance piping. A potable water source is planned for injection use but treated groundwater may also be considered for water supply, as applicable. The carbon dosing will comprise approximately 2%

molasses solution or 2% EVO, or a 4% solution of combined organic carbon substrate. While injection volumes at individual wells are expected to vary based on achievable injection well flowrates and monitoring well breakthrough response, the total injection volume is expected to remain within the limits of the maximum volume approved in Phase I PBR.

**Installation of New Shallow Zone Multipurpose Remediation Wells**

The proposed new multipurpose wells will be installed by a union, New Jersey-licensed well driller and completed in accordance with the N.J.A.C. 7:9D. The drilling approach and well designs include the following:

- Drilling with a 6.25-inch inner diameter hollow stem auger (HSA) or using similar drilling technologies to the terminal depth of 15 feet below ground surface (bgs) or to the meadow mat (whichever is shallower) and screened from approximately 5 to 15 ft bgs.
- 10-foot, 4-inch Schedule 40 polyvinyl chloride (PVC) screens (10-slot with #0 sand pack)
- Schedule 40 PVC riser to approximately 3 feet above ground
- The wells will be finished with stick up mounts. Locking covers will be placed over each wellhead assembly.

During well completion, hydrated bentonite and grout will be used to seal the annulus to the surface. Final well completion determination will also account for surface elevation changes that may occur as part of regrading activities performed during site restoration activities. As applicable, protective bollards may also be installed to prevent well damage during the IRM.

A submersible pump will be used to withdraw the groundwater from the extraction wells and temporary, double-contained pipe will be used to convey the groundwater above-grade to an existing Phase I IRM extraction well vault for connection and conveyance to the water treatment system. Drawdown will be adjusted based on depth to water measurements in the operating extraction well(s) and in nearby monitoring wells.

For injection operations, the multipurpose wells will be equipped with temporary wellhead connections and above-grade conveyance hose to convey the injected recirculation water and carbon amendment to the well. Based on field and system performance observations, it is estimated that injection rates may vary between 0.1 to 1.0 gpm per well. Similar to extraction operations, injection wells may be operated at higher flow rates, depending on the nature of the soil formation and ability to receive fluids. Injections will also be attempted at existing shallow zone injection wells in the treatment area.

**Injection of FerroBlack Using Hydraulic Fracturing Wells**

The pilot test to evaluate hydraulic fracturing techniques to emplace a FerroBlack solution into low permeability zones and to enhance permeability in the transitional intermediate/deep water-bearing zones below the meadow mat at Site 114. The low permeability fracture zone will be selected using existing or proposed soil borings in the pilot test area, and hydraulic profiling and vertical aquifer profiling tests that will be completed during baseline sampling. The anticipated fracture zone is 40 to 60 feet below grade but will be selected from boring profiles during drilling. In addition, a monitoring well will be installed at the top of meadow mat (approximately 6 to 12 inches into the meadow mat) to assess the potential for effects of fracturing in the target treatment zone on the meadow mat above the fracture depth.

FerroBlack is a proprietary mixture of amorphous iron sulfide (mackinawite) particles with other compounds to create a site-specific beneficial chemical reductant, manufactured by Redox

Technology Group, LLC (d/b/a Redox Solutions), and that can be used to treat heavy metals such as Cr in soil and groundwater. A copy of the Safety Data Sheet for FerroBlack is included in Appendix A.

The hydraulic fracturing process will be designed to create multiple fractures or lenses at select depths in the target treatment zone below the meadow mat layer using high pressure fluids such as water and or a solution of FerroBlack. This process may be complemented by the addition of sand slurry to the fracturing fluid to act as a proppant to maintain the fracture lens post-injection, and will be field determined. A thickening agent (e.g. guar gum) may also be incorporated into the process. A copy of the Safety Data Sheet for guar gum is included in Appendix A.

The pilot test layout includes three fracture wells located radially around an existing monitoring well cluster (114-P1B-MW103S, MW-P1B-MW103D, and 114-P1-IRM-3). **Figure 2** shows the proposed pilot test layout and **Figure 3** shows the proposed pilot test area layout detail. The locations of the fracture wells are positioned at 15, 20, and 25 feet from the monitoring well cluster and will be used as a line of evidence to determine the optimum radius of influence during hydraulic fracturing and FerroBlack emplacement. The installation of the fracture wells includes the following:

- Either sonic or a combination of hollow stem auger/mud rotary drilling methods will be used to install three 4-inch diameter PVC fracture wells (FP-FW-01, -02, and -03) in approximately 8-inch diameter boreholes radially around the MW-103 cluster. The fracture wells will be grouted in place at least one week before fracturing commences.
    - The sonic drilling method results in a grouted, sealed borehole when complete. Permanent steel casings would not need to be installed using this technology as the sonic rig tooling would serve as the outer wall for placement of the grout before retracting the tooling. Although not needed, 10-inch outer steel casings may be installed to the meadow mat for each of the fracture wells.
    - Potentially, three permanent 8-inch steel casings may be installed in the meadow mat for the fracture wells. These steel casings would be installed if the combined hollow stem auger/mud rotary drilling methods were used to install the fracture wells. If installed, these casings would serve as outer (double) casings for fracture borings/wells through the meadow mat.
- At the selected fracture depth, a notch or a starting point will be created in the well casing to access the formation using a high pressure water jet to nucleate a fracture and create a lens for adding the FerroBlack to the formation. Down-well packers will be used to isolate the depth interval to be fractured and to emplace materials. Once the volume of FerroBlack has been injected, the fracture equipment will be moved to the next fracture interval and the process repeated.

**FerroBlack-H Dosing Design**

For the pilot test, the basis of design is to emplace the maximum volume of FerroBlack that could be emplaced in the equivalent of a 1/5 inch by 20-foot ROI. The estimated FerroBlack volume to be emplaced in the target treatment zone using the three fracture wells is approximately 2,000 gallons (approximately 20,000 pounds); however, up to 5,000 gallons of FerroBlack may be injected during the initial pilot test injection event. The FerroBlack will either be injected as a pure solution or mixed with potable water, and or clean sand slurry to act as a proppant and hold the

fracture lens open. For purposes of this PBR modification, it is assumed up to 5,000 gallons of potable water and/or 2,000 pounds of sand could potentially be mixed with the FerroBlack. The actual quantities of FerroBlack, water, and sand that will be injected will be field determined during the pilot test, and the goal will be to optimize the fracture extension and FerroBlack emplacement. The decision criteria will be based on the response of the formation and injected fluid leakoff through the fracture lens into the formation during fracture propagation. In addition, up to 500 pounds of guar gum potentially may be used during the hydraulic fracturing pilot test.

Based on the findings of the pilot test, additional pilot testing of hydraulic fracturing techniques to emplace FerroBlack may be performed in the same pilot test area, or in a second area with a different geology and Cr concentration. This PBR Modification requests permission to inject up to 10,000 gallons of FerroBlack with up to 10,000 gallons of potable water and/or 4,000 pounds of sand slurry, along with 1,000 pounds of guar gum.

**Treatment Monitoring and Reporting**

The treatment monitoring of the shallow water-bearing zone and reporting of the results will follow the procedures, frequency, and schedule presented in the approved Phase I PBR. These activities will be performed concurrently with the monitoring and reporting of the Phase I system for the treatment of intermediate and deep water-bearing zones.

In addition, monitoring of the effectiveness of the hydraulic fracturing process to maximize the emplacement of FerroBlack into the low permeability treatment zone located below the meadow mat layer will be completed using the following means and methods:

- As a potential line of evidence to assess ROI, heave monitoring to assess the radius of influence will be completed using an array of tiltmeters around one of the fracture wells during fracturing events and the injection of the FerroBlack solution.
- Measuring and recording injection pressures, nucleation pressure (breakdown pressure), maintenance pressure, volumes, flow rates, and duration will be conducted during the fracturing process.
- Monitoring of water levels, and groundwater field parameters (i.e., pH, specific conductivity, turbidity, dissolved oxygen [DO], oxidation reduction potential [ORP], temperature), and color will be conducted in seven existing monitoring wells (114-P1B-MW103S, 114-P1B-MW103D, 114-P1-IRM-3, 114-MW-4D, 114-P1-MW-1I/D, and 114-P1-IRM-7) and one new monitoring well (FP-MW01) installed in the meadow mat above the target treatment zone. These monitoring wells, shown in **Figure 2**, are located up-, down-, and side-gradient of the pilot test fracture network, and will be monitored before, during and end of the fracture program. **Table 1** shows the specifications for the pilot test monitoring wells.
- Monitoring the effectiveness of the FerroBlack injections by groundwater sampling and analysis of the seven existing monitoring wells in the pilot test area and one new well installed in the meadow mat, will be conducted before and two to four weeks after the hydraulic fracturing and FerroBlack emplacement is completed. The groundwater will be analyzed for total and dissolved Cr and iron, and sulfide[1]
- Soil logging and soil sampling to evaluate for visual evidence of fractures will be performed in the pilot test area based on evidence observed during FerroBlack emplacement. The soil logging and sampling will be conducted approximately one month following the hydraulic fracturing test.

- Pre- and post-fracture hydraulic permeability slug testing will be performed in two monitoring wells in the vicinity of the fracture wells. The monitoring wells will be selected after review of the HPT/VAP and soil boring logs. This will be used to evaluate beneficial changes that could be attributed to the fracture program. The hydraulic permeability slug testing will be conducted approximately one month following the hydraulic fracturing test.
- Pre- and post-fracture hydraulic permeability pump in testing, using potable water, will be performed over a period of several hours in one (pilot test area monitoring well in the vicinity of the fracture wells. The monitoring well will be selected after review of the HPT/VAP and soil boring logs. The hydraulic permeability pump in testing will be conducted approximately one month following the hydraulic fracturing test.

The findings from the hydraulic fracturing and FerroBlack emplacement pilot test will be documented in a pilot test technical memorandum.

**Enclosures:**

Table 1: Hydraulic Fracturing Pilot Test Monitoring Wells

Figure 1**:** Layout of New Shallow Zone Multipurpose Wells

Figure 2: Proposed Layout Pilot Test Area

Figure 3:  Proposed Layout Pilot Test Area Detail

Appendix A: Safety Data Sheets

FerroBlack®-H Safety Data Sheet

Guar Gum Safety Data Sheet

**Table 1**
**Hydraulic Fracturing Pilot Test Monitoring Wells Specifications**
**PPG Site 114 IRM Phase 1 Permit-By-Rule Modification Request**
**Jersey City, New Jersey**

| Well ID | Status | Material of Construction | | Total Depth (ft) | Screened Interval (ft) | Inner Well Diameter (inches) |
|---|---|---|---|---|---|---|
| | | Screen | Casing | | | |
| 114-P1B-MW103S | Existing | #10-slot Schedule 40 PVC | Sch 40 PVC | 17.00 | 7 - 17 | 4.0 |
| 114-P1B-MW103D | Existing | #10-slot Schedule 40 PVC | Steel (outer), Sch 40 PVC (inner) | 56.00 | 51 - 56 | 2.0 |
| 114-P1-IRM-3 | Existing | #10-slot Stainless Steel | Steel (outer), Sch 40 PVC (inner) | 43.10 | 23.1 - 43.1 | 4.0 |
| 114-MW4D | Existing | #10-slot Schedule 40 PVC | Steel | 107.00 | 87 - 107 | 6.0 |
| 114-P1-MW-1I | Existing | #10-slot Schedule 40 PVC | Steel (outer), Sch 40 PVC (inner) | 40.40 | 20.4 - 40.4 | 2.0 |
| 114-P1-MW-1D | Existing | #10-slot Schedule 40 PVC | Steel (outer), Sch 40 PVC (inner) | 56.35 | 36.35 - 56.35 | 2.0 |
| 114-P1-IRM-7 | Existing | #10-slot Stainless Steel | Steel (outer), Sch 40 PVC (inner) | 42.40 | 22.4 - 42.4 | 4.0 |
| FP-MW01 | To Be Installed | #10-slot Stainless Steel | Sch 40 PVC | 24.00* | 19- 24* | 2.0 |

**Notes:**
ft = feet
IRM = interim remedial measure
PVC = polyvinyl chloride
* - final depth to be determined in the field, based on confirmation of meadow mat bottom during soil boring. The well will be set approximately 6 to 12 inches into the meadow mat layer.

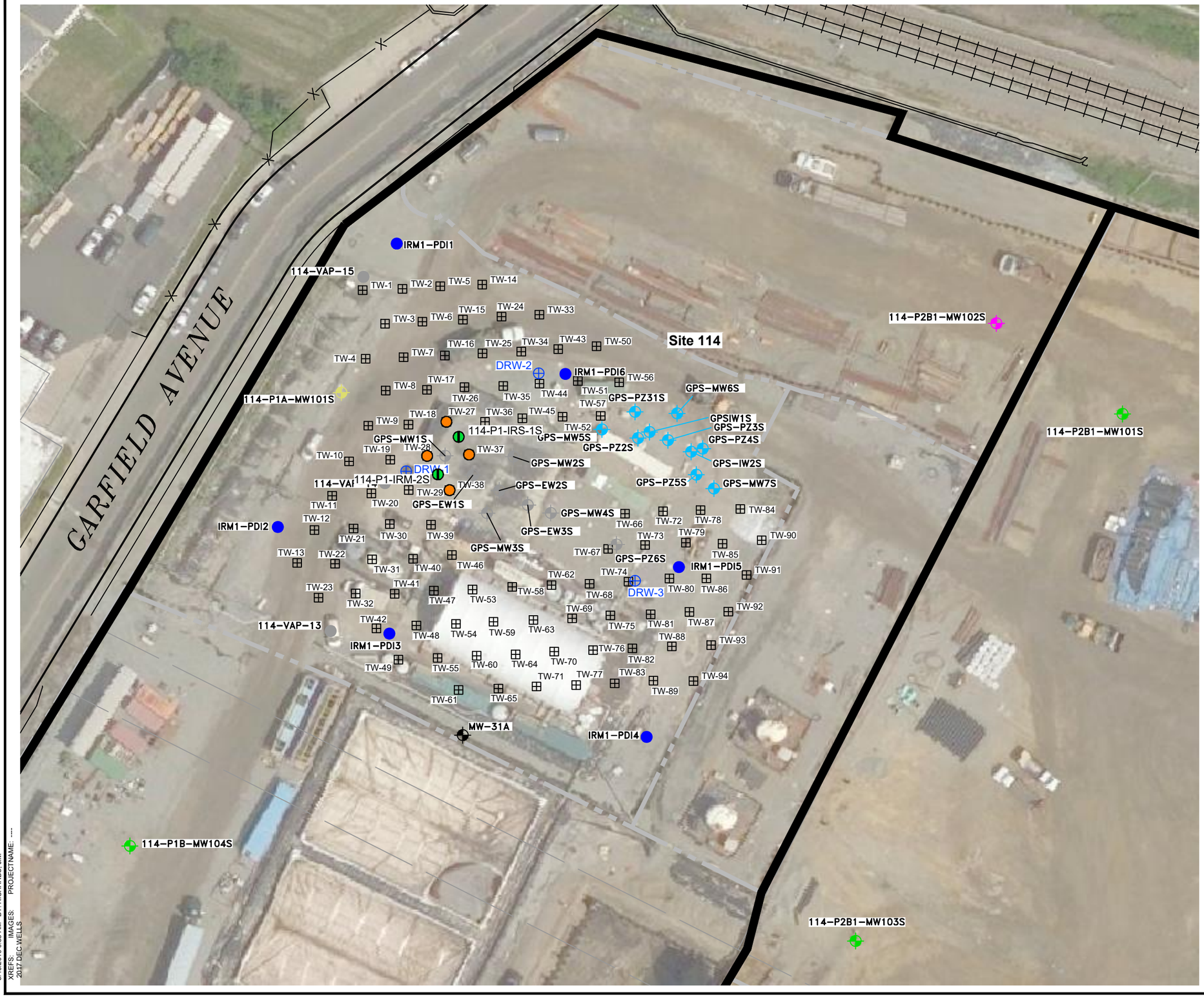


N

0 25 50 FT

SCALE: 1" = 50'

LEGEND

- SHEET PILES RELEVANT TO SITE 114 IRM
- HISTORICAL RI WELLS
- FERROBLACK @ -H PBR MONITORING WELLS (JUNE 2016)
- FERROBLACK @ -H PBR MONITORING WELLS (SEPTEMBER 2016)
- CHEMICAL REDUCTION PILOT TEST WELLS (SEPTEMBER & OCTOBER 2016)
- HISTORICAL RI WELLS (DECEMBER 2015)
- IN SITU BIOPRECIPITATION STUDY WELLS (APRIL 2015)
- PRE-DESIGN BORING, JULY 2017
- VERTICAL AQUIFER PROFILE (VAP) POINT
- PHASE I IRM TEMPORARY WELL (DECEMBER 2017)
- PHASE I IRM TEMPORARY DOSE RESPONSE WELL (DECEMBER 2017)
- PROPOSED NEW MULTIPURPOSE SHALLOW ZONE WELL
- ANTICIPATED INJECTION WELL

NOTES:
1. TEMPORARY WELL AND DOSE RESPONSE WELL LOCATION INFORMATION SHOWN ON THIS PLAN WAS FIELD LOCATED BY TAYLOR, WISEMAN & TAYLOR ON 02/08/2018 THROUGH 02/13/2018.

PPG GARFIELD AVENUE GROUP SITE 114
JERSEY CITY, NEW JERSEY

NP000776.0001

# LAYOUT OF NEW MULTIPURPOSE SHALLOW ZONE WELLS

ARCADIS Design & Consultancy for natural and built assets

FIGURE 1

CITY:(COLUMBUS, OHIO) DIV/GROUP:(IM/DV) DB:(R. SMITH) LD:(Opt) PIC:(Opt) PM:(P. JIN) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
C:\BIM\OneDrive - ARCADIS\BIM 360 Docs\PPG INDUSTRIES, INC\PPG - GAG GW Pilot Study Phase 1 Design\2019\NP000776.0001\01-DWG\Permit 2019 Fig1 Site.dwg LAYOUT:1 SAVED: 5/16/2019 9:58 AM ACADVER: 23.0S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ACAD.CTB PLOTTED:
5/16/2019 9:58 AM BY: RICHARDS, JIM
XREFS: IMAGES: PROJECTNAME: ----
2017 DEC WELLS

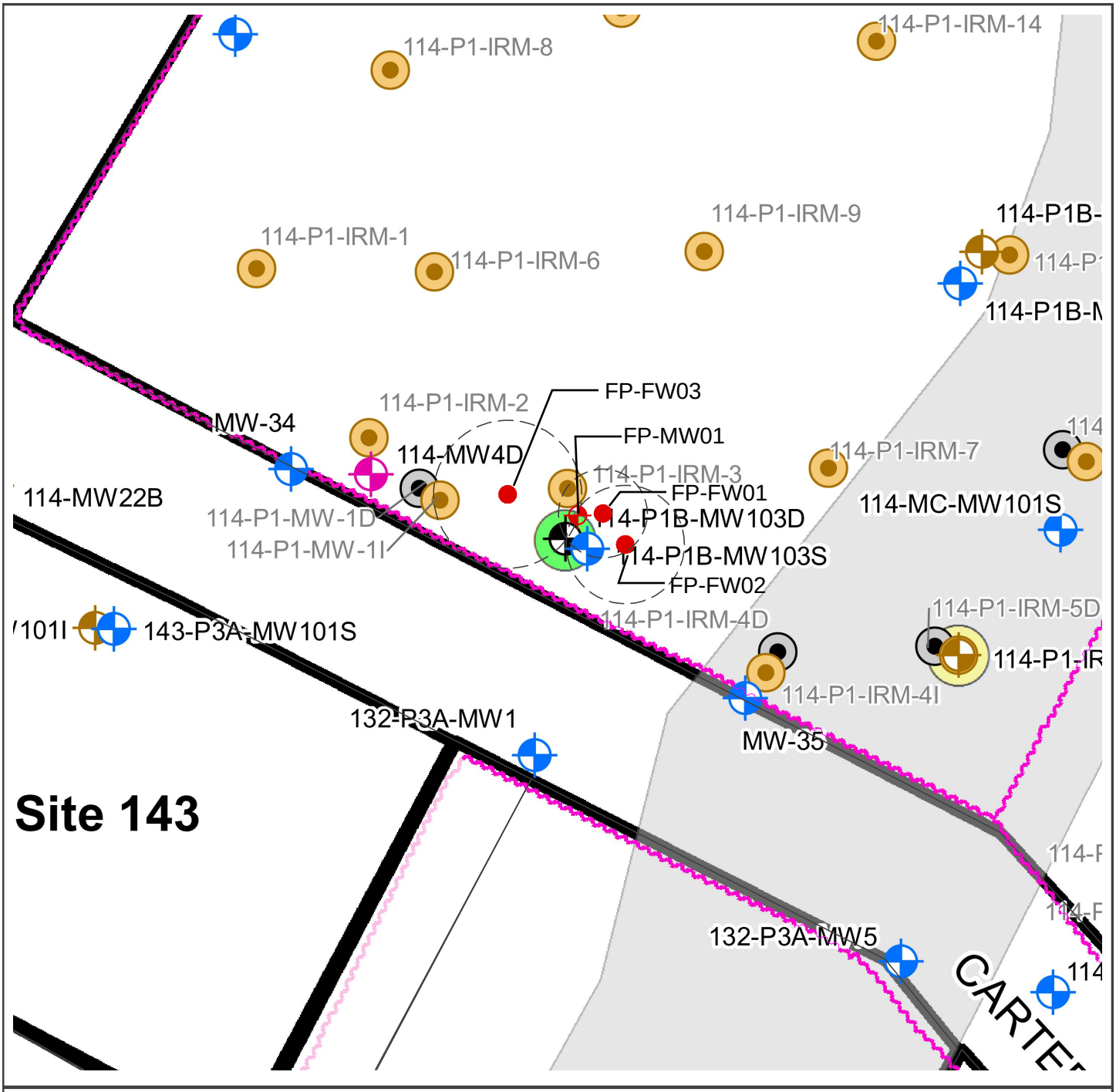


**Legend**

- Garfield Avenue Group Boundary
- Hudson County Parcels
- Former Morris Canal
- Sheetpile In Place (As of February 2018)
- Sheetpile Removed
- Railroad

**Monitoring Well Locations**

- Shallow
- Intermediate
- Deep
- Bedrock

**Other Monitoring Locations and Notes**

- Groundwater IRM Phase 1 IntermediateWell
- Groundwater IRM Phase 1 Deep Well
- Groundwater IRM Phase 1 Shallow Well

0 50 100

SCALE IN FEET

N

FRACTURE PILOT TEST LOCATIONS

- Proposed Fracture Well With Radius Of Influence
- Proposed Meadow Mat Monitoring Well

**Map Notes:**
1. New Jersey State Plane North American Datum 1983 Coordinates, U.S. Survey Feet.
2. Parcels of Hudson County, New Jersey State Plane NAD83, Hudson County Department of Planning, Jersey City, New Jersey, May 21, 2013.

AECOM
30 Knightsbridge Road
Building 5, Suite 520
Piscataway, NJ 08854
www.aecom.com

| | |
|---|---|
| SCALE: | AS SHOWN |
| DATE: | 04/01/2019 |
| FILE NO: | Fracture Pilot |
| DESIGN: | TK |
| APPROVED: | LH |
| DRAWN: | FS |

CLIENT: PPG

PROJ: GARFIELD AVENUE GROUP
JERSEY CITY, NEW JERSEY

PROJECT NO: 60605431

TITLE: PROPOSED LAYOUT
PILOT TEST AREA

FIGURE: 2

J:\Project\PPG-NJCProgram\5-Legal\5.1-Permits\5.1.B-GA Group\PBRs\2019 GW Ph I PBR Mod Request\Fracture Pilot.dwg

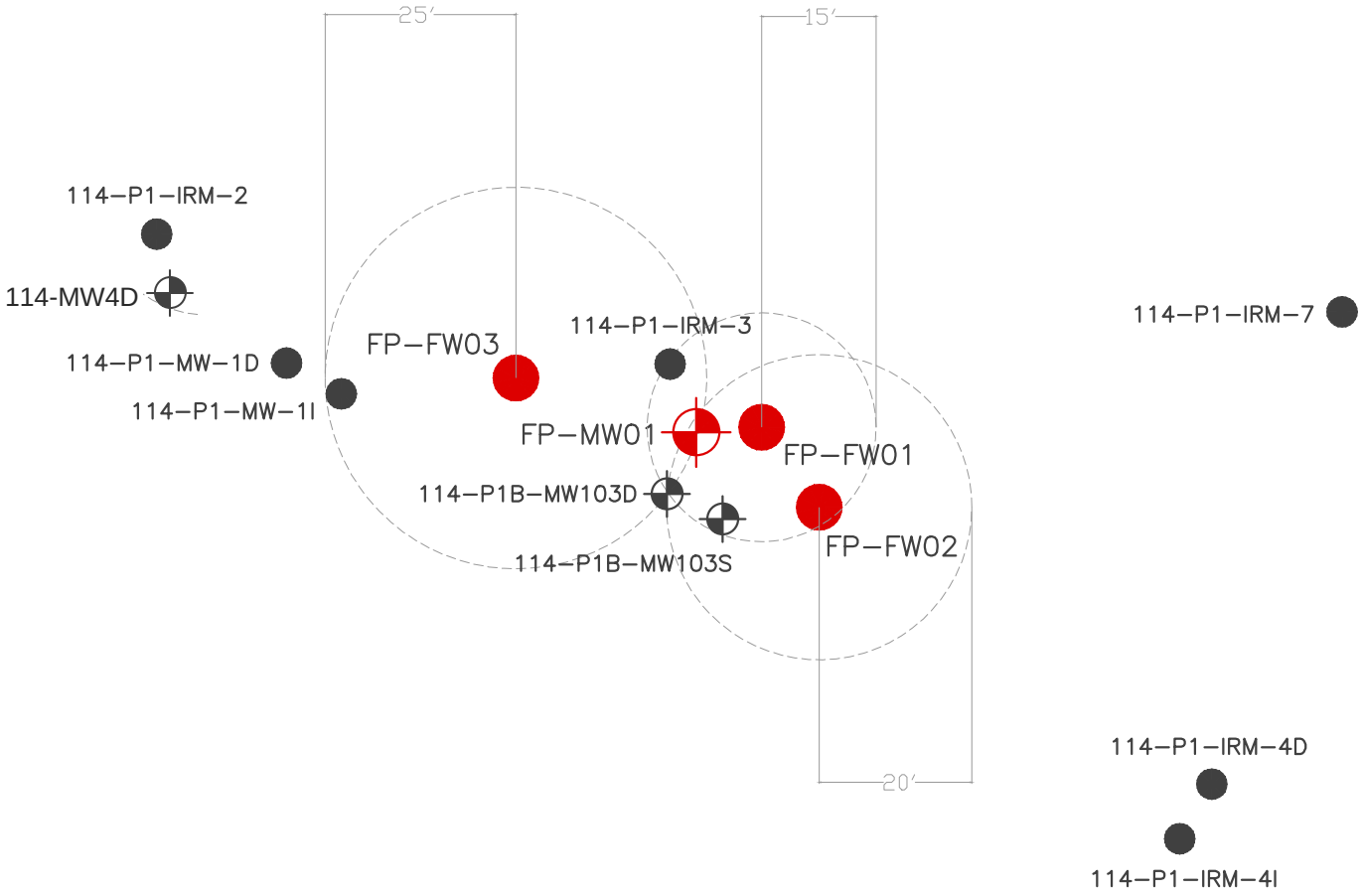


## LEGEND

- Existing Phase I Interim Remedial Measure Well
- Existing Monitoring Well

FRACTURE PILOT TEST LOCATIONS

- Proposed Fracture Well With Radius Of Influence
- Proposed Meadow Mat Monitoring Well

N

0 25 50

SCALE IN FEET

AECOM
30 Knightsbridge Road
Building 5, Suite 520
Piscataway, NJ 08854
www.aecom.com

| | |
|---|---|
| SCALE: | AS SHOWN |
| DATE: | 04/01/2019 |
| FILE NO: | Fracture Pilot |
| DESIGN: | TK |
| APPROVED: | LH |
| DRAWN: | FS |

CLIENT: PPG

PROJ: GARFIELD AVENUE GROUP
JERSEY CITY, NEW JERSEY

PROJECT NO: 60605431

TITLE: PROPOSED LAYOUT
PILOT TEST AREA
DETAIL

FIGURE: 3

J:\Project\PPG-NJCProgram\5-Legal\5.1-Permits\5.1.B-GA Group\PBRs\2019 GW Ph I PBR Mod Request\Fracture Pilot.dwg

# APPENDIX A

Safety Data Sheets



# FerroBlack-H

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 06/14/2016 Revision date: 06/14/2016 Supersedes: 06/25/2015

## SECTION 1: Identification

### 1.1. Identification

Product form : Mixture

Trade name : FerroBlack-H

CAS No : 1317-37-9

Formula : FeS

Synonyms : Ferrous sulfide / Iron sulfide / Iron sulphide / Iron(II) sulfide / Ferrous sulfide / Iron sulfide / Iron sulphide / Iron(II) sulfide

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Chemical used for the removal and/or sequestering of mercury. Also used as a mercury re-emission prevention chemical in wet flue gas desulfurization units.

### 1.3. Details of the supplier of the safety data sheet

Redox Technology Group, LLC
d/b/a Redox Solutions
1580 Research Way
Indianapolis, IN 46231

Company Contact: Jim Kissel
Telephone Number: (317) 660-6867 or (317) 412-3267

### 1.4. Emergency telephone number

CHEMTREC: (800) 424-9300

## SECTION 2: Hazard(s) identification

### 2.1. Classification of the substance or mixture

**GHS-US classification**

Skin corrosion/irritation Category 2 H315
Serious eye damage/eye irritation Category 2A H319

Full text of H statements : see section 16

### 2.2. Label elements

**GHS-US labeling**

Hazard pictograms (GHS-US) :



GHS07

Signal word (GHS-US) : Warning

Hazard statements (GHS-US) : H315 - Causes skin irritation
H319 - Causes serious eye irritation

Precautionary statements (GHS-US) : P264 - Wash hands thoroughly after handling
P280 - Wear eye protection, protective clothing, protective gloves
P302+P352 - If on skin: Wash with plenty of water
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P321 - Specific treatment (see Consult a doctor/medical service if you feel unwell on this label)
P332+P313 - If skin irritation occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P362+P364 - Take off contaminated clothing and wash it before reuse

### 2.3. Other hazards

**HMIS Classification:**
Health hazard: 0
Flammability: 0
Physical hazards: 0

**NFPA Rating:**
Health hazard: 1
Fire: 0
Reactivity Hazard: 0

**Inhalation** May be harmful if inhaled. May cause respiratory tract irritation.
**Skin** May be harmful if absorbed through skin. May cause skin irritation.
**Eyes** May cause eye irritation.
**Ingestion** May be harmful if swallowed.
**Other Hazards not contributing to the classification:** Generates toxic gas in contact with acid.

### 2.4. Unknown acute toxicity (GHS US)

Not applicable

## SECTION 3: Composition/Information on ingredients

### 3.1. Substance

Not applicable

### 3.2. Mixture

| Name | Product Identifier | % | GHS-US classification |
|---|---|---|---|
| Iron sulfide (FeS) | (CAS No) 1317-37-9 | 7 -11 | Not classified |
| Sodium Sulfide | (CAS No) 1313-82-2 | 0.1 - 1 | Acute Tox. 3 (Oral), H301 |

Full text of hazard classes and H-statements : see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.

First-aid measures after skin contact : Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a doctor/physician. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Immediately call a poison center or doctor/physician. Call a poison center/doctor/physician if you feel unwell.

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : Causes skin and eye irritation.

Symptoms/injuries after skin contact : Irritation.

Symptoms/injuries after eye contact : Causes serious eye damage. Eye irritation.

### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media : Do not use a heavy water stream.

### 5.2. Special hazards arising from the substance or mixture

Reactivity : Corrosive vapors.

### 5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Evacuate unnecessary personnel. Avoid contact with skin and eyes.

#### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".

Emergency procedures : Ventilate area.

### 6.2. Environmental precautions

Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

Other information : Dispose of materials or solid residues at an authorized site.

### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Do not breathe dust, fume, gas, mist, spray, vapors. Avoid contact during pregnancy/while nursing. Avoid contact with skin and eyes. Wear personal protective equipment.

Hygiene measures : Wash hands thoroughly after handling. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Comply with applicable regulations.

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Ignition sources, Incompatible materials. Keep container closed when not in use. Store in a well-ventilated place. Keep cool.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

| **FerroBlack-H (1317-37-9)** | | |
|---|---|---|
| ACGIH | ACGIH TWA (mg/m³) | 1.4 mg/m³ |
| ACGIH | ACGIH TWA (ppm) | 1 ppm |
| ACGIH | ACGIH STEL (mg/m³) | 7 mg/m³ |
| ACGIH | ACGIH STEL (ppm) | 5 ppm |

| **Iron sulfide (FeS) (1317-37-9)** |
|---|
| Not applicable |

| **Sodium sulfide (1313-82-2)** |
|---|
| Not applicable |

### 8.2. Exposure controls

| | |
|---|---|
| Appropriate engineering controls | : Ensure good ventilation of the work station. |
| Personal protective equipment | : Avoid all unnecessary exposure. |
| Hand protection | : Wear protective gloves. |
| Eye protection | : Chemical goggles or face shield. Safety glasses. |
| Skin and body protection | : Wear suitable protective clothing. |
| Respiratory protection | : Wear appropriate mask. |
| Environmental exposure controls | : Avoid release to the environment. |
| Other information | : Do not eat, drink or smoke during use. |

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

| | |
|---|---|
| Physical state | : Liquid |
| Appearance | : Black liquid with visible suspended solids. |
| Color | : Black |
| Odor | : Rotten eggs |
| Odor threshold | : No data available |
| pH | : 11.5 - 12.8 |
| Melting point | : Not applicable |
| Freezing point | : No data available |
| Boiling point | : No data available |
| Flash point | : No data available |
| Relative evaporation rate (butyl acetate=1) | : No data available |
| Flammability (solid, gas) | : Non flammable. |
| Vapor pressure | : No data available |
| Relative vapor density at 20 °C | : No data available |
| Relative density | : 1.15 - 1.22 |
| Solubility | : Mininally soluble in water. |
| Log Pow | : No data available |
| Auto-ignition temperature | : No data available |
| Decomposition temperature | : No data available |
| Viscosity, kinematic | : No data available |
| Viscosity, dynamic | : No data available |
| Explosion limits | : No data available |
| Explosive properties | : No data available |
| Oxidizing properties | : No data available |

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Acidic vapors.

### 10.2. Chemical stability

Not established.

### 10.3. Possibility of hazardous reactions

Contact with acids liberates toxic gas.

### 10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

### 10.5. Incompatible materials

Acids will cause the release of highly toxic Hydrogen Sulfide. Reacts violently with diazonium salts. Ferrous sulfide(s) solution is not compatible with copper, zinc, aluminum or their **alloys** (i.e. bronze, brass, galvanized metals, etc.). Corrosive to steel above 150º F (65.5º C). These materials of construction should not be used in handling systems or storage containers for this product.

### 10.6. Hazardous decomposition products

Hazardous decomposition products formed under fire may include sulfur oxides, iron oxides.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

| Sodium Sulfide (113-82-2) | |
|---|---|
| LD50 oral rat | 208 mg/kg |
| ATE US (oral) | 208.000 mg/kg body weight |
| LD50 dermal rabbit | < 340 mg/kg |
| ATE US (dermal) | 300.000 mg/kg body weight |

Skin corrosion/irritation : Causes skin irritation.
pH: 11.5 - 12.8

Serious eye damage/irritation : Causes eye irritation.
pH: 11.5 - 12.8

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

Symptoms/injuries after skin contact : Irritation.

Symptoms/injuries after eye contact : Causes eye irritation.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

| FerroBlack-H (1317-37-9) | |
|---|---|
| LC50 fish 1 | > 10000 mg/l Mosquito fish |

| Sodium Sulfide (1313-82-2) | |
|---|---|
| LC50 fish 1 | 7.7 - 29.1 mg/l (Exposure time: 96 h - Species: Poecilia reticulata) |
| EC50 Daphnia 1 | 2.1 mg/l (Exposure time: 48 h - Species: Daphnia magna) |

### 12.2. Persistence and degradability

| FerroBlack-H (1317-37-9) | |
|---|---|
| Persistence and degradability | Not established. |

### 12.3. Bioaccumulative potential

| FerroBlack-H (1317-37-9) | |
|---|---|
| Bioaccumulative potential | Not established. |

| Sodium Sulfide (16721-80-5) | |
|---|---|
| Log Pow | -3.5 (at 25 °C) |

### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

Effect on the global warming : No known effects from this product.

GWPmix comment : No known effects from this product.

Other information : Avoid release to the environment.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

Waste disposal recommendations : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

Ecology - waste materials : Avoid release to the environment.

## SECTION 14: Transport information

**Department of Transportation (DOT)**

In accordance with DOT

Not Regulated

**Transport by sea**

Not Regulated

**Air transport**

Not Regulated

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

| Iron sulfide (FeS) (1317-37-9) |
|---|
| Listed on the United States TSCA (Toxic Substances Control Act) inventory |

| Sodium Sulfide (1313-82-2) |
|---|
| Listed on the United States TSCA (Toxic Substances Control Act) inventory |

### 15.2. International regulations

**CANADA**

| Iron sulfide (FeS) (1317-37-9) | |
|---|---|
| Listed on the Canadian DSL (Domestic Substances List) | |
| WHMIS Classification | Uncontrolled product according to WHMIS classification criteria |

| Sodium Sulfide (1313-82-2) |
|---|
| Listed on the Canadian DSL (Domestic Substances List) |

**EU-Regulations**

| Iron sulfide (FeS) (1317-37-9) |
|---|
| Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances) |

| **Sodium Sulfide (1313-82-2)** |
|---|
| Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances) |

**National regulations**

| **Iron sulfide (FeS) (1317-37-9)** |
|---|
| Listed on the AICS (Australian Inventory of Chemical Substances)<br>Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)<br>Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory<br>Listed on the Korean ECL (Existing Chemicals List)<br>Listed on NZIoC (New Zealand Inventory of Chemicals)<br>Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) |

| **Sodium Sulfide (1313-82-2)** |
|---|
| Listed on the AICS (Australian Inventory of Chemical Substances)<br>Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)<br>Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory<br>Listed on the Korean ECL (Existing Chemicals List)<br>Listed on NZIoC (New Zealand Inventory of Chemicals)<br>Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)<br>Listed on INSQ (Mexican National Inventory of Chemical Substances)<br>Listed on CICR (Turkish Inventory and Control of Chemicals) |

### 15.3. US State regulations

| **Sodium Sulfide (1313-82-2)** |
|---|
| U.S. - Massachusetts - Right To Know List<br>U.S. - New Jersey - Right to Know Hazardous Substance List |

## SECTION 16: Other information

Revision date : 06/14/2016

Other information : None.

Full text of H-phrases:

| | |
|---|---|
| H301 | Toxic if swallowed |
| H315 | Causes skin irritation |
| H319 | Causes serious eye irritation |
| H400 | Very toxic to aquatic life |

SDS US (GHS HazCom 2012)

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*

# Safety Data Sheet

## SECTION 1: IDENTIFICATION

**Product Identifier**
**Trade Name:** **G150 Guar Gum**

**Recommended Use of the Chemical and Restrictions on Use**
**Product Use**:
**Uses Advised Against:** None identified


**Manufacturer/Supplier:** **Rantec Corporation**
**Address:** 17 Kukuchka Lane
Ranchester, WY 82839

**Phone Number:** (307) 655-9565
**Fax Number:** (307) 655-9528
**e-mail:** rantec@ranteccorp.com


**SDS Date of Preparation**: December 15, 2014

## SECTION 2: HAZARDS IDENTIFICATION

**GHS Classification:**
Combustible Dust
Respiratory Sensitizer Category 1

**Label Elements:**
Danger!



May form combustible dust concentrations in air.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Avoid breathing dust or fume.
In case of inadequate ventilation, wear respiratory protection.
IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
If experiencing respiratory symptoms: Remove victim to fresh air and call POISON CENTER or doctor.
Dispose of contents in accordance with local, regional and national regulations.

**Other Hazards:** None

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical Name | CAS# | % |
|---|---|---|
| Guar Gum | 9000-30-0 | 100 |

## SECTION 4: FIRST AID MEASURES

**Description of First Aid Measures**

**Eye:** Flush thoroughly with water. If irritation persists get medical attention.

**Skin:** No first aid should normally be needed. Wash exposed skin with soap and water after use. If irritation or rash develops, get medical attention. Use skin lotion if dryness occurs.

**Inhalation:** If symptoms of irritation or allergy develop, remove person from source of exposure to fresh air. Get immediate medical attention if asthmatic symptoms develop.

**Ingestion:** DO NOT INGEST. While this product is not toxic by ingestion, swallowing small amounts could cause complete blockage of the mouth, pharynx, trachea, esophagus and/or gastrointestinal system which may cause choking, suffocation and/or other life threatening medical conditions. Get medical attention immediately.

**Most Important symptoms and effects, both acute and delayed:**

May cause mechanical eye and skin irritation. Inhalation of dust may cause nose and throat irritation, coughing and sneezing. Inhalation may cause sensitization and difficulty breathing. Ingestion may cause gastric upset and nausea.

**Indication of any immediate medical attention and special treatment needed:** If inhaled and causes allergic reaction, seek prompt medical attention. Seek immediate medical attention if any amount is ingested.

## SECTION 5: FIRE FIGHTING MEASURES

**Extinguishing Media:**

Use water fog, dry chemical, carbon dioxide or foam. Do not use solid water jet as that may create a dust cloud that can present an explosion hazard. Guar gum is very slippery when wet.

**Specific Hazards Arising from the Chemical**

High concentrations of dust suspended in air may present a potential explosion hazard. Settled dust presents a fire hazard. Re-suspension of the dust into the air by vibration, traffic, material handling, etc. in high concentrations in the presence of an ignition source could result in a dust explosion. Minimize the generation and accumulation of dust. Slip hazard: product is very slippery when wet.

**Hazardous Decomposition Products:** Combustion may produce oxides of carbon and nitrogen.

**Special Protective Equipment and Precautions for Fire-Fighters:**

Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

**Personal Precautions, Protective Equipment and Emergency Procedures:**

Wear appropriate protective equipment. Avoid creating and breathing dust. Eliminate ignition

sources. Combustible Dust in Industry: Preventing and Mitigating the Effects of Fire and Explosions. Safety and Health Information Bulletin. SHIB 07-31-2005; updated 11-12-2014. https://www.osha.gov/dts/shib/shib073105.html

**Environmental Precautions:**

Avoid unintentional release to the environment.

**Methods and Material for Containment and Cleaning Up:**

Do not use water or water based solvents. Collect dry and in a manner to minimize the generation of airborne dust or vacuum with a high vacuum cleaner. If a vacuum is used, explosion proof equipment is required. Non-sparking tools should be used. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentrations. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air.)

**Reference to Other Sections:**

Refer to Section 8 for protective equipment. Refer to Section 13 for disposal guidance.

## SECTION 7: HANDLING AND STORAGE

**Precautions for Safe Handling**:

Avoid contact with eyes and clothing. Avoid creating and breathing dusts. Wear protective clothing and equipment as described in Section 8. Use only with adequate ventilation. Wash thoroughly with soap and water after handling. Minimize the generation and accumulation of dust. Keep dust away from open flames, hot surfaces and sources of ignition. Follow good housekeeping practices to keep surfaces, including areas overhead such as piping, drop ceilings, ductwork, etc. free from settled dust. Dry powders can build static electricity charges when subjected to friction of transfer and in mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres.

Empty containers retain product residues. Follow all SDS precautions in handling empty containers.

**Conditions for Safe Storage, Including any Incompatibilities**

Keep containers closed when not in use.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure Limits:**

| Chemical Name | Exposure Limits |
|---|---|
| Guar Gum (as PNOR) | 5 mg/m3 TWA OSHA PEL (respirable), 15 mg/m3 TWA (total dust) |

**Note:** The OSHA limits may not adequately protect workers from respiratory sensitization. Exposure levels should be maintained as low as possible for the workers' protection.

Refer to local regulations for specific requirements.

**Exposure Controls:**

**Engineering Controls:** Use explosion proof local exhaust ventilation as needed to maintain exposure concentrations below the recommended limits.
**Eye and Face:** Follow facility requirements. Dust goggles recommended for dusty conditions.
**Skin:** None required. Work gloves may be used to protect against mechanical irritation.
**Respiratory:** If the concentrations exceed the Threshold Value Limit (TLV), a NIOSH approved dust respirator, supplied air respirator or self-contained breathing apparatus is recommended. Select appropriate respiratory protection for respirable particulates based on consideration of the airborne workplace concentrations and duration of exposure. Select and use respirators in accordance with 29 CFR 1910.134, ANSI Z88.2, the NIOSH Respirator Decision Logic and good

industrial hygiene practice.
**Protective Clothing:** Appropriate protective clothing as needed to minimize skin contact.
**Work Hygienic Practices**: Wash thoroughly after handling.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Physical State:** Solid | **Appearance:** Creamy white powder |
| **Odor:** Bean-like odor | **Odor Threshold**: Not applicable |
| **pH:** Not applicable | **Relative Density:** Not applicable |
| **Boiling Point:** Not applicable | **Melting Point:** Decomposes |
| **Vapor Pressure:** Not applicable | **Water Solubility:** complete solubility |
| **Vapor Density:** Not applicable | **Evaporation Rate:** Not applicable |
| **Viscosity**: Not applicable | **Pour Point**: Not applicable |
| **Flash Point:** Not applicable | **Flammable Limits: LEL:** 0.04 oz/cf |
| **Autoignition Temperature**: None | **Flammable Limits: UEL:** Not applicable |
| **Percent Volatile**: Not applicable | **Flammability (solid/gas):** Not applicable |
| **Partition Coefficient: n-octanol/water:** Not applicable | **Decomposition Temperature:** None |
| **Explosive Properties:** Combustible dust | **Oxidizing Properties:** None |

## SECTION 10: STABILITY AND REACTIVITY

**Reactivity:** Not reactive.

**Chemical Stability:** Stable under normal conditions.

**Possibility of Hazardous Reactions:** Reactions with strong oxidizers may generate heat.

**Conditions to Avoid:** Keep away ignition sources. Combustible Dust in Industry: Preventing and Mitigating the Effects of Fire and Explosions. Safety and Health Information Bulletin. SHIB 07-31-2005; updated 11-12-2014. https://www.osha.gov/dts/shib/shib073105.html

**Incompatible Materials:** Avoid strong acids and oxidizing agents.

**Hazardous Decomposition Products:** Thermal decomposition may produce carbon and nitrogen oxides.

## SECTION 11: TOXICOLOGICAL INFORMATION

**Information on Toxicological Effects:**

**Eye Contact:** Contact may cause irritation based on studies with laboratory animals.

**Skin Contact:** Contact may cause dryness.

**Inhalation:** Inhalation of dust may cause irritation of the nose, throat and respiratory passages. Symptoms include coughing, sore throat, nasal congestion, sneezing wheezing and shortness of breath. May cause allergic reaction in susceptible individuals.

**Ingestion:** Ingesting small amounts could cause complete blockage of the mouth, pharynx, trachea, esophagus and/or gastrointestinal system which may cause choking, suffocation and/or other life threatening medical conditions.

**Acute Toxicity Data**:
Guar Gum: Oral rat LD50: 9.4g/kg

Guar gum is a natural food additive, although direct use in powder or pill form is banned by the FDA due to the risk of respiratory or gastrointestinal blockage.

**Chronic Health Effects**: Prolonged overexposure to any nuisance dust may cause lung injury. Symptoms include cough, shortness of breath and reduced pulmonary function.

**Germ Cell Mutagenicity:** No data available. This product is not expected to cause mutagenic activity.

**Carcinogenicity:** None of the components of this product are listed as carcinogens or suspected carcinogens by OSHA, IARC or NTP.

**Developmental / Reproductive Toxicity**: No data available. This product is not expected to cause adverse effects on reproduction or development.

**Specific Target Organ Toxicity (Single Exposure)**: No data available.

**Specific Target Organ Toxicity (Repeated Exposure)**: Prolonged overexposure to any nuisance dust may cause lung injury. Symptoms include cough, shortness of breath and reduced pulmonary function.

## SECTION 12: ECOLOGICAL INFORMATION

**Toxicity:**
No data available. This product is not expected to be toxic to aquatic organisms.

**Persistence and Degradability:**
No data available.

**Bioaccumulative Potential:**
Not expected to bioaccumulate.

**Mobility in Soil:**
No mobility in soil is expected.

**Other Adverse Effects:** None known.

## SECTION 13: DISPOSAL INFORMATION

**Waste Treatment Methods**

**Disposal Method**: Dispose in accordance with all local, state and federal regulations.
**Empty Container**: No special handling or disposal is required.
**General Comments**: It is the responsibility of the user of this product to characterize wastes generated to determine if the waste meets the definition of hazardous waste. The product uses, transformations, synthesis, mixtures, etc., may render the resulting end product subject to regulation.

## SECTION 14: TRANSPORT INFORMATION

| | UN Number | UN Proper Shipping Name | Transport Hazard Class(s) | Packing Group | Environmental Hazards |
|---|---|---|---|---|---|
| **US DOT** | None | Not regulated | None | None | Not applicable |
| **EU ADR/RID** | None | Not regulated | None | None | Not applicable |
| **IMDG** | None | Not regulated | None | None | Not applicable |

**Special Precautions for User:** None

## SECTION 15: REGULATORY INFORMATION

**Safety, Health and Environment Regulations:**

**US Regulations:**
**EPA SARA 311/312 Hazard Classification**: Fire Hazard, Acute Health

**EPA SARA 313**: This Product Contains the Following Chemicals Subject to Annual Release Reporting Requirements Under SARA Title III, Section 313 (40 CFR 372): None

**Protection Of Stratospheric Ozone**: This product is not known to contain or to have been manufactured with ozone depleting substances as defined in 40 CFR Part 82, Appendix A to Subpart A.

**CERCLA Section 103**: This product is not subject to CERCLA spill reporting requirements. Many states have more stringent release reporting requirements. Report spills when required under federal, state and local regulations.

**California Proposition 65**: This product is not known to contain chemicals regulated under Proposition 65.

**Canadian Regulations:**
**Canadian WHMIS**: D-2-A
This product has been classified in accordance with the hazard criteria in the CPR and the SDS contains all the information required by the CPR.

**Chemical Inventories:**
**US TSCA** All of the components of this material are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory or are exempt.
**Canadian CEPA**: All of the components are listed on the Canadian DSL or are exempt.
**Australia:** All of the components are listed on the AICS inventory or are exempt.
**China:** All the components are listed on the Chinese chemical inventory or are exempt.
**Philippines:** All the components are listed in the Philippine Inventory.
**New Zealand:** All of the components are listed on the New Zealand Inventory of Chemicals.
**Korea:** All of the components are listed on the Korean Existing Chemicals Inventory
**Japan**: All the components are listed on the Japan Inventory of existing chemicals.

## SECTION 16: OTHER INFORMATION

**NFPA Ratings:**
Health: 1 Flammability: 2 Reactivity: 0

**HMIS Ratings:**
Health: 1 Flammability: 2 Reactivity: 0

**SDS Date of Preparation/Revision**: December 15, 2014

**Revision History**: Conversion to GHS format. Changes in all Sections.

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Ravi, Shree

From: Hellerich, Lucas
Sent: Thursday, May 23, 2019 4:12 PM
To: Gratton, Patrick; Mikaelian, Scott; King, Trevor C.
Subject: Fwd: PPG Site 114 - PBR Modification Request

Sent from my Verizon, Samsung Galaxy smartphone

-------- Original message --------
From: "VanEck, David" <David.VanEck@dep.nj.gov>
Date: 5/23/19 3:12 PM (GMT-05:00)
To: "Schnobrich, Matthew" <Matthew.Schnobrich@arcadis.com>, prabal.amin@westonsolutions.com, ralph.costa@westonsolutions.com, "Doyle, David" <David.Doyle@dep.nj.gov>
Cc: "Overmyer, Jody" <overmyer@ppg.com>, "Feinberg, Richard [C]" <feinberg@ppg.com>, "Flanders, Cullen" <Cullen.Flanders@arcadis.com>, "Hellerich, Lucas" <Lucas.Hellerich@aecom.com>, "Horst, John" <John.Horst@arcadis.com>
Subject: RE: PPG Site 114 - PBR Modification Request

Hello all,

On behalf of PPG, Arcadis has submitted an updated proposed modification of the Groundwater Interim Remedial Measure (IRM) Phase I Design Permit-By-Rule (PBR) that was approved by the New Jersey Department of Environmental (NJDEP) on 21 September 2017 for the Garfield Avenue Group (GAG) Sites located in Jersey City. This Phase I PBR modification covers installation and operation of two new multipurpose extraction / injection wells near GPS-MW1S. In addition to this modification, an update to the shallow water-bearing zone organic carbon substrate for ISAB is also proposed to include both molasses and EVO for subsurface injections. The carbon dosing will comprise approximately 2% molasses solution or 2% EVO, or a 4% solution of combined organic carbon substrate.

The proposed modification also requests pilot testing of hydraulic fracturing techniques in the transitional intermediate/deep water-bearing zone. The pilot test proposes to evaluate hydraulic fracturing techniques to emplace a FerroBlack solution into low permeability zones and to enhance permeability in the transitional intermediate/deep water-bearing zones below the meadow mat at Site 114. The anticipated fracture zone is 40 to 60 feet below grade but will be selected from boring profiles during drilling. The pilot test layout includes three fracture wells (FP-FW-01, -02, and -03) located radially around existing monitoring well cluster MW-103 (114-P1B-MW103S, MW-P1B-MW103D, and 114-P1-IRM-3). The three 4-inch diameter PVC fracture wells would be installed in approximately 8-inch diameter boreholes. Either sonic or a combination of hollow stem auger/mud rotary drilling methods will be used. If the combined hollow stem auger/mud rotary drilling methods are used, three 8 steel casings would be Installed in the meadow mat serve as outer (double) casings. If sonic drilling methods are used, permanent steel casings would not necessarily need to be installed, but 10-inch outer steel casings may be installed to the meadow mat.

A high pressure water jet would be used to nucleate a fracture and create a lens for adding the FerroBlack to the formation. The estimated FerroBlack volume to be emplaced in the target treatment zone using the three fracture wells is approximately 2,000 gallons (approximately 20,000 pounds); however, up to 5,000 gallons of FerroBlack may be injected during the initial pilot test injection event. The FerroBlack will either be injected as a pure solution or mixed

with potable water, and or clean sand slurry to act as a proppant and hold the fracture lens open. For purposes of this PBR modification, it is assumed up to 5,000 gallons of potable water and/or 2,000 pounds of sand could potentially be mixed with the FerroBlack. In addition, up to 500 pounds of guar gum potentially may be used during the hydraulic fracturing pilot test.

Based on the findings of the pilot test, additional pilot testing of hydraulic fracturing techniques to emplace FerroBlack may be performed in the same pilot test area, or in a second area with a different geology and Cr concentration. This PBR Modification requests permission to inject up to 10,000 gallons of FerroBlack with up to 10,000 gallons of potable water and/or 4,000 pounds of sand slurry, along with 1,000 pounds of guar gum.

The Department hereby approves the proposed PBR modification request. The injection and monitoring activities must be performed as proposed in the 22 May 2019 “Discharge to Groundwater Permit-by-Rule Modification Request”.

David
…
David Van Eck, Supervising Geologist
NJ Dept. of Environmental Protection
Bureau of Ground Water Pollution Abatement
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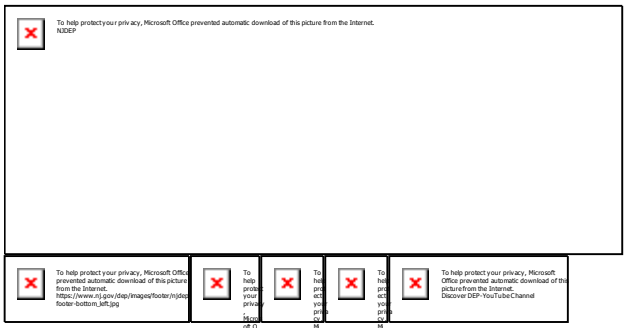


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From: Schnobrich, Matthew <Matthew.Schnobrich@arcadis.com>
Sent: Thursday, May 23, 2019 12:34 PM
To: prabal.amin@westonsolutions.com; ralph.costa@westonsolutions.com; Doyle, David <David.Doyle@dep.nj.gov>
Cc: VanEck, David <David.VanEck@dep.nj.gov>; Overmyer, Jody <overmyer@ppg.com>; Feinberg, Richard [C] <feinberg@ppg.com>; Flanders, Cullen <Cullen.Flanders@arcadis.com>; Hellerich, Lucas <lucas.hellerich@aecom.com>; Horst, John <John.Horst@arcadis.com>
Subject: [EXTERNAL] FW: PPG Site 114 - PBR Modification Request

All –

In response to a question from Dave on drilling methodology for one portion of the Site 114 Phase I IRM PBR Modification Request submitted last Thursday, minor revisions to last week’s document were made to provide additional flexibility for drilling during the hydraulic pilot test. These were submitted in an updated version yesterday and is attached here to incorporate the broader distribution group.

Matt

From: Schnobrich, Matthew
Sent: Wednesday, May 22, 2019 2:48 PM
To: VanEck, David <David.VanEck@dep.nj.gov>
Cc: Flanders, Cullen <Cullen.Flanders@arcadis.com>; Hellerich, Lucas <Lucas.Hellerich@aecom.com>
Subject: RE: PPG Site 114 - PBR Modification Request

Dave –

In response to your question below and our phone conversation last week, attached is the updated Phase I IRM PBR Modification request for both the shallow zone activities and the hydraulic fracturing pilot test. As we discussed, additional detail has been added to page 5 of this document to reflect the considerations for either sonic or HSA/mud rotary mud rotary drilling and the specifications around when an additional outer casing is included to isolate the meadow mat. This provides increased flexibility for pilot test planning and ultimately enables selection of the appropriate methodology.

Please let us know if you have further questions. Thanks.

Matt

From: VanEck, David <David.VanEck@dep.nj.gov>
Sent: Friday, May 17, 2019 10:44 AM
To: Schnobrich, Matthew <Matthew.Schnobrich@arcadis.com>
Subject: RE: PPG Site 114 - PBR Modification Request

Matthew,

Not 10 minutes before I received this email, I got a call from AECOM about a "hydraulic fracturing pilot test" at this site, where steel casing was not proposed. Although they checked with our Bureau of Well Permitting and Water Allocation, and were told it would be okay, they seemed worried about this. I agreed. Right after the call, I received this proposal and see you are proposing steel casing. Has there been some change? I also see that sonic drilling is proposed, and Well Permitting allows sonic drilling to omit the steel secondary casing since the sonic drill protects the borehole and achieves a good grout seal. Am I misunderstanding something? Or did PPG review an earlier draft? How did AECOM get he idea that steel secondary casing down to meadow mat was being omitted?

David

...

David Van Eck, Supervising Geologist
NJ Dept. of Environmental Protection, Site Remediation Program
Bureau of Ground Water Pollution Abatement
P.O. Box 420, Mail Code 401-05V, Trenton, New Jersey 08625-0420
Phone: 609-633-2427
David.VanEck@dep.nj.gov

From: Schnobrich, Matthew <Matthew.Schnobrich@arcadis.com>
Sent: Thursday, May 16, 2019 1:47 PM
To: VanEck, David <David.VanEck@dep.nj.gov>
Cc: Overmyer, Jody <overmyer@ppg.com>; Feinberg, Richard [C] <feinberg@ppg.com>; Flanders, Cullen <Cullen.Flanders@arcadis.com>; Hellerich, Lucas <lucas.hellerich@aecom.com>; prabal.amin@westonsolutions.com;

ralph.costa@westonsolutions.com; Horst, John <John.Horst@arcadis.com>; Doyle, David <David.Doyle@dep.nj.gov>
Subject: [EXTERNAL] PPG Site 114 - PBR Modification Request

David –

On behalf of PPG, Arcadis and AECOM have prepared the attached request to modify the PBR Discharge Authorization approved by NJDEP for Garfield Avenue Group Site 114 in Jersey City, Hudson County, New Jersey. The proposed modification to the existing PBR includes: 1) the installation of several new multipurpose wells to support ongoing treatment in the shallow water-bearing zone; and 2) the implementation approach for pilot testing hydraulic fracturing to enhance permeability and reagent delivery in the intermediate and deep water-bearing zones. Both approaches are consistent with discussions during the February 6, 2019 Site 114 Groundwater IRM Status meeting in Jersey City.

Please let us know if you agree with these proposed modifications, or if you have any questions.

Regards,
Matt Schnobrich

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Be green, leave it on the screen.

Professional Registration/KY: 28828

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**New Jersey Department of Environmental Protection**
Site Remediation and Waste Management Program

# DISCHARGE TO GROUND WATER (DGW) PERMIT-BY-RULE AUTHORIZATION REQUEST

☐ LSRP ☐ Subsurface Evaluator (UHOT)

**Date Stamp (For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Garfield Avenue Site 113 and Former Halladay Street Gas Works

AKAs:

Street Address: 900 Garfield Avenue

Municipality: Jersey City (*Township, Borough or City*)

County: Hudson Zip Code: 07305

Program Interest (PI) Number(s): G000008791

Case Tracking Number(s) for this submission:

Municipal block(s) and lot(s) where the **proposed discharge(s)** would occur:

Block # 21501 Lot #(s) 16, 17, 18, 19, 20 Block # Lot #(s)

Block # Lot #(s) Block # Lot #(s)

## SECTION B. FEE AND DISCHARGE INFORMATION

DGW Proposal Review Fee ..... $350.00

**Discharge Type** *(check all that apply)*

☒ Discharge of Recovered Ground Water

Will the discharge be a result of dewatering only? ..... ☐ Yes ☐ No

☒ Discharge that is part of an *In situ* Remediation

☐ Discharges other than those above *(see instructions for more information)*

**Facility Type** *(check all that apply)*

☒ Underground Injection Control (UIC) facility (i.e., any type of injection)

☐ Non-UIC (e.g., surface application) *(see instructions for more information)*

**Attach a Discharge to Ground Water Proposal to this form** *(see instructions)* See attached CD

## SECTION C. PUBLIC NOTICE PROVISIONS *(Does not apply to residential heating oil tank cases)*

Is the proposed discharge lasting greater than 180 days? ..... ☒ Yes ☐ No

If "Yes," attach a copy of the public notice written as you intend it to be published. *(see instructions)* See attached CD, Appendix A

## SECTION D. SITE USE AND GROUND WATER CLASSIFICATION

**Current Site Use** *(check all that apply)*

☐ Industrial ☐ Agricultural
☐ Residential ☐ Park or recreational use
☐ Commercial ☒ Vacant
☐ School or child care ☐ Government
☐ Other

**Intended Future Site Use** *(check all that apply)*

☐ Industrial ☐ Park or recreational use
☐ Residential ☐ Vacant
☐ Commercial ☐ Government
☐ School or child care ☒ Future site use unknown

What is the ground water classification for this site as per N.J.A.C. 7:9C? *(check all that apply)*

☐ Class I-A ☒ Class II-A
☐ Class I-PL Pinelands Protection Area ☐ Class III-A
☐ Class I-PL Pinelands Preservation Area ☐ Class III-B

## SECTION E. RECEPTOR EVALUATION SUMMARY

**Non-UHOT Cases**

1. Have any of the following been identified on the site or within 200 feet of the site boundary?

   Check all that apply.

   ☒ Residences
   ☐ Child care facilities
   ☐ Public and private schools (K-12)
   ☐ Surface water
   ☒ Other occupied buildings
   ☒ Public parks and playgrounds

2. Did the well search conducted as a part of the receptor evaluation show any well use (potable, industrial, or irrigation)? ☐ Yes ☒ No

   If "Yes," indicate the type of use and approximate distance (closest occurrence) from site: *(Check all that apply)*

   ☐ Potable Distance from site: _____ feet

   ☐ Industrial Distance from site: _____ feet

   ☐ Irrigation Distance from site: _____ feet

3. Have any of these receptors been impacted? ☐ Yes ☒ No
   If "Yes," Do you have an NJDEP assigned Case Manager? ☐ Yes ☐ No

   If "Yes," please list the Case Manager: _____

**UHOT Cases**

1. Is ground water contamination above the Ground Water Remediation Standards? ☐ Yes ☐ No
   If "Yes," answer questions 2 and 3.
2. Has a potable well been identified within 100 feet of the contamination? ☐ Yes ☐ No
3. Have any potable wells been impacted? ☐ Yes ☐ No
   If "Yes," has the NJDEP been notified? ☐ Yes ☐ No

## SECTION F. PERSON RESPONSIBLE FOR CONDUCTING THE REMEDIATION INFORMATION AND CERTIFICATION

Full Legal Name of the Person Responsible for Conducting the Remediation: PPG Industries, Inc.

Representative First Name: Mark Representative Last Name: Terril

Title: Corporate Director Environmental Affairs

Telephone Number: (412) 434-2708 Ext.: _____ FAX: _____

Mailing Address: One PPG Place

City/Town: Pittsburgh State: PA Zip Code: 15222

Email Address: terril@ppg.com

This certification shall be signed by the person responsible for conducting the remediation who is submitting this notification in accordance with Administrative Requirements for the Remediation of Contaminated Sites rule at N.J.A.C. 7:26C-1.5(a).

*I certify under penalty of law that I have personally examined and am familiar with the information submitted herein, including all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, to the best of my knowledge, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties.*

Signature: Mark Terril Date: 2/28/2019

Name/Title: Mark Terril / Corporate Director Environmental Affairs

☐ Check this box if the person above is also the property owner of the site or their representative. If this person is not the site property owner, please ensure the site property owner's name and address is included in the DGW Proposal, and also indicate that the property owner has been informed about the proposed discharge.

**SECTION G. LICENSED SITE REMEDIATION PROFESSIONAL INFORMATION AND STATEMENT**

LSRP ID Number: _____

First Name: _____ Last Name: _____

Phone Numbers: _____ Ext.: _____ Fax: _____

Mailing Address: _____

Municipality: _____ State: _____ Zip Code: _____

Email Address: _____

This statement shall be signed by the LSRP who is submitting this notification in accordance with N.J.S.A. 58:10C-14, and N.J.S.A. 58:10B-1.3b(1) and (2).

*(1) I certify, as a Licensed Site Remediation Professional authorized pursuant to N.J.S.A. 58:10C-1 et seq. to conduct business in New Jersey, that for the remediation described in this submission, and all attachments included in this submission, I personally: Managed, supervised, or performed the remediation conducted at this site that is described in this submission, and all attachments included in this submission; and/or periodically reviewed and evaluated the work performed by other persons that forms the basis for the information in this submission; and/or completed the work of another site remediation professional, licensed or not, after having: (1) reviewed all available documentation on which I relied; (2) conducted a site visit and observed the then-current conditions and verified the status of as much of the work as was reasonably observable; and (3)concluded, in the exercise of my independent professional judgment, that there was sufficient information upon which to complete any additional phase of remediation and prepare workplans and reports related thereto.*

*(2) I certify:*

- *That I have read this submission and all attachments to this submission;*
- *That in performing the professional services as the licensed site remediation professional for the entire site or each area of concern, I adhered to the professional conduct standards and requirements governing licensed site remediation professionals provided in N.J.S.A. 58:10C-16;*
- *That the remediation conducted at the entire site or each area of concern, that is described in this submission and all attachments to this submission, was conducted pursuant to and in compliance with the remediation requirements in N.J.S.A. 58:10C-14.c;*
- *That the remediation described in this submission, and all attachments to this submission, was conducted pursuant to and in compliance with the regulations of the Site Remediation Professional Licensing Board at N.J.A.C. 7:26I; and*
- *That the information contained in this submission and all attachments to this submission is true, accurate, and complete.*

*(3) I certify, when this submission includes a response action outcome, that the entire site or each area of concern has been remediated in compliance with all applicable statutes, rules, and regulations and is protective of public health and safety and the environment.*

*(4) I certify that no other person is authorized or able to use any password, encryption method, or electronic signature that the Board or the Department have provided to me.*

*(5) I certify that I understand and acknowledge that:*

- *If I knowingly make a false statement, representation, or certification in any document or information I submit to the Department I may be subject to civil and administrative enforcement pursuant to N.J.S.A. 58:10C-17.a.1(a)through (f) by the Board, including but not limited to license suspension, revocation, or denial of renewal; and*
- *If I purposely, knowingly, or recklessly make a false statement, representation, or certification in any application, form, record, document or other information submitted to the Department or required to be maintained pursuant to the Site Remediation Reform Act, I shall be guilty, upon conviction, of a crime of the third degree and shall, notwithstanding the provisions of subsection b. of N.J.S.2C:43-3, be subject to a fine of not less than $5,000 nor more than $75,000 per day of violation, or by imprisonment, or both.*

*(6) I certify that I have read this certification prior to signing, certifying, and making this submission.*

LSRP Signature: _____ Date: _____

LSRP Name: _____

Company Name: _____

**SECTION G. SUBSURFACE EVALUATOR UST REPORT CERTIFICATION FORM**

*I certify under penalty of law that the work was performed under my oversight and I have reviewed the report and all attached documents, and the submitted information is true, accurate and complete in accordance with the requirements of N.J.A.C. 7:14B and N.J.A.C. 7:26E. I am aware that there are significant civil and criminal penalties for submitting false, inaccurate or incomplete information including fines and/or imprisonment.*

Name: _____ UST Cert. No.: _____

Firm: _____ Firm's UST Cert. Number: _____

Firm Address: _____

City/Town: _____ State: _____ Zip Code: _____

Phone Number: _____ Ext: _____ Fax: _____

Signature: _____ Date: _____

Completed forms should be sent to:

Bureau of Case Assignment & Initial Notice
Site Remediation Program
NJ Department of Environmental Protection
401-05H
PO Box 420
Trenton, NJ 08625-0420

ARCADIS Design & Consultancy for natural and built assets

PPG Garfield Avenue Group Sites

# GROUNDWATER INTERIM REMEDIAL MEASURE: PHASE II DESIGN AND PERMIT-BY-RULE AUTHORIZATION REQUEST

February 2019

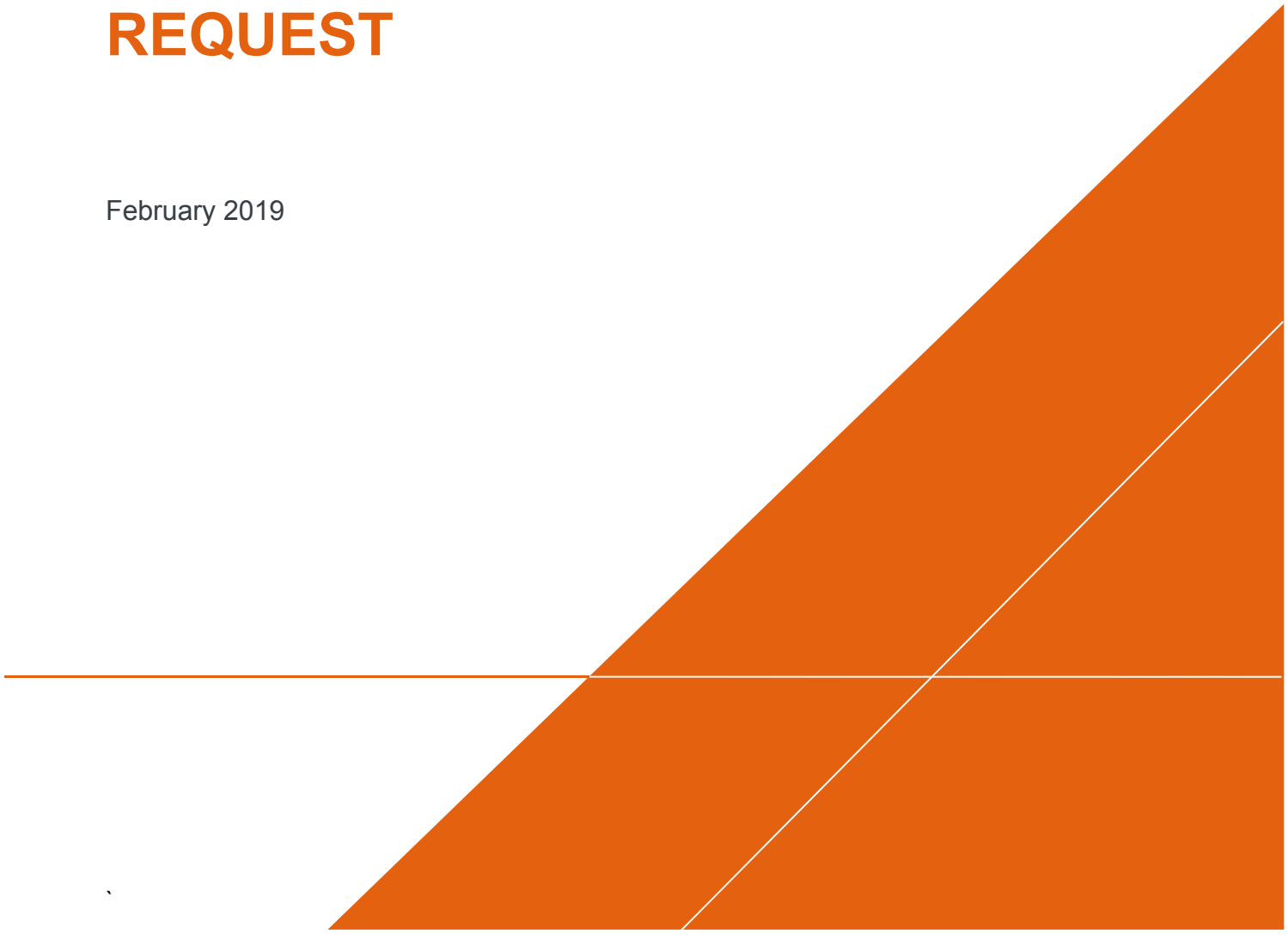

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# GROUNDWATER INTERIM REMEDIAL MEASURE: PHASE II DESIGN AND PERMIT-BY-RULE AUTHORIZATION REQUEST

PPG Garfield Avenue Group Sites
Jersey City, New Jersey

Program Interest #G000008791

Andrew Fuller – PE
Senior Environmental Engineer

Matthew Schnobrich
Technical Expert

John Horst
Executive Director

Prepared by:
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Tel 267 685 1800
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Our Ref.:
NP000775

Date:
February 2019

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Appendix A Draft Public Notice

Appendix B IRM Phase I Groundwater Monitoring Data - October 2018

Appendix C Recirculation Flow and Solute Transport Modeling

Appendix D Safety Data Sheets for Reagents and Substrates

# 1 INTRODUCTION AND IRM OVERVIEW

On behalf of PPG, Arcadis U.S., Inc. (Arcadis) prepared this Groundwater Interim Remedial Measure (IRM): Phase II Design and Permit-By-Rule (PBR) Authorization Request (Phase II Design) for the Garfield Avenue Group (GAG) sites, located in Jersey City, New Jersey (the site, **Figure 1**). The Phase II Design will be implemented at Site 114, which is located at 900 Garfield Avenue in Jersey City, New Jersey (**Figure 2**).

In order to expedite the treatment of groundwater associated with the portion of the GAG sites impacted with total and hexavalent chromium (Cr and Cr[VI], respectively), an IRM approach was developed consistent with the December 2016 technical memorandum titled, GW-050: Concepts for Groundwater Interim Remedial Measures for GAG sites, Jersey City, New Jersey (AECOM 2016) and subsequent discussions with the New Jersey Department of Environmental Protection (NJDEP) during May 2017. The IRM program was developed for phased implementation, with each phase representing a manageable portion of the affected area. The phased approach was intended to enable testing of the technical approach during the initial phase(s) and allow for continuous optimization of the process during successive phases. The IRM program is focused primarily on the intermediate and deep water-bearing zones that underlie areas where source removal has been completed and where elevated Cr(VI) is present in the groundwater.

The Phase I IRM is being performed in accordance with the Groundwater Interim Remedial Measure (IRM): Phase I Design and Permit-By-Rule (PBR) Authorization Request (Phase I Design; Arcadis 2017b) and included a combination of groundwater extraction within the northern portion of Site 114 for ex situ Cr removal and the reinjection of carbon-amended, treated groundwater in the southern portion of Site 114. Extraction operations within northern Site 114 served to recover groundwater containing the higher total Cr and Cr(VI) on site, while in situ anaerobic bioprecipitation (ISAB) was initiated in the southern section of Site 114 where Cr concentrations were lower and more amenable to bioremediation.

The proposed design for the Phase II IRM includes Cr treatment in both the northern and southeastern portions of Site 114 using a combination of groundwater extraction for ex situ Cr removal; and the reinjection of carbon-amended, treated groundwater or potable water for ISAB treatment. This Phase II IRM will be configured as follows:

- In the central portion of Site 114, groundwater will be recovered from areas containing elevated total Cr and Cr(VI) concentrations. This provides direct treatment of this area by removing Cr, resulting in less overall Cr in the subsurface. This area is also strategically advantageous to hydraulic operation, as the centralized site location enhances the subsurface progression of organic carbon and reactive zone distribution from both Phase II (north to south) and Phase I (south to north) IRM operations. Groundwater will be recovered for ex situ treatment and either reinjected or disposed to the sewer.
- In the northern portion of Site 114, a combination of localized groundwater extraction and substrate reinjection will provide a degradable source of organic carbon and foster development of a reactive zone for ISAB of Cr(VI) to trivalent Cr (Cr[III]) and subsequent precipitation and fixation of Cr within the aquifer matrix.

- In the southeastern corner of Site 114, groundwater will be recovered for ex situ treatment and permitted disposal to the sewer or reinjected with substrates to support ISAB in an area not included in the Phase I IRM.
- Similar to Phase I operations, the extraction/injection dynamics will help maintain the hydraulic balance inside the sheet pile enclosure around Site 114 and may also support flushing of Cr mass toward the extraction wells.
- Operation of the Phase I IRM remediation well network may continue intermittently in select areas in accordance with the existing Phase I IRM PBR (Arcadis 2017a) while Phase II operations are underway.

This design will advance ISAB treatment in the northern portion of Site 114 and facilitate ISAB treatment within the southern area of the site. During Phase I IRM operations, challenges pertaining to uniform reactive zone distribution within the heterogeneous Site 114 soils were encountered and have been considered in the Phase II design. To address this, supplemental injection techniques are currently being evaluated for subsurface permeability enhancement within the Phase I treatment area to improve treatment performance and the preferred methodology will be utilized in the Phase II program, as appropriate. The Phase II IRM program therefore leverages both design and operational insights gained during Phase I operations to enhance the ISAB process and allow continuous optimization of the treatment process.

## 1.1 Phase II IRM Objectives

Active treatment performed during the phased IRM program is being completed over a 3-year timeframe that includes approximately 1 year of active treatment per phase. Each active treatment phase is proposed to be followed by approximately 2 years of post-treatment monitoring. Phase I IRM extraction and injection operations were initiated during December 2017 and March 2018, respectively, and both were performed through 2018. Active Phase I treatment operations are anticipated to continue during the first half of 2019, following which post-treatment monitoring will be initiated.

Phase II IRM construction is expected to begin during the first half of 2019 with operational startup expected in mid-2019. The objectives of the Phase II program are to achieve the following:

- Establish anaerobic reactive zones to support ISAB reduction of Cr(VI) and total Cr within:
  - The northern portion of Site 114 where Phase I groundwater extraction was used to reduce Cr.
  - The southeastern portion of Site 114.
- Document post-treatment trends showing continuing attenuation/reduction of total Cr toward the Groundwater Quality Standards (GWQS).
- Capture site-specific information on the system operation to support subsequent IRM phases.

## 1.2 Regulatory and Permitting Considerations

Since Phase II of the IRM proposed injections to groundwater, a New Jersey Pollutant Discharge Elimination System (NJPDES) Discharge to Groundwater (DGW) PBR Authorization Request will be prepared and submitted. Pursuant to NJPDES rules (New Jersey Administrative Code [N.J.A.C.] 7:14A-

7.5 and 8.5) and Technical Requirements for Site Remediation (N.J.A.C. 7:26E-5.6), this report provides the PBR Authorization Request Form (**Appendix A**) and the detailed design describing the DGW activities.

In addition, because the DGW PBR involves operation beyond 180 days, a 30-day public notice is also required prior to the start of the groundwater discharge in accordance with 7:26E-5.6 (c)1-4. A draft public notice is provided as **Appendix A**. Proof of publication will be provided to NJDEP within 15 days after the notice is published.

Because the design also involves the withdrawal/removal of groundwater, either a Water Use Registration (WUR) or Water Allocation Permit (WAP) are required by the NJDEP Division of Water Supply (DWS). PPG currently maintains a WUR for the site (WUR100001) associated with the ongoing excavation dewatering efforts. The current WUR covers PPG Site 114 with an upper limit of total water from all diversion sources of 3.1 million gallons per month. The design for Phase II of the IRM relies on balancing the IRM-related groundwater extraction with the excavation dewatering extraction needs, such that the total dewatering will stay within the approved volumes of the current permit. The existing WUR permit (WUR100001) will be updated with the additional wells proposed for extraction purposes during the IRM, consistent with previous modifications.

This document provides the relevant technical background followed by the detailed design (and basis), operation, and monitoring plan for Phase II of the IRM.

# 2 TECHNICAL BACKGROUND

This section provides a brief summary of pertinent site background information, remediation history, site geology and hydrogeology, fate and transport of Cr in groundwater, and a discussion of Cr treatment technologies that have been evaluated for the site. A summary of relevant observations and design modifications gleaned from the Phase I IRM program are also presented for use in refining overall performance of the Phase II IRM approach.

## 2.1 Site Use, Remediation History, and Future Site Redevelopment Plans

In 1954, PPG acquired the 16.6-acre property from Natural Products Refining Company and processed chromite ore until 1963. In 1964, the plant was sold, and by 1976, chromite ore processing at the site had ceased. During the chromite ore processing operation, chromate chemical production waste (CCPW) was generated as a by-product from the production of sodium bichromate, including chromite ore processing residue (COPR), green-gray mud, and fill mixed with COPR or green-gray mud. Some of this material was used as fill around the site. These materials served as a source of Cr impacts observed in soil and groundwater at the site.

In 1990, PPG and NJDEP entered into an Administrative Consent Order (ACO) to investigate and remediate locations where CCPW or CCPW-impacted materials related to former PPG operations may be present. On June 26, 2009, NJDEP, PPG, and the City of Jersey City entered into a Partial Consent Judgment Concerning the PPG Sites, also referred to as the Judicial Consent Order (JCO), with the purpose of assessing the groundwater and sources of contamination at these sites as expeditiously as possible. The goal of the JCO was to complete the investigation and soil remediation activities at the PPG sites within 5 years. The selected approach for Cr-impacted soil is excavation and off-site disposal. Soil remediation at Site 114 was completed between July 2010 and January 2015. The final groundwater remedy is monitored natural attenuation (MNA), but this IRM is intended to advance groundwater treatment throughout all of Site 114 prior to the implementation of MNA.

The site is enclosed in steel sheet piling with internal shoring that bisects the site into east and west portions (**Figure 2**). The sheet pile is installed to variable depths along its length based on the site geology, with the majority of sheet pile section separating the western and eastern areas of Site 114 installed to approximately 55 feet below ground surface (bgs). Currently, the site is completely enclosed by a security fence with a main entrance gate at the intersection of Carteret Avenue and Halladay Street. A New Jersey Transit Rail Line bounds the site to the north, and a residential neighborhood is located to the west across Garfield Avenue. The southern and eastern boundary of the site is surrounded by light industrial and commercial areas near the New Jersey Turnpike Extension (Interstate 78). The eastern side of the site is the location of a former manufactured gas plant (MGP). Remediation of the MGP-impacted soils has been completed. The primary approach for soils impacted with MGP is excavation and off-site disposal.

The site is currently vacant, and remediation activities, including excavation of source mass, have been conducted. The City of Jersey City and the Jersey City Redevelopment Agency plan to redevelop the site

and a few surrounding sites into a multi-block retail and residential complex. The redevelopment will be implemented as a phased approach while the groundwater remediation is being conducted at the site.

## 2.2 Chromium Treatment Pilot Testing

In situ treatment of Cr(VI) is a well-developed technology (United States Environmental Protection Agency [USEPA] 2000), which may be implemented via chemical reduction and biologically mediated precipitation processes. Although chemical and biological treatment mechanisms differ, both treatment processes are designed to reductively precipitate and permanently fix/immobilize the Cr in the aquifer, reduce Cr concentrations in groundwater to enable achievement of treatment goals, and support long-term treatment permanence.

Pilot scale testing was completed to evaluate the feasibility of both ISAB and in situ chemical reduction (ISCR) technologies for treatment of Cr-impacted groundwater and saturated soil at the site per the Technical Execution Plan: Pilot Study for In Situ Treatment of Chromium Impacted Groundwater Using Reduced Iron/Free Sulfide Injections and Bioprecipitation (AECOM 2013). These tests provided information relative to the anticipated Cr treatment performance, reagent longevity and utilization, and yielded information pertaining to fluid injection and transport within shallow and intermediate water-bearing zone geologies. The primary findings from these tests were used to develop the IRM remedial program and are summarized below. Detailed descriptions of these tests were included in the Phase I Design, the Groundwater Bioprecipitation Pilot Test Completion Report (Arcadis 2017a), and in the Groundwater Chemical Reduction Pilot Study Completion Report (AECOM 2017).

### 2.2.1 Pilot Test Implications for IRM Design

The the Groundwater Bioprecipitation Pilot Test (Arcadis 2017a) and the Groundwater Chemical Reduction Pilot Study (AECOM 2017) were completed to evaluate the use of the ISAB and ISCR technologies as options to address elevated Cr(VI) concentrations present in the site's groundwater. Field-scale injection tests were used to assess the benefit of degradable organic carbon substrates (ISAB) and FerroBlack®-H and calcium polysulfide (CaSx) chemical reductants (ISCR) to demonstrate the effectiveness of the techniques. The results of performance monitoring of the ISAB and ISCR pilot tests suggest that complete treatment of Cr(VI) impacts were achieved in soil and groundwater at the site using both technologies. Specifically, the test results demonstrated the following:

- Both ISAB and ISCR technologies demonstrated the capability for rapid, effective, and permanent (at least 1-year post reagent injection) Cr treatment.
- Elevated organic carbon concentrations or chemical reductant and the related reducing conditions in groundwater persisted through the end of the performance monitoring period (12 months), which suggests treatment effectiveness may last for an extended period without additional reagent amendment.
- Injections were able to achieve distribution of reagent within the target footprint within the testing period. Where ISAB injection wells were used, average injection rates ranged between 0.5 and 1 gallon per minute (gpm).

- Injection limitations during the ISAB pilot test were observed related to the fermentation of organic carbon and the generation of gases within the subsurface, following sustained delivery of carbon substrate over extended timeframes. During the ISCR testing with Ferroblack©-H, the solid clogging of screens and surfacing under pressurized injection were observed related to the viscous nature of the blended FerroBlack©-H particulate and water mixture. These observations were considered in development of the IRM system design to accommodate adjustments of operating well locations, injection/extraction flow rates, substrate dosing cycling, and fouling mitigation techniques.
- Where groundwater pH was high, the ISAB pilot test was successful in moderating pH to a circumneutral range (approximately pH 7 standard units [S.U.]), which is advantageous for enhancing the long-term stability of precipitated Cr(III).

The evaluation of pilot test results (e.g., aquifer mobile fraction, injection flow rates and pressures, and reagent loading) also provided baseline design parameters for the Phase I IRM. Additional operational and performance monitoring insights during the Phase I IRM expanded on information obtained from the initial pilot tests, and this updated information has been used to make modifications to the Phase II IRM design.

### 2.2.2 Phase II Design Insights Derived from the Phase I IRM

The IRM program is adaptive, with operational and performance monitoring observations used to make routine modifications to each phase while underway and to support refinement of subsequent phase design. The Phase I IRM has been routinely adjusted over the course of operation, and observations of carbon substrate distribution and Cr treatment have provided a series of design element changes and operational adjustments that will be integrated into the Phase II IRM program.

The ISAB treatment approach implemented during the Phase I IRM has employed the routine delivery of molasses into the groundwater system to stimulate the native microorganisms and promote the development of an in situ reaction zone. Within the reactive zone, fermentation of the organic carbon substrate promotes development of iron- and sulfate-reducing groundwater conditions that are favorable for the reduction of Cr(VI). Under these conditions, Cr(VI) is reduced to Cr[III] through reactions with multiple biologically generated reductants or via direct anaerobic respiration with Cr(VI) serving as the terminal electron acceptor. Specifically, Cr(VI) is reduced to form less soluble Cr(III)-hydroxide via the following three major reduction mechanisms:

- Direct anaerobic respiration with Cr(VI) serving as the terminal electron acceptor (e.g., enzymatic extracellular reduction and intracellular reduction [Zhu et al. 2008]).
- Reduction by sulfide (hydrogen sulfide [$H_2S$], hydrosulfide [$HS^-$]) and ferrous iron (Fe[II]). Under reducing conditions, sulfide and Fe[II] will be produced from the reduction of naturally occurring sulfate and iron.
- Formation of an iron-Cr hydroxide complex that is less soluble and more stable than pure chromium hydroxide ($Cr[OH]_3$) (Sass and Rai 1987; Eary and Rai 1988).

The Cr(III) formed following Cr(VI) reduction is less soluble under site groundwater conditions and may be immobilized in the form of a hydroxide mineral that can be incorporated in a matrix of carbonate, sulfide, and other precipitates generated during the treatment process. The insoluble Cr(III) phases are also

resistant to re-oxidation to Cr(VI) phases under soil and groundwater conditions of the site. In addition to monitoring changes in both Cr(III) and Cr(VI) via the above mechanisms, performance monitoring data collected during the Phase I IRM were also used to evaluate the propagation of carbon substrate through the subsurface. These data were assessed using changes in total organic carbon (TOC) concentrations, which demonstrate the extent of the reactive zone and where conditions are most advantageous for Cr treatment. Other geochemical lines of evidence (e.g., iron, manganese, sulfate, methane) were also used to support this assessment, as the electron donor from the carbon substrate is also used to reduce naturally occurring metal species (iron and manganese) and support both sulfate reduction and methanogenesis. The carbon is expected to decline with increased distance away from the injection wells, so these supplemental geochemical indicators are useful in understanding where TOC may be depleted but where reactive species (e.g., iron sulfide) from the ISAB process may be observed and still contribute to Cr treatment within the ISAB anoxic fringe (Arcadis 2017).

Phase I IRM monitoring data meet the monitoring objectives in documenting development of both the reactive zone and anoxic fringe and have also been used to identify areas of Site 114 where geologic heterogeneities have limited carbon distribution and treatment performance. Where treatment was achieved, these observations were used to transition injection wells through the step-wise well network sequence identified in the Phase I Design (Arcadis 2017a). Where distribution was not observed or took longer than originally anticipated, injection wells were operated for longer durations to increase overall carbon delivery. These insights have provided valuable information to improve the design of the Phase II IRM program and account for geologic heterogeneities within the intermediate and deep water-bearing zones. System operational recommendations have also been identified based on Phase I performance. A summary of these is included below.

- **Organic carbon dosing** – Organic carbon pulsing during the Phase I IRM was performed between late March 2018 and December 2018 for daily periods approximately 4 to 6 hours in length. During each cycle, the molasses solution was mixed inline to achieve a dosing concentration between 0.5% and 3% (by volume) and distributed to the operating injection wells. After each carbon pulsing cycle, the injection of unamended, treated groundwater from the water treatment plant (WTP) or an on-site potable supply was used to continue injection until the subsequent carbon cycle. During the first 2 months of operation (March through May), a dosing strength between 0.5% and 1.0% was employed to evaluate the extent of potential biofouling within the conveyance network and limit potential fermentation gas buildup within the injection wells. When it was demonstrated that these could be successfully managed, the carbon dosing was increased further during late May to a 2% concentration that was generally maintained for carbon pulsing periods through December. Based on Phase I IRM operations, the Phase II IRM will be initiated using a 2% solution that will be delivered during 6-hour weekday pulsing cycles.
- **Injection well spacing** – Phase I IRM injection wells were installed on approximate, 75-foot on-center well spacing to support delivery of carbon substrate and unamended groundwater throughout the southern Site 114 reactive zone (**Figure 3**). This spacing was determined based on dose treatment response monitoring collected during the ISAB pilot test, aquifer testing performed previously at Site 114 and in advance of the Phase I IRM, and hydraulic simulations presented in the Phase I Design. Performance monitoring data demonstrated that propagation of the reactive zone within Site 114 occurred most readily within the intermediate water-bearing zone, where soils are generally more permeable, and that distribution within the lower permeability deep water-bearing

zone soils was less than anticipated. To account for the distribution limitations observed, most notably in the deep water-bearing zone, the 75-foot well spacing required operation of each of the Phase I injection steps for a longer period than originally anticipated to increase reactive zone expansion. To improve distribution during the Phase II IRM, the well network design has been modified to include a tighter, 50-foot on-center injection well spacing to increase the proximity of carbon injection locations and account for geologic heterogeneities that can otherwise reduce distribution.

- **Reinjection water sourcing** – Groundwater recovered from Site 114 and treated at the WTP served as the primary source of reinjection water over the course of the Phase I IRM, but potable water from an on-site source was also used during late 2018. Utilization of treated groundwater from the WTP is beneficial, as groundwater from the site can be returned to the aquifer at similar rates to that recovered via the extraction well network. Reinjection of treated groundwater is also advantageous, as it limits the amount of water recorded on a monthly basis under the existing WUR. Comparison of the two water sources, however, indicated that the use of the potable source resulted in less overall fouling of the injection conveyance network and allowed for higher injection flow rates at acceptable system injection pressures (less than 10 pounds per square inch [psi]). This is attributed to the consistent chlorine residual and lower concentration of inorganics (e.g., sulfate) present in the potable water supply that are useful in reducing biofouling. To capitalize on the benefits of both water sources, both sources will be used during the Phase II IRM. It is anticipated that treated groundwater will be used to offset the overall permitted discharge volume and that potable water will be used during warmer periods when biofouling contributes to increase system maintenance demands. Finally, operational monitoring data (e.g., flow rates, injection pressures) and unanticipated downtime at the WTP will also be considered in water source cycling.
- **Fouling mitigation steps** – The Phase I Design identified the advanced need to perform routine field fouling mitigation procedures to sustain injection flow rates and maximize injection well performance. It was anticipated, based on the previous operation of continuous-delivery carbon substrate injection systems, that subsurface fermentation gas generation and biofilm development within the injection wells would represent the most notable fouling challenge. These impacts were mitigated by the timing of pulsing cycles and routine introduction of unamended potable or groundwater that served to continually push carbon from the well screen into the surrounding formation. The most notable fouling during the Phase I IRM included biological growth that occurred within the conveyance piping and system components between the mobile injection unit (MIU) and the injection wells. This fouling was most notable during warmer periods when biological growth kinetics increased, and following periods of WTP disruption which contributed to redox changes in the MIU water source. Phase II Design recommendations include an increase in conveyance line clean-out locations and modification of valves and gauging components that have an increased tendency to foul.

In addition to the areas for Phase II Design performance improvement identified above, efficiencies related to day-to-day field operations will also streamline Phase II implementation and startup procedures. Details pertaining to how these recommendations are included in the Phase II Design are discussed further in Sections 3 and 4.

## 2.3 Site Geology and Hydrology

The site is located on the Jersey City peninsula, approximately midway between the Passaic River and the Hackensack River junction to the west (approximately 1.8 miles) and the upper bay/mouth of the Hudson River to the east (approximately 1.6 miles). Site observations from soil boring logs are consistent with the regional geologic mapping and generally include approximately 10 to 20 feet of poorly-sorted fill materials over organic-rich meadow mat. The meadow mat occurs throughout the majority of the site and marks the transition from the shallow fill aquifer (shallow water-bearing zone) to the underlying intermediate and deep water-bearing zones. Where the meadow mat is absent, the shallow water-bearing zone exhibits direct hydraulic communication with the intermediate water-bearing zone.

The hydrogeologic units present at the site have been historically classified as the shallow water-bearing zone (soils and groundwater above the meadow mat), the intermediate water-bearing zone (soils and groundwater below the meadow mat to approximate depths of 40 feet bgs), and the deep water-bearing zone (soil and groundwater between 40 feet bgs to bedrock). The transition zone between the intermediate and deep water-bearing zones is characterized by varved deposits consisting of alternating layers of silt, silty sand, and clay which separate the more permeable intermediate and deep water-bearing zone soils. The presence and thickness of these units depends on the relative depth to bedrock, which varies across Site 114. While not viewed as a separate hydrogeologic unit, the meadow mat that separates the shallow and intermediate water-bearing zones represents a semi-confining layer for the intermediate water-bearing zone (where present).

While characterized extensively via previous remedial investigation activities, additional insights into the high degree of heterogeneity of the intermediate and deep water-bearing zones were generated over the course of the Phase I IRM. Pre-design aquifer pump testing, well drilling observations, ongoing operational flow rates (injection and extraction), and supplemental vertical aquifer profiling (VAP) were all valuable in improving the understanding of soil type distribution and their bearing on permeability and reactive zone development.

### 2.3.1 Shallow Water-Bearing Zone

The shallow water-bearing zone includes unconsolidated soils and fill above the meadow mat and is present to approximately 20 feet bgs. The meadow mat is encountered at Site 114 at elevations of 0 to -5 feet (North American Vertical Datum of 1988). The shallow fill has been excavated to a large extent as part of the soil and groundwater remediation in the shallow water-bearing zone (completed at Site 114). A clean, uniform, dense-graded aggregate (DGA) was backfilled to grade and was, in some areas, complemented by a capillary break. In many areas of Site 114, the backfill was amended with FerroBlack®-H to prevent the clean fill from being re-contaminated with Cr-containing groundwater from the deeper water-bearing zones in areas where Cr remains elevated. The shallow aquifer depth to groundwater ranges from approximately 1 to 8.6 feet bgs and exhibits a downward vertical gradient when compared to the intermediate water-bearing zone. Horizontal groundwater flows is limited by the sheet pile walls, and the vertical flow is limited by the meadow mat.

The meadow mat consists of silt and clay with varying amounts of organic materials; however, in some areas, the organic deposits are thin or absent. The thickness of the meadow mat varies from less than 1

foot to approximately 6 feet and exhibits reduced hydraulic conductivity compared to the shallow fill and underlying intermediate aquifer.

### 2.3.2 Intermediate Water-Bearing Zone

The intermediate water-bearing zone includes unconsolidated soils below the meadow mat extending to the deep water-bearing zone, ranging in thickness from 5 to 20 ft, and is encountered across the GAG sites to a terminal depth elevation between approximately -50 and -60 feet. Within Site 114, intermediate soils are encountered at elevations between approximately 0 and -30 feet. The intermediate aquifer consists of fine-to-coarse sands or silty sand with varying amounts of silt and gravel. VAP sampling performed during previous investigation activities and the Phase I IRM indicates that the distribution of these more permeable intermediate zone soils is highly variable. At VAP borings within southern Site 114, loose, coarse sands and pebbles were encountered immediately below the meadow mat and were present in intervals of 1 to 5 feet in thickness. These materials grade to coarse or fine sands and contain increasing silt content with depth. The transition zone between the intermediate and deep water-bearing zones is generally characterized by the presence of increasing fines and the occurrence of varved deposits consisting of interbedded low permeability silt layers with silty sands or sandy silts. This transition zone can occur gradually or as sharp transitions within either the intermediate water-bearing zone (shallower than 40 ft bgs) or 10 to 20 feet deeper in the deep water-bearing zone. While these general trends were observed in VAP sampling, there is limited lateral continuity in the vertical profile of these interbedded varve sequences. This high degree of heterogeneity must be considered for design well spacing and injection volumes in order to propagate the subsurface reactive zone within the intermediate soils.

The hydraulic gradient in the intermediate aquifer is east to southeast or southeast and ranges from 0.002 feet per foot (ft/ft) to 0.004 ft/ft (March 2017 data). The estimated hydraulic conductivity in the intermediate water-bearing zone is up to approximately 5 feet per day (ft/day) and, assuming a porosity of 0.25, the estimated seepage velocity is approximately 0.04 to 0.08 ft/day. The flow is likely to be affected by leaking sheet pile and recharge associated with a nearby diabase contact parallel to Garfield Avenue.

The vertical hydraulic gradients are generally downward from the shallow aquifer and upward from the underlying, lower permeability, deeper aquifer. The vertical hydraulic gradient patterns are likely to reflect that the majority of advective groundwater flow and flux are occurring in the intermediate depth aquifer.

### 2.3.3 Deep Water-Bearing Zone

The deep water-bearing zone includes unconsolidated soils below the intermediate zone that extend to the top of bedrock. The thickness of the deep water-bearing zone varies based on the depth to bedrock, which deepens moving west to east across Site 114. The deep zone is encountered at Site 114 to terminal elevations of approximately -40 to -50 feet. The deep water-bearing zone consists of mixes of sand, silt, and clay with considerable variability in hydraulic conductivity and interbedding. The deep zone also includes low permeability till which is generally encountered below these sequences and overlies the bedrock. VAP characterization logs and soil borings indicate that the zones of highest relative permeability consist of silty sand or sandy silt and can be encountered with thicknesses of up to approximately 5 feet. These zones represent the primary intervals for groundwater and Cr transport within the deep water-bearing zone. Based on observations from the VAP logs and the Phase I extraction rates,

the bulk hydraulic conductivity for the deep water-bearing zone is generally an order of magnitude lower than observed in the intermediate depth aquifer. The higher degree and nonuniform distribution of low permeability soils within the deeper water-bearing zone has reduced hydraulic interconnectivity, which limited reagent delivery and reactive zone propagation within the Phase I IRM treatment area.

Depending on the location, the deep aquifer hydraulic gradient is east, east to southeast, and southeasterly and is approximately 0.005 ft/ft. Based on the VAP logs and assuming a porosity of 0.5, the seepage velocities in the deep aquifer range from less than 0.004 ft/day to approximately 0.04 ft/day.

### 2.3.4 Aquifer Testing Results

Pump testing activities performed in advance of Phase I IRM implementation were used to assess the range of anticipated sustainable flow rates and drawdown response expected following well installation. These data were also used to validate system sizing and hydraulic model assumptions. Initial testing was completed by AECOM in the northern area of Site 114, east of the pilot test area (AECOM 2015). Additional pre-design testing was performed by Arcadis during July 2017 prior to IRM implementation (Arcadis 2018).

Initial pump testing included a step drawdown pump test, a 3-day constant rate pump test, and a recovery test (to monitor the time taken for water levels to resume to the original conditions observed prior to pumping) between November 4 and November 17, 2014. These tests were conducted by extracting groundwater from the intermediate water-bearing zone well 114-MC-EW-103 (**Figure 2**). During the pumping test, a sustained groundwater pumping rate of approximately 3 gpm was achieved in 114-MC-EW103 over a period of 72 hours. Drawdowns at the monitoring wells were found to range between 25 feet (at the pumping well) to 4 feet (at an intermediate well located 27 feet away). No measurable water level drawdowns were observed at monitoring wells located more than 27 feet from the extraction well. Hydraulic conductivity estimates from both the pumping and recovery tests were found to range from 1 to 5 ft/day for the intermediate water-bearing zone. These estimates are consistent with representative values for silt sediments with varying amounts of fine sand, which were the main soil types observed across the well screens.

Between July 10 and July 27, 2017, four test wells (114-P1-IRM-9, 114-P1-IRM-23D, 114-P1-IRM-41I, and 114-P1-IRM-41D) were installed for pre-design testing. These wells were constructed in accordance with the PBR, which included installation of outer steel casings keyed into the meadow mat. Each of these well locations served as part of the IRM Phase I well network and were designed to accommodate both injection and extraction functions (**Figure 3**).

Hydraulic testing activities included initial step testing at 50% and 100% of the expected sustainable extraction rates, constant rate testing to achieve steady-state pumping at the selected pumping rates, stress testing to determine the maximum sustained pumping rate capable of dewatering the screen to 2 feet above the top of the well screen, and constant rate injection testing. Geochemical samples were also collected prior to hydraulic testing and during the test to assess changes in conditions due to pumping (Arcadis 2018).

As summarized in the Groundwater IRM Phase I Quarterly Report – Q1 2018 (Arcadis 2018), hydraulic conductivities ranged from 0.5 to 8 ft/day, with the lowest hydraulic conductivity observed in the deep aquifer well. This range was generally consistent with the 2014 testing and the parameters incorporated

into the IRM design. Sustainable extraction rates ranged from less than 0.5 gpm in the deep water-bearing zone to 3 gpm in the intermediate water-bearing zone. The achievable and sustained injection rates under moderate wellhead pressures (up to 5 psi) were generally consistent with the magnitude of the extraction rates. Analysis of the pumping test observation data supported the conceptual site model (CSM) of limited and negligible seepage from the shallow to the intermediate and deep water-bearing zones. These data indicate that, where the meadow mat is present, the intermediate/deep water-bearing zones are generally hydraulically disconnected from the shallow zone; however, seepage is known to exist in areas where the meadow mat is thin or absent.

### 2.3.5 Phase I Hydraulic Operations

Groundwater extraction operations during the Phase I IRM indicated that sustainable flow rates were within the range of previous hydraulic testing. In general, flow rates from extraction wells screened within the intermediate water-bearing zone were higher than that observed in the deep water-bearing zone due to the relative difference in permeability between units. Flows within the intermediate water-bearing zone generally ranged between 1 and 7 gpm, with flows in the deep water-bearing zone between 0.1 and 2 gpm. The one exception to this was well 114-IRM-40D, which exhibited sustained pumping rates between 5 and 7 gpm through much of the Phase I operational period. The decision to operate individual extraction wells at a given time during the Phase I program was made based on a balance between the following evaluation criteria:

- The well's spatial location near operating injection wells to enhance carbon distribution and reactive zone propagation within the extraction/injection well hydraulic dipole arrangement.
- The well's observed groundwater yield, with a focus on maximizing flow from the most productive locations.
- The magnitude of Cr observed in each extraction well, with a focus on maximizing groundwater recovery from wells containing the highest Cr concentration.
- A balanced distribution of operating extraction wells, with a desire to sustain flow from wells within the southwest and southeast carbon reinjection areas and the northwest and northeast Cr recovery areas.
- Any increase in organic carbon breakthrough associated with injection activities in the surrounding area that could exacerbate well or ex situ treatment system fouling.

Using the above evaluation criteria, the combinations of extraction wells used during Phase I sustained a total system extraction rate of 20 to 25 gpm for most of the Phase I period, which was in excess of the initial Phase I IRM design target of 17 gpm determined from the hydraulic model. Phase I observations indicate that extraction wells are likely to exhibit variability based on the stratigraphic features of the well location and, therefore, more Phase II remediation wells should be installed with extraction well capability to accommodate production rate variability in order to achieve the design flow rates.

Groundwater gauging activities were performed on at least a monthly basis between January and December 2018 in conjunction with the performance monitoring program to assess changes in drawdown and hydraulic gradients within the intermediate and deep water-bearing zones. Potentiometric maps for

these two zones are shown on **Figure 4**. Water levels were also collected from a series of shallow zone monitoring wells for use in assessing vertical gradients between all three units.

A review of Phase I potentiometric influence demonstrates the lateral and vertical hydraulic connection in the intermediate water-bearing zone. Relative areas of groundwater mounding are observed in the vicinity of the injection wells (**Figure 4**) when compared to observed cones of depression near extraction wells. The groundwater elevation patterns indicate that the injection/extraction network has been successful in establishing controlled and engineered groundwater flow patterns that focus groundwater flow toward the extraction wells. The presence of relatively high hydraulic conductivity aquifer materials in the intermediate water bearing zone have promoted successful distribution of carbon and injection and extraction of water volumes that met or exceeded the design criteria. The main challenge identified within the intermediate zone is likely the creation of localized hydraulic stagnation zones which can occur between operating injection wells or in locations where injection wells are operated adjacent to the sheet pile barrier. While enhancing the mounding associated with the injection program, the sheet pile barrier also limits flow and carbon distribution toward the barrier. Identification of these zones is important, as it informs how specific well locations can be addressed by sequentially cycling adjacent injection well operations over the course of several weeks or monthly time intervals.

Similar potentiometric patterns were observed in the deep water-bearing zone. The groundwater elevation contours demonstrate hydraulic control and engineered groundwater flow patterns from the injection wells toward the extraction points. The relatively lower permeability of the deep water-bearing zone has been apparent in the reduced injection and extraction volumes within this interval. Data collected over the course of Phase I also indicates that carbon distribution has not been effective in areas defined by less permeable soils. This difference in carbon distribution reflects the lower bulk hydraulic conductivity in the deep water-bearing zone and the discontinuous nature of zones of higher relative permeability. Carbon distribution has been achieved through the deep water-bearing zone soil intervals that are defined by higher advective flow but is less significant or not otherwise observed in zones that may be hydraulically isolated due to increased thicknesses of silt. As part of the Phase I IRM program, options for permeability enhancement and supplemental reagent delivery are currently being evaluated to better address lower permeability soils that also serve as Cr storage zones. For the Phase II IRM program, these observations serve as the primary rationale for increasing the overall density of the remediation well network by reducing the on-center well spacing. As applicable, permeability enhancement methods may also be incorporated in the Phase II IRM program as in Section 3 and is.

## 2.4 Nature and Extent of Chromium Impacts

### 2.4.1 Chromium in Groundwater

The primary site contaminant of concern (COC) in groundwater is Cr. Total Cr and Cr(VI) have been detected in the shallow, intermediate, and deep groundwater water-bearing zones of the site at concentrations exceeding the GWQS of 70 micrograms per liter (µg/L). Recent total Cr and Cr(VI) concentrations and iso-concentration contour maps for the intermediate and deep water-bearing zones are presented on **Figures 5** through **8**. As shown on these figures, both total Cr and Cr(VI) are primarily present in the intermediate and deep water-bearing zones with a reduced footprint and magnitude. As Cr, within the shallow water-bearing zone, has been excavated, concentrations above the GWQS were only

observed at a few localized areas at the site. Groundwater within the intermediate and deep water-bearing zones at Site 114 is confined by the existing sheet pile enclosures that reduce the likelihood of off-site Cr transport in groundwater. The historical total Cr and Cr(VI) data in groundwater are provided in **Appendix B**.

*Shallow Water-Bearing Zone*

The concentrations of Cr in the shallow water-bearing zone prior to the excavation work ranged from less than 1,000 µg/L to 16,000,000 µg/L. The concentrations of both total Cr and Cr(VI) and the areas with concentrations exceeding the GWQS of 70 µg/L for total Cr have been reduced as a result of the shallow water-bearing zone soil excavation and treatment of backfilled FerroBlack®-H material. Total Cr and Cr(VI) concentrations have been reduced below the 70 µg/L in most areas at Site 114, except for the pilot test area located in the northwestern portion of Site 114 and in a localized area surrounding monitoring well 114-P2B1-MW102S. Treatment performed under the Phase I PBR targeted the area in the vicinity of the former pilot tests and will continue in accordance with the Phase I injection and post-treatment monitoring program. Except for the pilot test area, areas within Site 114 that contain total Cr and Cr(VI) above the GWQS were backfilled with FerroBlack®-H material. Continued Cr treatment in the presence of FerroBlack®-H material in these areas is expected to continue over time.

*Intermediate Water-Bearing Zone*

Prior to implementation of Phase I, Cr concentrations at intermediate water-bearing zone monitoring wells, between 2015 and 2016, ranged from less than 1,000 µg/L to more than 1,000,000 µg/L with detected Cr and Cr(VI) concentrations observed up to 5,720,000 µg/L and 5,370,000 µg/L, respectively. The footprint of the Cr-impacted area has changed significantly under the influence of Phase I carbon injections in the southern area and groundwater extraction in the northern area of the site. The distribution of total Cr and Cr(VI) in the intermediate water-bearing zone based on data collected between October 30 and November 2, 2018 are shown on **Figures 5** and **6**, respectively. These data are also included in **Appendix B**.

As shown on **Figures 5** and **6**, Cr and Cr(VI) concentrations have been reduced to below 1,000 µg/L and to below detection, respectively, in the majority of the southeast and portions of the southwest corners of the Phase I treatment area. This area received carbon substrate delivery for the longest duration during Phase I operations. Cr is still observed within the northern half of the Phase I injection area where Phase I operations continued through the early December, approximately 5 weeks after the date of the sampling data. This area represents the primary area of treatment once Phase I operations resume during March 2019. Similar Cr reductions are expected in the northern half of the Phase I treatment area during continued operation of the Phase I well network during 2019.

Within the northern half of Site 114, changes have been observed in Cr due to ongoing operation of the groundwater extraction network. Concentrations have generally declined at most extraction wells operating during the Phase I program, which can be attributed to the ongoing Cr mass removal via extraction operations. As reported in the Groundwater IRM Phase I Quarterly Report for third quarter (Arcadis 2018b), over 17,000 pounds of total Cr and over 15,000 pounds of Cr(VI) had been recovered for ex situ treatment. Based on data collected through November, these mass removal numbers currently exceed 21,000 and 19,000 pounds for total Cr and Cr(VI), respectively. Collectively, the reduction in Cr

concentrations within the northern portion of Site 114 is consistent with the IRM objectives of reducing mass in this area prior to initiating the Phase II IRM ISAB injection program.

*Deep Water-Bearing Zone*

Similar to the intermediate water-zone, the implementation of Phase I injection and extraction operations have altered the Cr and Cr(VI) footprints in the deep water-bearing zone. The distribution of total Cr and Cr(VI) in the deep water-bearing zone are shown on **Figures 7** and **8**, respectively. The reductions in total Cr and Cr(VI) concentrations within the deep water-bearing zone are less extensive than that observed in the intermediate water-bearing zone. This is attributed to the more limited distribution of organic carbon substrate through the deeper, lower permeability soils. While some monitoring locations have shown limited change due reduced soil permeability, others have shown signs of improvement and highlight the degree of heterogeneity within the deeper water-bearing zone (e.g., 114-P1-IRM-10D). The deep water-bearing zone remains an area of focus as Phase I operations resume in 2019. Additional Phase I actions during 2019 will include ongoing organic carbon delivery in these areas where observed distribution has been more limited. As part of an amendment to the Phase I PBR, supplemental pilot testing is also being developed to evaluate an alternative injection method that can be used to enhance the relative permeability of more vertically extensive zones of low permeability soils that retain Cr. Improvements observed during these activities would also be used to adapt Phase II IRM activities, as warranted.

The highest concentrations of total Cr and Cr(VI) within the Phase I IRM monitoring network exceed 1,000,000 µg/L at well 114-P1-MW7D, within northern Site 114. Similar to the intermediate zone, reductions in Cr have been observed at operating deep extraction wells, consistent with the IRM objective related to achieving overall mass removal.

### 2.4.2 Chromium in the Soil

Cr impacts in shallow water-bearing zone soils have been removed via excavation, and soil concentrations in exceedance of the Non-Residential Direct Contact Soil Cleanup Criteria (NRDCSCC) have been identified within the intermediate and deep water-bearing zones. These exceedances are attributed to the high dissolved-phase concentrations that result in an elevated saturated soil sample response. As soil Cr impacts in the intermediate and deep water-bearing zones are a reflection of the dissolved-phase concentration, soil impacts are expected to decline via the IRM groundwater treatment program. The historical total Cr and Cr(VI) data in soil are provided in **Appendix B** of the Phase I IRM Design (Arcadis 2017b).

### 2.4.3 Other Contaminants

Additional contaminants historically detected above the applicable GWQS values at Site 114 include Target Analyte List (TAL) metals, cyanide, petroleum hydrocarbon compounds, volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs) associated with former MGP operations. While metals have been detected across Site 114, VOCs and SVOCs were primarily observed at localized areas in the eastern portion of the site (e.g., 114-MW20B). Based on the most recent sampling events (September 1, 2015 through June 1, 2018), the following COCs were detected above the applicable GWQS values:

- **Metals** – antimony, arsenic, beryllium, cadmium, cobalt, lead, nickel, silver, strontium, thallium, and vanadium
- **VOCs** – benzene, ethylbenzene, toluene, xylenes, tetrachloroethene, trichloroethene, cis-1,2-dichloroethene, vinyl chloride, chlorobenzene, 1,1-dichloroethene, 1,2-dichloroethane, 1,2,4-trimethylbenzene, 1,2-dichlorobenzene, 1,4-dichlorobenzene, 1,2,4-trichlorobenzene, and styrene
- **SVOCs** – benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, 1-methylnaphthalene, 2-methylnaphthalene, bis(2-ethylhexyl)phthalate, pentachlorophenol, 1,4-dioxane, naphthalene, hexachlorobenzene, benzo(k)fluoranthene, and indeno(1,2,3-cd)pyrene

While the concentrations of these COCs were lower compared to Cr and are not the primary targets of the IRM program, these additional COCs have been considered as part of the IRM program development and will be addressed via IRM treatment operations. Similar to Phase I operations, these contaminants are expected to be treated with the existing WTP (e.g., via metal precipitation, granular activated carbon [GAC] adsorption, and filtration) or may be otherwise utilized as supplemental organic carbon substrates for ISAB or degraded via natural biological degradation (e.g., VOCs and SVOCs).

As detailed in Section 3.1.3, operation of the water treatment system has been effective in reducing these concentrations prior to discharge. Ongoing monitoring of these COCs will continue to demonstrate that sufficient treatment (i.e., a 95% reduction between influent and effluent concentrations or removal to below the applicable GWQS, whichever is smaller), is achieved for reinjection use over the course of the IRM.

# 3 PHASE II IRM DESIGN: INTERMEDIATE AND DEEP WATER-BEARING ZONES

Activities proposed as part of the IRM Phase II and summarized in this PBR request include the following:

- Implementation of ISAB to initiate and sustain biological treatment in the northern and southeastern areas of Site 114 while leveraging groundwater extraction within the northern, central, and southeastern portions of Site 114 to remove Cr mass.
- Extraction and reinjection activities included as part of the Phase II IRM are designed to address intermediate and deep groundwater horizons, utilizing both biological degradation and physical extraction means.

Each of these PBR elements are presented in the sections below.

## 3.1 IRM Design Basis and Infrastructure

The ISAB treatment program builds on successful results achieved during pilot testing and Phase I activities. The IRM Phase II program will rely on an injectable organic carbon substrate (e.g., molasses, emulsified vegetable oil [EVO]) to establish reduced geochemical conditions and to stimulate the native microbial community to support reduction of Cr(VI) to Cr(III). As detailed in Section 2.2, this process is facilitated by several primary mechanisms that foster the precipitation and fixation of Cr(III) in aquifer soils. To achieve ISAB treatment within the northern and southeastern areas of Site 114, the IRM program has been developed with a well network designed to allow sustained delivery of potable or treated groundwater that has been amended with organic carbon into the subsurface. Groundwater extraction activities concurrent with ISAB reinjection will serve the following primary objectives:

- Provide a source of water for sustained ISAB injections.
- Maintain hydraulic conditions within the Site 114 sheet pile to limit mounding during sustained injection activities.
- Support removal of Cr(VI) concentrations from the northern portion of Site 114.

As demonstrated during the pilot test and the Phase I IRM, the propagation of both organic carbon and reduced groundwater chemical species (e.g., Fe[II], sulfide) through the subsurface collectively support Cr(VI) to Cr(III) reduction and precipitation (Arcadis 2017; Arcadis 2018). To accomplish this for Phase II, the proposed well network will be used adaptively over the course of operation in conjunction with systematic modification of extraction and reinjection flow rates, well configuration (i.e., extraction or injection), and organic carbon dosing. The recommended well network was developed based on incorporating existing site information and observed Phase I data into a groundwater and solute transport model (Section 3.1.1). This model was used to determine specifications for well spacing, vertical installation, and operational sequencing based on previously identified hydraulic information and observations from Phase I operations. While the model serves as a basis for conceptual design, Phase I challenges related to Site 114 soil heterogeneity and the presence of low permeability strata in the deep water-bearing zone must be considered as part of Phase II implementation. High-resolution lithologic profiling and VAP sampling performed as part of the Phase II well installation will be used to better refine

the understanding of relative permeability and Cr distribution across the intermediate and deep water-bearing zones, will allow targeted placement of injection and extraction well screened intervals, and will be used to identify zones for potential permeability enhancement via fracture-based injection techniques. The following sections present the modeling and design basis and the Phase II well network, water treatment, and conveyance infrastructure specifications.

### 3.1.1 Recirculation Flow and Solute Transport Modeling

Historical geologic and hydraulic information, together with the observations from Phase I implementation, were utilized to optimize the design well network within the Phase II IRM treatment areas. The groundwater flow and solute transport model constructed for Site 114 in the Phase I Design was also updated to improve predictability of the model based on Phase I information. These changes are detailed in **Appendix C** and were used to optimize the spacing, orientation, and operational sequencing of the Phase II well network. This modeling approach helps ensure the extraction and injection activities at Site 114 avoid hydraulic mounding within the sheet pile walls and can reasonably estimate organic carbon distribution during the Phase II operational timeframe. The model also serves as a tool to revisit potential optimization activities during the Phase II operation.

As detailed in **Appendix C**, MODFLOW was selected for the construction of the numerical groundwater flow model. The model extents are limited to the Site 114 boundary that follows the perimeter sheet pile walls as an effective hydraulic control for the majority of the site. The model is composed of four vertical layers that discretely represent the shallow fill, meadow mat, intermediate, and deep aquifers. The base of the model represents the contact between the bottom of the deep aquifer and the underlying till and/or bedrock. Hydraulic parameters, such as hydraulic conductivity and recharge, were assigned within ranges of observed values based on site slug tests, aquifer tests, and literature values. Iterative remedy simulations were then conducted to evaluate the temporal change in heads during remedy operations. Once the groundwater flow model was constructed, solute transport modeling was performed using Modular 3-D Transport Model (MT3D) and MT3D Multi-Species (MT3DMS). The solute transport modeling was used to represent the development of the ISAB reactive zone based on carbon substrate injection simulations during the first 6 months of Phase II operations.

Prior to simulating proposed Phase II operations, the groundwater flow and solute transport model was run using the actual Phase I operational data in order to compare water levels and the observed development of the ISAB reactive zones to the previously simulated Phase I carbon substrate injection results. Simulated and observed water levels indicate a reasonable fit and support the existing flow model parameters. The solute transport model also indicated a good correlation between the simulated and observed reducing zones for the intermediate water-bearing zone, while the simulated results for the deep water-bearing zone indicated development of a much larger reactive zone than what was observed during Phase I. To improve the match of the simulated transport results in the deep water-bearing zone (model layer 4), the mobile and immobile porosity values were incrementally adjusted from 10% and 25%, respectively, to 15% and 20%. This preserved the total porosity at 35% but allowed for a slower development of the reactive zones in the deep interval that was more consistent with what was observed. These adjusted solute transport model parameters coupled with the limited injection rates in the deep unit observed during Phase I operations were used to refine and tighten the spacing in the Phase II well network to maximize substrate distribution and reactive zone development in the target areas.

The groundwater flow and solute transport model were used to identify an initial IRM design consisting of 144 new injection wells and 20 new extraction well positions. The 144 injection wells were split between 103 injection locations in the northern area and 41 wells in the southeastern area. These wells include both intermediate and deep injection intervals to span the potential 20- to 40-foot Cr-impacted thickness within model Layers 3 and 4. The well network includes variable sequencing that utilizes wells operated for injection purposes and wells that are shifted from extraction to injection purposes to control hydraulic mounding during different steps of the Phase II program. Dedicated Phase II extraction wells are located in the central area of Site 114 and are located in areas that are hydraulically advantageous to maximize mass removal and support Phase II reactive zone propagation from north to south and to further enhance reactive zone development in the Phase I area from south to north.

Iterations of the site-specific injection and extraction flow rates and the Phase II well network indicated that a combined total injection and extraction rate of 21 gpm and 12 gpm within the northern and southeastern Phase II areas, respectively, can achieve organic carbon distribution during the operational period based on model parameters. While the model indicates reactive zone coverage can be achieved over a 6-month duration where aquifer properties are like those in the model, Phase I operation has demonstrated that distribution behavior will vary based on unique geologic heterogeneities in different areas of the site. Therefore, where achievable, injection and extraction rates will be increased to maximize the total quantity of groundwater extracted and injected within the capabilities of both treatment areas (40 gpm each) and within permit specifications. Over the course of operation, the Phase II design entails initiation of injection activities within the northern end of Site 114, followed by gradual southward shifts in operating wells. Based on the model flow rates, these have been conceptualized as three, 8-week cycles (**Appendix C**). Similarly, injection activities in the southeastern area will gradually shift further east during the Phase II operation. While the model assumptions are helpful in predicting the progression through the individual steps during the operational period, individual cycles may be extended in length (e.g., to 12 or 16 weeks) based on performance and observed reactive zone development.

As observed during Phase I IRM operations, geologic heterogeneities within the intermediate and deep water-bearing zones influenced reagent and reactive zone propagation within the recirculation area. This resulted in extension of the anticipated timeframes for each operational step based on performance monitoring observations. A similar approach will be adopted for Phase II, with the predicted sequencing timeframes above adapted, as necessary, based on operational and performance monitoring results. The reduction in on-center injection well spacing from 75 feet (Phase I) to 50 feet (Phase II) will also shorten the necessary reactive zone propagation distance between well locations and will serve to help overcome natural geologic controls that might otherwise limit distribution and treatment extent. While the model developed for Phase II operations serves to support well spacing configuration and duration estimates, it will also be leveraged over the course of the remedy to review and refine remedial operations based on additional geologic information obtained during well installation, hydraulic operational observations, and water quality monitoring. This information will enable use of the model as a predictive tool or to evaluate remedy performance, while monitoring information will be used to assess overall treatment progress and adapt remedial operations.

### 3.1.2 Extraction and Injection Well Design

The 144 new injection wells and 20 new groundwater extraction wells identified based on the observed Site 114 Cr distribution and hydraulic modeling outputs include discrete screened intervals to provide injection access to both the intermediate and deep water-bearing zones. The Phase II well installation program is anticipated to include a combination of hydraulic profiling tool (HPT) and vertical aquifer profiling (VAP) sampling methods to refine the understanding of Cr and lithologic vertical distribution to support final determination of the injection, extraction and monitoring well network. While HPT and VAP sampling will not be applied at all well locations, it is anticipated that the initial subset of wells (and up to 25% of the overall network) will utilize a combination of these sampling methods. Following these activities, drilling observations during installation and baseline groundwater sampling from each location will be used to further refine the understanding of geologic profiles and Cr distribution to optimize overall well placement. Collectively, this information is intended to support placement of injection and extraction well screens to address the vertical profile of the intermediate and deep water-bearing zones that contains Cr. Similar to the Phase I IRM well installation, injection/extraction wells are expected to entail longer well screens up to 20 feet in length to overwhelm potential heterogeneities within the intermediate and deep soils and allow propagation of the reactive through the soils of higher relative permeability.

Insights from all well installation activities will also be used to guide any modification in well network sequencing or recirculation flow balancing to achieve the IRM objectives. Examples of this include identification of areas with higher Cr concentrations and greater permeability that will represent an area for increased treatment focus or reduction in flows at wells installed in areas that do not require treatment. The layout and vertical interval specifications for IRM Phase II extraction and injection wells identified via the model are considered to be a conceptual representation of the final network, understanding that further refinements may be made in response to geologic and baseline analytical data consistent with the adaptive remedial program. For PBR approval purposes, it is assumed that up to 160 total injection wells and 30 total extraction wells will be installed. The proposed IRM Phase II remedial well layout is shown on **Figure 9**, and the remediation well construction details are included in **Table 1**.

The conceptual designs of the extraction and injection well completions are summarized on **Figure 10** and are consistent with the well construction used in the Phase I IRM. All remediation and monitoring wells will be installed by a union, New Jersey-licensed well driller and completed in accordance with the N.J.A.C. 7:9D. Drilling will use a step-wise process that entails hollow stem auger (HSA) to advance an outer, shallow protective casing with the meadow mat; this will then be followed by mud rotary drilling to achieve the target depths for well installation. As applicable, a Geoprobe rig may also be used to confirm the depth of the meadow mat prior to advancing HSA. The drilling approach and well designs include the following:

- Drilling with a 6.25-inch inner diameter HSA or similar drilling technologies to the meadow mat for installation of an outer steel casing to establish a grouted, competent seal and eliminate hydraulic communication between the shallow and intermediate aquifers.
- Following adequate curing time and using mud rotary drilling techniques advanced through the shallow protective casing, installation of 4-inch stainless steel screens (10-slot with #0 sand pack) for remediation wells and 2-inch Schedule 40 polyvinyl chloride (PVC) for monitoring wells at the specified depth intervals.

- Installation of Schedule 40 PVC riser to approximately 3 feet above ground or completed with flush mount well vaults.
- The wells will be finished with stick up mounts or completed with flush mount well vaults. Locking covers will be placed over each wellhead assembly.

During well completion, hydrated bentonite and grout will be used to seal the annulus to the surface. While flush mount well completions are currently considered a part of the design, the option of using stick-up well construction will be reviewed during the final wellhead and system conveyance infrastructure design. Final well completion determination will also account for surface elevation changes that occur as a result from regrading activities performed during site restoration activities. As applicable, protective bollards may also be installed to prevent well damage during the IRM.

For the purposes of this PBR, individual well screen lengths are proposed to range between 5 to 20 feet in length, which will be further refined based on high-resolution sampling results obtained during the drilling program, the soil stratigraphy observed during drilling activities, the distribution of Cr, and the updated CSM. At the outset of Phase II drilling activities, a combination of high-resolution lithologic profiling using a HPT and VAP sample collection will be used to map the soil and Cr distribution within the intermediate and deep water-bearing zones. These methods will be used for all proposed monitoring well locations and at subset (approximately 20) of the remediation wells. Data collected during these activities will be used to determine the preferred interval for monitoring well screen placement and to expand the understanding of soil heterogeneities within the Phase II treatment area. High resolution data will then be used to support finalization of the target screen intervals for the rest of the Phase II IRM well network.

Within the extraction wells, well pumps will initially be set at the midpoint of the screened interval, and drawdown will be adjusted using control valves based on readings from a pressure transducer installed in the well. This is intended to limit over pumping the extraction wells, to limit exposing the screen to air (and oxygen), and to control well fouling. The location of the extraction well pump within the screen interval may be adjusted based on field and system performance observations. Based on previous hydraulic testing and Phase I observations, it is assumed that average extraction rates per well may be up to 3 gpm. Where feasible, extraction rates will be increased based on the specific capacity of the aquifer at a given well location.

Initially, the injection wells will be equipped with a drop tube to approximately 2 feet below the seasonal low groundwater elevation to convey the injected recirculation water and carbon amendment to the saturated interval and thereby limit aeration of the injection water and bubble entrainment within the reinjection stream. Based on field and system performance observations, the depth of the drop tube may be adjusted by using an inflatable packer to focus the injection flow to specific treatment zones. Each active injection well will be equipped with a pressure transducer installed in the well to monitor the water level of the well. Based on previous testing at the site and the common ratios of injection well capacity relative to injection wells, it is estimated that injection rates may vary between 0.5 to 3 gpm per well. Similar to extraction operations, injection wells may be operated at higher flow rates, depending on the nature of the soil formation and ability to receive fluids.

### 3.1.3 Ex Situ Groundwater Treatment

The ex situ treatment system will be used to handle extracted groundwater for treatment, carbon substrate amendment, and injection to support the IRM ISAB recirculation approach. WTP operation will be conducted in accordance with the existing WUR for the site (WUR100001), with the treatment train qualified to address an anticipated extraction and injection flow rate of up to 60 gpm. Each of the recirculation systems will be capable of handling 40 gpm, but it is not expected that both will operate at these flows for the duration of the Phase II program. For PBR purposes, it is assumed that Phase II operations will entail up to 60 gpm of total system flow over 12 months of operation, resulting in a total recirculated volume of 31.5 million gallons. This equates to approximately 2.63 million gallons per month, which is within the WUR permit specifications and still leaves capacity for excavation dewatering needs, as necessary.

As detailed in Sections 2.4.1 and 2.4.3, the primary COC is Cr(VI), with concentrations up to or above 1,000,000 µg/L. Low levels of other metals, VOCs, and SVOCs are also encountered within Site 114. The current water treatment system has been used effectively to achieve removal of these target COCs and comply with permit requirements during previous excavation dewatering activities.

Over the course of operation, the water treatment system will be monitored for flow rate and treatment management. The conservative 60 gpm flow rate proposed for the IRM still allows enough system capacity within the WUR for anticipated excavation dewatering needs. There may be transient occurrences where excavation dewatering needs to be increased to accommodate recharge from significant storm events, and total IRM flow rates during these potential durations can be temporarily reduced to remain within the WUR. Treatment system management includes ongoing review of influent and effluent COC concentrations at the water treatment plant to ensure that reinjected water meets the requirements of the PBR. The treatment of COCs in the effluent groundwater used for reinjection will be sufficient to achieve either 95% reduction of influent levels or below the applicable GWQS values, whichever is less stringent. Based on the groundwater sourced to the treatment system, a review of individual COCs will be performed to ensure that these treatment objectives are met. The water treatment train will consist of the following basic unit process elements:

- Groundwater extraction
- Equalization
- Chemical reduction (Cr[VI] reduction)
- Chemical amendment (coagulation and flocculation)
- Phase separation (solids removal)
- Filtration
- Adsorption (VOC removal and Cr[VI]/metals polishing)
- Chemical amendment (organic carbon amendment) for the treated water that will be injected into the subsurface
- Solids management (e.g., solids thickening, dewatering, and disposal)

The treatment system will facilitate continuous operation while minimizing operator input and manual system operations to the extent practical. Similar to previous site operations, dewatered treatment residuals will be stored on site prior to off-site disposal.

### 3.1.4 Recirculation Conveyance and Reagent Mixing

The conveyance infrastructure for the Phase II system will be designed to facilitate adaptive extraction and injection operations. The design will allow flexibility for reuse of conveyance materials with different well sequencing and to accommodate changes related to other site activities (e.g., earthwork and dewatering operations). A conceptual layout of the conveyance infrastructure is presented on **Figure 11**.

The water conveyance piping for the extraction wells will be standard dimension ratio (SDR) 11, high density polyethylene (HDPE) double-contained piping. The 2-inch carrier pipe and 4-inch containment pipe will readily accommodate the anticipated flow rates of 1 to 3 gpm per well. The double containment will protect against leaks and prevent damage to the piping. A pumping station will be constructed to collect groundwater pumped during Phase II extraction and transfer the water to the existing water treatment system. Individual laterals from each well will discharge directly into the pump station without connecting to a header pipe. Double-contained discharge piping from the pump station will be connected into the existing 2-inch by 4-inch double-contained HDPE piping, which runs from Site 114 to the existing groundwater treatment system.

In addition to the extraction conveyance piping, 2-inch, non-metallic electrical conduits will be installed between each extraction well and the water treatment system. Each extraction well will have two conduits, one for pump power wiring and the other for instrument signal wiring. The conduits will be installed alongside the conveyance piping to each well with adequate separation between the power and signal wire conduits to prevent interference. The conveyance piping and conduit for the extraction wells will be installed within a trench and protected with a soil cover of at least 3 feet deep, which both protects these utilities from damage and the elements and prevents water from freezing within the pipes. Buried utility runs will be marked with colored stakes at regular intervals as visual indicators.

Treated groundwater for reinjection will be routed to two injection systems staged in the southern part of Site 114. These systems will contain a storage tank for the stock reagent solution and appropriate metering pumps, in-line mixing components, and manifolds to control carbon substrate amendment into the treated groundwater prior to delivery into operating injection wells. Dynamic operation of these systems will also be used to toggle between periods of carbon substrate pulsing and treated groundwater reinjection alone. One trailer-mounted system was installed for Phase I injection activities and will be reused for Phase II. A second system, installed in a shipping container, will be fabricated off site and delivered to the site for installation and use for Phase II. System design will also include storage and dosing equipment to meter a glutaraldehyde-based biocide solution in to the injection system piping to prevent fouling of the wells or piping due to growth of biomass. A Safety Data Sheet (SDS) for the proposed chemical is included in the **Appendix D**.

The treated water conveyance piping between the water treatment system and each injection system will be a 2-inch SDR11 HDPE single-walled pipe that will carry the anticipated 40 gpm maximum design flow for injection at each well field. New conveyance pipes will be connected to the existing piping, which was installed and used for Phase I operations. Separate 2-inch pipes will be installed to each of the Phase II injection system locations. Two-inch non-metallic electrical conduits will be installed between the new

injection trailer and the water treatment system. Existing electrical conduit will continue to be used for the existing injection trailer. Each trailer will have two conduits – one for power wiring and the other for instrument signal wiring. The conduits will be installed alongside the conveyance piping to each trailer with adequate separation between the power and signal wire conduits to prevent interference. Similar to the extraction well utilities, the injection trailer utilities will be buried and marked. The injection trailers will be strategically located at both injection well fields to minimize the need for trailer relocation.

Each injection system enclosure will be outfitted with an injection manifold and instrumentation to monitor and inject treated and amended water to all active injection wells during each step of Phase II. Instrumentation will be installed at the injection manifolds to allow for pressure and flow monitoring for the active injection wells. Heat tracing and pipe insulation will be used to prevent any exposed pipes from freezing. Injection water will be conveyed to the active injection wells from the injection manifolds through ½ inch Schedule 80 PVC piping. Individual pipes will be installed from injection wells to the corresponding injection system enclosure. Injection pipes will be buried in a similar fashion to the extraction well piping, and the pipe locations will be marked using colored stakes at regular intervals as visual indicators.

If there is a need to move or alter the utilities to accommodate adaptive system operation, such as repurposing wells, or to accommodate other site activities, hoses, piping, and conduits can be uncovered and relocated or altered, as necessary. The use of flexible hoses, HDPE piping, and non-metallic conduit allows for flexibility in the utility layouts. Alternative methods of covering and protecting the lines will be considered during development of the final conveyance infrastructure design and may include burying portions of the delivery lines or using heat trace to eliminate freezing risk. During periods where freezing conditions are not a concern, piping may temporarily be installed on the ground surface if short-term injection of amended groundwater is needed at individual wells.

## 3.2 IRM Operation: Intermediate and Deep Water-Bearing Zones

### 3.2.1 Adaptive Management Overview

An integral component to successful groundwater recirculation remedies is maintaining an overall degree of adaptability over the course of operation to respond to field observations and to maintain the pace of overall remedial performance. Key aspects of the performance include Cr concentration reduction, mass recovery (from extraction wells), organic carbon distribution, and evidence of reduced groundwater geochemical propagation within the subsurface. These indicators will be assessed as part of the Groundwater Monitoring Program (Section 4) and used to adapt overall extraction and injection operations during Phase II.

The conceptual layout for the IRM Phase II well network is provided on **Figure 9** and in **Appendix C**, which includes variable groups of injection wells that will be sequenced (turned on and off) strategically over the course of the Phase II program to deliver both organic carbon and treated groundwater uniformly through the subsurface. Performance data will be used to guide system operation and adjust well sequencing to meet the overall Phase II objectives. Data that will be evaluated continuously to optimize the remedial performance include, but are not limited to, the following:

- Monitoring well water quality data, including laboratory data (e.g., TOC, total Cr, and Cr[VI]) and field parameters (e.g., dissolved oxygen [DO] and oxidation-reduction potential [ORP])

- Extraction well water quality data (e.g., TOC, total Cr, and Cr[VI])
- Individual extraction and injection well flow rates
- Treatment system influent water quality
- Changes in the overall Cr distribution extent and plume footprint

The pulsing of carbon amendment in concert with the sequenced extraction scheme is key to overcoming aquifer heterogeneities, ambient hydraulic gradients, and preferred flow paths. Injection sequencing in the northern area of Site 114 will be implemented stepwise from north to south and in the southeastern corner of Site 114 from the west to east. Select extraction wells will be used during steps 1 and 2 in the northern area, and continuous extraction from the central portion of the site are intended to provide mass removal, support southward carbon delivery, and balance the water demand required for injections. The specific timing of transitions between injection wells will be assessed based on the observations listed above. As the IRM Phase II progresses, specific adjustments (e.g., wells for extraction and injection, flow rates, organic carbon dosing) will be made to optimize the system's performance. These adjustments will likewise be based on the observations listed above and include the following:

- Increases and decreases in individual extraction well pumping rates to optimize mass recovery, distribute organic carbon, and promote hydraulic control.
- Adjustments of individual injection well flow rates and duration of carbon amendment pulsing. This includes substrate dosing and volume adjustments to refine hydraulic control and optimize the distribution of organic carbon.
- Strategic conversion of extraction wells to injection wells or injection wells to extraction wells to optimize mass recovery, organic carbon distribution, and hydraulic control. This may also include the installation of additional extraction and/or injection wells.
- The use of treated groundwater or a potable water supply for reinjection and recirculation purposes.
- Strategic adjustments to the extraction scheme to ensure water chemistry and flow rate meets the treatment systems operational requirements.
- The type of organic carbon substrate (e.g., molasses and EVO) used and the relative dosing strength to induce and sustain the bioprecipitation processes in situ.
- The timing of organic carbon substrate dosing and recirculation shutdown and initiation of rebound monitoring.

The above management framework is advantageous in that it enables routine optimization for maximum Phase II efficiency. Each of these steps also serve to develop insights into supporting the transition of Phase II operations into subsequent phases of treatment at the GAG sites.

As reduction in Cr concentrations are achieved within the IRM Phase II area and attention turns to subsequent IRM treatment phases, select Phase II wells may continue to be operated as injection or extraction wells to maintain treatment performance during the transition. This will support hydraulic control, organic carbon distribution, and mass removal.

In addition to the adaptive modifications specified above and as identified in the preceding sections, alternative injection strategies are currently being considered to enhance or augment the Phase II treatment operations. Pilot testing completed previously at Site 114 included other methods of injection delivery, such as Direct Push Technology and hydraulic fracturing methodologies, to emplace solid-phase reagent material (e.g., Ferroblack®-H). Similar methods are currently being considered for subsurface permeability enhancement in the Phase I treatment area and will also be used during the Phase II program for lithologic zones that contain Cr and are not receptive to injection delivery via standard wells. It is anticipated that the emplacement material will include a combination of Ferroblack®-H and sand slurry that can be propagated into discrete intervals to improve hydraulic communication in low permeability soils and provide a lasting source of treatment reagent for Cr(VI) reduction. Observations during the Phase I program will be used to refine the injection design approach, which can then be used to adapt the Phase II program based on the supplemental lithologic and Cr distribution information obtained. In advance of performing these activities, a modification to this PBR will be submitted to detail the specific method of delivery, objectives, implementation design and reagent use, and any changes to the monitoring program.

### 3.2.2 Reagent Selection and Dosing Strategy

In support of sustaining ISAB treatment mechanisms during active operation and post-IRM monitoring phases, multiple carbon substrates may be utilized. These will include dissolved-phase organic carbon materials (e.g., molasses) that can be easily distributed in the subsurface and longer lasting materials that can provide extended longevity following injection (e.g., EVO). Like other operational decisions, substrate selection will be an adaptive consideration, with decisions based on field information obtained during IRM Phase II.

During system operation and injection, it is assumed that organic carbon will be diluted with either treated groundwater from the WTP or the potable water supply and dosed via the recirculation stream for approximately 6 hours per day. For the other 18 hours of daily operation, injections will continue using either treated or potable water but without substrate dosing. Modifications to the dosing timing and reagent strength will be supported by ongoing operational monitoring (Section 4) to strike an appropriate balance between sustaining overall injectability, limiting biofouling and potential back pressure generation related to fermented gas generation, and achieving subsurface TOC distribution.

A combination of ISAB substrates is considered for use during Phase II. Phase II operations will be initiated using molasses as the organic carbon substrate consistent with the previous ISAB pilot test and the Phase I IRM program. Over the course of operation, EVO will be considered for use during late-stage recirculation to provide a longer-term source of organic carbon. While pulsed operation is anticipated, it is assumed, for PBR approval purposes, that the average organic carbon dosing over the course of the 12-month Phase II program is 0.5% by volume. Based on the projected total recirculation volume of 31.5 million gallons of groundwater, the organic carbon demands for Phase II will be no more than 158,000 gallons of substrate (either molasses, EVO, or a combination of both). As specified above, the actual dosing strength of these organic carbon substrates, the dosing durations per day (or per week), and the timing of molasses and EVO use will be determined based on monitoring observations.

Reagent flexibility is considered a key consideration for maximizing overall treatment during the IRM program. While the carbon substrates above will serve as the primary reagents for use, other reagents

are being included in this PBR to allow flexibility in the event that unique areas of the site are better suited to their application. As described in Section 2.2.2, both FerroBlack®-H and CaSx were used to achieve treatment during pilot test activities, and these reagents are retained for potential consideration during Phase II. CaSx could be delivered via the recirculation network as a soluble reagent for ISCR in select areas of Site 114 in lieu of or prior to use of a carbon substrate. In addition to these two reagents, ferrous sulfate may also be used as a supplement to the carbon substrate source to provide additional iron and sulfide to further enhance Cr abiotic reduction mechanisms. As applicable, other equivalent reagents capable of reducing Cr may also be considered during the Phase II IRM and if used, would be detailed in a modification to this PBR.

The SDSs for molasses, EVO, FerroBlack®-H, CaSx, and ferrous sulfate are included in **Appendix D**.

### 3.2.3 Injection and Extraction Well Flow Rates and Operating Sequencing

Consistent with the dynamic management approach discussed in Section 3.1.1 and **Appendix C**, operation of the individual injection and extraction wells will be modified based on routine performance data reviews reliant on both operational and treatment monitoring (Section 4) and updates to the dynamic groundwater and solute transport flow model. The sequencing of well operations are planned as part of three, 8-week steps to enable carbon distribution across the southern portion of Site 114 within the first 6 months. As executed during Phase I, the duration of these steps may be extended based on observed carbon reagent distribution and Cr reduction performance. Once the three steps are complete, it is anticipated that ongoing groundwater extraction and carbon delivery will be performed for the duration of the 12-month period to sustain treatment. Data collected over the course of operation will be used to adapt the overall program based on observed aquifer response and a focus on maximizing the extent of distribution achieved.

Injection well operational sequencing steps and modification may include the following:

- Injection rates in individual injection wells may be reduced or temporarily stopped to alter the hydraulic gradients and stresses applied to the intermediate and deep aquifers. As previously discussed, injection rates may also be reduced to focus available recirculation water on other well locations.
- The timing, duration, and dosing of carbon amendment pulsing may be adjusted to maximize sustainable flow rates and enhance carbon amendment distribution.
- Injection wells may temporarily or permanently be converted to extraction wells to enhance hydraulic control, mass removal, and/or overcome aquifer heterogeneities.

Similarly, individual extraction well operational modifications may include the following:

- Adjustment of extraction rates to optimize mass recovery, hydraulic control, overcome aquifer heterogeneities, and optimize carbon amendment distribution.
- Temporarily or permanently stop extraction operations if carbon amendment breakthrough is observed. Cessation of extraction operations will limit carbon loading to the treatment system and will prevent removal of the carbon substrate from the aquifer. In these instances, other extraction wells will be brought online to sustain the recirculation process and maintain overall recirculation water demands.

Injection wells positioned within the northern and southeastern treatment areas that are not being actively utilized as part of injection operations may be sampled as temporary monitoring wells to evaluate subsurface carbon distribution and to support decisions related to injection well sequence timing. Data from these wells may also be collected after injections have been completed to evaluate TOC longevity and to determine the timing of supplemental delivery, as necessary.

### 3.2.4 Well Development and Fouling Management

Arcadis' experience from Phase I and other similar groundwater recirculation and injection systems underpins the importance of a systematic fouling management plan. This is particularly important for both conveyance infrastructure and injection wells, where mixing of water with a varied range in redox potential and with organic carbon amendment can promote the formation of biofilms and/or metal precipitation. Biofilms and metal precipitation can be associated with a reduction in injection rates. During Phase I, the daily organic carbon pulsing program was effective in limiting the build-up of biological growth within the injection well network, but routine fouling was encountered in above-grade conveyance lines and fittings. Mitigation activities were required to address biofouling during warmer periods of the year and following transient upsets at the WTP. Several methods have been identified as part of the Phase II IRM to limit the impact of fouling on system shutdown, which include the use of potable water as an alternative reinjection source, additives to the WTP (e.g., chlorine) and the carbon dosing system (e.g., biocide), and use of a proactive injection well redevelopment scheme to prolong injection well and conveyance line performance. Injection well redevelopment may also include physical scrubbing, surging, and jetting of the well with or without the addition of chemicals/pH adjustments to remove biofilm and metal precipitates. Consistent with the adaptive management plan, the schedule for redevelopment of certain wells may be adjusted based on operational data (e.g., observed injection flow rates and wellhead pressures).

### 3.2.5 Well Network Optimization

Additional or replacement wells may be installed as the IRM Phase II progresses. The wells may include both injection and extraction wells with the intent of:

- Replacing destroyed or severely fouled wells.
- Enhancing hydraulic control, Cr recovery, or carbon amendment distribution in areas where performance is observed to be limited.

Additional wells may also be added to increase the vertical distribution of amendment by targeting depth intervals not sufficiently addressed by the initial injection/extraction well network.

### 3.2.6 Waste Disposal

Soil cuttings and drilling mud generated from well installation will be containerized in properly labeled 55-gallon drums or larger containers and disposed of at an appropriate off-site disposal facility using existing investigation-derived waste (IDW) profiles for Site 114. Purged water from well development and groundwater sampling activities will be temporarily stored in tanks and transferred to the treatment system following sufficient time for solids to settle. The settled solids will be disposed of at an appropriate off-site

disposal facility. Groundwater will be treated before being re-injected or discharged to the sewer. Sludge or filter cake generated from this process will be disposed of at an appropriate off-site disposal facility.

# 4 IRM MONITORING PROGRAM

The groundwater monitoring program for the IRM Phase II has been developed to support ongoing evaluation of Cr treatment effectiveness, to provide feedback related to Phase II recirculation operations, and to support continuous adaptation and optimization of the recirculation program. IRM Phase II monitoring activities are proposed as part of four primary categories to support treatment assessment and performance optimization, including 1) baseline sampling, 2) operational monitoring, 3) treatment monitoring, and 4) post-treatment monitoring.

A combination of both new and existing monitoring wells will be incorporated as part of each of these four monitoring categories. A list of new and existing monitoring wells (included in each of these monitoring categories for the intermediate and deep water-bearing zones) are provided in **Table 2**, and the monitoring well network is shown on **Figure 12** for the intermediate zone and **Figure 13** for the deep zone. A summary of the overall Phase II monitoring program is provided in **Table 3**. In addition to these well locations, select Phase II extraction and injection wells may also be periodically added into the sampling program to supplement the dedicated monitoring well network locations.

The details of the groundwater monitoring program are discussed in the sections below.

## 4.1 Baseline Sampling

Prior to the startup of Phase II operations but following the installation of the remediation well network and new monitoring well locations, samples will be collected for baseline analysis from new well locations to establish the starting conditions for IRM treatment performance review. In accordance with **Table 3**, baseline samples will be collected for TAL metals (total and dissolved); Cr(VI) (total and dissolved); key geochemical parameters (sulfate/sulfide and methane); TOC, field parameters (pH, specific conductivity, DO, ORP, turbidity, and temperature); and depth to groundwater. A summary of the monitoring wells included in the baseline sampling event is provided in **Table 2** along with all the new injection and extraction wells.

Baseline samples will be collected using the low-flow sampling method and select wells may be sampled at 5-foot intervals. Purge water generated during sampling will be temporarily stored and then transferred to the groundwater treatment system. Prior to the start of purging, depth to water will be gauged at each well location. Following purging, field parameter measurements will be recorded. Samples collected for dissolved TAL metals and dissolved Cr(VI) analyses will be field filtered using in-line 0.45 micrometer (µm) filters.

## 4.2 Operational Monitoring

The operational monitoring program will be utilized to assess ongoing remedial system performance in support of guiding potential modifications to injection and extraction flow rates, well balancing, carbon dosing and timing, and to pre-emptively guide potential biofouling management and well redevelopment. Operational monitoring will yield information pertaining to the sustainable recirculation flow rates, will confirm that wellhead injection pressures are within an appropriate range, will be useful to evaluate hydraulic influence of extraction and injection operations, and will confirm overall aboveground treatment

system effectiveness in accordance with the WUR permit. Collectively, these data will be used to guide adaptive system operations, routine adjustments, and overall optimization.

Depending on the parameters, operational monitoring will be performed at variable frequencies (weekly, biweekly, or monthly), as necessary, over the course of operation (**Table 3**). A summary of the well locations included as part of the operational monitoring program is provided in **Table 2**. Measurements may be periodically performed more frequently than specified in **Table 3** to support potential troubleshooting activities over the course of operation. Given the adaptive nature of the recirculation program and the sequencing of different groupings of injection and extraction wells over the course of operation, it is anticipated that the operational sampling frequency of existing monitoring wells will be adapted over time. As an example, monitoring wells located within the northernmost area of Site 114 are most relevant for operational monitoring during the first step of recirculation activities. Following this initial period and the transition to more southerly injection wells, the frequency and parameter list of the initial monitoring locations may be reduced to maintain remedial efficiency, as applicable.

For operational monitoring, analytical data and field parameter measurements for extracted and treated groundwater will be collected at operating extraction wells from sampling ports located at the wellheads or at the influent to the water treatment system. When collected from dedicated sampling ports, samples will be collected via grab sampling techniques. For individual well locations, samples will be collected using the one-volume purge sampling method (Arcadis 2017). The one-volume technique will entail dedicated tubing deployed to the middle of the screen intervals in each well for purging and sampling. Purge water generated during sampling will be temporarily stored and then transferred to the groundwater treatment system.

## 4.3 Treatment Monitoring

Overall Phase II remedial performance will be documented via ongoing treatment monitoring over the course of the 12-month program. Sampling parameters will be collected to verify organic carbon distribution, assess the development of reduced geochemical groundwater conditions within the subsurface, and confirm corresponding declines in total Cr and Cr(VI). The development of the reactive zone confirmed via treatment monitoring activities will be used to guide carbon substrate dosing strength and frequency based on the observed subsurface response and confirm that reactive zone propagation has been achieved prior to transition of operating recirculation wells to subsequent steps. A summary of the analytical and field parameter measurements for treatment sampling is provided in **Table 3**, and well locations included in the overall treatment monitoring program are included in **Table 2** and on **Figures 12** and **13**.

Similar to the operational monitoring specifications, treatment monitoring parameters will be collected at a specified frequency based on the relevance of a given parameter to operation and optimization activities. TOC and field parameter sampling is proposed most frequently (biweekly to monthly) to effectively gauge propagation of both carbon substrate and geochemical influence within the subsurface. Total Cr and Cr(VI) and select geochemical parameters ([dissolved] Fe[II], dissolved manganese, sulfate) will be collected monthly to enable the collection of at least one to two samples between recirculation well steps. Methane sampling is also proposed, albeit less frequently, to confirm the overall extent of reduced groundwater conditions. Similar to the sampling frequency considerations presented for the operational

monitoring program, select well locations or parameters may be collected more or less frequently for system optimization purposes, as applicable.

Treatment monitoring samples will be collected using the low-flow sampling method and select wells may be sampled at 5-foot intervals. Purge water generated during sampling will be temporarily stored and then transferred to the groundwater treatment system. Prior to the start of purging, depth to water will be gauged at each well location. Following purging, field parameter measurements will be recorded. Samples collected for dissolved total Cr and Cr(VI) analyses will be field filtered using in-line 0.45 µm filters.

Data collected as part of the treatment monitoring program will be used to confirm treatment performance in areas undergoing active carbon recirculation and to confirm the longevity of TOC availability and treatment permanence as recirculation activities transition to other areas of Site 114. Data collected between recirculation cycles will also be used to determine whether subsequent carbon substrate delivery is required during the 12-month Phase II period. These decisions will be guided based on observed TOC strength, its longevity in the subsurface, and the extent of observed Cr reduction.

## 4.4 Post-Treatment Monitoring

Following the 12-month Phase II operational program, post-treatment monitoring will be used to document overall Cr treatment performance, confirm the residual reactive zone reduction capacity (via residual TOC and reduced geochemistry species), and develop an appropriate data set to demonstrate ongoing natural attenuation of any residual total Cr and Cr(VI). Post-treatment sampling will be performed in accordance with **Table 3** and at well locations shown in **Table 2**.

Treatment monitoring samples will be collected using the low-flow sampling method and select screen locations with wells will be sampled at 5-foot intervals. Purge water generated during sampling will be temporarily stored and then transferred to the groundwater treatment system or containerized and disposed of off-site, as appropriate. Prior to the start of purging, depth to water will be gauged at each well location. Following purging, field parameter measurements will be recorded. Samples collected for dissolved total Cr and Cr(VI) analyses will be field filtered using in-line 0.45 µm filters.

Post-treatment sampling activities will be performed on a quarterly basis over a total duration of 2 years.

# 5 SCHEDULE AND REPORTING

Details of the supplemental pre-design testing, well and system installation, system operation, and performance monitoring results associated with the IRM Phase II program will be documented as part of a quarterly technical status reports submitted to NJDEP. These quarterly status reports will include succinct, high-level summaries of activities performed, data collected, adaptive steps taken to modify or optimize Phase II treatment, and an overview of activities planned for the subsequent quarter.

Upon approval of this IRM Phase II Work Plan, the PBR Authorization by NJDEP, and receiving all the applicable permits required to conduct the field work detailed in this document, PPG will proceed with startup of the IRM Phase II program. IRM infrastructure construction (e.g., well installation, water treatment plant modification, conveyance piping installation) may be initiated prior to final approval to expedite elements of the project schedule, as necessary. The IRM Phase II operation is anticipated to start in the second quarter of 2019 and last for a duration of up to approximately 12 months, followed by a post-operational monitoring period of 2 years. As-built layouts for the IRM Design will be provided within the appropriate quarterly status report.

The schedule for implementation of the IRM Phase II program may be adjusted based on regulatory review and approval of the PBR Authorization and the IRM Phase II Work Plan.

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# ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| % | percent |
| µg/L | micrograms per liter |
| µm | micrometer |
| ACO | Administrative Consent Order |
| Arcadis | Arcadis U.S., Inc. |
| bgs | below ground surface |
| CaSx | calcium polysulfide |
| CCPW | chromate chemical production waste |
| COC | contaminant of concern |
| COPR | chromite ore processing residue |
| CSM | conceptual site model |
| Cr | chromium |
| Cr(III) | trivalent chromium |
| Cr(VI) | hexavalent chromium |
| Design | Groundwater Interim Remedial Measure: Phase I Design and Permit-By-Rule Authorization Request |
| DGA | dense-graded aggregate |
| DGW | Discharge to Groundwater |
| DO | dissolved oxygen |
| DWS | Division of Water Supply |
| EVO | emulsified vegetable oil |
| ft/day | feet per day |
| ft/ft | feet per foot |
| GAC | granular activated carbon |
| GAG | Garfield Avenue Group |
| GWQS | Groundwater Quality Standards |
| gpm | gallon per minute |
| $H_2S$ | hydrogen sulfide |
| HDPE | high density polyethylene |
| HPT | hydraulic profiling tool |

| | |
|---|---|
| $HS^-$ | hydrosulfide |
| HSA | hollow stem auger |
| IDW | investigation-derived waste |
| ISAB | in situ anaerobic bioprecipitation |
| ISCR | in situ chemical reduction |
| IRM | interim remedial measure |
| JCO | Judicial Consent Order |
| MGP | manufactured gas plant |
| MIU | mobile injection unit |
| MNA | monitored natural attenuation |
| MT3D | Modular 3-D Transport Model |
| MT3DMS | Modular 3-D Transport Model Multi-Species |
| N.J.A.C. | New Jersey Administrative Code |
| NJDEP | New Jersey Department of Environmental Protection |
| NJPDES | New Jersey Pollutant Discharge Elimination System |
| NRDCSCC | Non-Residential Direct Contact Soil Cleanup Criteria |
| ORP | oxidation-reduction potential |
| PBR | Permit-by-Rule |
| psi | pounds per square inch |
| PVC | polyvinyl chloride |
| SDR | standard dimension ratio |
| SDS | Safety Data Sheets |
| SVOC | semi-volatile organic compound |
| S.U. | standard unit |
| TAL | Target Analyte List |
| TOC | total organic carbon |
| USEPA | United States Environmental Protection Agency |
| VAP | vertical aquifer profiling |
| VOC | volatile organic compound |
| WAP | Water Allocation Permit |
| WTP | water treatment plan |

| | |
|---|---|
| WUR | Water Use Registration |

# TABLES

**Table 1**
**New IRM Phase II Remediation Well Details**
**Groundwater IRM: Phase II Design and PBR Authorization Request**
**PPG Garfield Avenue Group Sites, Jersey City, New Jersey**

ARCADIS Design & Consultancy for natural and built assets

| WELL ID | Well Installation Date | Well Diameter (in) | Total Depth (ft bgs) | Top of Screen (ft bTOC) | Bottom of Screen (ft bTOC) | Ground Surface Elevation (ft NAVD88) | Top of Casing Elevation (ft NAVD88) |
|---|---|---|---|---|---|---|---|
| 114-P2-IRM-1I | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-2I | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-3I | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-4I | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-5I | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-6I | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-7I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-8I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-9I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-10I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-11I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-12I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-13I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-14I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-15I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-16I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-17I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-18I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-19I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-20I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-21I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-22I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-23I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-24I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-25I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-26I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-27D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-28D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-29D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-30D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-31D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-32D | TBD | 4 | | TBD | | TBD | TBD |
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| 114-P2-IRM-41I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-42I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-43I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-44I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-45I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-46I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-47I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-48I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-49I/D | TBD | 4 | | TBD | | TBD | TBD |
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| 114-P2-IRM-51I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-52I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-53I/D | TBD | 4 | | TBD | | TBD | TBD |

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|---|---|---|---|---|---|---|---|
| 114-P2-IRM-54I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-55I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-56I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-57I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-58I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-59I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-60I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-61D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-62D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-63D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-64D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-65D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-66D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-67I | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-68I | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-69I | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-70I | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-71I | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-72I | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-73I | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-74I | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-75I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-76I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-77I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-78I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-79I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-80I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-81I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-82I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-83I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-84I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-85I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-86I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-87I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-88I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-89I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-90I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-91I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-92I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-93I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-94I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-95I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-96I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-97I/D | TBD | 4 | | TBD | | TBD | TBD |
| 114-P2-IRM-98I/D | TBD | 4 | | TBD | | TBD | TBD |

**Notes:**

The total depth of new wells and number of screens at each location are tentative and may be adjusted based on field observation.

* PPG will prepare and submit a revised remediation well network table once proposed extraction, injection, and monitoring wells are installed

bgs - below ground surface

bTOC - below top of casing

ft - feet

I/D - intermediate/deep

in - inches

IRM - interim remedial measures

NAVD88 - North American Vertical Datum, 1988

PBR - Permit-by-Rule

PPG - Piitsburgh Paint and Glass

TBD - to be determined

-- not available

**Table 2**
**IRM Phase I and II Monitoring Well Details**
**Groundwater IRM: Phase II Design and PBR Authorization Request**
**PPG Garfield Avenue Group Sites, Jersey City, New Jersey**

ARCADIS Design & Consultancy for natural and built assets

| WELL ID | Well Installation Date | Well Diameter (in) | Total Depth (ft bgs) | Top of Screen (ft bTOC) | Bottom of Screen (ft bTOC) | Ground Surface Elevation (ft NAVD88) | Top of Casing Elevation (ft NAVD88) | IRM Phase I Monitoring Program Category | IRM Phase II Monitoring Program Category | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Proposed New Monitoring Well Locations[1]** | | | | | | | | **Post-Treatment** | **Baseline** | **Operational** | **Treatment** | **Post-Treatment** |
| 114-P2-MW1I/D | TBD | 2 | 65 | 20 | 65 | TBD | TBD | | X | X | X | X |
| 114-P2-MW2I/D | TBD | 2 | 40 | 20 | 40 | TBD | TBD | | X | X | X | X |
| 114-P2-MW3I/D | TBD | 2 | 40 | 20 | 40 | TBD | TBD | | X | X | X | X |
| 114-P2-MW4I/D | TBD | 2 | 40 | 20 | 40 | TBD | TBD | | X | X | X | X |
| 114-P2-MW5I/D | TBD | 2 | 65 | 20 | 65 | TBD | TBD | | X | X | X | X |
| 114-P2-MW6I/D | TBD | 2 | 65 | 20 | 65 | TBD | TBD | | X | X | X | X |
| 114-P2-MW7I/D | TBD | 2 | 40 | 20 | 40 | TBD | TBD | | X | X | X | X |
| 114-P2-MW8I/D | TBD | 2 | 40 | 20 | 40 | TBD | TBD | | X | X | X | X |
| 114-P2-MW9I/D | TBD | 2 | 65 | 20 | 65 | TBD | TBD | | X | X | X | X |
| 114-P2-MW10I/D | TBD | 2 | 65 | 20 | 65 | TBD | TBD | | X | X | X | X |
| 114-P2-MW11I/D | TBD | 2 | 65 | 20 | 65 | TBD | TBD | | X | X | X | X |
| 114-P2-MW12I/D | TBD | 2 | 65 | 20 | 65 | TBD | TBD | | X | X | X | X |
| **Existing Shallow Water-Bearing Zone Monitoring Wells** | | | | | | | | **Post-Treatment** | | | | |
| GPS-MW1S | 10/16/2013 | 2 | 16 | 6 | 16 | 14.90 | 14.53 | X | | | | |
| GPS-MW2S | 4/22/2013 | 2 | 15 | 5 | 15 | 13.00 | 14.31 | X | | | | |
| GPS-MW3S | 10/16/2013 | 2 | 16 | 6 | 16 | 13.10 | 14.01 | X | | | | |
| GPS-MW4S | 8/29/2013 | 2 | 16 | 6 | 16 | 14.00 | 13.66 | X | | | | |
| GPS-MW5S | 10/8/2013 | 2 | 16 | 6 | 16 | 14.00 | 13.87 | X | | | | |
| GPS-MW6S | 4/19/2013 | 2 | 16 | 6 | 16 | 13.30 | 12.98 | X | | | | |
| GPS-MW7S | 9/4/2013 | 2 | 16 | 6 | 16 | 13.30 | 13.16 | X | | | | |
| **Existing Intermediate and Deep Water-Bearing Zone Monitoring Wells** | | | | | | | | **Post-Treatment** | | | | |
| 114-P1-MW1I | 11/20/2017 | 2 | 41 | 20 | 40 | -- | 16.42 | X | | | | |
| 114-P1-MW1D | 12/16/2017 | 2 | 57 | 36 | 56 | -- | 16.08 | X | | | | |
| 114-P1-MW2I | 12/11/2017 | 2 | 40 | 19 | 39 | -- | 16.104 | X | | | | |
| 114-P1-MW2D | 11/20/2017 | 2 | 46 | 25 | 45 | -- | 16.22 | X | | | | |
| 114-P1-MW3I | 12/8/2017 | 2 | 44 | 23 | 43 | -- | 16.41 | X | | | | |
| 114-P1-MW4I | 12/19/2017 | 2 | 44 | 23 | 43 | -- | 13.226 | X | | | | |
| 114-P1-MW4D | 12/21/2017 | 2 | 68 | 47 | 67 | -- | 13.32 | X | | | | |
| 114-P1-MW5I | 11/20/2017 | 2 | 43 | 22 | 42 | -- | 12.47 | X | | | | |
| 114-P1-MW5D | 12/18/2017 | 2 | 66 | 45 | 65 | -- | 12.48 | X | | | | |
| 114-P1-MW6I | 12/19/2017 | 2 | 44 | 23 | 43 | -- | 13.68 | X | | | | |
| 114-P1-MW6D | 11/21/2017 | 2 | 61 | 40 | 60 | -- | 14.37 | X | | | | |
| 114-P1-MW7I | 12/21/2017 | 2 | 43 | 22 | 42 | -- | 12.88 | X | | X | X | X |
| 114-P1-MW7D | 12/20/2017 | 2 | 62 | 41 | 61 | -- | 13.67 | X | | X | X | X |
| 114-MC-EW103 | 5/29/2014 | 4 | 45 | 30 | 45 | -- | 12.11 | X | | X | X | X |
| 114-MC-PZ103 | 6/3/2014 | 2 | 42 | 37 | 42 | -- | 11.98 | X | | | | |
| 114-MC-PZ203 | 10/3/2014 | 2 | 43 | 37 | 42 | 11.50 | 14.01 | X | | | | |
| 114-P1A-MW101I | 4/24/2014 | 4 | 35 | 25 | 35 | 15.20 | 14.40 | X | | X | X | X |
| 114-P1B-MW101I | 5/22/2014 | 4 | 33 | 23 | 33 | 14.40 | 14.13 | X | | | | |
| 114-P1B-MW102I | 5/7/2014 | 4 | 34 | 24 | 34 | 11.20 | 12.63 | X | | | | |
| 114-P1C-MW101I | 10/9/2014 | 4 | 35 | 30 | 35 | 11.20 | 13.31 | X | | X | X | X |
| 114-P1C-PZ1 | 4/4/2014 | 2 | 36 | 26 | 36 | 14.10 | 16.18 | X | | | | |
| 114-P1C-PZ2 | 10/13/2014 | 2 | 30 | 20 | 30 | 10.40 | 13.24 | X | | | | |
| 114-P2A-MW101I | 2/4/2016 | 2 | 41 | 31 | 41 | 9.40 | 12.71 | X | | | | |
| 114-P2B1-MW101I | 10/16/2014 | 4 | 40 | 30 | 40 | 11.10 | 13.93 | X | | X | X | X |
| 114-P2B2-MW101I | 2/26/2015 | 4 | 39 | 27 | 37 | 11.00 | 10.55 | X | | X | X | X |
| 114-P2B3-MW101I | 3/3/2015 | 4 | 35 | 25 | 35 | 10.90 | 12.9 | X | | | | |
| 114-P2B4-MW101I | 3/3/2015 | 4 | 49 | 39 | 49 | 11.00 | 13.31 | X | | | | |
| 114-P2B4-MW102I | 2/9/2015 | 4 | 36 | 26 | 36 | 10.60 | 11.86 | X | | X | X | X |
| 114-P2B4-MW103I | 2/11/2015 | 4 | 34 | 22 | 32 | 11.90 | 13.03 | X | | X | X | X |
| GPS-MW2I | 4/23/2013 | 2 | 35 | 25 | 36 | 14.40 | 14.07 | X | | | | |
| GPS-MW3I | 10/11/2013 | 2 | 40 | 30 | 40 | 14.60 | 14.12 | X | | | | |
| GPS-MW5I | 9/6/2013 | 2 | 40 | 30 | 40 | 14.00 | 13.82 | X | | X | X | X |
| GPS-MW6I | 4/29/2013 | 2 | 35 | 30 | 40 | 13.40 | 13.13 | X | | X | X | X |
| **Existing Deep Water-Bearing Zone Monitoring Wells** | | | | | | | | **Post-Treatment** | | | | |
| MW6C | 12/7/2005 | 2 | 65 | 55 | 65 | -- | 14.18 | X | | X | X | X |

**Table 2**
**IRM Phase I and II Monitoring Well Details**
**Groundwater IRM: Phase II Design and PBR Authorization Request**
**PPG Garfield Avenue Group Sites, Jersey City, New Jersey**

**Notes:**
1 - The total depth of new wells and number of screens at each location are tentative and may be adjusted based on field observation.
* PPG will prepare and submit a revised monitoring well network table once proposed extraction, injection, and monitoring wells are installed
bgs - below ground surface
bTOC - below top of casing
ft - feet
I/D - intermediate/deep
in - inches
IRM - interim remedial measures
NAVD88 - North American Vertical Datum, 1988
PBR - Permit-by-Rule
PPG - Piitsburgh Paint and Glass
TBD - to be determined
X - selected
-- not available

**Table 3**
**IRM Phase I and II Groundwater Monitoring Program**
**Groundwater IRM: Phase II Design and PBR Authorization Request**
**PPG Garfield Avenue Group Sites, Jersey City, New Jersey**

ARCADIS Design & Consultancy for natural and built assets

| Monitoring Program | Monitoring Well Network | Monitoring Parameters | Monitoring Frequency |
|---|---|---|---|
| Baseline Monitoring | New extraction, injection monitoring wells and existing monitoring wells | 1. **Field Parameters**: DTW, pH, conductivity, DO, ORP, turbidity, and temperature<br>2. **Lab Analytical**: Total/dissolved TAL metals, total/dissolved Cr(VI), TOC, sulfate/sulfide, and methane | Prior to operation start |
| Operational Monitoring | New extraction and monitoring wells; existing shallow, intermediate, and deep monitoring wells; and system sampling port (influent and effluent) | 1. **Field Parameters**: DTW | Weekly - Biweekly |
| | | 2. **System Parameters**<br>- Injection / extraction well flow rates | Weekly |
| | | - Wellhead pressures | Weekly |
| | | - Water treatment system monitoring | Weekly - Monthly (as appropriate) |
| Treatment Monitoring | New extraction and monitoring wells and existing intermediate and deep monitoring wells | 1. **Field Parameters**: DTW, pH, conductivity, DO, ORP, turbidity, and temperature | Biweekly - Monthly |
| | | **2. Lab Analytical:**<br>- Total/dissolved Cr and Cr(VI) | Monthly |
| | | - TOC | Biweekly - Monthly |
| | | - Supplemental geochemical parameters (sulfate, ferrous [dissolved] iron, dissolved manganese) | Monthly |
| | | - Methane | Monthly - Quarterly |
| Post-Treatment Monitoring | New monitoring wells and existing shallow, intermediate, and deep monitoring wells | 1. **Field Parameters**: DTW, pH, conductivity, DO, ORP, turbidity, and temperature<br>2. **Lab Analytical**: Total/dissolved TAL metals, total/dissolved Cr and Cr(VI), VOCs, SVOCs, TOC, sulfate/sulfide, dissolved iron, dissolved manganese, and methane. | Quarterly following system shutdown for up to 2 years |

**Notes:**

1. The monitoring locations, parameters, and frequencies provided in this table serve as general guidance for IRM-related monitoring activities and may be adjusted or changed based on IRM Phase I performance, injection and extraction areas in operation, and observed monitoring results.
2. Dissolved metal samples are to be field filtered prior to sample collection.

Cr - chromium
Cr(VI) - hexavalent chromium
DO - dissolved oxygen
DTW - depth-to-water
IRM - Interim Remedial Measures
ORP - oxidation-reduction potential
PBR - Permit-by-Rule
PPG - Pittsburgh Paint and Glass
SVOC - semi-volatile organic compound
TAL - target analyte list
TOC - total organic carbon
VOC - volatile organic compound

# FIGURES

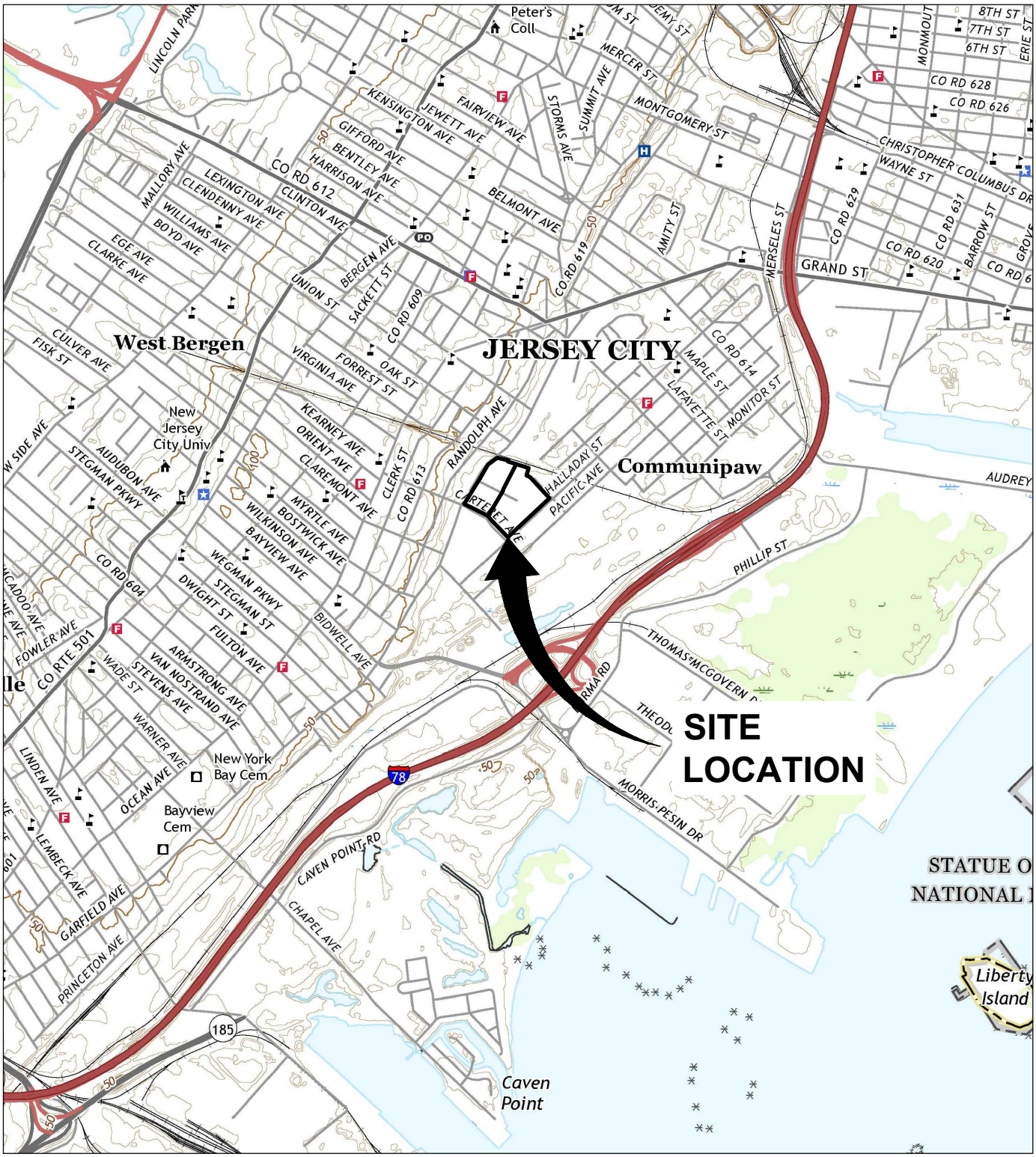


REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD.: JERSEY CITY, NJ-NY (2016), HUDSON COUNTY, NEW JERSEY

0 2000' 4000'

Approximate Scale: 1 in. = 2000 ft.

AREA LOCATION

NEW JERSEY

PPG GARFIELD AVENUE GROUP SITE 114
JERSEY CITY, NEW JERSEY

NP000776.0001

## SITE LOCATION MAP

ARCADIS Design & Consultancy for natural and built assets

FIGURE 1

CITY:TAMPA, FL DIV/GROUP:ENV_CAD DB:J.RICHARDS LD:J.RICHARDS PM:(Reqd)
C:\Users\jrichards\OneDrive - ARCADIS\BIM 360 Docs\PPG INDUSTRIES, INC\PPG - GAG GW Pilot Study Phase 1 Design\2019\NP000776.0003\01-DWG\PH2RD Fig1 SLM.dwg LAYOUT: 1 SAVED: 1/27/2019 5:18 PM ACADVER: 21.0S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB
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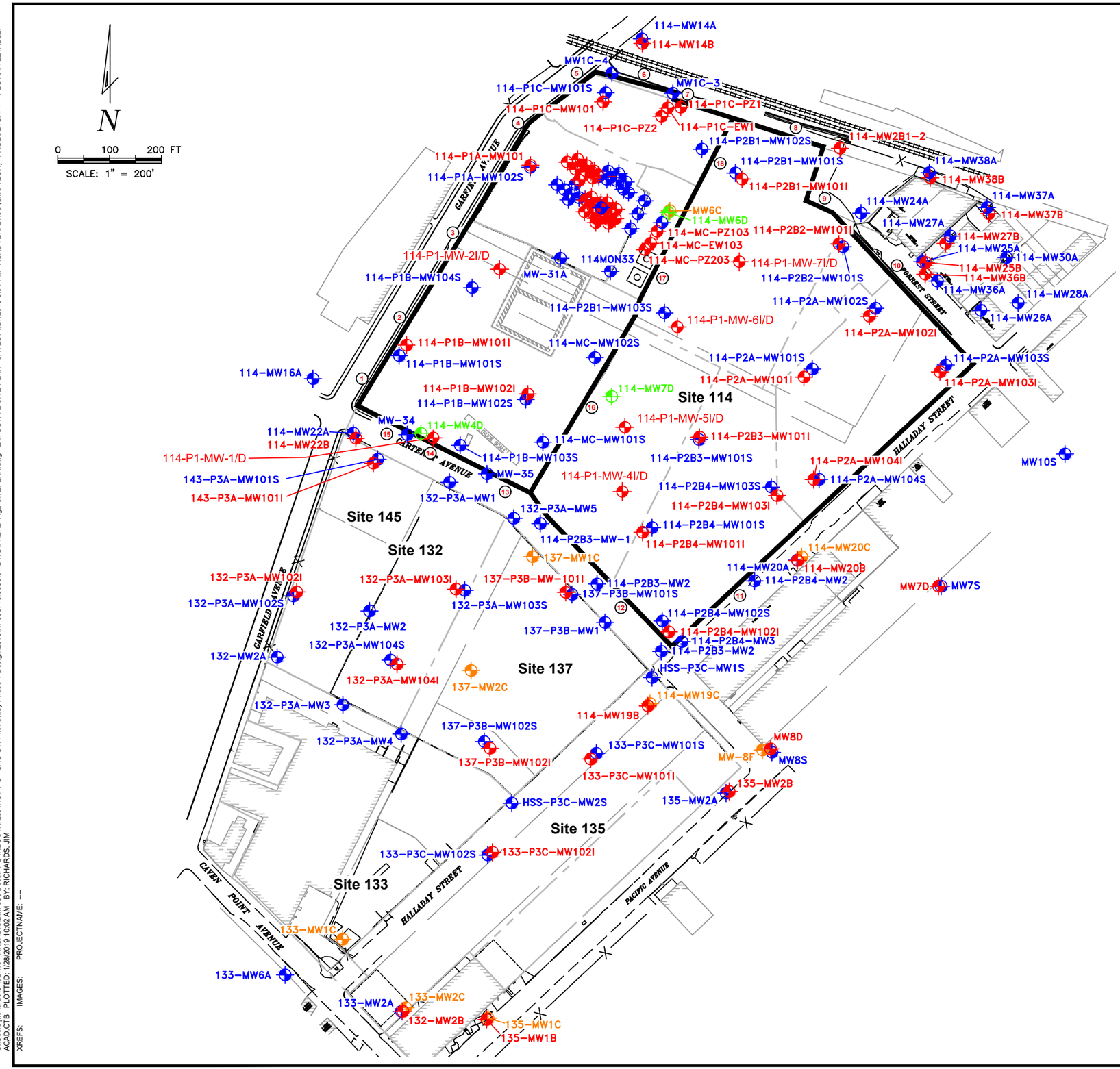


LEGEND

- SHEET PILES RELEVANT TO SITE 114 IRM
- SHALLOW WATER-BEARING ZONE MONITORING WELL
- INTERMEDIATE WATER-BEARING ZONE MONITORING WELL
- DEEP WATER-BEARING ZONE MONITORING WELL
- BEDROCK MONITORING WELL

IRM – INTERIM REMEDIAL MEASURES
FT AMSL – FEET ABOVE MEAN SEA LEVEL
NAV D88 – NORTH AMERICAN VERTICAL DATUM OF 1988

**Sheet Pile Construction**

| Location | Average Tip Elevation (ft amsl*) |
|---|---|
| 1 | -30.00 |
| 2 | -35.03 |
| 3 | -31.00 |
| 4 | -23.50 |
| 5 | -30.00 |
| 6 | -25.05 |
| 7 | -26.51 |
| 8 | -39.80 |
| 9 | -43.00 |
| 10 | -42.00 |
| 11 | -49.91 |
| 12 | -49.79 |
| 13 | -46.00 |
| 14 | -31.00 |
| 15 | -38.13 |
| 16 | -41.50 |
| 17 | -42.50 |
| 18 | -21.50 |

*Vertical elevation datum: NAV D88

PPG GARFIELD AVENUE GROUP SITES,
JERSEY CITY, NEW JERSEY

NP000775.0001

# SITE PLAN

ARCADIS Design & Consultancy for natural and built assets

FIGURE 2

CITY:(COLUMBUS, OHIO) DIV/GROUP:(IM/DV) DB:(R. SMITH) LD:(Opt) PIC:(Opt) PM:(P. JIN) IM:(Opt) LYR:(Opt)(ON=*;OFF=*REF*)
C:\Users\jrichards\OneDrive - ARCADIS\BIM 360 Docs\PPG INDUSTRIES, INC\PPG - GAG GW Pilot Study Phase 1 Design\2019\NP000776.0003\01-DWG\PH2RD Fig2 SITEPLAN.dwg LAYOUT: F2 SITE PLAN SAVED: 1/27/2019 5:04 PM ACADVER: 21.0S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE:
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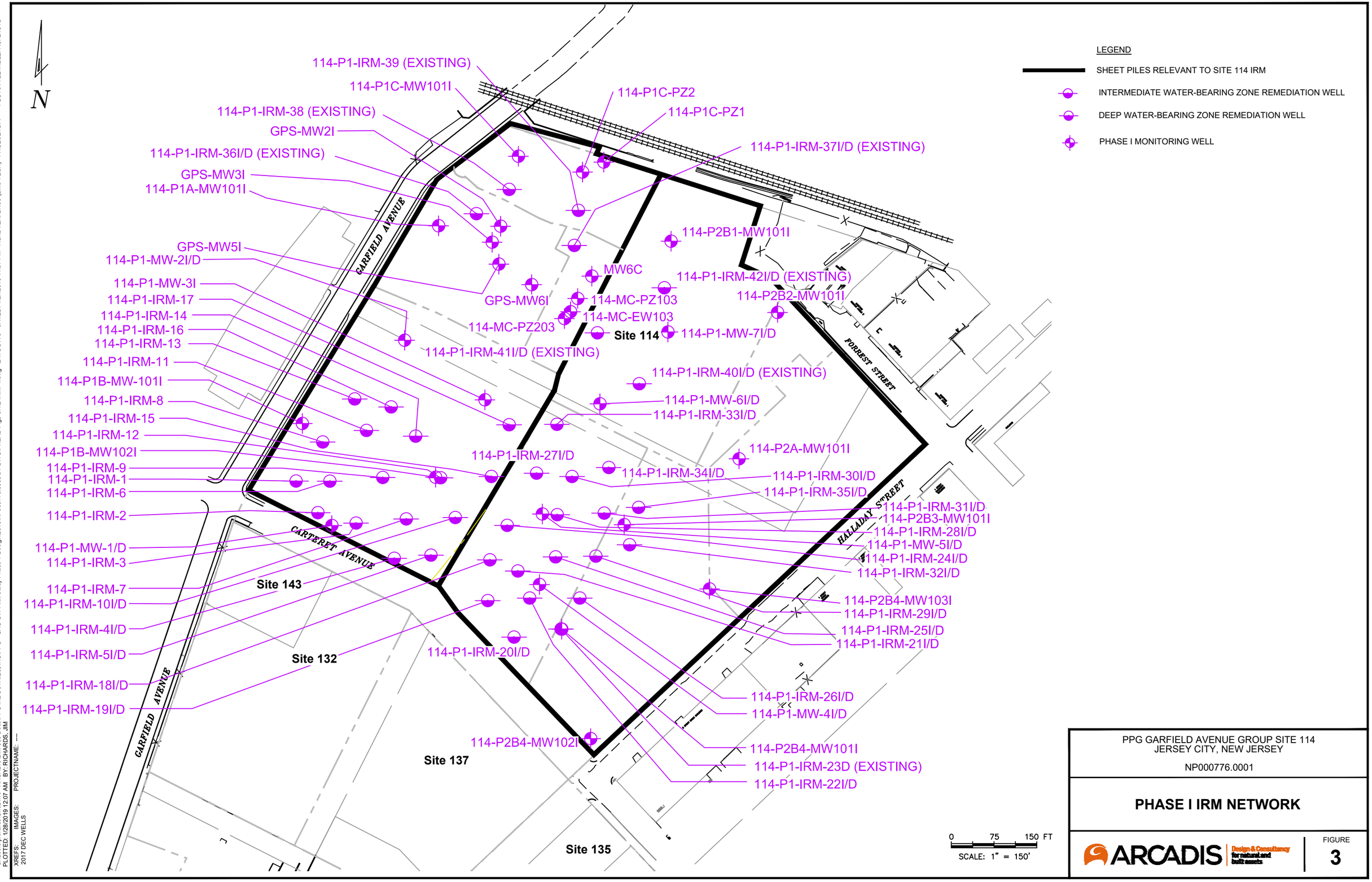


PPG GARFIELD AVENUE GROUP SITE 114
JERSEY CITY, NEW JERSEY

NP000776.0001

**PHASE I IRM NETWORK**

ARCADIS Design & Consultancy for natural and built assets

FIGURE 3

CITY:(COLUMBUS, OHIO) DIV/GROUP:(IM/DV) DB:(K. SMITH) LD:(Opt) PIC:(Opt) PM:(P. JIN) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
C:\Users\jrichards\OneDrive - ARCADIS\BIM 360 Docs\PPG INDUSTRIES, INC\PPG - GAG GW Pilot Study Phase 1 Design\2019\NP000776.0003\01-DWG\PH2RD Fig3 SITE-IRMP1.dwg LAYOUT: 3 SAVED: 1/27/2019 11:57 PM ACADVER: 21.0S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ACAD.CTB
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2017 DEC WELLS

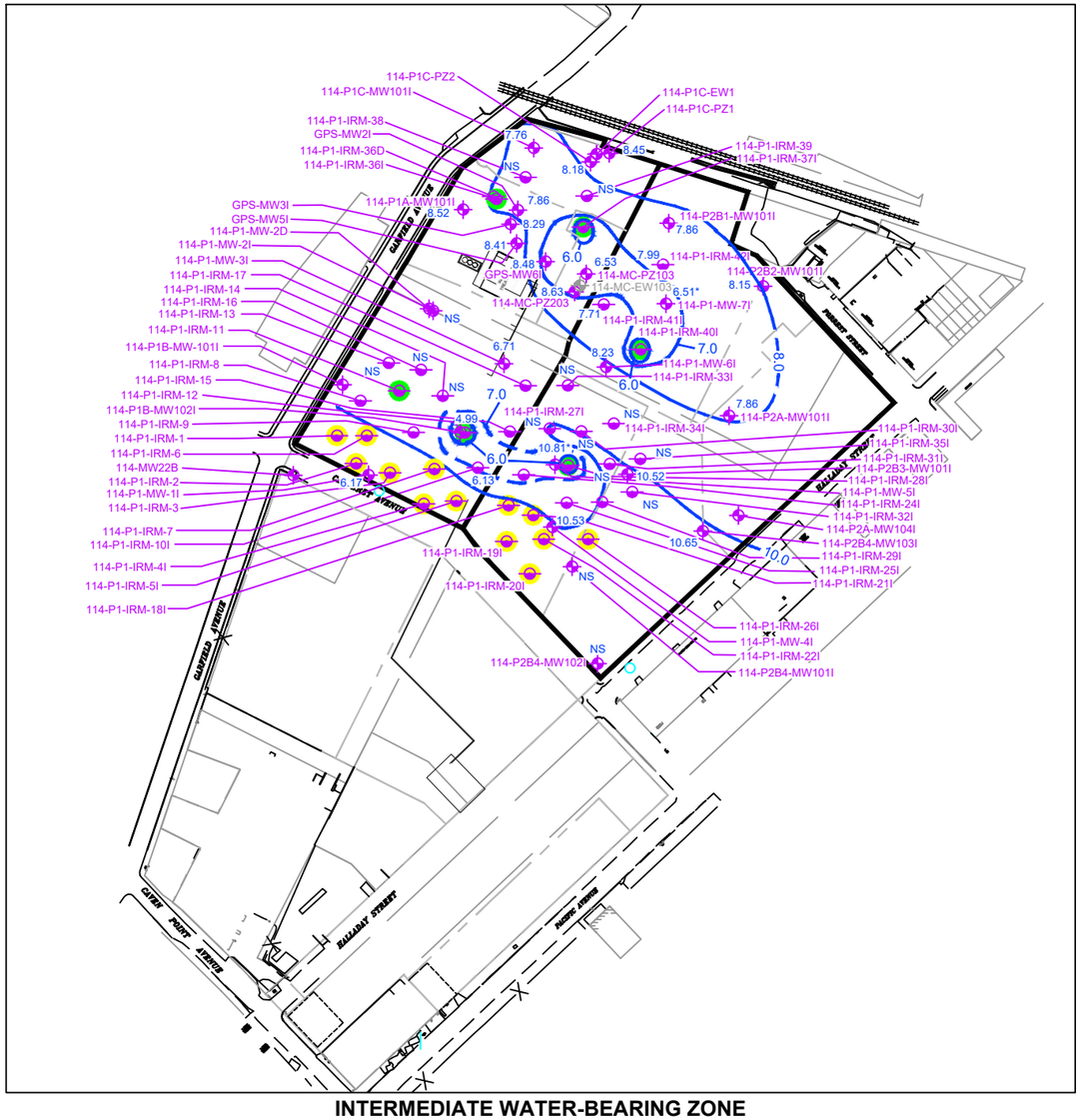


**INTERMEDIATE WATER-BEARING ZONE**

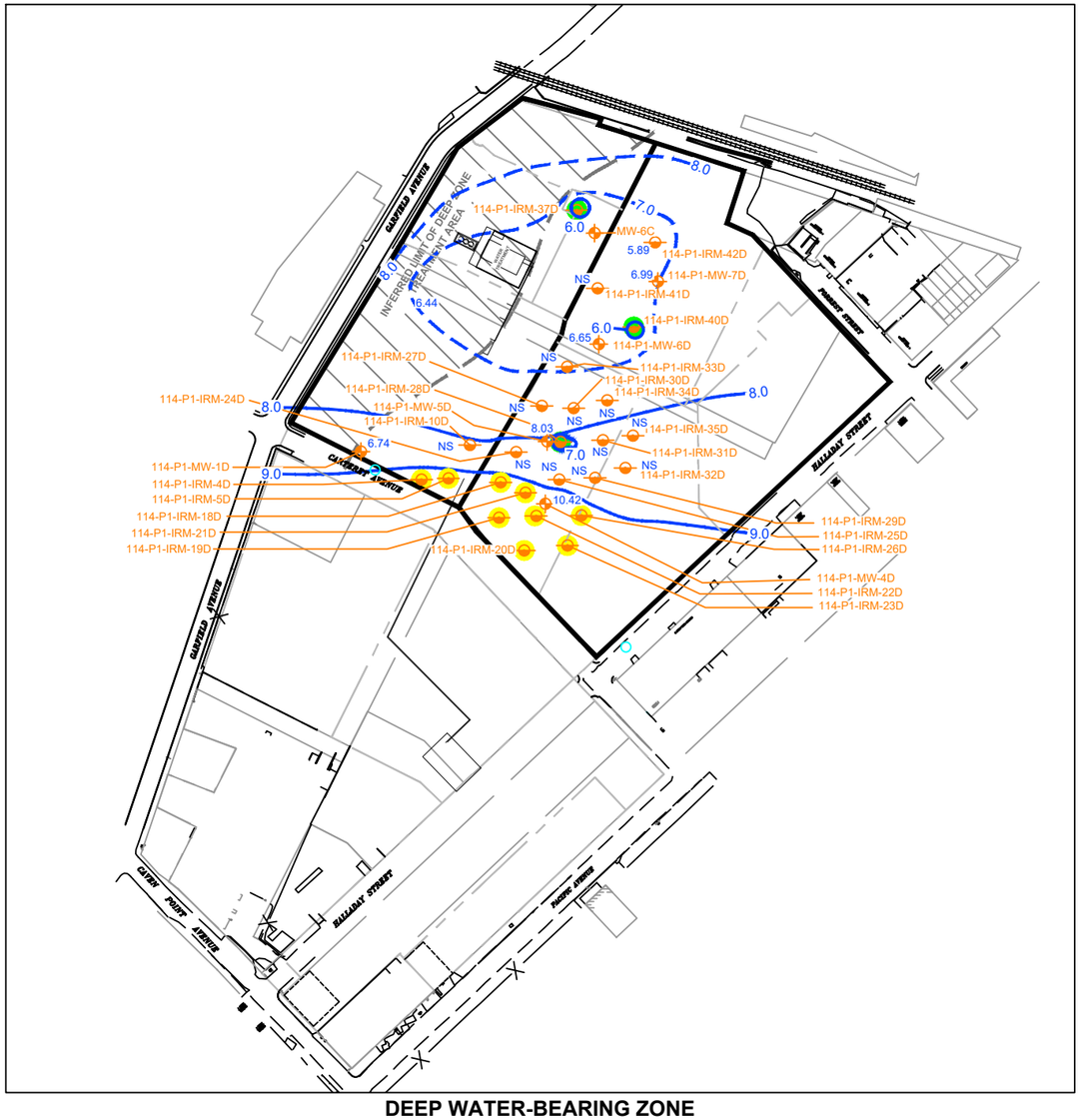


**DEEP WATER-BEARING ZONE**

LEGEND

- SHEET PILES RELEVANT TO SITE 114 IRM
- INTERMEDIATE WATER-BEARING ZONE MONITORING WELL
- INTERMEDIATE WATER-BEARING ZONE REMEDIATION WELL
- DEEP WATER-BEARING ZONE MONITORING WELL
- DEEP WATER-BEARING ZONE REMEDIATION WELL
- DESTROYED INTERMEDIATE WATER-BEARING ZONE MONITORING WELL
- **INFERRED LIMIT OF DEEP ZONE TREATMENT AREA**

- 7.86 — WATER-TABLE ELEVATION (FEET)
- 7.0 — WATER-TABLE ELEVATION CONTOUR DASHED WHERE INFERRED CONTOUR INTERVAL = 1.0 FEET
- NS — NOT SAMPLED
- * — MONITORING WELLS WERE NOT INCLUDED DURING GROUNDWATER CONTOUR INTERPRETATION
- GROUNDWATER EXTRACTION OPERATION WERE BEING PERFORMED AT THE FOLLOWING WELLS DURING COLLECTION OF WATER ELEVATION MEASUREMENTS: IRM-11, IRM-12, IRM-28I, IRM-28D, IRM-36I, IRM-37I, IRM-37D, IRM-40I, AND IRM-40D
- INJECTION WELL

N

0 150 300 FT

SCALE: 1" = 300'

NOTE:
DEEP WELLS THAT WERE INSTALLED IN LOCATION WHERE THE DEPTH TO BEDROCK IS LESS THAN 45 FEET BELOW GROUND SURFACE ARE INCLUDED ON THE INTERMEDIATE CONTOUR.

PPG GARFIELD AVENUE GROUP SITE 114
JERSEY CITY, NEW JERSEY

NP000776.0001

# GROUNDWATER ELEVATION CONTOUR MAPS (OCTOBER 2018)

ARCADIS Design & Consultancy for natural and built assets

FIGURE 4

CITY:(COLUMBUS, OHIO) DIV/GROUP:(IMDV) DB:(R. SMITH) LD:(Opt) PIC:(Opt) PM:(P. JIN) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
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XREFS: IMAGES: PROJECTNAME: ----
2017 DEC WELLS

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XREFS: IMAGES: PROJECTNAME: ---
2017 DEC WELLS
Total Cr Intermediate
Total Cr Deep
Hex Cr Deep
HEX CR Intermediate
Total Cr Deep_baseline
Total Cr Intermediate_baseline




Notes:

1. Concentrations are shown in the unit of micrograms per liter (µg/L).
2. The New Jersey Department of Environmental Protection's Groundwater Quality Standard for chromium is 70 µg/L.
3. Isopleths are drawn based on the highest concentration obtained from monitoring wells with multiple sampling intervals.
4. Elevation vertical datum is NAV D88 in U.S. survey ft.
5. Where data was not collected in October 2018, the most recent data from each well were used.

ft - feet
NAV D88 - North American Vertical Datum of 1988
IRM - Interim Remedial Measures
R I – Remedial Investigation
VAP - Vertical Aquifer Profiling

PPG GARFIELD AVENUE GROUP SITE 114
JERSEY CITY, NEW JERSEY

NP000776.0001

**DISTRIBUTION OF TOTAL CHROMIUM IN INTERMEDIATE WATER-BEARING ZONE (OCTOBER 2018)**

ARCADIS Design & Consultancy for natural and built assets

FIGURE
5

CITY:(COLUMBUS, OHIO) DIVGROUP:(MMDV) DB:(R. SMITH) LD:(Opt) PIC:(Opt) PM:(P. JIN) TM:(Opt) LYR:(On)=(*OFF*;*REF*)
C:\BIM\OneDrive - ARCADIS\BIM 360 Docs\PPG INDUSTRIES, INC\PPG - GAG GW Pilot Study Phase 1 Design\2019\NP000776.0003\01-DWG\PH2RD Fig5-8 GWQ.dwg LAYOUT: 6 SAVED: 2/15/2019 4:24 PM ACADVER: 23.0S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: ACAD.CTB PLOTTED:
2/20/2019 3:06 PM BY: RICHARDS, JIM

N

0 75 150 FT

SCALE: 1" = 150'

LEGEND

- SHEET PILES RELEVANT TO SITE 114 IRM
- INTERMEDIATE WATER-BEARING ZONE MONITORING WELL
- INTERMEDIATE WATER-BEARING ZONE REMEDIATION WELL
- DESTROYED INTERMEDIATE WATER-BEARING ZONE MONITORING WELL

1000000
100000
10000
1000
70

114-P1C-PZ2
114-P1C-MW101I
114-P1C-EW1
114-P1C-PZ1
114-P1-IRM-38
GPS-MW2I
114-P1-IRM-36D
114-P1-IRM-36I
114-P1-IRM-39
114-P1-IRM-37I
114-P1A-MW101I
GPS-MW3I
GPS-MW5I
114-P2B1-MW101I
114-P1-MW-2I
114-P1-MW-3I
114-P1-IRM-17
114-P1-IRM-14
114-P1-IRM-16
114-P1-IRM-13
114-P1-IRM-11
114-P1B-MW-101I
114-P1-IRM-8
114-P1-IRM-15
114-P1-IRM-12
114-P1B-MW102I
114-P1-IRM-9
114-P1-IRM-1
114-P1-IRM-6
114-MW22B
114-P1-IRM-2
114-P1-MW-1I
114-P1-IRM-3
114-P1-IRM-7
114-P1-IRM-10I
114-P1-IRM-4I
114-P1-IRM-5I
114-P1-IRM-18I
GPS-MW6I
114-MC-PZ103
114-MC-EW103
114-P1-MW-2D
114-MC-PZ203
114-P1-IRM-42I
114-P2B2-MW101I
114-P1-MW-7I
114-P1-IRM-41I
114-P1-IRM-40I
Site 114
114-P1-MW-6I
114-P1-IRM-33I
114-P1-IRM-27I
114-P2A-MW101I
114-P1-IRM-34I
114-P1-IRM-30I
114-P1-IRM-35I
114-P1-IRM-31I
114-P2B3-MW101I
114-P1-IRM-28I
114-P1-MW-5I
114-P1-IRM-24I
114-P1-IRM-32I
114-P2A-MW104I
114-P2B4-MW103I
114-P1-IRM-29I
114-P1-IRM-25I
114-P1-IRM-21I
114-P1-IRM-19I
114-P1-IRM-20I
114-P1-IRM-26I
114-P1-MW-4I
114-P1-IRM-22I
114-P2B4-MW101I
114-P2B4-MW102I
Site 143
Site 132
Site 137
Site 135
GARFIELD AVENUE
CARTERET AVENUE
FORREST STREET
HALLADAY STREET

Notes:
1. Concentrations are shown in the unit of micrograms per liter (µg/L).
2. The New Jersey Department of Environmental Protection's Groundwater Quality Standard for chromium is 70 µg/L.
3. Isopleths are drawn based on the highest concentration obtained from monitoring wells with multiple sampling intervals.
4. Elevation vertical datum is NAV D88 in U.S. survey ft.
5. Where data was not collected in October 2018, the most recent data from each well were used.

ft - feet
NAV D88 - North American Vertical Datum of 1988
IRM - Interim Remedial Measures
R I – Remedial Investigation
VAP - Vertical Aquifer Profiling

PPG GARFIELD AVENUE GROUP SITE 114
JERSEY CITY, NEW JERSEY

NP000776.0001

**DISTRIBUTION OF HEXAVALENT CHROMIUM IN INTERMEDIATE WATER-BEARING ZONE (OCTOBER 2018)**

ARCADIS Design & Consultancy for natural and built assets

FIGURE 6

C:\IBM\OneDrive - ARCADIS\IBM 360 Docs\PPG INDUSTRIES, INC\PPG - GAG GW Pilot Study Phase 1 Design\2019\NP000776.0003\01-DWG\PH2RD Fig5-8 GWO.dwg LAYOUT: 7 SAVED: 2/27/2019 1:06 PM ACADVER: 23.0S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: ACAD.CTB PLOTTED: 2/27/2019 1:08 PM BY: RICHARDS, JIM
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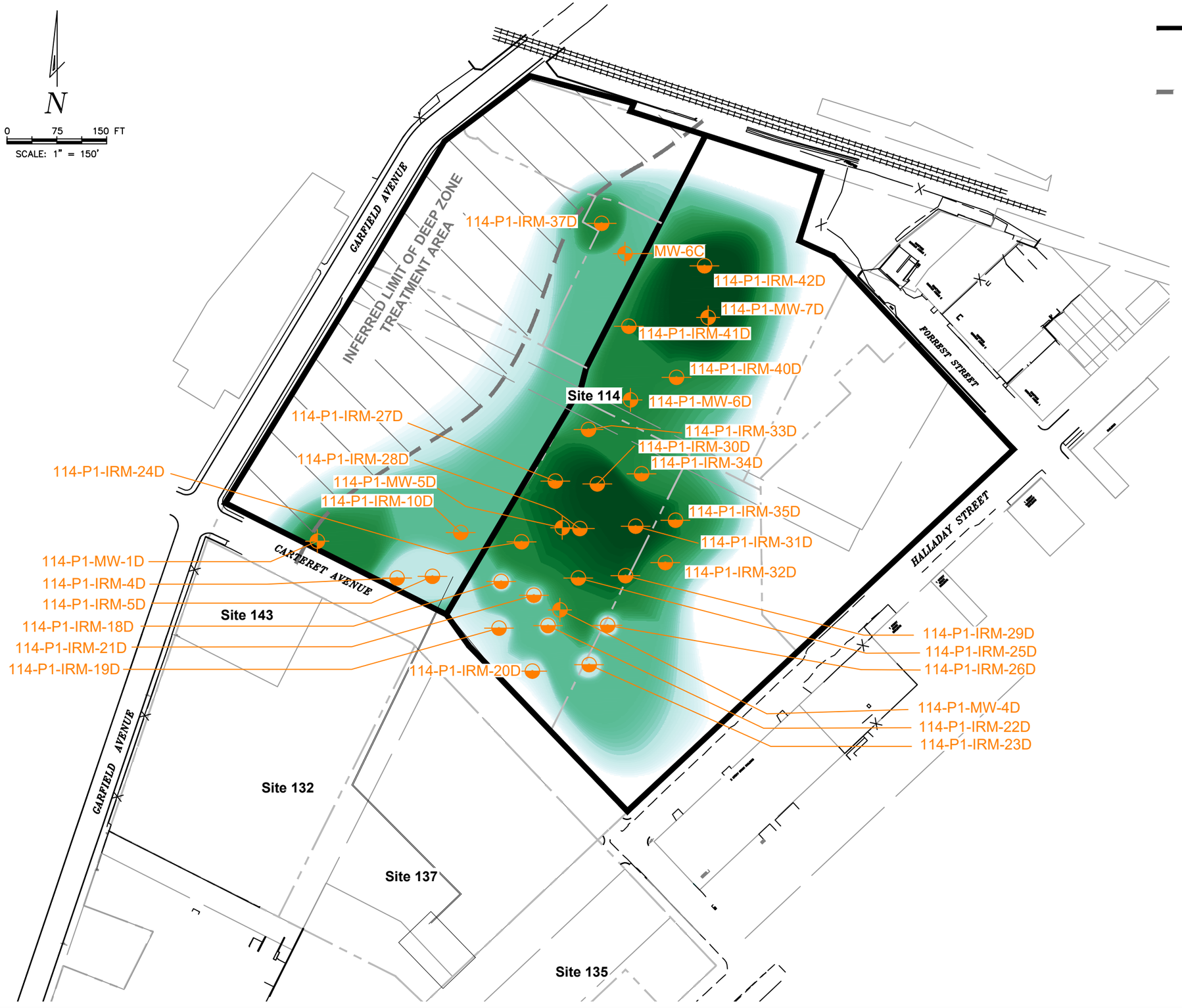


Notes:
1. Concentrations are shown in the unit of micrograms per liter (µg/L).
2. The New Jersey Department of Environmental Protection's Groundwater Quality Standard for chromium is 70 µg/L.
3. Isopleths are drawn based on the highest concentration obtained from monitoring wells with multiple sampling intervals.
4. Elevation vertical datum is NAV D88 in U.S. survey ft.
5. Where data was not collected in October 2018, the most recent data from each well were used.

ft - feet
NAV D88 - North American Vertical Datum of 1988
IRM - Interim Remedial Measures
R I – Remedial Investigation
VAP - Vertical Aquifer Profiling

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# DISTRIBUTION OF TOTAL CHROMIUM IN DEEP WATER-BEARING ZONE (OCTOBER 2018)

ARCADIS Design & Consultancy for natural and built assets

FIGURE 7

N

0 75 150 FT

SCALE: 1" = 150'

LEGEND

SHEET PILES RELEVANT TO SITE 114 IRM

DEEP WATER-BEARING ZONE MONITORING WELL

DEEP WATER-BEARING ZONE REMEDIATION WELL

**INFERRED LIMIT OF DEEP ZONE TREATMENT AREA**

1000000

100000

10000

1000

70

GARFIELD AVENUE

INFERRED LIMIT OF DEEP ZONE TREATMENT AREA

FORREST STREET

HALLADAY STREET

CARTERET AVENUE

GARFIELD AVENUE

114-P1-IRM-37D

MW-6C

114-P1-IRM-42D

114-P1-MW-7D

114-P1-IRM-41D

114-P1-IRM-40D

Site 114

114-P1-MW-6D

114-P1-IRM-27D

114-P1-IRM-33D

114-P1-IRM-30D

114-P1-IRM-28D

114-P1-IRM-34D

114-P1-IRM-24D

114-P1-MW-5D

114-P1-IRM-10D

114-P1-IRM-35D

114-P1-IRM-31D

114-P1-IRM-32D

114-P1-MW-1D

114-P1-IRM-4D

114-P1-IRM-5D

Site 143

114-P1-IRM-18D

114-P1-IRM-21D

114-P1-IRM-19D

114-P1-IRM-20D

114-P1-IRM-29D

114-P1-IRM-25D

114-P1-IRM-26D

114-P1-MW-4D

114-P1-IRM-22D

114-P1-IRM-23D

Site 132

Site 137

Site 135

Notes:

1. Concentrations are shown in the unit of micrograms per liter (µg/L).
2. The New Jersey Department of Environmental Protection's Groundwater Quality Standard for chromium is 70 µg/L.
3. Isopleths are drawn based on the highest concentration obtained from monitoring wells with multiple sampling intervals.
4. Elevation vertical datum is NAV D88 in U.S. survey ft.
5. Where data was not collected in October 2018, the most recent data from each well were used.

ft - feet
NAV D88 - North American Vertical Datum of 1988
IRM - Interim Remedial Measures
R I – Remedial Investigation
VAP - Vertical Aquifer Profiling

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NP000776.0001

**DISTRIBUTION OF HEXAVALENT CHROMIUM IN DEEP WATER-BEARING ZONE (OCTOBER 2018)**

ARCADIS Design & Consultancy for natural and built assets

FIGURE 8

CITY:(COLUMBUS, OHIO) DIVGROUP:(MIDV) DB:(R. SMITH) LD:(Opt) PIC:(Opt) PM:(P. JIN) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
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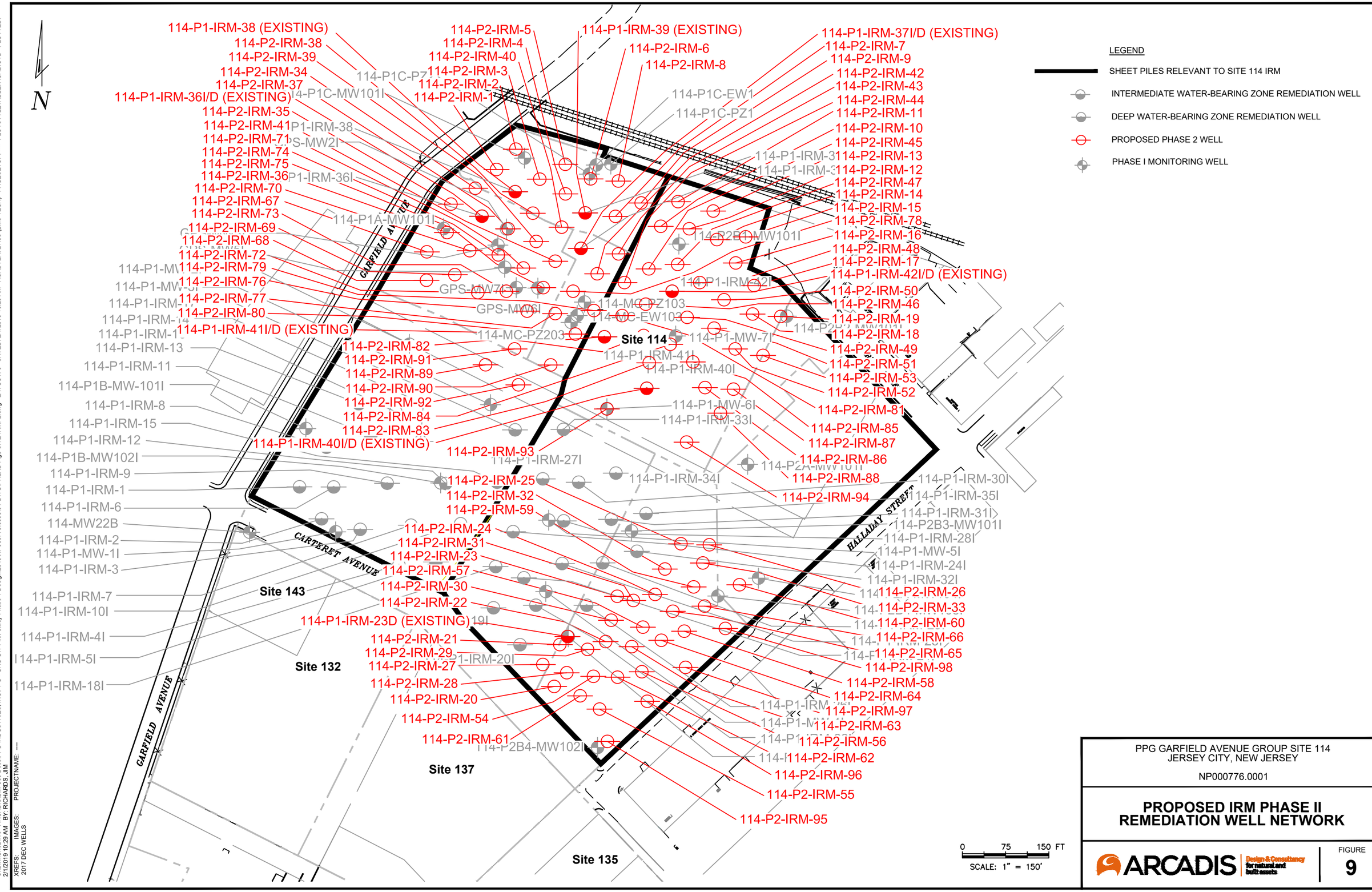


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# PROPOSED IRM PHASE II REMEDIATION WELL NETWORK

ARCADIS Design & Consultancy for natural and built assets

FIGURE 9

CITY:(COLUMBUS, OH(G) DIV/GROUP:(IM)DV) DB:(R. SMITH) LD:(Opt) PIC:(Opt) PM:(P. JIN) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
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2017 DEC WELLS

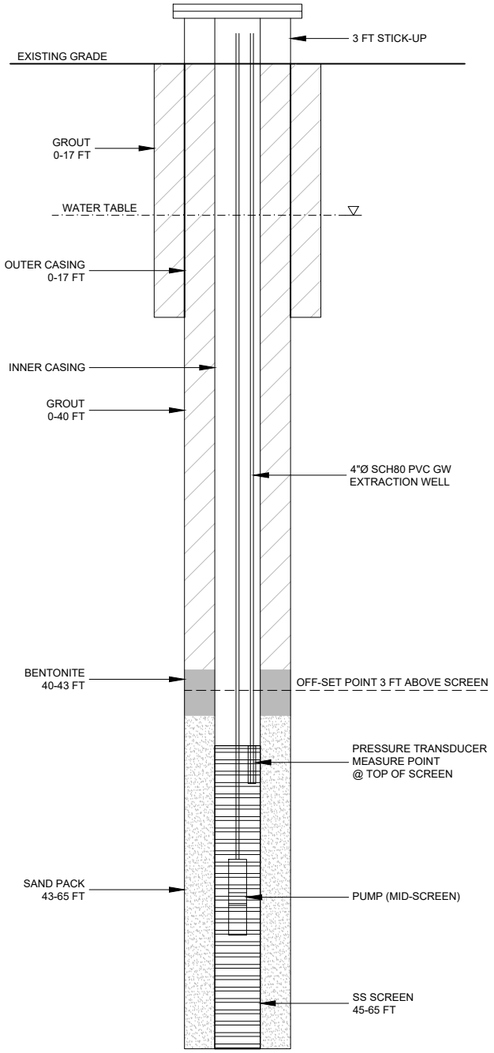


**DEEP WATER-BEARING ZONE EXTRACTION WELL** 1

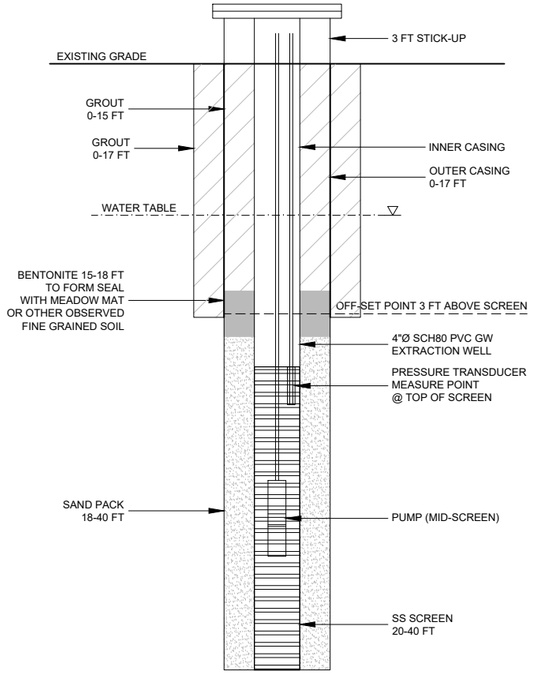


**INTERMEDIATE WATER-BEARING ZONE EXTRACTION WELL** 2

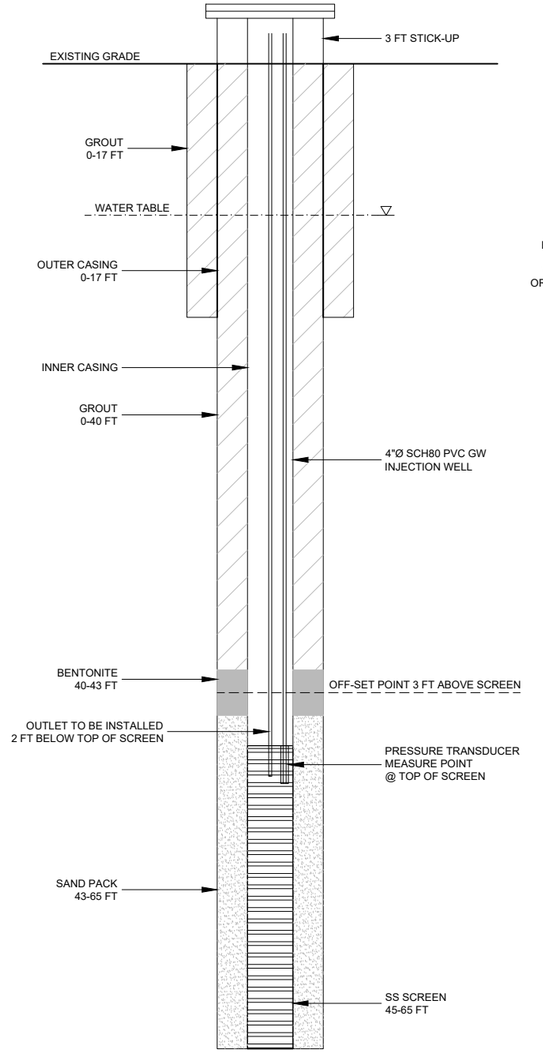


**DEEP WATER-BEARING ZONE INJECTION WELL** 3

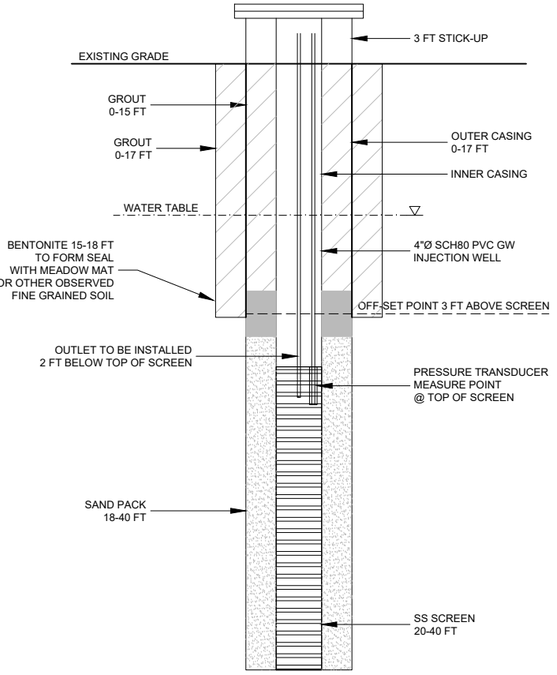


**INTERMEDIATE WATER-BEARING ZONE INJECTION WELL** 4

**DRAWING NOT TO SCALE**

NOTE:

1. ACTUAL LENGTH OF SCREEN AND OPERATIONS WILL BE BASED ON PRE-DESIGN TESTING AND FIELD OBSERVATIONS.
2. OUTER CASING WILL BE INSTALLED 2 TO 3 FEET INTO THE MEADOW MAT.

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# CONCEPTUAL EXTRACTION AND INJECTION WELL CONSTRUCTION DETAILS

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FIGURE
10

CITY:(COLUMBUS, OH) DIV/GROUP:(IM/DV) DB:(R. SMITH) LD:(Opt) PIC:(Opt) PM:(P. JIN) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
C:\BIM\OneDrive - ARCADIS\BIM 360 Docs\PPG INDUSTRIES, INC\PPG - GAG GW Pilot Study Phase 1 Design\2019\NP000776.0003\01-DWG\PH2RD FIG10 Conceptual Well Construction Details.dwg LAYOUT: 10 SAVED: 1/27/2019 9:25 PM ACADVER: 21.0S (LMS TECH) PAGESETUP: ----
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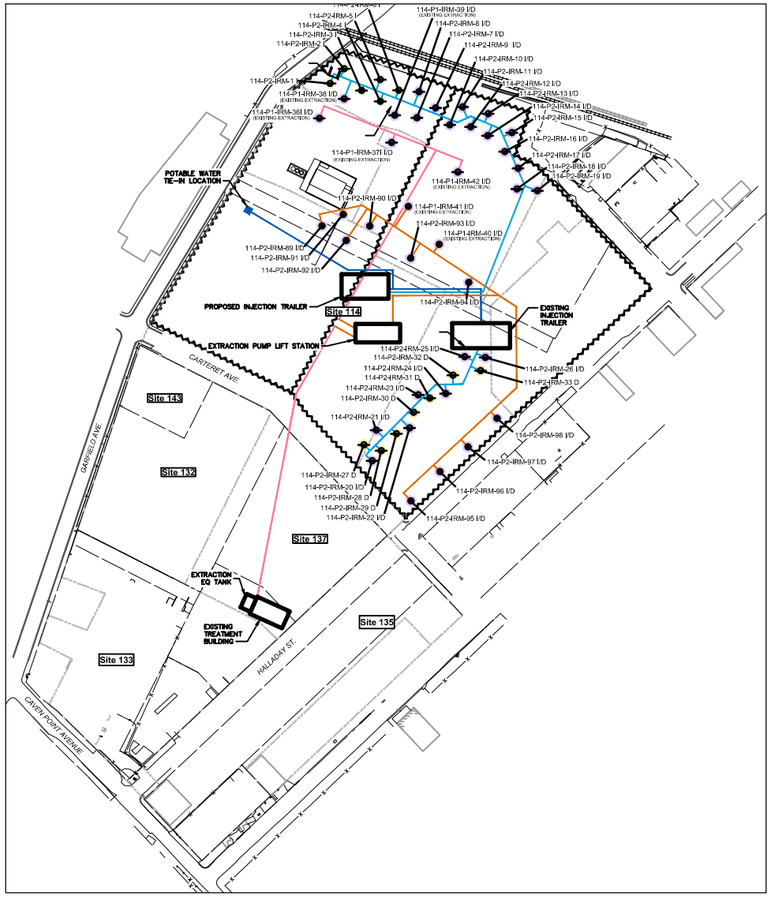


STEP 1

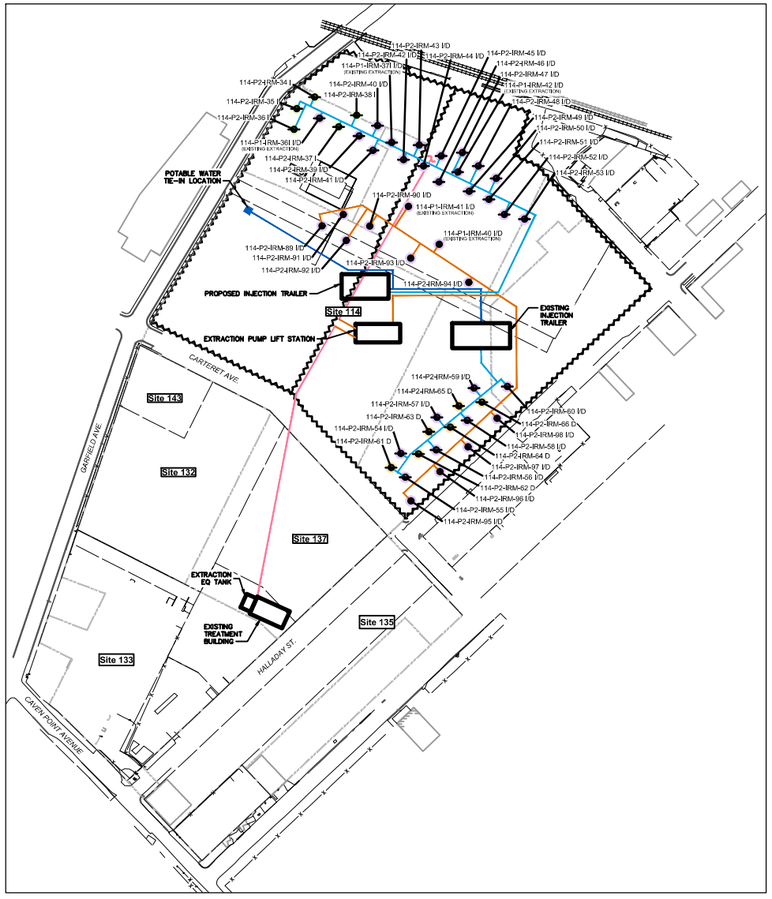


STEP 2

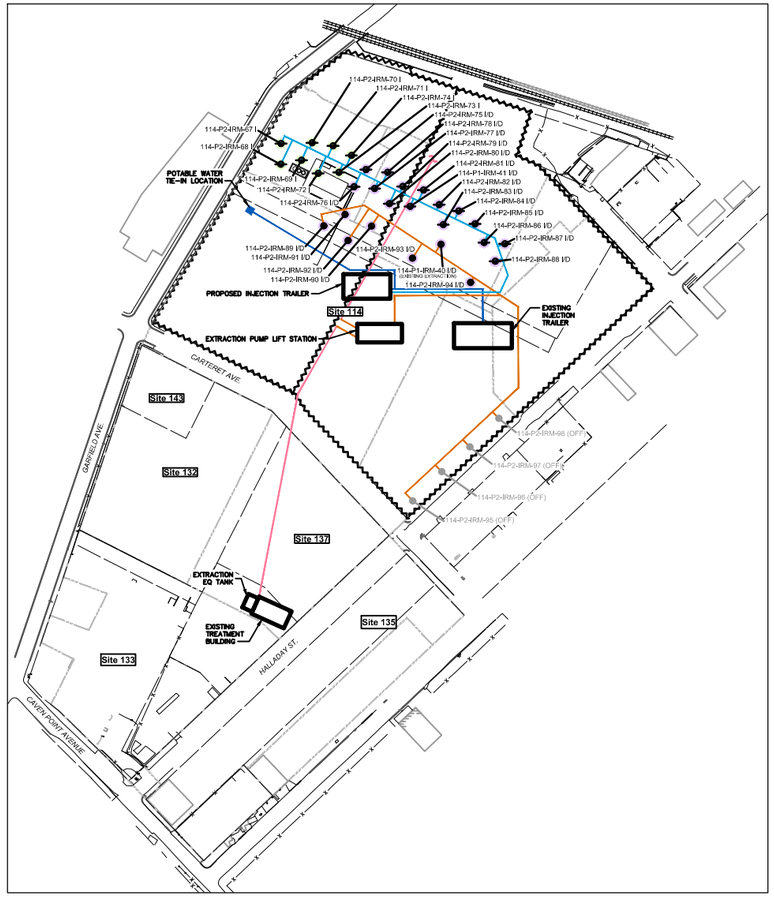


STEP 3

**LEGEND:**

- SHEET PILES RELEVANT TO SITE 114 IRM
- OPERATING IRM PHASE 2 REMEDIATION LOCATION (INJECTION)
- OPERATING IRM PHASE 2 REMEDIATION WELL LOCATION (EXTRACTION)
- INTERMEDIATE WELL DEPTH
- DEEP WELL DEPTH
- INTERMEDIATE AND DEEP WELL DEPTH
- OPERATING IRM TREATMENT SYSTEM INJECTION PIPING LINES
- OPERATING IRM TREATMENT SYSTEM EXTRACTION PIPING LINES
- EXISTING EXTRACTION PIPING LINES
- POTABLE WATER ACCESS LINES

N

0 180 360 FT

SCALE: 1" = 360'

NOTES:

1. PROPOSED NEW WELL LOCATIONS ARE APPROXIMATE. THE ACTUAL LOCATIONS MAY BE ADJUSTED BASED ON GEOLOGICAL FORMATION INFORMATION COLLECTED DURING WELL INSTALLATION.
2. EACH PROPOSED WELL LOCATION MAY CONSIST OF A WELL PAIR (TWO SCREENS) DEPENDING ON THE THICKNESS OF AQUIFER TARGETED FOR TREATMENT.
3. IRM = INTERIM REMEDIAL MEASURES

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# PROPOSED IRM PHASE II CONVEYANCE PIPING ORIENTATION

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FIGURE 11

CITY:(COLUMBUS, OHIO) DIV/GROUP:(IM/DV) DB:(K. SMITH) LD:(Opt) PIC:(Opt) PM:(P. JIN) TM:(Opt) LYR:(Opt)ON="";OFF="*DEF*"
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XREFS: IMAGES: PROJECTNAME: ---
PH2CD_DWG C-03_Step 1 Piping Plan
PH2CD_DWG C-04_Step 2 Piping Plan
PH2CD_DWG C-05_Step 3 Piping Plan

N

0 75 150 FT

SCALE: 1" = 150'

LEGEND

- SHEET PILES RELEVANT TO SITE 114 IRM
- INTERMEDIATE WATER-BEARING ZONE MONITORING WELL
- INTERMEDIATE WATER-BEARING ZONE REMEDIATION WELL
- DESTROYED INTERMEDIATE WATER-BEARING ZONE MONITORING WELL
- PROPOSED PHASE 2 WELL
- PROPOSED PHASE II MONITORING WELL

114-P1C-PZ2
114-P1C-MW101I
114-P2-MW-1I
114-P1C-EW1
114-P1C-PZ1
114-P1-IRM-38
GPS-MW2I
114-P2-MW-2I
114-P1-IRM-36D
114-P1-IRM-36I
114-P1-IRM-39
114-P1-IRM-37I
114-P1A-MW101I
114-P2-MW-5I
GPS-MW3I
114-P2-MW-4I
114-P2B1-MW101I
GPS-MW5I
114-P2-MW-3I
114-P1-MW-2I
114-P1-IRM-42I
114-P2-MW-6I
114-P1-MW-3I
GPS-MW7I
114-MC-PZ103
114-P1-IRM-17
GPS-MW6I
114-MC-EW103
114-P1-IRM-14
114-P2B2-MW101I
114-P1-MW-2D
114-P1-IRM-16
114-MC-PZ203
114-P1-MW-7I
114-P1-IRM-13
Site 114
114-P1-IRM-41I
114-P1-IRM-11
114-P2-MW-7I
114-P1-IRM-40I
114-P1B-MW-101I
114-P2-MW-8I
114-P1-IRM-8
114-P1-MW-6I
114-P1-IRM-15
114-P1-IRM-33I
114-P1-IRM-12
114-P1-IRM-27I
114-P1B-MW102I
114-P2A-MW101I
114-P1-IRM-9
114-P1-IRM-34I
114-P1-IRM-30I
114-P1-IRM-1
114-P1-IRM-35I
114-P1-IRM-6
114-P1-IRM-31I
114-MW22B
114-P2B3-MW101I
114-P2-MW-9I
114-P1-IRM-2
114-P1-IRM-28I
114-P1-MW-1I
114-P1-MW-5I
114-P1-IRM-3
114-P1-IRM-24I
114-P1-IRM-32I
Site 143
114-P2A-MW104I
114-P1-IRM-7
114-P2B4-MW103I
114-P1-IRM-10I
114-P1-IRM-19I
114-P1-IRM-29I
114-P1-IRM-4I
114-P2-MW-10I
114-P1-IRM-25I
114-P1-IRM-20I
114-P1-IRM-21I
114-P1-IRM-5I
114-P2-MW-12I
114-P1-IRM-18I
Site 132
114-P2-MW-11I
114-P1-IRM-26I
114-P1-MW-4I
114-P1-IRM-22I
114-P2B4-MW102I
Site 137
114-P2B4-MW101I
Site 135

CARFIELD AVENUE
CARTERET AVENUE
CARFIELD AVENUE
FORREST STREET
HALLADAY STREET

PPG GARFIELD AVENUE GROUP SITE 114
JERSEY CITY, NEW JERSEY

NP000776.0001

**PROPOSED IRM PHASE II MONITORING WELL NETWORK - INTERMEDIATE ZONE**

ARCADIS Design & Consultancy for natural and built assets

FIGURE 12

CITY:(COLUMBUS, OHIO) DIV/GROUP:(IM/DV) DB:(R. SMITH) LD:(Opt) PIC:(Opt) PM:(P. JIN) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
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PLOTTED: 2/28/2019 1:32 PM BY: RICHARDS, JIM
XREFS: IMAGES: PROJECTNAME: ----
2017 DEC WELLS

N

0 75 150 FT

SCALE: 1" = 150'

LEGEND

- SHEET PILES RELEVANT TO SITE 114 IRM
- DEEP WATER-BEARING ZONE MONITORING WELL
- DEEP WATER-BEARING ZONE REMEDIATION WELL
- INFERRED LIMIT OF DEEP ZONE TREATMENT AREA
- PROPOSED PHASE 2 WELL
- PROPOSED PHASE II MONITORING WELL

114-P2-MW-1D
114-P2-MW-2D
114-P2-MW-4D
114-P2-MW-5D
114-P2-MW-3D
114-P2-MW-6D
114-P2-MW-7D
114-P2-MW-8D
114-P2-MW-9D
114-P2-MW-10D
114-P2-MW-11D
114-P2-MW-12D
114-P1-IRM-37D
MW-6C
114-P1-IRM-42D
114-P1-IRM-41D
Site 114
114-P1-IRM-40D
114-P1-MW-6D
114-P1-IRM-27D
114-P1-IRM-33D
114-P1-IRM-30D
114-P1-IRM-34D
114-P1-IRM-28D
114-P1-IRM-24D
114-P1-MW-5D
114-P1-IRM-10D
114-P1-IRM-35D
114-P1-IRM-31D
114-P1-IRM-32D
114-P1-MW-1D
114-P1-IRM-4D
114-P1-IRM-5D
114-P1-IRM-18D
114-P1-IRM-21D
114-P1-IRM-19D
Site 143
114-P1-IRM-20D
114-P1-IRM-29D
114-P1-IRM-25D
114-P1-IRM-26D
114-P1-MW-4D
114-P1-IRM-22D
114-P1-IRM-23D
Site 132
Site 137
Site 135

GARFIELD AVENUE
INFERRED LIMIT OF DEEP ZONE TREATMENT AREA
FORREST STREET
CARTERET AVENUE
HALLADAY STREET
GARFIELD AVENUE

PPG GARFIELD AVENUE GROUP SITE 114
JERSEY CITY, NEW JERSEY

NP000776.0001

# PROPOSED IRM PHASE II MONITORING WELL NETWORK - DEEP ZONE

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FIGURE 13

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PLOTTED: 2/28/2019 1:32 PM BY: RICHARDS, JIM
XREFS: IMAGES: PROJECTNAME: ----
2017 DEC WELLS

# APPENDIX A

## Draft Public Notice

## DRAFT PUBLIC NOTICE

Take notice that, as part of the remediation of Garfield Avenue Site 114 and Former Halladay Street Gas Works at 900 Garfield Avenue, Block: 21501 Lots: 16,17,18, 19, 20, in the City of Jersey City, Hudson County, New Jersey, a proposal has been submitted to the New Jersey Department of Environmental Protection (Department) to discharge to groundwater in accordance with a permit issued pursuant to the provisions of the New Jersey Water Pollution Control Act, New Jersey Statutes Annotated (N.J.S.A.) 58:10A-1 et seq., the New Jersey Pollutant Discharge Elimination System, New Jersey Administrative Code (N.J.A.C.) 7:14A; the Ground Water Quality Standards, N.J.A.C. 7:9C; and the Technical Requirements for Site Remediation, N.J.A.C. 7:26E. The Department's Site Remediation Program is reviewing the proposal to discharge to groundwater for the purpose of remediating a contaminated site with the program interest # G000008791.

Brief description of the proposed discharge: The Phase II Interim Remedial Measure will be implemented at Site 114, which is located at 900 Garfield Avenue in Jersey City, Hudson County, New Jersey. The site is located on the Jersey City peninsula, approximately midway between the Passaic River and Hackensack River junction to the west (approximately 1.8 miles) and the upper bay/mouth of the Hudson River to the east (approximately 1.6 miles). The local overburden geology is generally consistent with the regional geologic mapping and includes approximately 16 feet of poorly sorted fill materials over organic rich meadow mat. The meadow mat occurs over most of the site and marks the transition from the shallow fill aquifer to the intermediate depth and deep aquifers, although in some areas the meadow mat is absent. The pilot study will include a combination of groundwater extraction, treatment, and reinjection to achieve in situ anaerobic bioprecipitation (ISAB) and in-situ chemical reduction (ISCR). In the overburden, ISAB will be achieved by injecting organic carbon substrate (e.g., molasses and/or emulsified vegetable oil [EVO]) to establish geochemical reducing conditions to stimulate a native microbial community for reducing hexavalent chromium (Cr[VI]) to trivalent chromium (Cr[III]), which will eventually be precipitated and permanently fixed in soil formation. At the same time, distribution of injected organic carbon substrate and expansion of established reducing conditions (ISCR) will be supported with a dynamically operated well network (i.e., alternately operating wells for extraction and/or injection, as needed) and groundwater recirculation (i.e., reinjecting of extracted groundwater after aboveground treatment). A copy of this public notice has been sent to the Municipal Clerk and the designated Local Health Official for Jersey City and Hudson County, New Jersey.

A copy of the discharge to groundwater proposal is available from the person responsible for conducting the remediation (Mark Terril, One PPG Place, Pittsburgh, PA 15222), or as part of the administrative record, which is on file at the offices of the Department, Site Remediation Program, located at 401 East State Street, Trenton, Mercer County, New Jersey. The file may be reviewed under the New Jersey Open Public Records Act (OPRA), N.J.S.A. 47:1A-1 et seq. Information regarding the OPRA procedures is available at http://www.state.nj.us/dep/opra/oprainfo.html.

Interested persons may submit written comments regarding the discharge to groundwater proposal to the Department at the address listed below and to the owner or operator of the facility: Richard Feinberg, 900 Garfield Avenue, Jersey City, NJ, 07305. All comments shall be submitted within 30 calendar days after the date of this public notice or the end of any public hearing that the Department may schedule that occurs after that date. All persons who believe that the discharge to groundwater proposal is

inappropriate, must submit all reasonably ascertainable issues in writing to the Department, with all supporting material, by the close of the public comment period. The Department will consider all public comments that relate to the discharge to groundwater proposal, provided that the Department receives the comments by the close of the public comment period. After the close of the public comment period, the Department will render a decision regarding the proposed discharge to groundwater.

The Department will respond to all significant and timely comments with its decision regarding the discharge to groundwater proposal. Each person who has submitted written comments will receive notice of the Department's decision.

Any person may request in writing that the Department hold a non-adversarial public hearing on the discharge to groundwater proposal. This request shall state the nature of the issues to be raised in the proposed hearing and shall be submitted within 30 calendar days of the date of this public notice to the address cited below. A public hearing will be conducted whenever the Department determines that there is a significant degree of public interest in the discharge to groundwater decision. If a public hearing is held, the public comment period in this notice shall automatically be extended to the close of the public hearing.

Comments and written requests for a non-adversarial public hearing shall be sent to:

NJ Department of Environmental Protection
Site Remediation Program
Bureau Case Assignment and Initial Notice
Mail Code 401-05H
401 East State Street
P.O. Box 420 Trenton,
NJ 08625-0420
ATTN: DGW proposal

# APPENDIX B

## IRM Phase I Groundwater Monitoring Data - October 2018

**Table 4**
**Groundwater Sampling Analytical Results Summary for Intermediate Water-Bearing Zone**
**Groundwater IRM Phase I Quarterly Report – Q3 2018**
**PPG Garfield Avenue Group Sites, Jersey City, New Jersey**

ARCADIS Design & Consultancy for natural and built assets

| | | | | Location ID | 114-MC-PZ103 | 114-MC-PZ203 | 114-P1B-MW101I | 114-P1B-MW102I | 114-P1C-PZ1 | 114-P1C-PZ2 | 114-P1-IRM-10I | 114-P1-IRM-41I | 114-P1-IRM-42I | 114-P1-IRM-8 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 10/31/2018 | 10/31/2018 | 10/30/2018 | 10/30/2018 | 10/31/2018 | 10/31/2018 | 10/29/2018 | 10/31/2018 | 10/30/2018 | 10/29/2018 |
| Analyte | CASRN | Fraction | PPG-NJDEP Specific GWQC | Sample ID \\ Units | 114-MC-PZ103-20181031 | 114-MC-PZ203-20181031 | 114-P1B-MW101I-20181030 | 114-P1B-MW102I-20181030 | 114-P1C-PZ1-20181031 | 114-P1C-PZ2-20181031 | 114-P1-IRM-10I-20181029 | 114-P1-IRM-41I-20181031 | 114-P1-IRM-42I-20181030 | 114-P1-IRM-8-20181029 |
| **CCPW Metals** | | | | | | | | | | | | | | |
| Antimony | 7440-36-0 | T | 6 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | T | 70 | µg/l | **165** | **190000** | **216** | **282000** | 20.9 | **25800** | **495000** | **165000** | **95500** | **48200** |
| | | D | | µg/l | < 10 U | **210000** | **135** | **290000** | 13.6 | **25500** | **475000** | **161000** | **95300** | **40900** |
| Chromium VI | 18540-29-9 | T | 70 | µg/l | < 10 U | **155000** | **99** | **246000** | < 10 U | **24200** | **485000** | **155000** | **103000** | **41700** |
| | | D | | µg/l | < 10 U | **152000** | **100** | **239000** | < 10 U | **23400** | **455000** | **143000** | **101000** | **40700** |
| Nickel | 7440-02-0 | T | 100 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | T | 0.5 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | T | 60 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Non-CCPW Metals** | | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | T | 200 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | T | 0.02 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | T | 6000 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | T | 1 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | T | 4 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | T | -- | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | T | -- | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | T | 1300 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous Iron | 15438-31-0 | D | -- | µg/l | < 200 U | < 200 U | < 200 U | < 200 U | < 200 U | < 200 U | < 200 U | < 200 U | < 200 U | < 200 U |

See Notes on Page 4.

**Table 4**
**Groundwater Sampling Analytical Results Summary for Intermediate Water-Bearing Zone**
**Groundwater IRM Phase I Quarterly Report – Q3 2018**
**PPG Garfield Avenue Group Sites, Jersey City, New Jersey**

ARCADIS Design & Consultancy for natural and built assets

| | | | | Location ID | 114-MC-PZ103 | 114-MC-PZ203 | 114-P1B-MW101I | 114-P1B-MW102I | 114-P1C-PZ1 | 114-P1C-PZ2 | 114-P1-IRM-10I | 114-P1-IRM-41I | 114-P1-IRM-42I | 114-P1-IRM-8 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 10/31/2018 | 10/31/2018 | 10/30/2018 | 10/30/2018 | 10/31/2018 | 10/31/2018 | 10/29/2018 | 10/31/2018 | 10/30/2018 | 10/29/2018 |
| Analyte | CASRN | Fraction | PPG-NJDEP Specific GWQC | Sample ID \\ Units | 114-MC-PZ103-20181031 | 114-MC-PZ203-20181031 | 114-P1B-MW101I-20181030 | 114-P1B-MW102I-20181030 | 114-P1C-PZ1-20181031 | 114-P1C-PZ2-20181031 | 114-P1-IRM-10I-20181029 | 114-P1-IRM-41I-20181031 | 114-P1-IRM-42I-20181030 | 114-P1-IRM-8-20181029 |
| Iron | 7439-89-6 | T | 300 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | T | 5 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | T | -- | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | T | 50 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | **56.1** | < 150 U | < 15 U | **151** | **5730** | **3240** | **258** | < 150 U | < 150 U | < 150 U |
| Mercury | 7439-97-6 | T | 2 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | T | -- | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | T | 40 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | T | 40 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | T | 50000 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | T | 2000 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | | |
| Sulfate | 14808-79-8 | -- | -- | mg/l | 2800 | 738 | 199 | 492 | 1270 | 923 | 526 | 574 | 852 | 1100 |
| Sulfide | 18496-25-8 | -- | -- | mg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methane | 74-82-8 | -- | -- | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| TOC | ARC-TOC | -- | -- | mg/l | 2.8 | 7.1 | 1.0 | 8.6 | 2.8 | 5.3 | 7.0 | 20.8 | 10.1 | 18.7 |
| ORP | -- | -- | -- | mV | 120 | -76 | 184 | 167 | 55 | 115 | 224 | 116 | 220 | 259 |
| pH | -- | -- | -- | pH units | 7.78 | 9.15 | 7.26 | 7.4 | 6.71 | 7.11 | 7.26 | 9.30 | 7.35 | 6.60 |
| DO | -- | -- | -- | mg/l | 9.70 | 0 | 0 | 0 | 0 | 1.84 | 1.59 | 6.15 | 2.44 | 0.02 |
| Conductivity | -- | -- | -- | mS/cm | 2.25 | 8.27 | 7.68 | 5.62 | 2.85 | 5.34 | 4.11 | 6.15 | 5.20 | 5.66 |

See Notes on Page 4.

**Table 4**
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**PPG Garfield Avenue Group Sites, Jersey City, New Jersey**

| | | | | Location ID | 114-P1-IRM-9 | 114-P1-MW-1I | 114-P1-MW-3I | 114-P1-MW-6I | 114-P1-MW-7I | 114-P2A-MW101I | 114-P2B2-MW101I |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 10/29/2018 | 10/30/2018 | 10/30/2018 | 10/31/2018 | 10/30/2018 | 10/31/2018 | 10/30/2018 |
| Analyte | CASRN | Fraction | PPG-NJDEP Specific GWQC | Sample ID \\ Units | 114-P1-IRM-9-20181029 | 114-P1-MW-1I-20181030 | 114-P1-MW-3I-20181030 | 114-P1-MW-6I-20181031 | 114-P1-MW-7I-20181030 | 114-P2A-MW101I-20181031 | 114-P2B2-MW101I-20181030 |
| **CCPW Metals** | | | | | | | | | | | |
| Antimony | 7440-36-0 | T | 6 | µg/l | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA |
| Chromium | 7440-47-3 | T | 70 | µg/l | **569000** | **42700** | **38700 H** | **489000** | **8280** | 10.8 | **34600** |
| | | D | | µg/l | **566000** | **25800** | **40700 HH** | **453000** | 109 | < 10 U | **35600** |
| Chromium VI | 18540-29-9 | T | 70 | µg/l | **678000** | **35800** | **36500** | **410000** | < 10 U | < 10 U | **31500** |
| | | D | | µg/l | **656000** | **36500** | **34700** | **377000** | < 10 U | < 10 U | **28800** |
| Nickel | 7440-02-0 | T | 100 | µg/l | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | T | 0.5 | µg/l | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | T | 60 | µg/l | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA |
| **Non-CCPW Metals** | | | | | | | | | | | |
| Aluminum | 7429-90-5 | T | 200 | µg/l | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | T | 0.02 | µg/l | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | T | 6000 | µg/l | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | T | 1 | µg/l | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | T | 4 | µg/l | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | T | -- | µg/l | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | T | -- | µg/l | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | T | 1300 | µg/l | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA |
| Ferrous Iron | 15438-31-0 | D | -- | µg/l | < 200 U | < 200 U | < 200 U | < 200 U | 3900 | < 200 U | < 200 U |

See Notes on Page 4.

**Table 4**
**Groundwater Sampling Analytical Results Summary for Intermediate Water-Bearing Zone**
**Groundwater IRM Phase I Quarterly Report – Q3 2018**
**PPG Garfield Avenue Group Sites, Jersey City, New Jersey**

| | | | | Location ID | 114-P1-IRM-9 | 114-P1-MW-1I | 114-P1-MW-3I | 114-P1-MW-6I | 114-P1-MW-7I | 114-P2A-MW101I | 114-P2B2-MW101I |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 10/29/2018 | 10/30/2018 | 10/30/2018 | 10/31/2018 | 10/30/2018 | 10/31/2018 | 10/30/2018 |
| Analyte | CASRN | Fraction | PPG-NJDEP Specific GWQC | Sample ID \\ Units | 114-P1-IRM-9-20181029 | 114-P1-MW-1I-20181030 | 114-P1-MW-3I-20181030 | 114-P1-MW-6I-20181031 | 114-P1-MW-7I-20181030 | 114-P2A-MW101I-20181031 | 114-P2B2-MW101I-20181030 |
| Iron | 7439-89-6 | T | 300 | µg/l | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | T | 5 | µg/l | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | T | -- | µg/l | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | T | 50 | µg/l | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | < 150 U | **1000** | **116** | < 150 U | **2790** | **1050** | **541** |
| Mercury | 7439-97-6 | T | 2 | µg/l | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | T | -- | µg/l | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | T | 40 | µg/l | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | T | 40 | µg/l | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | T | 50000 | µg/l | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | T | 2000 | µg/l | NA | NA | NA | NA | NA | NA | NA |
| | | D | | µg/l | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | |
| Sulfate | 14808-79-8 | -- | -- | mg/l | 1820 | 1500 | 876 | 523 | 1490 | 1350 | 1030 |
| Sulfide | 18496-25-8 | -- | -- | mg/l | NA | NA | NA | NA | NA | NA | NA |
| Methane | 74-82-8 | -- | -- | µg/l | NA | NA | NA | NA | NA | NA | NA |
| TOC | ARC-TOC | -- | -- | mg/l | 20.7 | 24.2 | 7.4 | 27.6 | 10.8 | 16.0 | 20.2 |
| ORP | -- | -- | -- | mV | 290 | 164 | 130 | 99 | -19 | -235 | 305 |
| pH | -- | -- | -- | pH units | 6.69 | 7.47 | 7.70 | 9.14 | 6.66 | 8.11 | 7.8 |
| DO | -- | -- | -- | mg/l | 0 | 1.34 | 0.92 | 0.43 | 0 | 2.34 | 6.94 |
| Conductivity | -- | -- | -- | mS/cm | 7.91 | 10 | 10.4 | 4.32 | 8.78 | 10.1 | 0.784 |

See Notes on Page 4.

**Table 4**
**Groundwater Sampling Analytical Results Summary for Intermediate Water-Bearing Zone**
**Groundwater IRM Phase I Quarterly Report – Q3 2018**
**PPG Garfield Avenue Group Sites, Jersey City, New Jersey**

ARCADIS Design & Consultancy for natural and built assets

**Notes:**

| | |
|---|---|
| < 3.0 U | Constituent not detected at concentrations greater than the laboratory detection limit. |
| 13.6 | Constituent detected at concentrations above the laboratory detection limit. |
| **311** | Constituent detected at concentrations above the applicable NJDEP GWQC. |
| -- | data not available |

**Abbreviations:**

| | |
|---|---|
| CASRN | Chemical Abstracts System Registration Number |
| D | dissolved |
| FD | Field duplicate sample |
| mg/l | milligrams per liter |
| mS/cm | millisiemens per centimeter |
| mV | millivolts |
| NA | Not Analyzed |
| PPG NJDEP GWQC | New Jersey Department of Environmental Protection Groundwater Quality Criteria |
| s.u. | standard pH units |
| T | total |
| µg/l | micrograms per liter |

**Data Qualifiers:**

| | |
|---|---|
| U | The compound was analyzed for but not detected. The associated value is the compound quantitation limit. |
| B | The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect. |
| E | The compound was quantitated above the calibration range. |
| D | Concentration is based on a diluted sample analysis. |
| J | The compound was positively identified; however, the associated numerical value is an estimated concentration only. |
| J+ | The result is an estimated quantity, but the result may be biased high. |
| J- | The result is an estimated quantity, but the result may be biased low. |
| UJ | The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation. |
| UB | Compound considered non-detect at the listed value due to associated blank contamination. |
| R | The sample results are rejected. |

**Table 5**
**Groundwater Sampling Analytical Results Summary for Deep Water-Bearing Zone**
**Groundwater IRM Phase I Quarterly Report – Q3 2018**
**PPG Garfield Avenue Group Sites, Jersey City, New Jersey**

ARCADIS Design & Consultancy for natural and built assets

| | | | | Location ID | MW6C | 114-P1-IRM-10D | 114-P1-IRM-41D | 114-P1-IRM-41D | 114-P1-IRM-42D | 114-P1-MW-1D | 114-P1-MW-2D | 114-P1-MW-6D | 114-P1-MW-7D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 10/31/2018 | 10/29/2018 | 10/31/2018 | 10/31/2018 | 10/30/2018 | 10/30/2018 | 10/30/2018 | 10/31/2018 | 10/30/2018 |
| Analyte | CASRN | | PPG-NJDEP Specific GWQC | Sample ID \\ Units | MW6C-20181031 | 114-P1-IRM-10D-20181029 | 114-P1-IRM-41D-20181031 | 114-P1-IRM-41D-DUP-20181031 | 114-P1-IRM-42D-20181030 | 114-P1-MW-1D-20181030 | 114-P1-MW-2D-20181030 | 114-P1-MW-6D-20181031 | 114-P1-MW-7D-20181030 |
| **CCPW Metals** | | | | | | | | | | | | | |
| Chromium | 7440-47-3 | T | 70 | µg/l | **12900** | **49200** | **185000** | **244000** | **1620000** | **404000** | **630** | **104000** | **1570000** |
| Chromium | 7440-47-3 | D | 70 | µg/l | **12100** | **55200** | **187000** | **230000** | **1590000** | **427000** | 22.0 | **97900** | **1560000** |
| Chromium VI | 18540-29-9 | T | 70 | µg/l | **11100** | **43800** | **156000** | **152000** | **1420000** | **357000** | < 10 U | **94700** | **1410000** |
| Chromium VI | 18540-29-9 | D | 70 | µg/l | **11400** | **46300** | **148000** | **145000** | **1380000** | **336000** | < 10 U | **91600** | **1330000** |
| Antimony | 7440-36-0 | T | 6 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Antimony | 7440-36-0 | D | 6 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | T | 100 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Nickel | 7440-02-0 | D | 100 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | T | 0.5 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Thallium | 7440-28-0 | D | 0.5 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | T | 60 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Vanadium | 7440-62-2 | D | 60 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Non-CCPW Metals** | | | | | | | | | | | | | |
| Aluminum | 7429-90-5 | T | 200 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Aluminum | 7429-90-5 | D | 200 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | T | 0.02 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Arsenic | 7440-38-2 | D | 0.02 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | T | 6000 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Barium | 7440-39-3 | D | 6000 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | T | 1 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Beryllium | 7440-41-7 | D | 1 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | T | 4 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cadmium | 7440-43-9 | D | 4 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | T | -- | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Calcium | 7440-70-2 | D | -- | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | T | -- | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Cobalt | 7440-48-4 | D | -- | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | T | 1300 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Copper | 7440-50-8 | D | 1300 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Ferrous Iron | 15438-31-0 | D | -- | µg/l | < 200 U | < 200 U | < 200 U | < 200 U | < 200 U | < 200 U | 220 | < 200 U | < 200 U |
| Iron | 7439-89-6 | T | 300 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Iron | 7439-89-6 | D | 300 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **Non-CCPW Metals (cont.d)** | | | | | | | | | | | | | |
| Lead | 7439-92-1 | T | 5 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Lead | 7439-92-1 | D | 5 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | T | -- | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Magnesium | 7439-95-4 | D | -- | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | T | 50 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Manganese | 7439-96-5 | D | 50 | µg/l | **1040** | **396** | < 150 U | **160** | < 150 U | **906** | **1700** | **249** | **480** |
| Mercury | 7439-97-6 | T | 2 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Mercury | 7439-97-6 | D | 2 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | T | -- | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Potassium | 7440-09-7 | D | -- | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | T | 40 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Selenium | 7782-49-2 | D | 40 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | T | 40 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Silver | 7440-22-4 | D | 40 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | T | 50000 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Sodium | 7440-23-5 | D | 50000 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | T | 2000 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Zinc | 7440-66-6 | D | 2000 | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| **General Chemistry** | | | | | | | | | | | | | |
| Sulfate | 14808-79-8 | -- | -- | mg/l | 403 | 1430 | 206 | 207 | 720 | 614 | 188 | 214 | 712 |
| Sulfide | 18496-25-8 | -- | -- | mg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Methane | 74-82-8 | -- | -- | µg/l | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| TOC | ARC-TOC | -- | -- | mg/l | 3.5 | 11.1 | 2.4 | 2.8 | 11.6 | 9.2 | 4.5 | 3.7 | 10.0 |
| ORP | -- | -- | -- | mV | 118 | 229 | 255 | 255 | 234 | 170 | 23 | 197 | 240 |
| pH | -- | -- | -- | pH units | 7.02 | 7.09 | 7.90 | 7.90 | 7.43 | 7.64 | 7.04 | 8.01 | 7.11 |
| DO | -- | -- | -- | mg/l | 0 | 0 | 1.44 | 1.44 | 3.95 | 0.52 | 0 | 0.82 | 0.86 |
| Conductivity | -- | -- | -- | mS/cm | 3.42 | 4.61 | 1.88 | 1.88 | 7.55 | 5.53 | 5.42 | 1.71 | 8.70 |

See Notes on Page 1.

**Table 5**
**Groundwater Sampling Analytical Results Summary for Deep Water-Bearing Zone**
**Groundwater IRM Phase I Quarterly Report – Q3 2018**
**PPG Garfield Avenue Group Sites, Jersey City, New Jersey**

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**Notes:**

| | |
|---|---|
| < 3.0 U | Constituent not detected at concentrations greater than the laboratory detection limit. |
| 13.6 | Constituent detected at concentrations above the laboratory detection limit. |
| **311** | Constituent detected at concentrations above the applicable NJDEP GWQC. |

**Abbreviations:**

| | |
|---|---|
| CASRN | Chemical Abstracts System Registration Number |
| D | dissolved |
| FD | Field duplicate sample |
| mg/l | milligrams per liter |
| mS/cm | millisiemens per centimeter |
| mV | millivolts |
| NA | Not Analyzed |
| PPG NJDEP GWQC | New Jersey Department of Environmental Protection Groundwater Quality Criteria |
| s.u. | standard pH units |
| T | total |
| µg/l | micrograms per liter |

**Data Qualifiers:**

| | |
|---|---|
| U | The compound was analyzed for but not detected. The associated value is the compound quantitation limit. |
| B | The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect. |
| E | The compound was quantitated above the calibration range. |
| D | Concentration is based on a diluted sample analysis. |
| J | The compound was positively identified; however, the associated numerical value is an estimated concentration only. |
| J+ | The result is an estimated quantity, but the result may be biased high. |
| J- | The result is an estimated quantity, but the result may be biased low. |
| UJ | The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation. |
| UB | Compound considered non-detect at the listed value due to associated blank contamination. |
| R | The sample results are rejected. |

**Table 5**
**Groundwater Sampling Analytical Results Summary for Deep Water-Bearing Zone**
**Groundwater IRM Phase I Quarterly Report – Q3 2018**
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| | |
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**Abbreviations:**

| | |
|---|---|
| CASRN | Chemical Abstracts System Registration Number |
| D | dissolved |
| FD | Field duplicate sample |

# APPENDIX C

## Recirculation Flow and Solute Transport Modeling

## Recirculation Flow and Solute Transport Modeling

The existing groundwater flow and solute transport model for Site 114 was re-evaluated based on the collection of new data during the installation and operation of the Phase I IRM system. The flow model calibration was initially verified based on observed water levels under active Phase I IRM system rates. Next, the solute transport model was evaluated by comparing the observed propagation of reagent (total organic carbon [TOC]) and reducing condition observed during Phase I operations to the previously simulated intermediate and deep reactive zones after 6 months of Phase I IRM operation. The groundwater flow and solute transport model was then updated to better match observed Phase I observations. The updated groundwater flow and solute transport model was then used to assess the necessary spacing, orientation, and operational sequencing of the Phase II well network. The modeling approach allowed verification of the combination of extraction and injection at Site 114 that avoids excessive hydraulic mounding within the sheet pile walls while achieving organic carbon distribution during the Phase II operational timeframe. Finally, this model will serve as a tool for future optimization of the Phase II program based on additional groundwater extraction and injection information generated over the course of operation.

## Hydrogeology Implications for Groundwater Recirculation

The local hydrogeology discussed in Section 2.3 has been considered when designing and constructing the injection and extraction well network for the Phase II IRM. Several key geologic conditions for the design include the following:

- Utilization of fine-grained soils associated with the meadow mat (where present) to ensure a good seal between the shallow and intermediate aquifers.
- Consideration of the hydraulic control necessary for both higher chromium (Cr) mass and volumetric flux within the intermediate water-bearing zone.
- The expected contrast in hydraulic conductivity between the intermediate and deep water-baring zones that may require discretely-screened remediation wells to address both intervals.

Existing Phase I hydraulic information and observed reactive zone distribution within Site 114 have been utilized to develop the Phase II conceptual well network.

## Model Development and Calibration

The simulation program MODFLOW was selected for the construction of the numerical groundwater flow model at the site. MODFLOW is a publicly available groundwater flow simulation program developed by the U.S. Geological Survey (McDonald and Harbaugh 1988). MODFLOW simulates transient or steady-state, saturated groundwater flow in three dimensions. The program is designed to simplify the specification of boundary conditions by designing the data input to align with common field variables. The boundary conditions supported by MODFLOW include specified head, precipitation recharge, injection or extraction wells, evapotranspiration, horizontal flow barriers, drains, and rivers or streams. Aquifers simulated by MODFLOW can be confined, unconfined, or convertible between conditions. For the site, which consists of a heterogeneous geologic system with variable unit thicknesses and boundary conditions, MODFLOW's three-dimensional capability and boundary condition versatility are essential for the proper simulation of groundwater flow conditions.

MODFLOW uses the method of finite differences to solve the equations of groundwater flow. Using a block-centered finite-difference approach, MODFLOW replaces the continuous system represented by the equations of flow with a system of discrete blocks in space. The solution of the finite-difference equations produces time-varying values of hydraulic head at each of the discrete points representing the real aquifer system.

The model extents are limited to the Site 114 boundary, which follows the perimeter sheet pile walls that provide effective hydraulic control for the majority of the site. The model is composed of four vertical layers that discretely represent the shallow fill, meadow mat, and intermediate and deep water-bearing zones. The base of the model represents the contact between the bottom of the deep aquifer and the underlying till and/or bedrock. The thickness of each model layer was initialized based upon hydrogeologic unit contacts identified in site boring logs, geophysical surveys, and interpolated cross-sections. Hydraulic parameters, such as hydraulic conductivity and recharge, were assigned within ranges of observed values based on site slug tests, aquifer tests, and literature values. Model boundary conditions include no-flow cells to represent the perimeter sheet pile walls, hydraulic flow boundaries to represent interior sheet pile walls, head boundaries to represent the portions of the site perimeter where the existing sheet pile walls do not fully extend to the underlying till and/or bedrock, and wells to represent the installed Phase I IRM remedial injection and extraction wells. Hydraulic flow barriers representing the interior sheet piles in the northwestern portion of the Site were removed consistent with the removal of the sheet piles in this area. The model domain extents, updated boundary conditions, and Phase I IRM wells are shown in **Figure 1**. The model was qualitatively calibrated to the average Phase I IRM operational conditions, accounting for a 3-foot head difference from shallow to intermediate water-bearing zones across the meadow mat. No further modifications were made to the hydraulic conductivity values or distribution were deemed necessary.

Upon completion of the groundwater flow model update, the solute transport modeling was performed using the modular three-dimensional transport model referred to as Modular 3-D Transport Model (MT3D). MT3D was originally developed by Zheng (1990) at S.S. Papadopulos & Associates, Inc. for the Robert S. Kerr, Environmental Research Laboratory of the U.S. Environmental Protection Agency (USEPA). The MT3D code uses the flows computed by MODFLOW in its transport calculations. MT3D also uses the same finite-difference grid structure and boundary conditions as MODFLOW, simplifying the effort to construct the solute transport model. MT3D is regularly updated (Zheng and Wang 1999), and the most recent version is referred to in the literature as MT3D Multi-Species (MT3DMS), where MS denotes the Multi-Species structure for accommodating add-on reaction packages. MT3DMS has a comprehensive set of options and capabilities for simulating advection, dispersion/diffusion, and chemical reactions of contaminants in groundwater flow systems under a range of hydrogeologic conditions. Recent updates to MT3DMS have included the dual-domain formulation and the ability to incorporate site-specific processes.

To represent the development of the reactive zone over time, the injection of a carbon substrate was simulated. The carbon substrate is not readily sorbed in the subsurface so there was no sorption parameter simulated. Based on the previous data obtained during in situ anaerobic bioprecipitation pilot testing, a conservative (i.e., faster) carbon degradation half-life of 20-days was simulated. The original solute transport model is simulated as dual domain with an average mobile porosity of 10% and immobile porosity of 25% in all model layers. However, based on the limited observed distribution of the carbon substrate and reactive zone in the deep aquifer (Model Layer 4), the mobile and immobile porosity was systematically adjusted until the simulated carbon substrate/reactive zone distribution better matched the observed distribution during Phase I IRM operations. The final mobile and immobile porosities of model

layer 4 were set to 15% and 20%, respectively. No further modifications were made to the solute transport model parameters or distribution. The simulated 6-month Phase I IRM reaction zone distribution is presented in **Figure 2**.

For evaluation of the proposed Phase II IRM, a constant organic carbon injection concentration of 100 milligrams per liter (mg/L) was assumed so it can be easily scaled to represent different proposed injection concentrations. While constant carbon delivery was assumed for model purposes, it is expected that Phase II operations will rely on a pulsed carbon delivery similar to Phase I. The individual Phase II carbon pulses will include a range of TOC concentrations between 1,000 to 7,000 mg/L during each of the operational steps, so the 100 mg/L assumption used in the model is considered a low estimate of total Phase II delivery for conservative purposes.

## Remedy Simulation

The updated groundwater flow and solute transport model was utilized to iterate a combination of remedial well infrastructure, flow rates, and operational sequencing to establish an optimal remedy design of the Phase II IRM. The injection and extraction rates simulated in this Phase II evaluation are based on observed Phase I extraction and injection well operational rates and assume Phase I was completed. The final Phase II IRM design consists of 137 new remediation well locations that will be multipurpose and used for either injection or extraction purposes based on the specific operational step. These new wells will supplement 12 additional Phase I wells already installed within northern Site 114 and used as part of the Phase I IRM (**Figure 13**). These locations will supplement 12 existing extraction wells located in the northern half of Site 114 that were operated during the Phase I program. New well locations were chosen based on the observed Cr distribution from October 2018 in the intermediate and deep water-bearing zones. The injection wells are located in the northern half of Site 114 and in the southeastern corner of Site 114. Dedicated Phase II extraction wells are located in the center of Site 114 spanning east-west and are in an area of elevated Cr concentrations to support mass removal during the early steps and then allow reagent introduction during late-stage Phase II treatment. At each well location, hydraulic simulations were performed to allow access to both model layers 3 and 4 based on their relative hydraulic conductivity. This process allows development of a total number of well locations for the PBR and allows for modification of the actual number of discrete well intervals necessary based on observations pertaining to the local aquifer heterogeneity, saturated thickness, and Cr concentrations during confirmatory sampling and construction activities.

Iterations of the site-specific injection and extraction flow rates and the Phase I well network indicated that a combined injection and extraction rate of 21 gallons per minute (gpm) in the north and 12 gpm in the southeast can achieve organic carbon distribution within the target Site 114 treatment areas during the first 6-month period. While this flow rate was acceptable for modeling purposes, it is anticipated that wells will behave differently based on unique geologic heterogeneities in different areas of the site. It is also assumed that where achievable, injection and extraction rates will be increased to maximize the total quantity of groundwater extracted and injected, within permit specifications. The design simulation entails initiation of injection activities within the northern end of Site 114 followed by gradual southward shifts in operating wells. For the southeastern area, injections would initiate in the westernmost portion of the injection network and proceed gradually eastward during 8-week cycles. This modeled sequencing allows for complete carbon coverage and reactive zone development for Cr reduction throughout the Phase II injection area. **Figure 3** shows the simulated well locations and rates over the simulated 6-month period. **Figure 4** shows the active injection and extraction wells locations during each of the three stages of remedy operation.

The resulting reactive zone development at weeks 8, 16, and 24 (days 56, 112, and 168) is shown on **Figure 5** and **Figure 6** for the intermediate and deep water-bearing zones (layers 3 and 4), respectively. This reactive zone is defined as the extent of the simulated carbon substrate concentration above a relative concentration of 0.1%, which reflects the combined influence of TOC and reduced groundwater geochemistry footprints. This allows for the simulated carbon concentration results to be directly scalable to the final proposed injection concentrations to evaluate carbon concentration distributions during active remedy conditions. The simulated reactive zone development indicates that within a 6-month period, the Phase II area will be effectively addressed with either available TOC or reduced metal species – both of which work to reduce Cr.

To evaluate the drawdown and mounding, the simulated active remedy transient water levels were also reviewed in detail. The simulated steady-state water level starting conditions for model layers 3 and 4 are shown on **Figure 7**. The simulated active remedy transient water levels for model layers 3 and 4 at weeks 8, 16, and 24 are shown on **Figures 8** and **9**, respectively. These transient water levels were then directly compared to the starting steady state water levels to determine the relative hydraulic mounding and drawdown that occurs during remedy operation. **Figures 10** and **11** show the relative changes in water levels over time for model layers 3 and 4, respectively. The maximum hydraulic mounding is approximately 3.5 feet in both model layers 3 and 4. This indicates that simulated mounding water levels will not exceed land surface and that a neutral to downward vertical gradient is preserved between the intermediate and deep aquifers.

## Model Update

Through additional hydrogeologic testing, hydraulic monitoring, and water quality monitoring during remedial well infrastructure installation and Phase II operation, the groundwater flow and solute transport model can be updated periodically to more accurately reflect encountered conditions. This will allow the model to be further used as a predictive tool to evaluate remedy performance and assist in providing recommendations for optimization of the remedial system (i.e., injection/extraction rates and frequency, carbon dosing frequency and concentration, and need for provisional wells).

As with all mathematical models of natural systems, the groundwater flow and solute transport model is limited by factors such as scale, accuracy of the estimated hydraulic properties and/or boundary conditions, and the underlying simplifications and assumptions incorporated into the model. These factors result in limitations to the model's appropriate uses and to the interpretations that may be made of the simulation results. The proposed remedy design and operation were based on the conceptual site model, calibrated groundwater flow model, the predictive solute transport modeling, and professional expertise related to similar remedial designs and modeling bases. This model is intended to serve as the initial basis for the Phase II IRM design, considering that additional data collection prior to and during the Phase II implementation will all be used to adapt and refine treatment operations.

## Figures

Figure 1. Model Domain Extents and Boundary Conditions

Figure 2. Simulated 6-Month Phase I Reactive Zone

Figure 3. Proposed Phase II Well Layout

Figure 4. Simulated Phase II Well Operation Schedule

Figure 5. Simulated Phase II Reactive Zone Development in Model Layer 3

Figure 6. Simulated Phase II Reactive Zone Development in Model Layer 4

Figure 7. Simulated Initial Steady State Water Levels

Figure 8. Simulated Phase II Transient Water Levels in Model Layer 3 (Intermediate Aquifer)

Figure 9. Simulated Phase II Transient Water Levels in Model Layer 4 (Deep Aquifer)

Figure 10. Simulated Phase II Change in Water Levels in Model Layer 3 (Intermediate Aquifer)

Figure 11. Simulated Phase II Change in Water Levels in Model Layer 4 (Deep Aquifer)

## References

McDonald, M. G., and A. W. Harbaugh, 1988. *A Modular Three-Dimensional Finite-Difference Ground-Water Flow Model, Techniques of Water-Resources Investigations, Book 6, Chapter A1*. U. S. Geological Survey. Reston, Virginia.

Zheng, C. 1990. *MT3D: A Modular Three-Dimensional Transport Model for Simulation of Advection, Dispersion, and Chemical Reactions of Contaminants in Groundwater Systems*. Prepared for the U.S. Environmental Protection Agency. Robert S. Kerr Environmental Research Laboratory, Ada, Oklahoma. Developed by S.S. Papadopulos & Associates, Inc., Rockville, Maryland.

Zheng, C., and P. Wang. 1999. *MT3DMS: A Modular Three-Dimensional Multispecies Transport Model for Simulation of Advection, Dispersion, and Chemical Reactions of Contaminants in Groundwater Systems*. Prepared for the U.S. Army Corps of Engineers, Washington, DC. University of Alabama, Tuscaloosa.

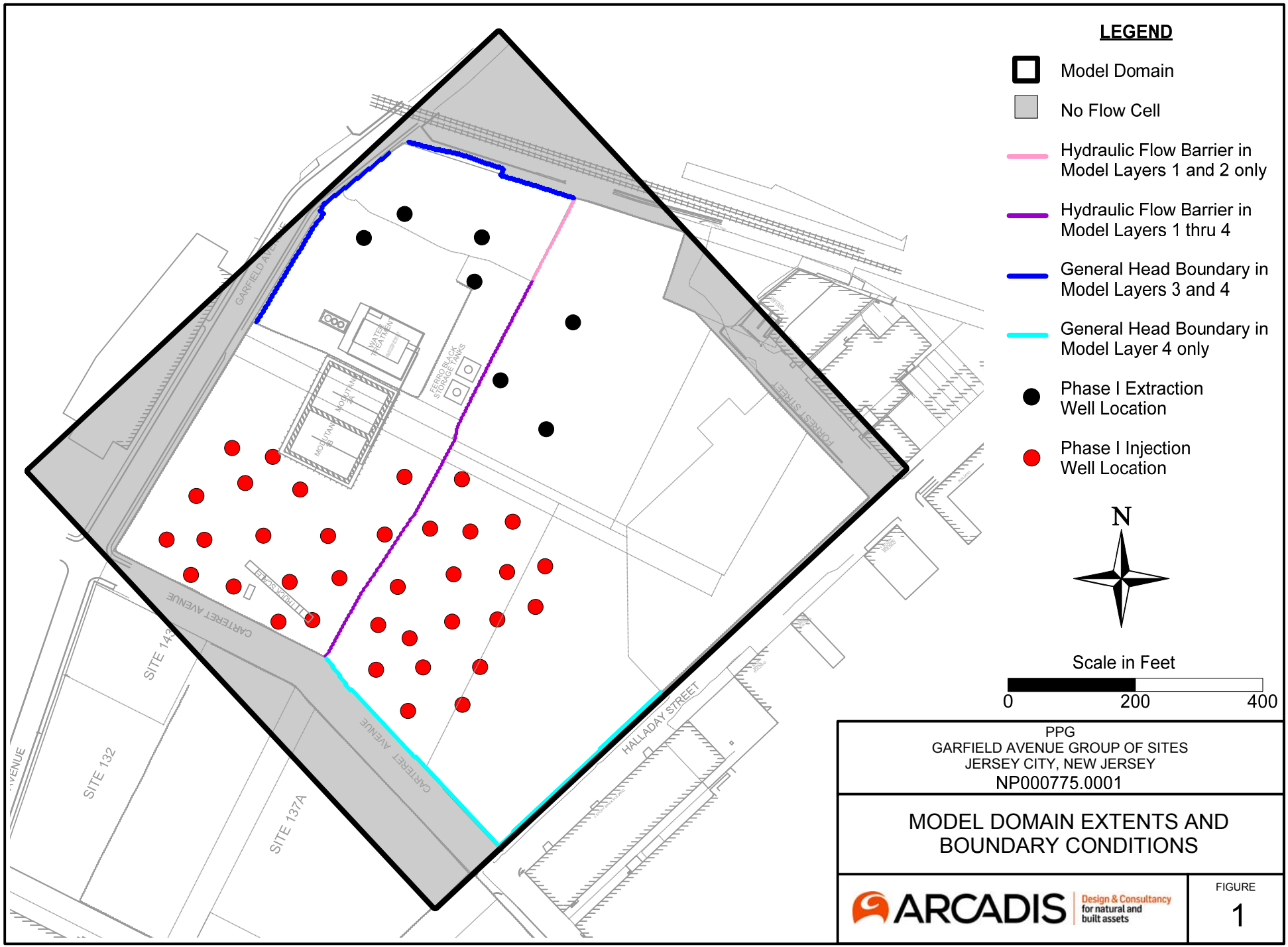


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# MODEL DOMAIN EXTENTS AND BOUNDARY CONDITIONS

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FIGURE
1

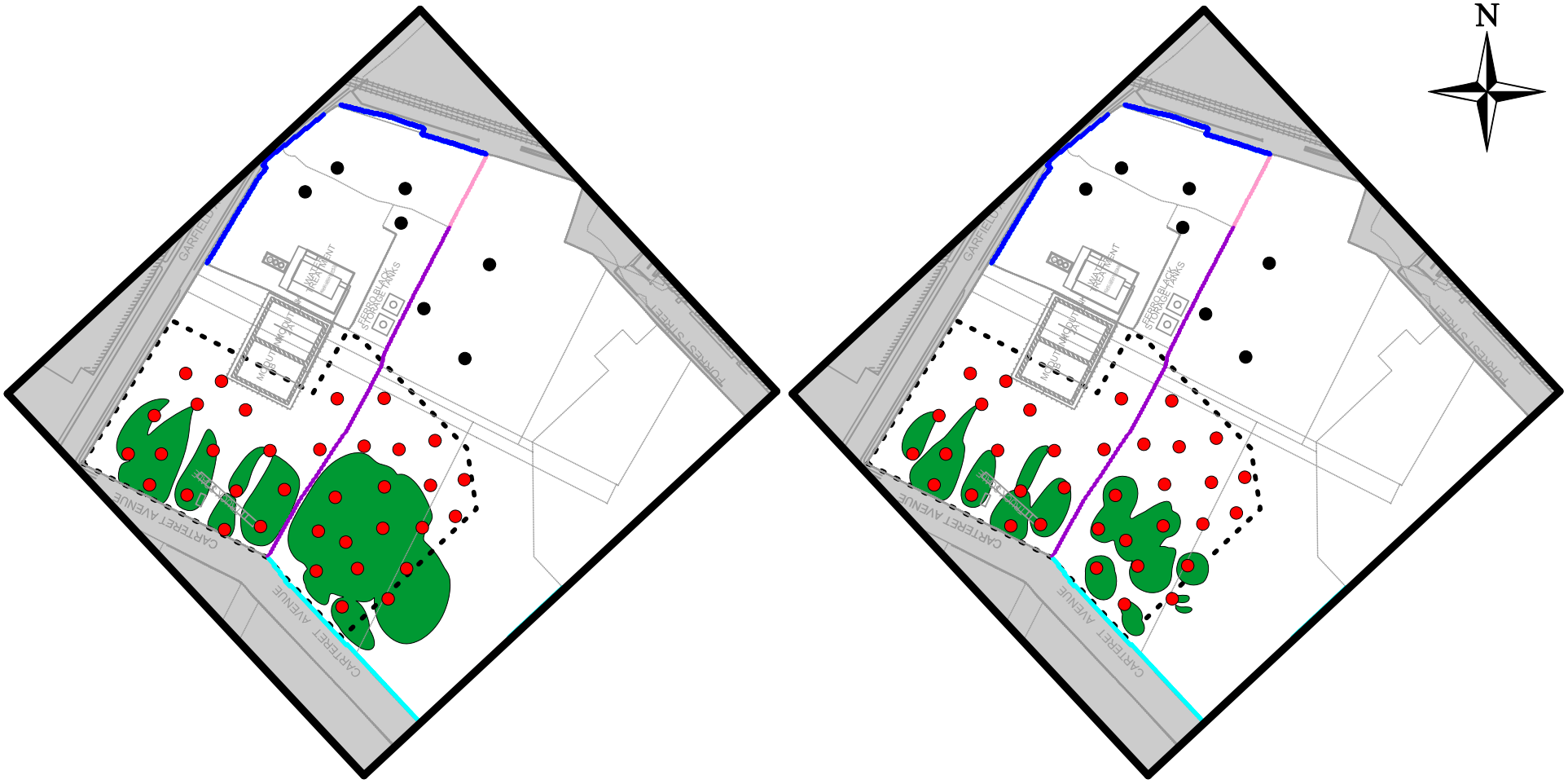


**LEGEND**

- Model Domain
- No Flow Cell
- Hydraulic Flow Barrier in Model Layers 1 and 2 only
- Hydraulic Flow Barrier in Model Layers 1 thru 4
- General Head Boundary in Model Layers 3 and 4
- General Head Boundary in Model Layer 4 only
- Phase I Extraction Well
- Phase I Injection Well
- Simulated Reactive Zone
- Phase 1 Boundary

Scale in Feet

0 280 560

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# SIMULATED 6-MONTH PHASE I REACTIVE ZONES

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FIGURE
2

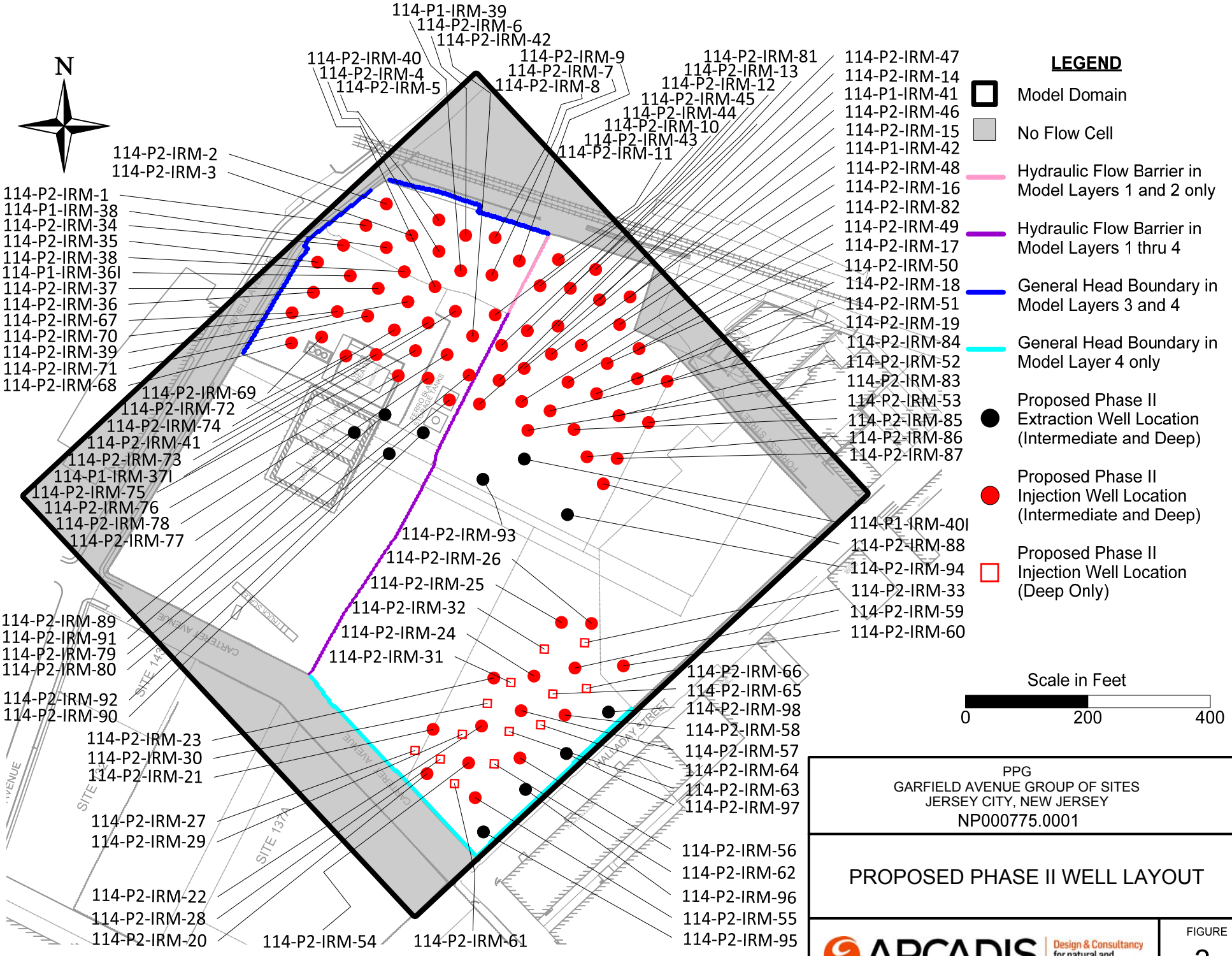


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# PROPOSED PHASE II WELL LAYOUT

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FIGURE
3

Injection: 21 gpm

Extraction: 21 gpm

Injection: 12 gpm

Extraction: 12 gpm

**Days 0 - 56**
**(Weeks 0 - 8)**

Injection: 21 gpm

Extraction: 21 gpm

Injection: 12 gpm

Extraction: 12 gpm

**Days 56 - 112**
**(Weeks 9 - 16)**

Injection: 21 gpm

Extraction: 21 gpm

**Days 112 - 168**
**(Weeks 17 - 24)**

**LEGEND**

- Model Domain
- No Flow Cell
- Hydraulic Flow Barrier in Model Layers 1 and 2 only
- Hydraulic Flow Barrier in Model Layers 1 thru 4
- General Head Boundary in Model Layers 3 and 4
- General Head Boundary in Model Layer 4 only
- Proposed Extraction Well Intermediate/Deep Location
- Proposed Injection Well Intermediate/Deep Location
- Proposed Injection Well Deep Only Location
- Active Extraction Well Locations
- Active Injection Well Locations

N

Scale in Feet

0 200 400

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# SIMULATED PHASE II WELL OPERATION SCHEDULE

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FIGURE
4

# Intermediate Aquifer

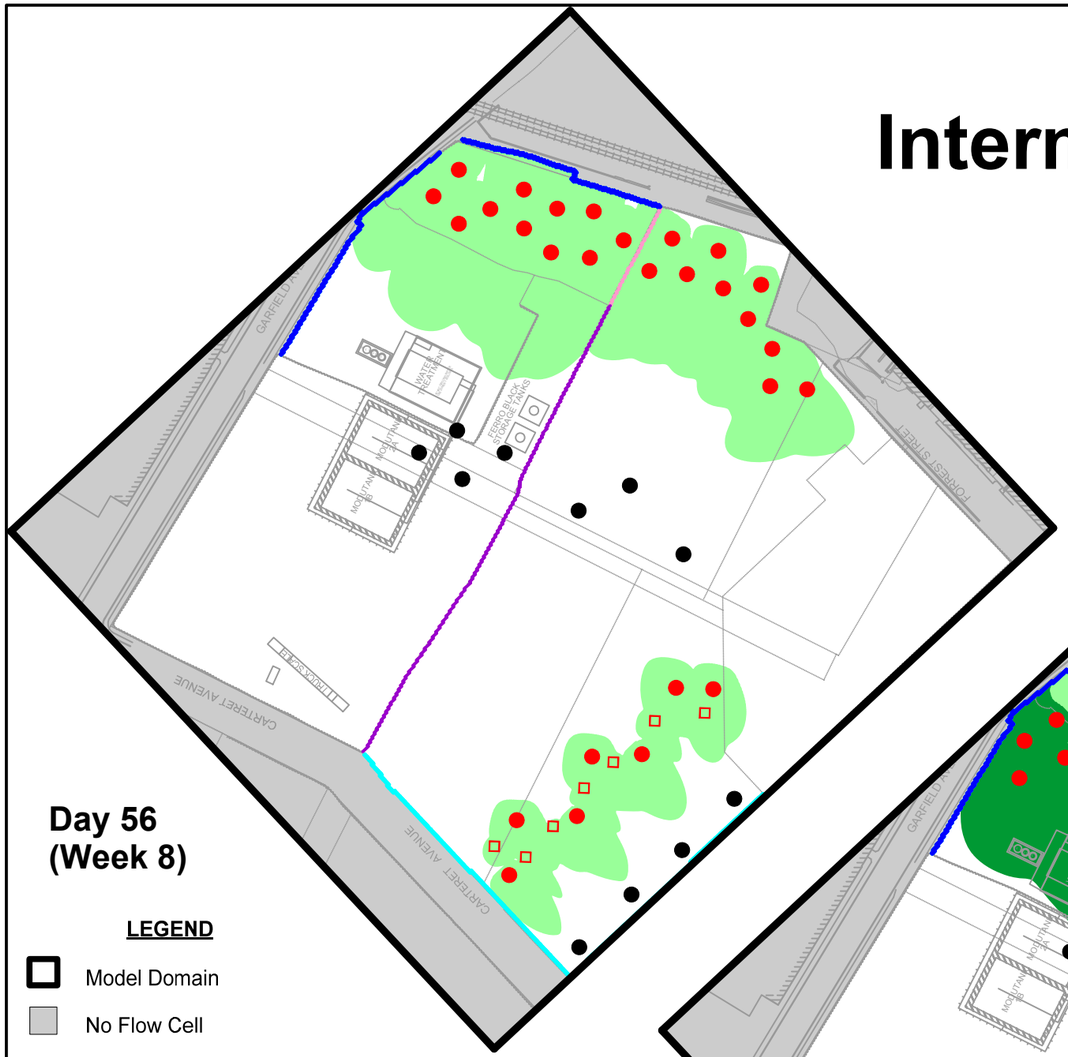


Day 56
(Week 8)




Day 112
(Week 16)

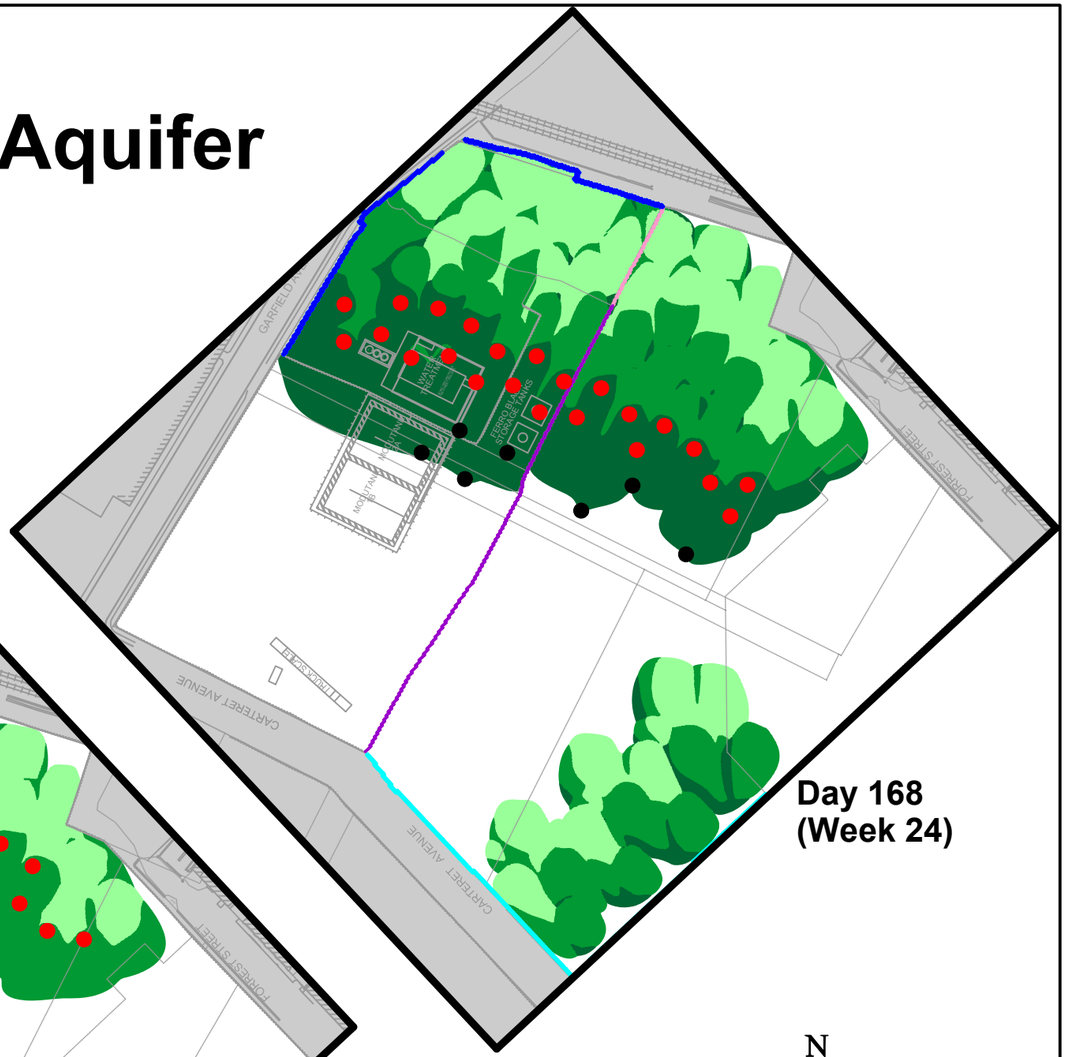


Day 168
(Week 24)

**LEGEND**

- Model Domain
- No Flow Cell
- Hydraulic Flow Barrier in Model Layers 1 and 2 only
- Hydraulic Flow Barrier in Model Layers 1 thru 4
- General Head Boundary in Model Layers 3 and 4
- General Head Boundary in Model Layer 4 only
- Proposed Extraction Well Intermediate/Deep Location
- Proposed Injection Well Intermediate/Deep Location
- Proposed Injection Well Deep Only Location

Simulated Reactive Zones

- Phase 1 (Week 1 - Week 8)
- Phase 2 (Week 9 - Week 16)
- Phase 3 (Week 17 - Week 24)

N

Scale in Feet

0 200 400

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NP000775.0001

SIMULATED PHASE II REACTIVE ZONE DEVELOPMENT IN MODEL LAYER 3

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FIGURE
5

# Deep Aquifer

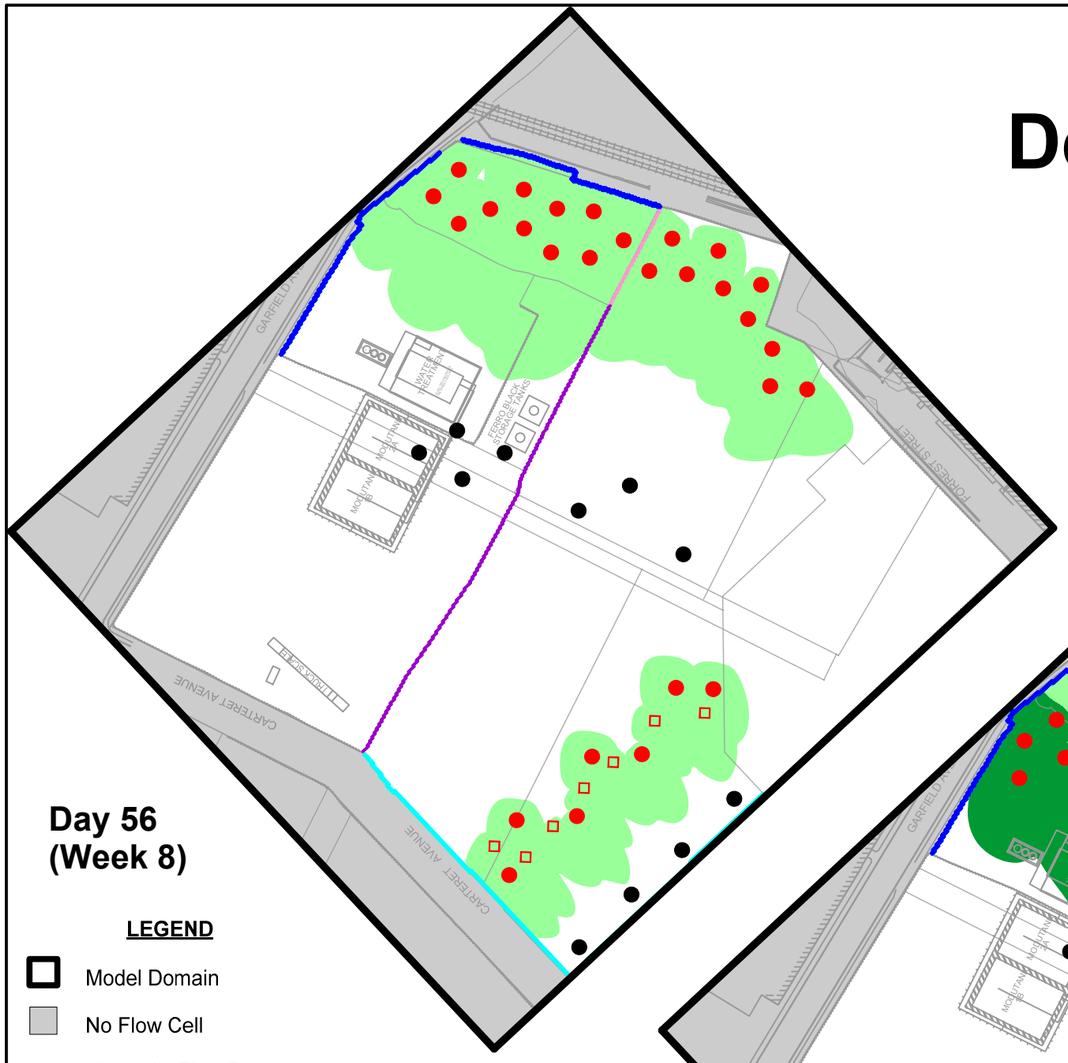


Day 56
(Week 8)




Day 112
(Week 16)




Day 168
(Week 24)

**LEGEND**

- Model Domain
- No Flow Cell
- Hydraulic Flow Barrier in Model Layers 1 and 2 only
- Hydraulic Flow Barrier in Model Layers 1 thru 4
- General Head Boundary in Model Layers 3 and 4
- General Head Boundary in Model Layer 4 only
- Proposed Extraction Well Intermediate/Deep Location
- Proposed Injection Well Intermediate/Deep Location
- Proposed Injection Well Deep Only Location

Simulated Reactive Zones

- Phase 1 (Week 1 - Week 8)
- Phase 2 (Week 9 - Week 16)
- Phase 3 (Week 17 - Week 24)

N

Scale in Feet

0 200 400

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SIMULATED PHASE II REACTIVE ZONE DEVELOPMENT IN MODEL LAYER 4

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FIGURE
6

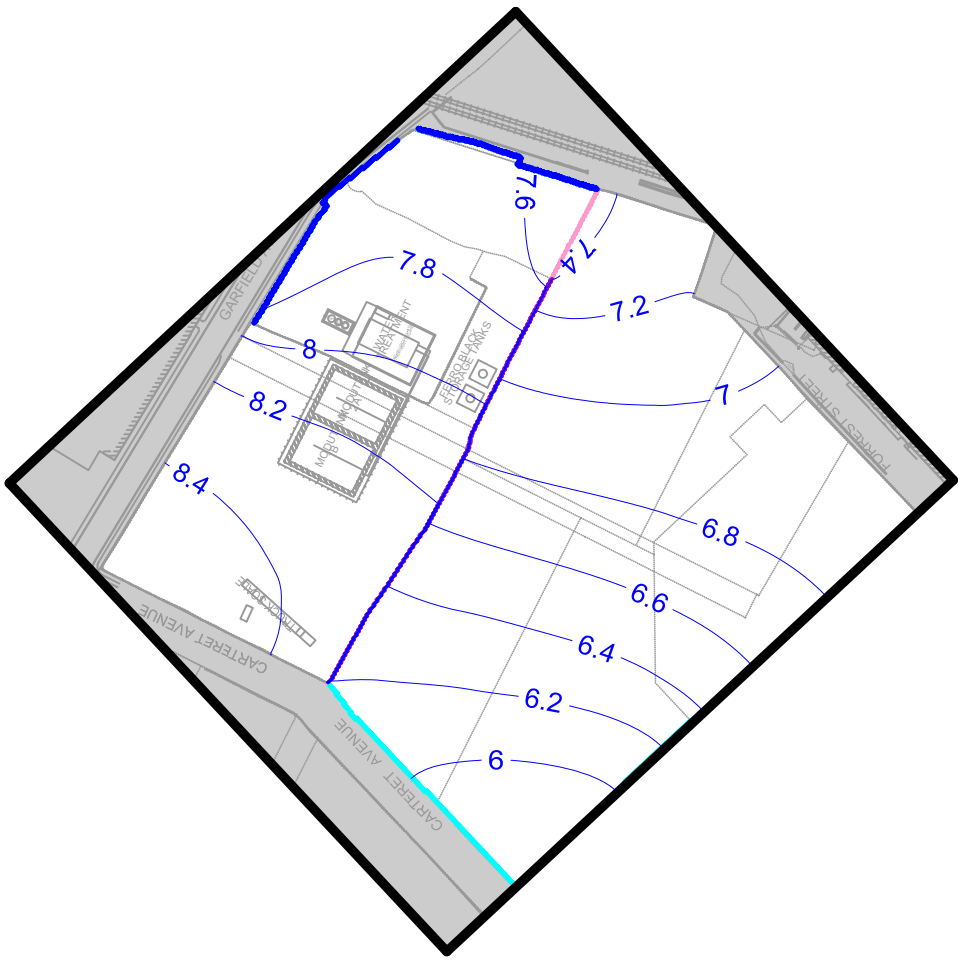


Intermediate Aquifer (Model Layer 3)

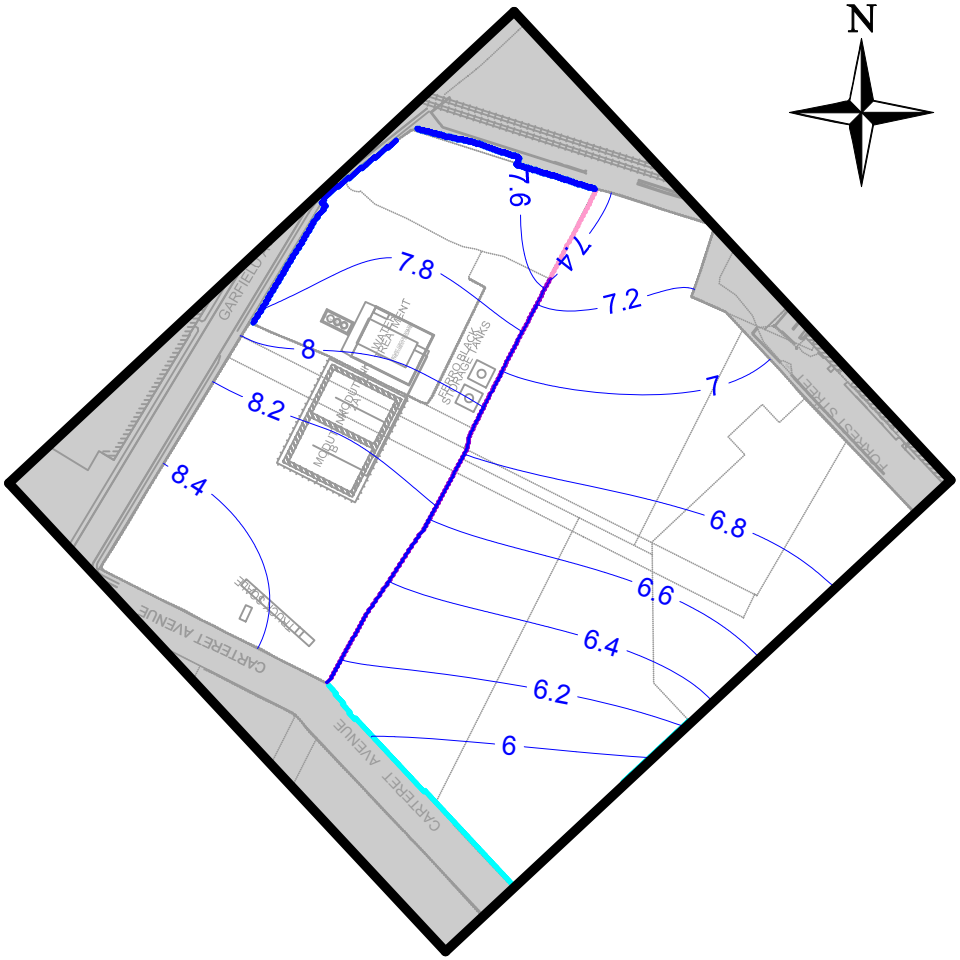


Deep Aquifer (Model Layer 4)

N

**LEGEND**

- Model Domain
- No Flow Cell
- Hydraulic Flow Barrier in Model Layers 1 and 2 only
- Hydraulic Flow Barrier in Model Layers 1 thru 4
- General Head Boundary in Model Layers 3 and 4
- General Head Boundary in Model Layer 4 only
- 7 — Simulated Water Level (ft NGVD88)

Scale in Feet

0 280 560

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SIMULATED INITIAL STEADY STATE WATER LEVELS

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FIGURE
7

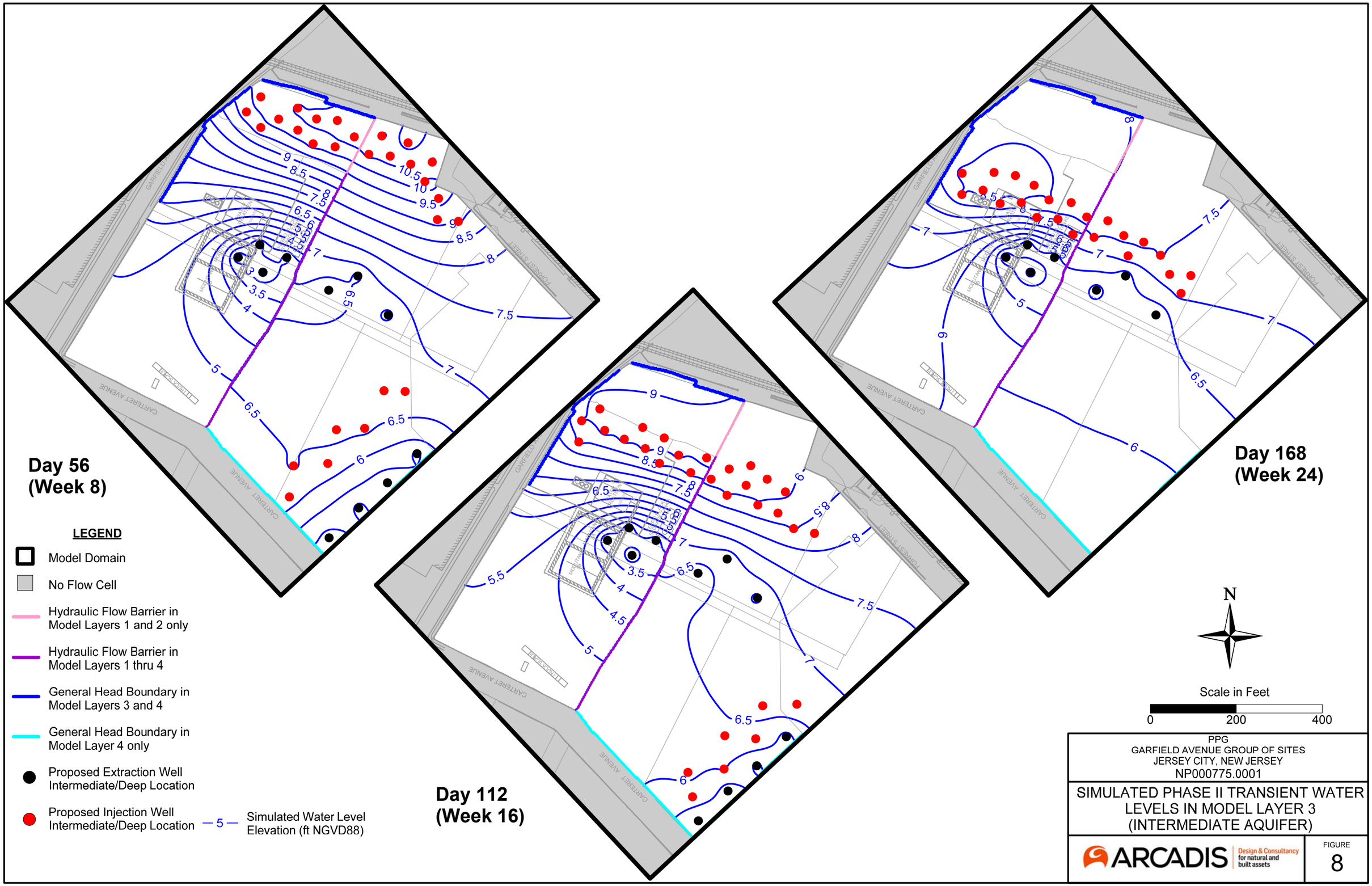


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SIMULATED PHASE II TRANSIENT WATER LEVELS IN MODEL LAYER 3 (INTERMEDIATE AQUIFER)

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FIGURE
8

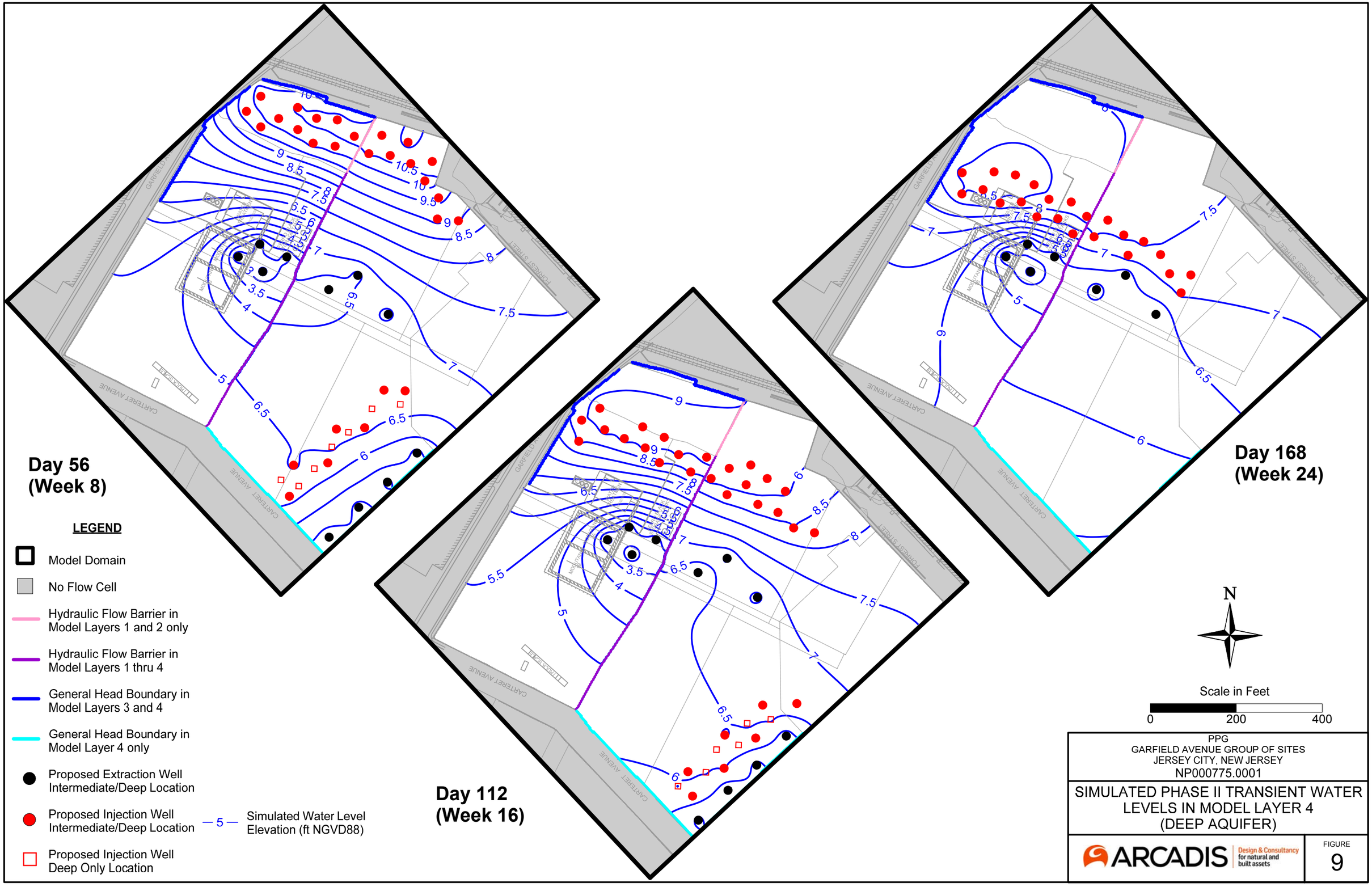
Day 56
(Week 8)
Day 112
(Week 16)
Day 168
(Week 24)
CARTERET AVENUE
FORREST STREET
GARFIELD AVENUE
LEGEND
Model Domain
No Flow Cell
Hydraulic Flow Barrier in Model Layers 1 and 2 only
Hydraulic Flow Barrier in Model Layers 1 thru 4
General Head Boundary in Model Layers 3 and 4
General Head Boundary in Model Layer 4 only
Proposed Extraction Well Intermediate/Deep Location
Proposed Injection Well Intermediate/Deep Location
Proposed Injection Well Deep Only Location
5
Simulated Water Level Elevation (ft NGVD88)
N
Scale in Feet
0
200
400
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SIMULATED PHASE II TRANSIENT WATER LEVELS IN MODEL LAYER 4 (DEEP AQUIFER)
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FIGURE
9

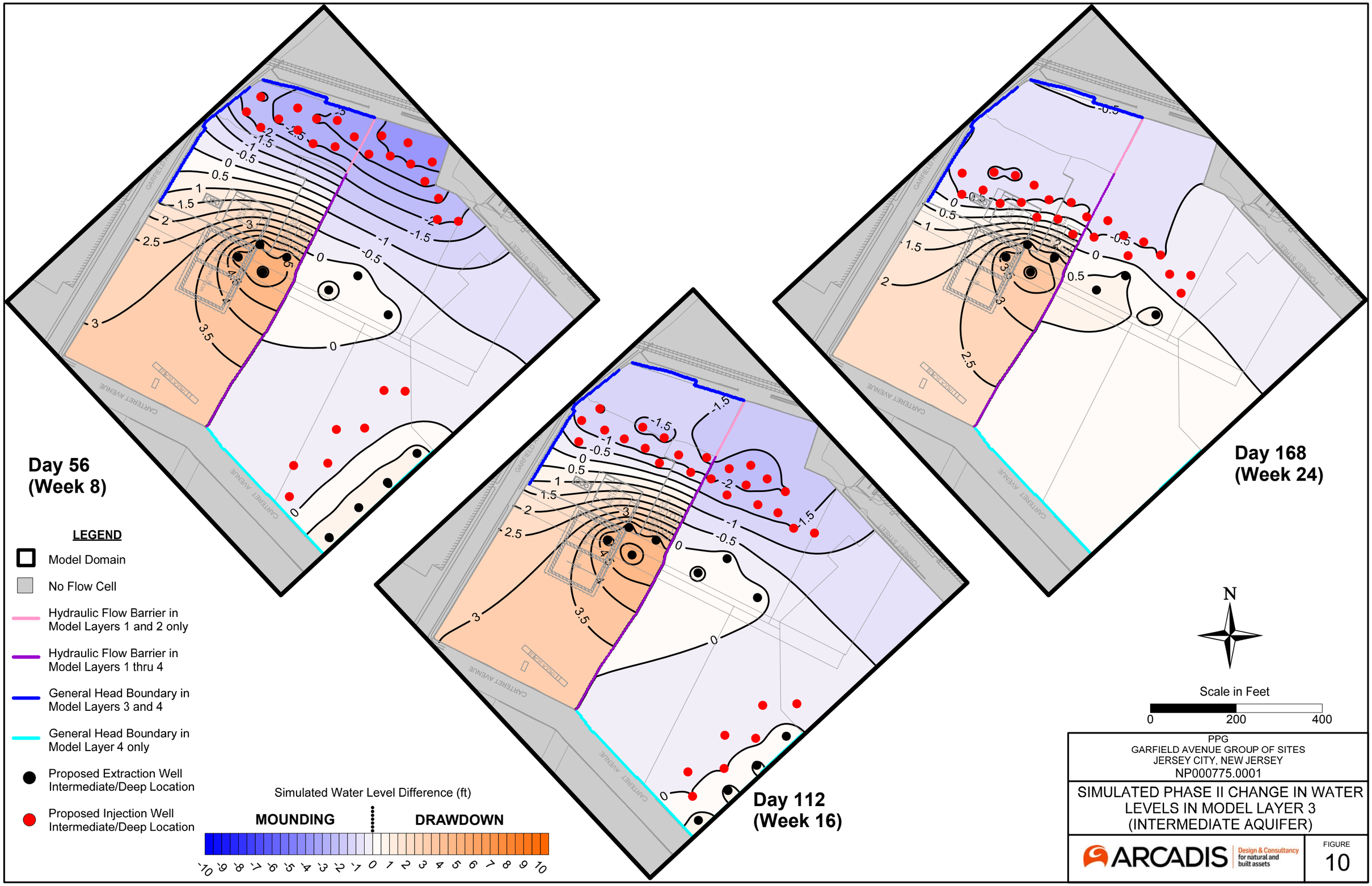


PPG
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# SIMULATED PHASE II CHANGE IN WATER LEVELS IN MODEL LAYER 3 (INTERMEDIATE AQUIFER)

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FIGURE
10

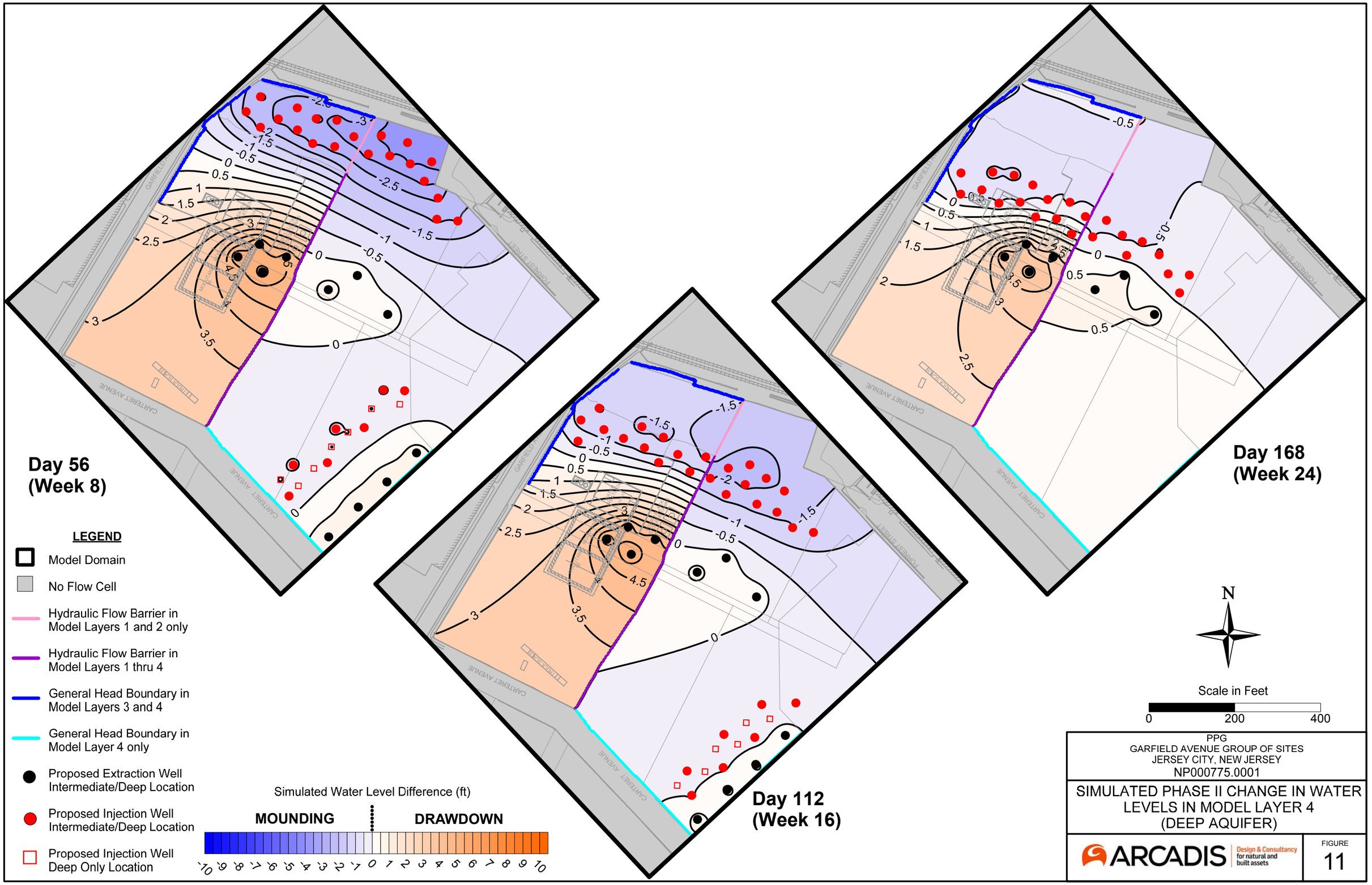


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# SIMULATED PHASE II CHANGE IN WATER LEVELS IN MODEL LAYER 4 (DEEP AQUIFER)

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FIGURE
11

# APPENDIX D

## Safety Data Sheets for Reagents and Substrates

# Safety Data Sheet
# Calmet®

**SDS Number:** 1535 **Revision:** March 19, 2015

## Section 1: IDENTIFICATION

**1.1 Product Name:** **Calmet®**

**1.2 Other Identification:**

Chemical Family: Inorganic salt solution
Formula: $CaS_x$

**1.3 Recommended Use of Chemical:** Metal precipitant

**1.4 Manufacturer:** Tessenderlo Kerley, Inc.
2255 N. 44th Street, Suite 300
Phoenix, Arizona 85008-3279

Information: (602) 889-8300

**1.5 Emergency Contact:**

| | |
|---|---|
| Tessenderlo Kerley, Inc. | (800) 877-1737 |
| CHEMTREC | (800) 424-9300 (Domestic) |
| | (703) 527-3887 (International) |

## Section 2: HAZARD(S) IDENTIFICATION

**2.1 Hazard Classification:**

| | | |
|---|---|---|
| Health | Acute Oral Toxicity | Category 4 |
| | Acute Dermal Toxicity | Category 4 |
| | Acute Inhalation Toxicity | Category 4 |
| | Skin Corrosion/Irritation | Category 2 |
| | Eye Damage/Irritation | Category 2B |
| Physical | None | |

**2.2 Signal Word:** Warning

**2.2.1 Hazard Statement(s):**

Harmful if swallowed.
Harmful in contact with skin.
Harmful if inhaled.
Causes skin irritation.
Causes eye irritation.

**2.2.2 Symbol(s):**



**2.2.3 Precautionary Statement(s):**

**If swallowed**: Rinse mouth. Call a poison center/doctor/regional medical center if you feel unwell.
**If on skin**: Wash with plenty of water. Take off contaminated clothing and wash before reuse. Continue rinsing. Call a poison center/doctor/regional medical center if you feel unwell.
**If inhaled**: Remove person to fresh air and make comfortable for breathing. Call poison center/doctor/regional medical center if you feel unwell.
**If in eyes**: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. If eye irritation occurs: Get medical advice/attention.
Wash hands and face thoroughly with water after handling. Do not eat, drink or smoke when using this product.
Wear neoprene rubber chemical suit, gloves, goggles/full-face shield when handling product.
Avoid breathing product fume/gas/mist/vapors/spray.
Use only outdoors or in well-ventilated area.
Dispose of contents/container to chemical waste facility in accordance with local/regional/federal regulations.
Do not allow release to waterways (potential aquatic toxicity).

**2.3 Unclassified Hazard(s):** Aquatic toxicity.

**2.4 Unknown Toxicity Ingredient:** None

## Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

**3.1 Chemical Ingredients** (See Section 8 for exposure guidelines):

| Chemical | Synonym Common Name | CAS No. | EINECS No. | % by Wt. |
|---|---|---|---|---|
| Calcium polysulfide, $CaS_x$ | Lime sulfur, calcium sulfide | 1344-81-6 | 215-709-2 | 24 - 29 |
| Water | Water | 7732-18-5 | 231-791-2 | Remaining % |

## Section 4: FIRST AID MEASURES

**4.1 Symptoms/Effects:**

Acute: Eye contact may cause eye irritation. Repeated or prolonged skin contact may cause skin irritation. Ingestion may irritate the gastrointestinal tract.

Chronic: No known chronic effects.

**4.2 Eyes:** Immediately flush with large quantities of water for 15 minutes. Hold eyelids apart during irrigation to insure thorough flushing of the entire area of the eye and lids. Obtain medical attention if irritation occurs.

**4.3 Skin:** Immediately flush with large quantities of water. Remove contaminated clothing under a safety shower. Continue rinsing. Obtain medical attention if irritation occurs.

**4.4 Ingestion:** If victim is conscious, give 2 to 4 glasses of water and induce vomiting by touching finger to back of throat. Obtain immediate medical attention.

**4.5 Inhalation:** Remove victim from contaminated atmosphere. If breathing is labored, administer oxygen. If breathing has ceased, clear airway and start CPR. Obtain immediate medical attention.

## Section 5: FIRE FIGHTING MEASURES

**5.1 Flammable Properties:** (See Section 9, for additional flammable properties)

**NFPA: Health – 2 Flammability – 0 Reactivity - 0**

Heating this product will evolve hydrogen sulfide vapors.

**5.2 Extinguishing Media:**

**5.2.1 Suitable Extinguishing Media:** Not flammable, use media suitable for combustibles involved in fire.

**5.2.2 Unsuitable Extinguishing Media:** Not applicable.

**5.3 Protection of Firefighters:**

**5.3.1 Specific Hazards Arising from the Chemical:**

**Physical Hazards:** Heating (flames) of closed or sealed containers may cause violent rupture of container due to thermal expansion of compressed gases.

**Chemical Hazards:** Heating causes release of hydrogen sulfide vapors. Vapors are irritating to eyes, skin and respiratory tract.

**5.3.2 Protective Equipment and Precautions for Firefighters:**

Firefighters should wear self-contained breathing apparatus (SCBA) and full fire-fighting turnout gear. Keep containers/storage vessels in fire area cooled with water spray.

## Section 6: ACCIDENTAL RELEASE MEASURES

**6.1 Personal Precautions:** Use personal protective equipment specified in Section 8. Isolate the release area and deny entry to unnecessary, unprotected and untrained personnel.

**6.2 Environmental Precautions:**

Keep out of “waters of the United States” because of potential aquatic toxicity (See Section 12).

**6.3 Methods of Containment:**

**Small Release:** Confine and absorb small releases on sand, earth or other inert absorbents.

**Large Release:** Shut off release if safe to do so. Dike spill area with earth, sand or other inert absorbents to prevent runoff into surface waterways (potential aquatic toxicity).

**6.4 Method for Cleanup:**

**Small Release:** For small areas shovel up absorbed material and place in drums for disposal as a chemical waste.

**Large Release:** Recover as much of the spilled product using portable pump and hoses. Treat remaining material as a small release (above).

## Section 7: HANDLING and STORAGE

**7.1 Handling:** Avoid contact with eyes. Use only in a well-ventilated area. Wash thoroughly after handling. Avoid prolonged or repeated breathing of vapors. Avoid prolonged or repeated contact with the skin.

**7.2 Storage:** Store in well-ventilated areas. Do not store combustibles in the area of storage vessels. Keep away from any sources of heat or flame. Store totes and smaller containers out of direct sunlight at moderate temperatures.

## Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

**8.1 Exposure Guidelines:**

| Chemical | OSHA PELs | | ACGIH TLVs | |
|---|---|---|---|---|
| | TWA | STEL | TLV | STEL |
| Hydrogen sulfide | 20 ppm (Ceiling) | ---- | 1 ppm | 5 ppm |

**8.2 Engineering Controls:** Use adequate exhaust ventilation to prevent inhalation of product vapors. Keep eye wash/safety shower in areas where product is commonly handled.

**8.3 Personal Protective Equipment (PPE):**

**8.3.1 Eye/Face Protection:** Chemical goggles and a full face shield.

**8.3.2 Skin Protection:** Neoprene rubber gloves and suit should be worn to prevent repeated or prolonged contact with the liquid. Wash contaminated clothing prior to reuse.

**8.3.3 Respiratory Protection:**

Have self-contained breathing apparatus (SCBA), positive pressure, MSHA/NIOSH (approved or equivalent) available in case of spillage or equipment failure.

**8.3.4 Hygiene Considerations:**

Common good industrial hygiene practices should be followed, such as washing thoroughly after handling and before eating or drinking.

## Section 9: PHYSICAL and CHEMICAL PROPERTIES

| | |
|---|---|
| **9.1 Appearance:** | Ruby-red liquid |
| **9.2 Odor:** | Odor of rotten eggs |
| **9.3 Odor Threshold:** | 4.7 ppb (hydrogen sulfide) |
| **9.4 pH:** | 11.5 – 11.7, Typical |
| **9.5 Melting Point/Freezing Point:** | 18 to 25°F (-7.7 to -3.9°C), Typical |
| **9.6 Boiling Point:** | Not determined |
| **9.7 Flash Point:** | Not applicable |
| **9.8 Evaporation Rate:** | Not determined |
| **9.9 Flammability:** | Not applicable |
| **9.10 Upper/Lower Flammability Limits:** | Not applicable |
| **9.11 Vapor Pressure:** | Not determined |
| **9.12 Vapor Density:** | Not determined |
| **9.13 Relative Density:** | 1.27 (10.6 lbs/gal), Typical |
| **9.14 Solubility:** | Miscible |
| **9.15 Partition Coefficient:** | Data not available. |
| **9.16 Auto-ignition Temperature:** | Not applicable. |
| **9.17 Decomposition Temperature:** | Not determined. |
| **9.18 Viscosity:** | 2.95 cSt @ 20°C, 2.5 cSt @ 30°C. |

## Section 10: STABILITY and REACTIVITY

| | |
|---|---|
| **10.1 Reactivity:** | Strong oxidizers and acids. |
| **10.2 Chemical Stability:** | This is a stable product under conditions of ambient temperature and pressure. |
| **10.3 Possibility of Hazardous Reactions:** | Interaction with strong oxidizers, acids or acidic materials. |
| **10.4 Conditions to Avoid:** | Interaction with strong oxidizers or acidic materials (evolution of hydrogen sulfide vapors). |
| **10.5 Incompatible:** | Strong oxidizers can cause explosive mixtures if heated to dryness. Acids, acidic materials and dilution with water will cause the release of highly toxic hydrogen sulfide vapors. |
| **10.6 Hazardous Decomposition Products:** | Hydrogen sulfide and oxides of sulfur. |

## Section 11: TOXICOLOGICAL INFORMATION

| | |
|---|---|
| **11.1 Oral:** | Oral Rat $LD_{50}$: 820 mg/kg. |
| **11.2 Dermal:** | Dermal Rabbit $LD_{50}$: > 2,000 mg/kg. |
| **11.3 Inhalation:** | INH-Rat $LC_{50}$: 3.6 mg/L (4 hr. exposure). |
| **11.4 Eye:** | Data not available. |
| **11.5 Chronic/Carcinogenicity:** | Not listed in NTP, IARC or by OSHA. |
| **11.6 Teratology:** | Data not available. |
| **11.7 Reproduction:** | Data not available. |

**11.8 Mutagenicity:** Data not available.

## Section 12: ECOLOGICAL INFORMATION

**12.1 Ecotoxicity:** Green Algae, $EC_{50}$: 16.4 mg/l.

Water Flea, $EC_{50}$: 13.7 mg/l.

Bluegill, $LC_{50}$: 52.9 mg/l.

Fathead Minnow, $LC_{50}$: 42.9 mg/l.

Rainbow Trout, $LC_{50}$: 8.8mg/l.

**12.2 Persistence & Degradability:** No data is available.

**12.3 Bioaccumulative Potential:** This product is not bioaccumulative.

**12.4 Mobility in Soil:** No data available.

**12.5 Other Adverse Effects:** None

## Section 13: DISPOSAL CONSIDERATIONS

Consult federal, state and local regulations for disposal regulations.

## Section 14: TRANSPORT INFORMATION

**14.1 Basic Shipping Description:**

**14.1.1 Proper Shipping Name:** Calcium polysulfide solution *(Not regulated by DOT)*
**14.1.2 Hazard Classes:** Not applicable
**14.1.3 Identification Number:** Not applicable
**14.1.4 Packing Group:** Not applicable
**14.1.5 Hazardous Substance:** No
**14.1.6 Marine Pollutant:** No

**14.2 Additional Information:**

**14.2.1 Other DOT Requirements:**

**14.2.1.1 Reportable Quantity:** No
**14.2.1.2 Placard(s):** Not applicable
**14.2.1.3 Label(s):** Not applicable
**14.2.2 USCG Classification:** Not determined.

**14.2.3 International Transportation:**

**14.2.3.1 IMO:** Environmentally hazardous substance, liquid, n.o.s. (calcium polysulfide)

| | |
|---|---|
| **14.2.3.2 IATA:** | Non-hazardous under IATA regulations. |
| **14.2.3.3 TDG (Canada):** | Not regulated – See US DOT Section 14.1.1. |
| **14.2.3.4 ADR (Europe):** | Environmentally hazardous substance, liquid, n.o.s. (calcium polysulfide) |
| **14.2.3.5 ADG (Australia):** | Environmentally hazardous substance, liquid, n.o.s. (calcium polysulfide) |
| **14.2.4 Emergency Response Guide:** | Not applicable |
| **14.2.5 ERAP - Canada:** | Not applicable |
| **14.2.6 Special Precautions:** | Not applicable |
| **14.2.7 RR STCC** | 2899991 |

## Section 15: REGULATORY INFORMATION

### 15.1 U.S. Federal Regulations:

**15.1.1 OSHA:** This product meets the criteria of the Federal OSHA Hazard Communication Standard (29 CFR 1910.1200).

**15.1.2 TSCA:** Product is contained in USEPA Toxic Substance Control Act Inventory.

**15.1.3 CERCLA:** Reportable Quantity – Not applicable

**15.1.4 SARA Title III:**

**15.1.4.1 Extremely Hazardous Substance (EHS):** No

**15.1.4.2 Section 312 (Tier II) Ratings:**

| | |
|---|---|
| Immediate (acute) | Yes |
| Fire | No |
| Sudden Release | No |
| Reactivity | No |
| Delayed (chronic) | No |

**15.1.4.3 Section 313 (FORM R):** Not applicable

**15.1.5 RCRA**: Not applicable

**15.1.6 CAA** (Hazardous Air Pollutant/HAP): Not applicable

### 15.2 International Regulations:

**15.2.1 Canada:**

**15.2.1.1 WHMIS:** Not determined

**15.2.1.2 DSL/NDSL:** Listed in NDSL, Record No. 28636

### 15.3 State Regulations:

**CA Proposition 65:** No

## Section 16: OTHER INFORMATION

**REVISIONS:** This SDS was reformatted to comply with the new Hazard Communication Standard dated March 26, 2012, by the Regulatory Affairs Department of Tessenderlo Kerley, Inc. 7/1/2014.

Revised multiple sections for formatting and wording. 3/19/15.

*The information above is believed to be accurate and represents the best information currently available to Tessenderlo Kerley, Inc.(TKI). No warranty of merchantability, fitness for any particular purpose, or any other warranty is expressed or is to be implied regarding the accuracy or completeness of this information, the results to be obtained from the use of this information or the product, the safety of this product, or the hazards related to its use. Users should make their own investigations to determine the suitability of the information for their particular purpose and on the condition that they assume the risk of their use thereof. TKI reserves the right to revise this Safety Data Sheet periodically as new information becomes available.*

# SAFETY DATA SHEET
# EHC® Liquid Reagent Mix

**SDS # :** EHCLM-C
**Revision date:** 2016-02-03
**Format:** NA
**Version** 1.01

## 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Identifier**

**Product Name** EHC® Liquid Reagent Mix

**Other means of identification**

**Alternate Commercial Name** EHC®-L Mix; EHC® Liquid - Solid Component

**Recommended use of the chemical and restrictions on use**

**Recommended Use:** Bioremediation product for the remediation of contaminated soil and groundwater

**Restrictions on Use:** Not for drinking water purification treatment.

**Manufacturer/Supplier**

PeroxyChem LLC
2005 Market Street
Suite 3200
Philadelphia, PA 19103
Phone: +1 267/ 422-2400 (General Information)
E-Mail: sdsinfo@peroxychem.com

**Emergency telephone number**

For leak, fire, spill or accident emergencies, call:
1 800 / 424 9300 (CHEMTREC - U.S.A.)
1 703 / 527 3887 (CHEMTREC - Collect - All Other Countries)
1 303/ 389-1409 (Medical - U.S. - Call Collect)

## 2. HAZARDS IDENTIFICATION

**Classification**

**OSHA Regulatory Status**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Combustible dust

**GHS Label elements, including precautionary statements**

**EMERGENCY OVERVIEW**

**Warning**

**Hazard Statements**
May form combustible dust concentrations in air

**Precautionary Statements - Prevention**
Keep away from all ignition sources including heat,sparks and flame.
Keep container closed and grounded.
Prevent dust accumulations to minimize explosion hazard.

**Hazards not otherwise classified (HNOC)**
No hazards not otherwise classified were identified.

**Other Information**

CONTAINMENT HAZARD: Any vessel that contains wet EHC must be vented due to potential pressure build up from fermentation gases

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical name | CAS-No | Weight % |
|---|---|---|
| Iron salt | Proprietary | 92-97 |
| amino acid | Proprietary | 3-7 |

Occupational exposure limits, if available, are listed in section 8

## 4. FIRST AID MEASURES

**Eye Contact** Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids intermittently. Consult a physician.

**Skin Contact** Wash off with warm water and soap. Get medical attention if irritation develops and persists.

**Inhalation** Remove from exposure, lie down. If symptoms persist, call a physician.

**Ingestion** If swallowed, do not induce vomiting - seek medical advice.

**Protection of first-aiders** No information available.

**Most important symptoms and effects, both acute and delayed** Gastrointestinal effects. Inhalation of dust in high concentration may cause irritation of respiratory system.

**Indication of immediate medical attention and special treatment needed, if necessary** Treat symptomatically

## 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Specific Hazards Arising from the Chemical** Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

**Hazardous Combustion Products** Carbon oxides (COx).

**Explosion data**
**Sensitivity to Mechanical Impact** Not sensitive.
**Sensitivity to Static Discharge** Not sensitive.

**Protective equipment and precautions for firefighters** As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions** For personal protection see Section 8. Avoid dispersal of dust in the air (i.e., cleaning dust surfaces with compressed air.).

**Other** Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Use only non-sparking tools.

**Environmental Precautions** No special environmental precautions required.

**Methods for Containment** Sweep or vacuum up spillage and return to container. Avoid wetting dust and clean up as a dry powder with appropriate PPE for handling dry dusty materials; store in containers that keep material dry, segregated but allow to vent. Avoid dispersal of dust in the air (i.e., cleaning dust surfaces with compressed air.). Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Material may be recycled when contamination is not a problem.

**Methods for cleaning up** Following product recovery, flush area with water.

## 7. HANDLING AND STORAGE

**Handling** Avoid contact with skin, eyes and clothing. Do not ingest. Ensure adequate ventilation. Minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powdered material can build static electricity when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmosphere.

**Storage** Keep tightly closed in a dry and cool place. Keep away from open flames, hot surfaces and sources of ignition.

**Incompatible products** . Strong oxidizing agents

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters**

**Exposure Guidelines** Ingredients with workplace control parameters.

| Chemical name | ACGIH TLV | OSHA PEL | NIOSH | Mexico |
|---|---|---|---|---|
| Iron salt | TWA: 1 mg/m$^3$ | - | - | - |

| Chemical name | British Columbia | Quebec | Ontario TWAEV | Alberta |
|---|---|---|---|---|
| Iron salt | TWA: 1 mg/m$^3$ | TWA: 1.0 mg/m$^3$ | TWA: 1 mg/m$^3$ | TWA: 1 mg/m$^3$ |

**Appropriate engineering controls**

**Engineering measures** Ensure adequate ventilation, especially in confined areas. It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in the handling of this product contain explosion relief vents or an explosion suppression or an oxygen-deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Use only appropriately classified electrical equipment and powered industrial trucks.

**Individual protection measures, such as personal protective equipment**

| | |
|---|---|
| **Eye/Face Protection** | Safety glasses with side-shields. |
| **Skin and Body Protection** | Wear suitable protective clothing. |
| **Hand Protection** | Protective gloves |
| **Respiratory Protection** | When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. |
| **Hygiene measures** | Handle in accordance with good industrial hygiene and safety practice. |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Information on basic physical and chemical properties**

| | |
|---|---|
| **Appearance** | Dry powder |
| **Physical State** | Solid |
| **Color** | light gray |
| **Odor** | Slight |
| **Odor threshold** | No information available |
| **pH** | 4.5 (1% solution) |
| **Melting point/freezing point** | 100 °C |
| **Boiling Point/Range** | No information available |
| **Flash point** | Not applicable |
| **Evaporation Rate** | No information available |
| **Flammability (solid, gas)** | May be combustible at high temperatures |
| **Flammability Limit in Air** | |
| **Upper flammability limit:** | No information available |
| **Lower flammability limit:** | No information available |
| **Vapor pressure** | No information available |
| **Vapor density** | No information available |
| **Density** | No information available |
| **Specific gravity** | No information available |
| **Water solubility** | Fairly soluble |
| **Solubility in other solvents** | |
| **Partition coefficient** | No information available |
| **Autoignition temperature** | |
| **Decomposition temperature** | No information available |
| **Viscosity, kinematic** | No information available |
| **Viscosity, dynamic** | No information available |
| **Explosive properties** | Low level dust explosion hazard |
| **$K_{st}$** | 76 bar-m/sec: St1 Class dust |
| **Oxidizing properties** | No information available |
| **Molecular weight** | No information available |
| **Bulk density** | Not applicable |

## 10. STABILITY AND REACTIVITY

None under normal use conditions

| | |
|---|---|
| **Chemical Stability** | Stable under recommended storage conditions. Decomposes on heating. |
| **Possibility of Hazardous Reactions** | None under normal processing. |
| **Hazardous polymerization** | Hazardous polymerization does not occur. |
| **Conditions to avoid** | To avoid thermal decomposition, do not overheat. |
| **Incompatible materials** | Strong oxidizing agents. |
| **Hazardous Decomposition Products** | Carbon oxides (COx). |

## 11. TOXICOLOGICAL INFORMATION

**Product Information**

| | |
|---|---|
| **LD50 Oral** | Iron Salt: 2100 mg/kg (guinea pig)<br>Cysteine: 1890 mg/kg (rat) |
| **LD50 Dermal** | No information available |
| **LC50 Inhalation** | No information available |

**Sensitization** Not expected to be sensitizing based on the components.

**Information on toxicological effects**

**Symptoms** Dust is irritating eyes, nose, throat, and lungs.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Carcinogenicity** Contains no ingredient listed as a carcinogen.

**Mutagenicity** This product is not recognized as mutagenic by Research Agencies

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

| | |
|---|---|
| **STOT - single exposure** | No information available. |
| **STOT - repeated exposure** | No information available. |

**Aspiration hazard** Not applicable.

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

**Ecotoxicity effects** Not expected to have significant environmental effects

**Persistence and degradability** No information available.

**Bioaccumulation** No information available.

**Mobility** No information available.

**Other Adverse Effects** None known.

## 13. DISPOSAL CONSIDERATIONS

**Waste disposal methods** It must undergo special treatment, e.g. at suitable disposal site, to comply with local regulations.

**Contaminated Packaging** Dispose of in accordance with local regulations.

## 14. TRANSPORT INFORMATION

**DOT** NOT REGULATED

## 15. REGULATORY INFORMATION

## U.S. Federal Regulations

**SARA 313**
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

**SARA 311/312 Hazard Categories**

| | |
|---|---|
| **Acute health hazard** | No |
| **Chronic health hazard** | No |
| **Fire hazard** | No |
| **Sudden release of pressure hazard** | No |
| **Reactive Hazard** | No |

**Clean Water Act**
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

**CERCLA/EPCRA**
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

### International Inventories

| Component | TSCA (United States) | DSL (Canada) | EINECS/ELINCS (Europe) | ENCS (Japan) | China (IECSC) | KECL (Korea) | PICCS (Philippines) | AICS (Australia) | NZIoC (New Zealand) |
|---|---|---|---|---|---|---|---|---|---|
| Iron salt ( 92-97 ) | X | X | X | | | X | X | X | X |
| amino acid ( 3-7 ) | X | X | X | X | X | X | X | X | X |

**CANADA**

**WHMIS Hazard Class** Non-controlled

## 16. OTHER INFORMATION

| | | | | |
|---|---|---|---|---|
| **NFPA** | **Health Hazards** 1 | **Flammability** 1 | **Stability** 0 | **Special Hazards** - |
| **HMIS** | **Health Hazards** 1 | **Flammability** 1 | **Physical hazard** 0 | **Special precautions** - |

**NFPA/HMIS Ratings Legend** Severe = 4; Serious = 3; Moderate = 2; Slight = 1; Minimal = 0

**Uniform Fire Code References** COMBUSTIBLE DUST/POWDER
Refer to NFPA 654, *Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids* , for safe handling.

**Revision date:** 2016-02-03
**Revision note** (M)SDS sections updated 9
**Issuing Date:** 2016-01-26

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**Prepared By:**

PeroxyChem

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**End of Safety Data Sheet**

**SDS DATE: July, 2016**

## SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Emulsified Zero Valent Iron (antimethanogenic)
**SYNONYMS:** EZVI /EZVI-CH4™
**PRODUCT CODES:**

**MANUFACTURER:** Provectus Environmental Products, Inc
**ADDRESS:** 2871 W. Forest Road, #2
Freeport, IL 61032

**EMERGENCY PHONE:** (815) 650-2230
**CHEMTREC PHONE:** (800) 424-9300 (Domestic)
**OTHER CALLS:**
**FAX PHONE:**

**CHEMICAL NAME:** Emulsified Zero Valent Iron (EZVI/EZVI-CH4™)
**CHEMICAL FAMILY:**
**CHEMICAL FORMULA:**

**PRODUCT USE:** Soil & Groundwater Remediation (DNAPL contamination)
**PREPARED BY:** Provectus Environmental Products, Inc.
**SECTION 1 NOTES:**

## SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

| INGREDIENT: | CAS NO. | % WT | % VOL | SARA 313 REPORTABLE |
|---|---|---|---|---|
| Iron (Fe) | 7439-89-6 | 5 – 20 | NA | NA |
| Sorbitan Trioleate | 26266-58-0 | 1 – 5 | NA | NA |
| Food Grade Veg Oil | 8001-22-7 | 30 – 40 | NA | NA |
| Potable Water | 7732-18-5 | 40 – 50 | NA | NA |
| Yeast Extracts* | 8013-01-2 | 0.5 – 5 | NA | NA |

*(some formulations contain - e.g. EZVI-CH4™)

| | ppm | mg/m3 |
|---|---|---|
| OSHA PEL-TWA: | NA | NA |
| OSHA PEL STEL : | NA | NA |
| OSHA PEL CEILING: | NA | NA |
| ACGIH TLV-TWA: | NA | NA |
| ACGIH TLV STEL: | NA | NA |
| ACGIH TLV CEILING: | NA | NA |

**SECTION 2 NOTES:**

## SECTION 3: HAZARDS IDENTIFICATION

**EMERGENCY OVERVIEW:**

**ROUTES OF ENTRY:**

**EYES:** YES

**SKIN:** NO

**INGESTION:** YES

**INHALATION:** NO

**ACUTE HEALTH HAZARDS:** NONE KNOWN
**CHRONIC HEALTH HAZARDS:** NONE KNOWN
**MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:** NONE KNOWN
**CARCINOGENICITY**
**OSHA:** NA **ACGIH:** NA **NTP:** NA **IARC:** NA **OTHER:** NA

**SECTION 3 NOTES:**

## SECTION 4: FIRST AID MEASURES

**EYES: In case of eye contact, rinse opened eye for 15 minutes with water, then consult physician.**

**SKIN: In case of skin contact, immediately wash affected area(s) with soap & water and rinse thoroughly.**

**INGESTION: After swallowing seek immediate medical advice. Make physician aware that the following symptoms may occur; stomach cramps, nausea, gastric or intestinal disorders.**

**INHALATION: NA**

**NOTES TO PHYSICIANS OR FIRST AID PROVIDERS:**

**SECTION 4 NOTES:**

## SECTION 5: FIRE-FIGHTING MEASURES

**FLAMMABLE LIMITS IN AIR, UPPER: NA**
**(% BY VOLUME) LOWER: NA**

**FLASH POINT:**
**F: >482 ºF**
**C: >250 ºC**
**METHOD USED: Closed Cup**

**AUTOIGNITION TEMPERATURE:**
**F: >760 ºF**
**C: >404 ºC**

**NFPA HAZARD CLASSIFICATION**
**HEALTH: 1 FLAMMABILITY: 2 REACTIVITY: 1**
**OTHER:**

**HMIS HAZARD CLASSIFICATION**
**HEALTH: 1 FLAMMABILITY: 2 REACTIVITY: 1**
**PROTECTION:**

**EXTINGUISHING MEDIA: Extinguishing Powder**

**SPECIAL FIRE FIGHTING PROCEDURES: DO NOT use water, CO2, or halogenated extinguishers.**

**UNUSUAL FIRE AND EXPLOSION HAZARDS: NA**

**HAZARDOUS DECOMPOSITION PRODUCTS: NA**

**SECTION 5 NOTES:**

## SECTION 6: ACCIDENTAL RELEASE MEASURES

**ACCIDENTAL RELEASE MEASURES:**
**Personal Safety Measures: Wear protective equipment, keep unprotected persons away, ensure adequate ventilation**
**Environmental Safey Measures: NA**
**Spill/Cleanup Safety Measures: Dispose of collected waste and contaminated materials as directed in Section 7.**

**SECTION 6 NOTES:**

## SECTION 7: HANDLING AND STORAGE

**HANDLING AND STORAGE: Spilled material should be contained and recovered into drums**
**OTHER PRECAUTIONS: Store in cool, dry, ventilated area. Do Not store near halogens, oxidizers or acidic materials. Keep ignition sources away and ensure good ventilation.**

**SECTION 7 NOTES:**

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

**ENGINEERING CONTROLS: Block off handling or spill area from unprotected persons**

**VENTILATION : Ensure area is adequately ventilated.**

**RESPIRATORY PROTECTION: NA**

**EYE PROTECTION: safety goggles/splash shield**

**SKIN PROTECTION: tyvec suit with rubberized gloves (neoprene)**

**OTHER PROTECTIVE CLOTHING OR EQUIPMENT: slip resistant footwear**

**WORK HYGIENIC PRACTICES: Surfaces covered with EZVI can become VERY slippery. Exercise additional care when handling/cleaning up to avoid slip and fall injury.**

**EXPOSURE GUIDELINES: NA**

**SECTION 8 NOTES:**

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

**APPEARANCE: Black/Dark Gray viscous material**
**ODOR: cooking oil odor**
**PHYSICAL STATE: liquid**

**pH AS SUPPLIED:**
**pH (Other):**
**BOILING POINT:**
**F: >572 ºF**
**C: >300 ºC**
**MELTING POINT:**
**F: NA**
**C: NA**
**FREEZING POINT:**
**F: - 4 ºF**
**C: - 20 ºC**
**VAPOR PRESSURE (mmHg):**
**@**
**F: NA**
**C: NA**
**VAPOR DENSITY (AIR = 1):**
**@**
**F: NA**
**C: NA**
**SPECIFIC GRAVITY (H2O = 1): 1.05 – 1.13**

**EVAPORATION RATE: NA**

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (con't)

**SOLUBILITY IN WATER: Insoluble**
**PERCENT SOLIDS BY WEIGHT: 5 – 20 %**
**PERCENT VOLATILE:**
**BY WT/ BY VOL @**
**F: NA**
**C: NA**
**VOLATILE ORGANIC COMPOUNDS (VOC):**
**WITH WATER:** NA **LBS/GAL**
**WITHOUT WATER: NA LBS/GAL**
**VISCOSITY: ~ 1100 cps (@ 75 ºF)**

**SECTION 9 NOTES:**

## SECTION 10: STABILITY AND REACTIVITY

| | STABLE | UNSTABLE |
|---|---|---|
| STABILITY: | X | |

CONDITIONS TO AVOID (STABILITY): AVOID IMPROPER HANDLING & STORAGE CONDITIONS
INCOMPATIBILITY (MATERIAL TO AVOID): HALOGENS, ACIDS, OXIDIZERS
HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:
HAZARDOUS POLYMERIZATION: NA
CONDITIONS TO AVOID (POLYMERIZATION): NA
SECTION 10 NOTES:

## SECTION 11: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION: NA

SECTION 11 NOTES:

## SECTION 12: ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION: NA

SECTION 12 NOTES: Used for environmental cleanup of contaminated soils and groundwater. EZVI is biodegradeable in the environment.

## SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Place waste into appropriate containers

RCRA HAZARD CLASS: NA
SECTION 13 NOTES:

## SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION
- PROPER SHIPPING NAME: Emulsified Zero Valent Iron (EZVI)
- HAZARD CLASS: NA
- ID NUMBER: NA
- PACKING GROUP: NONE
- LABEL STATEMENT:

WATER TRANSPORTATION
- PROPER SHIPPING NAME: Emulsified Zero Valent Iron (EZVI)
- HAZARD CLASS: NA
- ID NUMBER: NA
- PACKING GROUP: NONE
- LABEL STATEMENTS:

AIR TRANSPORTATION
- PROPER SHIPPING NAME: Emulsified Zero Valent Iron (EZVI)
- HAZARD CLASS: NA
- ID NUMBER: NA
- PACKING GROUP: NONE
- LABEL STATEMENTS:

OTHER AGENCIES:
SECTION 14 NOTES:

## SECTION 15: REGULATORY INFORMATION

**U.S. FEDERAL REGULATIONS**

**TSCA (TOXIC SUBSTANCE CONTROL ACT): NA**

**CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT): NA**

**SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT): NA**

**311/312 HAZARD CATEGORIES: NA**

**313 REPORTABLE INGREDIENTS: NA**

**STATE REGULATIONS: NA**

**INTERNATIONAL REGULATIONS: NA**

**SECTION 15 NOTES:**

## SECTION 16: OTHER INFORMATION

**OTHER INFORMATION: NA**

**PREPARATION INFORMATION: NA**

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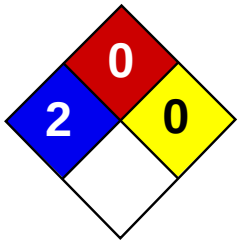





# Material Safety Data Sheet
## Ferrous sulfate MSDS

## Section 1: Chemical Product and Company Identification

**Product Name:** Ferrous sulfate

**Catalog Codes:** SLF1516

**CAS#:** 13463-43-9

**RTECS:** Not available.

**TSCA:** TSCA 8(b) inventory: No products were found.

**CI#:** Not available.

**Synonym:** Ferrous Sulfate Hydrate; Ferrous Sulfate Dried Powder

**Chemical Name:** Ferrous Sulfate

**Chemical Formula:** FeSO4.xH2O

**Contact Information:**

**Sciencelab.com, Inc.**
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

**CHEMTREC (24HR Emergency Telephone), call:** 1-800-424-9300

**International CHEMTREC, call:** 1-703-527-3887

**For non-emergency assistance, call:** 1-281-441-4400

## Section 2: Composition and Information on Ingredients

**Composition:**

| Name | CAS # | % by Weight |
|---|---|---|
| Ferrous sulfate | 13463-43-9 | 100 |

**Toxicological Data on Ingredients:** Ferrous sulfate LD50: Not available. LC50: Not available.

## Section 3: Hazards Identification

**Potential Acute Health Effects:** Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

**Potential Chronic Health Effects:**
CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to kidneys, liver, cardiovascular system, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage.

## Section 4: First Aid Measures

**Eye Contact:**
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

**Skin Contact:**
In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

**Serious Skin Contact:**
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

**Inhalation:**
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**Serious Inhalation:** Not available.

**Ingestion:**
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

**Serious Ingestion:** Not available.

## Section 5: Fire and Explosion Data

**Flammability of the Product:** Non-flammable.

**Auto-Ignition Temperature:** Not applicable.

**Flash Points:** Not applicable.

**Flammable Limits:** Not applicable.

**Products of Combustion:** Not available.

**Fire Hazards in Presence of Various Substances:** Not applicable.

**Explosion Hazards in Presence of Various Substances:**
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

**Fire Fighting Media and Instructions:** Not applicable.

**Special Remarks on Fire Hazards:** Not available.

**Special Remarks on Explosion Hazards:** Not available.

## Section 6: Accidental Release Measures

**Small Spill:**
Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

**Large Spill:**
Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

## Section 7: Handling and Storage

**Precautions:**
Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If you feel unwell, seek medical attention and show the label when possible. Avoid contact with skin and eyes.

**Storage:**
Hygroscopic. Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 24°C (75.2°F).

## Section 8: Exposure Controls/Personal Protection

**Engineering Controls:**
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

**Personal Protection:**
Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

**Personal Protection in Case of a Large Spill:**
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Exposure Limits:** Not available.

## Section 9: Physical and Chemical Properties

**Physical state and appearance:** Solid.

**Odor:** Not available.

**Taste:** Not available.

**Molecular Weight:** 151.9 g/mole + H20

**Color:** Grayish -white to yellowish. (Light.)

**pH (1% soln/water):** Not available.

**Boiling Point:** Not available.

**Melting Point:** Not available.

**Critical Temperature:** Not available.

**Specific Gravity:** Not available.

**Vapor Pressure:** Not applicable.

**Vapor Density:** Not available.

**Volatility:** Not available.

**Odor Threshold:** Not available.

**Water/Oil Dist. Coeff.:** Not available.

**Ionicity (in Water):** Not available.

**Dispersion Properties:** See solubility in water.

**Solubility:** Soluble in cold water.

## Section 10: Stability and Reactivity Data

**Stability:** The product is stable.

**Instability Temperature:** Not available.

**Conditions of Instability:** Incompatibles

**Incompatibility with various substances:** Not available.

**Corrosivity:** Not available.

**Special Remarks on Reactivity:**
Hygroscopic. Loses water at about 300 C. No other information found.

**Special Remarks on Corrosivity:** Not available.

**Polymerization:** Will not occur.

## Section 11: Toxicological Information

**Routes of Entry:** Inhalation. Ingestion.

**Toxicity to Animals:**
LD50: Not available. LC50: Not available.

**Chronic Effects on Humans:** May cause damage to the following organs: kidneys, liver, cardiovascular system, central nervous system (CNS).

**Other Toxic Effects on Humans:** Hazardous in case of skin contact (irritant), of ingestion, of inhalation.

**Special Remarks on Toxicity to Animals:** Not available.

**Special Remarks on Chronic Effects on Humans:** May affect genetic material (mutagenic)

**Special Remarks on other Toxic Effects on Humans:**
Acute Potential Health Effects: Skin: May cause skin irritation. Eyes: May cause eye irritation. Inhalation: May cause respiratory tract irritation. Ingestion: Harmful if swallowed. May cause gastrointestinal tract distrubances and irritation with nausea, vomiting, colic, constipation, diarrhea, black stool. May also affect behavior/Central Nervous System (somnolence -general depressed activity), respiration, cardiovascular system, liver, kidneys (pink urine discoloration). Chronic Potential Health Effects: Repeated exposure via ingestion may increase iron levels in the liver, and spleen. Damage may occur to spleen and liver.

## Section 12: Ecological Information

**Ecotoxicity:** Not available.

**BOD5 and COD:** Not available.

**Products of Biodegradation:**
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

**Toxicity of the Products of Biodegradation:** The product itself and its products of degradation are not toxic.

**Special Remarks on the Products of Biodegradation:** Not available.

## Section 13: Disposal Considerations

**Waste Disposal:**
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

## Section 14: Transport Information

**DOT Classification:** Not a DOT controlled material (United States).

**Identification:** Not applicable.

**Special Provisions for Transport:** Not applicable.

## Section 15: Other Regulatory Information

**Federal and State Regulations:** No products were found.

**Other Regulations:** OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

**Other Classifications:**

**WHMIS (Canada):** Not controlled under WHMIS (Canada).

**DSCL (EEC):**
R36/38- Irritating to eyes and skin. S2- Keep out of the reach of children. S46- If swallowed, seek medical advice immediately and show this container or label.

**HMIS (U.S.A.):**

**Health Hazard:** 2

**Fire Hazard:** 0

**Reactivity:** 0

**Personal Protection:** E

**National Fire Protection Association (U.S.A.):**

**Health:** 2

**Flammability:** 0

**Reactivity:** 0

**Specific hazard:**

**Protective Equipment:**
Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Splash goggles.

## Section 16: Other Information

**References:** Not available.

**Other Special Considerations:** Not available.

**Created:** 10/09/2005 05:33 PM

**Last Updated:** 05/21/2013 12:00 PM

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# MINERAL MASTERS

130 W GRAND LAKE BLVD., WEST CHICAGO, IL 60185

FOR CHEMICAL EMERGENCY. SPILL, LEAK, EXPOSURE, OR ACCIDENT, CALL CHEMTREC, 1-800-424-9300

## MATERIAL SAFETY DATA SHEET

**Revised 8-11-10**

### 1. IDENTIFICATION OF THE PRODUCT

**MM-2480**

### 2. HAZARDS IDENTIFICATION

Appearance and Odor

Form : Granular solid
Color : White
Odor : None

Emergency Overview :
Aqueous solutions or powders that become wet render surfaces extremely slippery.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Identification : Cationic water-soluble polymer.

Regulated Components
None.

### 4. FIRST AID MEASURES

Inhalation : No hazards which require special first aid measures.
Skin contact : No hazards which require special first aid measures. Wash with water and soap as a precaution. Call a physician if irritation persists.

Eye contact : Rinse thoroughly with plenty of water, also under the eyelids. In case of persistent eye irritation, consult a physician.

Ingestion : No hazards which require special first aid measures. The product is not considered toxic based on studies on laboratory animals.

### 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Water. Water spray. Foam. Carbon dioxide (CO2). Dry powder.

Precautions : Aqueous solutions or powders that become wet render surfaces extremely slippery.

Special protective equipment for firefighters : No special protective equipment required.

Flash point : Not applicable
Autoignition temperature : Not applicable

### 6. ACCIDENTAL RELEASE MEASURES

Personal precautions : No special precautions required.

Environmental precautions : As with all chemical products, do not flush into surface water.

Methods for cleaning up : Do not flush with water Clean up promptly by sweeping or vacuum. Keep in suitable and closed containers for disposal. After cleaning, flush away traces with water.

### 7. HANDLING AND STORAGE

Handling
Safe handling advice : Avoid contact with skin and eyes. Avoid dust formation. Do not breathe dust. Wash hands before breaks and at the end of workday.

Storage

Keep in a dry, cool place (0 - 35 °C).

### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures
Use local exhaust if dusting occurs. Natural ventilation is adequate in absence of dusts.

Personal protective equipment
Respiratory protection : Dust safety masks are recommended where concentration of total dust is more than 10 mg/m3.

Hand protection : Rubber gloves.

Eye protection : Safety glasses with side-shields. Do not wear contact lenses where this product is used.

Skin and body protection : Chemical resistant apron or protective suit if spashing or repeated contact with solution is likely.

Hygiene measures
Wash hands before breaks and at the end of workday. Handle in accordance with good industrial hygiene and safety practice.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

Form : Granular solid
Color : White Odor : None

pH : 2.5 - 4.5 @ 5 g/l

Melting point/range : Not applicable Flash point : Not applicable

Autoignition temperature : Not applicable

Approx. bulk density : 0.62 Water solubility : See Technical Bulletin

LogPow : 0

### 10. STABILITY AND REACTIVITY

Stability : Stable. Hazardous polymerisation does not occur.

Materials to avoid : Oxidizing agents may cause exothermic reactions.

Hazardous decomposition products : Burning of the dried material can produce: hydrogen chloride gas, nitrogen oxides (NOx), carbon oxides.

### 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Skin : The results of testing on rabbits showed this material to be non-toxic even at high dose levels.

Oral : LD50/oral/rat = 5000 mg/kg.

Inhalation : The product is not expected to be toxic by inhalation.

Irritation

Skin : The results of testing on rabbits showed this material to be non-irritating to the skin.

Eyes : Testing conducted according to the Draize technique showed the material produces no corneal or iridial effects and only slight transitory conjuctival effects similar to those which all granular materials have on conjuctivae.

Sensitization : The results of testing on guinea pigs showed this material to be non-sensitizing.

Chronic toxicity : A one-year feeding study on rats did not reveal adverse health effects. A one-year feeding study on dogs did not reveal adverse health effects.

### 12. ECOLOGICAL INFORMATION

Aquatic toxicity

Toxicity to fish (dano rerio, rainbow trout, fathead minnow): LC50/96 hours = 5 - 10 mg/L.

Toxicity to daphnia : EC50/48 hours = 20 - 50 mg/L.

Toxicity to algae : Algal inhibition tests are not appropriate. The flocculation characteristics of the product interfere directly in the test medium preventing homogenous distribution which invalidates the test.

*Environmental fate*

*Hydrolysis : At natural pHs (>6) the polymer degrades due to hydrolysis to more than 70% in 28 days. The hydrolysis products are not harmfull to aquatic organisms.*

*LogPow : 0*

*Bioaccumulation : Does not bioaccumulate.*

*Other ecological information :*
*The effects of this product on aquatic organisms are rapidly and significantly mitigated by the presence of dissolved organic carbon in the aquatic environment.*

## *13. DISPOSAL CONSIDERATIONS*

*Disposal : In accordance with local, state and federal regulations.*

*Container : Rinse empty containers with water and use the rinse water to prepare the working solution. Can be landfilled or incinerated, when in compliance with local, state and federal regulations.*

## *14. TRANSPORT INFORMATION*

*DOT*

*Remarks : Not classified as dangerous in the meaning of DOT regulations.*

*IMDG/IMO*
*Remarks : Not classified as dangerous in the meaning of IMO/IMDG regulations.*
*ICAO/IATA*
*Remarks : Not classified as dangerous in the meaning of ICAO/IATA regulations.*

## *15. REGULATORY INFORMATION*

*US SARA Reporting Requirements*

*SARA Title III Sections*
*Sara (311, 312) hazard class : Not concerned*

*State Regulations*

*The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986. This product contains the following substance (s) known to the State of California to cause cancer : Acrylamide.*

*International Inventories*

*European Union (EINECS/ELINCS) : All components of this product are either listed on the inventory or are exempt from listing.*

*USA (TSCA) : All components of this product are either listed on the inventory or are exempt from listing.*

*Canada (DSL) : All components of this product are either listed on the inventory or are exempt from listing.*

*Australia (AICS) : All components of this product are either listed on the inventory or are exempt from listing.*

*China (IECSC) : All components of this product are either listed on the inventory or are exempt from listing.*

*Japan (ENCS) : All components of this product are either listed on the inventory or are exempt from listing.*

*Korea (ECL) : All components of this product are either listed on the inventory or are exempt from listing.*

*Philippines (PICCS) : All components of this product are either listed on the inventory or are exempt from listing.*

## *16. OTHER INFORMATION*

*NFPA and HMIS Ratings :*

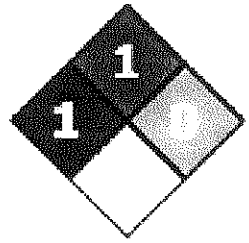


*NFPA :*

*Health : 1*
*Flammability : 1*
*Instability : 0*

*HMIS :*

*Health : 1*
*Flammability : 1*
*Physical Hazard : 0*

***PREPARED BY MINERAL MASTERS THIS INFORMATION IS OFFERED IN GOOD FAITH AS TYPICAL VALUES AND NOT AS A PRODUCT SPECIFICATION. NO WARRANTY, EXPRESSED OR IMPLIED IS HEREBY MADE. THE RECOMMENDED INDUSTRIAL HYGIENE AND SAFE HANDLING PROCEDURES ARE BELIEVED TO BE GENERALLY APPLICABLE. HOWEVER,E ACH USER SHOULD REVIEW THESE RECOMMENDATIONS IN THE SPECIFIC CONTEXT OF THE INTENDED USE AND DETERMINE WHETHER THEY ARE APPROPRIATE.***

**MATERIAL SAFETY DATA SHEET**
**MOLASSES/MOLASSES BLENDS/BINDERS**

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

| Chemical Name | Chemical Formula | Molecular Weight |
|---|---|---|
| N/A | Mixture of liquid Agricultural commodities | No data |

Trade Name – Molasses/Molasses Blends

Synonyms: DOT Identification No.

Liquid animal supplement: N/A

Company Identification:
Westway Trading Corporation
365 Canal Street, Suite 2900
New Orleans, Louisiana 70130
(504) 525-9741

## 2. COMPOSITION, INFORMATION ON INGREDIENTS

| Component(s), Chemical Name | CAS Registry No. | %(Approx.) | ACGIH TLV-TWA |
|---|---|---|---|
| Proprietary **See ingredient tag** | NA | No data | No data |

## 3. HAZARDS IDENTIFICATION

Emergency Overview

This material should be stored in a vented tank designed to contain a material with a specific gravity of 1.3 or greater. Material can ferment if excessive moisture contamination is allowed. Fermentation can yield carbon dioxide with possible traces of ethanol or volatile fatty acids (e.g. acetic, propionic, lactic, or butyric) and if exposed to a spark or flame may result in an explosion. These conditions should be avoided. If maintenance of tank requires entry by personnel, OSHA's Confined Space standard (29CFR1910.146) shall be complied with. If welding is to be performed, the tank should be gas freed and only certified welders shall perform welding operations.

Potential Health Effects

Eyes - Mild irritant

Skin - None

Inhalation – Insufficient oxygen may be present in vessels containing the product due to the generation of carbon monoxide during fermentation

## 4. FIRST AID MEASURES

Eyes: Flush eyes for 15 minutes.

Skin: Wash with soap and water.

Ingestion: No data

## 5. FIRE FIGHTING MEASURES

| Flashpoint (Method used) | Flammable Limits in Air |
|---|---|
| Non-flammable<br>Non-combustible | Non-flammable<br>Non-combustible |

Extinguishing Agents - NA

Unusual Fire and Explosion Hazards – Fermentation occurs when diluted with water and is accelerated by heat. During fermentation, carbon monoxide with possible traces of ethanol or volatile fatty acids (e.g., acetic, propionic, lactic, or butyric) is given off, which produces inhalation hazards and possible explosion hazards.

## 6. ACCIDENTAL RELEASE MEASURES

Steps to be Taken in Case Material is Released or Spilled

Small spills - Stop the source of the spill. Recover as much product as possible for reuse. Absorb remaining spill and dispose solids in waste container.

Large spills - Stop the source of the spill. Create diversionary structures to minimize the extent of the release. Prevent the release from entering a waterway or sewer. Recover useable product. Absorb remaining spill and dispose of at an approved facility such as a municipal landfill or land application site.

## 7. HANDLING AND STORAGE

This material should be stored in a vented tank designed to contain a material with a specific gravity of 1.3 or greater. Material can ferment if excessive moisture contamination is allowed.

## 8. EXPOSURE CONTROLS, PERSONAL PROTECTION

Respiratory Protection - None

Ventilation – Provide adequate ventilation to prevent accumulation of vapors.

Skin Protection - Rubber gloves

Eye Protection - Safety glasses

Hygiene - Wash any exposed area promptly with soap and water. Launder contaminated clothing.

Other Control Measures - None

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| Appearance<br>Dark brown syrupy liquid | Odor<br>Sweet |
| Physical State<br>Liquid | Specific Gravity<br>1.45 |
| Boiling Point<br>Very high | Freezing/Melting Point<br>Varies |
| Vapor Pressure<br>Low | % Volatile, by Volume<br>No data |
| Evaporation Rate<br>No data | Vapor Density in Air<br>Water vapor only |
| Solubility in Water<br>Soluble | pH<br>2.25 to 6.0 |

## 10. STABILITY AND REACTIVITY

Chemical Stability - Stable

Conditions to Avoid – Excess moisture or heat. Unventilated containers.

Incompatibility with Other Materials - Reacts with concentrated nitric acid or concentrated Sulphuric acid. Ferments when diluted with water.

Hazard Decomposition Products – Carbon monoxide, alcohol or fatty acid vapors

Hazardous Polymerization - NA

## 11. ECOLOGICAL INFORMATION

Prevent releases to land or water. Results in high Biological Oxygen Demand (BOD) and potential oxygen depletion of aquatic systems.

## 12. DISPOSAL CONSIDERATIONS

Dispose of waste material at an approved municipal landfill or land application site.

## 13. TRANSPORT INFORMATION

Hazardous Materials Description/ Proper Shipping Name - NA

DOT Hazard Class - NA

DOT Identification Number - NA

X  This product is not a DOT hazardous material.

## 14. REGULATORY INFORMATION

Discharges to a water of the U.S. are regulated by the Environmental Protection Agency.

## 15. OTHER INFORMATION

None.

Date of Preparation: 3/15/96 **REVISED: 10/12/01**

Prepared by: Jane Besch, Director - HSE

Disclaimer:
WESTWAY FEED PRODUCTS provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. WESTWAY FEED PRODUCTS makes no representations or warranties, either express or implied, including without limitation any warranties of merchantability, fitness for a particular purpose with respect to the information set forth herein or the product to which the information refers. Accordingly, WESTWAY FEED PRODUCTS will not be responsible for damages resulting from use of or reliance upon this information.

EOS Remediation, LLC

# EOS PRO

## SAFETY DATA SHEET

| Section 1: Identification | |
|---|---|
| Product Name: | **EOS Pro** |
| Chemical Description: | Mixture; vegetable oil emulsion |
| Manufacturer: | EOS Remediation<br>1101 Nowell Road<br>Raleigh, NC 27607<br>(P): 919-873-2204<br>www.eosremediation.com |
| Recommended Use: | Groundwater bioremediation (environmental applications) |
| Restricted Use: | Not for human consumption. |
| 24-Hour Emergency Contact: | ChemTel: United States<br>(P): 800-255-3924<br>ChemTel: International<br>(P): 813-248-0585 |

| Section 2: Hazard(s) Identification | |
|---|---|
| Hazard Classification: | Irritant (skin and eye) |
| Signal Word: | Warning |
| Hazard Statement(s): | Potential eye and skin irritant. |
| Pictograms: |  |
| Precautionary Statement(s): | Not for human consumption. Do not store near excessive heat or oxidizers. Avoid contact with eyes and skin. Wear protective gloves and eye protection. |

| Section 3: Composition/Information on Ingredients | | |
|---|---|---|
| **Common Name(s)** | **CAS NO.** | **% by Weight** |
| Soybean Oil | 8001-22-7 | 59.8 |
| Food Grade Emulsifiers<br>Trade Secret[1,2] | Proprietary | 10 |
| Soluble Substrates<br>Trade Secret[1,2] | Proprietary | 4 |
| Food Additives/Preservatives<br>Trade Secret[1] | Proprietary | 0.3 |
| Nutrients/Extracts<br>Trade Secret[1,2] | Proprietary | 1 |
| Water | 7732-18-5 | Balance |

1 – The precise composition of this product is proprietary information. A more complete disclosure will be provided to a physician in the event of a medical emergency.

2 – The soluble substrates and emulsifiers are generally recognized as safe for food contact.

| Section 4: First-Aid Measures | |
|---|---|
| **Routes of Exposure** | **Emergency First-Aid Procedures** |
| Inhalation | Remove to fresh air. |
| Eye Contact | Flush with water for 15 minutes; if irritation persists see a physician. |
| Skin Contact | Wash with mild soap and water. |
| Ingestion | Product is non-toxic. If nausea occurs, induce vomiting and seek medical attention. |

| Section 5: Fire-Fighting Measures | |
|---|---|
| Extinguishing Media: | $CO_2$, foam, dry chemical<br>Note: Water, fog and foam may cause frothing and spattering. |
| Special Fire Fighting Procedures: | Wear self-contained breathing apparatus and chemical resistant clothing. Use water spray to cool fire exposed containers. |
| Fire Hazard(s): | Burning will cause oxides of carbon. |

| Section 6: Accidental Release Measures | |
|---|---|
| Personal Precautions: | Avoid contact with eyes and skin. Do not consume. |
| Emergency Procedures: | N/A |
| Methods & Materials used for Containment: | Compatible granular absorbent |
| Cleanup Procedures: | Spread compatible granular absorbent over spill area and sweep using broom and pan; dispose in appropriate receptacle. Clean area with water. |

| Section 7: Handling and Storage | |
|---|---|
| Safe Handling & Storage: | Do not store near excessive heat or oxidizers. |
| Other Precautions: | Consumption of food and beverages should be prevented in work area where product is being used. After handling product, always wash hands and face thoroughly with soap and water before eating, drinking, or smoking. |

| Section 8: Exposure Controls/Personal Protection | | |
|---|---|---|
| **Exposure Limits** | | |
| OSHA PEL: | NE | |
| ACGIH TLV: | NE | |
| NIOSH REL: | NE | |
| **Personal Protective Measures** | | |
| Respiratory Protection: | Not normally required. P95 respirator if aerosols might be generated. | |
| Hand Protection: | Protective gloves are recommended | |
| Eye Protection: | Recommended | |
| Engineering Measures: | Local exhaust ventilation if aerosols are generated | |
| Hygiene Measures: | Wash promptly with soap & water if skin becomes irritated from contact. | |
| Other Protection: | Wear appropriate clothing to prevent skin contact. | |

| Section 9: Physical and Chemical Properties | | | |
|---|---|---|---|
| Appearance: | White Liquid | Explosive Limits: | NE |
| Odor: | Vegetable Oil | Vapor Pressure: | NE |
| Odor Threshold: | NE | Vapor Density: | Heavier than air |
| pH: | Neutral | Relative Density: | 0.96-0.98 |
| Melting Point/Freezing Point: | Liquid at room temperature | Solubility: | Dispersible |
| Boiling Point: | 212°F (100°C) | Partition coefficient: | NE |
| Flash Point: | >300°F (149°C) | Auto-ignition Temperature: | NE |
| Evaporation Rate: | NE | Decomposition Temperature: | N/A |
| Flammability (solid, gas): | NE | Viscosity: | 500-1500 cP |

NE – Not Established

| Section 10: Stability and Reactivity | |
|---|---|
| Stability: | Stable |
| Incompatibility: | Strong acids and oxidizers |
| Hazardous Decomposition Products: | Thermal decomposition may produce oxides of carbon |
| Hazardous Reactions/Polymerization: | Will not occur |
| Conditions to Avoid: | None known |

| Section 11: Toxicological Information | | |
|---|---|---|
| Likely Routes of Exposure: | | Ingestion, dermal and eye contact |
| Signs and Symptoms of Exposure: | | None known |
| Health Hazards | | |
| | Acute: | Potential eye and skin irritant |
| | Chronic: | None known |
| Carcinogenicity | | |
| | NTP: | No |
| | IARC: | No |
| | OSHA: | No |

| Section 12: Ecological Information (non-mandatory) |
|---|
| There is no data on the ecotoxicity of this product. |

| Section 13: Disposal Considerations (non-mandatory) | |
|---|---|
| Waste Disposal Methods: | Dispose of according to Federal and local regulations for non-hazardous waste. Recycle, if practical. |

| Section 14: Transport Information (non-mandatory) |
|---|
| The product is not covered by international regulation on the transport of dangerous goods. |
| No transport warning required. |

| Section 15: Regulatory Information (non-mandatory) |
|---|
| N/A |

| Section 16: Other Information | |
|---|---|
| Date of Preparation: | 29 May 2014 |
| Last Modified Date: | 5 September 2014 |
| The information contained herein is based on available data and is believed to be correct. However, EOS Remediation, LLC makes no warranty, expressed or implied, regarding the accuracy of this data or the results to be obtained thereof. This information and product are furnished on the condition that the person receiving them shall make his/her own determination as to the suitability of the product for his/her particular purpose. | |

# Sodium Hydroxide, 50% w/w

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 10/16/2013 Revision date: 02/07/2017 Supersedes: 10/16/2013 Version: 1.1

## SECTION 1: Identification

### 1.1. Identification

| | | |
|---|---|---|
| Product form | : | Mixtures |
| Product name | : | Sodium Hydroxide, 50% w/w |
| CAS No | : | 1310-73-2 |
| Product code | : | LC24150 |
| Formula | : | NaOH |
| Synonyms | : | caustic soda 50% W/W / soda lye, 50%, aqueous solution / white caustic, 50%, aqueous solution |

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

| | | |
|---|---|---|
| Use of the substance/mixture | : | Industrial use |
| Recommended use | : | Laboratory chemicals |
| Restrictions on use | : | Not for food, drug or household use |

### 1.3. Details of the supplier of the safety data sheet

LabChem Inc
Jackson's Pointe Commerce Park Building 1000, 1010 Jackson's Pointe Court
Zelienople, PA 16063 - USA
T 412-826-5230 - F 724-473-0647
info@labchem.com - www.labchem.com

### 1.4. Emergency telephone number

| | | |
|---|---|---|
| Emergency number | : | CHEMTREC: 1-800-424-9300 or 011-703-527-3887 |

## SECTION 2: Hazard(s) identification

### 2.1. Classification of the substance or mixture

**GHS-US classification**

| | |
|---|---|
| Skin corrosion/irritation, Category 1B | H314 |
| Serious eye damage/eye irritation, Category 1 | H318 |
| Hazardous to the aquatic environment — Acute Hazard, Category 3 | H402 |

Full text of H statements : see section 16

### 2.2. Label elements

**GHS-US labelling**

Hazard pictograms (GHS-US) :



GHS05

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) :
H314 - Causes severe skin burns and eye damage
H402 - Harmful to aquatic life

Precautionary statements (GHS-US) :
P260 - Do not breathe mist, vapours, spray
P264 - Wash exposed skin thoroughly after handling
P273 - Avoid release to the environment
P280 - Wear protective gloves, protective clothing, eye protection, face protection
P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P363 - Wash contaminated clothing before reuse
P405 - Store locked up
P501 - Dispose of contents/container to comply with local, state and federal regulations
If inhaled: Remove person to fresh air and keep comfortable for breathing

### 2.3. Other hazards

No additional information available

### 2.4. Unknown acute toxicity (GHS US)

Not applicable

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

| Name | Product identifier | % | GHS-US classification |
|---|---|---|---|
| Sodium Hydroxide | (CAS No) 1310-73-2 | 50 | Acute Tox. 4 (Dermal), H312<br>Skin Corr. 1A, H314<br>Eye Dam. 1, H318<br>Aquatic Acute 3, H402 |
| Water | (CAS No) 7732-18-5 | 50 | Not classified |

Full text of hazard classes and H-statements : see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general : Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital. Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.

First-aid measures after skin contact : Wash immediately with lots of water (15 minutes)/shower. Do not apply (chemical) neutralizing agents. Remove clothing while washing. Do not remove clothing if it sticks to the skin. Cover wounds with sterile bandage. Consult a doctor/medical service. If burned surface > 10%: take victim to hospital. Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor/physician.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

First-aid measures after ingestion : Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Do not give activated charcoal. Do not give chemical antidote. Immediately consult a doctor/medical service. Call Poison Information Centre (www.big.be/antigif.htm). Take the container/vomit to the doctor/hospital. Ingestion of large quantities: immediately to hospital. Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician.

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : Causes severe skin burns and eye damage.

Symptoms/injuries after inhalation : EXPOSURE TO HIGH CONCENTRATIONS: Dry/sore throat. Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. FOLLOWING SYMPTOMS MAY APPEAR LATER: Possible laryngeal spasm/oedema. Risk of lung oedema. Respiratory difficulties.

Symptoms/injuries after skin contact : Caustic burns/corrosion of the skin. Slow-healing wounds.

Symptoms/injuries after eye contact : Corrosion of the eye tissue. Permanent eye damage. Causes serious eye damage.

Symptoms/injuries after ingestion : Vomiting. Diarrhoea. Burns to the gastric/intestinal mucosa. Possible esophageal perforation. Bleeding of the gastrointestinal tract. Shock. AFTER ABSORPTION OF HIGH QUANTITIES: Disturbances of consciousness.

Chronic symptoms : ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Dry skin. Skin rash/inflammation. Possible inflammation of the respiratory tract.

### 4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

## SECTION 5: Fire-fighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : EXTINGUISHING MEDIA FOR SURROUNDING FIRES: Adapt extinguishing media to the environment. Foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media : Solid water jet ineffective as extinguishing medium.

### 5.2. Special hazards arising from the substance or mixture

Fire hazard : DIRECT FIRE HAZARD. Non combustible. INDIRECT FIRE HAZARD. Reactions involving a fire hazard: see "Reactivity Hazard".

Explosion hazard : INDIRECT EXPLOSION HAZARD. Reactions with explosion hazards: see "Reactivity Hazard".

Reactivity : Violent exothermic reaction with water (moisture): (increased) risk of fire. On heating: release of corrosive gases/vapours. Absorbs the atmospheric CO2. Violent exothermic reaction with (some) acids. May be corrosive to metals. Reacts with (some) metals: release of highly flammable gases/vapours (hydrogen).

### 5.3. Advice for firefighters

Precautionary measures fire : Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.

Firefighting instructions : Cool tanks/drums with water spray/remove them into safety. Dilute toxic gases with water spray. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it.

Protection during firefighting : Heat/fire exposure: compressed air/oxygen apparatus.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

Protective equipment : Gloves. Face-shield. Corrosion-proof suit. Large spills/in enclosed spaces: compressed air apparatus. Large spills/in enclosed spaces: gas-tight suit. See "Material-Handling" to select protective clothing.

Emergency procedures : Mark the danger area. No naked flames. Wash contaminated clothes. Large spills/in confined spaces: consider evacuation. In case of hazardous reactions: keep upwind. In case of reactivity hazard: consider evacuation.

#### 6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Ventilate area.

### 6.2. Environmental precautions

Prevent soil and water pollution. Prevent spreading in sewers. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

### 6.3. Methods and material for containment and cleaning up

For containment : Contain released substance, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply. Dam up the liquid spill. Hazardous reaction: measure explosive gas-air mixture. Reaction: dilute combustible gas/vapour with water curtain. Heat exposure: dilute toxic gas/vapour with water spray. Take account of toxic/corrosive precipitation water.

Methods for cleaning up : Take up liquid spill into absorbent material, e.g.: sand, saw dust, kieselguhr. Scoop absorbed substance into closing containers. See "Material-handling" for suitable container materials. Carefully collect the spill/leftovers. Small quantities of liquid spill: neutralize with acid solution. Wash away neutralized product with plentiful water. Damaged/cooled tanks must be emptied. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Handle and open the container with care. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Keep away from naked flames/heat. Observe very strict hygiene - avoid contact. Keep container tightly closed. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

Hygiene measures : Wash exposed skin thoroughly after handling.

### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Comply with applicable regulations.

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : incompatible materials. Keep container closed when not in use.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

Storage temperature : > 15 °C

Heat and ignition sources : KEEP SUBSTANCE AWAY FROM: heat sources.

Prohibitions on mixed storage : KEEP SUBSTANCE AWAY FROM: combustible materials. (strong) acids. metals.

Storage area : Store in a dry area. Keep container in a well-ventilated place. Keep locked up. Protect against frost. Provide for a tub to collect spills. Unauthorized persons are not admitted. Meet the legal requirements.

Special rules on packaging : SPECIAL REQUIREMENTS: hermetical. dry. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

Packaging materials : SUITABLE MATERIAL: stainless steel. nickel. polyethylene. polypropylene. glass. stoneware/porcelain. MATERIAL TO AVOID: lead. aluminium. copper. tin. zinc. bronze.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

| **Sodium Hydroxide, 50% w/w (1310-73-2)** | | |
|---|---|---|
| OSHA | OSHA PEL (TWA) (mg/m³) | 2 mg/m³ |
| IDLH | US IDLH (mg/m³) | 10 mg/m³ |
| NIOSH | NIOSH REL (ceiling) (mg/m³) | 2 mg/m³ |

| **Sodium Hydroxide (1310-73-2)** | | |
|---|---|---|
| ACGIH | ACGIH Ceiling (mg/m³) | 2 mg/m³ (Sodium hydroxide; USA; Momentary value; TLV - Adopted Value) |
| OSHA | OSHA PEL (TWA) (mg/m³) | 2 mg/m³ |
| IDLH | US IDLH (mg/m³) | 10 mg/m³ |
| NIOSH | NIOSH REL (ceiling) (mg/m³) | 2 mg/m³ |

| **Water (7732-18-5)** |
|---|
| Not applicable |

### 8.2. Exposure controls

Appropriate engineering controls : Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Provide adequate general and local exhaust ventilation.

Personal protective equipment : Protective goggles. Gloves. Protective clothing. Face shield.



Materials for protective clothing : GIVE EXCELLENT RESISTANCE: nitrile rubber. GIVE GOOD RESISTANCE: No data available. GIVE LESS RESISTANCE: chlorinated polyethylene. styrene-butadiene rubber. nitrile rubber/PVC. GIVE POOR RESISTANCE: PVA. natural fibres.

Hand protection : Wear protective gloves.

| | | |
|---|---|---|
| Eye protection | : | Chemical goggles or face shield. Face shield. |
| Skin and body protection | : | Corrosion-proof clothing. |
| Respiratory protection | : | Wear gas mask with filter type B if conc. in air > exposure limit. |
| Other information | : | Do not eat, drink or smoke during use. |

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

| | | |
|---|---|---|
| Physical state | : | Liquid |
| Appearance | : | Liquid. |
| Colour | : | Colourless |
| Odour | : | Odourless |
| Odour threshold | : | No data available |
| pH | : | 14 (8 %) |
| pH solution | : | 8 % |
| Melting point | : | 12 °C |
| Freezing point | : | No data available |
| Boiling point | : | 143 °C |
| Flash point | : | Not applicable |
| Relative evaporation rate (butylacetate=1) | : | No data available |
| Flammability (solid, gas) | : | Non flammable. |
| Vapour pressure | : | 1.2 hPa (20 °C) |
| Relative vapour density at 20 °C | : | No data available |
| Relative density | : | 1.5 |
| Density | : | 1525 kg/m³ |
| Molecular mass | : | 40 g/mol |
| Solubility | : | Exothermically soluble in water. Soluble in ethanol. Soluble in methanol. Soluble in glycerol. Water: Complete |
| Log Pow | : | No data available |
| Auto-ignition temperature | : | Not applicable |
| Decomposition temperature | : | No data available |
| Viscosity, kinematic | : | No data available |
| Viscosity, dynamic | : | 79 mPa.s (20 °C) |
| Explosive limits | : | No data available |
| Explosive properties | : | Not applicable. |
| Oxidising properties | : | None. |

### 9.2. Other information

| | | |
|---|---|---|
| Minimum ignition energy | : | Not applicable |
| VOC content | : | Not applicable (inorganic) |
| Other properties | : | Clear. Hygroscopic. Slightly volatile. Substance has basic reaction. |

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Violent exothermic reaction with water (moisture): (increased) risk of fire. On heating: release of corrosive gases/vapours. Absorbs the atmospheric CO2. Violent exothermic reaction with (some) acids. May be corrosive to metals. Reacts with (some) metals: release of highly flammable gases/vapours (hydrogen).

### 10.2. Chemical stability

Stable under normal conditions. Absorbs the atmospheric CO2. Hygroscopic. Not established.

### 10.3. Possibility of hazardous reactions

Not established.

### 10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

### 10.5. Incompatible materials

Strong acids. metals.

### 10.6. Hazardous decomposition products

Sodium oxide. Thermal decomposition generates : Corrosive vapours.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Likely routes of exposure : Skin and eyes contact

Acute toxicity : Not classified

| Sodium Hydroxide (1310-73-2) | |
|---|---|
| ATE US (dermal) | 1350.000 mg/kg bodyweight |

| Water (7732-18-5) | |
|---|---|
| LD50 oral rat | ≥ 90000 mg/kg |
| ATE US (oral) | 90000.000 mg/kg bodyweight |

Skin corrosion/irritation : Causes severe skin burns and eye damage.
pH: 14 (8 %)

Serious eye damage/irritation : Causes serious eye damage.
pH: 14 (8 %)

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified
Based on available data, the classification criteria are not met

Carcinogenicity : Not classified

Reproductive toxicity : Not classified
Based on available data, the classification criteria are not met

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Potential adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

Symptoms/injuries after inhalation : EXPOSURE TO HIGH CONCENTRATIONS: Dry/sore throat. Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. FOLLOWING SYMPTOMS MAY APPEAR LATER: Possible laryngeal spasm/oedema. Risk of lung oedema. Respiratory difficulties.

Symptoms/injuries after skin contact : Caustic burns/corrosion of the skin. Slow-healing wounds.

Symptoms/injuries after eye contact : Corrosion of the eye tissue. Permanent eye damage. Causes serious eye damage.

Symptoms/injuries after ingestion : Vomiting. Diarrhoea. Burns to the gastric/intestinal mucosa. Possible esophageal perforation. Bleeding of the gastrointestinal tract. Shock. AFTER ABSORPTION OF HIGH QUANTITIES: Disturbances of consciousness.

Chronic symptoms : ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Dry skin. Skin rash/inflammation. Possible inflammation of the respiratory tract.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008.

Ecology - air : Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009). None of the known components is included in the list of fluorinated greenhouse gases (Regulation (EC) No 842/2006).

Ecology - water : Ground water pollutant. Maximum concentration in drinking water: 200 mg/l (sodium) (Directive 98/83/EC). Harmful to fishes. Harmful to invertebrates (Daphnia). pH shift.

| Sodium Hydroxide (1310-73-2) | |
|---|---|
| LC50 fish 1 | 45.4 mg/l (LC50; Other; 96 h; Salmo gairdneri; Static system; Fresh water; Experimental value) |

### 12.2. Persistence and degradability

| Sodium Hydroxide, 50% w/w (1310-73-2) | |
|---|---|
| Persistence and degradability | Biodegradability: not applicable. No (test) data on mobility of the components available. |

| Sodium Hydroxide (1310-73-2) | |
|---|---|
| Persistence and degradability | Biodegradability: not applicable. No (test)data on mobility of the substance available. |
| Biochemical oxygen demand (BOD) | Not applicable |
| Chemical oxygen demand (COD) | Not applicable |
| ThOD | Not applicable |

| Water (7732-18-5) | |
|---|---|
| Persistence and degradability | Not established. |

### 12.3. Bioaccumulative potential

| Sodium Hydroxide, 50% w/w (1310-73-2) | |
|---|---|
| Bioaccumulative potential | Does not contain bioaccumulative component(s). |

| Sodium Hydroxide (1310-73-2) | |
|---|---|
| Bioaccumulative potential | No bioaccumulation data available. |

| Water (7732-18-5) | |
|---|---|
| Bioaccumulative potential | Not established. |

### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

Effect on the global warming : No known effects from this product.

GWPmix comment : No known effects from this product.

Other information : Avoid release to the environment.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Waste disposal recommendations : Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle/reuse. Remove for physico-chemical/biological treatment. Do not discharge into drains or the environment.

Additional information : LWCA (the Netherlands): KGA category 05. Hazardous waste according to Directive 2008/98/EC.

Ecology - waste materials : Avoid release to the environment.

## SECTION 14: Transport information

### Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN1824 Sodium hydroxide solution, 8, II

UN-No.(DOT) : UN1824

Proper Shipping Name (DOT) : Sodium hydroxide solution

Transport hazard class(es) (DOT) : 8 - Class 8 - Corrosive material 49 CFR 173.136

Packing group (DOT) : II - Medium Danger

Hazard labels (DOT) : 8 - Corrosive



| | | |
|---|---|---|
| DOT Packaging Non Bulk (49 CFR 173.xxx) | : | 202 |
| DOT Packaging Bulk (49 CFR 173.xxx) | : | 242 |
| DOT Special Provisions (49 CFR 172.102) | : | B2 - MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks are not authorized.<br>IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized.<br>N34 - Aluminum construction materials are not authorized for any part of a packaging which is normally in contact with the hazardous material.<br>T7 - 4 178.274(d)(2) Normal..... 178.275(d)(3)<br>TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: tr is the maximum mean bulk temperature during transport, tf is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively. |
| DOT Packaging Exceptions (49 CFR 173.xxx) | : | 154 |
| DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) | : | 1 L |
| DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) | : | 30 L |
| DOT Vessel Stowage Location | : | A - The material may be stowed ‘‘on deck’’ or ‘‘under deck’’ on a cargo vessel and on a passenger vessel. |
| DOT Vessel Stowage Other | : | 52 - Stow ‘‘separated from’’ acids |
| Other information | : | No supplementary information available. |

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

| **Sodium Hydroxide, 50% w/w (1310-73-2)** | |
|---|---|
| Listed on the United States TSCA (Toxic Substances Control Act) inventory<br>Not subject to reporing requirements of the United States SARA Section 313 | |
| RQ (Reportable quantity, section 304 of EPA's List of Lists) | 1000 lb |
| SARA Section 311/312 Hazard Classes | Immediate (acute) health hazard |

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

| **Sodium Hydroxide (1310-73-2)** | |
|---|---|
| RQ (Reportable quantity, section 304 of EPA's List of Lists) | 1000 lb |
| SARA Section 311/312 Hazard Classes | Immediate (acute) health hazard |

### 15.2. International regulations

#### CANADA

| **Sodium Hydroxide, 50% w/w (1310-73-2)** | |
|---|---|
| WHMIS Classification | Class E - Corrosive Material |

| **Sodium Hydroxide (1310-73-2)** | |
|---|---|
| Listed on the Canadian DSL (Domestic Substances List) | |
| WHMIS Classification | Class E - Corrosive Material |

| **Water (7732-18-5)** | |
|---|---|
| WHMIS Classification | Uncontrolled product according to WHMIS classification criteria |

#### EU-Regulations

No additional information available

### National regulations
No additional information available

### 15.3. US State regulations
California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

## SECTION 16: Other information

Revision date : 02/07/2017

Other information : None.

Full text of H-statements: see section 16:

| | |
|---|---|
| H312 | Harmful in contact with skin |
| H314 | Causes severe skin burns and eye damage |
| H318 | Causes serious eye damage |
| H402 | Harmful to aquatic life |

NFPA health hazard : 3 - Materials that, under emergency conditions, can cause serious or permanent injury.

NFPA fire hazard : 0 - Materials that will not burn under typical dire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity : 1 - Materials that in themselves are normally stable but can become unstable at elevated temperatures and pressures.

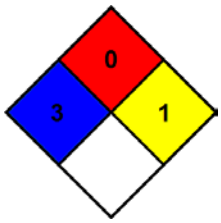


HMIS III Rating

Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

Flammability : 0 Minimal Hazard - Materials that will not burn

Physical : 1 Slight Hazard - Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors.

Personal protection : H

H - Splash goggles, Gloves, Synthetic apron, Vapor respirator

SDS US LabChem

*Information in this SDS is from available published sources and is believed to be accurate. No warranty, express or implied, is made and LabChem Inc assumes no liability resulting from the use of this SDS. The user must determine suitability of this information for his application.*

COLUMBUS CHEMICAL INDUSTRIES INC.

# Safety Data Sheet

# Sulfuric Acid, 93% PC

## 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Sulfuric Acid, 93% PC

**Synonyms/Generic Names:** Battery Acid, Dihydrogen Sulfate, Oil of Vitriol

**Product Number:** 5665

**Product Use:** Industrial, Manufacturing or Laboratory use

**Manufacturer:** Columbus Chemical Industries, Inc.
N4335 Temkin Rd.
Columbus, WI. 53925

**For More Information Call:** 920-623-2140 (Monday-Friday 8:00-4:30)

**In Case of Emergency Call:** CHEMTREC - 800-424-9300 or 703-527-3887 (24 Hours/Day, 7 Days/Week)

## 2. HAZARDS IDENTIFICATION

**OSHA Hazards:** Target organ effect, Corrosive

**Target Organs:** Teeth, Lungs

**Signal Words:** Danger

**Pictograms:**



**GHS Classification:**

| | |
|---|---|
| Skin corrosion | Category 1A |
| Serious eye damage | Category 1 |
| Acute aquatic toxicity | Category 3 |

**GHS Label Elements, including precautionary statements:**

**Hazard Statements:**

| | |
|---|---|
| H314 | Causes severe skin burns and eye damage. |
| H402 | Harmful to aquatic life. |

**Precautionary Statements:**

| | |
|---|---|
| P260 | Do not breathe dusts or mists. |
| P264 | Wash hands thoroughly after handling. |
| P273 | Avoid release to the environment. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| P301+P330+P331 | IF SWALLOWED: Rinse mouth. Do not induce vomiting. |

| | |
|---|---|
| P303+P361+P353 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. |
| P304+P340 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P310 | Immediately call a POISON CENTER/doctor/physician. |
| P363 | Wash contaminated clothing before reuse. |
| P405 | Store locked up. |
| P501 | Dispose of contents/container in accordance with local regulations. |

**Potential Health Effects**

| | |
|---|---|
| **Eyes** | Causes severe eye burns. |
| **Inhalation** | May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. |
| **Skin** | May be harmful if absorbed through skin. Causes skin burns. |
| **Ingestion** | May be harmful if swallowed. |

**NFPA Ratings**

| | |
|---|---|
| **Health** | 3 |
| **Flammability** | 0 |
| **Reactivity** | 2 |
| **Specific hazard** | W |

**HMIS Ratings**

| | |
|---|---|
| **Health** | 3 |
| **Fire** | 0 |
| **Reactivity** | 2 |
| **Personal** | J |

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

| Component | Weight % | CAS # | EINECS# / ELINCS# | Formula | Molecular Weight |
|---|---|---|---|---|---|
| Sulfuric Acid | 92-94 | 7664-93-9 | 231-939-5 | $H_2SO_4$ | 98.08 g/mol |
| Water | Balance | 7732-18-5 | 231-791-2 | $H_2O$ | 18.00 g/mol |

## 4. FIRST-AID MEASURES

| | |
|---|---|
| **Eyes** | Rinse with plenty of water for at least 15 minutes. Get medical attention immediately. |
| **Inhalation** | Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention immediately. |
| **Skin** | Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Get medical attention immediately. |
| **Ingestion** | **Do Not Induce Vomiting!** Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention immediately. |

## 5. FIRE-FIGHTING MEASURES

| | |
|---|---|
| **Suitable (and unsuitable) extinguishing media** | Product is not flammable. Use appropriate media for adjacent fire. Cool containers with water. |
| **Special protective equipment and precautions for firefighters** | Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots. |
| **Specific hazards arising from the chemical** | Emits toxic fumes (sulfur oxides, hydrogen sulfide gas) under fire conditions. (See also Stability and Reactivity section). |

## 6. ACCIDENTAL RELEASE MEASURES

| | |
|---|---|
| **Personal precautions, protective equipment and emergency procedures** | See section 8 for recommendations on the use of personal protective equipment. |
| **Environmental precautions** | Prevent spillage from entering drains. Any release to the environment may be subject to federal/national or local reporting requirements. |
| **Methods and materials for containment and cleaning up** | Prevent spillage from entering drains. Neutralize spill with sodium bicarbonate or lime. Absorb spill with noncombustible absorbent material, then place in a suitable container for disposal. Clean surfaces thoroughly with water to remove residual contamination. Dispose of all waste and cleanup materials in accordance with regulations. |

## 7. HANDLING AND STORAGE

**Precautions for safe handling**
See section 8 for recommendations on the use of personal protective equipment. Use with adequate ventilation. Wash thoroughly after using. Keep container closed when not in use. Avoid formation of aerosols.

**Conditions for safe storage, including any incompatibilities**
Store in cool, dry well ventilated area. Keep away from incompatible materials (see section 10 for incompatibilities).

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Occupational exposure controls:**

| Component | Exposure Limits | Basis | Entity |
|---|---|---|---|
| Sulfuric Acid | 0.2 $mg/m^3$ | TLV | ACGIH |
| | 1 $mg/m^3$ | PEL | OSHA |
| | 1 $mg/m^3$ | REL | NIOSH |
| | 15 $mg/m^3$ | IDLH | OSHA |

TWA: Time Weighted Average over 8 hours of work.
TLV: Threshold Limit Value over 8 hours of work.
REL: Recommended Exposure Limit
PEL: Permissible Exposure Limit
STEL: Short Term Exposure Limit during x minutes.
IDLH: Immediately Dangerous to Life or Health
WEEL: Workplace Environmental Exposure Levels
CEIL: Ceiling

**Personal Protection**

| | |
|---|---|
| **Eyes** | Wear chemical safety glasses or goggles, and face shield. |
| **Inhalation** | Provide local exhaust, preferably mechanical. If exposure levels are excessive, use an approved respirator. |
| **Skin** | Wear nitrile or rubber gloves, and full body suit. |
| **Other** | Not Available |

**Other Recommendations**
Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| Appearance (physical state, color, etc.) | Clear, colorless liquid. |
| Odor | Odorless. |
| Odor threshold | Not Available |
| pH | Not Available |
| Melting point/freezing point | Not Available |
| Initial boiling point and boiling range | Not Available |
| Flash point | Not Flammable |
| Evaporation rate | Not Available |
| Flammability (solid, gas) | Not Flammable |
| Upper/lower flammability or explosive limit | Not Explosive |
| Vapor pressure | Not Available |
| Vapor density | Not Available |
| Density | 1.8350 (water = 1) |
| Solubility (ies) | Soluble in water. |
| Partition coefficient: n-octanol/water | Not Available |
| Auto-ignition temperature | Not Available |
| Decomposition temperature | Not Available |

## 10. STABILITY AND REACTIVITY

| | |
|---|---|
| **Chemical Stability** | Stable |
| **Possibility of Hazardous Reactions** | Will not occur. |
| **Conditions to Avoid** | Moisture. |
| **Incompatible Materials** | Bases, halides, organic material, carbides, chlorates, fulminates, nitrates, picrates, cyanides, cyclopentadiene, cyclopentanone oxime, nitroaryl amines, hexalithium disilicide, phosphorus (III) oxide, powdered metals. |
| **Hazardous Decomposition Products** | Sulfur oxides, hydrogen sulfide gas. |

## 11. TOXICOLOGICAL INFORMATION

**Acute Toxicity**

*Sulfuric Acid*

| | |
|---|---|
| **Skin** | Not Available |
| **Eyes** | Not Available |
| **Respiratory** | LD50 – Rat – 510 mg/m$^3$ – 2h |
| **Ingestion** | LD50 – Rat – 2,140 mg/kg |

**Carcinogenicity**

| | |
|---|---|
| **IARC** | 1: Carcinogenic to humans (Sulfuric Acid-Aerosol). |
| **ACGIH** | A2: Suspected human carcinogen (Sulfuric Acid-Aerosol). |
| **NTP** | No components of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. |
| **OSHA** | No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. |

**Signs & Symptoms of Exposure**

| | |
|---|---|
| **Skin** | Burning, itching, redness, inflammation upon exposed tissue. |
| **Eyes** | Eye burns, watering eyes. |
| **Respiratory** | Burning, choking, coughing, shortness of breath. |
| **Ingestion** | Nausea, vomiting, diarrhea, burning, severe pain. |

| | |
|---|---|
| **Chronic Toxicity** | May cause bleeding of nose and gums, nasal and oral mucosal ulceration, conjunctivitis, yellowing of teeth and erosion of tooth enamel. |
| **Teratogenicity** | Not Available |
| **Mutagenicity** | Not Available |
| **Embryotoxicity** | Not Available |
| **Specific Target Organ Toxicity** | Not Available |
| **Reproductive Toxicity** | Not Available |
| **Respiratory/Skin Sensitization** | Not Available |

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

*Sulfuric Acid*

| | |
|---|---|
| **Aquatic Vertebrate** | LC50 – Gambusia affinis – 42 mg/L – 96h |
| **Aquatic Invertebrate** | EC50 - Daphnia magna (Water flea) - 29 mg/l - 24 h |
| **Terrestrial** | Not Available |

| | |
|---|---|
| **Persistence and Degradability** | Not Available |
| **Bioaccumulative Potential** | Does not accumulate. |
| **Mobility in Soil** | Not Available |
| **PBT and vPvB Assessment** | Not Available |
| **Other Adverse Effects** | Not Available |

## 13. DISPOSAL CONSIDERATIONS

| | |
|---|---|
| **Waste Residues** | Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product container or residue. |
| **Product Containers** | Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product container. |

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.

## 14. TRANSPORTATION INFORMATION

| | |
|---|---|
| US DOT | UN1830, Sulfuric acid, 8, pg II |
| TDG | UN1830, SULFURIC ACID, 8, pg II |
| IMDG | UN1830, SULFURIC ACID, 8, pg II |
| Marine Pollutant | No |
| IATA/ICAO | UN1830, Sulfuric acid, 8, pg II |

## 15. REGULATORY INFORMATION

| | |
|---|---|
| TSCA Inventory Status | All ingredients are listed on the TSCA inventory. |
| DSCL (EEC) | All ingredients are listed on the DSCL inventory. |
| California Proposition 65 | Listed: Sulfuric Acid (aerosol) |
| SARA 302 | Listed: Sulfuric Acid (aerosol) |
| SARA 304 | Listed: Sulfuric Acid (aerosol) |
| SARA 311 | Acute Health Hazard, Chronic Health Hazard |
| SARA 312 | Acute Health Hazard, Chronic Health Hazard |
| SARA 313 | Listed: Sulfuric Acid (aerosol) |
| WHMIS Canada | Class E: Corrosive material.<br>Class D-1A: Material causing other toxic effects (VERY TOXIC). |

## 16. OTHER INFORMATION

| Revision | Date |
|---|---|
| Revision 1 | 02/15/2013 |
| Revision 2 | 01/22/2015 |
| | |

Disclaimer: Columbus Chemical Industries, Inc. (“Columbus”) believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because Columbus has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. COLUMBUS MAKES NO WARRANTY, EXPRESS OR IMPLIED, INCLUDING (WITHOUT LIMITATION) WARRANTIES WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN OR WITH RESPECT TO FITNESS FOR ANY PARTICULAR USE.

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

| | | |
|---|---|---|
| Trade name | : | TOLCIDE PS50A |
| FIFRA Registration number | : | 4564-17 |

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

| | | |
|---|---|---|
| Uses of the Substance / Mixture | : | Specific use(s): FIFRA regulated use only., Biocidal product |

### 1.3 Details of the supplier of the safety data sheet

| | | |
|---|---|---|
| Company | : | Solvay USA Inc.,<br>NOVECARE<br>8 Cedar Brook Drive<br>Cranbury, NJ, 08512-7500, US<br>Telephone number: 800-973-7873 |

### 1.4 Emergency telephone

FOR EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CONTACT: CHEMTREC 800-424-9300 within the United States and Canada, or 703-527-3887 for international collect calls.

## SECTION 2: Hazards identification

Although OSHA has not adopted the environmental portion of the GHS regulations, this document may include information on environmental effects.

### 2.1 Classification of the substance or mixture

**HCS 2012 (29 CFR 1910.1200)**

| | |
|---|---|
| Acute toxicity, Category 4 | H302: Harmful if swallowed. |
| Acute toxicity, Category 3 | H331: Toxic if inhaled. |
| Serious eye damage, Category 1 | H318: Causes serious eye damage. |
| Skin sensitization, Category 1 | H317: May cause an allergic skin reaction. |
| Reproductive toxicity, Category 2 | H361: Suspected of damaging fertility or the unborn child. |

### 2.2 Label elements

**HCS 2012 (29 CFR 1910.1200)**

Pictogram :



| | | |
|---|---|---|
| Signal Word | : | Danger |

**Hazard Statements:**

| | |
|---|---|
| H302 | Harmful if swallowed. |
| H317 | May cause an allergic skin reaction. |
| H318 | Causes serious eye damage. |
| H331 | Toxic if inhaled. |
| H361 | Suspected of damaging fertility or the unborn child. |

**Precautionary Statements:**

Prevention

| | |
|---|---|
| P201 | Obtain special instructions before use. |
| P202 | Do not handle until all safety precautions have been read and understood. |
| P261 | Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray. |
| P264 | Wash skin thoroughly after handling. |
| P270 | Do not eat, drink or smoke when using this product. |
| P271 | Use only outdoors or in a well-ventilated area. |
| P272 | Contaminated work clothing must not be allowed out of the workplace. |
| P280 | Wear eye protection/ face protection. |
| P280 | Wear protective gloves. |
| P281 | Use personal protective equipment as required. |

Response

| | |
|---|---|
| P301 + P312 | IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. |
| P302 + P352 | IF ON SKIN: Wash with plenty of soap and water. |
| P304 + P340 | IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. |
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P308 + P313 | IF exposed or concerned: Get medical advice/ attention. |
| P310 | Immediately call a POISON CENTER or doctor/ physician. |
| P330 | Rinse mouth. |
| P333 + P313 | If skin irritation or rash occurs: Get medical advice/ attention. |
| P363 | Wash contaminated clothing before reuse. |

Storage

| | |
|---|---|
| P403 + P233 | Store in a well-ventilated place. Keep container tightly closed. |
| P405 | Store locked up. |

Disposal

| | |
|---|---|
| P501 | Dispose of contents/ container to an approved waste disposal plant. |

**2.3 Other hazards which do not result in classification**

H400: Very toxic to aquatic life.
H411: Toxic to aquatic life with long lasting effects.

Possible damage to liver following repeated or prolonged exposure by ingestion.

## SECTION 3: Composition/information on ingredients

### 3.1 Substance

Not applicable, this product is a mixture.

### 3.2 Mixture

Chemical nature : Aqueous solution

**Hazardous Ingredients and Impurities**

| Chemical Name | Identification number CAS-No. | Concentration [%] |
|---|---|---|
| Tetrakis(Hydroxymethyl) Phosphonium Sulfate | 55566-30-8 | 50 |

## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

General advice : Show this material safety data sheet to the doctor in attendance.
First responder needs to protect himself.
Place affected apparel in a sealed bag for subsequent decontamination.
Plan first aid action before beginning work with this product.
In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

If inhaled : Move to fresh air.
Keep at rest.
Consult a physician.

Skin contact : Take off contaminated clothing and shoes immediately.
Wash off with plenty of water.
Wash immediately and thoroughly for a prolonged period (at least 15 minutes).
Get medical attention if irritation develops and persists.

Eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Get immediate medical advice/ attention.

Ingestion : Do not induce vomiting without medical advice.
If victim is conscious:
Rinse mouth with water.
Keep at rest.
Never give anything by mouth to an unconscious person.
Do not leave the victim unattended.
Vomiting may occur spontaneously
Risk of product entering the lungs on vomiting after ingestion.
Lay victim on side.
Get immediate medical advice/ attention.

**4.2 Most important symptoms and effects, both acute and delayed**

| | | |
|---|---|---|
| Symptoms | : | Lachrymation<br>Ingestion may provoke the following symptoms:<br>Nausea<br>Liver disorders |
| Risks | : | Skin contact may aggravate existing skin disease |

**4.3 Indication of any immediate medical attention and special treatment needed**

| | | |
|---|---|---|
| Notes to physician | : | All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.<br><br>Treat symptomatically.<br>There is no specific antidote available. |

## SECTION 5: Firefighting measures

| | | |
|---|---|---|
| Flash point | : | Not applicable (aqueous liquid). |
| Autoignition temperature | : | Not applicable |
| Flammability / Explosive limit | : | no data available |

**5.1 Extinguishing media**

| | | |
|---|---|---|
| Suitable extinguishing media | : | In case of fire, use water/water spray/water jet/carbon dioxide/sand/foam/alcohol resistant foam/chemical powder for extinction. |
| Unsuitable extinguishing media | : | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |

**5.2 Special hazards arising from the substance or mixture**

| | | |
|---|---|---|
| Specific hazards during fire fighting | : | Harmful or toxic vapors are released.<br>Do not allow run-off from fire fighting to enter drains or water courses.<br>Under fire conditions:<br>Will burn<br>(following evaporation of water)<br>Hazardous decomposition products<br>Phosphorus trihydride (phosphine)<br>Oxides of phosphorus<br>Sulfur oxides<br>Carbon oxides |

**5.3 Advice for firefighters**

| | | |
|---|---|---|
| Special protective equipment for fire-fighters | : | Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing. |

| | | |
|---|---|---|
| | | In the event of fire, wear self-contained breathing apparatus.<br>Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing |
| Specific fire fighting methods | : | Standard procedure for chemical fires. |
| Further information | : | Collect contaminated fire extinguishing water separately. This must not be discharged into drains.<br>Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. |

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

| | | |
|---|---|---|
| Personal precautions, protective equipment and emergency procedures | : | Do not breathe spray.<br>Avoid contact with the skin and the eyes.<br>Use personal protective equipment.<br>Ensure adequate ventilation.<br>Evacuate personnel to safe areas. |

### 6.2 Environmental precautions

| | | |
|---|---|---|
| Environmental precautions | : | Do not allow uncontrolled discharge of product into the environment.<br>Contain the spilled material by diking.<br>Do not flush into surface water or sanitary sewer system.<br>Do not let product enter drains.<br>Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies |

### 6.3 Methods and materials for containment and cleaning up

| | | |
|---|---|---|
| Recovery | : | Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).<br>Keep in suitable, closed containers for disposal. |
| | : | Never return spills in original containers for re-use. |
| Decontamination / cleaning | : | Wash nonrecoverable remainder with large amounts of water.<br>Recover the cleaning water for subsequent disposal. |
| | : | Decontaminate tools, equipment and personal protective equipment in a segregated area. |
| Disposal | : | Dispose of contents/ container to an approved waste disposal plant.<br>Dispose of in accordance with local regulations. |

### 6.4 Reference to other sections

| | | |
|---|---|---|
| Reference to other sections | : | For personal protection see section 8. |

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

| | | |
|---|---|---|
| Technical measures | : | Provide adequate ventilation. |
| Advice on safe handling and usage | : | Avoid exposure - obtain special instructions before use.<br>This product must only be handled by skilled operators.<br>Reduce the duration of exposure to the minimum required.<br><br>Avoid formation of aerosol.<br>Avoid the formation or spread of mists in the atmosphere.<br>Handle in accordance with good industrial hygiene and safety practice.<br>Use only with adequate ventilation/personal protection.<br><br>Do NOT handle without gloves. |
| Hygiene measures | : | Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this materials:<br>1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.<br>2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.<br>3) Wash exposed skin promptly to remove accidental splashes or contact with material. |

### 7.2 Conditions for safe storage, including any incompatibilities

| | | |
|---|---|---|
| Technical Measures for storage | : | Prevent unauthorized access.<br>Keep container tightly closed in a dry and well-ventilated place.<br>Containers which are opened must be carefully resealed and kept upright to prevent leakage.<br>Take all necessary measures to avoid accidental discharge of products into drains and waterways due to the rupture of containers or transfer systems. |

**Storage conditions**

| | | |
|---|---|---|
| Recommended | : | Keep in a dry, cool and well-ventilated place.<br>Keep container tightly closed. |
| To be avoided | : | Keep away from incompatible materials to be indicated by the manufacturer<br>Keep away from open flames, hot surfaces and sources of ignition. |
| Incompatible products | : | Do not mix with incompatible materials (See list, section 10). |

**Packaging Measures**

| | | |
|---|---|---|
| Packaging Measures | : | Polyethylene or polypropylene drums., Stainless steel |
| Packaging materials—Recommended | : | Plastic materials (polyethylene). |
| Packaging materials—To be avoided | : | Ordinary steel. |

**Storage stability**

| | | |
|---|---|---|
| Storage temperature | : | no data available |
| Other data | : | No decomposition if stored and applied as directed. |

**7.3 Specific end use(s)**

no data available

## SECTION 8: Exposure controls/personal protection

Introductory Remarks: These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

**8.1 Control parameters**

**Ingredients with workplace control parameters**

| Ingredients | Value type | Value | Basis |
|---|---|---|---|
| Tetrakis(Hydroxymethyl) Phosphonium Sulfate | TWA | 2 mg/m3 | ACGIH |
| | Central nervous system, 2014 Adoption, Not classifiable as a human carcinogen | | |

**8.2 Exposure controls**

**Control measures**

| | | |
|---|---|---|
| Engineering measures | : | Where engineering controls are indicated by use conditions or a potential for excessive exposure exists, the following traditional exposure control techniques may be used to effectively minimize employee exposures :<br><br>Avoid splashes.<br>Effective exhaust ventilation system<br>Facilities and equipment easily cleanable.<br>Separate rooms are required for washing, showering and changing clothes. |

**Personal protective equipment**

| | | |
|---|---|---|
| Respiratory protection | : | When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.<br><br>Use a respirator with an approved filter if a risk assessment indicates this is necessary. |
| Hand protection | : | Glove material: Polyvinyl alcohol or nitrile- butyl-rubber gloves<br>Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.<br>Gloves must be inspected prior to use.<br>Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. |
| Eye protection | : | Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material.<br><br>Eye contact should be prevented through the use of:<br><br>Safety glasses with side-shields<br>In case of contact through splashing:<br>Wear face-shield and protective suit. |
| Skin and body protection | : | Wear suitable protective clothing, gloves and eye/face protection.<br><br>Choose body protection according to the amount and concentration of the dangerous substance at the work place.<br>Remove and wash contaminated apparel. |
| Hygiene measures | : | Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this materials:<br>1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.<br>2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.<br>3) Wash exposed skin promptly to remove accidental splashes or contact with material. |
| Protective measures | : | Always have on hand a first-aid kit, together with proper instructions.<br>Ensure that eyewash stations and safety showers are close to the workstation location.<br>The protective equipment must be selected in accordance with current local standards and in cooperation with the supplier of the protective equipment.<br>Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the potential hazards, and/or risks that may occur during use. |

## SECTION 9: Physical and chemical properties

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product information phone number in Section 1 for its exact specifications.

### 9.1 Information on basic physical and chemical properties

| | | |
|---|---|---|
| Appearance | : | Form : Aqueous solution<br>Physical state: liquid<br>Color: pale yellow to pale pink |
| Odor | : | characteristic |
| Odor Threshold | : | no data available |
| pH | : | 3.0 - 4.0 ( 1 % (m/v)) |
| Freezing point | : | < 14 °F (< -10 °C) |
| Flash point | : | Not applicable (aqueous liquid). |
| Evaporation rate (Butylacetate = 1) | : | no data available |
| Flammability (solid, gas) | : | The product is not flammable. |
| Flammability / Explosive limit | : | no data available |
| Autoignition temperature | : | Not applicable |
| Vapor pressure | : | no data available |
| Vapor density | : | no data available |
| Density | : | 1.21 - 1.29 g/cm3 ( 68 °F (20 °C)) |
| Solubility | : | Water solubility :<br>completely miscible<br><br>Solubility in other solvents:<br>not determined |
| Partition coefficient: n-octanol/water | : | log Pow: -9.8<br>THPS 75%, Structure-activity relationship (SAR), estimated<br><br>log Pow: -4.38<br>Polymer, Structure-activity relationship (SAR), estimated |
| Thermal decomposition | : | > 320 °F (160 °C) |

| | | |
|---|---|---|
| Viscosity | : | Viscosity, kinematic : 4 mm2/s ( 73 °F (23 °C)) |
| Explosive properties | : | no data available |
| Oxidizing properties | : | Not considered as oxidizing. |

**9.2 Other information**

| | | |
|---|---|---|
| Molecular weight | : | 406.3 g/mol |

## SECTION 10: Stability and reactivity

**10.1 Reactivity**

| | | |
|---|---|---|
| Reactivity | : | Stable at normal ambient temperature and pressure. |

**10.2 Chemical stability**

| | | |
|---|---|---|
| Chemical stability | : | Stable under recommended storage conditions. |

**10.3 Possibility of hazardous reactions**

No decomposition if stored and applied as directed.

| | | |
|---|---|---|
| Polymerization | : | Hazardous polymerization does not occur. |

**10.4 Conditions to avoid**

| | | |
|---|---|---|
| Conditions to avoid | : | No dangerous reaction known under conditions of normal use. |

**10.5 Incompatible materials**

| | | |
|---|---|---|
| Materials to avoid | : | Strong acids<br>Strong bases<br>Strong oxidizing agents<br>Strong reducing agents. |

**10.6 Hazardous decomposition products**

| | | |
|---|---|---|
| Decomposition products | : | Oxides of phosphorus<br>Sulfur oxides<br>Hydrogen<br>Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).<br>PHOSPHINE |

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | | |
|---|---|---|
| Acute oral toxicity | : | The product itself has not been tested.<br>According to the data on the components<br>According to the classification criteria for mixtures.<br>Harmful if swallowed.<br><br>LD50 : 575 mg/kg - Rat , for males and females<br>THPS 75%<br>Unpublished internal reports<br><br>LD50 : > 2,000 mg/kg - Rat<br>Polymer<br>Unpublished internal reports |
| Acute inhalation toxicity | : | The product itself has not been tested.<br>Data available only for some components.<br>According to the classification criteria for mixtures.<br>Toxic by inhalation.<br><br>LC50 - 4 h ( dust/mist ) : 0.59 mg/l - Rat , for males and females<br>THPS 75%<br>Published data |
| Acute dermal toxicity | : | The product itself has not been tested.<br>Data available only for some components.<br>According to the classification criteria for mixtures.<br>Not classified as harmful by contact with skin<br><br>LD50 : > 2,000 mg/kg - Rat , for males and females<br>THPS 75%<br>Unpublished internal reports |
| Acute toxicity (other routes of administration) | : | no data available |

**Skin corrosion/irritation**

Skin irritation : The product itself has not been tested.
According to the data on the components
According to the classification criteria for mixtures.
Not classified as irritating to skin

Rabbit
No skin irritation
Method: OECD Test Guideline 404
THPS 75%
Unpublished internal reports

Rabbit
Method: OECD Test Guideline 404
Unpublished internal reports
Polymer
Not classified as irritating to skin

**Serious eye damage/eye irritation**

Eye irritation : The product itself has not been tested.
According to the data on the components
According to the classification criteria for mixtures.
Risk of serious damage to eyes.

Rabbit
Risk of serious damage to eyes.
Method: OECD Test Guideline 405
THPS 75%
Unpublished internal reports

Rabbit
Method: OECD Test Guideline 405
Polymer
Not classified as irritating to eyes
Unpublished internal reports

**Respiratory or skin sensitization**

Sensitization : Magnusson and Kligman method - Guinea pig
May cause sensitization by skin contact.
THPS 75%
Unpublished internal reports

Magnusson and Kligman method - Guinea pig
Polymer
not sensitizing
Unpublished internal reports

**Mutagenicity**

Genotoxicity in vitro : According to the data on the components

Mutagenicity (Salmonella typhimurium - reverse mutation assay)
with and without metabolic activation
negative
THPS 75%
Unpublished internal reports

Mutagenicity (in vitro mammalian cytogenetic test)
Strain: CHO
with and without metabolic activation
positive
THPS 75%
Unpublished internal reports

UDS test
Strain: Hepatocyte (primary culture)
negative
THPS 75%
Unpublished internal reports

Mouse lymphoma test / TK
with and without metabolic activation
positive
THPS 75%
Unpublished internal reports

Mutagenicity (Escherichia coli - reverse mutation assay)
with and without metabolic activation
negative
Polymer
Unpublished internal reports

Genotoxicity in vivo : Data available only for some components.
Product is not considered to be genotoxic

Rodent dominant Lethal test - Rat
negative
THPS 75%
Unpublished internal reports

In vivo micronucleus test - Mouse
negative
THPS 75%
Unpublished internal reports

**Carcinogenicity**

Carcinogenicity : Data available only for some components.

Rat Oral exposure
THPS 75%
Animal testing did not show any carcinogenic effects.
Published data

Mouse Oral exposure
THPS 75%
Animal testing did not show any carcinogenic effects.
Published data

This product does not contain any ingredient designated as probable or suspected human carcinogens by:
NTP
IARC
OSHA
ACGIH

**Toxicity for reproduction and development**

Toxicity to reproduction / fertility : Data available only for some components.

Fertility study 2 generations - Rat
Oral exposure
THPS 75%
no impairment of fertility has been observed
Unpublished internal reports

Developmental Toxicity/Teratogenicity : Data available only for some components.

Rat
Oral exposure
NOEL teratogenicity: 60 mg/kg
NOEL maternal: 15 mg/kg

THPS 75%
Unpublished internal reports

Rabbit
Oral exposure
NOEL teratogenicity: 18 mg/kg
NOEL maternal: 18 mg/kg

THPS 75%
Effects on development were observed
Unpublished internal reports

**STOT**

STOT-single exposure : Toxicology Assessment:
The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT-repeated exposure : Toxicology Assessment:

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Data available only for some components.

Oral exposure 90 Days - Rat , for males and females
NOEL: 1 mg/kg
THPS 75%
Liver toxicity
Unpublished internal reports

**Neurological effects**

Neurological effects : THPS 75%, The product does not induce inhibition, Screening biochemistry test kit for cholinesterase activity inhibition

Carcinogenicity

Tetrakis(Hydroxymethyl) Phosphonium Sulfate : The product is not considered to be carcinogenic.

Teratogenicity

Tetrakis(Hydroxymethyl) Phosphonium Sulfate : Suspected human reproductive toxicant

**Aspiration toxicity**

Aspiration toxicity : no data available

## SECTION 12: Ecological information

### 12.1 Toxicity

**Aquatic Compartment**

Acute toxicity to fish : LC50 - 96 h : 95 mg/l - Oncorhynchus mykiss (rainbow trout)
THPS 75%
Unpublished internal reports

LC50 - 96 h : 87 mg/l - Pleuronectes platessa (European Plaice)
THPS 75%
Unpublished internal reports

| | | |
|---|---|---|
| Acute toxicity to daphnia and other aquatic invertebrates. | : | EC50 - 48 h : 15.1 mg/l - Daphnia magna (Water flea)<br>THPS 75%<br>Unpublished internal reports |
| | : | EC50 - 48 h : 17 mg/l - Daphnia magna (Water flea)<br>Polymer<br>Harmful to aquatic organisms.<br>Test results are based on the dry product.<br>Unpublished internal reports |
| | : | EC50 - 48 h : 0.4 mg/l - Crustacean: Acartia tonsa<br>THPS 75% |
| | : | EC50 - 96 h : 1,000 mg/l - Crustacean: Americamysis bahia<br>Polymer<br>Unpublished internal reports |
| Toxicity to aquatic plants | : | EC50 - 96 h : 0.66 mg/l - Pseudokirchneriella subcapitata (microalgae)<br>THPS 75%<br>Unpublished internal reports |
| | : | EC50 - 96 h : 0.16 mg/l - Skeletonema costatum (marine diatom)<br>THPS 75%<br>Unpublished internal reports |
| | : | NOEC - 96 h : 0.059 mg/l - Skeletonema costatum (marine diatom)<br>THPS 75%<br>Unpublished internal reports |
| Toxicity to microorganisms | : | EC50 - 3 h : 24 mg/l - activated sludge<br>THPS 75%<br>Unpublished internal reports |
| | | EC50 - 3 h : 2,200 mg/l - activated sludge<br>Polymer<br>Test results are based on the dry product.<br>Unpublished internal reports |
| Chronic toxicity to fish | : | NOEC: 1.1 mg/l - 32 d - Pimephales promelas (fathead minnow)<br>THPS 75%<br>Unpublished internal reports |
| Chronic toxicity to daphnia and other aquatic invertebrates. | : | NOEC: 0.032 mg/l - 21 d - Daphnia magna (Water flea)<br>Method: OECD Test Guideline 202<br>THPS 75%<br>Unpublished internal reports |

**Sediment compartment**
Toxicity to benthic organims

| | | |
|---|---|---|
| Tetrakis(Hydroxymethyl) Phosphonium Sulfate | : | EC50: 619 Exposure duration: 5 Days<br>Unpublished internal reports |

**Terrestrial Compartment**
Toxicity to soil dwelling organisms

| | | |
|---|---|---|
| Tetrakis(Hydroxymethyl) Phosphonium Sulfate | : | LC50: 960 mg/kg - 14 Days - Eisenia fetida (earthworms)<br>Method: OECD Test Guideline 207 |

Toxicity to terrestrial plants

| | | |
|---|---|---|
| Tetrakis(Hydroxymethyl) Phosphonium Sulfate | : | EC50: 102 mg/kg - 14 Days<br>Method: OECD Test Guideline 208 |

**Ecotoxicity assessment**

| | | |
|---|---|---|
| Acute aquatic toxicity | : | According to the classification criteria for mixtures.<br>Very toxic to aquatic life. |
| Chronic aquatic toxicity | : | Toxic to aquatic life with long lasting effects. |

**M-Factor**

| | | |
|---|---|---|
| Tetrakis(Hydroxymethyl) Phosphonium Sulfate | : | Acute aquatic toxicity = 1<br>( according to the Globally Harmonized System (GHS) ) |

**12.2 Persistence and degradability**

**Biodegradability**

| | | |
|---|---|---|
| Biodegradability | : | Ultimate aerobic biodegradability<br>Method: Simulation study<br>70 % - 21 d<br>Readily biodegradable.<br>THPS 75%<br>US EPA FIFRA, Subdivision N, § 162-4<br>Unpublished internal reports<br><br>Ultimate aerobic biodegradability<br>Not readily biodegradable.<br>Polymer<br>Unpublished internal reports<br><br>anaerobic<br>Method: Simulation study<br>60 % - 30 d<br>THPS 75%<br>US EPA FIFRA, Subdivision N, § 162-3<br>Unpublished internal reports<br><br>Product is not persistent. |

**Stability**

Stability in water

| | | |
|---|---|---|
| Tetrakis(Hydroxymethyl) Phosphonium Sulfate | : | DT50: Half-life value: 131 Days (77 °F (25 °C))<br>pH: 5.0<br>Method: according to a standardized method<br>Unpublished internal reports<br><br>DT50: Half-life value: 72 Days (77 °F (25 °C))<br>pH: 7.0<br>Method: according to a standardized method<br>Unpublished internal reports<br><br>DT50: Half-life value: 7 Days (77 °F (25 °C))<br>pH: 9.0<br>Method: according to a standardized method<br>Unpublished internal reports |

Photodegradation

| | | |
|---|---|---|
| Tetrakis(Hydroxymethyl) Phosphonium Sulfate | : | Sensitizer: OH<br>Concentration sensitizer in molecule/cm3: 1,500,000 1/cm3<br>Rate constant in cm3 / molecule*s: 2.7E-11 cm3/s<br>Half-life indirect photolysis: 0.4 Days<br>Structure-activity relationship (SAR)<br>Published data |
| Other Physicochemical reactions | : | THPS 75%<br>Product is easily oxidizable in aqueous media in dilute solutions |

**Degradability assessment**

Degradability assessment

| | | |
|---|---|---|
| Tetrakis(Hydroxymethyl) Phosphonium Sulfate | : | The product is considered to be rapidly degradable in the environment |

**12.3 Bioaccumulative potential**

| | | |
|---|---|---|
| Partition coefficient: n-octanol/water | : | According to the data on the components<br>Not potentially bioaccumulable<br>Structure-activity relationship (SAR) |

**12.4 Mobility in soil**

| | | |
|---|---|---|
| Adsorption potential (Koc) | : | Log Koc: 2.2<br>THPS 75%<br>Moderately mobile in soils<br>Unpublished internal reports |
| Known distribution to environmental compartments | : | Ultimate destination of the product: Water |

**12.5 Results of PBT and vPvB assessment**

| | | |
|---|---|---|
| Results of PBT and vPvB assessment | : | This mixture contains no substance considered to be persistent, bioaccumulating, and toxic (PBT)., This mixture contains no substance considered to be very persistent and very bioaccumulating (vPvB). |

**12.6 Other adverse effects**

Environment assessment : According to the classification criteria for mixtures.
Very toxic to aquatic life.
Toxic to aquatic life with long lasting effects.

## SECTION 13: Disposal considerations

**13.1 Waste treatment methods**

**Product Disposal**

Advice on Disposal : Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal laws and regulations. Consult state and local regulations regarding the proper disposal of this material.

Waste Code : EPA:
Hazardous Waste – NO

**Advice on cleaning and disposal of packaging**

Advice : Take preliminary precautions based on the dangerous properties of the product.
Empty the packaging completely prior to disposal.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
The user's attention is drawn to the possible existence of local regulations regarding disposal.

## SECTION 14: Transport information

Transportation status: IMPORTANT! Statements below provide additional data on listed transport classification.
The listed Transportation Classification does not address regulatory variations due to changes in package size, mode of shipment or other regulatory descriptors.

**DOT**

**14.1 UN number** UN 2810

**14.2 Dangerous Good Description** UN 2810 TOXIC, LIQUIDS, ORGANIC, N.O.S. (tetrakis(hydroxymethyl) phosphonium sulphate), 6.1, III

**14.3 Transport hazard class** 6.1

**14.4 Packing group**

| | |
|---|---|
| Packing group | III |
| Label(s) | 6.1 |
| ERG No | 153 |

| | |
|---|---|
| **14.5 Environmental hazards** | YES |
| **Marine pollutant** | Marine Pollutant (tetrakis(hydroxymethyl) phosphonium sulphate) |

**TDG**

| | |
|---|---|
| **14.1 UN number** | UN 2810 |
| **14.2 Dangerous Good Description** | UN 2810 TOXIC LIQUID, ORGANIC, N.O.S. (tetrakis(hydroxymethyl) phosphonium sulphate), 6.1, III |
| **14.3 Transport hazard class** | 6.1 |
| **14.4 Packing group** | |
| Packing group | III |
| Label(s) | 6.1 |
| ERG No | 153 |
| **14.5 Environmental hazards** | YES |
| **Marine pollutant** | Marine Pollutant (tetrakis(hydroxymethyl) phosphonium sulphate) |

**IMDG**

| | |
|---|---|
| **14.1 UN number** | UN 2810 |
| **14.2 Dangerous Good Description** | UN 2810 TOXIC LIQUID, ORGANIC, N.O.S. (tetrakis(hydroxymethyl) phosphonium sulphate), 6.1, III |
| **14.3 Transport hazard class** | 6.1 |
| **14.4 Packing group** | |
| Packing group | III |
| Label(s) | 6.1 |
| EmS | F-A , S-A |
| **14.5 Environmental hazards** | YES |
| **Marine pollutant** | |

**14.6 Special precautions for user**
For personal protection see section 8.

**IATA**

| | |
|---|---|
| **14.1 UN number** | UN 2810 |
| **14.2 Dangerous Good Description** | UN 2810 TOXIC LIQUID, ORGANIC, N.O.S. (tetrakis(hydroxymethyl) phosphonium sulphate), 6.1, III |

**14.3 Transport hazard class** 6.1

**14.4 Packing group**

| | |
|---|---|
| Packing group | III |
| Label(s): | 6.1 |
| Packing instruction (cargo aircraft) | 663 |
| Max net qty / pkg | 220.00 L |
| Packing instruction (passenger aircraft) | 655 |
| Max net qty / pkg | 60.00 L |

**14.5 Environmental hazards** YES
**Marine pollutant**

**14.6 Special precautions for user**
For personal protection see section 8.

Note: The above regulatory prescriptions are those valid on the date of publication of this sheet. Given the possible evolution of transportation regulations for hazardous materials, it would be advisable to check their validity with your sales office.

## SECTION 15: Regulatory information

**15.1 Notification status**

| | | |
|---|---|---|
| United States TSCA Inventory | : | e (special case)<br>This product is regulated under the United States Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). |
| Canadian Domestic Substances List (DSL) | : | YES (positive listing)<br>All components of this product are on the Canadian DSL. |
| Australia Inventory of Chemical Substances (AICS) | : | n (Negative listing)<br>Not in compliance with the inventory |
| Japan. CSCL - Inventory of Existing and New Chemical Substances | : | n (Negative listing)<br>Not in compliance with the inventory |
| Korea. Korean Existing Chemicals Inventory (KECI) | : | n (Negative listing)<br>Not in compliance with the inventory |
| China. Inventory of Existing Chemical Substances in China (IECSC) | : | n (Negative listing)<br>Not in compliance with the inventory |

**15.2 Federal Regulations**

**SARA 311/312 Hazards**

| | |
|---|---|
| Fire Hazard | no |
| Reactivity Hazard | no |
| Sudden Release of Pressure Hazard | no |
| Acute Health Hazard | yes |
| Chronic Health Hazard | yes |

**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 302** : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**EPCRA - Emergency Planning and Community Right-to-Know**

**CERCLA Reportable Quantity**

| Ingredients | CAS-No. | Reportable quantity |
|---|---|---|
| Formaldehyde | 50-00-0 | 100 lb |
| Acrylic Acid | 79-10-7 | 5000 lb |

**SARA 304 Reportable Quantity**

| Ingredients | CAS-No. | Reportable quantity |
|---|---|---|
| Formaldehyde | 50-00-0 | 100 lb |

**SARA 302 Reportable Quantity**

| Ingredients | CAS-No. | Reportable quantity |
|---|---|---|
| Formaldehyde | 50-00-0 | 100 lb |

**15.3 State Regulations**

**California Prop 65** : WARNING! This product contains a chemical known in the State of California to cause cancer.
Formaldehyde

No Significant Risk Levels (NSRLs) have been established for the following:
Formaldehyde
Value : 40 micrograms per day

## SECTION 16: Other information

**NFPA (National Fire Protection Association) - Classification**

| | | |
|---|---|---|
| Health | : | 2 moderate |
| Flammability | : | 0 minimal |
| Instability or Reactivity | : | 1 slight |

**HMIS (Hazardous Materials Identification System (Paint & Coating)) - Classification**

| | | |
|---|---|---|
| Health | : | 2 moderate |
| Flammability | : | 0 minimal |
| Reactivity | : | 1 slight |

**Further information**

| | | |
|---|---|---|
| Date Prepared | : | 02/24/2015 |
| Further information | : | Product classified under the US GHS format. |

**Key or legend to abbreviations and acronyms used in the safety data sheet**

| | | |
|---|---|---|
| TWA | : | 8-hour, time-weighted average |
| ACGIH | : | American Conference of Governmental Industrial Hygienists |
| OSHA | : | Occupational Safety and Health Administration |
| WHMIS | : | Workplace Hazardous Materials Information System |
| NTP | : | National Toxicology Program |
| IARC | : | International Agency for Research on Cancer |
| | : | Solvay Acceptable Exposure Limit |
| NIOSH | : | National Institute for Occupational Safety and Health |
| NFPA | : | National Fire Protection Association |
| HMIS | : | Hazardous Materials Identification System (Paint & Coating) |

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of its publication. Such information is only given as a guidance to help the user handle, use, process, store, transport, dispose, and release the product in satisfactory safety conditions and is not to be considered as a warranty or quality specification. It should be used in conjunction with technical sheets but do not replace them. Thus, the information only relates to the designated specific product and may not be applicable if such product is used in combination with other materials or in another manufacturing process, unless otherwise specifically indicated. It does not release the user from ensuring he is in conformity with all regulations linked to its activity.

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State of New Jersey

**DEPARTMENT OF ENVIRONMENTAL PROTECTION**

Department of Environmental Protection
SITE REMEDIATION AND WASTE MANAGEMENT PROGRAM
Division of Remediation Management
Remediation Oversight Element
Mail Code 401-05A
P.O. Box 420
Trenton, NJ 08625
609-984-1351
Fax: 609-984-6514

PHILIP D. MURPHY
*Governor*

SHEILA Y. OLIVER
*Lt. Governor*

CATHERINE R. McCABE
*Commissioner*

9 May 2019

Mark Terril, Corporate Director Environmental Affairs
PPG Industries, Inc.
One PPG Place
Pittsburgh, PA 15222

Re: Discharge to Ground Water Authorization
PPG Industries (COPR)
Garfield Avenue Group and Former Halladay Street Gas Works
900 Garfield Avenue; Block: 21501, Lots: 16, 17, 18, 19, and 20
Jersey City, Hudson County
NJ Program Interest Numbers: G000005480
Subject Item ID: DGWD0000167709

Dear Mr. Terril:

This New Jersey Pollutant Discharge Elimination System/Discharge to Ground Water (NJPDES/DGW) authorization is hereby issued under the authority of the New Jersey Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq. and the implementing regulations, N.J.A.C. 7:14A-1 et seq. N.J.A.C. 7:14A-7.5 authorizes the discharge described below which will allow the recovery and treatment of contaminated ground water, as well as implementation of in-situ remediation of contaminated ground water at the above referenced site.

Pursuant to N.J.A.C. 7:14A-22.4(b)5, a Treatment Works Approval is not required for discharges to ground water authorized pursuant to N.J.A.C. 7:14A-7.5 or 8.5 and a licensed operator is not required pursuant to N.J.A.C. 7:10A-1.10(c)1. The discharge shall be conducted as proposed in the February 2019 *Groundwater Interim Remedial Measure (IRM): Phase II Design and Permit-By-Rule (PBR) Authorization Request*, received on 28 February 2019 and clarified and revised as described in the email correspondence of 11 April 2019. This document and supporting clarification information was submitted by Cullen Flanders, Andrew Fuller, Matthew Schnobrich, and John Horst of Arcadis U.S. Inc., on behalf of PPG Industries.

A public notice describing this discharge was published in The Jersey Journal on 20 March 2019 which initiated a 30-day public comment period. In addition, a copy of the public notice has been sent to the Municipal Clerk and designated local health official for Jersey City and Hudson County. The Department did not receive any comments on the DGW proposal.

Pursuant to N.J.A.C. 7:14A-2.7 the maximum approved discharge duration is five (5) years from the date of this letter, regardless of the date when the discharge first occurs. The Department shall be notified of the date when the discharge begins as instructed in section IV of this letter. Only the discharge described in Section I below is authorized. The discharge shall be conducted in conformance with the above mentioned DGW proposal and shall comply with the requirements of Sections II, III, and IV, farther below.

## I. DISCHARGE DESCRIPTION

The authorized discharge includes organic carbon substrate (e.g., molasses and/or emulsified vegetable oil [EVO]) which will be mixed with treated groundwater recovered from the site. Groundwater will be recovered from the northern portion of Site 114, from an area containing the highest total chromium (Cr) and hexavalent chromium [Cr(VI)] concentrations, and will also be recovered from areas in southern Site 114 to enhance the organic carbon recirculation program. Groundwater will be treated using an on-site water treatment plant to provide direct treatment of Cr and Cr(VI). Treatment of the recovered water will also make it suitable for re-injection with organic carbon substrate.

The treated water will be amended with substrates to provide a degradable source of organic carbon within the subsurface to support an in situ anaerobic bioprecipitation (ISAB) approach. Both dilute organic carbon and treated water will be reinjected in the southern portion of Site 114, where concentrations of Cr are lower and more amenable to rapid bioremediation. The organic carbon will stimulate several primary mechanisms that: (1) promote the in-situ reduction of Cr(VI) to trivalent Cr (Cr[III]); and (2) support the development of an environment that enables the precipitation and fixation of Cr within the aquifer matrix.

Within the reactive zone, fermentation of the organic carbon substrate promotes development of iron- and sulfate-reducing groundwater conditions that are favorable for the reduction of Cr(VI). Under these conditions, Cr(VI) is reduced to Cr(III) through reactions with multiple biologically generated reductants or via direct anaerobic respiration with Cr(VI) serving as the terminal electron acceptor. Specifically, Cr(VI) is reduced to form less soluble Cr(III)-hydroxide.

The combination of groundwater extraction from the northern area of Site 114 and portions of southern Site 114 with reinjection in southern Site 114 will help maintain the hydraulic balance inside the sheet pile enclosure around Site 114 and may also support flushing of Cr mass toward the extraction wells to speed up the reduction of Cr concentrations in the groundwater.

The IRM Phase II operation is anticipated to start in second quarter of 2019 and last for a duration of up to approximately 12 months, followed by a post-operational monitoring of 2 years. However, this will be evaluated as the program proceeds, and modifications may be requested.

It is expected that the average organic carbon dosing over the course of the 12-month Phase II program is 0.5% by volume that will be delivered during 6-hour weekday pulsing cycles. Based on the projected total recirculation volume of 31.5 million gallons of groundwater, the organic carbon demands for Phase II will be no more than 158,000 gallons of substrate (either molasses, EVO, or a combination of both). The actual dosing strength of these organic carbon substrates, the dosing durations per day (or per week), and the timing of molasses and EVO use will be determined based on monitoring observations. Groundwater recovered from Site 114 and treated at the water treatment plant will serve as the primary source of reinjection water over the course of the Phase II IRM, but potable water from an on-site source will also be used, especially during warmer periods, to reduce the incidence of biofouling.

Reagent flexibility is considered a key consideration for maximizing overall treatment during the IRM Program. While the carbon substrates above will serve as the primary reagents for use, other reagents are being included in this PBR to allow flexibility in the event that unique areas of the site are better suited to their application. Both FerroBlack®-H (a water-based suspension of 7 to 8% by weight ferrous sulfide and 1 to 2% by weight sodium hydrosulfide) and $CaS_x$ (calcium polysulfide) were used to achieve treatment during prior pilot test activities, and these reagents are retained for potential consideration during Phase II. $CaS_x$ could be delivered via the recirculation network as a soluble reagent for in situ chemical reduction (ISCR) in select areas of Site 114 in lieu of, prior to, or following use of carbon substrate. In addition to these two reagents, ferrous sulfate heptahydrate may also be used as a supplement to the carbon substrate source to provide additional iron and sulfide to further enhance Cr abiotic reduction mechanisms. As applicable, other equivalent reagents capable of reducing Cr may also be considered during the Phase II IRM and if used, would be detailed in a modification to this PBR.

The planned Phase II IRM design consists of 144 new injection wells and 20 new groundwater extraction wells. However, up to 160 total injection wells and 30 total extraction wells may be installed if needed. Using a combination of hollow stem auger (HSA) and mud rotary drilling techniques (or similar equivalent drilling technologies), wells will be constructed with 4-inch stainless steel screens. Individual well screen lengths are proposed to range between 5 to 20 feet in length, which will be further refined based on high-resolution sampling results obtained during the drilling program. Similar to the Phase I IRM well installation, injection/extraction wells may entail longer well screens up to 20 feet in length to overwhelm potential heterogeneities within the intermediate and deep soils and allow propagation of the reactive through the soils of higher relative permeability. Intermediate-depth wells are expected to reach approximate depths of between 20 to 40 feet below ground surface (bgs). Deep water-bearing zone wells will be constructed with 4-inch stainless steel, 10-slot, 20-foot screens between 45 to 65 feet bgs. Actual length of screen, screen size and general depths are free to change based on pre-design testing and field observations.

Based on previous hydraulic testing and Phase I observations, it is assumed that average extraction rates per well may be up to 3 gallons per minute (gpm). The Phase II design estimates a combined total recirculation rate (both extraction and injection) of 21 gpm and 12 gpm within the northern and southeastern areas, respectively. Where achievable, injection and extraction rates will be increased to maximize the total quantity of groundwater extracted and injected within the capabilities of both treatment areas (40 gpm each). Based on previous testing at the site and the common ratios of injection well capacity relative to injection wells, it is estimated

that injection rates may vary between 0.5 to 3 gpm per well. Injection wells may be operated at higher flow rates, depending on the nature of the soil formation and ability to receive fluids. Over the course of operation, the Phase II design entails initiation of injection activities within the northern end of Site 114, followed by gradual southward shifts in operating wells. Based on the model flow rates, these have been conceptualized as three, 8-week cycles. Similarly, injection activities in the southeastern area will gradually shift further east during the Phase II operation. Individual cycles may be extended in length (e.g., to 12 or 16 weeks) based on performance and observed reactive zone development.

The treatment of groundwater used for reinjection will be sufficient to achieve either 95% reduction of influent levels (e.g., primarily for Cr and Cr[VI]) or concentrations below the applicable Ground Water Quality Standard (GWQS) values (e.g., for Cr, Cr[VI], and other compounds with historical detections) in the effluent of the water treatment plant, whichever is less stringent. A groundwater Classification Exception Area (CEA) was established on 7 June 2018, which allows for the discharge of water containing Cr, Cr(VI), metals, volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs) which may not be treated to levels below the GWQS by the water treatment plant prior to re-injection. The compounds other than Cr and Cr(VI) that were historically detected above the respective GWQS in the shallow, intermediate, and deep water-bearing zones are listed in the table below. Groundwater generated from the shallow water-bearing zone during soil excavation dewatering will be combined with groundwater extracted from the intermediate and deep water-bearing zones and treated with the water treatment plant. The CEA comprises the entirety of the project area (Block 21501, Lots 16 through 20), and extends to a depth of 100 feet below ground surface.

| METALs | VOCs | SVOCs |
|---|---|---|
| ALUMINUM | 1,1-DICHLOROETHYLENE | 1,2,4-TRICHLOROBENZENE |
| ANTIMONY | 1,1,2-TRICHLOROETHANE | 2,4-DIMETHYLPHENOL |
| ARSENIC | 1,2-DICHLOROETHANE | 2-METHYLNAPHTHALENE |
| BARIUM | 1,2,4-TRICHLOROBENZENE | 2-METHYLPHENOL |
| BERYLLIUM | BENZENE | 3+4-METHYLPHENOL |
| CADMIUM | CHLOROBENZENE | ACENAPHTHENE |
| COBALT | CIS-1,2-DICHLOROETHENE | BENZO(A)ANTHRACENE |
| COPPER | DICHLOROMETHANE | BENZO(A)PYRENE |
| IRON | ETHYLBENZENE | BENZO(B)FLUORANTHENE |
| LEAD | METHYL-TERT-BUTYL ETHER | BENZO(K)FLUORANTHENE |
| MANGANESE | STYRENE (MONOMER) | BIS(2-ETHYLHEXYL)PHTHALATE |
| MERCURY | TETRACHLOROETHENE | CHRYSENE |
| NICKEL | TOLUENE | DIBENZO(A,H)ANTHRACENE |
| SELENIUM | TRICHLOROETHENE | FLUORENE |
| SILVER | VINYL CHLORIDE | HEXACHLOROBENZENE |
| SODIUM | XYLENES | INDENO(1,2,3-CD)PYRENE |
| THALLIUM | | NAPHTHALENE |
| VANADIUM | | NITROBENZENE |
| ZINC | | N-NITROSO-DI-N-PROPYLAMINE |
| | | N-NITROSODIPHENYLAMINE |
| | | PENTACHLOROPHENOL |
| | | PHENANTHRENE |
| | | PHENOL |

## II. SYSTEM OPERATION AND MONITORING

The area of discharge shall be monitored for evidence of malfunction. Said evidence shall include, but is not limited to: injection solution observation at land surface, wet areas, ponding, odors, and elevated photoionization detector (PID) readings in the nearby work area or building. If encountered, appropriate controls and system modification will be implemented.

The discharge shall not cause any of the following negative impacts: adverse impact on the behavior of free product or the plume; adverse impacts to a water supply well or have a long term adverse impact on ground water quality; create an unpermitted discharge to any surface water of the State or violation of Surface Water Quality Standards; create a persistent standing, ponded or surface-flowing fluid condition; or cause adverse vapor intrusion to occur.

Pursuant to N.J.A.C. 7:14A-6.2(a)5 and 11, if free product in ground water, vapors or odors in any building, or any malfunction resulting in a potential impact to a receptor are detected and are a result of the discharge authorized by this approval, the discharger will immediately: (1) cease the discharge or make necessary adjustments to the discharge rate or system operation; and (2) repair or mitigate any negative impacts.

After completion of the discharge, the property returned to its previous condition, or as agreed to with property owner if the permittee is not the property owner. All UIC-Class V injection wells shall be properly abandoned in accordance with N.J.A.C. 7:14A-8.16(d)1 as applicable. The permittee will comply with any applicable provisions of the Additional Conditions Applicable to Class I, II, III and V UIC Permits of the NJPDES regulations, N.J.A.C. 7:14A-8.9, et seq. when UIC-Class V injection well units (i.e., the injection points) are used.

## III. GROUND WATER MONITORING REQUIREMENTS

The Permittee shall perform the following ground water sampling as was specified in the DGW proposal (including all addendums and modifications) for the purpose of complying with this Discharge to Ground Water Permit-By-Rule authorization.

Baseline Sampling, before injection:

Prior to the startup of Phase II operations, but following the installation of the remediation well network and new monitoring well locations, samples will be collected for baseline analysis to establish the starting conditions for IRM treatment performance review. In accordance with the attached Table 1, baseline samples will be collected for TAL metals (total and dissolved); Cr(VI) (total and dissolved); key geochemical parameters (sulfate/sulfide and methane); total organic carbon (TOC), field parameters (pH, specific conductivity, dissolved oxygen [DO], oxidation-reduction potential [ORP], turbidity, and temperature); and depth to groundwater.

Baseline samples will be collected using the low-flow sampling method. Purge water generated during sampling will be temporarily stored and then transferred to the groundwater treatment system. Prior to the start of purging, depth to water will be

gauged at each well location. Following purging, field parameter measurements will be recorded. Samples collected for dissolved metal analyses will be filtered using 0.45 micrometer (μm) filters in the field.

Operational and Treatment Monitoring, during the injections:

The operational monitoring program will be used to assess ongoing remedial system performance in support of guiding potential modifications to injection and extraction flow rates, recirculation well balancing, carbon dosing and timing, and to pre-emptively guide potential biofouling management and well redevelopment.

Operational monitoring will be performed at variable frequencies (weekly, biweekly, or monthly), as necessary, over the course of operation pursuant to Table 1. Measurements may be periodically performed more frequently than specified in Table 1 to support potential troubleshooting activities over the course of operation. Given the adaptive nature of the recirculation program and the sequencing of different groupings of injection and extraction wells during operation, it is anticipated that the operational sampling frequency of existing monitoring wells will be adapted over time. As an example, monitoring wells located within the northernmost area of Site 114 are most relevant for operational monitoring during the first step of recirculation activities. Following this initial period and the transition to more southerly injection wells, the frequency and parameter list of the initial monitoring locations may be reduced to maintain remedial efficiency, as applicable, subject to NJDEP approval. For the operational monitoring, analytical data and field parameter measurements for extracted and treated groundwater will be collected at operating extraction wells from sampling ports located at the wellheads or at the influent to the water treatment system.

Overall Phase II remedial performance will be documented via ongoing treatment monitoring during the 12-month IRM program. Sampling parameters will be collected to verify organic carbon distribution, assess the development of reduced geochemical groundwater conditions within the subsurface, and confirm corresponding declines in total Cr and Cr(VI). Evaluation of these parameters will confirm development of the subsurface reactive zone and will be used to guide carbon substrate dosing strength and frequency. This will enable treatment optimization and confirmation prior to transitioning the operating recirculation wells to subsequent steps. A summary of the analytical and field parameter measurements for treatment sampling is provided in Table 1.

Similar to the operational monitoring specifications, treatment monitoring parameters will be collected at specified frequency based on the relevance of a given parameter to operation and optimization activities. TOC and field parameter sampling is proposed most frequently (biweekly to monthly) to effectively gauge propagation of both carbon substrate and geochemical influence within the subsurface. Total Cr and Cr(VI) and select geochemical parameters (ferrous [dissolved] iron, dissolved manganese, sulfate) will be collected monthly to enable the collection of at least one to two samples between recirculation well steps. Methane sampling is also proposed, albeit less

frequently, to confirm the overall extent of reduced groundwater conditions. Similar to the sampling frequency considerations presented for the operational monitoring program, treatment monitoring parameters will be collected at a specified frequency based on the relevance of a given parameter to operation and optimization activities.

Treatment monitoring samples will be collected using the low-flow sampling method and select wells may be sampled at 5-foot intervals. Purge water generated during sampling will be temporarily stored and then transferred to the groundwater treatment system. Prior to the start of purging, depth to water will be gauged at each well location. Following purging, field parameter measurements will be recorded. Samples collected for dissolved metal analyses will be filtered using 0.45 μm filters in the field.

Post Treatment Sampling, after completion of injections:

Following the 12-month Phase II operational program, post-treatment monitoring will be used to document overall Cr treatment performance, confirm the residual reactive zone reduction capacity (via residual TOC and reduced geochemistry species), and develop an appropriate data set to demonstrate ongoing natural attenuation of any residual total Cr and Cr(VI). Post-treatment sampling will be performed in accordance with Table 1.

Treatment monitoring samples will be collected using the low-flow sampling method and select screen locations with wells will be sampled at 5-foot intervals. Purge water generated during sampling will be temporarily stored and then transferred to the groundwater treatment system – or containerized and disposed of off-site, as appropriate. Prior to the start of purging, depth to water will be gauged at each well location. Following purging, field parameter measurements will be recorded. Samples collected for dissolved metal analyses will be filtered using 0.45 μm filters in the field.

Post-treatment sampling activities will be performed on a quarterly basis over a total duration of two years.

Pursuant to the Tech Regs, the Permittee shall measure ground water elevations at all sampled wells during each sampling event and shall construct ground water flow maps with the water elevation data to document the direction of ground water flow. Any non-aqueous phase liquid (NAPL) observed, including sheen, shall be documented and the NJDEP shall be notified. The Permittee shall check for both light non-aqueous phase liquid (LNAPL) and dense non-aqueous phase liquid (DNAPL). If NAPL is identified in thicknesses greater than 0.01 feet in wells planned for injection use during baseline gauging or subsequent routine performance monitoring activities, these wells will be operated first as extraction wells to facilitate NAPL recovery and removal. NAPL will be recovered and modifications will be made to allow oil separation prior to transfer to the water treatment system. Prior to converting these wells for injection use, extraction will be discontinued to allow static gauging for NAPL reoccurrence. If NAPL is not observed with thicknesses in excess of 0.01 feet for two consecutive gauging events, and the NJDEP concurs, then NAPL will be considered eliminated or recovered to the extent practicable and wells will be deemed acceptable for injection use. Alternatively, if NAPL is identified in

excess of 0.01 feet in thickness but is considered no longer recoverable (or immobile), and the NJDEP concurs, the NAPL will be considered recovered to the extent practicable and wells may also be deemed acceptable for injection use.

All sampling shall be performed as proposed and consistent with the methods specified in the most current edition of the Department's Field Sampling Procedures Manual. All samples shall be analyzed by a New Jersey Certified Laboratory certified for the methods being used to analyze groundwater samples. Analytical method MDLs shall be less than or equal to the ground water quality standards (N.J.A.C. 7:9C-1.7). Parameters determined in the field (pH, specific conductance, dissolved oxygen, temperature) are to be measured by a certified contractor or laboratory.

Comparison to the VI screening levels is necessary in order to monitor whether or not the discharge activities have the potential to cause VI issues within any nearby structures by means of adversely impacting the behavior of the ground-water contaminants (e.g., unexpected contaminant movement). If there are any exceedances of the VI screening levels caused by the authorized discharge, a VI evaluation shall be conducted of any potentially impacted structures.

Compliance with N.J.A.C. 7:26E-5.7(b) requires that the Permittee satisfy the post-injection ground water monitoring requirements that are set forth in this letter before applying for any Remedial Action Permit for Ground Water. If a Remedial Action Permit application is submitted before the required ground water sampling has been completed, the application will be denied.

Additionally, contingency compliance ground water sampling is required if ground water sampling results indicate that GWQS have been contravened because of the authorized discharge (e.g., the GWQS for sulfate is exceeded as a result of calcium polysulfide injection, or the GWQS for iron is exceeded as a result of FerroBlack®-H injection), or that ground water quality has not returned to baseline conditions (when baseline concentrations are greater than GWQS) in the expected timeframe. Ground water sampling must continue until it can be demonstrated that the GWQS have been met or until the ground water quality has returned to baseline conditions. To demonstrate either of these conditions, a minimum of two consecutive ground water sampling events spaced far enough apart to account for seasonal fluctuations, must be conducted.

Furthermore, if the Permittee is planning to apply for a Ground Water Remedial Action Permit for Natural Attenuation in the future, and exceedances of the GWQS that are due to the discharge remain, those exceedances must be treated similarly to any other site related contaminants (i.e., a sufficient number of samples is required and a decreasing concentration trend must be evident) consistent with the Department's Remedial Action Permits for Ground Water Guidance.

## IV. REPORTING REQUIREMENTS AND INFORMATION SUBMITTALS

Details of the supplemental pre-design testing, well and system installation, system operation, and performance monitoring results associated with the IRM Phase II program will be documented as part of a quarterly technical status reports submitted to the NJDEP. These quarterly status reports will include succinct, high-level summaries of activities performed, data collected, adaptive steps taken to modify or optimize Phase II treatment, and an overview of activities planned for the subsequent quarter.

Succinct performance summary results will be submitted as part of quarterly status reports. All information, including a complete summary of the work performed under the PBR, a complete set of the data collected, a summary of data trends, an evaluation and interpretation of the data, and conclusions reached (as well as the QA/QC package specified at N.J.A.C. 7:26E-2.1(a)15) shall be submitted as part of the completion report within 6 months following cessation of active Phase II operation. All information shall be submitted to:

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CASE ASSIGNMENT & INITIAL NOTICE
MAILCODE 401-05H
P.O. BOX 420
TRENTON, NJ 08625-0420
ATTN: COPR

Consistent with N.J.A.C. 7:14A-2.11(a) and 6.2(a)14, within 90 days after initiation of the discharge, notify the Department of the "start date" of the discharge. To report this date, send an email to Wayne.Howitz@dep.nj.gov stating the start date of the discharge.

Consistent with N.J.A.C. 7:14A-2.11(a) and 6.2(a)14, any malfunctions or non-compliance should be reported by fax or telephone within 24 hours to Wayne Howitz of the Site Remediation Program at (609) 984-2905, and in writing within 7 days to the above address using the subject line "DGW Permit-by-Rule Compliance Report - COPR." Written submissions must include the facility name and PI Number. Failure to report this information is a violation of N.J.A.C. 7:14A and the permit-by-rule.

If you have any questions or concerns, please contact Wayne C. Howitz of the Site Remediation Program at (609) 984-2905.

Sincerely,

Wayne C. Howitz, Assistant Director
Remediation Oversight Element

Attachment

c: John Horst, Arcadis U.S. Inc.
Rolando R. Lavarro, Jersey City Redevelopment Agency
Carrie Nawrocki, Health Officer, Hudson Regional Health Commission
Stacey Flanagan, Director, Department of Health and Human Services
Robert Byrne, Jersey City Clerk

**Table 1**:
IRM Phase I and II Groundwater Monitoring Program, PPG Garfield Avenue Group Sites, Jersey City, New Jersey

| Monitoring Program | Monitoring Well Network | Monitoring Parameters | Monitoring Frequency |
|---|---|---|---|
| Baseline Monitoring | New extraction, injection, monitoring wells and existing monitoring wells | 1. **Field Parameters**: DTW, pH, conductivity, DO, ORP, turbidity, and temperature<br>2. **Lab Analytical**: Total/dissolved TAL metals, total/dissolved Cr(VI), TOC, sulfate/sulfide, and methane | Prior to operation start |
| Operational Monitoring | New extraction and monitoring wells, existing shallow, intermediate and deep monitoring wells, and system sampling port (influent and effluent) | 1. **Field Parameters**: DTW | Weekly - Biweekly |
| | | 2. **System Parameters**<br>- Injection / extraction well flow rates | Weekly |
| | | - Wellhead pressures | Weekly |
| | | - Water treatment system monitoring | Weekly - Monthly (as appropriate) |
| Treatment Monitoring | New extraction and monitoring wells, and existing intermediate and deep monitoring wells | 1. **Field Parameters**: DTW, pH, conductivity, DO, ORP, turbidity, and temperature | Biweekly - Monthly |
| | | **2. Lab Analytical:**<br>- Total/dissolved Cr and Cr(VI) | Monthly |
| | | - TOC | Biweekly - Monthly |
| | | - Supplemental geochemical parameters (sulfate, ferrous [dissolved] iron, dissolved manganese) | Monthly |
| | | - Methane | Monthly-Quarterly |
| Post-Treatment Monitoring | New monitoring wells and existing shallow, intermediate and deep monitoring wells | 1. **Field Parameters**: DTW, pH, conductivity, DO, ORP, turbidity, and temperature<br>2. **Lab Analytical**: Total/dissolved TAL metals, total/dissolved Cr and Cr(VI), VOCs, SVOCs, TOC, sulfate/sulfide, dissolved iron, dissolved manganese, and methane. | Quarterly following system shutdown for up to 2 years |

**Notes:**

1. The monitoring locations, parameters, and frequencies provided in this table serve as a general guidance for IRM-related monitoring activities and may be adjusted or changed based on IRM Phase II performance, injection and extraction areas in operation, and observed monitoring results.
2. Dissolved metal samples are to be field filtered prior to sample collection.

Cr - chromium
Cr(VI) - hexavalent chromium
DO - dissolved oxygen
DTW - depth-to-water
IRM - Interim Remedial Measures
ORP - oxidation-reduction potential
PBR - Permit-by-Rule
SVOCs - semi-volatile organic compounds
TAL - target analyte list
TOC - total organic carbon
VOCs - volatile organic compounds

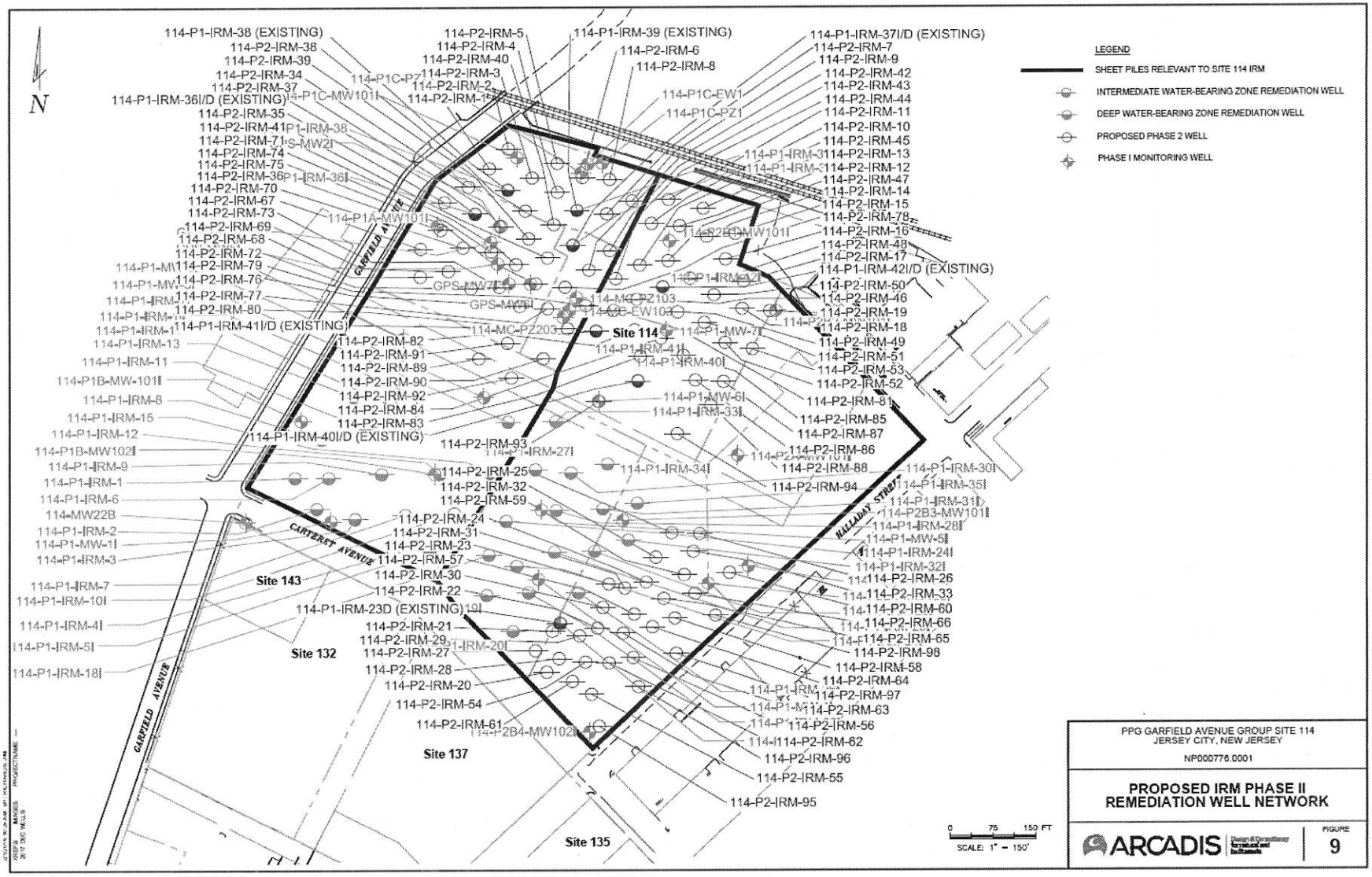


PPG GARFIELD AVENUE GROUP SITE 114
JERSEY CITY, NEW JERSEY

NP000776.0001

**PROPOSED IRM PHASE II REMEDIATION WELL NETWORK**

ARCADIS

FIGURE 9

AECOM

30 Knightsbridge Road, Suite 520
Piscataway, New Jersey 08854
www.aecom.com

# Memorandum

| | | | |
|---|---|---|---|
| **To:** | Dave VanEck, NJDEP | | |
| **Cc:** | Mark Terril, PPG<br>Jody Overmyer, PPG<br>Richard Feinberg, PPG<br>Prabal Amin, Weston<br>Laura Amend-Babcock, Weston<br>Ralph Costa, Weston<br>Trevor King, AECOM<br>Bill Spronz, AECOM<br>Matthew Schnobrich, Arcadis | | |
| **From:** | Carey Letts, AECOM | | |
| **Date:** | January 19, 2021 | **Project Number:** | 60624321 |
| **Project Reference:** | PPG Phase II GW IRM | | |

This memorandum (memo) presents a request for the proposed modification of the Groundwater Interim Remedial Measure (IRM) Phase II Design Permit-by-Rule (PBR) (Attachment 1) that was approved by the New Jersey Department of Environmental (NJDEP) on 9 May 2019 for the Garfield Avenue Group Sites located in Jersey City, New Jersey.

An excerpt from the PBR states that:

> *"If NAPL is identified in thicknesses greater than 0.01 feet in wells planned for injection use during baseline gauging or subsequent routine performance monitoring activities, these wells will be operated first as extraction wells to facilitate NAPL recovery and removal..."* [NAPL = non-aqueous phase liquid]

The PBR further states that:

> *"…Alternatively, if NAPL is identified in excess of 0.01 feet in thickness but is considered no longer recoverable (or immobile), and the NJDEP concurs, the NAPL will be considered recovered to the extent practicable and wells may also be deemed acceptable for injection use" .*

As discussed during the 17 December 2020 conference call, there are at least 20 wells (injection, monitoring, and extraction wells) with dense non-aqueous phase liquids (DNAPL) present in the bottom of the wells ranging in thickness from 2 inches to as much as 15 feet (Figure 1). Also discussed were the following points:

- DNAPL in the formation is limited to thin, discrete lenses within the intermediate and deep water-bearing zones. Measured amounts of DNAPL in the wells are not representative of a similarly "thick," saturated DNAPL zone within these water-bearing zones.

AECOM
30 Knightsbridge Road, Suite 520
Piscataway, New Jersey 08854
www.aecom.com

- Removal of DNAPL to thicknesses less than 0.01 feet before commencement of the IRM is not practical within the established timeframe for the IRM Phase II.
- The low injection pressures currently used to inject reagent into the formation for the Phase II IRM will allow the reagent to flow around the DNAPL lenses rather than displace the DNAPL, thereby allowing injectant to enter permeable areas of chromium-impacted groundwater within the IRM area.
- While some movement of DNAPL may occur during the IRM injections, it is expected to be localized and to remain within the area bounded by sheet pile.

**PBR Modification Request**

In order to commence the Phase II IRM program in the southeastern area of Site 114, PPG requests that the Phase II IRM PBR be modified to allow the following:

- DNAPL in existing injection, groundwater extraction, and monitoring wells will be pumped out from the wells to the extent possible, followed by commencement of the Phase II IRM reagent injections and groundwater extraction in select wells. One or more groundwater extraction wells may be converted to reagent injection wells to treat groundwater and will be determined based on operation and treatment monitoring.
- Injection wells will be monitored for DNAPL accumulation by observing injection pressures and flow rates. If DNAPL accumulation is suspected, the reagent injection at those wells will be temporarily stopped and DNAPL will be removed. The wells will then be returned to service.
- The Phase II IRM monitoring wells will be periodically gauged for DNAPL. DNAPL will be pumped out from these monitoring wells to the extent possible and as needed in order to continue monitoring activities. The frequency of the gauging and removal events in monitoring wells will be determined based on findings during the treatment period.

Upon your email approval of this modification request, PPG will commence the Phase II IRM treatment in the southeastern area as described above.

**Attachments:**

Attachment 1: Groundwater Interim Remedial Measure Phase II Design Permit-By-Rule
Figure 1: Summary of DNAPL Observations

# Attachment 1

# Groundwater Interim Remedial Measure Phase II Design Permit-by-Rule

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

PHILIP D. MURPHY
*Governor*

SHEILA Y. OLIVER
*Lt. Governor*

Department of Environmental Protection
SITE REMEDIATION AND WASTE MANAGEMENT PROGRAM
Division of Remediation Management
Remediation Oversight Element
Mail Code 401-05A
P.O. Box 420
Trenton, NJ 08625
609-984-1351
Fax: 609-984-6514

CATHERINE R. McCABE
*Commissioner*

9 May 2019

Mark Terril, Corporate Director Environmental Affairs
PPG Industries, Inc.
One PPG Place
Pittsburgh, PA 15222

Re: Discharge to Ground Water Authorization
PPG Industries (COPR)
Garfield Avenue Group and Former Halladay Street Gas Works
900 Garfield Avenue; Block: 21501, Lots: 16, 17, 18, 19, and 20
Jersey City, Hudson County
NJ Program Interest Numbers: G000005480
Subject Item ID: DGWD0000167709

Dear Mr. Terril:

This New Jersey Pollutant Discharge Elimination System/Discharge to Ground Water (NJPDES/DGW) authorization is hereby issued under the authority of the New Jersey Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq. and the implementing regulations, N.J.A.C. 7:14A-1 et seq. N.J.A.C. 7:14A-7.5 authorizes the discharge described below which will allow the recovery and treatment of contaminated ground water, as well as implementation of in-situ remediation of contaminated ground water at the above referenced site.

Pursuant to N.J.A.C. 7:14A-22.4(b)5, a Treatment Works Approval is not required for discharges to ground water authorized pursuant to N.J.A.C. 7:14A-7.5 or 8.5 and a licensed operator is not required pursuant to N.J.A.C. 7:10A-1.10(c)1. The discharge shall be conducted as proposed in the February 2019 *Groundwater Interim Remedial Measure (IRM): Phase II Design and Permit-By-Rule (PBR) Authorization Request*, received on 28 February 2019 and clarified and revised as described in the email correspondence of 11 April 2019. This document and supporting clarification information was submitted by Cullen Flanders, Andrew Fuller, Matthew Schnobrich, and John Horst of Arcadis U.S. Inc., on behalf of PPG Industries.

A public notice describing this discharge was published in The Jersey Journal on 20 March 2019 which initiated a 30-day public comment period. In addition, a copy of the public notice has been sent to the Municipal Clerk and designated local health official for Jersey City and Hudson County. The Department did not receive any comments on the DGW proposal.

Pursuant to N.J.A.C. 7:14A-2.7 the maximum approved discharge duration is five (5) years from the date of this letter, regardless of the date when the discharge first occurs. The Department shall be notified of the date when the discharge begins as instructed in section IV of this letter. Only the discharge described in Section I below is authorized. The discharge shall be conducted in conformance with the above mentioned DGW proposal and shall comply with the requirements of Sections II, III, and IV, farther below.

## I. DISCHARGE DESCRIPTION

The authorized discharge includes organic carbon substrate (e.g., molasses and/or emulsified vegetable oil [EVO]) which will be mixed with treated groundwater recovered from the site. Groundwater will be recovered from the northern portion of Site 114, from an area containing the highest total chromium (Cr) and hexavalent chromium [Cr(VI)] concentrations, and will also be recovered from areas in southern Site 114 to enhance the organic carbon recirculation program. Groundwater will be treated using an on-site water treatment plant to provide direct treatment of Cr and Cr(VI). Treatment of the recovered water will also make it suitable for re-injection with organic carbon substrate.

The treated water will be amended with substrates to provide a degradable source of organic carbon within the subsurface to support an in situ anaerobic bioprecipitation (ISAB) approach. Both dilute organic carbon and treated water will be reinjected in the southern portion of Site 114, where concentrations of Cr are lower and more amenable to rapid bioremediation. The organic carbon will stimulate several primary mechanisms that: (1) promote the in-situ reduction of Cr(VI) to trivalent Cr (Cr[III]); and (2) support the development of an environment that enables the precipitation and fixation of Cr within the aquifer matrix.

Within the reactive zone, fermentation of the organic carbon substrate promotes development of iron- and sulfate-reducing groundwater conditions that are favorable for the reduction of Cr(VI). Under these conditions, Cr(VI) is reduced to Cr(III) through reactions with multiple biologically generated reductants or via direct anaerobic respiration with Cr(VI) serving as the terminal electron acceptor. Specifically, Cr(VI) is reduced to form less soluble Cr(III)-hydroxide.

The combination of groundwater extraction from the northern area of Site 114 and portions of southern Site 114 with reinjection in southern Site 114 will help maintain the hydraulic balance inside the sheet pile enclosure around Site 114 and may also support flushing of Cr mass toward the extraction wells to speed up the reduction of Cr concentrations in the groundwater.

The IRM Phase II operation is anticipated to start in second quarter of 2019 and last for a duration of up to approximately 12 months, followed by a post-operational monitoring of 2 years. However, this will be evaluated as the program proceeds, and modifications may be requested.

It is expected that the average organic carbon dosing over the course of the 12-month Phase II program is 0.5% by volume that will be delivered during 6-hour weekday pulsing cycles. Based on the projected total recirculation volume of 31.5 million gallons of groundwater, the organic carbon demands for Phase II will be no more than 158,000 gallons of substrate (either molasses, EVO, or a combination of both). The actual dosing strength of these organic carbon substrates, the dosing durations per day (or per week), and the timing of molasses and EVO use will be determined based on monitoring observations. Groundwater recovered from Site 114 and treated at the water treatment plant will serve as the primary source of reinjection water over the course of the Phase II IRM, but potable water from an on-site source will also be used, especially during warmer periods, to reduce the incidence of biofouling.

Reagent flexibility is considered a key consideration for maximizing overall treatment during the IRM Program. While the carbon substrates above will serve as the primary reagents for use, other reagents are being included in this PBR to allow flexibility in the event that unique areas of the site are better suited to their application. Both FerroBlack®-H (a water-based suspension of 7 to 8% by weight ferrous sulfide and 1 to 2% by weight sodium hydrosulfide) and $CaS_x$ (calcium polysulfide) were used to achieve treatment during prior pilot test activities, and these reagents are retained for potential consideration during Phase II. $CaS_x$ could be delivered via the recirculation network as a soluble reagent for in situ chemical reduction (ISCR) in select areas of Site 114 in lieu of, prior to, or following use of carbon substrate. In addition to these two reagents, ferrous sulfate heptahydrate may also be used as a supplement to the carbon substrate source to provide additional iron and sulfide to further enhance Cr abiotic reduction mechanisms. As applicable, other equivalent reagents capable of reducing Cr may also be considered during the Phase II IRM and if used, would be detailed in a modification to this PBR.

The planned Phase II IRM design consists of 144 new injection wells and 20 new groundwater extraction wells. However, up to 160 total injection wells and 30 total extraction wells may be installed if needed. Using a combination of hollow stem auger (HSA) and mud rotary drilling techniques (or similar equivalent drilling technologies), wells will be constructed with 4-inch stainless steel screens. Individual well screen lengths are proposed to range between 5 to 20 feet in length, which will be further refined based on high-resolution sampling results obtained during the drilling program. Similar to the Phase I IRM well installation, injection/extraction wells may entail longer well screens up to 20 feet in length to overwhelm potential heterogeneities within the intermediate and deep soils and allow propagation of the reactive through the soils of higher relative permeability. Intermediate-depth wells are expected to reach approximate depths of between 20 to 40 feet below ground surface (bgs). Deep water-bearing zone wells will be constructed with 4-inch stainless steel, 10-slot, 20-foot screens between 45 to 65 feet bgs. Actual length of screen, screen size and general depths are free to change based on pre-design testing and field observations.

Based on previous hydraulic testing and Phase I observations, it is assumed that average extraction rates per well may be up to 3 gallons per minute (gpm). The Phase II design estimates a combined total recirculation rate (both extraction and injection) of 21 gpm and 12 gpm within the northern and southeastern areas, respectively. Where achievable, injection and extraction rates will be increased to maximize the total quantity of groundwater extracted and injected within the capabilities of both treatment areas (40 gpm each). Based on previous testing at the site and the common ratios of injection well capacity relative to injection wells, it is estimated

that injection rates may vary between 0.5 to 3 gpm per well. Injection wells may be operated at higher flow rates, depending on the nature of the soil formation and ability to receive fluids. Over the course of operation, the Phase II design entails initiation of injection activities within the northern end of Site 114, followed by gradual southward shifts in operating wells. Based on the model flow rates, these have been conceptualized as three, 8-week cycles. Similarly, injection activities in the southeastern area will gradually shift further east during the Phase II operation. Individual cycles may be extended in length (e.g., to 12 or 16 weeks) based on performance and observed reactive zone development.

The treatment of groundwater used for reinjection will be sufficient to achieve either 95% reduction of influent levels (e.g., primarily for Cr and Cr[VI]) or concentrations below the applicable Ground Water Quality Standard (GWQS) values (e.g., for Cr, Cr[VI], and other compounds with historical detections) in the effluent of the water treatment plant, whichever is less stringent. A groundwater Classification Exception Area (CEA) was established on 7 June 2018, which allows for the discharge of water containing Cr, Cr(VI), metals, volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs) which may not be treated to levels below the GWQS by the water treatment plant prior to re-injection. The compounds other than Cr and Cr(VI) that were historically detected above the respective GWQS in the shallow, intermediate, and deep water-bearing zones are listed in the table below. Groundwater generated from the shallow water-bearing zone during soil excavation dewatering will be combined with groundwater extracted from the intermediate and deep water-bearing zones and treated with the water treatment plant. The CEA comprises the entirety of the project area (Block 21501, Lots 16 through 20), and extends to a depth of 100 feet below ground surface.

| METALs | VOCs | SVOCs |
|---|---|---|
| ALUMINUM | 1,1-DICHLOROETHYLENE | 1,2,4-TRICHLOROBENZENE |
| ANTIMONY | 1,1,2-TRICHLOROETHANE | 2,4-DIMETHYLPHENOL |
| ARSENIC | 1,2-DICHLOROETHANE | 2-METHYLNAPHTHALENE |
| BARIUM | 1,2,4-TRICHLOROBENZENE | 2-METHYLPHENOL |
| BERYLLIUM | BENZENE | 3+4-METHYLPHENOL |
| CADMIUM | CHLOROBENZENE | ACENAPHTHENE |
| COBALT | CIS-1,2-DICHLOROETHENE | BENZO(A)ANTHRACENE |
| COPPER | DICHLOROMETHANE | BENZO(A)PYRENE |
| IRON | ETHYLBENZENE | BENZO(B)FLUORANTHENE |
| LEAD | METHYL-TERT-BUTYL ETHER | BENZO(K)FLUORANTHENE |
| MANGANESE | STYRENE (MONOMER) | BIS(2-ETHYLHEXYL)PHTHALATE |
| MERCURY | TETRACHLOROETHENE | CHRYSENE |
| NICKEL | TOLUENE | DIBENZO(A,H)ANTHRACENE |
| SELENIUM | TRICHLOROETHENE | FLUORENE |
| SILVER | VINYL CHLORIDE | HEXACHLOROBENZENE |
| SODIUM | XYLENES | INDENO(1,2,3-CD)PYRENE |
| THALLIUM | | NAPHTHALENE |
| VANADIUM | | NITROBENZENE |
| ZINC | | N-NITROSO-DI-N-PROPYLAMINE |
| | | N-NITROSODIPHENYLAMINE |
| | | PENTACHLOROPHENOL |
| | | PHENANTHRENE |
| | | PHENOL |

## II. SYSTEM OPERATION AND MONITORING

The area of discharge shall be monitored for evidence of malfunction. Said evidence shall include, but is not limited to: injection solution observation at land surface, wet areas, ponding, odors, and elevated photoionization detector (PID) readings in the nearby work area or building. If encountered, appropriate controls and system modification will be implemented.

The discharge shall not cause any of the following negative impacts: adverse impact on the behavior of free product or the plume; adverse impacts to a water supply well or have a long term adverse impact on ground water quality; create an unpermitted discharge to any surface water of the State or violation of Surface Water Quality Standards; create a persistent standing, ponded or surface-flowing fluid condition; or cause adverse vapor intrusion to occur.

Pursuant to N.J.A.C. 7:14A-6.2(a)5 and 11, if free product in ground water, vapors or odors in any building, or any malfunction resulting in a potential impact to a receptor are detected and are a result of the discharge authorized by this approval, the discharger will immediately: (1) cease the discharge or make necessary adjustments to the discharge rate or system operation; and (2) repair or mitigate any negative impacts.

After completion of the discharge, the property returned to its previous condition, or as agreed to with property owner if the permittee is not the property owner. All UIC-Class V injection wells shall be properly abandoned in accordance with N.J.A.C. 7:14A-8.16(d)1 as applicable. The permittee will comply with any applicable provisions of the Additional Conditions Applicable to Class I, II, III and V UIC Permits of the NJPDES regulations, N.J.A.C. 7:14A-8.9, et seq. when UIC-Class V injection well units (i.e., the injection points) are used.

## III. GROUND WATER MONITORING REQUIREMENTS

The Permittee shall perform the following ground water sampling as was specified in the DGW proposal (including all addendums and modifications) for the purpose of complying with this Discharge to Ground Water Permit-By-Rule authorization.

Baseline Sampling, before injection:

Prior to the startup of Phase II operations, but following the installation of the remediation well network and new monitoring well locations, samples will be collected for baseline analysis to establish the starting conditions for IRM treatment performance review. In accordance with the attached Table 1, baseline samples will be collected for TAL metals (total and dissolved); Cr(VI) (total and dissolved); key geochemical parameters (sulfate/sulfide and methane); total organic carbon (TOC), field parameters (pH, specific conductivity, dissolved oxygen [DO], oxidation-reduction potential [ORP], turbidity, and temperature); and depth to groundwater.

Baseline samples will be collected using the low-flow sampling method. Purge water generated during sampling will be temporarily stored and then transferred to the groundwater treatment system. Prior to the start of purging, depth to water will be

gauged at each well location. Following purging, field parameter measurements will be recorded. Samples collected for dissolved metal analyses will be filtered using 0.45 micrometer (μm) filters in the field.

Operational and Treatment Monitoring, during the injections:

The operational monitoring program will be used to assess ongoing remedial system performance in support of guiding potential modifications to injection and extraction flow rates, recirculation well balancing, carbon dosing and timing, and to pre-emptively guide potential biofouling management and well redevelopment.

Operational monitoring will be performed at variable frequencies (weekly, biweekly, or monthly), as necessary, over the course of operation pursuant to Table 1. Measurements may be periodically performed more frequently than specified in Table 1 to support potential troubleshooting activities over the course of operation. Given the adaptive nature of the recirculation program and the sequencing of different groupings of injection and extraction wells during operation, it is anticipated that the operational sampling frequency of existing monitoring wells will be adapted over time. As an example, monitoring wells located within the northernmost area of Site 114 are most relevant for operational monitoring during the first step of recirculation activities. Following this initial period and the transition to more southerly injection wells, the frequency and parameter list of the initial monitoring locations may be reduced to maintain remedial efficiency, as applicable, subject to NJDEP approval. For the operational monitoring, analytical data and field parameter measurements for extracted and treated groundwater will be collected at operating extraction wells from sampling ports located at the wellheads or at the influent to the water treatment system.

Overall Phase II remedial performance will be documented via ongoing treatment monitoring during the 12-month IRM program. Sampling parameters will be collected to verify organic carbon distribution, assess the development of reduced geochemical groundwater conditions within the subsurface, and confirm corresponding declines in total Cr and Cr(VI). Evaluation of these parameters will confirm development of the subsurface reactive zone and will be used to guide carbon substrate dosing strength and frequency. This will enable treatment optimization and confirmation prior to transitioning the operating recirculation wells to subsequent steps. A summary of the analytical and field parameter measurements for treatment sampling is provided in Table 1.

Similar to the operational monitoring specifications, treatment monitoring parameters will be collected at specified frequency based on the relevance of a given parameter to operation and optimization activities. TOC and field parameter sampling is proposed most frequently (biweekly to monthly) to effectively gauge propagation of both carbon substrate and geochemical influence within the subsurface. Total Cr and Cr(VI) and select geochemical parameters (ferrous [dissolved] iron, dissolved manganese, sulfate) will be collected monthly to enable the collection of at least one to two samples between recirculation well steps. Methane sampling is also proposed, albeit less

frequently, to confirm the overall extent of reduced groundwater conditions. Similar to the sampling frequency considerations presented for the operational monitoring program, treatment monitoring parameters will be collected at a specified frequency based on the relevance of a given parameter to operation and optimization activities.

Treatment monitoring samples will be collected using the low-flow sampling method and select wells may be sampled at 5-foot intervals. Purge water generated during sampling will be temporarily stored and then transferred to the groundwater treatment system. Prior to the start of purging, depth to water will be gauged at each well location. Following purging, field parameter measurements will be recorded. Samples collected for dissolved metal analyses will be filtered using 0.45 μm filters in the field.

Post Treatment Sampling, after completion of injections:

Following the 12-month Phase II operational program, post-treatment monitoring will be used to document overall Cr treatment performance, confirm the residual reactive zone reduction capacity (via residual TOC and reduced geochemistry species), and develop an appropriate data set to demonstrate ongoing natural attenuation of any residual total Cr and Cr(VI). Post-treatment sampling will be performed in accordance with Table 1.

Treatment monitoring samples will be collected using the low-flow sampling method and select screen locations with wells will be sampled at 5-foot intervals. Purge water generated during sampling will be temporarily stored and then transferred to the groundwater treatment system – or containerized and disposed of off-site, as appropriate. Prior to the start of purging, depth to water will be gauged at each well location. Following purging, field parameter measurements will be recorded. Samples collected for dissolved metal analyses will be filtered using 0.45 μm filters in the field.

Post-treatment sampling activities will be performed on a quarterly basis over a total duration of two years.

Pursuant to the Tech Regs, the Permittee shall measure ground water elevations at all sampled wells during each sampling event and shall construct ground water flow maps with the water elevation data to document the direction of ground water flow. Any non-aqueous phase liquid (NAPL) observed, including sheen, shall be documented and the NJDEP shall be notified. The Permittee shall check for both light non-aqueous phase liquid (LNAPL) and dense non-aqueous phase liquid (DNAPL). If NAPL is identified in thicknesses greater than 0.01 feet in wells planned for injection use during baseline gauging or subsequent routine performance monitoring activities, these wells will be operated first as extraction wells to facilitate NAPL recovery and removal. NAPL will be recovered and modifications will be made to allow oil separation prior to transfer to the water treatment system. Prior to converting these wells for injection use, extraction will be discontinued to allow static gauging for NAPL reoccurrence. If NAPL is not observed with thicknesses in excess of 0.01 feet for two consecutive gauging events, and the NJDEP concurs, then NAPL will be considered eliminated or recovered to the extent practicable and wells will be deemed acceptable for injection use. Alternatively, if NAPL is identified in

excess of 0.01 feet in thickness but is considered no longer recoverable (or immobile), and the NJDEP concurs, the NAPL will be considered recovered to the extent practicable and wells may also be deemed acceptable for injection use.

All sampling shall be performed as proposed and consistent with the methods specified in the most current edition of the Department's Field Sampling Procedures Manual. All samples shall be analyzed by a New Jersey Certified Laboratory certified for the methods being used to analyze groundwater samples. Analytical method MDLs shall be less than or equal to the ground water quality standards (N.J.A.C. 7:9C-1.7). Parameters determined in the field (pH, specific conductance, dissolved oxygen, temperature) are to be measured by a certified contractor or laboratory.

Comparison to the VI screening levels is necessary in order to monitor whether or not the discharge activities have the potential to cause VI issues within any nearby structures by means of adversely impacting the behavior of the ground-water contaminants (e.g., unexpected contaminant movement). If there are any exceedances of the VI screening levels caused by the authorized discharge, a VI evaluation shall be conducted of any potentially impacted structures.

Compliance with N.J.A.C. 7:26E-5.7(b) requires that the Permittee satisfy the post-injection ground water monitoring requirements that are set forth in this letter before applying for any Remedial Action Permit for Ground Water. If a Remedial Action Permit application is submitted before the required ground water sampling has been completed, the application will be denied.

Additionally, contingency compliance ground water sampling is required if ground water sampling results indicate that GWQS have been contravened because of the authorized discharge (e.g., the GWQS for sulfate is exceeded as a result of calcium polysulfide injection, or the GWQS for iron is exceeded as a result of FerroBlack®-H injection), or that ground water quality has not returned to baseline conditions (when baseline concentrations are greater than GWQS) in the expected timeframe. Ground water sampling must continue until it can be demonstrated that the GWQS have been met or until the ground water quality has returned to baseline conditions. To demonstrate either of these conditions, a minimum of two consecutive ground water sampling events spaced far enough apart to account for seasonal fluctuations, must be conducted.

Furthermore, if the Permittee is planning to apply for a Ground Water Remedial Action Permit for Natural Attenuation in the future, and exceedances of the GWQS that are due to the discharge remain, those exceedances must be treated similarly to any other site related contaminants (i.e., a sufficient number of samples is required and a decreasing concentration trend must be evident) consistent with the Department's Remedial Action Permits for Ground Water Guidance.

## IV. REPORTING REQUIREMENTS AND INFORMATION SUBMITTALS

Details of the supplemental pre-design testing, well and system installation, system operation, and performance monitoring results associated with the IRM Phase II program will be documented as part of a quarterly technical status reports submitted to the NJDEP. These quarterly status reports will include succinct, high-level summaries of activities performed, data collected, adaptive steps taken to modify or optimize Phase II treatment, and an overview of activities planned for the subsequent quarter.

Succinct performance summary results will be submitted as part of quarterly status reports. All information, including a complete summary of the work performed under the PBR, a complete set of the data collected, a summary of data trends, an evaluation and interpretation of the data, and conclusions reached (as well as the QA/QC package specified at N.J.A.C. 7:26E-2.1(a)15) shall be submitted as part of the completion report within 6 months following cessation of active Phase II operation. All information shall be submitted to:

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CASE ASSIGNMENT & INITIAL NOTICE
MAILCODE 401-05H
P.O. BOX 420
TRENTON, NJ 08625-0420
ATTN: COPR

Consistent with N.J.A.C. 7:14A-2.11(a) and 6.2(a)14, within 90 days after initiation of the discharge, notify the Department of the "start date" of the discharge. To report this date, send an email to Wayne.Howitz@dep.nj.gov stating the start date of the discharge.

Consistent with N.J.A.C. 7:14A-2.11(a) and 6.2(a)14, any malfunctions or non-compliance should be reported by fax or telephone within 24 hours to Wayne Howitz of the Site Remediation Program at (609) 984-2905, and in writing within 7 days to the above address using the subject line "DGW Permit-by-Rule Compliance Report - COPR." Written submissions must include the facility name and PI Number. Failure to report this information is a violation of N.J.A.C. 7:14A and the permit-by-rule.

If you have any questions or concerns, please contact Wayne C. Howitz of the Site Remediation Program at (609) 984-2905.

Sincerely,

Wayne C. Howitz, Assistant Director
Remediation Oversight Element

Attachment

c: John Horst, Arcadis U.S. Inc.
Rolando R. Lavarro, Jersey City Redevelopment Agency
Carrie Nawrocki, Health Officer, Hudson Regional Health Commission
Stacey Flanagan, Director, Department of Health and Human Services
Robert Byrne, Jersey City Clerk

**Table 1**:
IRM Phase I and II Groundwater Monitoring Program, PPG Garfield Avenue Group Sites, Jersey City, New Jersey

| Monitoring Program | Monitoring Well Network | Monitoring Parameters | Monitoring Frequency |
|---|---|---|---|
| Baseline Monitoring | New extraction, injection, monitoring wells and existing monitoring wells | 1. **Field Parameters**: DTW, pH, conductivity, DO, ORP, turbidity, and temperature<br>2. **Lab Analytical**: Total/dissolved TAL metals, total/dissolved Cr(VI), TOC, sulfate/sulfide, and methane | Prior to operation start |
| Operational Monitoring | New extraction and monitoring wells, existing shallow, intermediate and deep monitoring wells, and system sampling port (influent and effluent) | 1. **Field Parameters**: DTW | Weekly - Biweekly |
| | | 2. **System Parameters**<br>- Injection / extraction well flow rates | Weekly |
| | | - Wellhead pressures | Weekly |
| | | - Water treatment system monitoring | Weekly - Monthly (as appropriate) |
| Treatment Monitoring | New extraction and monitoring wells, and existing intermediate and deep monitoring wells | 1. **Field Parameters**: DTW, pH, conductivity, DO, ORP, turbidity, and temperature | Biweekly - Monthly |
| | | **2. Lab Analytical:**<br>- Total/dissolved Cr and Cr(VI) | Monthly |
| | | - TOC | Biweekly - Monthly |
| | | - Supplemental geochemical parameters (sulfate, ferrous [dissolved] iron, dissolved manganese) | Monthly |
| | | - Methane | Monthly-Quarterly |
| Post-Treatment Monitoring | New monitoring wells and existing shallow, intermediate and deep monitoring wells | 1. **Field Parameters**: DTW, pH, conductivity, DO, ORP, turbidity, and temperature<br>2. **Lab Analytical**: Total/dissolved TAL metals, total/dissolved Cr and Cr(VI), VOCs, SVOCs, TOC, sulfate/sulfide, dissolved iron, dissolved manganese, and methane. | Quarterly following system shutdown for up to 2 years |

**Notes:**

1. The monitoring locations, parameters, and frequencies provided in this table serve as a general guidance for IRM-related monitoring activities and may be adjusted or changed based on IRM Phase II performance, injection and extraction areas in operation, and observed monitoring results.
2. Dissolved metal samples are to be field filtered prior to sample collection.

Cr - chromium
Cr(VI) - hexavalent chromium
DO - dissolved oxygen
DTW - depth-to-water
IRM - Interim Remedial Measures
ORP - oxidation-reduction potential
PBR - Permit-by-Rule
SVOCs - semi-volatile organic compounds
TAL - target analyte list
TOC - total organic carbon
VOCs - volatile organic compounds

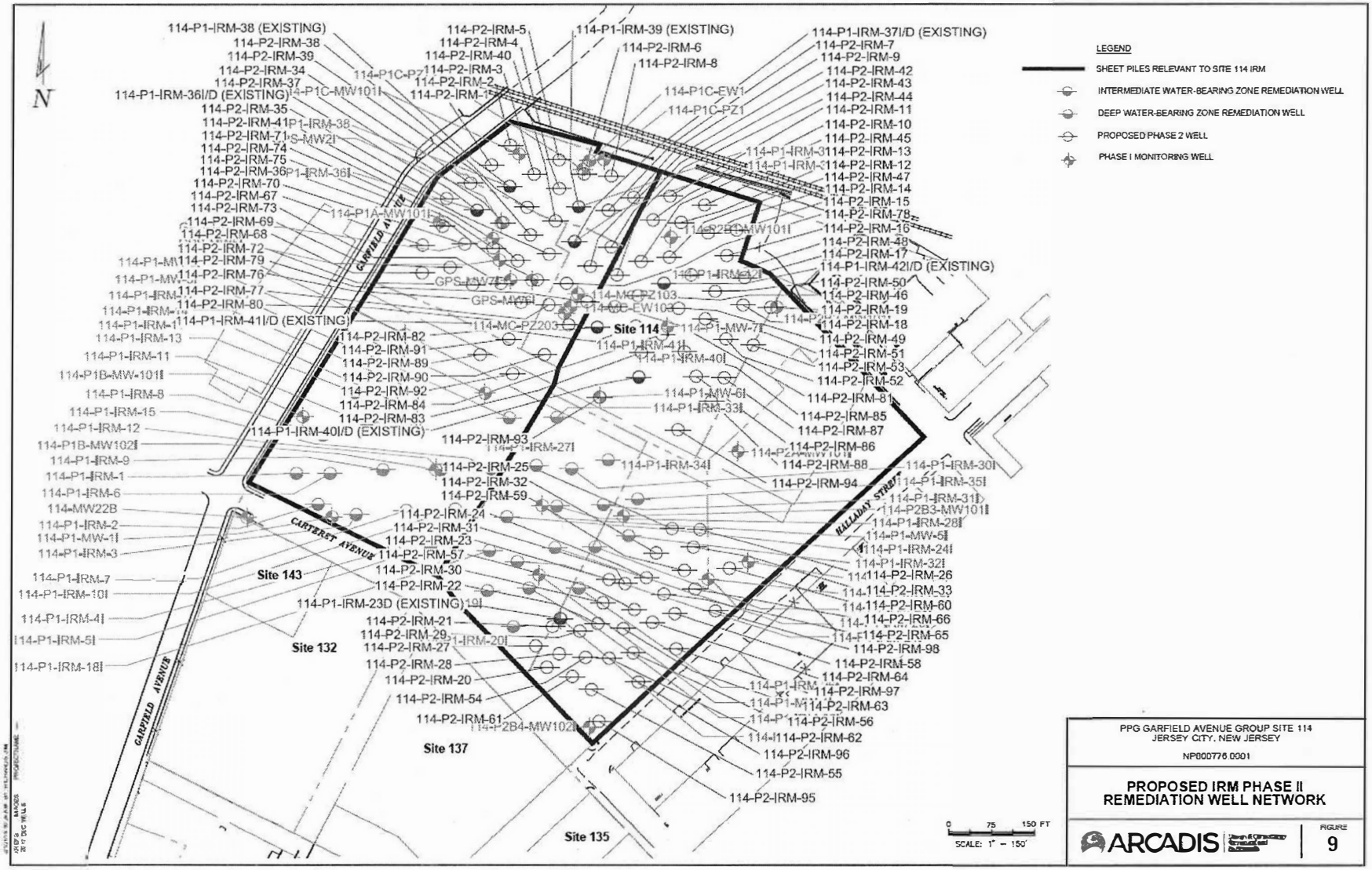
N
LEGEND
SHEET PILES RELEVANT TO SITE 114 IRM
INTERMEDIATE WATER-BEARING ZONE REMEDIATION WELL
DEEP WATER-BEARING ZONE REMEDIATION WELL
PROPOSED PHASE 2 WELL
PHASE I MONITORING WELL
Site 114
Site 132
Site 135
Site 137
Site 143
GARFIELD AVENUE
CARTERET AVENUE
HALLADAY STREET
0 75 150 FT
SCALE: 1" = 150'
PPG GARFIELD AVENUE GROUP SITE 114
JERSEY CITY, NEW JERSEY
NP000776.0001
PROPOSED IRM PHASE II
REMEDIATION WELL NETWORK
ARCADIS
FIGURE
9

# Figure 1

# Summary of DNAPL Observations

N
W E
S

BERRY LANE PARK

NJ TRANSIT LIGHT RAIL

GARFIELD AVENUE

CARTERET AVENUE

FORREST STREET

HALLADAY STREET

PACIFIC AVENUE

SITE 114

SITE 143

SITE 132

SITE 137

**FSP-VAP-10 (9/21/2020)**
5-9 ft bgs: strong MGP odor, sheen
22-26 ft bgs: MGP odor
32-36 ft bgs: strong MGP odor
41-45 ft bgs: MGP odor
54-58 ft bgs: slight MGP odor
59-63 ft bgs: slight MGP odor

**FSP-VAP-01 (3/31/2020)**
34-38 ft bgs: MGP odor and DNAPL present
47-51 ft bgs: MGP odor and sheen
57-61 ft bgs: MGP odor and sheen

**FSP-VAP-12 (9/21/2020)**
4-8 ft bgs: strong MGP odor
17-21 ft bgs: slight MGP odor
23-27 ft bgs: slight MGP odor
31-35 ft bgs: slight MGP odor
40-44 ft bgs: MGP odor
48-52 ft bgs: MGP odor

**FSP-VAP-06 (4/3/2020)**
5-9 ft bgs: MGP odor
17-21 ft bgs: MGP odor and blebs
25-29 ft bgs: slight MGP odor, trace sheen

**114-P2-IRM-19I (9/2020)**
Max DNAPL thickness 17.35 ft

**114-P2-IRM-57D (10/2020)**
Max DNAPL thickness 14.75 ft

**114-P2-IRM-31D (10/2020)**
Max DNAPL thickness 14.85 ft

**114-P2-MW-10I (3/2020)**
Max DNAPL thickness 1.00 ft

**114-P2-IRM-23D (10/2019)**
Max DNAPL thickness 2.50 ft

**114-P2-IRM-23I (3/2020)**
Max DNAPL thickness 0.49 ft

**114-P2-MW-10D (3/2020)**
Max DNAPL thickness 7.00 ft

**114-P2-IRM-30D (8/2020 and 10/2020)**
Max DNAPL thickness 15.60 ft

**114-P2-IRM-22I (10/2020)**
Max DNAPL thickness 4.15 ft

**114-P2-IRM-29D (3/2020)**
Max DNAPL thickness 13.25 ft

**114-P2-IRM-24D (9/2020)**
Max DNAPL thickness 16.6 ft

**114-P2-IRM-25I (10/2019)**
Max DNAPL thickness 1.10 ft

**114-P2-IRM-26D (1/2019)**
Max DNAPL thickness 1.10 ft

**114-P2-IRM-24I (8/2020)**
Max DNAPL thickness 1.91 ft

**114-P2-IRM-64D (8/2020)**
Max DNAPL thickness 6.90 ft

**114-P2-MW-12D (2/2020)**
Max DNAPL thickness 6.40 ft

**114-P2-IRM-56I (2/2020)**
Max DNAPL thickness 2.00 ft

**114-P2-IRM-56D (8/2020)**
Max DNAPL thickness 13.60 ft

**114-P2-IRM-96I (10/2019)**
Max DNAPL thickness 1.20 ft

**114-P2-IRM-55I (8/2020)**
Max DNAPL thickness 1.30 ft

**P3-IRM-VAP16 (9/25/2020)**
8-12 ft bgs: MGP odor
18-22 ft bgs: strong MGP odor, sheen, slight MGP in sample
25-29 ft bgs: strong MGP odor, sheen, slight MGP in sample
33-37 ft bgs: strong MGP odor
40-44 ft bgs: slight MGP odor

**P3-IRM-VAP14 (9/28/2020)**
8-12 ft bgs: MGP odor
20-24 ft bgs: MGP odor
28-32 ft bgs: MGP odor
35-39 ft bgs: MGP odor
43-47 ft bgs: sheen
50-54 ft bgs: light sheen, no odor
67-71 ft bgs: light sheen, no odor

**DNAPL-W1 (11/16/2017) - Soil boring observations:**
16-18 ft bgs: strong organic odor
18-20 ft bgs: PID = 20 ppm
23-28 ft bgs: PID = 230 ppm at 25 ft
28-31.5 ft bgs: petroleum sheen
31.5-33.5 ft bgs: petroleum stained, free product

Note: No DNAPL measured in temporary well installed at this location.

**137-P3B-MW101I (11/17/2017)**
DNAPL from 43.47 to 47.66 ft bTOC

**DNAPL-S1 (11/16/2017) - Soil boring observations:**
16-18 ft bgs: strong organic odor
26-27 ft bgs: PID = 25 ppm
27-28 ft bgs: PID = 67 ppm
32-34 ft bgs: petroleum staining (PID = 148 ppm)
42 ft bgs: PID = 122 ppm
46 ft bgs: PID = 67 ppm

Note: No DNAPL measured in temporary well installed at this location.

**P3-IRM-VAP08 (9/24/2020)**
7-11 ft bgs: light sheen, no odor
14-18 ft bgs: light sheen, no odor
29-33 ft bgs: light sheen, no odor
38-42 ft bgs: light sheen, no odor

Jersey City, NJ

## LEGEND

- SITE 114 BOUNDARY
- HUDSON COUNTY
- FORMER MORRIS CANAL
- RAILROAD
- IN-PLACE SHEETPILE
- MEASURABLE DNAPL IDENTIFIED
- MONITORING WELLS
- DNAPL INVESTIGATION - COMPLETED NOVEMBER 2017

**PHASE II GW IRM INJECTION**

- STEP 1
- STEP 2
- STEP 3
- EXTRACTION WELLS

**HPT/VAP LOCATIONS**

- FORREST ST. - COMPLETED IN MARCH-APRIL 2020
- FORREST ST. - COMPLETED IN SEPTEMBER 2020
- PHASE III IRM - COMPLETED IN SEPTEMBER 2020

**Map Notes:**
1. New Jersey State Plane North American Datum 1983 Coordinates (NAD83), U.S. Survey Feet.
2. Parcels of Hudson County, New Jersey State Plane NAD83, Hudson County Department of Planning, Jersey City, New Jersey, May 21, 2013.

**Abbreviations:**
bgs = below ground surface
bTOC = below top of inner casing
DNAPL = dense non-aqueous phase liquid
ft = feet
GW = Groundwater
HPT = hydraulic profiling tool
IRM = interim remedial measures
MGP = manufactured gas plant
PID = Photoionization Detector
ppm = parts per million
RI = Remedial Investigation
VAP = vertical aquifer profile
*** Well 114-MC-EW103 was reportedly damaged during site activities after the completion of the groundwater RI

0 30 60 Feet

AECOM

PPG
GARFIELD AVENUE GROUP SITE 114
JERSEY CITY, NEW JERSEY
60624321

DATE: 12/2/2020 | DRAWN BY: JM | CHECKED BY: SR

# FIGURE 1
# SUMMARY OF DNAPL OBSERVATIONS

Last Saved By: MeuseJ
Path: C:\Work\HampshireBoraie\60624321PPG\MXD\DNAPL_Summary.mxd

Ravi, Shree

| | |
|---|---|
| From: | VanEck, David <David.VanEck@dep.nj.gov> |
| Sent: | Thursday, January 21, 2021 2:59 PM |
| To: | Jody Overmyer (overmyer@ppg.com); terril@ppg.com |
| Cc: | Feinberg, Richard [C]; Amin, Prabal (Prabal.Amin@WestonSolutions.com); Amend-Babcock, Laura; Costa, Ralph; King, Trevor C.; Spronz, Bill; Schnobrich, Matthew; Letts, Carey; Doyle, David |
| Subject: | [EXTERNAL] Re: PPG -> GW-IRM-019 Permit-by-Rule Modification |
| Attachments: | 2021-01-19_PBR_Modification_DNAPL_Approach_DS.pdf |

Good afternoon,

The New Jersey Department of Environmental Protection (NJDEP) hereby approves the proposed modification (memo from AECOM dated 19 January 2021) of the Groundwater Interim Remedial Measure (IRM) Phase II Design Permit-by-Rule (PBR) that was approved by the NJDEP on 9 May 2019 for the Garfield Avenue Group Sites located in Jersey City, New Jersey.

The work shall be conducted in accordance with the aforementioned proposal. In order to commence the Phase II IRM program in the southeastern area of Site 114, the Phase II IRM PBR is modified to allow the following:

- DNAPL in existing injection, groundwater extraction, and monitoring wells will be pumped out from the wells to the extent possible, followed by commencement of the Phase II IRM reagent injections and groundwater extraction in select wells. One or more groundwater extraction wells may be converted to reagent injection wells to treat groundwater and will be determined based on operation and treatment monitoring.
- Injection wells will be monitored for DNAPL accumulation by observing injection pressures and flow rates. If DNAPL accumulation is suspected, the reagent injection at those wells will be temporarily stopped and DNAPL will be removed. The wells will then be returned to service.
- The Phase II IRM monitoring wells will be periodically gauged for DNAPL. DNAPL will be pumped out from these monitoring wells to the extent possible and as needed in order to continue monitoring activities. The frequency of the gauging and removal events in monitoring wells will be determined based on findings during the treatment period.

This email will serve as the official approval of the PBR modification. A copy of the proposal and this email exchange will be uploaded into NJEMS to document the Department's approval.

Thanks for your assistance with this. And feel free to forward this email to any interested parties.

David

..

David Van Eck, Supervising Geologist
NJ Dept. of Environmental Protection
Bureau of Ground Water Pollution Abatement
P.O. Box 420, Mail Code 401-05V, Trenton, New Jersey 08625-0420
Phone: 609-633-2427 (working remotely, voicemail checked sporadically)
David.VanEck@dep.nj.gov

AECOM
30 Knightsbridge Road Suite 520
Piscataway, New Jersey
www.aecom.com

732 564 3200 tel
732 369 0122 fax

April 20, 2021

**Via Registered Certified Mail**

Bureau of Case Assignment & Initial Notice (BCAIN)
New Jersey Department of Environmental Protection
Site Remediation Program
401-05H, PO Box 420
Trenton, NJ 08625-0420

**Subject: Discharge to Groundwater Permit-By-Rule Authorization Request**
**Garfield Avenue Group Sites, Groundwater Phase III Interim Remedial Measure**
**Jersey City, Hudson County, New Jersey**

To Whom It May Concern:

AECOM, on behalf of PPG, has prepared this Phase III Groundwater Interim Remedial Measure (IRM) New Jersey Pollutant Discharge Elimination System (NJPDES) Discharge to Groundwater (DGW) Permit-By-Rule (PBR) Authorization Request for portions of the Garfield Avenue (GA) Group Sites, part of the Hudson County Chromate (HCC) Sites in Jersey City, Hudson County, New Jersey (Project Area). The Project Area is shown on **Figure 1**.

Groundwater IRMs are being implemented on HCC Site 114 to actively treat groundwater impacted with total chromium (Cr) and hexavalent chromium ($Cr^{+6}$) in the shallow, intermediate, and deep water-bearing zones. The Phase I IRM was implemented between July 2017 and March 2020 under a PBR authorization issued by the New Jersey Department of Environmental Protection (NJDEP) (NJDEP, 2017). Completion of the Phase I IRM program is being followed by post-treatment performance monitoring through early 2022. As confirmed during treatment monitoring and post-treatment monitoring, the Phase I IRM has reduced Cr and $Cr^{+6}$ concentrations within the Site 114 area and is expected to reduce future mass flux from the treated areas and potential mass discharge outside of Site 114. The Phase II IRM system has been installed and full-scale operation began in October 2020 under its own PBR authorization (NJDEP, 2019). Phase II IRM operation is ongoing and will be followed by up to two years of post-treatment monitoring. A third IRM phase (Phase III) is planned to treat groundwater impacted with Cr, $Cr^{+6}$, and other select target constituents identified as emanating from Site 114 in areas beyond the horizontal and vertical limits of the Phase I and Phase II IRM areas, and is the subject of this PBR Authorization Request.

The Phase III IRM area includes select portions of water-bearing zones within the following areas outside of Site 114: Carteret Avenue; select areas within HCC Sites 132, 137 and 143; Halladay Street North; intersection of Carteret Avenue and Pacific Avenue; in the vicinity of the 101 Pacific Avenue property; Forrest Street; and Site 199. The Phase III IRM also includes targeted treatment in strategic areas within the lower portion of the deep water-bearing zone on Site 114. In addition, a limited area within the shallow water-bearing zone on Site 199 is being targeted for treatment of

tetrachloroethene (PCE). **Table 1** summarizes the Sites and properties, addresses and NJDEP Site Remediation Program (SRP) Program Interest (PI) numbers (where applicable) of the areas included in the Phase III IRM.

The three IRMs use a combination of demonstrated active remediation technologies, including *in situ* anaerobic bioprecipitation (ISAB) and *in situ* chemical reduction (ISCR), to achieve the IRM objectives. Post-treatment monitoring data from Phase I IRM show that the IRM decreased groundwater Cr and $Cr^{+6}$ concentrations by three to four orders of magnitude across most of the treatment area, with $Cr^{+6}$ concentrations below the analytical detection limits at most monitoring locations and reductions in the lateral extent of the groundwater plume within the treatment area (Arcadis, 2021). Lessons learned from the Phase I program were adopted as part of the Phase II design, and current treatment monitoring data from the Phase II IRM indicate the development of a reactive zone and decreases in groundwater Cr and $Cr^{+6}$ concentrations in the treatment areas (AECOM, 2021a). Lessons learned from the Phase I and Phase II IRMs will be applied to the Phase III IRM and it is expected that the treatment efficacy achieved by the Phase I and Phase II IRMs will also be achieved by the Phase III IRM.

The remainder of this letter provides a summary of the Project Area geology and hydrogeology, IRM objectives, target treatment areas, description of the Phase III implementation approach, groundwater monitoring program, reporting, regulatory and permitting considerations, and references. The Phase III IRM PBR is intended to be flexible and adaptive and has been streamlined to include the lessons learned during implementation of the Phase I and Phase II IRMs.

**Project Area Geology and Hydrogeology**

The Project Area is located on miscellaneous fill material that was used to reclaim the salt marsh for the construction of this portion of Jersey City. Native materials beneath the fill include an organic meadow mat layer, unconsolidated deposits of glacial origin, and bedrock. The geology within the Project Area consists of:

- Fill (*the shallow zone*), consisting of:
    - Non-native fill materials in areas where soil remediation is not needed or has not yet been implemented, and
    - Clean fill (unamended or amended with the FerroBlack®-H reductant) where the previously existing non-native fill materials and subsurface structures were excavated to remove sources of chromium (Cr);
- Underlying the fill, a discontinuous layer of estuarine organic-rich deposits (*meadow mat*);
- Underlying the meadow mat, or directly below the fill where the meadow mat is absent, native soils consisting of sands, silty sands, silts, and clays (*the intermediate zone*) generally separated from the underlying deep zone by a layer of interbedded lower permeability silts, clayey silts, silty sands, and clays (*the transition zone, part of the intermediate zone);*

- Underlying the intermediate zone, sands with lenses of silt, clay, and gravel underlain by the basal facies of the Rahway Till (*the deep zone, includes the basal till and overlying sands);* and

- Underlying the overburden, bedrock of the Lockatong and Stockton Formations with a diabase sill intruding into the Lockatong formation along the western edge of the Project Area (*bedrock zone*).

Groundwater in the Project Area occurs within distinct hydrostratigraphic water-bearing zones (units), as follows:

- *Shallow Water-Bearing Zone*: includes groundwater present in the fill from the water table to the top of the meadow mat. Where the fill was excavated during soil remediation, the backfill is a more uniform dense-graded aggregate (DGA) material or DGA amended with FerroBlack®-H. In the northeastern corner of Site 114, beyond Forrest Street, a native sandy unit underlies the fill above the intermediate water-bearing zone deposits.

- *Intermediate Water-Bearing Zone:* includes groundwater present in the meadow mat, the underlying sand unit, and the transition zone. Where present, the meadow mat is the transition zone between the shallow and intermediate water-bearing zones and generally limits vertical groundwater movement between these zones. Where meadow mat is absent, the shallow and intermediate water-bearing zones are in direct contact. Where present, the transition zone behaves like an aquitard due to its lower permeability. The intermediate water-bearing zone pinches out against the rising bedrock surface west of the Project Area (beyond Garfield Avenue).

- *Deep Water-Bearing Zone*: north of Carteret Avenue, the deep zone consists primarily of sand and gravel with lenses of clay or silt underlain by basal till. South of Carteret Avenue, the deep zone becomes more difficult to differentiate from the intermediate zone as both zones grade into thicker sequences of lower conductivity materials such as silts, clays, and fine sands with silt and clay. The deep water-bearing zone pinches out against the rising bedrock surface on the western margin of the Project Area near Garfield Avenue.

- *Bedrock Water-Bearing Zone:* consists primarily of the Lockatong Formation, with the Palisades Sill (diabase) along the western edge of the Project Area and a section of the Stockton Formation in the eastern portion of Site 114. Groundwater flow within the bedrock occurs only within interconnected bedrock fractures, bedding planes, cracks, and voids. Yields from bedrock wells in the Project Area are low (0.02 to 0.05 gallons per minute [gpm]). Groundwater flow in bedrock is a small fraction of the total groundwater flux through the Project Area.

**Phase III IRM Objectives**

The objectives of the Phase III IRM program are to:

- Actively treat groundwater $Cr^{+6}$ concentrations greater than 1,000 micrograms per liter (µg/L) within targeted water-bearing zones where practicable using a combination of one or more ISAB and/or ISCR alternatives. Also, treat or reduce concentrations of other constituents of concern (COCs) in groundwater[1];

- Inject electron donors to create and support ISAB and/or injections of chemical reductant to support ISCR in the target shallow, intermediate, and deep water-bearing zones;

- Inject FerroBlack®-H to establish *in situ* reactive zones (IRZ) to create and support ISCR in target areas and water-bearing zones; and

- Document post-treatment trends in groundwater quality with respect to total Cr and other COCs, showing continuing attenuation/reduction toward the Class II-A Groundwater Quality Standards (GWQS).

**Target Treatment Areas**

The horizontal and vertical extent of the Project Area where Cr is present in groundwater at concentrations greater than 1,000 µg/L in the shallow, intermediate, and deep water-bearing zones was delineated by the groundwater Remedial Investigation (RI) (AECOM, 2021a). In defining the active remediation target treatment areas, it was assumed that Cr concentrations within the 1,000 µg/L Cr isopleths consist entirely of $Cr^{+6}$. Active groundwater treatment for a portion of these areas has already been completed or is ongoing via implementation of the Phase I and Phase II IRMs. Treatment of the remaining areas will be accomplished via implementation of the Phase III IRM. Based on this information, **Figure 2-1, Figure 2-2,** and **Figure 2-3** show the target treatment areas for the Phase III IRM for the shallow, intermediate, and deep water-bearing zones, respectively. The depicted target treatment areas are approximate, have been developed using available data, and may be refined before commencement of active treatment as additional data are collected during installation of the Phase III IRM remediation wells and monitoring wells.

**Phase III IRM Approach**

As stated above, the three IRMs use a combination of demonstrated active remediation technologies, including ISAB and ISCR, to achieve the IRM objectives. Although biological and chemical treatment mechanisms differ, both treatment processes are designed to reductively precipitate and permanently fix/immobilize the $Cr^{+6}$ in the aquifer, reduce $Cr^{+6}$ concentrations in groundwater to achieve remediation goals, and support long-term treatment permanence.

***In situ Anerobic Bioprecipitation*** is an established biologically-mediated remedial technology for the treatment of metals (e.g., Cr) and other COCs in groundwater. This technology uses continuous or periodic delivery of degradable organic carbon substrates, such as molasses or emulsified vegetable oil (EVO), into the contaminated groundwater system to stimulate the native microorganisms and promote the development of an IRZ. Within the IRZ, fermentation of the organic carbon substrate promotes development of iron- and sulfate-reducing groundwater conditions that are favorable for the

[1] The concentrations of non-Cr COCs within the active treatment areas are lower compared to Cr and are not the primary targets of the active remedy. Several of the non-Cr COCs will be treated using the selected active remedies (e.g., *in situ* via ISAB or ISCR), specifically PCE on Site 199.

reduction of $Cr^{+6}$. Under these conditions, $Cr^{+6}$ is reduced to $Cr^{+3}$ through reactions with multiple biologically-generated reductants or via direct anaerobic respiration with $Cr^{+6}$ serving as the terminal electron acceptor. The reduction of $Cr^{+6}$ to $Cr^{+3}$ provides three benefits from a treatment perspective:

- $Cr^{+3}$ is less toxic than $Cr^{+6}$ and, therefore, has higher permissible environmental concentrations;
- $Cr^{+3}$ is less soluble than $Cr^{+6}$ under Project Area groundwater conditions and forms a precipitate that is immobilized in the form of a hydroxide mineral that can be incorporated in a matrix of carbonate, sulfide, and other precipitates generated during the treatment process; and
- Insoluble $Cr^{+3}$ phases are resistant to re-oxidation to $Cr^{+6}$ phases under the soil and groundwater conditions at the Project Area.

The above benefits, combined with the pH-neutralizing effects of organic carbon fermentation, and the capability of the ISAB process to establish a reactive zone with sustained biological and abiotic reduction capacity, make $Cr^{+6}$ treatment via ISAB a suitable groundwater remedial technology for the Project Area. A pilot test was completed in 2014 within the shallow and intermediate water-bearing zones of the former Phase IRM I test area on Site 114 to test the effectiveness of an ISAB remedy for $Cr^{+6}$-contaminated groundwater. The performance monitoring results show that treatment of $Cr^{+6}$ impacts was achieved in groundwater and soil in the test area, with the treatment goals of 90% reduction of $Cr^{+6}$ in groundwater, and the target concentration of 20 milligrams per kilogram (mg/kg) of $Cr^{+6}$ in soil, being met. Based on the pilot test results, ISAB was selected for the Phase I and II IRM programs. Performance monitoring data from the Phase I IRM through the fourth quarter of 2020 show that Cr and $Cr^{+6}$ concentrations were reduced by three and four orders of magnitude (compared to baseline conditions) in the majority of the Phase I treatment area, with limited exceptions (Arcadis, 2021). In the Phase II IRM area, breakthrough with respect to total organic carbon (TOC) concentrations present in treatment areas with greater than baseline TOC concentrations, and decreases in Cr and $Cr^{+6}$ concentrations were observed in several monitoring wells during treatment monitoring and is expected to progress further as the remainder of the injection program is completed (AECOM, 2021a).

***In Situ Chemical Reduction*** is a direct abiotic chemical reduction treatment that is implemented by introducing a reductant to chemically reduce $Cr^{+6}$ to less soluble $Cr^{+3}$, which in turn geochemically binds onto soil surfaces in the target groundwater treatment zone. This is achieved by the delivery of the chemical reductant into the subsurface, which facilitates abiotic Cr removal in the aqueous phase via conversion of $Cr^{+6}$ to $Cr^{+3}$ and subsequent precipitation as either chromium hydroxide ($Cr[OH]_3$) or as iron-Cr hydroxide complexes. An ISCR pilot test was conducted in 2016 on Site 114 to evaluate the applicability of abiotic treatment for $Cr^{+6}$ in groundwater and saturated soil. During the ISCR pilot test, two chemical reductants, FerroBlack®-H and calcium polysulfide (CPS), were tested to assess the viability of ISCR at the Site. The pilot test performance monitoring results demonstrated that $Cr^{+6}$ and total Cr concentrations were reduced by greater than 90% and 75%, respectively, when compared to the baseline concentrations. Overall, pilot testing showed that ISCR is effective for $Cr^{+6}$ treatment and is included in the selected active remedy to complement ISAB. This technology provides reagent flexibility and can be applied alone or in combination with ISAB to optimize the remediation strategy.

The ISAB/ISCR approach to the Phase III IRM will vary across the treatment areas depending on soil heterogeneity, soil and structure geotechnical sensitivity, distribution of $Cr^{+6}$ concentrations within the targeted water-bearing zones, and location of existing structures (buildings, light rail,

etc.). *In situ* reagent injections and FerroBlack®-H IRZs will be used to treat $Cr^{+6}$ in groundwater and will be tailored to each of the shallow, intermediate, and deep treatment zones.

**Table 2** includes the proposed reagents (molasses, EVO, CPS and FerroBlack®-H) and the calculated target injection volumes for each of the Phase III IRM treatment areas and water-bearing zones. **Table 3** shows the approximate pore volumes proposed for treatment by target areas with molasses, EVO and/or CPS. **Appendix A** includes Safety Data Sheets for these reagents.

### *In Situ Injections*

*In situ* injections will be performed using a permanent well network screened at target depths and may be supplemented with the use of direct push injections, as needed. The locations of the proposed injection wells in the shallow, intermediate, and deep water-bearing zones are shown in **Figure 3-1, Figure 3-2, and Figure 3-3**, respectively. Note that the number and location of proposed injection wells are approximate and subject to change based on Phase III IRM performance and observed monitoring results.

Injections will be implemented in phases and will begin along the downgradient edge of each target area to establish a reactive zone along the boundary (edge) prior to, and potentially during, injections in upgradient areas. Injection flow rates at individual wells may vary from 0 to 1.5 gpm based on experience during the Phase I and Phase II IRMs. Optimum injection pressures will be field determined but are not expected to exceed 10 pounds per square inch (psi) in the shallow water-bearing zone, 20 psi in the intermediate water-bearing zone, and 25 psi in the deep water-bearing zone.

A well-point dewatering system may be installed and screened in the intermediate or shallow water-bearing zones in and around Carteret Avenue prior to commencing injection activities. If used, the dewatering system will be operated for approximately one month prior to commencing injection activities to depress the water table and reduce pore pressure, with the goal of optimizing the injection period and preventing hydraulic mounding. The dewatering system may continue to be operated during injection activities to manage hydraulic mounding, if needed. Once injected reagents are detected within the dewatering points, the dewatering system operation will be discontinued to prevent removal of reagent from the treatment zone. Groundwater removed via the dewatering system will be directed to the existing onsite groundwater treatment plant.

### *Ferro Black®-H Reactive Zones*

In areas planned for $Cr^{+6}$ treatment using FerroBlack®-H, the reagent will be delivered into the target zones to establish a reducing environment within the zone of influence of the injected material. FerroBlack®-H is a proprietary reagent of Redox Solutions, LLC, and is a reductive, colloidal suspension of 1-2% by weight (wt.) soluble sulfides and 7-8% by wt. insoluble iron sulfides (FeS). The effectiveness of this chemical reductant was demonstrated in laboratory, bench-scale, and pilot-scale testing, and through its use as a backfill amendment across the Project Area over the last decade (AECOM, 2021c).

The reagent will precipitate $Cr^{+6}$ out of the aqueous phase as iron-chromium hydroxide complexes, thereby reducing the concentration of dissolved-phase Cr. The soluble sulfides component serves as a short-term source of sulfides (electron donor) to promote the reduction of $Cr^{+6}$ to $Cr^{+3}$, while the minimally soluble FeS particles act as a long-term source of reductant. The reduction of $Cr^{+6}$ to the

less toxic, less mobile $Cr^{+3}$ precipitates by FerroBlack®-H occurs through one or more geochemical processes, whereby:

- The soluble sulfides component of the FerroBlack®-H reacts rapidly with aqueous $Cr^{+6}$, providing a readily available source of electron donor (i.e., dissolved sulfides) resulting in its reduction to $Cr^{+3}$ and the formation of an iron-chromium precipitate; and

- The insoluble phase of FerroBlack®-H, mainly comprised of minimally soluble FeS particles, provides a slow-release long-term source of both iron and sulfur species to promote the continued reduction of $Cr^{+6}$ to $Cr^{+3}$, through a combination of dissolution, surface adsorption, and co-precipitation reactions. The reduction of $Cr^{+6}$ occurs at the FeS particles' surface, and results in the formation of $Cr^{+3}$-$Fe^{+3}$ hydroxides or oxyhydroxide (e.g., $Cr^{x}Fe^{1-x})(OH)_3$ or $Cr^{x}Fe^{1-x}OOH$) at pH conditions greater than 4 standard units (AECOM, 2021c). The mineral matrix of the FeS will continue to provide a slow-release, long-term source of reductant.

FerroBlack®-H reactive zones are being considered for three target areas: (1) in the southwestern quadrant of Site 114 within the lower portion of the deep water-bearing zone below the transition zone and beneath the vertical limits of the Phase I IRM, but above the top of the basal till; (2) east of the intersection of Carteret and Pacific Avenues in the intermediate water-bearing zone; and (3) potentially on and/or immediately adjacent to Site 199 in the intermediate water-bearing zone. Each of the three Area 1 FerroBlack®-H reactive zones are anticipated to be approximately 250 feet in length perpendicular to the local groundwater flow direction, up to 15 feet in vertical thickness and range up to 20 feet in horizontal thickness based on the total volume of FerroBlack®-H to be emplaced in each reactive zone as depicted in Figure 3-3. The focal area of the FerroBlack®-H reactive zone in Area 2 east of Pacific Avenue is anticipated to be 180 feet in length in a line perpendicular to the local groundwater flow direction, approximately 40 feet in vertical thickness and range up to 20 feet in horizontal thickness. Additional contingency length beyond the target 180-feet is contemplated in Figure 3-2. The Area 3 FerroBlack®-H reactive zone along the boundary of Site 199 and Site 114 is anticipated to be approximately 135 feet in length, up to 30 feet in vertical thickness and range up to 15 feet in horizontal thickness as depicted in Figure 3-2. The ultimate location and geometry of each reactive zone will be finalized during the design and ultimately during FerroBlack®-H emplacement and will consider factors such as: utilities, access to non-PPG owned properties, structural stabilization of adjacent facilities, properties and structures, and proximity to the New Jersey (NJ) Transit Light Rail (on Site 199). The emplacement of the FerroBlack®-H reactive zone near the boundary of Site 114 and Site 199 is conceptual and is being contemplated to address potential future mass flux in groundwater from green-gray mud remaining under the light rail on Site 199. A geotechnical evaluation is underway to determine the technical practicability of establishing a FerroBlack®-H reactive zone near the boundary of Site 114 and Site 199 without disturbing the adjacent light rail and associated retaining wall structure. The reactive zone east of the intersection of Carteret and Pacific Avenues is designed to address the downgradient edge of Cr impacts for areas along Halladay Street that are not readily accessible for *in situ* injections. All final locations are subject to access.

In areas planned for FerroBlack®-H emplacement, the reagent will be delivered into the target treatment zones via a series of soil borings in a line generally perpendicular to the direction of groundwater flow. The lateral spacing of the soil borings will allow for overlapping radii of influence. Final depth intervals for the target treatment zones will be determined in the field based on observations made during installation of the soil borings that will serve as the reagent delivery points.

Once emplaced, the FerroBlack®-H will establish a reducing environment within the zone of influence of the injected material. The protocols for reagent delivery will be finalized during the design.

**Groundwater Monitoring**

The groundwater monitoring program for the Phase III IRM has been developed to support ongoing evaluation of treatment effectiveness and support continuous adaptation and optimization of the program. Phase III IRM monitoring activities are proposed as part of four primary categories to support treatment assessment and performance optimization, including: 1) baseline sampling, 2) operational monitoring, 3) treatment monitoring, and 4) post-treatment monitoring. A combination of both new and existing monitoring wells will be incorporated as part of each of these four monitoring categories. The monitoring schedule is described in **Appendix B**, which includes a schedule of the monitoring phases, monitoring parameters, and frequency. Existing and proposed monitoring wells for the shallow, intermediate, and deep water-bearing zones are provided on **Figure 3-1, Figure 3-2,** and **Figure 3-3**, respectively. A list of existing and proposed monitoring wells to be utilized for injection monitoring and treatment monitoring are provided in **Table 4-1** and **Table 4-2**, respectively. A list of the proposed injection wells is provided in **Table 4-3**. Recent sampling data for Cr and PCE from the existing monitoring well network are presented in **Appendix C**.

The duration of the monitoring program in each category may vary across the water-bearing zones and treatment areas and will be dependent on when active treatment begins in each area and the treatment effectiveness in each zone. Monitoring parameters and frequencies may be adjusted to optimize the monitoring program and allow treatment effectiveness to be evaluated and transition from the IRM to next phase of active treatment (i.e., enhanced attenuation, as described further in the Groundwater Remedial Action Work Plan [AECOM, 2021c]). Monitoring of groundwater parameters (e.g., depth to water, geochemical parameters, TOC, COCs) will allow for identifying potential groundwater mounding, evaluating the development of the reactive zone, and evaluating treatment efficacy. During the injection phases, reagent injection pressures, flow rates, and volumes will be monitored and may be adjusted to prevent daylighting or breakout of reagent at the ground surface.

**Reporting**

Details of the well and system installation, system operation, and operation and treatment monitoring results associated with the Phase III IRM will be documented as part of quarterly technical status reports submitted to NJDEP. These quarterly status reports will include succinct, high-level summaries of activities performed, data collected and graphs depicting apparent trends, adaptive steps taken to modify or optimize Phase III treatment, and an overview of activities planned for the subsequent quarter.

**Schedule**

PPG will proceed with startup of the Phase III IRM program upon issuance of the PBR Authorization by NJDEP and installation of the necessary IRM infrastructure (e.g., wells, piping, mobile injection units, utilities). IRM infrastructure construction may be initiated prior to PBR authorization to expedite elements of the project schedule, as necessary. Additionally, start-up will occur in stages in the various target areas (e.g., Target Area 1 injections are anticipated to start up prior to Target Areas 2 and 3). In accordance with the monthly groundwater Gantt chart submittals, Phase III IRM remediation and monitoring well installation is anticipated to begin in early May 2021. Work in areas

planned for FerroBlack®-H treatment is anticipated to commence by July 2021 on Site 114 and be completed by end of September 2021. Work in the other areas planned for FerroBlack®-H treatment will be completed by December 31, 2021.

The Phase III IRM operation is anticipated to start in the fourth quarter of 2021 and last for a duration of up to approximately 15 months, followed by a post-treatment monitoring period of up to two years. While the active injection period is anticipated to be concluded within approximately 15 months of start-up, it is requested that the PBR be authorized for five years in the event post-treatment monitoring results indicate additional reagent injections are required to achieve the objectives. The total reagent volumes presented in **Table 2** include contingency volumes for additional injections, if required, such that the total reagent volumes injected under this PBR authorization do not exceed the volumes in **Table 2**. As-built layouts for the Phase III IRM system will be provided within the appropriate quarterly status reports.

**Regulatory and Permitting Considerations**

Because the Phase III IRM proposes injections to groundwater, an NJPDES DGW PBR Authorization Request is included herein. Pursuant to NJPDES rules (New Jersey Administrative Code [N.J.A.C.] 7:14A-7.5 and 8.5) and Technical Requirements for Site Remediation (N.J.A.C. 7:26E-5.6), this letter provides the PBR Authorization Request Form (**Appendix D**) and a description of the DGW activities. In addition, because the DGW PBR involves operation beyond 180 days, a 30-day public notice is required prior to the start of the groundwater discharge in accordance with 7:26E-5.6 (c)1-4. A draft public notice is provided as **Appendix D**. Proof of publication will be provided to NJDEP within 15 days after the notice is published.

Right of way permits for injection and monitoring well installations in city streets and sidewalks outside the Site 114 fence line will be obtained prior to installation. Additionally, the Temporary Access Permit (TAP) with New Jersey Transit will be updated before the installation of wells or implementation of FerroBlack®-H emplacement on Site 199.

PPG currently maintains a Water Allocation Permit (WAP) for the site (WAP190001) associated with the ongoing excavation dewatering efforts and Phase II IRM operations. The current WAP covers the PPG GA Group sites with an upper limit of total water from all diversion sources of 6 million gallons per month/50 million gallons per year. If the well-point dewatering system is implemented, operation of the proposed Phase III IRM dewatering system will be balanced with the operational needs of the existing Phase II IRM groundwater extraction system and the excavation dewatering extraction needs, such that the total water diversion will stay within the approved volumes of the current permit. The existing WAP will be updated with the required information for the Phase III IRM dewatering system, if implemented, and prior to commencement of water withdrawal activities.

**References**

AECOM, 2021a. Groundwater Interim Remedial Measures Phase II Quarterly Report – Fourth Quarter 2020, Draft. February 19, 2021.

AECOM, 2021b. Groundwater Remedial Investigation Report, Revised Draft. March 24, 2021.

AECOM, 2021c. Groundwater Remedial Action Work Plan, Garfield Avenue Group Sites, NJDEP Program Interest Numbers: G000005480, G000008749, 629345, 025695, 246332, G000008753, G000008759, G000044581, 777089, 722429, 775706, 775998, 629388, Draft. March 31, 2021.

Arcadis, 2021. Groundwater Interim Remedial Measure Phase I Quarterly Report – Fourth Quarter 2020, Garfield Avenue Group Site 114. February 23, 2021.

NJDEP, 2017. Discharge Approval and Monitoring Requirements Associated with Permit-By-Rule Discharge Authorization for PPG Industries (COPR), Garfield Avenue Group and Former Halladay Street Gas Works, 900 Garfield Avenue, Block: 21501, Lots 16, 17, 18, 19, and 20, Jersey City, Hudson County, NJ Program Interest Numbers G000008791. September 21, 2017.

NJDEP, 2019. Discharge to Groundwater Authorization, PPG Industries (COPR), Garfield Avenue Group and Former Halladay Street Gas Works, 900 Garfield Avenue, Block: 21501, Lots 16, 17, 18, 19, and 20, Jersey City, Hudson County, NJ Program Interest Numbers G000005480. May 9, 2019.

**Closing**

Thank you for your consideration of this application. If you have any questions or require additional information, please contact the undersigned.

Yours sincerely,



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# Tables

# Table 1
## Program Interest and Activity Numbers
## Permit-By-Rule Authorization Request - Phase III Groundwater Interim Remedial Measures
## Garfield Avenue Group Sites
## PPG, Jersey City, New Jersey

AECOM

| Site No. | SRP Program Interest Number | Cr Activity Number | Site Name | Location/Address | Block | Lot(s) |
|---|---|---|---|---|---|---|
| 114 | G000005480 | RPC000051 | Former MGP facility and COPR stockpile area | Southwest and Eastern portions of Site 114 (70 Carteret Avenue; 2 Dakota Street; 880 and 884 Garfield Avenue) | 21501 | 16, 17, 18.01, 18.02, 19.01, 19.02 |
| | | | Former Chromate Chemical Production Facility | Northwest portion of Site 114 (900 Garfield Avenue) | 21501 | 20.01 & 20.02 |
| 132 | G000008749 | RPC900001 | Town & Country Linen (former name) | 824 Garfield Avenue | 21510 | 2 |
| 133 West | 629345 | RPC190001 | Ross Wax (former name) | 15 Halladay Street | 21510 | 5 |
| 133 East | 025695 | RPC900001 | Ross Wax (former name) | 22 Halladay Street | 21509 | 1 |
| 135 | 246332 | RPC000001 | Vitarroz or Narula (former name) | 51-99 Pacific Avenue | 21509 | 2 |
| 137A | G000008753 | RPC900001 | Rudolf Bass, Inc. (former name) | 45 Halladay Street | 21510 | 3 |
| 143 | G000008759 | RPC900001 | F. Talarico Auto (former name) | 846 Garfield Avenue | 21510 | 1 |
| 199 | G000044581 | N/A | NJ Transit - Hudson-Bergen Light Rail | 163 Halladay Street | 21501 | 1.01 |
| Halsted Building | 722429 | associated with Site 114 G000005480 | Halsted Building | 78, 94, 98, 100, 102, and 104 Halladay Street | 21502 | 12-17 |
| Forrest Street and Forrest Street Properties | 775706 | associated with Site 114 G000005480 | Forrest Street Properties and Forrest Street | 84, 86, 90, 98, 100, and 108 Forrest Street | 21501 | 11, 12 14.01 |
| Fishbein | 629388 | associated with Site 114 G000005480 | Fishbein | 816 Garfield Avenue | 21510 | 11 |
| Roadways | G000005480 | associated with Site 114 G000005480 | Carteret Avenue, Garfield Avenue, Halladay Street North, Pacific Avenue | N/A | N/A | N/A |
| Eden Wood Property | N/A | N/A | Eden Wood | 33-47 Carteret Avenue; 150 Pacific Avenue | 21503 | 23 & 27 |

**Notes:**

1. Block and lot numbers were sourced from the tax map of Jersey City (Sheet 215), last updated 12/2020, accessed at: http://hostedfiles.civilsolutions.biz/jerseycity/taxmaps/index.htm

COPR = chromite ore processing residue

Cr = chromium

MGP = manufactured gas plant

N/A = not applicable

SRP = Site Remediation Program

# Table 2
## Proposed Reagents and Injection Volumes
## Permit-By-Rule Authorization Request - Phase III Groundwater Interim Remedial Measures
## Garfield Avenue Group Sites
## PPG, Jersey City, New Jersey

| Treatment Type | Reagent[1] | Target Area (see Figures 2-1, 2-2, and 2-3) | Water-Bearing Zone (see Figures 2-1, 2-2, and 2-3) | Local Maximum Injection Solution Volume (Gallons) | Total Maximum Injection Solution Volume (Gallons) |
|---|---|---|---|---|---|
| ISAB | Molasses (0.05%) | Target Area 1 | Intermediate | 3,400,000 | 16,240,000 |
| | | | Deep | 120,000 | |
| | | | Contingency [3] | 3,520,000 | |
| | | Target Area 2 | Intermediate | 3,000,000 | |
| | | | Deep | 140,000 | |
| | | | Contingency [3] | 3,140,000 | |
| | | Target Area 3 | Shallow | 47,000 | |
| | | | Intermediate | 1,400,000 | |
| | | | Deep | 13,000 | |
| | | | Contingency [3] | 1,460,000 | |
| | Emulsified Vegetable Oil (EVO) (1.5%) | Target Area 1 | Intermediate | 580,000 | 2,752,000 |
| | | | Deep | 20,000 | |
| | | | Contingency [3] | 600,000 | |
| | | Target Area 2 | Intermediate | 510,000 | |
| | | | Deep | 24,000 | |
| | | | Contingency [3] | 534,000 | |
| | | Target Area 3 | Shallow | 9,000 | |
| | | | Intermediate | 230,000 | |
| | | | Deep | 3,000 | |
| | | | Contingency [3] | 242,000 | |
| ISCR | Calcium Polysulfide (CPS) (2.75%) | See Note 2. | | | |
| | FerroBlack®-H[4] | Target Area 1 | Deep | 168,000 | 796,000 |
| | | | Contingency [3] | 168,000 | |
| | | Target Area 2 | Intermediate | 162,000 | |
| | | | Contingency [3] | 162,000 | |
| | | Target Area 3 | Intermediate | 68,000 | |
| | | | Contingency [3] | 68,000 | |

**Notes:**

1. Percentages noted in this column represent the design reagent-to-potable water concentrations proposed to be injected into the respective water bearing zones.

2. A CPS solution may be substituted for up to 50% of the anticipated injection volume of molasses (i.e., 8,120,000 gallons), if baseline or treatment monitoring data suggest the presence of areas of elevated hexavalent chromium concentrations (i.e., greater than 1,000,000 µg/L).

3. Contingency volumes account for an additional 100% of the estimated required injection volumes and may be implemented based on Treatment Monitoring.

4. FerroBlack®-H volumes were calculated using treatability study values derived from previous bench-scale and pilot-scale tests conducted in 2016. Actual volumes will be determined at the time of installation.

ISAB = *in situ* anaerobic bioprecipitation

ISCR = *in situ* chemical reduction

µg/L = micrograms per liter

**Table 3**
**Approximate Mobile Pore Volumes for Treatment with Molasses/EVO/CPS**
**Permit-By-Rule Authorization Request - Phase III Groundwater Interim Remedial Measures**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| Water-Bearing Zone | Target Area 1 Mobile Pore Volume (Gallons) | Target Area 2 Mobile Pore Volume (Gallons) | Target Area 3 Mobile Pore Volume (Gallons) | Total Mobile Pore Volume (Gallons) |
|---|---|---|---|---|
| Shallow | 0 | 0 | 71,000 | **71,000** |
| Intermediate | 4,967,000 | 4,388,000 | 1,993,000 | **11,348,000** |
| Deep | 175,000 | 206,000 | 19,000 | **400,000** |
| **Combined** | **5,142,000** | **4,594,000** | **2,083,000** | **11,819,000** |

**Notes:**

1. Mobile pore volumes are estimated to be 15% of the total volume of soil and pore spaces. This assumption is consistant with the Phase I and Phase II Interim Remedial Measures.

EVO = Emulsified Vegitable Oil

CPS = Calcium Polysulfide

**Table 4-1**
**Existing Monitoring Well Network**
**Permit-By-Rule Authorization Request - Phase III Groundwater Interim Remedial Measures**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| Well ID | Target Area | Water-Bearing Zone | Treatment Monitoring (Cr) | Treatment Monitoring (PCE) | Operational Monitoring |
|---|---|---|---|---|---|
| 132-P3A-MW103S | Target Area 1 | SHALLOW | | | X |
| 137-P3B-MW101S | Target Area 1 | SHALLOW | | | X |
| 143-P3A-MW101S | Target Area 1 | SHALLOW | | | X |
| 114-MW22BR | Target Area 1 | INTERMEDIATE | X | | X |
| 132-P3A-MW102I | Target Area 1 | INTERMEDIATE | X | | X |
| 132-P3A-MW103I | Target Area 1 | INTERMEDIATE | X | | X |
| 132-P3A-MW104I | Target Area 1 | INTERMEDIATE | X | | X |
| 143-P3A-MW101I | Target Area 1 | INTERMEDIATE | X | | X |
| 114-MW68C | Target Area 1 | DEEP | X | | X |
| 114-MW67C | Target Area 1 | DEEP | X | | X |
| 114-MW68C | Target Area 1 | DEEP | X | | X |
| 114-MW70C | Target Area 1 | DEEP | X | | X |
| 132-P3A-MW104D-1 | Target Area 1 | DEEP | X | | X |
| 137-MW1C | Target Area 1 | DEEP | X | | X |
| 114-MW39B | Target Area 2 | INTERMEDIATE | X | | X |
| 135-MW2B | Target Area 2 | INTERMEDIATE | X | | X |
| MW8D | Target Area 2 | INTERMEDIATE | X | | X |
| MW1C-3 | Target Area 3 | SHALLOW | X | | X |
| 114-MW22AR | Target Area 3 | SHALLOW | | | X |
| 114-MW25A | Target Area 3 | SHALLOW | | | X |
| 114-MW36A | Target Area 3 | SHALLOW | | | X |
| 114-MW41A | Target Area 3 | SHALLOW | X | X | X |
| MW1C-4 | Target Area 3 | SHALLOW | X | | X |
| 114-MW24B | Target Area 3 | INTERMEDIATE | X | | X |
| 114-MW25B | Target Area 3 | INTERMEDIATE | X | | X |
| 114-MW26B | Target Area 3 | INTERMEDIATE | X | | X |
| 114-MW2B1-2I | Target Area 3 | INTERMEDIATE | X | | X |
| 114-MW36B | Target Area 3 | INTERMEDIATE | X | | X |
| 114-MW41B | Target Area 3 | INTERMEDIATE | X | X | X |

**Notes:**

Cr = chromium

PCE = tetrachloroethene

# Table 4-2
## Proposed Monitoring Well Network
## Permit-By-Rule Authorization Request - Phase III Groundwater Interim Remedial Measures
## Garfield Avenue Group Sites
## PPG, Jersey City, New Jersey

| Well ID | Target Area | Water-Bearing Zone | Treatment Monitoring (Cr) | Treatment Monitoring (PCE) | Operational Monitoring |
|---|---|---|---|---|---|
| 132-P3-MW002I-A | Target Area 1 | INTERMEDIATE | X | | X |
| 132-P3-MW002I-B | Target Area 1 | INTERMEDIATE | X | | X |
| 132-P3-MW003I-A | Target Area 1 | INTERMEDIATE | X | | X |
| 132-P3-MW003I-B | Target Area 1 | INTERMEDIATE | X | | X |
| 137A-P3-MW001I-A | Target Area 1 | INTERMEDIATE | X | | X |
| 137A-P3-MW001I-B | Target Area 1 | INTERMEDIATE | X | | X |
| 137A-P3-MW002I-A | Target Area 1 | INTERMEDIATE | X | | X |
| 137A-P3-MW002I-B | Target Area 1 | INTERMEDIATE | X | | X |
| 143-P3-MW001I | Target Area 1 | INTERMEDIATE | X | | X |
| CAR-P3-MW001I-A | Target Area 1 | INTERMEDIATE | X | | X |
| CAR-P3-MW001I-B | Target Area 1 | INTERMEDIATE | X | | X |
| CAR-P3-MW003I-A | Target Area 1 | INTERMEDIATE | X | | X |
| CAR-P3-MW003I-B | Target Area 1 | INTERMEDIATE | X | | X |
| CAR-P3-MW004I-A | Target Area 1 | INTERMEDIATE | X | | X |
| CAR-P3-MW004I-B | Target Area 1 | INTERMEDIATE | X | | X |
| EW-P3-MW002I | Target Area 1 | INTERMEDIATE | X | | X |
| HAL-P3-MW001I | Target Area 1 | INTERMEDIATE | X | | X |
| 132-P3-MW001D | Target Area 1 | DEEP | X | | X |
| CAR-P3-MW001D | Target Area 1 | DEEP | X | | X |
| CAR-P3-MW002D | Target Area 1 | DEEP | X | | X |
| CAR-P3-MW003D | Target Area 1 | DEEP | X | | X |
| HSTD-P3-MW001S | Target Area 2 | SHALLOW | | | X |
| HSTD-P3-MW003S | Target Area 2 | SHALLOW | | | X |
| EW-P3-MW001I-A | Target Area 2 | INTERMEDIATE | X | | X |
| EW-P3-MW001I-B | Target Area 2 | INTERMEDIATE | X | | X |
| HSTD-P3-MW001I-A | Target Area 2 | INTERMEDIATE | X | | X |
| HSTD-P3-MW001I-B | Target Area 2 | INTERMEDIATE | X | | X |
| HSTD-P3-MW003I-A | Target Area 2 | INTERMEDIATE | X | | X |
| HSTD-P3-MW003I-B | Target Area 2 | INTERMEDIATE | X | | X |
| PAC-P3-MW001I | Target Area 2 | INTERMEDIATE | X | | X |
| HAL-P3-MW002D | Target Area 2 | DEEP | X | | X |
| HAL-P3-MW003D | Target Area 2 | DEEP | X | | X |
| HAL-P3-MW004D | Target Area 2 | DEEP | X | | X |
| HSTD-P3-MW002D | Target Area 2 | DEEP | X | | X |
| 199-P3-MW001S | Target Area 3 | SHALLOW | X | X | X |
| 199-P3-MW004S | Target Area 3 | SHALLOW | X | X | X |
| FSP-P3-MW001S | Target Area 3 | SHALLOW | X | X | X |
| 199-P3-MW001I | Target Area 3 | INTERMEDIATE | X | | X |
| 199-P3-MW004I | Target Area 3 | INTERMEDIATE | X | | X |
| FS-P3-MW001I | Target Area 3 | INTERMEDIATE | X | | X |
| FS-P3-MW002I | Target Area 3 | INTERMEDIATE | X | | X |
| FS-P3-MW003I | Target Area 3 | INTERMEDIATE | X | | X |
| FSP-P3-MW001I | Target Area 3 | INTERMEDIATE | X | | X |
| 199-P3-MW003D | Target Area 3 | DEEP | X | | X |
| 199-P3-MW004D | Target Area 3 | DEEP | X | | X |
| 114-P3-MW001D | Target Area 1 | DEEP | X | | X |
| 114-P3-MW002D | Target Area 1 | DEEP | X | | X |
| 114-P3-MW003D | Target Area 1 | DEEP | X | | X |
| 114-P3-MW004D | Target Area 1 | DEEP | X | | X |
| 114-P3-MW005D | Target Area 1 | DEEP | X | | X |
| 114-P3-MW006D | Target Area 1 | DEEP | X | | X |

**Notes:**
Cr = chromium
PCE = tetrachloroethene

**Table 4-3**
**Proposed Injection Well Network**
**Permit-By-Rule Authorization Request - Phase III Groundwater Interim Remedial Measures**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| Well ID | Target Area | Water-Bearing Zone |
|---|---|---|
| 132-P3-IRM-001I | Target Area 1 | INTERMEDIATE |
| 132-P3-IRM-002I-A | Target Area 1 | INTERMEDIATE |
| 132-P3-IRM-002I-B | Target Area 1 | INTERMEDIATE |
| 132-P3-IRM-003I-A | Target Area 1 | INTERMEDIATE |
| 132-P3-IRM-003I-B | Target Area 1 | INTERMEDIATE |
| 132-P3-IRM-004I-A | Target Area 1 | INTERMEDIATE |
| 132-P3-IRM-004I-B | Target Area 1 | INTERMEDIATE |
| 132-P3-IRM-005I-A | Target Area 1 | INTERMEDIATE |
| 132-P3-IRM-005I-B | Target Area 1 | INTERMEDIATE |
| 132-P3-IRM-006I | Target Area 1 | INTERMEDIATE |
| 132-P3-IRM-007I-A | Target Area 1 | INTERMEDIATE |
| 132-P3-IRM-007I-B | Target Area 1 | INTERMEDIATE |
| 132-P3-IRM-008I-A | Target Area 1 | INTERMEDIATE |
| 132-P3-IRM-008I-B | Target Area 1 | INTERMEDIATE |
| 132-P3-IRM-009I-A | Target Area 1 | INTERMEDIATE |
| 132-P3-IRM-009I-B | Target Area 1 | INTERMEDIATE |
| 132-P3-IRM-010I-A | Target Area 1 | INTERMEDIATE |
| 132-P3-IRM-010I-B | Target Area 1 | INTERMEDIATE |
| 132-P3-IRM-011I-A | Target Area 1 | INTERMEDIATE |
| 132-P3-IRM-011I-B | Target Area 1 | INTERMEDIATE |
| 137A-P3-IRM-001I | Target Area 1 | INTERMEDIATE |
| 137A-P3-IRM-002I-A | Target Area 1 | INTERMEDIATE |
| 137A-P3-IRM-002I-B | Target Area 1 | INTERMEDIATE |
| 143-P3-IRM-001I | Target Area 1 | INTERMEDIATE |
| 143-P3-IRM-002I | Target Area 1 | INTERMEDIATE |
| 143-P3-IRM-003I | Target Area 1 | INTERMEDIATE |
| 143-P3-IRM-004I | Target Area 1 | INTERMEDIATE |
| 143-P3-IRM-005I | Target Area 1 | INTERMEDIATE |
| CAR-P3-IRM-001I | Target Area 1 | INTERMEDIATE |
| CAR-P3-IRM-002I-A | Target Area 1 | INTERMEDIATE |
| CAR-P3-IRM-002I-B | Target Area 1 | INTERMEDIATE |
| CAR-P3-IRM-003I-A | Target Area 1 | INTERMEDIATE |
| CAR-P3-IRM-003I-B | Target Area 1 | INTERMEDIATE |
| CAR-P3-IRM-004I-A | Target Area 1 | INTERMEDIATE |
| CAR-P3-IRM-004I-B | Target Area 1 | INTERMEDIATE |
| CAR-P3-IRM-005I-A | Target Area 1 | INTERMEDIATE |
| CAR-P3-IRM-005I-B | Target Area 1 | INTERMEDIATE |
| CAR-P3-IRM-006I | Target Area 1 | INTERMEDIATE |
| CAR-P3-IRM-007I-A | Target Area 1 | INTERMEDIATE |
| CAR-P3-IRM-007I-B | Target Area 1 | INTERMEDIATE |
| CAR-P3-IRM-008I-A | Target Area 1 | INTERMEDIATE |
| CAR-P3-IRM-008I-B | Target Area 1 | INTERMEDIATE |
| CAR-P3-IRM-009I | Target Area 1 | INTERMEDIATE |
| CAR-P3-IRM-010I-A | Target Area 1 | INTERMEDIATE |
| CAR-P3-IRM-010I-B | Target Area 1 | INTERMEDIATE |
| CAR-P3-IRM-011I-A | Target Area 1 | INTERMEDIATE |
| CAR-P3-IRM-011I-B | Target Area 1 | INTERMEDIATE |
| CAR-P3-IRM-012I-A | Target Area 1 | INTERMEDIATE |

**Table 4-3**
**Proposed Injection Well Network**
**Permit-By-Rule Authorization Request - Phase III Groundwater Interim Remedial Measures**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| Well ID | Target Area | Water-Bearing Zone |
|---|---|---|
| CAR-P3-IRM-012I-B | Target Area 1 | INTERMEDIATE |
| CAR-P3-IRM-013I-A | Target Area 1 | INTERMEDIATE |
| CAR-P3-IRM-013I-B | Target Area 1 | INTERMEDIATE |
| CAR-P3-IRM-014I | Target Area 1 | INTERMEDIATE |
| CAR-P3-IRM-015I-A | Target Area 1 | INTERMEDIATE |
| CAR-P3-IRM-015I-B | Target Area 1 | INTERMEDIATE |
| CAR-P3-IRM-019I | Target Area 1 | INTERMEDIATE |
| CAR-P3-IRM-006D | Target Area 1 | DEEP |
| CAR-P3-IRM-008D | Target Area 1 | DEEP |
| CAR-P3-IRM-010D | Target Area 1 | DEEP |
| CAR-P3-IRM-012D | Target Area 1 | DEEP |
| CAR-P3-IRM-017I | Target Area 2 | INTERMEDIATE |
| CAR-P3-IRM-018I | Target Area 2 | INTERMEDIATE |
| HAL-P3-IRM-001I-A | Target Area 2 | INTERMEDIATE |
| HAL-P3-IRM-001I-B | Target Area 2 | INTERMEDIATE |
| HAL-P3-IRM-002I-A | Target Area 2 | INTERMEDIATE |
| HAL-P3-IRM-002I-B | Target Area 2 | INTERMEDIATE |
| HAL-P3-IRM-003I-A | Target Area 2 | INTERMEDIATE |
| HAL-P3-IRM-003I-B | Target Area 2 | INTERMEDIATE |
| HAL-P3-IRM-004I-A | Target Area 2 | INTERMEDIATE |
| HAL-P3-IRM-004I-B | Target Area 2 | INTERMEDIATE |
| HAL-P3-IRM-005I-A | Target Area 2 | INTERMEDIATE |
| HAL-P3-IRM-005I-B | Target Area 2 | INTERMEDIATE |
| HAL-P3-IRM-006I-A | Target Area 2 | INTERMEDIATE |
| HAL-P3-IRM-006I-B | Target Area 2 | INTERMEDIATE |
| HAL-P3-IRM-007I-A | Target Area 2 | INTERMEDIATE |
| HAL-P3-IRM-007I-B | Target Area 2 | INTERMEDIATE |
| HAL-P3-IRM-008I-A | Target Area 2 | INTERMEDIATE |
| HAL-P3-IRM-008I-B | Target Area 2 | INTERMEDIATE |
| HAL-P3-IRM-009I-A | Target Area 2 | INTERMEDIATE |
| HAL-P3-IRM-009I-B | Target Area 2 | INTERMEDIATE |
| HAL-P3-IRM-010I-A | Target Area 2 | INTERMEDIATE |
| HAL-P3-IRM-010I-B | Target Area 2 | INTERMEDIATE |
| HAL-P3-IRM-011I-A | Target Area 2 | INTERMEDIATE |
| HAL-P3-IRM-011I-B | Target Area 2 | INTERMEDIATE |
| HAL-P3-IRM-012I-A | Target Area 2 | INTERMEDIATE |
| HAL-P3-IRM-012I-B | Target Area 2 | INTERMEDIATE |
| HAL-P3-IRM-013I-A | Target Area 2 | INTERMEDIATE |
| HAL-P3-IRM-013I-B | Target Area 2 | INTERMEDIATE |
| HSTD-P3-IRM-001I-A | Target Area 2 | INTERMEDIATE |
| HSTD-P3-IRM-001I-B | Target Area 2 | INTERMEDIATE |
| HSTD-P3-IRM-002I-A | Target Area 2 | INTERMEDIATE |
| HSTD-P3-IRM-002I-B | Target Area 2 | INTERMEDIATE |
| HSTD-P3-IRM-003I-A | Target Area 2 | INTERMEDIATE |
| HSTD-P3-IRM-003I-B | Target Area 2 | INTERMEDIATE |
| HSTD-P3-IRM-004I-A | Target Area 2 | INTERMEDIATE |
| HSTD-P3-IRM-004I-B | Target Area 2 | INTERMEDIATE |
| HSTD-P3-IRM-005I-A | Target Area 2 | INTERMEDIATE |

**Table 4-3**
**Proposed Injection Well Network**
**Permit-By-Rule Authorization Request - Phase III Groundwater Interim Remedial Measures**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| Well ID | Target Area | Water-Bearing Zone |
|---|---|---|
| HSTD-P3-IRM-005I-B | Target Area 2 | INTERMEDIATE |
| HSTD-P3-IRM-006I-A | Target Area 2 | INTERMEDIATE |
| HSTD-P3-IRM-006I-B | Target Area 2 | INTERMEDIATE |
| HSTD-P3-IRM-007I-A | Target Area 2 | INTERMEDIATE |
| HSTD-P3-IRM-007I-B | Target Area 2 | INTERMEDIATE |
| HSTD-P3-IRM-008I-A | Target Area 2 | INTERMEDIATE |
| HSTD-P3-IRM-008I-B | Target Area 2 | INTERMEDIATE |
| HSTD-P3-IRM-009I-A | Target Area 2 | INTERMEDIATE |
| HSTD-P3-IRM-009I-B | Target Area 2 | INTERMEDIATE |
| HAL-P3-IRM-003D | Target Area 2 | DEEP |
| HAL-P3-IRM-004D | Target Area 2 | DEEP |
| HAL-P3-IRM-005D | Target Area 2 | DEEP |
| HAL-P3-IRM-006D | Target Area 2 | DEEP |
| HAL-P3-IRM-011D | Target Area 2 | DEEP |
| 199-P3-IRM-001S | Target Area 3 | SHALLOW |
| 199-P3-IRM-002S | Target Area 3 | SHALLOW |
| 199-P3-IRM-003S | Target Area 3 | SHALLOW |
| 199-P3-IRM-004S | Target Area 3 | SHALLOW |
| 199-P3-IRM-001I-A | Target Area 3 | INTERMEDIATE |
| 199-P3-IRM-001I-B | Target Area 3 | INTERMEDIATE |
| 199-P3-IRM-002I-A | Target Area 3 | INTERMEDIATE |
| 199-P3-IRM-002I-B | Target Area 3 | INTERMEDIATE |
| 199-P3-IRM-003I-A | Target Area 3 | INTERMEDIATE |
| 199-P3-IRM-003I-B | Target Area 3 | INTERMEDIATE |
| 199-P3-IRM-004I-A | Target Area 3 | INTERMEDIATE |
| 199-P3-IRM-004I-B | Target Area 4 | INTERMEDIATE |
| 199-P3-IRM-005I-A | Target Area 3 | INTERMEDIATE |
| 199-P3-IRM-005I-B | Target Area 3 | INTERMEDIATE |
| FS-P3-IRM-001I | Target Area 3 | INTERMEDIATE |
| FS-P3-IRM-002I | Target Area 3 | INTERMEDIATE |
| FS-P3-IRM-003I | Target Area 3 | INTERMEDIATE |
| FS-P3-IRM-004I | Target Area 3 | INTERMEDIATE |
| FSP-P3-IRM-001I-A | Target Area 3 | INTERMEDIATE |
| FSP-P3-IRM-001I-B | Target Area 3 | INTERMEDIATE |
| FSP-P3-IRM-002I-A | Target Area 3 | INTERMEDIATE |
| FSP-P3-IRM-002I-B | Target Area 3 | INTERMEDIATE |
| 199-P3-IRM-003D | Target Area 3 | DEEP |
| 199-P3-IRM-004D | Target Area 3 | DEEP |

**Notes:**

1. A/B well designations denote locations where co-located wells with distinct well screen intervals are anticipated be required to span the vertical depth interval of the associated water-bearing zone. Necessity for co-located wells and final well screen intervals will be determined at the time of installation.

# Figures

LEGEND

- PROPERTY LINE
- EDGE OF PAVEMENT
- EDGE OF CONCRETE
- EXISTING SHEET PILE
- CURB
- DEPRESSED CURB
- EXISTING BUILDING
- PHASE III IRM SITE BOUNDARY

IRM - INTERIM REMEDIAL MEASURE

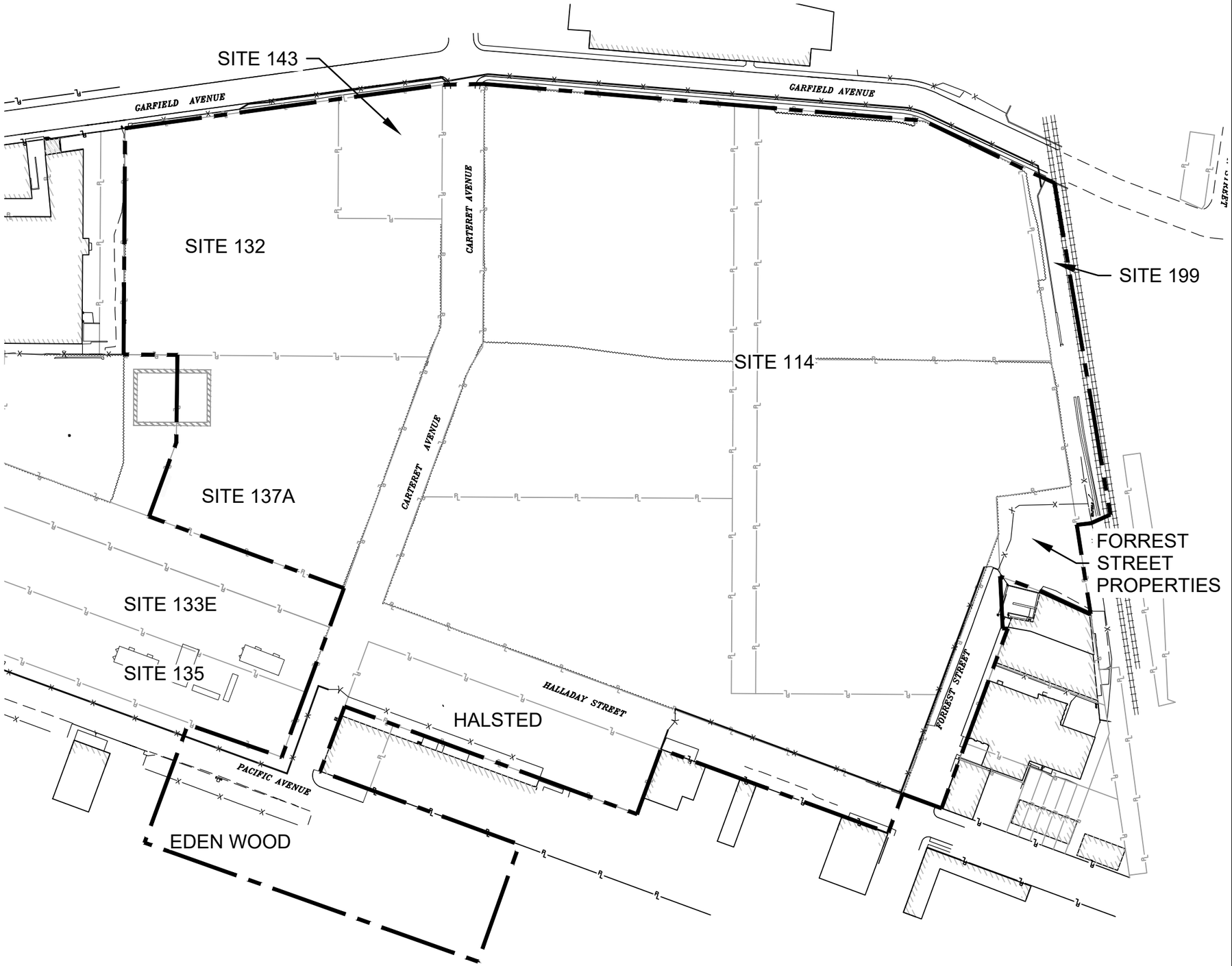


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GRAPHIC SCALE IN FEET

AECOM

PPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY

**PHASE III GROUNDWATER IRM SITE MAP**

DATE: 04/08/2021 | DRWN: JJA | **FIGURE 1**

File: Q:\20 SHEETS\GW\IRM Phase III Design\04-05-2021_GW PHASE 3 PBR FIGURES.dwg Layout: PBR Figure 1 User: John.Angelone Plotted: Apr 08, 2021 - 3:02pm Xref's:

## LEGEND

- PROPERTY LINE
- EDGE OF PAVEMENT
- EDGE OF CONCRETE
- EXISTING SHEET PILE
- CURB
- DEPRESSED CURB
- EXISTING BUILDING
- PHASE III IRM SITE BOUNDARY
- REGIONAL GROUNDWATER FLOW DIRECTION
- PHASE III IRM SHALLOW TARGET ZONE
- 1000 — TOTAL CHROMIUM GROUNDWATER ISOPLETHS (µg/L)
- 1000 — INFERRED TOTAL CHROMIUM ISOPLETHS (µg/L)

NOTES:

1. THE NEWJERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION'S GROUNDWATER QUALITY STANDARD FOR TOTAL CHROMIUM = 70 µg/L.

IRM - INTERIM REMEDIAL MEASURE
µg/L - MICROGRAMS PER LITER

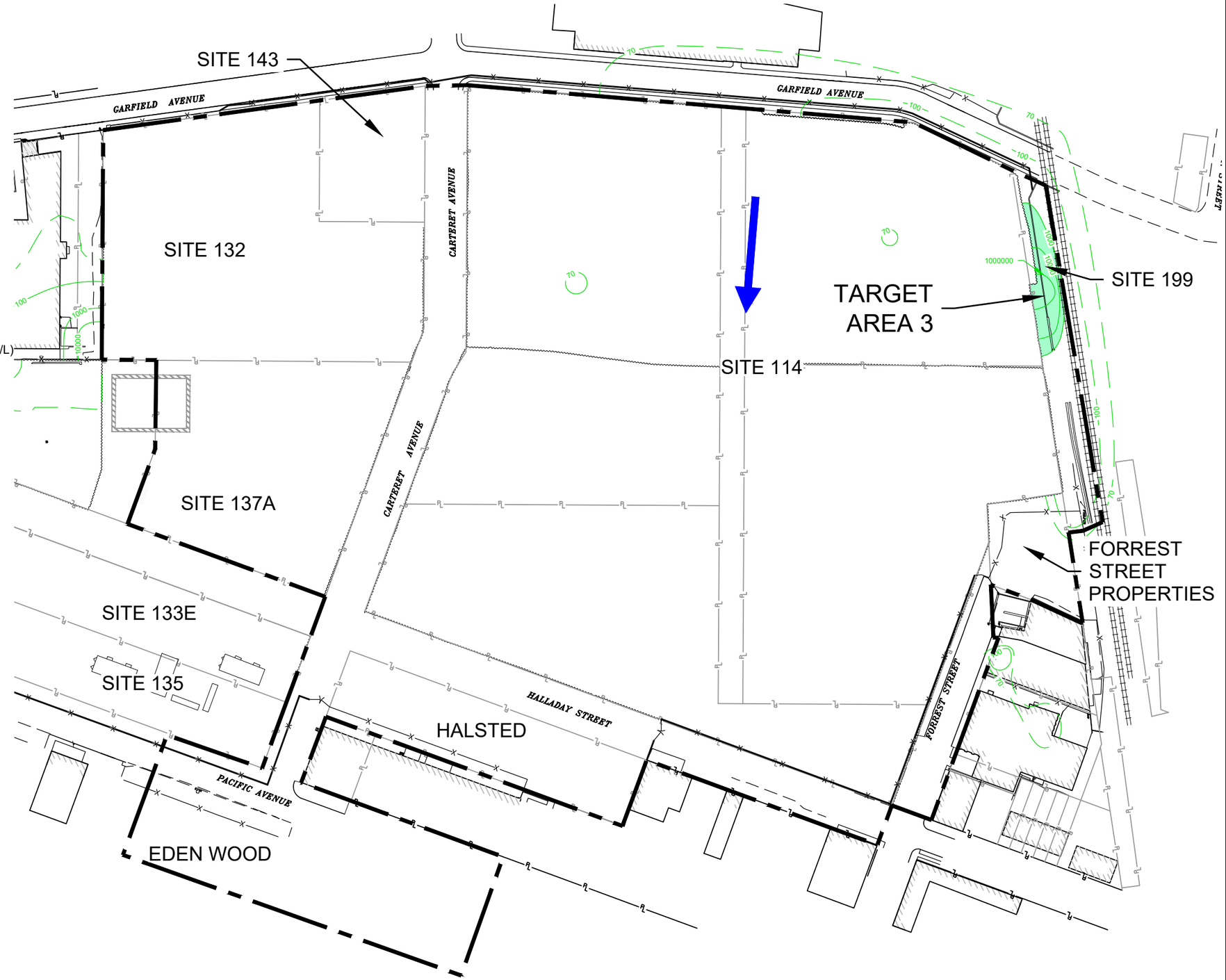


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GRAPHIC SCALE IN FEET

AECOM

| | | |
|---|---|---|
| PPG<br>GARFIELD AVENUE GROUP SITES<br>JERSEY CITY, NEW JERSEY | | **PHASE III GROUNDWATER IRM<br>CHROMIUM ISOPLETHS AND TARGET ZONES<br>SHALLOW ZONE** |
| DATE: 04/16/2021 | DRWN: JJA | **FIGURE 2-1** |

File: C:\Users\john.angelone\AppData\Local\Temp\AcPublish_14388\04-13-2021_GW PHASE 3 PBR FIGURES.dwg Layout: PBR Figure 2-1 User: John.Angelone Plotted: Apr 16, 2021 - 8:47am Xref's:

## LEGEND

- PROPERTY LINE
- EDGE OF PAVEMENT
- EDGE OF CONCRETE
- EXISTING SHEET PILE
- CURB
- DEPRESSED CURB
- EXISTING BUILDING
- PHASE III IRM SITE BOUNDARY
- REGIONAL GROUNDWATER FLOW DIRECTION
- PHASE III IRM INTERMEDIATE TARGET ZONE
- TOTAL CHROMIUM GROUNDWATER ISOPLETHS (µg/L)
- INFERRED TOTAL CHROMIUM ISOPLETHS (µg/L)

NOTES:

1. THE NEWJERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION'S GROUNDWATER QUALITY STANDARD FOR TOTAL CHROMIUM = 70 µg/L.

IRM - INTERIM REMEDIAL MEASURE
µg/L - MICROGRAMS PER LITER

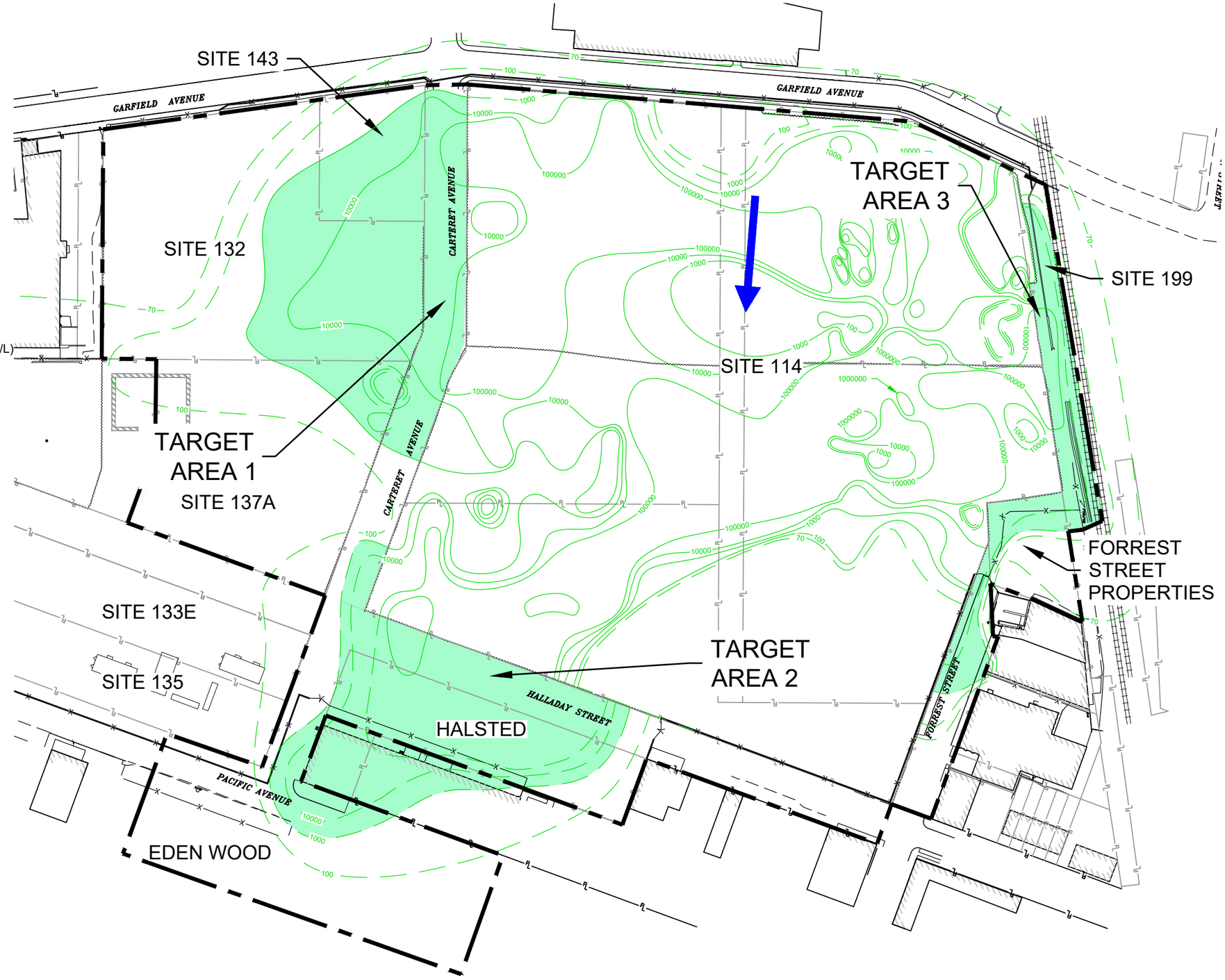


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GRAPHIC SCALE IN FEET

AECOM

| | | | |
|---|---|---|---|
| PPG<br>GARFIELD AVENUE GROUP SITES<br>JERSEY CITY, NEW JERSEY | | | **PHASE III GROUNDWATER IRM<br>CHROMIUM ISOPLETHS AND TARGET ZONES<br>INTERMEDIATE ZONE** |
| DATE: 04/16/2021 | DRWN: JJA | | **FIGURE 2-2** |

File: C:\Users\john.angelone\AppData\Local\Temp\AcPublish_14388\04-13-2021_GW_PHASE_3_PBR_FIGURES.dwg Layout: PBR Figure 2-2 User: John.Angelone Plotted: Apr 16, 2021 - 8:47am Xref's:

LEGEND

- PROPERTY LINE
- EDGE OF PAVEMENT
- EDGE OF CONCRETE
- EXISTING SHEET PILE
- CURB
- DEPRESSED CURB
- EXISTING BUILDING
- PHASE III IRM SITE BOUNDARY
- REGIONAL GROUNDWATER FLOW DIRECTION
- PHASE III IRM DEEP TARGET ZONE
- TOTAL CHROMIUM GROUNDWATER ISOPLETHS (µg/L)
- INFERRED TOTAL CHROMIUM ISOPLETHS (µg/L)

NOTES:

1. THE NEWJERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION'S GROUNDWATER QUALITY STANDARD FOR TOTAL CHROMIUM = 70 µg/L.

IRM - INTERIM REMEDIAL MEASURE
µg/L - MICROGRAMS PER LITER

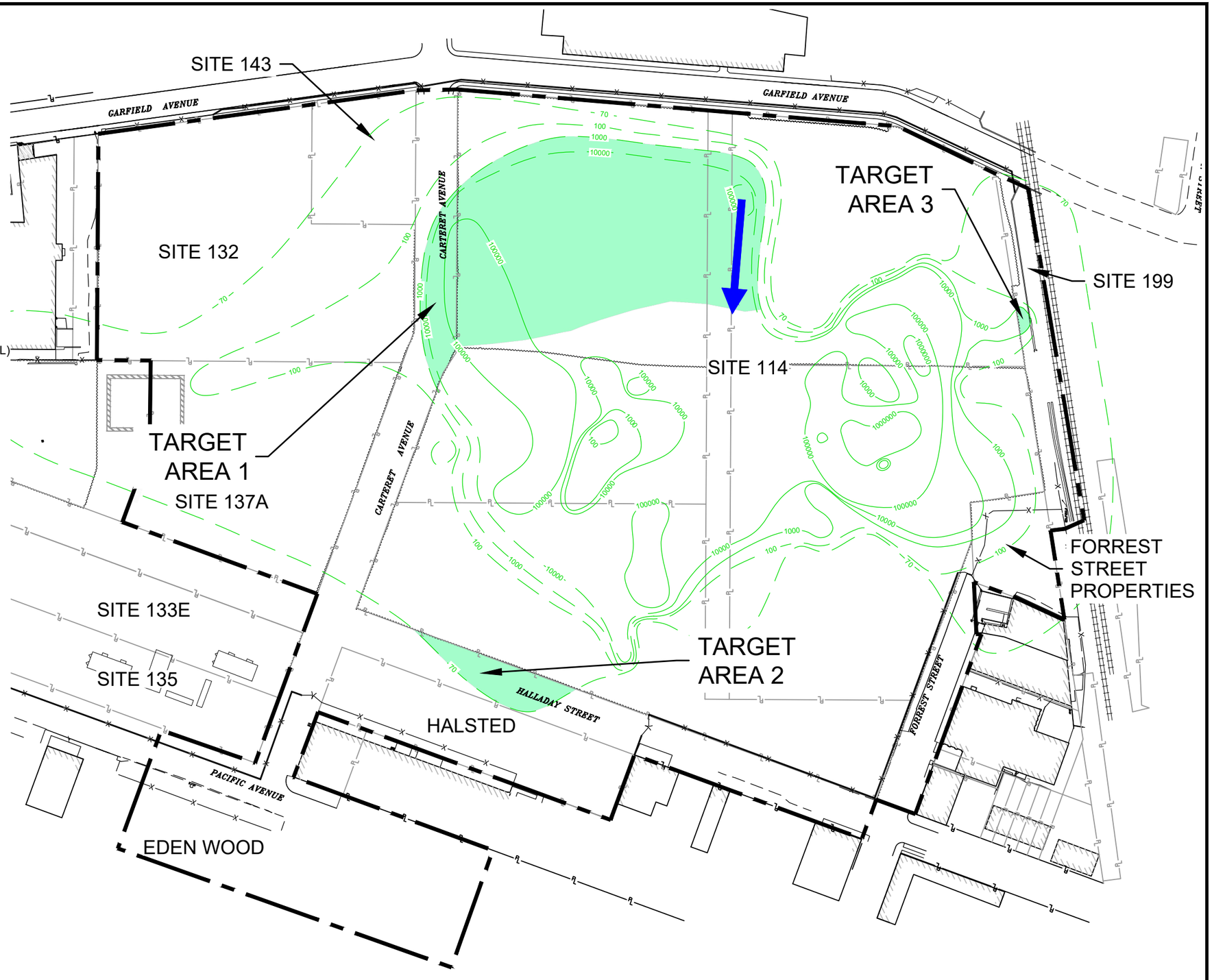


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GRAPHIC SCALE IN FEET

AECOM

PPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY

DATE: 04/16/2021 | DRWN: JJA

**PHASE III GROUNDWATER IRM**
**CHROMIUM ISOPLETHS AND TARGET ZONES**
**DEEP ZONE**

**FIGURE 2-3**

File: C:\Users\john.angelone\AppData\Local\Temp\AcPublish_14388\04-13-2021_GW PHASE 3 PBR FIGURES.dwg Layout: PBR Figure 2-3 User: John.Angelone Plotted: Apr 16, 2021 - 8:47am Xref's:

## LEGEND

- PROPERTY LINE
- EDGE OF PAVEMENT
- EDGE OF CONCRETE
- EXISTING SHEET PILE
- CURB
- DEPRESSED CURB
- EXISTING BUILDING
- PHASE III IRM SITE BOUNDARY
- APPROXIMATE PROPOSED SHALLOW ZONE INJECTION WELL LOCATION
- APPROXIMATE PROPOSED SHALLOW ZONE MONITORING WELL LOCATION
- EXISTING SHALLOW ZONE MONITORING WELL
- PHASE III IRM SHALLOW TARGET ZONE

NOTES:

1. ALL PROPOSED PHASE III IRM INFRASTRUCTURE PRESENTED ON THIS FIGURE ARE APPROXIMATE AND SERVE AS GENERAL GUIDANCE FOR THE REMEDY IMPLEMENTATION. IRM PHASE III INFRASTRUCTURE MAY BE ADJUSTED BASED ON PHASE III IRM PERFORMANCE AND OBSERVED MONITORING RESULTS.

IRM - INTERIM REMEDIAL MEASURE

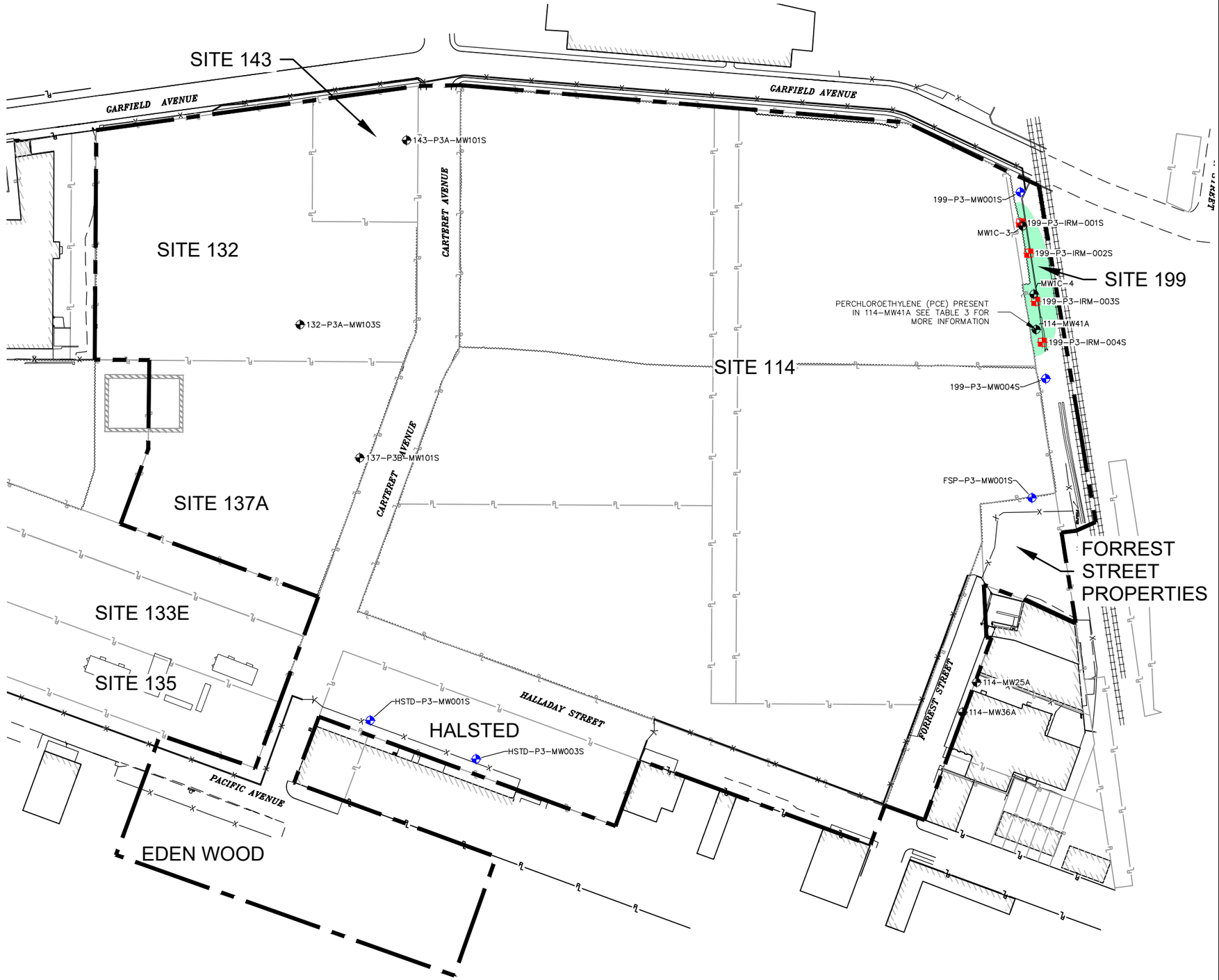


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GRAPHIC SCALE IN FEET

AECOM

| | | | |
|---|---|---|---|
| PPG<br>GARFIELD AVENUE GROUP SITES<br>JERSEY CITY, NEW JERSEY | | | **PHASE III GROUNDWATER IRM<br>INJECTION AND MONITORING WELL NETWORK<br>SHALLOW ZONE** |
| DATE: 04/15/2021 | DRWN: JJA | | **FIGURE 3-1** |

File: C:\Users\john.angelone\AppData\Local\Temp\AcPublish_96.32\04-13-2021_GW PHASE 3 PBR FIGURES.dwg Layout: PBR Figure 3-1 User: John.Angelone Plotted: Apr 15, 2021 - 6:53pm Xref's:

## LEGEND

- PROPERTY LINE
- EDGE OF PAVEMENT
- EDGE OF CONCRETE
- EXISTING SHEET PILE
- CURB
- DEPRESSED CURB
- EXISTING BUILDING
- PHASE III IRM SITE BOUNDARY
- APPROXIMATE PROPOSED FERROBLACK®-H REACTIVE ZONE
- APPROXIMATE PROPOSED INTERMEDIATE ZONE INJECTION WELL LOCATION
- APPROXIMATE PROPOSED INTERMEDIATE ZONE MONITORING WELL LOCATION
- EXISTING INTERMEDIATE ZONE MONITORING WELL
- PHASE III IRM INTERMEDIATE TARGET ZONE

NOTES:

1. ALL PROPOSED PHASE III IRM INFRASTRUCTURE PRESENTED ON THIS FIGURE ARE APPROXIMATE AND SERVE AS GENERAL GUIDANCE FOR THE REMEDY IMPLEMENTATION. IRM PHASE III INFRASTRUCTURE MAY BE ADJUSTED BASED ON PHASE III IRM PERFORMANCE AND OBSERVED MONITORING RESULTS.

IRM - INTERIM REMEDIAL MEASURE

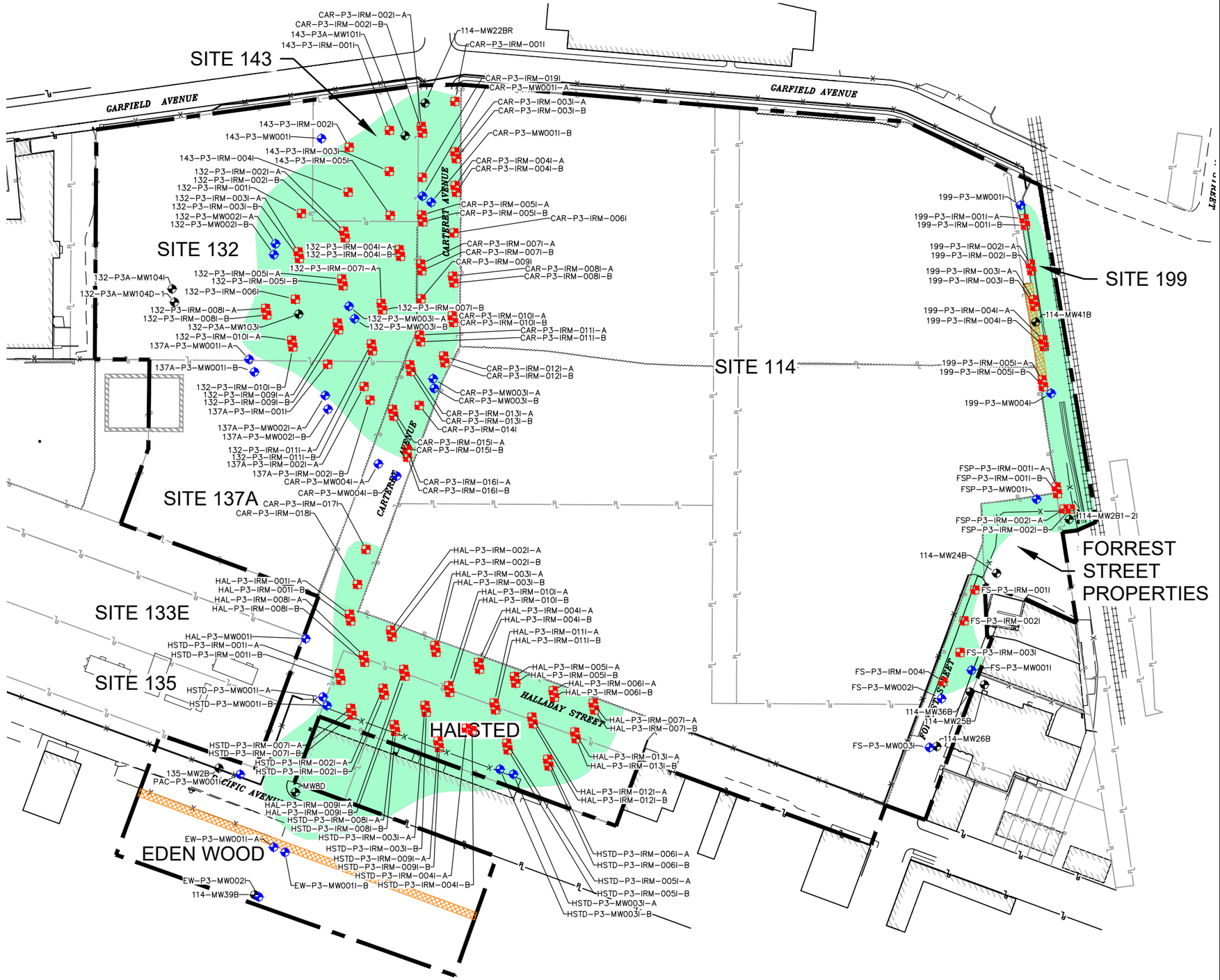


AECOM

PPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY

DATE: 04/19/2021 | DRWN: JJA

**PHASE III GROUNDWATER IRM INJECTION AND MONITORING WELL NETWORK INTERMEDIATE ZONE**

**FIGURE 3-2**

File: Q:\20 SHEETS\GW\IRM Phase III Design\04-13-2021_GW PHASE 3 PDR FIGURES.dwg Layout: PDR Figure 3-2 User: John.Angelone Plotted: Apr 19, 2021 - 4:23pm Xref's:

## LEGEND

- PROPERTY LINE
- EDGE OF PAVEMENT
- EDGE OF CONCRETE
- EXISTING SHEET PILE
- CURB
- DEPRESSED CURB
- EXISTING BUILDING
- PHASE III IRM SITE BOUNDARY
- APPROXIMATE PROPOSED FERROBLACK®-H REACTIVE ZONE
- APPROXIMATE DEEP ZONE INJECTION WELL LOCATION
- APPROXIMATE PROPOSED DEEP ZONE MONITORING WELL LOCATION
- EXISTING DEEP ZONE MONITORING WELL
- PHASE III IRM DEEP TARGET ZONE

NOTES:

1. ALL PROPOSED PHASE III IRM INFRASTRUCTURE PRESENTED ON THIS FIGURE ARE APPROXIMATE AND SERVE AS GENERAL GUIDANCE FOR THE REMEDY IMPLEMENTATION. IRM PHASE III INFRASTRUCTURE MAY BE ADJUSTED BASED ON PHASE III IRM PERFORMANCE AND OBSERVED MONITORING RESULTS.

IRM - INTERIM REMEDIAL MEASURE




75 0 150

GRAPHIC SCALE IN FEET

AECOM

| | | | |
|---|---|---|---|
| PPG<br>GARFIELD AVENUE GROUP SITES<br>JERSEY CITY, NEW JERSEY | | | **PHASE III GROUNDWATER IRM<br>INJECTION AND MONITORING WELL NETWORK<br>DEEP ZONE** |
| DATE: 04/15/2021 | DRWN: JJA | | **FIGURE 3-3** |

File: C:\Users\john.angelone\AppData\Local\Temp\AcPublish_9632\04-13-2021_GW PHASE_3 PBR FIGURES.dwg Layout: PBR Figure 3-3 User: John.Angelone Plotted: Apr 15, 2021 - 6:53pm Xref's:

# Appendix A
# Safety Data Sheets

# Molasses

## 1. Identification of the substance and of the company

| | | |
|---|---|---|
| **1.1** | Product Identification: | Molasses |
| | Trade Name/Synonym(s): | Cane Molasses, Cane Syrup, Beet Molasses, Beet Syrup, Organic Molasses, High Test Molasses, High sugar Molasses, Desugarized Molasses, Blackstrap Molasses, Refiner's Syrup, Refiner's Molasses |
| | Description: | Molasses is a viscous by-product of the processing of sugar cane or sugar beets after which no more sugar can be economically crystallized by factory methods. Molasses is a dark sticky liquid. |
| **1.2** | **Pertinent uses identified for the mixture and uses not recommended** | |
| | Uses identified: | Animal feedstuffs; Fermentation; Industrial applications |
| | Uses not recommended: | Not intended for human consumption. |
| **1.3** | **Information regarding the supplier of the safety data sheet** | |
| | Company Identification: | Westway Feed Products LLC<br>14014 Park Drive, Suite 217<br>Tomball, TX 77377 |
| | Telephone Number: | (800) 654-9668 |
| | Fax Number: | (281) 351-4975 |
| **1.4** | Emergency Telephone: | (800) 654-9668 |

## 2. Identification of risks

**2.1 Hazard Classification:**

This product is does not meet the criteria for classification when reviewed according to the requirements of the Occupational Safety and Health Administration Hazard Communication Standard, 29 CFR 1910.1200.

**2.2 Elements of the label:**

| | |
|---|---|
| Hazard pictograms: | 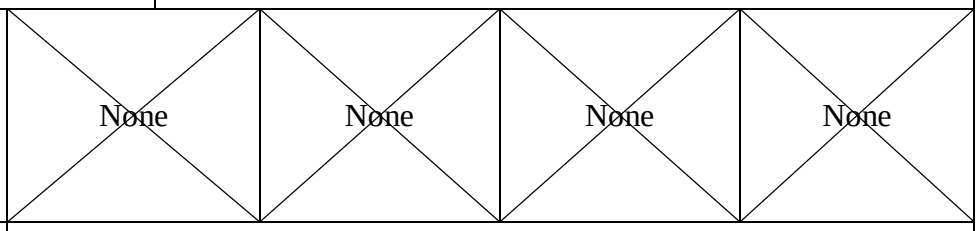 |
| Signal word: | None |
| Hazard statements: | None |
| Precautionary statements: | Observe good industrial hygiene practices. |
| | Wash hands after handling. |
| | Store away from incompatible materials. |
| | Dispose of waste and residues in accordance with local authority requirements. |

**2.3 Hazards Not Otherwise Classified:** None known

## 3. Composition/information regarding the ingredients

Product contains the following hazardous substances:

| Chemical Name | CAS Number | % |
|---|---|---|
| Molasses | 68476-78-8 | 1 - 100 |
| Water | 7732-18-5 | 1 - 99 |

## 4. First aid measures

**4.1 Description of the first aid measures:**

| | | |
|---|---|---|
| | General recommendations: | Ensure that medical personnel are aware of the material(s) involved. |
| | Following inhalation: | Move to fresh air. |
| | Following skin contact: | Wash with water and soap. Remove contaminated clothing. |
| | Following eye contact: | Flush eyes for at least 15 minutes with clean water, lifting lower and upper eyelids occasionally. |
| | Following ingestion: | If swallowed, give several glasses of water to dilute. |
| | Self-protection of the first aider: | Ensure area is safe to enable first aid. |
| **4.2** | **Main symptoms and effects, both acute and delayed:** | |
| | Acute effects: | Direct contact with eyes may cause temporary irritation. |
| | Delayed effects: | None |
| **4.3** | **Indication of the possible need to immediately consult and physician and special treatments:** | |
| | Notes for the doctor: | See section 4.1 regarding the method of exposure |
| | Special treatment: | N/A |

## 5. Firefighting measures

| | | |
|---|---|---|
| **5.1** | **Fire extinguisher media:** | |
| | Suitable extinguisher media: | Water, carbon dioxide, foam or chemical powder can be used as a suitable extinguishing media. |
| | Unsuitable extinguisher media: | None known |
| **5.2** | **Special hazards arising from the substance or mixture:** | |
| | Hazardous combustion products: | Fermentation can yield carbon dioxide with possible traces of ethanol or volatile fatty acids (e.g. acetic, propionic, lactic, or butyric) and if exposed to a spark or flame may result in an explosion. These conditions should be avoided. Decomposition products released in a fire should be considered as harmful. |
| **5.3** | **Advice for firefighters:** | Wear self-contained breathing apparatus in case of large fires. |

## 6. Accidental release measures

| | | |
|---|---|---|
| **6.1** | **Personal precautions, protective devices and procedures in case of an emergency:** | |
| | For non-emergency personnel: | Ensure adequate ventilation. Spilled product may present slip hazard. Appropriate personal protective equipment is recommended. |
| | For emergency responders: | Keep unnecessary personnel away. Prevent the release from entering a waterway or sewer. |
| **6.2** | **Environmental precautions:** | Results in high Biological Oxygen Demand (BOD) and potential oxygen depletion of aquatic systems. |
| **6.3** | **Methods and materials for containment and for land reclamation:** | |
| | For containment: | Stop the source of the spill. Create diversionary structures to minimize the extent of the release. |
| | For cleaning up: | Use absorbent pads/materials to soak up small spills. A vacuum pump may be needed to recover larger spills. |
| | Other information: | Recover useable product. Absorb/wash down remaining spill and dispose of at an approved facility such as a municipal landfill or land application site in accordance with local procedures. |
| **6.4** | **Reference to other sections:** | |
| | Additional information: | N/A |

## 7. Handling and storage

# Molasses

| | | |
|---|---|---|
| **7.1** | **Precautions for safe handling:** | |
| | Measures/technical precautions: | Use with adequate ventilation. Wear appropriate personal protective equipment. Avoid direct contact with eyes. Molasses in containers can ferment spontaneously using oxygen and possibly create a hazardous atmosphere. If maintenance of tank requires entry by personnel, Confined Space Entry standards and procedures shall be observed and atmosphere testing must be performed prior to tank entry and thereafter daily. If welding is to be performed, tank should be ventilated to a safe atmosphere, (LEL < 10%) prior to entry. |
| | General hygiene: | Always observe good personal hygiene measures, such as hand washing after handling the materials and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. |
| **7.2** | **Conditions for safe storage, including eventual incompatibility:** | |
| | Technical measures and storage conditions: | Store in a well-ventilated area or container. Store in suitable, labelled containers. Keep containers closed when not in use. Store below 120° F. |
| | Requirements for storage rooms and vessels: | Material can ferment if excessive moisture contamination is allowed. Ensure proper ventilation to prevent quality deterioration. |
| | Incompatible products: | None known |

| **8. Exposure controls/personal protection** | | | |
|---|---|---|---|
| **8.1** | **Occupational Exposure Limits:** | | |
| | None | | |
| | | | |
| **8.2** | **Exposure controls:** | Store below 120ºF. | |
| **8.2.1** | **Appropriate Engineering Controls:** | Provide general ventilation. | |
| **8.2.2** | **Personal protective equipment:** | | |
| | **Eye/Face Protection:** | | |
| | Suitable eye protection: | If contact is likely, safety glasses with side shields are recommended. | |
| | **Skin Protection:** | | |
| | Hand protection: | Wear suitable gloves and protective clothing. | |
| | Body protection: | Wear suitable gloves and protective clothing. | |
| | Other skin protection measures: | Wear suitable gloves and protective clothing. | |
| | Respiratory Protection: | In case of insufficient ventilation, wear suitable respiratory equipment. | |
| | Thermal Hazards: | Wear appropriate thermal protective clothing when necessary. | |
| **8.2.3** | **Environmental exposure controls:** | Ensure storage tanks/containers have adequate means to measure level of stored material to prevent overfilling. If stored near waterways or drains, ensure means of preventing spilled material from entering these areas. Ensure storage tanks/containers are regularly inspected to ensure integrity. | |

| **9. Physical and chemical properties** | |
|---|---|
| **9.1** | **Information regarding the basic physical and chemical properties** |

# Molasses

| | |
|---|---|
| Appearance/color: | Viscous, syrupy liquid – Brown to Black in color |
| Odor: | Sweet |
| Odor threshold: | No data |
| Flash point: | No data |
| Flammability: | No data |
| Upper/lower flammability/explosive limits: | No data |
| Vapor pressure: | No data |
| Relative density: | 1.0 – 1.5 g/ml (8.33 – 12.5 lbs/gal) |
| Solubility in water: | Soluble in water |
| Distribution/partition coefficient: | No data |
| Self-ignition temperature: | No data |
| Viscosity @ 20°C / 70°F: | 0-150,000 cps |
| pH: | 4-10 |
| Melting point: | No data |
| Freezing point: | < 0° F |
| Boiling point / range: | > 212° F |
| Evaporation rate: | No data |
| Decomposition temperature: | > 120º F |
| **9.2 Other information:** | None |

| **10. Stability and reactivity** | | |
|---|---|---|
| **10.1** | Reactivity: | Reacts with concentrated nitric acid. |
| **10.2** | Chemical stability: | Product is stable under normal conditions of use, storage, and transport. |
| **10.3** | Possibility of dangerous reactions: | Ferments when diluted with water. If diluted below 50%, fermentation may occur with large expansion in volume (addition of propionic or sulfuric acid to decrease pH to <4.5 will prevent fermentation). Care should be taken when adding sulfuric acid to prevent charring. Acid must be added with strong agitation at point of contact. |
| **10.4** | Conditions to be avoided: | Avoid heat, open flames, and storage of product in unventilated storage tanks or containers. |
| **10.5** | Incompatible materials: | None known |
| **10.6** | Hazardous decomposition products: | Carbon monoxide, alcohol or fatty acid vapors. |

| **11. Toxicological information** | | |
|---|---|---|
| **11.1** | Information on toxicological effects: | |
| | Acute oral toxicity: | No data |
| | Acute skin toxicity: | No data |
| | Skin irritation: | May cause skin irritation. |
| | Eye irritation: | May cause eye irritation. |
| | **Further toxicity data** | |
| | Skin sensitivity: | No data |
| | Carcinogenicity: | No data |
| | Mutagenicity: | No data |
| | Reproductive toxicity: | No data |
| | Sub-acute toxicity: | No data |

# Molasses

| | | |
|---|---|---|
| | Listed in the National Toxicology Program (NTP) Report on Carcinogens: | ☐ Yes ☒ No |
| | International Agency for Research on Cancer (IARC) Monographs Potential Carcinogen: | ☐ Yes ☒ No |

## 12. Ecological information

| | | |
|---|---|---|
| **12.1** | Ecotoxicity: | Results in high Biological Oxygen Demand (BOD) and potential oxygen depletion of aquatic systems. |
| **12.2** | Persistence and Degradability: | No data |
| **12.3** | Bio accumulative Potential: | No data |
| **12.4** | Mobility in Soil: | No data |
| **12.5** | Results of PBT and vPvB Assessment: | No data |
| **12.5** | Other Adverse Effects: | No data |

## 13. Disposal considerations

| | | |
|---|---|---|
| **13.1** | **Methods for waste treatment:** | |
| | Packaging waste: | Empty containers or liners may retain some product residues. |
| | Product waste: | Collect and reclaim or dispose of residues at an approved facility, as applicable. |

## 14. Information regarding transport

| | | |
|---|---|---|
| **14.1** | UN Number: | None |
| **14.2** | UN Proper Shipping Name: | None |
| **14.3** | Transport Hazard Class(es): | None |
| **14.4** | Packing Group: | None |
| **14.5** | Environmental Hazards: | None |
| **14.6** | Transport in Bulk: | None |
| **14.7** | Special Precautions: | None |

## 15. Information regarding regulations

| | |
|---|---|
| **15.1** | Safety, health and environmental regulations/legislation specific for the substance or mixture: |
| | N/A |
| **15.2** | Evaluation of the chemical safety: |
| | N/A |

## 16. Other information

The information in this document is obtained from supplier information and publicly available sources and is believed to be accurate and represents the best information currently available to Westway Feed Products LLC. All data and numbers represented are typical. These may vary dependent of origin, production process, crop cycle, supplier or producer.

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# SAFETY DATA SHEET
## ABC-Olé

## 1. PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** **ABC-Olé**
**GENERAL USE:** **Bioremediation of halogenated organics and metals**

**MANUFACTURER:**

**Redox Tech, LLC**
200 Quade Drive
Cary, NC 27513
919-678-0140

**EMERGENCY TELEPHONE:**

Within USA and Canada: 1-800-424-9300
+1 703-527-3887 (collect calls accepted)

## 2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Product is generally recognized as safe. May cause irritation exposure to eyes. Long term contact to skin may cause some drying and minor irritation.

## 3. COMPOSITION INFORMATION ON INGREDIENTS

Proprietary mixture of fatty acids, glycerol, hydrolyzed vegetable oil, emulsifying agent and dipotassium phosphate.

## 4. FIRST AID MEASURES

**EYES:** Immediately flush with water for up to 15 minutes. If irritation persists, seek medical attention.

**SKIN:** Rinse with water. Irritation is unlikely, but if irritation occurs or persists, seek medical attention.

**INGESTION:** Generally safe to ingest but not recommended.

**INHALATION:** No first aid required.

## 5. FIRE FIGHTING MEASURES

**EXTINGUISHING MEDIA:** Deluge with water

**FIRE/EXPLOSION HAZARDS:** Product is combustible only at temperatures above 600C

**FIRE FIGHTING PROCEDURES:** Use flooding with plenty of water, carbon dioxide or other inert gasses. Wear full protective clothing and self-contained breathing apparatus. Deluging with water is the best method to control combustion of the product.

**FLAMMABILITY LIMITS:** non-combustible

**SENSITIVITY TO IMPACT:** non-sensitive

**SENSITIVITY TO STATIC DISCHARGE:** non-senstive

# 6. ACCIDENTAL RELEASE MEASURES

Confine and collect spill. Transfer to an approved DOT container and properly dispose. Do not dispose of or rinse material into sewer, stormwater or surface water. Discharge of product to surface water could result in depressed dissolved oxygen levels and subsequent biological impacts.

# 7. HANDLING AND STORAGE

**HANDLING:** Protective gloves and safety glasses are recommended.

**STORAGE:** Keep dry. Use first in, first out storage system. Keep container tightly closed when not in use. Avoid contamination of opened product. Avoid contact with reducing agents.

# 8. EXPOSURE CONTROLS – PERSONAL PROTECTION

**EXPOSURE LIMITS**

| Chemical Name | ACGIH | OSHA | Supplier |
|---|---|---|---|
| **ABC** | **NA** | **NA** | **NA** |

**ENGINEERING CONTROLS:** None are required

**PERSONAL PROTECTIVE EQUIPMENT**

**EYES and FACE:** Safety glasses recommended
**RESPIRATOR:** none necessary
**PROTECTIVE CLOTHING:** None necessary
**GLOVES:** rubber, latex or neoprene recommended but not required

# 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| Odor: | none to mild pleasant organic odor |
| Appearance: | milky |
| Auto-ignition Temperature | Non-combustible |
| Boiling Point | >600 C |

| | |
|---|---|
| Melting Point | NA |
| Density | 0.90 gram/cc |
| Solubility | infinite (miscible) |
| pH | 6-8 |

# 10. STABILITY AND REACTIVITY

**CONDITIONS TO AVOID:** Do not contact with strong oxidizers
**STABILITY:** product is stable
**POLYMERIZATION:** will not occur
**INCOMPATIBLE MATERIALS:** strong oxidizers
**HAZARDOUS DECOMPOSITION PRODUCTS:**

# 11. TOXICOLOGICAL INFORMATION

**Acute Toxicity**
A: General Product Information
Acute exposure may cause mild skin and eye irritation.
B: Component Analysis - LD50/LC50

No information available.

B: Component Analysis - TDLo/LDLo
TDLo (Oral-Man) none

**Carcinogenicity**
A: General Product Information
No information available.
B: Component Carcinogenicity
Product is not listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

**Epidemiology**
No information available.

**Neurotoxicity**
No information available.

# 12. ECOLOGICAL INFORMATION

**Ecotoxicity**
Discharge to water may cause depressed dissolved oxygen and subsequent ecological stresses
**Environmental Fate**
No potential for food chain concentration

# 13. DISPOSAL CONSIDERATIONS

**DISPOSAL METHOD:** Material is not considered hazardous, but consult with local, state and federal agencies prior to disposal to ensure all applicable laws are met.

# 14. TRANSPORT INFORMATION

NOTE: The shipping classification information in this section (Section 14) is meant as a guide to the overall classification of the product. However, transportation classifications may be subject to change with changes in package size. Consult shipper requirements under I.M.O., I.C.A.O. (I.A.T.A.) and 49 CFR to assure regulatory compliance.

**US DOT Information**
Shipping Name: Not Regulated
Hazard Class: Not Classified
UN/NA #: Not Classified
Packing Group:None
Required Label(s):None

**50$^{th}$Edition International Air Transport Association (IATA):**
Not hazardous and not regulated

**INTERNATIONAL MARITIME DANGEROUS GOODS (IMDG)**

Material is not regulated under IMDG

# 15. REGULATORY INFORMATION

**UNITED STATES**

**SARA TITLE III**
SECTION 311 No Hazard for Immediate health Hazard
SECTION 312 No Threshold Quanitity
SECTION 313 Not listed

**CERCLA** NOT REGULATED UNDER CERCLA

**TSCA** NOT REGULATED UNDER TSCA

**CANADA (WHIMS):** NOT REGULATED

# 16. OTHER INFORMATION

HMIS:

| | |
|---|---|
| Health | 0 |
| Flammability | 0 |
| Physical Hazard | 0 |
| Personal Protection | E |

E: Safety Glasses, gloves

# FerroBlack®-H

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 06/14/2016 Revision date: 06/14/2016 Supersedes: 06/25/2015

## SECTION 1: Identification

### 1.1. Identification

| | | |
|---|---|---|
| Product form | : | Mixture |
| Trade name | : | FerroBlack®-H |
| CAS No | : | 1317-37-9 |
| Formula | : | FeS |
| Synonyms | : | Ferrous sulfide / Iron sulfide / Iron sulphide / Iron(II) sulfide / Ferrous sulfide / Iron sulfide / Iron sulphide / Iron(II) sulfide |

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

| | | |
|---|---|---|
| Use of the substance/mixture | : | Chemical used for the remediation of heavy metal(s) for liquid and solid wastes. |

### 1.3. Details of the supplier of the safety data sheet

Redox Technology Group, LLC
d/b/a Redox Solutions
1580 Research Way
Indianapolis, IN 46231

Company Contact: Jim Kissel
Telephone Number: (317) 660-6867 or (317) 412-3267

### 1.4. Emergency telephone number

CHEMTREC: (800) 424-9300

## SECTION 2: Hazard(s) identification

### 2.1. Classification of the substance or mixture

**GHS-US classification**

| | |
|---|---|
| Skin corrosion/irritation Category 2 | H315 |
| Serious eye damage/eye irritation Category 2A | H319 |

Full text of H statements : see section 16

### 2.2. Label elements

**GHS-US labeling**

Hazard pictograms (GHS-US) :



GHS07

Signal word (GHS-US) : Warning

Hazard statements (GHS-US) :
H315 - Causes skin irritation
H319 - Causes serious eye irritation

Precautionary statements (GHS-US) :
P264 - Wash hands thoroughly after handling
P280 - Wear eye protection, protective clothing, protective gloves
P302+P352 - If on skin: Wash with plenty of water
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P321 - Specific treatment (see Consult a doctor/medical service if you feel unwell on this label)
P332+P313 - If skin irritation occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P362+P364 - Take off contaminated clothing and wash it before reuse

### 2.3. Other hazards

**HMIS Classification:**
Health hazard: 0
Flammability: 0
Physical hazards: 0

**NFPA Rating:**
Health hazard: 1
Fire: 0
Reactivity Hazard: 0

**Inhalation** May be harmful if inhaled. May cause respiratory tract irritation.
**Skin** May be harmful if absorbed through skin. May cause skin irritation.
**Eyes** May cause eye irritation.
**Ingestion** May be harmful if swallowed.
**Other Hazards not contributing to the classification:** Generates toxic gas in contact with acid.

### 2.4. Unknown acute toxicity (GHS US)

Not applicable

## SECTION 3: Composition/Information on ingredients

### 3.1. Substance

Not applicable

### 3.2. Mixture

| Name | Product Identifier | % | GHS-US classification |
|---|---|---|---|
| Iron sulfide (FeS) | (CAS No) 1317-37-9 | 7 - 11 | Not classified |
| Sodium Sulfide | (CAS No) 1313-82-2 | 0.1 - 1 | Acute Tox. 3 (Oral), H301 |

Full text of hazard classes and H-statements : see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.

First-aid measures after skin contact : Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a doctor/physician. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Immediately call a poison center or doctor/physician. Call a poison center/doctor/physician if you feel unwell.

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : Causes skin and eye irritation.

Symptoms/injuries after skin contact : Irritation.

Symptoms/injuries after eye contact : Causes serious eye damage. Eye irritation.

### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media : Do not use a heavy water stream.

### 5.2. Special hazards arising from the substance or mixture

Reactivity : Corrosive vapors.

### 5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Evacuate unnecessary personnel. Avoid contact with skin and eyes.

#### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".

Emergency procedures : Ventilate area.

### 6.2. Environmental precautions

Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

Other information : Dispose of materials or solid residues at an authorized site.

### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Do not breathe dust, fume, gas, mist, spray, vapors. Avoid contact during pregnancy/while nursing. Avoid contact with skin and eyes. Wear personal protective equipment.

Hygiene measures : Wash hands thoroughly after handling. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Comply with applicable regulations.

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Ignition sources, Incompatible materials. Keep container closed when not in use. Store in a well-ventilated place. Keep cool.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

**Iron sulfide (FeS) (1317-37-9)**

Not applicable

**Sodium sulfide (1313-82-2)**

Not applicable

### 8.2. Exposure controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Personal protective equipment : Avoid all unnecessary exposure.

| | | |
|---|---|---|
| Hand protection | : | Wear protective gloves. |
| Eye protection | : | Chemical goggles or face shield. Safety glasses. |
| Skin and body protection | : | Wear suitable protective clothing. |
| Respiratory protection | : | Wear appropriate mask. |
| Environmental exposure controls | : | Avoid release to the environment. |
| Other information | : | Do not eat, drink or smoke during use. |

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

| | | |
|---|---|---|
| Physical state | : | Liquid |
| Appearance | : | Black liquid with visible suspended solids. |
| Color | : | Black |
| Odor | : | Mild |
| Odor threshold | : | No data available |
| pH | : | 11.0 - 12.5 |
| Melting point | : | Not applicable |
| Freezing point | : | No data available |
| Boiling point | : | No data available |
| Flash point | : | No data available |
| Relative evaporation rate (butyl acetate=1) | : | No data available |
| Flammability (solid, gas) | : | Non flammable. |
| Vapor pressure | : | No data available |
| Relative vapor density at 20 °C | : | No data available |
| Relative density | : | 1.15 - 1.22 |
| Solubility | : | Mininally soluble in water. |
| Log Pow | : | No data available |
| Auto-ignition temperature | : | No data available |
| Decomposition temperature | : | No data available |
| Viscosity, kinematic | : | No data available |
| Viscosity, dynamic | : | No data available |
| Explosion limits | : | No data available |
| Explosive properties | : | No data available |
| Oxidizing properties | : | No data available |

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Acidic vapors.

### 10.2. Chemical stability

Not established.

### 10.3. Possibility of hazardous reactions

Contact with acids liberates toxic gas.

### 10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

### 10.5. Incompatible materials

Acids will cause the release of highly toxic Hydrogen Sulfide. Reacts violently with diazonium salts. Ferrous sulfide(s) solution is not compatible with copper, zinc, aluminum or their **alloys** (i.e. bronze, brass, galvanized metals, etc.). Corrosive to steel above 150º F (65.5º C). These materials of construction should not be used in handling systems or storage containers for this product.

### 10.6. Hazardous decomposition products

Hazardous decomposition products formed under fire may include sulfur oxides, iron oxides.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

| Sodium Sulfide (113-82-2) | |
|---|---|
| LD50 oral rat | 208 mg/kg |
| ATE US (oral) | 208.000 mg/kg body weight |
| LD50 dermal rabbit | < 340 mg/kg |
| ATE US (dermal) | 300.000 mg/kg body weight |

Skin corrosion/irritation : Causes skin irritation.
pH: 11.0 - 12.5

Serious eye damage/irritation : Causes eye irritation.
pH: 11.0 - 12.5

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

Symptoms/injuries after skin contact : Irritation.

Symptoms/injuries after eye contact : Causes eye irritation.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

| FeS (1317-37-9) | |
|---|---|
| LC50 fish 1 | > 10000 mg/l Mosquito fish |

| Sodium Sulfide (1313-82-2) | |
|---|---|
| LC50 fish 1 | 7.7 - 29.1 mg/l (Exposure time: 96 h - Species: Poecilia reticulata) |
| EC50 Daphnia 1 | 2.1 mg/l (Exposure time: 48 h - Species: Daphnia magna) |

### 12.2. Persistence and degradability

| Redox-Hg (1317-37-9) | |
|---|---|
| Persistence and degradability | Not established. |

### 12.3. Bioaccumulative potential

| FeS (1317-37-9) | |
|---|---|
| Bioaccumulative potential | Not established. |

| Sodium Sulfide (16721-80-5) | |
|---|---|
| Log Pow | -3.5 (at 25 °C) |

### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

Effect on the global warming : No known effects from this product.
GWPmix comment : No known effects from this product.

Other information : Avoid release to the environment.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Waste disposal recommendations : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.
Ecology - waste materials : Avoid release to the environment.

## SECTION 14: Transport information

**Department of Transportation (DOT)**

In accordance with DOT

Not Regulated

**Transport by sea**

Not Regulated

**Air transport**

Not Regulated

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

| **Iron sulfide (FeS) (1317-37-9)** |
|---|
| Listed on the United States TSCA (Toxic Substances Control Act) inventory |

| **Sodium Sulfide (1313-82-2)** |
|---|
| Listed on the United States TSCA (Toxic Substances Control Act) inventory |

### 15.2. International regulations

**CANADA**

| **Iron sulfide (FeS) (1317-37-9)** | |
|---|---|
| Listed on the Canadian DSL (Domestic Substances List) | |
| WHMIS Classification | Uncontrolled product according to WHMIS classification criteria |

| **Sodium Sulfide (1313-82-2)** |
|---|
| Listed on the Canadian DSL (Domestic Substances List) |

**EU-Regulations**

| **Iron sulfide (FeS) (1317-37-9)** |
|---|
| Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances) |

| **Sodium Sulfide (1313-82-2)** |
|---|
| Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances) |

**National regulations**

| **Iron sulfide (FeS) (1317-37-9)** |
|---|
| Listed on the AICS (Australian Inventory of Chemical Substances)<br>Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)<br>Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory<br>Listed on the Korean ECL (Existing Chemicals List)<br>Listed on NZIoC (New Zealand Inventory of Chemicals)<br>Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) |

| **Sodium Sulfide (1313-82-2)** |
|---|
| Listed on the AICS (Australian Inventory of Chemical Substances)<br>Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)<br>Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory<br>Listed on the Korean ECL (Existing Chemicals List)<br>Listed on NZIoC (New Zealand Inventory of Chemicals)<br>Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)<br>Listed on INSQ (Mexican National Inventory of Chemical Substances)<br>Listed on CICR (Turkish Inventory and Control of Chemicals) |

### 15.3. US State regulations

| **Sodium Sulfide (1313-82-2)** |
|---|
| U.S. - Massachusetts - Right To Know List<br>U.S. - New Jersey - Right to Know Hazardous Substance List |

## SECTION 16: Other information

Revision date : 06/14/2016

Other information : None.

Full text of H-phrases:

| | |
|---|---|
| H301 | Toxic if swallowed |
| H315 | Causes skin irritation |
| H319 | Causes serious eye irritation |
| H400 | Very toxic to aquatic life |

SDS US (GHS HazCom 2012)

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*

# REMOTOX®
## SAFETY DATA SHEET

Issue Date: 11/01/2012 | Revision Date: 04/01/2019

## SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**1.1 Product identifier**

| | |
|---|---|
| Product Name | REMOTOX® |
| Chemical Name | Calcium Polysulfide Solution |
| Chemical Family | Inorganic Salt |
| CAS-No. | 1344-81-6 |

**1.2 Recommended use of the substance or mixture**

| | |
|---|---|
| Identified Uses | Industrial use. Heavy metal fixation agent. |

**1.3 Details of the supplier of the safety data sheet**

| | |
|---|---|
| Company | Graus Chemicals, LLC<br>P.O. Box 768<br>Carefree, AZ 85377<br>1-623-328-5175<br>info@grauschemicals.com |

**1.4 Emergency phone number** 1-888-255-3924 | CHEMTEL

## SECTION 2: HAZARD(S) IDENTIFICATION

**2.1 Classification of the substance or mixture**

| | |
|---|---|
| Acute toxicity – oral | Category 4 |
| Acute toxicity – dermal | Category 4 |
| Acute toxicity – inhalation | Category 4 |
| Skin corrosion/irritation | Category 2 |
| Eye damage/irritation | Category 1 |

**2.2 GHS-US labeling**

Signal word: Danger!

Hazard statement(s):

| | |
|---|---|
| H302 | Harmful if swallowed. |
| H315 | Causes skin irritation. |
| H318 | Causes serious eye damage. |
| H332 | Harmful if inhaled. |

Symbol(s):



Precautionary statement(s):

| | |
|---|---|
| P221 | Take any precaution to avoid mixing with ombustibles/acids/oxidizers. |
| P261 | Avoid breathing dust/fumes/gas/mist/vapors/spray. |
| P262 | Do not get in eyes, on skin, or on clothing. |
| P264 | Wash thoroughly after handling. |
| P233 | Keep containers tightly closed. |
| P271 | Use only outdoors or in a well-ventilated area. |
| P273 | Avoid release to the environment – if this is not the intended use. |
| P280 | Wear protective gloves/eye protection/face shield. |
| P501 | Dispose of contents/container in accordance with local/regional/ national/international regulations. |

Unclassified hazard(s): Acute aquatic toxicity

Unknown acute toxicity ingredient: None

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substance/Mixture

| Chemical Name | Synonyms | Formula | CAS No. | EINECS No. | % by weight |
|---|---|---|---|---|---|
| Calcium Polysulfide | Lime Sulfur, Calcium Sulfide | $CaS_X/KS_X$ | 1344-81-6 | 215-709-2 | 26-34 |
| Water | Water | H2O | 7732-18-5 | 231-791-2 | Remaining |

## SECTION 4: FIRST AID MEASURES

### 4.1 Description of first aid measures

Eye contact — Rinse immediately (the exposed eyes) with lukewarm, gently flowing water for at least 15-20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get immediate medical advice/attention.

Skin contact — Wash immediately with soap and plenty of water. Rinse for at least 15 minutes. Remove contaminated clothing and wash it before reuse. If skin irritation or rash occurs: Get medical advice/attention.

Ingestion — Drink immediately a small amount of water or milk. Then call a Poison Control Center or doctor/physician right away. Do not induce vomiting unless instructed by poison control or a medical professional.

Inhalation — Remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get immediate medical advice/attention.

### 4.2 Most important symptoms and effects both acute and delayed

Acute — Eyes: Symptoms may include burns or irritation to the eyes.
Skin: Repeated or prolonged contact may cause dryness, cracking and dermatitis.
Inhalation: Symptoms may include irritation to the respiratory tract.
Ingestion: Symptoms may include burns or irritation of the gastrointestinal tract. Contact with stomach acid can liberate toxic hydrogen sulfide vapors.

Delayed — No known chronic effects.

## SECTION 5: FIRE FIGHTING MEASURES

### 5.1 Flammable properties

National Fire Protection Association (NFPA) Ratings

| | |
|---|---|
| Health | 2 |
| Flammability | 0 |
| Reactivity | 1 |
| Special | - |

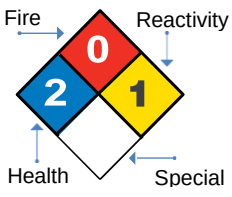


*HAZARD RATING:*
*4 SEVERE*
*3 SERIOUS*
*2 MODERATE*
*1 SLIGHT*
*0 MINIMAL*

### 5.2 Suitable extinguishing media

Use firefighting measures that suit the environment.

### 5.3 Unsuitable extinguishing media

No restrictions known.

### 5.4 Specific hazards arising from the substance or mixture

Closed/sealed containers may rupture violently when heated. In a fire, the following hazardous materials may be generated: hydrogen sulfide (H2S) gas.

**5.5 Protective equipment or precautions for firefighters**
Firefighters should wear self-contained breathing apparatus (SCBA) and full firefighting turnout gear. Keep containers and storage vessels in the fire area cooled with water spray.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

**6.1 Personal precautions**
Wear protective equipment specified in Section 8. Isolate the release area and deny entry to unnecessary personnel.

**6.2 Environmental precautions**
Avoid release to the environment – if this is not the intended use. Dike spills and stop leakage where practical.

**6.3 Methods and materials for containment and cleaning up**

| | |
|---|---|
| Small releases | Use absorbent material to collect and contain for salvage or disposal. Clean surface thoroughly to remove residual spill. |
| Large releases | Shut off release if safe to do so. Dike spill area with earth, sand or other inert absorbents to prevent runoff into surface waterways or drains. Recover as much of the released product as possible, using portable pump and hoses, and place into container(s) for later disposal. Following product recovery, flush area with water. |

## SECTION 7: HANDLING AND STORAGE

**7.1 Precautions for safe handling**
Wear suitable protective clothing, gloves and eye/face protection. Use only in a well ventilated area. Avoid contact with skin and eyes. Avoid prolonged or repeated breathing of vapors. Wash skin thoroughly after handling.

**7.2 Conditions for safe storage, including any incompatibilities**
Store in well ventilated area and away from combustibles, acids and oxidizing agents. Keep away from heat. Keep containers tightly closed and store out of direct sunlight at a moderate temperature.

## SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION

**8.1 Occupational exposure limits**
No exposure limits noted.

**8.2 Engineering controls**
Good ventilation should be used. Ventilation rates should be matched to site conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below reccommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station where material is frequently handled.

**8.3 Personal protection measures**



Eye Protection — Wear chemical goggles/full face shield. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 EU).



Skin Protection — Wear neoprene rubber gloves and chemical protection suit to prevent repeated or prolonged contact with material. Use protective clothing tested and approved under appropriate government standards such as NIOSH (US) or Directive 89/686/EEC (EU).

| | | |
|---|---|---|
|  | Respiratory Protection | Have self-contained breathing apparatus (SCBA) positive pressure, available in case of accidental release, equipment failure or other unforeseen incidents. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or EN 166 EU |
|  | General Hygiene Considerations | Wash thoroughly after handling and before eating, drinking or smoking. Routinely wash work clothing and protective equipment to remove contaminants. |

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| Appearance | Deep red-yellow liquid |
| Upper/lower flammability limits | Not applicable |
| Odor | Slight rotten egg odor |
| Vapor pressure | Not determined |
| Odor threshold | 4.7 ppb (hydrogen sulfide) |
| Vapor density | Not determined |
| pH | 10.5-11.5 |
| Relative density | 1.27 g/cc or 10.6 lbs/gal |
| Melting point | Not applicable |
| Freezing point | 18-25 °F (-7.7 to -3.9 °C) |
| Solubility | Completely soluble in water |
| Initial Boiling point/range | Not determined |
| Flash point | Not applicable |
| Evaporation rate | Not determined |
| Flammability (solid, gas) | Not applicable |
| Partition coefficient | No data available |
| Auto ignition temperature | Not applicable |
| Decomposition temperature | Not determined |
| Viscosity | 2.95 cSt @ 20 °C, 2.5 cSt @ 30 °C |

## SECTION 10: STABILITY AND REACTIVITY

### 10.1 Reactivity
Strong oxidizers and acids.

### 10.2 Chemical stability
Stable under moderate temperature and pressure.

### 10.3 Possibility of hazardous interactions
Acids, acidic materials, and strong oxidizers cause rapid decomposition, resulting in the formation of $H_2S$ gas.

### 10.4 Conditions to avoid
Fire, excessive heat and freezing conditions.

### 10.5 Incompatible materials
Chemical substances: Acids, acidic materials and oxidizing agents. Materials of construction: Copper, carbon steel, aluminum or their alloys (i.e. brass, bronze, etc.).

### 10.6 Hazardous decomposition products
Hydrogen sulfide and oxides of sulfur.

## SECTION 11: TOXICOLOGICAL INFORMATION

| | | |
|---|---|---|
| Oral | Rat | $LD_{50}$: 820 mg/kg |
| Dermal | Rabbit | $LD_{50}$: >2,000 mg/kg |
| Inhalation | Rat | $LC_{50}$: 3.9 mg/l (4 hr exposure) male rat |
| | | $LC_{50}$: 3.1 mg/l (4 hr exposure) female rat |
| Eye | | Primary eye irritation. Possible risk of irreversible effects. |
| Carcinogenicity | | Not listed in NTP, IARC or by OSHA. |
| Teratology | | No data available. |
| Reproduction | | No data available. |
| Mutagenicity | | No data available. |

## SECTION 12: ECOLOGICAL INFORMATION

**12.1 Ecotoxicity**

| | |
|---|---|
| Green Algae | $EC_{50}$: 16.4 mg/l |
| Water Flea | $EC_{50}$: 13.7 mg/l |
| Bluegill | $LC_{50}$: 52.9 mg/l |
| Fathead Minnow | $LC_{50}$: 42.9 mg/l |
| Rainbow trout | $LC_{50}$: 8.8 mg/l |
| Honey Bee | $LD_{50}$: >25 µg ai/Bee |
| Avian | $LD_{50}$: 560 ai/kg |
| Bobwhite Quail | $LD_{50}$: 560 ai/kg body wt. |

**12.2 Persistence and degradability**
Calcium Polysulfide present in moist soils and/or moist foliage is expected to dissociate rapidly; therefore, run-off and erosion into surface waters, as present calcium polysulfide, should be negligible. (US EPA 2005, RED)

**12.3 Bioaccumulation potential**
Product is not bio-accumulative.

**12.4 Mobility in soil**
No data available.

**12.5 Other adverse effects**
Toxic to aquatic organisms.

## SECTION 13: DISPOSAL CONSIDERATION

**13.1 Waste treatment methods**
Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with the local/regional/national/international regulations.

## SECTION 14: TRANSPORTATION INFORMATION

**14.1 Basic shipping information**

| | | |
|---|---|---|
| Proper shipping name | Calcium Polysulfide Solution | *(not regulated by US DOT)* |
| DOT Hazard Class | Not applicable | |
| UN Number | Not applicable | |
| Packing Group | Not applicable | |
| Placard(s) | Not applicable | |
| Labels | Not applicable | |
| Hazardous Substance | No | |
| Reportable quantity | No | |

| | | |
|---|---|---|
| **14.3** | **USCG Classification** | Not determined |
| **14.4** | **International Transportation** | |
| | IMO | UN3082, Environmentally Hazardous Substance, liquid, n.o.s., (Calcium Polysulfide) 9, PG III, MARINE POLLUTANT |
| | IATA | Not regulated |
| | TDG (Canada) | Not regulated |
| | ADR (Europe) | UN3082, Environmentally Hazardous Substance, liquid, n.o.s., (Calcium Polysulfide) 9, PG III, MARINE POLLUTANT |
| | ADG (Australia) | UN3082, Environmentally Hazardous Substance, liquid, n.o.s., (Calcium Polysulfide) 9, PG III, MARINE POLLUTANT |
| **14.5** | **Emergency Response Guide** | Not applicable |
| **14.6** | **ERAP (Canada)** | Not applicable |
| **14.7** | **Special Precautions** | Not applicable |

## SECTION 15: REGULATORY INFORMATION

| | | | |
|---|---|---|---|
| **15.1** | **US Federal Regulations** | | |
| | OSHA | Meets the definition of a hazardous substance under the Federal OSHA Hazard Communication Standard (29 CFR 1910.1200). | |
| | TSCA | Included in the US EPA TSCA Inventory List. | |
| | CERCLA | Reportable quantity: No | |
| | SARA Title III | Extremely Hazardous Substance (EHS): No | |
| | | Section 312 (Tier II) Ratings: | Immediate (acute): Yes |
| | | | Fire: No |
| | | | Sudden release No |
| | | | Reactivity: No |
| | | | Delayed (chronic) No |
| | | Section 313 (Form R): | Not applicable |
| | RCRA | Not applicable | |
| | CAA (HAP): | Not applicable | |
| **15.2** | **State Regulations** | CA Prop 65: Not applicable | |
| **15.3** | **International Regulations** | | |
| | WHMIS (Canada) | Not determined | |
| | DSL/NDSL (Canada) | Listed in NDSL, Record No. 28636 | |

## SECTION 16: OTHER INFORMATION

**16.1 Use of Substance/Preparation**

This material is used for heavy metal removal in soil, groundwater and wastewater. Its use varies depending on the site and remediation technology employed. Therefore, exposure should be evaluated so that appropriate handling practices and training can be established to ensure safet workplace operations.

Some of the information presented are from sources other than direct test data on the product itself. The information in this Safety Data Sheet (SDS) was obtained from sources which we believe are reliable. However, the information is provided without any warranty, expressed or implied, regarding the correctness. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage, or expense arising out of or in any way connected with the handling, use or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS may not be applicable. Graus Chemicals reserves the right to revise this SDS periodically as new information becomes available.

# Appendix B
# Groundwater Monitoring Schedule

**Appendix B**
**Groundwater Monitoring Plan**
**Permit-By-Rule Authorization Request - Phase III Groundwater Interim Remedial Measures**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| Monitoring Program | Monitoring Well Network (Refer to Tables 3-1, 3-2 and 3-3) | Monitoring Parameters | Monitoring Frequency |
|---|---|---|---|
| Baseline Monitoring | Monitoring and Injection Wells | 1. **Field Parameters**: DTW, pH, conductivity, DO, ORP, turbidity, and temperature<br>2. **Lab Analytical**: Total and dissolved TAL metals, total and dissolved $Cr^{+6}$, TOC, sulfate/sulfide, and methane | Prior to operation start |
| Operational Monitoring | Select Monitoring Wells | 1. **Field Parameters**: DTW | Weekly |
| | | 2. **Lab Analytical**: TOC | Monthly (for injection areas in operation) |
| Treatment Monitoring | Cr Monitoring Wells | 1. **Field Parameters**: DTW, pH, conductivity, DO, ORP, turbidity, and temperature | Monthly (for injection areas in operation) |
| | | 2. **Lab Analytical**: Total and dissolved Cr, TOC, Sulfate | Monthly (for injection areas in operation) |
| | PCE Monitoring Wells | 1. **Field Parameters**: DTW, pH, conductivity, DO, ORP, turbidity, and temperature<br>2. **Lab Analytical**: Chlorinated Ethenes only | Monthly (for injection areas in operation) |
| Post-Treatment Monitoring | Monitoring and Injection Wells | 1. **Field Parameters**: DTW, pH, conductivity, DO, ORP, turbidity, and temperature<br>2. **Lab Analytical**: Total and dissolved TAL metals, total and dissolved $Cr^{+6}$, TOC, sulfate/sulfide, and methane | 1st quarter following end of operation |
| | | 1. **Field Parameters**: DTW, pH, conductivity, DO, ORP, turbidity, and temperature<br>2. **Lab Analytical**: Total and dissolved TAL metals, TOC, sulfate | Quarterly following end of operation for up to 2 years |
| | PCE Monitoring Wells | 1. **Field Parameters**: DTW, pH, conductivity, DO, ORP, turbidity, and temperature | Quarterly, following end of operation for up to 2 years |
| | | 2. **Lab Analytical:** Chlorinated Ethenes only | |

**Notes:**

1. The monitoring location, parameters, and frequencies presented in this table serve as general guidance for IRM-related monitoring activities and may be adjusted based on Phase III IRM performance, injection areas in operation, and observed monitoring results.
2. Samples for analysis of dissolved-phase metals will be field-filtered prior to sample collection.

Cr = chromium
$Cr^{+6}$ = hexavalent chromium
DO = dissolved oxygen
DTW = depth to water
IRM = interim remedial measure
ORP = oxidation-reduction potential
PBR = Permit-By-Rule
PCE = tetrachloroethene
TAL = Target Analyte List
TOC = total organic carbon

# Appendix C

# Recent Sampling Data from Existing Monitoring Wells

**Appendix C-1**
**Most Recent Groundwater Analytical Data for Total Chromium**
**Permit-By-Rule Authorization Request - Phase III Groundwater Interim Remedial Measures**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

AECOM

| Well ID | Well Type | Most Recent Sampling Date | Sample Depth (ft below TOIC) | Total Chromium (ug/L) |
|---|---|---|---|---|
| 114-MW22AR | Shallow | 7/20/2020 | 10.5 | 3 |
| 114-MW25A | Shallow | 7/22/2020 | 11.5 | 47.6 |
| 114-MW36A | Shallow | 4/2/2020 | 12.5 | 11.8 |
| 114-MW41A | Shallow | 4/20/2018 | 12.5 | **65,600** |
| 132-P3A-MW103S | Shallow | 6/16/2016 | 11.0 | 6.6 |
| 137-P3B-MW101S | Shallow | 7/22/2020 | 12.5 | 3.4 |
| 137-P3B-MW101S | Shallow | 7/22/2020 | 18.5 | 5.6 |
| 143-P3A-MW101S | Shallow | 7/21/2020 | 6.5 | < 2.0 |
| 143-P3A-MW101S | Shallow | 7/21/2020 | 11.5 | < 2.0 |
| MW1C-3 | Shallow | 12/17/2015 | 10.0 | **6,690** |
| MW1C-4 | Shallow | 12/17/2015 | 12.5 | **157,000** |
| MW1C-4 | Shallow | 12/17/2015 | 15.5 | **637,000** |
| 114-MW22BR | Intermediate | 7/20/2020 | 28.5 | **18,900** |
| 114-MW24B | Intermediate | 3/30/2020 | 32.5 | 3.8 |
| 114-MW25B | Intermediate | 9/28/2017 | 32.5 | 6.2 |
| 114-MW26B | Intermediate | 3/13/2018 | 35.5 | 5.0 |
| 114-MW2B1-2I | Intermediate | 3/30/2020 | 35.5 | **4,730** |
| 114-MW36B | Intermediate | 4/2/2020 | 32.5 | 13 |
| 114-MW39B | Intermediate | 2/12/2018 | 42.5 | 6.3 |
| 114-MW41B | Intermediate | 4/20/2018 | 24.5 | **282,000** |
| 132-P3A-MW102I | Intermediate | 6/17/2016 | 23.0 | 10.2 |
| 132-P3A-MW103I | Intermediate | 6/16/2016 | 39.0 | **20,900** |
| 132-P3A-MW104I | Intermediate | 6/16/2016 | 43.0 | 1.5 |
| 135-MW2B | Intermediate | 4/25/2018 | 30.5 | 5.5 |
| 143-P3A-MW101I | Intermediate | 7/21/2020 | 24.5 | **1,720** |
| 143-P3A-MW101I | Intermediate | 7/21/2020 | 29.5 | **2,490** |
| MW8D | Intermediate | 4/25/2018 | 41.0 | **70,800** |
| MW8D | Intermediate | 4/25/2018 | 45.0 | **1,390** |
| 114-MW67C | Deep | 2/15/2021 | 55.0 | **547,000** |
| 114-MW68C | Deep | 2/16/2021 | 55.0 | **76,000** |
| 114-MW70C | Deep | 2/16/2021 | 90.5 | 2.5 |
| 114-MW70C | Deep | 2/16/2021 | 95.5 | < 2.0 |
| 132-P3A-MW104D-1 | Deep | 4/26/2018 | 52.0 | 45.3 |
| 137-MW1C | Deep | 12/18/2015 | 42.0 | **92.4** |

**Notes:**

1. Exceedances of the NJDEP GWQS of 70 ug/L for total chromium are in **bold** font.

ft = feet
GWQS = groundwater quality standard
NJDEP = New Jersey Department of Environmental Protection
TOIC = top of inner casing
ug/L = micrograms per liter

**Appendix C-2**
**Most Recent Groundwater Analytical Data for Tetrachloroethene**
**Permit-By-Rule Authorization Request - Phase III Groundwater Interim Remedial Measures**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| Well ID | Well Type | Most Recent Sampling Date | Sample Depth (ft below TOIC) | Tetrachloroethene (ug/L) |
|---|---|---|---|---|
| 114-MW41A | Shallow | 4/20/2018 | 12.5 | **6.5** |
| 114-MW41B | Intermediate | 4/20/2018 | 24.5 | 0.67 |

**Notes:**

1. Exceedances of the NJDEP GWQS of 1 ug/L for tetrachloroethene are in **bold** font.

ft = feet

GWQS = groundwater quality standard

NJDEP = New Jersey Department of Environmental Protection

TOIC = top of inner casing

ug/L = micrograms per liter

# Appendix D

# NJDEP PBR Authorization Request Form

# and Draft Public Notice

**New Jersey Department of Environmental Protection**
Site Remediation and Waste Management Program

# DISCHARGE TO GROUND WATER (DGW) PERMIT-BY-RULE AUTHORIZATION REQUEST

☐ LSRP ☐ Subsurface Evaluator (UHOT)

**Date Stamp (For Department use only)**

## SECTION A. SITE NAME AND LOCATION

Site Name: Garfield Avenue Group Sites

AKAs: See Attachment 1

Street Address: See Attachment 1

Municipality: Jersey City (*Township, Borough or City*)

County: Hudson County Zip Code: 07305

Program Interest (PI) Number(s): See Attachment 1

Case Tracking Number(s) for this submission: See Attachment 1

Municipal block(s) and lot(s) where the **proposed discharge(s)** would occur:

Block # See Attachment Lot #(s) _____ Block # _____ Lot #(s) _____

Block # _____ Lot #(s) _____ Block # _____ Lot #(s) _____

## SECTION B. FEE AND DISCHARGE INFORMATION

DGW Proposal Review Fee ..... $350.00

**Discharge Type** *(check all that apply)*

☐ Discharge of Recovered Ground Water

Will the discharge be a result of dewatering only? ..... ☐ Yes ☐ No

☒ Discharge that is part of an *In situ* Remediation

☐ Discharges other than those above *(see instructions for more information)*

**Facility Type** *(check all that apply)*

☒ Underground Injection Control (UIC) facility (i.e., any type of injection)

☐ Non-UIC (e.g., surface application) *(see instructions for more information)*

**Attach a Discharge to Ground Water Proposal to this form** *(see instructions)*

## SECTION C. PUBLIC NOTICE PROVISIONS *(Does not apply to residential heating oil tank cases)*

Is the proposed discharge lasting greater than 180 days? ..... ☒ Yes ☐ No

If "Yes," attach a copy of the public notice written as you intend it to be published. *(see instructions)*

## SECTION D. SITE USE AND GROUND WATER CLASSIFICATION

**Current Site Use** *(check all that apply)*

☐ Industrial ☐ Agricultural
☐ Residential ☐ Park or recreational use
☒ Commercial ☒ Vacant
☐ School or child care ☐ Government
☒ Other Roadways

**Intended Future Site Use** *(check all that apply)*

☐ Industrial ☒ Park or recreational use
☒ Residential ☐ Vacant
☒ Commercial ☐ Government
☐ School or child care ☐ Future site use unknown

What is the ground water classification for this site as per N.J.A.C. 7:9C? *(check all that apply)*

☐ Class I-A ☒ Class II-A
☐ Class I-PL Pinelands Protection Area ☐ Class III-A
☐ Class I-PL Pinelands Preservation Area ☐ Class III-B

## SECTION E. RECEPTOR EVALUATION SUMMARY

### Non-UHOT Cases

1. Have any of the following been identified on the site or within 200 feet of the site boundary?

   Check all that apply.

   ☒ Residences
   ☐ Child care facilities
   ☐ Public and private schools (K-12)
   ☐ Surface water
   ☒ Other occupied buildings
   ☒ Public parks and playgrounds

2. Did the well search conducted as a part of the receptor evaluation show any well use (potable, industrial, or irrigation)? ☒ Yes ☐ No

   If "Yes," indicate the type of use and approximate distance (closest occurrence) from site: *(Check all that apply)*

   ☒ Potable Distance from site: 6500 feet
   ☒ Industrial Distance from site: 670 feet
   ☒ Irrigation Distance from site: 3700 feet

3. Have any of these receptors been impacted? ☐ Yes ☒ No
   If "Yes," Do you have an NJDEP assigned Case Manager? ☐ Yes ☐ No

   If "Yes," please list the Case Manager: _____

### UHOT Cases

1. Is ground water contamination above the Ground Water Remediation Standards? ☐ Yes ☐ No
   If "Yes," answer questions 2 and 3.
2. Has a potable well been identified within 100 feet of the contamination? ☐ Yes ☐ No
3. Have any potable wells been impacted? ☐ Yes ☐ No
   If "Yes," has the NJDEP been notified? ☐ Yes ☐ No

## SECTION F. PERSON RESPONSIBLE FOR CONDUCTING THE REMEDIATION INFORMATION AND CERTIFICATION

Full Legal Name of the Person Responsible for Conducting the Remediation: PPG

Representative First Name: Mark Representative Last Name: Terril

Title: Corporate Director, Environmental Affairs

Telephone Number: (412) 434-2780 Ext.: _____ FAX: _____

Mailing Address: One PPG Place

City/Town: Pittsburgh State: PA Zip Code: 15222

Email Address: terril@ppg.com

This certification shall be signed by the person responsible for conducting the remediation who is submitting this notification in accordance with Administrative Requirements for the Remediation of Contaminated Sites rule at N.J.A.C. 7:26C-1.5(a).

*I certify under penalty of law that I have personally examined and am familiar with the information submitted herein, including all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, to the best of my knowledge, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties.*

Signature: Mark Terril Date: April 19, 2021

Name/Title: Mark Terril, Corporate Director, Environmental Affairs

☐ Check this box if the person above is also the property owner of the site or their representative. If this person is not the site property owner, please ensure the site property owner's name and address is included in the DGW Proposal, and also indicate that the property owner has been informed about the proposed discharge.

**SECTION G. LICENSED SITE REMEDIATION PROFESSIONAL INFORMATION AND STATEMENT**

LSRP ID Number: _____

First Name: _____ Last Name: _____

Phone Numbers: _____ Ext.: _____ Fax: _____

Mailing Address: _____

Municipality: _____ State: _____ Zip Code: _____

Email Address: _____

This statement shall be signed by the LSRP who is submitting this notification in accordance with N.J.S.A. 58:10C-14, and N.J.S.A. 58:10B-1.3b(1) and (2).

*(1) I certify, as a Licensed Site Remediation Professional authorized pursuant to N.J.S.A. 58:10C-1 et seq. to conduct business in New Jersey, that for the remediation described in this submission, and all attachments included in this submission, I personally: Managed, supervised, or performed the remediation conducted at this site that is described in this submission, and all attachments included in this submission; and/or periodically reviewed and evaluated the work performed by other persons that forms the basis for the information in this submission; and/or completed the work of another site remediation professional, licensed or not, after having: (1) reviewed all available documentation on which I relied; (2) conducted a site visit and observed the then-current conditions and verified the status of as much of the work as was reasonably observable; and (3)concluded, in the exercise of my independent professional judgment, that there was sufficient information upon which to complete any additional phase of remediation and prepare workplans and reports related thereto.*

*(2) I certify:*

- *That I have read this submission and all attachments to this submission;*
- *That in performing the professional services as the licensed site remediation professional for the entire site or each area of concern, I adhered to the professional conduct standards and requirements governing licensed site remediation professionals provided in N.J.S.A. 58:10C-16;*
- *That the remediation conducted at the entire site or each area of concern, that is described in this submission and all attachments to this submission, was conducted pursuant to and in compliance with the remediation requirements in N.J.S.A. 58:10C-14.c;*
- *That the remediation described in this submission, and all attachments to this submission, was conducted pursuant to and in compliance with the regulations of the Site Remediation Professional Licensing Board at N.J.A.C. 7:26I; and*
- *That the information contained in this submission and all attachments to this submission is true, accurate, and complete.*

*(3) I certify, when this submission includes a response action outcome, that the entire site or each area of concern has been remediated in compliance with all applicable statutes, rules, and regulations and is protective of public health and safety and the environment.*

*(4) I certify that no other person is authorized or able to use any password, encryption method, or electronic signature that the Board or the Department have provided to me.*

*(5) I certify that I understand and acknowledge that:*

- *If I knowingly make a false statement, representation, or certification in any document or information I submit to the Department I may be subject to civil and administrative enforcement pursuant to N.J.S.A. 58:10C-17.a.1(a)through (f) by the Board, including but not limited to license suspension, revocation, or denial of renewal; and*
- *If I purposely, knowingly, or recklessly make a false statement, representation, or certification in any application, form, record, document or other information submitted to the Department or required to be maintained pursuant to the Site Remediation Reform Act, I shall be guilty, upon conviction, of a crime of the third degree and shall, notwithstanding the provisions of subsection b. of N.J.S.2C:43-3, be subject to a fine of not less than $5,000 nor more than $75,000 per day of violation, or by imprisonment, or both.*

*(6) I certify that I have read this certification prior to signing, certifying, and making this submission.*

LSRP Signature: _____ Date: _____

LSRP Name: _____

Company Name: _____

**SECTION G. SUBSURFACE EVALUATOR UST REPORT CERTIFICATION FORM**

*I certify under penalty of law that the work was performed under my oversight and I have reviewed the report and all attached documents, and the submitted information is true, accurate and complete in accordance with the requirements of N.J.A.C. 7:14B and N.J.A.C. 7:26E. I am aware that there are significant civil and criminal penalties for submitting false, inaccurate or incomplete information including fines and/or imprisonment.*

Name: _____ UST Cert. No.: _____

Firm: _____ Firm's UST Cert. Number: _____

Firm Address: _____

City/Town: _____ State: _____ Zip Code: _____

Phone Number: _____ Ext: _____ Fax: _____

Signature: _____ Date: _____

Completed forms should be sent to:

Bureau of Case Assignment & Initial Notice
Site Remediation Program
NJ Department of Environmental Protection
401-05H
PO Box 420
Trenton, NJ 08625-0420

## Draft Public Notice

Take notice that, as part of the remediation of the Garfield Avenue Group Sites (refer to Table 1) in Jersey City, Hudson County, a proposal has been submitted to the New Jersey Department of Environmental Protection (Department) to discharge to ground water in accordance with a permit issued pursuant to the provisions of the New Jersey Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., its implementing regulations the New Jersey Pollutant Discharge Elimination System, N.J.A.C. 7:14A; the Ground Water Quality Standards, N.J.A.C. 7:9C; and the Technical Requirements for Site Remediation, N.J.A.C. 7:26E. The Department's Site Remediation Program is reviewing the proposal to discharge to ground water for the purpose of remediating the contaminated sites with the program interest numbers, provided in Table 1 below.

Brief description of the proposed discharge: The Phase III Interim Remedial Measure (IRM) will be implemented at the Garfield Avenue Group Sites and select surrounding properties (herein collectively referred to as the “Project Area”), located in Jersey City, Hudson County, New Jersey. The Project Area is located on the Jersey City peninsula, approximately midway between the Passaic River and Hackensack River junction to the west (approximately 1.8 miles) and the upper bay/mouth of the Hudson River to the east (approximately 1.6 miles). The local overburden geology is generally consistent with the regional geologic mapping, and includes approximately 16 feet of poorly sorted fill materials over organic carbon-rich meadow mat. The meadow mat occurs over a large portion of the Project Area, and where present, marks the transition from the shallow fill aquifer to the intermediate and deep aquifers.

The proposed IRM will include discharge of biological and/or chemical reagents to facilitate in situ anaerobic bioprecipitation (ISAB) or in situ chemical reduction (ISCR) of targeted groundwater contaminants of concern. Within the overburden, ISAB will be achieved by injecting organic carbon substrates (i.e., molasses and/or emulsified vegetable oil [EVO]) into targeted vertical zones to stimulate a native microbial community for reducing hexavalent chromium ($Cr^{+6}$) to the less toxic, and less mobile trivalent chromium ($Cr^{+3}$) form, which will eventually be precipitated out of the aqueous phase and permanently fixed in the soil formation as insoluble precipitates. ISCR will be achieved by injecting calcium polysulfide (CPS) or by emplacing FerroBlack®-H into targeted vertical zones, to establish geochemically reducing conditions to achieve direct abiotic reduction of $Cr^{+6}$ to $Cr^{+3}$ and subsequent precipitation as $Cr^{+3}$-solids similar to the ISAB approach.

A copy of the discharge to ground water proposal is available from the person responsible for conducting the remediation (Mark Terril, One PPG Place, Pittsburgh, PA 15222), or as part of the administrative record which is on file at the offices of the Department, Site Remediation Program, located at 401 East State Street, Trenton, Mercer County, New Jersey. The file may be reviewed under the New Jersey Open Public Records Act ("OPRA"), N.J.S.A. 47:1A-1 et seq. Information regarding the OPRA procedures is available at www.state.nj.us/dep/opra/oprainfo.html. A copy of this public notice has been sent to the

Municipal Clerk and the designated Local Health Official for Jersey City and Hudson County, New Jersey.

Interested persons may submit written comments regarding the discharge to ground water proposal to the Department at the address listed below and to the owner or operator of the facility at [name and address of person/contact submitting discharge to ground water proposal]. All comments shall be submitted within 30 calendar days after the date of this public notice, or the end of any public hearing that the Department may schedule that occurs after that date. All persons who believe that the discharge to ground water proposal is inappropriate, must raise all reasonably ascertainable issues and submit in writing to the Department all reasonably available arguments and factual grounds supporting their position, including all supporting material, by the close of the public comment period. The Department will consider all public comments that relate to the discharge to ground water proposal, provided that the Department receives the comments by the close of the public comment period. After the close of the public comment period, the Department will render a decision regarding the proposed discharge to ground water.

The Department will respond to all significant and timely comments with its decision regarding the discharge to ground water proposal. Each person who has submitted written comments will receive notice of the Department's decision.

Any person may request in writing that the Department hold a non-adversarial public hearing on the discharge to ground water proposal. This request shall state the nature of the issues to be raised in the proposed hearing and shall be submitted within 30 calendar days of the date of this public notice to the address cited below. A public hearing will be conducted whenever the Department determines that there is a significant degree of public interest in the discharge to ground water decision. If a public hearing is held, the public comment period in this notice shall automatically be extended to the close of the public hearing.

Comments and written requests for a non-adversarial public hearing shall be sent to:

NJ Department of Environmental Protection
Site Remediation and Waste Management Program
Bureau of Case Assignment and Initial Notice
Mail Code 401-05H
401 East State Street, 5th Floor
P.O. Box 420
Trenton, NJ 08625-0420
ATTN: DGW proposal

## Table 1

| Site No. | SRP Program Interest Number | Site Name | Location/Address | Block | Lot(s) |
|---|---|---|---|---|---|
| 114 | G000005480 | Former MGP facility and COPR stockpile area | Southwest and Eastern portions of Site 114 (70 Carteret Avenue; 2 Dakota Street; 880 and 884 Garfield Avenue) | 21501 | 16, 17, 18.01, 18.02, 19.01, 19.02 |
| | | Former Chromate Chemical Production Facility | Northwest portion of Site 114 (900 Garfield Avenue) | 21501 | 20.01 & 20.02 |
| 132 | G000008749 | Town & Country Linen (former name) | 824 Garfield Avenue | 21510 | 2 |
| 133 West | 629345 | Ross Wax (former name) | 15 Halladay Street | 21510 | 5 |
| 133 East | 025695 | Ross Wax (former name) | 22 Halladay Street | 21509 | 1 |
| 135 | 246332 | Vitarroz or Narula (former name) | 51-99 Pacific Avenue | 21509 | 2 |
| 137A | G000008753 | Rudolf Bass, Inc. (former name) | 45 Halladay Street | 21510 | 3 |
| 143 | G000008759 | F. Talarico Auto (former name) | 846 Garfield Avenue | 21510 | 1 |
| 199 | G000044581 | NJ Transit - Hudson-Bergen Light Rail | 163 Halladay Street | 21501 | 1.01 |
| Halsted Building | 722429 | Halsted Building | 78, 94, 98, 100, 102, and 104 Halladay Street | 21502 | 12-17 |
| Forrest Street and Forrest Street Properties | 775706 | Forrest Street Properties and Forrest Street | 84, 86, 90, 98, 100, and 108 Forrest Street | 21501 | 11, 12 14.01 |
| Fishbein | 629388 | Fishbein | 816 Garfield Avenue | 21510 | 11 |
| Roadways | G000005480 | Carteret Avenue, Garfield Avenue, Halladay Street North, Pacific Avenue | N/A | N/A | N/A |
| Eden Wood Property | N/A | Eden Wood | 33-47 Carteret Avenue; 150 Pacific Avenue | 21503 | 23 & 27 |

**Notes:**
COPR = chromite ore processing residue
MGP = manufactured gas plant
N/A = not applicable
SRP = Site Remediation Program

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Site Remediation and Waste Management Program
Publicly Funded Respons Element
Mail Code: 401-05A
P.O. Box 420
Trenton, NJ 08625-0420
Phone: 609-984-1351

PHIL MURPHY
*Govemor*

SHEILA OLIVER
*Lt. Govemor*

SHAWN LATOURETTE
*Commissioner*

July 9, 2021

Mark Terril, Corporate Director – Environmental Affairs
PPG
One PPG Place
Pittsburgh, PA. 15222

Re: Discharge to Ground Water Authorization (Phase III IRM)
Garfield Avenue Group Sites (Sites 114, 132, 133, 135, 137, and 143)
900 Garfield Avenue
Jersey City, Hudson County
Program Interest Numbers: G000008791 et al.
Subject Item ID: DGDW0000167710

Dear Mr. Terril,

This New Jersey Pollutant Discharge Elimination System/Discharge to Ground Water (NJPDES/DGW) authorization is hereby issued under the authority of the New Jersey Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq. and the implementing regulations, N.J.A.C. 7:14A-1 et seq. N.J.A.C. 7:14A-7.5 authorizes the discharge described below which will allow the recovery and treatment of contaminated ground water, as well as implementation of in-situ remediation of contaminated ground water at the above referenced site.

Pursuant to N.J.A.C. 7:14A-22.4(b)5, a Treatment Works Approval is not required for discharges to ground water authorized pursuant to N.J.A.C. 7:14A-7.5 or 8.5 and a licensed operator is not required pursuant to N.J.A.C. 7:10A-1.10(c)1. The discharge approved through this authorization will be to a combination of permanent injection wells and to temporary injection points described below. The discharge shall be conducted as proposed in the 20 April 2021 Discharge to Groundwater Permit-by-Rule Authorization Request and DGW proposal, received on 20 April 2021 and clarified and revised by email on 4 June 2021 and 24 June 2021. These documents were submitted on your behalf by Joseph M. Luty, P.E. of AECOM.

A public notice describing this discharge was published in the Star Ledger on 4 May 2021 which initiated a 30 day public comment period. In addition, a copy of the public notice was sent to the clerk for the City of Jersey City and to the local health department. A response to comments document is attached.

Although the anticipated duration of injection activities is 15 months, PPG is requesting that the PBR be authorized for a full 5 years in case additional reagent injections are necessary to achieve the objectives. Pursuant to N.J.A.C. 7:14A-2.7 the maximum approved discharge duration is 5 years and it begins on the date the this discharge approval letter is issued. This authorized discharge shall not extend beyond 5 years from the date of this letter, regardless of the date when the discharge first occurs.

The Department shall be notified of the date when the discharge begins as instructed in section IV of this letter. Only the discharge described in Section I below is authorized. The discharge shall be conducted in conformance with the DGW proposal and shall comply with the requirements of Sections II, III, and IV, farther below.

## I. DISCHARGE DESCRIPTION

The authorized discharge includes organic carbon substrate (e.g., molasses and/or emulsified vegetable oil [EVO]) and/or two chemical reductants (FerroBlack®-H and calcium polysulfide [CPS]) which will be injected into areas described below. The clean water source for the mixture is the private water supply at the site.

The molasses and EVO substrates will provide a degradable source of organic carbon within the subsurface to support an in situ anaerobic bioprecipitation (ISAB) approach. FerroBlack®-H (a water based suspension of 7 to 11% by weight ferrous sulfide and 1 to 2% by weight sodium sulfide) and/or CPS solution (26 to 34% by weight calcium polysulfide) will also be used to support in situ chemical reduction (ISCR).

Site 114 is the former location of a chromite ore processing facility and a former manufactured gas plant, and encompasses 16.6 acres. The remaining five sites (Sites 132, 133, 135, 137, and 143) that comprise the Garfield Avenue Group are proximate to each other on abutting parcels. The total area encompassed by these five sites is 11.3 acres. The Phase III IRM area includes select portions of water-bearing zones within the following areas outside of Site 114: Carteret Avenue; select areas within HCC Sites 132, 137 and 143; Halladay Street North; intersection of Carteret Avenue and Pacific Avenue; in the vicinity of the 101 Pacific Avenue property; Forrest Street; and Site 199. The Phase III IRM also includes targeted treatment in strategic areas within the lower portion of the deep water-bearing zone on Site 114. Locations are shown on the attached figures. The target treatment areas for the Phase III IRM for the shallow, intermediate, and deep water-bearing zones will reach to depths of approximately 65 feet. An estimated minimum of 136 permanent injection wells will be installed, and may be supplemented with the use of direct push injections, as needed. Note that the number and location of proposed injection wells are approximate and subject to change based on Phase III IRM performance and observed monitoring results.

FerroBlack-H reactive zones are being considered for three target areas: (1) in the southwestern quadrant of Site 114 within the lower portion of the deep water-bearing zone l; (2) east of the intersection of Carteret and Pacific Avenues in the intermediate water-bearing zone; and (3) potentially on and/or immediately adjacent to Site 199 in the intermediate water-bearing zone. Boreholes will be spaced approximately 25 feet on-center along the transects. Boreholes will be pre-drilled using sonic techniques, and backfilled with bentonite. The injection probe will be

advanced using a direct-push technology through the bentonite to the target injection depths. It is estimated that approximately 300 gallons of FerroBlack-H suspension (i.e. 70 to 300 pounds FerroBlack-H in 300 gallons of water) will be injected every 3 feet vertically along the targeted depths.

Each of the three Area 1 FerroBlack-H reactive zones are anticipated to be approximately 250 feet in length perpendicular to the local groundwater flow direction, up to 15 feet in vertical thickness (depths ranging from 40 to 65 feet) and range up to 20 feet in horizontal thickness based on the total volume of FerroBlack-H to be emplaced in each reactive zone as depicted in the attached Figure 3-3. The focal area of the FerroBlack-H reactive zone in Area 2 east of Pacific Avenue is anticipated to be 180 feet in length in a line perpendicular to the local groundwater flow direction, approximately 40 feet in vertical thickness and range up to 20 feet in horizontal thickness. Additional contingency length beyond the target 180-feet is contemplated in the attached Figure 3-2. The Area 3 FerroBlack-H reactive zone along the boundary of Site 199 and Site 114 is anticipated to be approximately 135 feet in length, up to 30 feet in vertical thickness and range up to 15 feet in horizontal thickness as depicted in Figure 3-2. The lateral spacing of the soil borings will allow for overlapping radii of influence. The ultimate location and geometry of each reactive zone will be finalized during the design and ultimately during FerroBlack-H emplacement and will consider factors such as: utilities, access to non-PPG owned properties, structural stabilization of adjacent facilities, properties and structures, and proximity to the New Jersey (NJ) Transit Light Rail (on Site 199). The emplacement of the FerroBlack-H reactive zone near the boundary of Site 114 and Site 199 is conceptual and is being contemplated to address potential future mass flux in groundwater from green-gray mud remaining under the light rail on Site 199. A geotechnical evaluation is underway to determine the technical practicability of establishing a FerroBlack-H reactive zone near the boundary of Site 114 and Site 199 without disturbing the adjacent light rail and associated retaining wall structure. The reactive zone east of the intersection of Carteret and Pacific Avenues is designed to address the downgradient edge of Cr impacts for areas along Halladay Street that are not readily accessible for in situ injections. All final locations are subject to access.

In addition, a limited area within the shallow water-bearing zone on Site 199 is being targeted for treatment of tetrachloroethene (PCE). The attached Figure 3-1 shows the locations.

Although the anticipated duration of injection activities is 15 months, the PBR is authorized for a full 5 years in case additional reagent injections are necessary to achieve the objectives. The attached tables summarize the Sites and properties, and the anticipated volumes of reagents to be injected.

The injection of these products is designed to actively treat groundwater impacted with total chromium (Cr) and hexavalent chromium ($Cr^{+6}$) greater than 1000 µg/L in the shallow, intermediate, and deep water-bearing zones. Total chromium was reported as high as 600,000 µg/L. All four compounds have demonstrated their ability to reduce $Cr^{+6}$. In addition, a limited area within the shallow water-bearing zone on Site 199 is being targeted for treatment of tetrachloroethylene (PCE).

## II. SYSTEM OPERATION AND MONITORING

The area of discharge shall be monitored for evidence of malfunction. Said evidence shall include, but is not limited to: injection solution observation at land surface, wet areas, ponding, odors, and elevated PID readings in the nearby work area or building.

The discharge shall not cause any of the following negative impacts: adverse impact on the behavior of free product or the plume; adverse impacts to a water supply well or have a long term adverse impact on ground water quality; create an unpermitted discharge to any surface water of the State or violation of Surface Water Quality Standards; create a persistent standing, ponded or surface-flowing fluid condition; or cause adverse vapor intrusion to occur.

Pursuant N.J.A.C. 7:14A-6.2(a)5 and 11, if free product in ground water, vapors or odors in any building, or any malfunction resulting in a potential impact to a receptor are detected and are a result of the discharge authorized by this approval, the discharger will immediately: (1) cease the discharge or make necessary adjustments to the discharge rate or system operation; and (2) repair or mitigate any negative impacts.

After completion of the discharge, the property should be returned to its previous condition, or as agreed to with property owner if the permittee is not the property owner. All UIC-Class V injection wells shall be properly abandoned in accordance with N.J.A.C. 7:14A-8.16(d)1 as applicable. The permittee will comply with any applicable provisions of the Additional Conditions Applicable to Class I, II, III and V UIC Permits of the NJPDES regulations, N.J.A.C. 7:14A-8.9, et seq. when UIC-Class V injection well units (i.e., the injection points) are used.

## III. GROUND WATER MONITORING REQUIREMENTS

The Permittee shall perform the following ground water sampling as was specified in the DGW proposal (including all addendums and modifications) for the purpose of complying with this Discharge to Ground Water Permit-By-Rule authorization.

Baseline Sampling, before injection:

Baseline monitoring will be conducted prior to the start of operations. Groundwater will be analyzed for total and dissolved TAL metals, total and dissolved Cr, total organic carbon (TOC), sulfate/sulfide, and methane. Field parameters will include pH, conductivity, dissolved oxygen (DO), oxidation reduction potential (ORP), turbidity, and temperature. See attached Tables 4-1 and 4-2 for the list of wells.

Interim Sampling, during the injections:

Monthly groundwater samples will be collected within injection areas during operations. See attached Tables 4-1 and 4-2 for the list of wells. Analysis will be for total and dissolved Cr, TOC, and Sulfate. In the PCE treatment area, analysis will

include chlorinated ethenes. Field Parameters will include: pH, conductivity, DO, ORP, turbidity, and temperature.

Post Treatment Sampling, after completion of injections:

Quarterly sampling will be conducted for up to 2 years, See attached Tables 4-1 and 4-2 for the list of wells. Analysis will be for total and dissolved Cr, TOC, and Sulfate. In the PCE treatment area, analysis will include chlorinated ethenes. Field Parameters will include: pH, conductivity, DO, ORP, turbidity, and temperature.

Pursuant to the Tech Regs, the Permittee shall measure ground water elevations at all sampled wells upon each sampling event and shall construct ground water flow maps with the water elevation data to document the direction of ground water flow. Any product observed, including sheen, shall be documented. If measurable product is observed, injections shall be suspended until all of the recoverable product is removed from the treatment area.

All sampling shall be performed as proposed and consistent with the methods specified in the most current edition of the Department's Field Sampling Procedures Manual. All samples shall be analyzed by a New Jersey Certified Laboratory certified for the methods being used to analyze groundwater samples. Analytical method MDLs shall be less than or equal to the ground water quality standards (N.J.A.C. 7:9C-1.7). Parameters determined in the field (pH, specific conductance, dissolved oxygen, temperature) are to be measured by a certified contractor or laboratory.

Comparison to the vapor intrusion (VI) screening levels is necessary in order to monitor whether or not the discharge activities have the potential to cause VI issues within any nearby structures by means of adversely impacting the behavior of the ground-water contaminants (e.g., unexpected contaminant movement). If there are any exceedances of the VI screening levels caused by the authorized discharge, a VI evaluation shall be conducted of any potentially impacted structures.

Compliance with N.J.A.C. 7:26E-5.7(b) requires that the Permittee satisfy the post-injection ground water monitoring requirements that are set forth in this letter before applying for any Remedial Action Permit for Ground Water. If a Remedial Action Permit application is submitted before the required ground water sampling has been completed, the application will be denied.

Additionally, contingency compliance ground water sampling is required if ground water sampling results indicate that ground water quality criteria (GWQC) have been contravened because of the authorized discharge (e.g., the GWQC for sodium is exceeded as a result of sodium sulfide injection, or the GWQC for iron is exceeded as a result of FerroBlack-H), or that ground water quality has not returned to baseline conditions (when baseline concentrations are greater than GWQC) in the expected timeframe. Ground water sampling must continue until it can be demonstrated that the GWQC have been met or until the ground water quality has returned to baseline conditions. To demonstrate either of these conditions, a minimum of two consecutive ground water sampling events spaced far enough apart to account for seasonal fluctuations, must be conducted.

Furthermore, if the Permittee is planning to apply for a Ground Water Remedial Action Permit for Natural Attenuation in the future, and exceedances of the GWQC that are due to the discharge remain, those exceedances must be treated similarly to any other site related contaminants (i.e., a sufficient

number of samples are required and a decreasing concentration trend must be evident) consistent with the Department's Remedial Action Permits for Ground Water Guidance.

## IV. REPORTING REQUIREMENTS AND INFORMATION SUBMITTALS

Details of the well and system installation, system operation, and operation and treatment monitoring results associated with the Phase III IRM will be documented as part of quarterly technical status reports submitted to NJDEP. These quarterly status reports will include succinct, high-level summaries of activities performed, data collected and graphs depicting apparent trends, adaptive steps taken to modify or optimize Phase III treatment, and an overview of activities planned for the subsequent quarter. Pursuant to N.J.A.C. 7:26E-5.7(b), the person responsible for conducting the remediation shall present and discuss in the remedial action report all of the information identified or collected pursuant to N.J.A.C. 7:26E-5.1 through 5.6.

Succinct performance summary results will be submitted as part of quarterly status reports. All information, including a complete summary of the work performed under the PBR, a complete set of the data collected, a summary of data trends, an evaluation and interpretation of the data, and conclusions reached (as well as the QA/QC package specified at N.J.A.C. 7:26E-2.1(a)15) shall be submitted as part of the completion report within 6 months following cessation of active Phase II operation. All information shall be submitted to:

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CASE ASSIGNMENT & INITIAL NOTICE
MAILCODE 401-05H
P.O. BOX 420
TRENTON, NJ 08625-0420
ATTN: COPR

Consistent with N.J.A.C. 7:14A-2.11(a) and 6.2(a)14, within 90 days after initiation of the discharge, notify the Department of the "start date" of the discharge. To report this date, send an email to Wayne.Howitz@dep.nj.gov stating the start date of the discharge.

Consistent with N.J.A.C. 7:14A-2.11(a) and 6.2(a)14, any malfunctions or non-compliance should be reported by telephone within 24 hours to the Bureau of Ground Water Pollution Abatement at (609) 292-8427 and in writing within seven days. Written submissions must include the facility name and PI Number. Failure to report this information is a violation of N.J.A.C. 7:14A and the permit-by-rule.

Nothing in this correspondence affects your potential liability and obligations to the State Trustee, the Department or its Commissioner regarding natural resource injuries, restoration, or damages. Although this Phase III IRM is being approved as an interim remedial measure, PPG is planning to incorporate this effort into the overall final groundwater remediation strategy at the Garfield Avenue Group Sites. Approval of the IRM in this PBR does not constitute tacit approval of the final remedy proposed in the Groundwater Remedial Action Work Plan (AECOM, 31 March 2021) for the Garfield Avenue Group sites. Additional requirements in N.J.A.C. 7:26E-5.5 et seq. apply to any final remedial action workplans. Compliance with this PBR's post-treatment monitoring requirements

does not satisfy monitoring requirements for the final groundwater remedy. Consistent with N.J.A.C. 7:26E-5.2(a)3, the RAWP must demonstrate the effectiveness of the remedy in achieving the applicable remediation standards throughout the Garfield Avenue Group Sites.

If you have any questions or concerns associated with this Discharge Authorization, please contact Wayne Howitz of the Site Remediation Program at (609) 984-2905.

Sincerely,

Wayne C. Howitz, Assistant Director
Publicly Funded Remediation Element

Enclosure

c: Joseph M. Luty, AECOM
Rolando R. Lavarro, Jersey City Redevelopment Agency
Jersey City Municipal Utilities Authority
Sean J. Gallagher, Jersey City Municipal Clerk
Stacy Flanagan, Jersey City Department of Health and Human Services
David Spader, ERFS

AECOM

**Table 1**
**Program Interest and Activity Numbers**
**Permit-By-Rule Authorization Request - Phase III Groundwater Interim Remedial Measures**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| Site No. | SRP Program Interest Number | Cr Activity Number | Site Name | Location/Address | Block | Lot(s) |
|---|---|---|---|---|---|---|
| 114 | G000005480 | RPC000051 | Former MGP facility and COPR stockpile area | Southwest and Eastern portions of Site 114 (70 Carteret Avenue; 2 Dakota Street; 880 and 884 Garfield Avenue) | 21501 | 16, 17, 18.01, 18.02, 19.01, 19.02 |
| | | | Former Chromate Chemical Production Facility | Northwest portion of Site 114 (900 Garfield Avenue) | 21501 | 20.01 & 20.02 |
| 132 | G000008749 | RPC900001 | Town & Country Linen (former name) | 824 Garfield Avenue | 21510 | 2 |
| 133 West | 629345 | RPC190001 | Ross Wax (former name) | 15 Halladay Street | 21510 | 6 |
| 133 East | 025695 | RPC900001 | Ross Wax (former name) | 22 Halladay Street | 21509 | 1 |
| 135 | 246332 | RPC000001 | Vitarroz or Narula (former name) | 51-99 Pacific Avenue | 21509 | 2 |
| 137A | G000008753 | RPC900001 | Rudolf Bass, Inc. (former name) | 45 Halladay Street | 21510 | 3 |
| 143 | G000008759 | RPC900001 | F. Talarico Auto (former name) | 846 Garfield Avenue | 21510 | 1 |
| 199 | G000044581 | N/A | NJ Transit - Hudson-Bergen Light Rail | 163 Halladay Street | 21501 | 1.01 |
| Halsted Building | 722429 | associated with Site 114 G000005480 | Halsted Building | 78, 94, 98, 100, 102, and 104 Halladay Street | 21502 | 12-17 |
| Forrest Street and Forrest Street Properties | 775706 | associated with Site 114 G000005480 | Forrest Street Properties and Forrest Street | 84, 86, 90, 98, 100, and 108 Forrest Street | 21501 | 11, 12 14.01 |
| Fishbein | 629388 | associated with Site 114 G000005480 | Fishbein | 816 Garfield Avenue | 21510 | 11 |
| Roadways | G000005480 | associated with Site 114 G000005480 | Carteret Avenue, Garfield Avenue, Halladay Street North, Pacific Avenue | N/A | N/A | N/A |
| Eden Wood Property | N/A | N/A | Eden Wood | 33-47 Carteret Avenue; 150 Pacific Avenue | 21503 | 23 & 27 |

**Notes:**

1. Block and lot numbers were sourced from the tax map of Jersey City (Sheet 215), last updated 12/2020, accessed at: http://hostedfiles.civilsolutions.biz/jerseycity/taxmaps/index.htm

COPR = chromite ore processing residue
Cr = chromium
MGP = manufactured gas plant
N/A = not applicable
SRP = Site Remediation Program

AECOM

# Table 2
## Proposed Reagents and Injection Volumes
## Permit-By-Rule Authorization Request - Phase III Groundwater Interim Remedial Measures
## Garfield Avenue Group Sites
## PPG, Jersey City, New Jersey

| Treatment Type | Reagent[1] | Target Area (see Figures 2-1, 2-2, and 2-3) | Water-Bearing Zone (see Figures 2-1, 2-2, and 2-3) | Local Maximum Injection Solution Volume (Gallons) | Total Maximum Injection Solution Volume (Gallons) |
|---|---|---|---|---|---|
| ISAB | Molasses (0.05%) | Target Area 1 | Intermediate | 3,400,000 | 16,240,000 |
| | | | Deep | 120,000 | |
| | | | Contingency[3] | 3,520,000 | |
| | | Target Area 2 | Intermediate | 3,000,000 | |
| | | | Deep | 140,000 | |
| | | | Contingency[3] | 3,140,000 | |
| | | Target Area 3 | Shallow | 47,000 | |
| | | | Intermediate | 1,400,000 | |
| | | | Deep | 13,000 | |
| | | | Contingency[3] | 1,460,000 | |
| | Emulsified Vegetable Oil (EVO) (1.5%) | Target Area 1 | Intermediate | 580,000 | 2,752,000 |
| | | | Deep | 20,000 | |
| | | | Contingency[3] | 600,000 | |
| | | Target Area 2 | Intermediate | 510,000 | |
| | | | Deep | 24,000 | |
| | | | Contingency[3] | 534,000 | |
| | | Target Area 3 | Shallow | 9,000 | |
| | | | Intermediate | 230,000 | |
| | | | Deep | 3,000 | |
| | | | Contingency[3] | 242,000 | |
| ISCR | Calcium Polysulfide (CPS) (2.75%) | See Note 2. | | | |
| | FerroBlack®-H[4] | Target Area 1 | Deep | 168,000 | 796,000 |
| | | | Contingency[3] | 168,000 | |
| | | Target Area 2 | Intermediate | 162,000 | |
| | | | Contingency[3] | 162,000 | |
| | | Target Area 3 | Intermediate | 68,000 | |
| | | | Contingency[3] | 68,000 | |

**Notes:**

1. Percentages noted in this column represent the design reagent-to-potable water concentrations proposed to be injected into the respective water bearing zones.

2. A CPS solution may be substituted for up to 50% of the anticipated injection volume of molasses (i.e., 8,120,000 gallons), if baseline or treatment monitoring data suggest the presence of areas of elevated hexavalent chromium concentrations (i.e., greater than 1,000,000 µg/L).

3. Contingency volumes account for an additional 100% of the estimated required injection volumes and may be implemented based on Treatment Monitoring.

4. FerroBlack®-H volumes were calculated using treatability study values derived from previous bench-scale and pilot-scale tests conducted in 2016. Actual volumes will be determined at the time of installation.

ISAB = *in situ* anaerobic bioprecipitation

ISCR = *in situ* chemical reduction

µg/L = micrograms per liter

AECOM

**Table 3**
**Approximate Mobile Pore Volumes for Treatment with Molasses/EVO/CPS**
**Permit-By-Rule Authorization Request - Phase III Groundwater Interim Remedial Measures**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| Water-Bearing Zone | Target Area 1 Mobile Pore Volume (Gallons) | Target Area 2 Mobile Pore Volume (Gallons) | Target Area 3 Mobile Pore Volume (Gallons) | Total Mobile Pore Volume (Gallons) |
|---|---|---|---|---|
| Shallow | 0 | 0 | 71,000 | **71,000** |
| Intermediate | 4,967,000 | 4,388,000 | 1,993,000 | **11,348,000** |
| Deep | 175,000 | 206,000 | 19,000 | **400,000** |
| **Combined** | **5,142,000** | **4,594,000** | **2,083,000** | **11,819,000** |

**Notes:**

1. Mobile pore volumes are estimated to be 15% of the total volume of soil and pore spaces. This assumption is consistant with the Phase I and Phase II Interim Remedial Measures.

EVO = Emulsified Vegitable Oil

CPS = Calcium Polysulfide

**Table 4-1**
**Existing Monitoring Well Network**
**Permit-By-Rule Authorization Request - Phase III Groundwater Interim Remedial Measures**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

AECOM

| Well ID | Target Area | Water-Bearing Zone | Treatment Monitoring (Cr) | Treatment Monitoring (PCE) | Operational Monitoring |
|---|---|---|---|---|---|
| 132-P3A-MW103S | Target Area 1 | SHALLOW | | | X |
| 137-P3B-MW101S | Target Area 1 | SHALLOW | | | X |
| 143-P3A-MW101S | Target Area 1 | SHALLOW | | | X |
| 114-MW22BR | Target Area 1 | INTERMEDIATE | X | | X |
| 132-P3A-MW102I | Target Area 1 | INTERMEDIATE | X | | X |
| 132-P3A-MW103I | Target Area 1 | INTERMEDIATE | X | | X |
| 132-P3A-MW104I | Target Area 1 | INTERMEDIATE | X | | X |
| 143-P3A-MW101I | Target Area 1 | INTERMEDIATE | X | | X |
| 114-MW68C | Target Area 1 | DEEP | X | | X |
| 114-MW67C | Target Area 1 | DEEP | X | | X |
| 114-MW68C | Target Area 1 | DEEP | X | | X |
| 114-MW70C | Target Area 1 | DEEP | X | | X |
| 132-P3A-MW104D-1 | Target Area 1 | DEEP | X | | X |
| 137-MW1C | Target Area 1 | DEEP | X | | X |
| 114-MW39B | Target Area 2 | INTERMEDIATE | X | | X |
| 135-MW2B | Target Area 2 | INTERMEDIATE | X | | X |
| MW8D | Target Area 2 | INTERMEDIATE | X | | X |
| MW1C-3 | Target Area 3 | SHALLOW | X | | X |
| 114-MW22AR | Target Area 3 | SHALLOW | | | X |
| 114-MW25A | Target Area 3 | SHALLOW | | | X |
| 114-MW36A | Target Area 3 | SHALLOW | | | X |
| 114-MW41A | Target Area 3 | SHALLOW | X | X | X |
| MW1C-4 | Target Area 3 | SHALLOW | X | | X |
| 114-MW24B | Target Area 3 | INTERMEDIATE | X | | X |
| 114-MW25B | Target Area 3 | INTERMEDIATE | X | | X |
| 114-MW26B | Target Area 3 | INTERMEDIATE | X | | X |
| 114-MW2B1-2I | Target Area 3 | INTERMEDIATE | X | | X |
| 114-MW36B | Target Area 3 | INTERMEDIATE | X | | X |
| 114-MW41B | Target Area 3 | INTERMEDIATE | X | X | X |

**Notes:**
Cr = chromium
PCE = tetrachloroethene

**Table 4-2**
**Proposed Monitoring Well Network**
**Permit-By-Rule Authorization Request - Phase III Groundwater Interim Remedial Measures**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

AECOM

| Well ID | Target Area | Water-Bearing Zone | Treatment Monitoring (Cr) | Treatment Monitoring (PCE) | Operational Monitoring |
|---|---|---|---|---|---|
| 132-P3-MW002I-A | Target Area 1 | INTERMEDIATE | X | | X |
| 132-P3-MW002I-B | Target Area 1 | INTERMEDIATE | X | | X |
| 132-P3-MW003I-A | Target Area 1 | INTERMEDIATE | X | | X |
| 132-P3-MW003I-B | Target Area 1 | INTERMEDIATE | X | | X |
| 137A-P3-MW001I-A | Target Area 1 | INTERMEDIATE | X | | X |
| 137A-P3-MW001I-B | Target Area 1 | INTERMEDIATE | X | | X |
| 137A-P3-MW002I-A | Target Area 1 | INTERMEDIATE | X | | X |
| 137A-P3-MW002I-B | Target Area 1 | INTERMEDIATE | X | | X |
| 143-P3-MW001I | Target Area 1 | INTERMEDIATE | X | | X |
| CAR-P3-MW001I-A | Target Area 1 | INTERMEDIATE | X | | X |
| CAR-P3-MW001I-B | Target Area 1 | INTERMEDIATE | X | | X |
| CAR-P3-MW003I-A | Target Area 1 | INTERMEDIATE | X | | X |
| CAR-P3-MW003I-B | Target Area 1 | INTERMEDIATE | X | | X |
| CAR-P3-MW004I-A | Target Area 1 | INTERMEDIATE | X | | X |
| CAR-P3-MW004I-B | Target Area 1 | INTERMEDIATE | X | | X |
| EW-P3-MW002I | Target Area 1 | INTERMEDIATE | X | | X |
| HAL-P3-MW001I | Target Area 1 | INTERMEDIATE | X | | X |
| 132-P3-MW001D | Target Area 1 | DEEP | X | | X |
| CAR-P3-MW001D | Target Area 1 | DEEP | X | | X |
| CAR-P3-MW002D | Target Area 1 | DEEP | X | | X |
| CAR-P3-MW003D | Target Area 1 | DEEP | X | | X |
| HSTD-P3-MW001S | Target Area 2 | SHALLOW | | | X |
| HSTD-P3-MW003S | Target Area 2 | SHALLOW | | | X |
| EW-P3-MW001I-A | Target Area 2 | INTERMEDIATE | X | | X |
| EW-P3-MW001I-B | Target Area 2 | INTERMEDIATE | X | | X |
| HSTD-P3-MW001I-A | Target Area 2 | INTERMEDIATE | X | | X |
| HSTD-P3-MW001I-B | Target Area 2 | INTERMEDIATE | X | | X |
| HSTD-P3-MW003I-A | Target Area 2 | INTERMEDIATE | X | | X |
| HSTD-P3-MW003I-B | Target Area 2 | INTERMEDIATE | X | | X |
| PAC-P3-MW001I | Target Area 2 | INTERMEDIATE | X | | X |
| HAL-P3-MW002D | Target Area 2 | DEEP | X | | X |
| HAL-P3-MW003D | Target Area 2 | DEEP | X | | X |
| HAL-P3-MW004D | Target Area 2 | DEEP | X | | X |
| HSTD-P3-MW002D | Target Area 2 | DEEP | X | | X |
| 199-P3-MW001S | Target Area 3 | SHALLOW | X | X | X |
| 199-P3-MW004S | Target Area 3 | SHALLOW | X | X | X |
| FSP-P3-MW001S | Target Area 3 | SHALLOW | X | X | X |
| 199-P3-MW001I | Target Area 3 | INTERMEDIATE | X | | X |
| 199-P3-MW004I | Target Area 3 | INTERMEDIATE | X | | X |
| FS-P3-MW001I | Target Area 3 | INTERMEDIATE | X | | X |
| FS-P3-MW002I | Target Area 3 | INTERMEDIATE | X | | X |
| FS-P3-MW003I | Target Area 3 | INTERMEDIATE | X | | X |
| FSP-P3-MW001I | Target Area 3 | INTERMEDIATE | X | | X |
| 199-P3-MW003D | Target Area 3 | DEEP | X | | X |
| 199-P3-MW004D | Target Area 3 | DEEP | X | | X |
| 114-P3-MW001D | Target Area 1 | DEEP | X | | X |
| 114-P3-MW002D | Target Area 1 | DEEP | X | | X |
| 114-P3-MW003D | Target Area 1 | DEEP | X | | X |
| 114-P3-MW004D | Target Area 1 | DEEP | X | | X |
| 114-P3-MW005D | Target Area 1 | DEEP | X | | X |
| 114-P3-MW006D | Target Area 1 | DEEP | X | | X |

**Notes:**
Cr = chromium
PCE = tetrachloroethene

PPG will add four new monitoring well pairs to the Phase III IRM well network, as requested by the NJDEP in the 10 June 2021 email. A figure is attached. These wells will be named as follows:

- **Site 143:** 143-P3-MW002I-A and 143-P3-MW002I-B
- **Site 132:** 132-P3-MW001I-A and 132-P3-MW001I-B
- **Halsted:** HSTD-P3-MW002I-A/B and HSTD-P3-MW004I-A/B

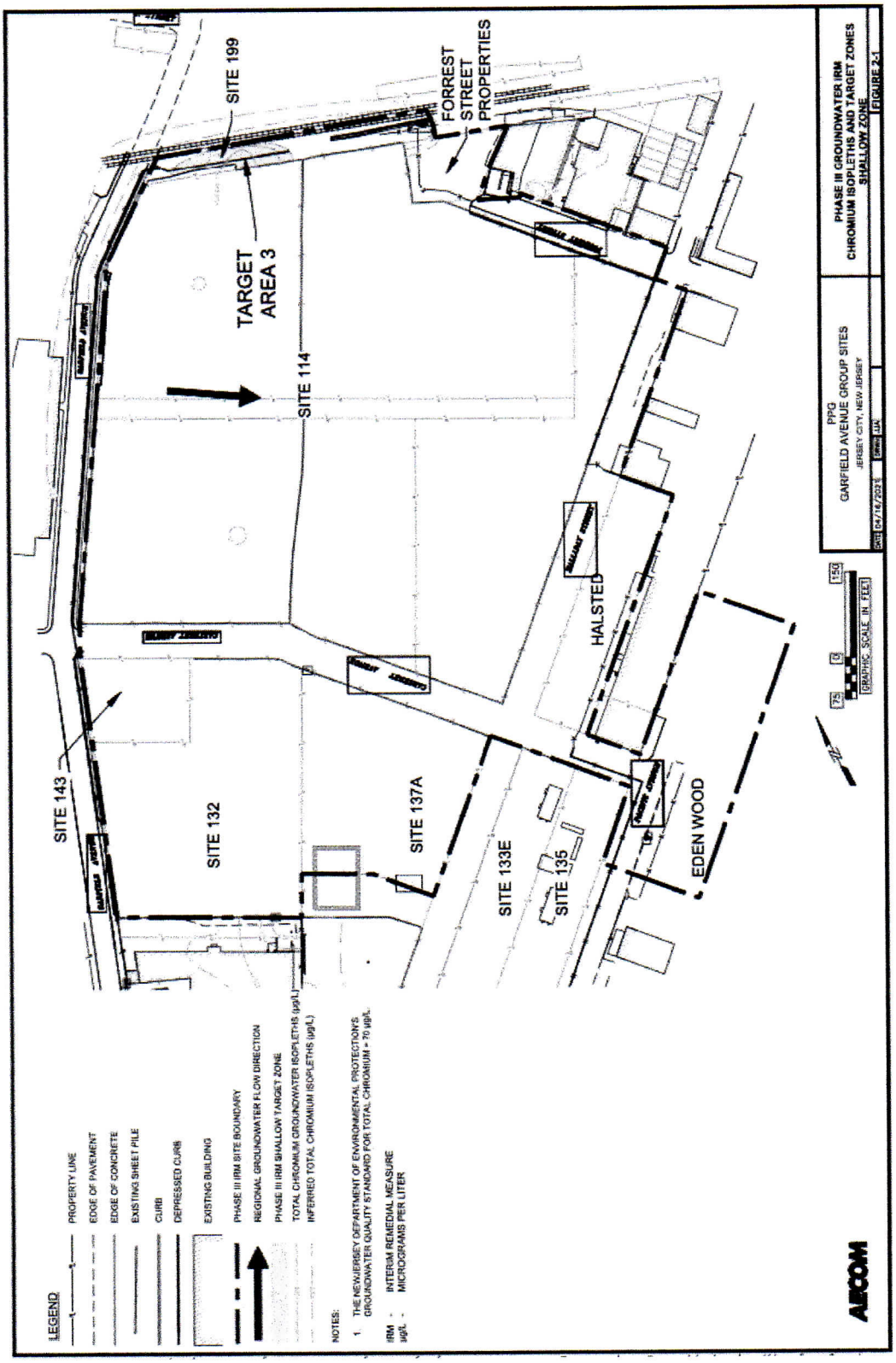
LEGEND
PROPERTY LINE
EDGE OF PAVEMENT
EDGE OF CONCRETE
EXISTING SHEET PILE
CURB
DEPRESSED CURB
EXISTING BUILDING
PHASE III IRM SITE BOUNDARY
REGIONAL GROUNDWATER FLOW DIRECTION
PHASE III IRM SHALLOW TARGET ZONE
TOTAL CHROMIUM GROUNDWATER ISOPLETHS (µg/L)
INFERRED TOTAL CHROMIUM ISOPLETHS (µg/L)
NOTES:
1 THE NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION'S GROUNDWATER QUALITY STANDARD FOR TOTAL CHROMIUM = 70 µg/L.
IRM - INTERIM REMEDIAL MEASURE
µg/L - MICROGRAMS PER LITER
SITE 143
SITE 132
SITE 137A
SITE 133E
SITE 135
SITE 114
TARGET AREA 3
SITE 199
FORREST STREET PROPERTIES
HALSTED
EDEN WOOD
75
0
150
GRAPHIC SCALE IN FEET
AECOM
PPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY
DATE 04/16/2015
PHASE III GROUNDWATER IRM
CHROMIUM ISOPLETHS AND TARGET ZONES
SHALLOW ZONE
FIGURE 2-1

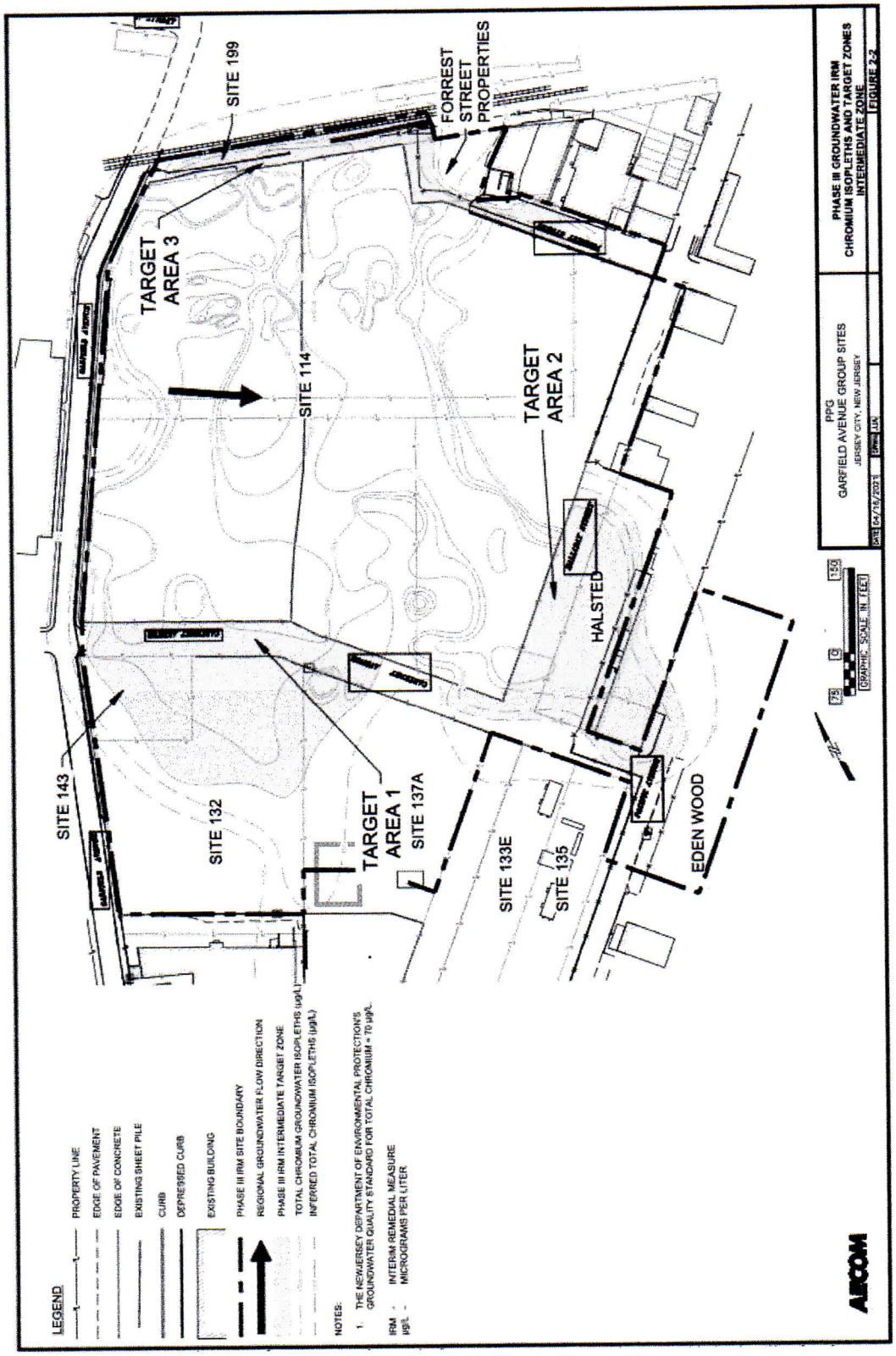
LEGEND
PROPERTY LINE
EDGE OF PAVEMENT
EDGE OF CONCRETE
EXISTING SHEET PILE
CURB
DEPRESSED CURB
EXISTING BUILDING
PHASE III IRM SITE BOUNDARY
REGIONAL GROUNDWATER FLOW DIRECTION
PHASE III IRM INTERMEDIATE TARGET ZONE
TOTAL CHROMIUM GROUNDWATER ISOPLETHS (ug/L)
INFERRED TOTAL CHROMIUM ISOPLETHS (ug/L)
NOTES:
1. THE NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION'S GROUNDWATER QUALITY STANDARD FOR TOTAL CHROMIUM = 70 µg/L.
IRM - INTERIM REMEDIAL MEASURE
µg/L - MICROGRAMS PER LITER
SITE 143
SITE 132
TARGET AREA 1
SITE 137A
SITE 133E
SITE 135
EDEN WOOD
HALSTED
TARGET AREA 2
SITE 114
TARGET AREA 3
SITE 199
FORREST STREET PROPERTIES
0
75
150
GRAPHIC SCALE IN FEET
AECOM
PPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY
DATE 04/15/2021
PHASE III GROUNDWATER IRM
CHROMIUM ISOPLETHS AND TARGET ZONES
INTERMEDIATE ZONE
FIGURE 2-2

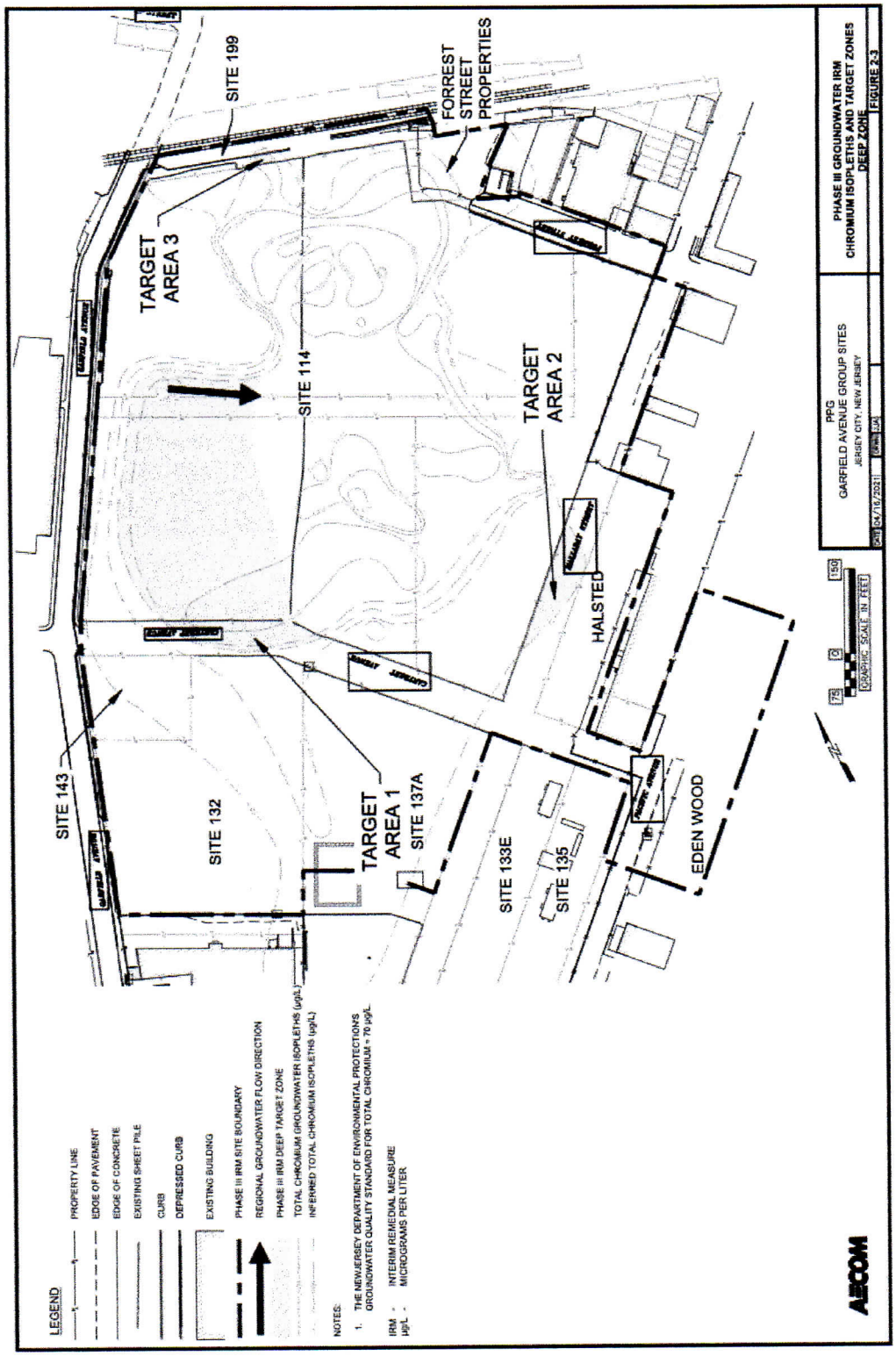
LEGEND
PROPERTY LINE
EDGE OF PAVEMENT
EDGE OF CONCRETE
EXISTING SHEET PILE
CURB
DEPRESSED CURB
EXISTING BUILDING
PHASE III IRM SITE BOUNDARY
REGIONAL GROUNDWATER FLOW DIRECTION
PHASE III IRM DEEP TARGET ZONE
TOTAL CHROMIUM GROUNDWATER ISOPLETHS (µg/L)
INFERRED TOTAL CHROMIUM ISOPLETHS (µg/L)
NOTES:
1. THE NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTIONS GROUNDWATER QUALITY STANDARD FOR TOTAL CHROMIUM = 70 µg/L
IRM - INTERIM REMEDIAL MEASURE
µg/L - MICROGRAMS PER LITER
SITE 143
SITE 132
TARGET AREA 1
SITE 137A
SITE 133E
SITE 135
EDEN WOOD
HALSTED
TARGET AREA 2
SITE 114
TARGET AREA 3
SITE 199
FORREST STREET PROPERTIES
AECOM
75
0
150
GRAPHIC SCALE IN FEET
PPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY
DATE 04/16/2021
PHASE III GROUNDWATER IRM
CHROMIUM ISOPLETHS AND TARGET ZONES
DEEP ZONE
FIGURE 2-3

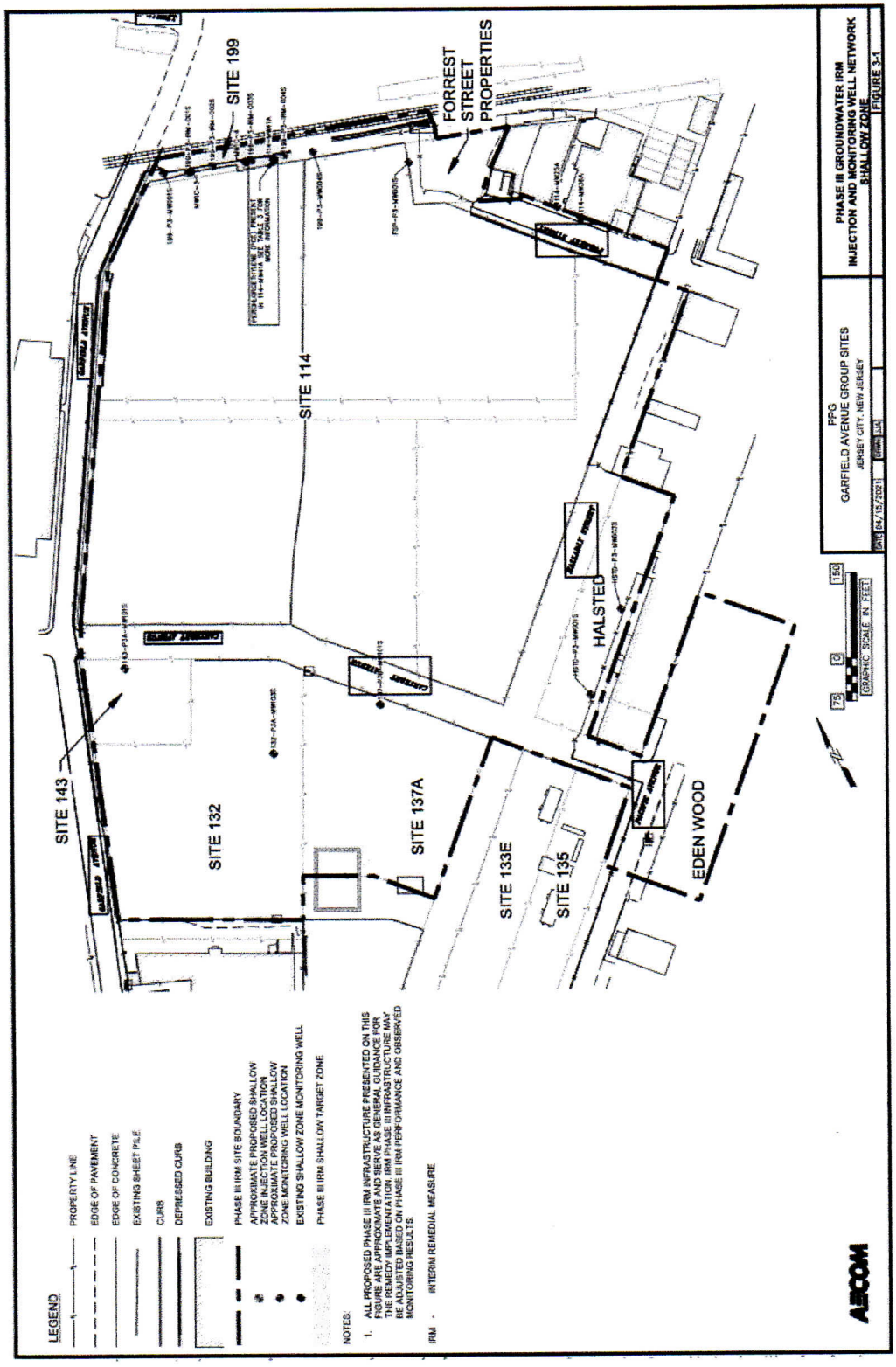
SITE 143
SITE 132
SITE 137A
SITE 133E
SITE 135
SITE 114
SITE 199
HALSTED
EDEN WOOD
FORREST STREET PROPERTIES
LEGEND
PROPERTY LINE
EDGE OF PAVEMENT
EDGE OF CONCRETE
EXISTING SHEET PILE
CURB
DEPRESSED CURB
EXISTING BUILDING
PHASE III IRM SITE BOUNDARY
APPROXIMATE PROPOSED SHALLOW ZONE INJECTION WELL LOCATION
APPROXIMATE PROPOSED SHALLOW ZONE MONITORING WELL LOCATION
EXISTING SHALLOW ZONE MONITORING WELL
PHASE III IRM SHALLOW TARGET ZONE
NOTES:
1. ALL PROPOSED PHASE III IRM INFRASTRUCTURE PRESENTED ON THIS FIGURE ARE APPROXIMATE AND SERVE AS GENERAL GUIDANCE FOR THE REMEDY IMPLEMENTATION. IRM PHASE III INFRASTRUCTURE MAY BE ADJUSTED BASED ON PHASE III IRM PERFORMANCE AND OBSERVED MONITORING RESULTS.
IRM - INTERIM REMEDIAL MEASURE
AECOM
GRAPHIC SCALE IN FEET
PPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY
DATE 04/15/2021
PHASE III GROUNDWATER IRM
INJECTION AND MONITORING WELL NETWORK
SHALLOW ZONE
FIGURE 3-1

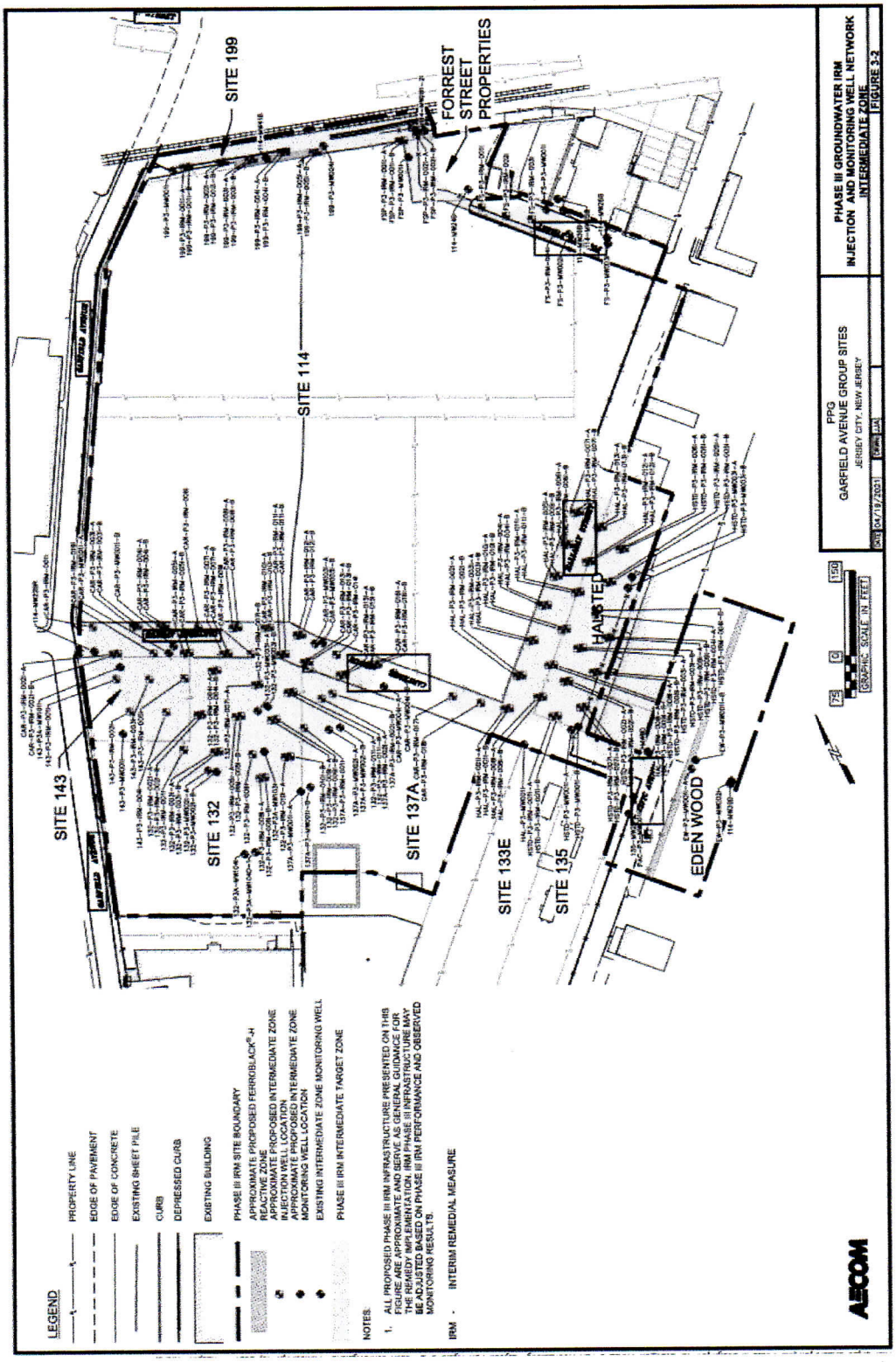
SITE 143
SITE 132
SITE 114
SITE 199
SITE 137A
SITE 133E
SITE 135
HAUSTED
EDEN WOOD
FORREST STREET PROPERTIES
LEGEND
PROPERTY LINE
EDGE OF PAVEMENT
EDGE OF CONCRETE
EXISTING SHEET PILE
CURB
DEPRESSED CURB
EXISTING BUILDING
PHASE III IRM SITE BOUNDARY
APPROXIMATE PROPOSED FERROBLACK® H REACTIVE ZONE
APPROXIMATE PROPOSED INTERMEDIATE ZONE INJECTION WELL LOCATION
APPROXIMATE PROPOSED INTERMEDIATE ZONE MONITORING WELL LOCATION
EXISTING INTERMEDIATE ZONE MONITORING WELL
PHASE III IRM INTERMEDIATE TARGET ZONE
NOTES:
1. ALL PROPOSED PHASE III IRM INFRASTRUCTURE PRESENTED ON THIS FIGURE ARE APPROXIMATE AND SERVE AS GENERAL GUIDANCE FOR THE REMEDY IMPLEMENTATION. IRM PHASE III INFRASTRUCTURE MAY BE ADJUSTED BASED ON PHASE III IRM PERFORMANCE AND OBSERVED MONITORING RESULTS.
IRM - INTERIM REMEDIAL MEASURE
AECOM
75
0
150
GRAPHIC SCALE IN FEET
FPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY
DATE 04/19/2021
PHASE III GROUNDWATER IRM
INJECTION AND MONITORING WELL NETWORK
INTERMEDIATE ZONE
FIGURE 3-2

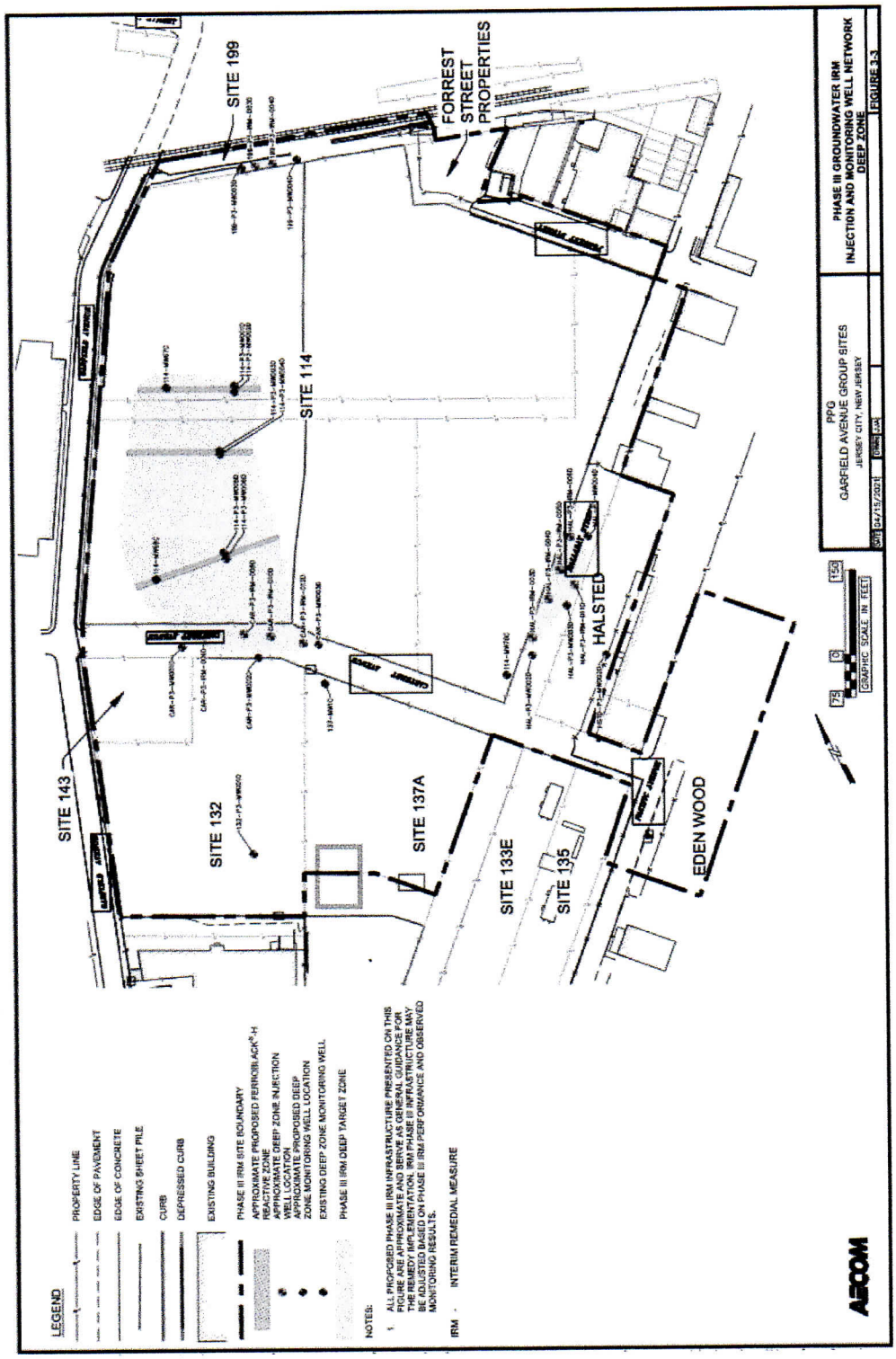
LEGEND
PROPERTY LINE
EDGE OF PAVEMENT
EDGE OF CONCRETE
EXISTING SHEET PILE
CURB
DEPRESSED CURB
EXISTING BUILDING
PHASE III IRM SITE BOUNDARY
APPROXIMATE PROPOSED FERROBLACK® H REACTIVE ZONE
APPROXIMATE DEEP ZONE INJECTION WELL LOCATION
APPROXIMATE PROPOSED DEEP ZONE MONITORING WELL LOCATION
EXISTING DEEP ZONE MONITORING WELL
PHASE III IRM DEEP TARGET ZONE
NOTES:
1 ALL PROPOSED PHASE III IRM INFRASTRUCTURE PRESENTED ON THIS FIGURE ARE APPROXIMATE AND SERVE AS GENERAL GUIDANCE FOR THE REMEDY IMPLEMENTATION. IRM PHASE III INFRASTRUCTURE MAY BE ADJUSTED BASED ON PHASE III IRM PERFORMANCE AND OBSERVED MONITORING RESULTS.
IRM - INTERIM REMEDIAL MEASURE
SITE 143
SITE 132
SITE 137A
SITE 133E
SITE 135
SITE 114
SITE 199
FORREST STREET PROPERTIES
HALSTED
EDEN WOOD
0
150
GRAPHIC SCALE IN FEET
AECOM
PPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY
PHASE III GROUNDWATER IRM
INJECTION AND MONITORING WELL NETWORK
DEEP ZONE
FIGURE 3-3

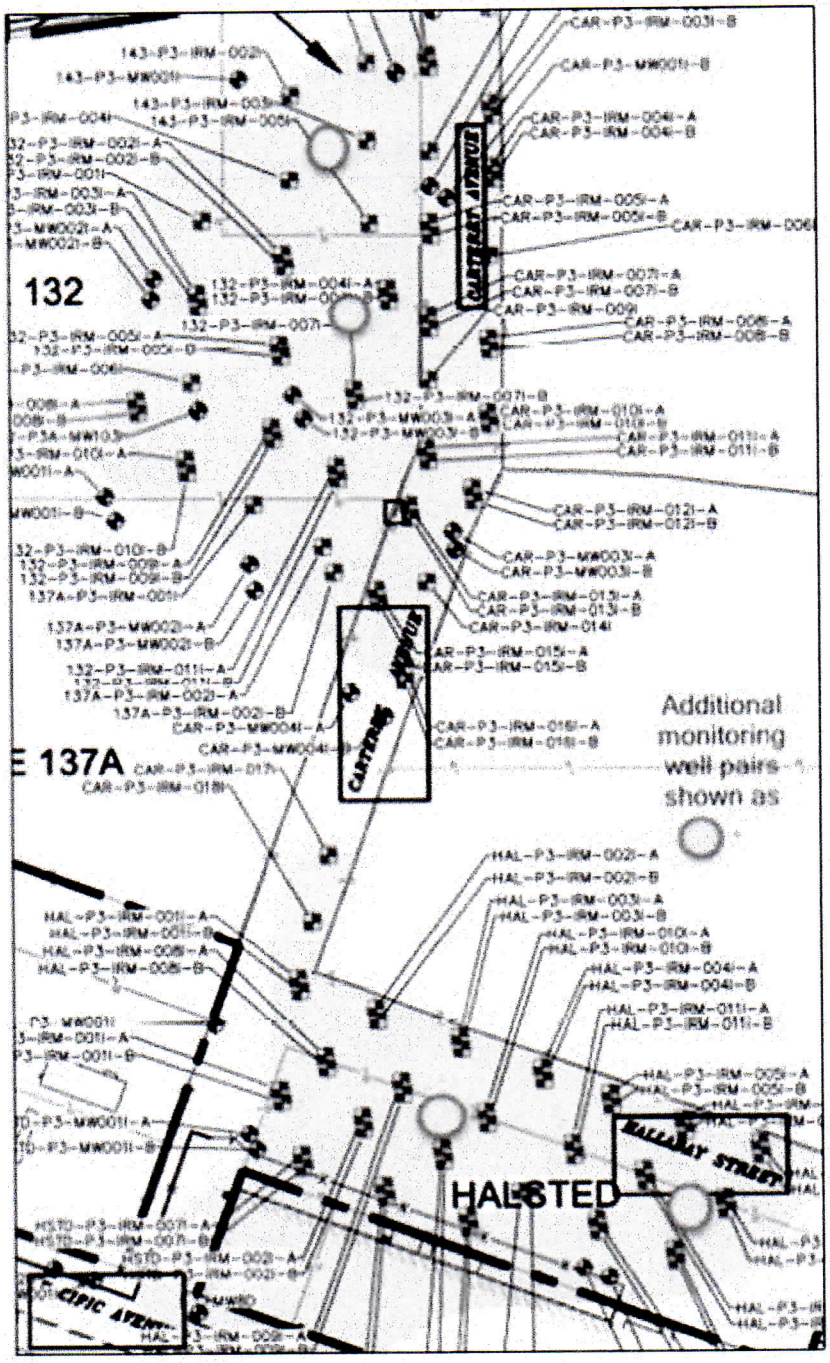


*(Source: screen snip shared in email dated June 10, 2021 from Mr. David VanEck, NJDEP)*

Response to Comments Document

Discharge to Ground Water Authorization (Phase III, IRM)

Garfield Avenue Group Sites (Sites: 114, 132, 133, 135, 137 and 143)

900 Garfield Avenue

Jersey City

Hudson County

Program Interest Numbers: G000008791 et al.

Subject Item ID: DGDW0000167710

## *Response to Comments Document*

Comment: Describe the technologies that are being considered for the emplacement of the in-situ reactive barriers (IRZs) depicted in the Groundwater RAWP. Describe how FerroBlack-H (FBH) will be incorporated into the IRZs.

Response: Boreholes will be pre-drilled with sonic drill, backfilled with bentonite, then the injection probe will be advanced to targeted depth. The issue is elaborated in Part I of the approval letter.

Comment: Can these technologies be used for treatment within the basal till zone? Is the basal till zone considered untreatable?

Response: PPG considers the basal till to be low permeability, and not practical for treatment.

Comment: How will the meadow mat, as an engineering control, be maintained and repaired if disturbed by the emplacement of the IRZs?

Response: The integrity of the meadow mat is preserved by backfilling the borings with hydrated bentonite in a tremie pipe fashion as the casing is withdrawn from each boring. This is described in Part I of the approval letter.

Comment: What are the general design parameters that will be used to determine the locations and dimensions for the IRZs?

Response: The dimensions of the target area for the FerroBlack-H reactive zones in the southwestern portion of Site 114 will vary per transect, but generally are as follows:

- Vertical thickness varies from < 5 feet to 15 feet
- Depths range from 40 to 65 feet below ground surface
- Lengths range from 250 to 350 feet.

The IRZs are described in Part I of the approval letter.

Comment: What additional data collection (e.g., bench tests, bucket tests, pilot test) will be undertaken to support the design of the IRZs?

Response: The estimated FerroBlack-H dosing (i.e., 70 to 300 pounds FerroBlack-H in 300 gallons of water per injection interval) was based on bench scale testing conducted by Redox Solutions.

Comment: What technologies will be used to map and verify the dimensions and hydraulic characteristics of the IRZs?

Response: Nested observation wells will be installed within reactive zone transects. Samples will be collected from the observation wells for geochemical and colorimetric evaluation (i.e., pH, oxidation-reduction potential [ORP], free sulfide, sample color). Monitoring requirement are described in Part III of the approval letter, and illustrated on attached figures.

Comment: What is the general approach to monitoring the IRZ system after emplacement to demonstrate long-term efficacy?

Response: Monitoring of the target treatment zone will proceed as per Appendix B of the PBR, which includes quarterly sampling of a set of existing and proposed monitoring wells for the first two years. Monitoring requirement are described in Part III of the approval letter, and illustrated on attached figures.

Post-PBR monitoring will be defined in the Active System Groundwater Remedial Action Permit (RAP) for the Garfield Avenue Group Sites.

Comment: What would be done to replace the FBH reductant once it is spent or if it does not achieve the design objectives, and how would replacement be conducted if redevelopment features are in the way?

Response: If supplemental injections are needed during initial emplacement mobilization, contingency volumes for FerroBlack-H were included in the PBR. If additional treatment is deemed necessary in the future, most of the target areas in the lower portion of the deep water-bearing zone will remain accessible following redevelopment as they are largely located within parking areas and outside the footprint of proposed buildings. This issue is relevant to the final groundwater remedial action.

Comment: Can case studies be provided for projects with similar size and depth parameters? Can case studies be provided for similar projects using FBH in deep vertical IRZs?

Response: Case studies were provided to New Jersey Department of Environmental Protection (NJDEP) via email on May 12, 2021. (There were no case studies using injection of FerroBlack-H.)

Comment: Why does the Site 143 area not have pairs of injection wells, and none in the deep zone?

Response: Using an adaptive management approach, adjustments will be made in field based on observations, and injection wells are expected to cover the entirety of the Phase III IRM area targeted for remediation. In several instances paired wells have been installed on Site 143 where only a single well was indicated in the PBR application.

Comment: Screen lengths were not specified in the proposal. The comment requested some clarification that the monitoring wells will have comparably long well screens (e.g., closer to 20 feet than 5 feet) consistent with the treatment zones.

Response: A table was provided, showing screen lengths, and a majority are 15 or 20 feet.

Comment: The Department requested four additional monitoring well pairs in the GW-IRM Phase 3 monitoring program.

Response: The four additional monitoring well pairs were added. The locations are provided on a figure, and are identified underneath Table 4-2, both attached to the PBR approval letter.

Comment: Requested the affidavit of publication for the Public Notice for the injections.

Response: The affidavit of publication was emailed on June 17, 2021.

# Appendix C

# Geotechnical Evaluation of Active Remedies at Hudson County Chromate Site 199

AECOM
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# Memorandum

| | |
|---|---|
| Subject | Geotechnical Evaluation of Proposed Groundwater Treatment within Site 199 and Forrest Street Properties – Phase III Groundwater Interim Remedial Measures<br>PPG Garfield Avenue Group, Hudson County Chromate Sites, Jersey City, New Jersey |
| Date | October 4, 2021 |

## 1. Introduction

On behalf of PPG, AECOM has prepared this technical memorandum to document the geotechnical evaluation of interim remedial measures (IRMs) proposed to address groundwater impacts at Site 199 and Forest Street Properties. Site 199 is located adjacent to the Hudson County Chromate Site 114, which is part of the Garfield Avenue (GA) Group Sites in Jersey City, Hudson County, New Jersey (NJ) (Project Area). Site 199 is part of the broader Phase III IRM area (see **Figure 1)** that includes select water-bearing zones outside of Site 114 and strategic areas of the lower portion of the deep water-bearing zone within Site 114.

Site 199 is adjacent to the NJ Transit Hudson-Bergen Light Rail (HBLR) tracks between Garfield Avenue and Halladay Street and the Forrest Street Properties which is referred to as “Target Area 1” in the April 20, 2021 Discharge to Groundwater Permit-By-Rule (PBR) Authorization Request (AECOM, 2021b). The objectives of the geotechnical evaluation (documented below) are: to determine if the IRM implementation can cause ground deformations (or pose other risks) that would disrupt HBLR operations; and to identify mitigation, limits, and controls that would facilitate safe implementation of the IRM at Site 199.

This technical memorandum provides the following information:

- Background information including a description of subsurface conditions and ground movements that occurred at the HBLR during Site 114 remediation (**Section 2**);
- Description of the Site 199 proposed IRMs and identification of potential risks to the HBLR posed by each activity (**Section 3**);
- Evaluation of the risks identified and the limits of controls required to mitigate those risks (**Section 4**);
- Geotechnical recommendations regarding IRM implementation (**Section 5**); and
- References for documents that are cited in the memorandum (**Section 6**).

## 2. Background

This section provides information on the geology and hydrogeology of the Project Area as well as a description of the previously observed settlement and vibration in the vicinity of the HBLR tracks during the installation of a shoring systems (sheet pile) and soil excavation conducted as part of the Site 114 remediation. This section also provides a discussion of the completed Phase I and ongoing Phase II groundwater IRMs.

The groundwater Cr plume within Site 199, which is the focus of the Phase III IRM, includes areas beneath the HBLR from Garfield Avenue to the Forest Street Properties. Sheet pile installed during the Site 114 remediation forms the boundary between Site 199 and Site 114. The HBLR tracks and catenary structures are elevated on an earth embankment supported by a concrete block retaining

wall. The embankment and retaining wall slope upward as the track approaches the Garfield Avenue bridge crossing.

## 2.1 Project Area Geology and Hydrogeology

The Project Area is located on miscellaneous fill material that was used to reclaim the salt marsh for the construction of this portion of Jersey City. Native materials beneath the fill include an organic meadow mat layer, unconsolidated deposits of glacial origin, and bedrock. The geology within the Project Area consists of:

- Fill (*the shallow zone*), comprised of:
    - Non-native fill materials in areas where soil remediation is not needed or has not yet been implemented. Native fill is present beneath Site 199 (north of the sheet pile).
    - Clean fill (unamended or amended with FerroBlack®-H reductant) where the previously existing non-native fill materials and subsurface structures were excavated to remove sources of chromium (Cr). Clean fill is present beneath Site 114 (south of the sheet pile).
- Underlying the fill, a discontinuous layer of estuarine organic-rich deposits (*meadow mat*);
- Underlying the meadow mat, or directly below the fill where the meadow mat is absent, native soils consisting of sands, silty sands, silts, and clays (*the intermediate zone*) generally separated from the underlying deep zone by a layer of interbedded lower permeability silts, clayey silts, silty sands, and clays (*the transition zone, part of the intermediate zone);*
- Underlying the intermediate zone, sands with lenses of silt, clay, and gravel underlain by the basal facies of the Rahway Till (*the deep zone, includes the basal till and overlying sands);* and
- Underlying the overburden, bedrock of the Lockatong and Stockton Formations with a diabase sill intruding into the Lockatong formation along the western edge of the Project Area (*the bedrock zone*).

Groundwater in the Project Area occurs within distinct hydrostratigraphic water-bearing zones (units), as follows:

- *Shallow Water-Bearing Zone*: includes groundwater present in the fill from the water table to the top of the meadow mat. Where the fill was excavated during soil remediation, the backfill is a more uniform dense-graded aggregate (DGA) material or DGA amended with FerroBlack®-H (A-DGA). In the northeastern corner of Site 114, beyond Forrest Street, a native sandy unit underlies the fill above the intermediate water-bearing zone deposits.
- *Intermediate Water-Bearing Zone:* includes groundwater present in the meadow mat, the underlying sand unit, and the transition zone. Where present, the meadow mat is the

transition zone between the shallow and intermediate water-bearing zones and generally limits vertical groundwater movement between these zones. Where meadow mat is absent, the shallow and intermediate water-bearing zones are in direct contact. Where present, the transition zone behaves like an aquitard due to its lower permeability. The intermediate water-bearing zone pinches out against the rising bedrock surface west of the Project Area (beyond Garfield Avenue).

- *Deep Water-Bearing Zone*: north of Carteret Avenue, the deep zone consists primarily of sand and gravel with lenses of clay or silt underlain by basal till. South of Carteret Avenue, the deep zone becomes more difficult to differentiate from the intermediate zone as both zones grade into thicker sequences of lower conductivity materials such as silts, clays, and fine sands with silt and clay. The deep water-bearing zone pinches out against the rising bedrock surface on the western margin of the Project Area near Garfield Avenue.

- *Bedrock Water-Bearing Zone:* consists primarily of the Lockatong Formation, with the Palisades Sill (diabase) along the western edge of the Project Area and a section of the Stockton Formation in the eastern portion of Site 114. Groundwater flow within the bedrock occurs only within interconnected bedrock fractures, bedding planes, cracks, and voids. Yields from bedrock wells in the Project Area are low (0.02 to 0.05 gallons per minute [gpm]). Groundwater flow in bedrock is a small fraction of the total groundwater flux through the Project Area.

The locations of two lithologic cross sections within Site 199 are shown on **Figure 2**. Cross sections depicting the geologic units and groundwater table are included on **Figure 3A** and **Figure 3B**. Results from geotechnical borings installed near or within Site 199 are included in **Attachment 1**.

## 2.2 Previously Observed Light Rail Ground Movements

Remediation activities, including the installation of sheet pile and excavation at Site 114, took place between 2013 and 2014 as a part of Phase 1C and Phase 2B-1. Site 114 is located at the intersection of Garfield Avenue and Carteret Avenue and the New Jersey Transit Right-of-Way (ROW) is located on the northwest boundary of Site 114. The HBLR runs within the ROW and the sheet pile installation and excavations occurred approximately 45 feet from the HBLR. This section describes movement and vibrations that occurred associated with the installation of the shoring systems (sheet piles) and the soil excavations.

### 2.2.1 Ground Movements During Shoring Installation

Sheet piles were installed parallel to the HBLR from April 25 to 29, 2013. During this time, a total of 39 sheets comprising approximately 162 linear feet to depths of 38.5 to 42.5 feet below ground surface were installed using a vibratory hammer. Two seismographs were used to continuously monitor vibration. These monitors were placed at the base of the retaining wall near RW-E and CP-H (see **Figure 4**). During this installation period, the vibration warning action limit of 0.5 inches/second and the stop work limit of 2.0 inches/second were exceeded. The maximum vibration observed was 2.5 inches per second.

Movement stop work levels (i.e., ±0.04 feet) at the retaining wall were exceeded on April 29, 2013 and work was subsequently stopped. The most significant movement along the retaining wall was observed within Row G. Movement at this location was measured as follows:

- Northing: -0.19 feet (movement towards the Site)
- Easting: -0.07 feet (movement towards Garfield Avenue)
- Elevation: -0.14 feet (movement downward)

Movement at the railroad ties was also observed as follows:

- Northing: -0.04 feet (movement towards the Site)
- Easting: 0.0 feet (i.e. no movement towards Garfield Avenue)
- Elevation: -0.01 feet (movement downward)

Settlement monitoring continued after the work stoppage at an increased frequency starting the week of April 29, 2013. The monitoring indicated slow, small-scale movement of the retaining wall, railroad ties, and catenary structures in a southerly direction (towards the Site) during the week of April 29 to May 5, 2013. Separation on the back side of the retaining wall between the wall and a concrete swale that runs behind the top of the wall, and between the concrete swale and the ground surface, was also visually observed during the week of April 29 to May 5, 2013. Sheet pile installation locations and indications of observed movement are shown on **Figure 4**.

As a result of the vibrations and settlement observed during the sheet pile installation, a revised design was developed. Shoring installation resumed on August 26, 2013 and was completed on October 4, 2013. During this time, sheet piles were installed using an ABI hydraulic press to reduce vibrations. No stop work exceedances of vibration or movement were observed during the use of the hydraulic press to install sheet piles.

The ground movement was likely due to vibration-induced consolidation of the loose fill, meadow mat soil, and loose soil lenses in the intermediate zone. Soil shifting during pre-drilling and excavation of obstructions along the shoring alignment may also have caused the movements.

### 2.3.2 Ground Movement During Excavations

On November 22, 2013, soil excavation between the permanent and temporary sheet pile began in Grid D. The excavation progressed west to east, with backfilling following excavation. Excavation between the sheet piles progressed slowly due to the need to iteratively install levels of bracing and the tight working environment between the sheet piles and bracing.

In mid-December 2013, AECOM observed an increase in the movement trend (as observed at settlement monitors) that appeared to be related to the ongoing excavation work. This trend slowed in late December, but movement (at a lower rate) was still observed (even in areas that had been backfilled) into January 2014. On January 17, 2014, a sudden increase in movement was observed over the course of the afternoon and evening. The excavation was backfilled and work was stopped.

Settlement monitoring was conducted on the retaining wall, rail lines, catenary structures, sheet pile, and nearby structures during the excavation work. Manual measurements were collected from March 26, 2013 to July 1, 2013 and real-time measurements began on July 1, 2013. From March 26, 2013 to January 21, 2014, the following minimum and maximum movements were observed:

**Settlement Monitoring Results – March 26, 2013 to January 21, 2014**

| Prism Location | Southing (inches) | | Elevation (inches) | |
|---|---|---|---|---|
| | Minimum | Maximum | Minimum | Maximum |
| Sheet Pile | 0.58 (SP-F) | 1.39 (SP-H) | -0.013 (SP-H) | -0.99 (SP-I) |
| Retaining Wall | 1.2 (RW-D) | 4.94 (RW-G) | -0.12 (RW-D) | -3.02 (RW-G) |
| Rail Line | 0.48 (RR-D) | 2.14 (RR-I) | -0.002 (RR-L) | -0.73 (RR-I) |

Loose soils along the HBLR embankment may have shifted in response to the sheet pile deformations resulting in the even greater movements observed the retaining wall and rail line presented in the table above.

## 2.3 Phase I and II Groundwater IRMs

The three IRMs (implemented, Phase I; ongoing, Phase II and Phase III), that are being implemented under PBR authorizations issued by the New Jersey Department of Environmental Protection (NJDEP), use a combination of demonstrated active remediation technologies, including in situ anaerobic bioprecipitation (ISAB) and in situ chemical reduction (ISCR), to achieve the IRM objectives (i.e., to treat Cr and hexavalent chromium [$Cr^{+6}$] concentrations in groundwater).

During Phase I and Phase II IRMs, both injection and extraction wells were used to balance the water table and help spread the injected fluids throughout the groundwater table. During the injection process, some break out or mounding was observed at the injection points. This was typically observed at the location of the injection well where the injection caused the water level to rise to the surface and fluid was observed breaking out or mounding at the surface. On rare occasions, mounding was observed approximately 10 to 20 feet away from the injection well. Mounding was more common in areas where wells were installed in rows, which resulted in a more localized injection zone. The surface mounding is impacted by the injection pressure and volume, as well as the site geology. The fluid will flow through a zone of preferential flow and potentially emerge at the surface. During the Phase I and II IRM phases, extraction wells were located hundreds of feet from the injection wells; due to this distance, the extraction wells are not expected to have a significant impact on mounding effects. Extraction wells will not be used in the Phase III IRM.

# 3. Summary of Site 199 Phase III IRM

As presented in the PBR authorization request for the Phase III IRM, the planned strategy for Site 199 (Target Area 1) includes in situ reagent injections using a permanent well network screened at target depths or direct push reagent injections. Injection of three different types of reagents (molasses and emulsified vegetable oil (EVO), calcium polysulfide (CPS), and FerroBlack®-H) are contemplated for select areas or portions of the shallow, intermediate, and deep injection wells as shown on **Figures 5** through **7**.

The following subsections present the planned strategy for Site 199, including injection flow rates, pressures, and total volumes for the three reagent types and identify potential risks to the HBLR operations posed by the reagent injection activities.

## 3.1 Molasses and Emulsified Vegetable Oil (EVO)

The Site 199 Phase III IRM proposes injection of a molasses and EVO solution at individual wells with flow rates that vary from 0 to 1.5 gpm based on experience gained during the Phase I and II IRMs. Injection pressures will not exceed 25 pounds per square inch (psi) based on the depth of injection and the response of the treatment zones to injection flows and pressures. The following injection volumes are proposed at Site 199 (Target Area 1):

**Proposed Injection Volumes: Target Area 1**

| Water Bearing Zone | Local Maximum Injection Solution Volume (Gallons) | | Number of Injection Wells |
|---|---|---|---|
| | Molasses (0.05%) | EVO (1.5%) | |
| Shallow | 47,000 | 9,000 | 7 |
| Intermediate | 1,400,000 | 230,000 | 24 |
| Deep | 13,000 | 3,000 | 4 |
| Contingency | 1,460,000 | 242,000 | |

## 3.2 Calcium Polysulfide (CPS)

CPS provides ISCR of constituents of concern. A CPS solution may be substituted for up to 50% of the anticipated injection volume of molasses if baseline or treatment monitoring data suggest the presence of areas of elevated $Cr^{+6}$ concentrations (i.e., greater than 1,000,000 micrograms per liter [µg/L]). If employed, the CPS solution will be injected using the same injection flow rates and pressures as molasses.

## 3.3 Potential Risks to HBLR Operations – Molasses, EVO, and CPS

Implementation of the molasses, EVO and CPS injections would pose the following risks to HBLR operations:

- Track fouling during injection well installation – A drill rig will work close to the HBLR retaining wall. If the drill rig tipped over with the mast up, it could cross the track or catenary lines.
- Ground movement during injection well installation – Drilling techniques including sonic drilling may generated ground vibrations that could cause soil movement beneath the retaining wall and tracks.
- Ground movement from groundwater mounding – Injection of the molasses and EVO solution will cause a temporary rise in the water table. If the rise in water table saturates soils that are not saturated by normal water table fluctuations, the soils will consolidate under the changing effective stress as the water table recedes; this may cause settlement of the retaining wall and tracks.

## 3.4 FerroBlack®-H

FerroBlack®-H is a proprietary reagent of Redox Solutions, LLC, and is a reductive, colloidal suspension of soluble and insoluble iron sulfides. In areas planned for FerroBlack®-H treatment, the

reagent will be delivered into the target zones to establish a reducing environment within the zone of influence of the injected material.

Injection wells will be pre-drilled using roto-sonic (sonic) drilling technology. At each location, after logging and photographing the soil to the target depth, the evacuated borehole will be backfilled with hydrated bentonite to seal the borehole wall. A direct push rig will then be used to install probe rods fitted with specialized tips to push through the column. The tool head will be customized for directional injections. Wells will be installed in transects spaced 25 feet on center with three nested well installations completed in each transect. Each boring will have five injection intervals with an injection interval range of 40 to 65 feet. The injected reagent slurry may include up to 54,000 gallons of water and 285,000 pounds of FerroBlack®-H.

The proposed injection flow rates can be up to 280 gpm with injection pressures up to 2,000 pounds per square inch gauge (psig). Based on the existing site geology, it is anticipated that the system will operate at flows of 70 to 200 gpm and pressures of 500 psig realized in the subsurface (not including system pressure losses).

### 3.4.1 Potential Risks to HBLR Operations - FerroBlack®-H

Implementation of the FerroBlack®-H injection would pose the following risks to HBLR operations:

- Track fouling during injection well installation;
- Ground movement during injection well installation;
- Ground movement from groundwater mounding; and
- Changes to the soil structure – High pressure is used to loosen the soil and allow the FerroBlack®-H slurry to permeate the pore space surrounding the injection point. The initial pressure gradient at the injection point may result in critical pore pressure gradients and temporary soil liquefaction. As the slurry flows into the surrounding soils and pressures dissipate, soil heave or expansion may occur. Both the localized liquification and heave may cause retaining wall, catenary structure or track movement.

## 4. Risk Evaluation and Mitigation

Four specific types of risks to the HBLR operations posed by the Site 199 Phase III IRM are identified in **Section 3**. They include:

- Track fouling during injection well installation;
- Ground movement during injection well installation;
- Ground movement from groundwater mounding; and
- Changes to the soil structure.

Each risk is evaluated and mitigation measures are identified in the following subsections.

### 4.1 Track Fouling During Inject Well Installation

Given the proximity of the proposed injection wells and points (for the three proposed reagent types) to the retaining wall and tracks, there is potential for track or catenary line fouling. The track fouling risk can be mitigated by maintaining drill rig masts below the fouling zone. If the rig mast must extend into the fouling zone, then the railroad operator would be notified and a flagger may be

required to direct train traffic during the drilling activities. In addition, measures to ensure the rig is level and properly stabilized with outriggers would be implemented.

Soil borings and monitoring wells have been installed in Site 199 without incident. The track fouling risk does not preclude implementation any of the three reagent injections if proper planning and mitigation measures are in place during the well or injection point installation.

## 4.2 Ground Movement During Injection Well Installation

Sonic drilling techniques that generate ground vibration may be used to install injection wells or points for the three reagent types. As noted above, the loose soils beneath the HBLR are susceptible to vibration-induced movements. However, the ground vibrations caused by sonic drilling are typically much less than those generated by sheet pile installation. If injection wells and points must be installed with sonic drilling, then a vibration monitoring program should be implemented during the well installation to ensure that vibration levels are less than prescribed thresholds where ground movement may occur.

## 4.3 Ground Movements from Groundwater Mounding

The proposed injection volumes for the three reagents are sufficient to generate a groundwater mound. As described above, temporary groundwater mounding beyond normal water table fluctuations may cause settlement of the retaining wall and tracks as the mounded water table recedes.

To determine the potential for the three proposed reagent injection types to create a groundwater mound above normal water table fluctuation and induce settlement, historical water levels were reviewed to establish the fluctuation range. In addition, groundwater modeling simulations were conducted to estimate the extent of the water level mound that would occur from the molasses EVO or CPS injections. These are described in the following subsections.

### 4.3.1 Review of Historical Water Levels

Groundwater levels were measured in the vicinity of the Site 199 beginning in 2004. Discrete water level measurements taken from the shallow wells range from elevation 2.5 feet in the North American Vertical Datum of 1988 (NAVD88) to elevation 13.2 feet (NAVD88). Statistical review of the data in the Site 199 area show that the water level is below elevation 11.2 feet NAVD88 90% of the time.

During 2015 and 2016, a capillary rise study was performed to support the design and use of a capillary break at the Project Area to prevent potentially impacted groundwater from reaching the surface through capillary action (AECOM, 2017). Pressure transducer data collected during the capillary rise study were analyzed to estimate the natural range of water table fluctuations and the water table rise in response to rainfall events. Five wells were selected for this analysis including three near Site 199 that are within sheet piles and two to the southwest, further from Site 199, that are located outside of the sheet piles. The table below shows the minimum, maximum, and range of water levels for each of the five selected wells for the period from June through October of 2016. The range of the water level fluctuation within the wells during this timeframe fluctuated between 1.73 and 4.08 feet with a maximum water level elevation of 9.72 feet NAVD88 and a minimum value of 5.64 feet NAVD88.

**Range of Water Levels**

| Well ID | Inside Sheet Piles | Min Water Level (ft NAVD88) | Max Water Level (ft NAVD88) | Range (feet) |
|---|---|---|---|---|
| 132-P3A-MW104S | No | 6.99 | 9.25 | 2.26 |
| PZ1 | Yes | 5.64 | 9.72 | 4.08 |
| 114-P1C-MW101S | Yes | 6.73 | 8.85 | 2.12 |
| 114-P2B1-MW101S | Yes | 5.96 | 8.65 | 2.69 |
| 137-P3B-MW102S | No | 6.88 | 8.61 | 1.73 |

Note: ft NAVD88 = feet in the North American Vertical Datum of 1988

The water level response to several rainfall events was evaluated by comparing each rainfall event to the corresponding water level rise at each well. The projected baseline water level in the following table reflects the expected water level extrapolated from the trendline of the available dataset. The peak water level is the highest water level measured after the rainfall event. The two wells outside the sheet piles showed 7.14 and 14.33 inches of water table rise for each inch of rainfall. The water table rise within the three wells within the sheet piles, located closer to Site 199, ranged from 12 to 20 inches of rise for each inch of rainfall. Because some runoff gets trapped within the sheet piles, recharge to groundwater in wells within the sheet pile may be higher than what is expected at Site 199. A summary of the water table fluctuations in response to rainfall events is shown in the following table:

**Water Table Fluctuations in Response to Rainfall Events**

| Well ID | Inside Sheet Piles | Projected Baseline Water Level (ft NAVD88) | Peak Water Level Time After Rainfall | Peak Water level (ft NAVD 88) | Increase (inches) | Rainfall (inches) |
|---|---|---|---|---|---|---|
| 132-P3A-MW104S | No | 7.83 | 7/10/2016 7:00 | 8.00 | 2.00 | 0.28 |
| PZ1 | Yes | 6.46 | 7/26/2016 22:00 | 8.09 | 19.54 | 0.99 |
| 114-P1C-MW101S | Yes | 7.40 | 7/26/2016 0:00 | 8.39 | 11.85 | 0.99 |
| 114-P2B1-MW101S | Yes | 6.57 | 7/27/2016 20:00 | 8.18 | 19.34 | 0.99 |
| 137-P3B-MW102S | No | 7.40 | 7/26/2016 7:00 | 8.58 | 14.19 | 0.99 |

Note: ft NAVD88 = feet in the North American Vertical Datum of 1988

Based on the review of the groundwater elevation data, an injection-induced groundwater mound maintained below elevation 11.2 feet NAVD88 would be within the water table fluctuation range and would not cause settlement.

### 4.3.2 Groundwater Modeling – Molasses/EVO and CPS Injections

A numerical groundwater model was created for the Project Area using the United States Geological Survey (USGS) software MODFLOW-USG Transport with the Groundwater Vistas graphic user interface. This model was developed to advance the Phase III IRM design and was used to assess the potential for mounding due to Phase III injections at Site 199. Model simulations were created to evaluate an injection system that would only allow a maximum of 1 foot of mounding (conservative assumption) at the wells to minimize the potential for saturation of fill beneath the light rail tracks which could cause movement (settlement).

The Phase III IRM design for Site 199 includes the following injection wells – four in the shallow water-bearing zone (WBZ), 14 in the intermediate WBZ, and two in the deep WBZ. In addition, during the operation of these injection wells, four injection wells in the intermediate WBZ in Forrest Street would be in operation, as well as (potentially) some select wells along Carteret Avenue.

Model simulations included several scenarios, each evaluating combinations of these injection wells operating concurrently or in series. Each model simulation began with all wells injecting at 0.6 gpm for 90 days. **Figure 8** shows mounding contours for the scenario with only the Site 199 wells in operation, which resulted in a maximum of 2.21 feet of mounding. **Figure 9** shows mounding contours for the scenario with Site 199 and Forrest Street wells in operation, which resulted in a maximum of 2.28 feet of mounding. Based on a simulation of only the selected Carteret wells in operation, the estimated contribution from those wells to groundwater level increase at Site 199 was less than 0.2 feet.

Based on these model simulations (which do not meet the criterion for a maximum of 1 foot of mounding), several additional simulations were performed iteratively, whereby the injection rates were reduced to limit mounding to below 1 foot, while still achieving adequate reagent spread around the injection wells. Through these simulations it was estimated that by reducing the injection rates in all Site 199 wells from 0.6 gpm to 0.3 gpm, the mounding would be reduced to less than 1 foot and adequate reagent spread would be achieved to cover the target areas in the shallow, intermediate, and deep WBZs. **Figure 10** shows mounding contours and reagent concentrations after 90 days with Site 199 wells injecting at 0.3 gpm and Forrest Street wells injecting at 0.6 gpm. **Figure 11** shows mounding contours and reagent concentrations after 90 days with Site 199 wells injecting at 0.3 gpm and Forrest Street and selected Carteret wells injecting at 0.6 gpm. Both of these scenarios satisfy the mounding criteria and adequate reagent concentration spread.

Based on the review of the historical groundwater levels and the groundwater model simulations, the molasses and EVO or CPS injections (at flow rates of 0.3 gpm to 0.6 gpm) would not generate a groundwater mound beyond normal water table fluctuations and would not cause ground movements beneath the HBLR. Groundwater level response to the relatively low injection rates will be gradual so that groundwater monitoring in piezometers screened around the injection zones can be conducted during injection to ensure the mounding is maintained below elevation 11.2 feet NAVD88. If water levels in the piezometers approach this level, then injection can be stopped, or the rate further reduced. A detailed water level monitoring plan should be developed as part of the final design for the EVO or CPS injections.

Given the high injection pressures and flow rates required deliver the FerroBlack®-H slurry, the resulting groundwater level response to the injection could not be simulated with the groundwater flow model. The FerroBlack®-H slurry (54,000 gallons of water and 285,000 pounds of FerroBlack®-H) will be injected over approximately 10 days. The resulting response in groundwater levels is likely to be rapid and could exceed the 11.2 feet NAVD88 threshold. Groundwater level monitoring may not identify elevated groundwater levels in time to shut down the injection and prevent the groundwater levels from exceeding 11.2 feet NAVD88.

### 4.4 Changes to the Soil Structure

The risk of change to the soil structure does not preclude the use of the molasses and EVO or CPS injections. These injections are at sufficiently low flow rates and pressure so that soil pore space and grain structure would not be altered.

The proposed FerroBlack®-H injection (flow rates of 70 to 200 gpm and pressures of 500 psig) will initially loosen the soil around the injection points. Pressure gradients in the pore spaces may become critical (i.e., vertically upward) causing localized soil liquefaction. **Figure 12** shows the stress distribution from the HBLR embankment within the underlying soils. The stress distribution contours (percent of total embankment load developed from Boussinesq theory) shows that soils within the proposed FerroBlack®-H injection zone are supporting the embankment. Localized liquefaction caused by the high-pressure injections would result in embankment settlement.

As the FerroBlack®-H slurry is forced into the pore spaces, soils may expand or shift. Injection pressures may erode and displace fine-grained particles in the treatment zone causing additional heave and soil movement within the soils that are supporting the embankment.

Initial soil movement in response to the injection is likely to be rapid and may continue after injection has stopped. Settlement monitoring along the retaining wall and tracks would be unable to identify problematic ground movements in time stop the injection and halt the movements.

AECOM performed a pilot test to evaluate FerroBlack®-H emplacement through hydraulic fracturing of low-permeability layers at the southeast corner of Site 114 (AECOM, 2019). Tilt meters at the ground surface detected small movements (less than an inch) during the pilot injection. Lithology within the injection zone (low-permeability soils) is not similar to the Site 199 injection zone and the injection methods used in the pilot test (injection of a thin layer of reagent within the low permeable stratum) are not the same as those proposed at Site 199 (injection is a slurry across a three- to five-foot interval).

## 5. Conclusions and Geotechnical Recommendations

Based the review of the Site 199 subsurface conditions, a review of previously observed ground movements, and the evaluation of the potential risks identified for each of the proposed reagent injections, AECOM recommends that the Site 199 Phase III IRM proceed as follows:

- Molasses and EVO or CPS injection and monitoring wells should be installed in a manner that addresses the risks of track fouling. If a drill rig mast needs to extend into the fouling zone, the HBLR operator should be notified and rail operator procedures must be followed.
- If sonic drilling is required to install injection or monitoring wells, then a vibration monitoring plan should be developed and implemented during the well installation.

- A groundwater level monitoring plan should be developed and implemented to ensure the molasses and EVO or CPS injections do not result in groundwater mounding above elevation 11.2 feet NAVD88.
- Initial molasses and EVO or CPS solutions injection rates should be at or less than 0.3 gpm and should be adjusted, as necessary, based on the groundwater level monitoring results. Injections should take place during periods of lower groundwater elevation, if possible.
- Injection of the FerroBlack®-H slurry should not be attempted at Site 199.

## 6. References

AECOM, 2017. *Capillary Rise Study – Final Report (Revision 2), PPG, Jersey City, New Jersey*. December 14, 2017.

AECOM, 2019. *Technical Memorandum Hydraulic Fracturing and FerroBlack®-H Emplacement in Low-Permeability Zones*. November 6, 2019

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Arcadis, 2021. *Groundwater Interim Remedial Measure Phase I Quarterly Report – Fourth Quarter 2020, Garfield Avenue Group Site 114.* February 23, 2021.

NJDEP, 2017. *Discharge Approval and Monitoring Requirements Associated with Permit-By-Rule Discharge Authorization for PPG Industries (COPR), Garfield Avenue Group and Former Halladay Street Gas Works, 900 Garfield Avenue, Block: 21501, Lots 16, 17, 18, 19, and 20, Jersey City, Hudson County, NJ Program Interest Numbers G000008791*. September 21, 2017.

NJDEP, 2019. *Discharge to Groundwater Authorization, PPG Industries (COPR), Garfield Avenue Group and Former Halladay Street Gas Works, 900 Garfield Avenue, Block: 21501, Lots 16, 17, 18, 19, and 20, Jersey City, Hudson County, NJ Program Interest Numbers G000005480*. May 9, 2019.

## Figures:

Figure 1 Site Map
Figure 2 Monitoring Well and Cross Section Locations
Figure 3A Cross Section A-A'
Figure 3B Cross Section B-B'
Figure 4 Retaining Wall Settlement Evaluation
Figure 5 Injection and Monitoring Well Network – Shallow Zone
Figure 6 Injection and Monitoring Well Network – Intermediate Zone
Figure 7 Injection and Monitoring Well Network – Deep Zone
Figure 8 Groundwater Level Increase Contours (Feet) Simulated in MODFLOW Model - Site 199 Injections
Figure 9 Groundwater Level Increase Contours (Feet) Simulated in MODFLOW Model - Site 199 and Forrest Street Injections
Figure 10 Groundwater Level Increase Contours (Feet) Simulated in MODFLOW Model - Site 199 (Reduced Pressure) and Forrest Street Injections
Figure 11 Groundwater Level Increase Contours (Feet) Simulated in MODFLOW Model - Site 199 (Reduced Pressure), Forrest Street, and Carteret Injections
Figure 12 HBLR Embankment Stress Distribution

## Attachment 1: Geotechnical Boring Data

# FIGURES

File: C:\Users\chinaz\OneDrive\AECOM\PPG - GDS\910 CAD\20 SHEETS\GW\IRM Phase III Design\Geotech Eval\05-03-2021_GW PHASE 3 GEOTECH EVAL FIGURES.dwg Layout: Geotech Figure 1 User: china2 Plotted: Sep

LEGEND

- PROPERTY LINE
- EDGE OF PAVEMENT
- EDGE OF CONCRETE
- EXISTING SHEET PILE
- CURB
- DEPRESSED CURB
- LIGHT RAIL TRACKS
- EXISTING BUILDING
- PHASE III IRM SITE BOUNDARY

IRM - INTERIM REMEDIAL MEASURE

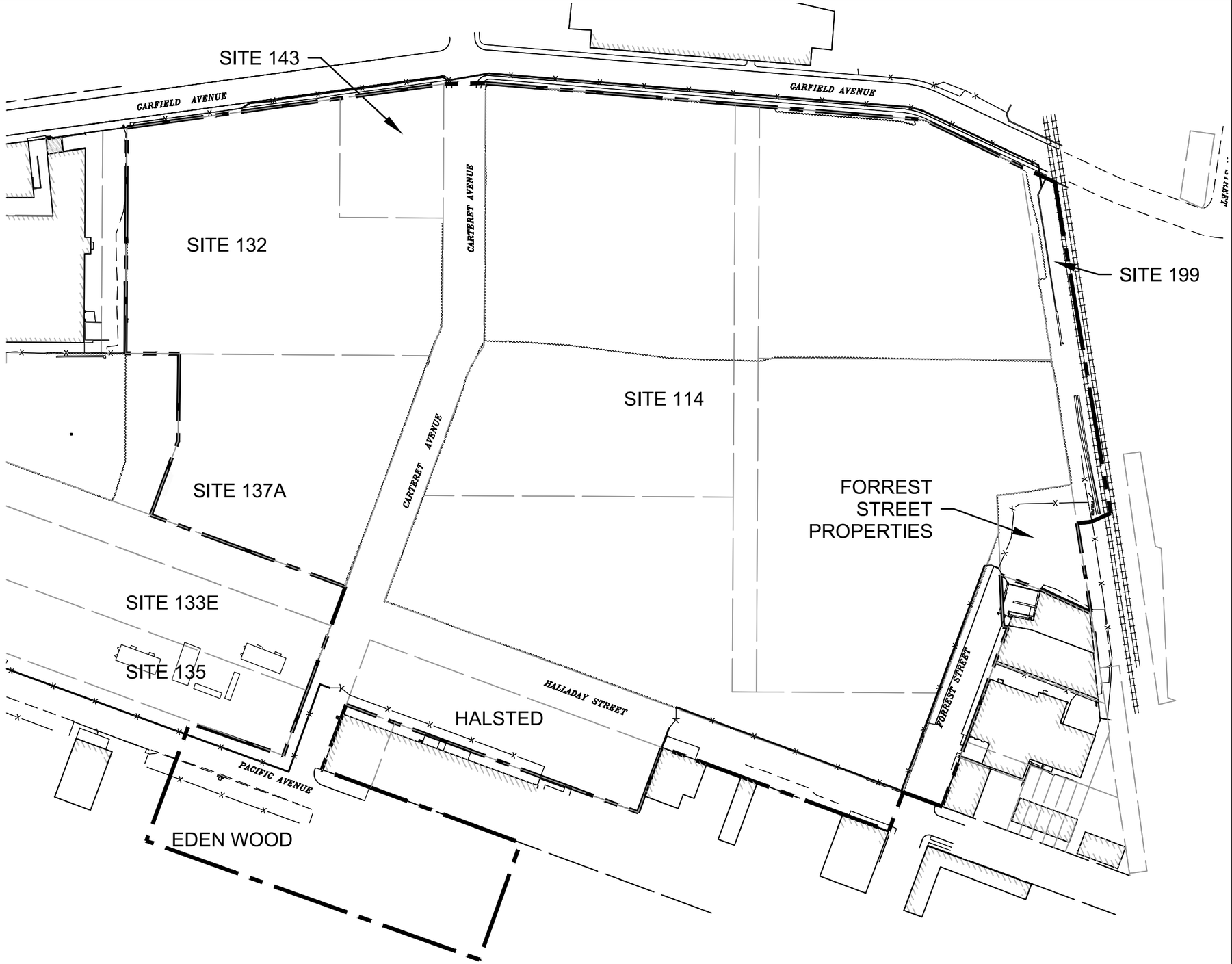


75 0 150

GRAPHIC SCALE IN FEET

AECOM

| | | | |
|---|---|---|---|
| PPG<br>GARFIELD AVENUE GROUP SITES<br>JERSEY CITY, NEW JERSEY | | | **PHASE III GROUNDWATER IRM SITE MAP** |
| DATE: 09/03/2021 | DRWN: JJA/AC | | **FIGURE 1** |

File: C:\Users\china2\OneDrive\AECOM\PPG - GDS\910 CAD\20 SHEETS\GW\IRM Phase III Design\Geotech Eval\05-03-2021_GW PHASE 3 GEOTECH EVAL FIGURES.dwg Layout: Geotech Figure 2 User: china2 Plotted: Sep

## LEGEND

- PROPERTY LINE
- EDGE OF PAVEMENT
- EDGE OF CONCRETE
- EXISTING SHEET PILE
- CURB
- DEPRESSED CURB
- LIGHT RAIL TRACKS
- EXISTING BUILDING
- PHASE III IRM SITE BOUNDARY
- A — A' CROSS SECTION LOCATION
- EXISTING MONITORING WELL

IRM - INTERIM REMEDIAL MEASURE

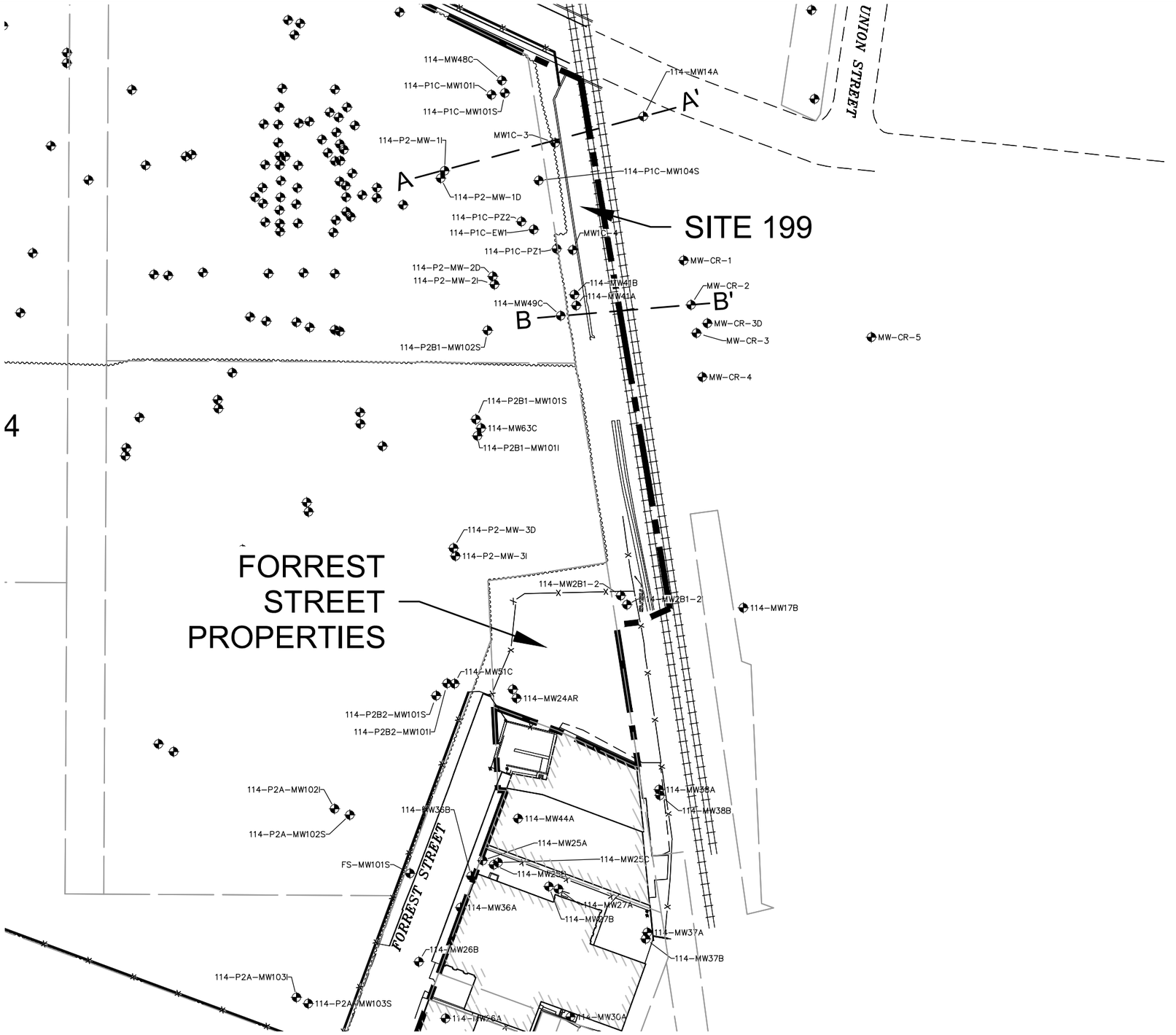


50 0 100

GRAPHIC SCALE IN FEET

AECOM

| | | | |
|---|---|---|---|
| PPG<br>GARFIELD AVENUE GROUP SITES<br>JERSEY CITY, NEW JERSEY | | | **PHASE III GROUNDWATER IRM MONITORING WELL AND CROSS SECTION LOCATIONS** |
| DATE: 09/03/2021 | DRWN: JJA/AC | | **FIGURE 2** |

# SECTION A–A'

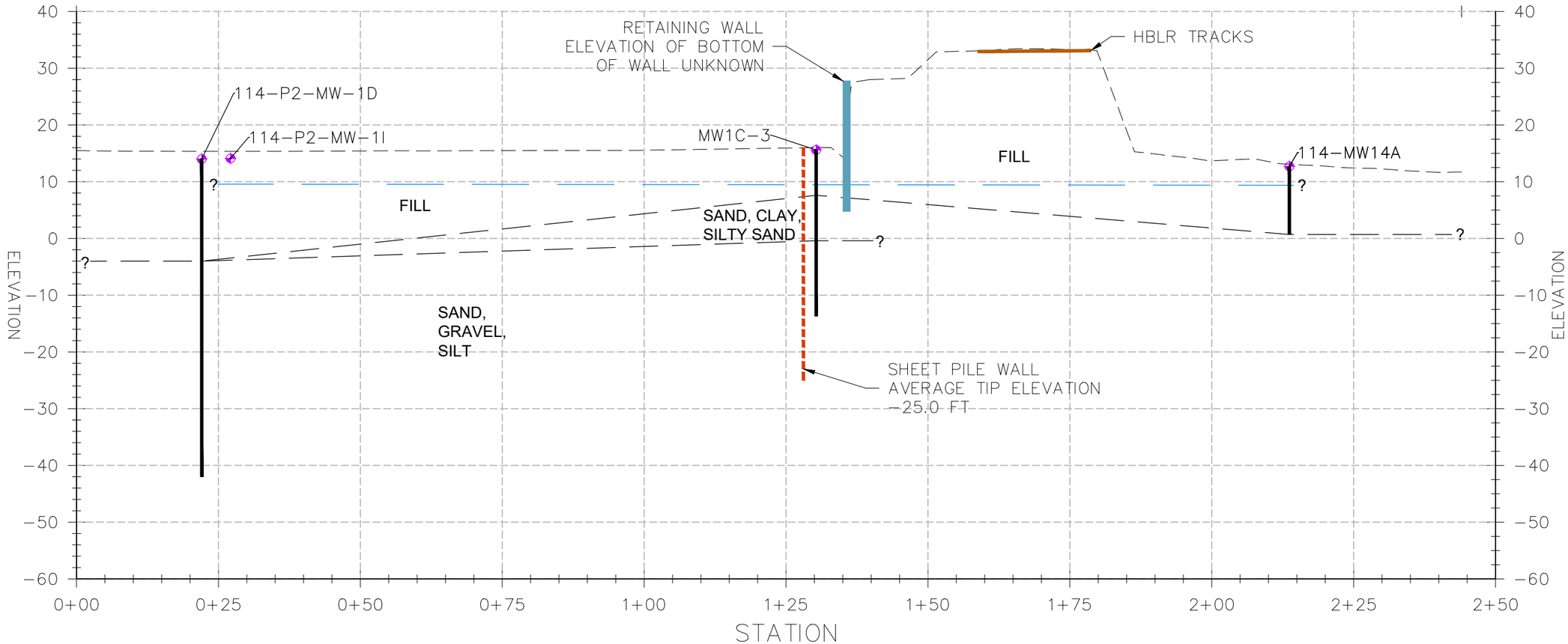


## LEGEND

- APPROXIMATE STRATIGRAPHIC LIMIT
- EXISTING GROUND SURFACE
- GROUNDWATER SURFACE, SHALLOW WELLS (MAY/JUNE 2018)
- 114–MW25C GROUNDWATER MONITORING WELL
- BORING
- HBLR TRACK
- SHEET PILE
- RETAINING WALL

10 0 20

GRAPHIC SCALE IN FEET

NOTES:

1. CROSS SECTION LOCATION SHOWN ON FIGURE 2.

IRM - INTERIM REMEDIAL MEASURE
HBLR - HUDSON BERGEN LIGHT RAIL

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JERSEY CITY, NEW JERSEY

**PHASE III GROUNDWATER IRM**
**CROSS SECTION A-A'**

DATE: 10/20/2021 | DRWN: AC | **FIGURE 3A**

File: C:\Users\china2\OneDrive\AECOM\PPG - GDS\910 CAD\20 SHEETS\GW\IRM Phase III Design\Geotech Eval\05-03-2021_GW PHASE 3 GEOTECH EVAL FIGURES.dwg Layout: Geotech Figure 3A User: china2 Plotted: Oc

# SECTION B–B'

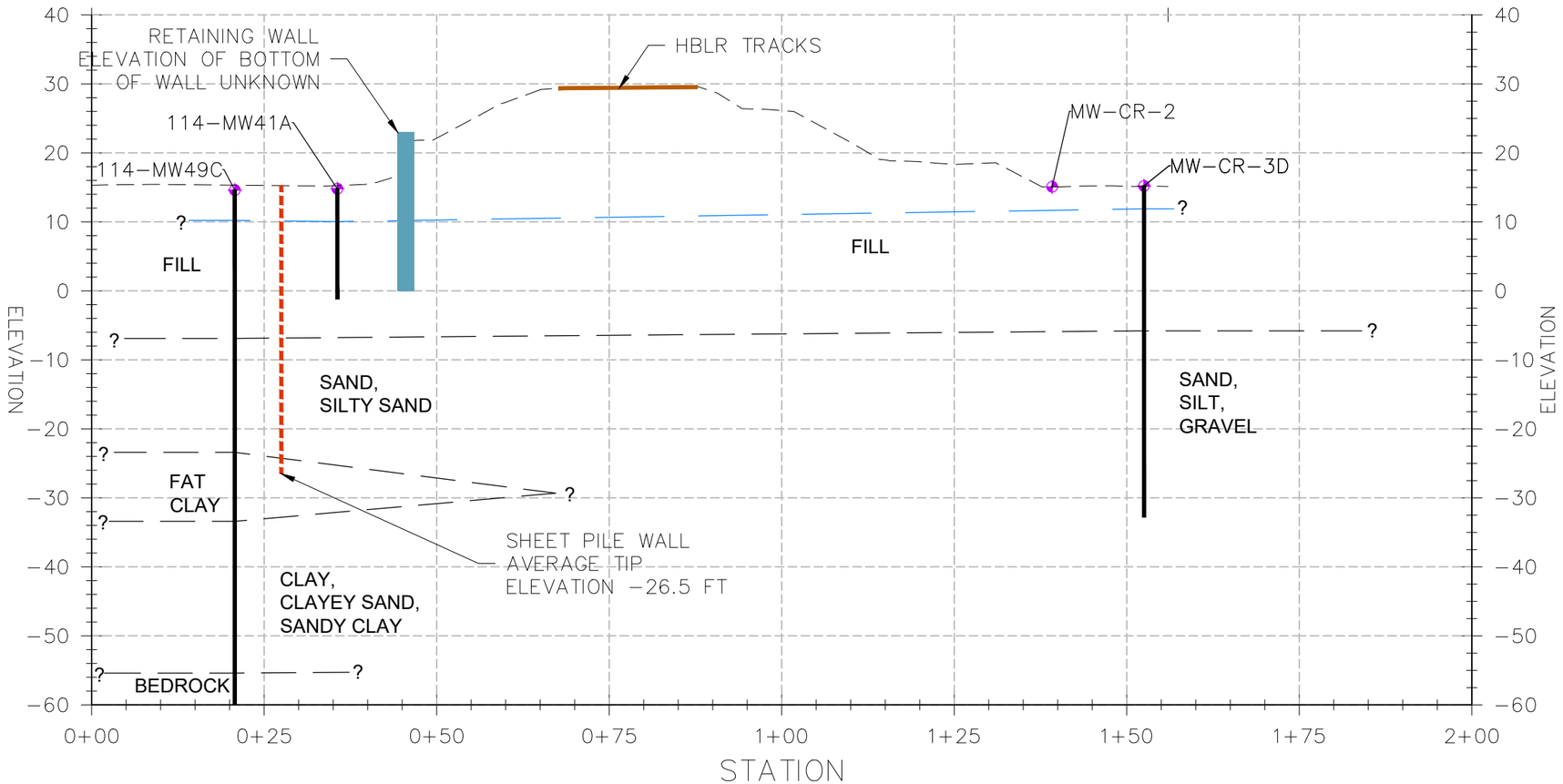


## LEGEND

- APPROXIMATE STRATIGRAPHIC LIMIT
- EXISTING GROUND SURFACE
- GROUNDWATER SURFACE, SHALLOW WELLS (MAY/JUNE 2018)
- 114–MW25C GROUNDWATER MONITORING WELL
- BORING
- HBLR TRACK
- SHEET PILE
- RETAINING WALL

10 0 20
GRAPHIC SCALE IN FEET

NOTES:

1. CROSS SECTION LOCATION SHOWN ON FIGURE 2.

IRM - INTERIM REMEDIAL MEASURE
HBLR - HUDSON BERGEN LIGHT RAIL

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**PHASE III GROUNDWATER IRM**
**CROSS SECTION B-B'**

DATE: 10/20/2021 | DRWN: AC | **FIGURE 3B**

File: C:\Users\china2\OneDrive\AECOM\PPG - GDS\910 CAD\20 SHEETS\GW\IRM Phase III Design\Geotech Eval\05-03-2021_GW PHASE 3 GEOTECH EVAL FIGURES.dwg Layout: Geotech Figure 3B User: china2 Plotted: 0

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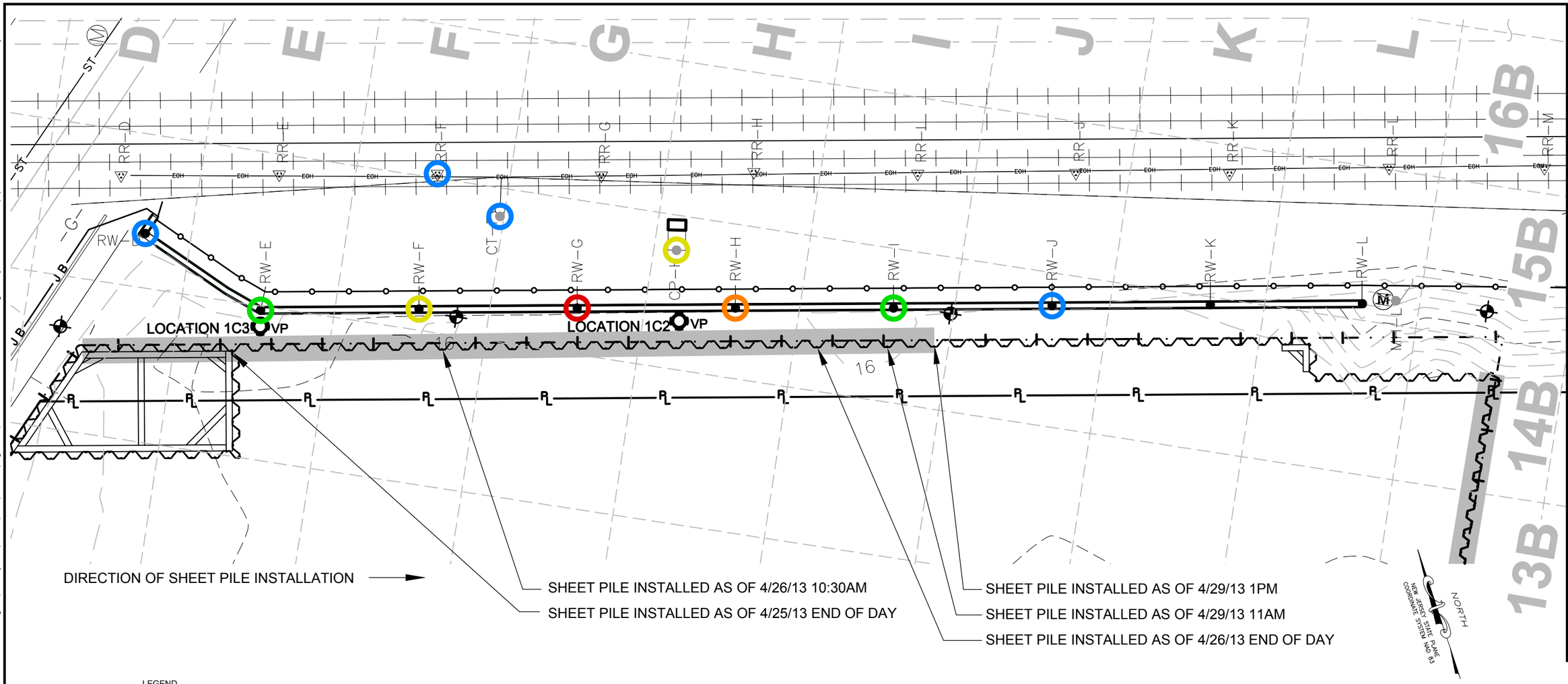


LEGEND

- GROUND SURFACE ELEVATION CONTOURS 1' INTERVAL 5' INDEX
- PROPERTY LINE
- EDGE OF CONCRETE
- CURB
- DEPRESSED CURB
- RETAINING WALL
- SEWER UTILITY LINE
- SANITARY SEWER UTILITY LINE
- GAS UTILITY LINE
- WATER UTILITY LINE
- OVERHEAD WIRES
- OVERHEAD CATENARY WIRE
- UTILITY POLE
- CATCH BASIN INLET
- MANHOLE
- RAILROAD TRACKS
- TEMPORARY CONSTRUCTION FENCE
- JERSEY BARRIER W/FENCE
- PROPOSED AZ19-700 SHEET PILE
- PROPOSED PZ-35 SHEET PILE
- PROPOSED SHEET PILE BRACING
- EXCAVATION GRID
- GROUNDWATER MOUNDING MONITORING WELL
- RR–X RAILROAD SETTLEMENT MONITORING POINT
- CT–X CATENARY TOWER SETTLEMENT MONITORING POINT
- CP–X CONCRETE PAD SETTLEMENT MONITORING POINT
- RW–X RETAINING WALL SETTLEMENT MONITORING POINT
- MH–X MANHOLE SETTLEMENT MONITORING POINT
- VP VIBRATION MONITORING POINT 04–05–2013

SETTLEMENT POINTS STOP WORK ACTION LIMITS REACHED – 4/29/13

- VECTOR SUM MOVEMENT GREATER THAN 0.05 FT
- VECTOR SUM MOVEMENT GREATER THAN 0.10 FT
- VECTOR SUM MOVEMENT GREATER THAN 0.15 FT
- VECTOR SUM MOVEMENT GREATER THAN 0.20 FT
- VECTOR SUM MOVEMENT GREATER THAN 0.25 FT

PPG
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JERSEY CITY, HUDSON COUNTY, NEW JERSEY

FIGURE 4

60279171.GE.DE.P1CD

RETAINING WALL
SETTLEMENT EVALUATION

REVISION:

DRWN: BcV/C–MA

DATE: 05/07/13

AECOM

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## LEGEND

- PROPERTY LINE
- EDGE OF PAVEMENT
- EDGE OF CONCRETE
- EXISTING SHEET PILE
- CURB
- DEPRESSED CURB
- LIGHT RAIL TRACKS
- EXISTING BUILDING
- PHASE III IRM SITE BOUNDARY
- APPROXIMATE PROPOSED SHALLOW ZONE INJECTION WELL LOCATION
- APPROXIMATE PROPOSED SHALLOW ZONE MONITORING WELL LOCATION
- EXISTING SHALLOW ZONE MONITORING WELL
- PHASE III IRM SHALLOW TARGET ZONE

NOTES:

1. PROPOSED INFRASTRUCTURE PRESENTED ON THIS FIGURE IS APPROXIMATE AND SERVES AS GENERAL GUIDANCE FOR THE REMEDY IMPLEMENTATION. IRM PHASE III INFRASTRUCTURE MAY BE ADJUSTED BASED ON PHASE III IRM PERFORMANCE AND OBSERVED MONITORING RESULTS.

IRM - INTERIM REMEDIAL MEASURE

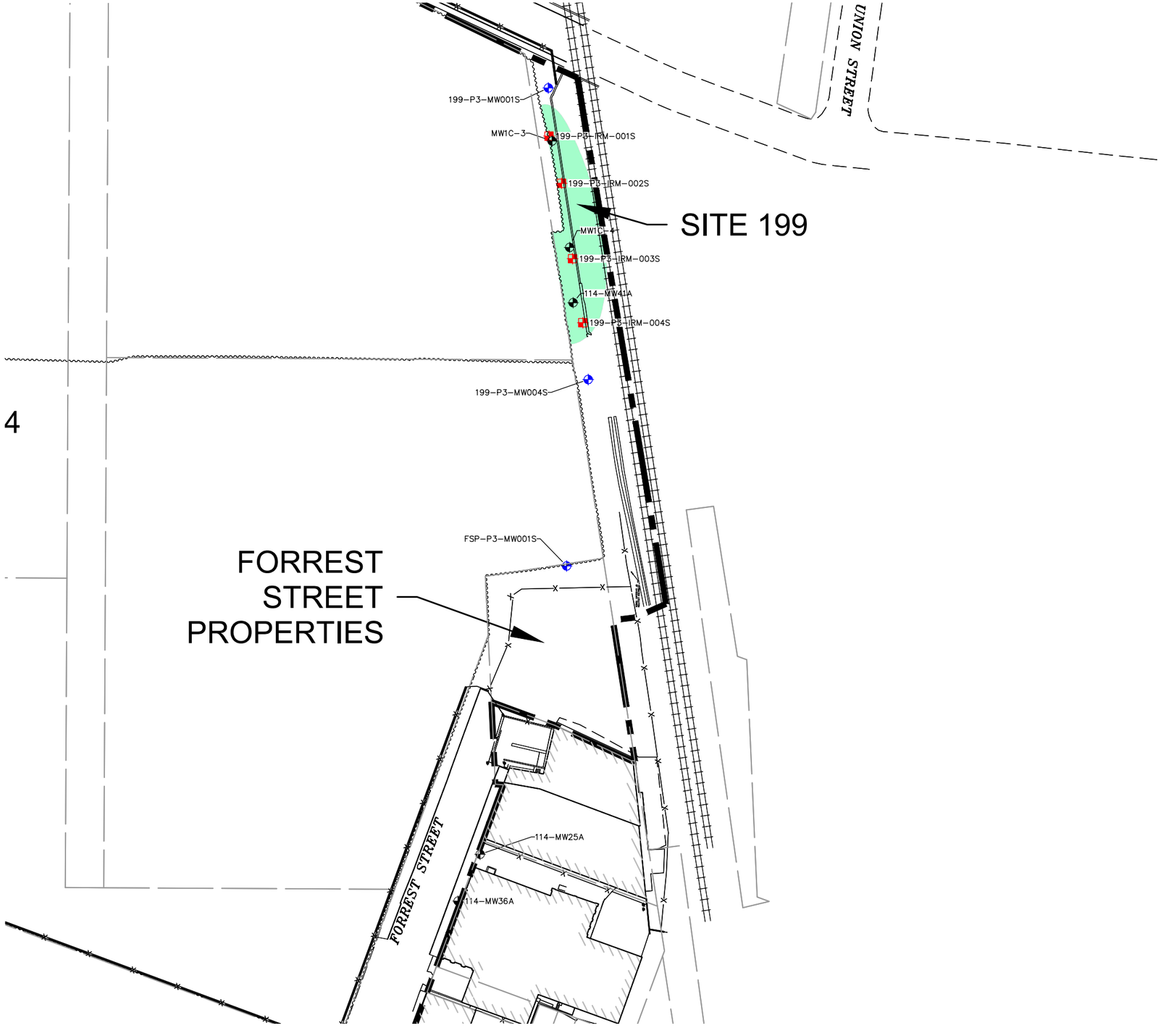


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| | | | |
|---|---|---|---|
| PPG<br>GARFIELD AVENUE GROUP SITES<br>JERSEY CITY, NEW JERSEY | | | **PHASE III GROUNDWATER IRM<br>INJECTION AND MONITORING WELL NETWORK<br>SHALLOW ZONE** |
| DATE: 09/03/2021 | DRWN: JJA/AC | | **FIGURE 5** |

## LEGEND

- PROPERTY LINE
- EDGE OF PAVEMENT
- EDGE OF CONCRETE
- EXISTING SHEET PILE
- CURB
- DEPRESSED CURB
- LIGHT RAIL TRACKS
- EXISTING BUILDING
- PHASE III IRM SITE BOUNDARY
- APPROXIMATE PROPOSED FERROBLACK®-H REACTIVE ZONE
- APPROXIMATE PROPOSED SHALLOW ZONE INJECTION WELL LOCATION
- APPROXIMATE PROPOSED SHALLOW ZONE MONITORING WELL LOCATION
- EXISTING SHALLOW ZONE MONITORING WELL
- PHASE III IRM SHALLOW TARGET ZONE

NOTES:

1. PROPOSED INFRASTRUCTURE PRESENTED ON THIS FIGURE IS APPROXIMATE AND SERVES AS GENERAL GUIDANCE FOR THE REMEDY IMPLEMENTATION. IRM PHASE III INFRASTRUCTURE MAY BE ADJUSTED BASED ON PHASE III IRM PERFORMANCE AND OBSERVED MONITORING RESULTS.

IRM - INTERIM REMEDIAL MEASURE

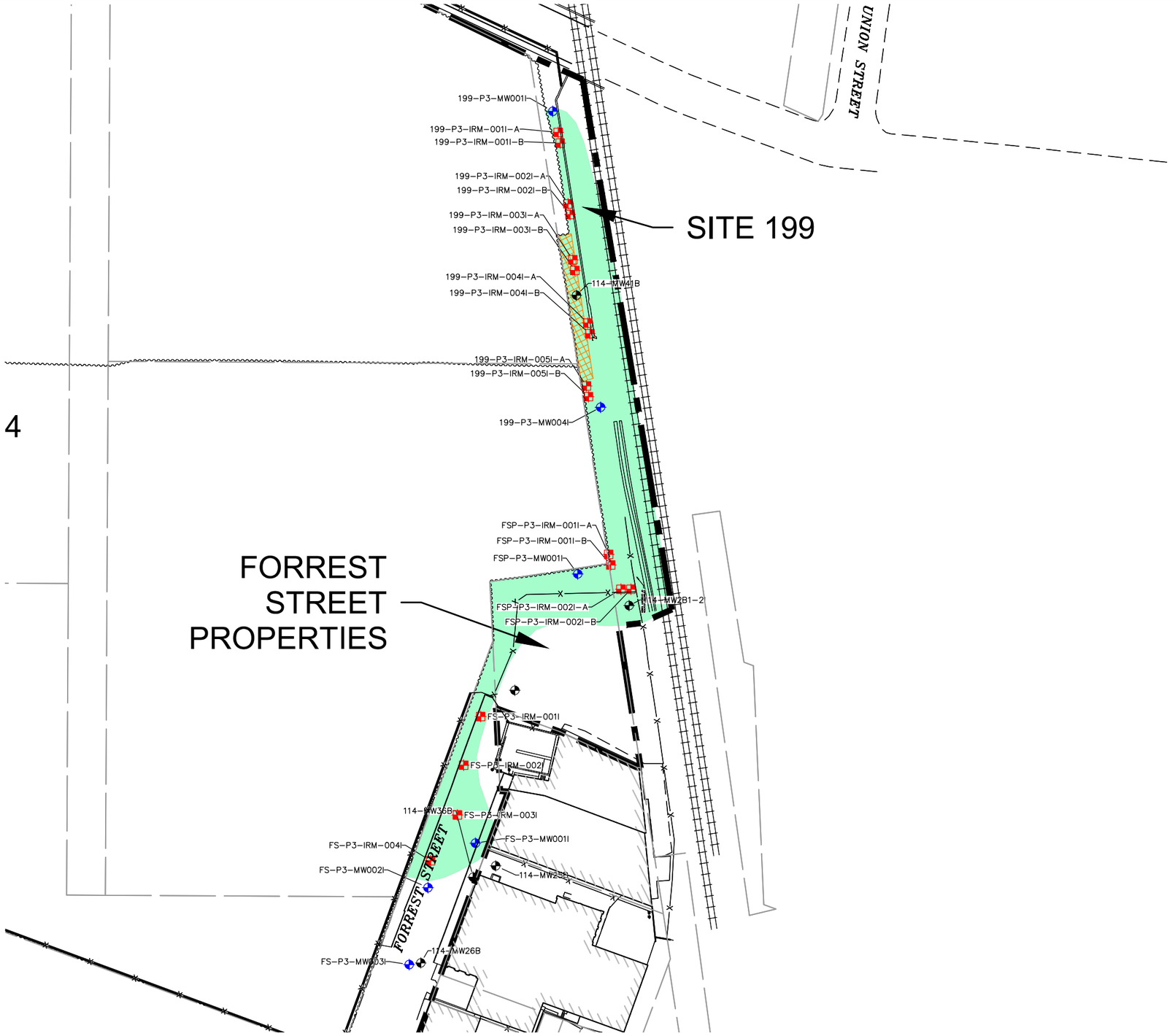


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| PPG<br>GARFIELD AVENUE GROUP SITES<br>JERSEY CITY, NEW JERSEY | | | PHASE III GROUNDWATER IRM<br>INJECTION AND MONITORING WELL NETWORK<br>INTERMEDIATE ZONE |
|---|---|---|---|
| DATE: 09/03/2021 | DRWN: JJA/AC | | FIGURE 6 |

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## LEGEND

- PROPERTY LINE
- EDGE OF PAVEMENT
- EDGE OF CONCRETE
- EXISTING SHEET PILE
- CURB
- DEPRESSED CURB
- LIGHT RAIL TRACKS
- EXISTING BUILDING
- PHASE III IRM SITE BOUNDARY
- APPROXIMATE PROPOSED FERROBLACK®-H REACTIVE ZONE
- APPROXIMATE PROPOSED SHALLOW ZONE INJECTION WELL LOCATION
- APPROXIMATE PROPOSED SHALLOW ZONE MONITORING WELL LOCATION
- EXISTING SHALLOW ZONE MONITORING WELL
- PHASE III IRM SHALLOW TARGET ZONE

NOTES:

1. PROPOSED INFRASTRUCTURE PRESENTED ON THIS FIGURE IS APPROXIMATE AND SERVES AS GENERAL GUIDANCE FOR THE REMEDY IMPLEMENTATION. IRM PHASE III INFRASTRUCTURE MAY BE ADJUSTED BASED ON PHASE III IRM PERFORMANCE AND OBSERVED MONITORING RESULTS.

IRM - INTERIM REMEDIAL MEASURE

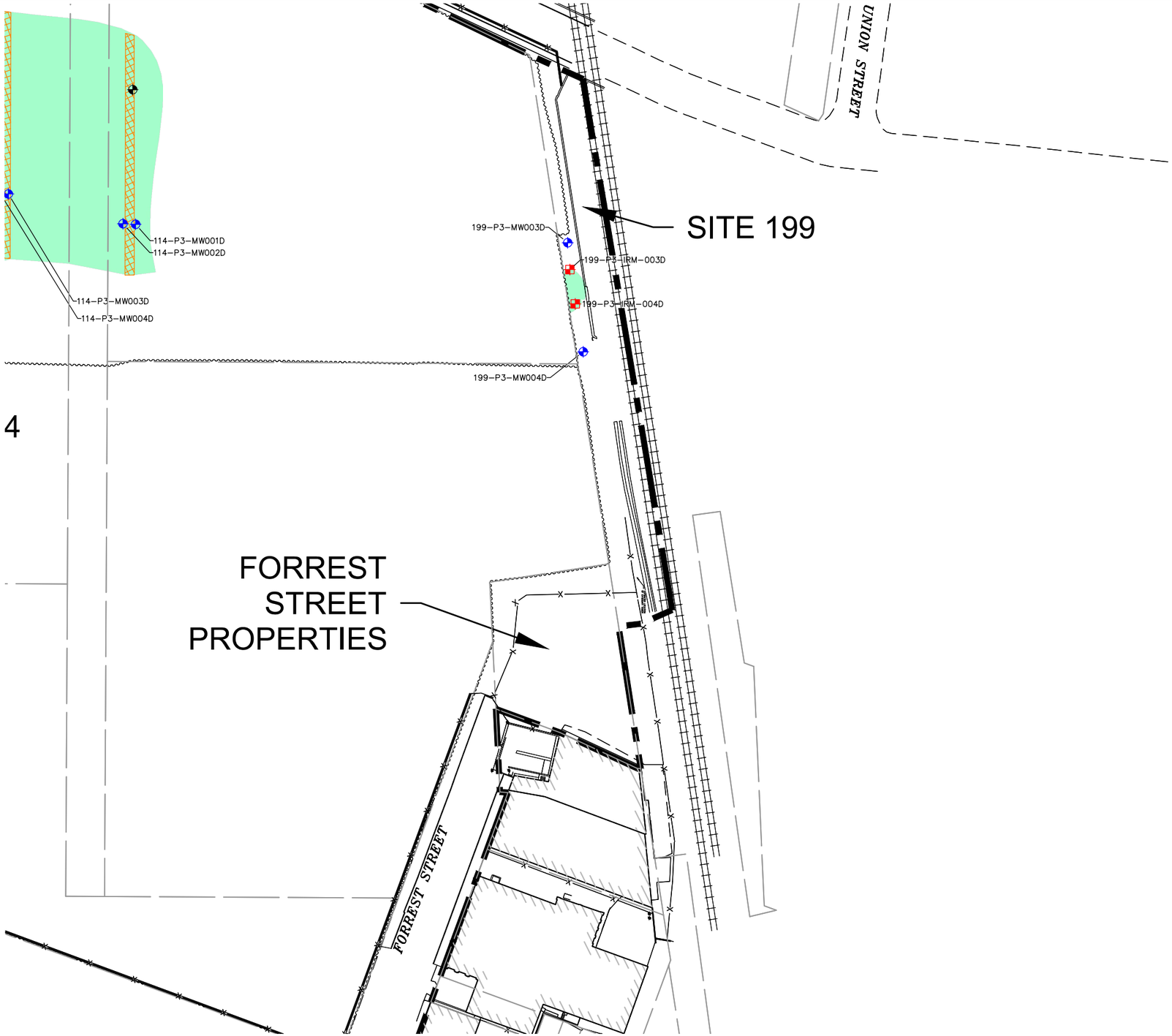


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DATE: 09/03/2021 | DRWN: JJA/AC

**PHASE III GROUNDWATER IRM INJECTION AND MONITORING WELL NETWORK DEEP ZONE**

**FIGURE 7**

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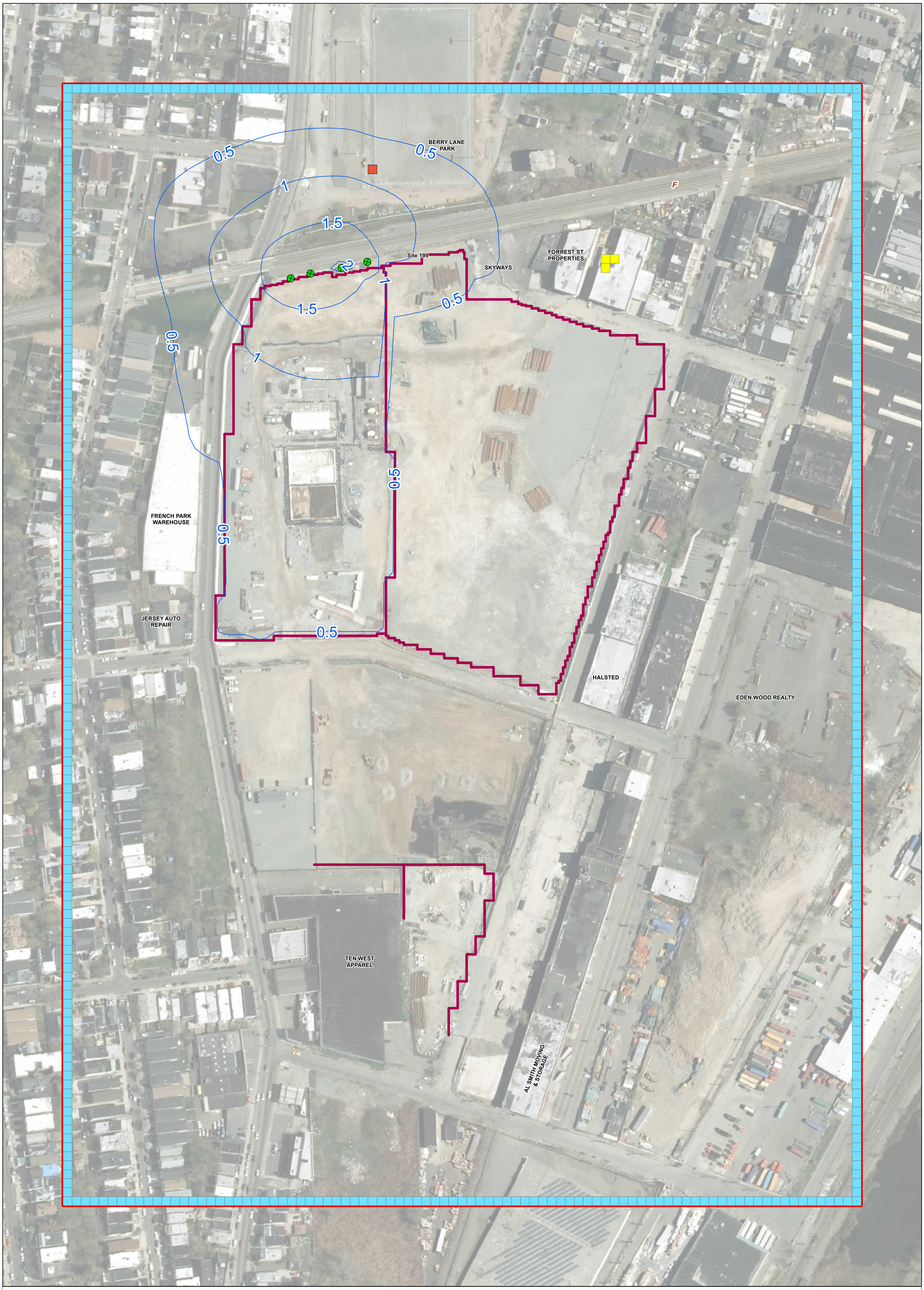


**LEGEND**

- Model Domain

**Model Boundary Conditions**

- General Head Boundary
- Well Boundary (represents leaking water line)
- Drain Boundary Condition
- Injection Well
- Horizontal Flow Barrier (Sheetpile)
- Groundwater Level Increase Contour (0.5 ft Interval)

0 100 200 Feet

N E S W

**Map Notes:**
1. New Jersey State Plane North American Datum 1983 Coordinates (NAD83), U.S. Survey Feet.
2. Parcels of Hudson County, New Jersey State Plane NAD83, Hudson County Department of Planning, Jersey City, New Jersey, May 21, 2013.

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**60550261**

| DATE: 9/7/2021 | DRAWN BY: DE | CHECKED BY: AC |
|---|---|---|

**FIGURE 8**
**GROUNDWATER LEVEL INCREASE CONTOURS (FEET)**
**SIMULATED IN MODFLOW MODEL**
**SITE 199 INJECTIONS**

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**LEGEND**

- Model Domain

**Model Boundary Conditions**

- General Head Boundary
- Well Boundary (represents leaking water line)
- Drain Boundary Condition
- Injection Well
- Horizontal Flow Barrier (Sheetpile)
- Groundwater Level Increase Contour (0.5 ft Interval)

0 100 200 Feet

N E S W

**Map Notes:**
1. New Jersey State Plane North American Datum 1983 Coordinates (NAD83), U.S. Survey Feet.
2. Parcels of Hudson County, New Jersey State Plane NAD83, Hudson County Department of Planning, Jersey City, New Jersey, May 21, 2013.

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**60550261**

| DATE: 9/7/2021 | DRAWN BY: DE | CHECKED BY: AC |
|---|---|---|

**FIGURE 9**
**GROUNDWATER LEVEL INCREASE CONTOURS (FEET)**
**SIMULATED IN MODFLOW MODEL**
**SITE 199 AND FORREST STREET INJECTIONS**

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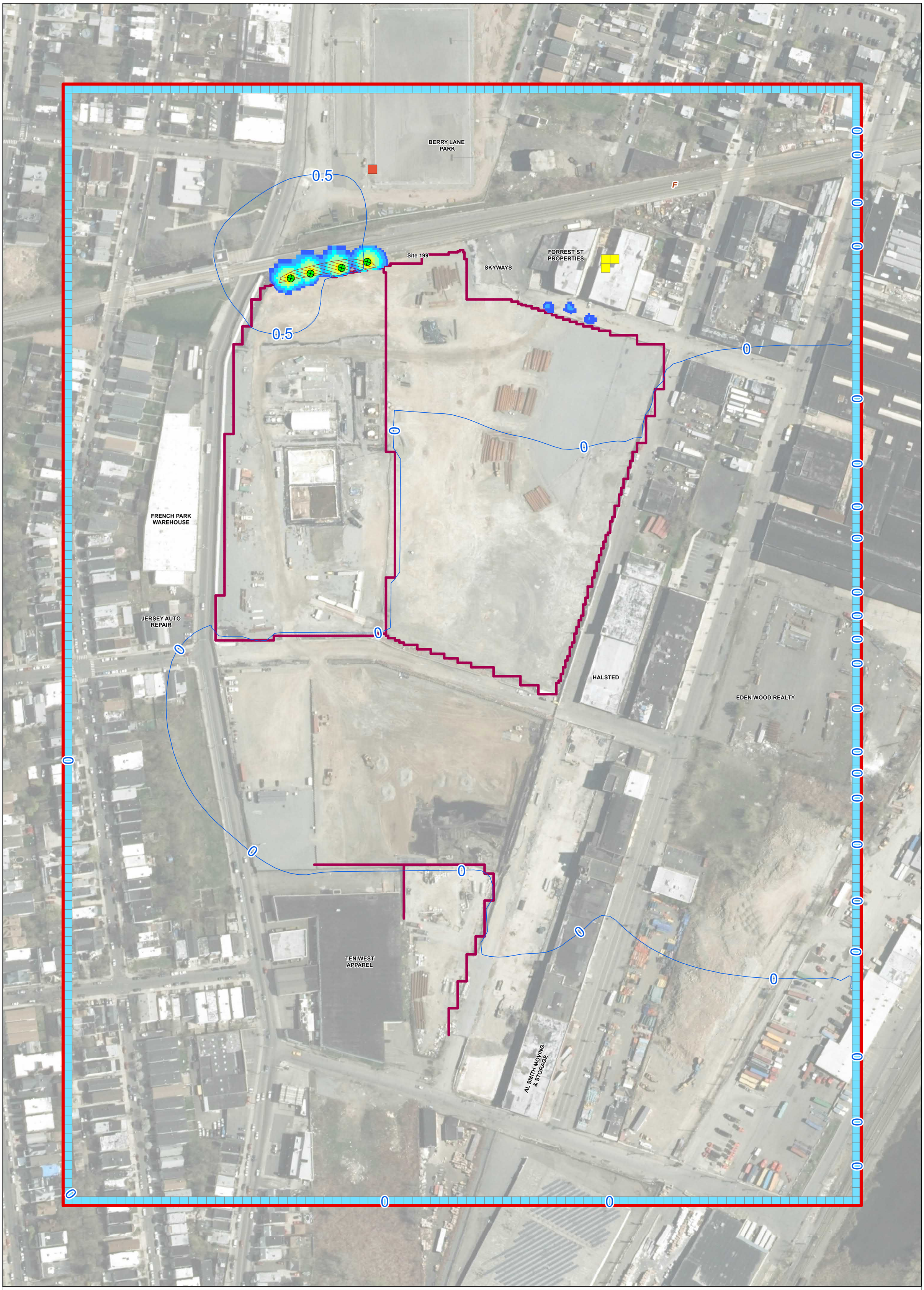


**LEGEND**

- Model_Domain

**Model Boundary Conditions**

- General Head Boundary
- Well Boundary (represents leaking water line)
- Drain Boundary Condition
- Injection Well
- Horizontal Flow Barrier (Sheetpile)
- Groundwater Level Increase Contour (0.5 ft Interval)
- Shallow Target Zone

**Reagent Concentration (parts per million)**

- < 100
- 100 - 200
- 200 - 500
- 500 - 1000
- 1000 - 2000
- 2000 - 3000
- 3000 - 4000
- 4000 - 5000
- 5000 - 10000
- 10000 - 28000

0 100 200 Feet

N E S W

**Map Notes:**
1. New Jersey State Plane North American Datum 1983 Coordinates (NAD83), U.S. Survey Feet.
2. Parcels of Hudson County, New Jersey State Plane NAD83, Hudson County Department of Planning, Jersey City, New Jersey, May 21, 2013.

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**JERSEY CITY, NEW JERSEY**
**60550261**

DATE: 9/7/2021 | DRAWN BY: DE | CHECKED BY: AC

# FIGURE 10
# GROUNDWATER LEVEL INCREASE CONTOURS (FEET) SIMULATED IN MODFLOW MODEL SITE 199 (REDUCED PRESSURE) AND FORREST STREET INJECTIONS

*Last Saved By: dave.estrella*
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BERRY LANE PARK

F

Site 199

FORREST ST PROPERTIES

SKYWAYS

FRENCH PARK WAREHOUSE

JERSEY AUTO REPAIR

HALSTED

EDEN WOOD REALTY

TEN WEST APPAREL

AL SMITH MOVING & STORAGE

0.5

0

## LEGEND

- Model Domain

**Model Boundary Conditions**

- General Head Boundary
- Well Boundary (represents leaking water line)
- Drain Boundary Condition
- Shallow Target Zone
- Injection Well
- Horizontal Flow Barrier (Sheetpile)
- Groundwater Level Increase Contour (0.5 ft Interval)

**Reagent Concentration (parts per million)**

- < 100
- 100 - 200
- 200 - 500
- 500 - 1000
- 1000 - 2000
- 2000 - 3000
- 3000 - 4000
- 4000 - 5000
- 5000 - 10000
- 10000 - 28000

0 100 200 Feet

N E S W

**Map Notes:**
1. New Jersey State Plane North American Datum 1983 Coordinates (NAD83), U.S. Survey Feet.
2. Parcels of Hudson County, New Jersey State Plane NAD83, Hudson County Department of Planning, Jersey City, New Jersey, May 21, 2013.

AECOM

**PPG**
**GARFIELD AVENUE GROUP SITES**
**JERSEY CITY, NEW JERSEY**
**60550261**

| DATE: 9/7/2021 | DRAWN BY: DE | CHECKED BY: AC |
|---|---|---|

**FIGURE 11**
**GROUNDWATER LEVEL INCREASE CONTOURS (FEET) SIMULATED IN MODFLOW MODEL**
**SITE 199 (REDUCED PRESSURE), FORREST STREET, AND CARTERET INJECTIONS**

*Last Saved By: dave.estrella*
*Path: D:\PPG - Groundwater Model\GIS\Mounding_Figures\Fig_11_ 1ft limit mound_2+cart.mxd*

## LEGEND

- MINIMUM ALLOWABLE GROUNDWATER ELEVATION DURING INJECTION (EL. 6.5 NAVD88)
- MAXIMUM ALLOWABLE GROUNDWATER ELEVATION DURING INJECTION (EL 11 NAVD88)
- BOUSSINESQ STRESS CONTOUR
- EXISTING SHEETPILE
- FERROBLACK-H TREATMENT AREA
- INJECTION WELL
- WELL SCREEN INTERVAL
- MONITORING WELL
- WELL SCREEN INTERVAL

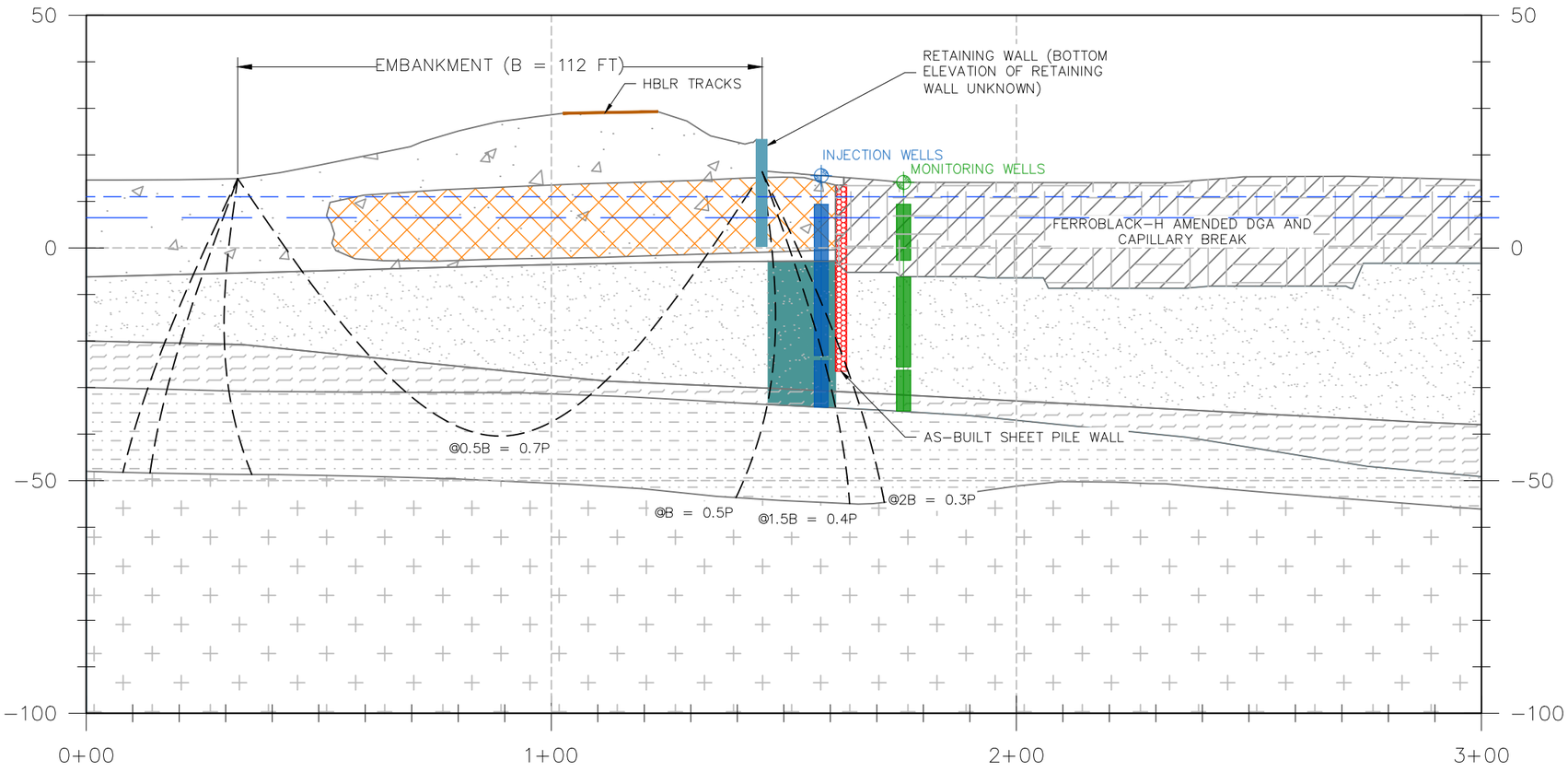


15 0 30

SCALE 1"=30'

## STRATIGRAPHY

**SHALLOW WATER-BEARING ZONE**

- FILL: FINE TO COARSE SAND WITH SILT AND GRAVEL. MAY INCLUDE VARIOUS MATERIALS ASSOCIATED WITH HISTORICAL FILL SUCH AS: CONSTRUCTION SPOILS, DEMOLITION DEBRIS, GARBAGE, INCINERATOR ASH, COAL ASH, SHIP BALLAST, AND INDUSTRIAL WASTE
- DENSE-GRADED AGGREGATE (DGA) FILL: FINE TO COARSE SAND WITH FINE GRAVEL AND SILT

**INTERMEDIATE WATER-BEARING ZONE**

- SAND AND SILTY SAND WITH LENSES OF GRAVEL, SILT, OR CLAY

**DEEP WATER-BEARING ZONE**

- SAND WITH LENSES OF GRAVEL, SILT, OR CLAY
- BASAL TILL (LOWER FACIES OF RAHWAY TILL) REDDISH-BROWN SILTY CLAYS, SANDY SILTS, AND SILTY SANDS WITH SUBROUNDED TO SUBANGULAR FINE TO COARSE GRAVEL AND COBBLES, AND OCCASIONAL INTERBEDDED LENSES OF CLAY, SILT, OR FINE SAND. HARD, DENSE, COMPACT, AND TYPICALLY DRY.
- BEDROCK: STOCKTON FORMATION, LOCKATONG FORMATION, OR DIABASE
- AREA WITH VISUAL OBSERVATIONS OF CCPW, CONSISTING OF COPR, GREEN-GRAY MUD, OR FILL MIXED WITH COPR OR GREEN-GRAY MUD
- FERROBLACK-H AMENDED BACKFILL AREA

NOTES:

1. ELEVATIONS ARE SHOWN IN FT NAVD88.
2. APPROXIMATE ZONE OF INFLUENCE DETERMINED FROM BOUSSINESQ STRESS CONTOURS FOR AN INFINITELY LONG FOUNDATION. B = BASE WIDTH (WIDTH OF EMBANKMENT). P = PRESSURE.

DEFINITIONS:

| | |
|---|---|
| CCPW | CHROMATE CHEMICAL PRODUCTION WASTE |
| COPR | CHROMITE ORE PROCESSING RESIDUE FT |
| DGA | DENSE-GRADED AGGREGATE |
| HBLR | HUDSON-BERGEN LIGHT RAIL |
| IRM | INTERIM REMEDIAL MEASURE |
| NAVD88 | FEET IN NORTH AMERICAN VERTICAL DATUM OF 1988 |

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PPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, HUDSON COUNTY NEW JERSEY

**HBLR EMBANKMENT STRESS DISTRIBUTION**

DATE: 09/15/2021 | DRWN: FS/AC

**FIGURE 12**

# ATTACHMENT 1

# GEOTECHNICAL BORING DATA




| DESC | NORTHING | EASTING | DEPTH | CHEMISTRY SAMPLE |
|---|---|---|---|---|
| GT-1 | 683867.24 | 611079.64 | 50 FT. (OR TO BEDROCK) | GEOTECHNICAL BORING ONLY |
| GT-2 | 683921.94 | 611141.08 | 50 FT. (OR TO BEDROCK) | GEOTECHNICAL BORING ONLY |
| GT-3 | 683916.76 | 611247.28 | 50 FT. (OR TO BEDROCK) | SAMPLE 0-2, 5-7, 10-12, 15-17, (OR MEADOW MAT) |
| GT-4 | 683867.79 | 611333.72 | 50 FT. (OR TO BEDROCK) | GEOTECHNICAL BORING ONLY |
| GT-5 | 683869.88 | 611394.10 | 50 FT. (OR TO BEDROCK) | SAMPLE 0-2, 5-7, 10-12, 15-17, (OR MEADOW MAT) |
| GT-6 | 683780.37 | 611348.68 | 50 FT. (OR TO BEDROCK) | GEOTECHNICAL BORING ONLY |
| GT-7 | 683503.26 | 611209.67 | 50 FT. (OR TO BEDROCK) | GEOTECHNICAL BORING ONLY |
| GT-8A | 683438.10 | 611111.34 | 50 FT. (OR TO BEDROCK) | GEOTECHNICAL BORING ONLY |
| GT-8B | 683423.56 | 611144.66 | 50 FT. (OR TO BEDROCK) | GEOTECHNICAL BORING ONLY |
| GT-8C | 683406.36 | 611176.03 | 50 FT. (OR TO BEDROCK) | GEOTECHNICAL BORING ONLY |
| GT-9A | 683350.07 | 611068.49 | 50 FT. (OR TO BEDROCK) | GEOTECHNICAL BORING ONLY |
| GT-9B | 683334.12 | 611098.40 | 50 FT. (OR TO BEDROCK) | GEOTECHNICAL BORING ONLY |
| GT-9C | 683317.36 | 611129.51 | 50 FT. (OR TO BEDROCK) | GEOTECHNICAL BORING ONLY |
| GT-10A | 683257.89 | 611023.04 | 50 FT. (OR TO BEDROCK) | GEOTECHNICAL BORING ONLY |
| GT-10B | 683243.83 | 611056.10 | 50 FT. (OR TO BEDROCK) | GEOTECHNICAL BORING ONLY |
| GT-10C | 683228.98 | 611087.27 | 50 FT. (OR TO BEDROCK) | GEOTECHNICAL BORING ONLY |
| GT-11 | 683138.79 | 611024.77 | 50 FT. (OR TO BEDROCK) | GEOTECHNICAL BORING ONLY |
| GT-12 | 683190.50 | 610946.63 | 50 FT. (OR TO BEDROCK) | GEOTECHNICAL BORING ONLY |
| GT-13 | 683257.18 | 610817.37 | 50 FT. (OR TO BEDROCK) | GEOTECHNICAL BORING ONLY |
| GT-14 | 683345.66 | 610731.51 | 50 FT. (OR TO BEDROCK) | GEOTECHNICAL BORING ONLY |
| GT-15 | 683454.83 | 610798.01 | 50 FT. (OR TO BEDROCK) | GEOTECHNICAL BORING ONLY |
| GT-16 | 683581.67 | 610871.09 | 50 FT. (OR TO BEDROCK) | GEOTECHNICAL BORING ONLY |
| GT-17 | 683608.54 | 610885.90 | 50 FT. (OR TO BEDROCK) | GEOTECHNICAL BORING ONLY |
| GT-18 | 683837.04 | 611488.55 | 50 FT. (OR TO BEDROCK) | SAMPLE 0-2, 5-7, 10-12, 15-17, (OR MEADOW MAT) |
| GT-19 | 683785.18 | 611568.77 | 50 FT. (OR TO BEDROCK) | SAMPLE 0-2, 5-7, 10-12, 15-17, (OR MEADOW MAT) |

LEGEND

- GEOTECHNICAL BORING
- GEOTECHNICAL/CHEMISTRY BORING
- PROPERTY LINE

IRM - INTERIM REMEDIAL MEASURE

N

75 0 150

GRAPHIC SCALE IN FEET

AECOM

PPG
SITE 114

**PROPOSED GEOTECHNICAL BORING LOCATIONS**
**GARFIELD AVE, JERSEY CITY**
**HUDSON COUNTY, NEW JERSEY**

DATE: 02/16/2011 | DRWN: RCW/WFD |

**FIGURE 1**

File: J:\Rem_Eng\Project Files\PPG Industries\Garfield Avenue\Shoring Alignment\CAD\Rail Shoring Clearance 01-26-11.dwg Layout: Fig 1 Geotech Boring Locations User: warrenr Plotted: Feb 16, 2011 - 10:08am

| GT - 03 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Soil Layer | Elevation | Depth Interval (Feet BGS) | | USCS | N Value | $N_{60}$ | ϕ' Degrees | Density (%) |
| Fill | 16 | 0 | 1 | Fill | NM | NM | NM | NM |
| | | 1 | 2 | Fill | 19 | 32 | 42 | 73 |
| | | 2 | 4 | Fill | 9 | 15 | 35 | 50 |
| | | 4 | 6 | Fill | 6 | 10 | 33 | 41 |
| | | 6 | 8 | Fill | 24 | 41 | 45 | 82 |
| | | 8 | 10 | Fill | 18 | 31 | 42 | 71 |
| | | 10 | 12 | No Recovery | 14 | 24 | 39 | 63 |
| | 2 | 12 | 14 | Fill | 54 | 85 | 56 | 119 |
| Meadow Mat | | 14 | 16 | SM | 80 | 118 | 63 | 140 |
| | | 16 | 18 | SM/ML/PT | 25 | 35 | 43 | 76 |
| | | 18 | 20 | OL | 4 | 5 | 29 | 30 |
| | -6 | 20 | 22 | OL | 13 | 16 | 36 | 52 |
| Silt/Sand/Sandy Silt | | 22 | 24 | SP/GM | 68 | 82 | 55 | 117 |
| | | 24 | 26 | SP/SW | 7 | 8 | 31 | 37 |
| | | 26 | 28 | SP/SW | 34 | 38 | 44 | 79 |
| | | 28 | 30 | move | 41 | 44 | 46 | 86 |
| | | 30 | 32 | SP | 16 | 17 | 36 | 53 |
| | | 32 | 34 | MH | 21 | 21 | 38 | 59 |
| | | 34 | 36 | MH/SP | 17 | 17 | 36 | 53 |
| | | 36 | 38 | SP | 14 | 13 | 34 | 47 |
| | | 38 | 40 | SP | 8 | 7 | 31 | 35 |
| | | 40 | 42 | ML | 14 | 13 | 34 | 46 |
| | | 42 | 44 | ML | 22 | 20 | 37 | 57 |
| | | 44 | 46 | MH | 21 | 18 | 37 | 55 |
| | | 46 | 48 | CL | 13 | 11 | 33 | 43 |
| | -34 | 48 | 50 | SW | 14 | NM | NM | NM |

| GT - 05 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Soil Layer | Elevation | Depth Interval (Feet BGS) | | USCS | N Value | $N_{60}$ | ϕ' Degrees | Density (%) |
| Fill | 15 | 0 | 1 | Fill | NM | NM | NM | NM |
| | | 1 | 2 | Fill | 20 | 34 | 43 | 75 |
| | | 2 | 4 | Fill | 7 | 12 | 34 | 45 |
| | | 4 | 6 | Fill | 9 | 15 | 35 | 50 |
| | | 6 | 8 | Fill | 11 | 19 | 37 | 56 |
| | | 8 | 10 | Fill | 13 | 22 | 38 | 61 |
| | | 10 | 12 | Fill | 15 | 26 | 40 | 65 |
| | 1 | 12 | 14 | No Recovery | 17 | 27 | 40 | 67 |
| Silt/Sand/Sandy Silt | | 14 | 16 | SP/SM | 19 | 28 | 41 | 68 |
| | | 16 | 18 | SW | 21 | 29 | 41 | 70 |
| | | 18 | 20 | SP/GM | 23 | 30 | 42 | 71 |
| | | 20 | 22 | SP/GM | 25 | 31 | 42 | 72 |
| | | 22 | 24 | SW | 39 | 47 | 47 | 88 |
| | | 24 | 26 | SP | 5 | 6 | 29 | 31 |
| | | 26 | 28 | SP | 17 | 19 | 37 | 56 |
| | | 28 | 30 | SP | 9 | 10 | 32 | 40 |
| | | 30 | 32 | SP | 18 | 19 | 37 | 56 |
| | | 32 | 34 | SP | 7 | 7 | 30 | 34 |
| | | 34 | 36 | No Recovery | | 0 | 20 | 0 |
| | | 36 | 38 | CL/SM | 9 | 9 | 32 | 38 |
| | | 38 | 40 | SM/C/SP/SM | 20 | 19 | 37 | 56 |
| | | 40 | 42 | CL | 8 | 7 | 31 | 35 |
| | | 42 | 44 | CL | 10 | 9 | 32 | 38 |
| | | 44 | 46 | CL | 4 | 3 | 27 | 24 |
| | | 46 | 48 | CL/SP | 23 | 20 | 37 | 57 |
| | -35 | 48 | 50 | SP | 55 | NM | NM | NM |

| GT - 18 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Soil Layer | Elevation | Depth Interval (Feet BGS) | | USCS | N Value | $N_{60}$ | ϕ' Degrees | Density (%) |
| Fill | 17 | 0 | 1 | Fill | NM | NM | NM | NM |
| | | 1 | 2 | Fill | 19 | 32 | 42 | 73 |
| | | 2 | 4 | Fill | 20 | 34 | 43 | 75 |
| | | 4 | 6 | Fill | 22 | 37 | 44 | 79 |
| | | 6 | 8 | Fill | 24 | 41 | 45 | 82 |
| | | 8 | 10 | No Recovery | 26 | 44 | 46 | 86 |
| | 5 | 10 | 12 | No Recovery | 28 | 48 | 47 | 89 |
| | 2 | 13 | 15 | SP | 31 | 47 | 47 | 89 |
| Silt/Sand/Sandy Silt | | 15 | 17 | SP/PT | 33 | 47 | 47 | 89 |
| | | 17 | 18 | No Recovery | 35 | 49 | 47 | 90 |
| | | 18 | 20 | SM | 36 | 47 | 47 | 89 |
| | | 20 | 22 | SW\GM | 38 | 48 | 47 | 89 |
| | | 22 | 24 | GM | 26 | 31 | 42 | 72 |
| | | 24 | 26 | GM | 39 | 45 | 46 | 87 |
| | | 26 | 28 | GM/SP | 20 | 22 | 39 | 61 |
| | | 28 | 30 | SP | 18 | 19 | 37 | 57 |
| | | 30 | 32 | SP | 19 | 20 | 37 | 57 |
| | | 32 | 34 | SP/SM | 15 | 15 | 35 | 50 |
| | | 34 | 36 | SP | 25 | 25 | 39 | 64 |
| | | 36 | 38 | SP | 23 | 22 | 38 | 61 |
| | | 38 | 40 | SP | 11 | 10 | 33 | 41 |
| | | 40 | 42 | SP | 10 | 9 | 32 | 39 |
| | | 42 | 44 | SP | 25 | 22 | 38 | 61 |
| | | 44 | 46 | SP/CL | 15 | 13 | 34 | 47 |
| | | 46 | 48 | SP/CL | 40 | 34 | 43 | 75 |
| | -33 | 48 | 50 | SP | 53 | 44 | 46 | 86 |

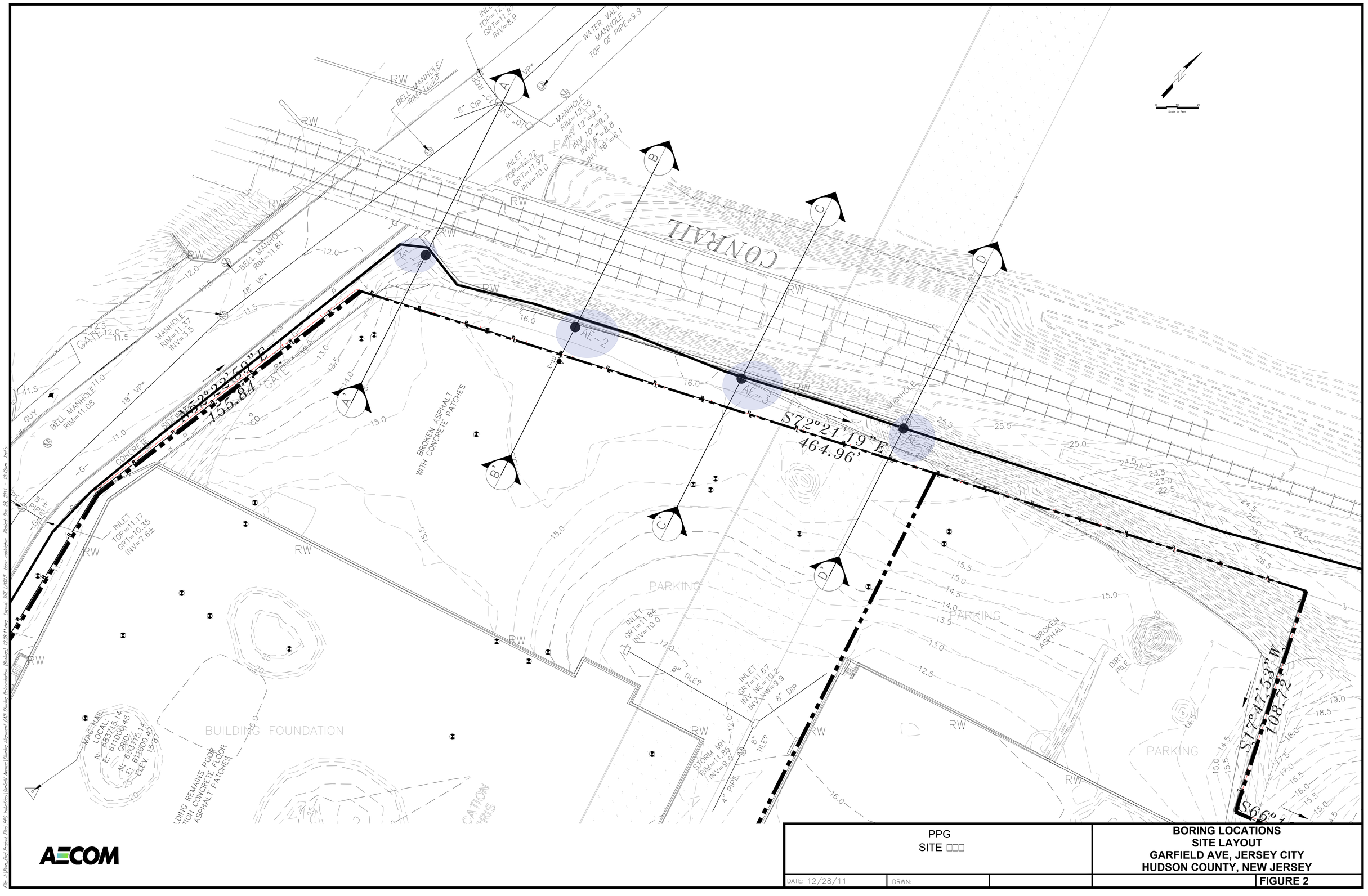


AECOM

| | | | |
|---|---|---|---|
| PPG<br>SITE □□□ | | | **BORING LOCATIONS**<br>**SITE LAYOUT**<br>**GARFIELD AVE, JERSEY CITY**<br>**HUDSON COUNTY, NEW JERSEY** |
| DATE: 12/28/11 | DRWN: | | **FIGURE 2** |

| Boring ID # AE-1 | Mid Point | Blow Counts | $N_{70}$ | $N_{60}$ | $D_r$ | Friction Angle (ϕ) | |
|---|---|---|---|---|---|---|---|
| Depth (ft) | Depth (ft) | Blows/ft | Blows/ft | Blows/ft | % | Degrees | |
| 0-2 | 1 | NA | NA | NA | NA | NA | |
| 4-6 | 5 | NA | NA | NA | NA | NA | |
| 6-8 | 7 | NA | NA | NA | NA | NA | Fill |
| 8-10 | 9 | 4 | 9 | 10 | 42 | 33 | Fill |
| 10-12 | 11 | 26 | 53 | 61 | 101 | 51 | Fill |
| 12-14 | 13 | 25 | 47 | 54 | 95 | 49 | Fill |
| 14-16 | 15 | 17 | 29 | 34 | 76 | 43 | Fill |
| 16-18 | 17 | NA | NA | NA | NA | NA | Fill - SM |
| 18-20 | 19 | 19 | 29 | 34 | 75 | 43 | SM - SW |
| 20-22 | 21 | 56 | 82 | 96 | 126 | 58 | SW |
| 22-24 | 23 | 30 | 42 | 49 | 90 | 47 | SW |
| 24-26 | 25 | 14 | 19 | 22 | 60 | 38 | SW - SP |
| 26-28 | 27 | 20 | 26 | 30 | 71 | 42 | SW |
| 28-30 | 29 | 28 | 35 | 41 | 82 | 45 | SW |
| 30-32 | 31 | 19 | 23 | 27 | 67 | 40 | SW |
| 32-34 | 33 | 29 | 34 | 40 | 81 | 45 | SW |
| 34-36 | 35 | 19 | 22 | 25 | 65 | 40 | SW |
| 36-38 | 37 | 17 | 19 | 22 | 60 | 38 | SP |
| 38-40 | 39 | 12 | 13 | 15 | 50 | 35 | SM |
| 40-42 | 41 | 18 | 19 | 22 | 61 | 38 | SM-SW |
| 42-44 | 43 | 37 | 38 | 44 | 86 | 46 | GW |
| 44-46 | 45 | 52 | 52 | 61 | 101 | 51 | GP |
| 46-48 | 47 | 60 | 59 | 69 | 107 | 53 | SP/GP |
| 48-50 | 49 | 59 | 57 | 66 | 105 | 52 | SP |
| 50-52 | 51 | 45 | 42 | 49 | 91 | 48 | SP/GP |
| 52-54 | 53 | Refusal | NA | NA | NA | NA | GC |
| 54-56 | 55 | Refusal | NA | NA | NA | NA | GC |

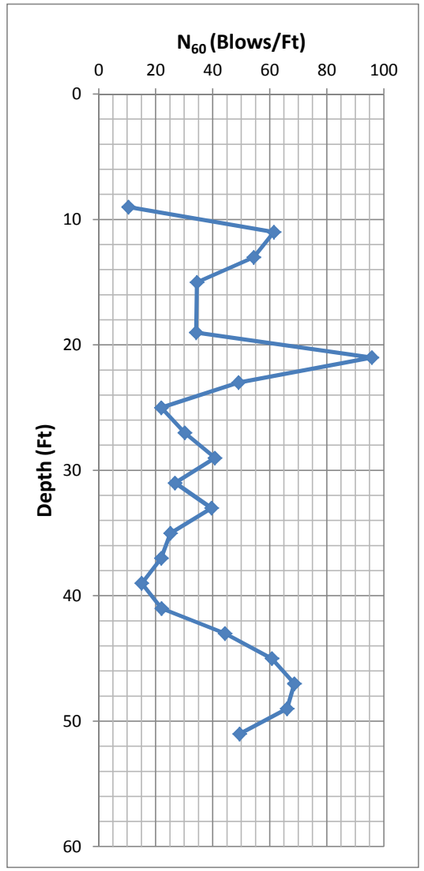


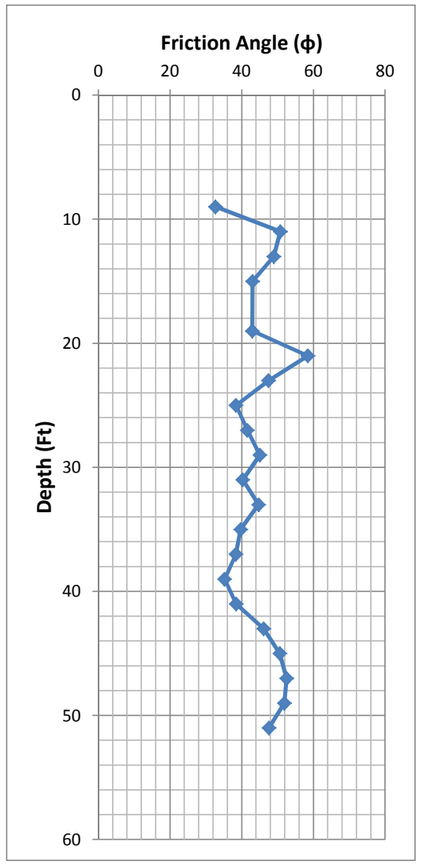


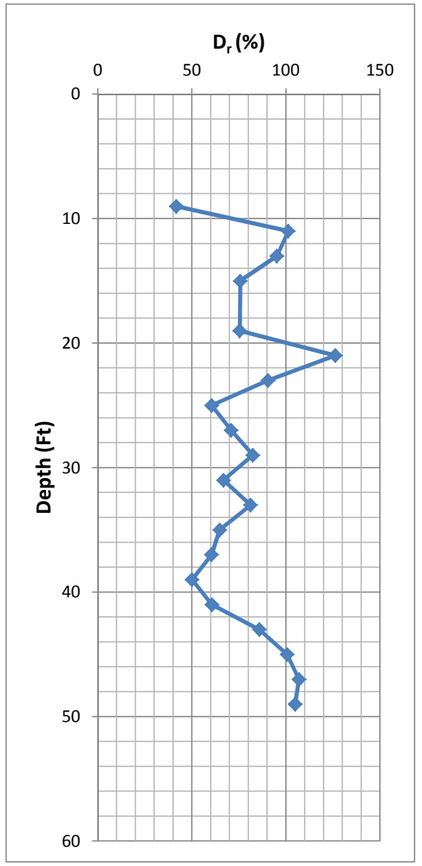

| Boring ID # AE-2 | Mid Point | Blow Counts | $N_{70}$ | $N_{60}$ | $D_r$ | Friction Angle (ϕ) | |
|---|---|---|---|---|---|---|---|
| Depth (ft) | Depth (ft) | Blows/ft | Blows/ft | Blows/ft | % | Degrees | |
| 0-2 | 1 | NA | NA | NA | NA | NA | |
| 4-6 | 5 | NA | NA | NA | NA | NA | |
| 6-8 | 7 | 3 | 8 | 9 | 38 | 32 | Fill |
| 8-10 | 9 | 16 | 36 | 42 | 83 | 45 | Fill |
| 10-12 | 11 | 17 | 34 | 40 | 82 | 45 | Fill |
| 12-14 | 13 | 27 | 50 | 59 | 99 | 50 | Fill |
| 14-16 | 15 | 18 | 31 | 36 | 78 | 44 | Fill |
| 16-18 | 17 | 19 | 31 | 36 | 78 | 44 | NR |
| 18-20 | 19 | NA | NA | NA | NA | NA | ST |
| 20-22 | 21 | 32 | 47 | 55 | 96 | 49 | SM-SM/GM |
| 22-24 | 23 | 37 | 52 | 60 | 100 | 51 | SW |
| 24-26 | 25 | 19 | 26 | 30 | 70 | 41 | SW/SM |
| 26-28 | 27 | 28 | 36 | 42 | 84 | 46 | SM |
| 28-30 | 29 | 26 | 32 | 38 | 79 | 44 | SM |
| 30-32 | 31 | 22 | 27 | 31 | 72 | 42 | SM |
| 32-34 | 33 | 16 | 19 | 22 | 60 | 38 | SM |
| 34-36 | 35 | 25 | 28 | 33 | 74 | 43 | SP |
| 36-38 | 37 | 26 | 29 | 33 | 75 | 43 | SP |
| 38-40 | 39 | 1 | 1 | 1 | 14 | 24 | NR |
| 40-42 | 41 | 5 | 5 | 6 | 32 | 30 | ML |
| 42-44 | 43 | 17 | 17 | 20 | 58 | 38 | ML |
| 44-46 | 45 | 30 | 30 | 35 | 76 | 43 | SW/GW |
| 46-48 | 47 | 51 | 50 | 58 | 99 | 50 | SW/GW-SP |
| 48-50 | 49 | 60 | 58 | 67 | 106 | 52 | SP |
| 50-52 | 51 | 39 | 37 | 43 | 84 | 46 | SP |
| 52-54 | 53 | 63 | 58 | 68 | 106 | 52 | SP |
| 54-56 | 55 | Refusal | NA | NA | NA | NA | SP |
| 56-58 | 57 | 43 | 38 | 45 | 86 | 46 | SP |
| 58-60 | 59 | 70 | 61 | 71 | 109 | 53 | SP/GP |
| 60-62 | 61 | 60 | 52 | 60 | 100 | 50 | GW |
| 62-64 | 63 | Refusal | NA | NA | NA | NA | GC |

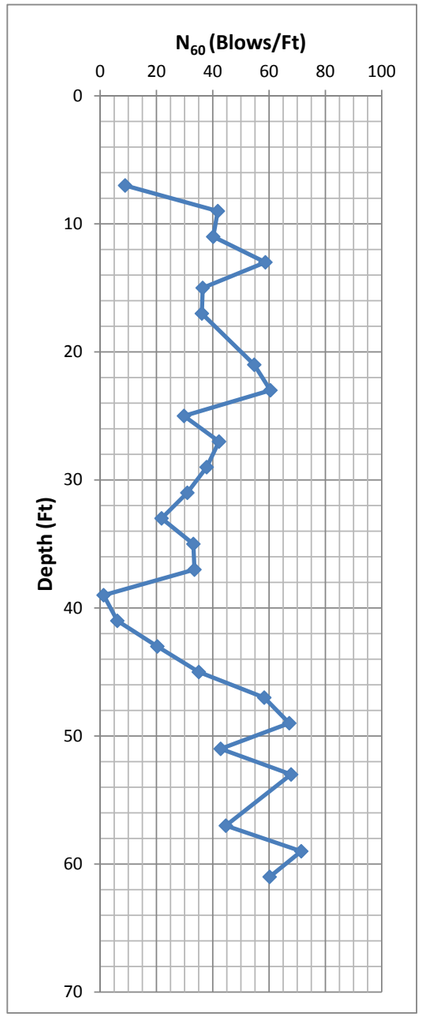


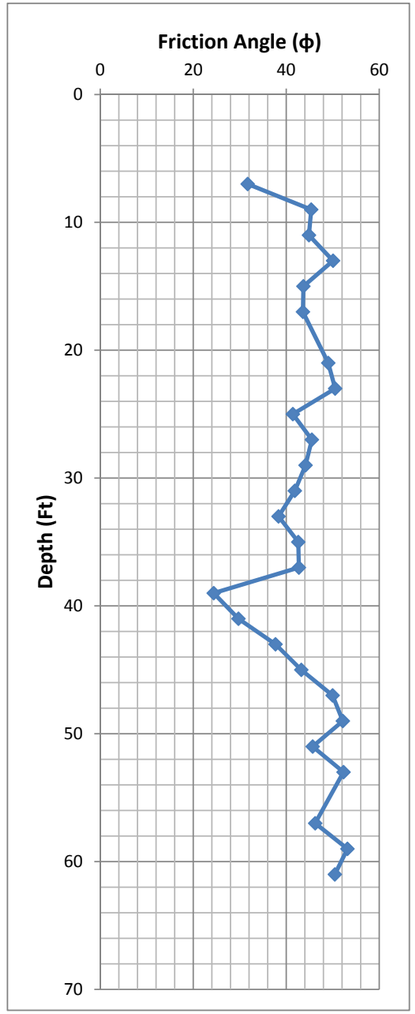


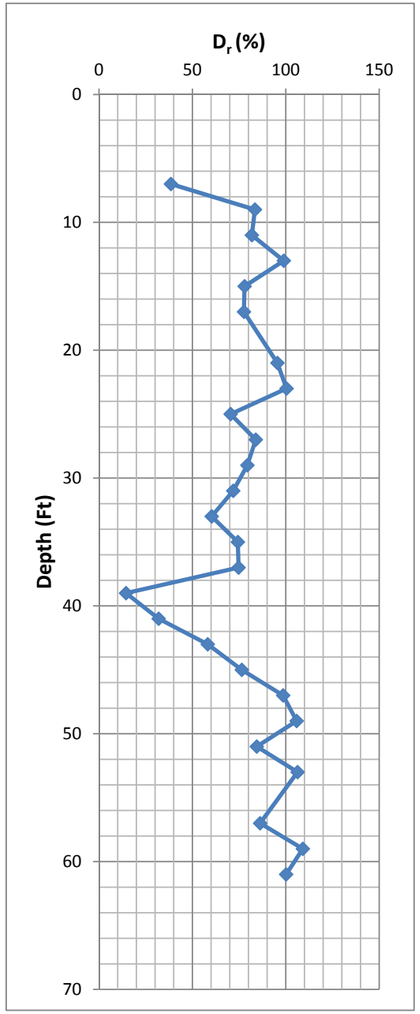

| Boring ID # AE-3 | Mid Point | Blow Counts | $N_{70}$ | $N_{60}$ | $D_r$ | Friction Angle (ϕ) | |
|---|---|---|---|---|---|---|---|
| Depth (ft) | Depth (ft) | Blows/ft | Blows/ft | Blows/ft | % | Degrees | |
| 0-2 | 1 | NA | NA | NA | NA | NA | |
| 4-6 | 5 | NA | NA | NA | NA | NA | |
| 6-8 | 7 | 8 | 20 | 24 | 63 | 39 | Fill |
| 8-10 | 9 | 19 | 43 | 50 | 91 | 48 | Fill |
| 10-12 | 11 | 17 | 34 | 40 | 82 | 45 | Fill |
| 12-14 | 13 | 59 | 110 | 128 | 146 | 64 | Fill |
| 14-16 | 15 | 25 | 43 | 51 | 92 | 48 | SM |
| 16-18 | 17 | NA | NA | NA | NA | NA | ST |
| 18-20 | 19 | 5 | 8 | 9 | 39 | 32 | OL |
| 20-22 | 21 | 5 | 7 | 9 | 38 | 31 | OL-SP |
| 22-24 | 23 | 43 | 60 | 70 | 108 | 53 | SP-SP/GP |
| 24-26 | 25 | 41 | 55 | 64 | 103 | 51 | SP/GP |
| 26-28 | 27 | 25 | 32 | 38 | 79 | 44 | SM |
| 28-30 | 29 | 26 | 32 | 38 | 79 | 44 | SM |
| 30-32 | 31 | 27 | 33 | 38 | 80 | 44 | SM |
| 32-34 | 33 | 6 | 7 | 8 | 37 | 31 | SM |
| 34-36 | 35 | 10 | 11 | 13 | 47 | 34 | SP/ML |
| 36-38 | 37 | 14 | 15 | 18 | 55 | 37 | SP |
| 38-40 | 39 | 8 | 9 | 10 | 41 | 32 | ML |
| 40-42 | 41 | 26 | 27 | 32 | 73 | 42 | ML-SP |
| 42-44 | 43 | 31 | 32 | 37 | 79 | 44 | ML/SM |
| 44-46 | 45 | 37 | 37 | 43 | 85 | 46 | SM |
| 46-48 | 47 | 42 | 41 | 48 | 89 | 47 | GM |
| 48-50 | 49 | 24 | 23 | 27 | 67 | 40 | GM/GC |

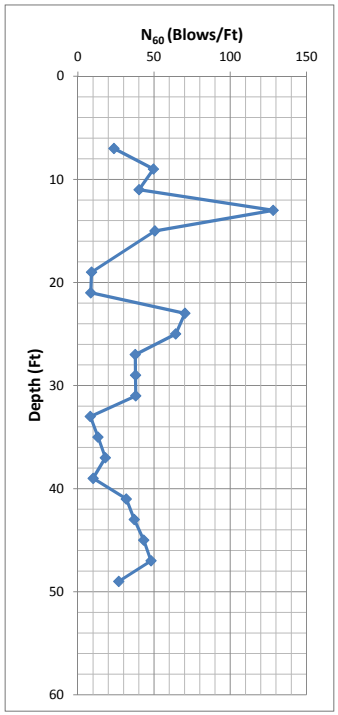


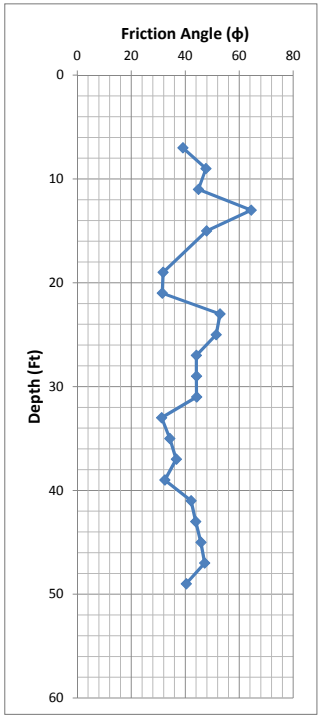


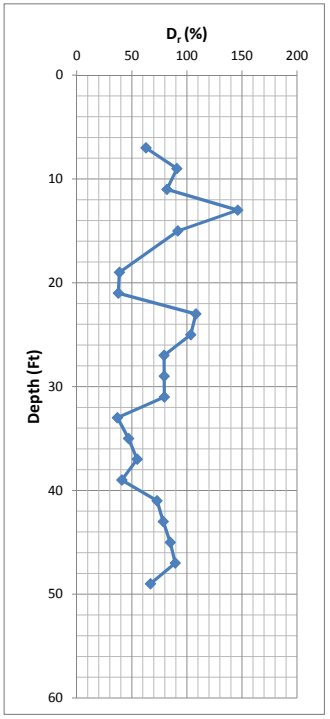

| Boring ID # AE-4 | Mid Point | Blow Counts | $N_{70}$ | $N_{60}$ | $D_r$ | Friction Angle (ϕ) | |
|---|---|---|---|---|---|---|---|
| Depth (ft) | Depth (ft) | Blows/ft | Blows/ft | Blows/ft | % | Degrees | |
| 0-2 | 1 | NA | NA | NA | NA | NA | |
| 4-6 | 5 | NA | NA | NA | NA | NA | |
| 6-8 | 7 | 3 | 8 | 9 | 38 | 32 | Fill |
| 8-10 | 9 | 3 | 7 | 8 | 36 | 31 | Fill |
| 10-12 | 11 | 33 | 67 | 78 | 114 | 55 | Fill |
| 12-14 | 13 | 49 | 91 | 107 | 133 | 60 | Fill |
| 14-16 | 15 | 12 | 21 | 24 | 64 | 39 | GP-ML |
| 16-18 | 17 | 42 | 68 | 80 | 115 | 55 | GP |
| 18-20 | 19 | 9 | 14 | 16 | 52 | 36 | OL-SP |
| 20-22 | 21 | 33 | 48 | 56 | 97 | 49 | SP |
| 22-24 | 23 | 37 | 52 | 60 | 100 | 51 | SP |
| 24-26 | 25 | 17 | 23 | 27 | 67 | 40 | SP |
| 26-28 | 27 | 6 | 8 | 9 | 39 | 32 | SP |
| 28-30 | 29 | 13 | 16 | 19 | 56 | 37 | SP |
| 30-32 | 31 | 4 | 5 | 6 | 31 | 29 | SP |
| 32-34 | 33 | 6 | 7 | 8 | 37 | 31 | SP-SM |
| 34-36 | 35 | 1 | 1 | 1 | 15 | 25 | SP |
| 36-38 | 37 | NA | NA | NA | NA | NA | NR |
| 38-40 | 39 | 10 | 11 | 13 | 46 | 34 | ML |
| 40-42 | 41 | 5 | 5 | 6 | 32 | 30 | ML |
| 42-44 | 43 | 10 | 10 | 12 | 45 | 34 | ML-SP |
| 44-46 | 45 | 11 | 11 | 13 | 46 | 34 | SW |
| 46-48 | 47 | 46 | 45 | 53 | 94 | 48 | SP |
| 48-50 | 49 | 32 | 31 | 36 | 77 | 43 | SP |
| 50-52 | 51 | Refusal | NA | NA | NA | NA | SP/GP |
| 52-54 | 53 | 32 | 30 | 34 | 76 | 43 | SP/GP |
| 54-56 | 55 | 42 | 38 | 44 | 86 | 46 | SP/GP |
| 56-58 | 57 | 33 | 29 | 34 | 76 | 43 | SP/GP |
| 58-60 | 59 | Refusal | NA | NA | NA | NA | SP/GP |

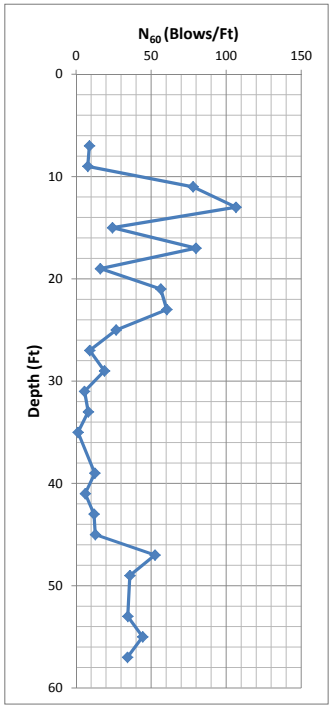


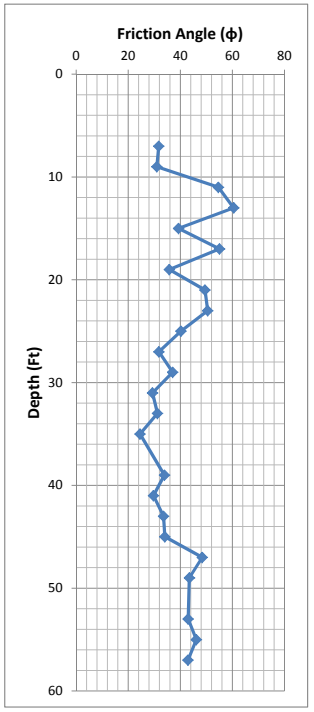


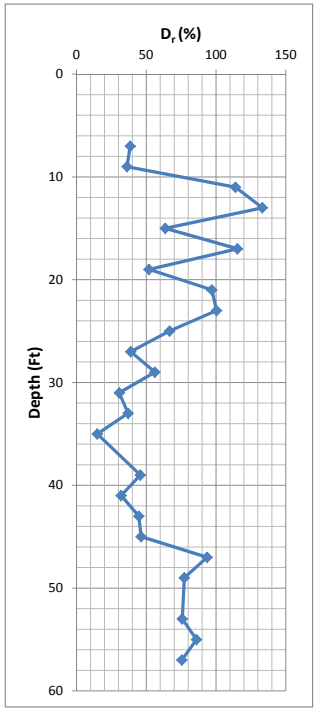

# Appendix D

# Field Sampling Plan/Quality Assurance Project Plan and Field Change Notifications for the Groundwater Interim Remedial Measures

AECOM Environment

Submitted to:
PPG Industries
Allison Park, Pennsylvania

Submitted by:
AECOM
Piscataway, New Jersey
60149955.4013A
June 2010

# Field Sampling Plan / Quality Assurance Project Plan

## PPG Non-Residential and Residential Chromium Sites
## Hudson County, New Jersey

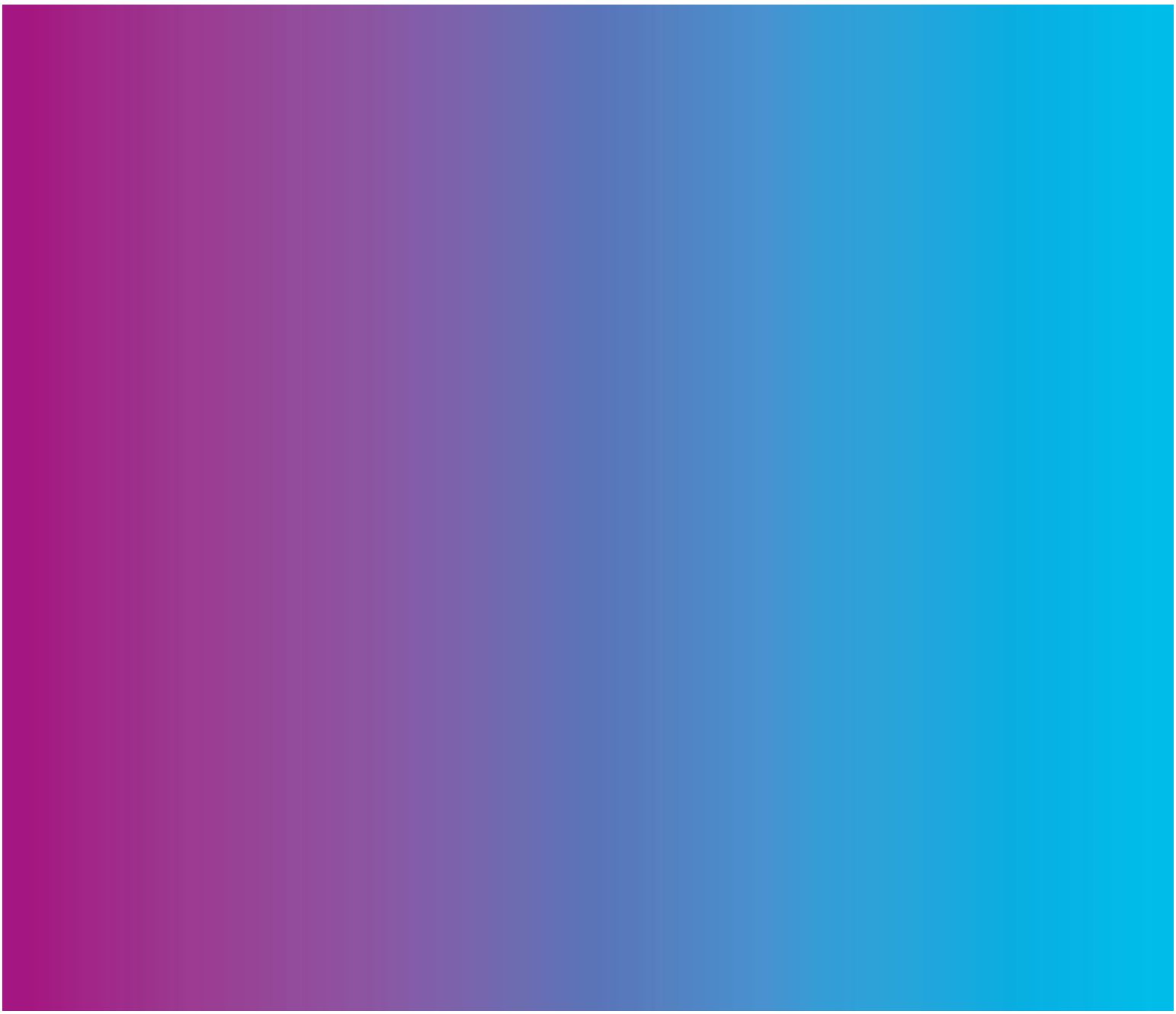

# FIELD SAMPLING PLAN / QUALITY ASSURANCE PROJECT PLAN
# Non-Residential and Residential Chromium Sites
# Hudson County, New Jersey

# FIELD SAMPLING PLAN / QUALITY ASSURANCE PROJECT PLAN
# Non-Residential and Residential Chromium Sites
# Hudson County, New Jersey

Prepared By: _____ Date: _____
Mary O'Connell Kozik

Reviewed By: _____ Date: _____
Scott H. Mikaelian

Approved By: _____ Date: _____
QA Reviewer
Kathy Whooley

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# 1.0 Introduction

## 1.1 Purpose

The Field Sampling Plan/Quality Assurance Project Plan (FSP/QAPP) for operations at the PPG Industries, Inc. (PPG) residential and non-residential chromium sites, including associated perimeter air monitoring, in Hudson County, New Jersey, was developed by AECOM Environment (AECOM) to comply with the New Jersey Department of Environmental Protection (NJDEP) quality assurance (QA) requirements for remedial investigations (RI). The purpose of the FSP/QAPP is to assure reliable monitoring data by serving as the instrument of control for field and analytical activities associated with the project. Stated or referenced within the FSP/QAPP are the analytical methods, sampling procedures, Quality Assurance policies, Quality Control (QC) criteria, and reporting requirements that must be followed by all prime and subcontractor personnel when carrying out their assigned responsibilities on the project.

This document is intended to be an organic document that is updated as required and will be modified as necessary during the performance of activities. This FSP/QAPP was prepared in accordance with the July 19, 1990 Administrative Consent Order (ACO) between the State of New Jersey and PPG Industries, Inc., and the NJDEP Technical Requirements for Site Remediation (New Jersey Administrative Code [N.J.A.C.] 7:26E-2.2 *et. seq*.). This FSP/QAPP will also be utilized during execution of the remedial activities related to the Judicial Consent Order (JCO) as filed on June 26, 2009.

The FSP/QAPP was prepared in accordance with the requirements and methods described in the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E *et. seq.*, November 4, 2009, date last amended April 19, 2010), *Field Sampling Procedures Manual* (August, 2005, last updated April 30, 2009), *Alternative Ground Water Sampling Techniques* (July 1994), *Field Analysis Manual* (July 1994) and N.J.A.C. Chapter 9D *Well Construction, Maintenance, and Sealing of Abandoned Wells Drilling Regulations and Requirements* (April 2, 2007), as guidance. Remedial investigation results will be compared to New Jersey's *Remediation Standards* (N.J.A.C. 7:26D *et. seq*., November 2009) for soil delineation purposes for non-chromium compounds. The most stringent (non-residential) chromium soil cleanup criteria (CrSCC) of 20 mg/kg for hexavalent chromium, and the most stringent (residential) soil cleanup criteria of 120,000 mg/kg for trivalent chromium, will be utilized for soil delineation purposes pursuant to the *Chromium Soil Cleanup Criteria* (NJDEP, September 2008). Groundwater results will be compared to the *Ground Water Quality Standards* (N.J.A.C. 7:9C), last amended November 4, 2009.

The FSP/QAPP is the standard by which field and laboratory procedures must be performed and the standard against which activities will be audited. In the event that the FSP/QAPP must be changed to include a new procedure or modify an existing procedure, the procedure discussed in **Section 3.0** of the FSP/QAPP will be used to document the change.

## 1.2 Project Background

PPG Industries, Inc., owned and operated a chromate chemical production facility encompassing approximately 16.6 acres located on Garfield Avenue in the City of Jersey City, County of Hudson, New Jersey.

On or about September 1, 1963, PPG ceased operations at the chromate chemical production facility. These operations had resulted in the generation of chromate ore processing residue (COPR) that was distributed by third parties as fill material for use in certain construction and development projects in Hudson County, New Jersey.

The chromate ore processing residue was used for the backfilling of demolition sites, preparation for building foundations, construction of tank berms, roadway construction, the filling of wetlands and other construction and development-related purposes.

The JCO requires the investigation and if necessary, the remediation of chromate chemical production waste (CCPW) at residential properties within the vicinity of the PPG sites. Perimeter air monitoring will be conducted during various ground intrusive remedial phases at the Garfield Avenue site (PPG Site 114) for protection of residents and the community. The remaining PPG residential and non-residential chromium sites are designated by the ACO. This FSP/QAPP will augment the individual work plans and report submittals developed for on and off-site work.

## 1.3 Data Quality Objectives

Data Quality Objectives (DQOs) are qualitative and quantitative statements that specify the quality of data needed to accomplish the project objectives. The design for each sampling program will be based on USEPA's DQO guidance (USEPA, 2000), a multi-step, iterative process that ensures that the type, quantity, and quality of environmental data used in decision-making is appropriate for its intended application. This process is summarized below:

- State the problem;
- Identify the decision;
- Identify inputs to the decision;
- Define the study boundaries;
- Develop a decision rule;
- Specify decision error limits; and
- Optimize the study design.

The field collection efforts at the non-residential sites will generate data to be used for a variety of purposes, including but not limited to site characterization, evaluation of alternatives, engineering design, risk assessment, and potential responsible party (PRP) determination. Therefore, the sampling and analysis programs incorporate the following QA elements:

- A sampling program designed to obtain sufficient data to determine levels of constituents in media of interest;

- The use of sample collection and handling procedures that will ensure the representativeness and integrity of the samples;
- An analytical program designed to generate definitive data of sufficient quality and sensitivity to meet the project objectives; and
- Data deliverables that will allow verification and validation of the data and reproducibility of the reported results.

## 1.4 Project Schedule

Project schedules for each site are site-specific and will be presented in the site-specific work plans or other individual report submittals for each site.

# 2.0 Project Organization

A Project Management Team has been established that consists of three primary classifications: the Principal-in-Charge, Project Managers, and the Field Operations Leader. Responsibilities of the management team, and supporting staff, are described in **Section 2.1**.

## 2.1 Management Responsibilities

The roles and responsibilities each for program position that will participate in projects associated with this FSP/QAPP are summarized below. Personnel assigned to these positions are provided in **Table 2-1**.

AECOM:

**Principal-In-Charge (PIC):** The Principal-in-Charge (PIC) works closely with PPG Industries, Inc. and is responsible for managing contractual agreements between AECOM and PPG. The PIC will also have the responsibility for reviewing major deliverables to ensure compliance with the FSP/QAPP requirements.

**Project Managers:** Project Managers (PMs) will be designated on a site-by-site basis and will be responsible for daily coordination of the project, management of the project team, and the overall success of the project. The Project Manager will review reports and all correspondence prior to submission, and will act as overall technical coordinator. The Project Manager will maintain budget and schedule; track invoices, purchase orders, subcontracts; and set project goals and objectives according to proposal and client-authorized changes as they arise.

**Field Operations Leader:** The Field Operations Leader (FOL) is directly responsible for sampling quality control. It is the FOL's responsibility to mobilize the proper equipment, ensure that sampling procedures are implemented properly, that field control samples are collected as required, maintain chain of custody, and complete the required documentation. The FOL has full authority over logistical aspects of sampling in the field and the authority to implement minor changes to sampling plans to accommodate field conditions.

**Site Supervisor:** The site supervisor has the overall responsibility and authority to direct work operations at the job site according to the work plans. The Site Supervisor may also serve as a Task Leader or other role.

**Task Leader:** Task Leaders have the responsibility for supervising subcontractors, and for overseeing the collection of soil and groundwater sampled. A geologist or hydrogeologist will be the Task Leader for drilling and well construction operations, and has the responsibility for supervising the drilling subcontractor during the collection of soil samples and grab-groundwater samples, and installation of monitoring wells, and for classifying soil samples in the field. The Task Leader will ensure that field engineering and geological data is in accordance with currently accepted

professional standards and that wells are installed in accordance with the FSP/QAPP, work plans and other report submittals.

The Task Leader will have the direct responsibility to ensure that soil and groundwater sampling activities are performed in accordance with the FSP/QAPP, work plans and other report submittals. The task leader reports directly to and is supervised by the FOL. The task leader will communicate with the FOL and report any conditions that may require changes in field activities or procedures.

The Task Leader or another AECOM representative may be designated by the Site Safety Officer (SSO) to perform as the SSO's field representative, and will report directly to the SSO to ensure that procedures outlined in the Health and Safety Plan (HASP) are followed.

**Sampling and Health and Safety Technicians:** Sampling Technicians are responsible for implementing sampling procedures as described in the FSP/QAPP, work plans and other report submittals. Sampling Technicians do not have the authority to change the sampling plan. Sampling Technicians may also serve as Health and Safety (H&S) Technician, and will report directly to the SSO's representative to ensure that the proper H&S precautions are taken. There will be an H&S Technician on-site for all activities. The H&S technicians' responsibilities are further outlined in the site-specific HASP and work plans.

**Regional Safety, Health & Environment Manager (RSHEM):** The AECOM RSHEM is the individual responsible for the preparation, interpretation and modification of the Health and Safety Plans (HASPs) as needed and will serve as the primary Health and Safety resource for the program.

**Database Manager:** The Database Manager will be responsible for the development and management of the groundwater, soil, and geologic databases. Additional support by trained administrative staff will be available as needed.

**GIS Manager:** The GIS Manager will be responsible for maintaining the geographic information systems for the program, and directing the production of GIS drawings and data presentation.

**Data Validation Manager:** The Data Validation Manager will act as the data review supervisor.

**Project Quality Assurance Officer (QAO):** The QAO will be responsible for maintaining compliance with AECOM's internal and project specific standards and practices for Quality Assurance. The project QAO will maintain and implement the FSP/QAPP.

**Engineering Manager:** The Engineering Manager will manage and delegate tasks related to evaluation of remedial options and implementation of remedial actions.

**On-Site Health & Safety Coordinators:** Each of the Task Leaders identified in **Table 2-1** will be in charge of coordinating health and safety issues on site and maintaining health and safety documentation for the duration of time each is on-site. They will apprise the Field Operations Leader of matters regarding health and safety. However, decisions pertaining to health and safety will be the responsibility of the RSHEM, with input from the Site Safety Officer, Site Supervisor and Task Leaders, as appropriate. These personnel will be responsible for coordinating field staff, maintaining budget and schedule, as well as the development of detailed internal work plans and schedules. Each

will be in charge of coordinating health and safety issues on-site and maintaining health and safety documentation during their time on-site.

PPG Industries, Inc.:

**Director, Environmental Affairs:** The PPG Director, Environmental Affair is responsible for overall contract execution and PPG program management.

**Project Manager, Environmental Remediation:** The PPG Project Managers are responsible for monitoring field activities, assisting in contract execution, management of individual site projects, and coordinating with various contractors on technical work execution.

NJDEP:

**Manager, Site Remediation:** The primary NJDEP representative is responsible for review and approval of submittals. JCO Team:

**JCO Site Administrator:** The Site Administrator is appointed by the Courts under the terms of the JCO and is responsible for establishing the Master Schedule, coordination of JCO activities, holding meetings with stakeholders, and hiring experts and consultants to assist him in JCO oversight, financial management of the JCO Fund, and other related tasks as dictated by the JCO.

**JCO Site Administrator Project Manager:** The Site Administrator Project Manager is responsible to assist the Site Administrator in his duties.

**Technical Consultant:** The Technical Consultant is hired by the Site Administrator under the terms of the JCO and provides technical support to the Site Administrator and NJDEP, and other tasks as dictated by the JCO.

**Table 2-1 Program Personnel**

| Title, Affiliation, Name | Address | Phone | Email |
|---|---|---|---|
| ***Principal-In-Charge (AECOM)*** | | | |
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| Title, Affiliation, Name | Address | Phone | Email |
|---|---|---|---|
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| Dave Claassen | 4325 Rosanna Drive, Allison Park, PA, 15101 | (412) 492-5629 | dclaassen@ppg.com |
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| ***Project Manager for JCO Site Administrator*** | | | |
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| ***Manager, Site Remediation (NJDEP)*** | | | |
| Thomas Cozzi | 401 E State St. 5th floor Trenton, NJ 08625 | (609) 984-2905 | tom.cozzi@dep.state.nj.us |
| ***Technical Consultant (Weston Solutions)*** | | | |
| Prabal Amin | 205 Campus Drive Edison, NJ 08837 | (732) 417-5857 | prabal.amin@westonsolutions.com |

## 2.2 Laboratory

The analytical laboratory contractors supporting the standard analytical work for the non-residential and residential chromium site remedial activities are Accutest Laboratories, Inc. (Accutest), and Test America (formerly Severn Trent Laboratories, Inc. (STL)). The geotechnical laboratory supporting the geotechnical analyses will be GeoTesting Express, Inc. Analysis of hexavalent chromium on air filters will be performed by Galson Laboratories. Analyses of air filters for particulates ($PM_{10}$) will be performed by the AECOM laboratory in Harvard, MA. Measurements for Dissolved Oxygen, pH,

temperature, turbidity, specific conductance, and oxidation/reduction potential (ORP) in the field will be performed by AECOM personnel.

All laboratories utilized for this program will be NJDEP-certified laboratories and hold current certifications for parameters of interest listed in **Appendix D** (where appropriate). **Table 2-2** provides contact and certification information for the participating laboratories.

**Table 2-2 Laboratory Information**

| Laboratory | Laboratory Contact | NJDEP Certification No. | Analytical Role |
|---|---|---|---|
| Accutest Laboratories<br>Fresh Ponds Corporate Village, Building B<br>2235 Route 130<br>Dayton, NJ 08810 | Matt Cordova,<br>Director of Client Services<br>Phone: 732.329.0200<br>e-mail: matt@accutest.com | 12129 | Laboratory support for chemical analysis of soil and water samples |
| AECOM<br>30 Knightsbridge Road,<br>Suite 520<br>Piscataway, NJ 08854 | Erin Murphy<br>Phone: 732.564.3628<br>e-mail: erin.murphy@aecom.com | 12995 | Field measurements of dissolved oxygen, pH, temperature, turbidity, ORP, and specific conductance. |
| AECOM<br>325 Ayer Road<br>Harvard, MA 01451 | Henry Chow<br>Phone: 978.772.3345<br>e-mail: henry.chow@aecom.com | MA010 | Field GC measurements<br>Particulates |
| Galson Laboratories<br>6601 Kirkville Road<br>East Syracuse, NY 13057 | Ed Stuber, CIH<br>Phone: 315.432.5227<br>e-mail:estuber@galsonlabs.com | NY024 | Hexavalent Chromium in air |
| GeoTesting Express Inc.<br>1145 Massachusetts Ave.<br>Boxborough, MA 01719 | Mark Dobday<br>978-635-0012 Tel<br>978-844-2074 Cell<br>e-mail: mdobday@geotesting.com | Not Applicable | Laboratory support for geotechnical analysis of solid samples |
| TestAmerica<br>777 New Durham Road<br>Edison, NJ 08817 | Thomas Tanico<br>Customer Service Manager<br>Phone: 732.549.3900<br>e-mail: Thomas.Tanico@testamericainc.com | 12028 | Laboratory support for chemical analysis of soil and water samples |

## 2.3 Field Responsibilities

Task Leaders for continuing investigation and remedial activities, will be responsible for locating sample points (e.g., wells), ensuring adequate sample containers are available for sampling personnel, making sure that the required samples are collected and proper sampling techniques are used, ensuring that the appropriate documentation is completed, and the samples are properly preserved, packaged, and shipped to the appropriate laboratories. Task Leaders will receive copies of field notes and documentation from Field Team members and will review these notes. Deficiencies

in the field notes will be reported by the Task Leaders to the project QAO and Field Team authors. Field notebook authors will revise the field notes as appropriate. Task Leaders and on-site representatives will also be responsible for subcontractor management while AECOM subcontractor personnel are onsite and ensuring that tailgate health and safety briefings are conducted for compliance with the HASP.

The Field Team members' responsibilities will include collecting field samples, collecting personnel and perimeter air monitoring samples, conducting field measurements, and documentation of all activities pursuant to this FSP/QAPP, work plans, AECOM Standard Operating Procedures (SOPs), and applicable NJDEP regulation and guidance. Field Team members will submit a copy of field documentation to the appropriate Task Leader, and will revise notes as necessary based on the Task Leader's quality assurance review.

### 2.3.1 Personnel Training

AECOM and subcontractor personnel working on this program will be properly trained and qualified individuals. Prior to the commencement of work on the site, personnel will be given instructions specific to this project, covering the following areas:

- Organization and lines of communication and authority;
- Overview of the field investigation activities;
- QA/QC considerations;
- Documentation requirements;
- Decontamination requirements; and
- Health and safety considerations.

Training of field personnel will be provided by the AECOM Project Manager, AECOM Task Leaders, Project QAO, and/or any other qualified designee. Federal regulations found in Title 49 of the Code of Federal Regulations (49 CFR) Part 172.702 require that each employer whose employees work with hazardous materials (as defined in sections 49 CFR 171 and 172) must train each of its hazmat employees. "Hazmat employees" include those who prepare the packages for shipping, prepare, sign or review the paperwork, load trucks, drive the vehicles or unload or receive the hazardous materials.

A hazmat employee who performs any of these functions may not perform the function unless he or she has been trained in the requirements of hazardous materials (generally: identification, classification, labeling, marking, placarding, packaging, etc.) that apply to that function. It is the duty of each hazmat employer to comply with the applicable requirements of this subchapter and to ensure that each hazmat employee has received the appropriate training. AECOM employee(s) will have the New Jersey Department of Transportation (NJDOT) Hazardous Materials Transportation Certification pursuant to 49 CFR 172.704. Only personnel knowledgeable and trained in the shipment of hazardous or dangerous goods will be responsible for the shipment of hazardous materials.

# 3.0 Changes to Project Plans

The following procedure provides a means for controlling and documenting changes to the approved FSP/QAPP or site-specific work plans and changes during field activities or related to changes in accepted methods. The objective of the process is to maintain the level of QA/QC provided in the original review and approval process.

## 3.1 Changes or Additions

If non time-critical changes to a FSP/QAPP or site-specific work plan are required, the requesting party will initiate a request for change by editing the existing procedure and indicating the proposed changes by underlining the altered portions of the FSP/QAPP, work plans or other report submittals. The revision will be submitted with a cover letter (which includes the timeline for implementation of the change) to PPG and subsequently NJDEP for review, comment, and/or approval. Changes or additions required by NJDEP will be addressed by PPG based on written comments by NJDEP. Upon acceptance or approval of the revision by PPG and NJDEP, the change will be added to the appropriate section of the project planning document. Depending upon the complexity and extent of modifications, changes may be incorporated by marking the revised pages of the document with the word "revised" with the revision number and date placed in the lower right-hand corner. Extensive changes which result in resubmission of the entire document will be noted as a revision number for the document.

If time critical changes which could impact the overall project schedule (Master Schedule) are indentified, AECOM will implement a procedure for rapid notification of key parties (AECOM Project Manager and Principal-In-Charge, NJDEP's Technical Consultant [Weston] and PPG via direct contact (phone or electronic mail). This will be followed by written documentation of the issue identified, proposed solution, and proposed schedule revisions to the Site Administrator. Following agreement on actions and approval of changes, the existing FSP/QAPP or work plan will be modified as needed. Revised pages or, if necessary, a complete, revised version of these documents will be prepared and distributed to all parties who received the original documents. Any schedule changes or revisions would also be documented in the Progress Report in accordance with 74.e and 74.f. of the ACO.

## 3.2 Changes or Additions to Laboratory Services

In the event that an additional laboratory subcontractor is required to handle the project load or there is a need to add additional analyses to the SOPs for the laboratory, a request will be made in writing to the other party. The letter will document the reason for the change, indicate any new analytical procedures to be used, present all pertinent laboratory SOPs, present the laboratory organization along with resumes and include a schedule for implementation as applicable. The requesting party will forward the letter to the other party for review, comment, and/or approval. Upon approval by both parties, the change or addition will be implemented. Appropriate correspondence documenting the acceptance of the change or addition of the analysis, along with supporting documentation, will be added as an appendix to the FSP/QAPP.

Requests for revisions or additions will be transmitted through the NJDEP Case Manager (if originating from NJDEP) or Mr. Brian McGuire or Mr. Mark Terril. (if originating from PPG) to the AECOM PIC, Mr. Robert Falotico or AECOM Program Manager, Scott Mikaelian

## 3.3 Field Changes or Additions

Because time critical changes or additions to the FSP/QAPP or site-specific work plan may be needed in order to accommodate field conditions or respond to findings obtained in the field, a mechanism to accommodate such changes has been established. These changes or additions may be initiated by either NJDEP or AECOM and PPG through the use of the following procedure:

1. Notification: The requesting party makes contact with the other party to request and discuss the change and a schedule for implementation. Persons to be contacted in addressing field changes are the AECOM PM and PIC, Technical Consultant (Weston), and PPG representative(s).

2. Field Sign-off: Following internal discussion, if both parties orally agree to the change or addition, it will be implemented according to the agreed upon schedule. Oral requests for field changes and agreement on field changes will be documented in the site log book and will require sign-off by both parties in the field log prior to implementation.

3. Project Manager Sign-off: The requesting party must complete a field change request form (**Appendix A**) and submit it to the other party within 72 hours to document written approval of the change.

4. Revision to the FSP/QAPP: All approved field changes will be followed up by formal written changes to the FSP/QAPP, unless the changes are site-specific. Site-specific changes will be documented in the appropriate site-specific report.

# 4.0 Quality Assurance Objectives

The overall QA objective is to develop and implement procedures for field sampling, chain of custody, laboratory analysis, and reporting that will provide results that are legally defensible in a court of law. Specific procedures for sampling, chain of custody, instrument calibration, laboratory analysis, reporting of data, internal QC, audits, preventative maintenance of field equipment, and corrective action are described in other sections of this FSP/QAPP. The purpose of this section is to address the specific objectives for accuracy, precision, completeness, representativeness, and comparability. These terms are described below.

## 4.1 Precision

### 4.1.1 Definition

Precision is a measure of the degree to which two or more measurements are in agreement.

### 4.1.2 Field Precision Objectives

Field precision is assessed through the collection and measurement of field duplicates at a rate of one duplicate per twenty field samples. Precision will be measured through the calculation of relative percent difference (RPD). The equation for this calculation is presented in **Section 5.2.1** of this FSP/QAPP. The objectives for field precision RPDs are 30% RPD for aqueous samples and $\leq$50% RPD for soil, chip, masonry, and air particulate samples. Co-located samples will be collected to assess the precision of air particulate measurements. Field duplicates will not be collected for wipe samples or hexavalent chromium in air.

### 4.1.3 Laboratory Precision Objectives

Precision in the laboratory is assessed by calculating the RPD for duplicates. The equation for this calculation is presented in **Section 5.2.1** of this FSP/QAPP. Matrix Spike/Matrix Spike Duplicate (MS/MSD) samples will be used to evaluate the precision of organic analyses. Laboratory duplicates as well as MS and/or MSD samples will be used for inorganic analyses; blank spike and/or blank spike duplicate samples will be used to assess laboratory precision for the determination of hexavalent chromium collected on air filters. Precision objectives will be the statistical control limits, or those specified in the method, whichever are more stringent.

## 4.2 Accuracy

### 4.2.1 Definition

Accuracy is the degree of agreement between the observed value and an accepted reference value.

### 4.2.2 Field Accuracy Objectives

The achievement of accurate data in the field will be addressed through the use of sampling procedures that minimize bias, the calibration of field instruments, and adherence to sample holding

times and preservation requirements. Accuracy in the field will be evaluated through the use of trip blanks and/or field blanks. These blanks should contain no target analytes above the reporting limit.

### 4.2.3 Laboratory Accuracy Objectives

Laboratory accuracy will be expressed as percent recovery and will be determined through the analysis of matrix spikes, surrogates, and laboratory control samples. The equation that will be used to calculate percent recovery is included in **Section 5.2.2** of this FSP/QAPP. Laboratory accuracy objectives limits will be the statistical control limits, or those specified in the method, whichever are more stringent.

## 4.3 Completeness

### 4.3.1 Definition

Completeness is a measure of the amount of valid data obtained from a measurement system compared to the amount that was expected to be obtained under normal conditions. "Normal conditions" are defined as the conditions expected if the sampling plan were implemented as planned.

### 4.3.2 Field Completeness Objective

Field completeness will be measured on the basis of (1) the number of valid field measurements and (2) the number of valid samples collected. The equation for completeness is presented in **Section 5.2.3** of this FSP/QAPP. The objective for field completeness for this project is greater than 90%.

### 4.3.3 Laboratory Completeness Objectives

Laboratory completeness will be measured by the number of valid measurements obtained compared to the number of valid samples submitted. The equation for calculating completeness is presented in **Section 5.2.3** of this FSP/QAPP. The completeness objective for the laboratory is greater than 90%.

## 4.4 Representativeness

### 4.4.1 Definition

Representativeness expresses the degree to which data accurately and precisely represents a characteristic of a population, parameter variations at a sampling point, a process condition, or an environmental condition.

### 4.4.2 Measures to Ensure Representativeness of Field and Laboratory Data

Representativeness is a qualitative parameter which is dependent upon the proper design of the sampling program and proper laboratory protocol. The rationale of the sampling program is discussed in the site-specific work plan. Representativeness will be satisfied by ensuring that the work plan is followed, proper sampling techniques are used, samples are appropriately preserved, proper analytical procedures are followed, and holding times of the samples are not exceeded. Representativeness will be included as a QA measure during the yearly Project QA audits.

Sampling protocols (discussed in **Section 6**) have been developed to assure that samples collected are representative of the media. Field handling protocols (e.g., storage, handling in the field, and

shipping) have also been designed to protect the representativeness of the collected samples. Proper field documentation will be used to establish that protocols have been followed and that sample identification and integrity have been maintained.

## 4.5 Comparability

### 4.5.1 Definition

Comparability expresses the confidence with which one data set can be compared to another.

### 4.5.2 Measures to Ensure Comparability of Field and Laboratory Data

The extent to which existing and planned analytical data will be comparable depends on the similarity of sampling and analytical methods. The procedures used to obtain the planned analytical data, as documented in this FSP/QAPP, are expected to provide comparable data. Any changes in procedure or QA objectives, however, may affect data comparability.

When comparing data, it is important to compare data collected under the same set of conditions. Seasonal trends, depth of sample collection, analytical protocol, stream flow during sample collection, and any other sampling/analytical variables must be taken into account when comparing data sets.

Comparability will be maximized by: (1) the use of Project Operating Procedures (POPs) and SOPs throughout the project; (2) the recording of data in a standardized format; (3) the use of standard methods; (4) conducting confirmatory sampling and analysis when using alternative sampling and analysis methodologies; and (5) reporting of data in appropriate, consistent units.

## 4.6 Level of Quality Control Effort

### 4.6.1 Field Measurement

The field measurement equipment will be calibrated required under the methodologies specified in **Section 11** of this FSP/QAPP and the individual work plan(s). SOPs and POPs for the use of field instrumentation also contain detailed calibration requirements.

### 4.6.2 Laboratory Analysis

The level of QC effort provided by the laboratory will be equivalent to the level of QC effort required under the methodologies specified in **Section 12** of this FSP/QAPP. Each sample set processed as a batch by the laboratory will include a method blank, a measure of analytical accuracy such as a blank spike or matrix spike, and a measure of analytical precision such as a laboratory or matrix spike duplicate. Laboratories will adhere to all quality control procedures required in the analytical SOPs specified in **Appendix D**.

In accordance with the quality assurance requirements of the recently amended N.J.A.C. 7:26E-2.1(a)7, “The person responsible for conducting the remediation shall ensure that hexavalent chromium analysis of aqueous and nonaqueous samples is conducted as follows: i. Measure the pH and Eh of each sample, not just the quality control sample, with the pH and Eh data included and plotted in the full data deliverables using the graph in USEPA SW-846 Method 3060A incorporated herein by reference, as amended and supplemented; and ii. Use a site sample for the quality control

analyses so the reduction/oxidation effects of the site matrix can be properly evaluated using USEPA SW-846 Method 3060A." The NJDEP certified laboratories that will perform the hexavalent chromium analysis are aware of these requirements. These requirements will also be included in the technical terms and conditions which are part of the laboratory purchase order in order to ensure compliance.

# 5.0 Data Assessment Procedures

## 5.1 Field Measurements

Field data will be reviewed by the AECOM Field Operations Leader and Task Leader for compliance with the Work plan, FSP/QAPP, and SOPs/POPs as applicable. Precision, accuracy, and completeness will be evaluated based on the methods and equations described in **Sections 4.1, 4.2, and 4.3**.

## 5.2 Laboratory Data

Laboratory analytical results will be assessed for compliance with precision, accuracy, completeness, and sensitivity requirements as described in the following sections.

### 5.2.1 Precision

AECOM will review the nonconformance summaries reported by the laboratories, which include RPD measurements outside laboratory QC limits by analyte group.

AECOM expects that the precision of laboratory analysis will be assessed by comparing the analytical results between MS/MSD samples for organic analysis, and laboratory duplicate analyses and MS/MSD samples for inorganic analysis. The RPD will be calculated for each pair of duplicate analysis using the following equation:

$$\%\ RPD = \frac{(S - D)}{(S + D)/2} \times 100$$

where S = original sample data
D = duplicate sample data

### 5.2.2 Accuracy

AECOM will review the nonconformance summaries reported by the laboratories which include monitoring of recovery measurements based on laboratory QC limits by analyte group. The accuracy of laboratory results will be assessed for compliance with the criteria established in **Section 4.2** of this FSP/QAPP using the analytical results of method blanks, trip blanks, field blanks, and MS/MSD samples. The percent recovery (%R) of matrix spike samples will be calculated using the following equation:

$$\%\ R = \frac{(A - B)}{C} \times 100$$

where A = the analyte concentration determined experimentally from the spiked sample,
B = the background level determined by a separate analysis of the unspiked sample, and
C = the amount of the spike added.

### 5.2.3 Completeness

The completeness of laboratory analytical results will be assessed by the laboratory for the amount of data required in **Section 4.3** of this FSP/QAPP. The completeness will be calculated using the following equation.

$$Completeness = \frac{ValidDataObtained}{TotalPlannedData} \times 100$$

### 5.2.4 Sensitivity

The laboratory will monitor the data quality through constant instrument performance and that instrument sensitivity will be monitored through the use of method blanks, calibration check samples, etc., in accordance with the methods listed in **Appendix D** of this FSP/QAPP. Method detection limits will be calculated according to 40 CFR Part 136 Appendix B.

As required in the *Technical Requirements for Site Remediation* at N.J.A.C. 7:26E-2.1(a)8, samples that will be used for determining compliance will be analyzed using a method with adequate sensitivity to accurately measure to the applicable remedial standard. Detection limits will be at or below applicable *Remediation Standards (*N.J.A.C 7:26D*),* last revised November 4, 2009*, or Soil Cleanup Criteria,* last revised May 12, 1999 (for trivalent and hexavalent chromium), Table 1 from the NJDEP guidance document *Development of Site-Specific Impact to Ground Water Soil Remediation Standards using the Soil-Water Partition Equation*, December 2008 (revised), *and* the *Ground Water Quality Standards (*N.J.A.C. 7:9C Appendix Table 1) adopted by reference as Ground Water Remediation Standards. **Tables 5-1 and 5-2** provide a comparison of the laboratory reporting limits with the applicable NJDEP practical quantitation levels (PQL) and remediation standards for the soil and aqueous analytes of interest. The detection limits and action limits for the air monitoring program will be specified in the specific air monitoring work plan.

# 6.0 Field Operations

The standard sampling procedures to be used for the PPG residential and non-residential chromium sites, and perimeter air monitoring are described in this section. All sample collection and field screening will be conducted in accordance with the current versions of the NJDEP *Field Sampling Procedures Manual* (August 2005), the NJDEP *Technical Requirements for Site Remediation* (November 2009), applicable AECOM SOPs/POPs), and accepted practices. SOPs and POPs for all significant field activities are presented in **Appendix B**. All samples will be handled in a manner consistent with the sample container, preservation, and holding time requirements specific to the analytical and data quality requirements of the investigation.

All samples collected during the field investigation will be analyzed by NJDEP-certified laboratories. The laboratories will adhere to the United States Environmental Protection Agency (USEPA) protocols for sample preparation and analysis dictated by the requested analytical method.

Full laboratory data deliverables, as detailed in Appendix A of the NJDEP *Technical Requirements for Site Remediation* (November 2009) will be submitted for all hexavalent chromium and hexavalent chromium associated analytical data (pH, Eh, sulfides, etc.). The full laboratory data deliverables will consist of the following:

- three electronic copies of the laboratory data package on CD in Adobe portable document format (pdf),
- one paper copy of the laboratory data package,
- three electronic copies of the analytical data using the format NJDEP's 1999 *Electronic Data Interchange Manual*,
- and one electronic copy of the analytical data in the EQuIS four-file format, as modified by AECOM.

Reduced laboratory data deliverables, as detailed in Appendix A of the NJDEP *Technical Requirements for Site Remediation* (November 2009), will be submitted for all other analytical data (ex. metals, volatile organic compounds [VOCs], etc…). The reduced laboratory data deliverables will consist of the following:

- one electronic copy of the full, validatable laboratory data package on CD in Adobe pdf will be submitted,
- three electronic copies of the analytical data using the format NJDEP's 1999 *Electronic Data Interchange Manual*, and
- one electronic copy of the analytical data in the EQuIS four-file format, as modified by AECOM.

Details are provided in this section for both field measurement activities and sample acquisition. Details are also provided for:

- Equipment cleaning and decontamination;
- Drilling and monitoring well installation;
- Sample storage and handling; and
- Documentation.

In addition to the requirements described in the above protocols, the following general requirements apply to all sampling activities:

- Whenever possible, samples will be collected in order of least to most contaminated, so that risks of systematic contamination are minimized.

  Samples designated for laboratory analysis will be collected from the liner and placed in appropriate laboratory pre-cleaned containers (after homogenization, if appropriate). Per Section 6.9.2, Means of Sample Collection, of the *NJDEP Field Sampling Procedures Manual* (August 2005) the order in which analytical samples should be collected is as follows:

  1. VOC (prior to soil sample homogenization);
  2. Total organic halogens (TOX)
  3. Total organic carbon (TOC)
  4. Semivolatile organic compounds (SVOCs)
  5. Extractable petroleum hydrocarbons (EPH)
  6. Polychlorinated biphenyls (PCBs)
  7. Total metals
  8. Dissolved metals (groundwater only)
  9. Phenols
  10. Cyanide
  11. Chloride
  12. Preserved inorganics
  13. Non-preserved inorganics

  When several wells with known or suspected contamination will be sampled, the least contaminated well should be sampled first, and the wells then sampled in order of increasing contamination.

- Additional sample locations will be co-located when necessary to obtain additional sample volume for the required analyses from each depth interval or sample location. The samples will be thoroughly homogenized prior to filling the sample bottles, except for samples collected for volatile organics analysis.
- Wherever possible, sampling equipment will arrive at the Site pre-cleaned and will be dedicated to one sample location on-site. Where not practical, field decontamination will be conducted in accordance with **Section 9**.
- Water and soil samples requiring chemical preservation will be placed in pre-preserved containers supplied by the laboratory.
- Sample containers and blank water will be obtained from the analytical laboratories which will provide properly cleaned and preserved (where required) sample containers. The vendor-prepared bottles will be prepared according to USEPA protocol as described in Specification and Guidance for Contaminant-Free Sample Containers, EPA 540/R-93/051. The laboratories will also prepare analyte-free blank water to be used for field blanks. Care will be taken to ensure that blanks are prepared using only water supplied by the laboratory that will perform the analysis. In general, a single laboratory will be responsible for the analysis of samples collected at a single location. For air samples, a blank filter will be submitted with field samples; the filter will be from the same manufacturing lot as that used for sample collection.
- Field changes to site-specific work plan(s), either by AECOM field personnel or NJDEP field personnel, are permissible only when made in strict accordance with field change policies described in **Section 3**.
- Outer gloves will be changed between sampling locations.
- Air monitoring will be conducted in accordance with the HASP. Field instruments for air monitoring will include a photoionization detector (PID), hydrogen sulfide ($H_2S$) portable, hand-held analyzer, and an aerosol/dust monitor.

## 6.1 Soil and Building Materials Investigation

Drilling and soil sample collection will be supervised by the Task Leader who will be an AECOM geologist/hydrogeologist. Drilling, sample collection, well construction and well/boring abandonment will be conducted in accordance with N.J.A.C 7.9D. A driller licensed by the State of New Jersey will be in charge of all drilling operations. Drillers shall be required to comply with OSHA 1910.120. Drilling and soil sampling procedures in the applicable POP(s) are attached in **Appendix B (POP Nos. PPG 005 and PPG 006).**

Soil samples will be screened for VOC in the field shortly after collection using an instrument equipped with a PID. The equipment will be issued through a formal equipment tracking system and operated by trained personnel in accordance with manufacturers' recommendations. All field measurement equipment will be maintained to ensure that measurements obtained are accurate and defensible.

All samples will be placed in pre-cleaned containers for transport to the laboratory. Soil samples for VOC will be transferred directly from the sample collection tool to containers prepared by the laboratory in accordance with the NJDEP *Field Sampling Procedures Manual* (August 2005) (refer to

applicable POP(s) in **Appendix B (POP No. PPG 005**). VOC sample collection utilizing EnCore® or similar sampling devices will reduce the potential for VOC loss during sample collection and will result in lower reporting limits comparable to the impact to groundwater soil remediation standard. VOC samples will be collected using an EnCore® or similar sampling device and promptly shipped to the laboratory to permit freezing or analysis within 48 hours of collection.

Soil samples for all other parameters will be homogenized prior to placing in the containers. Homogenization will be performed in a stainless-steel bowl per the applicable POP(s) in **Appendix B (POP No. PPG 005)**. Building materials samples will be placed in containers without homogenization. Prior to homogenization, soils will be field screened with a PID using the applicable POP(s) in **Appendix B (POP Nos. PPG 004 and PPG 005)**.

In accordance with N.J.A.C. 7:26E-3.6(a)4, all soil samples to be analyzed for volatile organics shall be collected as follows:

i. A bulk sampling device that will collect an intact core (for example, splitspoon) shall be used to minimize contaminant loss during sampling; and

ii. Each core shall be screened with a properly calibrated direct reading instrument equipped with a photoionization detector (PID), flame ionization detector (FID), or other suitable instrument capable of detecting the contaminants pursuant to N.J.A.C. 7:26E-2.1(b) to select samples of volatile organics analysis using the following criteria:

(1) If field measurement readings are detected above background:

(A) The coring shall be extended until either background readings are achieved, groundwater is encountered, or bedrock is encountered; and

(B) An undisturbed sample from the six-inch interval registering the highest field measurement reading shall be collected, at a minimum, using the appropriate sample collection method and sampling device for volatile organics analysis pursuant to the requirements specified in N.J.A.C. 7:26E-2.1(a)4; or

(2) If all intervals register the same field measurement reading or all field measurement readings do not exceed backgrounds:

(A) The coring shall be extended to groundwater, bedrock, or 10 feet, whichever is encountered first; and

(B) One undisturbed sample at a minimum, from the six-inch interval at the bottom of the soil boring shall be collected, using the appropriate sample collection method and sampling device for volatile organics analysis pursuant to the requirements specified in N.J.A.C. 7:26E-2.1(a)4; and

iii. Contaminants that cannot be detected with field-screening instruments shall be sampled in accordance with the requirements at N.J.A.C. 7:26E-3.4(a).

### 6.1.1 Utility Protection

Prior to conducting any intrusive operations, existing drawings and other available documentation will be reviewed to evaluate whether potential conflicts with underground utilities exist. New Jersey One Call will be notified by the drilling contractor at least three and not more than ten business days prior to the start of drilling in each off-site area.

If any doubt exists regarding the potential presence of subsurface utilities, a professional utility locating service will be retained to conduct surveys to clear proposed drilling locations. A variety of techniques are available to locate utilities, including ground penetrating radar, electromagnetic conductivity, radio frequency, audio frequency, and passive electric. The efficacy of each technique is dependent on the material used to construct the utility, type of utility, number and type of nearby utilities, and many other factors. As such, it is common practice to use more than one utility locating technique. The requirements for utility location and appropriate techniques will be determined once available information is gathered and evaluated.

Soil boring, sampling, and monitoring well locations will be adjusted to avoid underground and overhead utilities. As an added precaution, vacuum boring to a depth of four feet or to the expected invert depth of the deepest utility at any given soil boring or well location may be conducted. However, if vacuum boring is required at certain locations, collection of shallow soil samples for laboratory analysis in the vacuumed zone will still be undertaken from the sidewall area of the vacuumed zone to ensure that shallow surface soil samples will be collected at all proposed off-site investigation locations.

### 6.1.2 Direct-Push Drilling and Soil Sampling

Direct-push methods (Geoprobe® and similar systems) of soil sampling utilize a hydraulically-powered percussion drilling machine to drive hollow soil samplers into the subsurface to obtain soil samples. The equipment and hydraulics used in the drilling machine are generally mounted on a vehicle to provide both mobility around the jobsite and a stable drilling platform. A POP for direct-push drilling is included in **Appendix B (POP No. PPG 005)**.

Geoprobe® sampling systems typically utilize the Macro-Core sampler, which is a 45-inch long, 1.5-inch diameter hollow steel sampling barrel, lined with a disposable factory-clean acetate liner. It is the Macro-Core which is driven into the ground for collection of soil samples. This method works best in stable subsurface environments where borehole collapse is not a significant issue.

Where borehole instability is anticipated (e.g., “running sands”), sampling can also be conducted using a dual tube sampling system. This system is similar to the Macro-Core except that the liner (in this case PVC) is withdrawn but the steel outer casing remains in place until the last sample is collected and the borehole grouted to prevent borehole collapse.

Once a sample is collected, the liner is cut with a knife by the driller (per the project HASP). Following liner cutting, the soil sample will be field screened with a calibrated PID, if required. Sample recovery will be determined by the geologist/hydrogeologist using a folding rule or tape measure. Any portion of the split-spoon contents which are not considered part of the true sample (heaved soils, borehole scrapings, etc.) will not be included in the measurement.

Due to anticipated variations in sample recovery, thickness of various strata identified in the recovered sample, and the number of analyses proposed, sample collection precedence as described below will be used to collect soil samples. Samples will be collected using this precedence until no additional material is available for the sampling interval. If additional sample volume is needed to complete the analyte suite required, sample volume will be collected from the six-inch interval directly above or below the target interval, whichever is most similar in terms of geology and field observations.

Samples designated for laboratory analysis will be collected from the liner and placed in appropriate laboratory pre-cleaned containers (after homogenization, if appropriate). Sample order precedence is discussed above in **Section 6.0**. Sample handling is discussed in **Section 10.0**.

### 6.1.3 Split-Spoon Sampling

Soil samples obtained during hollow-stem auger or mud-rotary drilling will be collected using a split-spoon sampler (refer to POP No. PPG 005 in **Appendix B**). Split-spoon sampling devices are constructed of steel and are most commonly available in lengths of 18 and 24 inches and inside diameters of 1.5 to 3 inches. Typically, the 1.5-inch diameter sampler is used; however, larger diameter samplers may be used if large volumes of soil are required for analytical testing.

The split-spoon consists of a tubular body with two halves that split apart lengthwise, a drive head on the upper end with a ball-check valve for venting, and a hardened steel cutting shoe at the bottom. The soil sample enters the split-spoon through the cutting shoe as the device is driven into the ground. A replaceable plastic or metal basket is often inserted into the shoe to assist with retaining samples. Once the sampler is retrieved, the drive head and cutting shoes are removed and the split-spoon halves are then separated, revealing the sample.

The drilling subcontractor will lower the split-spoon into the borehole. The sampler is generally driven into the ground using a 140-pound hammer with a vertical free drop of 30 inches, although a down-hole hammer or hydraulic drivers may be utilized as an alternative.

The number of blows required for every 6 inches of penetration will be recorded on the boring. Blow count information is used as an indicator of soil density for stratigraphic logging purposes. Once the split-spoon has been driven to its fullest extent, or to refusal, it will be removed from the borehole. Refusal is defined as 50 blows for six inches or less of penetration.

The split-spoon will be immediately opened upon removal from the casing/auger/borehole. The open sampler shall then be field screened with a calibrated PID, if required. Sample recovery will be determined by the geologist/hydrogeologist using a folding rule or tape measure. Any portion of the split-spoon contents which are not considered part of the true sample (heaved soils, borehole scrapings, etc.) will not be included in the measurement.

Samples designated for laboratory analysis will be collected from the liner and placed in appropriate laboratory pre-cleaned containers (after homogenization, if appropriate). Sample order precedence is discussed in **Section 6.0**. Sample handling is discussed in **Section 10.0**.

### 6.1.4 Soil Sampling Beneath Residential Slabs

During completion of field activities, it may become necessary to collect soil samples from beneath concrete slabs in residential buildings. Soil sampling beneath residential slabs will be conducted following the applicable POP(s) in **Appendix B** (POP No. PPG 005). Prior to collection of the samples, utility protection measures consistent with **Section 6.1.1** will be implemented to ensure the concrete at the proposed sampling location is free of utilities. After the sampling location has been cleared for utilities, the drilling contractor will utilize a concrete core drill to create an opening in the slab of sufficient size to allow for collection of the soil samples. Upon completion of sampling activities, the drilling contractor will repair the opening with concrete.

### 6.1.5 Air Sampling

The AIRMETRICS MiniVol™ portable air sampler will be used for the integrated sampling of airborne particulates ($PM_{10}$) and hexavalent chromium on 47 mm filters. Two separate MiniVol™ samplers will be used; for the collection of $PM_{10}$ the sampler will be configured to draw air at 5 liters/minute through a 10 micron particle size separator (impactor) then though a 47 mm pre-weighed filter. A similar configuration will be used for the collection of hexavalent chromium with the exception that no particle size impactor is required and the flow rate will be set at 3.5 liters/minute. Filters for $PM_{10}$ and hexavalent chromium will be recovered and shipped under chain-of-custody to off-site laboratories for analysis.

Additional on-site air measurements will include the use of a direct reading real-time MIE DataRAM Analyzer or TSI DustTrak Aerosol Monitor or equivalent for the determination of $PM_{10}$ which will be used as a surrogate for continuous monitoring of hexavalent chromium, metals, and polyaromatic hydrocarbons (PAHs). Total VOC (TVOC) concentrations associated with ground intrusive activities will be monitored through the use of RAE portable PID. If an elevated TVOC level is detected at one of the fixed air monitoring sites, a gas chromatograph fitted with an automatic injection feature will monitor for benzene, toluene, ethylbenzene and xylenes (BTEX). As needed, handheld measurements for hydrogen sulfide will be made using the Arizona Instrument Jerome Model 631X Hydrogen Sulfide portable analyzer or equivalent.

Specific procedures for these field instruments are contained in SOP Nos. PPG-017 and PPG 020 in Appendix B.

### 6.1.6 Feasibility Study

Material which is tentatively identified as Green-Gray Mud or Chromite Ore Processing Residue (COPR) but cannot be confirmed to be one of these materials through other techniques such as visual, magnetic or similar tests will be subjected to hydrochloric acid testing using the procedure described in POP PPG 015. Green-Gray Mud is expected to contain percent levels of calcium; COPR may contain significant levels of calcium as well. The field test described in POP PPG 015 will involve dropwise addition of 1:1 Hydrochloric Acid to a sample of the suspected material, if calcium or other carbonate salts/minerals are present foaming or effervescence should occur. However, as noted in the POP, this test is not specific to calcium and should be used in conjunction with other observations to assist in the identification of materials containing Green/Gray Mud and COPR.

In order to document that representative samples are obtained for testing of proposed remediation procedures, samples taken from a predetermined grid will be field screened for grain size using a series of sieves. In addition, soil color and the presence/absence of COPR nodules or paste-like material will be documented; photographs will be used as appropriate to further document the nature of the sample. POP PPG 016 describes the specific procedures which will be used to document the condition of field samples collected for assessment of remediation options.

## 6.2 Quality Control Samples

QC samples collected during field activities will consist of trip blanks, field blanks, field duplicates, matrix spike, and matrix spike duplicate samples. The procedures for collection of specific sample matrices are discussed in the applicable POPs in **Appendix B** (POP Nos. PPG 005, PPG 008, PPG 010, PPG 011, PPG 012, PPG 013, PPG 018, and PPG019) and below. A description of the QC samples is provided below:

- **Field Blanks:** Field blanks are analyzed to check for procedural contamination at the site that may cause sample contamination. Field blanks will be prepared by routing analyte free deionized/distilled water (provided by each laboratory performing the sample analysis) through sampling equipment after equipment decontamination and before field sample collection. The blank water quality supplied by each laboratory will meet the requirements stated in Section 2.5.4 of the NJDEP *Field Sampling Procedures Manual* (August 2005). The appropriate laboratory water will be used to collect the field blanks depending on the analysis and the laboratory performing the analysis. Thus, field blanks associated with analyses to be performed by a designated laboratory will only be collected using the deionized/distilled water supplied by the designated laboratory. In addition, if specific water is provided by the laboratory for a specific analysis then only that water will be used to collect the associated field blank.

  Field blanks will be preserved in the same manner as samples (**Appendix C**). For air and wipe sampling, field blanks will be collected using filters and wipes from same lot number as those used for sampling. For this FSP/QAPP, field blanks will be collected at the frequency specified in Table 6-1 and analyzed for all applicable target parameters as specified in **Table 6-1**.

  **For the non-aqueous matrix**, for sampling events lasting more than one day, field blanks associated should be performed at a rate of 10% of the total number of samples collected throughout the event for all parameters sampled that day. If collection of 10% of total number of samples will result in the collection of more than 1 Field Blank per day, this is not necessary per the NJDEP FSPM (2005).

  **For the aqueous matrix**, field blanks must be performed at a rate of one per day for all parameters sampled that day.

- **Trip Blanks:** Trip blanks are used to assess the potential for contamination of samples due to VOC contaminant migration during sample shipment and storage. Each laboratory performing volatile organic analysis will prepare trip blanks by filling sets of 40-milliliter (ml) vials with analyte free deionized water, sealing the vials with septum-lined caps (allowing no headspace or entrapped air bubbles). The vials will then be kept with the sample cooler

from the time the sampling kit leaves the laboratory until it is returned from the field. The blank water quality supplied by each laboratory will meet the requirements stated in Section 2.5.4 of the NJDEP *Field Sampling Procedures Manual* (August 2005). The trip blanks prepared by a designated laboratory will only accompany samples being delivered to that designated laboratory. In general, a single laboratory will be responsible for all analyses associated with a specific location. According to the *NJDEP Field Sampling Procedures Manual* (August 2005), trip blanks are not required for the non-aqueous matrix. Trip blanks will be required at a frequency of one set per cooler in which aqueous VOC samples are shipped (**Table 6-1**). Trip blanks will be analyzed for VOC only.

- **Field Duplicates:** Field duplicates are analyzed to check for sampling and analytical reproducibility. Duplicate samples will be collected by alternately filling sample bottles from the source being sampled. Field duplicates will not be collected for wipe samples. Co-located samplers will be used for the collection of field duplicates for the $PM_{10}$ analysis. Field duplicates for air, soil, aqueous, chip, and masonry samples will be collected at the frequencies specified in **Table 6-1**.
- **Matrix Spike Samples:** Matrix spikes provide information about the effect of the sample matrix on the preparation and measurement methodology. Matrix spikes for organic and inorganic analyses are performed in duplicate and (referred to as MS/MSD samples). MS/MSD samples will be prepared by the laboratory according to their SOPs, as applicable to the method. A matrix spike/laboratory duplicate analysis may be substituted for an MS/MSD for inorganic parameters (if allowed by the method) at the same frequency as the MS/MSD. MS/MSDs will not be collected for wipe and air samples; blank spikes and blank spike duplicates will be used for these analyses. MS/MSD soil, aqueous, chip, and masonry samples will be collected at the frequencies specified in **Table 6-1**.

## 6.3 Borehole Abandonment

Unless a well is to be installed, boreholes will be abandoned by grouting in accordance with N.J.A.C 7.9D.

## 6.4 Location Measurements

The locations of all new borings and other sample collection points will be measured using standard surveying techniques or using GPS. The locations and elevations of all new monitoring wells will be measured by a New Jersey State licensed surveyor in accordance with NJDEP requirements. Latitude and Longitude will be measured to the nearest 1/10 of second (NAD 83) and to the New Jersey State Plane Coordinates (NAD 83) to the nearest 1 foot. A permanent reference mark will be made on the top of the riser (cap off), and the elevation (NAVD 88) will be surveyed to the nearest 1/10 foot. Surveyors shall be required to comply with OSHA 1910.120. All surveying and reporting of location information will be in compliance with the requirements of N.J.A.C. 7:26E-3.13(c)3v.

## TABLE 6-1 QUALITY CONTROL SAMPLE SUMMARY

| Matrix [1] | Analyses [1] | Quality Assurance Samples | Sampling Frequency | Criteria |
|---|---|---|---|---|
| AIR | Chromium (Total and Hexavalent) | Field Blank | 1/day from same lot number as sample filters | <MDL [8] |
| | Particulates ($PM_{10}$) | Field (Blind) Duplicate (co-located) | 1/20 samples (5% of total) or minimum of 1/week | RPD < 50% |
| WIPES | Chromium [4] (Total and Hexavalent) | Field Blank | 1/day from same lot number as the sample wipes | <RL [2] |
| SOIL, CHIP, CONCRETE, SWEEP, MASONRY (including TCLP and/or SPLP, as applicable) | TCL VOCs<br>TCL SVOCs<br>TCL PCBs<br>TAL Metals<br>Hexavalent Chromium [4]<br>EPH<br>Phenols<br>Cyanide | Field Blank | Either 1/day or 10% of the total number of samples collected, but not more than 1/day | < RL [2] |
| | | Field (Blind) Duplicate | 1/20 samples (5% of total) | RPD < 50% |
| | | MS/MSD | 1/20 samples (5% of total) | See method [3] |
| | Wet Chemistry [5] | Field Blank | Either 1/day or 10% of the total number of samples collected, but not more than 1/day | < RL [2] |
| | | Field (Blind) Duplicate | 1/20 samples (5% of total) | RPD < 50% |
| | Geotechnical [6] | Field (Blind) Duplicate | 1/20 samples (5% of total) | RPD < 50% |
| | Waste Characteristics [7] | | | |

## TABLE 6-1 QUALITY CONTROL SAMPLE SUMMARY (continued)

| Matrix [1] | Analyses [1] | Quality Assurance Samples | Sampling Frequency | Criteria |
|---|---|---|---|---|
| AQUEOUS | TCL VOCs | Trip Blank | 1/cooler | < RL [2] |
| | | Field Blank | 1/day | < RL [2] |
| | | Field (Blind) Duplicate | 1/20 samples (5% of total) | RPD < 30% |
| | | MS/MSD | 1/20 samples (5% of total) | See method [3] |
| | TCL SVOCs<br>TCL PCBs<br>TAL Metals<br>Hexavalent Chromium [4]<br>EPH<br>Phenols<br>Cyanide | Field Blank | 1/day | < RL [2] |
| | | Field (Blind) Duplicate | 1/20 samples (5% of total) | RPD < 30% |
| | | MS/MSD | 1/20 samples (5% of total) | See method [3] |
| | Wet Chemistry [5] | Field Blank | 1/day | < RL [2] |
| | | Field (Blind) Duplicate | 1/20 samples (5% of total) | RPD < 30% |
| | Waste Characteristics [7] | Field (Blind) Duplicate | 1/20 samples (5% of total) | RPD < 30% |

Notes:

[1] - These are proposed matrices and analytes, refer to the RIWP for the specific matrices and analytes.

[2] - Refer to Tables 5-1 and 5-2 for the analyte specific RL.

[3] – Refer to the specific analytical methods for the MS/MSD QC Criteria.

[4] – Hexavalent chromium analysis includes Eh and pH analysis on every sample.

[5] – Wet Chemistry analyses may include BOD, CEC, COD, TDS, TSS, TOC, TOX, Alkalinity, Chloride, Ferrous iron, Nitrate, Nitrite, Phosphate, and Sulfide.

[6] – Geotechnical analyses may include moisture content, permeability, specific gravity, grain size, bulk density, Atterberg limits, and unconfined compressive strength.

[7] – Waste Characteristic analyses may include ignitability, reactivity, moisture content, and corrosivity.

[8] - Refer to the specific air monitoring work plan.

Acronyms:

| | | | |
|---|---|---|---|
| EPH | Extractable Petroleum Hydrocarbons | TAL | Target Analyte List |
| MDL | Method Detection Limit | TCL | Target Compound List |
| PCB | Polychlorinated Biphenyl | TDS | Total Dissolved Solids |
| $PM_{10}$ | Particulates | TOC | Total Organic Carbon |
| RL | Reporting Limit | TOX | Total Organic Halides |
| RPD | Relative Percent Difference | TSS | Total Suspended Solids |
| SOP | Standard Operating Procedure | VOC | Volatile Organic Compound |
| SVOC | Semivolatile Organic Compound | | |

# 7.0 Groundwater Investigation

Soil boring investigation methodologies are described previously in **Section 6.0**. The following section details the well construction, development, and groundwater sampling methodologies.

## 7.1 Well Construction

Wells will be constructed by the drilling contractor at the direction of the Site geologist/hydrogeologist. Wells will be constructed in accordance with N.J.A.C 7.9D typically using two-inch (nominal) Schedule-40 PVC riser and screen. Wells installed below the meadow mat (or equivalent elevation, where there is no meadow mat) will be double cased using a six-inch (minimum) nominal diameter steel pipe as the outer casing. The outer diameter of the borehole will be a minimum of four inches larger than the well riser or outer casing. Double cased (or telescoping) wells will be advanced into the meadow mat (intermediate wells) or deeper confining layer (deep wells). The outer casing will be installed into the confining or semi-confining geological unit and grouted in place. Drilling to the target depth will proceed following a minimum period of 24 hours so that the grout has had sufficient time to set.

In boreholes where a shallow water-bearing zone is encountered above a deeper water bearing zone, casing will be installed to prevent downward migration between the water-bearing zones in accordance with N.J.A.C. 7.9D. The casing will be installed into the confining or semi-confining unit; or where absent to a sufficient depth to prevent migration between the water-bearing zones. The annular space between the casing and borehole, as well as the annular space between water-bearing zones, will be grouted. The grout will be allowed to set for a minimum of 24 hours prior to further advancement of the borehole. In accordance with the NJDEP *Field Sampling Procedure Manual* (August 2005), installation of well couplets (e.g., shallow and deep) and well triplets (e.g., shallow, intermediate and deep) will be installed in separate boreholes since grout is less likely to invade well intakes (screens) if the wells are installed in separate boreholes. Care will be taken to assure that any confining unit between aquifer zones is not breached without providing adequate protection of underlying/overlying aquifers.

Well screens will be machine-slotted (0.010- to 0.020-inch slots), and will be of a length suitable for the particular use. Sand pack will be installed to an approximate height of two feet or greater above the top of the screen. An approximate one-foot thick bentonite seal will then be placed above the sand pack and the remainder of the well annulus will be grouted with a Portland cement and bentonite mixture. Specific well construction procedures are presented in POP PPG 006 in **Appendix B**.

## 7.2 Well Development

Not sooner than 24 hours after completion, all wells will be developed to remove fines and minimize the effects of drilling on the water quality. Pumping will be the preferred method for developing the monitoring wells. When recharge is adequate, the monitoring well will be surged (by surge block or by raising and lowering the pump along the screened interval) and pumped using one of the following: a

submersible pump or a surface centrifugal pump. Bailing may be used to surge the well and remove sediment if recharge is inadequate to use a submersible pump to develop the monitoring well.

Well development water will be contained in 55-gallon drums or tanks for waste classification and disposal. The determination of groundwater disposal for off-site wells will be made on a case-by-case basis by the Site hydrogeologist, with PPG approval. Well development procedures are presented in POP PPG 007 in **Appendix B**.

## 7.3 Groundwater Sampling Procedures and Equipment

To ensure that each groundwater sample collected is representative of the conditions at that location, and that the sample is neither altered nor contaminated by the sampling and handling procedures, AECOM will conduct all sampling as per the NJDEP *Field Sampling Procedure Manual* (August 2005), and applicable AECOM SOPs and POPs. All groundwater samples will be handled in a manner consistent with the sample container, preservation, and holding time requirements specific to the analysis requirements of this investigation (refer to Appendix C of the *Field Sampling Procedures Manual*, August 2005). Groundwater sampling procedures are presented in POP PPG 008 in **Appendix B**.

Field instruments that will be utilized in the groundwater remedial investigation will include water level indicators (Solinst® or equivalent), oil/water interface probes, water quality meters (Horiba U-22 or equivalent), and/or PIDs (as required). All field measurement equipment will be maintained to ensure that measurements obtained are accurate and defensible. The equipment will be issued through a formal equipment tracking system and operated by trained personnel in accordance with manufacturers' recommendations.

### 7.3.1 Groundwater Sampling Program

All groundwater samples will be collected in accordance with the NJDEP *Low Flow Purging and Sampling Guidance* (December 2003). Prior to initiating the groundwater sampling program, synoptic groundwater elevation measurements will be collected. A PID and/or a gas monitor (if required by the HASP) will be used to screen the well headspace immediately after the cap is removed. Then, from the survey mark at the top of the well casing, the depth to water and the total depth of the well will be measured using an appropriate water level gauging meter.

Permanent monitoring wells installed with a screened interval of 10 feet will be sampled at two locations within the well. The locations will be at five-foot intervals within the screen, in accordance with the NJDEP *Low Flow Purging and Sampling Guidance* (December 2003). Groundwater sampling logs will be completed in the field as per New Jersey Technical Requirements and will include measurements of field parameters ( i.e., temperature, pH, conductivity, dissolved oxygen, turbidity, and oxidation-reduction potential). Groundwater quality parameters will be measured and recorded at timed intervals prior to and during purging to evaluate the stabilization of water quality parameters prior to sampling as directed in applicable guidance documents.

#### 7.3.1.1 Low-Flow Purging and Sampling

Low-flow purging and sampling will be accomplished using a peristaltic pump (submersible or bladder pumps will be utilized for samples for VOC analysis) as described in POP PPG 008 in **Appendix B**.

Groundwater will then be purged from the well at rates between 0.1 liters per minutes (L/min) and 0.5 L/min) through dedicated polyethylene tubing (Teflon© or Teflon©-lined tubing will be utilized for samples for VOC analysis) attached to a flow-through cell and in-line water quality meter.

Water quality indicator parameters (WQIPs) will be collected once water fills the in-line cell at a minimum of 5-minute intervals. Water quality parameters will be monitored for stabilization. Stabilization will be defined when three consecutive water quality readings are within:

| Field Measurement | Stabilization Requirement |
|---|---|
| Temperature | ±3% |
| pH | ±0.1 Standard Units |
| Specific Conductivity | ±3% |
| Turbidity | ±1 Nephelometric Turbidity Units (NTU)* |
| Dissolved Oxygen (DO) | ±10% |
| Oxidation-Reduction Potential (ORP)/Eh | ±10 mV |
| * Turbidity readings must stabilize to ± 10% for turbidity (if greater than 1 NTU). Because metals are a primary concern at this site and metals analyses are strongly influenced by the presence of suspended solids in the sample, special attention will be paid to turbidity measurements. Typically, turbidity stabilization needs to occur first. The target value shall be < 10 NTUs. After turbidity stabilization is attained the remainder of parameters will be evaluated for stabilization. After four hours of purging, samples will be collected regardless of whether WQIPs have stabilized. | |

Water levels will also be monitored during purging and the purge rate will be adjusted (where possible) to minimize drawdown (not greater than 0.3 feet). Upon stabilization of water quality parameters, the water line will be severed prior to the in-line water quality meter and samples will be collected directly from the pump/tubing. AECOM is certified (NJ Lab Certification # 12995) to collect Dissolved Oxygen, pH and temperature measurements in the field. AECOM's Lab Certification for field measurement of conductivity, turbidity and ORP is pending upon NDJEP approval of certification. Laboratory-supplied sample bottleware will be filled directly from the tube starting with VOC vials. The order of sample collection will be:

1. VOC
2. TOX
3. TOC
4. SVOC
5. EPH

6. PCBs
7. Total Metals
8. Dissolved Metals (groundwater only)
9. Phenols
10. Cyanide
11. Chloride
12. Preserved inorganics
13. Non-preserved inorganics

Non-VOC samples may not be collected before VOC samples. When several wells will be sampled of known or suspected contamination, the least contaminated well should be sampled first, and the wells then sampled in order of increasing contaminant concentration for that parameter, as long as VOCs are collected prior to non-VOC parameters.

## 7.4 Hydraulic Conductivity Testing

In-situ permeability (rising and falling head or "slug") tests will be conducted in selected wells to estimate in-situ lateral variability thereof. Permeability data will be used to estimate the average linear velocity of the groundwater, and to evaluate whether separate flow regimes may exist as a result of lithologic differences.

Time-drawdown data will be collected by instantaneously displacing a volume of water and recording the change in water level as the well recovers. Water will be displaced using a solid slug. Slug size will be selected to displace enough water to ensure a valid test. Where the static water level is found above the screened interval, a falling-head test and a rising-head test will be performed. Where the static water level is in the screen, two rising head tests will be performed, as displacement of water into the unsaturated screened zone introduces error into testing results. Water levels will be recorded automatically with pressure transducers and an electronic data logger. The time-drawdown data will be analyzed in the office utilizing the appropriate analytical method. Duplicate test results will be compared to determine the precision of the method and then, if appropriate, averaged to give a more accurate value. Field procedures for performing slug tests are presented in POP PPG 009 in **Appendix B**.

## 7.5 Quality Control Samples

QC samples collected during field activities will consist of trip blanks, field blanks, field duplicates, and/or MS/MSDs (described in **Section 6.2**) as appropriate to the matrix and analytical method. The procedures for collection of these samples are discussed in **Section 6.0**. Frequencies of collection for QC samples are specified in **Table 6-1**.

# 8.0 Building Component Sampling

Building component sampling provides information on monitoring surficial contamination and is intended for non-volatile species. Four types of sampling methods for collecting building components are presented as follows:

1. **Chip Sampling:** Applicable for obtaining samples of porous material (e.g., concrete and brick) on flat surfaces (e.g., floors). The procedure is presented in POP PPG 010 in **Appendix B**.

2. **Wipe Sampling:** Applicable mostly for collecting samples from the surface of non-porous materials (e.g., painted walls, glass, or metal). The procedure is presented in POP PPG 011 in **Appendix B**.

3. **Concrete Core Sampling:** Applicable for collecting samples of concrete floor slabs and foundations. The procedure is presented in POP PPG 012 in **Appendix B**.

4. **Scrape/Sweep:** Applicable for collecting scrape and sweep samples from all types of surfaces. The procedure is presented in POP PPG 013 in **Appendix B**.

# 9.0 Decontamination and Waste Management Procedures

All equipment, vehicles, and personal protective equipment (PPE) potentially exposed to hazardous materials will be decontaminated prior to removal from the Site.

Equipment in contact with samples will be decontaminated prior to use to ensure sample integrity. Wherever possible, pre-cleaned, disposable or dedicated equipment will be utilized. All other sampling equipment used in the field investigations will be cleaned before and after sample collection using a three-part decontamination procedure. Cleaning of equipment is performed to prevent cross-contamination between samples and to maintain a clean working environment for all personnel. Detailed decontamination procedures are presented in POP PPG 014 in **Appendix B**.

Although it is preferred that all non-aqueous field sampling equipment is either laboratory cleaned, wrapped, and dedicated, it may be necessary to decontaminate in the field using more than one method. Decontamination of equipment in the field that is not dedicated or disposable will be conducted in general accordance with POP PPG 014 found in **Appendix B** of this FSP/QAPP. The following modifications to the decontamination POP PPG 014 in **Appendix B** will be made:

Eight-Step Decontamination Process:

A solvent rinse and acid rinse steps of the full 8-step decontamination process will not be performed during field decontamination. Under typical field conditions, the 3-step decontamination process consisting of a laboratory grade glassware detergent (i.e., Alconox®) and tap water scrub to remove visible contamination followed by a generous tap water rinse and a final rinse using distilled and deionized (ASTM Type II) water. If visual contamination persists, or gross contamination is suspected, additional decontamination procedures will be required (steps 4 through 8 below dependent upon the analysis required.

The field sampling equipment cleaning and decontamination procedures are as follows:

1. Laboratory grade glassware detergent plus tap water wash to remove all visible particulate matter and residual oils and grease;

2. Generous tap water rinse;

3. Distilled and deionized (ASTM Type II) water rinse;

4. 10% nitric acid rinse (trace metal or higher grade $HNO_3$ diluted with distilled and deionized (ASTM Type II) $H_2O$)*

5. Distilled and deionized (ASTM Type II) water rinse*

6. Acetone (pesticide grade) rinse**

7. Total air dry or pure nitrogen blow out**

8. Distilled and deionized (ASTM Type II) water rinse**

*Only if sample is to be analyzed for metals.
**Only if sample is to be analyzed for organics.

All sampling equipment decontaminated via this procedure must be wrapped and/or sealed during storage and prior to use. If visual contamination persists, or gross contamination is suspected, additional decontamination procedures will be required.

In the field, decontamination should be carried out over a container and the residual liquid material must be properly disposed. Decontamination wastes must be disposed in accordance with current NJDEP policy (see Chapter 2 of the *Field Sampling Procedure Manual* (August 2005), Section 2.4.5.7, *Disposal of Development, Purge, Pump Test and Decontamination Water*). Where possible, only dedicated and disposable materials will be used for sample collection to minimize the need for on-site full decontamination.

Decontamination of drilling equipment will be performed by the drilling subcontractor. AECOM will provide the drilling subcontractors with a copy of all the applicable POP(s) . Subcontractors will be overseen to ensure that decontamination is completed in accordance with POP PPG 014 and NJDEP *Field Sampling Procedures Manual* (August 2005).

## 9.1 Management of Waste Liquids

Waste liquids are managed directly by PPG in accordance with the Resource Conservation and Recovery Act (RCRA), Department of Transportation (DOT) requirements, NJDEP requirements for the disposal of installation, development, purge, pumping test and decontamination waters (Section 2.4.5.7 of the *Field Sampling Procedures Manual* (August 2005)) and all applicable laws and regulations. All purge water and waste decontamination fluids will be containerized. Waste liquids are periodically (less than 90 days after generation) transported off-site for proper management as a hazardous waste.

Waste liquids generated at off-site parcels will be placed in 55-gallon drums. The 55-gallon drums will either be transported to the Site 114 Drum Storage Area by the drilling contractor utilizing a rack truck, or will be secured at the off-site parcel for subsequent disposal.

## 9.2 Management of Drill Cuttings

Drill cuttings and other hazardous solids are managed directly by PPG in accordance with RCRA and DOT requirements, NJDEP requirements for the disposal of drill cuttings (Section 2.4.5.6 of the *Field Sampling Procedures Manual* (August 2005)) and all applicable laws and regulations. All drill cuttings will be containerized in DOT-approved 55-gallon drums and transported on a daily basis (minimum) to the on-site drum storage area. Drummed waste is periodically (less than 90 days after generation) transported off-site for proper management as a hazardous waste. Drill cuttings generated at off-site parcels will be placed in 55-gallon drums. The 55-gallon drums will either be transported to the Site 114 Drum Storage Area by the drilling contractor utilizing a rack truck, or will be secured at the off-site parcel for subsequent disposal.

# 10.0 Documentation and Chain-of-Custody

Documentation of custody is one of several factors that are necessary to document the proper handling of samples A sample is considered to be in a person's custody if:

- It is in the actual possession of an authorized person;
- It is in the view of an authorized person, after being in his/her actual possession;
- It was in the actual physical possession of an authorized person and then was locked up to prevent tampering; or
- It is in a designated and identified secure area.

## 10.1 Field Custody Procedures

### 10.1.1 Field Procedures

The field sampling personnel along with the Task Leader will be personally responsible for the care and custody of the samples until they are transferred or dispatched properly.

All sample containers will be labeled with a unique sample identifier that will consist of an alphanumeric sequence. Any other pertinent information regarding sample identification will be recorded in the field logbooks and/or on sample log sheets. Soil samples will be identified by the boring number followed by the depth of the sample below ground surface. Groundwater samples will be identified by the well number.

Labels will be completed prior to or during the sampling event for each sample. Labels will be completed with the site name, sample ID, sample collection date and time, analysis requested, and preservative (if any) and will be initialed by the sample collector. Labels will be water resistant, and will be completed using waterproof ink.

All relevant information will be transferred to a laboratory-supplied chain of custody (COC) form and signed by the individual responsible for the sampling.

Copies of the COC and field documentation will be supplied to the FOL or his/her designee on the same day as the sampling event. The FOL will review field activities to determine whether proper custody procedures were followed during the fieldwork and will decide if additional samples are required. The FOL will notify the project QAO of any deficiencies encountered during the review of documentation and will provide a copy of the reviewed/corrected COC to the Database Manager.

### 10.1.2 Field Notebook/Documentation

Field notebooks will provide the means of recording the data collecting activities performed. As such, entries will be described in as much detail as possible so that persons going to the Site could reconstruct a particular situation without reliance on memory.

Field notebooks will be bound, numbered, field survey books or notebooks. Field notebooks will be maintained by the Task Manager until they are archived. Each notebook will contain the notebook number, project identification, “return to” information, and project start and end dates. Entries into the notebook will include the Project name and number, date, start-time, weather, summary and purpose of planned field activities, and the names of all sampling team members present. The names of visitors to the Site (including subcontractors), the times and dates of their arrival and departure, and the purpose of their visit will also be recorded in the field notebook.

Content of the field notebook will include, but not be limited to, measurements made and samples collected, descriptions of sampling locations, sample collection times and depths, calibration information for field equipment, etc. Information recorded in the field notebook may be transferred to AECOM standard logs used to record and present field data. These logs may include:

- Geologic/Soil boring logs;
- Well construction logs;
- Well development logs;
- Groundwater purge and sample logs;
- Water level and product thickness records;
- COC forms; and
- Environmental sample logs.

Logs will include entries in every blank, with appropriate use of the abbreviations NA (not applicable) and NR (not recorded). All "NR" entries should be accompanied by an explanation. All entries will be recorded in waterproof ink or marker, and signed and dated by the person making the entry. No erasures will be made. If an incorrect entry is made, the information will be crossed out with a single strike mark, the correct entry recorded, and the change initialed and dated by the person making the correction.

Special visual observations and detection of odors shall be indicated in the field book. However, careful attention shall be given when attributing the source or substance of the observations.

A photographic log will also be maintained (when applicable) by AECOM field personnel. Field documentation of each photograph will be recorded in the field notebook and will contain a description of the object and field of view being photographed, type and lens size (if applicable) of camera, direction faced, frame number, time and date the photograph was taken, identity of photographer, and indication of scale or scale reference. The reference number assigned to the photograph and described in the log will be written on the back of the photograph and/or the file name of the electronic version will be saved with the reference number. Copies of the photographic logs will be filed in a central location in the AECOM Piscataway, New Jersey office. Detailed field documentation procedures for the Recording of Field Data are presented in POP PPG 001 in **Appendix B**.

### 10.1.3 Transfer of Custody and Shipment Procedures

Samples will be packaged and shipped according to POPs PPG 002 and PPG 003 in Appendix B. Samples will be accompanied by a properly completed COC form. At the time the sample possession is transferred, the individuals relinquishing and receiving will sign, date, and note the time on the record. This record documents the transfer of custody of samples from the sampler, to another person, to a mobile laboratory, to the permanent laboratory, or to/from secure storage locations.

Minimum information recorded on the COC record in addition to the signatures and dates of all custodians will include the following information in the appropriate spaces on the COCs:

| | |
|---|---|
| **Name (for Reporting):** | Designated AECOM Project Manager |
| **Company:** | AECOM |
| **Address:** | (INSERT Task Manager address) |
| **City, State, Zip Code:** | (INSERT Task Manager address) |
| **Phone:** | (INSERT Task Manager phone) |
| **Fax:** | (INSERT Task Manager fax) |
| **Email:** | njlabdata@aecom.com |
| **Name (for Invoicing):**<br>**Company:** | Erin Farrell<br>AECOM |
| **Address:** | 30 Knightsbridge Road, Suite 520 |
| **City, State, Zip Code:** | Piscataway, NJ 08854 |
| **Phone:** | (732) 564-3609 |
| **Fax:** | (732) 369-0122 |
| **Email:** | Erin.Farrell@aecom.com |
| **Samplers Name:** | This person must be the same person that relinquishes initial custody. |
| **Sample Delivery Group (SDG) No.** | The SDG Number will be recorded when assigned by the laboratory. The PPG Site Number will be included in the Sample ID. |
| **Purchase Order (PO) Number:** | AECOM's PO number (provided to the sampler by the Task Manager) |
| **AECOM Project Number** | **INSERT Task Specific Project Number (Mandatory Information to be Required on all COCs)** |
| **Site/Project Identification:** | PPG Site Number |
| **Case Type:** | NJ –Administrative Consent Order |

Any special instructions are to be filled in on every page of the COCs and page numbers must be written at the top right corner of the COC.

Aqueous and non-aqueous (soil, chip, wipe, sweep, waste, core) samples will be packed in coolers and transported, as needed, from the field to the laboratory by courier, laboratory representative, or AECOM personnel. For air samples, sample cassette /plastic mailer assemblies should be placed in a clean Ziploc® bag and the bag should be packed with small bubble wrap snugly in a clean shipping container or cooler to prevent movement of the samples during shipment. To preserve the samples during transit, blue ice packs will be placed inside the shipping cooler as standard practice. Refer to POP PPG 019. Samples are generally shipped daily to arrive at the laboratory within 24 hours of collection. Sample containers will be placed in a cooler packed with an absorbent material such as vermiculite and packed with ice to maintain a temperature of 4°C.

All sample containers will be labeled as described above. All sample documentation will then be affixed to the underside of each transport container lid. If samples are shipped to the laboratory via overnight air transportation (e.g., Federal Express) or by commercial courier, the COC record identifying the contents will be enclosed in each sample cooler and the cooler will be taped closed with fiberglass tape covering the custody seals. If a laboratory courier is used, the courier will sign the COC before departing the site. The transport container lid will then be closed and affixed with a custody seal. The coolers will be locked or secured with strapping or packing tape and sealed with custody seals. The preferred procedure is to attach a custody seal to the front right and back left of the cooler. The back copy of the COC will be detached and kept as part of the field records. The original record and remaining copies will accompany the coolers.

Regulations for packaging, marking/labeling, and shipping hazardous materials and wastes are issued by the USDOT. Air carriers which transport hazardous materials, such as Federal Express, may also require compliance with the current edition of the International Air Transport Association (IATA) Dangerous Goods Regulations. The IATA protocol details the procedures for the shipment and transportation of hazardous materials by a common air carrier. It is important to note that following all current IATA regulations will ensure compliance with USDOT protocol.

## 10.2 Laboratory Custody Procedures

The laboratory will be responsible for receiving the samples and logging them in. On arrival at the laboratory, all samples will be inspected thoroughly to confirm that the integrity of the samples and containers has not been compromised. The cooler custody seals will be inspected to verify that they are still intact and were properly signed and dated by the field sampling team. The individual sample containers will be inspected to verify that each has a sample label. The condition of the samples may be noted on the COC form under "Remarks".

The sample containers will be checked against the accompanying chain-of-custody to verify that the cooler contents are identical to the samples described on the COC documents. If discrepancies exist, they will be reported to the designated Project Manager by the Laboratory's Project Manager. The problem will be resolved, in writing (e.g., email, fax, memo, etc.), before the samples are logged in.

After it has been determined that the samples are in satisfactory condition and the documents are in order, each sample will be assigned a unique laboratory identification number. A sample log-in sheet will be initiated and will serve as documentation as to the condition of the samples upon receipt and cross-referenced between field identification numbers and assigned laboratory numbers.

After the samples have been entered into the laboratory tracking system, copies of the log-in forms and chain-of-custody records will be sent to the Project Manager, who will verify that the specified samples and parameters correspond to the samples and parameters identified in the FSP/QAPP. The samples will be placed in a secured storage area, under the conditions called for by the analytical method, until taken for analysis. Samples removed from the secure area for preparation or analysis will be tracked using internal custody forms.

Typically, samples will not be delivered on Saturday or Sunday. If Saturday delivery is required, the laboratory will be notified in advance.

# 11.0 Calibration Procedures

This section describes procedures for maintaining the accuracy of all the instruments that are used for conducting field tests and laboratory analyses. These instruments will be calibrated at the frequencies recommended by the manufacturer and the information will be recorded in the appropriate field book.

## 11.1 Field Instrument Calibration

Instruments used to gather, generate, or measure environmental data will be calibrated with sufficient frequency and in such a manner that accuracy and reproducibility of results are consistent with the manufacturer's specifications. Field instruments will be issued through a formal tracking system and operated by trained personnel, in accordance with the appropriate POPs or manufacturer's specifications. Each instrument used in the field will be examined daily by the AECOM FOL or his designee to verify that it is operating properly.

Field instruments will include a PID; hydrogen sulfide portable, hand-held monitor; air monitoring units containing continuous gas chromatographs (GC) fitted with a PID; the MiniVol™ portable (tactical) air sampler; water level meter; multi-parameter water quality meter; turbidity meter; and an aerosol/dust monitor. Calibration procedures will be performed according to the applicable SOP(s) and/or POP(s) in **Appendix B** work plans, and/or applicable manufacturer's instructions. In general, each instrument will be calibrated daily before its initial use. The calibration will be checked periodically according to the manufacturer's recommendations and/or the requirements in the applicable SOP(s), POP(s) and work plans. Calibration and calibration check results will be recorded in calibration log forms or in the field logbook. Preventative maintenance will be performed by the equipment rental agency supplying the instruments.

Calibration procedures will be documented in the field records. Documentation will include the date and time of calibration, the identity of the person performing the calibration, the reference standard used, the readings taken, and any corrective action. This information will be incorporated into the appropriate reports to be submitted to NJDEP for review. In addition to the manufacturer's recommended calibration procedures and frequencies, the contractor's preventive maintenance and internal calibration schedule will be provided and kept at the site for review by the NJDEP auditor. Field instruments will be calibration checked at a minimum of twice daily, before and after use. A calibration curve will be run every six (6) to eight (8) weeks. Documentation will also include the calibration curve, as well as a log of field calibration dates and standards.

### 11.1.1 Laboratory Instrument Calibration

Calibration is required to ensure that the analytical system is operating correctly and functioning at the proper sensitivity to meet the detection limits established for the method (refer to the applicable SOPs in **Appendix D**). These methodologies include specific instrument calibration procedures and frequencies that will be followed by the laboratory. If an instrument has not been properly calibrated and the quality of the data has been adversely affected, the corrective actions outlined in the methodologies will be implemented.

The laboratory maintains documentation for each instrument which includes the following information: instrument identification, serial number, date of calibration, analyst, calibration solutions, and the samples associated with these calibrations.

# 12.0 Laboratory Operations

## 12.1 Analytical Procedures

The analytical methods shown in **Appendix D, Laboratory SOP Lists**, will be used for all site specific analyses, such as, hexavalent chromium and total chromium. Additional analyses may be required including those for volatile and semi-volatile organics, PCBs, and additional metals. The site-specific work plans for each site will provide a specific list of analytes. SW-846 Methods are used for determination of volatile and semivolatile organics, metals, and hexavalent chromium; these methods are consistent with the regulatory requirements of this program but permit flexibility to maximize data usability with regard to sample preparation and clean up, and analytical sensitivity. Contract Laboratory Program (CLP)-type quality control requirements will, however, be implemented for all analyses as noted in **Section 12.3** of this document.

The laboratories identified in **Section 2.2** will be responsible for conducting all chemical analyses specified in **Appendix D**. Sample handling protocols, analytical procedures, and reporting procedures employed by the laboratories are described in the laboratory SOPs (**Appendix D**) and in the Quality Assurance Plan for each laboratory (which can be provided upon request).

## 12.2 Bottle Preparation

The laboratories will provide properly prepared containers for sampling in a convenient insulated shipping container/cooler. COC seals and forms are provided to ensure complete documentation during sample transport, sampling and analysis. The laboratories provide both chemical preservatives and ice packs in the coolers to ensure that proper preservation techniques are performed and preservation requirements are met. The laboratories provide new, properly cleaned sample containers in the cooler for sample collection. The laboratories do not prepare solvent rinsed sample containers. Solvent rinsed bottles are purchased as projects necessitate. The vendor-prepared bottles are prepared by USEPA protocol. The bottle and preservation requirements for the non-residential sites are summarized in **Appendix C**.

Bottle preparation procedures are described in Specifications and Guidance for Contaminant-Free Sample Containers, EPA-540/R-93/051. The selected laboratories provide containers from suppliers who meet or exceed the requirements outlined in this document; each lot of bottles is delivered with documentation certifying that the containers meet USEPA specifications. The laboratory sample management staff documents the receipt of each bottle shipment upon delivery. The bottle size, vendor lot number, date received, date submitted for quality control checking and date approved for use are recorded in a Bottle Receipt Logbook.. The lot certificate of analysis supplied by the bottle manufacturer is archived by the laboratory Quality Assurance Manager; this information is available on request.

## 12.3 Quality Control

Each laboratory has a QC program in place to ensure the reliability and validity of the analysis performed at the laboratories. All analytical procedures are documented in writing as SOPs and each SOP includes a QC section which addresses the minimum QC requirements for the procedure to meet CLP requirements. The internal QC checks differ slightly for each individual procedure but the following general QC requirements are incorporated as appropriate to the analytical procedure:

- Method blanks;
- Reagent/preparation blanks (inorganic parameters);
- Instrument blanks;
- MS/MSDs;
- Surrogate spikes;
- Laboratory duplicates
- Laboratory control sample (LCS);
- Post-digestion spike
- Internal standard areas;
- Mass tuning;
- Inductively Coupled Plasma (ICP) serial dilutions; and
- ICP interference check samples.

## 12.4 Data Reduction and Reporting

Data reduction, QC review, and reporting will be the responsibility of the analytical laboratory and is discussed in this section. Data assessment, including a formal data validation procedure, will be conducted by AECOM. AECOM will also conduct data reduction to facilitate the use of raw data in site evaluations. This process is discussed in the next section.

### 12.4.1 Data Reduction

Data reduction includes all automated and manual processes for reducing or organizing raw data generated by the laboratory. For all published and referenced methods, the laboratories adhere strictly to the requirements of the method for calculation of results. Further details are supplied in the laboratories' Standard Operating Procedures.

### 12.4.2 Data QC Review

Prior to being released as final, laboratory data will proceed through a tiered review process. Data verification starts with the analyst who performs a review of the data to ensure the work was done correctly the first time. Following the completion of the initial verification by the analyst performing the data reduction, a systematic check of the data will be performed by an experienced peer or supervisor. This check will be performed to ensure that initial review has been completed correctly and thoroughly. A third-level review will be performed by the Laboratory Project Manager before

results are submitted to clients. This review serves to verify the completeness of the data report and to ensure that project requirements are met for the analyses performed.

### 12.4.3 Data Reporting

The full analytical, quality control, and deliverables requirements (3 electronic copies, and one paper copy for chromium results; full data packages for all analytes) will be provided with the final Remedial Investigation Report, including New Jersey Electronic Data Deliverable (EDD), to be submitted to NJDEP. At a minimum, the data included in the laboratory report will meet the requirements of the Reduced Laboratory Data Deliverables for non-USEPA CLP Methods. A fully validatable CLP-type data package containing all raw data will be requested for those data sets being subjected to full data validation.

Full laboratory data deliverables, as detailed in Appendix A of the NJDEP *Technical Requirements for Site Remediation* (November 2009) will be submitted for all hexavalent chromium and hexavalent chromium associated (pH, Eh, sulfides, etc.) analyses. The full laboratory data deliverables will consist of the following:

- three electronic copies of the laboratory data package on CD in Adobe portable document format (pdf),
- one paper copy of the laboratory data package,
- three electronic copies of the analytical data using the format NJDEP's 1999 *Electronic Data Interchange Manual*,
- and one electronic copy of the analytical data in the EQuIS four-file format, as modified by AECOM.

Reduced laboratory data deliverables, as detailed in Appendix A of the NJDEP *Technical Requirements for Site Remediation* (November 2009), will be submitted for all other analytical data (ex, metals, VOCs, etc.). The reduced laboratory data deliverables will consist of the following:

- one electronic copy of the laboratory data package on CD in Adobe pdf will be submitted,
- three electronic copies of the analytical data using the format NJDEP's 1999 *Electronic Data Interchange Manual*,
- and one electronic copy of the analytical data in the EQuIS four-file format, as modified by AECOM.

# 13.0 Data Validation

Each data package will undergo a formal review procedure. The validation will be performed by the AECOM data validation staff under direction of the AECOM Data Validation Manager.

## 13.1 Data Validation

Validation of the laboratory deliverables will be performed by AECOM. One hundred percent of the analytical data will be reviewed, either as full or limited validation or for completeness. The percentage of the data for each level of validation will be identified in the site-specific work plan for each program.

For full validation, the data will be reviewed for the following, where applicable to the method:

- Completeness of deliverable;
- Technical holding times and sample preservation;
- Laboratory and field blank contamination;
- Surrogate spike recoveries,
- Field and laboratory duplicates;
- MS/MSD recoveries and RPDs;
- Post-digestion spike recoveries;
- LCS recoveries;
- Initial and continuing calibrations;
- Instrument tuning,
- Internal standard performance,
- ICP serial dilution results;
- ICP interference check sample results; and
- Calculation and transcription verifications (i.e., verifying summary data against raw data).

Limited validation will be based on information presented on summary forms and will include the following:

- Completeness of deliverable;
- Technical holding times and sample preservation;
- Laboratory and field blank contamination;
- Surrogate spike recoveries,

- Field and laboratory duplicates;
- MS/MSD recoveries and RPDs; and
- LCS recoveries.

The discovery of significant anomalies or discrepancies during validation using the summary forms may result in an in-depth review of the raw data and the incorporation of additional review elements into the validation of all data.

AECOM will perform validation of soil and aqueous samples according to the following validation protocols:

- Target Compound List (TCL) Organics, USEPA Region 2 Data Validation Guidance, which will be modified as required to reflect the actual laboratory SOPs used for this program.):
  - *Validating Volatile Organic Compounds by SW-846 Method 8260B, SOP-HW-24*, Rev.2, October 2006;
  - *Validating Semivolatile Organic Compounds by SW-846, Method 8270; SOP HW-22*, Rev 3, October 2006
- Target Analyte List (TAL) Inorganics, NJDEP Office of Data Quality Data Validation (DV) SOP:
  - SOP 5.A.16 , Rev. 1, Quality Assurance Data Validation of *Analytical Deliverables for Inorganics (based on USEPA SW-846 methods);* May 2002.
- Hexavalent Chromium, NJDEP Office of Data Quality DV SOPs:
  - SOP 5.A.9, Rev.1, *Standard Operating Procedure for the Completion of the Hexavalent Chromium Data Validation Report Forms and the Preparation of the Final Data Validation, October 2001.*
  - SOP 5.A.10, Rev.3, *Standard Operating Procedure for Analytical Data Validation of Hexavalent Chromium,* September 2009.

Data for $PM_{10}$ and hexavalent chromium in air will be reviewed for adherence to the respective SOP, and the laboratory precision and accuracy control limits contained in the method.

Once the validation for a data package is completed, a validation report will be prepared. This report will summarize the samples reviewed, elements reviewed, any nonconformances with the established criteria, and validation actions (including application of data qualifiers). Data qualifiers will be consistent with the NJDEP SOPs. Data validation results will be presented in accordance with the NJDEP "hit list" format using the template provided in **Appendix E**. A copy of each validation report as well as the analytical data package will be forwarded to the NJDEP for review with each report submittal.

## 13.2 Data Assessment

Following data validation, the AECOM project technical staff will assess the data for usability. Data assessment activities will examine site-specific factors which interfere with chemical analyses or utility of the results. Some of the factors which will be assessed include:

- Adverse matrix effects on the analytical recoveries.
- Nature and cause of extraneous contamination not attributable to laboratory contamination.
- Reproducibility of results for site-specific media in relation to stated precision goals.
- Adequacy of the data base in terms of numbers of samples, critical data points, and representativeness for meeting stated objectives.

Validated data and related assessments will be reported in appropriate charts and tables in the RI report.

## 13.3 Data Reliability

The overall reliability of the data will be assessed primarily using the results of the data validation process and will include a discussion of the effect of any nonconformances with regard to holding times, sample preservation, blank contamination, instrument calibration, and QC analyses. The usability of hexavalent chromium data will be evaluated based on the pre-digestion and post-digestion spike recoveries and the parameters indicative of oxidizing/reducing conditions.

# 14.0 Performance and System Audits

A system audit is defined as a qualitative evaluation of the components of a measurement system to determine their proper selection and use. A performance audit is a quantitative evaluation of the measurement system that requires testing of the system with samples of known composition or behavior to evaluate precision and accuracy.

## 14.1 Field Procedures

### 14.1.1 Field Performance Audits

It will be the responsibility of the AECOM FOL to continually monitor the performance of the field team, including subcontractors, for conformance to the site-specific work plan(s) and the FSP/QAPP. Any problems or deficiencies will be communicated to the Project Manager and project QAO. A record of any problems encountered, and their resolution, will be maintained in the field notebook.

Field performance will also be evaluated based on the analytical results of the field blanks and field duplicates. Field blanks assess the effectiveness of measures taken in the field to minimize cross contamination. The results of field duplicates reflect the ability of the field team to collect representative sample portions of each matrix type.

### 14.1.2 Field System Audits

Internal audits of field activities will be conducted periodically by the project QAO (or designate) during the field sampling program. Follow-up audits will be conducted if significant problems are encountered.

The audits will cover the execution of sample identification, sample control, COC procedures, field sampling and documentation, agreement with QA/QC objectives, FSP/QAPP and site-specific work plan(s). The audits will involve a review of field logbooks and standard forms, COC records, and instrument calibration records. The project QAO will review field performance with the FOL.

During the field performance audit, the auditor will maintain a record of the audit with written field notes. Preliminary results of the audit will be reviewed with the FOL. Corrective action for deficiencies that adversely affect the quality of the data will be implemented immediately.

Upon completion of the audit, the project QAO will develop an audit report in the form of a memorandum that summarizes the audit findings and identifies those areas still requiring corrective measures. This report will be submitted in memorandum form to the AECOM Project Manager, Task Manager, FOL, to NJDEP as well as to the project file. The resolution of final action as described in **Section 17.0** of the FSP/QAPP will be subsequently implemented.

## 14.2 Laboratory Audits

AECOM has contracted NJDEP-certified laboratories to perform all laboratory analysis of soil and groundwater sampling performed by AECOM.

### 14.2.1 Laboratory Performance Audits

Continuous performance auditing is accomplished through the regular use of LCS, matrix spike samples, duplicate samples, QC samples, proficiency testing, and through continuing calibration verification samples. Federal and State agencies may administer the proficiency testing.

### 14.2.2 Laboratory System Audits

The laboratory will conduct regular audits of facilities, processes, and procedures according to written protocols established by the laboratory QA Program. These audits will be conducted by the laboratory's QA Officer and the results documented in the laboratory analytical reports.

Laboratory audits are conducted periodically by AECOM or another qualified party as part of their analytical subcontractor monitoring program. The laboratory audit includes a review of the following areas:

- QA organization and procedures;
- Personnel training and qualifications;
- Sample log-in procedures;
- Sample storage facilities;
- Analyst technique;
- Adherence to laboratory SOPs;
- Compliance with QA/QC objectives;
- Instrument calibration and maintenance;
- Facility security;
- Bottleware preparation;
- Waste management;
- Data archival;
- Data recording, reduction, review, and reporting; and
- Cleanliness and housekeeping.

Preliminary results of the systems audit are discussed with laboratory personnel in an on-site debriefing. A written report that summarizes audit findings and recommends corrective actions is prepared and submitted to the laboratory for response, to the AECOM Project Manager and will be submitted to NJDEP as well. The results of the audit, including resolution of any deficiencies, are included in the QA reports to management as described in **Section 17**.

# 15.0 Preventative Maintenance

## 15.1 Field Instruments

Field instruments will be rented through an equipment rental company. Preventive maintenance for all field instruments is conducted according to applicable manufacturer's instructions by the rental company. A representative log for maintenance or calibration of field instruments is included with the rental unit. Instrument instruction manuals will be maintained with the rental unit.

AECOM field personnel will be responsible for ensuring that the instruments are properly functioning. At a minimum, this will entail checking the instrument prior to shipment to the field and performing daily operational checks and calibration as described in **Section 11**. Routine maintenance and trouble-shooting procedures will be performed as described in the manufacturer's instructions. All calibration and maintenance procedures will be documented in field records. Spare parts will be readily available on site or from the vendor. Preventive maintenance for all field instruments will be conducted according to applicable manufacturer's instructions, NJDEP guidance, and rental company SOPs.

Instrument instruction manuals will be available on site. Critical spare parts such as lamps, probes, and battery chargers will be kept on site to minimize downtime.

## 15.2 Laboratory Instruments

The laboratories will conduct preventative maintenance routinely on each analytical instrument and analytical instruments will be maintained and serviced in accordance with the manufacturer's specifications, laboratory SOPs, and analytical methods.

# 16.0 Corrective Action

Corrective action is the process of identifying, recommending, approving, and implementing measures to counter unacceptable procedures or out-of-limit QC performance that can affect data quality. Corrective action can occur during data compilation, data import, data validation, and data assessment. Any nonconformance with the established QC procedures in the FSP/QAPP will be identified and corrected in accordance with the FSP/QAPP. Corrective actions proposed and implemented in response to potential data quality issues will be documented in the QA sections of project deliverables. The following procedures should be followed when problems are identified and corrective actions are taken:

The person who identifies the problem is responsible for notifying the AECOM Project Manager, relevant Task Manager, and project QAO.

- Corrective action should only be implemented after approval by the AECOM Project Manager, or his designee (generally the FOL).
- If immediate corrective action is required, approvals may be secured by telephone from the AECOM Project Manager.
- All corrective actions should be documented in writing.

Corrective actions are defined as those measures taken to rectify a laboratory or field measurement system that exceeds its control limits. These actions may be initiated by any person performing work in support of investigation or remediation activity. The need for corrective action may be identified by system or performance audits or by standard QC checks. The essential steps in the corrective action process are:

- Identifying and defining the problem;
- Assigning responsibility for investigating the problem;
- Investigating and determining the cause of the problem;
- Determining a corrective action to eliminate the problem;
- Assigning and accepting responsibility for implementing the corrective action;
- Implementing the corrective action and evaluating its effectiveness; and
- Verifying that the corrective action has eliminated the problem.

## 16.1 Sample Collection/Field Measurements

Corrective action in the field can be needed when:

- The sample network is changed (i.e., more or fewer samples, sampling locations other than those specified in the site-specific work plan(s) and/or FSP/QAPP, etc.);

- Sampling procedures and/or field analytical procedures require modification because of unexpected conditions; or
- The integrity of field measurements or samples is in question.

The field team members will be responsible for identifying any suspected technical or QA deficiencies and reporting them to the AECOM FOL. The AECOM FOL will be responsible for assessing the suspected deficiency, for determining the impact on the quality of the data (in consultation with the project QAO, Task Manager, and Project Manager), developing the appropriate corrective action, and ensuring it is implemented. If the corrective action augments the original scope of the sampling plan (i.e., increases the numbers or types of samples/analyses) and uses existing and approved procedures in this FSP/QAPP, approval by the AECOM FOL and AECOM Project Manager will be sufficient. If the corrective action results in a reduced scope of the work, significant alterations in sample location, major modifications to analytical methods, or causes the project data quality objectives not to be achieved, it will be necessary for all levels of project management to concur with the proposed action.

If problems with field measurements occur, corrective action may include:

- Repeating the measurement to check the error;
- Checking for all proper adjustments for ambient conditions such as temperature;
- Checking the batteries;
- Recalibrating equipment;
- Checking the calibration;
- Replacing the instrument or piece of equipment; or
- Stopping work.

If, during his/her review of sampling operations, the AECOM FOL determines that the integrity or quality of the sample(s) has been adversely affected, the following corrective measures may be implemented:

- Reviewing sampling and/or COC procedures and modifying as necessary;
- Replacing or repairing sampling equipment;
- Collecting replacement sample(s); or
- Stopping work.

Deficiencies may also be noted during internal field audits. The project QAO will identify the deficiencies and recommend the appropriate corrective action to the AECOM Project Manager. Upon approval by the AECOM Project Manager, the AECOM FOL, Task Manager, and field team members will be responsible for implementing the corrective action. If the use of unapproved methods, or the improper use of approved methods, is adversely affecting the data, corrective action may be implemented immediately.

Corrective actions will be documented in the field records. Documentation will include:

- A description of the circumstance that initiated the corrective action;
- The action taken in response;
- The final resolution; and
- Any necessary approvals.

Corrective action resulting from internal field audits will be documented in the QA reports to management per **Section 17**. No staff member will initiate corrective action without prior communication of findings through the proper channels.

## 16.2 Laboratory Analyses

Laboratory personnel will be alerted that corrective actions may be necessary if:

- QC data are outside the warning or acceptable windows for precision and accuracy;
- Blanks contain target analytes above acceptable levels;
- Undesirable trends are detected in spike recoveries or RPD between duplicates;
- There are unusual changes in detection limits;
- Deficiencies are detected by the QA department during internal or external auditors or from the results of performance evaluation samples; or
- Inquiries concerning data quality are received.

Corrective action procedures may be handled at the bench level by the analyst, who will review the preparation or extraction procedure for possible errors, check the instrument calibration, spike and calibration mixes, instrument sensitivity, and so on. Corrective action will be in accordance with method protocol (when applicable). If the problem persists or cannot be identified, the matter will be referred to the laboratory supervisor, manager and/or QA department for further investigation. If the nonconformance causes the project objectives not be achieved, the AECOM Project QAO will be notified, who in turn will communicate the issue to the AECOM Project Manager and Task Manager.

Corrective actions will be performed prior to the release of data from the laboratory. The corrective action will be documented in both the laboratory's corrective action files, and in the narrative data report generated by the laboratory.

## 16.3 Data Validation/Data Assessment

The need for corrective action may be identified during either data validation or data assessment. Potential types of corrective action may include re-sampling by the field team or re-injection and reanalysis of samples by the laboratory. These actions are dependent upon the ability to mobilize the field team, whether the data to be collected are necessary to meet the required QA objectives, and physical limitations on the ability to recollect or reanalyze the sample.

The need for corrective action may be identified by the data validator or by a member of the project team assessing the data. The person responsible for identifying the corrective action situation will notify the AECOM Project Manager, who will be responsible for approving implementation of the corrective action. All corrective actions of this type will be documented by the project QAO in the QA reports (**Section 17**).

# 17.0 Quality Assurance Reports

As part of the requirements of each member of the project team, notification will be submitted to the project QAO to ensure that any problems identified during the sampling and analysis programs are investigated and the proper corrective measures taken in response. The FOL and Task Managers will assist the project QAO in preparing the QA reports. These reports will be prepared on an as-needed basis and will include:

- Summary of the status of field activities, including compiled field data sets and the results of field audits;
- Periodic assessment of measurement data accuracy, precision, and completeness;
- Data validation results;
- Summary of the status of laboratory activities, including timely submittal of analytical results, and compilation of QC data; and
- Any other QA issues relevant to the project, including corrective action situations, resolutions of previously stated problems, summaries of training programs, results of any performance evaluation audits, and any minor changes to this FSP/QAPP.

These QA reports will be prepared in writing by the project QAO who will provide compilation report(s), as necessary to the AECOM Principal-in-Charge, Project Manager, and to NJDEP. If serious QA deficiencies are noted, supplemental reports may be submitted.

# 18.0 References

New Jersey Administrative Code (N.J.A.C.), 2007. Title 7.

Chapter 9C. *Ground Water Quality Standards*, date last amended November 4, 2009 and *Specific Ground Water Quality Criteria*. Appendix Table 1.

Chapter 9D. *Well Construction and Maintenance; Sealing of Abandoned Wells* (Drilling Regulations and Requirements Effective April 2, 2007).

Chapter 26C. *Administrative Requirements for the Remediation of Contaminated Sites* (ARRCS), date adopted November 4, 2009, last amended April 19, 2010.

Chapter 26D. *Remediation Standards*, date last amended November 4, 2009.

Chapter 26E. T*echnical Requirements for Site Remediation,* date adopted November 4, 2009, date last amended April 19, 2010.

NJDEP, July, 1994. *Alternative Ground Water Sampling Techniques Guide*.

NJDEP, July 1994. *Field Analysis Manual*.

NJDEP, June 1997. *Guidance for the Submission and Use of Data In GIS Compatible Formats Pursuant to "Technical Requirements for Site Remediation,"* last revised January 30, 2009.

NJDEP, May 1999. *Soil Cleanup Criteria,* last revised May 12, 1999.

NJDEP, April 1999. *Site Remediation Program Electronic Data Interchange Manual*.

NJDEP, October 2001. SOP 5.A.9, Rev.1, *Standard Operating Procedure for the Completion of the Hexavalent Chromium Data Validation Report Forms and the Preparation of the Final Data Validation.*

NJDEP, May 2002. SOP 5.A.16 Rev. 1, Quality Assurance Data Validation of *Analytical Deliverables for Inorganics (based on USEPA SW-846 methods)*.

NJDEP, December 2003. *Low Flow Purging and Sampling Guidance*.

NJDEP, August 2005. *Field Sampling Procedures Manual,* last updated April 30, 2009.

NJDEP, February 2007. NJDEP *Commissioner Jackson's February 8, 2007 Memorandum Regarding Chromium Moratorium*.

NJDEP, September 2008. *Chromium Soil Cleanup Criteria,* last revised April 2010.

NJDEP, December 2008. *Guidance Document Development of Site-Specific Impact to Ground Water Soil Remediation Standards using the Soil-Water Partition Equation.*

NJDEP, September 2009. SOP 5.A.10, Rev.3, *Standard Operating Procedure for Analytical Data Validation of Hexavalent Chromium*.

NJDEP, USEPA Region II, October 2006. *Validating Volatile Organic Compounds by SW-846 Method 8260B*, SOP-HW-24, Rev.2.

USEPA Region II, October 2006; *Validating Semivolatile Organic Compounds by SW-846*, Method 8270; SOP HW-22, Rev 3.

# Tables

## TABLE 5-1 ANALYTES, ANALYTICAL METHODS, NJDEP SITE REMEDIATION STANDARDS, NJDEP PRACTICAL QUANTITATION LIMITS, AND LABORATORY REPORTING LIMITS FOR SOIL/SOLID SAMPLES

| Analyte [1] | Accutest Method | Test America Method | CAS No. | NJDEP Default Impact to Ground Water Soil Screening Levels (mg/kg) | NJDEP Residential Direct Contact Soil Remediation Standard (mg/kg) | NJDEP Non-Residential Direct Contact Soil Remediation Standard (mg/kg) | NJDEP Soil PQL (mg/kg) | Accutest RL (mg/kg) | Test America RL (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|
| **TAL Metals** | | | | | | | | | |
| Aluminum | SW846 6010B | SW846 6010B | 7429-90-5 | 3,900 | 78,000 | NA | 20 | 20 | 10 |
| Antimony | SW846 6010B | SW846 6010B | 7440-36-0 | 4 | 31 | 450 | 6 | 2 | 0.5 |
| Arsenic | SW846 6020 | SW846 6010B | 7440-38-2 | 19 [9] | 19* | 19* | 1 | 0.04 | 0.25 |
| Barium | SW846 6010B | SW846 6010B | 7440-39-3 | 1,300 | 16,000 | 59,000 | 20 | 20 | 10 |
| Beryllium | SW846 6010B | SW846 6010B | 7440-41-7 | 0.5 | 16 | 140 | 0.5 | 0.2 | 0.1 |
| Cadmium | SW846 6010B | SW846 6010B | 7440-43-9 | 1 | 78 | 78 | 0.5 | 0.5 | 0.25 |
| Calcium | SW846 6010B | SW846 6010B | 8047-59-4 | NA | NA | NA | NA | 500 | 250 |
| Chromium - Hexavalent | SW846 3060A/7196A | SW846 7196A | 18540-29-9 | See note [17] | 120 | 20 | 2 | 2 | 2 |
| Chromium (total) | SW846 6020 | SW846 6010B | 16065-83-1 | See note [17] | 120,000 | NA | 2 | 1 | 0.5 |
| Cobalt | SW846 6010B | SW846 6010B | 7440-48-4 | 59 | 1,600 | 590 | 5 | 5 | 2.5 |
| Copper | SW846 6010B | SW846 6010B | 7440-50-8 | 7,300 | 3,100 | 45,000 | 3 | 3 | 1.25 |
| Iron | SW846 6010B | SW846 6010B | 8053-60-9 | NA | NA | NA | NA | 10 | 7.5 |
| Lead | SW846 6020 | SW846 6010B | 7439-92-1 | 59 | 400 | 800 | 1 | 0.10 | 0.25 |
| Magnesium | SW846 6010B | SW846 6010B | 7439-95-4 | NA | NA | NA | NA | 500 | 250 |
| Manganese | SW846 6010B | SW846 6010B | 7439-96-5 | 42 | 11,000 | 5,900 | 2 | 2 | 0.75 |
| Mercury | SW846 7471A | SW846 7471A | 7439-97-6 | 0.1 [10] | 23 | 65 | 0.1 | 0.03 | 0.033 |
| Nickel | SW846 6010B | SW846 6010B | 7440-02-0 | 31 | 1,600 | 23,000 | 4 | 4 | 2 |
| Potassium | SW846 6010B | SW846 6010B | 7440-09-7 | NA | NA | NA | NA | 1000 | 250 |
| Selenium | SW846 6010B | SW846 6010B | 7782-49-2 | 7 | 390 | 5,700 | 4 | 2 | 0.5 |
| Silver | SW846 6010B | SW846 6010B | 7440-22-4 | 1 [10] | 390 | 5,700 | 1 | 0.5 | 0.5 |
| Sodium | SW846 6010B | SW846 6010B | 7646-69-7 | NA | NA | NA | NA | 1000 | 250 |
| Thallium | SW846 6010B | SW846 6010B | 7440-28-0 | 3 [10] | 5 | 79 | 3 | 1 | 0.5 |
| Vanadium | SW846 6010B | SW846 6010B | 7440-62-2 | NA | NA | NA | NA | 5 | 2.5 |
| Zinc | SW846 6010B | SW846 6010B | 7440-66-6 | 600 | 23,000 | 110,000 | 6 | 2 | 1.5 |

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|---|---|---|---|---|---|---|---|---|---|
| **TCL VOC** | | | | | | | | | |
| 1,1,1-Trichloroethane | SW846 8260B | SW846 8260B | 71-55-6 | 0.2 | 290 | 4,200 | 0.005 | 0.005 | 0.001 |
| 1,1,2,2-Tetrachloroethane | SW846 8260B | SW846 8260B | 79-34-5 | 0.005 [10] | 1 | 3 | 0.005 | 0.005 | 0.001 |
| 1,1,2-trichloro-1,2,2-trifluoroethane | SW846 8260B | SW846 8260B | 76-13-1 | NA | NA | NA | NA | 0.005 | 0.001 |
| 1,1,2-Trichloroethane | SW846 8260B | SW846 8260B | 79-00-5 | 0.01 | 2 | 6 | 0.005 | 0.005 | 0.001 |
| 1,1-Dichloroethane | SW846 8260B | SW846 8260B | 75-34-3 | 0.2 | 8 | 24 | 0.005 | 0.005 | 0.001 |
| 1,1-Dichloroethene | SW846 8260B | SW846 8260B | 75-35-4 | 0.005 | 11 | 150 | 0.005 | 0.005 | 0.001 |
| 1,2,3-Trichlorobenzene | SW846 8260B | SW846 8260B | 87-61-6 | NA | NA | NA | NA | 0.005 | 0.001 |
| 1,2,4-Trichlorobenzene | SW846 8260B | SW846 8260B | 120-82-1 | 0.4 | 73 | 820 | 0.005 | 0.005 | 0.001 |
| 1,2-Dibromo-3-chloropropane | SW846 8260B | SW846 8260B | 96-12-8 | 0.005 [10] | 0.08 | 0.2 | 0.005 | 0.01 (0.0005)[12] | 0.001 |
| 1,2-Dibromoethane | SW846 8260B | SW846 8260B | 106-93-4 | 0.005 [10] | 0.008 | 0.04 | 0.005 | 0.001 | 0.001 |
| 1,2-Dichlorobenzene | SW846 8260B | SW846 8260B | 95-50-1 | 11 | 5,300 | 59,000 | 0.005 | 0.005 | 0.001 |
| 1,2-Dichloroethane | SW846 8260B | SW846 8260B | 107-06-2 | 0.005 [10] | 0.9 | 3 | 0.005 | 0.001 | 0.001 |
| 1,2-Dichloropropane | SW846 8260B | SW846 8260B | 78-87-5 | 0.005 [10] | 2 | 5 | 0.005 | 0.005 | 0.001 |
| 1,3-Dichlorobenzene | SW846 8260B | SW846 8260B | 541-73-1 | 12 | 5,300 | 59,000 | 0.005 | 0.005 | 0.001 |
| 1,4-Dichlorobenzene | SW846 8260B | SW846 8260B | 106-46-7 | 1 | 5 | 13 | 0.005 | 0.005 | 0.001 |
| 1,4-Dioxane | SW846 8260B | SW846 8260B | 123-91-1 | NA | NA | NA | NA | 0.13 | 0.5 |
| 2-Butanone (MEK) | SW846 8260B | SW846 8260B | 78-93-3 | 0.6 | 3,100 | 44,000 | 0.01 | 0.01 | 0.01 |
| 2-Hexanone | SW846 8260B | SW846 8260B | 591-78-6 | NA | NA | NA | NA | 0.005 | 0.01 |
| 4-Methyl-2-pentanone(MIBK) | SW846 8260B | SW846 8260B | 108-10-1 | NA | NA | NA | NA | 0.005 | 0.01 |
| Acetone | SW846 8260B | SW846 8260B | 67-64-1 | 12 | 70,000 | NA | 0.01 | 0.01 | 0.01 |
| Benzene | SW846 8260B | SW846 8260B | 71-43-2 | 0.005 [10] | 2 | 5 | 0.005 | 0.001 | 0.001 |
| Bromochloromethane | SW846 8260B | SW846 8260B | 74-97-5 | NA | NA | NA | NA | 0.005 | 0.001 |
| Bromodichloromethane | SW846 8260B | SW846 8260B | 75-27-4 | 0.005 [10] | 1 | 3 | 0.005 | 0.005 | 0.001 |
| Bromoform | SW846 8260B | SW846 8260B | 75-25-2 | 0.02 | 81 | 280 | 0.005 | 0.005 | 0.001 |
| Bromomethane | SW846 8260B | SW846 8260B | 74-83-9 | 0.03 | 25 | 59 | 0.005 | 0.005 | 0.001 |
| Carbon disulfide | SW846 8260B | SW846 8260B | 75-15-0 | 4 | 7,800 | 110,000 | 0.5 | 0.005 | 0.001 |

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|---|---|---|---|---|---|---|---|---|---|
| Carbon tetrachloride | SW846 8260B | SW846 8260B | 56-23-5 | 0.005 [10] | 0.6 | 2 | 0.005 | 0.005 | 0.001 |
| Chlorobenzene | SW846 8260B | SW846 8260B | 108-90-7 | 0.4 | 510 | 7,400 | 0.005 | 0.005 | 0.001 |
| Chloroethane | SW846 8260B | SW846 8260B | 75-00-3 | NA | 220 | 1,100 | 0.005 | 0.005 | 0.001 |
| Chloroform | SW846 8260B | SW846 8260B | 67-66-3 | 0.2 | 0.6 | 2 | 0.005 | 0.005 | 0.001 |
| Chloromethane | SW846 8260B | SW846 8260B | 74-87-3 | NA | 4 | 12 | 0.005 | 0.005 | 0.001 |
| cis-1,2-Dichloroethene | SW846 8260B | SW846 8260B | 156-59-2 | 0.2 | 230 | 560 | 0.005 | 0.005 | 0.001 |
| cis-1,3-Dichloropropene | SW846 8260B | SW846 8260B | 10061-01-5 | 0.005 [10] | 2 | 7 | 0.005 | 0.005 | 0.001 |
| Cyclohexane | SW846 8260B | SW846 8260B | 110-82-7 | NA | NA | NA | NA | 0.005 | 0.001 |
| Dibromochloromethane | SW846 8260B | SW846 8260B | 124-48-1 | 0.005 [10] | 3 | 8 | 0.005 | 0.005 | 0.001 |
| Dichlorodifluoromethane | SW846 8260B | SW846 8260B | 75-71-8 | 25 | 490 | 230,000 | 0.005 | 0.005 | 0.001 |
| Ethylbenzene | SW846 8260B | SW846 8260B | 100-41-4 | 8 | 7,800 | 110,000 | 0.005 | 0.001 | 0.001 |
| Isopropylbenzene | SW846 8260B | SW846 8260B | 98-82-8 | NA | 12NA | NA | NA | 0.005 | 0.001 |
| m,p-Xylene | SW846 8260B | SW846 8260B | 108-38-3 & 106-42-3 | 12 | NA | NA | NA | 0.002 | 0.002 |
| Methyl Acetate | SW846 8260B | SW846 8260B | 79-20-9 | 14 | 78,000 | NA | 0.005 | 0.005 | 0.001 |
| Methyl Tert Butyl Ether | SW846 8260B | SW846 8260B | 1634-04-4 | 0.2 | 110 | 320 | 0.005 | 0.001 | 0.001 |
| Methylcyclohexane | SW846 8260B | SW846 8260B | 108-87-2 | NA | NA | NA | NA | 0.005 | 0.001 |
| Methylene chloride | SW846 8260B | SW846 8260B | 75-09-2 | 0.007 | 34 | 97 | 0.005 | 0.005 | 0.001 |
| o-Xylene | SW846 8260B | SW846 8260B | 95-47-6 | 12 | NA | NA | NA | 0.001 | 0.001 |
| Styrene | SW846 8260B | SW846 8260B | 100-42-5 | 2 | 90 | 260 | 0.005 | 0.005 | 0.001 |
| Tetrachloroethene | SW846 8260B | SW846 8260B | 127-18-4 | 0.005 [10] | 2 | 5 | 0.005 | 0.005 | 0.001 |
| Toluene | SW846 8260B | SW846 8260B | 108-88-3 | 4 | 6,300 | 91,000 | 0.005 | 0.001 | 0.001 |
| trans-1,2-Dichloroethene | SW846 8260B | SW846 8260B | 156-60-5 | 0.4 | 300 | 720 | 0.005 | 0.005 | 0.001 |
| trans-1,3-Dichloropropene | SW846 8260B | SW846 8260B | 10061-02-6 | 0.005 [10] | NA | NA | NA | 0.005 | 0.001 |
| Trichloroethene | SW846 8260B | SW846 8260B | 79-01-6 | 0.007 | 7 | 20 | 0.005 | 0.005 | 0.001 |
| Trichlorofluoromethane | SW846 8260B | SW846 8260B | 75-69-4 | 22 | 23,000 | 340,000 | 0.005 | 0.005 | 0.001 |
| Vinyl chloride | SW846 8260B | SW846 8260B | 75-01-4 | 0.005 [10] | 0.7 | 2 | 0.005 | 0.005 | 0.001 |
| Xylene (total) | SW846 8260B | SW846 8260B | 1330-20-7 | 12 | 12,000 | 170,000 | 0.005 | 0.002 | 0.003 |

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|---|---|---|---|---|---|---|---|---|---|
| **TCL SVOC** | | | | | | | | | |
| 1,1'-Biphenyl | SW846 8270C | SW846 8270C | 92-52-4 | 90 | 3,100 | 34,000 | 0.2 | 0.067 | 0.33 [8] |
| 1,2,4,5-Tetrachlorobenzene | SW846 8270C | Need to subcontract [5] | 95-94-3 | NA | NA | NA | NA | 0.17 | Use Accutest [5] |
| 2,3,4,6-Tetrachlorophenol | SW846 8270C | Need to subcontract [5] | 58-90-2 | NA | NA | NA | NA | 0.17 | Use Accutest [5] |
| 2,4,5-Trichlorophenol | SW846 8270C | SW846 8270C | 95-95-4 | 44 | 6,100 | 68,000 | 0.2 | 0.17 | 0.33 [8] |
| 2,4,6-Trichlorophenol | SW846 8270C | SW846 8270C | 88-06-2 | 0.2 [10] | 19 | 74 | 0.2 | 0.17 | 0.33 (0.06) [12] |
| 2,4-Dichlorophenol | SW846 8270C | SW846 8270C | 120-83-2 | 0.2 [10] | 180 | 2,100 | 0.2 | 0.17 | 0.33 (0.05) [12] |
| 2,4-Dimethylphenol | SW846 8270C | SW846 8270C | 105-67-9 | 0.7 | 1,200 | 14,000 | 0.2 | 0.17 | 0.33 [8] |
| 2,4-Dinitrophenol | SW846 8270C | SW846 8270C | 51-28-5 | 0.3 [10] | 120 | 1,400 | 0.3 | 0.67 (0.04) [12] | 1 (0.07) [12] |
| 2,4-Dinitrotoluene | SW846 8270C | SW846 8270C | 121-14-2 | NA | 0.7 | 3 | 0.2 | 0.067 | 0.067 |
| 2,6-Dinitrotoluene | SW846 8270C | SW846 8270C | 606-20-2 | NA | 0.7 | 3 | 0.2 | 0.067 | 0.067 |
| 2-Chloronaphthalene | SW846 8270C | SW846 8270C | 91-58-7 | NA | NA | NA | NA | 0.067 | 0.33 |
| 2-Chlorophenol | SW846 8270C | SW846 8270C | 95-57-8 | 0.5 | 310 | 2,200 | 0.2 | 0.17 | 0.33 [8] |
| 2-Methylnaphthalene | SW846 8270C | SW846 8270C | 91-57-6 | 5 | 230 | 2400 | 0.2 | 0.067 | 0.33 [8] |
| 2-Methylphenol | SW846 8270C | SW846 8270C | 95-48-7 | NA | 310 | 3,400 | 0.2 | 0.067 | 0.33 [8] |
| 2-Nitroaniline | SW846 8270C | SW846 8270C | 88-74-4 | NA | 39 | 23,000 | 0.3 | 0.17 | 0.067 |
| 2-Nitrophenol | SW846 8270C | SW846 8270C | 88-75-5 | NA | NA | NA | NA | 0.17 | 0.33 |
| 3&4-Methylphenol | SW846 8270C | SW846 8270C | 108-39-4 & 106-44-5 | NA | 31 | 340 | 31 | 0.067 | 0.33 |
| 3,3'-Dichlorobenzidine | SW846 8270C | SW846 8270C | 91-94-1 | 0.2 [10] | 1 | 4 | 0.2 | 0.17 | 0.067 |
| 3-Nitroaniline | SW846 8270C | SW846 8270C | 99-09-2 | NA | NA | NA | NA | 0.17 | 0.067 |
| 4,6-Dinitro-o-cresol | SW846 8270C | SW846 8270C | 534-52-1 | 0.3 [10] | 6 | 68 | 0.3 | 0.67 (0.04) [12] | 1 (0.16)[12] |
| 4-Bromophenyl phenyl ether | SW846 8270C | SW846 8270C | 101-55-3 | NA | NA | NA | NA | 0.067 | 0.33 |
| 4-Chloro-3-methyl phenol | SW846 8270C | SW846 8270C | 59-50-7 | NA | NA | NA | NA | 0.17 | 0.33 |
| 4-Chloroaniline | SW846 8270C | SW846 8270C | 106-47-8 | NA | NA | NA | NA | 0.17 | 0.33 |
| 4-Chlorophenyl phenyl ether | SW846 8270C | SW846 8270C | 7005-72-3 | NA | NA | NA | NA | 0.067 | 0.33 |
| 4-Nitroaniline | SW846 8270C | SW846 8270C | 100-01-6 | NA | NA | NA | NA | 0.17 | 0.067 |

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|---|---|---|---|---|---|---|---|---|---|
| 4-Nitrophenol | SW846 8270C | SW846 8270C | 100-02-7 | NA | NA | NA | NA | 0.33 | 1 |
| Acenaphthene | SW846 8270C | SW846 8270C | 83-32-9 | 74 | 3,400 | 37,000 | 0.2 | 0.033 | 0.33 [8] |
| Acenaphthylene | SW846 8270C | SW846 8270C | 208-96-8 | NA | NA | 300,000 | 0.2 | 0.033 | 0.33 [8] |
| Acetophenone | SW846 8270C | SW846 8270C | 98-86-2 | 2 | 2 | 5 | 0.2 | 0.17 | 0.33 [8] |
| Anthracene | SW846 8270C | SW846 8270C | 120-12-7 | 1,500 | 17,000 | 30,000 | 0.2 | 0.033 | 0.33 [8] |
| Atrazine | SW846 8270C | SW846 8270C | 1912-24-9 | 0.2 [10] | 210 | 2,400 | 0.2 | 0.17 | 0.33 (0.06) [12] |
| Benzaldehyde | SW846 8270C | SW846 8270C | 100-52-7 | NA | 6100 | 68,000 | 0.2 | 0.17 | 0.33 [8] |
| Benzo(a)anthracene | SW846 8270C | SW846 8270C | 56-55-3 | 0.5 | 0.6 | 2 | 0.2 | 0.033 | 0.033 |
| Benzo(a)pyrene | SW846 8270C | SW846 8270C | 50-32-8 | 0.2 [10] | 0.2 | 0.2 | 0.2 | 0.033 | 0.033 |
| Benzo(b)fluoranthene | SW846 8270C | SW846 8270C | 205-99-2 | 2 | 0.6 | 2 | 0.2 | 0.033 | 0.033 |
| Benzo(g,h,i)perylene | SW846 8270C | SW846 8270C | 191-24-2 | NA | 380,000 | 30,000 | 0.2 | 0.033 | 0.33 [8] |
| Benzo(k)fluoranthene | SW846 8270C | SW846 8270C | 207-08-9 | 16 | 6 | 23 | 0.2 | 0.033 | 0.033 |
| bis(2-Chloroethoxy)methane | SW846 8270C | SW846 8270C | 111-91-1 | NA | NA | NA | NA | 0.067 | 0.33 |
| bis(2-Chloroethyl)ether | SW846 8270C | SW846 8270C | 111-44-4 | 0.2 [10] | 0.4 | 2 | 0.2 | 0.067 | 0.033 |
| bis(2-Chloroisopropyl)ether | SW846 8270C | SW846 8270C | 108-60-1 | 3 | 23 | 67 | 0.2 | 0.067 | 0.33 [8] |
| bis(2-Ethylhexyl)phthalate | SW846 8270C | SW846 8270C | 117-81-7 | 790 | 35 | 140 | 0.2 | 0.067 | 0.33 [8] |
| Butyl benzyl phthalate | SW846 8270C | SW846 8270C | 85-68-7 | 150 | 1,200 | 14,000 | 0.2 | 0.067 | 0.33 [8] |
| Caprolactam | SW846 8270C | SW846 8270C | 105-60-2 | 8 | 31,000 | 340,000 | 0.2 | 0.067 | 0.33 [8] |
| Carbazole | SW846 8270C | SW846 8270C | 86-74-8 | NA | 24 | 96 | 0.2 | 0.067 | 0.33 [8] |
| Chrysene | SW846 8270C | SW846 8270C | 218-01-9 | 52 | 62 | 230 | 0.2 | 0.033 | 0.33 [8] |
| Dibenzo(a,h)anthracene | SW846 8270C | SW846 8270C | 53-70-3 | 0.5 | 0.2 | 0.2 | 0.2 | 0.033 | 0.033 |
| Dibenzofuran | SW846 8270C | SW846 8270C | 132-64-9 | NA | NA | NA | NA | 0.067 | 0.33 |
| Diethyl phthalate | SW846 8270C | SW846 8270C | 84-66-2 | 57 | 49,000 | 550,000 | 0.2 | 0.067 | 0.33 [8] |
| Dimethyl phthalate | SW846 8270C | SW846 8270C | 131-11-3 | NA | NA | NA | NA | 0.067 | 0.33 |
| Di-n-butyl phthalate | SW846 8270C | SW846 8270C | 84-74-2 | 620 | 6,100 | 68,000 | 0.2 | 0.067 | 0.33 [8] |
| Di-n-octyl phthalate | SW846 8270C | SW846 8270C | 117-84-0 | 3300 [11] | 2,400 | 27,000 | 0.2 | 0.067 | 0.33 [8] |

| Analyte [1] | Accutest Method | Test America Method | CAS No. | NJDEP Default Impact to Ground Water Soil Screening Levels (mg/kg) | NJDEP Residential Direct Contact Soil Remediation Standard (mg/kg) | NJDEP Non-Residential Direct Contact Soil Remediation Standard (mg/kg) | NJDEP Soil PQL (mg/kg) | Accutest RL (mg/kg) | Test America RL (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|
| Fluoranthene | SW846 8270C | SW846 8270C | 206-44-0 | 840 | 2,300 | 24,000 | 0.2 | 0.033 | 0.33 [8] |
| Fluorene | SW846 8270C | SW846 8270C | 86-73-7 | 110 | 2,300 | 24,000 | 0.2 | 0.033 | 0.33 [8] |
| Hexachlorobenzene | SW846 8270C | SW846 8270C | 118-74-1 | 0.2 [10] | 0.3 | 1 | 0.2 | 0.067 | 0.033 |
| Hexachlorobutadiene | SW846 8270C | SW846 8270C | 87-68-3 | 0.6 | NA | NA | NA | 0.033 | 0.067 |
| Hexachlorocyclopentadiene | SW846 8270C | SW846 8270C | 77-47-4 | 210 | 45 | 110 | 0.2 | 0.67 [8] | 0.33 [8] |
| Hexachloroethane | SW846 8270C | SW846 8270C | 67-72-1 | 0.2 [10] | 35 | 140 | 0.2 | 0.17 | 0.033 |
| Indeno(1,2,3-cd)pyrene | SW846 8270C | SW846 8270C | 193-39-5 | 5 | 0.6 | 2 | 0.2 | 0.033 | 0.033 |
| Isophorone | SW846 8270C | SW846 8270C | 78-59-1 | 0.2 [10] | 510 | 2,000 | 0.2 | 0.067 | 0.33 (0.04) [12] |
| Naphthalene | SW846 8270C | SW846 8270C | 91-20-3 | 16 | 6 | 17 | 0.2 | 0.033 | 0.33 [8] |
| Nitrobenzene | SW846 8270C | SW846 8270C | 98-95-3 | 0.2 [10] | 31 | 340 | 0.2 | 0.067 | 0.033 |
| N-Nitroso-di-n-propylamine | SW846 8270C | SW846 8270C | 621-64-7 | 0.2 [10] | 0.2 | 0.3 | 0.2 | 0.067 | 0.033 |
| N-Nitrosodiphenylamine | SW846 8270C | SW846 8270C | 86-30-6 | 0.2 | 99 | 390 | 0.2 | 0.17 | 0.33 (0.05) [12] |
| Pentachlorophenol | SW846 8270C | SW846 8270C | 87-86-5 | 0.3 [10] | 3 | 10 | 0.3 | 0.33 (0.06) [12] | 1 (0.16) [12] |
| Phenanthrene | SW846 8270C | SW846 8270C | 85-01-8 | NA | NA | 300,000 | 0.2 | 0.033 | 0.33 [8] |
| Phenol | SW846 8270C | SW846 8270C | 108-95-2 | 5 | 18,000 | 210,000 | 0.2 | 0.067 | 0.33 [8] |
| Pyrene | SW846 8270C | SW846 8270C | 129-00-0 | 550 | 1,700 | 18,000 | 0.2 | 0.033 | 0.33 [8] |
| **TCL PCBs** | | | | | | | | | |
| Aroclor 1016 | SW846 8082 | SW846 8082A | 12674-11-2 | 0.2 | 0.2 | 1 | 0.03 | 0.034 [8] | 0.067 [8] |
| Aroclor 1221 | SW846 8082 | SW846 8082A | 11104-28-2 | 0.2 | 0.2 | 1 | 0.03 | 0.034 [8] | 0.067 [8] |
| Aroclor 1232 | SW846 8082 | SW846 8082A | 11141-16-5 | 0.2 | 0.2 | 1 | 0.03 | 0.034 [8] | 0.067 [8] |
| Aroclor 1242 | SW846 8082 | SW846 8082A | 53469-21-9 | 0.2 | 0.2 | 1 | 0.03 | 0.034 [8] | 0.067 [8] |
| Aroclor 1248 | SW846 8082 | SW846 8082A | 12672-29-6 | 0.2 | 0.2 | 1 | 0.03 | 0.034 [8] | 0.067 [8] |
| Aroclor 1254 | SW846 8082 | SW846 8082A | 11097-69-1 | 0.2 | 0.2 | 1 | 0.03 | 0.034 [8] | 0.067 [8] |
| Aroclor 1260 | SW846 8082 | SW846 8082A | 11096-82-5 | 0.2 | 0.2 | 1 | 0.03 | 0.034 [8] | 0.067 [8] |
| Aroclor 1262 | SW846 8082 | SW846 8082A | 37324-23-5 | 0.2 | 0.2 | 1 | 0.03 | 0.034 [8] | 0.067 [8] |
| Aroclor 1268 | SW846 8082 | SW846 8082A | 11100-14-4 | 0.2 | 0.2 | 1 | 0.03 | 0.034 [8] | 0.067 [8] |

| Analyte [1] | Accutest Method | Test America Method | CAS No. | NJDEP Default Impact to Ground Water Soil Screening Levels (mg/kg) | NJDEP Residential Direct Contact Soil Remediation Standard (mg/kg) | NJDEP Non-Residential Direct Contact Soil Remediation Standard (mg/kg) | NJDEP Soil PQL (mg/kg) | Accutest RL (mg/kg) | Test America RL (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|
| **Miscellaneous** | | | | | | | | | |
| Cyanide | 9012B | SW846 9012A | 57-12-5 | 13 | 1,600 | 23,000 | 3 | 0.24 | 0.5 |
| Extractable Petroleum Hydrocarbons (EPH) | NJDEP EPH Ver.1.1 10/09 Rev. 2 | See note[6] | NA | NA | NA | NA | NA | 80 | Use Accutest[6] |
| Phenols | SW846 9065 | SW846 9065 | 64743-03-9 | 5 | NA | NA | NA | 2.4 | 5 |
| Total Organic Carbon (TOC) | EPA Lloyd Kahn | EPA Lloyd Kahn | 7440-44-0 | NA | NA | NA | NA | 1000 | 100 |
| Total Organic Halides (TOX) | SW846 9020 B | See note[5] | NA | NA | NA | NA | NA | 20 | Use Accutest[5] |
| Cation Exchange Capacity (CEC) | SW846 9081 | See note[5] | NA | NA | NA | NA | NA | NA | Use Accutest[5] |
| pH [7] | SW846 9045C | SW846 9045C | STL00204 | NA | NA | NA | NA | NA | NA |
| Eh [7] | ASTM D1498-76M | SM2580 | NA | NA | NA | NA | NA | NA | NA |
| COD [3, 15] | HACH 8000M | 5220D | STL00070 | NA | NA | NA | NA | 20 mg/l and 150 mg/l | 200 |
| Sulfide [3] | EPA 376.1M | SW846 9034 | 18496-25-8 | NA | NA | NA | NA | 4 | 10 |
| Ferrous Iron [3, 15] | ASTM D3872 | ASTM D3872 | NA | NA | NA | NA | NA | 2 | 2 |
| TCLP [4] | SW846 1311 | SW846 1311 | NA | See individual limits above | NA | NA | NA | see RLs above | see RLs above |
| SPLP [4] | SW846 1312 | SW846 1312 | NA | See individual limits above | NA | NA | NA | see RLs above | see RLs above |
| Nitrite [16] | SM19 4500NO2 B Modified | EPA 353.2 modified | NA | NA | NA | NA | NA | 0.2 | 2 |
| Nitrate/Nitrite [16] | EPA 353.2 modified | EPA 353.2 modified | NA | NA | NA | NA | NA | 20 | 2 |
| Alkalinity [16] | EPA 310.1 modified | EPA 310.1 modified | NA | NA | NA | NA | NA | 50 | 20 |
| Phosphate [16] | EPA 365.3 modified | EPA 365.3 modified | NA | NA | NA | NA | NA | 2.5 | 0.6 |
| Ignitability | SW846 1010A | 1030 | STL00250 | NA | NA | NA | NA | NA | NA |
| Reactivity | SW846 9034, Ch.7 | SW846 9034, Ch.7 | NA | NA | NA | NA | NA | 100 | 100 |

| Analyte [1] | Accutest Method | Test America Method | CAS No. | NJDEP Default Impact to Ground Water Soil Screening Levels (mg/kg) | NJDEP Residential Direct Contact Soil Remediation Standard (mg/kg) | NJDEP Non-Residential Direct Contact Soil Remediation Standard (mg/kg) | NJDEP Soil PQL (mg/kg) | Accutest RL (mg/kg) | Test America RL (mg/kg) |
|---|---|---|---|---|---|---|---|---|---|
| Corrosivity | SW846 9045C | SW846 9045C | STL00179 | NA | NA | NA | NA | NA | NA |
| Moisture Content | ASTM D1744-92 | EPA CLP SOW SOM01.1 | NA | NA | NA | NA | NA | NA | NA |
| Bulk Density | ASTM D2937-94M | See note[5] | NA | NA | NA | NA | NA | NA | Use Geotesting or Accutest [5] |
| **Analyte [1]** | **GeoTesting Method** | | | | | | | | |
| Compressive Strength | ASTM D1633 | | NA | NA | NA | NA | NA | NA | |
| Moisture Content | ASTM D2216 | | NA | NA | NA | NA | NA | NA | |
| Strength and stress-strain relationships of cohesive soil | ASTM 2850 | | NA | NA | NA | NA | NA | NA | |
| Grain Size Analysis | ASTM D422 | | NA | NA | NA | NA | NA | NA | |
| Plasticity of soils | ASTM D 4318 | | NA | NA | NA | NA | NA | NA | |
| Strength/stress-strain relationships of saturated cohesive soil | ASTM D4767 | | NA | NA | NA | NA | NA | NA | |
| Resistance of Solid Wastes to Freezing and Thawing [14] | ASTM D4842 | | NA | NA | NA | NA | NA | NA | |
| Wet/Dry Test of Solid Wastes | ASTM D4843 | | NA | NA | NA | NA | NA | NA | |
| Hydraulic Conductivity (Permeability) | ASTM D5084 | | NA | NA | NA | NA | NA | NA | |
| Specific Gravity | ASTM D854 | | NA | NA | NA | NA | NA | NA | |

**NOTES**

CAS No. - Chemical Abstracts System Registration Number
MDL – Method Detection Limit
Mg/kg – milligram per killigram
NA – Not available for this constituent.
NJDEP – New Jersey Department of Environmental Protection
PQL - Practical Quantitation Level as defined in N.J.A.C. 7:9C-1.4
RL – Reporting Limit
TAL – Target Analyte List
TCL – Target Compound List

[1] – The individual RIWPs will indicate the parameters/analytes that will be analyzed.

[2] – Or Allergic Contact Dermatitis (ACD) whichever is lower. ACD for hexavalent chromium is a site-specific determination.

[3] – This analysis may be required if the MS/MSD does not meet QC requirements for hexavalent chromium analysis. The analysis is used to assist in the evaluation of the tendency of Cr+6 to exist or not exist in the unspiked sample. This analysis is only necessary if the unspiked sample contains detectable Cr 6+. .

[4] – TCLP and/or SPLP may be needed for waste characterization

[5] – Test America does not perform this analysis, thus the analysis will be performed by Accutest or GeoTesting Express.

[6] – Test America is pending approval of their NJDEP EPH method; however, Accutest will be the only laboratory used for this analysis until Test America receives NJDEP certification.

[7] – Eh and pH are required to be determined under the hexavalent chromium analysis.

[8] – The laboratory reporting limit(s) (RLs) exceed the NJDEP Soil PQLs; however, since the laboratory RLs are less than both the NJDEP residential direct contact soil remediation standard and NJDEP non-residential direct contact soil remediation standard, these RLs are acceptable for these analytes.

[9] – Health based criterion defaults to background according to Table 1 in the NJDEP Guidance Document *Development of Site-Specific Impact to Ground Water Soil Remediation Standards Using the Soil-Water Partition Equation,* December 2008.

[10] – Standard set a Practical Quantitation Limit (PQL) according to Table 1 in the NJDEP Guidance Document *Development of Site-Specific Impact to Ground Water Soil Remediation Standards Using the Soil-Water Partition Equation,* December 2008.

[11] – Health based criterion defaults to soil saturation limit according to Table 1 in the NJDEP Guidance Document *Development of Site-Specific Impact to Ground Water Soil Remediation Standards Using the Soil-Water Partition Equation,* December 2008.

[12] – The laboratory reporting limit(s) (RLs) exceed one of the NJDEP standards (i.e., Impact to GW, NJDEP Soil PQL, NJDEP residential direct contact soil remediation standard, and/or NJDEP non-residential direct contact soil remediation standard. However, the laboratory MDL in parenthesis is below the NJDEP standards and thus is acceptable. Note, that a laboratory fortified blank (LFB) at a concentration equivalent to the lowest applicable NJDEP standard for those analytes with standards between the RL and MDL will be performed to ensure that the instrument accuracy is acceptable.

[13] - Standard represents a maximum value

[14] – Method has been removed from ASTM, but will only be used for informational purposes during the Feasibility Pilot Studies.

[15] – These parameters do not have applicable NJ certified methods for soil/solid samples. However, the aqueous methods are NJ certified. These parameters in soil are for informational purposes only to support the hexavalent chromium analysis (SW846 3060/7196) if the MS/MSD fails.

[16] – These parameters do not have applicable NJ certified methods for soil/solid samples. However, the aqueous methods are NJ certified. These parameters in soil are for informational purposes only to support the feasibility pilot studies to monitor the treatment.

[17] – Impact to GW soil remediation standards must be developed on a site-specific basis for chromium. For Class II GW, the GW quality standard is 70 ug/l (measured as total chromium), but assuming it is all in the form of hexavalent chromium. In addition to the cleanup criteria listed above, all remedial actions at sites that have hexavalent chromium must comply with Commissioner Jackson's memorandum dated February 8, 2007. A copy of this memorandum can be found on the Department web site at http://www.state.nj.us/dep/dsr/chromium/crmorlift200702.pdf

**TABLE 5-2 – ANALYTES, ANALYTICAL METHODS, NJDEP SPECIFIC GW QUALITY CRITERIA, NJDEP PRACTICAL QUANTITATION LIMITS, AND LABORATORY REPORTING LIMITS FOR AQUEOUS SAMPLES**

| Analyte[1] | Accutest Method | Test America Method | CAS No. | NJDEP Specific GW Quality Criteria (µg/L) | NJDEP PQL (µg/L) | Accutest RL (µg/L) | Test America RL (µg/L) |
|---|---|---|---|---|---|---|---|
| **TAL Metals** | | | | | | | |
| Aluminum | SW846 6020B | SW846 6010B | 7429-90-5 | 200 | 30 | 100 [7] | 50 [7] |
| Antimony | SW846 6020B | SW846 6020 | 7440-36-0 | 6 | 3 | 4 [7] | 0.25 |
| Arsenic | SW846 6010B | SW846 6020 | 7440-38-2 | 0.02 | 3 | 3 | 0.25 |
| Barium | SW846 6010B | SW846 6020 | 7440-39-3 | 6000 | 200 | 200 | 200 |
| Beryllium | SW846 6010B | SW846 6020 | 7440-41-7 | 1 | 1 | 1 | 0.1 |
| Cadmium | SW846 6020B | SW846 6020 | 7440-43-9 | 4 | 0.5 | 2 [7] | 0.25 |
| Calcium | SW846 6010B | SW846 6010B | 8047-59-4 | NA | NA | 5000 | 5000 |
| Chromium - Hexavalent | SW846 3060A/7196A | SW846 3060A/7196A | 18540-29-9 | 70 [3] | 1 | 10 | 10 |
| Chromiun (total) | SW846 6020B | SW846 6020 | 16065-83-1 | 70 [3] | 1 | 1.4 [7] | 5 [7] |
| Cobalt | SW846 6010B | SW846 6010B | 7440-48-4 | NA | NA | 50 | 50 |
| Copper | SW846 6010B | SW846 6020 | 7440-50-8 | 1300 | 4 | 10 [7] | 0.5 |
| Iron | SW846 6010B | SW846 6020 | 8053-60-9 | 300 | 20 | 100 [7] | 15 |
| Lead | SW846 6010B | SW846 6010B | 7439-92-1 | 5 | 5 | 3 | 5 |
| Magnesium | SW846 6010B | SW846 6010B | 7439-95-4 | NA | NA | 5000 | 5000 |
| Manganese | SW846 6020B | SW846 6020B | 7439-96-5 | 50 | 0.4 | 2 [7] | 10 [7] |
| Mercury | SW846 7470A | SW846 7470A | 7439-97-6 | 2 | 0.05 | 0.200 [7] | 0.200 [7] |
| Nickel | SW846 6010B | SW846 6020 | 7440-02-0 | 100 | 4 | 10 [7] | 0.5 |
| Potassium | SW846 6010B | SW846 6010B | 7440-09-7 | NA | NA | 10000 | 5000 |
| Selenium | SW846 6010B | SW846 6020B | 7782-49-2 | 40 | 4 | 10 [7] | 2.5 |
| Silver | SW846 6010B | SW846 6010B | 7440-22-4 | 40 | 1 | 10 [7] | 5 [7] |
| Sodium | SW846 6020B | SW846 6010B | 7646-69-7 | 50,000 | 400 | 500 [7] | 250 |
| Thallium | SW846 6010B | SW846 6020 | 7440-28-0 | 0.5 | 2 | 2 | 0.1 |
| Vanadium | SW846 6020B | SW846 6020 | 7440-62-2 | 60 [4] | 1 | 10 [7] | 0.5 |
| Zinc | SW846 6010B | SW846 6020 | 7440-66-6 | 2000 | 10 | 10 [7] | 2 |

| Analyte[1] | Accutest Method | Test America Method | CAS No. | NJDEP Specific GW Quality Criteria (µg/L) | NJDEP PQL (µg/L) | Accutest RL (µg/L) | Test America RL (µg/L) |
|---|---|---|---|---|---|---|---|
| **TCL VOC** | | | | | | | |
| 1,1,1-Trichloroethane | SW846 8260B | SW846 8260B | 71-55-6 | NA | 1 | 1 | 1 |
| 1,1,2,2-Tetrachloroethane | SW846 8260B | SW846 8260B | 79-34-5 | 1 | 1 | 1 | 1 |
| 1,1,2-trichloro-1,2,2-trifluoroethane | SW846 8260B | SW846 8260B | 76-13-1 | 2000 | 1 | 5 [7] | 1 |
| 1,1,2-Trichloroethane | SW846 8260B | SW846 8260B | 79-00-5 | 3 | 2 | 1 | 1 |
| 1,1-Dichloroethane | SW846 8260B | SW846 8260B | 75-34-3 | 50 | 1 | 1 | 1 |
| 1,1-Dichloroethene | SW846 8260B | SW846 8260B | 75-35-4 | 1 | 1 | 1 | 1 |
| 1,2,3-Trichlorobenzene | SW846 8260B | SW846 8260B | 87-61-6 | NA | NA | 5 | 1 |
| 1,2,4-Trichlorobenzene | SW846 8260B | SW846 8270C | 120-82-1 | 9 | 1 | 5 [7] | 1 |
| 1,2-Dibromo-3-chloropropane | SW846 8260B | SW846 8260B | 96-12-8 | 0.02 | 0.02 | 0.02 | 1 [9] |
| 1,2-Dibromoethane | SW846 8011 | SW846 8260B | 106-93-4 | 0.0004 | 0.03 | 0.02 | 1 [9] |
| 1,2-Dichlorobenzene | SW846 8260B | SW846 8260B | 95-50-1 | 600 | 5 | 1 | 1 |
| 1,2-Dichloroethane | SW846 8260B | SW846 8260B | 107-06-2 | 0.3 | 2 | 1 | 1 |
| 1,2-Dichloropropane | SW846 8260B | SW846 8260B | 78-87-5 | 0.5 | 1 | 1 | 1 |
| 1,3-Dichlorobenzene | SW846 8260B | SW846 8260B | 541-73-1 | 600 | 5 | 1 | 1 |
| 1,4-Dichlorobenzene | SW846 8260B | SW846 8260B | 106-46-7 | 75 | 5 | 1 | 1 |
| 1,4-Dioxane | SW846 8260B | SW846 8260B | 123-91-1 | NA | NA | 130 | 1000 |
| 2-Butanone (MEK) | SW846 8260B | SW846 8260B | 78-93-3 | 300 | 2 | 10 [7] | 10 [7] |
| 2-Hexanone | SW846 8260B | SW846 8260B | 591-78-6 | NA | NA | 5 | 10 |
| 4-Methyl-2-pentanone(MIBK) | SW846 8260B | SW846 8260B | 108-10-1 | NA | NA | 5 | 10 |
| Acetone | SW846 8260B | SW846 8260B | 67-64-1 | 6000 | 10 | 10 | 10 |
| Benzene | SW846 8260B | SW846 8260B | 71-43-2 | 0.2 | 1 | 1 | 1 |
| Bromochloromethane | SW846 8260B | SW846 8260B | 74-97-5 | NA | NA | 5 | 1 |
| Bromodichloromethane | SW846 8260B | SW846 8260B | 75-27-4 | 0.6 | 1 | 1 | 1 |
| Bromoform | SW846 8260B | SW846 8260B | 75-25-2 | 4 | 0.8 | 4 [7] | 1 [7] |
| Bromomethane | SW846 8260B | SW846 8260B | 74-83-9 | 10 | 1 | 2 [7] | 1 |
| Carbon disulfide | SW846 8260B | SW846 8260B | 75-15-0 | 700 | 1 | 2 [7] | 1 |
| Carbon tetrachloride | SW846 8260B | SW846 8260B | 56-23-5 | 0.4 | 1 | 1 | 1 |

| Analyte[1] | Accutest Method | Test America Method | CAS No. | NJDEP Specific GW Quality Criteria (µg/L) | NJDEP PQL (µg/L) | Accutest RL (µg/L) | Test America RL (µg/L) |
|---|---|---|---|---|---|---|---|
| Chlorobenzene | SW846 8260B | SW846 8260B | 108-90-7 | 50 | 1 | 1 | 1 |
| Chloroethane | SW846 8260B | SW846 8260B | 75-00-3 | NA | NA | 1 | 1 |
| Chloroform | SW846 8260B | SW846 8260B | 67-66-3 | 70 | 1 | 1 | 1 |
| Chloromethane | SW846 8260B | SW846 8260B | 74-87-3 | NA | NA | 1 | 1 |
| cis-1,2-Dichloroethene | SW846 8260B | SW846 8260B | 156-59-2 | 70 | 1 | 1 | 1 |
| cis-1,3-Dichloropropene | SW846 8260B | SW846 8260B | 10061-01-5 | 0.4 | 1 | 1 | 1 |
| Cyclohexane | SW846 8260B | SW846 8260B | 110-82-7 | NA | NA | 5 | 1 |
| Dibromochloromethane | SW846 8260B | SW846 8260B | 124-48-1 | 0.4 | 1 | 1 | 1 |
| Dichlorodifluoromethane | SW846 8260B | SW846 8260B | 75-71-8 | 1000 | 2 | 5 [7] | 1 |
| Ethylbenzene | SW846 8260B | SW846 8260B | 100-41-4 | 700 | 2 | 1 | 1 |
| Isopropylbenzene | SW846 8260B | SW846 8260B | 98-82-8 | 700 | 1 | 2 [7] | 1 |
| m,p-Xylene | SW846 8260B | SW846 8260B | 108-38-3 & 106-42-3 | 1000 [5] | 2 | 1 | 2 |
| Methyl Acetate | SW846 8260B | SW846 8260B | 79-20-9 | 7000 | 0.5 | 5 [7] | 2 [7] |
| Methyl Tert Butyl Ether | SW846 8260B | SW846 8260B | 1634-04-4 | 70 | 1 | 1 | 1 |
| Methylcyclohexane | SW846 8260B | SW846 8260B | 108-87-2 | NA | NA | 5 | 1 |
| Methylene chloride | SW846 8260B | SW846 8260B | 75-09-2 | 3 | 1 | 2 [7] | 1 |
| o-Xylene [5] | SW846 8260B | SW846 8260B | 95-47-6 | 1000 | 2 | 1 | 1 |
| Styrene | SW846 8260B | SW846 8260B | 100-42-5 | 100 | 2 | 5 [7] | 1 |
| Tetrachloroethene | SW846 8260B | SW846 8260B | 127-18-4 | 0.4 | 1 | 1 | 1 |
| Toluene | SW846 8260B | SW846 8260B | 108-88-3 | 600 | 1 | 1 | 1 |
| trans-1,2-Dichloroethene | SW846 8260B | SW846 8260B | 156-60-5 | 100 | 1 | 1 | 1 |
| trans-1,3-Dichloropropene | SW846 8260B | SW846 8260B | 10061-02-6 | 0.4 | 1 | 1 | 1 |
| Trichloroethene | SW846 8260B | SW846 8260B | 79-01-6 | 1 | 1 | 1 | 1 |
| Trichlorofluoromethane | SW846 8260B | SW846 8260B | 75-69-4 | 2000 | 1 | 5 [7] | 1 |
| Vinyl chloride | SW846 8260B | SW846 8260B | 75-01-4 | 0.08 | 1 | 1 | 1 |
| Xylene (total) | SW846 8260B | SW846 8260B | 1330-20-7 | 1000 | 2 | 1 | 3 [7] |

| Analyte[1] | Accutest Method | Test America Method | CAS No. | NJDEP Specific GW Quality Criteria (µg/L) | NJDEP PQL (µg/L) | Accutest RL (µg/L) | Test America RL (µg/L) |
|---|---|---|---|---|---|---|---|
| **TCL SVOC** | | | | | | | |
| 1,1'-Biphenyl | SW846 8270C | SW846 8270C | 92-52-4 | 400 | 10 | 2 | 10 |
| 1,2,4,5-Tetrachlorobenzene | SW846 8270C | See Note below [8] | 95-94-3 | NA | NA | 5 | Use Accutest [8] |
| 2,3,4,6-Tetrachlorophenol | SW846 8270C | See Note below [8] | 58-90-2 | 200 | 3 | 5 [7] | Use Accutest [8] |
| 2,4,5-Trichlorophenol | SW846 8270C | SW846 8270C | 95-95-4 | 700 | 10 | 5 | 10 |
| 2,4,6-Trichlorophenol | SW846 8270C | SW846 8270C | 88-06-2 | 1 | 20 | 5 | 10 |
| 2,4-Dichlorophenol | SW846 8270C | SW846 8270C | 120-83-2 | 20 | 10 | 5 | 10 |
| 2,4-Dimethylphenol | SW846 8270C | SW846 8270C | 105-67-9 | 100 | 20 | 5 | 10 |
| 2,4-Dinitrophenol | SW846 8270C | SW846 8270C | 51-28-5 | 10 | 40 | 20 | 30 |
| 2,4-Dinitrotoluene | SW846 8270C | SW846 8270C | 121-14-2 | NA | NA | 2 | 2 |
| 2,6-Dinitrotoluene | SW846 8270C | SW846 8270C | 606-20-2 | NA | NA | 2 | 2 |
| 2-Chloronaphthalene | SW846 8270C | SW846 8270C | 91-58-7 | 600 | 10 | 5 | 10 |
| 2-Chlorophenol | SW846 8270C | SW846 8270C | 95-57-8 | 40 | 20 | 5 | 10 |
| 2-Methylnaphthalene | SW846 8270C | SW846 8270C | 91-57-6 | NA | NA | 2 | 10 |
| 2-Methylphenol | SW846 8270C | SW846 8270C | 95-48-7 | NA | NA | 2 | 10 |
| 2-Nitroaniline | SW846 8270C | SW846 8270C | 88-74-4 | NA | NA | 5 | 20 |
| 2-Nitrophenol | SW846 8270C | SW846 8270C | 88-75-5 | NA | NA | 5 | 10 |
| 3&4-Methylphenol | SW846 8270C | SW846 8270C | 108-39-4 & 106-44-5 | NA | NA | 2 | 10 |
| 3,3'-Dichlorobenzidine | SW846 8270C | SW846 8270C | 91-94-1 | 0.08 | 30 | 5 | 20 |
| 3-Nitroaniline | SW846 8270C | SW846 8270C | 99-09-2 | NA | NA | 5 | 20 |
| 4,6-Dinitro-o-cresol | SW846 8270C | SW846 8270C | 534-52-1 | NA | NA | 20 | 30 |
| 4-Bromophenyl phenyl ether | SW846 8270C | SW846 8270C | 101-55-3 | NA | NA | 2 | 10 |
| 4-Chloro-3-methyl phenol | SW846 8270C | SW846 8270C | 59-50-7 | NA | NA | 5 | 10 |
| 4-Chloroaniline | SW846 8270C | SW846 8270C | 106-47-8 | 30 | 10 | 5 | 10 |
| 4-Chlorophenyl phenyl ether | SW846 8270C | SW846 8270C | 7005-72-3 | NA | NA | 2 | 10 |
| 4-Nitroaniline | SW846 8270C | SW846 8270C | 100-01-6 | NA | NA | 5 | 20 |
| 4-Nitrophenol | SW846 8270C | SW846 8270C | 100-02-7 | NA | NA | 10 | 30 |

| Analyte[1] | Accutest Method | Test America Method | CAS No. | NJDEP Specific GW Quality Criteria (µg/L) | NJDEP PQL (µg/L) | Accutest RL (µg/L) | Test America RL (µg/L) |
|---|---|---|---|---|---|---|---|
| Acenaphthene | SW846 8270C | SW846 8270C | 83-32-9 | NA | NA | 0.1 | 10 |
| Acenaphthylene | SW846 8270C | SW846 8270C | 208-96-8 | NA | NA | 0.1 | 10 |
| Acetophenone | SW846 8270C | SW846 8270C | 98-86-2 | 700 | 10 | 5 | 10 |
| Anthracene | SW846 8270C | SW846 8270C | 120-12-7 | 2000 | 10 | 0.1 | 10 |
| Atrazine | SW846 8270C | SW846 8270C | 1912-24-9 | 3 | 0.1 | 5 [9] | 10 [9] |
| Benzaldehyde | SW846 8270C | SW846 8270C | 100-52-7 | NA | NA | 5 | 10 |
| Benzo(a)anthracene | SW846 8270C SIM | SW846 8270C SIM | 56-55-3 | 0.05 | 0.1 | 0.1 | 0.05 |
| Benzo(a)pyrene | SW846 8270C SIM | SW846 8270C SIM | 50-32-8 | 0.005 | 0.1 | 0.1 | 0.05 |
| Benzo(b)fluoranthene | SW846 8270C SIM | SW846 8270C SIM | 205-99-2 | 0.05 | 0.2 | 0.1 | 0.05 |
| Benzo(g,h,i)perylene | SW846 8270C | SW846 8270C | 191-24-2 | NA | NA | 0.1 | 10 |
| Benzo(k)fluoranthene | SW846 8270C SIM | SW846 8270C | 207-08-9 | 0.5 | 0.3 | 0.1 | 0.05 |
| bis(2-Chloroethoxy)methane | SW846 8270C | SW846 8270C | 111-91-1 | NA | NA | 2 | 10 |
| bis(2-Chloroethyl)ether | SW846 8270C | SW846 8270C | 111-44-4 | 0.03 | 7 | 2 | 1 |
| bis(2-Chloroisopropyl)ether | SW846 8270C | SW846 8270C SIM | 108-60-1 | 300 | 10 | 2 | 0.02 |
| bis(2-Ethylhexyl)phthalate | SW846 8270C | SW846 8270C | 117-81-7 | 2 | 3 | 2 | 10 [9] |
| Butyl benzyl phthalate | SW846 8270C | SW846 8270C | 85-68-7 | 100 | 1 | 2 [7] | 10 [7] |
| Caprolactam | SW846 8270C | SW846 8270C | 105-60-2 | NA | NA | 2 | 10 |
| Carbazole | SW846 8270C | SW846 8270C | 86-74-8 | NA | NA | 2 | 10 |
| Chrysene | SW846 8270C | SW846 8270C SIM | 218-01-9 | 5 | 0.2 | 0.1 | 0.05 |
| Dibenzo(a,h)anthracene | SW846 8270C | SW846 8270C SIM | 53-70-3 | 0.005 | 0.3 | 0.1 | 0.05 |
| Dibenzofuran | SW846 8270C | SW846 8270C | 132-64-9 | NA | NA | 5 | 10 |
| Diethyl phthalate | SW846 8270C | SW846 8270C | 84-66-2 | 6000 | 1 | 2 [7] | 10 [7] |
| Dimethyl phthalate | SW846 8270C | SW846 8270C | 131-11-3 | NA | NA | 2 | 10 |
| Di-n-butyl phthalate | SW846 8270C | SW846 8270C | 84-74-2 | 700 | 1 | 2 [7] | 10 [7] |
| Di-n-octyl phthalate | SW846 8270C | SW846 8270C | 117-84-0 | 100 | 10 | 2 | 10 |
| Fluoranthene | SW846 8270C | SW846 8270C | 206-44-0 | 300 | 10 | 0.1 | 10 |
| Fluorene | SW846 8270C | SW846 8270C | 86-73-7 | 300 | 1 | 0.1 | 10 [7] |
| Hexachlorobenzene | SW846 8270C SIM | SW846 8270C SIM | 118-74-1 | 0.02 | 0.02 | 0.02 | 0.02 |

| Analyte[1] | Accutest Method | Test America Method | CAS No. | NJDEP Specific GW Quality Criteria (µg/L) | NJDEP PQL (µg/L) | Accutest RL (µg/L) | Test America RL (µg/L) |
|---|---|---|---|---|---|---|---|
| Hexachlorobutadiene | SW846 8270C | SW846 8270C | 87-68-3 | 0.4 | 1 | 1 | 1 |
| Hexachlorocyclopentadiene | SW846 8270C | SW846 8270C | 77-47-4 | 40 | 0.5 | 20 [7] | 10 [7] |
| Hexachloroethane | SW846 8270C | SW846 8270C | 67-72-1 | 2 | 7 | 5 | 1 |
| Indeno(1,2,3-cd)pyrene | SW846 8270C | SW846 8270C SIM | 193-39-5 | 0.05 | 0.2 | 0.1 | 0.05 |
| Isophorone | SW846 8270C | SW846 8270C | 78-59-1 | 40 | 10 | 2 | 10 |
| Naphthalene | SW846 8270C | SW846 8270C | 91-20-3 | 300 | 2 | 0.1 | 10 [7] |
| Nitrobenzene | SW846 8270C | SW846 8270C | 98-95-3 | 4 | 6 | 2 | 1 |
| N-Nitroso-di-n-propylamine | SW846 8270C | SW846 8270C | 621-64-7 | 0.005 | 10 | 2 | 1 |
| N-Nitrosodiphenylamine | SW846 8270C | SW846 8270C | 86-30-6 | 7 | 10 | 5 | 10 |
| Pentachlorophenol | SW846 8270C SIM | SW846 8270C SIM | 87-86-5 | 0.3 | 0.1 | 0.3 [7] | 0.2 [7] |
| Phenanthrene | SW846 8270C | SW846 8270C | 85-01-8 | NA | NA | 0.1 | 10 |
| Phenol | SW846 8270C | SW846 8270C | 108-95-2 | 2000 | 10 | 2 | 10 |
| Pyrene | SW846 8270C | SW846 8270C | 129-00-0 | 200 | 0.1 | 0.1 | 10 [7] |
| **TCL PCBs** | | | | | | | |
| Aroclor 1016 | SW846 8082 | SW846 8082 | 12674-11-2 | 0.02 | 0.5 | 0.5 | 0.5 |
| Aroclor 1221 | SW846 8082 | SW846 8082 | 11104-28-2 | 0.02 | 0.5 | 0.5 | 0.5 |
| Aroclor 1232 | SW846 8082 | SW846 8082 | 11141-16-5 | 0.02 | 0.5 | 0.5 | 0.5 |
| Aroclor 1242 | SW846 8082 | SW846 8082 | 53469-21-9 | 0.02 | 0.5 | 0.5 | 0.5 |
| Aroclor 1248 | SW846 8082 | SW846 8082 | 12672-29-6 | 0.02 | 0.5 | 0.5 | 0.5 |
| Aroclor 1254 | SW846 8082 | SW846 8082 | 11097-69-1 | 0.02 | 0.5 | 0.5 | 0.5 |
| Aroclor 1260 | SW846 8082 | SW846 8082 | 11096-82-5 | 0.02 | 0.5 | 0.5 | 0.5 |
| Aroclor 1262 | SW846 8082 | SW846 8082 | 37324-23-5 | 0.02 | 0.5 | 0.5 | 0.5 |
| Aroclor 1268 | SW846 8082 | SW846 8082 | 11100-14-4 | 0.02 | 0.5 | 0.5 | 0.5 |
| **Miscellaneous** | | | | | | | |
| Cyanide | SW846 9012B | SW846 9012A | 57-12-5 | 100 | 6 | 10 [7] | 10 [7] |
| Extractable Petroleum Hydrocarbons (EPH) [6] | NJ DEP EPH | See Note Below [10] | NA | None Noted | NA | 0.8 | Use Accutest [10] |
| Phenols | SW846 9066 | SW846 9065 | 108-95-2 | 2000 | 10 | 200 [7] | 50 [7] |
| Cation Exchange Capacity (CEC) | SW846 9081 | See Note Below [8] | NA | NA | NA | NA | Use Accutest [8] |
| pH | SW846 9040C | SW846 9045C | NA | NA | NA | NA | NA |

| Analyte[1] | Accutest Method | Test America Method | CAS No. | NJDEP Specific GW Quality Criteria (µg/L) | NJDEP PQL (µg/L) | Accutest RL (µg/L) | Test America RL (µg/L) |
|---|---|---|---|---|---|---|---|
| eH | ASTM D1498-76 | SM2580 | NA | NA | NA | NA | NA |
| Ferrous Iron [2] | SM3500Fe-B | SM 3500Fe-D | 15438-31-0 | NA | NA | 200 | 100 [10] |
| Carbon Oxygen Demand (COD) [2] | SM5220C | SM 5220D | NA | NA | NA | 20,000 or | 10000 |
| Biological Oxygen Demand (BOD) [2] | SM5210B | SM 5210B | NA | NA | NA | 2000 | 2000 |
| Sulfide [2] | SM4500S-F | SM9034 | 18496-25-8 | NA | NA | 1000 | 1000 |
| Total Organic Carbon (TOC) | SM5310 B | SM5310 B | NA | NA | NA | 1000 | 1000 |
| Total Organic Halides (TOX) | SW846 9020B M | See Note Below [8] | NA | NA | NA | 50 | Use Accutest [8] |
| Ignitability | SW846 1010A | SW846 1020A | NA | NA | NA | NA | NA |
| Reactivity | SW846 9034 | SW846 9034 | NA | NA | NA | NA | NA |
| Corrosivity | SM9040C | SM9045C | NA | NA | NA | NA | NA |
| Total Suspended Solids (TSS) | SM 2540D | SM 2540D | NA | NA | NA | NA | NA |
| Total Dissolved Solids (TDS) | SM 2540C | SM 2540C | NA | 500,000 | 10000 | 10000 | 10000 |
| Chloride | SM 4500Cl-C | SM 4500Cl-E | NA | 250,000 | 2000 | 2000 | 10000 [7] |

**Notes:**

[1] – The individual RIWPs will indicate the parameters/analytes that will be analyzed.

[2] - Cr+6 Reanalysis may require these additional parameters if the matrix spike/matrix spike duplicate do not meet QC requirements.

[3] - GW criteria is for total chromium

[4] - GW criteria is for vanadium pentoxide

[5] - GW criteria is for total xylenes

[6] - GW criteria is for Oil & Grease & Petroleum Hydrocarbons

[7] - The laboratory RLs exceed the NJDEP PQLs; however, the laboratory RLs are less than the NJDEP Specific GW Quality Criteria and thus are acceptable.

[8] – Test America does not perform this analysis, thus the analysis will be performed by Accutest.

**Acronyms:**

CAS - Chemical Abstracts System Registration Number
NA - not available for this constituent
NJDEP New Jersery Department of Environmental Protection
PCB - Polychlorinated Biphenyl
PQL - Practical Quantitation Level as defined in N.J.A.C. 7:9C-1.4
RL - Reporting Limit
SVOC- Semivolatile Organic Compound
TAL - Target Analyte List
TCL - Target Compound List
µg/L – microgram per liter
VOC - Volatile Organic Compound

## TABLE 6-1 QUALITY CONTROL SAMPLE SUMMARY

| Matrix [1] | Analyses [1] | Quality Assurance Samples | Sampling Frequency | Criteria |
|---|---|---|---|---|
| AIR | Chromium (Total and Hexavalent) | Field Blank | 1/day from same lot number as sample filters | <MDL [8] |
| | Particulates ($PM_{10}$) | Field (Blind) Duplicate (co-located) | 1/20 samples (5% of total) or minimum of 1/week | RPD < 50% |
| WIPES | Chromium [4] (Total and Hexavalent) | Field Blank | 1/day from same lot number as the sample wipes | <RL [2] |
| SOIL, CHIP, CONCRETE, SWEEP, MASONRY (including TCLP and/or SPLP, as applicable) | TCL VOCs<br>TCL SVOCs<br>TCL PCBs<br>TAL Metals<br>Hexavalent Chromium [4]<br>EPH<br>Phenols<br>Cyanide | Field Blank | Either 1/day or 10% of the total number of samples collected, but not more than 1/day | < RL [2] |
| | | Field (Blind) Duplicate | 1/20 samples (5% of total) | RPD < 50% |
| | | MS/MSD | 1/20 samples (5% of total) | See method [3] |
| | Wet Chemistry [5] | Field Blank | Either 1/day or 10% of the total number of samples collected, but not more than 1/day | < RL [2] |
| | | Field (Blind) Duplicate | 1/20 samples (5% of total) | RPD < 50% |
| | Geotechnical [6] | Field (Blind) Duplicate | 1/20 samples (5% of total) | RPD < 50% |
| | Waste Characteristics [7] | | | |

## TABLE 6-1 QUALITY CONTROL SAMPLE SUMMARY (continued)

| Matrix [1] | Analyses [1] | Quality Assurance Samples | Sampling Frequency | Criteria |
|---|---|---|---|---|
| AQUEOUS | TCL VOCs | Trip Blank | 1/cooler | < RL [2] |
| | | Field Blank | 1/day | < RL [2] |
| | | Field (Blind) Duplicate | 1/20 samples (5% of total) | RPD < 30% |
| | | MS/MSD | 1/20 samples (5% of total) | See method [3] |
| | TCL SVOCs<br>TCL PCBs<br>TAL Metals<br>Hexavalent Chromium [4]<br>EPH<br>Phenols<br>Cyanide | Field Blank | 1/day | < RL [2] |
| | | Field (Blind) Duplicate | 1/20 samples (5% of total) | RPD < 30% |
| | | MS/MSD | 1/20 samples (5% of total) | See method [3] |
| | Wet Chemistry [5] | Field Blank | 1/day | < RL [2] |
| | | Field (Blind) Duplicate | 1/20 samples (5% of total) | RPD < 30% |
| | Waste Characteristics [7] | Field (Blind) Duplicate | 1/20 samples (5% of total) | RPD < 30% |

Notes:

[1] - These are proposed matrices and analytes, refer to the RIWP for the specific matrices and analytes.

[2] - Refer to Tables 5-1 and 5-2 for the analyte specific RL.

[3] – Refer to the specific analytical methods for the MS/MSD QC Criteria.

[4] – Hexavalent chromium analysis includes Eh and pH analysis on every sample.

[5] – Wet Chemistry analyses may include BOD, CEC, COD, TDS, TSS, TOC, TOX, Alkalinity, Chloride, Ferrous iron, Nitrate, Nitrite, Phosphate, and Sulfide.

[6] – Geotechnical analyses may include moisture content, permeability, specific gravity, grain size, bulk density, Atterberg limits, and unconfined compressive strength.

[7] – Waste Characteristic analyses may include ignitability, reactivity, moisture content, and corrosivity.

[8] - Refer to the specific air monitoring work plan.

Acronyms:

| | | | |
|---|---|---|---|
| EPH | Extractable Petroleum Hydrocarbons | TAL | Target Analyte List |
| MDL | Method Detection Limit | TCL | Target Compound List |
| PCB | Polychlorinated Biphenyl | TDS | Total Dissolved Solids |
| $PM_{10}$ | Particulates | TOC | Total Organic Carbon |
| RL | Reporting Limit | TOX | Total Organic Halides |
| RPD | Relative Percent Difference | TSS | Total Suspended Solids |
| SOP | Standard Operating Procedure | VOC | Volatile Organic Compound |
| SVOC | Semivolatile Organic Compound | | |

# Appendix A

# Field Change Request Form

AECOM

**FIELD CHANGE REQUEST**

**PPG INDUSTRIES - NON-RESIDENTIAL SITES**

CHANGE NUMBER _____

(To be completed by requesting party)

| ACO Site Number: | Site Name: |
|---|---|

| Requesting Party*: | Signature: | Date: |
|---|---|---|

Change Description:

Reason for Change:

Implementation Schedule:

---

(To be completed by concurring party)

| Project Manager*: | Signature: | Date: |
|---|---|---|

Comments:

| Technical Contact Name and Affiliation | Phone Number |
|---|---|
| **Tom Cozzi, NJDEP** | (609) 633-1408 |
| **Prabal Amin, Technical Consultant (Weston Solutions)** | (732) 417-5857 |
| **Brian McPeak, JCO Site Administrator Project Manager** | (732) 216-6364 |
| **Brian McGuire, Project Manager, PPG Industries** | (412) 492-5683 |
| **W. B. Kennedy, Jr., PPG Industries, Remediation Manager** | (330) 753-2783 |
| **Bob Falotico, AECOM Principal-in-Charge** | (978) 589-3183 |
| **Scott Mikaelian, AECOM Program Manager** | (732) 564-3624 |
| **Rich Feinberg, AECOM Field Operations Leader** | (732) 233-4552 |

# Appendix B

# Field Standard Operating Procedures and Project Operating Procedures

APPENDIX B
AECOM FIELD POPs and SOPS
PPG FSP/QAPP

| POP or SOP No. | POP or SOP TITLE | SOURCE | ORIGINAL POP or SOP DATE | REVISION NO. | REVISION DATE |
|---|---|---|---|---|---|
| PPG 001 | Recording of Field Data | AECOM | June 2010 | 0 | N/A |
| PPG 002 | Chain of Custody Procedures | AECOM | June 2010 | 0 | N/A |
| PPG 003 | Packaging and Shipment of Environmental Samples | AECOM | June 2010 | 0 | N/A |
| PPG 004 | Operation and Calibration of a Photoionization Detector | AECOM | June 2010 | 0 | N/A |
| PPG 005 | Surface and Subsurface Soil Sampling Procedures and Boring Log Template | AECOM | June 2010 | 0 | N/A |
| PPG 006 | Monitoring Well Construction and Installation | AECOM | June 2010 | 0 | N/A |
| PPG 007 | Monitoring Well Development | AECOM | June 2010 | 0 | N/A |
| PPG 008 | Low Flow Groundwater Sampling | AECOM | June 2010 | 0 | N/A |
| PPG 009 | Hydraulic Conductivity Tests | AECOM | June 2010 | 0 | N/A |
| PPG 010 | Chip Sampling | AECOM | June 2010 | 0 | N/A |
| PPG 011 | Wipe Sampling | AECOM | June 2010 | 0 | N/A |
| PPG 012 | Concrete Core Sampling | AECOM | April 2010 | 0 | N/A |
| PPG 013 | Sweep Sampling | AECOM | June 2010 | 0 | N/A |
| PPG 014 | Decontamination of Field Equipment | AECOM | June 2010 | 0 | N/A |
| PPG 015 | Procedures for Acid Testing of Green-Grey Mud and COPR | AECOM | March 2010 | 0 | N/A |
| PPG 016 | Field Screening for Grain Size Procedures | AECOM | June 2010 | 0 | N/A |
| PPG- 017 | Operation of the TSI Model 8520 DustTrak™ Aerosol Monitor | AECOM | June 2010 | 1 | N/A |
| PPG-018 | SOP No. 2000-226 Calibration/Operation/Maintenance of MiniVol™ Tactical Air Sampler (TAS) | AECOM | June 2010 | 1 | N/A |
| PPG-019 | Sample Collection of Airborne Hexavalent Chromium using Airmetrics MiniVol Tactical Air Sampler and OSHA Method ID 215 Version 2 | AECOM | May 2010 | 0 | N/A |
| PPG-020 | Operation and Calibration of a Hydrogen Sulfide Monitor | AECOM | May 2010 | 0 | N/A |
| PPG-021 | Field and Laboratory Measurement of pH | AECOM | December 2009 | 2 | 12/29/2009 |
| PPG-022 | Field and Laboratory Measurement of Dissolved Oxygen | AECOM | June 2010 | 2 | 12/29/2009 |
| PPG-023 | Field and Laboratory Measurement of Temperature | AECOM | December 2009 | 2 | 12/29/2009 |
| PPG-024 | Calibration and Operation of the Mamotte 2020 Turbidimeter | AECOM | May 2010 | DRAFT | 5/26/2010 |
| PPG-025 | Calibration and Operation of the YSI 6-Series Water Quality Meter for Temperature, pH, Dissolbed Oxygen, Conductivity and Oxidation Reduction Potential | AECOM | May 2010 | DRAFT | 5/26/2010 |
| PPG-026 | Operation/Field Calibration of the Baseline BTX Model 1030A GC, SOP No. 2600-150A | AECOM | October 2004 | 1 | 10/1/2004 |
| PPG-027 | Changing the BTX Span Value(s) for an Air Monitoring System, Procedure No. 2000-119 | AECOM | May 2008 | 0 | 6/4/2008 |
| PPG-028 | Standard Operating Procedure for the Niton XL3t 600 XRF | AECOM | June 2010 | 0 | 6/15/2010 |

AECOM

Project Operating Procedure

# Recording of Field Data

Procedure Number: PPG 001

Revision No.: 0

Revision Date: June 2010



POP Author Date: 6/28/2010

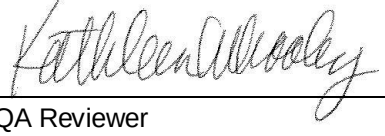

QA Reviewer Date: 6/28/2010

Annual review of this SOP has been performed and the SOP still reflects current practice.

Initials: _____ Date: _____

Initials: _____ Date: _____

Project Operating Procedure

# Recording of Field Data



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Project Operating Procedure

# Recording of Field Data



## 1.0 Scope and Applicability

**1.1** Purpose and Applicability

This Project Operating Procedure (POP) provides instructions for recording data when documenting a sample collection event, field measurements, or a site visit. Field data may be recorded in field logbooks, on standardized forms, as annotated maps, as photo documentation, or electronically. Chain-of-custody records are also considered field data; however, these records are specifically addressed in POP PPG 002 Chain of Custody Procedures and POP PPG 003 Packaging and Shipment of Environmental Samples.

## 2.0 Health and safety considerations

**2.1** Not Applicable

## 3.0 Interferences

**3.1** Not Applicable

## 4.0 Equipment and materials

The following materials are necessary for this procedure:

- Bound field logbook (preferably waterproof, such as Rite-in-Rain™)
- Standardized field data sheets (refer to individual POPs for test pit logs, boring logs, groundwater sample collection logs, etc.)
- Pen or SharpieTM
- Watch or other time-keeping device

The following materials may also be needed:

- Site maps
- Clipboard
- Three-ring binder or equivalent
- Camera
- Hand-held electronic recording device (e.g., PDA, laptop, or tablet PC)

## 5.0 Procedures

### 5.1 General

Field activities vary widely and no general rules can specify the exact information that must be recorded for each event. However, the field records must contain sufficient detail so that persons going to the site could reconstruct a particular situation without reliance on the collector's memory.

Field logbooks may be supplemented by standardized forms (e.g., well construction and development, sample collection forms, drum logs). In that case, the logbook provides a chronology of events, summary of personnel on site, and a narration of events not covered by the standardized forms. It is recommended that the details recorded on the standardized forms not be replicated in the logbook due to the potential for transcription errors and inconsistencies. References to standardized forms must be included in the logbook.

Entries will be recorded legibly in permanent ink (a black ballpoint pen is preferable) and will be signed and dated. No erasures or obliterations will be made. If an incorrect entry is made, the information will be crossed out with a single strike mark which is initialed and dated by the sampler, and the correct information added.

Pencils should not be used. If a ballpoint pen cannot be used because of adverse weather conditions (rain or freezing temperatures), a fine-point Sharpie™ is an acceptable substitute. If conditions are such that only pencil can be used, an explanation must be included in the logbook and the affected data should be photocopied, signed as verified copy, and maintained in the project files as documentation that the data has not been changed.

Information to be recorded should address the questions of who, where, what, when, how, and why. A specific list of information that should be recorded is included in Table 1.

Entries will be objective, factual, and free of personal feelings or inappropriate language. Cryptic notes and undefined abbreviations or acronyms should be avoided.

Information will be made in as close to real time as possible. Information recorded significantly after the fact must be dated as such.

### 5.2 Field Logbooks

Field logbooks will be bound water-proof field survey books or notebooks with consecutively numbered pages.

Logbooks will be assigned to field personnel, and will be identified by a unique document number. The logbook should be kept in the field person's possession or in a secure location during field activities and archived in the project files upon completion of the field program.

Logbooks should be specific to a project. Multiple projects should not be included in one logbook because of document retention and evidentiary reasons.

The title page of each logbook will contain the following:

- Person to whom the logbook is assigned, AECOM office location, and phone number,
- The logbook number,
- Project name and number, and
- Start and end dates of work covered by the logbook.

Logbook entries documenting sample collection or field measurements must clearly identify the task being completed (for example, water level measurements, headspace readings). Units must be included for all measurements.

For ease of reference, it is recommended that a new page be started for each sampling day and that the time be recorded in the far left column. Each day's entries will be signed and dated by the person making the entries. A diagonal line across the bottom of the page will indicate the end of an entry.

**5.3** Standardized Forms

- At a minimum, each form must include a title identifying the activity being documented and the project identification (name and number).
- Each form must be signed and dated by the person completing the form.
- There should be no blank spaces on the form. Each space must be filled in with the information requested or "NA" (not applicable).
- Forms should not be loose, but should be maintained in an organized manner (e.g., clipboards, binders).

**5.4** Maps and Drawings

Maps and drawings that document final sampling locations and which are separate from the field logbook must be referenced in the logbook. These maps or drawings must include the project name and number, site identification and location, and must be signed and dated by the person recording the locations.

Maps and drawings must include compass orientation and scale.

**5.5** Photographs and Other Photo Documentation

Photo documentation, if permitted at the site, can provide invaluable information on site conditions, sample locations, and the sample itself.

Photographs, videos, or slides must be cross-referenced to entries in the field logbook or on a photo documentation log. Information to be recorded includes name of photographer, date, time, direction faced, description of subject, and sequential number of the photograph and roll number. An indication of scale is also helpful. Image-enhancing techniques (lenses, film) should also be noted.

**5.6** Electronic Files

Electronically captured data may include data logging systems and hand-held electronic recording devices such as PDAs, laptops, or tablet PCs.

Field data that is captured electronically must be cross-referenced in the field logbook. Information to be recorded includes the identity of the person recording the data, instrument make and model number, measurement time and date, and file identification.

Sufficient backup systems must be in place to protect against the loss of data. Electronic files must be saved to a disk or backed up immediately upon completion. The backup disk or other media (CD, flash drive) should then be stored in a secure location separate from the laptop, tablet, or PDA.

Files must be uniquely identified and should be stored in the project files on the network. An unedited version of the file must be maintained and all subsequent manipulations tracked.

## 6.0 Quality assurance / quality control

Field records provide evidence and support for technical decisions, interpretations, and judgments. It is therefore critical that procedures and systems be in place to ensure that they are legible, identifiable, and retrievable, and protected from loss or damage. In addition, client or regulatory requirements, or the end use of the data (e.g., to support litigation) may determine the format in which the data must be recorded. For example, some projects may require that all field information be recorded in the field logbook and may not allow the use of standardized forms. The requirements necessary to meet the data quality objectives for a particular project will be defined in the site-specific workplan and/or Sampling and Analysis Plan (SAP) hereafter referred to as the project plan.

The field records will be reviewed by the Field Team Leader, or by the Project Manager or his/her designate, for accuracy, completeness, and adherence to the requirements of this POP. At a minimum, this must occur at the end of the field event. For field activities of extended duration, it is recommended that this review occur more frequently (e.g., daily or weekly).

If information recorded in the field is transcribed to another format, the original record must be retained for comparison purposes.

Periodic copying of the field records should be considered to insure against the loss or destruction of the original documents.

## 7.0 Data and records management

At the end of the field program, original field records must be placed in the project files and maintained for a certain retention time. The duration of record retention will be determined by project-specific requirements, or, in the absence of project requirements, by AECOM Corporate policy.

## 8.0 Personnel qualifications and training

The Project Manager is responsible for ensuring that project-specific requirements are communicated to the project team and for providing the materials, resources, and guidance necessary to perform the measurements in accordance with this POP and the project plan. In the absence of a Field Team Leader, the Project Manager is responsible for ensuring that field records are reviewed and approved as described below.

The Field Team Leader is responsible for reviewing and approving the field records for accuracy, completeness, and conformance to the procedures in this POP.

Field personnel are responsible for recording data according to the procedures outlined in this POP.

## 9.0 References

POP PPG 002 Chain of Custody Procedures

POP PPG 003 Packaging and Shipment of Environmental Samples

USACE. 2001. Requirements for the Preparation of Sampling and Analysis Plans. EM 200-1-3. United States Army Corps of Engineers. 1 February 2001.

USEPA. 2004. Contract Laboratory Program Guidance for Field Samplers. OSWER 9240.0-35. EPA540-R-00-003. United States Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation. August 2004.

USEPA. 2001. Environmental Investigations Standard Operating Procedures and Quality Assurance Manual. United States Environmental Protection Agency, Region 4, Athens, GA. November 2001.

USEPA. 1998. Test Methods for Evaluating Solid Wastes. Physical/Chemical Methods (SW-846). Third edition, including all final updates.

USEPA. 1992. RCRA Ground-water Monitoring: Draft Technical Guidance. United States Environmental Protection Agency, Office of Solid Waste, Washington, DC. November 1992.

## 10.0 Revision History

| Revision | Date | Changes |
|---|---|---|
| 0 | June 2010 | Original POP |

**Table 1. Specific Information to Be Recorded**

| |
|---|
| Site name and location |
| Personnel on site (AECOM, clients, site contacts, regulators, oversight personnel, subcontractors, general public) |
| Results of phone calls, conversations |
| Chronology of activities, including mobilization, investigatory activities, and demobilization |
| Weather conditions (initial and any changes; temperature, barometric pressure, wind conditions, precipitation) |
| Tidal stage (if applicable) |
| Inspections of equipment, materials, supplies (problems, corrective action) |
| Subcontractor name, description of services to be provided, and any issues (problems, stand by time) |
| Description of major equipment (drill rigs, backhoe, survey vessels, sampling platforms) |
| Field measurements<br>• Description of procedure<br>• Instruments (make, model, serial number, lamp)<br>• Instrument calibration (date, time, personnel, standard, lot number, standard expiration date, true/measured results, units, corrective action, calibration checks and results)<br>• Results (including units of measure, any correction factors applied, documentation of calculations (if applicable)<br>• Date and time of measurement<br>• Identity of person performing the measurements<br>• Atmospheric conditions (if applicable) |
| Equipment decontamination procedures and materials |
| Well information (depth to water, static water depth, condition of well) |
| Well purging information (procedure, equipment, volumes, pumping rate, criteria for acceptance, time and date) |

| |
|---|
| Presence and detection of immiscible layers, detection method, sampling method |
| Sampling information<br>• Procedures and equipment (type and material)<br>• Sample (soil) selection criteria/rationale (PID, staining, water table)<br>• Sample location identification (e.g., boring, well identification)<br>• Sample location description (sketch, GPS coordinates, compass and distance measurements from fixed points).<br>• Sample depth<br>• Sample flow rate/drawdown<br>• Sample description (recovery, moisture, color, odor, texture, turbidity, artifacts)<br>• Sample manipulations (filtration, homogenization, compositing, preservation)<br>• Sample date and time<br>• Unique sample ID<br>• Identity of sampler<br>• Sample parameters, containers (size/type), preservation<br>• QC samples (field duplicates, trip blanks, field/equipment blanks, MS/MSDs, split samples) – include ID, associated field sample, method of collection |
| Any pertinent field observations that could affect data quality (instrument problems, contamination sources) |
| Deviations from approved plan (schedule modifications, relocation or elimination of sample locations, change orders), including rationale |
| Investigation-derived waste (IDW) types, volumes, storage, and disposal |
| Health and safety (H&S) meetings, personal protective equipment (PPE) worn, H&S monitoring |

AECOM

Project Operating Procedure

# Chain-of-Custody Procedures

Procedure Number: PPG 002

Revision No.: 0

Revision Date: June 2010



POP Author Date: 6/28/2010

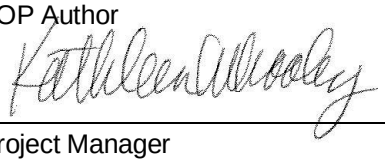

Project Manager Date: 6/28/2010

Annual review of this POP has been performed and the POP still reflects current practice.

Initials: _____ Date: _____

Initials: _____ Date: _____

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Project Operating Procedure

# Chain-of-Custody Procedures



## 1.0 Project Scope and applicability

Chain-of-custody (COC) is defined as the unbroken trail of accountability that ensures the physical security of samples, data, and records (EPA Glossary of Quality-Related Terms). This project operating procedure (POP) describes COC procedures applicable to environmental samples collected by AECOM during field sampling and analysis programs. Custody procedures within the laboratories analyzing the samples are not addressed.

Samples are physical evidence. The objective of COC procedures is to provide sufficient evidence of sample integrity to satisfy data defensibility requirements in legal or regulatory situations.

The National Enforcement Investigations Center (NEIC) of the U.S. Environmental Protection Agency (EPA) defines custody of evidence in the following manner:

- It is in your actual possession;
- it is in your view, after being in your physical possession;
- it was in your possession and then you locked or sealed it up to prevent tampering; or
- it is in a secure area.

This POP is to be utilized to conduct the work identified in the title of this POP. In the event the Project Manager or Project Team determines that the protocols and procedures listed in this POP are not applicable to the project, the POP will be updated as a subsequent revision.

## 2.0 Health and safety considerations

The health and safety considerations for the work associated with this POP, including both potential physical and chemical hazards, will be addressed in the site-specific Health and Safety Plan (HASP). In the absence of a site-specific HASP, work will be conducted according to the AECOM Health and Safety Policy and Procedures Manual and/or direction from the Regional Health and Safety Manager.

## 3.0 Interferences

The following may impact the legal or regulatory defensibility of the data:

- The samples are not accompanied by a COC form, and
- The information recorded on the COC form is incomplete, inaccurate, or differs from the information recorded on the sample containers.

## 4.0 Equipment and materials

The following materials are relevant to this procedure:

- COC Form (Figure 1)
- Sample labels
- COC tape or seal (Figure 2)
- Indelible pen or Sharpie™
- Clear plastic sealing tape

Materials identified in related POPs may also be needed.

## 5.0 Procedures

**5.1** Pre-sample collection activities

Some measurement methods require preparation of sample collection media or special treatment of sample containers prior to sample collection. In these cases, COC procedures should be initiated with the media preparation or container treatment. This requires that sample identification numbers or media/container identification numbers be assigned. These numbers should be entered on the COC form, leaving room for the subsequent recording of the associated sample numbers. In this variation, the custodian responsible for media preparation or container treatment has the responsibilities outlined in Section 5.2, and the sampler or field sample custodian has the responsibilities stated in Section 5.3 when he or she receives the prepared media or treated containers. There are a number of acceptable approaches to this variation, and the detailed procedures should be defined in the project-specific Quality Assurance Project Plan (QAPP).

**5.2** Sample collection phase

**5.2.1** As few people as possible should handle the samples. For certain programs, it is helpful if a single person is designated as the sample custodian (the person responsible for the care and custody of the samples until they are transferred to the laboratory for analysis).

**5.2.2** While in the field, sampling personnel should be able to testify that tampering of the samples could not occur without their knowledge. Examples of actions taken may include sealing the sample containers with COC tape or locking the samples in a secure area.

**5.2.3** If samples are to be shipped by commercial overnight carrier, the field sampler or sample custodian completes a COC form (Figure 1) for each cooler/package of samples and places the original of completed form inside the associated cooler/package before the package is sealed (a copy is retained and kept in the field record files). Each completed COC form should accurately list the sample

identification numbers of the samples with which it is packaged, and should contain the identification number of the COC tape on the cooler/package. Representatives of commercial carriers are not required to sign the COC form. Refer to PPG POP 003 Packaging and Shipment of Environmental Samples for specific packaging procedures.

**5.2.4** If samples are hand carried to a laboratory, the person hand carrying the samples is the sample custodian. If the carrier is a different person than the one who filled out the COC form and packaged the samples, then that person transfers custody to the carrier by signing and dating each form in the "Relinquished By" section. The carrier then signs and dates each form in the adjacent "Received By" section. When the carrier transfers the samples to the laboratory, he or she signs and dates each form in the next "Relinquished By" section, and the laboratory sample custodian signs and dates each form in the adjacent "Received By" section.

**5.2.5** If samples are transmitted to the laboratory by courier, the procedures described in either Section 5.2.3 or 5.2.4 are followed, depending on whether the courier is a commercial courier or laboratory representative, and whether the cooler has been secured by COC seals prior to pick up by a laboratory courier.

**5.3** Sample labeling

Labeling of samples occurs at the time of sample collection.

Waterproof, adhesive labels are preferred. Labels should be applied to the container, not the lid whenever possible. Additional interior labels may be required for certain biological samples.

Sample tags may be required for certain projects requiring a strict level of legal or regulatory data defensibility. If tags are utilized, their use will be addressed in the project-specific work plan or QAPP.

Labels should be completed in waterproof, indelible ink. Covering the label with clear plastic tape is recommended to protect the legibility of the label and to prevent the label from detaching from the sample container.

The following information should be recorded on the sample label:

- Project identification (project name and number/client/site)
- Field sample identification code (exactly as it appears on the COC form)
- Sampler's initials
- Date and time of sample collection
- Analyses requested
- Preservation

**5.4** Documentation of sample history

Sample history includes, but is not limited to, preparation of sample containers or collection media (for example, wipes), collection, handling (such as subsampling or compositing), storage, shipment, analytical preparation and analysis, reporting, and disposal.

Refer to PPG POP 001 Recording of Field Data, for specific guidance on documentation of field activities, field measurements, and sample collection.

**5.5** Documentation of custody

It is recommended that a COC form (Figure 1 or equivalent) be initiated upon sample collection. If this is not feasible for a particular project, the COC form may be initiated at the time of sample packaging. If this is the case, the sample collection records will serve as the initial custody document and will document the collection of the sample (sample location and identification, date and time of collection, sampler, and parameters to be analyzed, including containers and preservatives).

The following information is recorded on the COC form:

- Project identification (AECOM project number, client, site name and location).
- Page number (for example, 1 of 2, 2 of 2).
- Field sample identification code. This code should be unique to the sampling event and to the program. This code should agree exactly with the field sample identification code recorded on the bottle label.
- Sampling point location (optional if recorded elsewhere in field records).
- Date and time of sample collection.
- Sample matrix (soil, water, air, etc.).
- Preservative.
- Analysis requested.
- Number of containers.
- Type of sample (grab or composite). Identifying if aqueous samples have been filtered in the field is recommended.
- Signature(s) of sampling personnel and signatures of all personnel handling, receiving, and relinquishing the samples.
- Date(s) and time(s) of each sample transfer.
- Sampler remarks. These comments may serve to alert the laboratory to highly contaminated samples or identify quality control (QC) sample requirements.
- Airbill number (if shipped by overnight commercial carrier).
- Laboratory name and address.

**5.6** COC tape numbers.

The COC is filled out completely and legibly in indelible ink. There should be no unexplained blank spaces. Blank lines should be lined out and initialed and dated.

Data will not be obliterated. Corrections are made, if necessary, by drawing a single line through and initialing and dating the error. The correct information is then recorded with indelible ink.

Information on the COC should agree exactly with that recorded on the sample containers. Discrepancies may result in the samples being incorrectly logged into the laboratory or delays in initiating sample analysis.

**5.7** Sample receipt and inspection

Upon sample receipt, the coolers or packages are inspected for general condition and the condition of the COC tape. The coolers or boxes are then opened and each sample is inspected for damage.

Sample containers are removed from packing material and sample label information is verified against the COC form.

The condition upon receipt, including any discrepancies or problems, is documented and the COC form is completed by signing and recording the date and time of receipt.

Receipt and inspection of samples by subcontractor analytical laboratories will adhere to written procedures established by the laboratory.

## 6.0 Quality assurance / quality control

The records generated in this procedure are subject to review by the sampling team leader, project manager, or designee.

The records generated in this procedure will become a part of the evidence reviewed in the data validation process.

## 7.0 Data and records management

The records generated in this procedure are part of the permanent record supporting the associated measurements and may include, as applicable, the COC forms, sample tags, carrier waybills, and field and laboratory records of sample history (collection, handling, storage, analysis, etc.).

Unanticipated changes to the procedures or materials described in this POP (deviations) should be appropriately documented in the project records.

Records associated with the activities described in this POP should be maintained according to the document management policy for the project.

## 8.0 Personnel qualifications and training

**8.1** Qualifications and training

The individual executing these procedures should have read, and be familiar with, the requirements of this POP.

No specialized skills are necessary in order to implement these procedures; however, an understanding of the concept of custody is useful.

**8.2** Responsibilities

The project manager is responsible for providing the project team with the materials, resources and guidance necessary to properly execute the procedures described in this POP.

The individual performing the work is responsible for implementing the procedures as described in this POP and any project-specific work plans.

For certain sampling programs, the project manager, sampling team leader, or designee may assign an individual to serve as sample custodian. This individual is responsible for supervising the implementation of COC procedures in accordance with this POP and any project-specific work plans or QAPP.

## 9.0 References

American Society for Testing and Materials (ASTM). 2004. Standard Guide for Sample Chain-of-Custody Procedures. D 4840-99 (Reapproved 2004).

PPG POP 001 Recording of Field Data

PPG POP 003 Packaging and Shipment of Environmental Samples

United States Environmental Protection Agency. 2001. Guidance for Preparing Standard Operating Procedures (SOPs). EPA QA/G-6. EPA/240/B-01/004. USEPA Office of Environmental Information, Washington, DC. March 2001.

## 10.0 Revision history

| Revision | Date | Changes |
|---|---|---|
| 0 | June 2010 | Original POP |

**Figure 1. Chain-of-Custody Form**

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**CHAIN OF CUSTODY RECORD**

Page ____ of ____

| Client/Project Name: | Project Location: | Analysis Requested |
|---|---|---|
| Project Number: | Field Logbook No.: | |
| Sampler (Print Name)/(Affiliation): | Chain of Custody Tape Nos.: | |
| Signature: | Send Results/Report to: / TAT: | |

Container Type: P – Plastic; A – Amber Glass; G – Clear Glass; V – VOA Vial; O – Other; E – Encore

Preservation: 1 – HCl, 4°; 2 – $H_2SO_4$, 4°; 3 – $HNO_3$, 4°; 4 – NaOH, 4°; 5 – NaOH/ZnAc, 4°; 6 – $Na_2S_2O_3$, 4°; 7 – 4°

Matrix Codes: DW – Drinking Water; WW – Wastewater; GW – Groundwater; SW – Surface Water; ST – Storm Water; W – Water; S – Soil; SL – Sludge; SD – Sediment; SO – Solid; A – Air; L – Liquid; P – Product

| Field Sample No./Identification | Date | Time | COMP | GRAB | Sample Container (Size/Mat'l) | Matrix | Preserv. | Field Filtered | Lab I.D. | Remarks |
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| Relinquished by: (Print Name)/(Affiliation) | Date: / Time: | Received by: (Print Name)/(Affiliation) | Date: / Time: | Analytical Laboratory (Destination): |
|---|---|---|---|---|
| Signature: | | Signature: | | |
| Relinquished by: (Print Name)/(Affiliation) | Date: / Time: | Received by: (Print Name)/(Affiliation) | Date: / Time: | |
| Signature: | | Signature: | | |
| Relinquished by: (Print Name)/(Affiliation) | Date: / Time: | Received by: (Print Name)/(Affiliation) | Date: / Time: | Sample Shipped Via: UPS FedEx Courier Other |
| Signature: | | Signature: | | Temp blank: Yes No |

**Serial No.** _____

**Figure 2. Chain-of-Custody Tape**

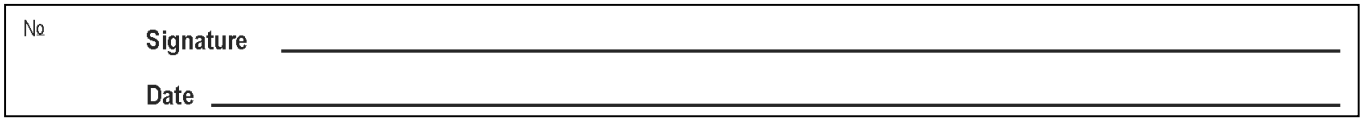

AECOM

Project Operating Procedure

# Packaging and Shipment of Environmental Samples

Procedure Number: PPG 003

Revision No.: 0

Revision Date: June 2010



POP Author Date: 6/28/2010



Project Manager Date: 6/28/2010

Annual review of this POP has been performed and the POP still reflects current practice.

Initials: _____ Date: _____

Initials: _____ Date: _____

Project Operating Procedure

# Packaging and Shipment of Environmental Samples



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Figure 2 Example Chain-of-Custody Tape

Project Operating Procedure

# Packaging and Shipment of Environmental Samples



## 1.0 Project Scope and applicability

### 1.1 Purpose and Applicability

This Project Operating Procedure (POP) describes the procedures associated with the packaging and shipment of environmental samples. Two general categories of samples exist: environmental samples consisting of water and soil submitted for routine environmental testing, and waste material samples which include non-hazardous solid wastes and/or hazardous wastes as defined by 40 CFR Part 261 submitted for environmental testing or bench/pilot-scale treatability testing. Packaging and shipping procedures will differ for the two sample categories.

This POP is applicable to packaging and shipment of environmental samples submitted for routine environmental testing. Environmental samples are not considered a hazardous waste by definition; therefore, more stringent Department of Transportation (DOT) regulations regarding sample transportation do not apply. Environmental samples do, however, require fairly stringent packaging and shipping measures to ensure sample integrity as well as safety for those individuals handling and transporting the samples.

This POP is designed to provide a high degree of certainty that environmental samples will arrive at their destination intact. This POP assumes that samples will often require shipping overnight by a commercial carrier service, therefore, the procedures are more stringent than may be necessary if a laboratory courier is used or if samples are transported directly to their destination by a sampling team member. Should the latter occur, the procedures may be modified to reflect a lesser degree of packaging requirements.

Respective state or federal agency (regional offices) protocols may require or recommend specific types of equipment for use in sample packaging or a specific method of shipment that may vary from the indicated procedures. Deviations from this POP to accommodate other regulatory requirements should be reviewed in advance of the field program, should be explained in the project work plan, and must be documented in the field project notebook when they occur.

### 1.2 General Principles

Sample packaging and shipment generally involves the placement of individual sample containers into a cooler or other similar shipping container and placement of packing materials and coolant in such a manner as to isolate the samples, maintain the required temperature, and to limit the potential for damage to sample containers when the cooler is transported.

## 2.0 Health and safety considerations

Sampling personnel should be aware that packaging and shipment of samples involves potential physical hazards primarily associated with handling of occasional broken sample containers and lifting of heavy objects. Adequate health and safety measures must be taken to protect sampling personnel from these potential hazards. The project Health and Safety Plan (HASP) generally addresses

physical and other potential hazards. This plan must be approved by the project Health and Safety Officer before work commences, must be distributed to all personnel performing sampling, and must be adhered to as field activities are performed. In the absence of a HASP, work will be conducted according to the AECOM Health and Safety Policy and Procedures Manual and/or direction from the Regional Health and Safety Manager.

## 3.0 Interferences

Not Applicable

## 4.0 Equipment and materials

- Sample coolers
- Sample containers
- Shipping labels
- Chain-of-custody records, custody seals
- Bubble wrap
- Vermiculite (granular), or styrofoam pellets
- "Blue Ice" refreezable ice packs, or ice cubes
- Transparent tape, or rubber bands
- Fiber tape
- Duct tape
- Zipper-lock plastic bags
- Trash bags
- Health and Safety supplies
- Equipment decontamination materials
- Field project notebook/pen

## 5.0 Procedures

**5.1** General Information

**5.1.1** Regulatory Information

The extent and nature of sample containerization will be governed by the type of sample, and the most reasonable projection of the sample's hazardous nature and constituents. The EPA regulations (40 CFR Section 261.4(d)) specify that samples of solid waste, water, soil or air, collected for the sole purpose of testing, are exempt from regulation under the Resource Conservation and Recovery Act (RCRA) when any of the following conditions are applicable:

- Samples are being transported to a laboratory for analysis;
- Samples are being transported to the collector from the laboratory after analysis;
- Samples are being stored (1) by the collector prior to shipment for analyses, (2) by the analytical laboratory prior to analyses, (3) by the analytical laboratory after testing but prior to return of sample to the collector or pending the conclusion of a court case.

**5.1.2** Sample Information:

The following information must accompany each shipment of samples on a chain-of-custody form (Figure 1) where each sample has an individual entry:

- Sample collector's name, mailing address and telephone number,
- Analytical laboratory's name, mailing address and telephone number,
- A unique identification of each sample,
- Sample description (matrix),
- Number and type of sample containers,
- Container size,
- Preservative,
- Type and method of analysis requested, and
- Date and time that the samples were collected and prepared for shipping,
- Special handling instructions, including notation of suspected high concentration samples.

**5.1.3** Laboratory Notifications:

Prior to sample collection, the Project Manager, or designated alternative must notify the laboratory manager of the number, type and approximate collection and shipment dates for the samples. If the number, type or date of sample shipment changes due to program changes which may occur in the

field, the Project Manager or alternate must notify the laboratory of the changes. Additional notification from the field is often necessary when shipments are scheduled for weekend delivery.

**5.2** General Site Preparation

**5.2.1** Small Projects

Small projects of one or two days duration may require packaging and shipment of samples using the field vehicle as the sample preparation area. If sample coolers will be sent via third party commercial carrier service, adequate sample packaging materials should be sent to the project location in advance of sampling or purchased from stores located near the site.

**5.2.2** Large Projects

Multi-day or week sampling programs usually require rental of an office trailer or use of existing office/storage facilities for storage of equipment as well as for sample preparation. If possible, a designated area should be selected for storage of unused sample containers/coolers and another area for sample handling, packaging, and shipment. Handling of environmental samples should preferably be conducted in a clean area and away from unused sample containers to minimize the potential for cross contamination. Large quantities of packaging materials may require advance special ordering. Shipping forms/labels may be preprinted to facilitate shipping.

**5.2.3** Cooler Inspection and Decontamination

Laboratories will often re-use coolers. Every cooler received at a project location should be inspected for condition and cleanliness. Any coolers that have cracked interior or exterior linings/panels or hinges should be discarded as their insulating properties are now compromised. Any coolers missing one or both handles should also be discarded if replacement handles (i.e., knotted rope handles) can not be fashioned in the field. Replacement coolers may be purchased in the field if necessary.

The interior and exterior of each cooler should be inspected for cleanliness before using it. Excess strapping tape and old shipping labels should be removed. If the cooler interior exhibits visible contamination or odors it should be decontaminated in accordance with POP PPG 014 Decontamination of Field Equipment prior to use. Drain plugs should be sealed on the inside with duct tape.

**5.2.4** Other Considerations

VOC Samples - Sample containers used for VOC analysis may be grouped into a single cooler, with separate chain-of-custody record, to limit the number of trip blanks required for transportation and analysis. Individual VOC samples may also be placed into Zipper-lock bags to further protect the samples.

Contaminated Samples - Sample containers with presumed high contaminant concentrations should be isolated within their own cooler with each sample container placed into a Zipper-lock bag.

**5.3** Sample Packaging Method

Sample packaging should be conducted in the following manner:

Place plastic bubble wrap matting over the base of each cooler or shipping container as needed. A 2- to 3-inch thickness layer of vermiculite may be used as a substitute base material.

Insert a clean trash bag into the cooler to serve as a liner.

Check that each sample container is sealed, labeled legibly, and is externally clean. Re-label and/or wipe bottles clean if necessary. Clear tape should be placed over the labels to protect them. Wrap each sample bottle individually with bubble wrap secured with tape or rubber bands. Place bottles into the cooler in an upright single layer with approximately one inch of space between each bottle. Do not stack bottles or place them in the cooler lying on their side. If plastic and glass sample containers are used, alternate the placement of each type of container within the cooler so that glass bottles are not placed side by side.

Insert cooler temperature blanks if required.

Place additional vermiculite, bubble wrap, and/or styrofoam pellet packing material throughout the voids between sample containers within each cooler to a level which meets the approximate top of the sample containers. Packing material may require tamping by hand to reduce the potential for settling.

Place cubed ice or cold packs in heavy duty Zip-lock type plastic bags, close the bags, and distribute the packages in a layer over the top of the samples. Cubed ice should be double-bagged to prevent leakage. Loose ice should never be used. Cold packs should be used only if the samples are chilled before being placed in the cooler.

Add additional bubble wrap/styrofoam pellets or other packing materials to fill the balance of the cooler or container.

Obtain two pieces of chain of custody tape as shown in Figure 2 and enter the custody tape numbers in the appropriate place on the chain-of-custody form. Sign and date the chain-of-custody tape.

Complete the chain-of-custody form. If shipping the samples involves use of a third party commercial carrier service, sign the chain-of-custody record thereby relinquishing custody of the samples. Shippers should not be asked to sign chain of custody records. If a laboratory courier is used, or if samples are transported to the laboratory, the receiving party should accept custody and sign the chain-of-custody records. Remove the last copy from the form and retain it with other field notes. Place the original (with remaining copies) in a Zipper-lock type plastic bag and tape the bag to the inside lid of the cooler or shipping container.

Close the top or lid of the cooler or shipping container.

Place the chain of custody tape at two different locations (i.e., one tape on each side) on the cooler or container lid and overlap with transparent packaging tape.

Packaging tape should be placed entirely around the sample shipment containers. A minimum of two full wraps of packaging tape will be placed at least two places on the cooler.

Repeat the above steps for each cooler or shipping container.

**5.4** Sample Shipping Method

Packaged sample coolers should be shipped using one of the following options:

**5.4.1** Hand Delivery

When a project member is transporting samples by automobile to the laboratory, the cooler should only be sealed with tape. In these cases, chain-of-custody will be maintained by the person transporting the sample and chain-of-custody tape need not be used. Chain-of-custody records should be relinquished upon delivery and a copy of the record retained in the project file.

**5.4.2** Laboratory Courier

Laboratory couriers are usually employees of the analytical laboratory receiving the samples. As such, they will accept custody of the samples and must be asked to sign the chain-of-custody records. Chain-of-custody records do not need to be sealed in the cooler although it is recommended that the coolers be sealed with tape. All other packaging requirements generally apply unless otherwise specified in the SAP.

If the laboratory courier is not authorized to accept custody of the samples, or if the requirements of the project plan preclude transfer to the laboratory courier, samples will be handled as described below in Section 5.4.3.

**5.4.3** Third Party Courier

If overnight shipment is required, a third party package delivery service should be used. Transport the cooler to the package delivery service office or arrange for package pick-up at the site. Fill out the appropriate shipping form or airbill and affix it to the cooler. Some courier services may use multi-package shipping forms where only one form needs to be filled out for all packages going to the same destination. If not, a separate shipping form should be used for each cooler. Keep the receipt for package tracking purposes should a package become lost. Please note that each cooler also requires a shipping label which indicates point of origin and destination. This will aid in recovery of a lost cooler if a shipping form gets misplaced. Never leave coolers unattended while waiting for package pick-up. Airbills or waybills will be maintained as part of the custody documentation.

**5.5** Sample Receipt

Upon receipt of the samples, the analytical laboratory will open the cooler or shipping container and will sign "received by laboratory" on each chain-of-custody form. The laboratory will verify that the chain-of-custody tape has not been broken previously and that the tape number corresponds with the number on the chain-of-custody record. The laboratory will note the condition of the samples upon receipt and will identify any discrepancies between the contents of the cooler and chain-of-custody. The analytical laboratory will then forward the back copy of the chain-of-custody record to the project manager to indicate that sample transmittal is complete.

## 6.0 Quality assurance / quality control

Sampling personnel should follow specific quality assurance guidelines as outlined in the site-specific work plan or QAPP. Proper quality assurance requirements should be provided which will specify sample packaging and shipment requirements if variations to the indicated procedures are necessary on a particular project.

The potential for samples to break during transport increases greatly if individual containers are not snugly packed into the cooler. Completed coolers may be lightly shake-tested to check for any loose bottles. The cooler should be repacked if loose bottles are detected.

Environmental samples are generally shipped so that the samples are maintained at a temperature of approximately 4°C. Temperature blanks may be required for some projects as a quality assurance check on shipping temperature conditions. These blanks usually are supplied by the laboratory and consist of a 40-ml vial or plastic bottle filled with tap water. Temperature blanks should be placed near the center of the cooler.

## 7.0 Data and records management

Documentation supporting sample packaging and shipment generally consists of chain-of-custody records and shipping records. In addition, a description of sample packaging procedures will be written in the field project notebook. All documentation will be retained in the project files following project completion.

## 8.0 Personnel qualifications and training

Sample packaging and shipment is a relatively simple procedure requiring minimal training and a minimal amount of equipment. It is, however, recommended that initial attempts be supervised by more experienced personnel. Sampling technicians should be health and safety certified as specified by OSHA (29 CFR 1910.120(e)(3)(i)) to work on sites where hazardous waste materials are considered to be present.

**8.1** Sampling Technician

It is the responsibility of the sampling technician to be familiar with the procedures outlined within this POP and with specific sampling, quality assurance, and health and safety requirements outlined within the project-specific plans. The sampling technician is responsible for proper packaging and shipment of environmental samples and for proper documentation of sampling activities for the duration of the sampling program.

**8.2** Sampling Coordinator

Large sampling programs may require additional support personnel such as a sampling coordinator. The sampling coordinator is responsible for providing management support such as maintaining an orderly sampling process, providing instructions to sampling technicians regarding sampling locations, and fulfilling sample documentation requirements, thereby allowing sampling technicians to collect samples in an efficient manner.

**8.3** Project Manager

The project manager is responsible for ensuring that project-specific requirements are communicated to the project team and for providing the materials, resources, and guidance necessary to perform the activities in accordance with the project plan and this POP. The project manager is also responsible for ensuring that proper arrangements have been made with the designated analytical laboratory. These arrangements include, but are not necessarily limited to, subcontractor agreements, analytical scheduling, and bottle/cooler orders. The project manager may delegate some of these responsibilities to other project staff.

## 9.0 References

Not applicable.

## 10.0 Revision History

| Revision | Date | Changes |
|---|---|---|
| 0 | June 2010 | Original POP |

**Figure 1. Chain of Custody Form**

AECOM

**CHAIN OF CUSTODY RECORD**

Page ____ of ____

| Client/Project Name: | Project Location: | Analysis Requested |
|---|---|---|
| Project Number: | Field Logbook No.: | |
| Sampler (Print Name)/(Affiliation): | Chain of Custody Tape Nos.: | |
| Signature: | Send Results/Report to: / TAT: | |

Container Type: P – Plastic; A – Amber Glass; G – Clear Glass; V – VOA Vial; O – Other; E – Encore

Preservation: 1 – HCl, 4°; 2 – H2SO4, 4°; 3 – HNO3, 4°; 4 – NaOH, 4°; 5 – NaOH/ZnAc, 4°; 6 – Na2S2O3, 4°; 7 – 4°

Matrix Codes: DW – Drinking Water; WW – Wastewater; GW – Groundwater; SW – Surface Water; ST – Storm Water; W – Water; S – Soil; SL – Sludge; SD – Sediment; SO – Solid; A – Air; L – Liquid; P – Product

| Field Sample No./Identification | Date | Time | COMP | GRAB | Sample Container (Size/Mat'l) | Matrix | Preserv. | Field Filtered | Lab I.D. | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
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| Relinquished by: (Print Name)/(Affiliation) | Date: / Time: | Received by: (Print Name)/(Affiliation) | Date: / Time: | Analytical Laboratory (Destination): |
|---|---|---|---|---|
| Signature: | | Signature: | | |
| Relinquished by: (Print Name)/(Affiliation) | Date: / Time: | Received by: (Print Name)/(Affiliation) | Date: / Time: | |
| Signature: | | Signature: | | |
| Relinquished by: (Print Name)/(Affiliation) | Date: / Time: | Received by: (Print Name)/(Affiliation) | Date: / Time: | Sample Shipped Via: UPS FedEx Courier Other |
| Signature: | | Signature: | | Temp blank: Yes No |

**Serial No.** _____

**Figure 2. Chain of Custody Tape**

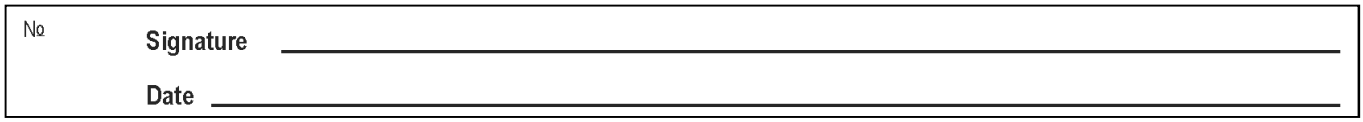

AECOM

Project Operating Procedure

# Operation and Calibration of a Photoionization Detector

Procedure Number: PPG 004

Revision No.: 0

Revision Date: June 2010



POP Author Date: 6/28/2010

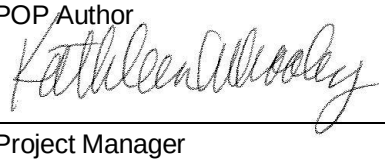

Project Manager Date: 6/28/2010

Annual review of this SOP has been performed and the SOP still reflects current practice.

Initials: _____ Date: _____

Initials: _____ Date: _____

Project Operating Procedure

# Operation and Calibration of a Photoionization Detector



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**2.0 Health and safety considerations ..... 2**

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**5.0 Procedures ..... 3**

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**8.0 Personnel qualifications and training ..... 6**

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Project Operating Procedure

# Operation and Calibration of a Photoionization Detector



## 1.0 Project Scope and applicability

### 1.1 Purpose and Applicability

This document describes the procedures that will be followed by field staff for operation and calibration of a photoionization detector (PID). The PID is primarily used by AECOM personnel for safety and survey monitoring of ambient air, determining the presence of volatiles in soil and water, and detecting leakage of volatiles.

PIDs routinely used by AECOM personnel include the Photovac Microtip, Thermoelectron 580EZ, and MiniRAE 2000. Personnel responsible for using the PID should first read and thoroughly familiarize themselves with the instrument instruction manual.

### 1.2 Principle of Operation

The PID is a non-specific vapor/gas detector. The unit generally consists of a hand-held probe that houses a PID, consisting of an ultraviolet (UV) lamp, two electrodes, and a small fan which pulls ambient air into the probe inlet tube. The probe is connected to a readout/control box that consists of electronic control circuits, a readout display, and the system battery. Units are available with UV lamps having an energy from 9.5 electron volts (eV) to 11.7 eV.

The PID analyzer measures the concentration of trace gas present in the atmosphere by photoionization. Photoionization occurs when an atom or molecule absorbs a photon of sufficient energy to release an electron and become a positive ion. This will occur when the ionization potential of the molecule (in electron volts (eV)) is less than the energy of the photon. The source of photons is an ultraviolet lamp in the probe unit. Lamps are available with energies ranging from 9.5 eV to 11.7 eV. All organic and inorganic vapor/gas compounds having ionization potentials lower than the energy output of the UV lamp are ionized and the resulting potentiometric change is seen as a positive reading on the unit. The reading is proportional to the concentration of organics and/or inorganics in the vapor.

Sample gases enter the probe through the inlet tube and enter the ion chamber where they are exposed to the photons emanating from the UV lamp. Ionization occurs for those molecules having ionization potentials near to or less than that of the lamp. A positive- biased polarizing electrode causes these positive ions to travel to a collector electrode in the chamber. Thus the ions create an electrical current which is amplified and displayed on the meter. This current is proportional to the concentration of trace gas present in the ion chamber and to the sensitivity of that gas to photoionization.

In service, the analyzer is first calibrated with a gas of known composition equal to, close to, or representative of that to be measured. Gases with ionization potentials near to or less than the energy of the lamp will be ionized. These gases will thus be detected and measured by the analyzer. Gases with ionization potentials greater than the energy of the lamp will not be detected. The ionization potentials of the major components of air, i.e., oxygen, nitrogen, and carbon dioxide, range

from about 12.0 eV to 15.6 eV and are not ionized by any of the lamps available. Gases with ionization potentials near to or slightly higher than the lamp are partially ionized, with low sensitivity.

**1.3** Specifications

Refer to the manufacturer's instructions for the technical specifications of the instrument being used. The operating concentration range is typically 0.1 to 2,000 ppm isobutylene equivalent.

## 2.0 Health and safety considerations

The health and safety considerations for the site, including both potential physical and chemical hazards, will be addressed in the site-specific Health and Safety Plan (HASP). In the absence of a site-specific HASP, work will be conducted according to the AECOM Health and Safety Policy and Procedures Manual and/or direction from the Regional Health and Safety Manager.

Only PIDs stamped Division I Class I may be used in explosive atmospheres. Refer to the project HASP for instructions pertaining to instrument use in explosive atmospheres.

## 3.0 Interferences

Regardless of which gas is used for calibration, the instrument will respond to all analytes present in the sample that can be detected by the type of lamp used in the PID.

Moisture will generate a positive interference in the concentration measured for a PID and is characterized by a slow increase in the reading as the measurement is made. Care must be taken to minimize uptake of moisture to the extent possible. Refer to the manufacturers' instructions for care, cleaning, and maintenance.

Uptake of soil into the PID must be avoided as it will compromise instrument performance by blocking the probe, causing a positive interference, or dirtying the PID lamp. Refer to the manufacturers' instructions for care, cleaning, and maintenance.

The user should listen to the pitch of the sampling pump. Any changes in pitch may indicate a blockage and corrective action should be initiated.

## 4.0 Equipment and materials

- Calibration Gas: Compressed gas cylinder of isobutylene in air or similar stable gas mixture of known concentration. The selected gas should have an ionization potential similar to that of the vapors to be monitored, if known. The concentration should be at 50-75% of the range in which the instrument is to be calibrated.

- Regulator for calibration gas cylinder
- Approximately 6 inches of Teflon® tubing
- Tedlar bag (optional)
- Commercially-supplied zero grade air (optional)
- "Magic Marker" or “Sharpie” or other waterproof marker
- Battery charger
- Moisture traps
- Spare lamps
- Manufacturer’s instructions
- Field data sheets or logbook/pen

## 5.0 Procedures

### **5.1** Preliminary Steps

Preliminary steps (battery charging, check-out, calibration, maintenance) should be conducted in a controlled or non-hazardous environment.

### **5.2** Calibration

The PID must be calibrated in order to display concentrations in units equivalent to ppm. First a supply of zero air (ambient air or from a supplied source), containing no ionizable gases or vapors is used to set the zero point. A span gas, containing a known concentration of a photoionizable gas or vapor, is then used to set the sensitivity.

Calibrate the instrument according to the manufacturer’s instructions. Record the instrument model and identification number, the initial and adjusted meter readings, the calibration gas composition and concentration, and the date and the time in the field records.

If the calibration cannot be achieved or if the span setting resulting from calibration is 0.0, then the lamp must be cleaned (Section 5.4).

### **5.3** Operation

Turn on the unit and allow it to warm up (minimum of 5 minutes). Check to see if the intake fan is functioning; if so, the probe will vibrate slightly and a distinct sound will be audible when holding the probe casing next to the ear. Also, verify on the readout display that the UV lamp is lit.

Calibrate the instrument as described in Section 5.2, following the manufacturer’s instructions. Record the calibration information in the field records.

The instrument is now operational. Readings should be recorded in the field records.

When the PID is not being used or between monitoring intervals, the unit may be switched off to conserve battery power and UV lamp life; however, a "bump" test should be performed each time the unit is turned on and prior to taking additional measurements. To perform a bump test, connect the outlet tubing from a Tedlar bag containing a small amount of span gas to the inlet tubing on the unit and record the reading. If the reading is not within the tolerance specified in the project plan, the unit must be recalibrated.

At the end of each day, recheck the calibration. The check will follow the same procedures as the initial calibration (Section 5.2) except that no adjustment will be made to the instrument. Record the information in the field records.

Recharge the battery after each use (Section 5.4).

When transporting, ensure that the instrument is packed in its stored condition in order to prevent damage.

### **5.4** Routine Maintenance

Routine maintenance associated with the use of the PID includes charging the battery, cleaning the lamp window, replacing the detector UV lamp, replacing the inlet filter, and replacing the sample pump. Refer to the manufacturer's instructions for procedures and frequency.

All routine maintenance should be performed in a non-hazardous environment.

### **5.5** Troubleshooting Tips

One convenient method for periodically confirming instrument response is to hold the sensor probe next to the tip of a magic marker. A significant reading should readily be observed.

Air currents or drafts in the vicinity of the probe tip may cause fluctuations in readings.

A fogged or dirty lamp, due to operation in a humid or dusty environment, may cause erratic or fluctuating readings. The PID should never be operated without the moisture trap in place.

Moving the instrument from a cool or air-conditioned area to a warmer area may cause moisture to condense on the UV lamp and produce unstable readings.

A zero reading on the meter should not necessarily be interpreted as an absence of air contaminants. The detection capabilities of the PID are limited to those compounds that will be ionized by the particular probe used.

Many volatile compounds have a low odor threshold. A lack of meter response in the presence of odors does not necessarily indicate instrument failure.

When high vapor concentrations enter the ionization chamber in the PID the unit can become saturated or "flooded". Remove the unit to a fresh air environment to allow the vapors to be completely ionized and purged from the unit.

## 6.0 Quality assurance / quality control

The end use of the data will determine the quality assurance requirements that are necessary to produce data of acceptable quality. These quality assurance requirements will be defined in the site-specific workplan or Sampling and Analysis Plan (SAP), hereafter referred to as the project plan.

Calibration of the PID will be conducted at the frequency specified in the project plan. In the absence of project-specific guidance, calibration will be performed at the beginning of each day of sampling and will be checked at the end of the sampling day or whenever instrument operation is suspect. The PID will sample a calibration gas of known concentration. The instrument must agree with the calibration gas within ±10%. If the instrument responds outside this tolerance, it must be recalibrated.

Checks of the instrument response (Section 5.5) should be conducted periodically and documented in the field records.

## 7.0 Data and records management

Safety and survey monitoring with the PID will be documented in a bound field logbook, or on standardized forms, and retained in the project files. The following information is to be recorded:

- Project name and number.
- Instrument manufacturer, model, and identification number.
- Operator's signature.
- Date and time of operation.
- Calibration gas used.
- Calibration check at beginning and end of day (meter readings before adjustment).
- Span setting after calibration adjustment.
- Meter readings (monitoring data obtained).
- Instances of erratic or questionable meter readings and corrective actions taken.
- Instrument checks and response verifications – e.g., battery check, magic marker response (Section 5.5) or similar test.

## 8.0 Personnel qualifications and training

The project manager is responsible for ensuring that project-specific requirements are communicated to the project team and for providing the materials, resources, and guidance necessary to perform the measurements in accordance with this POP and the project plan.

The field operator is responsible for verifying that the PID is in proper operating condition prior to use and for implementing the calibration and measurement procedures in accordance with this POP and the project plan.

## 9.0 References

United States Environmental Protection Agency. Environmental Investigations Standard Operating Procedures and Quality Assurance Manual (EISOPQAM). USEPA, Region 4, SESD, Enforcement and Investigations Branch, Athens, GA. November 2001.

## 10.0 Revision History

| Revision | Date | Changes |
|---|---|---|
| 0 | June 2010 | Original POP |

AECOM

Project Operating Procedure

# Surface and Subsurface Soil Sampling Procedures

Procedure Number: PPG 005

Revision No.: 0

Revision Date: June 2010

POP Author Date: 6/28/2010

Project Manager Date: 6/28/2010

Annual review of this SOP has been performed and the SOP still reflects current practice.

Initials: _____ Date: _____

Initials: _____ Date: _____

Project Operating Procedure

# Surface and Subsurface Soil Sampling Procedures



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## List of Attachments

Attachment 1. Example Boring Log

Attachment 2. En Core® Sampler Sampling Procedures

Project Operating Procedure

# Surface and Subsurface Soil Sampling Procedures



## 1.0 Project Scope and applicability

This project operating procedure (POP) is applicable to soil sampling. The procedure includes surface and subsurface sampling by various methods using hand auguring, test pit, direct-push, and split-spoon equipment. The procedure includes soil sampling for volatile organic compounds (VOCs). For project specific information (e.g. sampling depths, equipment to be used, and frequency of sampling), refer to the Quality Assurance Project Plan (QAPP) and/or Work Plan, which take precedence over these procedures.

Surface soil sampling, typically considered to be up to two feet below ground surface by EPA standards, is typically accomplished using hand tools such as shovels or hand augers. Test pit samples are considered subsurface samples, although normally collected via hand tools similar to surface soil sampling or by excavation machinery. Direct-push and split-spoon sampling offer the benefit of collecting soil samples from a discrete or isolated subsurface interval, without the need of extracting excess material above the target depth. These methods dramatically reduce time and cost associated with disposal of material from soil cuttings when compared to test pit sampling. In addition, direct-push and split-spoon sampling methods can obtain samples at targeted intervals greater than 15 feet in depth, allowing for discrete depth soil sampling while speeding up the sampling process. Direct-push methods work best in medium to fine-grained cohesive materials such as medium to fine sands, silts, and silty clay soils. Split-spoon sampling works well in all types of soil, but is somewhat slower than direct-push methods. Samples are composited so that each sample jar to be analyzed contains a homogenized representative portion of the interval samples. Due to potential loss of analytes, samples for volatile analysis are not composited. Samples for chemical analysis can be collected by any of the above-mentioned sampling methods, as disturbed soil samples. Undisturbed samples are collected, sealed, and sent directly to the laboratory for analysis. For undisturbed samples, the samples are not homogenized.

## 2.0 Health and safety considerations

All calibration, maintenance and servicing of soil sampling equipment and instrumentation should be performed in a safe area, away from hazardous locations.

Refer to the Site-Specific Health and Safety Plan for health and safety issues and equipment/instrumentation needed. General health and safety equipment includes a combustible gas indicator (CGI), photo/flame ionization detector (PID/FID), tyvek, gloves, safety glasses, and steel-toe boots.

The Site-Specific Health and Safety Plan should be followed during all site activities. Health and safety meetings should be held each day prior to the commencement of activities.

Before soil sampling commences, appropriate entities (e.g. DigSafe, New Jersey Call Before You Dig, local public works departments, company facilities, etc.) must be contacted to assure the anticipated soil sampling locations are marked for utilities, including electrical, telecommunications, water, sewer,

and gas. These entities will be notified by the drilling contractor at least three, but not more than ten business days prior to the start of drilling. Prior to conducting any intrusive operations, existing drawings and other available documentation will be reviewed to evaluate whether potential conflicts with underground utilities exist. If any doubt exists regarding the potential presence of subsurface utilities, a professional utility locating service will be retained to conduct surveys to clear proposed drilling locations. A variety of techniques are available to locate utilities, including ground penetrating radar, electromagnetic conductivity, radio frequency, audio frequency, and passive electric. The efficacy of each technique is dependent on the material used to construct the utility, type of utility, number and type of nearby utilities, and many other factors. As such, it is common practice to use more than one utility locating technique. The requirements for utility location and appropriate techniques will be determined once available information is gathered and evaluated. Soil boring, sampling, and monitoring well locations will be adjusted to avoid underground and overhead utilities. As an added precaution, vacuum boring to a depth of four feet or to the expected invert depth of the deepest utility at any given soil boring or well location may be conducted. However, if vacuum boring is required at certain locations, collection of shallow soil samples for laboratory analysis in the vacuumed zone will still be undertaken from the sidewall area of the vacuumed zone to ensure that shallow surface soil samples will be collected at all proposed off-site investigation locations. The shallow surface soil samples will be collected according the General Soil Sampling procedures in Section 5.1 and Surface Soil Sampling procedures in Section 5.2. All underground utility identification will be performed in accordance with AECOM SH&E SOP No. 726, located in the site-specific Health and Safety Plan (HASP).

## 3.0 Interferences

Low recovery of soil from sampling equipment will prevent an adequate representation of the soil profile and sufficient amount of soil sample. If low recovery is a problem, the hole may be offset and re-advanced, terminated, or continued using a larger diameter sampler.

Asphalt in soil samples can cause false positive results for hydrocarbons. To ensure samples are free of asphalt, do not collect sample from soil with possible asphalt. Note the sampling depth(s) and the depths at with the presence of asphalt are suspected.

Instrumentation interferences addressed in POPs for Calibration of the PID, Headspace Screening for Total Volatile Organics, and Equipment Decontamination Procedures must also be considered.

Cross contamination from sampling equipment will be prevented by using sampling equipment constructed of stainless steel that is adequately decontaminated between samples.

## 4.0 Equipment and materials

The depth at which samples will be collected and the anticipated method of sample collection (direct-push, split-spoon, hand auger, shovel, or test pits) will be presented in the QAPP and/or Work Plan.

The following details equipment typically needed for soil sampling, based on the various methods. See the QAPP and/or Work Plan for specific detail of equipment and supply needs.

Depending on the nature of suspected contamination, field screening instrumentation may be used to direct sampling. Appropriate instrumentation and calibration standards should be available. If volatile organic contaminants are suspected and a PID will be used, refer to the equipment and instrumentation listed in the POP PPG 004 Operation and Calibration of a Photoionization Detector. Equipment in this POP includes but is not limited to:

- PID
- Calibration gas
- Tedlar® gas bags (for calibration)

If field screening methods include jar headspace screening for volatile organics, refer to the equipment and procedure in the POP for Headspace Screening for Total VOCs. Equipment in this POP includes but is not limited to:

- Clean soil ("drillers jars") jars
- Aluminum foil

Appropriate decontamination procedures must be followed for sampling equipment. Refer to POP PPG 014 Decontamination of Field Equipment for the proper decon procedures.

The following general equipment is needed for all soil sampling, regardless of method:

- Stainless steel bowls
- Stainless steel trowels
- Appropriate sample containers for laboratory analysis
- CGI (as necessary – i.e. sites where explosive gasses may be encountered)
- Personal Protective Equipment (PPE)
- Log Book
- Cooler and ice for preservation
- Stakes and flagging to document sampling location

The following additional equipment is needed for volatile organic sampling:

- Electronic pan scale and weights for calibration
- Syringes or other discrete soil core samplers

The following additional equipment may be needed for surface and test pit soil sampling:

- Hand Auger

The following additional equipment may be needed for soil sampling from split-spoon equipment:

- Tape measure or folding carpenter's rule for recording the length of soil recovered in the split-spoon.

All subsurface drilling equipment will be provided and maintained by the subcontractor.

## 5.0 Procedures

**5.1** General Soil Sampling Procedure for All Soil Sampling Methods

1. Record the weather conditions and other relevant on-site conditions.
2. Select the soil sampling location, clear vegetation if necessary, and record the sampling location identification number and pertinent location details.
3. Verify that the sampling equipment is properly decontaminated, in working order, and situated at the intended sampling location.
4. Place polyethylene sheeting on the ground and assemble all necessary sampling equipment on top of it. Cover surfaces onto which soils or soil samplers will be placed (i.e. tables with polyethylene sheeting).
5. Follow the appropriate procedures listed below for either surface, split-spoon, direct push, or test pit sample collection (5.2, 5.3, 5.4, and 5.5 respectively).
7. For projects located in New Jersey, see Section 5.6 for New Jersey-specific requirements for soil samples collected for volatile organics analysis.
6. Collect soil samples according to procedures listed in Section 5.7 depending on project specific analyses.
7. Record date/time, sample ID, and sample descriptions in the field logbook for field form. A sketch or description of the location should also be recorded so the sample location can be re-constructed.
8. Immediately label (and tag if required) the sample containers and place them on ice, if required for preservation. Complete the COC form(s) as soon as possible.
9. Dispose of all excess excavated soil in accordance with the site-specific QAPP and/or Work Plan. Soils may either be segregated based on level of contamination, stockpiled, drummed for disposal, or put back into the hole from which the soil came.
10. Upon completion, clearly label a wooden stake or pin flag with indelible ink and stake or flag the sampling location.

11. Decontaminate the sampling equipment according to POP PPG 014 Decontamination of Field Equipment.

**5.2** Surface Soil Sampling

The following procedures are to be used to collect surface soil samples. Surface soils are considered to be soils that are up to one (1) foot below ground surface, though state regulations and project objectives may define surface soils differently; therefore, the QAPP and/or Work Plan should be consulted for direction on the depth from which to collect the surface soil samples. Sampling and other pertinent data and information will be recorded in the field logbook and/or on field forms. Photographs will be taken as needed or as specified in the QAPP and/or Work Plan.

1. Gently scrape any vegetative covering until soil is exposed. Completely remove any pavement.
2. Remove soil from excavation with a trowel, hand auger, or shovel. Put soils within the sampling interval in a stainless steel bowl for homogenizing. Monitor the excavation as required in the site-specific HASP and/or QAPP and/or Work Plan (i.e., PID).

The criteria used for selecting surface soil locations for sampling may include the following:

- Visual observations (soil staining, fill materials)
- Other relevant soil characteristics
- Site features
- Screening results
- Predetermined sampling approach (i.e. grid or random)
- Sampling objectives as provided in the QAPP and/or Work Plan

3. For VOC analyses, collect representative soil samples directly from the recently-exposed sidewall of the excavation using a syringe or other soil coring device (e.g., TerraCore®, EnCore®). Follow procedures in Section 5.7.1 or 5.7.2 for VOC sampling.
4. Collect sufficient soil to fill all remaining sample jars into a stainless steel bowl. Homogenize the soil samples to obtain a uniform soil composition which is representative of the total soil sample collected according to the following procedure:
    a) Remove all rocks and non-soil objects using a stainless steel spoon or scoop. However, if the soils to be sampled contain chromite ore processing residue (COPR) nodules or chromate chemical production waste (CCPW) materials, **do not** remove these CCPW “non-soil objects” and document their presence in the field logbook.
    b) Form a cone shaped mound with the sample material, then flatten the cone and split the sample into quarters.

c) Use the stainless steel spoon/scoop to mix the quarter samples that are opposite.

d) After mixing the opposite quarters, reform the cone shaped mound.

e) Repeat this procedure a minimum of five (5) times, removing any non-soil objects and breaking apart any clumps.

**5.3** Split-Spoon Sampling

1. At each boring location, the frequency and depth of split-spoon samples will be determined from the QAPP and/or Work Plan. Split-spoon samples may be collected continuously, intermittently, or from predetermined depths.
2. Standard penetration tests will be conducted according to ASTM D1586-99, Standard Test Method for Penetration Test and Split-Barrel Sampling of Soils to record the number of hammer blows required to advance the sampler each 6 inches of depth in the boring log.
3. Split-spoon samplers shall be driven into undisturbed soil by driving the spoon ahead of the drill augers/casing. In cohesive soils, or soils where the borehole remains open (does not collapse), two split-spoon samples may be taken prior to advancing the augers/casing.
4. After split-spoons are retrieved, open the split-spoon and measure the recovery of soil. If a PID will be used for screening, immediately scan the recovered sample for VOCs using a PID/FID. Scan the recovered soil by making a hole in the soil and placing the PID in or very close to the hole. Be very careful not to get soil on the tip of the PID. Take these PID scan readings every 6 inches along the split-spoon. Note any staining and/or presence of water. Record the highest PID reading and the depth at which it was observed along with other observations. If the project is in New Jersey, see Section 5.6 for state-specific procedures on determining where to collect VOC samples. All VOC samples should be collected (see Section 5.7.1 and 5.7.2) prior to logging the sample.
5. If headspace screening for VOCs is required in the QAPP and/or Work Plan, collect a soil sample and perform headspace screening according to the POP for Headspace Screening for Total VOCs.
6. Soils collected using the split-spoon sampler will be logged by the AECOM field representative using the procedure described in ASTM D2488-00 Standard Practice for Description and Identification of Soils. In addition to the description of the soils, blow counts, sample recovery, PID readings (headspace), and the depth to water will also be recorded.
7. Collect the remainder of the sample volume required into a stainless steel bowl. Homogenize the soil so the material is uniform in composition and representative of the total soil sample collected. Follow homogenizing techniques as described in Section 5.2.
8. The QAPP and/or Work Plan may specify that intervals to be sent to the laboratory be determined by visual observation and/or highest PID screening or headspace results,

which can only be determined once the boring is complete. In this instance, a VOC sample should be collected at each interval. The remainder of the soil from that interval will be set aside in a clearly labeled stainless steel bowl covered with aluminum foil. Once the boring has been completed and the sample interval has been determined, the remainder of the soil can be homogenized according to Section 5.2 and submitted for laboratory analysis.

9. Once a boring is complete and all required samples have been collected, the boring may be filled or a monitoring well or piezometer may be installed. Borings must be completed as specified in the QAPP and/or Work Plan.

**5.4** Direct Push Sampling

At each boring location, the frequency of direct-push samples will be determined from the QAPP and/or Work Plan. Typically, samples with direct-push equipment are collected in 4 ft intervals.

1. Sample using either 2' or 4' Macro-Core samplers with acetate liners to obtain discrete soil samples at specific depths.
2. Cut open the acetate liner, and immediately scan the recovered sampler for VOCs using a PID/FID. Note any staining and/or presence of water. Record the highest PID reading and the depth at which it was observed along with other observations. If the project is in New Jersey, see Section 5.6 for state-specific procedures on determining where to collect VOC samples. All VOC samples should be collected (see Section 5.7.1 and 5.7.2) prior to logging the sample.
3. If required in the QAPP and/or Work Plan, collect a soil sample and perform headspace screening according to the POP for Headspace Screening for Total VOCs.
4. Soils collected using the direct-push sampler will be logged by the AECOM field representative using the procedure described in ASTM D2488-00 Standard Practice for Description and Identification of Soils. In addition to the description of the soils and sample recovery, PID readings (headspace), and the depth to water will also be recorded.
5. Collect the remainder of the sample into a stainless steel bowl. Homogenize the soil collected so that the material is uniform in composition and representative of the total soil sample collected. Follow homogenizing techniques as described in Section 5.2.
6. Once a boring is complete and all required samples have been collected, the boring may be filled or a monitoring well or piezometer may be installed. Borings must be completed as specified in the QAPP and/or Work Plan.

**5.5** Test Pit Sampling

1. Excavate the test pit to the desired depth.
2. Using the excavator bucket, collect soil samples as specified in the QAPP and/or Work Plan. Collect a sample and perform screening analyses as required by the QAPP and/or Work Plan. If VOCs contamination is suspected,

perform headspace screening according to the POP for Headspace Screening for Total VOCs.

3. Collect the sample from center of the bucket to avoid potential contamination from the bucket.
4. VOC samples should also be collected from an undisturbed section soil in the excavator bucket. The top layer of exposed soil should be scraped away just prior to collecting the VOC samples. VOC samples should be collected according to the procedures in Section 5.7.1 and 5.7.2.
5. Collect the remainder of the sample volume required into a stainless steel bowl. Homogenize the soil so the material is uniform in composition and representative of the total soil sample collected. Follow homogenizing techniques as described in section 5.2.
6. Dispose of all excavated soil according to the QAPP and/or Work Plan.

**5.6** Special considerations for projects in New Jersey

**5.6.1** All soil samples to be analyzed for volatile organics shall be collected as follows:

- A bulk sampling device that will collect an intact core (e.g., split-spoon) shall be used to minimize contaminant loss during sampling.
- Each core shall be field screened with a properly calibrated direct reading instrument equipped with a PID, flame ionization detector (FID), or other suitable instrument capable of detecting the contaminants pursuant to N.J.A.C. 7:26E-2.1(b) to select samples for volatile organics analysis using the following criteria if field measurement readings are above background:
    - The coring shall be extended until either background readings are achieved, ground water is encountered, or bedrock is encountered; and
    - An undisturbed sample from the six-inch interval registering the highest field measurement reading shall be collected, at a minimum, using the appropriate sample collection method and sampling device for volatile organics analysis pursuant to the requirements specified in N.J.A.C. 7:26E-2.1(a)4.
- If all intervals register the same field measurement reading or all field measurement readings do not exceed background:
    - The coring shall be extended to ground water, bedrock, or 10 feet, whichever is encountered first;
    - One undisturbed sample at a minimum, from the six-inch interval at the bottom of the soil boring shall be collected, using the appropriate sample collection method and sampling device for volatile organics analysis pursuant to the requirements specified in N.J.A.C. 7:26E-2.1(a)4; and

- Contaminants that cannot be detected with field-screening instruments shall be sampled in accordance with the requirements at N.J.A.C. 7:26E-3.4(a).

- In all cases, samples shall be collected in discrete six inch increments. If more or less than a six inch increment is sampled because of poor sample recovery or other field logistical problems, an explanation shall be provided in the soil log.

**5.7** Sample Collection Methods

**5.7.1** Volatile Organics Sampling – Closed System Vials with Organic Free Water (low-level) and Methanol (high level)

For soils collected for analyses of volatile organics, including Volatile Petroleum Hydrocarbons (VPH) or other purgable compounds, a closed system is maintained. From collection through analysis, the sample bottles are not opened. The bottle kit for a routine field sample for these analyses will typically include four 40-mL VOA vials and one soil jar. Two 40-mL VOA vials will contain 5 mL organic free water (OFA) and magnetic stir bars (i.e., low level vials), and two VOA vials will contain 15 mL methanol with no magnetic stir bar (i.e., high level vial). These vials are provided by the laboratory and are pre-weighed. No sample labels are affixed to the VOA vials, as addition of a label would alter the vial weight. All information is recorded directly on the VOA vial using indelible marker. The soil jar is provided for percent solids determination. For VOC or VPH analyses, samples are collected prior to sample homogenization. Collect the VOC sample in accordance with the procedure described below.

1. Prior to sampling, weigh the 40-mL VOA vials received from the laboratory. Record this weight to the nearest 0.1 gram. This weight will be used to determine if the proper amount of soil has been added to the vial. In addition, the weight should be within 0.2 grams of the tare weight on the sample label. If the weight is off by more than 0.2 grams, do not use this vial as some of the OFA may have been lost.

2. Determine the soil volume necessary for the required sample weight, typically 5 grams:

   a) Prepare a 5 mL sampling corer (e.g., Terra Core®) or cut-off plastic syringe.

   b) Tare the sampler by placing it on the scale, and zeroing the scale.

   c) Draw back the plunger to the 5 gram mark or 5mL (5cc) mark on cut-off syringe, and insert the open end of the sampler into an undisturbed area of soil with a twisting motion, filling the sampler with soil. Note the location of the plunger with respect to the milliliter (cc) or other graduation printed on the sampler.

d) Weigh the filled sampler, and remove or add soil until the desired weight is obtained. Note the location of the plunger which corresponds to this weight. Do not use this sample for laboratory analysis.

3. Once the required soil volume has been determined, pull the plunger back to this mark and hold it there while filling the syringe for each sample.

4. Collect 5 grams of soil using the cut-off syringe or Terra Core® sample device. Extrude the 5-grams of soil into one of the low level 40-mL VOA vials. Quickly wipe any soil from the threads of the VOA vial with a clean Kimwipe® and immediately close the vial. It is imperative that the threads be free from soil or other debris prior to replacing the cap on the vial in order to maintain the closed system necessary for the analysis.

5. Gently swirl the vial so that all of the soil is fully wedded with the preservative.

6. Weigh the 40 mL vial with the sample contained. Sample weight should be within 0.5 grams (±10%) of the target weight. Record the sample weight.

7. Fill the other low level 40 mL VOA vial in this manner,

8. Repeat the process for the high level VOA vials.

NOTE: Depending on the laboratory, some high level VOA vials contain 10 mL or 15 mL of methanol. If this is the case, either 10 grams total or 15 grams total, respectively, should be extruded into the high level VOA vial (i.e., 2 or 3 Terra Core® volumes). In other words, the mass of soil in grams should be identical to the volume of methanol in mL (i.e., 1:1 ratio of soil to methanol).

9. Collect any additional QC sample collected (e.g., field duplicate, MS, and MSD) in the same manner as above.

10. Fill the 4-oz glass jar with soil from the same area for percent moisture determination.

**5.7.2** Volatile Organics Sampling – En Core® Samplers

This preservation and sampling method employs the use of a small-diameter core sampler known as the En Core® sampler. The En Core® sampler is a one-time-use, volumetric sampling, storage and transportation device. It is designed to collect and store soil samples for transportation to the laboratory.

Soil should be collected using the En Core® sampler in accordance with the manufacturer's recommendations. A specially designed "T" handle, available from the manufacturer, is used to push the En Core® sampler into the soil matrix and to lock the sampler after collection. A copy of the manufacturer's instructions is provided as Attachment 2 of this POP.

A minimum of three (3) individual 5 gram En Core® samplers must be collected for each soil sample. Upon sample collection, label each En Core® sampler cap with the label provided by the manufacturer and return it to the airtight, resealable foil package. The 4-oz glass jar must be filled with soil from the same area from which

the En Core® samplers were collected for the percent moisture determination. En Core® samplers should be iced (cooled to 4°C [+ 2°C]) or frozen (-7°C and -15°C) for later shipment to the laboratory. En Core® samplers can be shipped directly to the laboratory for VOC analysis; however, laboratory must extrude the soil from the En Core® sampler and analyze, chemically preserve or freeze the soil within 48 hours of sample collection. The soil samples must be extruded from the En Core® sampler into appropriate sample containers using a specially designed "T" handle push-rod tool available from the manufacturer. Soil cannot be scooped out of the En Core® sampler using a trowel or spatula as this can cause a significant loss of VOCs. The holding time for soil stored in an En Core® sampler can be extended if the soil is extruded by the laboratory within 48 hours to a sealed vial and frozen or chemically preserved until actual analysis. This method is appropriate for low- and medium-level analysis under USEPA CLP SOW and low and high-level analysis for USEPA SW846 Methodologies.

En Core® samplers must be stored in a contaminant free environment before use and during shipment. It is the responsibility of the field sampling team and sample container provider (i.e., the laboratory) to ensure contaminant free sample container integrity.

**5.7.3** Soil Sampling Method (All other analyses except VOC/VPH)

When all the required soil for a sampling location has been obtained, the soil can be homogenized as described in section 5.2. Collect sufficient volume to fill all of the remaining sample containers at least ¾ full for all other analyses. Homogenize the soil in a decontaminated stainless steel bowl, removing rocks, sticks, or other non-soil objects (with the exception of COPR nodules and CCPW materials) and breaking apart any lumps of soil prior to filling the remaining sample containers.

NOTE: Soil samples must contain greater than 30% solids for the data to be considered valid.

## 6.0 Quality assurance / quality control

Sampling personnel should follow specific quality assurance guidelines as outlined in the QAPP and/or Work Plan. Proper quality assurance requirements should be provided which will allow for collection of representative samples from representative sampling points. Quality assurance requirements outlined in the QAPP and/or Work Plan typically suggest the collection of a sufficient quantity of field duplicate, field blank, and other samples.

Quality control requirements are dependent on project-specific sampling objectives. The QAPP and/or Work Plan will provide requirements for equipment decontamination (frequency and materials), sample preservation and holding times, sample container types, sample packaging and shipment, as well as requirements for the collection of various quality assurance samples such as trip blanks, field blanks, equipment blanks, and field duplicate samples.

## 7.0 Data and records management

All data and information (e.g., sample collection method used) must be documented on field data sheets, boring logs, or within site log books with permanent ink. Data recorded will include the following:

- weather conditions
- arrival and departure time of persons on site
- instrument type, lamp (PID), make, model and serial number
- calibration gas used
- date, time and results of instrument calibration and calibration checks
- sampling date and time
- sampling location
- samples collected
- sampling depth and soil type
- deviations from the procedure as written
- readings obtained

## 8.0 Personnel qualifications and training

All field staff are required to be OSHA 40-Hour Health and Safety certified with a current annual 8-hour refresher prior to engaging in any field collection activities.

Prior to implementation of these soil sampling procedures, the field sampler will be instructed by a person experienced with these procedures. The field staff will demonstrate to the field team leader the proper set-up, calibration, operation, and routine maintenance of the instrumentation and hand-held equipment, as well as the proper procedures, used to collect soil samples.

## 9.0 References

New Jersey Department of Environmental Protection (NJDEP), August 2005. Field Sampling Procedures Manual.

AECOM SH&E SOP No. 726 Identifying Underground Utilities

POP PPG 004 Operation and Calibration of a Photoionization Detector

POP PPG 014 Decontamination of Field Equipment

ASTM D1586-99, Standard Test Method for Penetration Test and Split-Barrel Sampling of Soils

ASTM D2488-00 Standard Practice for Description and Identification of Soils

## 10.0 Revision History

| Revision | Date | Changes |
|---|---|---|
| 0 | June 2010 | Original POP |

**Attachment 1. Example Boring Log**

| AECOM | *Client:* | | *Boring ID:* |
|---|---|---|---|
| | *Project Number:* | | |
| | *Site Location:* | | |
| | *Coordinates:* | *Elevation:* | *Sheet: 1 of 1* |
| | *Drilling Method:* | | *Monitoring Well Installed:* |
| | *Sample Type(s):* | *Boring Diameter:* | *Screened Interval:* |
| *Weather:* | *Logged By:* | *Date/Time Started:* | *Depth of Boring:* |
| *Drilling Contractor:* | *Ground Elevation:* | *Date/Time Finished:* | *Water Level:* |

| Depth (ft) | Geologic sample ID | Sample Depth (ft) | Blows per 6" | Recovery (inches) | Headspace (ppm) | U.S.C.S | MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known) | Lab Sample ID | Lab Sample Depth (Ft.) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | |
| 2 | | | | | | | | | |
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| 18 | | | | | | | | | |
| 19 | | | | | | | | | |
| 20 | | | | | | | | | |

NOTES:

Checked by _____ Date: _____

| Date | Time | Depth to groundwater while drilling |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

**Attachment 2. En Core® Sampler Sampling Procedures**

# Disposable En Core® Sampler

**En Novative Technologies, Inc.**
1795 Industrial Drive
Green Bay, WI 54302
Phone: 920-465-3960 • Fax: 920-465-3963
Toll Free: 888-411-0757
*www.ennovativetech.com*

## Sampling Procedures

## Using The En Core® T-Handle

*NOTE:*

1. En Core® Sampler is a SINGLE USE device. It cannot be cleaned and/or reused.

2. En Core® Sampler is designed to store soil. Do not use En Core Sampler to store solvent or free product!

3. En Core® Sampler must be used with En Core® T-Handle and/or En Core® Extrusion Tool exclusively. (These items are sold separately.)

### En Core®

**Top**

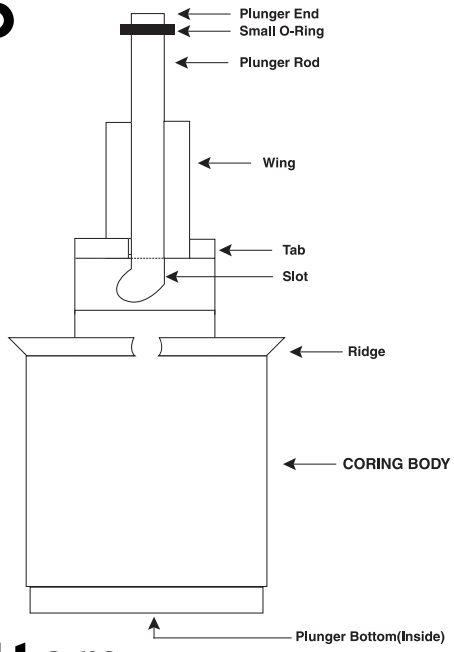


**Bottom**

### En Core® T-Handle

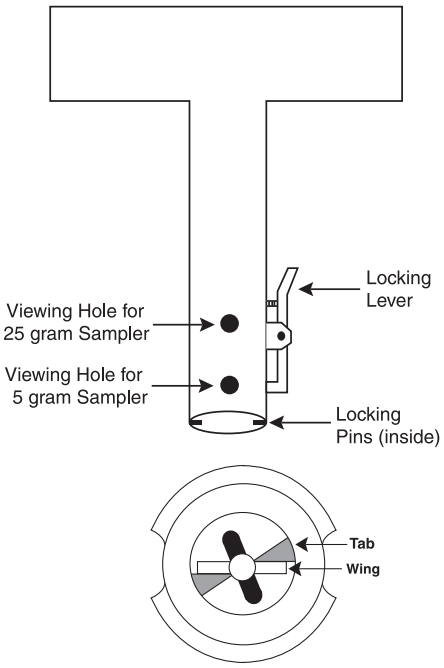


### Sampler Correctly Capped

(Locking arm grooves seated over coring body ridge.)

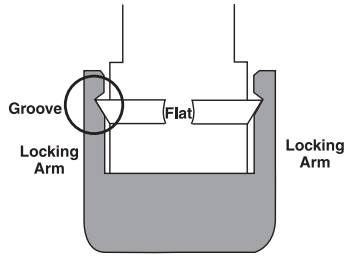


### Sampler Incorrectly Capped

(Cap appears crooked; locking arm grooves not fully seated over coring body ridge.)

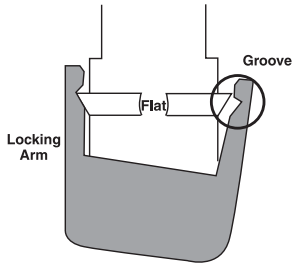


**BEFORE TAKING SAMPLE:**

1. Hold **coring body** and push **plunger rod** down until **small o-ring** rests against **tabs**. This will assure that plunger moves freely.

2. Depress **locking lever** on En Core T-Handle. Place coring body, **plunger end first,** into open end of T-Handle, *aligning the (2)* ***slots*** *on the coring body with the (2)* ***locking pins*** *in the T-Handle*. Twist coring body clockwise to lock pins in slots. Check to ensure Sampler is locked in place. Sampler is ready for use.

**TAKING SAMPLE:**

3. Turn T-Handle with T-up and coring body down. This positions plunger bottom flush with bottom of coring body (ensure that plunger bottom is in position). Using T-Handle, push Sampler into soil until coring body is completely full. When full, small o-ring will be centered in T-Handle **viewing hole**. Remove Sampler from soil. Wipe excess soil from coring body exterior.

4. Cap coring body while it is still on T-handle. *Push* **cap** over **flat** area of **ridge** *and twist* to lock **cap** in place. **CAP MUST BE SEATED TO SEAL SAMPLER (see diagram)**.

**PREPARING SAMPLER FOR SHIPMENT:**

5. Remove the capped Sampler by depressing locking lever on T-Handle while twisting and pulling Sampler from T-Handle.

6. Lock plunger by rotating extended plunger rod fully counter-clockwise until **wings** rest firmly against tabs (see plunger diagram).

7. Attach completed tear-off label (from En Core Sampler bag) to cap on coring body.

8. Return full En Core Sampler to zipper bag. Seal bag and put on ice.

# Disposable En Core® Sampler

## EXTRUSION PROCEDURES

## USING THE En Core® EXTRUSION TOOL

***CAUTION! Always use the Extrusion Tool to extrude soil from the En Core Sampler. If the Extrusion Tool is not used, the Sampler may fragment, causing injury.***

1. To attach En Core Sampler to En Core Extrusion Tool: Depress locking lever on Extrusion Tool and place Sampler, plunger end first, into open end of Extrusion Tool, aligning slots on coring body with pins in Extrusion Tool. Turn coring body clockwise until it locks into place. Release locking lever.

2. Rotate and gently push Extrusion Tool plunger knob clockwise until plunger slides over wings of coring body. (When properly positioned plunger will not rotate further.)

3. Hold Extrusion Tool with capped Sampler pointed upward so soil does not fall out when cap is removed. Remove cap from Sampler by rotating cap until locking arms are aligned with the flat area of ridge and pull cap off. To release soil core push down on plunger knob of En Core Extrusion Tool. Remove and properly dispose of En Core Sampler.

## Warranty and Disclaimers

IMPORTANT: FAILURE TO USE THE EN CORE® SAMPLER IN COMPLIANCE WITH THE WRITTEN INSTRUCTIONS PROVIDED HEREIN VOIDS ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

**PRINCIPLE OF USE.** The En Core Sampler Cartridge System is a volumetric sampling system designed to collect, store and deliver a soil sample. The En Core Sampler comes in two sizes for sample volumes of approximately 25 or 5 grams. There are four components: the cartridge with a movable plunger; a cap with two locking arms; a T-handle (purchased separately); and an extrusion handle (purchased separately). NOTE: The En Core Sampler is designed to store soil. It is not designed to store solvent or free product.

The soil is stored in a sealed headspace-free state. The seals are achieved by three special Viton® * o-rings, two located on the plunger and one on the cap of the Sampler. At no time and under no condition should these o-rings be removed or disturbed.

**QUALITY CONTROL**. The cartridge is sealed in an airtight package to prevent contamination prior to use. Due to the stringent quality control requirements associated with the use of this system, the disposable cartridge is designed to be used only once.

**WARRANTY**. En Novative Technologies, Inc. ("En Novative Technologies") warrants that the En Core Sampler shall perform consistent with the research conducted under En Novative Technologies' approval, within thirty (30) days from the date of delivery, provided that the Customer gives En Novative Technologies prompt notice of any defect or failure to perform and satisfactory proof thereof. THIS WARRANTY DOES NOT APPLY TO THE FOLLOWING, AS SOLELY DETERMINED BY EN NOVATIVE TECHNOLOGIES: (a) Damage caused by accident, abuse, mishandling or dropping; (b)Samplers that have been opened, taken apart or mishandled; (c)Samplers not used in accordance with the directions; and (d)Damages exceeding the cost of the sampler. Seller warrants that all En Core Samplers shall be free from defects in title. THE FOREGOING WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, WHETHER ORAL, WRITTEN, EXPRESSED, IMPLIED OR STATUTORY, INCLUDING ANY INFORMATION PROVIDED BY SALES REPRESENTATIVES OR IN MARKETING LITERATURE. IMPLIED WARRANTIES OF FITNESS AND MERCHANTABILITY SHALL NOT APPLY. En Novative Technologies' warranty obligations and Customer's remedies, except as to title, are solely and exclusively as stated herein.

**LIMITATION OF LIABILITY.** IN NO EVENT SHALL EN NOVATIVE TECHNOLOGIES BE LIABLE FOR ANTICIPATED PROFITS, INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES, INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF REVENUE, DOWN TIME, REMEDIATION ACTIVITIES, REMOBILIZATION OR RESAMPLING, COST OF CAPITAL, SERVICE INTERRUPTION OR FAILURE OF SUPPLY, LIABILITY OF CUSTOMER TO A THIRD PARTY, OR FOR LABOR, OVERHEAD, TRANSPORTATION, SUBSTITUTE SUPPLY SOURCES OR ANY OTHER EXPENSE, DAMAGE OR LOSS, INCLUDING PERSONAL INJURY OR PROPERTY DAMAGE. En Novative Technologies' liability on any claim of any kind shall be replacement of the En Core Sampler or refund of the purchase price. En Novative Technologies shall not be liable for penalties of any description whatsoever. In the event the En Core Sampler will be utilized by Customer on behalf of a third party, such third party shall not occupy the position of a third-party beneficiary of the obligation or warranty provided by En Novative Technologies, and no such third party shall have the right to enforce same. All claims must be brought within one (1) year of shipment, regardless of their nature.

**En Novative Technologies, Inc.**
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Phone: 920-465-3960 • Fax: 920-465-3963
Toll Free: 888-411-0757
*www.ennovativetech.com*

The En Core™ Sampler is covered by One or More of the Following U.S. Patents: 5,343,771; 5,505,098; 5,517,868; 5,522,271. Other U.S. and Foreign Patents Pending.

* Viton® is a registered trademark of DuPont Dow Elastomers.

AECOM

Project Operating Procedure

# Monitoring Well Construction and Installation

Procedure Number: PPG 006

Revision No.: 0

Revision Date: June 2010



POP Author — Date: 6/28/2010



Project Manager — Date: 6/28/2010

Annual review of this POP has been performed and the POP still reflects current practice.

Initials: _____ Date: _____

Initials: _____ Date: _____

Project Operating Procedure

# Monitoring Well Construction and Installation



## Contents

**1.0 Project Scope and applicability ..... 1**

**2.0 Health and safety considerations ..... 2**

**3.0 Interferences ..... 2**

**4.0 Equipment and materials ..... 2**

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**6.0 Quality assurance / quality control ..... 9**

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**8.0 Personnel qualifications and training ..... 9**

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**10.0 Revision History ..... 10**

## List of Attachments

Attachment 1. Example Monitoring Well Construction Log

Project Operating Procedure

# Monitoring Well Construction and Installation



## 1.0 Project Scope and applicability

### 1.1 Purpose and Applicability

This Project Operating Procedure (POP) provides guidance for installing groundwater monitoring wells. Monitoring wells are installed to monitor the depth to groundwater, to measure aquifer properties, and to obtain samples of groundwater for chemical analysis.

This POP is applicable to installation of single monitoring wells within a borehole. The construction and installation of nested, multilevel or other special well designs is not covered within this POP as these type of wells are not frequently constructed. This POP applies to both overburden and bedrock monitoring wells.

Some states and EPA Regions have promulgated comprehensive guidelines for monitoring well construction and for subsurface investigation procedures. Deviations from this POP to accommodate other regulatory requirements should be reviewed in advance of the field program, should be explained in the applicable Remedial Investigation Work Plan, and must be documented in the field project notebook when they occur.

### 1.2 General Principles

Monitoring well construction and installation generally involves drilling a borehole using conventional drilling equipment, installing commercially available well construction and filter/sealing materials, and development of the well prior to sampling. This POP covers well construction and installation methods only. Borehole drilling and well development methods are covered under POP PPG 005 Surface and Subsurface Soil Sampling Procedures and POP PPG 007 Monitoring Well Development, respectively.

### 1.3 Quality Assurance Planning Considerations

Field personnel should follow specific quality assurance guidelines as outlined in the site-specific QAPP.

The following aspects of monitoring well design and installation procedures depend on project-specific objectives which are addressed in the QAPP and in the Remedial Investigation Work Plan:

- Borehole drilling method and diameter,
- Type of construction materials for well screen, riser, filter pack and seals,
- Diameter of well materials,
- Length of well screen,
- Location, thickness, and composition of annular seals, and
- Well completion and surface protection requirements.

## 2.0 Health and safety considerations

Monitoring well installation may involve chemical hazards associated with materials in the soil or groundwater being investigated; and always involves physical hazards associated with drilling equipment and well construction methods. When wells are to be installed in locations where the aquifer and/or overlying materials may contain chemical hazards, a Health and Safety Plan (HASP) must be prepared and approved by the Health and Safety Officer before field work commences. This plan must be distributed to all field personnel and must be adhered to as field activities are performed.

## 3.0 Interferences

**3.1** Not Applicable

## 4.0 Equipment and materials

**4.1** Well Construction Materials

Well construction materials are usually provided by the drilling subcontractor and most often consist of commercially available flush-threaded well screen and riser pipe constructed of PVC or stainless steel with a minimum 2-inch inside diameter. The length of the screen and the size of the screen slots should be specified in the Remedial Investigation Work Plan.

**4.2** Well Completion Materials

Well completion materials include silica sand, bentonite, cement, protective casings and locks. Completion materials are generally provided by the drilling subcontractor.

**4.3** Other required materials include the following:

- Potable water supply
- Fiberglass or steel measuring tape
- Water level indicator
- Well construction diagrams (A typical well construction diagram is presented as Figure 1)
- Waterproof marker or paint (to label wells)
- Health and Safety supplies
- Equipment decontamination materials
- Field project notebook/pen

## 5.0 Procedures

**5.1** General Preparation

**5.1.1** Borehole Preparation

Standard drilling methods should be used to achieve the desired drilling/well installation depths specified in the Remedial Investigation Work Plan. Soil sampling, if conducted, should be conducted in accordance with POP PPG 005 Surface and Subsurface Soil Sampling Procedures.

The diameter of the borehole must be a minimum of 2 inches greater than the outside diameter of the well screen or riser pipe used to construct the well. This is necessary so that sufficient annular space is available to install filter packs, bentonite seals, and grout seals. Bedrock wells may require reaming after coring in order to provide a large enough borehole diameter for well installation.

Rotary drilling methods requiring bentonite-based drilling fluids, if selected, should be used with caution to drill boreholes that will be used for monitoring well installation. The bentonite mud builds up on the borehole walls as a filter cake and permeates the adjacent formation, potentially reducing the permeability of the material adjacent to the well screen.

**5.1.2** Well Material Decontamination

Although new well materials (well screen and riser pipe) generally arrive at the site boxed and sealed within plastic bags, it is sometimes necessary to decontaminate the materials prior to their use. Well materials should be inspected by the Task Leader upon delivery to check cleanliness. If the well materials appear dirty, or if local or regional regulatory guidance requires decontamination, then well material decontamination should be performed by the drilling subcontractor.

**5.2** Well Construction Procedure

**5.2.1** Depth Measurement

Once the target drilling depth has been reached, the drilling subcontractor will measure the total open depth of the borehole with a weighted, calibrated tape measure. Adjustments of borehole depth can be made at this time by drilling further or installing a small amount of sand filter material to achieve the desired depth. If drilling fluids were used during the drilling process, the borehole should be flushed at this time using potable water. The water table depth may also be checked with a water level indicator if this measurement cannot be obtained with the calibrated tape.

**5.2.2** Centralizers

Centralizers may be used but are not required. Centralizers are especially helpful for deep well installations where it may be difficult to position the well by hand.

Centralizers may not be necessary on shallow water table well installations where the well completion depth is within 25 feet of the ground surface.

**5.2.3** Well Construction

The well screen and riser pipe generally are assembled by hand as they are lowered into the borehole. Before the well screen is inserted into the borehole, the full length of the slotted portion of the well screen as well as the unslotted portion of the top and bottom of the screen should be measured with the measuring tape. These measurements should be recorded on the well construction diagram. The maximum length of well screen (or open borehole in bedrock wells) for monitoring wells is 25 feet. In cases where low-flow sampling is intended in newly installed monitoring wells, the wells should be installed with no more than five feet of screen.

After the above measurement has been taken, the drilling subcontractor may begin assembling the well. As the assembled well is lowered, care should be taken to ensure that it is centered in the hole if centralizers are not used. The well should be temporarily capped before filter sand and other annular materials are installed.

**5.2.4** Filter Sand Installation

The drilling subcontractor should fill the annular space surrounding the screened section of the monitoring well to at least 1 foot above the top of the screen with an appropriately graded, clean silica sand or fine gravel. In general, the filter pack should not extend more than 3 feet above the top of the screen to limit the thickness of the monitoring zone. If coarse filter materials are used, an additional 1-foot thick layer of fine sand should be placed immediately above the filter pack to prevent the infiltration of sealing components (bentonite or grout) into the filter pack. As the filter pack is placed, a weighted tape should be lowered in the annular space to verify the depth to the top of the layer. Depending upon depth, some time may be required for these materials to settle. If necessary, to eliminate possible bridging or creation of voids, placement of the sand pack may require the use of a tremie pipe. Tremie pipe sandpack installations are generally suggested for deep water table wells and for wells which are screened some distance beneath the water table.

**5.2.5** Bentonite Seal Installation

An approximate 1-foot thick layer of slurry seal will be installed by the drilling subcontractor immediately above the well screen filter pack in all monitoring wells. The purpose of the seal is to provide a barrier to vertical flow of water in the annular space between the borehole and the well casing. Bentonite is used because it swells significantly upon contact with water. As an option, powdered bentonite may be mixed with water into a very thick slurry and a tremie pipe used to inject the seal to the desired depth.

**5.2.6** Annular Grout Seal Installation

This grout seal should consist of a bentonite/cement mix with a ratio of bentonite to cement of between 1:5 and 1:20. The grout ratio should be chosen based on site conditions with a higher percentage of bentonite generally used for formations with higher porosity. A mud balance should be used if a specific mud density is required at a particular site. Grout slurry should be pumped into the annular space using a side-discharging tremie pipe located about 2 feet above the sand pack. Side discharge will help preserve the integrity of the sand pack.

In situations where the monitoring well screen straddles the water table, the seal will be in the unsaturated zone. Optionally, seals in this situation may be a cement/bentonite mixture containing up to 10 percent bentonite by weight. This type of mixture shall be tremied to the desired depth in the borehole.

Drill cuttings, even those known not to be contaminated, will not be used as backfill material.

**5.2.7** Well Completion

The drilling subcontractor will cut the top of the well to the desired height and install a vented (if possible), locking cap. The upper portion of the well casing can optionally be drilled to allow venting. Well casings are usually cut to be a certain height above ground surface (typically 2.5 to 3 feet) or are cut to be flush with the ground surface.

**5.2.8** Protective Casing/Concrete Pad Installation

The drilling subcontractor will install a steel guard pipe on the well as a protective casing. The borehole around the guard pipe will be dug out to an approximate 2 to 3-foot radius to a minimum depth of 1 foot at the center and 6 inches at the edges. After installing the protective casing, the excavation will be filled with a concrete/sand mix. The surface of the concrete pad will be sloped so that drainage occurs away from the well. Flush-mount protective casings may not require an extensive concrete pad and should be completed such that they are slightly mounded above the surrounding surface to prevent surface water from running over or ponding on top of the casing. It should be noted, however, that in areas subject to snowfall, flush-mount casings may have to be installed so that they are entirely flush with the ground surface as they may be damaged by snow plows.

Above-ground protective casings should also be vented or should have non-air tight caps. Flush mount installations should not be vented. Installation of additional guard pipes may be necessary around above-ground well completions in traffic areas. Protective casings should be lockable to prevent unauthorized access.

**5.2.9** Well Numbering

The Task Leader will ensure that each well casing is identified with an indelible marker, paint, or stamp. This is particularly important with nested or paired wells to

distinguish between shallow and deep wells. The well should be labeled on both the outside of the protective casing and inside beneath the protective casing lid.

**5.2.10** Measuring Point Identification

The Task Leader will ensure that the measuring point from which water level measurements will be made at each well is marked along the upper edge of the well casing. PVC wells can easily be notched with a pocket knife or saw. Stainless steel wells (or PVC wells) can be marked with a waterproof marker on the outside of the well casing with an arrow pointing to the measuring point location. The measuring point is the point which will require surveying during the well elevation survey task.

**5.2.11** Well Measurements

Upon completion, the following well measurements should be taken and recorded on the well construction diagram (Figure 1):

- Depth to static water level if water level has stabilized,
- Total length of well measured from top-of-well casing,
- Height of well casing above or below ground surface,
- Height of protective casing above ground surface,
- Depth of bottom of protective casing below ground surface (may be estimated).

Well screen filter pack, bentonite seal and annular seal thicknesses and depths should also be recorded on the well construction diagram.

**5.2.12** Disposal of Drilling Wastes

Drill cuttings and other investigation-derived wastes such as drilling mud or well development/purge water must be properly contained and disposed of. Site-specific requirements for collection and removal of these waste materials should be outlined within the Remedial Investigation Work Plan. Containment of these materials should be performed by the drilling subcontractor.

**5.2.13** Well Development

After installation of a well and prior to use of the well for water-level measurements or collection of water quality samples, development of the well shall be undertaken in accordance with POP PPG 007 Monitoring Well Development. Well development will be performed by the drilling subcontractor.

**5.2.14** Well Elevation Survey

At the completion of the well installation program, all monitoring wells are to be surveyed by a surveying subcontractor in accordance with NJDEP requirements.

**5.2.15** Double Casing

In boreholes where a shallow water-bearing zone is encountered above a deeper water bearing zone, casing will be installed to prevent downward migration between the water-bearing zones in accordance with N.J.A.C. 7.9D. The casing will be installed to a sufficient depth to prevent migration between the water-bearing zones, and the annular space between the casing and borehole, as well as the annular space between water-bearing zones, will be grouted. The grout will be allowed to set for a minimum of 24 hours prior to further advancement of the borehole.

In accordance with the NJDEP FSPM, installation of well couplets (e.g., shallow and deep) and well triplets (e.g., shallow, intermediate and deep) will be installed in separate boreholes since grout is less likely to invade well intakes (screens) if the wells are installed in separate boreholes. Care will be taken to assure that any confining unit between aquifer zones is not breached without providing adequate protection of underlying/overlying aquifers.

In accordance with Subchapter 2 (Requirements and Procedures for the Construction, Installation, Operation and Maintenance of Wells) NJAC 7:9D-2.1(a), *"monitoring wells, air sparging wells, soil vapor extraction wells, recovery wells, and wells or well points installed for environmental remediation projects"* are considered Category 3 wells for the purposes of establishing general and specific well construction standards[1].

In accordance with NJAC 7:9D-2.4, the following specific requirements also apply to Category 3 wells in unconsolidated aquifers where a confining layer(s) exist shall be constructed in accordance with the following:

1. The screened interval or the filter pack shall not extend across the interface of a confining layer.

2. Monitoring wells will be constructed in accordance with Figure 6.14 on Page 173 of 188 of the August 2005 NJDEP Field Sampling Procedures Manual (see below). The outer casing shall be driven to a minimum of one foot below the drilled borehole.

[1] The requirements in NJAC 7:9D-2.1(b)1, requiring a minimum of 20 feet of outer-most well casing into the confining layer or to the base of the confining layer is intended for water supply wells and in areas where there is salt water intrusion where double casing is needed to protect the water supply.

**Field Sampling Procedures Manual**
Chapter 6G – Page 173 of 188

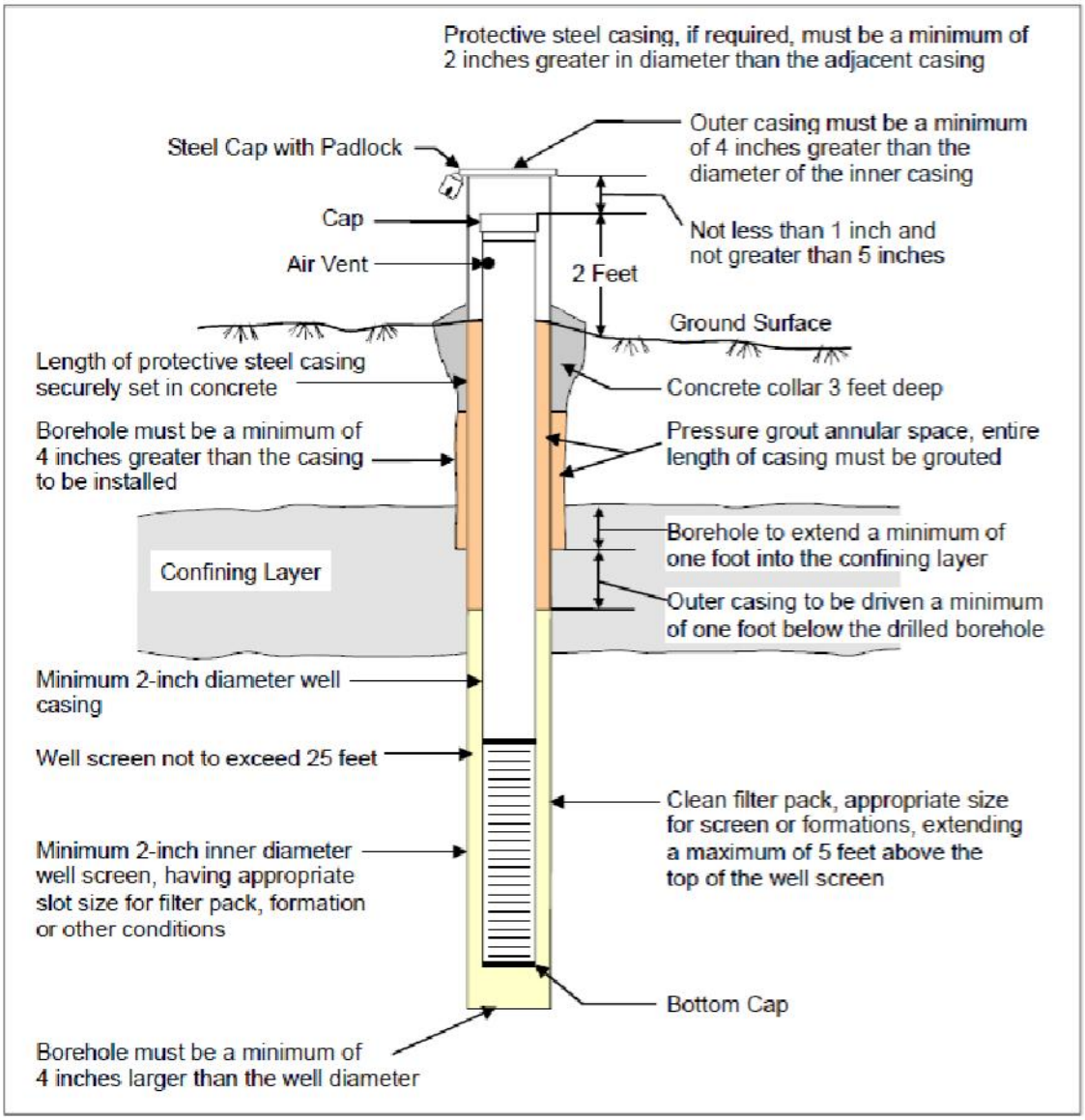


Figure 6.14 Confined Unconsolidated Aquifer Well

## 6.0 Quality assurance / quality control

Certain quality control measures should be taken to ensure proper well completion.

- The borehole will be checked for total open depth, and extended by further drilling or shortened by backfilling, if necessary, before any well construction materials are placed.
- Water level and non-aqueous phase liquid (NAPL) presence will be checked during well installation to ensure that the positions of well screen, sand pack, and seal, relative to water level, conform to project requirements.
- The depth to the top of each layer of packing (i.e., sand, bentonite, grout, etc.) will be verified and adjusted if necessary to conform to project requirements before the next layer is placed.
- If water or other drilling fluids have been introduced into the boring during drilling or well installation, samples of these fluids may be required for analysis of chemical constituents of interest at the site.

## 7.0 Data and records management

All well construction data will be recorded on the Monitoring Well Construction Detail form. A typical Monitoring Well Construction Detail form is presented as Figure 1. All wells will be referenced onto the appropriate site map. A field notebook and/or boring log will be used as additional means of recording data. In no case will the notebook or boring log take the place of the well construction diagram.

## 8.0 Personnel qualifications and training

Well construction and installation requires a moderate degree of training and experience as numerous drilling situations may occur which will require field decisions to be made. Inexperienced personnel will be supervised until they are capable of working on their own. Experienced drillers will be utilized, as they are also of great assistance with problem resolution in the field. Field personnel should be health and safety certified as specified by OSHA (29 CFR 1910.120(e)(3)(i)) to work on sites where hazardous waste materials are considered to be present.

### **8.1** Project Manager

It is the responsibility of the Project Manager to ensure that each project involving monitoring well installation is properly planned and executed. The project manager is responsible for ensuring that project-specific requirements are communicated to the project team and for providing the materials, resources, and guidance necessary to perform the measurements in accordance with this POP and the project plan.

**8.2** Task Leader

The Task Leader for drilling activities will be a geologist or hydrogeologist. It is the responsibility of the Task Leader to directly oversee the construction and installation of the monitoring well by the drilling subcontractor to ensure that the well-installation specifications defined in the Remedial Investigation Work Plan are adhered to, and that all pertinent data are recorded on the appropriate forms.

**8.3** Drilling Subcontractor

The drilling subcontractor is required to obtain the necessary permits and must be licensed in accordance with N.J.A.C. 7:9D. It is the responsibility of the drilling subcontractor to provide the necessary equipment for well construction and installation. Well construction materials should be consistent with project requirements. The drilling contractor will be licensed in accordance with applicable State regulations, and will be responsible for obtaining all necessary permits.

**8.4** Surveying Subcontractor

It is the responsibility of the surveying subcontractor to provide one or more of the following well measurements as specified in the Remedial Investigation Work Plan: ground surface elevation, horizontal well coordinates, top of well casing elevation (i.e., top-of-casing, or measuring point elevation), and/or top of protective casing elevation.

## 9.0 References

Standard References for Monitoring Wells, Massachusetts Department of Environmental Protection, WSC-310-91, 1991.

N.J.A.C. 7:9D Well Construction and Maintenance; Sealing of Abandoned Boreholes, 2007.

NJDEP "Field Sampling Procedures Manual," August 2005.

United States Environmental Protection Agency. Environmental Investigations Standard Operating Procedures and Quality Assurance Manual (EISOPQAM). USEPA, Region 4, SESD, Enforcement and Investigations Branch, Athens, GA. November 2001.

POP PPG 005 Surface and Subsurface Soil Sampling Procedures

POP PPG 007 Monitoring Well Development

## 10.0 Revision History

| Revision | Date | Changes |
|---|---|---|
| 0 | June 2010 | Original POP |

## Attachment 1 – Monitoring Well Construction Log

| | | | |
|---|---|---|---|
| AECOM | Client: | | BORING ID: |
| | Project Number: | | |
| | Site Location: | | |
| | Coordinates: | Elevation: | Sheet: |
| | Drilling Method: Shallow-stem auger (Air - rotatory) | | Monitoring Well Installed: yes |
| | Sample Type(s): Trowel, split-spoon sampling | Boring Diameter: 6" | Screened Interval: |
| Weather: | Logged By: | Date/Time Started: | Depth of Boring: |
| Drilling Contractor: | Ground Elevation: | Date/Time Finished: | Water Level: |

| Depth (ft) | Geologic sample ID | Well Construction | Headspace w/ PID (ppm) | Depth to Water | MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known) | Lab Sample ID | Lab Sample Depth (Ft.) |
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**NOTES:** PRIVILEGED AND CONFIDENTIAL
ATTORNEY CLIENT PRIVILEGED. PREPARED AT THE REQUEST OF COUNSEL.
THIS IS A PRELIMINARY DRAFT. IT HAS BEEN PREPARED BASED
ON PRELIMINARY INFORMATION AND ON ASSUMPTIONS. NO ONE MAY
RELY ON THIS DRAFT. IT IS SUBJECT TO CHANGE AS ADDITIONAL
INFORMATION BECOMES AVAILABLE OR IS CLARIFIED.
Checked by _____ Date:_____

| Date | Time | Depth to groundwater while drilling |
|---|---|---|
| | | |
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AECOM

Project Operating Procedure

# Monitoring Well Development

Procedure Number: PPG 007

Revision No.: 0

Revision Date: June 2010



POP Author Date: 6/28/2010

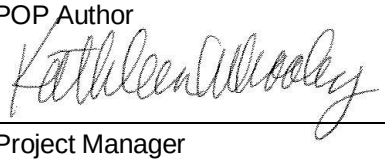

Project Manager Date: 6/28/2010

Annual review of this SOP has been performed and the SOP still reflects current practice.

Initials: _____ Date: _____

Initials: _____ Date: _____

Project Operating Procedure

# Monitoring Well Development



## Contents

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**2.0 Health and Safety Considerations ..... 1**

**3.0 Interferences ..... 2**

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Project Operating Procedure

# Monitoring Well Development



## 1.0 Scope and Applicability

### 1.1 Purpose and Applicability

This POP describes the methods used for developing newly installed monitoring wells and/or existing wells which may require redevelopment/rehabilitation. This POP is applicable to monitoring wells and/or small diameter recovery wells and piezometers.

Monitoring well development and/or redevelopment is necessary for several reasons:

- To improve/restore hydraulic conductivity of the surrounding formations as they have likely been disturbed during the drilling process, or may have become partially plugged with silt,
- To remove drilling fluids (water, mud), when used, from the borehole and surrounding formations, and
- To remove residual fines from well filter materials and reduce turbidity of groundwater, therefore, reducing the chance of chemical alteration of groundwater samples caused by suspended sediments.

Respective state or federal agency (regional offices) regulations may require specific types of equipment for use or variations in the indicated method of well development. Deviations from this POP to accommodate other regulatory requirements should be reviewed in advance of the field program, should be explained in the Work Plan or Quality Assurance Project Plan (QAPP), and must be documented in the field logbook when they occur.

### 1.2 General Principles

Well development generally involves withdrawal of an un-specified volume of water from a well using a pump, surge block or other suitable method such that, when completed effectively, the well is in good or restored hydraulic connection with the surrounding water bearing unit and is suitable for obtaining representative groundwater samples or for other testing purposes.

## 2.0 Health and Safety Considerations

Monitoring well development may involve chemical hazards associated with materials in the soil or aquifer being characterized and may involve physical hazards associated with use of well development equipment. When wells are to be installed and developed on hazardous waste investigation sites, a Health and Safety Plan must be prepared and approved by the Health and Safety Officer before field work commences. This plan must be approved by the project Health and Safety Officer before work commences, must be distributed to all field project personnel, and must be adhered to as field activities are performed.

## 3.0 Interferences

Well development performed with inappropriate techniques or improper procedures may lead to groundwater monitoring data that is not representative of the formation. Careful consideration should be given to the monitoring well development method selected, and the procedures should be followed as presented in this POP.

Monitoring well development will be conducted a minimum of 8 hours after completion of the well construction to allow the grout to set.

## 4.0 Equipment and Materials

Well development can be performed using a variety of methods and equipment. The specific method chosen for development of any given well is governed by the purpose of the well, well diameter and materials, depth, accessibility, geologic conditions, static water level in the well, and type of contaminants present, if any.

The following list of equipment, each with their own particular application, may be used to develop and/or purge monitoring wells.

### **4.1** Bailer Purging

A bailer is used to purge silt-laden water from wells after using other devices such as a surge block. In some situations, the bailer can be used to develop a well by bailing and surging, often accompanied with pumping. A bailer should be used for purging in situations where the depth to static water is greater than 25 feet and/or where insufficient hydraulic head is available for use of other development methods.

### **4.2** Surge Block Development

Surge blocks are commercially available for use with Waterra™-type pumping systems or may be manufactured using a rubber or teflon "plunger" attached to a rod or pipe of sufficient length to reach the bottom of the well. Well drillers usually can provide surge blocks if requested. A recommended design is shown in Figure 1.

### **4.3** Pump Development

A pump is often necessary to remove large quantities of silt-laden ground water from a well after using the surge block. In some situations, the pump alone can be used to develop the well and remove the fines by overpumping. Since the purpose of well development is to remove suspended solids from a well and surrounding filter pack, the pump must be capable of moving some solids without damage. The preferred pump is a submersible pump which can be used in both shallow and deep ground water situations. A centrifugal pump may be used in shallow wells but will work only where the depth to static ground water is less than approximately 25 feet. Pumping may not be successful in low-yielding aquifer materials or in wells with insufficient hydraulic head.

**4.4** Compressed Gas Development

Compressed gas, generally nitrogen from a tank or compressed air through a compressor, can be used to both surge and develop a monitoring well. The method works by injection of compressed gas at the bottom of the water column, driving sediment-laden water to the surface. Compressed gas can also be used for "jetting" - a process by which the gas is directed at the slots in the well screen to cause turbulence (thereby disturbing fine materials in the adjacent filter pack). Compressed gas is not limited by any depth range.

Since the compressed gas will be used to "lift" water from the monitoring well, provisions must be made for controlling the discharge from contaminated wells. This is generally accomplished by attaching a "tee" discharge to the top of the casing and providing drums to contain the discharged water. Gas-lifting should never be done in contaminated wells without providing a means to control discharge.

**4.5** Other Required Materials:

- Well development records (Figure 2)
- Health and Safety equipment
- Equipment decontamination materials
- Water level indicator
- Water quality instrumentation: turbidity meter, pH, temperature, specific conductance meters, as required
- Field logbook/pen

## 5.0 Procedures

**5.1** General Preparation

**5.1.1** Well Records Review: Well completion diagrams should be reviewed to determine well construction characteristics. Formation characteristics should also be determined from review of available boring logs.

**5.1.2** Site Preparation: Well development, similar to groundwater sampling, should be conducted in as clean an environment as possible. This usually requires, at a minimum, placing sheet plastic on the ground to provide a clean working area for development equipment.

**5.1.3** Monitoring well development will occur a minimum of 8 hours after completion of monitoring well construction, to allow the grout to set.

**5.1.4** IDW Containment: Provisions should be in place for collection and management of investigation-derived wastes (IDW), specifically well development water and miscellaneous expendable materials generated during the development process. The collection of IDW in drums or tanks may be required depending on project-specific requirements.

**5.1.5** Water Level/Well Depth Measurement: The water level and well depth should be measured with a water level indicator and written on the well development record. This information is used to calculate the volume of standing water (i.e., the well volume) within the well.

**5.1.6** Equipment Decontamination: All down-well equipment should be decontaminated prior to use in accordance with the NJDEP Field Sampling Procedures Manual. Refer to POP PPG 014, Decontamination of Field Equipment.

**5.1.7** Removal of Drilling Fluids: Drilling fluids such as mud or water, if used during the drilling and well installation process, should be removed during the well development procedure. It is recommended that a minimum of 1.5 times the volume of added fluid be removed from the well during development. Drilling muds should initially have been flushed from the drilling casing during the well installation procedure with water added during the flushing process. If the quantity of added fluid is not known or could not be reasonably estimated, removal of a minimum of 10 well volumes of water is recommended during the development procedure.

**5.2** Development Procedures

**5.2.1** Development Method Selection

The construction details of each well shall be used to define the most suitable method of well development. Some consideration should be given to the potential degree of contamination in each well as this will impact IDW containment requirements.

The criteria for selecting a well development method include well diameter, total well depth, static water depth, screen length, the likelihood and level of contamination, and characteristics of the geologic formation adjacent to the screened interval.

The limitations, if any, of a specific procedure are discussed within each of the following procedures.

**5.2.2** General Water Quality Measurements

Measure and record water temperature, pH, specific conductance, and turbidity periodically during development using the available water quality instruments. These measurements will aid in determining whether well development is proceeding efficiently, will assist in identifying when well development is complete, will determine whether the development process is effective or not with any given well and, potentially, may identify well construction irregularities (i.e., grout in well, poor well screen slot-size selection). Water quality parameters should be checked a minimum of 3 to 5 times during the development process.

**5.2.3** Bailer Procedure

- As stated previously, bailers shall preferably not be used for well development but may be used in combination with a surge block to remove silt-laden water from the well.
- When using a bailer to purge well water; select the appropriate bailer, then tie a length of bailer cord onto the end of it.

- Lower the bailer into the screened interval of the monitoring well. Silt, if present, will generally accumulate within the lower portions of the well screen.
- The bailer may be raised and lowered repeatedly in the screened interval to further simulate the action of a surge block and pull silt through the well screen.
- Remove the bailer from the well and empty it into the appropriate storage container.
- Continue surging/bailing the well until sediment-free water is obtained. If moderate to heavy siltation is still present, the surge block procedure should be repeated and followed again with bailing.
- Check water quality parameters periodically.

**5.2.4** Surge Block Procedure

- A surge block effectively develops most monitoring wells. This device first forces water within the well through the well screen and out into the formation, and then pulls water back through the screen into the well along with fine soil particles. Surge blocks may be manufactured to meet the design criteria shown in the example (Figure 1) or may be purchased as an adaptor to fit commercially available well purging systems such as the Waterra system.
- Insert the surge block into the well and lower it slowly to the level of static water. Start the surge action slowly and gently above the well screen using the water column to transmit the surge action to the screened interval. A slow initial surging, using plunger strokes of approximately 3 feet, will allow material which is blocking the screen to separate and become suspended.
- After 5 to 10 plunger strokes, remove the surge block and purge the well using a pump or bailer. The returned water should be heavily laden with suspended silt and clay particles. Discharge the purged water into the appropriate storage container.
- Repeat the process. As development continues, slowly increase the depth of surging to the bottom of the well screen. For monitoring wells with long screens (greater than 10 feet) surging should be undertaken along the entire screen length in short intervals (2 to 3 feet) at a time. Continue this cycle of surging and purging until the water yielded by the well is free of visible suspended material.
- Check water quality parameters periodically.

**5.2.5** Pump Procedure

- Well development using only a pump is most effective in monitoring wells that will yield water continuously. Theoretically, pumping will increase the hydraulic gradient and velocity of groundwater near the well by drawing the water level down. The increased velocity will move residual fine soil particles into the well and clear the well screen of this material. Effective development cannot be accomplished if the pump has to be shut off to allow the well to recharge.
- When using a submersible pump or surface pump, set the intake of the pump or intake line in the center of the screened interval of the monitoring well.
- Pump a minimum of three well volumes of water from the well and raise and lower the pump line through the screened interval to remove any silt/laden water.
- Continue pumping water from the well until sediment-free water is obtained. This method may be combined with the manual surge block method if well yield is not rapid enough to extract silt from the surrounding formations.
- Check water quality parameters periodically.

**5.2.6** Compressed Gas Procedure

- Although the equipment used to develop a well using this method is more difficult to obtain and use, well development using compressed gas is considered to be a very effective method. This method is also not limited by well depth, well diameter, or depth to static water. Caution must be exercised, however, in highly permeable formations not to inject gas into the formation. Drilling subcontractors will often provide the necessary materials as well as perform this method , if requested. When using a compressor, an oil-less compressor should be used, or an oil trap/filter should be placed on the air discharge line which enters the well.
- Lower the gas line into the well, setting it near the bottom of the screened interval. Install the discharge control equipment (i.e., tee fitting) at the well head.
- Set the gas flow rate to allow continuous discharge of water from the well.
- At intervals during gas-lifting, especially when the discharge begins to contain less suspended material , shut off the air flow and allow the water in the well to backflush through the screened interval to disturb any bridging that may have occurred. Re-establish the gas flow when the water level in the well has returned to the pre-development level.
- Continue gas-lifting and/or jetting until the discharged water is free from suspended material.
- Check water quality parameters periodically.

**5.2.7** Special Considerations for Wells in Low-Permeability Formations

Wells installed in low-permeability formations may be difficult to develop due to the slow rate of recharge into the well resulting in the well purging dry before proper well development can be achieved. When developing wells under these circumstances, the addition of potable water to the well during development to maintain a sufficient well volume should be considered. Approval from all appropriate regulatory agencies, including permitting requirements, must be obtained prior to implementing this procedure modification. If implemented, the following must be followed:

- The well development record must document that the addition of potable water is being used to aid in the development of the well and the justification for doing so.
- The volume of water added to the well must be documented.

**5.2.8** A minimum of 1.5 times the volume of water added to the well must be purged from the well. The total volume of water purged should be recorded on the well development record to document that this has been performed.

## 6.0 Quality Assurance / Quality Control

Field project personnel should follow specific quality assurance guidelines as outlined in the QAPP. The plan should indicate the preferred method of well development at a particular site based on project objectives, aquifer conditions, and agency requirements. Specific well performance criteria such as low turbidity values to be achieved following well development should also be specified as well as any requirements for collection/containerization and disposal of well development water.

A well has been successfully developed when one or more of the following criteria are met:

- The sediment load in the well has been eliminated or greatly reduced. Regulatory requirements may be in place which state that water turbidity values ranging from 5 to 50 NTU must be achieved at the end of the development procedure. Use of a turbidity meter is required during the well development procedure to measure water turbidity if meeting a specific turbidity value is required by the regulations. Attaining low turbidity values in fine-grained formations may be difficult to achieve.
- Permeability tests yield repeatable hydraulic conductivity values.

## 7.0 Data and Records Management

The Monitoring Well Development Record (Figure 2) will be completed by the geologist or hydrogeologist conducting the development. In addition, a field logbook should be maintained documenting any problems or unusual conditions which may have occurred during the development process.

Unanticipated changes to the procedures or materials described in this POP (deviations) will be appropriately documented in the project records. Records associated with the activities described in this POP will be maintained according to the document management policy for the project.

## 8.0 Personnel Qualifications and Training

Well development procedures vary in complexity. It is recommended that initial development attempts be supervised by more experienced personnel. Field personnel should be health and safety certified as specified by OSHA (29 CFR 1910.120(e)(3)(i)) to work on sites where hazardous waste materials are considered to be present. For wells that are located in New Jersey, all well development or redevelopment work shall be performed by a licensed well driller of the proper class in accordance with N.J.A.C. 7:9D-2.11(b).

**8.1** Responsibilities

**8.1.1** The project manager is responsible for providing the project team with the materials, resources and guidance necessary to properly execute the procedures described in this POP.

**8.1.2** The individual performing the work is responsible for implementing the procedures as described in this POP and any project-specific work plans.

## 9.0 References

Standard References for Monitoring Wells, Massachusetts Department of Environmental Protection, WSC-310-91, 1991.

N.J.A.C. 7:9D Well Construction and Maintenance; Sealing of Abandoned Boreholes, 2007.

NJDEP "Field Sampling Procedures Manual," August 2005.

United States Environmental Protection Agency. Environmental Investigations Standard Operating Procedures and Quality Assurance Manual (EISOPQAM). USEPA, Region 4, SESD, Enforcement and Investigations Branch, Athens, GA. November 2001.

## 10.0 Revision History

| Revision | Date | Changes |
|---|---|---|
| 0 | June 2010 | Original POP |

## APPENDIX: DEFINITIONS

Bridging: A condition within the filter pack outside the well screen whereby the smaller particles are wedged together in a manner that causes blockage of pore spaces.

Hydraulic Conductivity: A characteristic property of aquifer materials which describes the permeability of the material with respect to flow of water.

Hydraulic Connection: A properly installed and developed monitoring well should have good hydraulic connection with the aquifer. The well screen and filter material should not provide any restriction to the flow of water from the aquifer into the well.

Permeability Test: Used to determine the hydraulic conductivity of the aquifer formation near a well screen. Generally conducted by displacing the water level in a well and monitoring the rate of recovery of the water level as it returns to equilibrium. Various methods of analysis are available to calculate the hydraulic conductivity from these data.

Static Water Level: The water level in a well that represents an equilibrium or stabilized condition, usually with respect to atmospheric conditions in the case of monitoring wells.

Well Surging: That process of moving water in and out of a well screen to remove fine sand, silt and clay size particles from the adjacent formation.

Well Purging: The process of removing standing water from a well to allow surrounding formation water to enter the well.

Well Screen: That portion of the well casing material that is perforated in some manner so as to provide a hydraulic connection to the aquifer. The perforated, or slotted, portion of a well is also known as the screened interval.

**Figure 1 Recommended Surge Block Design**

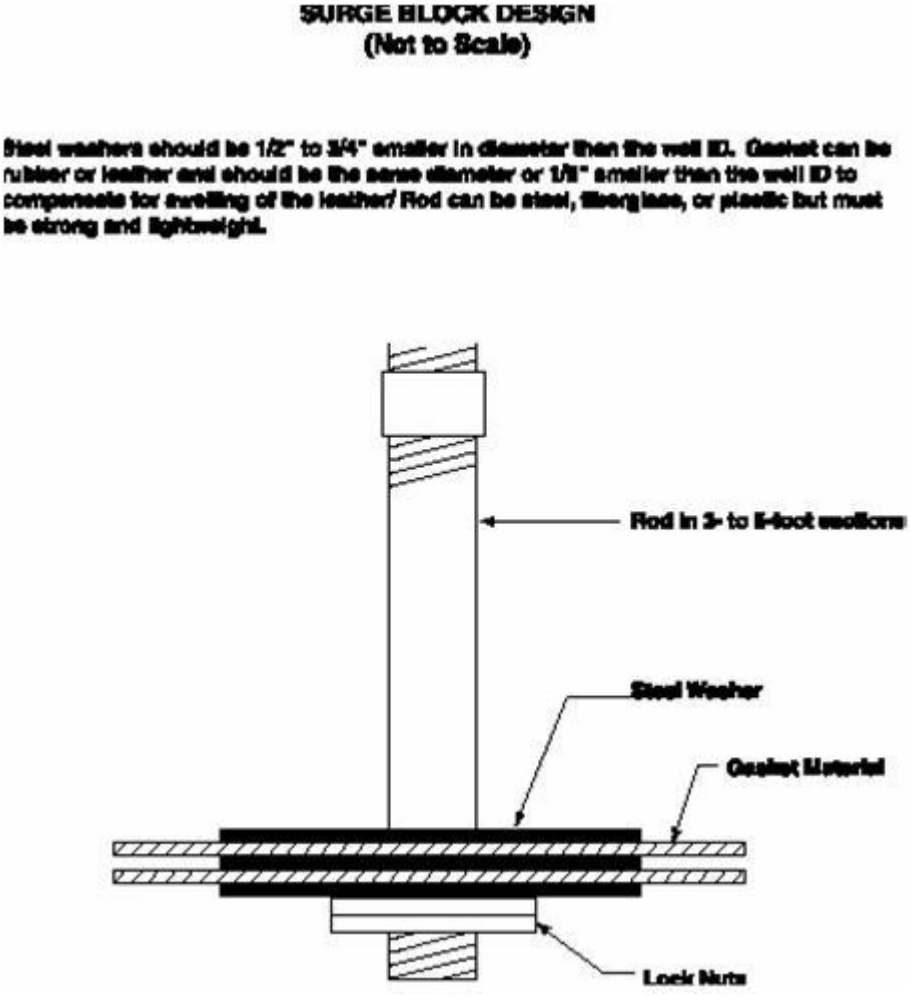

**Figure 2 Well Development Record**

Well/Piez. ID:

**Well/Piezometer Development Record**

Client: _____

Project No: _____ Date: _____ Developer: _____

Site Location: _____

**Well/Piezometer Data**

Well ☐ Piezometer ☐ Diameter _____ Material _____

Measuring Point Description _____ Geology at Screen Interval (if known) _____

Depth to Top of Screen (ft.) _____

Depth to Bottom of Screen (ft.) _____ Time of Water Level Measurement _____

Total Well Depth (ft.) _____ Calculate Purge Volume (gal.) _____

Depth to Static Water Level (ft.) _____ Disposal Method _____

Headspace _____

Original Well Development ☐ Redevelopment ☐ Date of Original Development _____

**DEVELOPMENT METHOD** _____

**PURGE METHOD** _____

| Time | Total Volume Purged (gal.) | Flow Rate (gpm) | Turbidity (NTU) | Color | pH | Temp | Other |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

**ACCEPTANCE CRITERIA (from workplan)**
Minimum Purge Volume Required _____ gallons
Maximum Turbidity Allowed _____ NTUs
Stabilization of parameters _____%

| | Yes | No | N/A |
|---|---|---|---|
| Has required volume been removed | ☐ | ☐ | ☐ |
| Has required turbidity been reached | ☐ | ☐ | ☐ |
| Has parameters stabilized | ☐ | ☐ | ☐ |

If no or N/A explain below: _____

Signature _____ Date: _____

AECOM

Project Operating Procedure

# Low Stress Groundwater Sampling Procedures

Procedure Number: PPG 008

Revision No.: 0

Revision Date: June 2010



POP Author Date: 6/28/2010

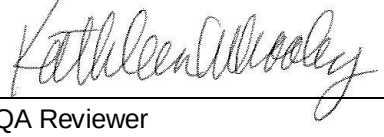

QA Reviewer Date: 6/28/2010

Annual review of this SOP has been performed and the SOP still reflects current practice.

Initials: _____ Date: _____

Initials: _____ Date: _____

Project Operating Procedure

# Low Stress Groundwater Sampling Procedures



## Contents

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**2.0 Health and safety considerations ..... 1**

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Figure 1: Low-Flow Setup Diagram

## List of Attachments

Attachment 1: Monitoring Well Sampling Worksheet

Project Operating Procedure

# Low Stress Groundwater Sampling Procedures



## 1.0 Project Scope and applicability

This procedure is for the collection of groundwater samples that are indicative of mobile organic and inorganic loads at ambient flow conditions (both the dissolved fraction and the fraction associated with the mobile particulates). The procedure emphasizes the need to minimize stress on the aquifer by using low pumping rates (below 1 liter per minute) and allowing minimal or no drawdown in order to collect samples with minimal alterations to water chemistry. The procedure also reduces the volume of purge water generated, thereby reducing disposal costs. A minimum purge volume, based on well screen length and whether the water level is below the top of the screen, is specified so that samples will be representative of the conditions of the groundwater flowing through the well screen.

The procedure is suited for monitoring wells that have a screen, or open interval, of 10 feet or less but is also applicable to wells with longer well screens. The monitoring wells must be sufficiently wide to simultaneously accept a submersible pump or intake tubing from a peristaltic pump, and the probe from an electronic water level indicator. The screened or open interval must be positioned to intercept the existing contaminant plume, and the monitoring well must be properly constructed, developed, and maintained. This procedure does not address the collection of samples from wells containing light or dense non-aqueous phase liquids (LNAPL/DNAPL).

## 2.0 Health and safety considerations

All calibration, maintenance and servicing of the instrumentation should be performed in a safe area, away from hazardous locations.

Refer to the Site Specific Health and Safety Plan for additional Health and Safety issues.

## 3.0 Interferences

Contaminants that are known to adsorb to particulates, such as metals, PCBs, etc., will be impacted by elevated turbidity (i.e., >25 NTU). If the turbidity stabilizes above 25 NTU, samples for metals, PCBs, and other analyses that may be impacted by contaminants adsorbed to suspended particulates will be filtered using an in-line 0.45 micron filter prior to sample collection. However, groundwater samples to be used in Risk Assessment should not be filtered unless an unfiltered sample will also be submitted for the same analysis. Decisions to sample when turbidity remains above 10 NTU shall be made in consideration of the analyses that will be performed and the project objectives.

ORP is a difficult parameter to measure in the field because the length of time which is necessary for the probe to obtain an accurate measurement is too long to be conducive to use during low-stress monitoring. Consequently, ORP readings may continue to increase or decrease slowly over the purging period.

Gas bubbles present in discharge tubing during purging and sampling are a problem: Their presence indicates off-gassing from groundwater or poor purging connections in the airline or groundwater tubing. Sunlight can exacerbate this problem when low pumping rates are used. Check connections at the surface. If bubbles persist, check connections at the pump. Erect an umbrella to shade and insulate the transparent flow-through cell and tubing to prevent exposure to direct sunlight. During purging and sampling, observe the flow of groundwater in the sample tubing and keep the tubing filled with groundwater, removing all air pockets and bubbles, to the extent possible. Gas bubbles may be reduced by increasing flow, if possible, and keeping tubing and the transparent flow-through cells shaded. Monitor the flow-through cell for trapped gases which can impact the readings. Placing the flow-through cell at a 45 degree angle with the port side facing upwards can help remove air bubbles from the flow-through cell (see Figure 1).

Thermal currents in the monitoring well may cause vertical mixing of water in the well bore. When the air temperature is colder than the groundwater temperature, it can cool the top of the water column. Colder water which is denser than warm water sinks to the bottom of the well and the warmer water at the bottom of the well rises, setting up a convection cell. "During low-flow sampling, the pumped water may be a mixture of convecting water from within the well casing and aquifer water moving inward through the screen. This mixing of water during low-flow sampling can substantially increase equilibration times, can cause false stabilization of indicator parameters, can give false indication of redox state, and can provide biological data that are not representative of the aquifer conditions" (Vroblesky 2007).

Pump tubing lengths above the top of well casing should be kept as short as possible to minimize heating the groundwater in the tubing by exposure to sun light and ambient air temperatures. Heating may cause the groundwater to degas, which is unacceptable for the collection of samples for VOC and dissolved gases analyses.

## 4.0 Equipment and materials

**4.1** Submersible pumps, bladder pumps, positive displacement pumps, or peristaltic pump

In selecting the appropriate pump, the sampler must consider the head pressure the pump must overcome (the distance between the water level and the highest point over which the purge water must be raised), the depth to the desired sampling interval, the inner diameter of the inner well casing, the analyses to be performed, and the associated logistics (power source, well accessibility). The pump selected must have sufficient lift capacity for the head pressure anticipated. Peristaltic pumps are effective up to a depth to water of approximately 27 feet (note that this must be measured from the highest point that the water must be raised, such as the top of the outer casing). The pump must be sufficiently small to fit into the well along with the water level indicator. The associated pressure lines, power lines, and purge and intake lines must be sufficiently long to reach to the intended sampling interval. As per EPA guidance, peristaltic pumps or other pumps that use suction shall be avoided for sampling volatile compounds, gases (methane, ethane, ethene), and other parameters that may be impacted by degassing and pH modification. For these analyses, peristaltic pumps must not be used when project decisions hinge on detection of low concentrations of VOCs. ***Peristaltic pumps will not***

***be used for collection of any samples that include hexavalent chromium or VOCs as part of the analytical suite.***

### **4.2** Bladder Pump

The bladder pump system contains the following components: a pressurized cylinder of inert gas (typically nitrogen), a pump controller, air intake and discharge lines, and bladder pumps. Dedicated bladder pumps installed at some sites, may also have an extension designed to lower the pump intake below the level of the pump. The controller regulates total flow of nitrogen from the pressurized nitrogen cylinder to the pump assembly located in the well. AECOM typically samples one well per nitrogen cylinder. Note that if the bladder pumps are placed at the same depth in each well, multiple wells may be sampled simultaneously with one nitrogen cylinder. In this case, a three-way cross splitter with quick-connect air line fittings is attached to the tubing connected to the nitrogen cylinder. Up to three controllers can then be connected to the nitrogen cylinder. If nitrogen cylinders are not available, air compressors may be used to power the bladder pumps.

The tubing bundle connected to the pump has three components: an air line with fittings to the pump and the controller, a sample line, and a Teflon-coated support cable. The sample line, through which the purge water is removed, should be composed entirely of Teflon. In locations where dedicated bladder pumps are installed, the tubing bundle and support cable may be connected to a well plate recessed below the locking cap.

### **4.3** Peristaltic Pump

Peristaltic pumps are not submerged in the well, but remain outside of the well and function by pulling water to the surface. Use is therefore not approved for collection of samples requiring analysis for volatile organic compounds, gases, or other analyses that may be impacted by changes in pressure or pH, including hexavalent chromium. A peristaltic pump has a rotating pump head with stepless variable speed that compresses a short stretch of flexible (Pharmed) silicone tubing to pull water up from the well using mechanical peristalsis. The sample water does not come into direct contact with the pump. Teflon tubing is connected to either end of the silicone tubing. The pumps typically used by AECOM, the GeoPump or GeoPump II by GeoTech, operate off an external 12 V battery or 120 V AC power source. Commercially available “JumpStart” 12 volt batteries are typically preferred since electrical hookup is typically not available; since they are safe, easy to carry, and easy to recharge; and since the potential contamination issues associated with use of a generator are avoided.

### **4.4** Submersible Pump

Submersible pumps used are typically electrical centrifugal pumps. A centrifugal submersible pump consists of impellers or vanes that are spun or rotated by a sealed electric motor. The spinning of the impellers that causes water to be accelerated outward and then upward into the pump's discharge line. The higher the pumping rate, the greater the potential for sample alteration by sample agitation, increased turbulence and pressure changes in the sample. However, maintaining flow in the low-flow range (less than 1,000 mL per minute) is considered acceptable. A centrifugal submersible pump is usually suspended in a monitoring well by a support cable. Electrical submersible pumps typically used by AECOM are the Grundfos Redi-Flo 2, or similar. These are centrifugal pumps constructed of stainless steel and Teflon, and the motors are cooled and lubricated with water rather than with

hydrocarbon-based coolants and lubricants that could contaminate groundwater samples. The pumps can achieve flow rates as low as 100 mL per minute. The pumps require a 115 or 230 volt electrical supply, therefore a generator is typically required. Pumps are available for wells 2" in diameter or larger.

**4.5** Tubing suited to the pumps and flow-through cells to be used

Teflon or Teflon-lined polyethylene tubing are preferred for all parameters. Stainless steel tubing may be used for sampling organics, but is not recommended for inorganics. PVC, polypropylene or polyethylene may be used for sampling inorganics. Pharmaceutical-grade (e.g. Pharmed) silicon tubing shall be used around the rotor head of the peristaltic pump, and if necessary as a connecting tubing to the flow-through cells. Inner tubing diameter should be kept to the smallest size possible to reduce the generation of air pockets during low flow. Tubing typically used with the peristaltic pumps is Teflon of 1/4-inch outside diameter, and 3/16-inch outside diameter.

**4.6** Electronic water level indicator: Solinst Model 101 or similar

Inner casing diameter and pump diameter should be considered in selecting a water level indicator that will fit into the well with the pump. A smaller diameter probe may be required for smaller wells.

**4.7** High-Density Polyethylene (HDPE) Y connectors and tubing clamps

These allow for removal of an aliquot of purge water prior to the flow-through cell for turbidity analysis.

**4.8** Flow controllers and compressed inert gases for submersible bladder pumps

QED Model MP-10 Flow controller and nitrogen gas are typically used unless nitrogen is an analyte of interest. Portable air compressors may be used in place of compressed gas (e.g., QED Well Wizard).

**4.9** Power source

Marine battery, battery pack, compressed gas and flow-controller, or generator and heavy duty extension cords depending on pump

**4.9.1** Bladder Pumps

For bladder pump operation, the cylinders of inert compressed gas or portable air compressors function with the flow controller as the power source, although the flow controller does require batteries.

**4.9.2** Peristaltic Pumps

The peristaltic pumps typically used by AECOM require an external 12 volt battery or 120 volt AC power source. Commercially available 12 volt batteries designed for jump-starting a car battery (“JumpStart” or similar) are preferred since electrical hookup is typically not available; since they are safe, easy to carry, and easily rechargeable; and since the potential contamination issues associated with use of a generator are avoided.

**4.9.3** Submersible Pumps

An external power source is required. If use of a generator is required, precautions must be taken to avoid cross-contamination when handling fuel and when locating the generator to prevent contamination of the samples and sampling equipment by fumes and exhaust.

**4.10** Water Quality Meter with Transparent Flow-Through Cell

YSI 6820 Water Quality Meter and transparent Flow-through cell with 610DM data manager, or similar model

**4.11** Turbidity Meter

LaMotte 2020 turbidity meter, or similar model

**4.12** Other Equipment

- Photoionization Detector (PID)
- Tarp, umbrellas, or other means to shade the tubing, flow-through cells, and water quality meters from direct sunlight
- Graduated cylinders
- Watch with seconds hand
- Graduated plastic purge buckets or carboys
- Well information consisting of well casing diameter, depth to bottom, depth to top and bottom of screened interval, desired depth for sample collection, depth of pump intake (if dedicated pumps are in place) and results of synoptic water level measurements and LNAPL/DNAPL survey.

## 5.0 Procedures

This section includes the procedures for performing field activities that should be conducted prior to sampling, procedures for purging the wells using the different pumps, and the sampling and post-sampling procedures (which are the same for the different pump types).

**5.1** Pre-Sampling Field Activities

Prior to beginning sampling activities in any wells, all required synoptic water level measurements and well soundings should be completed in accordance with the POP for Water Level Measurements.

Wells should be inspected for the presence of DNAPL or LNAPL. Wells with NAPL cannot be sampled using low-flow techniques, and must be sampled with an alternative sampling method, such as bailing.

All non-dedicated down-well measuring devices will be thoroughly decontaminated before sampling and between monitoring locations.

Sampling should begin at the monitoring well likely to have the lowest levels of contamination, generally upgradient or farthest from the site or suspected source, and proceed such that the most contaminated wells are sampled last.

Record the monitoring location identification number. Check the monitoring location for damage or evidence of tampering, and record observations.

Place polyethylene sheeting on the ground and assemble all necessary sampling equipment on top of it. This helps to prevent contamination of the sampling equipment by the soil, reduces wear on the sampling equipment due to dirt, and reduces the likelihood that contaminated purge water will spill into the surface soil.

Unlock the protective outer casing (if present) and remove the outer well cap.

Remove the inner well cap, and measure the well headspace and breathing zone for total organic vapors. If it is windy, stand upwind of the well to conduct measurements. For well headspace, place the intake of the PID approximately two inches below the plane formed by the top of the inner casing. Measure the total volatile organic concentrations in the breathing zone. Record both readings. Use the breathing zone concentrations to determine appropriate health and safety measures in accordance with the site-specific health and safety plan.

**5.2** Purging the Wells

The procedure for sampling with bladder pumps is as follows:

Connect all the lines to the pump. If a dedicated bladder pump is in place, the tubing will already be connected to the pump and is likely connected to the well plate.

Carefully lower the pump to the desired sampling depth using the suspension cable. Take care to minimize disturbance and contact with the well walls which could knock rust or other deposits into the standing water. Secure the pump using the suspension cable.

Connect the pump power cable to the power source. Bladder pumps are driven by compressed gas or air through a controller. The controller typically requires batteries. Connect the regulator, pressurized inert gas cylinder or air compressor, flow controller, and pump. If using compressed gas, use a crescent wrench to attach the regulator to the pressurized nitrogen cylinder. Connect the air line from the regulator to the intake valve of the flow controller. Connect the air line from the outflow valve of the flow controller to the airline to the dedicated bladder pump.

Carefully install a flow-through cell on the sonde. Avoid touching the oxygen probe. Connect a purge water discharge line to the flow-through cell of the water quality meter.

Connect the purge water discharge line from the well to the water quality meter using a HDPE Y connector and pinch valve so that an aliquot of purge water can be obtained before the flow-through cell for turbidity measurements. Connect the discharge tubing from the well to the HDPE Y connector fitting using a short piece of silicone tubing. Attach a piece of silicone tubing to one end of the fitting and close it with a pinch value or check valve unit. Samples for turbidity measurements will be collected by opening this pinch valve. Connect the other end of the Y connector fitting to the lower of the two openings in the flow-through cell using silicon tubing and short pieces of Teflon tubing. Connect a piece of Teflon tubing to the out flow of the flow-through cell to the purge bucket. Use a short piece of silicon tubing at the cell. Be sure to use a piece of Teflon tubing sufficiently long to allow purge water to flow easily into the purge bucket.

Mount the sonde and flow-through cell assembly at a 45 degree angle to allow air bubbles to escape from the cell, and position the sonde such that any groundwater spills will be directed away from the sample.

Slowly open the valve on the regulator attached to the nitrogen cylinder until the pressure gauge reads approximately 60 pounds per square inch (PSI). Adjust the regulator on the flow controller to approximately 10 - 20 PSI.

Re-measure the static water level.

Determine the minimum purge volume required for the well. Samples should only be collected after the required volume has been removed from the well. For screen lengths of ten feet or less, a minimum volume of one saturated screen length plus drawdown volume must be removed. For screen lengths greater than ten feet, a minimum purge volume of three saturated screen lengths plus drawdown volume must be removed.

If the depth to water is less than the depth to the top of the screen, the screen is fully saturated and the minimum purge volume is one saturated screen length plus drawdown volume for screens of ten feet of less or three saturated screen lengths plus drawdown volume for screens greater than ten feet.

If the depth to water is greater than the depth to the top of the screen, calculate the well volume. Subtract the difference between the depth to water and the depth to the top of the screen from the well screen length to obtain the saturated well screen length. Round the saturated well screen length up to the nearest foot, and calculate the well volume using the volume per foot of screen length. Multiply the saturated well screen volume by three if the well screen length is greater than 10 feet.

Record the saturated well screen length and the saturated well screen volume on the sampling worksheet.

Start the flow controller and begin purging at the slowest rate possible.

- Note the purge start time.
- Collect all purge water in a bucket or carboy.

- Slowly increase the pressure at the controlled until discharge begins. The bladder pump controller should be set to allow for adequate recharge such that a maximum flow rate with no drawdown is achieved (generally 100-1,000 mL/min) and a smooth, even discharge flow is achieved. Refer to the historical flow controller settings for the well to select the starting controller pressure and intake and discharge intervals.
- Measure the flow rate using a graduated cylinder and time piece and monitor the water level and pumping rate.

Once drawdown has stopped and an acceptable flow rate established, begin monitoring indicator parameters and continue monitoring flow rate and water level.

- Record reading every three to five minutes, or as appropriate for the flow rate and flow-through cell volume. Use the water quality meter to monitor the following: temperature, pH, specific conductance, DO, and ORP. Use a turbidity meter to monitor turbidity.
- In the event that the well has extremely low recharge such that the lowest purge rate possible (100 mL/min or more, if equipment cannot effectively purge that slowly) continues to dewater the well, do not allow a water level that was above the top of the screen to drop below it, do not allow a water level already below the top of the screen to drop further, do not allow the water level to drop below the pump intake, and do not pump the well dry under any circumstances. Notify the field team leader of the situation. If all efforts to avoid dewatering the well have failed, a decision may be made to allow the well to recharge to a level sufficient to allow for collection of the necessary sample volume and to sample the well immediately. Record detailed notes concerning the sampling of the well.
- Stop purging when all parameters have stabilized. Parameters are considered to have stabilized if, over three consecutive readings, the following criteria are met:
    - pH ± 0.1 unit
    - specific conductance and temperature ± 3%
    - turbidity < 10 NTU and ± 10 %
    - DO ± 10% (down to a detection limit of 0.5 mg/L)
    - ORP ± 10 mV
- The reporting limits presented are the lowest concentrations to which the instrument is considered linear and therefore accurate. Three consecutive readings below the reporting limits presented are considered to be stable.
- Readings should be recorded approximately every 5 minutes for flows in the range of 200 to 500 ml/min. Readings should be taken less frequently if the maximum flow rate is less than 100 ml/min because of the retention time in the flow-through cell. Each reading should represent a fresh aliquot of groundwater in the flow-through cell.
- Record the time at which the required minimum volume was removed, and record the total volume removed prior to sampling.

- If parameters do not stabilize, or turbidity remains greater than 5 NTU, or the minimum volume cannot be removed prior to the maximum purging time, contact the field team leader. Technical judgment will be used to ascertain when sampling should be commenced.

**5.3** Sampling with Peristaltic Pumps

The procedure for sampling with peristaltic pumps is as follows:

Determine the depth at which the samples will be collected by referring to the QAPP. Samples are frequently collected from the most-contaminated interval, as determined by previous profiling investigations, or from the lower part of the screened interval, or the midpoint of the saturated screened interval. If possible, keep the pump intake at least two feet above the bottom of the well to minimize mobilization of sediment that may be present at the bottom of the well.

Connect the necessary tubing to the pump, using a Y connector fitting and pinch valve to split the flow prior to the flow-through cell in order to collect an aliquot for turbidity:

- Measure a new section of pharmaceutical-grade, 3/16-inch inner diameter (ID) silicon tubing and attach it to the peristaltic pump head.
- Note that the length of silicon tubing in contact with the sample should be kept to a minimum.
- Measure a new section of 3/16-inch ID Teflon tubing to extend from the depth of the intended sampling location to the intake end of silicon tubing. To do this and avoid contamination of the tubing, it is recommended that a decontaminated water level measurement tape be used to measure the tubing as it is lowered into the well. The water level indicator may be lowered into the well with the tubing, or allowed to run onto the clean plastic on the ground outside of the well. Since the tubing is typically stored on a roll, straightening the tubing as you put it into the well will help avoid catching the tubing on any obstructions in the well, such as the top of the well screen. Once the tubing is lowered to the desired depth, immediately secure the free end of the Teflon tubing to prevent it dropping into the well. Using a piece of silicon tubing, connect the outflow end of the Teflon tubing to the HDPE Y-connector. Then, using several pieces of Teflon tubing, connect the pinch valve and check valve units to one end of the Y-connector (through which samples for turbidity will be collected) and connect the other end of the Y-connector to the intake of the flow-through cell.

Connect the electrical clamps from the pump to the appropriate terminals on the 12 volt battery.

Note that reversing the connections will typically cause the pump to run in reverse, which could push air into the well and should be avoided.

Re-measure and record the static groundwater level after the tubing has been placed in the well, and the water level has been allowed to stabilize again.

Determine the minimum purge volume required for the well. Samples should only be collected after the required volume has been removed from the well. For screen lengths of ten feet or less, a minimum volume of one saturated screen length plus drawdown volume must be removed. For screen lengths greater than ten feet, a minimum purge volume of three saturated screen lengths plus drawdown volume must be removed.

If the depth to water is less than the depth to the top of the screen, the screen is fully saturated and the minimum purge volume is one saturated screen length plus drawdown volume for screens of ten feet of less or three saturated screen lengths plus drawdown volume for screens greater than ten feet.

If the depth to water is greater than the depth to the top of the screen, calculate the well volume. Subtract the difference between the depth to water and the depth to the top of the screen from the well screen length to obtain the saturated well screen length. Round the saturated well screen length up to the nearest foot, and calculate the well volume using the volume per foot of screen length. Multiply the saturated well screen volume by three if the well screen length is greater than 10 feet.

Record the saturated well screen length and the saturated well screen volume on the sampling worksheet.

Commence purging at the slowest possible flow rate and slowly increase the speed until discharge occurs. The pump rate should be set to allow for maximum flow rate (100-1,000 milliliters per minute) with no drawdown. Refer to historical purge information for recharge information. Under no circumstances should the well be pumped dry and once pumping is begun, it should not be interrupted until all sample volume has been collected. Collect all purge water in a bucket or carboy.

Once the stagnant volume in the tubing has been removed (see below for volume equation), drawdown has stopped, and an acceptable flow rate has been established, begin monitoring indicator parameters and continue monitoring flow rate and water level. Record readings every three to five minutes, or as appropriate for the flow rate and flow-through cell volume. Use the water quality meter monitor the following: temperature, pH, specific conductance, DO, turbidity, and ORP. .

- Tubing radius = r = 0.0104 ft.
- Volume of tubing = $r^2$ x length of tubing = V (in ft3)
- $ft^3$ x 28.316 = liters
- In the event that the well has extremely low recharge such that the lowest purge rate possible (100 mL/min or more, if equipment cannot effectively purge that slowly) continues to dewater the well, do not allow a water level that was above the top of the screen to drop below it,
- do not allow a water level already below the top of the screen to drop further,
- do not allow the water level to drop below the pump intake,
- do not pump the well dry under any circumstances.

- Notify the field team leader of the situation. If all efforts to avoid dewatering the well have failed, a decision may be made to allow the well to recharge to a level sufficient to allow for collection of the necessary sample volume and to sample the well immediately.
- Record detailed notes concerning the sampling of the well.

Stop purging when all parameters have stabilized. Parameters are considered to have stabilized if, over three consecutive readings, the following criteria are met:

- pH ± 0.1 unit
- specific conductance and temperature ± 3%
- turbidity < 10 NTU and ± 10 %
- DO ± 10% (down to a detection limit of 0.5 mg/L)
- ORP ± 10 mV

The reporting limits presented are the lowest concentrations to which the instrument is considered linear and therefore accurate. Three consecutive readings below the reporting limits presented are considered to be stable.

Readings should be recorded approximately every 5 minutes for flows in the range of 200 to 500 ml/min. Readings should be taken less frequently if the maximum flow rate is less than 100 ml/min because of the retention time in the flow-through cell. Each reading should represent a fresh aliquot of groundwater in the flow-through cell.

Record the time at which the required minimum volume was removed, and record the total volume removed prior to sampling.

If parameters do not stabilize, or turbidity remains greater than 10 NTU, or the minimum volume cannot be removed prior to the maximum purging time, contact the field team leader. Technical judgment will be used to ascertain when sampling should be commenced.

**5.4** Sampling with Submersible Pumps

The procedure for sampling with submersible pumps is as follows:

Prior to placing any equipment in the well, measure and record the static water level as described in the water level measurement Standard operating procedure.

Note the water level in relation to the top of the screen. If the static water level is above the top of the screen, care should be taken to prevent the water level from dropping below the top of the screen.

Determine the depth at which the samples will be collected by referring to the QAPP. Samples are frequently collected from the most-contaminated interval, as determined by previous profiling investigations, or from the lower part of the screened interval, or the midpoint of the saturated

screened interval. If possible, keep the pump intake at least two feet above the bottom of the well to minimize mobilization of sediment that may be present at the bottom of the well.

Connect the pump to the power source. Submersible pumps are driven by an external power source.

If the use of a generator is required, it should be placed downwind of the sampling location to prevent exhaust from impacting the samples.

Care must be taken in handling the generator and gasoline to preclude cross-contamination of the samples and sampling equipment.

At a minimum, samplers must change gloves after handling the fuel or generator prior to sampling.

Carefully lower the pump to the desired sampling depth using the suspension cable. Take care to minimize disturbance and contact with the well walls which could knock rust or other deposits into the standing water.

Secure the pump using the suspension cable, and connect the ground from the pump.

Connect the purge water discharge line to the water quality meter using a splitter and pinch valve so that an aliquot of purge water can be obtained before the flow-through cell for turbidity measurements.

Connect the outflow end of the purge water line to the HDPE Y connector using a short piece of silicone tubing if necessary. Attach a piece of silicone tubing to one end of the Y and close it with a pinch value or check valve unit.

- Samples for turbidity measurements will be collected by opening this pinch valve.

Connect the other end of the Y connector to the lower of the two openings in the flow-through cell using Teflon tubing and short pieces of silicon tubing at the joints.

Connect a piece of Teflon tubing to the out flow of the flow-through cell to the purge bucket. Use a short piece of silicon tubing at the joint.

Be sure to use a piece of Teflon tubing sufficiently long to allow purge water to flow easily into the purge bucket.

Re-measure the static water level.

Determine the minimum purge volume required for the well.

Samples should only be collected after the required volume has been removed from the well.

For screen lengths of ten feet or less, a minimum volume of one saturated screen length plus drawdown volume must be removed.

For screen lengths greater than ten feet, a minimum purge volume of three saturated screen lengths plus drawdown volume must be removed.

If the depth to water is less than the depth to the top of the screen, the screen is fully saturated and the minimum purge volume is one saturated screen length plus drawdown volume for screens of ten feet of less or three saturated screen lengths plus drawdown volume for screens greater than ten feet.

If the depth to water is greater than the depth to the top of the screen, calculate the well volume. Subtract the difference between the depth to water and the depth to the top of the screen from the well screen length to obtain the saturated well screen length. Round the saturated well screen length up to the nearest foot, and calculate the well volume using the volume per foot of screen length. Multiply the saturated well screen volume by three if the well screen length is greater than 10 feet.

Record the saturated well screen length and the saturated well screen volume on the sampling worksheet.

Start the pump and begin purging at the slowest rate possible.

- Note the purge start time. Slowly increase the speed until discharge begins.
- The pump should be set to allow for adequate recharge such that a maximum flow rate with no drawdown is achieved (generally 100-1,000 mL/min).
- Refer to the historical flow controller settings for the well to select the starting controller pressure and intake and discharge intervals.

Collect all purge water in a bucket or carboy.

Measure the flow rate using a graduated cylinder and time piece and monitor the water level and pumping rate during purging.

Under no circumstances should purging be interrupted until all sample volume has been collected.

Once drawdown has stopped and an acceptable flow rate established, begin monitoring indicator parameters and continue monitoring flow rate and water level. Record reading every three to five minutes, or as appropriate for the flow rate and flow-through cell volume. Use the water quality meter to monitor the following: temperature, pH, specific conductance, DO, turbidity and ORP.

In the event that the well has extremely low recharge such that the lowest purge rate possible (100 mL/min or more, if equipment cannot effectively purge that slowly) continues to dewater the well, do not allow a water level that was above the top of the screen to drop below it, do not allow a water level already below the top of the screen to drop further, do not allow the water level to drop below the pump intake, and do not pump the well dry under any circumstances. Notify the field team leader of the situation. If all efforts to avoid dewatering the well have failed, a decision may be made to allow the well to recharge to a level sufficient to allow for collection of the necessary sample volume and to sample the well immediately. Record detailed notes concerning the sampling of the well.

Stop purging when all parameters have stabilized. Parameters are considered to have stabilized if, over three consecutive readings, the following criteria are met:

- pH ± 0.1 unit
- specific conductance and temperature ± 3%
- turbidity < 10 NTU and ± 10 %
- DO ± 10% (down to a detection limit of 0.5 mg/L)
- ORP ± 10 mV

The reporting limits presented are the lowest concentrations to which the instrument is considered linear and therefore accurate. Three consecutive readings below the reporting limits presented are considered to be stable.

Readings should be recorded approximately every 5 minutes for flows in the range of 200 to 500 ml/min. Readings should be taken less frequently if the maximum flow rate is less than 100 ml/min because of the retention time in the flow-through cell. Each reading should represent a fresh aliquot of groundwater in the flow-through cell.

Record the time at which the required minimum volume was removed, and record the total volume removed prior to sampling.

If parameters do not stabilize, or turbidity remains greater than 10 NTU, or the minimum volume cannot be removed prior to the maximum purging time, contact the field team leader. Technical judgment will be used to ascertain when sampling should be commenced.

**5.5** Sampling

Once purging has been completed, test for oxidants and sulfides as required for the analyses to be conducted and in accordance with standard operating procedures. Prior to commencing sampling,

- measure and record final water level, temperature, pH, specific conductance, DO, ORP, turbidity, and flow rate.
- disconnect the purge tubing from the flow-through cell, such that sample water will be collected directly from the tubing.

For the PPG Site 114 project, samples will be collected in the following order:

- VOCs
- Total Organic Halogens (TOX)
- Total Organic Carbon (TOC)
- SVOCs
- EPH

- PCBs
- Total Metals
- Dissolved Metals
- Phenols
- Cyanide
- Chloride
- Preserved Inorganics
- Non-preserved Inorganics

VOCs are always collected first, before other non-VOC parameters. During sample collection, allow the water to flow directly into and down the side of the sample container without allowing the tubing to touch the inside of the sample container or lid, in order to minimize aeration and maintain sample integrity.

**5.6** Post-Sampling Field Activities

Preserve the samples as per standard operating procedures for preservation. Immediately label the sample containers with the sample collection date and time and place them on ice. Complete the COC forms as soon as possible.

Cease pumping and disassemble the purging and sampling equipment.

Replace the well cap and lock the outer protective casing.

Decontaminate the sampling equipment as per standard operating procedures for decontamination.

Dispose of all purge water as per the site-specific work plan.

## 6.0 Quality assurance / quality control

The tubing and lines associated with sampling pumps are typically long and awkward to handle, and careful handling is required to prevent introduction of contaminants into the well. It is therefore preferable for set-up and installation of sampling equipment to be performed by a team of at least two people in order to prevent contamination of equipment to be introduced into the well.

Duplicate measurements cannot effectively be taken using the flow-though cell, since two consecutive measurements taken are not measuring the same sample, and flow cannot be interrupted. Water quality parameters obtained should be compared to historical readings, and potential instrument issues should be considered in the event of major differences.

**6.1** Pollution Prevention and Waste Management

Purge water volume is kept to a minimum through the use of the low-stress sampling procedures. When available, historical information on sampling rates for each well will be used in an attempt to minimize time spent determining the equilibrium flow rate and thereby minimizing purge water volume.

Lengths of Teflon tubing remove from each roll of tubing will be tracked to maximize use and minimize waste of remaining pieces.

Disposable tubing will be disposed of in accordance with the site-specific sampling and analysis plan.

Purge water will be containerized until purging and sampling activities at the well are completed. Purge water will then be disposed of in accordance with the site-specific sampling and analysis plan

## 7.0 Data and records management

All documentation will be conducted in accordance with standard documentation procedures.

Groundwater sampling information specific to each well will be recorded on the monitoring well sampling worksheet. An example monitoring well worksheet is included as Attachment 1 of this POP. Activities common to more than one well, samples collected, deviations from the sampling and analysis plan, and any other unusual occurrences will also be documented in the field logbook in accordance with standard documentation procedures.

## 8.0 Personnel qualifications and training

All field samplers are required to take the 40-hour OSHA health and safety training course and annual 8-hour refresher courses prior to engaging in any field collection activities.

For projects in New Jersey, field personnel collecting water quality indicator parameters (i.e., DO, pH, temperature, ORP, specific conductivity, and turbidity) must be certified by NJDEP for those parameters for which certification is offered as required by N.J.A.C. 7:26E-2.1(a)1.vii.

The entire sampling team should read and be familiar with the site Health and Safety Plan, all relevant POPs, and the SAP/QAPP (and the most recent amendments) before going onsite for the sampling event. It is recommended that the field sampling leader attest to the understanding of these site documents and that it is recorded.

Samplers will have a minimum of one-week's experience performing low-stress sampling prior to sampling without supervision

## 9.0 References

*U.S. Environmental Protection Agency, Region 1. Low-Stress (Low Flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells,* Revision 2, July 30, 1996.

Vroblesky, Don A., Clifton C. Casey, and Mark A. Lowery, Summer 2007, *Influence of Dissolved Oxygen Convection on Well Sampling*, Ground Water Monitoring & Remediation 27, no. 3: 49-58.

## 10.0 Revision History

| Revision | Date | Changes |
|---|---|---|
| 0 | June 2010 | Original POP |

**Figure 1: Low-Flow Setup Diagram**

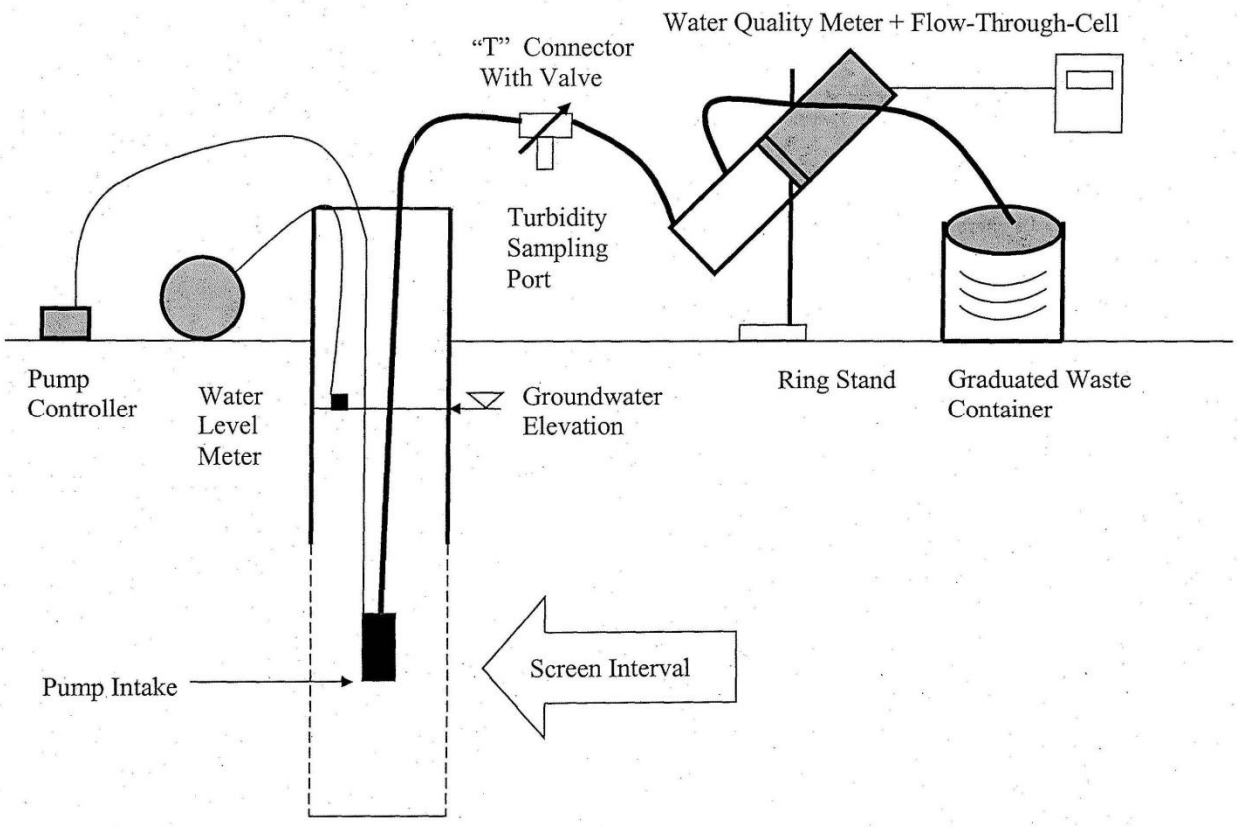

## Attachment 1: Monitoring Well Sampling Worksheet

**Well Purging-Field Water Quality Measurement Form** Page 1 of 1

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Location (Site/Facility Name): | PPG Garfield Ave Site 114 | | | | | | Screen Interval | Top | | Bottom | |
| Well # | | Date: | | | | | From MP in feet: | | | | |
| Field Personnel: | | | | | | | Pump Intake depth (ft below MP): | | | | |
| Sampling Organization: | AECOM | | | | | | Purging Device; (pump type): | | | | |
| Identify Measuring Point (MP): | PVC | | | | | | Weather: | | | | |
| Clock Time<br>24 HR | Depth to Water<br>ft | Pump Dial | Purge Rate<br>ml/min | Cum. Volume Purged<br>gal | Temp.<br>°C | Spec. Conductivity<br>µS/cm² | pH<br>s.u. | ORP<br>mV | DO<br>mg/L | Turb-idity<br>NTU | Comments |
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**Stabilization Criteria:**

| | |
|---|---|
| Temp +/- 3% | ORP +/- 10 mv |
| Spec. Cond +/- 3% | DO +/- 10% for values greater than 0.5 mg/L. |
| pH +/- 0.1 SU | Turb +/- 10% or <5 |

AECOM

Project Operating Procedure

# Hydraulic Conductivity Tests – Pressure Transducer Method

Procedure Number: PPG 009

Revision No.: 0

Revision Date: June 2010



POP Author Date: 6/28/2010

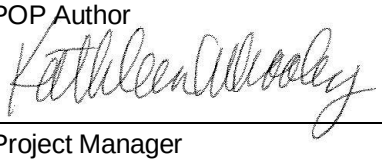

Project Manager Date: 6/28/2010

Annual review of this POP has been performed and the POP still reflects current practice.

Initials: _____ Date: _____

Initials: _____ Date: _____

Project Operating Procedure

# Hydraulic Conductivity Tests – Pressure Transducer Method



## Contents

**1.0 Project Scope and applicability ..... 1**

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## List of Attachments

Attachment 1. Example Hydraulic Conductivity Test Log

Project Operating Procedure

# Hydraulic Conductivity Tests – Pressure Transducer Method



## 1.0 Project Scope and applicability

### 1.1 Purpose and Applicability

This Project Operating Procedure (POP) describes the procedures for conducting rising head and falling head hydraulic conductivity tests (slug tests). Rising head/falling head tests are performed to determine the hydraulic conductivity of the soil or rock surrounding a monitoring well.

Hydraulic conductivity values are used for many purposes, including:

- To estimate rates of groundwater flow;
- To estimate responses of aquifers to applied stresses, such as pumping;
- To estimate the rate of movement of various chemicals in subsurface zones; and
- To construct and calibrate groundwater flow models.

In-situ tests to determine hydraulic conductivity can be conducted in open boreholes or in monitoring wells, and they can be variable-head tests or constant-head tests. The initial change in water levels required to begin the test can be produced by adding or removing a known volume of water using a pump or bailer, displacing water with a solid slug, or changing head conditions using pressurized gas. The water levels can be monitored using a water level tape or with a transducer. For the purpose of this POP, the method to perform a variable-head test in a monitoring well using a slug and transducer is outlined. Use of other test options must be fully described in the project-specific Work Plan.

Wells that contain high concentrations of contaminants or non-aqueous phase liquids may require specialized equipment which will not be damaged by the contaminants. Slug tests should not be performed in wells with non-aqueous phase liquid present.

### 1.2 General Principles

Hydraulic conductivity is a measure of the ability of a specific porous medium to transmit a specific fluid. Variable-head tests are performed by causing a sudden (instantaneous) rise or drop of the static water level in a well. Water levels are then monitored and recorded until the water level has returned to the condition prior to slug removal or insertion (i.e., static conditions) or sufficient data is collected to perform the hydraulic conductivity calculations.

### 1.3 Definitions

**1.3.1** Hydraulic Conductivity: The measure of the ability of a specific porous medium to transmit a specific fluid.

**1.3.2** Slug: Solid cylinder of teflon, PVC, or other material which is either lowered into the water inside the well to produce a temporary rise in the water level or removed to produce a temporary fall in the water level. If the cylinder is not solid, it should be sealed to prevent water leaking into the slug.

**1.3.3** Data Logger: A data logger is a computerized device which records in electronic memory the hydrostatic pressure (i.e., water level) measured by the transducer at specific, user-defined time intervals. The data logger and transducer may be combined in one device.

**1.3.4** Transducer: A probe lowered into a well that measures hydrostatic pressure which can be used to calculate the water level. The data logger and transducer may be combined in one device.

**1.3.5** Falling Head Test: Following the instantaneous rise in the static water level by inserting a slug, the drop in water level with respect to time is measured.

**1.3.6** Rising Head Test: Following the instantaneous lowering of the static water by extracting the slug, the rise of the water level with respect to time is measured.

**1.4** Quality Assurance Planning Considerations

Personnel shall follow specific quality assurance guidelines as outlined in the site-specific Work Plan and/or Quality Assurance Project Plan (QAPP), hereafter referred to as the project plans. Proper quality assurance requirements shall be provided which will allow project objectives to be met. Quality assurance requirements typically require the collection of both the rising head and falling head data for comparison or performing the same test twice, although falling head tests may not be required for monitoring wells screened in a water table aquifer. The minimum initial change in well or borehole water level achieved by the slug should be a minimum of one foot to ensure that the formation is sufficiently stressed so that meaningful hydraulic conductivity values can be determined.

The data collected during slug tests shall be reviewed and analyzed by a hydrogeologist or similarly qualified personnel. Many factors affect the appropriate interpretation of slug test data.

## 2.0 Health and safety considerations

Hydraulic conductivity testing may involve chemical hazards associated with the potentially contaminated groundwater the testing equipment comes in contact with. Adequate health and safety measures must be taken to protect project personnel from potential chemical exposures or other hazards. The health and safety considerations for the site, including both potential physical and chemical hazards, shall be addressed in the site-specific Health and Safety Plan (HASP). In the absence of a site-specific HASP, work will be conducted according to the AECOM Health and Safety Policy and Procedures Manual and/or direction from the Regional Health and Safety Manager.

## 3.0 Interferences

**3.1** Not Applicable

## 4.0 Equipment and materials

Equipment required includes:

- Well records (boring, well logs, and well construction diagrams), if available
- Data logger(s)
- Transducer(s) with cable wire length sufficient to reach target depth and to reach from the well to the computer used to download data.
- Computer - with appropriate software and cables to download data from data logger
- Slugs - diameter dependent upon well diameter; the slug length is dependent on the length of the water column in the well but should provide a minimum of 1 foot displacement of the water column; slug materials may be specified by the project work plan.
- Nylon string
- Water level meter or steel tape
- Health and safety supplies
- Equipment decontamination supplies - Liquinox, buckets, brushes, plastic sheeting (around well to keep equipment clean), solvent (e.g., methanol), DI water, Kimwipes, and aluminum foil.
- Field logbook/standardized forms
- Pen

## 5.0 Procedures

**5.1** Office Preparation

**5.1.1** Review boring, well logs, and well construction diagrams to determine the geologic medium to be tested (sand, silt, clay, etc.) and well depth, depth-to-water, and screen placement.

**5.1.2** Determine what slug diameter and length are to be used on the well. The larger the slug, the greater the water displacement, which results in more comprehensive data capture. The diameter of the well, the length of the water column, and the medium to be tested, will determine which slug to use. The slug must be short enough to be completely submerged beneath the static water level, thin enough to be placed in the well and have sufficient room for the transducer cable and there must be room beneath the bottom of the slug for the transducer.

**5.1.3** Procure appropriate supplies based on well construction (transducer, cable length, slug sizes).

**5.2** General Site Preparation

**5.2.1** The monitoring wells to be tested should have been previously developed and had sufficient time to equilibrate before the hydraulic conductivity testing is conducted. The water level in tightly sealed wells may need to equilibrate once opened and exposed to the atmosphere. Well construction diagrams are necessary to determine the well diameter, sand pack thickness, the depth of the monitoring well and the screened interval.

**5.2.2** Measure the static water level and well depth in each well to be tested and record the level in the field logbook or on the standard form.

**5.2.3** Confirm slug diameter and length to use in well. Record the slug length and diameter in the field logbook or on the standard form for use during data evaluation.

**5.2.4** Record the make, model, and serial number of transducer and data logger in field log book or on the standard form. If data logger saves to an electronic file, record specified file name in field log book. File name protocols may be specified in the project plans.

**5.2.5** Connect the transducer cable to the data logger, and program the logger in accordance with manufacturer's instructions. If using a device where the transducer and logger are combined in one unit, connect the unit to the computer and program it in accordance with manufacturer's instructions. A logarithmic time or very short time interval (typically 3 seconds or less) should be used for recording slug test data. The specified time interval should be outlined in the project plans, and the transducer should have sufficient memory to record data for the entire test duration.

**5.2.6** Lower the transducer into the well. The transducer must be set at a level that will not be disturbed during the test, especially at the insertion or removal of the slug. Ideally, the entire slug length should be below the water surface; however, due to well geometry, this may not be possible. Also, if possible, the transducer should be set a few feet above the base of the well, above the level of any sediment that may be present and may potentially interfere with transducer readings. If these ideal conditions are not present, appropriate notes shall be recorded in the field note book or on the standard form.

**5.2.7** The cable of the transducer should be fixed (e.g., with tape or a clamp) at the top of the well to stabilize it and hold it in place.

**5.2.8** Allow the water level to equilibrate to the static level (i.e., the water level observed prior to installing the transducer). Monitor with the transducer and/or the water level meter.

**5.2.9** When the water has returned to the static water level following installation of the transducer, measure the depth to water using a water level meter and record in the field log book or on the standard form. Also, measure and record an instantaneous pressure reading, if possible. This allows pressure readings to be tied to hydraulic head values. If the data logger requires input of a reference elevation, enter into the data logger an appropriate reference elevation that corresponds to the measured

depth to water. Reference elevations may be set to zero, to the depth to water, or to a calculated hydraulic head (preferred). Record the reference elevation method in field log book or on the standard form.

**5.2.10** Tie nylon string to the slug and cut it to a length that will allow the top of the slug to be submerged beneath the static water level. The length of the string should not allow the slug to touch the transducer.

**5.3** Falling Head Test

**5.3.1** Lower the slug into the well so that the bottom of the slug is just above the water surface.

**5.3.2** Start the data logger recording and immediately lower the slug into the water in the well. The data logger should record a few measurements of static water level in the few seconds it takes to lower the slug. Care should be taken to lower the slug fast enough to produce a nearly instantaneous rise in the water level, but not so fast as to produce a wave when the slug enters the water. The top of the slug should be below the static water level, completely submerged.

**5.3.3** Monitor the data logger so that when the water level returns to the static level, the rising head test can be started (Sec. 5.4).

**5.3.4** If the hydraulic conductivity is low, it may take hours or more for the water level to return to static. In this situation the project hydrogeologist should determine a maximum duration for each test (typically 30 minutes).

**5.4** Rising Head Test

**5.4.1** When the falling head test is over, reset the data logger to begin a new test sequence. There should be no reason to re-set the reference elevation, unless the transducer moved during testing.

**5.4.2** Start the data logger recording. The data logger should record a few measurements of static water level prior to removal of the slug. The slug should be removed quickly so that an instantaneous fall in the water level occurs. Take care not to disturb the transducer when removing the slug.

**5.4.3** Terminate the rising head test when the water has returned to a static condition or the maximum test length duration determined by the project hydrogeologist has elapsed.

**5.4.4** If the hydraulic conductivity is low it may take hours or more for the water level to return to static. In this situation the project hydrogeologist should determine a maximum duration for each test (typically 30 minutes).

**5.5** Data Review and Download

**5.5.1** Some data logging equipment allows collected data to be reviewed and plotted on a graph in the field. Prior to moving to the next well location, it is beneficial to review the collected data to see if it appears acceptable. Common problems are that a well was insufficiently stressed (i.e., water level change from static less than 1 foot) or the transducer moved. Contact the project hydrogeologist if uncertain on the

acceptability of test results. If the data is not acceptable or the project plans require it, the test should be repeated. Make appropriate notes in field log book or on standard form.

The collected data from all tests must be downloaded into a computer for quantitative analysis. This may be performed in the field or in the office but in the field is preferred. If renting equipment, do not return until the project hydrogeologist can preliminarily review downloaded data for completeness. Follow manufacturer's instructions.

**5.6** Equipment Decontamination

**5.6.1** All equipment which comes into contact with the groundwater (slugs, transducer, and water level tape) shall be decontaminated in accordance with POP PPG 014 Decontamination of Field Equipment before moving to the next location. The string, plastic sheeting, and any health and safety supplies (e.g. gloves) shall be properly disposed of in accordance with site requirements.

**5.7** Data Analysis

**5.7.1** Several methods are available for analyzing data obtained from hydraulic conductivity tests. Most methods incorporate graphical techniques, such as semi-log and log-log plots, to evaluate the data and select values for the calculations. Computer software is available to aid in evaluation.

Inherent in all analytical methods are simplifying assumptions concerning the aquifer properties and test methods. When selecting a particular analytical method, it is important to consider the basic assumptions that underlie the mathematical expressions. In many cases it may be advisable to evaluate the data using several methods and examine the range of hydraulic conductivities that are obtained. When reporting a calculated in-situ hydraulic conductivity, the analytical method(s) used should be referenced.

One of the major issues in determining the method to use is whether the aquifer is a water table (unconfined) aquifer or a confined aquifer. Falling head tests may overestimate hydraulic conductivity in water table aquifers if the screened interval is not fully submerged. Although the tests may be performed under such conditions and analyzed for comparative purposes to rising head tests, the limitations of falling head tests conducted in a water table aquifer should be appropriately considered and noted when reporting results or computing average values.

## 6.0 Quality assurance / quality control

The slug test and data analysis shall be performed under the supervision of a hydrogeologist or other qualified personnel. A hydrogeologist shall review all calculations and results.

Both rising and falling head tests or replicate tests may be conducted for quality control. If the rising and falling head results are not comparable, assess whether the transducer recorded accurate data.

The falling head test is not accurate for wells with screens that bracket the stabilized water table, because they will overestimate hydraulic conductivity. These tests may be performed in water table wells, but the results should not be used quantitatively.

## 7.0 Data and records management

Documentation for the field component of hydraulic conductivity tests shall include a minimum of the following:

- Project and site identification
- Measured groundwater levels (with water level tape and/or electronic files from the data logger)
- Slug dimensions
- Data logger / transducer number or instrument identification number/model
- Reference elevations, if available
- Other data logger programming inputs
- Relevant dates and times for start / finish and subsequent water-level measurements
- Weather conditions
- Identities of personnel performing the measurements
- Description of any events or conditions that could impact the quality of the test results

The information shall be recorded in a field logbook or on a standard field form (see Attachment 1). Analysis and results of the tests shall be documented in a technical memorandum and/or report as specified in the project plans.

## 8.0 Personnel qualifications and training

The field technician shall be properly trained in the process of hydraulic conductivity measurement and shall have specialized training and supervision in using the transducer and data loggers.

The slug test and data analysis shall be performed by or under the supervision of a hydrogeologist or other qualified personnel. A hydrogeologist shall review all calculations and results.

**8.1** Project Manager

The project manager is responsible for ensuring that project-specific requirements are communicated to the project team and for providing the materials, resources, and guidance necessary to perform the measurements in accordance with this POP and the project plans.

**8.2** Field Technician

It is the responsibility of the field technician to be familiar with the general principles of hydraulic conductivity testing and the testing equipment. The field technician is responsible for verifying that the equipment is in proper operating condition prior to use and for implementing the measurement procedures in accordance with this POP and the project plans.

**8.3** Project Hydrogeologist

It is the responsibility of the project hydrogeologist to provide guidance to the field technician necessary to perform the measurements in accordance with this POP and the project plans and to perform and/or supervise the analysis of the data collected.

## 9.0 References

**9.1** Not Applicable.

## 10.0 Revision History

| Revision | Date | Changes |
|---|---|---|
| 0 | June 2010 | Original POP |

**Attachment 1 – Hydraulic Conductivity Test Log**

Slug Test Data Form

Page __ of __

DATE: _____

SITE ID: _____ SLUG VOLUME ($ft^3$): _____

LOCATION ID: _____ LOGGER: _____

TEST METHOD: __ SLUG INJECTION __ SLUG WITHDRAWAL

COMMENTS: _____

_____

_____

Time Beginning of Test #1 _____ Time Beginning of Test #2 _____

Time End of Test #1 _____ Time End of Test #2 _____

| ELAPSED TIME (MIN) | DEPTH TO WATER (FT) | ELAPSED TIME (MIN) | DEPTH TO WATER (FT) |
|---|---|---|---|

AECOM

Project Operating Procedure

# Chip Sampling

Procedure Number: PPG 010

Revision No.: 0

Revision Date: June 2010



POP Author Date: 6/28/2010



QA Reviewer Date: 6/28/2010

Annual review of this SOP has been performed and the SOP still reflects current practice.

Initials: _____ Date: _____

Initials: _____ Date: _____

Project Operating Procedure

**Chip Sampling**



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**10.0 Revision History ..... 4**

# Project Operating Procedure
# Chip Sampling



## 1.0 Scope and Applicability

**1.1** This Project Operating Procedure (POP) defines the procedures for the collection of chip samples to determine surficial contamination on porous surfaces (e.g., cement, brick, wood). These procedures are intended for samples to be analyzed for non-volatile analyses (e.g., PCBs, TCDD, and TCDF), and should not be used for volatile organic compound (VOC) analysis. Sample points should be carefully chosen and should be based on site history, manufacturing processes, personnel practices, obvious contamination, and available surface area. Suggested sampling points include floors near process vessels and storage tanks, loading dock areas, etc. The sampling area should be large enough to provide a sufficient amount of sample for analysis (smaller sample volumes cause higher detection limits). To facilitate the calculations once the analytical data is received, the area sampled should be measured.

## 2.0 Health and Safety Considerations

**2.1** The health and safety considerations for the work associated with this POP, including both potential physical and chemical hazards, will be addressed in the site specific Health and Safety Plan (HASP). In the absence of a site-specific HASP, work will be conducted according to the AECOM Health and Safety Policy and Procedures Manual and/or direction from the Regional Health and Safety Manager.

## 3.0 Interferences

**3.1** Cross contamination from sampling equipment will be prevented by using sampling equipment constructed of stainless steel that is adequately decontaminated between samples.

## 4.0 Equipment and Materials

To collect a chip sample, the following equipment is needed:

- Ruler, measuring tape, measuring wheel, or other similar measuring device
- Chalk
- Disposable nitrile gloves, safety glasses, and other PPE required in the site-specific HASP.
- Decontaminated beryllium copper or stainless steel chisel
- Hammer or electric hammer

- Dedicated natural bristle brush and a dust pan lined with aluminum foil or one that is dedicated, decontaminated and constructed of a pre-approved material which will not interfere with the contaminants of concern
- Glass sample containers
- Field logbook and pen with indelible ink

## 5.0 Procedures

**5.1** Mark off the sample collection location with chalk and measure the area.

**5.2** Don safety glasses, a new pair of disposable gloves, and any other PPE required in the site-specific HASP.

**5.3** Using the decontaminated chisel and hammer, break up the surface of the location to be sampled. An effort should be made to avoid scattering pieces out of the marked sampling area boundary. Any pieces that fall outside the sampling area should not be used. The area should be chipped to less than ¼" and preferably ⅛".

**5.4** Record how deep chips were taken in the field logbook or field data sheet.

**5.5** Collect the chipped pieces using a dedicated, decontaminated dustpan and natural bristle brush and transfer the sample directly into the sample container.

**5.6** Repeat the process for each location to be sampled. Use new or decontaminated equipment at each location. Outer gloves must be changed before each sample is collected.

**5.7** Decontaminate the sampling equipment in accordance with POP PPG 014 Decontamination of Field Equipment.

## 6.0 Quality Assurance / Quality Control

**6.1** Sampling personnel should follow specific quality assurance guidelines as outlined in the QAPP and/or Work Plan. Proper quality assurance requirements should be provided which will allow for collection of representative samples from representative sampling points. Quality assurance requirements outlined in the QAPP and/or Work Plan typically suggest the collection of a sufficient quantity of field duplicate, field blank, and other samples.

**6.2** Quality control requirements are dependent on project-specific sampling objectives. The QAPP and/or Work Plan will provide requirements for equipment decontamination (frequency and materials), sample preservation and holding times, sample container types, sample packaging and shipment, as well as requirements for the collection of various quality assurance samples such as trip blanks, field blanks, equipment blanks, and field duplicate samples.

## 7.0 Data and Records Management

**7.1** All data and information (e.g., sample collection method used) must be documented on field data sheets or within site log books with permanent ink.

**7.2** Unanticipated changes to the procedures or materials described in this POP (deviations) will be appropriately documented in the project records.

**7.3** Records associated with the activities described in this POP will be maintained according to the document management policy for the project.

## 8.0 Personnel Qualifications and Training

**8.1** Qualifications and training

**8.1.1** The individual executing these procedures must have read, and be familiar with, the requirements of this POP.

**8.1.2** The entire sampling team should read and be familiar with the site Health and Safety Plan, all relevant POPs, and the QAPP and/or Work Plan (and the most recent amendments) before going onsite for the sampling event. It is recommended that the field sampling leader attest to the understanding of these site documents and that it is recorded.

**8.2** Responsibilities

**8.2.1** The project manager is responsible for providing the project team with the materials, resources and guidance necessary to properly execute the procedures described in this POP.

**8.2.2** The individual performing the work is responsible for implementing the procedures as described in this POP and any project-specific work plans.

## 9.0 References

United States Environmental Protection Agency. 2001. Guidance for Preparing Standard Operating Procedures (SOPs). EPA QA/G-6. EPA/240/B-01/004. USEPA Office of Environmental Information, Washington, DC. March 2001.

New Jersey Department of Environmental Protection (NJDEP), August 2005. Field Sampling Procedures Manual.

POP PPG 014 Decontamination of Field Equipment

## 10.0 Revision History

| Revision | Date | Changes |
|---|---|---|
| 0 | June 2010 | Original POP |

AECOM

Project Operating Procedure

# Wipe Sampling

Procedure Number: PPG 011

Revision No.: 0

Revision Date: June 2010



POP Author Date: 6/28/2010

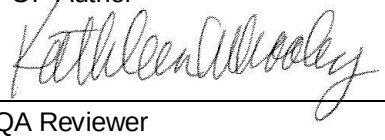

QA Reviewer Date: 6/28/2010

Annual review of this SOP has been performed and the SOP still reflects current practice.

Initials: _____ Date: _____

Initials: _____ Date: _____

Project Operating Procedure

# Wipe Sampling



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**10.0 Revision History ..... 4**

Project Operating Procedure

# Wipe Sampling



## 1.0 Scope and Applicability

**1.1** This Project Operating Procedure (POP) defines the procedures for the collection of wipe samples to determine surficial contamination on non-porous surfaces (e.g., metal, glass). Sample points should be carefully chosen and should be based on site history, manufacturing processes, personnel practices, obvious contamination, and available surface area. Sample points should be carefully chosen and should be based on site history, manufacturing processes, personnel practices, obvious contamination, migration pathways and available surface area. Suggested sampling points include process vessels, ventilation ducts and fans, exposed beams, windowpanes, etc. The area wiped should be large enough to provide a sufficient amount of sample for analysis (smaller sample volumes cause higher detection limits).

## 2.0 Health and Safety Considerations

**2.1** The health and safety considerations for the work associated with this POP, including both potential physical and chemical hazards, will be addressed in the site specific Health and Safety Plan (HASP). In the absence of a site-specific HASP, work will be conducted according to the AECOM Health and Safety Policy and Procedures Manual and/or direction from the Regional Health and Safety Manager.

## 3.0 Interferences

**3.1** To facilitate the collection of a wipe sample, a 3” x 3” gauze pad should be utilized. The use of filter paper for wipe sampling is not recommended. Filter paper will tend to rip and crumble if the surface wiped is slightly rough. If filter paper is to be used, it should be 4” diameter heavy gauge paper, such as Whatman #4 Filter Paper.

**3.2** Occasionally samples are desired from painted or waxed surfaces. Since hexane may degrade the finish or pick up interfering substances, an alternate solvent should be used. In this case, methanol or distilled/deionized water for semi-volatiles, pesticides and PCBs and distilled and deionized water alone for metals should be used. Surface interference should be recorded in the field logbook.

When samples are submitted for analysis, the laboratory should be instructed to rinse the sample jars with the appropriate extraction or digestion solvent, depending on the analysis to be performed, when transferring the sample to the extraction/digestion glassware. This will ensure that the entire sample has been removed from the sample container.

## 4.0 Equipment and Materials

To collect a chip sample, the following equipment is needed:

- Ruler or measuring tape
- Disposable nitrile gloves, safety glasses, and other PPE required in the site-specific HASP.
- Sterile, wrapped, 3" x 3" gauze pad
- Glass sample containers with appropriate pesticide-grade solvent or distilled/deionized water
- Field logbook and pen with indelible ink

## 5.0 Procedures

**5.1** Mark off the sample collection location. It is recommended that an area be premeasured (e.g. 25 cm x 25 cm) to allow for easier calculation of the final results. However, this is not always feasible and may be done after the area is wiped.

**5.2** Don safety glasses, a new pair of disposable gloves, and any other PPE required in the site-specific HASP.

**5.3** Remove the gauze pad from its sterile wrapping and soak it with the appropriate solvent. The solvent of choice may change based upon the analytes of interest and surface being sampled. Gauze pads for semi-volatiles, pesticide and PCB samples should be moistened in a 1:4 acetone/hexane mixture and those for metals with distilled/deionized water. The gauze pad should be soaked and excess squeezed out immediately before the collection of each sample. **Use of presoaked pads is not acceptable.** Alternate solvents may be acceptable for certain parameters, however, their approval for use will be at the discretion of NJDEP.

**5.4** Wipe the entire area to be sampled once in the horizontal direction and once in the vertical direction, applying moderate pressure. Wipe the entire area so that all the sample material is picked up.

**5.5** Place the gauze pad into the sample container.

**5.6** Repeat the process for each location to be sampled. Outer gloves must be changed before each sample is collected.

**5.7** A blank must always be collected for each wipe-sampling event at the frequency specified in the QAPP and/or Work Plan in order to ensure the quality of the data. The blank will help to identify potential introduction of contaminants from the pad, solvent, sample container or ambient air conditions. Collect the wipe blank as follows:

- Don a new pair of nitrile gloves
- Wet a gauze pad with the solvent or distilled/deionized water (for each collection parameter) and place the pad directly into the sample bottle.

## 6.0 Quality Assurance / Quality Control

**6.1** Sampling personnel should follow specific quality assurance guidelines as outlined in the QAPP and/or Work Plan. Proper quality assurance requirements should be provided which will allow for collection of representative samples from representative sampling points. Quality assurance requirements outlined in the QAPP and/or Work Plan typically suggest the collection of a sufficient quantity of field duplicate, field blank, and other samples.

**6.2** Quality control requirements are dependent on project-specific sampling objectives. The QAPP and/or Work Plan will provide requirements for equipment decontamination (frequency and materials), sample preservation and holding times, sample container types, sample packaging and shipment, as well as requirements for the collection of various quality assurance samples such as trip blanks, field blanks, equipment blanks, and field duplicate samples.

## 7.0 Data and Records Management

**7.1** All data and information (e.g., sample collection method used) must be documented on field data sheets or within site log books with permanent ink.

**7.2** Unanticipated changes to the procedures or materials described in this POP (deviations) will be appropriately documented in the project records.

**7.3** Records associated with the activities described in this POP will be maintained according to the document management policy for the project.

## 8.0 Personnel Qualifications and Training

**8.1** Qualifications and training

**8.1.1** The individual executing these procedures must have read, and be familiar with, the requirements of this POP.

**8.1.2** The entire sampling team should read and be familiar with the site Health and Safety Plan, all relevant POPs, and the QAPP and/or Work Plan (and the most recent amendments) before going onsite for the sampling event. It is recommended that the field sampling leader attest to the understanding of these site documents and that it is recorded.

**8.2** Responsibilities

**8.2.1** The project manager is responsible for providing the project team with the materials, resources and guidance necessary to properly execute the procedures described in this POP.

**8.2.2** The individual performing the work is responsible for implementing the procedures as described in this POP and any project-specific work plans.

## 9.0 References

United States Environmental Protection Agency. 2001. Guidance for Preparing Standard Operating Procedures (SOPs). EPA QA/G-6. EPA/240/B-01/004. USEPA Office of Environmental Information, Washington, DC. March 2001.

New Jersey Department of Environmental Protection (NJDEP), August 2005. Field Sampling Procedures Manual.

## 10.0 Revision History

| Revision | Date | Changes |
|---|---|---|
| 0 | June 2010 | Original POP |

AECOM

Project Operating Procedure

# Concrete Core Sampling

Procedure Number: PPG 012

Revision No.: 0

Revision Date: April 2010

_____ Date: _____

POP Author

_____ Date: _____

Project Manager

Annual review of this SOP has been performed and the SOP still reflects current practice.

Initials: _____ Date: _____

Initials: _____ Date: _____

Project Operating Procedure

# Concrete Core Sampling



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**8.0 Personnel Qualifications and Training ..... 3**

**9.0 References ..... 3**

**10.0 Revision History ..... 4**

Project Operating Procedure

# Concrete Core Sampling



## 1.0 Scope and Applicability

**1.1** This Project Operating Procedure (POP) defines the procedure that will be used for the collection of concrete core samples. Selected concrete cores will be removed from floor slabs, foundations, and other concrete structures. Subsamples of the cores will be obtained at various depth intervals using the procedure described hereinafter.

**1.2** A carbide drill bit attached to a rotary hammer will be used to obtain cuttings from a solid core. The cuttings are taken from the side of the core at selected intervals, based on visual evidence of chromium or other criteria (such as depth). Cores containing a thin band (<0.25 inch) of chromium at the bottom, will be chip sampled using a beryllium chisel. If the core disintegrates during sampling, the remaining portions will be pulverized with a beryllium hammer to obtain a representative sample.

## 2.0 Health and Safety Considerations

**2.1** The health and safety considerations for the work associated with this POP, including both potential physical and chemical hazards, will be addressed in the site specific Health and Safety Plan (HASP). In the absence of a site-specific HASP, work will be conducted according to the AECOM Health and Safety Policy and Procedures Manual and/or direction from the Regional Health and Safety Manager.

## 3.0 Interferences

**3.1** Cross contamination from sampling equipment will be prevented by using sampling equipment constructed of stainless steel that is adequately decontaminated between samples.

## 4.0 Equipment and Materials

- Decontaminated carbide drill bit, 1 inch to 2 inch in diameter and approximately six inches in length;
- Power rotary hammer;
- Decontaminated beryllium copper or stainless steel chisel;
- Hammer;
- Engineers rule;
- Bristle brush, dedicated;
- Decontaminated glass bowl;

- Decontaminated/dedicated polyethylene or Teflon spoon;
- Polyethylene sheeting;
- Disposable nitrile gloves;
- Safety glasses; and
- Field logbook and pen with indelible ink

## 5.0 Procedures

**5.1** Photograph, in color, the core from the top, bottom and side. Record the photograph number in the field logbook. Sketch the specifics of each core (dimensions, staining,etc) in the field logbook.

**5.2** Brush the loose dirt from the bottom of the core.

**5.3** Measure the dimensions of the core to be sampled and select the sample intervals for the collection of the drill cuttings. Sketch specifics of the sample intervals in the field logbook.

**5.4** Beginning at the top of the core, drill holes around the perimeter at the first sampling interval and collect the cuttings on the polyethylene sheeting or in the glass bowl. Drill each hole approximately 3/8ths of the way through the core and stop. Rotate the core 90 degrees and drill again. Continue drilling holes around the perimeter of the core until enough sample cuttings are produced to sufficiently fill the sample collection jar for the analyses requested.

If the core breaks during drilling, collect the remaining portion of that interval with a dedicated beryllium chisel and hammer, and pulverize the chips on new polyethylene sheeting. The final pieces should be no larger than 1 centimeter in diameter.

**5.5** Transfer the sample cuttings from the sheeting or bowl to the sampling jar with a polyethylene or Teflon spoon.

**5.6** Repeat the process for each interval. Use new or decontaminated equipment at each interval. Outer gloves must be changed before each sample is collected.

**5.7** Decontaminate the sampling equipment in accordance with POP PPG 014 Decontamination of Field Equipment.

## 6.0 Quality Assurance / Quality Control

**6.1** Sampling personnel should follow specific quality assurance guidelines as outlined in the QAPP and/or Work Plan. Proper quality assurance requirements should be provided which will allow for collection of representative samples from representative sampling points. Quality assurance requirements outlined in the QAPP and/or Work Plan typically suggest the collection of a sufficient quantity of field duplicate, field blank, and other samples.

**6.2** Quality control requirements are dependent on project-specific sampling objectives. The QAPP and/or Work Plan will provide requirements for equipment decontamination (frequency

and materials), sample preservation and holding times, sample container types, sample packaging and shipment, as well as requirements for the collection of various quality assurance samples such as trip blanks, field blanks, equipment blanks, and field duplicate samples.

## 7.0 Data and Records Management

**7.1** All data and information (e.g., sample collection method used) must be documented on field data sheets, boring logs, or within site log books with permanent ink.

**7.2** Unanticipated changes to the procedures or materials described in this POP (deviations) will be appropriately documented in the project records.

**7.3** Records associated with the activities described in this POP will be maintained according to the document management policy for the project.

## 8.0 Personnel Qualifications and Training

**8.1** Qualifications and training

**8.1.1** The individual executing these procedures must have read, and be familiar with, the requirements of this POP.

**8.1.2** The entire sampling team should read and be familiar with the site Health and Safety Plan, all relevant POPs, and the QAPP and/or Work Plan (and the most recent amendments) before going onsite for the sampling event. It is recommended that the field sampling leader attest to the understanding of these site documents and that it is recorded.

**8.2** Responsibilities

**8.2.1** The project manager is responsible for providing the project team with the materials, resources and guidance necessary to properly execute the procedures described in this POP.

**8.2.2** The individual performing the work is responsible for implementing the procedures as described in this POP and any project-specific work plans.

## 9.0 References

United States Environmental Protection Agency. 2001. Guidance for Preparing Standard Operating Procedures (SOPs). EPA QA/G-6. EPA/240/B-01/004. USEPA Office of Environmental Information, Washington, DC. March 2001.

POP PPG 014 Decontamination of Field Equipment

## 10.0 Revision History

| Revision | Date | Changes |
|---|---|---|
| 0 | April 2010 | Original POP |

AECOM

Project Operating Procedure

# Sweep Sampling

Procedure Number: PPG 013

Revision No.: 0

Revision Date: June 2010



POP Author Date: 6/28/2010

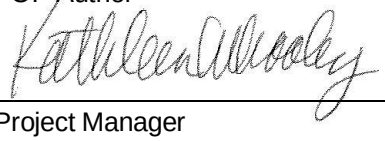

Project Manager Date: 6/28/2010

Annual review of this SOP has been performed and the SOP still reflects current practice.

Initials: _____ Date: _____

Initials: _____ Date: _____

Project Operating Procedure

**Sweep Sampling**



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**7.0 Data and Records Management ..... 2**

**8.0 Personnel Qualifications and Training ..... 3**

**9.0 References ..... 3**

**10.0 Revision History ..... 3**

# Project Operating Procedure
# Sweep Sampling



## 1.0 Scope and Applicability

**1.1** This Project Operating Procedure (POP) defines the procedures for the collection of sweep samples to determine surficial contamination on porous (e.g., asphalt) or non-porous (e.g., metal) surfaces. These procedures are intended for samples to be analyzed for non-volatile analyses (e.g., PCBs, TCDD, and TCDF), and should not be used for volatile organic compound (VOC) analysis. Sweep sampling allows collection of dust/residue samples that may help in the assessment of contaminant determination and delineation. Sample points should be carefully chosen and should be based on site history, manufacturing processes, personnel practices, obvious contamination, migration pathways and available surface area. Suggested sampling points include ventilation systems where dust can collect, floor surfaces near process vessels and storage tanks, or street gutters where contaminated sediments may have migrated and accumulated. The area sampled should be large enough to provide a sufficient amount of sample for analysis.

## 2.0 Health and Safety Considerations

**2.1** The health and safety considerations for the work associated with this POP, including both potential physical and chemical hazards, will be addressed in the site specific Health and Safety Plan (HASP). In the absence of a site-specific HASP, work will be conducted according to the AECOM Health and Safety Policy and Procedures Manual and/or direction from the Regional Health and Safety Manager.

## 3.0 Interferences

**3.1** Cross contamination from sampling equipment will be prevented by using dedicated sampling equipment and/or sampling equipment constructed of stainless steel that is adequately decontaminated between samples.

## 4.0 Equipment and Materials

To collect a sweep sample, the following equipment is needed:

- Disposable nitrile gloves, safety glasses, and other PPE required in the site-specific HASP.
- Dedicated natural bristle brush
- Stainless steel spatula or dedicated spatula
- Dust pan lined with aluminum foil or one that is dedicated, decontaminated and constructed of a pre-approved material which will not interfere with the contaminants of concern

- Glass sample containers
- Field logbook and pen with indelible ink
- Camera (optional)

## 5.0 Procedures

**5.1** Identify the location to be sampled and document its description in the field log book or field data sheets. If necessary, take a picture of the location.

**5.2** Don safety glasses, a new pair of disposable gloves, and any other PPE required in the site-specific HASP.

**5.3** Using the dedicated natural bristle brush, sweep all residue in the area to be sampled into a decontaminated or dedicated dustpan.

**5.4** Use the decontaminated stainless steel or dedicated spatula to transfer the sample from the dustpan to the sample bottle(s).

**5.5** Repeat the process for each location to be sampled. Use dedicated or decontaminated equipment at each location. Outer gloves must be changed before each sample is collected.

**5.1** Decontaminate the sampling equipment in accordance with POP PPG 014 Decontamination of Field Equipment.

## 6.0 Quality Assurance / Quality Control

**6.1** Sampling personnel should follow specific quality assurance guidelines as outlined in the QAPP and/or Work Plan. Proper quality assurance requirements should be provided which will allow for collection of representative samples from representative sampling points. Quality assurance requirements outlined in the QAPP and/or Work Plan typically suggest the collection of a sufficient quantity of field duplicate, field blank, and other samples.

**6.2** Quality control requirements are dependent on project-specific sampling objectives. The QAPP and/or Work Plan will provide requirements for equipment decontamination (frequency and materials), sample preservation and holding times, sample container types, sample packaging and shipment, as well as requirements for the collection of various quality assurance samples such as trip blanks, field blanks, equipment blanks, and field duplicate samples.

## 7.0 Data and Records Management

**7.1** All data and information (e.g., sample collection method used) must be documented on field data sheets or within site log books with permanent ink.

**7.2** Unanticipated changes to the procedures or materials described in this POP (deviations) will be appropriately documented in the project records.

**7.3** Records associated with the activities described in this POP will be maintained according to the document management policy for the project.

## 8.0 Personnel Qualifications and Training

**8.1** Qualifications and training

**8.1.1** The individual executing these procedures must have read, and be familiar with, the requirements of this POP.

**8.1.2** The entire sampling team should read and be familiar with the site Health and Safety Plan, all relevant POPs, and the QAPP and/or Work Plan (and the most recent amendments) before going onsite for the sampling event. It is recommended that the field sampling leader attest to the understanding of these site documents and that it is recorded.

**8.2** Responsibilities

**8.2.1** The project manager is responsible for providing the project team with the materials, resources and guidance necessary to properly execute the procedures described in this POP.

**8.2.2** The individual performing the work is responsible for implementing the procedures as described in this POP and any project-specific work plans.

## 9.0 References

United States Environmental Protection Agency. 2001. Guidance for Preparing Standard Operating Procedures (SOPs). EPA QA/G-6. EPA/240/B-01/004. USEPA Office of Environmental Information, Washington, DC. March 2001.

New Jersey Department of Environmental Protection (NJDEP), August 2005. Field Sampling Procedures Manual.

POP PPG 014 Decontamination of Field Equipment

## 10.0 Revision History

| Revision | Date | Changes |
|---|---|---|
| 0 | June 2010 | Original POP |

AECOM

Project Operating Procedure

# Decontamination of Field Equipment

Procedure Number: PPG 014

Revision No.: 0

Revision Date: June 2010



POP Author Date: 6/28/2010

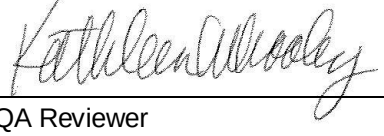

QA Reviewer Date: 6/28/2010

Annual review of this POP has been performed and the POP still reflects current practice.

Initials: _____ Date: _____

Initials: _____ Date: _____

Project Operating Procedure

# Decontamination of Field Equipment



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Project Operating Procedure

# Decontamination of Field Equipment



## 1.0 Project Scope and applicability

### 1.1 Purpose and Applicability

This POP describes the methods to be used for the decontamination of field equipment used in the collection of environmental samples. The list of field equipment may include a variety of items used in the collection of soil and/or water samples, such as split-spoon samplers, trowels, scoops, spoons, bailers and pumps. Heavy equipment such as drill rigs and backhoes also require decontamination, usually in a specially constructed temporary decontamination area.

Decontamination is performed as a quality assurance measure and a safety precaution. Improperly decontaminated sampling equipment can lead to misinterpretation of environmental data due to interference caused by cross-contamination. Decontamination protects field personnel from potential exposure to hazardous materials. Decontamination also protects the community by preventing transportation of contaminants from a site.

This POP emphasizes decontamination procedures to be used for decontamination of reusable field equipment. Occasionally, dedicated field equipment such as well construction materials (well screen and riser pipe) or disposable field equipment (bailers or other general sampling implements) may also require decontamination prior to use. The project-specific work plan should indicate the specific decontamination requirements for a particular project.

Respective state or federal agency (regional offices) regulations may require specific types of equipment or procedures for use in decontamination of field equipment. The project manager should review the applicable regulatory requirements, if any, prior to the start of the field investigation program.

### 1.2 General Principles

Decontamination is accomplished by manually scrubbing, washing, or spraying equipment with detergent solutions, tap water, distilled/deionized water, steam and/or high pressure water, or solvents. The decontamination method and agents are generally determined on a project-specific basis and must be stated in the Quality Assurance Project Plan (QAPP) and/or Work Plan.

Generally, decontamination of equipment is accomplished at each sampling site between collection points. Waste decontamination materials such as spent liquids and solids will be collected and managed as investigation-derived waste for later disposal. All decontamination materials, including wastes, should be stored in a central location so as to maintain control over the quantity of materials used or produced throughout the investigation program.

## 2.0 Health and safety considerations

Decontamination procedures may involve chemical exposure hazards associated with the type of contaminants encountered or solvents employed and may involve physical hazards associated with decontamination equipment. When decontamination is performed on equipment which has been in contact with hazardous materials or when the quality assurance objectives of the project require decontamination with chemical solvents, the measures necessary to protect personnel must be

addressed in the project Health and Safety Plan (HASP). This plan must be approved by the project Health and Safety Officer before work commences, must be distributed to all personnel performing equipment decontamination, and must be adhered to as field activities are performed.

## 3.0 Interferences

Improper decontamination can result is sample contamination and affect the accuracy of data.

## 4.0 Equipment and materials

- Decontamination agents (per work plan requirements):
  - LIQUI-NOX, ALCONOX, or other phosphate-free biodegradable detergent,
  - Tap water,
  - Distilled/deionized water,
  - Nitric acid and/or hydrochloric acid,
  - Methanol and/or hexane, acetone, isopropanol.
- Health and Safety equipment
- Chemical-free paper towels
- Waste storage containers: drums, 5-gallon pails w/covers, plastic bags
- Cleaning containers: plastic buckets or tubs, galvanized steel pans, pump cleaning cylinder
- Cleaning brushes
- Pressure sprayers
- Squeeze bottles
- Plastic sheeting
- Aluminum foil
- Field logbook and pen with indelible ink

## 5.0 Procedures

**5.1** General Preparation

**5.1.1** It should be assumed that all sampling equipment, even new items, are contaminated until the proper decontamination procedures have been performed on them or unless a certificate of analysis is available which demonstrates the items cleanliness.

Field equipment that is not frequently used should be wrapped in aluminum foil, shiny side out, and stored in a designated "clean" area. Small field equipment can also be

stored in plastic bags to eliminate the potential for contamination. Field equipment should be inspected and decontaminated prior to use if the equipment appears contaminated and/or has been stored for long periods of time. Unless customized procedures are stated in the QAPP and/or Work Plan for decontamination of equipment, the standard procedures specified in this POP shall be followed.

**5.1.2** Establish the decontamination station within an area that is convenient to the sampling location. If single samples will be collected from multiple locations, then a centralized decontamination station, or a portable decontamination station should be established.

**5.1.3** An investigation-derived waste (IDW) containment station should be established at this time also. The project-specific work plan should specify the requirements for IDW containment. In general, decontamination solutions are discarded as IDW between sampling locations. Solid waste is disposed of as it is generated.

**5.2** Sampling conducted using bailers

**5.2.1** Field decontamination of bailers will not be conducted on this project. Only dedicated disposable bailers or laboratory decontaminated bailers will be used for sample collection in accordance with the FSPM.

**5.3** Decontamination for Organic Analyses

**5.3.1** This procedure applies to soil sampling and groundwater sampling equipment used in the collection of environmental samples submitted for organic constituents analysis. Examples of relevant items of equipment include split-spoons, trowels, scoops/spoons, bailers, and other small items. Submersible pump decontamination procedures are outlined in Section 5.4.

**5.3.2** Decontamination is to be performed before sampling events and between sampling points.

**5.3.3** After a sample has been collected, remove all gross contamination from the equipment or material by brushing and then rinsing with available tap water. This initial step may be completed using a 5-gallon pail filled with tap water. Steam or a high-pressure water rinse may also be conducted to remove solids and/or other contamination.

**5.3.4** Wash the equipment with a phosphate-free detergent and tap water solution. This solution should be kept in a 5-gallon pail with its own brush.

**5.3.5** Rinse with tap water or distilled/deionized water until all detergent and other residue is washed away. This step can be performed over an empty bucket using a squeeze bottle or pressure sprayer.

**5.3.6** Rinse with methanol or other appropriate solvent using a squeeze bottle or pressure sprayer. Rinsate should be collected in a waste bucket.

**5.3.7** Rerinse with deionized water to remove any residual solvent. Rinsate should be collected in the solvent waste bucket.

**5.3.8** Allow the equipment to air-dry in a clean area or blot with chemical-free paper towels before reuse. Wrap the equipment in tin foil and/or seal it in a plastic bag if it will not be reused for a while.

**5.3.9** Dispose of soiled materials and spent solutions in the designated IDW disposal containers.

**5.4** Decontamination for Inorganic (Metals) Analyses

**5.4.1** This procedure applies to soil sampling equipment used primarily in the collection of environmental samples submitted for inorganic constituents analysis. Examples of relevant items of equipment include split-spoons, trowels, scoops/spoons, bailers, and other small items.

**5.4.2** For plastic and glass sampling equipment, follow the steps outlined in 5.2 above, however, use a 10% nitric acid solution (acid in water) in place of the solvent rinse.

**5.4.3** For metal sampling equipment, follow the steps outlined in 5.2 above, however, use a 10% hydrochloric acid solution (acid in water) in place of the solvent rinse.

**5.5** Decontamination of Submersible Pumps

**5.5.1** This procedure will be used to decontaminate submersible pumps before and between ground-water sample collection points. This procedure applies to both electric submersible and bladder pumps. This procedure also applies to discharge tubing if it will be reused between sampling points.

**5.5.2** Prepare the decontamination area if pump decontamination will be conducted next to the sampling point. If decontamination will occur at another location, the pump and tubing may be removed from the well and placed into a clean trash bag for transport to the decontamination area. Pump decontamination is easier with the use of 3-foot tall pump cleaning cylinders (i.e., Nalgene cylinder) for the various cleaning solutions, although the standard bucket rinse equipment may be used.

**5.5.3** Sample tubing shall not be decontaminated in the field. Only dedicated tubing will be used for each well and disposed of upon completion of well sampling.

**5.5.4** Once the decontamination station is established, the pump should be removed from the well and the discharge tubing and power cord coiled by hand as the equipment is removed. If any of the equipment needs to be put down temporarily, place it on a plastic sheet (around well) or in a clean trash bag. If a disposable discharge line is used it should be removed and discarded at this time.

**5.5.5** As a first step in the decontamination procedure, use a pressure sprayer with tap water to rinse the exterior of the pump, discharge line, and power cord as necessary. Collect the rinsate and handle as IDW.

**5.5.6** Cut a short piece of dedicated tubing and attach it to the pump. Place the pump into a pump cleaning cylinder or bucket containing a detergent solution (detergent in tap water). Bend the tubing so that decontamination fluids can be recirculated back into the bucket. Holding the tubing/power cord, pump solution through the pump system. A minimum of one gallon of detergent solution should be pumped through the system. Collect the rinsate and handle as IDW.

**5.5.7** Place the pump into another cylinder/bucket containing a 10% solution of solvent (methanol, or other designated solvent) in distilled/deionized water. Bend the tubing so that decontamination fluids can be recirculated back into the bucket. Pump until the detergent solution is removed in accordance with the NJDEP FSPM, Chapter 2A,

Section 2.4.4, page 17. Circulate the rinse solution for three or more system cycles. Collect the rinsate and handle as IDW.

**5.5.8** Place the pump into another cylinder/bucket containing distilled/deionized water. Bend the tubing so that decontamination fluids can be recirculated back into the bucket. Pump a minimum of 3 to 5 pump system volumes (pump and tubing) of water through the system. Vary the pump speed during decontamination and briefly raise the pump to introduce air during the decontamination procedure. Collect the rinsate and handle as IDW.

**5.5.9** Remove the pump from the cylinder/bucket and if the pump is reversible, place the pump in the reverse mode to discharge all removable water from the system. If the pump is not reversible the pump and discharge line should be drained by hand as much as possible. Collect the rinsate and handle as IDW.

**5.5.10** Refill the cylinder/bucket with clean potable water and run pump for 3 to 5 pump system volumes. Collect the rinsate and handle as IDW. Then, using a pressure sprayer with distilled/deionized water, rinse the exterior of the pump, discharge line, and power cord thoroughly, shake all excess water, then place the pump system into a clean trash bag for storage. If the pump system will not be used again right away, the pump itself should also be wrapped with aluminum foil before placing it into the bag.

**5.6** Decontamination of Bladder Pumps

**5.6.1** Most bladder pumps cannot be easily decontaminated in the field due to their unique construction. For that reason, bladder pumps are not employed on a well-to-well basis **unless** they are constructed with easy to clean parts and *disposable* bladders. If they are constructed with disposable bladders, proper decontamination should include removal, disposal, and replacement of the used bladder and a thorough eight-step decontamination procedure. Field cleaning of bladder pumps is acceptable only if the following conditions are met: 1) the bladder pump housing is constructed of stainless steel with an internal disposable bladder and 2) either the eight-step, Cold Regions decontamination method or the ultra clean decontamination method is employed as discussed in the NJDEP FSPM.

**5.7** Decontamination of Peristaltic Pumps

**5.7.1** A peristaltic pump is a self-priming suction lift (negative air pressure) pump utilized at the ground surface, which consists of a rotor with ball bearing rollers. One end of dedicated tubing is inserted into the well. The other end is attached to a short length of flexible tubing, which has been threaded around the rotor, out of the pump, and connected to a discharge tube. The liquid moves totally within the tubing, thus no part of the pump contacts the liquid. Tubing used for well evacuation may also be used for sample collection. Teflon®-lined polyethylene tubing is recommended for sampling. Tubing will be discarded and properly disposed of after each sample is collected.

**5.8** Decontamination of Large Equipment

**5.8.1** Consult the QAPP and/or Work Plan for instruction on the location of the decontamination station and the method of containment of the wash solutions. On large projects usually a temporary decontamination facility (decontamination pad) is required which may include a membrane-lined and bermed area large enough to

drive heavy equipment (drill rig, backhoe) onto with enough space to spread other equipment and to contain overspray. Usually a small sump with pump is necessary to collect and contain rinsate. A water supply and power source is also necessary to run steam cleaning and/or pressure washing equipment.

**5.8.2** Upon arrival and prior to leaving a sampling site, all heavy equipment such as drill rigs, trucks, and backhoes should be thoroughly cleaned and then the parts of the equipment which come in contact or in close proximity to sampling activity should be decontaminated. This can be accomplished in two ways, steam cleaning or high pressure water wash and manual scrubbing. Following this initial cleaning, only those parts of the equipment which come in close proximity to the sampling activities (i.e., auger stems, rods, backhoe bucket) must be decontaminated in between sampling events.

**5.8.3** Occasionally, well construction materials such as well screen and riser pipe may require decontamination before the well materials are used. These materials may be washed in the decontamination pad, preferably on a raised surface above the pad (i.e., on sawhorses), with clean plastic draped over the work surfaces. Well materials usually do not require a multistep cleaning process as they generally arrive clean from the manufacturer. Usually, a thorough steam-cleaning of the interior/exterior of the well materials will be sufficient. The QAPP and/or Work Plan should provide specific guidance regarding decontamination of well materials.

## 6.0 Quality assurance / quality control

### 6.1 General Considerations

Sampling personnel should follow specific quality assurance guidelines as outlined in the QAPP. The QAPP guidelines typically require collection of equipment blank samples in order to determine the effectiveness of the decontamination procedure.

The decontamination method, solvent, frequency, location on site and the method of containment and disposal of decontamination wash solids and solutions are dependent on site logistics, site-specific chemistry, and nature of the contaminated media to be studied and the objectives of the study. Each topic must be considered and addressed during development of a decontamination strategy and should be outlined in the QAPP and/or Work Plan.

### 6.2 Solvent Selection

There are several factors which need to be considered when deciding upon a decontamination solvent. The solvent should not be an analyte of interest. The sampling equipment must be resistant to the solvent. The solvent must be evaporative or water soluble or preferably both. The applicable regulatory agency may have specific requirements regarding decontamination solvents. The QAPP and/or Work Plan should specify the type of solvent to be used for a particular project.

The analytical objectives of the study must also be considered when deciding upon a decontamination solvent. Pesticide-grade methanol is the solvent of choice for general organic analyses. It is relatively safe and effective. Hexane, acetone, and isopropanol are sometimes used as well. A 10% nitric acid in deionized water solution is the solvent of choice for general metals analyses. Nitric acid can be

used only on Teflon, plastics and glass. If used on metal equipment, nitric acid will eventually corrode the metal and lead to the introduction of metals to the collected samples. Dilute hydrochloric acid is usually preferred over nitric acid when cleaning metal sampling equipment.

Equipment decontamination should be performed a safe distance away from the sampling area so as not to interfere with sampling activities but close enough to the sampling area to maintain an efficient working environment. If heavy equipment such as drill rigs or backhoes are to be decontaminated, then a central decontamination station should be constructed with access to a power source and water supply.

### **6.3** Field Blank Sample Collection

General guidelines for quality control check of field equipment decontamination usually require the collection of one field blank from the decontaminated equipment per day. The QAPP should specify the type and frequency of collection of each type of quality assurance sample.

Field blanks are generally made by pouring laboratory-supplied deionized water into, over, or through the freshly decontaminated sampling equipment and then transferring this water into a sample container. Field blanks should then be labeled as a sample and submitted to the laboratory to be analyzed for the same parameters as the associated sample. Field blank sample numbers, as well as collection method, time and location should be recorded in the field notebook.

## 7.0 Data and records management

Specific information regarding decontamination procedures should be documented in the project-specific field notebook. Documentation within the notebook should thoroughly describe the construction of each decontamination facility and the decontamination steps implemented in order to show compliance with the project work plan. Decontamination events should be logged when they occur with the following information documented:

- Date, time and location of each decontamination event
- Equipment decontaminated
- Method
- Solvents
- Notable circumstances
- Identification of field blanks and decontamination rinsates
- Method of blank and rinsate collection
- Date, time and location of blank and rinsate collection
- Disposition of IDW

Repetitive decontamination of small items of equipment does not need to be logged each time the item is cleaned.

## 8.0 Personnel qualifications and training

All sampling technicians performing decontamination must be properly trained in the decontamination procedures employed, the project data quality objectives, health and safety procedures and the project QA procedures. Specific training or orientation will be provided for each project to ensure that personnel understand the special circumstances and requirements of that project. Field personnel should be health and safety certified as specified by OSHA (29 CFR 1910.120(e)(3)(i)) to work on sites where hazardous materials may be present.

### **8.1** Sampling Technician

It is the responsibility of the sampling technician to be familiar with the decontamination procedures outlined within this POP and with specific quality assurance, and health and safety requirements outlined within project-specific work plans (HASP, QAPP, Work Plan, etc.). The sampling technician is responsible for decontamination of field equipment and for proper documentation of decontamination activities. The sampling technician is also responsible for ensuring that decontamination procedures are followed by subcontractors when heavy equipment requires decontamination.

### **8.2** Field Project Manager

The field project manager is responsible for ensuring that the required decontamination procedures are followed at all times. The project manager is also responsible for ensuring that subcontractors construct and operate their decontamination facilities according to project specifications. The project manager is responsible for collection and control of IDW in accordance with project specifications.

## 9.0 References

Not applicable.

## 10.0 Revision History

| Revision | Date | Changes |
|---|---|---|
| 0 | June 2010 | Original POP |

AECOM

Project Operating Procedure

# Procedures for Acid Testing of Green-Gray Mud and COPR

Procedure Number: PPG 015

Revision No.: 0

Revision Date: March 19, 2010



POP Author Date: March 19, 2010



Project Manager Date: March 19, 2010

Annual review of this SOP has been performed and the SOP still reflects current practice.

Initials: _____ Date: _____

Initials: _____ Date: _____

Project Operating Procedure

# Procedures for Acid Testing of Green-Gray Mud and COPR



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Project Operating Procedure

# Procedures for Acid Testing of Green-Gray Mud and COPR



## 1.0 Scope and Applicability

**1.1** This Project Operating Procedure (POP) is for acid testing of material suspected to be Green-Gray Mud or chromite ore processing residue (COPR). This procedure will be used on material that cannot be definitively identified as Green-Gray Mud or COPR through other techniques (e.g., visual, magnetic, XRF). The results of the procedure will be used as part of a weight-of-evidence approach to determine whether the material in question is Gray/green mud or COPR.

High levels of calcium (i.e., percent levels) are expected in Green-Gray Mud and possibly COPR. Hydrochloric acid (HCl) will be used in a controlled manner to determine if the suspected material contains calcium and is potentially Green-Gray Mud or COPR. The HCl will be added to the suspected material in a drop-wise manner and the material will be observed for a reaction.

## 2.0 Health and Safety Considerations

**2.1** The health and safety considerations for the work associated with this POP, including both potential physical and chemical hazards, will be addressed in the site-specific Health and Safety Plan (HASP). In the absence of a site-specific HASP, work will be conducted according to the AECOM Health and Safety Policy and Procedures Manual and/or direction from the Regional Health and Safety Manager.

**2.2** Due to the use of hydrochloric acid (HCl) this procedure, field personnel will be required to wear safety glasses and gloves when performing this procedure. The plastic dropper bottle for the HCl must be stored in a plastic container that is lined with acid neutralizing sorbent paper. The plastic container and dropper bottle must be labeled as HCl and also have a United Nations (UN) 1789 label (Figure 1). Refer to the job safety analysis (JSA) for this activity in the site-specific HASP for more detail.

## 3.0 Interferences

**3.1** Soils that contain carbonate salts/minerals other than calcium will also react with the HCl and may lead to false conclusion that calcium is present.

## 4.0 Equipment and Materials

- 16 ounce (oz) clear glass jars

- Labeled plastic dropper bottle containing 1:1 HCl (i.e., 6 normal [N] HCl)
- Labeled plastic storage container lined with acid neutralizing sorbent paper for plastic dropper bottle
- Extra acid neutralizing sorbent paper for spills
- Plastic scoop
- Nitrile gloves
- Safety glasses
- Field logbook and pen
- Site HASP
- Project Feasibility Study Work Plan (FSWP)
- Camera (optional)

## 5.0 Procedures

**5.1** Don safety glasses and nitrile gloves as instructed in the site-specific HASP.

**5.2** Use the plastic scoop to transfer a small amount (e.g., 5-10 grams) of the suspected material into a 16 oz clear glass jar.

Remove the plastic dropper bottle from its plastic storage container. Carefully open the dropper bottle and drop 2-3 drops of HCl onto the suspected material in the 16 oz clear glass jar. Observe the material for any reaction. If calcium or other carbonate salts/minerals are present, effervescing/foaming should occur. Observe the material for approximately 30 seconds and record the observations in the field logbook. If necessary, a camera can be used to photodocument the presence or absence of a reaction.

**5.3** Once the test is complete, replace the cap on the dropper bottle, and return the dropper bottle to its plastic storage container.

**5.4** Wait for any reaction that is occurring to subside, and dispose of the material in the soil stockpile.

**5.5** Rinse the 16 oz clear glass jar and dispose of the rinse water in accordance with the investigative derived waste (IDW) procedures for the site.

## 6.0 Quality Assurance / Quality Control

**6.1** The field notes generated from this procedure will be reviewed by the sampling team leader, project manager, or designee.

## 7.0 Data and Records Management

**7.1** Unanticipated changes to the procedures or materials described in this POP (deviations) will be appropriately documented in the project records.

**7.2** Records associated with the activities described in this POP will be maintained according to the document management policy for the project.

## 8.0 Personnel Qualifications and Training

**8.1** Qualifications and training

**8.1.1** The individual executing these procedures must have read, and be familiar with, the requirements of this POP.

**8.1.2** Each person who performs this procedure will be trained by someone familiar with the procedure such that the procedure is performed in a consistent manner throughout the duration of the project. No field staff will perform this procedure without one-on-one training from another field staff that is familiar with the procedure.

**8.2** Responsibilities

**8.2.1** The project manager is responsible for providing the project team with the materials, resources and guidance necessary to properly execute the procedures described in this POP.

**8.2.2** The individual performing the work is responsible for implementing the procedures as described in this POP and any project-specific work plans.

## 9.0 References

United States Environmental Protection Agency. 2001. Guidance for Preparing Standard Operating Procedures (SOPs). EPA QA/G-6. EPA/240/B-01/004. USEPA Office of Environmental Information, Washington, DC. March 2001.

## 10.0 Revision History

| Revision | Date | Changes |
|---|---|---|
| 0 | March 2010 | Original POP |

**Figure 1 – UN 1789 Label**



AECOM

Project Operating Procedure

# Wet Sieve for Grain Size Analysis for Soils with Chromium Procedures

Procedure Number: PPG 016

Revision No.: 0

Revision Date: June 2010

Kristen E Streit

Date: 6/29/2010

Kristen Streit POP Author

Craig W. MacPhee

Date: 6/29/2010

Project Manager

Annual review of this SOP has been performed and the SOP still reflects current practice.

Initials: _____ Date: _____

Initials: _____ Date: _____

Project Operating Procedure

**Wet Sieve**



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# Project Operating Procedure
# Wet Sieve



## 1.0 Scope and Applicability

**1.1** This Project Operating Procedure (POP) defines basic techniques for field screening of wet soil to determine the percent by weight of COPR particles and grain size. Sieving will be done wet to avoid generation of dust.

## 2.0 Health and Safety Considerations

**2.1** The work will be conducted in accordance with the site specific HASP and the Job Safety Analysis. This procedure is specifically designed to prevent dusty conditions during soil handling. Due to the possibility of release of volatile organics and contamination of equipment, soil with MGP material and/or photoionizing detector readings over 10 ppm will not be processed.

## 3.0 Interferences

**3.1** Debris (twigs, roots, trash, etc) that is not removed from the soil prior to and during screening can lead to high bias in the amount for each screen. The addition of water may slightly increase the estimated weight of COPR nodules. The goal is to measure weight percent COPR to ±5%.

## 4.0 Equipment and Materials

- 5-gallon buckets
- 5-gallon bucket with holes drilled and lined with fine mesh
- 2-4 bricks
- Level D PPE with tyvek suit with booties and nitrile gloves
- Ear plugs
- Half face respirator (in the case of exceedence of air action levels)
- Scale capable of weighing at least 50 lbs ± 0.1 pounds
- Shovel
- 2”, 1”, ½”, ¼” and No. 7 sieve screens

- Additional screens No. 14 and No. 200
- Plastic tubs ( One 14-gallon tub and at least 10 smaller tubs)
- Munsell color chart
- Field Screening for Grain Size Field Form (Attachment 1)
- Field logbook and pen
- Site HASP
- Work Plan
- Screen Shaker
- Camera (optional)

## 5.0 Procedures

**5.1** Prior to initiation of sieving prepare the following equipment:

**5.1.1** A 5-gallon bucket with holes and mesh. Drill small diameter holes (3/8") in the bottom on the sides of a 5-gallon bucket. Adhere a fine mesh (No. 200) to the bottom and sides of the inside of the bucket. Make sure the mesh is smaller than the smallest tray being used in the shaker.

**5.1.2** Obtain two dedicated plastic containers for each sieve tray. Weigh each container and note the weight in both the field book and on the container. For each sieve size mark two plastic containers with the sieve size. You should have two plastic containers for each sieve size; one for the entire sieve size and one for chromium nodules.

**5.1.3** Place the sieve machine in a bermed area on a plastic sheet.

**5.2** Don the modified Level D PPE including tyvek suit with booties, nitrile gloves and hearing protection as instructed by the site-specific HASP.

**5.3** Inspect the five gallon bucket prior to processing. Each bucket should have a grid designation and a depth interval. These should be noted on the sieve collection form. Review the soil classification data sheet. If the sample contains MGP material or PID readings over 10 ppm, do not process and call the project manager.

**5.4** Place the 5-gallon bucket on the scale and record the weight on the field form.

**5.5** Soil will be collected from the excavation under a separate POP (see the Sample Collection POP for details).

**5.6** Weight the bucket containing the soil and record the weight on the field form.

**5.7** Fill the bucket with water so that it covers the soil. Allow the soil to soak in the water for at least 15 minutes to allow soil to soften.

**5.8** Place two bricks in the bottom of a 14 gal or greater plastic tub. Place the 5-gallon bucket with holes and mesh on top of the bricks.

**5.9** Transfer the soil and water that has been soaking in the bucket into the 5-gallon bucket with holes. Allow the water to drain from the bucket but make sure the soil does not dry out. Make sure the bottom of the bucket is not sitting in standing water (add more bricks if necessary to insure the bucket is out of the water).

**5.10** Dispose of the water in the frac tanks for off-site disposal.

**5.11** Weigh the filled 5-gallon bucket and record the weight on the field form. Subtract the initial weight of the bucket to determine the actual soil (and water) weight.

**5.12** Pour the contents of the 5-gallon bucket into the top of the Gilson Porta-Screen. If the sample weight was greater than 60 lbs. only pour half of the soil into the shaker at a time. If the sample is split be sure to combine the total at the end. **Follow the instructions provided by Gilson when operating the shaker** (Attachment 2).

**5.13** Transfer the contents of each tray into a separate pre-weighed dedicated grain size container. Weigh and record the weight on the field form making sure to subtract the container weight.

**5.14** Sort through each container and pull out the chromium nodule. Place the chromium nodules in another pre-weighed container. Once all the chromium nodules are separated from the soil, weigh and record the weight of each chromium nodule container making sure to subtract the container weight. COPR nodules are typically round and 1/8 to ¼ inch in size. Large particles and irregular shapes are possible. Suspect nodules can be scrapped or crushed for closer examination. Compare visual clues to sample COPR pellets.

**5.15** Calculate percent weight of COPR by the following equation:

Total weight of COPR pellets / Weight lf soil tested (prior to wetting) x 100%

**5.16** Dispose of soil and chromium nodules in the soil stockpile for off-site disposal.

## 6.0 Quality Assurance / Quality Control

**6.1** The field forms and field notes generated from this procedure will be reviewed by the sampling team leader, project manager, or designee.

## 7.0 Data and Records Management

**7.1** Unanticipated changes to the procedures or materials described in this POP (deviations) will be appropriately documented in the project records.

**7.2** Records associated with the activities described in this POP will be maintained according to the document management policy for the project.

## 8.0 Personnel Qualifications and Training

**8.1** Qualifications and training

**8.1.1** The individual executing these procedures must have read, and be familiar with, the requirements of this POP.

**8.1.2** Each person who performs this procedure will be trained by someone familiar with the procedure such that the procedure is performed in a consistent manner throughout the duration of the project. No field staff will perform this procedure without one-on-one training from another field staff that is familiar with the procedure.

**8.2** Responsibilities

**8.2.1** The project manager is responsible for providing the project team with the materials, resources and guidance necessary to properly execute the procedures described in this POP.

**8.2.2** The individual performing the work is responsible for implementing the procedures as described in this POP and any project-specific work plans.

## 9.0 References

ASTM, 1993, Standard Practice for Wet Preparation of Soil Samples for Particle Analysis and Determination of Soil Constants D 2217-85

United States Environmental Protection Agency. 2001. Guidance for Preparing Standard Operating Procedures (SOPs). EPA QA/G-6. EPA/240/B-01/004. USEPA Office of Environmental Information, Washington, DC. March 2001.

## 10.0 Revision History

| Revision | Date | Changes |
|---|---|---|
| 0 | June 2010 | Original POP |

## Attachment 1

## Soil Sieve Data Form

Date _____

Staff
_____

Grid ID _____ Depth Interval_____

Does the sample contain MGP material or have a PID reading over 10 ppm Y/N **(if yes to either of these questions do not process and call the project manager)**

a. 5-gal bucket weight without soil _____

b. 5-gal bucket and soil weight_____

c. Soil weight (b-a) _____

d. 5-gal bucket and soil weight after soaking in water _____

e. Wet soil weight (d-a)_____

**f. Empty plastic container weight (Soil and COPR container)**

2" material _____ 1" material _____ ½" material _____

1/4" material _____ No. 7 material _____ No. 200 material_____

**g. Empty plastic container (COPR container)**

2" material _____ 1" material _____ ½" material _____

1/4" material _____ No. 7 material _____ No. 200 material_____

**h. Plastic container with soil and COPR**

2" material _____ 1" material _____ ½" material _____

1/4" material _____ No. 7 material _____ No. 200 material_____

**i. Soil and COPR weight (h-f)**

2" material _____ 1" material _____ ½" material _____

1/4" material _____ No. 7 material _____ No. 200 material_____

**j. Plastic container with COPR weight**

2" material _____ 1" material _____ ½" material _____

1/4" material _____ No. 7 material _____ No. 200 material_____

**k. COPR weight (j-g)**

2" material _____ 1" material _____ ½" material _____

1/4" material _____ No. 7 material _____ No. 200 material_____

**l. Total COPR weight (∑k)** _____

**m. Total COPR percent (l/e*100)**_____

**n. Grain size percentage (soil and COPR) (i/e * 100)**

2" material _____ 1" material _____ ½" material _____

1/4" material _____ No. 7 material _____ No. 200 material_____

**o. COPR percentage by grain size (k/l*100)**

2" material _____ 1" material _____ ½" material _____

1/4" material _____ No. 7 material _____ No. 200 material_____

Notes:_____
_____
_____
_____
_____
_____
_____
_____
_____

## Attachment 2

## Gilson Porta-Screen Operating Manual

# OPERATING MANUAL

## Gilson Porta-Screen®

## PS-3 & PS-4




02/23/2010

**PHONE:** 800-444-1508
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740-548-5314

# SAFETY INSTRUCTIONS
# GILSON PORTA-SCREEN®

WHETHER YOU ARE THE OWNER, EMPLOYER, OPERATOR, OR MAINTENANCE PERSON FOR THIS MACHINE, SAFETY IS YOUR RESPONSIBILITY. YOU ARE RESPONSIBLE FOR OPERATING AND MAINTAINING THIS EQUIPMENT IN COMPLIANCE WITH THESE INSTRUCTIONS AND FOR USING COMMON SENSE. YOU SHOULD ALWAYS REVIEW AND COMPLETELY UNDERSTAND THESE SAFETY AND OPERATING INSTRUCTIONS BEFORE USING THIS MACHINE.

⚠ **DANGER**: This machine operates on electrical current. Improper use could result in electric shock, electrocution, injury by explosion, or even death.

1. **ALWAYS** make sure the motor and electrical components are appropriate and properly configured for your intended use and available power source. Porta-Screens are normally wired for 115 volts 60Hz and come with a 1/4 hp non-explosion-proof motor.

2. **ALWAYS** check electrical wiring for loose connections and for pinched or frayed wiring.

3. **ALWAYS** ground the Porta-Screen®. Connect its three-pronged plug to a properly-wired, three-pronged, grounded receptacle with appropriate electrical current for the machine.

4. **ALWAYS** disconnect and lock out the power supply before performing maintenance or repairs on your machine.

⚠ **DANGER**: The 1/4 hp, 115-volt motor of the Porta-Screen® has internal thermal protection. Therefore, the motor will automatically shut off if overloaded. The motor will restart by itself after cooling unless disconnected from its power source during cool-down.

⚠ **DANGER**: Do not use the Porta-Screen® in an explosive or hazardous atmosphere. It is not explosion-proof.

***Warning:*** Operate only in a properly-ventilated area.

***Warning:*** Level the Porta-Screen® before operation.

***Warning:*** Stop the Porta-Screen® if excessive vibration or machine movement occurs.

***Warning:*** Always take care not to pinch your fingers between the clamp levers and the machine frame.

***Warning:*** Do not operate without all guards and covers in place.

***Warning:*** Keep all parts of your body away from moving parts of the machine while it is operating.

***Warning:*** Do not wear loose clothing which might be caught in moving parts of the machine.

***Warning:*** Wear safety glasses, protective clothing, and hearing protection. Wear approved NIOSH/MSHA respirator as required by the sample to prevent your inhaling any dust which may be considered hazardous.

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# Gilson Porta-Screen®

The Gilson Porta-Screen® is a portable shaker for field control of construction aggregates and for quality control in asphalt and ready-mix plants. It is designed for best separation in the 2" (50.8mm) to No. 16 (1.18mm) range. Model PS-3 holds five screen trays and a pan; PS-4's capacity is seven trays and a pan.

## 1.0 Unpacking & Installation

The Porta-Screen®, packed for shipment, weighs between 225 and 255 lbs, depending on the model and the number of trays packed inside. Use equipment to adequately to handle this weight safely.

1. The Porta-Screen® is shipped in a cardboard carton. Before you accept the shipment, check the carton for visible damage. Note any damage on the freight bill, and proceed with inspection.

2. Place the carton on its side so that you can remove the staples from the bottom. Open the bottom flaps and set the machine upright again. Lift off the carton and set it aside until you are sure that the Porta-Screen® is in acceptable condition.

3. Check the machine for shipping damage. If you find concealed damage after you have signed for the Porta-Screen®, call the delivering carrier immediately for an inspection. Save all packing materials, and leave the Porta-Screen® as it is.

4. Check the tag on the electric motor of the Porta-Screen® to be sure that the machine is wired as ordered.

5. Release clamping pressure on the Porta-Screen® trays by rotating the clamp levers outward and upward 180˚.

6. Remove trays by sliding them out the front of the machine.

7. Choose your operating site:

   A. The Porta-Screen® requires a properly-wired, three-pronged, grounded receptacle with appropriate electrical current for the machine.

   B. Choose a well-ventilated site.

   C. Set the Porta-Screen® on a solid, stable floor, platform, or other surface.

8. When you have placed the Porta-Screen® in its operating location, and each time you move it, level the unit by adjusting the three leveling legs.

   To extend a leg, place your foot on the edge of the pad, and lift up on the machine above the leg.

   To contract a leg, depress the leg lock tab, which extends from the case above each footpad.

   Use the bullseye level in the top frame crossbar as a guide.

   After you have placed the Porta-Screen® into service, observe the distribution of sample material in the trays at the end of a test. If the material is not evenly distributed, re-level the machine.

9. Reinstall the trays in the Porta-Screen®. Leave them unclamped.

10. Do not plug in the Porta-Screen® until you are ready to use it.

## 2.0 Operation

WHETHER YOU ARE THE OWNER, EMPLOYER, OPERATOR, OR MAINTENANCE PERSON FOR THIS MACHINE, SAFETY IS YOUR RESPONSIBILITY. YOU ARE RESPONSIBLE FOR OPERATING AND MAINTAINING THIS EQUIPMENT IN COMPLIANCE WITH THESE INSTRUCTIONS AND FOR USING COMMON SENSE. YOU SHOULD ALWAYS REVIEW AND COMPLETELY UNDERSTAND THESE SAFETY AND OPERATING INSTRUCTIONS BEFORE USING THIS MACHINE.

***Warning:*** Operate only in a properly ventilated area.

***Warning:*** Level the Porta-Screen® before operation.

***Warning:*** Stop the Porta-Screen® if excessive vibration or machine movement occurs.

***Warning:*** Always take care not to pinch your fingers between the clamp levers and the machine frame.

***Warning:*** Do not operate without all guards and covers in place.

***Warning:*** Keep all parts of your body away from moving parts of the machine while it is operating.

***Warning:*** Do not wear loose clothing which might be caught in moving parts of the machine.

***Warning:*** Wear safety glasses, protective clothing, and hearing protection. Wear approved NIOSH/MSHA respirator as required by the sample to prevent your inhaling any dust which may be considered hazardous.

**Procedure:**

Read and be sure you understand all safety, operating, and timer instructions, as well as specifications and procedures for your test.

1. Check to see that the Porta-Screen® is level.
2. Select and load the appropriate trays.

   Fill all the slots: five trays and pan for the PS-3
   seven trays and pan for the PS-4

   The Porta-Screen® will not clamp or operate properly unless fully loaded with trays. If your test requires fewer trays than the capacity of the Porta-Screen®, you may insert the required trays in the upper slots with the pan immediately below. Then fill the lower slots with extra trays.
3. Clamp the trays by rotating the clamp levers so that they point down.
4. Pour your sample into the top tray. Refer to the sample capacity information and be sure not to overload the Porta-Screen®.
5. Connect the three-pronged plug into a properly-wired, grounded receptacle with appropriate electrical current.
6. Set and activate the timer.
7. When the machine stops, unclamp the trays by rotating the clamp levers so they point up. Remove and empty the trays, following the directions in your test specifications.
8. When you have finished your test, unplug the machine. Do not reconnect power until you are ready to use the machine again.
9. Store clean, empty trays in the unit, leaving them unclamped.
10. Re-level the machine before the next use.

## 3.0 Sample Capacity

Capacity of the Porta-Screen® depends on the specifications of the test and the type and size of the material being tested. For any given sample, the Porta-Screen's maximum capacity is determined by the tray which has the largest load at the end of the test. This is the limiting tray.

**Coarse Aggregates:**

Minimum quantity of sample is usually established by the specifications of the test procedure. For example, ASTM C-136 "Specification for the Sieve or Screen Analysis of Fine and Coarse Aggregates" calls for the minimum weight of the test sample of coarse aggregates (density such as limestone or gravel) as follows:

| Normal Maximum Size of Particle mm (in) | Minimum Sample Weight kg (lb) |
|---|---|
| 9.5 (3/8) | 1 (2) |
| 12.5 (1/2) | 2 (4) |
| 19.0 (3/4) | 5 (11) |
| 25.0 (1) | 10 (22) |
| 37.5 (1-1/2) | 15 (33) |
| 50 (2) | 20 (44) |
| 63 (2-1/2) | 35 (77) |

These guidelines on minimum sample size quantities are for representative samples. Always take a much larger amount, perhaps from several spots in a storage bin or stockpile. Then combine and reduce them to the correct quantity by splitting.

With coarse series trays, (2" to No. 4), the limiting tray should have no more than one layer of particles over the wire cloth at the end of the test. Therefore, lightweight aggregates or coal must be tested in lower sample weights. High-density ores or pellets may be tested in larger amounts by weight. Many light materials are also soft, and test times should be limited to avoid degradation of the sample.

Most samples of up to 2" topsize can be handled in a single batch without difficulty. We do not recommend the use of trays with mesh sizes above 1-1/2", since larger particles become wedged in the mesh and make it difficult to remove the trays.

**Fine Aggregates:**

With fine series trays, (No. 8 to No. 200), the limiting tray should contain no more than approximately four grams per square inch of sieve surface at the end of a test. Assuming that the material is about the density of sand, there will be approximately 800 grams maximum on the limiting tray.

Since the Porta-Screen® is designed primarily for use in the 2" to No. 20 range, separations in finer sizes will not be as precise. If you are testing materials exclusively in the fine range, we recommend equipment specifically designed for this purpose, such as the Gilson Model SS-8R Sieve Shaker.

## 4.0 Maintenance & Disassembly

READ AND BE SURE YOU UNDERSTAND ALL SAFETY AND MAINTENANCE INSTRUCTIONS BEFORE PERFORMING MAINTENANCE ON YOUR PORTA-SCREEN®.

ALWAYS DISCONNECT AND LOCK OUT ELECTRIC POWER BEFORE PERFORMING MAINTENANCE.

**Clamping System:**

1. DISCONNECT AND LOCK OUT ELECTRIC POWER.
2. Load the Porta-Screen® with trays and pan, filling all the slots.
3. Rotate the clamp levers (#38) so that they point down.
4. Locate the clamp adjusting nuts (#9), which are on the lower ends of the four clamp tension rods (#7).
5. Tighten the nuts only enough to prevent the trays from rattling when the machine is operating.

**Lubrication:**

1. DISCONNECT AND LOCK OUT ELECTRIC POWER.

2. Remove and set aside trays and pan.

3. Remove upper case cover.

4. Connection Rod Bearing:
   Lubricate the connecting rod bearing (#52) after every 80 to 100 hours of operation.

   a. Rotate drive shaft (#20) slightly by hand until the grease fitting at the lower end of the connecting rod (#50) is accessible. (Grease fitting may be pointing either to the front or to the back of the Porta-Screen®).

   b. Apply a small amount of any good-quality bearing grease.

   c. Proceed to shaft bearing lubrication.

5. Shaft Bearings:
   There are two bearings (#47), front and rear, on the drive shaft (#20), and two bearings (#41), front and rear, on each of the two counterweight shafts (#12, 13). Some Porta-Screens have sealed shaft bearings; others have shaft bearings with grease fittings. If the shaft bearings on your machine have grease fittings, lubricate the bearings after every 80 to 100 hours of operation.

   a. WITH ELECTRIC POWER DISCONNECTED AND LOCKED OUT, and trays, pan, and upper case cover removed, remove lower front and rear case covers.

   b. Apply a small amount of any good-quality bearing grease.

   c. Reassemble in reverse order.

6. Motor Bearings: Lubricate annually.

   a. Remove trays, pan, and upper case cover.

   b. Remove lower front and rear case covers.

   c. Find and remove the oil plugs at each end of the motor.

   d. Insert a few drops of oil.

   e. Replace plugs.

   f. Reassemble in reverse order.

7. Idler Pulley Bearings:
   These sealed bearings (#62) do not require lubrication.

**Belts:** The Drive Belt (#22) should fit snugly. If the belt is too tight, it will soon wear out, causing bearings to wear and resulting in noisy operation. A loose belt may cause the unit to run too slowly or to slip. Keep the drive pulley (#21) and motor pulley (#60) aligned so that the drive belt is straight.

The Timing Belt (#16) should fit tightly.

**Access to Belts:**

1. DISCONNECT AND LOCK OUT ELECTRIC POWER.

2. Remove and set aside trays and pan.

3. Remove all case covers.

4. Drive Belt:
   Check tension by pressing on the span of the belt. If properly adjusted, the belt should be deflected 1/64th of the value of the distance between the pulleys. To adjust or remove, loosen the motor mounting bolts (#61); and the motor will slide up, loosening the belt tension.

   a. To adjust, move the motor up or down until the belt tension is correct. Retighten the nuts.

   b. Or remove the loosened belt if it is worn, and install a new one. Obtain the correct tension by moving the motor up or down. Retighten the nuts.

   c. Continue or reassemble.

5. Timing Belt:
   Check tension by pressing on the span of the belt. The belt should be tight. To adjust or remove the timing belt, loosen the two idler bracket mounting screws (#45). Loosen the nut on the adjusting screw (#46).

   a. To tighten: Turn in the adjusting screw to pull the bracket (#17) down and increase tension on the belt. Retighten the nut to hold the bracket in position. Reassemble.

   b. To replace: Loosen the adjusting screw to permit the idler bracket to move upward, loosening the tension on the timing belt so that you can remove it. Before reinstalling belt,

(1) Rotate drive shaft (#20) until the connecting rod (#50) is at its highest position.

(2) Rotate counterweight shafts (#12, #13) until counterweights are at their lowest position.

(3) Fit the belt around the left counterweight shaft pulley, around the timing pulley (#49), above the right counterweight shaft pulley, and around the idler pulley (#19).

(4) Tighten the idler bracket adjusting screw until the timing belt is tight, making certain that you do not change the position of the shafts. Lock the idler bracket in position with the nut. Tighten the bracket mounting screws.

(5) Reassemble.

DO NOT PLUG IN THE PORTA-SCREEN® UNTIL YOU ARE READY TO USE IT.

**Bearing Replacement:**

1. Guide Bearing Assemblies:
   The Porta-Screen® has three guide bearing assemblies: each has a housing and guide bushing. The two upper guide bearings (#34) are mounted to the top frame crossbar. The lower guide bearing (#59) is mounted to the underside of the vibrating unit.

   If you notice side-to-side movement of the vibrating unit during operation, inspect the guide bearings and replace them if necessary. We recommend replacement of all three assemblies at the same time.

   a. DISCONNECT AND LOCK OUT ELECTRIC POWER.

   b. Remove and set aside trays and pan.

   c. Remove top frame screws (#2), and lift off top frame crossbar (#1).

   d. Upper:
      (1) Remove mounting screws (#35) to detach bearing housing (#34).

      (2) Replace with new bearing housing assembly.

   e. Lower:
      (1) Remove all case covers.

      (2) Remove the connecting rod mounting bolt (#24).

      (3) Lift the entire vibrating unit assembly up and out of the Porta-Screen® frame.

      (4) Remove mounting screws (#56) to detach bearing housing unit (#59).

      (5) Replace with new bearing housing assembly.

   f. Reassemble in reverse order.

DO NOT PLUG IN THE PORTA-SCREEN® UNTIL YOU ARE READY TO USE IT.

2. Connecting Rod & Drive Shaft Bearings:
   The connecting rod (#50) can be replaced as an assembly, or you can press out and replace its bearing and bushing (#52).

   The drive shaft (#20) has front and rear bearings (#47). We recommend replacement of both front and rear bearings as a set.

   a. DISCONNECT AND LOCK OUT ELECTRIC POWER.

   b. Remove and set aside trays and pan.

   c. Remove top frame screws (#2).

   d. Lift off top frame crossbar (#1).

   e. Remove all case covers.

   f. Remove the connecting rod mounting bolt (#24).

   g. Lift the entire vibrating unit assembly up and out of the Porta-Screen® frame.

   h. Loosen the motor mounting bolts to release tension on the drive belt, and remove the drive belt from its pulleys.

   i. Loosen the setscrew in the drive pulley (#21), and slide the pulley off the drive shaft.

   j. Loosen the setscrew in the rear drive shaft bearing.

   k. Loosen the idler bracket mounting and adjusting screws (#45, 46) to release tension on the timing belt.

   l. Remove the timing belt (#16).

   m. Loosen the setscrew in the drive shaft pulley (#49), and slide the pulley off the drive shaft.

   n. Remove the mounting screws from the front drive shaft bearing (#47).

   o. Hold onto the top of the connecting rod (#50) while you pull the drive shaft out from the front of the machine with the front bearing attached.

   p. Remove the connecting rod (#50).

   q. Install new connecting rod assembly or press new bushing and bearing into existing connecting rod.

   r. Replace drive shaft bearings if needed.

   s. Continue or reassemble in reverse order. When replacing timing belt, refer to timing belt instructions and be sure that counterweights are aligned properly.

DO NOT PLUG IN THE PORTA-SCREEN® UNTIL YOU ARE READY TO USE IT.

3. Counterweight Shaft Bearings:
   Each of the two counterweight shafts (#12, 13) has a front and a rear bearing (#41). We recommend replacement of both bearings on a shaft. If you have disassembled the Porta-Screen® to replace the connecting rod and/or drive shaft bearings, skip to step h. Otherwise, disassemble as follows:

   a. DISCONNECT AND LOCK OUT ELECTRIC POWER.

   b. Remove and set aside tray and pan.

   c. Remove top frame screws (#2).

   d. Lift off top frame crossbar (#1).

   e. Remove all case covers.

   f. Remove the connecting rod mounting bolt (#24).

   g. Lift the entire vibrating unit assembly up and out of the Porta-Screen® frame.

   h. Loosen the idler bracket mounting and adjusting (#45, 46) to release tension on the timing belt.

   i. Remove the timing belt (#16).

   j. Loosen the bolts on the rear counterweight clamp bracket (#43), and remove the counterweight from the shaft.

   k. Loosen the setscrew which holds the rear bearing to the counterweight shaft.

   l. Remove the mounting screws (#42) which hold the front counterweight shaft bearing (#41) to the main frame.

   m. Pull the counterweight shaft from the front of the machine with its front counterweight, pulley, and front bearing all attached.

   n. Reinstall parts as needed.

   o. Reassemble in reverse order. When replacing timing belt, refer to timing belt instructions and be sure that the counterweights are aligned properly.

DO NOT PLUG IN THE PORTA-SCREEN® UNTIL YOU ARE READY TO USE IT.

4. Wire Cloth:
   Check condition of wire cloth both before and after operation. Test results can be only as accurate as the size of wire cloth openings. Always replace with testing grade wire cloth only.

   Testing grade wire cloth is a precision-made material and should be treated with care. The ASTM E-11 specification permits only very slight variations in average opening and wire diameter. Abrasion due to normal use and/or improper cleaning and handling can cause the wire cloth to be out of specification to a considerable degree before it appears worn. Check it frequently to be sure that it conforms to your test specifications.

   Wire cloth life can be extended by establishing proper procedures for handling, cleaning, and storage of trays. The Porta-Pan Accessory is helpful in the repetitive sequence of emptying trays, cleaning wire cloth, and weighing sample fractions.

   Wire cloth may eventually sag, reducing its effective screening area. Wire sizes 2" to No. 14 are rigid and self-supporting. Trays for No. 16 through No. 80 wire cloth contain three wire cloth support strips. No. 100 and finer trays have supporting backup cloth to minimize wear and distortion. When you replace No. 16 and finer wire cloth, always use support strips or backup cloth as indicated.

## 5.0 Parts List

| | PARTS | NO. REQUIRED |
|---|---|---|
| | ***Outer Case & Frame Parts*** | |
| 1 | Top frame cross bar | 1 |
| 2 | Top frame screw & lock washer | 4 |
| 31 | Bullseye level with cushion washer | 1 |
| 36 | Bullseye level adjusting screws | 3 |
| 27 | Leg lock tab | 3 |
| 33 | Leg lock tab spring | 3 |
| 65,28 | Leveling leg (65), with adjusting screw pad, nut & washer | 3 |
| 29 | Main frame | 1 |
| 30 | Vibrating unit assembly | |
| | Upper case cover | 2 |
| 11A | Lower case cover, front | 1 |
| | Lower case cover, rear | 1 |
| | ***Upper Guide Bearing Assembly Parts*** | |
| 34 | Upper guide bearing housing with guide bushing | 2 |
| 35 | Upper guide bearing mounting screw & lock washer | 4 |
| 4 | Upper guide bearing pin & set screw | 2 |
| | ***Clamping Assembly Parts, Right & Left*** | |
| 5A | Clamp lever with mounting bracket 6F left side | 1 |
| 5B | Clamp lever with mounting bracket 6F right side | 1 |
| 38 | Clamp lever handle grip | 2 |
| 6R | Rear clamp lever mounting bracket | 2 |
| 39 | Clamp lever mounting bracket screw & lock washer | 8 |
| 7 | Clamp tension rod | 4 |
| 40 | Clamp tension rod retainer clip, screw and lock washer | 4 |
| 8 | Clamp bar | 1 |
| 9 | Clamp adjusting nut and spacer | 4 |
| | ***Counterweight Assembly Parts*** | |
| 12 | Left counterweight shaft (short) | 1 |
| 13 | Right counterweight shaft (long) | 1 |
| 41 | Counterweight shaft bearing | 4 |
| 42 | Counterweight shaft bearing mounting screw & lock washer | 8 |
| 14 | Counterweight | 4 |
| 43 | Counterweight clamp bracket | 4 |
| 44 | Counterweight clamp bracket bolt & lock washer | 8 |
| 15 | Counterweight shaft pulley & set screw | 2 |
| 16 | Timing belt | 1 |
| 17 | Idler bracket | 1 |
| 45 | Idler bracket mounting screw with lock & flat washers | 2 |
| 46 | Idler bracket adjusting screw with locking nut | 1 |
| 18 | Idler pulley mounting screw & lock washer | 1 |
| 19/62 | Idler pulley with bearing set | 1 |
| | ***Drive Shaft Assembly Parts*** | |
| 20 | Drive shaft with eccentric, set screw, and roll pin | 1 |
| 47 | Drive shaft bearing | 2 |
| 42 | Drive shaft bearing mounting screw & lock washer | 4 |
| 49 | Timing pulley & set screw | 1 |
| 21 | Drive pulley with set screw | 1 |
| 22 | Drive belt | 1 |

| | PARTS | NO. REQUIRED |
|---|---|---|
| | ***Connecting Rod Assembly Parts*** | |
| 50 | Connecting rod with grease fitting | 1 |
| 51 | Connecting rod rubber bushing | 1 |
| 52 | Connecting rod bearing with inner race | 1 |
| — | (Connecting rod assembly - Parts 50, 51, 52, assembled) | (1) |
| 24 | Connecting rod mounting bolt with lock nut | 1 |
| 54 | Connecting rod mounting bolt spacer | 2 |
| | ***Lower Guide Bearing Assembly Parts*** | |
| 59 | Lower guide bearing housing with guide bushing | 1 |
| 56 | Lower guide bearing mounting screw & lock washer | 2 |
| 26 | Lower guide bearing pin | 1 |
| 64 | Lower guide bearing pin clamp bolt with lock nut | 1 |
| | ***Electric & Drive Parts*** | |
| 63 | Motor, 1/4 hp, 115V, 60Hz, 1Ph, 1725 RPM | 1 |
| 60 | Motor Pulley & set screw | 1 |
| 61 | Motor mounting bolt with lock & flat washer | 4 |
| — | Electric cord assembly, motor-to-timer | 1 |
| — | Electric cord assembly, with ground plug | 1 |
| — | Electric cord grip grommet | 1 |
| | Timer, Digital (EDA) | 1 |
| | Timer, Digital (Artisan) | 1 |

## Replacement Trays and Wire Cloth

Porta-Screen® Tray, complete with wire cloth

| Model | |
|---|---|
| PSA-300 | 2" to No. 4 inclusive |
| PSA-301 | No. 5 to No. 14 inclusive |
| PSA-302 | No. 16 to No. 80 inclusive with wire cloth supports |
| PSA-302 | No. 100, with backup cloth |
| PSA-306 | No. 200, with backup cloth |
| PSA-310 | Dustpan tray |

Replacement Wire Cloth, complete with metal shields & resilient gasket backing

| Model | |
|---|---|
| PSA-325 | 2" to No. 4 inclusive |
| PSA-326A | No. 5 to No. 14 inclusive |
| PSA-326B | No. 16 to No. 100 inclusive |
| PSA-327 | No. 200 |
| PSA-225 | Backup cloth (use with No. 100 to No. 200) |

Screen Tray Parts

| Model | |
|---|---|
| PSA-336 | Tray, complete, but without wire cloth, supports, or backup cloth |
| | Tray side clamp (4 required per tray) |
| | Tray bolts & nuts (12 required per tray) |
| | Wire cloth support (3 required per tray) |

# PS-3 & PS-4
# PARTS DIAGRAM

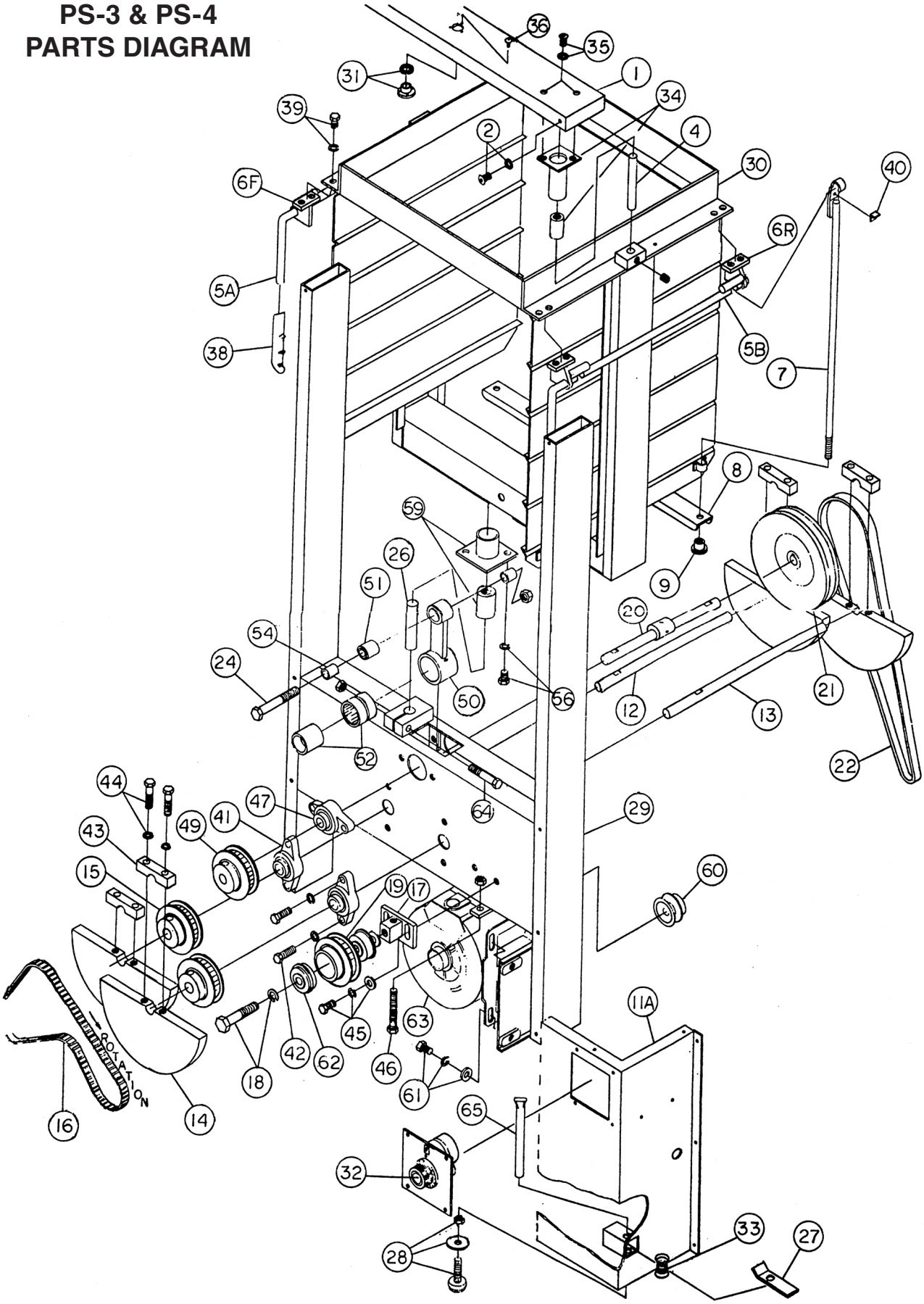

## 6.0 Accessories




**Porta-Screen® has Foot-Tab leveling.**



**Porta-Screen® Tray cloth has metal shields to eliminate partial openings.**

**PSA-114 Porta Wheels** may be attached for added mobility. Ball-bearing wheel assemblies with rubber tires are predrilled for quick attachment to frame of Porta-Screen®.



**PSA-114**

**PSA-367 Porta-Pan** is helpful in emptying and cleaning trays and in weighing operations. This 17x30x4in (432x762x102mm), WxLxD chute-end pan is sized to fit inverted trays and hold entire samples for cumulative weighing. Handling is easy with the top swing-away handle and end handle grip.

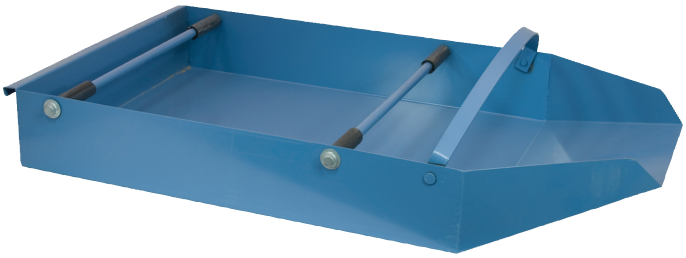

**PSA-367**

**PSA-312 Porta Cover** bolts to the top flange to enclose the sample chamber. It has a latch, and is hinged to open for introduction of samples.

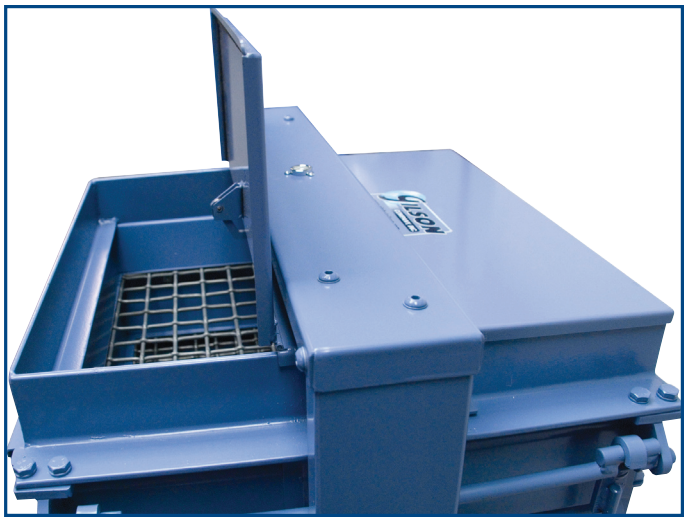

**PSA-312 on PS-3**

AECOM

Project Operating Procedure

# Operation of the TSI Model 8520 DustTrak™ Aerosol Monitor

Procedure Number: PPG 017

Revision No.: 1

Revision Date: June 2010



POP Author: Henry Chow  Date: June 29, 2010

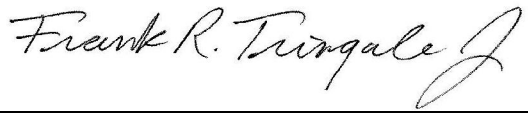

Program Manager: Frank R. Tringale  Date: June 29, 2010

Annual review of this SOP has been performed and the SOP still reflects current practice.

Initials: _____ Date: _____

Initials: _____ Date: _____

Project Operating Procedure

# Operation of the TSI Model 8520 DustTrak™ Aerosol Monitor



## Contents

**1.0 Scope and Applicability ..... 1**

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Project Operating Procedure

# Operation of the TSI Model 8520 DustTrak™ Aerosol Monitor



## 1.0 Scope and Applicability

**1.1** This Project Operating Procedure (POP) defines the procedures for monitoring particulate matter (PM) using a totally portable system.

**1.2** This POP is to be utilized to conduct the work identified in the title of this POP. Refer to SOP 1011, Preparation and Control of Standard Operating Procedures, for SOP modification and Project Operating Procedure (POP) development procedures.

## 2.0 Health and Safety Considerations

**2.1** The health and safety considerations for the work associated with this POP, including both potential physical and chemical hazards, as well as personal protective equipment (PPE) requirements, will be addressed in the site specific Health and Safety Plan (HASP). In the absence of a site-specific HASP, work will be conducted according to the AECOM Health and Safety Policy and Procedures Manual and/or direction from the Regional Health and Safety Manager Interferences.

## 3.0 Interfaces

**3.1** The following may cause errors in data that could cause erroneous operation of this system:

- If the analyzers are in need of maintenance or repair;
- If environmental conditions are beyond the limits specified in the instrument manual;
- Excessive ambient moisture either because of high humidity or precipitation will interfere with the proper operation of either instrument; and
- Operation of the system in portable mode without a fully charged battery can interfere with the proper measurement of PM data.

## 4.0 Equipment and Materials

**4.1** The following equipment and materials are required for operation of the PAM station:

- Trimpot screw driver;
- Flow meter with a measurement range of 0-3 LPM;
- Zero particulate filter; and
- Operator manuals for TSI model 8520 DustTrak™ aerosol monitor.

## 5.0 Procedures

**5.1** ON/OFF key

Press the ON/OFF key to power the DustTrak monitor. The DustTrak monitor immediately begins an internal self-check, while illuminating the display digits and symbols. If a problem is detected, the display shows the message "SERVICE" along with a number indicating that the DustTrak monitor requires service. Refer to Chapter 5: "Troubleshooting," of the manual for information regarding service numbers. If the "SERVICE" message appears, the DustTrak monitor will pause until any key is pressed. (**NOTE**: when the cause of the service message is resolved, the message must be reset according to instructions specified in the user manual, if not, the message will re-appear again each time the DustTrak is powered on.)

**5.2** Manually Setting the Real-Time Clock

To set the time and date with the keypad, you must press and hold the SAMPLE key while the DustTrak monitor displays the current time. Hold the SAMPLE key until the monitor "beeps". You will have an opportunity to view and/or change the year, month, and calendar day, hours, and minutes in sequence.

Use the up and down arrow keys (↓ ↑) to change a setting. Use the SAMPLE key to store each setting and advance to the next one. (**NOTE**: it is imperative to set the correct time and date when operating in the data logging mode.)

**5.3** SAMPLE Key

Press the SAMPLE key to start/stop data sampling. The word "SAMPLE" appears in the upper right corner of the display while the DUSTTRAK monitor is in sample mode. When sampling is stopped, the DustTrak monitor automatically scrolls through statistics for the sampling period that just ended. (**NOTE**: Data sampling must be stopped in order to establish communication with TrakPro software to download logged data.)

**5.4** TIME CONSTANT Key

Momentarily press and release the TIME CONSTANT key to view the current time-constant. To change the time-constant, press and hold the key down. The available time-constant choices will scroll on the display. When the desired value is displayed, immediately release the key. Select 10 seconds as the time constant for standard operation.

**5.5** SAMPLING MODE Key

The SAMPLING MODE key allows you to select among the four (4) sampling modes: Survey, LOG 1, LOG 2, and LOG 3. Each time you press the SAMPLING MODE key, the DustTrak monitor sequences to the next mode. When the DustTrak monitor is in Survey mode, the current measurement will be shown on the display. When one of the LOG modes is selected,

the LOG mode number, (i.e., LOG 1, LOG 2, or LOG 3) will be displayed along with the percentage of free memory available.

**5.6** Survey Mode

When the DustTrak monitor is first turned on, it will always be in Survey mode. Survey mode allows you to make real-time measurements of aerosol concentrations, and to obtain statistics for that sample. The statistics include the average, minimum, and maximum values, as well as the elapsed time for that sample. Individual data points are not recorded in internal memory (this can be done in any of the LOG modes). Each new sample taken in Survey mode clears the previous sample data from memory. Data taken in Survey mode remains in memory until another sample is made, or until samples are taken in one of the LOG modes. Turning the DustTrak monitor off will ***not*** erase data.

Use the SAMPLE key to start and stop a sample

**5.7** LOG Modes

There are three (3) LOG modes: LOG 1, LOG 2, and LOG 3. When one of these modes is selected using the SAMPLING MODE key, the LOG mode number will be listed at the top of the display. The LOG modes allow you to record aerosol concentration data points in the internal memory for later retrieval and analysis using the TraKPro software provided with the instrument. Use the SAMPLE key to start and stop recording. The word “RECORDING” appears at the top of the display when recording is in progress. The frequency that data is recorded can be set for LOG 1 mode with the LOGGING INTERVAL key. (**NOTE**: the logging interval is also the data averaging time used by the DustTrak and only block average can be generated.) Use TraKPro software for LOG 2 and LOG 3 modes. (**NOTE**: LOG2 and 3 are for timed or scheduled on/off sampling.)

Data recorded using one of the LOG modes can only be erased by using the CLEAR MEMORY key. Turning the DustTrak monitor off ***will not*** erase data. Recording another sample (by turning sampling off and on again) with one of the LOG modes without clearing memory first will cause new data to be added to the existing data in the memory and these new data will be identified with a new TEST number.

**5.8** LOGGING INTERVAL key

This key sets the frequency and averaging period for LOG1 mode. Use SAMPLE MODE key to set the monitor to LOG1 mode, press and hold the LOGGING INTERVAL key, release this key when the desired interval is displayed. (**NOTE**: Only TraKPro software can be used to set interval for LOG 2 and 3.)

**5.9** CLEAR MEMORY Key

Use the CLEAR MEMORY key to erase stored data. The CLEAR MEMORY key ***will not*** respond unless the DustTrak monitor is in one of the three LOG modes. (**NOTE**: before

clearing the memory, you should first download the data to a computer through the TraKPro software.

***There is only one block of memory in the DustTrak monitor. Clearing the memory for one LOG mode clears memory for all LOG modes.***

To clear the memory, press and hold the CLEAR MEMORY key until the countdown reaches zero, then release quickly. This prevents the data from being accidentally erased. Releasing the key too soon or too late prevents memory from being cleared. (**NOTE**: the DustTrak monitor has memory capacity of 31,000 data points, if the data average interval is set to 15-minutes, it could store data up to a total of 322 days. After the memory is cleared 100% memory should be displayed.

**5.10** The Arrow Keys 

The two arrow keys are used to adjust the readings when calibrating the DustTrak monitor and for adjusting the time and date for the internal real-time clock.

**5.11** CALIBRATE Key

Use the CALIBRATE key to put the DustTrak monitor into calibration mode. See Chapter 4, “Maintenance” and Step 5.1.12 below for details on how to perform zero calibration of the monitor.

**5.12** Display/Keypad Lockout Switch

Recording data over extended time periods often requires leaving the DustTrak monitor unattended. To reduce the risk of having an unauthorized person either intentionally or inadvertently interrupt the measurements, you can lock the display and keypad. The lockout switch is on the backside of the DustTrak monitor between the data port and the external power socket. It is a small slide switch and is recessed so that a pointed device must be used to move it.

- With the switch in the right side position (nearest the power socket), the keypad and display functions will work normally.
- With the switch in the left side position (closest to the data port), the display and keypad will go into lockout mode.

There are two ways to use the lockout switch.

1. Lock the keypad after recording starts, or
2. Put the switch into the lockout position prior to when recording starts.

The second method will enable you to operate each function normally *until* the SAMPLE key is pressed in one of the LOG modes. At that time the keypad automatically locks. When the display and keypad are locked, the display shows the words “RECORDING LOG X ” where “X” is the current LOG mode number.

**5.13** Zero Checking/Re-Zeroing/Calibration

To calibrate or perform a zero check on the DustTrak, use the following steps:

1. Put the DustTrak monitor in Survey mode;
2. Connect zero particulate filter (supplied by DustTrak manufacturer) on monitor sample inlet. (See Figure 4–1 of the manual for an illustration on how to make the connection);
3. Set the time-constant to 10 seconds, if necessary. Press and hold the TIME CONSTANT key until “10” is displayed, then release;
4. Wait 10–60 seconds for displayed values to settle to zero;
5. If the displayed value is between -0.001 and +0.001 mg/$m^3$, the DustTrak monitor does not need adjustment. If the displayed value exceeds this limit, follow steps 6 to 8 below to re-zero the instrument;
6. Press and hold the CALIBRATE key and wait for the displayed countdown to reach 0, then immediately release the key. The message “CALIBRATE ZERO” is displayed. If it is not displayed, try again;
7. Press the SAMPLE key and wait for the 60-second countdown. When the countdown is completed, the current calibration constant will be displayed; and
8. Press the CALIBRATE key again to return to survey mode. The re-zeroing process is now completed.

**5.14** Verification/Adjustment of sampling flow rate

The standard sampling flow rate for the DustTrak 8520 is 1.7 LPM and should be verified and adjusted initially and on a regular basis. The particle size cut-off is based on this flow rate for each size cut-off nozzles and cyclone.

Connect the flowmeter (supplied by manufacturer) to the monitor sample inlet, hold the flowmeter in a vertical position (as illustrated on Figure 4-4 of the manual) and verify the flowmeter ball height (middle of the ball) is at 1.7 LPM. If necessary, adjust the flow adjustment trimpot with a small screw driver until the flow rate is at 1.7 LPM. The flow adjustment trimpot is located at the back panel of the DustTrak monitor.

**5.15** Maintenance

(See Chapter 4 of the Operation Manual for recommended maintenance schedule and detailed maintenance procedures)

**5.16** Standard Startup Procedure for DustTrak 8520

Standard Startup procedure is as follows for the DustTrak:

5.16.1 Instrument set up

- Power up - press ON/OFF key
  - DustTrak should begins self-check sequence ,and display all digits and symbols;
  - Verify no SERVICE messages; and
  - Verify adequate battery life remaining and no battery symbol is displayed.

- Verify internal clock - adjust clock if necessary either manually or through the use of TRAKPRO Software

- Verify flow rate @ 1.7 LPM_– connect rotameter to inlet nozzle, check and verify ball high (mid-ball) at 1.7 LPM, adjust flow pot if necessary

- Verify time constant (recommended to use 10 seconds)

- Verify or Select/sampling particle size inlet. The selections are as follow:
  - 4.0 um: install BLACK nozzle and CYCLONE;
  - 10 um: install BLACK nozzle;
  - 2.5 um: install BLUE 2.5 um nozzle with impactor plate and O-ring; and
  - 1.0 um: install BLUE 1.0 um nozzle with impactor plate and O-ring.

- Zero checking/re-zeroing **-** perform this procedure:
  - Daily from cold start;
  - Ambient temperature change exceeds more than 8C;
  - Maintenance is performed; and
  - DustTrak is moved from high aerosol concentration to a low concentration location.

- Put DustTrak in SURVEY mode (press SAMPLE key if need to).

- Connect filter to inlet nozzle.

- Press and hold TIME CONSTANT key to verify display is in 10 sec (00:10:00).

- Wait 10-60 second sampling, readings should be approaching zero.

- If stable reading is between +/- 0.001 mg/$m^3$, no zeroing will be needed.

- If reading exceeds this limit, press and hold CALIBRATE key until count down to 0 and release key immediately, "CALIBRATE ZERO" message should be displayed, if not try again.

- Press SAMPLE key to initiate the 60 seconds countdown. Current calibration factor should be displayed after the countdown.

- Press CALIBRATE key to return DustTrak to survey mode and zeroing is completed.

5.16.2 Set DustTrak in one of the four SAMPLING MODEs

- Survey mode – default mode after power up : to display real-time readings ( no internal logging) – this mode is use mostly for analog output to connect to an external data logger.

- LOG 1 – sample and record average readings in internal memory
  - Press SAMPLE MODE until LOG1 is displayed;
  - Press LOGGING INTERVAL to verify averaging period (e.g., 15 minute);
  - Or press and hold key until the desired interval is displayed, release key immediately; and
  - Press SAMPLE key to start sampling. In additional to readings, **LOG1 Recording and Sample** message will also be displayed, this verifies that sampling is in progress and data averages will be stored in internal memory.

**NOTE**: each time when SAMPLE key is pressed to stop and start a new sampling event, a new test ID will be created for the current sampling event).

- LOG2 and LOG3 – user selectable auto start/stop operation and average readings recorded in internal memory.

5.16.3 Enable Alarm (only through the use of TraKPro software)

- Start up TraKPro.
  - Select Instrument Setup, select Parameters, Alarm Setpoint;
  - Check Alarm Enabled box;
  - Enter an alarm limit (e.g., 0.150 mg/$m^3$);
  - Press send button to program the DustTrak;
  - When alarm is triggered, internal beeper will be on once/second and AL message will be flashing on display; and
  - Alarm will be turned off when reading falls below 5% of limit.

5.16.4 If LOG1 mode is used, verify and/or select the LOGGING INTERVAL. Verify adequate memory is available.

5.16.5 Verify no battery warning is displayed. Press SAMPLE key to start the sampling session. (**NOTE**: SAMPLE should be displayed on the top right hand corner of the display panel).

**5.17** Use of TraKPro Software

TraKPro is a companion software designed to assist in the operation of DustTrak 8520. TraKPro provides a number of operation features that cannot be initiated through the keypad.. These features include the following:

- Logging Interval for LOG2 and 3;
- Enable/disable data alarm and setting/modifying alarm threshold;
- Setting up analog output range;
- Downloading and exporting logged data; and
- Generating data reports.

5.17.1 Follow the procedure described in Chapter 2 “Setting up TraKPro Data Analysis Software” to connect the monitor to a Personal Computer (PC).

**NOTE**: Sampling must be stopped manually (press the SAMPLE key) in order to establish communications between the monitor and PC.

5.17.2 Follow the procedures described in Chapter 3 “Analog Output”; “Alarm Output Specifications and Programming the Alarm Set Point”; and “Programming Advanced Modes: LOG2 and LOG3” to configure the monitor as needed.

**NOTE**: DustTrak 8520 will alarm only on instantaneous readings.

5.17.3 Downloading and Exporting logged data

1. Open TraKPro Software.
2. Click on File in the TraKPro task bar.
3. Select Receive.
4. On the sub-menu “Logged data Test(s) to receive”, sampling events stored in monitor (identify by Test ID number, Test date and time) will be listed on a menu. You either Select ALL or highlight the test ID to select the data you want to transfer from the DustTrak to the PC, and then click Receive…
5. After the data transfer is complete, a confirmed window “Logged Test(s)” will open with more detailed information on the selected test ID. By highlighting the Notes at the end of each test ID, the operator can add specific comments associated with each test ID (i.e., test location or site code before it is saved).

6. Click File, select Save As, select a file destination, specify a file name, and click Save. The data will be saved with a TPK extension (the TrakPro native file).
7. To export data as text file that can be used with MS Excel, click File, select Export, and select Export Test Data. At this point a window will come up listing the test IDs, start date, and time.

**NOTE**: The default Data Delimiter is Comma.

**M**odify the selection as needed, highlight the monitoring event(s) to convert, click Export, specify a file destination, specify file name, and click Save. A text file with a .TXT extension will be created and saved.

**NOTE**: a standard file naming convention is recommended, at a minimum the name should contain information to identify the site location and date of sampling, an example is as follows:

**NNNN mmddyy** where:

NNNN = site code or location

mm = month

dd = day

yy = year

## 6.0 Quality assurance / quality control

**6.1** Calibrations must always leave the analyzer operating within ± 5.0% of the reference calibrator at each calibration input.

**6.2** As soon as possible following calibration, the completed data form is to be submitted to the project manager or designee for review. Standards are reviewed for traceability and completeness. Data and strip chart readings (where applicable) are to be reviewed for agreement and completeness

## 7.0 Data and records management

**7.1** Unanticipated changes to the procedures or materials described in this POP (deviations) will be appropriately documented in the project records.

**7.2** Records associated with the activities described in this POP will be maintained according to the document management policy for the project.

7.2.1 The field documentation (PAM Station Checklist) is included at the end of this POP.

**7.3** Completed calibration data sheets are subject to senior review in accordance with AECOM senior review policy (SOP 1003, Senior Review). Calculations, standard conditions, correction factors, project identification, and other data will be reviewed for accuracy, completeness and conformance to the relevant AECOM operational SOP and the project QA Plan.

## 8.0 Personnel Qualifications and Training

**8.1** Qualifications and training

8.1.1 The individual executing these procedures must have read, and be familiar with, the requirements of this POP.

**8.2** Responsibilities

8.2.1 The project manager is responsible for providing the project team with the materials, resources and guidance necessary to properly execute the procedures described in this POP.

8.2.2 The individual performing the work is responsible for implementing the procedures as described in this POP and any project-specific work plans.

## 9.0 References

United States Environmental Protection Agency. 2001. Guidance for Preparing Standard Operating Procedures (SOPs). EPA QA/G-6. EPA/240/B-01/004. USEPA Office of Environmental Information, Washington, DC. March 2001.

ENSR 1003, Senior Review.

ENSR SOP 1011, Preparation and Control of Standard Operating Procedures

TSI model 8520 DustTrak™ aerosol monitor

## 10.0 Revision History

| Revision | Date | Changes |
|---|---|---|
| 1 | June 2010 | Minor edits re typos |

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# Routine Operations Check List

Portable Air Monitoring Stations

Week of (Monday date): _____ Site: _____

| Activity | Technician's Results | | | | | | | Comments |
|---|---|---|---|---|---|---|---|---|
| Daily Start-Up | Mon | Tue | Wed | Thu | Fri | Sat | Sun | |
| 1. Time of Calibration | | | | | | | | |
| 2. Technician's Initials | | | | | | | | |
| 3. Perform zero check of RAE. Record results. | | | | | | | | |
| 4. Perform span check of RAE. Record results. (Re-span if > +/- 0.5 ppm) | | | | | | | | |
| 5. Perform zero check of DustTrak. Record initial results. (Re-zero if > +/- 1.0 ug/$m^3$) | | | | | | | | |
| 6. Perform flow check of DustTrak. Record initial results. (Acceptable flow 1.5 – 1.9 lpm) | | | | | | | | |
| 7. Record combined battery voltage (Target 12V, if less than 11.3V batteries must be changed). | | | | | | | | |
| 8. Record top battery voltage (Target 6.5V) | | | | | | | | |
| 9. Check water drop out jar and empty as necessary. | | | | | | | | |
| Weekly | | | | | | | | |
| 1. Check DustTrak filter following rain events for moisture. If filter is wet, then replace with new filter. | | | | | | | | |
| Monthly | | | | | | | | |
| 1. Replace sample line filters on RAE PID. | | | | | | | | |
| 2. Perform an upscale response check of DustTrak particulate monitor, using a smoke generator. Record upscale response and time of check. | | | | | | | | |
| Comments: | | | | | | | | |

AECOM

Standard Operating Procedure

# Calibration/Operation/Maintenance of MiniVol™ Tactical Air Sampler (TAS)

**Procedure Number: PPG 018**

Based on Procedure Number: 2000-226

Revision No.: 1

Revision Date: June 29, 2010

SOP Contributors: Tony Sacco



Henry Chow, Technical Team Leader

Date: June 2010

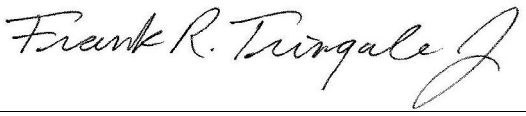

Frank R. Tringale Project Manager

Date: June 2010

Standard Operating Procedure

# Calibration/Operation/Maintenance of MiniVol™ Tactical Air Sampler (TAS)



## Contents

**1.0 Scope and applicability....1**

**2.0 Health and safety considerations....1**

**3.0 Interferences....1**

**4.0 Equipment and materials....1**

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**6.0 Quality assurance / quality control....9**

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**9.0 References....10**

Standard Operating Procedure

# Calibration/Operation/Maintenance of MiniVol™ Tactical Air Sampler (TAS)



## 1.0 Scope and applicability

**1.1** This Standard Operating Procedure (SOP) provides the guidance for the use of the MiniVol™ Tactical Air Sampler (TAS), to provide a standardized procedure for the collection of particulates or vapors.

**1.2** This sampler may be used to collect particulate matter on various types of filer media or gases/vapors in Tedlar™bags. General sampler calibration procedures are given in ENSR SOP 2000-106.

**1.3** This SOP is to be utilized to conduct the work identified in the title of this SOP. In the event the Project Manager or Project Team determines that the protocols and procedures listed in this SOP are not applicable to the project, there is the option to either adapt this SOP or to develop a site-specific SOP to more closely match the requirements of the project. Refer to SOP 1011, Preparation and Control of Standard Operating Procedures, for SOP modification and Project Operating Procedure (POP) development procedures.

## 2.0 Health and safety considerations

**2.1** The health and safety considerations for the work associated with this SOP, including both potential physical and chemical hazards, as well as personal protective equipment (PPE) requirements, will be addressed in the site specific Health and Safety Plan (HASP). In the absence of a site-specific HASP, work will be conducted according to the AECOM Health and Safety Policy and Procedures Manual and/or direction from the Regional Health and Safety Manager.

## 3.0 Interferences

**3.1** Physical disturbance of the sample during collection can result in significant loss of sample. Care must be taken to minimize disturbance of samples during collection to ensure that intact discrete samples are obtained and that the samples are representative of the intended interval.

**3.2** Communication with the laboratory in the project planning stages is critical to address the potential issues that may arise.

## 4.0 Equipment and materials

A standard MiniVol™ TAS comes packed in an all weather carrying case containing the following:

- 1 MiniVol™ TAS Pump Module
- 2 Filter Holder Assemblies
- 2 Size Selective Impactors
- 2 Battery Packs and a Battery Charger

- 1 All Weather Carrying Case
- 1 Universal Mounting Bracket or Light Weight Tripod

During particulate matter sampling, the following consumables are needed for proper operation of the MiniVol™TAS:

- Impactor grease - Glisseal® Ht, Apiezon® M Grease, etc.
- 47 mm filters - pure quartz, pure Teflon®, Teflon®-coated glass, etc.
- Petrislides™ - for storage and transport of the filters.
- A microbalance accurate to one microgram is needed to weigh the filters.
- Operation Manual.
- ENSR SOP 2000-106 Ambient Monitoring Transfer Standard Calibration.

# 5.0 Procedures

**5.1** Charging batteries

1. Connect the charging plug of the battery charger to the charging jack on the battery pack.

2. Plug the charger into an AC outlet.

3. The LED on the top of the battery charger will light indicating the status of the battery being charged.

When this light is green the battery is charged. A fully discharged battery requires about 5 hours to be completely recharged.

**Battery Charger LED Status Modes**

**LED Status Battery Status**

- Green Battery Fully Charged
- Red Battery Partially Charged
- Flashing Red Battery Fully Discharged

**5.2** Turning the sampler On/Off

The ON/AUTO/OFF button on the Programmable Timer allows the operator to manually turn the sampler on or off (or to place it in the "Auto" mode in which it is controlled by programmed on/off sequences). As the ON/AUTO/OFF button is pressed, a bar at the lower edge of the LCD display moves horizontally over the words "On", "Auto" and "Off" which are printed on the timer case. With the battery pack inserted into the sampler, press the ON/AUTO/OFF button until the bar is above

the "ON" legend. The red power indicator (to the right of the ON/AUTO/OFF button) should light and the pump motor should start. If the timer display does not respond, press the small black reset button located next to the red power led. While the sampler is running press the ON/AUTO/OFF button, until the bar indicator is over the “OFF” legend. The power indicator light will go off and the pump will stop running.

**5.3** Programming the timer

The Programmable Timer can be set to run up to six on/off cycles within a 24 hour period, as well as to run for separate time periods on separate days within a 7-day period. To set the timer, first set the real-time clock to establish the correct time frame in which the cycles are to run. Next, enter the on/off times at which the programmed cycles are to begin and end. Finally, set the timer to "Auto" mode.

**5.4** Setting the real-time clock

1. DAY SET: Hold down the CLOCK button and press the WEEK button until the correct day appears at the top of the display.

2. TIME SET (Hour): Hold down the CLOCK button and press the HOUR button until the display indicates the correct hour. You may have to cycle through the hours twice to obtain the proper AM or PM (on the left side of the display). Seconds will automatically reset to zero.

3. TIME SET (Minutes): Hold down the CLOCK button and press the MIN button until the display indicates the correct minutes. Seconds will automatically reset to zero.

**5.5** Setting the On/Off times

1. Press the **PROG** button once. **1ON** will appear near the lower left corner of the display indicating that the Power-on time for the first cycle is ready to be programmed.

2. Press the **HOUR** and **MIN** buttons to enter the power-on time for the first cycle.

3. Press the **WEEK** button to select the desired day. The days appear along the top of the display. Continuously pressing the **WEEK** button will sequentially display "Mo Tu We Th Fr Sa Su", "Mo", "Tu", "We", "Th", "Fr", "Sa", "Su", "Mo Tu We Th Fr", "Sa Su" and finally back to "Mo Tu We Th Fr Sa Su".

   **NOTE: When more than one day is displayed, these days will all have the same power-on time.**

4. After you have entered the power-on time and date for the first cycle, press the **PROG** button. **1OFF** now appears on the display to indicate that the power-off time for the first cycle is ready to be programmed. Repeat steps 2 and 3 to enter the desired power-off time.

   **NOTE: The power-off time does not have to occur on the same day as the on time. In this way, sampling may start on one day and end on the next day**.

5. Press the **PROG** button again. **2ON** appears on the display to indicate that the second power-on time is ready to be programmed. Repeat steps 2 through 4 to enter the remaining power-on/power-off times (up to 6 on/off times).

6. Press the **PROG** button to step through the times you entered to make sure they are correct. Press the **RST/RCL** button to disable (ReSeT) or reactivate (ReCalL) any time entries. When you disable a particular power-on/off entry, four dashes will appear instead of the time. When you reactivate an entry, it will return to the values that were set before you performed a reset.

   **NOTE: Be sure to clear or reset all unwanted time entries prior to sampling in the AUTO mode. Both ON and OFF entries need to be disabled for the unwanted programs to be inactive.**

8. Press the **CLOCK** button to return to the real-time clock display.

9. Press the **ON/AUTO/OFF** button until the bar is positioned above the desired setting (see below).

**5.5.1** Setting the time to “ON,” “AUTO,” and “OFF” modes

The **ON/AUTO/OFF** button is used to manually turn the sampler on or off, or to place it in the "Auto" mode. A bar on the lower edge of the LCD display moves from "Off" to "Auto" to "On" as the button is pressed. In the "Auto" mode the sampler is controlled by the programmed on/off sequences.

To manually turn the sampler ON, press the ON/AUTO/OFF button until the bar on the lower edge of the display is above the "ON" legend. The pump will start and the power indicator will light.

To manually turn the sampler OFF, press the ON/AUTO/OFF button until the bar is above the "OFF" legend.

To set the timer to "AUTO" mode, in which the sampler will be automatically controlled by programmed sequences, first turn the sampler OFF. Then press the ON/AUTO/OFF button until the bar is above the "AUTO" legend.

**5.6** Checking for leaks

To check for leaks, remove the impactor/filter holder assembly from the inlet tube. Make sure that the inlet tube is fully extended and the compression fitting is tight. Cover the air inlet tube with the

palm of the hand while the pump is running. The ball in the flowmeter should drop to zero and remain there without movement.

**NOTE: If the "Low Flow" indicator LED activates and the sampler shuts down after 15-20 seconds, push the reset button twice to reactivate the sampler. If the ball does not drop to zero, a leak exists somewhere in the hoses and/or fittings between the inlet and the flowmeter.**

Leaks on the inlet side of the pump are especially critical, since flow measurement will not accurately reflect the amount of air passing through the filter. The sampler will be measuring air passing through the filter, plus whatever air may be entering through the leak.

If there is a leak use the following procedures to isolate the leak. After each procedure check the sampler for leaks before moving to the next step:

- Verify that the inlet tube is extended and the compression fitting is tight.
- Remove the four faceplate thumbscrews and the sampler mount thumbscrew to access the sampler pump and plumbing.
- Verify that all push-on hose fittings are secure.
- Check for cracks in the flowmeter inlet and outlet.
- Check for cracks in the pulse dampener.
- Check and tighten all compression fittings.

**5.7** Particulate matter sampling

Sampling procedures for TSP, $PM_{10}$, and $PM_{2.5}$ are identical except for the configuration of the impactor/filter holder assembly.

**5.7.1** Preparing the sampler

**TSP** - Remove the impactor from the filter holder assembly prior to sampling. Since the impactor will not be used, greasing and cleaning of the impactor's target disk need not be done.

**$PM_{10}$** - Use a $PM_{10}$ impactor in the filter holder assembly. Greasing and cleaning of the impactor's target disk should be performed initially and after every fifth sample (or more often if heavy loading is observed).

**$PM_{2.5}$** - Use a $PM_{2.5}$ impactor in the filter holder assembly and a $PM_{10}$ impactor in a multiple impactor adapter mounted on the filter holder assembly tube. Greasing and cleaning of the impactors' target disks should be performed initially and after every fifth sample (or more often if heavy loading is observed).

To remove impactor, use your thumb to simply push the impactor out of its tube from bottom to top. When correctly installed, the impactor's top is flush with the surrounding filter holder assembly tube or multiple impactor adapter tube.

Before transporting the MiniVol™ TAS to the field, perform a laboratory check to determine if it is operational.

- Turn the sampler on and observe the motor performance.
- Perform a leak check. Investigate and correct any malfunctions before proceeding.
- Perform a single-point flow rate check using a calibrated orifice, soap-bubble meter or other flow measuring device of known accuracy and compare to the curve established during calibration. The flow should be within ±10% of 5 LPM at current conditions. If the unit fails to operate in this range, check the sampler for obvious leaks and malfunctions. The sampler must be repaired or recalibrated if the flow criteria are not met.

**5.7.2** Flow rate

The particle size cut point of the impactor is a function of the velocity with which the air stream passes through the impactor and impacts on the target. The impactor is designed to have the correct cut point at an air flow rate of 5 LPM at ambient conditions. Since the density of air and the behavior of the flowmeter are functions of the ambient air temperature and atmospheric pressure, a flow rate set point must be calculated for each different sampling project.

The sampler air flow calibration curves that are supplied with each sampler contain the necessary information needed to determine the flowmeter set point for a particular ambient condition.

Flowmeter calibration

The sampler should be recalibrated once a year and/or if the flowmeter is replaced (see ENSR SOP 2000-106 Ambient Monitoring Transfer Standard Calibration.

**5.7.3** Particulate matter sampling procedure

After the sampler has been assembled (refer to sections 4.7-4.14 of the MinVol ™ manual), adjusted, verified to be in proper working order, and a filter loaded in the Filter Assembly, the sampler is ready to collect air samples.

1. Carefully transport the sampler to the field site. Verify that the sampler, when finally installed will be positioned with the intake upward in an unobstructed area at least 30 cm from any obstacle to airflow.
2. Place the sampler on a firm level surface.
3. Loosen the inlet tube compression nut and extend the inlet tube to the maximum height and re-tighten the nut. Check for leaks.
4. Remove the clean Impactor/Filter Holder Assembly from the plastic transport bag or case. Attach the assembly to the top of the sampler inlet tube.
5. Record the following information on the PM Field Data Sheet: Site ID, number of the filter, the battery ID, sampler ID, ambient temperature and pressure, flowmeter

reading, and elapsed time meter reading. (a copy of the data sheet may be downloaded from the Airmetrics website, www.airmetrics.com).

6. Open the sampler case and obtain the beginning flow rate, press the **ON/AUTO/OFF** button to start the pump. On the LCD display, the horizontal bar should move to "ON".
7. If the flowmeter, which should be in the vertical position, indicates zero or a very low reading, check for restrictions.
8. Using the Flow Rate Adjustment control, set the flowmeter within specifications for the project temperature and pressure conditions. Take the reading of the flowmeter from the center of the ball.
9. Press the **ON/AUTO/OFF** button twice to stop the pump.
10. Press the **ON/AUTO/OFF** button to set the timer to "Auto" mode.

    **NOTE: The Sampler MUST be in "Auto" mode before the operator leaves if the sampler is to run at a pre-programmed time.**
11. Close the sampler case.

### 5.7.4 Particulate matter sample retrieval

As soon as possible after the end of the sampling period, the operator should return to the monitoring site to retrieve the exposed filter. There is a potential for filter damage or changes in sample mass due to particle loss, passive deposition, or volatilization increases if the filter is left in the sampler for extended periods of time after the sampling activity has ceased. On the previously referenced Field Data Sheet record the ambient temperature (Ta), barometric pressure (Pa), flowmeter reading and elapsed time.

**NOTE: Ta and Pa readings may be estimated on site or may be obtained from a nearby US National Weather Service Forecast Office or airport weather station. Barometric pressure readings obtained from airports must be at station pressure (not corrected to sea level), and they may have to be corrected for differences between the elevation of the monitoring site and that of the airport. If Ta and Pa readings are not available, seasonal average temperature ($T_{avg}$) and barometric pressure ($P_{avg}$) may be substituted. Care must be taken that the actual conditions at the site can be reasonably represented by such averages. It is therefore recommended that seasonal values represent actual values within 20°C and 40 mmHg.**

1. Open the sampler case and check the sampler for any error conditions. Repair as needed.
2. Verify correct time and day of week on time LCD.
3. Record elapsed time as shown on the Elapsed Time Totalizer.
4. Obtain ending flow rate:
   - Press the **ON/AUTO/OFF** button to start the pump.

- With the flowmeter in a vertical position, record the flow rate to the nearest 0.25 LPM (read at center of ball).
- Press the **ON/AUTO/OFF** button twice to stop the pump.

5. Exchange a new impactor/filter holder assembly for the exposed filter holder assembly. Perform a crosscheck of the exposed filter number with the filter number recorded on the Field Data Sheet for the run just completed. Also, check the filter number against the site number.
6. Change the battery pack.
7. Obtain beginning flow rate (see above, step 4).
8. Make sure the timer is set for the desired period and in the **"AUTO"** mode.

**5.7.5** Exposed filter

1. In the laboratory, unscrew the filter holder and remove the filter cassette.
2. Locate the Petrislide™ with the filter number which matches the number on the side of the filter holder assembly. This is the original Petrislide™ in which the filter came.
3. Use the cassette separator (P/N 600-007) to remove the top half of the filter cassette.
4. Using forceps carefully remove the exposed filter from the filter cassette and place it into its original Petrislide™ with the exposed side of the filter facing up, replacing the Petrislide™ lid when finished.

   **NOTE: Be sure to replace the filter support screen in the filter cassette assembly.**
5. Remove the old ID tag from the filter holder assembly base and discard.

   **NOTE: Recheck this number to be sure it matches the number on the Petrislide™.**

**5.7.6** Maintenance

Ideally, records reflecting the history of maintenance (including all replacement parts, supplies, costs, expenditures) should be kept for each MiniVol™ TAS.

Check sheets should be used to record preventative and/or corrective maintenance activities and the subsequent sampler calibration curve.

The sampler is comprised of four basic components that require maintenance:

- impactor/filter holder assembly,
- flow control system,
- timer, and
- battery pack.

Section 6 of the MiniVol™ TAS Operation Manual details the recommended maintenance procedures.

# 6.0 Quality assurance / quality control

**6.1** Quality control requirements for the MiniVol™ TAS are dependent on project-specific objectives. The Quality Assurance Project Plan (QAPP) will provide requirements for sample preservation and holding times, container types, sample labeling, sample packaging and shipment, as well as requirements for the collection of various quality assurance samples such as trip blanks, field blanks, equipment blanks, MS/MSDs, and field duplicate samples.

**6.2** Siting Requirements

Siting recommendations in the operational manual conform to the U. S. Environmental Protection Agency requirements as stated in the U. S. Code of Federal Regulations (40 CFR part 58, Appendix E). When operating the sampler in locations under another jurisdiction, the operator should follow the appropriate guidelines.

The MiniVol™ TAS should be positioned with the intake upward and should be located in an unobstructed area at least 30 cm from any obstacle to air flow. Accessibility to the unit under all weather conditions, along with safety and security of the monitoring personnel and equipment, should be prime considerations.

Completed calibration data sheets are subject to senior review in accordance with AECOM's senior review policy. Calculations, standard conditions, correction factors, project identification, and other data will be reviewed for accuracy, completeness and conformance to the relevant AECOM operational SOP and the project QA Plan.

# 7.0 Data and records management

**7.1** Forms must be completed and delivered to the project manager for review. A copy of these forms must be maintained on site. All columns on these forms must be completed or marked N/A if they do not apply.

**7.2** All activities performed in shelter must be documented in the field station log including date, the time in and out, technician's initials and employee number, activities performed, time the instrument is taken off-line, time the instrument is put back on-line, calibration results as well as any other circumstances which may arise during the site visit.

**7.3** Unanticipated changes to the procedures or materials described in this SOP (deviations) will be appropriately documented in the project records.

**7.4** Records associated with the activities described in this SOP will be maintained according to the document management policy for the project.

# 8.0 Personnel qualifications and training

**8.1** Qualifications and training

**8.1.1** The individual executing these procedures must have read, and be familiar with, the requirements of this SOP.

**8.1.2** Field technicians must have been trained to operate, maintain and calibrate this sampler and must be familiar with procedures for proper documentation of test data.

**8.2** Responsibilities

**8.2.1** The project manager is responsible for providing the project team with the materials, resources and guidance necessary to properly execute the procedures described in this SOP.

**8.2.2** The individual performing the work is responsible for implementing the procedures as described in this SOP and any project-specific work plans.

**8.2.3** The Project Manager is responsible for determining the methods that are appropriate to achieve the project objectives, and for supplying the necessary resources to meet those objectives.

**8.2.4** The field sampling team leader or task manager is responsible for ensuring that this procedure is followed in collecting the samples.

# 9.0 References

United States Environmental Protection Agency. 2001. Guidance for Preparing Standard Operating Procedures (SOPs). EPA QA/G-6. EPA/240/B-01/004. USEPA Office of Environmental Information, Washington, DC. March 2001.

AECOM Project Procedure PP-9-0, Senior Review Procedure.

AECOM SOP 1011, Preparation and Control of Standard Operating Procedures.

ENSR SOP 2000-106, Ambient Monitoring Transfer Standard Calibration.

ENSR SOP 1007, Chain of Custody Procedures.

Revision history

| Revision | Date | Changes |
|---|---|---|
| 0 | June 2010 | NA |

AECOM

Standard Operating Procedure

# Sample Collection of Airborne Hexavalent Chromium using Airmetrics MiniVol Tactical Air Sampler and OSHA Method ID 215 Version 2

**Procedure Number: PPG 019**

Based on Procedure Number: 2000-126

Revision No.: 0

Revision Date: May 2010

SOP Contributors:

Henry Chow, SOP Team Leader — Date: 5/28/10

Leo Gendron, AM Dept. Manager — Date: 05/28/10

Annual review of this SOP has been performed and the SOP still reflects current practice.

Initials: _____ Date: _____

Initials: _____ Date: _____

Standard Operating Procedure

# Sample Collection of Airborne Hexavalent Chromium using Airmetrics MinVol Tactical Air Sampler and OSHA Method ID 215 Version 2



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Standard Operating Procedure

# Sample Collection of Airborne Hexavalent Chromium using Airmetric MiniVol Tactical Air Sampler and OSHA Method ID 215 Version 2



## 1.0 Scope and applicability

This Standard Operating Procedure (SOP) defines the collection procedures of airborne hexavalent chromium in ambient air and/or work places using OSHA Method ID 215 Version 2 on a polyvinyl chloride (PVC) filter. Ambient air is drawn through a polystyrene cassette preloaded with a PVC filter and stainless steel back-up screen at a measured flow rate through the use of the Air Metric MiniVol Tactical Air Sampler (TAS). After sampling, the filters are extracted in an alkaline digestion solution and analyzed colorimetrically in the laboratory using the procedures described in OSHA Method ID-215 Version 2.

**1.1** This SOP is to be utilized to conduct the field sampling tasks identified in the title of this SOP. In the event the Project Manager or Project Team Members determine that the protocols and procedures listed in this SOP are not applicable to the project, there is the option to either adapt this SOP or to develop a site-specific SOP to more closely match the requirements of the project. Refer to SOP 1011, Preparation and Control of Standard Operating Procedures, for SOP modification and Project Operating Procedure (POP) development procedures.

## 2.0 Health and safety considerations

**2.1** The health and safety considerations for the work associated with this SOP, including both potential physical and chemical hazards, will be addressed in the site specific Health and Safety Plan (HASP). In the absence of a site-specific HASP, work will be conducted according to the AECOM Health and Safety Policy and Procedures Manual and/or direction from the Regional Health and Safety Manager.

## 3.0 Interferences

**3.1** The two known interferences in ambient sampling could be low humidity and low concentration that might affect the ability of PVC filter to retain hexavalent chromium (Cr (VI)).

## 4.0 Equipment and materials

- Air Metrics MiniVol TAS (Tactical Air Sampler or equivalent) with related apparatus and Manufacturer's instruction manual
- Air Metric (or equivalent) NIST traceable flow standard kit for calibrating the MiniVol TAS Sampler
- Cr(VI) Field Sampling Event Data Sheets

- Chain-of-custody forms
- Two-piece polystyrene filter cassettes with back-up screen
- Cassettes shipping plastic mailer
- 47 mm PVC filters
- Teflon coated forceps
- Small Shipping cooler
- Blue Ice
- Ziploc bag
- Small Bubble wrap

# 5.0 Procedures

### 5.1 PVC Filter Cassette Assembly Preparation

**5.1.1** Using the Teflon coated forceps, place a 47 mm PVC filter on the stainless steel screen in the outlet side of the two-piece cassettes

**5.1.2** Replace the inlet side of the cassette and then compress the two pieces together to form the cassette assembly

**5.1.3** Verify that the PVC filter is facing the inlet of the cassette assembly

**5.1.4** Place the assembled filter cassette in a clean cassette holder (plastic mailer) to seal the filter cassette

**5.1.5** Assembling of the filter cassette may be performed in the laboratory or the field.

### 5.2 Flow Calibration of the MiniVol TAS

The sample flow rate specified in OSHA Method ID 215 Version 2 is 2 liters per minute (LPM) and the total sample volume required is approximately 960 liters.

**5.2.1** In order to simulate the pressure drop that will be encountered during actual sampling, the PVC filter cassette assembly prepared in section 5.1 should be used in the flow calibration. It is advisable to dedicate a "dummy" cassette assembly for the purpose of calibrations and flow checks.

**5.2.2** Load the “dummy “ cassette assembly in the MinVol TAS filter holder . Remove the weather cap and insert the Air Metric flow calibration kit adaptor and connect the port of the adaptor to the digital manometer with suitable flexible tubing.

**5.2.3** The MiniVol TAS consists of an active constant flow device which compensates for changes in pressure drop across the sample train. The use of a dummy filter cassette assembly in-line during calibration and flow check serves as a verification that the pressure drop over the filter cassette assembly is not too great for the pump and is an exact duplication of conditions the pump will experience during sampling.

**5.2.4** For the operating procedures of the MiniVOl TAS and the Air Metric calibration kit, refer to the manufacturer instruction manual as well as its SOP

**5.2.5** Turn ON the MinVol TAS and digital manometer of the flow standard, and let it running and warm-up for at least 2-3 minutes, verify the ball height on the rotameter is at approximately 2 LPM, adjust the flow control circuit on the TAS until the ball height is at 2 LPM if necessary

**5.2.6** Measure the approximate flow rate through the calibration system train. Adjust the flow on the MiniVol TAS until the desired flow rate close to 3.5 LPM is achieved. Ensure to allow 10 to 15 seconds after each adjustment for the flow control mechanism to respond before activating the flow standard to take any flow measurement. Record the digital manometer reading of the adapter and the equivalent rotameter reading (midpoint of the ball) on the calibration data sheet. Record the ambient temperature and pressure, the standard pressure and temperature

**5.2.7** Repeat 5.2.7 for target flow rate of 3.0, 3.5. 4.0, 4.5 and 5.0 LPM

**5.2.8** Calculate the actual flow from each manometer reading from the equation provided with the calibration kit ( adaptor) for each ball height. Determine the relationship by linear regression or on a graph between the actual measured flow rates ( on Y axis) and the square root of equivalent rotameter reading( on X axis) corrected to actual temperature and pressure

**5.2.9** Determine the equivalent ball height (corrected to seasonal temperature and pressure ) of the rotameter for the sampling flow of 2 LPM

**5.2.10** When the calibration has been completed, remove the dummy filter cassette assembly and save it for future calibrations.

**5.3** Calibrate each MiniVol TAS following step 5.2 of this SOP.

**5.4** Record all calibration data on a Calibration Data Sheet including serial numbers as well as the calibrated flow rates, ball heights, temperature and pressure as well as flow rate vs. ball height relationship associated with each MiniVol TAS,

**5.5** Determine and record the seasonal, operation ball height as in step 5.2.10 for each MiniVol TAS.

**5.6** Install the MiniVol TAS consisting of a pre-loaded PVC filter cassette assembly at the sampling location. The height of the sample inlet should be approximately 2 meters from the ground. .

**5.7** Record all initial pertinent data on the Cr (VI) Field Sampling Event Data Sheet including sample location name, date of sampling, filter and cassette ID #, MiniVol TAS serial #, seasonal rotameter ball height, and start time on the elapsed timer.

**5.8** At the start of the sampling event, turn the MiniVol TAS on and begin sampling. Record the initial reading on the elapsed timer. Verify the ball height on the rotameter has settled steadily on the pre-determined seasonal reading ( from step 5.5)., adjust the ball height as necessary **Note:** The MiniVol TAS might take a few seconds to regulate the flow to the target value

**5.9** If possible, check each MiniVol TAS at approximately one-hour intervals to assure proper operation.

**5.10** After the sampling event is completed, record the final rotameter ball height, turn off the TAS then record the "End Time" on the elapsed timer on the Cr (VI) Field Sampling Event Data Sheet

**5.11** Remove the exposed filter cassette from the MiniVol TAS inlet/filter holder and place it in a clean plastic cassette mailer. After all samples have been collected they will be transported to a "clean area" for transfer to the sample shipping container for overnight shipping and delivery to the analytical laboratory. **Note :** All Cr (VI) field samples with the chain-of-custody form will be shipped overnight to arrive at the analytical laboratory within 24 hours of sampling. All samples will be logged, with the accompanying information.

**5.12** Once chain-of-custody documentation is completed and all entries verified, the samples will be prepared for overnight shipment. Sample cassette /plastic mailer assemblies should be placed in a clean Ziploc® bag and the bag should be packed with small bubble wrap snugly in a clean shipping container or cooler to prevent movement of the samples during shipment.

**5.13** To preserve the samples during transit, Blue ices will be placed inside the shipping cooler as standard practice.

**5.14** After packing, the container or cooler lid will be sealed along its entire length with wide tape.

**5.15** **Field Blank** -One field blank per sampling day will also be submitted from the same lot number as the sample filters. Field blanks will be subjected to the exact handling as the samples, except that no air is drawn through the filter cassette assembly. The handling includes loading, sealing and transporting in the field and shipping to the laboratory.

# 6.0 Sample Analysis

6.1 All filter samples including blanks and quality control samples must be analyzed within 8 days of collection. Samples must be prepared using an alkaline digestion as described in OSHA Method ID-215. The digestate is then analyzed using OSHA Method ID-215. Results are reported as total ug Cr(VI)/filter.

6.2 Final results may be reported as $\mu g/m^3$ using the following equation:

$$Cr(VI), \mu g/m^3 = Cr\ (VI)\ on\ filter\ \mu g/m^3\ air\ sampled$$

# 7.0 Quality assurance / quality control

**7.1** Field Blanks: The purpose of field blanks is to facilitate the detection of contamination that may have occurred between the initial filter manufacturing process and field handling. To accomplish this a field blank is collected by dedicating a filter cassette through the entire process of filter loading, cassette sealing, labeling, transporting to the field site, set-up, and labeling/packaging/transporting to the lab, without passing any sample air through it. In general, at least one field blank from the same lot number as the samples should be collected and analyzed per day of sampling. Details of the blank collection procedure should be described in the sample collection records.

**7.2** Chromic Acid cleaning solutions must not be used in any field or laboratory operations.

# 8.0 Data and records management

**8.1** All data, notes, comments will be documented on the Cr(VI) Sampling Event Data Sheet and in the Site Log Book as described in this procedure. All laboratory data must be recorded in a bound notebook. All documentation must be reproducible. Use black ink whenever possible, and write legibly. All records shall be placed in the project/task file immediately following sample collection.

**8.2** Unanticipated changes to the procedures or materials described in this SOP (deviations) will be appropriately documented in the project records.

**8.3** Records associated with the activities described in this SOP will be maintained according to the document management policy for the project.

# 9.0 Personnel qualifications and training

**9.1** Qualifications and training

**9.1.1** The individual executing these procedures must have read, and be familiar with, the requirements of this SOP.

**9.1.2** The individual must have prior knowledge and training of operating the Air Metric Calibration kit flow standard and the Air Metrics MiniVol TAS.

**9.2** Responsibilities

**9.2.1** The project manager is responsible for providing the project team with the materials, resources and guidance necessary to properly execute the procedures described in this SOP.

**9.2.2** The individual performing the work is responsible for implementing the procedures as described in this SOP and any project-specific work plans.

**9.2.3** The on-site field technician or operator is responsible for the operation and documentation of the sample collection apparatus, as well as preparation of samples for shipment to the laboratory.

## 10.0 References

United States Environmental Protection Agency. 2001. Guidance for Preparing Standard Operating Procedures (SOPs). EPA QA/G-6. EPA/240/B-01/004. USEPA Office of Environmental Information, Washington, DC. March 2001.

OSHA Method ID 215 Version 2 for Hexavalent Chromium Analysis. Revised April 2006. Method Development Team, Industrial Hygiene Chemistry Division, Sandy UT

AECOM SOP 1011, Preparation and Control of Standard Operating Procedures.

AECOM SOP 2000-226 Calibration/Operation/Maintenance of MiniVol TAS

## 11.0 Revision history

| Revision | Date | Changes |
|---|---|---|
| 0 | May 2010 | NA |
| | | |

# Sample Collection of Airborne Hexavalent Chromium using Airmetric MiniVol Tactical Air Sampler and OSHA Method ID 215 Version 2

## Cr(VI) Field Sampling Event Data Sheet

**Network Name** _____ **Date** _____ **Operator** _____

**Site Temperature $^{o}$C: begin**_____ **End** _____**Atmospheric Pressure** _____**mmHg**

**Seasonal Temperature $^{o}$C =** _____ **Seasonal Pressure** _____**mm Hg**

| Location (ID) | Filter ID | MiniVol TAS S/N | MiniVol Initial Flow Rate ($LPM_1$) | MinVol Post-Sampling flow Rate ($LPM_2$) | Average sampling Flow Rate Ave(LPM) | Start Time ( min ) | End Time (min) | Elapsed Time ( min ) | Total Sampling Volume (Liters) |
|---|---|---|---|---|---|---|---|---|---|
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**Note** : **Ave(LPM) = ($LPM_1$ + $LPM_2$)/2**

**Total Sampling Volume (Liters) = Ave(LPM) x Elapsed time (min)**

**Specs for Total Volume : between 912 - 1008 liters**

**Comments :**

Example of a Sampling Event Data Sheet

# Operation and Calibration of a Portable Hydrogen Sulfide Monitor

Procedure Number: PPG 020

Revision No.: 0

Revision Date: May 2010

Mary Connell Forgie

POP Author — Date: May 2010

Leo J. Gendron

Project Manager — Date: May 2010

Annual review of this SOP has been performed
and the SOP still reflects current practice.

Initials: _____ Date: _____
Initials: _____ Date: _____

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Project Operating Procedure

# Operation and Calibration of a Portable Hydrogen Sulfide Monitor



## 1.0 Project Scope and applicability

### 1.1 Purpose and Applicability

This document describes the procedures that will be followed by field staff for operation and calibration of a portable hydrogen sulfide ($H_2S$) monitor. The monitor is primarily used by AECOM personnel for safety and survey monitoring of ambient air, determining the presence of hydrogen sulfide in sampling environments.

The instrumentation routinely used by AECOM personnel is the Jerome 631-X Hydrogen Sulfide Analyzer manufactured by Arizona Instrument Company. Personnel responsible for using this monitor should first read and thoroughly familiarize themselves with the instrument instruction manual.

### 1.2 Principle of Operation

The Jerome 631-X Hydrogen Sulfide Analyzer is designed for rapid detection of hydrogen sulfide vapor in ambient air. A thin gold film undergoes an increase in electrical resistance in the presence of hydrogen sulfide proportional to the mass of hydrogen sulfide present in the sample. When the SAMPLE button is pressed, an internal pump pulls ambient air over the gold film sensor for a measured period; the gold film absorbs the hydrogen sulfide and the increase in electrical resistance is converted to and displayed as parts per million (ppm) $H_2S$. During normal sampling the ambient air sample is diluted in the flow system at a ratio of 100:1. If low levels of hydrogen sulfide are expected, undiluted air samples can be drawn across the gold film sensor.

The instrument's microprocessor automatically re-zeroes the digital meter at the start of each sample cycle and freezes the meter reading until the next sample cycle is activated, thus eliminating drift between samples. During the sample mode cycle, the LCD display indicates the percentage of sensor saturation. Depending on concentration a series of 50 to 500 samples may be taken before the sensor reaches saturation. When the display indicates the sensor is near saturation a 10-minute heat cycle is required to remove the accumulated hydrogen sulfide from the sensor.

### 1.3 Specifications

Refer to the specific manufacturer's instructions for the technical specifications. This analyzer has a range of 0.003 ppm to 50 ppm $H_2S$. Response time is 12 – 52 seconds.

## 2.0 Health and safety considerations

The health and safety considerations for the site, including both potential physical and chemical hazards, will be addressed in the site-specific Health and Safety Plan (HASP). In the absence of a site-specific HASP, work will be conducted according to the AECOM Health and Safety Policy and Procedures Manual and/or direction from the Regional Health and Safety Manager.

This instrument is designed for vapor use only. The probe or instrument intake should not be exposed to any liquid, dust, or other foreign material.

## 3.0 Interferences

The instrument should be at the same temperature as its environment before sampling. A Zero Air Filter removes mercury vapor, mercaptans, and hydrogen sulfide from the air sample; when this filter is installed the readings should be at or near zero. Since air cooler than the instrument can cause low readings and warmer air can result in higher readings the Zero Air Filter should be used to equilibrate the instrument to ambient air temperature. Continuous sampling with clean air will not cause saturation of the gold filter but will allow the instrument to equilibrate more rapidly.

The Zero Air Filter can also be used to identify contamination within the instrument. If the readings do not reduce to near zero with the filter installed, contamination should be suspected.

The gold film sensors do not respond to the following compounds:

- Hydrocarbons
- CO, $CO_2$, and $SO_2$
- Water vapor (water vapor condensation on the gold film can cause irreparable harm to the sensor and must be avoided)

The following compounds *may* cause the gold film to respond:

- Chlorine
- Ammonia
- $NO_2$
- Most mercaptans (organic sulfur compounds or thiols)

## 4.0 Equipment and materials

- Jerome 631-X Hydrogen Sulfide Analyzer
- Probe
- Tubing Adapter
- Trimmer Tool
- Zero Air Filter
- Line Cord
- Functional Test Module
- Manufacturer’s instructions

- Field data sheets or logbook/pen

## 5.0 Procedures

### **5.1** Preliminary Steps

Preliminary steps (battery charging, check-out, calibration, maintenance) should be conducted in a controlled or non-hazardous environment.

### **5.2** Calibration

To ensure the input to the instrument contains no hydrogen sulfide or mercaptans, use a Zero Air Filter. This filter cleans the air sample and should produce sample readings of less than 0.003 ppm. With the Zero Air Filter in place, sample the air continuously until the readings stabilize.

Perform a sensor regeneration and re-zero the instrument prior to each day's use or after 30 days of storage or inactivity. Press the ON switch and the REGEN button. The instrument will begin a 10 minute regeneration cycle indicated by .H.H.H flashing on the display. **Do not interrupt this cycle**. When regeneration is complete wait 30 minutes to allow the instrument to cool then zero the sensor by pressing the ZERO button and turning the zero adjust screw under the instrument handle until the display reads 0.

The gold film sensor is inherently stable and does not require frequent calibration. It has been factory calibrated against NIST traceable permeation tubes. Calibration must be performed at the factory or an authorized calibration/repair facility. While the actual frequency depends upon the application and use, the recommended interval between calibrations is every 12 months. The Functional Test Module (FTM) provides a field check of the functionality of the instrument but does not calibrate the instrument. The FTM uses a permeation tube containing hydrogen sulfide; the flow rate and temperature of the release of hydrogen sulfide is factory calibrated to provide a specified concentration to the instrument. If the concentration falls within the expected range for the FTM being used the instrument is functioning properly; if the level is not within the expected range then the instrument must be returned for service. This calibration check is used as part of a routine maintenance routine.

### **5.3** Operation

Turn on the unit and allow it to warm up (minimum of 1 minute). The digital display should read 000. Recharge or replace the battery pack if the LO BAT indicator remains on.

Use the Zero Air Filter to equilibrate the instrument to ambient air temperature; sample continuously until the readings stabilize.

Perform sensor regeneration, wait a minimum of 30 minutes and then zero the instrument.

Press the SAMPLE button to begin sampling; during the sampling cycle the digital display will show bars to indicate the degree of sensor saturation. At the end of the sampling cycle the hydrogen sulfide

concentration is displayed in ppm; record the value. This value will remain in the display until the next sample is taken; the digital meter automatically zeroes at the start of each sample.

When sampling is completed for the day, perform sensor regeneration. Under no circumstances should hydrogen sulfide be allowed to remain on the sensor overnight.

At the end of each day, recheck the calibration. The check will follow the same procedures as the initial calibration (Section 5.2) except that no adjustment will be made to the instrument. Record the information in the field records.

When transporting, ensure that the instrument is packed in its stored condition in order to prevent damage.

### **5.4** Routine Maintenance

Perform sensor regeneration daily. Do not allow hydrogen sulfide to remain on the gold film sensor overnight. This analyzer has a range of 0.003 ppm to 50 ppm $H_2S$. Periodically check Tygon® tubing within the instrument; kinks and crimps can restrict airflow during regeneration cycle and permanently damage the sensor.

All routine maintenance should be performed in a non-hazardous environment.

### **5.5** Troubleshooting Tips

A display of .8.8.8 indicates the sensor is saturated and must be regenerated.

Changes in temperature may cause the display to show .L.L.L when taking the initial sample. Refer to the operating manual for directions on zero adjustment.

The display shows H at conclusion of sensor regeneration when zero is pressed. Check tubing for crimps and repeat regeneration cycle. If the problem is not resolved the fritware filter, intake filter disk, scrubber filters and Tygon® tubing.

High or erratic results may indicate that the internal filters are clogged. This can happen when sampling in dusty or humid areas.

A low response or erratic readings, particularly after an extended period of non-use may indicate the need for a second regeneration cycle. Wait 30 minutes before performing the second regeneration cycle.

## 6.0 Quality assurance / quality control

The end use of the data will determine the quality assurance requirements that are necessary to produce data of acceptable quality. These quality assurance requirements will be defined in the site-specific workplan or Sampling and Analysis Plan (SAP), hereafter referred to as the project plan.

Calibration of the $H_2S$ monitor will be conducted at the frequency specified in the project plan. In the absence of project-specific guidance, calibration will be performed at the beginning of each day of sampling and will be checked at the end of the sampling day or whenever instrument operation is suspect. The FTM will be used as part of a routine maintenance program to verify instrument functionality. Readings which are outside the stated acceptance range for the FTM used will require that the monitor be returned to the factory for calibration.

Checks of the instrument response (Section 5.2) should be conducted periodically and documented in the field records.

## 7.0 Data and records management

Safety and survey monitoring with the hydrogen sulfide monitor will be documented in a bound field logbook, or on standardized forms, and retained in the project files. The following information is to be recorded:

- Project name and number.
- Instrument manufacturer, model, and identification number.
- Operator's signature.
- Date and time of operation.
- Calibration check at beginning and end of day (meter readings before adjustment).
- Span setting after calibration adjustment.
- Meter readings (monitoring data obtained).
- Instances of erratic or questionable meter readings and corrective actions taken.
- Instrument checks and response verifications.

## 8.0 Personnel qualifications and training

The project manager is responsible for ensuring that project-specific requirements are communicated to the project team and for providing the materials, resources, and guidance necessary to perform the measurements in accordance with this POP and the project plan.

The field operator is responsible for verifying that the hydrogen sulfide monitor is in proper operating condition prior to use and for implementing the calibration and measurement procedures in accordance with this POP and the project plan.

## 9.0 References

United States Environmental Protection Agency. Environmental Investigations Standard Operating Procedures and Quality Assurance Manual (EISOPQAM). USEPA, Region 4, SESD, Enforcement and Investigations Branch, Athens, GA. November 2001.

## 10.0 Revision History

| Revision | Date | Changes |
|---|---|---|
| 0 | May 2010 | Original POP |

# Field and Laboratory Measurement of pH

**Manager's Signature:**

| | |
|---|---|
| **SOP #:** | 7121 |
| **Effective Date:** | 12/29/2009 |
| **Revision #:** | 2 |
| **Method Reference:** | 2550 B |

## 1.0 SCOPE AND APPLICATION

1.1 Purpose and Applicability

This Standard Operating Procedure (SOP) provides basic instructions for routine calibration and operation of the Oakton pH/CON 300 meter. This SOP is designed specifically for the measurement of pH in accordance with Standard Method 4500-H B which address electrometric pH measurements of drinking, surface, and saline waters, domestic and industrial wastes, and acid rain.

1.2 Quality Assurance Planning Considerations

The end use of the data will determine the quality assurance requirements that are necessary to produce data of acceptable quality. These quality assurance requirements will be defined in the laboratory Quality Assurance Quality Control (QA/QC) Manual and may include duplicate or replicate measurements or confirmatory analyses.

## 2.0 RESPONSIBILITIES

2.1 The analyst is responsible for verifying that the pH meter is in proper operating condition prior to use and for implementing the calibration and measurement procedures in accordance with this SOP and the project plan.

2.2 The project manager is responsible for ensuring that project-specific requirements are communicated to the project team and for providing the materials, resources, and guidance necessary to perform the measurements in accordance with this SOP and the project plan.

## 3.0 REQUIRED MATERIALS

The following materials are necessary for this procedure:

- Oakton Portable Waterproof pH/Conductivity/temperature meter 9with Auto temperature correction) (model 300)
- Oakton pH/CON 300 instruction manual

- Deionized water
- Clean glass or plastic beakers or cups
- 4.0, 7.0, and 10.0 buffer solutions
- Magnetic stirrer and Teflon-coated stirring bar
- Lint-free tissues
- Mild detergent and/or 10% hydrochloric acid (for use if samples contain oily material or particulate matter)
- Calibration sheets
- Laboratory/field data sheets or logbook.

## 4.0 SUMMARY OF METHOD

The pH of a sample is determined electrometrically using either a glass electrode and a reference potential or a combination electrode.

## 5.0 SAMPLE HANDLING, PRESERVATION, AND GENERAL MEASUREMENT PROCEDURES

5.1.1 To achieve accurate pH measurements, samples shall be analyzed within 15 minutes of collection. Sample should be collected in plastic or glass containers.

5.1.2 After measuring a sample containing oily material or particulate matter, the electrode must be cleaned by carefully wiping with a lint-free cloth, or washing gently in a mild detergent, followed by a deionized water rinse. If this does not suffice, an additional rinse with 10% hydrochloric acid (followed by de-ionized water) may be needed.

5.1.3 As temperature can affect the pH measurements obtained, both the pH and the temperature of the sample must be recorded.

5.1.4 Calibration must include a three point calibration that bracket the expected pH of the samples to be measured.

5.1.5 Primary standard buffer salts available from NIST can be purchased and are necessary for situations where extreme accuracy is required. Secondary standard buffers may be purchased as a solution from commercial vendors and are recommended for routine use. Buffers should not be used after their expiration dates as provided by the manufacturer. If the manufacturer does not supply an expiration date or if the buffers are prepared from pH powder pillows, etc., an expiration date of one year from purchase or preparation should be used. All standards must be labeled with manufacturer, lot number, receipt date, opened date, and expiration date.

5.1.6 When the meter is being used in the field, move the probe in a way that creates sufficient sample movement across the sensor; this insures homogeneity of the sample and suspension of solids. If sufficient

movement has occurred, the readings will not drift (<0.1 pH units). Rinse the electrode with deionized water between samples and wipe gently with a lint-free tissue.

5.1.7 Fluctuating readings may indicate more frequent instrument calibrations are necessary.

5.2 Calibration and Measurement Procedures

5.2.1 The pH meter must be calibrated daily before any analyses are performed. The instrument serial # should be noted in the log book. The meter should be checked every 3 hours against one of the buffers, and the value recorded. If the measurement is off by more than 0.2, the instrument needs to be re-calibrated.

5.2.2 A duplicate pH reading must be made for every twenty (20) samples measured in the field for any given parameter. The duplicate results must be reported with its corresponding sample results. Duplicate results must be within 0.10 standard units of the original analysis result.

5.2.3 Connect the electrode to the meter. Choose either 7.0 and 10.0 (high range) or 4.0 and 7.0 (low range) buffers, whichever will bracket the expected sample range. Place the buffer in a clean beaker. If the pH is being measured in a laboratory, place the beaker on the magnetic stirrer and place the stirring bar in the beaker. Measure and record the temperatures of the buffers using a calibrated thermometer or automatic temperature compensation (ATC).

5.2.4 Place the electrode into the 10.0 buffer or into the 7.0 buffer. (The calibration procedure described here begins with the buffer of the highest pH selected. The instrument manufacturer's calibration instructions may suggest starting with the buffer of the lowest pH selected).

5.2.5 Adjust the instrument calibration according to the Oakton instruction manual. Discard the buffer and rinse the beaker and stirring bar thoroughly with de-ionized water.

5.2.6 Refill the beaker with the 7.0 buffer or the 4.0 buffer. Rinse the electrode, gently wipe it with a lint-free tissue, and place it in the selected buffer solution. If the pH is being measured in a laboratory, place the beaker on the magnetic stirrer and place the stirring bar in the beaker. Continue adjusting the instrument calibration according to the manufacturer's instructions. Record the electrode slope (if provided by the instrument) on the calibration sheet (an acceptable slope is between 92 and 102 percent). Measure and record the temperature of the buffer using a calibrated thermometer or ATC. Discard the buffer and rinse the beaker and stirring bar thoroughly with deionized water.

5.2.7 After calibration, the instrument shall be checked against the calibration buffers. Calibration is valid if buffers read within 0.10 standard units of their certified values.

5.2.8 An additional check may be performed, if required by the project plan, by placing the electrode into an additional buffer solution. This buffer should be from a different source than the buffers used for the initial calibration. This buffer should read within +0.2 pH units of the buffer's true pH value if after three hours of use.

5.2.9 Verify the calibration every 20 samples and after the last sample of the day with a buffer solution prepared from a different source than that used for initial calibration. Recalibrate the instrument if the check value varies more than 0.2 pH units from the true value.

5.2.10 The electrode will be rinsed with deionized water and wiped gently with a lint-free tissue between sample analysis.

5.2.11 Recalibrate the instrument if the buffers do not bracket the pH of the samples.

5.2.12 The meter must be re-calibrated following any maintenance activities and prior to the next use.

5.3 Troubleshooting Information

If there are any performance problems with the pH meter which result in inability to achieve the acceptance criteria presented in Section 5.0, consult the appropriate section of the meter instruction manual for the checkout and self-test procedures. If the problem persists, consult the manufacturer's customer service department immediately for further instructions.

5.4 Maintenance

5.4.1 Instrument maintenance should be performed according to the procedures and frequencies required by the manufacturer.

5.4.2 The electrode must be stored and maintained according to the manufacturer's instructions.

5.4.3 If an instrument with ATC is being used, the device should be checked on a quarterly basis for accuracy with an NIST thermometer.

## 6.0 QUALITY CONTROL

6.1 Duplicate measurements of a single sample will be performed of at least 1 per every 20 samples. Duplicate measurements should agree within +0.1 pH units.

6.2 The temperature readout of the meter will be checked quarterly against an NIST-traceable thermometer. If the difference is greater than 0.2□C, the instrument manufacturer will be consulted for instructions. Temperature measurements will be compensated for any difference with the reference thermometer.

## 7.0 REPORTING

7.1 All pH meter calibration, temperature check, and maintenance information will be recorded on a daily calibration sheet. pH data may be recorded on the appropriate laboratory or field data sheets or logbooks.

7.2 Calibration documentation must be maintained in a thorough and consistent manner. At a minimum, the following information must be recorded:

- Date and time of calibration

- Signature or initials of person performing the measurement
- Instrument identification number/model
- Expiration dates and batch numbers for all buffer solutions
- Reading for pH 7.0 buffer before and after meter adjustment
- Reading for pH 4.0 or 10.0 buffer before and after meter adjustment
- Readings for all continuing calibration checks
- Temperature of buffers (corrected for any difference with reference thermometer), including units
- Slope reading (if provided by instrument)
- Comments

7.3 Documentation for recorded data must include a minimum of the following:

- Date and time of analysis
- Signature or initials of person performing the measurement
- Instrument identification number/model
- Sample identification/station location
- Temperature (corrected for any difference with reference thermometer) and pH of sample (including units and duplicate measurements)
- Comments
- All calibration records (logs) must be retained for five years.

## 8.0 TRAINING/QUALIFICATIONS

To properly perform pH measurements, the analyst must be familiar with the calibration and measurement techniques stated in this SOP. The analyst must also be experienced in the operation of the meter.

Certain state certification programs require that pH measurements in the field be taken by, or in the presence of, personnel that are qualified under the certification program.

## 9.0 REFERENCES

APHA-AWWA-WPCF. Standard Methods for the Examination of Water and Wastewater, 20th Edition. 1999.

AECOM

Project Operating Procedure

# Field and Laboratory Measurement of Dissolved Oxygen

**Procedure Number: PPG 022**

Reference SOP #: 7124 Revision No.: 3

Method Reference: 2550 B

Revision Date: June 2010

POP Author Date: 6/21/2010

QA Reviewer Date: 6/21/2010

Annual review of this POP has been performed and the POP still reflects current practice.

Initials: _____ Date: _____

Initials: _____ Date: _____

Project Operating Procedure

# Decontamination of Field Equipment



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Project Operating Procedure

# Decontamination of Field Equipment



## 1.0 Purpose and applicability

This Standard Operating Procedure (SOP) provides basic instructions for routine measurement of Dissolved Oxygen (DO) using Oakton Portable Waterproof Dissolved Oxygen Meter (Model 35641). It is noted that this instrument is a combination DO/temperature meter.

This SOP, which has been prepared pursuant to the requirement of NJAC7:18-8, addresses DO measurement only.

This SOP applies when performing “analyze immediately” DO measurements on regulatory samples, in accordance with Standard Method SM 4500 O G, for DO measurement in drinking, surface and saline waters, and domestic and industrial wastewaters.

## 2.0 Summary of method

Dissolved oxygen levels in natural and waste waters depend on the physical, chemical, and biochemical activities in the water body.

This meter uses a galvanic probe. It consists of a cell that contains electrolyte and that is enclosed by a selective membranes, and two metallic electrodes. The membrane is practically impermeable to water and ionic dissolved matter, but is permeable to oxygen and a few other gasses.

The cathode consumes the oxygen passed through the membrane, and produces an electric current in the probe; this current is proportional to the partial pressure of oxygen in the sample.

## 3.0 Responsibilities

The analyst is responsible for verifying that the DO meter is in proper operating condition prior to use, and for operating the meter in accordance with manufacturers’ instructions. The analyst is also responsible for implementing and documenting the calibration and measurement procedures in accordance with the manufacturers’ instructions, this SOP and the project plan.

The project manager is responsible for ensuring that project-specific requirements are communicated to the project team and for providing the materials, resources and guidance necessary to perform the measurements in accordance with this SOP and the project plan.

## 4.0 Required materials

The following materials are necessary for this procedure:

- Oakton Portable Waterproof DO meter (Model 35641)
- Oakton instruction manual
- Deionized Water

- Field logbook
- Lint free cloth

## 5.0 Sample handling and general measurement procedures

To achieve accurate temperature measurements, samples must be analyzed within 15 minutes of collection. Samples should be collected in glass or plastic containers.

Since the cathode consumes the oxygen in the sample, it is essential that the fluid flow past the sensor to maintain accurate readings. Therefore, when the meter is being used in the field, if necessary, move the probe in a way that creates sufficient sample movement across the sensor. This insures homogeneity of the sample. If sufficient movement has occurred, the readings will not drift. Rinse the electrode with deionized water between samples and wipe gently with a lint free cloth.

The solubility of oxygen in water varies with barometric peruse and temperatures, and decreases as salinity increases. For the most accurate DO readings, you need to compensate for these factors. This meter automatically compensates for temperature readings. It also allows you to enter a salinity correction factor and the barometric pressure to correct this variability. A pressure vs. altitude table is included in the equipment instruction booklet. Consult manufacturer's instructions if it becomes necessary to adjust the instrument from factory default settings for salinity and/or barometric pressure.

After measuring a sample containing oily material or particulate matter, the electrode may need to be cleaned using a deionized water rinse and/or by carefully wiping with a damp lint-free cloth.

## 6.0 Calibration and measurement procedures

The DO meter must be calibrated daily before any analyses are performed. The meter shall be calibrated in accordance with the manufacturer's instructions. The instrument serial number should be noted in the field book.

A duplicate DO reading must be made for every twenty samples measured in the field. The duplicate result must be reported with its corresponding sample result. Duplicate results must be within 10% of the original analysis result and recorded in the field book.

The electrode will be rinsed with deionized water and wiped gently with a lint-free tissue between sample analyses.

The meter must be re-calibrated following any maintenance activities and prior to the next daily use.

The built-in temperature sensor included in the probe is factory calibrated. Calibrate your sensor only if you suspect drift that may have occurred over a long period of time or if you have a replacement probe. Calibration is performed using a NIST traceable thermometer, in accidence with manufacturer's instruction.

The instrument will be calibrated for DO measurement precision weekly when in use using the Winkler Method.

## 7.0 Troubleshooting information

If there are any performance problems with the DO meter which result in inability to achieve the acceptance criteria presented in Section 6 (+/- 10%), consult the appropriate section of the meter instruction manual for the troubleshooting procedures. If the problem persists, consult the manufacturer's customer service department immediately for further instructions.

## 8.0 Probe care

The probe is a galvanic measuring element which produces an output proportional to the oxygen present in the medium in which it is placed. The galvanis probe design lets you take measurements immediately- without the typical 15 minute wit of other dissolved probes.

The probe consists two parts:

- An upper part consisting of an anode, a cathode, and cable; and
- A lower part consisting of a membrane cap, membrane, and electrolyte.

Under typical operating control conditions, the probe should last for several years. Proper care and maintenance will help you receiver the maximum probe life and ensure more accurate readings. Since any deposits on the membrane surface act as a barrier to oxygen diffusing through the membrane, the membrane must be cleaned at regular intervals to assure maximum reliability. After using the probe, rinse the probe in clean water and wipe it with a soft cloth or paper to avoid any hardening of deposits. If growth develops on the probe, use a disinfecting chemical to clean.

NOTE: Although the membrane is strong and not easily damaged, wipe it gently while cleaning it. If the membrane is damaged or torn, the probe will no longer function. There are no special probe storage requirements.

## 9.0 Quality control

A duplicate measurement of a single sample will be performed of at least 1 per every20 samples. Duplicate DO measurements should agree within +/- 10%. Duplicate temperature measurements should agree within 1.0 degree Fahrenheit.

The instrument will be calibrated quarterly when in use using the Winkler method. The temperature probe will be calibrated against an NIST traceable thermometer. Calibration records will be maintained by AECOM's Laboratory Manager. Records will be kept on the file for at least 5 years.

## 10.0 Reporting

All daily DO meter calibration and maintenance information, as well as DO data, will be recorded on the appropriate laboratory or field data sheets or field logbook.

At a minimum, the following information must be recorded:

Date and time of calibration

Instrument identification number/model

Signature or initials of person performing the measurement

Documentation for recorded data must include a minimum of the following:

Data and time of analysis

Signature or initials of person performing the measurement

Instrument identification number/model

Sample identification/ station location

Temperature and DO readings

Comments

## 11.0 Training/qualifications

To properly perform temperature measurements, the analyst must be familiar with the calibration and measurement techniques stated in this SOP. The analyst must also be experienced in the operation of the meter.

Certain state certification programs require that temperature measurements in the field be taken by, or in the presence of, personnel that are qualified under the certification program.

## 12.0 References

APHA-AWWA-WPCF. Standard Methods for the Examination of Water and Wastewater, 20th Edition. 1999.

Operating Instructions – Oakton DO Meter – 300 Series.

## 13.0 Revision History

| Revision | Date | Changes |
|---|---|---|
| 3 | June 2010 | Revised POP |

AECOM

| Field and Laboratory Measurement of Temperature | Manager's Signature:  |
|---|---|
| | **SOP #:** 7123 |
| | **Effective Date:** 12/29/2009 |
| | **Revision #:** 2 |
| | **Method Reference:** 2550 B |

## 1.0 SCOPE AND APPLICATION

**1.1** Purpose and Applicability

This Standard Operating Procedure (SOP) provides basic instructions for routine measurement of temperature using the Oakton pH/CON 300 meter. It is noted that this instrument is a combination pH/temperature meter. This SOP addresses temperature measurement only (other capabilities are outlined in the appropriate SOP). This SOP is designed specifically for the measurement of temperature in accordance with Standard Method 2550 B which address thermometric temperature measurement of drinking, surface, and saline waters, and domestic and industrial wastes.

**1.2** Quality Assurance Planning Considerations

The end use of the data will determine the quality assurance requirements that are necessary to produce data of acceptable quality. These quality assurance requirements will be defined in the laboratory Quality Assurance Quality Control (QA/QC) Manual and may include duplicate or replicate measurements or confirmatory analyses.

## 2.0 RESPONSIBILITIES

**2.1** The analyst is responsible for verifying that the Oakton pH/CON 300 meter is in proper operating condition prior to use and for implementing the calibration and measurement procedures in accordance with this SOP and the project plan.

**2.2** The project manager is responsible for ensuring that project-specific requirements are communicated to the project team and for providing the materials, resources, and guidance necessary to perform the measurements in accordance with this SOP and the project plan.

## 3.0 REQUIRED MATERIALS

The following materials are necessary for this procedure:

- Oakton Portable Waterproof ph/Conductivity/Temperature meter (model 300)
- Oakton pH/CON 300 meter instruction manual
- National Institute of Standards and Technology (NIST)-traceable thermometer
- Laboratory or field data sheets or logbooks
- Clear glass or plastic containers

## 4.0 SUMMARY OF METHOD

The temperature of a sample is determined electrometrically using a temperature sensor. The Oakton pH/CON 300 meter displays temperature in the range of -10.0 to 110 $^{o}$C simultaneously with sample results. The meter can display measurement values to tenths (0.0), hundredths (0.00) or thousandths (0.000). The default is hundredths. The meter can display temperature in $^{o}$C or $^{o}$F.

## 5.0 SAMPLE HANDLING, PRESERVATION, AND GENERAL MEASUREMENT PROCEDURES

To achieve accurate temperature measurements, samples shall be analyzed within 15 minutes of collection. Samples should be collected in glass or plastic containers.

**5.1** Calibration and Measurement Procedures

**5.1.1** The Oakton pH/CON 300 meter will, at a minimum, be checked quarterly as described in Section 5.0. The device will be checked against an NIST-traceable thermometer and the necessary compensation made for the difference in temperature 0.5 $^{o}$C or greater

**5.1.2** Immerse the Oakton pH/CON 300 meter into the sample.

**5.1.3** Swirl and take a reading when the value stabilizes.

**5.1.4** Record the temperature reading to the nearest 0.1$^{o}$.

**5.1.5** The Oakton pH/CON 300 meter will be deployed in accordance with the manufacturer's instruction manual. For water-column profiling operations (if applicable) the sensor readings will be recorded manually in a designated field logbook or continuously through the use of a computer. An internal data-logger will be used for recording sensor measurements during moored deployment of a sensor. The frequency of data recording will be specified in the project plan. The location, date, and time of sensor deployment, along with depth (of measurement or mooring) will be recorded in

conjunction with the temperature sensor data. Additional documentation requirements are listed in Section 6.2.

**5.1.6** Temperature data may be post-calibrated using any of a variety of calibration data including, but not limited to, field calibration points, manufacturer calibration data, and analytical results from samples collected during field deployment of the sensors. The decision criteria for post calibration, and the technique used, will be specified in the project plan, and will be consistent with the manufacturer's recommendations.

**5.2** Troubleshooting Information

If there are any performance problems with the Oakton pH/CON 300 meter, consult the appropriate section of the meter instruction manual for the checkout and self-test procedures. If the problem persists, consult the Oakton customer service department immediately for further instructions. If performance problems exist with the probe, repair or replace the temperature sensor.

**5.3** Maintenance

Instrument maintenance for meter-type temperature measuring devices should be performed according to the procedures and frequencies specified by Oakton.

## 6.0 QUALITY CONTROL

**6.1** The Oakton pH/CON 300 meter will, at a minimum, be checked against an NIST-traceable thermometer at the frequency stated in section 5.1.1 (quarterly). This verification procedure will be performed as follows:

- Immerse the temperature sensor and the NIST-traceable thermometer into a sample.
- Allow the readings to stabilize.
- Record the readings and document the difference.
- Label the temperature sensor with the correction value/adjustment and the date the accuracy check was performed. A correction factor is required only when the difference between the NIST thermometer and the probe equals or exceeds 0.5 $^{o}$C.
- Compensate for the difference when sample measurements are taken.
- Record the thermometer IDs, the temperature from the NIST-traceable thermometer, the temperature from the thermometer being verified, the time, date and the initials of the analyst, and any required correction factor.

**6.2** A duplicate measurement must be made for every twenty (20) samples measured in the field for temperature measurements. It is noted that duplicate measurements should agree within $\pm$0.5$^{o}$C or approximately $\pm$1.0$^{o}$F.

## 7.0 REPORTING

**7.1** Records for checking the accuracy of the Oakton pH/CON 300 meter (where applicable) will include:

- Date
- Temperature probe checked
- Reference thermometer number
- Readings for reference thermometer and temperature probe being checked
- Adjustment made for difference in readings
- Initials of analyst

**7.2** Documentation for recorded data must include a minimum of the following:

- Date and time of analysis
- Signature or initials of person performing the measurement
- Thermometer ID number or instrument identification number/model
- Sample identification/station location
- Temperature of sample (including units and duplicate measurements) compensated for any difference with the reference thermometer if applicable
- Comments
- Records will be kept on file for at least 5-years.

## 8.0 TRAINING/QUALIFICATIONS

To properly perform temperature measurements, the analyst must be familiar with the calibration and measurement techniques stated in this SOP. The analyst must also be experienced in the operation of the meter.

Certain state certification programs require that temperature measurements in the field be taken by, or in the presence of, personnel that are qualified under the certification program.

## 9.0 REFERENCES

APHA-AWWA-WPCF. Standard Methods for the Examination of Water and Wastewater, 20th Edition. 1999.

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**STANDARD OPERATING PROCEDURE**

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| **NUMBER:** | DRAFT |
| **REVISION:** | 01 |
| **ISSUED:** | May 26, 2010 |
| **PAGE:** | 1 of 11 |

# CALIBRATION AND OPERATION OF THE LAMOTTE 2020 TURBIDIMETER

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## 1.0 Scope and Application

This procedure is applicable to the field measurement of turbidity in groundwater, drinking water, or surface water using the LaMotte 2020 turbidimeter. Turbidity is an expression of the optical property that causes light to be scattered or absorbed rather than transmitted in straight lines through a sample (the higher the intensity of scattered light, the higher the turbidity). Turbidity in water is caused by the presence of suspended matter such as clay, silt, finely divided organic and inorganic material, and microscopic organisms. Turbidity should not be confused with color, since a darkly colored water can still be clear and not turbid.

## 2.0 Summary of Method

The LaMotte 2020 turbidimeter is a portable, microprocessor controlled Nephelometer. The LaMotte 2020 turbidimeter measures scattered light in the sample at 90 degrees from the light source. A reference beam passes through the sample and is measured at 180 degrees from the light source. The ratio of these two readings is electronically converted to a turbidity measurement in nephelometric turbidity units (NTU). The light source for the LaMotte 2020 turbidimeter is a tungsten incandescent light bulb operated at 2,800 degrees Kelvin, and the light is detected by two silicon photo diodes (one at 90 degrees from the light source and one at 180 degrees from the light source). The multi-detector optical configuration assures long term stability and minimizes stray light and color interferences. All readings are determined by the process of signal averaging over a five second period, minimizing fluctuations in readings attributed to large particles and enabling rapid, repeatable measurements. A picture of the LaMotte 2020 turbidimeter is presented as Figure 2-1. A diagram illustrating how the LaMotte 2020 turbidimeter measures turbidity is presented as Figure 2-2.

The LaMotte 2020 turbidimeter is pre-calibrated by the manufacturer to a range of 0 to 1,100 NTU with AMCO™ primary standards. Recalibration of the LaMotte 2020 is not required by the user. However, a procedure to standardize the calibration is performed to obtain the most accurate readings over a narrow range using two AMCO™ standards of 1.00 NTU and 10.0 NTU, which are supplied with the LaMotte 2020.

For operation of the LaMotte 2020 turbidimeter, a sample is collected into the LaMotte 2020 turbidity vial. The vial is placed into the LaMotte 2020 sample chamber, the sample chamber is closed, and the READ button is pressed. A walking dash "—" is displayed while the LaMotte 2020 turbidimeter analyzes the sample. After five seconds, the turbidity in NTU is displayed.

## 3.0 Health and Safety Warnings

3.1 Refer to the site-specific heath and safety plan for cautions and health and safety procedures associated with the samples to be analyzed.

3.2 Caution should be taken when working with all chemicals. Refer to the Material Safety Data Sheets (MSDSs) for the chemicals to be used. The MSDSs are located in the site-specific health and safety plan.




**Figure 2-1. The LaMotte 2020 Turbidimeter**

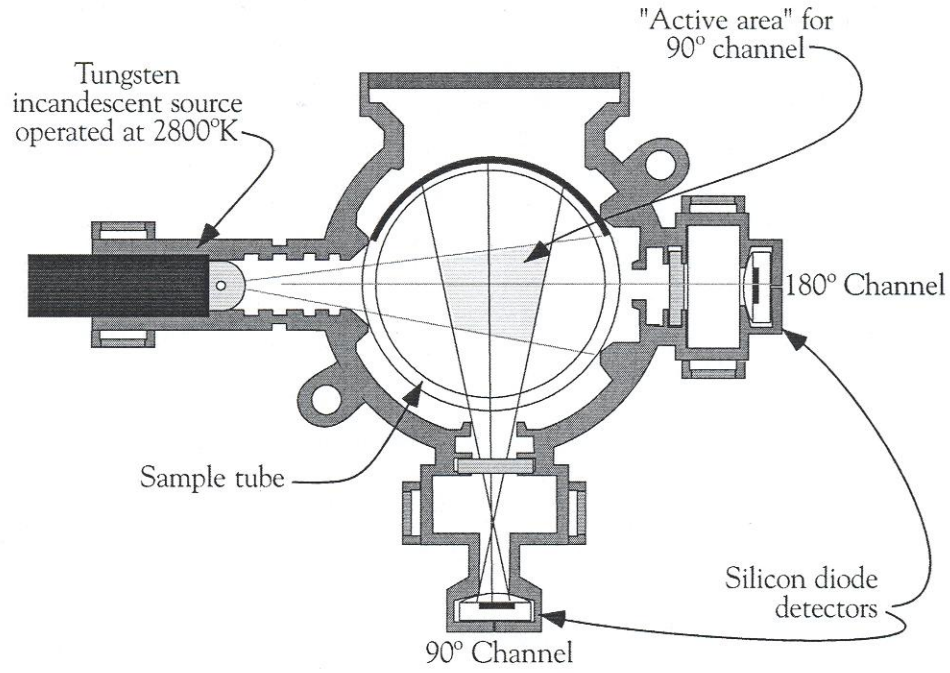


**Figure 2-2. How the LaMotte 2020 measures turbidity**

3.3 The LaMotte 2020 turbidimeter should not be stored or used in a wet or corrosive environment. Care should be taken to prevent water from wet turbidity tubes from entering the turbidimeter light chamber. NEVER PUT WET TURBIDITY TUBES IN THE TURBIDIMETER.

3.4 If operating the LaMotte 2020 turbidimeter in an environment where the temperature is less than or equal to 0° C, be sure to remove the turbidity standards from the LaMotte 2020 turbidimeter case, as the standards will freeze and crack the turbidity vials if exposed to temperatures less than or equal to 0° C.

**4.0 Interferences**

4.1 The presence of floating debris, coarse sediments, or air bubbles will cause high readings.

4.2 The presence of light absorbing materials (such as activated carbon) will cause low readings.

4.3 Excessive color in a sample will absorb light and cause high readings. If the turbidity readings appear to be biased high due to excessive color in the sample, use professional judgment when interpreting the turbidity results. This should be noted on the monitoring well worksheet or the field logbook.

4.4 Extreme care should be taken when handling the turbidity standards or the turbidity vial, as surface scratches or finger smudges will cause analytical errors. Handle these items by the top only.

4.5 Do not shake or freeze samples or turbidity standards.

4.6 Do not operate the LaMotte 2020 turbidimeter near electric motors. The electric field created by electric motors can affect turbidity readings on the LaMotte 2020 turbidimeter.

4.7 The LaMotte 2020 turbidimeter should be placed on a surface free from vibration. Vibrations can cause high turbidity readings on the LaMotte 2020 turbidimeter.

## 5.0 Personnel Qualifications

All field samplers are required to take the 40-hour OSHA Hazardous Waste Operations training course and annual 8-hour refresher training prior to engaging in any field collection activities. Prior to the implementation of this SOP, all field samplers will be instructed by a person experienced with the LaMotte 2020 turbidimeter and this SOP. All field samplers must demonstrate to the field team leader and/or Project Chemist the proper procedures for calibration and operation of the LaMotte 2020 turbidimeter prior to sample analysis.

## 6.0 Equipment and Supplies

- Copy of the Health and Safety Plan and Sampling and Analysis Plan
- LaMotte 2020 turbidimeter
- LaMotte 2020 turbidimeter turbidity tubes
- AMCO™ 1.00 NTU and 10.0 NTU turbidity standards
- Kimwipes® Absorbent Wipes
- Backup 9-volt battery
- Deionized, ultra-filtered (DIUF) water
- Turbidity free water
- ¾" circular stickers
- thermometer

## 7.0 Procedure

7.1 Setting the Operating Mode

The LaMotte 2020 turbidity meter has two operating modes: standard operating mode and EPA mode. The standard operating mode displays the measured turbidity to the full resolution of the instrument. The EPA mode displays the measured turbidity rounded to the reporting requirements of the EPA and Standard Methods compliance monitoring programs. Operating in EPA mode eliminates the need for the user to manually round off turbidity results according to EPA specifications. The EPA requires these reporting requirements because it recognizes the inherent accuracy limitations of turbidity measurements within the specified ranges.

The LaMotte 2020 turbidity meter can only be switched from one mode to the other while turning the instrument on from the off state. The LaMotte 2020 turbidity meter will remain in which ever mode it was last used, even if the meter has been turned off. To switch from one mode to the other, perform the following procedure:

7.1.1 Turn off the LaMotte 2020 turbidimeter if it is on.

7.1.2 Press the **CAL** button and hold it down while pressing the **READ** button to turn the LaMotte 2020 turbidimeter on.

7.1.3 The LaMotte 2020 turbidimeter will come on in the opposite mode than it was in previously. If the LaMotte 2020 is in EPA mode, an up arrow (▲) will be visible in the upper left hand corner of the instrument display.

7.2 Calibration of the Turbidity Tubes

If the LaMotte 2020 is supplied by a rental agency (e.g. U.S. Environmental, Pine Environmental), calibration of the turbidity tubes is usually not needed, as this procedure is performed by the rental agency and the turbidity tube with the lowest reading is usually supplied with the turbidimeter. If the LaMotte 2020 turbidimeter is purchased, or if this step was not performed by the rental agency and more than one turbidity vial is provided with the LaMotte 2020, perform the following procedure.

7.2.1 Record the ambient temperature.

7.2.2 Allow the calibration standards to equilibrate to ambient temperature.

7.2.3 Fill each turbidity tube with DIUF water.

7.2.4 Analyze and record the turbidity reading for each turbidity tube according to the procedures presented in Section 7.4.

7.2.5 Mark the tube with the lowest turbidity reading by placing a ¾" circular sticker on the top of the lid of the tube and writing an "R" on the sticker for reference tube.

7.2.6 Follow the calibration procedures presented in Section 7.3, using the reference turbidity tube and the 1.00 NTU or 10.0 NTU AMCO™ standard.

7.2.7 Fill the remaining turbidity tubes with the same AMCO™ standard as in the reference turbidity tube.

7.2.8 Analyze and record the turbidity reading for each tube according to the procedures presented in Section 7.3.

7.2.9 The difference between the true value of the AMCO™ standard (1.00 NTU or 10.0 NTU) and the value produced when the turbidity tube with the AMCO™ standard is analyzed is the correction

factor for that tube. Place a ¾' circular sticker on the top of the lid of the turbidity tube and write the correction factor on the sticker. This correction factor should be used when comparing results from different tubes.

In most cases, comparison of results from different tubes is not necessary, and only steps 7.2.1 through 7.2.3 need to be performed in order to determine which turbidity tube produces the lowest reading.

7.3 Calibration of the LaMotte 2020 Turbidimeter

7.3.1 Record the ambient temperature.

7.3.2 Allow the calibration standards to equilibrate to ambient temperature.

7.3.3 Select the AMCO™ standards (1.00 NTU or 10.0 NTU) in the range of the samples to be tested. In most cases this will be the 10.0 NTU standard.

7.3.4 Fill the reference turbidity tube (see section 7.2) with the standard, cap the reference turbidity tube, and wipe the reference turbidity tube with a Kimwipe®. **NOTE:** If the LaMotte 2020 Turbidimeter is provided by a rental agency, the rental agency will most likely supply the two AMCO™ standards in capped turbidity tubes that are dedicated to each standard. Therefore, pouring of the AMCO™ standard into the reference turbidity tube is not necessary.

7.3.5 Open the lid on the LaMotte 2020 turbidimeter. Align the indexing arrow on the turbidity tube with the indexing arrow just below the sample chamber on the LaMotte 2020 turbidimeter (see Figure 7-1), and insert the turbidity tube into the sample chamber.

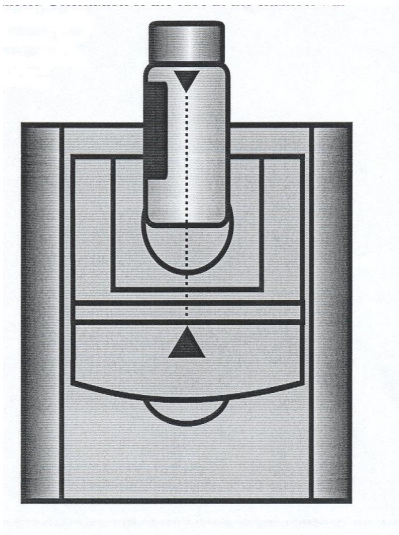

**Figure 7-1 Aligning the Index Arrows on the Turbidity Tube and the LaMotte 2020 Turbidimeter**

7.3.6 Close the lid on the LaMotte 2020 turbidimeter and press the **READ** button. The turbidity in NTU will be displayed in five seconds. If the displayed value is within +/- 5% of the true value of the AMCO™ standard, record the reading on the turbidity calibration log sheet, and indicate in the comments column of the turbidity calibration log sheet that the reading was obtained through a calibration check, and the LaMotte 2020 turbidimeter did not require calibration. If the displayed value is not within +/- 5%of the true value of the AMCO™ standard, continue with the calibration procedure.

7.3.7 Push the **CAL** button for five seconds until **CAL** is displayed on the LaMotte 2020 turbidimeter, and release the **CAL** button. The display will flash the reading obtained in step 7.3.6.

7.3.8 Adjust the display with the ▲ or ▼ buttons until the true value of the AMCO™ standard is displayed on the LaMotte 2020 turbidimeter.

7.3.9 Push the **CAL** button again to memorize the calibration. The LaMotte 2020 turbidimeter display will stop flashing, indicating that calibration is complete. Press the **READ** button again to verify that the calibration is acceptable. If the reading is not within +/- 5% of the true value of the AMCO™ standard, the LaMotte 2020 turbidimeter must be recalibrated by repeating steps 7.3.1 through 7.3.9.

7.3.10 Once an acceptable calibration check has been performed, record the reading on the turbidity calibration log sheet, and indicate in the comments column of the turbidity calibration log sheet that the reading was a calibration check obtained following calibration.

7.3.11 Repeat the calibration check using a second standard to bracket the expected values. For low-flow groundwater sampling, deionized ultra-filtered water (0.00 NTU) should be used unless elevated turbidity is expected. Repeat steps 7.3.4 and 7.3.6. The value should be within ± 0.10 NTU. If criteria are not met, check the cleanliness of the tube, check the standard for air bubbles, and repeat the check. If the error cannot be corrected, recalibrate, or use another meter.

7.4 Sample Analysis

7.4.1 Rinse an empty turbidity tube with a portion of the sample, and shake out the excess sample water.

7.4.2 Fill the reference turbidity tube to the neck. The turbidity tube should be filled in a manner such that the sample water is entering the turbidity tube down the side of the turbidity tube to avoid creating bubbles.

7.4.4 Cap the turbidity tube and wipe the turbidity tube dry with a clean Kimwipe®.

7.4.5 Gently mix the sample by inverting the turbidity tube. Be careful not to introduce any bubbles into the turbidity vial.

7.4.6 Open the lid on the LaMotte 2020 turbidimeter. Align the indexing arrow on the turbidity tube with the indexing arrow just below the sample chamber on the LaMotte 2020 turbidimeter (see Figure 7-1), and insert the turbidity tube into the sample chamber.

7.4.7 Close the lid on the LaMotte 2020 turbidimeter and press the **READ** button. The turbidity in NTU will be displayed in five seconds.

7.4.8 Use a graduated cylinder and turbidity free water to dilute any sample that is over 1,100 NTU, such that the reading falls within the LaMotte 2020 turbidimeter's calibrated range (0 to 1,100 NTU). Calculate final turbidity according to the following formula:

*Turbidity (NTU) = sample_reading x dilution_factor*

Record the results on the monitoring well worksheet or the field logbook.

7.4.9 The LaMotte 2020 turbidimeter will turn off automatically two minutes after the last button push. To turn the LaMotte 2020 turbidimeter off manually, press and hold the **READ** button for at least one second. Release the **READ** button when "0FF" is displayed.

## 8.0 Data and Records Management

All calibration/calibration check information must be documented on the turbidity calibration log sheet. An example turbidity calibration log sheet is presented in Attachment A. All sample data and relevant information (e.g. sample collection method used) must be documented on field data sheets (e.g. groundwater monitoring worksheets, surface water sampling worksheets) or within site log books with permanent ink. Data recorded will include the following:

- Instrument make, model, and serial number
- Date, time, and results of instrument calibration and calibration checks
- Deviations from the procedure as written
- Readings obtained, including any dilutions

## 9.0 Quality Control and Quality Assurance

9.1 The LaMotte 2020 turbidimeter will be calibrated at the start of each day of sample analysis according to the procedures described in Section 7.3. If a parameter is measured that lies outside of the range bracketed by the instrument calibration standards, the instrument must either be recalibrated using standards that bracket the value or a calibration check using a standard that brackets the value must be performed. If the standards are not available to bracket the result, the data must be qualified.

9.2 Readings measured by instruments that are subsequently found to be outside of criteria during the calibration check shall be documented on the sampling worksheet used to document the sample collection.

9.3 If the LaMotte 2020 turbidimeter is being used in fieldwork (e.g. groundwater sampling or surface water sampling), the calibration will be checked each day prior to calibration, immediately after calibration (if calibration is required as described in Section 7.3), and at the end of each day using the same AMCO™ standard as was used for calibration. The reading must be within +/- 5% of the true value (± 0.10 NTU for the zero standard). If this criteria is not met, the source of the problem must be identified and corrected, or another turbidimeter must be used.

9.4 If the LaMotte 2020 turbidimeter is being used in a field laboratory setting (e.g. pilot groundwater treatability study), the calibration will be checked each day prior to calibration, immediately after calibration (if calibration is required as described in Section 7.3), at the midpoint of each day, and at the end of each day using the same AMCO™ standard as was used for calibration. The reading must be within +/- 5% of the true value. If this criteria is not met, the source of the problem must be identified and corrected, or another turbidimeter must be used.

## 10.0 Troubleshooting and Maintenance

The LaMotte 2020 turbidimeter is not designed for field service with the exception of battery replacement. See the Instructions Manual presented in Attachment B for detailed descriptions of troubleshooting and maintenance procedures. Some common troubleshooting and maintenance procedures are presented below.

10.1 "BAT" is displayed – The battery is low and needs to be changed.

10.1.1 Open the battery compartment lid on the bottom of the LaMotte 2020 turbidimeter

10.1.2 Remove the 9-volt battery from the battery compartment, disconnect and remove the 9-volt battery from the polarized plug

10.1.3 Carefully connect a new 9-volt battery to the polarized plug and insert it into the battery compartment.

10.1.4 Close the battery compartment lid.

10.2 "ER1" is displayed – The battery is very low and needs to be changed immediately. **Operating the LaMotte 2020 turbidimeter with a very low battery could result in permanent erasure of the factory calibration. Change the battery according to the procedures outlined in steps 10.1.1 through 10.1.4 immediately.**

10.3 "ER2" is displayed – The sample result is above the calibration range (>1,100 NTU). Dilute the sample with turbidity free water and reanalyze.

10.4 "ER3" is displayed – The tungsten incandescent light bulb is misaligned or burnt out. Call LaMotte for procedures on returning the instrument to the manufacturer.

## 11.0 References

LaMotte Company, 2004. *LaMotte 2020 Turbidimeter Instruction Manual,* August.

U.S. Environmental Protection Agency Region I (U.S. EPA-NE). 2010. *Calibration of Field Instruments (temperature, pH, dissolved oxygen, conductivity/specific conductivity, oxidation/reduction potential [ORP], and turbidity), Revision Number 2*. January 19.

Attachment A

Attachment B

AECOM

**STANDARD OPERATING PROCEDURE**

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| **NUMBER:** | DRAFT |
| **REVISION:** | 01 |
| **ISSUED:** | May 26, 2010 |
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# CALIBRATION AND OPERATION OF YSI 6-SERIES WATER QUALITY METER FOR TEMPERATURE, PH, DISSOLVED OXYGEN, CONDUCTIVITY AND OXIDATION REDUCTION POTENTIAL

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**Approved by:** _____ **Date:** _____
Anne M. Salazar // Manager

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Attachment: Calibration Log

## 1.0 Scope and Application

The purpose of this standard operating procedure (SOP) is provide a framework for calibrating sondes used to measure water quality parameters for ground water and surface water. Water quality parameters include temperature, pH, dissolved oxygen, conductivity/specific conductance, and oxidation reduction potential. Turbidity must not be measured using the portable water quality meters since the method used by the YSI and other models for turbidity measurement may not be approved for use by EPA, and because the flow-through cell acts as a sediment trap. A separate meter which uses EPA Method 180.1 or Standard Method 3130 B to measure turbidity must be used.

This SOP is written specifically for the YSI model 6-Series Sondes (which include the 600R, 600XL, 600XLM, 6820, 6920 and 6600 models), and the YSI 650 MDS (Multi parameter Display System) display/logger. Note that the YSI 6820 is the equipment model typically used. The general calibration processes discussed herein are applicable to other manufactures sondes and displays/loggers. Consult the manufacturer's instruction manuals for specific procedures.

## 2.0 Summary of Method

This SOP describes the process for calibration using YSI Model 6-Series Sondes for water quality field measurements.

## 3.0 Health and Safety Warnings

3.1 All proper personal protection clothing and equipment is to be worn.

3.2 The standard solutions for calibrating conductivity contain iodine, potassium chloride and propanol. When using the standards, avoid inhalation, skin contact, eye contact or ingestion. If skin contact occurs, remove contaminated clothing immediately. Wash the affected areas thoroughly with large amounts of water. If inhalation, eye contact or ingestion occurs, consult the Material Data Safety Sheets (MSDS) for prompt action, and in all cases seek medical attention immediately.

3.3 All standard solutions for calibration pH contain the following chemicals:

- pH 4 Solutions: potassium hydrogen phthalate, formaldehyde, water
- pH 7 Solutions: sodium phosphate (dibasic), potassium phosphate (monobasic), water
- pH 10 Solutions: potassium borate (tetra), potassium carbonate, potassium hydroxide, sodium diethylenediamine tetraacetate, water

Avoid inhalation, skin contact, eye contact and ingestion. If skin contact occurs remove contaminated clothing immediately. Wash the affected areas thoroughly with large amounts of water. If inhalation, eye contact or ingestion occurs, consult the MSDS for prompt action, and in all cases seek medical attention immediately.

3.4 Standard solutions for calibration of oxidation reduction potential (ORP) contain the following chemicals:

- potassium ferrocyanide trihydrate

- potassium ferrocyanide
- potassium chloride

Avoid inhalation, skin contact, eye contact, and ingestion. Avoid combining with the pH buffers and with any acids since cyanide may be released. Isolate the ORP solution. Do not dispose with other calibration solutions. If skin contact occurs, wash affected areas thoroughly with large amounts of water. Consult the Health and Safety Plan, and the MSDSs therein.

3.5 Standard solutions for calibration of dissolved oxygen contain sodium sulfite, cobalt chloride, manganese sulfate, alkali-iodide-azide, sulfuric acid, starch solution and sodium thiosulfate. Avoid inhalation, skin contact, eye contact, and ingestion. If skin contact occurs, wash affected areas thoroughly with large amounts of water. Consult the Health and Safety Plan, and the MSDSs therein.

## 4.0 Interferences

4.1 Each of the parameters measured with this procedure is subject to various interferences including cross-contamination, turbidity, aeration, and temperature fluctuations. Care must be taken to ensure that the instrument remains in a stable, controlled environment throughout the calibration and monitoring process; and that the conditions under which the samples are analyzed are the same as those under which calibration is conducted.

4.2 There must be no air bubbles lodged between the probe and probe guard.

4.3 All standards should be stored according to manufacturers' instructions.

## 5.0 Personnel Qualifications

5.1 All field samplers are required to take the 40-hour OSHA health and safety training course and annual 8-hour refresher courses prior to engaging in any field collection activities.

5.2 Prior to implementation of this procedure, the field sampler will be instructed by a person experienced with these procedures and will demonstrate to the field team leader the proper set-up, calibration, operation, and routine maintenance of the hand-held equipment, as well as an understanding of this procedure.

## 6.0 Equipment and Supplies

- Copy of the instrument manual and instrument specifications
- Copy of the project Health and Safety Plan and Sampling and Analysis Plan
- Thermometer (with NIST trace)
- pH Buffers of 4, 7, and 10
- Conductivity standards (concentration dependent upon expected field conditions)
- Zobell ORP calibration standard
- Zero Dissolved Oxygen Solution
- Deionized Ultra-Filtered (DIUF) Water

- YSI Sonde with attached pH, Conductivity, Dissolved Oxygen, and ORP probes with clear flow-through cell
- YSI 650 MDS Multiparameter Display System
- Sonde communications cable
- Winkler DO Kit
- Ring stand or similar capable of holding the sonde and flow-through cell upright during low-flow groundwater sampling
- Kimwipes or equivalent
- Gallon-size plastic freezer bags (e.g. Ziploc) to protect the MDS and the top of the Sonde from rain

## 7.0 Procedure

All instrument probes must be calibrated before they are used to measure environmental samples, and the calibration should be checked at the end of the sampling day or if any anomalous readings are obtained. All results should be recorded on the YSI Water Quality Calibration Log Sheet, presented in Attachment 1.

### 7.1 Set-up

7.1.1 Before performing any calibration procedure the sonde and display/logger must warm-up for at least 15 minutes.

7.1.2 During the warm-up period, set the sonde up on a ring stand.

7.1.3 Prior to calibration, all instrument probes on the sonde must be cleaned according to the manufacturer's instructions. Failure to perform this step can lead to erratic measurements. The probes must also be cleaned by rinsing with deionized water before and after immersing the probe in a calibration solution.

7.1.4 Check the calibration solutions for expiration dates and do not use expired standards.

7.1.5 The temperature of the standards should be as close to the temperature of the samples to be measured as is practical.

7.1.6 For each of the calibration solutions, provide enough volume so that the probe and the temperature sensor are sufficiently covered. Specific detail on the volume required for each sonde and calibration solution is provided on pages 2-29 and 2-30 of the YSI 6-Series Instrument Manual.

7.1.7 Check the display/logger to determine the battery level in the display/logger to see if new batteries are necessary.

7.1.8 Set up instrument display so that the following items are displayed:

- DO (%)
- ORP (mV)

- DO (mg/L)
- Cond. (µs/cm)
- Sp. Cond. (µs/cm)
- pH (Standard Units [S.U.])
- Temperature (°C)

7.2 Temperature

For instrument probes that rely on the temperature sensor (pH, dissolved oxygen/specific conductance, and ORP), the sonde temperature sensor needs to be checked for accuracy against a thermometer that is traceable to the National Institute of Standards and Technology (NIST). This accuracy check should be performed at least quarterly, and the date and results of the check kept with the instrument. Temperature checks will be checked by the rental company for rented units, and by the M&E equipment manager for M&E-owned units. Prior to mobilizing, obtain the date and results of the check from the equipment room manager or check the outside of the case for rental units. If the check has not been performed within the past three months, do not use the instrument. Document the date, results, and company that performed the check on the calibration log sheet or in the field logbook. In the event that verification is required, the procedure is presented below:

7.2.1 Fill a container with water and adjust the water temperature to a temperature below the temperature of the samples to be measured.

7.2.2 Place a thermometer that is traceable to the NIST into the water and wait for both temperature readings to stabilize.

7.2.3 Compare the two measurements. The instrument's temperature sensor must agree with the reference thermometer within the accuracy of the sensor (+/- 0.2°C). If the measurements do not agree, the instrument may not be working correctly and the manufacturer should be contacted.

7.2.4 Repeat the procedure using a container of water that has a temperature above that anticipated for the samples to be measured.

7.3 Dissolved Oxygen

Dissolved oxygen (DO) content in water is measured using a membrane electrode. The DO probe's membrane and electrolyte solution should be inspected for any damage or air bubbles prior to calibration. If air bubbles, nicks, or damage are present, replace the membrane according to manufacturer's suggestions. After changing the membrane, it is preferable to wait 12 hours before use to allow the membrane to equilibrate. If this is not possible, note this in the calibration log. YSI 6-Series DO probe be must calibrated using the calibration cup provided with the sonde. Calibration of the DO probe requires inputting the current barometric pressure. The YSI 650 display/logger has a barometer within the unit and automatically provides this during the calibration procedure. The barometric pressure for all units onsite should be checked for agreement between units, or checked using the onsite barometer. Other display/loggers do not supply the barometric pressure, and this must be obtained from an onsite barometer. Do not use barometric pressure obtained from meteorology reports as these are usually corrected to mean sea level.

Calibration is performed using 100% saturated air, and checked immediately after with a solution with zero dissolved oxygen. The calibration check at the end of the day uses both 100% saturated air and the zero dissolved oxygen solution. In addition, on a weekly basis when the meter is in use, compare DO concentrations measured by the probe to those measured using the Winkler method.

7.3.1 DO Calibration

7.3.1.1 Gently dry the temperature sensor and remove any water droplets from the DO probe's sensor membrane according to the manufacturer's instructions. Note that the evaporation of moisture on the temperature sensor or DO probe may influence the readings during calibration.

7.3.1.2 Place a small amount of water (<1/8") in the bottom of the calibration cup. Engage only one thread of the calibration cap onto the sonde so that the DO probe is readily vented to the atmosphere. Take care to avoid touching the oxygen membrane with the calibration cups and flow-cell. The DO probe and thermistor must not be in contact with the water. Keep the instrument in run mode and wait approximately 15 minutes for the air in the calibration cup to become water-saturated (100% humidity at atmospheric pressure) and the temperature to equilibrate. Set up the remaining instruments and solutions in the meantime.

7.3.1.3 When the temperature has stabilized, go to Calibrate mode - **Calibrate DO%**

7.3.1.4 Record the temperature on the calibration log. Check the barometric pressure reading on the YSI versus the barometer and other YSIs present. Enter the barometric pressure if correction is necessary. Record the barometric pressure on the calibration log. (Note: barometric pressures presented in meteorological reports are generally corrected to mean sea level. These are not useful for calibrating the sonde, which requires uncorrected barometric pressure).

7.3.1.5 When the DO% and temperature readings have stabilized for at least one minute, press **enter**. Record the number that appears on the screen. Record also the DO mg/L value.

7.3.1.6 Check the oxygen solubility at that pressure and temperature on Table 1 and record under "Std temp/pressure correction." The instrument DO reading should be comparable with the value on the table (within $\pm$0.2 mg/L). If not, recalibrate, or replace DO membrane.

7.3.1.7 Make up the zero DO solution by filling the calibration cap with DI water, adding approximately 1 gram of sodium sulfite to supersaturate the solution. Add a few crystals of the cobalt chloride (purple salt) and stir. There should be solids on the bottom of the cap. Screw the cap tightly onto the YSI. Water should leak out to indicate that there is no air around the probes. An open disposable sample cup may be used in place of the

calibration cap, however if check criteria are not met, the procedure must be repeated using the calibration cap as described.

7.3.1.8 Immediately after calibration, if the DO is ≤ 0.50 mg/L and ≥ 0.00 mg/L, record the value on the calibration log. If the number stabilizes at a value > 0.50 mg/L, or reads negative, and an open cup was used, repeat the procedure with the closed calibration cup. If an open cup was not used, change the DO membrane and repeat the calibration and check.

7.3.1.9 Remove the cap, and rinse the probes well with DI water. Blot the probes dry, carefully avoiding the DO membrane.

7.3.2 DO End-of-Day Check

7.3.2.1 Perform the calibration check using the 100% saturated standard.

7.3.2.1.1.1 Follow Steps 7.3.1.1 and 7.3.1.2.

7.3.2.1.1.2 Allow the DO% and temperature readings to stabilized for at least one minute. Record the number that appears on the screen. Record also the DO mg/L value.

7.3.2.1.1.3 Check the oxygen solubility at that pressure and temperature on the attached table and record under “Std temp/pressure correction.” The instrument DO reading should be comparable with the value on the table (within ±0.5 mg/L).

7.3.2.2 Perform the calibration check using the zero dissolved oxygen standard.

7.3.2.2.1.1 Follow Step 7.3.1.7.

7.3.2.2.1.2 The DO should be ≤ 0.5 mg/L, but not negative. If the DO is above criteria, make up a new zero DO standard and used a closed calibration cap if an open cup was used. Repeat the calibration check. If criteria are still not met, note the failed criteria and the readings that are impacted.

7.3.3 Winkler Method

7.3.3.1 Fill a 300-mL glass stoppered BOD bottle with sample water. Remember no bubbles.

7.3.3.2 Immediately add 2mL of manganese sulfate to the collection bottle by inserting the calibrated pipette just below the surface of the liquid. (If the reagent is added above the sample surface, you will introduce oxygen into the sample.) Squeeze the pipette slowly so no bubbles are introduced via the pipette.

7.3.3.3 Add 2 mL of alkali-iodide-azide reagent in the same manner.

7.3.3.4 topper the bottle with care to be sure no air is introduced. Mix the sample by inverting several times. Check for air bubbles; discard the sample and start over if any are seen. If oxygen is present, a brownish-orange cloud of precipitate or floc will appear. When this floc has settle to the bottom, mix the sample by turning it upside down several times and let it settle again.

7.3.3.5 Add 2 mL of concentrated sulfuric acid via a pipette held just above the surface of the sample. Carefully stopper and invert several times to dissolve the floc. At this point, the sample is "fixed" and can be stored for up to 8 hours if kept in a cool, dark place. As an added precaution, squirt distilled water along the stopper, and cap the bottle with aluminum foil and a rubber band during the storage period.

7.3.3.6 In a glass flask, titrate 201 mL of the sample with sodium thiosulfate to a pale straw color. Titrate by slowly dropping titrant solution from a calibrated pipette into the flask and continually stirring or swirling the sample water.

7.3.3.7 Add 2 mL of starch solution so a blue color forms.

7.3.3.8 Continue slowly titrating until the sample turns clear. As this experiment reaches the endpoint, it will take only one drop of the titrant to eliminate the blue color. Be especially careful that each drop is fully mixed into the sample before adding the next. It is sometimes helpful to hold the flask up to a white sheet of paper to check for absence of the blue color.

7.3.3.9 The concentration of dissolved oxygen in the sample is equivalent to the number of milliliters of titrant used. Each milliliter of sodium thiosulfate added in steps 6 and 8 equals 1 mg/L dissolved oxygen.

## 7.4 pH

The pH of a sample is determined electrometrically using a glass electrode. Choose the appropriate standards that will bracket the expected values at the sampling locations. A two or three-point calibration can be performed. Typically, a three-point calibration using standards pH 4, pH 7, and pH 10 will be required. A calibration check is performed immediately after calibration using the pH 7 standard and a criterion of ±0.05 S.U. A calibration check is also performed at the end of the day using the pH 7 standard and a criteria of 0.2 S.U..

### 7.4.1 pH Calibration

7.4.1.1 Allow the buffered samples to equilibrate to the ambient temperature.

7.4.1.2 Remove the calibration cap and clean all of the probes on the sonde with deionized water. Begin with pH 7. Wipe with Kimwipe and immerse all the probes except the DO probe in the 7 pH solution. Place enough pH 7 solution in the calibration cup to immerse the pH probe, reference junction, and thermistor. Return to **calibration mode**.

7.4.1.3 Scroll to pH on the calibration menu. Select **3-pt calibration**.

7.4.1.4 Enter the pH value based on the solution temperature when prompted for the first value, and press **enter**. The pH value adjusted for temperature is presented on the label of the buffer solution.

7.4.1.5 When value is stable for approximately 30 seconds, press **enter**, and record the number that appears on the screen. The display will indicate that the calibration has been accepted and will prompt the analyst to enter a second pH value.

7.4.1.6 Remove probes from solution. Rinse with DI water, wipe carefully, and put all probes in solution pH 4. Make sure that there is enough pH 4 buffer to immerse the pH probe, reference junction, and thermistor.

7.4.1.7 Enter the pH value based on the solution temperature when prompted for the second pH solution, press **enter**.

7.4.1.8 Allow at least one minute for temperature equilibration. When value is stable for at least 30 seconds, press **enter**, and record the number that appears on the screen.

7.4.1.9 Repeat steps 5, 6, and 7 for the pH 10 solution.

7.4.1.10 Press **enter** or **esc** to go to calibration menu.

7.4.1.11 Go to the run mode to perform a calibration check of the pH 7 solution. Rinse the probe and immerse in pH 7 solution. The reading should be within ± 0.05 pH units of the pH value adjusted for temperature. If not, recalibrate. Record the reading.

7.4.2 pH End-of-Day Check

7.4.2.1 Go to the run mode to perform a calibration check of the pH 7 solution.

7.4.2.2 Rinse the probe and immerse in pH 7 solution. Record the reading. The reading should be within ± 0.2 pH units of the pH value adjusted for temperature.

7.4.2.3 If not, record on the measurements impacted that the pH calibration check criterion was not met.

7.5 Conductivity

Conductivity is used to measure the ability of an aqueous solution to carry an electrical current. Specific conductance is the conductivity value corrected to 25°C. Note that the pH buffers are highly conductive and will adversely impact calibration of conductivity. Thoroughly rinse the probes after performing pH calibration, and then pre-rinse the probe with the conductivity solution to be used.

EPA recommends that conductivity be calibrated using standards that bracket the range of concentrations expected. Conductivities in groundwater frequently range below 1,000 µS/cm; however YSI does not recommend calibration with standards below 1,000 µS/cm because interference with the instrument from outside electrical noise (RF) may be a factor. Since the calibration for conductivity is a 1-point calibration, and expected conductivities will generally be less than 1,000 µS/cm, calibrate with the 1,000 µS/cm standard, and perform a check with a lower conductivity solution to bracket the range (e.g. 100 µS/cm). If an alternative check concentration is required to bracket the expected concentrations of site samples, the alternative concentration will be specified in the site-specific QAPP.

7.5.1 Conductivity Calibration

7.5.1.1 Allow the calibration standards to equilibrate to the ambient temperature.

7.5.1.2 Carefully rinse the probes in DIUF, then in the first conductivity solution to be used.

7.5.1.3 Immerse all probes except the DO probe completely in the conductivity calibration solution. Make sure that the thermistor is immersed, and the conductivity cell is immersed past the vent hole. Gently tap the side of the calibration cup to dislodge any air bubbles trapped inside the cell.

7.5.1.4 Scroll to **conductivity** on the screen, then select **specific conductance**. Select calibrate to **µS/cm**. Enter the conductivity value for the standard at 25ºC in µS/cm, which is the same as the specific conductance for the standard

7.5.1.5 Press **enter** and wait for the readings to stabilize. Press **enter**. Record the readings for specific conductivity in the calibration log. Do not exit conductivity.

7.5.1.6 **Do not** indicate “accept” when the calibration indicates “Out of Range.” Possible causes are incorrect entry, low level of solution, bubbles, or a bad probe. Attempt to recalibrate. If the problem persists, use another instrument. Return the instrument to the vendor or equipment room.

7.5.1.7 Perform a check of the calibration. Remove the probes from the solution. Rinse with the next conductivity solution. Immerse all probes except DO in the conductivity calibration solution. Allow the number to stabilize and record the values for specific conductivity in the calibration log. If the specific conductivity result is not within 5% of the value on the bottle, recalibrate. Remove probes from solution and rinse with DI water. Wipe dry.

7.5.2 Conductivity End-of-Day Check

7.5.2.1 Rinse the probes with the conductivity solution. Immerse all the probes except the DO probes in the conductivity calibration solution.

7.5.2.2 Allow the number to stabilize and record the values for conductivity and specific conductivity in the calibration log. If the specific conductivity result is not within 5% of the value on the bottle, note on the measurements obtained that the conductivity calibration check criteria were not met.

7.5.2.3 Remove the probes from solution and rinse with DI water. Wipe dry.

7.6 Oxidation Reduction Potential

ORP will be checked for accuracy, and will only be field calibrated if the calibration check fails criteria.

7.6.1 ORP Calibration

7.6.1.1 Switch to **run mode**. Gently mix the ORP solution and open the packet. Put all but the DO probe in the ORP solution. Allow to stabilize and record reading. If reading is not within ±10mV of the actual value corrected for temperature (see Table 2), proceed to 7.6.1.2.

7.6.1.2 Go to Calibration mode. Scroll to ORP and press **enter**. Enter ORP value (**corrected for temperature** - see above) and press **enter**. When the number is stable for 20 seconds, press **enter** and record the number. If instrument says "Out of Range," do not accept the value: Use a different instrument. If a different instrument is not available, record the number and note that it is not within limits.

7.6.2 ORP End-of-Day Check

7.6.2.1 Switch to **run mode**.

7.6.2.2 Gently mix the ORP solution and open the packet. Put all but the DO probe in the ORP solution.

7.6.2.3 Allow to stabilize and record reading. If reading is not within ±10mV of the actual value corrected for temperature (see table below), note on the measurements affected that the criterion for ORP check was not met.

7.7 Close up Instrument (After calibration and prior to mobilizing to the sampling location)

7.7.1 Replace clean cap over probes.

7.7.2 Select MDS Menu mode. Reset the parameters to the field sampling parameters:

- Time (24hr) – correct as needed
- pH (S.U.)
- specific conductivity (µs/cm)
- ORP (mV)
- Temperature (°C)
- DO (mg/L)

7.7.3 Shut off computer, and return to case

**8.0 Data and Records Management**

8.1 Calibration logsheets shall be used to document the details of instrument calibration and calibration checks.

8.2 The site logbook should be used to note when instrument calibration and instrument calibration checks were conducted, and should reference the calibration logsheets for details.

## 9.0 Quality Control and Quality Assurance

9.1 Quality Control Criteria are summarized in Table 2.

9.1.1 If a parameter is measured that lies outside of the range bracketed by the instrument calibration standards, the instrument must either be recalibrated using standards that bracket the value or a calibration check using a standard that brackets the value must be performed. If the standards are not available to bracket the result, the data must be qualified.

9.1.2 Readings measured by instruments that are subsequently found to be outside of criteria during the calibration check shall be documented on the sampling worksheet used to document the sample collection.

9.2 Pollution Prevention

9.2.1 Containers used to calibrate the probes shall be sized to use the smallest amount of standard possible but still accommodate all probes which need to be in the calibration solution such that they are adequately covered.

9.2.2 Conductivity and pH calibration solutions may be reused at the end of the day with caution if properly stored. However, a calibration check that reuses standard but does not meet criteria should be re-checked with fresh standard, and calibration should be conducted with fresh standards.

9.3 Waste Management

Unused calibration standards should be returned to the equipment room manager for proper disposal. Do not combine ORP standards with other standards since cyanide could be released.

## 10.0 References

State of Washington Department of Ecology. 2010. How to Measure Dissolved Oxygen. http://www.ecy.wa.gov/programs/wq/plants/management/joysmanual/4oxygen.html May 25.

U.S. Environmental Protection Agency Region I (U.S. EPA-NE). 2010. *Calibration of Field Instruments (temperature, pH, dissolved oxygen, conductivity/specific conductivity, oxidation/reduction potential [ORP], and turbidity), Revision Number 2*. January 19.

U.S. Environmental Protection Agency Region I (U.S. EPA-NE). 2002. *Standard Operating Procedure for Calibration and Field Measurement Procedures for the YSI Model 6-Series Sondes (Including: Temperature, pH, Specific Conductance, Turbidity, and Dissolved Oxygen), Revision I*. May 31.

U.S. Environmental Protection Agency Region I (U.S. EPA-NE). 2006. *Final QA Bulletin: Calibration of Dissolved Oxygen Meters, Revision 0*. February.

YSI, Inc. (YSI). 2010. 6-Series Multiparameter Water Quality Sondes: User Manual, www.ysi.com . May 25.

YSI, Inc. (YSI). 2002. *YSI Calibration Procedures: Profiling and Logging,* www.water-monitor.com . Dec 22.

**Table 1: Oxygen Solubility at Indicated Pressure (Source: 2010 EPA SOP for Calibration of Field Instruments)**

**Table 2: ORP Check Standard Readings (Source: YSI 3682 Zobell Solution Instructions)**

| Temperature, °C | 231 mV Standard Solution |
|---|---|
| -5 | 270.0 |
| 0 | 263.5 |
| 1 | 262.2 |
| 2 | 260.9 |
| 3 | 259.6 |
| 4 | 258.3 |
| 5 | 257.0 |
| 6 | 255.7 |
| 7 | 254.4 |
| 8 | 253.1 |
| 9 | 251.8 |
| 10 | 250.5 |
| 11 | 249.2 |
| 12 | 247.99 |
| 13 | 246.6 |
| 14 | 245.3 |
| 15 | 244.0 |
| 16 | 242.7 |
| 17 | 242.4 |
| 18 | 240.1 |
| 19 | 238.8 |
| 20 | 237.5 |
| 21 | 236.2 |
| 22 | 234.9 |
| 23 | 233.6 |
| 24 | 232.3 |
| **25** | **231.0** |
| 30 | 224.5 |

**Table 3: pH Values Adjusted for Temperature**
**For Use Only with**
**pH4 -- Fisher #SB-101-500**
**pH7 – Fisher #SB-107-500**
**pH10 – Fisher #SB-115-500**

**(Source: Fisher Scientific Standard Labels)**

| Temperature (° C) | pH 4 (S.U.) | pH 7 (S.U.) | pH 10 (S.U.) |
|---|---|---|---|
| 0 | 4.01 | 7.13 | 10.34 |
| 5 | 3.99 | 7.10 | 10.26 |
| 10 | 4.00 | 7.07 | 10.19 |
| 15 | 3.99 | 7.05 | 10.12 |
| 20 | 4.00 | 7.02 | 10.06 |
| 25 | 4.00 | 7.00 | 10.00 |
| 30 | 4.01 | 6.99 | 9.94 |
| 35 | 4.02 | 6.98 | 9.90 |

**Table 4: Quality Control Criteria**

| | Beginning of Activities | | | | End-of-Day | | | |
|---|---|---|---|---|---|---|---|---|
| | Calibration | | Calibration Check | | Calibration Check | | | |
| **Parameter** | **Standard** | **Criteria** | **Standard** | **Criteria** | **1st Standard** | **Criteria** | **2nd Standard** | **Criteria** |
| Temperature | NIST Thermometer | ± 0.2 °C | NA | NA | NA | NA | NA | NA |
| Dissolved Oxygen | 100 % Saturated | ± 0.2 mg/L | 0.0 mg/L | ≤ 0.5 mg/L, but ≥ 0.0 | 100% Sat | ± 0.5 mg/L | 0.0 mg/L | ≤ 0.5 mg/L, but ≥ 0.0 |
| pH | Bracket anticipated (pH 7, 4, 10) | NA | pH 7<br>Temp. adjusted value | ± 0.05 pH | pH 7<br>Temp. adjusted value | ± 0.2 pH | NA | NA |
| Specific Conductance | Bracket anticipated (≤ 1,000 µS/cm) | NA | Bracket anticipated | ± 5% | Same as for calibration | ± 5% | NA | NA |
| Oxidation-Reduction Potential | Only if check fails: 231 mV Zobell solution | NA | 231 mV Zobell solution | ± 10mV | 231 mV Zobell solution | ± 10mV | NA | NA |

**Attachment: YSI Water Quality Calibration Log**

**SOP NUMBER: 2600-150A**

# Operation/ Field Calibration of the Baseline BTX Model 1030A GC

**Date:** October 2004
**Revision Number:** 01
**Author:** Tony Sacco
**Discipline:** Air Toxics Monitoring

## 1.0 PURPOSE AND SCOPE

The purpose of this SOP is to provide a method for field personnel to operate and calibrate/ adjust the span response setting of the Baseline model 1030A gas chromatograph (GC) that is configured to speciate the BTX compounds benzene, toluene and the m, o, p-xylenes ( defined as Xylene).

This operation and calibration procedure assumes that the Model 1030A GC is installed in a real-time network where the analog output from each of the GC channels is sent to a Odessa Model 3260 data logger. The data logger converts the signals (0-10VDC) to engineering units. The engineering units are communicated to a desktop central computer by means of a telemetry system such as a spread spectrum or other wireless system

This SOP is intended for the use of individuals who have been trained in the task of calibration in general and in the calibration of this specific instrument, in particular.

## 2.0 RESPONSIBILITIES

**2.1** It is the responsibility of the project manager to make the proper training available to the qualified project field personnel.

**2.2** It is the responsibility of the project engineer to provide the training and guidance to field personnel prior to any field activity where this SOP is to be employed.

**2.3** It is the responsibility of the affected field personnel to read and understand this SOP and to also, read and understand the manufacturer's operation manual for the **Baseline, Model 1030A BTX Gas Chromatograph (GC)**.

## 3.0 REQUIRED MATERIALS

- Single pen strip chart recorder (0-10 VDC range) with the capability of a chart speed of 2 cm/min.
- Calibration gas mixture of benzene (approx. 1ppm), toluene (approx. 5 ppm), xylene (approx. 5 ppm).
- Electronic Calculator.
- Calibration form(s) (NJNG Calibration of Baseline GC).
- 10" adjustable wrench, 6" adjustable wrench.

- Laptop computer or data terminal (Optional).
- The manufacturer's operation manual for the Baseline, Model 1030A BTX Gas Chromatograph.

## 4.0 INSTRUMENT SPECIFICATIONS

- Dynamic Range: Benzene (0-2.00 ppm), Toluene (0-10.00 ppm), Xylene (0-10.00 ppm)
- Detection limits: 0.001 ppm, Benzene, Toluene, Xylene.
- Precision: 1% or 0.02 ppm
- Accuracy: +/- 1% of full scale
- Calibration: See section **6.0**
- Detector: PID 10.6 eV lamp
- Columns: packed
- Power: 115 VAC @ 60 Hz and 300 watts
- Operating conditions: 40-95 ºF (4-40 ºC); humidity, 10-85%, non-condensing.
- Carrier Gas: Helium containing <1ppm total hydrocarbons

## 5.0 CALIBRATION FREQUENCY

**5.1** A daily automatic span check is conducted for benzene, toluene and xylene. The span check is initiated through the data logger at each monitoring site and takes place during a time when there are no site activities.

**5.2** The site technician will conduct the following corrective actions on the basis of the nightly span checks results:

- **Routine QC Adjustment** ( section **6.0**)– if the span check error on any BTX channel is less than +/- 25% of full scale
- **QC Adjustment with Dynamic Calibration Verification** (section **7.0**) - if the span check error on any BTX channel is equal or greater than +/-25% of full scale

## 6.0 ROUTINE QC ADJUSTMENT

**6.1** Prior to going to the monitoring station that requires adjustment; fill out the top portion of the calibration data sheet "**Calibration of Baseline GC**". In order to determine the percent of Full Scale **(%FS)** that is expected for each of the compounds, use the following equation:

$$\%FS = \frac{cyl.ppm}{Span - ppm} \quad (100)$$

Where:

%FS = the expected % of full scale that is expected for the compound

*Cyl. ppm* = the concentration of the compound in the calibration gas cylinder (ppm). (**Note:** This information should be noted on a paper tag or a label directly on the cylinder bottle installed in the monitoring station.)

*Span-ppm* = the full-scale range of the GC for the compound (ppm). (See list below)

The Span-ppm for the BTX compounds are:

**Benzene = 2 ppm,**
**Toluene = 10 ppm**
**Xylene = 10 ppm.**

**6.2** Locate the monitoring station, verify that the Monitor System Unit # matches the station (site) # on the calibration data sheet or on the daily span check report.

**6.3** Verify the GC is in **Standby** mode, switch the display to the BTX channel required adjustment

**6.4** Un-lock the corresponding BTX channel potentiometer (pot), turn the pot clockwise or counter-clockwise until the display is equal to the corresponding expected value in % full scale (**D**) as indicated on the calibration data sheet. Go to Step 6.5. But if the pot has run out of adjustment, a coarse adjustment should be performed as follow:

**6.4.1** Adjust the pot to mid-scale ( 5.00), and then remove the cover of the GC chassis

**6.4.2** Locate the integrated control/output PCB inside the chassis, this PCB is mounted on the panel in the middle left hand side of the chassis and on the same side as the sample pump.

**6.4.3** Locate the 8 position DIP switches on the PCB. Record the current setting on calibration data sheet

**6.4.4** Turn on the next combination of switches to increase the effective gain ( refer to page 20 of the operation manual for the effective gain setting) (ie. Switch 4 on = effective gain X5, switches 5&6 on = effective gain X8.33, etc.)

**6.4.5** Repeat step **6.4** to fine tune the adjustment to the expected %of full scale.

**6.5** Lock the pot when the adjustment is complete and record the **After Cal** pot setting on the calibration data sheet

**6.6** Repeat step **6.4** and **6.5** for other BTX channels as necessary

**6.7** At the Main site, perform the following steps to activate the GC into speciation mode for analyzing the ambient sample and to reset the BTX integrated outputs to ambient condition.

**6.7.1** At the conclusion of a polling cycle press the **ESC** key of the computer terminal of the desktop PC (when the screen flashes several times) and the screen will display the **Main Menu** list.

**6.7.2** Select "**Communicate with DAU (SCADA)**" by using the arrow keys and move the cursor to appropriate box , Key in **X** and then press the **F1** key. Select the DAU # corresponding to the number on the shelter door of the GC that is to be calibrated (1-9) and press the **F1** key and then **F1** key again, the data logger responds with the specific DAU # indicating that it is in data collection mode and is logged in

**6.7.3** In data collection mode, key-in **A**; the data logger will respond with a sub-menu consisting of a listing of action items; enter a **1** ( start seq), when data logger prompts again; enter a **3** to activate sequence 3 of the data logger set up. (note: sequence 3 was designed to accomplish step **6.7** to reset the BTX integrated outputs to ambient conditions)

**6.8** Press **ESC** and **ESC** again to bring the desktop PC back to displaying the data screen.

**6.9** Press **Alt M** for a Marco screen , select " **Change Display to BTX and PM10**" Verify that when sequence **3** is complete, all BTX outputs are near ambient concentration levels.

**6.10** Press **Alt M** again for the Macro screen; select "**Change Display to TVOC and PM10** " to return monitor to the normal data display screen.

## 7.0 QC ADJUSTMENT WITH DYNAMIC CALIBRATION VERIFICATION

**7.1** Repeat steps **6.1** through **6.6**

**7.2** At the Main site, perform the following steps to activate the daily calibration sequence for the GC to verify the field QC adjustment.

**7.3** At the conclusion of a polling cycle on the desktop PC (when the screen flashes several times) and from data display screen, press the **ESC** key at the computer terminal and the screen will display the **Main Menu** list.

**7.4** Select "**Communicate with DAU (SCADA)**" by using the arrow keys and move the cursor to related the appropriate box , Key in **X** and then press the **F1** key. Select the DAU # corresponding to the number on the shelter door of the of the GC is to be calibrated (1-9) and press the **F1** key and then the **F1** key again, the data logger responds with the specific DAU # indicating that it is in data collection mode and is login

**7.5** In data collection mode, Key-in **A**, data logger will respond with a sub-menu, enter a **1** (start seq), when data logger prompts again, enter a **1** to activate sequence 1 of the data logger set up. (note: sequence 1 was designed for the daily calibration of the GC)

**7.6** Press **ESC** and **ESC** again to bring the desktop PC back to displaying data screen.

**7.7** When daily calibration sequence **1** is complete (the calibration sequence should be completed within 25 minutes), press **ESC** to return to the **Main Menu**,

**7.8** Select" **Generate Quick Look Report**" on **Main Menu** then **F1,** select the specific DAU #, and then **F1**

**7.9** Verify the date of the daily calibration report to be generated and then select a **Single Day** report.

**7.10** Key-in **X** on "**Calibration Report to a Printer".**

**7.11** Check and verify the start time on the report is correct

**7.12** scale. The QC adjustment is complete.

**7.13** Verify that the calibration result of all BTX channels is within +/- 20 % of the full If the result is more than +/- 20 % of full scale on any BTX channel, the GC should be removed for services and replaced with a backup unit.

## 8.0 DYNAMIC CALIBRATION AFTER MAINTENANCE SERVICE

This calibration procedure should be performed after trouble-shooting or maintenance service ( e,g cleaning and/or replacing the UV lamp or PID detector. Refer to page 16 of the Operation Manual for detailed maintenance procedure) and is recommended to be conducted in a temperature controlled environment such as inside the trailer located at the Main site. The 1030A GC should be removed from the monitoring location and set up inside the trailer.

**8.1** After the performing any maintenance services, re-connect the Helium carrier gas and the calibration gas cylinder to the GC

**8.2** Turn GC power on, verify the carrier gas is on and that the analyzer is in **standby** mode. Allow the GC to warm up at minimum of 1-2 hours or until the temperature reaches its set point.

**8.3** install a strip chart recorded and connect the chart recorder input leads to Pin 2(+) and Pin 10(-) on connector 1 at the rear panel of the GC.( **Note**: polarity of

the leads should be observed). Plug the recorder power cord into a power outlet. Confirm the recorder is getting power and the pen and chart advance is operating. The chart will move slowly at 2 centimeters per hour (one inch per hour). Set recorder signal input span to 0-10Vdc

**8.4** Repeat step **6.1** described above, determine the % full scale (D) for each BTX compound and fill out data sheet with required information

**8.4** Locate and press the **Auto** button on the GC followed by the **Clear** button on the lower right front panel of the Baseline GC.

**8.5** Put the 1030A GC **CAL** switch in the **ON** (up) position and confirm the recorder is attached and operating (responding to the GC). The display panel above the GC keypad will begin scrolling through the timing program similar to the program as indicated on Page 5 of the Model 1030A Analyzer Operation Manual. Observe that the RED **Stand-bye** lamp (located to the left of the display screen) goes out and that the GREEN **Analyze** lamp (located below the stand-bye lamp) comes on.

**7.6** Adjust the chart speed of the recorder to obtain a smooth chromatogram showing good separation of the BTX compounds. Allow the GC to complete at least 3 cycles or until the peak heights from two consecutive cycles for each of the BTX compounds have stabilized. The heights should be approximately the same when observing the strip chart.

**8.6** After the peak heights have stabilized, record the **%FS** data from the GC display screen on the calibration data sheet.

**8.7** Release **AUTO** and depress **CLEAR** to stop the analysis

**8.8** Adjust the calibration potentiometer (pots), which are located below the display screen, to the expected % full scale for each of the BTX compounds (benzene is **CH1,** toluene is **CH2**, and xylene is **CH3**).
**Note**: The selector switch below the display screen must be set to the appropriate channel before it can be adjusted

**8.9** Record **yes** in the column marked **Cal. Adj** on the calibration data form

**8.10** At the conclusion of the calibration record the final potentiometer settings in the spaces marked **After cal.** on the calibration data form. Be sure to lock the pot(s) at the conclusion of the calibration

**8.11** Place the **CAL** switch on the GC to the middle position, depress **AUTO** and then **CLEAR** to switch into speciation and allow the GC to go through two cycles without span gas to re-set the integrated output to ambient concentration.

**8.12** The GC is ready for monitoring service

.

## 9.0 DOCUMENTATION

Make certain to document all calibrations along with comments in the field station log. Return all equipment and tools to the proper locations.

## 10.0 QUALITY ASSURANCE

All calibration documentation will be reviewed by the project engineer. Quarterly audits of the GCs will be conducted by the project quality assurance officer.

ENSR INTERNATIONAL

## CALIBRATION OF BASELINE GC

**Site #_____ Monitor System Unit #_____ GC S/N_____ Date of Cal. _____**
**Tech Name_____ Time of Calibration _____**

**Span Pot Settings: Before Cal: CH1_____ CH2_____ CH3_____Coarse Setting_____**
**After Cal: CH1_____ CH2_____ CH3_____Coarse Setting_____**

**Cal. Gas Concentration : Benzene* _____ppm Toluene** _____ppm Xylene***_____ppm**

**Expected %FS _____(D) % FS _____(D) %FS _____(D)**

**Down Channel Before Cal.: Yes / No Time:_____ Up Channel After Cal. Yes / No Time:_____**
**(circle response Yes or No)**

### DATA

| | Benzene (O) %FS | Δ% FS | Toluene (O) %FS | Δ% FS | Xylene (O) %FS | Δ% FS | Cal. Adj. (Yes or No) |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

**Δ% FS = 0 – D**

**(LIMIT FOR QC Adjustment with Dynamic Span Check Verification: +/- 20 % FS )**

**Output Voltage-ppm equivalent:**

***Benzene: 0-10VDC = 0-2.0 ppm** ****Toluene: 0-10VDC = 0-10 ppm**
***** Xylene: 0-10VDC = 0-10 ppm**

**Comments**

Standard Operating Procedure

# Changing the BTX Span Value(s) for an Air Monitoring System

Procedure Number: 2000-119

Revision No.: 0

Revision Date: May 2008

SOP Contributors: Larry Nigro

Tony Sacco, SOP Team Leader — Date: June 4, 2008

Joseph Curreri,
Stakeholder/Service Line Leader — Date: 6/4/08

Robert C. Weber,
President and Chief Executive Officer — Date: June 4, 2008

Annual review of this SOP has been performed and the SOP still reflects current practice.

Initials: _____ Date: _____
Initials: _____ Date: _____

Standard Operating Procedure

# Changing the BTX Span Value(s) for an Air Monitoring System



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**2.0 Health and safety considerations ..... 1**

**3.0 Interferences ..... 1**

**4.0 Equipment and materials ..... 1**

**5.0 Procedures ..... 2**

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**10.0 Revision history ..... 4**

Standard Operating Procedure

# Changing the BTX Span Value(s) for an Air Monitoring System



## 1.0 Scope and applicability

**1.1** This Standard Operating Procedure (SOP) defines methods by which technicians may change the values for the benzene, toluene and xylenes (BTX) span values for the gas chromatograph/photoionization detector (GC/PID) instruments installed at a fenceline air monitoring site.

**1.2** This SOP applies to those situations when a new cylinder of BTX is being installed at a monitor location. The method in this SOP is used to change the database so that the designated values for the BTX calibration reflect new span concentrations.

**1.3** This SOP is to be utilized to conduct the work identified in the title of this SOP. In the event the Project Manager or Project Team determines that the protocols and procedures listed in this SOP are not applicable to the project, there is the option to either adapt this SOP or to develop a site-specific SOP to more closely match the requirements of the project. Refer to SOP 1011, Preparation and Control of Standard Operating Procedures, for SOP modification and Project Operating Procedure (POP) development procedures.

## 2.0 Health and safety considerations

**2.1** The health and safety considerations for the work associated with this SOP, including both potential physical and chemical hazards, will be addressed in the site specific Health and Safety Plan (HASP). In the absence of a site-specific HASP, work will be conducted according to the ENSR Health and Safety Policy and Procedures Manual and/or direction from the Regional Health and Safety Manager.

## 3.0 Interferences

- Employing calibration gases that have not been properly certified may cause data to be rejected.
- Calibration gases used outside of the operating range of the monitoring system may cause data to be rejected.
- Leaks in the GC/PID pneumatics may lead to erroneous data.

## 4.0 Equipment and materials

- BTX calibration cylinder.
- Calibration gas in the appropriate range for the monitoring program under test.
- A tool kit that includes several adjustable wrenches.

# 5.0 Procedures

**5.1** As soon as the pressure in any BTX calibration cylinder declines below 500 psig the field technician should inform the project engineer so that new calibration gas can be ordered. The cylinder pressure may be observed on the cylinder regulator pressure gage which is the gage that is closer to the cylinder. In order to read the pressure, the cylinder supply valve must be turned on.

**5.1.1** The BTX calibration cylinder should be replaced when the gas pressure falls below 100 psig.

**5.1.2** The procedure below should be followed in order to replace a BTX calibration cylinder.

1. Shut off the cylinder supply valve.
2. Shut off the regulator supply valve.
3. Use a 6" adjustable wrench to remove the fitting that connects the Teflon line to the GC.
4. Slowly bleed any pressure that may remain in the regulator by opening the regulator supply valve. Be sure to shut the valve after the regulator has been bled.
5. Use a 10" adjustable wrench to remove the regulator from the cylinder.

**NOTE: THE THREAD ON THE FITTING IS LEFTHAND. IN ORDER TO REMOVE IT THE FITTING MUST BE TURNED CLOCKWISE.**

6. Connect the regulator to the new BTX cylinder using a 10" adjustable wrench. The fitting must be turned **counterclockwise**.
7. Reconnect the fitting for the Teflon® line to the regulator. Make sure that the regulator output valve is shut.
8. Turn on the cylinder supply valve. The cylinder pressure gage should register approximately 2000 psig. If the gage registers less than 1500 psig, inform the project engineer. You may still use the cylinder.
9. Use Snoop liquid to identify whether there are any leaks at any of the thread connections. This will be obvious by the appearance of bubbles where the Snoop has been applied.
10. Turn on the regulator supply valve and set the pressure to approximately 20 psig.

**5.2** Once the new cylinder has been installed and leak checked, the new span values for the BTX compounds should be input to the computer at the main site.

**5.2.1** From the dual data screen key in **ESC**.

**5.2.2** Scroll down to the line that reads "Perform Operator Functions" and key in **F1**.

**5.2.3** Select the option that indicates "Change Expected Calibration Factors" and key in **F1**.

**5.2.4** Select the monitor number where the BTX calibration values are to be changed and key in **F1**.

**5.3** Select the parameter (benzene, toluene or xylene), key in **F1** and enter the new expected span value (the expected span values for each BTX compound is printed on the certification tag on the calibration cylinder).

**5.4** Key in **ESC** and repeat steps 5.2.2 - 5.2.5.

**5.5** When all the required span values have been modified, key in **ESC, ESC** to return to the dual data screen.

# 6.0 Quality assurance / quality control

**6.1** Calibrations should always leave the analyzer operating within ± 5.0% of the reference calibrator at all calibration inputs.

**6.2** As soon as possible following calibration, the completed data form is to be submitted to the project manager or designee for review in accordance with ENSR's Senior Review Policy PP-9-0. Standards are reviewed for traceability and completeness. DAS and strip chart readings are to be reviewed for agreement and completeness. Calculations, standard conditions, correction factors, project identification, and other data should be reviewed for accuracy, completeness and conformance to the relevant ENSR operational SOP and the project QA Plan.

# 7.0 Data and records management

**7.1** Unanticipated changes to the procedures or materials described in this SOP (deviations) will be appropriately documented in the project records.

**7.2** Records associated with the activities described in this SOP will be maintained according to the document management policy for the project.

# 8.0 Personnel qualifications and training

**8.1** Qualifications and training

**8.1.1** The individual executing these procedures should have read, and be familiar with, the requirements of this SOP.

**8.1.2** Technicians attempting the tasks in this SOP must be thoroughly trained to operate and calibrate the GC/PID being used.

**8.2** Responsibilities

**8.2.1** The project manager is responsible for providing the project team with the materials, resources and guidance necessary to properly execute the procedures described in this SOP.

**8.2.2** It is the responsibility of the project manager and project engineer to make this SOP available to field personnel and to ensure that the method described in this SOP is directly applicable to the task.

**8.2.3** It is the responsibility of the field technicians to read and follow this SOP at any time when a new BTX span cylinder is to be installed.

## 9.0 References

ENSR SOP 1011, Preparation and Control of Standard Operating Procedures.

United States Environmental Protection Agency. 2001. Guidance for Preparing Standard Operating Procedures (SOPs). EPA QA/G-6. EPA/240/B-01/004. USEPA Office of Environmental Information, Washington, DC. March 2001.

## 10.0 Revision history

| Revision | Date | Changes |
|---|---|---|
| 0 | May 2008 | NA |

AECOM

Project Operating Procedure

# Standard Operating Procedure for the Niton XL3t 600 XRF

Procedure Number: PPG 028

Revision No.: 0

Revision Date: June 2010

Mary Connell Forgie

POP Author

Date: June 2010

Craig W. MacPhee

Project Manager

Date: June 2010

Annual review of this SOP has been performed
and the SOP still reflects current practice.

Initials: _____ Date: _____
Initials: _____ Date: _____

Project Operating Procedure

# Standard Operating Procedure for the Niton XL3t 600 XRF



## Contents

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**9.0 References ..... 7**

**10.0 Revision History ..... 7**

Project Operating Procedure

# Standard Operating Procedure for the Niton XL3t 600 XRF



## 1.0 Scope and Applicability

**1.1** This Project Operating Procedure (POP) provides the proper techniques for safely operating the Niton XL 3t 600 X-Ray fluorescence (XRF) analyzer for field screening of metals, primarily chromium, in soil. The procedure will permit in-situ analysis of soil samples for field decision making and will be used for delineation purposes during the remedial investigation. This procedure is not intended for submission of data to regulatory agencies; confirmatory analysis must be performed by a certified laboratory using EPA total metals methods.

**1.2** This procedure is to be used in conjunction with the site specific Field Sampling Plan. This procedure is intended to provide the necessary information for setting up and analyzing soil samples with the XRF analyzer and performing associated quality control procedures.

**1.3** This procedure is to be used in conjunction with the Niton XL 3t 600 XRF User's Guide. This procedure will provide the basic information for set up of the instrument and analysis of soil samples. However, certain custom functions are not covered in this procedure and must be referenced from the instruction manual.

**1.4** The method sensitivity or lower limit of detection depends on a number of factors including physical and chemical matrix effects and interelement spectral interferences; in-situ analysis and testing of bagged samples are considered field screening procedures. More accurate measurements using XRF are highly dependent on sample homogeneity; samples must be prepared by sieving and potentially grinding to a uniform particle size in order to achieve the most accurate results.

**1.5** In-situ XRF results alone are not acceptable for determining that a sample is below cleanup levels. In these cases XRF must be performed on a prepared (homogenized) sample and confirmed using a certified laboratory.

## 2.0 Health and Safety Considerations

**2.1** The health and safety considerations for the work associated with this POP, including both potential physical and chemical hazards, will be addressed in the site-specific Health and Safety Plan (HASP). In the absence of a site-specific HASP, work will be conducted according to the AECOM Health and Safety Policy and Procedures Manual and/or direction from the Regional Health and Safety Manager.

**2.2** Due to the dust generation anticipated from this procedure, field personnel will be required to don Level C personal protective equipment (PPE) for this procedure. Refer to the job safety analysis (JSA) for this activity in the site-specific HASP for more detail.

**2.3** The XRF analyzer contains an x-ray tube; when the x-ray tube is turned on by the user and the shutter is open, as during a measurement, the analyzer emits a directed radiation beam. The instrument should never be pointed at anyone or at any body part. **Never** point the analyzer into the air and perform a test. **Never** hold a sample in your hand and perform a test.

**2.4** Each field analyst must undergo training in safe use of the instrumentation by a manufacturer's representative prior to use of the XRF equipment. Protective shielding should never be removed by the analyst or any personnel other than the manufacturer. All maintenance other than that specifically listed in the operating manual must be performed by the manufacturer.

**2.5** Those operating XRF equipment must be aware of, and comply with, state-specific licensing requirements for the use of XRF analyzers (N.J.A.C 7:28-54.1). A copy of the license should be present with the instrument at all times and available upon request in an audit.

**2.6** A copy of the United States Department of Transportation (US DOT) compliance statement has been provided with each Niton instrument; this document should be kept in the analyzer case at all times.

**2.7** The analyst must comply with all safety requirements listed in the instrument specific operating manual.

## 3.0 Interferences

**3.1** Physical matrix effects can result from variations in the physical character of the sample. This includes variations in particle size, uniformity, homogeneity and surface condition. As a minimum every effort should be made to thoroughly mix and homogenize samples before analysis. The most accurate data will be obtained if samples are sieved and ground to a uniform particle size prior to testing.

**3.2** Moisture content of soils and sediments can impact analytical accuracy particularly if the sample is water saturated; moisture levels of 5-20% generally have a minimal impact on accuracy. If field data are to be compared with laboratory generated results, samples should be dried using a convection or toaster oven; a microwave should not be used due to the potential for arcing if metal fragments are present in the sample. Studies have also shown poor agreement between laboratory confirmatory analysis and field XRF data when microwave drying is used.

**3.3** Inconsistent positioning of the sample in front of the probe window can produce errors since the x-ray signal decreases as the distance from the radioactive source increases. The best results are obtained when the sample has a flat, smooth surface and the probe window is in direct contact with the surface.

**3.4** Chemical matrix effects can occur in soils contaminated with metals and result from spectral interferences (peak overlaps) or as x-ray absorption and enhancement phenomena. Peak overlaps occur when certain x-ray lines from different elements are close in energy; the degree to which these peaks can be resolved is dependent upon the instrument detector. Elevated levels of vanadium have been documented as a potential interference for chromium. Absorption occurs when one element tends to absorb the x-rays of a second element reducing the detector's measurement of the intensity of the second element. Less common

are interferences resulting from K/L, K/M, and L/M line overlaps; this interference can cause difficulty in detection of arsenic in the presence of high levels of lead.

**3.5** Ambient temperature changes can result in instrument drift. The analyst should review the instrument instructions for the optimal operating range of the instrument and assess the accuracy of instrument response through periodic analysis of blanks and QC check samples.

## 4.0 Equipment and Materials

**4.1** The following equipment and materials are required for sample analysis using this technique:

- Niton XL 3t 600 XRF
- Niton XL 3t 600 XRF User's Guide, Version 6.5
- U.S. DOT Compliance Statement and any state required licenses
- Battery charger and spare battery
- National Institute of Standards and Testing (NIST) certified standard reference material(s) (SRMs) or similar standards from the U.S. Geological Survey (USGS) or commercial sources.
- Reference standards and samples provided by the instrument manufacturer
- Blank sample of clean quartz, Teflon, or silicon dioxide
- Trowel for smoothing soil surface or collecting sample
- Plastic bags for collection and homogenization of soil samples.
- Field logbook and pen
- Level C PPE
- Camera (optional)

## 5.0 Procedures

**5.1** Initial Setup

**5.1.1** Don the Level C PPE as instructed in the site-specific HASP.

**5.1.2** To turn on the analyzer depress the on/off/escape button on the control panel for 10 seconds; the start screen will appear and begin a 10 second countdown. When the log on screen appears, press anywhere on the screen to continue. Acknowledge the radiation warning by pressing "Yes" and enter the security code for the device.

**5.1.3** Confirm that the date/time display is correct. Refer to the Niton XL3t 600 User's Guide for specific instructions on navigation through the menu. If the instrument has been turned off for more than 30 minutes allow a 10 minute warm-up period before calibration. Select Calibrate and Test and press Clear/Enter to begin the self calibration; when the instrument beeps the calibration is complete and the instrument is ready for use.

**5.1.4** For the purposes of in-situ measurements, the instrument will be operated in the Standard Soil Mode. Select Standard Soil Mode from the Bulk Analysis Menu. Calibrate the instrument using the soil standards supplied by Niton immediately after the instrument completes self-calibration. The standards should be tested every 1- 2 hours during the analysis day and at the conclusion of testing for the day to ensure that no drift has occurred. All calibration procedures and the results of standard check samples must be recorded in the XRF logbook. Until control limits specific to the XRF unit being used are established control limits of ± 20% of the true value should be used.

**5.1.5** The Niton XL3T 600 offers six modes of operation for soil samples. It is expected that the Easy Trigger method will be used for in-situ measurements. Using this technique the measurement window is placed against the sample and the trigger is pulled once to initiate the analysis. The instrument constantly checks the backscatter measurements to determine if a sample is against the measurement window and will shut off any radiation directed through the window if it determines there is no sample present.

**5.1.6** The analyzer will display the results screen throughout the duration of the reading; once the reading is complete, the screen will display the final results of the measurement.

**5.2** Sample screening may be performed by holding the probe directly on the soil or on a bagged sample. Clean the measurement window between samples using a cotton swab.

**5.2.1** Remove any obviously non-representative materials such as leaves, vegetation, roots, or concrete from the sample; use caution that COPR related materials are not removed from the sample. Finer and more homogeneous material will yield more accurate results. Increased accuracy can be gained by loosening the soil and letting it dry in the sun prior to testing. The soil sample should not be saturated with water; the XRF technique will generally not produce reliable results if ponded water exists on the surface.

**5.2.2** Use a trowel to level the surface of the soil. Hold the XRF in one hand and place the instrument window flush against the surface of the sample to be tested. The four LED lights on the screen will flash to indicate the initiating preconditions have been met (see page 1-45 of the User's Guide); however as a safety precaution the x-ray tube will not turn on immediately and no reading will begin for approximately 0.5 seconds. Watch the display screen to determine when the test is complete; a typical test will take 30-60 seconds. To end the test simply release the trigger mechanism.

**5.2.3** If direct measurement of the sample is not possible, samples may be placed in plastic bags and analyzed without preparation. However, since the measurement is made through a plastic bag, test results can be 5-10% lower than those obtained by direct measurement. Place 50-100g of soil in a clean zipper locking bag (approximately 1-mil thick polyethylene bag is recommended) removing any obviously non-representative material. Mix the sample thoroughly by kneading the bag and flatten the bag of soil to form uniform layer of approximately 0.5 inch thickness. Place the XRF flat against the bag and take a measurement as described in Section 5.2.2. ***Do not hold the bag in your hand during testing.***

**5.3** Download the stored data and spectra to a computer or directly to a database; erase the stored data from the XRF once you have confirmed that all results have been successfully downloaded. ***Do not attempt to take measurements while downloading readings, this will generate an error requiring a system reset and may corrupt stored readings.***

**5.4** Routine maintenance procedures include cleaning and replacement of the measurement window.

**5.4.1** Keep the transparent measurement window covering the analysis window clean. Clean the measurement window gently with a cotton swab. Clean the body of the analyzer with a soft cloth. The touch screen may be cleaned using a lens cleaning solution with a soft cloth; water should not be used. Never use detergents or solvents on any portion of the analyzer or immerse the analyzer in water.

**5.4.2** If the measurement window becomes frayed, ripped, or contaminated with metal particulates, replace it with a new window. The User's Guide provides part numbers and instructions for replacement of the windows.

**5.4.3** All other maintenance must be performed by an authorized Niton service center. The instrument must be transported and stored in its padded carrying case when not in use.

## 6.0 Quality Assurance / Quality Control

**6.1** An energy calibration check should be run at the start of each day of sampling. This check confirms that the characteristic x-ray lines are stable and instrument drift is not occurring. This also provides a gain check if the ambient temperature fluctuates significantly. This test must be run at the start of each day, when the batteries are changed, when the instrument is shut down, and at the end of each day. This procedure should also be run any time the operator believes that drift is occurring during analysis.

**6.2** A blank consisting of silicon dioxide or a Teflon or quartz block must be run at the beginning and end of each day of analysis and after every 20 samples or every hour of operation during the day or at any time the analyst suspects contamination in the analytical system.

**6.3** An independent standard must be used to verify the accuracy of the instrument and confirm its stability and consistency for the analyte of interest. NIST, USGS or commercial standards

may be used. The standard check must be performed at the beginning and end of each analysis day and after every 20 samples or hour of operation during the day. If the measured value falls outside the acceptance range the check sample must be reanalyzed; if it is still outside the acceptance range the instrument must be recalibrated and any samples analyzed since the previous acceptable calibration check must be reanalyzed.

**6.4** At least one sample in each set of 20 must be analyzed in duplicate to assess measurement precision. Relative percent difference for duplicates should be ≤ 30%.

**6.5** The field forms and field notes generated from this procedure will be reviewed by the sampling team leader, project manager, or designee. All quality control results must be downloaded to project computer files along with sample data. Any deviations from this SOP, problems encountered during the analysis and corrective actions taken must be documented in the field records.

## 7.0 Data and Records Management

**7.1** Unanticipated changes to the procedures or materials described in this POP (deviations) will be appropriately documented in the project records.

**7.2** All data and spectral files must be backed up onto a computer on a regular basis. Any deviations from this POP or problems encountered during the analysis must be documented in a field log book which is dedicated to the XRF analyzer.

**7.3** Records associated with the activities described in this POP will be maintained according to the specific document management policy for the project.

## 8.0 Personnel Qualifications and Training

**8.1** Qualifications and training

**8.1.1** The individual executing these procedures must have read, and be familiar with, the requirements of this POP.

**8.1.2** Sampling personnel must be health and safety certified as specified by Occupational Safety and Health Administration (OSHA) 29 CFR 1910.120(e)(3)(i) to work on sites where hazardous materials may be present.

**8.1.3** Each person who performs this procedure will undergo training offered by the manufacturer such that the procedure is performed in a consistent manner and all safety procedures are followed.

**8.1.4** Individual states and countries have specific regulations and guidelines for the use of X-ray tube devices that produce ionizing radiation. For New Jersey site work, the licensing requirements outlined in N.J.A.C. 7:28-54.1 must be met prior to the start of site work.

**8.2** Responsibilities

**8.2.1** The project manager is responsible for providing the project team with the materials, resources and guidance necessary to properly execute the procedures described in this POP.

**8.2.2** The individual performing the work is responsible for implementing the procedures as described in this POP and any project-specific work plans.

## 9.0 References

United States Environmental Protection Agency. 2001. Guidance for Preparing Standard Operating Procedures (SOPs). EPA QA/G-6. EPA/240/B-01/004. USEPA Office of Environmental Information, Washington, DC. March 2001.

United States Environmental Protection Agency. 2007. Method 6200, Field Portable X-Ray Fluorescence Spectrometry for the Determination of Elemental Concentrations in Soil and Sediment, Revision 0. Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Washington, D.C. January 2008.

New Jersey Department of Environmental Protection Site Remediation Program. 1994. Field Manual. Trenton, NJ. July 1994.

Thermo Scientific, Niton XL3t 600 Analyzer User's Guide, Version 6.5. Billerica, MA 2009

## 10.0 Revision History

| Revision | Date | Changes |
|---|---|---|
| 0 | June 2010 | Original POP |

# Appendix C

# Required Preservation, Container and Maximum Holding Times

# Appendix C-1: Required Preservation, Container, and Maximum Holding Times for Solid and Aqueous Samples

## Table 2.2 Required Preservation, Container, and Maximum Holding Times for Drinking Water Samples, Except Radiochemical Parameters

| Parameter | Preservation | Container | Maximum Holding Time |
|---|---|---|---|
| Total Coliform Finished Drinking Water | Cool 4°C, 0.008% sodium thiosulfate ($Na_2S_2O_3$) | P or G | 30 hours |
| Heterotrophic Plate Count Finished Drinking Water | Cool 4°C, 0.008% $Na_2S_2O_3$ | P or G | 8 hours |
| Total Coliform Source Water | Cool 4°C, 0.008% $Na_2S_2O_3$ | P or G | 8 hours |
| Fecal Coliform Source Water | Cool 4°C, 0.008% $Na_2S_2O_3$ | P or G | 8 hours |
| Cryptosporidium | Cool 0-8°C, No Freezing | LPDE Cubitainer | Elution must begin within 96hrs of sampling[14] |
| Giardi cysts | Cool 0-8°C, No Freezing | LPDE Cubitainer | Elution must begin within 96hrs of sampling[14] |
| Alkalinity | Cool 4°C | P or G | 14 days |
| Antimony | Conc. $HNO_3$ to pH < 2 | P or G | 6 months |
| Arsenic | Conc. $HNO_3$ to pH < 2 | P or G | 6 months |
| Asbestos | Cool 4°C | P or G | Filter within 48 hours |
| Barium | Conc. $HNO_3$ to pH < 2 | P or G | 6 months |
| Beryllium | Conc. $HNO_3$ to pH < 2 | P or G | 6 months |
| Bromate | 50 mg/L Ethylenediamine (EDA) solution | P or G | 28 days |
| Bromide | None | P or G | 28 days |
| Cadmium | Conc. $HNO_3$ to pH < 2 | P or G | 6 months |
| Calcium | Conc. $HNO_3$ to pH < 2 | P or G | 6 months |
| Chlorate | 50 mg/L Ethylenediamine (EDA) solution | P or G | 28 days |
| Chloride | None | P or G | 28 days |
| Chlorite | 50 mg/L Ethylenediamine (EDA) solution Cool 4°C | P or G | 14 days |
| Chlorinated Hydrocarbons | Refrigerate at 4°C. After collection, Ascorbic acid | Glass with foil or Teflon®-lined cap | 14 days until extraction; 40 days after extraction |

Table 2.2 (continued) Required Preservation, Container, and Maximum Holding Times for Drinking Water Samples, Except Radiochemical Parameters

| Parameter | Preservation | Container | Maximum Holding Time |
|---|---|---|---|
| Chlorinated Pesticides | 80mg/L $Na_2S_2O_3$ if residual chlorine ($Cl_2$) is present, Cool 4°C | Glass with Teflon®-lined septum | 7 days until extraction; 14 days after extraction |
| Chlorinated Phenoxy Acids | 80mg/L $Na_2S_2O_3$ if residual chlorine ($Cl_2$) is present, Cool 4°C | Glass with Teflon®-lined septum | 14 days until extraction; 28 days after extraction |
| Chlorine Dioxide | None | P or G | Analyze Immediately |
| Chlorinated Acids | Refrigerate at 4°C after collection, Ascorbic acid | Glass with foil or Teflon®-lined cap | 7 days until extraction; 30 days after extraction |
| Chromium | Conc. $HNO_3$ to pH < 2 | P or G | 6 months |
| Copper | Conc. $HNO_3$ to pH < 2 | P or G | 6 months |
| Cyanide | NaOH to pH > 12, Cool 4°C, 0.6 g Ascorbic acid | P or G | 14 days |
| EDB/DBCP/1,2,3-TCP | Cool 4°C, 0.08% $Na_2S_2O_3$ | Glass with Teflon®-lined septum | extract: 14 days; 24 hours to analysis |
| Fluoride | None | Polyethylene only | 28 days |
| Free Chlorine Residual | None | P or G | Analyze Immediately |
| Lead | Conc. $HNO_3$ to pH < 2 | P or G | 6 months |
| Mercury | Conc. $HNO_3$ to pH < 2 | P or G | 28 days |
| N-Methyl-Carbamoyloximes N-Methyl-Carbamates | Monochloroacetic acid to pH 3, 80mg/L $Na_2S_2O_3$, Cool 4°C until storage, Store at -10°C | Glass with Teflon®-lined septum | 28 days at -10°C |
| Nickel | Conc. $HNO_3$ to pH < 2 | P or G | 6 months |
| Nitrate-Nitrate | Conc. $H_2SO_4$ to pH < 2; Cool 4°C | P or G | 28 days |
| Nitrate-N | Cool 4°C | P or G | 48 hours |
| Nitrite-N | Cool 4°C | P or G | 48 hours |
| Nitrogen- and Phosphorus-Containing Pesticides | 80mg/L $Na_2S_2O_3$ (if residual $Cl_2$) Cool 4°C | Glass (dark) with Teflon®-lined septum | 14 days until extraction; 14 days after extraction |
| o-Phosphate | Cool 4°C | P or G | 48 hours |
| Perchlorates | None Required | P or G | 28 days |

Table 2.2 (continued) Required Preservation, Container, and Maximum Holding Times for Drinking Water Samples, Except Radiochemical Parameters

| Parameter | Preservation | Container | Maximum Holding Time |
|---|---|---|---|
| Odor | Cool 4°C | P or G | 24 hours |
| Organic Compounds | If residual $Cl_2$ 40-50 mg sodium arsenite or sodium thiosulfate; if unchlorinated, 6 N HCl to pH < 2 | Glass with Teflon®-lined septum | 7 days until extraction; 30 days after extraction |
| Organohalide Pesticides and Commercial PCB Products (Arochlors) | 3mg $Na_2S_2O_3$ or 7uL $Na_2S_2O_3$ (0.04g/mL), Cool 4°C until analyzed | Glass with Teflon®-lined septum | If Heptachlor, 7 days until extraction; 40 days after extraction. If no extraction, analysis within 14 days |
| Ozone | None | G | Analyze Immediately |
| pH | None | P or G | Analyze Immediately |
| Selenium | Conc. $HNO_3$ to pH < 2 | P or G | 6 months |
| Silver | Conc. $HNO_3$ to pH < 2 | P or G | 6 months |
| Sodium | Conc. $HNO_3$ to pH < 2 | P or G | 6 months |
| Sulfate | Cool 4°C | P or G | 28 days |
| Temperature | None | P or G | Analyze Immediately |
| Thallium | Conc. $HNO_3$ to pH < 2 | P or G | 6 months |
| TTHMs | $Na_2S_2O_3$ if residual $Cl_2$ and 6N HCl | Glass with Teflon®-lined septum | 14 days |
| Total Dissolved Solids | Cool 4°C | P or G | 7 days |
| Turbidity | Cool 4°C | P or G | 48 hours |
| Volatile Aromatic and Unsaturated Organic Compounds | 1:1 HCl to pH < 2 Cool, 4°C until analysis, Ascorbic acid | Glass with Teflon®-lined septum | 14 days |
| Volatile Halogenated Organic Compounds | 1:1 HCl to pH < 2 Cool, 4°C until analysis, Ascorbic acid | Glass with Teflon®-lined septum | 14 days |
| Volatile Organic Compounds | 1:1 HCl to pH < 2 Cool, 4°C until analysis, Ascorbic acid | Glass with Teflon®-lined septum | 14 days |

## Table 2.3 Required Preservation, Container, and Maximum Holding Times for Wastewater Samples and Solid/Hazardous Waste Samples (Aqueous Matrices), Except Radiochemical Parameters

| Parameter | Preservation | Container | Maximum Holding Time |
|---|---|---|---|
| **Bacterial Tests** | | | |
| Coliform (fecal) | Cool 4°C, 0.008% $Na_2S_2O_3$[1] | P, G | 6 hours |
| Coliform (total) | Cool 4°C, 0.008% $Na_2S_2O_3$[1] | P, G Cool | 6 hours |
| Fecal streptococci | Cool 4°C, 0.008% $Na_2S_2O_3$[1] | P, G | 6 hours |
| Enterococcii | Cool 4°C, 0.008% $Na_2S_2O_3$[1] | P, G (sterile) | 6 hours |
| Escherichia coli | Cool 4°C, 0.008% $Na_2S_2O_3$[1] | P, G (sterile) | 6 hours |
| Heterotrophic Plate Count | Cool 4°C, 0.008% $Na_2S_2O_3$[1] | P, G (sterile) | 8 hours |
| Salmonella sp. Bacteria | Cool 4°C | P, G (sterile) | 24 hours |
| Helminth Ova | Cool 4°C | P, G (sterile) | 24 hours |
| Enteric Viruses[13] | Cool 4°C | P, G (sterile) | 8 hours |
| **Toxicity Test** | | | |
| Acute or Chronic Toxicity | Cool 4°C | P, G | 36 hours[12] |
| **Inorganic Tests** | | | |
| Acidity, as $CaCO_3$ | Cool 4°C | P, G | 14 days |
| Alkalinity as $CaCO_3$ | Cool 4°C | P, G | 14 days |
| Aluminum-total[3] | $HNO_3$ to pH < 2 | P, G | 6 months |
| Ammonia (as N) | Cool 4°C $H_2SO_4$ to pH < 2 | P, G | 28 days |
| Antimony-total[3] | $HNO_3$ to pH < 2 | P, G | 6 months |
| Arsenic-total[3] | $HNO_3$ to pH < 2 | P, G | 6 months |
| Barium-total[3] | $HNO_3$ to pH < 2 | P, G | 6 months |
| Beryllium-total[3] | $HNO_3$ to pH < 2 | P, G | 6 months |
| Biochemical Oxygen Demand | Cool 4°C | P, G | 48 hours |
| Boron-total[3] | $HNO_3$ to pH < 2 | P,G | 6 months |
| Bromide[3] | None required | P, G | 28 days |
| Cadmium-total[3] | $HNO_3$ to pH < 2 | P, G | 6 months |
| Calcium-total[3] | $HNO_3$ to pH < 2 | P, G | 6 months |
| Carbonaceous Biochemical Oxygen Demand | Cool 4°C | P, G | 48 Hours |

Table 2.3 (continued) Required Preservation, Container, and Maximum Holding Times for Wastewater Samples and Solid/ Hazardous Waste Samples (Aqueous Matrices), Except Radiochemical Parameters

| Parameter | Preservation | Container | Maximum Holding Time |
|---|---|---|---|
| Chemical Oxygen Demand (COD) | Cool 4°C $H_2SO_4$ to pH < 2 | P, G | 28 days |
| Chloride | None required | P, G | 28 days |
| Chlorine total residual (TRC) | None required | P, G | Analyze Immediately |
| Chromium VI (dissolved) | Cool 4°C | P, G | 24 hours |
| Chromium-total[3] | $HNO_3$ to pH < 2 | P, G | 6 months |
| Cobalt-total[3] | $HNO_3$ to pH < 2 | P, G | 6 months |
| Color | Cool 4°C | P, G | 48 hours |
| Copper-total[3] | $HNO_3$ to pH < 2 | P, G | 6 months |
| Cyanide-total[3] | Cool 4°C, NaOH to pH > 12,0.6g ascorbic acid | P, G | 14 days (24 hours when sulfide is present)[2] |
| Cyanide amenable to chlorination[3] | Cool 4°C, NaOH to pH > 12,0.6g ascorbic acid | P, G | 14 days (24 hours when sulfide is present)[2] |
| Fluoride | None required | Polyethylene only | 28 days |
| Gold-total[3] | $HNO_3$ to pH < 2 | P, G | 6 months |
| Hardness-total as $CaCO_3$ | $HNO_3$ to pH < 2 $H_2SO_4$ to pH < 2, | P, G | 6 months |
| Hydrogen ion (pH) | None required | P, G | Analyze Immediately |
| Iridium-total[3] | $HNO_3$ to pH < 2 | P, G | 6 months |
| Iron-total[3] | $HNO_3$ to pH < 2 | P, G | 6 months |
| Kjeldahl & Organic Nitrogen | Cool 4°C, $H_2SO_4$ to pH < 2 | P, G | 28 days |
| Lead-total[3] | $HNO_3$ to pH < 2 | P, G | 6 months |
| Magnesium-total[3] | $HNO_3$ to pH < 2 | P, G | 6 months |
| Mercury-dissolved[11] (does not include methyl mercury) | 5mL/Lof 12 N HCl or 5mL/L of 12 N BrCl Cool 4°C | Fluoropolymer with fluoropolymer or fluoropolymer lined cap | 28 days |
| Mercury-dissolved[11] (includes methyl mercury) | 5mL/L of 12 N HCl Cool 4°C | Fluoropolymer with fluoropolymer or fluoropolymer lined cap | 28 days |
| Mercury-total[3] | $HNO_3$ to pH < 2 | P, G | 28 days |
| Mercury-total[11](does not include methylmercury) | 5mL/L of 12 N HCl or 5 mL/L of 12 N BrCl | Fluoropolymer with fluoropolymer or | 28 days |

Table 2.3 (continued) Required Preservation, Container, and Maximum Holding Times for Wastewater Samples and Solid/ Hazardous Waste Samples (Aqueous Matrices), Except Radiochemical Parameters

| Parameter | Preservation | Container | Maximum Holding Time |
|---|---|---|---|
| | Cool 4°C | fluoropolymer lined cap | |
| Mercury-total[11] (includes methylmercury) | 5mL/L of 12 N HCl Cool 4°C | Fluoropolymer with fluoropolymer or fluoropolymer lined cap | 28 days |
| Molybdenum-total[3] | $HNO_3$ to pH < 2 | P, G | 6 months |
| Nickel-total[3] | $HNO_3$ to pH < 2 | P, G | 6 months |
| Nitrate (as N) | Cool 4°C | P, G | 48 hours |
| Nitrate-Nitrite(as N) | Cool 4°C, $H_2SO_4$ to pH < 2 | P, G | 28 days |
| Nitrite (as N) | Cool 4°C | P, G | 48 hours |
| Oil and grease | Cool 4°C HCl or $H_2SO_4$ to pH < 2 | G | 28 days |
| Organic carbon-total (TOC) | Cool 4°C, HCl or $H_2SO_4$ to pH < 2 or phosphoric acid | P, G | 28 days |
| Orthophosphate (as P) | Filter Immediately, Cool 4°C | P, G | 48 hours |
| Osmium-total[3] | $HNO_3$ to pH < 2 | P, G | 6 months |
| Oxygen dissolved (probe) | None Required | Glass bottle and top | Analyze Immediately |
| Oxygen dissolved (Winkler) | Fix on site and store in dark | Glass bottle and top | 8 hours |
| Palladium-total[3] | $HNO_3$ to pH < 2 | P, G | 6 months |
| Petroleum Hydrocarbons | HCl to pH 2 | G | 7 days |
| Phenols | Cool 4°C, $H_2SO_4$ to pH < 2 | G only | 28 days |
| Phosphorus (elemental) | Cool 4°C | G | 48 hours |
| Phosphorus-total | Cool 4°C, $H_2SO_4$ to pH < 2 | P, G | 28 days |
| Platinum-total[3] | $HNO_3$ to pH < 2 | P, G | 6 months |
| Potassium-total[3] | $HNO_3$ to pH < 2 | P, G | 6 months |
| Residue-total | Cool 4°C | P, G | 7 days |
| Residue-filterable (TDS) | Cool 4°C | P, G | 7 days |
| Residue-nonfilterable (TSS) | Cool 4°C | P, G | 7 days |
| Residue-settleable | Cool 4°C | P, G | 48 hours |
| Residue-volatile | Cool to 4°C | P, G | 7 days |
| Rhodium-total[3] | $HNO_3$ to pH < 2 | P, G | 6 months |
| Ruthenium-total[3] | $HNO_3$ to pH < 2 | P, G | 6 months |

Table 2.3 (continued) Required Preservation, Container, and Maximum Holding Times for Wastewater Samples and Solid/ Hazardous Waste Samples (Aqueous Matrices), Except Radiochemical Parameters

| Parameter | Preservation | Container | Maximum Holding Time |
|---|---|---|---|
| Salinity | Cool 4°C | G | 28 days |
| Selenium-total[3] | $HNO_3$ to pH < 2 | P, G | 6 months |
| Silica-dissolved | Cool 4°C | P | 28 days |
| Silver-total[3] | $HNO_3$ to pH < 2 | P, G | 6 months |
| Sodium-total[3] | $HNO_3$ to pH < 2 | P, G | 6 months |
| Specific conductance | Cool 4°C | P, G | 28 days |
| Sulfate | Cool 4°C | P, G | 28 days |
| Sulfide | Cool 4°C, add zinc acetate & NaOH to pH > 9 | P, G | 7 days |
| Sulfite | None required | P, G | Analyze Immediately |
| Surfactants | Cool 4°C | P, G | 48 hours |
| Temperature | None required | P, G | Analyze Immediately |
| Thallium-total[3] | $HNO_3$ to pH < 2 | P, G | 6 months |
| Tin-total[3] | $HNO_3$ to pH < 2 | P, G | 6 months |
| Titanium-total[3] | $HNO_3$ to pH < 2 | P, G | 6 months |
| Turbidity | Cool 4°C | P, G | 48 hours |
| Vanadium-total[3] | $HNO_3$ to pH < 2 | P, G | 6 months |
| Zinc-total[3] | $HNO_3$ to pH < 2 | P, G | 6 months |
| **Organic Tests[4]** | | | |
| Acenaphthene[7] | Cool 4°C, 0.008% $Na_2S_2O_3$ Store in dark | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Acenaphthylene[7] | Cool 4°C, 0.008% $Na_2S_2O_3$ | Glass, Teflon®-lined cap Store in dark | 7 days until extraction; 40 days after extraction |
| Acrolein | Cool 4°C, 0.008% $Na_2S_2O_3$ Adjust pH to 4-5[6] | Glass, Teflon®-lined septum | 14 days |
| Acrylonitrile | Cool 4°C, 0.008% $Na_2S_2O_3$ Adjust pH to 4-5[6] | Glass, Teflon®-lined septum | 14 days[6] |
| Anthracene[7] | Cool 4°C, 0.008% $Na_2S_2O_3$ | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Benzene | Cool 4°C, 0.008% $Na_2S_2O_3$ HCl to pH 2 | Glass, Teflon®-lined septum | 14 days |
| Benzidine[7] | Cool 4°C, 0.008% $Na_2S_2O_3$ | Glass, Teflon®-lined cap | 7 days until extraction[8] |

Table 2.3 (continued) Required Preservation, Container, and Maximum Holding Times for Wastewater Samples and Solid/ Hazardous Waste Samples (Aqueous Matrices), Except Radiochemical Parameters

| Parameter | Preservation | Container | Maximum Holding Time |
|---|---|---|---|
| Benzo(a) anthracene[7] | Cool 4°C, 0.008% $Na_2S_2O_3$ Store in dark | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Benzo(a)pyrene[7] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Benzo(b) fluoranthene[7] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Benzo(g,h,i) perylene[7] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Benzo(k) fluoranthene[7] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Benzyl chloride | Cool 4°C, 0.008% $Na_2S_2O_3$[1] | Glass, Teflon®-lined septum | 14 days |
| Benzyl butyl phthalate[7] | Cool 4°C | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Bis(2-chloroethoxy) methane[7] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Bis(2-chloroethyl) ether[7] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Bis(2-ethylhexyl) phthalate[7] | Cool 4°C | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Bromodichloro-methane | Cool 4°C 0.008% $Na_2S_2O_3$[1], HCl to pH 2[5] | Glass, Teflon®-lined septum | 14 days |
| Bromoform | Cool 4°C 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5] | Glass, Teflon®-lined septum | 14 days |
| Bromomethane | Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5] | Glass, Teflon®-lined septum | 14 days |
| Carbon tetrachloride | Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5] | Glass, Teflon®-lined septum | 14 days |
| 4-Chloro-3-methylphenol[7] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Chlorobenzene | Cool 4°C 0.008%$Na_2S_2O_3$[1] HCl to pH 2[5] | Glass, Teflon®-lined septum | 14 days |
| Chloroethane | Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5] | Glass, Teflon®-lined septum | 14 days |
| 2-Chloroethylvinyl ether | Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5] | Glass, Teflon®-lined septum | 14 days |
| Chloroform | Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5] | Glass, Teflon®-lined septum | 14 days |

Table 2.3 (continued) Required Preservation, Container, and Maximum Holding Times for Wastewater Samples and Solid/ Hazardous Waste Samples (Aqueous Matrices), Except Radiochemical Parameters

| Parameter | Preservation | Container | Maximum Holding Time |
|---|---|---|---|
| Chloromethane | Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5] | Glass, Teflon®-lined septum | 14 days |
| 2-Chloronaphthalene[7] | Cool 4°C | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| 2-Chlorophenol[7] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| 4-Chlorophenylphenyl ether[7] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Chrysene[7] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Dibenzo (a,h)anthracene[7] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Dibromochloro-methane | Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5] | Glass, Teflon®-lined septum | 14 days |
| 1,2-Dichloro-benzene[7] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5] | Glass, Teflon®-lined septum | 14 days |
| 1,3-Dichloro-benzene[7] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5] | Glass, Teflon®-lined septum | 14 days |
| 1,4-Dichloro-benzene[7] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5] | Glass, Teflon®-lined septum | 14 days |
| 3,3'-Dichloro-benzidine[7] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] | Glass, Teflon®-lined septum | 14 days |
| Dichlorodifluoro-methane | Cool 4°C, 0.008% $Na_2S_2O_3$[1] | Glass, Teflon®-lined septum | 14 days |
| 1,1-Dichloroethane | Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5] | Glass, Teflon®-lined septum | 14 days |
| 1,2-Dichloroethane | Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5] | Glass, Teflon®-lined septum | 14 days |
| 1,1-Dichloroethene | Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5] | Glass, Teflon®-lined septum | 14 days |
| trans-1,2-Dichloro-ethene | Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5] | Glass, Teflon®-lined septum | 14 days |
| 2,4-Dichlorophenol[7] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| 1,2-Dichloropropane | Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5] | Glass, Teflon®-lined septum | 14 days |
| cis-1,3-Dichloro-propene | Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5] | Glass, Teflon®-lined septum | 14 days |

Table 2.3 (continued) Required Preservation, Container, and Maximum Holding Times for Wastewater Samples and Solid/ Hazardous Waste Samples (Aqueous Matrices), Except Radiochemical Parameters

| Parameter | Preservation | Container | Maximum Holding Time |
|---|---|---|---|
| trans-1,3-Dichloro-propene | Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5] | Glass, Teflon®-lined septum | 14 days |
| Diethyl phthalate[7] | Cool 4°C | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| 2,4-Dimethylphenol[7] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Dimethyl phthalate | Cool 4°C | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Di-n-butyl phthalate[7] | Cool 4°C | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Di-n-octyl phthalate[7] | Cool 4°C | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| 2,3-Dinitrophenol[7] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| 2,4-Dinitrotoluene[7] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| 2,6-Dinitrotoluene[7] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Epichlorohydrin | Cool 4°C, 0.008% $Na_2S_2O_3$[1] | Glass, Teflon®-lined septum | 14 days |
| Ethylbenzene | Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5] | Glass, Teflon®-lined septum | 14 days |
| Fluoranthene[7] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Fluorene[7] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Hexachlorobenzene[7] | Cool 4°C | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Hexachlorobutadiene[7] | Cool 4°C | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Hexachlorocyclo-pentadiene[7] | Cool 4°C | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Hexachloroethane[7] | Cool 4°C | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Ideno(1,2,3-cd)pyrene[7] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Isophorone[7] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |

Table 2.3 (continued) Required Preservation, Container, and Maximum Holding Times for Wastewater Samples and Solid/ Hazardous Waste Samples (Aqueous Matrices), Except Radiochemical Parameters

| Parameter | Preservation | Container | Maximum Holding Time |
|---|---|---|---|
| Methylene chloride | Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5] | Glass, Teflon®-lined cap | 14 days |
| 2-Methyl-4,6-dinitro phenol[7] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Naphthalene[7] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Nitrobenzene[7] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| 2-Nitrophenol[7] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| 4-Nitrophenol[7] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| N-Nitrosodimethyl amine[7, 10] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| N-Nitrosodi-n-propyl-amine[7, 10] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| N-Nitrosodiphenyl-amine[7, 10] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| 2,2'-Oxybis(1-chloro-propane) | Cool 4°C, 0.008% $Na_2S_2O_3$[1] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| PCB-1016[7] | Cool 4°C | Glass, Teflon®-lined cap, | 7 days until extraction; 40 days afterextraction |
| PCB-1221[7] | Cool 4°C | Glass, Teflon®-lined cap, | 7 days until extraction; 40 days after extraction |
| PCB-1232[7] | Cool 4°C | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| PCB-1242[7] | Cool 4°C | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| PCB-1248[7] | Cool 4°C | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| PCB-1254[7] | Cool 4°C | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| PCB-1260[7] | Cool 4°C | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Pentachlorophenol | Cool 4°C, 0.008% $Na_2S_2O_3$[1] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Phenanthrene[7] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |

Table 2.3 (continued) Required Preservation, Container, and Maximum Holding Times for Wastewater Samples and Solid/ Hazardous Waste Samples (Aqueous Matrices), Except Radiochemical Parameters

| Parameter | Preservation | Container | Maximum Holding Time |
|---|---|---|---|
| Phenol[7] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Pyrene[7] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] Store in dark | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| 2,3,7,8-Tetra-chlorodi-benzo-p-dioxin[7] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| 1,1,2,2-Tetrachloro-ethane | Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5] | Glass, Teflon®-lined septum | 14 days |
| Tetrachloroethene | Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5] | Glass, Teflon®-lined septum | 14 days |
| Toluene | Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5] | Glass, Teflon®-lined septum | 14 days |
| 1,2,4-Trichloro-benzene[7] | Cool 4°C | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| 1,1,1-Trichloroethane | Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5] | Glass, Teflon®-lined septum | 14 days |
| 1,1,2-Trichloroethane | Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5] | Glass, Teflon®-lined septum | 14 days |
| Trichloroethene | Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5] | Glass, Teflon®-lined septum | 14 days |
| Trichlorofluoro-Methane | Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2[5] | Glass, Teflon®-lined septum | 14 days |
| 2,4,6-Trichloro-phenol[7] | Cool 4°C, 0.008% $Na_2S_2O_3$[1] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Vinyl chloride | Cool 4°C, 0.008% $Na_2S_2O_3$[1] HCl to pH 2 | Glass, Teflon®-lined septum | 14 days[5] |
| **Pesticides Tests[7]** | | | |
| Aldrin | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Ametryn | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Aminocarb | Cool 4°C pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Atraton | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Atrazine | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |

Table 2.3 (continued) Required Preservation, Container, and Maximum Holding Times for Wastewater Samples and Solid/ Hazardous Waste Samples (Aqueous Matrices), Except Radiochemical Parameters

| Parameter | Preservation | Container | Maximum Holding Time |
|---|---|---|---|
| Azinphos methyl | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Barban | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| alpha-BHC | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| beta-BHC | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| delta-BHC | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Gamma-BHC (Lindane) | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Captan | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Carbaryl | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Carbophenothion | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Chlordane | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Chloropropham | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| 2,4-D | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| 4,4'-DDD | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| 4,4'-DDE | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| 4,4'-DDT | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Demeton-O | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Dementon-S | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Diazinon | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Dicamba | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |

Table 2.3 (continued) Required Preservation, Container, and Maximum Holding Times for Wastewater Samples and Solid/ Hazardous Waste Samples (Aqueous Matrices), Except Radiochemical Parameters

| Parameter | Preservation | Container | Maximum Holding Time |
|---|---|---|---|
| Dichlofenthion | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Dichloran | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Dicofol | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Dieldrin | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Dioxathion | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Disulfoton | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Diuron | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Endosulfan I | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Endosulfan II | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Endosulfan Sulfate | Cool 4°C,pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Endrin | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Endrin aldehyde | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Ethion | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Fenuron | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Fenuron-TCA | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Heptachlor | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Heptachlor epoxide | Cool 4°C,pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Isodrin | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Linuron | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |

Table 2.3 (continued) Required Preservation, Container, and Maximum Holding Times for Wastewater Samples and Solid/ Hazardous Waste Samples (Aqueous Matrices), Except Radiochemical Parameters

| Parameter | Preservation | Container | Maximum Holding Time |
|---|---|---|---|
| Malathion | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Methiocarb | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Methoxychlor | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Mexacarbate | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Mirex | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Monuron | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Monuron-TCA | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Nuburon | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Parathion methyl | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Parathion ethyl | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| PCNB | Cool 4°C,pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Perthane | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Prometron | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Prometryn | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Propazine | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Propham | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Propoxur | Cool 4°C,pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Secbumeton | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Siduron | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |

Table 2.3 (continued) Required Preservation, Container, and Maximum Holding Times for Wastewater Samples and Solid/ Hazardous Waste Samples (Aqueous Matrices), Except Radiochemical Parameters

| Parameter | Preservation | Container | Maximum Holding Time |
|---|---|---|---|
| Simazine | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Strobane | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Swep | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| 2,4,5-T | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| 2,4,5-TP (Silvex) | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Terbuthylazine | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Toxaphene | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |
| Trifluralin | Cool 4°C, pH 5-9[10] | Glass, Teflon®-lined cap | 7 days until extraction; 40 days after extraction |

## Table 2.6 Required Preservation, Container and Maximum Holding Times for Solid/Hazardous Waste Samples (Soils, Liquids, Sediments, Sludges, and Ambient Air)

| Parameter | Preservation | Container | Maximum Holding Time |
|---|---|---|---|
| Volatile Organics for soil/ sediment, and sludge | Cool 4°C | Glass Teflon®-lined cap | 14 days |
| Volatile Organics (Non-Aqueous sample) | Cool 4°C, dark | Encore™ or equivalent field core sampling/ storage containers & 60 ml septum sealed glass vial | Transfer immediately upon receipt to methanol and sodium bisulfate solution, analyze within 14 days |
| Volatile Organics (Non-Aqueous sample) | Cool 4°C, dark | Field preserved vials methanol & sodium bisulfate Glass, 40 ml vial stir bar [sodium bisulfate only], septum sealed glass vial & 60 ml septum sealed glass vial | 14 days |
| Volatile organics in liquid samples | Cool 4°C, if residual $Cl_2$ add $Na_2S_2O_3$ and HCl to pH < 2 | Glass, Teflon®-lined cap | 14 days |
| Acrolein and Acrylonitrile in liquid samples | Cool 4°C Adjust to pH 4-5 | Glass, Teflon®-lined cap | 14 days |
| Semivolatile organics/ organochlorine pesticides/ PCBs and herbicides for soil/sediment, and sludge | Cool 4°C | Glass, Teflon®-lined cap | 14 days until extraction; 40 days after extraction |
| Semivolatile organics/ organochlorine pesticides/ PCBs and herbicides for concentrated waste samples | Cool 4°C | Glass, Teflon®-lined cap | 14 days until extraction; 40 days after extraction |
| Metals except Cr VI and Hg (total) for liquid samples | Cool 4°C, $HNO_3$ to pH < 2 | P, G | 6 months |
| Metals except Cr VI and Hg (dissolved) for liquid samples | Cool 4°C, Filter on-site $HNO_3$ to pH < 2 | P, G | 6 months |
| Metals except Cr VI and Hg (suspended) for liquid samples | Cool 4°C Filter on-site | P, G | 6 months |

Table 2.6 (continued) Required Preservation, Container and Maximum Holding Times for Solid/Hazardous Waste Samples (Soils, Liquids, Sediments, Sludges, and Ambient Air)

| Parameter | Preservation | Container | Maximum Holding Time |
|---|---|---|---|
| Metals except Cr VI and Hg for solid samples | Cool 4°C | P, G | 6 months |
| Chromium VI for solid samples | Cool 4°C | P, G | 30 days to digestion; analysis 168 hours after digestion |
| Chromium VI for liquid samples | Cool 4°C | P, G | 24 hours |
| Mercury (total) for liquid samples | $HNO_3$ to pH < 2 | P, G | 28 days |
| Mercury (dissolved) for liquid samples | Filter on-site $HNO_3$ to pH < 2 | P, G | 28 days |
| Mercury (total) for solid samples | Cool 4°C | P, G | 28 days |
| **Ambient Air Analysis** | | | |
| TO-15 Volatile Organics in Specially Prepared Canisters – GC/MS | None | Specially prepared canisters | 30 days from sample collection |
| TO-17 Volatile Organics in Ambient Air using Active Sampling onto Sorbent Tubes | Cool ≤4°C after sample collection and in refrigeration unless samples are analyzed the same day of collection. The samples must be stored in an organic solvent free environment. Small packages of activated charcoal/silica gel must be with each shipment container of multiple tubes. | Sorbent Tubes | 30 days from sample collection; except 7days if limonene, carene, labile sulfur, bischloromethylether or nitrogen containing volatiles |

## Table 2.7 Required Preservation, Container and Maximum Holding Times From VTSR for CERCLA-CLP Aqueous and Non-Aqueous Samples

| Parameter | Preservation | Container | Maximum Holding Time From Validated Time of Sample Receipt (VTSR) |
|---|---|---|---|
| Volatile Organics (Aqueous) | Cool 4°C, dark 0.08% $Na_2S_2O_3$ if residual $Cl_2$ | Glass, white polypropylene or black phenolic plastic screw Teflon®-lined septum | 10 days |
| Volatile Organics (Non-Aqueous) | Cool 4°C, dark | Glass, polypropylene cap, white Teflon® liner | 10 days |
| Volatile Organics (Non-Aqueous) | Cool 4°C, dark | Encore™ or equivalent field core sampling/ storage container & 60 ml septum sealed glass vial | Transfer immediately upon receipt to methanol and sodium bisulfate solution analyze within 10 days |
| Volatile Organics (Non-Aqueous) | Cool 4°C, dark | Field preserved vials methanol & sodium bisulfate glass, 40 ml vial stir bar [sodium bisulfate only], septum sealed glass vial & 60 ml septum sealed glass vial | 10 days |
| Pesticide/PCBs | Cool 4°C, dark | Amber Glass, white polypropylene or black phenolic, baked polyethylene cap | Extraction Aqueous: continuous liquid-liquid extraction must be started within 5 days, Non-Aqueous: 10 days analysis, 40 days from VTSR |
| Polychlorinated Dibenzo-p-Dioxins (PCDDs) and Dibenzofurans (PCDFs) (Non Aqueous) | Cool 10°C, dark | Amber Glass, white polypropylene or black phenolic, baked polyethylene cap | Extraction: 30 days from VTSR, analysis 45 days from extraction |

Table 2.7 (continued) Required Preservation, Container and Maximum Holding Times From VTSR for CERCLA-CLP Aqueous and Non-Aqueous Samples

| Parameter | Preservation | Container | Maximum Holding Time From Validated Time of Sample Receipt (VTSR) |
|---|---|---|---|
| Polychlorinated Dibenzo-p-Dioxins (PCDDs) and Dibenzofurans (PCDFs) (Aqueous) | Cool 4°C, dark | Amber Glass, white polypropylene or black phenolic, baked polyethylene cap | Extraction: 30days from VTSR, analysis: 45 days from extraction |
| Polychlorinated Dibenzo-p-Dioxins (PCDDs) and Dibenzofurans (PCDFs) (Fish and Tissue Samples) | Cool 4°C, dark until prepared then-10°C until analysis | Wrapped in aluminum foil in field | Extraction: 1 year from VTSR. Once thawed, must be analyzed within 24 hours. Analysis: 45 days from extraction |
| Cyanide, total amenable to chlorination | Aqueous - 0.6g ascorbic acid if residual $Cl_2$, NaOH to pH>12, cool 4°C, $CaCO_3$ in presence of sulfide | Plastic bottle, plastic cap, plastic liner | 14 days |
| Metals except Hg (Aqueous) | $HNO_3$ to pH<2, cool 4°C, until analyzed | Plastic bottle, plastic cap, plastic liner | 180 days |
| Metals – Dissolved except Hg (Aqueous) | Field filter 0.45 µm pore diameter filter, rinse bottle with sample then immediately $HNO_3$ to pH<2, cool 4°C until analyzed | Plastic bottle, plastic cap, plastic liner | 180 days |
| Metals except Hg (Non-Aqueous) | Cool 4°C until analyzed | Flint glass bottle, black phenolic cap, polyethylene liner | 180 days |
| Hg (Aqueous) | $HNO_3$ to pH<2, Cool, 4°C until analyzed | Plastic bottle, plastic cap, plastic liner | 26 days |
| Hg – Dissolved (Aqueous) | Field filter 0.45 µm pore diameter filter, rinse bottle with sample immediately, $HNO_3$ to pH<2, Cool, 4°C until analyzed | Plastic bottle, plastic cap, plastic liner | 26 days |
| Hg (Non-Aqueous) | $HNO_3$ to pH<2, Cool, 4°C until analyzed | Flint glass bottle, black phenolic cap, polyethylene liner | 28 days |

Table 2.7 (continued) Required Preservation, Container and Maximum Holding Time From VTSR for CERCLA-CLP Aqueous and Non-Aqueous Samples

| Parameter | Preservation | Container | Maximum Holding Time From Validated Time of Sample Receipt (VTSR) |
|---|---|---|---|
| Cyanide (Aqueous) | 0.6g ascorbic acid if residual $Cl_2$ NaOH to pH>12, cool 4°C until analyzed | Plastic bottle, plastic cap, plastic liner | 14 days |
| Cyanide (Non-Aqueous) | Cool 4°C, until analyzed | Plastic bottle, plastic cap, plastic liner | 14 days |
| Low Level Volatile Organics | Cool 4°C, dark, 0.008% $Na_2S_2O_3$ | Glass, black phenolic or white polypropylene screw cap, Teflon®-lined septum | 7 days |
| Low Level Semi-volatile Organics | Cool 4°C, dark | White polypropylene or black phenolic, baked polyethylene cap | Extraction: continuous extraction must be started within 5 days of VTSR. Analysis: 40 days from start of extraction |
| Low Level Pesticides/PCBs Organics | Cool 4°C, dark | Amber glass, white polypropylene or black phenolic, baked polyethylene cap | Extraction: continuous extraction must be started within 5 days of VTSR. Analysis: 40 days from start of extraction |

## Footnotes

[1] Use only in the presence of residual chlorine.

[2] Optionally, all samples may be tested with lead acetate paper before pH adjustment in order to determine if sulfide is present. If sulfide is present, it can be removed by the addition of cadmium nitrate powder until a negative spot test is obtained. The sample is filtered and then the NaOH is added to pH 12.

[3] Filter samples immediately on-site before adding preservatives for dissolved metals.

[4] Applies to samples to be analyzed by GC, LC, or GC/MS for specific compounds.

[5] Sample receiving no pH adjustment shall be analyzed within seven days of sampling.

[6] The pH adjustment is not required if acrolein will not be measured. Samples for acrolein receiving no pH adjustment shall be analyzed within three days of sampling.

[7] When the extractable analytes of concern fall within a single chemical Category, the specified preservative and maximum holding times shall be observed for optimum safe guard of sample integrity. When the analyses of concern fall within two or more chemical categories, the sample may be preserved by cooling to four (4) degrees Celsius, reducing residual chlorine with 0.008% $Na_2S_2O_3$, storing in the dark and, for pesticides only, adjusting the pH to 6-9.Samples preserved in this manner may be held for seven days before extraction and 40 days after extraction. Exceptions to this optional preservation and holding time procedure are noted in reference 1 (regarding the requirement for thiosulfate reduction of residual chlorine), and references 8 and 9 (regarding the analysis of benzidine).

[8] Extracts may be stored up to seven days before analysis if storage is conducted under an inert (oxidant-free) atmosphere.

[9] For the analysis of diphenylnitrosamine, add 0.008% $Na_2S_2O_3$ and adjust pH to 7-10 with NaOH within 24 hours of sampling.

[10] The pH adjustment may be performed upon receipt at the environmental laboratory and may be omitted if the samples are extracted within 72 hours of collection. For the analysis of aldrin, add 0.008% $Na_2S_2O_3$.

[11] Method 1631 Revision B: Mercury in Water by Oxidation, Purge and Trap and Cold Vapor Atomic Fluorescence Spectrometry is required. Samples may be shipped to laboratory unpreserved if collected in fluoropolymer bottles, filled to top with no headspace, capped tightly, and maintained at 4°C from time of collection until preservation. The samples must be acid preserved within 48 hours after sampling.

[12] First use of samples shall begin within 36 hours of collection. For storm water discharges, first use of the sample shall begin within 48 hours of collection.

[13] Once collected if the assay can not begin within 8 hours then the sample must be frozen. Once defrosted, the sample can be held at 4°C until the assay begins. The assay must then be done the day that the sample is defrosted.

[14] Elution, concentration and the application of the purified sample to the slide must be completed in one work day. The sample must be stained within 72 hours of the application of the purified sample to the slide. Up to 7 days are permitted between sample staining and examination.

# Appendix C-2: Required Preservation, Container, and Maximum Holding Times for Air Samples

## Required Preservation, Container, and Maximum Holding Times for Air Samples

| Parameter | Preservation | Container | Maximum Holding Times |
|---|---|---|---|
| Hexavalent Chromium | Cool 4°C ± 2°C | 47 mm PVC filter and cellulose backup pads loaded in a Federal Reference Method (FRM) type cassette with holder<br><br>Place sample cassette assemblies in a clean Ziploc ® bag | The laboratory SOP specifies holding times only for samples from chromium plating or paint operations. A maximum holding time of 30 days from sample collection which conforms to NJDEP requirements for hexavalent chromium in non-aqueous samples will be used. In general filter samples will be analyzed and reported within 5 business days of collection. |
| Particulate Matter ($PM_{10}$) | None, ambient temperature | 47 mm $PM_{10}$ filter in static, dissipative plastic petri dish slides for particulate filter transit and/or storage | None |

# Appendix D

# Analytical Laboratory Standard Operating Procedures (SOPs)

# D-1: Accutest Laboratories SOPs

(Lab procedures are proprietary information and provided to the NJDEP only)

APPENDIX D-1

ACCUTEST LABORATORY SOP LIST
PPF FSP/QAPP

| Matrix | Analysis | SOP Title | SOP No./Date | Method(s) | Certification Status |
|---|---|---|---|---|---|
| Solid and Aqueous | Polychlorinated Biphenyls (PCBs) | SW846 8082: Determination of Polychlorinated Biphenyls (PCBs) Using GC System | EGC8082-11 10/20/09 | SW846 8082 | Certified |
| Solid and Aqueous | Extractable Petroleum Hydrocarbons (EPH) | Extractable Petroleum Hydrocarbons | EGCNJEPH-01 1/7/10 | NJDEP EPH | Certified |
| Solid | Percent Solids | Percent Solids and Total Solids in Soil/Solid Matrices | EGN007-08 9/22/09 | SM 2540G, ASTM D4643-00 | NA |
| Aqueous | Total Dissolved Solids (TDS) | Total Dissolved Solids (Total Filterable Residue) | EGN020-08 4/21/09 | SM 2540C | Certified |
| Aqueous | Nitrate/Nitrite | Nitrate/Nitrite and Nitrate only by Cadmium Reduction Analysis (Lachat Autoanalyzer) | EGN026-06 02/09/09 | EPA 353.2 | Certified |
| Aqueous | Alkalinity | Alkalinity, Total (pH 4.5) | EGN037-07 10/06/08 | SM 2320B | Certified |
| Aqueous | Total Suspended Solids (TSS) | Total Suspended Solids (Non-Filterable Residue) | EGN087-08 11/16/09 | SM 2540D | Certified |
| Solid and Aqueous | Carbon Oxygen Demand (COD) | Chemical Oxygen Demand - HACH 8000, Aqueous Samples, HACH 8000, Modification for Solid Samples | EGN099-06 4/22/07 | SM 5220 C | Certified aqueous, certification NA for soil |
| Aqueous | Orthophosphate | Orthophosphate | EGN102-06 3/18/10 | SM 4500-P E | Certified |
| Aqueous | Nitrite | Nitrogen, Nitrite (Total-Waters), Nitrogen, Nitrite (soluble-Soils) | EGN103-05 07/29/04 | SM 4500-NO2 | Certified |
| Solid and Aqueous | Sulfide (acid soluble and insoluble) | Sulfide | EGN118-06 10/12/09 | SW846 9034 | Certified |
| Aqueous | Chloride | Chloride | EGN131-04 4/25/07 | SM 4500-CI C | Certified |
| Aqueous | Biological Oxygen Demand (BOD) | Biological Oxygen Demand and Carbonaceous Oxygen Demand | EGN134-08 3/11/09 | SM 5210B | Certified |
| Solid and Aqueous | Ignitability | Ignitability | EGN140-09 12/22/09 | SW846 1010A | Certified |
| Solid | TCLP -Organics | TCLP | EGN142-10 10/3/09 | SW846 1311 | Certified |
| Aqueous | Total Cyanide - Spectrophotometric | Cyanide (Lachat Autoanalyzer) | EGN207-14 12/14/09 | EPA 335.4 | Certified |
| Solid | Hexavalent Chromium - Colorimetric | Hexavalent Chromium (Soils) | EGN214-08 10/6/08 | SW846 3060A for digestion SW846 7196A for analysis | Certified |
| Aqueous | Phenols | Phenols (Lachat Autoanalyzer) | EGN217-13 9/23/09 | SW846 9066 | Certified |
| Solid | Total Organic Halides (TOX) | Total Organic Halides, Solid and Oil Matrices | EGN219-04 5/6/08 | SW846 9023 | Certified |
| Solid and Aqueous | Reactivity | Sulfide Analysis and Reactive Sulfides | EGN228-06 1/2/03 | SW846 9034 | Certified |
| Aqueous | Hexavalent Chromium - Colorimetric | Hexavalent Chromium in Waters | EGN230-08 4/22/09 | SW846 7196A | Certified |
| Solid | Total Organic Carbon (TOC) | Total Organic Carbon in Soils Samples | EGN233-07 11/8/07 | SW846 9060 | Certified |
| Aqueous | Total Organic Carbon | Total Organic Carbon in Aqueous Samples | EGN234-10 7/16/08 | SM 5310 B | Certified |
| Aqueous | pH and Corrosivity | pH and Corrosivity for Aqueous and Multiphasic Wastes | EGN238-05 5/30/08 | SW846 9040C | Certified |
| Solids | Synthetic Precipitation Leaching Procedure (SPLP) for Non-volatile Analytes | Synthetic Precipitation Leaching Procedure for Non-Volatile Analytes | EGN239-03 4/28/09 | SW846 1312 | Certified |
| Solids | Synthetic Precipitation Leaching Procedure (SPLP) Volatile Analytes | Synthetic Precipitation Leaching Procedure for Volatile Analytes | EGN240-03 4/28/09 | SW846 1312 | Certified |
| Solid | Cation Exchange Capacity (CEC) | Cation Exchange Capacity of Soils (Sodium Acetate) | EGN242-03 1/19/06 | SW846 9081 | Certified |
| Aqueous | Ferrous and Ferric Iron | Ferrous Iron | EGN243-05 3/20/09 | SM 3500B-Fe B | Certified |
| Solid and Aqueous | Anions - bromide, chloride, sulfate (using Dionex DX500) | Determination of Inorganic Anions by Ion Chromatography | EGN251-08 5/16/06 | EPA 300 & SW846 9056 | Certified |
| Solid | Shake Extraction with Water | The Neutral Leaching of Solid Waste Samples Using Shake Extraction | EGN252-03 1/7/09 | ASTM D3987-85 | NA |
| Solid and Aqueous | Oxidation-Reduction Potential (Redox) | Oxidation-Reduction Potential | EGN253-07 10/6/08 | ASTM D1498-76 | NA |
| Aqueous | Total Phosphorus | Total Phosphorus | EGN256-08 8/10/09 | EPA 365.3 | Certified |
| Solid | Total Cyanide - Colorimetric | Cyanide Distallation/Soil Samples /Micro Method | EGN276-08 12/14/09 | SW846 9012B M | Certified |
| Solid | Phenols | Phenols Micro Distillation, Soil Samples | EGN280-04 8/24/08 | SW846 9065 | Certified |
| Solid and Aqueous | Anions - bromide, chloride, sulfate (using Dionex ICS-2000) | Determination of Inorganic Anions by Ion Chromatography | EGN281-07 3/24/10 | EPA 300 & SW846 9056 | Certified |

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ACCUTEST LABORATORY SOP LIST
PPF FSP/QAPP

| Matrix | Analysis | SOP Title | SOP No./Date | Method(s) | Certification Status |
|---|---|---|---|---|---|
| Solid | Particle Size Reduction | Procedure for Particle Size Reduction (Crushing) of Solid Matrices | EGN297-01 08/06/07 | NA | NA |
| Solid | Pore Water Extraction from Saturated Soils | Procedure for Pre Water Extraction from Soil Samples for Non-Volatile or Metals Analysis | EGN299-01 8/25/09 | NA | NA |
| Aqueous/ Solid | Sample Waste Disposal | Sample Waste Disposal | EHS004-03 10/21/09 | NA | NA |
| Solids | Mercury - Cold Vapor | Cold Vapor Analysis of Mercury for Soil Samples | EMA072-14 9/16/08 | SW846 7471A | Certified |
| Aqueous | Mercury - Cold Vapor | Cold Vapor Analysis of Mercury for Water Samples | EMA215-09 9/16/08 | SW846 7470A | Certified |
| Solid and Aqueous | Total and Dissolved Metals by ICP | Metals by Inductively Coupled Plasma - Mass Spectrometry (ICP-MS) | EMA217-08 7/31/08 | SW846 6020 | Certified |
| Solid and Aqueous | Total and Dissolved Metals by ICP-MS | Metals by Inductively Coupled Plasma Atomic Emission Spectrometry (ICP) Using Solid State ICP | EMA222-07 1/13/10 | SW846 6010B | Certified |
| Aqueous | Acid Digestion for Metals - Aqueous | Digestion of Non-Portable Waters for ICP or ICP-MS Analysis | EMP070-12 1/15/10 | SW846 3010A | Certified |
| Solid | Acid Digestion for Metals - Solids | Digestion of Soils for ICP and ICP-MS Analysis | EMP073-12 9/1/09 | SW846 3050B | Certified |
| Aqueous | Acid Digestion for Metals - Aqueous | Digestion of Non-Potable Waters for Total Recoverable or Dissolved Metals for ICP or Flame Analysis | EMP081-04 10/3/09 | SW846 3005A | Certified |
| Solid and Aqueous | Volatile Organic Compounds (VOCs) | Method 8260B, Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry (GC/MS) | EMS8260-19 9/11/2009 | SW846 8260B | Certified |
| Solid and Aqueous | Semivolatile Organic Compounds (SVOCs) | Method 8270C, Semivolatile Organic Compounds by Gas Chromatography / Mass Spectrometry (GC/MS) | EMS8270-16 2/3/09 | SW846 8270C | Certified |
| Aqueous | Separatory Funnel Extraction for SVOCs | Preparation of Semi-Volatile Extractables in Aqueous | EOP001-09 11/3/09 | SW846 3510C | Certified |
| Solid | Ultrasonic Extraction - SVOCs | Extraction of Semivolatile Organics from Solids by Sonication (Base, Neutral, Acid Organics; Pesticides, Polychlorinated Biphenyls, Diesel Range Organics) | EOP002-11 9/20/07 | SW846 3550B | Certified |
| Aqueous | Continuous Liquid-Liquid Extraction for SVOCs | Continuous Liquid-Liquid Extraction | EOP007-03 7/28/03 | SW846 3520C | Certified |
| Solid and Aqueous | Preparation for PCBs | Preparation of Petroleum Oils and Organic Wastes for PCB Analysis by SW8082 | EOP017-02 9/25/08 | SW846 3580A | Certified |
| Solid | Cleanup - Sulfur Removal | The Removal of Elemental Sulfur from Organic Extracts using Tetrabutylammonium Sulfite | EOP018-01 9/27/04 | SW846 3660B | Certified |
| Solid | Soxhlet Extraction - SVOCs | Preparation of Solids for Semi-Volatile Organics by Soxhlet Extraction | EOP020-03 7/29/03 | SW846 3540C | Certified |
| Solid | Cleanup - Florisil | Florisil Column Cleanup | EOP3620-04 5/25/06 | SW846 3620B | Certified |
| Solid | Cleanup - Sulfuric Acid | Sulfuric Acid/Permanganate Cleanup | EOP3665-03 | SW846 3665A | Certified |
| Aqueous | Purge & Trap for VOCs | Purge-and-Trap Extraction for Aqueous Samples | EOP5030-03 8/6/03 | SW846 5030B | Certified |
| Solid | Purge & Trap for VOCs - low level | Collection, Preservation, Management and Handling of Solid Samples for Volatile Organic Analysis by SW-846 Methodology | EOP5035-12 3/2/09 | SW846 5035L & 5035H | Certified |
| Aqueous/ Solid | Sample Container Receipt, Cleaning, and Quality Control | Sample Container Receipt, Cleaning, and Quality Control | EQA006-07 10/18/06 | NA | NA |
| Solid | Homogenization | Procedure for Obtaining Representative Sample Aliquots | EQA042-03 2/17/06 | NA | NA |

NA - Not applicable

# D-2: Air Laboratories SOPs

(Lab procedures are proprietary information and provided to the NJDEP only)

APPENDIX D-2

AIR LABORATORY SOP LIST
PPG FSP/QAPP

| Matrix | Analysis | Laboratory | SOP Title | SOP No./Date/Rev. # | Source Method | Certification Status |
|---|---|---|---|---|---|---|
| Air | Hexavalent Chromium | Galson | Preparation of PVC Filters for the Determination of Hexavalent Chromium by IC | II-CR6PREP | OSHA Method ID-215 | Certified |
| Air | Hexavalent Chromium | Galson | Analysis of Hexavalent Chromium by Ion Chromatography | II-CR6IC | OSHA Method ID-215 | Certified |
| Air | Particulates | AECOM | Filter Processing Method for the Determination of Suspended Particulates in Ambient Air | 2000-105, March 2007, Rev. No. 6 | 40 CFR 50 | Certified |

# D-3: GeoTesting Express SOPs

(Lab procedures are proprietary information and provided to the NJDEP only)

APPENDIX D-3

GEOTESTING EXPRESS SOP LIST
PPG FSP/QAPP

| Matrix | Analysis | Laboratory | SOP Title | SOP No./Date/Rev. # | Source Method | Certification Status |
|---|---|---|---|---|---|---|
| Solid | Compressive Strength | GeoTesting Express | Standard Test Methods for Compressive Strength of Molded Soil-Cement Cylinders[1] | D 1633 – 00 (Reapproved 2007) | ASTM D1633 | NA |
| Solid | Moisture Content | GeoTesting Express | Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock Mass | ASTM D 2216, June 2006, Revision 4 | ASTM D2216 - latest revision | NA |
| Solid | Strength and stress-strain relationships of cohesive soil | GeoTesting Express | Test Method for Unconsolidated Undrained Triaxial Compression Test on Cohesive Soils | ASTM D 2850, June 2006, Revision 3 | ASTM D2850 - lastest revision | NA |
| Solid | Grain Size Analysis | GeoTesting Express | Test Method for Particle Size Analysis of Soils | ASTM D 422, June 2009, Revision 6 | ASTM D 422- latest revision | NA |
| Solid | Plasticity of soils | GeoTesting Express | Standard Test Method for Liquid Limit, Plastic Limit and Plasticity Index of Soils | ASTM D 4318, June 2006, Revision 3 | ASTM D 4318 – latest revision | NA |
| Solid | Strength and stress-strain relationships of saturated cohesive soil | GeoTesting Express | Standard Test Method for Consolidated Undrained Triaxial Compression Test for Cohesive Soils | ASTM D 4767, June 2006, Revision 3 | ASTM D 4767 – latest revision | NA |
| Solid | Resistance of Solid Wastes to Freezing and Thawing | GeoTesting Express | Standard Test Method for Determining the Resistance of Solid Wastes to Freezing and Thawing[1] | D 4842 – 90 (Reapproved 2001) | ASTM D 4842 | NA |
| Solid | Wetting and Drying Test of Solid Wastes | GeoTesting Express | Standard Test Method for Wetting and Drying Test of Solid Wastes[1] | D 4843 – 88 (Reapproved 1999) | ASTM D 4843 | NA |
| Solid | Hydraulic Conductivity | GeoTesting Express | Standard Test Method for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter | ASTM D 5084, June 2006, Revision 6 | ASTM D 5084 – latest revision | NA |
| Solid | Specific gravity | GeoTesting Express | Standard Test Method for Specific Gravity of Soil Solids by Water Pycnomete | ASTM D 854, June 2009, Revision 4 | ASTM D 854 – latest revision | NA |

NA - Not applicable

# D-4: Test America SOPs

(Lab procedures are proprietary information and provided to the NJDEP only)

APPENDIX D-4

TEST AMERICA LABORATORY SOP LIST
PPG FSP/QAPP

| Matrix | Technique Description | SOP Title | SOP No./Date/Rev. # | NJDEP Approved Method(s) | Certification Status |
|---|---|---|---|---|---|
| NA | Solvent and Acid Lot Testing | Solvent & Acid Lot Testing & Approval | CA-Q-S-001 10/1/07 Rev. 0 | None | NA |
| Solid and Aqueous | Calibration Curves | Calibration Curves (General) | CA-Q-S-005 12/15/09 Rev. 2 | None | NA |
| Solid and Aqueous | Preparation and Screening for SVOC | Preparation and Screening of Semivolatile Organic Extracts for GC/MS Analysis | ED-GCS-001 1/24/08 Rev. 6 | None | NA |
| Solid | Headspace for VOCs | Screening for Volatile Organics, Static Headspace with GC FID, SW846 Method 5021 | ED-GCV-001 10/23/09 Rev. 8 | SW846 5021 | Certified |
| NA | Control of Non-Conformances | Standard Operating Procedure for Control of Non-Conformances and Corrective Action | ED-GEN-003 3/13/09 Rev. 3a | None | NA |
| Solid | SubSampling | SubSampling | ED-GEN-007 3/13/09 Rev. 2a | None | NA |
| NA | Reagents and Standards | Traceability and Storage of Standards and Reagents | ED-GEN-008 1/26/10 Rev. 3 | None | NA |
| Solid | Calibration of Balances | Calibration of Analytical Balances | ED-GEN-010 6/8/09 Rev. 5 | None | NA |
| Solid | Thermometer Calibration | Thermometer Calibration | ED-GEN-014 7/6/09 Rev. 5 | None | NA |
| NA | Training | Training | ED-GEN-022 6/11/08 Rev. 1 | None | NA |
| NA | Bulk Solvent testing | Bulk Solvent Testing and Approval | ED-GEN-023 4/1/08 Rev. 0 | None | NA |
| Solid and Aqueous | Semivolatile Organic Compounds (SVOCs) | Semi-Volatile Organic Compounds by Gas Chromatography / Mass Spectrometry (GC/MS), SW846 Method 8270C | ED-MSS-002 2/15/10 Rev. 10 | SW846 8270C | Certified |
| Aqueous | Purge and Trap for VOCs in Aqueous | Purge and Trap for Aqueous Samples, SW846 Method 5030 | ED-MSV-001 10/6/08 Rev. 7 | SW846 5030B | Certified |
| Solid | Purge and Trap for VOCs in Solid Samples | Closed System Purge and Trap and Extraction for Volatile Organics in Soil, SW846 Method 5035A | ED-MSV-002 11/4/08 Rev. 7 | SW846 5035A | Certified |

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TEST AMERICA LABORATORY SOP LIST
PPG FSP/QAPP

| Matrix | Technique Description | SOP Title | SOP No./Date/Rev. # | NJDEP Approved Method(s) | Certification Status |
|---|---|---|---|---|---|
| Solid and Aqueous | Volatile Organic Compounds (VOCs) | SW846 Method 8260B, Volatile Organic Compounds By Gas Chromatography/ Mass Spectrometry (GC/MS) | ED-MSV-005 10/23/08 Rev. 8 | SW846 8260B | Certified |
| Solid and Aqueous | Metals by ICP | Trace Metals Analysis by Inductively Coupled Plasma Emission Spectroscopy [Method No. SW846 Method 6010B] | ED-MT-004 6/26/08 Rev. 6 | SW846 6010B | Certified |
| Solid and Aqueous | Use of ICP | The Use of the Thermo Jarrell Ash Model 61E Trace Simultaneous Inductively Coupled Plasma Emission Spectrometer | ED-MT-013 11/25/09 Rev. 6 | None | NA |
| Solid | Mercury by Manual Cold Vapor | Mercury Analysis for Sediment and Soil Samples using the Leeman Mercury Analyzer (Cold Vapor Technique) by SW846 Method 7471A | ED-MT-016 3/17/09 Rev. 7 | SW846 7471A | Certified |
| Aqueous | Mercury by Manual Cold Vapor | Mercury Analysis for Water and Wastewater using EPA 245.1 and SW846 7470A; Mercury in Drinking Water using EPA245.1; Leeman Mercury Analyzer (Cold Vapor Technique) | ED-MT-017 9/3/09 Rev. 6 | SW846 7470A | Certified |
| Solid and Aqueous | Metals by ICP-MS | Trace Metals Analysis for Water, Wastewater, Soil, Sediment, and Leachate Samples by ICP-MS Method No(s). EPA Methods 200.8 and SW-846 Method 6020 | ED-MT-029 9/11/09 Rev. 6 | SW846 6020 | Certified |
| Aqueous | Acid Digestion - SW and GW | Digestion of Water and Wastewater Samples for Analysis by ICP and ICP-MS [Method No. 3005A] | ED-MTP-002 10/20/09 Rev. 6 | SW846 3005A | Certified |
| Aqueous | Acid Digestion for Metals - Aqueous | Digestion of Water and Wastewater Samples for Analysis by ICP and ICP-MS [Method No. 3010A] | ED-MTP-003 11/24/08 Rev. 6 | SW846 3010A | Certified |

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TEST AMERICA LABORATORY SOP LIST
PPG FSP/QAPP

| Matrix | Technique Description | SOP Title | SOP No./Date/Rev. # | NJDEP Approved Method(s) | Certification Status |
|---|---|---|---|---|---|
| Solid | Acid Digestion for Metals - Solids | Hot Block Digestion of Sediments, Sludges and Soils, SW846 Method 3050B | ED-MTP-005 3/30/10 Rev. 8 | SW846 3050B | Certified |
| Aqueous | Separatory Funnel Extraction for SVOCs | Extraction of Semi-Volatile Organic Compounds in Aqueous Samples and Leachates - Separatory Funnel, (SW846 Method 3510C) | ED-ORP-002 11/24/08 Rev. 6 | SW846 3510C | Certified |
| Aqueous | Continuous Liquid-Liquid Extraction for SVOCs | Extraction of Semi-Volatile Organic Compounds in Water by Continuous Liquid-Liquid Extraction, SW846 Method 3520C | ED-ORP-003 11/24/08 Rev. 6 | SW846 3520C | Certified |
| Solid | Automatic Soxhlet Extraction for SVOCs | Automated Soxhlet Extraction of Solid Samples for Semivolatile Organic Compounds by SW846 Method 3541 | ED-ORP-004 1/26/10 Rev. 7 | SW846 3541 | Certified |
| Solid | Ultrasonic Extraction for SVOCs | Extraction of Semivolatile Organic Compounds in Soil Using a Medium-Level Extraction Technique (SW846 Method 3550B) | ED-ORP-006 1/19/08 Rev. 3 | SW846 3550B | Certified |
| Aqueous | Separatory Funnel Extraction for Pesticides and PCBs | Extraction of Pesticides and PCBs in Water by Separatory Funnel using SW846 Method 3510C | ED-ORP-014 10/30/09 Rev. 6 | SW846 3510C | Certified |
| Solid | Automatic Soxhlet Extraction for Pesticides and PCBs | Automated Soxhlet Extraction of Solid Samples for Semivolatile Pesticides/PCBs Compounds by SW846 Method 3541 | ED-ORP-016 1/25/10 Rev. 7 | SW846 3541 | Certified |
| Solid | Ultrasonic Extraction for Pesticides and PCBs | Ultrasonic Extraction of Pesticides & PCBs in Soils using SW846 Method 3550B | ED-ORP-018 12/1/09 Rev.6 | SW846 3550B | Certified |
| Solid and Aqueous | Dilution | Waste Dilution Preparation for Pesticides and PCBs using SW846 Method 3580A | ED-ORP-019 11/23/09 Rev. 6 | SW846 3580A | Certified |
| Solid | Cleanup - Florisil | Florisil Cleanup of Pesticide/PCB Sample Extracts by SW846 Method 3620B | ED-ORP-020 11/23/09 Rev. 5 | SW846 3620B | Certified |

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TEST AMERICA LABORATORY SOP LIST
PPG FSP/QAPP

| Matrix | Technique Description | SOP Title | SOP No./Date/Rev. # | NJDEP Approved Method(s) | Certification Status |
|---|---|---|---|---|---|
| Solid | Cleanup - Sulfur Removal | The Removal of Elemental Sulfur from Pesticide/PCB Extracts using SW846 Method 3660/3660B | ED-ORP-021 11/23/09 Rev. 5 | SW846 3660B | Certified |
| Solid | Cleanup - Sulfuric Acid | Sulfuric Acid Cleanup of PCB Extracts using SW846 Method 3665A | ED-ORP-022 11/16/09 Rev. 6 | SW846 3665A | Certified |
| Solid | TCLP for organic and inorganic analytes | Extraction Procedure Using the Toxicity Characteristic Leaching Procedure (TCLP), SW846 1311 | ED-ORP-038 11/2/09 Rev. 7 | SW846 1311 | Cerfified |
| Solids | Synthetic Precipitation Leaching Procedure (SPLP) | Extraction Procedure Using the Synthetic Precipitation Leaching Procedure (SPLP), SW846 1312 | ED-ORP-040 11/8/09 Rev. 4 | SW846 1312 | Certified |
| Solid | Shake Extraction with Water | ASTM Leachate Procedure for the Extraction of Solid Waste with Water | ED-ORP-041 10/28/09 Rev. 5 | ASTM D3987-85 | Certified |
| Solid and Aqueous | Polychlorinated Biphenyls (PCBs) | Analysis of Polychlorinated Biphenyls by Gas Chromatography using SW846 Method 8082 | EDS-GCS-04 1/12/10 Rev. 7 | SW846 8082 | Certified |
| NA | Sample Storage and Handling | Sample Storage & Handling Procedures for Mitigation of Sample and Laboratory Contamination | ED-SPM-004 2/1/08 Rev. 5 | None | NA |
| Aqueous/Solid | Laboratory Waste Disposal | Laboratory Waste Disposal Procedures | ED-SPM-008 Rev. 2 | None | NA |
| Solid and Aqueous | Reactive Cyanide | Cyanide-Reactivity, Analysis of Cyanide Reactivity [Method No(s). Vol. 1c 7.3.3] | ED-WET-001 9/15/08 Rev. 4 | Vol. 1c 7.3.3 | NA |
| Solid and Aqueous | Cyanide | Analysis of Total and Amenable Cyanide in Water, Drinking water, Wastewater, and Soil- Automated [Method No(s). SW846 9012A/9012B; 335.4 and SM 4500CN-C] | ED-WET-002 9/28/09 Rev. 4 | SW846 9012A<br>EPA 335.4<br>SM 4500 CN C | Certified |
| Solid | Hexavalent Chromium Digestion | The Alkaline Digestion of Soil Samples for the Analysis of Hexavalent Chromium [Method SW846 3060A] | ED-WET-010 2/03/10 Rev. 9 | SW846 3060A | Certified |

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TEST AMERICA LABORATORY SOP LIST
PPG FSP/QAPP

| Matrix | Technique Description | SOP Title | SOP No./Date/Rev. # | NJDEP Approved Method(s) | Certification Status |
|---|---|---|---|---|---|
| Solid | Hexavalent Chromium by Colorimetric | The Analysis of Digestates for Hexavalent Chromium by SW846 7196A | ED-WET-011 8/25/09 Rev. 7 | SW846 7196A | Certified |
| Aqueous | Hexavalent Chromium by Colorimetric | The Analysis of Waters for Hexavalent Chromium by EPA SW846 Method 7196A | ED-WET-012 1/22/08 Rev. 4 | SW846 7196A | Certified |
| Aqueous | Nitrate/Nitrite | Analysis of Nitrate and Nitrite in Water, Wastewater, and Soil-Automated [EPA 353.2 and SM 4500-NO3F] | ED-WET-021 9/15/09 Rev. 4 | SM 4500-NO3 F | Certified |
| Solid and Aqueous | Phenol | PHENOL, Analysis Total Phenols in Water and Wastewater - Discreet Analyzer [Method No(s). EPA 420.1 and SW846 9065] | ED-WET-026 5/20/08 Rev. 5 | SW846 9065 | Certified |
| Aqueous | Total Dissolved Solids (TDS) | TDS, The Determination of Filterable Residue [Method No. Standard Method 2540C] | ED-WET-027 7/16/08 Rev. 5 | SM 2540C | Certified |
| Aqueous | Total Suspended Solids (TSS) | TSS, Analysis of Total Suspended Solids in Water and Wastewater Samples [Method No. Standard Method 2540D] | ED-WET-028 10/8/08 Rev. 5 | SM 2540D | Certified |
| Solid | Percent Moisture | Percent Moisture Determination | ED-WET-32 2/16/10 Rev. 4 | EPA CLP SOW SOM01.1 | NA |
| Aqueous | Alkalinity | ALKALINITY, Analysis of Alkalinity in Water, Wastewater and Soil by Manual Titration or Auto-Titrator, Standard Method 2320B | ED-WET-039 11/10/08 Rev. 6 | SM 2320B | Certified |
| Aqueous | Biological Oxygen Demand (BOD) | Analysis of Biological Oxygen Demand in Water and Wastewater [Method No. SM 5210B] | ED-WET-041 4/1/08 Rev. 7 | SM 5210B | Certified |
| Aqueous | Chloride | Analysis of Chloride in Water, Wastewater, and Soil by Method No(s). SM 4500-CL B and SW846 9253 | ED-WET-043 11/18/09 Rev. 4 | SM 4500-CL B | Cerfified |

APPENDIX D-4

TEST AMERICA LABORATORY SOP LIST
PPG FSP/QAPP

| Matrix | Technique Description | SOP Title | SOP No./Date/Rev. # | NJDEP Approved Method(s) | Certification Status |
|---|---|---|---|---|---|
| Solid and Aqueous | Chloride - Colorimetric | Analysis of Chloride in Water, Wastewater, and Soil by Colorimetric Automated Ferricyanide [Method No(s). Standard Methods | ED-WET-044 10/1/09 Rev. 5 | SM 4500-CL E SW846 9251 | Certified |
| Aqueous | Carbon Oxygen Demand (COD) | Analysis of Chemical Oxygen Demand in Water Wastewater and Soil | ED-WET-048 5/5/06 Rev. 3 | EPA 410.4 SM 5220D | Certified |
| Aqueous | Dissolved Oxygen (DO) | DISSOLVE OXYGEN, Titrimetric Analysis of Dissolved Oxygen by Standard Method 4500-O C | ED-WET-053 2/22/10 Rev. 5 | SM 4500-O C | Certified |
| Aqueous | Ferrous Iron | Analysis of Ferrous Iron in Aqueous Samples by Discreet Analyzer | ED-WET-057 5/8/06 Rev. 3 | SM 3500 - Fe D | NJDEP certifies ferrous iron determination only for analysis of aqueous samples in the field |
| Solid and Aqueous | Ignitability | IGNITABILITY, Setaflash Method for Determining the Ignitability of Soil and Water Samples [Method No. SW846 1020A] | ED-WET-058 7/9/08 Rev. 5 | SW846 1020A | Certified |
| Solid and Aqueous | pH (Corrosivity) | Analysis of pH for Waters and Drinking water Measured Electrochemically [EPA 150.1, SM 4500 $H^+B$, SW846 9040B] | ED-WET-060 10/5/09 Rev. 5 | SW846 9040B | Certified |
| Solid | pH | Analysis of pH for Soils and Organic Samples Determined Electrochemically [Method No. SW846 9045C] | ED-WET-061 10/6/09 Rev. 4 | SW846 9045C | Certified |
| Aqueous | Ortho Phosphate | Analysis of Orthophosphate in Water | ED-WET-064 5/8/06 Rev. 3 | SM 4500-P E | Certified |

APPENDIX D-4

TEST AMERICA LABORATORY SOP LIST
PPG FSP/QAPP

| Matrix | Technique Description | SOP Title | SOP No./Date/Rev. # | NJDEP Approved Method(s) | Certification Status |
|---|---|---|---|---|---|
| Solid and Aqueous | Oxidation-Reduction Potential (Redox) | REDOX, Analysis of Oxidation-Reduction Potential by Standard Methods 2580 | ED-WET-066 11/30/09 Rev. 5 | SM 2580 | NA; NJDEP does not certify this parameter |
| Solid and Aqueous | Sulfate | Photometric Analysis of Sulfate in Water Wastewater and Soil | ED-WET-068 3/29/07 Rev. 5 | SW846 9038 | Certified |
| Solid | Sulfide Reactivity | Analysis of Sulfide Reactivity | ED-WET-070 5/5/06 Rev. 3 | SW846 9034 | Certified |
| Solid | Acid Soluble Sulfide | Analysis of Acid Soluble Sulfides in Soil, SW846 9030B & 9034 | ED-WET-071 5/8/06 Rev. 3 | SW846 9030B SW846 9034 | Certified |
| Aqueous | Total Organic Carbon (TOC) | Analysis of Total Organic Carbon in Aqueous Samples, SW846 9060 | ED-WET-073 11/12/07 Rev. 4 | SW846 9060 | Certified |
| Solid | Total Organic Carbon (TOC) | The Determination of Total Organic Carbon in Solid Samples by Flash EA 1122 Analyzer, Lloyd Kahn | ED-WET-076, 7/11/2007 Rev. 2 | SW846 9060 | Certified |
| Solid and Aqueous | Extractable Petroleum Hydrocarbons (EPH) | Preparation and Analysis of Extractable Petroleum Hydrocarbons (EPH) in Solid and Water Samples using NJDEP EPH 10/08: Analysis of Extractable Petroleum Hydrocarbon Compounds (EPH) in Aqueous and Soil/Sediment/Sludge Matrices | ED-GCS-012, 4/19/2010 Rev 2 | NJDEP EPH Method 10/08, Rev. 2, October 2009. | Certified |

NA - Not Applicable

# Appendix E

# Sample Hit List

**Summary Hit List**
**PPG Industries, Inc.**

**Summary Hit List Format**
**PPG Industries, Inc**

| | |
|---|---|
| **Site Name** | |
| **NJDEP Case No.** | |
| **Sampling Date** | |
| **Lab Name/ID** | |
| **SDG No.** | |
| **Sample Matrix** | |

| | |
|---|---|
| **Trip Blank ID** | |
| **Field Blank ID** | |

| Sample ID | Analyte Name[1] | Method Blank Results[2] | Lab Concentration | Validator Concentration | QA Decision | Data Validation Qualifier[3] | NJDEP Footnote[4] |
|---|---|---|---|---|---|---|---|
| (Units) | | (Units) | (Units) | (Units) | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

**Notes:**

[1] - ND values are not listed

[2] - Units must be mg/kg for solid samples

[3] - Flagging code added by validator

[4] - NJDEP Reason Codes listed in Section 20 of *Standard Operating Procedures for the Completion of the Data Validation Report Forms and the Preparation of the Final Data Validation Report,* SOP 5.A.15, Rev. 2, October 2001.

AECOM

**FIELD CHANGE NOTIFICATION**

**PPG - NON-RESIDENTIAL SITES**

**CHANGE NUMBER #20: GW IRM Phase II O&M Monitoring (Revision 2)**

| | |
|---|---|
| ACO Site Number: Site 114 | Site Name:<br>Garfield Avenue Group Sites |

| | | |
|---|---|---|
| Requesting Party:<br>Trevor King, AECOM<br>Richard Feinberg, PPG | Signature:<br>Trevor King | Date:<br>07/22/2020 |

**Change Description:**

Peristaltic pumps are proposed in lieu of bladder pumps to collect groundwater samples for the baseline, operational, and treatment monitoring events that are being conducted to support the Groundwater (GW) Interim Remedial Measure (IRM) Phase II activities at Garfield Avenue (GA) Group Site 114. The proposed change is a deviation from the groundwater sampling procedures specified in the *Field Sampling Plan/Quality Assurance Project Plan, Non-Residential and Residential Chromium Sites, Hudson County, New Jersey* (AECOM, 2010) (June 2010 FS/QAPP), as updated. Consistent with the FS/QAPP and the New Jersey Department of Environmental Protection Field Sampling Procedures Manual, Chapter 6.9, water quality indicator parameters (WQIP) will be collected and low-flow stabilization data will be recorded before groundwater sample collection. If all WQIP stabilize within one hour of commencement of purging, a groundwater sample will be collected. However, if turbidity stabilization is attained but the remainder of the WQIP do not stabilize, purging will continue for up to one hour after the commencement of purging and a groundwater sample will be collected. Note that this duration is less than the four hours mentioned in the FS/QAPP (Section 7.3.1.1).

The analytical datasets generated during the baseline, operational, and treatment sampling events will not be used for New Jersey Department of Environmental Protection (NJDEP) compliance purposes; the data will be used to evaluate the progress and effectiveness of the GW IRM Phase II remediation system.

**Reason for Change:**

At the present time, the subcontractor and the construction schedules are at the stage where down-well equipment (e.g., extraction well pumps, transducers, injection drop pipes, etc.) associated with the GW IRM Phase II remedial system is being installed. The down-well equipment will interfere with sample collection practices that use bladder pumps. The use of bladder pumps during baseline, operational, or treatment monitoring would cause an approximate delay of two- to four-weeks per sampling event in the GW IRM Phase II construction schedule.

To keep the GW IRM Phase II construction activities on schedule, and recognizing that peristaltic pumps are an acceptable means of collecting groundwater samples for constituents other than volatile organic compounds, it is recommended that peristaltic pumps be used instead of bladder pumps. Future compliance sampling will be performed consistent with the procedures specified in the approved June 2010 FS/QAPP, as updated.

**Implementation Schedule:**

Baseline groundwater sampling activities commenced on March 16, 2020 and 183 wells were sampled using peristaltic pumps. One additional well will be sampled when the field activities resume.

---

| | | |
|---|---|---|
| Project Manager*:<br><br>Raymond Baranowski | Signature:<br>Raymond Baranowski | Date:<br><br>07/22/2020 |

Comments:

| Technical Contact Name and Affiliation | Phone Number |
|---|---|
| **Wayne Howitz, NJDEP** | (609) 984-1351 |
| **Ronald Riccio, Site Administrator** | (201) 874-4581 |
| **James Ray, Site Administrator PM** | (201) 874-4581 |
| **Nancy Colson, Site Administrator Assistant** | (201) 874-4581 |
| **David Doyle, NJDEP** | (609) 292-2173 |
| **Prabal Amin, Weston Solutions, Inc.** | (732) 417-5857 |
| **Laura Amend-Babcock, Weston Solutions, Inc.** | (732) 417-5811 |
| **David Spader, ERFS** | (914) 834-4195 |
| **Nick Strasser, City of Jersey City** | (201) 547-4701 |
| **Peter Baker, City of Jersey City** | (201) 547-4701 |
| **Chris Fiore, Jersey City Redevelopment Agency** | (201) 761-0823 |
| **Jody Overmyer, PPG** | (724) 325-5070 |
| **Richard Feinberg, PPG** | (732) 233-4552 |
| **Scott Mikaelian, AECOM** | (732) 564-3624 |

Ravi, Shree

Subject: RE: FCN-020: Field Change Notification GW IRM Phase II O&M Monitoring

From: Amend-Babcock, Laura <Laura.Amend-Babcock@WestonSolutions.com>
Sent: Thursday, March 12, 2020 2:37 PM
To: Baranowski, Raymond <raymond.baranowski@aecom.com>; David Spader <dspader@erfs.com>; NStrasser@jcnj.org; pbaker@jcnj.org; FioreC@JCNJ.org; David Doyle (David.Doyle@dep.nj.gov) <David.Doyle@dep.nj.gov>; Wayne.Howitz@dep.nj.gov; James D. Ray <Jray@mdmc-law.com>; Nancy Colson (ncolson@mdmc-law.com) <ncolson@mdmc-law.com>; Ronald Riccio (rriccio@mdmc-law.com) <rriccio@mdmc-law.com>; Amin, Prabal <Prabal.Amin@WestonSolutions.com>
Cc: Feinberg@ppg.com; overmyer@ppg.com; Spronz, Bill <Bill.Spronz@aecom.com>; King, Trevor C. <Trevor.King@aecom.com>
Subject: RE: FCN-020: Field Change Notification GW IRM Phase II O&M Monitoring

Weston has reviewed Field Change Notification #20: *GW IRM Phase II O&M Monitoring* dated 3/9/20 (FCN#20) submitted by the email below, and discussed our review with the New Jersey Department of Environmental Protection (Department). The proposed field change is acceptable conditioned on the comments provided herein. PPG may move forward with implementation of the planned baseline groundwater IRM #2 baseline sampling program concurrent with revising FCN#20 to incorporate these comments for the record.

1. Change Description: The change description should state the change is being made from the groundwater sampling procedures specified in the approved June 2010 Field Sampling / Quality Assurance Project Plan (FS/QAPP). Also state water quality parameter data collection will be performed and stabilization achieved consistent with the FS/QAPP.

2. Reason for Change, 2nd paragraph, last sentence: Revise the sentence to *"Future compliance sampling will be performed consistent with the procedures specified in the approved June 2010 FS/QAPP."*

*Laura*

Laura J. Amend-Babcock, P.E.
Principal Project Engineer
Weston Solutions, Inc.
205 Campus Drive
Edison, New Jersey 08837

phone: (732) 417-5811
fax: (732) 417-5801
e-mail: Laura.Amend-Babcock@westonsolutions.com
www.WestonSolutions.com

From: Baranowski, Raymond [mailto:raymond.baranowski@aecom.com]
Sent: Monday, March 9, 2020 4:09 PM
To: David Spader <dspader@erfs.com>; NStrasser@jcnj.org; pbaker@jcnj.org; FioreC@JCNJ.org; David Doyle (David.Doyle@dep.nj.gov) <David.Doyle@dep.nj.gov>; Wayne.Howitz@dep.nj.gov; James D. Ray <Jray@mdmc-law.com>; Nancy Colson (ncolson@mdmc-law.com) <ncolson@mdmc-law.com>; Ronald Riccio (rriccio@mdmc-law.com) <rriccio@mdmc-law.com>; Amend-Babcock, Laura <Laura.Amend-Babcock@WestonSolutions.com>; Amin, Prabal <Prabal.Amin@WestonSolutions.com>
Cc: Feinberg@ppg.com; overmyer@ppg.com; Spronz, Bill <Bill.Spronz@aecom.com>; King, Trevor C. <Trevor.King@aecom.com>
Subject: FCN-020: Field Change Notification GW IRM Phase II O&M Monitoring

**** External Email ****

Team –

Please find attached, the *Field Change Notification #20: GW IRM Phase II O&M Monitoring* for your review and concurrence.

As noted in the attached, the baseline monitoring being conducted to support the Groundwater Interim Remedial Measure Phase II activities at the Garfield Avenue Group Sites is scheduled to begin on March 16, 2020.

Therefore, kindly provide your concurrence on the revised sampling approaching described in the attached by March 10, 2020.

Thank you,
Ray
Raymond Baranowski
raymond.baranowski@aecom.com
856.628.1941

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AECOM

**FIELD CHANGE NOTIFICATION**

**PPG - NON-RESIDENTIAL SITES**

**CHANGE NUMBER #22: Phase III Groundwater IRM Baseline and O&M Monitoring**

| | |
|---|---|
| ACO Site Number(s): Site 114, Site 132, Site 137, Site 143, Site 199, Carteret Avenue, Halladay Street North, Pacific Avenue, Forrest Street, Former Halsted Property, Forrest Street Properties, Eden Wood Properties. | Site Name:<br>Garfield Avenue Group Sites |

| | | |
|---|---|---|
| Requesting Party:<br>Joseph M. Luty, PE, AECOM<br>Richard Feinberg, PPG | Signature:<br> 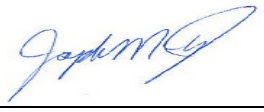 | Date:<br>08/30/2021 |

**Change Description:**

The following modification to the groundwater sampling program to support the Phase III Groundwater Interim Remedial Measure (IRM) activities at Garfield Avenue (GA) Group Sites is being proposed:

Peristaltic pumps are proposed in lieu of bladder pumps to collect groundwater samples for the baseline, operational, and treatment monitoring events. Consistent with the Field-Sampling Plan/Quality Assurance Project Plan (FSP/QAPP) for the GA Group Sites and the New Jersey Department of Environmental Protection (NJDEP) Field Sampling Procedures Manual (FSPM), Chapter 6.9, water quality indicator parameters (WQIP) will be collected and low-flow stabilization data will be recorded before groundwater sample collection. If all WQIP stabilize within one hour of commencement of purging, a groundwater sample will be collected. However, if turbidity stabilization is attained but the remainder of the WQIP do not stabilize, purging will continue for up to one hour after the commencement of purging and a groundwater sample will be collected. Note that this duration is less than the four hours mentioned in the FS/QAPP (Section 7.3.1.1).

This proposed change is a deviation from the groundwater sampling procedures specified in the *Field Sampling Plan/Quality Assurance Project Plan, Non-Residential and Residential Chromium Sites, Hudson County, New Jersey* (AECOM, 2010) (June 2010 FS/QAPP), as updated.

The analytical datasets generated during the baseline, operational, and treatment sampling events will not be used for compliance with the NJDEP Groundwater Quality Standards; but rather will be used to evaluate the progress and effectiveness of the Phase III IRM remediation system.

**Reasons for Change:**

Down-well equipment (e.g., transducers, injection drop pipes, etc.) associated with the Phase III IRM system will interfere with sample collection practices that use bladder pumps. The use of bladder pumps during baseline, operational, or treatment monitoring would cause an approximate delay of two- to four-weeks per sampling event in the Phase III IRM construction schedule.

To keep the construction activities on schedule and recognizing that peristaltic pumps are an acceptable means of collecting groundwater samples for constituents other than volatile organic compounds, it is recommended that peristaltic pumps be used instead of bladder pumps. Future compliance sampling (i.e., post-treatment performance monitoring) will

be performed consistent with the procedures specified in the approved June 2010 FS/QAPP, as updated.

**Implementation Schedule:**

Baseline groundwater sampling activities at select well locations using bladder pumps was completed between June 9 and July 9, 2021, to collect analytical data to support an adaptive management approach to guide the installation of additional remediation and/or monitoring wells. Baseline sampling of the remainder of the Phase III IRM wells, using peristaltic pumps, is expected to be conducted between August and September 2021.

---

| Project Manager: | Signature: | Date: |
|---|---|---|
| Carey Letts | Carey Letts | 08/30/2021 |

**Comments:**

| Technical Contact Name and Affiliation | Phone Number |
|---|---|
| **Wayne Howitz, NJDEP** | (609) 984-1351 |
| **Ronald Riccio, Site Administrator** | (201) 874-4581 |
| **James Ray, Site Administrator PM** | (201) 874-4581 |
| **Nancy Colson, Site Administrator Assistant** | (201) 874-4581 |
| **David Doyle, NJDEP** | (609) 292-2173 |
| **Prabal Amin, Weston Solutions, Inc.** | (732) 417-5857 |
| **Laura Amend-Babcock, Weston Solutions, Inc.** | (732) 417-5811 |
| **Ralph Costa, Weston Solutions, Inc.** | (973) 727-6694 |
| **David Spader, ERFS** | (914) 834-4195 |
| **Nick Strasser, City of Jersey City** | (201) 547-4701 |
| **Peter Baker, City of Jersey City** | (201) 547-4701 |
| **Jody Overmyer, PPG** | (724) 325-5070 |
| **Richard Feinberg, PPG** | (732) 233-4552 |
| **Scott Mikaelian, AECOM** | (732) 564-3624 |
| **Bill Spronz, AECOM** | (732) 564-3917 |

Ravi, Shree

From: Costa, Ralph <Ralph.Costa@WestonSolutions.com>
Sent: Friday, September 17, 2021 2:21 PM
To: Letts, Carey; 'dspader@erfs.com'; NStrasser@jcnj.org; pbaker@jcnj.org; FioreC@JCNJ.org; David Doyle (David.Doyle@dep.nj.gov); Wayne.Howitz@dep.nj.gov; James D. Ray; Nancy Colson (ncolson@mdmc-law.com); Ronald Riccio (rriccio@mdmc-law.com); Amin, Prabal; Amend-Babcock, Laura; Lantigua, Ralph
Cc: Overmyer, Jody; Feinberg, Richard [C]; Mikaelian, Scott; Spronz, Bill; Ravi, Shree; Luty, Joseph
Subject: [EXTERNAL] RE: [EXT]:Field Change Notification #22: Phase III Groundwater IRM Baseline and O&M Monitoring

On behalf of NJDEP, the updated *Field Change Notification #22: Phase III Groundwater IRM Baseline & O&M Monitoring* submitted per the email below is acceptable.

Thank you.

Ralph Costa, P.G.
Weston Solutions, Inc.
email: ralph.costa@westonsolutions.com
mobile: 973.727.6694

---

From: Letts, Carey <Carey.Letts@aecom.com>
Sent: Wednesday, September 1, 2021 8:18 AM
To: 'dspader@erfs.com' <dspader@erfs.com>; NStrasser@jcnj.org; pbaker@jcnj.org; FioreC@JCNJ.org; David Doyle (David.Doyle@dep.nj.gov) <David.Doyle@dep.nj.gov>; Wayne.Howitz@dep.nj.gov; James D. Ray <Jray@mdmc-law.com>; Nancy Colson (ncolson@mdmc-law.com) <ncolson@mdmc-law.com>; Ronald Riccio (rriccio@mdmc-law.com) <rriccio@mdmc-law.com>; Amin, Prabal <Prabal.Amin@WestonSolutions.com>; Amend-Babcock, Laura <Laura.Amend-Babcock@WestonSolutions.com>; Lantigua, Ralph <ralph.lantigua@aecom.com>
Cc: Overmyer, Jody <overmyer@ppg.com>; Feinberg, Richard [C] <feinberg@ppg.com>; Mikaelian, Scott <Scott.Mikaelian@aecom.com>; Spronz, Bill <Bill.Spronz@aecom.com>; Ravi, Shree <Shree.Ravi@aecom.com>; Luty, Joseph <Joseph.Luty@aecom.com>
Subject: [EXT]:Field Change Notification #22: Phase III Groundwater IRM Baseline and O&M Monitoring
Importance: High

**CAUTION:** ***External Message***

On behalf of PPG, attached for your review and concurrence is the *Field Change Notification #22: Phase III Groundwater IRM Baseline and O&M Monitoring*. Please note that this FCN is identical to the approved FCN #20, submitted on July 22, 2020, for the Phase II Groundwater IRM.

Please contact me if you have any questions regarding this submittal. Due to the similarities to the approved FCN #20, your expeditious review of the submittal is requested.

Thank you,

Carey Letts

Project Manager

AECOM Canada Ltd.
Mobile – (613) 530-5434

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Schuele, Frederik

| | |
|---|---|
| From: | Amin, Prabal <Prabal.Amin@WestonSolutions.com> |
| Sent: | Tuesday, February 22, 2022 4:57 PM |
| To: | Gleason, Shannon; 'Doyle, David'; David.VanEck@dep.nj.gov; 'James D. Ray' (Jray@mdmc-law.com); 'Nancy Colson (ncolson@mdmc-law.com)' (ncolson@mdmc-law.com); rriccio@mdmc-law.com; RobSchmitt@UHREIT.com; 'FioreC@JCNJ.org'; Chris Daggett; 'psorge@jmsorge.com' (psorge@jmsorge.com); 'dspader@erfs.com'; pbaker@jcnj.org; BDoshi@MSBNJ.com; ETomaszewski@MSBNJ.com; Costa, Ralph; Amend-Babcock, Laura; mclemente@jcnj.org |
| Cc: | Overmyer, Jody; Terril, Mark; 'Feinberg, Richard [C]'; Laguzza, Dorothy M.; Joseph Lagrotteria; Schuele, Frederik; Spronz, William; Ravi, Shree; Mark Pietrucha |
| Subject: | [EXTERNAL] RE: [EXT]:PPG GA Group Groundwater - Groundwater RI Bedrock Investigation |

On behalf of the New Jersey Department of Environmental Protection (Department), please see the comments herein related to PPG's January 25, 2022 bedrock groundwater remedial investigation (RI) update provided per the email below, as supplemented by a meeting held on February 2, 2022 where AECOM presented to the Department PPG's proposed scope of work to complete the delineation of the chromium impacts in bedrock groundwater.

1. At the time of the February 2, 2022 meeting, the specific capacity testing and surface geophysics results were pending and not available for discussion. Since PPG is implementing the bedrock groundwater RI "at risk", the Department requests that PPG provide the specific capacity testing and surface geophysics results as soon as they are available to support conformance to the Master Schedule.

2. The data and information provided by PPG did not include figures showing the distribution of chromium in plan or cross-sectional views although such figures were used by AECOM during the February 2, 2022 meeting. The Department requests that figures portraying the currently known extent of bedrock contamination in plan and cross-sectional views be provided to the Department ahead of the bedrock groundwater RI Report to facilitate the Department's on-going understanding of the extent of contamination in bedrock.

3. During the February 2, 2022 meeting, the Department emphasized the requirement that any existing or proposed monitoring well to be used for delineation purposes must intersect the same fractures as the contaminated bedrock monitoring well. For example, PPG has proposed 114-MW6D to delineate contamination present in 114-MW52D. However, based on the site-specific bedrock strike and dip, 114-MW6D does not intersect the same fractures as 114-MW52D. Therefore, 114-MW6D cannot be used to delineate contamination present in 114-MW52D, and installation of a delineation well to the northeast of 114-MW52D (along strike), biased to the fracture(s) with the highest chromium concentration, would be required as part of the scope of work for the next mobilization.

4. As observed on a figure depicting cross-section B-B' presented by AECOM during the February 2, 2022 meeting, hexavalent chromium exceeding 50,000 ug/l is present in the Lockatong formation at deepened borehole 114-MW66D. However, the highly contaminated fractures at 114-MW66D were

not intersected in the downdip direction at 114-MW61D which was advanced through the diabase and into the Lockatong formation. Furthermore, based on the site-specific bedding dip, the scope of work as proposed does not intersect the highly contaminated fractures in 114-MW66D at a downdip location. Ultimately, delineation of the fractures with the highest chromium contamination in the downdip direction is required to complete the bedrock groundwater RI and a well in the downdip direction from 114-MW66D would be required as part of the scope of work for the next mobilization.

Thank you.

**Prabal N. Amin, P.E., LSRP**
Weston Solutions, Inc.
205 Campus Drive
Edison, NJ 08837

prabal.amin@westonsolutions.com
Office: 732-417-5857
Cell: 609-240-5289
Fax: 732-417-5801

---

From: Gleason, Shannon <Shannon.Gleason@aecom.com>
Sent: Tuesday, January 25, 2022 5:41 PM
To: 'Doyle, David' <David.Doyle@dep.nj.gov>; David.VanEck@dep.nj.gov; 'James D. Ray' (Jray@mdmc-law.com) <Jray@mdmc-law.com>; 'Nancy Colson (ncolson@mdmc-law.com)' (ncolson@mdmc-law.com) <ncolson@mdmc-law.com>; rriccio@mdmc-law.com; RobSchmitt@UHREIT.com; 'FioreC@JCNJ.org' <FioreC@JCNJ.org>; Chris Daggett <chrisjdaggett@outlook.com>; 'psorge@jmsorge.com' (psorge@jmsorge.com) <psorge@jmsorge.com>; 'dspader@erfs.com' <dspader@erfs.com>; pbaker@jcnj.org; BDoshi@MSBNJ.com; ETomaszewski@MSBNJ.com; Costa, Ralph <Ralph.Costa@WestonSolutions.com>; Amend-Babcock, Laura <Laura.Amend-Babcock@WestonSolutions.com>; mclemente@jcnj.org; Amin, Prabal <Prabal.Amin@WestonSolutions.com>
Cc: Overmyer, Jody <overmyer@ppg.com>; Terril, Mark <terril@ppg.com>; 'Feinberg, Richard [C]' <feinberg@ppg.com>; Laguzza, Dorothy M. <dorothy.laguzza@klgates.com>; Joseph Lagrotteria <joseph.lagrotteria@klgates.com>; Schuele, Frederik <frederik.schuele@aecom.com>; Spronz, William <Bill.Spronz@aecom.com>; Ravi, Shree <Shree.Ravi@aecom.com>; Mark Pietrucha <mpietrucha@woodardcurran.com>
Subject: [EXT]:PPG GA Group Groundwater - Groundwater RI Bedrock Investigation

**CAUTION:** ***External Message***

As discussed during the January 19, 2022 Principals' Call, and on behalf of PPG, AECOM is providing the following for information purposes, only:

- Attached file, which includes a table (Table 1) summarizing the bedrock well installation and sampling data from the Sept-Dec 2021 Bedrock Field Investigation and a figure (Figure 1) showing the bedrock well locations; and
- Summary of additional Bedrock Field Investigation to occur in 2022 (below).

*2022 Bedrock Field Investigation Summary*

Bedrock Well Installation, Development, and Geophysics: One new bedrock well (114-MW73D) will be installed on Site 132 using sonic and/or conventional drilling methods to provide horizontal delineation in the Lockatong Formation along the predominant northeast-southwest trending bedding plane strike south of impacted well 114-MW72D. No sooner than 24 hours following installation, the newly installed bedrock well will be developed using techniques in accordance with the NJDEP's Field Sampling Procedures Manual (NJDEP, 2005) (FSPM) and PPG's Field Sampling Plan/Quality Assurance Project Plan (FSP-QAPP) (AECOM, 2010). Geophysical logging will be performed within the open borehole

interval of the newly installed bedrock well. The same suite of borehole geophysics will be performed at each location as was conducted for the Sept-Dec 2021 Bedrock Field Investigation.

Groundwater Elevation Gauging and Sampling: No sooner than 14 days following well development, the newly installed open hole bedrock well will be sampled using low-flow sampling protocols as defined in the NJDEP FSPM and the FSP-QAPP. Groundwater samples will be submitted to a NJ-certified laboratory for analysis of total phase Cr+6 and total phase Cr. Field parameters, including depth to water, pH, ORP, dissolved oxygen, temperature, specific conductivity, and turbidity will be recorded on field data collection sheets and groundwater samples will be collected upon stabilization of these parameters as defined in the FSP-QAPP. Upon completion of the groundwater sampling program, the collected data will be validated. Prior to sampling activities, a synoptic round of groundwater elevations will be collected from the newly installed bedrock well and existing bedrock wells to evaluate bedrock groundwater potentiometry. The wells targeted for groundwater elevation gauging include: 114-MW16B, 114-MW4D, 114-MW52D, 114-MW57D, 114-MW61D, 114-MW66D, 114-MW6D, 114-MW7D, 114-MW71D, 114-MW72D, and 114-MW73D.

Resampling of Bedrock Well 114-MW61D: The open borehole interval at well 114-MW61D was extended to 135 feet (ft) below ground surface (bgs) in November 2021 to complete horizontal delineation of groundwater impacts at the contact between the diabase and the Lockatong Formation, and within the Lockatong Formation, in the area down-dip (along Lockatong Formation bedding) of well 114-MW66D where groundwater impacts have been identified in the Lockatong Formation. Due to instability of the borehole (highly weathered/fractured rock causing borehole cave-in), well 114-MW61D was completed with 2-inch polyvinyl chloride (PVC) casing and a 25-foot section of 10-slot PVC screen set from 110 to 135 ft bgs. Based on samples collected from well 114-MW61D in February 2021 (from 88 to 110 ft below top of well casing [btwc]) and in December 2021 (from 117 to 135 ft btwc), all intervals sampled exhibit Cr concentrations below the GWQS for Cr of 70 µg/L except for one field duplicate sample collected at 130.8 ft btwc where Cr was detected at 88.3 µg/L. Based on these findings, the result for the 130.8 depth interval seems anomalous and this interval will be re-sampled and compliance averaging will be used to complete delineation at this location. Well 114-MW61D will be sampled at 130.8 ft btwc using low-flow sampling protocols as defined in the NJDEP FSPM and the FSP-QAPP. Two samples will be collected, one month apart, to allow for compliance averaging. Groundwater samples will be submitted to a NJ-certified laboratory for analysis of total phase Cr. Field parameters, including depth to water, pH, ORP, dissolved oxygen, temperature, specific conductivity, and turbidity will be recorded in field data collection sheets and groundwater samples will be collected upon stabilization of these parameters as defined in the FSP-QAPP.

Multi-port Water FLUTe™ System Installation: Multi-port Water FLUTe™ systems will be installed at bedrock wells 114-MW52D, 114-MW66D, and 114-MW72D to conduct depth-discrete multilevel groundwater sampling within the boreholes to complete vertical delineation at these locations. Previously collected data at well 114-MW52D suggested that Cr-related impacts extended throughout the length of the open borehole, based on samples collected in February 2021 from 81 to 105 feet below top of well casing (ft btwc) which exhibited Cr concentrations ranging from 42,200 to 46,500 micrograms per liter (µg/L). However, a sample collected at 114-MW52D in December 2021 from a depth of 104 ft btwc, after installation of a packer at 100 ft btwc to isolate the bottom 5-foot section of the open borehole, exhibited a Cr concentration of 5,630 µg/L demonstrating that Cr concentrations attenuate with depth within the borehole. During sampling of the packered interval, it was difficult to fully purge the isolated portion of the open borehole due to the extremely low yield for this portion of the well (heat pulse flow meter logging showed no measurable flow in the borehole below 90 feet). Therefore, it is likely that the sample collected at 104 ft btwc exhibited residual Cr concentrations associated with impacted groundwater remaining within the borehole which could not be removed during purging. A similar condition is expected at wells 114-MW66D and 114-MW72D, where heat pulse flow meter logging showed no measurable flow at 114-MW66D below 125 feet and no measurable flow at 114-MW72D below 106 feet. The Multi-port Water FLUTe™ systems will be installed to allow for the collection of groundwater samples at fracture intervals identified within the boreholes based on geophysical logging and at the bottom of each borehole. The collected samples will be submitted to a NJ-certified laboratory for analysis of total phase Cr+6 and total phase Cr and the data will be validated.

Contingency Bedrock Well Installation to Achieve Vertical Delineation: Should the Multi-port Water FLUTe™ program not achieve vertical delineation, one new bedrock well will be installed next each of the existing bedrock wells 114-

MW52D, 114-MW66D, and 114-MW72D for a total of three new bedrock wells (114-MW74D, 114-MW75D, 114-MW76D). Proposed contingency well locations are depicted on Figure 1.

Data Evaluation: The data generated will be evaluated. If the evaluation indicates that vertical and horizontal delineation of CCPW impacts to bedrock groundwater are complete, then PPG will prepare an addendum to the revised groundwater RI report to document the investigation activities and associated findings and conclusions.

Anticipated Schedule:

- Installation of the Multi-port Water FLUTe™ System is expected in March 2022;
- Installation of new bedrock wells, geophysics, elevation gauging and groundwater sampling are expected to occur between April and June 2022;
- Laboratory analysis and data validation are expected to occur in July 2022; and
- Preparation and submittal of the RIR Addendum for Bedrock is expected by the end of August 2022.

References

AECOM, 2010. Field Sampling Plan/Quality Assurance Project Plan, PPG Non-Residential and Residential Chromium Sites, Hudson County, New Jersey. June 2010.
AECOM, 2021. Groundwater Remedial Investigation Report, Final. August 31, 2021.
NJDEP, 2005. Field Sampling Procedures Manual. August 2005.
NJDEP, 2012. Groundwater Technical Guidance: Site Investigation, Remedial Investigation, Remedial Action Performance Monitoring, Site Remediation Program, April 3, 2012.

**Shannon Gleason**, P.E.
Sr Manager/Technical Specialist, Remediation Practices
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shannon.gleason@aecom.com

**Note upcoming PTO: Jan 27 – Feb 4**

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# Meeting Summary

**Meeting name**
GA Group
Groundwater Meeting

**Meeting date**
October 19, 2023

**Time**
10:00 AM – 2:30 PM

**Location**
AECOM Piscataway, NJ and Microsoft Teams

**Prepared by**
PPG

**Internal Reference:**
GW-116
PN# 60704509

**Attendees**
Ron Riccio, Site Adminstrator
Nancy Colson, Site Administrator Assistant
Jim Ray, Assistant Site Administrator (virtual attendee)
Ian Curtis, NJDEP
Dave Van Eck, NJDEP
Dave Spader, Endpoint (virtual attendee)
Peter Sorge (on behalf of Hampshire)
Prabal Amin, Weston Solutions
Ralph Costa, Weston Solutions
Jody Overmyer, PPG
Matt Schnobrich, Arcadis
Mark Pietrucha, Woodard & Curran
Shannon Gleason, AECOM
Frederik Schuele, AECOM
Joseph Luty, AECOM

---

The meeting commenced at approximately 10:15 AM in AECOM's Piscataway office with introductions of the attendees. Virtual attendees joined via Microsoft Teams.

The Site Administrator, Ron Riccio, provided introductory comments summarizing several letters, emails, meetings, and reports that have been provided recently regarding the investigation and remediation of groundwater at the Garfield Avenue (GA) Group Sites:

- Letter dated May 5, 2023 from Assistant Commissioner David Haymes (NJDEP) regarding groundwater at the GA Group Sites that identified 12 items which must be addressed to the Department's satisfaction in order for the agency to approve a Groundwater Remedial Action Report (RAR) for the overburden and bedrock aquifer zones and PPG's application for a Remedial Action Permit – Ground Water (RAP-GW).
- Technical meeting on June 8, 2023 regarding the delineation of chromium (Cr) impacts within the bedrock water-bearing zone and the progress of the groundwater remedy at the GA Group Sites.
- Email dated June 16, 2023 from the 2009 Partial Consent Judgment (JCO) Site Administrator's Independent Technical Consultant, Weston Solutions, Inc. (Weston) requesting four items, in writing, from PPG "to help resolve some of the technical issues discussed related to the March 2023 Addendum to Groundwater Remedial Investigation Report [RIR] and Groundwater Remedial Action Work Plan [RAWP] for Bedrock Water-Bearing Zone."
- Letter dated June 30, 2023 from Mark Pietrucha, LSRP, to Assistant Commissioner Haymes providing responses to the Weston June 16, 2023 email and responses to four of the items in the Department's May 5, 2023 letter and requesting Department approval of the March 2023 Addendum to Groundwater RIR and Groundwater RAWP for Bedrock Water Bearing Zone.
- Transmittal dated September 8, 2023 from PPG providing the draft Groundwater RAR for the GA Group Sites, as well as responses to the remaining eight items in the Department's May 5, 2023 letter and a table indicating where each of the 12 items (identified in the Department's May 5, 2023 letter) are documented in the draft Groundwater RAR submittal.
- Email dated September 8, 2023 from Ron Riccio providing sub points developed by Weston that elaborate on each of the 12 items raised in the Department's May 5, 2023 letter.
- Transmittal dated October 13, 2023 from PPG providing, in red colored text (i.e., redlined), responses to the sub points developed by Weston (provided via email on September 8, 2023), and noting those comments that are considered resolved and require no further discussion with NJDEP.

Ron Riccio summarized that the purpose of this meeting is to discuss and resolve items in the Department's May 5, 2023 letter. At the conclusion of the meeting, Mr. Riccio expects to report progress on the resolution of the items identified in the Department's May 5, 2023 letter to the Superior Court. Mr. Riccio requested that all parties make a good-faith effort to resolve the issues to avoid the potentially significant delays that could result if the Parties reach an impasse and need to re-engage the judge.

Discussions during the meeting were facilitated by the attached presentation developed by PPG. It should be noted that due to time constraints all items included in the presentation were not presented by PPG and/or discussed by the group. Highlights, decisions, and actions from items discussed during the meeting are summarized below by key topic.

**RIR for the Bedrock Water Bearing Zone:**

- Weathered Bedrock:
  - PPG agreed to install one additional monitoring well at the location agreed upon by NJDEP/Weston in weathered bedrock in an effort to complete horizontal delineation of total chromium (Cr) in weathered bedrock groundwater.
  - NJDEP agreed to extend the 70 parts per billion (ppb) Cr isocontour to the vicinity of wells with Cr concentrations below 70 ppb.
  - NJDEP and PPG agreed that, should Cr not exceed 70 ppb in the sample collected from the newly installed well at the agreed upon location extending the 70 ppb isocontour as described above will meet NJDEP's requirement for "clean point" delineation within the weathered bedrock and does not impact the already completed delineation in the competent bedrock to the east of 114-MW66D.
- Competent Bedrock:
  - PPG agreed to install two monitoring wells in competent bedrock at locations agreed upon by NJDEP/Weston to evaluate potential hydraulic connection with 114-MW66D and provide data to triangulate groundwater flow direction within competent bedrock.
  - If the newly installed wells are determined to not be hydraulically connected to existing well 114-MW66D, NJDEP will accept a variance from the requirement to demonstrate the presence (or absence) of hydraulic connection between competent bedrock wells and confirm groundwater flow direction in competent bedrock.
  - It was noted that PPG objects to the technical basis on which the NJDEP is requesting these two additional competent bedrock wells, which are in an area that PPG has identified as contaminated.
- Figures depicting the agreed upon locations of these proposed wells will be provided by PPG to all parties.

**RAWP for the Bedrock Water Bearing Zone:**

- Weston stated that the NJDEP does not accept the proposed remedy for the bedrock water-bearing zone.
- PPG offered the following response:
  - Reagent distribution is being observed in weathered bedrock from injections in the overburden.
  - The Cr plume is stable and not expanding.
  - There are no impacts to human health or ecological receptors.
  - Institutional controls are in place (i.e., Classified Exception Areas).
  - Near-term changes in Cr concentrations are expected and long-term monitoring will demonstrate remedy effectiveness. Time is needed to let the remedy work.
- Prabal Amin suggested that Cr(VI) concentrations of 1,000 ppb would need to be achieved before the Department would consider transition to a monitored natural attenuation (MNA) remedy for groundwater to be appropriate.
- Mark Pietrucha responded acknowledging that the approved remedy for overburden groundwater targets areas with Cr(VI) greater than 1,000 ppb for treatment - but does not require Cr(VI) concentrations to be below 1,000 ppb in order to transition to MNA. He further indicated that NJDEP MNA guidance indicates "for inorganics, MNA is most effective when immobilization [or plume stabilization] is demonstrated to be occurring." NJDEP MNA guidance does not speak to the need for decreasing trends or achieving a certain concentration in order for MNA to be an appropriate remedy for inorganics. In addition, PPG is aware of several other Hudson County Chromate sites where Cr(VI) concentrations in groundwater exceed 1,000 ppb and NJDEP has approved a MNA remedy and issued a MNA category Remedial Action Permit for Groundwater.

- Frederik Schuele indicated that the active remedy implemented in the overburden must be given time to work. Based on the data collected to date, effects of the active remedy are being observed in bedrock. Therefore, active treatment in bedrock is not necessary because the remedial goal of plume stability in bedrock is being achieved.

**Groundwater RAR for GA Group Sites (all water-bearing zones)**

- Matt Schnobrich indicated that variable permeability and hydraulically isolated intervals are present in the overburden throughout the GA Group Site area and that the NJDEP-approved RAWP accommodates management of these areas via enhanced attenuation/establishment of reactive zones in the surrounding higher permeability materials which will be demonstrated by/through long-term monitoring.
- Matt shared a video available from Colorado State University illustrating the effects of matrix diffusion in overburden soils, and further explained how these effects are present at the site.
- Matt summarized that, overall, 85% of the monitoring wells at the GA Group Sites exhibit hexavalent chromium concentrations less than 1,000 micrograms per liter and that remedy operations are still ongoing in the Phase III area.
- PPG has addressed the items raised in the Department's May 5, 2023 letter in the draft Groundwater RAR submitted on September 8, 2023. In its cover letter transmitting the report, PPG included a table indicating where each of the 12 items (identified in the Department's May 5, 2023 letter) are documented in the draft Groundwater RAR submittal.
- In accordance with the Master Schedule milestones, NJDEP review of the draft Groundwater RAR is expected by December 4, 2023.
- NJDEP and Weston will complete review of the draft Groundwater RAR by the master schedule milestone date, and, as per the request of Ron Riccio, will consider that PPG's experts have provided a thoughtful, technically accurate, and regulatorily compliant document, and rather than pointing out where PPG's approach is different than the one they may take, consider if PPG's approach is suitable in achieving remedial goals and objectives and is protective of human health and the environment.
- Ron Riccio suggested that rather than communicating in writing only, technical experts from NJDEP and PPG should discuss technical or clarifying questions in one-on-one conversations during the review process.

During the meeting, Ron Riccio asked NJDEP to identify the standard by which the Groundwater RAR will be compared against to determine acceptability by the NJDEP. This question was asked in the context of the potential to re-engage the judge should there be an impasse between the Parties as the judge will ask what is the standard that PPG's remediation is being held/compared to.

- NJDEP indicated the Technical Requirements for Site Remediation (the "Tech Rule") provides the standard, which are supported by technical guidance documents published by the Department. Mr. Riccio inquired if the guidance is the standard, to which NJDEP responded that guidance provides helpful interpretation of the Tech Rule, but the Tech Rule provides the standard.
- Mark Pietrucha clarified that the Tech Rule is provided in N.J.A.C. 7:26E, and that while it is the standard, the Tech Rule itself indicates that remediation can vary from the requirements set forth in N.J.A.C. 7:26E when the remediation is demonstrated to be protective of human health and the environment. Mr. Pietrucha further indicated that precedence established by Department decisions and approvals at other sites in NJ can also guide the standard, to which Mr. Riccio agreed.
- Mr. Riccio inquired if the Department's May 5, 2023 letter listed all the items that need to be addressed by PPG in accordance with the NJDEP standard to achieve acceptance of the Groundwater RAR, and the NJDEP concurred.

Ron Riccio inquired if Peter Sorge, on behalf of the redeveloper, had any remarks. Mr. Sorge offered the following comments:

- In his opinion, PPG has conducted a tremendous remediation of groundwater at the GA Group Sites.
- A lot has been accomplished: a lot of materials have been injected into the subsurface and Cr concentrations have been reduced significantly.

- Mr. Sorge opined that PPG's current delineation of groundwater impacts in the bedrock water-bearing zone and their proposed remedy for the bedrock water-bearing zone are adequate and appropriate.

Ron Riccio thanked the attendees for their participation in the meeting. He concluded that his report to the Superior Court with respect to progress on resolution of the items identified in the Department's May 5, 2023 letter will be prepared after the Department has reviewed the Draft Groundwater RAR.

Mr. Riccio's closing remarks noted that he was impressed with the credentials and stature of all of the experts representing NJDEP, Jersey City, and PPG. He pointed out that the various expert opinions were, in his view, offered in good faith and reflected reasoned differences of technical opinions based on knowledge, training, and experience. He stressed that the experts' differences should not be seen as if the context is an adversarial court proceeding but, rather, as a collaborative process working towards a common goal shared by all to achieve effective, efficient, and safe groundwater remediation that protects the public health, safety, and welfare. To achieve the common goal Mr. Riccio suggested that NJDEP's experts (Ian Curtis and Dave Van Eck as well as Weston's experts Ralph Costa and Prabal Amin who assist both NJDEP and the Site Administrator) and Jersey City's expert (Dave Spader) work closely and collaboratively with PPG's experts (Jody Overmyer, Mark Pietrucha, Matt Schnobrich, Shannon Gleason, Frederik Schuele, and Joseph Luty) in reviewing/responding to PPG's draft groundwater RAR for the GA Group Sites. Mr. Riccio suggested that the close coordination and collaboration include, but not be limited to, as needed in person meetings, as needed virtual meetings, and as needed phone discussions between and among all the experts prior to issuance of written comments by NJDEP/Weston to the RAR. Mr. Riccio asked if anyone disagreed with his suggestion. No one disagreed with his suggestion, and all endorsed it as a sensible and efficient way to proceed.

The meeting concluded at 2:30 PM.

## Schuele, Frederik

| | |
|---|---|
| From: | Gleason, Shannon |
| Sent: | Friday, October 27, 2023 2:46 PM |
| To: | 'rriccio@mdmc-law.com' |
| Cc: | 'Ian.Curtis@dep.nj.gov'; David.VanEck@dep.nj.gov; Zervas, Gwen [DEP]; Richard.Engel@law.njoag.gov; Amin, Prabal; Costa, Ralph; 'iwilson@jcnj.org'; 'pbaker@jcnj.org'; dspader@endpointei.com; Overmyer, Jody; Laguzza, Dorothy M.; Joseph Lagrotteria; Mark Pietrucha (mpietrucha@woodardcurran.com); Schuele, Frederik; 'jray@mdmc-law.com'; 'ncolson@mdmc-law.com' |
| Subject: | PPG- GAG GW Bedrock Well Locations |
| Attachments: | Figure 1 - Proposed Weathered Bedrock Well.pdf; Figure 2 - Proposed Competent Bedrock Wells.pdf |

As discussed during the Oct 19, 2023 meeting regarding groundwater at the Garfield Avenue Group Sites, PPG has agreed to the following:

- Installation of one monitoring well (114-MW75WR) in weathered bedrock at the location shown on Figure 1 to complete horizontal delineation of total chromium (Cr) in weathered bedrock groundwater.
- For the weathered bedrock, PPG is proposing to interpret the Cr isoconcentration contours as depicted on Figure 1. In doing so, PPG is extending the 70 parts per billion (ppb) Cr isocontour to the vicinity of wells with Cr concentrations below 70 ppb. As discussed during the meeting, this meets the requirement for "clean point" delineation within the weathered bedrock and does not impact the already completed delineation in the competent bedrock to the east of 114-MW66D.
- Installation of two monitoring wells (114-MW73D and 114-MW74D) in competent bedrock at the locations shown on Figure 2 to evaluate potential hydraulic connection with 114-MW66D and provide data to triangulate groundwater flow direction within the competent portion of the Lockatong Formation.

Frederik Schuele reviewed the proposed well locations with Ralph Costa via teleconference on Oct 25, 2023, during which Ralph Costa concurred with the locations presented on Figures 1 and 2.

As discussed during the Oct 19, 2023 meeting, if wells 114-MW73D and 114-MW74D are determined to not be hydraulically connected to 114-MW66D, no additional investigations will be required by NJDEP to further demonstrate the presence (or absence) of hydraulic connection between the bedrock wells completed within the Lockatong Formation.

As also discussed during the Oct 19, 2023 meeting, PPG does not understand the technical basis for the two additional competent bedrock wells in an area that PPG has identified as contaminated, but PPG is agreeing to the installation in order to satisfy the Department's request. As such, PPG is not agreeing to conduct further "step-out" explorations from proposed wells 114-MW73D and 114-MW74D.

Best Regards,

**Shannon B. Gleason**, P.E.
*she, her, hers*

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shannon.gleason@aecom.com

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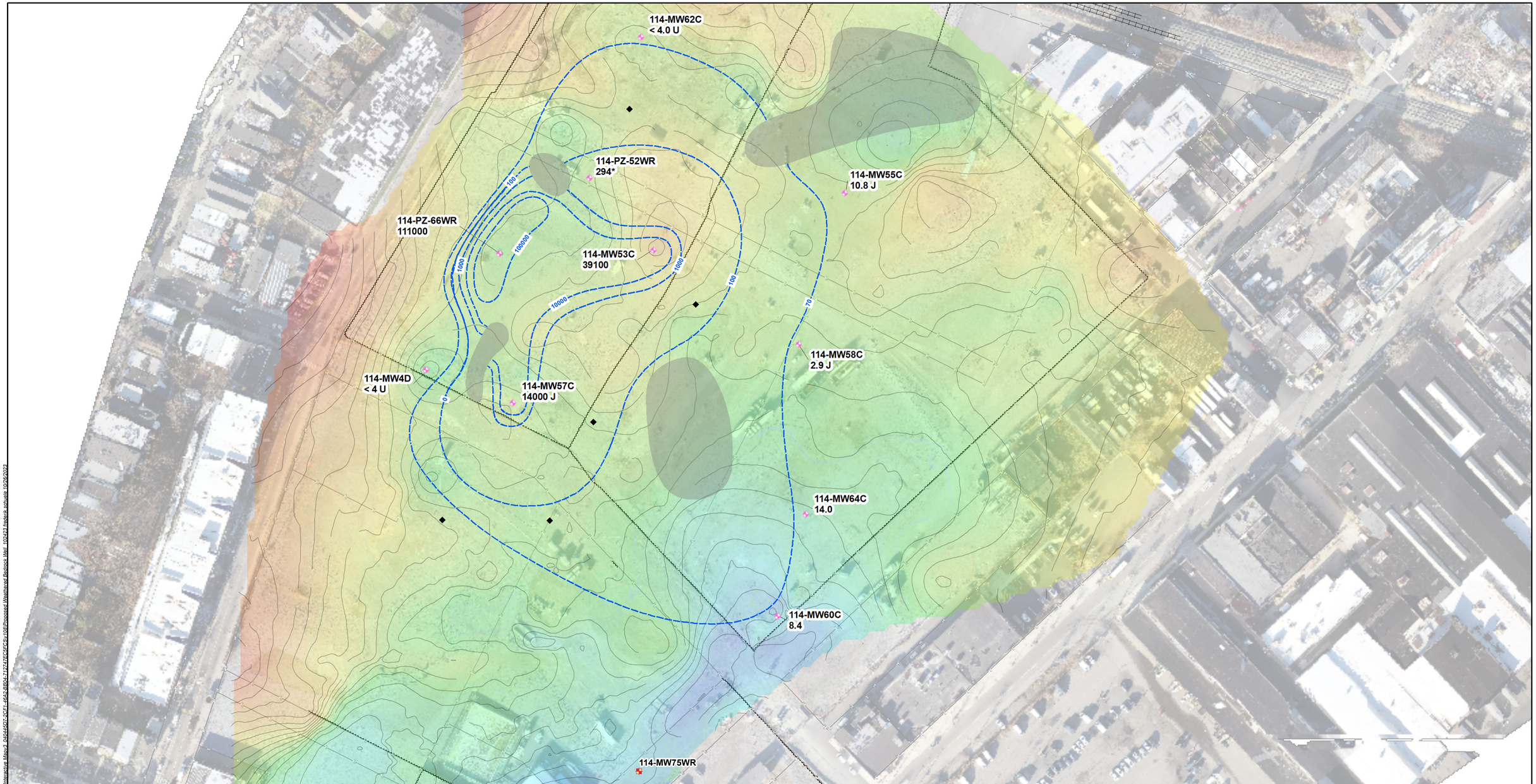


Legend

PROPERTY LINE
EXISTING SHEETPILE
RAILROAD

0
-20
-40
-60
-80
-100
-120
BEDROCK ELEVATION (FEET)

Weathered Bedrock Monitoring Well
NJDEP Proposed Weathered Bedrock Well
Proposed Weathered Bedrock Well
Proposed Cr Isoconcentration Contours (ppb)
Areas of No Weathered Bedrock
Bedrock Surface Elevation Contours (5-foot)
114-MW57C Well ID
8.5 Cr Concentration in micrograms per liter (ug/L)

U = Indicates the analyte was not detected in the sample above the listed reporting limit

J = Indicates the result is an estimated value

**NOTES:**

1. WELL 114-MW75WR TO BE COMPLETED IN WEATHERED BEDOCK.

2. TOTAL CHROMIUM (Cr) RESULTS POSTED NEXT TO EACH WELL ARE IN PARTS PER BILLION (ppb) AND ARE BASED ON SAMPLES COLLECTED IN JUNE/JULY 2023.

3. *DENOTES RESULT IS FROM A FIELD FILTERED SAMPLE (DISSOLVED-PHASE). FIELD FILTERING WAS CONDUCTED DUE TO ELEVATED SAMPLE TURBIDITY.

4. AERIAL IMAGE DATED DECEMBER 20, 2021 SOURCED FROM AERIAL IMAGERY PROVIDED BY BORBAS SURVEYING AND MAPPING, LLC.

80 40 0 80 Feet

N

AECOM

GARFIELD AVENUE GROUP SITES
PPG
JERSEY CITY, NEW JERSEY

**PROPOSED WEATHERED BEDROCK MONITORING WELL LOCATIONS**

10/24/2023 | DRWN: FS | **FIGURE 1**

File: C:\Users\frederik.schuele\OneDrive - AECOM\Documents\ArcGIS\Packages\202309 DEP Meeting Interactive Map\3_04\044507-2CF1-4682-BB04-712747EC5ECS\v108\Proposed Weathered Bedrock Well_102423 frederik.schuele 10/26/2023

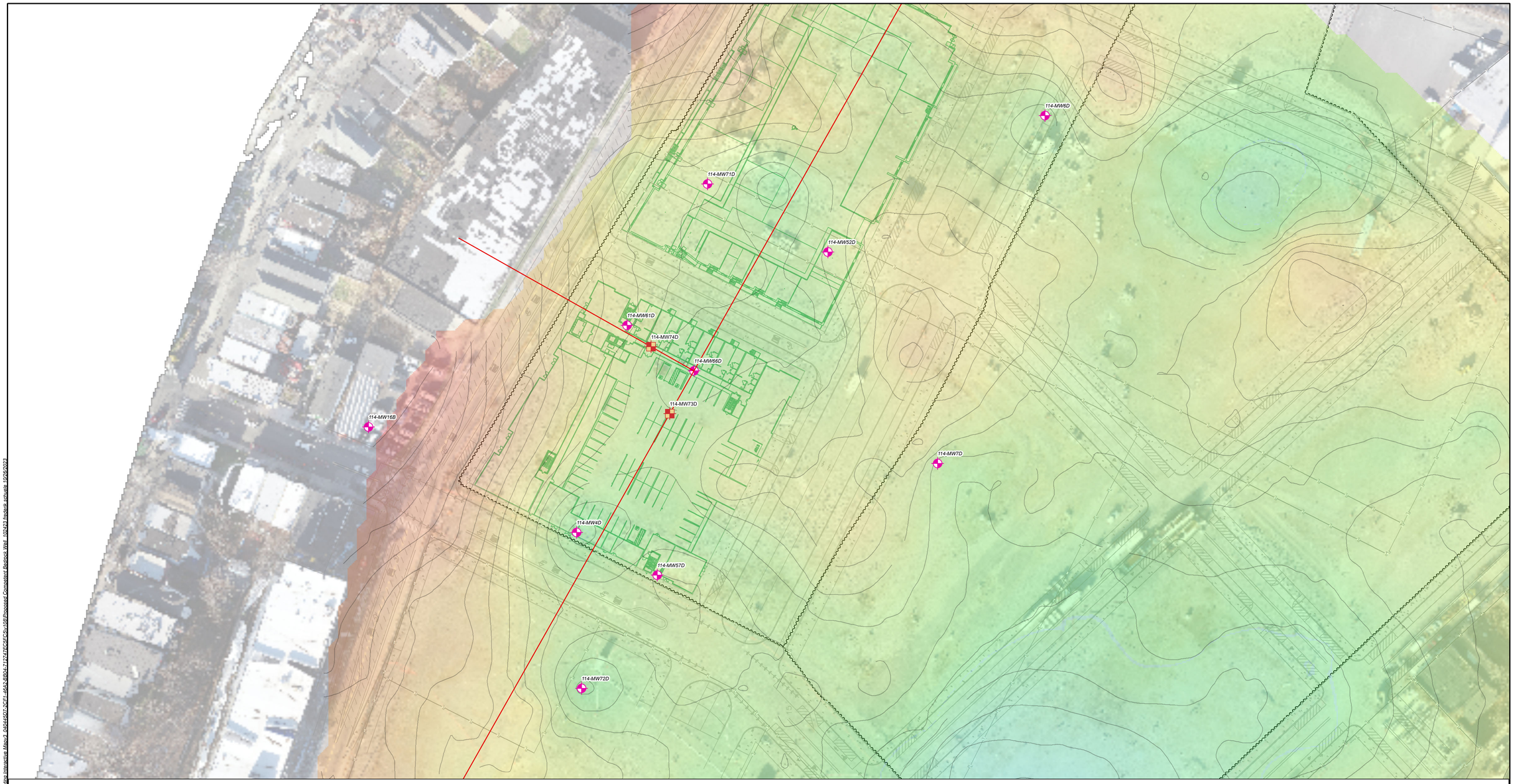


Legend

PROPERTY LINE
EXISTING SHEETPILE
RAILROAD

0
-20
-40
-60
-80
-100
-120
BEDROCK ELEVATION (FEET)

Competent Bedrock Monitoring Well
Proposed Competent Bedrock Well
Lockatong Formation Strike and Dip Azimuth
Bedrock Surface Elevation Contours (5-foot)

**NOTES:**

1. WELLS 114-MW73D AND 114-MW74D TO BE COMPLETED IN COMPETENT BEDOCK.
2. AERIAL IMAGE DATED DECEMBER 20, 2021 SOURCED FROM AERIAL IMAGERY PROVIDED BY BORBAS SURVEYING AND MAPPING, LLC.

50 25 0 50 Feet

N

AECOM

| GARFIELD AVENUE GROUP SITES<br>PPG<br>JERSEY CITY, NEW JERSEY | | | PROPOSED COMPETENT<br>BEDROCK MONITORING<br>WELL LOCATIONS |
|---|---|---|---|
| 10/24/2023 | DRWN: FS | | FIGURE 2 |

File: C:\Users\frederik.schuele\OneDrive - AECOM\Documents\ArcGIS\Packages\202309 DEP Meeting Interactive Map\3_040445D7-2CF1-46A2-BB04-712747EC5FC5\v108\Proposed Competent Bedrock Well_102423 frederik.schuele 10/26/2023

Schuele, Frederik

From: VanEck, David [DEP] <David.VanEck@dep.nj.gov>
Sent: Thursday, December 21, 2023 10:20 AM
To: Schuele, Frederik
Cc: Overmyer, Jody; Gleason, Shannon
Subject: RE: PPG GA Group Sites Groundwater - Low Permeability Information

Categories: Yellow Category

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I was hoping to discuss the issue with Ralph, but he had been preoccupied with finalizing the RAR comments, and he is on vacation for the remainder of December. (Today is my last workday as well until January 2nd.)

The two proposed weathered bedrock replacement well locations are acceptable to the Department. The main concern is that they be installed in a manner that prevents the creation of a migration pathway for any DNAPL that may be encountered.

Dave

...
David Van Eck, Section Chief
NJ Dept. of Environmental Protection
Bureau of Ground Water Pollution Abatement
P.O. Box 420, Mail Code 401-05V, Trenton, New Jersey 08625-0420
Phone: 609-633-2427
David.VanEck@dep.nj.gov
Nothing in this correspondence affects your potential liability and obligations to the State Trustee, the Department or its Commissioner regarding natural resource injuries or damages.

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From: Schuele, Frederik <frederik.schuele@aecom.com>
Sent: Thursday, December 21, 2023 9:54 AM
To: VanEck, David [DEP] <David.VanEck@dep.nj.gov>
Cc: Overmyer, Jody <overmyer@ppg.com>; Gleason, Shannon <Shannon.Gleason@aecom.com>
Subject: [EXTERNAL] RE: PPG GA Group Sites Groundwater - Low Permeability Information

Hi Dave. Checking in on status of review of the proposed locations for the two replacement weathered bedrock wells (yellow highlighted item below). Are you able to provide an update?

Thanks!

---
**Frederik Schuele**
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---

From: Schuele, Frederik
Sent: Tuesday, December 12, 2023 2:59 PM
To: Dave VanEck (David.VanEck@dep.nj.gov) <David.VanEck@dep.nj.gov>
Cc: Overmyer, Jody <overmyer@ppg.com>; Gleason, Shannon <Shannon.Gleason@aecom.com>
Subject: PPG GA Group Sites Groundwater - Low Permeability Information

Hi Dave. Thank you for taking my call last week regarding groundwater at the Garfield Avenue Group sites. As a follow up to that call, attached please find two PDF files which were shared and discussed with NJDEP and other stakeholders in February of 2021. These materials were developed to facilitate discussions regarding implementation of the groundwater remedy at the site, in particular as it relates to delivery of reagents to low-permeability soils and matrix diffusion. The February 16, 2021 file was also included in Appendix A.2 of the groundwater RAWP as an attachment to a memorandum providing responses to comments on the definition of low permeability for the site. This memorandum is also attached for your reference. Additional details regarding the implications of soil heterogeneities on contaminant fate and transport and matrix diffusion at the site are provided in Appendix E of the groundwater RIR.

Regarding the basal till, the groundwater RIR included an evaluation of permeable zones within the basal till (Appendix G) and concluded that of the approximately 390 ft of basal till logged at the site, only 21 ft consisted of sand stringers or lenses, which equates to less than 6% of the basal till. The RIR further noted that, where present, these higher permeability intervals within the basal till may serve as preferential migration pathways for Cr-impacted groundwater. I believe that this is the migration mechanism for the observation of EVO at weathered bedrock well 114-PZ-52WR. However, as discussed in the summary of hydraulic testing results provided in Appendix D of the addendum to groundwater RIR and groundwater RAWP for the bedrock water-bearing zone, the bulk permeability of the basal till, as a whole, is several orders of magnitude lower than the permeability of any sand stringers or lenses within the till. Furthermore, the permeable sand stringers or lenses are limited in lateral extent.

I found it beneficial to review these items within the context of more recent discussions related to how low-permeability soils will be managed by the remedy over the long-term.

Lastly, we also discussed the proposed locations of two replacement weathered bedrock monitoring wells. As a reminder, we are mobilizing to the site this week to initiate the drilling program and would like to receive your concurrence with our proposed locations.

Best regards,
---
**Frederik Schuele**
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Northeast Region - New England
M +1-207-939-8619
frederik.schuele@aecom.com

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## Schuele, Frederik

From: Schuele, Frederik
Sent: Tuesday, April 23, 2024 10:47 AM
To: Costa, Ralph
Cc: Dave VanEck (David.VanEck@dep.nj.gov); Curtis, Ian (Ian.Curtis@dep.nj.gov); Faeth, Steve; Krall, Scott M; 'Mark Pietrucha'
Subject: RE: PPG - Technical Meeting to Discuss Groundwater RIR Addendum for Bedrock

Ralph – Regarding the requirement to demonstrate hydraulic connection between 114-MW75D and 114-MW72D, we intend to evaluate this during well development activities at 114-MW75D. We will deploy transducers in each of the FLUTe ports at 114-MW72D to monitor for hydraulic response while pumping the open borehole at 114-MW75D. This was the same approach that was successfully employed in January 2024 to demonstrate hydraulic connection between 114-MW66D and wells 114-MW73D and 114-MW74D (see Table 2 and Attachment 2 of the *Summary of Packer Testing and Hydraulic Monitoring Results* technical memorandum).

Best regards,
---
**Frederik Schuele**
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---

From: Amin, Prabal <Prabal.Amin@WestonSolutions.com>
Sent: Friday, April 19, 2024 9:43 AM
To: Schuele, Frederik <frederik.schuele@aecom.com>; 'Zervas, Gwen [DEP]' <Gwen.Zervas@dep.nj.gov>; Curtis, Ian (Ian.Curtis@dep.nj.gov) <Ian.Curtis@dep.nj.gov>; VanEck, David [DEP] <David.VanEck@dep.nj.gov>; Costa, Ralph <Ralph.Costa@WestonSolutions.com>
Cc: Gleason, Shannon <Shannon.Gleason@aecom.com>; Faeth, Steve <sfaeth@ppg.com>; 'Mark Pietrucha' <mpietrucha@woodardcurran.com>; Krall, Scott M <skrall@ppg.com>; James D. Ray <Jray@mdmc-law.com>
Subject: RE: PPG - Technical Meeting to Discuss Groundwater RIR Addendum for Bedrock

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On behalf of the New Jersey Department of Environmental Protection (Department), the Department concurs with the location of proposed competent bedrock monitoring well 114-MW75D per the email below. As discussed during the April 4, 2024 technical meeting, PPG is required to confirm hydraulic

connection between 114-MW72D and 114-MW75D using a combination of packer testing and hydraulic monitoring methods similar to those used in January 2024 to confirm the hydraulic connection between monitoring well 114-MW66D and monitoring wells 114-MW73D and 114-MW74D.

Thank you.

**Prabal N. Amin, P.E., LSRP**
Weston Solutions, Inc.
205 Campus Drive
Edison, NJ 08837

Office: 732-417-5857
Cell: 609-240-5289
prabal.amin@westonsolutions.com

---

From: Schuele, Frederik <frederik.schuele@aecom.com>
Sent: Friday, April 12, 2024 9:02 AM
To: 'Zervas, Gwen [DEP]' <Gwen.Zervas@dep.nj.gov>; Amin, Prabal <Prabal.Amin@WestonSolutions.com>; Curtis, Ian (Ian.Curtis@dep.nj.gov) <Ian.Curtis@dep.nj.gov>; VanEck, David [DEP] <David.VanEck@dep.nj.gov>; Costa, Ralph <Ralph.Costa@WestonSolutions.com>
Cc: Gleason, Shannon <Shannon.Gleason@aecom.com>; Faeth, Steve <sfaeth@ppg.com>; 'Mark Pietrucha' <mpietrucha@woodardcurran.com>; Krall, Scott M <skrall@ppg.com>
Subject: RE: PPG - Technical Meeting to Discuss Groundwater RIR Addendum for Bedrock

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As discussed during the meeting, attached please find a figure with the proposed location for a competent bedrock monitoring well to be installed in the Lockatong Formation to complete delineation of total chromium south of monitoring well 114-MW72D. Please review the proposed well location and provide any comments or approval of the location.

Best regards,
---
**Frederik Schuele**
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-----Original Appointment-----
From: Schuele, Frederik
Sent: Monday, March 11, 2024 7:32 AM
To: Schuele, Frederik; Zervas, Gwen [DEP]; Amin, Prabal; Curtis, Ian (Ian.Curtis@dep.nj.gov); VanEck, David [DEP]; 'Mark Pietrucha'; Costa, Ralph; Krall, Scott M; Steve Faeth (sfaeth@ppg.com)

Subject: PPG - Technical Meeting to Discuss Groundwater RIR Addendum for Bedrock
When: Thursday, April 04, 2024 1:00 PM-3:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: Microsoft Teams Meeting

Agenda

1. Review results of the packer testing program recently completed at the site. This program was implemented pursuant to the agreed-upon scope of work discussed during the October 19, 2023 technical meeting.
2. Confirm NJDEP agreement to submit the final RIR for the bedrock water-bearing zone. The RAWP for the bedrock water-bearing zone will be submitted separately at a future date TBD.

---

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---

From: Zervas, Gwen [DEP] <Gwen.Zervas@dep.nj.gov>
Sent: Sunday, March 10, 2024 11:49 AM
To: Amin, Prabal <Prabal.Amin@WestonSolutions.com>; Schuele, Frederik <frederik.schuele@aecom.com>
Cc: Krall, Scott M <skrall@ppg.com>; VanEck, David [DEP] <David.VanEck@dep.nj.gov>; 'Mark Pietrucha' <mpietrucha@woodardcurran.com>; Costa, Ralph <Ralph.Costa@WestonSolutions.com>
Subject: RE: PPG - Technical Meeting to Discuss Groundwater RIR Addendum for Bedrock

I am also available 4/2 and 4/4 at 1-3 pm.

| Date | 12/22/2023 | 12/22/2023 | 12/20/2023 | 12/20/2023 | 12/20/2023 | 12/20/2023 | 12/19/2023 | 12/19/2023 | 12/19/2023 | 12/19/2023 |
|---|---|---|---|---|---|---|---|---|---|---|
| Depth (ft) | 117 | 117 | 121 | 121 | 126 | 126 | 131 | 131 | 136 | 136 |
| Sample Type | N (T) | N (D) | N (T) | N (D) | N (T) | N (D) | N (T) | N (D) | N (T) | N (D) |
| **114-MW61D** | | | | | | | | | | |
| Cr | 7.8 J | 0.64 J | < 10.0 U | < 10.0 U | 5.0 J | < 10.0 U | < 10.0 U | < 10.0 U | 6.2 J | < 10.0 U |
| $Cr^{+6}$ | < 10.0 U | < 10.0 U | < 10.0 U | < 10.0 U | < 10.0 U | < 10.0 U | < 10.0 U | < 10.0 U | < 10.0 U | < 10.0 U |

| Date | 08/27/2020 | 08/27/2020 | 08/27/2020 | 08/26/2020 | 08/26/2020 |
|---|---|---|---|---|---|
| Depth (ft) | 88.5 | 93.5 | 98.5 | 103.5 | 108.5 |
| Sample Type | N | N | N | N | N |
| **114-MW6D** | | | | | |
| Cr | < 10.0 U | < 10.0 U | < 10.0 U | < 10.0 U | 3.4 J |
| $Cr^{+6}$ | < 10.0 U | < 10.0 U | < 10.0 U | < 10.0 UJ | < 10.0 UJ |

| Date | 12/14/2021 | 12/14/2021 | 12/14/2021 | 12/15/2021 | 12/21/2021 |
|---|---|---|---|---|---|
| Depth (ft) | 119 | 126 | 132.5 | 137 | 141.5 |
| Sample Type | N | N | N | N | N |
| **114-MW71D** | | | | | |
| Cr | 42.9 | 53.5 | 54.8 | 44.2 | 29.0 |
| $Cr^{+6}$ | 17.3 | 25.2 | 19.5 | < 21.9 UB | < 10.0 U |

| Date | 12/27/2023 | 12/27/2023 | 12/27/2023 |
|---|---|---|---|
| Depth (ft) | 80-83 | 87-90 | 102-105 |
| Sample Type | N | N | N |
| **114-MW52D** | | | |
| Cr | 5.0 J | 11.1 | < 10.0 U |
| $Cr^{+6}$ | < 10.0 UJ | 4.9 J- | < 10.0 UJ |

| Date | 12/15/2023 | 12/15/2023 | 12/15/2023 | 12/15/2023 | 12/15/2023 |
|---|---|---|---|---|---|
| Depth (ft) | 91-97 | 107-111 | 118-123 | 124-129 | 137-140 |
| Sample Type | N | N | N | N | N |
| **114-MW66D** | | | | | |
| Cr | **2820 J** | **102** | 15.7 | 3.9 J | < 10.0 U |
| $Cr^{+6}$ | 4100 RA | 17 RA | < 10.0 RA | < 10.0 RA | < 10.0 RA |

| Date | 08/21/2020 |
|---|---|
| Depth (ft) | 33 |
| Sample Type | N |
| **114-MW16B** | |
| Cr | 2.8 J |
| $Cr^{+6}$ | < 10.0 U |

| Date | 08/31/2020 |
|---|---|
| Depth (ft) | 87.5 |
| Sample Type | N |
| **114-MW7D** | |
| Cr | 3.6 J |
| $Cr^{+6}$ | < 10.0 U |

| Date | 12/19/2023 | 12/19/2023 | 12/19/2023 | 12/19/2023 |
|---|---|---|---|---|
| Depth (ft) | 87.5-91.5 | 96.5-100.5 | 104-108 | 109-113 |
| Sample Type | N | N | N | N |
| **114-MW57D** | | | | |
| Cr | 6.8 J | 35.2 | 11.3 | 6.8 J |
| $Cr^{+6}$ | < 10.0 U | < 10.0 U | < 10.0 U | < 10.0 U |

| Date | 12/20/2023 | 12/20/2023 | 12/20/2023 | 12/20/2023 | 12/20/2023 | 12/20/2023 | 12/20/2023 | 12/20/2023 |
|---|---|---|---|---|---|---|---|---|
| Depth (ft) | 102-106 | 102-106 | 110-114 | 110-114 | 116-119 | 116-119 | 123-126 | 123-126 |
| Sample Type | N (T) | N (D) | N (T) | N (D) | N (T) | N (D) | N (T) | N (D) |
| **114-MW72D** | | | | | | | | |
| Cr | **134** | **132** | **131** | **138** | **75.1** | **72.1** | 36.3 | 33.7 J |
| $Cr^{+6}$ | 120 | 120 | 100 | 110 | 76 | 78 | 36 J | 55 J |

| Date | 12/19/2023 | 12/19/2023 | 12/19/2023 | 12/19/2023 |
|---|---|---|---|---|
| Depth (ft) | 90-94 | 98-102 | 111-115 | 121-125 |
| Sample Type | N | N | N | N |
| **114-MW4D** | | | | |
| Cr | < 10.0 U | < 10.0 U | < 10.0 U | < 10.0 UJ |
| $Cr^{+6}$ | 9.5 J | < 10.0 U | < 10.0 U | 28 J |

Proposed location of competent bedrock well 114-MW75D

Map Sources:

1. New Jersey State Plane North American Datum 1983 Coordinates, U.S. Survey Feet.
2. Vertical Elevations are in North American Vertical Datum of 1988 (NAVD88), U.S. Survey Feet.

Notes:

1. Data used to develop the interpreted top of bedrock surface were obtained from historical investigations conducted by PPG and Public Service Electric and Gas Company (PSEG), borings and monitoring wells completed by PPG as part of the groundwater Remedial Investigation (RI), and a geophysical survey (seismic refraction) completed as part of the groundwater RI.
2. Bedrock elevations are in feet NAVD88.
3. Concentrations are presented in units of micrograms per liter (µg/L).
4. Bold and shaded value indicates the concentration is greater than the NJDEP GWQS of 70 µg/L for total Cr.
5. Sample depths are relative to the top of the well casing (PVC for monitoring wells, steel for open borehole bedrock wells and FLUTe ports).
6. Groundwater analytical results are from unfiltered samples (total fraction), except as noted with (T) for total fraction and (D) for dissolved (field-filtered) fraction.
7. For each well, the most current results for each sample depth interval are presented.

Abbreviations:

Cr = total chromium
$Cr^{+6}$ = hexavalent chromium
D = Dissolved fraction
FD = field duplicate sample
ft = feet
GWQS = NJDEP groundwater quality standard
J = Indicates the result is an estimated value; the associated numerical value is an approximate concentration of the analyte in the sample.
JB = The analyte concentration is greater than three (3) times, but less than or equal to ten (10) times the concentration in the associated method/prep blank. The presence of that analyte in the sample is considered "real." The concentration is quantitatively qualified (JB) due to method blank contamination.
N = normal environmental sample
NJDEP = New Jersey Department of Environmental Protection
RA = The sample result was rejected but still considered usable.
T = Total fraction
U = Indicates the analyte was not detected in the sample above the laboratory reporting limit.
UB = The analyte concentration is less than or equal to three (3) times the concentration in the associated method/prep blank. The presence of the analyte in the sample is negated (UB) due to laboratory contamination. The presence of the analyte in the sample is negated (UB) due to laboratory contamination.
ug/l = micrograms per liter.
UJ = Indicates the analyte was not detected above the laboratory reporting limit and the reporting limit was approximate.

Bedrock Elevation (feet): 0, -20, -40, -60, -80, -100, -120

LEGEND

- PROPERTY LINE
- SHEET PILE
- NEW JERSEY TRANSIT LIGHT RAIL
- BEDROCK SURFACE CONTOURS (5-FOOT INTERVAL)
- 70 — INFERRED TOTAL CHROMIUM ISOPLETH (ug/L)
- 114-MW72D — WELL/PIEZOMETER ID
- MONITORING WELL (Cr < GWQS)
- MONITORING WELL (Cr > GWQS)
- INFERRED CONTACT BETWEEN ROCK TYPES
- A — A' CROSS-SECTION ALIGNMENT

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GARFIELD AVENUE GROUP
GROUNDWATER REMEDIAL INVESTIGATION
JERSEY CITY, NEW JERSEY

DATE: MARCH 2024 | DRWN: GET

# FIGURE 4-3
# DISTRIBUTION OF TOTAL CHROMIUM IN COMPETENT BEDROCK

Filename: G:\910 CAD\20 SHEETS\GW\2022 GW RI\PPG_DISTRIBUTIONOFCRINBEDROCK_032524.DWG

## Schuele, Frederik

From: VanEck, David [DEP] <David.VanEck@dep.nj.gov>
Sent: Thursday, September 12, 2024 2:59 PM
To: Schuele, Frederik; 'David Spader'; Zhang, Lihua; Costa, Ralph; Hastings, Brianne J; Schnobrich, Matthew; Albrecht, Erin
Cc: Gleason, Shannon; Krall, Scott M
Subject: RE: GAG Groundwater Technical Meeting

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Frederik,
Yes, I concur with the proposed location and scope of work for well 114-MW81D. Thank you.
David
...
David Van Eck, Section Chief
NJ Dept. of Environmental Protection
Bureau of Ground Water Pollution Abatement
P.O. Box 420, Mail Code 401-05V, Trenton, New Jersey 08625-0420
NOTE: New Phone #: 609-940-4611
David.VanEck@dep.nj.gov
Nothing in this correspondence affects your potential liability and obligations to the State Trustee, the Department or its Commissioner regarding natural resource injuries or damages.

From: Schuele, Frederik <frederik.schuele@aecom.com>
Sent: Thursday, September 12, 2024 1:05 PM
To: VanEck, David [DEP] <David.VanEck@dep.nj.gov>; 'David Spader' <dspader@endpointei.com>; Zhang, Lihua <Lihua.Zhang@westonsolutions.com>; Costa, Ralph <Ralph.Costa@westonsolutions.com>; Hastings, Brianne J <bhastings@ppg.com>; Schnobrich, Matthew <matthew.schnobrich@arcadis.com>; Albrecht, Erin <Erin.Albrecht@aecom.com>
Cc: Gleason, Shannon <Shannon.Gleason@aecom.com>; Krall, Scott M <skrall@ppg.com>
Subject: [EXTERNAL] RE: GAG Groundwater Technical Meeting
Thank you for your time today. As discussed, attached please find a plan-view and cross-section presenting the proposed location and scope of work associated with the new competent bedrock well (114-MW81D) to be installed to complete the bedrock Remedial Investigation (RI). We also discussed that ongoing monitoring at 114-MW72D will continue to track Cr concentrations at this well. And lastly, we agreed that extrapolation of the 70 ppb Cr contour in bedrock beneath 114-MW72D is appropriate for completion of the bedrock RI, based on the data at nearby wells.
Dave Van Eck – Please provide your concurrence on the proposed location and scope of work for 114-MW81D.
Best regards,
---
**Frederik Schuele**
Hydrogeologist, Project Manager
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-----Original Appointment-----
From: Schuele, Frederik
Sent: Tuesday, September 10, 2024 10:48 AM
To: Schuele, Frederik; 'David Spader'; Zhang, Lihua; Costa, Ralph; Hastings, Brianne J; VanEck, David [DEP]; Schnobrich, Matthew; Albrecht, Erin
Subject: GAG Groundwater Technical Meeting
When: Thursday, September 12, 2024 12:00 PM-1:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: Microsoft Teams Meeting

Discussion Topics:

- Follow-up on 114-MW72D horizontal delineation
- Clarification on 114-MW72D vertical delineation
- Follow-up discussion on observations of yellow water in Phase 1 IRM intermediate groundwater and path forward

---

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---

## Schuele, Frederik

From: Schuele, Frederik
Sent: Monday, December 2, 2024 10:37 AM
To: 'Costa, Ralph'; VanEck, David [DEP]
Cc: Hastings, Brianne J
Subject: RE: PPG - GA Group Sites Bedrock RI Drilling Program

Dave and Ralph – Thank you for meeting with us on 11/26/24 to review the packer testing procedure. As discussed, the proposed approach characterizes the 25-foot open borehole interval at 114-MW81D by staggering the packers at 5-foot intervals. Therefore, we will implement the program as proposed. Note that this work is scheduled for 12/4 to 12/5.

Best regards,
---
**Frederik Schuele**
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frederik.schuele@aecom.com

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---

From: Schuele, Frederik
Sent: Monday, November 25, 2024 11:14 AM
To: 'Costa, Ralph' <Ralph.Costa@WestonSolutions.com>; VanEck, David [DEP] <David.VanEck@dep.nj.gov>
Cc: Hastings, Brianne J <bhastings@ppg.com>
Subject: RE: PPG - GA Group Sites Bedrock RI Drilling Program

Hi Ralph and Dave. Do you have 20 minutes sometime today or tomorrow to discuss this comment? The packer testing is scheduled for next week and we want to be sure we fully understand your concerns.

Best regards,
---
**Frederik Schuele**
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From: Costa, Ralph <Ralph.Costa@WestonSolutions.com>
Sent: Friday, November 22, 2024 12:34 PM
To: Schuele, Frederik <frederik.schuele@aecom.com>; VanEck, David [DEP] <David.VanEck@dep.nj.gov>
Cc: Hastings, Brianne J <bhastings@ppg.com>; Krall, Scott M <skrall@ppg.com>; Gleason, Shannon <Shannon.Gleason@aecom.com>; Prabal.Amin <Prabal.Amin@WestonSolutions.com>; Curtis, Ian [DEP] <Ian.Curtis@dep.nj.gov>
Subject: RE: PPG - GA Group Sites Bedrock RI Drilling Program

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Frederik,
Thank you for clarifying. Your approach is not consistent with the sequencing provided in the Department's groundwater guidance. Although I don't object to your sequencing at 114-MW-81D, I would not recommend it. The goal is to demonstrate hydraulic connection, but your approach carries some risk of unintentionally inflating packers over bedding plane fractures that the geophysics might identify and be connected to 114-MW-72D.
Thank you,
Ralph

From: Schuele, Frederik <frederik.schuele@aecom.com>
Sent: Thursday, November 21, 2024 4:21 PM
To: Costa, Ralph <Ralph.Costa@WestonSolutions.com>; VanEck, David [DEP] <David.VanEck@dep.nj.gov>
Cc: Hastings, Brianne J <bhastings@ppg.com>; Krall, Scott M <skrall@ppg.com>; Gleason, Shannon <Shannon.Gleason@aecom.com>; Amin, Prabal <Prabal.Amin@WestonSolutions.com>; Curtis, Ian [DEP] <Ian.Curtis@dep.nj.gov>
Subject: RE: PPG - GA Group Sites Bedrock RI Drilling Program

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Hi Ralph. I don't think I said that. We discussed doing borehole geophysics before sampling the well, but not before packer testing. We did not do borehole geophysics before packer testing at 114-MW73D and 114-MW74D. We just did packer testing at 5-foot intervals within the open borehole, and that is the plan for 114-MW81D.

Best regards,
---
**Frederik Schuele**
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frederik.schuele@aecom.com

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From: Costa, Ralph <Ralph.Costa@WestonSolutions.com>
Sent: Thursday, November 21, 2024 4:05 PM
To: Schuele, Frederik <frederik.schuele@aecom.com>; VanEck, David [DEP] <David.VanEck@dep.nj.gov>
Cc: Hastings, Brianne J <bhastings@ppg.com>; Krall, Scott M <skrall@ppg.com>; Gleason, Shannon <Shannon.Gleason@aecom.com>; Prabal.Amin <Prabal.Amin@WestonSolutions.com>; Curtis, Ian [DEP] <Ian.Curtis@dep.nj.gov>
Subject: RE: PPG - GA Group Sites Bedrock RI Drilling Program

Frederik,
The summary provided below looks good. I have one addition regarding sequencing of the scope. You clarified that if the borehole remains open, the geophysics would be conducted after well development and before packer testing. I agree this would be prudent, so we don't inadvertently inflate packers where the geophysics suggests conductive fractures may be.
Thank you
Ralph

From: Schuele, Frederik <frederik.schuele@aecom.com>
Sent: Wednesday, November 20, 2024 3:52 PM
To: Costa, Ralph <Ralph.Costa@WestonSolutions.com>; VanEck, David [DEP] <David.VanEck@dep.nj.gov>
Cc: Hastings, Brianne J <bhastings@ppg.com>; Krall, Scott M <skrall@ppg.com>; Gleason, Shannon <Shannon.Gleason@aecom.com>
Subject: RE: PPG - GA Group Sites Bedrock RI Drilling Program

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Thank you Dave and Ralph for your time today, it is much appreciated. Please let me know if you agree with the summary below, or if you have any questions or additions.

To summarize, we discussed the scope of work for installation of well 114-MW81D. The original scope is shown below.

Scope of Work

- Install new bedrock well 114-MW81D 60 feet south of 114-MW72D with open borehole from 100 to 125 ft bgs
- Develop well
- During well development and pump test, continuous water level monitoring at 114-MW72D and 114-MW76D
- Packer testing at 114-MW81D at 5-foot intervals (25-foot open borehole, 5 intervals)
- During packer testing, continuous water level monitoring at 114-MW72D and 114-MW76D
- Borehole geophysics at 114-MW81D
- Groundwater sampling at 114-MW81D (vertical profiling at 5-ft intervals)

Based on the nature of the rock observed thus far (to 100 ft bgs), it may not be possible to complete 114-MW81D as an open borehole well. If that is not possible, we discussed the option of installing a 2-inch PVC well with filter pack to keep the borehole open. For such an installation, we agreed to forgo the 5-ft packer testing program and borehole geophysics. A pump test with up to 1 hour of pumping at 114-MW81D would be performed to evaluate for hydraulic connection with nearby by wells 114-MW72D and 114-MW76D. Water levels at these wells will be monitored with pressure transducers. We are still proposing to conduct vertical profiling of 114-MW81D at 5-ft intervals to characterize groundwater quality and to delineate chromium concentrations downgradient of 114-MW72D.

Ralph inquired about packer testing in the 2-inch PVC well, suggesting that this could be performed to isolate the upper and lower portions of the well and perhaps provide more definition on which portion of the boring is hydraulically connected to 114-MW72D or 114-MW76D. This topic was discussed but no decision was made. Ralph suggested that further discussion on this topic be deferred, pending results of the pump test at 114-MW81D.

Best regards,
---
**Frederik Schuele**
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Environment
Northeast Region - New England
M +1-207-939-8619
frederik.schuele@aecom.com

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From: Schuele, Frederik
Sent: Tuesday, November 19, 2024 2:39 PM
To: Costa, Ralph <Ralph.Costa@WestonSolutions.com>; Dave VanEck (David.VanEck@dep.nj.gov) <David.VanEck@dep.nj.gov>
Cc: Hastings, Brianne J <BHastings@ppg.com>; Krall, Scott M <skrall@ppg.com>; Gleason, Shannon <Shannon.Gleason@aecom.com>
Subject: PPG - GA Group Sites Bedrock RI Drilling Program

Hi Dave and Ralph. This is a quick update for the bedrock drilling program at the PPG site in Jersey City. We are drilling the boring for installation of well 114-MW81D, to complete the bedrock RI. Top of bedrock was encountered at 71.5 ft bgs. Today the crew advanced the borehole to 100 ft bgs. The target depth interval for the open borehole well is 100-125 ft bgs, therefore we are going to set and grout 6-inch steel casing at 100 ft bgs. Drilling/rock coring will continue inside the 6-inch casing tomorrow. The boring will be terminated at 125 ft bgs.

The rock thus far has been mostly highly weathered with very little structure (broken up pieces of rock within a sand/clay matrix, see photos below). If this continues to target depth, we may not be able to finish this boring as an open-borehole well due to the likelihood of the rock caving in and filling the borehole. Instead, we would build a 2-inch PVC well with filter pack to keep the borehole open. We will know better as drilling continues tomorrow.

If we need to build a PVC well, this will not allow for completion of the packer testing program that we discussed. The presence of hydraulic connection at 114-MW81D with the other two nearby bedrock wells (114-MW72D and 114-MW76D) would have to be evaluated via a pump test. Since this is a deviation from the scope of work we discussed earlier this year, we would like to discuss this option with you should it become necessary. To that end, would you be available for a call to discuss tomorrow afternoon? Please let me know if this works for you and what time is best. I think a 30 minute call will suffice.

Best regards,


11/19/24
119-MW81D
90-95
NON-HAZARDOUS
WASTE


95
11/19/24
119-MW81D
95-100

---
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Schuele, Frederik

From: VanEck, David [DEP] <David.VanEck@dep.nj.gov>
Sent: Thursday, January 9, 2025 4:18 PM
To: Schuele, Frederik; Costa, Ralph
Cc: Krall, Scott M; Hastings, Brianne J; Gleason, Shannon
Subject: RE: PPG - Borehole Geophysical Log and Recommended Sample Intervals for 114-MW81D

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Report Suspicious

Hello Frederik,
Ralph and I looked at the documents and we are in agreement with your proposed sample intervals for 114-MW81D.
David
...
David Van Eck, Section Chief
NJ Dept. of Environmental Protection
Bureau of Ground Water Pollution Abatement
P.O. Box 420, Mail Code 401-05V, Trenton, New Jersey 08625-0420
NOTE: New Phone #: 609-940-4611
David.VanEck@dep.nj.gov
Nothing in this correspondence affects your potential liability and obligations to the State Trustee, the Department or its Commissioner regarding natural resource injuries or damages.

From: Schuele, Frederik
Sent: Thursday, January 2, 2025 11:10 AM
To: VanEck, David [DEP] ; Costa, Ralph
Cc: Krall, Scott M ; Hastings, Brianne J ; Gleason, Shannon
Subject: [EXTERNAL] PPG - Borehole Geophysical Log and Recommended Sample Intervals for 114-MW81D
Good morning Ralph and Dave. Attached please find the borehole geophysical logging report for bedrock well 114-MW81D and a separate file denoting the proposed sample intervals and supporting data. 114-MW81D is an open-borehole bedrock well with 6-inch steel casing set to 100 ft bgs and the open borehole interval extending from 100 to 125 ft bgs.
We are proposing a total of 5 samples targeting the following intervals:

- 103.5 ft btc: Major fracture at 103.2 ft btc with minor flow into and up the borehole under pumping conditions from 103 to 104.3 ft btc.
- 107.5 ft btc: Fracture interval from 106.5 to 108 ft bgs with major fracture at 107 ft btc and minor flow into and up the borehole under pumping conditions from 106.1 to 109.2 ft btc. Sample targets section with largest Acoustic Caliper aperture.
- 115 ft btc: Major fractures at 114.7 and 115 ft btc.
- 123 ft btc: Bedding plane at 123.2 ft btc with possible minor flow into or out of the borehole based on the fluid conductivity data from 122.9 to 124.2 ft btc.
- 127 ft btc: Minor fracture at 127 ft btc. Serves as vertical delineation point for boring.

We are prepared to collect the samples during the week of 1/13/25 to 1/17/25, pending your concurrence. As done previously, samples will be collected using low-flow protocols. Please let me know if you agree with the proposed sampling program.
Best regards,
---
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March 5, 2025

Mr. Ian Curtis, Case Manager
New Jersey Department of
Environmental Protection
P.O. Box 420
Trenton, New Jersey 08625

**Groundwater Remedial Action Progress Report, 4th Quarter 2024**

**Garfield Avenue Group Sites, Jersey City, Hudson County, New Jersey**

On behalf of PPG, AECOM has prepared this remedial action progress report (RAPR) to describe the activities conducted in the fourth quarter (Q4) of 2024 (i.e., from October 1, 2024 through December 31, 2024) related to the groundwater remedy for the Garfield Avenue (GA) Group Sites (Project Area) (**Figure 1**), which is part of the Hudson County Chromate (HCC) Sites located in Jersey City, New Jersey (NJ).

Between 2010 and 2022, PPG conducted soil remedial activities to remove or control exposure to impacted fill, thereby eliminating the risks to public health and the environment. Over 1,100,000 tons of waste have been excavated from ground surface to the depth of the naturally-occurring, competent meadow mat present over most of the Project Area. The competent meadow mat functions as a chemical barrier that maintains a reducing environment in the subsurface as well as a physical barrier due to its low permeability. In 2017, PPG began implementation of *in situ* remedies for the intermediate and deep water-bearing zones (referred to as the overburden). The New Jersey Department of Environmental Protection (NJDEP) approved the remediation strategy for the shallow, intermediate, and deep water-bearing zones as outlined in the GA Group Groundwater Remedial Action Work Plan (RAWP) for the Project Area in January 2022 (AECOM, 2022). The approved remedy for the shallow, intermediate, and deep water-bearing zones includes a combination of *in situ* remedies, engineering controls, and institutional controls, which are supplemented by robust monitoring programs. The *in situ* remedies in the overburden target hexavalent chromium (Cr[VI]) in groundwater at concentrations greater than 1,000 micrograms per liter (µg/L), where practicable, using a combination of anaerobic bioprecipitation and chemical reduction alternatives to treat or reduce concentrations of Cr(VI) and other contaminants of concern in groundwater.

On May 5, 2023, PPG received a letter from Assistant Commissioner Dave Haymes regarding groundwater at the GA Group Sites. The letter titled "*Outstanding Tasks Remaining on Garfield Avenue Group Ground Water Remedial Action"* (referred to herein as the "Haymes Letter") (Haymes, 2023) identified 12 items that must be addressed to the NJDEP's satisfaction for the agency to approve the groundwater Remedial Action Report (RAR) and PPG's application for an Active Category Remedial Action Permit – Ground Water (RAP-GW). PPG provided responses to four of the items listed in the Haymes Letter related to the Groundwater Remedial Investigation (RI) Report/RAWP Addendum, in a letter from Mark Pietrucha, NJ Licensed Site Remediation Professional (Woodard & Curran), to Assistant Commissioner David Haymes (NJDEP) on June 30, 2023 (Pietrucha, 2023).

On September 8, 2023, PPG submitted the draft GA Group Groundwater RAR (AECOM, 2023), which provided documentation of remedy progress through Q2 2023 as well as responses to the remaining eight items in the Haymes Letter (Haymes, 2023). NJDEP's comments on the GA Group Groundwater RAR were received on January 10, 2024 and included a request for pilot studies to be implemented for the impacted portions of the basal till and bedrock; during a meeting with the NJDEP on February 26, 2024, PPG agreed to this request.

The Site 114 Basal Till Injection Work Plan and Bedrock Injection Work Plan and associated Discharge to Groundwater Permit-by-Rule (DGW PBR) applications were submitted to the NJDEP on March 15, 2024 (AECOM, 2024a; AECOM, 2024b). Meetings were held with the NJDEP on April 12 and April 23,

2024 to discuss the submitted plans (referred to herein as the Basal Till DGW PBR and Bedrock DGW PBR), which were subsequently approved by the NJDEP on May 16, 2024 (NJDEP, 2024a; NJDEP, 2024b). Well installation, well development, groundwater sampling, and injection activities were initiated during Q2 2024 in accordance with these work plans. The Basal Till pilot injection test took place from June 13, 2024 to June 26, 2024, while bedrock injections began on July 11, 2024 and continued in Q4 2024. Monthly groundwater monitoring in the basal till and bedrock treatment areas continued in Q4 2024.

On May 31, 2024, NJDEP sent an additional correspondence (in the form of comments on the Q4 2023 RAPR) (NJDEP, 2024c) that provided an assessment of the status of the issues raised in the Haymes Letter (Haymes, 2023). NJDEP requested contingency remedy implementation in the "Recalcitrant Phase II Northern Area" (Q4 2023 RAPR Comment #1; herein after referred to as the Phase II Recalcitrant Area) and the "Recalcitrant Area Near Carteret Avenue" (Q4 2023 RAPR Comment #2; hereinafter referred to as the Phase I Recalcitrant Area). NJDEP requested that additional Hydraulic Profiling Tool/vertical aquifer profiling (HPT/VAP) investigations be conducted in the recalcitrant areas to evaluate potentially applicable contingency measures.

On June 13, 2024, PPG sent an email responding to NJDEP's May 31, 2024 comments. Further discussions among Subject Matter Experts (SME) for PPG, NJDEP, and the city of Jersey City were held via a series of online technical meetings. During SME meetings held on June 24 and 25, 2024 and July 18, 2024, the conceptual scope of the HPT/VAP investigation program for the Phase 1 Recalcitrant Area and the Phase II Recalcitrant Area recalcitrant areas was discussed and agreed upon.

On August 21, 2024, NJDEP sent a correspondence (in the form of comments on the Q1 2024 RAPR) (NJDEP, 2024d) regarding yellow water observed during the Q2 2024 well installation activities. SME meetings were held in September to discuss this correspondence, and these discussions are referred to herein as the "Phase I Yellow Water Discussion".

On September 5, 2024, NJDEP distributed a revised comprehensive list of items that need to be addressed for the Project Area (referred to herein as "September 2024 List of Outstanding GA Group Groundwater Issues") (NJDEP, 2024e). This revised list is meant to supersede previous lists of issues provided by the NJDEP for the Project Area and consolidate remaining items to be resolved. On September 20, 2024, PPG distributed a summary of the status of each item and proposed date for completion (PPG, 2024a). On December 23 2024, PPG revised the status of each item based on the progress made in Q4 2024 via email (PPG, 2024b).[1]

On December 31, 2024 a Draft HPT/VAP Investigation Work Plan (AECOM, 2024d) was submitted to the NJDEP, documenting the scope of work to conduct additional investigation in the Phase I Recalcitrant Area, the Phase II Recalcitrant Area, and in the area where yellow water was observed during Q2 2024 well installation activities (Additional Contingency Area).

The table below summarizes the technical meetings held during Q4 2024 to advance the progress of the project and collaborate with NJDEP on the Project Area remedy. Previous SME meetings held were summarized in the Q3 2024 RAPR (AECOM, 2024c).

| SME Meeting Date | Topics Discussed |
|---|---|
| 10/2/2024 | Meeting to Discuss PPG's 9/20/2024 Responses to NJDEP's September 2024 List of Outstanding GA Group Groundwater Issues. |
| 10/10/2024 | PlanEngage Demonstration and C3 Soil Depiction Discussion (Item #3) |

[1] The list was also revised at the Department's request on January 27, 2025. PPG and NJDEP agreed that future updates to the list will be made on a quarterly basis and included with the RAPR Refer to Appendix E for an updated List of Issues through March 5, 2025.

| SME Meeting Date | Topics Discussed |
|---|---|
| 10/16/2024 | September 2024 List of Outstanding GA Group Groundwater Issues (Item #1) - Demonstration of Groundwater Remedy Effectiveness. |
| 10/22/2024* | Basal Till and Bedrock Remedial Action Status/Status of September 2024 List of Outstanding GA Group Groundwater Issues. |
| 11/20/2024 | 114-MW81D Bedrock Well Scope of Work (Item #6) |
| 11/24/2024 | 114-MW81D Bedrock Well Drilling Status and Packer Testing Approach (Item #6) |
| 12/9/2024 | Revised Cross-Sections – C3 Soil Depiction Discussion (Item #3a) |
| 1/2/2025 | Groundwater Sampling Intervals at 114-MW81D (Item #6) |

** Attendance list was extended to include to external stakeholders for the NJDEP, the city of Jersey City, and PPG.*

In addition to summarizing the activities completed in Q4 2024, this RAPR discusses issues encountered, deviations from the NJDEP-approved DGW PBRs (NJDEP, 2017; NJDEP, 2019; NJDEP, 2021; NJDEP, 2024a; and NJDEP, 2024b) or NJDEP-approved GA Group Groundwater RAWP, samples collected (along with analytical data tables, figures, and supporting appendices), and work planned for the next quarter. Monitoring and remediation well information and construction details are presented in **Table 1**.

As of Q4 2024, the progress of the remedy with respect to Cr(VI) concentrations is summarized below:

| Water-Bearing Zone/Area | Wells With Cr(VI) <1,000 µg/L | Reduction of Volume of Cr(VI) >1,000 µg/L Plume Compared to Baseline |
|---|---|---|
| Shallow | 42 of 42<br>**100%** | 100% |
| Intermediate | 108 of 124<br>**87%** | 85% |
| Deep | 49 of 58<br>**84%** | 81% |
| Bedrock | 25 of 28<br>**89%** | 93% |

The approximate total volumes of reagent and potable water injected within the areas where active injections were occurring in this quarter and through Q4 2024 are summarized below. Bedrock total volumes are calculated through January 3, 2025, the last day of bedrock injections.

| Area | Gallons Injected in Q4 2024 | Total Gallons Injected |
|---|---|---|
| Phase III Target Area 2 | 567,000 | 3,406,800 |
| Bedrock | 267,500 | 412,237 |
| Basal Till | 13,460 | 18,300 |

# 1. Work Conducted During Reporting Period

## 1.1 Project Area-Wide

- A site-wide groundwater elevation gauging event was conducted November 11 through November 12, 2024. **Figures 2A, 2B, 2C, 2D, 2E, and 2F** depict groundwater potentiometric surface maps for the shallow water-bearing zone, intermediate water-bearing zone, deep water-bearing zone, the lower deep zone, the basal till, and weathered bedrock, respectively.
- Monthly groundwater monitoring was conducted at up to 39 wells to evaluate where active treatment is ongoing; monitoring occurred from September 30 through October 9, October 16, November 4 through November 8, November 13 through November 15, December 2 through December 11, and December 18, 2024 in accordance with the Phase III (AECOM, 2021), Basal Till (AECOM, 2024a), and Bedrock DGW PBRs (AECOM, 2024b). Operational injection wells showing active treatment areas during Q4 2024 are identified in **Figures 3A** through **3F**.
- Quarterly groundwater monitoring at six wells located in the Eden Wood property and Pacific Avenue was conducted on October 7 and 8, 2024 and December 10, 2024 in accordance with the Phase III DGW PBR.
- Quarterly post-treatment groundwater monitoring at up to 82 monitoring wells took place from October 8 through October 16, 2024 and November 14 through November 22, 2024. Injection operations in these areas are complete and monitoring is performed to evaluate the *in situ* remedy in accordance with the Phase II (AECOM, 2019) and Phase III DGW PBRs (AECOM, 2021). As of Q4 2024, eight rounds of post-treatment monitoring have been completed for monitoring wells in the Phase II area (refer to Phase II DGW PBR; AECOM, 2019). This area will transition to the Enhanced Attenuation groundwater monitoring program in 2025.
- Quarterly groundwater monitoring to evaluate the limits of the total chromium (Cr) plume across the Project Area was conducted in Q4 2024 by sampling an additional 29 wells on November 19, November 21, and December 11 through December 17, 2024.
- Groundwater monitoring to evaluate the FerroBlack®-H reactive zones established in the southwest quadrant of Site 114 was completed at nine wells during Q4 2024.
- Quarterly groundwater monitoring at 5 basal till wells was conducted on November 20, 2024 to evaluate conditions outside of the basal till treatment area footprint.
- Quarterly groundwater monitoring at 10 bedrock wells was conducted from December 13 through December 18, 2024 to evaluate conditions outside of the bedrock treatment area footprint.
- Removal of dense non-aqueous phase liquid (DNAPL) present in select monitoring wells in the Southeastern Area of Site 114 (114-P2-MW-10I/D and 114-P2-MW-12D) was conducted prior to collection of groundwater samples. DNAPL thicknesses ranging from 4 feet (ft) to 11 ft were recorded at these wells and a total of approximately 50 gallons of DNAPL was recovered. Removal of DNAPL was also conducted at one monitoring well in the former Halsted property (HSTD-P3-MW002I-B). DNAPL thickness in this well ranged from 2.5 ft to 9 ft and a total of approximately 50 gallons of DNAPL was recovered.
- Additional NJDEP-requested field investigations for the bedrock water-bearing zone were initiated on November 14, 2024. As part of these investigations, bedrock monitoring well 114-MW81D was installed on November 21, 2024 and developed on November 22, 2024. A pump test was conducted at 114-MW81D on November 25, 2024, and packer testing was conducted from December 4 to December 6, 2024. Baseline sampling for this well is scheduled for Q1 2025.
- On December 17, 2024, Borbas Surveying, Inc. surveyed bedrock well 114-MW81D.
- No wells were decommissioned this quarter.
- Communications regarding redevelopment of the Project Area continued in this quarter.

### 1.2 Site 114 (Phases I, II, III, Basal Till, and Bedrock)

- Injections at well 114-PW-02T (basal till) recommenced on October 23, 2024 and continued through the end of the Basal Till DGW PBR period (i.e., December 6, 2024).
- Injections in the bedrock, which began on July 11, 2024, continued at up to 11 injection wells through the end of the Bedrock DGW PBR period (i.e., January 3, 2025).
- Degradable organic carbon substrate (i.e., molasses) was pulsed into the bedrock and basal till for up to 6 hours per day on weekdays. Overnight injections of potable water occurred based on field conditions (i.e., groundwater elevations and injection wellhead pressures). Groundwater gauging was conducted, and wellhead pressures were measured, throughout each injection day to monitor conditions and mitigate the risk of potential surfacing. Figure 3E identifies basal till and bedrock injection wells that were operational during the quarter.

### 1.3 Halladay Street, former Halsted property, and Eden Wood Property (Phase III, Target Area 2)

- Injection operations continued in Q4 2024 at up to 36 remediation wells within the intermediate water-bearing zone of the Halladay Street and Halsted area.
- Degradable organic carbon substrate (emulsified vegetable oil [EVO] and molasses) was pulsed into the formation for up to 6 hours per day on weekdays based on field conditions (i.e., groundwater elevations). Overnight injections of potable water occurred based on field conditions (i.e., groundwater elevations and injection wellhead pressures). Groundwater gauging was conducted, and wellhead pressures were measured, throughout each injection day to monitor conditions and mitigate the risk of potential surfacing. Figure 3B identifies which intermediate water-bearing zone injection wells were operational during the quarter.
- Sixteen injection wells were transitioned from calcium polysulfide (CaSx) reagent to molasses reagent in October 2024. Potable water only was pulsed into the formation at these locations for up to 8 hours per day on weekdays based on field conditions (i.e., groundwater elevations) through October 25, 2024, prior to beginning molasses injections.
- In Q4 2024, 16 wells received molasses and 28 injection wells received EVO.

## 2. Treatment Status for Reporting Period

- Volumes of reagents and potable water injected into operational Phase III target areas in Q4 2024 (i.e., as of December 31, 2024) are summarized below. **Table 2** provides operational summaries on a well-by-well basis for Phase III.
    - In Target Area 2 (Halladay Street, former Halsted property), 567,000 gallons were injected in Q4 2024, for a total of 3.407 million gallons injected since start-up (105% of target volume).
- Volumes of reagents and potable water injected to progress the bedrock and basal till remedies in Q4 2024 are summarized below. **Tables 3a** and **3b** provide operational summaries on a well-by-well basis for the bedrock and basal till, respectively.
    - In bedrock, a total of 267,519 gallons was injected in Q4 2024, for a total of 412,237 gallons since start-up.
    - In basal till, a total of 13,461 gallons was injected Q4 2024, for a total of 18,328 gallons injected since start-up.
- Figures 3A, 3B, 3C, 3D, 3E, and 3F depict the following for the shallow water-bearing zone, intermediate water-bearing zone, deep water-bearing zone, lower deep zone, basal till, and bedrock, respectively, for Q4 2024:
    - Injection wells where operations were ongoing during the quarter;

  - Wells sampled and where Cr(VI) concentrations were less than or greater than 1,000 µg/L;
  - Wells sampled and where Cr concentrations were less than or greater than the NJDEP Groundwater Quality Standard (GWQS) for Cr of 70 µg/L; and
  - Figures 3A, 3B, and 3C also depict the inferred limit of Cr greater than the GWQS based on data collected in Q4 2024.

- **Table 4** provides a summary of Cr(VI) and Cr groundwater analytical results for wells in the Project Area with a comparison to baseline concentrations.
- Remedy progress relative to concentrations of Cr(VI) in groundwater is illustrated in plan-view on **Figures 4A** through **4F**, in cross-sectional view on **Figures 5A** through **5I**, and in three-dimensional view on **Figure 6.** These figures include two datasets:
  - Baseline: provides a representation of Cr(VI) concentrations prior to operation of the groundwater remedy; and
  - Progress: provides a representation of Cr(VI) concentrations based on the most recent groundwater analytical results at each monitoring location, which are indicative of prevailing conditions in response to implementation of the groundwater remedy.
- Data used to generate Figures 3, 4, 5, and 6 are presented in **Appendix A-1**, which provides groundwater analytical results for Cr(VI), Cr, and geochemistry parameters through Q4 2024.
- Per the GA Group Groundwater RAWP (AECOM, 2022), a localized tetrachloroethene (PCE) plume in the shallow water-bearing zone on Site 199 was actively treated via *in situ* injections. Bioaugmentation with a *Dehalococcoides* consortium was performed in July 2023. Groundwater samples are collected quarterly from three shallow wells and one intermediate well on Site 199 for analysis of PCE and its breakdown products (i.e., select chlorinated volatile organic compounds [CVOCs]). Analytical data for Q4 2024 for these compounds are presented in **Appendix A-2**.
- Analytical results from quality assurance (QA)/quality control (QC) samples for Cr(VI), Cr, and geochemistry, and CVOCs are presented in **Appendices A-3** and **A-4**, respectively.
- Time-series trend plots depicting concentrations of Cr, Cr(VI), total organic carbon (TOC), sulfate, and geochemical indicator parameters (dissolved oxygen [DO] and oxidation-reduction potential [ORP]) are presented in **Appendix B-1** through **Appendix B-6**. Appendix B also includes a reference guide for interpreting these parameters and their applicable target ranges for evaluating the influence and effectiveness of groundwater treatment.
- As requested by the NJDEP, statistical analysis (Mann-Kendall trend test and linear regression) was conducted to assess trends in Cr(VI) concentrations at select monitoring wells where treatment has been completed and where concentrations of Cr(VI) greater than 1,000 µg/L were detected in at least one of the past four sampling events. Results of the statistical analysis are presented in **Appendix B-7**. Of the 19 wells evaluated, five (5) wells exhibited a decreasing trend, one (1) well exhibited an increasing trend, and eight (8) wells exhibited no trend. Five wells did not meet the data use objectives of the test; therefore, no trend analysis was performed for these wells.
- Well documentation for bedrock well 114-MW81D installed during Q4 2024 is included in **Appendix C**. Decommissioning records for bedrock wells 114-MW73D and 114-MW74D are awaiting pin access from NJDEP prior to submittal. Both wells were decommissioned on May 6, 2024.
- **Appendix D** consolidates technical evaluations pertaining to the bedrock injections.
- Deuterium (inert tracer) analytical results from samples collected as part of the basal till and bedrock baseline, injection, and performance monitoring events are presented in **Appendix E**.

- An updated status to the September 2024 List of Outstanding GA Group Groundwater Issues is provided in **Appendix F**.
- Responses to NJDEP comments on the Q3 2024 RAPR are included on **Table 5**.

# 3. Progress of the Groundwater Remedy

## 3.1 Cr and Cr(VI)

### 3.1.1 Site 114 (Phase I, II, and III)

*Shallow Water-Bearing Zone*

- In the shallow water-bearing zone, five monitoring wells were sampled for Cr and Cr(VI) in Q4 2024 (Figure 3A, Table 4).
- In Q4 2024, Cr(VI) concentrations at the five shallow monitoring wells sampled were less than 1,000 µg/L.
- In Q4 2024, Cr concentrations greater than the NJDEP GWQS (70 µg/L) were observed at one shallow zone monitoring well (GPS-MW5S, 119 µg/L). Cr(VI) was detected in this well (at 5.2 µg/L).
- The footprint of the Cr plume is stable and not expanding (Figure 3A).

*Intermediate Water-Bearing Zone*

- In the intermediate water-bearing zone, 28 monitoring wells were sampled for Cr and Cr(VI) in Q4 2024 (Figure 3B, Table 4).
- In Q4 2024, Cr(VI) concentrations at 20 out of 28 (71%) intermediate monitoring wells were less than 1,000 µg/L, demonstrating significant treatment success.
- In Q4 2024, eight monitoring wells out of 28 wells (29%) contained Cr(VI) concentrations greater than 1,000 µg/L. Concentrations of Cr(VI) in these wells for the most recent sampling results ranged from 3,800 µg/L to 1,620,000 µg/L. Of these wells:
    - One well (114-P2-MW-12D) is in an area where the presence of DNAPL has slowed reactive zone propagation. Well 114-P2-MW-12D contains DNAPL and observed data trends were defined by a prolonged treatment period prior to increased TOC and declines in concentrations of Cr(VI) (see Appendix B-2). Decreases in Cr(VI) concentrations are ongoing at 114-P2-MW-12D. The Cr(VI) concentration at 114-P2-MW-12D has decreased steadily and has reduced by 88% since baseline sampling (743,000 µg/L to 92,100 µg/L), consistent with the increase in TOC concentrations noted since the start of injections in this area. In addition, negative ORP values and low DO concentrations (less than [<] 2 milligrams per liter [mg/L]) have been recorded in seven of the last eight sampling events. These observations indicate that the presence of DNAPL does not preclude development of the reactive zone and Cr(VI) treatment. Sustained TOC from the Phase II injection program at 114-P2-MW-12D supports ongoing Cr(VI) reduction and the presence of DNAPL also supports reactive zone treatment as part of the groundwater remedy.
    - Five wells (114-MC-PZ103, 114-P1-MW-7I, 114-P2-MW-5I, 114-P2-MW-6I, and 114-P2-MW-8I) are in areas where active operations have been completed. These wells are located in the Phase II Recalcitrant Area. As presented in the draft GA Group Groundwater RAR (AECOM, 2023), it is acknowledged that limited reactive zone response has been observed in these areas. Residual Cr(VI) concentrations in these areas are attributable to subsurface heterogeneities within the native formation, including the presence of low-permeability soils that do not readily accept remediation compounds and the presence of hydraulically isolated lenses of soils that do not readily participate in the overall advective groundwater flow regime. These conditions and the associated residual Cr(VI) concentrations were expected, and the remedy was designed to

accommodate them. While these areas are expected to exhibit detectable Cr(VI) or yellow-colored water in the near-term, the reactive zones established around these areas will serve to stabilize Cr(VI) and Cr, prevent long-term transport, and support ongoing *in situ* anaerobic bioprecipitation (ISAB) processes. An HPT/VAP Investigation Work Plan to further evaluate existing subsurface conditions in this area was submitted to the NJDEP on December 31, 2024 (AECOM, 2024d).

- Two wells (114-PZ-57I and 114-PZ-66I) are in the area where yellow-colored water was observed during installation of the basal till and bedrock remediation and monitoring wells. These wells were first sampled in Q2 2024, and sampling of these wells will continue as part of the basal till and bedrock remedy monitoring programs. An HPT/VAP Investigation Work Plan to further evaluate existing subsurface conditions in this area was submitted to the NJDEP on December 31, 2024 (AECOM, 2024d).

- In Q4 2024, concentrations of Cr for the most recent sampling results in the intermediate water-bearing zone ranged from non-detect (< 10 µg/L) to 1,950,000 µg/L. The Cr concentration at well 114-P2-MW-3I decreased to less than the NJDEP GWQS (70 µg/L) during Q4 2024. The footprint of the Cr plume on Site 114 is stable and not expanding (Figure 3B).

*Deep Water-Bearing Zone*

- In the deep water-bearing zone, 13 monitoring wells were sampled for Cr and Cr(VI) in Q4 2024 (Figure 3C, Table 4).
- In Q4 2024, 11 out of 13 wells (85%) contained Cr(VI) concentrations less than 1,000 µg/L, demonstrating significant treatment success.
- In Q4 2024, two out of 13 monitoring wells (15%) contained Cr(VI) concentrations greater than 1,000 µg/L. Concentrations of Cr(VI) in these wells for the most recent sampling results ranged from 165,000 µg/L to 198,000 µg/L. Of these wells:
    - Two wells (114-P1-MW-6D and 114-P1-MW-7D) are in areas where active operations have been completed. These wells are located in the Phase II Recalcitrant Area. As presented in the draft GA Group Groundwater RAR (AECOM, 2023), it is acknowledged that limited reactive zone response has been observed in these select areas. Residual Cr(VI) concentrations in these areas are attributable to subsurface heterogeneities within the native formation, including the presence of low-permeability soils that do not readily accept remediation compounds and the presence of hydraulically isolated lenses of soils that do not readily participate in the overall advective groundwater flow regime. These conditions and the associated residual Cr(VI) concentrations were expected, and the remedy was designed to accommodate them. While these areas are expected to exhibit detectable Cr(VI) or yellow-colored water in the near-term, the reactive zones established around these areas will serve to stabilize Cr(VI) and Cr, prevent long-term transport, and support ongoing *in situ* ISAB processes. An HPT/VAP Investigation Work Plan to further evaluate existing subsurface conditions in this area was submitted to the NJDEP on December 31, 2024 (AECOM, 2024d).
- In Q4 2024, concentrations of Cr for the most recent sampling results in the deep water-bearing zone ranged from non-detect (< 10 µg/L) to 157,000 µg/L. The footprint of the Cr plume is stable and not expanding (Figure 3C).

*Lower Deep Zone (Phase III, Target Area 1B)*

- In the lower deep zone, ten monitoring wells were sampled for Cr and Cr(VI) in Q4 2024 (Figure 3D, Table 4).
- In Q4 2024, five out of ten wells (50%) contained Cr(VI) concentrations less than 1,000 µg/L.
- In Q4 2024, five out of ten wells (50%) contained Cr(VI) concentrations greater than 1,000 µg/L. Concentrations of Cr(VI) in these wells for the most recent sampling results ranged from 36,000 to 478,000 µg/L (114-MW68C, 114-P3-MW003D, 114-P3-MW004D, 114-P3-MW005D and 114-P3-

MW006D). The Cr(VI) concentration at well 114-PZ-66D decreased below 1,000 µg/L during Q4 2024. The established FerroBlack®-H reactive zones will continue to address Cr(VI) concentrations, with treatment expected to be a long-term process due to the slow groundwater flow velocities in this zone. A conceptual remedial design for this area was discussed with NJDEP during the June and July SME Meetings (AECOM, 2024c).

- In Q4 2024, concentrations of Cr for the most recent sampling results in the Lower Deep Zone ranged from non-detect (< 10 µg/L) to 478,000 µg/L.
- Lower Deep Zone well 114-PZ-66D has responded to and achieved treatment breakthrough from injections in the bedrock, indicating that there is an advective transport pathway in the southwestern quadrant of Site 114 from bedrock into the overburden.

### 3.1.2 Carteret Avenue and HCC Sites 132, 137A, and 143 (Phase III, Target Area 1A)

*Intermediate Water-Bearing Zone*

- In the intermediate water-bearing zone, 26 monitoring wells were sampled for Cr and Cr(VI) in Q4 2024 (Figure 3B, Table 4).
- In Q4 2024, 25 out of 26 wells (96%) contained Cr(VI) concentrations less than 1,000 µg/L, demonstrating significant treatment success.
- In Q4 2024, one monitoring well out of 26 (4%) contained Cr(VI) concentrations greater than 1,000 µg/L (144-MW22BR), where the most recent Cr(VI) was detected at a concentration of 1,900 µg/L. Prior to Q2 2024, and since April 2023, Cr(VI) concentrations at this well were less than 1,000 µg/L. TOC breakthrough has previously been achieved at this well indicating a reactive zone presence. Quarterly monitoring is expected to continue through Q1 2025 to evaluate remedy effectiveness while the aquifer equilibrates in this area.
- In Q4 2024, concentrations of Cr ranged from non-detect (< 10 µg/L) to 3,670 µg/L. Cr concentrations at 132-P3-MW001I-A and 143-P3-MW002I-B decreased to less than the NJDEP GWQS (70 µg/L) during Q4 2024. The footprint of the Cr plume is stable and not expanding (Figure 3B).

*Deep Water-Bearing Zone*

- In the deep water-bearing zone, seven monitoring wells were sampled for Cr and Cr(VI) in Q4 2024 (Figure 3C, Table 4).
- In Q4 2024, Cr(VI) concentrations at the seven deep monitoring wells (100%) were less than 1,000 µg/L.
- In Q4 2024, concentrations of Cr for the most recent sampling results in the deep water-bearing zone ranged from non-detect (< 10 µg/L) to 646 µg/L. Cr concentrations greater than the NJDEP GWQS were observed at two deep zone monitoring wells (CAR-P3-MW001D and CAR-P3-MW002D). Cr concentration at one monitoring well (137-MW1C) decreased to less than the NJDEP GWQS (70 µg/L) during Q4 2024. The footprint of the Cr plume is stable and not expanding (Figure 3C).

### 3.1.3 Halladay Street, former Halsted property, and Eden Wood Property (Phase III, Target Area 2)

*Intermediate Water-Bearing Zone*

- In the intermediate water-bearing zone, 22 monitoring wells were sampled for Cr and Cr(VI) in Q4 2024 (Figure 3B, Table 4).
- In Q4 2024, five out of the 22 wells were sampled in the Eden Wood Property. Cr(VI) concentrations at the five Eden Wood monitoring wells were less than 1,000 µg/L. Concentrations of Cr for the most recent sampling results in the Eden Wood monitoring wells ranged from non-detect (< 10 µg/L) to 118 µg/L.

- In Q4 2024, 17 out of 22 wells (77%) contained Cr(VI) concentrations less than 1,000 µg/L, demonstrating significant treatment success.
- In Q4 2024, five monitoring wells (HAL-P3-MW001I-B, HSTD-P3-MW001I-A, HSTD-P3-MW001I-B, HSTD-P3-MW002I-B, and HSTD-P3-MW003I-B) out of 22 wells (23%) contained Cr(VI) concentrations greater than 1,000 µg/L. Concentrations of Cr(VI) in these wells for the most recent sampling results ranged from 6,500 µg/L to 544,000 µg/L. Operation of the *in situ* remedy will continue in these areas.
- In Q4 2024, concentrations of Cr for the most recent sampling results in the intermediate water-bearing zone ranged from non-detect (< 10 µg/L) to 538,000 µg/L. The Cr concentration at one monitoring well (MW8D) decreased to less than the NJDEP GWQS (70 µg/L) during Q4 2024. The footprint of the Cr plume is stable and not expanding (Figure 3B).

*Deep Water-Bearing Zone*

- In the deep water-bearing zone, one remediation well was sampled for Cr and Cr(VI) in Q4 2024 (Figure 3C, Table 4).
- Cr(VI) and Cr concentrations at this well were not detected.

### 3.1.4 Forrest Street Properties and Site 199 (Phase III, Target Area 3)

*Shallow Water-Bearing Zone*

- In the shallow water-bearing zone, 12 monitoring wells were sampled for Cr and Cr(VI) in Q4 2024 (Figure 3A, Table 4).
- In Q4 2024, Cr(VI) concentrations at the 12 wells (100%) were less than 1,000 µg/L.
- In Q4 2024, Cr concentrations at nine out of 12 shallow water-bearing zone monitoring wells were less than the NJDEP GWQS (70 µg/L). Concentrations for the most recent sampling results ranged from non-detect (< 10 µg/L) to 392 µg/L. The Cr concentration at one monitoring well (MW1C-4) decreased to less than the NJDEP GWQS (70 µg/L) during Q4 2024. The footprint of the Cr plume is stable and not expanding (Figure 3A).

*Intermediate Water-Bearing Zone*

- In the intermediate water-bearing zone, 14 monitoring wells were sampled for Cr and Cr(VI) in Q4 2024 (Figure 3B, Table 4).
- In Q4 2024, Cr(VI) concentrations at the 14 wells (100%) were less than 1,000 µg/L, demonstrating significant treatment success.
- In Q4 2024, concentrations of Cr for the most recent sampling results in the intermediate water-bearing zone ranged from non-detect (< 10 µg/L) to 5,850 µg/L. The footprint of the Cr plume is stable and not expanding (Figure 3B).

*Deep Water-Bearing Zone*

- In the deep water-bearing zone, two monitoring wells on Site 199 were sampled for Cr and Cr(VI) in Q4 2024 (Figure 3C, Table 4).
- In Q4 2024, Cr(VI) concentrations at both wells (100%) were less than 1,000 µg/L.
- The concentration of Cr at one well (199-P3-MW003D) was greater than the NJDEP GWQS (70 µg/L) in the most recent sampling results from Q4 2024, with a Cr concentration of 140 µg/L. Cr concentrations at 199-P3-MW004D decreased to less than the NJDEP GWQS during Q4 2024.

### 3.1.5 Basal Till

- In the basal till, 18 wells were sampled for Cr and Cr(VI) in Q4 2024 (Figure 3E, Table 4).

- In Q4 2024, 17 out of 18 monitoring wells (94%) contained Cr(VI) concentrations less than 1,000 µg/L. The Cr(VI) concentration at well 114-PMW-02T decreased to less than 1,000 µg/L in Q4 2024.
- In Q4 2024, one out of 18 monitoring wells (6%) contained Cr(VI) concentrations greater than 1,000 µg/L. The concentration of Cr(VI) for the most recent sampling result at this well (114-MW56C) was 4,000 µg/L. This well is in the southwestern Site 114 Basal Till Pilot Test treatment area where active *in situ* injections were completed from June 13 to June 26, 2024, recommenced on October 23, 2024, and continued through December 6, 2024. Performance groundwater monitoring in accordance with the approved Basal Till DGW PBR will continue to evaluate the treatment response in these areas.
- In Q4 2024, concentrations of Cr for the most recent sampling results in the basal till ranged from non-detect (< 10 µg/L) to 4,160 µg/L.

#### 3.1.6 Bedrock Water-Bearing Zone

- In the bedrock water-bearing zone, 19 wells were sampled for Cr and Cr(VI) in Q4 2024 (Figure 3F, Table 4).
- In Q4 2024, 17 out of 19 bedrock wells (89%) contained Cr(VI) concentrations less than 1,000 µg/L.
- In Q4 2024, 2 out of 19 (11%) bedrock wells contained Cr(VI) concentrations greater than 1,000 µg/L (114-MW66D and 114-MW76WR). Concentrations of Cr(VI) for the most recent sampling results in bedrock ranged from non-detect (< 10 µg/L) to 45,800 µg/L and concentrations of Cr in bedrock ranged from non-detected (< 10 µg/L) to 34,000 µg/L.
- In Q4 2024, Cr(VI) concentration reductions were noted in three bedrock monitoring wells (114-MW66D, 114-MW76WR, and 114-PZ-66WR) and TOC breakthrough was observed in seven bedrock monitoring wells (114-MW52D, 114-PZ-52WR, 114-MW53C, 114-MW57C, 114-MW57D, 114-MW79WR, and 114-PZ-66WR), indicating an improvement in water quality in the bedrock in response to active groundwater treatment.
- Bedrock well 114-PZ-52WR has responded to and achieved treatment breakthrough from injections in the deep water-bearing zone at remediation well 114-P2-IRM-89D (AECOM, 2023). During Q4 2024, TOC breakthrough was also observed at 114-PZ-57T, 114-PZ-66T, 114-MW54C, and 114-MW61C (screened in basal till), which can be attributed to bedrock injections. Combined, these observations indicate that there is an advective transport pathway in the southwestern quadrant of Site 114 from overburden into bedrock and from bedrock into overburden.

### 3.2 Other Constituents of Concern

- Per the GA Group Groundwater RAWP (AECOM, 2022), a localized PCE plume in the shallow water-bearing zone on Site 199 was actively treated via *in situ* injections. Bioaugmentation with a *Dehalococcoides* consortium was performed in July 2023. Groundwater samples are collected quarterly from three shallow wells and one intermediate well on Site 199 for analysis of PCE and its breakdown products (Appendix A-2).
    - In Q4 2024, PCE, trichloroethene, cis-1,2-dichloroethene, and vinyl chloride were not detected in monitoring wells on Site 199. This is the fourth quarter of data indicating concentrations less than the GWQS for these CVOCs.

## 4. Deviations or Problems Encountered During Reporting Period

### 4.1 Deviations from or Modification to the PBRs

- There were no modifications to the DGW PBRs in Q4 2024.

### 4.2 Problems Encountered

- Injection operations across the target areas were offline the week of December 23rd due to subfreezing conditions.

## 5. Work Scheduled for Next Reporting Period (in Q1 2025)

- Within the Phase III area, reagent injections, operational monitoring, and treatment monitoring will continue in the Halladay/Halsted Target Area. In Phase III areas where reagent injections have been completed (i.e., within Site 199, Carteret Avenue Right-of-Way [ROW], Carteret Avenue, South of Carteret Avenue, and Forrest Street/Forrest Street Properties), post-treatment monitoring will continue on a quarterly basis.
- Within the basal till, groundwater monitoring will continue on a quarterly basis.
- Within the bedrock, groundwater monitoring will continue on a quarterly basis. Beginning with the next RAPR (i.e., the Q1 2025 RAPR), the visual representation of Cr(VI) concentrations in bedrock (Figure 4F) will combine the weathered and competent rock data into a single figure as the groundwater flow regime is continuous across all the bedrock.
- Groundwater will continue to be monitored for Cr(VI) in the vicinity of the Eden Wood property on a quarterly basis.
- Groundwater sampling to monitor the extent of Cr at concentrations greater than the GWQS will continue on a semi-annual basis across the Project Area.
- An updated Conceptual Site Model of the Project Area will be submitted.
- An Addendum to the Groundwater Remedial Investigation Report (RIR) and Groundwater RAWP for Bedrock will be submitted.
- A Draft Work Plan and PBR Application for remediation in the Phase I Redevelopment Area will be submitted.
- The HPT/VAP Investigation Work Plan will be finalized and submitted.

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NJDEP, 2024b. Discharge to Ground Water Authorization (Weathered Bedrock), Garfield Avenue Group Sites (Sites 114, 132, 133, 135, 137, and 143), 900 Garfield Avenue, Jersey City, Hudson County. Program Interest Numbers: G000005480. Subject Item ID: DGDW0000167713. May 16, 2024.

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Yours sincerely,





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**Table 1**
**Monitoring and Remediation Well Network and Construction Details**
**Groundwater Remedial Action Progress Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

AECOM

| | | | | | | | Well Construction | | | | | As-Built Survey | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Well ID | Water-Bearing Zone | Status | Location | Remediation Area | Permit Number | Well Use | Screen Material | Well Diameter (in) | Screen Interval Top (ft bgs)[1] | Screen Interval Bottom (ft bgs)[1] | Well Installation Date | Easting (ft NAD83) | Northing (ft NAD83) | Ground Surface Elevation (ft NAVD88) | Top of Outer Casing Elevation (ft NAVD88) | Top of Inner Casing Elevation (ft NAVD88) | Survey Date |
| ***Phase I*** | | | | | | | | | | | | | | | | | |
| GPS-MW1S | SHALLOW | ACTIVE | SITE 114 | N/A | E201305154 | MONITORING | SCHEDULE 40 PVC | 2.0 | 6.0 | 16.0 | 10/16/2013 | 611081.5 | 683738.2 | 14.90 | 14.85 | 14.53 | 4/28/2014 |
| GPS-MW2S | SHALLOW | ACTIVE | SITE 114 | N/A | E201305155 | MONITORING | SCHEDULE 40 PVC | 2.0 | 5.0 | 15.0 | 4/22/2013 | 611116.4 | 683737.8 | 13.00 | NA | 14.31 | 4/28/2014 |
| GPS-MW3S | SHALLOW | ACTIVE | SITE 114 | N/A | E201311271 | MONITORING | SCHEDULE 40 PVC | 2.0 | 6.0 | 16.0 | 10/16/2013 | 611102.9 | 683708.9 | 13.10 | NA | 14.01 | 4/28/2014 |
| GPS-MW4S | SHALLOW | ACTIVE | SITE 114 | N/A | E201311273 | MONITORING | SCHEDULE 40 PVC | 2.0 | 11.0 | 16.0 | 8/29/2013 | 611135.5 | 683709.0 | 14.00 | 14.00 | 13.66 | 4/28/2014 |
| GPS-MW5S | SHALLOW | ACTIVE | SITE 114 | N/A | E201310735 | MONITORING | SCHEDULE 40 PVC | 2.0 | 6.0 | 16.0 | 10/8/2013 | 611161.7 | 683751.7 | 14.00 | 14.02 | 13.87 | 4/28/2014 |
| GPS-MW6S | SHALLOW | ACTIVE | SITE 114 | N/A | E201305156 | MONITORING | SCHEDULE 40 PVC | 2.0 | 5.0 | 15.0 | 4/19/2013 | 611200.2 | 683760.0 | 13.40 | 13.37 | 13.04 | 8/6/2020 |
| GPS-MW7S | SHALLOW | ACTIVE | SITE 114 | N/A | E201310733 | MONITORING | SCHEDULE 40 PVC | 2.0 | 6.0 | 16.0 | 9/4/2013 | 611218.9 | 683721.5 | 13.30 | 13.32 | 13.16 | 4/28/2014 |
| 114-P1B-MW101I | INTERMEDIATE | ACTIVE | SITE 114 | N/A | E201404662 | MONITORING | SCHEDULE 40 PVC | 4.0 | 23.0 | 33.0 | 5/22/2014 | 610792.0 | 683434.4 | 14.40 | 14.45 | 14.13 | 4/29/2015 |
| 114-P1B-MW102I | INTERMEDIATE | ACTIVE | SITE 114 | N/A | E201404663 | MONITORING | SCHEDULE 40 PVC | 4.0 | 24.0 | 34.0 | 5/7/2014 | 611027.7 | 683334.0 | 11.20 | 12.78 | 12.63 | 4/29/2015 |
| 114-P1-MW-1I | INTERMEDIATE | ACTIVE | SITE 114 | North | E201711721 | MONITORING | SCHEDULE 40 PVC | 2.0 | 17.8 | 37.8 | 11/20/2017 | 610845.5 | 683249.3 | 13.77 | NA | 16.42 | 3/7/2018 |
| 114-P1-MW-2D | INTERMEDIATE | ACTIVE | SITE 114 | North | E201711724 | MONITORING | SCHEDULE 40 PVC | 2.0 | 22.5 | 42.5 | 12/11/2017 | 610965.7 | 683578.4 | 14.14 | NA | 16.22 | 3/7/2018 |
| 114-P1-MW-2I | INTERMEDIATE | ACTIVE | SITE 114 | North | E201711723 | MONITORING | SCHEDULE 40 PVC | 2.0 | 17.3 | 37.3 | 12/8/2017 | 610974.0 | 683574.0 | 13.98 | NA | 16.23 | 6/11/2018 |
| 114-P1-MW-3I | INTERMEDIATE | ACTIVE | SITE 114 | North | E201711725 | MONITORING | SCHEDULE 40 PVC | 2.0 | 20.1 | 40.1 | 12/21/2017 | 611114.1 | 683469.7 | 13.86 | NA | 16.41 | 3/7/2018 |
| 114-P1-MW-4I | INTERMEDIATE | ACTIVE | SITE 114 | North | E201711727 | MONITORING | SCHEDULE 40 PVC | 2.0 | 20.3 | 40.3 | 12/18/2017 | 611209.8 | 683145.8 | 11.00 | NA | 13.23 | 3/7/2018 |
| 114-P1-MW-5I | INTERMEDIATE | ACTIVE | SITE 114 | North | E201711729 | MONITORING | SCHEDULE 40 PVC | 2.0 | 20.1 | 40.1 | 11/21/2017 | 611214.8 | 683269.6 | 10.64 | NA | 12.47 | 3/7/2018 |
| 114-P1-MW-6I | INTERMEDIATE | ACTIVE | SITE 114 | North | E201711731 | MONITORING | SCHEDULE 40 PVC | 2.0 | 21.6 | 41.6 | 12/20/2017 | 611316.0 | 683463.1 | 12.50 | 13.28 | 15.76 | 4/17/2024 |
| 114-P1-MW-7I | INTERMEDIATE | ACTIVE | SITE 114 | North | E201711733 | MONITORING | SCHEDULE 40 PVC | 2.0 | 22.5 | 42.5 | 12/21/2017 | 611435.1 | 683588.6 | 11.10 | 13.00 | 13.92 | 12/16/2021 |
| 114-P2A-MW101I | INTERMEDIATE | ACTIVE | SITE 114 | N/A | E201600650 | MONITORING | SCHEDULE 40 PVC | 2.0 | 31.0 | 41.0 | 2/4/2016 | 611562.6 | 683373.3 | 12.18 | NA | 12.71 | 6/13/2018 |
| 114-P2B3-MW101I | INTERMEDIATE | ACTIVE | SITE 114 | N/A | E201500659 | MONITORING | SCHEDULE 40 PVC | 4.0 | 25.0 | 35.0 | 3/3/2015 | 611359.0 | 683256.6 | 11.84 | NA | 12.93 | 6/11/2018 |
| 114-P2B4-MW101I | INTERMEDIATE | ACTIVE | SITE 114 | N/A | E201500660 | MONITORING | SCHEDULE 40 PVC | 4.0 | 39.0 | 49.0 | 3/2/2015 | 611248.4 | 683067.9 | 11.00 | 13.14 | 13.25 | 12/16/2021 |
| GPS-MW2I | INTERMEDIATE | ACTIVE | SITE 114 | N/A | E201305158 | MONITORING | SCHEDULE 40 PVC | 2.0 | 26.0 | 36.0 | 4/23/2013 | 611140.8 | 683782.1 | 14.40 | 14.43 | 14.07 | 4/28/2014 |
| GPS-MW3I | INTERMEDIATE | ACTIVE | SITE 114 | N/A | E201311272 | MONITORING | SCHEDULE 40 PVC | 2.0 | 30.0 | 40.0 | 10/11/2013 | 611119.3 | 683746.9 | 14.60 | 14.61 | 14.12 | 4/28/2014 |
| 114-P1-IRM-1 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 20.4 | 40.4 | 12/15/2017 | 610782.8 | 683327.3 | 13.71 | NA | 16.50 | 3/7/2018 |
| 114-P1-IRM-10I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 20.0 | 40.0 | 12/7/2017 | 611062.2 | 683263.3 | 13.60 | NA | 16.18 | 3/7/2018 |
| 114-P1-IRM-11 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 21.3 | 41.3 | 12/12/2017 | 610906.3 | 683416.1 | 14.76 | NA | 16.43 | 3/7/2018 |
| 114-P1-IRM-12 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 20.1 | 40.1 | 12/12/2017 | 611036.4 | 683333.1 | 13.69 | NA | 15.13 | 3/7/2018 |
| 114-P1-IRM-13 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 20.7 | 40.7 | 12/14/2017 | 610885.7 | 683471.2 | 13.87 | NA | 16.65 | 3/7/2018 |
| 114-P1-IRM-14 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 19.5 | 39.5 | 12/13/2017 | 610992.6 | 683405.9 | 13.60 | NA | 16.62 | 3/7/2018 |
| 114-P1-IRM-15 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 19.3 | 39.3 | 12/26/2017 | 611125.5 | 683335.2 | 13.45 | NA | 16.21 | 3/7/2018 |
| 114-P1-IRM-16 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 20.2 | 40.2 | 12/14/2017 | 610949.6 | 683457.3 | 13.72 | NA | 16.77 | 3/7/2018 |
| 114-P1-IRM-17 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 19.9 | 39.9 | 12/26/2017 | 611156.5 | 683425.9 | 13.49 | NA | 15.89 | 3/7/2018 |
| 114-P1-IRM-18I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 20.9 | 40.9 | 12/18/2017 | 611122.8 | 683189.0 | 10.62 | NA | 13.11 | 3/7/2018 |
| 114-P1-IRM-19I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 19.8 | 39.8 | 12/1, 12/4/2017 | 611119.0 | 683117.6 | 10.85 | NA | 13.16 | 3/7/2018 |
| 114-P1-IRM-2 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 19.9 | 39.9 | 12/19/2017 | 610821.0 | 683271.9 | 13.86 | NA | 16.75 | 3/7/2018 |
| 114-P1-IRM-20I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 20.4 | 40.4 | 12/4/2017 | 611165.2 | 683053.7 | 10.82 | NA | 12.93 | 3/7/2018 |
| 114-P1-IRM-21I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 20.1 | 40.1 | 12/6/2017 | 611171.8 | 683169.4 | 10.68 | NA | 12.92 | 3/7/2018 |
| 114-P1-IRM-22I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 21.6 | 41.6 | 11/30/2017 | 611192.7 | 683122.1 | 11.02 | NA | 13.11 | 3/7/2018 |
| 114-P1-IRM-23D | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201707534 | REMEDIATION | STAINLESS STEEL | 4.0 | 45.8 | 65.8 | 7/12-7/19/2017 | 611247.6 | 683067.9 | 10.90 | NA | 13.18 | 3/7/2018 |
| 114-P1-IRM-24I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 18.9 | 38.9 | 12/18/2017 | 611153.0 | 683249.5 | 10.33 | NA | 13.44 | 3/7/2018 |
| 114-P1-IRM-25I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 20.3 | 40.3 | 12/26/2017 | 611238.0 | 683194.2 | 10.92 | NA | 13.01 | 3/7/2018 |
| 114-P1-IRM-26I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 19.5 | 39.5 | 10/31/2017 | 611280.5 | 683122.0 | 12.65 | NA | 14.54 | 3/7/2018 |
| 114-P1-IRM-27I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 19.4 | 39.4 | 11/8-11/9/2017 | 611204.6 | 683341.0 | 10.78 | NA | 13.45 | 3/7/2018 |
| 114-P1-IRM-28I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 21.0 | 41.0 | 12/15/2017 | 611240.9 | 683268.2 | 11.61 | NA | 13.13 | 3/7/2018 |
| 114-P1-IRM-29I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 25.8 | 45.8 | 12/15/2017 | 611308.6 | 683195.5 | 13.61 | NA | 15.30 | 3/7/2018 |
| 114-P1-IRM-3 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 20.4 | 40.4 | 12/18/2017 | 610888.1 | 683253.6 | 14.18 | NA | 16.91 | 3/7/2018 |
| 114-P1-IRM-30I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 21.8 | 41.8 | 11/27/2017 | 611266.9 | 683335.3 | 10.45 | NA | 12.84 | 3/7/2018 |
| 114-P1-IRM-31I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 18.7 | 38.7 | 12/20-12/21/17 | 611323.2 | 683270.9 | 10.88 | NA | 12.81 | 3/7/2018 |
| 114-P1-IRM-32I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 20.4 | 40.4 | 11/28/2017 | 611367.8 | 683215.5 | 12.27 | NA | 14.21 | 3/7/2018 |
| 114-P1-IRM-33I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 21.5 | 41.5 | 12/14/2017 | 611240.4 | 683426.8 | 11.73 | NA | 13.55 | 3/7/2018 |
| 114-P1-IRM-34I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 21.0 | 41.0 | 11/17,11/20-21/2017 | 611331.3 | 683351.0 | 11.69 | NA | 12.61 | 3/7/2018 |
| 114-P1-IRM-35I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 20.5 | 40.5 | 12/20/2017 | 611383.7 | 683281.1 | 10.79 | NA | 13.01 | 3/7/2018 |
| 114-P1-IRM-4I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 11.2 | 31.2 | 12/18/2017 | 610955.1 | 683191.8 | 11.86 | NA | 14.41 | 3/7/2018 |
| 114-P1-IRM-5I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 19.9 | 39.9 | 12/6/2017 | 611019.5 | 683197.4 | 13.73 | NA | 16.82 | 3/7/2018 |
| 114-P1-IRM-6 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 18.7 | 38.7 | 12/16/2017 | 610842.1 | 683327.0 | 13.74 | NA | 16.35 | 3/7/2018 |
| 114-P1-IRM-7 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 19.9 | 39.9 | 12/13/2017 | 610976.0 | 683260.8 | 13.68 | NA | 16.14 | 3/7/2018 |

**Table 1**
**Monitoring and Remediation Well Network and Construction Details**
**Groundwater Remedial Action Progress Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

AECOM

| | | | | | | | Well Construction | | | | | As-Built Survey | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Well ID | Water-Bearing Zone | Status | Location | Remediation Area | Permit Number | Well Use | Screen Material | Well Diameter (in) | Screen Interval Top (ft bgs)[1] | Screen Interval Bottom (ft bgs)[1] | Well Installation Date | Easting (ft NAD83) | Northing (ft NAD83) | Ground Surface Elevation (ft NAVD88) | Top of Outer Casing Elevation (ft NAVD88) | Top of Inner Casing Elevation (ft NAVD88) | Survey Date |
| 114-P1-IRM-8 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 20.2 | 40.2 | 12/15/2017 | 610829.6 | 683395.8 | 13.67 | NA | 16.59 | 3/7/2018 |
| 114-P1-IRM-9 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 17.4 | 37.4 | 12/16/2017 | 610934.8 | 683333.5 | 13.69 | NA | 16.15 | 3/7/2018 |
| 114-P1B-MW103D | DEEP | ACTIVE | SITE 114 | N/A | E201711877 | MONITORING | SCHEDULE 40 PVC | 2.0 | 51.0 | 56.0 | 11/13/2017 | 610887.2 | 683237.0 | 13.50 | 16.68 | 16.73 | 11/28/2017 |
| 114-P1-MW-1D | DEEP | ACTIVE | SITE 114 | N/A | E201711722 | MONITORING | SCHEDULE 40 PVC | 2.0 | 34.1 | 54.1 | 11/20/2017 | 610838.3 | 683253.9 | 13.79 | NA | 16.08 | 3/7/2018 |
| 114-P1-MW-4D | DEEP | ACTIVE | SITE 114 | N/A | E201711728 | MONITORING | SCHEDULE 40 PVC | 2.0 | 44.5 | 64.5 | 12/19/2017 | 611203.6 | 683150.3 | 11.05 | NA | 13.32 | 3/7/2018 |
| 114-P1-MW-5D | DEEP | ACTIVE | SITE 114 | N/A | E201711730 | MONITORING | SCHEDULE 40 PVC | 2.0 | 43.2 | 63.2 | 11/20/2017 | 611207.2 | 683274.1 | 10.74 | NA | 12.48 | 3/7/2018 |
| 114-P1-MW-6D | DEEP | ACTIVE | SITE 114 | N/A | E201711732 | MONITORING | SCHEDULE 40 PVC | 2.0 | 38.7 | 58.7 | 12/19/2017 | 611310.0 | 683467.2 | 12.60 | 13.38 | 14.51 | 4/17/2024 |
| 114-P1-MW-7D | DEEP | ACTIVE | SITE 114 | N/A | E201711734 | MONITORING | SCHEDULE 40 PVC | 2.0 | 40.9 | 60.9 | 12/20/2017 | 611426.8 | 683590.9 | 11.00 | 13.32 | 14.27 | 12/16/2021 |
| 114-P1-IRM-10D | DEEP | DECOMMISSIONED | SITE 114 | N/A | E201711737 | REMEDIATION | STAINLESS STEEL | 4.0 | 31.5 | 51.5 | 12/8/2017 | 611054.3 | 683266.9 | 13.53 | NA | 16.69 | 3/7/2018 |
| 114-P1-IRM-18D | DEEP | DECOMMISSIONED | SITE 114 | N/A | E201711737 | REMEDIATION | STAINLESS STEEL | 4.0 | 31.6 | 51.6 | 12/16/2017 | 611115.2 | 683193.1 | 10.65 | NA | 13.26 | 3/7/2018 |
| 114-P1-IRM-19D | DEEP | DECOMMISSIONED | SITE 114 | N/A | E201711737 | REMEDIATION | STAINLESS STEEL | 4.0 | 42.4 | 62.4 | 12/1, 12/5/2017 | 611111.9 | 683122.9 | 10.90 | NA | 12.98 | 3/7/2018 |
| 114-P1-IRM-20D | DEEP | DECOMMISSIONED | SITE 114 | N/A | E201711737 | REMEDIATION | STAINLESS STEEL | 4.0 | 45.2 | 65.2 | 12/4/2017 | 611162.0 | 683058.2 | 10.74 | NA | 12.88 | 3/7/2018 |
| 114-P1-IRM-21D | DEEP | DECOMMISSIONED | SITE 114 | N/A | E201711737 | REMEDIATION | STAINLESS STEEL | 4.0 | 41.1 | 61.1 | 12/6/2017 | 611164.5 | 683172.4 | 10.65 | NA | 13.02 | 3/7/2018 |
| 114-P1-IRM-22D | DEEP | DECOMMISSIONED | SITE 114 | N/A | E201711737 | REMEDIATION | STAINLESS STEEL | 4.0 | 45.3 | 65.3 | 11/30/2017 | 611185.7 | 683126.6 | 11.02 | NA | 13.07 | 3/7/2018 |
| 114-P1-IRM-24D | DEEP | DECOMMISSIONED | SITE 114 | N/A | E201711737 | REMEDIATION | STAINLESS STEEL | 4.0 | 31.5 | 51.5 | 12/18/2017 | 611145.9 | 683253.0 | 10.74 | NA | 13.52 | 3/7/2018 |
| 114-P1-IRM-25D | DEEP | DECOMMISSIONED | SITE 114 | N/A | E201711737 | REMEDIATION | STAINLESS STEEL | 4.0 | 38.8 | 58.8 | 12/27/2017 | 611231.3 | 683198.4 | 11.10 | NA | 13.47 | 3/7/2018 |
| 114-P1-IRM-26D | DEEP | DECOMMISSIONED | SITE 114 | N/A | E201711737 | REMEDIATION | STAINLESS STEEL | 4.0 | 46.9 | 66.9 | 12/21/2017 | 611275.3 | 683127.3 | 15.05 | NA | 15.42 | 3/7/2018 |
| 114-P1-IRM-27D | DEEP | DECOMMISSIONED | SITE 114 | N/A | E201711737 | REMEDIATION | STAINLESS STEEL | 4.0 | 30.5 | 50.5 | 11/9/2017 | 611196.7 | 683344.5 | 10.76 | NA | 13.26 | 3/7/2018 |
| 114-P1-IRM-28D | DEEP | DECOMMISSIONED | SITE 114 | N/A | E201711737 | REMEDIATION | STAINLESS STEEL | 4.0 | 36.5 | 56.5 | 12/15/2017 | 611233.7 | 683272.8 | 12.20 | NA | 13.10 | 3/7/2018 |
| 114-P1-IRM-29D | DEEP | DECOMMISSIONED | SITE 114 | N/A | E201711737 | REMEDIATION | STAINLESS STEEL | 4.0 | 46.2 | 66.2 | 12/13/2017 | 611302.4 | 683201.9 | 13.26 | NA | 14.97 | 3/7/2018 |
| 114-P1-IRM-30D | DEEP | DECOMMISSIONED | SITE 114 | N/A | E201711737 | REMEDIATION | STAINLESS STEEL | 4.0 | 36.9 | 56.9 | 11/27-11/28 | 611260.0 | 683340.0 | 10.88 | NA | 12.68 | 3/7/2018 |
| 114-P1-IRM-31D | DEEP | DECOMMISSIONED | SITE 114 | N/A | E201711737 | REMEDIATION | STAINLESS STEEL | 4.0 | 36.1 | 56.1 | 12/20/2017 | 611317.7 | 683276.4 | 10.84 | NA | 12.86 | 3/7/2018 |
| 114-P1-IRM-32D | DEEP | DECOMMISSIONED | SITE 114 | N/A | E201711737 | REMEDIATION | STAINLESS STEEL | 4.0 | 42.8 | 62.8 | 11/28, 11/29/2017 | 611362.4 | 683221.6 | 12.22 | NA | 14.36 | 3/7/2018 |
| 114-P1-IRM-33D | DEEP | DECOMMISSIONED | SITE 114 | N/A | E201711737 | REMEDIATION | STAINLESS STEEL | 4.0 | 25.7 | 45.7 | 12/14/2017 | 611246.7 | 683422.1 | 11.78 | NA | 13.52 | 3/7/2018 |
| 114-P1-IRM-34D | DEEP | DECOMMISSIONED | SITE 114 | N/A | E201711737 | REMEDIATION | STAINLESS STEEL | 4.0 | 32.4 | 52.4 | 11/22/2017 | 611326.6 | 683355.4 | 11.81 | NA | 12.83 | 3/7/2018 |
| 114-P1-IRM-35D | DEEP | DECOMMISSIONED | SITE 114 | N/A | E201711737 | REMEDIATION | STAINLESS STEEL | 4.0 | 40.3 | 60.3 | 12/19/2017 | 611377.5 | 683285.5 | 10.71 | NA | 12.83 | 3/7/2018 |
| 114-P1-IRM-4D | DEEP | DECOMMISSIONED | SITE 114 | N/A | E201711737 | REMEDIATION | STAINLESS STEEL | 4.0 | 38.1 | 58.1 | 12/19/2017 | 610958.5 | 683198.4 | 12.02 | NA | 14.66 | 3/7/2018 |
| 114-P1-IRM-5D | DEEP | DECOMMISSIONED | SITE 114 | N/A | E201711737 | REMEDIATION | STAINLESS STEEL | 4.0 | 37.0 | 57.0 | 12/7/2017 | 611011.7 | 683200.9 | 13.81 | NA | 17.14 | 3/7/2018 |
| ***Phase II*** | | | | | | | | | | | | | | | | | |
| 114-P2-IRM-89I | INTERMEDIATE | ACTIVE | SITE 114 | North | E201904797 | EXTRACTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 6/14/2019 | 611108.8 | 683543.0 | 13.90 | 16.11 | 15.85 | 10/9/2019 |
| 114-P2-IRM-90I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201904806 | EXTRACTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 6/20/2019 | 611218.5 | 683539.7 | 13.20 | 15.05 | 14.81 | 10/9/2019 |
| 114-P2-IRM-92I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201904800 | EXTRACTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 6/17/2019 | 611158.8 | 683496.4 | 14.00 | 15.24 | 14.95 | 10/9/2019 |
| 114-P2-IRM-93I | INTERMEDIATE | ACTIVE | SITE 114 | North | E201904802 | EXTRACTION | STAINLESS STEEL | 4.0 | 21.0 | 41.0 | 7/2/2019 | 611302.6 | 683476.2 | 12.70 | 14.98 | 14.60 | 10/9/2019 |
| 114-P2-IRM-94I | INTERMEDIATE | ACTIVE | SITE 114 | North | E201904804 | EXTRACTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 7/16/2019 | 611454.2 | 683413.3 | 11.10 | 13.00 | 12.69 | 10/10/2019 |
| 114-P2-IRM-100I | INTERMEDIATE | ACTIVE | SITE 114 | North | E202300489 | INJECTION | STAINLESS STEEL | 2.0 | 20.0 | 40.0 | 1/31/2023 | 611273.6 | 683458.3 | 13.20 | 15.98 | 16.90 | 2/27/2023 |
| 114-P2-IRM-101I | INTERMEDIATE | ACTIVE | SITE 114 | North | E202300491 | INJECTION | STAINLESS STEEL | 2.0 | 19.0 | 39.0 | 2/3/2023 | 611354.8 | 683428.8 | 11.80 | 14.94 | 15.48 | 2/27/2023 |
| 114-P2-IRM-102I | INTERMEDIATE | ACTIVE | SITE 114 | North | E202300493 | INJECTION | STAINLESS STEEL | 2.0 | 17.0 | 37.0 | 2/6/2023 | 611445.4 | 683475.4 | 11.30 | 14.36 | 15.14 | 2/27/2023 |
| 114-P2-IRM-103I | INTERMEDIATE | ACTIVE | SITE 114 | North | E202300495 | INJECTION | STAINLESS STEEL | 2.0 | 19.0 | 39.0 | 2/8/2023 | 611468.0 | 683382.9 | 11.20 | 14.14 | 14.91 | 2/27/2023 |
| 114-P2-IRM-10I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905383 | INJECTION | STAINLESS STEEL | 4.0 | 23.0 | 43.0 | 7/25/2019 | 611406.2 | 683781.5 | 14.70 | 15.93 | 15.61 | 10/9/2019 |
| 114-P2-IRM-11I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905040 | INJECTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 7/31/2019 | 611447.4 | 683819.0 | 14.00 | 16.35 | 16.09 | 10/9/2019 |
| 114-P2-IRM-12I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905285 | INJECTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 8/2/2019 | 611463.3 | 683774.0 | 14.10 | 16.42 | 16.11 | 10/9/2019 |
| 114-P2-IRM-13I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905287 | INJECTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 7/26/2019 | 611495.6 | 683804.7 | 14.00 | 16.04 | 15.71 | 10/9/2019 |
| 114-P2-IRM-14I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905289 | INJECTION | STAINLESS STEEL | 4.0 | 23.0 | 43.0 | 8/1/2019 | 611495.6 | 683754.3 | 14.70 | 15.72 | 15.36 | 10/9/2019 |
| 114-P2-IRM-15I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905042 | INJECTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 7/30/2019 | 611548.8 | 683760.7 | 14.00 | 14.84 | 14.56 | 10/9/2019 |
| 114-P2-IRM-16I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905291 | INJECTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 8/7/2019 | 611536.7 | 683715.5 | 13.60 | 14.78 | 14.48 | 10/9/2019 |
| 114-P2-IRM-17I | INTERMEDIATE | ACTIVE | SITE 114 | North | E201905044 | INJECTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 8/6/2019 | 611563.9 | 683678.2 | 13.40 | 15.79 | 15.26 | 10/9/2019 |
| 114-P2-IRM-18I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905293 | INJECTION | STAINLESS STEEL | 4.0 | 19.0 | 39.0 | 9/16/2019 | 611571.7 | 683625.0 | 11.80 | 13.90 | 13.70 | 10/9/2019 |
| 114-P2-IRM-19I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905295 | INJECTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 7/19/2019 | 611620.4 | 683619.7 | 11.80 | 13.87 | 13.63 | 10/9/2019 |
| 114-P2-IRM-1I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905004 | INJECTION | STAINLESS STEEL | 4.0 | 21.5 | 41.5 | 8/1/2019 | 611123.6 | 683877.3 | 15.00 | 16.70 | 16.49 | 10/8/2019 |
| 114-P2-IRM-2I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905260 | INJECTION | STAINLESS STEEL | 4.0 | 19.0 | 39.0 | 7/3/2019 | 611158.0 | 683912.0 | 15.20 | 17.21 | 16.99 | 10/8/2019 |
| 114-P2-IRM-34I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905270 | INJECTION | STAINLESS STEEL | 4.0 | 20.0 | 40.0 | 8/14/2019 | 611086.4 | 683845.1 | 14.10 | 15.95 | 15.69 | 10/8/2019 |
| 114-P2-IRM-35I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905006 | INJECTION | STAINLESS STEEL | 4.0 | 19.0 | 29.0 | 9/6/2019 | 611044.2 | 683816.8 | 13.80 | 15.64 | 15.27 | 10/8/2019 |
| 114-P2-IRM-36I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905271 | INJECTION | STAINLESS STEEL | 4.0 | 20.0 | 40.0 | 9/10/2019 | 611033.6 | 683762.2 | 13.60 | 15.42 | 15.14 | 10/8/2019 |
| 114-P2-IRM-37I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905272 | INJECTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 8/28/2019 | 611151.6 | 683771.6 | 13.10 | 14.78 | 14.25 | 10/8/2019 |
| 114-P2-IRM-38I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905273 | INJECTION | STAINLESS STEEL | 4.0 | 23.0 | 43.0 | 8/28/2019 | 611183.8 | 683785.4 | 13.30 | 14.17 | 13.51 | 10/8/2019 |
| 114-P2-IRM-39I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905274 | INJECTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 8/27/2019 | 611195.2 | 683748.9 | 13.30 | 15.24 | 14.60 | 10/8/2019 |
| 114-P2-IRM-3I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905261 | INJECTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 7/15/2019 | 611202.1 | 683858.4 | 14.00 | 16.43 | 16.14 | 10/8/2019 |
| 114-P2-IRM-40I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905276 | INJECTION | STAINLESS STEEL | 4.0 | 21.0 | 41.0 | 9/4/2019 | 611241.8 | 683777.1 | 13.30 | 15.42 | 14.85 | 10/8/2019 |
| 114-P2-IRM-42I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905007 | INJECTION | STAINLESS STEEL | 4.0 | 22.5 | 42.5 | 8/12/2019 | 611309.1 | 683692.3 | 14.50 | 16.12 | 15.97 | 10/8/2019 |
| 114-P2-IRM-43I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905280 | INJECTION | STAINLESS STEEL | 4.0 | 23.0 | 43.0 | 8/8/2019 | 611338.8 | 683728.7 | 15.40 | 17.55 | 17.03 | 10/8/2019 |
| 114-P2-IRM-44I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905414 | INJECTION | STAINLESS STEEL | 4.0 | 22.5 | 42.5 | 8/9/2019 | 611348.7 | 683679.5 | 13.30 | 15.46 | 15.13 | 10/17/2019 |
| 114-P2-IRM-45I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905416 | INJECTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 9/3/2019 | 611380.1 | 683705.5 | 13.90 | 15.83 | 15.35 | 10/9/2019 |
| 114-P2-IRM-46I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905418 | INJECTION | STAINLESS STEEL | 4.0 | 17.0 | 37.0 | 8/27/2019 | 611379.8 | 683644.3 | 11.10 | 12.88 | 12.39 | 10/9/2019 |
| 114-P2-IRM-47I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905420 | INJECTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 8/9/2019 | 611439.8 | 683711.3 | 14.60 | 16.81 | 16.24 | 10/9/2019 |
| 114-P2-IRM-48I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905422 | INJECTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 8/9/2019 | 611480.3 | 683679.0 | 14.00 | 16.51 | 15.96 | 10/9/2019 |
| 114-P2-IRM-49I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905424 | INJECTION | STAINLESS STEEL | 4.0 | 19.0 | 39.0 | 8/14/2019 | 611451.1 | 683622.7 | 11.10 | 13.03 | 12.08 | 10/9/2019 |
| 114-P2-IRM-4I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905262 | INJECTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 7/23/2019 | 611244.8 | 683835.0 | 14.20 | 16.18 | 15.74 | 10/8/2019 |
| 114-P2-IRM-50I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905427 | INJECTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 8/13/2019 | 611517.5 | 683648.8 | 12.30 | 14.44 | 14.21 | 10/9/2019 |
| 114-P2-IRM-51I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905429 | INJECTION | STAINLESS STEEL | 4.0 | 19.0 | 39.0 | 8/16/2019 | 611507.8 | 683602.0 | 11.20 | 13.07 | 12.05 | 10/10/2019 |
| 114-P2-IRM-52I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905430 | INJECTION | STAINLESS STEEL | 4.0 | 20.0 | 40.0 | 8/19/2019 | 611544.4 | 683561.9 | 11.10 | 12.96 | 12.66 | 10/10/2019 |
| 114-P2-IRM-53I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905048 | INJECTION | STAINLESS STEEL | 4.0 | 19.0 | 39.0 | 8/15/2019 | 611594.1 | 683551.8 | 11.10 | 13.16 | 12.82 | 10/10/2019 |
| 114-P2-IRM-5I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905005 | INJECTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 7/17/2019 | 611243.7 | 683885.7 | 14.00 | 16.08 | 15.87 | 10/8/2019 |

**Table 1**
**Monitoring and Remediation Well Network and Construction Details**
**Groundwater Remedial Action Progress Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | Well Construction | | | | | As-Built Survey | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Well ID | Water-Bearing Zone | Status | Location | Remediation Area | Permit Number | Well Use | Screen Material | Well Diameter (in) | Screen Interval Top (ft bgs)[1] | Screen Interval Bottom (ft bgs)[1] | Well Installation Date | Easting (ft NAD83) | Northing (ft NAD83) | Ground Surface Elevation (ft NAVD88) | Top of Outer Casing Elevation (ft NAVD88) | Top of Inner Casing Elevation (ft NAVD88) | Survey Date |
| 114-P2-IRM-67I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905472 | INJECTION | STAINLESS STEEL | 4.0 | 19.0 | 39.0 | 9/11/2019 | 611018.4 | 683749.7 | 14.00 | 15.95 | 15.68 | 10/8/2019 |
| 114-P2-IRM-68I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905473 | INJECTION | STAINLESS STEEL | 4.0 | 21.0 | 41.0 | 8/15/2019 | 610998.6 | 683678.3 | 13.10 | 14.84 | 14.65 | 10/9/2019 |
| 114-P2-IRM-69I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905009 | INJECTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 8/16/2019 | 611053.1 | 683693.1 | 13.10 | 14.59 | 14.20 | 10/9/2019 |
| 114-P2-IRM-6I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905263 | INJECTION | STAINLESS STEEL | 4.0 | 22.5 | 42.5 | 8/13/2019 | 611292.6 | 683863.1 | 14.00 | 15.94 | 15.50 | 10/8/2019 |
| 114-P2-IRM-70I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905474 | INJECTION | STAINLESS STEEL | 4.0 | 20.0 | 40.0 | 9/4/2019 | 611071.4 | 683729.7 | 13.30 | 15.02 | 14.56 | 10/9/2019 |
| 114-P2-IRM-71I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905475 | INJECTION | STAINLESS STEEL | 4.0 | 21.0 | 41.0 | 9/5/2019 | 611125.8 | 683730.0 | 13.10 | 15.01 | 14.86 | 10/9/2019 |
| 114-P2-IRM-72I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905476 | INJECTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 8/19/2019 | 611091.8 | 683664.9 | 13.20 | 14.42 | 14.05 | 10/9/2019 |
| 114-P2-IRM-73I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905477 | INJECTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 8/20/2019 | 611141.0 | 683666.9 | 13.20 | 14.76 | 14.16 | 10/9/2019 |
| 114-P2-IRM-74I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905010 | INJECTION | STAINLESS STEEL | 4.0 | 20.0 | 40.0 | 8/27/2019 | 611175.0 | 683712.0 | 13.20 | 14.49 | 13.96 | 10/9/2019 |
| 114-P2-IRM-75I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905478 | INJECTION | STAINLESS STEEL | 4.0 | 20.0 | 40.0 | 8/27/2019 | 611206.2 | 683668.3 | 13.10 | 14.69 | 14.28 | 10/9/2019 |
| 114-P2-IRM-76I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905011 | INJECTION | STAINLESS STEEL | 4.0 | 21.0 | 41.0 | 8/22/2019 | 611183.5 | 683638.5 | 13.30 | 14.30 | 13.97 | 10/9/2019 |
| 114-P2-IRM-77I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905480 | INJECTION | STAINLESS STEEL | 4.0 | 21.0 | 41.0 | 9/16/2019 | 611229.9 | 683619.7 | 13.60 | 15.87 | 15.62 | 10/9/2019 |
| 114-P2-IRM-78I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905482 | INJECTION | STAINLESS STEEL | 4.0 | 20.0 | 40.0 | 8/29/2019 | 611255.4 | 683663.0 | 13.70 | 15.26 | 14.83 | 10/9/2019 |
| 114-P2-IRM-79I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905484 | INJECTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 8/26/2019 | 611285.7 | 683634.5 | 14.20 | 16.33 | 15.88 | 10/8/2019 |
| 114-P2-IRM-7I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905264 | INJECTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 8/7/2019 | 611337.3 | 683796.3 | 14.90 | 16.14 | 15.80 | 10/8/2019 |
| 114-P2-IRM-80I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905486 | INJECTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 8/28/2019 | 611264.8 | 683589.7 | 13.70 | 15.78 | 15.22 | 10/8/2019 |
| 114-P2-IRM-81I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905451 | INJECTION | STAINLESS STEEL | 4.0 | 19.0 | 39.0 | 8/28/2019 | 611342.7 | 683620.5 | 11.10 | 12.96 | 12.21 | 10/8/2019 |
| 114-P2-IRM-82I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905453 | INJECTION | STAINLESS STEEL | 4.0 | 18.0 | 38.0 | 8/27/2019 | 611383.0 | 683587.3 | 11.00 | 12.99 | 12.68 | 10/9/2019 |
| 114-P2-IRM-83I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905455 | INJECTION | STAINLESS STEEL | 4.0 | 18.0 | 38.0 | 8/26/2019 | 611391.0 | 683552.1 | 11.10 | 13.18 | 12.77 | 10/9/2019 |
| 114-P2-IRM-84I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905457 | INJECTION | STAINLESS STEEL | 4.0 | 19.0 | 39.0 | 8/22/2019 | 611427.7 | 683571.9 | 11.30 | 13.38 | 13.12 | 10/9/2019 |
| 114-P2-IRM-85I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905459 | INJECTION | STAINLESS STEEL | 4.0 | 20.0 | 40.0 | 8/20/2019 | 611468.8 | 683542.4 | 11.10 | 13.20 | 12.91 | 10/10/2019 |
| 114-P2-IRM-86I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905461 | INJECTION | STAINLESS STEEL | 4.0 | 17.0 | 37.0 | 8/23/2019 | 611485.6 | 683498.4 | 11.30 | 13.12 | 14.14 | 11/11/2022 |
| 114-P2-IRM-87I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905052 | INJECTION | STAINLESS STEEL | 4.0 | 19.0 | 39.0 | 8/20/2019 | 611538.8 | 683496.1 | 10.90 | 12.92 | 13.72 | 11/11/2022 |
| 114-P2-IRM-88I | INTERMEDIATE | ACTIVE | SITE 114 | North | E201905463 | INJECTION | STAINLESS STEEL | 4.0 | 19.0 | 39.0 | 8/22/2019 | 611508.9 | 683454.8 | 11.30 | 13.26 | 12.89 | 10/10/2019 |
| 114-P2-IRM-8I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905266 | INJECTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 7/25/2019 | 611330.5 | 683859.8 | 14.00 | 15.90 | 15.72 | 10/8/2019 |
| 114-P2-IRM-99I | INTERMEDIATE | ACTIVE | SITE 114 | North | E202300487 | INJECTION | STAINLESS STEEL | 2.0 | 19.0 | 39.0 | 2/2/2023 | 611289.9 | 683512.9 | 11.80 | 14.72 | 15.49 | 2/27/2023 |
| 114-P2-IRM-9I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905268 | INJECTION | STAINLESS STEEL | 4.0 | 23.0 | 43.0 | 7/26/2019 | 611378.7 | 683821.5 | 14.00 | 15.24 | 15.00 | 10/8/2019 |
| 114-P2-IRM-41I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201905278 | INJECTION/EXTRACTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 9/5/2019 | 611232.1 | 683719.4 | 12.90 | 14.53 | 13.93 | 10/8/2019 |
| 114-P2-IRM-91I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201904808 | INJECTION/EXTRACTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 6/18/2019 | 611149.0 | 683568.5 | 13.50 | 15.16 | 14.99 | 10/9/2019 |
| 114-MC-PZ103 | INTERMEDIATE | ACTIVE | SITE 114 | North | E201406166 | MONITORING | SCHEDULE 40 PVC | 2.0 | 37.0 | 42.0 | 6/2/2014 | 611276.7 | 683655.5 | 12.20 | 17.28 | 18.11 | 12/16/2021 |
| 114-MC-PZ203 | INTERMEDIATE | ACTIVE | SITE 114 | North | E201411821 | MONITORING | SCHEDULE 40 PVC | 2.0 | 37.0 | 42.0 | 10/3/2014 | 611253.7 | 683620.0 | 11.50 | 16.24 | 16.97 | 12/16/2021 |
| 114-P1A-MW101I | INTERMEDIATE | ACTIVE | SITE 114 | North | E201404661 | MONITORING | SCHEDULE 40 PVC | 4.0 | 25.0 | 35.0 | 4/24/2014 | 611036.1 | 683779.1 | 15.20 | 14.36 | 16.85 | 12/16/2021 |
| 114-P1C-MW101I | INTERMEDIATE | ACTIVE | SITE 114 | North | E201404665 | MONITORING | SCHEDULE 40 PVC | 4.0 | 25.0 | 35.0 | 10/9/2014 | 611171.1 | 683905.2 | 11.20 | 13.10 | 16.14 | 12/16/2021 |
| 114-P2A-MW102I | INTERMEDIATE | ACTIVE | SITE 114 | North | E201600652 | MONITORING | SCHEDULE 40 PVC | 2.0 | 27.5 | 37.5 | 2/2/2016 | 611686.2 | 683489.7 | 11.90 | NA | 13.12 | 6/13/2018 |
| 114-P2A-MW103I | INTERMEDIATE | ACTIVE | SITE 114 | North | E201600654 | MONITORING | SCHEDULE 40 PVC | 2.0 | 32.0 | 42.0 | 1/29/2016 | 611823.6 | 683382.7 | 11.20 | NA | 15.41 | 6/13/2018 |
| 114-P2B1-MW101I | INTERMEDIATE | ACTIVE | SITE 114 | North | E201404664 | MONITORING | SCHEDULE 40 PVC | 4.0 | 30.0 | 40.0 | 10/16/2014 | 611441.8 | 683756.1 | 11.10 | NA | 17.35 | 12/16/2021 |
| 114-P2B2-MW101I | INTERMEDIATE | ACTIVE | SITE 114 | North | E201500658 | MONITORING | SCHEDULE 40 PVC | 4.0 | 27.0 | 37.0 | 2/26/2015 | 611630.1 | 683631.6 | 11.00 | 11.06 | 13.81 | 12/16/2021 |
| 114-P2-MW-1I | INTERMEDIATE | ACTIVE | SITE 114 | North | E201904844 | MONITORING | SCHEDULE 40 PVC | 2.0 | 37.5 | 42.5 | 7/18/2019 | 611213.8 | 683836.5 | 14.10 | 15.73 | 16.51 | 12/16/2021 |
| 114-P2-MW-2I | INTERMEDIATE | ACTIVE | SITE 114 | North | E201904846 | MONITORING | SCHEDULE 40 PVC | 2.0 | 36.0 | 41.0 | 8/5/2019 | 611326.0 | 683831.0 | 14.00 | 15.94 | 16.85 | 12/16/2021 |
| 114-P2-MW-3I | INTERMEDIATE | ACTIVE | SITE 114 | North | E201904851 | MONITORING | SCHEDULE 40 PVC | 2.0 | 40.0 | 45.0 | 8/29/2019 | 611530.3 | 683689.8 | 13.90 | 15.61 | 17.03 | 12/16/2021 |
| 114-P2-MW-4I | INTERMEDIATE | ACTIVE | SITE 114 | North | E201904848 | MONITORING | SCHEDULE 40 PVC | 2.0 | 25.0 | 30.0 | 9/16/2019 | 611200.2 | 683774.9 | 13.30 | 14.47 | 15.59 | 12/16/2021 |
| 114-P2-MW-5I | INTERMEDIATE | ACTIVE | SITE 114 | North | E201904853 | MONITORING | SCHEDULE 40 PVC | 2.0 | 36.0 | 41.0 | 8/29/2019 | 611384.9 | 683666.1 | 11.10 | 13.21 | 14.14 | 12/16/2021 |
| 114-P2-MW-6I | INTERMEDIATE | ACTIVE | SITE 114 | North | E201904855 | MONITORING | SCHEDULE 40 PVC | 2.0 | 40.0 | 45.0 | 9/4/2019 | 611509.7 | 683627.1 | 11.10 | 13.34 | 14.21 | 12/16/2021 |
| 114-P2-MW-7I | INTERMEDIATE | ACTIVE | SITE 114 | North | E201904857 | MONITORING | SCHEDULE 40 PVC | 2.0 | 23.0 | 28.0 | 8/29/2019 | 611315.1 | 683557.3 | 11.10 | 13.11 | 13.90 | 12/16/2021 |
| 114-P2-MW-8I | INTERMEDIATE | ACTIVE | SITE 114 | North | E201904859 | MONITORING | SCHEDULE 40 PVC | 2.0 | 34.0 | 39.0 | 9/3/2019 | 611458.8 | 683513.3 | 11.20 | 13.31 | 14.29 | 12/16/2021 |
| GPS-MW5I | INTERMEDIATE | ACTIVE | SITE 114 | North | E201310734 | MONITORING | SCHEDULE 40 PVC | 2.0 | 30.0 | 40.0 | 9/6/2013 | 611137.9 | 683713.3 | 13.10 | 13.80 | 16.05 | 12/16/2021 |
| GPS-MW6I | INTERMEDIATE | ACTIVE | SITE 114 | North | E201305159 | MONITORING | SCHEDULE 40 PVC | 2.0 | 25.0 | 35.0 | 4/29/2013 | 611196.6 | 683678.7 | 13.00 | 13.13 | 15.10 | 12/16/2021 |
| 114-MC-EW103 | INTERMEDIATE | ACTIVE | SITE 114 | North | E201406161 | MONITORING/EXTRACTION | SCHEDULE 40 PVC | 4.0 | 30.0 | 44.4 | 5/29/2014 | 611263.8 | 683631.3 | 13.30 | 17.01 | 17.29 | 4/25/2022 |
| 114-P1-IRM-36D | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201711951 | REMEDIATION | STAINLESS STEEL | 4.0 | 21.8 | 41.8 | 12/11-12/12/2017 | 611092.7 | 683801.1 | 13.11 | NA | 14.73 | 3/7/2018 |
| 114-P1-IRM-36I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201711950 | REMEDIATION | STAINLESS STEEL | 4.0 | 21.0 | 41.0 | 12/13-12/14/2017 | 611099.2 | 683796.2 | 13.49 | NA | 15.39 | 3/7/2018 |
| 114-P1-IRM-37I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201711950 | REMEDIATION | STAINLESS STEEL | 4.0 | 18.9 | 38.9 | 12/12/2017 | 611270.8 | 683740.4 | 12.69 | NA | 14.53 | 3/7/2018 |
| 114-P1-IRM-38 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201711950 | REMEDIATION | STAINLESS STEEL | 4.0 | 20.8 | 40.8 | 12/12/2017 | 611156.7 | 683838.7 | 13.54 | NA | 15.32 | 3/7/2018 |
| 114-P1-IRM-39 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201711950 | REMEDIATION | STAINLESS STEEL | 4.0 | 19.6 | 39.6 | 11/17/2017 | 611278.1 | 683802.0 | 14.19 | NA | 16.01 | 3/7/2018 |
| 114-P1-IRM-40I | INTERMEDIATE | ACTIVE | SITE 114 | North | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 18.0 | 38.0 | 11/13/2017 | 611384.7 | 683497.9 | 11.46 | NA | 12.83 | 3/7/2018 |
| 114-P1-IRM-41I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201707532 | REMEDIATION | STAINLESS STEEL | 4.0 | 21.1 | 41.1 | 7/17-7/25/2017 | 611311.4 | 683587.2 | 11.76 | NA | 12.70 | 3/7/2018 |
| 114-P1-IRM-42I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | North | E201711736 | REMEDIATION | STAINLESS STEEL | 4.0 | 20.9 | 40.9 | 11/15/2017 | 611428.7 | 683666.1 | 11.62 | NA | 13.04 | 3/7/2018 |
| 114-P2-IRM-89D | DEEP | ACTIVE | SITE 114 | North | E201904799 | EXTRACTION/INJECTION | STAINLESS STEEL | 4.0 | 42.0 | 62.0 | 6/13/2019 | 611102.5 | 683546.9 | 13.80 | 15.11 | 14.86 | 10/9/2019 |
| 114-P2-IRM-93D | DEEP | ACTIVE | SITE 114 | North | E201904803 | EXTRACTION | STAINLESS STEEL | 4.0 | 41.0 | 61.0 | 6/26/2019 | 611294.6 | 683481.7 | 13.00 | 15.09 | 14.91 | 10/9/2019 |
| 114-P2-IRM-94D | DEEP | ACTIVE | SITE 114 | North | E201904805 | EXTRACTION | STAINLESS STEEL | 4.0 | 42.0 | 62.0 | 7/3/2019 | 611449.8 | 683405.9 | 11.00 | 13.01 | 12.66 | 10/10/2019 |
| 114-P2-IRM-100D | DEEP | ACTIVE | SITE 114 | North | E202300490 | INJECTION | STAINLESS STEEL | 2.0 | 35.0 | 45.0 | 1/31/2023 | 611269.1 | 683463.3 | 13.30 | 16.17 | 16.92 | 2/27/2023 |
| 114-P2-IRM-101D | DEEP | ACTIVE | SITE 114 | North | E202300492 | INJECTION | STAINLESS STEEL | 2.0 | 38.0 | 58.0 | 2/2/2023 | 611347.2 | 683430.7 | 12.00 | 15.22 | 15.73 | 2/27/2023 |
| 114-P2-IRM-102D | DEEP | ACTIVE | SITE 114 | North | E202300494 | INJECTION | STAINLESS STEEL | 2.0 | 37.0 | 57.0 | 2/6/2023 | 611449.9 | 683467.1 | 11.20 | 14.17 | 14.90 | 2/27/2023 |
| 114-P2-IRM-103D | DEEP | ACTIVE | SITE 114 | North | E202300496 | INJECTION | STAINLESS STEEL | 2.0 | 36.0 | 56.0 | 2/7/2023 | 611463.6 | 683376.9 | 11.20 | 14.11 | 14.88 | 2/27/2023 |
| 114-P2-IRM-10D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905284 | INJECTION | STAINLESS STEEL | 4.0 | 43.0 | 63.0 | 7/24/2019 | 611414.6 | 683778.8 | 14.80 | 16.37 | 15.91 | 10/9/2019 |
| 114-P2-IRM-11D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905041 | INJECTION | STAINLESS STEEL | 4.0 | 43.0 | 63.0 | 7/30/2019 | 611439.2 | 683821.3 | 14.10 | 15.55 | 15.30 | 10/9/2019 |
| 114-P2-IRM-12D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905286 | INJECTION | STAINLESS STEEL | 4.0 | 41.0 | 61.0 | 8/1/2019 | 611454.4 | 683776.4 | 14.10 | 16.15 | 15.83 | 10/9/2019 |
| 114-P2-IRM-13D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905288 | INJECTION | STAINLESS STEEL | 4.0 | 42.0 | 62.0 | 7/29/2019 | 611503.9 | 683804.3 | 14.10 | 16.07 | 15.65 | 10/9/2019 |
| 114-P2-IRM-14D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905290 | INJECTION | STAINLESS STEEL | 4.0 | 43.0 | 63.0 | 7/31/2019 | 611503.2 | 683753.8 | 14.50 | 15.55 | 15.17 | 10/9/2019 |
| 114-P2-IRM-15D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905043 | INJECTION | STAINLESS STEEL | 4.0 | 42.0 | 62.0 | 7/30/2019 | 611556.3 | 683759.2 | 14.00 | 15.60 | 15.14 | 10/9/2019 |
| 114-P2-IRM-16D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905292 | INJECTION | STAINLESS STEEL | 4.0 | 43.0 | 63.0 | 8/7/2019 | 611544.1 | 683713.1 | 13.50 | 14.93 | 14.53 | 10/9/2019 |
| 114-P2-IRM-17D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905045 | INJECTION | STAINLESS STEEL | 4.0 | 42.0 | 62.0 | 8/5/2019 | 611571.3 | 683676.0 | 13.10 | 14.16 | 13.86 | 10/9/2019 |
| 114-P2-IRM-18D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905294 | INJECTION | STAINLESS STEEL | 4.0 | 35.0 | 55.0 | 9/19/2019 | 611564.1 | 683627.1 | 11.70 | 13.67 | 13.44 | 10/9/2019 |

**Table 1**
**Monitoring and Remediation Well Network and Construction Details**
**Groundwater Remedial Action Progress Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | Well Construction | | | | | As-Built Survey | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Well ID | Water-Bearing Zone | Status | Location | Remediation Area | Permit Number | Well Use | Screen Material | Well Diameter (in) | Screen Interval Top (ft bgs)[1] | Screen Interval Bottom (ft bgs)[1] | Well Installation Date | Easting (ft NAD83) | Northing (ft NAD83) | Ground Surface Elevation (ft NAVD88) | Top of Outer Casing Elevation (ft NAVD88) | Top of Inner Casing Elevation (ft NAVD88) | Survey Date |
| 114-P2-IRM-19D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905296 | INJECTION | STAINLESS STEEL | 4.0 | 41.0 | 61.0 | 7/18/2019 | 611613.8 | 683626.0 | 12.20 | 14.16 | 13.86 | 10/9/2019 |
| 114-P2-IRM-39D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905275 | INJECTION | STAINLESS STEEL | 4.0 | 42.0 | 62.0 | 8/19/2019 | 611188.7 | 683753.5 | 13.30 | 15.03 | 14.49 | 10/8/2019 |
| 114-P2-IRM-40D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905277 | INJECTION | STAINLESS STEEL | 4.0 | 36.5 | 56.5 | 9/3/2019 | 611234.2 | 683779.3 | 13.30 | 15.27 | 14.69 | 10/8/2019 |
| 114-P2-IRM-42D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905008 | INJECTION | STAINLESS STEEL | 4.0 | 43.0 | 63.0 | 8/9/2019 | 611302.2 | 683694.7 | 14.40 | 15.43 | 14.95 | 10/8/2019 |
| 114-P2-IRM-43D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905281 | INJECTION | STAINLESS STEEL | 4.0 | 43.0 | 63.0 | 8/7/2019 | 611331.4 | 683732.8 | 15.40 | 16.90 | 16.53 | 10/8/2019 |
| 114-P2-IRM-44D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905415 | INJECTION | STAINLESS STEEL | 4.0 | 42.5 | 62.5 | 8/8/2019 | 611343.5 | 683684.6 | 13.90 | 16.06 | 15.31 | 10/17/2019 |
| 114-P2-IRM-45D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905417 | INJECTION | STAINLESS STEEL | 4.0 | 43.5 | 63.5 | 8/30/2019 | 611386.8 | 683701.0 | 13.50 | 15.80 | 15.40 | 10/9/2019 |
| 114-P2-IRM-46D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905419 | INJECTION | STAINLESS STEEL | 4.0 | 42.0 | 62.0 | 8/27/2019 | 611388.1 | 683642.3 | 11.20 | 12.91 | 12.38 | 10/9/2019 |
| 114-P2-IRM-47D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905421 | INJECTION | STAINLESS STEEL | 4.0 | 43.0 | 63.0 | 8/8/2019 | 611432.8 | 683715.1 | 14.80 | 16.40 | 15.78 | 10/9/2019 |
| 114-P2-IRM-48D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905423 | INJECTION | STAINLESS STEEL | 4.0 | 43.0 | 63.0 | 8/12/2019 | 611474.6 | 683683.2 | 14.20 | 16.36 | 15.82 | 10/9/2019 |
| 114-P2-IRM-49D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905425 | INJECTION | STAINLESS STEEL | 4.0 | 43.0 | 63.0 | 8/14/2019 | 611458.0 | 683619.8 | 11.10 | 13.07 | 12.75 | 10/9/2019 |
| 114-P2-IRM-50D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905426 | INJECTION | STAINLESS STEEL | 4.0 | 43.0 | 63.0 | 8/13/2019 | 611509.4 | 683652.9 | 12.50 | 14.67 | 14.25 | 10/9/2019 |
| 114-P2-IRM-51D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905428 | INJECTION | STAINLESS STEEL | 4.0 | 43.0 | 63.0 | 8/15/2019 | 611500.6 | 683605.5 | 11.10 | 13.11 | 12.75 | 10/10/2019 |
| 114-P2-IRM-52D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905431 | INJECTION | STAINLESS STEEL | 4.0 | 45.0 | 65.0 | 8/15/2019 | 611551.0 | 683558.1 | 11.10 | 12.92 | 12.68 | 10/10/2019 |
| 114-P2-IRM-53D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905049 | INJECTION | STAINLESS STEEL | 4.0 | 38.0 | 58.0 | 8/14/2019 | 611586.1 | 683555.0 | 11.20 | 13.04 | 12.72 | 10/10/2019 |
| 114-P2-IRM-78D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905483 | INJECTION | STAINLESS STEEL | 4.0 | 35.0 | 55.0 | 8/23/2019 | 611258.8 | 683669.6 | 13.80 | 15.21 | 14.80 | 10/9/2019 |
| 114-P2-IRM-79D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905485 | INJECTION | STAINLESS STEEL | 4.0 | 42.0 | 62.0 | 8/23/2019 | 611294.3 | 683631.2 | 14.30 | 16.96 | 16.48 | 10/8/2019 |
| 114-P2-IRM-7D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905265 | INJECTION | STAINLESS STEEL | 4.0 | 42.0 | 62.0 | 8/5/2019 | 611327.5 | 683797.7 | 14.80 | 16.26 | 15.94 | 10/8/2019 |
| 114-P2-IRM-81D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905452 | INJECTION | STAINLESS STEEL | 4.0 | 44.0 | 64.0 | 8/28/2019 | 611345.1 | 683627.8 | 11.20 | 13.35 | 12.61 | 10/8/2019 |
| 114-P2-IRM-82D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905454 | INJECTION | STAINLESS STEEL | 4.0 | 41.5 | 61.5 | 8/27/2019 | 611376.4 | 683590.0 | 11.00 | 13.04 | 12.72 | 10/9/2019 |
| 114-P2-IRM-83D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905456 | INJECTION | STAINLESS STEEL | 4.0 | 43.0 | 63.0 | 8/22/2019 | 611384.0 | 683555.4 | 11.10 | 13.07 | 12.87 | 10/9/2019 |
| 114-P2-IRM-84D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905458 | INJECTION | STAINLESS STEEL | 4.0 | 43.0 | 63.0 | 8/21/2019 | 611421.2 | 683575.7 | 11.10 | 13.27 | 13.11 | 10/9/2019 |
| 114-P2-IRM-85D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905460 | INJECTION | STAINLESS STEEL | 4.0 | 43.0 | 63.0 | 8/20/2019 | 611461.7 | 683546.4 | 11.20 | 13.27 | 13.00 | 10/10/2019 |
| 114-P2-IRM-86D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905462 | INJECTION | STAINLESS STEEL | 4.0 | 37.0 | 57.0 | 8/22/2019 | 611493.2 | 683497.0 | 11.20 | 13.06 | 14.07 | 11/11/2022 |
| 114-P2-IRM-87D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905053 | INJECTION | STAINLESS STEEL | 4.0 | 44.0 | 64.0 | 8/20/2019 | 611547.6 | 683490.3 | 10.80 | 12.79 | 13.67 | 11/11/2022 |
| 114-P2-IRM-88D | DEEP | ACTIVE | SITE 114 | North | E201905464 | INJECTION | STAINLESS STEEL | 4.0 | 43.0 | 63.0 | 8/21/2019 | 611516.4 | 683452.8 | 11.30 | 13.16 | 12.84 | 10/10/2019 |
| 114-P2-IRM-8D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905267 | INJECTION | STAINLESS STEEL | 4.0 | 40.0 | 60.0 | 7/24/2019 | 611338.5 | 683858.0 | 14.00 | 16.01 | 15.55 | 10/8/2019 |
| 114-P2-IRM-99D | DEEP | ACTIVE | SITE 114 | North | E202300488 | INJECTION | STAINLESS STEEL | 2.0 | 34.0 | 44.0 | 2/1/2023 | 611285.4 | 683518.3 | 12.00 | 14.89 | 15.58 | 2/27/2023 |
| 114-P2-IRM-9D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905269 | INJECTION | STAINLESS STEEL | 4.0 | 42.0 | 62.0 | 7/29/2019 | 611371.6 | 683821.4 | 14.00 | 15.45 | 15.22 | 10/8/2019 |
| 114-P2-IRM-41D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905279 | INJECTION/EXTRACTION | STAINLESS STEEL | 4.0 | 37.5 | 57.5 | 9/5/2019 | 611239.1 | 683716.8 | 12.80 | 14.55 | 13.93 | 10/8/2019 |
| 114-P2-IRM-77D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905481 | INJECTION/EXTRACTION | STAINLESS STEEL | 4.0 | 35.0 | 55.0 | 9/13/2019 | 611234.1 | 683627.5 | 13.60 | 15.81 | 15.25 | 10/9/2019 |
| 114-P2-IRM-80D | DEEP | DECOMMISSIONED | SITE 114 | North | E201905487 | INJECTION/EXTRACTION | STAINLESS STEEL | 4.0 | 43.0 | 63.0 | 8/28/2019 | 611257.0 | 683594.6 | 13.60 | 15.79 | 15.36 | 10/8/2019 |
| 114-P2-MW-1D | DEEP | ACTIVE | SITE 114 | North | E201904845 | MONITORING | SCHEDULE 40 PVC | 2.0 | 50.5 | 55.5 | 8/13/2019 | 611218.3 | 683830.4 | 14.00 | 15.74 | 16.55 | 12/16/2021 |
| 114-P2-MW-2D | DEEP | ACTIVE | SITE 114 | North | E201904847 | MONITORING | SCHEDULE 40 PVC | 2.0 | 50.0 | 55.0 | 8/2/2019 | 611319.0 | 683832.9 | 14.00 | 16.16 | 15.72 | 4/17/2024 |
| 114-P2-MW-3D | DEEP | ACTIVE | SITE 114 | North | E201904852 | MONITORING | SCHEDULE 40 PVC | 2.0 | 50.0 | 55.0 | 8/29/2019 | 611523.1 | 683691.3 | 13.80 | 15.63 | 17.17 | 12/16/2021 |
| 114-P2-MW-4D | DEEP | ACTIVE | SITE 114 | North | E201904849 | MONITORING | SCHEDULE 40 PVC | 2.0 | 57.0 | 62.0 | 9/12/2019 | 611208.4 | 683770.6 | 13.40 | 15.35 | 16.03 | 12/16/2021 |
| 114-P2-MW-5D | DEEP | ACTIVE | SITE 114 | North | E201904854 | MONITORING | SCHEDULE 40 PVC | 2.0 | 56.0 | 61.0 | 8/29/2019 | 611375.5 | 683670.5 | 11.20 | 13.26 | 14.05 | 12/16/2021 |
| 114-P2-MW-6D | DEEP | ACTIVE | SITE 114 | North | E201904856 | MONITORING | SCHEDULE 40 PVC | 2.0 | 54.0 | 59.0 | 9/3/2019 | 611500.6 | 683632.7 | 11.10 | 13.09 | 14.00 | 12/16/2021 |
| 114-P2-MW-7D | DEEP | ACTIVE | SITE 114 | North | E201904858 | MONITORING | SCHEDULE 40 PVC | 2.0 | 60.0 | 65.0 | 8/29/2019 | 611307.7 | 683560.3 | 11.00 | 13.10 | 13.88 | 12/16/2021 |
| 114-P2-MW-8D | DEEP | ACTIVE | SITE 114 | North | E201904860 | MONITORING | SCHEDULE 40 PVC | 2.0 | 62.0 | 67.0 | 8/30/2019 | 611450.9 | 683517.9 | 11.10 | 13.18 | 14.11 | 12/16/2021 |
| MW6C | DEEP | ACTIVE | SITE 114 | North | 26-00077-553 | MONITORING | SCHEDULE 40 PVC | 2.0 | 55.0 | 65.0 | 12/7/2005 | 611301.5 | 683686.7 | 14.20 | 17.76 | 18.71 | 12/16/2021 |
| 114-P1-IRM-37D | DEEP | DECOMMISSIONED | SITE 114 | North | E201711951 | REMEDIATION | STAINLESS STEEL | 4.0 | 26.8 | 46.8 | 12/13/2017 | 611266.4 | 683732.4 | 12.88 | NA | 14.41 | 3/7/2018 |
| 114-P1-IRM-40D | DEEP | ACTIVE | SITE 114 | North | E201711737 | REMEDIATION | STAINLESS STEEL | 4.0 | 45.9 | 65.9 | 11/14/2017 | 611379.2 | 683500.7 | 11.64 | NA | 12.73 | 3/7/2018 |
| 114-P1-IRM-41D | DEEP | DECOMMISSIONED | SITE 114 | North | E201707533 | REMEDIATION | STAINLESS STEEL | 4.0 | 47.6 | 67.6 | 7/21/2017 | 611307.4 | 683577.5 | 11.74 | NA | 13.00 | 3/7/2018 |
| 114-P1-IRM-42D | DEEP | DECOMMISSIONED | SITE 114 | North | E201711737 | REMEDIATION | STAINLESS STEEL | 4.0 | 39.9 | 59.9 | 11/16/2017 | 611421.3 | 683668.4 | 11.56 | NA | 12.82 | 3/7/2018 |
| 114-P2-IRM-95D | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905250 | EXTRACTION | STAINLESS STEEL | 4.0 | 43.0 | 63.0 | 9/4/2019 | 611320.0 | 682882.5 | 11.00 | 13.66 | 13.24 | 10/10/2019 |
| 114-P2-IRM-95I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905249 | EXTRACTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 9/5/2019 | 611313.0 | 682886.3 | 11.10 | 13.24 | 12.80 | 10/10/2019 |
| 114-P2-IRM-96D | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201904979 | EXTRACTION | STAINLESS STEEL | 4.0 | 42.0 | 62.0 | 9/18/2019 | 611389.7 | 682960.1 | 10.90 | 12.67 | 12.03 | 10/10/2019 |
| 114-P2-IRM-96I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201904978 | EXTRACTION | STAINLESS STEEL | 4.0 | 21.0 | 41.0 | 9/18/2019 | 611384.7 | 682954.6 | 10.90 | 12.62 | 12.14 | 10/10/2019 |
| 114-P2-IRM-97D | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201904981 | EXTRACTION | STAINLESS STEEL | 4.0 | 42.0 | 62.0 | 9/20/2019 | 611448.4 | 683012.7 | 11.20 | 12.79 | 12.26 | 10/10/2019 |
| 114-P2-IRM-97I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201904980 | EXTRACTION | STAINLESS STEEL | 4.0 | 20.0 | 40.0 | 9/19/2019 | 611454.3 | 683017.1 | 11.10 | 13.06 | 12.54 | 10/10/2019 |
| 114-P2-IRM-98D | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905252 | EXTRACTION | STAINLESS STEEL | 4.0 | 42.0 | 62.0 | 9/23/2019 | 611517.3 | 683082.3 | 11.30 | 13.12 | 12.57 | 10/10/2019 |
| 114-P2-IRM-98I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905251 | EXTRACTION | STAINLESS STEEL | 4.0 | 20.0 | 40.0 | 9/24/2019 | 611524.6 | 683084.3 | 11.00 | 12.99 | 12.44 | 10/10/2019 |
| 114-P2-IRM-20D | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905394 | INJECTION | STAINLESS STEEL | 4.0 | 42.0 | 62.0 | 9/11/2019 | 611225.2 | 682984.6 | 10.90 | 12.75 | 12.41 | 10/10/2019 |
| 114-P2-IRM-20I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905393 | INJECTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 9/11/2019 | 611218.9 | 682978.9 | 11.10 | 12.64 | 12.38 | 10/10/2019 |
| 114-P2-IRM-21D | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905396 | INJECTION | STAINLESS STEEL | 4.0 | 42.0 | 62.0 | 9/17/2019 | 611230.0 | 683050.4 | 11.90 | 13.85 | 13.53 | 10/10/2019 |
| 114-P2-IRM-21I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905395 | INJECTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 9/17/2019 | 611234.0 | 683057.3 | 12.00 | 13.28 | 12.84 | 10/10/2019 |
| 114-P2-IRM-22D | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905398 | INJECTION | STAINLESS STEEL | 4.0 | 43.0 | 63.0 | 9/6/2019 | 611316.7 | 683063.1 | 10.90 | 13.13 | 12.84 | 10/10/2019 |
| 114-P2-IRM-22I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905397 | INJECTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 9/9/2019 | 611311.3 | 683058.1 | 11.00 | 13.21 | 12.84 | 10/10/2019 |
| 114-P2-IRM-23D | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905400 | INJECTION | STAINLESS STEEL | 4.0 | 42.0 | 62.0 | 9/23/2019 | 611337.5 | 683135.8 | 12.40 | 14.29 | 13.95 | 10/10/2019 |
| 114-P2-IRM-23I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905399 | INJECTION | STAINLESS STEEL | 4.0 | 21.0 | 41.0 | 9/24/2019 | 611331.3 | 683132.4 | 12.40 | 14.39 | 14.25 | 10/10/2019 |
| 114-P2-IRM-24D | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905402 | INJECTION | STAINLESS STEEL | 4.0 | 45.0 | 65.0 | 9/10/2019 | 611395.8 | 683137.3 | 10.90 | 12.88 | 12.48 | 10/10/2019 |
| 114-P2-IRM-24I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905401 | INJECTION | STAINLESS STEEL | 4.0 | 25.0 | 45.0 | 9/10/2019 | 611402.4 | 683142.5 | 10.90 | 12.82 | 12.34 | 10/10/2019 |
| 114-P2-IRM-25I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905403 | INJECTION | STAINLESS STEEL | 4.0 | 17.0 | 37.0 | 9/25/2019 | 611444.5 | 683235.0 | 11.20 | 13.41 | 12.85 | 10/10/2019 |
| 114-P2-IRM-26I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905405 | INJECTION | STAINLESS STEEL | 4.0 | 18.0 | 38.0 | 9/27/2019 | 611493.5 | 683227.7 | 12.40 | 14.35 | 13.99 | 10/10/2019 |
| 114-P2-IRM-27D | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905407 | INJECTION | STAINLESS STEEL | 4.0 | 42.0 | 62.0 | 9/16/2019 | 611204.2 | 683019.3 | 11.10 | 12.93 | 12.62 | 10/10/2019 |
| 114-P2-IRM-28D | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905408 | INJECTION | STAINLESS STEEL | 4.0 | 43.0 | 63.0 | 9/12/2019 | 611245.8 | 683004.8 | 10.90 | 12.43 | 12.22 | 10/10/2019 |
| 114-P2-IRM-29D | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905046 | INJECTION | STAINLESS STEEL | 4.0 | 35.0 | 55.0 | 9/9/2019 | 611277.9 | 683042.7 | 10.90 | 12.75 | 12.44 | 10/10/2019 |
| 114-P2-IRM-30D | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905409 | INJECTION | STAINLESS STEEL | 4.0 | 43.0 | 63.0 | 9/10/2019 | 611323.3 | 683096.8 | 11.00 | 12.93 | 12.64 | 10/10/2019 |
| 114-P2-IRM-31D | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905410 | INJECTION | STAINLESS STEEL | 4.0 | 42.0 | 62.0 | 9/18/2019 | 611360.9 | 683130.4 | 10.90 | 12.81 | 12.37 | 10/10/2019 |
| 114-P2-IRM-54D | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905434 | INJECTION | STAINLESS STEEL | 4.0 | 42.0 | 62.0 | 9/13/2019 | 611289.5 | 682993.4 | 10.90 | 12.86 | 12.53 | 10/10/2019 |
| 114-P2-IRM-54I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905433 | INJECTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 9/13/2019 | 611295.9 | 682999.3 | 10.90 | 12.76 | 12.30 | 10/10/2019 |

**Table 1**
**Monitoring and Remediation Well Network and Construction Details**
**Groundwater Remedial Action Progress Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | Well Construction | | | | | As-Built Survey | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Well ID | Water-Bearing Zone | Status | Location | Remediation Area | Permit Number | Well Use | Screen Material | Well Diameter (in) | Screen Interval Top (ft bgs)[1] | Screen Interval Bottom (ft bgs)[1] | Well Installation Date | Easting (ft NAD83) | Northing (ft NAD83) | Ground Surface Elevation (ft NAVD88) | Top of Outer Casing Elevation (ft NAVD88) | Top of Inner Casing Elevation (ft NAVD88) | Survey Date |
| 114-P2-IRM-55D | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905051 | INJECTION | STAINLESS STEEL | 4.0 | 42.0 | 62.0 | 9/10/2019 | 611306.1 | 682943.2 | 10.80 | 12.49 | 12.27 | 10/10/2019 |
| 114-P2-IRM-55I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905050 | INJECTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 9/10/2019 | 611300.9 | 682937.1 | 10.90 | 12.78 | 12.48 | 10/10/2019 |
| 114-P2-IRM-56D | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905436 | INJECTION | STAINLESS STEEL | 4.0 | 43.0 | 63.0 | 9/5/2019 | 611370.4 | 683003.6 | 11.00 | 12.95 | 12.60 | 10/10/2019 |
| 114-P2-IRM-56I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905435 | INJECTION | STAINLESS STEEL | 4.0 | 22.0 | 42.0 | 9/5/2019 | 611376.8 | 683009.6 | 10.90 | 13.17 | 12.59 | 10/10/2019 |
| 114-P2-IRM-57D | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905438 | INJECTION | STAINLESS STEEL | 4.0 | 43.0 | 63.0 | 9/12/2019 | 611375.5 | 683080.7 | 10.80 | 12.74 | 12.41 | 10/10/2019 |
| 114-P2-IRM-57I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905437 | INJECTION | STAINLESS STEEL | 4.0 | 19.0 | 39.0 | 9/13/2019 | 611380.1 | 683087.3 | 10.90 | 12.89 | 12.14 | 10/10/2019 |
| 114-P2-IRM-58D | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905440 | INJECTION | STAINLESS STEEL | 4.0 | 42.0 | 62.0 | 9/18/2019 | 611452.8 | 683079.8 | 11.00 | 13.05 | 12.82 | 10/10/2019 |
| 114-P2-IRM-58I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905439 | INJECTION | STAINLESS STEEL | 4.0 | 20.0 | 40.0 | 9/19/2019 | 611447.5 | 683074.6 | 11.00 | 12.89 | 12.45 | 10/10/2019 |
| 114-P2-IRM-59D | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905442 | INJECTION | STAINLESS STEEL | 4.0 | 42.0 | 62.0 | 9/19/2019 | 611464.8 | 683151.6 | 10.90 | 12.86 | 12.36 | 10/10/2019 |
| 114-P2-IRM-59I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905441 | INJECTION | STAINLESS STEEL | 4.0 | 18.0 | 38.0 | 9/20/2019 | 611471.1 | 683156.2 | 10.90 | 12.88 | 12.42 | 10/10/2019 |
| 114-P2-IRM-60I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905443 | INJECTION | STAINLESS STEEL | 4.0 | 20.0 | 40.0 | 9/25/2019 | 611545.5 | 683157.2 | 11.80 | 13.74 | 13.21 | 10/10/2019 |
| 114-P2-IRM-61D | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905445 | INJECTION | STAINLESS STEEL | 4.0 | 44.0 | 64.0 | 9/5/2019 | 611268.9 | 682965.4 | 10.90 | 12.40 | 12.14 | 10/10/2019 |
| 114-P2-IRM-62D | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905446 | INJECTION | STAINLESS STEEL | 4.0 | 42.0 | 62.0 | 9/19/2019 | 611333.3 | 682997.2 | 11.00 | 12.96 | 12.57 | 10/10/2019 |
| 114-P2-IRM-63D | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905447 | INJECTION | STAINLESS STEEL | 4.0 | 42.0 | 62.0 | 9/17/2019 | 611359.3 | 683048.4 | 11.00 | 12.99 | 12.55 | 10/10/2019 |
| 114-P2-IRM-64D | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905448 | INJECTION | STAINLESS STEEL | 4.0 | 42.0 | 62.0 | 9/16/2019 | 611410.0 | 683061.3 | 11.00 | 13.05 | 12.75 | 10/10/2019 |
| 114-P2-IRM-65D | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905449 | INJECTION | STAINLESS STEEL | 4.0 | 44.0 | 64.0 | 9/6/2019 | 611430.8 | 683110.4 | 10.90 | 12.53 | 11.77 | 10/10/2019 |
| 114-P2-IRM-66D | INTERMEDIATE | DECOMMISSIONED | SITE 114 | Southeast | E201905450 | INJECTION | STAINLESS STEEL | 4.0 | 42.0 | 62.0 | 9/24/2019 | 611486.0 | 683121.8 | 10.90 | 12.63 | 12.08 | 10/10/2019 |
| 114-P2B4-MW102I | INTERMEDIATE | ACTIVE | SITE 114 | Southeast | E201500661 | MONITORING | SCHEDULE 40 PVC | 4.0 | 24.0 | 34.0 | 2/9/2015 | 611299.5 | 682875.0 | 10.60 | 12.15 | 11.83 | 12/16/2021 |
| 114-P2B4-MW103I | INTERMEDIATE | ACTIVE | SITE 114 | Southeast | E201500662 | MONITORING | SCHEDULE 40 PVC | 4.0 | 22.0 | 32.0 | 2/11/2015 | 611508.4 | 683137.7 | 10.87 | 12.83 | 13.05 | 12/16/2021 |
| 114-P2-MW-10D | INTERMEDIATE | ACTIVE | SITE 114 | Southeast | E201904864 | MONITORING | SCHEDULE 40 PVC | 2.0 | 50.0 | 55.0 | 9/11/2019 | 611351.5 | 683096.6 | 10.80 | 12.81 | 14.15 | 12/16/2021 |
| 114-P2-MW-10I | INTERMEDIATE | ACTIVE | SITE 114 | Southeast | E201905283 | MONITORING | SCHEDULE 40 PVC | 2.0 | 30.0 | 35.0 | 9/11/2019 | 611357.3 | 683102.0 | 10.80 | 12.83 | 13.41 | 12/16/2021 |
| 114-P2-MW-11D | INTERMEDIATE | ACTIVE | SITE 114 | Southeast | E201904866 | MONITORING | SCHEDULE 40 PVC | 2.0 | 45.0 | 50.0 | 9/6/2019 | 611249.9 | 682977.1 | 10.90 | 12.51 | 13.51 | 12/16/2021 |
| 114-P2-MW-11I | INTERMEDIATE | ACTIVE | SITE 114 | Southeast | E201904865 | MONITORING | SCHEDULE 40 PVC | 2.0 | 33.0 | 38.0 | 9/6/2019 | 611255.3 | 682982.4 | 10.90 | 12.13 | 12.97 | 12/16/2021 |
| 114-P2-MW-12D | INTERMEDIATE | ACTIVE | SITE 114 | Southeast | E201904868 | MONITORING | SCHEDULE 40 PVC | 2.0 | 51.0 | 56.0 | 9/9/2019 | 611389.1 | 683042.8 | 10.90 | 12.90 | 13.65 | 12/16/2021 |
| 114-P2-MW-12I | INTERMEDIATE | ACTIVE | SITE 114 | Southeast | E201904867 | MONITORING | SCHEDULE 40 PVC | 2.0 | 34.0 | 39.0 | 9/10/2019 | 611381.6 | 683038.3 | 11.00 | 12.83 | 13.74 | 12/16/2021 |
| 114-P2-MW-9I | INTERMEDIATE | ACTIVE | SITE 114 | Southeast | E201904861 | MONITORING | SCHEDULE 40 PVC | 2.0 | 43.0 | 48.0 | 9/27/2019 | 611517.6 | 683196.1 | 12.80 | 14.48 | 15.64 | 12/16/2021 |
| 114-P2-IRM-25D | DEEP | DECOMMISSIONED | SITE 114 | Southeast | E201905404 | INJECTION | STAINLESS STEEL | 4.0 | 42.0 | 62.0 | 9/26/2019 | 611448.8 | 683229.1 | 11.30 | 13.36 | 13.08 | 10/10/2019 |
| 114-P2-IRM-26D | DEEP | DECOMMISSIONED | SITE 114 | Southeast | E201905406 | INJECTION | STAINLESS STEEL | 4.0 | 37.0 | 57.0 | 9/27/2019 | 611487.9 | 683234.1 | 12.20 | 14.23 | 13.88 | 10/10/2019 |
| 114-P2-IRM-32D | DEEP | DECOMMISSIONED | SITE 114 | Southeast | E201905047 | INJECTION | STAINLESS STEEL | 4.0 | 40.0 | 60.0 | 9/9/2019 | 611416.6 | 683183.2 | 10.90 | 12.91 | 12.45 | 10/10/2019 |
| 114-P2-IRM-33D | DEEP | DECOMMISSIONED | SITE 114 | Southeast | E201905411 | INJECTION | STAINLESS STEEL | 4.0 | 39.0 | 59.0 | 9/24/2019 | 611480.0 | 683195.0 | 11.60 | 13.31 | 13.17 | 10/10/2019 |
| 114-P2-IRM-60D | DEEP | DECOMMISSIONED | SITE 114 | Southeast | E201905444 | INJECTION | STAINLESS STEEL | 4.0 | 42.0 | 62.0 | 9/25/2019 | 611538.4 | 683162.0 | 11.90 | 13.73 | 13.36 | 10/10/2019 |
| 114-MW70C | DEEP (LOWER) | ACTIVE | SITE 114 | Southeast | E202100484 | MONITORING | SCHEDULE 40 PVC | 4.0 | 85.0 | 95.0 | 1/25/2021 | 611331.4 | 682887.0 | 11.10 | 14.11 | 13.79 | 2/9/2021 |
| 114-P2-MW-9D | DEEP | ACTIVE | SITE 114 | Southeast | E201904862 | MONITORING | SCHEDULE 40 PVC | 2.0 | 58.0 | 63.0 | 9/26/2019 | 611512.7 | 683202.5 | 12.60 | 14.93 | 15.63 | 12/16/2021 |
| ***Phase III*** | | | | | | | | | | | | | | | | | |
| 114-MW22AR | SHALLOW | ACTIVE | CARTERET AVE | Target Area 1A | E202006408 | MONITORING | SCHEDULE 40 PVC | 2.0 | 8.0 | 13.0 | 6/25/2020 | 610688.0 | 683257.0 | 11.80 | 11.85 | 11.51 | 1/24/2024 |
| 132-P3A-MW103S | SHALLOW | ACTIVE | SITE 132 | Target Area 1A | E201508502 | MONITORING | SCHEDULE 40 PVC | 4.0 | 6.0 | 16.0 | 8/27/2015 | 610902.2 | 682953.6 | 12.60 | NA | 15.11 | 6/8/2018 |
| 137-P3B-MW101S | SHALLOW | ACTIVE | SITE 137A | Target Area 1A | E201508494 | MONITORING | SCHEDULE 40 PVC | 4.0 | 6.0 | 16.0 | 8/25/2015 | 611109.9 | 682945.1 | 12.54 | NA | 14.61 | 6/8/2018 |
| 143-P3A-MW101S | SHALLOW | ACTIVE | SITE 143 | Target Area 1A | E201508498 | MONITORING | SCHEDULE 40 PVC | 4.0 | 4.0 | 14.0 | 8/24/2015 | 610734.9 | 683206.6 | 10.90 | NA | 12.17 | 10/14/2015 |
| 114-MW22BR | INTERMEDIATE | ACTIVE | CARTERET AVE | Target Area 1A | E202006409 | MONITORING | SCHEDULE 40 PVC | 2.0 | 26.0 | 31.0 | 7/2/2020 | 610700.0 | 683252.8 | 11.70 | 11.65 | 11.36 | 1/24/2024 |
| 132-P3A-MW102I | INTERMEDIATE | ACTIVE | SITE 132 | Target Area 1A | E201508499 | MONITORING | SCHEDULE 40 PVC | 4.0 | 18.0 | 28.0 | 9/9/2015 | 610581.0 | 682952.2 | 13.70 | 15.64 | 15.81 | 10/14/2015 |
| 132-P3A-MW103I | INTERMEDIATE | ACTIVE | SITE 132 | Target Area 1A | E201508501 | MONITORING | SCHEDULE 40 PVC | 4.0 | 34.0 | 44.0 | 9/10/2015 | 610888.4 | 682958.1 | 12.89 | NA | 13.21 | 6/8/2018 |
| 132-P3A-MW104I | INTERMEDIATE | ACTIVE | SITE 132 | Target Area 1A | E201508503 | MONITORING | SCHEDULE 40 PVC | 4.0 | 38.0 | 48.0 | 9/4/2015 | 610775.7 | 682812.3 | 15.40 | 18.31 | 17.85 | 1/24/2024 |
| 132-P3-IRM-001I | INTERMEDIATE | ACTIVE | SITE 132 | Target Area 1A | E202105464 | INJECTION | STAINLESS STEEL | 2.0 | 22.0 | 42.0 | 6/15/2021 | 610761.9 | 683025.0 | 11.90 | 14.69 | 15.26 | 11/10/2021 |
| 132-P3-IRM-002I-A | INTERMEDIATE | ACTIVE | SITE 132 | Target Area 1A | E202105464 | INJECTION | STAINLESS STEEL | 2.0 | 22.0 | 42.0 | 6/16/2021 | 610810.7 | 683067.3 | 11.86 | 15.33 | 16.03 | 11/10/2021 |
| 132-P3-IRM-002I-B | INTERMEDIATE | ACTIVE | SITE 132 | Target Area 1A | E202105464 | INJECTION | STAINLESS STEEL | 2.0 | 44.0 | 59.0 | 6/15/2021 | 610820.5 | 683065.5 | 11.81 | 15.12 | 15.84 | 11/10/2021 |
| 132-P3-IRM-003I-A | INTERMEDIATE | ACTIVE | SITE 132 | Target Area 1A | E202105464 | INJECTION | STAINLESS STEEL | 2.0 | 21.0 | 41.0 | 6/1/2021 | 610811.3 | 682987.7 | 12.02 | 14.89 | 15.47 | 11/10/2021 |
| 132-P3-IRM-003I-B | INTERMEDIATE | ACTIVE | SITE 132 | Target Area 1A | E202105464 | INJECTION | STAINLESS STEEL | 2.0 | 44.0 | 54.0 | 6/1/2021 | 610818.4 | 682994.2 | 12.22 | 15.10 | 15.68 | 11/10/2021 |
| 132-P3-IRM-004I-A | INTERMEDIATE | ACTIVE | SITE 132 | Target Area 1A | E202105464 | INJECTION | STAINLESS STEEL | 2.0 | 19.0 | 39.0 | 6/17/2021 | 610870.1 | 683127.3 | 12.49 | 15.79 | 16.35 | 11/11/2021 |
| 132-P3-IRM-004I-B | INTERMEDIATE | ACTIVE | SITE 132 | Target Area 1A | E202105464 | INJECTION | STAINLESS STEEL | 2.0 | 39.0 | 54.0 | 6/16/2021 | 610879.6 | 683124.2 | 12.39 | 15.77 | 16.34 | 11/11/2021 |
| 132-P3-IRM-005I-A | INTERMEDIATE | ACTIVE | SITE 132 | Target Area 1A | E202105464 | INJECTION | STAINLESS STEEL | 2.0 | 20.0 | 40.0 | 6/22/2021 | 610871.3 | 683035.5 | 12.45 | 15.62 | 16.40 | 11/11/2021 |
| 132-P3-IRM-005I-B | INTERMEDIATE | ACTIVE | SITE 132 | Target Area 1A | E202105464 | INJECTION | STAINLESS STEEL | 2.0 | 40.0 | 60.0 | 6/22/2021 | 610880.1 | 683031.4 | 12.46 | 15.82 | 16.40 | 11/11/2021 |
| 132-P3-IRM-006I | INTERMEDIATE | ACTIVE | SITE 132 | Target Area 1A | E202105464 | INJECTION | STAINLESS STEEL | 2.0 | 25.0 | 45.0 | 6/2/2021 | 610867.6 | 682963.5 | 13.15 | 16.40 | 16.98 | 11/15/2021 |
| 132-P3-IRM-007I-A | INTERMEDIATE | ACTIVE | SITE 132 | Target Area 1A | E202105464 | INJECTION | STAINLESS STEEL | 2.0 | 18.0 | 38.0 | 6/18/2021 | 610927.0 | 683070.0 | 11.71 | 14.97 | 15.89 | 11/11/2021 |
| 132-P3-IRM-007I-B | INTERMEDIATE | ACTIVE | SITE 132 | Target Area 1A | E202105464 | INJECTION | STAINLESS STEEL | 2.0 | 38.0 | 53.0 | 6/18/2021 | 610936.7 | 683067.2 | 11.77 | 14.75 | 15.72 | 11/11/2021 |
| 132-P3-IRM-008I-A | INTERMEDIATE | ACTIVE | SITE 132 | Target Area 1A | E202105464 | INJECTION | STAINLESS STEEL | 2.0 | 24.0 | 44.0 | 6/2/2021 | 610860.0 | 682919.3 | 13.62 | 16.79 | 17.34 | 11/15/2021 |
| 132-P3-IRM-008I-B | INTERMEDIATE | ACTIVE | SITE 132 | Target Area 1A | E202105464 | INJECTION | STAINLESS STEEL | 2.0 | 43.0 | 63.0 | 6/1/2021 | 610869.4 | 682916.7 | 13.39 | 16.67 | 17.24 | 11/15/2021 |
| 132-P3-IRM-009I-A | INTERMEDIATE | ACTIVE | SITE 132 | Target Area 1A | E202105464 | INJECTION | STAINLESS STEEL | 2.0 | 19.0 | 39.0 | 6/18/2021 | 610924.6 | 683001.7 | 12.08 | 15.41 | 16.16 | 11/11/2021 |
| 132-P3-IRM-009I-B | INTERMEDIATE | ACTIVE | SITE 132 | Target Area 1A | E202105464 | INJECTION | STAINLESS STEEL | 2.0 | 39.0 | 59.0 | 6/17/2021 | 610934.3 | 682998.8 | 12.31 | 15.61 | 16.46 | 11/11/2021 |
| 132-P3-IRM-010I-A | INTERMEDIATE | ACTIVE | SITE 132 | Target Area 1A | E202105464 | INJECTION | STAINLESS STEEL | 2.0 | 23.0 | 43.0 | 6/22/2021 | 610917.1 | 682932.2 | 12.81 | 15.82 | 16.37 | 11/15/2021 |
| 132-P3-IRM-010I-B | INTERMEDIATE | ACTIVE | SITE 132 | Target Area 1A | E202105464 | INJECTION | STAINLESS STEEL | 2.0 | 43.0 | 63.0 | 6/21/2021 | 610926.7 | 682929.6 | 12.93 | 15.94 | 16.51 | 11/15/2021 |
| 132-P3-IRM-011I-A | INTERMEDIATE | ACTIVE | SITE 132 | Target Area 1A | E202105464 | INJECTION | STAINLESS STEEL | 2.0 | 19.0 | 39.0 | 6/21/2021 | 610972.3 | 683031.9 | 11.51 | 14.68 | 15.51 | 11/11/2021 |
| 132-P3-IRM-011I-B | INTERMEDIATE | ACTIVE | SITE 132 | Target Area 1A | E202105464 | INJECTION | STAINLESS STEEL | 2.0 | 39.0 | 54.0 | 6/21/2021 | 610981.9 | 683029.0 | 11.48 | 14.66 | 15.55 | 11/11/2021 |
| 132-P3-MW001I-A | INTERMEDIATE | ACTIVE | SITE 132 | Target Area 1A | E202107030 | MONITORING | SCHEDULE 40 PVC | 2.0 | 19.0 | 39.0 | 8/4/2021 | 610883.9 | 683076.0 | 12.42 | 15.49 | 15.41 | 11/11/2021 |
| 132-P3-MW001I-B | INTERMEDIATE | ACTIVE | SITE 132 | Target Area 1A | E202107031 | MONITORING | SCHEDULE 40 PVC | 2.0 | 41.0 | 61.0 | 8/4/2021 | 610885.8 | 683085.9 | 12.50 | 15.74 | 15.54 | 11/11/2021 |
| 132-P3-MW002I-A | INTERMEDIATE | ACTIVE | SITE 132 | Target Area 1A | E202105563 | MONITORING | SCHEDULE 40 PVC | 2.0 | 20.0 | 35.0 | 6/2/2021 | 610790.5 | 682958.1 | 12.01 | 15.68 | 15.45 | 11/10/2021 |
| 132-P3-MW002I-B-R | INTERMEDIATE | ACTIVE | SITE 132 | Target Area 1A | E202106365 | MONITORING | SCHEDULE 40 PVC | 2.0 | 35.0 | 50.0 | 6/30/2021 | 610799.2 | 682960.6 | 12.31 | 15.70 | 15.68 | 11/10/2021 |
| 132-P3-MW003I-A | INTERMEDIATE | ACTIVE | SITE 132 | Target Area 1A | E202105565 | MONITORING | SCHEDULE 40 PVC | 2.0 | 19.0 | 39.0 | 6/18/2021 | 610910.4 | 683027.0 | 12.30 | 15.52 | 15.56 | 11/11/2021 |
| 132-P3-MW003I-B | INTERMEDIATE | ACTIVE | SITE 132 | Target Area 1A | E202105566 | MONITORING | SCHEDULE 40 PVC | 2.0 | 40.0 | 60.0 | 6/17/2021 | 610919.0 | 683026.3 | 12.32 | 15.54 | 15.50 | 11/11/2021 |
| 137A-P3-IRM-001I-R | INTERMEDIATE | ACTIVE | SITE 137A | Target Area 1A | E202106634 | INJECTION | STAINLESS STEEL | 2.0 | 26.0 | 46.0 | 6/30/2021 | 610968.9 | 682960.1 | 11.79 | 15.26 | 15.83 | 11/11/2021 |
| 137A-P3-IRM-002I-A | INTERMEDIATE | ACTIVE | SITE 137A | Target Area 1A | E202105811 | INJECTION | STAINLESS STEEL | 2.0 | 21.0 | 41.0 | 6/16/2021 | 611025.1 | 682995.6 | 11.17 | 14.28 | 14.87 | 11/11/2021 |
| 137A-P3-IRM-002I-B | INTERMEDIATE | ACTIVE | SITE 137A | Target Area 1A | E202105812 | INJECTION | STAINLESS STEEL | 2.0 | 41.0 | 61.0 | 6/15/2021 | 611033.5 | 682996.0 | 10.99 | 13.80 | 14.35 | 11/11/2021 |
| 137A-P3-MW001I-A | INTERMEDIATE | ACTIVE | SITE 137A | Target Area 1A | E202105569 | MONITORING | SCHEDULE 40 PVC | 2.0 | 25.0 | 45.0 | 6/4/2021 | 610914.6 | 682866.2 | 13.36 | 16.65 | 16.57 | 11/15/2021 |

**Table 1**
**Monitoring and Remediation Well Network and Construction Details**
**Groundwater Remedial Action Progress Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | Well Construction | | | | | As-Built Survey | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Well ID | Water-Bearing Zone | Status | Location | Remediation Area | Permit Number | Well Use | Screen Material | Well Diameter (in) | Screen Interval Top (ft bgs)[1] | Screen Interval Bottom (ft bgs)[1] | Well Installation Date | Easting (ft NAD83) | Northing (ft NAD83) | Ground Surface Elevation (ft NAVD88) | Top of Outer Casing Elevation (ft NAVD88) | Top of Inner Casing Elevation (ft NAVD88) | Survey Date |
| 137A-P3-MW001I-B | INTERMEDIATE | ACTIVE | SITE 137A | Target Area 1A | E202105570 | MONITORING | SCHEDULE 40 PVC | 2.0 | 48.0 | 68.0 | 6/4/2021 | 610923.1 | 682865.4 | 13.07 | 16.41 | 16.39 | 11/15/2021 |
| 137A-P3-MW002I-A | INTERMEDIATE | ACTIVE | SITE 137A | Target Area 1A | E202105571 | MONITORING | SCHEDULE 40 PVC | 2.0 | 24.0 | 44.0 | 7/6/2021 | 611020.3 | 682939.9 | 11.06 | 14.34 | 14.11 | 11/11/2021 |
| 137A-P3-MW002I-B | INTERMEDIATE | ACTIVE | SITE 137A | Target Area 1A | E202105572 | MONITORING | SCHEDULE 40 PVC | 2.0 | 46.0 | 66.0 | 7/2/2021 | 611027.7 | 682935.2 | 10.99 | 14.37 | 14.24 | 11/11/2021 |
| 137A-P3-MW003I-A | INTERMEDIATE | ACTIVE | SITE 137A | Target Area 1A | E202300497 | MONITORING | SCHEDULE 40 PVC | 2.0 | 24.0 | 44.0 | 2/10/2023 | 611118.8 | 682867.8 | 11.50 | 14.57 | 14.41 | 2/27/2023 |
| 137A-P3-MW003I-B | INTERMEDIATE | ACTIVE | SITE 137A | Target Area 1A | E202300498 | MONITORING | SCHEDULE 40 PVC | 2.0 | 46.0 | 66.0 | 2/9/2023 | 611113.1 | 682862.8 | 11.50 | 14.59 | 14.25 | 2/27/2023 |
| 143-P3A-MW101I | INTERMEDIATE | ACTIVE | SITE 143 | Target Area 1A | E201508497 | MONITORING | SCHEDULE 40 PVC | 4.0 | 20.0 | 30.0 | 9/1/2015 | 610728.7 | 683206.9 | 10.90 | 12.77 | 12.93 | 10/14/2015 |
| 143-P3-IRM-001I | INTERMEDIATE | ACTIVE | SITE 143 | Target Area 1A | E202105475 | INJECTION | STAINLESS STEEL | 2.0 | 16.0 | 36.0 | 6/3/2021 | 610711.7 | 683190.5 | 12.14 | 14.90 | 15.47 | 11/10/2021 |
| 143-P3-IRM-002I | INTERMEDIATE | ACTIVE | SITE 143 | Target Area 1A | E202105476 | INJECTION | STAINLESS STEEL | 2.0 | 15.0 | 35.0 | 6/7/2021 | 610708.3 | 683128.3 | 11.92 | 15.15 | 15.72 | 11/10/2021 |
| 143-P3-IRM-003I-A | INTERMEDIATE | ACTIVE | SITE 143 | Target Area 1A | E202105477 | INJECTION | STAINLESS STEEL | 2.0 | 16.0 | 36.0 | 6/9/2021 | 610764.4 | 683163.7 | 12.32 | 15.49 | 16.37 | 11/10/2021 |
| 143-P3-IRM-003I-B | INTERMEDIATE | ACTIVE | SITE 143 | Target Area 1A | E202106452 | INJECTION | STAINLESS STEEL | 2.0 | 36.0 | 46.0 | 6/28/2021 | 610754.5 | 683161.1 | 12.32 | 15.15 | 16.10 | 11/10/2021 |
| 143-P3-IRM-004I-A | INTERMEDIATE | ACTIVE | SITE 143 | Target Area 1A | E202106453 | INJECTION | STAINLESS STEEL | 2.0 | 17.0 | 37.0 | 6/24/2021 | 610763.2 | 683087.3 | 11.87 | 15.17 | 15.99 | 11/10/2021 |
| 143-P3-IRM-004I-B | INTERMEDIATE | ACTIVE | SITE 143 | Target Area 1A | E202105478 | INJECTION | STAINLESS STEEL | 2.0 | 36.0 | 51.0 | 6/8/2021 | 610764.8 | 683098.2 | 12.12 | 15.28 | 16.27 | 11/10/2021 |
| 143-P3-IRM-005I-A | INTERMEDIATE | ACTIVE | SITE 143 | Target Area 1A | E202106454 | INJECTION | STAINLESS STEEL | 2.0 | 18.0 | 38.0 | 6/24/2021 | 610815.1 | 683128.8 | 12.24 | 15.23 | 15.71 | 11/10/2021 |
| 143-P3-IRM-005I-B | INTERMEDIATE | ACTIVE | SITE 143 | Target Area 1A | E202105479 | INJECTION | STAINLESS STEEL | 2.0 | 36.0 | 56.0 | 5/28/2021 | 610820.8 | 683137.2 | 12.27 | 15.11 | 15.86 | 11/10/2021 |
| 143-P3-MW001I | INTERMEDIATE | ACTIVE | SITE 143 | Target Area 1A | E202105484 | MONITORING | SCHEDULE 40 PVC | 2.0 | 19.0 | 34.0 | 6/7/2021 | 610679.3 | 683098.6 | 11.96 | 15.45 | 15.11 | 11/10/2021 |
| 143-P3-MW002I-A | INTERMEDIATE | ACTIVE | SITE 143 | Target Area 1A | E202107027 | MONITORING | SCHEDULE 40 PVC | 2.0 | 16.0 | 31.0 | 8/5/2021 | 610768.6 | 683123.4 | 12.03 | 15.15 | 14.75 | 11/10/2021 |
| 143-P3-MW002I-B | INTERMEDIATE | ACTIVE | SITE 143 | Target Area 1A | E202107028 | MONITORING | SCHEDULE 40 PVC | 2.0 | 31.0 | 46.0 | 8/5/2021 | 610759.8 | 683119.8 | 12.20 | 15.18 | 14.74 | 11/10/2021 |
| CAR-P3-IRM-001I | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 12.0 | 22.0 | 7/7/2021 | 610716.3 | 683291.4 | 11.09 | 13.75 | 14.30 | 11/10/2021 |
| CAR-P3-IRM-002I-B | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 13.0 | 33.0 | 7/7/2021 | 610736.4 | 683230.8 | 11.35 | 14.19 | 14.77 | 11/10/2021 |
| CAR-P3-IRM-003I-A | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 17.0 | 22.0 | 5/17/2021 | 610781.2 | 683260.1 | 11.56 | 14.34 | 14.87 | 11/10/2021 |
| CAR-P3-IRM-003I-B | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 20.0 | 40.0 | 5/14/2021 | 610790.5 | 683257.5 | 11.43 | 14.44 | 15.00 | 11/10/2021 |
| CAR-P3-IRM-004I-A | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 19.0 | 29.0 | 5/14/2021 | 610823.6 | 683238.7 | 11.70 | 14.69 | 15.25 | 11/10/2021 |
| CAR-P3-IRM-004I-B | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 29.0 | 49.0 | 5/13/2021 | 610833.3 | 683236.0 | 11.72 | 14.65 | 15.20 | 11/10/2021 |
| CAR-P3-IRM-005I-A | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 23.0 | 43.0 | 5/26/2021 | 610840.2 | 683177.5 | 12.02 | 15.30 | 15.88 | 11/10/2021 |
| CAR-P3-IRM-005I-B | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 40.0 | 55.0 | 5/26/2021 | 610849.9 | 683174.8 | 12.21 | 15.37 | 15.94 | 11/10/2021 |
| CAR-P3-IRM-006I | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 24.0 | 44.0 | 5/18/2021 | 610883.7 | 683207.3 | 12.28 | 15.07 | 15.65 | 11/10/2021 |
| CAR-P3-IRM-007I-A | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 19.0 | 39.0 | 7/26/2021 | 610901.7 | 683145.0 | 11.89 | 15.11 | 15.66 | 11/10/2021 |
| CAR-P3-IRM-007I-B | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 42.0 | 62.0 | 7/26/2021 | 610911.2 | 683142.1 | 11.90 | 14.66 | 15.21 | 11/10/2021 |
| CAR-P3-IRM-008I-B | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 21.0 | 41.0 | 5/19/2021 | 610947.6 | 683175.1 | 12.46 | 15.33 | 15.86 | 11/10/2021 |
| CAR-P3-IRM-009I | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 21.0 | 41.0 | 8/3/2021 | 610946.7 | 683123.4 | 11.88 | 14.90 | 15.45 | 11/11/2021 |
| CAR-P3-IRM-010I-B | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 24.0 | 44.0 | 5/19/2021 | 610997.6 | 683150.1 | 12.42 | 15.25 | 15.81 | 11/11/2021 |
| CAR-P3-IRM-011I-A | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 20.0 | 40.0 | 7/27/2021 | 610991.5 | 683098.2 | 11.93 | 14.97 | 15.54 | 11/11/2021 |
| CAR-P3-IRM-011I-B | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 42.0 | 52.0 | 7/27/2021 | 610996.3 | 683090.1 | 11.71 | 14.78 | 15.34 | 11/11/2021 |
| CAR-P3-IRM-012I-A | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 27.0 | 47.0 | 5/20/2021 | 611034.1 | 683115.9 | 11.54 | 14.54 | 15.09 | 11/11/2021 |
| CAR-P3-IRM-012I-B | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 46.0 | 56.0 | 5/20/2021 | 611043.2 | 683112.6 | 11.43 | 14.41 | 14.96 | 11/11/2021 |
| CAR-P3-IRM-013I-A | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 20.0 | 40.0 | 7/29/2021 | 611023.6 | 683067.2 | 11.56 | 14.65 | 15.20 | 11/11/2021 |
| CAR-P3-IRM-013I-B | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 40.0 | 55.0 | 7/29/2021 | 611032.7 | 683064.8 | 11.37 | 14.36 | 14.90 | 11/11/2021 |
| CAR-P3-IRM-014I | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 27.0 | 47.0 | 5/25/2021 | 611081.0 | 683053.0 | 11.83 | 14.58 | 15.14 | 11/11/2021 |
| CAR-P3-IRM-015I-A | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 21.0 | 41.0 | 7/30/2021 | 611069.2 | 683016.8 | 11.39 | 14.24 | 14.79 | 11/11/2021 |
| CAR-P3-IRM-015I-B | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 43.0 | 63.0 | 7/30/2021 | 611078.6 | 683014.3 | 11.42 | 14.79 | 15.37 | 11/11/2021 |
| CAR-P3-IRM-016I-A | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 20.0 | 40.0 | 5/26/2021 | 611129.5 | 683009.7 | 11.50 | 14.62 | 15.18 | 11/11/2021 |
| CAR-P3-IRM-016I-B | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 40.0 | 60.0 | 5/26/2021 | 611140.0 | 683005.6 | 11.40 | 14.25 | 14.80 | 11/11/2021 |
| CAR-P3-IRM-017I-A | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 21.0 | 41.0 | 6/24/2021 | 611228.6 | 682907.8 | 10.89 | 13.90 | 14.48 | 11/11/2021 |
| CAR-P3-IRM-017I-B | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 41.0 | 61.0 | 6/24/2021 | 611243.9 | 682894.5 | 11.03 | 13.72 | 14.27 | 11/11/2021 |
| CAR-P3-IRM-017I-C | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 61.0 | 71.0 | 6/23/2021 | 611236.2 | 682901.2 | 10.86 | 13.72 | 14.27 | 11/11/2021 |
| CAR-P3-IRM-018I-A | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 23.0 | 43.0 | 5/25/2021 | 611270.1 | 682861.3 | 10.63 | 13.53 | 14.10 | 11/11/2021 |
| CAR-P3-IRM-018I-B | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 43.0 | 63.0 | 5/24/2021 | 611262.7 | 682864.6 | 10.73 | 14.02 | 14.58 | 11/11/2021 |
| CAR-P3-IRM-018I-C | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 63.0 | 83.0 | 6/24/2021 | 611273.5 | 682853.9 | 10.64 | 13.56 | 14.11 | 11/11/2021 |
| CAR-P3-IRM-019I | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 28.0 | 48.0 | 5/28/2021 | 610792.8 | 683202.3 | 11.64 | 14.74 | 15.31 | 11/10/2021 |
| CAR-P3-IRM-020I-A | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 22.0 | 42.0 | 9/9/2021 | 611188.3 | 682937.6 | 11.10 | 14.39 | 14.96 | 11/11/2021 |
| CAR-P3-IRM-020I-B | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 42.0 | 62.0 | 9/8/2021 | 611198.8 | 682926.2 | 11.02 | 14.22 | 14.78 | 11/11/2021 |
| CAR-P3-IRM-021I-A | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 22.0 | 42.0 | 9/9/2021 | 611148.2 | 682944.5 | 11.53 | 14.42 | 15.00 | 11/11/2021 |
| CAR-P3-IRM-021I-B | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 42.0 | 62.0 | 9/9/2021 | 611156.7 | 682933.8 | 11.46 | 14.81 | 15.37 | 11/11/2021 |
| CAR-P3-MW001I-A | INTERMEDIATE | ACTIVE | CARTERET AVE | Target Area 1A | E202105262 | MONITORING | SCHEDULE 40 PVC | 2.0 | 22.0 | 37.0 | 5/28/2021 | 610816.7 | 683190.3 | 11.86 | 15.18 | 14.96 | 11/10/2021 |
| CAR-P3-MW001I-B | INTERMEDIATE | ACTIVE | CARTERET AVE | Target Area 1A | E202105280 | MONITORING | SCHEDULE 40 PVC | 2.0 | 37.0 | 52.0 | 5/27/2021 | 610833.8 | 683184.3 | 11.89 | 15.16 | 14.91 | 11/10/2021 |
| CAR-P3-MW003I-A | INTERMEDIATE | ACTIVE | CARTERET AVE | Target Area 1A | E202105271 | MONITORING | SCHEDULE 40 PVC | 2.0 | 26.0 | 36.0 | 5/24/2021 | 611062.3 | 683092.1 | 11.68 | 15.03 | 14.80 | 11/11/2021 |
| CAR-P3-MW003I-B | INTERMEDIATE | ACTIVE | CARTERET AVE | Target Area 1A | E202105274 | MONITORING | SCHEDULE 40 PVC | 2.0 | 33.0 | 53.0 | 5/24/2021 | 611069.1 | 683083.6 | 11.79 | 14.96 | 14.83 | 11/11/2021 |
| CAR-P3-MW004I-A | INTERMEDIATE | ACTIVE | CARTERET AVE | Target Area 1A | E202105275 | MONITORING | SCHEDULE 40 PVC | 2.0 | 22.0 | 42.0 | 5/27/2021 | 611165.2 | 682977.3 | 11.55 | 14.78 | 14.81 | 11/11/2021 |
| CAR-P3-MW004I-B | INTERMEDIATE | ACTIVE | CARTERET AVE | Target Area 1A | E202105276 | MONITORING | SCHEDULE 40 PVC | 2.0 | 43.0 | 63.0 | 5/27/2021 | 611156.8 | 682979.9 | 11.56 | 14.61 | 14.59 | 11/11/2021 |
| 132-P3A-MW104D-1 | DEEP | ACTIVE | SITE 132 | Target Area 1A | E201712010 | MONITORING | SCHEDULE 40 PVC | 2.0 | 50.0 | 55.0 | 11/15/2017 | 610794.3 | 682807.3 | 15.20 | 15.23 | 14.89 | 1/5/2018 |
| 132-P3A-MW104D-2 | DEEP | ACTIVE | SITE 132 | Target Area 1A | E201712011 | MONITORING | SCHEDULE 40 PVC | 2.0 | 67.0 | 72.0 | 11/15/2017 | 610794.3 | 682807.3 | 15.20 | 15.23 | 14.89 | 1/5/2018 |
| 137-MW1C | DEEP | ACTIVE | SITE 137A | Target Area 1A | 26-00082-189 | MONITORING | SCHEDULE 40 PVC | 2.0 | 68.0 | 73.0 | 3/15/2007 | 611036.8 | 683020.2 | 12.3 | 15.72 | 15.45 | 1/20/2022 |
| CAR-P3-IRM-006D | DEEP | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 46.0 | 56.0 | 5/11/2021 | 610887.9 | 683193.5 | 12.56 | 15.24 | 15.81 | 11/10/2021 |
| CAR-P3-IRM-007D | DEEP | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 40.0 | 55.0 | 7/28/2021 | 610874.9 | 683145.1 | 12.15 | 15.14 | 15.69 | 11/10/2021 |
| CAR-P3-IRM-008D | DEEP | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 36.0 | 56.0 | 5/18/2021 | 610947.7 | 683163.9 | 12.20 | 15.20 | 15.76 | 11/10/2021 |
| CAR-P3-IRM-010D | DEEP | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 40.0 | 60.0 | 5/12/2021 | 610990.8 | 683143.8 | 12.27 | 15.24 | 15.79 | 11/11/2021 |
| CAR-P3-IRM-011D | DEEP | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 30.0 | 50.0 | 7/28/2021 | 610963.0 | 683097.1 | 12.11 | 14.99 | 15.55 | 11/11/2021 |
| CAR-P3-IRM-012D | DEEP | DECOMMISSIONED | CARTERET AVE | Target Area 1A | E202104690 | INJECTION | STAINLESS STEEL | 2.0 | 53.0 | 73.0 | 5/20/2021 | 611034.6 | 683101.8 | 11.67 | 14.65 | 15.21 | 11/11/2021 |
| CAR-P3-MW001D | DEEP | ACTIVE | CARTERET AVE | Target Area 1A | E202105383 | MONITORING | SCHEDULE 40 PVC | 2.0 | 51.0 | 56.0 | 5/27/2021 | 610825.8 | 683188.2 | 12.03 | 15.46 | 15.21 | 11/10/2021 |
| CAR-P3-MW002D | DEEP | ACTIVE | CARTERET AVE | Target Area 1A | E202105384 | MONITORING | SCHEDULE 40 PVC | 2.0 | 48.0 | 58.0 | 9/10/2021 | 610858.7 | 683142.9 | 12.62 | 15.66 | 15.69 | 11/10/2021 |
| CAR-P3-MW003D | DEEP | ACTIVE | CARTERET AVE | Target Area 1A | E202104688 | MONITORING | SCHEDULE 40 PVC | 2.0 | 54.0 | 69.0 | 5/13/2021 | 611057.6 | 683087.3 | 11.74 | 15.02 | 14.98 | 11/11/2021 |
| 114-MW67C | DEEP (LOWER) | ACTIVE | SITE 114 | Target Area 1B | E202100480 | MONITORING | SCHEDULE 40 PVC | 4.0 | 50.0 | 56.0 | 1/20/2021 | 611021.9 | 683615.9 | 13.30 | 15.31 | 14.67 | 2/9/2021 |

**Table 1**
**Monitoring and Remediation Well Network and Construction Details**
**Groundwater Remedial Action Progress Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

AECOM

| | | | | | | | Well Construction | | | | | As-Built Survey | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Well ID | Water-Bearing Zone | Status | Location | Remediation Area | Permit Number | Well Use | Screen Material | Well Diameter (in) | Screen Interval Top (ft bgs)[1] | Screen Interval Bottom (ft bgs)[1] | Well Installation Date | Easting (ft NAD83) | Northing (ft NAD83) | Ground Surface Elevation (ft NAVD88) | Top of Outer Casing Elevation (ft NAVD88) | Top of Inner Casing Elevation (ft NAVD88) | Survey Date |
| 114-MW68C | DEEP (LOWER) | ACTIVE | SITE 114 | Target Area 1B | E202100482 | MONITORING | SCHEDULE 40 PVC | 4.0 | 50.0 | 56.0 | 1/19/2021 | 610851.6 | 683321.4 | 14.10 | 16.28 | 15.75 | 2/9/2021 |
| 114-P3-MW001D | DEEP (LOWER) | ACTIVE | SITE 114 | Target Area 1B | E202105788 | MONITORING | SCHEDULE 40 PVC | 2.0 | 39.0 | 47.0 | 11/22/2021 | 611154.4 | 683574.4 | 13.40 | 16.58 | 15.93 | 1/20/2022 |
| 114-P3-MW002D | DEEP (LOWER) | ACTIVE | SITE 114 | Target Area 1B | E202105789 | MONITORING | SCHEDULE 40 PVC | 2.0 | 40.0 | 47.0 | 11/23/2021 | 611112.8 | 683494.4 | 13.90 | 16.91 | 16.07 | 1/20/2022 |
| 114-P3-MW003D | DEEP (LOWER) | ACTIVE | SITE 114 | Target Area 1B | E202105790 | MONITORING | SCHEDULE 40 PVC | 2.0 | 50.0 | 55.0 | 12/1/2021 | 610994.1 | 683506.6 | 14.60 | 17.91 | 17.60 | 1/20/2022 |
| 114-P3-MW004D | DEEP (LOWER) | ACTIVE | SITE 114 | Target Area 1B | E202105791 | MONITORING | SCHEDULE 40 PVC | 2.0 | 50.0 | 52.0 | 11/23/2021 | 610993.3 | 683484.7 | 13.90 | 17.26 | 16.73 | 1/20/2022 |
| 114-P3-MW005D | DEEP (LOWER) | ACTIVE | SITE 114 | Target Area 1B | E202105792 | MONITORING | SCHEDULE 40 PVC | 2.0 | 45.0 | 50.0 | 11/23/2021 | 611070.4 | 683304.5 | 14.10 | 17.49 | 16.94 | 1/20/2022 |
| 114-P3-MW006D | DEEP (LOWER) | ACTIVE | SITE 114 | Target Area 1B | E202105793 | MONITORING | SCHEDULE 40 PVC | 2.0 | 45.0 | 50.0 | 11/30/2021 | 611065.3 | 683275.5 | 13.70 | 16.86 | 16.16 | 1/20/2022 |
| CW10 | DEEP (LOWER) | DECOMMISSIONED | SITE 114 | Target Area 1B | E202110620 | PIEZOMETER | SCHEDULE 40 PVC | 1.0 | 60.0 | 65.0 | 10/15/2021 | 610955.8 | 683525.4 | 14.35 | NA | NA | NA |
| CW1A | DEEP (LOWER) | DECOMMISSIONED | SITE 114 | Target Area 1B | E202109623 | PIEZOMETER | SCHEDULE 40 PVC | 1.0 | 57.0 | 62.0 | 9/23/2021 | 610992.0 | 683622.2 | 13.25 | NA | NA | NA |
| CW1B | DEEP (LOWER) | DECOMMISSIONED | SITE 114 | Target Area 1B | E202109624 | PIEZOMETER | SCHEDULE 40 PVC | 1.0 | 65.0 | 70.0 | 9/23/2021 | 610992.0 | 683622.2 | 13.25 | NA | NA | NA |
| CW2A | DEEP (LOWER) | DECOMMISSIONED | SITE 114 | Target Area 1B | E202109625 | PIEZOMETER | SCHEDULE 40 PVC | 1.0 | 38.0 | 43.0 | 9/22/2021 | 611090.7 | 683576.9 | 13.56 | NA | NA | NA |
| CW2B | DEEP (LOWER) | DECOMMISSIONED | SITE 114 | Target Area 1B | E202109626 | PIEZOMETER | SCHEDULE 40 PVC | 1.0 | 46.0 | 51.0 | 9/22/2021 | 611090.7 | 683576.9 | 13.56 | NA | NA | NA |
| CW3 | DEEP (LOWER) | DECOMMISSIONED | SITE 114 | Target Area 1B | E202109628 | PIEZOMETER | SCHEDULE 40 PVC | 1.0 | 34.5 | 39.5 | 9/21/2021 | 611168.6 | 683535.0 | 13.64 | NA | NA | NA |
| CW4 | DEEP (LOWER) | DECOMMISSIONED | SITE 114 | Target Area 1B | E202109630 | PIEZOMETER | SCHEDULE 40 PVC | 1.0 | 46.0 | 51.0 | 9/30/2021 | 610911.8 | 683521.4 | 14.02 | NA | NA | NA |
| CW5 | DEEP (LOWER) | DECOMMISSIONED | SITE 114 | Target Area 1B | E202109632 | PIEZOMETER | SCHEDULE 40 PVC | 1.0 | 53.5 | 58.5 | 10/4/2021 | 610999.3 | 683514.6 | 14.91 | NA | NA | NA |
| CW6 | DEEP (LOWER) | DECOMMISSIONED | SITE 114 | Target Area 1B | E202109634 | PIEZOMETER | SCHEDULE 40 PVC | 1.0 | 40.0 | 45.0 | 10/1/2021 | 611053.0 | 683448.2 | 13.90 | NA | NA | NA |
| CW7 | DEEP (LOWER) | DECOMMISSIONED | SITE 114 | Target Area 1B | E202109635 | PIEZOMETER | SCHEDULE 40 PVC | 1.0 | 60.0 | 65.0 | 10/13/2021 | 610887.7 | 683313.2 | 13.86 | NA | NA | NA |
| CW8 | DEEP (LOWER) | DECOMMISSIONED | SITE 114 | Target Area 1B | E202109637 | PIEZOMETER | SCHEDULE 40 PVC | 1.0 | 48.0 | 53.0 | 10/14/2021 | 610964.7 | 683307.6 | 13.86 | NA | NA | NA |
| CW9 | DEEP (LOWER) | DECOMMISSIONED | SITE 114 | Target Area 1B | E202109639 | PIEZOMETER | SCHEDULE 40 PVC | 1.0 | 46.0 | 51.0 | 10/7/2021 | 611029.7 | 683292.1 | 13.97 | NA | NA | NA |
| HSTD-P3-MW001S | SHALLOW | ACTIVE | HALSTED | Target Area 2 | E202105668 | MONITORING | SCHEDULE 40 PVC | 2.0 | 9.0 | 14.0 | 7/20/2021 | 611448.4 | 682796.4 | 11.31 | 14.84 | 14.87 | 11/16/2021 |
| HSTD-P3-MW003S | SHALLOW | ACTIVE | HALSTED | Target Area 2 | E202105669 | MONITORING | SCHEDULE 40 PVC | 2.0 | 9.0 | 14.0 | 7/16/2021 | 611563.8 | 682905.6 | 11.51 | 14.79 | 14.55 | 11/15/2021 |
| 114-MW39B | INTERMEDIATE | ACTIVE | EDEN WOOD | Target Area 2 | E201712605 | MONITORING | SCHEDULE 40 PVC | 2.0 | 40.0 | 45.0 | 1/25/2018 | 611599.8 | 682533.1 | 11.10 | 11.07 | 10.64 | 6/7/2018 |
| 114-MW40B | INTERMEDIATE | ACTIVE | EDEN WOOD | Target Area 2 | E201803066 | MONITORING | SCHEDULE 40 PVC | 2.0 | 38.0 | 43.0 | 4/11/2018 | 611703.3 | 682730.4 | 10.80 | 10.77 | 10.29 | 6/7/2018 |
| 135-MW2B | INTERMEDIATE | ACTIVE | SITE 135 | Target Area 2 | 26-00082-879 | MONITORING | SCHEDULE 40 PVC | 2.0 | 28.0 | 33.0 | 4/18/2007 | 611415.9 | 682568.1 | 9.10 | 9.05 | 8.65 | 12/6/2011 |
| EW-P3-MW001I-A | INTERMEDIATE | ACTIVE | EDEN WOOD | Target Area 2 | E202105662 | MONITORING | SCHEDULE 40 PVC | 2.0 | 19.0 | 39.0 | 3/29/2022 | 611559.2 | 682575.8 | 10.60 | 10.65 | 10.36 | 4/25/2022 |
| EW-P3-MW001I-B | INTERMEDIATE | ACTIVE | EDEN WOOD | Target Area 2 | E202105663 | MONITORING | SCHEDULE 40 PVC | 2.0 | 40.0 | 60.0 | 3/28/2022 | 611554.6 | 682580.2 | 10.40 | 10.45 | 9.98 | 4/25/2022 |
| EW-P3-MW002I | INTERMEDIATE | ACTIVE | EDEN WOOD | Target Area 2 | E202105664 | MONITORING | SCHEDULE 40 PVC | 2.0 | 19.0 | 39.0 | 3/30/2022 | 611607.8 | 682526.5 | 11.10 | 11.12 | 10.85 | 4/25/2022 |
| HAL-P3-IRM-001I-A | INTERMEDIATE | ACTIVE | HALLADAY ST | Target Area 2 | E202104691 | INJECTION | STAINLESS STEEL | 2.0 | 21.0 | 41.0 | 6/15/2021 | 611303.1 | 682831.9 | 10.38 | 13.64 | 14.18 | 11/15/2021 |
| HAL-P3-IRM-001I-B | INTERMEDIATE | ACTIVE | HALLADAY ST | Target Area 2 | E202104691 | INJECTION | STAINLESS STEEL | 2.0 | 42.0 | 57.0 | 6/14/2021 | 611312.0 | 682829.3 | 10.40 | 13.59 | 14.15 | 11/15/2021 |
| HAL-P3-IRM-002I-A | INTERMEDIATE | ACTIVE | HALLADAY ST | Target Area 2 | E202104691 | INJECTION | STAINLESS STEEL | 2.0 | 23.0 | 43.0 | 7/1/2021 | 611349.6 | 682874.2 | 10.54 | 13.69 | 14.26 | 11/15/2021 |
| HAL-P3-IRM-002I-B | INTERMEDIATE | ACTIVE | HALLADAY ST | Target Area 2 | E202104691 | INJECTION | STAINLESS STEEL | 2.0 | 43.0 | 63.0 | 7/1/2021 | 611358.9 | 682871.8 | 10.61 | 13.48 | 14.03 | 11/15/2021 |
| HAL-P3-IRM-003I-A | INTERMEDIATE | DECOMMISSIONED | HALLADAY ST | Target Area 2 | E202104691 | INJECTION | STAINLESS STEEL | 2.0 | 16.0 | 36.0 | 7/6/2021 | 611396.8 | 682918.6 | 11.00 | 13.90 | 14.46 | 11/15/2021 |
| HAL-P3-IRM-003I-A-R | INTERMEDIATE | ACTIVE | HALLADAY ST | Target Area 2 | E202401108 | INJECTION | STAINLESS STEEL | 2.0 | 16.0 | 36.0 | 2/29/2024 | 611397.2 | 682918.8 | 10.8 | 13.54 | 14.26 | 6/14/2024 |
| HAL-P3-IRM-003I-B | INTERMEDIATE | ACTIVE | HALLADAY ST | Target Area 2 | E202104691 | INJECTION | STAINLESS STEEL | 2.0 | 60.0 | 80.0 | 5/19/2021 | 611406.0 | 682918.1 | 10.95 | 13.72 | 14.27 | 11/15/2021 |
| HAL-P3-IRM-004I-A | INTERMEDIATE | ACTIVE | HALLADAY ST | Target Area 2 | E202104691 | INJECTION | STAINLESS STEEL | 2.0 | 21.0 | 41.0 | 7/2/2021 | 611445.9 | 682965.7 | 11.11 | 14.08 | 14.65 | 11/15/2021 |
| HAL-P3-IRM-004I-B | INTERMEDIATE | ACTIVE | HALLADAY ST | Target Area 2 | E202104691 | INJECTION | STAINLESS STEEL | 2.0 | 60.0 | 80.0 | 5/20/2021 | 611455.6 | 682962.7 | 11.18 | 14.15 | 14.69 | 11/15/2021 |
| HAL-P3-IRM-005I-A | INTERMEDIATE | DECOMMISSIONED | HALLADAY ST | Target Area 2 | E202104691 | INJECTION | STAINLESS STEEL | 2.0 | 21.0 | 41.0 | 5/19/2021 | 611486.9 | 683002.3 | 11.44 | 14.49 | 15.04 | 11/15/2021 |
| HAL-P3-IRM-005I-A-R | INTERMEDIATE | ACTIVE | HALLADAY ST | Target Area 2 | E202401109 | INJECTION | STAINLESS STEEL | 2.0 | 21.0 | 41.0 | 2/29/2024 | 611487.2 | 683002.8 | 11.4 | 14.49 | 15.57 | 6/14/2024 |
| HAL-P3-IRM-005I-B | INTERMEDIATE | ACTIVE | HALLADAY ST | Target Area 2 | E202104691 | INJECTION | STAINLESS STEEL | 2.0 | 44.0 | 64.0 | 5/18/2021 | 611496.4 | 682999.8 | 11.66 | 14.54 | 15.10 | 11/15/2021 |
| HAL-P3-IRM-006I-A | INTERMEDIATE | ACTIVE | HALLADAY ST | Target Area 2 | E202104691 | INJECTION | STAINLESS STEEL | 2.0 | 23.0 | 43.0 | 7/13/2021 | 611536.1 | 683047.0 | 11.79 | 14.66 | 15.22 | 11/15/2021 |
| HAL-P3-IRM-006I-B | INTERMEDIATE | ACTIVE | HALLADAY ST | Target Area 2 | E202104691 | INJECTION | STAINLESS STEEL | 2.0 | 43.0 | 63.0 | 7/12/2021 | 611543.4 | 683053.8 | 11.87 | 14.80 | 15.36 | 11/15/2021 |
| HAL-P3-IRM-007I-A | INTERMEDIATE | ACTIVE | HALLADAY ST | Target Area 2 | E202104691 | INJECTION | STAINLESS STEEL | 2.0 | 19.0 | 39.0 | 7/9/2021 | 611571.2 | 683085.6 | 12.12 | 15.26 | 15.60 | 11/15/2021 |
| HAL-P3-IRM-007I-B | INTERMEDIATE | ACTIVE | HALLADAY ST | Target Area 2 | E202104691 | INJECTION | STAINLESS STEEL | 2.0 | 39.0 | 49.0 | 7/9/2021 | 611579.4 | 683083.2 | 12.27 | 15.10 | 15.68 | 11/15/2021 |
| HAL-P3-IRM-008I-A | INTERMEDIATE | ACTIVE | HALLADAY ST | Target Area 2 | E202104691 | INJECTION | STAINLESS STEEL | 2.0 | 26.0 | 46.0 | 6/29/2021 | 611366.5 | 682814.1 | 10.48 | 13.35 | 13.92 | 11/15/2021 |
| HAL-P3-IRM-008I-B | INTERMEDIATE | ACTIVE | HALLADAY ST | Target Area 2 | E202104691 | INJECTION | STAINLESS STEEL | 2.0 | 46.0 | 66.0 | 6/29/2021 | 611373.5 | 682820.7 | 10.48 | 13.73 | 14.29 | 11/15/2021 |
| HAL-P3-IRM-009I-A | INTERMEDIATE | ACTIVE | HALLADAY ST | Target Area 2 | E202104691 | INJECTION | STAINLESS STEEL | 2.0 | 18.0 | 38.0 | 6/10/2021 | 611409.7 | 682856.6 | 10.18 | 13.53 | 14.09 | 11/15/2021 |
| HAL-P3-IRM-009I-B | INTERMEDIATE | ACTIVE | HALLADAY ST | Target Area 2 | E202104691 | INJECTION | STAINLESS STEEL | 2.0 | 38.0 | 58.0 | 6/9/2021 | 611417.1 | 682863.3 | 10.29 | 13.83 | 14.38 | 11/15/2021 |
| HAL-P3-IRM-010I-A | INTERMEDIATE | ACTIVE | HALLADAY ST | Target Area 2 | E202104691 | INJECTION | STAINLESS STEEL | 2.0 | 31.0 | 51.0 | 7/2/2021 | 611452.5 | 682899.8 | 10.9 | 13.79 | 14.47 | 1/20/2022 |
| HAL-P3-IRM-010I-B-R | INTERMEDIATE | ACTIVE | HALLADAY ST | Target Area 2 | E202104691 | INJECTION | STAINLESS STEEL | 2.0 | 60.0 | 80.0 | 5/25/2021 | 611460.8 | 682906.7 | 10.71 | 13.84 | 14.40 | 11/15/2021 |
| HAL-P3-IRM-011I-A | INTERMEDIATE | ACTIVE | HALLADAY ST | Target Area 2 | E202104691 | INJECTION | STAINLESS STEEL | 2.0 | 18.0 | 38.0 | 6/14/2021 | 611517.9 | 682945.4 | 11.02 | 13.71 | 14.27 | 11/15/2021 |
| HAL-P3-IRM-011I-B | INTERMEDIATE | ACTIVE | HALLADAY ST | Target Area 2 | E202104691 | INJECTION | STAINLESS STEEL | 2.0 | 38.0 | 53.0 | 6/11/2021 | 611521.1 | 682957.9 | 10.98 | 13.82 | 14.40 | 11/15/2021 |
| HAL-P3-IRM-012I-A | INTERMEDIATE | ACTIVE | HALLADAY ST | Target Area 2 | E202104691 | INJECTION | STAINLESS STEEL | 2.0 | 20.0 | 40.0 | 7/13/2021 | 611552.0 | 682989.6 | 11.98 | 15.46 | 16.01 | 11/15/2021 |
| HAL-P3-IRM-012I-B | INTERMEDIATE | ACTIVE | HALLADAY ST | Target Area 2 | E202104691 | INJECTION | STAINLESS STEEL | 2.0 | 42.0 | 62.0 | 7/13/2021 | 611559.4 | 682996.6 | 12.09 | 15.67 | 15.97 | 11/15/2021 |
| HAL-P3-IRM-013I-A | INTERMEDIATE | ACTIVE | HALLADAY ST | Target Area 2 | E202104691 | INJECTION | STAINLESS STEEL | 2.0 | 20.0 | 40.0 | 6/10/2021 | 611598.2 | 683034.6 | 12.45 | 15.58 | 16.15 | 11/15/2021 |
| HAL-P3-IRM-013I-B | INTERMEDIATE | ACTIVE | HALLADAY ST | Target Area 2 | E202104691 | INJECTION | STAINLESS STEEL | 2.0 | 40.0 | 50.0 | 6/10/2021 | 611605.4 | 683041.3 | 12.63 | 15.38 | 15.94 | 11/15/2021 |
| HAL-P3-MW001I | INTERMEDIATE | ACTIVE | HALLADAY ST | Target Area 2 | E202105379 | MONITORING | SCHEDULE 40 PVC | 2.0 | 18.0 | 38.0 | 7/14/2021 | 611309.1 | 682759.9 | 10.09 | 13.67 | 13.19 | 11/15/2021 |
| HAL-P3-MW001I-B | INTERMEDIATE | ACTIVE | HALLADAY ST | Target Area 2 | E202107725 | MONITORING | SCHEDULE 40 PVC | 2.0 | 38.0 | 58.0 | 8/6/2021 | 611316.0 | 682755.4 | 10.04 | 13.23 | 12.98 | 11/15/2021 |
| HSTD-P3-IRM-001I-A | INTERMEDIATE | ACTIVE | HALSTED | Target Area 2 | E202105814 | INJECTION | STAINLESS STEEL | 2.0 | 18.0 | 38.0 | 6/14/2021 | 611372.2 | 682781.7 | 10.65 | 14.11 | 14.94 | 11/16/2021 |
| HSTD-P3-IRM-001I-B | INTERMEDIATE | ACTIVE | HALSTED | Target Area 2 | E202105814 | INJECTION | STAINLESS STEEL | 2.0 | 38.0 | 58.0 | 6/11/2021 | 611381.3 | 682778.9 | 10.39 | 13.45 | 14.26 | 11/16/2021 |
| HSTD-P3-IRM-002I-A | INTERMEDIATE | ACTIVE | HALSTED | Target Area 2 | E202105814 | INJECTION | STAINLESS STEEL | 2.0 | 22.0 | 42.0 | 6/30/2021 | 611418.4 | 682827.8 | 10.48 | 13.26 | 13.53 | 11/16/2021 |
| HSTD-P3-IRM-002I-B | INTERMEDIATE | ACTIVE | HALSTED | Target Area 2 | E202105814 | INJECTION | STAINLESS STEEL | 2.0 | 42.0 | 62.0 | 6/30/2021 | 611427.9 | 682825.5 | 10.39 | 13.19 | 14.16 | 11/16/2021 |
| HSTD-P3-IRM-003I-A | INTERMEDIATE | DECOMMISSIONED | HALSTED | Target Area 2 | E202105814 | INJECTION | STAINLESS STEEL | 2.0 | 18.0 | 38.0 | 6/11/2021 | 611466.8 | 682870.1 | 10.12 | 13.18 | 14.10 | 11/16/2021 |
| HSTD-P3-IRM-003I-A-R | INTERMEDIATE | ACTIVE | HALSTED | Target Area 2 | E202401088 | INJECTION | STAINLESS STEEL | 2.0 | 18.0 | 38.0 | 2/28/2024 | 611466.9 | 682870.0 | 10.2 | 13.18 | 13.94 | 6/14/2024 |
| HSTD-P3-IRM-003I-B | INTERMEDIATE | DECOMMISSIONED | HALSTED | Target Area 2 | E202105814 | INJECTION | STAINLESS STEEL | 2.0 | 38.0 | 53.0 | 6/10/2021 | 611476.3 | 682867.8 | 10.26 | 13.44 | 14.34 | 11/16/2021 |
| HSTD-P3-IRM-003I-B-R | INTERMEDIATE | ACTIVE | HALSTED | Target Area 2 | E202401094 | INJECTION | STAINLESS STEEL | 2.0 | 38.0 | 53.0 | 2/28/2024 | 611476.3 | 682867.7 | 10.2 | 13.34 | 14.67 | 6/14/2024 |
| HSTD-P3-IRM-004I-A | INTERMEDIATE | ACTIVE | HALSTED | Target Area 2 | E202105814 | INJECTION | STAINLESS STEEL | 2.0 | 20.0 | 40.0 | 7/7/2021 | 611522.2 | 682908.4 | 11.15 | 13.23 | 14.09 | 11/15/2021 |
| HSTD-P3-IRM-004I-B | INTERMEDIATE | ACTIVE | HALSTED | Target Area 2 | E202105814 | INJECTION | STAINLESS STEEL | 2.0 | 40.0 | 55.0 | 7/6/2021 | 611528.9 | 682914.8 | 10.41 | 13.41 | 14.31 | 11/15/2021 |
| HSTD-P3-IRM-005I-A | INTERMEDIATE | ACTIVE | HALSTED | Target Area 2 | E202105814 | INJECTION | STAINLESS STEEL | 2.0 | 20.0 | 40.0 | 7/8/2021 | 611566.9 | 682951.2 | 12.17 | 15.01 | 15.80 | 11/15/2021 |
| HSTD-P3-IRM-005I-B | INTERMEDIATE | DECOMMISSIONED | HALSTED | Target Area 2 | E202105814 | INJECTION | STAINLESS STEEL | 2.0 | 40.0 | 55.0 | 7/7/2021 | 611576.2 | 682948.4 | 12.49 | 15.40 | 16.24 | 11/15/2021 |
| HSTD-P3-IRM-005I-B-R | INTERMEDIATE | ACTIVE | HALSTED | Target Area 2 | E202401101 | INJECTION | STAINLESS STEEL | 2.0 | 40.0 | 55.0 | 2/28/2024 | 611576.0 | 682948.4 | 12.5 | 15.39 | 16.44 | 6/14/2024 |
| HSTD-P3-IRM-006I-A | INTERMEDIATE | ACTIVE | HALSTED | Target Area 2 | E202105815 | INJECTION | STAINLESS STEEL | 2.0 | 22.0 | 42.0 | 7/9/2021 | 611613.0 | 682993.1 | 12.30 | 15.36 | 16.04 | 11/15/2021 |
| HSTD-P3-IRM-006I-B | INTERMEDIATE | ACTIVE | HALSTED | Target Area 2 | E202105816 | INJECTION | STAINLESS STEEL | 2.0 | 42.0 | 52.0 | 7/9/2021 | 611622.4 | 682990.0 | 12.44 | 15.69 | 16.35 | 11/15/2021 |

**Table 1**
**Monitoring and Remediation Well Network and Construction Details**
**Groundwater Remedial Action Progress Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | Well Construction | | | | | As-Built Survey | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Well ID | Water-Bearing Zone | Status | Location | Remediation Area | Permit Number | Well Use | Screen Material | Well Diameter (in) | Screen Interval Top (ft bgs)[1] | Screen Interval Bottom (ft bgs)[1] | Well Installation Date | Easting (ft NAD83) | Northing (ft NAD83) | Ground Surface Elevation (ft NAVD88) | Top of Outer Casing Elevation (ft NAVD88) | Top of Inner Casing Elevation (ft NAVD88) | Survey Date |
| HSTD-P3-IRM-007I-A | INTERMEDIATE | ACTIVE | HALSTED | Target Area 2 | E202105814 | INJECTION | STAINLESS STEEL | 2.0 | 21.0 | 41.0 | 7/16/2021 | 611423.6 | 682773.9 | 11.01 | 13.77 | 14.33 | 11/16/2021 |
| HSTD-P3-IRM-007I-B | INTERMEDIATE | ACTIVE | HALSTED | Target Area 2 | E202105814 | INJECTION | STAINLESS STEEL | 2.0 | 41.0 | 61.0 | 7/16/2021 | 611429.5 | 682779.6 | 11.25 | 14.31 | 14.86 | 11/16/2021 |
| HSTD-P3-IRM-008I-A | INTERMEDIATE | ACTIVE | HALSTED | Target Area 2 | E202105814 | INJECTION | STAINLESS STEEL | 2.0 | 21.0 | 41.0 | 7/15/2021 | 611472.0 | 682819.2 | 11.65 | 14.95 | 15.48 | 11/16/2021 |
| HSTD-P3-IRM-008I-B | INTERMEDIATE | ACTIVE | HALSTED | Target Area 2 | E202105814 | INJECTION | STAINLESS STEEL | 2.0 | 41.0 | 61.0 | 7/15/2021 | 611480.3 | 682826.5 | 10.27 | 13.89 | 14.45 | 11/16/2021 |
| HSTD-P3-IRM-009I-A | INTERMEDIATE | ACTIVE | HALSTED | Target Area 2 | E202105814 | INJECTION | STAINLESS STEEL | 2.0 | 20.0 | 40.0 | 7/14/2021 | 611519.8 | 682864.4 | 11.08 | 13.93 | 14.47 | 11/15/2021 |
| HSTD-P3-IRM-009I-B | INTERMEDIATE | ACTIVE | HALSTED | Target Area 2 | E202105814 | INJECTION | STAINLESS STEEL | 2.0 | 40.0 | 55.0 | 7/14/2021 | 611526.7 | 682869.6 | 11.14 | 13.75 | 14.30 | 11/15/2021 |
| HSTD-P3-MW001I-A | INTERMEDIATE | ACTIVE | HALSTED | Target Area 2 | E202105670 | MONITORING | SCHEDULE 40 PVC | 2.0 | 21.0 | 41.0 | 7/20/2021 | 611397.9 | 682754.9 | 10.17 | 13.55 | 13.67 | 11/16/2021 |
| HSTD-P3-MW001I-B | INTERMEDIATE | ACTIVE | HALSTED | Target Area 2 | E202105671 | MONITORING | SCHEDULE 40 PVC | 2.0 | 41.0 | 61.0 | 7/19/2021 | 611407.0 | 682754.1 | 10.40 | 13.42 | 13.55 | 11/16/2021 |
| HSTD-P3-MW002I-A | INTERMEDIATE | ACTIVE | HALSTED | Target Area 2 | E202107050 | MONITORING | SCHEDULE 40 PVC | 2.0 | 18.0 | 38.0 | 7/16/2021 | 611429.4 | 682874.7 | 10.41 | 13.66 | 13.41 | 11/15/2021 |
| HSTD-P3-MW002I-B | INTERMEDIATE | ACTIVE | HALSTED | Target Area 2 | E202107051 | MONITORING | SCHEDULE 40 PVC | 2.0 | 38.0 | 58.0 | 7/15/2021 | 611430.0 | 682884.7 | 10.91 | 13.94 | 13.93 | 11/16/2021 |
| HSTD-P3-MW003I-A | INTERMEDIATE | ACTIVE | HALSTED | Target Area 2 | E202105672 | MONITORING | SCHEDULE 40 PVC | 2.0 | 19.0 | 39.0 | 7/12/2021 | 611601.5 | 682932.6 | 12.50 | 15.73 | 15.79 | 11/15/2021 |
| HSTD-P3-MW003I-B | INTERMEDIATE | ACTIVE | HALSTED | Target Area 2 | E202105673 | MONITORING | SCHEDULE 40 PVC | 2.0 | 39.0 | 59.0 | 7/12/2021 | 611594.9 | 682925.4 | 12.29 | 15.35 | 15.33 | 11/15/2021 |
| HSTD-P3-MW004I-A | INTERMEDIATE | ACTIVE | HALSTED | Target Area 2 | E202107052 | MONITORING | SCHEDULE 40 PVC | 2.0 | 20.0 | 40.0 | 7/19/2021 | 611575.7 | 683012.3 | 11.95 | 15.29 | 15.05 | 11/15/2021 |
| HSTD-P3-MW004I-B | INTERMEDIATE | ACTIVE | HALSTED | Target Area 2 | E202107053 | MONITORING | SCHEDULE 40 PVC | 2.0 | 40.0 | 55.0 | 7/19/2021 | 611582.0 | 683018.0 | 12.06 | 15.30 | 15.03 | 11/15/2021 |
| MW8D | INTERMEDIATE | ACTIVE | PACIFIC AVE | Target Area 2 | 26-00075-536 | MONITORING | SCHEDULE 40 PVC | 4.0 | 39.0 | 49.0 | 7/15/2005 | 611495.4 | 682650.1 | 9.30 | 9.25 | 8.62 | 8/10/2020 |
| PAC-P3-MW001I | INTERMEDIATE | ACTIVE | PACIFIC AVE | Target Area 2 | E202105785 | MONITORING | SCHEDULE 40 PVC | 2.0 | 22.0 | 44.0 | 6/25/2021 | 611438.2 | 682590.4 | 8.70 | 8.74 | 8.42 | 1/20/2022 |
| PAC-P3-MW002I | INTERMEDIATE | ACTIVE | PACIFIC AVE | Target Area 2 | E202301199 | MONITORING | SCHEDULE 40 PVC | 2.0 | 20.0 | 40.0 | 2/13/2023 | 611470.4 | 682658.2 | 9.90 | 9.88 | 9.72 | 2/27/2023 |
| HAL-P3-IRM-003D | DEEP | ACTIVE | HALLADAY ST | Target Area 2 | E202104695 | INJECTION | STAINLESS STEEL | 2.0 | 82.0 | 92.0 | 5/17/2021 | 611403.4 | 682925.2 | 10.88 | 13.16 | 14.14 | 11/15/2021 |
| 114-MW25A | SHALLOW | ACTIVE | FS/FSP | Target Area 3 | E201118846 | MONITORING | SCHEDULE 40 PVC | 4.0 | 9.0 | 14.0 | 12/2/2011 | 611787.9 | 683588.8 | 10.20 | 10.12 | 9.88 | 12/6/2011 |
| 114-MW36A | SHALLOW | ACTIVE | FS/FSP | Target Area 3 | E201505769 | MONITORING | SCHEDULE 40 PVC | 2.0 | 10.0 | 15.0 | 6/22/2015 | 611817.1 | 683551.8 | 11.10 | 11.14 | 10.69 | 9/3/2015 |
| 114-MW41A | SHALLOW | ACTIVE | SITE 199 | Target Area 3 | E201710722 | MONITORING | SCHEDULE 40 PVC | 2.0 | 10.0 | 15.0 | 10/25/2017 | 611376.3 | 683888.8 | 14.70 | 18.67 | 18.24 | 11/28/2017 |
| 114-MW44A | SHALLOW | ACTIVE | FS/FSP | Target Area 3 | E201712282 | MONITORING | SCHEDULE 40 PVC | 2.0 | 7.0 | 12.0 | 10/30/2017 | 611768.2 | 683634.4 | 9.60 | 9.55 | 9.14 | 11/28/2017 |
| 199-P3-IRM-001S | SHALLOW | ACTIVE | SITE 199 | Target Area 3 | E202105807 | INJECTION | STAINLESS STEEL | 2.0 | 8.0 | 18.0 | 10/14/2021 | 611230.9 | 683937.3 | 16.30 | 20.32 | 19.96 | 4/25/2022 |
| 199-P3-IRM-002S | SHALLOW | ACTIVE | SITE 199 | Target Area 3 | E202105807 | INJECTION | STAINLESS STEEL | 2.0 | 12.0 | 22.0 | 10/8/2021 | 611276.1 | 683923.9 | 16.20 | 20.13 | 19.50 | 4/25/2022 |
| 199-P3-IRM-003S | SHALLOW | ACTIVE | SITE 199 | Target Area 3 | E202105807 | INJECTION | STAINLESS STEEL | 2.0 | 9.0 | 19.0 | 10/12/2021 | 611341.7 | 683895.3 | 15.60 | 19.93 | 19.16 | 4/25/2022 |
| 199-P3-IRM-004S | SHALLOW | ACTIVE | SITE 199 | Target Area 3 | E202105807 | INJECTION | STAINLESS STEEL | 2.0 | 10.0 | 20.0 | 10/18/2021 | 611391.5 | 683883.9 | 16.20 | 20.12 | 19.94 | 4/25/2022 |
| 199-P3-IRM-005S | SHALLOW | ACTIVE | SITE 199 | Target Area 3 | E202302492 | INJECTION | STAINLESS STEEL | 2.0 | 8.0 | 18.0 | 3/23/2023 | 611427.2 | 683865.4 | 17.20 | 19.58 | 20.93 | 5/9/2023 |
| 199-P3-IRM-006S | SHALLOW | DECOMMISSIONED | SITE 199 | Target Area 3 | E202302491 | INJECTION | STAINLESS STEEL | 2.0 | 8.0 | 18.0 | 3/24/2023 | 611450.2 | 683858.0 | 17.50 | 19.91 | 21.06 | 5/9/2023 |
| 199-P3-IRM-006S-R | SHALLOW | ACTIVE | SITE 199 | Target Area 3 | E202310590 | INJECTION | STAINLESS STEEL | 4.0 | 8.0 | 18.0 | 10/23/2023 | 611467.4 | 683854.3 | 17.50 | 20.41 | 21.81 | 1/24/2024 |
| 199-P3-MW001S | SHALLOW | ACTIVE | SITE 199 | Target Area 3 | E202105800 | MONITORING | SCHEDULE 40 PVC | 2.0 | 6.0 | 16.0 | 10/7/2021 | 611190.9 | 683955.5 | 15.80 | 19.65 | 19.49 | 4/25/2022 |
| 199-P3-MW004S | SHALLOW | ACTIVE | SITE 199 | Target Area 3 | E202105801 | MONITORING | SCHEDULE 40 PVC | 2.0 | 11.0 | 21.0 | 10/27/2021 | 611406.4 | 683872.0 | 17.20 | 20.39 | 20.21 | 1/20/2022 |
| FSP-P3-MW001S | SHALLOW | ACTIVE | FS/FSP | Target Area 3 | E202106366 | MONITORING | SCHEDULE 40 PVC | 2.0 | 7.0 | 17.0 | 8/2/2021 | 611594.0 | 683774.9 | 16.85 | 20.18 | 20.92 | 11/10/2021 |
| MW1C-3 | SHALLOW | ACTIVE | SITE 199 | Target Area 3 | E201308658 | MONITORING | SCHEDULE 40 PVC | 2.0 | 5.0 | 15.0 | 7/3/2013 | 611235.8 | 683937.3 | 15.60 | 18.46 | 18.45 | 8/21/2013 |
| MW1C-4 | SHALLOW | ACTIVE | SITE 199 | Target Area 3 | E201308659 | MONITORING | SCHEDULE 40 PVC | 2.0 | 5.0 | 15.0 | 7/2/2013 | 611329.7 | 683908.4 | 15.50 | 17.81 | 17.58 | 8/21/2013 |
| 114-MW24B | INTERMEDIATE | ACTIVE | FS/FSP | Target Area 3 | E201400225 | MONITORING | SCHEDULE 40 PVC | 4.0 | 30.0 | 35.0 | 1/17/2014 | 611661.5 | 683682.3 | 11.90 | 11.93 | 11.56 | 6/7/2018 |
| 114-MW26B | INTERMEDIATE | ACTIVE | FS/FSP | Target Area 3 | E201710720 | MONITORING | SCHEDULE 40 PVC | 2.0 | 33.0 | 38.0 | 10/10/2017 | 611844.2 | 683496.2 | 11.60 | 11.62 | 11.32 | 11/28/2017 |
| 114-MW2B1-2I | INTERMEDIATE | ACTIVE | FS/FSP | Target Area 3 | E201710717 | MONITORING | SCHEDULE 40 PVC | 2.0 | 33.0 | 38.0 | 10/20/2017 | 611639.0 | 683809.0 | 24.10 | 24.14 | 23.95 | 11/28/2017 |
| 114-MW36B | INTERMEDIATE | ACTIVE | FS/FSP | Target Area 3 | E201505770 | MONITORING | SCHEDULE 40 PVC | 2.0 | 30.0 | 35.0 | 6/28/2015 | 611795.9 | 683573.2 | 10.40 | NA | 9.93 | 7/21/2015 |
| 114-MW41B | INTERMEDIATE | ACTIVE | SITE 199 | Target Area 3 | E201710723 | MONITORING | SCHEDULE 40 PVC | 2.0 | 22.0 | 27.0 | 10/25/2017 | 611366.9 | 683891.9 | 15.00 | 18.12 | 17.67 | 11/28/2017 |
| 199-P3-IRM-001I-A | INTERMEDIATE | ACTIVE | SITE 199 | Target Area 3 | E202105807 | INJECTION | STAINLESS STEEL | 2.0 | 23.0 | 38.0 | 10/14/2021 | 611225.3 | 683938.5 | 16.50 | 20.37 | 19.57 | 4/25/2022 |
| 199-P3-IRM-001I-B | INTERMEDIATE | ACTIVE | SITE 199 | Target Area 3 | E202105807 | INJECTION | STAINLESS STEEL | 2.0 | 38.0 | 48.0 | 10/14/2021 | 611240.2 | 683935.1 | 16.40 | 20.45 | 19.75 | 4/25/2022 |
| 199-P3-IRM-002I-A | INTERMEDIATE | ACTIVE | SITE 199 | Target Area 3 | E202105807 | INJECTION | STAINLESS STEEL | 2.0 | 24.0 | 39.0 | 10/8/2021 | 611297.2 | 683915.5 | 15.80 | 19.97 | 19.05 | 4/25/2022 |
| 199-P3-IRM-002I-B | INTERMEDIATE | ACTIVE | SITE 199 | Target Area 3 | E202105807 | INJECTION | STAINLESS STEEL | 2.0 | 39.0 | 49.0 | 10/8/2021 | 611288.3 | 683919.3 | 15.90 | 19.73 | 18.94 | 4/25/2022 |
| 199-P3-IRM-003I-A | INTERMEDIATE | ACTIVE | SITE 199 | Target Area 3 | E202105807 | INJECTION | STAINLESS STEEL | 2.0 | 23.0 | 38.0 | 10/13/2021 | 611333.3 | 683902.5 | 16.00 | 20.25 | 19.51 | 4/25/2022 |
| 199-P3-IRM-003I-B | INTERMEDIATE | ACTIVE | SITE 199 | Target Area 3 | E202105807 | INJECTION | STAINLESS STEEL | 2.0 | 39.0 | 49.0 | 10/12/2021 | 611345.2 | 683900.8 | 16.10 | 20.15 | 19.59 | 4/25/2022 |
| 199-P3-IRM-004I-A | INTERMEDIATE | ACTIVE | SITE 199 | Target Area 3 | E202105807 | INJECTION | STAINLESS STEEL | 2.0 | 23.0 | 38.0 | 10/18/2021 | 611385.7 | 683884.6 | 15.90 | 20.00 | 19.41 | 4/25/2022 |
| 199-P3-IRM-004I-B | INTERMEDIATE | ACTIVE | SITE 199 | Target Area 3 | E202105807 | INJECTION | STAINLESS STEEL | 2.0 | 39.0 | 49.0 | 10/19/2021 | 611396.9 | 683881.6 | 16.10 | 19.79 | 19.40 | 4/25/2022 |
| 199-P3-IRM-005I-A | INTERMEDIATE | ACTIVE | SITE 199 | Target Area 3 | E202105807 | INJECTION | STAINLESS STEEL | 2.0 | 22.0 | 37.0 | 10/22/2021 | 611445.2 | 683859.7 | 17.17 | 20.07 | 20.47 | 1/20/2022 |
| 199-P3-IRM-005I-B | INTERMEDIATE | ACTIVE | SITE 199 | Target Area 3 | E202105807 | INJECTION | STAINLESS STEEL | 2.0 | 37.0 | 52.0 | 10/22/2021 | 611460.9 | 683855.6 | 17.31 | 20.04 | 20.42 | 1/20/2022 |
| 199-P3-MW001I | INTERMEDIATE | ACTIVE | SITE 199 | Target Area 3 | E202105802 | MONITORING | SCHEDULE 40 PVC | 2.0 | 20.0 | 40.0 | 10/6/2021 | 611207.6 | 683944.4 | 16.10 | 19.84 | 19.17 | 4/25/2022 |
| 199-P3-MW001I-B | INTERMEDIATE | ACTIVE | SITE 199 | Target Area 3 | E202110751 | MONITORING | SCHEDULE 40 PVC | 2.0 | 35.0 | 45.0 | 10/27/2021 | 611198.5 | 683950.3 | 15.90 | 19.52 | 19.03 | 4/25/2022 |
| 199-P3-MW004I | INTERMEDIATE | ACTIVE | SITE 199 | Target Area 3 | E202105803 | MONITORING | SCHEDULE 40 PVC | 2.0 | 22.0 | 42.0 | 10/22/2021 | 611454.2 | 683856.8 | 17.30 | 20.42 | 20.19 | 4/25/2022 |
| FS-P3-IRM-001I | INTERMEDIATE | ACTIVE | FS/FSP | Target Area 3 | E202105558 | INJECTION | STAINLESS STEEL | 2.0 | 17.0 | 32.0 | 6/4/2021 | 611669.3 | 683644.4 | 9.81 | 9.81 | 9.30 | 11/16/2021 |
| FS-P3-IRM-002I | INTERMEDIATE | ACTIVE | FS/FSP | Target Area 3 | E202105559 | INJECTION | STAINLESS STEEL | 2.0 | 17.0 | 37.0 | 6/7/2021 | 611702.4 | 683610.1 | 9.78 | 9.78 | 9.59 | 11/16/2021 |
| FS-P3-IRM-003I | INTERMEDIATE | ACTIVE | FS/FSP | Target Area 3 | E202105560 | INJECTION | STAINLESS STEEL | 2.0 | 10.0 | 30.0 | 6/9/2021 | 611739.1 | 683585.3 | 9.84 | 9.84 | 9.03 | 11/16/2021 |
| FS-P3-IRM-004I | INTERMEDIATE | ACTIVE | FS/FSP | Target Area 3 | E202105561 | INJECTION | STAINLESS STEEL | 2.0 | 14.0 | 34.0 | 6/9/2021 | 611765.4 | 683548.7 | 10.4 | 10.35 | 10.20 | 1/20/2022 |
| FS-P3-MW001I | INTERMEDIATE | ACTIVE | FS/FSP | Target Area 3 | E202105489 | MONITORING | SCHEDULE 40 PVC | 2.0 | 13.0 | 33.0 | 7/23/2021 | 611793.5 | 683594.4 | 10.34 | 10.34 | 10.09 | 11/16/2021 |
| FS-P3-MW002I | INTERMEDIATE | ACTIVE | FS/FSP | Target Area 3 | E202105490 | MONITORING | SCHEDULE 40 PVC | 2.0 | 13.0 | 33.0 | 7/22/2021 | 611714.9 | 683599.3 | 9.73 | 9.73 | 9.33 | 11/16/2021 |
| FS-P3-MW003I | INTERMEDIATE | ACTIVE | FS/FSP | Target Area 3 | E202105491 | MONITORING | SCHEDULE 40 PVC | 2.0 | 10.0 | 30.0 | 7/21/2021 | 611832.6 | 683482.3 | 11.49 | 11.49 | 10.92 | 11/16/2021 |
| FS-P3-MW004I | INTERMEDIATE | ACTIVE | FS/FSP | Target Area 3 | E202205921 | MONITORING | SCHEDULE 40 PVC | 2.0 | 12.0 | 32.0 | 7/12/2022 | 612012.1 | 683273.2 | 15.50 | 15.50 | 14.90 | 8/4/2022 |
| FSP-P3-IRM-001I-A | INTERMEDIATE | ACTIVE | FS/FSP | Target Area 3 | E202105807 | INJECTION | STAINLESS STEEL | 2.0 | 23.0 | 38.0 | 10/20/2021 | 611590.1 | 683813.9 | 17.1 | 20.35 | 20.88 | 1/20/2022 |
| FSP-P3-IRM-001I-B | INTERMEDIATE | ACTIVE | FS/FSP | Target Area 3 | E202105807 | INJECTION | STAINLESS STEEL | 2.0 | 40.0 | 55.0 | 10/20/2021 | 611599.1 | 683810.1 | 17.4 | 20.83 | 21.26 | 1/20/2022 |
| FSP-P3-IRM-002I-A | INTERMEDIATE | ACTIVE | FS/FSP | Target Area 3 | E202105807 | INJECTION | STAINLESS STEEL | 2.0 | 33.0 | 48.0 | 10/28/2021 | 611621.3 | 683807.4 | 23.9 | 26.78 | 27.36 | 1/20/2022 |
| FSP-P3-IRM-002I-B | INTERMEDIATE | ACTIVE | FS/FSP | Target Area 3 | E202105807 | INJECTION | STAINLESS STEEL | 2.0 | 51.0 | 66.0 | 10/28/2021 | 611626.5 | 683815.9 | 24.2 | 27.06 | 27.50 | 1/20/2022 |
| FSP-P3-MW001I | INTERMEDIATE | ACTIVE | FS/FSP | Target Area 3 | E202105784 | MONITORING | SCHEDULE 40 PVC | 2.0 | 22.0 | 42.0 | 8/2/2021 | 611595.4 | 683779.7 | 16.94 | NA | 20.66 | 11/10/2021 |
| 199-P3-MW003D | DEEP | ACTIVE | SITE 199 | Target Area 3 | E202105804 | MONITORING | SCHEDULE 40 PVC | 2.0 | 41.0 | 46.0 | 10/11/2021 | 611321.4 | 683905.9 | 16.00 | 19.37 | 18.38 | 4/25/2022 |
| 199-P3-MW004D | DEEP | ACTIVE | SITE 199 | Target Area 3 | E202105805 | MONITORING | SCHEDULE 40 PVC | 2.0 | 32.0 | 52.0 | 10/25/2021 | 611412.9 | 683869.0 | 16.80 | 20.31 | 20.15 | 1/20/2022 |
| 199-P3-IRM-004D | BASAL TILL | ACTIVE | SITE 199 | Target Area 3 | E202105807 | INJECTION | STAINLESS STEEL | 2.0 | 60.0 | 65.0 | 10/15/2021 | 611370.8 | 683886.2 | 15.70 | 20.06 | 19.35 | 4/25/2022 |
| ***Basal Till and Weathered Bedrock Remedial Action*** | | | | | | | | | | | | | | | | | |
| 114-MW76WR | WEATHERED BEDROCK | ACTIVE | SITE 114 | Target Area 1B | E202404422 | MONITORING | STAINLESS STEEL | 4 | 55 | 65 | 5/2/2024 | 611052.1 | 683389.8 | 14 | 14 | 13.61 | 6/13/2024 |
| 114-MW77WR | WEATHERED BEDROCK | ACTIVE | SITE 114 | Target Area 1B | E202404423 | MONITORING/INJECTION | STAINLESS STEEL | 4 | 55 | 65 | 5/6/2024 | 611023.4 | 683307.5 | 14.2 | 14.19 | 13.71 | 6/13/2024 |
| 114-MW78WR | WEATHERED BEDROCK | ACTIVE | SITE 114 | Target Area 1A | E202404424 | MONITORING | STAINLESS STEEL | 4 | 74 | 84 | 5/8/2024 | 610979.7 | 683145.3 | 12.5 | 12.51 | 12.1 | 6/13/2024 |

**Table 1**
**Monitoring and Remediation Well Network and Construction Details**
**Groundwater Remedial Action Progress Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | Well Construction | | | | | As-Built Survey | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Well ID | Water-Bearing Zone | Status | Location | Remediation Area | Permit Number | Well Use | Screen Material | Well Diameter (in) | Screen Interval Top (ft bgs)[1] | Screen Interval Bottom (ft bgs)[1] | Well Installation Date | Easting (ft NAD83) | Northing (ft NAD83) | Ground Surface Elevation (ft NAVD88) | Top of Outer Casing Elevation (ft NAVD88) | Top of Inner Casing Elevation (ft NAVD88) | Survey Date |
| 114-MW79WR | WEATHERED BEDROCK | ACTIVE | SITE 114 | Target Area 1B | E202404491 | MONITORING | STAINLESS STEEL | 4 | 71 | 81 | 5/29/2024 | 610899.4 | 683455.9 | 14.2 | 14.15 | 13.93 | 6/13/2024 |
| 114-MW80WR | WEATHERED BEDROCK | ACTIVE | SITE 114 | Target Area 1B | E202404496 | MONITORING | STAINLESS STEEL | 4 | 84 | 94 | 6/10/2024 | 611129.3 | 683132.3 | 11.2 | 11.2 | 10.95 | 6/13/2024 |
| 114-PMW-01T | BASAL TILL | ACTIVE | SITE 114 | Target Area 1B | E202404419 | MONITORING | SCHEDULE 40 PVC | 2 | 57 | 73 | 5/1/2024 | 610921.4 | 683329.9 | 14 | 13.99 | 13.75 | 6/13/2024 |
| 114-PMW-02T | BASAL TILL | ACTIVE | SITE 114 | Target Area 1B | E202404420 | MONITORING | SCHEDULE 40 PVC | 2 | 61 | 72 | 5/7/2024 | 610940.5 | 683338.2 | 14.1 | 14.12 | 13.95 | 6/13/2024 |
| 114-PMW-03T | BASAL TILL | ACTIVE | SITE 114 | N/A | E202404421 | MONITORING | STAINLESS STEEL | 2 | 62 | 69.5 | 5/22/2024 | 611274.2 | 683581.4 | 13.8 | 13.76 | 13.45 | 6/13/2024 |
| 114-PMW-04T | BASAL TILL | ACTIVE | SITE 114 | N/A | E202404490 | MONITORING | SCHEDULE 40 PVC | 2 | 63 | 73 | 5/15/2024 | 611302.2 | 683596.6 | 12.8 | 12.82 | 12.47 | 6/13/2024 |
| 114-PW-01T | BASAL TILL | ACTIVE | SITE 114 | Target Area 1B | E202404319 | INJECTION | STAINLESS STEEL | 4 | 63 | 73 | 5/6/2024 | 610919.8 | 683324.7 | 13.9 | 16.9 | 17.45 | 6/13/2024 |
| 114-PW-01WR | WEATHERED BEDROCK | ACTIVE | SITE 114 | Target Area 1B | E202404320 | INJECTION | STAINLESS STEEL | 4 | 81 | 91 | 5/15/2024 | 610908.2 | 683443.7 | 13.9 | 16.92 | 17.43 | 6/13/2024 |
| 114-PW-02T | BASAL TILL | ACTIVE | SITE 114 | Target Area 1B | E202404321 | INJECTION | STAINLESS STEEL | 4 | 64.5 | 69.5 | 5/9/2024 | 610932.7 | 683339.4 | 14 | 17.02 | 17.52 | 6/13/2024 |
| 114-PW-02WR | WEATHERED BEDROCK | ACTIVE | SITE 114 | Target Area 1B | E202404322 | INJECTION | STAINLESS STEEL | 4 | 83 | 93 | 5/21/2024 | 610933.8 | 683486.3 | 14.9 | 17.74 | 18.25 | 6/13/2024 |
| 114-PW-03T | BASAL TILL | ACTIVE | SITE 114 | N/A | E202404323 | INJECTION | STAINLESS STEEL | 4 | 57 | 67 | 5/10/2024 | 611276.5 | 683586.3 | 13.6 | 16.67 | 17.13 | 6/14/2024 |
| 114-PW-03WR | WEATHERED BEDROCK | ACTIVE | SITE 114 | Target Area 1B | E202404324 | INJECTION | STAINLESS STEEL | 4 | 81 | 91 | 5/29/2024 | 610958.5 | 683529.8 | 14.9 | 17.78 | 18.14 | 6/13/2024 |
| 114-PW-04T | BASAL TILL | ACTIVE | SITE 114 | N/A | E202404325 | INJECTION | STAINLESS STEEL | 4 | 63 | 73 | 5/17/2024 | 611297.9 | 683599.5 | 13.3 | 16.4 | 16.9 | 6/14/2024 |
| 114-PW-04WR | WEATHERED BEDROCK | ACTIVE | SITE 114 | Target Area 1B | E202404492 | INJECTION | STAINLESS STEEL | 4 | 44 | 54 | 5/31/2024 | 611148.4 | 683452.9 | 14 | 16.97 | 17.43 | 6/13/2024 |
| 114-PW-05WR | WEATHERED BEDROCK | ACTIVE | SITE 114 | Target Area 1B | E202404427 | INJECTION | STAINLESS STEEL | 4 | 81 | 91 | 5/15/2024 | 610886.6 | 683398.9 | 14 | 16.9 | 17.43 | 6/13/2024 |
| 114-PW-06WR | WEATHERED BEDROCK | ACTIVE | SITE 114 | Target Area 1B | E202404425 | INJECTION | STAINLESS STEEL | 4 | 79 | 89 | 5/14/2024 | 610895.7 | 683311.6 | 14 | 16.93 | 17.46 | 6/13/2024 |
| 114-PW-07WR | WEATHERED BEDROCK | ACTIVE | SITE 114 | N/A | E202404426 | INJECTION | STAINLESS STEEL | 4 | 66 | 76 | 5/23/2024 | 610923.2 | 683228.8 | 14.8 | 17.57 | 18.12 | 6/13/2024 |
| 114-PW-09WR | WEATHERED BEDROCK | ACTIVE | SITE 114 | N/A | E202404494 | MONITORING/INJECTION | STAINLESS STEEL | 4 | 71 | 81 | 6/3/2024 | 611100.4 | 683183.2 | 12.4 | 15.12 | 15.61 | 6/13/2024 |
| 114-PW-10WR | WEATHERED BEDROCK | ACTIVE | SITE 114 | N/A | E202404495 | MONITORING/INJECTION | STAINLESS STEEL | 4 | 76 | 86 | 6/5/2024 | 611132.3 | 683261 | 12.6 | 15.38 | 15.96 | 6/13/2024 |
| ***Other Monitoring Wells*** | | | | | | | | | | | | | | | | | |
| 114-MC-MW101S | SHALLOW | ACTIVE | SITE 114 | N/A | E201404675 | MONITORING | SCHEDULE 40 PVC | 4.0 | 5.0 | 15.0 | 9/29/2014 | 611054.3 | 683240.3 | 13.87 | NA | 14.17 | 6/11/2018 |
| 114-MC-MW102S | SHALLOW | ACTIVE | SITE 114 | N/A | E201404676 | MONITORING | SCHEDULE 40 PVC | 4.0 | 7.0 | 17.0 | 9/29/2014 | 611155.1 | 683403.8 | 14.02 | NA | 14.65 | 6/11/2018 |
| 114-MW14A | SHALLOW | ACTIVE | SITE 199 | N/A | 26-00082-033 | MONITORING | SCHEDULE 40 PVC | 2.0 | 2.5 | 12.5 | 2/2/2007 | 611250.0 | 684019.5 | 12.70 | 12.74 | 12.07 | 2/25/2016 |
| 114-MW15A | SHALLOW | ACTIVE | FRENCH PARK WAREHOUSE CO. | N/A | 26-00081-305 | MONITORING | SCHEDULE 40 PVC | 2.0 | 2.5 | 6.0 | 1/30/2007 | 610888.5 | 683851.5 | 13.30 | 13.29 | 13.05 | 12/6/2011 |
| 114-MW16A | SHALLOW | ACTIVE | JERSEY AUTO REPAIR | N/A | 26-00081-300 | MONITORING | SCHEDULE 40 PVC | 2.0 | 2.0 | 17.0 | 1/5/2007 | 610609.5 | 683363.0 | 16.10 | 16.05 | 15.81 | 12/6/2011 |
| 114-MW20AR | SHALLOW | ACTIVE | HALLADAY ST | N/A | E202006406 | MONITORING | SCHEDULE 40 PVC | 2.0 | 8.0 | 13.0 | 6/26/2020 | 611545.9 | 683012.1 | 11.80 | 10.80 | 11.26 | 8/6/2020 |
| 114-MW24AR | SHALLOW | ACTIVE | FS/FSP | N/A | E201802594 | MONITORING | SCHEDULE 40 PVC | 2.0 | 9.0 | 14.0 | 4/10/2018 | 611670.2 | 683681.8 | 11.80 | 11.81 | 11.36 | 6/7/2018 |
| 114-MW26A | SHALLOW | ACTIVE | FS/FSP | N/A | E201118843 | MONITORING | SCHEDULE 40 PVC | 4.0 | 10.0 | 15.0 | 11/30/2011 | 611900.8 | 683494.9 | 14.50 | 14.47 | 14.20 | 12/6/2011 |
| 114-MW27A | SHALLOW | ACTIVE | FS/FSP | N/A | E201118845 | MONITORING | SCHEDULE 40 PVC | 4.0 | 11.0 | 16.0 | 12/2/2011 | 611841.6 | 683638.6 | 10.60 | 10.57 | 10.35 | 12/6/2011 |
| 114-MW28A | SHALLOW | DECOMMISSIONED | FS/FSP | N/A | E201118844 | MONITORING | SCHEDULE 40 PVC | 4.0 | 9.0 | 14.0 | 11/30/2011 | 611972.7 | 683509.5 | 15.50 | 15.46 | 15.30 | 12/6/2011 |
| 114-MW2B1-2 | SHALLOW | ACTIVE | FS/FSP | N/A | E201400709 | MONITORING | SCHEDULE 40 PVC | 2.0 | 15.0 | 25.0 | 5/9/2014 | 611629.1 | 683807.6 | 24.40 | 24.45 | 23.96 | 6/26/2014 |
| 114-MW30A | SHALLOW | ACTIVE | FS/FSP | N/A | E201206000 | MONITORING | SCHEDULE 40 PVC | 2.0 | 9.0 | 14.0 | 2/3/2012 | 611950.1 | 683596.7 | 10.20 | 10.17 | 9.90 | 12/17/2012 |
| 114-MW37A | SHALLOW | ACTIVE | FS/FSP | N/A | E201505771 | MONITORING | SCHEDULE 40 PVC | 2.0 | 10.0 | 15.0 | 6/22/2015 | 611912.7 | 683693.1 | 11.30 | 11.31 | 10.87 | 7/21/2015 |
| 114-MW38A | SHALLOW | ACTIVE | FS/FSP | N/A | E201505773 | MONITORING | SCHEDULE 40 PVC | 2.0 | 20.0 | 25.0 | 7/1/2015 | 611801.7 | 683760.3 | 20.80 | 20.84 | 20.51 | 7/21/2015 |
| 114-MW42A | SHALLOW | ACTIVE | GARFIELD AVE. | N/A | E201712012 | MONITORING | SCHEDULE 40 PVC | 2.0 | 7.0 | 12.0 | 11/1/2017 | 610825.5 | 683625.8 | 10.40 | 10.37 | 9.94 | 11/28/2017 |
| 114-MW43A | SHALLOW | ACTIVE | GARFIELD AVE. | N/A | E201712608 | MONITORING | SCHEDULE 40 PVC | 2.0 | 7.0 | 12.0 | 11/9/2017 | 611056.7 | 683941.8 | 11.80 | 11.83 | 11.38 | 11/28/2017 |
| 114-P1A-MW101S | SHALLOW | ACTIVE | SITE 114 | N/A | E201404666 | MONITORING | SCHEDULE 40 PVC | 4.0 | 5.0 | 15.0 | 4/22/2014 | 611028.5 | 683770.6 | 15.00 | 15.00 | 14.33 | 6/26/2014 |
| 114-P1B-MW101S | SHALLOW | ACTIVE | SITE 114 | N/A | E201404667 | MONITORING | SCHEDULE 40 PVC | 4.0 | 4.0 | 14.0 | 5/19/2014 | 610775.8 | 683407.3 | 13.00 | NA | 13.30 | 4/29/2015 |
| 114-P1B-MW102S | SHALLOW | ACTIVE | SITE 114 | N/A | E201404668 | MONITORING | SCHEDULE 40 PVC | 4.0 | 6.0 | 16.0 | 5/2/2014 | 611020.3 | 683323.2 | 11.40 | NA | 13.06 | 4/29/2015 |
| 114-P1B-MW103S | SHALLOW | ACTIVE | SITE 114 | N/A | E201404669 | MONITORING | SCHEDULE 40 PVC | 4.0 | 7.0 | 17.0 | 5/16/2014 | 610894.7 | 683233.7 | 14.60 | 14.59 | 14.24 | 4/29/2015 |
| 114-P1B-MW104S | SHALLOW | ACTIVE | SITE 114 | N/A | E201404670 | MONITORING | SCHEDULE 40 PVC | 4.0 | 4.0 | 14.0 | 5/19/2014 | 610918.1 | 683537.6 | 14.20 | 14.19 | 13.93 | 4/29/2015 |
| 114-P1C-MW101S | SHALLOW | ACTIVE | SITE 114 | N/A | E201404674 | MONITORING | SCHEDULE 40 PVC | 4.0 | 2.0 | 12.0 | 10/8/2014 | 611175.1 | 683916.7 | 14.31 | NA | 13.68 | 6/13/2018 |
| 114-P1C-MW102S | SHALLOW | ACTIVE | SITE 114 | N/A | E201702772 | MONITORING | SCHEDULE 40 PVC | 2.0 | 3.3 | 13.3 | 3/16/2017 | 611067.2 | 683864.2 | 12.60 | NA | 14.91 | 6/13/2018 |
| 114-P1C-MW103S | SHALLOW | ACTIVE | SITE 114 | N/A | E201702773 | MONITORING | SCHEDULE 40 PVC | 2.0 | 5.6 | 15.6 | 3/16/2017 | 611224.6 | 683789.1 | 11.20 | NA | 14.72 | 3/29/2017 |
| 114-P1C-MW104S | SHALLOW | ACTIVE | SITE 114 | N/A | E201702774 | MONITORING | SCHEDULE 40 PVC | 2.0 | 2.9 | 12.9 | 3/16/2017 | 611259.7 | 683908.9 | 14.55 | NA | 14.60 | 6/13/2018 |
| 114-P2A-MW101S | SHALLOW | ACTIVE | SITE 114 | N/A | E201600651 | MONITORING | SCHEDULE 40 PVC | 2.0 | 8.5 | 18.5 | 2/1/2016 | 611575.0 | 683382.4 | 9.40 | NA | 12.52 | 2/25/2016 |
| 114-P2A-MW102S | SHALLOW | ACTIVE | SITE 114 | N/A | E201600653 | MONITORING | SCHEDULE 40 PVC | 2.0 | 8.0 | 18.0 | 2/1/2016 | 611697.4 | 683499.6 | 12.01 | NA | 13.70 | 6/13/2018 |
| 114-P2A-MW103S | SHALLOW | ACTIVE | SITE 114 | N/A | E201600655 | MONITORING | SCHEDULE 40 PVC | 2.0 | 8.5 | 18.5 | 1/21/2016 | 611833.4 | 683389.7 | 11.38 | NA | 15.98 | 6/13/2018 |
| 114-P2A-MW104S | SHALLOW | ACTIVE | SITE 114 | N/A | E201600657 | MONITORING | SCHEDULE 40 PVC | 2.0 | 10.0 | 20.0 | 2/1/2016 | 611588.5 | 683170.1 | 11.88 | NA | 12.83 | 6/11/2018 |
| 114-P2B1-MW101S | SHALLOW | ACTIVE | SITE 114 | N/A | E201404671 | MONITORING | SCHEDULE 40 PVC | 4.0 | 3.0 | 13.0 | 10/14/2014 | 611427.8 | 683761.5 | 14.64 | NA | 15.01 | 6/13/2018 |
| 114-P2B1-MW102S | SHALLOW | ACTIVE | SITE 114 | N/A | E201404672 | MONITORING | SCHEDULE 40 PVC | 4.0 | 9.0 | 19.0 | 10/9/2014 | 611360.5 | 683806.9 | 10.30 | NA | 11.46 | 4/29/2015 |
| 114-P2B1-MW103S | SHALLOW | ACTIVE | SITE 114 | N/A | E201404673 | MONITORING | SCHEDULE 40 PVC | 4.0 | 3.0 | 13.0 | 4/29/2014 | 611290.4 | 683489.7 | 13.16 | NA | 12.99 | 6/13/2018 |
| 114-P2B2-MW101S | SHALLOW | ACTIVE | SITE 114 | N/A | E201500663 | MONITORING | SCHEDULE 40 PVC | 4.0 | 4.5 | 14.5 | 2/23/2015 | 611635.6 | 683617.7 | 11.20 | 11.21 | 10.96 | 4/29/2015 |
| 114-P2B3-MW101S | SHALLOW | ACTIVE | SITE 114 | N/A | E201500664 | MONITORING | SCHEDULE 40 PVC | 4.0 | 6.0 | 16.0 | 2/19/2015 | 611356.2 | 683243.7 | 12.21 | NA | 13.93 | 6/11/2018 |
| 114-P2B3-MW2R | SHALLOW | ACTIVE | CARTERET AVE | N/A | E202006410 | MONITORING | SCHEDULE 40 PVC | 2.0 | 9.0 | 14.0 | 6/26/2020 | 611161.4 | 682967.8 | 11.40 | 11.38 | 10.87 | 8/6/2020 |
| 114-P2B4-MW101S | SHALLOW | ACTIVE | SITE 114 | N/A | E201500665 | MONITORING | SCHEDULE 40 PVC | 4.0 | 8.0 | 18.0 | 2/19/2015 | 611266.9 | 683076.0 | 11.98 | NA | 13.48 | 6/11/2018 |
| 114-P2B4-MW102S | SHALLOW | ACTIVE | SITE 114 | N/A | E201500666 | MONITORING | SCHEDULE 40 PVC | 4.0 | 8.0 | 18.0 | 2/4/2015 | 611283.9 | 682895.5 | 10.97 | NA | 13.44 | 6/11/2018 |
| 114-P2B4-MW103S | SHALLOW | ACTIVE | SITE 114 | N/A | E201500667 | MONITORING | SCHEDULE 40 PVC | 4.0 | 6.0 | 16.0 | 2/10/2015 | 611496.7 | 683152.3 | 10.95 | NA | 15.30 | 6/11/2018 |
| 114-P2B4-MW2R | SHALLOW | ACTIVE | HALLADAY ST | N/A | E202006407 | MONITORING | SCHEDULE 40 PVC | 2.0 | 9.0 | 14.0 | 6/24/2020 | 611324.4 | 682856.7 | 10.40 | NA | 9.81 | 8/24/2020 |
| 114REL6 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201200587 | RELIEF WELL | STAINLESS STEEL | 4.0 | 13.0 | 16.0 | 3/1/2012 | 611180.4 | 683559.2 | 11.90 | NA | 14.70 | 3/30/2012 |
| 114REL7 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201200588 | RELIEF WELL | STAINLESS STEEL | 4.0 | 11.5 | 14.5 | 2/10/2012 | 611198.6 | 683599.7 | 10.07 | NA | 13.40 | 3/30/2012 |
| 114REL8 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201200589 | RELIEF WELL | STAINLESS STEEL | 4.0 | 10.5 | 13.5 | 2/9/2012 | 611225.8 | 683652.4 | 10.76 | NA | 10.76 | 3/30/2012 |
| 114REL9 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201200590 | RELIEF WELL | STAINLESS STEEL | 4.0 | 11.5 | 14.5 | 2/8/2012 | 611252.8 | 683706.1 | 10.16 | NA | 10.16 | 3/30/2012 |
| 132-P3A-MW102S | SHALLOW | ACTIVE | SITE 132 | N/A | E201508500 | MONITORING | SCHEDULE 40 PVC | 4.0 | 3.5 | 13.5 | 8/28/2015 | 610574.2 | 682944.0 | 13.60 | NA | 15.38 | 10/14/2015 |
| 132-P3A-MW104S | SHALLOW | ACTIVE | SITE 132 | N/A | E201508504 | MONITORING | SCHEDULE 40 PVC | 4.0 | 6.0 | 16.0 | 8/27/2015 | 610759.9 | 682818.6 | 15.60 | 18.00 | 17.73 | 1/24/2024 |
| 132-P3A-MW1R | SHALLOW | ACTIVE | CARTERET AVE | N/A | E202006411 | MONITORING | SCHEDULE 40 PVC | 2.0 | 3.0 | 8.0 | 6/25/2020 | 610877.0 | 683163.7 | 12.40 | 12.44 | 11.92 | 8/6/2020 |
| 132-P3A-MW2 | SHALLOW | ACTIVE | SITE 132 | N/A | E201410049 | MONITORING | SCHEDULE 40 PVC | 2.0 | 7.0 | 17.0 | 8/11/2014 | 610722.8 | 682915.9 | 12.80 | 12.81 | 12.20 | 9/8/2024 |
| 133-MW6A | SHALLOW | DECOMMISSIONED | CAVEN POINT AVE. | N/A | E201414244 | MONITORING | SCHEDULE 40 PVC | 2.0 | 10.0 | 15.0 | 11/27/2013 | 610556.4 | 682210.1 | 12.40 | 12.43 | 11.49 | 4/29/2014 |
| 133-P3C-MW101S | SHALLOW | ACTIVE | HALLADAY ST | N/A | E201600649 | MONITORING | SCHEDULE 40 PVC | 2.0 | 5.0 | 15.0 | 1/21/2016 | 611157.8 | 682638.6 | 11.03 | NA | 12.16 | 6/8/2018 |
| 133-P3C-MW102S | SHALLOW | ACTIVE | HALLADAY ST | N/A | E201600679 | MONITORING | SCHEDULE 40 PVC | 2.0 | 4.0 | 14.0 | 1/21/2016 | 610947.8 | 682441.5 | 10.91 | NA | 12.57 | 6/8/2018 |
| 135-MW1AR | SHALLOW | ACTIVE | PACIFIC AVE | N/A | E201802595 | MONITORING | SCHEDULE 40 PVC | 2.0 | 10.0 | 15.0 | 3/29/2018 | 610949.4 | 682141.4 | 10.10 | 10.11 | 9.71 | 6/7/2018 |
| 135-MW2A | SHALLOW | ACTIVE | PACIFIC AVE | N/A | 26-00082-878 | MONITORING | SCHEDULE 40 PVC | 2.0 | 3.0 | 16.5 | 4/17/2007 | 611409.2 | 682561.8 | 9.10 | 9.08 | 8.74 | 12/6/2011 |

**Table 1**
**Monitoring and Remediation Well Network and Construction Details**
**Groundwater Remedial Action Progress Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | Well Construction | | | | | As-Built Survey | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Well ID | Water-Bearing Zone | Status | Location | Remediation Area | Permit Number | Well Use | Screen Material | Well Diameter (in) | Screen Interval Top (ft bgs)[1] | Screen Interval Bottom (ft bgs)[1] | Well Installation Date | Easting (ft NAD83) | Northing (ft NAD83) | Ground Surface Elevation (ft NAVD88) | Top of Outer Casing Elevation (ft NAVD88) | Top of Inner Casing Elevation (ft NAVD88) | Survey Date |
| 135-P3C-MW101S | SHALLOW | ACTIVE | SITE 133E | N/A | E201802607 | MONITORING | SCHEDULE 40 PVC | 2.0 | 7.0 | 12.0 | 3/30/2018 | 611270.5 | 682599.1 | 11.30 | 11.34 | 10.97 | 6/7/2018 |
| 135-P3C-MW102S | SHALLOW | ACTIVE | PACIFIC AVE | N/A | E201802598 | MONITORING | SCHEDULE 40 PVC | 2.0 | 10.0 | 15.0 | 4/3/2018 | 611120.7 | 682311.9 | 11.50 | 11.49 | 10.99 | 6/7/2018 |
| 137-P3B-MW102S | SHALLOW | ACTIVE | SITE 137A | N/A | E201508496 | MONITORING | SCHEDULE 40 PVC | 4.0 | 7.0 | 17.0 | 8/25/2015 | 610941.1 | 682662.1 | 11.00 | NA | 14.16 | 10/14/2015 |
| 143-P3-MW001S | SHALLOW | ACTIVE | SITE 143 | N/A | E202213939 | MONITORING | SCHEDULE 40 PVC | 2.0 | 8.0 | 13.0 | 12/27/2022 | 610782.0 | 683089.7 | 12.10 | 15.29 | 14.71 | 1/4/2023 |
| 186-MW01 | SHALLOW | ACTIVE | SITE 186 | N/A | 2648758 | MONITORING | SCHEDULE 40 PVC | 2.0 | 5.0 | 15.0 | 9/11/1997 | 611231.8 | 684198.7 | 18.80 | NA | 18.37 | 12/6/2011 |
| 186-MW02R | SHALLOW | ACTIVE | SITE 186 | N/A | E201710902 | MONITORING | SCHEDULE 40 PVC | 2.0 | 5.0 | 15.0 | 9/30/2017 | 611305.0 | 684165.2 | 13.40 | 13.38 | 13.10 | 11/28/2017 |
| FS-MW101S | SHALLOW | ACTIVE | FS/FSP | N/A | E201802593 | MONITORING | SCHEDULE 40 PVC | 2.0 | 4.0 | 9.0 | 4/10/2018 | 611769.0 | 683524.7 | 11.30 | 11.29 | 10.83 | 6/7/2018 |
| HAL-P3-MW001S | SHALLOW | ACTIVE | HALLADAY ST | N/A | E202213937 | MONITORING | SCHEDULE 40 PVC | 2.0 | 8.0 | 13.0 | 12/27/2022 | 611447.8 | 682944.3 | 11.20 | 11.20 | 10.85 | 1/4/2023 |
| HAL-P3-MW002S | SHALLOW | ACTIVE | HALLADAY ST | N/A | E202213938 | MONITORING | SCHEDULE 40 PVC | 2.0 | 10.0 | 15.0 | 12/27/2022 | 611319.8 | 682821.4 | 10.40 | 10.43 | 10.20 | 1/4/2023 |
| HSS-P3C-MW1S | SHALLOW | ACTIVE | HALLADAY ST | N/A | E201601117 | MONITORING | SCHEDULE 40 PVC | 2.0 | 7.0 | 17.0 | 2/5/2016 | 611265.2 | 682785.5 | 10.78 | NA | 11.97 | 6/8/2018 |
| HSS-P3C-MW2S | SHALLOW | ACTIVE | HALLADAY ST | N/A | E201601118 | MONITORING | SCHEDULE 40 PVC | 2.0 | 4.0 | 14.0 | 2/5/2016 | 610994.0 | 682542.7 | 10.87 | NA | 12.37 | 6/8/2018 |
| MW10S | SHALLOW | ACTIVE | FORREST ST. | N/A | 26-00075-537 | MONITORING | SCHEDULE 40 PVC | 2.0 | 5.0 | 15.0 | 8/16/2007 | 612063.0 | 683218.3 | 14.60 | 14.50 | 13.79 | 12/6/2011 |
| MW-31A | SHALLOW | ACTIVE | SITE 114 | N/A | E201207640 | MONITORING | SCHEDULE 40 PVC | 2.0 | 6.0 | 16.0 | 5/25/2012 | 611088.6 | 683596.6 | 13.68 | NA | 15.72 | 6/13/2018 |
| MW7S | SHALLOW | ACTIVE | PACIFIC AVE | N/A | 26-00084-549 | MONITORING | SCHEDULE 40 PVC | 2.0 | 2.0 | 12.0 | 8/16/2007 | 611824.6 | 682961.0 | 11.00 | 10.98 | 10.29 | 12/6/2011 |
| MW8S | SHALLOW | ACTIVE | PACIFIC AVE | N/A | E201317210 | MONITORING | SCHEDULE 40 PVC | 2.0 | 7.0 | 12.0 | 11/27/2013 | 611487.6 | 682642.8 | 9.00 | 9.05 | 8.46 | 8/6/2020 |
| MW-CR-1 | SHALLOW | ACTIVE | BERRY LANE PARK | N/A | E201317042 | MONITORING | SCHEDULE 40 PVC | 4.0 | 2.0 | 22.0 | 11/19/2013 | 611383.0 | 683994.0 | NA | NA | 17.61 | 2/19/2014 |
| MW-CR-2 | SHALLOW | ACTIVE | BERRY LANE PARK | N/A | E201317043 | MONITORING | SCHEDULE 40 PVC | 4.0 | 3.0 | 23.0 | 11/20/2013 | 611422.0 | 683982.0 | NA | NA | 17.78 | 2/19/2014 |
| MW-CR-3 | SHALLOW | ACTIVE | BERRY LANE PARK | N/A | E201317044 | MONITORING | SCHEDULE 40 PVC | 4.0 | 3.0 | 23.0 | 11/21/2013 | 611447.0 | 683975.0 | NA | NA | 17.82 | 2/19/2014 |
| MW-CR-4 | SHALLOW | ACTIVE | BERRY LANE PARK | N/A | E201317045 | MONITORING | SCHEDULE 40 PVC | 4.0 | 4.0 | 19.0 | 11/21/2013 | 611485.0 | 683962.0 | NA | NA | 17.73 | 2/19/2014 |
| MW-CR-5 | SHALLOW | ACTIVE | BERRY LANE PARK | N/A | E201317049 | MONITORING | SCHEDULE 40 PVC | 4.0 | 3.0 | 18.0 | 11/22/2013 | 611521.0 | 684115.0 | NA | NA | 16.55 | 2/19/2014 |
| MW-CR-6 | SHALLOW | ACTIVE | BERRY LANE PARK | N/A | E201317050 | MONITORING | SCHEDULE 40 PVC | 4.0 | 5.0 | 20.0 | 11/22/2013 | 611670.0 | 684406.0 | NA | NA | 17.04 | 2/19/2014 |
| MW-CR-7 | SHALLOW | ACTIVE | BERRY LANE PARK | N/A | E201317052 | MONITORING | SCHEDULE 40 PVC | 4.0 | 3.0 | 18.0 | 12/7/2013 | 611804.0 | 684686.0 | NA | NA | 16.92 | 2/19/2014 |
| MW-CR-8 | SHALLOW | ACTIVE | BERRY LANE PARK | N/A | E201317053 | MONITORING | SCHEDULE 40 PVC | 4.0 | 3.0 | 18.0 | 12/7/2013 | 611908.0 | 684955.0 | NA | NA | 16.66 | 2/19/2014 |
| MW-MORRIS1A | SHALLOW | ACTIVE | SITE 114 | N/A | E201217886 | MONITORING | SCHEDULE 40 PVC | 4.0 | 10.0 | 20.0 | 11/29/2012 | 611286.2 | 683664.0 | 12.10 | 12.10 | 14.43 | 3/29/2017 |
| PSEG-MW-104A | SHALLOW | ACTIVE | HALSTED | N/A | E202106862 | MONITORING | SCHEDULE 40 PVC | 2.0 | 4.0 | 14.0 | 9/8/2021 | 611691.0 | 683007.0 | NA | NA | 12.90 | NA |
| 114-FP-MW01 | INTERMEDIATE | ACTIVE | SITE 114 | N/A | E201905648 | MONITORING | SCHEDULE 40 PVC | 2.0 | 23.0 | 25.0 | 6/7/2019 | 610886.3 | 683246.8 | 14.51 | NA | NA | NA |
| 114-MW17B | INTERMEDIATE | ACTIVE | BERRY LANE PARK | N/A | E201711856 | MONITORING | SCHEDULE 40 PVC | 2.0 | 25.0 | 30.0 | 2/7/2018 | 611688.5 | 683902.0 | 13.50 | 13.52 | 13.25 | 6/7/2018 |
| 114-MW19B | INTERMEDIATE | ACTIVE | HALLADAY ST | N/A | 26-00080-773 | MONITORING | SCHEDULE 40 PVC | 2.0 | 45.0 | 50.0 | 10/12/2006 | 611259.9 | 682735.0 | 10.64 | NA | 12.66 | 6/8/2018 |
| 114-MW27B | INTERMEDIATE | ACTIVE | FS/FSP | N/A | E201400561 | MONITORING | SCHEDULE 40 PVC | 4.0 | 30.0 | 35.0 | 2/4/2014 | 611835.7 | 683631.9 | 10.60 | 10.62 | 10.20 | 4/29/2014 |
| 114-MW37B | INTERMEDIATE | ACTIVE | FS/FSP | N/A | E201505772 | MONITORING | SCHEDULE 40 PVC | 2.0 | 30.0 | 35.0 | 6/23/2015 | 611917.3 | 683689.1 | 11.20 | 11.15 | 10.79 | 7/21/2015 |
| 114-MW38B | INTERMEDIATE | ACTIVE | FS/FSP | N/A | E201505774 | MONITORING | SCHEDULE 40 PVC | 2.0 | 37.0 | 42.0 | 7/7/2015 | 611806.4 | 683758.6 | 20.80 | 20.85 | 20.55 | 5/9/2023 |
| 114-P1C-EW1 | INTERMEDIATE | ACTIVE | SITE 114 | N/A | E201402919 | MONITORING | SCHEDULE 40 PVC | 4.0 | 29.0 | 39.0 | 4/4/2014 | 611297.4 | 683885.0 | 10.70 | 12.90 | 13.08 | 4/29/2015 |
| 114-P1C-PZ1 | INTERMEDIATE | ACTIVE | SITE 114 | N/A | E201402920 | PIEZOMETER | SCHEDULE 40 PVC | 2.0 | 26.0 | 36.0 | 4/4/2014 | 611322.2 | 683895.7 | 14.10 | 12.87 | 16.09 | 12/16/2021 |
| 114-P1C-PZ2 | INTERMEDIATE | ACTIVE | SITE 114 | N/A | E201411822 | PIEZOMETER | SCHEDULE 40 PVC | 2.0 | 20.0 | 30.0 | 10/13/2014 | 611286.0 | 683878.2 | 10.40 | 12.71 | 15.02 | 12/16/2021 |
| 114-P2A-MW104I | INTERMEDIATE | ACTIVE | SITE 114 | N/A | E201600656 | MONITORING | SCHEDULE 40 PVC | 2.0 | 30.0 | 40.0 | 2/4/2016 | 611579.1 | 683175.0 | 11.95 | NA | 14.10 | 6/11/2018 |
| 114-PZ-52I | INTERMEDIATE | ACTIVE | SITE 114 | N/A | E202110384 | MONITORING | SCHEDULE 40 PVC | 1.5 | 28.0 | 33.0 | 11/29/2021 | 611063.0 | 683542.0 | 13.90 | 16.64 | 15.99 | 12/7/2021 |
| 114-PZ-57I | INTERMEDIATE | ACTIVE | SITE 114 | N/A | E202110386 | MONITORING | SCHEDULE 40 PVC | 1.5 | 26.0 | 31.0 | 11/22/2021 | 610922.5 | 683223.4 | 14.40 | 16.89 | 16.13 | 12/7/2021 |
| 114-PZ-66I | INTERMEDIATE | ACTIVE | SITE 114 | N/A | E202109830 | MONITORING | SCHEDULE 40 PVC | 1.5 | 35.0 | 40.0 | 11/18/2021 | 610929.9 | 683430.2 | 13.90 | 16.75 | 16.19 | 12/7/2021 |
| 133-P3C-MW101I | INTERMEDIATE | ACTIVE | HALLADAY ST | N/A | E201600648 | MONITORING | SCHEDULE 40 PVC | 2.0 | 35.0 | 45.0 | 1/27/2016 | 611148.2 | 682630.9 | 10.83 | NA | 12.02 | 6/8/2018 |
| 133-P3C-MW102I | INTERMEDIATE | ACTIVE | HALLADAY ST | N/A | E201600678 | MONITORING | SCHEDULE 40 PVC | 2.0 | 36.0 | 46.0 | 1/26/2016 | 610958.2 | 682452.2 | 10.88 | NA | 12.18 | 6/8/2018 |
| 135-MW1B | INTERMEDIATE | ACTIVE | PACIFIC AVE | N/A | 26-00082-194 | MONITORING | SCHEDULE 40 PVC | 2.0 | 27.5 | 32.5 | 3/23/2007 | 610948.1 | 682129.6 | 10.00 | 9.94 | 9.64 | 12/6/2011 |
| 135-MW3BR | INTERMEDIATE | ACTIVE | PACIFIC AVE | N/A | E201802596 | MONITORING | SCHEDULE 40 PVC | 2.0 | 32.0 | 37.0 | 4/3/2018 | 611113.1 | 682304.0 | 11.30 | 11.25 | 10.94 | 6/7/2018 |
| 137-P3B-MW101I | INTERMEDIATE | DECOMMISSIONED | SITE 137A | N/A | E201508493 | MONITORING | SCHEDULE 40 PVC | 4.0 | 35.0 | 45.0 | 9/15/2015 | 611100.5 | 682952.0 | 10.80 | NA | 13.00 | 10/14/2015 |
| 137-P3B-MW102I | INTERMEDIATE | ACTIVE | SITE 137A | N/A | E201508495 | MONITORING | SCHEDULE 40 PVC | 4.0 | 39.0 | 49.0 | 9/11/2015 | 610954.2 | 682651.6 | 11.54 | NA | 12.94 | 6/8/2018 |
| MW7D | INTERMEDIATE | ACTIVE | PACIFIC AVE | N/A | 26-00075-537 | MONITORING | SCHEDULE 40 PVC | 2.0 | 38.0 | 48.0 | 7/14/2005 | 611819.6 | 682963.3 | 11.20 | 11.21 | 10.93 | 8/4/2022 |
| MW9B | INTERMEDIATE | ACTIVE | SITE 114 | N/A | 26-00076-990 | MONITORING | SCHEDULE 40 PVC | 2.0 | 27.0 | 37.0 | 11/10/2005 | 611097.6 | 683632.7 | 15.77 | NA | 17.45 | 12/22/2005 |
| PSEG-MW-102D | INTERMEDIATE | ACTIVE | PACIFIC AVE | N/A | E202010124 | MONITORING | SCHEDULE 40 PVC | 2.0 | 40.0 | 50.0 | 11/5/2020 | 610965.0 | 682152.0 | NA | NA | 9.62 | NA |
| PSEG-MW-104B | INTERMEDIATE | ACTIVE | HALSTED | N/A | E202106861 | MONITORING | SCHEDULE 40 PVC | 2.0 | 20.0 | 30.0 | 9/9/2021 | 611694.0 | 683009.0 | NA | NA | 12.98 | NA |
| PSEG-MW-10D | INTERMEDIATE | ACTIVE | FORREST ST. | N/A | E202010122 | MONITORING | SCHEDULE 40 PVC | 2.0 | 26.0 | 36.0 | 11/11/2020 | 612062.0 | 683221.0 | NA | NA | 14.16 | NA |
| PSEG-MW-137-101IR | INTERMEDIATE | ACTIVE | SITE 137A | N/A | E202012670 | MONITORING | SCHEDULE 40 PVC | 4.0 | 30.0 | 40.0 | 12/2/2020 | 611096.0 | 682950.0 | NA | NA | 13.05 | NA |
| PSEG-MW-42D | INTERMEDIATE | ACTIVE | GARFIELD AVE. | N/A | E202010114 | MONITORING | SCHEDULE 40 PVC | 2.0 | 21.0 | 26.0 | 11/13/2020 | 611047.0 | 683938.0 | NA | NA | 11.29 | NA |
| PSEG-MW-7F | INTERMEDIATE | ACTIVE | PACIFIC AVE | N/A | E202010113 | MONITORING | SCHEDULE 40 PVC | 2.0 | 25.0 | 35.0 | 10/30/2020 | 611827.0 | 682973.0 | NA | NA | 10.83 | NA |
| 114-MW25C | DEEP | ACTIVE | FS/FSP | N/A | E201710719 | MONITORING | SCHEDULE 40 PVC | 2.0 | 42.0 | 47.0 | 10/13/2017 | 611795.8 | 683600.4 | 10.40 | 10.37 | 9.77 | 11/28/2017 |
| 114-PZ-52D | DEEP (LOWER) | ACTIVE | SITE 114 | N/A | E202110385 | MONITORING | SCHEDULE 40 PVC | 1.5 | 40.0 | 45.0 | 11/29/2021 | 611063.0 | 683542.0 | 13.90 | 16.64 | 15.89 | 12/7/2021 |
| 114-PZ-57D | DEEP (LOWER) | ACTIVE | SITE 114 | N/A | E202109829 | MONITORING | SCHEDULE 40 PVC | 1.5 | 53.0 | 58.0 | 11/22/2021 | 610922.5 | 683223.4 | 14.40 | 16.89 | 16.39 | 12/7/2021 |
| 114-PZ-66D | DEEP (LOWER) | ACTIVE | SITE 114 | N/A | E202110391 | MONITORING | SCHEDULE 40 PVC | 1.5 | 45.0 | 47.0 | 11/18/2021 | 610929.9 | 683430.2 | 13.90 | 16.75 | 16.15 | 12/7/2021 |
| 133-MW2C | DEEP | ACTIVE | SITE 133E | N/A | 26-00082-198 | MONITORING | SCHEDULE 40 PVC | 2.0 | 94.0 | 99.0 | 4/13/2007 | 610792.8 | 682151.2 | 10.90 | 10.94 | 10.69 | 1/24/2024 |
| 135-MW1C | DEEP | ACTIVE | PACIFIC AVE | N/A | 26-00082-195 | MONITORING | SCHEDULE 40 PVC | 2.0 | 98.0 | 103.0 | 4/3/2007 | 610951.3 | 682131.1 | 9.90 | 9.87 | 9.34 | 12/6/2011 |
| 137-MW2C | DEEP | ACTIVE | SITE 137A | N/A | 26-00082-192 | MONITORING | SCHEDULE 40 PVC | 2.0 | 78.0 | 83.0 | 3/5/2007 | 610918.5 | 682801.1 | 14.40 | 14.38 | 13.87 | 12/6/2011 |
| MW8F | DEEP | ACTIVE | PACIFIC AVE | N/A | E201317209 | MONITORING | SCHEDULE 40 PVC | 4.0 | 78.0 | 83.0 | 12/20/2013 | 611479.9 | 682647.7 | 9.50 | 9.52 | 9.00 | 8/6/2020 |
| MW9C | DEEP | ACTIVE | SITE 114 | N/A | 26-00076-989 | MONITORING | SCHEDULE 40 PVC | 2.0 | 48.0 | 58.0 | 11/15/2005 | 611100.1 | 683638.0 | 13.30 | 13.27 | 16.56 | 5/9/2023 |
| MW-CR-3D | DEEP | ACTIVE | BERRY LANE PARK | N/A | E201711855 | MONITORING | SCHEDULE 40 PVC | 2.0 | 41.0 | 46.0 | 2/2/2018 | 611443.5 | 683987.8 | 15.20 | 15.20 | 14.88 | 6/7/2018 |
| 114-MW19C | BASAL TILL | ACTIVE | HALLADAY ST | N/A | 26-00081-141 | MONITORING | SCHEDULE 40 PVC | 2.0 | 96.0 | 101.0 | 11/3/2006 | 611263.3 | 682737.3 | 10.63 | NA | 12.53 | 6/8/2018 |
| 114-MW45C | BASAL TILL | ACTIVE | SITE 114 | N/A | E201909974 | MONITORING | SCHEDULE 40 PVC | 2.0 | 67.0 | 71.0 | 10/2/2019 | 611411.8 | 683675.0 | 11.50 | 13.73 | 13.22 | 10/14/2019 |
| 114-MW48C | BASAL TILL | ACTIVE | SITE 114 | N/A | E202002714 | MONITORING | SCHEDULE 40 PVC | 2.0 | 53.0 | 57.0 | 3/19/2020 | 611163.8 | 683919.4 | 15.00 | 16.72 | 16.20 | 8/6/2020 |
| 114-MW49C | BASAL TILL | ACTIVE | SITE 114 | N/A | E202002715 | MONITORING | SCHEDULE 40 PVC | 2.0 | 64.5 | 69.5 | 3/20/2020 | 611378.1 | 683872.0 | 14.60 | 16.73 | 16.52 | 8/6/2020 |
| 114-MW50C | BASAL TILL | ACTIVE | SITE 114 | N/A | E202002716 | MONITORING | SCHEDULE 40 PVC | 2.0 | 57.0 | 62.0 | 3/31/2020 | 611043.1 | 683769.8 | 13.40 | 16.04 | 15.36 | 8/6/2020 |
| 114-MW51C | BASAL TILL | ACTIVE | SITE 114 | N/A | E202002718 | MONITORING | SCHEDULE 40 PVC | 2.0 | 71.5 | 76.5 | 3/25/2020 | 611633.3 | 683637.4 | 12.20 | 15.00 | 14.13 | 8/6/2020 |
| 114-MW52C | BASAL TILL | ACTIVE | SITE 114 | N/A | E202002719 | MONITORING | SCHEDULE 40 PVC | 2.0 | 68.0 | 73.0 | 7/9/2020 | 611034.7 | 683527.7 | 14.00 | 16.47 | 15.85 | 8/6/2020 |
| 114-MW54C | BASAL TILL | ACTIVE | SITE 114 | N/A | E202002721 | MONITORING | SCHEDULE 40 PVC | 2.0 | 72.0 | 77.0 | 4/2/2020 | 611214.9 | 683276.5 | 10.80 | 13.05 | 12.71 | 8/6/2020 |
| 114-MW56C | BASAL TILL | ACTIVE | SITE 114 | N/A | E202002723 | MONITORING | SCHEDULE 40 PVC | 2.0 | 67.0 | 72.0 | 7/6/2020 | 610934.8 | 683324.4 | 14.00 | 16.61 | 16.04 | 8/6/2020 |
| 114-MW59C | BASAL TILL | ACTIVE | SITE 114 | N/A | E202002726 | MONITORING | SCHEDULE 40 PVC | 2.0 | 89.5 | 92.5 | 6/22/2020 | 611255.2 | 683079.6 | 12.10 | 14.45 | 14.07 | 8/6/2020 |

**Table 1**
**Monitoring and Remediation Well Network and Construction Details**
**Groundwater Remedial Action Progress Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

AECOM

| | | | | | | | Well Construction | | | | | As-Built Survey | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Well ID | Water-Bearing Zone | Status | Location | Remediation Area | Permit Number | Well Use | Screen Material | Well Diameter (in) | Screen Interval Top (ft bgs)[1] | Screen Interval Bottom (ft bgs)[1] | Well Installation Date | Easting (ft NAD83) | Northing (ft NAD83) | Ground Surface Elevation (ft NAVD88) | Top of Outer Casing Elevation (ft NAVD88) | Top of Inner Casing Elevation (ft NAVD88) | Survey Date |
| 114-MW63C | BASAL TILL | ACTIVE | SITE 114 | N/A | E202002938 | MONITORING | SCHEDULE 40 PVC | 2.0 | 63.5 | 65.5 | 3/24/2020 | 611437.0 | 683762.1 | 15.50 | 17.97 | 17.68 | 8/24/2020 |
| 114-MW65C | BASAL TILL | ACTIVE | SITE 114 | N/A | E202002936 | MONITORING | SCHEDULE 40 PVC | 2.0 | 60.0 | 65.0 | 3/18/2020 | 611291.7 | 683583.0 | 12.40 | 14.69 | 14.20 | 8/6/2020 |
| 114-PZ-57T | BASAL TILL | ACTIVE | SITE 114 | N/A | E202110387 | MONITORING | SCHEDULE 40 PVC | 1.5 | 63.0 | 68.0 | 11/22/2021 | 610922.5 | 683223.4 | 14.40 | 16.89 | 16.42 | 12/7/2021 |
| 114-PZ-66T | BASAL TILL | ACTIVE | SITE 114 | N/A | E202110390 | MONITORING | SCHEDULE 40 PVC | 1.5 | 65.0 | 70.0 | 11/18/2021 | 610929.9 | 683430.2 | 13.90 | 16.75 | 16.17 | 12/7/2021 |
| 132-P3-MW001D | BASAL TILL | ACTIVE | SITE 132 | N/A | E202105567 | MONITORING | SCHEDULE 40 PVC | 2.0 | 78.0 | 88.0 | 6/3/2021 | 610786.2 | 682809.0 | 15.15 | 18.52 | 18.62 | 11/11/2021 |
| 114-MW58C | WEATHERED BEDROCK | DECOMMISSIONED | SITE 114 | N/A | E202002725 | MONITORING | SCHEDULE 40 PVC | 2.0 | 72.5 | 76.0 | 6/18/2020 | 611371.2 | 683296.6 | 11.20 | 13.36 | 12.51 | 8/6/2020 |
| 114-MW58C-R | WEATHERED BEDROCK | ACTIVE | SITE 114 | N/A | E202312356 | MONITORING | SCHEDULE 80 PVC | 2.0 | 82.0 | 87.0 | 2/1/2024 | 611383.1 | 683303.4 | 11.20 | 11.24 | 10.87 | 6/14/2024 |
| 114-MW61C | BASAL TILL | ACTIVE | SITE 114 | N/A | E202002939 | MONITORING | SCHEDULE 40 PVC | 2.0 | 62.5 | 67.5 | 7/15/2020 | 610879.4 | 683478.6 | 14.00 | 17.24 | 16.67 | 8/6/2020 |
| 114-MW62C | WEATHERED BEDROCK | ACTIVE | SITE 114 | N/A | E202002717 | MONITORING | SCHEDULE 40 PVC | 2.0 | 69.0 | 73.0 | 6/16/2020 | 611139.0 | 683749.8 | 13.00 | 15.18 | 15.04 | 8/6/2020 |
| 114-MW53C | WEATHERED BEDROCK | ACTIVE | SITE 114 | N/A | E202002720 | MONITORING | SCHEDULE 40 PVC | 2.0 | 46.0 | 47.5 | 7/13/2020 | 611157.6 | 683435.6 | 13.90 | 15.86 | 15.08 | 8/6/2020 |
| 114-MW55C | WEATHERED BEDROCK | DECOMMISSIONED | SITE 114 | N/A | E202002722 | MONITORING | SCHEDULE 40 PVC | 2.0 | 68.0 | 69.0 | 3/27/2020 | 611439.1 | 683519.8 | 11.10 | 13.73 | 13.23 | 8/6/2020 |
| 114-MW57C | WEATHERED BEDROCK | ACTIVE | SITE 114 | N/A | E202002724 | MONITORING | SCHEDULE 40 PVC | 2.0 | 68.5 | 70.0 | 7/1/2020 | 610949.9 | 683210.4 | 12.90 | 15.37 | 14.55 | 8/6/2020 |
| 114-MW60C | WEATHERED BEDROCK | DECOMMISSIONED | SITE 114 | N/A | E202002727 | MONITORING | SCHEDULE 40 PVC | 2.0 | 119.5 | 121.5 | 6/29/2020 | 611340.1 | 682895.5 | 11.00 | 13.63 | 12.87 | 8/6/2020 |
| 114-MW60C-R | WEATHERED BEDROCK | ACTIVE | SITE 114 | N/A | E202312354 | MONITORING | SCHEDULE 40 PVC | 2.0 | 115.0 | 119.0 | 1/29/2024 | 611335.5 | 682857.6 | 10.50 | 10.46 | 10.09 | 6/14/2024 |
| 114-MW64C | WEATHERED BEDROCK | DECOMMISSIONED | SITE 114 | N/A | E202002937 | MONITORING | SCHEDULE 40 PVC | 2.0 | 93.0 | 96.0 | 6/24/2020 | 611381.9 | 683046.0 | 10.80 | 12.98 | 12.30 | 8/6/2020 |
| 114-MW16B | BEDROCK | ACTIVE | JERSEY AUTO REPAIR | N/A | 26-00081-301 | MONITORING | SCHEDULE 40 PVC | 2.0 | 30.5 | 35.5 | 1/5/2007 | 610610.2 | 683366.4 | 16.10 | 16.06 | 15.53 | 12/6/2011 |
| 114-MW4D | BEDROCK | ACTIVE | SITE 114 | N/A | E202110740 | MONITORING | Flute Multiport System | 6.0 | 90.0<br>98.0<br>111.0<br>121.0 | 94.0<br>102.0<br>115.0<br>125.0 | 12/18/2006 | 610822.4 | 683258.3 | 13.10 | 15.55 | 15.94 | 5/9/2023 |
| 114-MW52D | BEDROCK | ACTIVE | SITE 114 | N/A | E202012657 | MONITORING | Flute Multiport System | 6.0 | 80.0<br>87.0<br>102.0 | 83.0<br>90.0<br>105.0 | 12/11/2020 | 611077.5 | 683544.4 | 13.90 | N/A | 15.64 | 1/18/2021 |
| 114-MW57D | BEDROCK | ACTIVE | SITE 114 | N/A | E202012660 | MONITORING | Flute Multiport System | 6.0 | 87.5<br>96.5<br>104.0<br>109.0 | 91.5<br>100.5<br>108.0<br>113.0 | 1/4/2021 | 610903.7 | 683216.2 | 12.60 | 14.35 | 14.86 | 5/9/2023 |
| 114-MW61D | BEDROCK | ACTIVE | SITE 114 | N/A | E202110645 | MONITORING | SCHEDULE 40 PVC | 2.0 | 110.0 | 135.0 | 12/28/2020 | 610873.2 | 683469.8 | 14.30 | 17.29 | 17.12 | 12/7/2021 |
| 114-MW66D | BEDROCK | ACTIVE | SITE 114 | N/A | E202110646 | MONITORING | Flute Multiport System | 6.0 | 91.0<br>107.0<br>118.0<br>124.0<br>137.0 | 97.0<br>111.0<br>123.0<br>129.0<br>140.0 | 12/30/2020 | 610941.4 | 683423.4 | 13.90 | N/A | 16.20 | 12/7/2021 |
| 114-MW6D | BEDROCK | ACTIVE | SITE 114 | N/A | 26-00081-167 | MONITORING | Open Borehole | 6.0 | 86.0 | 111.0 | 12/14/2006 | 611298.4 | 683683.3 | 14.00 | NA | 12.69 | 6/13/2018 |
| 114-MW71D | BEDROCK | ACTIVE | SITE 114 | N/A | E202109567 | MONITORING | Open Borehole | 6.0 | 115.0 | 141.0 | 10/19/2021 | 610955.0 | 683613.6 | 14.20 | 16.31 | 15.96 | 12/7/2021 |
| 114-MW72D | BEDROCK | ACTIVE | SITE 132 | N/A | E202109568 | MONITORING | Flute Multiport System | 6.0 | 102.0<br>110.0<br>116.0<br>123.0 | 106.0<br>114.0<br>119.0<br>126.0 | 11/1/2021 | 610827.0 | 683100.2 | 12.30 | N/A | 14.41 | 12/7/2021 |
| 114-MW7D | BEDROCK | ACTIVE | SITE 114 | N/A | 26-00081-207 | MONITORING | SCHEDULE 40 PVC | 6.0 | 85.0 | 90.0 | 12/15/2006 | 611189.2 | 683329.1 | 11.21 | NA | 11.92 | 6/11/2018 |
| 114-MW75WR | WEATHERED BEDROCK | ACTIVE | SITE 114 | N/A | E202312353 | MONITORING | SCHEDULE 40 PVC | 2.0 | 116.0 | 121.0 | 12/22/2023 | 611142.9 | 682659.5 | 11.50 | 11.52 | 11.17 | 1/24/2024 |
| 114-PZ-52WR | WEATHERED BEDROCK | ACTIVE | SITE 114 | N/A | E202109828 | MONITORING | SCHEDULE 40 PVC | 2.0 | 70.0 | 74.0 | 11/29/2021 | 611063.0 | 683542.0 | 13.90 | 16.64 | 15.93 | 12/7/2021 |
| 114-PZ-66WR | WEATHERED BEDROCK | ACTIVE | SITE 114 | N/A | E202110392 | MONITORING | SCHEDULE 40 PVC | 2.0 | 80.0 | 84.0 | 11/18/2021 | 610929.9 | 683430.2 | 13.90 | 16.75 | 15.85 | 12/7/2021 |
| 114-MW76D | BEDROCK | ACTIVE | SITE 114 | Target Area 1A | E202405808 | MONITORING | Open Borehole | 6 | 99.0 | 124.0 | 6/18/2024 | 610739.718 | 682956.53 | 12.00 | 15.45 | 14.90 | 8/1/2024 |
| 114-MW81D | BEDROCK | ACTIVE | SITE 114 | N/A | E202411518 | MONITORING | Open Borehole | 10 | 100.0 | 125.0 | 11/21/2024 | 610795.9 | 683046.5 | 12.20 | 15.82 | 15.45 | 12/17/2024 |
| ***Other Monitoring Wells - Inactive (Abandoned, Decommissioned, or Unable to be Located)*** | | | | | | | | | | | | | | | | | |
| 10W-MW101S | SHALLOW | DECOMMISSIONED | TEN WEST APPAREL | N/A | E201710694 | MONITORING | SCHEDULE 40 PVC | 2.0 | 12.0 | 17.0 | 1/18/2018 | 610587.4 | 682617.1 | 15.50 | 15.55 | 15.15 | 1/24/2018 |
| 10W-MW102S | SHALLOW | DECOMMISSIONED | TEN WEST APPAREL | N/A | E201710695 | MONITORING | SCHEDULE 40 PVC | 2.0 | 12.0 | 17.0 | 1/19/2018 | 610516.5 | 682453.4 | 15.50 | 15.46 | 15.11 | 1/24/2018 |
| 114CAN1 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201200538 | RECOVERY | SCHEDULE 40 PVC | 4.0 | 6.0 | 16.0 | 2/28/2012 | 611343.1 | 683733.6 | NA | NA | NA | NA |
| 114CAN15 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201200552 | RECOVERY | SCHEDULE 40 PVC | 4.0 | 4.5 | 14.5 | 1/17/2012 | 611240.3 | 683516.0 | NA | NA | NA | 3/30/2012 |
| 114CAN18 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201200554 | RECOVERY | SCHEDULE 40 PVC | 4.0 | 5.0 | 15.0 | 1/12/2012 | 611216.5 | 683493.9 | NA | NA | 12.18 | 3/30/2012 |
| 114CAN21 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201201548 | RECOVERY | SCHEDULE 40 PVC | 4.0 | 5.0 | 15.0 | 1/18/2012 | 611211.6 | 683459.7 | NA | NA | 12.12 | 3/30/2012 |
| 114CAN22 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201200559 | RECOVERY | SCHEDULE 40 PVC | 4.0 | 4.5 | 19.5 | 1/20/2012 | 611133.0 | 683426.3 | NA | NA | 13.22 | 3/30/2012 |
| 114CAN23 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201200560 | RECOVERY | SCHEDULE 40 PVC | 4.0 | 4.5 | 14.5 | 1/30/2012 | 611179.5 | 683411.6 | NA | NA | 13.37 | 3/30/2012 |
| 114CAN24 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201200561 | RECOVERY | SCHEDULE 40 PVC | 4.0 | 5.5 | 15.5 | 1/23/2012 | 611105.6 | 683382.8 | NA | NA | 13.87 | 3/30/2012 |
| 114CAN25 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201200562 | RECOVERY | SCHEDULE 40 PVC | 4.0 | 8.0 | 18.0 | 1/23/2012 | 611151.6 | 683361.5 | NA | NA | 14.18 | 3/30/2012 |
| 114CAN26 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201200563 | RECOVERY | SCHEDULE 40 PVC | 4.0 | 4.5 | 19.5 | 1/24/2012 | 611081.3 | 683331.0 | NA | NA | 13.52 | 3/30/2012 |
| 114CAN27 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201200564 | RECOVERY | SCHEDULE 40 PVC | 4.0 | 5.5 | 15.5 | 1/24/2012 | 611119.9 | 683311.1 | NA | NA | 13.30 | 3/30/2012 |
| 114CAN28 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201200565 | RECOVERY | SCHEDULE 40 PVC | 4.0 | 4.0 | 14.0 | 1/27/2012 | 611052.5 | 683277.8 | NA | NA | 13.38 | 3/30/2012 |
| 114CAN29 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201200566 | RECOVERY | SCHEDULE 40 PVC | 4.0 | 6.0 | 16.0 | 1/26/2012 | 611087.4 | 683256.5 | NA | NA | 13.37 | NA |
| 114CAN30 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201200567 | RECOVERY | SCHEDULE 40 PVC | 4.0 | 6.5 | 16.5 | 2/8/2012 | 611023.7 | 683223.5 | NA | NA | 13.49 | 3/30/2012 |
| 114CAN31 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201200568 | RECOVERY | SCHEDULE 40 PVC | 4.0 | 6.0 | 16.0 | 1/24/2012 | 611057.1 | 683204.4 | NA | NA | 13.10 | NA |
| 114CAN32 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201200569 | RECOVERY | SCHEDULE 40 PVC | 4.0 | 3.0 | 18.0 | 1/30/2012 | 610988.1 | 683181.2 | NA | NA | 13.22 | NA |
| 114CAN33 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201200570 | RECOVERY | SCHEDULE 40 PVC | 4.0 | 4.0 | 19.0 | 1/26/2012 | 611025.8 | 683157.5 | NA | NA | 13.09 | 3/30/2012 |
| 114CAN4 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201200541 | RECOVERY | SCHEDULE 40 PVC | 4.0 | 5.5 | 15.5 | 2/16/2012 | 611305.8 | 683644.6 | NA | NA | NA | 3/30/2012 |
| 114CAN8 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201200545 | RECOVERY | SCHEDULE 40 PVC | 4.0 | 5.0 | 15.0 | 2/21/2012 | 611279.1 | 683594.5 | NA | NA | NA | 3/30/2012 |
| 114MON10 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201201532 | GAUGING | SCHEDULE 40 PVC | 4.0 | 5.5 | 15.5 | 1/24/2012 | 611093.9 | 683354.8 | NA | NA | 13.62 | 3/30/2012 |
| 114MON11 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201201533 | GAUGING | SCHEDULE 40 PVC | 4.0 | 6.0 | 16.0 | 1/19/2012 | 611149.6 | 683453.6 | NA | NA | 14.53 | 3/30/2012 |
| 114MON15 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201201540 | GAUGING | SCHEDULE 40 PVC | 4.0 | 3.5 | 13.5 | 2/24/2012 | 611344.9 | 683720.8 | NA | NA | NA | NA |
| 114MON16 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201201462 | GAUGING | SCHEDULE 40 PVC | 4.0 | 6.0 | 16.0 | 2/8/2012 | 611269.2 | 683767.8 | NA | NA | NA | NA |
| 114MON24 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201201534 | GAUGING | SCHEDULE 40 PVC | 4.0 | 3.5 | 13.5 | 2/28/2012 | 611033.4 | 683133.4 | NA | NA | 13.54 | 3/30/2012 |
| 114MON25 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201201535 | GAUGING | SCHEDULE 40 PVC | 4.0 | 6.5 | 11.5 | 2/3/2012 | 611087.9 | 683223.9 | NA | NA | 13.01 | 3/30/2012 |

**Table 1**
**Monitoring and Remediation Well Network and Construction Details**
**Groundwater Remedial Action Progress Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | Well Construction | | | | | As-Built Survey | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Well ID | Water-Bearing Zone | Status | Location | Remediation Area | Permit Number | Well Use | Screen Material | Well Diameter (in) | Screen Interval Top (ft bgs)[1] | Screen Interval Bottom (ft bgs)[1] | Well Installation Date | Easting (ft NAD83) | Northing (ft NAD83) | Ground Surface Elevation (ft NAVD88) | Top of Outer Casing Elevation (ft NAVD88) | Top of Inner Casing Elevation (ft NAVD88) | Survey Date |
| 114MON26 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201201536 | GAUGING | SCHEDULE 40 PVC | 4.0 | 4.5 | 14.5 | 3/6/2012 | 611155.9 | 683325.1 | NA | NA | 13.70 | 3/30/2012 |
| 114MON27 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201201537 | GAUGING | SCHEDULE 40 PVC | 4.0 | 4.0 | 14.0 | 2/29/2012 | 611215.0 | 683428.7 | NA | NA | 12.60 | 3/30/2012 |
| 114MON28 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201201541 | GAUGING | SCHEDULE 40 PVC | 4.0 | 3.5 | 13.5 | 3/5/2012 | 611253.3 | 683528.2 | NA | NA | 13.77 | 4/5/2012 |
| 114MON29 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201201542 | GAUGING | SCHEDULE 40 PVC | 4.0 | 4.0 | 14.0 | 2/14/2012 | 611322.1 | 683655.4 | NA | NA | 12.68 | 4/5/2012 |
| 114MON30 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201201543 | GAUGING | SCHEDULE 40 PVC | 4.0 | 6.5 | 16.5 | 2/13/2012 | 611362.2 | 683736.3 | NA | NA | 12.73 | 4/5/2012 |
| 114MON32 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201201464 | GAUGING | SCHEDULE 40 PVC | 4.0 | 4.0 | 14.0 | 2/9/2012 | 611239.5 | 683681.0 | NA | NA | 15.53 | NA |
| 114MON33 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201201465 | GAUGING | SCHEDULE 40 PVC | 4.0 | 4.0 | 14.0 | 3/2/2012 | 611187.0 | 683570.3 | NA | NA | 16.74 | 6/13/2018 |
| 114MON9 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201201539 | GAUGING | SCHEDULE 40 PVC | 4.0 | 3.5 | 18.5 | 2/1/2012 | 611050.9 | 683238.8 | NA | NA | 13.24 | 3/30/2012 |
| 114-MW19A | SHALLOW | DECOMMISSIONED | HALLADAY ST | N/A | 26-00080-772 | MONITORING | SCHEDULE 40 PVC | 2.0 | 3.0 | 15.0 | 10/12/2006 | 611256.2 | 682731.8 | 11.00 | NA | 10.68 | 12/6/2011 |
| 114-MW20A | SHALLOW | DECOMMISSIONED | HALLADAY ST | N/A | 26-00080-774 | MONITORING | SCHEDULE 40 PVC | 2.0 | 3.0 | 15.0 | 10/9/2006 | 611545.9 | 683012.2 | 12.40 | NA | 12.17 | 12/6/2011 |
| 114-MW21A | SHALLOW | DECOMMISSIONED | SITE 199 | N/A | 26-00080-776 | MONITORING | SCHEDULE 40 PVC | 2.0 | 3.0 | 15.0 | 10/5/2006 | 611390.8 | 683877.6 | 15.40 | NA | 14.97 | 12/6/2011 |
| 114-MW22A | SHALLOW | DECOMMISSIONED | CARTERET AVE | N/A | 26-00081-172 | MONITORING | SCHEDULE 40 PVC | 2.0 | 7.0 | 19.0 | 11/20/2006 | 610687.8 | 683257.1 | 12.40 | NA | 11.90 | 12/6/2011 |
| 114-MW23A | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | 26-00081-649 | MONITORING | SCHEDULE 40 PVC | 2.0 | 3.0 | 17.0 | 12/20/2006 | 611569.2 | 683774.8 | 14.70 | NA | 14.40 | 12/6/2011 |
| 114-MW24A | SHALLOW | DECOMMISSIONED | FS/FSP | N/A | E201118847 | MONITORING | SCHEDULE 40 PVC | 4.0 | 9.0 | 14.0 | 12/1/2011 | 611670.0 | 683682.5 | 11.70 | NA | 11.44 | 12/6/2011 |
| 114-MW2B1-3 | SHALLOW | DECOMMISSIONED | FS/FSP | N/A | E201400710 | MONITORING | SCHEDULE 40 PVC | 2.0 | 8.5 | 18.5 | 5/15/2014 | 611611.0 | 683710.1 | 17.60 | NA | 17.14 | 6/26/2014 |
| 114-MW73D | BEDROCK | DECOMMISSIONED | SITE 114 | N/A | E202312362 | MONITORING | Open Borehole | 6.0 | 88.0 | 118.0 | 12/29/2023 | 610916.6 | 683379.7 | 13.90 | 14.31 | 14.99 | 1/24/2024 |
| 114-MW74D | BEDROCK | DECOMMISSIONED | SITE 114 | N/A | E202312357 | MONITORING | Open Borehole | 6.0 | 97.0 | 132.0 | 1/10/2024 | 610897.5 | 683447.6 | 14.20 | 15.19 | 15.23 | 1/24/2024 |
| 114-P2B3-MW1 | SHALLOW | UNABLE TO BE LOCATED | CARTERET AVE | N/A | E201409186 | MONITORING | SCHEDULE 40 PVC | 2.0 | 5.0 | 15.0 | 7/22/2014 | 611051.7 | 683084.2 | 12.50 | 12.47 | 12.29 | 8/5/2014 |
| 114-P2B3-MW2 | SHALLOW | DECOMMISSIONED | CARTERET AVE | N/A | E201409187 | MONITORING | SCHEDULE 40 PVC | 2.0 | 7.0 | 17.0 | 7/17/2014 | 611161.2 | 682967.8 | 12.20 | 12.22 | 11.97 | 8/5/2014 |
| 114-P2B4-MW1 | SHALLOW | DECOMMISSIONED | CARTERET AVE | N/A | E201409188 | MONITORING | SCHEDULE 40 PVC | 2.0 | 7.0 | 17.0 | 7/16/2014 | 611284.7 | 682837.8 | 11.50 | 11.48 | 10.50 | 8/5/2014 |
| 114-P2B4-MW2 | SHALLOW | DECOMMISSIONED | HALLADAY ST | N/A | E201409189 | MONITORING | SCHEDULE 40 PVC | 2.0 | 7.0 | 17.0 | 7/23/2014 | 611324.7 | 682856.9 | 11.70 | 11.71 | 10.75 | 8/5/2014 |
| 114-P2B4-MW3 | SHALLOW | DECOMMISSIONED | HALLADAY ST | N/A | E201409190 | MONITORING | SCHEDULE 40 PVC | 2.0 | 7.0 | 17.0 | 7/21/2014 | 611465.0 | 682973.8 | 11.20 | 11.24 | 10.95 | 8/5/2014 |
| 114REL10 | SHALLOW | ABANDONED | SITE 114 | N/A | E201200584 | RELIEF | STAINLESS STEEL | 4.0 | 14.0 | 17.0 | 2/6/2012 | 611269.1 | 683779.0 | NA | NA | 14.80 | NA |
| 114REL11 | SHALLOW | ABANDONED | SITE 114 | N/A | E201200585 | RELIEF | STAINLESS STEEL | 4.0 | 13.0 | 16.0 | 2/7/2012 | 611309.4 | 683765.3 | NA | NA | 13.90 | 3/30/2012 |
| 114REL12 | SHALLOW | ABANDONED | SITE 114 | N/A | E201200586 | RELIEF | STAINLESS STEEL | 4.0 | 13.0 | 16.0 | 2/27/2012 | 611337.2 | 683750.8 | NA | NA | 13.80 | 3/30/2012 |
| 114REL13 | SHALLOW | ABANDONED | SITE 114 | N/A | E201201549 | RELIEF | STAINLESS STEEL | 4.0 | 10.0 | 13.0 | 2/14/2012 | 611358.7 | 683724.5 | NA | NA | 14.60 | 4/5/2012 |
| 114REL14 | SHALLOW | ABANDONED | SITE 114 | N/A | E201201550 | RELIEF | STAINLESS STEEL | 4.0 | 11.5 | 14.5 | 2/14/2012 | 611329.6 | 683669.0 | NA | NA | 15.30 | 4/5/2012 |
| 114REL15 | SHALLOW | ABANDONED | SITE 114 | N/A | E201201551 | RELIEF | STAINLESS STEEL | 4.0 | 12.5 | 15.5 | 2/16/2012 | 611298.8 | 683621.5 | NA | NA | 13.81 | 4/5/2012 |
| 114REL16 | SHALLOW | ABANDONED | SITE 114 | N/A | E201201552 | RELIEF | STAINLESS STEEL | 4.0 | 10.0 | 13.0 | 2/21/2012 | 611272.0 | 683569.9 | NA | NA | 13.03 | 4/5/2012 |
| 114REL17 | SHALLOW | ABANDONED | SITE 114 | N/A | E201201553 | RELIEF | STAINLESS STEEL | 4.0 | 11.0 | 14.0 | 3/1/2012 | 611243.7 | 683490.7 | NA | NA | 14.30 | 3/30/2012 |
| 114REL18 | SHALLOW | ABANDONED | SITE 114 | N/A | E201201554 | RELIEF | STAINLESS STEEL | 4.0 | 11.0 | 14.0 | 2/29/2012 | 611229.6 | 683455.0 | NA | NA | 11.80 | 3/30/2012 |
| 114REL19 | SHALLOW | ABANDONED | SITE 114 | N/A | E201200571 | RELIEF | STAINLESS STEEL | 4.0 | 11.0 | 14.0 | 2/28/2012 | 611197.8 | 683398.6 | NA | NA | 13.95 | 3/30/2012 |
| 114REL20 | SHALLOW | ABANDONED | SITE 114 | N/A | E201200572 | RELIEF | STAINLESS STEEL | 4.0 | 12.0 | 15.0 | 3/6/2012 | 611175.1 | 683348.7 | NA | NA | 13.28 | 3/30/2012 |
| 114REL21 | SHALLOW | ABANDONED | SITE 114 | N/A | E201200573 | RELIEF | STAINLESS STEEL | 4.0 | 12.0 | 15.0 | 3/7/2012 | 611136.6 | 683298.6 | NA | NA | 14.38 | 3/30/2012 |
| 114REL22 | SHALLOW | ABANDONED | SITE 114 | N/A | E201200574 | RELIEF | STAINLESS STEEL | 4.0 | 10.0 | 13.0 | 2/6/2012 | 611096.6 | 683241.9 | NA | NA | 13.11 | 3/30/2012 |
| 114REL23 | SHALLOW | ABANDONED | SITE 114 | N/A | E201200575 | RELIEF | STAINLESS STEEL | 4.0 | 9.0 | 12.0 | 2/2/2012 | 611076.7 | 683204.6 | NA | NA | 12.31 | 3/30/2012 |
| 114REL24 | SHALLOW | ABANDONED | SITE 114 | N/A | E201200576 | RELIEF | STAINLESS STEEL | 4.00 | 12.0 | 15.0 | 2/28/2012 | 611038.1 | 683148.1 | NA | NA | 13.25 | 3/30/2012 |
| 132-MW2A | SHALLOW | DECOMMISSIONED | SITE 132 | N/A | 26-00082-298 | MONITORING | SCHEDULE 40 PVC | 2.0 | 4.0 | 18.0 | 3/20/2007 | 610541.9 | 682823.9 | 14.60 | 14.55 | 14.12 | 12/6/2011 |
| 132-P3A-MW1 | SHALLOW | DECOMMISSIONED | CARTERET AVE | N/A | E201410048 | MONITORING | SCHEDULE 40 PVC | 2.0 | 5.0 | 15.0 | 8/7/2014 | 610876.9 | 683163.9 | 12.10 | 12.08 | 11.19 | 9/8/2024 |
| 132-P3A-MW3 | SHALLOW | DECOMMISSIONED | FORMER FISHBEIN PROPERTY | N/A | E201410050 | MONITORING | SCHEDULE 40 PVC | 2.0 | 8.0 | 18.0 | 8/6/2014 | 610668.2 | 682734.0 | 13.90 | 13.85 | 13.01 | 9/8/2024 |
| 132-P3A-MW4 | SHALLOW | DECOMMISSIONED | FORMER FISHBEIN PROPERTY | N/A | E201410051 | MONITORING | SCHEDULE 40 PVC | 2.0 | 10.0 | 20.0 | 8/5/2014 | 610780.3 | 682676.9 | 13.50 | 13.50 | 13.08 | 9/8/2024 |
| 132-P3A-MW5 | SHALLOW | DECOMMISSIONED | CARTERET AVE | N/A | E201410052 | MONITORING | SCHEDULE 40 PVC | 2.0 | 7.0 | 17.0 | 8/8/2014 | 611000.6 | 683094.5 | 12.70 | 12.72 | 12.45 | 9/8/2024 |
| 133-MW1A | SHALLOW | DECOMMISSIONED | SITE 133 WEST | N/A | 26-00082-875 | MONITORING | SCHEDULE 40 PVC | 2.0 | 3.0 | 13.0 | 5/1/2007 | 610678.0 | 682270.1 | 11.70 | 11.64 | 11.12 | 12/6/2011 |
| 133-MW2A | SHALLOW | DECOMMISSIONED | SITE 133 EAST | N/A | 26-00082-196 | MONITORING | SCHEDULE 40 PVC | 2.0 | 3.0 | 13.0 | 4/3/2007 | 610780.8 | 682140.0 | 10.00 | 9.98 | 9.64 | 12/6/2011 |
| 133-MW3A | SHALLOW | DECOMMISSIONED | SITE 133 WEST | N/A | E201317206 | MONITORING | SCHEDULE 40 PVC | 2.0 | 10.0 | 15.0 | 11/27/2013 | 610752.9 | 682496.3 | NA | NA | NA | NA |
| 133-P3B-MW1 | SHALLOW | DECOMMISSIONED | HALLADAY ST | N/A | E201410679 | MONITORING | SCHEDULE 40 PVC | 2.0 | 7.0 | 17.0 | 8/14/2014 | 610835.8 | 682385.2 | 11.70 | 11.65 | 11.41 | 9/8/2024 |
| 135-MW1A | SHALLOW | DECOMMISSIONED | FORMER AL SMITH MOVING & STORAGE | N/A | 26-00082-193 | MONITORING | SCHEDULE 40 PVC | 2.0 | 4.0 | 16.0 | 3/22/2007 | 610954.3 | 682134.3 | 9.80 | 9.79 | 9.36 | 12/6/2011 |
| 135-MW3A | SHALLOW | DECOMMISSIONED | SITE 135 | N/A | E201317207 | MONITORING | SCHEDULE 40 PVC | 2.0 | 10.0 | 15.0 | 11/27/2013 | 611125.5 | 682308.2 | 11.60 | 11.62 | 10.63 | 4/29/2014 |
| 135-P3C-MW1 | SHALLOW | DECOMMISSIONED | SITE 133 EAST | N/A | E201502322 | MONITORING | SCHEDULE 40 PVC | 2.0 | 6.0 | 16.0 | 4/26/2015 | 610901.3 | 682249.4 | 10.60 | 10.64 | 10.34 | 4/29/2015 |
| 137-MW1A | SHALLOW | DECOMMISSIONED | SITE 137A | N/A | 26-00082-187 | MONITORING | SCHEDULE 40 PVC | 2.0 | 3.0 | 14.0 | 3/9/2007 | 611043.7 | 683029.4 | 13.40 | 13.38 | 12.80 | 12/6/2011 |
| 137-MW2A | SHALLOW | DECOMMISSIONED | SITE 137A | N/A | 26-00082-190 | MONITORING | SCHEDULE 40 PVC | 2.0 | 3.0 | 18.0 | 3/6/2007 | 610924.0 | 682808.6 | 14.40 | 14.32 | 13.92 | 12/6/2011 |
| 137-MW4A | SHALLOW | DECOMMISSIONED | SITE 137B | N/A | 26-00082-305 | MONITORING | SCHEDULE 40 PVC | 2.0 | 3.0 | 18.0 | 2/21/2007 | 610978.4 | 682542.7 | 13.60 | 13.52 | 13.20 | 12/6/2011 |
| 137-P3B-MW1 | SHALLOW | DECOMMISSIONED | CARTERET AVE | N/A | E201413188 | MONITORING | SCHEDULE 40 PVC | 2.0 | 5.0 | 15.0 | 10/10/2014 | 611176.6 | 682893.6 | 12.00 | 11.96 | 11.31 | 9/3/2015 |
| 137-P3B-MW2 | SHALLOW | DECOMMISSIONED | HALLADAY ST | N/A | E201410680 | MONITORING | SCHEDULE 40 PVC | 2.0 | 7.0 | 17.0 | 8/13/2014 | 611044.1 | 682574.4 | 12.60 | 12.61 | 12.25 | 9/8/2024 |
| 186-MW02 | SHALLOW | DECOMMISSIONED | SITE 186 | N/A | 26-00048759 | MONITORING | SCHEDULE 40 PVC | 2.0 | 5.5 | 15.5 | 9/11/1997 | 611301.6 | 684159.5 | 13.30 | 13.22 | 13.15 | 12/6/2011 |
| D-1 | SHALLOW | ABANDONED | SITE 114 | N/A | NA | MONITORING | NA | 0.75 | 9.0 | 11.0 | 5/18/2005 | 610904.8 | 683631.7 | 12.17 | NA | 14.27 | NA |
| DPT-10 | SHALLOW | DECOMMISSIONED | SITE 132 | N/A | E201307058 | MONITORING | SCHEDULE 40 PVC | 2.0 | 4.0 | 14.0 | 5/23/2013 | 610939.0 | 683077.0 | NA | NA | NA | NA |
| DPT-11 | SHALLOW | DECOMMISSIONED | SITE 132 | N/A | E201307059 | MONITORING | SCHEDULE 40 PVC | 2.0 | 4.0 | 14.0 | 5/23/2013 | 610937.0 | 683073.0 | NA | NA | NA | NA |
| DPT-12 | SHALLOW | DECOMMISSIONED | SITE 132 | N/A | E201307060 | MONITORING | SCHEDULE 40 PVC | 2.0 | 4.0 | 14.0 | 5/23/2013 | 610934.0 | 683068.0 | NA | NA | NA | NA |
| DPT-7 | SHALLOW | DECOMMISSIONED | SITE 132 | N/A | E201307055 | MONITORING | SCHEDULE 40 PVC | 2.0 | 4.0 | 14.0 | 5/23/2013 | 610946.0 | 683079.0 | NA | NA | NA | NA |
| DPT-8 | SHALLOW | DECOMMISSIONED | SITE 132 | N/A | E201307056 | MONITORING | SCHEDULE 40 PVC | 2.0 | 4.0 | 14.0 | 5/23/2013 | 610951.0 | 683077.0 | NA | NA | NA | NA |
| DPT-9 | SHALLOW | DECOMMISSIONED | SITE 132 | N/A | E201307057 | MONITORING | SCHEDULE 40 PVC | 2.0 | 4.0 | 14.0 | 5/23/2013 | 610956.0 | 683075.0 | NA | NA | NA | NA |
| EW-1 | SHALLOW | ABANDONED | SITE 114 | N/A | NA | EXTRACTION | NA | 0.75 | 10.5 | 13.5 | 5/18/2005 | 611265.1 | 683629.2 | 14.11 | NA | 14.11 | NA |
| EW-2 | SHALLOW | ABANDONED | SITE 114 | N/A | NA | EXTRACTION | NA | 0.75 | 10.5 | 16.3 | 5/17/2005 | 611256.9 | 683632.8 | 16.30 | NA | 16.30 | NA |
| F-1 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | NA | PIEZOMETER | NA | 0.75 | 10.5 | 16.5 | 5/17/2005 | 611068.9 | 683811.6 | NA | NA | 17.18 | NA |
| F-2 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | NA | PIEZOMETER | NA | 0.75 | 10.5 | 16.0 | 5/17/2005 | 611000.6 | 683687.6 | NA | NA | 17.21 | NA |
| F-3 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | NA | PIEZOMETER | NA | 0.75 | 10.5 | 16.0 | 5/17/2005 | 611119.3 | 683785.3 | NA | NA | 17.10 | NA |
| F-4 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | NA | PIEZOMETER | NA | 0.75 | 10.5 | 16.0 | 5/17/2005 | 611050.6 | 683665.2 | NA | NA | 17.16 | NA |
| F-5 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | NA | PIEZOMETER | NA | 0.75 | 10.5 | 16.2 | 5/17/2005 | 611195.8 | 683743.6 | NA | NA | 17.28 | NA |
| F-6 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | NA | PIEZOMETER | NA | 0.75 | 10.5 | 16.1 | 5/17/2005 | 611138.6 | 683617.8 | NA | NA | 17.29 | NA |
| F-7 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | NA | PIEZOMETER | NA | 0.75 | 10.5 | 16.2 | 5/18/2005 | 611233.2 | 683647.3 | NA | NA | 17.41 | NA |
| GPS-EW1S | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201310721 | EXTRACTION | SCHEDULE 40 PVC | 2.0 | 6.0 | 16.0 | 10/15/2013 | 611095.7 | 683728.3 | 13.10 | NA | 14.04 | 4/28/2014 |

**Table 1**
**Monitoring and Remediation Well Network and Construction Details**
**Groundwater Remedial Action Progress Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | Well Construction | | | | | As-Built Survey | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Well ID | Water-Bearing Zone | Status | Location | Remediation Area | Permit Number | Well Use | Screen Material | Well Diameter (in) | Screen Interval Top (ft bgs)[1] | Screen Interval Bottom (ft bgs)[1] | Well Installation Date | Easting (ft NAD83) | Northing (ft NAD83) | Ground Surface Elevation (ft NAVD88) | Top of Outer Casing Elevation (ft NAVD88) | Top of Inner Casing Elevation (ft NAVD88) | Survey Date |
| GPS-EW2S | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201310719 | EXTRACTION | SCHEDULE 40 PVC | 2.0 | 6.0 | 16.0 | 10/16/2013 | 611109.2 | 683720.5 | 12.90 | NA | 15.08 | 4/28/2014 |
| GPS-EW3S | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201310717 | EXTRACTION | SCHEDULE 40 PVC | 2.0 | 6.0 | 16.0 | 10/16/2013 | 611123.8 | 683713.1 | 12.80 | NA | 13.75 | 4/28/2014 |
| GPS-IW1S | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201311280 | INJECTION | SCHEDULE 40 PVC | 4.0 | 6.0 | 16.0 | 9/19/2013 | 611186.0 | 683750.4 | 14.00 | 13.95 | 13.56 | 4/28/2014 |
| GPS-IW2S | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201311282 | INJECTION | SCHEDULE 40 PVC | 4.0 | 6.0 | 16.0 | 9/5/2013 | 611207.3 | 683740.3 | 13.60 | 13.58 | 13.29 | 4/28/2014 |
| GPS-PZ1S | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201311260 | PIEZOMETER | SCHEDULE 40 PVC | 1.0 | 6.0 | 16.0 | 9/24/2013 | 611178.6 | 683760.7 | 13.90 | 13.94 | 13.56 | 4/28/2014 |
| GPS-PZ2S | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201311262 | PIEZOMETER | SCHEDULE 40 PVC | 1.0 | 6.0 | 16.0 | 9/18/2013 | 611180.1 | 683747.3 | 14.00 | 13.98 | 13.73 | 4/28/2014 |
| GPS-PZ3S | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201311264 | PIEZOMETER | SCHEDULE 40 PVC | 1.0 | 6.0 | 16.0 | 9/18/2013 | 611195.4 | 683746.2 | 13.80 | 13.82 | 13.41 | 4/28/2014 |
| GPS-PZ4S | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201311266 | PIEZOMETER | SCHEDULE 40 PVC | 1.0 | 6.0 | 16.0 | 9/4/2013 | 611213.2 | 683741.9 | 13.60 | 13.59 | 13.23 | 4/28/2014 |
| GPS-PZ5S | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201311268 | PIEZOMETER | SCHEDULE 40 PVC | 1.0 | 6.0 | 16.0 | 9/4/2013 | 611209.9 | 683728.6 | 13.40 | 13.41 | 13.19 | 4/28/2014 |
| GPS-PZ6S | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201315022 | MONITORING | SCHEDULE 40 PVC | 1.0 | 6.0 | 16.0 | 10/17/2013 | 611169.1 | 683692.9 | 13.50 | 13.48 | 13.17 | 4/28/2014 |
| MW10A | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | 26-00076-986 | MONITORING | SCHEDULE 40 PVC | 2.0 | 2.0 | 15.0 | 10/17/2005 | 611338.3 | 683377.3 | 12.80 | 15.38 | 14.57 | 12/6/2011 |
| MW11A | SHALLOW | ABANDONED | SITE 114 | N/A | 26-00076-988 | MONITORING | SCHEDULE 40 PVC | 2.0 | 4.0 | 16.0 | 10/31/2005 | 611386.7 | 683604.0 | NA | NA | 17.28 | NA |
| MW12A | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | 26-00076-987 | MONITORING | SCHEDULE 40 PVC | 2.0 | 2.0 | 16.0 | 10/17/2005 | 610968.7 | 683335.3 | 13.90 | 14.48 | 14.32 | 12/6/2011 |
| MW13A | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | 26-00077-352 | MONITORING | SCHEDULE 40 PVC | 2.0 | 2.0 | 15.0 | 11/2/2005 | 611264.1 | 683088.9 | 13.40 | 13.39 | 13.04 | 12/6/2011 |
| MW14S | SHALLOW | DECOMMISSIONED | BERRY LANE PARK | N/A | 26-00084-552 | MONITORING | SCHEDULE 40 PVC | 2.0 | 3.0 | 13.0 | 9/4/2007 | 611619.2 | 683962.2 | 11.20 | 13.96 | 13.75 | 12/6/2011 |
| MW1A | SHALLOW | ABANDONED | SITE 114 | N/A | 26-00069-756 | MONITORING | SCHEDULE 40 PVC | 2.0 | 5.0 | 10.0 | 11/18/2003 | 610815.6 | 683478.9 | 11.90 | 13.59 | 13.35 | 12/6/2011 |
| MW1S | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | 26-00068-656 | MONITORING | SCHEDULE 40 PVC | 2.0 | 2.0 | 12.0 | 8/6/2003 | 611430.1 | 683837.0 | 16.00 | 15.91 | 15.57 | 12/6/2011 |
| MW2A | SHALLOW | ABANDONED | SITE 114 | N/A | 26-00069-765 | MONITORING | SCHEDULE 40 PVC | 2.0 | 5.0 | 10.0 | 11/18/2003 | 610960.4 | 683739.0 | NA | NA | 10.97 | 1/12/2004 |
| MW2S | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | 26-00068-657 | MONITORING | SCHEDULE 40 PVC | 2.0 | 2.0 | 12.0 | 8/6/2003 | 611070.6 | 683117.3 | 12.90 | 12.82 | 12.33 | 12/6/2011 |
| MW-32 | SHALLOW | DECOMMISSIONED | GARFIELD AVE. | N/A | E201211013 | MONITORING | SCHEDULE 40 PVC | 2.0 | 2.0 | 12.0 | 7/23/2012 | 610829.3 | 683528.3 | 8.60 | NA | 11.72 | 8/14/2012 |
| MW-33 | SHALLOW | DECOMMISSIONED | GARFIELD AVE. | N/A | E201211014 | MONITORING | SCHEDULE 40 PVC | 2.0 | 3.0 | 13.0 | 7/23/2012 | 610764.8 | 683421.2 | 9.50 | NA | 11.57 | 8/14/2012 |
| MW-34 | SHALLOW | DECOMMISSIONED | CARTERET AVE | N/A | E201211015 | MONITORING | SCHEDULE 40 PVC | 2.0 | 8.0 | 18.0 | 7/24/2012 | 610794.7 | 683260.4 | 13.13 | NA | 15.65 | 6/11/2018 |
| MW-35 | SHALLOW | DECOMMISSIONED | CARTERET AVE | N/A | E201211016 | MONITORING | SCHEDULE 40 PVC | 2.0 | 8.0 | 18.0 | 7/24/2012 | 610947.9 | 683183.3 | 12.88 | NA | 15.62 | 6/11/2018 |
| MW3A | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | 26-00069-766 | MONITORING | SCHEDULE 40 PVC | 2.0 | 3.0 | 8.0 | 11/17/2003 | 611154.5 | 683927.5 | 13.80 | 13.80 | 13.57 | 12/6/2011 |
| MW3S | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | 26-00068-658 | MONITORING | SCHEDULE 40 PVC | 2.0 | 2.0 | 12.0 | 8/6/2003 | 611649.9 | 683505.7 | 13.20 | 13.20 | 12.93 | 12/6/2011 |
| MW4A | SHALLOW | DECOMMISSIONED | CARTERET AVE | N/A | 26-00069-757 | MONITORING | SCHEDULE 40 PVC | 2.0 | 4.0 | 14.0 | 11/18/2003 | 610811.5 | 683249.6 | 12.80 | 12.71 | 12.27 | 12/6/2011 |
| MW4S | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | 26-00068-659 | MONITORING | SCHEDULE 40 PVC | 2.0 | 2.0 | 12.0 | 8/13/2003 | 611627.9 | 683359.4 | 11.70 | 14.35 | 13.86 | 12/6/2011 |
| MW5A | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | 26-00069-758 | MONITORING | SCHEDULE 40 PVC | 2.0 | 5.0 | 16.0 | 11/13/2003 | 611031.2 | 683533.9 | 13.50 | 15.73 | 15.35 | 12/6/2011 |
| MW5S | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | 26-00068-660 | MONITORING | SCHEDULE 40 PVC | 2.0 | 2.0 | 12.0 | 8/22/2003 | 611561.1 | 683114.9 | 13.40 | 13.39 | 13.11 | 12/6/2011 |
| MW6A | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | 26-00069-767 | MONITORING | SCHEDULE 40 PVC | 2.0 | 5.0 | 15.0 | 11/12/2003 | 611302.5 | 683696.9 | NA | NA | 12.95 | NA |
| MW6S | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | 26-00068-661 | MONITORING | SCHEDULE 40 PVC | 2.0 | 5.0 | 15.0 | 8/13/2003 | 611861.4 | 683403.1 | 14.10 | 14.03 | 13.58 | 12/6/2011 |
| MW7A | SHALLOW | ABANDONED | SITE 114 | N/A | 26-00069-759 | MONITORING | SCHEDULE 40 PVC | 2.0 | 5.0 | 17.0 | 11/12/2003 | 611186.8 | 683317.0 | 13.20 | 13.12 | 12.72 | 12/6/2011 |
| MW8A | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | 26-00069-768 | MONITORING | SCHEDULE 40 PVC | 2.0 | 5.0 | 17.0 | 11/14/2003 | 611337.4 | 682896.4 | 12.90 | 14.99 | 14.62 | 12/6/2011 |
| MW9A | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | 26-00076-991 | MONITORING | SCHEDULE 40 PVC | 2.0 | 3.0 | 17.0 | 10/28/2005 | 611091.4 | 683631.1 | NA | NA | 17.36 | NA |
| MW9S | SHALLOW | ABANDONED | HALLADAY ST | N/A | 26-00084-546 | MONITORING | SCHEDULE 40 PVC | 2.0 | 4.0 | 14.0 | 8/13/2007 | 611180.0 | 682658.0 | 11.80 | 11.73 | 11.29 | 12/6/2011 |
| MWP1 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | 26-00071-097 | MONITORING | NA | 0.75 | 5.0 | 10.0 | 5/7/2004 | 611042.8 | 683788.5 | 17.20 | NA | 17.58 | NA |
| NW-1 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | NA | PIEZOMETER | NA | 0.75 | 10.5 | 15.9 | 5/18/2005 | 611104.4 | 683850.6 | 16.68 | NA | 16.68 | NA |
| NW-2 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | NA | PIEZOMETER | NA | 0.75 | 10.5 | 16.2 | 5/17/2005 | 611100.5 | 683840.4 | 17.25 | NA | 17.25 | NA |
| NW-3 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | NA | PIEZOMETER | NA | 0.75 | 10.5 | 14.3 | 5/18/2005 | 611242.3 | 683780.4 | 15.25 | NA | 15.25 | NA |
| NW-4 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | NA | PIEZOMETER | NA | 0.75 | 10.5 | 16.1 | 5/17/2005 | 611233.4 | 683775.8 | 17.28 | NA | 17.28 | NA |
| OW1 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | 26-00080-103 | PIEZOMETER | SCHEDULE 40 PVC | 2.0 | 11.0 | 16.0 | 8/10/2006 | 611320.9 | 683861.8 | NA | NA | 15.88 | NA |
| OW2 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | 26-00080-104 | PIEZOMETER | SCHEDULE 40 PVC | 2.0 | 11.0 | 16.0 | 8/9/2006 | 611310.5 | 683859.3 | NA | NA | 15.82 | NA |
| PW1 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | 26-00080-106 | MONITORING | SCHEDULE 40 PVC | 4.0 | 3.0 | 18.0 | 8/9/2006 | 611318.7 | 683856.4 | NA | NA | 15.82 | NA |
| PZ1 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | 26-00076-979 | PIEZOMETER | SCHEDULE 40 PVC | 0.75 | 15.0 | 20.0 | 10/20/2005 | 611020.8 | 683230.7 | NA | NA | 15.29 | NA |
| PZ10 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | 26-00077-024 | PIEZOMETER | SCHEDULE 40 PVC | 0.75 | 13.0 | 18.0 | 10/19/2005 | 611140.6 | 683609.5 | NA | NA | 17.52 | NA |
| PZ11 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | 26-00077-025 | PIEZOMETER | SCHEDULE 40 PVC | 0.75 | 13.0 | 18.0 | 10/19/2005 | 610979.3 | 683669.1 | NA | NA | 17.44 | NA |
| PZ12 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | 26-00077-026 | PIEZOMETER | SCHEDULE 40 PVC | 0.75 | 12.0 | 17.0 | 10/19/2005 | 611025.5 | 683747.7 | NA | NA | 17.58 | NA |
| PZ13 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | 26-00077-017 | PIEZOMETER | SCHEDULE 40 PVC | 0.75 | 11.0 | 16.0 | 10/19/2005 | 611083.7 | 683797.0 | NA | NA | 17.45 | NA |
| PZ14 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | 26-00077-018 | PIEZOMETER | SCHEDULE 40 PVC | 0.75 | 15.0 | 20.0 | 10/19/2005 | 611218.6 | 683785.4 | NA | NA | 17.50 | NA |
| PZ2 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | 26-00076-980 | PIEZOMETER | SCHEDULE 40 PVC | 0.75 | 3.0 | 18.0 | 10/11/2005 | 611045.4 | 683195.5 | NA | NA | 15.29 | NA |
| PZ3 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | 26-00077-981 | PIEZOMETER | SCHEDULE 40 PVC | 0.75 | 1.0 | 16.0 | 10/11/2005 | 611135.5 | 683485.3 | NA | NA | 14.36 | NA |
| PZ4 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | 26-00077-982 | PIEZOMETER | SCHEDULE 40 PVC | 0.75 | 1.5 | 16.5 | 10/11/2005 | 611170.5 | 683468.5 | NA | NA | 14.42 | NA |
| PZ5 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | 26-00077-019 | PIEZOMETER | SCHEDULE 40 PVC | 0.75 | 12.0 | 17.0 | 10/19/2005 | 611198.6 | 683533.5 | NA | NA | 17.76 | NA |
| PZ6 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | 26-00077-020 | PIEZOMETER | SCHEDULE 40 PVC | 0.75 | 7.0 | 17.0 | 10/18/2005 | 611226.5 | 683615.4 | NA | NA | 18.00 | NA |
| PZ7 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | 26-00077-021 | PIEZOMETER | SCHEDULE 40 PVC | 0.75 | 6.0 | 16.0 | 10/18/2005 | 611291.8 | 683732.6 | NA | NA | 17.53 | NA |
| PZ8 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | 26-00077-022 | PIEZOMETER | SCHEDULE 40 PVC | 0.75 | 11.5 | 16.5 | 10/21/2005 | 611360.2 | 683835.8 | NA | NA | 15.75 | NA |
| PZ9 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | 26-00077-023 | PIEZOMETER | SCHEDULE 40 PVC | 0.75 | 8.5 | 13.5 | 10/21/2005 | 611393.0 | 683810.5 | NA | NA | 15.23 | NA |
| RW-3 | SHALLOW | DECOMMISSIONED | SITE 132 | N/A | E201307046 | RECOVERY | STAINLESS STEEL | 2.0 | 10.0 | 14.0 | 5/24/2013 | 610942.0 | 683082.0 | NA | NA | NA | NA |
| SAP-1 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201117484 | MONITORING | SCHEDULE 40 PVC | 2.0 | 7.0 | 17.0 | 10/30/2011 | 611219.0 | 683855.2 | 15.40 | 15.37 | 15.07 | 8/14/2012 |
| SAP-2 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201117485 | MONITORING | SCHEDULE 40 PVC | 2.0 | 7.0 | 17.0 | 10/29/2011 | 611228.3 | 683885.4 | 15.20 | 17.09 | 16.91 | 8/14/2012 |
| SAP-3 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | E201117486 | MONITORING | SCHEDULE 40 PVC | 2.0 | 7.0 | 17.0 | 10/30/2011 | 611239.9 | 683911.9 | 15.70 | 15.73 | 15.46 | 8/14/2012 |
| SW-1 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | NA | PIEZOMETER | NA | 0.75 | 10.5 | 13.0 | 5/18/2005 | 610970.6 | 683639.1 | 14.35 | NA | 16.45 | NA |
| SW-2 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | NA | PIEZOMETER | NA | 0.75 | 10.5 | 16.1 | 5/18/2005 | 610974.9 | 683645.9 | 17.33 | NA | 17.33 | NA |
| SW-3 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | NA | PIEZOMETER | NA | 0.75 | 10.5 | 15.8 | 5/18/2005 | 611094.7 | 683567.3 | 15.34 | NA | 16.89 | NA |
| SW-4 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | NA | PIEZOMETER | NA | 0.75 | 10.5 | 16.1 | 5/17/2005 | 611105.7 | 683582.6 | 17.31 | NA | 17.31 | NA |
| W-1B | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | NA | MONITORING | SCHEDULE 40 PVC | 2.0 | 8.0 | 18.0 | 10/8/1983 | 611406.7 | 682955.0 | 12.50 | 14.21 | 13.97 | 12/6/2011 |
| WW-1 | SHALLOW | DECOMMISSIONED | SITE 114 | N/A | NA | PIEZOMETER | NA | 0.75 | 1.0 | 4.0 | 4/19/2005 | 610944.9 | 683719.9 | 12.15 | NA | 15.04 | NA |
| WW-2 | SHALLOW | DECOMMISSIONED | GARFIELD AVE. | N/A | NA | PIEZOMETER | NA | 0.75 | 1.0 | 4.0 | 4/19/2005 | 610996.2 | 683805.0 | 12.34 | NA | 15.30 | NA |
| WW-3 | SHALLOW | DECOMMISSIONED | GARFIELD AVE. | N/A | NA | PIEZOMETER | NA | 0.75 | 1.0 | 5.0 | 4/19/2005 | 611090.7 | 683901.5 | 13.98 | NA | 13.98 | NA |
| WW-4 | SHALLOW | ABANDONED | SITE 114 | N/A | NA | PIEZOMETER | NA | 0.75 | 9.0 | 10.8 | 5/18/2005 | 610922.8 | 683678.1 | 13.04 | NA | 14.15 | NA |
| 10W-MW105I | INTERMEDIATE | DECOMMISSIONED | TEN WEST APPAREL | N/A | E201712014 | MONITORING | SCHEDULE 40 PVC | 2.0 | 35.0 | 40.0 | 1/10/2018 | 610626.9 | 682304.3 | 11.20 | 11.25 | 10.92 | 1/24/2018 |
| 114CAN10 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201200547 | RECOVERY | SCHEDULE 40 PVC | 4.0 | 9.5 | 39.5 | 2/17/2012 | 611213.3 | 683593.6 | NA | NA | NA | 3/30/2012 |

**Table 1**
**Monitoring and Remediation Well Network and Construction Details**
**Groundwater Remedial Action Progress Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | Well Construction | | | | | As-Built Survey | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Well ID | Water-Bearing Zone | Status | Location | Remediation Area | Permit Number | Well Use | Screen Material | Well Diameter (in) | Screen Interval Top (ft bgs)[1] | Screen Interval Bottom (ft bgs)[1] | Well Installation Date | Easting (ft NAD83) | Northing (ft NAD83) | Ground Surface Elevation (ft NAVD88) | Top of Outer Casing Elevation (ft NAVD88) | Top of Inner Casing Elevation (ft NAVD88) | Survey Date |
| 114CAN11 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201200548 | RECOVERY | SCHEDULE 40 PVC | 4.0 | 5.0 | 15.0 | 2/21/2012 | 611267.6 | 683571.7 | NA | NA | NA | 3/30/2012 |
| 114CAN12 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201200549 | RECOVERY | SCHEDULE 40 PVC | 4.0 | 9.0 | 39.0 | 2/2/2012 | 611207.6 | 683565.2 | NA | NA | NA | 3/30/2012 |
| 114CAN13 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201200550 | RECOVERY | SCHEDULE 40 PVC | 4.0 | 10.0 | 40.0 | 1/31/2012 | 611248.7 | 683536.9 | NA | NA | NA | 3/30/2012 |
| 114CAN14 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201200551 | RECOVERY | SCHEDULE 40 PVC | 4.0 | 9.5 | 39.5 | 1/17/2012 | 611188.2 | 683541.1 | NA | NA | NA | 3/30/2012 |
| 114CAN16 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201201545 | RECOVERY | SCHEDULE 40 PVC | 4.0 | 5.5 | 35.5 | 1/27/2012 | 611188.8 | 683508.9 | NA | NA | NA | 3/30/2012 |
| 114CAN17 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201200553 | RECOVERY | SCHEDULE 40 PVC | 4.0 | 20.0 | 40.0 | 1/13/2012 | 611226.9 | 683484.4 | NA | NA | NA | 3/30/2012 |
| 114CAN19 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201201546 | RECOVERY | SCHEDULE 40 PVC | 4.0 | 19.5 | 39.5 | 1/25/2012 | 611206.0 | 683499.4 | NA | NA | NA | 3/30/2012 |
| 114CAN2 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201200539 | RECOVERY | SCHEDULE 40 PVC | 4.0 | 19.5 | 39.5 | 2/15/2012 | 611320.3 | 683675.7 | NA | NA | NA | 3/30/2012 |
| 114CAN20 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201201547 | RECOVERY | SCHEDULE 40 PVC | 4.0 | 9.5 | 39.5 | 1/18/2012 | 611160.2 | 683489.6 | NA | NA | 13.74 | 3/30/2012 |
| 114CAN3 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201200540 | RECOVERY | SCHEDULE 40 PVC | 4.0 | 9.5 | 39.5 | 2/13/2012 | 611256.3 | 683675.8 | NA | NA | NA | 3/30/2012 |
| 114CAN5 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201200542 | RECOVERY | SCHEDULE 40 PVC | 4.0 | 10.0 | 40.0 | 2/14/2012 | 611251.3 | 683664.2 | NA | NA | NA | 3/30/2012 |
| 114CAN6 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201200543 | RECOVERY | SCHEDULE 40 PVC | 4.0 | 19.5 | 39.5 | 2/17/2012 | 611294.9 | 683625.8 | NA | NA | NA | 3/30/2012 |
| 114CAN7 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201200544 | RECOVERY | SCHEDULE 40 PVC | 4.0 | 9.5 | 39.5 | 2/15/2012 | 611235.9 | 683632.0 | NA | NA | NA | 3/30/2012 |
| 114CAN9 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201200546 | RECOVERY | SCHEDULE 40 PVC | 4.0 | 9.5 | 39.5 | 2/16/2012 | 611222.6 | 683612.7 | NA | NA | NA | 3/30/2012 |
| 114MON12 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201201459 | GAUGING | SCHEDULE 40 PVC | 4.0 | 29.5 | 39.5 | 2/1/2012 | 611219.9 | 683556.2 | NA | NA | 10.75 | NA |
| 114MON13 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201201460 | GAUGING | SCHEDULE 40 PVC | 4.0 | 29.5 | 39.5 | 2/23/2012 | 611258.3 | 683604.2 | NA | NA | 11.90 | 3/30/2012 |
| 114MON14 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201201461 | GAUGING | SCHEDULE 40 PVC | 4.0 | 29.5 | 39.5 | 2/21/2012 | 611292.6 | 683651.2 | NA | NA | 13.11 | 3/30/2012 |
| 114MON17 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201201544 | GAUGING | SCHEDULE 40 PVC | 4.0 | 10.0 | 40.0 | 2/3/2012 | 611176.9 | 683514.8 | NA | NA | NA | 3/30/2012 |
| 114MON31 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201201463 | GAUGING | SCHEDULE 40 PVC | 4.0 | 30.0 | 40.0 | 2/7/2012 | 611292.1 | 683775.5 | NA | NA | 11.26 | 3/30/2012 |
| 114MON8 | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201201538 | GAUGING | SCHEDULE 40 PVC | 4.0 | 29.5 | 39.5 | 1/31/2012 | 611006.1 | 683169.9 | NA | NA | 12.84 | 3/30/2012 |
| 114-MW14B | INTERMEDIATE | DECOMMISSIONED | SITE 207 | N/A | 26-00082-034 | MONITORING | SCHEDULE 40 PVC | 2.0 | 28.0 | 33.0 | 2/1/2007 | 611245.3 | 684020.5 | 12.70 | 12.67 | 11.88 | 2/25/2016 |
| 114-MW20B | INTERMEDIATE | DECOMMISSIONED | HALLADAY ST | N/A | 26-00080-775 | MONITORING | SCHEDULE 40 PVC | 2.0 | 35.0 | 40.0 | 10/9/2006 | 611548.0 | 683014.2 | 12.40 | NA | 12.16 | 12/6/2011 |
| 114-MW21B | INTERMEDIATE | DECOMMISSIONED | SITE 199 | N/A | 26-00080-777 | MONITORING | SCHEDULE 40 PVC | 2.0 | 29.0 | 34.0 | 10/6/2006 | 611394.9 | 683875.4 | 15.50 | NA | 15.06 | 12/6/2011 |
| 114-MW22B | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | N/A | 26-00081-173 | MONITORING | SCHEDULE 40 PVC | 2.0 | 28.0 | 33.0 | 11/21/2006 | 610693.5 | 683254.9 | 12.60 | NA | 12.23 | 12/6/2011 |
| 114-MW23B | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | 26-00081-703 | MONITORING | SCHEDULE 40 PVC | 2.0 | 35.0 | 40.0 | 12/20/2006 | 611569.7 | 683780.5 | 14.80 | NA | 14.50 | 12/6/2011 |
| 114-MW25B | INTERMEDIATE | DECOMMISSIONED | FS/FSP | N/A | E201317213 | MONITORING | SCHEDULE 40 PVC | 4.0 | 30.0 | 35.0 | 1/24/2014 | 611795.8 | 683596.0 | 10.30 | 10.32 | 10.08 | 4/29/2014 |
| 132-MW2B | INTERMEDIATE | DECOMMISSIONED | SITE 132 | N/A | 26-00082-299 | MONITORING | SCHEDULE 40 PVC | 2.0 | 25.0 | 30.0 | 3/20/2007 | 610555.0 | 682811.8 | 14.60 | 14.57 | 14.44 | 12/6/2011 |
| 132-P3A-MW105I | INTERMEDIATE | DECOMMISSIONED | SITE 132 | N/A | E201712013 | MONITORING | SCHEDULE 40 PVC | 2.0 | 37.0 | 42.0 | 1/15/2018 | 610676.8 | 682695.3 | 14.40 | 14.41 | 14.10 | 1/24/2018 |
| 133-MW1B | INTERMEDIATE | DECOMMISSIONED | SITE 133 WEST | N/A | 26-00082-876 | MONITORING | SCHEDULE 40 PVC | 2.0 | 32.0 | 37.0 | 4/25/2007 | 610675.3 | 682278.9 | 11.90 | 11.80 | 11.40 | 12/6/2011 |
| 133-MW2B | INTERMEDIATE | DECOMMISSIONED | SITE 133 EAST | N/A | 26-00082-197 | MONITORING | SCHEDULE 40 PVC | 2.0 | 29.0 | 34.0 | 4/5/2007 | 610786.4 | 682144.4 | 10.20 | 10.17 | 9.70 | 12/6/2011 |
| 135-MW3B | INTERMEDIATE | DECOMMISSIONED | SITE 135 | N/A | E201317208 | MONITORING | SCHEDULE 40 PVC | 2.0 | 28.0 | 33.0 | 12/15/2013 | 611114.8 | 682301.5 | 11.50 | 11.48 | 11.19 | 4/29/2014 |
| 137-MW1B | INTERMEDIATE | DECOMMISSIONED | SITE 137A | N/A | 26-00082-188 | MONITORING | SCHEDULE 40 PVC | 2.0 | 28.0 | 33.0 | 3/14/2007 | 611039.5 | 683024.4 | 13.50 | 13.44 | 13.02 | 12/6/2011 |
| 137-MW2B | INTERMEDIATE | DECOMMISSIONED | SITE 137A | N/A | 26-00082-191 | MONITORING | SCHEDULE 40 PVC | 2.0 | 28.0 | 33.0 | 2/28/2007 | 610921.5 | 682805.1 | 14.40 | 14.31 | 13.95 | 12/6/2011 |
| 137-MW4B | INTERMEDIATE | DECOMMISSIONED | SITE 137B | N/A | 26-00082-306 | MONITORING | SCHEDULE 40 PVC | 2.0 | 28.0 | 33.0 | 2/21/2007 | 610974.6 | 682539.2 | 13.50 | 13.49 | 13.11 | 12/6/2011 |
| GPS-EW1I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201310720 | EXTRACTION | SCHEDULE 40 PVC | 2.0 | 30.0 | 40.0 | 9/17/2013 | 611155.8 | 683699.9 | 13.80 | 13.77 | 13.36 | 4/28/2014 |
| GPS-EW2I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201310718 | EXTRACTION | SCHEDULE 40 PVC | 2.0 | 30.0 | 40.0 | 9/16/2013 | 611179.0 | 683686.9 | 13.50 | 13.47 | 13.19 | 4/28/2014 |
| GPS-IW10I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201310724 | INJECTION | SCHEDULE 40 PVC | 4.0 | 30.0 | 40.0 | 8/27/2013 | 611154.0 | 683682.2 | 13.60 | 16.99 | 17.48 | 4/28/2014 |
| GPS-IW11I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201310723 | INJECTION | SCHEDULE 40 PVC | 4.0 | 30.0 | 40.0 | 8/26/2013 | 611166.9 | 683676.2 | 13.50 | 16.70 | 17.20 | 4/28/2014 |
| GPS-IW12I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201310722 | INJECTION | SCHEDULE 40 PVC | 4.0 | 30.0 | 40.0 | 8/23/2013 | 611183.0 | 683670.5 | 13.50 | 16.55 | 16.06 | 4/28/2014 |
| GPS-IW1I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201311281 | INJECTION | SCHEDULE 40 PVC | 4.0 | 30.0 | 40.0 | 10/2/2013 | 611127.8 | 683772.3 | 14.40 | 14.36 | 14.08 | 4/28/2014 |
| GPS-IW2I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201311283 | INJECTION | SCHEDULE 40 PVC | 4.0 | 30.0 | 40.0 | 10/9/2013 | 611149.9 | 683762.5 | 14.00 | 14.02 | 13.83 | 4/28/2014 |
| GPS-IW3I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201310731 | INJECTION | SCHEDULE 40 PVC | 4.0 | 30.0 | 40.0 | 9/20/2013 | 611150.3 | 683720.0 | 14.10 | 17.00 | 17.51 | 4/28/2014 |
| GPS-IW4I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201310730 | INJECTION | SCHEDULE 40 PVC | 4.0 | 30.0 | 40.0 | 9/23/2013 | 611168.2 | 683710.4 | 13.90 | 16.85 | 17.35 | 4/28/2014 |
| GPS-IW5I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201310729 | INJECTION | SCHEDULE 40 PVC | 4.0 | 30.0 | 40.0 | 9/13/2013 | 611181.0 | 683702.9 | 13.60 | 16.81 | 17.32 | 4/28/2014 |
| GPS-IW6I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201310728 | INJECTION | SCHEDULE 40 PVC | 4.0 | 30.0 | 40.0 | 9/4/2013 | 611197.1 | 683696.5 | 13.50 | 16.48 | 15.98 | 4/28/2014 |
| GPS-IW7I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201310727 | INJECTION | SCHEDULE 40 PVC | 4.0 | 30.0 | 40.0 | 9/9/2013 | 611142.7 | 683705.4 | 13.90 | 16.73 | 16.26 | 4/28/2014 |
| GPS-IW8I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201310726 | INJECTION | SCHEDULE 40 PVC | 4.0 | 30.0 | 40.0 | 9/10/2013 | 611190.1 | 683681.8 | 13.60 | 16.51 | 16.02 | 4/28/2014 |
| GPS-IW9I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201310725 | INJECTION | SCHEDULE 40 PVC | 4.0 | 30.0 | 40.0 | 8/28/2013 | 611136.5 | 683693.6 | 13.90 | 17.06 | 17.52 | 4/28/2014 |
| GPS-MW1I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201305157 | MONITORING | SCHEDULE 40 PVC | 2.0 | 30.0 | 40.0 | 4/26/2013 | 611103.6 | 683780.7 | 14.50 | 14.52 | 14.22 | 4/28/2014 |
| GPS-MW4I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201311274 | MONITORING | SCHEDULE 40 PVC | 2.0 | 30.0 | 40.0 | 9/27/2013 | 611163.5 | 683756.1 | 14.00 | 14.04 | 13.77 | 4/28/2014 |
| GPS-MW7I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201310732 | MONITORING | SCHEDULE 40 PVC | 2.0 | 30.0 | 40.0 | 8/20/2013 | 611158.7 | 683672.4 | 13.60 | 13.60 | 13.28 | 4/28/2014 |
| GPS-PZ1I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201311261 | PIEZOMETER | SCHEDULE 40 PVC | 1.0 | 30.0 | 40.0 | 10/1/2013 | 611122.9 | 683783.1 | 14.50 | 14.49 | 14.17 | 4/28/2014 |
| GPS-PZ2I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201311263 | PIEZOMETER | SCHEDULE 40 PVC | 1.0 | 30.0 | 40.0 | 10/3/2013 | 611120.0 | 683767.1 | 14.40 | 14.36 | 14.07 | 4/28/2014 |
| GPS-PZ3I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201311265 | PIEZOMETER | SCHEDULE 40 PVC | 1.0 | 30.0 | 40.0 | 10/7/2013 | 611139.0 | 683764.4 | 14.10 | 14.10 | 13.75 | 4/28/2014 |
| GPS-PZ4I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201311267 | PIEZOMETER | SCHEDULE 40 PVC | 1.0 | 30.0 | 40.0 | 9/27/2013 | 611155.9 | 683763.4 | 14.10 | 14.06 | 13.69 | 4/28/2014 |
| GPS-PZ5I | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | E201311269 | PIEZOMETER | SCHEDULE 40 PVC | 1.0 | 30.0 | 40.0 | 10/14/2013 | 611152.1 | 683749.2 | 14.10 | 14.09 | 13.85 | 4/28/2014 |
| MW11B | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | 26-00076-983 | MONITORING | SCHEDULE 40 PVC | 2.0 | 26.0 | 36.0 | 11/7/2005 | 611383.9 | 683597.5 | NA | NA | 17.18 | NA |
| MW12B | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | 26-00076-984 | MONITORING | SCHEDULE 40 PVC | 2.0 | 26.0 | 36.0 | 11/14/2005 | 610972.1 | 683341.9 | 14.00 | 14.40 | 14.03 | 12/9/2011 |
| MW13B | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | 26-00077-351 | MONITORING | SCHEDULE 40 PVC | 2.0 | 32.0 | 42.0 | 11/11/2005 | 611262.7 | 683084.7 | 13.40 | 13.37 | 13.20 | 12/6/2011 |
| MW14D | INTERMEDIATE | DECOMMISSIONED | BERRY LANE PARK | N/A | 26-00084-489 | MONITORING | SCHEDULE 40 PVC | 2.0 | 30.0 | 40.0 | 9/5/2007 | 611622.2 | 683965.4 | 11.00 | 12.56 | 12.06 | 12/6/2011 |
| MW1B | INTERMEDIATE | ABANDONED | SITE 114 | N/A | 26-00069-760 | MONITORING | SCHEDULE 40 PVC | 2.0 | 19.0 | 29.0 | 12/3/2003 | 610819.7 | 683486.7 | 12.00 | 14.48 | 14.27 | 12/9/2011 |
| MW1D | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | 26-00068-662 | MONITORING | SCHEDULE 40 PVC | 2.0 | 34.0 | 44.0 | 8/11/2003 | 611427.7 | 683831.3 | 16.00 | 15.94 | 15.60 | 12/6/2011 |
| MW2B | INTERMEDIATE | ABANDONED | SITE 114 | N/A | 26-00069-769 | MONITORING | SCHEDULE 40 PVC | 2.0 | 16.0 | 26.0 | 11/25/2003 | 610963.9 | 683743.8 | NA | NA | 11.03 | 1/12/2004 |
| MW2D | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | 26-00068-663 | MONITORING | SCHEDULE 40 PVC | 2.0 | 33.0 | 43.0 | 8/12/2003 | 611067.1 | 683110.8 | 13.20 | 13.15 | 12.65 | 12/6/2011 |
| MW3B | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | 26-00069-775 | MONITORING | SCHEDULE 40 PVC | 2.0 | 32.0 | 42.0 | 11/21/2003 | 611160.7 | 683929.2 | 14.20 | 14.14 | 13.78 | 12/6/2011 |
| MW3D | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | 26-00068-664 | MONITORING | SCHEDULE 40 PVC | 2.0 | 46.0 | 56.0 | 8/15/2003 | 611655.1 | 683511.6 | 13.60 | 13.53 | 13.08 | 12/6/2011 |
| MW4B | INTERMEDIATE | DECOMMISSIONED | CARTERET AVE | N/A | 26-00069-761 | MONITORING | SCHEDULE 40 PVC | 2.0 | 28.0 | 38.0 | 12/3/2003 | 610816.7 | 683246.9 | 12.70 | 12.69 | 12.31 | 12/6/2011 |
| MW4D | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | 26-00068-665 | MONITORING | SCHEDULE 40 PVC | 2.0 | 38.0 | 48.0 | 8/19/2003 | 611625.1 | 683352.4 | 11.80 | 14.29 | 13.50 | 12/6/2011 |
| MW5B | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | 26-00069-762 | MONITORING | SCHEDULE 40 PVC | 2.0 | 31.0 | 41.0 | 12/1/2003 | 611041.0 | 683531.4 | 13.50 | 16.59 | 16.42 | 12/6/2011 |
| MW6B | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | 26-00069-776 | MONITORING | SCHEDULE 40 PVC | 2.0 | 21.0 | 31.0 | 11/20/2003 | 611300.4 | 683692.7 | NA | NA | 12.95 | NA |
| MW6D | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | 26-00068-667 | MONITORING | SCHEDULE 40 PVC | 2.0 | 40.0 | 50.0 | 8/16/2003 | 611858.9 | 683398.7 | 14.30 | 14.29 | 13.82 | 12/6/2011 |
| MW7B | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | 26-00069-763 | MONITORING | SCHEDULE 40 PVC | 2.0 | 23.0 | 33.0 | 12/1/2003 | 611179.3 | 683320.7 | 13.20 | 13.18 | 12.73 | 12/6/2011 |

**Table 1**
**Monitoring and Remediation Well Network and Construction Details**
**Groundwater Remedial Action Progress Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | Well Construction | | | | | As-Built Survey | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Well ID | Water-Bearing Zone | Status | Location | Remediation Area | Permit Number | Well Use | Screen Material | Well Diameter (in) | Screen Interval Top (ft bgs)[1] | Screen Interval Bottom (ft bgs)[1] | Well Installation Date | Easting (ft NAD83) | Northing (ft NAD83) | Ground Surface Elevation (ft NAVD88) | Top of Outer Casing Elevation (ft NAVD88) | Top of Inner Casing Elevation (ft NAVD88) | Survey Date |
| MW8B | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | 26-00069-764 | MONITORING | SCHEDULE 40 PVC | 2.0 | 35.0 | 45.0 | 12/4/2003 | 611340.6 | 682900.2 | 13.20 | 15.97 | 14.83 | 12/3/2011 |
| MW9D | INTERMEDIATE | ABANDONED | HALLADAY ST | N/A | 26-00075-538 | MONITORING | SCHEDULE 40 PVC | 2.0 | 35.0 | 45.0 | 7/12/2005 | 611181.1 | 682655.3 | 11.80 | 11.79 | 11.56 | 12/6/2011 |
| W-1A | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | NA | MONITORING | SCHEDULE 40 PVC | 2.0 | 45.0 | 55.0 | 10/7/1983 | 611399.5 | 682947.9 | 12.40 | 13.86 | 13.80 | 12/6/2011 |
| W-3B | INTERMEDIATE | DECOMMISSIONED | SITE 114 | N/A | NA | MONITORING | SCHEDULE 40 PVC | 2.0 | 20.0 | 30.0 | 10/7/1983 | 611692.4 | 683346.1 | 14.40 | 17.18 | 16.86 | 12/6/2011 |
| 114-MW20C | DEEP | DECOMMISSIONED | HALLADAY ST | N/A | E201317211 | MONITORING | SCHEDULE 40 PVC | 4.0 | 78.0 | 83.0 | 1/2/2014 | 611555.6 | 683020.2 | 12.40 | 12.36 | 12.07 | 5/20/2014 |
| 133-MW1C | DEEP | DECOMMISSIONED | SITE 133W | N/A | 26-00082-877 | MONITORING | SCHEDULE 40 PVC | 2.0 | 72.0 | 77.0 | 4/30/2007 | 610670.8 | 682283.1 | 11.90 | 11.86 | 11.50 | 12/6/2011 |
| MW4C | DEEP | DECOMMISSIONED | CARTERET AVE | N/A | 26-00077-353 | MONITORING | SCHEDULE 40 PVC | 2.0 | 59.0 | 69.0 | 11/22/2005 | 610824.8 | 683246.7 | 13.20 | 13.15 | 12.69 | 12/6/2011 |
| MW4F | DEEP | DECOMMISSIONED | SITE 114 | N/A | 26-00075-535 | MONITORING | SCHEDULE 40 PVC | 4.0 | 67.0 | 77.0 | 7/11/2005 | 611637.0 | 683326.5 | 13.10 | 15.42 | 14.74 | 12/6/2011 |
| MW5D | DEEP | DECOMMISSIONED | SITE 114 | N/A | 26-00068-666 | MONITORING | SCHEDULE 40 PVC | 2.0 | 61.0 | 71.0 | 8/12/2003 | 611559.6 | 683107.6 | 13.40 | 13.36 | 12.78 | 12/6/2011 |
| MW7C | DEEP | DECOMMISSIONED | SITE 114 | N/A | 26-00076-985 | MONITORING | SCHEDULE 40 PVC | 2.0 | 42.5 | 52.5 | 11/18/2005 | 611186.2 | 683324.3 | 13.00 | 12.92 | 12.43 | 12/6/2011 |
| W-3A | DEEP | DECOMMISSIONED | SITE 114 | N/A | NA | MONITORING | SCHEDULE 40 PVC | 2.0 | 56.0 | 66.0 | 10/5/1983 | 611710.2 | 683335.2 | 14.20 | 16.99 | 16.43 | 12/6/2011 |

**Abbreviations:**

| | |
|---|---|
| bgs | below ground surface |
| FS/FSP | Forrest Street/Forrest Street Properties |
| ft | feet |
| in | inches |
| NA | not available |
| N/A | not applicable |
| NAD83 | North American Datum of 1983 |
| NAVD88 | North American Vertical Datum of 1988 |
| PVC | polyvinyl chloride |
| Q4 | fourth quarter |

Notes:
[1]Screen intervals (sample port intervals) for wells with Flute Multiport Systems are listed in feet below top of steel casing

**Table 2**
**Operational Summary of Injection - Phase III**
**Groundwater Remedial Action Progress Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

AECOM

| Well ID | Operations Start Date | Operations End Date | Total Days of Operation | Injected Reagent Type | Average Daytime Flow Rate During Molasses Injection Phase (gpm) | Estimated Reagent Volume During Molasses Phase (gal) | Estimated Total Volume During Molasses Injection Phase (gal) | Average Daytime Flow Rate During EVO Injection Phase (gpm) | Estimated Reagent Volume During EVO Phase (gal) | Estimated Total Volume During EVO Injection Phase (gal) | Average Daytime Flow Rate During CaSx Injection Phase (gpm) | Estimated Reagent Volume During CaSx Phase (gal) | Estimated Total Volume During CaSx Injection Phase (gal) | Estimated Reagent Volume (gal) | Estimated Total Volume (gal) | % Complete |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***Target Area 1A (Carteret Avenue, Sites 132, 137A, and 143)*** | | | | | | | | | | | | | | | | |
| 132-P3-IRM-001I | 10/20/2021 | 12/9/2022 | 233 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1,139 | 73,576 | 74% |
| 132-P3-IRM-002I-A | 5/16/2022 | 6/28/2024 | 411 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1,960 | 108,183 | 108% |
| 132-P3-IRM-002I-B | 5/16/2022 | 6/28/2024 | 411 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1,960 | 114,287 | 114% |
| 132-P3-IRM-003I-A | 10/20/2021 | 4/29/2024 | 433 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2,099 | 130,824 | 131% |
| 132-P3-IRM-003I-B | 10/20/2021 | 4/29/2024 | 444 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2,227 | 135,116 | 135% |
| 132-P3-IRM-004I-A | 10/20/2021 | 6/28/2024 | 409 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2,146 | 129,236 | 112% |
| 132-P3-IRM-004I-B | 10/20/2021 | 6/28/2024 | 416 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2,223 | 131,638 | 114% |
| 132-P3-IRM-005I-A | 5/16/2022 | 6/28/2024 | 436 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2,105 | 122,209 | 106% |
| 132-P3-IRM-005I-B | 5/16/2022 | 6/28/2024 | 436 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2,105 | 115,667 | 101% |
| 132-P3-IRM-006I | 10/20/2021 | 4/29/2024 | 443 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2,108 | 129,380 | 129% |
| 132-P3-IRM-007I-A | 5/16/2022 | 6/28/2024 | 436 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2,105 | 122,209 | 106% |
| 132-P3-IRM-007I-B | 5/16/2022 | 6/28/2024 | 436 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2,105 | 122,345 | 106% |
| 132-P3-IRM-008I-A | 5/16/2022 | 4/29/2024 | 375 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1,708 | 98,500 | 98% |
| 132-P3-IRM-008I-B | 5/16/2022 | 4/29/2024 | 388 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1,792 | 102,427 | 102% |
| 132-P3-IRM-009I-A | 5/16/2022 | 4/30/2024 | 378 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1,745 | 100,384 | 100% |
| 132-P3-IRM-009I-B | 5/16/2022 | 2/22/2024 | 350 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1,565 | 90,849 | 91% |
| 132-P3-IRM-010I-A | 10/20/2021 | 4/29/2024 | 449 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2,214 | 135,498 | 135% |
| 132-P3-IRM-010I-B | 10/20/2021 | 4/29/2024 | 450 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2,105 | 132,750 | 133% |
| 132-P3-IRM-011I-A | 5/16/2022 | 6/28/2024 | 415 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1,971 | 109,335 | 109% |
| 132-P3-IRM-011I-B | 5/16/2022 | 6/28/2024 | 415 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1,971 | 109,335 | 109% |
| 137A-P3-IRM-001I-R | 5/16/2022 | 4/29/2024 | 479 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2,446 | 132,310 | 132% |
| 137A-P3-IRM-002I-A | 5/16/2022 | 2/22/2024 | 436 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2,196 | 119,315 | 119% |
| 137A-P3-IRM-002I-B | 5/16/2022 | 4/19/2024 | 449 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2,292 | 123,960 | 124% |
| 137A-P3-MW002I-A | 4/5/2023 | 4/29/2024 | 270 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1,551 | 81,321 | 127% |
| 137A-P3-MW002I-B | 4/5/2023 | 4/30/2024 | 271 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1,551 | 81,609 | 128% |
| 143-P3-IRM-001I | 5/16/2022 | 6/20/2023 | 296 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1,575 | 84,643 | 151% |
| 143-P3-IRM-002I | 10/20/2021 | 12/9/2022 | 231 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1,103 | 71,704 | 128% |
| 143-P3-IRM-003I-A | 5/16/2022 | 3/29/2023 | 241 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1,024 | 58,632 | 105% |
| 143-P3-IRM-003I-B | 5/16/2022 | 3/29/2023 | 241 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1,024 | 58,632 | 105% |
| 143-P3-IRM-004I-A | 5/16/2022 | 7/16/2023 | 224 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 919 | 51,050 | 91% |
| 143-P3-IRM-004I-B | 5/16/2022 | 7/16/2023 | 224 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 919 | 51,050 | 91% |
| 143-P3-IRM-005I-A | 5/16/2022 | 12/9/2022 | 171 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 601 | 36,640 | 65% |
| 143-P3-IRM-005I-B | 5/16/2022 | 12/9/2022 | 171 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 601 | 36,640 | 65% |
| CAR-P3-IRM-001I | 11/2/2021 | 12/9/2022 | 300 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1,576 | 96,840 | 215% |
| CAR-P3-IRM-002I-B | 10/6/2021 | 6/20/2023 | 379 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2,038 | 126,387 | 281% |
| CAR-P3-IRM-003I-A | 10/6/2021 | 1/18/2022 | 74 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 669 | 50,436 | 112% |
| CAR-P3-IRM-003I-B | 10/6/2021 | 1/18/2022 | 69 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 554 | 46,044 | 102% |
| CAR-P3-IRM-004I-A | 10/6/2021 | 5/13/2022 | 144 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 932 | 63,715 | 142% |
| CAR-P3-IRM-004I-B | 10/6/2021 | 6/12/2022 | 178 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 975 | 64,829 | 144% |
| CAR-P3-IRM-005I-A | 10/6/2021 | 3/30/2022 | 100 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 665 | 51,263 | 114% |
| CAR-P3-IRM-005I-B | 10/6/2021 | 6/12/2022 | 168 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 847 | 60,602 | 135% |
| CAR-P3-IRM-006D | 10/6/2021 | 3/11/2022 | 88 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 631 | 45,623 | 101% |
| CAR-P3-IRM-006I | 10/6/2021 | 6/12/2022 | 169 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 828 | 57,650 | 128% |
| CAR-P3-IRM-007D | 10/6/2021 | 1/18/2022 | 69 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 548 | 44,208 | 98% |
| CAR-P3-IRM-007I-A | 10/6/2021 | 1/18/2022 | 67 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 573 | 43,848 | 97% |
| CAR-P3-IRM-007I-B | 10/6/2021 | 1/18/2022 | 63 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 519 | 43,416 | 96% |
| CAR-P3-IRM-008D | 10/6/2021 | 3/11/2022 | 74 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 407 | 39,902 | 89% |
| CAR-P3-IRM-008I-B | 10/6/2021 | 4/8/2022 | 109 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 640 | 50,425 | 112% |
| CAR-P3-IRM-009I | 10/6/2021 | 1/18/2022 | 71 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 634 | 47,556 | 106% |
| CAR-P3-IRM-010D | 10/6/2021 | 3/11/2022 | 87 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 540 | 43,741 | 97% |
| CAR-P3-IRM-010I-B | 10/6/2021 | 1/18/2022 | 73 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 646 | 45,576 | 101% |
| CAR-P3-IRM-011D | 10/6/2021 | 1/18/2022 | 80 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 807 | 57,888 | 129% |
| CAR-P3-IRM-011I-A | 10/6/2021 | 1/18/2022 | 74 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 658 | 47,520 | 106% |
| CAR-P3-IRM-011I-B | 10/6/2021 | 1/18/2022 | 74 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 614 | 46,800 | 104% |
| CAR-P3-IRM-012D | 10/20/2021 | 1/18/2022 | 67 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 629 | 42,480 | 94% |
| CAR-P3-IRM-012I-A | 10/6/2021 | 3/11/2022 | 99 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 689 | 52,535 | 117% |
| CAR-P3-IRM-012I-B | 10/6/2021 | 6/12/2022 | 181 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 989 | 64,537 | 143% |
| CAR-P3-IRM-013I-A | 10/6/2021 | 6/12/2022 | 105 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 524 | 45,636 | 101% |
| CAR-P3-IRM-013I-B | 10/6/2021 | 6/12/2022 | 178 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 973 | 66,818 | 148% |
| CAR-P3-IRM-014I | 11/2/2021 | 6/12/2022 | 167 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 999 | 59,303 | 132% |
| CAR-P3-IRM-015I-A | 10/6/2021 | 4/12/2022 | 79 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 685 | 50,835 | 113% |
| CAR-P3-IRM-015I-B | 10/6/2021 | 1/18/2022 | 72 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 533 | 43,704 | 97% |
| CAR-P3-IRM-016I-A | 10/6/2021 | 2/7/2023 | 300 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1,546 | 103,670 | 230% |
| CAR-P3-IRM-016I-B | 2/11/2022 | 2/7/2023 | 260 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1,155 | 66,438 | 148% |
| CAR-P3-IRM-017I-A | 10/6/2021 | 1/18/2022 | 61 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 509 | 42,984 | 96% |
| CAR-P3-IRM-017I-B | 10/6/2021 | 2/16/2022 | 78 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 644 | 46,964 | 104% |
| CAR-P3-IRM-018I-A | 10/6/2021 | 1/18/2022 | 71 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 601 | 46,224 | 103% |
| CAR-P3-IRM-018I-B | 10/6/2021 | 1/18/2022 | 74 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 637 | 47,016 | 104% |
| CAR-P3-IRM-019I | 10/6/2021 | 6/12/2022 | 177 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 994 | 66,485 | 148% |
| CAR-P3-IRM-020I-A | 12/6/2021 | 6/12/2022 | 146 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 759 | 48,107 | 107% |
| CAR-P3-IRM-020I-B | 10/6/2021 | 3/11/2022 | 90 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 594 | 49,943 | 111% |
| CAR-P3-IRM-021I-A | 10/6/2021 | 3/11/2022 | 101 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 692 | 49,835 | 111% |
| CAR-P3-IRM-021I-B | 10/6/2021 | 3/11/2022 | 96 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 657 | 48,215 | 107% |

**Table 2**
**Operational Summary of Injection - Phase III**
**Groundwater Remedial Action Progress Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

AECOM

| Well ID | Operations Start Date | Operations End Date | Total Days of Operation | Injected Reagent Type | Average Daytime Flow Rate During Molasses Injection Phase (gpm) | Estimated Reagent Volume During Molasses Phase (gal) | Estimated Total Volume During Molasses Injection Phase (gal) | Average Daytime Flow Rate During EVO Injection Phase (gpm) | Estimated Reagent Volume During EVO Phase (gal) | Estimated Total Volume During EVO Injection Phase (gal) | Average Daytime Flow Rate During CaSx Injection Phase (gpm) | Estimated Reagent Volume During CaSx Phase (gal) | Estimated Total Volume During CaSx Injection Phase (gal) | Estimated Reagent Volume (gal) | Estimated Total Volume (gal) | % Complete |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***Target Area 2 (Halladay Street and Former Halsted Property)*** | | | | | | | | | | | | | | | | |
| HAL-P3-IRM-001I-A | 11/16/2021 | 4/17/2024 | 245 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1,455 | 64,311 | 101% |
| HAL-P3-IRM-001I-B | 11/16/2021 | 4/17/2024 | 245 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1,474 | 65,487 | 103% |
| HAL-P3-IRM-002I-A | 11/16/2021 | 12/10/2024 | 428 | Molasses/EVO | -- | -- | -- | 0.4 | 159 | 10,222 | -- | -- | -- | 1,787 | 85,943 | 135% |
| HAL-P3-IRM-002I-B | 11/16/2021 | 12/10/2024 | 428 | Molasses/EVO | -- | -- | -- | 0.4 | 159 | 10,222 | -- | -- | -- | 1,810 | 87,272 | 137% |
| HAL-P3-IRM-003I-A | 12/9/2021 | 12/10/2024 | 360 | Molasses/EVO | -- | -- | -- | 0.4 | 159 | 14,960 | -- | -- | -- | 1,308 | 73,561 | 116% |
| HAL-P3-IRM-003I-B | 11/16/2021 | 12/10/2024 | 505 | Molasses/EVO | -- | -- | -- | 0.4 | 159 | 10,222 | -- | -- | -- | 2,089 | 98,011 | 154% |
| HAL-P3-IRM-004I-A | 11/16/2021 | 5/9/2024 | 361 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1,703 | 72,968 | 89% |
| HAL-P3-IRM-004I-B | 11/16/2021 | 4/17/2024 | 362 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1,758 | 77,217 | 94% |
| HAL-P3-IRM-005I-A | 11/16/2021 | 11/22/2024 | 251 | Molasses/EVO | -- | -- | -- | 0.4 | 125 | 10,590 | -- | -- | -- | 1,247 | 70,749 | 111% |
| HAL-P3-IRM-005I-B | 11/16/2021 | 8/7/2024 | 309 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1,801 | 79,342 | 125% |
| HAL-P3-IRM-006I-A | 11/16/2021 | 11/1/2024 | 440 | Molasses/EVO | -- | -- | -- | 0.4 | 78 | 4,307 | -- | -- | -- | 2,018 | 92,390 | 145% |
| HAL-P3-IRM-006I-B | 11/16/2021 | 8/7/2024 | 399 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1,891 | 87,395 | 137% |
| HAL-P3-IRM-007I-A | 11/16/2021 | 11/1/2024 | 387 | Molasses/EVO | -- | -- | -- | 0.4 | 78 | 4,307 | -- | -- | -- | 1,833 | 78,572 | 124% |
| HAL-P3-IRM-007I-B | 11/16/2021 | 11/1/2024 | 389 | Molasses/EVO | -- | -- | -- | 0.4 | 78 | 4,307 | -- | -- | -- | 1,898 | 82,554 | 130% |
| HAL-P3-IRM-008I-A | 12/9/2021 | ongoing | 256 | Molasses/CaSx | 0.4 | 193.3 | 17,782 | -- | -- | -- | 0.1 | 0 | 3,006 | 988 | 68,672 | 95% |
| HAL-P3-IRM-008I-B | 11/16/2021 | 12/10/2024 | 259 | Molasses/CaSx/EVO | -- | -- | -- | 0.4 | 159 | 21,956 | -- | -- | -- | 1,176 | 85,327 | 118% |
| HAL-P3-IRM-009I-A | 11/16/2021 | 12/10/2024 | 435 | Molasses/CaSx/EVO | -- | -- | -- | 0.4 | 159 | 10,648 | -- | -- | -- | 1,548 | 89,976 | 124% |
| HAL-P3-IRM-009I-B | 11/16/2021 | 12/10/2024 | 439 | Molasses/CaSx | 0.4 | 146.8 | 6,611 | -- | -- | -- | 0.4 | 0 | 3,274 | 1,477 | 88,568 | 122% |
| HAL-P3-IRM-010I-A | 8/15/2023 | ongoing | 307 | CaSx/EVO | -- | -- | -- | 0.3 | 135 | 19,264 | -- | -- | -- | 1,250 | 74,173 | 66% |
| HAL-P3-IRM-010I-B-R | 11/16/2021 | ongoing | 342 | Molasses/CaSx | 0.2 | 68.1 | 6,939 | -- | -- | -- | 0.2 | 0 | 2,929 | 1,151 | 72,817 | 70% |
| HAL-P3-IRM-011I-A | 11/16/2021 | 12/10/2024 | 502 | Molasses/CaSx/EVO | 0.3 | 8.4 | 600 | 0.3 | 60 | 8,127 | 0.1 | 0 | 891 | 2,049 | 119,764 | 107% |
| HAL-P3-IRM-011I-B | 11/16/2021 | 12/10/2024 | 463 | Molasses/CaSx/EVO | 0.1 | 3.4 | 234 | 0.4 | 67 | 4,705 | 0.1 | 0 | 843 | 1,686 | 94,921 | 122% |
| HAL-P3-IRM-012I-A | 11/16/2021 | 11/1/2024 | 351 | Molasses/CaSx/EVO | -- | -- | -- | 0.4 | 70 | 4,398 | -- | -- | -- | 1,761 | 94,520 | 130% |
| HAL-P3-IRM-012I-B | 11/16/2021 | 12/10/2024 | 401 | Molasses/CaSx/EVO | 0.1 | 3.4 | 234 | 0.3 | 53 | 4,007 | 0.1 | 0 | 843 | 1,799 | 100,087 | 138% |
| HAL-P3-IRM-013I-A | 11/16/2021 | 11/1/2024 | 259 | Molasses/EVO | -- | -- | -- | 0.4 | 78 | 11,015 | -- | -- | -- | 1,209 | 76,346 | 105% |
| HAL-P3-IRM-013I-B | 11/16/2021 | 11/1/2024 | 259 | Molasses/EVO | -- | -- | -- | 0.4 | 78 | 11,015 | -- | -- | -- | 1,229 | 78,303 | 108% |
| HSTD-P3-IRM-001I-A | 7/20/2023 | ongoing | 233 | Molasses/CaSx | 0.4 | 196.2 | 18,310 | -- | -- | -- | 0.4 | 0 | 8,229 | 990 | 69,797 | 96% |
| HSTD-P3-IRM-001I-B | 7/20/2023 | ongoing | 310 | Molasses/CaSx | 0.4 | 196.2 | 18,310 | -- | -- | -- | 0.2 | 0 | 3,158 | 980 | 68,355 | 94% |
| HSTD-P3-IRM-002I-A | 4/15/2024 | ongoing | 173 | Molasses/CaSx | 0.4 | 196.2 | 18,310 | -- | -- | -- | 0.4 | 0 | 8,235 | 684 | 56,522 | 78% |
| HSTD-P3-IRM-002I-B | 4/15/2024 | ongoing | 172 | Molasses/CaSx | 0.4 | 187.9 | 16,684 | -- | -- | -- | 0.2 | 0 | 5,259 | 687 | 52,905 | 73% |
| HSTD-P3-IRM-003I-A | 7/5/2023 | ongoing | 259 | Molasses/CaSx | 0.4 | 196.2 | 18,310 | -- | -- | -- | 0.2 | 0 | 2,950 | 909 | 59,799 | 82% |
| HSTD-P3-IRM-003I-B | 7/5/2023 | ongoing | 262 | Molasses/CaSx/EVO | 0.4 | 99.9 | 9,567 | 0.4 | 73 | 8,744 | 0.4 | 0 | 8,547 | 1,086 | 74,704 | 103% |
| HSTD-P3-IRM-004I-A | 4/20/2023 | ongoing | 376 | Molasses/CaSx/EVO | 0.4 | 163.7 | 12,903 | 0.4 | 25 | 3,318 | 0.1 | 0 | 2,137 | 1,531 | 87,895 | 100% |
| HSTD-P3-IRM-004I-B | 4/20/2023 | ongoing | 359 | Molasses/CaSx/EVO | 0.4 | 13.7 | 2,468 | 0.4 | 120 | 15,026 | 0.2 | 0 | 5,121 | 1,261 | 83,022 | 126% |
| HSTD-P3-IRM-005I-A | 9/13/2022 | ongoing | 422 | Molasses/CaSx/EVO | 0.4 | 13.7 | 2,468 | 0.4 | 120 | 15,458 | 0.2 | 0 | 5,121 | 1,360 | 89,633 | 123% |
| HSTD-P3-IRM-005I-B | 9/13/2022 | ongoing | 408 | Molasses/CaSx/EVO | 0.4 | 13.7 | 936 | 0.4 | 120 | 15,458 | 0.4 | 0 | 3,371 | 1,443 | 89,236 | 123% |
| HSTD-P3-IRM-006I-A | 5/31/2023 | ongoing | 226 | CaSx/EVO | -- | -- | -- | 0.3 | 142 | 18,498 | -- | -- | -- | 985 | 58,513 | 80% |
| HSTD-P3-IRM-006I-B | 5/31/2023 | ongoing | 226 | CaSx/EVO | -- | -- | -- | 0.3 | 167 | 20,013 | -- | -- | -- | 780 | 50,141 | 69% |
| HSTD-P3-IRM-007I-A | 11/16/2021 | ongoing | 358 | Molasses/EVO | -- | -- | -- | 0.4 | 198 | 19,333 | -- | -- | -- | 1,460 | 84,240 | 109% |
| HSTD-P3-IRM-007I-B | 11/16/2021 | ongoing | 358 | Molasses/EVO | -- | -- | -- | 0.4 | 198 | 19,733 | -- | -- | -- | 1,382 | 79,693 | 103% |
| HSTD-P3-IRM-008I-A | 11/16/2021 | 7/1/2024 | 257 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1,082 | 55,696 | 72% |
| HSTD-P3-IRM-008I-B | 11/16/2021 | 7/5/2024 | 259 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1,084 | 56,136 | 73% |
| HSTD-P3-IRM-009I-A | 11/16/2021 | ongoing | 209 | Molasses/EVO | -- | -- | -- | 0.4 | 198 | 26,048 | -- | -- | -- | 775 | 65,047 | 84% |
| HSTD-P3-IRM-009I-B | 11/16/2021 | ongoing | 201 | Molasses/EVO | -- | -- | -- | 0.4 | 198 | 26,474 | -- | -- | -- | 783 | 66,243 | 86% |
| ***Target Area 3 (Forrest Street, Forrest Street Properties, and Site 199)*** | | | | | | | | | | | | | | | | |
| FS-P3-IRM-001I | 6/8/2022 | 4/17/2023 | 260 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1,129 | 69,293 | 92% |
| FS-P3-IRM-002I | 3/23/2022 | 3/28/2023 | 310 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1,087 | 62,951 | 84% |
| FS-P3-IRM-003I | 3/15/2022 | 5/24/2023 | 356 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1,593 | 89,918 | 120% |
| FS-P3-IRM-004I | 6/22/2022 | 5/24/2023 | 272 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1,447 | 83,747 | 112% |
| FSP-P3-IRM-001I-A | 9/19/2022 | 3/22/2024 | 322 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1186.7 | 62,643 | 104% |
| FSP-P3-IRM-001I-B | 9/19/2022 | 3/22/2024 | 322 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1187.9 | 62,787 | 105% |
| FSP-P3-IRM-002I-A | 9/19/2022 | 3/22/2024 | 322 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1190.8 | 62,787 | 105% |
| FSP-P3-IRM-002I-B | 9/19/2022 | 3/22/2024 | 322 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1183.9 | 62,643 | 104% |
| 199-P3-IRM-001I-A | 7/18/2022 | 3/22/2024 | 270 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 812.0 | 50,976 | 146% |
| 199-P3-IRM-001I-B | 7/18/2022 | 3/22/2024 | 268 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 808.0 | 50,848 | 145% |
| 199-P3-IRM-002I-A | 8/12/2022 | 3/22/2024 | 222 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 905.5 | 42,123 | 120% |
| 199-P3-IRM-002I-B | 8/12/2022 | 3/22/2024 | 214 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 862.7 | 41,181 | 118% |
| 199-P3-IRM-002S | 7/18/2022 | 9/30/2022 | 55 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 142.8 | 7,982 | 23% |
| 199-P3-IRM-003I-A | 7/18/2022 | 3/22/2024 | 216 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 819.1 | 40,461 | 116% |
| 199-P3-IRM-003I-B | 7/18/2022 | 3/22/2024 | 219 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 838.6 | 40,923 | 117% |
| 199-P3-IRM-003S | 7/18/2022 | 7/28/2023 | 21 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 42.2 | 2,925 | 8% |
| 199-P3-IRM-004I-A | 10/18/2022 | 3/22/2024 | 295 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1108.4 | 58,274 | 166% |
| 199-P3-IRM-004I-B | 10/20/2022 | 3/22/2024 | 291 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1088.3 | 57,653 | 165% |
| 199-P3-IRM-004S | 7/18/2022 | 7/28/2023 | 131 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 315.2 | 25,390 | 73% |
| 199-P3-IRM-005I-A | 7/18/2022 | 3/22/2024 | 366 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1304.5 | 69,081 | 197% |
| 199-P3-IRM-005I-B | 7/18/2022 | 3/22/2024 | 368 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1316.2 | 69,410 | 198% |
| 199-P3-IRM-005S | 4/4/2023 | 3/22/2024 | 104 | Molasses/EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 397.1 | 25,838 | 74% |
| 199-P3-IRM-006S | 4/4/2023 | 7/28/2023 | 57 | Molasses | -- | -- | -- | -- | -- | -- | -- | -- | -- | 196.2 | 16,000 | 74% |
| 199-P3-IRM-006S-R | 12/11/2023 | 3/20/2024 | 45 | EVO | -- | -- | -- | -- | -- | -- | -- | -- | -- | 196.1 | 9,854 | |

**Abbreviations:**

| | |
|---|---|
| CaSx | calcium polysulfide |
| EVO | emulsified vegetable oil |
| gal | gallons |
| gpm | gallons per minute |
| Q4 | fourth quarter |
| -- | inactive well |

**Table 3a**
**Operational Summary of Injection - Bedrock**
**Groundwater Remedial Action Progress Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

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| | | | | | Q4 2024 Progress | | | Overall Progress through 1/3/25 [1] | |
|---|---|---|---|---|---|---|---|---|---|
| Well ID | Operations Start Date | Operations End Date | Total Days of Operation | Injected Reagent Type | Average Flow Rate (gpm) | Estimated Total Molasses Volume (gal) | Estimated Total Volume (gal) | Estimated Total Molasses Volume (gal) | Estimated Total Volume (gal) |
| **Bedrock Injection Wells** | | | | | | | | | |
| 114-PW-01WR | 7/11/2024 | 1/3/2025 | 113 | Molasses | 0.17 | 104 | 3,802 | 210 | 7,909 |
| 114-PW-02WR | 7/11/2024 | 1/3/2025 | 113 | Molasses | 0.26 | 105 | 4,432 | 278 | 12,163 |
| 114-PW-03WR | 7/11/2024 | 1/3/2025 | 115 | Molasses | 0.55 | 470 | 31,075 | 784 | 49,690 |
| 114-PW-04WR | 7/11/2024 | 1/3/2025 | 115 | Molasses | 0.58 | 518 | 38,459 | 902 | 59,261 |
| 114-PW-05WR | 7/11/2024 | 1/3/2025 | 114 | Molasses | 0.64 | 410 | 28,270 | 806 | 44,941 |
| 114-PW-06WR | 7/11/2024 | 1/3/2025 | 104 | Molasses | 0.32 | 186 | 14,333 | 372 | 21,699 |
| 114-PW-07WR | 7/11/2024 | 1/3/2025 | 115 | Molasses | 0.58 | 521 | 39,110 | 915 | 59,406 |
| 114-PW-09WR | 7/11/2024 | 1/3/2025 | 115 | Molasses | 0.62 | 570 | 42,218 | 1,022 | 64,405 |
| 114-PW-10WR | 7/11/2024 | 1/3/2025 | 115 | Molasses | 0.57 | 541 | 38,631 | 924 | 60,443 |
| 114-P2-IRM-89D [2] | 11/22/2022 | 1/3/2025 | 350 | EVO/Molasses | 0.16 | 60 | 2,729 | 1,385 | 90,413 |
| 114-MW77WR | 9/25/2024 | 1/3/2025 | 63 | Molasses | 0.58 | 442 | 24,460 | 479 | 26,836 |

**Notes and Abbreviations:**

(1) Overall Progress volumes include total volume injected through 1/3/25, the Bedrock Injection Program completion date.

(2) 84,929 gallons were injected during the Phase II program.

| | |
|---|---|
| gal | gallons |
| gpm | gallons per minute |
| Q4 | fourth quarter |

**Table 3b**
**Operational Summary of Injection - Basal Till**
**Groundwater Remedial Action Progress Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | Q4 2024 Progress | | | Overall Progress through 1/3/25 | |
|---|---|---|---|---|---|---|---|---|---|
| **Well ID** | **Operations Start Date** | **Operations End Date** | **Total Days of Operation** | **Injected Reagent Type** | **Average Flow Rate (gpm)** | **Estimated Total Molasses Volume (gal)** | **Estimated Total Volume (gal)** | **Estimated Total Volume (gal)** | **% Complete** |
| 114-PW-01T | 6/13/2024 | 6/14/2024 | 2 | Molasses/Deuterium | 0 | 0 | 0 | 177 | 12% |
| 114-PW-02T | 6/13/2024 | 12/6/2024 | 39 | Molasses and Molasses/Deuterium | 0.58 | 298 | 13,461 | 15,052 | 1003% |
| 114-PW-03T | 6/13/2024 | 6/26/2024 | 10 | Molasses/Deuterium | 0 | 0 | 0 | 1,508 | 101% |
| 114-PW-04T | 6/13/2024 | 6/26/2024 | 10 | Molasses/Deuterium | 0 | 0 | 0 | 1,591 | 106% |

**Abbreviations:**

| | |
|---|---|
| gal | gallons |
| gpm | gallons per minute |
| Q4 | fourth quarter |

**Table 4**
**Analytical Data Summary**
**Groundwater Remedial Action Progress Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

AECOM

| | | Cr(VI) Concentrations (ug/L) | | | | | | | Cr Concentrations (ug/L) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Q4 2024 | | | | | | | Q4 2024 | | | | |
| Well ID | Water-Bearing Zone | Baseline | Oct-24 | Nov-24 | Dec-24 | Most Recent | % Change | Mann-Kendall Trend (See Appendix B-7) | Baseline | Oct-24 | Nov-24 | Dec-24 | Most Recent | % Change |
| **Phase I** | | | | | | | | | | | | | | |
| 114-P1C-PZ1 | INTERMEDIATE | 10 | NS | NS | NS | 500 | -- | NA | 139 | NS | NS | NS | 41900 | >100% |
| 114-P1C-PZ2 | INTERMEDIATE | 10 | NS | NS | NS | 23 | >100% | NA | 104 | NS | NS | NS | 814 | >100% |
| 114-P1B-MW102I | INTERMEDIATE | 37 | NS | NS | NS | 10 | -73% | NA | 724 | NS | NS | NS | 31.3 | -96% |
| 114-P1-MW-1I | INTERMEDIATE | 153000 | NS | NS | NS | 425000 | >100% | **No Trend** | 161000 | NS | NS | NS | 483000 | >100% |
| 114-P1-MW-2I | INTERMEDIATE | 10 | NS | NS | NS | 6.3 | -37% | NA | 230 | NS | NS | NS | 142 | -38% |
| 114-P1-MW-2D | INTERMEDIATE | 10 | NS | NS | NS | 2.6 | -74% | NA | 49 | NS | NS | NS | 135 | >100% |
| 114-P1-MW-3I | INTERMEDIATE | 8300 | NS | NS | NS | 57 | -99% | NA | 8680 | NS | NS | NS | 52.6 | -99% |
| 114-P1-MW-4I | INTERMEDIATE | 106000 | NS | NS | NS | 3.9 | -100% | NA | 98700 | NS | NS | NS | 101 | -100% |
| 114-P1-MW-5I | INTERMEDIATE | 18 | NS | NS | NS | 17 | -6% | NA | 244 | NS | NS | NS | 47.2 | -81% |
| 114-P2B3-MW101I | INTERMEDIATE | 277000 | NS | NS | NS | 10 | -100% | NA | 284000 | NS | NS | NS | 139 | -100% |
| 114-P2B4-MW101I | INTERMEDIATE | 402000 | NS | NS | NS | 10 | -100% | NA | 427000 | NS | NS | NS | 1110 | -100% |
| GPS-MW2I | INTERMEDIATE | 140000 | NS | NS | NS | 8.8 | -100% | NA | 153000 | NS | NS | NS | 521 | -100% |
| GPS-MW3I | INTERMEDIATE | 29300 | NS | NS | NS | 3.9 | -100% | NA | 17100 | NS | NS | NS | 302 | -98% |
| 114-P1B-MW103D | DEEP | 95500 | NS | NS | NS | 10 | -100% | NA | 101000 | NS | NS | NS | 77.5 | -100% |
| 114-P1-MW-1D | DEEP | 175000 | NS | NS | NS | 446000 | >100% | **No Trend** | 244000 | NS | NS | NS | 485000 | 99% |
| 114-P1-MW-4D | DEEP | 46700 | NS | NS | NS | 12 | -100% | NA | 47900 | NS | NS | NS | 171 | -100% |
| 114-P1-MW-5D | DEEP | 261000 | NS | NS | NS | 5.1 | -100% | NA | 270000 | NS | NS | NS | 24.9 | -100% |
| **Phase II** | | | | | | | | | | | | | | |
| **Northern Area** | | | | | | | | | | | | | | |
| **Monitoring Wells** | | | | | | | | | | | | | | |
| 114-MC-EW103 | INTERMEDIATE | 2550000 | NS | 10 | NS | 10 | -100% | NA | 2280000 | NS | 2710 | NS | 2710 | -100% |
| 114-MC-PZ103 | INTERMEDIATE | 10 | NS | 3800 | NS | 3800 | >100% | **Decreasing** | 3450 | NS | 13500 | NS | 13500 | >100% |
| 114-MC-PZ203 | INTERMEDIATE | 171000 | NS | 100 | NS | 100 | -100% | NA | 150000 | NS | 24300 | NS | 24300 | -84% |
| 114-P1A-MW101I | INTERMEDIATE | 4000 | NS | 16 | NS | 16 | -100% | NA | 4730 | NS | 48 | NS | 48 | -99% |
| 114-P1C-MW101I | INTERMEDIATE | 990 | NS | 10 | NS | 10 | -99% | NA | 1580 | NS | 108 | NS | 108 | -93% |
| 114-P1-MW-6I | INTERMEDIATE | 719000 | NS | 10 | NS | 10 | -100% | NA | 564000 | NS | 1140 | NS | 1140 | -100% |
| 114-P1-MW-7I | INTERMEDIATE | 1560000 | NS | 267000 | NS | 267000 | -83% | **No Trend** | 398000 | NS | 288000 | NS | 288000 | -28% |
| 114-P2B1-MW101I | INTERMEDIATE | 10 | NS | 10 | NS | 10 | -- | NA | 756 | NS | 162 | NS | 162 | -79% |
| 114-P2B2-MW101I | INTERMEDIATE | 2260000 | NS | NS | NS | 10 | -100% | NA | 2750000 | NS | NS | NS | 5.4 | -100% |
| 114-P2-MW-1I | INTERMEDIATE | 8500 | NS | 4.2 | NS | 4.2 | -100% | NA | 8490 | NS | 95 | NS | 95 | -99% |
| 114-P2-MW-2I | INTERMEDIATE | 10 | NS | 6.6 | NS | 6.6 | -34% | NA | 10 | NS | 14 | NS | 14 | 37% |
| 114-P2-MW-3I | INTERMEDIATE | 662000 | NS | 10 | NS | 10 | -100% | NA | 680000 | NS | 67 | NS | 67 | -100% |
| 114-P2-MW-4I | INTERMEDIATE | 60300 | NS | 10 | NS | 10 | -100% | NA | 28100 | NS | 130 | NS | 130 | -100% |
| 114-P2-MW-5I | INTERMEDIATE | 1200000 | NS | 860000 | NS | 860000 | -28% | **No Trend** | 1300000 | NS | 983000 | NS | 983000 | -24% |
| 114-P2-MW-6I | INTERMEDIATE | 3230000 | NS | 1620000 | NS | 1620000 | -50% | **Decreasing** | 2960000 | NS | 1950000 | NS | 1950000 | -34% |
| 114-P2-MW-7I | INTERMEDIATE | 293000 | NS | 11 | NS | 11 | -100% | NA | 316000 | NS | 486 | NS | 486 | -100% |
| 114-P2-MW-8I | INTERMEDIATE | 156000 | NS | 909000 | NS | 909000 | >100% | **No Trend** | 160000 | NS | 858000 | NS | 858000 | >100% |
| GPS-MW5I | INTERMEDIATE | 10 | NS | 10 | NS | 10 | -- | NA | 901 | NS | 87 | NS | 87 | -90% |
| GPS-MW6I | INTERMEDIATE | 17800 | NS | 10 | NS | 10 | -100% | NA | 144000 | NS | 1680 | NS | 1680 | -99% |
| 114-P1-MW-6D | DEEP | 90100 | NS | 198000 | NS | 198000 | >100% | NA | 89900 | NS | 157000 | NS | 157000 | 75% |
| 114-P1-MW-7D | DEEP | 61300 | NS | 165000 | NS | 165000 | >100% | **No Trend** | 70000 | NS | 153000 | NS | 153000 | >100% |
| 114-P2-MW-1D | DEEP | 10 | NS | 61 | NS | 61 | -- | NA | 19 | NS | 39 | NS | 39 | -- |
| 114-P2-MW-2D | DEEP | 130 | NS | 22 | NS | 22 | -83% | NA | 159 | NS | 45 | NS | 45 | -71% |
| 114-P2-MW-3D | DEEP | 30000 | NS | 10 | NS | 10 | -100% | NA | 30100 | NS | 391 | NS | 391 | -99% |
| 114-P2-MW-4D | DEEP | 10 | NS | 3.1 | NS | 3.1 | -69% | NA | 8 | NS | 10 | NS | 10 | 22% |
| 114-P2-MW-5D | DEEP | 233000 | NS | 10 | NS | 10 | -100% | NA | 526 | NS | 423 | NS | 423 | -20% |
| 114-P2-MW-6D | DEEP | 186000 | NS | 10 | NS | 10 | -100% | NA | 164000 | NS | 88 | NS | 88 | -100% |
| 114-P2-MW-7D | DEEP | 13600 | 10 | 10 | 10 | 10 | -100% | NA | 1120 | 52 | 52 | 58 | 58 | -95% |
| 114-P2-MW-8D | DEEP | 7.3 | NS | 55 | NS | 55 | -- | NA | 25 | NS | 119 | NS | 119 | >100% |
| MW6C | DEEP | 7700 | NS | 10 | NS | 10 | -100% | NA | 9070 | NS | 296 | NS | 296 | -97% |
| **Southeastern Area** | | | | | | | | | | | | | | |
| **Monitoring Wells** | | | | | | | | | | | | | | |
| 114-P2B4-MW102I | INTERMEDIATE | 28 | NS | NS | NS | 27 | -4% | NA | 303 | NS | NS | NS | 353 | 17% |
| 114-P2B4-MW103I | INTERMEDIATE | 10 | NS | 10 | NS | 10 | -- | NA | 10 | NS | 7.6 | NS | 7.6 | -24% |
| 114-P2-MW-9I | INTERMEDIATE | 6.8 | NS | 10 | NS | 10 | 47% | NA | 30 | NS | 5.0 | NS | 5.0 | -83% |
| 114-P2-MW-10D | INTERMEDIATE | 8880 | NS | 18 | NS | 18 | -100% | NA | 734000 | NS | 856 | NS | 856 | -100% |
| 114-P2-MW-10I | INTERMEDIATE | 8420 | NS | NS | NS | 10 | -100% | NA | 8100 | NS | NS | NS | 88 | -99% |
| 114-P2-MW-11D | INTERMEDIATE | 722000 | NS | NS | NS | 10 | -100% | NA | 826000 | NS | NS | NS | 396 | -100% |

**Table 4**
**Analytical Data Summary**
**Groundwater Remedial Action Progress Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

AECOM

| | | Cr(VI) Concentrations (ug/L) | | | | | | | Cr Concentrations (ug/L) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Q4 2024 | | | | | | | Q4 2024 | | | | |
| Well ID | Water-Bearing Zone | Baseline | Oct-24 | Nov-24 | Dec-24 | Most Recent | % Change | Mann-Kendall Trend (See Appendix B-7) | Baseline | Oct-24 | Nov-24 | Dec-24 | Most Recent | % Change |
| 114-P2-MW-11I | INTERMEDIATE | 138000 | NS | NS | NS | 50 | -100% | NA | 153000 | NS | NS | NS | 362 | -100% |
| 114-P2-MW-12D | INTERMEDIATE | 743000 | NS | 92100 | NS | 92100 | -88% | Decreasing | 453000 | NS | 57900 | NS | 57900 | -87% |
| 114-P2-MW-12I | INTERMEDIATE | 31200 | NS | NS | NS | 9.7 | -100% | NA | 36900 | NS | NS | NS | 693.0 | -98% |
| 114-P2-MW-9D | DEEP | 10 | NS | 10 | NS | 10 | -- | NA | 10 | NS | 10 | NS | 10 | -- |
| 114-MW70C | LOWER DEEP | 10 | NS | 10 | NS | 10 | -- | NA | 20 | NS | 10 | NS | 10 | -49% |
| **Phase III** | | | | | | | | | | | | | | |
| **Target Area 1A (Carteret Avenue, South of Carteret Avenue)** | | | | | | | | | | | | | | |
| **Carteret Avenue** | | | | | | | | | | | | | | |
| **Monitoring Wells** | | | | | | | | | | | | | | |
| 114-MW22AR | SHALLOW | 50 | NS | NS | NS | 10 | -80% | NA | 3.0 | NS | NS | NS | 17.2 | >100% |
| 132-P3A-MW103S | SHALLOW | 10 | NS | NS | NS | 10 | -- | NA | 4.0 | NS | NS | NS | 4.0 | -- |
| 137-P3B-MW101S | SHALLOW | 50 | NS | NS | NS | 10 | -80% | NA | 5.6 | NS | NS | NS | 7.4 | 32% |
| 143-P3A-MW101S | SHALLOW | 10 | NS | NS | NS | 20 | -- | NA | 10 | NS | NS | NS | 4.0 | -60% |
| 114-MW22BR | INTERMEDIATE | 9210 | 1900 | NS | NS | 1900 | -79% | No Trend | 9400 | 2050 | NS | NS | 2050 | -78% |
| CAR-P3-MW001I-A | INTERMEDIATE | 37500 | 230 | NS | NS | 230 | -99% | NA | 38600 | 462 | NS | NS | 462 | -99% |
| CAR-P3-MW001I-B | INTERMEDIATE | 24600 | 20 | NS | NS | 20 | -100% | NA | 22600 | 21 | NS | NS | 21 | -100% |
| CAR-P3-MW003I-A | INTERMEDIATE | 169000 | 8.2 | NS | NS | 8.2 | -100% | NA | 171000 | 515 | NS | NS | 515 | -100% |
| CAR-P3-MW003I-B | INTERMEDIATE | 227000 | 70 | NS | NS | 70 | -100% | NA | 253000 | 719 | NS | NS | 719 | -100% |
| CAR-P3-MW004I-A | INTERMEDIATE | 548000 | 110 | NS | NS | 110 | -100% | NA | 524000 | 3670 | NS | NS | 3670 | -99% |
| CAR-P3-MW004I-B | INTERMEDIATE | 10 | 5.9 | NS | NS | 5.9 | -41% | NA | 94 | 168 | NS | NS | 168 | 78% |
| CAR-P3-MW001D | DEEP | 162000 | 140 | NS | NS | 140 | -100% | NA | 144000 | 260 | NS | NS | 260 | -100% |
| CAR-P3-MW002D | DEEP | 30100 | 14 | NS | NS | 14 | -100% | NA | 93200 | 646 | NS | NS | 646 | -99% |
| CAR-P3-MW003D | DEEP | 10 | 10 | NS | NS | 10 | -- | NA | 18 | 10 | NS | NS | 10 | -46% |
| **South of Carteret Avenue (HCC Sites 132, 137A, and 143)** | | | | | | | | | | | | | | |
| **Monitoring Wells** | | | | | | | | | | | | | | |
| 132-P3-MW001I-A | INTERMEDIATE | 10 | 27 | NS | NS | 27 | -- | NA | 4.0 | 19 | NS | NS | 19 | -- |
| 132-P3-MW001I-B | INTERMEDIATE | 15.2 | 10 | NS | NS | 10 | -34% | NA | 48 | 362 | NS | NS | 362 | >100% |
| 132-P3-MW002I-A | INTERMEDIATE | 9430 | 73 | NS | NS | 73 | -99% | NA | 13700 | 363 | NS | NS | 363 | -97% |
| 132-P3-MW002I-B-R | INTERMEDIATE | 10 | 10 | NS | NS | 10 | -- | NA | 4.0 | 72 | NS | NS | 72 | >100% |
| 132-P3-MW003I-A | INTERMEDIATE | 11300 | 43 | NS | NS | 43 | -100% | NA | 17100 | 247 | NS | NS | 247 | -99% |
| 132-P3-MW003I-B | INTERMEDIATE | 10 | 10 | NS | NS | 10 | -- | NA | 13 | 122 | NS | NS | 122 | >100% |
| 132-P3A-MW102I | INTERMEDIATE | 9.8 | 9.2 | NS | NS | 9.2 | -6% | NA | 14 | 10 | NS | NS | 10 | -28% |
| 132-P3A-MW103I | INTERMEDIATE | 32100 | 51 | NS | NS | 51 | -100% | NA | 54300 | 341 | NS | NS | 341 | -99% |
| 132-P3A-MW104I | INTERMEDIATE | 10 | 10 | NS | NS | 10 | -- | NA | 4.0 | 10 | NS | NS | 10 | -- |
| 137A-P3-MW001I-A | INTERMEDIATE | 10 | 59 | NS | NS | 59 | -- | NA | 4.0 | 15 | NS | NS | 15 | -- |
| 137A-P3-MW001I-B | INTERMEDIATE | 10 | 12 | NS | NS | 12 | 20% | NA | 4.0 | 10 | NS | NS | 10 | -- |
| 137A-P3-MW003I-A | INTERMEDIATE | 20 | 3.0 | NS | NS | 3.0 | -85% | NA | 128 | 42 | NS | NS | 42 | -67% |
| 137A-P3-MW003I-B | INTERMEDIATE | 10 | 24 | NS | NS | 24 | -- | NA | 4.0 | 10 | NS | NS | 10 | -- |
| 143-P3A-MW101I | INTERMEDIATE | 37400 | 10 | NS | NS | 10 | -100% | NA | 38100 | 602 | NS | NS | 602 | -98% |
| 143-P3-MW001I | INTERMEDIATE | 34400 | 45 | NS | NS | 45 | -100% | NA | 36800 | 36 | NS | NS | 36 | -100% |
| 143-P3-MW002I-A | INTERMEDIATE | 10 | 21 | NS | NS | 21 | -- | NA | 15 | 24 | NS | NS | 24 | 58% |
| 143-P3-MW002I-B | INTERMEDIATE | 1560 | 10 | NS | NS | 10 | -99% | NA | 2380 | 21 | NS | NS | 21 | -99% |
| 132-P3A-MW104D-1 | DEEP | 18 | 10 | NS | NS | 10 | -44% | NA | 33 | 10 | NS | NS | 10 | -70% |
| 132-P3A-MW104D-2 | DEEP | 10 | 3.4 | NS | NS | 3.4 | -66% | NA | 51 | 10 | NS | NS | 10 | -80% |
| 137-MW1C | DEEP | 10 | 10 | NS | NS | 10 | -- | NA | 44 | 10 | NS | NS | 10 | -78% |
| **Target Area 1B (Site 114, Lower Deep Zone)** | | | | | | | | | | | | | | |
| **Monitoring Wells** | | | | | | | | | | | | | | |
| 114-MW67C | DEEP (LOWER) | 374000 | NS | NS | 10 | 10 | -100% | NA | 330000 | NS | NS | 250 | 250 | -100% |
| 114-MW68C | DEEP (LOWER) | 65100 | 31400 | 51400 | 60100 | 60100 | -8% | NA | 64200 | 32800 | 44000 | 52900 | 52900 | -18% |
| 114-P3-MW001D | DEEP (LOWER) | 10 | 6 | 3.7 | 10 | 10 | -- | NA | 4.0 | 7.5 | 13 | 10 | 10 | -- |
| 114-P3-MW002D | DEEP (LOWER) | 112000 | NS | NS | 98 | 98 | -100% | NA | 226000 | NS | NS | 428 | 428 | -100% |
| 114-P3-MW003D | DEEP (LOWER) | 802000 | NS | NS | 301000 | 301000 | -62% | Decreasing | 139000 | NS | NS | 334000 | 334000 | >100% |
| 114-P3-MW004D | DEEP (LOWER) | 797000 | NS | NS | 478000 | 478000 | -40% | Decreasing | 808000 | NS | NS | 533000 | 533000 | -34% |
| 114-P3-MW005D | DEEP (LOWER) | 122000 | 185000 | 143000 | 174000 | 174000 | 43% | No Trend | 137000 | 183000 | 98400 | 143000 | 143000 | 4% |
| 114-P3-MW006D | DEEP (LOWER) | 10 | NS | NS | 36000 | 36000 | >100% | Increasing | 39 | NS | NS | 32700 | 32700 | >100% |
| **Target Area 2 (Halladay Street, Former Halsted Property, Pacific Avenue, and Eden Wood)** | | | | | | | | | | | | | | |
| **Halladay Street** | | | | | | | | | | | | | | |
| **Monitoring Wells** | | | | | | | | | | | | | | |
| HAL-P3-MW001I | INTERMEDIATE | 22700 | 5 | 10 | 79 | 79 | -100% | NA | 54800 | 133 | 317 | 145 | 145 | -100% |

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AECOM

| | | Cr(VI) Concentrations (ug/L) | | | | | | | Cr Concentrations (ug/L) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Q4 2024 | | | | | | | Q4 2024 | | | | |
| Well ID | Water-Bearing Zone | Baseline | Oct-24 | Nov-24 | Dec-24 | Most Recent | % Change | Mann-Kendall Trend (See Appendix B-7) | Baseline | Oct-24 | Nov-24 | Dec-24 | Most Recent | % Change |
| HAL-P3-MW001I-B | INTERMEDIATE | 174000 | 1400 | 45100 | 22300 | 22300 | -87% | NA | 315000 | 1210 | 40500 | 22300 | 22300 | -93% |
| **Former Halsted Property** | | | | | | | | | | | | | | |
| **Monitoring Wells** | | | | | | | | | | | | | | |
| HSTD-P3-MW001I-A | INTERMEDIATE | 460000 | 189000 | 249000 | 59700 | 59700 | -87% | NA | 482000 | 150000 | 235000 | 71900 | 71900 | -85% |
| HSTD-P3-MW001I-B | INTERMEDIATE | 347000 | 13 | 130000 | 6500 | 6500 | -98% | NA | 426000 | 741 | 138000 | 5700 | 5700 | -99% |
| HSTD-P3-MW002I-A | INTERMEDIATE | 372000 | 5 | 6.8 | 28 | 28 | -100% | NA | 374000 | 468 | 523 | 453 | 453 | -100% |
| HSTD-P3-MW002I-B | INTERMEDIATE | 969000 | 505000 | 498000 | 400000 | 400000 | -59% | NA | 797000 | 596000 | 592000 | 320000 | 320000 | -60% |
| HSTD-P3-MW003I-A | INTERMEDIATE | 826000 | 10 | 10 | 10 | 10 | -100% | NA | 718000 | 160 | 173 | 305 | 305 | -100% |
| HSTD-P3-MW003I-B | INTERMEDIATE | 571000 | 554000 | 526000 | 544000 | 544000 | -5% | NA | 547000 | 604000 | 549000 | 538000 | 538000 | -2% |
| HSTD-P3-MW004I-A | INTERMEDIATE | 10 | 3 | 45 | 20 | 20 | -- | NA | 1140 | 428 | 441 | 468 | 468 | -59% |
| HSTD-P3-MW004I-B | INTERMEDIATE | 17300 | 10 | 1000 | 11 | 11 | -100% | NA | 15700 | 494 | 2320 | 3720 | 3720 | -76% |
| PSEG-MW-104B | INTERMEDIATE | 10 | NS | NS | 10 | 10 | -- | NA | 646 | NS | NS | 108 | 108 | -83% |
| **Pacific Avenue** | | | | | | | | | | | | | | |
| **Monitoring Wells** | | | | | | | | | | | | | | |
| 135-MW2B | INTERMEDIATE | 10 | 10 | NS | NS | 10 | -- | NA | 4.0 | 10 | NS | NS | 10 | -- |
| MW7D | INTERMEDIATE | 10 | NS | NS | 10 | 10 | -- | NA | 10 | NS | NS | 10 | 10 | -- |
| MW8D | INTERMEDIATE | 10300 | 18 | 10 | 10 | 10 | -100% | NA | 10500 | 102 | 178 | 68 | 68 | -99% |
| PAC-P3-MW001I | INTERMEDIATE | 10 | NS | NS | 4.4 | 4.4 | -56% | NA | 16 | NS | NS | 4.1 | 4.1 | -74% |
| PAC-P3-MW002I | INTERMEDIATE | 262 | 10 | 9200 | 10 | 10 | -96% | NA | 479 | 29 | 7930 | 20 | 20 | -96% |
| **Eden Wood** | | | | | | | | | | | | | | |
| **Monitoring Wells** | | | | | | | | | | | | | | |
| 114-MW39B | INTERMEDIATE | 10 | 7.2 | NS | NS | 7.2 | -28% | NA | 6.3 | 10 | NS | NS | 10 | 59% |
| 114-MW40B | INTERMEDIATE | 10 | 10 | NS | NS | 10 | -- | NA | 1.3 | 10 | NS | NS | 10 | -- |
| EW-P3-MW001I-A | INTERMEDIATE | 70200 | 6.0 | NS | NS | 6.0 | -100% | NA | 70500 | 118 | NS | NS | 118 | -100% |
| EW-P3-MW001I-B | INTERMEDIATE | 10 | 7.2 | NS | NS | 7.2 | -28% | NA | 334 | 10 | NS | NS | 10 | -97% |
| EW-P3-MW002I | INTERMEDIATE | 10 | 25 | NS | NS | 25 | -- | NA | 3.5 | 10 | NS | NS | 10 | -- |
| **Target Area 3 (Forrest Street, Forrest Street Properties, and Site 199)** | | | | | | | | | | | | | | |
| **Forrest Street and Forrest Street Properties** | | | | | | | | | | | | | | |
| **Monitoring Wells** | | | | | | | | | | | | | | |
| 114-MW36A | SHALLOW | 8.6 | NS | NS | NS | 10 | 16% | NA | 11.8 | NS | NS | NS | 4.0 | -66% |
| 114-MW25A | SHALLOW | 10 | NS | NS | 5.5 | 5.5 | -45% | NA | 48 | NS | NS | 21 | 20.7 | -57% |
| 114-MW44A | SHALLOW | 64 | NS | NS | 10 | 10 | -84% | NA | 160 | NS | NS | 7.8 | 7.8 | -95% |
| 114-MW24B | INTERMEDIATE | 10 | 4.6 | NS | NS | 4.6 | -54% | NA | 4.0 | 3.9 | NS | NS | 3.9 | -3% |
| 114-MW26B | INTERMEDIATE | 10 | 6.9 | NS | NS | 6.9 | -31% | NA | 4.0 | 59 | NS | NS | 59 | -- |
| 114-MW36B | INTERMEDIATE | 10 | 10 | NS | NS | 10 | -- | NA | 4.0 | 10 | NS | NS | 10 | -- |
| FS-P3-MW001I | INTERMEDIATE | 872 | 10 | NS | NS | 10 | -99% | NA | 946 | 24 | NS | NS | 24 | -97% |
| FS-P3-MW002I | INTERMEDIATE | 4550 | 100 | NS | NS | 100 | -98% | NA | 4620 | 166 | NS | NS | 166 | -96% |
| FS-P3-MW003I | INTERMEDIATE | 9240 | 5.7 | NS | NS | 5.7 | -100% | NA | 10400 | 182 | NS | NS | 182 | -98% |
| FS-P3-MW004I | INTERMEDIATE | 10 | NS | NS | NS | 10 | -- | NA | 4.0 | NS | NS | NS | 4.0 | -- |
| **Site 199** | | | | | | | | | | | | | | |
| **Monitoring Wells** | | | | | | | | | | | | | | |
| 114-MW41A | SHALLOW | 10400 | 51 | NS | NS | 51 | -100% | NA | 11200 | 392 | NS | NS | 392.0 | -97% |
| 199-P3-MW001S | SHALLOW | 1810 | 25 | NS | NS | 25 | -99% | NA | 1950 | 144 | NS | NS | 144.0 | -93% |
| 199-P3-MW004S | SHALLOW | 51800 | 10 | NS | NS | 9.8 | -100% | NA | 53000 | 256 | NS | NS | 256.0 | -100% |
| FSP-P3-MW001S | SHALLOW | 10 | 39 | NS | NS | 39 | -- | NA | 2.6 | 10 | NS | NS | 10 | -- |
| MW1C-3 | SHALLOW | 41.6 | 13 | NS | NS | 13 | -69% | NA | 462 | 37 | NS | NS | 37.2 | -92% |
| MW1C-4 | SHALLOW | 35700 | 36 | NS | NS | 36 | -100% | NA | 34200 | 43 | NS | NS | 43.4 | -100% |
| 114-MW2B1-2I | INTERMEDIATE | 3510 | 9.2 | NS | NS | 9.2 | -100% | NA | 3610 | 19 | NS | NS | 18.8 | -99% |
| 114-MW41B | INTERMEDIATE | 47100 | 10 | NS | NS | 10.0 | -100% | NA | 50200 | 321 | NS | NS | 321.0 | -99% |
| 199-P3-MW001I | INTERMEDIATE | 49800 | 38 | NS | NS | 38 | -100% | NA | 56900 | 5850 | NS | NS | 5850.0 | -90% |
| 199-P3-MW001I-B | INTERMEDIATE | 77.3 | 11 | NS | NS | 11 | -86% | NA | 412 | 20 | NS | NS | 19.7 | -95% |
| 199-P3-MW004I | INTERMEDIATE | 10 | 15 | NS | NS | 15 | 50% | NA | 79.6 | 457 | NS | NS | 457.0 | >100% |
| FSP-P3-MW001I | INTERMEDIATE | 10 | 10 | NS | NS | 10 | -- | NA | 14 | 10 | NS | NS | 10.0 | -28% |
| **Other Groundwater Monitoring** | | | | | | | | | | | | | | |
| **Supplemental Wells Sampled to Monitor Limits of the Cr/Cr(VI) Plume** | | | | | | | | | | | | | | |
| 114-MW20AR | SHALLOW | 50 | NS | NS | NS | 10 | -80% | NA | 200 | NS | NS | NS | 10 | -95% |
| 114-MW24AR | SHALLOW | 10 | NS | NS | 10 | 10 | -- | NA | 4.9 | NS | NS | 10 | 10 | -- |
| 114-MW27A | SHALLOW | 10 | NS | NS | 18 | 18 | 80% | NA | 29 | NS | NS | 19 | 19 | -35% |
| 114-MW2B1-2 | SHALLOW | 10 | NS | NS | 9.0 | 9.0 | -10% | NA | 163 | NS | NS | 10 | 10 | -94% |

**Table 4**
**Analytical Data Summary**
**Groundwater Remedial Action Progress Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

AECOM

| | | Cr(VI) Concentrations (ug/L) | | | | | | | Cr Concentrations (ug/L) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Q4 2024 | | | | | | | Q4 2024 | | | | | |
| Well ID | Water-Bearing Zone | Baseline | Oct-24 | Nov-24 | Dec-24 | Most Recent | % Change | Mann-Kendall Trend (See Appendix B-7) | Baseline | Oct-24 | Nov-24 | Dec-24 | Most Recent | % Change |
| 114-MW42A | SHALLOW | 10 | NS | NS | 10 | 10 | -- | NA | 3.5 | NS | NS | 10 | 10 | -- |
| 114-MW43A | SHALLOW | 10 | NS | NS | 10 | 10 | -- | NA | 20 | NS | NS | 10 | 10 | -50% |
| 114-P1A-MW101S | SHALLOW | 50 | NS | NS | NS | 10 | -80% | NA | 16.2 | NS | NS | NS | 24.1 | 49% |
| 114-P1B-MW101S | SHALLOW | 10 | NS | NS | NS | 9.1 | -9% | NA | 2.8 | NS | NS | NS | 4.0 | 43% |
| 114-P1B-MW102S | SHALLOW | 10 | NS | NS | NS | 10 | -- | NA | 250 | NS | NS | NS | 47.5 | -81% |
| 114-P1B-MW103S | SHALLOW | 12 | NS | NS | NS | 10 | -17% | NA | 19.2 | NS | NS | NS | 6.7 | -65% |
| 114-P1C-MW101S | SHALLOW | 10 | NS | NS | NS | 10 | -- | NA | 3.0 | NS | NS | NS | 4.2 | 40% |
| 114-P1C-MW102S | SHALLOW | 50 | NS | NS | NS | 10 | -80% | NA | 3.8 | NS | NS | NS | 28.5 | -- |
| 114-P1C-MW104S | SHALLOW | 50 | NS | NS | NS | 10 | -80% | NA | 10 | NS | NS | NS | 3.7 | -63% |
| 114-P2B3-MW2R | SHALLOW | 50 | NS | NS | NS | 20 | -60% | NA | 2.4 | NS | NS | NS | 4.0 | 67% |
| 114-P2B4-MW102S | SHALLOW | 50 | NS | NS | NS | 10 | -80% | NA | 5.7 | NS | NS | NS | 8.9 | 56% |
| 114-P2B4-MW2R | SHALLOW | 50 | NS | NS | NS | 10 | -80% | NA | 36 | NS | NS | NS | 33.9 | -6% |
| 132-P3A-MW1R | SHALLOW | 50 | NS | NS | NS | 50 | -- | NA | 10 | NS | NS | NS | 4.0 | -60% |
| 143-P3-MW001S | SHALLOW | 10 | NS | NS | NS | 10 | -- | NA | 4.0 | NS | NS | NS | 4.0 | -- |
| FS-MW101S | SHALLOW | 10 | NS | NS | 10 | 10 | -- | NA | 10 | NS | NS | 10 | 10 | -- |
| GPS-MW1S | SHALLOW | 110 | NS | 10 | NS | 10 | -91% | NA | 153 | NS | 27 | NS | 27 | -83% |
| GPS-MW2S | SHALLOW | 10 | NS | NS | NS | 10 | -- | NA | 10 | NS | NS | NS | 10 | -- |
| GPS-MW3S | SHALLOW | 10 | NS | NS | NS | 6.4 | -36% | NA | 10 | NS | NS | NS | 10 | -- |
| GPS-MW4S | SHALLOW | 10 | NS | NS | 10 | 10 | -- | NA | 10 | NS | NS | 13 | 13 | 28% |
| GPS-MW5S | SHALLOW | 10 | NS | 5.2 | NS | 5.2 | -48% | NA | 134 | NS | 119 | NS | 119 | -11% |
| GPS-MW6S | SHALLOW | 10 | NS | NS | NS | 10 | -- | NA | 7.0 | NS | NS | NS | 5.2 | -26% |
| GPS-MW7S | SHALLOW | 10 | NS | NS | NS | 9.2 | -8% | NA | 10.6 | NS | NS | NS | 17 | 62% |
| HAL-P3-MW001S | SHALLOW | 10 | NS | NS | NS | 10 | -- | NA | 4.0 | NS | NS | NS | 4.0 | -- |
| HAL-P3-MW002S | SHALLOW | 10 | NS | NS | NS | 10 | -- | NA | 4.6 | NS | NS | NS | 4.0 | -13% |
| HSS-P3C-MW1S | SHALLOW | 50 | NS | NS | NS | 10 | -80% | NA | 2.9 | NS | NS | NS | 8.4 | -- |
| 114-MW17B | INTERMEDIATE | 10 | NS | NS | 10 | 10 | -- | NA | 7.4 | NS | NS | 6.5 | 6.5 | -12% |
| 114-MW38B | INTERMEDIATE | 10 | NS | NS | 10 | 10 | -- | NA | 5.9 | NS | NS | 10 | 10 | 69% |
| 114-P1B-MW101I | INTERMEDIATE | 119000 | NS | NS | 8.7 | 8.7 | -100% | NA | 134000 | NS | NS | 351 | 351 | -100% |
| 114-P2A-MW101I | INTERMEDIATE | 10 | NS | 10 | NS | 10 | -- | NA | 10 | NS | 10 | NS | 10 | -- |
| 114-P2A-MW102I | INTERMEDIATE | 6.1 | NS | 10 | NS | 10 | 64% | NA | 5.9 | NS | 10 | NS | 10 | 69% |
| 133-P3C-MW101I | INTERMEDIATE | NA | NS | 4.9 | NS | 4.9 | -- | NA | NA | NS | 10 | NS | 10 | -- |
| 137-P3B-MW102I | INTERMEDIATE | NA | NS | NS | 52 | 52.0 | -- | NA | NA | NS | NS | 10 | 10 | -- |
| PSEG-MW-42D | INTERMEDIATE | NA | NS | NS | 10 | 10.0 | -- | NA | NA | NS | NS | 10 | 10 | -- |
| PSEG-MW-7F | INTERMEDIATE | NA | NS | NS | 10 | 10.0 | -- | NA | NA | NS | NS | 10 | 10 | -- |
| 114-PZ-57I | INTERMEDIATE | 53500 | 67300 | 72900 | 64500 | 64500.0 | 21% | NA | 44500 | 62100 | 63600 | 55600 | 55600.0 | 25% |
| 114-PZ-66I | INTERMEDIATE | 578000 | 498000 | 581000 | 707000 | 707000.0 | 22% | NA | 474000 | 456000 | 461000 | 474000 | 474000.0 | -- |
| 137-MW2C | DEEP | NA | NS | NS | 4.3 | 4.3 | -- | NA | NA | NS | NS | 29 | 29.4 | -- |
| 199-P3-MW003D | DEEP | 10 | NS | NS | 37 | 37 | -- | NA | 22 | NS | NS | 140 | 140 | >100% |
| 199-P3-MW004D | DEEP | 10 | NS | NS | 15 | 15 | 50% | NA | 61 | NS | NS | 70 | 69.5 | 15% |
| HAL-P3-IRM-003D | DEEP | 10 | NS | 10 | NS | 10 | -- | NA | 3.2 | NS | 10 | NS | 10 | -- |
| MW9C | DEEP | 8.8 | NS | 2.9 | NS | 2.9 | -67% | NA | 36 | NS | 8.7 | NS | 8.7 | -76% |
| 114-PZ-66D | DEEP (LOWER) | 10100 | NS | 10 | 11 | 11 | -100% | NA | 9640 | NS | 41 | 106 | 106 | -99% |
| 199-P3-IRM-004D | BASAL TILL | 1310 | NS | NS | 10 | 10 | -99% | NA | 1600 | NS | NS | 37 | 37 | -98% |
| 132-P3-MW001D | BASAL TILL | 10 | NS | 10 | NS | 10 | -- | NA | 4.0 | NS | 10 | NS | 10 | -- |
| **Basal Till Groundwater Monitoring (Site 114)** | | | | | | | | | | | | | | |
| 114-MW45C | BASAL TILL | 10 | NS | 10 | NS | 10 | -- | NA | 10.2 | NS | 10 | NS | 10 | -5% |
| 114-MW48C | BASAL TILL | 10 | NS | NS | NS | 10 | -- | NA | 11.3 | NS | NS | NS | 11.3 | -- |
| 114-MW49C | BASAL TILL | 10 | NS | 10 | NS | 10 | -- | NA | 15.2 | NS | 6.4 | NS | 6.4 | -58% |
| 114-MW50C | BASAL TILL | 10 | NS | 10 | NS | 10 | -- | NA | 2.1 | NS | 10 | NS | 10 | -- |
| 114-MW51C | BASAL TILL | 10 | NS | 10 | NS | 10 | -- | NA | 3.3 | NS | 10 | NS | 10 | -- |
| 114-MW52C | BASAL TILL | 1000 | 10 | 6.1 | 5.5 | 5.5 | -99% | NA | 989 | 1420 | 201 | 124 | 124 | -87% |
| 114-MW54C | BASAL TILL | 10 | 3.6 | 3.7 | 10 | 10 | -- | NA | 10 | 3.6 | 5.2 | 3.1 | 3.1 | -69% |
| 114-MW56C | BASAL TILL | 1800 | 5900 | 5100 | 4000 | 4000 | >100% | NA | 1930 | 5590 | 4780 | 4160 | 4160 | >100% |
| 114-MW59C | BASAL TILL | 50 | NS | NS | NS | 50 | -- | NA | 22.7 | NS | NS | NS | 22.7 | -- |
| 114-MW61C | BASAL TILL | 88900 | 820 | 10 | 10 | 10 | -100% | NA | 94100 | 2300 | 796 | 586 | 586 | -99% |
| 114-MW63C | BASAL TILL | 150 | NS | 10 | NS | 10 | -93% | NA | 167 | NS | 10 | NS | 10 | -94% |
| 114-MW65C | BASAL TILL | 25400 | 10 | 10 | 74 | 74 | -100% | NA | 26800 | 170 | 832 | 510 | 510 | -98% |
| 114-PMW-01T | BASAL TILL | 496000 | 10 | 4.9 | 10 | 10 | -100% | NA | 509000 | 249 | 397 | 279 | 279 | -100% |
| 114-PMW-02T | BASAL TILL | 201000 | 9400 | 63 | 10 | 10 | -100% | NA | 143000 | 8850 | 4410 | 679 | 679 | -100% |

**Table 4**
**Analytical Data Summary**
**Groundwater Remedial Action Progress Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

AECOM

| | | Cr(VI) Concentrations (ug/L) | | | | | | | Cr Concentrations (ug/L) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Q4 2024 | | | | | | | Q4 2024 | | | | |
| Well ID | Water-Bearing Zone | Baseline | Oct-24 | Nov-24 | Dec-24 | Most Recent | % Change | Mann-Kendall Trend (See Appendix B-7) | Baseline | Oct-24 | Nov-24 | Dec-24 | Most Recent | % Change |
| 114-PMW-03T | BASAL TILL | 610 | 70 | 10 | 7.6 | 7.6 | -99% | NA | 703 | 3010 | 3630 | 3120 | 3120 | >100% |
| 114-PMW-04T | BASAL TILL | 900 | 120 | 10 | 250 | 250 | -72% | NA | 991 | 3560 | 2280 | 1330 | 1330 | 34% |
| 114-PZ-57T | BASAL TILL | 10 | 4.7 | 10 | 8.7 | 8.7 | -13% | NA | 16.8 | 168 | 214 | 342 | 342 | >100% |
| 114-PZ-66T | BASAL TILL | 193000 | 7.0 | 6.7 | 6.7 | 6.7 | -100% | NA | 145000 | 799 | 5430 | 829 | 829 | -99% |
| **Weathered Bedrock / Bedrock Groundwater Monitoring** | | | | | | | | | | | | | | |
| 114-MW53C | WEATHERED BEDROCK | 46700 | 340 | 23 | 400 | 400 | -99% | NA | 55000 | 1410 | 1040 | 910 | 910 | -98% |
| 114-MW55C | WEATHERED BEDROCK | 10 | NS | NS | NS | 10 | -- | NA | 6.8 | NS | NS | NS | 10.8 | 59% |
| 114-MW57C | WEATHERED BEDROCK | 30200 | NS | 240 | 9.0 | 9.0 | -100% | NA | 32100 | NS | 1280 | 743 | 743 | -98% |
| 114-MW58C | WEATHERED BEDROCK | 10 | NS | NS | NS | 10 | -- | NA | 4.4 | NS | NS | NS | 2.9 | -34% |
| 114-MW58C-R | WEATHERED BEDROCK | 56 | NS | NS | 10 | 10 | -82% | NA | 47 | NS | NS | 10 | 10 | -79% |
| 114-MW60C | WEATHERED BEDROCK | 10 | NS | NS | NS | 10 | -- | NA | 10 | NS | NS | NS | 5.7 | -43% |
| 114-MW60C-R | WEATHERED BEDROCK | 33 | NS | NS | 60 | 60 | 82% | NA | 29.1 | NS | NS | 51 | 51 | 75% |
| 114-MW62C | WEATHERED BEDROCK | 10 | NS | NS | 10 | 10 | -- | NA | 10 | NS | NS | 10 | 10 | -- |
| 114-MW64C | WEATHERED BEDROCK | 10 | NS | NS | NS | 10 | -- | NA | 5.7 | NS | NS | NS | 14.0 | >100% |
| 114-MW75WR | WEATHERED BEDROCK | 10 | 10 | 10 | 10 | 10 | -- | NA | 10 | 10 | 10 | 10 | 10 | -- |
| 114-PZ-52WR | WEATHERED BEDROCK | 27100 | 27 | 61 | 10 | 10 | -100% | NA | 30400 | 863 | 967 | 1040 | 1040 | -97% |
| 114-PZ-66WR | WEATHERED BEDROCK | 198000 | NS | 63 | 10 | 10 | -100% | NA | 195000 | NS | 5800 | 6690 | 6690 | -97% |
| 114-MW16B | BEDROCK | 10 | NS | NS | NS | 10 | -- | NA | 2.8 | NS | NS | NS | 2.8 | -- |
| 114-MW4D | BEDROCK | 10 | NS | NS | 13 | 13 | 30% | NA | 3.0 | NS | NS | 10 | 10 | -- |
| 114-MW52D | BEDROCK | 22.7 | NS | NS | 67 | 67 | -- | NA | 57 | NS | NS | 884 | 884 | >100% |
| 114-MW57D | BEDROCK | 10 | NS | NS | 10 | 10 | -- | NA | 114 | NS | NS | 87 | 87 | -23% |
| 114-MW61D | BEDROCK | 45.3 | NS | NS | 4.2 | 4.2 | -91% | NA | 60 | NS | NS | 10 | 10 | -83% |
| 114-MW66D | BEDROCK | 422 | NS | NS | 3300 | 3300 | >100% | NA | 1110 | NS | NS | 2540 | 2540 | >100% |
| 114-MW6D | BEDROCK | 10 | NS | NS | NS | 10 | -- | NA | 7.8 | NS | NS | NS | 10 | 28% |
| 114-MW71D | BEDROCK | 25.2 | NS | NS | NS | 25.2 | -- | NA | 54.8 | NS | NS | NS | 54.8 | -- |
| 114-MW72D | BEDROCK | 62 | NS | NS | 530 | 530 | >100% | NA | 52 | NS | NS | 517 | 517 | >100% |
| 114-MW76D | BEDROCK | 10 | NS | NS | 10 | 10 | -- | NA | 10 | NS | NS | 10 | 10 | -- |
| 114-MW76WR | BEDROCK | 85700 | 56500 | 52300 | 45800 | 45800 | -47% | NA | 87800 | 54400 | 49900 | 34000 | 34000 | -61% |
| 114-MW77WR | BEDROCK | 30300 | NS | NS | NS | 19300 | -36% | NA | 27300 | NS | NS | NS | 17900 | -34% |
| 114-MW78WR | BEDROCK | 10 | NS | 10 | 10 | 10 | -- | NA | 5.6 | NS | 10 | 4.0 | 4.0 | -29% |
| 114-MW79WR | BEDROCK | 5600 | NS | 110 | 4.3 | 4.3 | -100% | NA | 4810 | NS | 997 | 698 | 698 | -85% |
| 114-MW7D | BEDROCK | 10 | NS | NS | NS | 10 | -- | NA | 6.3 | NS | NS | NS | 3.6 | -43% |
| 114-MW80WR | BEDROCK | 10 | NS | 10 | 10 | 10 | -- | NA | 6.3 | NS | 4.2 | 6.1 | 6.1 | -3% |

**Notes:**

1. Most recent results can be found in Appendix A.
2. Underlined concentrations indicate non-detect values at the sample reporting limit.
3. For baseline data points that were rejected during validation, or for wells not sampled during the baseline events, the data from the next recent treatment monitoring event was used.
4. A negative sign (-) indicates a concentration decrease compared to baseline.
5. Concentration reductions are not calculated for instances where the baseline and most recent concentrations are less than the reporting limit or less than 70 ug/L (the Cr Groundwater Quality Standard) and are noted as " -- ".

| | |
|---|---|
| Gray Shading | Most recent Cr(VI) and Cr concentrations (as depicted on Figures 3A-3F), and where applicable, compared to the baseline concentration in calculation of the % change. |

**Abbreviations:**

| | |
|---|---|
| Cr(VI) | hexavalent chromium |
| Cr | chromium |
| HCC | Hudson County Chromate |
| Q4 | fourth quarter |
| ug/L | micrograms per liter |
| NA | not applicable |
| NS | not sampled |

**Table 5**
**NJDEP Comments and PPG Responses on Q3 2024 Remedial Action Progress Report**
**Groundwater Remedial Action Progress Report, Q4 2024 – Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| Comment # | Document Location | Comment | Response |
|---|---|---|---|
| 1 | NA | For future progress reports, please add a table of contents, section numbers, and subsection numbers to help the review process and improve the overall organization of the progress reports. We recognize that bookmarks were already provided in the PDF file. | Section and subsection numbers have been added to the letter report for the Q4 2024 RAPR. Section numbers and names are also listed before the Lists of Tables, Figures and Appendices. |
| 2 | Appendix B-7 | Although it is understood that discussions related to an acceptable timeframe to achieve 1,000 ug/L are on hold at this time, please add a column to the table "Statistical Analysis of Groundwater Monitoring Data" with an estimated timeframe (for those wells with decreasing trends) to achieve groundwater concentrations of 1,000 ug/L hexavalent chromium based on the trend analysis. The Department still sees value in understanding these timeframes to evaluate progress towards the enhanced attenuation remedy and overall effectiveness. | Calculations of estimated timeframes for Cr(VI) to attenuate to 1,000 µg/L must be interpreted with caution as these numbers are based on an assumption that current trends and decay rate constants will remain consistent over several years. Decay rates may vary significantly as additional data are collected. However, as requested by NJDEP, estimated timeframes for Cr(VI) to attenuate to 1,000 µg/L have been added to Appendix B-7 for those wells with decreasing trends, as well as for certain wells with a "No Trend" determination, as visual interpretation indicates a decreasing pattern. Finally, it is noted that wells situated in the Lower Deep Zone are listed separately because the current remedy for that zone (reactive barrier) is different from the current remedy for other wells listed on the table (ISAB). |
| 3a | Appendix E | Please clarify whether injection has been resumed in well 114-PW-02T, and if so, please identify in the next progress report the injection resumption date, injection rate, injection pressures, and injection volume associated with the resumption of injection. | Injections at well 114-PW-02T (basal till) recommenced on October 23, 2024 (i.e., in Q4 2024) and continued through the end of the Basal Till DGW PBR-period, December 6, 2024. This is described in the current RAPR for Q4 2024. Please refer to Table 3b of the Q4 2024 RAPR. |
| 3b.1 | Appendix E | Regarding the third sentence of the second paragraph on the first page of text, please provide a reference (e.g., technical paper, textbook, guidance document, etc.) for the methodology used to determine qualitative groundwater velocity | The methodology applied was described by Suthersan et al. (2014), which was adapted from Valocchi (1989) and Goltz and Roberts (1987). Complete references are included below.<br>• Suthersan, S., Divine, C., Cohen, E., Heinze, K. 2014. Tracer testing: recommended best practice for design and optimization of in situ remediation systems Groundwater Monitoring and Remediation, 34(3), 33-40.<br>• Goltz, M.N., Roberts, P.V. 1987. Using the method of moments to analyze three-dimensional diffusion-limited solute transport from temporal and spatial perspectives. Water Resources Research, 23(8), 1575-1585.<br>• Valocchi, A.J. Use of temporal moment analysis to study reactive solute transport in aggregated porous media. Geoderma, 46, 233-247. |
| 3b.2 | Appendix E | In addition, please provide the backup calculations. | As stated in Appendix E: "…*the groundwater velocity can… be estimated by dividing d (the distance between the upgradient edge of displacement and the monitoring well location) by the duration over which a 50% decline in TOC and/or D2O was observed during the post-injection monitoring period."*<br><br>An example calculation is provided below for **114-PMW-03T:**<br>See response to 3c below for upstream displacement radius of influence (ROI) or "*r*" calculation.<br>*114-PW-03T r* = 9.6 feet<br>*d* = *r* + distance from 114-PW-03T to 114-PMW-03T = 9.6 feet + 5 feet = 14.6 feet<br>Estimated time for 50% TOC/D2O reduction = 28 days (see Figure E-4)<br>v = 14.6 feet / 28 days = <u>0.52 feet / day</u> |

**Table 5**
**NJDEP Comments and PPG Responses on Q3 2024 Remedial Action Progress Report**
**Groundwater Remedial Action Progress Report, Q4 2024 – Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| Comment # | Document Location | Comment | Response |
|---|---|---|---|
| | | | |
| 3b.3 | Appendix E | Note that the groundwater velocities provided in the quarterly report are different from those presented for the same wells during the Garfield Avenue Group Sites Groundwater update meeting held on October 22, 2024. Specifically, the groundwater velocities presented in the meeting for wells PMW-03T and PMW-04T were 0.18 feet per day (ft/day) and 0.07 ft/day respectively, whereas the velocities presented in Appendix E for these same wells were significantly higher at 0.52 ft/day and 0.23 ft/day respectively. | As stated in the October 22, 2024 meeting and described in the meeting summary, the deuterium (D2O) and total organic carbon (TOC) analytical data presented during the meeting were preliminary and did not include all sampling events (i.e., they were the data available at that time). Since then, additional D2O and TOC analytical data were received, and thus Appendix E for the Q3 2024 RAPR was prepared using **all** available data to inform the calculations. Note that Appendix E included the following statement: "*Estimated groundwater velocities for the three wells are included in the figure based on the available post-injection TOC and D2O dataset. These velocity estimates may change as more data become available."* |
| 3c | Appendix E | Please clarify how "Upstream displacement radius of influence" was determined at each location. | The upstream displacement ROI (*r*) was determined based on the total volume injected at the nearby injection well and the estimated mobile fraction obtained via the breakthrough analysis performed (Figures E-1 through E-3). Then, Equation 1 provided in Appendix E was utilized ($Vol = \pi r^2 h\theta_m$), wherein the user solves for "*r*" to determine the upstream displacement ROI.<br><br>An example calculation is provided below for **114-PMW-03T:**<br>114-PW-03T Vol = 1,508 gallons = 201.6 cubic feet<br>$\theta_m$= 7% (Figure E-2)<br>114-PW-03T h = 10 feet<br>r = $(\frac{Vol}{\pi * h * \theta_m})^{1/2}$ = $(\frac{201.6}{\pi * 10 * 0.07})^{1/2}$= **9.6 feet** |

# Figures

File: C:\Users\Breedveldt\AECOM\PPG - GDS\910 CAD\20 SHEETS\GW\GW RAPR\2024\04\Figure 1\2024 04 Figure 1.dwg Layout: WELL MAP-ALL WELLS (AERIAL) User: BreedveldT Plotted: Feb 19, 2025 - 2:28pm Xref's:

SITE 199

PHASE III TARGET AREA 3 (FORREST ST., FORREST ST. PROPERTIES, AND SITE 199)

FORREST STREET PROPERTIES

2024 TARGET AREA - BEDROCK AND BASAL TILL

PHASE III TARGET AREA 1B (LOWER DEEP ZONE - SITE 114)

PHASE I

SITE 114

PHASE II - NORTHERN AREA

PHASE II - SOUTHEASTERN AREA

SITE 143

PHASE III TARGET AREA 1A (CARTERET AVE. ROW, SITES 132, 137A, AND 143)

PHASE III TARGET AREA 2 (HALLADAY ST. ROW, HALSTED, EDEN WOOD, PACIFIC AVE.)

HALSTED

SITE 132

SITE 137A

FISHBEIN

SITE 137B

TEN WEST

SITE 133E

SITE 135

SITE 133W

AL SMITH MOVING

CARFIELD AVENUE

CARTERET AVENUE

HALLADAY STREET

PACIFIC AVENUE

CAVEN POINT AVENUE

FORREST STREET

VAN HORNE ST (60' R.O.W.)

DANFORTH AVE (60' R.O.W.)

MOD-IV TANK

WATER TREATMENT

LEGEND

- PROPERTY LINE
- EXISTING SHEET PILE
- RAILROAD TRACK
- FERROBLACK®-H REACTIVE ZONES
- OUTLINE OF PHASE I
- OUTLINE OF PHASE II
- OUTLINE OF PHASE III
- OUTLINE OF 2024 TARGET AREA
- FORMER MORRIS CANAL
- LOWER DEEP ZONE FERROBLACK®-H INJECTION BORING

WELL BY WATER-BEARING ZONE

- SHALLOW MONITORING WELL
- SHALLOW REMEDIATION WELL
- INTERMEDIATE MONITORING WELL
- INTERMEDIATE REMEDIATION WELL
- DEEP AND LOWER DEEP MONITORING WELL
- DEEP AND LOWER DEEP REMEDIATION WELL
- BASAL TILL MONITORING WELL
- BASAL TILL REMEDIATION WELL
- WEATHERED BEDROCK MONITORING WELL
- WEATHERED BEDROCK REMEDIATION WELL
- BEDROCK MONITORING WELL
- ABANDONED/DECOMMISSIONED WELLS
- HPT/VAP OR TEMPORARY GROUNDWATER SCREENING POINTS
- BASEMENT SUMP

**NOTES:**

1. WELL STATUSES UPDATED AS OF DECEMBER 31, 2024.
2. PROPOSED REDEVELOPMENT PLAN DATED NOVEMBER 7, 2024 BY BORAIE DEVELOPMENT LLC.
3. AERIAL IMAGE DATED DECEMBER 20, 2021 SOURCED FROM AERIAL IMAGERY PROVIDED BY BORBAS SURVEYING AND MAPPING, LLC.

AVE. - AVENUE
HPT - HYDRAULIC PROFILING TOOL
IRM - INTERIM REMEDIAL MEASURE
ROW - RIGHT-OF-WAY
ST. - STREET
VAP - VERTICAL AQUIFER PROFILING

N

30 0 60
GRAPHIC SCALE IN FEET

AECOM

PPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY

DATE: 02/18/2025 | DRWN: TEB

# SITE PLAN, MONITORING AND REMEDIATION WELL NETWORK, AND TARGET AREAS FOR REMEDY IMPLEMENTATION

FIGURE 1

File: C:\Users\Alexandru.Dumit\AECOM\PPG - 04\Figure 2\2024 04 Figure 2.dwg Layout: SHALLOW User: Alexandru.Dumit Plotted: Jan 21, 2025 - 6:16pm Xref's:

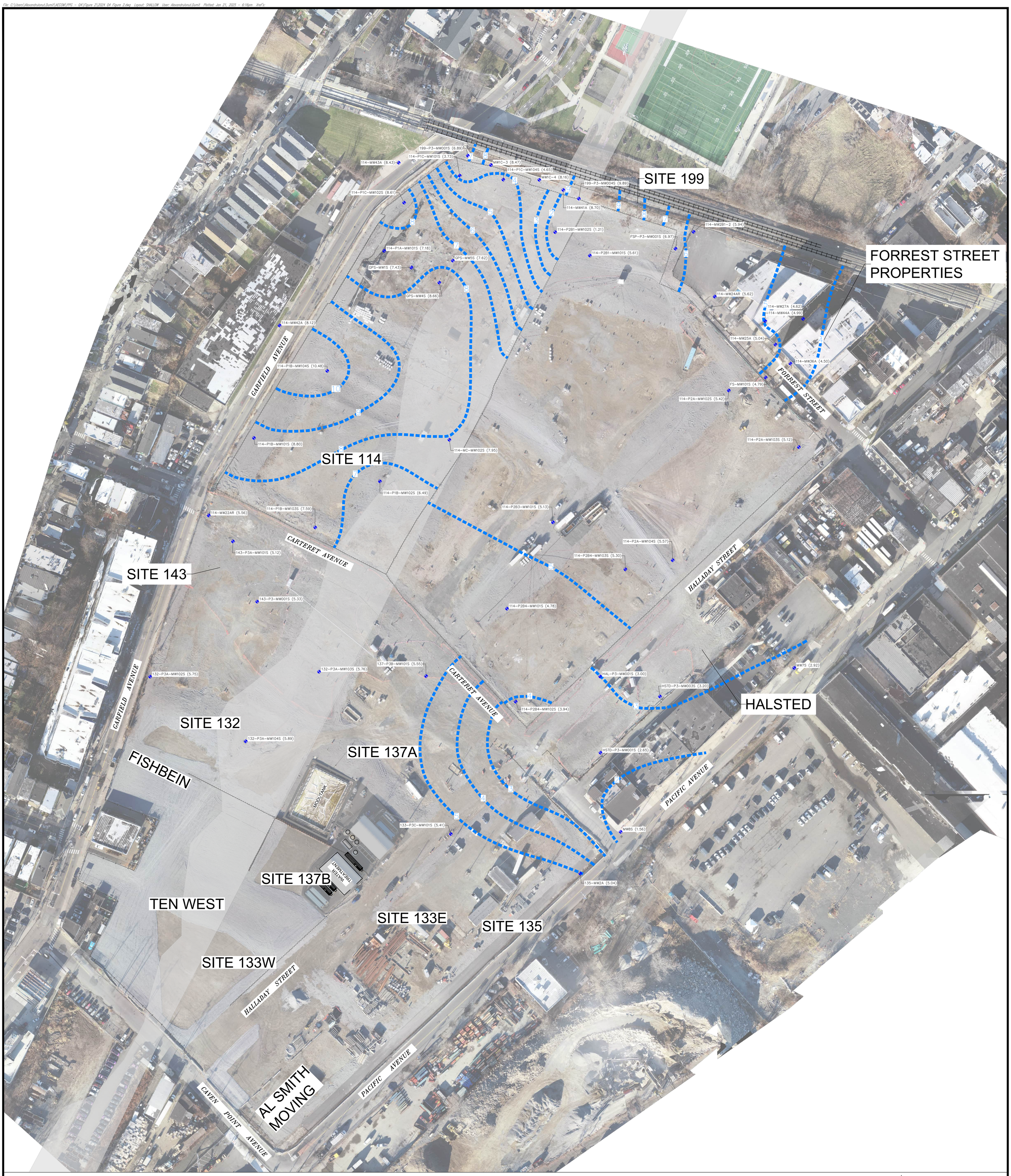


LEGEND

- PROPERTY LINE
- EDGE OF PAVEMENT
- EDGE OF CONCRETE
- EXISTING SHEET PILE
- SHALLOW GROUNDWATER ELEVATION CONTOURS, 1-FT (IN NAVD88) - INFERRED
- RAILROAD TRACK
- CURB
- DEPRESSED CURB
- EXISTING BUILDING
- FORMER MORRIS CANAL
- MW7D (3.41) SHALLOW WATER-BEARING ZONE WELL (WATER LEVEL ELEVATION IN FT NAVD88)

**NOTES:**

1. GROUNDWATER ELEVATION MEASUREMENTS FOR THE SHALLOW WATER-BEARING ZONE WERE COLLECTED FROM NOVEMBER 11, 2024 TO NOVEMBER 12, 2024.
2. AERIAL IMAGE DATED DECEMBER 20, 2021 SOURCED FROM AERIAL IMAGERY PROVIDED BY BORBAS SURVEYING AND MAPPING, LLC.

**ABBREVIATIONS:**

FT = FEET
NAVD88 = NORTH AMERICAN DATUM OF 1988

N

30 0 60
GRAPHIC SCALE IN FEET

AECOM

PPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY

**GROUNDWATER ELEVATION CONTOUR MAP - SHALLOW WATER-BEARING ZONE**

DATE: 01/21/2025 | DRWN: ID | **FIGURE 2A**

File: C:\Users\Alexandrulonut.Dumit\AECOM\PPG - 04\Figure 2\2024 04 Figure 2.dwg Layout: INTERMEDIATE User: Alexandrulonut.Dumit Plotted: Jan 21, 2025 - 6:17pm Xref's:

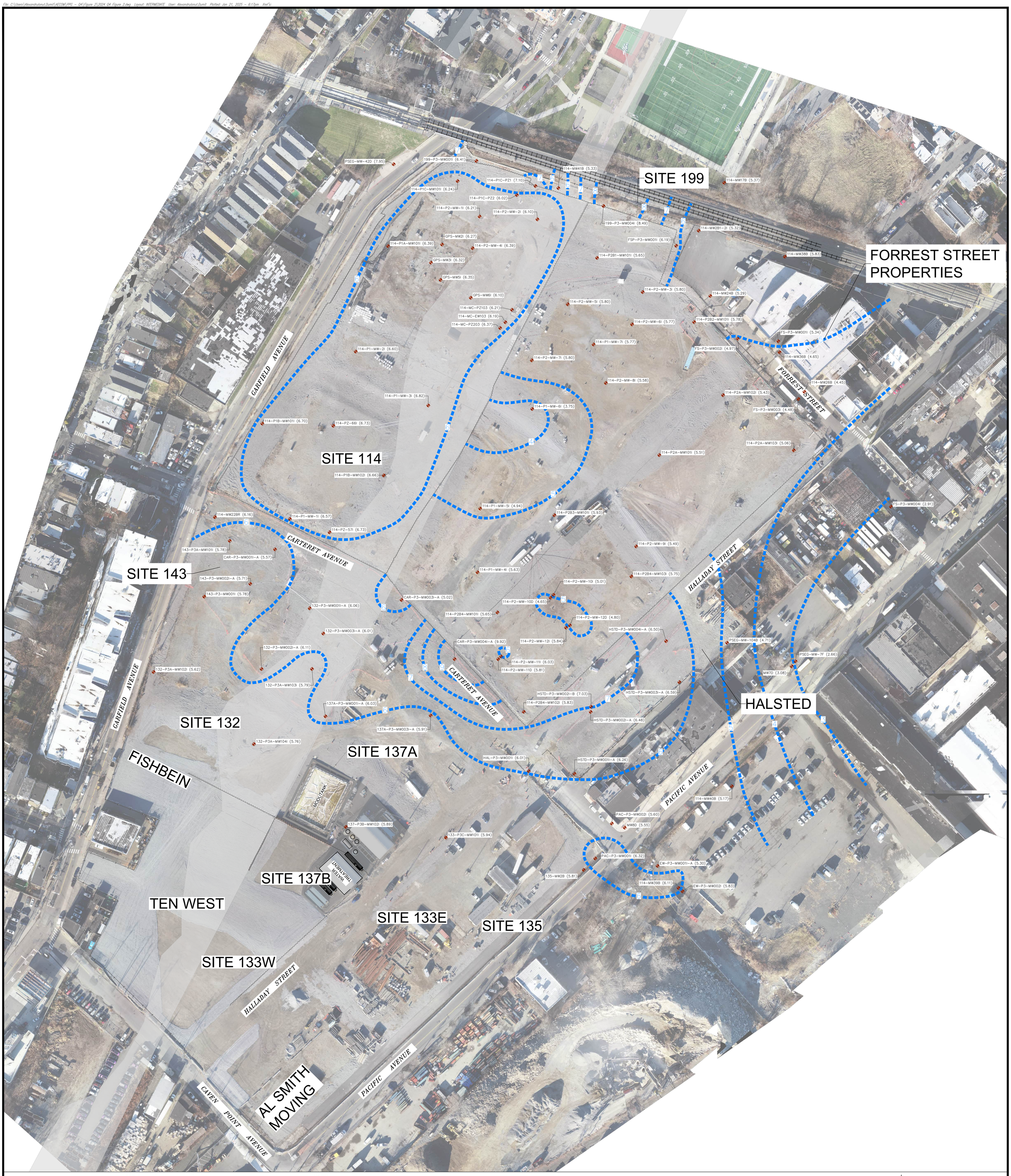


LEGEND

- PROPERTY LINE
- EDGE OF PAVEMENT
- EDGE OF CONCRETE
- EXISTING SHEET PILE
- INTERMEDIATE GROUNDWATER ELEVATION CONTOURS, 1-FT (IN NAVD88) - INFERRED
- RAILROAD TRACK
- CURB
- DEPRESSED CURB
- EXISTING BUILDING
- FORMER MORRIS CANAL
- MW7D (3.41) INTERMEDIATE WATER-BEARING ZONE WELL (WATER LEVEL ELEVATION IN FT NAVD88)

**NOTES:**

1. GROUNDWATER ELEVATION MEASUREMENTS FOR THE INTERMEDIATE WATER-BEARING ZONE WERE COLLECTED FROM NOVEMBER 11, 2024 TO NOVEMBER 12, 2024.
2. AERIAL IMAGE DATED DECEMBER 20, 2021 SOURCED FROM AERIAL IMAGERY PROVIDED BY BORBAS SURVEYING AND MAPPING, LLC.

**ABBREVIATIONS:**

FT = FEET
NAVD88 = NORTH AMERICAN DATUM OF 1988

N

30 0 60
GRAPHIC SCALE IN FEET

AECOM

PPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY

DATE: 01/21/2025 | DRWN: ID

# GROUNDWATER POTENTIOMETRIC SURFACE MAP - INTERMEDIATE WATER-BEARING ZONE

FIGURE 2B

File: C:\Users\Alexandru.Ionut.Dumit\AECOM\PPG - 04\Figure 2\2024 04 Figure 2.dwg Layout: DEEP User: Alexandru.Ionut.Dumit Plotted: Jan 23, 2025 - 3:04pm Xref's:

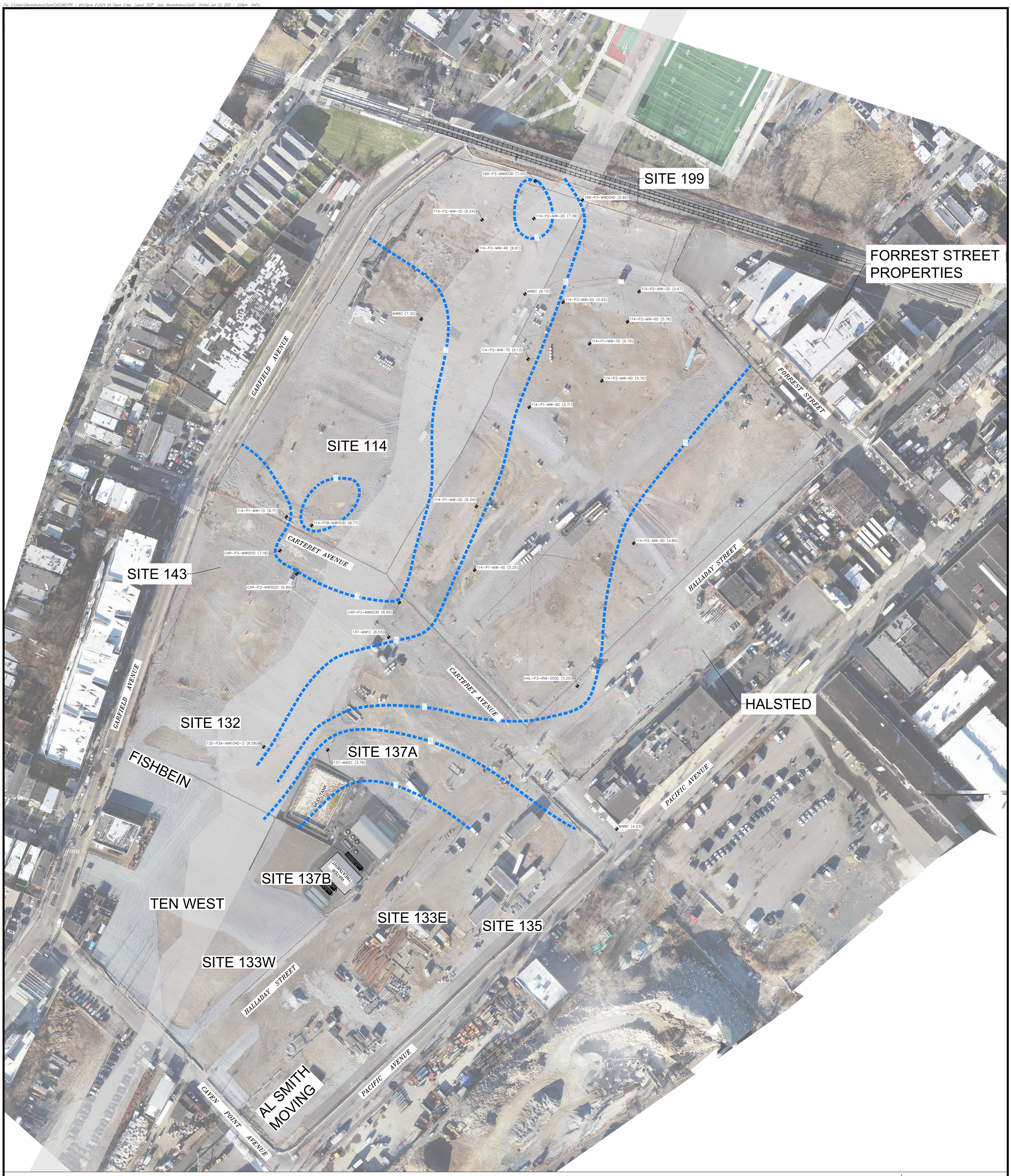


LEGEND

- PROPERTY LINE
- EDGE OF PAVEMENT
- EDGE OF CONCRETE
- EXISTING SHEET PILE
- DEEP GROUNDWATER ELEVATION CONTOURS, 1-FT (IN NAVD88) - INFERRED
- RAILROAD TRACK
- CURB
- DEPRESSED CURB
- EXISTING BUILDING
- FORMER MORRIS CANAL
- MW7D (3.41) DEEP WATER-BEARING ZONE WELL (WATER LEVEL ELEVATION IN FT NAVD88)

**NOTES:**

1. GROUNDWATER ELEVATION MEASUREMENTS FOR THE DEEP WATER-BEARING ZONE WERE COLLECTED FROM NOVEMBER 11, 2024 TO NOVEMBER 12, 2024.
2. AERIAL IMAGE DATED DECEMBER 20, 2021 SOURCED FROM AERIAL IMAGERY PROVIDED BY BORBAS SURVEYING AND MAPPING, LLC.

**ABBREVIATIONS:**

FT = FEET
NAVD88 = NORTH AMERICAN DATUM OF 1988

N

30 0 60
GRAPHIC SCALE IN FEET

AECOM

PPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY

DATE: 01/22/2025 | DRWN: ID

# GROUNDWATER POTENTIOMETRIC SURFACE MAP - DEEP WATER-BEARING ZONE

FIGURE 2C

File: C:\Users\Alexandrulonut.Dumit\AECOM\PPG - 04\Figure 2\2024 04 Figure 2.dwg Layout: LOWER DEEP User: Alexandrulonut.Dumit Plotted: Jan 23, 2025 - 3:04pm Xref's:

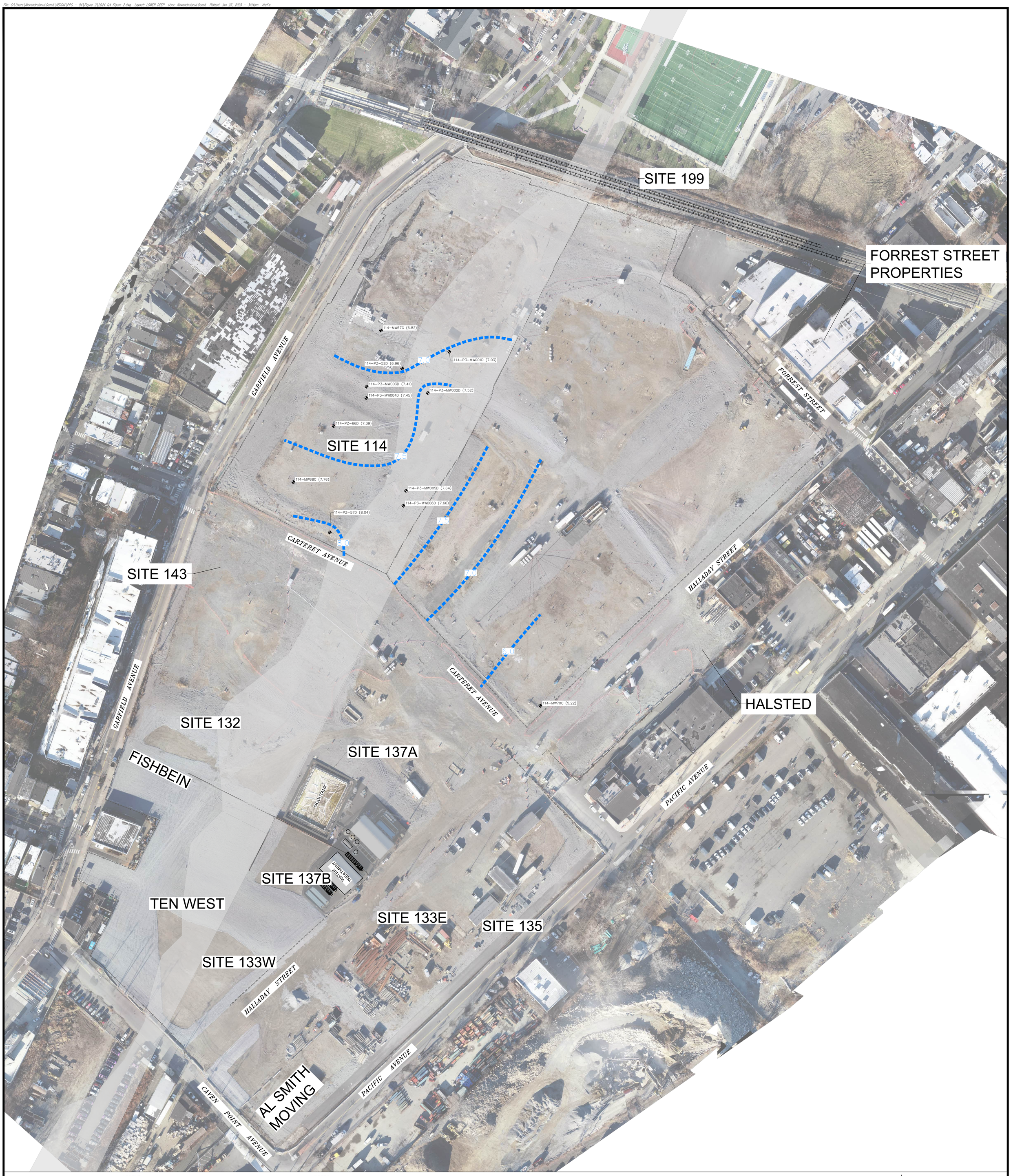


LEGEND

- PROPERTY LINE
- EDGE OF PAVEMENT
- EDGE OF CONCRETE
- EXISTING SHEET PILE
- 7.5 — LOWER DEEP ZONE GROUNDWATER ELEVATION CONTOURS, 1-FT (IN NAVD88) - INFERRED
- RAILROAD TRACK
- CURB
- DEPRESSED CURB
- EXISTING BUILDING
- FORMER MORRIS CANAL
- MW7D (3.41) — LOWER DEEP ZONE WELL (WATER LEVEL ELEVATION IN FT NAVD88)

**NOTES:**

1. GROUNDWATER ELEVATION MEASUREMENTS FOR THE LOWER DEEP WATER-BEARING ZONE WERE COLLECTED FROM NOVEMBER 11, 2024 TO NOVEMBER 12, 2024.
2. AERIAL IMAGE DATED DECEMBER 20, 2021 SOURCED FROM AERIAL IMAGERY PROVIDED BY BORBAS SURVEYING AND MAPPING, LLC.

**ABBREVIATIONS:**

FT = FEET
NAVD88 = NORTH AMERICAN DATUM OF 1988

N

30 0 60
GRAPHIC SCALE IN FEET

AECOM

PPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY

DATE: 01/22/2025 | DRWN: ID

# GROUNDWATER POTENTIOMETRIC SURFACE MAP - LOWER DEEP ZONE

FIGURE 2D

File: C:\Users\Alexandrulonut.Dumit\AECOM\PPG - 04\Figure 2\2024 04 Figure 2.dwg Layout: BASAL TILL User: Alexandrulonut.Dumit Plotted: Jan 21, 2025 - 6:19pm Xref's:

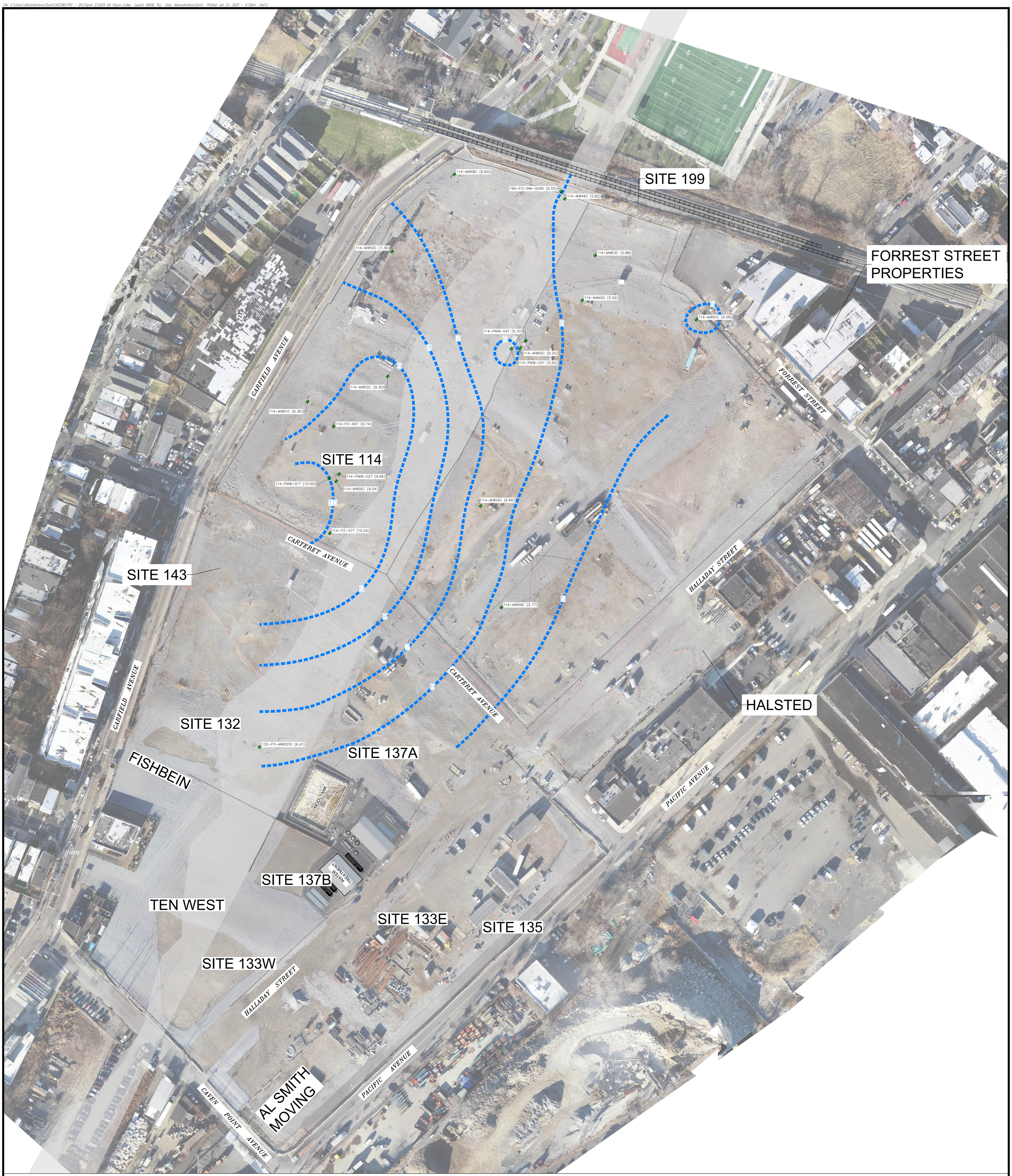


LEGEND

- PROPERTY LINE
- EDGE OF PAVEMENT
- EDGE OF CONCRETE
- EXISTING SHEET PILE
- BASAL TILL GROUNDWATER ELEVATION CONTOURS, 1-FT (IN NAVD88) - INFERRED
- RAILROAD TRACK
- CURB
- DEPRESSED CURB
- EXISTING BUILDING
- FORMER MORRIS CANAL
- MW7D (3.41) BASAL TILL WELL (WATER LEVEL ELEVATION IN FT NAVD88)

**NOTES:**

1. GROUNDWATER ELEVATION MEASUREMENTS FOR THE BASAL TILL WERE COLLECTED FROM NOVEMBER 11, 2024 TO NOVEMBER 12, 2024.
2. AERIAL IMAGE DATED DECEMBER 20, 2021 SOURCED FROM AERIAL IMAGERY PROVIDED BY BORBAS SURVEYING AND MAPPING, LLC.

**ABBREVIATIONS:**

FT = FEET
NAVD88 = NORTH AMERICAN DATUM OF 1988

N

30 0 60
GRAPHIC SCALE IN FEET

AECOM

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JERSEY CITY, NEW JERSEY

**GROUNDWATER POTENTIOMETRIC SURFACE MAP - BASAL TILL**

DATE: 01/21/2025 | DRWN: ID | **FIGURE 2E**

File: C:\Users\Alexandrulonut.Dumit\AECOM\PPG - 04\Figure 2\2024 04 Figure 2.dwg Layout: WEATHERED_BEDROCK User: Alexandrulonut.Dumit Plotted: Jan 21, 2025 - 6:20pm Xref's:

SITE 199

FORREST STREET PROPERTIES

114-MW62C (6.79)

CARFIELD AVENUE

114-PZ-52WR (8.28)

10

114-MW79WR (10.54)

114-PZ-66WR (9.88)

9

7

114-MW53C (6.98)

114-MW76WR (7.41)

SITE 114

FORREST STREET

114-MW58C-R (6.16)

114-MW57C (8.73)

CARTERET AVENUE

8

7

114-MW78WR (6.59)

114-MW80WR (6.61)

HALLADAY STREET

SITE 143

CARFIELD AVENUE

SITE 132

6

CARTERET AVENUE

114-MW60C-R (5.09)

5

HALSTED

SITE 137A

FISHBEIN

MODUTANK

WATER TREATMENT

114-MW75WR (5.32)

PACIFIC AVENUE

SITE 137B

TEN WEST

SITE 133E

SITE 135

SITE 133W

HALLADAY STREET

AL SMITH MOVING

PACIFIC AVENUE

CAVEN POINT AVENUE

LEGEND

- PROPERTY LINE
- EDGE OF PAVEMENT
- EDGE OF CONCRETE
- EXISTING SHEET PILE
- 8 WEATHERED BEDROCK GROUNDWATER ELEVATION CONTOURS, 1-FT (IN NAVD88) - INFERRED
- RAILROAD TRACK
- CURB
- DEPRESSED CURB
- EXISTING BUILDING
- FORMER MORRIS CANAL
- MW7D (3.41) WEATHERED BEDROCK WELL (WATER LEVEL ELEVATION IN FT NAVD88)

**NOTES:**

1. GROUNDWATER ELEVATION MEASUREMENTS FOR THE WEATHERED BEDROCK WERE COLLECTED FROM NOVEMBER 11, 2024 TO NOVEMBER 12, 2024.
2. AERIAL IMAGE DATED DECEMBER 20, 2021 SOURCED FROM AERIAL IMAGERY PROVIDED BY BORBAS SURVEYING AND MAPPING, LLC.

**ABBREVIATIONS:**

FT = FEET
NAVD88 = NORTH AMERICAN DATUM OF 1988

Bedrock Elevation (feet)
0
-20
-40
-60
-80
-100
-120

N

30 0 60
GRAPHIC SCALE IN FEET

AECOM

PPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY

**GROUNDWATER POTENTIOMETRIC SURFACE MAP - WEATHERED BEDROCK**

DATE: 01/21/2025 | DRWN: ID | **FIGURE 2F**

File: C:\Users\breedveldt\AECOM\PPG - GDS\910 CAD\20 SHEETS\GW\GW RAPR\2024\04\Figure 3\2024 04 Figure 3.dwg Layout: SHALLOW WELLS User: breedveldt Plotted: Feb 11, 2025 - 6:15pm Xref's:

SITE 199

FORREST STREET PROPERTIES

SITE 114

SITE 143

SITE 132

SITE 137A

SITE 137B

TEN WEST

SITE 133W

SITE 133E

SITE 135

HALSTED

FISHBEIN

AL SMITH MOVING

CARFIELD AVENUE

CARTERET AVENUE

HALLADAY STREET

PACIFIC AVENUE

FORREST STREET

CAVEN POINT AVENUE

MOD I TANK

WATER TREATMENT

LEGEND

- PROPERTY LINE
- EDGE OF PAVEMENT
- EDGE OF CONCRETE
- EXISTING SHEET PILE
- RAILROAD TRACK
- CURB
- DEPRESSED CURB
- EXISTING BUILDING
- FORMER MORRIS CANAL

REMEDIAL PROGRESS DURING Q4 2024

- MONITORING WELL NOT SAMPLED
- REMEDIATION WELL NOT SAMPLED
- Cr(VI) CONCENTRATION < 1,000 ug/L
- Cr(VI) CONCENTRATION > 1,000 ug/L
- BASEMENT SUMP
- TOTAL Cr CONCENTRATION < 70 ug/L
- TOTAL Cr CONCENTRATION > 70 ug/L
- LIMITS OF Q4 TOTAL CHROMIUM GREATER THAN 70 ug/L (INFERRED)
- LIMITS OF BASELINE TOTAL CHROMIUM GREATER THAN 70 ug/L

**NOTES:**

1. REFER TO TABLE 4 FOR ANALYTICAL DATA COLLECTED DURING Q4 2024, GREY SHADED VALUES ON TABLE 4 WERE USED TO CLASSIFY THE WELL SYMBOLOGY WITH REGARD TO Cr AND Cr(VI) CONCENTRATIONS.
2. AERIAL IMAGE DATED DECEMBER 20, 2021 SOURCED FROM AERIAL IMAGERY PROVIDED BY BORBAS SURVEYING AND MAPPING, LLC.

**ABBREVIATIONS:**

Cr = CHROMIUM
Cr(VI) = HEXAVALENT CHROMIUM
ug/L = MICROGRAMS PER LITER

N

30 0 60
GRAPHIC SCALE IN FEET

AECOM

PPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY

DATE: 01/30/2025 | DRWN: ID

**SHALLOW WATER-BEARING ZONE OPERATIONAL AND MONITORING DATA SUMMARY, Q4 2024**

**FIGURE 3A**

File: C:\Users\breedveldt\AECOM\PPG - GDS\910 CAD\20 SHEETS\GW\GW RAPR\2024\04\Figure 3\2024 04 Figure 3.dwg Layout: INTERMEDIATE User: breedveldt Plotted: Feb 11, 2025 - 6:15pm Xref's:

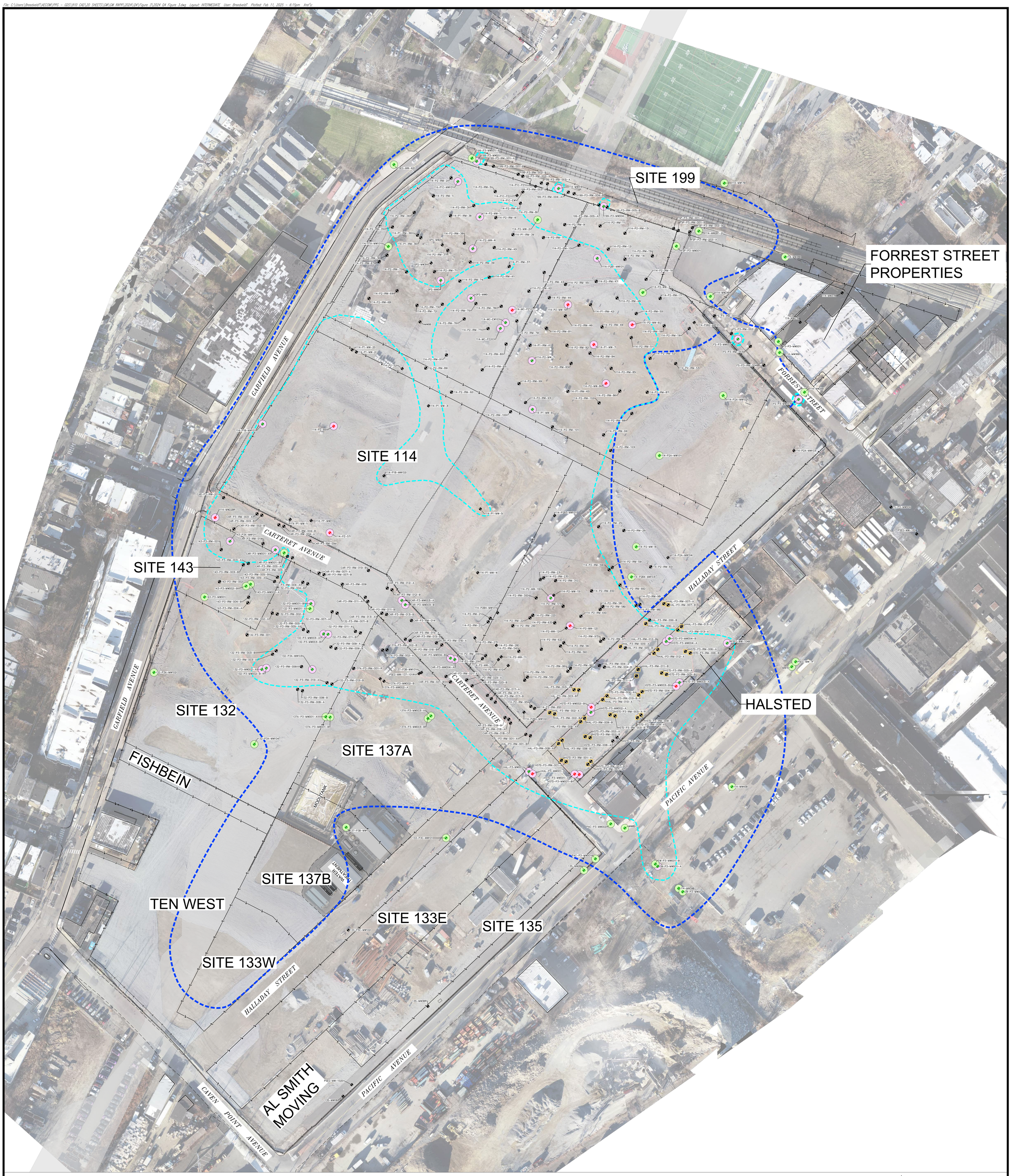


LEGEND

- PROPERTY LINE
- EDGE OF PAVEMENT
- EDGE OF CONCRETE
- EXISTING SHEET PILE
- RAILROAD TRACK
- CURB
- DEPRESSED CURB
- EXISTING BUILDING
- FORMER MORRIS CANAL

REMEDIAL PROGRESS DURING Q4 2024

- MONITORING WELL NOT SAMPLED
- REMEDIATION WELL NOT SAMPLED
- Cr(VI) CONCENTRATION < 1,000 ug/L
- Cr(VI) CONCENTRATION > 1,000 ug/L
- INJECTION OR EXTRACTION WELL WHERE OPERATIONS ARE ONGOING
- TOTAL Cr CONCENTRATION < 70 ug/L
- TOTAL Cr CONCENTRATION > 70 ug/L
- LIMITS OF Q4 TOTAL CHROMIUM GREATER THAN 70 ug/L (INFERRED)
- LIMITS OF BASELINE TOTAL CHROMIUM GREATER THAN 70 ug/L

**NOTES:**

1. REFER TO TABLE 4 FOR ANALYTICAL DATA COLLECTED DURING Q4 2024, GREY SHADED VALUES ON TABLE 4 WERE USED TO CLASSIFY THE WELL SYMBOLOGY WITH REGARD TO Cr AND Cr(VI) CONCENTRATIONS.
2. AERIAL IMAGE DATED DECEMBER 20, 2021 SOURCED FROM AERIAL IMAGERY PROVIDED BY BORBAS SURVEYING AND MAPPING, LLC.

**ABBREVIATIONS:**

Cr = CHROMIUM
Cr(VI) = HEXAVALENT CHROMIUM
ug/L = MICROGRAMS PER LITER

N

30 0 60
GRAPHIC SCALE IN FEET

AECOM

PPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY

DATE: 01/30/2025 | DRWN: ID

**INTERMEDIATE WATER-BEARING ZONE OPERATIONAL AND MONITORING DATA SUMMARY, Q4 2024**

**FIGURE 3B**

File: C:\Users\Breedveld\AECOM\PPG - GDS\910 CAD\20 SHEETS\GW\GW RAPR\2024\04\Figure 3\2024 04 Figure 3.dwg Layout: DEEP User: Breedveld Plotted: Feb 11, 2025 - 6:15pm Xref's:

SITE 199

FORREST STREET PROPERTIES

SITE 114

SITE 143

SITE 132

FISHBEIN

SITE 137A

SITE 137B

TEN WEST

SITE 133E

SITE 135

SITE 133W

AL SMITH MOVING

HALSTED

CARFIELD AVENUE

CARTERET AVENUE

HALLADAY STREET

PACIFIC AVENUE

CAVEN POINT AVENUE

FORREST STREET

MOD TANK

WATER TREATMENT

LEGEND

- PROPERTY LINE
- EDGE OF PAVEMENT
- EDGE OF CONCRETE
- EXISTING SHEET PILE
- RAILROAD TRACK
- CURB
- DEPRESSED CURB
- EXISTING BUILDING
- FORMER MORRIS CANAL

REMEDIAL PROGRESS DURING Q4 2024

- MONITORING WELL NOT SAMPLED
- REMEDIATION WELL NOT SAMPLED
- Cr(VI) CONCENTRATION < 1,000 ug/L
- Cr(VI) CONCENTRATION > 1,000 ug/L
- INJECTION OR EXTRACTION WELL WHERE OPERATIONS ARE ONGOING
- TOTAL Cr CONCENTRATION < 70 ug/L
- TOTAL Cr CONCENTRATION > 70 ug/L
- LIMITS OF Q4 TOTAL CHROMIUM GREATER THAN 70 ug/L (INFERRED)
- LIMITS OF BASELINE TOTAL CHROMIUM GREATER THAN 70 ug/L

**NOTES:**

1. REFER TO TABLE 4 FOR ANALYTICAL DATA COLLECTED DURING Q4 2024, GREY SHADED VALUES ON TABLE 4 WERE USED TO CLASSIFY THE WELL SYMBOLOGY WITH REGARD TO Cr AND Cr(VI) CONCENTRATIONS.
2. AERIAL IMAGE DATED DECEMBER 20, 2021 SOURCED FROM AERIAL IMAGERY PROVIDED BY BORBAS SURVEYING AND MAPPING, LLC.

**ABBREVIATIONS:**

Cr = CHROMIUM
Cr(VI) = HEXAVALENT CHROMIUM
ug/L = MICROGRAMS PER LITER

N

30 0 60
GRAPHIC SCALE IN FEET

AECOM

PPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY

DATE: 01/30/2025 | DRWN: ID

**DEEP**
**WATER-BEARING ZONE**
**OPERATIONAL AND MONITORING DATA SUMMARY, Q4 2024**

**FIGURE 3C**

File: C:\Users\Breedveld\AECOM\PPG - GDS\910 CAD\20 SHEETS\GW\GW RAPR\2024\04\Figure 3\2024 04 Figure 3.dwg Layout: LOWER DEEP User: Breedveld Plotted: Feb 11, 2025 - 6:15pm Xref's:

SITE 199

FORREST STREET PROPERTIES

SITE 114

SITE 143

SITE 132

SITE 137A

FISHBEIN

SITE 137B

TEN WEST

SITE 133E

SITE 135

SITE 133W

HALSTED

AL SMITH MOVING

CARFIELD AVENUE

CARTERET AVENUE

HALLADAY STREET

PACIFIC AVENUE

FORREST STREET

CAVEN POINT AVENUE

MOD/ TANK

WATER TREATMENT

114-MW67C

114-P3-MW001D

114-P2-52C

114-P3-MW003D

114-P3-MW004D

114-P3-MW002D

114-P2-56D

114-MW68C

114-P3-MW005D

114-P3-MW006D

114-P2-57D

114-MW70C

LEGEND

- PROPERTY LINE
- EDGE OF PAVEMENT
- EDGE OF CONCRETE
- EXISTING SHEET PILE
- RAILROAD TRACK
- CURB
- DEPRESSED CURB
- EXISTING BUILDING
- FORMER MORRIS CANAL
- LOWER DEEP ZONE FERROBLACK®-H INJECTION BORING

REMEDIAL PROGRESS DURING Q4 2024

- MONITORING WELL NOT SAMPLED
- REMEDIATION WELL NOT SAMPLED
- Cr(VI) CONCENTRATION < 1,000 ug/L
- Cr(VI) CONCENTRATION > 1,000 ug/L
- TOTAL Cr CONCENTRATION < 70 ug/L
- TOTAL Cr CONCENTRATION > 70 ug/L

**NOTES:**

1. REFER TO TABLE 4 FOR ANALYTICAL DATA COLLECTED DURING Q4 2024, GREY SHADED VALUES ON TABLE 4 WERE USED TO CLASSIFY THE WELL SYMBOLOGY WITH REGARD TO Cr AND Cr(VI) CONCENTRATIONS.
2. AERIAL IMAGE DATED DECEMBER 20, 2021 SOURCED FROM AERIAL IMAGERY PROVIDED BY BORBAS SURVEYING AND MAPPING, LLC.

**ABBREVIATIONS:**

Cr = CHROMIUM
Cr(VI) = HEXAVALENT CHROMIUM
ug/L = MICROGRAMS PER LITER

N

30 0 60
GRAPHIC SCALE IN FEET

AECOM

PPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY

DATE: 01/30/2025 | DRWN: ID

**LOWER DEEP ZONE OPERATIONAL AND MONITORING DATA SUMMARY, Q4 2024**

**FIGURE 3D**

File: C:\Users\breedveldT\AECOM\PPG - GDS\910_CAD\20_SHEETS\GW\GW_RAPR\2024\04\Figure_3\2024_04_Figure_3.dwg Layout: BASAL TILL User: BreedveldT Plotted: Feb 11, 2025 - 6:16pm Xref's:

SITE 199

FORREST STREET PROPERTIES

SITE 114

SITE 143

SITE 132

SITE 137A

SITE 137B

TEN WEST

SITE 133E

SITE 135

SITE 133W

HALSTED

FISHBEIN

AL SMITH MOVING

CARFIELD AVENUE

CARTERET AVENUE

HALLADAY STREET

PACIFIC AVENUE

CAVEN POINT AVENUE

FORREST STREET

MODU TANK

WATER TREATMENT

114-MW48C
199-P3-RM-0040
114-MW49C
114-MW50C
114-MW63C
114-MW45C
114-MW51C
114-PW-04T
114-PW-03T
114-PWM-04T
114-PWM-03T
114-MW65C
114-MW61C
114-MW62C
114-P2-66T
114-PW-02T
114-PWM-01T
114-PWM-02T
114-PW-01T
114-MW56C
114-MW54C
114-P2-57T
114-MW59C
132-P3-MW001D
114-MW57C

LEGEND

- PROPERTY LINE
- EDGE OF PAVEMENT
- EDGE OF CONCRETE
- EXISTING SHEET PILE
- RAILROAD TRACK
- CURB
- DEPRESSED CURB
- EXISTING BUILDING
- FORMER MORRIS CANAL

REMEDIAL PROGRESS DURING Q4 2024

- MONITORING WELL NOT SAMPLED
- REMEDIATION WELL NOT SAMPLED
- Cr(VI) CONCENTRATION < 1,000 ug/L
- Cr(VI) CONCENTRATION > 1,000 ug/L
- TOTAL Cr CONCENTRATION < 70 ug/L
- TOTAL Cr CONCENTRATION > 70 ug/L

**NOTES:**

1. REFER TO TABLE 4 FOR ANALYTICAL DATA COLLECTED DURING Q4 2024, GREY SHADED VALUES ON TABLE 4 WERE USED TO CLASSIFY THE WELL SYMBOLOGY WITH REGARD TO Cr AND Cr(VI) CONCENTRATIONS.
2. AERIAL IMAGE DATED DECEMBER 20, 2021 SOURCED FROM AERIAL IMAGERY PROVIDED BY BORBAS SURVEYING AND MAPPING, LLC.

**ABBREVIATIONS:**

Cr = CHROMIUM
Cr(VI) = HEXAVALENT CHROMIUM
ug/L = MICROGRAMS PER LITER

N

30 0 60
GRAPHIC SCALE IN FEET

AECOM

PPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY

**BASAL TILL OPERATIONAL AND MONITORING DATA SUMMARY, Q4 2024**

DATE: 01/30/2025 | DRWN: ID | **FIGURE 3E**

File: C:\Users\breedveldt\AECOM\PPG - GDS\910 CAD\20 SHEETS\GW\GW RAPR\2024\04\Figure 3\2024 04 Figure 3.dwg Layout: BEDROCK AND WEATHERED BEDROCK User: breedveldt Plotted: Feb 11, 2025 - 6:16pm Xref's:

SITE 199

FORREST STREET PROPERTIES

SITE 114

SITE 143

SITE 132

SITE 137A

SITE 137B

TEN WEST

SITE 133E

SITE 135

SITE 133W

HALSTED

FISHBEIN

AL SMITH MOVING

CARFIELD AVENUE

CARTERET AVENUE

HALLADAY STREET

FORREST STREET

PACIFIC AVENUE

CAVEN POINT AVENUE

MODUTANK

WATER TREATMENT

LEGEND

- PROPERTY LINE
- EDGE OF PAVEMENT
- EDGE OF CONCRETE
- EXISTING SHEET PILE
- RAILROAD TRACK
- CURB
- DEPRESSED CURB
- EXISTING BUILDING
- FORMER MORRIS CANAL

REMEDIAL PROGRESS DURING Q4 2024

- MONITORING WELL NOT SAMPLED
- REMEDIATION WELL NOT SAMPLED
- Cr(VI) CONCENTRATION < 1,000 ug/L
- Cr(VI) CONCENTRATION > 1,000 ug/L
- INJECTION OR EXTRACTION WELL WHERE OPERATIONS ARE ONGOING
- TOTAL Cr CONCENTRATION < 70 ug/L
- TOTAL Cr CONCENTRATION > 70 ug/L

**NOTES:**

1. REFER TO TABLE 4 FOR ANALYTICAL DATA COLLECTED DURING Q4 2024, GREY SHADED VALUES ON TABLE 4 WERE USED TO CLASSIFY THE WELL SYMBOLOGY WITH REGARD TO Cr AND Cr(VI) CONCENTRATIONS.
2. AERIAL IMAGE DATED DECEMBER 20, 2021 SOURCED FROM AERIAL IMAGERY PROVIDED BY BORBAS SURVEYING AND MAPPING, LLC.

**ABBREVIATIONS:**

Cr = CHROMIUM
Cr(VI) = HEXAVALENT CHROMIUM
ug/L = MICROGRAMS PER LITER

Bedrock Elevation (feet)

0 -20 -40 -60 -80 -100 -120

N

30 0 60

GRAPHIC SCALE IN FEET

AECOM

PPG
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY

DATE: 01/30/2025 | DRWN: ID

**BEDROCK OPERATIONAL AND MONITORING DATA SUMMARY, Q4 2024**

**FIGURE 3F**

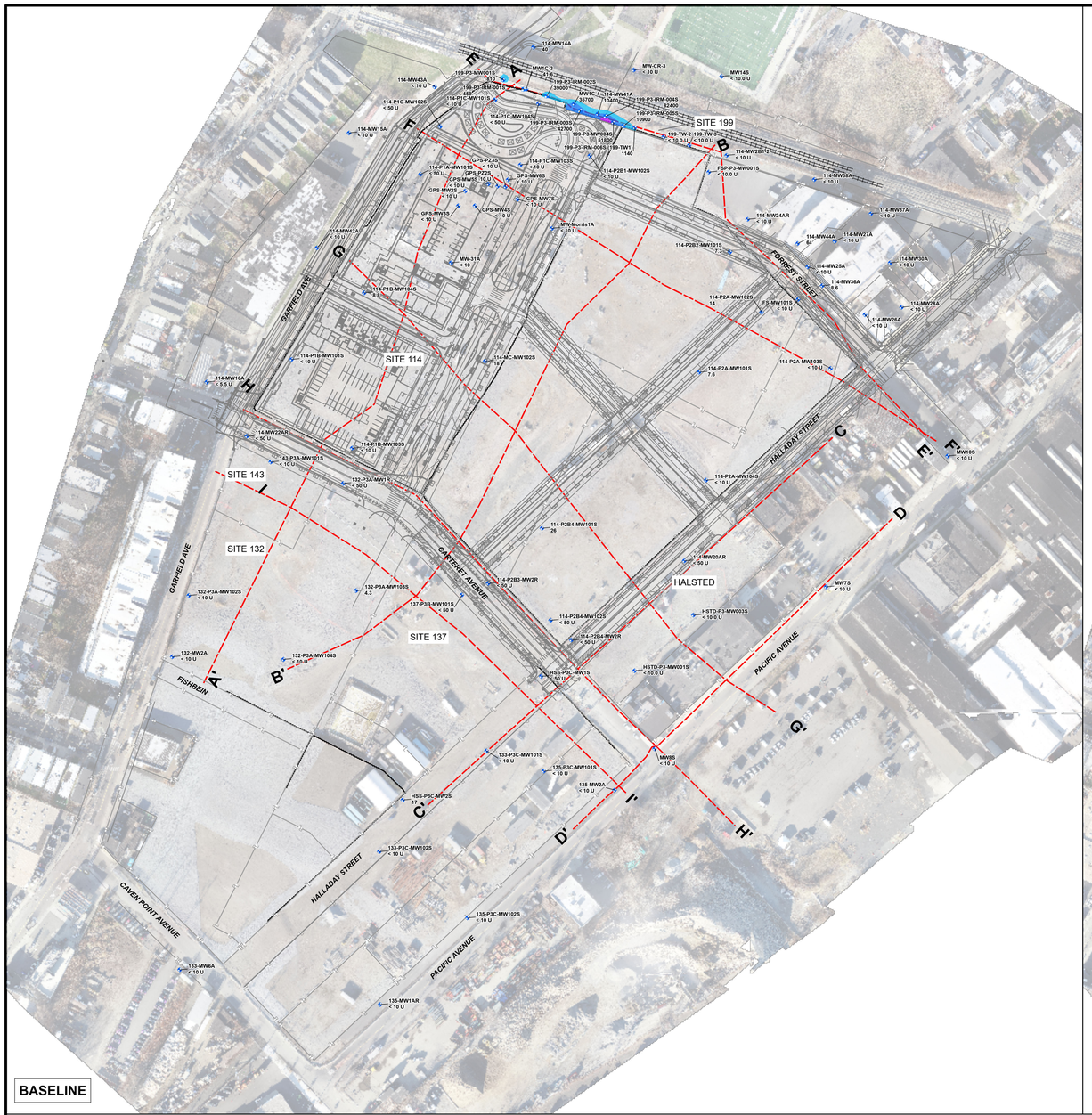


**BASELINE**

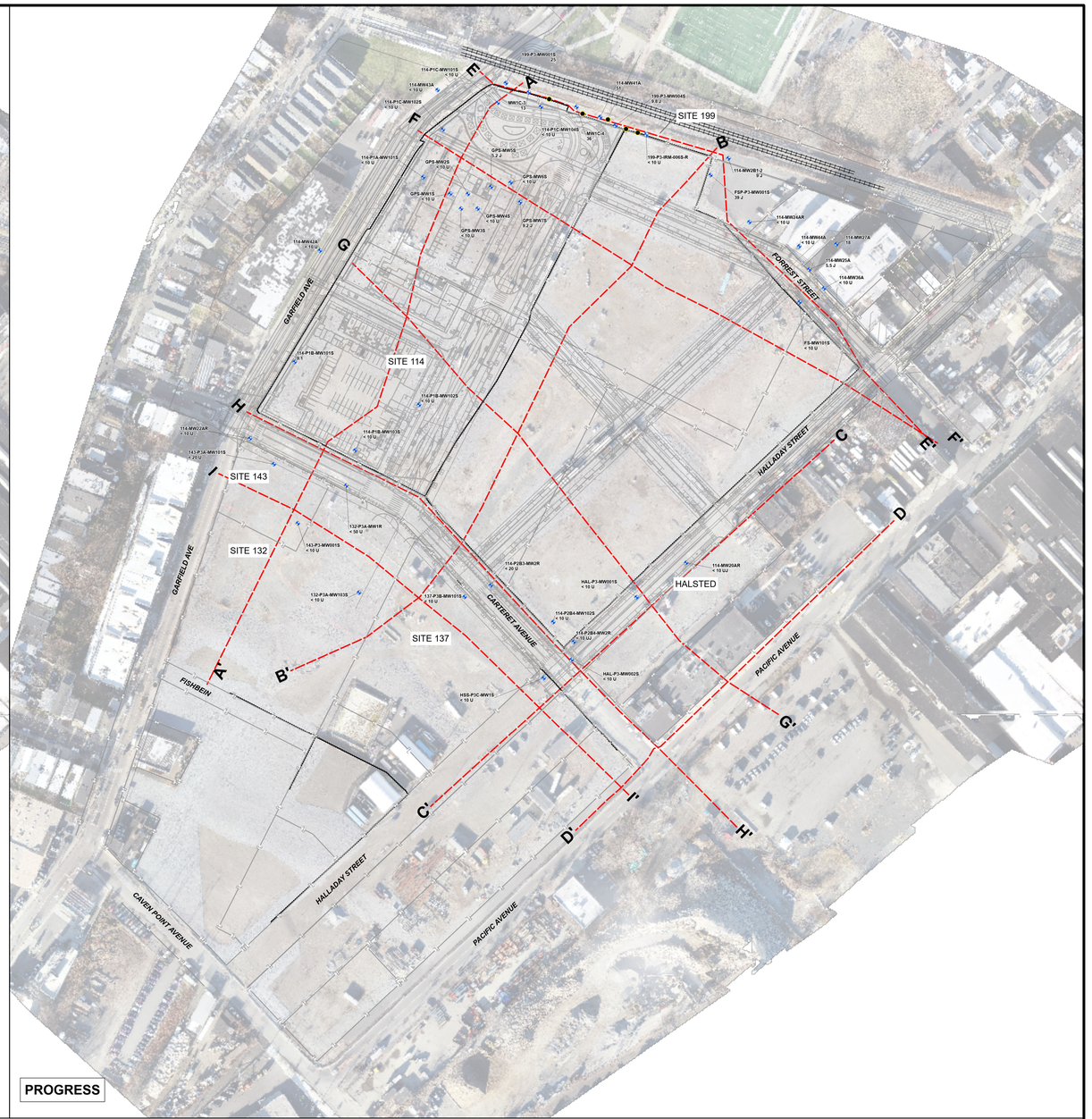


**PROGRESS**

Legend

- PROPERTY LINE
- EXISTING SHEETPILE
- RAILROAD
- CROSS-SECTION ALIGNMENT

GROUNDWATER MONITORING WELL BY TYPE WITH Cr(VI) CONCENTRATION

- 135-MW1AR — Well ID
- < 1,000 ug/L — Cr (VI) Concentration in ug/L
- Shallow Monitoring Well
- Shallow Remediation Well

Cr(VI) CONCENTRATION

- 1,000 - 10,000 ug/L
- 10,000 - 50,000 ug/L
- 50,000 - 100,000 ug/L
- > 100,000 ug/L

- INJECTION WELL THAT HAS RECEIVED REMEDIATION COMPOUND(S) (MOLASSES/EVO/CaSx)

**NOTES:**

1. INTERPOLATION OF THE Cr(VI) PLUME DEPICTED FOR THE BASELINE FIGURE IS BASED ON ANALYTICAL RESULTS FOR SAMPLES COLLECTED FROM MONITORING WELLS, REMEDIATION WELLS, AND VAP POINTS FROM 6/29/2011 TO 3/30/2023.

2. INTERPOLATION OF THE Cr(VI) PLUME DEPICTED ON THE GROUNDWATER REMEDY PROGRESS FIGURES IS BASED ON THE MOST RECENT ANALYTICAL RESULTS FOR SAMPLES COLLECTED FROM MONITORING WELLS AND REMEDIATION WELLS, WHERE AVAILABLE.

3. AERIAL IMAGE DATED DECEMBER 20, 2021 SOURCED FROM AERIAL IMAGERY PROVIDED BY BORBAS SURVEYING AND MAPPING, LLC.

4. PROPOSED REDEVELOPMENT PLAN UP TO DATE AS OF NOVEMBER 7, 2024 BY BORAIE DEVELOPMENT LLC.

**ABBREVIATIONS:**

CaSx = CALCIUM POLYSULFIDE
Cr(VI) = HEXAVALENT CHROMIUM
EVO = EMULSIFIED VEGETABLE OIL
VAP = VERTICAL AQUIFER PROFILE
U = ANALYTE WAS ANALYZED FOR BUT NOT DETECTED
ug/L = MICROGRAMS PER LITER

0 62.5 125 250 Feet

N

AECOM

GARFIELD AVENUE GROUP SITES
PPG
JERSEY CITY, NEW JERSEY

**Visual Representation of Cr(VI) Concentrations in the Shallow Water-Bearing Zone**

DATE: 2/11/2025 | DRWN: RGM | **FIGURE 4A**

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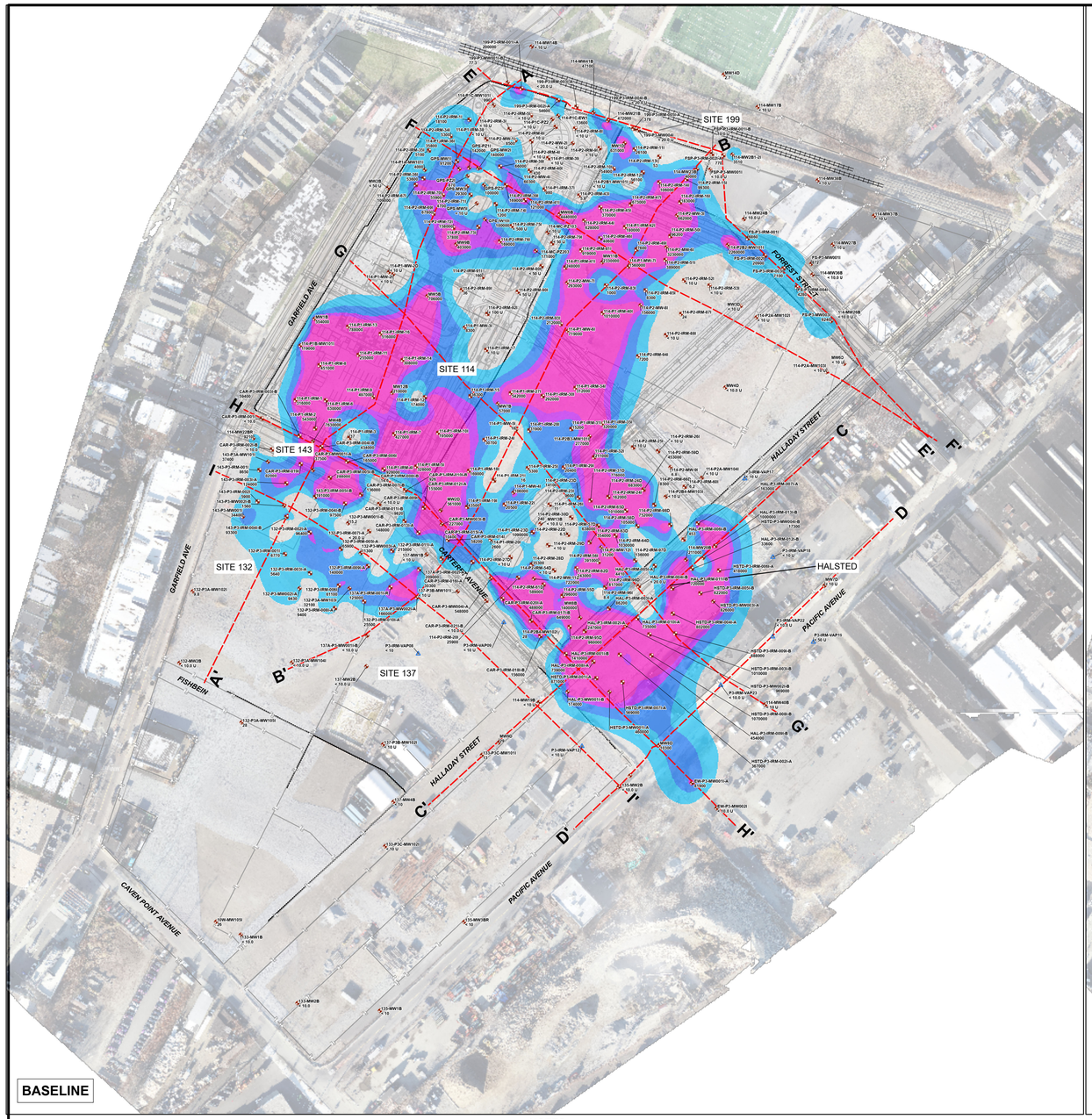


BASELINE

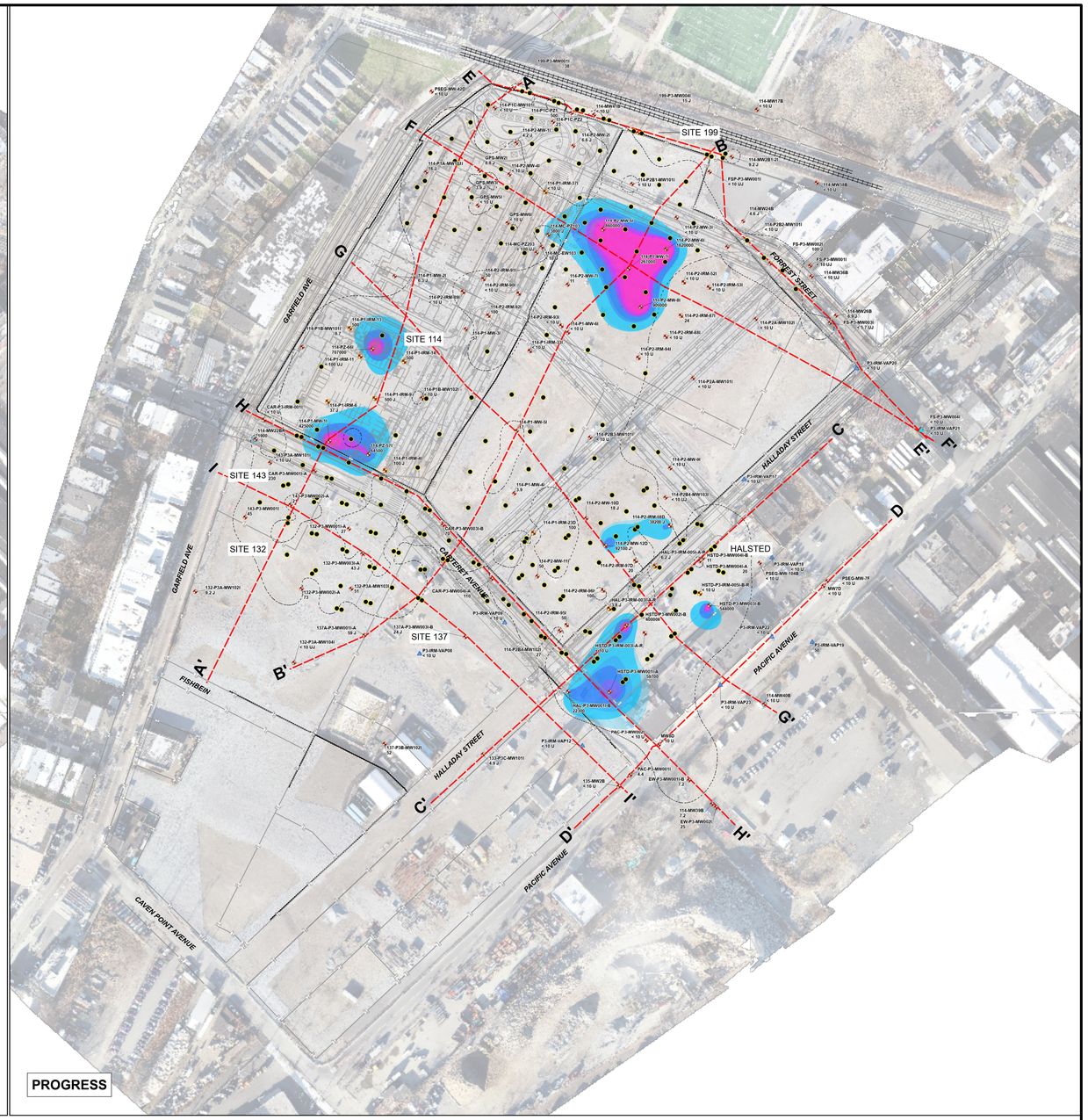


PROGRESS

Legend

- PROPERTY LINE
- EXISTING SHEETPILE
- RAILROAD
- CROSS-SECTION ALIGNMENT
- AREA WHERE CR(VI) CONCENTRATIONS CAN BE EXPECTED TO RESIDE WITHIN LOW PERMEABILITY SOILS

GROUNDWATER MONITORING WELL BY TYPE WITH Cr(VI) CONCENTRATION

- 135-MW1AR (< 1,000 ug/L) — Well ID; Cr(VI) Concentration in ug/L
- Intermediate Monitoring Well
- Intermediate Remediation Well
- VAP Screening Point

Cr(VI) CONCENTRATION

- 1,000 - 10,000 ug/L
- 10,000 - 50,000 ug/L
- 50,000 - 100,000 ug/L
- > 100,000 ug/L

- INJECTION WELL THAT HAS RECEIVED REMEDIATION COMPOUND(S) (MOLASSES/EVO/CaSx)

AECOM

**NOTES:**

1. INTERPOLATION OF THE Cr(VI) PLUME DEPICTED FOR THE BASELINE FIGURE IS BASED ON ANALYTICAL RESULTS FOR SAMPLES COLLECTED FROM MONITORING WELLS, REMEDIATION WELLS, AND VAP POINTS FROM 9/9/2005 TO 7/7/2022.

2. INTERPOLATION OF THE Cr(VI) PLUME DEPICTED ON THE GROUNDWATER REMEDY PROGRESS FIGURES IS BASED ON THE MOST RECENT ANALYTICAL RESULTS FOR SAMPLES COLLECTED FROM MONITORING WELLS AND REMEDIATION WELLS, WHERE AVAILABLE.

3. FOR THE GROUNDWATER REMEDY PROGRESS FIGURES, RESIDUAL Cr(VI) CONCENTRATIONS RESIDING WITHIN AREAS OF LOW PERMEABILITY WERE NOT EXPLICITLY MODELED BUT ARE KNOWN TO EXIST. BACK DIFFUSION FROM THESE AREAS WILL BE MANAGED DURING THE ENHANCED ATTENUATION PHASE VIA THE EXCESS REDUCING CAPACITY ESTABLISHED WITHIN THE PERMEABLE PORTIONS OF THE TREATMENT ZONE. ZONES OF LOW PERMEABILITY ARE DEPICTED IN CROSS-SECTION VIEW ON FIGURE 5.

4. FOR PAIRED WELLS WHERE THE SCREENED INTERVALS WERE INSTALLED AT DIFFERING DEPTHS WITHIN THE SAME WATER-BEARING ZONE, THE MAXIMUM DETECTED CONCENTRATION WAS SELECTED FOR INTERPOLATION OF THE Cr(VI) PLUME.

5. AERIAL IMAGE DATED DECEMBER 20, 2021 SOURCED FROM AERIAL IMAGERY PROVIDED BY BORBAS SURVEYING AND MAPPING, LLC.

6. PROPOSED REDEVELOPMENT PLAN UP TO DATE AS OF NOVEMBER 7, 2024 BY BORAIE DEVELOPMENT LLC.

**ABBREVIATIONS:**

CaSx = CALCIUM POLYSULFIDE
Cr(VI) = HEXAVALENT CHROMIUM
EVO = EMULSIFIED VEGETABLE OIL
VAP = VERTICAL AQUIFER PROFILE
U = ANALYTE WAS ANALYZED FOR BUT NOT DETECTED
ug/L = MICROGRAMS PER LITER

N

0 62.5 125 250 Feet

GARFIELD AVENUE GROUP SITES
PPG
JERSEY CITY, NEW JERSEY

**Visual Representation of Cr(VI) Concentrations in the Intermediate Water-Bearing Zone**

| DATE: 2/7/2025 | DRWN: RGM | | **FIGURE 4B** |
|---|---|---|---|

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BASELINE

PROGRESS

SITE 199
SITE 114
SITE 143
SITE 132
SITE 137
GARFIELD AVE
CARTERET AVENUE
HALSTED
HALLADAY STREET
FORREST STREET
PACIFIC AVENUE
FISHBEIN
CAVEN POINT AVENUE

Legend

- PROPERTY LINE
- EXISTING SHEETPILE
- RAILROAD
- CROSS-SECTION ALIGNMENT
- AREA WHERE CR(VI) CONCENTRATIONS CAN BE EXPECTED TO RESIDE WITHIN LOW PERMEABILITY SOILS

GROUNDWATER MONITORING WELL BY TYPE WITH Cr(VI) CONCENTRATION

- 135-MW1AR / < 1,000 ug/L — Well ID / Cr(VI) Concentration in ug/L
- Deep Monitoring Well
- Deep Remediation Well
- VAP Screening Point

Cr(VI) CONCENTRATION

- 1,000 - 10,000 ug/L
- 10,000 - 50,000 ug/L
- 50,000 - 100,000 ug/L
- > 100,000 ug/L

- INJECTION WELL THAT HAS RECEIVED REMEDIATION COMPOUND(S) (MOLASSES/EVO/CaSx)

**NOTES:**

1. INTERPOLATION OF THE Cr(VI) PLUME DEPICTED FOR THE BASELINE FIGURE IS BASED ON ANALYTICAL RESULTS FOR SAMPLES COLLECTED FROM MONITORING WELLS, REMEDIATION WELLS, AND VAP POINTS FROM 6/21/2011 TO 7/8/2022.

2. INTERPOLATION OF THE Cr(VI) PLUME DEPICTED ON THE GROUNDWATER REMEDY PROGRESS FIGURES IS BASED ON THE MOST RECENT ANALYTICAL RESULTS FOR SAMPLES COLLECTED FROM MONITORING WELLS AND REMEDIATION WELLS, WHERE AVAILABLE.

3. FOR THE GROUNDWATER REMEDY PROGRESS FIGURES, RESIDUAL Cr(VI) CONCENTRATIONS RESIDING WITHIN AREAS OF LOW PERMEABILITY WERE NOT EXPLICITLY MODELED BUT ARE KNOWN TO EXIST. BACK DIFFUSION FROM THESE AREAS WILL BE MANAGED DURING THE ENHANCED ATTENUATION PHASE VIA THE EXCESS REDUCING CAPACITY ESTABLISHED WITHIN THE PERMEABLE PORTIONS OF THE TREATMENT ZONE. ZONES OF LOW PERMEABILITY ARE DEPICTED IN CROSS-SECTION VIEW ON FIGURE 5.

4. AERIAL IMAGE DATED DECEMBER 20, 2021 SOURCED FROM AERIAL IMAGERY PROVIDED BY BORBAS SURVEYING AND MAPPING, LLC.

5. PROPOSED REDEVELOPMENT PLAN UP TO DATE AS OF NOVEMBER 7, 2024 BY BORAIE DEVELOPMENT LLC.

**ABBREVIATIONS:**

CaSx = CALCIUM POLYSULFIDE
Cr(VI) = HEXAVALENT CHROMIUM
EVO = EMULSIFIED VEGETABLE OIL
U = ANALYTE WAS ANALYZED FOR BUT NOT DETECTED
ug/L = MICROGRAMS PER LITER
VAP = VERTICAL AQUIFER PROFILE

N

0 62.5 125 250 Feet

AECOM

GARFIELD AVENUE GROUP SITES
PPG
JERSEY CITY, NEW JERSEY

**Visual Representation of Cr(VI) Concentrations in the Deep Water-Bearing Zone**

DATE: 2/7/2025 | DRWN: RGM | **FIGURE 4C**

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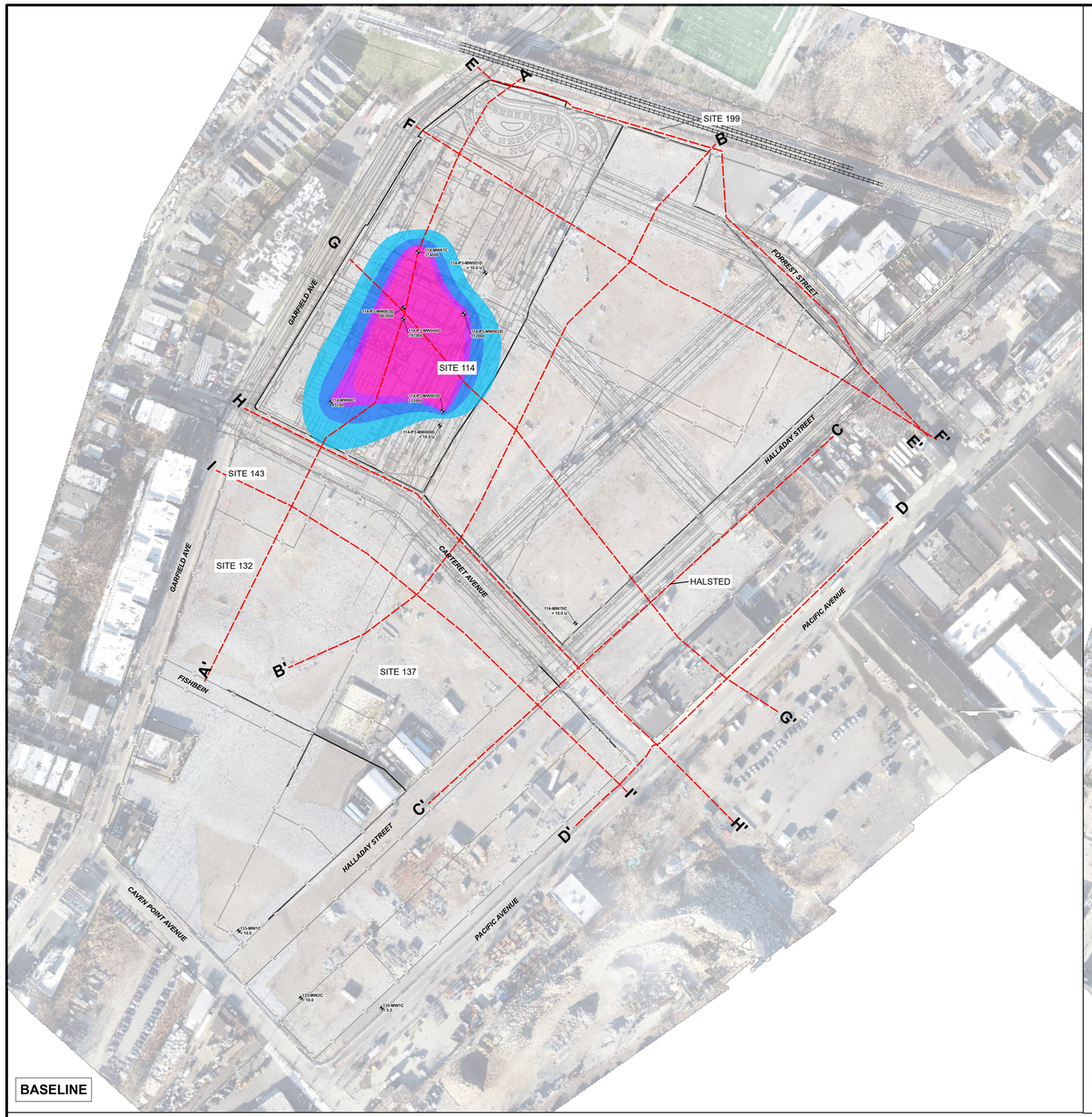


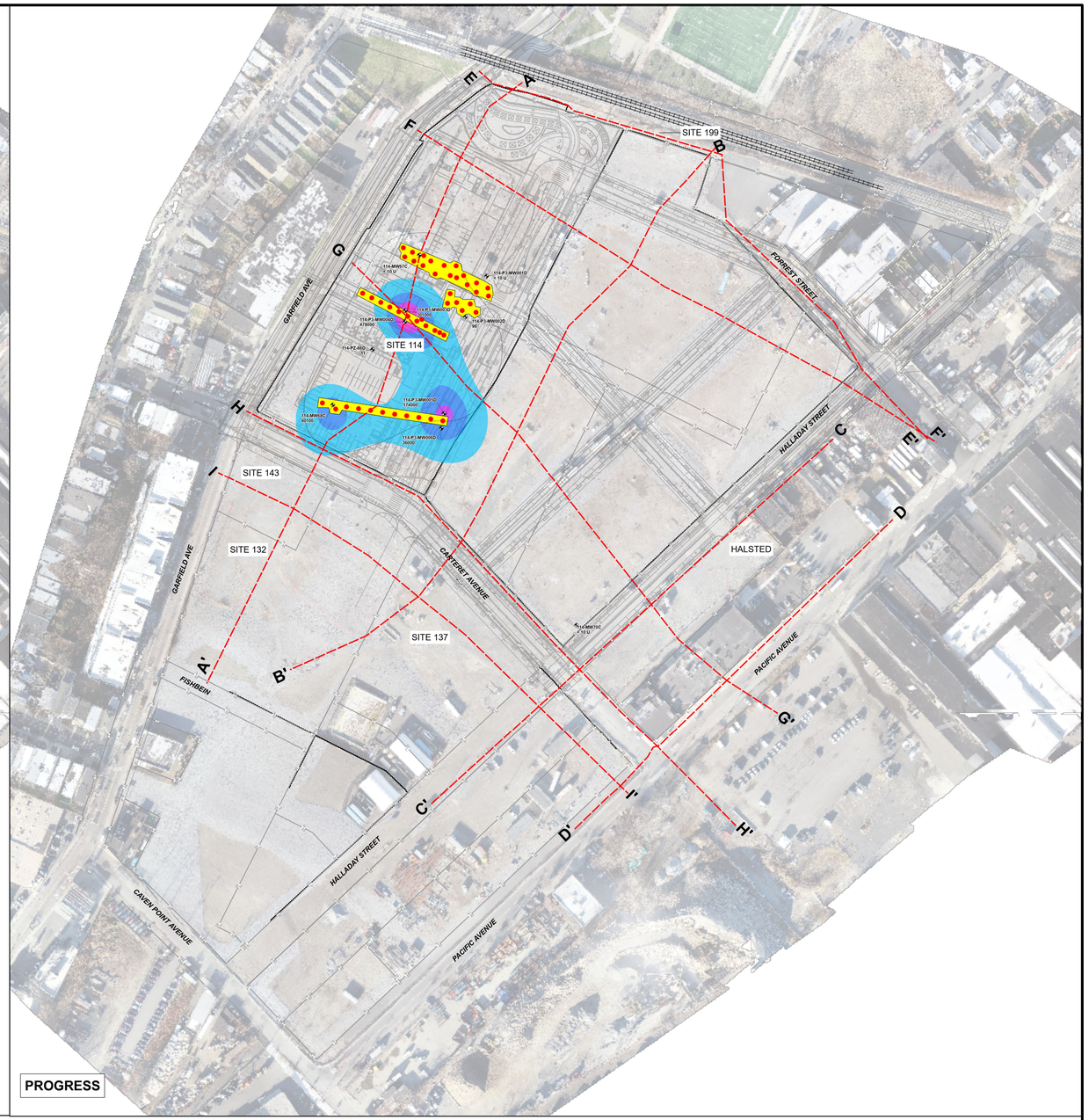


**Legend**

- PROPERTY LINE
- EXISTING SHEETPILE
- RAILROAD
- CROSS-SECTION ALIGNMENT
- AREA WHERE CR(VI) CONCENTRATIONS CAN BE EXPECTED TO RESIDE WITHIN LOW PERMEABILITY SOILS

GROUNDWATER MONITORING WELL BY TYPE WITH Cr(VI) CONCENTRATION

- 135-MW1AR — Well ID; < 1,000 ug/L — Cr(VI) Concentration in ug/L
- Lower Deep Zone Monitoring Well

Cr(VI) CONCENTRATION

- 1,000 - 10,000 ug/L
- 10,000 - 50,000 ug/L
- 50,000 - 100,000 ug/L
- > 100,000 ug/L
- FERROBLACK®-H REACTIVE ZONES

**NOTES:**

1. INTERPOLATION OF THE Cr(VI) PLUME DEPICTED FOR THE BASELINE FIGURE IS BASED ON ANALYTICAL RESULTS FOR SAMPLES COLLECTED FROM MONITORING WELLS FROM 11/16/2011 TO 12/29/2021.

2. INTERPOLATION OF THE Cr(VI) PLUME DEPICTED ON THE GROUNDWATER REMEDY PROGRESS FIGURES IS BASED ON THE MOST RECENT ANALYTICAL RESULTS FOR SAMPLES COLLECTED FROM MONITORING WELLS.

3. FOR THE GROUNDWATER REMEDY PROGRESS FIGURES, RESIDUAL Cr(VI) CONCENTRATIONS RESIDING WITHIN AREAS OF LOW PERMEABILITY WERE NOT EXPLICITLY MODELED BUT ARE KNOWN TO EXIST. BACK DIFFUSION FROM THESE AREAS WILL BE MANAGED DURING THE ENHANCED ATTENUATION PHASE VIA THE EXCESS REDUCING CAPACITY ESTABLISHED WITHIN THE PERMEABLE PORTIONS OF THE TREATMENT ZONE. ZONES OF LOW PERMEABILITY ARE DEPICTED IN CROSS-SECTION VIEW ON FIGURE 5.

4. AERIAL IMAGE DATED DECEMBER 20, 2021 SOURCED FROM AERIAL IMAGERY PROVIDED BY BORBAS SURVEYING AND MAPPING, LLC.

5. PROPOSED REDEVELOPMENT PLAN UP TO DATE AS OF NOVEMBER 7, 2024 BY BORAIE DEVELOPMENT LLC.

**ABBREVIATIONS:**

Cr(VI) = HEXAVALENT CHROMIUM
U = ANALYTE WAS ANALYZED FOR BUT NOT DETECTED
ug/L = MICROGRAMS PER LITER

N

0 62.5 125 250 Feet

AECOM

GARFIELD AVENUE GROUP SITES
PPG
JERSEY CITY, NEW JERSEY

**Visual Representation of Cr(VI) Concentrations in the Lower Deep Zone**

DATE: 2/6/2025 | DRWN: RGM | **FIGURE 4D**

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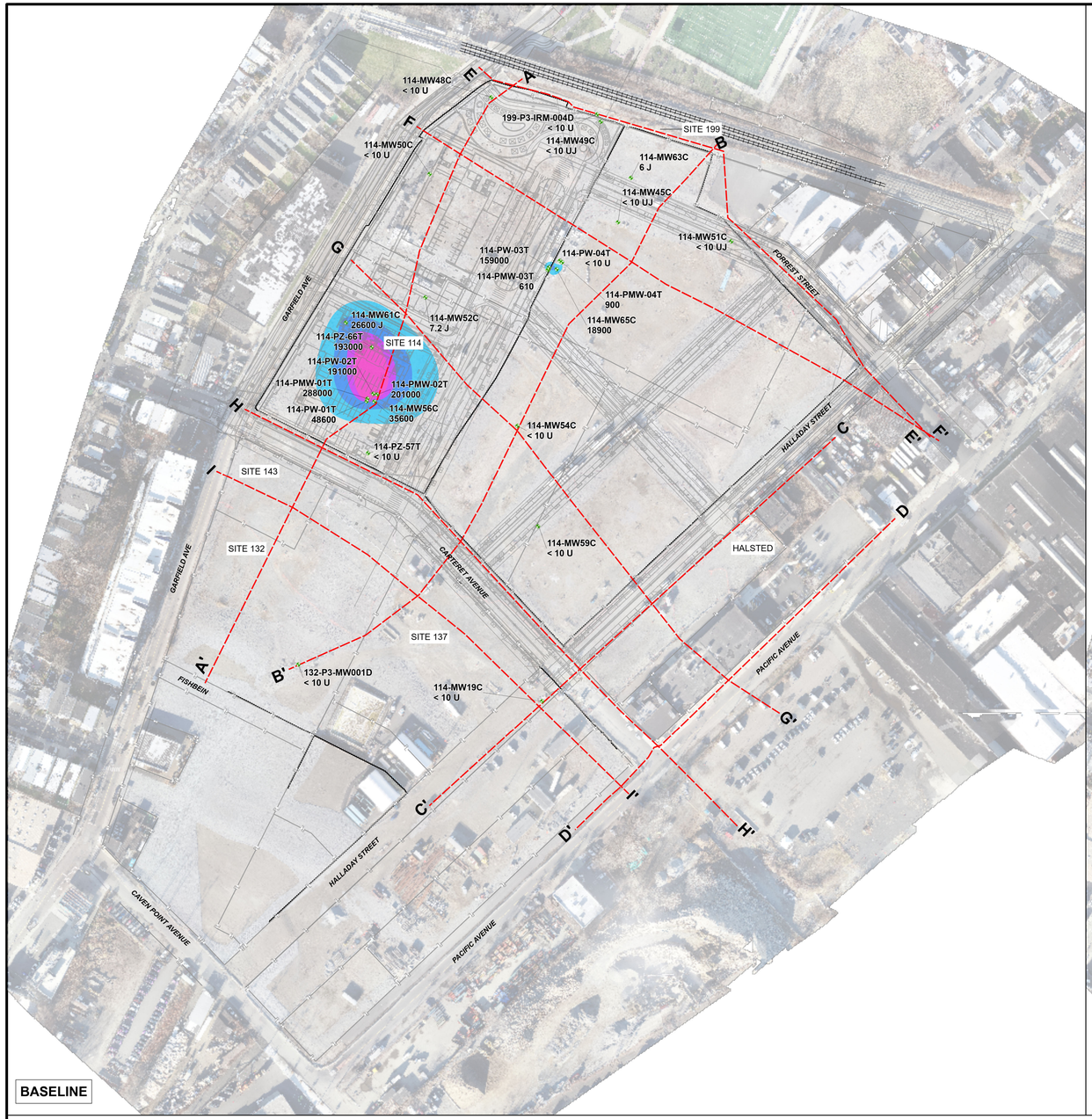


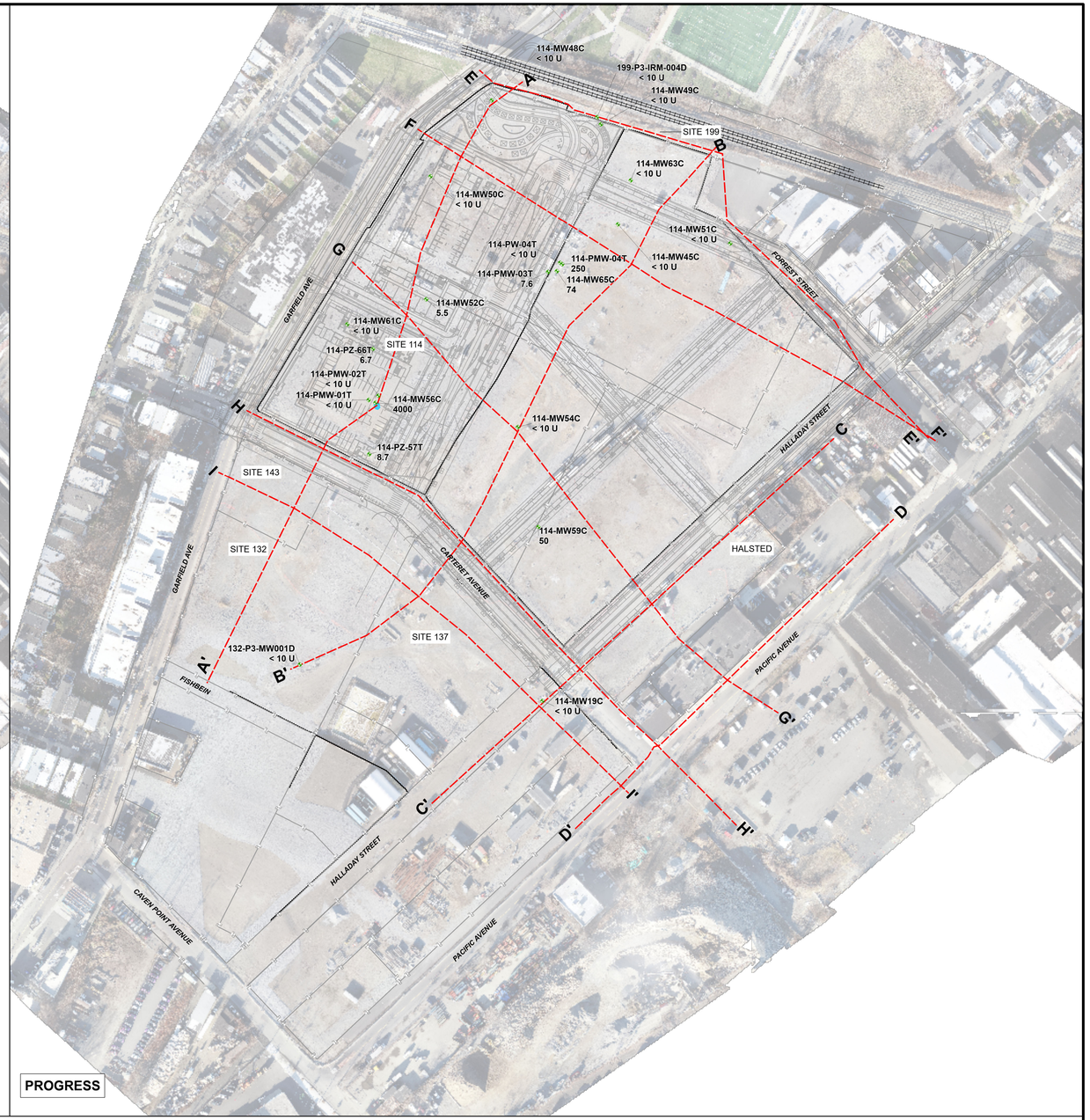


Legend

- PROPERTY LINE
- EXISTING SHEETPILE
- RAILROAD
- CROSS-SECTION ALIGNMENT

GROUNDWATER MONITORING WELL WITH Cr(VI) CONCENTRATION

135-MW1AR — Well ID
< 1,000 ug/L — Cr(VI) Concentration in ug/L

Basal Till Monitoring Well

Cr(VI) CONCENTRATION

- 1,000 - 10,000 ug/L
- 10,000 - 50,000 ug/L
- 50,000 - 100,000 ug/L
- > 100,000 ug/L

**NOTES:**

1. INTERPOLATION OF THE Cr(VI) PLUME DEPICTED FOR THE BASELINE FIGURE IS BASED ON ANALYTICAL RESULTS FOR SAMPLES COLLECTED FROM MONITORING WELLS, REMEDIATION WELLS, AND VAP POINTS FROM 6/21/2011 TO 6/10/2024.
2. INTERPOLATION OF THE Cr(VI) PLUME DEPICTED ON THE GROUNDWATER REMEDY PROGRESS FIGURES IS BASED ON THE MOST RECENT ANALYTICAL RESULTS FOR SAMPLES COLLECTED FROM MONITORING WELLS AND REMEDIATION WELLS, WHERE AVAILABLE.
3. AERIAL IMAGE DATED DECEMBER 20, 2021 SOURCED FROM AERIAL IMAGERY PROVIDED BY BORBAS SURVEYING AND MAPPING, LLC.
4. Cr(VI) CONCENTRATIONS USED FOR 114-MW-52C ARE BASED ON DATA FROM OCTOBER 2024.
5. PROPOSED REDEVELOPMENT PLAN UP TO DATE AS OF NOVEMBER 7, 2024 BY BORAIE DEVELOPMENT LLC.

**ABBREVIATIONS:**

Cr(VI) = HEXAVALENT CHROMIUM
U = ANALYTE WAS ANALYZED FOR BUT NOT DETECTED
ug/L = MICROGRAMS PER LITER
VAP = VERTICAL AQUIFER PROFILE

N

0 62.5 125 250 Feet

AECOM

GARFIELD AVENUE GROUP SITES
PPG
JERSEY CITY, NEW JERSEY

**Visual Representation of Cr(VI) Concentrations in the Basal Till**

| DATE: 2/6/2025 | DRWN: RGM | | | **FIGURE 4E** |
|---|---|---|---|---|

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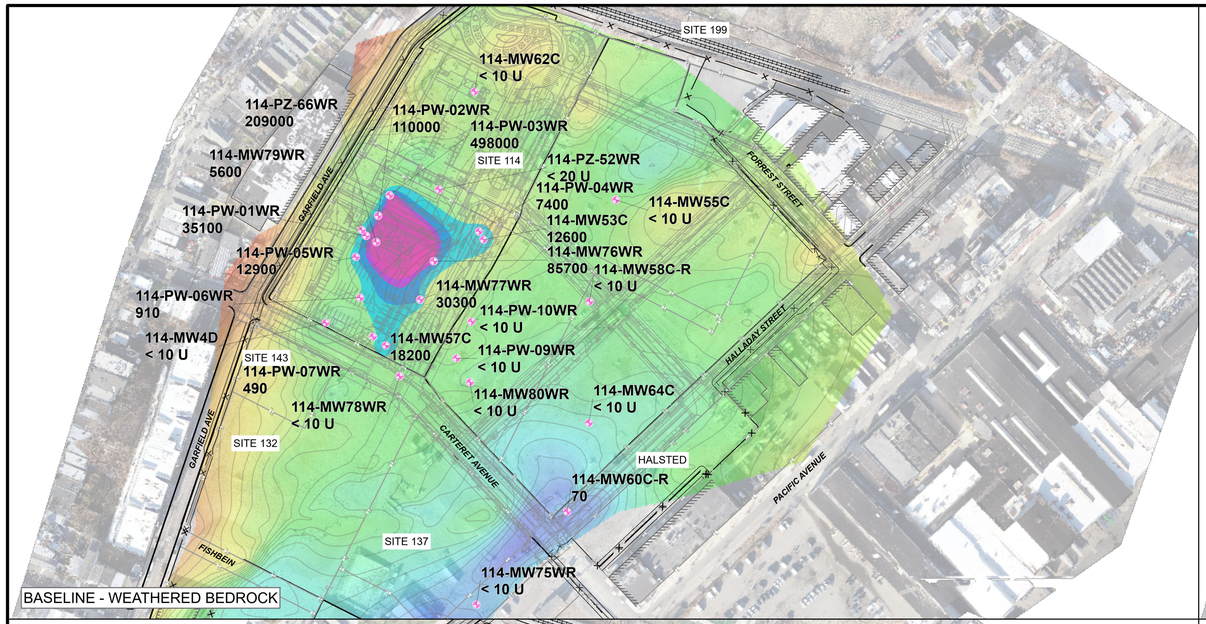


BASELINE - WEATHERED BEDROCK

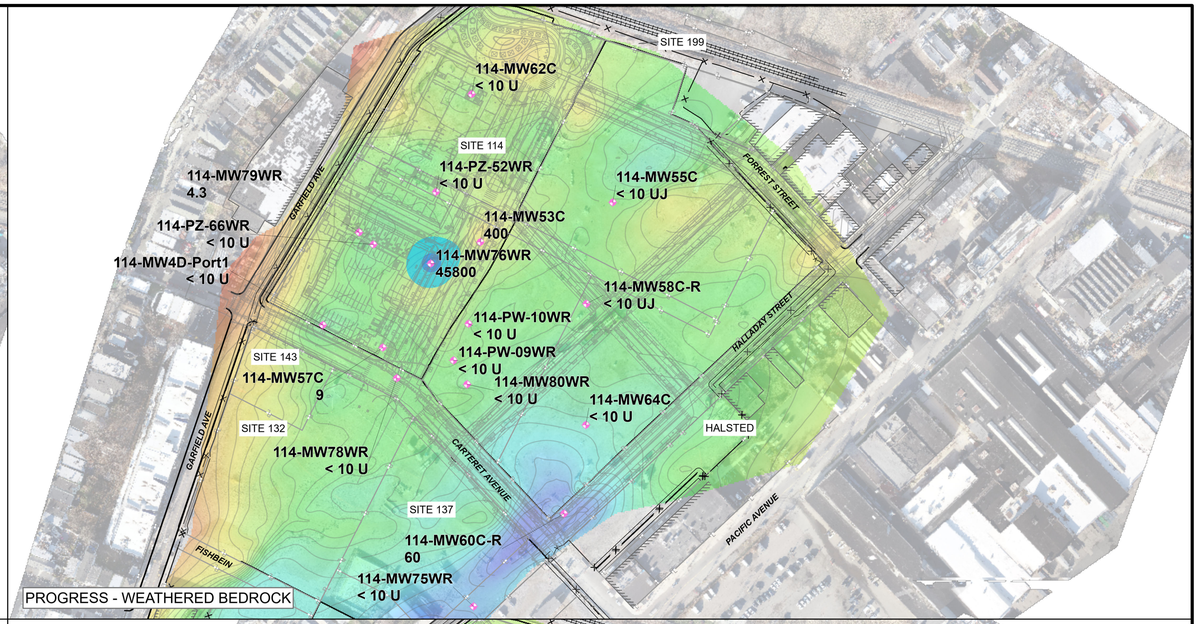


PROGRESS - WEATHERED BEDROCK

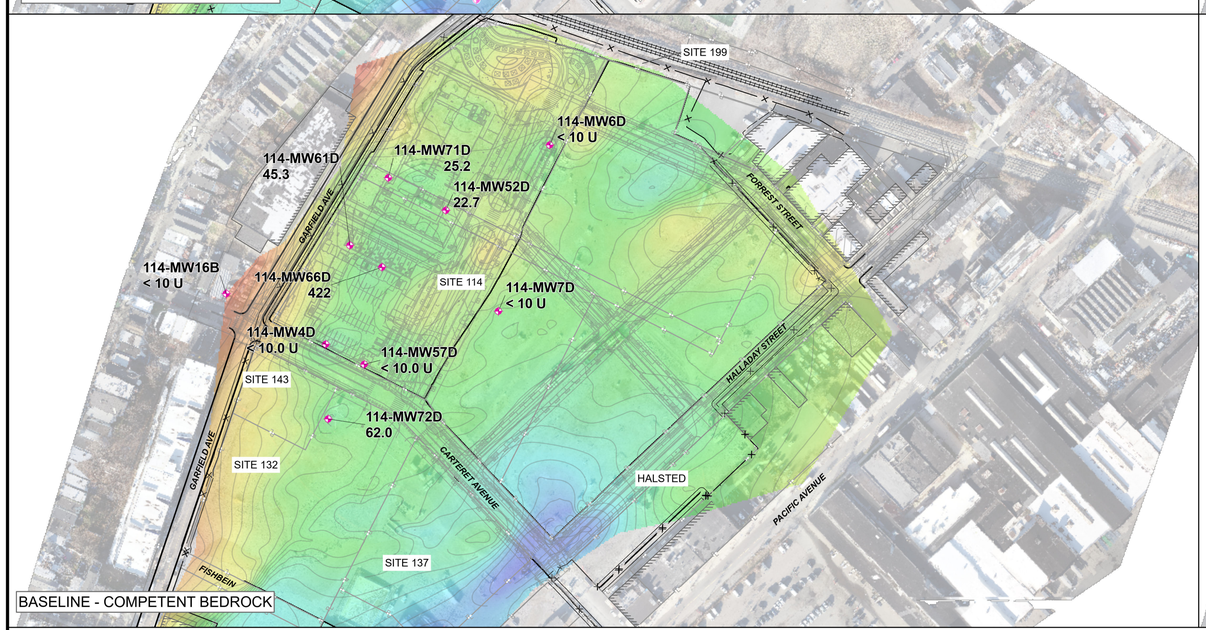


BASELINE - COMPETENT BEDROCK

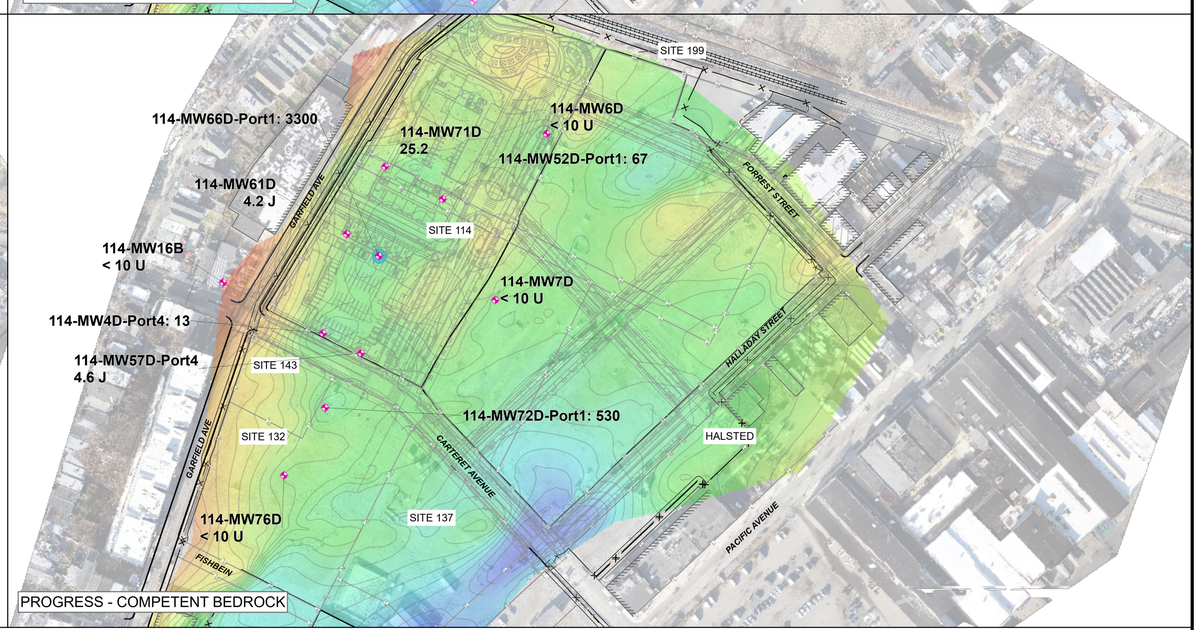


PROGRESS - COMPETENT BEDROCK

Legend

- PROPERTY LINE
- EXISTING SHEETPILE
- RAILROAD

GROUNDWATER MONITORING WELL WITH Cr(VI) CONCENTRATION

- 135-MW1AR / < 1,000 ug/L — Well ID / Cr (VI) Concentration in ug/L
- WEATHERED BEDROCK MONITORING WELL
- COMPETENT BEDROCK MONITORING WELL

Cr(VI) CONCENTRATION

- 1,000 - 10,000 ug/L
- 10,000 - 50,000 ug/L
- 50,000 - 100,000 ug/L
- > 100,000 ug/L

BEDROCK ELEVATION (FEET)

0 / -20 / -40 / -60 / -80 / -100 / -120

**NOTES:**

1. INTERPOLATION OF THE Cr(VI) PLUME DEPICTED FOR THE BASELINE WEATHERED BEDROCK FIGURE IS BASED ON ANALYTICAL RESULTS FOR SAMPLES COLLECTED FROM MONITORING WELLS FROM 5/21/2023 TO 6/27/2024.
2. INTERPOLATION OF THE Cr(VI) PLUME DEPICTED FOR THE BASELINE COMPETENT BEDROCK FIGURE IS BASED ON ANALYTICAL RESULTS FOR SAMPLES COLLECTED FROM MONITORING WELLS FROM 8/21/2020 TO 8/4/2022.
3. INTERPOLATION OF THE Cr(VI) PLUME DEPICTED ON THE GROUNDWATER REMEDY PROGRESS FIGURES IS BASED ON THE MOST RECENT ANALYTICAL RESULTS FOR SAMPLES COLLECTED FROM MONITORING WELLS.
4. FOR WELLS WITH MULTIPLE SAMPLE DEPTH INTERVALS, THE MAXIMUM DETECTED CONCENTRATION IS SHOWN NEXT TO THE WELL.
5. AERIAL IMAGE DATED DECEMBER 20, 2021 SOURCED FROM AERIAL IMAGERY PROVIDED BY BORBAS SURVEYING AND MAPPING, LLC.
6. PROPOSED REDEVELOPMENT PLAN UP TO DATE AS OF NOVEMBER 7, 2024 BY BORAIE DEVELOPMENT LLC.

**ABBREVIATIONS:**

Cr(VI) = HEXAVALENT CHROMIUM
U = ANALYTE WAS ANALYZED FOR BUT NOT DETECTED
ug/L = MICROGRAMS PER LITER

0 75 150 300 Feet

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**Visual Representation of Cr(VI) Concentrations in the Bedrock**

| DATE: 2/4/2025 | DRWN: RGM | | | **FIGURE 4F** |
|---|---|---|---|---|

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# Baseline

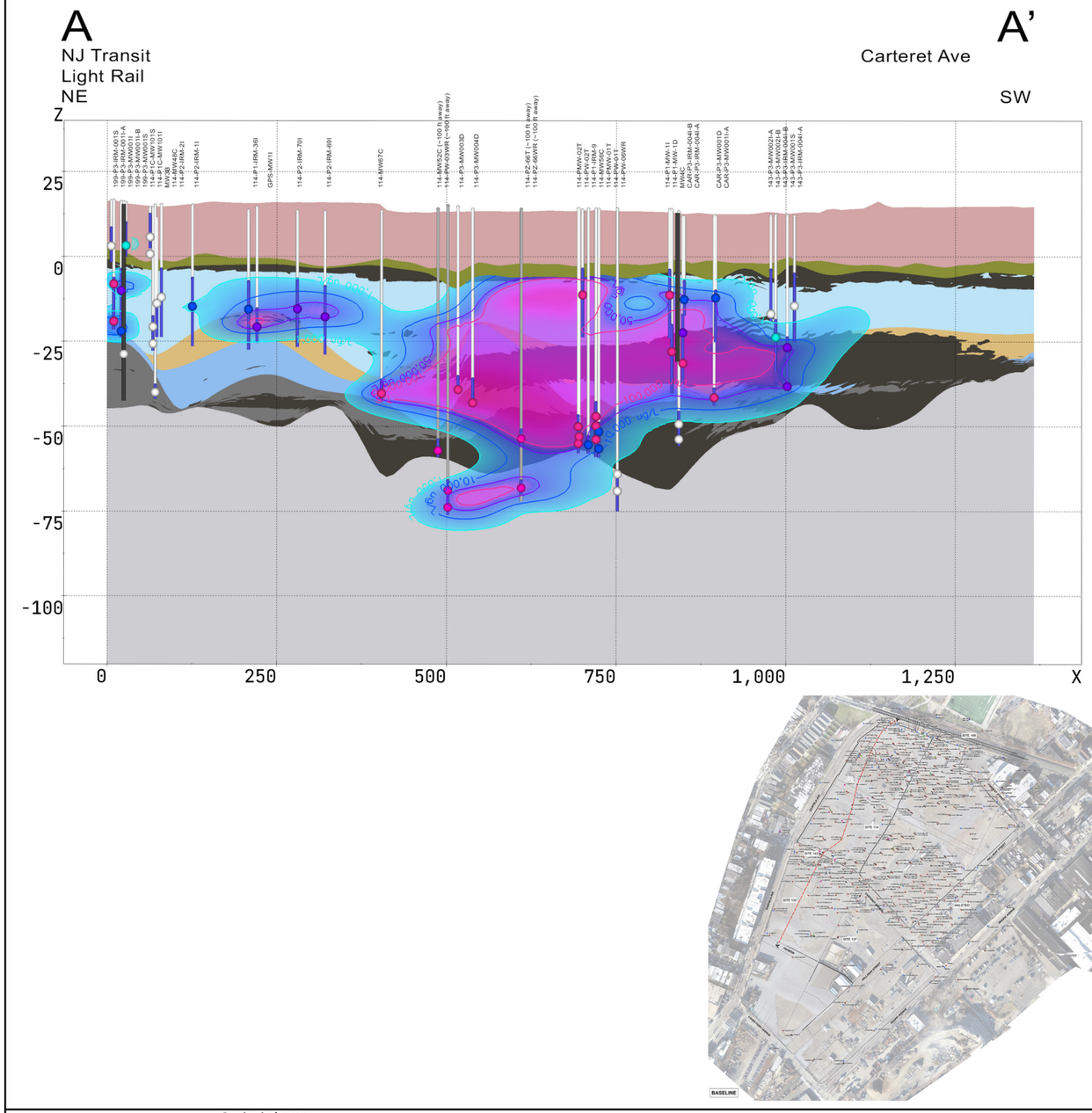





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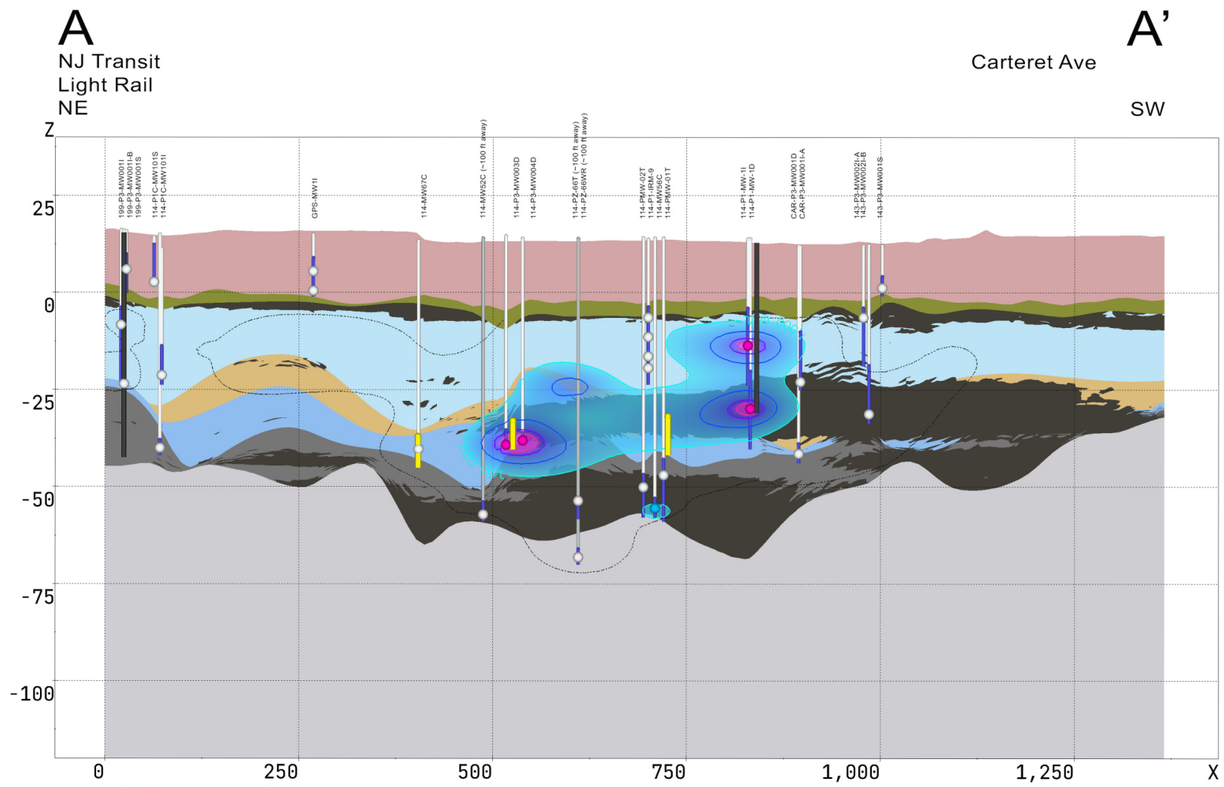


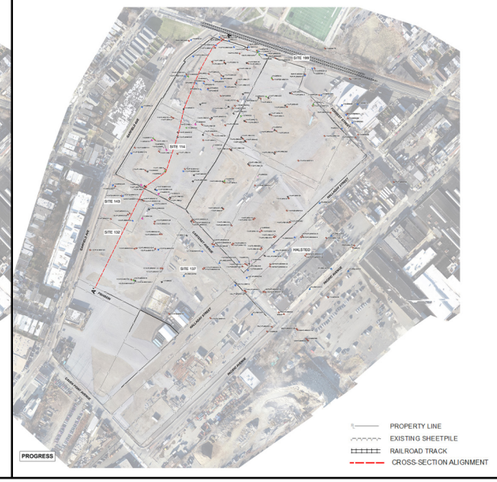


**Cr(VI) Concentrations in Groundwater**
- >100,000 ug/L
- 10,000 ug/L
- 1000 ug/L

Ferroblack-H Reactive Zones

Sheetpile

**Geologic Layers**
- Fill
- Meadow Mat
- Intermediate WBZ
- Transition Zone
- Deep WBZ
- Basal Till
- Bedrock
- Zones of low-permeability based on HPT logs and soil boring logs

**Cr VI Concentrations (ug/L)**
- <1000
- 1000-10,000
- 10,000-50,000
- 50,000-100,000
- >100,000

Area where residual Cr(VI) concentrations can be expected to reside within low permeability soils.

**Notes:**
1. INTERPOLATION OF THE Cr(VI) PLUME DEPICTED FOR THE BASELINE FIGURE IS BASED ON ANALYTICAL RESULTS FOR SAMPLES COLLECTED FROM MONITORING WELLS, REMEDIATION WELLS, AND VAP POINTS FROM 9/9/2005 TO 8/4/2022.

2. INTERPOLATION OF THE Cr(VI) PLUME DEPICTED ON THE GROUNDWATER REMEDY PROGRESS FIGURE IS BASED ON THE MOST RECENT ANALYTICAL RESULTS FOR SAMPLES COLLECTED FROM MONITORING WELLS AND REMEDIATION WELLS, WHERE AVAILABLE.

**Abbreviations:**
Cr(VI) = hexavalent chromium
HPT = Hydraulic Profiling Tool
ug/L = micrograms per liter
VAP = vertical aquifer profiling
WBZ = water bearing zone

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HEXAVALENT CHROMIUM CONCENTRATIONS PRE- AND POST-REMEDIAL ACTION CROSS SECTION A-A'

| DATE: 2/6/2025 | DRWN: RGM | | | FIGURE 5A |
|---|---|---|---|---|

# Baseline

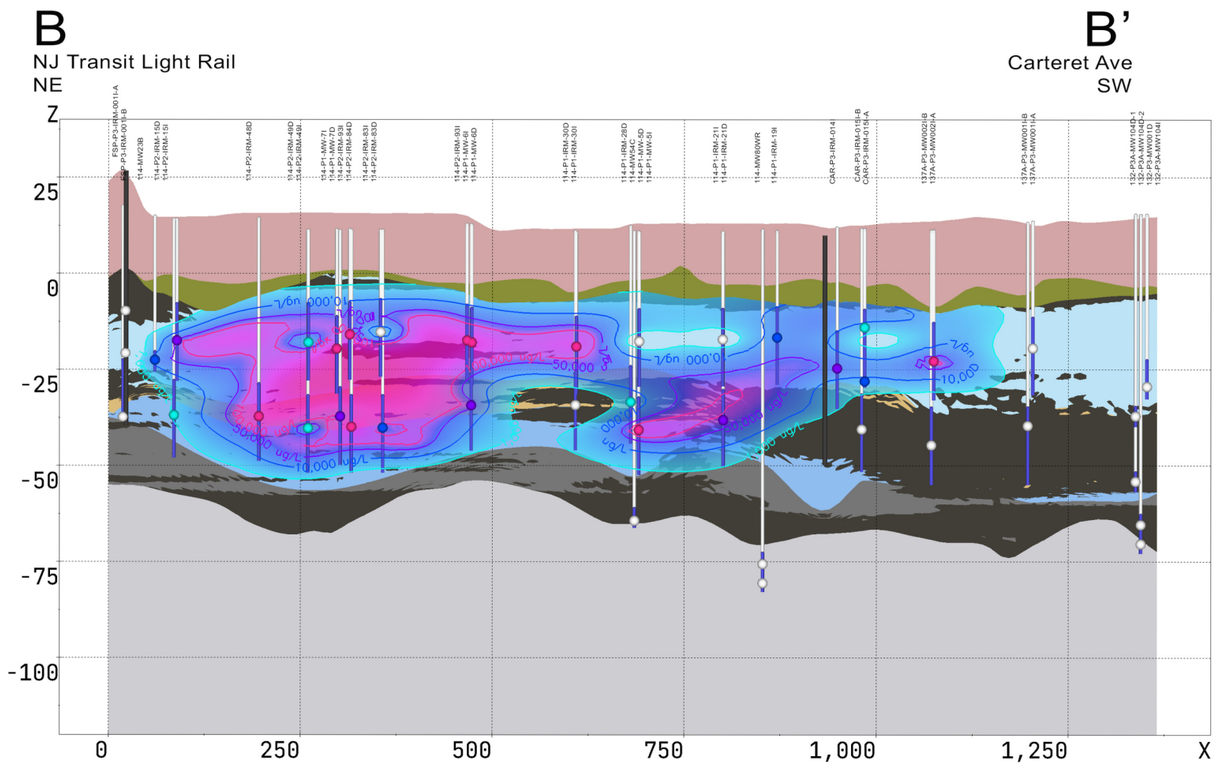


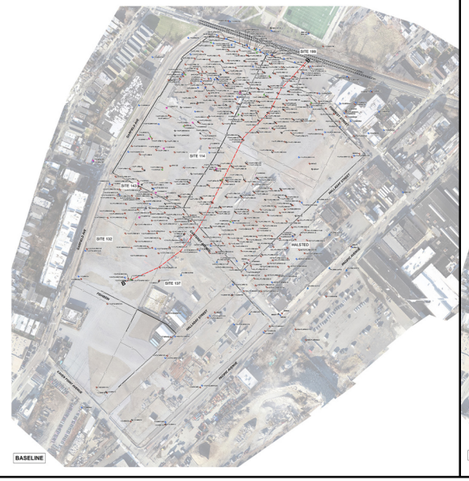


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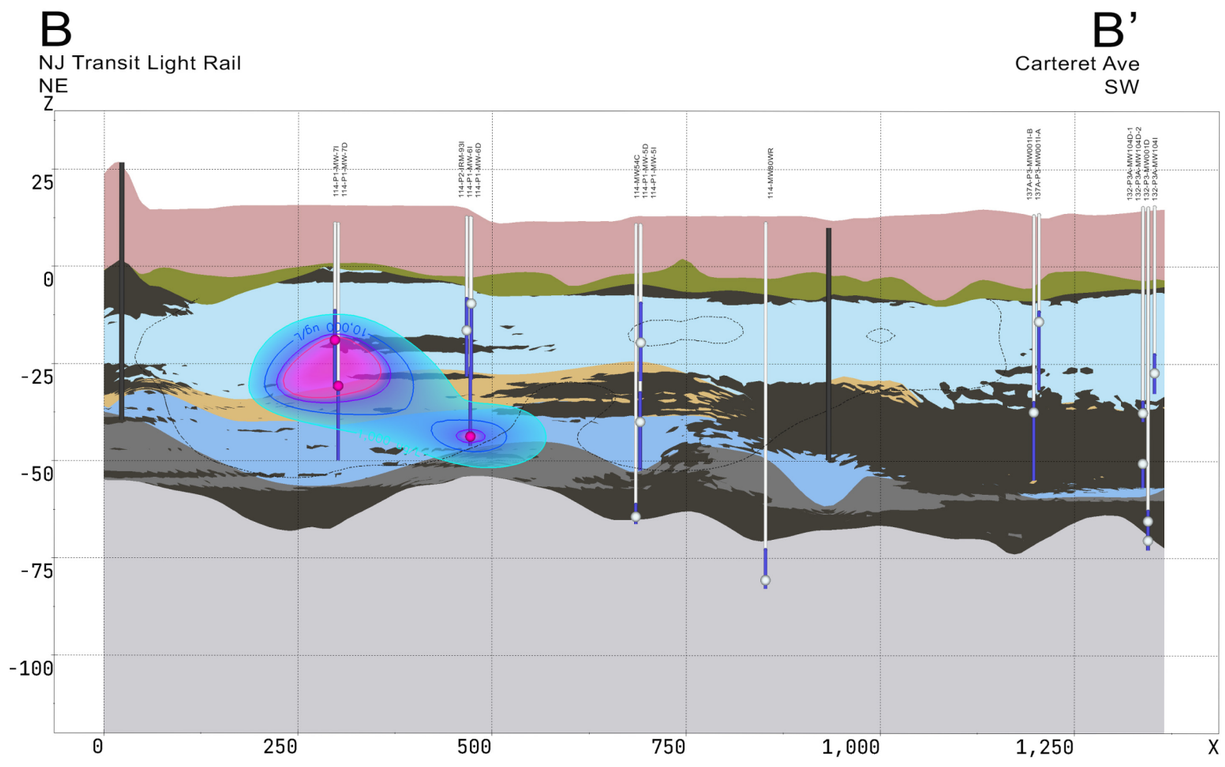


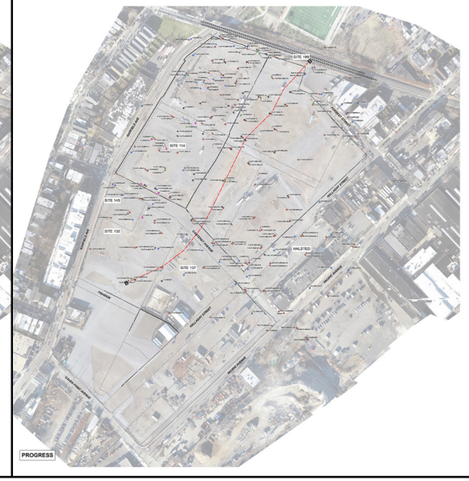


PROPERTY LINE
EXISTING SHEETPILE
RAILROAD TRACK
CROSS-SECTION ALIGNMENT

**Cr(VI) Concentrations in Groundwater**
- >100,000 ug/L
- 10,000 ug/L
- 1000 ug/L

Ferroblack-H Reactive Zones

Sheetpile

**Geologic Layers**
- Fill
- Meadow Mat
- Intermediate WBZ
- Transition Zone
- Deep WBZ
- Basal Till
- Bedrock
- Zones of low-permeability based on HPT logs and soil boring logs

**Cr VI Concentrations (ug/L)**
- <1000
- 1000-10,000
- 10,000-50,000
- 50,000-100,000
- >100,000

Area where residual Cr(VI) concentrations can be expected to reside within low permeability soils.

**Notes:**
1. INTERPOLATION OF THE Cr(VI) PLUME DEPICTED FOR THE BASELINE FIGURE IS BASED ON ANALYTICAL RESULTS FOR SAMPLES COLLECTED FROM MONITORING WELLS, REMEDIATION WELLS, AND VAP POINTS FROM 9/9/2005 TO 8/4/2022.

2. INTERPOLATION OF THE Cr(VI) PLUME DEPICTED ON THE GROUNDWATER REMEDY PROGRESS FIGURE IS BASED ON THE MOST RECENT ANALYTICAL RESULTS FOR SAMPLES COLLECTED FROM MONITORING WELLS AND REMEDIATION WELLS, WHERE AVAILABLE.

**Abbreviations:**
Cr(VI) = hexavalent chromium
HPT = Hydraulic Profiling Tool
ug/L = micrograms per liter
VAP = vertical aquifer profiling
WBZ = water bearing zone

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| | | | | |
|---|---|---|---|---|
| GARFIELD AVENUE GROUP SITES<br>PPG<br>JERSEY CITY, NEW JERSEY | | | HEXAVALENT CHROMIUM CONCENTRATIONS PRE- AND POST-REMEDIAL ACTION CROSS SECTION B-B' | |
| DATE: 2/6/2025 | DRWN: RGM | | | FIGURE 5B |

# Baseline

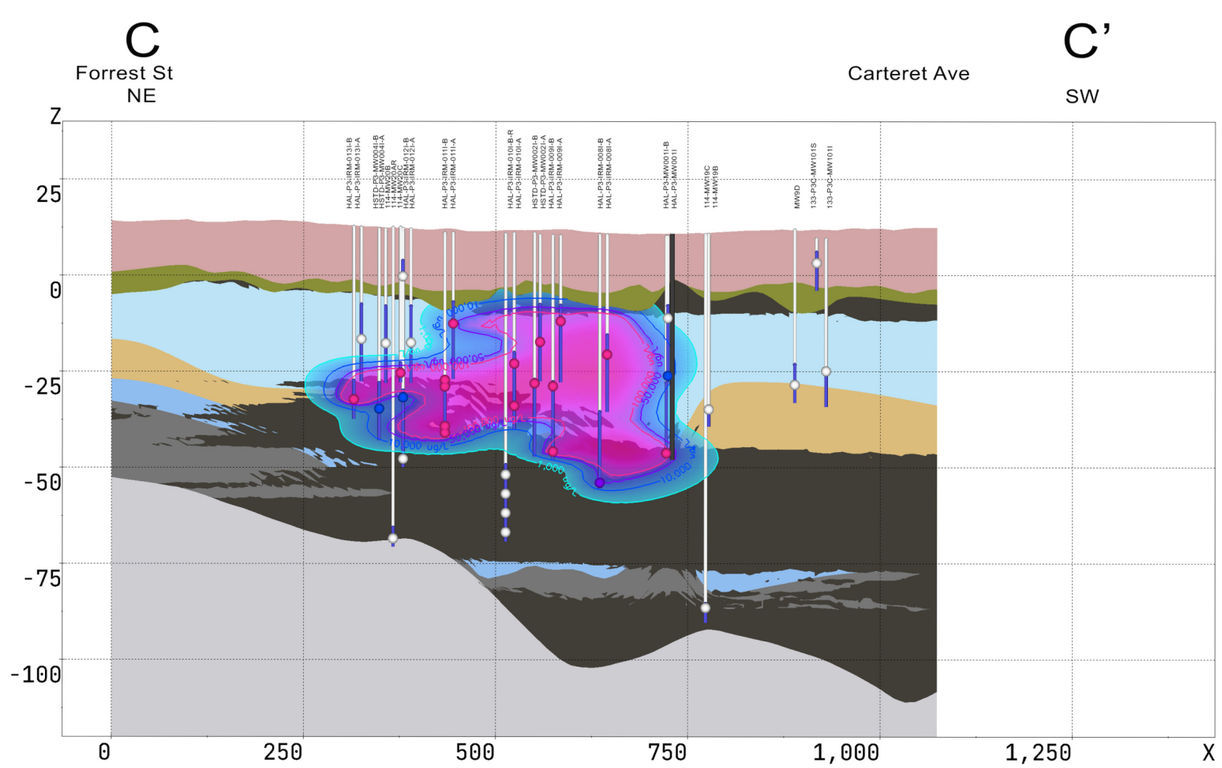


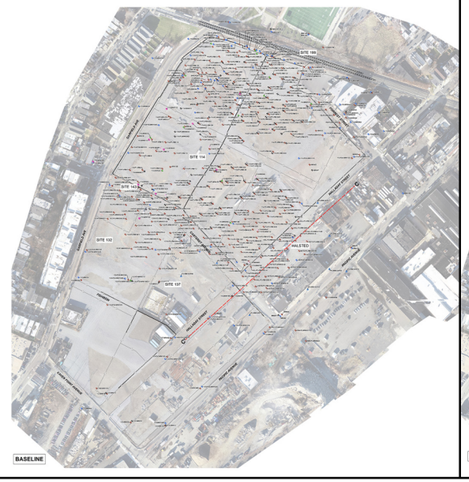


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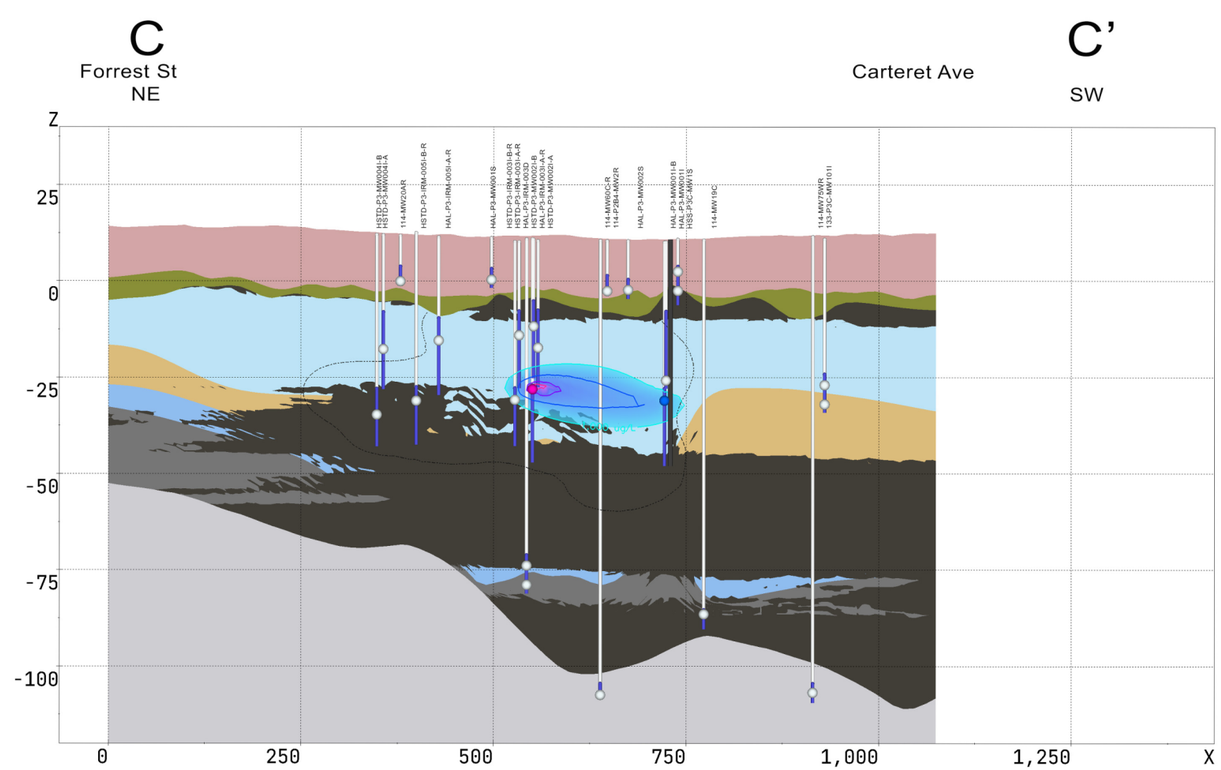


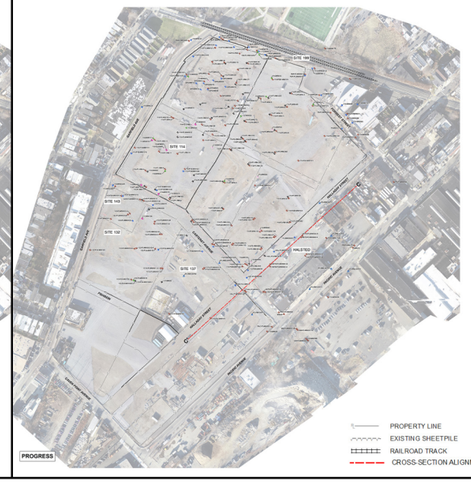


**Cr(VI) Concentrations in Groundwater**
- >100,000 ug/L
- 10,000 ug/L
- 1000 ug/L

Ferroblack-H Reactive Zones

Sheetpile

**Geologic Layers**
- Fill
- Meadow Mat
- Intermediate WBZ
- Transition Zone
- Deep WBZ
- Basal Till
- Bedrock
- Zones of low-permeability based on HPT logs and soil boring logs

**Cr VI Concentrations (ug/L)**
- <1000
- 1000-10,000
- 10,000-50,000
- 50,000-100,000
- >100,000

Area where residual Cr(VI) concentrations can be expected to reside within low permeability soils.

**Notes:**
1. INTERPOLATION OF THE Cr(VI) PLUME DEPICTED FOR THE BASELINE FIGURE IS BASED ON ANALYTICAL RESULTS FOR SAMPLES COLLECTED FROM MONITORING WELLS, REMEDIATION WELLS, AND VAP POINTS FROM 9/9/2005 TO 8/4/2022.

2. INTERPOLATION OF THE Cr(VI) PLUME DEPICTED ON THE GROUNDWATER REMEDY PROGRESS FIGURE IS BASED ON THE MOST RECENT ANALYTICAL RESULTS FOR SAMPLES COLLECTED FROM MONITORING WELLS AND REMEDIATION WELLS, WHERE AVAILABLE.

**Abbreviations:**
Cr(VI) = hexavalent chromium
HPT = Hydraulic Profiling Tool
ug/L = micrograms per liter
VAP = vertical aquifer profiling
WBZ = water bearing zone

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HEXAVALENT CHROMIUM CONCENTRATIONS PRE- AND POST-REMEDIAL ACTION CROSS SECTION C-C'

DATE: 2/6/2025 | DRWN: RGM | FIGURE 5C

# Baseline

D (along Halladay St) Forrest St NE

D’ (along Halladay St) Carteret Ave SW

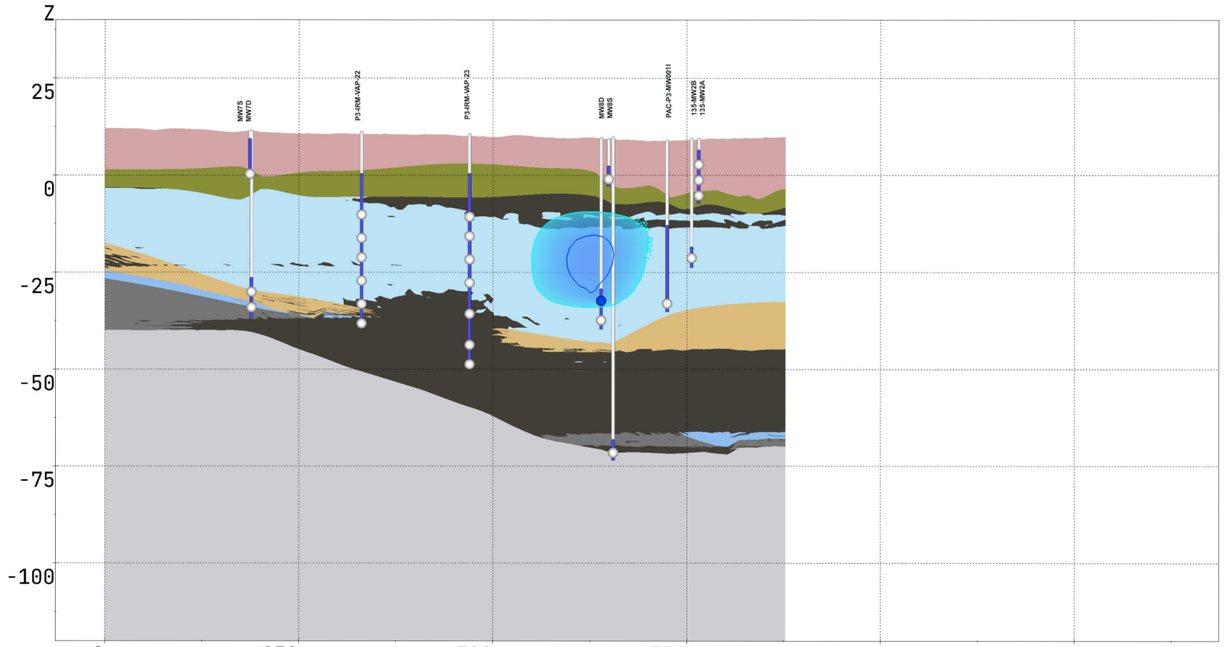


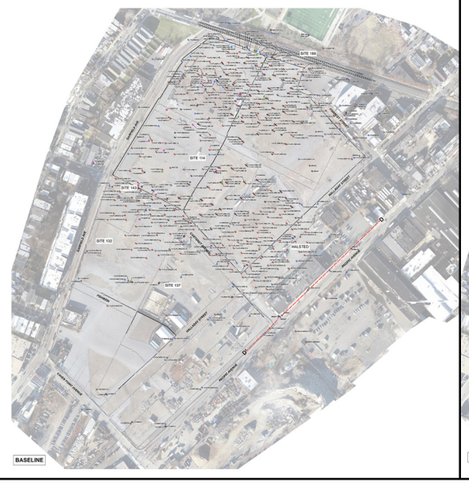


# Progress

D (along Halladay St) Forrest St NE

D’ (along Halladay St) Carteret Ave SW

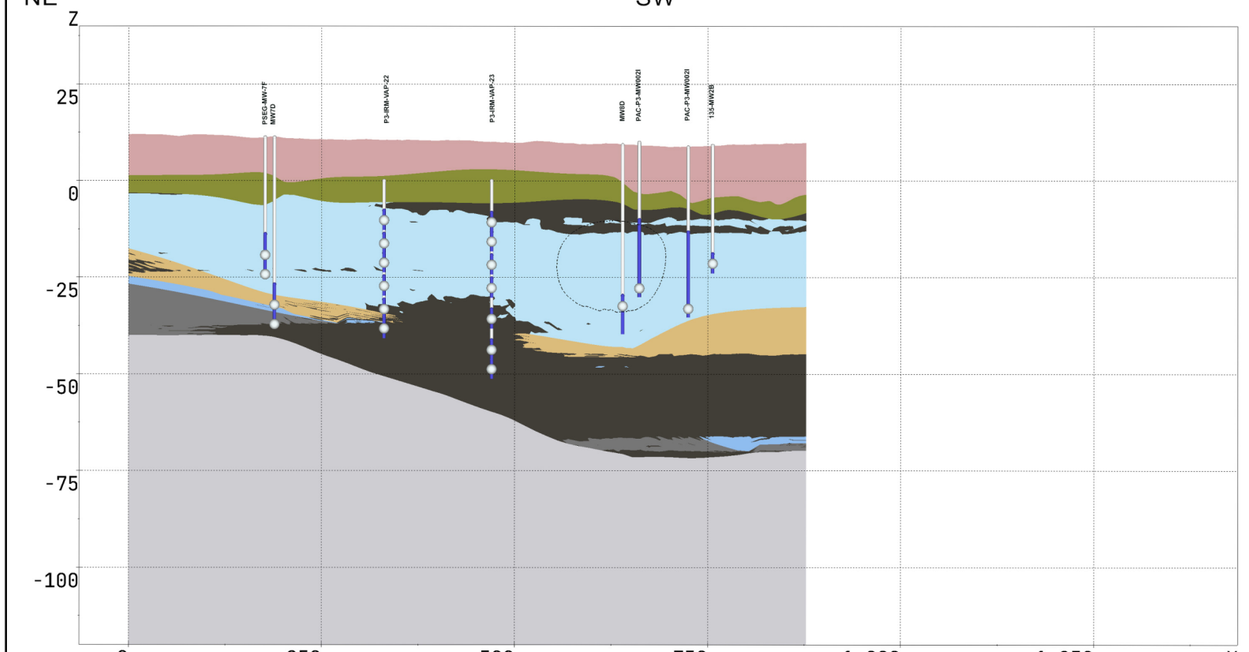


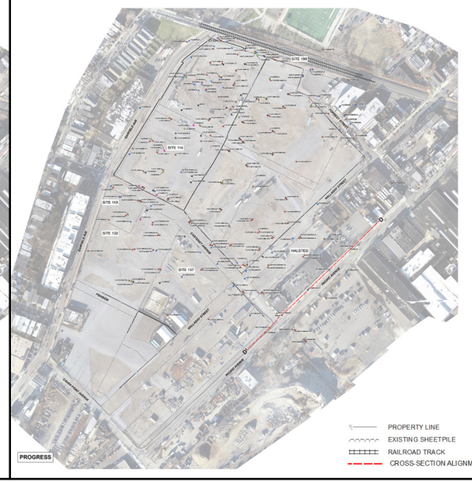


**Cr(VI) Concentrations in Groundwater**
- >100,000 ug/L
- 10,000 ug/L
- 1000 ug/L

Ferroblack-H Reactive Zones

Sheetpile

**Geologic Layers**
- Fill
- Meadow Mat
- Intermediate WBZ
- Transition Zone
- Deep WBZ
- Basal Till
- Bedrock
- Zones of low-permeability based on HPT logs and soil boring logs

**Cr VI Concentrations (ug/L)**
- <1000
- 1000-10,000
- 10,000-50,000
- 50,000-100,000
- >100,000

Area where residual Cr(VI) concentrations can be expected to reside within low permeability soils.

**Notes:**
1. INTERPOLATION OF THE Cr(VI) PLUME DEPICTED FOR THE BASELINE FIGURE IS BASED ON ANALYTICAL RESULTS FOR SAMPLES COLLECTED FROM MONITORING WELLS, REMEDIATION WELLS, AND VAP POINTS FROM 9/9/2005 TO 8/4/2022.

2. INTERPOLATION OF THE Cr(VI) PLUME DEPICTED ON THE GROUNDWATER REMEDY PROGRESS FIGURE IS BASED ON THE MOST RECENT ANALYTICAL RESULTS FOR SAMPLES COLLECTED FROM MONITORING WELLS AND REMEDIATION WELLS, WHERE AVAILABLE.

**Abbreviations:**
Cr(VI) = hexavalent chromium
HPT = Hydraulic Profiling Tool
ug/L = micrograms per liter
VAP = vertical aquifer profiling
WBZ = water bearing zone

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HEXAVALENT CHROMIUM CONCENTRATIONS PRE- AND POST-REMEDIAL ACTION CROSS SECTION D-D’

DATE: 2/6/2025 | DRAWN: RGM | | | FIGURE 5D

# Baseline

## E

Site 199
Garfield Ave
NW

## E’

Along Forrest St
Halladay St

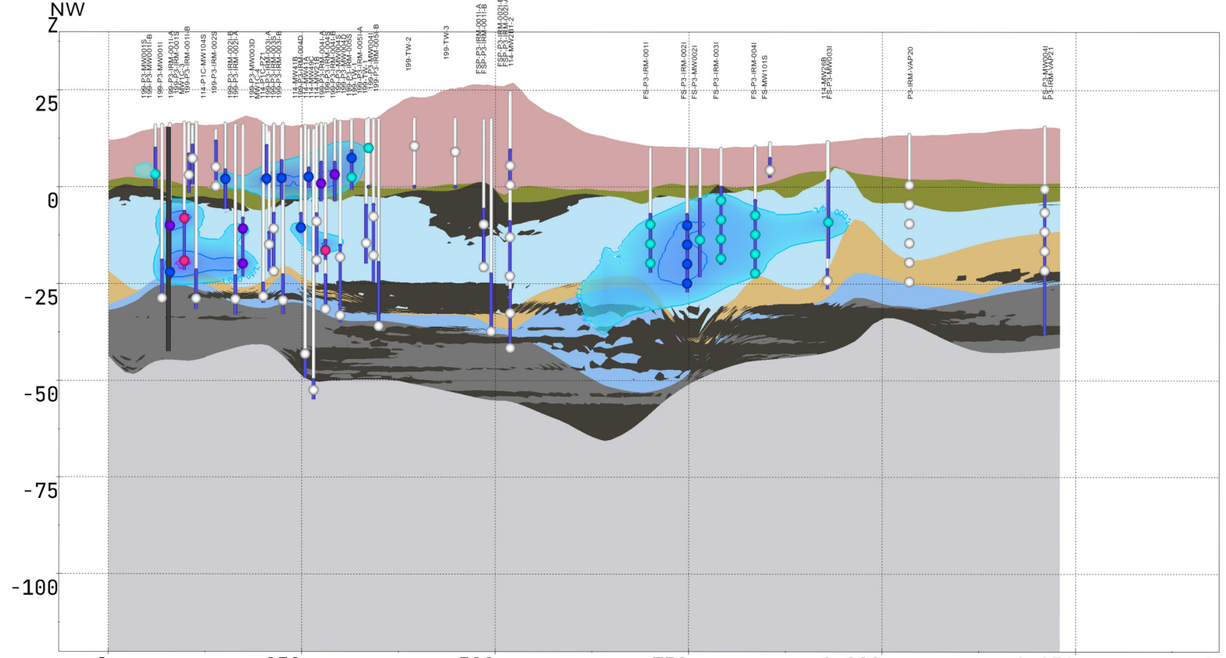


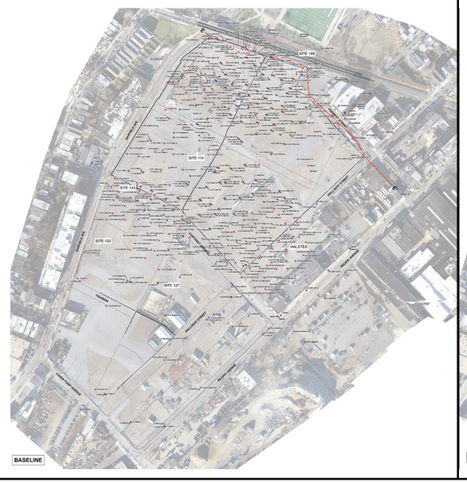


# Progress

## E

Site 199
Garfield Ave
NW

## E’

Along Forrest St
Halladay St

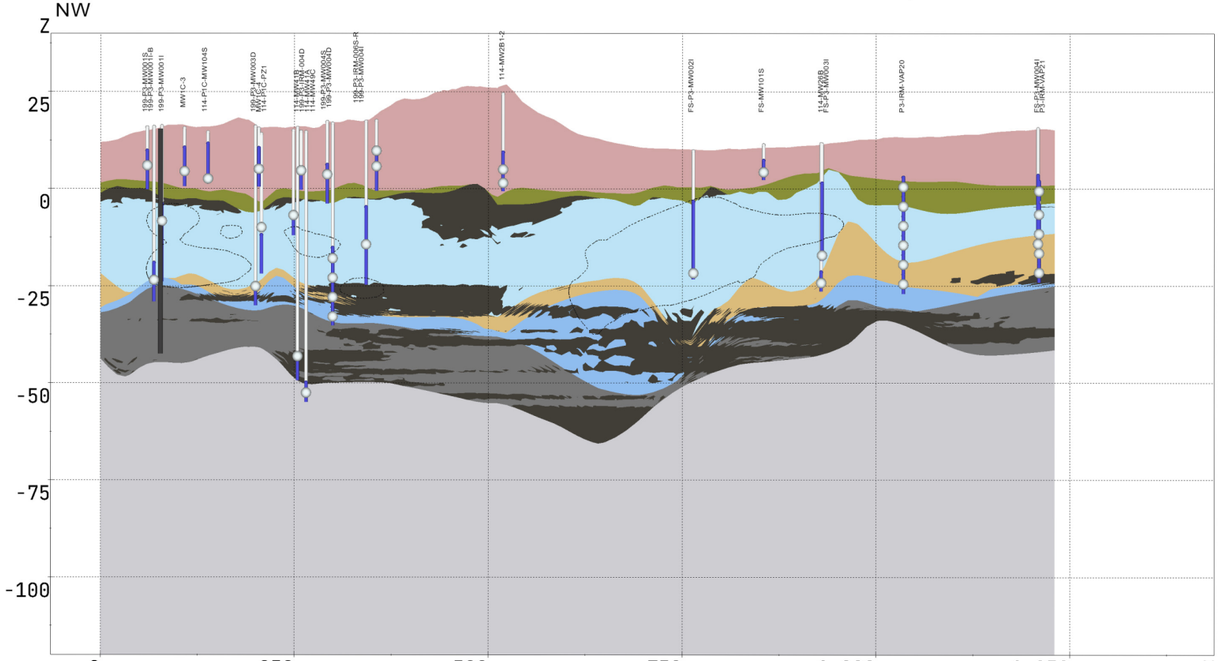


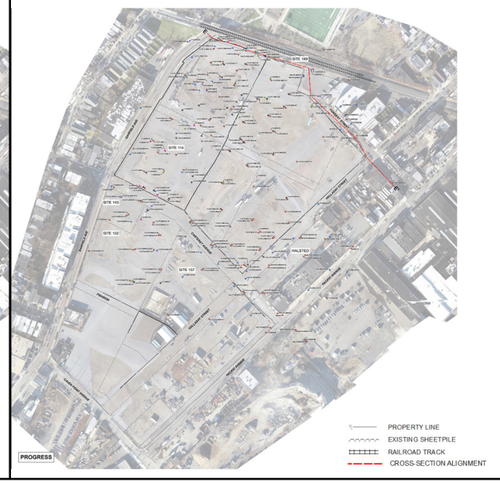


**Cr(VI) Concentrations in Groundwater**

- >100,000 ug/L
- 10,000 ug/L
- 1000 ug/L
- Ferroblack-H Reactive Zones
- Sheetpile

**Geologic Layers**

- Fill
- Meadow Mat
- Intermediate WBZ
- Transition Zone
- Deep WBZ
- Basal Till
- Bedrock
- Zones of low-permeability based on HPT logs and soil boring logs

**Cr VI Concentrations (ug/L)**

- <1000
- 1000-10,000
- 10,000-50,000
- 50,000-100,000
- >100,000
- -------- Area where residual Cr(VI) concentrations can be expected to reside within low permeability soils.

**Notes:**

1. INTERPOLATION OF THE Cr(VI) PLUME DEPICTED FOR THE BASELINE FIGURE IS BASED ON ANALYTICAL RESULTS FOR SAMPLES COLLECTED FROM MONITORING WELLS, REMEDIATION WELLS, AND VAP POINTS FROM 9/9/2005 TO 8/4/2022.

2. INTERPOLATION OF THE Cr(VI) PLUME DEPICTED ON THE GROUNDWATER REMEDY PROGRESS FIGURE IS BASED ON THE MOST RECENT ANALYTICAL RESULTS FOR SAMPLES COLLECTED FROM MONITORING WELLS AND REMEDIATION WELLS, WHERE AVAILABLE.

**Abbreviations:**

Cr(VI) = hexavalent chromium
HPT = Hydraulic Profiling Tool
ug/L = micrograms per liter
VAP = vertical aquifer profiling
WBZ = water bearing zone

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HEXAVALENT CHROMIUM CONCENTRATIONS PRE- AND POST-REMEDIAL ACTION CROSS SECTION E-E’

| DATE: 2/6/2025 | DRWN: RGM | | | FIGURE 5E |
|---|---|---|---|---|

# Baseline

F
Garfield Ave
NW

F’
Halladay St
SE

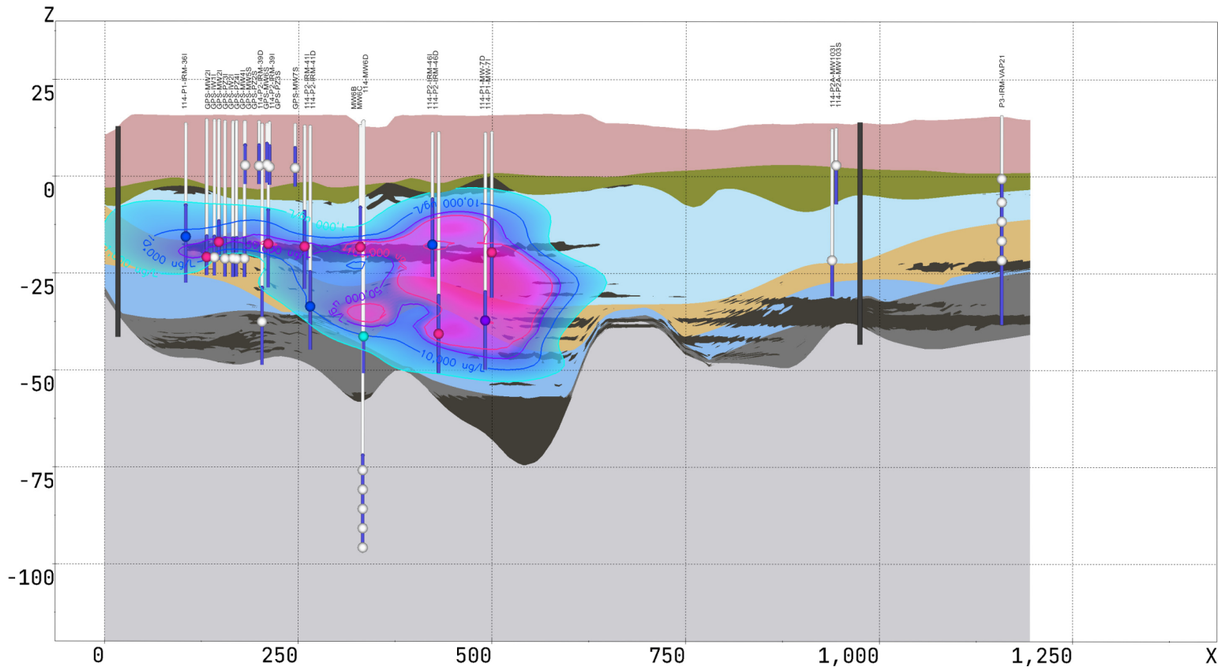


# Progress

F
Garfield Ave
NW

F’
Halladay St
SE

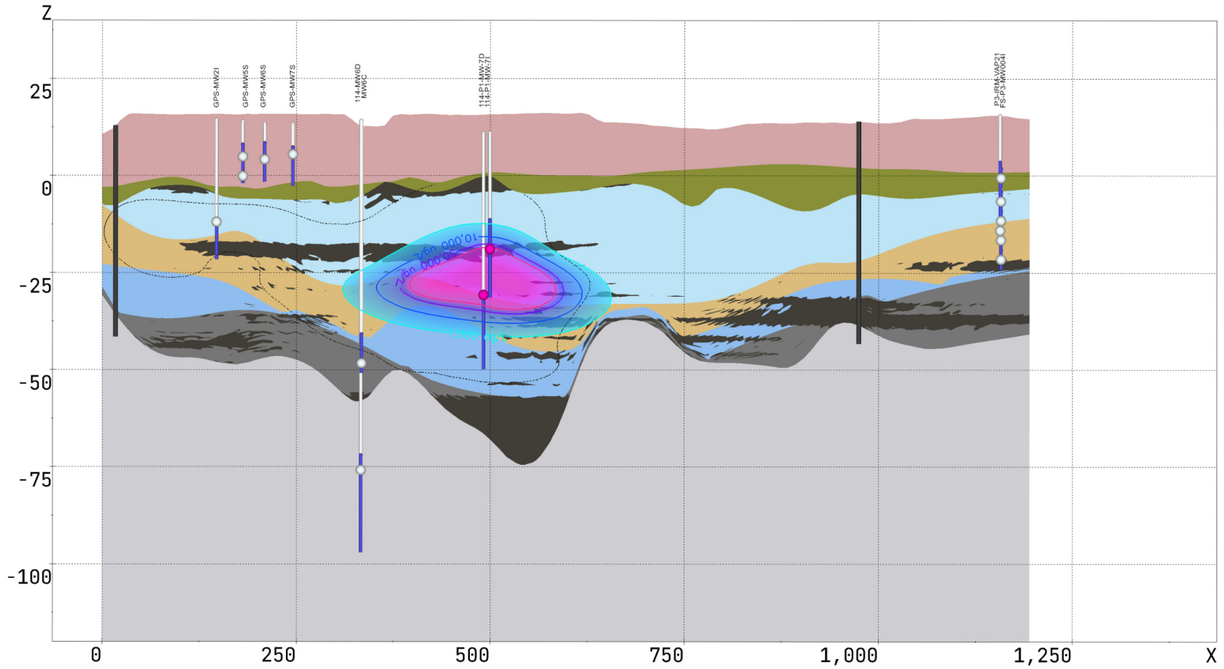


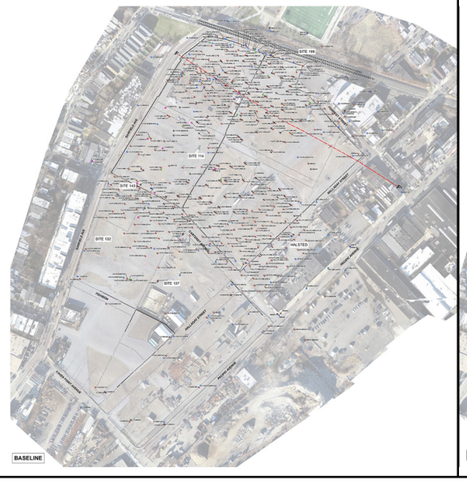


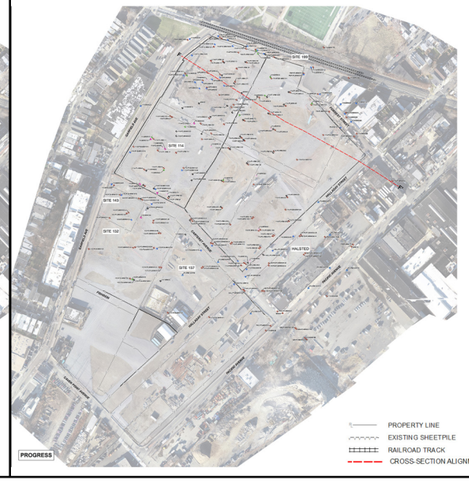


**Cr(VI) Concentrations in Groundwater**
- >100,000 ug/L
- 10,000 ug/L
- 1000 ug/L

Ferroblack-H Reactive Zones

Sheetpile

**Geologic Layers**
- Fill
- Meadow Mat
- Intermediate WBZ
- Transition Zone
- Deep WBZ
- Basal Till
- Bedrock
- Zones of low-permeability based on HPT logs and soil boring logs

**Cr VI Concentrations (ug/L)**
- <1000
- 1000-10,000
- 10,000-50,000
- 50,000-100,000
- >100,000

Area where residual Cr(VI) concentrations can be expected to reside within low permeability soils.

**Notes:**
1. INTERPOLATION OF THE Cr(VI) PLUME DEPICTED FOR THE BASELINE FIGURE IS BASED ON ANALYTICAL RESULTS FOR SAMPLES COLLECTED FROM MONITORING WELLS, REMEDIATION WELLS, AND VAP POINTS FROM 9/9/2005 TO 8/4/2022.

2. INTERPOLATION OF THE Cr(VI) PLUME DEPICTED ON THE GROUNDWATER REMEDY PROGRESS FIGURE IS BASED ON THE MOST RECENT ANALYTICAL RESULTS FOR SAMPLES COLLECTED FROM MONITORING WELLS AND REMEDIATION WELLS, WHERE AVAILABLE.

**Abbreviations:**
Cr(VI) = hexavalent chromium
HPT = Hydraulic Profiling Tool
ug/L = micrograms per liter
VAP = vertical aquifer profiling
WBZ = water bearing zone

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HEXAVALENT CHROMIUM CONCENTRATIONS PRE- AND POST-REMEDIAL ACTION CROSS SECTION F-F’

DATE: 2/6/2025 | DRWN: RGM | | | FIGURE 5F

# Baseline

## G
Garfield Ave
NW

## G’
Halladay St
SE

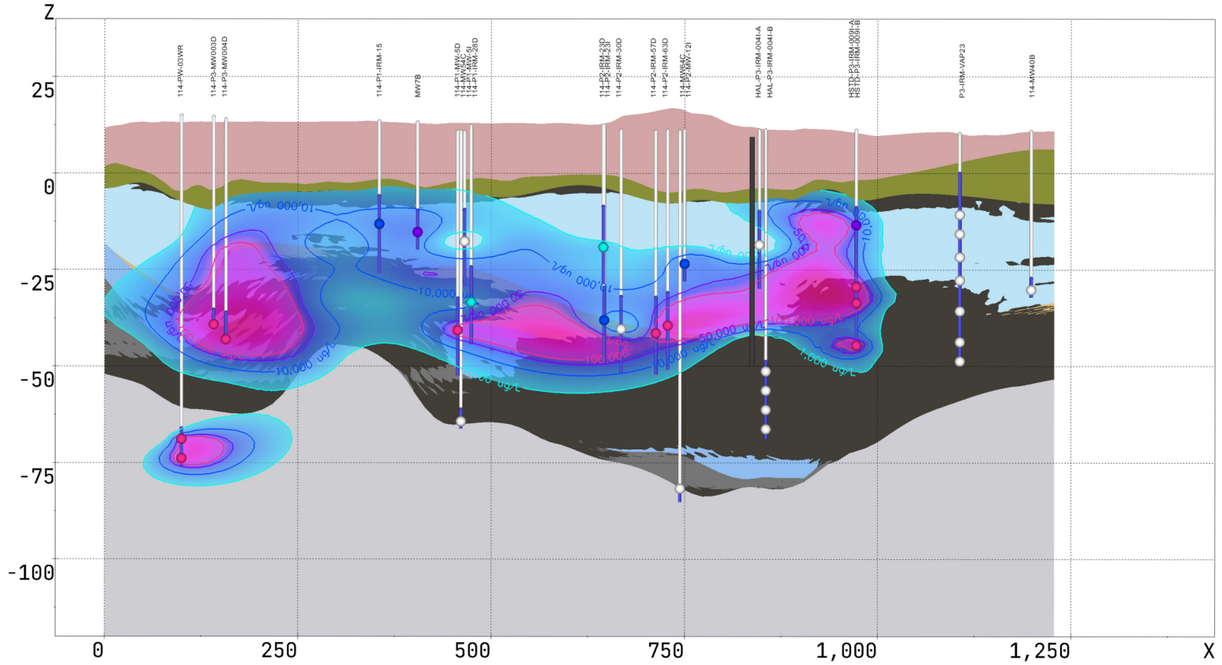


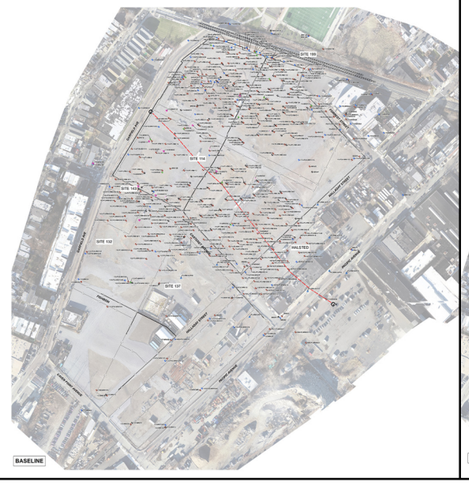


# Progress

## G
Garfield Ave
NW

## G’
Halladay St
SE

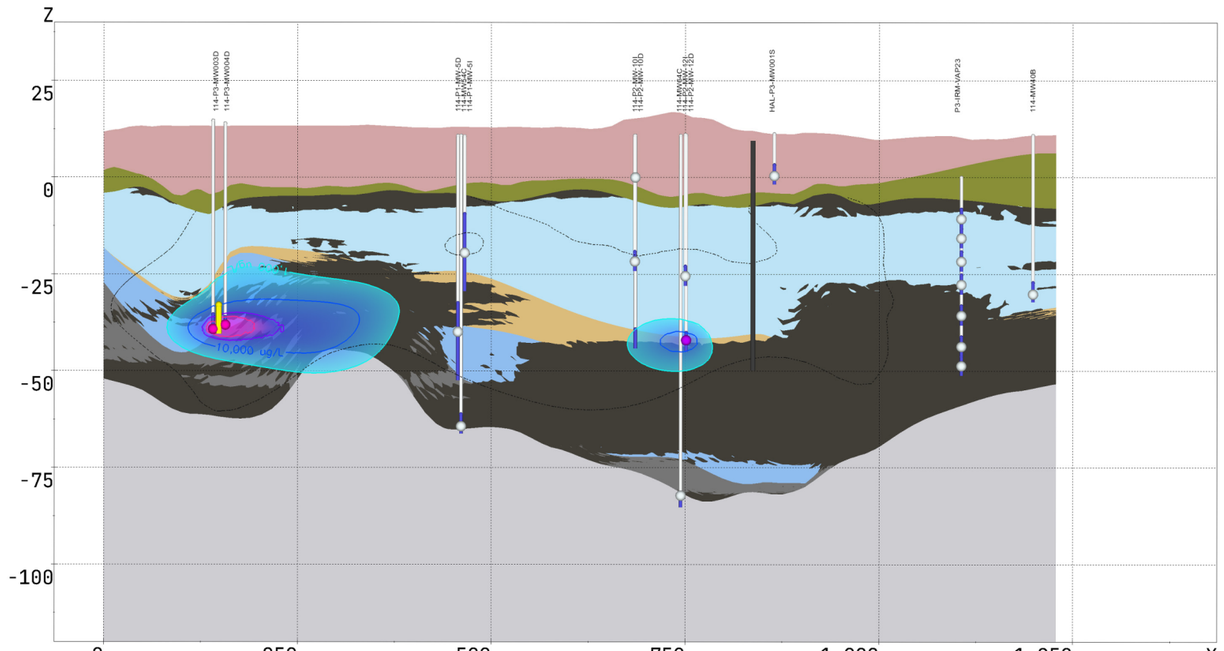


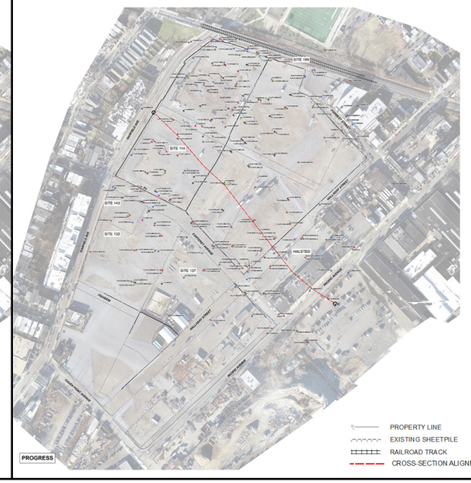


**Cr(VI) Concentrations in Groundwater**
- >100,000 ug/L
- 10,000 ug/L
- 1000 ug/L

Ferroblack-H Reactive Zones

Sheetpile

**Geologic Layers**
- Fill
- Meadow Mat
- Intermediate WBZ
- Transition Zone
- Deep WBZ
- Basal Till
- Bedrock
- Zones of low-permeability based on HPT logs and soil boring logs

**Cr VI Concentrations (ug/L)**
- <1000
- 1000-10,000
- 10,000-50,000
- 50,000-100,000
- >100,000

Area where residual Cr(VI) concentrations can be expected to reside within low permeability soils.

**Notes:**
1. INTERPOLATION OF THE Cr(VI) PLUME DEPICTED FOR THE BASELINE FIGURE IS BASED ON ANALYTICAL RESULTS FOR SAMPLES COLLECTED FROM MONITORING WELLS, REMEDIATION WELLS, AND VAP POINTS FROM 9/9/2005 TO 8/4/2022.

2. INTERPOLATION OF THE Cr(VI) PLUME DEPICTED ON THE GROUNDWATER REMEDY PROGRESS FIGURE IS BASED ON THE MOST RECENT ANALYTICAL RESULTS FOR SAMPLES COLLECTED FROM MONITORING WELLS AND REMEDIATION WELLS, WHERE AVAILABLE.

**Abbreviations:**
Cr(VI) = hexavalent chromium
HPT = Hydraulic Profiling Tool
ug/L = micrograms per liter
VAP = vertical aquifer profiling
WBZ = water bearing zone

AECOM

| | | | | |
|---|---|---|---|---|
| GARFIELD AVENUE GROUP SITES<br>PPG<br>JERSEY CITY, NEW JERSEY | | | HEXAVALENT CHROMIUM CONCENTRATIONS PRE- AND POST-REMEDIAL ACTION CROSS SECTION G-G’ | |
| DATE: 2/6/2025 | DRWN: RGM | | | FIGURE 5G |

# Baseline

## H
(along Carteret Ave)
Garfield Ave
NW

## H'
(along Carteret Ave)
Halladay St
SE

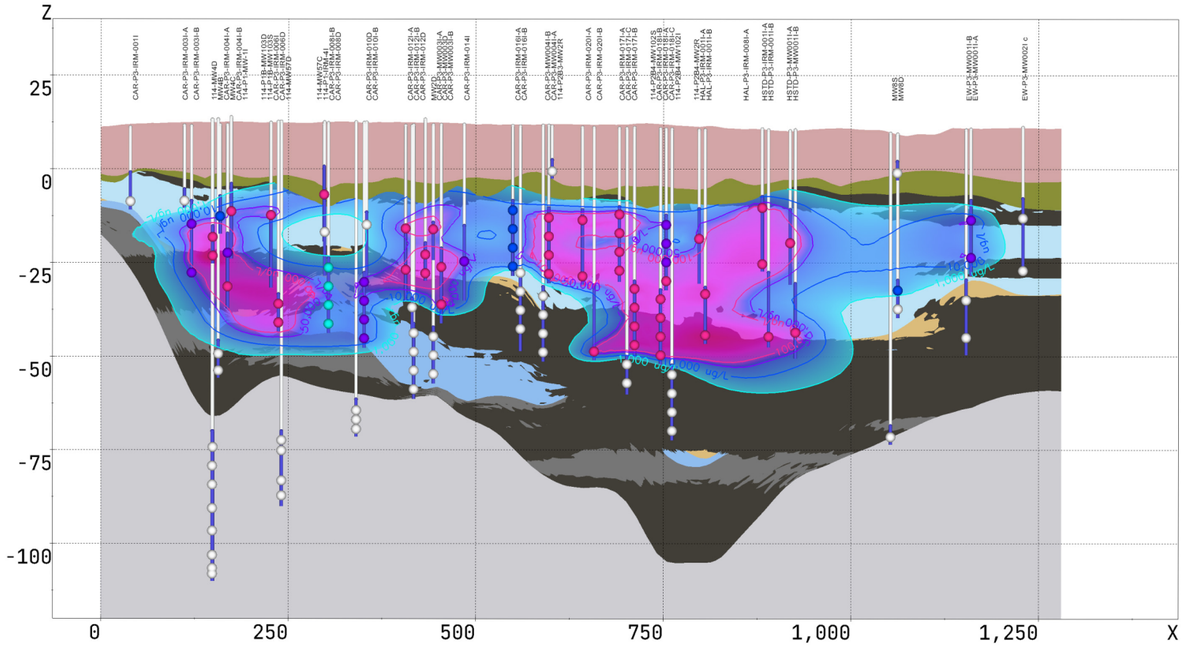


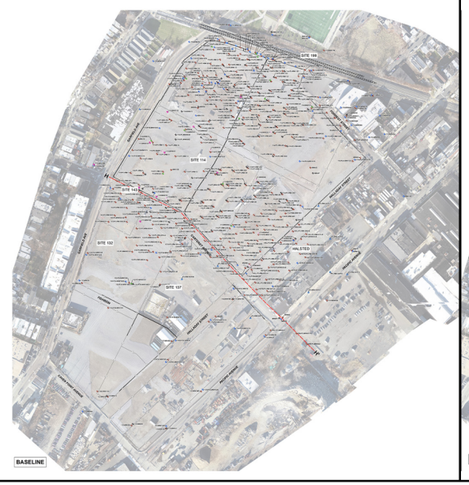


# Progress

## H
(along Carteret Ave)
Garfield Ave
NW

## H'
(along Carteret Ave)
Halladay St
SE

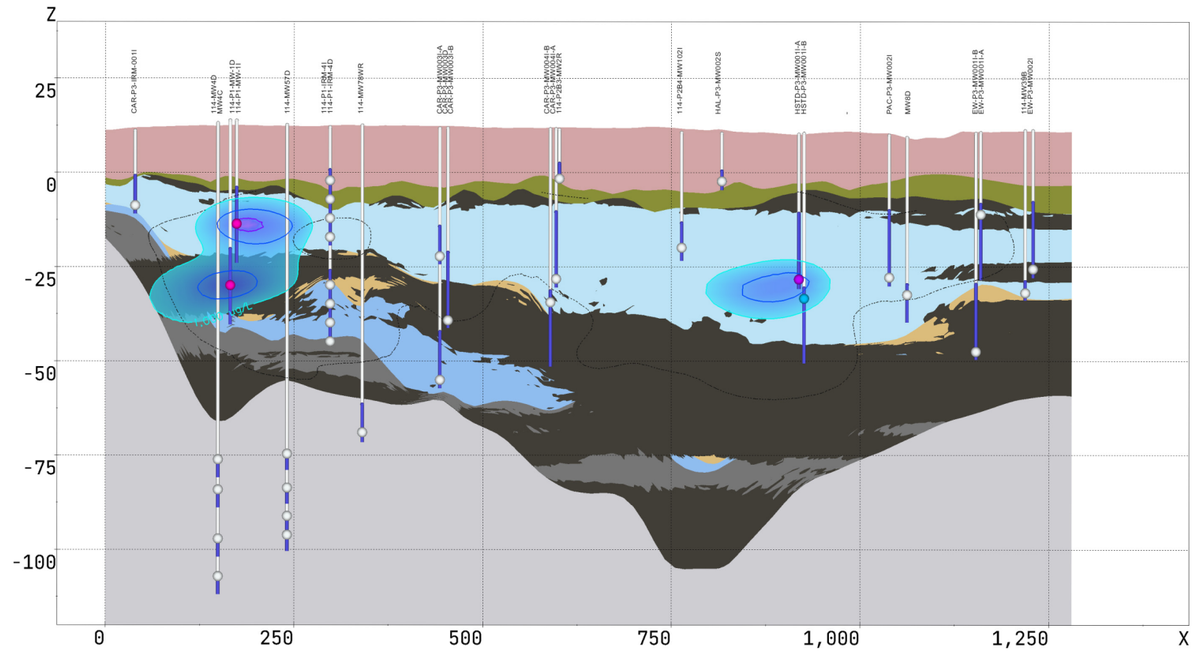


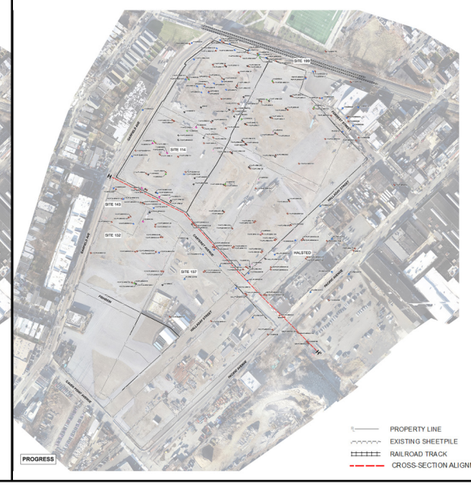


**Cr(VI) Concentrations in Groundwater**
- >100,000 ug/L
- 10,000 ug/L
- 1000 ug/L
- Ferroblack-H Reactive Zones
- Sheetpile

**Geologic Layers**
- Fill
- Meadow Mat
- Intermediate WBZ
- Transition Zone
- Deep WBZ
- Basal Till
- Bedrock
- Zones of low-permeability based on HPT logs and soil boring logs

**Cr VI Concentrations (ug/L)**
- <1000
- 1000-10,000
- 10,000-50,000
- 50,000-100,000
- >100,000
- -------- Area where residual Cr(VI) concentrations can be expected to reside within low permeability soils.

**Notes:**
1. INTERPOLATION OF THE Cr(VI) PLUME DEPICTED FOR THE BASELINE FIGURE IS BASED ON ANALYTICAL RESULTS FOR SAMPLES COLLECTED FROM MONITORING WELLS, REMEDIATION WELLS, AND VAP POINTS FROM 9/9/2005 TO 8/4/2022.

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**Abbreviations:**
Cr(VI) = hexavalent chromium
HPT = Hydraulic Profiling Tool
ug/L = micrograms per liter
VAP = vertical aquifer profiling
WBZ = water bearing zone

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PPG
JERSEY CITY, NEW JERSEY

HEXAVALENT CHROMIUM CONCENTRATIONS PRE- AND POST-REMEDIAL ACTION CROSS SECTION H-H'

DATE: 2/6/2025 | DRWN: RGM | FIGURE 5H

# Baseline

I
Garfield Ave
NW

I'
Halladay St
SE

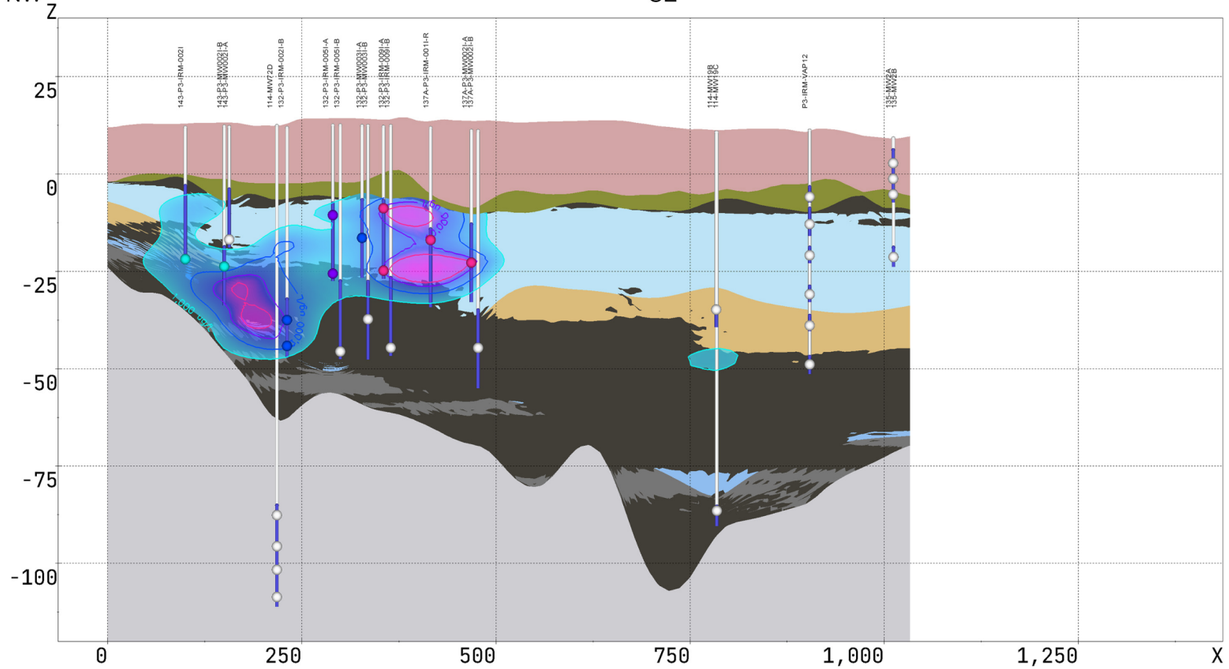


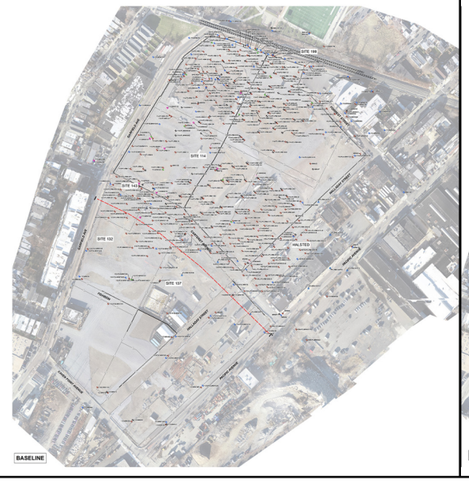


# Progress

I
Garfield Ave
NW

I'
Halladay St
SE

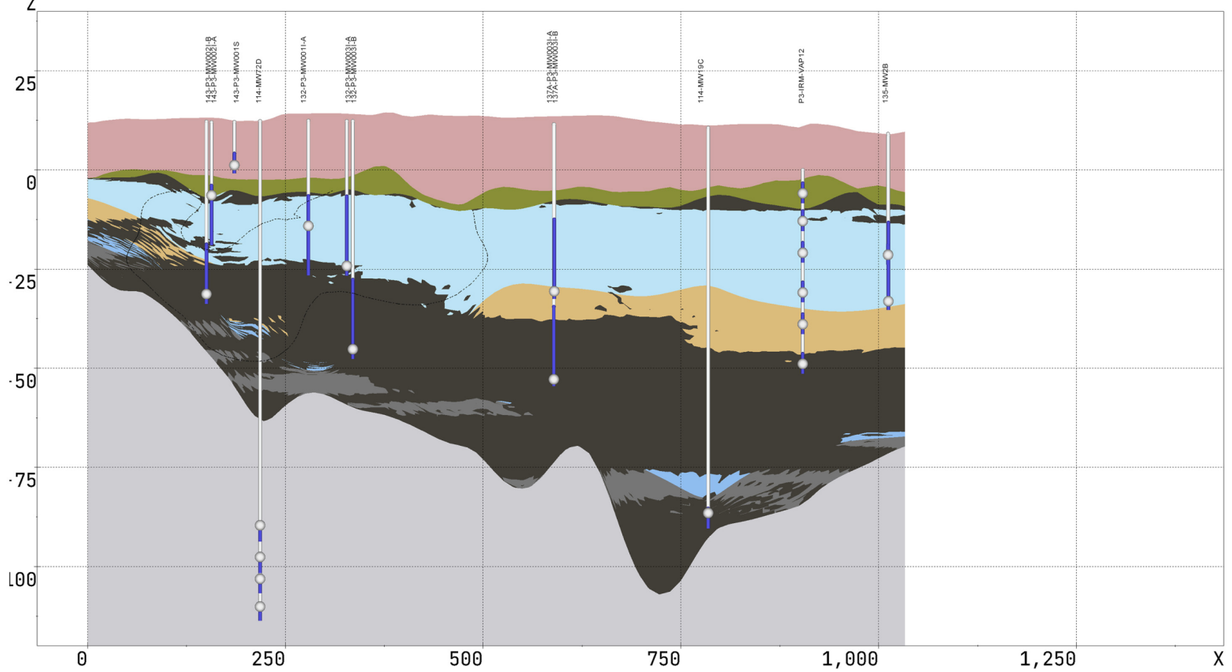


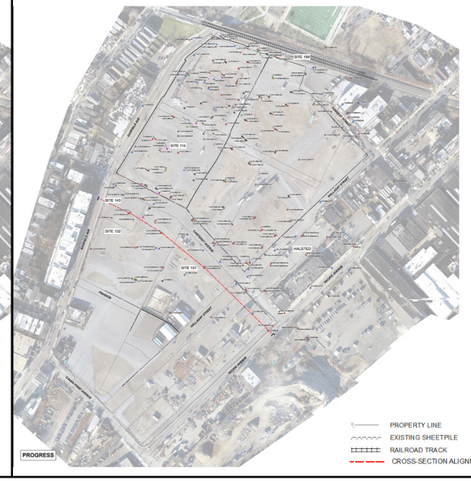


**Cr(VI) Concentrations in Groundwater**
- >100,000 ug/L
- 10,000 ug/L
- 1000 ug/L

- Ferroblack-H Reactive Zones
- Sheetpile

**Geologic Layers**
- Fill
- Meadow Mat
- Intermediate WBZ
- Transition Zone
- Deep WBZ
- Basal Till
- Bedrock
- Zones of low-permeability based on HPT logs and soil boring logs

**Cr VI Concentrations (ug/L)**
- <1000
- 1000-10,000
- 10,000-50,000
- 50,000-100,000
- >100,000
- -------- Area where residual Cr(VI) concentrations can be expected to reside within low permeability soils.

**Notes:**
1. INTERPOLATION OF THE Cr(VI) PLUME DEPICTED FOR THE BASELINE FIGURE IS BASED ON ANALYTICAL RESULTS FOR SAMPLES COLLECTED FROM MONITORING WELLS, REMEDIATION WELLS, AND VAP POINTS FROM 9/9/2005 TO 8/4/2022.

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**Abbreviations:**
Cr(VI) = hexavalent chromium
HPT = Hydraulic Profiling Tool
ug/L = micrograms per liter
VAP = vertical aquifer profiling
WBZ = water bearing zone

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GARFIELD AVENUE GROUP SITES
PPG
JERSEY CITY, NEW JERSEY

HEXAVALENT CHROMIUM CONCENTRATIONS PRE- AND POST-REMEDIAL ACTION CROSS SECTION I-I'

DATE: 2/6/2025 | DRWN: RGM | | | FIGURE 5I

# Baseline

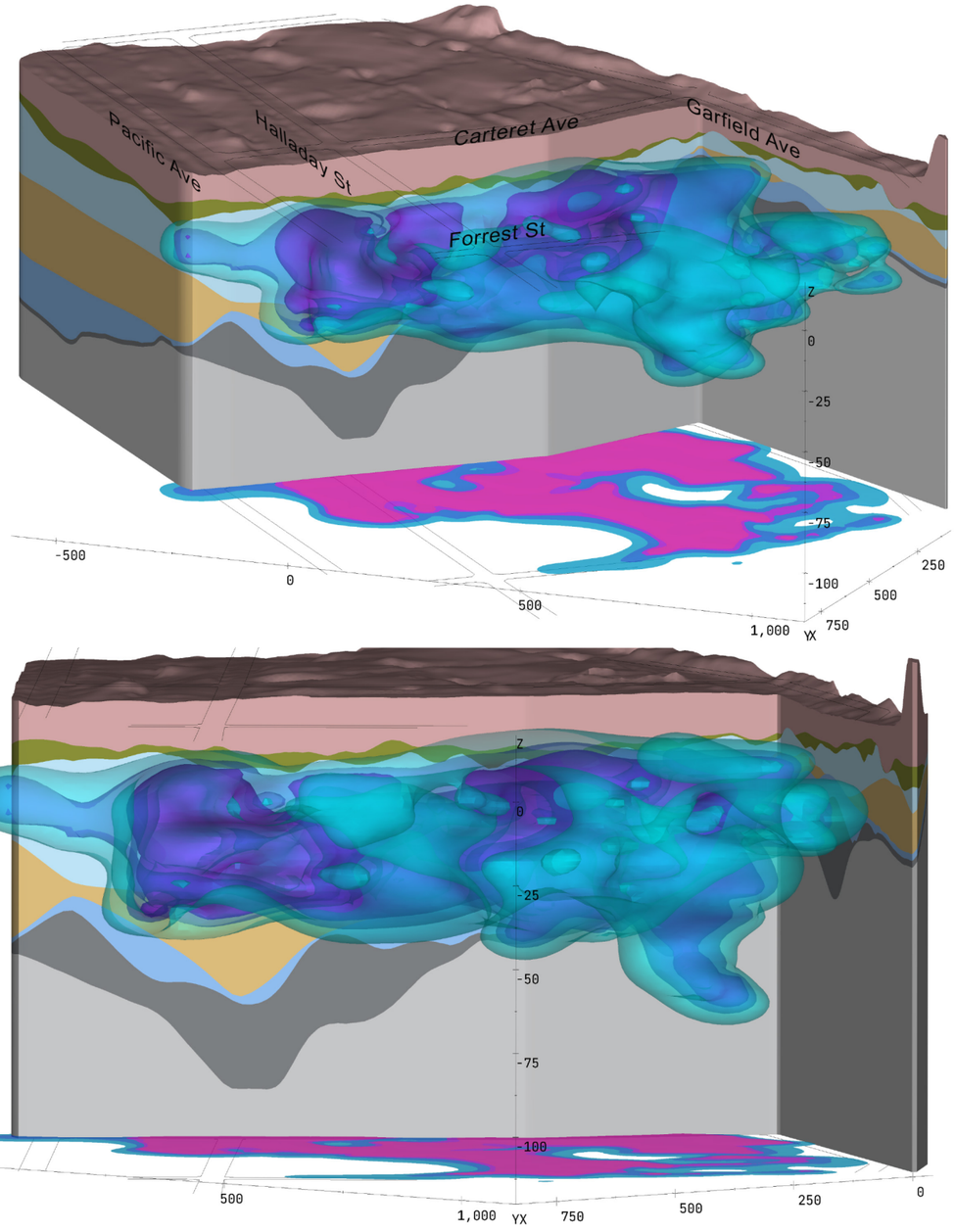


# Progress

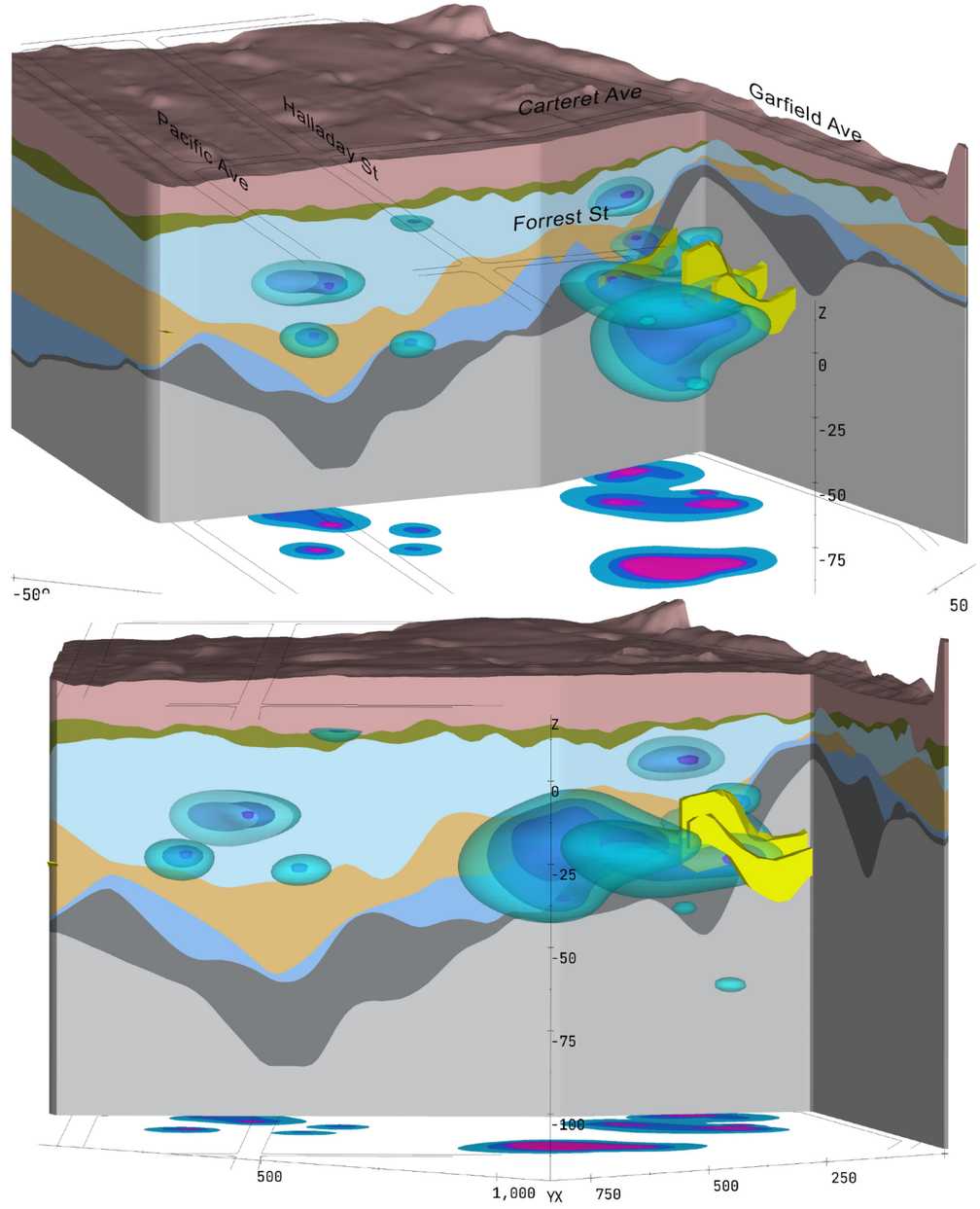


**Cr(VI) Concentrations in Groundwater**

- 1000-10,000 ug/L
- 10,000-50,000 ug/L
- 50,000-100,000 ug/L
- >100,000 ug/L

**Geologic Layers**

- Fill
- Meadow Mat
- Intermediate WBZ
- Transition Zone
- Deep WBZ
- Basal Till
- Bedrock

**Notes:**

1. INTERPOLATION OF THE Cr(VI) PLUME DEPICTED FOR THE BASELINE FIGURE IS BASED ON ANALYTICAL RESULTS FOR SAMPLES COLLECTED FROM MONITORING WELLS, REMEDIATION WELLS, AND VAP POINTS FROM 9/9/2005 TO 8/4/2022.

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**Abbreviations:**

Cr(VI) = hexavalent chromium
HPT = Hydraulic Profiling Tool
ug/L = micrograms per liter
VAP = vertical aquifer profiling
WBZ = water bearing zone

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GARFIELD AVENUE GROUP SITES
PPG
JERSEY CITY, NEW JERSEY

HEXAVALENT CHROMIUM CONCENTRATIONS PRE- AND POST-REMEDIAL ACTION IN 3D

| DATE:2/12/2025 | DRWN: RGM | | | FIGURE 6 |
|---|---|---|---|---|

# Appendix A
# Groundwater Sampling Analytical Results and QA/QC Sample Results

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| ***Phase I*** | | | | | | | | | | | | | | | | | | | | | | | | | |
| ***Monitoring*** | | | | | | | | | | | | | | | | | | | | | | | | | |
| GPS-MW1S | GPS-MW1S-20171221 | 12/21/2017 | 11 | N | JC57864 | Baseline | Shallow | R | R | R | R | -- | -- | -- | -- | -- | -- | -- | 19.2 | **697** | 2.6 | 1270 | < 100 U | < 15 U | -- |
| GPS-MW1S | GPS-MW1S-20180302 | 3/2/2018 | 11 | N | JC61711 | Treatment | Shallow | **94.6** | **153** | **120** | **110** | -- | -- | -- | -- | -- | -- | -- | 26.6 | -- | -- | -- | -- | -- | -- |
| GPS-MW1S | GPS-MW1S-20180409 | 4/9/2018 | 11 | N | JC63852 | Treatment | Shallow | **9470 J** | **4080 J** | **8200** | **8000** | -- | -- | -- | -- | -- | -- | -- | 29.7 | **685** | < 2.0 U | 2540 | < 100 U | < 15 U | -- |
| GPS-MW1S | 114-GPS-MW1S-20180604 | 6/4/2018 | 11 | N | JC67259 | Treatment | Shallow | **852** | **12400** | 46 | 56 | -189 | 11.39 | 10.53 | 2.18 | 16.68 | 0 | -- | 25.2 | -- | 2.1 | 292 | < 100 U | < 15 U | < 0.20 U |
| GPS-MW1S | 114-GPS-MW1S-20180604 | 6/4/2018 | 11 | N | JC67259A | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 245 | -- | -- | -- | -- | -- |
| GPS-MW1S | GPS-MW1S-180830 | 8/30/2018 | 11 | N | JC72843 | Treatment | Shallow | -- | **2070** | -- | **410** | -- | -- | -- | -- | -- | -- | -- | 22.3 | **672** | -- | 648 | -- | -- | -- |
| GPS-MW1S | GPS-MW1S-181127 | 11/27/2018 | 11 | N | JC78589 | Treatment | Shallow | **247** | **253** | **110** | **110** | -- | -- | -- | -- | -- | -- | -- | 27.9 | **838** | -- | 286 | -- | < 15 U | < 0.20 UJ |
| GPS-MW1S | GPS-MW1S-20181220 | 12/20/2018 | 11 | N | JC80137 | Treatment | Shallow | R | R | **2900 J** | **3200 J** | -- | -- | -- | -- | -- | -- | -- | 28.5 | **742** | -- | 379 J | -- | < 15 U | R |
| GPS-MW1S | GPS-MW1S-20190325 | 3/25/2019 | 11 | N | JC85107 | Treatment | Shallow | **1460** | **1720** | **1300** | **1600** | -- | -- | -- | -- | -- | -- | -- | 28.5 | **720** | -- | 485 | -- | < 15 U | < 0.20 U |
| GPS-MW1S | GPS-MW1S-20190503 | 5/3/2019 | 11 | N | JC87509 | Treatment | Shallow | **6820** | **6280** | **7500** | **7300** | -- | -- | -- | -- | -- | -- | -- | 26.8 | **554** | -- | 902 | -- | < 15 U | < 0.20 U |
| GPS-MW1S | GPS-MW1S-11.0-20190528 | 5/28/2019 | 11 | N | JC88834 | Treatment | Shallow | **3930** | **11500** | **1900** | **8900** | -- | -- | -- | -- | -- | -- | -- | 26.1 | **506** | -- | 10.6 J | -- | < 15 U | < 0.20 UJ |
| GPS-MW1S | GPS-MW1S-13.5-20190528 | 5/28/2019 | 13.5 | N | JC88834 | Treatment | Shallow | **5200** | **10500** | **8500** | **10100** | -- | -- | -- | -- | -- | -- | -- | 30.7 | **514** | -- | 4.6 J | -- | < 15 U | < 0.20 UJ |
| GPS-MW1S | GPS-MW-1S-20190628 | 6/28/2019 | 11 | N | JC90875 | Treatment | Shallow | **9920** | **9650** | **9100** | **10100** | -- | -- | -- | -- | -- | -- | -- | 24.7 | **458** | -- | 189 | -- | < 15 U | R |
| GPS-MW1S | GPS-MW1S-20190726 | 7/26/2019 | 11 | N | JC92294 | Treatment | Shallow | **7930** | **8140** | **4000** | **6300** | -- | -- | -- | -- | -- | -- | -- | 23.7 J | **515** | -- | 11.1 J | -- | < 15 U | < 0.20 U |
| GPS-MW1S | GPS-MW-1S-20190828 | 8/28/2019 | 11 | N | JC94021 | Treatment | Shallow | **1420** | **836** | **420** | **320** | -- | -- | -- | -- | -- | -- | -- | 21.4 | **556** | -- | 300 | -- | < 15 U | < 0.20 U |
| GPS-MW1S | GPS-MW1S-20200130 | 1/30/2020 | 11 | N | JD2521 | Treatment | Shallow | **1800** | **1890** | **1600** | **2200** | -- | -- | -- | -- | -- | -- | -- | 17.1 | **552** | -- | 436 | -- | < 15 U | -- |
| GPS-MW1S | GPS-MW1S-2020226 | 2/26/2020 | 11 | N | JD3741 | Treatment | Shallow | **96.3** | **318** | 43 | 44 | -- | -- | -- | -- | -- | -- | -- | 16.5 | **548** | -- | 95.1 | -- | < 15 U | -- |
| GPS-MW1S | GPS-MW1S-20200324 | 3/24/2020 | 11 | N | JD5103 | Treatment | Shallow | **2490** | **3780** | **3100** | **3400** | -- | -- | -- | -- | -- | -- | -- | 19.5 | **542** | -- | 511 | -- | < 15 U | -- |
| GPS-MW1S | GPS-MW1S-8.5-20200724 | 7/24/2020 | 8.5 | N | JD10630 | N/A | Shallow | **7820** | **8420** | **9500** | **9600** | -281.70 | 0.22 | 10.77 | 2.16 | 17.93 | 3.93 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW1S | GPS-MW1S-13.5-20200724 | 7/24/2020 | 13.5 | N | JD10630 | N/A | Shallow | **6940** | **6870** | **7500** | **7300** | -244.30 | 0.28 | 10.81 | 1.91 | 17.28 | 6.50 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW1S | GPS-MW1S-20200811 | 8/11/2020 | 11 | N | JD11542 | Post-Treatment | Shallow | R | R | **130** | 32 | -- | -- | -- | -- | -- | -- | -- | 14.8 | **600** | < 2.0 U | 38.5 | < 100 U | < 15 U | -- |
| GPS-MW1S | GPS-MW1S-20201113 | 11/13/2020 | 11 | N | JD16259 | Post-Treatment | Shallow | 13.6 | 46.2 | 24 | 23 | -- | -- | -- | -- | -- | -- | -- | 10.8 | **506** | < 2.0 U | 80.5 | < 100 U | < 15 U | -- |
| GPS-MW1S | GPS-MW1S-20210225 | 2/25/2021 | 11 | N | JD20780 | Post-Treatment | Shallow | **155** | **662** | 59 | 65 | -- | -- | -- | -- | -- | -- | -- | 16.9 | **364** | < 2.0 U | 91.2 | 119 | **4010** | -- |
| GPS-MW1S | GPS-MW-1S-20211011 | 10/11/2021 | 11 | N | JD33262 | Post-Treatment | Shallow | 1.4 J | 5.6 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 14.2 | **509** | 2.6 | 970 J | **< 300 U** | 1.4 J | -- |
| GPS-MW1S | GPS-MW1S-20211116 | 11/16/2021 | 11 | N | JD35372 | Post-Treatment | Shallow | 13.7 | **70.3** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 12.7 | **455** | 3.0 | 1730 | < 100 U | < 15 U | -- |
| GPS-MW1S | GPS-MW1S-20220223 | 2/23/2022 | 11 | N | JD40159 | Post-Treatment | Shallow | 3.5 J | 25.6 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 8.9 | **419** | < 2.0 U | 2540 | < 100 U | < 15 U | -- |
| GPS-MW1S | GPS-MW1S-20220525 | 5/25/2022 | 11 | N | JD45473 | Post-Treatment | Shallow | 11.6 J | 36.6 | 23 | 2.6 J | -- | -- | -- | -- | -- | -- | -- | 9.5 | **259** | < 2.0 U | 1020 | < 100 U | < 15 U | -- |
| GPS-MW1S | GPS-MW1S-DUP-20220525 | 5/25/2022 | 11 | FD | JD45473 | Post-Treatment | Shallow | 42.4 J | 32.1 | 39 | 6.2 J | -- | -- | -- | -- | -- | -- | -- | 9.7 | **259** | < 2.0 U | 1170 | < 100 U | < 15 U | -- |
| GPS-MW1S | GPS-MW1S-11-20220907 | 9/7/2022 | 11 | N | 4602650311 | N/A | Shallow | **121** | **169** | **86.5 J** | 29.0 J | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW1S | GPS-MW1S-11-20221229 | 12/29/2022 | 11 | N | 4602721691 | N/A | Shallow | -- | 5.8 | -- | < 10.0 U | -293.9 | 0.36 | 9.93 | 1.088 | 11.17 | 1.81 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW1S | GPS-MW1S-11-0-20230314 | 3/14/2023 | 11 | N | 4602762891 | N/A | Shallow | -- | 5.2 | -- | < 10.0 U | -153.1 | 0.38 | 10.22 | 0.791 | 7.22 | 4.56 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW1S | GPS-MW1S-11-20230508 | 5/8/2023 | 11 | N | 4602798181 | N/A | Shallow | -- | < 4.0 U | -- | < 10.0 U | -297.7 | 0.39 | 10.00 | 0.606 | 15.10 | 1.74 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW1S | GPS-MW1S-11.0-20230912 | 9/12/2023 | 11 | N | 4602879871 | Total Cr Isopleth | Shallow | -- | < 4.0 U | -- | < 10.0 U | -90 | 0.81 | 9.28 | 0.946 | 24.19 | 0.77 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW1S | GPS-MW1S-9.0-20231211 | 12/11/2023 | 9 | N | JD78573 | Total Cr Isopleth | Shallow | -- | 25.4 | -- | < 10 U | -126 | 0.19 | 10.29 | 0.839 | 13.7 | 4.55 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW1S | GPS-MW1S-14.0-20231211 | 12/11/2023 | 14 | N | JD78573 | Total Cr Isopleth | Shallow | -- | 29.3 | -- | 5.6 J | -191 | 3.05 | 10.35 | 0.916 | 13.5 | 5.32 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW1S | GPS-MW1S-9.0-20240313 | 3/13/2024 | 9 | N | JD84389 | Total Cr Isopleth | Shallow | -- | < 10 U | -- | < 10 U | -170.2 | 0.23 | 9.36 | 0.499 | 13 | 1.42 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW1S | GPS-MW1S-14.0-20240313 | 3/13/2024 | 14 | N | JD84389 | Total Cr Isopleth | Shallow | -- | 3.9 J | -- | < 10 U | -94.2 | 0.29 | 9.34 | 0.493 | 12.5 | 2.59 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW1S | GPS-MW1S-9.0-20240612 | 6/12/2024 | 9 | N | JD90298 | Total Cr Isopleth | Shallow | -- | < 10 U | -- | < 10 U | -508.2 | 0.21 | 10.44 | 1.038 | 16.3 | 0.64 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW1S | GPS-MW1S-14.0-20240612 | 6/12/2024 | 14 | N | JD90298 | Total Cr Isopleth | Shallow | -- | < 10 U | -- | < 10 U | -460.3 | 2.34 | 10.44 | 0.992 | 15.5 | 0.71 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW1S | GPS-MW1S-9.0-20240913 | 9/13/2024 | 9 | N | JD96081 | Total Cr Isopleth | Shallow | -- | 22.4 J- | -- | < 10 U | -200 | 0.1 | 9.2 | 1.07 | 22.1 | 3.09 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW1S | GPS-MW1S-14.0-20240913 | 9/13/2024 | 14 | N | JD96081 | Total Cr Isopleth | Shallow | -- | 16.7 J- | -- | < 10 U | -120.6 | 0.13 | 9.01 | 1.01 | 20.1 | 2.24 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW1S | GPS-MW1S-9.0-20241119 | 11/19/2024 | 9 | N | JE946 | Total Cr Isopleth | Shallow | -- | 26.5 | -- | < 10 U | -288.9 | 5.54 | 9.92 | 1.30 | 17.5 | 0.87 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW1S | GPS-MW1S-14.0-20241119 | 11/19/2024 | 14 | N | JE946 | Total Cr Isopleth | Shallow | -- | 12.0 JB | -- | < 10 U | -254.9 | 4.64 | 9.63 | 1.12 | 16.2 | 1.18 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW2S | GPS-MW2S-20171221 | 12/21/2017 | 10.18 | N | JC57859 | Baseline | Shallow | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 8.0 | **411** | < 2.0 UJ | 44.0 | < 100 U | < 15 U | -- |
| GPS-MW2S | GPS-MW2S-DUP-20171221 | 12/21/2017 | 10.18 | FD | JC57859 | Baseline | Shallow | < 10 U | < 10 U | 11 | < 10 U | -- | -- | -- | -- | -- | -- | -- | 8.0 | **412** | < 2.0 UJ | 45.4 | < 100 U | < 15 U | -- |
| GPS-MW2S | GPS-MW2S-20180409 | 4/9/2018 | 10.18 | N | JC63852 | Treatment | Shallow | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 28.7 | **326** | < 2.0 U | 10.3 J | 134 | < 15 U | -- |
| GPS-MW2S | GPS-MW2S-DUP-20180409 | 4/9/2018 | 10.18 | FD | JC63852 | Treatment | Shallow | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 26.0 | **325** | < 2.0 U | 17.3 J | < 100 U | < 15 U | -- |
| GPS-MW2S | GPS-MW2S-20181220 | 12/20/2018 | 10.18 | N | JC80137 | Treatment | Shallow | < 10 UJ | 12.1 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 33.9 | 136 | -- | 1010 | -- | 18.4 | R |
| GPS-MW2S | GPS-MW2S-20200812 | 8/12/2020 | 10.18 | N | JD11593 | Post-Treatment | Shallow | < 10 U | 2.7 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 8.9 | 234 | 6.5 | 560 | < 100 U | 16.4 | -- |
| GPS-MW2S | GPS-MW2S-20201113 | 11/13/2020 | 10.18 | N | JD16259 | Post-Treatment | Shallow | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 6.7 | **282** | 3.4 | 560 | < 100 U | 13.3 J | -- |
| GPS-MW2S | GPS-MW2S-20210226 | 2/26/2021 | 10.18 | N | JD20896 | Post-Treatment | Shallow | 9.0 J | 17.7 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 28.3 | 168 | 3.9 | 834 | < 100 U | 6.8 J | -- |
| GPS-MW2S | GPS-MW2S-20211011 | 10/11/2021 | 10.18 | N | JD33262 | Post-Treatment | Shallow | < 10 U | 1.7 J | 4.9 J | < 10 U | -- | -- | -- | -- | -- | -- | -- | 8.9 | 221 | 4.5 | 373 | **< 300 U** | 10.2 J | -- |
| GPS-MW2S | GPS-MW2S-20211115 | 11/15/2021 | 10.18 | N | JD35301 | Post-Treatment | Shallow | < 10 U | 3.2 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 8.6 | 239 | 2.6 | 584 J | < 100 U | 14.7 J | -- |
| GPS-MW2S | GPS-MW2S-20220223 | 2/23/2022 | 10.18 | N | JD40159 | Post-Treatment | Shallow | 12.6 | 15.5 | 2.7 J | 8.6 J | -- | -- | -- | -- | -- | -- | -- | 4.6 | 136 | 1.3 J | 646 | < 100 U | 24.8 | -- |
| GPS-MW2S | GPS-MW2S-20220525 | 5/25/2022 | 10.18 | N | JD45473 | Post-Treatment | Shallow | < 10 UJ | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 10.3 | 128 | 2.0 | 826 | < 100 U | 21.4 | -- |
| GPS-MW3S | GPS-MW3S-20171221 | 12/21/2017 | 11 | N | JC57864 | Baseline | Shallow | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 21.1 | **495** | 2.6 | 906 | < 100 U | < 15 U | -- |
| GPS-MW3S | GPS-MW3S-20180409 | 4/9/2018 | 11 | N | JC63852 | Treatment | Shallow | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 18.9 | **437** | < 2.0 U | 849 | < 100 U | < 15 U | -- |
| GPS-MW3S | GPS-MW3S-20181221 | 12/21/2018 | 11 | N | JC80202 | Treatment | Shallow | < 10 U | -- | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 3.2 | 10.7 | -- | 1230 | -- | **186** | < 0.20 U |
| GPS-MW3S | GPS-MW3S-20200812 | 8/12/2020 | 11 | N | JD11593 | Post-Treatment | Shallow | < 10 U | 6.8 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 12.9 | **252** | 1.1 J | 701 | < 100 U | < 15 U | -- |
| GPS-MW3S | GPS-MW3S-20201111 | 11/11/2020 | 11 | N | JD16049 | Post-Treatment | Shallow | < 10 U | < 10 UB | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 14.7 | **332** | 0.97 J | 1160 | < 100 U | < 15 U | -- |
| GPS-MW3S | GPS-MW3S-20210222 | 2/22/2021 | 11 | N | JD20592 | Post-Treatment | Shallow | < 10 U | 7.9 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 5.8 | **288** | < 2.0 U | 530 | < 100 U | < 15 U | -- |
| GPS-MW3S | GPS-MW-3S-20211011 | 10/11/2021 | 11 | N | JD33262 | Post-Treatment | Shallow | 1.4 J | 2.7 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 11.7 | **306** | 1.4 J | 1140 | 18.3 J | < 15 U | -- |
| GPS-MW3S | GPS-MW-3S-20211116 | 11/16/2021 | 11 | N | JD35372 | Post-Treatment | Shallow | 31.1 | < 10 UB | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 12.3 | **306** | 1.3 J | 2130 | **320** | 3.8 J | -- |
| GPS-MW3S | GPS-MW3S-20220223 | 2/23/2022 | 11 | N | JD40159 | Post-Treatment | Shallow | < 10 U | 2.2 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 12.0 | **293** | 0.87 J | 664 | < 100 U | < 15 U | -- |
| GPS-MW3S | GPS-MW3S-20220523 | 5/23/2022 | 11 | N | JD45334 | Post-Treatment | Shallow | < 10 U | < 10 UB | 2.7 J | 6.4 J | -- | -- | -- | -- | -- | -- | -- | 18.4 | 247 | 1.1 J | 3630 | < 100 U | < 15 U | -- |
| GPS-MW3S | GPS-MW3S-DUP-20220523 | 5/23/2022 | 11 | FD | JD45334 | Post-Treatment | Shallow | < 10 U | < 10 UB | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 18.5 | **250** | 1.2 J | 3170 | < 100 U | < 15 U | -- |
| GPS-MW7S | GPS-MW7S-20171221 | 12/21/2017 | 7.68 | N | JC57864 | Baseline | Shallow | < 10 U | 10.6 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 23.3 | 213 | 12.6 | 3020 | < 100 U | < 15 U | -- |
| GPS-MW7S | GPS-MW-7S-20180130 | 1/30/2018 | 7.68 | N | JC59976 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 26.7 | -- | -- | -- | -- | -- | -- |
| GPS-MW7S | GPS-MW7S-20180409 | 4/9/2018 | 7.68 | N | JC63852 | Treatment | Shallow | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 25.9 | 77.0 | < 2.0 U | 4710 | < 100 U | < 15 U | -- |
| GPS-MW7S | GPS-MW7S_20181221 | 12/21/2018 | 7.68 | N | JC80202 | Treatment | Shallow | < 10 U | -- | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 18.8 | **422** | -- | 53.8 | -- | < 15 U | < 0.20 U |
| GPS-MW7S | GPS-MW7S-20200814 | 8/14/2020 | 7.68 | N | JD11773 | Post-Treatment | Shallow | 6.2 J | 8.7 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 17.9 | 240 J | 0.60 J | 1220 | 77.8 J | 10.4 J | -- |
| GPS-MW7S | GPS-MW7S-20201113 | 11/13/2020 | 7.68 | N | JD16259 | Post-Treatment | Shallow | < 10 U | 2.2 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 6.3 | 125 | 0.61 J | 1130 | **446** | 44.0 | -- |
| GPS-MW7S | GPS-MW7S-20210223 | 2/23/2021 | 10.9 | N | JD20642 | Post-Treatment | Shallow | 31.5 J | 42.5 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 104 | 196 | 16.4 | 9270 | **< 500 U** | **< 75 U** | -- |
| GPS-MW7S | GPS-MW7S-20210226 | 2/26/2021 | 7.68 | N | JD20896 | Post-Treatment | Shallow | 2.4 J | 5.0 J | < 10 U | 8.7 J | -- | -- | -- | -- | -- | -- | -- | 9.9 | 34.1 | < 2.0 U | 863 | **1060** | **405** | -- |
| GPS-MW7S | GPS-MW7S_20210930 | 9/30/2021 | 7.68 | N | JD32569 | Post-Treatment | Shallow | 60.3 | **101** | < 10 U | **< 100 U** | -- | -- | -- | -- | -- | -- | -- | 22.7 | 131 | 5.8 | 9540 | 43.2 J | 1.6 J | -- |
| GPS-MW7S | GPS-MW7S-20211115 | 11/15/2021 | 7.68 | N | JD35301 | Post-Treatment | Shallow | 16.5 | 24.2 | < 10 U | 7.4 J | -- | -- | -- | -- | -- | -- | -- | 26.8 | 174 | 5.2 | 13300 | < 100 U | < 15 U | -- |
| GPS-MW7S | GPS-MW7S-20220223 | 2/23/2022 | 7.68 | N | JD40159 | Post-Treatment | Shallow | 2.3 J | 5.5 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 5.1 | 72.1 | 0.53 J | 3400 | **714** | 31.0 | -- |
| GPS-MW7S | GPS-MW7S-20220524 | 5/24/2022 | 7.68 | N | JD45395 | Post-Treatment | Shallow | < 10 U | 17.2 | < 10 U | 9.2 J | -- | -- | -- | -- | -- | -- | -- | 22.1 | 154 | 0.76 J | 4960 | < 100 U | 36.4 | -- |
| 114-P1A-MW101I | 114-P1A-MW101I-20180129 | 1/29/2018 | 18.95 | N | JC59916 | Baseline | Intermediate | **4670** | **4730** | **3600** | **4000** | 88 | 20.01 | 6.59 | 1.52 | 12.05 | 10.1 | -- | 2.1 | 90.9 | < 2.0 U | < 1.1 UB | **< 500 U** | **176** | -- |
| 114-P1A-MW101I | 114-P1A-MW101I-DUP-20180503 | 5/3/2018 | 18.95 | FD | JC65417 | Treatment | Intermediate | < 10 U | 32.7 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 13.7 | **394** | -- | 1210 | -- | **3980** | < 0.20 UJ |
| 114-P1A-MW101I | 114-P1A-MW101I-20180503 | 5/3/2018 | 18.95 | N | JC65417 | Treatment | Intermediate | < 10 U | 39.5 | < 10 U | < 10 U | -165 | 0 | 7.62 | 3.53 | 18.2 | 39.6 | -- | 13.6 | **382** | -- | 1180 | -- | **4030** | < 0.20 UJ |
| 114-P1A-MW101I | 114-P1A-MW101I-20180530 | 5/30/2018 | 18.95 | N | JC66984 | Treatment | Intermediate | **5430** | **5610** | **5700** | **5400** | -- | -- | -- | -- | -- | -- | -- | 2.0 | -- | -- | < 3.3 UB | -- | **163** | < 0.20 U |
| 114-P1A-MW101I | 114-P1A-MW101I-20180530 | 5/30/2018 | 18.95 | N | JC66984A | Treatment | Intermediate | -- | -- | -- | -- | 117 | 0 | 6.76 | 1.62 | 24.99 | 8.9 | -- | -- | 97.4 J | -- | -- | -- | -- | -- |
| 114-P1A-MW101I | 114-P1A-MW-101I-20180706 | 7/6/2018 | 18.95 | N | JC69376 | Treatment | Intermediate | **7400** | **8970** | **9100** | **9800** | 203 | 0.58 | 6.04 | 1.75 | 16.7 | 3.8 | -- | 2.6 | 129 | -- | 20.6 | -- | **200** | < 0.20 U |
| 114-P1A-MW101I | 114-P1A-MW101I-20180727 | 7/27/2018 | 18.95 | N | JC70845 | Treatment | Intermediate | **7660** | **7710** | **6100** | **6900** | 154 | 0.83 | 6.94 | 1.55 | 25.53 | 0 | -- | 2.3 | 118 | -- | 27.6 | -- | **202** | R |
| 114-P1A-MW101I | 114-P1A-MW101I-180830 | 8/30/2018 | 18.95 | N | JC72843 | Treatment | Intermediate | **4970** | **4920** | **4500** | **4800** | -- | -- | -- | -- | -- | -- | -- | 3.8 | 111 | -- | 3.3 | -- | **168** | < 0.20 U |
| 114-P1A-MW101I | 114-P1A-MW101I-20180926 | 9/26/2018 | 18.95 | N | JC74616 | Treatment | Intermediate | **5090** | **5240** | **4600** | **5000** | -- | -- | -- | -- | -- | -- | -- | 2.3 | 97.3 | -- | -- | -- | **153** | < 0.20 U |
| 114-P1A-MW101I | 114-P1A-MW101I-181102 | 11/2/2018 | 18.95 | N | JC77195 | Treatment | Intermediate | **4760** | **4790** | **4200** | **4500** | -- | -- | -- | -- | -- | -- | -- | 2.6 | 98.6 | -- | -- | -- | **151** | < 0.20 U |
| 114-P1A-MW101I | 114-P1A-MW101I-181127 | 11/27/2018 | 18.95 | N | JC78589 | Treatment | Intermediate | **5420** | **7260** | **6900** | **6500** | -- | -- | -- | -- | -- | -- | -- | 3.6 | 149 | -- | 26.1 J | -- | **162** | < 0.20 UJ |
| 114-P1A-MW101I | 114-P1A-MW101I_20181220 | 12/20/2018 | 18.95 | N | JC80137 | Treatment | Intermediate | **11000 J** | **11300 J** | **11900** | **11500** | -- | -- | -- | -- | -- | -- | -- | 3.6 | 199 | -- | -- | -- | **289** | R |
| 114-P1A-MW101I | 114-P1A-MW101I-20190327 | 3/27/2019 | 18.95 | N | JC85279 | Treatment | Intermediate | **8130** | **8150** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 3.0 | 209 | -- | 0.27 | -- | **213** | < 0.20 U |
| 114-P1A-MW101I | 114-P1A-MW101I-20190430 | 4/30/2019 | 18.95 | N | JC87228 | Treatment | Intermediate | **17300** | **17600** | **< 1000 U** | **20400** | -- | -- | -- | -- | -- | -- | -- | 3.8 | 213 | -- | 37.6 | -- | **323** | < 0.20 U |
| 114-P1A-MW101I | 114-P1A-MW101I-27.50-20190530 | 5/30/2019 | 27.5 | N | JC88958 | Treatment | Intermediate | **17700** | **17600** | **20900** | **20000** | -- | -- | -- | -- | -- | -- | -- | 3.7 | 220 | -- | 31.2 J | -- | **288** | R |
| 114-P1A-MW101I | 114-P1A-MW101I-32.50-20190530 | 5/30/2019 | 32.5 | N | JC88958 | Treatment | Intermediate | **15700** | **15800** | **18600** | **18100** | -- | -- | -- | -- | -- | -- | -- | 3.8 | 218 | -- | 41.6 J | -- | **310** | R |
| 114-P1A-MW101I | 114-P1A-MW101I_20190629 | 6/29/2019 | 18.95 | N | JC90940 | Treatment | Intermediate | **18000** | **17700** | **16400** | **16500** | -- | -- | -- | -- | -- | -- | -- | 3.8 | 221 | -- | 62.3 | -- | **358** | < 0.20 U |
| 114-P1A-MW101I | 114-P1A-MW101I-20190729 | 7/29/2019 | 18.95 | N | JC92380 | Treatment | Intermediate | **17900** | **18800** | **16400** | **16200** | -- | -- | -- | -- | -- | -- | -- | 4.0 | 207 | -- | 12.8 | -- | **368** | < 0.20 U |
| 114-P1A-MW101I | 114-P1A-MW101I_20190828 | 8/28/2019 | 18.95 | N | JC94021 | Treatment | Intermediate | **29000** | **28200** | **28700** | **29600** | -- | -- | -- | -- | -- | -- | -- | 4.0 | 208 | -- | 95.7 | -- | **277** | < 0.20 U |
| 114-P1A-MW101I | 114-P1A-MW-101I-20190926 | 9/26/2019 | 18.95 | N | JC95738 | Treatment | Intermediate | **20100** | **20800** | **21200** | **21400** | -- | -- | -- | -- | -- | -- | -- | 3.7 | 220 | -- | 51.6 | -- | **357** | R |
| 114-P1A-MW101I | 114-P1A-MW101I-20191028 | 10/28/2019 | 18.95 | N | JC97565 | Treatment | Intermediate | **17300** | **17100** | **14800** | **15400** | -- | -- | -- | -- | -- | -- | -- | 3.8 | 231 | -- | 103 | -- | **356** | < 0.20 U |
| 114-P1A-MW101I | 114-P1A-MW101I-20191125 | 11/25/2019 | 18.95 | N | JC99177 | Treatment | Intermediate | **24300** | **24700** | **22800** | **23900** | -- | -- | -- | -- | -- | -- | -- | 4.0 | 205 | -- | 51.4 | -- | **245** | -- |
| 114-P1A-MW101I | 114-P1A-MW101I-DUP-20191227 | 12/27/2019 | 18.95 | FD | JD963 | Treatment | Intermediate | **12300** | **12300** | **12600** | **13300** | -- | -- | -- | -- | -- | -- | -- | 4.0 | 129 | -- | 0.61 J | -- | **170 J** | -- |
| 114-P1A-MW101I | 114-P1A-MW101I-20191227 | 12/27/2019 | 18.95 | N | JD963 | Treatment | Intermediate | **13000** | **12900** | **12100** | **12500** | -- | -- | -- | -- | -- | -- | -- | 3.5 | 129 | -- | 0.26 J | -- | **170 J** | -- |
| 114-P1A-MW101I | 114-P1A-MW101I-20200227 | 2/27/2020 | 18.95 | N | JD3810 | Treatment | Intermediate | **41700** | **44300** | **41000** | **39000** | -- | -- | -- | -- | -- | -- | -- | 4.7 | 243 | -- | 211 | -- | **469** | -- |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P1A-MW101I | 114-P1A-MW101I-20200324 | 3/24/2020 | 18.95 | N | JD5103 | Treatment | Intermediate | **58200** | **61700** | **53000** | **54600** | -- | -- | -- | -- | -- | -- | -- | 5.8 | **277** | -- | 19.1 | -- | **510** | -- |
| 114-P1A-MW101I | 114-P1A-MW101I-25.5-20200723 | 7/23/2020 | 25.5 | N | JD10545 | N/A | Intermediate | **56200** | **58000** | **60000** | **55800** | 156.60 | 0.44 | 6.80 | 1.83 | 17.81 | 3.30 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1A-MW101I | 114-P1A-MW101I-30.5-20200723 | 7/23/2020 | 30.5 | N | JD10545 | N/A | Intermediate | **55500** | **62500** | **57200** | **53500** | 141.80 | 0.29 | 6.81 | 1.84 | 19.28 | 7.01 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1A-MW101I | 114-P1A-MW101I-20200817 | 8/17/2020 | 18.95 | N | JD11849 | Treatment | Intermediate | **64400** | **61000** | **59000** | **60600** | -- | -- | -- | -- | -- | -- | -- | 6.1 | **307** | < 2.0 U | 173 | 51.1 J | **706** | -- |
| 114-P1A-MW101I | 114-P1A-MW101I-20201112 | 11/12/2020 | 18.95 | N | JD16144 | Treatment | Intermediate | **13900** | **15200** | **15400** | **15300** | -- | -- | -- | -- | -- | -- | -- | 3.1 | 132 | < 2.0 U | 30.5 | < 100 U | **236** | -- |
| 114-P1A-MW101I | 114-P1A-MW101I-31.0-20201215 | 12/15/2020 | 31 | N | JD17793 | Treatment | Intermediate | **7920** | **8870** | **8300** | **8300** | 146.1 | 0.07 | 6.56 | 1.658 | -- | 8.01 | -- | 3.2 | 211 | -- | -- | -- | -- | -- |
| 114-P1A-MW101I | 114-P1A-MW101I-30.0-20210113 | 1/13/2021 | 30 | N | JD18964 | Treatment | Intermediate | **740** | **338** | 8.6 B | 7.4 B | -71.9 | 0.45 | 6.61 | 1.853 | -- | 10.27 | -- | 63.3 | 125 | -- | -- | -- | -- | -- |
| 114-P1A-MW101I | 114-P1A-MW101I-20210225 | 2/25/2021 | 18.95 | N | JD20780 | Post-Treatment | Intermediate | **80.6** | **1310** | < 10 U | 6.2 J | -- | -- | -- | -- | -- | -- | -- | 15.7 | 189 | < 2.0 U | 57.2 | **1050** | **12400** | -- |
| 114-P1A-MW101I | 114-P1A-MW101I-30-20210315 | 3/15/2021 | 30 | N | JD21732 | Treatment | Intermediate | 53.5 B | **171** | 14 | 25 | -81.3 | 0.26 | 6.92 | 2.192 | -- | -- NM | -- | 82.4 | 64.8 | -- | -- | -- | -- | -- |
| 114-P1A-MW101I | 114-P1A-MW101I-31-20210427 | 4/27/2021 | 31 | N | 4602330111 | Treatment | Intermediate | **73.6** | **79.4** | < 10.0 U | < 10.0 U | -115.8 | 2.36 | 6.75 | 1.638 | -- | 2.78 | -- | 56.6 | 18.4 | -- | 5000 | **9110** | **18300** | -- |
| 114-P1A-MW101I | 114-P1A-MW-101I-32-20210526 | 5/26/2021 | 32 | N | 4602352461 | Treatment | Intermediate | 66.4 | **145** | < 20.0 U | < 10.0 U | -315.6 | -7.6 ** | 6.52 | 1.97 | -- | -- NM | -- | 21.8 | 164 | -- | 1900 | **735** | **27200** | -- |
| 114-P1A-MW101I | 114-P1A-MW-101I-32.0-20210624 | 6/24/2021 | 32 | N | 4602373191 | Treatment | Intermediate | 50.4 | 67.1 | < 10.0 U | < 10.0 U | -301.9 | -- NM | 6.63 | 1.612 | -- | -- NM | -- | 18.2 | **567** | -- | 1400 | **< 600 U** | **16000** | -- |
| 114-P1A-MW101I | 114-P1A-MW101I-27.5-20210720 | 7/20/2021 | 27.5 | N | 4602391431 | Treatment | Intermediate | 61.2 | **159** | < 10.0 U | < 10.0 U | -288.8 | 4.78 | 6.71 | 2.04 | -- | 2.35 | -- | 19.2 | **557** | -- | 900 | **573** | **22700** | -- |
| 114-P1A-MW101I | 114-P1A-MW101I-32-20210825 | 8/25/2021 | 32 | N | 4602415661 | Treatment | Intermediate | 34.9 | **72.5** | < 10.0 U | < 10.0 U | -166.6 | 0.75 | 6.66 | 1.624 | -- | 9.28 | -- | 10.9 | **421** | -- | 410 | **1520** | **19700** | -- |
| 114-P1A-MW101I | 114-P1A-MW101I-37.0-20210921 | 9/21/2021 | 32 | N | 4602432721 | Treatment | Intermediate | 22.5 | **172 J** | < 10.0 U | < 10.0 U | -182.6 | 2.91 | 7.17 | 1.549 | -- | 7.11 | -- | 8.6 | 221 | -- | 240 | **3190** | **20600** | -- |
| 114-P1A-MW101I | 114-P1A-MW101I-37.0-20210921-X | 9/21/2021 | 32 | FD | 4602432721 | Treatment | Intermediate | 21.6 | **302 J** | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 8.7 | 246 | -- | 230 | **3080** | **19700** | -- |
| 114-P1A-MW101I | 114-P1A-MW101I-20211015 | 10/18/2021 | 32 | N | 4602453121 | Treatment | Intermediate | 17.5 | **122** | < 10.0 U | < 10.0 U | -173 | 0.2 | 6.78 | 1.8 | -- | 2.31 | -- | 9.1 | 191 | -- | 150 | **3810** | **18300** | -- |
| 114-P1A-MW101I | 114-P1A-MW101I-32.0-20211117 | 11/17/2021 | 32 | N | 4602474651 | Treatment | Intermediate | 37.4 | 52.7 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 15.5 | 166 | -- | 3900 | **3610** | **21800** | -- |
| 114-P1A-MW101I | 114-P1A-MW-101I-32-20211220 | 12/20/2021 | 32 | N | 4602495141 | Treatment | Intermediate | 60.6 | 69.4 | < 10.0 U | < 10.0 U | -114 | 0.24 | 6.45 | 2.15 | -- | 1.17 | -- | 21.8 | 197 | -- | 6100 | **10500** | **26700** | -- |
| 114-P1A-MW101I | 114-P1A-MW101I-32-20220113 | 1/13/2022 | 32 | N | 4602506661 | Treatment | Intermediate | 58.0 | 66.9 | < 10.0 U | < 10.0 U | -221.8 | 0.13 | 6.83 | 1.938 | -- | 1.73 | -- | 19.4 | 171 | -- | 5700 | **10900** | **21200** | -- |
| 114-P1A-MW101I | 114-P1A-MW101I-32-20220218 | 2/18/2022 | 32 | N | 4602528091 | Treatment | Intermediate | 32.0 | 36.4 | < 10.0 U | < 10.0 U | -62.8 | 1.21 | 7.35 | 1.959 | -- | 3.37 | -- | 9.0 | 173 | -- | 1300 | **4160** | **18300** | -- |
| 114-P1A-MW101I | 114-P1A-MW-101I-37.1-20220314 | 3/14/2022 | 37.1 | N | 4602542351 | Treatment | Intermediate | 16.3 | **143** | < 10.0 U | < 10.0 U | -149.4 | 0.75 | 7.03 | 1.485 | -- | 0.93 | -- | 9.4 | 144 | -- | 330 | **3030** | **14600** | -- |
| 114-P1A-MW101I | 114-P1A-MW-101I-32.0-20220413 | 4/13/2022 | 37.1 | N | 4602562001 | Treatment | Intermediate | 46.2 | **467** | < 10.0 U | < 10.0 U | -183.3 | 19.5 | 7.51 | 1.521 | 16.34 | 1.15 | -- | 10.2 | 141 | -- | 160 | **2930** | **14600** | -- |
| 114-P1A-MW101I | 114-P1A-MW-101I-32.0-20220513 | 5/13/2022 | 37.1 | N | 4602580891 | Treatment | Intermediate | 31.1 | 41.3 | < 10.0 U | < 10.0 U | -175.6 | 2.72 | 6.84 | 1.128 | 14.87 | 1.93 | -- | 10 | 180 | -- | 380 | **2160** | **14600** | -- |
| 114-P1A-MW101I | 114-P1A-MW-101I-32.0-20220609 | 6/9/2022 | 37.1 | N | 4602597481 | Treatment | Intermediate | -- | 43.2 | -- | < 10.0 U | -83.6 | 4.59 | 6.94 | 1.646 | 18.14 | 0.28 | -- | 11.2 | 219 | -- | -- | -- | -- | -- |
| 114-P1A-MW101I | 114-P1A-MW-101I-32.0-20220712 | 7/12/2022 | 32 | N | 4602617771 | Treatment | Intermediate | -- | 47.5 | -- | < 10.0 U | -111.6 | 1 | 6.96 | 1.794 | 17.42 | 4.10 | -- | 11.2 | 232 | -- | -- | -- | -- | -- |
| 114-P1A-MW101I | 114-P1A-MW101I-32-20220816 | 8/16/2022 | 32 | N | 4602639181 | Treatment | Intermediate | -- | **98.6** | -- | < 10.0 U | -46.0 | 0.75 | 7.21 | 1.632 | 18.91 | 1.39 | -- | 9.4 | **252** | -- | -- | **4010** | **13700** | -- |
| 114-P1A-MW101I | 114-P1A-MW-101I-27.5-20220831 | 8/31/2022 | 27.5 - 27.5 | N | 4602646891 | N/A | Intermediate | -- | 57.3 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1A-MW101I | 114-P1A-MW-101I-30.7-20220831 | 8/31/2022 | 30.7 - 30.7 | N | 4602646891 | N/A | Intermediate | 17.2 | 46.2 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1A-MW101I | 114-P1A-MW101I-27.5-20221209 | 12/9/2022 | 27.5 | N | 4602710741 | Post-Treatment | Intermediate | -- | 56.8 | -- | < 10.0 U | -87.3 | 1.36 | 6.8 | 1.944 | 11.96 | 2.03 | -- | 11.1 J- | **344** | < 1 U | -- | **8140** | **18900** | -- |
| 114-P1A-MW101I | 114-P1A-MW101I-32.5-20221209 | 12/9/2022 | 32.5 | N | 4602710741 | Post-Treatment | Intermediate | -- | **116** | -- | < 10.0 U | -81.2 | 1.95 | 6.76 | 1.948 | 13.34 | 1.8 | -- | 37.1 J- | 2.05 J | 1.6 | -- | **359** | **281** | -- |
| 114-P1A-MW101I | 114-P1A-MW101I-29.2-20230215 | 2/15/2023 | 29.2 | N | 4602746811 | Post-Treatment | Intermediate | -- | 57.7 | -- | < 10.0 U | -64.5 | 1.23 | 6.79 | 2.206 | 16.42 | 7.6 | -- | 14.1 | **279** | < 1 U | -- | **17500** | **21500** | -- |
| 114-P1A-MW101I | 114-P1A-MW101I-34.2-20230215 | 2/15/2023 | 34.2 | N | 4602746811 | Post-Treatment | Intermediate | -- | 66.9 | -- | < 10.0 U | -67.8 | 0.76 | 7.12 | 2.392 | 14.85 | 5.31 | -- | 17.1 | **336** | < 1 U | -- | **22300** | **23700** | -- |
| 114-P1A-MW101I | 114-P1A-MW101I-34.2-20230526 | 5/26/2023 | 34.2 | N | 4602810841 | Post-Treatment | Intermediate | -- | 60.7 | -- | < 20.0 U | -209.4 | 0.83 | 6.63 | 1.992 | 19.70 | 4.36 | -- | 17.2 | **321** | < 1 U | -- | **24500** | **21400** | -- |
| 114-P1A-MW101I | 114-P1A-MW101I-34.2-20230818 | 8/18/2023 | 34.2 | N | 4602864961 | Post-Treatment | Intermediate | -- | **92.7** | -- | < 10.0 U | 64.8 | 3.8 | 6.75 | 2.211 | 20.13 | 1.91 | -- | 14.6 J- | **255** | < 1 U | -- | **19600** | **19900** | -- |
| 114-P1A-MW101I | 114-P1A-MW101I-34.2-20231117 | 11/17/2023 | 34.2 | N | JD77231 | Post-Treatment | Intermediate | -- | 59.4 | -- | 16 RA | -100.6 | 0.16 | 6.7 | 2.462 | 17.5 | 2.41 | -- | 12.0 | **348** | -- | -- | -- | -- | -- |
| 114-P1A-MW101I | 114-P1A-MW101I-34.2-20240220 | 2/20/2024 | 34.2 | N | JD82805 | Post-Treatment | Intermediate | -- | 52.9 J | -- | **82 J** | -366.3 | 0.23 | 6.54 | 2.333 | 10.2 | 1.98 | -- | 15.5 | **425** | -- | -- | -- | -- | -- |
| 114-P1A-MW101I | 114-P1A-MW101I-34.2-20240520 | 5/20/2024 | 34.2 | N | JD88833 | Post-Treatment | Intermediate | -- | 54.2 | -- | 28 | -327.6 | 3.3 | 6.72 | 2.013 | 15.9 | 2.14 | -- | 14.5 | **333** | -- | -- | -- | -- | -- |
| 114-P1A-MW101I | 114-P1A-MW101I-34.2-20240821 | 8/21/2024 | 34.2 | N | JD94599 | Post-Treatment | Intermediate | -- | 55.5 | -- | 10 | -112.1 | 0.18 | 6.71 | 2.59 | 19.3 | 3.43 | -- | 15.0 | **353** | -- | -- | -- | -- | -- |
| 114-P1A-MW101I | 114-P1A-MW101I-34.2-20241120 | 11/20/2024 | 34.2 | N | JE1025 | Post-Treatment | Intermediate | -- | 48.4 | -- | 16 J- | -173.2 | 0.14 | 6.67 | 2.61 | 16.8 | 0.84 | -- | 14.0 J- | **421** | -- | -- | -- | -- | -- |
| 114-P1B-MW101I | 114-P1B-MW101I_20180123 | 1/23/2018 | 28 | N | JC59556 | Baseline | Intermediate | **143000** | **134000** | **115000** | **119000** | 204 | 0.56 | 7.06 | 2.6 | 12.77 | 0 | -- | 7.2 | 235 | < 2.0 U | 185 | **< 500 U** | **536** | -- |
| 114-P1B-MW101I | 114-P1B-MW-101I-20180531 | 5/31/2018 | 28 | N | JC67082 | Treatment | Intermediate | **94000** | **95400** | **94100 J** | **90300** | -- | -- | -- | -- | -- | -- | -- | 9.5 | -- | -- | 1480 | -- | **489** | < 0.20 U |
| 114-P1B-MW101I | 114-P1B-MW-101I-20180531 | 5/31/2018 | 28 | N | JC67082A | Treatment | Intermediate | -- | -- | -- | -- | 225 | 0 | 6.78 | 2.81 | 17.21 | 10.9 | -- | -- | 210 | -- | -- | -- | -- | -- |
| 114-P1B-MW101I | 114-P1B-MW-101I-20180705 | 7/5/2018 | 28 | N | JC69286 | Treatment | Intermediate | **77000** | **66400** | **58000** | **68300** | 197 | 0.33 | 6.49 | 2.97 | 19.41 | 0.2 | -- | 8.2 | 184 | -- | 724 | -- | **429** | < 0.20 U |
| 114-P1B-MW101I | 114-P1B-MW-101I-180828 | 8/28/2018 | 28 | N | JC72673 | Treatment | Intermediate | **32000** | **34900** | **39200** | **35800** | -- | -- | -- | -- | -- | -- | -- | 16.6 | **1160** | -- | 757 | -- | **549** | < 0.20 U |
| 114-P1B-MW101I | 114-P1B-MW101I-20180927 | 9/27/2018 | 28 | N | JC74699 | Treatment | Intermediate | **58100** | **58400** | **49200** | **52700** | -- | -- | -- | -- | -- | -- | -- | 11.1 | **761** | -- | -- | -- | **528** | < 0.20 U |
| 114-P1B-MW101I | 114-P1B-MW101I-20181030 | 10/30/2018 | 28 | N | JC76905 | Treatment | Intermediate | **135** | **216 J** | **100** | **99** | -- | -- | -- | -- | -- | -- | -- | 1.0 | 199 | -- | -- | -- | < 15 U | < 0.20 U |
| 114-P1B-MW101I | 114-P1B-MW101I-181127 | 11/27/2018 | 28 | N | JC78589 | Treatment | Intermediate | **6720** | **7060** | **7400** | **6400** | -- | -- | -- | -- | -- | -- | -- | 26.2 | **1350** | -- | 1420 | -- | **745** | < 0.20 UJ |
| 114-P1B-MW101I | 114-P1B-MW101I-DUP-181219 | 12/19/2018 | 28 | FD | JC80041 | Treatment | Intermediate | **7540** | **7520** | **8400** | **9100** | -- | -- | -- | -- | -- | -- | -- | 25.6 | **1290** | -- | -- | -- | **795** | R |
| 114-P1B-MW101I | 114-P1B-MW101I-181219 | 12/19/2018 | 28 | N | JC80041 | Treatment | Intermediate | **7610 J** | **7480 J** | **8400 J** | **8900 J** | -- | -- | -- | -- | -- | -- | -- | 24.4 | **1280** | -- | -- | -- | **803 J** | R |
| 114-P1B-MW101I | 114-P1B-MW101I-20190327 | 3/27/2019 | 28 | N | JC85279 | Treatment | Intermediate | **12500** | **13300** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 18.6 | **1300** | -- | 1020 | -- | **871** | < 0.20 U |
| 114-P1B-MW101I | 114-P1B-MW101I-20190503 | 5/3/2019 | 28 | N | JC87509 | Treatment | Intermediate | **14800** | **14700** | **15200** | **14700** | -- | -- | -- | -- | -- | -- | -- | 17.3 | **1250** | -- | 79.3 | -- | **928** | < 0.20 U |
| 114-P1B-MW101I | 114-P1B-MW101I-25.5-20190529 | 5/29/2019 | 25.5 | N | JC88888 | Treatment | Intermediate | **16900** | **16700** | **17100** | **17400** | -- | -- | -- | -- | -- | -- | -- | 15.9 | **1410** | -- | 1060 J | -- | **832** | R |
| 114-P1B-MW101I | 114-P1B-MW101I-30.5-20190529 | 5/29/2019 | 30.5 | N | JC88888 | Treatment | Intermediate | **16800** | **16800** | **16800** | **17600** | -- | -- | -- | -- | -- | -- | -- | 16.2 | **1410** | -- | < 0.11 UBJ | -- | **820** | R |
| 114-P1B-MW101I | 114-P1B-MW-101I-20190702 | 7/2/2019 | 28 | N | JC91049 | Treatment | Intermediate | **18900** | **19500** | **16300** | **15900** | -- | -- | -- | -- | -- | -- | -- | 17.0 | **1360** | -- | 1220 | -- | **913** | < 0.20 U |
| 114-P1B-MW101I | 114-P1B-MW-101I-20190801 | 8/1/2019 | 28 | N | JC92580 | Treatment | Intermediate | **19900** | **21000** | **20000** | **19600** | -- | -- | -- | -- | -- | -- | -- | 17.2 | **1280** | -- | 6.6 | -- | **966** | < 0.20 UJ |
| 114-P1B-MW101I | 114-P1B-MW-101I-20190826 | 8/26/2019 | 28 | N | JC93900 | Treatment | Intermediate | **19300** | **20100** | **24000** | **24600** | -- | -- | -- | -- | -- | -- | -- | 16.8 | **1590** | -- | 1130 | -- | **945** | < 0.20 U |
| 114-P1B-MW101I | 114-P1B-MW101I-20190923 | 9/23/2019 | 28 | N | JC95491 | Treatment | Intermediate | **17500** | **18700** | **18900** | **17900** | -- | -- | -- | -- | -- | -- | -- | 15.4 | **1430** | -- | 944 | -- | **877** | < 0.20 UJ |
| 114-P1B-MW101I | 114-P1B-MW-101I-20191030 | 10/30/2019 | 28 | N | JC97696 | Treatment | Intermediate | **25000** | **25400** | **25400** | **25100** | -- | -- | -- | -- | -- | -- | -- | 15.8 | **1140** | -- | 1230 | -- | **799** | < 0.20 U |
| 114-P1B-MW101I | 114-P1B-MW101I-20191123 | 11/23/2019 | 28 | N | JC99155 | Treatment | Intermediate | **33600** | **35100** | **35200** | **35800** | -- | -- | -- | -- | -- | -- | -- | 15.4 | **1120** | -- | 1260 | -- | **782** | -- |
| 114-P1B-MW101I | 114-P1B-MW101I-20191230 | 12/30/2019 | 28 | N | JD1000 | Treatment | Intermediate | **40900** | **41300** | **42900** | **40000** | -- | -- | -- | -- | -- | -- | -- | 16.3 | **961** | -- | 704 J | -- | **730** | -- |
| 114-P1B-MW101I | 114-P1B-MW101I-20200130 | 1/30/2020 | 28 | N | JD2521 | Treatment | Intermediate | **43600** | **45400** | **48900** | **49900** | -- | -- | -- | -- | -- | -- | -- | 15.2 | **950** | -- | 1230 J | -- | **634** | -- |
| 114-P1B-MW101I | 114-P1B-MW-101I-20200227 | 2/27/2020 | 28 | N | JD3810 | Treatment | Intermediate | **40000** | **41400** | **39100** | **40500** | -- | -- | -- | -- | -- | -- | -- | 16.1 | **784** | -- | 1380 | -- | **730** | -- |
| 114-P1B-MW101I | 114-P1B-MW-101I-200200323 | 3/23/2020 | 28 | N | JD5060 | Treatment | Intermediate | **31300** | **30900** | **29300** | **28500** | -- | -- | -- | -- | -- | -- | -- | 17.3 | **797** | -- | 1520 | -- | **639** | -- |
| 114-P1B-MW101I | 114-P1B-MW101I-25.5-20200724 | 7/24/2020 | 25.5 | N | JD10630 | N/A | Intermediate | **19200** | **18600** | **19400** | **20100** | 121.90 | 0.46 | 6.41 | 4.63 | 17.60 | 1.17 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW101I | 114-P1B-MW101I-30.5-20200724 | 7/24/2020 | 30.5 | N | JD10630 | N/A | Intermediate | **18600** | **18800** | **20700** | **21600** | 113.10 | 0.32 | 6.43 | 4.65 | 17.48 | 1.51 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW101I | 114-P1B-MW101I-20200817 | 8/17/2020 | 28 | N | JD11849 | Post-Treatment | Intermediate | **21900** | **21100** | **20100** | **21200** | -- | -- | -- | -- | -- | -- | -- | 18.0 | **857** | < 2.0 U | 753 | 56.0 J | **671** | -- |
| 114-P1B-MW101I | 114-P1B-MW101I-20201112 | 11/12/2020 | 28 | N | JD16144 | Post-Treatment | Intermediate | **17800** | **17300** | **16600** | **17000** | -- | -- | -- | -- | -- | -- | -- | 17.0 | **651** | < 2.0 U | 2530 | < 100 U | **636** | -- |
| 114-P1B-MW101I | 114-P1B-MW101I-20210224 | 2/24/2021 | 28 | N | JD20709 | Post-Treatment | Intermediate | **11800** | **11800** | **10800** | **12400** | -- | -- | -- | -- | -- | -- | -- | 13.3 | **745** | < 2.0 U | 1720 | **< 500 U** | **800** | -- |
| 114-P1B-MW101I | 114-P1B-MW101I-20210929 | 9/29/2021 | 28 | N | JD32460 | Post-Treatment | Intermediate | **186** | **455** | < 33 UB | 52 | -- | -- | -- | -- | -- | -- | -- | 10.8 | **342** | < 2.0 U | 1680 | 220 | **876** | -- |
| 114-P1B-MW101I | 114-P1B-MW101I-20211117 | 11/17/2021 | 28 | N | JD35453 | Post-Treatment | Intermediate | **342** | **569 J** | **230** | **250** | -- | -- | -- | -- | -- | -- | -- | 11.6 | **300** | < 2.0 U | 1780 | 166 | **844** | -- |
| 114-P1B-MW101I | 114-P1B-MW101I-20220223 | 2/23/2022 | 28 | N | JD40159 | Post-Treatment | Intermediate | **91.0** | **197** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 10.2 | **290** | < 2.0 U | 745 | **618** | **1380** | -- |
| 114-P1B-MW101I | 114-P1B-MW101I-20220524 | 5/24/2022 | 28 | N | JD45395 | Post-Treatment | Intermediate | **74.4** | **101** | 5.6 J | 6.8 J | -- | -- | -- | -- | -- | -- | -- | 14.5 | 245 | < 2.0 U | 549 | **749** | **1760** | -- |
| 114-P1B-MW101I | 114-P1B-MW101I-25-20220831 | 8/31/2022 | 25 | N | 4602646891 | N/A | Intermediate | -- | **143** | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW101I | 114-P1B-MW101I-29.6-20220831 | 8/31/2022 | 29.6 | N | 4602646891 | N/A | Intermediate | 65.9 | **319** | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW101I | 114-P1B-MW101I-28.0-20221227 | 12/27/2022 | 28 | N | 4602720661 | Enhanced Attenuation | Intermediate | -- | 69.2 | -- | < 10.0 U | -84.60 | 0.23 | 6.80 | 3.82 | 12.60 | 1.34 | -- | 11.5 J- | R | < 1.0 UJ | -- | 268 | -- | -- |
| 114-P1B-MW101I | 114-P1B-MW101I-28.0-20230411 | 4/11/2023 | 28 | N | 4602780811 | Enhanced Attenuation | Intermediate | -- | **85.9** | -- | < 10.0 UJ | 42.2 | 1.38 | 6.7 | 3.534 | 14.67 | 2.02 | -- | 9.9 | 238 | < 1 U | -- | 142 | **2470** | -- |
| 114-P1B-MW101I | 114-P1B-MW101I-28.0-20230912 | 9/12/2023 | 28 | N | 4602879871 | Total Cr Isopleth | Intermediate | -- | **116** | -- | < 10.0 UJ | 8.3 | 0.99 | 5.95 | 2.934 | 18.3 | 1.2 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW101I | 114-P1B-MW101I-26.0-20231211 | 12/11/2023 | 26 | N | JD78573 | Total Cr Isopleth | Intermediate | -- | 54.3 | -- | < 10 U | 28 | 0.11 | 6.54 | 3.283 | 13.8 | 0.61 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW101I | 114-P1B-MW101I-31.0-20231211 | 12/11/2023 | 31 | N | JD78573 | Total Cr Isopleth | Intermediate | -- | 64.1 | -- | < 10 U | 19.9 | 0.15 | 6.52 | 3.286 | 13.4 | 0.75 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW101I | 114-P1B-MW101I-31.0-20231211-x | 12/11/2023 | 31 | FD | JD78573 | Total Cr Isopleth | Intermediate | -- | 61.5 | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW101I | 114-P1B-MW101I-26.0-20240312 | 3/12/2024 | 26 | N | JD84279 | Total Cr Isopleth | Intermediate | -- | 43.4 | -- | < 10 U | 35.9 | 0.62 | 6.65 | 2.689 | 15 | 0.99 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW101I | 114-P1B-MW101I-31.0-20240312 | 3/12/2024 | 31 | N | JD84279 | Total Cr Isopleth | Intermediate | -- | 41.3 | -- | < 10 U | 47.2 | 0.13 | 6.67 | 2.71 | 14 | 1.03 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW101I | 114-P1B-MW101I-26.0-20240410 | 4/10/2024 | 26 | N | JD86198 | Enhanced Attenuation | Intermediate | -- | 38.3 | -- | < 10 U | 53.2 | 0.18 | 6.75 | 2.898 | 14.1 | 0.53 | -- | 7.3 | 185 | < 2.0 U | -- | 100 J | **3920** | -- |
| 114-P1B-MW101I | 114-P1B-MW101I-31.0-20240410 | 4/10/2024 | 31 | N | JD86198 | Enhanced Attenuation | Intermediate | -- | 39.5 | -- | < 10 U | 68.1 | 0.11 | 6.75 | 2.9 | 14.1 | 0.55 | -- | 7.4 | 186 | < 2.0 U | -- | < 250 U | **4030** | -- |
| 114-P1B-MW101I | 114-P1B-MW101I-26.0-20240916 | 9/16/2024 | 26 | N | JD96194 | Total Cr Isopleth | Intermediate | -- | 48.3 | -- | < 10 U | 18.8 | 1.2 | 6.56 | 3.15 | 21.7 | 0.84 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW101I | 114-P1B-MW101I-31.0-20240916 | 9/16/2024 | 31 | N | JD96194 | Total Cr Isopleth | Intermediate | -- | 62.9 | -- | < 10 U | 0.9 | 0.25 | 6.57 | 3.13 | 19.2 | 0.88 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW101I | 114-P1B-MW101I-26.0-20241216 | 12/16/2024 | 26 | N | JE2745 | Total Cr Isopleth | Intermediate | -- | **75.7** | -- | 5.2 J | -59.6 | 0.06 | 6.75 | 3.33 | 14.6 | 1.76 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW101I | 114-P1B-MW101I-31.0-20241216 | 12/16/2024 | 31 | N | JE2745 | Total Cr Isopleth | Intermediate | -- | **351** | -- | 8.7 J | -18.5 | 0.1 | 6.76 | 3.36 | 14.6 | 9.41 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW102I | 114-P1B-MW102I_20180123 | 1/23/2018 | 29 | N | JC59556 | Baseline | Intermediate | **346** | **724** | 15 | 37 | -- | -- | -- | -- | -- | -- | -- | 13.1 | 107 | < 2.0 U | 4280 | **359** | < 30 U | -- |
| 114-P1B-MW102I | 114-P1B-MW102I-20180502 | 5/2/2018 | 29 | N | JC65331 | Treatment | Intermediate | **1910** | **5950** | **990** | **920** | 100 | 0 | 8.63 | 2.23 | 23.26 | 34.4 | -- | 14.5 | 227 | -- | 6010 | -- | 35.3 | < 0.20 U |
| 114-P1B-MW102I | 114-P1B-MW102I-20180531 | 5/31/2018 | 29 | N | JC67082 | Treatment | Intermediate | **37200** | **38400** | **34500 J** | **35800** | -- | -- | -- | -- | -- | -- | -- | 9.1 | -- | -- | 2020 | -- | **426** | < 0.20 U |
| 114-P1B-MW102I | 114-P1B-MW102I-20180531 | 5/31/2018 | 29 | N | JC67082A | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 155 | -- | -- | -- | -- | -- |
| 114-P1B-MW102I | 114-P1B-MW-102I-20180705 | 7/5/2018 | 29 | N | JC69286 | Treatment | Intermediate | **83400** | **83500** | **71500** | **78600** | 155 | 0.21 | 6.88 | 2.67 | 20.99 | 1.3 | -- | 7.2 | **310** | -- | 1450 | -- | **774** | < 0.20 U |
| 114-P1B-MW102I | BD-20180725 | 7/25/2018 | 29 | FD | JC70550 | Treatment | Intermediate | **70100** | **71100** | **66200** | **74400** | -- | -- | -- | -- | -- | -- | -- | 6.5 | **377** | -- | 37.4 J | -- | **458** | < 0.20 UJ |
| 114-P1B-MW102I | 114-P1B-MW-102I-20180725 | 7/25/2018 | 29 | N | JC70550 | Treatment | Intermediate | **70800** | **72000** | **66500** | **77900** | 209 | 0 | 6.87 | 2.84 | 19.34 | 9.7 | -- | 7.1 | **376** | -- | 293 J | -- | **462** | < 0.20 UJ |
| 114-P1B-MW102I | 114-P1B-MW-102I-180828 | 8/28/2018 | 29 | N | JC72673 | Treatment | Intermediate | **137000** | **133000** | **125000** | **135000** | -- | -- | -- | -- | -- | -- | -- | 8.8 | **374** | -- | 492 | -- | **300** | < 0.20 U |
| 114-P1B-MW102I | 114-P1B-MW102I-20180927 | 9/27/2018 | 29 | N | JC74699 | Treatment | Intermediate | **176000** | **181000** | **161000** | **170000** | -- | -- | -- | -- | -- | -- | -- | 7.3 | **376** | -- | -- | -- | **178** | 0.28 |
| 114-P1B-MW102I | 114-P1B-MW102I-20181030 | 10/30/2018 | 29 | N | JC76905 | Treatment | Intermediate | **290000** | **282000 J** | **239000** | **246000** | -- | -- | -- | -- | -- | -- | -- | 8.6 | **492** | -- | -- | -- | **151** | < 0.20 U |
| 114-P1B-MW102I | 114-P1B-MW102I-181127 | 11/27/2018 | 29 | N | JC78589 | Treatment | Intermediate | **249000** | **261000** | **244000** | **256000** | -- | -- | -- | -- | -- | -- | -- | 9.0 | **424** | -- | 659 | -- | **< 750 U** | < 0.20 UJ |
| 114-P1B-MW102I | 114-P1B-MW102I-181219 | 12/19/2018 | 29 | N | JC80041 | Treatment | Intermediate | **236000** | **309000** | **290000** | **307000** | -- | -- | -- | -- | -- | -- | -- | 13.6 | **556** | -- | -- | -- | **< 150 U** | R |
| 114-P1B-MW102I | 114-P1B-MW102I-20190327 | 3/27/2019 | 29 | N | JC85279 | Treatment | Intermediate | **1080** | **1040** | **830** | **830** | -- | -- | -- | -- | -- | -- | -- | 4.3 | 42.0 | -- | 0.37 | -- | < 15 U | < 0.20 U |
| 114-P1B-MW102I | 114-P1B-MW102I-20190502 | 5/2/2019 | 29 | N | JC87408 | Treatment | Intermediate | **20000** | **19400** | **16700** | **17400** | -- | -- | -- | -- | -- | -- | -- | 2.4 | 56.3 | -- | 0.27 | -- | 32.8 | < 0.20 U |
| 114-P1B-

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P1B-MW102I | 114-P1B-MW102I-20190629 | 6/29/2019 | 29 | N | JC90940 | Treatment | Intermediate | **15600** | **15200** | **< 500 U** | **< 500 U** | -- | -- | -- | -- | -- | -- | -- | 1.8 | 66.3 | -- | < 0.11 U | -- | 32.9 | < 0.20 U |
| 114-P1B-MW102I | 114-P1B-MW102I-20190727 | 7/27/2019 | 29 | N | JC92354 | Treatment | Intermediate | **7110 J** | **4500 J** | **6000 J** | **4000 J** | -- | -- | -- | -- | -- | -- | -- | 2.3 | 38.2 | -- | < 0.11 U | -- | 24.6 | < 0.20 U |
| 114-P1B-MW102I | 114-P1B-MW102I-20190826 | 8/26/2019 | 29 | N | JC93900 | Treatment | Intermediate | **1030** | **1730** | **640** | **640** | -- | -- | -- | -- | -- | -- | -- | 5.0 | 37.4 | -- | < 0.11 U | -- | 18.3 | < 0.20 U |
| 114-P1B-MW102I | 114-P1B-MW102I-20190924 | 9/24/2019 | 29 | N | JC95567 | Treatment | Intermediate | **65900** | **104000** | **47200** | **59100** | -- | -- | -- | -- | -- | -- | -- | 732 | 160 | -- | 1300 | -- | **1570** | 1.5 J |
| 114-P1B-MW102I | 114-P1B-MW-102I-20191031 | 10/31/2019 | 29 | N | JC97796 | Treatment | Intermediate | **1570** | **1840** | **420** | **270** | -- | -- | -- | -- | -- | -- | -- | 52.4 | 46.0 | -- | 151 | -- | **219** | < 0.20 U |
| 114-P1B-MW102I | 114-P1B-MW102I-20191123 | 11/23/2019 | 29 | N | JC99155 | Treatment | Intermediate | **7190** | **7910** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 789 | 96.9 | -- | 4020 | -- | **1680** | -- |
| 114-P1B-MW102I | 114-P1B-MW102I-20191230 | 12/30/2019 | 29 | N | JD1000 | Treatment | Intermediate | 28.3 | **138** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 2.1 | 10.6 | -- | 0.18 | -- | 29.7 | -- |
| 114-P1B-MW102I | 114-P1B-MW102I-20200127 | 1/27/2020 | 29 | N | JD2342 | Treatment | Intermediate | **319** | **529** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 22.2 | 9.6 | -- | 268 | -- | **278** | -- |
| 114-P1B-MW102I | 114-P1B-MW102I-20200224 | 2/24/2020 | 29 | N | JD3618 | Treatment | Intermediate | **633 J** | **720** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 90.2 | 10.9 | -- | 3080 | -- | **1350** | -- |
| 114-P1B-MW102I | 114-P1B-MW102I-20200325 | 3/25/2020 | 29 | N | JD5175 | Treatment | Intermediate | **647** | **724** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 116 | 2.8 | -- | 3460 | -- | **2030** | -- |
| 114-P1B-MW102I | 114-P1B-MW102I-20200812 | 8/12/2020 | 29 | N | JD11593 | Post-Treatment | Intermediate | **133** | **227** | < 10 U | 6.8 J | -- | -- | -- | -- | -- | -- | -- | 11.3 | 16.4 | 1.1 J | 7430 | **1070** | **645** | -- |
| 114-P1B-MW102I | 114-P1B-MW102I-DUP-20201112 | 11/12/2020 | 29 | FD | JD16144 | Post-Treatment | Intermediate | 26.1 | 69.4 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 4.8 | 40.2 | < 2.0 U | 45.4 J | **814 J** | **97.8 J** | -- |
| 114-P1B-MW102I | 114-P1B-MW102I-20201112 | 11/12/2020 | 29 | N | JD16144 | Post-Treatment | Intermediate | 20.5 | **250 J** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 6.0 | 43.2 | < 2.0 U | 9550 J | **577 J** | **71.6 J** | -- |
| 114-P1B-MW102I | 114-P1B-MW102I-20210929 | 9/29/2021 | 29 | N | JD32460 | Post-Treatment | Intermediate | < 10 UB | 24.6 | < 10 UB | < 10 UB | -- | -- | -- | -- | -- | -- | -- | < 2.3 UB | 33.0 | < 2.0 U | 7.06 | < 100 U | 2.7 J | -- |
| 114-P1B-MW102I | 114-P1B-MW-102I-20211118 | 11/18/2021 | 29 | N | JD35530 | Post-Treatment | Intermediate | 14.7 | 64.6 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | < 2.6 UB | 34.7 | < 2.0 U | 3000 | R | **113** | -- |
| 114-P1B-MW102I | 114-P1B-MW102I-20220222 | 2/22/2022 | 29 | N | JD40096 | Post-Treatment | Intermediate | 11.4 | 35.3 | 4.8 J | 7.2 J | -- | -- | -- | -- | -- | -- | -- | < 1.4 UB | 27.3 | < 2.0 U | 4870 | **1310** | **233** | -- |
| 114-P1B-MW102I | 114-P1B-MW102I-20220524 | 5/24/2022 | 29 | N | JD45395 | Post-Treatment | Intermediate | 28.0 | 64.5 | 8.0 J | 9.2 J | -- | -- | -- | -- | -- | -- | -- | 5.1 | 32.1 | < 2.0 U | 4230 | **4520** | **647** | -- |
| 114-P1B-MW102I | 114-P1B-MW102I-30-20221227 | 12/27/2022 | 30 | N | 4602720661 | Enhanced Attenuation | Intermediate | -- | **101** | -- | < 10.0 U | -107.60 | 0.87 | 6.90 | 0.55 | 11.10 | 6.02 | -- | 6.0 J- | R | < 1.0 UJ | -- | **8580** | -- | -- |
| 114-P1B-MW102I | 114-P1B-MW102I-30.0-20230411 | 4/11/2023 | 30 | N | 4602780811 | Enhanced Attenuation | Intermediate | -- | **147** | -- | < 10.0 UJ | -15.7 | 0.67 | 6.64 | 0.827 | 16.24 | 7.7 | -- | 8.6 | 21.7 | < 1 U | -- | **10200** | **1180** | -- |
| 114-P1B-MW102I | 114-P1B-MW102I-30.0-20240411 | 4/11/2024 | 30 | N | JD86320 | Enhanced Attenuation | Intermediate | -- | 31.3 | -- | < 10 U | -169.8 | 0.08 | 6.47 | 0.2411 | 12.8 | 7.57 | -- | 1.1 | 6.1 | < 2.0 U | -- | 244 J | **72.0** | -- |
| 114-P1C-MW101I | 114-P1C-MW101I_20180123 | 1/23/2018 | 25 | N | JC59556 | Baseline | Intermediate | **1490** | **1580** | **930** | **990** | -37 | 1.11 | 8.54 | 3.39 | 14.07 | 9.9 | -- | 18.1 | **763** | < 2.0 U | 7.3 | **665** | **258** | -- |
| 114-P1C-MW101I | 114-P1C-MN101I-20180503 | 5/3/2018 | 25 | N | JC65417 | Treatment | Intermediate | **1550** | **1740** | **540 J** | **560 J** | 122 | 5.38 | 8.27 | 3.08 | 17.8 | 14.7 | -- | 17.4 | **728** | -- | 31.8 | -- | **258** | < 0.20 UJ |
| 114-P1C-MW101I | 114-P1C-MW101I-20180529 | 5/29/2018 | 25 | N | JC66923 | Treatment | Intermediate | **1790** | **3450** | **1600** | **1700** | 82 | 0 | 8.2 | 3.51 | 23.61 | 269 | -- | 16.4 | -- | -- | 116 | -- | **237** | < 0.20 U |
| 114-P1C-MW101I | 114-P1C-MW101I-20180529 | 5/29/2018 | 25 | N | JC66923B | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **298 J** | -- | -- | -- | -- | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-20180702 | 7/2/2018 | 25 | N | JC69148 | Treatment | Intermediate | **1180** | **1740** | **830** | **840** | 82 | 0.21 | 8.05 | 2.89 | 23.4 | 37.4 | -- | 16.4 | **737** | -- | 123 | -- | **225** | < 0.20 U |
| 114-P1C-MW101I | 114-P1C-MW101I-DUP-20180727 | 7/27/2018 | 25 | FD | JC70845 | Treatment | Intermediate | **462 J** | **872** | **440** | **460** | -- | -- | -- | -- | -- | -- | -- | 12.5 | **569** | -- | 44.5 | -- | **87.1 J** | R |
| 114-P1C-MW101I | 114-P1C-MW101I-20180727 | 7/27/2018 | 25 | N | JC70845 | Treatment | Intermediate | **830 J** | **981** | **490** | **510** | 31 | 1.1 | 8.33 | 2.16 | 28.64 | 11.1 | -- | 12.9 | **565** | -- | 41.7 | -- | **141 J** | R |
| 114-P1C-MW101I | 114-P1C-MW-101I-180829 | 8/29/2018 | 25 | N | JC72768 | Treatment | Intermediate | 27.1 | **139** | < 10 U | 11 | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | 21.3 | -- | < 0.11 U | -- | < 15 U | < 0.20 U |
| 114-P1C-MW101I | 114-P1C-MW101I_20180925 | 9/25/2018 | 25 | N | JC74535 | Treatment | Intermediate | **237** | **494** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 13.2 | **621** | -- | -- | -- | **210** | < 0.20 U |
| 114-P1C-MW101I | 114-P1C-MW101I-181101 | 11/1/2018 | 25 | N | JC77088 | Treatment | Intermediate | **68000 J** | **49500 J** | **57000 J** | **59600 J** | -- | -- | -- | -- | -- | -- | -- | 7.4 J | **573** | -- | -- | -- | **153** | < 0.20 UJ |
| 114-P1C-MW101I | 114-P1C-MW-101I-181126 | 11/26/2018 | 25 | N | JC78527 | Treatment | Intermediate | 26.2 | **82.1** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | 19.9 | -- | 0.38 | -- | < 15 U | < 0.20 U |
| 114-P1C-MW101I | 114-P1C-MW101I-181219 | 12/19/2018 | 25 | N | JC80041 | Treatment | Intermediate | **168** | **272** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 18.5 | **899** | -- | -- | -- | **266** | R |
| 114-P1C-MW101I | 114-P1C-MW-101I-20190326 | 3/26/2019 | 25 | N | JC85176 | Treatment | Intermediate | **164** | **166** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 15.5 | **1560** | -- | 34.5 J | -- | **235** | < 0.20 U |
| 114-P1C-MW101I | 114-P1C-MW101I-20190429 | 4/29/2019 | 25 | N | JC87158 | Treatment | Intermediate | **120** | **282** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 16.0 | **979** | -- | 7.2 | -- | **227** | < 0.20 U |
| 114-P1C-MW101I | 114-P1C-MW101I-25.0-20190528 | 5/28/2019 | 25 | N | JC88834 | Treatment | Intermediate | **122** | **235** | < 50 U | < 50 U | -- | -- | -- | -- | -- | -- | -- | 14.9 | **1050** | -- | < 1.2 UBJ | -- | **209** | < 0.20 UJ |
| 114-P1C-MW101I | 114-P1C-MW101I-20190628 | 6/28/2019 | 25 | N | JC90869 | Treatment | Intermediate | **136** | **271** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 13.3 | **1120** | -- | 28.9 | -- | **176** | R |
| 114-P1C-MW101I | 114-P1C-MW101I-DUP-20190726 | 7/26/2019 | 25 | FD | JC92294 | Treatment | Intermediate | 63.5 | **227** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 8.0 | **507** | -- | < 0.40 UB | -- | **80.6** | < 0.20 U |
| 114-P1C-MW101I | 114-P1C-MW101I-20190726 | 7/26/2019 | 25 | N | JC92294 | Treatment | Intermediate | 64.0 | **243** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 8.2 | **578** | -- | < 0.24 UB | -- | **80.8** | < 0.20 U |
| 114-P1C-MW101I | 114-P1C-MW101I_20190828 | 8/28/2019 | 25 | N | JC94021 | Treatment | Intermediate | **124** | **82.3** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 11.5 | **844** | -- | 24.8 | -- | **196** | < 0.20 U |
| 114-P1C-MW101I | 114-P1C-MW101I-20190925 | 9/25/2019 | 25 | N | JC95646 | Treatment | Intermediate | **97.4** | **144** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 11.3 | **864** | -- | 24.4 J | -- | **204** | < 0.20 U |
| 114-P1C-MW101I | 114-P1C-MW101I-20191028 | 10/28/2019 | 25 | N | JC97565 | Treatment | Intermediate | 47.5 | 64.0 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 6.2 | **488** | -- | 11.6 | -- | **81.2** | < 0.20 U |
| 114-P1C-MW101I | 114-P1C-MW101I-20191125 | 11/25/2019 | 25 | N | JC99177 | Treatment | Intermediate | **97.7** | **942** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 10.7 | **1300** | -- | 34.2 | -- | **192** | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-20191227 | 12/27/2019 | 25 | N | JD963 | Treatment | Intermediate | 22.0 | 61.6 | 13 | 14 | -- | -- | -- | -- | -- | -- | -- | 1.8 | 95.6 | -- | 0.21 | -- | R | < 0.20 U |
| 114-P1C-MW101I | 114-P1C-MW101I-20200128 | 1/28/2020 | 25 | N | JD2398 | Treatment | Intermediate | **114** | **253** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 15.5 | **1000** | -- | 30.0 | -- | **217** | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-20200129 | 1/29/2020 | 25 | N | JD2452 | Treatment | Intermediate | **17400** | **16900** | **18000** | **19000** | -- | -- | -- | -- | -- | -- | -- | 3.6 | 176 | -- | 2.0 | -- | **204** | -- |
| 114-P1C-MW101I | 114-P1C-MW-101I-20200225 | 2/25/2020 | 25 | N | JD3675 | Treatment | Intermediate | 41.6 | **72.3 J** | 19 | 18 | -- | -- | -- | -- | -- | -- | -- | 3.3 | 209 | -- | < 0.29 UB | -- | < 15 U | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-200200323 | 3/23/2020 | 25 | N | JD5060 | Treatment | Intermediate | **111** | **160** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 16.7 | **914** | -- | 14.8 | -- | **256** | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-20200811 | 8/11/2020 | 25 | N | JD11542 | Treatment | Intermediate | 4.4 J | 30.6 | < 10 U | 8.1 J | -- | -- | -- | -- | -- | -- | -- | 0.99 J | 49.0 | < 2.0 U | < 0.11 U | < 100 U | < 15 U | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-20201112 | 11/12/2020 | 25 | N | JD16144 | Treatment | Intermediate | 16.0 | 37.2 | < 10 U | 5.8 J | -- | -- | -- | -- | -- | -- | -- | 2.0 | 40.7 | < 2.0 U | 0.18 | 77.0 J | 12.0 J | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-20201215 | 12/15/2020 | 34 | N | JD17793 | Treatment | Intermediate | 3.9 B | 17.1 | < 10 U | < 10 U | -109.6 | 0.71 | 8.35 | 0.047 | -- | 6 | -- | < 1.0 U | 4.9 | -- | -- | -- | -- | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-30.0-20210111 | 1/11/2021 | 30 | N | JD18861 | Treatment | Intermediate | 50.6 | 61.8 | < 50 U | < 50 U | -91.6 | 0.59 | 7.69 | 0.82 | -- | 3 | -- | 331 | **352** | -- | -- | -- | -- | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-30.0-20210215 | 2/15/2021 | 30 | N | JD20381 | Treatment | Intermediate | 21.2 | 31.6 | < 10 U | < 10 U | -189.7 | 0.55 | 7.05 | 0.482 | -- | 5.53 | -- | 57.6 | 32.8 | -- | -- | -- | -- | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-30-20210315 | 3/15/2021 | 30 | N | JD21732 | Treatment | Intermediate | **126** | **270** | 29 | < 10 U | -300.1 ** | 30.89 ** | 7.22 | 2.978 | -- | 14.3 | -- | 272 | 44.9 | -- | -- | -- | -- | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-30-20210426 | 4/26/2021 | 30 | N | 4602329401 | Treatment | Intermediate | **138** | **169** | < 10.0 U | < 20.0 U | -295.1 | 0.52 | 7.24 | 2.2 | -- | 9.82 | -- | 113 | 13.4 | -- | 35000 | 108 J | **189** | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-33.0-20210526 | 5/26/2021 | 33 | N | 4602352461 | Treatment | Intermediate | **209** | **156** | < 10.0 U | < 10.0 U | -237.6 | 0.02 | 9.38 | 2.316 | -- | 4.12 | -- | 57.0 | 18.5 | -- | 23000 | **< 600 U** | **215** | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-33.0-20210624 | 6/24/2021 | 33 | N | 4602373191 | Treatment | Intermediate | **127** | **149** | < 10.0 U | < 10.0 U | -220.1 | 4.22 | 7.29 | 1.94 | -- | 4.58 | -- | 45.1 | 26.0 | -- | 32000 | **< 600 U** | **194** | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-32.5-20210720 | 7/20/2021 | 32.5 | N | 4602391431 | Treatment | Intermediate | **158** | **209** | < 10.0 U | < 10.0 U | -300.8 | 5.09 | 7.76 | 2.397 | -- | 4.52 | -- | 45.9 | 12.4 | -- | 29000 | 74.8 J | **238** | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-33.0-20210825 | 8/25/2021 | 33 | N | 4602415661 | Treatment | Intermediate | **143** | **153** | < 10.0 U | < 10.0 U | -262.8 | 0.71 | 7.64 | 1.772 | -- | 6.23 | -- | 38.4 *2 | 34.0 | -- | 19000 | < 120 U | **195** | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-33.0-20210921 | 9/21/2021 | 33 | N | 4602432721 | Treatment | Intermediate | **137** | **183** | < 10.0 U | < 10.0 U | -299.1 | 1.65 | 7.69 | 2.375 | -- | 8.68 | -- | 22.9 | 8.66 | -- | 9000 | 188 | **192** | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-20211015 | 10/18/2021 | 33 | N | 4602453121 | Treatment | Intermediate | 21.8 | 51.4 | < 10.0 U | < 10.0 U | -91.1 | 0.51 | 7.28 | 0.254 | -- | 1.3 | -- | 9.4 | 8.03 | -- | 8800 | **333** | **50.0** | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-33.0-20211119 | 11/19/2021 | 33 | N | 4602476321 | Treatment | Intermediate | **170** | **112** | < 10.0 U | < 10.0 U | 115.2 | 0.76 | 7.62 | 1.009 | -- | 5.22 | -- | 37.7 | 3.46 | -- | -- | 256 | **201** | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-30-20211213 | 12/13/2021 | 30 | N | 4602490301 | Treatment | Intermediate | **120** | **166** | < 10.0 U | < 10.0 U | -240.2 | 0.05 | 7.45 | 3.094 | -- | 10.79 | -- | 37.4 B | 4.11 | -- | 24000 | 240 | **200** | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-33-20220112 | 1/12/2022 | 33 | N | 4602505551 | Treatment | Intermediate | **132** | **153** | < 10.0 U | < 10.0 U | -290 | 0 | 7.76 | 2.8 | -- | 2.19 | -- | 39.6 | 16.6 | -- | 24000 | 247 | **217** | -- |
| 114-P1C-MW101I | 114-P1C-MW-101I-33-20220211 | 2/11/2022 | 33 | N | 4602523441 | Treatment | Intermediate | **97.4** | **154** | < 10.0 U | < 10.0 U | -275.7 | 0.05 | 7.51 | 3.41 | -- | 9.53 | -- | 41.8 | 38.4 | -- | 25000 | **780** | **604** | -- |
| 114-P1C-MW101I | 114-P1C-MW-101I-33-20220211-X | 2/11/2022 | 33 | FD | 4602523441 | Treatment | Intermediate | **101** | **162** | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 41.8 | 6.85 | -- | 25000 | **799** | **614** | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-33-20220314 | 3/14/2022 | 33 | N | 4602542351 | Treatment | Intermediate | < 4.0 U | **99.3** | < 10.0 U | < 10.0 U | -198.7 | 0.16 | 7.54 | 1.49 | -- | 8.4 | -- | 32.4 | 12.5 | -- | 13000 | < 120 U | < 8.0 U | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-33-0-20220412 | 4/12/2022 | 33 | N | 4602561091 | Treatment | Intermediate | **87.0** | **89.7** | < 10.0 UH | < 10.0 UH | -264.4 | 0.02 | 7.98 | 1.246 | 12.31 | 1.44 | -- | 30.2 | 7.88 | -- | 8000 | 115 J | **137** | -- |
| 114-P1C-MW101I | 114-P1C-MW-101I-33-20220512 | 5/12/2022 | 33 | N | 4602580081 | Treatment | Intermediate | **125** | **117** | < 10.0 U | < 10.0 U | -275.5 | 0.01 | 7.57 | 2.521 | 16.60 | 3.54 | -- | 37.5 | 23.6 | -- | 19000 | **319** | **205** | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-33-0-20220607 | 6/7/2022 | 33 | N | 4602595691 | Treatment | Intermediate | -- | **122** | -- | < 10.0 U | -279.4 | 0.13 | 7.44 | 2.687 | 17.69 | 9.98 | -- | 35.3 | 9.90 | -- | -- | -- | -- | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-33-0-20220712 | 7/12/2022 | 33 | N | 4602617771 | Treatment | Intermediate | -- | **151** | -- | < 10.0 U | -224.8 | 0.85 | 7.52 | 2.690 | 18.71 | 4.91 | -- | 38.9 | 9.97 | -- | -- | -- | -- | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-33-20220819 | 8/19/2022 | 33 | N | 4602641451 | Treatment | Intermediate | -- | **134** | -- | < 10.0 U | -285.7 | 7.31 | 7.50 | 4.510 | 19.62 | 5.38 | -- | 40.7 | 5.38 | -- | 283 | **240** | -- | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-27.5-20221209 | 12/9/2022 | 27.5 | N | 4602710741 | Post-Treatment | Intermediate | -- | **143** | -- | < 10.0 U | -85.1 | 1.97 | 7.99 | 2.655 | 12.2 | 2.41 | -- | 42.1 J- | 27.0 | 2.8 | -- | **388** | **273** | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-32.5-20221209 | 12/9/2022 | 32.5 | N | 4602710741 | Post-Treatment | Intermediate | -- | 41.3 | -- | < 10.0 U | -46.1 | 1.54 | 8.23 | 2.953 | 12.48 | 2.94 | -- | 11.9 J- | **368** | < 1 U | -- | **10400** | **21100** | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-32.4-20230215 | 2/15/2023 | 32.4 | N | 4602746811 | Post-Treatment | Intermediate | -- | **151** | -- | < 10.0 U | -178.8 | 0.26 | 7.18 | 2.708 | 14.8 | 4.8 | -- | 38.7 | 11.2 J | < 1 U | -- | **647** | **290** | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-32.4-20230215-X | 2/15/2023 | 32.4 | FD | 4602746811 | Post-Treatment | Intermediate | -- | **148** | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 38.7 | 20.0 J | < 1 U | -- | **635** | **287** | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-37.4-20230215 | 2/15/2023 | 37.4 | N | 4602746811 | Post-Treatment | Intermediate | -- | **145** | -- | < 10.0 U | -136.8 | 0.31 | 7.23 | 3.033 | 14.2 | 4.5 | -- | 37.9 | 5.50 | < 1 U | -- | **493** | **301** | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-37.4-20230613 | 6/13/2023 | 37.4 | N | 4602822041 | Post-Treatment | Intermediate | -- | **143** | -- | < 10.0 U | -135.2 | 0.52 | 7.06 | 2.374 | 19.97 | 7.61 | -- | 30.4 | 18.7 | < 1 U | -- | **526** | **262** | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-37.4-20230818 | 8/18/2023 | 37.4 | N | 4602864961 | Post-Treatment | Intermediate | **78.1** | **103** | < 10.0 U | < 10.0 U | -154.6 | 0.19 | 7.36 | 3.82 | 18.01 | 12.9 | -- | 28.7 J- | 16.9 | < 1 U | -- | **850** | **636** | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-37.4-20231120 | 11/20/2023 | 37.4 | N | JD77343 | Post-Treatment | Intermediate | -- | **105** | -- | < 10 UJ | -366.4 | 1.54 | 8.19 | 2.451 | 15.8 | 8.31 | -- | 24.4 | 46.9 | -- | -- | -- | -- | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-37.4-20240220 | 2/20/2024 | 37.4 | N | JD82805 | Post-Treatment | Intermediate | -- | **106** | -- | < 10 U | -401 | 0.34 | 7.23 | 2.546 | 11.2 | 4.5 | -- | 27.0 | 77.8 | -- | -- | -- | -- | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-37.4-20240516 | 5/16/2024 | 37.4 | N | JD88618 | Post-Treatment | Intermediate | -- | **104** | -- | < 10 U | -139.1 | 0.15 | 7.28 | 2.422 | 15.3 | 5.56 | -- | 28.7 J- | 114 | -- | -- | -- | -- | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-37.4-20240820 | 8/20/2024 | 37.4 | N | JD94507 | Post-Treatment | Intermediate | -- | **138** | -- | 5.0 J | -156.4 | 0.33 | 7.16 | 3.03 | 20.8 | 9.15 | -- | 29.8 | 148 | -- | -- | -- | -- | -- |
| 114-P1C-MW101I | 114-P1C-MW101I-37.4-20241122 | 11/22/2024 | 37.4 | N | JE1234 | Post-Treatment | Intermediate | -- | **108** | -- | < 10 U | -169.2 | 0.35 | 7.12 | 3.08 | 14.3 | 2.55 | -- | 23.9 J- | 193 | -- | -- | -- | -- | -- |
| 114-P1C-PZ1 | 114-P1C-PZ1-20180125 | 1/25/2018 | 26 | N | JC59745 | Baseline | Intermediate | 32.0 | **139** | < 10 U | < 10 U | 13 | 0.93 | 6.96 | 3.48 | 11.71 | 0 | -- | 2.9 | **1090** | < 2.0 U | 230 | **505** | **4230** | -- |
| 114-P1C-PZ1 | 114-P1C-PZ1-20180501 | 5/1/2018 | 26 | N | JC65257 | Treatment | Intermediate | **243000** | **207000** | **328000** | **326000** | 59 | 0 | 10.16 | 27.1 | 24.61 | 412 | -- | 82.9 | **5010** | -- | 2070 | -- | **< 50 U** | < 0.20 U |
| 114-P1C-PZ1 | 114-P1C-PZ1-20180529 | 5/29/2018 | 26 | N | JC66923 | Treatment | Intermediate | 12.4 | **178** | < 10 U | < 10 U | 19 | 0 | 6.86 | 3.74 | 22.12 | 0.6 | -- | 2.9 | -- | -- | 413 | -- | **6120** | < 0.20 U |
| 114-P1C-PZ1 | 114-P1C-PZ1-20180529 | 5/29/2018 | 26 | N | JC66923B | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **1530 J** | -- | -- | -- | -- | -- |
| 114-P1C-PZ1 | 114-P1C-PZ1-20180702 | 7/2/2018 | 26 | N | JC69148 | Treatment | Intermediate | 12.5 | **358** | < 10 U | < 10 U | 39 | 0.37 | 6.89 | 2.79 | 31.86 | 0 | -- | 2.6 | **1150** | -- | 568 | -- | **6440** | < 0.20 U |
| 114-P1C-PZ1 | 114-P1C-PZ1-20180730 | 7/30/2018 | 26 | N | JC70908 | Treatment | Intermediate | 15.7 | **138** | < 10 U | < 10 U | 69 | 0 | 6.75 | 3.03 | 19.9 | 0 | -- | 2.2 | **1370** | -- | 380 | -- | **6160** | < 0.20 U |
| 114-P1C-PZ1 | 114-P1C-PZ1-180829 | 8/29/2018 | 26 | N | JC72768 | Treatment | Intermediate | 11.6 | **230** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 3.3 | **1270** | -- | 423 | -- | **5750** | < 0.20 U |
| 114-P1C-PZ1 | 114-P1C-PZ1-20180926 | 9/26/2018 | 26 | N | JC74616 | Treatment | Intermediate | 15.9 | 33.2 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 2.9 | **1370** | -- | -- | -- | **6180** | 0.21 |
| 114-P1C-PZ1 | 114-P1C-PZ1-20181031 | 10/31/2018 | 26 | N | JC76975 | Treatment | Intermediate | 13.6 | 20.9 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 2.8 | **1270** | -- | -- | -- | **5730** | < 0.20 U |
| 114-P1C-PZ1 | 114-P1C-PZ1-181126 | 11/26/2018 | 26 | N | JC78527 | Treatment | Intermediate | 12.8 | 18.1 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 2.8 | **1260** | -- | 16.2 | -- | **5880** | < 0.20 U |
| 114-P1C-PZ1 | 114-P1C-PZ1_20181220 | 12/20/2018 | 26 | N | JC80137 | Treatment | Intermediate | 16.3 J | 22.4 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 2.5 | **1230** | -- | -- | -- | **6510** | R |
| 114-P1C-PZ1 | 114-P1C-PZ1-20190325 | 3/25/2019 | 26 | N | JC85107 | Treatment | Intermediate | 10.4 | 13.6 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 2.2 | **1360** | -- | 85.3 | -- | **4870** | < 0.20 U |
| 114-P1C-PZ1 | 114-P1C-PZ1-20190629 | 6/29/2019 | 26 | N | JC90940 | Treatment | Intermediate | < 10 U | 32.7 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 1.8 | **1050** | -- | 92.4 | -- | **3980** | < 0.20 U |
| 114-P1C-PZ1 | 114-P1C-PZ1-20190726 | 7/26/2019 | 26 | N | JC92294 | Treatment | Intermediate | < 10 U | **115** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 2.3 | **850** | -- | 2.6 | -- | **3870** | < 0.20 U |
| 114-P1C-PZ1 | 114-P1C-PZ1-20190828 | 8/28/2019 | 26 | N | JC94021 | Treatment | Intermediate | **383** | 19.1 | **140** | < 10 U | -- | -- | -- | -- | -- | -- | -- | 1.7 | **980** | -- | 207 | -- | **3850** | < 0.20 U |
| 114-P1C-PZ1 | 114-P1C-PZ1-20190925 | 9/25/2019 | 26 | N | JC95646 | Treatment | Intermediate | 11.5 | **700** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 2.5 | **918** | -- | 45.6 J | -- | **3500** | < 0.20 U |
| 114-P1C-PZ1 | 114-P1C-PZ1-20191028 | 10/28/2019 | 26 | N | JC97565 | Treatment | Intermediate | 20.6 | **278** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 2.8 | **990** | -- | 224 | -- | **2940** | < 0.20 U |
| 114-P1C-PZ1 | 114-P1C-PZ1-20191125 | 11/25/2019 | 26 | N | JC99177 | Treatment | Intermediate | 13.6 | **384** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 1.9 | **1120** | -- | 217 | -- | **3880** | -- |
| 114-P1C-PZ1 | 114-P1C-PZ1-20191226 | 12/26/2019 | 26 | N | JD923 | Treatment | Intermediate | 10.8 J | **250** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 2.5 | **837** | -- | 2.97 | -- | **4140** | -- |
| 114-P1C-PZ1 | 114-P1C-PZ1-20

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P1C-PZ1 | 114-P1C-PZ1-20200812 | 8/12/2020 | 26 | N | JD11593 | Post-Treatment | Intermediate | 11.0 | 34.6 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 2.5 | **905** | < 2.0 U | 92.0 | **475** | **3570** | -- |
| 114-P1C-PZ1 | 114-P1C-PZ1-20201110 | 11/10/2020 | 26 | N | JD15969 | Post-Treatment | Intermediate | 30.0 | 55.2 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 67.6 | **366 J** | < 2.0 U | 51.6 | **1660** | **6190** | -- |
| 114-P1C-PZ1 | 114-P1C-PZ1-20210225 | 2/25/2021 | 26 | N | JD20780 | Post-Treatment | Intermediate | 33.0 | 32.1 | 14 | 15 | -- | -- | -- | -- | -- | -- | -- | 20.6 | **482** | 2.8 | 1030 | **3420** | **6580** | -- |
| 114-P1C-PZ1 | 114-P1C-PZ120210928 | 9/28/2021 | 26 | N | JD32334 | Post-Treatment | Intermediate | 41.8 | 57.6 | **72 J** | **72 J** | -- | -- | -- | -- | -- | -- | -- | 9.6 | **464** | 1.2 J | 9110 | **9600** | **7830** | -- |
| 114-P1C-PZ1 | 114-P1C-PZ1-20211117 | 11/17/2021 | 26 | N | JD35453 | Post-Treatment | Intermediate | < 10 U | 4.8 J | 8.9 J | < 10 U | -- | -- | -- | -- | -- | -- | -- | 10.7 | **515** | < 2.0 U | 1280 | **16200** | **1840** | -- |
| 114-P1C-PZ1 | 114-P1C-PZ1-20220223 | 2/23/2022 | 26 | N | JD40159 | Post-Treatment | Intermediate | **3110** | **228** | R | < 10 U | -- | -- | -- | -- | -- | -- | -- | 750 | 174 | < 400 U | 3.36 | R | R | -- |
| 114-P1C-PZ1 | 114-P1C-PZ1-20220525_WG | 5/25/2022 | 26 | N | JD45473 | Post-Treatment | Intermediate | -- | **41900** | **< 500 U** | **< 500 U** | -- | -- | -- | -- | -- | -- | -- | 105 J | 148 J | 43000 | < 0.39 UB | -- | -- | -- |
| 114-P1C-PZ2 | 114-P1C-PZ2-20180125 | 1/25/2018 | 20 | N | JC59745 | Baseline | Intermediate | 68.3 | **104** | < 10 U | < 10 U | -87 | 0.64 | 6.59 | 7.75 | 13.01 | 0.7 | -- | 6.7 | **776** | < 2.0 U | 743 | **1750** | **2440** | -- |
| 114-P1C-PZ2 | 114-P1C-PZ2-20180501 | 5/1/2018 | 20 | N | JC65257 | Treatment | Intermediate | 14.8 | 47.3 | < 10 U | < 10 U | 217 | 6.29 | 7.7 | 3.55 | 25.14 | 7.5 | -- | 2.9 | **617** | -- | 378 | -- | **4960** | < 0.20 U |
| 114-P1C-PZ2 | 114-P1C-PZ2-20180529 | 5/29/2018 | 20 | N | JC66923 | Treatment | Intermediate | **251** | **642** | **170** | **180** | 56 | 0 | 7.2 | 6.59 | 22.74 | 45.1 | -- | 4.3 | -- | -- | 150 | -- | **3560** | < 0.20 U |
| 114-P1C-PZ2 | 114-P1C-PZ2-20180529 | 5/29/2018 | 20 | N | JC66923B | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **1160 J** | -- | -- | -- | -- | -- |
| 114-P1C-PZ2 | 114-P1C-PZ2-20180702 | 7/2/2018 | 20 | N | JC69148 | Treatment | Intermediate | **472** | **687** | **550** | **570** | 111 | 3.6 | 7.34 | 5.51 | 31.1 | 33.1 | -- | 5.1 | **1090** | -- | 292 | -- | **3360** | < 0.20 U |
| 114-P1C-PZ2 | 114-P1C-PZ2-180829 | 8/29/2018 | 20 | N | JC72768 | Treatment | Intermediate | **1100** | **1360** | **1300** | **1400** | -- | -- | -- | -- | -- | -- | -- | 4.1 | **1250** | -- | 143 | -- | **3330** | < 0.20 U |
| 114-P1C-PZ2 | 114-P1C-PZ2-20180926 | 9/26/2018 | 20 | N | JC74616 | Treatment | Intermediate | **23400** | **26100** | **25700** | **27100** | -- | -- | -- | -- | -- | -- | -- | 5.1 | **907** | -- | -- | -- | **3200** | < 0.20 U |
| 114-P1C-PZ2 | 114-P1C-PZ2-20181031 | 10/31/2018 | 20 | N | JC76975 | Treatment | Intermediate | **25500** | **25800** | **23400** | **24200** | -- | -- | -- | -- | -- | -- | -- | 5.3 | **923** | -- | -- | -- | **3240** | < 0.20 U |
| 114-P1C-PZ2 | 114-P1C-PZ2-181126 | 11/26/2018 | 20 | N | JC78527 | Treatment | Intermediate | **16600** | **16500** | **12000** | **13300** | -- | -- | -- | -- | -- | -- | -- | 4.4 | **1340** | -- | 28.5 | -- | **4000** | < 0.20 U |
| 114-P1C-PZ2 | 114-P1C-PZ2_20181220 | 12/20/2018 | 20 | N | JC80137 | Treatment | Intermediate | **3420 J** | **4140 J** | **3400** | **3700** | -- | -- | -- | -- | -- | -- | -- | 4.3 | **1100** | -- | -- | -- | **2330** | R |
| 114-P1C-PZ2 | 114-P1C-PZ2-20190326 | 3/26/2019 | 20 | N | JC85176 | Treatment | Intermediate | **79.9** | **82.5** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 4.1 | **1410** | -- | 279 | -- | **2370** | < 0.20 U |
| 114-P1C-PZ2 | 114-P1C-PZ2-20190701 | 7/1/2019 | 20 | N | JC90966 | Treatment | Intermediate | 27.9 | 53.3 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 3.5 | **1110** | -- | 431 | -- | **1800** | < 0.20 U |
| 114-P1C-PZ2 | 114-P1C-PZ2-20190729 | 7/29/2019 | 20 | N | JC92380 | Treatment | Intermediate | 24.7 | 57.5 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 3.6 | **1020** | -- | 93.3 | -- | **1770** | < 0.20 U |
| 114-P1C-PZ2 | 114-P1C-PZ2-20190828 | 8/28/2019 | 20 | N | JC94021 | Treatment | Intermediate | 27.6 | **109** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 3.1 | **1010** | -- | 345 | -- | **1790** | < 0.20 U |
| 114-P1C-PZ2 | 114-P1C-PZ2-20190927 | 9/27/2019 | 20 | N | JC95808 | Treatment | Intermediate | 29.9 | **87.2** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 3.8 | **1010** | -- | 474 | -- | **1580** | R |
| 114-P1C-PZ2 | 114-P1C-PZ2-20191028 | 10/28/2019 | 20 | N | JC97565 | Treatment | Intermediate | 25.0 | **142** | < 10 U | 10 | -- | -- | -- | -- | -- | -- | -- | 3.8 | **1040** | -- | 699 | -- | **1730** | < 0.20 U |
| 114-P1C-PZ2 | 114-P1C-PZ2-20191126 | 11/26/2019 | 20 | N | JC99269 | Treatment | Intermediate | **95.6** | **133 J** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 3.7 | **1110** | -- | 281 | -- | **1890** | -- |
| 114-P1C-PZ2 | 114-P1C-PZ2-20191226 | 12/26/2019 | 20 | N | JD923 | Treatment | Intermediate | 39.2 J | **81.6** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 3.4 | **1290** | -- | 92.3 | -- | **2540** | -- |
| 114-P1C-PZ2 | 114-P1C-PZ2-20200128 | 1/28/2020 | 20 | N | JD2398 | Treatment | Intermediate | 31.8 | **75.0** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 3.6 | **1120** | -- | < 1.7 UB | -- | **2220** | -- |
| 114-P1C-PZ2 | 114-P1C-PZ2-20200225 | 2/25/2020 | 20 | N | JD3675 | Treatment | Intermediate | **131** | **234 J** | **110** | **120** | -- | -- | -- | -- | -- | -- | -- | 3.3 | **1060** | -- | < 0.11 U | -- | **2800** | -- |
| 114-P1C-PZ2 | 114-P1C-PZ2-200200323 | 3/23/2020 | 20 | N | JD5060 | Treatment | Intermediate | **253** | **387** | **100** | **110** | -- | -- | -- | -- | -- | -- | -- | 4.6 | **1200** | -- | 220 | -- | **2410** | -- |
| 114-P1C-PZ2 | 114-P1C-PZ2-20200812 | 8/12/2020 | 20 | N | JD11593 | Post-Treatment | Intermediate | 24.5 | 27.2 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 3.7 | **862** | < 2.0 U | 212 | **473** | **1700** | -- |
| 114-P1C-PZ2 | 114-P1C-PZ2-20201110 | 11/10/2020 | 20 | N | JD15969 | Post-Treatment | Intermediate | **173** | **174** | < 50 U | < 50 U | -- | -- | -- | -- | -- | -- | -- | 152 | **330 J** | 14.6 | 51.3 | **760** | **2650** | -- |
| 114-P1C-PZ2 | 114-P1C-PZ2-30.0-20201215 | 12/15/2020 | 30 | N | JD17793 | Treatment | Intermediate | **270** | **289** | < 50 U | < 50 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1C-PZ2 | 114-P1C-PZ2-30.0-20201216 | 12/16/2020 | 30 | N | JD17868 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 223 | 37.2 | -- | -- | -- | -- | -- |
| 114-P1C-PZ2 | 114-P1C-PZ2-31.0-20210112 | 1/12/2021 | 31 | N | JD18928 | Treatment | Intermediate | **138** | **201** | < 10 U | 6.3 B | -- | -- | -- | -- | -- | -- | -- | 144 | 1.6 B | -- | -- | -- | -- | -- |
| 114-P1C-PZ2 | 114-P1C-PZ2-30.0-20210216 | 2/16/2021 | 30 | N | JD20408 | Treatment | Intermediate | **184** | **261** | 17 | 22 | -- | -- | -- | -- | -- | -- | -- | 237 | 2.1 | -- | -- | -- | -- | -- |
| 114-P1C-PZ2 | 114-P1C-PZ220210928 | 9/28/2021 | 20 | N | JD32334 | Post-Treatment | Intermediate | **166** | **396** | 45 J | **72 J** | -- | -- | -- | -- | -- | -- | -- | 55.8 | 10.3 | < 2.0 U | 10700 | **36800** | **3080** | -- |
| 114-P1C-PZ2 | 114-P1C-PZ2-20211117 | 11/17/2021 | 20 | N | JD35453 | Post-Treatment | Intermediate | **127** | **155 J** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 49.5 | < 8.3 UB | 5.6 | 11800 | 263 | **202** | -- |
| 114-P1C-PZ2 | 114-P1C-PZ2-20220222 | 2/22/2022 | 20 | N | JD40096 | Post-Treatment | Intermediate | **161** | **503** | **100** | **110** | -- | -- | -- | -- | -- | -- | -- | 32.7 | 10.8 | 0.60 J | 7200 | **46100** | **5570 J** | -- |
| 114-P1C-PZ2 | 114-P1C-PZ2-20220526 | 5/26/2022 | 20 | N | JD45556 | Post-Treatment | Intermediate | **185** | **814** | 18 | 23 | -- | -- | -- | -- | -- | -- | -- | 51.4 | 83.8 | < 2.0 U | 9650 | **60500** | **6390** | -- |
| 114-P1-MW-1I | 114-P1-MW-1I-20180129 | 1/29/2018 | 40 | N | JC59916 | Baseline | Intermediate | **158000** | **161000** | **145000** | **153000** | 272 | 0 | 7.22 | 3.93 | 10.39 | 22.6 | -- | 7.2 | **271** | < 2.0 U | 2630 | **< 1000 U** | **881** | -- |
| 114-P1-MW-1I | 114-P1-MW1I-20180430 | 4/30/2018 | 40 | N | JC65192 | Treatment | Intermediate | **138000** | **136000** | **86000** | **86800** | 260 | 0 | 6.99 | 5.82 | 13 | 623 | -- | 7.4 | 236 | -- | 188 | -- | **1610** | < 0.20 UJ |
| 114-P1-MW-1I | 114-P1-MW1I-20180530 | 5/30/2018 | 40 | N | JC66984 | Treatment | Intermediate | **92400** | **81200** | **75800** | **82700** | -- | -- | -- | -- | -- | -- | -- | 5.9 | -- | -- | 1020 | -- | **1090** | < 0.20 U |
| 114-P1-MW-1I | 114-P1-MW1I-20180530 | 5/30/2018 | 40 | N | JC66984A | Treatment | Intermediate | -- | -- | -- | -- | 211 | 0.67 | 6.93 | 3.51 | 21.92 | 183 | -- | -- | 187 J | -- | -- | -- | -- | -- |
| 114-P1-MW-1I | 114-P1-MW-1I-20180703 | 7/3/2018 | 40 | N | JC69235 | Treatment | Intermediate | **73100** | **71800** | **78700** | **74600** | 219 | 0.63 | 6.42 | 3.53 | 18.51 | 24.5 | -- | 5.7 | 200 | -- | 1770 | -- | **358** | < 0.20 UJ |
| 114-P1-MW-1I | 114-P1-MW-1I-180828 | 8/28/2018 | 40 | N | JC72673 | Treatment | Intermediate | **83100** | **98000** | **87600** | **96100** | -- | -- | -- | -- | -- | -- | -- | 12.2 | **707** | -- | 980 | -- | **610** | < 0.20 U |
| 114-P1-MW-1I | 114-P1-MW1I-20180924 | 9/24/2018 | 40 | N | JC74476 | Treatment | Intermediate | **39200** | **43200** | **37000** | **40400 J** | -- | -- | -- | -- | -- | -- | -- | 18.6 | **1380** | -- | -- | -- | **669** | < 0.20 U |
| 114-P1-MW-1I | 114-P1-MW-1I-DUP-20181030 | 10/30/2018 | 40 | FD | JC76905 | Treatment | Intermediate | **28600** | **33800 J** | **31400** | **31300** | -- | -- | -- | -- | -- | -- | -- | 26.9 | **1490** | -- | -- | -- | **995** | < 0.20 U |
| 114-P1-MW-1I | 114-P1-MW-1I-20181030 | 10/30/2018 | 40 | N | JC76905 | Treatment | Intermediate | **25800** | **42700 J** | **36500** | **35800** | -- | -- | -- | -- | -- | -- | -- | 24.2 | **1500** | -- | -- | -- | **1000** | < 0.20 U |
| 114-P1-MW-1I | 114-P1-MW-1I-181126 | 11/26/2018 | 40 | N | JC78527 | Treatment | Intermediate | **90400 J** | **67600 J** | **63100** | **69200** | -- | -- | -- | -- | -- | -- | -- | 22.7 | **1350** | -- | 2840 | -- | **1490** | R |
| 114-P1-MW-1I | 114-P1-MW-1I-181219 | 12/19/2018 | 40 | N | JC80041 | Treatment | Intermediate | **135000** | **124000** | **119000** | **127000** | -- | -- | -- | -- | -- | -- | -- | 26.5 | **988** | -- | -- | -- | **1530** | R |
| 114-P1-MW-1I | 114-P1-MW-1I-20190327 | 3/27/2019 | 40 | N | JC85279 | Treatment | Intermediate | **31800** | **31600** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 33.0 | **1140** | -- | 2500 | -- | **3130** | < 0.20 U |
| 114-P1-MW-1I | 114-P1-MW-1I-20190429 | 4/29/2019 | 40 | N | JC87158 | Treatment | Intermediate | **45100** | **43500** | **45000** | **46100** | -- | -- | -- | -- | -- | -- | -- | 30.5 | **1010** | -- | 1610 | -- | **3170** | < 0.20 U |
| 114-P1-MW-1I | 114-P1-MW-1I-23.0-20190530 | 5/30/2019 | 23 | N | JC88958 | Treatment | Intermediate | **57600** | **58600** | **48500** | **50600** | -- | -- | -- | -- | -- | -- | -- | 21.1 | **984** | -- | 2430 J | -- | **2830** | R |
| 114-P1-MW-1I | 114-P1-MW-1I-28.0-20190530 | 5/30/2019 | 28 | N | JC88958 | Treatment | Intermediate | **61700** | **62600** | **58800** | **56900** | -- | -- | -- | -- | -- | -- | -- | 22.6 | **1130** | -- | 1290 J | -- | **2940** | R |
| 114-P1-MW-1I | 114-P1-MW-1I-33.0-20190530 | 5/30/2019 | 33 | N | JC88958 | Treatment | Intermediate | **72900** | **78200** | **81700** | **85000** | -- | -- | -- | -- | -- | -- | -- | 24.3 | **1230** | -- | 740 J | -- | **3140** | R |
| 114-P1-MW-1I | 114-P1-MW-1I-38.0-20190530 | 5/30/2019 | 38 | N | JC88958 | Treatment | Intermediate | **102000** | **86400** | **85600** | **108000** | -- | -- | -- | -- | -- | -- | -- | 17.3 | **1090** | -- | 1650 J | -- | **2910** | R |
| 114-P1-MW-1I | 114-P1-MW1I-30.4-2019612 | 6/12/2019 | 30.4 | N | JC89756 | N/A | Intermediate | **88200** | **88800** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 2.0 U | -- | < 100 U | -- | -- |
| 114-P1-MW-1I | 114-P1-MW-1I-20190702 | 7/2/2019 | 40 | N | JC91049 | Treatment | Intermediate | **102000** | **99100** | **82400** | **75500** | -- | -- | -- | -- | -- | -- | -- | 21.0 | **1110** | -- | 1100 | -- | **2600** | < 0.20 U |
| 114-P1-MW-1I | 114-P1-MW-1I-20190801 | 8/1/2019 | 40 | N | JC92580 | Treatment | Intermediate | **105000** | **124000** | **88400** | **92600** | -- | -- | -- | -- | -- | -- | -- | 24.5 | **1460** | -- | 291 | -- | **3090** | < 0.20 UJ |
| 114-P1-MW-1I | 114-P1-MW-1I-30.4-20190801 | 8/1/2019 | 40 | N | JC92572 | Treatment | Intermediate | **5040** | **2340** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 2.0 U | -- | -- | 42.8 B | -- |
| 114-P1-MW-1I | 114-P1-MW-1I-20190827 | 8/27/2019 | 40 | N | JC93952 | Treatment | Intermediate | **102000** | **107000** | **93900** | **111000** | -- | -- | -- | -- | -- | -- | -- | 19.6 | **1270** | -- | 1440 | -- | **2960** | 0.21 |
| 114-P1-MW-1I | 114-P1-MW-1I-20190924 | 9/24/2019 | 40 | N | JC95567 | Treatment | Intermediate | **95200** | **90800** | **101000** | **104000** | -- | -- | -- | -- | -- | -- | -- | 18.8 | **848** | -- | 174 | -- | **2110** | < 0.20 U |
| 114-P1-MW-1I | 114-P1-MW-1I-20191029 | 10/29/2019 | 40 | N | JC97632 | Treatment | Intermediate | **187000** | **186000** | **186000** | **184000** | -- | -- | -- | -- | -- | -- | -- | 16.8 | **1050** | -- | 734 | -- | **2660** | < 0.20 U |
| 114-P1-MW-1I | 114-P1-MW-1I-20191122 | 11/22/2019 | 40 | N | JC99090 | Treatment | Intermediate | **282000** | **286000** | **286000** | **292000** | -- | -- | -- | -- | -- | -- | -- | 15.1 | **891** | -- | 1240 | -- | **2420** | -- |
| 114-P1-MW-1I | 114-P1-MW-1I-20191226 | 12/26/2019 | 40 | N | JD923 | Treatment | Intermediate | **392000 J** | **429000** | **390000** | **399000** | -- | -- | -- | -- | -- | -- | -- | 12.3 | **690** | -- | 1040 | -- | **2370** | -- |
| 114-P1-MW-1I | 114-P1-MW-1I-20200130 | 1/30/2020 | 40 | N | JD2521 | Treatment | Intermediate | **585000** | **568000** | **579000** | **570000** | -- | -- | -- | -- | -- | -- | -- | 9.9 | **566** | -- | 914 | -- | **1790** | -- |
| 114-P1-MW-1I | 114-P1-MW-1I-200200228 | 2/28/2020 | 40 | N | JD3873 | Treatment | Intermediate | **516000** | **724000 J** | **1420000** | **1430000 J** | -- | -- | -- | -- | -- | -- | -- | 9.3 | **567** | -- | 770 | -- | **< 1500 U** | -- |
| 114-P1-MW-1I | 114-P1-MW-1I-200200323 | 3/23/2020 | 40 | N | JD5060 | Treatment | Intermediate | **243000** | **238000** | **235000** | **232000** | -- | -- | -- | -- | -- | -- | -- | 10.3 | **966** | -- | 992 | -- | **1670** | -- |
| 114-P1-MW-1I | 114-P1-MW-1I-20200810 | 8/10/2020 | 40 | N | JD11480 | Post-Treatment | Intermediate | **341000** | **348000** | **293000** | **309000** | -- | -- | -- | -- | -- | -- | -- | 12.0 | **662** | < 2.0 U | 564 | **< 500 U** | **1170** | -- |
| 114-P1-MW-1I | 114-P1-MW1I-20201110 | 11/10/2020 | 40 | N | JD15969 | Post-Treatment | Intermediate | **381000** | **352000** | **390000** | **367000** | -- | -- | -- | -- | -- | -- | -- | 11.0 | 83.1 J | < 2.0 U | 2220 | **< 500 U** | **885** | -- |
| 114-P1-MW-1I | 114-P1-MW1I-20210223 | 2/23/2021 | 40 | N | JD20642 | Post-Treatment | Intermediate | **409000** | **400000** | **422000** | **442000** | -- | -- | -- | -- | -- | -- | -- | 11.3 | **600** | < 2.0 U | 553 | **< 1000 U** | **832** | -- |
| 114-P1-MW-1I | 114-P1-MW-1I-23.5_20210618 | 6/18/2021 | 23.5 | N | JD26872 | Post-Treatment | Intermediate | -- | **266000** | **287000** | **295000** | -- | -- | -- | -- | -- | -- | -- | 9.6 | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-MW-1I | 114-P1-MW-1I-28.5_20210618 | 6/18/2021 | 28.5 | N | JD26872 | Post-Treatment | Intermediate | -- | **303000** | **328000 J** | **329000 J** | -- | -- | -- | -- | -- | -- | -- | 9.5 | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-MW-1I | 114-P1-MW-1I-33.5-20210623 | 6/23/2021 | 33.5 | N | JD27142 | Post-Treatment | Intermediate | -- | **487000** | **447000** | **456000** | -- | -- | -- | -- | -- | -- | -- | 8.6 | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-MW-1I | 114-P1-MW-1I-38.5-20210623 | 6/23/2021 | 38.5 | N | JD27142 | Post-Treatment | Intermediate | -- | **413000** | **483000 J** | **391000 J** | -- | -- | -- | -- | -- | -- | -- | 8.8 | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-MW-1I | 114-P1-MW-1I-20210930 | 9/30/2021 | 40 | N | JD32569 | Post-Treatment | Intermediate | **357000** | **373000** | **316000** | **307000** | -- | -- | -- | -- | -- | -- | -- | 14.5 | **798** | < 2.0 U | 1650 | 32.9 J | **748** | -- |
| 114-P1-MW-1I | 114-P1-MW-1I-20211118 | 11/18/2021 | 40 | N | JD35530 | Post-Treatment | Intermediate | **460000** | **502000** | **217000** | **441000** | -- | -- | -- | -- | -- | -- | -- | 40.7 | **923** | < 2.0 U | 1110 | < 100 U | **785** | -- |
| 114-P1-MW-1I | 114-P1-MW-1I-20220222 | 2/22/2022 | 40 | N | JD40096 | Post-Treatment | Intermediate | **390000** | **410000** | **399000** | **401000** | -- | -- | -- | -- | -- | -- | -- | 13.9 | **775** | < 2.0 U | 1070 | < 100 U | **628** | -- |
| 114-P1-MW-1I | 114-P1-MW-1I-20220523 | 5/23/2022 | 40 | N | JD45334 | Post-Treatment | Intermediate | **338000** | **315000** | **329000** | **363000** | -- | -- | -- | -- | -- | -- | -- | 17.5 | **821** | < 2.0 U | 1260 | < 100 U | **561** | -- |
| 114-P1-MW-1I | 114-P1-MW-1I-40-20220923 | 9/23/2022 | 40 | N | 4602661551 | Treatment | Intermediate | -- | **218000** | -- | **202000 H**<br>**200000 H** | 113 | 2.39 | 7.1 | 5.722 | 17.26 | 1.78 | -- | 11.8 | **425** | -- | -- | -- | -- | -- |
| 114-P1-MW-1I | 114-P1-MW-1I-30-20221227 | 12/27/2022 | 30 | N | 4602720661 | Enhanced Attenuation | Intermediate | -- | **426000** | -- | **458000** | 219.6 | 0.86 | 6.63 | 4.883 | 11.99 | 6.74 | -- | 10.8 J- | R | < 100 UJ | -- | **< 2400 U** | -- | -- |
| 114-P1-MW-1I | 114-P1-MW-1I-30.0-20230412 | 4/12/2023 | 30 | N | 4602781101 | Enhanced Attenuation | Intermediate | -- | **362000** | -- | **364000** | -23.1 | 0.58 | 6.92 | 4.149 | 17.5 | 4.63 | -- | 10 | **671** | < 10 U | -- | **< 2400 U** | **554** | -- |
| 114-P1-MW-1I | 114-P1-MW-1I-30.0-20240409 | 4/9/2024 | 30 | N | JD86109 | Enhanced Attenuation | Intermediate | -- | **483000** | -- | **425000** | 142 | 0.2 | 6.74 | 4.84 | 15.6 | 2.71 | -- | 8.8 | **736** | < 2.0 U | -- | < 250 U | **446** | -- |
| 114-P1-MW-1I | 114-P1-MW-1I-30.0-20240409-X | 4/9/2024 | 30 | FD | JD86109 | Enhanced Attenuation | Intermediate | -- | **455000** | -- | **413000** | -- | -- | -- | -- | -- | -- | -- | 8.8 | **724** | < 2.0 U | -- | < 250 U | **461** | -- |
| 114-P1-MW-2D | 114-P1-MW-2D-20180119 | 1/19/2018 | 40 | N | JC59431 | Baseline | Intermediate | < 50 U | 49.0 | < 10 U | < 10 U | -26 | 2.73 | 6.7 | 3.98 | 11.01 | 0 | -- | 5.2 | 155 | < 2.0 U | 1180 | **2150** | **2970** | -- |
| 114-P1-MW-2D | 114-P1-MW2D-20180430 | 4/30/2018 | 40 | N | JC65192 | Treatment | Intermediate | **13600 J** | **13700 J** | **10500 J** | **11500 J** | 159 | 0.9 | 6.87 | 3.09 | 12.52 | 30.7 | -- | 17.7 J | **1810 J** | -- | 5340 J | -- | **146 J** | < 0.20 UJ |
| 114-P1-MW-2D | 114-P1-MW-2D-20180531 | 5/31/2018 | 40 | N | JC67082 | Treatment | Intermediate | **617** | **1000** | < 10 UJ | < 10 U | -- | -- | -- | -- | -- | -- | -- | 2.8 | -- | -- | 300 | -- | **1690** | < 0.20 U |
| 114-P1-MW-2D | 114-P1-MW-2D-20180531 | 5/31/2018 | 40 | N | JC67082A | Treatment | Intermediate | | | | | 36 | 0.49 | 5.84 | 3.25 | 19.68 | 413 | -- | -- | 174 | -- | -- | -- | -- | -- |
| 114-P1-MW-2D | 114-P1-MW-2D-20180705 | 7/5/2018 | 40 | N | JC69286 | Treatment | Intermediate | **2910** | **4410** | **3600** | **3400** | 101 | 0 | 6.22 | 3.55 | 17.01 | 57 | -- | 4.1 | 153 | -- | 984 | -- | **1750** | < 0.20 U |
| 114-P1-MW-2D | 114-P1-MW-2D-20180725 | 7/25/2018 | 40 | N | JC70550 | Treatment | Intermediate | 36.7 | **285** | < 10 U | < 10 U | 35 | 0 | 6.9 | 3.83 | 20.18 | 9.4 | -- | 4.9 | 188 | -- | 988 | -- | **1720** | 1.4 J |
| 114-P1-MW-2D | 114-P1-MW-2D-180828 | 8/28/2018 | 40 | N | JC72673 | Treatment | Intermediate | 25.9 | **1210** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 4.7 | 185 | -- | 833 | -- | **1570** | 0.48 |
| 114-P1-MW-2D | 114-P1-MW-2D_20180925 | 9/25/2018 | 40 | N | JC74535 | Treatment | Intermediate | **509** | **1010** | **430** | **460** | -- | -- | -- | -- | -- | -- | -- | 5.3 | 161 | -- | -- | -- | **1510** | < 0.20 U |
| 114-P1-MW-2D | 114-P1-MW-2D-20181030 | 10/30/2018 | 40 | N | JC76905 | Treatment | Intermediate | 22.0 | **630 J** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 4.5 | 188 | -- | -- | -- | **1700** | 0.22 |
| 114-P1-MW-2D | 114-P1-MW-2D-181126 | 11/26/2018 | 40 | N | JC78527 | Treatment | Intermediate | 22.6 | **370** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 5.0 | 203 | -- | 194 | -- | **1500** | 0.56 |
| 114-P1-MW-2D | 114-P1-MW-2D-DUP-181218 | 12/17/2018 | 40 | FD | JC79904 | Treatment | Intermediate | 50.6 | **282 J** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 5.6 | 202 | -- | -- | -- | **1690** | R |
| 114-P1-MW-2D | 114-P1-MW-2D-181217 | 12/17/2018 | 40 | N | JC79904 | Treatment | Intermediate | 46.1 | **384 J** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 5.9 | 207 | -- | -- | -- | **1700** | R |
| 114-P1-MW-2D | 114-P1-MW-2D-20190329 | 3/29/2019 | 40 | N | JC85453 | Treatment | Intermediate | 12.4 | 21.2 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 4.4 | 197 | -- | 8.5 | -- | **1490** | 2.5 |
| 114-P1-MW-2D | 114-P1-MW-2D-20190429 | 4/29/2019 | 40 | N | JC87158 | Treatment | Intermediate | 10.6 | 19.2 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 4.6 | 201 | -- | 1010 J | -- | **1520** | 5.7 |
| 114-P1-MW-2D | 114-P1-MW-2D-27.0-20190531 | 5/31/2019 | 27 | N | JC89048 | Treatment | Intermediate | 11.2 | 42.1 | 10 | 10 | -- | -- | -- | -- | -- | -- | -- | 3.7 | 212 | -- | 690 J | -- | **1210** | R |
| 114-P1-MW-2D | 114-P1-MW-2D-32.0-20190531 | 5/31/2019 | 32 | N | JC89048 | Treatment | Intermediate | 10 | **107** | 10 | 10 | -- | -- | -- | -- | -- | -- | -- | 3.8 | 213 | -- | 712 J | -- | **1200** | R |
| 114-P1-MW-2D | 114-P1-MW-2D-37.0-20190531 | 5/31/2019 | 37 | N | JC89048 | Treatment | Intermediate | 15.4 | **136** | 10 | 10 | -- | -- | -- | -- | -- | -- | -- | 4.1 | 214 | -- | 746 J | -- | **1210** | R |
| 114-P1-MW-2D | 114-P1-MW-2D-42.0-20190531 | 5/31/2019 | 42 | N | JC89048 | Treatment | Intermediate | 20.5 | **141** | 10 | 10 | -- | -- | -- | -- | -- | -- | -- | 4.3 | 213 | -- | 685 J | -- | **1220** | R |
| 114-P1-MW-2D | 114-P1-MW-2D-20190702 | 7/2/2019 | 40 | N | JC91049 | Treatment | Intermediate | < 10 U | 31.7 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 5.0 | **356** | -- | 2080 | -- | **1280** | < 0.20 U |
| 114-P1-MW-2D | 114-P1-MW-2D-20190801 | 8/1/2019 | 40 | N | JC92580 | Treatment | Intermediate | < 10 U | 35.3 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 7.6 | 168 | -- | 786 | -- | **1430** | < 0.20 UJ |
| 114-P1-MW-2D | 114-P1-MW-2D-20190828 | 8/28/2019 | 40 | N | JC94021 | Treatment | Intermediate | < 10 U | 16.8 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 7.3 | 183 | -- | 2850 | -- | **1560** | < 0.20 U |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P1-MW-2D | 114-P1-MW-2D-20190924 | 9/24/2019 | 40 | N | JC95567 | Treatment | Intermediate | 53.7 | 36.4 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 9.2 | 149 | -- | 338 | -- | **1030** | 0.21 |
| 114-P1-MW-2D | 114-P1-MW-2D-20191030 | 10/30/2019 | 40 | N | JC97696 | Treatment | Intermediate | **4620** | **5520** | **4900** | **4800** | -- | -- | -- | -- | -- | -- | -- | 4.0 | 234 | -- | 373 | -- | **1340** | < 0.20 U |
| 114-P1-MW-2D | 114-P1-MW-2D-20191122 | 11/22/2019 | 40 | N | JC99090 | Treatment | Intermediate | **7540** | **9240** | **8400** | **8900** | -- | -- | -- | -- | -- | -- | -- | 5.0 | 222 | -- | 437 | -- | **1060** | -- |
| 114-P1-MW-2D | 114-P1-MW-2D-20191226 | 12/26/2019 | 40 | N | JD923 | Treatment | Intermediate | **9950 J** | **10100** | **9100** | **9400** | -- | -- | -- | -- | -- | -- | -- | 5.0 | 215 | -- | 239 | -- | **940** | -- |
| 114-P1-MW-2D | 114-P1-MW-2D-20200130 | 1/30/2020 | 40 | N | JD2521 | Treatment | Intermediate | **9660** | **10500** | **9700** | **9400** | -- | -- | -- | -- | -- | -- | -- | 4.7 | 217 | -- | 182 | -- | **808** | -- |
| 114-P1-MW-2D | 114-P1-MW-2D-20200227 | 2/27/2020 | 40 | N | JD3810 | Treatment | Intermediate | **10300** | **10700** | **10800** | **11000** | -- | -- | -- | -- | -- | -- | -- | 4.4 | 194 | -- | 306 | -- | **749** | -- |
| 114-P1-MW-2D | 114-P1-MW-2D-20200325 | 3/25/2020 | 40 | N | JD5175 | Treatment | Intermediate | **2680** | **6510** | **2400** | **2400** | -- | -- | -- | -- | -- | -- | -- | 5.8 | 190 | -- | 1120 | -- | **563** | -- |
| 114-P1-MW-2D | 114-P1-MW-2D-20200811 | 8/11/2020 | 40 | N | JD11542 | Post-Treatment | Intermediate | **2870** | **3230** | **1200** | **2700** | -- | -- | -- | -- | -- | -- | -- | 5.6 | 196 | < 2.0 U | 39.6 | 58.9 J | **745** | -- |
| 114-P1-MW-2D | 114-P1-MW-2D-20201110 | 11/10/2020 | 40 | N | JD15969 | Post-Treatment | Intermediate | **4580** | **4590** | **4700** | **4400** | -- | -- | -- | -- | -- | -- | -- | 5.6 | 188 J | < 2.0 U | 1630 | 48.3 J | **872** | -- |
| 114-P1-MW-2D | 114-P1-MW2D-20210223 | 2/23/2021 | 40 | N | JD20642 | Post-Treatment | Intermediate | **1970** | **2210** | **2000** | **1900** | -- | -- | -- | -- | -- | -- | -- | 4.3 | 204 | < 2.0 U | 430 | 45.1 J | **1160** | -- |
| 114-P1-MW-2D | 114-P1-MW-2D-27.5-20210623 | 6/23/2021 | 27.5 | N | JD27142 | Post-Treatment | Intermediate | -- | **108** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 4.3 | -- | -- | -- | -- | -- | -- |
| 114-P1-MW-2D | 114-P1-MW-2D-32.5-20210624 | 6/24/2021 | 32.5 | N | JD27239 | Post-Treatment | Intermediate | -- | **1220 J** | **510** | **500** | -- | -- | -- | -- | -- | -- | -- | < 2.8 UB | -- | -- | -- | -- | -- | -- |
| 114-P1-MW-2D | 114-P1-MW-2D-37.5-20210624 | 6/24/2021 | 37.5 | N | JD27239 | Post-Treatment | Intermediate | -- | **963 J** | **510** | **510** | -- | -- | -- | -- | -- | -- | -- | < 2.9 UB | -- | -- | -- | -- | -- | -- |
| 114-P1-MW-2D | 114-P1-MW-2D-42.5-20210624 | 6/24/2021 | 42.5 | N | JD27239 | Post-Treatment | Intermediate | -- | **1420 J** | **500** | **500** | -- | -- | -- | -- | -- | -- | -- | < 2.8 UB | -- | -- | -- | -- | -- | -- |
| 114-P1-MW-2D | 114-P1-MW-2D-20210930 | 9/30/2021 | 40 | N | JD32569 | Post-Treatment | Intermediate | 30.5 | **1450** | 9.7 J | 7.4 J | -- | -- | -- | -- | -- | -- | -- | 5.6 | 188 | < 2.0 U | 1060 | **2410** | **1360** | -- |
| 114-P1-MW-2D | 114-P1-MW-2D-20211118 | 11/18/2021 | 40 | N | JD35530 | Post-Treatment | Intermediate | **155** | **974** | R | R | -- | -- | -- | -- | -- | -- | -- | < 4.6 UB | 231 | < 2.0 U | 324 | 97.3 J | **1300** | -- |
| 114-P1-MW-2D | 114-P1-MW-2D-20220221 | 2/21/2022 | 40 | N | JD40060 | Post-Treatment | Intermediate | 52.6 | **107** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 5.1 | 173 | < 2.0 U | 2370 | **2980** | **664** | -- |
| 114-P1-MW-2D | 114-P1-MW2D-20220525 | 5/25/2022 | 40 | N | JD45473 | Post-Treatment | Intermediate | 26.8 J | **135** | < 10 U | 2.6 J | -- | -- | -- | -- | -- | -- | -- | 12.3 | 148 | 0.70 J | 5150 | **2870** | **723** | -- |
| 114-P1-MW-2I | 114-P1-MW2I-22.5-20180116 | 1/16/2018 | 22.5 | N | JC58942 | N/A | Intermediate | -- | **230** | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-MW-2I | 114-P1-MW2I-27.5-20180116 | 1/16/2018 | 27.5 | N | JC58942 | N/A | Intermediate | -- | **1370** | -- | **860** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-MW-2I | 114-P1-MW2I-32.5-20180116 | 1/16/2018 | 32.5 | N | JC58942 | N/A | Intermediate | -- | **2040** | -- | **1100** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-MW-2I | 114-P1-MW2I-37.5-20180116 | 1/16/2018 | 37.5 | N | JC58942 | N/A | Intermediate | -- | **2880** | -- | **2000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-MW-2I | 114-P1-MW-2I-20180119 | 1/19/2018 | 35 | N | JC59431 | Baseline | Intermediate | -- | -- | < 10 U | < 10 U | -110 | 0.4 | 6.65 | 4.02 | 12.14 | 16.9 | -- | 6.3 | -- | < 2.0 U | -- | -- | -- | -- |
| 114-P1-MW-2I | 114-P1-MW-2I-191203 | 12/3/2019 | 35 | N | JC99494 | Treatment | Intermediate | **1600** | **2570** | **1300** | **1400** | -- | -- | -- | -- | -- | -- | -- | 5.2 | 235 | -- | 3490 | -- | **480** | -- |
| 114-P1-MW-2I | 114-P1-MW-2I-20191227 | 12/27/2019 | 35 | N | JD963 | Treatment | Intermediate | **3000** | **3570** | **2500** | **3000** | -- | -- | -- | -- | -- | -- | -- | 4.6 | 231 | -- | 106 J | -- | **511 J** | -- |
| 114-P1-MW-2I | 114-P1-MW-2I-20200228 | 2/28/2020 | 35 | N | JD3873 | Treatment | Intermediate | **1660** | **2030 J** | **1100** | **1100** | -- | -- | -- | -- | -- | -- | -- | 4.8 | 190 | -- | 2980 | -- | **532** | -- |
| 114-P1-MW-2I | 114-P1-MW-2I-20200325 | 3/25/2020 | 35 | N | JD5175 | Treatment | Intermediate | **13300** | **13600** | **10100** | **10000** | -- | -- | -- | -- | -- | -- | -- | 4.5 | 207 | -- | 131 | -- | **783** | -- |
| 114-P1-MW-2I | 114-P1-MW-2I-22.5-20200727 | 7/27/2020 | 22.5 | N | JD10717 | N/A | Intermediate | 22.0 | **485** | < 10 UJ | < 10 UJ | -133.20 | 0.01 | 6.62 | 2.96 | 21.14 | 12.80 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-MW-2I | 114-P1-MW-2I-27.5-20200727 | 7/27/2020 | 27.5 | N | JD10717 | N/A | Intermediate | 20.8 | **655** | < 10 UJ | < 10 UJ | -131.80 | 0.01 | 6.62 | 2.95 | 20.62 | 13.50 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-MW-2I | 114-P1-MW-2I-32.5-20200727 | 7/27/2020 | 32.5 | N | JD10717 | N/A | Intermediate | 23.0 | **592** | < 10 UJ | < 10 UJ | -126.40 | 0.01 | 6.62 | 2.88 | 20.19 | 29.10 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-MW-2I | 114-P1-MW-2I-37.5-20200727 | 7/27/2020 | 37.5 | N | JD10717 | N/A | Intermediate | 18.6 | **439** | < 10 UJ | < 10 UJ | -146.10 | 0.01 | 6.61 | 3.12 | 23.50 | 15.30 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-MW-2I | 114-P1-MW2I-27.3-20220913 | 9/13/2022 | 27.3 | N | 4602654381 | N/A | Intermediate | 29.3 | **191** | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-MW-2I | 114-P1-MW-2I-29-20221228 | 12/28/2022 | 29 | N | 4602721191 | Enhanced Attenuation | Intermediate | -- | 67.2 | -- | < 10.0 U | -87.8 | 0.71 | 6.72 | 3.191 | 13.39 | 0.86 | -- | 6.4 | 173 | 1.2 | -- | **1610** | -- | -- |
| 114-P1-MW-2I | 114-P1-MW-2I-29.0-20230412 | 4/12/2023 | 29 | N | 4602781101 | Enhanced Attenuation | Intermediate | -- | **203** | -- | < 10.0 U | -0.1 | 0.29 | 6.71 | 2.978 | 16.99 | 9.46 | -- | 5.3 | 160 | < 10 U | -- | **3810** | **691** | -- |
| 114-P1-MW-2I | 114-P1-MW-2I-29.0-20240410 | 4/10/2024 | 29 | N | JD86198 | Enhanced Attenuation | Intermediate | -- | **142** | -- | 6.3 J | -94.4 | 0.16 | 6.62 | 3.194 | 14.7 | 9.75 | -- | 4.5 | 148 | < 2.0 U | -- | **4310** | **575** | -- |
| 114-P1-MW-3I | 114-P1-MW-3I-20180126 | 1/26/2018 | 40 | N | JC59838 | Baseline | Intermediate | **9110 J-** | **8680** | **7400** | **8300** | 99 | 0.39 | 7.14 | 3.02 | 13.15 | 31.3 | -- | 4.7 | **395** | < 2.0 U | 74.7 | < 200 U | **147** | -- |
| 114-P1-MW-3I | 114-P1-MW3I-20180430 | 4/30/2018 | 40 | N | JC65192 | Treatment | Intermediate | **7670 J** | **5100 J** | **6100** | **6800** | 173 | 0.6 | 7.52 | 9.81 | 12.36 | 29.6 | -- | 3.8 | 224 | -- | 401 J | -- | **1940** | < 0.20 UJ |
| 114-P1-MW-3I | 114-P1-MW-3I-20180530 | 5/30/2018 | 40 | N | JC66984 | Treatment | Intermediate | **14400** | **13400** | **14500** | **14900** | -- | -- | -- | -- | -- | -- | -- | 17.3 | -- | -- | 831 | -- | **133** | < 0.20 U |
| 114-P1-MW-3I | 114-P1-MW-3I-20180530 | 5/30/2018 | 40 | N | JC66984A | Treatment | Intermediate | -- | -- | -- | -- | 155 | 0.38 | 6.76 | 12.1 | 18.15 | 28.9 | -- | -- | **1830 J** | -- | -- | -- | -- | -- |
| 114-P1-MW-3I | 114-P1-MW-3I-20180702 | 7/2/2018 | 40 | N | JC69148 | Treatment | Intermediate | **12900** | **13100** | **13200** | **12600** | 84 | 1.18 | 7.21 | 17.6 | 25.4 | 46.5 | -- | 15.6 | **1880** | -- | 71.0 | -- | **121** | < 0.20 U |
| 114-P1-MW-3I | 114-P1-MW-3I-20180725 | 7/25/2018 | 40 | N | JC70550 | Treatment | Intermediate | **10700** | **10800** | **9700** | **10700** | 174 | 0 | 7.25 | 16.7 | 18.49 | 9.9 | -- | 16.8 | **1790** | -- | 773 | -- | **< 150 U** | < 0.20 UJ |
| 114-P1-MW-3I | 114-P1-MW-3I-20180827 | 8/27/2018 | 40 | N | JC72621 | Treatment | Intermediate | **5740** | **5450 J** | **5800** | **5900** | -- | -- | -- | -- | -- | -- | -- | 17.1 | **2110** | -- | 1020 | -- | **111** | < 0.20 U |
| 114-P1-MW-3I | 114-P1-MW-3I-20180924 | 9/24/2018 | 40 | N | JC74476 | Treatment | Intermediate | **48300** | **50100** | **54800** | **48600 J** | -- | -- | -- | -- | -- | -- | -- | 4.6 | **466** | -- | -- | -- | **< 150 U** | < 0.20 U |
| 114-P1-MW-3I | 114-P1-MW-3I-20181030 | 10/30/2018 | 40 | N | JC76905 | Treatment | Intermediate | **40700** | **38700 J** | **34700** | **36500** | -- | -- | -- | -- | -- | -- | -- | 7.4 | **876** | -- | -- | -- | **116** | < 0.20 U |
| 114-P1-MW-3I | 114-P1-MW-3I-DUP-181126 | 11/26/2018 | 40 | FD | JC78527 | Treatment | Intermediate | **5710 J** | **4390 J** | **1600 J** | **1900 J** | -- | -- | -- | -- | -- | -- | -- | 11.5 | **1990** | -- | 1290 | -- | **84.4** | < 0.20 U |
| 114-P1-MW-3I | 114-P1-MW-3I-181126 | 11/26/2018 | 40 | N | JC78527 | Treatment | Intermediate | **4770** | **5140** | **4700 J** | **5100 J** | -- | -- | -- | -- | -- | -- | -- | 12.2 | **1800** | -- | 1560 | -- | **74.8** | < 0.20 U |
| 114-P1-MW-3I | 114-P1-MW-3I-181217 | 12/17/2018 | 40 | N | JC79904 | Treatment | Intermediate | **4410** | **4330 J** | **3600** | **3900** | -- | -- | -- | -- | -- | -- | -- | 12.4 | **1930** | -- | -- | -- | **91.2** | R |
| 114-P1-MW-3I | 114-P1-MW-3I-20190326 | 3/26/2019 | 40 | N | JC85176 | Treatment | Intermediate | **335** | **594** | **220** | **210** | -- | -- | -- | -- | -- | -- | -- | 11.7 | **2440** | -- | 963 J | -- | **64.0** | < 0.20 U |
| 114-P1-MW-3I | 114-P1-MW-3I-20190430 | 4/30/2019 | 40 | N | JC87228 | Treatment | Intermediate | **211** | **276** | **190** | **190** | -- | -- | -- | -- | -- | -- | -- | 10.1 | **1940** | -- | 680 | -- | **62.7** | < 0.20 U |
| 114-P1-MW-3I | 114-P1-MW-3I-25.0-20190530 | 5/30/2019 | 25 | N | JC88958 | Treatment | Intermediate | **125** | **155** | **79** | **85** | -- | -- | -- | -- | -- | -- | -- | 10.0 | **1660** | -- | 1020 J | -- | **72.0** | R |
| 114-P1-MW-3I | 114-P1-MW-3I-30.0-20190530 | 5/30/2019 | 30 | N | JC88958 | Treatment | Intermediate | **146** | **174** | **97** | **110** | -- | -- | -- | -- | -- | -- | -- | 11.2 | **1880** | -- | 654 J | -- | **70.9** | R |
| 114-P1-MW-3I | 114-P1-MW-3I-35.0-20190530 | 5/30/2019 | 35 | N | JC88958 | Treatment | Intermediate | **496** | **463** | **410** | **310** | -- | -- | -- | -- | -- | -- | -- | 8.4 | **1910** | -- | 1030 J | -- | **84.4** | R |
| 114-P1-MW-3I | 114-P1-MW-3I-40.0-20190530 | 5/30/2019 | 40 | N | JC88958 | Treatment | Intermediate | **1810** | **1800** | **1700** | **2200** | -- | -- | -- | -- | -- | -- | -- | 9.5 | **1780** | -- | 621 J | -- | **84.2** | R |
| 114-P1-MW-3I | 114-P1-MW-3I-20190628 | 6/28/2019 | 40 | N | JC90869 | Treatment | Intermediate | **355** | **384** | **250** | **260** | -- | -- | -- | -- | -- | -- | -- | 9.4 | **1630** | -- | 977 | -- | **62.5** | R |
| 114-P1-MW-3I | 114-P1-MW-3I-20190727 | 7/27/2019 | 40 | N | JC92354 | Treatment | Intermediate | **138** | **196** | **91** | **160** | -- | -- | -- | -- | -- | -- | -- | 9.3 | **1860** | -- | 36.2 | -- | **64.7** | < 0.20 U |
| 114-P1-MW-3I | 114-P1-MW-3I-20190826 | 8/26/2019 | 40 | N | JC93900 | Treatment | Intermediate | **242** | **487** | **190** | **200** | -- | -- | -- | -- | -- | -- | -- | 10.0 | **1750** | -- | 84.4 | -- | **78.1** | < 0.20 U |
| 114-P1-MW-3I | 114-P1-MW-3I-20190923 | 9/23/2019 | 40 | N | JC95491 | Treatment | Intermediate | 52.1 | **90.0** | < 32 UB | < 33 UB | -- | -- | -- | -- | -- | -- | -- | 8.7 | **1630** | -- | 629 | -- | **62.3** | < 0.20 UJ |
| 114-P1-MW-3I | 114-P1-MW-3I-20191030 | 10/30/2019 | 40 | N | JC97696 | Treatment | Intermediate | **662** | **695** | **680** | **670** | -- | -- | -- | -- | -- | -- | -- | 8.1 | **1830** | -- | 784 | -- | **76.1** | < 0.20 U |
| 114-P1-MW-3I | 114-P1-MW-3I-20191122 | 11/22/2019 | 40 | N | JC99090 | Treatment | Intermediate | **790** | **856** | **690** | **720** | -- | -- | -- | -- | -- | -- | -- | 8.6 | **1820** | -- | 816 | -- | **78.8** | -- |
| 114-P1-MW-3I | 114-P1-MW-3I-20191227 | 12/27/2019 | 40 | N | JD963 | Treatment | Intermediate | **3850** | **4160** | **3600** | **3600** | -- | -- | -- | -- | -- | -- | -- | 9.8 | **1860** | -- | 45.6 J | -- | **97.7 J** | -- |
| 114-P1-MW-3I | 114-P1-MW-3I-20200127 | 1/27/2020 | 40 | N | JD2342 | Treatment | Intermediate | **1800 J** | **1180 J** | **1600 J** | **960 J** | -- | -- | -- | -- | -- | -- | -- | 8.7 | **1670** | -- | 1040 | -- | **87.2** | -- |
| 114-P1-MW-3I | 114-P1-MW-3I-DUP-20200225 | 2/25/2020 | 40 | FD | JD3675 | Treatment | Intermediate | **491** | **716 J** | < 50 U | < 50 U | -- | -- | -- | -- | -- | -- | -- | 22.9 | **743** | -- | 7760 | -- | **182** | -- |
| 114-P1-MW-3I | 114-P1-MW-3I-20200225 | 2/25/2020 | 40 | N | JD3675 | Treatment | Intermediate | **498** | **766 J** | < 50 U | < 50 U | -- | -- | -- | -- | -- | -- | -- | 22.8 | **699** | -- | 5900 | -- | **180** | -- |
| 114-P1-MW-3I | 114-P1-MW-3I-20200324 | 3/24/2020 | 40 | N | JD5103 | Treatment | Intermediate | **4410** | **5070** | **4300** | **4600** | -- | -- | -- | -- | -- | -- | -- | 13.1 | **1660** | -- | 1150 | -- | **119** | -- |
| 114-P1-MW-3I | 114-P1-MW-3I-20200810 | 8/10/2020 | 40 | N | JD11480 | Post-Treatment | Intermediate | **1230 J** | **1010 J** | **1100** | **820** | -- | -- | -- | -- | -- | -- | -- | 18.8 | **1320** | < 2.0 U | 584 | 50.2 J | **161** | -- |
| 114-P1-MW-3I | 114-P1-MW-3I-20201109 | 11/9/2020 | 40 | N | JD15931 | Post-Treatment | Intermediate | **3840** | **3800** | **3900** | **3700** | -- | -- | -- | -- | -- | -- | -- | 15.5 | **1430** | < 2.0 U | 414 | < 100 U | **177** | -- |
| 114-P1-MW-3I | 114-P1-MW3I-20210223 | 2/23/2021 | 40 | N | JD20642 | Post-Treatment | Intermediate | **3080 J** | **2330 J** | **2600** | **2700** | -- | -- | -- | -- | -- | -- | -- | 19.0 | **1000** | < 2.0 U | 1110 | 83.9 J | **159** | -- |
| 114-P1-MW-3I | 114-P1-MW-3I-25.5-20210623 | 6/23/2021 | 25.5 | N | JD27142 | Post-Treatment | Intermediate | -- | **5270** | **5100** | **5100** | -- | -- | -- | -- | -- | -- | -- | 11.5 | -- | -- | -- | -- | -- | -- |
| 114-P1-MW-3I | 114-P1-MW-3I-30.5-20210623 | 6/23/2021 | 30.5 | N | JD27142 | Post-Treatment | Intermediate | -- | **5350** | **5300** | **5200** | -- | -- | -- | -- | -- | -- | -- | 11.0 | -- | -- | -- | -- | -- | -- |
| 114-P1-MW-3I | 114-P1-MW-3I-35.5-20210623 | 6/23/2021 | 35.5 | N | JD27142 | Post-Treatment | Intermediate | -- | **5410** | **5000** | **5000** | -- | -- | -- | -- | -- | -- | -- | 8.9 | -- | -- | -- | -- | -- | -- |
| 114-P1-MW-3I | 114-P1-MW-3I-40.5-20210623 | 6/23/2021 | 40.5 | N | JD27142 | Post-Treatment | Intermediate | -- | **5350** | **4900** | **5000** | -- | -- | -- | -- | -- | -- | -- | 10.5 | -- | -- | -- | -- | -- | -- |
| 114-P1-MW-3I | 114-P1-MW-3I-20210927 | 9/27/2021 | 40 | N | JD32281 | Post-Treatment | Intermediate | **4740 J** | **3590 J** | **2800 J** | **2700 J** | -- | -- | -- | -- | -- | -- | -- | 13.6 | **1160** | < 2.0 U | 699 | 281 | **172** | -- |
| 114-P1-MW-3I | 114-P1-MW3I-20211117 | 11/17/2021 | 40 | N | JD35453 | Post-Treatment | Intermediate | **1500** | **2890 J** | **1800** | **1700** | -- | -- | -- | -- | -- | -- | -- | 14.4 | **1100** | < 2.0 U | 109 | < 100 U | **174** | -- |
| 114-P1-MW-3I | 114-P1-MW-3I-20220221 | 2/21/2022 | 40 | N | JD40060 | Post-Treatment | Intermediate | **1830** | **2340** | **1600** | **1800** | -- | -- | -- | -- | -- | -- | -- | 8.4 | **1110** | < 2.0 U | 362 | < 100 U | **153** | -- |
| 114-P1-MW-3I | 114-P1-MW-3I-20220523 | 5/23/2022 | 40 | N | JD45334 | Post-Treatment | Intermediate | **403** | **576** | **380** | **390** | -- | -- | -- | -- | -- | -- | -- | 5.9 | **1150** | < 2.0 U | 91.2 | < 100 U | **138** | -- |
| 114-P1-MW-3I | 114-P1-MW-3I-33-20221228 | 12/28/2022 | 33 | N | 4602721191 | Enhanced Attenuation | Intermediate | -- | 32.5 | -- | < 10.0 U | 34.6 | 0.57 | 7.31 | 2.872 | 13.87 | 1.08 | -- | 4.2 | **854** | < 1.0 U | -- | < 120 U | -- | -- |
| 114-P1-MW-3I | 114-P1-MW-3I-20230417 | 4/17/2023 | 33 | N | 4602783651 | Enhanced Attenuation | Intermediate | -- | **119** | -- | 57.6 | 12.5 | 1.17 | 7.13 | 3.301 | 13.73 | 8.66 | -- | 4.7 | **849** | < 1 U | -- | < 120 U | **147** | -- |
| 114-P1-MW-3I | 114-P1-MW-3I-33.0-20240409 | 4/9/2024 | 33 | N | JD86109 | Enhanced Attenuation | Intermediate | -- | 52.6 | -- | 57 | 16.4 | 0.12 | 7.12 | 3.245 | 16 | 0.65 | -- | 3.7 | **762** | < 2.0 U | -- | < 250 U | **117** | -- |
| 114-P1-MW-4I | 114-P1-MW-4I-20180126 | 1/26/2018 | 37.5 | N | JC59838 | Baseline | Intermediate | **115000 J-** | **98700** | **111000** | **106000** | 104 | 0 | 7.82 | 4.05 | -- | 0 | -- | 16.4 | **795** | < 2.0 U | 882 | **< 500 U** | **294** | -- |
| 114-P1-MW-4I | 114-P1-MW4I-20180430 | 4/30/2018 | 37.5 | N | JC65192 | Treatment | Intermediate | **55000** | **52800** | **51700** | **55000** | -102 | 0 | 8.49 | 3.71 | 12.39 | 121 | -- | 15.4 | **613** | -- | 1860 | -- | **206** | < 0.20 UJ |
| 114-P1-MW-4I | 114-P1-MW-4I-20180531 | 5/31/2018 | 37.5 | N | JC67082 | Treatment | Intermediate | **7850** | **9270** | **4300 J** | **4100** | -- | -- | -- | -- | -- | -- | -- | 11.0 | -- | -- | 1070 | -- | **245** | < 0.20 UJ |
| 114-P1-MW-4I | 114-P1-MW-4I-20180531 | 5/31/2018 | 37.5 | N | JC67082A | Treatment | Intermediate | -- | -- | -- | -- | -131 | 0 | 8.24 | 2.92 | 19.96 | 841 | -- | -- | **420** | -- | -- | -- | -- | -- |
| 114-P1-MW-4I | 114-P1-MW-4I-20180703 | 7/3/2018 | 37.5 | N | JC69235 | Treatment | Intermediate | **123** | **3800** | < 10 U | < 10 U | -216 | 0.52 | 7.3 | 3.07 | 24.2 | 25.9 | -- | 8.9 | **410** | -- | 947 | -- | **1090** | < 0.20 UJ |
| 114-P1-MW-4I | 114-P1-MW4I-180830 | 8/30/2018 | 37.5 | N | JC72843 | Treatment | Intermediate | **250** | **363** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 97.7 | **1720** | -- | 297 | -- | **5490** | 0.65 |
| 114-P1-MW-4I | 114-P1-MW-4I_20180925 | 9/25/2018 | 37.5 | N | JC74535 | Treatment | Intermediate | **220** | **526** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 153 | **1590** | -- | -- | -- | **2970** | < 0.20 U |
| 114-P1-MW-4I | 114-P1-MW-4I-181101 | 11/1/2018 | 37.5 | N | JC77088 | Treatment | Intermediate | **222 J** | **703 J** | R | R | -- | -- | -- | -- | -- | -- | -- | 62.2 | **1690** | -- | -- | -- | **2460** | < 0.20 UJ |
| 114-P1-MW-4I | 114-P1-MW-4I-181129 | 11/29/2018 | 37.5 | N | JC78732 | Treatment | Intermediate | **314** | **565** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 71.5 | **1580** | -- | 563 | -- | **2500** | < 0.20 U |
| 114-P1-MW-4I | 114-P1-MW-4I-181219 | 12/19/2018 | 37.5 | N | JC80041 | Treatment | Intermediate | **289** | **445** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 49.4 | **1470** | -- | -- | -- | **2320** | R |
| 114-P1-MW-4I | 114-P1-MW-4I-20190325 | 3/25/2019 | 37.5 | N | JC85107 | Treatment | Intermediate | **133** | **225** | < 10 U | 11 | -- | -- | -- | -- | -- | -- | -- | 39.7 | **1780** | -- | 2240 | -- | **3230** | 0.37 |
| 114-P1-MW-4I | 114-P1-MW-4I-20190429 | 4/29/2019 | 37.5 | N | JC87158 | Treatment | Intermediate | **208** | **209** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 43.8 | **1420** | -- | 1050 | -- | **2110** | < 0.20 U |
| 114-P1-MW-4I | 114-P1-MW-4I-25.00-20190528 | 5/28/2019 | 25 | N | JC88834 | Treatment | Intermediate | **158** | **231** | < 50 U | 55 | -- | -- | -- | -- | -- | -- | -- | 42.3 | **1470** | -- | 585 J | -- | **2520** | < 0.20 U |
| 114-P1-MW-4I | 114-P1-MW-4I-30.00-20190528 | 5/28/2019 | 30 | N | JC88834 | Treatment | Intermediate | **173** | **421** | < 50 U | **70** | -- | -- | -- | -- | -- | -- | -- | 44.9 | **1460** | -- | 1320 J | -- | **2620** | < 0.20 U |
| 114-P1-MW-4I | 114-P1-MW-4I-35.00-20190528 | 5/28/2019 | 35 | N | JC88834 | Treatment | Intermediate | **195** | **403** | < 50 U | 65 | -- | -- | -- | -- | -- | -- | -- | 46.4 | **1550** | -- | 1220 J | -- | **2460** | < 0.20 U |
| 114-P1-MW-4I | 114-P1-MW-4I-40.00-20190528 | 5/28/2019 | 40 | N | JC88834 | Treatment | Intermediate | **209** | **449** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 48.9 | **1370** | -- | 1260 J | -- | **2370** | < 0.20 U |
| 114-P1-MW-4I | 114-P1-MW-4I-20190628 | 6/28/2019 | 37.5 | N | JC90869 | Treatment | Intermediate | **147** | **395** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 44.6 | **1360** | -- | 1470 | -- | **2790** | R |
| 114-P1-MW-4I | 114-P1-MW-4I_20190731 | 7/31/2019 | 37.5 | N | JC92478 | Treatment | Intermediate | **95.8** | **245** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 40.9 | **1400** | -- | 1440 | -- | **2650** | R |
| 114-P1-MW-4I | 114-P1-MW-4I-20190826826 | 8/26/2019 | 37.5 | N | JC93900 | Treatment | Intermediate | **160** | **769** | 12 | 12 | -- | -- | -- | -- | -- | -- | -- | 35.2 | **1340** | -- | 2140 | -- | **2390** | < 0.20 U |
| 114-P1-MW-4I | 114-P1-MW-4I-20190927 | 9/27/2019 | 37.5 | N | JC95808 | Treatment | Intermediate | **163** | **389** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 28.2 | **1210** | -- | 1610 J | -- | **2070** | R |
| 114-P1-MW-4I | 114-P1-MW-4I-20191030 | 10/30/2019 | 37.5 | N | JC97696 | Treatment | Intermediate | **121** | **1590** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 39.5 | **1470** | -- | 4640 | -- | **2500** | < 0.20 U |
| 114-P1-MW-4I | 114-P1-MW-4I-20191123 | 11/23/2019 | 37.5 | N | JC99155 | Treatment | Intermediate | **1090** | **9840** | **240 J** | **120 J** | -- | -- | -- | -- | -- | -- | -- | 23.7 | **963** | -- | 3670 | -- | **826** | -- |
| 114-P1-MW-4I | 114-P1-MW-4I-20191226 | 12/26/2019 | 37.5 | N | JD923 | Treatment | Intermediate | **756 J** | **5110** | < 10 U | 16 | -- | -- | -- | -- | -- | -- | -- | 25.1 | **930** | -- | 3330 | -- | **668** | -- |
| 114-P1-MW-4I | 114-P1-MW-4I-20200129 | 1/29/2020 | 37.5 | N | JD2452 | Treatment | Intermediate | **622** | **1570** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 28.6 | **789** | -- | 5070 | -- | **697** | -- |
| 114-P1-MW-4I | 114-P1-MW-4I-20200226 | 2/26/2020 | 37.5 | N | JD3741 | Treatment | Intermediate | **160** | **497** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 22.0 | **534** | -- | 6740 | -- | **575** | -- |
| 114-P1-MW-4I | 114-P1-MW-4I-200200323 | 3/23/2020 | 37.5 | N | JD5060 | Treatment | Intermediate | **110** | **630** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 24.3 | **571** | -- | 8500 | -- | **558** | -- |
| 114-P1-MW-4I | 114-P1-MW-4I-20200811 | 8/11/2020 | 37.5 | N | JD11542 | Post-Treatment | Intermediate | **105** | **247** | 8.1 J | 8.1 J | -- | -- | -- | -- | -- | -- | -- | 24.4 | **830** | 6.2 | 8880 | 173 | **1080** | -- |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P1-MW-4I | 114-P1-MW-4I-20201110 | 11/10/2020 | 37.5 | N | JD15969 | Post-Treatment | Intermediate | **97.4** | **234** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 21.2 | **673 J** | 4.0 | 10000 | 152 | **953** | -- |
| 114-P1-MW-4I | 114-P1-MW-4I-20210224 | 2/24/2021 | 37.5 | N | JD20709 | Post-Treatment | Intermediate | **101** | **212** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 22.3 | **562** | 3.6 | 9170 | 103 | **1240** | -- |
| 114-P1-MW-4I | 114-P1-MW-4I-20210927 | 9/27/2021 | 37.5 | N | JD32281 | Post-Treatment | Intermediate | **87.0** | **160** | < 10 UBJ | 9.3 J | -- | -- | -- | -- | -- | -- | -- | 19.1 | **443** | 4.7 | 10300 | 53.7 J | **1040** | -- |
| 114-P1-MW-4I | 114-P1-MW-4I-20211118 | 11/18/2021 | 37.5 | N | JD35530 | Post-Treatment | Intermediate | **77.3** | **97.5** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 22.3 | **625** | 6.0 | 9540 | 62.2 J | **1100** | -- |
| 114-P1-MW-4I | 114-P1-MW-4I-20220221 | 2/21/2022 | 37.5 | N | JD40060 | Post-Treatment | Intermediate | **85.3** | **551** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 20.3 | **477** | < 400 U | 7420 | < 100 U | **1240** | -- |
| 114-P1-MW-4I | 114-P1-MW4I-20220525 | 5/25/2022 | 37.5 | N | JD45473 | Post-Treatment | Intermediate | 65.8 | **293** | 5.0 J | < 10 U | -- | -- | -- | -- | -- | -- | -- | 24.2 | **381** | 6.1 | 10300 | 64.7 J | **1720** | -- |
| 114-P1-MW-4I | 114-P1-MW-4I-32.5-20221227 | 12/27/2022 | 32.5 | N | 4602720661 | Enhanced Attenuation | Intermediate | -- | -- | -- | < 10.0 U | -178.9 | 0.77 | 7.4 | 4.47 | 10.39 | 3.5 | -- | 23.7 J- | R | 3.6 J- | -- | < 120 U | -- | -- |
| 114-P1-MW-4I | 114-P1-MW-4I-32.5-20221229 | 12/29/2022 | 32.5 | N | 4602721691 | Enhanced Attenuation | Intermediate | -- | **97.9** | -- | -- | -276.9 | 0.53 | 7.14 | 4.513 | 13.05 | 4.19 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-MW-4I | 114-P1-MW-4I-32.5-20230413 | 4/13/2023 | 32.5 | N | 4602781921 | Enhanced Attenuation | Intermediate | -- | **84.9** | -- | < 10.0 U | -85.3 | 5.25 | 7.17 | 3.595 | 18.97 | 0.97 | -- | 28.6 | 207 | **4** | -- | < 120 U | **1390** | -- |
| 114-P1-MW-4I | 114-P1-MW-4I-32.5-20240409 | 4/9/2024 | 32.5 | N | JD86109 | Enhanced Attenuation | Intermediate | -- | **101** | -- | 3.9 J | -220.7 | 0.3 | 7.2 | 3.596 | 15.6 | 1.51 | -- | 21.9 | 140 | 6.5 | -- | < 250 U | **1090** | -- |
| 114-P1-MW-5I | 114-P1-MW-5I-20180123 | 1/23/2018 | 32 | N | JC59667 | Baseline | Intermediate | 12.0 | **244** | 18 | 18 | -117 | 0 | 6.96 | 2.38 | 17.56 | 45.1 | -- | 13.5 | **554** | < 2.0 U | 4720 J | **17800** | **3280** | -- |
| 114-P1-MW-5I | 114-P1-MW-5I-181102 | 11/2/2018 | 39.95 | N | JC77195 | Treatment | Intermediate | **36900** | **40500** | **29500** | **31500** | -- | -- | -- | -- | -- | -- | -- | 22.8 | **329** | -- | -- | -- | **159** | < 0.20 U |
| 114-P1-MW-5I | 114-P1-MW-5I-181219 | 12/19/2018 | 39.95 | N | JC80041 | Treatment | Intermediate | **13300 J** | **15100 J** | **13600 J** | **12600 J** | -- | -- | -- | -- | -- | -- | -- | 29.8 | **1110** | -- | -- | -- | **256 J** | R |
| 114-P1-MW-5I | 114-P1-MW-5I-20190327 | 3/27/2019 | 39.95 | N | JC85279 | Treatment | Intermediate | **4970** | **4670** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 28.1 | **1910** | -- | 1440 | -- | **477** | < 0.20 U |
| 114-P1-MW-5I | 114-P1-MW-5I-DUP-20190430 | 4/30/2019 | 39.95 | FD | JC87228 | Treatment | Intermediate | **15900** | **15500** | **< 1000 U** | **14800** | -- | -- | -- | -- | -- | -- | -- | 27.2 | **1340** | -- | 1040 J | -- | **347** | < 0.20 U |
| 114-P1-MW-5I | 114-P1-MW-5I-20190430 | 4/30/2019 | 39.95 | N | JC87228 | Treatment | Intermediate | **15500** | **15300** | **< 1000 U** | **14500** | -- | -- | -- | -- | -- | -- | -- | 27.3 | **1410** | -- | 734 J | -- | **351** | < 0.20 U |
| 114-P1-MW-5I | 114-P1-MW-5I-24.5-20190529 | 5/29/2019 | 24.5 | N | JC88888 | Treatment | Intermediate | **695** | **951** | **350** | **420** | -- | -- | -- | -- | -- | -- | -- | 30.0 | **1500** | -- | 1140 J | -- | **359** | R |
| 114-P1-MW-5I | 114-P1-MW-5I-29.5-20190529 | 5/29/2019 | 29.5 | N | JC88888 | Treatment | Intermediate | **1380** | **1570** | **900** | **1000** | -- | -- | -- | -- | -- | -- | -- | 31.1 | **1460** | -- | 1110 J | -- | **356** | R |
| 114-P1-MW-5I | 114-P1-MW-5I-34.5-20190529 | 5/29/2019 | 34.5 | N | JC88888 | Treatment | Intermediate | **1780** | **1980** | **1400** | **1500** | -- | -- | -- | -- | -- | -- | -- | 31.8 | **1360** | -- | 1200 J | -- | **347** | R |
| 114-P1-MW-5I | 114-P1-MW-5I-39.5-20190529 | 5/29/2019 | 39.5 | N | JC88888 | Treatment | Intermediate | **2280** | **2540** | **2700** | **2600** | -- | -- | -- | -- | -- | -- | -- | 34.9 | **1530** | -- | 1050 J | -- | **330** | R |
| 114-P1-MW-5I | 114-P1-MW5I-20190701 | 7/1/2019 | 39.95 | N | JC90966 | Treatment | Intermediate | **1940** | **1920** | **1600** | **1900** | -- | -- | -- | -- | -- | -- | -- | 29.2 | **1450** | -- | 1180 | -- | **331** | < 0.20 U |
| 114-P1-MW-5I | GPS-MW5I-DUP-20190729 | 7/29/2019 | 39.95 | FD | JC92380 | Treatment | Intermediate | **80.4** | **575 J** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 6.0 | **1940** | -- | 84.8 J | -- | **9100** | < 0.20 U |
| 114-P1-MW-5I | 114-P1-MW-5I-20190729 | 7/29/2019 | 39.95 | N | JC92380 | Treatment | Intermediate | **2900** | **4610** | **2200** | **2300** | -- | -- | -- | -- | -- | -- | -- | 28.4 | **1220** | -- | 1010 | -- | **311** | R |
| 114-P1-MW-5I | 114-P1-MW-5I-20190827 | 8/27/2019 | 39.95 | N | JC93952 | Treatment | Intermediate | **10800** | **14100** | **7200** | **8200** | -- | -- | -- | -- | -- | -- | -- | 146 | **704** | -- | 1520 | -- | **464** | < 0.20 U |
| 114-P1-MW-5I | 114-P1-MW-5I-20190923 | 9/23/2019 | 39.95 | N | JC95491 | Treatment | Intermediate | **1050** | **2480** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 203 | **296** | -- | 1510 J | -- | **737** | 0.57 J |
| 114-P1-MW-5I | 114-P1-MW-5I-20191029 | 10/29/2019 | 39.95 | N | JC97632 | Treatment | Intermediate | **2940** | **13800** | **420** | 27 | -- | -- | -- | -- | -- | -- | -- | 771 | 139 | -- | 1520 | -- | **2510** | 0.79 |
| 114-P1-MW-5I | 114-P1-MW-5I-20191123 | 11/23/2019 | 39.95 | N | JC99155 | Treatment | Intermediate | **1650** | **3430** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 512 | 24.1 | -- | 1070 J | -- | **2610** | -- |
| 114-P1-MW-5I | 114-P1-MW-5I-DUP-20191226 | 12/26/2019 | 39.95 | FD | JD923 | Treatment | Intermediate | **623 J** | **881** | 18 | 43 | -- | -- | -- | -- | -- | -- | -- | 309 | 108 | -- | 1550 | -- | **1520** | -- |
| 114-P1-MW-5I | 114-P1-MW-5I-20191226 | 12/26/2019 | 39.95 | N | JD923 | Treatment | Intermediate | **705 J** | **875** | 18 | 37 | -- | -- | -- | -- | -- | -- | -- | 300 | 102 | -- | 1660 | -- | **1730** | -- |
| 114-P1-MW-5I | 114-P1-MW-5I-20200127 | 1/27/2020 | 39.95 | N | JD2342 | Treatment | Intermediate | **445** | **566** | < 10 U | 31 | -- | -- | -- | -- | -- | -- | -- | 202 | 103 | -- | 2800 | -- | **1500** | -- |
| 114-P1-MW-5I | 114-P1-MW-5I-20200226 | 2/26/2020 | 39.95 | N | JD3741 | Treatment | Intermediate | **751** | **845** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 406 | 3.5 | -- | 1700 | -- | **2170** | -- |
| 114-P1-MW-5I | 114-P1-MW-5I-200200323 | 3/23/2020 | 39.95 | N | JD5060 | Treatment | Intermediate | **641** | **1250** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 399 | 2.9 | -- | 2410 | -- | **2370** | -- |
| 114-P1-MW-5I | 114-P1-MW-5I-20200812 | 8/12/2020 | 39.95 | N | JD11593 | Post-Treatment | Intermediate | **406** | **502** | < 50 U | < 50 U | -- | -- | -- | -- | -- | -- | -- | 268 | < 20 U | < 2.0 U | 5890 | **28600** | **2260** | -- |
| 114-P1-MW-5I | 114-P1-MW-5I-20210224 | 2/24/2021 | 39.95 | N | JD20709 | Post-Treatment | Intermediate | **274** | **458** | < 10 U | **< 100 U** | -- | -- | -- | -- | -- | -- | -- | 73.7 | 132 | 7.8 | 7650 | **441** | **495** | -- |
| 114-P1-MW-5I | 114-P1-MW-5I-20211001 | 10/1/2021 | 39.95 | N | JD32680 | Post-Treatment | Intermediate | **273** | **1210** | **97 J** | **74 J** | -- | -- | -- | -- | -- | -- | -- | 42.5 | < 20 U | 1.3 J | -- | **28700** | **2700** | -- |
| 114-P1-MW-5I | 114-P1-MW-5I-20211118 | 11/18/2021 | 39.95 | N | JD35530 | Post-Treatment | Intermediate | **289** | **1250** | **< 100 U** | **< 100 U** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **35800** | **2660** | -- |
| 114-P1-MW-5I | 114-P1-MW-5I-20220224 | 2/24/2022 | 39.95 | N | JD40291 | Post-Treatment | Intermediate | **204** | **1020** | 11 | 17 | -- | -- | -- | -- | -- | -- | -- | 45.6 | < 2.0 U | 0.93 J | 12100 | **10300** | **1470** | -- |
| 114-P1-MW-5I | 114-P1-MW-5I-20220524 | 5/24/2022 | 39.95 | N | JD45395 | Post-Treatment | Intermediate | **78.1** | **201** | 10 | 18 | -- | -- | -- | -- | -- | -- | -- | 21.5 | **571** | 35.4 | -- | **1220** | **581** | -- |
| 114-P1-MW-5I | 114-P1-MW-5I-32-20221228 | 12/28/2022 | 32 | N | 4602721191 | Enhanced Attenuation | Intermediate | -- | 65.6 | -- | < 10.0 U | -168.4 | 4.65 | 7.86 | 1.516 | 10.9 | 7.92 | -- | 8.6 | **293** | 3.2 | -- | < 120 U | -- | -- |
| 114-P1-MW-5I | 114-P1-MW-5I-26-20230413 | 4/13/2023 | 26 | N | 4602781921 | Enhanced Attenuation | Intermediate | -- | **144** | -- | < 10.0 U | -198.0 | 0.13 | 6.6 | 1.805 | 16.59 | 4.06 | -- | 10.7 | 105 | 13.6 | -- | < 120 U | **197** | -- |
| 114-P1-MW-5I | 114-P1-MW-5I-32.0-20240514 | 5/14/2024 | 32 | N | JD88423 | Enhanced Attenuation | Intermediate | -- | 47.2 J | -- | < 10 U | -283.2 | 0.1 | 7.34 | 0.4876 | 17 | 7.32 | -- | < 10 U | < 100 U | 2.9 | -- | **1410** | **128 J** | -- |
| 114-P1-MW-5I | 114-P1-MW-5I-32.0-20240514-X | 5/14/2024 | 32 | FD | JD88423 | Enhanced Attenuation | Intermediate | -- | 35.7 J | -- | 17 | -- | -- | -- | -- | -- | -- | -- | 15.3 | < 100 U | 3.3 | -- | **1190** | **160 J** | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-20180119 | 1/19/2018 | 38 | N | JC59431 | Baseline | Intermediate | **652000** | **564000** | **667000** | **719000** | 69 | 20.01 | 9.29 | 6.05 | 8.07 | 20.1 | -- | 18.5 | **524** | < 2.0 U | 565 | **< 500 U** | **< 75 U** | -- |
| 114-P1-MW-6I | 114-P1-MW6I-20180430 | 4/30/2018 | 38 | N | JC65192 | Treatment | Intermediate | **581000** | **532000** | **527000** | **525000** | 92 | 20.01 | 9.27 | 8.06 | 13.96 | 0 | -- | 26.4 | **577** | -- | 871 | -- | **< 1500 U** | < 2.0 UJ |
| 114-P1-MW-6I | 114-P1-MW-6I-20180529 | 5/29/2018 | 38 | N | JC66923 | Treatment | Intermediate | **678000** | **739000** | **1250000** | **1330000** | 99 | 0.48 | 9.25 | 5.71 | 21.04 | 1.33 | -- | 27.7 | -- | -- | 1080 | -- | **< 150 U** | < 0.20 U |
| 114-P1-MW-6I | 114-P1-MW-6I-20180529 | 5/29/2018 | 38 | N | JC66923B | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **545 J** | -- | -- | -- | -- | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-20180705 | 7/5/2018 | 38 | N | JC69286 | Treatment | Intermediate | **753000** | **720000** | **546000** | **593000** | 66 | 0.29 | 8.03 | 5.27 | 19.55 | 140 | -- | 28.5 | **571** | -- | 905 | -- | **< 150 U** | < 0.20 U |
| 114-P1-MW-6I | 114-P1-MW-6I-20180724 | 7/24/2018 | 38 | N | JC70485 | Treatment | Intermediate | **592000** | **547000** | **455000** | **476000** | 77 | 1.16 | 9.14 | 4.11 | 24.2 | 5.6 | -- | 28.2 | **551** | -- | 746 | -- | **< 150 U** | < 2.0 U |
| 114-P1-MW-6I | 114-P1-MW-6I-180828 | 8/28/2018 | 38 | N | JC72673 | Treatment | Intermediate | **688000** | **723000** | **635000** | **672000** | -- | -- | -- | -- | -- | -- | -- | 27.2 | **568** | -- | 686 | -- | **< 150 U** | < 0.20 U |
| 114-P1-MW-6I | 114-P1-MW6I-20180924 | 9/24/2018 | 38 | N | JC74476 | Treatment | Intermediate | **612000** | **643000** | **551000** | **582000 J** | -- | -- | -- | -- | -- | -- | -- | 25.2 | **578** | -- | -- | -- | **< 150 U** | < 0.20 U |
| 114-P1-MW-6I | 114-P1-MW-6I-20181031 | 10/31/2018 | 38 | N | JC76975 | Treatment | Intermediate | **453000** | **489000** | **377000** | **410000** | -- | -- | -- | -- | -- | -- | -- | 27.6 | **523** | -- | -- | -- | **< 150 U** | < 0.20 U |
| 114-P1-MW-6I | 114-P1-MW-6I-181127 | 11/27/2018 | 38 | N | JC78589 | Treatment | Intermediate | **455000** | **452000** | **566000** | **589000** | -- | -- | -- | -- | -- | -- | -- | 28.1 | **583** | -- | 737 | -- | **< 750 U** | < 0.20 UJ |
| 114-P1-MW-6I | 114-P1-MW-6I-181217 | 12/17/2018 | 38 | N | JC79904 | Treatment | Intermediate | **390000** | **357000 J** | **356000** | **371000** | -- | -- | -- | -- | -- | -- | -- | 25.9 | **574** | -- | -- | -- | **< 150 U** | R |
| 114-P1-MW-6I | 114-P1-MW-6I-20190328 | 3/28/2019 | 38 | N | JC85346 | Treatment | Intermediate | **419000** | **400000** | **450** | **450** | -- | -- | -- | -- | -- | -- | -- | 24.6 | **640** | -- | 859 J | -- | **< 1500 U** | 1.2 |
| 114-P1-MW-6I | 114-P1-MW-6I-20190502 | 5/2/2019 | 38 | N | JC87408 | Treatment | Intermediate | **480000** | **494000** | **423000** | **419000** | -- | -- | -- | -- | -- | -- | -- | 26.0 | **612** | -- | 827 | -- | **< 300 U** | < 0.20 U |
| 114-P1-MW-6I | 114-P1-MW-6I-25.50-20190531 | 5/31/2019 | 25.5 | N | JC89048 | Treatment | Intermediate | **383000** | **382000** | **882000** | **1100000** | -- | -- | -- | -- | -- | -- | -- | 26.3 | **568** | -- | 1020 J | -- | **300** | R |
| 114-P1-MW-6I | 114-P1-MW-6I-30.50-20190531 | 5/31/2019 | 30.5 | N | JC89048 | Treatment | Intermediate | **412000** | **392000** | **923000** | **979000** | -- | -- | -- | -- | -- | -- | -- | 27.2 | **588** | -- | 1020 J | -- | **300** | R |
| 114-P1-MW-6I | 114-P1-MW-6I-35.50-20190531 | 5/31/2019 | 35.5 | N | JC89048 | Treatment | Intermediate | **432000** | **436000** | **993000** | **1210000** | -- | -- | -- | -- | -- | -- | -- | 28.5 | **587** | -- | 950 J | -- | **300** | R |
| 114-P1-MW-6I | 114-P1-MW-6I-40.5-20190601 | 6/1/2019 | 40.5 | N | JC89077 | Treatment | Intermediate | **516000** | **510000** | **479000** | **462000** | -- | -- | -- | -- | -- | -- | -- | 24.6 | **618** | -- | 912 J | -- | **< 150 U** | R |
| 114-P1-MW-6I | 114-P1-MW-6I-20190629 | 6/29/2019 | 38 | N | JC90940 | Treatment | Intermediate | **441000** | **490000** | **343000** | **360000** | -- | -- | -- | -- | -- | -- | -- | 26.4 | **651** | -- | 934 | -- | **< 150 U** | < 0.20 U |
| 114-P1-MW-6I | 114-P1-MW-6I-20190801 | 8/1/2019 | 38 | N | JC92580 | Treatment | Intermediate | **501000** | **549000** | **412000** | **434000** | -- | -- | -- | -- | -- | -- | -- | 27.6 | **582** | -- | 64.2 | -- | **< 150 U** | < 0.20 UJ |
| 114-P1-MW-6I | 114-P1-MW-6I-20190827 | 8/27/2019 | 38 | N | JC93952 | Treatment | Intermediate | **485000** | **506000** | **448000** | **458000** | -- | -- | -- | -- | -- | -- | -- | 27.5 | **614** | -- | 8.5 | -- | **< 300 U** | 1.3 |
| 114-P1-MW-6I | 114-P1-MW-6I-20190923 | 9/23/2019 | 38 | N | JC95491 | Treatment | Intermediate | **388000** | **384000** | **359000** | **363000** | -- | -- | -- | -- | -- | -- | -- | 25.2 | **571** | -- | 593 | -- | **< 1500 U** | < 0.20 UJ |
| 114-P1-MW-6I | 114-P1-MW-6I-20191031 | 10/31/2019 | 38 | N | JC97796 | Treatment | Intermediate | **374000** | **373000** | **348000** | **369000** | -- | -- | -- | -- | -- | -- | -- | 27.8 | **637** | -- | 682 | -- | **< 380 U** | < 0.20 U |
| 114-P1-MW-6I | 114-P1-MW-6I-20191125 | 11/25/2019 | 38 | N | JC99177 | Treatment | Intermediate | **379000** | **367000** | **306000** | **316000** | -- | -- | -- | -- | -- | -- | -- | 28.7 | **666** | -- | 828 | -- | **< 3000 U** | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-20191226 | 12/26/2019 | 38 | N | JD923 | Treatment | Intermediate | **239000 J** | **272000** | **272000** | **270000** | -- | -- | -- | -- | -- | -- | -- | 29.9 | **858** | -- | 25.9 | -- | **< 750 U** | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-20200129 | 1/29/2020 | 38 | N | JD2452 | Treatment | Intermediate | **213000** | **219000** | **220000** | **230000** | -- | -- | -- | -- | -- | -- | -- | 28.9 | **958** | -- | 652 | -- | **< 750 U** | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-20200227 | 2/27/2020 | 38 | N | JD3810 | Treatment | Intermediate | **188000** | **177000** | **167000** | **190000** | -- | -- | -- | -- | -- | -- | -- | 29.2 | **914** | -- | 654 | -- | **67.0** | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-20200327 | 3/27/2020 | 38 | N | JD5288 | Treatment | Intermediate | **21500** | **140000** | **122000** | **125000** | -- | -- | -- | -- | -- | -- | -- | 30.6 | **762** | -- | 716 | -- | < 15 U | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-20200810 | 8/10/2020 | 38 | N | JD11480 | Post-Treatment | Intermediate | **131000** | **119000** | **115000** | **116000** | -- | -- | -- | -- | -- | -- | -- | 37.5 | **815** | < 2.0 U | 732 | **< 500 U** | 19.0 J | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-20201111 | 11/11/2020 | 38 | N | JD16049 | Post-Treatment | Intermediate | **293000** | **257000** | **242000** | **276000** | -- | -- | -- | -- | -- | -- | -- | 27.3 | **767** | < 2.0 U | 81.5 | **< 500 U** | **< 75 U** | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-20210224 | 2/24/2021 | 38 | N | JD20709 | Post-Treatment | Intermediate | **158000** | **144000** | **141000** | **172000** | -- | -- | -- | -- | -- | -- | -- | 12.3 | **841** | < 2.0 U | 471 | **< 1000 U** | **< 150 U** | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-20210928 | 9/28/2021 | 38 | N | JD32334 | Post-Treatment | Intermediate | **156000** | **184000** | **165000** | **170000** | -- | -- | -- | -- | -- | -- | -- | 20.8 | **674** | < 2.0 U | 288 | **< 500 U** | **< 75 U** | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-20211116 | 11/16/2021 | 38 | N | JD35372 | Post-Treatment | Intermediate | **884000** | **1040000** | **890000** | **1020000** | -- | -- | -- | -- | -- | -- | -- | 76.2 | **931** | < 2.0 U | 739 | < 100 U | **< 1500 U** | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-20220224 | 2/24/2022 | 38 | N | JD40291 | Post-Treatment | Intermediate | **60200** | **66700** | **58800** | **58400** | -- | -- | -- | -- | -- | -- | -- | 11.5 | **898** | < 1.3 UJ | 270 J | < 100 U | 16.7 J | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-DUP-20220224 | 2/24/2022 | 38 | FD | JD40291 | Post-Treatment | Intermediate | **61100** | **51900** | **52900** | **58600** | -- | -- | -- | -- | -- | -- | -- | 10.3 | **914** | < 2.0 U | 101 J | < 100 U | 15.7 J | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-20220526 | 5/26/2022 | 38 | N | JD45556 | Post-Treatment | Intermediate | **40400** | **179000** | **33700** | **29100** | -- | -- | -- | -- | -- | -- | -- | 31.6 J | **686** | < 2.0 U | 238 | < 100 U | < 15 U | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-32.8-20230330 | 3/30/2023 | 32.8 | N | 4602773211 | Treatment | Intermediate | -- | **7310** | -- | **8010** | -83.4 | 0.68 | 8.11 | 2.994 | 10.50 | 2.48 | -- | 13.9 | **631** | -- | -- | -- | -- | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-32.8-20230330-X | 3/30/2023 | 32.8 | FD | 4602773211 | Treatment | Intermediate | -- | **7210** | -- | **8230** | -- | -- | -- | -- | -- | -- | -- | 14.2 | **606** | -- | -- | < 120 U | 22.9 | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-32.8-20230412 | 4/12/2023 | 32.8 | N | 4602781111 | Treatment | Intermediate | -- | **1130** | -- | **627** | -210.9 | 1.25 | 8.28 | 2.563 | 18.41 | 1.46 | -- | 12.2 | **578** | -- | -- | < 120 U | 19.0 | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-32.8-20230505 | 5/5/2023 | 32.8 | N | 4602796711 | Treatment | Intermediate | -- | **294** | -- | **169** | 338.0 | 1.44 | 7.79 | 2.716 | 15.30 | 2.01 | -- | 10.8 | **644** | -- | -- | < 120 U | 24.0 | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-32.8-20230615 | 6/15/2023 | 32.8 | N | 4602824081 | Treatment | Intermediate | **500** | **338** | **381** | **302** | -172.1 | 2.17 | 8.58 | 2.229 | 18.00 | 21.2 | -- | 96.9 | **326** | -- | -- | 98.0 J | 26.5 | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-32.8-20230711 | 7/11/2023 | 32.8 | N | 4602839751 | Treatment | Intermediate | -- | **117** | -- | < 10.0 U | -184.7 | 3 | 8.2 | 2.864 | 17.32 | 2.98 | -- | 21.6 | **545** | -- | -- | 175 | 29.2 | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-32.8-20230815 | 8/15/2023 | 32.8 | N | 4602862021 | Treatment | Intermediate | -- | **75.7** | -- | < 10.0 U | -126.9 | 1.12 | 8.21 | 2.868 | 19.31 | 1.97 | -- | 39.5 | **283** | -- | -- | 86.8 J | 17.0 | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-32.8-20230912 | 9/12/2023 | 32.8 | N | 4602880021 | Treatment | Intermediate | -- | **76.2** | -- | < 10.0 U | -119.7 | 0.59 | 8.15 | 2.592 | 22.01 | 7.25 | -- | 72.7 | **343** | -- | -- | 128 | 24.4 | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-32.8-20231018 | 10/18/2023 | 32.8 | N | 4602906411 | Treatment | Intermediate | -- | **114** | -- | < 10.0 U | -81.3 | 0.27 | 8.43 | 2.688 | 17.5 | 2.29 | -- | 293 | 180 | -- | -- | 176 | 30.0 | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-32.8-20231018-X | 10/18/2023 | 32.8 | FD | 4602906411 | Treatment | Intermediate | -- | **116** | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 286 | 189 | -- | -- | 174 | 31.2 | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-32.8-20231113 | 11/13/2023 | 32.8 | N | JD76851 | Treatment | Intermediate | -- | **151** | -- | < 10 U | -278.9 | 0.18 | 8.38 | 2358 | 15.3 | 3.03 | -- | 148 | **315** | -- | -- | 222 | **55.2** | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-32.8-20231113-X | 11/13/2023 | 32.8 | FD | JD76851 | Treatment | Intermediate | -- | **141** | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | 152 | **303** | -- | -- | 220 | **55.4** | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-32.8-20231221 | 12/21/2023 | 32.8 | N | JD79358 | Treatment | Intermediate | -- | **279** | -- | < 10 U | -365.3 | 0.13 | 7.67 | 3.052 | 13.1 | 3.84 | -- | 389 | 19.3 | -- | -- | 170 B | 33.8 | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-32.8-20231221-X | 12/21/2023 | 32.8 | FD | JD79358 | Treatment | Intermediate | -- | **292** | -- | 6.1 B | -- | -- | -- | -- | -- | -- | -- | 390 | 21.7 | -- | -- | 174 B | 37.0 | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-32.8-20240126 | 1/26/2024 | 32.8 | N | JD81264 | Treatment | Intermediate | -- | **365** | -- | < 10 U | -296.7 | 0.24 | 7.49 | 3.472 | 11.4 | 5.66 | -- | 505 | 4.5 | -- | -- | **388** | **51.5** | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-32.8-20240214 | 2/14/2024 | 32.8 | N | JD82437 | Treatment | Intermediate | -- | **417** | -- | 4.0 B | -270.4 | 0.11 | 7.58 | 2.781 | 11 | 8.92 | -- | 250 | 3.5 | -- | -- | 177 B | 40.1 | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-32.8-20240214-X | 2/14/2024 | 32.8 | FD | JD82437 | Treatment | Intermediate | -- | **407** | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | 269 | 4.4 | -- | -- | 176 B | 40.4 | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-32.8-20240311 | 3/11/2024 | 32.8 | N | JD84214 | Treatment | Intermediate | -- | **889** | -- | < 10 U | -293.4 | 0.14 | 7.59 | 3.922 | 11.2 | 7.83 | -- | 348 | 1.4 B | -- | -- | 287 | **53.3** | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-35.3-20240520 | 5/20/2024 | 35.3 | N | JD88833 | Post-Treatment | Intermediate | -- | **2620** | -- | < 10 U | -310.4 | 0.42 | 7.28 | 3.117 | 19.2 | 9.86 | -- | 844 | < 10 U | 0.69 J | -- | -- | -- | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-40.3-20240520 | 5/20/2024 | 40.3 | N | JD88833 | Post-Treatment | Intermediate | **2140** | **2060** | < 10 U | < 10 U | -315 | 0.15 | 7.39 | 3.04 | 18.3 | 11.9 | -- | 442 | < 10 U | 0.89 J | -- | **1960** | **262** | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-25.3-20240521 | 5/21/2024 | 25.3 | N | JD88897 | Post-Treatment | Intermediate | -- | **2740** | -- | 12 | -128.8 | 0.32 | 6.88 | 3.796 | 23.4 | 9.63 | -- | 608 | < 10 U | 1.4 J | -- | -- | -- | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-30.3-20240521 | 5/21/2024 | 30.3 | N | JD88897 | Post-Treatment | Intermediate | -- | **2650** | -- | < 10 U | -151.6 | 0.16 | 6.95 | 3.78 | 21 | 9.83 | -- | 901 | < 10 U | 1.2 J | -- | -- | -- | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-25.3-20240822 | 8/22/2024 | 25.3 | N | JD94702 | Post-Treatment | Intermediate | **599** | **584** | < 10 U | 6.8 J | -181.6 | 0.11 | 6.92 | 3.36 | 24.8 | 14.4 | -- | 59.9 | < 2.0 U | -- | -- | -- | -- | -- |
| 114-P1-MW-6I | 114-P1-MW-6I-25.3-20241118 | 11/18/2024 | 25.3 | N | JE873 | Post-Treatment | Intermediate | **771** | **1140** | 5.3 J | < 10 U | -252.8 | 2.15 | 7.38 | 2.66 | 18.6 | 21.4 | -- | 48.7 J- | 90.4 | -- | -- | -- | -- | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-20180125 | 1/25/2018 | 38 | N | JC59745 | Baseline | Intermediate | **384000** | **398000** | **382000** | **1560000** | 201 | 3.8 | 9.44 | 3.96 | 11.3 | 0 | -- | 19.0 | **401** | < 2.0 U | 471 | **< 1000 U** | 33.2 | -- |
| 114-P1-MW-7I | 114-P1-MW7I-20180430 | 4/30/2018 | 38 | N | JC65192 | Treatment | Intermediate | **75.4** | **6160** | < 10 U | < 10 U | -8 | 0.51 | 6.53 | 21.9 | 11.12 | 70.4 | -- | 26.4 | **3540** | -- | 556 | -- | **11700** | 82.6 J |
| 114-P1-MW-7I | 114-P1-MW-7I-20180529 | 5/29/2018 | 38 | N | JC66923 | Treatment | Intermediate | 55.7 | **9020** | 14 | 19 | 30 | 0.27 | 6.58 | 16.1 | 25.1 | 58.2 | -- | 22.1 | -- | -- | 628 | -- | **7330** | 37.8 |
| 114-P1-MW-7

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P1-MW-7I | 114-P1-MW-7I-20180703 | 7/3/2018 | 38 | N | JC69235 | Treatment | Intermediate | **70.8** | **12700** | 33 | 32 | 6 | 0.24 | 6.74 | 13.6 | 21.29 | 129 | -- | 17.2 | **2270** | -- | 315 | -- | **5070** | 12.6 J |
| 114-P1-MW-7I | 114-P1-MW-7I-20180725 | 7/25/2018 | 38 | N | JC70550 | Treatment | Intermediate | **61900 J** | **46600 J** | **72200** | **76600** | 209 | 0.35 | 6.8 | 10 | 23.43 | 173 | -- | 14.3 | **1260** | -- | 365 | -- | **2950** | R |
| 114-P1-MW-7I | 114-P1-MW-7I-180828 | 8/28/2018 | 38 | N | JC72673 | Treatment | Intermediate | 60.2 | **5400** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 12.8 | **1650** | -- | 390 | -- | **3140** | 13.0 |
| 114-P1-MW-7I | 114-P1-MW7I-20180924 | 9/24/2018 | 38 | N | JC74476 | Treatment | Intermediate | 61.3 | **2490** | < 10 U | < 10 UJ | -- | -- | -- | -- | -- | -- | -- | 16.1 | **2100** | -- | -- | -- | **4940** | 42.2 |
| 114-P1-MW-7I | 114-P1-MW-7I-20181030 | 10/30/2018 | 38 | N | JC76905 | Treatment | Intermediate | **109** | **8280 J** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 10.8 | **1490** | -- | -- | -- | **2790** | 3.9 J |
| 114-P1-MW-7I | 114-P1-MW-7I-181219 | 12/19/2018 | 38 | N | JC80041 | Treatment | Intermediate | **7460** | **8890** | **7600** | **7700** | -- | -- | -- | -- | -- | -- | -- | 50.3 | **541** | -- | -- | -- | **1340** | R |
| 114-P1-MW-7I | 114-P1-7I-DUP-20190327 | 3/27/2019 | 38 | FD | JC85279 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **2480** | -- | -- | -- | -- | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-DUP-20190327 | 3/27/2019 | 38 | FD | JC85279 | Treatment | Intermediate | 66.5 | **544** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 16.7 | -- | -- | 631 | -- | **5270** | 8.2 |
| 114-P1-MW-7I | 114-P1-MW-7I-20190327 | 3/27/2019 | 38 | N | JC85279 | Treatment | Intermediate | **95.1** | **472** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 19.2 | **2450** | -- | 454 | -- | **5380** | 15.2 |
| 114-P1-MW-7I | 114-P1-MW-7I-20190430 | 4/30/2019 | 38 | N | JC87228 | Treatment | Intermediate | 45.0 | **630** | 52 | 51 | -- | -- | -- | -- | -- | -- | -- | 15.8 | **2380** | -- | 480 | -- | **7610** | 28.0 |
| 114-P1-MW-7I | 114-P1-MW-7I-25.00-20190529 | 5/29/2019 | 25 | N | JC88888 | Treatment | Intermediate | 65.4 | **4510** | **< 100 U** | **< 100 U** | -- | -- | -- | -- | -- | -- | -- | 15.7 | **2480 J** | -- | 26.5 J | -- | **6810** | 22.6 J |
| 114-P1-MW-7I | 114-P1-MW-7I-30.00-20190529 | 5/29/2019 | 30 | N | JC88888 | Treatment | Intermediate | 46.0 | **843** | **< 100 U** | **< 100 U** | -- | -- | -- | -- | -- | -- | -- | 17.5 | **2630** | -- | 589 J | -- | **7260** | 28.0 J |
| 114-P1-MW-7I | 114-P1-MW-7I-35.00-20190529 | 5/29/2019 | 35 | N | JC88888 | Treatment | Intermediate | 50.7 | **643** | 53 | 56 | -- | -- | -- | -- | -- | -- | -- | 15.7 | **2510** | -- | 663 J | -- | **7340** | 17.5 J |
| 114-P1-MW-7I | 114-P1-MW-7I-40.00-20190529 | 5/29/2019 | 40 | N | JC88888 | Treatment | Intermediate | 50.1 | **571** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 15.4 | **2440** | -- | 748 J | -- | **7820** | 16.1 J |
| 114-P1-MW-7I | 114-P1-MW-7I-20190628 | 6/28/2019 | 38 | N | JC90869 | Treatment | Intermediate | **91.2** | **394** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 15.2 | **2110** | -- | 627 | -- | **8590** | 4.9 J |
| 114-P1-MW-7I | 114-P1-MW-7I-20190801 | 8/1/2019 | 38 | N | JC92580 | Treatment | Intermediate | **79.6** | **495** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 14.9 | **1990** | -- | 26.9 | -- | **8200** | 30.9 J |
| 114-P1-MW-7I | 114-P1-MW-7I-DUP1-20190827 | 8/27/2019 | 38 | FD | JC93952 | Treatment | Intermediate | 35.7 | **589** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 5.1 | **500** | -- | 107 | -- | **243** | < 0.20 U |
| 114-P1-MW-7I | 114-P1-MW-7I-20190827 | 8/27/2019 | 38 | N | JC93952 | Treatment | Intermediate | **462** | **1050** | < 10 U | 19 | -- | -- | -- | -- | -- | -- | -- | 34.1 | **1970** | -- | 680 | -- | **7110** | 5.9 |
| 114-P1-MW-7I | 114-P1-MW-7I-20190925 | 9/25/2019 | 38 | N | JC95646 | Treatment | Intermediate | 68.5 | **325** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 14.8 | **2370** | -- | 392 | -- | **5200** | 505 |
| 114-P1-MW-7I | 114-P1-MW-7I-20191031 | 10/31/2019 | 38 | N | JC97796 | Treatment | Intermediate | **77300** | **134000** | **135000** | < 10 U | -- | -- | -- | -- | -- | -- | -- | 10.9 | **1210** | -- | 525 | -- | **2890** | < 0.20 U |
| 114-P1-MW-7I | 114-P1-MW-7I-20191125 | 11/25/2019 | 38 | N | JC99177 | Treatment | Intermediate | **261000** | **276000** | **206000** | **214000** | -- | -- | -- | -- | -- | -- | -- | 9.4 | **1010** | -- | 676 | -- | **2850** | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-20191227 | 12/27/2019 | 38 | N | JD963 | Treatment | Intermediate | **271000** | **301000** | **273000** | **275000** | -- | -- | -- | -- | -- | -- | -- | 11.4 | **1080** | -- | 580 J | -- | **1800 J** | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-20200129 | 1/29/2020 | 38 | N | JD2452 | Treatment | Intermediate | **162000** | **139000** | **158000** | **146000** | -- | -- | -- | -- | -- | -- | -- | 6.5 | **1240** | -- | 506 | -- | **1320** | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-20200224 | 2/24/2020 | 38 | N | JD3618 | Treatment | Intermediate | **241000 J** | **258000** | **242000** | **248000** | -- | -- | -- | -- | -- | -- | -- | 7.5 | **894** | -- | 439 | -- | **1000** | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-200200323 | 3/23/2020 | 38 | N | JD5060 | Treatment | Intermediate | **103000** | **84500** | **98900** | **98700** | -- | -- | -- | -- | -- | -- | -- | 5.1 | **1070** | -- | 366 | -- | **791** | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-20200811 | 8/11/2020 | 38 | N | JD11542 | Treatment | Intermediate | **174** | **1000** | < 10 U | 8.1 J | -- | -- | -- | -- | -- | -- | -- | 7.2 | **1540** | < 2.0 U | 419 | **6910** | **1970** | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-20201111 | 11/11/2020 | 38 | N | JD16049 | Treatment | Intermediate | **650000** | **710000** | **608000** | **689000** | -- | -- | -- | -- | -- | -- | -- | 13.8 | **1150** | < 2.0 U | 510 | **< 500 U** | **600** | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-20210224 | 2/24/2021 | 38 | N | JD20709 | Treatment | Intermediate | **287000 J** | **218000 J** | **271000** | **243000** | -- | -- | -- | -- | -- | -- | -- | 14.8 | **610** | < 2.0 U | 309 | **< 5000 U** | **295 J** | -- |
| 114-P1-MW-7I | 114-P1-MW7I-37.0-20210317 | 3/17/2021 | 37 | N | JD21863 | Treatment | Intermediate | **649000** | **714000** | **668000** | **805000** | 183.9 | 0.1 | 7.2 | 5.391 | -- | 9.71 | -- | 16.8 | **1030** | -- | -- | -- | -- | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-37.5-20210426 | 4/26/2021 | 37.5 | N | 4602329401 | Treatment | Intermediate | **1970000** | **1840000** | **2120000** | **1870000** | 181.5 | 4.75 | 7.08 | 7.775 | -- | 9.11 | -- | 14.8 | 39.9 | -- | 950 | **1860** | **480** | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-28-20210525 | 5/25/2021 | 28 | N | 4602351281 | Treatment | Intermediate | **2120000** | **1970000** | **1980000 H** | **1980000 H** | 250.9 | 2.45 | 7.17 | 9.814 | -- | 3.9 | -- | 14.6 | **785** | -- | 850 | **< 600 U** | **494** | -- |
| 114-P1-MW-7I | 114-P1-MW7I-28-20210622 | 6/22/2021 | 28 | N | 4602371271 | Treatment | Intermediate | **473000** | **598000** | **508000** | **530000** | 134 | 0.86 | 7.23 | 6.387 | -- | 8.64 | -- | 10.4 | **1030** | -- | 480 | **6040** | **471** | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-33.0-20210723 | 7/23/2021 | 33 | N | 4602389041 | Treatment | Intermediate | **1110000** | **1160000** | **1090000** | **1170000** | 15 | 5.11 | 7.2 | 10.15 | -- | 8.18 | -- | 36.7 | **851** | -- | 720 | **< 12000 U** | **779 J** | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-28.0-20210831 | 8/31/2021 | 28 | N | 4602418991 | Treatment | Intermediate | **2180000** | **2120000** | **2240000** | **1690000** | 213.1 | 2.22 | 7.15 | 8.567 | -- | 3.77 | -- | 11.9 | **723** | -- | 830 | **< 12000 U** | **508 J** | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-28.0-20210922 | 9/22/2021 | 28 | N | 4602433951 | Treatment | Intermediate | **1990000** | **1630000** | **1590000** | **1420000** | 240.2 | 0.48 | 6.9 | 8.936 | -- | 275 | -- | 14.8 | **1040** | -- | 990 | **< 600 U** | **305** | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-28.0-20211021 | 10/21/2021 | 28 | N | 4602456401 | Treatment | Intermediate | **2500000** | **2590000** | **2510000** | **2620000** | 184.8 | 0.41 | 7.03 | 9.997 | -- | 219 *** | -- | 15.1 | **874** | -- | 880 | **< 600 U** | **288** | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-28-20211119 | 11/19/2021 | 28 | N | 4602476321 | Treatment | Intermediate | **3030000** | **1960000** | **2000000 F1** | **2110000 F1** | 251.9 | 0.08 | 7.32 | 8.787 | -- | 9 | -- | 15.8 F1 | **716 F1** | -- | 890 | **597 J** | **613** | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-28-20211119-X | 11/19/2021 | 28 | FD | 4602476321 | Treatment | Intermediate | **2500000** | **1730000** | **2140000** | **1800000** | -- | -- | -- | -- | -- | -- | -- | 14.8 | **738** | -- | 970 | **< 600 U** | **518** | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-30.0-20211215 | 12/15/2021 | 30.6 | N | 4602491921 | Treatment | Intermediate | **2390000** | **2240000** | **1870000** | **1920000** | 189.6 | 8.69 | 7.13 | 10.51 | -- | 9.25 | -- | 16.3 | **788** | -- | 760 | **< 600 U** | **603** | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-28.0-20220112 | 1/12/2022 | 28 | N | 4602505551 | Treatment | Intermediate | **1300000** | **1250000** | **1260000** | **1440000** | 192 | 0 | 7.08 | 7.42 | -- | 7.66 | -- | 17.5 | **819** | -- | 840 | **< 1200 U** | **480** | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-43-20220216 | 2/16/2022 | | N | 4602526321 | Treatment | Intermediate | **687000** | **745000** | **689000** | **705000** | 167.8 | 0.12 | 7.92 | 5.588 | -- | 9.7 | -- | 35.2 | **775** | -- | 660 | **< 60000 U** | **811 J** | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-28.0-20220316 | 3/16/2022 | 28 | N | 4602544241 | Treatment | Intermediate | **1460000** | **1430000** | **1420000** | **1380000** | 99.5 | 0.18 | 8.42 | 6.838 | -- | 9.12 | -- | 18.2 ^2 | **915** | -- | 980 | **< 1200 U** | **399** | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-28.0-20220413 | 4/13/2022 | 28 | N | 4602562001 | Treatment | Intermediate | **1820000** | **1480000** | **1380000** | **1400000** | 197.8 | 0.21 | 7.76 | 11.61 | 14.37 | 9.7 | -- | 17.4 ^2 | **994** | -- | 1100 | **< 1200 U** | **361** | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-28.0-20220511 | 5/11/2022 | 28 | N | 4602579551 | Treatment | Intermediate | **1600000** | **1490000** | **1480000** | **1500000** | 208 | 5.42 | 7.67 | 14.92 | 14.93 | 9.97 | -- | 15.6 | **921** | -- | 980 | **< 1200 U** | **240** | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-28.0-20220608 | 6/8/2022 | 28 | N | 4602596671 | Treatment | Intermediate | -- | **1260000** | -- | **1430000** | 181.6 | 0.7 | 7.43 | 9.81 | 17.53 | 3.15 | -- | 15.2 | **946** | -- | -- | -- | -- | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-28.0-20220715 | 7/15/2022 | 28 | N | 4602619741 | Treatment | Intermediate | -- | **1190000** | -- | **1510000** | 148.00 | 4.41 | 7.57 | 14.98 | 17.14 | 9.16 | -- | 29.0 | **831** | -- | -- | -- | -- | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-28-20220817 | 8/17/2022 | 28 | N | 4602639901 | Treatment | Intermediate | -- | **1480000** | -- | **1720000** | 162.0 | 1.89 | 7.38 | 7.793 | 19.59 | 8.82 | -- | 21.4 | **990** | -- | -- | < 240 U | **298 J** | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-28-20220915 | 9/15/2022 | 28 | N | 4602655901 | Treatment | Intermediate | -- | **1350000** | -- | **1670000** | 145.8 | 0.01 | 7.39 | 9.127 | 18.93 | 4.59 | -- | 19.4 | **842** | -- | -- | **< 1200 U** | **268** | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-28-20221012 | 10/12/2022 | 28 | N | 4602673311 | Treatment | Intermediate | -- | **769000** | -- | **766000** | 156.2 | 1.43 | 7.31 | 6.939 | 20.85 | 9.78 | -- | 16.9 | **939** | -- | -- | **< 2400 U** | **794** | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-28-20221110 | 11/10/2022 | 28 | N | 4602692751 | Treatment | Intermediate | -- | **1400000** | -- | **1340000** | 75.7 | 1.92 | 8.36 | 8.771 | 16.60 | 7.90 | -- | 20.9 | **950** | -- | -- | **< 1200 U** | **185** | -- |
| 114-P1-MW-7I | 114-P1-MW7I-32-20221206 | 12/6/2022 | 32 | N | 4602707741 | Treatment | Intermediate | -- | **1720000** | -- | **1020000** | -- | -- | -- | -- | -- | -- | -- | 17.2 | **1010** | -- | -- | -- | -- | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-32.0-20221209 | 12/9/2022 | 32 | N | 4602711631 | Treatment | Intermediate | -- | -- | -- | -- | 17.3 | 0.67 | 7.37 | 8.563 | 12.6 | 6.25 | -- | -- | -- | -- | -- | **< 2400 U** | **175** | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-27.8-20230221 | 2/21/2023 | 27.8 | N | 4602750101 | Post-Treatment | Intermediate | **425000** | **443000** | **440000** | **419000** | -286.2 | 0.98 | 7.3 | 5.816 | 8.34 | 134 | -- | 16.8 | **756** | < 1 U | -- | **< 2400 U** | **2370** | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-32.8-20230221 | 2/21/2023 | 32.8 | N | 4602750101 | Post-Treatment | Intermediate | **1200000 J** | **592000 J** | **966000** | **741000** | -233.8 | 1.02 | 7.41 | 6.648 | 10.91 | 70 | -- | 16.9 | **1060** | < 1 U | -- | **< 2400 U** | **470** | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-37.8-20230222 | 2/22/2023 | 37.8 | N | 4602750771 | Post-Treatment | Intermediate | **629000** | **653000** | **623000** | **628000** | 158.9 | 1.1 | 7.62 | 10.297 | 11.09 | 34.7 | -- | 17.4 | **1080** | < 1 U | -- | **< 2400 U** | **1730** | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-32.8-20230517 | 5/17/2023 | 32.8 | N | 4602804511 | Treatment | Intermediate | -- | **187000** | -- | **187000** | 42.4 | 0.36 | 6.75 | 3.09 | 19 | 9.87 | -- | 15.8 | **438** | < 20.0 U | -- | **< 600 U** | **13600** | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-32.8-20230817 | 8/17/2023 | 32.8 | N | 4602864001 | Post-Treatment | Intermediate | **233000** | **257000** | **282000** | **266000** | 156.2 | 5.34 | 6.43 | 4.48 | 26.78 | 13.4 | -- | 14.1 | **493** | < 10 U | -- | **< 6000 U** | **11100** | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-32.8-20231116 | 11/16/2023 | 32.8 | N | JD77165 | Post-Treatment | Intermediate | **122000** | **126000 J** | **151000** | **182000 J** | 22 | 0 | 7.95 | 2.251 | 17.3 | 21.7 | -- | < 20 U | **666** | -- | -- | -- | -- | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-32.8-20240215 | 2/15/2024 | 32.8 | N | JD82518 | Post-Treatment | Intermediate | -- | **118000** | -- | **146000 J-** | 154.9 | 0.14 | 7.08 | 3.565 | 10.7 | 9.3 | -- | 12.3 | **724** | -- | -- | -- | -- | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-32.8-20240515 | 5/15/2024 | 32.8 | N | JD88509 | Post-Treatment | Intermediate | **274000** | **266000** | **237000** | **294000** | 15 | 2.29 | 6.91 | 5.14 | 16.5 | 15.4 | -- | 8.8 | **1040** | -- | -- | **< 500 U** | **9770** | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-32.8-20240815 | 8/15/2024 | 32.8 | N | JD94204 | Post-Treatment | Intermediate | **142000** | **144000** | -- | **166000** | 49.1 | 0.1 | 6.65 | 5.06 | 21.9 | 14.4 | -- | 14.5 | **963** | -- | -- | -- | -- | -- |
| 114-P1-MW-7I | 114-P1-MW-7I-32.8-20241118 | 11/18/2024 | 32.8 | N | JE873 | Post-Treatment | Intermediate | -- | **288000** | -- | **267000** | 150.9 | 0.14 | 7.06 | 5.17 | 18.7 | 9.78 | -- | R | **1180** | -- | -- | -- | -- | -- |
| 114-P2A-MW101I | 114-P2A-MW101I-20180130 | 1/30/2018 | 38.27 | N | JC59976 | Baseline | Intermediate | < 10 U | < 10 U | R | R | -52 | 0 | 6.85 | 7.58 | 7.84 | 205 | -- | 5.7 | **1790** | < 2.0 U | 2080 | **38600** | **13500** | -- |
| 114-P2A-MW101I | 114-P2A-MW101I-20180503 | 5/3/2018 | 38.27 | N | JC65417 | Treatment | Intermediate | < 10 | 10.6 | < 10 U | < 10 U | -186 | 0 | 8.45 | 10.01 | 20.8 | 93.7 | -- | 13.3 | **1260** | -- | 2620 | -- | **1170** | < 0.20 UJ |
| 114-P2A-MW101I | 114-P2A-MW101I-20180531 | 5/31/2018 | 38.27 | N | JC67082 | Treatment | Intermediate | < 10 U | < 10 U | < 10 UJ | < 10 U | -- | -- | -- | -- | -- | -- | -- | 10.4 | -- | -- | 45.4 | -- | **73.5** | < 0.20 U |
| 114-P2A-MW101I | 114-P2A-MW101I-20180531 | 5/31/2018 | 38.27 | N | JC67082A | Treatment | Intermediate | -- | -- | -- | -- | 26 | 0 | 8.98 | 2.22 | 19.59 | 6.57 | -- | -- | **398** | -- | -- | -- | -- | -- |
| 114-P2A-MW101I | 114-P2A-MW-101I_20180705 | 7/5/2018 | 38.27 | N | JC69286 | Treatment | Intermediate | < 10 U | 12.0 | < 10 U | < 10 U | -221 | 0.26 | 7.43 | 9.87 | 22.92 | 5.7 | -- | 14.3 | **1430** | -- | 2590 | -- | **869** | < 0.20 U |
| 114-P2A-MW101I | 114-P2A-MW101I-20180727 | 7/27/2018 | 38.27 | N | JC70845 | Treatment | Intermediate | < 10 U | 41.5 | < 10 U | < 10 U | -266 | 0.32 | 8.8 | 9.4 | 25.16 | 6.7 | -- | 15.0 | **1400** | -- | 3440 | -- | **965** | R |
| 114-P2A-MW101I | 114-P2A-MW101I-180828 | 8/28/2018 | 38.27 | N | JC72673 | Treatment | Intermediate | **92.3** | **135** | 67 | 68 | -- | -- | -- | -- | -- | -- | -- | 15.4 | **1180** | -- | 1420 | -- | **575** | < 0.20 U |
| 114-P2A-MW101I | 114-P1-P2A-MW101I-20180927 | 9/27/2018 | 38.27 | N | JC74699 | Treatment | Intermediate | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 16.0 | **1430** | -- | -- | -- | **562** | 0.21 |
| 114-P2A-MW101I | 114-P2A-MW101I-20181031 | 10/31/2018 | 38.27 | N | JC76975 | Treatment | Intermediate | < 10 U | 10.8 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 16.0 | **1350** | -- | -- | -- | **1050** | < 0.20 U |
| 114-P2A-MW101I | 114-P2A-MW101I-DUP-181128 | 11/28/2018 | 38.27 | FD | JC78649 | Treatment | Intermediate | < 10 U | 16.8 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 16.1 | **1330** | -- | 4710 | -- | **1370** | < 0.20 U |
| 114-P2A-MW101I | 114-P2A-MW101I-181128 | 11/28/2018 | 38.27 | N | JC78649 | Treatment | Intermediate | < 10 U | 26.6 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 16.2 | **1390** | -- | 3900 | -- | **1480** | < 0.20 U |
| 114-P2A-MW101I | 114-P2A-MW101I-181217 | 12/17/2018 | 38.27 | N | JC79904 | Treatment | Intermediate | < 10 UJ | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 15.6 | **1360** | -- | -- | -- | **881** | R |
| 114-P2A-MW101I | 114-P2A-MW101I-DUP-20190326 | 3/26/2019 | 38.27 | FD | JC85176 | Treatment | Intermediate | < 10 U | 13.5 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 15.4 | **1720 J** | -- | 3470 | -- | **1040** | < 0.20 U |
| 114-P2A-MW101I | 114-P2A-MW101I-20190326 | 3/26/2019 | 38.27 | N | JC85176 | Treatment | Intermediate | < 10 U | 20.6 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 15.5 | **309 J** | -- | 3260 | -- | **1130** | < 0.20 U |
| 114-P2A-MW101I | 114-P2A-MW101I-20190429 | 4/29/2019 | 38.27 | N | JC87158 | Treatment | Intermediate | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 15.6 | **1300** | -- | 3200 | -- | **1140** | < 0.20 U |
| 114-P2A-MW101I | 114-P2A-MW101I-33.50-20190528 | 5/28/2019 | 33.5 | N | JC88834 | Treatment | Intermediate | < 10 U | 16.8 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 15.1 | **1380** | -- | 3540 J | -- | **893** | < 0.20 U |
| 114-P2A-MW101I | 114-P2A-MW101I-38.50-20190528 | 5/28/2019 | 38.5 | N | JC88834 | Treatment | Intermediate | < 10 U | 13.1 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 14.2 | **1310** | -- | 3770 J | -- | **1280** | < 0.20 U |
| 114-P2A-MW101I | 114-P2A-MW101I-20190629 | 6/29/2019 | 38.27 | N | JC90940 | Treatment | Intermediate | < 10 U | 46.3 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 15.5 | **1440** | -- | 2010 | -- | **190** | < 0.20 U |
| 114-P2A-MW101I | 114-P2A-MW101I-20160727_20190727 | 7/27/2019 | 38.27 | N | JC92354 | Treatment | Intermediate | < 10 U | 21.3 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 16.2 | **1320** | -- | 800 | -- | **188** | < 0.20 U |
| 114-P2A-MW101I | 114-P2A-MW101I-20190826 | 8/26/2019 | 38.27 | N | JC93900 | Treatment | Intermediate | < 10 U | 22.3 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 16.3 | **1390** | -- | 3400 | -- | **223** | < 0.20 U |
| 114-P2A-MW101I | 114-P2A-MW-101I-20190926 | 9/26/2019 | 38.27 | N | JC95738 | Treatment | Intermediate | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 13.6 | **1260** | -- | 3010 | -- | **1010** | R |
| 114-P2A-MW101I | BD-20191031 | 10/31/2019 | 38.27 | FD | JC97796 | Treatment | Intermediate | < 10 U | **78.1** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 15.9 | **1330** | -- | 2950 | -- | **395** | < 0.20 U |
| 114-P2A-MW101I | 114-P2A-MW-101I-20191031 | 10/31/2019 | 38.27 | N | JC97796 | Treatment | Intermediate | < 10 U | **212** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 16.3 | **1360** | -- | 2550 | -- | **396** | < 0.20 U |
| 114-P2A-MW101I | 114-P2A-MW101I-20191123 | 11/23/2019 | 38.27 | N | JC99155 | Treatment | Intermediate | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 15.8 | **1200** | -- | 3610 | -- | **1160** | -- |
| 114-P2A-MW101I | 114-P2A-MW101I-20191227 | 12/27/2019 | 38.27 | N | JD963 | Treatment | Intermediate | 11.5 | 13.6 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 15.6 | **1230** | -- | 2250 | -- | **103 J** | -- |
| 114-P2A-MW101I | 114-P2A-MW101I-DUP-20200130 | 1/30/2020 | 38.27 | FD | JD2521 | Treatment | Intermediate | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 4.8 | **795** | -- | 54.6 | -- | **58.9** | -- |
| 114-P2A-MW101I | 114-P2A-MW101I-20200130 | 1/30/2020 | 38.27 | N | JD2521 | Treatment | Intermediate | < 10 U | < 10 U | < 10 U | < 10 U | -- | 0.27 | -- | -- | -- | -- | -- | 4.8 | **688** | -- | 65.6 | -- | **73.4** | -- |
| 114-P2A-MW101I | 114-P2A-MW101I-20200228 | 2/28/2020 | 38.27 | N | JD3873 | Treatment | Intermediate | < 10 U | 18.1 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 15.1 | **1190** | -- | 4830 | -- | **986** | -- |
| 114-P2A-MW101I | 114-P2A-MW101I-20200325 | 3/25/2020 | 38.27 | N | JD5175 | Treatment | Intermediate | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 4.6 | **881** | -- | 79.2 | -- | **97.3** | -- |
| 114-P2A-MW101I | 114-P2A-MW101I-20200813 | 8/13/2020 | 38.27 | N | JD11673 | Post-Treatment | Intermediate | < 10 U | 2.6 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 14.5 | **1210** | < 2.0 U | 2740 | **606** | **1400** | -- |
| 114-P2A-MW101I | 114-P2A-MW101I-20201110 | 11/10/2020 | 38.27 | N | JD15969 | Post-Treatment | Intermediate | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 3.9 | **630 J** | < 2.0 U | 143 | 56.7 J | **90.9** | -- |
| 114-P2A-MW101I | 114-P2A-MW101I-20210224 | 2/24/2021 | 38.27 | N | JD20709 | Post-Treatment | Intermediate | 3.9 J | 10.3 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 14.9 | **1360** | < 2.0 U | 4820 | **678** | **477** | -- |
| 114-P2A-MW101I | 114-P2A-MW101I-20211011 | 10/11/2021 | 38.27 | N | JD33262 | Post-Treatment | Intermediate | < 10 U | 1.9 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | < 4.2 UB | **722** | < 2.0 U | 253 | 38.6 J | **101** | -- |
| 114-P2A-MW101I | 114-P2A-MW101I-20211117 | 11/17/2021 | 38.27 | N | JD35453 | Post-Treatment | Intermediate | 22.6 | 44.4 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 14.6 | **1040** | < 2.0 U | 13600 | **1640** | **3520** | -- |
| 114-P2A-MW101I | 114-P2A-MW101I-20220224 | 2/24/2022 | 38.27 | N | JD40291 | Post-Treatment | Intermediate | < 10 U | 36.2 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | < 2.9 UB | **715** | < 2.0 U | 343 | 39.7 J | **104** | -- |
| 114-P2A-MW101I | 114-P2A-MW101I-20220525 | 5/25/2022 | 38.27 | N | JD45473 | Post-Treatment | Intermediate | **98.3** | **101** | 5.0 J | 8.7 J | -- | -- | -- | -- | -- | -- | -- | 250 | 9.4 | 27.9 | 9840 | 132 | **3280** | -- |
| 114-P2A-MW101I | 114-P2A-MW101I-34-20221229 | 12/29/2022 | 34 | N | 4602721691 | N/A | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -150.6 | 0.52 | 8.26 | 1.275 | 12.3 | 1.51 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW101I | 114-P2A-MW101I-39-20221229 | 12/29/2022 | 39 | N | 4602721691 | N/A | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -133.3 | 0.46 | 8.13 | 1.293 | 12.67 | 7.53 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW101I | 114-P2A-MW101I-34-20230314 | 3/14/2023 | 34 | N | 4602762891 | N/A | Intermediate | -- | 19.5 | -- | < 10.0 U | -66.30 | 0.35 | 8.57 | 1.102 | 9.30 | 4.8 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW101I | 114-P2A-MW101I-39-20230314 | 3/14/2023 | 39 | N | 4602762891 | N/A | Intermediate | -- | **104** | -- | < 10.0 U | -88.40 | 0.35 | 8.60 | 1.095 | 10.04 | 8.3 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW101I | 114-P2A-MW101I-34.0-20230418 | 4/18/2023 | 34 | N | 4602784511 | N/A | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -125.3 | 7.03 | 7.99 | 0.797 

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P2A-MW101I | 114-P2A-MW101I-39.0-20230912 | 9/12/2023 | 39 | N | 4602879871 | Total Cr Isopleth | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -55 | 0.39 | 6.75 | 0.964 | 19.95 | 8.89 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW101I | 114-P2A-MW101I-34.0-20231211 | 12/11/2023 | 34 | N | JD78573 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -177.5 | -0.08 | 8.41 | 1.171 | 12.7 | 0.31 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW101I | 114-P2A-MW101I-39.0-20231211 | 12/11/2023 | 39 | N | JD78573 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -160.8 | 1.8 | 8.36 | 1.174 | 13.3 | 2.66 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW101I | 114-P2A-MW101I-34.0-20240313 | 3/13/2024 | 34 | N | JD84389 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -188.6 | 0.42 | 8.34 | 1.187 | 13.7 | 0.38 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW101I | 114-P2A-MW101I-39.0-20240313 | 3/13/2024 | 39 | N | JD84389 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -180.9 | 0.13 | 8.28 | 1.182 | 12.6 | 1.11 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW101I | 114-P2A-MW101I-34.0-20240611 | 6/11/2024 | 34 | N | JD90213 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -139.6 | 0.65 | 8.25 | 1.041 | 16.1 | 5.39 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW101I | 114-P2A-MW101I-39.0-20240611 | 6/11/2024 | 39 | N | JD90213 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -142.3 | 0.42 | 8.27 | 1.032 | 15.8 | 7.73 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW101I | 114-P2A-MW101I-34.0-20240913 | 9/13/2024 | 34 | N | JD96081 | Total Cr Isopleth | Intermediate | -- | < 10 UJ | -- | < 10 U | -102.7 | 0.14 | 8.37 | 0.97 | 17.8 | 8.27 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW101I | 114-P2A-MW101I-39.0-20240913 | 9/13/2024 | 39 | N | JD96081 | Total Cr Isopleth | Intermediate | -- | < 10 UJ | -- | < 10 U | -100.4 | 0.08 | 8.34 | 0.97 | 19.1 | 2.83 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW101I | 114-P2A-MW101I-34.0-20241121 | 11/21/2024 | 34 | N | JE1118 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -179.1 | 0.11 | 8.23 | 1.11 | 14.7 | 2.91 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW101I | 114-P2A-MW101I-39.0-20241121 | 11/21/2024 | 39 | N | JE1118 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -175.4 | 0.13 | 8.24 | 1.11 | 15 | 5.35 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I_20180123 | 1/23/2018 | 30 | N | JC59556 | Baseline | Intermediate | **506** | **756** | < 10 U | < 10 U | 59 | 0.95 | 5.86 | 28.4 | 11.4 | 15.9 | -- | 30.8 | **4380** | < 2.0 U | 288 | **38800** | **21200** | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-20180501 | 5/1/2018 | 30 | N | JC65257 | Treatment | Intermediate | **490000** | **495000** | **381000** | **390000** | 167 | 8.6 | 8.19 | 3.39 | 22.7 | 8.3 | -- | 8.8 | **542** | -- | 29.9 | -- | **51.7** | < 0.20 U |
| 114-P2B1-MW101I | 114-P2B1-MW101I-20180530 | 5/30/2018 | 30 | N | JC66984 | Treatment | Intermediate | **383000** | **339000** | **301000** | **295000** | -- | -- | -- | -- | -- | -- | -- | 8.2 | -- | -- | 231 | -- | **< 150 U** | < 0.20 U |
| 114-P2B1-MW101I | 114-P2B1-MW101I-20180530 | 5/30/2018 | 30 | N | JC66984A | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **466 J** | -- | -- | -- | -- | -- |
| 114-P2B1-MW101I | 114-P2B1-MW-101I-20180706 | 7/6/2018 | 30 | N | JC69376 | Treatment | Intermediate | **324000** | **381000** | **353000** | **367000** | 167 | 0.48 | 6.81 | 4.86 | 20.46 | 0 | -- | 7.7 | **508** | -- | 87.2 | -- | **< 150 U** | < 0.20 U |
| 114-P2B1-MW101I | 114-P2B1-MW101I-180830 | 8/30/2018 | 30 | N | JC72843 | Treatment | Intermediate | **335000** | **335000** | **293000** | **308000** | -- | -- | -- | -- | -- | -- | -- | 9.1 | **491** | -- | 61.6 | -- | **< 150 U** | < 0.20 U |
| 114-P2B1-MW101I | 114-P2B1-MW101I-20180926 | 9/26/2018 | 30 | N | JC74616 | Treatment | Intermediate | **233000** | **238000** | **213000** | **240000** | -- | -- | -- | -- | -- | -- | -- | 8.0 | **614** | -- | -- | -- | **< 150 U** | < 0.20 U |
| 114-P2B1-MW101I | 114-P2B1-MW101I-181101 | 11/1/2018 | 30 | N | JC77088 | Treatment | Intermediate | **249000 J** | **301000 J** | **250000** | **264000** | -- | -- | -- | -- | -- | -- | -- | 7.5 | **744** | -- | -- | -- | **151** | < 0.20 UJ |
| 114-P2B1-MW101I | 114-P2B1-MW101I-181129 | 11/29/2018 | 30 | N | JC78732 | Treatment | Intermediate | **239000** | **244000** | **199000** | **214000** | -- | -- | -- | -- | -- | -- | -- | 8.5 | **632** | -- | 238 | -- | **< 1500 U** | < 0.20 U |
| 114-P2B1-MW101I | 114-P2B1-MW101I-181218 | 12/18/2018 | 30 | N | JC79966 | Treatment | Intermediate | **338000** | **341000** | **285000** | **303000** | -- | -- | -- | -- | -- | -- | -- | 8.5 | **566** | -- | -- | -- | **< 150 U** | R |
| 114-P2B1-MW101I | 114-P2B1-MW101I-20190328 | 3/28/2019 | 30 | N | JC85346 | Treatment | Intermediate | **263000** | **247000** | **244000** | **239000** | -- | -- | -- | -- | -- | -- | -- | 7.9 | **858** | -- | 95.0 | -- | **94.8** | 0.74 |
| 114-P2B1-MW101I | 114-P2B1-MW101I-20190501 | 5/1/2019 | 30 | N | JC87310 | Treatment | Intermediate | **280000** | **273000** | **229000** | **233000** | -- | -- | -- | -- | -- | -- | -- | 7.6 | **576** | -- | < 1.6 UB | -- | **< 380 U** | < 0.20 UJ |
| 114-P2B1-MW101I | 114-P2B1-MW101I-34.50-20190529 | 5/29/2019 | 34.5 | N | JC88888 | Treatment | Intermediate | < 10 U | 36.6 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 1.2 | 167 | -- | < 0.11 UJ | -- | < 15 U | R |
| 114-P2B1-MW101I | 114-P2B1-MW101I-32.5-20190531 | 5/31/2019 | 32.5 | N | JC89048 | Treatment | Intermediate | **233000** | **235000** | **205000** | **213000** | -- | -- | -- | -- | -- | -- | -- | 8.0 | **931** | -- | 363 J | -- | **300** | R |
| 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20190531 | 5/31/2019 | 37.5 | N | JC89048 | Treatment | Intermediate | **239000** | **246000** | **214000** | **215000** | -- | -- | -- | -- | -- | -- | -- | 7.2 | **849** | -- | 324 J | -- | **300** | R |
| 114-P2B1-MW101I | 114-P2B1-MW101I-20190701 | 7/1/2019 | 30 | N | JC90966 | Treatment | Intermediate | **269000** | **273000** | **230000** | **248000** | -- | -- | -- | -- | -- | -- | -- | 7.8 | **907** | -- | 225 | -- | **< 3000 U** | < 0.20 U |
| 114-P2B1-MW101I | 114-P2B2-MW-101I-DUP-20190801 | 8/1/2019 | 30 | FD | JC92580 | Treatment | Intermediate | **280000** | **296000** | **253000** | **273000** | -- | -- | -- | -- | -- | -- | -- | 8.0 | **817** | -- | 60.3 J | -- | **< 150 U** | < 0.20 UJ |
| 114-P2B1-MW101I | 114-P2B1-MW101I-20190801 | 8/1/2019 | 30 | N | JC92580 | Treatment | Intermediate | **274000** | **265000** | **244000** | **239000** | -- | -- | -- | -- | -- | -- | -- | 8.7 | **851** | -- | 31.6 J | -- | **< 150 U** | < 0.20 UJ |
| 114-P2B1-MW101I | 114-P2B1-MW101I-20190828 | 8/28/2019 | 41.2 | N | JC94021 | Treatment | Intermediate | **316000** | **298000** | **328000** | **325000** | -- | -- | -- | -- | -- | -- | -- | 8.2 | **812** | -- | 190 | -- | **< 300 U** | < 0.20 U |
| 114-P2B1-MW101I | 114-P2B1-MW101I-20191126 | 11/26/2019 | 30 | N | JC99269 | Treatment | Intermediate | **317000** | **319000 J** | **309000** | **329000** | -- | -- | -- | -- | -- | -- | -- | 7.8 | **566** | -- | 52.2 | -- | **< 3000 U** | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-20191226 | 12/26/2019 | 30 | N | JD923 | Treatment | Intermediate | **290000 J** | **331000** | **306000** | **331000** | -- | -- | -- | -- | -- | -- | -- | 7.9 | **625** | -- | < 0.11 U | -- | **< 750 U** | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-20200129 | 1/29/2020 | 30 | N | JD2452 | Treatment | Intermediate | **146000** | **146000** | **149000** | **150000** | -- | -- | -- | -- | -- | -- | -- | 6.8 | **694** | -- | 207 | -- | **< 750 U** | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-20200227 | 2/27/2020 | 30 | N | JD3810 | Treatment | Intermediate | **205000** | **227000** | **200000** | **206000** | -- | -- | -- | -- | -- | -- | -- | 6.4 | **834** | -- | 219 | -- | **< 141** | -- |
| 114-P2B1-MW101I | 114-P2B1-MW-101I-20200326 | 3/26/2020 | 30 | N | JD5246 | Treatment | Intermediate | **71700** | **79400** | **79200** | **73400** | -- | -- | -- | -- | -- | -- | -- | 4.5 | **698** | -- | 162 | -- | **< 75 U** | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-20200814 | 8/14/2020 | 30 | N | JD11773 | Treatment | Intermediate | **66200** | **69400** | **77000** | **82800** | -- | -- | -- | -- | -- | -- | -- | 4.4 | **755 J** | < 2.0 U | 2.9 | **< 500 U** | 8.5 J | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-20201112 | 11/12/2020 | 30 | N | JD16144 | Treatment | Intermediate | **69500** | **67600** | **78300** | **80100** | -- | -- | -- | -- | -- | -- | -- | 6.3 | **1180** | < 2.0 U | 92.0 | **< 500 U** | **193** | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-28.0-20201216 | 12/16/2020 | 28 | N | JD17868 | Treatment | Intermediate | **66600** | **74800** | **62300** | **68700** | 146.8 | 0.37 | 7.21 | 11.99 | -- | 1.97 | -- | 5.2 | **1650** | -- | -- | -- | -- | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-28.0-20210112 | 1/12/2021 | 28 | N | JD18928 | Treatment | Intermediate | **39200** | **36900** | **35400** | **41100** | 214.1 | 0.33 | 7.44 | 12.17 | -- | 5.98 | -- | 48.1 | **1320** | -- | -- | -- | -- | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-25.0-20210216 | 2/16/2021 | 25 | N | JD20408 | Treatment | Intermediate | **13700** | **21700** | **13200** | **18900** | 83.1 | 0.24 | 7.25 | 9.096 | -- | 8.41 | -- | 151 | **910** | -- | -- | -- | -- | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-30-20210316 | 3/16/2021 | 30 | N | JD21820 | Treatment | Intermediate | **827** | **2230** | 6.1 B | 7.4 B | -322.3 | 0.02 | 7.06 | 7.234 | -- | 14.1 | -- | 167 | **921** | -- | -- | -- | -- | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-30-20210427 | 4/27/2021 | 30 | N | 4602330111 | Treatment | Intermediate | **366** | **944** | < 20.0 U | < 20.0 U | -312.5 | 0.09 | 7.03 | 6.399 | -- | 6.53 | -- | 160 | **450** | -- | 180 | 248 | **8970** | -- |
| 114-P2B1-MW101I | 114-P2B1-MW-101I-30.0-20210526 | 5/26/2021 | 30 | N | 4602352461 | Treatment | Intermediate | **417** | **697** | < 20.0 U | < 20.0 U | -340.3 | 0 | 7.23 | 6.716 | -- | 4.15 | -- | 188 | **278** | -- | 160 | 282 | **10600** | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-30-20210623 | 6/23/2021 | 30 | N | 4602372171 | Treatment | Intermediate | **1930** | **2750** | < 20.0 U | < 20.0 U | -342.6 | 0.06 | 7.33 | 5.775 | -- | 7.09 | -- | 52.0 | **1110** | -- | 370 | **872 J** | **14900** | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-35.0-20210721 | 7/21/2021 | 35 | N | 4602392301 | Treatment | Intermediate | **229** | **522** | < 10.0 U | < 20.0 U | -242.5 | -7.99 ** | 7.5 | 8.389 | -- | 8.76 | -- | 96.1 F1 | **287 F1** | -- | 220 F1 | 74.3 J | **6930** | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-30.0-20210830 | 8/30/2021 | 30 | N | 4602418391 | Treatment | Intermediate | **115** | **266** | < 10.0 U | < 10.0 U | -328.6 | 1.49 | 7.41 | 8.655 | -- | 7.61 | -- | 19.8 | **805** | -- | 440 | < 120 U | **4080** | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-20.0-20210920 | 9/20/2021 | 30.5 | N | 4602432251 | Treatment | Intermediate | **258** | **480** | < 10.0 U | < 10.0 U | -342.9 | 0.05 | 6.99 | 7.841 | -- | 8.63 | -- | 92.4 | **293** | -- | 350 | < 120 U | **4820** | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-30-20211021 | 10/21/2021 | 30 | N | 4602456401 | Treatment | Intermediate | **231** | **446** | < 10.0 U | < 10.0 U | -320.6 | 0.14 | 7.11 | 6.42 | -- | 2.76 | -- | 143 | 15.7 | -- | 150 | < 120 U | **3800** | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-30.5-20211117 | 11/17/2021 | 30.5 | N | 4602474651 | Treatment | Intermediate | **353** | **431** | < 20.0 U | < 20.0 U | -392.6 | 0.24 | 7.32 | 4.092 | -- | 9.97 | -- | 151 | 2.22 | -- | 250 | < 240 U | **5020** | -- |
| 114-P2B1-MW101I | 114-P2B1-MW-101I-35-20211217 | 12/17/2021 | 35 | N | 4602493781 | Treatment | Intermediate | **224** | **241** | < 20.0 U | < 20.0 U | -302.7 | -0.37 | 7.37 | 7.78 | -- | 0.88 | -- | 16.5 | **743** | -- | 310 | < 120 U | **4860** | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-30.5-20220114 | 1/14/2022 | 30.5 | N | 4602507311 | Treatment | Intermediate | **240** | **262** | < 10.0 U | < 10.0 U | -359 | 0 | 7.5 | 11.2 | -- | 2.32 | -- | 21.8 | **647** | -- | 220 | < 120 U | **4680** | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-30.5-20220218 | 2/18/2022 | 30.5 | N | 4602528091 | Treatment | Intermediate | **237** | **248** | < 20.0 U | < 20.0 U | -28.4 | 0.59 | 8.15 | 6.219 | -- | 9.8 | -- | 18.5 | **748** | -- | 170 | < 240 U | **4870** | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-30.5-20220314 | 3/14/2022 | 30.5 | N | 4602542351 | Treatment | Intermediate | **220** | **266** | < 20.0 U | < 20.0 U | -298.2 | 0.41 | 7.88 | 8.238 | -- | 5.28 | -- | 18.9 F1 | **779** | -- | 140 F1 | < 120 U | **4650** | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-30.5-20220314-X | 3/14/2022 | 30.5 | FD | 4602542351 | Treatment | Intermediate | **232** | **223** | < 20.0 U | < 20.0 U | -- | -- | -- | -- | -- | -- | -- | 18.3 | **803** | -- | 130 | < 120 U | **4640** | -- |
| 114-P2B1-MW101I | 114-P2B1-MW-101I-30.5-20220413 | 4/13/2022 | 30.5 | N | 4602562001 | Treatment | Intermediate | **240** | **309** | < 10.0 U | < 10.0 U | -280.2 | 1.41 | 7.8 | 13.32 | 15.01 | 7.75 | -- | 20.0 | **737** | -- | 88 | < 120 U | **4530** | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-30.5-20220509 | 5/9/2022 | 30.5 | N | 4602578211 | Treatment | Intermediate | **212** | **228** | < 20.0 U | < 20.0 U | -312.9 | -0.67 | 7.18 | 6.529 | 14.18 | 2.94 | -- | 19.9 | **677** | -- | 93 | < 120 U | **3900** | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-30.5-20220607 | 6/7/2022 | 30.5 | N | 4602595691 | Treatment | Intermediate | -- | **349** | -- | **< 100 U** | -356 | 0.43 | 7.24 | 6.432 | 18.14 | 2.36 | -- | 22.5 | **667** | -- | -- | -- | -- | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-30.5-20220715 | 7/15/2022 | 30.5 | N | 4602619741 | Treatment | Intermediate | -- | **796** | -- | **< 100 U** | -310.60 | 2.36 | 7.22 | 6.51 | 17.10 | 4.22 | -- | 23.8 | **454** | -- | -- | -- | -- | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-30.5-20220818 | 8/18/2022 | 30.5 | N | 4602640741 | Treatment | Intermediate | -- | **474** | -- | < 50.0 U | -323.5 | 4.09 | 8.47 | 6.034 | 18.13 | 5.44 | -- | 24.4 | 61.3 | -- | -- | 123 | **3560** | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-30.5-20221209 | 12/9/2022 | 32.5 | N | 4602710741 | Post-Treatment | Intermediate | -- | **362** | -- | < 10.0 U | -290.5 | 0.8 | 7.42 | 5.053 | 13.3 | 3.09 | -- | 22.8 | **594** | 12.8 | -- | < 120 U | **3560** | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20221209 | 12/9/2022 | 37.5 | N | 4602710741 | Post-Treatment | Intermediate | -- | **285** | -- | < 10.0 U | -308.5 | 1.24 | 7.39 | 6.078 | 14.19 | 4.39 | -- | 22.6 | **689** | 1.6 | -- | 110 J | **4890** | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20230221 | 2/21/2023 | 37.5 | N | 4602750101 | Post-Treatment | Intermediate | -- | **289** | -- | < 10.0 U | 221.8 | 1.09 | 7.24 | 9.038 | 11.4 | 6.63 | -- | 21.9 | **854** | < 1 U | -- | 127 | **5200** | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20230615 | 6/15/2023 | 37.5 | N | 4602824101 | Post-Treatment | Intermediate | -- | **626** | -- | < 10.0 U | -215.2 | 2.93 | 7.22 | 6.02 | 17.4 | 3.15 | -- | 18.4 | **594** | < 1 U | -- | **632** | **4010** | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20230818 | 8/18/2023 | 37.5 | N | 4602864961 | Post-Treatment | Intermediate | -- | **170** | -- | < 10.0 U | -191.1 | 0.28 | 7.35 | 10.04 | 17.77 | 4.2 | -- | 17.5 J- | **612** | < 1 U | -- | **471** | **4840** | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20231120 | 11/20/2023 | 37.5 | N | JD77343 | Post-Treatment | Intermediate | -- | **292** | -- | < 10 UJ | -138.9 | 0.14 | 7.35 | 7.51 | 14.8 | 2.93 | -- | 13.3 | **809** | -- | -- | -- | -- | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20240216 | 2/16/2024 | 37.5 | N | JD82616 | Post-Treatment | Intermediate | -- | **162** | -- | < 10 U | -412.9 | 0.17 | 7.3 | 7.93 | 12.2 | 4.86 | -- | 11.4 | **1020** | -- | -- | -- | -- | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20240520 | 5/20/2024 | 37.5 | N | JD88833 | Post-Treatment | Intermediate | -- | **475** | -- | < 10 U | -315.2 | 2.8 | 7.44 | 5.83 | 16.1 | 4.28 | -- | 13.5 | **1050** | -- | -- | -- | -- | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20240820 | 8/20/2024 | 37.5 | N | JD94507 | Post-Treatment | Intermediate | -- | **206** | -- | 2.7 J | -151 | 0.26 | 7.28 | 8.47 | 19.7 | 2.46 | -- | 11.6 | **1290** | -- | -- | -- | -- | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-37.5-20241122 | 11/22/2024 | 37.5 | N | JE1234 | Post-Treatment | Intermediate | -- | **162** | -- | < 10 U | -141.9 | 0.32 | 7.49 | 7.33 | 12.7 | 1.16 | -- | 10.1 J- | **1210** | -- | -- | -- | -- | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-20180130 | 1/30/2018 | 33 | N | JC59976 | Baseline | Intermediate | **2740000** | **2750000** | **2280000** | **2260000** | 245 | 6.02 | 6.85 | 18.1 | 11.25 | 16.7 | -- | 11.6 | **800** | < 2.0 U | 240 | **< 5000 U** | **< 3800 U** | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-20180501 | 5/1/2018 | 33 | N | JC65257 | Treatment | Intermediate | < 50 U | < 50 U | < 10 U | < 10 U | -74 | 4.27 | 7.25 | 4.25 | 17.05 | 24.8 | -- | 15.2 | **489** | -- | 703 | -- | **26500** | 0.43 |
| 114-P2B2-MW101I | 114-P2B2-MW101I_20180106 | 6/1/2018 | 33 | N | JC67165 | Treatment | Intermediate | **7630** | **7420** | **7200** | **7400** | 107 | 1.14 | 7.32 | 8.9 | 20.04 | 10 | -- | 3.5 | -- | -- | 45.3 | -- | **117** | < 0.20 U |
| 114-P2B2-MW101I | 114-P2B2-MW101I_20180106 | 6/1/2018 | 33 | N | JC67165A | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 205 | -- | -- | -- | -- | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-20180702 | 7/2/2018 | 33 | N | JC69148 | Treatment | Intermediate | **18400** | **17600** | **17400** | **18500** | 148 | 0.36 | 7.47 | 2.93 | 8.18 | 9.1 | -- | 3.7 | **252** | -- | 392 | -- | **166** | < 0.20 U |
| 114-P2B2-MW101I | 114-P2-B2-MW-101I-20180724 | 7/24/2018 | 33 | N | JC70485 | Treatment | Intermediate | 26.4 | 62.7 | 17 | 25 | 78 | 4.58 | 8.32 | 0.646 | 28.51 | 70.2 | -- | 1.6 | 216 | -- | < 0.13 UB | -- | < 15 U | < 0.20 U |
| 114-P2B2-MW101I | 114-P2B2-MW-101I-201808827_20180827 | 8/27/2018 | 33 | N | JC72621 | Treatment | Intermediate | **123 J** | **81.4 J** | 14 | 16 | -- | -- | -- | -- | -- | -- | -- | 1.5 | **437** | -- | < 0.11 U | -- | 37.5 | < 0.20 U |
| 114-P2B2-MW101I | 114-P2B2-MW101I-20180924 | 9/24/2018 | 33 | N | JC74476 | Treatment | Intermediate | **930** | **1550** | **870** | **940 J** | -- | -- | -- | -- | -- | -- | -- | 1.5 | **302** | -- | -- | -- | 17.1 | < 0.20 U |
| 114-P2B2-MW101I | 114-P2B2-MW101I-20181030 | 10/30/2018 | 33 | N | JC76905 | Treatment | Intermediate | **35600** | **34600 J** | **28800** | **31500** | -- | -- | -- | -- | -- | -- | -- | 20.2 | **1030** | -- | -- | -- | **541** | < 0.20 U |
| 114-P2B2-MW101I | 114-P2B2-MW101I-181130 | 11/30/2018 | 33 | N | JC78781 | Treatment | Intermediate | < 10 U | 38.8 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 2.5 | 203 | -- | 0.50 | -- | **53.3** | < 0.20 U |
| 114-P2B2-MW101I | 114-P2B2-MW101I-181218 | 12/18/2018 | 33 | N | JC79966 | Treatment | Intermediate | < 10 U | 34.0 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | 36.1 | -- | -- | -- | < 15 U | R |
| 114-P2B2-MW101I | 114-P2B2-MW101I-20190326 | 3/26/2019 | 33 | N | JC85176 | Treatment | Intermediate | < 10 U | 20.4 | 42 | 41 | -- | -- | -- | -- | -- | -- | -- | 1.1 | **309** | -- | 0.50 | -- | < 15 U | < 0.20 U |
| 114-P2B2-MW101I | 114-P2B2-MW101I-20190430 | 4/30/2019 | 33 | N | JC87228 | Treatment | Intermediate | **522** | **514** | **520** | **530** | -- | -- | -- | -- | -- | -- | -- | 1.2 | 209 | -- | 5.1 | -- | < 15 U | < 0.20 U |
| 114-P2B2-MW101I | 114-P2B2-MW101I-29.50-20190529 | 5/29/2019 | 29.5 | N | JC88888 | Treatment | Intermediate | < 10 U | 24.5 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 1.5 | 168 | -- | < 0.11 UBJ | -- | < 15 U | R |
| 114-P2B2-MW101I | 114-P2B2-MW101I-20190701 | 7/1/2019 | 33 | N | JC90966 | Treatment | Intermediate | < 10 U | 13.9 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 1.2 | **371** | -- | 0.17 | -- | **69.1** | < 0.20 U |
| 114-P2B2-MW101I | 114-P2B2-MW101I-20190801 | 8/1/2019 | 33 | N | JC92580 | Treatment | Intermediate | 41.9 | 42.6 | 43 | 45 | -- | -- | -- | -- | -- | -- | -- | 2.3 | 178 | -- | 0.16 | -- | < 15 U | < 0.20 UJ |
| 114-P2B2-MW101I | 114-P2B2-MW101I-20190826 | 8/26/2019 | 33 | N | JC93900 | Treatment | Intermediate | **330** | **360** | **290** | **320** | -- | -- | -- | -- | -- | -- | -- | 1.7 | **266** | -- | 1.7 | -- | 28.2 | < 0.20 U |
| 114-P2B2-MW101I | 114-P2B2-MW101I-20190923 | 9/23/2019 | 33 | N | JC95491 | Treatment | Intermediate | **326** | **282** | **350** | **310** | -- | -- | -- | -- | -- | -- | -- | 2.0 | **288** | -- | 54.9 | -- | **159** | < 0.20 UJ |
| 114-P2B2-MW101I | 114-P2B2-MW101I-20191030 | 10/30/2019 | 33 | N | JC97696 | Treatment | Intermediate | < 10 U | 47.5 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | 34.1 | -- | 0.12 | -- | < 15 U | < 0.20 U |
| 114-P2B2-MW101I | 114-P2B2-MW101I-20191125 | 11/25/2019 | 33 | N | JC99177 | Treatment | Intermediate | 12.1 | 30.9 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 1.2 | 39.1 | -- | < 0.11 U | -- | < 15 U | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-20191227 | 12/27/2019 | 33 | N | JD963 | Treatment | Intermediate | **124** | **169** | **120** | **110** | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | 50.3 | -- | 0.42 | -- | R | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-20200129 | 1/29/2020 | 33 | N | JD2452 | Treatment | Intermediate | **173** | **294** | **180** | **180** | -- | -- | -- | -- | -- | -- | -- | 1.1 | 36.4 | -- | 0.47 | -- | < 15 U | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-20200227 | 2/27/2020 | 33 | N | JD3810 | Treatment | Intermediate | **133** | **201** | **140** | **140** | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | 27.7 | -- | < 0.84 UB | -- | < 15 U | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-20200324 | 3/24/2020 | 33 | N | JD5103 | Treatment | Intermediate | 21.1 | 68.7 | 18 | 23 | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | 16.5 | -- | < 0.35 UB | -- | < 15 U | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-29.5-20200403 | 4/3/2020 | 29.5 | N | JD5600 | N/A | Intermediate | -- | **435** | -- | **380** | 165.3 | 5.65 | 8.42 | 0.332 | 12.8 | 12.5 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-34.5-20200403 | 4/3/2020 | 34.5 | N | JD5600 | N/A | Intermediate | -- | **224** | -- | **180** | 153.2 | 7.25 | 9.07 | 0.237 | 12.4 | 26.3 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-27.5-20200727 | 7/27/2020 | 27.5 | N | JD10717 | N/A | Intermediate | **158** | **187** | **160** | **170** | 33.60 | 0.05 | 7.49 | 0.26 | 19.45 | 26.20 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-32.5-20200727 | 7/27/2020 | 32.5 | N | JD10717 | N/A | Intermediate | **82.4** | **152** | **90** | 67 | 33.50 | 0.04 | 7.38 | 0.24 | 20.00 | 25.80 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-20200813 | 8/13/2020 | 33 | N | JD11673 | Treatment | Intermediate | **155 J** | **125 J** | 64 | **72** | -- | -- | -- | -- | -- | -- | -- | 1.8 | 66.7 | < 2.0 U | 3.0 | < 100 U | 14.0 J | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-20201112 | 11/12/2020 | 33 | N | JD16144 | Treatment | Intermediate | 10.3 | 13.5 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 4.7 | 10.9 | < 2.0 U | < 0.11 U | < 100 U | < 15 U | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-33.0-20201214 | 12/14/2020 | 33 | N | JD17730 | Treatment | Intermediate | 8.7 B | 14.6 | < 10 U | 8.9 B | 150.3 | 2.44 | 6.95 | 0.166 | -- | 4.92 | -- | 4.6 | 6.5 | -- | -- | -- | -- | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-31.0-20210112 | 1/12/2021 | 31 | N | JD18928 | Treatment | Intermediate | 33.5 | 44.3 | < 10 U | < 10 U | -6.1 | 4.42 | 7.08 | 0.228 | -- | 5.91 | -- | 36.7 | 3.2 | -- | -- | -- | -- | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-31.0-20210112-X | 

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P2B2-MW101I | 114-P2B2-MW-101I-37-20210527 | 5/27/2021 | 37 | N | 4602353531 | Treatment | Intermediate | 3.5 J | 11.6 | < 10.0 U | < 10.0 U | 4.9 | 2.5 | 7.27 | 0.173 | -- | 6.5 | -- | 1.5 | 12.3 | -- | 260 | 201 | **409** | -- |
| 114-P2B2-MW101I | 114-P2B2-MW-101I-37.0-20210624 | 6/24/2021 | 37 | N | 4602373191 | Treatment | Intermediate | < 20.0 U | 16.7 | < 10.0 U | < 10.0 U | -198.3 | 1.71 | 7.5 | 0.973 | -- | 2.7 | -- | 59.9 | 57.8 | -- | 17000 | **2940** | **7010** | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-32.0-20210721 | 7/21/2021 | 32 | N | 4602392301 | Treatment | Intermediate | 8.2 | 13.0 | < 10.0 U | < 10.0 U | -- NM | 2.12 | 7.5 | 0.81 | -- | 5.62 | -- | 13.9 | 24.9 | -- | 17000 | **1590** | **5360** | -- |
| 114-P2B2-MW101I | 114-P2B2-MW-101I-37-20210924 | 9/24/2021 | 37 | N | 4602436001 | Treatment | Intermediate | 14.5 | 20.7 | < 10.0 U | < 10.0 U | -290 | 5.71 | 7 | 1.408 | -- | 3.24 | -- | 20.4 | 180 | -- | 17000 | 190 | **16900** | -- |
| 114-P2B2-MW101I | 114-P2B2-MW-101I-37.0-20211020 | 10/20/2021 | 37 | N | 4602455621 | Treatment | Intermediate | 21.8 | 19.9 | < 10.0 U | < 10.0 U | -119.8 | 1.41 | 6.86 | 1.693 | -- | 0 | -- | 24.7 | 13.6 | -- | 17000 | **707** | **17700** | -- |
| 114-P2B2-MW101I | 114-P2B2-MW-101I-39-20211217 | 12/17/2021 | 39 | N | 4602493781 | Treatment | Intermediate | 14.9 | 21.4 | < 10.0 U | < 10.0 U | -79.9 | 0.56 | 7.22 | 1.336 | -- | 1.49 | -- | 21.1 | 52.7 | -- | 21000 | **1520** | **16700** | -- |
| 114-P2B2-MW101I | 114-P2B2-MW-101I-32-20220112 | 1/12/2022 | 32 | N | 4602505551 | Treatment | Intermediate | 15.0 | 22.0 | < 10.0 U | < 10.0 U | -297 | 0 | 8.09 | 1.69 | -- | 3.64 | -- | 23.9 | 47.2 | -- | 9800 | **449** | **15100** | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-32.5-20220216 | 2/16/2022 | 32.5 | N | 4602526321 | Treatment | Intermediate | 19.7 | 26.4 | < 10.0 U | < 10.0 U | -56.8 | 1.56 | 7.91 | 1.365 | -- | 3.49 | -- | 20.0 | 47.6 | -- | 14000 | **837** | **14800** | -- |
| 114-P2B2-MW101I | 114-P2B2-MW-101I-32-20220314 | 3/14/2022 | 32 | N | 4602542351 | Treatment | Intermediate | 18.5 | 24.9 | < 10.0 U | < 10.0 U | -73.7 | 0.39 | 7.21 | 1.097 | -- | 1.22 | -- | 20.8 | 42.3 | -- | 13000 | **1150** | **14600** | -- |
| 114-P2B2-MW101I | 114-P2B2-MW-101I-32-20220412 | 4/12/2022 | 32 | N | 4602561091 | Treatment | Intermediate | 21.3 | 27.9 | < 10.0 U | < 10.0 U | -146.1 | 0.21 | 7.36 | 1.337 | 14.45 | 5.18 | -- | 19.4 B | 51.5 | -- | 11000 | **1110** | **14900** | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-32-20220509 | 5/9/2022 | 32 | N | 4602578211 | Treatment | Intermediate | 18.7 | 21.1 | < 10.0 U | < 10.0 U | -58.6 | 12.80 | 7.10 | 1.400 | 13.46 | 1.09 | -- | 19.2 | 57.0 | -- | 9200 | **1680** | **14400** | -- |
| 114-P2B2-MW101I | 114-P2B2-MW-101I-32-20220609 | 6/9/2022 | 32 | N | 4602597481 | Treatment | Intermediate | -- | 22.2 | -- | < 10.0 U | -71.3 | 0.18 | 7.23 | 2.63 | 16.79 | 3.6 | -- | 19.5 | 87.2 | -- | -- | -- | -- | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-32.0-20220715 | 7/15/2022 | 32 | N | 4602619741 | Treatment | Intermediate | -- | 29.0 | -- | < 10.0 U | -55.2 | 3.38 | 7.25 | 2.453 | 16.92 | 2.05 | -- | 20.6 | 105 | -- | -- | -- | -- | -- |
| 114-P2B2-MW101I | 114-P2B2-MW-101I-29.5-20220902 | 9/2/2022 | 29.5 | N | 4602648361 | N/A | Intermediate | 14.1 | 26.2 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-29.5-20221212 | 12/12/2022 | 29.5 | N | 4602712001 | Post-Treatment | Intermediate | -- | 36.5 J+ | -- | < 10.0 U | -46.9 | 0.74 | 7.32 | 1.132 | 9.95 | 2.97 | -- | 18.7 | 126 | < 1 U | -- | **3810** | **14500** | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-34.5-20221212 | 12/12/2022 | 34.5 | N | 4602712001 | Post-Treatment | Intermediate | -- | 25.4 J+ | -- | < 10.0 U | -45.2 | 0.72 | 7.29 | 1.478 | 11.8 | 3.86 | -- | 16.1 | **259** | < 1 U | -- | **1710** | **14100** | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-32.3-20230222 | 2/22/2023 | 32.3 | N | 4602750771 | Post-Treatment | Intermediate | -- | 15.5 | -- | < 10.0 U | -49.1 | 1.22 | 6.96 | 1.205 | 11.42 | 8.84 | -- | 10.9 | 63.2 | < 1 U | -- | **3630** | **11800** | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-37.3-20230222 | 2/22/2023 | 37.3 | N | 4602750771 | Post-Treatment | Intermediate | -- | 15.7 | -- | < 10.0 U | -87.4 | 1.81 | 6.94 | 1.121 | 11.72 | 8.82 | -- | 12.8 | 77.2 | < 1 U | -- | **2930** | **9860** | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-32.3-20230614 | 6/14/2023 | 32.3 | N | 4602823061 | Post-Treatment | Intermediate | -- | 19.7 | -- | < 10.0 U | -81.3 | 0.51 | 6.65 | 1.057 | 17.55 | 3.2 | -- | 13.2 | 51.6 | < 1 U | -- | **4740** | **11000** | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-37.3-20230614 | 6/14/2023 | 37.3 | N | 4602823061 | Post-Treatment | Intermediate | -- | 24.1 | -- | < 10.0 U | -75 | 0.55 | 6.48 | 1.301 | 17.2 | 2.37 | -- | 18.0 | 53.9 | < 1 U | -- | **7920** | **16000** | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-32.3-20230821 | 8/21/2023 | 32.3 | N | 4602866341 | Post-Treatment | Intermediate | -- | 23.1 | -- | < 10.0 UJ | -6.5 | 0.9 | 6.68 | 1.178 | 22.71 | 2.4 | -- | 13.3 | 56.5 | < 1 U | -- | **5740** | **12700** | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-37.3-20230821 | 8/21/2023 | 37.3 | N | 4602866341 | Post-Treatment | Intermediate | -- | 30.6 | -- | < 10.0 UJ | -12.2 | 1.34 | 6.59 | 1.638 | 22.52 | 4.32 | -- | 19.5 | 50.5 | < 1 U | -- | **11300** | **20800** | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-32.3-20231121 | 11/21/2023 | 32.3 | N | JD77454 | Post-Treatment | Intermediate | -- | 11.8 | -- | < 10 UJ | -127.9 | 1.74 | 8.24 | 0.2561 | 14.4 | 4.09 | -- | 1.6 | 30.4 | -- | -- | -- | -- | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-37.3-20231121 | 11/21/2023 | 37.3 | N | JD77454 | Post-Treatment | Intermediate | -- | 21.5 | -- | < 10 UJ | -214.1 | 0.85 | 7.95 | 1.149 | 14.9 | 2.23 | -- | 10.2 | 64.0 | -- | -- | -- | -- | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-32.3-20240220 | 2/20/2024 | 32.3 | N | JD82805 | Post-Treatment | Intermediate | -- | 7.0 J | -- | < 10 U | 58.3 | 7.04 | 7.25 | 0.1252 | 9.8 | 4.54 | -- | < 1.0 U | 13.6 | -- | -- | -- | -- | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-37.3-20240220 | 2/20/2024 | 37.3 | N | JD82805 | Post-Treatment | Intermediate | -- | 6.1 J | -- | < 10 U | -5.5 | 4.9 | 7.12 | 0.172 | 10.8 | 3.14 | -- | < 1.0 U | 20.5 | -- | -- | -- | -- | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-32.3-20240520 | 5/20/2024 | 32.3 | N | JD88833 | Post-Treatment | Intermediate | -- | 7.8 J | -- | < 10 U | 67 | 0.81 | 7.24 | 0.1288 | 15.5 | 1.52 | -- | 0.79 J | 17.7 | -- | -- | -- | -- | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-37.3-20240520 | 5/20/2024 | 37.3 | N | JD88833 | Post-Treatment | Intermediate | -- | 5.7 J | -- | < 10 U | -34 | 0.64 | 6.88 | 0.2896 | 16.6 | -- | -- | 2.1 | 28.0 | -- | -- | -- | -- | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-32.3-20240819 | 8/19/2024 | 32.3 | N | JD94428 | Post-Treatment | Intermediate | -- | 4.9 J | -- | < 10 U | -110.3 | 2.45 | 7.06 | 0.16 | 23.7 | 1.91 | -- | 1.7 | 23.3 | -- | -- | -- | -- | -- |
| 114-P2B2-MW101I | 114-P2B2-MW101I-37.3-20240819 | 8/19/2024 | 37.3 | N | JD94428 | Post-Treatment | Intermediate | -- | 5.4 | -- | < 10 U | -151.4 | 1.43 | 6.94 | 0.22 | 22.4 | 1.26 | -- | 0.87 J | 31.9 | -- | -- | -- | -- | -- |
| 114-P2B3-MW101I | 114-P2B3-MW-101I-20180119 | 1/19/2018 | 30 | N | JC59431 | Baseline | Intermediate | **263000** | **284000** | **297000** | **277000** | 72 | 0 | 7.59 | 3.26 | 11.42 | 0 | -- | 9.4 | **268** | < 2.0 U | 272 | **< 500 U** | **< 75 U** | -- |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20180502 | 5/2/2018 | 30 | N | JC65331 | Treatment | Intermediate | **218000** | **219000** | **187000** | **203000** | 46 | 0.05 | 9.54 | 3.04 | 28.6 | 0 | -- | 7.2 | **320** | -- | 22.5 | -- | **< 75 U** | < 0.20 U |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20180604 | 6/4/2018 | 30 | N | JC67259 | Treatment | Intermediate | **223000** | **211000** | **220000** | **218000** | 73 | 0 | 9.46 | 3.5 | 14.91 | 4.6 | -- | 8.2 | -- | -- | 129 | -- | **< 75 U** | < 0.20 U |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20180604 | 6/4/2018 | 30 | N | JC67259A | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 212 | -- | -- | -- | -- | -- |
| 114-P2B3-MW101I | 114-P2B3-MW-101I-20180705 | 7/5/2018 | 30 | N | JC69286 | Treatment | Intermediate | **255000** | **245000** | **196000** | **205000** | 63 | 0.25 | 8.98 | 3.11 | 20.48 | 0.5 | -- | 8.6 | **291** | -- | 184 | -- | **< 150 U** | < 0.20 U |
| 114-P2B3-MW101I | 114-P2B3-MW-101I-20180724 | 7/24/2018 | 30 | N | JC70485 | Treatment | Intermediate | **227000** | **223000** | **175000** | **190000** | 95 | 0 | 9.25 | 3.06 | 20.25 | 2.1 | -- | 8.6 | **279** | -- | 142 | -- | **< 150 U** | < 0.20 U |
| 114-P2B3-MW101I | 114-P2B3-MW101I-180830 | 8/30/2018 | 30 | N | JC72843 | Treatment | Intermediate | **223000** | **241000** | **182000** | **189000** | -- | -- | -- | -- | -- | -- | -- | 10.8 | **307** | -- | 138 | -- | **< 150 U** | < 0.20 U |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20180924 | 9/24/2018 | 30 | N | JC74476 | Treatment | Intermediate | **201000** | **205000** | **159000** | **169000 J** | -- | -- | -- | -- | -- | -- | -- | 8.5 | **285** | -- | -- | -- | **< 150 U** | R |
| 114-P2B3-MW101I | 114-P2B3-MW101I-181101 | 11/1/2018 | 30 | N | JC77088 | Treatment | Intermediate | **242000 J** | **221000 J** | **191000** | **202000** | -- | -- | -- | -- | -- | -- | -- | 9.0 | **271** | -- | -- | -- | -- | 32.2 |
| 114-P2B3-MW101I | 114-P2B3-MW101I-181129 | 11/29/2018 | 30 | N | JC78732 | Treatment | Intermediate | **211000** | **199000** | **188000** | **194000** | -- | -- | -- | -- | -- | -- | -- | 10.3 | **325** | -- | 302 | -- | **< 750 U** | < 0.20 U |
| 114-P2B3-MW101I | 114-P2B3-MW101I-181217 | 12/17/2018 | 30 | N | JC79904 | Treatment | Intermediate | **202000** | **195000 J** | **168000** | **178000** | -- | -- | -- | -- | -- | -- | -- | 12.4 | **414** | -- | -- | -- | **< 150 U** | R |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20190328 | 3/28/2019 | 30 | N | JC85346 | Treatment | Intermediate | **159000** | **165000** | **168000** | **174000** | -- | -- | -- | -- | -- | -- | -- | 11.0 | **613** | -- | 13.4 | -- | 32.8 | 0.44 |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20190502 | 5/2/2019 | 30 | N | JC87408 | Treatment | Intermediate | **152000** | **160000** | **148000** | **153000** | -- | -- | -- | -- | -- | -- | -- | 12.0 | **456** | -- | 38.4 | -- | **< 150 U** | < 0.20 U |
| 114-P2B3-MW101I | 114-P2B3-MW101I-27.5-20190530 | 5/30/2019 | 27.5 | N | JC88958 | Treatment | Intermediate | **91800** | **96800** | **96700** | **87800** | -- | -- | -- | -- | -- | -- | -- | 22.3 | **797** | -- | 585 J | -- | **84.2** | R |
| 114-P2B3-MW101I | 114-P2B3-MW101I-32.5-20190531 | 5/31/2019 | 32.5 | N | JC89048 | Treatment | Intermediate | **104000** | **109000** | **99000** | **100000** | -- | -- | -- | -- | -- | -- | -- | 17.5 | **688** | -- | 226 J | -- | **62.2** | R |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20190628 | 6/28/2019 | 30 | N | JC90869 | Treatment | Intermediate | **65000** | **67400** | **50000** | **59000** | -- | -- | -- | -- | -- | -- | -- | 22.1 | **789** | -- | 714 | -- | **< 150 U** | R |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20190727 | 7/27/2019 | 30 | N | JC92354 | Treatment | Intermediate | **32000** | **31600** | **19500** | **19400** | -- | -- | -- | -- | -- | -- | -- | 23.8 | **890** | -- | 14.0 | -- | **69.1** | < 0.20 U |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20190827 | 8/27/2019 | 30 | N | JC93952 | Treatment | Intermediate | **20200** | **21400** | **12700** | **11700** | -- | -- | -- | -- | -- | -- | -- | 23.4 | **829** | -- | 985 | -- | **79.1** | < 0.20 U |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20190923 | 9/23/2019 | 30 | N | JC95491 | Treatment | Intermediate | **861** | **1870** | **76** | **75** | -- | -- | -- | -- | -- | -- | -- | 54.0 | **1370** | -- | 439 | -- | **131** | < 0.20 UJ |
| 114-P2B3-MW101I | 114-P2B3-MW-101I-20191031 | 10/31/2019 | 30 | N | JC97796 | Treatment | Intermediate | **1790** | **2340** | **900** | **1200** | -- | -- | -- | -- | -- | -- | -- | 64.4 | **1520** | -- | 660 | -- | **148** | < 0.20 U |
| 114-P2B3-MW101I | 114-P2B3-MW-101I-20191123 | 11/23/2019 | 30 | N | JC99155 | Treatment | Intermediate | **654** | **3710** | **200** | **320** | -- | -- | -- | -- | -- | -- | -- | 61.8 | **1130** | -- | 817 | -- | **138** | -- |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20191227 | 12/27/2019 | 30 | N | JD963 | Treatment | Intermediate | **2380** | **2860** | **1600** | **2200** | -- | -- | -- | -- | -- | -- | -- | 84.7 | **747** | -- | 560 J | -- | **118 J** | -- |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20200130 | 1/30/2020 | 30 | N | JD2521 | Treatment | Intermediate | **16200** | **21600** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 41.5 | **1020** | -- | 283 | -- | **78.0** | -- |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20200227 | 2/27/2020 | 30 | N | JD3810 | Treatment | Intermediate | **11700** | **14800** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 51.6 | **1020** | -- | 391 | -- | **87.8** | -- |
| 114-P2B3-MW101I | 114-P2B3-MW101I-DUP-20200324 | 3/24/2020 | 30 | FD | JD5103 | Treatment | Intermediate | **5900** | **8290** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 75.8 | **1010** | -- | 310 | -- | **84.8** | -- |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20200324 | 3/24/2020 | 30 | N | JD5103 | Treatment | Intermediate | **6060** | **8280** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 77.4 | **922** | -- | 278 | -- | **85.7** | -- |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20200817 | 8/17/2020 | 30 | N | JD11849 | Post-Treatment | Intermediate | **221** | **1840** | 6.8 J | 8.0 J | -- | -- | -- | -- | -- | -- | -- | 215 | **830** | 8.4 | 440 | **662** | **77.0** | -- |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20201113 | 11/13/2020 | 30 | N | JD16259 | Post-Treatment | Intermediate | **193** | **463** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 281 | **289** | 26.6 | 551 J | 109 | **54.3** | -- |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20210224 | 2/24/2021 | 30 | N | JD20709 | Post-Treatment | Intermediate | **221** | **344** | **< 100 U** | **< 100 U** | -- | -- | -- | -- | -- | -- | -- | 300 | 43.4 | 34.7 | 1230 | **< 500 U** | 39.0 J | -- |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20210929 | 9/29/2021 | 30 | N | JD32460 | Post-Treatment | Intermediate | **204** | **424** | < 10 UB | < 10 UB | -- | -- | -- | -- | -- | -- | -- | 299 | 2.6 | 15.1 | 1830 | 111 | 25.6 | -- |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20211117 | 11/17/2021 | 30 | N | JD35453 | Post-Treatment | Intermediate | 3.3 J | **2400 J** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 6.7 | 150 | < 2.0 U | 4800 | **2210** | **1220** | -- |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20220224 | 2/24/2022 | 30 | N | JD40291 | Post-Treatment | Intermediate | **1160** | **1720** | **160** | **540** | -- | -- | -- | -- | -- | -- | -- | 370 | 35.8 | 7.1 | 2890 | 93.4 J | 41.0 | -- |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20220525 | 5/25/2022 | 30 | N | JD45473 | Post-Treatment | Intermediate | **138 J** | **270** | 7.4 J | < 10 U | -- | -- | -- | -- | -- | -- | -- | 332 | 12.0 | 4.9 | 4160 | 165 | **116** | -- |
| 114-P2B3-MW101I | 114-P2B3-MW101I-31-20221228 | 12/28/2022 | 31 | N | 4602721191 | Enhanced Attenuation | Intermediate | -- | **174** | -- | < 10.0 U | -266.2 | 1.08 | 8.81 | 2.084 | 10.9 | 1.76 | -- | 133 | < 5.0 U | 2.0 | -- | 85.2 J | -- | -- |
| 114-P2B3-MW101I | 114-P2B3-MW101I-28.6-20230411 | 4/11/2023 | 28.6 | N | 4602780811 | Enhanced Attenuation | Intermediate | -- | **195** | -- | < 10.0 UJ | -128.9 | 1.92 | 7.85 | 2.37 | 15.42 | 1.9 | -- | 77.7 | 38.7 | 2.8 | -- | **< 600 U** | 9.8 J | -- |
| 114-P2B3-MW101I | 114-P2B3-MW101I-33.6-20230411 | 4/11/2023 | 33.6 | N | 4602780811 | Enhanced Attenuation | Intermediate | -- | **192** | -- | < 10.0 UJ | -188.9 | 0.25 | 8.22 | 2.57 | 13.49 | 2.3 | -- | 82.0 | 40.7 | 3.6 | -- | **< 600 U** | 8.6 J | -- |
| 114-P2B3-MW101I | 114-P2B3-MW101I-33.6-20230411-X | 4/11/2023 | 33.6 | FD | 4602780811 | Enhanced Attenuation | Intermediate | -- | **180** | -- | < 10.0 UJ | -- | -- | -- | -- | -- | -- | -- | 77.2 | 37 | 3.6 | -- | **< 600 U** | 8.9 J | -- |
| 114-P2B3-MW101I | 114-P2B3-MW101I-28.6-20240410 | 4/10/2024 | 28.6 | N | JD86198 | Enhanced Attenuation | Intermediate | -- | **139** | -- | < 10 U | -429.9 | 0.15 | 8.33 | 2.11 | 13.4 | 4.11 | -- | 20.7 | 132 | 1.2 J | -- | < 250 U | 11.5 | -- |
| 114-P2B4-MW101I | 114-P2B4-MW101I | 1/23/2018 | 43.68 | N | JC59556 | Baseline | Intermediate | **439000** | **427000** | **389000** | **402000** | 17 | 2.92 | 9.19 | 5.95 | 12.71 | 39.7 | -- | 27.5 | **1140** | < 2.0 U | 793 J | **< 500 U** | **< 750 U** | -- |
| 114-P2B4-MW101I | 114-P2B4-MW101I-20180502 | 5/2/2018 | 43.68 | N | JC65331 | Treatment | Intermediate | < 20 U | < 50 U | < 10 U | < 10 U | -20 | 0 | 6.81 | 4.15 | 25.01 | 0 | -- | 7.2 | **4130** | -- | 6450 | -- | **13300** | 8.7 |
| 114-P2B4-MW101I | 114-P2B4-MW101I-20180604 | 6/4/2018 | 43.68 | N | JC67259 | Treatment | Intermediate | < 50 U | < 10 U | < 10 U | < 10 U | -123 | 0 | 6.74 | 12.3 | 16.72 | 0 | -- | 21.1 | -- | -- | 3210 | -- | **20000** | 3.1 |
| 114-P2B4-MW101I | 114-P2B4-MW101I-20180604 | 6/4/2018 | 43.68 | N | JC67259A | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **2670** | -- | -- | -- | -- | -- |
| 114-P2B4-MW101I | 114-P2B4-MW101I-20200130 | 1/30/2020 | 43.68 | N | JD2521 | Treatment | Intermediate | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 15.5 | **265** | -- | 3270 | -- | **6720** | -- |
| 114-P2B4-MW101I | 114-P2B4-MW101I-20200817 | 8/17/2020 | 43.68 | N | JD11849 | Post-Treatment | Intermediate | 5.2 J | 9.5 J | 16 | 22 | -- | -- | -- | -- | -- | -- | -- | 15.5 | **1190** | < 2.0 U | 4300 | **12000** | **5760** | -- |
| 114-P2B4-MW101I | 114-P2B4-MW-101I-20211118 | 11/18/2021 | 43.68 | N | JD35530 | Post-Treatment | Intermediate | **1490** | **2630** | **< 100 U** | **< 100 U** | -- | -- | -- | -- | -- | -- | -- | 102 | **280** | 69.9 | 11200 | < 100 U | **155** | -- |
| 114-P2B4-MW101I | 114-P2B4-MW101I-20220224 | 2/24/2022 | 43.68 | N | JD40291 | Post-Treatment | Intermediate | **1560** | **2400** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 83.3 | **258** | 56.0 J | 9940 | < 100 U | **158** | -- |
| 114-P2B4-MW101I | 114-P2B4-MW-101I-20220525 | 5/25/2022 | 43.68 | N | JD45473 | Post-Treatment | Intermediate | **1330 J** | **2080** | 2.6 J | 6.2 J | -- | -- | -- | -- | -- | -- | -- | 114 | **317** | 34.1 | 8800 | 38.8 J | **174** | -- |
| 114-P2B4-MW101I | 114-P2B4-MW101I-46-20221227 | 12/27/2022 | 46 | N | 4602720661 | Enhanced Attenuation | Intermediate | **905** | **2310** | -- | < 20.0 U | -330.4 | 0.21 | 7.44 | 4.278 | 11.01 | 30.1 | -- | 54.2 J- | R | 15.2 J- | -- | < 240 U | -- | -- |
| 114-P2B4-MW101I | 114-P2B4-MW101I-43.8-20230411 | 4/11/2023 | 43.8 | N | 4602780811 | Enhanced Attenuation | Intermediate | -- | **1790** | -- | **< 100 UJ** | -- NA | -- NA | -- NA | -- NA | -- NA | -- NA | -- | 59.1 | **317** | 20.8 | -- | **< 1200 U** | **164** | -- |
| 114-P2B4-MW101I | 114-P2B4-MW101I-48.8-20230411 | 4/11/2023 | 48.8 | N | 4602780811 | Enhanced Attenuation | Intermediate | -- | **1900** | -- | **< 100 U** | -- NA | -- NA | -- NA | -- NA | -- NA | -- NA | -- | 50.7 | **338** | 26.4 | -- | < 120 U | 22.5 | -- |
| 114-P2B4-MW101I | 114-P2B4-MW101I-48.8-20240410 | 4/10/2024 | 48.8 | N | JD86198 | Enhanced Attenuation | Intermediate | **708** | **1110** | < 10 U | < 10 U | -293.1 | 0.04 | 7.73 | 4.536 | 14 | 12.9 | -- | 39.8 | **353** | 33.4 | -- | < 250 U | **135** | -- |
| GPS-MW2I | GPS-MW2I-20180131 | 1/31/2018 | 30.7 | N | JC60035 | Baseline | Intermediate | **155000** | **153000** | **143000** | **140000** | 165 | 11.48 | 7.21 | 2.43 | 9.12 | 9.9 | -- | 8.5 | **330** | < 2.0 U | 568 | **< 500 U** | **374** | -- |
| GPS-MW2I | GPS-MW-2I_20180503 | 5/3/2018 | 26 | N | JC65417 | Treatment | Intermediate | **15600** | **17500** | **12800** | **14200** | -187 | 0 | 7.21 | 1.65 | 28.24 | 0 | -- | 3.3 | **259** | -- | 18800 | -- | **495** | < 0.20 |
| GPS-MW2I | GPS-MW2I-20180530 | 5/30/2018 | 26 | N | JC66984 | Treatment | Intermediate | **21100** | **21800** | **22000** | **21400** | -- | -- | -- | -- | -- | -- | -- | 4.2 | -- | -- | 8030 | -- | **520** | < 0.20 U |
| GPS-MW2I | GPS-MW2I-20180530 | 5/30/2018 | 26 | N | JC66984A | Treatment | Intermediate | -- | -- | -- | -- | 216 | 0 | 7.36 | 1.59 | 22.26 | 63.9 | -- | -- | 179 J | -- | -- | -- | -- | -- |
| GPS-MW2I | GPS-MW2I-DUP-20180703 | 7/3/2018 | 26 | FD | JC69235 | Treatment | Intermediate | **29000** | **29500** | **37300 J** | **33300** | -- | -- | -- | -- | -- | -- | -- | 5.1 | 242 | -- | 12400 | -- | **513** | < 0.20 UJ |
| GPS-MW2I | GPS-MW2I-20180703 | 7/3/2018 | 26 | N | JC69235 | Treatment | Intermediate | **29600** | **33000** | **27100 J** | **28000** | 158 | 0.18 | 7.54 | -- | 31.19 | 54.7 | -- | 5.3 | 247 | -- | 12600 | -- | **546** | < 0.20 UJ |
| GPS-MW2I | GPS-MW2I-20180727 | 7/27/2018 | 26 | N | JC70845 | Treatment | Intermediate | **30500** | **30900** | **24000** | **25500** | 182 | 0 | 7.28 | 1.64 | 26.73 | 7.6 | -- | 6.0 | **276** | -- | 11700 | -- | **555** | R |
| GPS-MW2I | GPS-MW2I-180830 | 8/30/2018 | 26 | N | JC72843 | Treatment | Intermediate | **26300** | **26500** | **21000** | **22500** | -- | -- | -- | -- | -- | -- | -- | 8.8 | **297** | -- | 10200 | -- | **546** | < 0.20 U |
| GPS-MW2I | GPS-MW-2I-20180926 | 9/26/2018 | 26 | N | JC74616 | Treatment | Intermediate | **19800** | **19600** | **18400** | **19000** | -- | -- | -- | -- | -- | -- | -- | 3.4 | 169 | -- | -- | -- | **660** | < 0.20 U |
| GPS-MW2I | GPS-MW2I-181101 | 11/1/2018 | 26 | N | JC77088 | Treatment | Intermediate | **18400 J** | **17100 J** | **17500** | **19200** | -- | -- | -- | -- | -- | -- | -- | 3.9 | 188 | -- | -- | -- | **685** | < 0.20 UJ |
| GPS-MW2I | GPS-MW2I-181127 | 11/27/2018 | 26 | N | JC78589 | Treatment | Intermediate | **29400** | **25300** | **27500** | **29400** | -- | -- | -- | -- | -- | -- | -- | 8.1 | **335** | -- | 13300 | -- | **611** | < 0.20 UJ |
| GPS-MW2I | GPS-MW2I-181218 | 12/18/2018 | 26 | N | JC79966 | Treatment | Intermediate | **25300** | **20300** | **19100** | **19900** | -- | -- | -- | -- | -- | -- | -- | 6.2 | **283** | -- | -- | -- | **566** | R |
| GPS-MW2I | GPS-MW2I-20190328 | 3/28/2019 | 26 | N | JC85346 | Treatment | Intermediate | **23600** | **24500** | **31700** | **32600** | -- | -- | -- | -- | -- | -- | -- | 6.8 | **342** | -- | 10400 | -- | **513** | < 0.20 U |
| GPS-MW2I | GPS-MW2I-20190501 | 5/1/2019 | 26 | N | JC87310 | Treatment | Intermediate | **32600** | **31900** | **34600** | **32900** | -- | -- | -- | -- | -- | -- | -- | 7.9 | **371** | -- | 11300 | -- | **548** | < 0.20 UJ |
| GPS-MW2I | GPS-MW2I-28.50-20190529 | 5/29/2019 | 28.5 | N | JC88888 | Treatment | Intermediate | **24800** | **24900** | **25400** | **26000** | -- | -- | -- | -- | -- | -- | -- | 6.7 | **378** | -- | 13000 J | -- | **525** | < 0.20 U |
| GPS-MW2I | GPS-MW2I-33.50-20190529 | 5/29/2019 | 33.5 | N | JC88888 | Treatment | Intermediate | **25500** | **25100** | **25400** | **25800** | -- | -- | -- | -- | -- | -- | -- | 6.7 | **365** | -- | 13100 J | -- | **524** | < 0.20 U |
| GPS-MW2I | GPS-MW2I-20190701 | 7/1/2019 | 26 | N | JC90966 | Treatment | Intermediate | **85300** | **90100** | **81600** | **83700** | -- | -- | -- | -- | -- | -- | -- | 15.1 | **1270** | -- | 1020 | -- | **341** | < 0.20 U |
| GPS-MW2I | GPS-MW2I-20190731 | 7/31/2019 | 26 | N | JC92478 | Treatment | Intermediate | **38200** | **36300** | **32500** | **33200** | -- | -- | -- | -- | -- | -- | -- | 8.6 | **393** | -- | 3120 | -- | **519** | R |
| GPS-MW2I | GPS-MW-2I-20190828 | 8/28/2019 | 26 | N | JC94021 | Treatment | Intermediate | **39800** | **37000** | **36600** | **37100** | -- | -- | -- | -- | -- | -- | -- | 7.7 | **320** | -- | 11000 | -- | **557** | < 0.20 U |
| GPS-MW2I | GPS-MW-2I-20190926 | 9/26/2019 | 26 | N | JC95738 | Treatment | Intermediate | **31700** | **25600** | **30400** | **32900** | -- | -- | -- | -- | -- | -- | -- | 7.2 | **339** | -- | 7930 | -- | **514** | R |
| GPS-MW2I | BD-20191028 | 10/28/2019 | 26 | FD | JC97565 | Treatment | Intermediate | **26400** | **27300** | **23200** |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| GPS-MW2I | GPS-MW2I-20200128 | 1/28/2020 | 26 | N | JD2398 | Treatment | Intermediate | **13300** | **13600** | **14600** | **14700** | -- | -- | -- | -- | -- | -- | -- | 7.1 | **364** | -- | 9700 | -- | **741** | -- |
| GPS-MW2I | GPS-MW2I-2020226 | 2/26/2020 | 26 | N | JD3741 | Treatment | Intermediate | **14400 J** | **16200 J** | **17800** | **17900** | -- | -- | -- | -- | -- | -- | -- | 7.7 | **412** | -- | 9640 | -- | **945** | -- |
| GPS-MW2I | GPS-MW2I-20200324 | 3/24/2020 | 26 | N | JD5103 | Treatment | Intermediate | **27800 J** | **22200 J** | **21700** | **21100** | -- | -- | -- | -- | -- | -- | -- | 8.0 | **440** | -- | 8150 | -- | **1140** | -- |
| GPS-MW2I | GPS-MW2I-20200812 | 8/12/2020 | 26 | N | JD11593 | Post-Treatment | Intermediate | **39000** | **38100** | **37600** | **36300** | -- | -- | -- | -- | -- | -- | -- | 8.9 | **394** | < 2.0 U | 11100 | 60.0 J | **1090** | -- |
| GPS-MW2I | GPS-MW2I-20201113 | 11/13/2020 | 26 | N | JD16259 | Post-Treatment | Intermediate | **33600 J** | **23600 J** | **28700** | **25900** | -- | -- | -- | -- | -- | -- | -- | 3.2 | 161 | < 2.0 U | 2800 | **< 500 U** | **715 J** | -- |
| GPS-MW2I | GPS-MW2I-20210222 | 2/22/2021 | 26 | N | JD20592 | Post-Treatment | Intermediate | **4070** | **7880** | **4900** | **6900** | -- | -- | -- | -- | -- | -- | -- | 16.8 | **343** | < 2.0 U | 13200 | 132 | **747** | -- |
| GPS-MW2I | GPS-MW2I-20211001 | 10/1/2021 | 26 | N | JD32680 | Post-Treatment | Intermediate | < 64.9 UB | **838** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 13.8 | 155 | < 2.0 U | 3850 | **2520** | **4510** | -- |
| GPS-MW2I | GPS-MW2I-20211115 | 11/15/2021 | 26 | N | JD35301 | Post-Treatment | Intermediate | **73.3** | **19100** | < 10 U | 9.8 J | -- | -- | -- | -- | -- | -- | -- | 49.7 | 147 | 0.99 J | 10400 | **2090** | **3880** | -- |
| GPS-MW2I | GPS-MW2I-20220223 | 2/23/2022 | 26 | N | JD40159 | Post-Treatment | Intermediate | 63.4 | **492** | 7.4 J | < 10 U | -- | -- | -- | -- | -- | -- | -- | 11.2 | 153 | 0.67 J | 3750 | **2850** | **4930** | -- |
| GPS-MW2I | GPS-MW2I-20220523 | 5/23/2022 | 26 | N | JD45334 | Post-Treatment | Intermediate | < 36.5 UB | **521** | 3.9 J | 8.8 J | -- | -- | -- | -- | -- | -- | -- | 12.2 | 193 | < 2.0 U | 8670 | **2150** | **3730** | -- |
| GPS-MW3I | GPS-MW3I-20180131 | 1/31/2018 | 26.05 | N | JC60035 | Baseline | Intermediate | **17200** | **17100** | **30600** | **28500** | 146 | 10.03 | 7.09 | 1.27 | 8.14 | 51.8 | -- | 3.6 | 125 | < 2.0 U | 1810 J | < 200 U | **495** | -- |
| GPS-MW3I | GPS-MW3I-20180131-DUP | 1/31/2018 | 26.05 | FD | JC60035 | Baseline | Intermediate | **17200** | **17300** | **32800** | **29300** | -- | -- | -- | -- | -- | -- | -- | 3.5 | 121 | < 2.0 U | 2470 J | < 200 U | **498** | -- |
| GPS-MW3I | GPS-MW3I-20180503 | 5/3/2018 | 26.05 | N | JC65417 | Treatment | Intermediate | **142000** | **119000** | **86100 J** | **93600 J** | -- | -- | -- | -- | -- | -- | -- | 7.2 | **333** | -- | 287 | -- | **458** | < 0.20 UJ |
| GPS-MW3I | GPS-MW3I-20180530 | 5/30/2018 | 26.05 | N | JC66984 | Treatment | Intermediate | **200000** | **187000** | **160000** | **152000** | -- | -- | -- | -- | -- | -- | -- | 11.0 | -- | -- | 848 | -- | **556** | < 0.20 U |
| GPS-MW3I | GPS-MW3I-20180530 | 5/30/2018 | 26.05 | N | JC66984A | Treatment | Intermediate | -- | -- | -- | -- | 181 | 0.54 | 7.44 | 1.97 | 19.65 | 14.3 | -- | -- | **447 J** | -- | -- | -- | -- | -- |
| GPS-MW3I | GPS-MW3I-20180703 | 7/3/2018 | 26.05 | N | JC69235 | Treatment | Intermediate | **262000** | **262000** | **221000** | **235000** | 181 | 4.6 | 7.39 | 3.58 | 25.08 | 23.1 | -- | 16.7 | **636** | -- | 1340 | -- | **664** | < 0.20 UJ |
| GPS-MW3I | GPS-MW3I-20180727 | 7/27/2018 | 26.05 | N | JC70845 | Treatment | Intermediate | **230000** | **194000** | **138000** | **160000** | 207 | 0 | 7.09 | 3.85 | 19.8 | 9.7 | -- | 14.1 | **810** | -- | 674 | -- | **629** | R |
| GPS-MW3I | GPS-MW-3I-180829 | 8/29/2018 | 26.05 | N | JC72768 | Treatment | Intermediate | **123000** | **128000** | **106000** | **113000** | -- | -- | -- | -- | -- | -- | -- | 8.2 | **364** | -- | 340 | -- | **391** | < 0.20 U |
| GPS-MW3I | GPS-MW-3I-20180926 | 9/26/2018 | 26.05 | N | JC74616 | Treatment | Intermediate | **99800** | **100000** | **104000** | **112000** | -- | -- | -- | -- | -- | -- | -- | 7.1 | **313** | -- | -- | -- | **400** | < 0.20 U |
| GPS-MW3I | GPS-MW3I-181101 | 11/1/2018 | 26.05 | N | JC77088 | Treatment | Intermediate | **133000 J** | **132000 J** | **114000** | **121000** | -- | -- | -- | -- | -- | -- | -- | 10.4 | **575** | -- | -- | -- | **469** | < 0.20 UJ |
| GPS-MW3I | GPS-MW3I-181127 | 11/27/2018 | 26.05 | N | JC78589 | Treatment | Intermediate | **146000** | **128000** | **138000** | **143000** | -- | -- | -- | -- | -- | -- | -- | 16.9 | **1220** | -- | 544 | -- | **501** | < 0.20 UJ |
| GPS-MW3I | GPS-MW3I-181218 | 12/18/2018 | 26.05 | N | JC79966 | Treatment | Intermediate | **118000** | **94300** | **98600** | **102000** | -- | -- | -- | -- | -- | -- | -- | 18.5 | **1060** | -- | -- | -- | **457** | R |
| GPS-MW3I | GPS-MW3I-20190326 | 3/26/2019 | 26.05 | N | JC85176 | Treatment | Intermediate | **106000** | **102000** | **82500** | **83300** | -- | -- | -- | -- | -- | -- | -- | 12.8 | **1390** | -- | 652 | -- | **372** | < 0.20 U |
| GPS-MW3I | GPS-MW3I-20190502 | 5/2/2019 | 26.05 | N | JC87408 | Treatment | Intermediate | **102000** | **85800** | **91700** | **87300** | -- | -- | -- | -- | -- | -- | -- | 11.8 | **1130** | -- | 514 | -- | **350** | < 0.20 U |
| GPS-MW3I | GPS-MW3I-37.50-DUP-20190529 | 5/29/2019 | 32.5 | FD | JC88888 | Treatment | Intermediate | **84500** | **80000** | **84500** | **85100** | -- | -- | -- | -- | -- | -- | -- | 13.2 | **1260** | -- | 949 J | -- | **329** | R |
| GPS-MW3I | GPS-MW3I-32.50-20190529 | 5/29/2019 | 37.5 | N | JC88888 | Treatment | Intermediate | **77200** | **73100** | **73900** | **74600** | -- | -- | -- | -- | -- | -- | -- | 12.1 | **1290** | -- | 635 J | -- | **319** | R |
| GPS-MW3I | GPS-MW3I-37.50-20190529 | 5/29/2019 | 37.5 | N | JC88888 | Treatment | Intermediate | **75400** | **82400** | **83700** | **86100** | -- | -- | -- | -- | -- | -- | -- | 12.5 | **1320** | -- | 887 J | -- | **327** | R |
| GPS-MW3I | GPS-MW-3I-20190702 | 7/2/2019 | 26.05 | N | JC91049 | Treatment | Intermediate | **27200** | **24600** | **22300** | **22100** | -- | -- | -- | -- | -- | -- | -- | 7.5 | **351** | -- | 5570 | -- | **479** | < 0.20 U |
| GPS-MW3I | GPS-MW3I-20190731 | 7/31/2019 | 26.05 | N | JC92478 | Treatment | Intermediate | **83300** | **87000** | **84200** | **87900** | -- | -- | -- | -- | -- | -- | -- | 11.4 | **1380** | -- | 105 | -- | **326** | R |
| GPS-MW3I | GPS-MW3I-20190830 | 8/30/2019 | 26.05 | N | JC94173 | Treatment | Intermediate | **89900** | **87400** | **79300** | **75600** | -- | -- | -- | -- | -- | -- | -- | 35.8 | **1310** | -- | 404 | -- | **350** | < 0.20 U |
| GPS-MW3I | GPS-MW-3I-20190926 | 9/26/2019 | 26.05 | N | JC95738 | Treatment | Intermediate | **90700** | **92800** | **87100** | **89600** | -- | -- | -- | -- | -- | -- | -- | 16.0 | **1170** | -- | 2140 | -- | **330** | R |
| GPS-MW3I | GPS-MW-3I-20191028 | 10/28/2019 | 26.05 | N | JC97565 | Treatment | Intermediate | **119000** | **120000** | **109000** | **110000** | -- | -- | -- | -- | -- | -- | -- | 16.6 | **1240** | -- | 1150 | -- | **< 380 U** | < 0.20 U |
| GPS-MW3I | GPS-MW3I-20191125 | 11/25/2019 | 26.05 | N | JC99177 | Treatment | Intermediate | **172000** | **156000** | **138000** | **143000** | -- | -- | -- | -- | -- | -- | -- | 20.1 | **1050** | -- | 1630 | -- | **369** | -- |
| GPS-MW3I | GPS-MW3I-20191226 | 12/26/2019 | 26.05 | N | JD923 | Treatment | Intermediate | **198000 J** | **199000** | **192000** | **195000** | -- | -- | -- | -- | -- | -- | -- | 21.7 | **1080** | -- | 1920 | -- | **352** | -- |
| GPS-MW3I | GPS-MW3I-20200128 | 1/28/2020 | 26.05 | N | JD2398 | Treatment | Intermediate | **201000** | **206000** | **208000** | **213000** | -- | -- | -- | -- | -- | -- | -- | 17.1 | **713** | -- | 1590 | -- | **< 1500 U** | -- |
| GPS-MW3I | GPS-MW3I-20200225 | 2/25/2020 | 26.05 | N | JD3675 | Treatment | Intermediate | **178000** | **179000 J** | **175000** | **167000** | -- | -- | -- | -- | -- | -- | -- | 13.6 | **862** | -- | 1520 | -- | **401** | -- |
| GPS-MW3I | GPS-MW3I-20200326 | 3/26/2020 | 26.05 | N | JD5246 | Treatment | Intermediate | **142000** | **138000** | **135000** | **133000** | -- | -- | -- | -- | -- | -- | -- | 13.7 | **1160** | -- | 940 | -- | **397** | -- |
| GPS-MW3I | GPS-MW3I-20200813 | 8/13/2020 | 26.05 | N | JD11673 | Post-Treatment | Intermediate | **165000** | **167000** | **170000** | **178000** | -- | -- | -- | -- | -- | -- | -- | 21.2 | **1010** | < 2.0 U | 975 | **< 1000 U** | **378** | < 0.20 U |
| GPS-MW3I | GPS-MW3I-20201113 | 11/13/2020 | 26.05 | N | JD16259 | Post-Treatment | Intermediate | **143000** | **158000** | **144000** | **144000** | -- | -- | -- | -- | -- | -- | -- | 10.2 | **704** | < 2.0 U | 1190 | **< 500 U** | **277** | -- |
| GPS-MW3I | GPS-MW3I-20210226 | 2/26/2021 | 26.05 | N | JD20896 | Post-Treatment | Intermediate | **539** | **6160** | **< 100 U** | **< 100 U** | -- | -- | -- | -- | -- | -- | -- | 242 | 64.7 | 6.0 | 371 | **5080** | **6670** | -- |
| GPS-MW3I | GPS-MW3I-20211001 | 10/1/2021 | 26.05 | N | JD32680 | Post-Treatment | Intermediate | < 37.7 UB | **1130** | **< 5000 U** | **< 5000 U** | -- | -- | -- | -- | -- | -- | -- | 121 | 175 | 363 | 983 | < 100 U | **91.4** | -- |
| GPS-MW3I | GPS-MW3I-20211115 | 11/15/2021 | 26.05 | N | JD35301 | Post-Treatment | Intermediate | **92.1** | **110** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 132 | 124 | 282 J | 49.7 | < 100 U | **221 J** | -- |
| GPS-MW3I | GPS-MW3I-20220223 | 2/23/2022 | 26.05 | N | JD40159 | Post-Treatment | Intermediate | **81.3** | **80.5** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 48.1 J | **266** | 420 | 544 | 62.1 J | **366** | -- |
| GPS-MW3I | GPS-MW3I-20220523 | 5/23/2022 | 26.05 | N | JD45334 | Post-Treatment | Intermediate | **85.5** | **302** | < 10 U | 3.9 J | -- | -- | -- | -- | -- | -- | -- | 104 | **673** | 97.0 | 3990 | < 100 U | **1510** | -- |
| GPS-MW5I | GPS-MW5I-20180131 | 1/31/2018 | 30 | N | JC60035 | Baseline | Intermediate | 32.5 | **901** | < 10 U | < 10 U | -385 | 0 | 7.9 | 5.17 | 10.63 | 43.7 | -- | 3.5 | **1570** | 62.9 | 57.4 | < 100 U | **436** | -- |
| GPS-MW5I | GPS-MW5I-20180503 | 5/3/2018 | 30 | N | JC65417 | Treatment | Intermediate | 24.1 | **97.4** | < 10 U | < 10 U | -353 | 0.71 | 1.63 | 4.13 | 26.15 | 54.4 | -- | 3.0 | **1130** | -- | 80.2 | -- | **131** | < 0.20 UJ |
| GPS-MW5I | GPS-MW5I-20180530 | 5/30/2018 | 30 | N | JC66984 | Treatment | Intermediate | **< 100 U** | **608** | < 10 UJ | < 10 UJ | -- | -- | -- | -- | -- | -- | -- | 4.5 | -- | -- | 138 | -- | **270** | < 0.20 U |
| GPS-MW5I | GPS-MW5I-20180530 | 5/30/2018 | 30 | N | JC66984A | Treatment | Intermediate | -- | -- | -- | -- | -357 | 0 | 7.62 | 4 | 20.64 | 831 | -- | -- | **1900 J** | -- | -- | -- | -- | -- |
| GPS-MW5I | GPS-MW5I-20180003 | 7/3/2018 | 30 | N | JC69235 | Treatment | Intermediate | 35.9 | **118** | < 10 U | < 10 U | -374 | 3.37 | 7.59 | 3.52 | 31.01 | 43.4 | -- | 3.7 | **1660** | -- | 218 | -- | **277** | < 0.20 UJ |
| GPS-MW5I | GPS-MW5I-20180730 | 7/30/2018 | 30 | N | JC70908 | Treatment | Intermediate | 41.7 | **248** | < 10 U | < 10 U | -338 | 0 | 7.36 | 3.76 | 21.3 | 7.6 | -- | 4.9 | **1790** | -- | 140 | -- | **614** | < 0.20 U |
| GPS-MW5I | GPS-MW-5I-180829 | 8/29/2018 | 30 | N | JC72768 | Treatment | Intermediate | 41.0 | **1370** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 4.5 | **1710** | -- | 165 | -- | **664** | < 0.20 U |
| GPS-MW5I | GPS-MW5I-20180926 | 9/26/2018 | 30 | N | JC74616 | Treatment | Intermediate | 49.9 | **388** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 5.3 | **1900** | -- | -- | -- | **623** | < 0.20 U |
| GPS-MW5I | GPS-MW5I-181102 | 11/2/2018 | 30 | N | JC77195 | Treatment | Intermediate | 50.9 | **197** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 4.5 | **1950** | -- | -- | -- | **865** | < 0.20 U |
| GPS-MW5I | GPS-MW5I-181128 | 11/28/2018 | 30 | N | JC78649 | Treatment | Intermediate | 59.5 | **488** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 6.0 | **1880** | -- | 206 | -- | **3340** | < 0.20 U |
| GPS-MW5I | GPS-MW5I-181218 | 12/18/2018 | 30 | N | JC79966 | Treatment | Intermediate | 60.8 | **158** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 5.2 | **2220** | -- | -- | -- | **5670** | R |
| GPS-MW5I | GPS-MW5I-20190326 | 3/26/2019 | 30 | N | JC85176 | Treatment | Intermediate | 53.6 | **289** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 5.1 | **1020** | -- | 202 J | -- | **2890** | 0.53 |
| GPS-MW5I | GPS-MW5I-DUP-20190501 | 5/1/2019 | 30 | FD | JC87310 | Treatment | Intermediate | 64.1 | **216** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 5.9 | **1790** | -- | 274 | -- | **4130** | < 0.20 UJ |
| GPS-MW5I | GPS-MW5I-20190501 | 5/1/2019 | 30 | N | JC87310 | Treatment | Intermediate | **71.0** | **180** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 6.1 | **1750** | -- | 275 | -- | **4310** | < 0.20 UJ |
| GPS-MW5I | GPS-MW5I-32.50-DUP-20190528 | 5/28/2019 | 32.5 | FD | JC88834 | Treatment | Intermediate | **71.8** | **153** | 14 | 13 | -- | -- | -- | -- | -- | -- | -- | 5.5 | **1810** | -- | 254 J | -- | **6060 J** | < 0.20 U |
| GPS-MW5I | GPS-MW5I-32.50-20190528 | 5/28/2019 | 32.5 | N | JC88834 | Treatment | Intermediate | **70.0** | **157** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 5.1 | **2060** | -- | 179 J | -- | **4300 J** | < 0.20 U |
| GPS-MW5I | GPS-MW5I-37.50-20190529 | 5/29/2019 | 37.5 | N | JC88888 | Treatment | Intermediate | 65.8 | **112** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 5.4 | **1960** | -- | 255 J | -- | **4180** | < 0.20 U |
| GPS-MW5I | GPS-MW-5I-20190628 | 6/28/2019 | 30 | N | JC90869 | Treatment | Intermediate | 65.7 | **1110** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 5.7 | **1920** | -- | 235 | -- | **3900** | R |
| GPS-MW5I | GPS-MW5I-20190729 | 7/29/2019 | 30 | N | JC92380 | Treatment | Intermediate | 61.4 | **1590 J** | 12 | 12 | -- | -- | -- | -- | -- | -- | -- | 6.0 | **1660** | -- | 18.1 J | -- | **10500** | < 0.20 U |
| GPS-MW5I | GPS-MW-5I-20190828 | 8/28/2019 | 30 | N | JC94021 | Treatment | Intermediate | 66.6 | **196** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 5.5 | **1820** | -- | 268 | -- | **10200** | < 0.20 U |
| GPS-MW5I | GPS-MW-5I-20190925 | 9/25/2019 | 30 | N | JC95646 | Treatment | Intermediate | 62.0 | **2320** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 5.7 | **1880** | -- | 59.6 J | -- | **3950** | 0.25 |
| GPS-MW5I | GPS-MW5I-20191029 | 10/29/2019 | 30 | N | JC97632 | Treatment | Intermediate | 58.2 | **499** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 5.3 | **1780** | -- | 284 | -- | **6750** | < 0.20 U |
| GPS-MW5I | GPS-MW5I-20191126 | 11/26/2019 | 30 | N | JC99269 | Treatment | Intermediate | 68.9 | **654 J** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 5.9 | **1650** | -- | 326 | -- | **6110** | -- |
| GPS-MW5I | GPS-MW5I-20191227 | 12/27/2019 | 30 | N | JD963 | Treatment | Intermediate | 57.1 | **81.9** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 5.6 | **1630** | -- | 1.57 | -- | **7800 J** | -- |
| GPS-MW5I | GPS-MW5I-20200129 | 1/29/2020 | 30 | N | JD2452 | Treatment | Intermediate | 66.3 | **812** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 6.2 | **2060** | -- | 278 | -- | **6290** | -- |
| GPS-MW5I | GPS-MW-5I-20200225 | 2/25/2020 | 30 | N | JD3675 | Treatment | Intermediate | **87.9** | **143 J** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 6.7 | **2210** | -- | 93.5 | -- | **7480** | -- |
| GPS-MW5I | GPS-MW5I-20200326 | 3/26/2020 | 30 | N | JD5246 | Treatment | Intermediate | **71.0** | **190** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 6.6 | **2040** | -- | 227 | -- | **5230** | -- |
| GPS-MW5I | GPS-MW5I-20200812 | 8/12/2020 | 30 | N | JD11593 | Post-Treatment | Intermediate | 63.6 | **408** | < 50 U | < 50 U | -- | -- | -- | -- | -- | -- | -- | 6.7 | **2320** | 1.5 J | 194 | **886** | **4660** | -- |
| GPS-MW5I | GPS-MW5I-20201111 | 11/11/2020 | 30 | N | JD16049 | Treatment | Intermediate | 43.4 | 46.8 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 6.5 | **2130** | < 2.0 U | 81.4 | **868** | **4510** | -- |
| GPS-MW5I | GPS-MW5I-20210223 | 2/23/2021 | 30 | N | JD20642 | Treatment | Intermediate | 24.8 | **630** | R | < 10 UJ | -- | -- | -- | -- | -- | -- | -- | 5.8 | < 2.0 U | 1.4 J | 336 | **1060** | **2400** | -- |
| GPS-MW5I | GPS-MW5I-35-20210315 | 3/15/2021 | 35 | N | JD21732 | Treatment | Intermediate | 50.8 | **161** | < 10 U | 53 | -283.8 | 0.02 | 7.03 | 3.091 | -- | 27.7 | -- | 11.9 | **1260** | -- | -- | -- | -- | -- |
| GPS-MW5I | GPS-MW5I-33-20210427 | 4/27/2021 | 33 | N | 4602230111 | Treatment | Intermediate | 57.0 | **114** | < 10.0 U | < 10.0 U | -317.2 ** | 18.22 ** | 6.86 | 2.369 | -- | 10.52 | -- | 5.9 | **1050** | -- | 710 | **353** | **5580** | -- |
| GPS-MW5I | GPS-MW-5I-35.5-20210527 | 5/27/2021 | 35.5 | N | 4602353531 | Treatment | Intermediate | 60.2 | **83.7** | < 10.0 U | < 10.0 U | -318.6 | 4.26 | 7.06 | 2.708 | -- | 11.5 | -- | 7.2 | **1110** | -- | 400 | 274 | **7470** | -- |
| GPS-MW5I | GPS-MW5I-35.5-20210623 | 6/23/2021 | 35.5 | N | 4602372171 | Treatment | Intermediate | **101** | **109** | < 10.0 U | < 10.0 U | -305.1 | 0.54 | 7.43 | 3.447 | -- | 7.01 | -- | 9.9 | **2190** | -- | 450 | **306** | **11300** | -- |
| GPS-MW5I | GPS-MW5I-35.0-20210721 | 7/21/2021 | 35 | N | 4602392301 | Treatment | Intermediate | 58.7 | **106** | < 10.0 U | < 10.0 U | -298 | 37.9 | 7.93 | 2.888 | -- | 6.76 | -- | 6.4 | **1200** | -- | 420 | 264 | **7460** | -- |
| GPS-MW5I | GPS-MW5I-35.5-20210831 | 8/31/2021 | 35.5 | N | 4602418991 | Treatment | Intermediate | **85.3** | **71.9** | < 10.0 U | < 10.0 U | -290.4 | 3.5 | 7.25 | 3.222 | -- | 9.1 | -- | 6.4 | **1180** | -- | 430 | 205 | **5760** | -- |
| GPS-MW5I | GPS-MW5I-36.0-20210921 | 9/21/2021 | 36 | N | 4602432721 | Treatment | Intermediate | **164** | **401** | < 20.0 U | < 50.0 U | -271 | 1.2 | 7.09 | 2.776 | -- | 7.91 | -- | 159 | **485** | -- | 8300 | 233 | **1280** | -- |
| GPS-MW5I | GPS-MW5I-35.5-20211019 | 10/19/2021 | 35.5 | N | 4602454351 | Treatment | Intermediate | 49.2 | **493** | < 10.0 U | < 20.0 U | -- | -- | -- | -- | -- | -- | -- | 5.5 B | **955** | -- | 490 | 60.9 J | **4480** | -- |
| GPS-MW5I | GPS-MW5I-36-20211119 | 11/19/2021 | 36 | N | 4602476321 | Treatment | Intermediate | **157** | -- | < 10.0 U | < 10.0 U | -323.5 | 0.26 | 7 | 3.549 | -- | 6.02 | -- | 132 | **601** | -- | 3700 | < 120 U | **6590** | -- |
| GPS-MW5I | GPS-MW5I-35-20211217 | 12/17/2021 | 35 | N | 4602493781 | Treatment | Intermediate | **82.3** | **296** | < 20.0 U | < 20.0 U | -326.5 | 0.18 | 7.06 | -- NM | -- | 11.75 | -- | 13.4 | **996** | -- | 760 | 78.5 J | **4620** | -- |
| GPS-MW5I | GPS-MW5I-35-20220112 | 1/12/2022 | 35 | N | 4602505551 | Treatment | Intermediate | **98.7** | **143** | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 13.3 | **1030** | -- | 1300 | < 120 U | **8530** | -- |
| GPS-MW5I | GPS-MW5I-35-20220217 | 2/17/2022 | 35 | N | 4602526891 | Treatment | Intermediate | 51.0 | **145** | < 10.0 U | < 10.0 U | -283.3 | 4 | 7.17 | 2.752 | -- | 8.16 | -- | 6.0 | **1130** | -- | 670 | 151 | **5210** | -- |
| GPS-MW5I | GPS-MW5I-35.0-20220315 | 3/15/2022 | 35 | N | 4602542861 | Treatment | Intermediate | 40.9 | **160** | < 10.0 U | < 10.0 U | -246.8 | 1.23 | 7.62 | 2.893 | -- | 8.12 | -- | -- | **1030** | -- | 720 | 185 | **3910** | -- |
| GPS-MW5I | GPS-MW5I-35-20220413 | 4/13/2022 | 35 | N | 4602562001 | Treatment | Intermediate | 36.9 | **152** | < 10.0 U | < 10.0 U | -300.0 | 3.72 | 7.46 | 6.281 | 15.22 | 6.35 | -- | 5.0 *2 | **1140** | -- | 450 | **303** | **3300** | -- |
| GPS-MW5I | GPS-MW5I-35-20220511 | 5/11/2022 | 35 | N | 4602579551 | Treatment | Intermediate | 40.4 | **95.7** | < 10.0 U | < 10.0 U | -311.0 | 1.38 | 7.25 | 0.331 | 15.25 | 3.90 | -- | 4.7 | **1140** | -- | 660 | **364** | **3480** | -- |
| GPS-MW5I | GPS-MW5I-35-20220609 | 6/9/2022 | 35 | N | 4602597481 | Treatment | Intermediate | -- | **137** | -- | < 10.0 U | -250.2 | 6.02 | 7.1 | 5.508 | 17.29 | 8 | -- | 5.1 | **1330** | -- | -- | -- | -- | -- |
| GPS-MW5I | GPS-MW5I-35.0-20220712 | 7/12/2022 | 35 | N | 4602617771 | Treatment | Intermediate | -- | **104** | -- | < 10.0 U | -230.1 | 1.35 | 7.14 | 3.456 | 17.47 | 4.08 | -- | 8.3 | **1160** | -- | -- | -- | -- | -- |
| GPS-MW5I | GPS-MW5I-35-20220818 | 8/18/2022 | 35 | N | 4602640741 | Treatment | Intermediate | -- | **98.9** | -- | < 10.0 U | -221.1 | 0.60 | 7.17 | 2.902 | 17.60 | 4.91 | -- | 4.9 | **355** | -- | -- | **487** | **3160** | -- |
| GPS-MW5I | GPS-MW5I-32.5-20221213 | 12/13/2022 | 32.5 | N | 4602712801 | Post-Treatment | Intermediate | -- | **98.0** | -- | < 10.0 U | -141.6 | 0.76 | 7.21 | 2.478 | 11.7 | 4.08 | -- | 4.6 | **1070** | 2 | -- | **717** | **2800** | -- |
| GPS-MW5I | GPS-MW5I-37.5-20221213 | 12/13/2022 | 37.5 | N | 4602712801 | Post-Treatment | Intermediate | -- | **87.0** | -- | 18.2 | -137.2 | 0.86 | 7.19 | 2.514 | 13.09 | 4.33 | -- | 6.1 | **1010** | < 1 U | -- | **601** | **3500** | -- |
| GPS-MW5I | GPS-MW5I-33.5-20230221 | 2/21/2023 | 33.5 | N | 4602750101 | Post-Treatment | Intermediate | -- | 63.6 | -- | < 10.0 U | 222.8 | 2.02 | 7.3 | 4.108 | 12.86 | 2.03 | -- | 10.1 | **1060** | < 1 U | -- | **326** | **6620** | -- |
| GPS-MW5I | GPS-MW5I-38.0-20230221 | 2/21/2023 | 38 | N | 4602750101 | Post-Treatment | Intermediate | -- | **109** | -- | < 10.0 U | 221.7 | 2.06 | 7.04 | 4.355 | 13.09 | 8.3 | -- | 5.3 JB | **1310** | < 1 U | -- | **805** | **3090** | -- |
| GPS-MW5I | GPS-MW5I-38.0-20230616 | 6/16/2023 | 38 | N | 4602824851 | Post-Treatment | Intermediate | 31.4 | **78.1** | < 10.0 U | < 10.0 U | -230.4 | 1.42 | 7.1 | 3.179 | 20.26 | 15 | -- | 5.1 | **1340** | < 1 U | -- | **678** | **3080** | -- |
| GPS-MW5I | GPS-MW5I-38.0-20230818 | 8/18/2023 | 38 | N | 4602864961 | Post-Treatment | Intermediate | -- | **125** | -- | < 10.0 U | -226.4 | 4.33 | 7.17 | 3.206 | 18.13 | 8.56 | -- | 6.2 JB | **1100** | < 1 U | -- | **938** | **3150** | -- |
| GPS-MW5I | GPS-MW5I-38.0-20231117 | 11/17/2023 | 38 | N | JD77231 | Post-Treatment | Intermediate | -- | **366** | -- | < 10 RA | -258.1 | 0.69 | 6.99 | 3.502 | 16.6 | 8.05 | -- | 6.5 | **1320** | -- | -- | -- | -- | -- |
| GPS-MW5I | GPS-MW5I-38.0-20240219 | 2/19/2024 | 38 | N | JD82732 | Post-Treatment | Intermediate | -- | **117** | -- | < 10 U | -148 | 0.35 | 6.91 | 3.45 | 12.5 | 9.97 | -- | 5.5 | **1420** | -- | -- | -- | -- | -- |
| GPS-MW5I | GPS-MW5I-38.0-20240520 | 5/20/2024 | 38 | N | JD88833 | Post-Treatment | Intermediate | -- | **124** | -- | < 10 U | -213.2 | 0.13 | 6.94 | 3.521 | 16.2 | 8.88 | -- | 6.6 | **1510** | -- | -- | -- | -- | -- |
| GPS-MW5I | GPS-MW5I-38.0-20240821 | 8/21/2024 | 38 | N | JD94599 | Post-Treatment | Intermediate | -- | **126** | -- | < 10 U | -203.9 | 0.12 | 6.93 | 3.73 | 18.5 | 8.97 | -- | 8.7 | **1450** | -- | -- | -- | -- | -- |
| GPS-MW5I | GPS-MW5I-38.0-20241114 | 11/14/2024 | 38 | N | JE610 | Post-Treatment | Intermediate | -- | **87.0** | -- | < 10 U | -177.4 | 0.21 | 7.01 | 3.44 | 15.3 | 5.75 | -- | 8.0 J- | **1230** | -- | -- | -- | -- | -- |
| GPS-MW6I | GPS-MW6I-20180130 | 1/30/2018 | 30 | N | JC59976 | Baseline | Intermediate | **206000** | **144000** | R | R | -278 | 0 | 10.84 | 6.65 | 13.01 | 148 | -- | 32.4 | **1450** | 29.0 | 978 | < 200 U | 44.6 | -- |
| GPS-MW6I | GPS-MW6I-20180503 | 5/3/2018 | 30 | N | JC65417 | Treatment | Intermediate | **56200** | **69200** | < 10 U | < 10 U | -180 | 0 | 10.22 | 5.3 | 27.58 | 161 | -- | 36.5 | **1320** | -- | 1230 | -- | **< 150 U** | < 0.20 UJ |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| GPS-MW6I | GPS-MW6I-20180530 | 5/30/2018 | 30 | N | JC66984 | Treatment | Intermediate | **192000** | **218000** | **145000** | **152000** | -- | -- | -- | -- | -- | -- | -- | 223 | -- | -- | 896 | -- | **< 150 U** | < 0.20 U |
| GPS-MW6I | GPS-MW6I-20180530 | 5/30/2018 | 30 | N | JC66984A | Treatment | Intermediate | -- | -- | -- | -- | -284 | 5.07 | 10.63 | 5.88 | 24.36 | 174 | -- | -- | **1300 J** | -- | -- | -- | -- | -- |
| GPS-MW6I | GPS-MW6I-20180703 | 7/3/2018 | 30 | N | JC69235 | Treatment | Intermediate | **209000** | **200000** | **111000** | **118000** | -315 | 4.11 | 11.03 | 5.49 | 30.36 | 275 | -- | 57.6 | **1360** | -- | 1340 | -- | **< 150 U** | < 0.20 UJ |
| GPS-MW6I | GPS-MW6I-20180730 | 7/30/2018 | 30 | N | JC70908 | Treatment | Intermediate | **331000** | **287000** | **244000** | -- | -298 | 0 | 10.28 | 5.69 | 24.23 | 4.7 | -- | 66.6 | **1370** | -- | 1960 | -- | **< 1900 U** | 0.23 |
| GPS-MW6I | GPS-MW-6I-180829 | 8/29/2018 | 30 | N | JC72768 | Treatment | Intermediate | **259000** | **297000** | **123000** | **141000** | -- | -- | -- | -- | -- | -- | -- | 51.1 | **1460** | -- | 2480 | -- | **< 150 U** | < 0.20 U |
| GPS-MW6I | GPS-MW-6I-20180927 | 9/27/2018 | 30 | N | JC74699 | Treatment | Intermediate | **97000** | **134000** | **17100** | **19000** | -- | -- | -- | -- | -- | -- | -- | 60.0 | **1250** | -- | -- | -- | **< 150 U** | < 0.20 U |
| GPS-MW6I | GPS-MW6I-181102 | 11/2/2018 | 30 | N | JC77195 | Treatment | Intermediate | **71900** | **75900** | **< 250 U** | **< 250 U** | -- | -- | -- | -- | -- | -- | -- | 755 | **1510** | -- | -- | -- | **< 150 U** | < 5.0 U |
| GPS-MW6I | GPS-MW6I-181218 | 12/18/2018 | 30 | N | JC79966 | Treatment | Intermediate | 10.3 | **220** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 2.2 | 16.5 | -- | -- | -- | 21.1 | R |
| GPS-MW6I | GPS-MW6I-20190328 | 3/28/2019 | 30 | N | JC85346 | Treatment | Intermediate | **46300** | **49800** | **10000** | **9100** | -- | -- | -- | -- | -- | -- | -- | < 100 U | **1100** | -- | 3370 | -- | **< 150 U** | < 4.0 U |
| GPS-MW6I | GPS-MW6I-20190430 | 4/30/2019 | 30 | N | JC87228 | Treatment | Intermediate | **64500** | **65600** | **41800** | **43500** | -- | -- | -- | -- | -- | -- | -- | 311 | **1150** | -- | 2870 | -- | **76.4** | < 2.0 U |
| GPS-MW6I | GPS-MW6I-32.5-20190529 | 5/29/2019 | 32.5 | N | JC88888 | Treatment | Intermediate | **84600** | **68600** | **48500** | **49200** | -- | -- | -- | -- | -- | -- | -- | 460 | **1180** | -- | 3550 J | -- | **< 230 U** | < 2.0 U |
| GPS-MW6I | GPS-MW6I-37.5-20190529 | 5/29/2019 | 37.5 | N | JC88888 | Treatment | Intermediate | **104000** | **95700** | **98200 J** | **75800 J** | -- | -- | -- | -- | -- | -- | -- | 260 | **1090** | -- | 3090 J | -- | **< 380 U** | < 2.0 U |
| GPS-MW6I | GPS-MW6I-20190701 | 7/1/2019 | 30 | N | JC90966 | Treatment | Intermediate | **55100** | **53000** | **25100** | **19300** | -- | -- | -- | -- | -- | -- | -- | 100 | **1050** | -- | 2150 | -- | **< 75 U** | < 0.20 U |
| GPS-MW6I | GPS-MW6I-20190731 | 7/31/2019 | 30 | N | JC92478 | Treatment | Intermediate | **56600** | **61000** | **41700** | **49900** | -- | -- | -- | -- | -- | -- | -- | 537 | **1170** | -- | 886 | -- | **< 75 U** | R |
| GPS-MW6I | GPS-MW-6I-20190926 | 9/26/2019 | 30 | N | JC95738 | Treatment | Intermediate | **25100** | **37700** | **530** | **< 500 U** | -- | -- | -- | -- | -- | -- | -- | 747 | **1220** | -- | 2410 | -- | **118** | 3.1 J |
| GPS-MW6I | GPS-MW6I-20191029 | 10/29/2019 | 30 | N | JC97632 | Treatment | Intermediate | **20200** | **17300** | **< 500 U** | **< 500 U** | -- | -- | -- | -- | -- | -- | -- | 499 | **1160** | -- | 2570 | -- | **76.0** | < 10 U |
| GPS-MW6I | GPS-MW6I-20191126 | 11/26/2019 | 30 | N | JC99269 | Treatment | Intermediate | **9270** | **9700 J** | **< 100 U** | **< 100 U** | -- | -- | -- | -- | -- | -- | -- | 49.6 | **472** | -- | 1630 | -- | 31.8 | -- |
| GPS-MW6I | GPS-MW6I-20200130 | 1/30/2020 | 30 | N | JD2521 | Treatment | Intermediate | **1330** | **1970** | **160 J** | **72 J** | -- | -- | -- | -- | -- | -- | -- | 7.4 | **368** | -- | 414 | -- | 21.1 | -- |
| GPS-MW6I | GPS-MW6I-2020226 | 2/26/2020 | 30 | N | JD3741 | Treatment | Intermediate | 51.7 | **1480** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 2.3 | 130 | -- | 13.0 | -- | < 15 U | -- |
| GPS-MW6I | GPS-MW6I-DUP-20200326 | 3/26/2020 | 30 | FD | JD5246 | Treatment | Intermediate | **21000** | **25400** | **18600** | **17800** | -- | -- | -- | -- | -- | -- | -- | 38.1 | **1010** | -- | 1380 | -- | **< 75 U** | -- |
| GPS-MW6I | GPS-MW6I-20200326 | 3/26/2020 | 30 | N | JD5246 | Treatment | Intermediate | **22000** | **24700** | **18200** | **17900** | -- | -- | -- | -- | -- | -- | -- | 39.0 | **998** | -- | 1220 | -- | **< 75 U** | -- |
| GPS-MW6I | GPS-MW6I-20200814 | 8/14/2020 | 30 | N | JD11773 | Treatment | Intermediate | **14400 J** | **9470 J** | **< 100 U** | **< 100 U** | -- | -- | -- | -- | -- | -- | -- | 232 | **1090 J** | 120 J | 1060 | **1050** | **50.0 J** | -- |
| GPS-MW6I | GPS-MW6I-20201113 | 11/13/2020 | 30 | N | JD16259 | Treatment | Intermediate | 4.0 J | **4040** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 12.2 | 181 | 10.5 | 26.7 | < 100 U | 5.5 J | -- |
| GPS-MW6I | BD-20210226 | 2/26/2021 | 30 | FD | JD20896 | Treatment | Intermediate | 3.3 J | 15.0 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 2.4 | 18.5 | < 2.0 U | 50.7 | 42.7 J | **65.4** | -- |
| GPS-MW6I | GPS-MW6I-20210226 | 2/26/2021 | 30 | N | JD20896 | Treatment | Intermediate | < 10 U | 25.6 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 3.7 | 19.5 | < 2.0 U | 50.7 | < 100 U | **65.2** | -- |
| GPS-MW6I | GPS-MW6I-35-20210316 | 3/16/2021 | 35 | N | JD21820 | Treatment | Intermediate | **14000** | **3190** | 31 | 10 | -124.7 | 0.32 | 8.35 | 0.263 | -- | 2.56 | -- | 10.1 | 42.8 | -- | -- | -- | -- | -- |
| GPS-MW6I | GPS-MW6I-33.0-20210426 | 4/26/2021 | 33 | N | 4602329401 | Treatment | Intermediate | **22000 J** | **3430 J** | **< 1000 U** | **< 1000 U** | -440.6 | 0.25 | 9.66 | 9.49 | -- | 9.71 | -- | 1710 | **1110** | -- | 13000 | **3300** | **620** | -- |
| GPS-MW6I | GPS-MW-6I-33.0-20210527 | 5/27/2021 | 33 | N | 4602353531 | Treatment | Intermediate | **26600** | **25800** | **< 5000 U** | **< 5000 U** | -435.7 | 9.36 | 9.53 | 9.609 | -- | 608 | -- | 380 | **975** | -- | 10000 | **9620 J** | **734 J** | -- |
| GPS-MW6I | GPS-MW6I-33.0-20210623 | 6/23/2021 | 33 | N | 4602372171 | Treatment | Intermediate | **6970** | **7610** | **< 250 U** | **< 250 U** | -414.6 | 0.4 | 9.47 | 4.401 | -- | 5.81 | -- | 1270 | **453** | -- | 8400 | **1990** | **183** | -- |
| GPS-MW6I | GPS-MW6I-35.0-20210726 | 7/26/2021 | 35 | N | 4602395391 | Treatment | Intermediate | **9890** | **3920** | **< 100 U** | **< 100 U** | -263.2 | 0.45 | 8.98 | 5.087 | -- | 0.52 | -- | 652 | 95.4 | -- | 13000 | **< 12000 U** | **259 J** | -- |
| GPS-MW6I | GPS-MW6I-33.0-20210831 | 8/31/2021 | 33 | N | 4602418991 | Treatment | Intermediate | **70.4** | 51.0 | < 10.0 U | < 10.0 U | -293.4 | 0.15 | 7.83 | 0.38 | -- | 9.3 | -- | 7.1 | 54.5 | -- | 100 | < 120 U | 26.3 | -- |
| GPS-MW6I | GPS-MW6I-33.0-20210922 | 9/22/2021 | 33 | N | 4602433951 | Treatment | Intermediate | **3740** | **4410** | **< 100 U** | **< 100 U** | -320.4 | 0.12 | 8.11 | 1.023 | -- | 7.99 | -- | 313 | 213 | -- | 6200 | **1740 J** | **89.1 J** | -- |
| GPS-MW6I | GPS-MW6I-33.0-20211020 | 10/20/2021 | 33 | N | 4602455621 | Treatment | Intermediate | **3860** | **3730** | **< 100 U** | **< 100 U** | -423.2 | 0 | 9.12 | 5.52 | -- | 9.96 | -- | 307 | **253** | -- | 7500 | **2020** | **135** | -- |
| GPS-MW6I | GPS-MW6I-33.0-20211119 | 11/19/2021 | 33 | N | 4602476321 | Treatment | Intermediate | 27.9 | **154** | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 2.3 | 193 | -- | 24 | **376** | **163** | -- |
| GPS-MW6I | GPS-MW6I-35.0-20211214 | 12/14/2021 | 35 | N | 4602491111 | Treatment | Intermediate | **1680** | **2900** | < 20.0 U | < 20.0 U | -385.7 | -1.53 | 9.86 | 3.398 | -- | 2.63 | -- | 494 | 17.5 | -- | 23000 | **760** | **54.0** | -- |
| GPS-MW6I | GPS-MW6I-32-20220112 | 1/12/2022 | 32 | N | 4602505551 | Treatment | Intermediate | **1260** | **1660** | < 20.0 U | < 20.0 U | -- | -- | -- | -- | -- | -- | -- | 418 | 16.5 | -- | 19000 | **471 J** | **66.8** | -- |
| GPS-MW6I | GPS-MW6I-32.0-20220217 | 2/17/2022 | 32 | N | 4602526891 | Treatment | Intermediate | **1360** | **2110** | < 50.0 U | < 50.0 U | -341.5 | 9.79 | 9.21 | 3.942 | -- | 8.68 | -- | 247 | 51.1 | -- | 22000 | **533 J** | 49.8 | -- |
| GPS-MW6I | GPS-MW6I-32-20220315 | 3/15/2022 | 32 | N | 4602542861 | Treatment | Intermediate | **1160** | **1370** | < 20.0 U | < 20.0 U | -403.4 | 0.22 | 9.57 | 3.15 | -- | 9.1 | -- | 85.9 | 59.1 | -- | 22000 | 215 J | **55.1** | -- |
| GPS-MW6I | GPS-MW6I-32.0-20220413 | 4/13/2022 | 32 | N | 4602562001 | Treatment | Intermediate | **2250** | **5560** | < 20.0 U | < 20.0 U | -402.3 | 48.48 | 9.06 | 4.643 | 15.03 | 8.69 | -- | 134 ^2 | 101 F2 | -- | 22000 | **467 J** | **53.9** | -- |
| GPS-MW6I | GPS-MW6I-32.0-20220413-X | 4/13/2022 | 32 | FD | 4602562001 | Treatment | Intermediate | **2850** | **3980** | < 20.0 U | < 20.0 U | -- | -- | -- | -- | -- | -- | -- | 136 ^2 | 78.0 | -- | 19000 | **493 J** | **58.8** | -- |
| GPS-MW6I | GPS-MW6I-32-20220512 | 5/12/2022 | 32 | N | 4602580081 | Treatment | Intermediate | **1140** | **1240** | < 20.0 U | < 20.0 U | -376.1 | 37.58 | 9.65 | 4.348 | 15.30 | 4.78 | -- | 129 | 107 | -- | 15000 | **491 J** | **50.3** | -- |
| GPS-MW6I | GPS-MW6I-32-20220609 | 6/9/2022 | 32 | N | 4602597481 | Treatment | Intermediate | -- | **1990** | -- | < 10.0 U | -338.7 | 2.26 | 8.65 | 7.715 | 16.16 | 9.1 | -- | 72.0 | 168 | -- | -- | -- | -- | -- |
| GPS-MW6I | GPS-MW6I-32.0-20220712 | 7/12/2022 | 32 | N | 4602617771 | Treatment | Intermediate | -- | **1840** | -- | < 10.0 U | -329.8 | 0.18 | 8.7 | 4.932 | 17.55 | 8.77 | -- | 67.7 | 236 | -- | -- | -- | -- | -- |
| GPS-MW6I | GPS-MW6I-32.0-20220712-X | 7/12/2022 | 32 | FD | 4602617771 | Treatment | Intermediate | -- | **1720** | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 67.1 | 230 | -- | -- | -- | -- | -- |
| GPS-MW6I | GPS-MW6I-32-20220818 | 8/18/2022 | 32 | N | 4602640741 | Treatment | Intermediate | -- | **984** | -- | < 10.0 U | -362.1 | 0.28 | 9.01 | 4.581 | 18.06 | 8.96 | -- | 62.6 | 224 | -- | -- | 106 J | **78.8** | -- |
| GPS-MW6I | GPS-MW-6I-32.5-20221206 | 12/6/2022 | 32.5 | N | 4602707751 | Post-Treatment | Intermediate | -- | **1630** | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 65.2 | **322** | 8 | -- | -- | -- | -- |
| GPS-MW6I | GPS-MW-6I-37.5-20221206 | 12/6/2022 | 37.5 | N | 4602707751 | Post-Treatment | Intermediate | -- | **44800** | -- | < 20.0 U | -- | -- | -- | -- | -- | -- | -- | 71.6 | **373** | 9.2 | -- | -- | -- | -- |
| GPS-MW6I | GPS-MW6I-32.5-20221212 | 12/12/2022 | 32.5 | N | 4602712001 | Post-Treatment | Intermediate | -- | -- | -- | -- | -206.2 | 0.33 | 8.48 | 3.825 | 11.92 | 9.38 | -- | -- | -- | -- | -- | 173 | **62.7** | -- |
| GPS-MW6I | GPS-MW6I-37.5-20221212 | 12/12/2022 | 37.5 | N | 4602712001 | Post-Treatment | Intermediate | -- | -- | -- | -- | -261.2 | 0.35 | 8.42 | 4.034 | 12.56 | 9.64 | -- | -- | -- | -- | -- | 181 | **64.6** | -- |
| GPS-MW6I | GPS-MW6I-29.6-20230222 | 2/22/2023 | 29.6 | N | 4602750771 | Post-Treatment | Intermediate | **539** | **2290** | < 10.0 U | < 10.0 U | 221.1 | 0.91 | 8.32 | 5.089 | 13.57 | 12.8 | -- | 61.9 | **455** | 4.64 | -- | 249 J | **62.6** | -- |
| GPS-MW6I | GPS-MW6I-29.6-20230222-X | 2/22/2023 | 29.6 | FD | 4602750771 | Post-Treatment | Intermediate | **452** | **2360** | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 65.4 | **452** | 5.04 | -- | 179 J | **61.3** | -- |
| GPS-MW6I | GPS-MW6I-34.6-20230222 | 2/22/2023 | 34.6 | N | 4602750771 | Post-Treatment | Intermediate | -- | **1800** | -- | < 10.0 U | 221.2 | 1.22 | 7.91 | 6.989 | 13.98 | 8.5 | -- | 60.2 | **524** | 4.64 | -- | 201 J | **65.3** | -- |
| GPS-MW6I | GPS-MW6I-34.6-20230614 | 6/14/2023 | 34.6 | N | 4602823061 | Post-Treatment | Intermediate | -- | **1140** | -- | < 10.0 U | -312.5 | 0.54 | 8.01 | 4.268 | 18.20 | 5.06 | -- | 74.9 | **414** | 5.2 | -- | 218 J | **76.4** | -- |
| GPS-MW6I | GPS-MW6I-34.6-20230817 | 8/17/2023 | 34.6 | N | 4602864001 | Post-Treatment | Intermediate | -- | **1130** | -- | < 10.0 U | -329.5 | 3.1 | 8.45 | 5.701 | 21.39 | 9.85 | -- | 62.6 | **385** | 3.44 J | -- | 197 J | **67.5** | -- |
| GPS-MW6I | GPS-MW6I-34.6-20230817-X | 8/17/2023 | 34.6 | FD | 4602864001 | Post-Treatment | Intermediate | -- | **1040** | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 65.2 | **332** | 5.04 J | -- | 173 J | **69.5** | -- |
| GPS-MW6I | GPS-MW6I-34.6-20231117 | 11/17/2023 | 34.6 | N | JD77231 | Post-Treatment | Intermediate | -- | **1080** | -- | 5.6 RA | -348.4 | 0.51 | 8.22 | 5.28 | 16.9 | 8.47 | -- | 35.4 | **637** | -- | -- | -- | -- | -- |
| GPS-MW6I | GPS-MW6I-34.6-20240219 | 2/19/2024 | 34.6 | N | JD82732 | Post-Treatment | Intermediate | -- | **993** | -- | < 10 U | -553 | 0.78 | 8.09 | 4.99 | 12.8 | 7.1 | -- | 60.4 | **570** | -- | -- | -- | -- | -- |
| GPS-MW6I | GPS-MW6I-34.6-20240520 | 5/20/2024 | 34.6 | N | JD88833 | Post-Treatment | Intermediate | -- | **1930** | -- | 4.5 J | -249.8 | 0.11 | 7.79 | 5.17 | 15.4 | 9.78 | -- | 62.9 | **703** | -- | -- | -- | -- | -- |
| GPS-MW6I | GPS-MW6I-34.6-20240520-X | 5/20/2024 | 34.6 | FD | JD88833 | Post-Treatment | Intermediate | -- | **1690** | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | 64.2 | **699** | -- | -- | -- | -- | -- |
| GPS-MW6I | GPS-MW6I-34.6-20240822 | 8/21/2024 | 34.6 | N | JD94599 | Post-Treatment | Intermediate | -- | **1910** | -- | < 10 U | -274 | 0.06 | 8.03 | 6.68 | 18.8 | 5.54 | -- | 89.3 | **812** | -- | -- | -- | -- | -- |
| GPS-MW6I | GPS-MW6I-34.6-20241114 | 11/14/2024 | 34.6 | N | JE610 | Post-Treatment | Intermediate | -- | **1680** | -- | < 10 U | -259.4 | 0.09 | 8.09 | 4.68 | 15 | 9.06 | -- | 44.8 J- | **686** | -- | -- | -- | -- | -- |
| 114-P1-MW-1D | 114-P1-MW-1D-20180129 | 1/29/2018 | 55 | N | JC59916 | Baseline | Deep | **235000** | **244000** | **217000 J** | **175000 J** | 219 | 0.69 | 7.46 | 2.64 | 9.71 | 49.7 | -- | 4.4 | **287** | < 2.0 U | 108 | **< 1000 U** | **< 150 U** | -- |
| 114-P1-MW-1D | 114-P1-MW1D-20180430 | 4/30/2018 | 55 | N | JC65192 | Treatment | Deep | **203000 J** | **164000 J** | **195000** | **198000** | 247 | 0 | 7.62 | 2.27 | 14.05 | 7.1 | -- | 2.4 | **296** | -- | 664 | -- | **< 380 U** | < 0.20 UJ |
| 114-P1-MW-1D | 114-P1-MW-1D-20180530 | 5/30/2018 | 55 | N | JC66984 | Treatment | Deep | **172000** | **166000** | **203000** | **190000** | -- | -- | -- | -- | -- | -- | -- | 3.3 | -- | -- | 477 | -- | **< 150 U** | < 0.20 U |
| 114-P1-MW-1D | 114-P1-MW-1D-20180530 | 5/30/2018 | 55 | N | JC66984A | Treatment | Deep | | | | | 196 | 4.04 | 7.29 | 2.06 | 27.09 | 17.8 | -- | -- | **259 J** | -- | -- | -- | -- | -- |
| 114-P1-MW-1D | 114-P1-MW-1D-20180703 | 7/3/2018 | 55 | N | JC69235 | Treatment | Deep | **193000** | **179000** | **195000** | **190000** | 221 | 0.4 | 6.6 | 3.34 | 18.37 | 10.9 | -- | 18.5 | **1330** | -- | 843 | -- | **1900** | < 0.20 UJ |
| 114-P1-MW-1D | 114-P1-MW-1D-20180724 | 7/24/2018 | 55 | N | JC70485 | Treatment | Deep | **126000** | **117000** | **97300** | **105000** | 169 | 0 | 6.89 | 6.07 | 21.32 | 7.9 | -- | 34.6 | **1480** | -- | 382 | -- | **5000** | < 0.20 U |
| 114-P1-MW-1D | 114-P1-MW-1D-180828 | 8/28/2018 | 55 | N | JC72673 | Treatment | Deep | **131000** | **156000** | **137000** | **150000** | -- | -- | -- | -- | -- | -- | -- | 30.7 | **1160** | -- | 895 | -- | **3540** | < 0.20 U |
| 114-P1-MW-1D | 114-P1-MW1D-20180924 | 9/24/2018 | 55 | N | JC74476 | Treatment | Deep | **300000** | **280000** | **236000** | **256000 J** | -- | -- | -- | -- | -- | -- | -- | 9.8 | **630** | -- | -- | -- | **1360** | < 0.20 U |
| 114-P1-MW-1D | 114-P1-MW-1D-20181030 | 10/30/2018 | 55 | N | JC76905 | Treatment | Deep | **427000** | **404000 J** | **336000** | **357000** | -- | -- | -- | -- | -- | -- | -- | 9.2 | **614** | -- | -- | -- | **906** | < 0.20 U |
| 114-P1-MW-1D | 114-P1-MW-1D-181126 | 11/26/2018 | 55 | N | JC78527 | Treatment | Deep | **175000** | **163000** | **159000** | **184000** | -- | -- | -- | -- | -- | -- | -- | 23.5 | **1400** | -- | 56.5 | -- | **6850** | < 0.20 U |
| 114-P1-MW-1D | 114-P1-MW-1D-181219 | 12/19/2018 | 55 | N | JC80041 | Treatment | Deep | R | R | **51800** | **59000** | -- | -- | -- | -- | -- | -- | -- | 29.2 | **1920** | -- | -- | -- | **4870** | R |
| 114-P1-MW-1D | 114-P1-MW-1D-20190327 | 3/27/2019 | 55 | N | JC85279 | Treatment | Deep | **105000** | **101000** | **81600** | **77900** | -- | -- | -- | -- | -- | -- | -- | 22.4 | **1470** | -- | 1760 | -- | **7780** | < 0.20 U |
| 114-P1-MW-1D | 114-P1-MW-1D-20190502 | 5/2/2019 | 55 | N | JC87408 | Treatment | Deep | **76100** | **53700** | **56400** | **56000** | -- | -- | -- | -- | -- | -- | -- | 21.1 | **1190** | -- | 1400 | -- | **7920** | < 0.20 U |
| 114-P1-MW-1D | 114-P1-MW-1D-36.5-20190530 | 5/30/2019 | 36.5 | N | JC88958 | Treatment | Deep | **58300** | **58600** | **69300** | **65700** | -- | -- | -- | -- | -- | -- | -- | 14.4 | **1140** | -- | 2040 J | -- | **7090** | R |
| 114-P1-MW-1D | 114-P1-MW-1D-41.5-20190530 | 5/30/2019 | 41.5 | N | JC88958 | Treatment | Deep | **87500** | **89300** | **98200** | **112000** | -- | -- | -- | -- | -- | -- | -- | 14.5 | **1230** | -- | 1710 J | -- | **7450** | R |
| 114-P1-MW-1D | 114-P1-MW-1D-46.5-20190531 | 5/31/2019 | 46.5 | N | JC89048 | Treatment | Deep | **115000** | **129000** | **93600** | **121000** | -- | -- | -- | -- | -- | -- | -- | 19.9 | **1180** | -- | 704 J | -- | **6750** | R |
| 114-P1-MW-1D | 114-P1-MW-1D-51.5-20190531 | 5/31/2019 | 51.5 | N | JC89048 | Treatment | Deep | **130000** | **131000** | **121000** | **125000** | -- | -- | -- | -- | -- | -- | -- | 18.4 | **1170** | -- | 1250 J | -- | **6820** | R |
| 114-P1-MW-1D | 114-P1-MW-1D-46.5-20190611 | 6/11/2019 | 46.5 | N | JC89662 | N/A | Deep | **152000** | **130000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 2.0 U | -- | < 100 U | -- | -- |
| 114-P1-MW-1D | 114-P1-MW-1D-DUP-20190702 | 7/2/2019 | 55 | FD | JC91049 | Treatment | Deep | **131000** | **130000** | **88200** | **93400** | -- | -- | -- | -- | -- | -- | -- | 25.7 | **1060** | -- | 1190 | -- | **94.0** | < 0.20 U |
| 114-P1-MW-1D | 114-P1-MW-1D-20190702 | 7/2/2019 | 55 | N | JC91049 | Treatment | Deep | **129000** | **118000** | **94200** | **81100** | -- | -- | -- | -- | -- | -- | -- | 23.7 | **1150** | -- | 1170 | -- | **< 75 U** | < 0.20 U |
| 114-P1-MW-1D | 114-P1-MW-1D-46.35-20190731 | 7/31/2019 | 46.35 | N | JC92477 | N/A | Deep | **120000** | **143000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 2.0 U | -- | 122 | -- | -- |
| 114-P1-MW-1D | 114-P1-MW-1D-20190802 | 8/2/2019 | 55 | N | JC92633 | Treatment | Deep | **138000** | **146000** | **129000** | **138000** | -- | -- | -- | -- | -- | -- | -- | 21.5 | **1040** | -- | 129 | -- | **807** | R |
| 114-P1-MW-1D | 114-P1-MW-1D-20190826 | 8/26/2019 | 55 | N | JC93900 | Treatment | Deep | **180000** | **196000** | **145000** | **158000** | -- | -- | -- | -- | -- | -- | -- | 22.4 | **1280** | -- | 1070 | -- | **1830** | < 0.20 U |
| 114-P1-MW-1D | 114-P1-MW-1D-DUP-20190923 | 9/23/2019 | 55 | FD | JC95491 | Treatment | Deep | **178000** | **200000 J** | **157000** | **178000** | -- | -- | -- | -- | -- | -- | -- | 20.4 | **1170** | -- | 682 | -- | **3940** | < 0.20 UJ |
| 114-P1-MW-1D | 114-P1-MW-1D-20190923 | 9/23/2019 | 55 | N | JC95491 | Treatment | Deep | **157000** | **322000 J** | **136000** | **161000** | -- | -- | -- | -- | -- | -- | -- | 21.1 | **1150** | -- | 785 | -- | **3460** | < 0.20 UJ |
| 114-P1-MW-1D | 114-P1-MW-1D-20191029 | 10/29/2019 | 55 | N | JC97632 | Treatment | Deep | **240000** | **367000** | **213000** | **211000** | -- | -- | -- | -- | -- | -- | -- | 24.4 | **1170** | -- | 1170 | -- | **4150** | < 0.20 U |
| 114-P1-MW-1D | 114-P1-MW-1D-DUP-20191126 | 11/26/2019 | 55 | FD | JC99269 | Treatment | Deep | **236000** | **212000 J** | **207000** | **213000** | -- | -- | -- | -- | -- | -- | -- | 17.8 | **1130** | -- | 760 | -- | **4450** | -- |
| 114-P1-MW-1D | 114-P1-MW-1D-20191126 | 11/26/2019 | 55 | N | JC99269 | Treatment | Deep | **218000** | **197000 J** | **198000** | **192000** | -- | -- | -- | -- | -- | -- | -- | 18.3 | **1220** | -- | 740 | -- | **4160** | -- |
| 114-P1-MW-1D | 114-P1-MW-1D-20191230 | 12/30/2019 | 55 | N | JD1000 | Treatment | Deep | **161000** | **170000** | **167000** | **165000** | -- | -- | -- | -- | -- | -- | -- | 18.5 | **1050** | -- | 1010 J | -- | **3770** | -- |
| 114-P1-MW-1D | 114-P1-MW-1D-20200129 | 1/29/2020 | 55 | N | JD2452 | Treatment | Deep | **228000 J** | **103000 J** | **223000 J** | **122000 J** | -- | -- | -- | -- | -- | -- | -- | 16.3 | **1090** | -- | 614 | -- | **2830** | -- |
| 114-P1-MW-1D | 114-P1-MW-1D-20200224 | 2/24/2020 | 55 | N | JD3618 | Treatment | Deep | **225000 J** | **135000 J** | **195000** | **178000 J** | -- | -- | -- | -- | -- | -- | 15.5 | -- | **1090** | -- | 580 | -- | **2340** | -- |
| 114-P1-MW-1D | 114-P1-MW-1D-20200325 | 3/25/2020 | 55 | N | JD5175 | Treatment | Deep | **132000** | **224000** | **130000** | **135000** | -- | -- | -- | -- | -- | -- | -- | 15.0 | **1000** | -- | 690 | -- | **3020** | -- |
| 114-P1-MW-1D | 114-P1-MW-1D-DUP-20200810 | 8/10/2020 | 55 | FD | JD11480 | Post-Treatment | Deep | **188000** | **186000** | **154000 J** | **147000 J** | -- | -- | -- | -- | -- | -- | -- | 14.7 | **1070** | < 2.0 U | 380 | **< 500 U** | **2430** | -- |
| 114-P1-MW-1D | 114-P1-MW-1D-20200810 | 8/10/2020 | 55 | N | JD11480 | Post-Treatment | Deep | **233000** | **206000** | **220000 J** | **208000 J** | -- | -- | -- | -- | -- | -- | -- | 14.2 | **1150** | < 2.0 U | 421 | **< 500 U** | **2250** | -- |
| 114-P1-MW-1D | 114-P1-MW-1D-20201112 | 11/12/2020 | 55 | N | JD16144 | Post-Treatment | Deep | **62200** | **58300** | R | R | -- | -- | -- | -- | -- | -- | -- | 12.7 | **1030** | < 2.0 U | 650 J | **< 500 U** | **3550 J** | -- |
| 114-P1-MW-1D | 114-P1-MW-1D-20210224 | 2/24/2021 | 55 | N | JD20709 | Post-Treatment | Deep | R | R | R | R | -- | -- | -- | -- | -- | -- | -- | 12.6 | **1040** | < 2.0 U | 628 | **< 1000 U** | **2270 J** | -- |
| 114-P1-MW-1D | 114-P1-MW-1D-39.5_20210618 | 6/18/2021 | 55 | N | JD26872 | Post-Treatment | Deep | -- | **79200** | **90200** | **80800** | -- | -- | -- | -- | -- | -- | -- | 9.7 | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-MW-1D | 114-P1-MW-1D-44.5_20210618 | 6/18/2021 | 55 | N | JD26872 | Post-Treatment | Deep | -- | **249000** | **231000** | **238000** | -- | -- | -- | -- | -- | -- | -- | 11.1 | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-MW-1D | 114-P1-MW-1D-49.5-20210623 | 6/23/2021 | 55 | N | JD27142 | Post-Treatment | Deep | -- | **294000** | **336000** | **384000** | -- | -- | -- | -- | -- | -- | -- | 11.1 | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-MW-1D | 114-P1-MW-1D-54.5-20210624 | 6/24/2021 | 55 | N | JD27239 | Post-Treatment | Deep | -- | **380000 J** | **448000** | **417000** | -- | -- | -- | -- | -- | -- | -- | 8.8 | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-MW-1D | 114-P1-MW-1D-20210929 | 9/29/2021 | 55 | N | JD32460 | Post-Treatment | Deep | **499000** | **453000** | **332000 J** | **259000 J** | -- | -- | -- | -- | -- | -- | -- | 10.5 | **985** | < 2.0 U | 737 | < 100 U | **1610** | -- |
| 114-P1-MW-1D | 114-P1-MW-1D-20211116 | 11/16/2021 | 55 | N | JD35372 | Post-Treatment | Deep | **350000** | **310000** | **361000** | **324000** | -- | -- | -- | -- | -- | -- | -- | 52.7 | **1060** | < 2.0 U | 580 | 55.7 J | **1260** | -- |
| 114-P1-MW-1D | 114-P1-MW-1D-20220221 | 2/21/2022 | 55 | N | JD40060 | Post-Treatment | Deep | **6690** | **13000** | **6100** | **6400** | -- | -- | -- | -- | -- | -- | -- | 23.4 | **580** | < 2.0 U | 628 | 60.7 J | **223** | -- |
| 114-P1-MW-1D | 114-P1-MW-1D-20220523 | 5/23/2022 | 55 | N | JD45334 | Post-Treatment | Deep | **66100** | **74800** | **61300** | **64900** | -- | -- | -- | -- | -- | -- | -- | 43.6 | **624** | < 2.0 U | 160 | < 100 U | **238** | -- |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P1-MW-1D | 114-P1-MW-1D-55-20220923 | 9/23/2022 | 55 | N | 4602661551 | Treatment | Deep | -- | **3850** | -- | < 50.0 U | -316.5 | 5.15 | 7.52 | 2.988 | 17.35 | 6.8 | -- | 115 | 46.7 | -- | -- | -- | -- | -- |
| 114-P1-MW-1D | 114-P1-MW-1D-46-20221227 | 12/27/2022 | 46 | N | 4602720661 | Enhanced Attenuation | Deep | **712** | **6280** | -- | < 20.0 U | -274.60 | 2.45 | 7.34 | 2.67 | 11.20 | 43.10 | -- | 112 J- | R | 5.6 J- | -- | **769** | -- | -- |
| 114-P1-MW-1D | 114-P1-MW-1D-46-20230413 | 4/13/2023 | 46 | N | 4602781921 | Enhanced Attenuation | Deep | -- | **265000** | -- | **301000** | 221.7 | 4.11 | 7.16 | 3.602 | 18.77 | 47.5 | -- | 12.3 | **787** | < 10 U | -- | **< 2400 U** | **596** | -- |
| 114-P1-MW-1D | 114-P1-MW-1D-46-20230413-X | 4/13/2023 | 46 | FD | 4602781921 | Enhanced Attenuation | Deep | -- | **229000** | -- | **266000** | -- | -- | -- | -- | -- | -- | -- | 12.5 | **772** | < 5 U | -- | **< 2400 U** | **643** | -- |
| 114-P1-MW-1D | 114-P1-MW-1D-46.0-20240409 | 4/9/2024 | 46 | N | JD86109 | Enhanced Attenuation | Deep | -- | **485000** | -- | **446000** | 142.7 | 0.33 | 7.21 | 4.535 | 16.4 | 8.53 | -- | 9.2 | **868** | < 2.0 U | -- | < 250 U | **870** | -- |
| 114-P1-MW-4D | 114-P1-MW-4D-20180126 | 1/26/2018 | 56 | N | JC59838 | Baseline | Deep | **46900 J-** | **47900** | **53600** | **46700** | 165 | 7.64 | 8.56 | 7.9 | 11.5 | 0 | -- | 8.9 | **1090** | < 2.0 U | 54.3 | **< 500 U** | **239** | -- |
| 114-P1-MW-4D | 114-P1-MW4D-20180430 | 4/30/2018 | 56 | N | JC65192 | Treatment | Deep | **72800** | **75600** | **75400** | **79000** | 113 | 6.18 | 8.13 | 8.74 | 12.8 | 33.1 | -- | 11.8 | 189 | -- | 298 | -- | **179** | < 0.20 UJ |
| 114-P1-MW-4D | 114-P1-MW-4D-20180604 | 6/4/2018 | 56 | N | JC67259 | Treatment | Deep | **60600** | **61500** | **59700** | **66300** | 90 | 1.04 | 8.2 | 5.74 | 17.58 | 45.6 | -- | 10.8 | -- | -- | 114 | -- | **223** | < 0.20 U |
| 114-P1-MW-4D | 114-P1-MW-4D-20180604 | 6/4/2018 | 56 | N | JC67259A | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **759** | -- | -- | -- | -- | -- |
| 114-P1-MW-4D | 114-P1-MW-4D_20180706 | 7/6/2018 | 56 | N | JC69376 | Treatment | Deep | **49100** | **53200** | **75100** | **79400** | 136 | 8.44 | 7.3 | 5.46 | 19.4 | 15.1 | -- | 11.3 | **888** | -- | 15.2 | -- | **183** | < 0.20 U |
| 114-P1-MW-4D | 114-P1-MW4D-180830 | 8/30/2018 | 56 | N | JC72843 | Treatment | Deep | **59800** | **61000** | **47700** | **51700** | -- | -- | -- | -- | -- | -- | -- | 12.3 | **950** | -- | 272 | -- | **< 150 U** | < 0.20 U |
| 114-P1-MW-4D | 114-P1-MW-4D_20180925 | 9/25/2018 | 56 | N | JC74535 | Treatment | Deep | **72100** | **60400** | **68100** | **72100** | -- | -- | -- | -- | -- | -- | -- | 11.5 | **915** | -- | -- | -- | **< 150 U** | < 0.20 U |
| 114-P1-MW-4D | 114-P1-MW-4D-181101 | 11/1/2018 | 56 | N | JC77088 | Treatment | Deep | **79700 J** | **81100 J** | **64700** | **70000** | -- | -- | -- | -- | -- | -- | -- | 10.4 | **890** | -- | -- | -- | **170** | < 0.20 UJ |
| 114-P1-MW-4D | 114-P1-MW-4D-181129 | 11/29/2018 | 56 | N | JC78732 | Treatment | Deep | **104000** | **105000** | **109000** | **99200** | -- | -- | -- | -- | -- | -- | -- | 12.4 | **865** | -- | 212 | -- | **< 750 U** | < 0.20 U |
| 114-P1-MW-4D | 114-P1-MW-4D-181219 | 12/19/2018 | 56 | N | JC80041 | Treatment | Deep | **109000** | **107000** | **113000** | **116000** | -- | -- | -- | -- | -- | -- | -- | 11.8 | **914** | -- | -- | -- | **< 380 U** | R |
| 114-P1-MW-4D | 114-P1-MW-4D-20190326 | 3/26/2019 | 56 | N | JC85176 | Treatment | Deep | **51500** | **54700** | **56200** | **56800** | -- | -- | -- | -- | -- | -- | -- | 29.1 | **1480** | -- | 431 | -- | **210** | < 0.20 U |
| 114-P1-MW-4D | 114-P1-MW-4D-20190502 | 5/2/2019 | 56 | N | JC87408 | Treatment | Deep | **43500** | **45400** | **44100** | **45000** | -- | -- | -- | -- | -- | -- | -- | 30.0 | **1200** | -- | 348 | -- | **222** | < 0.20 U |
| 114-P1-MW-4D | 114-P1-MW-4D-49.25-20190528 | 5/28/2019 | 49.25 | N | JC88834 | Treatment | Deep | **32800** | **38300** | **36900** | **36800** | -- | -- | -- | -- | -- | -- | -- | 30.4 | **1300** | -- | 8.3 J | -- | **227** | < 0.20 UJ |
| 114-P1-MW-4D | 114-P1-MW-4D-54.25-20190528 | 5/28/2019 | 54.25 | N | JC88834 | Treatment | Deep | **33900** | **33800** | **37400** | **36800** | -- | -- | -- | -- | -- | -- | -- | 34.3 | **1320** | -- | 13.5 J | -- | **229** | < 0.20 UJ |
| 114-P1-MW-4D | 114-P1-MW-4D-59.25-20190528 | 5/28/2019 | 59.25 | N | JC88834 | Treatment | Deep | **32500** | **31700** | **35000** | **35400** | -- | -- | -- | -- | -- | -- | -- | 36.2 | **1320** | -- | < 3.0 UBJ | -- | **239** | < 0.20 UJ |
| 114-P1-MW-4D | 114-P1-MW-4D-64.25-20190529 | 5/29/2019 | 64.25 | N | JC88888 | Treatment | Deep | **31200** | **32200** | **32400** | **34300** | -- | -- | -- | -- | -- | -- | -- | 33.9 | **1360** | -- | 432 J | -- | **222** | R |
| 114-P1-MW-4D | 114-P1-MW-4D-20190628 | 6/28/2019 | 56 | N | JC90869 | Treatment | Deep | **40500** | **38100** | **31000** | **32000** | -- | -- | -- | -- | -- | -- | -- | 25.2 | **1300** | -- | 262 | -- | **217** | R |
| 114-P1-MW-4D | 114-P1-MW-4D-20190729 | 7/29/2019 | 56 | N | JC92380 | Treatment | Deep | **31500** | **32300** | **26300** | **28000** | -- | -- | -- | -- | -- | -- | -- | 30.8 | **1380** | -- | 263 | -- | **233** | < 0.20 U |
| 114-P1-MW-4D | 114-P1-MW-4D-20190826826 | 8/26/2019 | 56 | N | JC93900 | Treatment | Deep | **26400** | **26300** | **26700** | **30100** | -- | -- | -- | -- | -- | -- | -- | 33.7 | **1410** | -- | 510 | -- | **241** | < 0.20 U |
| 114-P1-MW-4D | 114-P1-MW-4D-20190927 | 9/27/2019 | 56 | N | JC95808 | Treatment | Deep | **22300** | **29000** | **23200** | **25300** | -- | -- | -- | -- | -- | -- | -- | 26.4 | **1280** | -- | 389 J | -- | **248** | R |
| 114-P1-MW-4D | 114-P1-MW-4D-20191030 | 10/30/2019 | 56 | N | JC97696 | Treatment | Deep | **20000** | **20200** | **23300** | **20600** | -- | -- | -- | -- | -- | -- | -- | 29.6 | **1340** | -- | 414 | -- | **255** | < 0.20 U |
| 114-P1-MW-4D | 114-P1-MW-4D-20191125 | 11/25/2019 | 56 | N | JC99177 | Treatment | Deep | **14700** | **15500** | **11900** | **12400** | -- | -- | -- | -- | -- | -- | -- | 28.6 | **1480** | -- | 403 | -- | **253** | -- |
| 114-P1-MW-4D | 114-P1-MW-4D-20191226 | 12/26/2019 | 56 | N | JD923 | Treatment | Deep | **10900 J** | **12400** | **11200** | **12100** | -- | -- | -- | -- | -- | -- | -- | 27.9 | **1760** | -- | 1.24 | -- | **263** | -- |
| 114-P1-MW-4D | 114-P1-MW-4D-20200129 | 1/29/2020 | 56 | N | JD2452 | Treatment | Deep | **7430** | **7810** | **7000** | **7200** | -- | -- | -- | -- | -- | -- | -- | 29.6 | **2170** | -- | 282 | -- | **281** | -- |
| 114-P1-MW-4D | 114-P1-MW-4D-20200226 | 2/26/2020 | 56 | N | JD3741 | Treatment | Deep | **15200 J** | **17000 J** | **16000** | **15700** | -- | -- | -- | -- | -- | -- | -- | 23.5 | **1540** | -- | 149 | -- | **281** | -- |
| 114-P1-MW-4D | 114-P1-MW-4D-200200323 | 3/23/2020 | 56 | N | JD5060 | Treatment | Deep | **4420** | **4480** | **3500** | **4200** | -- | -- | -- | -- | -- | -- | -- | 30.4 | **1680** | -- | 263 | -- | **278** | -- |
| 114-P1-MW-4D | 114-P1-MW-4D-20200811 | 8/11/2020 | 56 | N | JD11542 | Post-Treatment | Deep | **1490** | **2150** | **1100** | **930** | -- | -- | -- | -- | -- | -- | -- | 29.2 | **1890** | < 2.0 U | 328 | 240 | **303** | -- |
| 114-P1-MW-4D | 114-P1-MW-4D-20201110 | 11/10/2020 | 56 | N | JD15969 | Post-Treatment | Deep | **753** | **978** | **280** | **390** | -- | -- | -- | -- | -- | -- | -- | 28.3 | **1600 J** | < 2.0 U | 506 | 250 | **317** | -- |
| 114-P1-MW-4D | BD-20210225 | 2/25/2021 | 56 | FD | JD20780 | Post-Treatment | Deep | **291 J** | **286** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 32.1 | **1540** | < 2.0 U | 1100 | **652** | **340** | -- |
| 114-P1-MW-4D | 114-P1-MW-4D-20210225 | 2/25/2021 | 56 | N | JD20780 | Post-Treatment | Deep | **210 J** | **277** | 6.2 J | 8.7 J | -- | -- | -- | -- | -- | -- | -- | 32.7 | **1760** | < 2.0 U | 1120 | **739** | **346** | -- |
| 114-P1-MW-4D | 114-P1-MW-4D-20210927 | 9/27/2021 | 56 | N | JD32281 | Post-Treatment | Deep | **124** | **195** | < 10 UBJ | 9.3 J | -- | -- | -- | -- | -- | -- | -- | 24.6 | **1070** | 0.54 J | 4010 | **1530** | **630** | -- |
| 114-P1-MW-4D | 114-P1-MW-4D-20211118 | 11/18/2021 | 56 | N | JD35530 | Post-Treatment | Deep | **150** | **154** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 50.7 | **1680** | < 2.0 U | 1400 | **884** | **419** | -- |
| 114-P1-MW-4D | 114-P1-MW-4D-20220222 | 2/22/2022 | 56 | N | JD40096 | Post-Treatment | Deep | **131** | **200** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 22.3 | **1170** | < 2.0 U | 1490 | R | **698 J** | -- |
| 114-P1-MW-4D | 114-P1-MW4D-20220525 | 5/25/2022 | 56 | N | JD45473 | Post-Treatment | Deep | **139 J** | **202** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 31.6 | **1270** | 0.55 J | 1020 | R | **445** | -- |
| 114-P1-MW-4D | 114-P1-MW-4D-57-20221227 | 12/27/2022 | 57 | N | 4602720661 | Enhanced Attenuation | Deep | -- | **165** | -- | < 10.0 U | -82.6 | 0.79 | 7.41 | 6.551 | 7.85 | 3.15 | -- | 22.7 J- | R | < 1.0 UJ | -- | **3270** | -- | -- |
| 114-P1-MW-4D | 114-P1-MW-4D-57-20221227-X | 12/27/2022 | 57 | FD | 4602720661 | Enhanced Attenuation | Deep | -- | **223** | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 22.9 J- | R | < 1.0 UJ | -- | **3360** | -- | -- |
| 114-P1-MW-4D | 114-P1-MW-4D-57.0-20230413 | 4/13/2023 | 57 | N | 4602781921 | Enhanced Attenuation | Deep | -- | **215** | -- | < 10.0 U | -65.5 | 1.22 | 7.17 | 5.479 | 18.38 | 1.69 | -- | 26.3 | **1260** | < 1 U | -- | **3310** | **545** | -- |
| 114-P1-MW-4D | 114-P1-MW-4D-57.0-20240409 | 4/9/2024 | 57 | N | JD86109 | Enhanced Attenuation | Deep | -- | **171** | -- | 12 | -132.6 | 0.36 | 7.44 | 7 | 15.5 | 1.94 | -- | 26.1 | **1310** | < 2.0 U | -- | **3570** | **449** | -- |
| 114-P1-MW-5D | 114-P1-MW-5D-20180123 | 1/24/2018 | 53.22 | N | JC59667 | Baseline | Deep | **259000** | **270000** | **222000** | **261000** | -- | -- | -- | -- | -- | -- | -- | 3.5 | **283** | < 2.0 U | 61.5 | **< 1000 U** | **205** | -- |
| 114-P1-MW-5D | 114-P1-MW-5D-20180531 | 5/31/2018 | 53.22 | N | JC67082 | Treatment | Deep | **49400** | **38000** | **31000 J** | **33400** | -- | -- | -- | -- | -- | -- | -- | 7.8 | -- | -- | 83.4 | -- | **202** | < 0.20 U |
| 114-P1-MW-5D | 114-P1-MW-5D-20180531 | 5/31/2018 | 53.22 | N | JC67082A | Treatment | Deep | -- | -- | -- | -- | 53 | 0 | 8.4 | 2.06 | 19.34 | 773 | -- | -- | **582** | -- | -- | -- | -- | -- |
| 114-P1-MW-5D | 114-P1-MW-5D_20180706 | 7/6/2018 | 53.22 | N | JC69376 | Treatment | Deep | **119000** | **134000** | **165000** | **174000** | 84 | 0.24 | 7.34 | 4.03 | 22.33 | 126 | -- | 13.8 | **859** | -- | 28.5 | -- | **208** | < 0.20 U |
| 114-P1-MW-5D | 114-P1-MW-5D-20180727 | 7/27/2018 | 53.22 | N | JC70845 | Treatment | Deep | **200000** | **221000** | **191000** | **197000** | 65 | 0.63 | 8.02 | 0 | 24.38 | 10.1 | -- | 21.8 | **1290** | -- | 375 | -- | **252** | R |
| 114-P1-MW-5D | 114-P1-MW5D-180830 | 8/30/2018 | 53.22 | N | JC72843 | Treatment | Deep | **224000** | **228000** | **187000** | **199000** | -- | -- | -- | -- | -- | -- | -- | 19.7 | **1200** | -- | 388 | -- | **275** | < 0.20 U |
| 114-P1-MW-5D | 114-P1-MW-5D_20180925 | 9/25/2018 | 53.22 | N | JC74535 | Treatment | Deep | **127000** | **115000** | **116000** | **122000** | -- | -- | -- | -- | -- | -- | -- | 11.0 | **779** | -- | -- | -- | **196** | < 0.20 U |
| 114-P1-MW-5D | 114-P1-MW-5D-181101 | 11/1/2018 | 53.22 | N | JC77088 | Treatment | Deep | **149 J** | **331 J** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 15.0 | **663** | -- | -- | -- | **199** | < 0.20 UJ |
| 114-P1-MW-5D | 114-P1-MW-5D-181219 | 12/19/2018 | 53.22 | N | JC80041 | Treatment | Deep | **29400** | **27700** | **23400** | **25900** | -- | -- | -- | -- | -- | -- | -- | 6.6 | **307** | -- | -- | -- | < 15 U | R |
| 114-P1-MW-5D | 114-P1-MW-5D-20190329 | 3/29/2019 | 53.22 | N | JC85453 | Treatment | Deep | **20800** | **24100 J** | **33000** | **30100** | -- | -- | -- | -- | -- | -- | -- | 9.6 | **899** | -- | 204 | -- | **232** | < 0.20 U |
| 114-P1-MW-5D | 114-P1-MW-5D-20190502 | 5/2/2019 | 53.22 | N | JC87408 | Treatment | Deep | **33900** | **32700** | **35900** | **35400** | -- | -- | -- | -- | -- | -- | -- | 8.4 | **665** | -- | 306 | -- | **187** | < 0.20 U |
| 114-P1-MW-5D | 114-P1-MW-5D-47.5-20190528 | 5/28/2019 | 47.5 | N | JC88834 | Treatment | Deep | **32800** | **34700** | **27100** | **29000** | -- | -- | -- | -- | -- | -- | -- | 6.7 | **572** | -- | 94.0 J | -- | **124** | < 0.20 UJ |
| 114-P1-MW-5D | 114-P1-MW-5D-52.5-20190528 | 5/28/2019 | 52.5 | N | JC88834 | Treatment | Deep | **30200** | **31400** | **25900** | **26800** | -- | -- | -- | -- | -- | -- | -- | 6.6 | **536** | -- | < 0.12 UBJ | -- | **122** | < 0.20 UJ |
| 114-P1-MW-5D | 114-P1-MW-5D-57.5-20190528 | 5/28/2019 | 57.5 | N | JC88834 | Treatment | Deep | **30200** | **31200** | **31500** | **29300** | -- | -- | -- | -- | -- | -- | -- | 6.0 | **519** | -- | < 2.3 UBJ | -- | **118** | < 0.20 UJ |
| 114-P1-MW-5D | 114-P1-MW-5D-62.5-20190528 | 5/28/2019 | 62.5 | N | JC88834 | Treatment | Deep | **27600** | **27300** | **28300** | **29500** | -- | -- | -- | -- | -- | -- | -- | 6.1 | **511** | -- | 9.0 J | -- | **112** | < 0.20 UJ |
| 114-P1-MW-5D | 114-P1-MW-5D-20190729 | 7/29/2019 | 53.22 | N | JC92380 | Treatment | Deep | **33000** | **33800** | **28300** | **30700** | -- | -- | -- | -- | -- | -- | -- | 7.4 | **569** | -- | 63.6 J | -- | **172** | < 0.20 U |
| 114-P1-MW-5D | 114-P1-MW-5D-20190826 | 8/26/2019 | 53.22 | N | JC93900 | Treatment | Deep | **17500** | **20800** | **20000** | **21200** | -- | -- | -- | -- | -- | -- | -- | 7.4 | **635** | -- | 13.2 | -- | **159** | < 0.20 U |
| 114-P1-MW-5D | 114-P1-MW-5D-20190923 | 9/23/2019 | 53.22 | N | JC95491 | Treatment | Deep | **13200** | **13900** | **13700** | **13200** | -- | -- | -- | -- | -- | -- | -- | 7.0 | **512** | -- | 104 | -- | **100** | < 0.20 UJ |
| 114-P1-MW-5D | 114-P1-MW-5D-20191029 | 10/29/2019 | 53.22 | N | JC97632 | Treatment | Deep | **8660** | **7500** | **7800** | **7800** | -- | -- | -- | -- | -- | -- | -- | 7.4 | **564** | -- | 2000 | -- | **157** | < 0.20 U |
| 114-P1-MW-5D | 114-P1-MW-5D-DUP-20191123 | 11/23/2019 | 53.22 | FD | JC99155 | Treatment | Deep | **1210** | **1960 J** | **810** | **1400 J** | -- | -- | -- | -- | -- | -- | -- | 20.7 J | **1130** | -- | 1040 J | -- | **335** | -- |
| 114-P1-MW-5D | 114-P1-MW-5D-20191123 | 11/23/2019 | 53.22 | N | JC99155 | Treatment | Deep | **1190** | **3320 J** | **830** | **2300 J** | -- | -- | -- | -- | -- | -- | -- | 9.8 J | **994** | -- | 1850 J | -- | **331** | < 0.20 U |
| 114-P1-MW-5D | 114-P1-MW-5D-20191226 | 12/26/2019 | 53.22 | N | JD923 | Treatment | Deep | **91.7 J** | **1580** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 12.1 | **653** | -- | 78.9 | -- | **196** | -- |
| 114-P1-MW-5D | 114-P1-MW-5D-20200127 | 1/27/2020 | 53.22 | N | JD2342 | Treatment | Deep | 49.4 | **405** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 15.2 | **649** | -- | 296 | -- | **202** | < 0.20 U |
| 114-P1-MW-5D | 114-P1-MW-5D-20200228 | 2/28/2020 | 53.22 | N | JD3873 | Treatment | Deep | 64.9 | **187 J** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 18.4 | **569** | -- | 725 | -- | **209** | -- |
| 114-P1-MW-5D | 114-P1-MW-5D-20200325 | 3/25/2020 | 53.22 | N | JD5175 | Treatment | Deep | 55.2 | **210** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 15.0 | **547** | -- | 34.4 | -- | **170** | -- |
| 114-P1-MW-5D | 114-P1-MW-5D-20200812 | 8/12/2020 | 53.22 | N | JD11593 | Post-Treatment | Deep | 29.6 | 63.1 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 8.7 | **355** | 1.5 J | 6620 | 205 | **151** | -- |
| 114-P1-MW-5D | 114-P1-MW-5D-20201109 | 11/9/2020 | 53.22 | N | JD15931 | Post-Treatment | Deep | **95.3** | **188** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 23.5 | **763** | 2.5 | 5480 | **612** | **359** | -- |
| 114-P1-MW-5D | 114-P1-MW-5D-20210224 | 2/24/2021 | 53.22 | N | JD20709 | Post-Treatment | Deep | 61.8 | **176** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 19.6 | **447** | 15.6 | 6670 | 197 | **247** | -- |
| 114-P1-MW-5D | 114-P1-MW-5D-DUP-20210927 | 9/27/2021 | 53.22 | FD | JD32281 | Post-Treatment | Deep | 44.0 | **93.1** | < 10 UJ | 9.3 J | -- | -- | -- | -- | -- | -- | -- | 13.4 | **449** | 8.3 | 8420 | 255 | **250** | -- |
| 114-P1-MW-5D | 114-P1-MW-5D-20210927 | 9/27/2021 | 53.22 | N | JD32281 | Post-Treatment | Deep | 45.9 | **70.8** | < 10 UBJ | 5.0 J | -- | -- | -- | -- | -- | -- | -- | 13.5 | **427** | 8.1 | 8580 | 264 | **259** | -- |
| 114-P1-MW-5D | BD-20211118 | 11/18/2021 | 53.22 | FD | JD35530 | Post-Treatment | Deep | 36.7 J | **189** | 4.0 J | < 10 U | -- | -- | -- | -- | -- | -- | -- | 20.7 | **530** | 9.0 | 4620 | 237 | **234** | -- |
| 114-P1-MW-5D | 114-P1-MW-5D-20211118 | 11/18/2021 | 53.22 | N | JD35530 | Post-Treatment | Deep | **105 J** | **180** | 2.8 J | < 10 U | -- | -- | -- | -- | -- | -- | -- | 25.4 | **524** | 9.2 | 4270 | 231 | **231** | -- |
| 114-P1-MW-5D | 114-P1-MW-5D-DUP-20220222 | 2/22/2022 | 53.22 | FD | JD40096 | Post-Treatment | Deep | 49.5 | **85.6** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 8.9 J | **465** | 5.2 | 1300 J | 279 | **286 J** | -- |
| 114-P1-MW-5D | 114-P1-MW-5D-20220222 | 2/22/2022 | 53.22 | N | JD40096 | Post-Treatment | Deep | 48.1 | **71.5** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 16.0 J | **467** | 5.1 | 960 J | 272 | **279** | -- |
| 114-P1-MW-5D | 114-P1-MW-5D-20220524 | 5/24/2022 | 53.22 | N | JD45395 | Post-Treatment | Deep | 6.3 J | **311** | < 10 U | 9.2 J | -- | -- | -- | -- | -- | -- | -- | 3.3 | **250** | 10.5 | 214 | **362** | **94.2** | -- |
| 114-P1-MW-5D | 114-P1-MW-5D-55.0-20221228 | 12/28/2022 | 55 | N | 4602721191 | Enhanced Attenuation | Deep | -- | 28.2 | -- | < 10.0 U | -118.1 | 0.31 | 7.91 | 1.005 | 11.8 | 3.27 | -- | 4.3 | 244 | < 1.0 U | -- | 190 | -- | -- |
| 114-P1-MW-5D | 114-P1-MW-5D-47.4-20230413 | 4/13/2023 | 47.4 | N | 4602781921 | Enhanced Attenuation | Deep | -- | 63.8 | -- | < 10.0 U | -7.4 | 0.84 | 7.75 | 1.478 | 17 | 8.1 | -- | 5.9 | **310** | < 1 U | -- | **456** | **171** | -- |
| 114-P1-MW-5D | 114-P1-MW-5D-52.4-20230413 | 4/13/2023 | 52.4 | N | 4602781921 | Enhanced Attenuation | Deep | -- | **500** | -- | < 10.0 U | -6.7 | 0.8 | 7.73 | 1.403 | 17.6 | 9.48 | -- | 5.0 | **328** | < 1 U | -- | **375** | **164** | -- |
| 114-P1-MW-5D | 114-P1-MW-5D-57.4-20230414 | 4/14/2023 | 57.4 | N | 4602782861 | Enhanced Attenuation | Deep | -- | 23.8 | -- | < 10.0 U | -105.2 | 3.6 | 4.74 | 1.511 | 16.3 | 5.4 | -- | 4.6 | **310** | < 1 U | -- | 221 | **158** | -- |
| 114-P1-MW-5D | 114-P1-MW-5D-62.4-20230414 | 4/14/2023 | 62.4 | N | 4602782861 | Enhanced Attenuation | Deep | -- | **102** | -- | < 10.0 U | -112.0 | 5.37 | 4.68 | 1.475 | 15.8 | 5.28 | -- | 4.0 | **325** | < 1 U | -- | 257 | **153** | -- |
| 114-P1-MW-5D | 114-P1-MW-5D-52.4-20240410 | 4/10/2024 | 52.4 | N | JD86198 | Enhanced Attenuation | Deep | -- | 24.9 | -- | 5.1 J | -101.2 | 0.27 | 7.49 | 2.458 | 16 | 0.9 | -- | 7.6 | **395** | < 2.0 U | -- | **458** | **207** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-20180119 | 1/19/2018 | 55.38 | N | JC59431 | Baseline | Deep | **76700** | **89900** | **84600** | **90100** | 96 | 0 | 6.51 | 0.744 | 8 | 71 | -- | 2.3 | 155 | < 2.0 U | 59.4 | **< 500 U** | **< 75 U** | -- |
| 114-P1-MW-6D | 114-P1-MW6D-20180430 | 4/30/2018 | 55.38 | N | JC65192 | Treatment | Deep | **16300** | **17000** | **36400** | **36000** | 163 | 2.36 | 8.18 | 0.875 | 13.13 | 9.3 | -- | 1.7 | 189 | -- | 51.3 | -- | **212** | < 0.20 UJ |
| 114-P1-MW-6D | 114-P1-MW-6D-20180529 | 5/29/2018 | 55.38 | N | JC66923 | Treatment | Deep | **16700** | **17600** | **18300** | **18000** | 98 | 3.66 | 8.12 | 1.2 | 20.92 | 56.9 | -- | 2.4 | -- | -- | 110 | -- | **234** | < 0.20 U |
| 114-P1-MW-6D | 114-P1-MW-6D-20180529 | 5/29/2018 | 55.38 | N | JC66923B | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 171 J | -- | -- | -- | -- | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-20180705 | 7/5/2018 | 55.38 | N | JC69286 | Treatment | Deep | **38600** | **40600** | **33600** | **34900** | 184 | 0.45 | 6.83 | 1.38 | 19.11 | 55.9 | -- | 2.4 | 152 | -- | 24.8 | -- | **214** | < 0.20 U |
| 114-P1-MW-6D | 114-P1-MW-6D-20180724 | 7/24/2018 | 55.38 | N | JC70485 | Treatment | Deep | **59000** | **61600** | **62100** | **63200** | 119 | 1.55 | 8.07 | 1.38 | 22.11 | 7.7 | -- | 2.3 | 225 | -- | 69.1 | -- | **219** | < 0.20 U |
| 114-P1-MW-6D | 114-P1-MW-6D-180828 | 8/28/2018 | 55.38 | N | JC72673 | Treatment | Deep | **42100** | **41000** | **38400** | **39800** | -- | -- | -- | -- | -- | -- | -- | 3.3 | 214 | -- | 42.2 | -- | **211** | < 0.20 U |
| 114-P1-MW-6D | 114-P1-MW-6D_20180925 | 9/25/2018 | 55.38 | N | JC74535 | Treatment | Deep | **67300** | **62200** | **74300** | **69600** | -- | -- | -- | -- | -- | -- | -- | 3.2 | 188 | -- | -- | -- | **205** | < 0.20 U |
| 114-P1-MW-6D | 114-P1-MW-6D-20181031 | 10/31/2018 | 55.38 | N | JC76975 | Treatment | Deep | **97900** | **104000** | **91600** | **94700** | -- | -- | -- | -- | -- | -- | -- | 3.7 | 214 | -- | -- | -- | **249** | < 0.20 U |
| 114-P1-MW-6D | 114-P1-MW-6D-181127 | 11/27/2018 | 55.38 | N | JC78589 | Treatment | Deep | **67900** | **83200** | **70000** | **65700** | -- | -- | -- | -- | -- | -- | -- | 3.0 | 204 | -- | 109 | -- | **185** | < 0.20 UJ |
| 114-P1-MW-6D | 114-P1-MW-6D-181217 | 12/17/2018 | 55.38 | N | JC79904 | Treatment | Deep | **68000** | **71400 J** | **64200** | **61600** | -- | -- | -- | -- | -- | -- | -- | 2.3 | 211 | -- | -- | -- | **186** | R |
| 114-P1-MW-6D | 114-P1-MW-6D-20190328 | 3/28/2019 | 55.38 | N | JC85346 | Treatment | Deep | **60900** | **62300** | **58100** | **59900** | -- | -- | -- | -- | -- | -- | -- | 2.5 | 210 | -- | 62.4 | -- | **150** | < 0.20 U |
| 114-P1-MW-6D | 114-P1-MW-6D-20190501 | 5/1/2019 | 55.38 | N | JC87310 | Treatment | Deep | **57500** | **52500** | **52400** | **53000** | -- | -- | -- | -- | -- | -- | -- | 1.9 | 209 | -- | 69.8 J | -- | **158** | < 0.20 UJ |
| 114-P1-MW-6D | 114-P1-MW-6D-43.00-20190531 | 5/31/2019 | 43 | N | JC89048 | Treatment | Deep | **47700** | **47000** | **47000** | **46300** | -- | -- | -- | -- | -- | -- | -- | 1.8 | 221 | -- | 148 J | -- | **149** | R |
| 114-P1-MW-6D | 114-P1-MW-6D-48.00-20190531 | 5/31/2019 | 48 | N | JC89048 | Treatment | Deep | **50600** | **51100** | **52200** | **52000** | -- | -- | -- | -- | -- | -- | -- | 1.9 | 224 | -- | 152 J | -- | **144** | R |
| 114-P1-MW-6D | 114-P1-MW-6D-53.00-20190531 | 5/31/2019 | 53 | N | JC89048 | Treatment | Deep | **49200** | **50700** | **51500** | **53100** | -- | -- | -- | -- | -- | -- | -- | 1.8 | 223 | -- | 14.2 J | -- | **143** | R |
| 114-P1-MW-6D | 114-P1-MW-6D-58.00-20190531 | 5/31/2019 | 58 | N | JC89048 | Treatment | Deep | **46800** | **47600** | **44900** | **46500** | -- | -- | -- | -- | -- | -- | -- | 2.1 | 200 | -- | 76.4 J | -- | **142** | R |
| 114-P1-MW-6D | 114-P1-MW6D-20190701 | 7/1/2019 | 55.38 | N | JC90966 | Treatment | Deep | **31500** | **32300** | **30900** | **30900** | -- | -- | -- | -- | -- | -- | -- | 8.2 | **713** | -- | 241 | -- | **158** | < 0.20 U |
| 114-P1-MW-6D | 114-P1-MW-6D-20190702 | 7/2/2019 | 55.38 | N | JC91049 | Treatment | Deep | **44500** | **43400** | **37300** | **35800** | -- | -- | -- | -- | -- | -- | -- | 1.7 | 213 | -- | 77.6 | -- | **158** | < 0.20 U |
| 114-P1-MW-6D | 114-P1-MW-6D-20190731 | 7/31/2019 | 55.38 | N | JC92478 | Treatment | Deep | **44400** | **47600** | **39800** | **41700** | -- | -- | -- | -- | -- | -- | -- | 2.3 | 233 | -- | 22.3 | -- | **164** | R |
| 114-P1-MW-6D | 114-P1-MW-6D-20190827 | 8/27/2019 | 55.38 | N | JC93952 | Treatment | Deep | **37300** | **40000** | **42300** | **42600** | -- | -- | -- | -- | -- | -- | -- | 2.1 | 229 | -- | 68.9 | -- | **176** | < 0.20 U |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P1-MW-6D | 114-P1-MW-6D-20190924 | 9/24/2019 | 55.38 | N | JC95567 | Treatment | Deep | **44800** | **46200** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 2.4 | 219 | -- | 87.0 | -- | **179** | 0.63 |
| 114-P1-MW-6D | 114-P1-MW-6D-20191031 | 10/31/2019 | 55.38 | N | JC97796 | Treatment | Deep | **17000** | **18400** | **17700** | **18600** | -- | -- | -- | -- | -- | -- | -- | 3.0 | 199 | -- | 20.0 | -- | **239** | < 0.20 U |
| 114-P1-MW-6D | 114-P1-MW-6D-20191125 | 11/25/2019 | 55.38 | N | JC99177 | Treatment | Deep | **11200** | **10800** | **10800** | **11000** | -- | -- | -- | -- | -- | -- | -- | 2.9 | 189 | -- | 23.9 | -- | **235** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-20191226 | 12/26/2019 | 55.38 | N | JD923 | Treatment | Deep | **9630 J** | **11600** | **9000** | **9300** | -- | -- | -- | -- | -- | -- | -- | 3.0 | 187 | -- | 22.1 | -- | **208** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-20200129 | 1/29/2020 | 55.38 | N | JD2452 | Treatment | Deep | **4880** | **5120** | **5200** | **5000** | -- | -- | -- | -- | -- | -- | -- | 3.2 | 214 | -- | 35.8 | -- | **240** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-DUP1-20200228 | 2/28/2020 | 55.38 | FD | JD3873 | Treatment | Deep | **4130** | **5900 J** | **6000** | **6000** | -- | -- | -- | -- | -- | -- | -- | 3.1 | **267** | -- | 31.1 | -- | **314** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-20200228 | 2/28/2020 | 55.38 | N | JD3873 | Treatment | Deep | **4040** | **7120 J** | **4900** | **4900** | -- | -- | -- | -- | -- | -- | -- | 3.0 | 247 | -- | 70.9 | -- | **320** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-20200327 | 3/27/2020 | 55.38 | N | JD5288 | Treatment | Deep | **11800** | **12000** | **9200** | **9700** | -- | -- | -- | -- | -- | -- | -- | 2.5 | **258** | -- | 23.6 | -- | **193** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-20200810 | 8/10/2020 | 55.38 | N | JD11480 | Post-Treatment | Deep | **25700** | **24400** | **25800** | **23400** | -- | -- | -- | -- | -- | -- | -- | 2.8 | **290** | < 2.0 U | 67.3 | **< 500 U** | **240** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-20201111 | 11/11/2020 | 55.38 | N | JD16049 | Post-Treatment | Deep | **66100** | **69100** | **59200** | **57600** | -- | -- | -- | -- | -- | -- | -- | 4.4 | **312** | < 2.0 U | 134 | **< 500 U** | **299** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-20210224 | 2/24/2021 | 55.38 | N | JD20709 | Post-Treatment | Deep | **69600** | **73000** | **61600** | **74800** | -- | -- | -- | -- | -- | -- | -- | 2.9 | **300** | < 2.0 U | 228 | **< 1000 U** | **208** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-20210928 | 9/28/2021 | 55.38 | N | JD32334 | Post-Treatment | Deep | R | R | **358000 J** | **289000 J** | -- | -- | -- | -- | -- | -- | -- | < 50 U | **268** | < 2.0 U | 92.1 | **< 500 U** | **299** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-20211117 | 11/17/2021 | 55.38 | N | JD35453 | Post-Treatment | Deep | **878000** | **958000 J** | **852000** | **849000** | -- | -- | -- | -- | -- | -- | -- | < 40 U | **490** | < 2.0 U | 303 | **< 10000 U** | **481** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-20220222 | 2/22/2022 | 55.38 | N | JD40096 | Post-Treatment | Deep | **889000** | **919000** | **849000** | **861000** | -- | -- | -- | -- | -- | -- | -- | 16.5 J | **560** | < 2.0 U | 232 | < 100 U | **359** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-20220526 | 5/26/2022 | 55.38 | N | JD45556 | Post-Treatment | Deep | **548000** | **611000** | **486000** | **497000** | -- | -- | -- | -- | -- | -- | -- | 37.3 | **543** | < 2.0 U | 157 | < 100 U | **260** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-52.2-20230329 | 3/29/2023 | 52.2 | N | 4602772691 | Treatment | Deep | **3670** | **7650** | **4120** | **2950** | 95.5 | 0.63 | 6.7 | 2.218 | 13.5 | 60.8 | -- | 59.0 | 53.8 | -- | -- | **< 600 U** | **1990** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-52.2-20230412 | 4/12/2023 | 52.2 | N | 4602781111 | Treatment | Deep | **3150** | **3400** | **2310** | **1810** | 214.6 | 2 | 6.88 | 1.956 | 18.9 | 53 | -- | 53.1 | 86.5 | -- | -- | **453** | **1820** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-52.2-20230505 | 5/5/2023 | 52.2 | N | 4602796711 | Treatment | Deep | **5780** | **18400** | **4710** | **5630 J** | 318.1 | 0.48 | 6.45 | 1.997 | 15.1 | 52.6 | -- | 41.4 | 15.5 J | -- | -- | **317** | **1760** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-52.2-20230505-X | 5/5/2023 | 52.2 | FD | 4602796711 | Treatment | Deep | **5150** | **16000** | **4450** | **11800 J** | -- | -- | -- | -- | -- | -- | -- | 41.1 | 42.2 J | -- | -- | 264 | **1750** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-52.2-20230615 | 6/15/2023 | 52.2 | N | 4602824081 | Treatment | Deep | **97300** | **68100** | **59400** | **48000** | 45.4 | 5.76 | 6.76 | 1.875 | 20.92 | 20.4 | -- | 14.8 | 126 | -- | -- | **< 600 U** | **1090** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-52.2-20230711 | 7/11/2023 | 52.2 | N | 4602839751 | Treatment | Deep | -- | **142000** | -- | **146000** | 62 | 1.1 | 7.27 | 2.294 | 17.62 | 5.9 | -- | 10.1 | **274** | -- | -- | **< 1200 U** | **603** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-52.2-20230711-X | 7/11/2023 | 52.2 | FD | 4602839751 | Treatment | Deep | -- | **128000** | -- | **139000** | -- | -- | -- | -- | -- | -- | -- | 10.2 | **280** | -- | -- | **< 600 U** | **604** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-52.2-20230815 | 8/15/2023 | 52.2 | N | 4602862021 | Treatment | Deep | -- | **11600** | -- | **13600** | 196.7 | 1.57 | 6.58 | 1.91 | 18.6 | 5.39 | -- | 18.7 | 87.7 | -- | -- | 86.3 J | **1020** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-52.2-20230815-X | 8/15/2023 | 52.2 | FD | 4602862021 | Treatment | Deep | -- | **12400** | -- | **12200** | -- | -- | -- | -- | -- | -- | -- | 17.2 | 103 | -- | -- | 98.3 J | **1100** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-52.2-20230912 | 9/12/2023 | 52.2 | N | 4602880021 | Treatment | Deep | -- | **313000** | -- | **310000 H** | 96.9 | 1 | 7.3 | 2.373 | 19.33 | 7.05 | -- | 10.1 | **293** | -- | -- | **< 600 U** | **614** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-52.2-20230912-X | 9/12/2023 | 52.2 | FD | 4602880021 | Treatment | Deep | -- | **291000** | -- | **304000** | -- | -- | -- | -- | -- | -- | -- | 10.4 | **279** | -- | -- | **< 2400 U** | **628** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-52.2-20231018 | 10/18/2023 | 52.2 | N | 4602906411 | Treatment | Deep | -- | **519000** | -- | **663000** | -63.4 | 0.51 | 8.12 | 3.338 | 16.7 | 4.75 | -- | 6.4 | **471** | -- | -- | **4820 J** | **394 J** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-52.2-20231113 | 11/13/2023 | 52.2 | N | JD76851 | Treatment | Deep | -- | **138000** | -- | **175000** | 156 | 0.31 | 7.25 | 1774 | 14.4 | 8.36 | -- | 10.7 | 226 | -- | -- | **< 500 U** | **455** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-52.2-20231221 | 12/21/2023 | 52.2 | N | JD79358 | Treatment | Deep | -- | **460000** | -- | **401000** | 1.86 | 0.09 | 7.56 | 2.932 | 13.2 | 4.52 | -- | 3.5 B | **397** | -- | -- | **< 2500 U** | **387** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-52.2-20240126 | 1/26/2024 | 52.2 | N | JD81264 | Treatment | Deep | -- | **287000** | -- | **295000** | 263 | 0.14 | 8.27 | 2.759 | 11.7 | 6.28 | -- | 4.5 | **428** | -- | -- | **< 130000 U** | **< 5000 U** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-52.2-20240126-X | 1/26/2024 | 52.2 | FD | JD81264 | Treatment | Deep | -- | **291000** | -- | **294000** | -- | -- | -- | -- | -- | -- | -- | 3.9 | **429** | -- | -- | **< 130000 U** | **< 5000 U** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-52.2-20240214 | 2/14/2024 | 52.2 | N | JD82437 | Treatment | Deep | -- | **225000** | -- | **285000** | 155.2 | 0.35 | 8.15 | 2.179 | 10.5 | 8.12 | -- | 3.6 | **442** | -- | -- | < 250 U | **140** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-52.2-20240311 | 3/11/2024 | 52.2 | N | JD84214 | Treatment | Deep | -- | **249000** | -- | **244000** | 4 | 0.23 | 8.19 | 2.634 | 13.4 | 9 | -- | 5.9 | **426** | -- | -- | < 250 U | **114** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-52.2-20240311-X | 3/11/2024 | 52.2 | FD | JD84214 | Treatment | Deep | -- | **233000** | -- | **234000** | -- | -- | -- | -- | -- | -- | -- | 4.5 B | **452** | -- | -- | < 50 U | **117** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-52.2-20240409 | 4/9/2024 | 52.2 | N | JD86108 | Treatment | Deep | -- | **194000** | -- | **191000** | -40.5 | 0.03 | 6.93 | 2.127 | 15.9 | 8.78 | -- | 9.9 | **332** | -- | -- | < 250 U | **449** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-52.2-20240409-X | 4/9/2024 | 52.2 | FD | JD86108 | Treatment | Deep | -- | **188000** | -- | **197000** | -- | -- | -- | -- | -- | -- | -- | 10.2 | 83.0 | -- | -- | < 250 U | **448** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-52.2-20240524 | 5/24/2024 | 52.2 | N | JD89187 | Treatment | Deep | -- | **268000** | -- | **238000** | -- | -- | -- | -- | -- | -- | -- | < 5.0 U | **424** | -- | -- | < 250 U | **156** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-52.2-20240524-X | 5/24/2024 | 52.2 | FD | JD89187 | Treatment | Deep | -- | **229000** | -- | **250000** | -- | -- | -- | -- | -- | -- | -- | 11.9 | **395** | -- | -- | < 250 U | **159** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-52.2-20240611 | 6/11/2024 | 52.2 | N | JD90227 | Treatment | Deep | -- | **247000** | -- | **261000** | 51.3 | 0.16 | 7.81 | 2.763 | 16.8 | 4.32 | -- | 7.8 | **461** | -- | -- | < 250 U | **194** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-52.2-20240611-X | 6/11/2024 | 52.2 | FD | JD90227 | Treatment | Deep | -- | **252000** | -- | **263000** | -- | -- | -- | -- | -- | -- | -- | 8.0 | **456** | -- | -- | < 250 U | **200** | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-53.2-20240820 | 8/20/2024 | 53.2 | N | JD94507 | Post-Treatment | Deep | -- | **326000** | -- | **287000** | 22 | 0.18 | 8.09 | 2.89 | 22.1 | 9.2 | -- | 6.7 | **506** | < 2.0 U | -- | -- | -- | -- |
| 114-P1-MW-6D | 114-P1-MW-58.2-20240820 | 8/20/2024 | 58.2 | N | JD94507 | Post-Treatment | Deep | -- | **320000** | -- | **335000** | 14.5 | 0.17 | 8.19 | 2.92 | 19.2 | 9.76 | -- | 5.4 | **509** | < 2.0 U | -- | -- | -- | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-43.2-20240821 | 8/21/2024 | 43.2 | N | JD94599 | Post-Treatment | Deep | -- | **250000** | -- | **255000** | -131.2 | 0.11 | 7.49 | 2.87 | 20.7 | 3.2 | -- | 7.3 | **441** | < 2.0 U | -- | -- | -- | -- |
| 114-P1-MW-6D | 114-P1-MW-48.2-20240821 | 8/21/2024 | 48.2 | N | JD94599 | Post-Treatment | Deep | -- | **265000** | -- | **278000** | -109.2 | 0.11 | 7.65 | 2.94 | 19.8 | 7.6 | -- | 6.4 | **459** | < 2.0 U | -- | -- | -- | -- |
| 114-P1-MW-6D | 114-P1-MW-58.2-20241118 | 11/18/2024 | 58.2 | N | JE873 | Post-Treatment | Deep | -- | **157000** | -- | **198000** | 166.1 | 1.21 | 7.02 | 2.15 | 17.4 | 4.89 | -- | R | **322** | -- | -- | -- | -- | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-20180125 | 1/25/2018 | 55 | N | JC59745 | Baseline | Deep | **61300** | **70000** | **59500** | **61300** | 145 | 3.71 | 8.84 | 0.768 | 8.42 | 14.8 | -- | 1.3 | 160 | < 2.0 U | 34.1 | < 200 U | **< 150 U** | -- |
| 114-P1-MW-7D | 114-P1-MW7D-20180430 | 4/30/2018 | 55 | N | JC65192 | Treatment | Deep | **1920000** | **1820000** | **853000** | **864000** | 246 | 0.71 | 7.14 | 11 | 12.6 | 9.5 | -- | 12.2 | **1100** | -- | 365 | -- | **< 7500 U** | 4.2 J |
| 114-P1-MW-7D | 114-P1-MW-7D-20180529 | 5/29/2018 | 55 | N | JC66923 | Treatment | Deep | **2060000** | **2050000** | **1900000** | **1940000** | 226 | 0.5 | 7.15 | 9.34 | 26.68 | 0.5 | -- | 11.8 | -- | -- | 435 | -- | **2320** | < 2.0 U |
| 114-P1-MW-7D | 114-P1-MW-7D-20180529 | 5/29/2018 | 55 | N | JC66923B | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **956 J** | -- | -- | -- | -- | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-20180703 | 7/3/2018 | 55 | N | JC69235 | Treatment | Deep | **2330000** | **2490000** | **1980000** | **2030000** | 193 | 0.81 | 7.2 | 11.2 | 26.88 | 3 | -- | 11.4 | **1030** | -- | 302 | -- | **< 7500 U** | < 0.20 UJ |
| 114-P1-MW-7D | 114-P1-MW-7D-20180724 | 7/24/2018 | 55 | N | JC70485 | Treatment | Deep | **1490000** | **1280000** | **1010000** | **1070000** | 206 | 6.99 | 7.33 | 4.08 | 30.48 | 0.9 | -- | 6.9 | **446** | -- | 29.6 | -- | **296** | < 2.0 U |
| 114-P1-MW-7D | 114-P1-MW-180828 | 8/28/2018 | 55 | N | JC72673 | Treatment | Deep | **1580000** | **1880000** | **1710000** | **1760000** | -- | -- | -- | -- | -- | -- | -- | 9.6 | **740** | -- | 220 | -- | **431** | < 0.20 U |
| 114-P1-MW-7D | 114-P1-MW7D-20180924 | 9/24/2018 | 55 | N | JC74476 | Treatment | Deep | **123000** | **1810000** | **1800000** | **1870000 J** | -- | -- | -- | -- | -- | -- | -- | 9.2 | **815** | -- | -- | -- | 27.9 | < 0.20 U |
| 114-P1-MW-7D | 114-P1-MW-7D-20181030 | 10/30/2018 | 55 | N | JC76905 | Treatment | Deep | **1560000** | **1570000 J** | **1330000** | **1410000** | -- | -- | -- | -- | -- | -- | -- | 10.0 | **712** | -- | -- | -- | **480** | < 0.20 U |
| 114-P1-MW-7D | 114-P1-181219 | 12/19/2018 | 55 | N | JC80041 | Treatment | Deep | **1420000** | **1450000** | **1280000** | **1360000** | -- | -- | -- | -- | -- | -- | -- | 11.9 | **505** | -- | -- | -- | **< 3000 U** | R |
| 114-P1-MW-7D | 114-P1-MW-7D-20190329 | 3/29/2019 | 55 | N | JC85453 | Treatment | Deep | **1160000** | **1380000 J** | **1240000** | **1260000** | -- | -- | -- | -- | -- | -- | -- | 8.6 | **929** | -- | < 1.6 UBJ | -- | **551** | 2.9 |
| 114-P1-MW-7D | 114-P1-MW-7D-20190502 | 5/2/2019 | 55 | N | JC87408 | Treatment | Deep | **1420000** | **1470000** | **940000** | **954000** | -- | -- | -- | -- | -- | -- | -- | 9.7 | **1050** | -- | 301 | -- | **972** | < 0.20 U |
| 114-P1-MW-7D | 114-P1-MW-7D-43.50-DUP-20190530 | 5/30/2019 | 43.5 | FD | JC88958 | Treatment | Deep | **1110000** | **1080000** | **1150000** | **1180000** | -- | -- | -- | -- | -- | -- | -- | 6.9 | **914** | -- | 385 J | -- | **< 7500 U** | R |
| 114-P1-MW-7D | 114-P1-MW-7D-43.50-20190530 | 5/30/2019 | 43.5 | N | JC88958 | Treatment | Deep | **1100000** | **1090000** | **988000** | **1040000** | -- | -- | -- | -- | -- | -- | -- | 7.2 | **932** | -- | 378 J | -- | **< 7500 U** | R |
| 114-P1-MW-7D | 114-P1-MW-7D-48.50-20190530 | 5/30/2019 | 48.5 | N | JC88958 | Treatment | Deep | **1290000** | **1210000** | **1390000** | **1420000** | -- | -- | -- | -- | -- | -- | -- | 7.7 | **1090** | -- | 385 J | -- | **< 7500 U** | R |
| 114-P1-MW-7D | 114-P1-MW-7D-53.50-20190530 | 5/30/2019 | 53.5 | N | JC88958 | Treatment | Deep | **1110000** | **1180000** | **1280000** | **1190000** | -- | -- | -- | -- | -- | -- | -- | 7.6 | **949** | -- | 377 J | -- | **< 7500 U** | R |
| 114-P1-MW-7D | 114-P1-MW-7D-58.50-20190530 | 5/30/2019 | 58.5 | N | JC88958 | Treatment | Deep | **1280000** | **1160000** | **1620000 J** | **1240000 J** | -- | -- | -- | -- | -- | -- | -- | 9.9 | **1070** | -- | 367 J | -- | **< 1500 U** | R |
| 114-P1-MW-7D | 114-P1-MW-7D-20190702 | 7/2/2019 | 55 | N | JC91049 | Treatment | Deep | **1290000** | **1400000** | **1120000** | **1130000** | -- | -- | -- | -- | -- | -- | -- | 10.5 | **1090** | -- | 420 | -- | **< 3000 U** | < 0.20 U |
| 114-P1-MW-7D | 114-P1-MW-7D-20190801 | 8/1/2019 | 55 | N | JC92580 | Treatment | Deep | **1330000** | **1330000** | **1040000** | **1040000** | -- | -- | -- | -- | -- | -- | -- | 9.8 | **859** | -- | 0.42 | -- | **1110** | 2.4 J |
| 114-P1-MW-7D | 114-P1-MW-7D-20190827 | 8/27/2019 | 55 | N | JC93952 | Treatment | Deep | **1180000** | **1280000** | **1060000** | **1130000** | -- | -- | -- | -- | -- | -- | -- | 9.3 | **970** | -- | 339 | -- | **1150** | 3.4 |
| 114-P1-MW-7D | 114-P1-MW-7D-20190925 | 9/25/2019 | 55 | N | JC95646 | Treatment | Deep | **1240000** | **1340000** | **979000** | **1190000** | -- | -- | -- | -- | -- | -- | -- | 7.8 | **865** | -- | 244 | -- | **< 1500 U** | < 0.20 U |
| 114-P1-MW-7D | 114-P1-MW-7D-20191031 | 10/31/2019 | 55 | N | JC97796 | Treatment | Deep | **1490000** | **1640000** | **1220000** | **1490000** | -- | -- | -- | -- | -- | -- | -- | 9.7 | **881** | -- | 266 | -- | **< 7500 U** | < 0.20 U |
| 114-P1-MW-7D | 114-P1-MW-7D-20191125 | 11/25/2019 | 55 | N | JC99177 | Treatment | Deep | **1300000** | **1370000** | **1030000** | **1120000** | -- | -- | -- | -- | -- | -- | -- | 8.0 | **645** | -- | 303 | -- | **< 3000 U** | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-20191227 | 12/27/2019 | 55 | N | JD963 | Treatment | Deep | **1450000** | **1400000** | **1370000** | **1430000** | -- | -- | -- | -- | -- | -- | -- | 10.2 | **533** | -- | 389 J | -- | **6370 J** | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-20200130 | 1/30/2020 | 55 | N | JD2521 | Treatment | Deep | **822000** | **712000** | **789000** | **766000** | -- | -- | -- | -- | -- | -- | -- | 5.9 | **487** | -- | 121 | -- | **337** | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-20200224 | 2/24/2020 | 55 | N | JD3618 | Treatment | Deep | **1730000 J** | **1740000** | **163000** | **158000** | -- | -- | -- | -- | -- | -- | -- | 8.6 | **542** | -- | 187 J | -- | **< 1500 U** | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-20200326 | 3/26/2020 | 55 | N | JD5246 | Treatment | Deep | **1150000** | **1150000** | **1290000** | **1270000** | -- | -- | -- | -- | -- | -- | -- | 8.3 | **525** | -- | 239 J | -- | **< 1500 U** | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-20200811 | 8/11/2020 | 55 | N | JD11542 | Treatment | Deep | **1370000** | **1340000** | **1470000** | **1380000** | -- | -- | -- | -- | -- | -- | -- | 7.8 | **519** | < 2.0 U | 236 | **< 500 U** | **138** | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-20201111 | 11/11/2020 | 55 | N | JD16049 | Treatment | Deep | **1470000** | **1480000** | **1260000** | **1640000** | -- | -- | -- | -- | -- | -- | -- | 9.6 | **550** | < 2.0 U | 215 | **< 500 U** | 34.5 J | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-20210224 | 2/24/2021 | 55 | N | JD20709 | Treatment | Deep | **1170000** | **1030000** | **1090000** | **1320000** | -- | -- | -- | -- | -- | -- | -- | 7.5 | **482** | < 2.0 U | 312 | **< 5000 U** | **< 750 U** | -- |
| 114-P1-MW-7D | 114-P1-MW7D-58.0-20210317 | 3/17/2021 | 58 | N | JD21863 | Treatment | Deep | **624000** | **714000** | **630000** | **744000** | 218.2 | 0.18 | 6.95 | 3.342 | -- | 2.7 | -- | 5.7 | **396** | -- | -- | -- | -- | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-58.0-20210427 | 4/27/2021 | 58 | N | 4602330111 | Treatment | Deep | **775000** | **818000** | **725000** | **747000** | 165.1 | 0.99 | 7.04 | 3.879 | -- | 2.06 | -- | 5.6 | **322** | -- | 250 | < 120 U | **164** | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-64.0-20210525 | 5/25/2021 | 64 | N | 4602351281 | Treatment | Deep | **590000** | **659000** | **1170000** | **1320000** | 241.1 | 0.66 | 7.13 | 4.047 | -- | 2.31 | -- | 5.6 | **406** | -- | 210 | **< 12000 U** | **228 J** | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-64.0-20210525-X | 5/25/2021 | 64 | FD | 4602351281 | Treatment | Deep | **666000** | **638000** | **635000 H** | **607000 H** | -- | -- | -- | -- | -- | -- | -- | 5.6 | **417** | -- | 200 | 88.3 J | 39.0 | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-64.0-20210622 | 6/22/2021 | 64 | N | 4602371271 | Treatment | Deep | **789000** | **898000** | **868000 F1** | **936000 F1** | 161.3 | 1.11 | 7.01 | 5.237 | -- | 2.53 | -- | 6.8 | **689** | -- | 300 | **< 6000 U** | **180 J** | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-64.0-20210622-X | 6/22/2021 | 64 | FD | 4602371271 | Treatment | Deep | **827000** | **934000** | **1070000** | **1090000** | -- | -- | -- | -- | -- | -- | -- | 6.6 | **690** | -- | 300 | **< 6000 U** | **167 J** | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-51.0-20210723 | 7/23/2021 | 51 | N | 4602394041 | Treatment | Deep | **856000** | **899000** | **800000** | **858000** | 10.8 | 5.54 | 7.01 | 7.204 | -- | 1.04 | -- | 6.4 | **524** | -- | 290 | **8890** | **359 J** | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-64.0-20210831 | 8/31/2021 | 64 | N | 4602418991 | Treatment | Deep | **671000** | **643000** | **600000** | **594000** | 145.1 | 3.37 | 7.19 | 4.821 | -- | 265 | -- | 5.4 | **397** | -- | 280 | **< 6000 U** | **198 J** | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-60.0-20210924 | 9/24/2021 | 60 | N | 4602436001 | Treatment | Deep | **847000** | **851000** | **812000** | **785000** | 213.6 | 0.49 | 6.91 | 5.991 | -- | 9.58 | -- | 8.8 | **518** | -- | 320 | **< 600 U** | **210** | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-64.0-20211022 | 10/22/2021 | 64 | N | 4602457501 | Treatment | Deep | **3640** | **895** | < 10.0 U | < 10.0 U | -448.8 | 0.02 | 10.99 | 5.14 | -- | 929.34 *** | -- | 2.9 | 196 | -- | 55 | < 120 U | < 8.0 U | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-60.0-20211119 | 11/19/2021 | 60 | N | 4602476321 | Treatment | Deep | **800** | **231** | **2530000** | **2360000** | -406.1 | 37.06 | 10.87 | 5.533 | -- | 110 | -- | 2.1 | 236 | -- | 52 | < 120 U | < 8.0 U | -- |
| 114-P1-MW-7D | 114-P1-MW-64-20211216 | 12/16/2021 | 64 | N | 4602492751 | Treatment | Deep | **6470** | **11200** | < 10.0 U | **< 2000 U** | -457.8 | 10.99 | 11.33 | 4.192 | -- | 161 | -- | 304 B | 139 | -- | 35 | < 120 U | < 8.0 U | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-61.0-20220112 | 1/12/2022 | 61 | N | 4602505551 | Treatment | Deep | **5700** | **9540** | **< 100 U** | **< 100 U** | -322 | 0 | 9.55 | 3.18 | -- | 100 | -- | 523 | 40.3 | -- | 51 | < 120 U | **1370** | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-62-20220216 | 2/16/2022 | 62 | N | 4602526321 | Treatment | Deep | **416000** | **431000** | **385000** | **374000** | 40.1 | 0.03 | 7.36 | 3.822 | -- | 2.49 | -- | 357 | 229 F1 | -- | 160 | **< 60000 U** | **1830 J** | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-61.0-20220316 | 3/16/2022 | 61 | N | 4602544241 | Treatment | Deep | **133000** | **149000** | **156000** | **126000** | -136.3 | 0.36 | 9.97 | 1.88 | -- | -- OR | -- | 85.5 | **251** | -- | 120 | **< 600 U** | **94.5** | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-61.0-20220413 | 4/13/2022 | 61 | N | 4602562001 | Treatment | Deep | **373000** | **588000** | **667000** | **355000** | -40.8 | 0.55 | 8.11 | 4.719 | 16.82 | 5.33 | -- | 68.6 *2 | 237 | -- | 44 | **< 600 U** | **257** | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-61-20220511 | 5/11/2022 | 61 | N | 4602579551 | Treatment | Deep | **225000** | **204000** | **386000** | **397000** | -25.4 | 0.83 | 8.26 | 4.605 | 16.58 | 317 | -- | 60.6 | 221 | -- | 130 | **< 600 U** | **168** | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-61-20220609 | 6/9/2022 | 61 | N | 4602597481 | Treatment | Deep | **189000** | **239000** | **203000** | **179000** | 29.7 | 0.01 | 7.63 | 2.442 | 18.17 | -- OR | -- | 48.6 | 242 | -- | -- | **< 600 U** | **191** | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-61.0-20220714 | 7/14/2022 | 61 | N | 4602619011 | Treatment | Deep | **143000** | **141000** | **172000** | **165000** | 46.5 | 1.47 | 7.69 | 2.769 | 20.95 | 126.00 | -- | 33.7 | **285** | -- | -- | **< 600 U** | **331** | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-61-20220817 | 8/17/2022 | 61 | N | 4602639901 | Treatment | Deep | **34800** | **39700** | **33900** | **32200** | 22.7 | 4.07 | 7.14 | 2.317 | 18.49 | 70.0 | -- | 33.7 | **250** | -- | -- | 70.8 J | **1020** | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-61-20220915 | 9/15/2022 | 61 | N | 4602655901 | Treatment | Deep | **1440** | **41700** | **1210** | **11900** | -30.9 | 0 | 7.06 | 2.258 | 17.73 | 626 | -- | 30.8 | **263** | -- | -- | 126 | **1920** | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-61-20221011 | 10/11/2022 | 61 | N | 4602672521 | Treatment | Deep | **21300** | **19800** | **29800** | **30300** | 67.7 | 4.86 | 7.00 | 2.042 | 19.85 | 126 | -- | 22.7 | **384** | -- | -- | 108 J | **1730** | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-61-20221110 | 11/10/2022 | 61 | N | 4602692751 | Treatment | Deep | **38200** | **53700** | **36600** | **26100** | 71.70 | 0.22 | 6.78 | 2.419 | 18.00 | 205 | -- | 19.0 | **415** | -- | -- | **< 600 U** | **2930** | -- |
| 114-P1-MW-7D | 114-P1-MW7D-51-20221206 | 12/6/2022 | 51 | N | 4602707741 | Treatment | Deep | **86100** | **115000** | **89500** | **90600** | -86.0 | 1.8 | 7.45 | 2.139 | 13.26 | 198 | -- | 18.5 | **468** | -- | -- | **< 600 U** | **2050** | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-45-20230220 | 2/20/2023 | 45 | N | 4602749361 | Post-Treatment | Deep | **123000 J** | **548000** | **308000 J** | **373000 J-** | 163.9 | 0.6 | 7.7 | 4.235 | 13.12 | -- OR | -- | 20.5 | **795** | < 1 U | -- | **< 600 U** | **147** | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-49-20230220 | 2/20/2023 | 49 | N | 4602749361 | Post-Treatment | Deep | **352000 J** | **227000 J** | **121000** | **117000 J-** | 157.2 | 0.69 | 7.41 | 3.092 | 15.6 | -- OR | -- | 17.9 | **658** | < 1 U | -- | **634** | **278** | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-54-20230221 | 2/21/2023 | 54 | N | 4602750101 | Post-Treatment | Deep | **74300** | **129000** | **81600** | **97700** | 120.1 | 2.43 | 7.32 | 2.866 | 11.9 | 371 | -- | 15.8 | **610** | < 1 U | -- | **< 600 U** | **899** | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-59-20230221 | 2/21/2023 | 59 | N | 4602750101 | Post-Treatment | Deep | **69300** | **72700** | **60100** | **62300** | 99.9 | 1.82 | 6.89 | 2.673 | 12.6 | 108 | -- | 15.9 | **587** | < 1 U | -- | **< 600 U** | **1740** | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-45-20230518 | 5/18/2023 |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P1-MW-7D | 114-P1-MW-7D-45.0-20231116 | 11/16/2023 | 45 | N | JD77165 | Post-Treatment | Deep | **893000** | **1170000** | -- | **1020000** | -- | 0.01 | 8.46 | 6.75 | 16.7 | 621 | -- | < 40 U | **886** | -- | -- | -- | -- | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-45.0-20240220 | 2/20/2024 | 45 | N | JD82805 | Post-Treatment | Deep | -- | **1070000** | -- | **1050000** | 57.8 | 0.22 | 7.45 | 5.31 | 11.3 | 381 | -- | 14.1 J | **876** | -- | -- | -- | -- | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-45.0-20240220 | 2/20/2024 | 45 | N | JD82805R | Post-Treatment | Deep | **839000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-45.0-20240515 | 5/15/2024 | 45 | N | JD88509 | Post-Treatment | Deep | **538000** | **742000** | **607000** | **618000** | 90.5 | 0.56 | 7.53 | 4.524 | 16.2 | 1000 | -- | < 30 U | **920** | -- | -- | < 100 U | **139 J** | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-45.0-20240815 | 8/15/2024 | 45 | N | JD94204 | Post-Treatment | Deep | **217000** | **276000** | -- | **265000** | 44.5 | 0.08 | 7.15 | 3.94 | 19.1 | 1000 | -- | 15.6 | **848** | -- | -- | -- | -- | -- |
| 114-P1-MW-7D | 114-P1-MW-7D-45.0-20241118 | 11/18/2024 | 45 | N | JE873 | Post-Treatment | Deep | **122000** | **153000** | -- | **165000** | 100.9 | 0.23 | 7.11 | 3.01 | 16.9 | 330 | -- | R | **724** | -- | -- | -- | -- | -- |
| MW6C | MW6C-57.0-20171220 | 12/20/2017 | 57 | N | JC57752 | N/A | Deep | -- | **25800** | -- | **14300** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW6C | MW6C-62.0-20171220 | 12/20/2017 | 62 | N | JC57752 | N/A | Deep | -- | **35900** | -- | **22900** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW6C | MC6C-20180129 | 1/29/2018 | 55 | N | JC59916 | Baseline | Deep | **8700** | **9070** | **7900** | **7700** | 178 | 0 | 7.19 | 3.19 | 12.19 | 38.9 | -- | 3.4 | **300** | < 2.0 U | 202 | **< 500 U** | **1000** | -- |
| MW6C | MW6C-BD-20180531 | 5/31/2018 | 55 | FD | JC67082 | Treatment | Deep | **16500** | **19100** | **19600 J** | **18800** | -- | -- | -- | -- | -- | -- | -- | 3.4 | -- | -- | 78.6 J | -- | **1100** | < 0.20 U |
| MW6C | MW6C-BD-20180531 | 5/31/2018 | 55 | FD | JC67082A | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **438** | -- | -- | -- | -- | -- |
| MW6C | MW6C-20180531 | 5/31/2018 | 55 | N | JC67082 | Treatment | Deep | **16900** | **19400** | **20200 J** | **18900** | -- | -- | -- | -- | -- | -- | -- | 3.9 | -- | -- | 113 J | -- | **1180** | < 0.20 U |
| MW6C | MW6C-20180531 | 5/31/2018 | 55 | N | JC67082A | Treatment | Deep | -- | -- | -- | -- | 2.66 | 0.92 | 6.88 | 3.22 | 16.37 | 47.2 | -- | -- | **428** | -- | -- | -- | -- | -- |
| MW6C | MW-6C-20180703 | 7/3/2018 | 55 | N | JC69235 | Treatment | Deep | **14300** | **14500** | **14900** | **13600** | 154 | 0.81 | 7.32 | 2.97 | 18.88 | 56.8 | -- | 3.6 | **399** | -- | 130 | -- | **1060** | < 0.20 UJ |
| MW6C | MW-6C-20180725 | 7/25/2018 | 55 | N | JC70550 | Treatment | Deep | **8710** | **13100** | **12500** | **13400** | 180 | 0.75 | 6.95 | 2.98 | 25.11 | 9.6 | -- | 3.2 | **397** | -- | 60.1 | -- | **981** | < 0.20 UJ |
| MW6C | MW-6C-180829 | 8/29/2018 | 55 | N | JC72768 | Treatment | Deep | **16100** | **17000** | **17000** | **16200** | -- | -- | -- | -- | -- | -- | -- | 3.5 | **407** | -- | 45.5 | -- | **1030** | < 0.20 U |
| MW6C | MW6C_20180925 | 9/25/2018 | 55 | N | JC74535 | Treatment | Deep | **5330** | **4840** | **4800** | **5100** | -- | -- | -- | -- | -- | -- | -- | 3.2 | **358** | -- | -- | -- | **937** | < 0.20 U |
| MW6C | MW6C-20181031 | 10/31/2018 | 55 | N | JC76975 | Treatment | Deep | **12100** | **12900** | **11400** | **11100** | -- | -- | -- | -- | -- | -- | -- | 3.5 | **403** | -- | -- | -- | **1040** | < 0.20 U |
| MW6C | MW6C-181126 | 11/26/2018 | 55 | N | JC78527 | Treatment | Deep | **11500** | **11600** | **20900** | **21500** | -- | -- | -- | -- | -- | -- | -- | 1.9 | **258** | -- | 0.51 | -- | **555** | < 0.20 U |
| MW6C | MW-6C-181217 | 12/17/2018 | 55 | N | JC79904 | Treatment | Deep | **29600** | **31600 J** | **23400** | **28000** | -- | -- | -- | -- | -- | -- | -- | 3.7 | **499** | -- | -- | -- | **1210** | R |
| MW6C | MW6C-20190327 | 3/27/2019 | 55 | N | JC85279 | Treatment | Deep | **29900** | **30800** | **36500** | **37900** | -- | -- | -- | -- | -- | -- | -- | 3.9 | **683** | -- | 63.1 | -- | **1200** | < 0.20 U |
| MW6C | MW-6C-20190501 | 5/1/2019 | 55 | N | JC87310 | Treatment | Deep | **35800** | **38700** | **46500** | **47300** | -- | -- | -- | -- | -- | -- | -- | 3.6 | **561** | -- | 75.9 | -- | **1250** | < 0.20 UJ |
| MW6C | MW6C-57.5-20190529 | 5/29/2019 | 57.5 | N | JC88888 | Treatment | Deep | **33500** | **36400** | **33000** | **33900** | -- | -- | -- | -- | -- | -- | -- | 3.6 | **600** | -- | 54.4 J | -- | **1220** | R |
| MW6C | MW6C-62.5-20190529 | 5/29/2019 | 62.5 | N | JC88888 | Treatment | Deep | **10800** | **10500** | **10700** | **11200** | -- | -- | -- | -- | -- | -- | -- | 3.6 | **631** | -- | 82.7 J | -- | **1330** | R |
| MW6C | MGC-DUP-20190701 | 7/1/2019 | 55 | FD | JC90966 | Treatment | Deep | **20300** | **19000** | **16200** | **17000** | -- | -- | -- | -- | -- | -- | -- | 3.1 | **555** | -- | 20.1 | -- | **1220** | < 0.20 U |
| MW6C | MW-6C-20190701 | 7/1/2019 | 55 | N | JC90966 | Treatment | Deep | **18900** | **22400** | **20000** | **20700** | -- | -- | -- | -- | -- | -- | -- | 3.7 | **575** | -- | 24.9 | -- | **1350** | < 0.20 U |
| MW6C | MW6C-20190731 | 7/31/2019 | 55 | N | JC92478 | Treatment | Deep | **29100** | **29900** | **24100** | **29300** | -- | -- | -- | -- | -- | -- | -- | 4.1 | **593** | -- | 3.9 | -- | **1320** | R |
| MW6C | MW-6C-20190827 | 8/27/2019 | 55 | N | JC93952 | Treatment | Deep | **21900** | **24800** | **23100** | **27100** | -- | -- | -- | -- | -- | -- | -- | 4.1 | **571** | -- | 22.2 | -- | **1360** | < 0.20 U |
| MW6C | MW6C-20190926 | 9/26/2019 | 55 | N | JC95738 | Treatment | Deep | **427000** | **747000** | **407000** | **728000** | -- | -- | -- | -- | -- | -- | -- | 6.0 | **628** | -- | 113 | -- | **< 7500 U** | R |
| MW6C | MW-6C-20191030 | 10/30/2019 | 55 | N | JC97696 | Treatment | Deep | **198000** | **1710000** | **285000** | **1320000** | -- | -- | -- | -- | -- | -- | -- | 3.2 | **336** | -- | 42.7 | -- | **171** | < 0.20 U |
| MW6C | MW6C-20191125 | 11/25/2019 | 55 | N | JC99177 | Treatment | Deep | **1500000** | **1360000** | **1130000** | **1130000** | -- | -- | -- | -- | -- | -- | -- | 8.8 | **733** | -- | 224 | -- | **< 3000 U** | -- |
| MW6C | MW6C-20191226 | 12/26/2019 | 55 | N | JD923 | Treatment | Deep | **1600000 J** | **1630000** | **1400000** | **1380000** | -- | -- | -- | -- | -- | -- | -- | 10.4 | **779** | -- | 340 | -- | **< 1500 U** | -- |
| MW6C | MW6C-20200128 | 1/28/2020 | 55 | N | JD2398 | Treatment | Deep | **1040000 J** | **1150000** | **1250000** | **1270000** | -- | -- | -- | -- | -- | -- | -- | 8.7 | **727** | -- | 253 J | -- | **< 3000 U** | -- |
| MW6C | MW6C-20200228 | 2/28/2020 | 55 | N | JD3873 | Treatment | Deep | **1200000 J** | **927000 J** | **906000** | **918000** | -- | -- | -- | -- | -- | -- | -- | 6.5 | **585** | -- | 179 | -- | **< 1500 U** | -- |
| MW6C | MW6C-20200324 | 3/24/2020 | 55 | N | JD5103 | Treatment | Deep | **588000** | **546000** | **514000** | **528000** | -- | -- | -- | -- | -- | -- | -- | 4.8 | **370** | -- | < 0.17 UB | -- | **304** | -- |
| MW6C | MW6C-20200814 | 8/14/2020 | 55 | N | JD11773 | Treatment | Deep | **1530000** | **1630000** | **1670000** | **1640000** | -- | -- | -- | -- | -- | -- | -- | 9.6 | **593 J** | < 2.0 U | 206 | **< 500 U** | **244 J** | -- |
| MW6C | MW6C-20201112 | 11/12/2020 | 55 | N | JD16144 | Treatment | Deep | R | R | R | R | -- | -- | -- | -- | -- | -- | -- | 93.8 | 205 | < 2.0 U | 76.2 | **< 500 U** | **2100** | -- |
| MW6C | MW6C-20210226 | 2/26/2021 | 55 | N | JD20896 | Treatment | Deep | **766000** | **688000** | **842000** | **778000** | -- | -- | -- | -- | -- | -- | -- | 65.4 | **465** | < 2.0 U | 246 | **< 1000 U** | **2110** | -- |
| MW6C | MW6C-55-20210316 | 3/16/2021 | 55 | N | JD21820 | Treatment | Deep | **23400** | **29900** | **3800** | **5000** | -328.5 | 0.23 | 9.92 | 1.208 | -- | 205 | -- | 23.8 | 57.6 | -- | -- | -- | -- | -- |
| MW6C | MW-6C-57.0-20210428 | 4/28/2021 | 57 | N | 4602331061 | Treatment | Deep | **17900** | **26300** | **17300** | **18600** | -487.1 | 0.69 | 10.44 | 14.28 | -- | 7.98 | -- | 57.4 | 45.7 | -- | 910 | < 120 U | **1110** | -- |
| MW6C | MW-6C-64-20210527 | 5/27/2021 | 64 | N | 4602353531 | Treatment | Deep | **83300** | **81600** | **< 5000 U** | **< 5000 U** | -419 | 1.77 | 11.16 | 2.89 | -- | 70 | -- | 1770 | 224 | -- | 22 | **< 2400 U** | **< 160 U** | -- |
| MW6C | MW-6C-63.0-20210623 | 6/23/2021 | 63 | N | 4602372171 | Treatment | Deep | **114000** | **132000** | **97200** | **87100** | 37.1 | 4.14 | 6.54 | 2.964 | -- | 9.53 | -- | 1270 | **321** | -- | 32 | **4430** | **3720** | -- |
| MW6C | MW6C-50.0-20210720 | 7/20/2021 | 50 | N | 4602391431 | Treatment | Deep | **13300** | **10200** | < 20.0 U | < 20.0 U | -270.2 | 39.41 | 6.43 | 3.207 | -- | 43.26 | -- | 694 | 98.7 | -- | 30 | **2380** | **4750** | -- |
| MW6C | MW6C-63.0-20210831 | 8/31/2021 | 63 | N | 4602418991 | Treatment | Deep | **835000** | **847000** | **960000** | **857000** | 34.4 | 5 | 8.82 | 7.48 | -- | 8.4 | -- | 41.9 | **602** | -- | 95 | **< 12000 U** | **463 J** | -- |
| MW6C | MW6C-63.0-20210920 | 9/20/2021 | 63 | N | 4602432251 | Treatment | Deep | -- | -- | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW6C | MW6C-62.0-20210921 | 9/21/2021 | 62 | N | 4602432721 | Treatment | Deep | **80.2** | **76.9** | **< 2000 U** | **< 2000 U** | -471.7 | 0.98 | 8.95 | 5.749 | -- | 12.13 | -- | 60.6 | 198 | -- | 14 | < 120 U | **262** | -- |
| MW6C | MW6C-64-20211020 | 10/20/2021 | 64 | N | 4602455621 | Treatment | Deep | **71.4** | **123** | **< 1000 U** | **< 1000 U** | -440.9 | 0 | 8.43 | 4.01 | -- | 6.74 | -- | 76.5 | 109 | -- | 25 | < 120 U | **111** | -- |
| MW6C | MW-6C-63.0-20211119-X | 11/19/2021 | 63 | FD | 4602476321 | Treatment | Deep | **490** | **704** | **1010** | **1050** | -- | -- | -- | -- | -- | -- | -- | 408 | 113 | -- | 25 | < 120 U | **194** | -- |
| MW6C | MW-6C-63.0-20211119 | 11/19/2021 | 63 | N | 4602476321 | Treatment | Deep | **440** | **631** | **< 100 U** | **< 100 U** | -444.5 | 0.52 | 8.52 | 3.317 | -- | 0.86 | -- | 445 | 124 F1 | -- | 24 | < 120 U | **190** | -- |
| MW6C | MW6C-50-20211217 | 12/17/2021 | 50 | N | 4602493781 | Treatment | Deep | **2340** | **2410** | < 50.0 U | < 50.0 U | -343.4 | 0.16 | 6.3 | 3.21 | -- | 135.46 | -- | 1010 | 111 | -- | 17 | **< 600 U** | **2750** | -- |
| MW6C | MW6C-63-20220113 | 1/13/2022 | 63 | N | 4602506661 | Treatment | Deep | **330** | **2920** | < 50.0 U | < 50.0 U | -404.2 | 0.12 | 7.02 | 2.117 | -- | 3.57 | -- | 95.9 | 80.3 | -- | 25 | **< 6000 U** | **775** | -- |
| MW6C | MW6C-63-20220210 | 2/10/2022 | 63 | N | 4602522631 | Treatment | Deep | **477** | **796** | < 10.0 U | < 10.0 U | -398.2 | 0.17 | 6.8 | 2.43 | -- | 9.14 | -- | 88.8 | 89.0 | -- | 63 | < 120 U | **791** | -- |
| MW6C | MW-6C-63-20220316 | 3/16/2022 | 63 | N | 4602544241 | Treatment | Deep | **705** | **1430** | < 50.0 U | **< 500 U** | -316.4 | 10.79 | 6.52 | 1.409 | -- | 1133 | -- | 1690 ^2 | 38.1 | -- | 130 | < 120 U | **2250** | -- |
| MW6C | MW6C-62.0-20220412 | 4/12/2022 | 62 | N | 4602561091 | Treatment | Deep | **723** | **1010** | **< 100 UH** | **< 100 UH** | -318.3 | 1.73 | 6.73 | 2.162 | 13.25 | 210 | -- | 912 | 68.1 | -- | 110 | < 120 U | **2320** | -- |
| MW6C | MW6C-63.0-20220512 | 5/12/2022 | 63 | N | 4602580081 | Treatment | Deep | **179** | **396** | < 50.0 U | < 20.0 U | -281.5 | 0.71 | 7.01 | 0.505 | 14.96 | 9.7 | -- | 29.7 | 92.4 | -- | 88 | < 120 U | **557** | -- |
| MW6C | MW6C-63-20220610 | 6/10/2022 | 63 | N | 4602598551 | Treatment | Deep | -- | **7210** | -- | < 10.0 U | -287.3 | 0.4 | 6.18 | 2.123 | 18.20 | 9.10 | -- | 327 | 94.4 | -- | -- | -- | -- | -- |
| MW6C | MW6C-63.0-20220715 | 7/15/2022 | 63 | N | 4602619741 | Treatment | Deep | -- | **1080** | -- | < 10.0 U | -325.1 | 5.81 | 6.45 | 2.135 | 17.94 | 9.11 | -- | 246 | 110 | -- | -- | -- | -- | -- |
| MW6C | MW6C-63-20220818 | 8/18/2022 | 63 | N | 4602640741 | Treatment | Deep | -- | **1700** | -- | **< 100 U** | -357.7 | 1.66 | 6.54 | 3.966 | 20.84 | 9.91 | -- | 111 | 174 | -- | -- | < 120 U | **1350** | -- |
| MW6C | MW6C-62.5-20221212 | 12/12/2022 | 62.5 | N | 4602712001 | Post-Treatment | Deep | -- | **708 J+** | -- | < 10.0 U | -335.0 | 0.4 | 6.5 | 0.085 | 11.5 | 8.47 | -- | 128 | 215 | 2400 | -- | < 120 U | **1160** | -- |
| MW6C | MW6C-57.5-20221213 | 12/13/2022 | 57.5 | N | 4602712801 | Post-Treatment | Deep | **351** | **1050** | < 20.0 U | < 50.0 U | -308.0 | 0.17 | 6.3 | 0.085 | 12 | 15 | -- | 83.6 | 178 | 2600 | -- | < 120 U | **880** | -- |
| MW6C | MW6C-62-0-20230222 | 2/22/2023 | 62 | N | 4602750771 | Post-Treatment | Deep | -- | **589** | -- | **< 100 U** | -281.8 | 10.13 | 6.12 | 2.641 | 11.04 | 9.65 | -- | 112 | 221 | 221 | -- | < 120 U | **671** | -- |
| MW6C | MW6C-67.0-20230222 | 2/22/2023 | 67 | N | 4602750771 | Post-Treatment | Deep | **336** | **639** | < 10.0 U | < 10.0 U | -289.3 | 10.26 | 6.09 | 2.455 | 11.07 | 10.2 | -- | 103 | **258** | 221 | -- | < 120 U | **730** | -- |
| MW6C | MW6C-67.0-20230614 | 6/14/2023 | 67 | N | 4602823061 | Post-Treatment | Deep | **247** | **842** | < 10.0 U | < 10.0 U | -335.4 | 5.25 | 6.15 | 2.233 | 17.60 | 20.1 | -- | 49.6 | 138 | 92 | -- | < 120 U | **362** | -- |
| MW6C | MW6C-67.0-20230817 | 8/17/2023 | 67 | N | 4602864001 | Post-Treatment | Deep | **240** | **263** | < 10.0 U | < 10.0 U | -326.9 | 0.27 | 6.69 | 2.868 | 18.19 | 18.2 | -- | 37.9 | 66.3 | 42.3 | -- | 136 J | **250** | -- |
| MW6C | MW6C-67.0-20231120 | 11/20/2023 | 67 | N | JD77343 | Post-Treatment | Deep | -- | **221** | -- | < 10 UJ | -432.3 | 1.33 | 7.72 | 1.633 | 15.5 | 9.91 | -- | 21.1 | 93.0 | -- | -- | -- | -- | -- |
| MW6C | MW6C-67.0-20240219 | 2/19/2024 | 67 | N | JD82732 | Post-Treatment | Deep | -- | **255** | -- | < 10 U | -342.8 | 0.29 | 6.82 | 2.171 | 10 | 8.43 | -- | 18.6 J | 142 | -- | -- | -- | -- | -- |
| MW6C | MW6C-67.0-20240219-X | 2/19/2024 | 67 | FD | JD82732 | Post-Treatment | Deep | -- | **201** | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | 44.4 J | 148 | -- | -- | -- | -- | -- |
| MW6C | MW6C-67-20240520 | 5/20/2024 | 67 | N | JD88833 | Post-Treatment | Deep | -- | **279** | -- | < 10 U | -348.2 | 0.16 | 7.01 | 2.626 | 18.1 | 9.79 | -- | 19.5 | 151 | -- | -- | -- | -- | -- |
| MW6C | MW6C-67.0-20240821 | 8/21/2024 | 67 | N | JD94599 | Post-Treatment | Deep | -- | **193** | -- | 5.7 J | -463.8 | 1 | 6.78 | 2.94 | 18.6 | 6.77 | -- | 17.3 | 220 | -- | -- | -- | -- | -- |
| MW6C | MW6C-67.0-20241122 | 11/22/2024 | 67 | N | JE1234 | Post-Treatment | Deep | -- | **296** | -- | < 10 U | -318.9 | 0.17 | 6.95 | 3.12 | 11.4 | 9.57 | -- | 15.4 J- | **262** | -- | -- | -- | -- | -- |
| ***Remediation*** | | | | | | | | | | | | | | | | | | | | | | | | | |
| 114-P1-IRM-1 | 114-P1-IRM-1-20180116 | 1/16/2018 | 34 | N | JC58932 | Baseline | Intermediate | **372000 J** | **263000 J** | **311000** | **316000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 500 U** | **< 750 U** | -- |
| 114-P1-IRM-1 | 114-P1-IRM-1-20180116 | 1/16/2018 | 34 | N | JC59349 | Baseline | Intermediate | -- | -- | -- | -- | 232 | 0.91 | 6.44 | 3.84 | 9.85 | 0.1 | -- | 5.2 | **384** | < 2.0 U | 861 | -- | -- | -- |
| 114-P1-IRM-10I | 114-P1-IRM-10I-20180125 | 1/25/2018 | 34 | N | JC59745 | Baseline | Intermediate | **152000** | **218000** | **162000** | **195000** | 185 | 0.8 | 7.29 | 3.45 | 3.77 | 35.5 | -- | 8.1 | **396** | < 2.0 U | 564 | < 200 U | **99.6** | -- |
| 114-P1-IRM-10I | 114-P1-IRM-10I-20181029 | 10/29/2018 | 34 | N | JC76813 | Treatment | Intermediate | **475000** | **495000** | **455000** | **485000** | -- | -- | -- | -- | -- | -- | -- | 7.0 | **526** | -- | -- | -- | **258** | < 0.20 U |
| 114-P1-IRM-11 | 114-P1-IRM-11-20180118 | 1/18/2018 | 33 | N | JC59349 | Baseline | Intermediate | **186000** | **222000** | **179000** | **255000** | 108 | 20.01 | 6.32 | 3.72 | 12.14 | 20.1 | -- | 26.0 | **434** | < 2.0 U | 440 | **< 500 U** | **352** | -- |
| 114-P1-IRM-11 | 114-P1-IRM-11-20180430 | 4/30/2018 | 33 | N | JC65192 | Treatment | Intermediate | **325000** | **322000** | **320000** | **328000** | 177 | 20.01 | 6.48 | 4.02 | 12.88 | 7.1 | -- | 8.0 | **548** | -- | 693 | -- | **< 750 U** | < 0.20 UJ |
| 114-P1-IRM-11 | 114-P1-IRM-11-20180529 | 5/29/2018 | 33 | N | JC66923 | Treatment | Intermediate | **367000** | **382000** | **381000** | **388000** | 171 | 2.89 | 7.4 | 2.08 | 22.1 | 8.9 | -- | 8.2 | -- | -- | 605 | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-11 | 114-P1-IRM-11-20180529 | 5/29/2018 | 33 | N | JC66923B | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **463 J** | -- | -- | -- | -- | -- |
| 114-P1-IRM-11 | 114-P1-IRM-11-20180702 | 7/2/2018 | 33 | N | JC69148 | Treatment | Intermediate | **387000** | **390000** | **366000** | **395000** | 289 | 0 | 6.93 | 4.96 | 21.52 | 0 | -- | 8.5 | **527** | -- | 757 | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-11 | 114-P1-IRM-11-20180723 | 7/23/2018 | 33 | N | JC70405 | Treatment | Intermediate | **388000** | **391000** | **327000** | **341000** | 309 | 0.48 | 6.45 | 6.13 | 20 | 3.9 | -- | 8.5 | **587** | -- | 687 | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-11 | 114-P1-IRM-11-201808827_20180827 | 8/27/2018 | 33 | N | JC72621 | Treatment | Intermediate | **388000** | **411000 J** | **368000** | **378000** | -- | -- | -- | -- | -- | -- | -- | 9.5 | **679** | -- | 490 | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-11 | 114-P1-IRM11-20180924 | 9/24/2018 | 33 | N | JC74476 | Treatment | Intermediate | **426000** | **407000** | **357000** | **368000 J** | -- | -- | -- | -- | -- | -- | -- | 9.2 | **610** | -- | -- | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-11 | 114-P1-IRM-11-181101 | 11/1/2018 | 33 | N | JC77088 | Treatment | Intermediate | **408000 J** | **389000 J** | **335000** | **345000** | -- | -- | -- | -- | -- | -- | -- | 10.9 | **688** | -- | -- | -- | **< 150 U** | < 0.20 UJ |
| 114-P1-IRM-11 | 114-P1-IRM-11-181126 | 11/26/2018 | 33 | N | JC78527 | Treatment | Intermediate | **384000** | **381000** | **318000** | **328000** | -- | -- | -- | -- | -- | -- | -- | 11.4 | **766** | -- | 608 | -- | **< 1500 U** | < 0.20 U |
| 114-P1-IRM-11 | 114-P1-IRM-11-20190503 | 5/3/2019 | 33 | N | JC87509 | Treatment | Intermediate | **181000** | **213000** | **186000** | **190000** | -- | -- | -- | -- | -- | -- | -- | 8.4 | **439** | -- | 673 | -- | **191** | < 0.20 U |
| 114-P1-IRM-11 | 114-P1-IRM-11-25.5-20210806 | 8/6/2021 | 25.5 | N | JD29574 | Post-Treatment | Intermediate | **183** | **209** | **< 100 UJ** | **< 100 UJ** | -- | -- | -- | -- | -- | -- | -- | 1120 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-11 | 114-P1-IRM-11-30.5-20210806 | 8/6/2021 | 30.5 | N | JD29574 | Post-Treatment | Intermediate | **188** | **200** | **< 100 U** | **< 100 U** | -- | -- | -- | -- | -- | -- | -- | 935 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-11 | 114-P1-IRM-11-35.5-20210806 | 8/6/2021 | 35.5 | N | JD29574 | Post-Treatment | Intermediate | **205** | **215** | **< 100 U** | **< 100 U** | -- | -- | -- | -- | -- | -- | -- | 1090 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-11 | 114-P1-IRM-11-40.5-20210806 | 8/6/2021 | 40.5 | N | JD29574 | Post-Treatment | Intermediate | **173** | **205** | **< 100 U** | **< 100 U** | -- | -- | -- | -- | -- | -- | -- | 1120 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-12 | 114-P1-IRM-12-20180118 | 1/18/2018 | 31 | N | JC59349 | Baseline | Intermediate | **186000** | **195000** | **172000** | **174000** | 127 | 20.01 | 6.7 | 3.06 | 12.02 | 20.1 | -- | 6.1 | **311** | < 2.0 U | 397 | **< 500 U** | **157** | -- |
| 114-P1-IRM-12 | 114-P1-IRM-12-20180529 | 5/29/2018 | 31 | N | JC66923 | Treatment | Intermediate | **271000** | **277000** | **308000** | **319000** | 208 | 0.62 | 6.77 | 2.33 | 22.4 | 30.9 | -- | 6.4 | -- | -- | 441 | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-12 | 114-P1-IRM-12-20180529 | 5/29/2018 | 31 | N | JC66923B | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **319 J** | -- | -- | -- | -- | -- |
| 114-P1-IRM-12 | 114-P1-IRM-12-20180702 | 7/2/2018 | 31 | N | JC69148 | Treatment | Intermediate | **309000** | **314000** | **273000** | **292000** | 268 | 0 | 6.88 | 4.02 | 21.34 | 1.3 | -- | 6.6 | **387** | -- | 453 | -- | **155** | < 0.20 U |
| 114-P1-IRM-12 | 114-P1-IRM-12-20180723 | 7/23/2018 | 31 | N | JC70405 | Treatment | Intermediate | **312000** | **304000** | **311000** | **305000** | 282 | 0 | 6.81 | 4.37 | 22.21 | 0 | -- | 6.7 | **410** | -- | 370 | -- | **155** | < 0.20 U |
| 114-P1-IRM-12 | 114-P1-IRM-12-201808827_20180827 | 8/27/2018 | 31 | N | JC72621 | Treatment | Intermediate | **304000** | **311000 J** | **288000** | **295000** | -- | -- | -- | -- | -- | -- | -- | 10.9 | **814** | -- | 480 | -- | **219** | < 0.20 U |
| 114-P1-IRM-12 | 114-P1-IRM12-20180924 | 9/24/2018 | 31 | N | JC74476 | Treatment | Intermediate | **318000 J** | **229000 J** | **255000** | **280000 J** | -- | -- | -- | -- | -- | -- | -- | 14.3 | **984** | -- | -- | -- | **226** | < 0.20 U |
| 114-P1-IRM-12 | 114-P1-IRM-12-181101 | 11/1/2018 | 31 | N | JC77088 | Treatment | Intermediate | **292000 J** | **299000 J** | **237000** | **256000** | -- | -- | -- | -- | -- | -- | -- | 19.5 | **989** | -- | -- | -- | **224** | < 0.20 UJ |
| 114-P1-IRM-12 | 114-P1-IRM-12-181126 | 11/26/2018 | 31 | N | JC78527 | Treatment | Intermediate | **261000** | **247000** | **218000** | **232000** | -- | -- | -- | -- | -- | -- | -- | 18.6 | **913** | -- | 454 | -- | **< 1500 U** | < 0.20 U |
| 114-P1-IRM-12 | 114-P1-IRM-12-181219 | 12/19/2018 | 31 | N | JC80041 | Treatment | Intermediate | **186000** | **241000** | **264000** | **270000** | -- | -- | -- | -- | -- | -- | -- | 28.2 | **1100** | -- | -- | -- | **251** | R |
| 114-P1-IRM-12 | 114-P1-IRM-12-20190329 | 3/29/2019 | 31 | N | JC85453 | Treatment | Intermediate | **58600** | **58900 J** | **61800** | **58000** | -- | -- | -- | -- | -- | -- | -- | 12.7 | **667** | -- | 3160 | -- | **125** | < 0.20 U |
| 114-P1-IRM-13 | 114-P1-IRM-13-20180116 | 1/16/2018 | 34 | N | JC58932 | Baseline | Intermediate | **929000** | **918000** | **813000** | **788000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 13000 U** | **< 1900 U** | -- |
| 114-P1-IRM-13 | 114-P1-IRM-13-20180116 | 1/16/2018 | 34 | N | JC59349 | Baseline | Intermediate | -- | -- | -- | -- | 223 | 20.01 | 6.72 | 6.35 | 11.93 | 26.6 | -- | 16.9 | **918** | < 2.0 U | 1020 | -- | -- | -- |
| 114-P1-IRM-13 | 114-P1-IRM-13-27.5-20210623 | 6/23/2021 | 27.5 | N | JD27142 | Post-Treatment | Intermediate | -- | **670** | **< 500 U** | **< 500 U** | -- | -- | -- | -- | -- | -- | -- | 3400 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-13 | 114-P1-IRM-13-32.5-20210623 | 6/23/2021 | 32.5 | N | JD27142 | Post-Treatment | Intermediate | -- | **3290** | **< 500 U** | **< 500 U** | -- | -- | -- | -- | -- | -- | -- | 4000 | -- | -- | -- | -- | -- | -- |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P1-IRM-13 | 114-P1-IRM-13-35.5-20210624 | 6/24/2021 | 35.5 | N | JD27239 | Post-Treatment | Intermediate | -- | **715 J** | **450 J** | **< 500 U** | -- | -- | -- | -- | -- | -- | -- | 2270 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-14 | 114-P1-IRM-14-20180116 | 1/16/2018 | 34 | N | JC58932 | Baseline | Intermediate | **333000 J** | **256000 J** | **299000** | **308000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 500 U** | **< 750 U** | -- |
| 114-P1-IRM-14 | 114-P1-IRM-14-20180116 | 1/16/2018 | 34 | N | JC59349 | Baseline | Intermediate | -- | -- | -- | -- | 241 | 0 | 7.9 | 4.2 | 11.12 | 0 | -- | 16.8 | **341** | < 2.0 U | 5760 | -- | -- | -- |
| 114-P1-IRM-14 | 114-P1-IRM-14-35.5-20210624 | 6/24/2021 | 35.5 | N | JD27239 | Post-Treatment | Intermediate | -- | **666 J** | **< 500 U** | **< 500 U** | -- | -- | -- | -- | -- | -- | -- | 1810 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-15 | 114-P1-IRM-15-20180122 | 1/22/2018 | 42 | N | JC59495 | Baseline | Intermediate | **35200** | **36800** | **32300** | **36300** | -- | -- | -- | -- | -- | -- | -- | 3.3 | **302** | < 2.0 U | 714 | < 200 U | **89.4** | -- |
| 114-P1-IRM-16 | 114-P1-IRM-16-20180116 | 1/16/2018 | 34 | N | JC58932 | Baseline | Intermediate | **690000** | **663000** | **591000** | **516000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 10000 U** | **1530** | -- |
| 114-P1-IRM-16 | 114-P1-IRM-16-20180116 | 1/16/2018 | 34 | N | JC59349 | Baseline | Intermediate | -- | -- | -- | -- | 185 | 0 | 7.67 | 5.98 | 12.58 | 25.2 | -- | 11.9 | **573** | < 2.0 U | 883 | -- | -- | -- |
| 114-P1-IRM-17 | 114-P1-IRM-17-20180122 | 1/22/2018 | 42.17 | N | JC59495 | Baseline | Intermediate | **98.4** | **1330** | < 10 U | < 10 U | -250 | 4.35 | 8.51 | 29.2 | 14.46 | 102 | -- | 26.7 | **1890** | < 2.0 U | 280 | 190 | **417** | -- |
| 114-P1-IRM-18I | 114-P1-IRM-18I-20180118 | 1/18/2018 | 34 | N | JC59349 | Baseline | Intermediate | **170000** | **179000** | **153000** | **169000** | 157 | 0 | 7.84 | 2.92 | 8.55 | 1 | -- | 10.4 | **259** | < 2.0 U | 599 | **< 500 U** | **278** | -- |
| 114-P1-IRM-19I | 114-P1-IRM-19I-20180117 | 1/17/2018 | 30 | N | JC59023 | Baseline | Intermediate | **46800** | **59500** | **41000** | **43500** | 262 | 0 | 7.61 | 2.98 | 9.26 | 8.5 | -- | 7.2 | 157 | < 2.0 U | 758 | **< 500 U** | **397** | -- |
| 114-P1-IRM-2 | 114-P1-IRM-2-20180116 | 1/16/2018 | 32 | N | JC58932 | Baseline | Intermediate | **587000** | **608000** | **548000** | **543000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 10000 U** | **< 1500 U** | -- |
| 114-P1-IRM-2 | 114-P1-IRM-2-20180116 | 1/16/2018 | 32 | N | JC59349 | Baseline | Intermediate | -- | -- | -- | -- | 237 | 0 | 7.13 | 4.09 | 12.34 | 30.1 | -- | 6.5 | **493** | < 2.0 U | 368 | -- | -- | -- |
| 114-P1-IRM-20I | 114-P1-IRM-20I-20180117 | 1/17/2018 | 32 | N | JC59023 | Baseline | Intermediate | **3260** | **4740** | **2400** | **2600** | 108 | 0 | 7.49 | 3.98 | 11.61 | 32.3 | -- | 9.2 | 153 | < 2.0 U | 1530 | 142 | **1290** | -- |
| 114-P1-IRM-21I | 114-P1-IRM-21I-20180118 | 1/18/2018 | 34 | N | JC59349 | Baseline | Intermediate | **87.7** | **3650** | 20 | 16 | -57 | 0 | 6.86 | 16.5 | 8.67 | 30 | -- | 12.2 | **1660** | < 2.0 U | 1790 | **28900** | **5210** | -- |
| 114-P1-IRM-22I | 114-P1-IRM-22I-20180118 | 1/18/2018 | 34 | N | JC59349 | Baseline | Intermediate | **9830** | **18600** | **19300** | **20500** | 103 | 0 | 7.93 | 3.32 | 9.04 | 37.9 | -- | 9.2 | **447** | < 2.0 U | 2600 | 201 | **1120 J** | -- |
| 114-P1-IRM-23D | 114-P1-IRM-23D-20180124 | 1/24/2018 | 38 | N | JC59667 | Baseline | Intermediate | **1030000** | **1070000** | **1040000** | **1090000** | 76 | 1.71 | 9.23 | 7.7 | 10.81 | 20.1 | -- | 34.2 | **1040** | < 2.0 U | 762 | **< 1000 U** | **459** | -- |
| 114-P1-IRM-23D | 114-P1-IRM-23D-31.5-20210624 | 6/24/2021 | 31.5 | N | JD27239 | Post-Treatment | Intermediate | -- | **5140 J** | < 10 U | **< 100 U** | -- | -- | -- | -- | -- | -- | -- | 92.8 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-23D | 114-P1-IRM-23D-36.5-20210624 | 6/24/2021 | 36.5 | N | JD27239 | Post-Treatment | Intermediate | -- | **3130 J** | < 10 U | **< 100 U** | -- | -- | -- | -- | -- | -- | -- | 68.9 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-23D | 114-P1-IRM-23D-41.5-20210624 | 6/24/2021 | 41 | N | JD27239 | Post-Treatment | Intermediate | -- | **2740 J** | < 10 U | **< 100 U** | -- | -- | -- | -- | -- | -- | -- | 82.3 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-23D | 114-P1-IRM-23D-46.5-20210624 | 6/24/2021 | 46.5 | N | JD27239 | Post-Treatment | Intermediate | -- | **3030 J** | < 10 U | **< 100 U** | -- | -- | -- | -- | -- | -- | -- | 106 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-24I | 114-P1-IRM-24I-20180118 | 1/18/2018 | 33 | N | JC59349 | Baseline | Intermediate | **32300** | **31400** | **27300** | **30700** | 164 | 4.37 | 8.79 | 361 | 11.52 | 39.8 | -- | 10.4 | 214 | < 2.0 U | 587 | < 200 U | **95.4** | -- |
| 114-P1-IRM-25I | 114-P1-IRM-25I-20180118 | 1/18/2018 | 34 | N | JC59349 | Baseline | Intermediate | **2270** | **3470** | **5000** | **5300** | 91 | 9.35 | 7.31 | 4.4 | 8.96 | 26.9 | -- | 16.1 | **531** | < 2.0 U | 1580 | **1260** | **1510** | -- |
| 114-P1-IRM-26I | 114-P1-IRM-26I-20180118 | 1/18/2018 | 31 | N | JC59349 | Baseline | Intermediate | **135** | **1140** | 11 | 11 | -105 | 0 | 7.14 | 6.21 | 9.29 | 64.2 | -- | 23.1 | 140 | < 2.0 U | 7150 | **7800** | **1850** | -- |
| 114-P1-IRM-27I | 114-P1-IRM-27I-20180122 | 1/22/2018 | 32.08 | N | JC59495 | Baseline | Intermediate | **500000** | **569000** | **521000** | **542000** | -14 | 0.46 | 9.67 | 5.83 | 13.28 | 29.9 | -- | 37.9 | **768** | < 2.0 U | 782 | **< 500 U** | **< 1900 U** | -- |
| 114-P1-IRM-27I | 114-IRM-27I-20180502 | 5/2/2018 | 32.08 | N | JC65331 | Treatment | Intermediate | **431000** | **446000** | **471000** | **503000** | 106 | 2.45 | 9.6 | 6.69 | 24.5 | 24.7 | -- | 35.1 | **1500** | -- | 630 | -- | **< 750 U** | < 0.20 U |
| 114-P1-IRM-27I | 114-IRM-27I-20180531 | 5/31/2018 | 32.08 | N | JC67082 | Treatment | Intermediate | **466000** | **470000** | **435000 J** | **446000** | -- | -- | -- | -- | -- | -- | -- | 44.8 | -- | -- | 673 | -- | **< 1500 U** | < 0.20 U |
| 114-P1-IRM-27I | 114-IRM-27I-20180531 | 5/31/2018 | 32.08 | N | JC67082A | Treatment | Intermediate | -- | -- | -- | -- | 183 | 7.9 | 9.33 | 5.72 | 17.06 | 70.3 | -- | -- | **1040** | -- | -- | -- | -- | -- |
| 114-P1-IRM-27I | 114-P1-IRM-27I-20180705 | 7/5/2018 | 32.08 | N | JC69286 | Treatment | Intermediate | **370000** | **415000** | **299000** | **316000** | -28 | 0.25 | 8.3 | 5.41 | 20.67 | 28.5 | -- | 29.9 | **1030** | -- | 666 | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-27I | 114-P1-IRM-27I-20180723 | 7/23/2018 | 32.08 | N | JC70405 | Treatment | Intermediate | **212000** | **190000** | **172000** | **183000** | 117 | 0.64 | 8.29 | 4.44 | 22.71 | 9.5 | -- | 20.4 | **1160** | -- | 546 | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-27I | 114-IRM27I-180830 | 8/30/2018 | 32.08 | N | JC72843 | Treatment | Intermediate | **422000** | **450000** | **361000** | **367000** | -- | -- | -- | -- | -- | -- | -- | 36.9 | **1410** | -- | 806 | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-27I | 114-P1-IRM-27I_20180925 | 9/25/2018 | 32.08 | N | JC74535 | Treatment | Intermediate | **188000** | **190000** | **192000** | **207000** | -- | -- | -- | -- | -- | -- | -- | 21.1 | **970** | -- | -- | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-28I | 114-P1-IRM-28I-20180118 | 1/18/2018 | 32 | N | JC59349 | Baseline | Intermediate | **35400** | **34200** | **27700** | **31900** | -177 | 20.01 | 9.2 | 3.59 | 12.72 | 20.1 | -- | 28.1 | **964** | 3.0 | 1010 | 227 | **433** | -- |
| 114-P1-IRM-28I | 114-P1-IRM-28I-20180430 | 4/30/2018 | 32 | N | JC65192 | Treatment | Intermediate | **49100** | **48400** | **20400** | **21500** | -202 | 20.01 | 9.27 | 3.39 | 14.08 | 5.8 | -- | 26.4 | **679** | -- | 2290 | -- | **265** | < 0.20 UJ |
| 114-P1-IRM-28I | 114-P1-IRM-28I-20180529 | 5/29/2018 | 32 | N | JC66923 | Treatment | Intermediate | **68300** | **67100** | **56000** | **58800** | 172 | 5.72 | 9.37 | 4.62 | 15.62 | 108.2 | -- | 25.1 | -- | -- | 2030 | -- | **257** | < 0.20 U |
| 114-P1-IRM-28I | 114-P1-IRM-28I-20180529 | 5/29/2018 | 32 | N | JC66923B | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **740 J** | -- | -- | -- | -- | -- |
| 114-P1-IRM-28I | 114-P1-IRM-28I-20180702 | 7/2/2018 | 32 | N | JC69148 | Treatment | Intermediate | **9480** | **7500** | **6700** | **5200** | -16.2 | 0 | 8.81 | 5.81 | 22.74 | 83 | -- | 22.1 | **602** | -- | 2040 | -- | **253** | < 0.20 U |
| 114-P1-IRM-28I | 114-P1-IRM-28I-20180723 | 7/23/2018 | 32 | N | JC70405 | Treatment | Intermediate | **4100 J** | **3240 J** | **1500** | **1300** | -202 | 0.42 | 8.73 | 6.27 | 22.88 | 41.2 | -- | 24.7 | **556** | -- | 1700 | -- | **258** | < 0.20 U |
| 114-P1-IRM-28I | 114-P1-IRM-28I-201808827_20180827 | 8/27/2018 | 32 | N | JC72621 | Treatment | Intermediate | **43400** | **48500 J** | **41000** | **43600** | -- | -- | -- | -- | -- | -- | -- | 23.8 | **1100** | -- | 684 | -- | **200** | < 0.20 U |
| 114-P1-IRM-28I | 114-P1-IRM28I-20180924 | 9/24/2018 | 32 | N | JC74476 | Treatment | Intermediate | **60500** | **52900** | **38300** | **40800 J** | -- | -- | -- | -- | -- | -- | -- | 31.6 | **1250** | -- | -- | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-28I | 114-P1-IRM-28I-181126 | 11/26/2018 | 32 | N | JC78527 | Treatment | Intermediate | < 50 U | < 50 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 4290 | **576** | -- | 34.4 | -- | **225** | < 0.20 U |
| 114-P1-IRM-29I | 114-P1-IRM-29I-20180118 | 1/18/2018 | 37 | N | JC59349 | Baseline | Intermediate | **12400** | **16700** | **17700** | **20400** | -24 | 0.81 | 9.17 | 3.88 | 8.76 | 62.4 | -- | 32.8 | **761** | < 2.0 U | 2140 J | **997** | **2210** | -- |
| 114-P1-IRM-29I | 114-P1-IRM-29I-20180430 | 4/30/2018 | 37 | N | JC65192 | Treatment | Intermediate | **77100** | **75500** | **242000** | **248000** | -82 | 1.37 | 9.31 | 3.27 | 10.33 | 42.7 | -- | 30.5 | **555** | -- | 5440 | -- | **2700** | < 0.20 UJ |
| 114-P1-IRM-29I | 114-P1-IRM-29I-20180529 | 5/29/2018 | 37 | N | JC66923 | Treatment | Intermediate | **114000** | **90900** | **107000** | **114000** | 87 | 1.37 | 9.6 | 3.52 | 18.22 | 71.2 | -- | 32.1 | -- | -- | 3550 | -- | **2080** | < 0.20 U |
| 114-P1-IRM-29I | 114-P1-IRM-29I-20180529 | 5/29/2018 | 37 | N | JC66923B | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **392 J** | -- | -- | -- | -- | -- |
| 114-P1-IRM-29I | 114-P1-IRM-29I-20180702 | 7/2/2018 | 37 | N | JC69148 | Treatment | Intermediate | **35100** | **39900** | **35200** | **36500** | 49 | 0 | 7.13 | 7.05 | 21.22 | 179 | -- | 24.3 | **309** | -- | 5100 | -- | **4340** | < 0.20 U |
| 114-P1-IRM-29I | 114-P1-IRM-29I-20180723 | 7/23/2018 | 37 | N | JC70405 | Treatment | Intermediate | **9650** | **14300** | **4200** | **3900** | 33 | 0 | 7.09 | 7.65 | 21.42 | 44.9 | -- | 26.7 | 191 | -- | 4090 | -- | **5010** | < 0.20 U |
| 114-P1-IRM-29I | 114-P1-IRM-29I-180829 | 8/29/2018 | 37 | N | JC72768 | Treatment | Intermediate | **1250** | **8370** | **280** | **300** | -- | -- | -- | -- | -- | -- | -- | 23.6 | **431** | -- | 3940 | -- | **4740** | < 0.20 U |
| 114-P1-IRM-29I | 114-P1-IRM29I-20180924 | 9/24/2018 | 37 | N | JC74476 | Treatment | Intermediate | **4270** | **7320** | **5300** | **5500 J** | -- | -- | -- | -- | -- | -- | -- | 22.1 | **425** | -- | -- | -- | **5670** | < 0.20 U |
| 114-P1-IRM-29I | 114-P1-IRM-29I-181126 | 11/26/2018 | 37 | N | JC78527 | Treatment | Intermediate | < 50 U | < 50 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 3950 | **613** | -- | 1.5 | -- | **249** | < 0.20 U |
| 114-P1-IRM-3 | 114-P1-IRM-3-20180124 | 1/24/2018 | 35 | N | JC59667 | Baseline | Intermediate | **6460** | **8240** | **1700** | 37 | -55 | 0.96 | 7.18 | 4.72 | 11.26 | 273 | -- | 27.4 | **403** | < 2.0 U | 4230 | 138 | **1090** | -- |
| 114-P1-IRM-3 | 114-P1-IRM-3-30.1-2019612 | 6/12/2019 | 30.1 | N | JC89756 | N/A | Intermediate | **1060** | **2620** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 44.3 | -- | 126 | -- | -- |
| 114-P1-IRM-3 | 114-P1-IRM-3-33.1-20190731 | 7/31/2019 | 33.1 | N | JC92477 | N/A | Intermediate | **936** | **4590** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 400 U | -- | 149 | -- | -- |
| 114-P1-IRM-30I | 114-P1-IRM-30I-DUP-20180122 | 1/22/2018 | 33.36 | FD | JC59495 | Baseline | Intermediate | **306000** | **334000** | **290000** | **292000** | -- | -- | -- | -- | -- | -- | -- | 22.6 | **545** | < 2.0 U | 711 | **< 500 U** | **< 750 U** | -- |
| 114-P1-IRM-30I | 114-P1-IRM-30I-20180122 | 1/22/2018 | 33.36 | N | JC59495 | Baseline | Intermediate | **287000** | **352000** | **269000** | **276000** | 86 | 4.22 | 8.57 | 4.24 | 11.35 | 9.1 | -- | 26.1 | **565** | < 2.0 U | 665 | **< 500 U** | **< 750 U** | -- |
| 114-P1-IRM-31I | 114-P1-IRM-31I-20180119 | 1/19/2018 | 30 | N | JC59431 | Baseline | Intermediate | **13300** | **13100** | **13900** | **15200** | 18 | 20.01 | 9.58 | 2.42 | 9.8 | 33.7 | -- | 35.7 | **395** | < 2.0 U | 1650 | 124 | **210** | -- |
| 114-P1-IRM-32I | 114-P1-IRM-32I-20180122 | 1/22/2018 | 41 | N | JC59495 | Baseline | Intermediate | **218000** | **253000** | **203000** | **211000** | 20 | 0.59 | 8.53 | 3.58 | 13.76 | 177 | -- | 11.2 | **467** | < 2.0 U | 165 | **< 500 U** | **< 750 U** | -- |
| 114-P1-IRM-33I | 114-P1-IRM-33I-20180124 | 1/24/2018 | 33 | N | JC59667 | Baseline | Intermediate | **150000** | **149000** | R | R | 56 | 0.7 | 9.25 | 3.88 | 11.39 | 4.1 | -- | 33.6 | **432** | < 2.0 U | 817 | **< 1000 U** | **187** | -- |
| 114-P1-IRM-33I | 114-P1-IRM-33I-20180501 | 5/1/2018 | 33 | N | JC65257 | Treatment | Intermediate | **304000** | **301000** | **299000** | **316000** | 159 | 0 | 8.72 | 4.6 | 14.87 | 54.1 | -- | 30.9 | **507** | -- | 1540 | -- | **< 50 U** | < 0.20 U |
| 114-P1-IRM-33I | 114-P1-IRM-33I-DUP-20180501 | 5/1/2018 | 33 | FD | JC65257 | Treatment | Intermediate | **304000** | **297000** | **280000** | **288000** | -- | -- | -- | -- | -- | -- | -- | 29.9 | **505** | -- | 1420 | -- | **< 50 U** | < 0.20 U |
| 114-P1-IRM-33I | 114-P1-IRM-33I_20180106 | 6/1/2018 | 33 | N | JC67165 | Treatment | Intermediate | **377000** | **361000** | **395000** | **406000** | 68 | 0.88 | 9.19 | 4.89 | 17.5 | 1.1 | -- | 33.6 | -- | -- | 732 | -- | **< 75 U** | < 0.20 U |
| 114-P1-IRM-33I | 114-P1-IRM-33I_20180106 | 6/1/2018 | 33 | N | JC67165A | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **522** | -- | -- | -- | -- | -- |
| 114-P1-IRM-33I | 114-P1-IRM-33I-20180702 | 7/2/2018 | 33 | N | JC69148 | Treatment | Intermediate | **315000** | **334000** | **320000** | **341000** | 47 | 0 | 9.53 | 4.42 | 20.7 | 5.5 | -- | 32.3 | **491** | -- | 864 | -- | **< 75 U** | < 0.20 U |
| 114-P1-IRM-33I | 114-P1-IRM-33I-20180724 | 7/24/2018 | 33 | N | JC70485 | Treatment | Intermediate | **437000** | **435000** | **371000** | **377000** | 111 | 5.13 | 9.54 | 5.13 | 20.33 | 8 | -- | 32.9 | **730** | -- | 570 | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-33I | 114-P1-IRM-33I-201808827_20180827 | 8/27/2018 | 33 | N | JC72621 | Treatment | Intermediate | **350000** | **328000 J** | **328000** | **342000** | -- | -- | -- | -- | -- | -- | -- | 30.7 | **769** | -- | 52.3 | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-33I | 114-P1-IRM-33I-181101 | 11/1/2018 | 33 | N | JC77088 | Treatment | Intermediate | **25900 J** | **26100 J** | **27800** | **25200** | -- | -- | -- | -- | -- | -- | -- | 5.4 | **327** | -- | -- | -- | **269** | < 0.20 UJ |
| 114-P1-IRM-33I | 114-P1-IRM-33I-181126 | 11/26/2018 | 33 | N | JC78527 | Treatment | Intermediate | **50300** | **50200** | **40300** | **43300** | -- | -- | -- | -- | -- | -- | -- | 7.5 | **398** | -- | 54.8 | -- | **234** | < 0.20 U |
| 114-P1-IRM-33I | 114-P1-IRM-33I-20190326 | 3/26/2019 | 33 | N | JC85176 | Treatment | Intermediate | **139000** | **117000** | **135000 J** | **94400 J** | -- | -- | -- | -- | -- | -- | -- | 14.3 | **897** | -- | 397 | -- | **< 300 U** | < 0.20 U |
| 114-P1-IRM-33I | 114-P1-IRM-33I-20190503 | 5/3/2019 | 33 | N | JC87509 | Treatment | Intermediate | **76100** | **76800** | **74200** | **73500** | -- | -- | -- | -- | -- | -- | -- | 11.7 | **718** | -- | 490 | -- | **< 300 U** | < 0.20 U |
| 114-P1-IRM-33I | 114-P1-IRM-33I-20191031 | 10/31/2019 | 33 | N | JC97796 | Treatment | Intermediate | **32400** | **31900** | **31100** | **29400** | -- | -- | -- | -- | -- | -- | -- | 6.9 | **545** | -- | 240 | -- | **379** | < 0.20 U |
| 114-P1-IRM-33I | 114-P1-IRM-33I-191202 | 12/2/2019 | 33 | N | JC99426 | Treatment | Intermediate | **18600** | **17400** | **20400** | **20400** | -- | -- | -- | -- | -- | -- | -- | 6.8 | **687** | -- | 388 | -- | **402** | -- |
| 114-P1-IRM-33I | 114-P1-IRM-33I-20191230 | 12/30/2019 | 33 | N | JD1000 | Treatment | Intermediate | **10500** | **10400** | **10200** | **10700** | -- | -- | -- | -- | -- | -- | -- | 9.2 | **554** | -- | 885 J | -- | **528** | -- |
| 114-P1-IRM-33I | 114-P1-IRM-33I-20200130 | 1/30/2020 | 33 | N | JD2521 | Treatment | Intermediate | **7040** | **7210** | **3400** | **3000** | -- | -- | -- | -- | -- | -- | -- | 38.1 | **578** | -- | 1450 | -- | **497** | -- |
| 114-P1-IRM-33I | 114-P1-IRM-33I-20200228 | 2/28/2020 | 33 | N | JD3873 | Treatment | Intermediate | **1260** | **1890 J** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 22.1 | **584** | -- | 2840 | -- | **668** | -- |
| 114-P1-IRM-33I | 114-P1-IRM-33I-20200327 | 3/27/2020 | 33 | N | JD5288 | Treatment | Intermediate | **919** | **2530** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 12.3 | **645** | -- | 1580 | -- | **759** | -- |
| 114-P1-IRM-34I | 114-P1-IRM-34I-20180125 | 1/25/2018 | 31 | N | JC59745 | Baseline | Intermediate | **333000** | **346000** | **320000** | **312000** | 53 | 0 | 8.12 | 3.82 | 10.98 | 83.9 | -- | 21.3 | **417** | < 2.0 U | 444 | **< 500 U** | **< 750 U** | -- |
| 114-P1-IRM-34I | 114-IRM-34I-20180502 | 5/2/2018 | 31 | N | JC65331 | Treatment | Intermediate | **378000** | **359000** | **282000** | **295000** | 95 | 0.72 | 9.66 | 4.31 | 17.49 | 5.1 | -- | 27.7 | **613** | -- | 639 | -- | **< 750 U** | < 0.20 U |
| 114-P1-IRM-34I | 114-P1-IRM-34I_20180106 | 6/1/2018 | 31 | N | JC67165 | Treatment | Intermediate | **235000** | **227000** | **304000** | **298000** | 76 | 1.11 | 8.35 | 3.72 | 20.59 | 12.2 | -- | 26.8 | -- | -- | 687 | -- | **< 75 U** | < 0.20 U |
| 114-P1-IRM-34I | 114-P1-IRM-34I_20180106 | 6/1/2018 | 31 | N | JC67165A | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **457** | -- | -- | -- | -- | -- |
| 114-P1-IRM-34I | 114-P1-IRM-34I-20180702 | 7/2/2018 | 31 | N | JC69148 | Treatment | Intermediate | **260000** | **258000** | **263000** | **270000** | 110 | 0 | 8.73 | 3.37 | 21.12 | 16.8 | -- | 19.5 | **436** | -- | 668 | -- | **< 75 U** | < 0.20 U |
| 114-P1-IRM-34I | 114-P1-IRM-34I-20180724 | 7/24/2018 | 31 | N | JC70485 | Treatment | Intermediate | **259000** | **261000** | **199000** | **223000** | 138 | 0 | 8.54 | 3.45 | 26.36 | 9.1 | -- | 19.7 | **409** | -- | 681 | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-34I | 114-P1-IRM-34I-201808827_20180827 | 8/27/2018 | 31 | N | JC72621 | Treatment | Intermediate | **240000** | **232000 J** | **184000** | **197000** | -- | -- | -- | -- | -- | -- | -- | 16.3 | **357** | -- | 536 | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-34I | 114-P1-IRM-34I-20180924 | 9/24/2018 | 31 | N | JC74476 | Treatment | Intermediate | **194000** | **193000** | **161000** | **176000 J** | -- | -- | -- | -- | -- | -- | -- | 18.6 | **382** | -- | -- | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-34I | 114-P1-IRM-34I-181126 | 11/26/2018 | 31 | N | JC78527 | Treatment | Intermediate | **137000** | **130000** | **106000** | **120000** | -- | -- | -- | -- | -- | -- | -- | 19.9 | **546** | -- | 1280 | -- | **82.5** | < 0.20 U |
| 114-P1-IRM-34I | 114-P1-IRM-34I-DUP-20190503 | 5/3/2019 | 31 | FD | JC87509 | Treatment | Intermediate | **142000** | **144000** | **126000** | **130000** | -- | -- | -- | -- | -- | -- | -- | 21.4 | **661** | -- | 1070 | -- | **< 300 U** | < 0.20 U |
| 114-P1-IRM-34I | 114-P1-IRM-34I-20190503 | 5/3/2019 | 31 | N | JC87509 | Treatment | Intermediate | **139000** | **138000** | **135000** | **132000** | -- | -- | -- | -- | -- | -- | -- | 21.0 | **657** | -- | 1100 | -- | **< 300 U** | < 0.20 U |
| 114-P1-IRM-34I | 114-P1-IRM-34I-20191030 | 10/30/2019 | 31 | N | JC97696 | Treatment | Intermediate | **98900** | **108000** | **108000** | **119000** | -- | -- | -- | -- | -- | -- | -- | 55.6 | **816** | -- | 1190 | -- | **79.2** | < 0.20 U |
| 114-P1-IRM-34I | 114-P1-IRM-34I-191202 | 12/2/2019 | 31 | N | JC99426 | Treatment | Intermediate | **66600** | **67700** | **63800** | **69300** | -- | -- | -- | -- | -- | -- | -- | 169 | **554** | -- | 101 | -- | **< 300 U** | -- |
| 114-P1-IRM-34I | 114-P1-IRM-34I-20191230 | 12/30/2019 | 31 | N | JD1000 | Treatment | Intermediate | **47100** | **47100** | **34800** | **35300** | -- | -- | -- | -- | -- | -- | -- | 189 | **366** | -- | 912 J | -- | **154** | -- |
| 114-P1-IRM-34I | 114-P1-IRM-34I-20200130 | 1/30/2020 | 31 | N | JD2521 | Treatment | Intermediate | **15300** | **22500** | **120** | **9700** | -- | -- | -- | -- | -- | -- | -- | 219 | **377** | -- | 1980 J | -- | **241** | -- |
| 114-P1-IRM-35I | 114-P1-IRM-35I-20180122 | 1/22/2018 | 30 | N | JC59495 | Baseline | Intermediate | **284000** | **407000** | **276000** | **320000** | 185 | 7.55 | 7.32 | 3.76 | 12.07 | 0 | -- | 6.5 | **432** | < 2.0 U | 265 | **< 500 U** | **< 750 U** | -- |
| 114-P1-IRM-36D | 114-P1-IRM-36D-20180124 | 1/24/2018 | 23.5 | N | JC59667 | Baseline | Intermediate | **12600** | **16100** | R | R | 21 | 2.22 | 9.92 | 1.59 | 10.09 | 1.59 | -- | 40.2 | 191 | < 2.0 U | 38.4 | **< 500 U** | **104** | -- |
| 114-P1-IRM-36D | 114-P1-IRM-36D-20180501 | 5/1/2018 | 23.5 | N | JC65257 | Treatment | Intermediate | **44200** | **43500** | **44400** | **47500** | 58 | 1.78 | 9.91 | 2.27 | 11.08 | 17.8 | -- | 4.7 | **503** | -- | 305 | -- | **732** | < 0.20 U |
| 114-P1-IRM-36D | 114-P1-IRM-36D-20180529 | 5/29/2018 | 23.5 | N | JC66923 | Treatment | Intermediate | **139000** | **143000** | **157000** | **155000** | 16 | 0.27 | 7.28 | 3.21 | 18.68 | 0.8 | -- | 6.3 | -- | -- | 138 | -- | **621** | < 0.20 U |
| 114-P1-IRM-36D | 114-P1-IRM-36D-20180529 | 5/29/2018 | 23.5 | N | JC66923B | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **576 J** | -- | -- | -- | -- | -- |
| 114-P1-IRM-36D | 114-P1-IRM-36D-20180702 | 7/2/2018 | 23.5 | N | JC69148 | Treatment | Intermediate | **15400** | **15200** | **18300** | **17000** | 191 | 0.96 | 7.4 | 4.46 | 24.96 | 3.4 | -- | 5.4 | **616** | -- | 6.4 | -- | **785** | < 0.20 U |
| 114-P1-IRM-36D | 114-P1-IRM-36D-20180723 | 7/23/2018 | 23.5 | N | JC70405 | Treatment | Intermediate | **160000 J** | **112000 J** | **46800** | **56600** | 158 | 4.45 | 6.89 | 6.16 | 23.28 | 5.4 | -- | 11.8 | **642** | -- | < 3.7 UB | -- | **534** | < 0.20 U |
| 114-P1-IRM-36D | 114-P1-IRM-36D-20180926 | 9/26/2018 | 23.5 | N | JC74616 | Treatment | Intermediate | **18100** | **20900** | **20500** | **18400** | -- | -- | -- | -- | -- | -- | -- | 5.0 | **544** | -- | -- | -- | **1090** | < 0.20 U |
| 114-P1-IRM-36D | 114-P1-IRM-36D-181101 | 11/1/2018 | 23.5 | N | JC77088 | Treatment | Intermediate | **18700 J** | **21400 J** | **16000** | **16600** | -- | -- | -- | -- | -- | -- | -- | 4.9 | **410** | -- | -- | -- | **1190** | < 0.20 UJ |
| 114-P1-IRM-36D | 114-P1-IRM-36D-181219 | 12/19/2018 | 23.5 | N | JC80041 | Treatment | Intermediate | **27200** | **30900** | **25600** | **27600** | -- | -- | -- | -- | -- | -- | -- | 5.4 | **574** | -- | -- | -- | **807** | R |
| 114-P1-IRM-36D | 114-P1-IRM-36D-20190327 | 3/27/2019 | 23.5 | N | JC85279 | Treatment | Intermediate | **20700** | **21600** | **13300** | **14500** | -- | -- | -- | -- | -- | -- | -- | 5.4 | **821** | -- | 35.1 | -- | **846** | < 0.20 U |
| 114-P1-IRM-36D | 114-P1-IRM-36D-20190503 | 5/3/2019 | 23.5 | N | JC87509 | Treatment | Intermediate | **59800** | **58000** | **54400** | **55500** | -- | -- | -- | -- | -- | -- | -- | 5.9 | **598** | -- | 750 | -- | **669** | < 0.20 U |
| 114-P1-IRM-36D | 114-P1-IRM-36D-26.0-20190531 | 5/31/2019 | 26 | N | JC89048 | Treatment | Intermediate | **66100** | **69100** | **68900** | **66800** | -- | -- | -- | -- | -- | -- | -- | 6.6 | **547** | -- | 1550 J | -- | **565** | R |
| 114-P1-IRM-36D | 114-P1-IRM-36D-31.0-20190531 | 5/31/2019 | 31 | N | JC89048 | Treatment | Intermediate | **78100** | **77500** | **77100** | **76200** | -- | -- | -- | -- | -- | -- | -- | 7.3 | **543** | -- | 1980 J | -- | **438** | R |
| 114-P1-IRM-36D | 114-P1-IRM-36D-36.0-20190531 | 5/31/2019 | 36 | N | JC89048 | Treatment | Intermediate | **67900** | **66000** | **67500** | **66800** | -- | -- | -- | -

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P1-IRM-36D | 114-P1-IRM-36D-20190701 | 7/1/2019 | 23.5 | N | JC90966 | Treatment | Intermediate | **79500** | **80000** | **61300** | **63600** | -- | -- | -- | -- | -- | -- | -- | 6.6 | **515** | -- | 2150 | -- | **670** | < 0.20 U |
| 114-P1-IRM-36D | 114-P1-IRM-36D-20190731 | 7/31/2019 | 23.5 | N | JC92478 | Treatment | Intermediate | **73600** | **79000** | **73800** | **78200** | -- | -- | -- | -- | -- | -- | -- | 7.9 | **517** | -- | 430 | -- | **698** | R |
| 114-P1-IRM-36D | 114-P1-IRM-36D-20190828 | 8/28/2019 | 23.5 | N | JC94021 | Treatment | Intermediate | **75400** | **74600** | **79200** | **78400** | -- | -- | -- | -- | -- | -- | -- | 8.0 | **452** | -- | 3670 | -- | **642** | < 0.20 U |
| 114-P1-IRM-36D | 114-P1-IRM-36D-20190925 | 9/25/2019 | 23.5 | N | JC95646 | Treatment | Intermediate | **67600** | **70400** | **64800** | **64600** | -- | -- | -- | -- | -- | -- | -- | 7.3 | **470** | -- | 748 | -- | **740** | < 0.20 U |
| 114-P1-IRM-36D | 144-P1-IRM-36D-20191030 | 10/30/2019 | 23.5 | N | JC97696 | Treatment | Intermediate | **52800** | **50100** | **49400** | **52800** | -- | -- | -- | -- | -- | -- | -- | 6.1 | **395** | -- | 860 | -- | **854** | < 0.20 U |
| 114-P1-IRM-36D | 114-P1-IRM-36D-20191125 | 11/25/2019 | 23.5 | N | JC99177 | Treatment | Intermediate | **58300** | **57200** | **53200** | **52800** | -- | -- | -- | -- | -- | -- | -- | 6.4 | **344** | -- | 242 | -- | **659** | -- |
| 114-P1-IRM-36D | 114-P1-IRM-36D-DUP-20200128 | 1/28/2020 | 23.5 | FD | JD2398 | Treatment | Intermediate | **35400** | **35700** | **35500** | **37200** | -- | -- | -- | -- | -- | -- | -- | 5.9 | **272** | -- | 14.1 | -- | **895** | -- |
| 114-P1-IRM-36D | 114-P1-IRM-36D-20200128 | 1/28/2020 | 23.5 | N | JD2398 | Treatment | Intermediate | **35300** | **35200** | **35400** | **35600** | -- | -- | -- | -- | -- | -- | -- | 5.9 | **271** | -- | 15.3 | -- | **894** | -- |
| 114-P1-IRM-36D | 114-P1-IRM-36D-20200226 | 2/26/2020 | 23.5 | N | JD3741 | Treatment | Intermediate | **26000 J** | **25600 J** | **28300** | **26400** | -- | -- | -- | -- | -- | -- | -- | 6.0 | **259** | -- | 5.6 | -- | **1160** | -- |
| 114-P1-IRM-36D | 114-P1-IRM-36D-20200325 | 3/25/2020 | 23.5 | N | JD5175 | Treatment | Intermediate | **27300** | **28300** | **20600** | **20400** | -- | -- | -- | -- | -- | -- | -- | 6.6 | 246 | -- | < 1.8 UB | -- | **1260** | -- |
| 114-P1-IRM-36I | 114-P1-IRM-36I-20180124 | 1/24/2018 | 36 | N | JC59667 | Baseline | Intermediate | **38900** | **37800** | **36900** | **35800** | 80 | 1.16 | 8.33 | 1.82 | 8.61 | 19.9 | -- | 33.1 | 205 | < 2.0 U | 24.3 | **< 500 U** | **203** | -- |
| 114-P1-IRM-36I | 114-P1-IRM-36I-20180501 | 5/1/2018 | 36 | N | JC65257 | Treatment | Intermediate | **261000** | **263000** | **266000** | **281000** | 52 | 2.77 | 8.91 | 2.09 | 9.7 | 33.6 | -- | 5.7 | **465** | -- | 42.8 | -- | **448** | < 0.20 U |
| 114-P1-IRM-36I | 114-P1-IRM-36I-20180529 | 5/29/2018 | 36 | N | JC66923 | Treatment | Intermediate | **45000** | **45200** | **47300** | **48500** | 20 | 2.88 | 7.57 | 3.36 | 22.17 | 11.3 | -- | 5.3 | -- | -- | 430 | -- | **811** | < 0.20 U |
| 114-P1-IRM-36I | 114-P1-IRM-36I-20180529 | 5/29/2018 | 36 | N | JC66923B | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | 22.87 | 14.3 | -- | -- | **1240 J** | -- | -- | -- | -- | -- |
| 114-P1-IRM-36I | 114-P1-IRM-36I-20180702 | 7/2/2018 | 36 | N | JC69148 | Treatment | Intermediate | **36800** | **37600** | **35000** | **39300** | 219 | 1.18 | 7.15 | 4.56 | 25.4 | 1.2 | -- | 5.3 | **540** | -- | 439 | -- | **705** | < 0.20 U |
| 114-P1-IRM-36I | 114-P1-IRM-36I-20180723 | 7/23/2018 | 36 | N | JC70405 | Treatment | Intermediate | **45100** | **45900** | **36200** | **45400** | 335 | 7.34 | 6.83 | 4.81 | 20.2 | 5.9 | -- | 5.3 | **514** | -- | 460 | -- | **672** | < 0.20 U |
| 114-P1-IRM-36I | 114-P1-IRM-36I-201808827_20180827 | 8/27/2018 | 36 | N | JC72621 | Treatment | Intermediate | **27200** | **27200 J** | **24000** | **26600** | -- | -- | -- | -- | -- | -- | -- | 5.2 | **661** | -- | 321 | -- | **826** | < 0.20 U |
| 114-P1-IRM-36I | 114-P1-IRM-36I-20180926 | 9/26/2018 | 36 | N | JC74616 | Treatment | Intermediate | **20900** | **20500** | **19800** | **20800** | -- | -- | -- | -- | -- | -- | -- | 5.5 | **727** | -- | -- | -- | **876** | < 0.20 U |
| 114-P1-IRM-36I | 114-P1-IRM-36I-181101 | 11/1/2018 | 36 | N | JC77088 | Treatment | Intermediate | **20800 J** | **20600 J** | **18900** | **20100** | -- | -- | -- | -- | -- | -- | -- | 5.5 | **710** | -- | -- | -- | **870** | < 0.20 UJ |
| 114-P1-IRM-36I | 114-P1-IRM-36I-181126 | 11/26/2018 | 36 | N | JC78527 | Treatment | Intermediate | **39300** | **39100** | **36400** | **35500** | -- | -- | -- | -- | -- | -- | -- | 5.9 | **698** | -- | 734 | -- | **705** | < 0.20 U |
| 114-P1-IRM-36I | 114-P1-IRM-36I_20191030 | 10/30/2019 | 36 | N | JC97696 | Treatment | Intermediate | **56100** | **53200** | **64800** | **61100** | -- | -- | -- | -- | -- | -- | -- | 7.3 | **488** | -- | 1650 | -- | **599** | < 0.20 U |
| 114-P1-IRM-36I | 114-P1-IRM-36I-191203 | 12/3/2019 | 36 | N | JC99494 | Treatment | Intermediate | **53700** | **53800** | **56500** | **58000** | -- | -- | -- | -- | -- | -- | -- | 20.2 | **385** | -- | 732 | -- | **428** | -- |
| 114-P1-IRM-36I | 114-P1-IRM-36I-20191230 | 12/30/2019 | 36 | N | JD1000 | Treatment | Intermediate | **58000** | **56700** | **56700** | **56300** | -- | -- | -- | -- | -- | -- | -- | 7.3 | **375** | -- | 1060 J | -- | **425** | -- |
| 114-P1-IRM-36I | 114-P1-IRM-36I-20200130 | 1/30/2020 | 36 | N | JD2521 | Treatment | Intermediate | **74200** | **74900** | **75300** | **74900** | -- | -- | -- | -- | -- | -- | -- | 8.1 | **358** | -- | 1000 | -- | **434** | -- |
| 114-P1-IRM-36I | 114-P1-IRM-36I-20200228 | 2/28/2020 | 36 | N | JD3873 | Treatment | Intermediate | **74500** | **73400 J** | **70300** | **71200** | -- | -- | -- | -- | -- | -- | -- | 7.4 | **341** | -- | 1270 | -- | **453** | -- |
| 114-P1-IRM-36I | 114-P1-IRM-36I-DUP-20200327 | 3/27/2020 | 36 | FD | JD5288 | Treatment | Intermediate | **15400** | **82600** | **74000 J** | **74500 J** | -- | -- | -- | -- | -- | -- | -- | 7.2 | **448** | -- | 534 | -- | **100** | -- |
| 114-P1-IRM-36I | 114-P1-IRM-36I-20200327 | 3/27/2020 | 36 | N | JD5288 | Treatment | Intermediate | **16100** | **77800** | **24500 J** | **25700 J** | -- | -- | -- | -- | -- | -- | -- | 7.3 | **431** | -- | 616 | -- | **105** | -- |
| 114-P1-IRM-37I | 114-P1-IRM-37I-20180117 | 1/17/2018 | 30.74 | N | JC59023 | Baseline | Intermediate | **1530** | **1420** | **990** | **980** | -192 | 2.18 | 8.7 | 4.92 | 12.86 | 20.1 | -- | 5.1 | **588** | 4.0 | 422 | < 100 U | 31.5 | -- |
| 114-P1-IRM-37I | 114-P1-IRM-37I-20180501 | 5/1/2018 | 30.74 | N | JC65257 | Treatment | Intermediate | **3260** | **10800** | < 10 U | < 10 U | -238 | 4.17 | 9.11 | 5.56 | 15.27 | 57.8 | -- | 12.0 | **1230** | -- | 620 | -- | **129** | < 0.20 U |
| 114-P1-IRM-37I | 114-P1-IRM-37I-20180927 | 9/27/2018 | 30.74 | N | JC74699 | Treatment | Intermediate | 15.3 | **2060** | R | R | -- | -- | -- | -- | -- | -- | -- | 15.6 J | **887** | -- | -- | -- | 41.6 | 0.38 |
| 114-P1-IRM-37I | 114-P1-IRM-37I-181101 | 11/1/2018 | 30.74 | N | JC77088 | Treatment | Intermediate | 16.8 J | **3400 J** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 15.6 | **1010** | -- | -- | -- | 39.8 | < 0.20 UJ |
| 114-P1-IRM-37I | 114-P1-IRM-37I-181128 | 11/28/2018 | 30.74 | N | JC78649 | Treatment | Intermediate | 16.9 | **1240** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 20.4 | **807** | -- | 710 | -- | 19.6 | 0.20 |
| 114-P1-IRM-37I | 114-P1-IRM-37I_20181220 | 12/20/2018 | 30.74 | N | JC80137 | Treatment | Intermediate | 21.1 J | **546 J** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 22.1 | **818** | -- | -- | -- | 25.6 | R |
| 114-P1-IRM-37I | P1-IRM-37I-20190326 | 3/26/2019 | 30.74 | N | JC85176 | Treatment | Intermediate | 18.5 | **465** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 19.8 | **972** | -- | 1890 | -- | 19.5 | 0.27 |
| 114-P1-IRM-37I | 114-P1-IRM-37I-20190430 | 4/30/2019 | 30.74 | N | JC87228 | Treatment | Intermediate | 14.5 | **404** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 16.2 | **1100** | -- | 1000 | -- | 30.3 | < 0.20 U |
| 114-P1-IRM-37I | 114-P1-IRM-37I-23.24-20190528 | 5/28/2019 | 23.24 | N | JC88834 | Treatment | Intermediate | 15.0 | 44.7 | < 50 U | 65 | -- | -- | -- | -- | -- | -- | -- | 18.9 | **774** | -- | 1970 J | -- | 16.2 | 0.21 |
| 114-P1-IRM-37I | 114-P1-IRM-37I-28.24-20190528 | 5/28/2019 | 28.24 | N | JC88834 | Treatment | Intermediate | 14.3 | **133** | < 10 U | 16 | -- | -- | -- | -- | -- | -- | -- | 13.0 | **1410** | -- | 620 J | -- | 39.5 | < 0.20 U |
| 114-P1-IRM-37I | 114-P1-IRM-37I-33.24-20190528 | 5/28/2019 | 33.24 | N | JC88834 | Treatment | Intermediate | 13.7 | **187** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 15.3 | **1380** | -- | 1180 J | -- | 34.1 | < 0.20 UJ |
| 114-P1-IRM-37I | 114-P1-IRM-37I-38.24-20190528 | 5/28/2019 | 38.24 | N | JC88834 | Treatment | Intermediate | 13.3 | **291** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 13.1 | **1280** | -- | 1090 J | -- | 32.0 | < 0.20 UJ |
| 114-P1-IRM-37I | 114-P1-IRM-37I-20190628 | 6/28/2019 | 30.74 | N | JC90869 | Treatment | Intermediate | 16.1 | **1280** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 15.1 | **1270** | -- | 1070 | -- | 33.7 | R |
| 114-P1-IRM-37I | 114-P1-IRM-37I-20190801 | 8/1/2019 | 30.74 | N | JC92580 | Treatment | Intermediate | 14.9 | **1510** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 15.6 | **1180** | -- | 44.2 | -- | 41.0 | < 0.20 UJ |
| 114-P1-IRM-37I | 114-P1-IRM-37I-20190926 | 9/26/2019 | 30.74 | N | JC95738 | Treatment | Intermediate | 16.7 | **9100 J** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 14.1 | **1270** | -- | 863 | -- | 33.2 | R |
| 114-P1-IRM-37I | 144-P1-IRM-37I-20191030 | 10/30/2019 | 30.74 | N | JC97696 | Treatment | Intermediate | **676** | **1780** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 15.5 | **1300** | -- | 806 | -- | **63.9** | < 0.20 U |
| 114-P1-IRM-37I | 114-P1-IRM-37I-20191126 | 11/26/2019 | 30.74 | N | JC99269 | Treatment | Intermediate | 34.1 | **144 J** | 17 | < 10 U | -- | -- | -- | -- | -- | -- | -- | 22.3 | **860** | -- | 736 | -- | 21.5 | -- |
| 114-P1-IRM-37I | 114-P1-IRM-37I-20191227 | 12/27/2019 | 30.74 | N | JD963 | Treatment | Intermediate | 29.1 | **144** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 25.2 | **717** | -- | 1570 | -- | 22.3 J | -- |
| 114-P1-IRM-37I | 114-P1-IRM-37I-20200128 | 1/28/2020 | 30.74 | N | JD2398 | Treatment | Intermediate | 15.1 | **327** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 19.7 | **1080** | -- | 1570 | -- | 33.8 | -- |
| 114-P1-IRM-37I | 114-P1-IRM-37I-20200226 | 2/26/2020 | 30.74 | N | JD3741 | Treatment | Intermediate | 34.0 | **96.0** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 22.3 | **734** | -- | 1160 | -- | 22.3 | -- |
| 114-P1-IRM-37I | 114-P1-IRM-37I-20200325 | 3/25/2020 | 30.74 | N | JD5175 | Treatment | Intermediate | 27.0 | 64.4 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 27.4 | **872** | -- | 1650 | -- | 21.4 | -- |
| 114-P1-IRM-38 | 114-P1-IRM-38-20180126 | 1/26/2018 | 32 | N | JC59838 | Baseline | Intermediate | 33.6 J- | **1160** | < 10 U | < 10 U | -63 | 0.72 | 7.33 | 3.79 | 9.9 | 18.4 | -- | 4.3 | **620** | < 2.0 U | 108 | **912** | **3470** | -- |
| 114-P1-IRM-38 | 114-P1-IRM-38-20180501 | 5/1/2018 | 32 | N | JC65257 | Treatment | Intermediate | 27.9 | **5530** | < 10 U | < 10 U | 2 | 0 | 7.1 | 5.06 | 17.39 | 80.5 | -- | 5.7 | **835** | -- | 225 | -- | **2040** | < 0.20 U |
| 114-P1-IRM-38 | 114-P1-IRM-38-20180529 | 5/29/2018 | 32 | N | JC66923 | Treatment | Intermediate | 27.7 | **2450** | < 10 U | 12 | -41 | 0 | 7.16 | 4.13 | 19.29 | 51.9 | -- | 5.6 | -- | -- | 530 | -- | **2370** | < 0.20 U |
| 114-P1-IRM-38 | 114-P1-IRM-38-20180529 | 5/29/2018 | 32 | N | JC66923B | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **512 J** | -- | -- | -- | -- | -- |
| 114-P1-IRM-38 | 114-P1-IRM-38-20180702 | 7/2/2018 | 32 | N | JC69148 | Treatment | Intermediate | 28.7 | **729** | < 10 U | < 10 U | -87 | 0 | 7.12 | 3.2 | 21.1 | 22.9 | -- | 4.9 | **854** | -- | 572 | -- | **2240** | < 0.20 U |
| 114-P1-IRM-38 | 114-P1-IRM-38-20180727 | 7/27/2018 | 32 | N | JC70845 | Treatment | Intermediate | 24.2 | **420** | < 10 U | < 10 U | -23 | 0 | 7 | 3.42 | 21.65 | 9.5 | -- | 5.1 | **847** | -- | 368 | -- | **2230** | R |
| 114-P1-IRM-38 | 114-P1-IRM38-180829 | 8/29/2018 | 32 | N | JC72768 | Treatment | Intermediate | 30.9 | **564** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 5.3 | **794** | -- | 268 | -- | **2450** | < 0.20 U |
| 114-P1-IRM-38 | 114-P1-IRM38-20180924 | 9/24/2018 | 32 | N | JC74476 | Treatment | Intermediate | **99.6** | **1010** | **930** | **950 J** | -- | -- | -- | -- | -- | -- | -- | 5.2 | **950** | -- | -- | -- | **250** | < 0.20 U |
| 114-P1-IRM-38 | 114-P1-IRM-38-181126 | 11/26/2018 | 32 | N | JC78527 | Treatment | Intermediate | **3250** | **3250** | **2700** | **3000** | -- | -- | -- | -- | -- | -- | -- | 4.8 | **1050** | -- | 130 | -- | **2750** | < 0.20 U |
| 114-P1-IRM-38 | 114-P1-IRM-38-20191031 | 10/31/2019 | 32 | N | JC97796 | Treatment | Intermediate | **1920** | **1800** | **2000** | **1900** | -- | -- | -- | -- | -- | -- | -- | 4.5 | **813** | -- | 248 | -- | **2420** | < 0.20 U |
| 114-P1-IRM-38 | 114-P1-IRM-38-191203 | 12/3/2019 | 32 | N | JC99494 | Treatment | Intermediate | **8680** | **9000** | **10200** | **10400** | -- | -- | -- | -- | -- | -- | -- | 5.2 | **864** | -- | 257 | -- | **2110** | -- |
| 114-P1-IRM-38 | 114-P1-IRM-38-20191230 | 12/30/2019 | 32 | N | JD1000 | Treatment | Intermediate | **7490** | **8050** | **8200** | **8400** | -- | -- | -- | -- | -- | -- | -- | 5.5 | **869** | -- | 213 J | -- | **1940** | -- |
| 114-P1-IRM-38 | 114-P1-IRM-38-20200130 | 1/30/2020 | 32 | N | JD2521 | Treatment | Intermediate | **9720** | **9540** | **9600** | **10000** | -- | -- | -- | -- | -- | -- | -- | 5.1 | **948** | -- | 235 | -- | **2060** | -- |
| 114-P1-IRM-38 | 114-P1-IRM-38-20200228 | 2/28/2020 | 32 | N | JD3873 | Treatment | Intermediate | **7330** | **7030 J** | **6600** | **6700** | -- | -- | -- | -- | -- | -- | -- | 4.7 | **881** | -- | 308 | -- | **2020** | -- |
| 114-P1-IRM-38 | 114-P1-IRM-38-20200327 | 3/27/2020 | 32 | N | JD5288 | Treatment | Intermediate | **9010** | **9600 J** | **12900** | **12600 J** | -- | -- | -- | -- | -- | -- | -- | 4.8 | **861** | -- | 273 | -- | **2040** | -- |
| 114-P1-IRM-39 | 114-P1-IRM-39-20180126 | 1/26/2018 | 31 | N | JC59838 | Baseline | Intermediate | **72.4 J-** | **4640** | < 10 U | < 10 U | -29 | 0.6 | 6.64 | 14.5 | 10.92 | 14.9 | -- | 9.2 | **2220** | < 2.0 U | 478 | **7630** | **11700** | -- |
| 114-P1-IRM-39 | 114-P1-IRM-39-20180501 | 5/1/2018 | 31 | N | JC65257 | Treatment | Intermediate | 24.3 | **120** | < 10 U | < 10 U | 0 | 0.81 | 7.09 | 9.35 | 10.41 | 28.4 | -- | 8.1 | **1360** | -- | 249 | -- | **4760** | < 0.20 U |
| 114-P1-IRM-39 | 114-P1-IRM-39-20180529 | 5/29/2018 | 31 | N | JC66923 | Treatment | Intermediate | 28.4 | **157** | < 10 U | < 10 U | -39 | 0 | 7.04 | 7.11 | 22.87 | 14.3 | -- | 7.7 | -- | -- | 614 | -- | **4850** | < 0.20 U |
| 114-P1-IRM-39 | 114-P1-IRM-39-20180529 | 5/29/2018 | 31 | N | JC66923B | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **1180 J** | -- | -- | -- | -- | -- |
| 114-P1-IRM-39 | 114-P1-IRM-39-DUP-20180702 | 7/2/2018 | 31 | FD | JC69148 | Treatment | Intermediate | 25.4 | **84.7** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 7.0 | **1040** | -- | 673 | -- | **4160** | < 0.20 U |
| 114-P1-IRM-39 | 114-P1-IRM-39-20180702 | 7/2/2018 | 31 | N | JC69148 | Treatment | Intermediate | 25.4 | **78.3** | < 10 U | < 10 U | -118 | 0 | 7.23 | 5.49 | 24.69 | 21.1 | -- | 8.4 | **1100** | -- | 840 | -- | **4280** | < 0.20 U |
| 114-P1-IRM-39 | 114-P1-IRM-39-20180730 | 7/30/2018 | 31 | N | JC70908 | Treatment | Intermediate | 24.9 | 55.9 | 12 | 17 | -68 | 0 | 7.04 | 5.83 | 21.9 | 0 | -- | 6.1 | **1080** | -- | 499 | -- | **3850** | < 0.20 U |
| 114-P1-IRM-39 | 114-P1-IRM-39-180830 | 8/30/2018 | 31 | N | JC72843 | Treatment | Intermediate | 17.3 | 20.7 | 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 11.3 | **1080** | -- | 356 | -- | **3500** | < 0.20 U |
| 114-P1-IRM-39 | 114-P1-IRM-39-20180924 | 9/24/2018 | 31 | N | JC74476 | Treatment | Intermediate | **10600 J** | **7820 J** | **6800** | **7300 J** | -- | -- | -- | -- | -- | -- | -- | 6.4 | **1330** | -- | -- | -- | **4460** | < 0.20 U |
| 114-P1-IRM-39 | 114-P1-IRM-39-181126 | 11/26/2018 | 31 | N | JC78527 | Treatment | Intermediate | **9180** | **9920** | **8200** | **8600** | -- | -- | -- | -- | -- | -- | -- | 6.0 | **1300** | -- | 665 | -- | **3570** | < 0.20 U |
| 114-P1-IRM-39 | 114-P1-IRM-39-20191230 | 12/30/2019 | 31 | N | JD1000 | Treatment | Intermediate | **4500** | **4650** | **4900** | **4900** | -- | -- | -- | -- | -- | -- | -- | 5.1 | **873** | -- | 464 | -- | **2140** | -- |
| 114-P1-IRM-39 | 114-P1-IRM-39-20200130 | 1/30/2020 | 31 | N | JD2521 | Treatment | Intermediate | **4330** | **4550** | **4200** | **4400** | -- | -- | -- | -- | -- | -- | -- | 4.9 | **1010** | -- | 475 | -- | **2410** | -- |
| 114-P1-IRM-39 | 114-P1-IRM-39-20200228 | 2/28/2020 | 31 | N | JD3873 | Treatment | Intermediate | **3970** | **4160 J** | **3600** | **3700** | -- | -- | -- | -- | -- | -- | -- | 4.8 | **919** | -- | 600 | -- | **2630** | -- |
| 114-P1-IRM-39 | 114-P1-IRM-39-20200327 | 3/27/2020 | 31 | N | JD5288 | Treatment | Intermediate | **3380** | **3810** | **4500** | **4200** | -- | -- | -- | -- | -- | -- | -- | 4.7 | **1140** | -- | 347 | -- | **2810** | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-20180117 | 1/17/2018 | 29 | N | JC59023 | Baseline | Intermediate | **1220000** | **1120000** | **1040000** | **1010000** | 131 | 20.01 | 7.06 | 4.82 | 9.88 | 107 | -- | 14.3 | **524** | < 2.0 U | 56.7 | **< 2500 U** | **< 380 U** | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-20180430 | 4/30/2018 | 29 | N | JC65192 | Treatment | Intermediate | **604000** | **601000** | **294000** | **298000** | 104 | 20.01 | 8.02 | 4.29 | 12.18 | 282 | -- | 11.2 | **729** | -- | 552 | -- | **< 1500 U** | < 0.20 UJ |
| 114-P1-IRM-40I | 114-P1-IRM-40I-20180529 | 5/29/2018 | 29 | N | JC66923 | Treatment | Intermediate | **676000** | **680000** | **612000** | **641000** | 102 | 2.44 | 8.13 | 1.72 | 21.52 | 47.1 | -- | 9.4 | -- | -- | 695 | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-40I | 114-P1-IRM-40I-20180529 | 5/29/2018 | 29 | N | JC66923B | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **702 J** | -- | -- | -- | -- | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-20180702 | 7/2/2018 | 29 | N | JC69148 | Treatment | Intermediate | **627000** | **651000** | **565000** | **584000** | 257 | 0 | 7.41 | 7.61 | 21.81 | 1.8 | -- | 9.6 | **836** | -- | 687 | -- | **< 75 U** | < 0.20 U |
| 114-P1-IRM-40I | 114-P1-IRM-40I-20180723 | 7/23/2018 | 29 | N | JC70405 | Treatment | Intermediate | **637000** | **628000** | **580000** | **615000** | 307 | 0.83 | 7 | 8.81 | 20.05 | 6.1 | -- | 10.3 | **939** | -- | 639 | -- | **< 1500 U** | < 0.20 U |
| 114-P1-IRM-40I | 114-P1-IRM-40I-201808827_20180827 | 8/27/2018 | 29 | N | JC72621 | Treatment | Intermediate | **709000** | **745000 J** | **656000** | **686000** | -- | -- | -- | -- | -- | -- | -- | 10.9 | **933** | -- | 458 | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-40I | 114-P1-IRM40I-20180924 | 9/24/2018 | 29 | N | JC74476 | Treatment | Intermediate | **576000** | **566000** | **502000** | **509000 J** | -- | -- | -- | -- | -- | -- | -- | 10.0 | **900** | -- | -- | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-40I | 114-P1-IRM-40I-181101 | 11/1/2018 | 29 | N | JC77088 | Treatment | Intermediate | **648000 J** | **651000 J** | **494000** | **555000** | -- | -- | -- | -- | -- | -- | -- | 11.3 | **897** | -- | -- | -- | **< 150 U** | < 0.20 UJ |
| 114-P1-IRM-40I | 114-P1-IRM-40I-181126 | 11/26/2018 | 29 | N | JC78527 | Treatment | Intermediate | **596000** | **555000** | **529000** | **539000** | -- | -- | -- | -- | -- | -- | -- | 11.0 | **919** | -- | 609 | -- | **< 1500 U** | < 0.20 U |
| 114-P1-IRM-40I | 114-P1-IRM-40I-20190503 | 5/3/2019 | 29 | N | JC87509 | Treatment | Intermediate | **564000** | **553000** | **478000** | **479000** | -- | -- | -- | -- | -- | -- | -- | 9.7 | **856** | -- | 669 | -- | **< 1500 U** | < 0.20 U |
| 114-P1-IRM-40I | 114-P1-IRM-40I-20191031 | 10/31/2019 | 29 | N | JC97796 | Treatment | Intermediate | **641000** | **657000** | **620000** | **647000** | -- | -- | -- | -- | -- | -- | -- | 9.3 | **889** | -- | 283 | -- | **< 380 U** | < 0.20 U |
| 114-P1-IRM-40I | 114-P1-IRM-40I-191202 | 12/2/2019 | 29 | N | JC99426 | Treatment | Intermediate | **502000** | **505000** | **491000** | **499000** | -- | -- | -- | -- | -- | -- | -- | 9.6 | **848** | -- | 289 | -- | **< 1500 U** | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-20191230 | 12/30/2019 | 29 | N | JD1000 | Treatment | Intermediate | **570000** | **510000** | **556000** | **591000** | -- | -- | -- | -- | -- | -- | -- | 9.7 | **910** | -- | 404 J | -- | **< 1500 U** | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-20200130 | 1/30/2020 | 29 | N | JD2521 | Treatment | Intermediate | **554000** | **562000** | **482000** | **530000** | -- | -- | -- | -- | -- | -- | -- | 10.2 | **956** | -- | 229 | -- | **< 1500 U** | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-DUP2-20200228 | 2/28/2020 | 29 | FD | JD3873 | Treatment | Intermediate | **464000** | **486000 J** | **483000** | **490000** | -- | -- | -- | -- | -- | -- | -- | 8.8 | **877** | -- | 347 | -- | **< 1500 U** | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-20200228 | 2/28/2020 | 29 | N | JD3873 | Treatment | Intermediate | **404000** | **499000 J** | **474000** | **486000** | -- | -- | -- | -- | -- | -- | -- | 9.1 | **751** | -- | 259 | -- | **< 1500 U** | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-20201218 | 12/18/2020 | | N | JD17977 | Treatment | Intermediate | **219000** | **268000** | **214000** | **222000** | 141.4 | 2.62 | 7.03 | 3.439 | -- | -- NM | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-20210114 | 1/14/2021 | | N | JD19032 | Treatment | Intermediate | **181000** | **183000** | **164000** | **168000** | 200.4 | 3.5 | 6.99 | 2.62 | -- | 1.38 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-40I | 114-P1-IRM-401-20210315 | 3/15/2021 | | N | JD21731 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.6 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-36-20210428 | 4/28/2021 | 36 | N | 4602331061 | Treatment | Intermediate | **8110** | **8680** | **7570** | **7860** | 123.1 | 0.85 | 7.14 | 2.15 | -- | 3.16 | -- | 8.0 | **518** | -- | 260 | < 120 U | 41.2 | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-36-20210428-X | 4/28/2021 | 36 | FD | 4602331061 | Treatment | Intermediate | **8530** | **9900** | **7740** | **7630** | -- | -- | -- | -- | -- | -- | -- | 8.1 | **536** | -- | 260 | < 120 U | 41.9 | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-39.0-20210601 | 6/1/2021 | 39 | N | 4602355971 | Treatment | Intermediate | **13000** | **13600** | **12500** | **12500** | 181.2 | 0.57 | 7.16 | 2.007 | -- | 3.91 | -- | 7.0 | **589** | -- | 260 | < 120 U | 43.6 | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-22.5-20210625 | 6/25/2021 | 22.5 | N | 4602374061 | Treatment | Intermediate | **3210** | **5080** | **2930** | **3070** | 74.4 | 0.96 | 7.2 | 1.912 | -- | 5.81 | -- | 5.7 | **800** | -- | -- | < 120 U | 46.8 | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-20.0-20210726 | 7/26/2021 | 20 | N | 4602395391 | Treatment | Intermediate | **5460** | **5270** | **4850** | **4850** | 232.3 | 3.85 | 7.13 | 3.741 | -- | 6.48 | -- | 8.0 | **633** | -- | 230 | < 120 U | **60.9** | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-20210812 | 8/12/2021 | | N | 4602409051 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.4 F1 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-22.5-20210831 | 8/31/2021 | 22.5 | N | 4602418991 | Treatment | Intermediate | **118000** | **108000** | **115000** | **110000** | 121.3 | 1.02 | 7.08 | 2.622 | -- | 0.86 | -- | 8.8 | **593** | -- | 220 | **< 600 U** | **92.5** | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-20210910 | 9/10/2021 | | N | 4602425261 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 10.3 | -- | -- | -- | -- | -- | -- |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P1-IRM-40I | 114-P1-IRM-40I-20210921 | 9/21/2021 | | N | 4602432721 | Treatment | Intermediate | **379** | **14300** | **149** | **811** | 25.8 | 2.7 | 7.77 | 6.048 | -- | 52 | -- | 18.3 | **524** | -- | 1700 | < 120 U | **213** | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-20211007 | 10/7/2021 | | N | 4602449131 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.3 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-20211118 | 11/18/2021 | | N | 4602475481 | Treatment | Intermediate | **382000** | **350000** | **367000 H** | **373000 H** | -- | -- | -- | -- | -- | -- | -- | 16.3 | **802** | -- | 160 | **< 1200 U** | **490** | -- |
| 114-P1-IRM-40I | 114-P1-IRM 40I | 12/2/2021 | | N | 4602484621 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 36.2 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-20211215 | 12/15/2021 | | N | 4602491921 | Treatment | Intermediate | **223000** | **208000** | **193000** | **198000** | -33.72 | 2.4 | 6.89 | 4.23 | -- | 3.55 | -- | 182 F1 | **564** | -- | 1200 | **597 J** | **1370** | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-20220110 | 1/10/2022 | | N | 4602504131 | Treatment | Intermediate | **763000** | **677000** | **668000** | **703000** | 89 | 3.21 | 6.97 | 4.85 | -- | 18.2 | -- | 115 | 238 | -- | 190 | **< 600 U** | **527** | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-20220217 | 2/17/2022 | | N | 4602526891 | Treatment | Intermediate | **256000** | **259000** | **217000** | **207000** | 24.9 | 2.83 | 7.62 | 2.992 | -- | 60.6 | -- | 75.7 | 183 | -- | 140 | **< 6000 U** | **747** | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-20220304 | 3/4/2022 | | N | 4602537771 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 59.0 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-20220317 | 3/17/2022 | | N | 4602545111 | Treatment | Intermediate | **18300** | **365000** | **36900** | **64200** | -26.8 | 2.329 | 6.87 | 6.69 | -- | 75.5 | -- | 91.5 | **445** | -- | 11000 | **434** | **5680** | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-20220414 | 4/14/2022 | | N | 4602562981 | Treatment | Intermediate | **366000** | **353000** | **288000** | **288000** | 21.4 | 3.62 | 7.55 | 3.454 | 17.35 | 12.8 | -- | 67.3 | **290** | -- | 320 | **< 1200 U** | **1890** | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-20220428 | 4/28/2022 | | N | 4602572301 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 58.5 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-20220513 | 5/13/2022 | | N | 4602580891 | Treatment | Intermediate | **388000** | **338000** | **411000** | **416000** | 7.8 | 2.48 | 6.99 | 2.655 | 15.03 | 49.9 | -- | 53.1 | **303** | -- | 360 | **< 600 U** | **2510** | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-20220527 | 5/27/2022 | | N | 4602589681 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 43.4 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-20220609 | 6/9/2022 | | N | 4602597481 | Treatment | Intermediate | **355000** | **384000** | **317000** | **328000** | 53.8 | 6.62 | 7.15 | 3.008 | 19.53 | 198 | -- | 41.9 | **310** | -- | -- | **< 600 U** | **2680** | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-20220620 | 6/20/2022 | | N | 4602604751 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 32.6 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-20220711 | 7/11/2022 | | N | 4602617131 | Treatment | Intermediate | **254000** | **252000** | **254000** | **252000** | -77.80 | 3.19 | 7.08 | 3.72 | 22.77 | 70.70 | -- | 31.3 | 235 | -- | -- | **< 600 U** | **3630** | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-20220725 | 7/20/2022 | | N | 4602625591 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 34.1 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-20220816 | 8/16/2022 | | N | 4602639181 | Treatment | Intermediate | -- | **166000** | -- | **184000** | 113.90 | 5.44 | 7.23 | 2.963 | 20.95 | 26.9 | -- | 35.3 | 209 | -- | -- | **< 600 U** | **3890** | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-22.5-20220915 | 9/15/2022 | 22.5 | N | 4602655901 | Treatment | Intermediate | **917** | **5310** | 66.8 | < 10.0 U | -117.4 | 6.51 | 6.64 | 2.461 | 19.27 | 75.9 | -- | 37.3 | 96.7 | -- | -- | **385** | **5040** | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-22.5-20221010 | 10/10/2022 | 22.5 | N | 4602671561 | Treatment | Intermediate | **151** | **578** | < 10.0 U | < 10.0 U | -218.8 | 14.87 | 7.21 | 2.3 | 18.68 | 113 | -- | 33.8 | 30.2 | -- | -- | **1600** | **5880** | -- |
| 114-P1-IRM-40I | 114-P1-IRM-40I-22.5-20221109 | 11/9/2022 | 22.5 | N | 4602691941 | Treatment | Intermediate | -- | **768** | -- | < 10.0 U | -162 | 2.14 | 6.73 | 2.956 | 16.6 | 9 | -- | 40.2 | 162 | -- | -- | **3060** | **7670** | -- |
| 114-P1-IRM-41I | 114-P1-IRM-41I-20180126 | 1/26/2018 | 31 | N | JC59838 | Baseline | Intermediate | **223000 J-** | **260000** | **204000** | **248000** | 72 | 0.32 | 8.52 | 4.08 | 12.05 | 6.9 | -- | 7.2 | 232 | < 2.0 U | 83.6 | **< 500 U** | **< 750 U** | -- |
| 114-P1-IRM-41I | 114-P1-IRM-41I-20180501 | 5/1/2018 | 31 | N | JC65257 | Treatment | Intermediate | **356000** | **357000** | **431000** | **439000** | 41 | 1.67 | 9.67 | 5.59 | 20.27 | 9.6 | -- | 19.2 | **671** | -- | 963 | -- | **< 750 U** | < 0.20 U |
| 114-P1-IRM-41I | 114-P1-IRM-41I-20180530 | 5/30/2018 | 31 | N | JC66984 | Treatment | Intermediate | **342000** | **349000** | **214000** | **226000** | -- | -- | -- | -- | -- | -- | -- | 20.3 | -- | -- | 1590 | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-41I | 114-P1-IRM-41I-20180530 | 5/30/2018 | 31 | N | JC66984A | Treatment | Intermediate | -- | -- | -- | -- | 114 | 0.59 | 9.13 | 6.66 | 17.05 | 3.4 | -- | -- | **593 J** | -- | -- | -- | -- | -- |
| 114-P1-IRM-41I | 114-P1-IRM-41I-20180702 | 7/2/2018 | 31 | N | JC69148 | Treatment | Intermediate | **302000** | **307000** | **244000** | **257000** | 80 | 0.81 | 9.1 | 5.92 | 21.66 | 0 | -- | 18.5 | **605** | -- | 1860 | -- | **< 75 U** | < 0.20 U |
| 114-P1-IRM-41I | 114-P1-IRM-41I-DUP-20180723 | 7/23/2018 | 31 | FD | JC70405 | Treatment | Intermediate | **217000** | **226000** | **179000** | **199000** | -- | -- | -- | -- | -- | -- | -- | 20.6 | **618** | -- | 1580 | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-41I | 114-P1-IRM-41I-20180723 | 7/23/2018 | 31 | N | JC70405 | Treatment | Intermediate | **214000** | **217000** | **179000** | **199000** | 69 | 3.21 | 9.52 | 5.83 | 20.97 | 9.6 | -- | 20.6 | **603** | -- | 1880 | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-41I | 114-P1-IRM-41I-201808827_20180827 | 8/27/2018 | 31 | N | JC72621 | Treatment | Intermediate | **195000** | **202000 J** | **151000** | **164000** | -- | -- | -- | -- | -- | -- | -- | 19.4 | **593** | -- | 1590 | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-41I | 114-P1-IRM-41I-20180927 | 9/27/2018 | 31 | N | JC74699 | Treatment | Intermediate | **134000** | **148000** | **130000** | **135000** | -- | -- | -- | -- | -- | -- | -- | 20.1 | **562** | -- | -- | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-41I | 114-P1-IRM-41I-20181031 | 10/31/2018 | 31 | N | JC76975 | Treatment | Intermediate | **161000** | **165000** | **143000** | **155000** | -- | -- | -- | -- | -- | -- | -- | 20.8 | **574** | -- | -- | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-41I | 114-P1-IRM-41I-181128 | 11/28/2018 | 31 | N | JC78649 | Treatment | Intermediate | **151000** | **151000** | **139000** | **158000** | -- | -- | -- | -- | -- | -- | -- | 21.8 | **581** | -- | 1570 | -- | **< 380 U** | < 0.20 U |
| 114-P1-IRM-41I | 114-P1-IRM-41I-191203 | 12/3/2019 | 31 | N | JC99494 | Treatment | Intermediate | **404000** | **404000** | **414000** | **428000** | -- | -- | -- | -- | -- | -- | -- | 12.4 | **1300** | -- | 555 | -- | **< 1500 U** | -- |
| 114-P1-IRM-41I | 114-P1-IRM-41I-20191230 | 12/30/2019 | 31 | N | JD1000 | Treatment | Intermediate | **458000** | **482000** | **480000** | **470000** | -- | -- | -- | -- | -- | -- | -- | 12.9 | **1250** | -- | 390 J | -- | **< 1500 U** | -- |
| 114-P1-IRM-41I | 114-P1-IRM-41I-20200130 | 1/30/2020 | 31 | N | JD2521 | Treatment | Intermediate | **387000** | **451000** | **414000** | **418000** | -- | -- | -- | -- | -- | -- | -- | 12.7 | **1370** | -- | 534 | -- | **< 1500 U** | -- |
| 114-P1-IRM-41I | 114-P1-IRM-41I-20200228 | 2/28/2020 | 31 | N | JD3873 | Treatment | Intermediate | **358000** | **366000 J** | **415000** | **409000** | -- | -- | -- | -- | -- | -- | -- | 12.1 | **1380** | -- | 642 | -- | **< 1500 U** | -- |
| 114-P1-IRM-41I | 114-P1-IRM-41I-20201120 | 11/20/2020 | | N | JD16639 | Treatment | Intermediate | **279000** | **368000** | **309000** | **339000** | 3.57 | 3.57 | 8.17 | 4.27 | -- | 9.1 | -- | 11.3 | **1150** | -- | 600 | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-41I | 114-P1-IRM-41I-20201218 | 12/18/2020 | | N | JD17977 | Treatment | Intermediate | **279000** | **359000** | **319000** | **316000** | 83.7 | 2.91 | 7.91 | 5.24 | -- | -- NM | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-41I | 114-P1-IRM-41I-20210114 | 1/14/2021 | | N | JD19032 | Treatment | Intermediate | **340000** | **383000** | **309000** | **317000** | 182 | 3.41 | 7.67 | 4.781 | -- | 1.99 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-41I | 114-P1-IRM-41I-20210319 | 3/19/2021 | | N | JD22003 | Treatment | Intermediate | **181000** | **185000** | **169000** | **163000** | 231.6 | 3.96 | 7.65 | 3.701 | -- | 16.9 | -- | 27.5 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-41I | 114-P1-IRM-41I-20210429 | 4/29/2021 | | N | 4602331931 | Treatment | Intermediate | **105000** | **130000** | **110000** | **98800 J+** | 214.5 | 3.77 | 7.32 | 3.43 | -- | 2.14 | -- | 11.0 | **694 F1** | -- | 330 | **< 600 U** | **126** | -- |
| 114-P1-IRM-41I | 114-P1-IRM-41I-20210429-X | 4/29/2021 | | FD | 4602331931 | Treatment | Intermediate | **110000** | **127000** | **104000** | **102000 J+** | -- | -- | -- | -- | -- | -- | -- | 10.9 | **697** | -- | 330 | **< 600 U** | **129** | -- |
| 114-P1-IRM-41I | 114-P1-IRM-41I-39.0-20210628 | 6/28/2021 | 39 | N | 4602376551 | Treatment | Intermediate | **10900** | **15000** | **10000 H** | **10000 H** | 100.7 | 1.21 | 7.94 | 2.635 | -- | 8.12 | -- | 9.0 | **906** | -- | -- | 170 | **96.3** | -- |
| 114-P1-IRM-41I | 114-P1-IRM-41I-20210812 | 8/12/2021 | | N | 4602409051 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 11.9 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-41I | 114-P1-IRM-41I-20210819 | 8/19/2021 | | N | 4602412191 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 11.9 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-41I | 114-P1-IRM-41I-20210824 | 8/24/2021 | | N | 4602414891 | Treatment | Intermediate | **153000** | **154000** | **166000** | **164000** | 219.1 | 3.9 | 7.41 | 2.954 | -- | 3.36 | -- | 13.4 | **535** | -- | 240 | **< 1200 U** | **86.3** | -- |
| 114-P1-IRM-41I | 114-P1-IRM-41I-20210910 | 9/10/2021 | | N | 4602425261 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 21.3 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-42I | 114-P1-IRM-42I-20180126 | 1/26/2018 | 32 | N | JC59838 | Baseline | Intermediate | **188000 J-** | **191000** | **183000** | **180000** | 229 | 2.86 | 7.62 | 6.53 | 11.83 | 0 | -- | 8.9 | **1170** | < 2.0 U | 265 | **< 500 U** | **236** | -- |
| 114-P1-IRM-42I | 114-P1-IRM-42I-20180501 | 5/1/2018 | 32 | N | JC65257 | Treatment | Intermediate | **218000** | **220000** | **164000** | **172000** | 177 | 1.25 | 7.41 | 5.91 | 12.77 | 7.1 | -- | 8.6 | **1300** | -- | 447 | -- | **161** | < 0.20 U |
| 114-P1-IRM-42I | 114-P1-IRM-42I-20180530 | 5/30/2018 | 32 | N | JC66984 | Treatment | Intermediate | **224000** | **211000** | **219000** | **215000** | -- | -- | -- | -- | -- | -- | -- | 9.0 | -- | -- | 372 | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-42I | 114-P1-IRM-42I-20180530 | 5/30/2018 | 32 | N | JC66984A | Treatment | Intermediate | -- | -- | -- | -- | 187 | 0.76 | 7.31 | 5.99 | 16.3 | 0.1 | -- | -- | **1160 J** | -- | -- | -- | -- | -- |
| 114-P1-IRM-42I | 114-P1-IRM-42I-20180702 | 7/2/2018 | 32 | N | JC69148 | Treatment | Intermediate | **167000** | **166000** | **154000** | **169000** | 183 | 3.46 | 7.19 | 5.95 | 21.34 | 0 | -- | 8.3 | **1220** | -- | 373 | -- | **103** | < 0.20 U |
| 114-P1-IRM-42I | 114-P1-IRM-42I-20180723 | 7/23/2018 | 32 | N | JC70405 | Treatment | Intermediate | **168000** | **168000** | **145000** | **155000** | 239 | 0.02 | 7.34 | 5.65 | 20.16 | 10.1 | -- | 8.5 | **1190** | -- | 243 | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-42I | 114-P1-IRM-42I-201808827_20180827 | 8/27/2018 | 32 | N | JC72621 | Treatment | Intermediate | **122000** | **123000 J** | **101000** | **108000** | -- | -- | -- | -- | -- | -- | -- | 7.6 | **1160** | -- | 264 | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-42I | 114-P1-IRM421-20180926 | 9/26/2018 | 32 | N | JC74616 | Treatment | Intermediate | **111000** | **111000** | **106000** | **111000** | -- | -- | -- | -- | -- | -- | -- | 8.0 | **1110** | -- | -- | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-42I | 114-P1-IRM-42I-20181030 | 10/30/2018 | 32 | N | JC76905 | Treatment | Intermediate | **95300** | **95500 J** | **101000** | **103000** | -- | -- | -- | -- | -- | -- | -- | 10.1 | **852** | -- | -- | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-42I | 114-P1-IRM-42I-181129 | 11/29/2018 | 32 | N | JC78732 | Treatment | Intermediate | **56500** | **56700** | **58300** | **52000** | -- | -- | -- | -- | -- | -- | -- | 14.9 | **372** | -- | 3.6 | -- | **220** | < 0.20 U |
| 114-P1-IRM-42I | 114-P1-IRM-42I-181218 | 12/18/2018 | 32 | N | JC79966 | Treatment | Intermediate | **75700** | **80000** | **81500** | **75300** | -- | -- | -- | -- | -- | -- | -- | 12.1 | **576** | -- | -- | -- | **156** | R |
| 114-P1-IRM-42I | 114-P1-IRM-42I-20190328 | 3/28/2019 | 32 | N | JC85346 | Treatment | Intermediate | **82200** | **84500** | **79100** | **80600** | -- | -- | -- | -- | -- | -- | -- | 7.2 | **1330** | -- | 111 | -- | **83.0** | 0.25 |
| 114-P1-IRM-42I | 114-P1-IRM-42I-190501 | 5/1/2019 | 32 | N | JC87310 | Treatment | Intermediate | **92800** | **90400** | **87600** | **90300** | -- | -- | -- | -- | -- | -- | -- | 6.7 | **1180** | -- | 68.6 | -- | **< 150 U** | < 0.20 UJ |
| 114-P1-IRM-4I | 114-P1-IRM-4I-20180124 | 1/24/2018 | 23 | N | JC59667 | Baseline | Intermediate | **942000** | **920000** | **834000** | **928000** | 214 | 0.71 | 7.05 | 5.43 | 11.79 | 47 | -- | 8.3 | **560** | < 2.0 U | 76.2 | **< 1000 U** | **804** | -- |
| 114-P1-IRM-4I | 114-P1-IRM-4I-16.50-07212021 | 7/21/2021 | 16.5 | N | JD28676 | Post-Treatment | Intermediate | **182** | **739** | 20 | **< 100 U** | -- | -- | -- | -- | -- | -- | -- | 218 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-4I | 114-P1-IRM-4I-21.50-07212021 | 7/21/2021 | 21.5 | N | JD28676 | Post-Treatment | Intermediate | **754** | **856** | **79 J** | 66 J | -- | -- | -- | -- | -- | -- | -- | 224 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-4I | 114-P1-IRM-4I-26.50-07212021 | 7/21/2021 | 26.5 | N | JD28676 | Post-Treatment | Intermediate | **193** | **912** | 24 | **< 100 U** | -- | -- | -- | -- | -- | -- | -- | 243 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-4I | 114-P1-IRM-4I-31.50-07212021 | 7/21/2021 | 31.5 | N | JD28676 | Post-Treatment | Intermediate | **192** | **1090** | < 10 U | 66 J | -- | -- | -- | -- | -- | -- | -- | 217 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | 12/26/2017 | 32.5 | N | JC58028 | N/A | Intermediate | -- | -- | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-5I | 114-P1-IRM-5I-32.5-20171226 | 12/26/2017 | 32.5 | N | JC58028A | N/A | Intermediate | -- | **644** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | 12/26/2017 | 37.5 | N | JC58028 | N/A | Intermediate | -- | -- | -- | **1700** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-5I | 114-P1-IRM-5I-37.5-20171226 | 12/26/2017 | 37.5 | N | JC58028A | N/A | Intermediate | -- | **4430** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | 12/27/2017 | 22.5 | N | JC58073 | N/A | Intermediate | -- | -- | -- | **710** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-5I | 114-P1-IRM-5I-22.5-20171227 | 12/27/2017 | 22.5 | N | JC58073A | N/A | Intermediate | -- | **3270** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | 12/27/2017 | 27.5 | N | JC58073 | N/A | Intermediate | -- | -- | -- | 8.7 J | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-5I | 114-P1-IRM-5I-27.5-20171227 | 12/27/2017 | 27.5 | N | JC58073A | N/A | Intermediate | -- | **542** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-5I | 114-P1-IRM-5I-20180123 | 1/23/2018 | 33 | N | JC59556 | Baseline | Intermediate | **427000** | **407000** | **315000** | **328000** | 116 | 0.08 | 8.24 | 5.53 | 12.06 | 0 | -- | 29.2 | **1010** | < 2.0 U | 537 J | **< 500 U** | **292** | -- |
| 114-P1-IRM-6 | 114-P1-IRM-6-20180116 | 1/16/2018 | 32 | N | JC58932 | Baseline | Intermediate | **708000** | **811000** | **601000** | **630000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 13000 U** | **< 1900 U** | -- |
| 114-P1-IRM-6 | 114-P1-IRM-6-20180116 | 1/16/2018 | 32 | N | JC59349 | Baseline | Intermediate | -- | -- | -- | -- | 213 | 20.01 | 6.82 | 4.46 | 11.88 | 29.6 | -- | 8.9 | **582** | < 2.0 U | 563 | -- | -- | -- |
| 114-P1-IRM-6 | 114-P1-IRM-6-24.00-07192021 | 7/19/2021 | 24 | N | JD28478 | Post-Treatment | Intermediate | **1080** | **1390** | R | 28 J | -- | -- | -- | -- | -- | -- | -- | 60.1 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-6 | 114-P1-IRM-6-29.00-DUP-07192021 | 7/19/2021 | 29 | FD | JD28478 | Post-Treatment | Intermediate | **1050** | **1300** | < 10 U | 37 J | -- | -- | -- | -- | -- | -- | -- | 97.3 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-6 | 114-P1-IRM-6-29.00-07192021 | 7/19/2021 | 29 | N | JD28478 | Post-Treatment | Intermediate | **958** | **1280** | 8.6 J | 14 J | -- | -- | -- | -- | -- | -- | -- | 97.8 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-6 | 114-P1-IRM-6-34.00-07192021 | 7/19/2021 | 34 | N | JD28478 | Post-Treatment | Intermediate | **887** | **1140** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 99.4 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-6 | 114-P1-IRM-6-39.00-07192021 | 7/19/2021 | 39 | N | JD28478 | Post-Treatment | Intermediate | **854** | **1120** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 68.2 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-7 | 114-P1-IRM-7-20180124 | 1/24/2018 | 33 | N | JC59667 | Baseline | Intermediate | **442000** | **441000** | **448000** | **427000** | 101 | 0.69 | 7.19 | 3.46 | 10.71 | 21.5 | -- | 7.2 | **439** | < 2.0 U | 409 | **< 1000 U** | **306** | -- |
| 114-P1-IRM-8 | 114-P1-IRM-8-20180116 | 1/16/2018 | 35 | N | JC58932 | Baseline | Intermediate | **579000** | **504000** | **434000** | **451000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 10000 U** | **< 1500 U** | -- |
| 114-P1-IRM-8 | 114-P1-IRM-8-20180116 | 1/16/2018 | 35 | N | JC59349 | Baseline | Intermediate | -- | -- | -- | -- | 226 | 20.01 | 6.68 | 4.09 | 12.19 | 23.9 | -- | 7.8 | **559** | < 2.0 U | 913 | -- | -- | -- |
| 114-P1-IRM-8 | 114-P1-IRM-8-20181029 | 10/29/2018 | 35 | N | JC76813 | Treatment | Intermediate | **40900** | **48200** | **40700** | **41700** | -- | -- | -- | -- | -- | -- | -- | 18.7 | **1100** | -- | -- | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-9 | 114-P1-IRM-9-20180116 | 1/16/2018 | 34 | N | JC58932 | Baseline | Intermediate | **490000** | **437000** | **415000** | **497000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 10000 U** | **< 1500 U** | -- |
| 114-P1-IRM-9 | 114-P1-IRM-9-20180116 | 1/16/2018 | 34 | N | JC59349 | Baseline | Intermediate | -- | -- | -- | -- | 273 | 0 | 7.06 | 4.41 | 12.02 | 53.6 | -- | 11.4 | **647** | < 2.0 U | 5080 | -- | -- | -- |
| 114-P1-IRM-9 | 114-P1-IRM-9-20181029 | 10/29/2018 | 34 | N | JC76813 | Treatment | Intermediate | **566000** | **569000** | **656000** | **678000** | -- | -- | -- | -- | -- | -- | -- | 20.7 | **1820** | -- | -- | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-9 | 114-P1-IRM-9-22.5-20210624 | 6/24/2021 | 22.5 | N | JD27239 | Post-Treatment | Intermediate | -- | **1840 J** | **< 500 U** | **< 500 U** | -- | -- | -- | -- | -- | -- | -- | 2330 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-9 | 114-P1-IRM-9-27.5-20210624 | 6/24/2021 | 27.5 | N | JD27239 | Post-Treatment | Intermediate | -- | **2300 J** | **< 500 U** | **< 500 U** | -- | -- | -- | -- | -- | -- | -- | 1790 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-9 | 114-P1-IRM-9-32.5-20210624 | 6/24/2021 | 32.5 | N | JD27239 | Post-Treatment | Intermediate | -- | **2660 J** | **< 500 U** | **< 500 U** | -- | -- | -- | -- | -- | -- | -- | 1920 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-9 | 114-P1-IRM-9-35.5-DUP-20210624 | 6/24/2021 | 35.5 | FD | JD27239 | Post-Treatment | Intermediate | -- | **3200 J** | **< 500 U** | **< 500 U** | -- | -- | -- | -- | -- | -- | -- | 1940 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-9 | 114-P1-IRM-9-35.5-20210624 | 6/24/2021 | 35.5 | N | JD27239 | Post-Treatment | Intermediate | -- | **2120 J** | **330 J** | **330 J** | -- | -- | -- | -- | -- | -- | -- | 1760 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-10D | 114-P1-IRM-10D-20180125 | 1/25/2018 | 44 | N | JC59745 | Baseline | Deep | **126000** | **124000** | **121000** | **122000** | 178 | 2.39 | 6.84 | 2.19 | 7.22 | 0 | -- | 3.1 | 243 | < 2.0 U | 40.4 | < 200 U | **< 300 U** | -- |
| 114-P1-IRM-10D | 114-P1-IRM-10D-20181029 | 10/29/2018 | 44 | N | JC76813 | Treatment | Deep | **55200** | **49200** | **46300** | **43800** | -- | -- | -- | -- | -- | -- | -- | 11.1 | **1430** | -- | -- | -- | **396** | < 0.20 U |
| 114-P1-IRM-18D | 114-P1-IRM-18D-20180118 | 1/18/2018 | 46 | N | JC59349 | Baseline | Deep | **155000** | **149000** | **133000** | **137000** | 169 | 0 | 7.7 | 2.74 | 11.18 | 5.4 | -- | 371 | 241 | < 2.0 U | 301 | **< 500 U** | **248** | -- |
| 114-P1-IRM-19D | 114-P1-IRM-19D-20180117 | 1/17/2018 | 54 | N | JC59023 | Baseline | Deep | **24200** | **24000** | **22800** | **22300** | 234 | 0 | 8.71 | 2.24 | 10.34 | 20.8 | -- | 2.2 | 245 | < 2.0 U | 41.2 | < 200 U | 34.8 | -- |
| 114-P1-IRM-20D | 114-P1-IRM-20D-20180117-DUP | 1/17/2018 | 57 | FD | JC59023 | Baseline | Deep | < 10 U | 24.1 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | 212 J | < 2.0 U | 13.3 | 206 | **213** | -- |
| 114-P1-IRM-20D | 114-P1-IRM-20D-20180117 | 1/17/2018 | 57 | N | JC59023 | Baseline | Deep | < 10 U | < 10 U | < 10 U | < 10 U | -113 | 0 | 8.45 | 10.4 | 8.32 | 7 | -- | < 1.0 U | 208 J | < 2.0 U | 15.3 | 199 | **212** | -- |
| 114-P1-IRM-21D | 114-P1-IRM-21D-20180118 | 1/18/2018 | 54 | N | JC59349 | Baseline | Deep | **98300** | **93500** | **73600** | **85900** | 33 | 6.49 | 8.36 | 3.43 | 3.06 | 9.6 | -- | 5.3 | **367** | < 2.0 U | 92.0 | **< 500 U** | **< 75 U** | -- |
| 114-P1-IRM-22D | 114-P1-IRM-22D-20180118 | 1/18/2018 | 60 | N | JC59349 | Baseline | Deep | **48600** | **48700** | **44200** | **46400** | 151 | 0.1 | 7.85 | 7.23 | 9.63 | 0 | -- | 11.0 | **1100** | < 2.0 U | 417 | < 200 U | **206** | -- |
| 114-P1-IRM-24D | 114-P1-IRM-24D-20180119 | 1/19/2018 | 44 | N | JC59431 | Baseline | Deep | **159000** | **154000** | **145000** | **154000** | 155 | 3.66 | 8.4 | 2.31 | 10.88 | 45.8 | -- | 5.1 | **280** | < 2.0 U | 254 | **< 500 U** | **< 75 U** | -- |
| 114-P1-IRM-25D | 114-P1-IRM-25D-20180118 | 1/18/2018 | 51 | N | JC59349 | Baseline | Deep | **243000** | **208000** | **192000** | **201000** | 74 | 0 | 8.35 | 6.46 | 12.46 | 30 | -- | 22.2 | **1260** | < 2.0 U | 509 | **< 500 U** | **316** | -- |
| 114-P1-IRM-26D | 114-P1-IRM-26D-20180119 | 1/19/2018 | 57 | N | JC59431 | Baseline | Deep | **938000** | **978000** | **893000** | **920000** | 94 | 0 | 8.94 | 8.63 | 12.03 | 25.7 | -- | 34.1 | **753** | < 2.0 U | 697 | **< 10000 U** | **268** | -- |
| 114-P1-IRM-27D | 114-P1-IRM-27D-57.0-20171221 | 12/21/2017 | 57 | N | JC57820 | N/A | Deep | -- | **71700** | -- | **63100** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P1-IRM-27D | 114-P1-IRM-27D-62.0-20171221 | 12/21/2017 | 62 | N | JC57820 | N/A | Deep | -- | **67500** | -- | **59500** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-27D | 114-P1-IRM-27D-47.0-20171222 | 12/22/2017 | 47 | N | JC57943 | N/A | Deep | -- | -- | -- | **51000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-27D | 114-P1-IRM-27D-47.0-20171222 | 12/22/2017 | 47 | N | JC57943A | N/A | Deep | -- | **61000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-27D | 114-P1-IRM-27D-52.0-20171222 | 12/22/2017 | 52 | N | JC57943 | N/A | Deep | -- | -- | -- | **65600** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-27D | 114-P1-IRM-27D-52.0-20171222 | 12/22/2017 | 52 | N | JC57943A | N/A | Deep | -- | **79000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-27D | 114-P1-IRM-27D-20180122 | 1/22/2018 | 43 | N | JC59495 | Baseline | Deep | **52200** | **57300** | **47400** | **49400** | 27 | 7.79 | 8.96 | 2.14 | 14.33 | 0.1 | -- | 5.7 | **423** | < 2.0 U | 198 | < 200 U | **149** | -- |
| 114-P1-IRM-27D | 114-IRM-27D-20180502 | 5/2/2018 | 43 | N | JC65331 | Treatment | Deep | **115000** | **119000** | **93500** | **103000** | 84 | 0.61 | 9.44 | 2.69 | 21.49 | 7.3 | -- | 9.4 | **833** | -- | 331 | -- | **179** | < 0.20 U |
| 114-P1-IRM-27D | 114-P1-MW-27D-20180604 | 6/4/2018 | 43 | N | JC67259 | Treatment | Deep | **67800** | **68800** | **71500** | **74100** | 50 | 2.01 | 9.14 | 2.44 | 17.61 | 1.8 | -- | 7.5 | -- | -- | 325 | -- | **161** | < 0.20 U |
| 114-P1-IRM-27D | 114-P1-MW-27D-20180604 | 6/4/2018 | 43 | N | JC67259A | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 50 U | -- | -- | -- | -- | -- |
| 114-P1-IRM-27D | 114-P1-IRM-27D_20180705 | 7/5/2018 | 43 | N | JC69286 | Treatment | Deep | **91600** | **91000** | **85800** | **84100** | -12 | 2.84 | 8.18 | 2.96 | 22.66 | 4.1 | -- | 10.2 | **782** | -- | 599 | -- | **206** | < 0.20 U |
| 114-P1-IRM-27D | 114-P1-IRM-27D-20180723 | 7/23/2018 | 43 | N | JC70405 | Treatment | Deep | **101000** | **99400** | **85900** | **95300** | 127 | 0 | 4.21 | 3.16 | 17.97 | 8.7 | -- | 12.5 | **885** | -- | 555 | -- | **233** | < 0.20 U |
| 114-P1-IRM-27D | 114-IRM27D-180830 | 8/30/2018 | 43 | N | JC72843 | Treatment | Deep | **132000** | **136000** | **99900** | **109000** | -- | -- | -- | -- | -- | -- | -- | 15.6 | **1010** | -- | 552 | -- | **315** | < 0.20 U |
| 114-P1-IRM-27D | 114-P1-IRM-27D_20180925 | 9/25/2018 | 43 | N | JC74535 | Treatment | Deep | **142000** | **146000** | **141000** | **142000** | -- | -- | -- | -- | -- | -- | -- | 19.3 | **1090** | -- | -- | -- | **389** | < 0.20 U |
| 114-P1-IRM-28D | 114-P1-IRM-28D-20180124 | 1/24/2018 | 47 | N | JC59667 | Baseline | Deep | **2460** | **3000** | **2100** | **2200** | 85 | 2.49 | 8.94 | 2.21 | 9.82 | 20.1 | -- | 17.6 | **494** | < 2.0 U | 164 | < 100 U | **109** | -- |
| 114-P1-IRM-28D | 114-P1-IRM-28D-20180430 | 4/30/2018 | 47 | N | JC65192 | Treatment | Deep | **66000** | **65400** | **30400** | **32400** | 101 | 2.14 | 9.1 | 3.89 | 11.62 | 20.1 | -- | 11.8 | **485** | -- | 183 | -- | **1390** | < 0.20 UJ |
| 114-P1-IRM-28D | 114-P1-IRM-28D-20180529 | 5/29/2018 | 47 | N | JC66923 | Treatment | Deep | **68100** | **55900** | **33600** | **34600** | 164 | 0.89 | 9.02 | 2.6 | 18.76 | 20.7 | -- | 13.0 | -- | -- | 211 | -- | **820** | < 0.20 U |
| 114-P1-IRM-28D | 114-P1-IRM-28D-20180529 | 5/29/2018 | 47 | N | JC66923B | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **586 J** | -- | -- | -- | -- | -- |
| 114-P1-IRM-28D | 114-P1-IRM-28D-20180702 | 7/2/2018 | 47 | N | JC69148 | Treatment | Deep | **109000** | **148000** | **132000** | **136000** | -68 | 0 | 8.77 | 5.05 | 25.95 | 4.6 | -- | 21.3 | **699** | -- | 357 | -- | **253** | < 0.20 U |
| 114-P1-IRM-28D | 114-P1-IRM-28D-20180723 | 7/23/2018 | 47 | N | JC70405 | Treatment | Deep | **109000** | **138000** | **111000** | **116000** | -102 | 0 | 8.3 | 4.97 | 22.42 | 19.7 | -- | 20.1 | **829** | -- | 386 | -- | **309** | < 0.20 U |
| 114-P1-IRM-28D | 114-P1-IRM-28D-201808827_20180827 | 8/27/2018 | 47 | N | JC72621 | Treatment | Deep | **89300** | **99400 J** | **89200** | **94300** | -- | -- | -- | -- | -- | -- | -- | 16.4 | **799** | -- | 242 | -- | **1370** | < 0.20 U |
| 114-P1-IRM-28D | 114-P1-IRM-28D-20180924 | 9/24/2018 | 47 | N | JC74476 | Treatment | Deep | **226000** | **220000** | **219000** | **236000 J** | -- | -- | -- | -- | -- | -- | -- | 47.1 | **1270** | -- | -- | -- | **359** | < 0.20 U |
| 114-P1-IRM-28D | 114-P1-IRM-28D-181126 | 11/26/2018 | 47 | N | JC78527 | Treatment | Deep | **91.0** | **84.5** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 3980 | **574** | -- | 32.7 | -- | **228** | < 0.20 U |
| 114-P1-IRM-29D | 114-P1-IRM-29D-20180118 | 1/18/2018 | 57 | N | JC59349 | Baseline | Deep | **594000** | **554000** | **492000** | **513000** | 68 | 1.92 | 8.6 | 4.33 | 10.47 | 12.5 | -- | 22.1 | **532** | < 2.0 U | 409 | **< 500 U** | **< 1500 U** | -- |
| 114-P1-IRM-29D | 114-P1-IRM-29D-180829 | 8/29/2018 | 57 | N | JC72768 | Treatment | Deep | **873000** | **865000** | **763000** | **788000** | -- | -- | -- | -- | -- | -- | -- | 46.7 | **1010** | -- | 656 | -- | **284** | < 0.20 U |
| 114-P1-IRM-29D | 114-P1-IRM29D-20180924 | 9/24/2018 | 57 | N | JC74476 | Treatment | Deep | **530000** | **604000** | **475000** | **490000 J** | -- | -- | -- | -- | -- | -- | -- | 41.3 | **1100** | -- | -- | -- | **204** | < 0.20 U |
| 114-P1-IRM-29D | 114-P1-IRM-29D-181126 | 11/26/2018 | 57 | N | JC78527 | Treatment | Deep | **114** | **153** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 4320 | **797** | -- | 20.3 | -- | **239** | < 0.20 U |
| 114-P1-IRM-30D | 114-P1-IRM-30D-20180122 | 1/22/2018 | 55 | N | JC59495 | Baseline | Deep | **92.8** | **1120** | < 10 U | < 10 U | -149 | 1.18 | 8.05 | 1.42 | 12.37 | 9.4 | -- | 5.6 | 204 | < 2.0 U | 90.1 | **304** | **88.7** | -- |
| 114-P1-IRM-31D | 114-P1-IRM-31D-20180119 | 1/19/2018 | 54 | N | JC59431 | Baseline | Deep | **71900 J** | **55500 J** | **72900** | **77200** | 5 | 20.01 | 9.9 | 1.41 | 11.42 | 20.1 | -- | 13.4 | **268** | < 2.0 U | 250 | **< 500 U** | **< 75 U** | -- |
| 114-P1-IRM-32D | 114-P1-IRM-32D-20180122 | 1/22/2018 | 55 | N | JC59495 | Baseline | Deep | **16400** | **33500** | **29400** | **34900** | 73 | 5.6 | 8.87 | 1.82 | 13.3 | 9.5 | -- | 5.5 | **368** | < 2.0 U | 62.9 | < 100 U | 33.4 | -- |
| 114-P1-IRM-33D | 114-P1-IRM-33D-20180124 | 1/24/2018 | 37 | N | JC59667 | Baseline | Deep | **149000** | **141000** | R | R | -79 | 0.55 | 11.64 | 2.89 | 11.5 | 18.5 | -- | 12.7 | **493** | < 2.0 U | 240 | **< 1000 U** | **< 150 U** | -- |
| 114-P1-IRM-33D | 114-P1-IRM-33D-20180501 | 5/1/2018 | 37 | N | JC65257 | Treatment | Deep | **48000** | **44900** | **41100** | **43000** | 183 | 0 | 8.36 | 1.2 | 14.68 | 8.7 | -- | 4.5 | **256** | -- | 22.8 | -- | **62.8** | < 0.20 U |
| 114-P1-IRM-33D | 114-P1-IRM-33D_20180106 | 6/1/2018 | 37 | N | JC67165 | Treatment | Deep | **398000** | **400000** | **405000** | **420000** | 60 | 0.86 | 10.42 | 5.28 | 17.82 | 1.3 | -- | 30.3 | -- | -- | 601 | -- | **< 1500 U** | R |
| 114-P1-IRM-33D | 114-P1-IRM-33D-20180106 | 6/1/2018 | 37 | N | JC67165A | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **1040** | -- | -- | -- | -- | -- |
| 114-P1-IRM-33D | 114-P1-IRM-33D-20180702 | 7/2/2018 | 37 | N | JC69148 | Treatment | Deep | **440000** | **449000** | **424000** | **445000** | -27 | 0 | 11.02 | 5.07 | 28.27 | 4.5 | -- | 31.1 | **959** | -- | 617 | -- | **92.0** | < 0.20 U |
| 114-P1-IRM-33D | 114-P1-IRM-33D-20180724 | 7/24/2018 | 37 | N | JC70485 | Treatment | Deep | **473000** | **470000** | **414000** | **390000** | 64 | 0 | 10.18 | 5.3 | 22.15 | 7.9 | -- | 27.1 | **1030** | -- | 651 | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-33D | 114-P1-IRM-33D-201808827_20180827 | 8/27/2018 | 37 | N | JC72621 | Treatment | Deep | **433000** | **406000 J** | **370000** | **395000** | -- | -- | -- | -- | -- | -- | -- | 26.5 | **1170** | -- | 576 | -- | **177** | < 0.20 U |
| 114-P1-IRM-33D | 114-P1-IRM33D-20180924 | 9/24/2018 | 37 | N | JC74476 | Treatment | Deep | **88700** | **94900** | **42100** | **46600 J** | -- | -- | -- | -- | -- | -- | -- | 9.6 | **504** | -- | -- | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-33D | 114-P1-IRM-33D-181101 | 11/1/2018 | 37 | N | JC77088 | Treatment | Deep | **29300 J** | **29800 J** | **25600** | **28300** | -- | -- | -- | -- | -- | -- | -- | 4.0 | **312** | -- | -- | -- | **185** | < 0.20 UJ |
| 114-P1-IRM-33D | 114-P1-IRM-33D-181126 | 11/26/2018 | 37 | N | JC78527 | Treatment | Deep | **25500** | **24500** | **19800** | **21100** | -- | -- | -- | -- | -- | -- | -- | 3.7 | **326** | -- | 7.1 | -- | **152** | < 0.20 U |
| 114-P1-IRM-33D | 114-P1-IRM-33D-20190503 | 5/3/2019 | 37 | N | JC87509 | Treatment | Deep | **99300** | **46300** | **41800** | **42700** | -- | -- | -- | -- | -- | -- | -- | 11.5 | **562** | -- | 202 | -- | **< 300 U** | < 0.20 U |
| 114-P1-IRM-33D | 114-P1-IRM-33D-191202 | 12/2/2019 | 37 | N | JC99426 | Treatment | Deep | **10300** | **9600** | **10100** | **10200** | -- | -- | -- | -- | -- | -- | -- | 4.4 | **400** | -- | 14.5 | -- | **172** | -- |
| 114-P1-IRM-33D | 114-P1-IRM-33D-20191230 | 12/30/2019 | 37 | N | JD1000 | Treatment | Deep | **30600** | **35600** | **27400** | **27600** | -- | -- | -- | -- | -- | -- | -- | 155 | **420** | -- | 1280 J | -- | **184** | -- |
| 114-P1-IRM-33D | 114-P1-IRM-33D-20200130 | 1/30/2020 | 37 | N | JD2521 | Treatment | Deep | **11600** | **11900** | **5700 J** | **730 J** | -- | -- | -- | -- | -- | -- | -- | 22.1 | **361** | -- | 1270 | -- | **301** | -- |
| 114-P1-IRM-33D | 114-P1-IRM-33D-20200228 | 2/28/2020 | 37 | N | JD3873 | Treatment | Deep | **1210** | **2380 J** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 28.2 | **351** | -- | 2020 J | -- | **397** | -- |
| 114-P1-IRM-33D | 114-P1-IRM-33D-20200327 | 3/27/2020 | 37 | N | JD5288 | Treatment | Deep | **705** | **1640** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 19.5 | **372** | -- | 1650 J | -- | **431** | -- |
| 114-P1-IRM-34D | 114-P1-IRM-34D-20180125 | 1/25/2018 | 43 | N | JC59745 | Baseline | Deep | **8400** | **8670** | **8200** | **7600** | 144 | 0.11 | 7.49 | 1.3 | 6.89 | 11.8 | -- | 2.9 | 204 | < 2.0 U | 4.3 | < 100 U | **51.9** | -- |
| 114-P1-IRM-34D | 114-IRM-34D-20180502 | 5/2/2018 | 43 | N | JC65331 | Treatment | Deep | **439000** | **429000** | **378000** | **393000** | -37 | 0.15 | 11.15 | 6.37 | 24.21 | 51.6 | -- | 25.4 | **1360** | -- | 473 | -- | **< 750 U** | < 0.20 U |
| 114-P1-IRM-34D | 114-P1-IRM-34D-BD20180601 | 6/1/2018 | 43 | FD | JC67165 | Treatment | Deep | **28300** | **26800** | **29100** | **30000** | -- | -- | -- | -- | -- | -- | -- | 3.5 | -- | -- | 70.8 J | -- | **56.6** | < 0.20 U |
| 114-P1-IRM-34D | 114-P1-IRM-34D-BD20180601 | 6/1/2018 | 43 | FD | JC67165A | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 222 | -- | -- | -- | -- | -- |
| 114-P1-IRM-34D | 114-P1-IRM-34D_20180106 | 6/1/2018 | 43 | N | JC67165 | Treatment | Deep | **27700** | **25700** | **28300** | **30000** | 102 | 0.8 | 8.14 | 1.28 | 17.56 | 5.1 | -- | 3.6 | -- | -- | 98.4 | -- | **56.0** | < 0.20 U |
| 114-P1-IRM-34D | 114-P1-IRM-34D-20180106 | 6/1/2018 | 43 | N | JC67165A | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 215 | -- | -- | -- | -- | -- |
| 114-P1-IRM-34D | 114-P1-IRM-34D-20180702 | 7/2/2018 | 43 | N | JC69148 | Treatment | Deep | **41900** | **42000** | **45700** | **43100** | 97 | 0 | 8.74 | 1.18 | 27.77 | 10.2 | -- | 4.4 | 245 | -- | 240 | -- | **< 75 U** | < 0.20 U |
| 114-P1-IRM-34D | 114-P1-IRM-34D-20180724 | 7/24/2018 | 43 | N | JC70485 | Treatment | Deep | **51800** | **49900** | **47800** | **53700** | 160 | 0.98 | 7.98 | 1.17 | 20.78 | 9.5 | -- | 4.7 | **253** | -- | 144 | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-34D | 114-P1-IRM-34D-201808827_20180827 | 8/27/2018 | 43 | N | JC72621 | Treatment | Deep | **64700** | **63300 J** | **59800** | **64700** | -- | -- | -- | -- | -- | -- | -- | 5.2 | **337** | -- | 186 | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-34D | 114-P1-IRM-34D-181101 | 11/1/2018 | 43 | N | JC77088 | Treatment | Deep | **38400 J** | **39400 J** | **39700** | **38400** | -- | -- | -- | -- | -- | -- | -- | 5.0 | 234 | -- | -- | -- | **< 150 U** | < 0.20 UJ |
| 114-P1-IRM-34D | 114-P1-IRM-34D-181126 | 11/26/2018 | 43 | N | JC78527 | Treatment | Deep | **39300** | **38300** | **27600** | **29500** | -- | -- | -- | -- | -- | -- | -- | 3.5 | 249 | -- | 154 | -- | **110** | < 0.20 U |
| 114-P1-IRM-34D | 114-P1-IRM-34D-20190326 | 3/26/2019 | 43 | N | JC85176 | Treatment | Deep | **29900** | **30000** | **28300** | **29100** | -- | -- | -- | -- | -- | -- | -- | 3.8 | **326** | -- | 223 | -- | **114** | < 0.20 U |
| 114-P1-IRM-34D | 114-P1-IRM-34D-20190503 | 5/3/2019 | 43 | N | JC87509 | Treatment | Deep | **46600** | **47300** | **46000** | **44200** | -- | -- | -- | -- | -- | -- | -- | 3.9 | **300** | -- | 166 | -- | **140** | < 0.20 U |
| 114-P1-IRM-34D | 114-P1-IRM-34D-20191030 | 10/30/2019 | 43 | N | JC97696 | Treatment | Deep | **42100** | **41200** | **40500** | **41600** | -- | -- | -- | -- | -- | -- | -- | 4.9 | **376** | -- | 1940 | -- | **156** | < 0.20 U |
| 114-P1-IRM-34D | 114-P1-IRM-34D-191202 | 12/2/2019 | 43 | N | JC99426 | Treatment | Deep | **18800** | **18800** | **20700** | **20400** | -- | -- | -- | -- | -- | -- | -- | 11.1 | **433** | -- | 1310 | -- | **164** | -- |
| 114-P1-IRM-34D | 114-P1-IRM-34D-20191230 | 12/30/2019 | 43 | N | JD1000 | Treatment | Deep | **12800** | **12500** | **12700** | **12200** | -- | -- | -- | -- | -- | -- | -- | 51.7 | **361** | -- | 1830 J | -- | **193** | -- |
| 114-P1-IRM-34D | 114-P1-IRM-34D-20200130 | 1/30/2020 | 43 | N | JD2521 | Treatment | Deep | **5240** | **5650** | **4100** | **4100** | -- | -- | -- | -- | -- | -- | -- | 49.1 | **335** | -- | 1380 | -- | **241** | -- |
| 114-P1-IRM-34D | 114-P1-IRM-34D-20200228 | 2/28/2020 | 43 | N | JD3873 | Treatment | Deep | **1730** | **2650 J** | **900** | **890** | -- | -- | -- | -- | -- | -- | -- | 44.5 | **273** | -- | 2170 | -- | **261** | -- |
| 114-P1-IRM-34D | 114-P1-IRM-34D-20200327 | 3/27/2020 | 43 | N | JD5288 | Treatment | Deep | **1090** | **2160** | **460** | **390** | -- | -- | -- | -- | -- | -- | -- | 40.1 | **272** | -- | 1020 | -- | **325** | < 0.20 U |
| 114-P1-IRM-35D | 114-P1-IRM-35D-20180122 | 1/22/2018 | 55 | N | JC59495 | Baseline | Deep | **856000** | **806000** | **745000** | **715000** | 177 | 0 | 7.8 | 4.74 | 12.87 | 85.3 | -- | 11.1 | **471** | < 2.0 U | 378 | **< 500 U** | **< 1900 U** | -- |
| 114-P1-IRM-35D | 114-P1-IRM-35D-20191230 | 12/30/2019 | 55 | N | JD1000 | Treatment | Deep | **40600** | **42500** | **41600** | **41300** | -- | -- | -- | -- | -- | -- | -- | 5.9 | **299** | -- | 8.9 J | -- | **785** | -- |
| 114-P1-IRM-37D | 114-P1-IRM-37D-20180117 | 1/17/2018 | 38 | N | JC59023 | Baseline | Deep | **87900** | **91800** | **108000** | **99400** | 2 | 20.01 | 9.36 | 1.73 | 8.6 | 1.2 | -- | 29.7 | **486** | < 2.0 U | 22.3 | **< 500 U** | **546** | -- |
| 114-P1-IRM-37D | 114-P1-IRM-37D-20180501 | 5/1/2018 | 38 | N | JC65257 | Treatment | Deep | **183000** | **190000** | **161000** | **164000** | 39 | 20.01 | 9.7 | 2.97 | 10.77 | 18.2 | -- | 8.4 | **753** | -- | 350 | -- | **353** | < 0.20 U |
| 114-P1-IRM-37D | 114-P1-IRM-37D-20180529 | 5/29/2018 | 38 | N | JC66923 | Treatment | Deep | **121000** | **174000** | **182000** | **189000** | -93 | 0.3 | 7.96 | 6.87 | 22.92 | 59.7 | -- | 7.7 | -- | -- | 258 | -- | **648** | < 0.20 U |
| 114-P1-IRM-37D | 114-P1-IRM-37D-20180529 | 5/29/2018 | 38 | N | JC66923B | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **639 J** | -- | -- | -- | -- | -- |
| 114-P1-IRM-37D | 114-P1-IRM-37D-181129 | 11/29/2018 | 38 | N | JC78732 | Treatment | Deep | **157000** | **153000** | **130000** | **137000** | -- | -- | -- | -- | -- | -- | -- | 10.7 | **1020** | -- | 17.7 | -- | **< 750 U** | < 0.20 U |
| 114-P1-IRM-37D | 114-P1-IRM-37D_20181220 | 12/20/2018 | 38 | N | JC80137 | Treatment | Deep | **88800 J** | **92100 J** | **48300** | **54800** | -- | -- | -- | -- | -- | -- | -- | 15.1 | **1250** | -- | -- | -- | **158** | R |
| 114-P1-IRM-37D | 114-P1-IRM-37D-20190327 | 3/27/2019 | 38 | N | JC85279 | Treatment | Deep | **129000** | **142000** | **103000** | **105000** | -- | -- | -- | -- | -- | -- | -- | 10.7 | **1330** | -- | 253 | -- | **< 600 U** | < 0.20 U |
| 114-P1-IRM-37D | 114-P1-IRM-37D-20190501 | 5/1/2019 | 38 | N | JC87310 | Treatment | Deep | **90500** | **103000** | **83600** | **82400** | -- | -- | -- | -- | -- | -- | -- | 10.9 | **1170** | -- | 296 J | -- | **< 150 U** | < 0.20 UJ |
| 114-P1-IRM-37D | 114-P1-IRM-37D-30.5-20190530 | 5/30/2019 | 30.5 | N | JC88958 | Treatment | Deep | **117000** | **142000** | **108000** | **113000** | -- | -- | -- | -- | -- | -- | -- | 10.9 | **1140** | -- | 487 J | -- | < 30 U | R |
| 114-P1-IRM-37D | 114-P1-IRM-37D-35.5-20190530 | 5/30/2019 | 35.5 | N | JC88958 | Treatment | Deep | **172000** | **180000** | **178000** | **171000** | -- | -- | -- | -- | -- | -- | -- | 9.3 | **986** | -- | 387 J | -- | **< 600 U** | R |
| 114-P1-IRM-37D | 114-P1-IRM-37D-20200130 | 1/30/2020 | 38 | N | JD2521 | Treatment | Deep | **200000** | **212000** | **207000** | **214000** | -- | -- | -- | -- | -- | -- | -- | 8.1 | **757** | -- | 348 | -- | **< 750 U** | -- |
| 114-P1-IRM-37D | 114-P1-IRM-37D-20200228 | 2/28/2020 | 38 | N | JD3873 | Treatment | Deep | **210000** | **275000 J** | **222000** | **224000** | -- | -- | -- | -- | -- | -- | -- | 9.0 | **781** | -- | 41.5 | -- | **< 1500 U** | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-24.0-20171222 | 12/22/2017 | 24 | N | JC57943 | N/A | Deep | -- | -- | -- | **210000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-24.0-20171222 | 12/22/2017 | 24 | N | JC57943A | N/A | Deep | -- | **263000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-29.0-20171222 | 12/22/2017 | 29 | N | JC57943 | N/A | Deep | -- | -- | -- | **184000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-29.0-20171222 | 12/22/2017 | 29 | N | JC57943A | N/A | Deep | -- | **222000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-34.0-20171222 | 12/22/2017 | 34 | N | JC57943 | N/A | Deep | -- | -- | -- | **992000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-34.0-20171222 | 12/22/2017 | 34 | N | JC57943A | N/A | Deep | -- | **205000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-39.0-20171222 | 12/22/2017 | 39 | N | JC57943 | N/A | Deep | -- | -- | -- | **116000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-39.0-20171222 | 12/22/2017 | 39 | N | JC57943A | N/A | Deep | -- | **1300000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20180118 | 1/18/2018 | 57 | N | JC59349 | Baseline | Deep | **265000** | **311000** | **172000** | **289000** | 97 | 1.94 | 7.3 | 1.78 | 10.77 | 171 | -- | 4.7 | 219 | < 2.0 U | 50.0 | **< 500 U** | **< 750 U** | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20180430 | 4/30/2018 | 57 | N | JC65192 | Treatment | Deep | **42900** | **44100** | **46100** | **46800** | 201 | 2.79 | 7.62 | 3.82 | 12.56 | 174 | -- | 3.7 | 189 | -- | 63.9 | -- | **505** | < 0.20 UJ |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20180529 | 5/29/2018 | 57 | N | JC66923 | Treatment | Deep | **63200** | **63100** | **42200** | **41800** | 92 | 0.48 | 7.63 | 2.32 | 22.18 | 13.1 | -- | 3.6 | -- | -- | 47.0 | -- | **561** | < 0.20 U |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20180529 | 5/29/2018 | 57 | N | JC66923B | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 66.6 J | -- | -- | -- | -- | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20180702 | 7/2/2018 | 57 | N | JC69148 | Treatment | Deep | **66200** | **62200** | **57300** | **65900** | 305 | 0 | 7.44 | 1.74 | 20.46 | 0.4 | -- | 3.3 | 209 | -- | 73.9 | -- | **503** | < 0.20 U |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20180723 | 7/23/2018 | 57 | N | JC70405 | Treatment | Deep | **65200** | **65100** | **63200** | **72700** | 341 | 0.73 | 6.7 | 2.37 | 20.7 | 2.2 | -- | 2.8 | 209 | -- | 62.6 | -- | **505** | < 0.20 U |
| 114-P1-IRM-40D | 114-P1-IRM-40D-201808827_20180827 | 8/27/2018 | 57 | N | JC72621 | Treatment | Deep | **78200** | **86100 J** | **62700** | **61000** | -- | -- | -- | -- | -- | -- | -- | 3.2 | **275** | -- | 41.2 | -- | **559** | < 0.20 U |
| 114-P1-IRM-40D | 114-P1-IRM40D-20180924 | 9/24/2018 | 57 | N | JC74476 | Treatment | Deep | **86600** | **72500** | **66400** | **75800 J** | -- | -- | -- | -- | -- | -- | -- | 2.9 | **251** | -- | -- | -- | **610** | < 0.20 U |
| 114-P1-IRM-40D | 114-P1-IRM-40D-181101 | 11/1/2018 | 57 | N | JC77088 | Treatment | Deep | **88100 J** | **84100 J** | **77900** | **79800** | -- | -- | -- | -- | -- | -- | -- | 3.8 | **265** | -- | -- | -- | **566** | < 0.20 UJ |
| 114-P1-IRM-40D | 114-P1-IRM-40D-181126 | 11/26/2018 | 57 | N | JC78527 | Treatment | Deep | **90300** | **95500** | **68500** | **72000** | -- | -- | -- | -- | -- | -- | -- | 3.0 | **293** | -- | 80.5 | -- | **600** | < 0.20 U |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20190326 | 3/26/2019 | 57 | N | JC85176 | Treatment | Deep | **84100** | **85400** | **71000** | **79100** | -- | -- | -- | -- | -- | -- | -- | 3.2 | **456** | -- | 73.5 | -- | **584** | < 0.20 U |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20190503 | 5/3/2019 | 57 | N | JC87509 | Treatment | Deep | **89500** | **86000** | **90400** | **91800** | -- | -- | -- | -- | -- | -- | -- | 3.1 | **344** | -- | 2.5 | -- | **531** | < 0.20 U |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20190924 | 9/24/2019 | 57 | N | JC95567 | Treatment | Deep | **447000** | **432000** | **419000** | **434000** | -- | -- | -- | -- | -- | -- | -- | 4.2 | **420** | -- | 181 | -- | **502** | < 0.20 U |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20191030 | 10/30/2019 | 57 | N | JC97696 | Treatment | Deep | **99400** | **102000** | **111000** | **110000** | -- | -- | -- | -- | -- | -- | -- | 3.3 | **381** | -- | 190 | -- | **574** | < 0.20 U |
| 114-P1-IRM-40D | 114-P1-IRM-40D-191202 | 12/2/2019 | 57 | N | JC99426 | Treatment | Deep | **104000** | **104000** | **107000** | **115000** | -- | -- | -- | -- | -- | -- | -- | 3.7 | **385** | -- | 75.6 | -- | **568** | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20191230 | 12/30/2019 | 57 | N | JD1000 | Treatment | Deep | **115000** | **119000** | **118000** | **131000** | -- | -- | -- | -- | -- | -- | -- | 3.9 | **385** | -- | 42.2 | -- | **582** | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20200130 | 1/30/2020 | 57 | N | JD2521 | Treatment | Deep | **130000** | **127000** | **119000** | **129000** | -- | -- | -- | -- | -- | -- | -- | 3.9 | **399** | -- | 227 | -- | **< 750 U** | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20200228 | 2/28/2020 | 57 | N | JD3873 | Treatment | Deep | **132000** | **119000 J** | **124000** | **124000** | -- | -- | -- | -- | -- | -- | -- | 3.6 | **385** | -- | 316 | -- | **< 1500 U** | -- |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20201120 | 11/20/2020 | | N | JD16639 | Treatment | Deep | **248000** | **193000** | **221000** | **228000** | 228 | 6.6 | 7.22 | 1.82 | -- | 10.8 | -- | 3.7 | **395** | -- | 234 | -- | **740** | < 0.20 U |
| | | | | | | | | **230000** | | | | | | | | | | | | | | | | **741** | |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20201218 | 12/18/2020 | | N | JD17977 | Treatment | Deep | **329000** | **311000** | **283000** | **285000** | 128.1 | 2.62 | 7.38 | 2.621 | -- | -- NM | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20210114 | 1/14/2021 | | N | JD19032 | Treatment | Deep | **345000** | **282000** | **276000** | **307000** | 194.9 | 3.45 | 7.26 | 2.371 | -- | 3.77 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20210218 | 2/18/2021 | | N | JD20490 | Treatment | Deep | **316000** | **266000** | **297000** | **261000** | 126.7 | 4.37 | 7.44 | 0.991 | -- | 1.26 | -- | 3.2 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20210319 | 3/19/2021 | | N | JD22003 | Treatment | Deep | **310000** | **308000** | **266000** | **269000** | 237 | 4.19 | 7.33 | 2.235 | -- | 6.5 | -- | 3.3 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20210429 | 4/29/2021 | | N | 4602331931 | Treatment | Deep | **286000** | **304000** | **314000** | **308000 J+** | 220.5 | 5.7 | 7.19 | 2.5 | -- | 10.22 | -- | 3.4 | **369** | -- | 240 | **< 600 U** | **628** | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20210525 | 5/25/2021 | | N | 4602351281 | Treatment | Deep | **286000** | **268000** | **267000 H** | **308000 H** | 225.2 | 6.01 | 7.28 | 2.506 | -- | -- NM | -- | 3.9 | **374** | -- | 340 | **< 600 U** | **625** | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-65.0-20210625 | 6/25/2021 | 65 | N | 4602374061 | Treatment | Deep | **449000** | **394000** | **435000** | **430000** | 180.4 | 0.7 | 7.52 | 2.475 | -- | 4.68 | -- | 3.9 | **458** | -- | -- | **< 2400 U** | **484** | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20210812 | 8/12/2021 | | N | 4602409051 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.7 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20210824 | 8/24/2021 | | N | 4602414891 | Treatment | Deep | **190000** | **189000** | **191000 F1** | **183000** | 169.9 | 2.53 | 7.75 | 2.373 | -- | 4.38 | -- | 4.8 F1 | **377 F1** | -- | 210 | **< 1200 U** | **476** | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20210824-X | 8/24/2021 | | FD | 4602414891 | Treatment | Deep | **188000** | **234000** | **188000 H** | **188000 H** | -- | -- | -- | -- | -- | -- | -- | 5.2 | **380** | -- | 220 | **< 1200 U** | **480** | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20210921 | 9/21/2021 | | N | 4602432721 | Treatment | Deep | **271000** | **256000** | **265000** | **259000** | 80.3 | 2.81 | 7.81 | 2.678 | -- | 1.66 | -- | 5.9 | **345** | -- | 210 | < 240 U | **442** | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20211007 | 10/7/2021 | | N | 4602449131 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.4 F1 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20211104 | 11/4/2021 | | N | 4602468981 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.1 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20211118 | 11/18/2021 | | N | 4602475481 | Treatment | Deep | **138000** | **140000** | **136000** | **143000** | -- | -- | -- | -- | -- | -- | -- | 4.8 | **330 F1** | -- | 170 | < 120 U | **188** | -- |
| 114-P1-IRM-40D | 114-P1-IRM 40D | 12/2/2021 | | N | 4602484621 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.0 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20211215 | 12/15/2021 | | N | 4602491921 | Treatment | Deep | **5190** | **6550** | **579** | **35800** | -159.1 | 0.75 | 7.12 | 2.1 | -- | 190.34 *** | -- | 7.3 | **526** | -- | 470 | < 120 U | **767** | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20220111 | 1/11/2022 | | N | 4602504631 | Treatment | Deep | **58900** | **62500** | **62000** | **64200** | 12 | 4.71 | 8.72 | 2.32 | -- | 17.6 | -- | 43.9 | 247 | -- | 69 | < 120 U | **51.1** | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20220217 | 2/17/2022 | | N | 4602526891 | Treatment | Deep | **63900** | **91300** | **55400** | **56500** | -171.8 | 3.75 | 9.68 | 2.417 | -- | 12.1 | -- | 27.5 | **264** | -- | 75 | < 240 U | **81.8** | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20220304 | 3/4/2022 | | N | 4602537771 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 14.6 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20220317 | 3/17/2022 | | N | 4602545111 | Treatment | Deep | **10900** | **35100** | **7910** | **8770** | 123.2 | 7.83 | 7.47 | 1.493 | -- | 225 | -- | 18.6 ^2 | **255** | -- | 880 | **< 600 U** | **1770** | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20220331 | 3/31/2022 | | N | 4602553841 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 56.0 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20220414 | 4/14/2022 | | N | 4602562981 | Treatment | Deep | **26200** | **52200** | **19100** | **24500** | -50.7 | 4.35 | 8.29 | 2.177 | 18.44 | 93.4 | -- | 50.2 | **263** | -- | 76 | < 120 U | **478** | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20220428 | 4/28/2022 | | N | 4602572301 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 56.9 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20220513 | 5/13/2022 | | N | 4602580891 | Treatment | Deep | **29200** | **30300** | **24900** | **26100** | -7 | 3.27 | 7.72 | 1.589 | 15.25 | 974 | -- | 68.2 | **259** | -- | 37 | < 120 U | **495** | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20220527 | 5/27/2022 | | N | 4602589681 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 95.0 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20220609 | 6/9/2022 | | N | 4602597481 | Treatment | Deep | **203** | **1580000** | < 10.0 U | < 10.0 U | -17.8 | 6.25 | 7.63 | 1.946 | 18.89 | -- OR | -- | 233 | **457** | -- | -- | < 120 U | **799** | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20220620 | 6/20/2022 | | N | 4602604751 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 93.6 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20220711 | 7/11/2022 | | N | 4602617131 | Treatment | Deep | **999** | **28600** | < 10.0 U | < 20.0 U | -154 | 3.88 | 7.41 | 2.146 | 21.6 | 652 | -- | 66.7 | **277** | -- | -- | < 120 U | **1000** | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-20220725 | 7/20/2022 | | N | 4602625591 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 65.2 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-65-20220819 | 8/19/2022 | 65 | N | 4602641451 | Treatment | Deep | **4100** | **14400** | < 20.0 U | < 20.0 U | -352.2 | 1.14 | 7.14 | 1.977 | 19.26 | 314 | -- | 48.0 | 221 | -- | -- | < 120 U | **288** | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-65-20220915 | 9/15/2022 | 65 | N | 4602655901 | Treatment | Deep | **526** | **26700** | < 10.0 U | < 10.0 U | -330.3 | 1.27 | 6.72 | 1.866 | 18.47 | 210 | -- | 32.3 | 124 | -- | -- | < 120 U | **600** | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-63.0-20221010 | 10/10/2022 | 63 | N | 4602671561 | Treatment | Deep | **183** | **9930** | **< 100 U** | **< 100 U** | -369.1 | 3.55 | 6.58 | 1.8 | 19.52 | 132 | -- | 70.0 | 216 | -- | -- | < 120 U | **1390** | -- |
| 114-P1-IRM-40D | 114-P1-IRM-40D-65-20221109 | 11/9/2022 | 65 | N | 4602691941 | Treatment | Deep | **2380** | **2940** | < 20.0 U | < 20.0 U | -155.2 | 7.53 | 5.76 | 3.766 | 16.2 | 23.3 | -- | 50.9 | **541** | -- | -- | 97.7 J | **1750** | -- |
| 114-P1-IRM-41D | 114-P1-IRM-41D-20180126 | 1/26/2018 | 58 | N | JC59838 | Baseline | Deep | **35700 J-** | **45500** | **28300** | **52000** | 167 | 0.5 | 7.58 | 1.17 | 8.49 | 0 | -- | 2.5 | 150 | < 2.0 U | 52.0 J | **< 500 U** | **151** | -- |
| 114-P1-IRM-41D | 114-P1-IRM-41D-20180501 | 5/1/2018 | 58 | N | JC65257 | Treatment | Deep | **222** | **326** | 51 | 58 | 109 | 0.68 | 8.09 | 1.13 | 16.67 | 7.9 | -- | 2.0 | 146 | -- | 35.4 | -- | **119** | < 0.20 U |
| 114-P1-IRM-41D | 114-P1-IRM-41D-20180604 | 6/4/2018 | 58 | N | JC67259 | Treatment | Deep | 28.2 | **106** | < 10 U | < 10 U | -43 | 0.01 | 7.7 | 1 | 13.9 | 10.2 | -- | 2.4 | -- | -- | 33.2 | -- | **111** | < 0.20 U |
| 114-P1-IRM-41D | 114-P1-IRM-41D-20180604 | 6/4/2018 | 58 | N | JC67259A | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 206 | -- | -- | -- | -- | -- |
| 114-P1-IRM-41D | 114-P1-IRM-41D-20180702 | 7/2/2018 | 58 | N | JC69148 | Treatment | Deep | **1060** | **1070** | **800** | **800** | 116 | 0.55 | 7.44 | 1.15 | 20.94 | 0 | -- | 2.8 | 149 | -- | 126 | -- | **101** | < 0.20 U |
| 114-P1-IRM-41D | 114-P1-IRM-41D-20180723 | 7/23/2018 | 58 | N | JC70405 | Treatment | Deep | 43.0 | **236** | 16 | 16 | 10 | 1.87 | 7.96 | 1.13 | 23.64 | 9.1 | -- | 2.2 | 122 | -- | 39.3 | -- | **94.1** | < 0.20 U |
| 114-P1-IRM-41D | 114-P1-IRM-41D-201808827_20180827 | 8/27/2018 | 58 | N | JC72621 | Treatment | Deep | 43.2 | **158 J** | 12 | 12 | -- | -- | -- | -- | -- | -- | -- | 2.6 | 114 | -- | 25.8 | -- | **97.8** | < 0.20 U |
| 114-P1-IRM-41D | 114-P1-IRM-41D-20180927 | 9/27/2018 | 58 | N | JC74699 | Treatment | Deep | **36000** | **50900** | **43200** | **45300** | -- | -- | -- | -- | -- | -- | -- | 2.4 | 161 | -- | -- | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-41D | 114-P1-IRM-41D-DUP-20181031 | 10/31/2018 | 58 | FD | JC76975 | Treatment | Deep | **230000** | **244000** | **145000** | **152000** | -- | -- | -- | -- | -- | -- | -- | 2.8 | 207 | -- | -- | -- | **160** | < 0.20 U |
| 114-P1-IRM-41D | 114-P1-IRM-41D-20181031 | 10/31/2018 | 58 | N | JC76975 | Treatment | Deep | **187000** | **185000** | **148000** | **156000** | -- | -- | -- | -- | -- | -- | -- | 2.4 | 206 | -- | -- | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-41D | 114-P1-IRM-41D-181128 | 11/28/2018 | 58 | N | JC78649 | Treatment | Deep | **26200** | **28100** | **22600** | **25700** | -- | -- | -- | -- | -- | -- | -- | 2.9 | 99.2 | -- | < 0.94 UB | -- | 16.1 | < 0.20 U |
| 114-P1-IRM-41D | 114-P1-IRM-41D-181218 | 12/18/2018 | 58 | N | JC79966 | Treatment | Deep | **344000** | **369000** | **308000** | **321000** | -- | -- | -- | -- | -- | -- | -- | 3.3 | **312** | -- | -- | -- | **< 150 U** | R |
| 114-P1-IRM-41D | 114-P1-IRM-41D-20190328 | 3/28/2019 | 58 | N | JC85346 | Treatment | Deep | **8630** | **8520** | **27200** | **25800** | -- | -- | -- | -- | -- | -- | -- | 2.2 | 50.5 | -- | < 0.24 UB | -- | < 15 U | < 0.20 U |
| 114-P1-IRM-41D | 114-P1-IRM-41D-20190501 | 5/1/2019 | 58 | N | JC87310 | Treatment | Deep | **59400** | **60000** | **59700** | **58200** | -- | -- | -- | -- | -- | -- | -- | 2.3 | 174 | -- | < 0.11 U | -- | < 15 U | < 0.20 UJ |
| 114-P1-IRM-41D | 114-P1-IRM-41D-20190503 | 5/3/2019 | 58 | N | JC87509 | Treatment | Deep | **108000** | **110000** | **94200** | **97600** | -- | -- | -- | -- | -- | -- | -- | 17.5 | **526** | -- | 207 | -- | 45.1 | < 0.20 U |
| 114-P1-IRM-41D | 114-P1-IRM-41D-0-20190531 | 5/31/2019 | 49 | N | JC89048 | Treatment | Deep | **62200** | **60000** | **66800** | **66100** | -- | -- | -- | -- | -- | -- | -- | 2.2 | 183 | -- | < 0.11 UJ | -- | 30.1 | R |
| 114-P1-IRM-41D | 114-P1-IRM-41D-54.0-20190531 | 5/31/2019 | 54 | N | JC89048 | Treatment | Deep | **330000** | **327000** | **288000** | **303000** | -- | -- | -- | -- | -- | -- | -- | 3.0 | **357** | -- | 144 J | -- | **300** | R |
| 114-P1-IRM-41D | 114-P1-IRM-41D-59.0-20190531 | 5/31/2019 | 59 | N | JC89048 | Treatment | Deep | **290000** | **286000** | **301000** | **316000** | -- | -- | -- | -- | -- | -- | -- | 3.2 | **380** | -- | 69.7 J | -- | **300** | R |
| 114-P1-IRM-41D | 114-P1-IRM-41D-64.0-20190531 | 5/31/2019 | 64 | N | JC89048 | Treatment | Deep | **188000** | **177000** | **216000** | **192000** | -- | -- | -- | -- | -- | -- | -- | 3.4 | **406** | -- | 94.9 J | -- | **405** | R |
| 114-P1-IRM-41D | 114-P1-IRM-41D-20190701 | 7/1/2019 | 58 | N | JC90966 | Treatment | Deep | **31600** | **31300** | **26900** | **27400** | -- | -- | -- | -- | -- | -- | -- | 1.8 | 107 | -- | 0.24 | -- | < 15 U | < 0.20 U |
| 114-P1-IRM-41D | 114-P1-IRM-41D-20190727 | 7/27/2019 | 58 | N | JC92354 | Treatment | Deep | **65700** | **69900** | **51000** | **53700** | -- | -- | -- | -- | -- | -- | -- | 2.3 | 168 | -- | 0.71 | -- | 20.3 | < 0.20 U |
| 114-P1-IRM-41D | 114-P1-IRM-41D-DUP-20190828 | 8/28/2019 | 58 | FD | JC94021 | Treatment | Deep | **424000** | **358000** | **456000** | **389000** | -- | -- | -- | -- | -- | -- | -- | 3.3 | **399** | -- | 91.4 | -- | **< 1500 U** | < 0.20 U |
| 114-P1-IRM-41D | 114-P1-IRM-41D-20190828 | 8/28/2019 | 58 | N | JC94021 | Treatment | Deep | **434000** | **301000** | **438000** | **336000** | -- | -- | -- | -- | -- | -- | -- | 3.5 | **402** | -- | 78.5 | -- | **364** | < 0.20 U |
| 114-P1-IRM-41D | 114-P1-IRM-41D-20191123 | 11/23/2019 | 58 | N | JC99155 | Treatment | Deep | **23200** | **23900** | **24500** | **26700** | -- | -- | -- | -- | -- | -- | -- | 2.4 | 166 | -- | 27.4 | -- | **< 75 U** | -- |
| 114-P1-IRM-41D | 114-P1-IRM-41D-20200131 | 1/31/2020 | 58 | N | JD2559 | Treatment | Deep | **3760** | **4610** | **4400** | **5500** | -- | -- | -- | -- | -- | -- | -- | 2.5 | 182 | -- | 33.6 | -- | **56.7** | -- |
| 114-P1-IRM-41D | 114-P1-IRM-41D-20200227 | 2/27/2020 | 58 | N | JD3810 | Treatment | Deep | **36400** | **39300** | **36400** | **36200** | -- | -- | -- | -- | -- | -- | -- | 2.5 | 118 | -- | < 0.18 UB | -- | < 15 U | -- |
| 114-P1-IRM-41D | 114-P1-IRM-41D-20201120 | 11/20/2020 | | N | JD16639 | Treatment | Deep | **290000** | **250000** | **285000** | **265000** | 261 | 2.41 | 7.27 | 2.83 | -- | 4.2 | -- | 5.1 | **602** | -- | 94.4 | -- | **2040** | < 0.20 U |
| 114-P1-IRM-41D | 114-P1-IRM-41D-20201218 | 12/18/2020 | | N | JD17977 | Treatment | Deep | **223000** | **229000** | **186000** | **178000** | 100.2 | 3.84 | 7.48 | 3.664 | -- | -- NM | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-41D | 114-P1-IRM-41D-20210114 | 1/14/2021 | | N | JD19032 | Treatment | Deep | **201000** | **202000** | **222000** | **211000** | 184.6 | 3.63 | 7.17 | 3.262 | -- | 1.21 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-41D | 114-P1-IRM-41D-20210114-X | 1/14/2021 | | FD | JD19032 | Treatment | Deep | **23100** | **210000** | **206000** | **232000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-41D | 114-P1-IRM-41D-20210218 | 2/18/2021 | | N | JD20490 | Treatment | Deep | **214000** | **223000** | **214000** | **221000** | 158.7 | 3.09 | 7.04 | 1.258 | -- | 0.41 | -- | 62.9 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-41D | 114-P1-IRM-41D-20210315 | 3/15/2021 | | N | JD21731 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 56.9 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-41D | 114-P1-IRM-41D-20210319 | 3/19/2021 | | N | JD22003 | Treatment | Deep | **218000** | **217000** | **190000** | **193000** | 226.5 | 3.79 | 7.08 | 2.637 | -- | 1.08 | -- | 53.5 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-41D | 114-P1-IRM-41D-20210429 | 4/29/2021 | | N | 4602351931 | Treatment | Deep | **183000** | **203000** | **173000** | **171000 J+** | 222.4 | 5.17 | 7 | 2.694 | -- | 9.87 | -- | 39.2 | 145 | -- | 98 | **< 600 U** | **784** | -- |
| 114-P1-IRM-41D | 114-P1-IRM-41D-20210525 | 5/25/2021 | | N | 4602351281 | Treatment | Deep | **251000** | **248000** | **239000 H** | **256000 H** | 219.6 | 5.01 | 7.03 | 2.699 | -- | -- NM | -- | 24.4 | 148 | -- | 72 | **< 600 U** | **927** | -- |
| 114-P1-IRM-41D | 114-P1-IRM-41D-64.0-20210628 | 6/28/2021 | 64 | N | 4602376551 | Treatment | Deep | **997000** | **1140000** | **1150000 H** | **1170000 H** | 134.6 | 1.21 | 7.89 | 4.599 | -- | 9.11 | -- | 8.4 | **645** | -- | -- | **42000** | **880** | -- |
| 114-P1-IRM-41D | 114-P1-IRM-41D-20210812 | 8/12/2021 | | N | 4602409051 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 84.4 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-41D | 114-P1-IRM-41D-20210819 | 8/19/2021 | | N | 4602412191 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 108 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-41D | 114-P1-IRM-41D-20210825 | 8/25/2021 | | N | 4602415651 | Treatment | Deep | **413000** | **458000** | **386000** | **364000** | -- | -- | -- | -- | -- | -- | -- | 125 ^2 | **302** | -- | 390 | **< 2400 U** | **405** | -- |
| 114-P1-IRM-41D | 114-P1-IRM-41D | 10/20/2021 | | N | 4602455341 | Treatment | Deep | -- | -- | -- | < 50.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-42D | 114-P1-IRM-42D-20180126-DUP | 1/26/2018 | 57 | FD | JC59838 | Baseline | Deep | **1380000 J-** | **1380000** | **1490000** | **1460000** | -- | -- | -- | -- | -- | -- | -- | 9.8 | **588** | < 2.0 U | 330 | **< 1000 U** | **< 3000 U** | -- |
| 114-P1-IRM-42D | 114-P1-IRM-42D-20180126 | 1/26/2018 | 57 | N | JC59838 | Baseline | Deep | **1320000 J-** | **1410000** | **1390000** | **1340000** | 250 | 2.03 | 7.79 | 7.54 | 9.28 | 55.9 | -- | 9.7 | **572** | < 2.0 U | 332 | **< 1000 U** | **< 3000 U** | -- |
| 114-P1-IRM-42D | 114-P1-IRM-42D-20180501 | 5/1/2018 | 57 | N | JC65257 | Treatment | Deep | **1860000** | **1880000** | **1700000** | **1750000** | 362 | 0.68 | 7.47 | 7.78 | 14.13 | 11.6 | -- | 11.5 | **820** | -- | 610 | -- | **< 3800 U** | < 2.0 U |
| 114-P1-IRM-42D | 114-P1-IRM-42D-20180530 | 5/30/2018 | 57 | N | JC66984 | Treatment | Deep | **1840000** | **1780000** | **1770000** | **1820000** | -- | -- | -- | -- | -- | -- | -- | 12.2 | -- | -- | 463 | -- | **165** | < 0.20 U |
| 114-P1-IRM-42D | 114-P1-IRM-42D-20180530 | 5/30/2018 | 57 | N | JC66984A | Treatment | Deep | | | | | 229 | 0.72 | 7.44 | 8.02 | 16.79 | 0.1 | -- | -- | **747 J** | -- | -- | -- | -- | -- |
| 114-P1-IRM-42D | 114-P1-IRM-42D-20180702 | 7/2/2018 | 57 | N | JC69148 | Treatment | Deep | **1570000** | **1650000** | **1540000** | **1590000** | 200 | 1.55 | 7.42 | 7.62 | 22.12 | 0 | -- | 10.4 | **768** | -- | 483 | -- | **< 75 U** | < 0.20 U |
| 114-P1-IRM-42D | 114-P1-IRM-42D-20180723 | 7/23/2018 | 57 | N | JC70405 | Treatment | Deep | **1680000** | **1680000** | **1450000** | **1460000** | 253 | 0.03 | 7.59 | 7.22 | 21.51 | 9.7 | -- | 11.1 | **765** | -- | 556 | -- | **< 3800 U** | < 2.0 U |
| 114-P1-IRM-42D | 114-P1-IRM-42D-201808827_20180827 | 8/27/2018 | 57 | N | JC72621 | Treatment | Deep | **1550000** | **1710000 J** | **1460000** | **1510000** | -- | -- | -- | -- | -- | -- | -- | 10.5 | **778** | -- | 391 | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM42D-20180926 | 114-P1-IRM42D-20180926 | 9/26/2018 | 57 | N | JC74616 | Treatment | Deep | **1500000** | **1500000** | **1460000** | **1550000** | -- | -- | -- | -- | -- | -- | -- | 10.9 | **758** | -- | -- | -- | **< 1500 U** | < 0.20 U |
| 114-P1-IRM-42D | 114-P1-IRM-42D-20181030 | 10/30/2018 | 57 | N | JC76905 | Treatment | Deep | **1590000** | **1620000 J** | **1380000** | **1420000** | -- | -- | -- | -- | -- | -- | -- | 11.6 | **720** | -- | -- | -- | **< 150 U** | < 0.20 U |
| 114-P1-IRM-42D | 114-P1-IRM-42D-181129 | 11/29/2018 | 57 | N | JC78732 | Treatment | Deep | **1440000** | **1460000** | **1250000** | **1340000** | -- | -- | -- | -- | -- | -- | -- | 10.9 | **723** | -- | 418 | -- | **< 3800 U** | < 0.20 U |
| 114-P1-IRM-42D | 114-P1-IRM-42D-181218 | 12/18/2018 | 57 | N | JC79966 | Treatment | Deep | **1520000** | **1740000** | **1410000** | **1520000** | -- | -- | -- | -- | -- | -- | -- | 12.8 | **800** | -- | -- | -- | **< 750 U** | R |
| 114-P1-IRM-42D | 114-P1-IRM-42D-2090329 | 3/29/2019 | 57 | N | JC85453 | Treatment | Deep | **1110000** | **1070000 J** | **1210000** | **1250000** | -- | -- | -- | -- | -- | -- | -- | 7.8 | **639** | -- | 48.2 | -- | **250** | 3.3 |
| 114-P1-IRM-42D | 114-P1-IRM-42D-20190503 | 5/3/2019 | 57 | N | JC87509 | Treatment | Deep | **1720000** | **1780000** | **1320000** | **1350000** | -- | -- | -- | -- | -- | -- | -- | 14.0 | **842** | -- | 232 | -- | **< 1500 U** | < 0.20 U |
| 114-P1-IRM-42D | 114-P1-IRM-42D-43.50-20190530 | 5/30/2019 | 43.5 | N | JC88958 | Treatment | Deep | **1490000** | **1610000** | **1650000** | **1650000** | -- | -- | -- | -- | -- | -- | -- | 12.9 | **884** | -- | 639 J | -- | **< 7500 U** | R |
| 114-P1-IRM-42D | 114-P1-IRM-42D-48.50-20190530 | 5/30/2019 | 48.5 | N | JC88958 | Treatment | Deep | **1520000** | **1560000** | **1550000** | **1650000** | -- | -- | -- | -- | -- | -- | -- | 12.9 | **849** | -- | 711 J | -- | **< 1500 U** | R |
| 114-P1-IRM-42D | 114-P1-IRM-42D-53.50-20190530 | 5/30/2019 | 53.5 | N | JC88958 | Treatment | Deep | **1480000** | **1460000** | **1790000** | **1570000** | -- | -- | -- | -- | -- | -- | -- | 12.7 | **831** | -- | 667 J | -- | **< 1500 U** | R |
| 114-P1-IRM-42D | 114-P1-IRM-42D-58.50-20190530 | 5/30/2019 | 58.5 | N | JC88958 | Treatment | Deep | **1350000** | **1380000** | **1810000** | **1560000** | -- | -- | -- | -- | -- | -- | -- | 12.3 | **848** | -- | 717 J | -- | **< 1500 U** | R |
| 114-P1-IRM-42D | 114-P1-IRM-42D-20190701 | 7/1/2019 | 57 | N | JC90966 | Treatment | Deep | **1920000** | **1870000** | **1670000** | **1470000** | -- | -- | -- | -- | -- | -- | -- | 15.1 | **943** | -- | 823 | -- | **< 7500 U** | < 0.20 U |
| 114-P1-IRM-42D | 114-P1-IRM-42D-20190802 | 8/2/2019 | 57 | N | JC92633 | Treatment | Deep | **1810000** | **1830000** | **1580000** | **1520000** | -- | -- | -- | -- | -- | -- | -- | 14.2 | **922** | -- | 215 | -- | **< 75 U** | 1.2 J |
| 114-P1-IRM-42D | 114-P1-IRM-42D-20190827 | 8/27/2019 | 57 | N | JC93952 | Treatment | Deep | **1460000** | **1470000** | **1520000** | **1280000** | -- | -- | -- | -- | -- | -- | -- | 10.5 | **756** | -- | 543 | -- | **< 300 U** | 3.9 |
| 114-P1-IRM-42D | 114-P1-IRM-42D-20190924 | 9/24/2019 | 57 | N | JC95567 | Treatment | Deep | **1510000** | **1530000** | **1520000** | **1550000** | -- | -- | -- | -- | -- | -- | -- | 11.2 | **875** | -- | 478 | -- | **< 750 U** | < 0.20 U |
| 114-P1-IRM-42D | 114-IRM-42D-20191123 | 11/23/2019 | 57 | N | JC99155 | Treatment | Deep | **776000** | **760000** | **822000** | **853000** | -- | -- | -- | -- | -- | -- | -- | 7.0 | **464** | -- | 30.7 | -- | **< 1500 U** | -- |
| 114-P1-IRM-42D | 114-P1-IRM-42D-DUP-20200131 | 1/31/2020 | 57 | FD | JD2559 | Treatment | Deep | **1070000** | **1040000** | **1030000** | **992000** | -- | -- | -- | -- | -- | -- | -- | 7.0 | **580** | -- | 105 J | -- | **< 150 U** | -- |
| 114-P1-IRM-42D | 114-P1-IRM-42D-20200131 | 1/31/2020 | 57 | N | JD2559 | Treatment | Deep | **1040000** | **1080000** | **1000000** | **1040000** | -- | -- | -- | -- | -- | -- | -- | 7.0 | **596** | -- | 147 J | -- | **< 150 U** | -- |
| 114-P1-IRM-42D | 114-P1-IRM-42D-20200227 | 2/27/2020 | 57 | N | JD3810 | Treatment | Deep | **1110000** | **1130000** | **849000** | **822000** | -- | -- | -- | -- | -- | -- | -- | 6.5 | **481** | -- | 1.8 | -- | **229** | -- |
| 114-P1-IRM-42D | 114-P1-IRM-42D-20200326 | 3/26/2020 | 57 | N | JD5246 | Treatment | Deep | **1440000** | **1290000** | **1360000** | **1390000** | -- | -- | -- | -- | -- | -- | -- | 9.8 | **613** | -- | 298 J | -- | **< 1500 U** | -- |
| 114-P1-IRM-4D | 114-P1-IRM-4D-20180124 | 1/24/2018 | 50 | N | JC59667 | Baseline | Deep | **401000** | **417000** | **387000** | **401000** | 184 | 0.49 | 7.51 | 3.09 | 12.32 | 108 | -- | 4.4 | **394** | < 2.0 U | 91.4 | **< 1000 U** | **347** | -- |
| 114-P1-IRM-4D | 114-P1-IRM-4D-49.5-20210624 | 6/24/2021 | 44.5 | N | JD27239 | Post-Treatment | Deep | -- | **539 J** | < 10 U | **< 500 U** | -- | -- | -- | -- | -- | -- | -- | 27.5 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-4D | 114-P1-IRM-4D-54.5-20210624 | 6/24/2021 | 49.5 | N | JD27239 | Post-Treatment | Deep | -- | **627 J** | 6.5 J | **< 500 U** | -- | -- | -- | -- | -- | -- | -- | 28.8 | -- | -- | -- | -- | -- | -- |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P1-IRM-4D | 114-P1-IRM-4D-59.5-20210624 | 6/24/2021 | 54.5 | N | JD27239 | Post-Treatment | Deep | -- | **1540 J** | < 10 U | **< 500 U** | -- | -- | -- | -- | -- | -- | -- | 38.7 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-4D | 114-P1-IRM-4D-64.5-20210624 | 6/24/2021 | 59.5 | N | JD27239 | Post-Treatment | Deep | -- | **1040 J** | 8.9 J | **< 500 U** | -- | -- | -- | -- | -- | -- | -- | 28.5 | -- | -- | -- | -- | -- | -- |
| 114-P1-IRM-5D | 114-P1-IRM-5D-20180124 | 1/24/2018 | 50 | N | JC59556 | Baseline | Deep | **94000** | **95900** | **74300** | **87600** | 175 | 0.33 | 7.38 | 2.54 | 10.41 | 17.2 | -- | 14.4 | **851** | < 2.0 U | 235 | **< 500 U** | **158** | -- |
| 114-P1-IRM-5D | 114-P1-IRM-5D-DUP-20180124 | 1/24/2018 | 50 | FD | JC59667 | Baseline | Deep | **223000** | **282000** | **222000** | **257000** | -- | -- | -- | -- | -- | -- | -- | 3.0 | **314** | < 2.0 U | 68.1 | **< 1000 U** | **195** | -- |
| ***Phase II*** | | | | | | | | | | | | | | | | | | | | | | | | | |
| ***Extraction*** | | | | | | | | | | | | | | | | | | | | | | | | | |
| 114-MC-EW103 | 114-MC-EW103-20200811 | 8/11/2020 | 32 | N | JD11542 | Post-Treatment | Intermediate | **173** | **1790** | **< 100 U** | **< 100 U** | -- | -- | -- | -- | -- | -- | -- | 26.0 | **779** | 46.1 | 684 | 234 | **304** | -- |
| 114-MC-EW103 | 114-MC-EW103-20201111 | 11/11/2020 | 32 | N | JD16049 | Post-Treatment | Intermediate | **222** | **456** | 38 | **70** | -- | -- | -- | -- | -- | -- | -- | 30.0 | **918** | 40.7 | 828 | **1020** | **462** | -- |
| 114-MC-EW103 | 114-MC-EW103-20210226 | 2/26/2021 | 32 | N | JD20896 | Post-Treatment | Intermediate | < 10 U | 13.6 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | 212 | < 2.0 U | < 0.21 UB | 43.1 J | 4.0 J | -- |
| 114-MC-EW103 | 114-MC-EW103-44.0-20210924 | 9/24/2021 | 44 | N | 4602436001 | Treatment | Intermediate | **2520000** | **2280000** | **2440000** | **2550000** | 126.8 | 0.34 | 8.17 | 13.17 | -- | 8.88 | -- | 14.5 | **1170** | -- | 470 | **< 600 U** | **134** | -- |
| 114-MC-EW103 | 114-MC-EW103-44-20211021 | 10/21/2021 | 44 | N | 4602456401 | Treatment | Intermediate | **1510000** | **1820000** | **1560000** | **1470000** | -30 | 0.27 | 8.55 | 10.82 | -- | 24.86 *** | -- | 24.9 | **1100** | -- | 310 | **< 600 U** | 14.5 J | -- |
| 114-MC-EW103 | 114-MC-EW103-44-20211119 | 11/19/2021 | 44 | N | 4602476321 | Treatment | Intermediate | **3460000** | **2310000** | **3060000** | **2950000** | 143.6 | 0.11 | 8.94 | 14.55 | -- | 21.4 | -- | 16.1 | **1180** | -- | 550 | **< 600 U** | **192** | -- |
| 114-MC-EW103 | 114-MC-EW-103-20211221 | 12/21/2021 | | N | 4602495931 | Treatment | Intermediate | **1930000** | **1080000** | **1590000** | **1360000** | -187.85 | 8.51 | 8.64 | 6.43 | -- | 487.29 | -- | 40.2 | **916** | -- | 110 | **< 600 U** | 42.5 | -- |
| 114-MC-EW103 | EW103-20211229 | 12/29/2021 | | N | 4602499871 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 158 | -- | -- | -- | -- | -- | -- |
| 114-MC-EW103 | 114-MC-EW103-20220110 | 1/10/2022 | | N | 4602504131 | Treatment | Intermediate | **1800000** | **1630000** | **1680000** | **1850000** | -- | -- | -- | -- | -- | -- | -- | 117 | **757** | -- | 260 | **< 1200 U** | **186** | -- |
| 114-MC-EW103 | 114-MC-EW-103-20220217 | 2/17/2022 | | N | 4602526891 | Treatment | Intermediate | **245000** | **1500000** | **584000** | **1330000** | -4 | 1.94 | 9.76 | 8.229 | -- | 500 | -- | 60.9 | **810** | -- | 400 | **< 2400 U** | **1020** | -- |
| 114-MC-EW103 | 114-MC-EW-103-44-20220317 | 3/17/2022 | 44 | N | 4602545111 | Treatment | Intermediate | **385000** | **423000** | **44800** | **37300** | -47.6 | 0.5 | 10.02 | 3.744 | -- | 350 | -- | 22.5 ^2 | **549** | -- | 840 | **< 12000 U** | **< 800 U** | -- |
| 114-MC-EW103 | 114-MC-EW103-44.0-20220414 | 4/14/2022 | 44 | N | 4602562981 | Treatment | Intermediate | **410000** | **239000** | **280000** | **238000** | -413.2 | 1.09 | 11.18 | 9.422 | 19.88 | 116 | -- | 206 | **863** | -- | 630 | **550 J** | < 40.0 U | -- |
| 114-MC-EW103 | 114-MC-EW103-44.0-20220512 | 5/12/2022 | 44 | N | 4602580081 | Treatment | Intermediate | **9630** | **45900** | **< 500 U** | **< 500 U** | -430.5 | 8.04 | 10.34 | 7.478 | 17.86 | 460 | -- | 233 | **646** | -- | 600 | **1180** | 3.8 J | -- |
| 114-MC-EW103 | 114-MC-EW-103-44-20220610 | 6/10/2022 | 44 | N | 4602598551 | Treatment | Intermediate | **321** | **5260** | -- | **< 100 U** | -415.8 | 1.67 | 8.27 | 10.36 | 18.6 | 7.68 | -- | 229 | **577** | -- | -- | **388** | 23.4 | -- |
| 114-MC-EW103 | 114-MC-EW103-44.0-20220714 | 7/14/2022 | 44 | N | 4602619011 | Treatment | Intermediate | -- | **4950** | -- | **< 100 U** | -373.2 | 3.09 | 8.16 | 14.75 | 19.83 | 9.89 | -- | 217 | **511** | -- | -- | -- | -- | -- |
| 114-MC-EW103 | 114-MC-EW103-44-20220818 | 8/18/2022 | 44 | N | 4602640741 | Treatment | Intermediate | -- | **3140** | -- | **< 100 U** | -404.1 | 2.86 | 8.53 | 19.45 | 18.34 | 9.25 | -- | 207 | 182 | -- | -- | **913** | **87.9** | -- |
| 114-MC-EW103 | 114-MC-EW103-37.0-20221208 | 12/8/2022 | 37 | N | 4602709591 | Treatment | Intermediate | -- | **680** | -- | **< 100 U** | -421.0 | 0.93 | 7.3 | 0.192 | 14.7 | 9.86 | -- | 103 | **688** | -- | -- | **837** | **96.9** | -- |
| 114-MC-EW103 | 114-MC-EW103-47.3-20230215 | 2/15/2023 | 47.3 | N | 4602746811 | Post-Treatment | Intermediate | **3060** | **74700** | **< 100 U** | **< 100 U** | -390.0 | 6.06 | 7.4 | 27.63 | 15.3 | 180 | -- | 92.2 | **669** | 522 | -- | **967** | **147** | -- |
| 114-MC-EW103 | 114-MC-EW103-37.3-20230216 | 2/16/2023 | 37.3 | N | 4602747691 | Post-Treatment | Intermediate | -- | **1030** | -- | **< 100 U** | -383.4 | 6.68 | 7.4 | 23.97 | 15.51 | 9 | -- | 74.8 | **741** | 378 | -- | **621** | **171** | -- |
| 114-MC-EW103 | 114-MC-EW103-42.3-20230216 | 2/16/2023 | 42.3 | N | 4602747691 | Post-Treatment | Intermediate | **74.2** | **2040** | **< 100 U** | **< 100 U** | -385.7 | 1.54 | 7.38 | 25.98 | 15.3 | 20 | -- | 84.0 | **715** | 474 | -- | **372** | **155** | -- |
| 114-MC-EW103 | 114-MC-EW103-47.3-20230526 | 5/26/2023 | 47.3 | N | 4602810841 | Post-Treatment | Intermediate | 50.9 | **1580** | **< 100 U** | **< 100 U** | -389.8 | 0.42 | 7.31 | 21.82 | 19.10 | 18.3 | -- | 73.5 | **725** | 346 | -- | **1170** | **156** | -- |
| 114-MC-EW103 | 114-MC-EW103-43.0-20230817 | 8/17/2023 | 43 | N | 4602864001 | Post-Treatment | Intermediate | **2220** | **2770** | < 50.0 U | < 50.0 U | -392.6 | 0.5 | 7.36 | 27.5 | 23.26 | 22.6 | -- | 65.2 | **591** | 353 | -- | **2450** | **194** | -- |
| 114-MC-EW103 | 114-MC-EW103-47.3-20231117 | 11/17/2023 | 47.3 | N | JD77231 | Post-Treatment | Intermediate | **184** | **1740** | < 10 U | < 10 RA | -410.2 | 1.5 | 7.25 | 29.66 | 17.2 | 39.1 | -- | 53.3 | **314** | -- | -- | -- | -- | -- |
| 114-MC-EW103 | 114-MC-EW103-47.3-20240215 | 2/15/2024 | 47.3 | N | JD82518 | Post-Treatment | Intermediate | -- | **406** | -- | < 10 RA | -450.7 | 0.3 | 7.41 | 28.3 | 9.9 | 18.7 | -- | 49.2 | **311** | -- | -- | -- | -- | -- |
| 114-MC-EW103 | 114-MC-EW103-47.3-20240520 | 5/20/2024 | 47.3 | N | JD88833 | Post-Treatment | Intermediate | **298** | **1270** | < 10 U | < 10 U | -422.2 | 0.14 | 7.38 | 24.75 | 18.8 | 32.9 | -- | 53.1 | **735** | -- | -- | **1610** | **223** | -- |
| 114-MC-EW103 | 114-MC-EW103-42.3-20240821 | 8/21/2024 | 42.3 | N | JD94599 | Post-Treatment | Intermediate | -- | **460** | -- | **130** | -402.6 | 0.98 | 7.3 | 28881 | 19.8 | 7.87 | -- | 48.1 | **711** | -- | -- | -- | -- | -- |
| 114-MC-EW103 | 114-MC-EW103-42.3-20241122 | 11/22/2024 | 42.3 | N | JE1234 | Post-Treatment | Intermediate | **107** | **2710** | < 10 U | < 10 U | -371.8 | 0.19 | 7.41 | 25.83 | 12.8 | 30.2 | -- | 42.3 J- | **752** | -- | -- | -- | -- | -- |
| 114-P2-IRM-41I | 114-P2-IRM-41I-32-2020326 | 3/26/2020 | 32 | N | JD5245 | Baseline | Intermediate | **119000** | **139000 J** | **126000** | **121000 J** | 139 | 0 | 7.75 | 3.93 | -- | 0 | -- | 16.5 | **583** | < 2.0 U | 420 | 161 J | **199** | -- |
| 114-P2-IRM-89I | 114-P2-IRM-89I-32-2020326 | 3/26/2020 | 32 | N | JD5217 | Baseline | Intermediate | **109** | **185** | 38 | 36 | 111 | 0 | 4.83 | 0.282 | -- | 89 | -- | 2.6 J | 53.3 | < 2.0 U | 6080 | **334** | **101** | -- |
| 114-P2-IRM-89I | 114-P2-IRM-89I-20201120 | 11/20/2020 | | N | JD16639 | Treatment | Intermediate | **1050** | **1540** | 44 | < 10 U | -22 | 1.33 | 7.27 | 3.18 | -- | 37.1 | -- | 9.4 | **995** | -- | 260 | -- | **2180** | 1.3 |
| 114-P2-IRM-89I | 114-P2-IRM-89I-20201218 | 12/18/2020 | | N | JD17977 | Treatment | Intermediate | **47100** | **45700** | **39900** | **41700** | 229.4 | 2.44 | 7.26 | 5.674 | -- | -- NM | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-89I | 114-P2-IRM-89I-20210114 | 1/14/2021 | | N | JD19032 | Treatment | Intermediate | **78200** | **77000** | **72600** | **74400** | 25.7 | 4 | 7.55 | 5.382 | -- | 2.68 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-89I | 114-P2-IRM-89I-20210429 | 4/29/2021 | | N | 4602331931 | Treatment | Intermediate | **116000** | **111000** | **121000** | **113000 J+** | 184.6 | 2.63 | 7.46 | 4.66 | -- | 3.56 | -- | 13.8 | **851** | -- | 480 | **< 600 U** | **143** | -- |
| 114-P2-IRM-89I | 114-P2-IRM-89I-20210525 | 5/25/2021 | | N | 4602351281 | Treatment | Intermediate | **125000** | **120000** | **122000 H** | **121000 H** | 180.8 | 2.12 | 7.3 | 4.651 | -- | -- NM | -- | 15.4 | **827** | -- | 670 | **< 600 U** | **148** | -- |
| 114-P2-IRM-89I | 114-P2-IRM-89I-20210824 | 8/24/2021 | | N | 4602414891 | Treatment | Intermediate | **105000** | **106000** | **107000 H** | **109000 H** | 222.8 | 3.13 | 7.47 | 4.217 | -- | 17.9 | -- | 14.1 | **845** | -- | 940 | **< 1200 U** | **155** | -- |
| 114-P2-IRM-89I | 114-P2-IRM-89I-20210921 | 9/21/2021 | | N | 4602432721 | Treatment | Intermediate | **110000** | **107000** | **34400** | **101000** | -61.2 | 3.13 | 7.92 | 5.919 | -- | 9.58 | -- | 14.9 | **793** | -- | 1100 | < 240 U | **221** | -- |
| 114-P2-IRM-89I | 114-P2-IRM-89I-20211018 | 10/18/2021 | | N | 4602453121 | Treatment | Intermediate | **110000** | **114000** | **119000** | **121000** | -- | -- | -- | -- | -- | -- | -- | 16.7 | **800** | -- | 1100 | **< 600 U** | **255** | -- |
| 114-P2-IRM-89I | 114-P2-IRM-89I-20211118 | 11/18/2021 | | N | 4602475481 | Treatment | Intermediate | **108000** | **110000** | **112000** | **106000** | -- | -- | -- | -- | -- | -- | -- | 16.9 | **825** | -- | 910 | **< 1200 U** | **304** | -- |
| 114-P2-IRM-89I | 114-P2-IRM 89I | 12/2/2021 | | N | 4602484621 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 16.5 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-89I | 114-P2-IRM-89I-20211215 | 12/15/2021 | | N | 4602491921 | Treatment | Intermediate | **114000** | **107000** | **91500** | **92600** | -73.25 | 0.53 | 7.14 | 7.04 | -- | 3.889 | -- | 5.4 | **338** | -- | 660 | < 120 U | **326** | -- |
| 114-P2-IRM-89I | 114-P2-IRM-89I-20211229 | 12/29/2021 | | N | 4602499871 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 15.2 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-89I | 114-P2-IRM-89I-20220110 | 1/10/2022 | | N | 4602504131 | Treatment | Intermediate | **108000** | **90000** | **101000** | **91300** | -1 | 10.07 | 7.74 | 7.27 | -- | 41.2 | -- | 16.3 | **760** | -- | 880 | 78.1 J | **273** | -- |
| 114-P2-IRM-89I | 114-P2-IRM-89I-20220217 | 2/17/2022 | | N | 4602526891 | Treatment | Intermediate | **84100** | **91200** | **83300** | **82200** | -2 | 2.3 | 8.46 | 7.521 | -- | 67.2 | -- | 16.0 | **790** | -- | 960 | **< 2400 U** | **354** | -- |
| 114-P2-IRM-89I | 114-P2-IRM-89I-20220304 | 3/4/2022 | | N | 4602537771 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 15.2 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-89I | 114-P2-IRM-89I-20220317 | 3/17/2022 | | N | 4602545111 | Treatment | Intermediate | **85400** | **83800** | 69.4 | **71600** | -116.8 | 7.13 | 8.36 | 5.269 | -- | 239 | -- | 16.9 ^2 | **823** | -- | 970 | **< 600 U** | **371** | -- |
| 114-P2-IRM-89I | 114-P2-IRM-89I-20220331 | 3/31/2022 | | N | 4602553841 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 16.5 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-89I | 114-P2-IRM-89I-20220414 | 4/14/2022 | | N | 4602562981 | Treatment | Intermediate | **68200** | **77700** | **60200** | **38000** | 21.5 | 1.89 | 8.27 | 6.734 | 16.3 | -- OR | -- | 15.7 | **703** | -- | 1000 | 83.1 J | **287** | -- |
| 114-P2-IRM-89I | 114-P2-IRM-89I-32-20220513 | 5/13/2022 | | N | 4602580891 | Treatment | Intermediate | **7220** | **18700** | **498** | **< 100 U** | -221.6 | 0.15 | 7.89 | 6.843 | 15.47 | 86.1 | -- | 22.1 | **1180** | -- | 1200 | 235 | **501** | -- |
| 114-P2-IRM-89I | 114-P2-IRM-89I-42-20220610 | 6/10/2022 | 42 | N | 4602598551 | Treatment | Intermediate | -- | **1370** | -- | < 10.0 U | -92.8 | 1.55 | 7.27 | 1.340 | 15.28 | 8.87 | -- | 5.1 | **269** | -- | -- | -- | -- | -- |
| 114-P2-IRM-89I | 114-P2-IRM-89I-42.0-20220715 | 7/15/2022 | 42 | N | 4602619741 | Treatment | Intermediate | -- | **680** | -- | < 10.0 U | -69.3 | 1.61 | 6.84 | 2.544 | 16.09 | 5.02 | -- | 8.7 | **371** | -- | -- | -- | -- | -- |
| 114-P2-IRM-89I | 114-P2-IRM-89I-42-20220818 | 8/18/2022 | | N | 4602640741 | Treatment | Intermediate | -- | **275** | -- | < 10.0 U | -119.6 | 2.74 | 6.63 | 4.562 | 17.55 | 9.91 | -- | 7.8 | **289** | -- | -- | **884** | **185** | -- |
| 114-P2-IRM-89I | 114-P2-IRM-89I-42-20220915 | 9/15/2022 | 42 | N | 4602655901 | Treatment | Intermediate | 6.1 | **1290** | < 10.0 U | < 10.0 U | -35.5 | 2.28 | 7.09 | 0.487 | 18.35 | 16.6 | -- | 2.5 | 206 | -- | -- | 183 | **107** | -- |
| 114-P2-IRM-89I | 114-P2-IRM-89I-42-20221011 | 10/11/2022 | 42 | N | 4602672521 | Treatment | Intermediate | 22.1 | **418** | -- | < 10.0 U | -258.6 | 0.63 | 7.26 | 2.464 | 16.60 | 9.38 | -- | 4.1 | **352** | -- | -- | 231 | **208** | -- |
| 114-P2-IRM-89I | 114-P2-IRM-89I-42-20221109 | 11/9/2022 | 42 | N | 4602685941 | Treatment | Intermediate | **114** | **915** | < 20.0 U | < 50.0 U | -299.5 | -0.17 | 7.01 | 15.584 | 16.30 | 15 | -- | 18.3 | **1160** | -- | -- | 166 | **607** | -- |
| 114-P2-IRM-89I | 114-P2-IRM-89I-32-20221207 | 12/7/2022 | 32 | N | 4602708821 | Treatment | Intermediate | 10.8 | 11.9 | < 10.0 U | < 10.0 U | 142.1 | 1.96 | 7.71 | 1.202 | 14.1 | -- OR | -- | 3.2 | **511** | -- | -- | 98.9 J | **63.8** | -- |
| 114-P2-IRM-90I | 114-P2-IRM-90I-32-2020326 | 3/26/2020 | 32 | N | JD5217 | Baseline | Intermediate | **237** | **347** | < 50 U | < 50 U | -331 | 0 | 12.53 | 4.49 | -- | 2.6 | -- | 31.8 | 3.9 | 24.3 | 62.6 | **697** | 9.5 J | -- |
| 114-P2-IRM-90I | 114-P2-IRM-90I-20201120 | 11/20/2020 | | N | JD16639 | Treatment | Intermediate | **13300** | **15000** | **14200** | **12500** | 200 | 1.86 | 7.36 | 2.77 | -- | 197 | -- | 5.2 | **367** | -- | 24.5 | -- | **980** | < 0.20 U |
| 114-P2-IRM-90I | 114-P2-IRM-90I-20201218 | 12/18/2020 | | N | JD17977 | Treatment | Intermediate | **95500** | **101000** | **73700** | **74700** | 39.9 | 2.56 | 7.07 | 3.159 | -- | -- NM | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-90I | 114-P2-IRM-90I-20210114 | 1/14/2021 | | N | JD19032 | Treatment | Intermediate | **75800** | **88100** | **88900** | **87000** | 190.3 | 3.09 | 7.11 | 3.595 | -- | 119 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-90I | 114-P2-IRM-90I-40-20210528 | 5/28/2021 | 40 | N | 4602356051 | Treatment | Intermediate | **207** | **2400** | < 10.0 U | < 10.0 U | -443 | 0 | 10.04 | 13.86 | -- | 9.6 | -- | 30.6 | **1220** | -- | 390 | 198 | 47.8 | -- |
| 114-P2-IRM-90I | 114-P2-IRM-90I-34.0-20210629 | 6/29/2021 | 34 | N | 4602376271 | Treatment | Intermediate | **95.8** | **2250** | < 10.0 U | < 10.0 U | -338.1 | 0.36 | 10.16 | 13.76 | -- | 7.11 | -- | 20.6 | **995** | -- | -- | **327** | 44.1 | -- |
| 114-P2-IRM-90I | 114-P2-IRM-90I-20210824 | 8/24/2021 | | N | 4602414891 | Treatment | Intermediate | 32.3 | **7470** | < 50.0 U | < 50.0 U | -263.1 | 4.46 | 8.55 | 12.02 | -- | 88.4 | -- | 21.0 | **882** | -- | 590 | **671** | **517** | -- |
| 114-P2-IRM-90I | 114-P2-IRM-90I-20210921 | 9/21/2021 | | N | 4602432721 | Treatment | Intermediate | **900** | **96200** | < 20.0 U | **< 200 U** | -210.6 | 2.47 | 8.9 | 9.805 | -- | -- High | -- | 22.3 | **725** | -- | 1000 | **592** | **429** | -- |
| 114-P2-IRM-90I | 114-P2-IRM-90I-20211118 | 11/18/2021 | | N | 4602475481 | Treatment | Intermediate | **411** | **3070** | < 50.0 U | < 50.0 U | -- | -- | -- | -- | -- | -- | -- | 15.9 | **759** | -- | 970 | **852** | **1060** | -- |
| 114-P2-IRM-90I | 114-P2-IRM 90I | 12/2/2021 | | N | 4602484621 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 15.7 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-90I | 114-P2-IRM-90I-20211215 | 12/15/2021 | | N | 4602491921 | Treatment | Intermediate | **44300** | **56200** | **28600** | **35200** | -157.19 | 0.91 | 7.21 | 2.29 | -- | 255.79 | -- | 14.4 | **408** | -- | 650 | < 120 U | **643** | -- |
| 114-P2-IRM-90I | 114-P2-IRM-90I-20211229 | 12/29/2021 | | N | 4602499871 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 16.2 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-90I | 114-P2-IRM-90I-20220111 | 1/11/2022 | | N | 4602504631 | Treatment | Intermediate | **109** | **921** | < 50.0 U | < 50.0 U | -227 | 0.93 | 8.35 | 10.4 | -- | 10.6 | -- | 16.4 | **868** | -- | 1000 | **751** | **947** | -- |
| 114-P2-IRM-90I | 114-P2-IRM-90I-20220217 | 2/17/2022 | | N | 4602526891 | Treatment | Intermediate | **94.2** | **2860** | **< 500 U** | **461 J** | -303.6 | 0.97 | 9.24 | 9.454 | -- | 112 | -- | 17.0 | **739** | -- | 1200 | **765** | **880** | -- |
| 114-P2-IRM-90I | 114-P2-IRM-90I-20220304 | 3/4/2022 | | N | 4602537771 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 12.7 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-90I | 114-P2-IRM-90I-20220317 | 3/17/2022 | | N | 4602545111 | Treatment | Intermediate | **39800** | **46800** | **31300** | **27800** | -188.7 | 7.21 | 8.17 | 6.429 | -- | 39 | -- | 23.3 | **422** | -- | 940 | **1060** | **1650** | -- |
| 114-P2-IRM-90I | 114-P2-IRM-90I-20220331 | 3/31/2022 | | N | 4602553841 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 17.7 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-90I | 114-P2-IRM-90I-20220414 | 4/14/2022 | | N | 4602562981 | Treatment | Intermediate | **299** | **3000** | **< 100 U** | **445** | -249.3 | 1.23 | 8.61 | 9.984 | 19.37 | -- OR | -- | 20.9 | **740** | -- | 3400 | **933** | **1110** | -- |
| 114-P2-IRM-90I | 114-P2-IRM-90I-20220428 | 4/28/2022 | | N | 4602572301 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 169 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-90I | 114-P2-IRM-90I-20220513 | 5/13/2022 | | N | 4602580891 | Treatment | Intermediate | **119** | **427** | **< 100 U** | **< 100 U** | -240.4 | 2.73 | 8.1 | 7.145 | 15.24 | 202 | -- | 25.0 | **540** | -- | 6100 | **1000** | **1010** | -- |
| 114-P2-IRM-90I | 114-P2-IRM-90I-20220527 | 5/27/2022 | | N | 4602589681 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 24.5 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-90I | 114-P2-IRM-90I-20220609 | 6/9/2022 | | N | 4602597481 | Treatment | Intermediate | **94.8** | **7160** | **< 100 U** | **< 100 U** | -84.8 | 4.2 | 7.39 | 7.567 | 20.02 | 202 | -- | 24.5 | **871** | -- | -- | **892** | **1180** | -- |
| 114-P2-IRM-90I | 114-P2-IRM-90I-20220620 | 6/20/2022 | | N | 4602604751 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 24.6 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-90I | 114-P2-IRM-90I-20220711 | 7/11/2022 | | N | 4602617131 | Treatment | Intermediate | **92.5** | **585** | < 50.0 U | < 50.0 U | -289.2 | 2.51 | 7.57 | 9.889 | 21.99 | 27.9 | -- | 23.2 | **652** | -- | -- | **843** | **1240** | -- |
| 114-P2-IRM-90I | 114-P2-IRM-90I-34-20220817 | 8/17/2022 | 34 | N | 4602639901 | Treatment | Intermediate | -- | **1760** | -- | < 10.0 U | -387.1 | 0.14 | 8.47 | 7.862 | 20.65 | 8.99 | -- | 23.4 | **870** | -- | -- | 299 | **344** | -- |
| 114-P2-IRM-90I | 114-P2-IRM-90I-32.0-20221207 | 12/7/2022 | 32 | N | 4602708821 | Treatment | Intermediate | 54.4 | **3180** | < 10.0 U | < 10.0 U | 59.7 | 0.08 | 8.91 | 9.453 | 15.29 | 165 | -- | 34.4 | **302** | -- | -- | 281 | **87.9** | -- |
| 114-P2-IRM-91I | 114-P2-IRM-91I-32-2020326 | 3/26/2020 | 32 | N | JD5217 | Baseline | Intermediate | **195** | **251** | **160** | **160** | 68 | 0 | 7.81 | 3.19 | -- | 8.2 | -- | 10.8 | **656** | < 2.0 U | 285 | 103 | 34.4 | -- |
| 114-P2-IRM-91I | 114-P2-IRM-91I-20201218 | 12/18/2020 | | N | JD17977 | Treatment | Intermediate | **48800** | **50700** | **41000** | **39900** | 90.7 | 2.96 | 8.16 | 4.573 | -- | -- NM | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-91I | 114-P2-IRM-91I-20210114 | 1/14/2021 | | N | JD19032 | Treatment | Intermediate | **57800** | **55900** | **49300** | **51100** | -26.7 | 3.82 | 8.19 | 4.356 | -- | 56.8 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-91I | 114-P2-IRM-91I-20210429 | 4/29/2021 | | N | 4602331931 | Treatment | Intermediate | **57100** | **68200** | **58500** | **56800 J+** | 180.9 | 3.63 | 8.04 | 3.92 | -- | 6.89 | -- | 34.6 | **668** | -- | 1700 | **< 600 U** | **127** | -- |
| 114-P2-IRM-91I | 114-P2-IRM-91I-20210525 | 5/25/2021 | | N | 4602351281 | Treatment | Intermediate | **68100** | **73900** | **69300 H** | **97500 H** | 181.6 | 3.89 | 8.12 | 4.011 | -- | -- NM | -- | 38.2 | **643** | -- | 2200 | **< 600 U** | **126** | -- |
| 114-P2-IRM-91I | 114-P2-IRM-91I-35.0-20210628 | 6/28/2021 | 35 | N | 4602376551 | Treatment | Intermediate | **2390** | **4520** | < 20.0 U | < 50.0 U | -156.8 | 0.45 | 9.38 | 3.417 | -- | 8.98 | -- | 50.8 | **762** | -- | -- | **664** | **109** | -- |
| 114-P2-IRM-91I | 114-P2-IRM-91I-20210921 | 9/21/2021 | | N | 4602432721 | Treatment | Intermediate | **12500** | **17600** | **12200** | **10100** | -166.3 | 1.93 | 8.71 | 4.685 | -- | 199 | -- | 48.0 | **409** | -- | 3700 | 110 J | **289** | -- |
| 114-P2-IRM-91I | 114-P2-IRM-91I-35.0-20211119 | 11/19/2021 | 35 | N | 4602476321 | Treatment | Intermediate | **1120** | **1580** | < 50.0 U | < 50.0 U | -- | -- | -- | -- | -- | -- | -- | 88.3 | 178 | -- | 8600 | **< 600 U** | **104** | -- |
| 114-P2-IRM-91I | 114-P2-IRM-91I-35-20211220 | 12/20/2021 | 35 | N | 4602495141 | Treatment | Intermediate | **1200** | **2360** | < 20.0 U | < 20.0 U | -414 | -0.38 | 8.5 | 5.237 | -- | 2.33 | -- | 80.5 | **493** | -- | 9700 | **< 600 U** | **156** | -- |
| 114-P2-IRM-91I | 114-P2-IRM-91I-35.0-20220113 | 1/13/2022 | 35 | N | 4602506661 | Treatment | Intermediate | **1470** | **1500** | < 50.0 U | < 50.0 U | -273 | 0 | 8.49 | 5.35 | -- | 4.68 | -- | 68.1 | **532** | -- | 6900 | **< 2400 U** | **188** | -- |
| 114-P2-IRM-91I | 114-P2-IRM-91I-35.0-20220218 | 2/18/2022 | 35 | N | 4602528091 | Treatment | Intermediate | **1220** | **1440** | < 20.0 U | < 20.0 U | -- | -- | -- | -- | -- | -- | -- | 74.8 | **612** | -- | 7800 | **304 J** | **104** | -- |
| 114-P2-IRM-91I | 114-P2-IRM-91I-35-20220316 | 3/16/2022 | 35 | N | 4602544241 | Treatment | Intermediate | **1240** | **2220** | < 50.0 U | < 50.0 U | -299.1 | 0.44 | 9.07 | 5.311 | -- | 3.96 | -- | 124 ^2 | **759** | -- | 10000 | **< 600 U** | **117** | -- |
| 114-P2-IRM-91I | 114-P2-IRM-91I-35-20220414 | 4/14/2022 | 35 | N | 4602562981 | Treatment | Intermediate | **334** | **1780** | < 20.0 U | < 50.0 U | -333.4 | 2.17 | 7.19 | 5.841 | 21.83 | 8.73 | -- | 121 | **581** | -- | 6400 | 104 J | **58.9** | -- |
| 114-P2-IRM-91I | 114-P2-IRM-91I-35.0-20220513 | 5/13/2022 | 35 | N | 4602580891 | Treatment | Intermediate | **509** | **1200** | < 20.0 U | < 20.0 U | -362.1 | 10.08 | 7.67 | 4.131 | 14.98 | 4.69 | -- | 103 | **607** | -- | 8000 | < 240 U | **66.8** | -- |
| 114-P2-IRM-91I | 114-P2-IRM-91I-35-20220610 | 6/10/2022 | 35 | N | 4602598551 | Treatment | Intermediate | -- | **1160** | -- | < 20.0 U | -286.9 | 1.84 | 8.52 | 4.437 | 15.65 | 7.80 | -- | 63.8 | **333** | -- | -- | -- | -- | -- |
| 114-P2-IRM-91I | 114-P2-IRM-91I-35.0-20220714 | 7/14/2022 | 35 | N | 4602619011 | Treatment | Intermediate | -- | **1200** | -- | **< 100 U** | -346.1 | 0.49 | 8.39 | 5.618 | 16.74 | 2.11 | -- | 82.1 | **570** | -- | -- | -- | -- | -- |
| 114-P2-IRM-91I | 114-P2-IRM-91I-35-20220817 | 8/17/2022 | 35 | N | 4602639901 | Treatment | Intermediate | -- | **1200** | -- | **< 100 U** | -342.5 | 12.01 | 8.29 | 5.224 | 17.76 | 3.17 | -- | 85.0 | **446** | -- | -- | **317** | **116** | -- |
| 114-P2-IRM-91I | 114-P2-IRM-91I-32-20221207 | 12/7/2022 | 32 | N | 4602708

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | T | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P2-IRM-92I | 114-P2-IRM-92I-32-2020326 | 3/26/2020 | 32 | N | JD5217 | Baseline | Intermediate | **314** | **329** | **< 100 U** | **< 100 U** | -156 | 0 | 8.5 | 5.45 | -- | 0 | -- | 62.4 | **1650** | 2.4 | 629 | **378** | **659** | -- |
| 114-P2-IRM-92I | 114-P2-IRM-92I-20201120 | 11/20/2020 | | N | JD16639 | Treatment | Intermediate | **3100** | **349** | **1100** | < 10 U | 70 | 0.66 | 7.84 | 3.61 | -- | 24.5 | -- | 8.8 | **706** | -- | 267 | -- | **1320** | < 0.20 U |
| 114-P2-IRM-92I | 114-P2-IRM-92I-20201218 | 12/18/2020 | | N | JD17977 | Treatment | Intermediate | **5160** | **5960** | **4600** | **4900** | 132.6 | 2.6 | 7.63 | 4.128 | -- | -- NM | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-92I | 114-P2-IRM-92I-20210114 | 1/14/2021 | | N | JD19032 | Treatment | Intermediate | **1300** | **2520** | **1100** | **1100** | -2.5 | 3.7 | 7.89 | 3.975 | -- | 31.2 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-92I | 114-P2-IRM-92I-20210218 | 2/18/2021 | | N | JD20490 | Treatment | Intermediate | **4900** | **6310** | **4500** | **4600** | -55 | 2.55 | 7.76 | 1.528 | -- | 24.2 | -- | 9.8 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-92I | 114-P2-IRM-92I-35-20210429 | 4/29/2021 | 35 | N | 4602331931 | Treatment | Intermediate | 50.4 J | **422** | **491 J** | **424 J+** | -224.5 | 0.18 | 8.53 | 3.772 | -- | 1.04 | -- | 16.9 | **1130** | -- | 1400 | 171 | **641** | -- |
| 114-P2-IRM-92I | 114-P2-IRM-92I-35.0-20210628 | 6/28/2021 | 35 | N | 4602376551 | Treatment | Intermediate | **98.2** | **420** | < 10.0 U | < 50.0 U | -199.6 | 0.63 | 8.4 | 3.442 | -- | 6.26 | -- | 23.7 | **1470** | -- | -- | 137 | **771** | -- |
| 114-P2-IRM-92I | 114-P2-IRM-92I-35.0-20210830 | 8/30/2021 | 35 | N | 4602418391 | Treatment | Intermediate | **84.4** | **107** | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 16.8 | **1070** | -- | 1000 | 226 | **873** | -- |
| 114-P2-IRM-92I | 114-P2-IRM-92I-35.0-20211119 | 11/19/2021 | 35 | N | 4602476321 | Treatment | Intermediate | **77.0** | **98.8** | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 21.2 | **1070** | -- | 1200 | 206 | **1090** | -- |
| 114-P2-IRM-92I | 114-P2-IRM-92I-35-20211221 | 12/21/2021 | 35 | N | 4602495931 | Treatment | Intermediate | **11200** | **156** | < 10.0 U | < 10.0 U | -298.5 | 0.07 | 8.2 | 6.6 | -- | 9.89 | -- | 17.9 | **1160** | -- | 790 | **< 600 U** | **1080** | -- |
| 114-P2-IRM-92I | 114-P2-IRM-92I-35.0-20220113 | 1/13/2022 | 35 | N | 4602506661 | Treatment | Intermediate | **103** | **114** | < 10.0 U | < 20.0 U | -219 | 0 | 8.22 | 6.71 | -- | 6.41 | -- | 20.4 | **1070** | -- | 1100 | **489 J** | **857** | -- |
| 114-P2-IRM-92I | 114-P2-IRM-92I-35.0-20220218 | 2/18/2022 | 35 | N | 4602528091 | Treatment | Intermediate | **88.4** | **133** | < 20.0 U | < 20.0 U | -- | -- | -- | -- | -- | -- | -- | 18.3 | **670** | -- | 1200 | 223 J | **280** | -- |
| 114-P2-IRM-92I | 114-P2-IRM-92I-35-20220316 | 3/16/2022 | 35 | N | 4602544241 | Treatment | Intermediate | 58.1 | **269** | < 10.0 U | < 10.0 U | -114.6 | 0.52 | 8.77 | 4.873 | -- | 7.02 | -- | 35.1 | **960** | -- | 1000 | 115 J | **446** | -- |
| 114-P2-IRM-92I | 114-P2-IRM-92I-35-20220414 | 4/14/2022 | 35 | N | 4602562981 | Treatment | Intermediate | **154** | **238** | < 20.0 U | < 20.0 U | -142.7 | 0.75 | 9.23 | 9.819 | 14.98 | 2.17 | -- | 18.1 | **899** | -- | 900 | 247 | **484** | -- |
| 114-P2-IRM-92I | 114-P2-IRM-92I-35-20220610 | 6/10/2022 | 35 | N | 4602598551 | Treatment | Intermediate | -- | **135 F1** | -- | < 10.0 U | -175.8 | 3.03 | 8.8 | 3.159 | 16.49 | 7.91 | -- | 12.9 | **562** | -- | -- | -- | -- | -- |
| 114-P2-IRM-92I | 114-P2-IRM-92I-35.0-20220610-X | 6/10/2022 | 35 | FD | 4602598551 | Treatment | Intermediate | -- | **214** | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 10.2 | **570** | -- | -- | -- | -- | -- |
| 114-P2-IRM-92I | 114-P2-IRM-92I-35.0-20220714 | 7/14/2022 | 35 | N | 4602619011 | Treatment | Intermediate | -- | **365** | -- | < 10.0 U | -230.6 | 0.53 | 8.74 | 4.806 | 17.93 | 3.91 | -- | 15.8 | **684** | -- | -- | -- | -- | -- |
| 114-P2-IRM-92I | 114-P2-IRM-92I-35-20220816 | 8/16/2022 | 35 | N | 4602639181 | Treatment | Intermediate | -- | **127** | -- | < 10.0 U | -158.4 | 1.01 | 8.41 | 4.568 | 18.69 | 7.90 | -- | 18.8 | **841** | -- | -- | 60.1 J | **500** | -- |
| 114-P2-IRM-92I | 114-P2-IRM-92I-32-20221208 | 12/8/2022 | 32 | N | 4602709591 | Treatment | Intermediate | -- | **195** | -- | **< 100 U** | -243.3 | 0.54 | 8.74 | 3.909 | 15.16 | 9.26 | -- | 17.1 | **836** | -- | -- | 133 | **510** | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-31-2020326 | 3/26/2020 | 32 | N | JD5217 | Baseline | Intermediate | **43200 J** | **44200 J** | **209000 J** | **212000 J** | 104 | 10.93 ** | 8.83 | 0.001 | -- | 5.2 | -- | 35.6 | **647** | < 2.0 U | 695 | < 100 U | 6.2 J | |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20201120 | 11/20/2020 | | N | JD16639 | Treatment | Intermediate | **148000**<br>**182000** | **160000**<br>**202000** | **202000**<br>**225000** | **201000**<br>**191000** | 165 | 4.57 | 9.22 | 3.49 | -- | 28.8 | -- | 27.2 | **741** | -- | 988 | -- | **< 150 U**<br>**24.0 B** | < 0.20 U |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20201120-X | 11/20/2020 | | FD | JD16639 | Treatment | Intermediate | **233000**<br>**230000** | **219000**<br>**212000** | **193000**<br>**187000** | **180000**<br>**190000** | -- | -- | -- | -- | -- | -- | -- | 26.0 | **784** | -- | 916 | -- | **< 150 U**<br>**29.0 B** | < 0.20 U |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20201218 | 12/18/2020 | | N | JD17977 | Treatment | Intermediate | **184000** | **161000** | **148000** | **159000** | 67.4 | 3.84 | 9.24 | 4.364 | -- | -- NM | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20200114 | 1/14/2021 | | N | JD19032 | Treatment | Intermediate | **159000** | **184000** | **193000** | **190000** | 155.6 | 2.79 | 9.05 | 4.332 | -- | 11.1 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20210319 | 3/19/2021 | | N | JD22003 | Treatment | Intermediate | **129000** | **135000** | **122000** | **119000** | 232.7 | 4.22 | 9.04 | 3.664 | -- | 2.5 | -- | 17.1 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20210429 | 4/29/2021 | | N | 4602331931 | Treatment | Intermediate | **181000** | **193000** | **182000** | **198000 J+** | 210.4 | 4.71 | 8.85 | 4.16 | -- | 4.56 | -- | 17.1 | **810** | -- | 680 | **< 600 U** | 9.6 J | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20210525 | 5/25/2021 | | N | 4602351281 | Treatment | Intermediate | **192000** | **183000** | **183000 H** | **186000 H** | 212.6 | 5.01 | 9 | 4.171 | -- | -- NM | -- | 22.6 | **779** | -- | 850 | **< 600 U** | 13.9 J | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-31.0-20210629 | 6/29/2021 | 31 | N | 4602376271 | Treatment | Intermediate | **31300** | **29800** | **23700** | **25900** | 146.1 | 1.03 | 8.95 | 3.518 | -- | 8.68 | -- | 10.8 | **922** | -- | -- | **< 600 U** | 11.1 J | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20210824 | 8/24/2021 | | N | 4602414891 | Treatment | Intermediate | **144000** | **140000** | **148000** | **148000** | 208.6 | 5.47 | 8.95 | 3.618 | -- | 5.78 | -- | 14.4 | **735** | -- | 870 | **< 1200 U** | 17.3 J | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20211018 | 10/18/2021 | | N | 4602453121 | Treatment | Intermediate | **130000** | **121000** | **138000** | **138000** | -- | -- | -- | -- | -- | -- | -- | 12.8 | **695** | -- | 760 | **< 600 U** | 21.7 J | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20211118 | 11/18/2021 | | N | 4602475481 | Treatment | Intermediate | **162000** | **151000** | **164000** | **167000** | -- | -- | -- | -- | -- | -- | -- | 25.3 | **559** | -- | 700 | **< 1200 U** | 26.7 J | -- |
| 114-P2-IRM-93I | 114-P2-IRM 93I | 12/2/2021 | | N | 4602484621 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 20.0 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20211215 | 12/15/2021 | | N | 4602491921 | Treatment | Intermediate | **176000** | **156000** | **151000** | **154000** | -57 | 0.4 | 8.37 | 4.32 | -- | 5.5 | -- | 21.7 | **697** | -- | 2300 | **< 600 U** | 46.7 | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20211229 | 12/29/2021 | | N | 4602499871 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 16.4 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20220110 | 1/10/2022 | | N | 4602504131 | Treatment | Intermediate | **208000** | **188000** | **176000** | **175000** | 29 | 4.02 | 8.27 | 4.39 | -- | 26.1 | -- | 15.6 | **630** | -- | 4900 | < 120 U | **50.1** | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20220217 | 2/17/2022 | | N | 4602526891 | Treatment | Intermediate | **27800** | **30000** | **23500** | **23900** | 16.9 | 2.7 | 9.27 | 3.521 | -- | 21.3 | -- | 15.3 | **601** | -- | 6000 | **< 2400 U** | 29.6 J | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20220304 | 3/4/2022 | | N | 4602537771 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 15.2 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20220317 | 3/17/2022 | | N | 4602545111 | Treatment | Intermediate | **86600** | **75900** | **71600** | **140000** | 100.4 | 8 | 7.83 | 2.388 | -- | 15.5 | -- | 218 ^2 | **404** | -- | 11000 | **312 J** | **5030** | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20220331 | 3/31/2022 | | N | 4602553841 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 15.2 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20220414 | 4/14/2022 | | N | 4602562981 | Treatment | Intermediate | **151000** | **143000** | **139000** | **143000** | 26.4 | 2.74 | 7.94 | 3.685 | 17.47 | 4.12 | -- | 15.6 | **507** | -- | 8200 | < 120 U | **64.2** | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20220428 | 4/28/2022 | | N | 4602572301 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 16.0 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20220513 | 5/13/2022 | | N | 4602580891 | Treatment | Intermediate | **177000** | **177000** | **185000** | **202000** | 182.1 | 2.74 | 8.19 | 3.16 | 14.86 | 13.1 | -- | 15.6 | **525** | -- | 5900 | **< 600 U** | **64.3** | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20220527 | 5/27/2022 | | N | 4602589681 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 16.2 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20220609 | 6/9/2022 | | N | 4602597481 | Treatment | Intermediate | **190000** | **215000** | **197000** | **192000** | 5.7 | 4.61 | 7.60 | 3.311 | 20.96 | 108 | -- | 18.5 | **540** | -- | -- | **< 600 U** | **79.2** | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20220620 | 6/20/2022 | | N | 4602604751 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 16.7 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20220711 | 7/11/2022 | | N | 4602617131 | Treatment | Intermediate | -- | **170000** | -- | **187000** | 153.7 | 3.5 | 7.81 | 4.073 | 21.8 | 9.5 | -- | 17.9 | **449** | -- | -- | -- | -- | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20220725 | 7/20/2022 | | N | 4602625591 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 19.0 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20220816 | 8/16/2022 | | N | 4602639181 | Treatment | Intermediate | -- | **221000** | -- | **297000** | 80.9 | 5.16 | 7.67 | 2.616 | 21.05 | 4.14 | -- | 20.7 | **454** | -- | -- | **< 1200 U** | **187** | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20220914 | 9/14/2022 | | N | 4602654911 | Treatment | Intermediate | -- | **285000** | -- | **288000** | 13.2 | 2.62 | 7.39 | 4.318 | 20.19 | 12.7 | -- | 20.2 | **513** | -- | -- | **< 600 U** | **111** | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20221010 | 10/10/2022 | | N | 4602671561 | Treatment | Intermediate | -- | **280000** | -- | **308000** | 103.9 | 2.49 | 7.56 | 3.955 | 18.75 | 13.5 | -- | 18.6 | **433** | -- | -- | **< 600 U** | **117** | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20221108 | 11/8/2022 | | N | 4602691101 | Treatment | Intermediate | -- | **140000** | -- | **143000** | 43.50 | 7.60 | 7.89 | 3.929 | 15.90 | 27.10 | -- | 25.2 | **424** | -- | -- | **< 600 U** | **110** | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20221208 | 12/8/2022 | | N | 4602709591 | Treatment | Intermediate | **266000** | **262000** | **256000** | **252000** | -3.0 | 1.73 | 7.55 | 3.913 | 15.5 | 18.4 | -- | 23.3 | **445** | -- | -- | **< 600 U** | **164** | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20230117 | 1/17/2023 | | N | 4602730721 | Treatment | Intermediate | **328000** | **328000** | **368000** | **354000** | 123.7 | 3.55 | 7.77 | 4.017 | 15.04 | 64.1 | -- | 22.8 | 226 | -- | -- | **< 1200 U** | **182** | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20230221 | 2/21/2023 | | N | 4602750091 | Treatment | Intermediate | **437000** | **433000** | **403000** | **419000** | 78.0 | 5.68 | 7.61 | 4.556 | 13.36 | 30.5 | -- | 22.4 | **497** | -- | -- | **< 1200 U** | **190** | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20230221-X | 2/21/2023 | | FD | 4602750091 | Treatment | Intermediate | **422000** | **446000** | **405000** | **427000** | -- | -- | -- | -- | -- | -- | -- | 22.1 | **470** | -- | -- | **< 1200 U** | **181** | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20230315 | 3/15/2023 | | N | 4602763801 | Treatment | Intermediate | -- | **144000** | -- | **129000** | 92.1 | 0.64 | 7.88 | 3.194 | 13.6 | 10.5 | -- | 41.9 | **417** | -- | -- | **< 6000 U** | **138 J** | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20230411 | 4/11/2023 | | N | 4602780351 | Treatment | Intermediate | **362000** | **345000** | **353000** | **340000** | 210.3 | 3.31 | 8.07 | 4.631 | 16.1 | 108 | -- | 97.9 | **477** | -- | -- | **< 1200 U** | **89.5** | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20230504 | 5/4/2023 | | N | 4602795681 | Treatment | Intermediate | **413000** | **412000** | **460000** | **466000** | -25.7 | 5.28 | 8.81 | 1.762 | 14.4 | 75.8 | -- | 70.7 | **396** | -- | -- | **< 1200 U** | **117** | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-33.0-20230615 | 6/15/2023 | 33 | N | 4602824081 | Treatment | Intermediate | **320000** | **344000** | **381000** | **501000** | 42.8 | 1.14 | 9.47 | 3.818 | 18.2 | 250 | -- | 25.1 | **382** | -- | -- | **< 2400 U** | 36.3 J | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-33.0-20230615-X | 6/15/2023 | 33 | FD | 4602824081 | Treatment | Intermediate | **286000** | **299000** | **328000** | **355000** | -- | -- | -- | -- | -- | -- | -- | 29.1 | **387** | -- | -- | **< 2400 U** | 35.7 J | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20230616 | 6/16/2023 | | N | 4602824881 | Treatment | Intermediate | **573000** | **532000** | **585000** | **574000** | 51.2 | 3.39 | 8.06 | 4.66 | 20.1 | 141 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20230712 | 7/12/2023 | | N | 4602840741 | Treatment | Intermediate | **276000** | **285000** | **297000** | **303000** | 191.2 | 3.18 | 7.95 | 3.576 | 22.2 | 75.4 | -- | 83.5 | **495** | -- | -- | **< 1200 U** | **98.6** | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20230817 | 8/17/2023 | | N | 4602864051 | Treatment | Intermediate | **502000 B** | **632000 B** | **596000** | **584000** | 109.4 | 2.05 | 8.11 | 4.04 | 21 | 134 | -- | 71.4 | **256** | -- | -- | **< 2400 U** | **116 J** | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20230912 | 9/12/2023 | | N | 4602880021 | Treatment | Intermediate | **652000** | **675000** | **704000** | **738000** | 62.9 | 2.1 | 8.18 | 4.513 | 21.79 | 146 | -- | 58.7 | **327** | -- | -- | **< 1200 U** | **153** | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-27.5-20231019 | 10/19/2023 | 27.5 | N | 4602907271 | Treatment | Intermediate | **288** | **908** | < 10.0 U | < 10.0 U | -26.1 | 0.17 | 7.44 | 3.499 | 17.8 | 41 | -- | 204 | 47.6 | -- | -- | 135 | **300** | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-20231113 | 11/13/2023 | | N | JD76851 | Treatment | Intermediate | **750000** | **703000** | **821000** | **818000** | 23 | 1.34 | 8.5 | 5.13 | 13.5 | 26.4 | -- | 126 | **573** | -- | -- | 148 B | **297** | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-31.0-20231221 | 12/21/2023 | 31 | N | JD79358 | Treatment | Intermediate | **6410** | **10400** | < 10 U | < 10 U | -313.7 | 0.08 | 7.38 | 3.667 | 13.9 | 106 | -- | 78.5 | 92.4 | -- | -- | **661** | **227** | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-31.0-20240125 | 1/25/2024 | 31 | N | JD81190 | Treatment | Intermediate | **311** | **382** | < 10 U | < 10 U | -456.5 | 0.08 | 7.17 | 3.918 | 14.2 | 27.9 | -- | 67.3 | < 20 U | -- | -- | **607** | **317** | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-31.0-20240214 | 2/14/2024 | 31 | N | JD82437 | Treatment | Intermediate | -- | **1480** | 5.1 B | < 10 U | -278.7 | 0.05 | 7.59 | 4.71 | 13.3 | 84.8 | -- | 52.3 | 9.1 | -- | -- | **2060** | **352** | -- |
| 114-P2-IRM-93I | 114-P2-IRM-93I-31.0-20240311 | 3/11/2024 | 31 | N | JD84214 | Treatment | Intermediate | **566** | **815** | < 10 U | < 10 U | -215 | 2.31 | 7.36 | 1.783 | 14.2 | 22 | -- | 10.4 | 34.1 | -- | -- | **1070** | **261** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-32-2020326 | 3/26/2020 | 32 | N | JD5245 | Baseline | Intermediate | **28800** | **42100 J** | **9600** | **7200 J** | -26 | 0 | 9.27 | 2.16 | -- | 9.2 | -- | 57.3 | 146 | < 2.0 U | 520 | **463** | **631** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20201120 | 11/20/2020 | | N | JD16639 | Treatment | Intermediate | **631**<br>**633** | **10700**<br>**1370** | **298000** | **480** | 138 | 2.85 | 7.22 | 1.7 | -- | 12.4 | -- | 8.8 | **474** | -- | 682 | -- | **2100**<br>**2090** | < 0.20 U |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20201218 | 12/18/2020 | | N | JD17977 | Treatment | Intermediate | **39100** | **26700** | **26600** | **23700** | 146.3 | 3.32 | 7.32 | 2.086 | -- | -- NM | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20210114 | 1/14/2021 | | N | JD19032 | Treatment | Intermediate | **238** | **1110** | **190** | **160** | 203 | 3.25 | 6.68 | 2.035 | -- | 13.8 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20210218 | 2/18/2021 | | N | JD20490 | Treatment | Intermediate | 47.6 | **862** | < 10 U | < 10 U | 54.3 | 4.31 | 7.05 | 0.885 | -- | 9.96 | -- | 5.0 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20210319 | 3/19/2021 | | N | JD22003 | Treatment | Intermediate | **1220** | **2330** | **920** | **910** | 235.8 | 4.32 | 7.04 | 1.896 | -- | 6.99 | -- | 7.4 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20210429 | 4/29/2021 | | N | 4602331931 | Treatment | Intermediate | **1010** | **2250** | **900** | **922 J+** | 228.1 | 5.88 | 7.22 | 2.24 | -- | 5.51 | -- | 7.3 | **553** | -- | 540 | 80.6 J | **2440** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20210525 | 5/25/2021 | | N | 4602351281 | Treatment | Intermediate | **1820** | **2500** | **1710 H** | **1970 H** | -- | -- | -- | -- | -- | -- | -- | 9.3 | **511** | -- | 880 | 99.3 J | **2290** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-39.0-20210629 | 6/29/2021 | 39 | N | 4602376271 | Treatment | Intermediate | **493** | **1010** | < 10.0 U | < 10.0 U | 67.6 | 1.71 | 7.35 | 2.276 | -- | 7.64 | -- | 14.8 | **265** | -- | -- | **866** | **1300** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20210921 | 9/21/2021 | | N | 4602432721 | Treatment | Intermediate | **6960** | **7690** | **6870** | **7890** | 81.9 | 4.21 | 7.51 | 2.58 | -- | 8.68 | -- | 6.6 | **411** | -- | 660 | < 120 U | **1640** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20211118 | 11/18/2021 | | N | 4602475481 | Treatment | Intermediate | **3160** | **6000** | **< 100 U** | **< 100 U** | -- | -- | -- | -- | -- | -- | -- | 37.8 | **541** | -- | 430 | < 240 U | **1020** | -- |
| 114-P2-IRM-94I | 114-P2-IRM 94I | 12/2/2021 | | N | 4602484621 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 13.3 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20211215 | 12/15/2021 | | N | 4602491921 | Treatment | Intermediate | **3070** | **3330** | **616** | **627** | -3.64 | 5.08 | 7.1 | 2.63 | -- | 111.29 | -- | 14.4 | **480** | -- | 1600 | 118 J | **1350** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20211215-X | 12/15/2021 | | FD | 4602491921 | Treatment | Intermediate | **3000** | **4280** | **638** | **683** | -- | -- | -- | -- | -- | -- | -- | 15.2 | **475** | -- | 1600 | 115 J | **1320** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20211229 | 12/29/2021 | | N | 4602499871 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 16.0 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20220110 | 1/10/2022 | | N | 4602504131 | Treatment | Intermediate | **6590** | **6300** | **6120** | **6840** | -53 | 11.86 | 7.61 | 2.85 | -- | 52.8 | -- | 12.8 | **348** | -- | 2600 | 191 | **1300** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20220217 | 2/17/2022 | | N | 4602526891 | Treatment | Intermediate | **2930** | **4180** | **2010** | **1920** | -4.7 | 2.64 | 7.84 | 2.469 | -- | 38.8 | -- | 17.8 | **304** | -- | 1900 | 182 | **2170** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20220317 | 3/17/2022 | | N | 4602545111 | Treatment | Intermediate | **787** | **11100** | **363** | **363** | 202.8 | 6.87 | 6.99 | 1.613 | -- | 89 | -- | 19.1 ^2 | **405** | -- | 730 | 169 | **2720** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20220317-X | 3/17/2022 | | FD | 4602545111 | Treatment | Intermediate | **774** | **2860** | **358** | **363** | -- | -- | -- | -- | -- | -- | -- | 19.3 ^2 | **405** | -- | 690 | 170 | **2690** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20220331 | 3/31/2022 | | N | 4602553841 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 21.6 F1 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20220331-X | 3/31/2022 | | FD | 4602553841 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 21.8 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20220414 | 4/14/2022 | | N | 4602562981 | Treatment | Intermediate | **1370** | **4820** | **308 F1** | **156 F1** | -81.2 | 1.06 | 8.48 | 2.338 | 16.9 | 59.4 | -- | 20.0 | **428** | -- | 4700 | 138 | **2750** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20220414-X | 4/14/2022 | | FD | 4602562981 | Treatment | Intermediate | **1410** | **4130** | **321** | **282** | -- | -- | -- | -- | -- | -- | -- | 20.6 | **409** | -- | 4400 | 143 | **2860** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20220428 | 4/28/2022 | | N | 4602572301 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 16.9 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20220428-X | 4/28/2022 | | FD | 4602572301 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 17.9 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20220513 | 5/13/2022 | | N | 4602580891 | Treatment | Intermediate | **1210** | **3550** | **307** | **139** | 202.5 | 2.43 | 6.84 | 1.806 | 15.69 | 170 | -- | 16.6 | 40.4 | -- | 7000 F1 | 152 | **3130** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20220513-X | 5/13/2022 | | FD | 4602580891 | Treatment | Intermediate | **1210** | **3390** | **301** | **243** | -- | -- | -- | -- | -- | -- | -- | 16.7 | **447** | -- | 7000 | 152 | **3120** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20220527 | 5/27/2022 | | N | 4602589681 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 15.4 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20220527-X | 5/27/2022 | | FD | 4602589681 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 15.4 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20220609 | 6/9/2022 | | N | 4602597481 | Treatment | Intermediate | **5320** | **7220** | **5800** | **5470** | 64.0 | 3.30 | 7.02 | 1.938 | 17.99 | 478 | -- | 13.2 | **444** | -- | -- | 113 J | **2640** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20220609-X | 6/9/2022 | | FD | 4602597481 | Treatment | Intermediate | **4520** | **4510** | **2850** | **2740** | -- | -- | -- | -- | -- | -- | -- | 14.5 | **457** | -- | -- | 76.3 J | **2740** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20220620 | 6/20/2022 | | N | 4602604751 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 11.1 | -- | -- | -- | -- | -- | -- |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20220620-X | 6/20/2022 | | FD | 4602604751 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 10.9 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20220711 | 7/11/2022 | | N | 4602617131 | Treatment | Intermediate | **8070** | **10400** | **6790** | **6910** | -1.4 | 3.26 | 7.14 | 2.42 | 18.63 | 42 | -- | 11.3 | **432** | -- | -- | 74.5 J | **2820** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20220816 | 8/16/2022 | | N | 4602639181 | Treatment | Intermediate | -- | **9600** | -- | **8180** | 70.1 | 4.25 | 8.50 | 2.218 | 17.52 | 35 | -- | 11.7 | **413** | -- | -- | < 240 U | **2890** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20220914 | 9/14/2022 | | N | 4602654911 | Treatment | Intermediate | -- | **8240** | -- | **6200** | 28.2 | 3.27 | 7.30 | 2.488 | 17.19 | 23.2 | -- | 13.8 | **444** | -- | -- | 136 | **3030** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20221011 | 10/11/2022 | | N | 4602672521 | Treatment | Intermediate | **8030** | **4930** | -- | **4750** | 46.4 | 2.68 | 6.99 | 2.046 | 17.95 | 28.8 | -- | 13.3 | **449** | -- | -- | 114 J | **3130** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20221108 | 11/8/2022 | | N | 4602691101 | Treatment | Intermediate | -- | **4890** | -- | **4740** | 58.20 | 8.17 | 7.61 | 2.432 | 16.30 | 52.00 | -- | 12.1 | **450** | -- | -- | **429** | **3550** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20221208 | 12/8/2022 | | N | 4602709591 | Treatment | Intermediate | **3650** | **5050** | **2690** | **2690** | 82.6 | 1.69 | 6.76 | 2.156 | 17 | 29.2 | -- | 12.8 | **385** | -- | -- | 259 | **3880** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20230117 | 1/17/2023 | | N | 4602730721 | Treatment | Intermediate | **4410** | **4720** | **3650** | **3700** | 222.5 | 4.2 | 6.96 | 2.1 | 16.58 | 138 | -- | 8.6 | **461** | -- | -- | < 120 U | **4070** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20230117-X | 1/17/2023 | | FD | 4602730721 | Treatment | Intermediate | **4540** | **5140** | **3770** | **3840** | -- | -- | -- | -- | -- | -- | -- | 8.4 | **464** | -- | -- | 79.5 J | **4270** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20230221 | 2/21/2023 | | N | 4602750091 | Treatment | Intermediate | **4720** | **7930** | **2020** | **2150** | 35.8 | 4.8 | 7.14 | 2.155 | 15.8 | 67.5 | -- | 44.1 | **378** | -- | -- | < 120 U | **3330** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20230315 | 3/15/2023 | | N | 4602763801 | Treatment | Intermediate | **19300** | **20100** | **16700** | **16900** | 193.7 | 3.09 | 6.97 | 1.74 | 13.7 | 32.5 | -- | 37.2 | **356** | -- | -- | **< 2400 U** | **2920** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20230411 | 4/11/2023 | | N | 4602780351 | Treatment | Intermediate | **25400** | **23500** | **18800** | **22400** | 211.0 | 4.26 | 7.04 | 2.25 | 16 | 29.6 | -- | 29.2 | **336** | -- | -- | < 120 U | **2750** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20230504 | 5/4/2023 | | N | 4602795681 | Treatment | Intermediate | **42100** | **7890** | **40000** | **35500** | 217.4 | 5.8 | 7.06 | 1.959 | 15.7 | 41 | -- | 27.9 | **342** | -- | -- | **< 600 U** | **2580** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20230504-X | 5/4/2023 | | FD | 4602795681 | Treatment | Intermediate | **40400** | **41800** | **39900** | **37800** | -- | -- | -- | -- | -- | -- | -- | 27.3 | **351** | -- | -- | **< 600 U** | **2590** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20230615 | 6/15/2023 | | N | 4602824081 | Treatment | Intermediate | **32400** | **32100** | **35400** | **38800** | 133.7 | 3.97 | 7.15 | 1.762 | 17.9 | 25.2 | -- | 35.3 | **265** | -- | -- | **< 600 U** | **1460** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20230712 | 7/12/2023 | | N | 4602840741 | Treatment | Intermediate | **21400** | **26700** | **19200** | **19400** | 200 | 4.6 | 6.76 | 1.549 | 19.94 | 15.8 | -- | 47.6 | **319** | -- | -- | < 240 U | **1320** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20230817 | 8/17/2023 | | N | 4602864051 | Treatment | Intermediate | **21300 B** | **24600 B** | **20900** | **20700** | 218.3 | 4.51 | 7.04 | 1.748 | 19.11 | 19.1 | -- | 71.9 | 235 | -- | -- | < 240 U | **1420** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20230912 | 9/12/2023 | | N | 4602880021 | Treatment | Intermediate | **24500** | **25300** | **21200** | **20400** | 6.6 | 10.3 | 7.57 | 1.793 | 17.83 | 40.6 | -- | 71.1 | **272** | -- | -- | **< 1200 U** | **1640** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20231019 | 10/19/2023 | | N | 4602907271 | Treatment | Intermediate | **24800** | **26900** | **22700** | **22400** | 61.9 | 1.13 | 7.09 | 2.107 | 16.9 | 71.4 | -- | 83.6 | **257** | -- | -- | **< 600 U** | **1920** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-20231113 | 11/13/2023 | | N | JD76851 | Treatment | Intermediate | **26700** | **2720** | **25300** | **26300** | 15.7 | 1.06 | 7.67 | 1.964 | 14.8 | 67.2 | -- | 128 | **269** | -- | -- | **898** | **2850** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-32.0-20231222 | 12/22/2023 | 32 | N | JD79445 | Treatment | Intermediate | **1080** | **2580** | 6.4 B | 8.8 B | -149.7 | 0.2 | 6.57 | 2.301 | 12.5 | 67 | -- | 248 | 75.0 | -- | -- | **11800** | **8750** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-32.0-20240125 | 1/25/2024 | 32 | N | JD81190 | Treatment | Intermediate | **1250** | **2090** | 8.3 B | 8.3 B | -295.5 | 0.12 | 6.91 | 2.147 | 13.6 | 64.5 | -- | 131 | 29.1 | -- | -- | 94.2 B | **9150** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-32.0-20240214 | 2/14/2024 | 32 | N | JD82437 | Treatment | Intermediate | **2340** | **2260** | 18 | 15 | -331.4 | 0.36 | 7.02 | 2.115 | 10.7 | 84.4 | -- | 96.8 | 23.3 | -- | -- | **526** | **7230** | -- |
| 114-P2-IRM-94I | 114-P2-IRM-94I-32.0-20240311 | 3/11/2024 | 32 | N | JD84214 | Treatment | Intermediate | **742** | **999** | < 10 U | < 10 U | -328.4 | 0.17 | 7.01 | 1.897 | 11.3 | 42.2 | -- | 37.8 | 31.2 | -- | -- | **651** | **5580** | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-62.0-20191022 | 10/22/2019 | 62 | N | JC97214 | N/A | Intermediate | -- | **536000** | -- | **526000 J** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-46.0-20200320 | 3/20/2020 | 46 | N | JD4980 | Baseline | Intermediate | **1140000** | **1100000** | **965000** | **953000** | -- | -- | -- | -- | -- | -- | -- | 34.7 | **893 J-** | < 2.0 U | 717 J | < 100 U | **67.2 J** | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-46.0-20200320-X | 3/20/2020 | 46 | FD | JD4980 | Baseline | Intermediate | **1060000** | **989000** | **987000** | **940000** | -- | -- | -- | -- | -- | -- | -- | 34.0 | **895 J-** | < 2.0 U | 1030 J | **< 1000 U** | **< 3000 U** | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-51.0-20200320 | 3/20/2020 | 51 | N | JD4980 | Baseline | Intermediate | **1130000** | **1130000** | **877000 J** | **502000 J** | -- | -- | -- | -- | -- | -- | -- | 35.9 | **860 J-** | < 2.0 U | 272 | < 100 U | **82.9** | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-56.0-20200320 | 3/20/2020 | 56 | N | JD4980 | Baseline | Intermediate | **882000** | **1080000** | **996000** | **960000** | -- | -- | -- | -- | -- | -- | -- | 34.4 | **854 J-** | < 2.0 U | 668 | < 100 U | 49.8 J | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-61.0-20200320 | 3/20/2020 | 61 | N | JD4980 | Baseline | Intermediate | **751000** | **637000** | **753000** | **706000** | -- | -- | -- | -- | -- | -- | -- | 20.3 | **840 J-** | < 2.0 U | 278 | 87.5 J | **60.1 J** | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-51-20210318 | 3/18/2021 | 51 | N | JD21941 | Treatment | Intermediate | **1000000** | **838000** | **601000** | **689000** | B6 | 0.16 | 8.56 | 6.474 | -- | -- NM | -- | 31.5 | **1020** | -- | -- | -- | -- | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-20210429 | 4/29/2021 | | N | 4602331931 | Treatment | Intermediate | **742000** | **796000** | **88.2** | **87.1 J+** | 228 | 6.41 | 8.32 | 6.987 | -- | 3 | -- | 28.4 | **979** | -- | 1500 | **< 600 U** | **63.6** | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-20210526 | 5/26/2021 | | N | 4602352461 | Treatment | Intermediate | **778000** | **790000** | **722000** | **801000** | -- | -- | -- | -- | -- | -- | -- | 30.4 | **927** | -- | 1900 | **< 600 U** | **67.4** | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-51.0-20210625 | 6/25/2021 | 51 | N | 4602374061 | Treatment | Intermediate | **723000** | **602000** | **778000** | **800000** | 82.1 | 1.34 | 8.92 | 4.97 | -- | 5.68 | -- | 30.1 | **1220** | -- | -- | **< 2400 U** | 43.4 J | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-53.0-20210726 | 7/26/2021 | 53 | N | 4602395391 | Treatment | Intermediate | **898000** | **921000** | **875000** | **940000** | 130.2 | 0.09 | 8.65 | 7.33 | -- | 0.36 | -- | 29.9 | **960** | -- | 1400 | **< 6000 U** | **107 J** | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-51.0-20210830 | 8/30/2021 | 51 | N | 4602418391 | Treatment | Intermediate | **727000** | **943000** | **727000** | **721000** | -- | -- | -- | -- | -- | -- | -- | 31.4 | **1110** | -- | 1500 | **< 2400 U** | **71.3 J** | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-20210922 | 9/22/2021 | | N | 4602433951 | Treatment | Intermediate | **362000** | **396000** | **348000 H** | **369000 H** | 44.1 | 2.66 | 2.82 | 7.019 | -- | 37.8 | -- | 234 | **1050** | -- | 2300 | **< 600 U** | **187** | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-20211007 | 10/7/2021 | | N | 4602449131 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 215 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-20211018 | 10/18/2021 | | N | 4602453121 | Treatment | Intermediate | **264000** | **274000** | **260000** | **272000** | -- | -- | -- | -- | -- | -- | -- | 239 | **625** | -- | 4600 | **354 J** | **240** | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-20211104 | 11/4/2021 | | N | 4602468981 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 306 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-20211118-X | 11/18/2021 | | FD | 4602475481 | Treatment | Intermediate | **2300** | **2480** | **2180** | **2350** | -- | -- | -- | -- | -- | -- | -- | 4.6 | **503** | -- | 710 | < 120 U | **597** | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-20211118 | 11/18/2021 | | N | 4602475481 | Treatment | Intermediate | **30900** | **19800** | **41700** | **1060** | -- | -- | -- | -- | -- | -- | -- | 268 | **493** | -- | 9300 | **603** | **526** | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-20211215 | 12/15/2021 | | N | 4602491921 | Treatment | Intermediate | **98500** | **540000** | **76000** | **78200** | -- | -- | -- | -- | -- | -- | -- | 232 | **473** | -- | 2600 | **457 J** | **263** | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-20211229 | 12/29/2021 | | N | 4602499871 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 244 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-20220217 | 2/17/2022 | | N | 4602526891 | Treatment | Intermediate | **136000** | **153000** | **111000** | **104000** | 26.3 | 3.52 | 9.06 | 6.16 | -- | 379 | -- | 143 | **577** | -- | 2700 | **< 2400 U** | **271** | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-20220304 | 3/4/2022 | | N | 4602537771 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 246 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-51.0-20220317 | 3/17/2022 | 51 | N | 4602545111 | Treatment | Intermediate | **52600** | **67100** | **46900** | **60900** | -86.3 | 1.04 | 9.95 | 5.106 | -- | 257 | -- | 94.4 | **661** | -- | 6200 | **< 600 U** | **222** | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-20220414 | 4/14/2022 | | N | 4602562981 | Treatment | Intermediate | **257000** | **237000** | **208000** | **208000** | -256 | 0.49 | 9.43 | 9.903 | 17.8 | 62.1 | -- | 33.8 | **710** | -- | 4300 | **< 1200 U** | **195** | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-20220428 | 4/28/2022 | | N | 4602572301 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 27.3 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-20220513 | 5/13/2022 | | N | 4602580891 | Treatment | Intermediate | **192000** | **171000** | **228000** | **226000** | -24.9 | 2.54 | 9.11 | 6.883 | 14.86 | 47.2 | -- | 23.3 | **758** | -- | 5300 | **< 1200 U** | **184** | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-20220527 | 5/27/2022 | | N | 4602589681 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 23.5 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-20220609 | 6/9/2022 | | N | 4602597481 | Treatment | Intermediate | **307000** | **318000** | **282000** | **284000** | -96.7 | 3.23 | 8.91 | 8.246 | 22.34 | 206 | -- | 31.5 | **851** | -- | -- | **< 600 U** | **165** | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-20220620 | 6/20/2022 | | N | 4602604751 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 28.4 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-20220711 | 7/11/2022 | | N | 4602617131 | Treatment | Intermediate | **289000** | **293000** | **296000** | **296000** | -70.3 | 6.42 | 9.11 | 10.88 | 24.71 | 21.3 | -- | 23.5 | **758** | -- | -- | **< 600 U** | **193** | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-20220725 | 7/25/2022 | | N | 4602625591 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 23.5 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-20220816 | 8/16/2022 | | N | 4602639181 | Treatment | Intermediate | -- | **268000** | -- | **281000** | 137.6 | 4.22 | 8.62 | 10.07 | 23.35 | 18 | -- | 211 | **669** | -- | -- | **< 1200 U** | **254** | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-20220914 | 9/14/2022 | | N | 4602654911 | Treatment | Intermediate | -- | **30300** | -- | **40900** | 70.4 | 2.51 | 8.49 | 9.994 | 20.65 | 19.1 | -- | 69.4 | **773** | -- | -- | 77.9 J | **200** | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-20221010 | 10/10/2022 | | N | 4602671561 | Treatment | Intermediate | -- | **38200** | -- | **35200** | 88.7 | 1.41 | 9.09 | 9.028 | 18.97 | 34.7 | -- | 135 | **583** | -- | -- | < 240 U | **195** | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-20221108 | 11/8/2022 | | N | 4602691101 | Treatment | Intermediate | -- | **25400** | -- | **26000** | 53.0 | 5.75 | 8.67 | 12.22 | 16.5 | 28.3 | -- | 118 | **740** | -- | -- | **< 600 U** | **256** | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-20221208 | 12/8/2022 | | N | 4602709591 | Treatment | Intermediate | **65700** | **64500** | **58100** | **59200** | -33.2 | 1.31 | 8.87 | 11.44 | 15.2 | 47 | -- | 115 | **746** | -- | -- | 117 J | **265** | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-55.2-20230217 | 2/17/2023 | 55.2 | N | 4602748361 | Post-Treatment | Intermediate | **167** | **2160** | < 10.0 U | < 10.0 U | -302.2 | 0.26 | 8.85 | 8.565 | 14.21 | 17.1 | -- | 98.0 | **604** | 10.2 | -- | 84.0 J | **470** | -- |
| 114-P2-IRM-95D | 114-P2-IRM-95D-55.2-20230522 | 5/22/2023 | 55.2 | N | 4602807921 | Post-Treatment | Intermediate | -- | **841** | -- | < 10.0 UJ | 89.1 | 4.18 | 8.37 | 7.015 | 19.10 | 9.84 | -- | 42.8 | **808** | 9.68 J+ | -- | **< 1200 U** | **517** | -- |
| 114-P2-IRM-95I | 114-P2-IRM-95I-27.0-20200320 | 3/20/2020 | 27 | N | JD4980 | Baseline | Intermediate | **28100** | **28800** | **24600** | **25500** | -- | -- | -- | -- | -- | -- | -- | 21.5 | 76.7 J- | < 2.0 U | 8100 | **436** | **114** | -- |
| 114-P2-IRM-95I | 114-P2-IRM-95I-32.0-20200320 | 3/20/2020 | 32 | N | JD4980 | Baseline | Intermediate | **33200** | **34500** | **29600** | **31200** | -- | -- | -- | -- | -- | -- | -- | 21.4 | 86.5 J- | < 2.0 U | 8250 | **451** | **123** | -- |
| 114-P2-IRM-95I | 114-P2-IRM-95I-37.0-20200320 | 3/20/2020 | 37 | N | JD4980 | Baseline | Intermediate | **275000** | **337000** | **236000** | **225000** | -- | -- | -- | -- | -- | -- | -- | 22.1 | **384 J-** | < 2.0 U | 6380 | 174 | **99.5 J** | -- |
| 114-P2-IRM-95I | 114-P2-IRM-95I-42.0-20200320 | 3/20/2020 | 42 | N | JD4980 | Baseline | Intermediate | **717000** | **930000** | **816000** | **806000** | -- | -- | -- | -- | -- | -- | -- | 28.5 | **915 J-** | < 2.0 U | 934 | **< 2500 U** | **< 380 U** | -- |
| 114-P2-IRM-95I | 114-P2-IRM-95I-42-20210318 | 3/18/2021 | 42 | N | JD21941 | Treatment | Intermediate | **424000** | **322000** | **249000** | **293000** | 8.2 | 1.55 | 9.13 | 4.93 | -- | 7.91 | -- | 26.9 | **1210** | -- | -- | -- | -- | -- |
| 114-P2-IRM-95I | 114-P2-IRM-95I-37-20210428 | 4/28/2021 | 37 | N | 4602331061 | Treatment | Intermediate | **3500** | **3190** | R | **1870** | 135.8 | 10.19 ** | 6.94 | 4.262 | -- | 4.11 | -- | 18.2 | 107 | -- | 20000 | **392** | **276** | -- |
| 114-P2-IRM-95I | 114-P2-IRM-95I-42.0-20210601 | 6/1/2021 | 42 | N | 4602355971 | Treatment | Intermediate | **1900** | **2450** | **635** | **551** | 138.1 | 0.07 | 6.88 | 3.783 | -- | 3.68 | -- | 22.5 | 203 | -- | 15000 | **388** | **385** | -- |
| 114-P2-IRM-95I | 114-P2-IRM-95I-42.0-20210625 | 6/25/2021 | 42 | N | 4602374061 | Treatment | Intermediate | **9060** | **7460** | **8260** | **8820** | 85.7 | 1.88 | 9.33 | 3.718 | -- | 3.79 | -- | 24.1 | **1240** | -- | -- | **< 600 U** | 29.5 J | -- |
| 114-P2-IRM-95I | 114-P2-IRM-95I-32.0-20210726 | 7/26/2021 | 32 | N | 4602395391 | Treatment | Intermediate | **1960** | **2650** | **1090** | **941** | -- | -- | -- | -- | -- | -- | -- | 24.7 | 159 | -- | 23000 | **437** | **214** | -- |
| 114-P2-IRM-95I | 114-P2-IRM-95I-42.0-20210830 | 8/30/2021 | 42 | N | 4602418391 | Treatment | Intermediate | **1280** | **3330** | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 23.6 | **290** | -- | 21000 | **304** | **210** | -- |
| 114-P2-IRM-95I | 114-P2-IRM-95I-20210922 | 9/22/2021 | | N | 4602433951 | Treatment | Intermediate | **2430** | **2980** | **1350 H** | **1180 H** | 41.5 | 1.74 | 7.27 | 4.144 | -- | 9.02 | -- | 80.4 | 97.6 | -- | 24000 | **389** | **133** | -- |
| 114-P2-IRM-95I | 114-P2-IRM-95I-20211007 | 10/7/2021 | | N | 4602449131 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 90.1 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-95I | 114-P2-IRM-95I-20211018 | 10/18/2021 | | N | 4602453121 | Treatment | Intermediate | **366** | **2960** | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 101 | 36.5 | -- | 27000 | **2520** | **156** | -- |
| 114-P2-IRM-95I | 114-P2-IRM-95I-20211118 | 11/18/2021 | | N | 4602475481 | Treatment | Intermediate | **866** | **1460** | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 98.7 | 89.5 | -- | 18000 | **1020** | **138** | -- |
| 114-P2-IRM-95I | 114-P2-IRM-95I | 12/2/2021 | | N | 4602484621 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 141 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-95I | 114-P2-IRM-95I-20211215 | 12/15/2021 | | N | 4602491921 | Treatment | Intermediate | **214000** | **205000** | **131000** | **127000** | -78.52 | 0.45 | 7 | 4.65 | -- | 552.36 *** | -- | 184 | **473** | -- | 1900 | **< 600 U** | **1370** | -- |
| 114-P2-IRM-95I | 114-P2-IRM-95I-25-20220113 | 1/13/2022 | 25 | N | 4602506661 | Treatment | Intermediate | **260** | **487** | < 20.0 U | < 20.0 U | -331 | 0 | 7.68 | 4.51 | -- | 9.64 | -- | 92.5 | 35.4 | -- | 11000 | **< 600 U** | **104** | -- |
| 114-P2-IRM-95I | 114-P2-IRM-95I-25-20220218 | 2/18/2022 | 25 | N | 4602528091 | Treatment | Intermediate | **239** | **282** | < 10.0 U | < 20.0 U | -20 | 0.05 | 7.42 | 3.594 | -- | 3.98 | -- | 185 | 2.91 | -- | 15000 | 137 J | **96.1** | -- |
| 114-P2-IRM-95I | 114-IRM-95I-32-20220317 | 3/17/2022 | 32 | N | 4602545111 | Treatment | Intermediate | **1080** | **3310** | < 10.0 U | < 10.0 U | -57.8 | 8.27 | 7.28 | 2.01 | -- | 675 | -- | 163 | 56.0 | -- | 19000 | **2830** | **105** | -- |
| 114-P2-IRM-95I | 114-P2-IRM-95I-20220331 | 3/31/2022 | | N | 4602553841 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 149 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-95I | 114-P2-IRM-95I-20220414 | 4/14/2022 | | N | 4602562981 | Treatment | Intermediate | **6190** | **38900** | **3660** | **49300** | 0.1 | 2.85 | 8.13 | 3.682 | 16.68 | 32 | -- | 194 | 147 | -- | 20000 | **370** | **120** | -- |
| 114-P2-IRM-95I | 114-P2-IRM-95I-20220428 | 4/28/2022 | | N | 4602572301 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 172 F1 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-95I | 114-P2-IRM-95I-32-20220512 | 5/12/2022 | | N | 4602580081 | Treatment | Intermediate | **686** | **937** | < 20.0 U | < 20.0 U | -175.0 | 0.07 | 6.83 | 3.414 | 15.04 | 8.38 | -- | 198 | 19.3 | -- | 13000 | **419** | **97.9** | -- |
| 114-P2-IRM-95I | 114-P2-IRM-95I-20220527 | 5/27/2022 | | N | 4602589681 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 242 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-95I | 114-P2-IRM-95I-20220609 | 6/9/2022 | | N | 4602597481 | Treatment | Intermediate | **9820** | **13600** | **6990** | **6890** | -- DNAPL | -- DNAPL | -- DNAPL | -- DNAPL | -- DNAPL | -- DNAPL | -- | 264 | 136 | -- | -- | **453** | **167** | -- |
| 114-P2-IRM-95I | 114-P2-IRM-95I-20220620 | 6/20/2022 | | N | 4602604751 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 273 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-95I | 114-P2-IRM-95I-20220711 | 7/11/2022 | | N | 4602617131 | Treatment | Intermediate | **13700** | **16100** | **10800** | **10600** | 51.2 | 2.94 | 7.33 | 1.055 | 19.64 | 589 | -- | 263 | 156 | -- | -- | **399** | **205** | -- |
| 114-P2-IRM-95I | 114-P2-IRM-95I-20220711-X | 7/11/2022 | | FD | 4602617131 | Treatment | Intermediate | **14100** | **16200** | **11000** | **10600** | -- | -- | -- | -- | -- | -- | -- | 266 | 144 | -- | -- | **398** | **206** | -- |
| 114-P2-IRM-95I | 114-P2-IRM-95I-20220725 | 7/25/2022 | | N | 4602625591 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 262 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-95I | 114-P2-IRM-95I-20220816 | 8/16/2022 | | N | 4602639181 | Treatment | Intermediate | -- | **17700** | -- | **6750** | 131.5 | 5 | 7.55 | 3.949 | 21.82 | 565 | -- | 324 | 156 | -- | -- | **369** | **236** | -- |
| 114-P2-IRM-95I | 114-P2-IRM-95I-20220914 | 9/14/2022 | | N | 4602654911 | Treatment | Intermediate | -- | **9440** | -- | **2770** | -2.4 | 3.47 | 7.18 | 3.898 | 19.73 | 179 | -- | 400 | 174 | -- | -- | **451** | **268** | -- |
| 114-P2-IRM-95I | 114-P2-IRM-95I-20221011 | 10/11/2022 | | N | 4602672521 | Treatment | Intermediate | **4910** | **9140** | -- | **2100** | 15.4 | 2.46 | 7.12 | 3.375 | 18.06 | 335 | -- | 368 | 148 | -- | -- | **544** | **345** | -- |
| 114-P2-IRM-95I | 114-P2-IRM-95I-20221108 | 11/8/2022 | | N | 4602691101 | Treatment | Intermediate | -- | **10200** | -- | **< 100 U** | 51.70 | 6.94 | 7.34 | 3.997 | 15.80 | 508 | -- | 423 | 122 | -- | -- | **2480** | **402** | -- |
| 114-P2-IRM-95I | 114-P2-IRM-95I-20221208 | 12/8/2022 | | N | 4602709591 | Treatment | Intermediate | **2010** | **2790** | < 50.0 U | < 50.0 U | 79.6 | 1.74 | 6.9 | 3.608 | 15.8 | 228 | -- | 277 | 50.8 | -- | -- | **1820** | **360** | -- |
| 114-P2-IRM-96D | 114-P2-IRM-96D-52-2020324 | 3/24/2020 | 52 | N | JD5095 | Baseline | Intermediate | **1170000** | **904000 J** | **835000** | **817000** | -- | -- | -- | -- | -- | -- | -- | 42.2 | **1120** | R | 479 | **< 5000 U** | **75.0 J** | -- |
| 114-P2-IRM-96D | 114-P2-IRM-96D-52.0-20210318 | 3/18/2021 | 52 | N | JD21941 | Treatment | Intermediate | **1110000** | **1110000** | **527000** | **629000** | 16.1 | 0.27 | 9.21 | 6.66 | -- | 2.87 | -- | 39.4 | **998** | -- | -- | -- | -- | -- |
| 114-P2-IRM-96D | 114-P2-IRM-96D-52-20210429 | 4/29/2021 | 52 | N | 4602331931 | Treatment | Intermediate | **840000** | **922000** | **882000** | **904000 J+** | 221 | 1.31 | 8.85 | 7.099 | -- | 0.89 | -- | 39.9 | **1090** | -- | 700 | **< 600 U** | **167** | -- |
| 114-P2-IRM-96D | 114-P2-IRM-96D-52.0-20210528 | 5/28/2021 | 52 | N | 4602354051 | Treatment | Intermediate | **768000** | **794000** | **730000** | **746000** | -7 | 0.64 | 9.04 | 5.025 | -- | 2.46 | -- | 43.4 | **1200** | -- | 750 | **< 12000 U** | **240 J** | -- |
| 114-P2-IRM-96D | 114-P2-IRM-96D-52.0-20210625 | 6/25/2021 | 52 | N | 4602374061 | Treatment | Intermediate | **728000** | **614000** | **733000** | **678000** | 48.9 | 0.21 | 8.92 | 5.317 | -- | -- NM | -- | 44.7 | **1570** | -- | -- | **< 2400 U** | **187** | -- |
| 114-P2-IRM-96D | 114-P2-IRM-96D-52.0-20210722 | 7/22/2021 | 52 | N | 4602393171 | Treatment | Intermediate | **718000** | **687000** | **757000** | **702000** | 40.1 | 0.07 | 8.82 | 4.039 | -- | 0.97 | -- | 40.7 | **1470** | -- | 930 | **< 4800 U** | **116 J** | -- |
| 114-P2-IRM-96D | 114-P2-IRM-96D-52.0-20210827 | 8/27/2021 | 52 | N | 4602417371 | Treatment | Intermediate | **1010000** | **1000000** | **1960000** | **1980000** | -- | -- | -- | -- | -- | -- | -- | 35.4 | **940** | -- | 910 | **< 2400 U** | **65.1 J** | -- |
| 114-P2-IRM-96D | 114-P2-IRM-96D-20210922 | 9/22/2021 | | N | 4602433951 | Treatment | Intermediate | **315000** | **293000** | **304000 H** | **309000 H** | -115 | 1.7 | 8.65 | 5.119 | -- | 200.6 | -- | 97.4 | **1270** | -- | 1100 | **< 600 U** | **111** | -- |
| 114-P2-IRM-96D | 114-P2-IRM-96D-20211007 | 10/7/2021 | | N | 4602449131 |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P2-IRM-96D | 114-P2-IRM-96D-20211104 | 11/4/2021 | | N | 4602468981 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 225 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-96D | 114-P2-IRM-96D-52.0-20211119 | 11/19/2021 | 52 | N | 4602476321 | Treatment | Intermediate | 536000 | 461000 | 479000 | 484000 | -- | -- | -- | -- | -- | -- | -- | 90.6 | 834 | -- | 740 | < 600 U | 418 | -- |
| 114-P2-IRM-96D | 114-P2-IRM-96D-20211215 | 12/15/2021 | | N | 4602491921 | Treatment | Intermediate | 208000 | 190000 | 89300 | 93700 | -90.72 | 0.32 | 7.98 | 5.89 | -- | 83.15 | -- | 242 | 823 | -- | 990 | 340 J | 138 | -- |
| 114-P2-IRM-96D | 114-P2-IRM-96D-20211229 | 12/29/2021 | | N | 4602499871 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 209 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-96D | 114-P2-IRM-96D-20220110 | 1/10/2022 | | N | 4602504131 | Treatment | Intermediate | 86200 | 85200 | 167000 | 160000 | -- | -- | -- | -- | -- | -- | -- | 209 | 316 | -- | 1500 | 91.5 J | 2890 | -- |
| 114-P2-IRM-96D | 114-P2-IRM-96D-20220217 | 2/17/2022 | | N | 4602526891 | Treatment | Intermediate | 173000 | 162000 | 142000 | 145000 | -91.5 | 1.52 | 8.81 | 5.629 | -- | 113 | -- | 164 | 782 | -- | 3700 | < 1200 U | 183 | -- |
| 114-P2-IRM-96D | 114-P2-IRM-96D-20220304 | 3/4/2022 | | N | 4602537771 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 191 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-96D | 114-P2-IRM-96D-20220317 | 3/17/2022 | | N | 4602545111 | Treatment | Intermediate | 2270 | 3510 | < 10.0 U | < 50.0 U | -57.8 | 8.05 | 7.28 | 1.972 | -- | 3.29 | -- | 248 | 91.1 | -- | 13000 | 1040 | 5830 | -- |
| 114-P2-IRM-96D | 114-P2-IRM-96D-20220331 | 3/31/2022 | | N | 4602553841 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 189 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-96D | 114-P2-IRM-96D-20220414 | 4/14/2022 | | N | 4602562981 | Treatment | Intermediate | 159000 | 141000 | 130000 | 113000 | 9.7 | 1.59 | 8.23 | 5.127 | 16.39 | 17.9 | -- | 207 | 591 | -- | 5500 | 420 J | 359 | -- |
| 114-P2-IRM-96D | 114-P2-IRM-96D-20220428 | 4/28/2022 | | N | 4602572301 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 189 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-96D | 114-P2-IRM-96D-20220513 | 5/13/2022 | | N | 4602580891 | Treatment | Intermediate | 46800 | 46000 | 37000 | 38800 | -18.9 | 2.54 | 7.11 | 2.427 | 15.8 | -- OR | -- | 181 | 554 | -- | 7500 | 308 J | 324 | -- |
| 114-P2-IRM-96D | 114-P2-IRM-96D-20220527 | 5/27/2022 | | N | 4602589681 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 199 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-96D | 114-P2-IRM-96D-20220609 | 6/9/2022 | | N | 4602597481 | Treatment | Intermediate | 26900 | 28900 | 25300 | 25100 | -71.5 | 4.96 | 8.10 | 4.185 | 20.42 | 143 | -- | 208 | 487 | -- | -- | 452 | 235 | -- |
| 114-P2-IRM-96D | 114-P2-IRM-96D-20220620 | 6/20/2022 | | N | 4602604751 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 193 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-96D | 114-P2-IRM-96D-20220711 | 7/11/2022 | | N | 4602617131 | Treatment | Intermediate | 23000 | 24000 | 19900 | 18000 | -31 | 3.24 | 8.32 | 5.049 | 22.34 | 61.3 | -- | 206 | 512 | -- | -- | 650 | 311 | -- |
| 114-P2-IRM-96D | 114-P2-IRM-96D-20220725 | 7/25/2022 | | N | 4602625591 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 207 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-96D | 114-P2-IRM-96D-20220816 | 8/16/2022 | | N | 4602639181 | Treatment | Intermediate | -- | 19500 | -- | 10600 | 109.5 | 3.20 | 8.96 | 5.753 | 22.87 | 140 | -- | 216 | 528 | -- | -- | 600 | 365 | -- |
| 114-P2-IRM-96D | 114-P2-IRM-96D-52-20220915 | 9/15/2022 | 52 | N | 4602655901 | Treatment | Intermediate | -- | 356000 | -- | 39300 | 293.5 | 1.54 | 3.86 | 8.988 | 17.35 | 9.91 | -- | 918 | 43.6 | -- | -- | 3690 | 2780 | -- |
| 114-P2-IRM-96D | 114-P2-IRM-96D-20221011 | 10/11/2022 | | N | 4602672521 | Treatment | Intermediate | 73900 | 65500 | -- | 69500 | -31.4 | 216 | 9.14 | 7.794 | 19.68 | 82.8 | -- | 55.5 | 784 | -- | -- | < 240 U | 152 | -- |
| 114-P2-IRM-96D | 114-P2-IRM-96D-20221108 | 11/8/2022 | | N | 4602691101 | Treatment | Intermediate | -- | 34100 | -- | 28800 | 39.7 | 7.14 | 8.43 | 5.224 | 16.2 | 427 | -- | 150 | 561 | -- | -- | 479 J | 252 | -- |
| 114-P2-IRM-96D | 114-P2-IRM-96D-20221208 | 12/8/2022 | | N | 4602709591 | Treatment | Intermediate | 7750 | 17400 | 4820 | 4820 | -54.5 | 1.36 | 8.54 | 4.879 | 14.9 | 367 | -- | 148 | 559 | -- | -- | 394 | 245 | -- |
| 114-P2-IRM-96D | 114-P2-IRM-96D-53.1-20230216 | 2/16/2023 | 53.1 | N | 4602747691 | Post-Treatment | Intermediate | 436 | 8730 | < 10.0 U | < 10.0 U | -384.5 | 0.28 | 8.58 | 5.104 | 15.09 | 98.9 | -- | 67.8 | 198 | 95.2 | -- | 76.9 J | 301 | -- |
| 114-P2-IRM-96D | 114-P2-IRM-96D-53.1-20230522 | 5/22/2023 | 53.1 | N | 4602807921 | Post-Treatment | Intermediate | 333 | 330 | < 10.0 U | < 10.0 UJ | 21.3 | 0.6 | 7.69 | 3.178 | 18.30 | 72.6 | -- | 56.4 | 46.4 | 95 | -- | < 120 U | 216 | -- |
| 114-P2-IRM-96I | 114-P2-IRM-96I-31.0-20200326 | 3/26/2020 | 31 | N | JD5217 | Baseline | Intermediate | 325 | 624 | < 10 U | 8.4 J | -- | -- | -- | -- | -- | -- | -- | 62.1 | 27.0 | < 2.0 U | 4480 | 1630 | 366 | -- |
| 114-P2-IRM-96I | 114-P2-IRM-96I-31.0-20210318 | 3/18/2021 | 31 | N | JD21941 | Treatment | Intermediate | 1810 | 2010 | 1400 | 1400 | -109.6 | 0.63 | 9.74 | 3.119 | -- | 6.89 | -- | 23.8 | 201 | -- | -- | -- | -- | -- |
| 114-P2-IRM-96I | 114-P2-IRM-96I-31.0-20210318-X | 3/18/2021 | 31 | FD | JD21941 | Treatment | Intermediate | 1980 | 2030 | 1300 | 1400 | -- | -- | -- | -- | -- | -- | -- | 22.8 | 199 | -- | -- | -- | -- | -- |
| 114-P2-IRM-96I | 114-P2-IRM-96I-31-20210428 | 4/28/2021 | 31 | N | 4602331061 | Treatment | Intermediate | 2310 | 2270 | 1270 | 1190 | -248.6 ** | 33.16 ** | 9.13 | 3.944 | -- | 1.97 | -- | 20.3 | 102 | -- | 9800 | 66.0 J | 186 | -- |
| 114-P2-IRM-96I | 114-P2-IRM-96I-31.0-20210528 | 5/28/2021 | 31 | N | 4602354051 | Treatment | Intermediate | 62.0 | 76.6 | < 10.0 U | < 10.0 U | -151.9 | 0.19 | 10.4 | 2.664 | -- | 1.71 | -- | 19.2 | 95.9 | -- | 13000 | 118 J | 139 | -- |
| 114-P2-IRM-96I | 114-P2-IRM-96I-31.0-20210625 | 6/25/2021 | 31 | N | 4602374061 | Treatment | Intermediate | 43.5 | 47.5 | < 10.0 U | < 10.0 U | -236.1 | 0 | 9.19 | 3.135 | -- | 2.35 | -- | 18.5 | 91.3 | -- | -- | 83.0 J | 135 | -- |
| 114-P2-IRM-96I | 114-P2-IRM-96I-31.0-20210722 | 7/22/2021 | 31 | N | 4602393171 | Treatment | Intermediate | 85.8 | 109 | < 10.0 U | < 10.0 U | -263.9 | 20.17 | 8.6 | 3.911 | -- | 4.28 | -- | 20.3 | 55.5 | -- | 18000 | 94.4 J | 75.7 | -- |
| 114-P2-IRM-96I | 114-P2-IRM-96I-31.0-20210827 | 8/27/2021 | 31 | N | 4602417371 | Treatment | Intermediate | 1550 | 1500 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 18.8 | 103 | -- | 14000 | < 120 U | 426 | -- |
| 114-P2-IRM-96I | 114-P2-IRM-96I-20210922 | 9/22/2021 | | N | 4602433951 | Treatment | Intermediate | 118 | 2020 | < 20.0 U | < 20.0 U | -174.4 | 1.79 | 8.35 | 4.065 | -- | 68.2 | -- | 19.5 | 100 | -- | 12000 | < 120 U | 737 | -- |
| 114-P2-IRM-96I | 114-P2-IRM-96I-20211007 | 10/7/2021 | | N | 4602449131 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 52.7 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-96I | 114-P2-IRM-96I-20211104 | 11/4/2021 | | N | 4602468981 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 36.9 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-96I | 114-P2-IRM-96I-20211118 | 11/18/2021 | | N | 4602475481 | Treatment | Intermediate | 5600 | 5980 | < 20.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 182 | 55.0 | -- | 17000 | 126 J | 708 | -- |
| 114-P2-IRM 96I | 114-P2-IRM 96I | 12/2/2021 | | N | 4602484621 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 201 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-96I | 114-P2-IRM-96I-20211215 | 12/15/2021 | | N | 4602491921 | Treatment | Intermediate | 206000 | 185000 | 170000 | 138000 | -- | -- | -- | -- | -- | -- | -- | 142 | 367 | -- | 3100 | < 600 U | 2320 | -- |
| 114-P2-IRM-96I | 114-P2-IRM-96I-20211229 | 12/29/2021 | | N | 4602499871 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 213 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-96I | 114-P2-IRM-96I-20220110 | 1/10/2022 | | N | 4602504131 | Treatment | Intermediate | 4190 | 4150 | 3250 | 2780 | -13 | 3.85 | 7.47 | 4.2 | -- | 56.8 | -- | 205 | 72.2 | -- | 18000 | 183 | 1350 | -- |
| 114-P2-IRM-96I | 114-P2-IRM-96I-20220217 | 2/17/2022 | | N | 4602526891 | Treatment | Intermediate | 2280 | 2380 | < 10.0 U | < 10.0 U | -75.4 | 1.23 | 7.79 | 3.413 | -- | 68.7 | -- | 255 | 44.4 | -- | 21000 | 412 | 1430 | -- |
| 114-P2-IRM-96I | 114-P2-IRM-96I-20220304 | 3/4/2022 | | N | 4602537771 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 248 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-96I | 114-P2-IRM-96I-20220317 | 3/17/2022 | | N | 4602545111 | Treatment | Intermediate | 4940 | 6230 | 153 | 320 | -77.6 | 7.75 | 7.3 | 2.132 | -- | 816 | -- | 277 | 62.7 | -- | 9400 | 307 | 1730 | -- |
| 114-P2-IRM-96I | 114-P2-IRM-96I-20220331 | 3/31/2022 | | N | 4602553841 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 299 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-96I | 114-P2-IRM-96I-20220414 | 4/14/2022 | | N | 4602562981 | Treatment | Intermediate | 4890 | 6470 | 86.8 | 288 | -98.4 | 2.51 | 7.68 | 3.051 | 16.11 | 78.7 | -- | 310 | 48.0 | -- | 20000 | 416 | 2380 | -- |
| 114-P2-IRM-96I | 114-P2-IRM-96I-20220428 | 4/28/2022 | | N | 4602572301 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 303 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-96I | 114-P2-IRM-96I-20220513 | 5/13/2022 | | N | 4602580891 | Treatment | Intermediate | 4330 | 5920 | 856 | 937 | 94.6 | 2.67 | 7.09 | 2.312 | 15.79 | -- OR | -- | 258 | 60.2 | -- | 8900 | 204 J | 2690 | -- |
| 114-P2-IRM-96I | 114-P2-IRM-96I-20220527 | 5/27/2022 | | N | 4602589681 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 291 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-96I | 114-P2-IRM-96I-20220609 | 6/9/2022 | | N | 4602597481 | Treatment | Intermediate | 5270 | 10200 | < 10.0 U | < 10.0 U | -- DNAPL | -- DNAPL | -- DNAPL | -- DNAPL | -- DNAPL | -- DNAPL | -- | 325 | 72.5 | -- | -- | 219 | 3430 | -- |
| 114-P2-IRM-96I | 114-P2-IRM-96I-20220620 | 6/20/2022 | | N | 4602604751 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 305 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-96I | 114-P2-IRM-96I-20220711 | 7/11/2022 | | N | 4602617131 | Treatment | Intermediate | 5440 | 9650 | < 10.0 U | < 50.0 U | -98.9 | 3 | 7.33 | 3.345 | 20.06 | 911 | -- | 298 | 89.1 | -- | -- | 224 | 3130 | -- |
| 114-P2-IRM-96I | 114-P2-IRM-96I-20220725 | 7/25/2022 | | N | 4602625591 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 288 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-96I | 114-P2-IRM-96I-20220818 | 8/18/2022 | | N | 4602640741 | Treatment | Intermediate | 3050 | 3000 | < 10.0 U | < 10.0 U | 101.8 | 1.96 | 8.11 | 2.619 | 17.08 | 96.1 | -- | 324 | 79.3 | -- | -- | 578 J | 3170 | -- |
| 114-P2-IRM-96I | 114-P2-IRM-96I-20220914 | 9/14/2022 | | N | 4602654911 | Treatment | Intermediate | -- | 7990 | -- | < 100 U | -17.6 | 2.74 | 7.60 | 3.578 | 18.23 | 993 | -- | 251 | 107 | -- | -- | 727 | 2660 | -- |
| 114-P2-IRM-96I | 114-P2-IRM-96I-20221011 | 10/11/2022 | | N | 4602672521 | Treatment | Intermediate | 6610 | 7960 | -- | < 10.0 U | -93.2 | 2.04 | 7.31 | 2.919 | 17.33 | 900 | -- | 349 | 130 | -- | -- | 340 | 2790 | -- |
| 114-P2-IRM-96I | 114-P2-IRM-96I-20221108 | 11/8/2022 | | N | 4602691101 | Treatment | Intermediate | -- | 7600 | -- | < 50.0 U | 10.1 | 7.18 | 7.53 | 3.333 | 15 | 576 | -- | 231 | 80.4 | -- | -- | 333 | 3570 | -- |
| 114-P2-IRM-96I | 114-P2-IRM-96I-20221208 | 12/8/2022 | | N | 4602709591 | Treatment | Intermediate | 602 | 2260 | < 100 U | < 100 U | -199.1 | 0.99 | 7.04 | 3.076 | 13.9 | -- OR | -- | 214 | 25.3 | -- | -- | < 120 U | 3370 | -- |
| 114-P2-IRM-97D | 114-P2-IRM-97D-52.0-20200320 | 3/20/2020 | 52 | N | JD5007 | Baseline | Intermediate | 142000 | 136000 | 127000 | 136000 | -- | -- | -- | -- | -- | -- | -- | 17.3 | 959 | R | 1120 | < 100 U | 116 J | -- |
| 114-P2-IRM-97D | 114-P2-IRM-97D-52.0-20210317 | 3/17/2021 | 52 | N | JD21863 | Treatment | Intermediate | 388000 | 505000 | 521000 | 560000 | 16.7 | 0.03 | 8.93 | 8.103 | -- | 2.27 | -- | 20.8 | 1080 | -- | -- | -- | -- | -- |
| 114-P2-IRM-97D | 114-P2-IRM-97D-52-20210429 | 4/29/2021 | 52 | N | 4602331931 | Treatment | Intermediate | 592000 | 544000 | 601000 | 579000 J+ | 32.4 | 0.87 | 8.79 | 7.489 | -- | 4.77 | -- | 17.1 | 864 | -- | 1000 | < 600 U | 15.2 J | -- |
| 114-P2-IRM-97D | 114-P2-IRM-97D-52-20210528 | 5/28/2021 | 52 | N | 4602354051 | Treatment | Intermediate | 540000 | 525000 | 508000 | 530000 | 50 | 0.4 | 8.94 | 6.906 | -- | 1.49 | -- | 20.4 | 829 | -- | 1200 | < 6000 U | < 400 U | -- |
| 114-P2-IRM-97D | 114-P2-IRM-97D-52-20210622 | 6/22/2021 | 52 | N | 4602371271 | Treatment | Intermediate | 582000 | 537000 | 563000 | 586000 | 96.1 | 0.55 | 8.8 | 9.134 | -- | 3.68 | -- | 18.8 | 1180 | -- | 1500 | < 12000 U | < 800 U | -- |
| 114-P2-IRM-97D | 114-P2-IRM-97D-52.0-20210722 | 7/22/2021 | 52 | N | 4602393171 | Treatment | Intermediate | 350000 | 380000 | 335000 | 352000 | 61.6 | 0.22 | 8.57 | 4.593 | -- | -- NM | -- | 17.5 | 1010 | -- | 1600 | < 4800 U | < 320 U | -- |
| 114-P2-IRM-97D | 114-P2-IRM-97D-50.0-20210827 | 8/27/2021 | 50 | N | 4602417371 | Treatment | Intermediate | 509000 | 522000 | 478000 | 483000 | -- | -- | -- | -- | -- | -- | -- | 17.5 | 1050 | -- | 1400 | < 600 U | 52.5 | -- |
| 114-P2-IRM-97D | 114-P2-IRM-97D-20211104 | 11/4/2021 | | N | 4602468981 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 184 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-97D | 114-P2-IRM-97D-20211118 | 11/18/2021 | | N | 4602475481 | Treatment | Intermediate | 9400 | 46400 | 136000 H | 6780 | -- | -- | -- | -- | -- | -- | -- | 317 | 657 | -- | 12000 | 115 J | 867 | -- |
| 114-P2-IRM-97D | 114-P2-IRM-97D-20211215 | 12/15/2021 | | N | 4602491921 | Treatment | Intermediate | 206000 | 198000 | 79300 | 162000 | -117.09 | 5.56 | 6.85 | 6.13 | -- | 2.41 | -- | 155 | 513 | -- | 2300 | < 600 U | 2270 | -- |
| 114-P2-IRM-97D | 114-P2-IRM-97D-20211229 | 12/29/2021 | | N | 4602499871 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 270 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-97D | 114-P2-IRM-97D-47-20220318 | 3/18/2022 | 47 | N | 4602546031 | Treatment | Intermediate | 252 | 32400 | < 50.0 U | < 50.0 U | -- | -- | -- | -- | -- | -- | -- | 125 | 201 | -- | 5400 | 92.7 J | 373 | -- |
| 114-P2-IRM-97D | 114-P2-IRM-97D-52-20220414 | 4/14/2022 | 52 | N | 4602562981 | Treatment | Intermediate | 1640 | 8340 | 1470 | 325 | -230.1 | 0.95 | 9.00 | 5.281 | 16.06 | 9.61 | -- | 51.2 | 483 | -- | 5300 | < 120 U | 252 | -- |
| 114-P2-IRM-97D | 114-P2-IRM-97D-52-20220512 | 5/12/2022 | 52 | N | 4602580081 | Treatment | Intermediate | 211000 | 206000 | 198000 | 198000 | -84.9 | 1.20 | 9.37 | 7.413 | 16.06 | 61.6 | -- | 37.0 | 539 | -- | 3900 | < 600 U | 155 | -- |
| 114-P2-IRM-97D | 114-P2-IRM-97D-52-20220613 | 6/13/2022 | 52 | N | 4602600111 | Treatment | Intermediate | -- | 239000 | -- | 243000 | 35.5 | 0.86 | 8.76 | 8.284 | 19.33 | 4.39 | -- | 24.4 | 763 | -- | -- | -- | -- | -- |
| 114-P2-IRM-97D | 114-P2-IRM-97D-52.0-20220714 | 7/14/2022 | 52 | N | 4602619011 | Treatment | Intermediate | -- | 212000 | -- | 243000 | -11.4 | 0.24 | 9.8 | 8.369 | 17.15 | 9.7 | -- | 32.8 | 678 | -- | -- | -- | -- | -- |
| 114-P2-IRM-97D | 114-P2-IRM-97D-52-20220817 | 8/17/2022 | 52 | N | 4602639901 | Treatment | Intermediate | -- | 167 | -- | < 10.0 U | -371.6 | 4.86 | 8.66 | 3.906 | 19.15 | 9.91 | -- | 123 | 237 | -- | -- | 64.7 J | 296 | -- |
| 114-P2-IRM-97D | 114-P2-IRM-97D-20220914 | 9/14/2022 | | N | 4602654911 | Treatment | Intermediate | -- | 62300 | -- | 67300 | 0.2 | 2.52 | 7.68 | 4.612 | 17.71 | 486 | -- | 279 | 344 | -- | -- | 309 J | 540 | -- |
| 114-P2-IRM-97D | 114-P2-IRM-97D-20221011 | 10/11/2022 | | N | 4602672521 | Treatment | Intermediate | 43900 | 37400 | -- | 40300 | DNAPL/NO RE | DNAPL/NO RE | DNAPL/NO RE | DNAPL/NO RE | DNAPL/NO REA | DNAPL/NO REA | DNAPL/NO RE | 206 | 351 | -- | -- | 371 | 758 | -- |
| 114-P2-IRM-97D | 114-P2-IRM-97D-20221108 | 11/8/2022 | | N | 4602691101 | Treatment | Intermediate | -- | 29400 | -- | 36200 | 39.1 | 7.77 | 7.77 | 4.364 | 15.3 | -- OR | -- | 240 | 267 | -- | -- | 332 J | 1080 | -- |
| 114-P2-IRM-97D | 114-P2-IRM-97D-20221208 | 12/8/2022 | | N | 4602709591 | Treatment | Intermediate | 20200 | 27100 | 16200 | 16300 | -113.4 | 1.51 | 7.47 | 3.79 | 16.3 | 454 | -- | 260 | 217 | -- | -- | 289 | 1290 | -- |
| 114-P2-IRM-97D | 114-P2-IRM-97D-53.1-20230216 | 2/16/2023 | 53.1 | N | 4602747691 | Post-Treatment | Intermediate | 6300 | 8980 | < 10.0 U | < 50.0 U | -343.6 | 0 | 7.91 | 5.834 | 15.62 | 25.9 | -- | 192 | 154 | 7.44 | -- | 191 | 877 | -- |
| 114-P2-IRM-97D | 114-P2-IRM-97D-53.1-20230524 | 5/24/2023 | 53.1 | N | 4602809491 | Post-Treatment | Intermediate | 503 | 941 | < 20.0 U | < 20.0 U | -374.1 | 0.29 | 7.75 | 3.262 | 18.88 | 15.2 | -- | 124 | 80.8 | 8.48 | -- | 98.2 J | 540 | -- |
| 114-P2-IRM-97I | 114-P2-IRM-97I-30.0-20200320 | 3/20/2020 | 30 | N | JD5007 | Baseline | Intermediate | 289 | 1370 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 16.9 | 149 J- | 2.5 J | 1040 | < 100 U | 199 J | -- |
| 114-P2-IRM-97I | 114-P2-IRM-97I-30.0-20210317 | 3/17/2021 | 30 | N | JD21863 | Treatment | Intermediate | 12.5 | 88.8 | < 10 U | 8.2 B | -99.2 | 0.06 | 8.22 | 5.678 | -- | 2.12 | -- | 16.2 | 236 | -- | -- | -- | -- | -- |
| 114-P2-IRM-97I | 114-P2-IRM-97I-30-20210429 | 4/29/2021 | 30 | N | 4602331931 | Treatment | Intermediate | 45.0 | 61.8 | < 10.0 U | < 10.0 U | -111.6 | 7.13 | 8.04 | 5.03 | -- | 1.87 | -- | 11.8 | 284 | -- | 1700 | 59.4 J | 96.6 | -- |
| 114-P2-IRM-97I | 114-P2-IRM-97I-30-20210528 | 5/28/2021 | 30 | N | 4602354051 | Treatment | Intermediate | 214 | 315 | < 10.0 U | < 10.0 U | -84.6 | 0.45 | 8.2 | 4.686 | -- | 3.39 | -- | 12.6 | 341 | -- | 2100 | 58.9 J | 110 | -- |
| 114-P2-IRM-97I | 114-P2-IRM-97I-30-20210622 | 6/22/2021 | 30 | N | 4602371271 | Treatment | Intermediate | 473 | 558 | 23.5 | 22.4 | 3.1 | 0.63 | 8.04 | 5.82 | -- | 1.41 | -- | 3.1 | 500 | -- | 2200 | < 120 U | 111 | -- |
| 114-P2-IRM-97I | 114-P2-IRM-97I-30.0-20210722 | 7/22/2021 | 30 | N | 4602393171 | Treatment | Intermediate | 83.9 | 215 | < 10.0 U | < 10.0 U | -170.3 | 11.21 | 8.14 | 3.235 | -- | 6.03 | -- | 12.8 | 548 | -- | 3100 | 62.5 J | 129 | -- |
| 114-P2-IRM-97I | 114-P2-IRM-97I-31.0-20210827 | 8/27/2021 | 31 | N | 4602417371 | Treatment | Intermediate | 779 | 917 | 193 | 220 | -- | -- | -- | -- | -- | -- | -- | 13.7 | 472 | -- | 2200 | < 120 U | 169 | -- |
| 114-P2-IRM-97I | 114-P2-IRM-97I-20211007 | 10/7/2021 | | N | 4602449131 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 177 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-97I | 114-P2-IRM-97I-20211104 | 11/4/2021 | | N | 4602468981 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 182 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-97I | 114-P2-IRM-97I-20211118 | 11/18/2021 | | N | 4602475481 | Treatment | Intermediate | 9060 | 18800 | 5190 | 5300 | -- | -- | -- | -- | -- | -- | -- | 308 | 201 | -- | 7300 | 102 J | 5010 | -- |
| 114-P2-IRM-97I | 114-P2-IRM 97I | 12/2/2021 | | N | 4602484621 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 407 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-97I | 114-P2-IRM-97I-20211215 | 12/15/2021 | | N | 4602491921 | Treatment | Intermediate | 2220 | 2870 | < 20.0 U | < 20.0 U | -135.25 | 2.04 | 6.71 | 3.15 | -- | 5.5 | -- | 359 | 129 | -- | 6300 | 133 | 7850 | -- |
| 114-P2-IRM-97I | 114-P2-IRM-97I-20211229 | 12/29/2021 | | N | 4602499871 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 277 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-97I | 114-P2-IRM-97I-20220110 | 1/10/2022 | | N | 4602504131 | Treatment | Intermediate | 15900 | 856 | < 50.0 U | < 50.0 U | -174 | 0 | 7.13 | 3.4 | -- | 21.6 | -- | 247 | 130 | -- | 8600 | 137 | 5550 | -- |
| 114-P2-IRM-97I | 114-P2-IRM-97I-20220217 | 2/17/2022 | | N | 4602526891 | Treatment | Intermediate | 410 | 877 | < 50.0 U | < 50.0 U | -201.4 | 0.66 | 7.33 | 2.984 | -- | 13 | -- | 445 | 74.6 | -- | 9700 | 2190 | 10800 | -- |
| 114-P2-IRM-97I | 114-P2-IRM-97I-20220304 | 3/4/2022 | | N | 4602537771 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 237 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-97I | 114-P2-IRM-97I-20220317 | 3/17/2022 | | N | 4602545111 | Treatment | Intermediate | 1290 | 1750 | < 10.0 U | < 10.0 U | -88.6 | 8.05 | 7.28 | 1.972 | -- | 3.29 | -- | 232 | 109 | -- | 9100 | 389 | 8320 | -- |
| 114-P2-IRM-97I | 114-P2-IRM-97I-20220414 | 4/14/2022 | | N | 4602562981 | Treatment | Intermediate | 1330 | 1670 | 31.5 | < 10.0 U | -95.3 | 2.39 | 7.73 | 3.049 | 16.81 | 5.11 | -- | 239 | 65.3 | -- | 15000 | 207 | 8280 | -- |
| 114-P2-IRM-97I | 114-P2-IRM-97I-30-20220613 | 6/13/2022 | 30 | N | 4602600111 | Treatment | Intermediate | -- | 324 | -- | < 100 U | -313.7 | 1.24 | 6.27 | 3.772 | 17.36 | 3.17 | -- | 352 | 9.59 | -- | -- | -- | -- | -- |
| 114-P2-IRM-97I | 114-P2-IRM-97I-30.0-20220714 | 7/14/2022 | 30 | N | 4602619011 | Treatment | Intermediate | -- | 275 | -- | < 100 U | -347.3 | 0.59 | 7.63 | 3.921 | 18.54 | 5.92 | -- | 244 | 5.21 | -- | -- | -- | -- | -- |
| 114-P2-IRM-97I | 114-P2-IRM-97I-30-20220817 | 8/17/2022 | 30 | N | 4602639901 | Treatment | Intermediate | -- | 232 | -- | < 20.0 U | -366.8 | 2.61 | 7.76 | 3.887 | 17.86 | 6.11 | -- | 218 | 6.07 | -- | -- | < 120 U | 955 | -- |
| 114-P2-IRM-97I | 114-P2-IRM-97I-30-20220914 | 9/14/2022 | 30 | N | 4602654911 | Treatment | Intermediate | -- | 209 | -- | < 10.0 U | -284.6 | 1.33 | 6.65 | 2.469 | 21.05 | 4.93 | -- | 181 | 0.65 J | -- | -- | 1040 | 6510 | -- |
| 114-P2-IRM-97I | 114-P2-IRM-97I-30-20221012 | 10/12/2022 | 30 | N | 4602673311 | Treatment | Intermediate | -- | 230 | -- | < 10.0 U | -246.1 | 1.40 | 7.12 | 2.927 | 18.05 | 8.22 | -- | 166 | 1.23 J | -- | -- | 195 | 2800 | -- |
| 114-P2-IRM-97I | 114-P2-IRM-97I-30-20221109 | 11/9/2022 | 30 | N | 4602691941 | Treatment | Intermediate | -- | 199 | -- | < 10.0 U | -184.3 | 3.88 | 6.57 | 2.136 | 17.6 | 3.62 | -- | 217 | 0.74 J | -- | -- | 3250 | 9110 | -- |
| 114-P2-IRM-97I | 114-P2-IRM-97I-30-20221208 | 12/8/2022 | 30 | N | 4602709591 | Treatment | Intermediate | -- | 217 | -- | < 10.0 U | -186.6 | 1.46 | 7.1 | 2.232 | 15.74 | 7.65 | -- | 180 | 0.74 J | -- | -- | 1380 | 5230 | -- |

https://aecom.sharepoint.com/sites/PPG/Shared Documents/Groundwater/500_Deliverables/RAPRs/2024-Q4/00_Report Components/Appendices/Appendix A - Analytical Results/excels/Appendix A-1_Cr_C

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P2-IRM-98D | 114-P2-IRM-98D-52-2020324 | 3/24/2020 | 52 | N | JD5095 | Baseline | Intermediate | **852000** | **825000 J** | **748000** | **752000** | -- | -- | -- | -- | -- | -- | -- | 17.7 | **749** | R | 831 | **< 5000 U** | **349 J** | -- |
| 114-P2-IRM-98D | 114-P2-IRM-98D-52-20210318 | 3/18/2021 | 52 | N | JD21941 | Treatment | Intermediate | **367000** | **368000** | **376000** | **457000** | 92.4 | 0.57 | 7.47 | 8.217 | -- | 2.04 | -- | 12.9 | **1180** | -- | -- | -- | -- | -- |
| 114-P2-IRM-98D | 114-P2-IRM-98D-52-20210429 | 4/29/2021 | 52 | N | 4602331931 | Treatment | Intermediate | **598000 J** | **372000 J** | **330000** | **347000 J+** | 151.4 | 0.36 | 7.57 | 8.87 | -- | 5.11 | -- | 10.8 | **1040** | -- | 1700 | **< 600 U** | 14.7 J | -- |
| 114-P2-IRM-98D | 114-P2-IRM-98D-52.0-20210601 | 6/1/2021 | 52 | N | 4602355971 | Treatment | Intermediate | **401000** | **19200** | **373000** | **412000** | 58.5 | 0.96 | 7.85 | 7.85 | -- | 1.46 | -- | 11.6 | **1070** | -- | 1900 | **< 600 U** | **389** | -- |
| 114-P2-IRM-98D | 114-P2-IRM-98D-52.0-20210625 | 6/25/2021 | 52 | N | 4602374061 | Treatment | Intermediate | **404000** | **369000** | **435000** | **446000** | 109 | 2.08 | 7.62 | 6.556 | -- | -- NM | -- | 13.9 | **1210** | -- | -- | **< 2400 U** | **379** | -- |
| 114-P2-IRM-98D | 114-P2-IRM-98D-52.0-20210722 | 7/22/2021 | 52 | N | 4602393171 | Treatment | Intermediate | **407000** | **482000** | **406000** | **417000** | -16.3 | 7.77 | 7.49 | 13.28 | -- | 1.12 | -- | 12.3 | **1170** | -- | 1700 | **< 2400 U** | **440** | -- |
| 114-P2-IRM-98D | 114-P2-IRM-98D-52.0-20210827 | 8/27/2021 | 52 | N | 4602417371 | Treatment | Intermediate | **426000** | **446000** | **395000** | **400000** | -- | -- | -- | -- | -- | -- | -- | 11.8 | **1140** | -- | 2000 | **< 2400 U** | **475** | -- |
| 114-P2-IRM-98D | 114-P2-IRM-98D-20210922 | 9/22/2021 | | N | 4602433951 | Treatment | Intermediate | **406000** | **424000** | **435000 H** | **447000 H** | 38.1 | 2.48 | 7.69 | 8.212 | -- | 23.5 | -- | 36.4 | **873** | -- | 2100 | **< 600 U** | **333** | -- |
| 114-P2-IRM-98D | 114-P2-IRM-98D-20211007 | 10/7/2021 | | N | 4602449131 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 75.3 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-98D | 114-P2-IRM-98D-20211104 | 11/4/2021 | | N | 4602468981 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 73.4 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-98D | 114-P2-IRM-98D-20211118 | 11/18/2021 | | N | 4602475481 | Treatment | Intermediate | **250000** | **233000** | **251000** | **260000** | -- | -- | -- | -- | -- | -- | -- | 84.0 | **644** | -- | 1600 | **804 J** | **2390** | -- |
| 114-P2-IRM-98D | 114-P2-IRM 98D | 12/2/2021 | | N | 4602484621 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 73.5 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-98D | 114-P2-IRM-98D-20211215 | 12/15/2021 | | N | 4602491921 | Treatment | Intermediate | **215000** | **231000** | **158000** | **99200** | -3.31 | 0.74 | 6.96 | 6.63 | -- | 20.88 | -- | 136 | **523** | -- | 1600 | **< 600 U** | **2380** | -- |
| 114-P2-IRM-98D | 114-P2-IRM-98D-20211229 | 12/29/2021 | | N | 4602499871 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 173 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-98D | 114-P2-IRM-98D-42-20220218 | 2/18/2022 | 42 | N | 4602528091 | Treatment | Intermediate | **247** | **1160** | **< 100 U** | **< 100 U** | -31.9 | 1.12 | 7.64 | 4.215 | -- | 4.77 | -- | 184 | 6.05 | -- | 2800 | < 240 U | **3510** | -- |
| 114-P2-IRM-98D | 114-P2-IRM-98D-52-20220318 | 3/18/2022 | 52 | N | 4602546031 | Treatment | Intermediate | **199** | **909** | < 50.0 U | < 50.0 U | -- | -- | -- | -- | -- | -- | -- | 157 | 3.61 | -- | 1800 | < 120 U | **2910** | -- |
| 114-P2-IRM-98D | 114-P2-IRM-98D-20220331 | 3/31/2022 | | N | 4602553841 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 303 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-98D | 114-P2-IRM-98D-20220414 | 4/14/2022 | | N | 4602562981 | Treatment | Intermediate | **91000** | **95300** | **73200** | **74800** | -2.1 | 1.81 | 7.80 | 5.245 | 15.73 | 74.6 | -- | 171 | 227 | -- | 1700 | **< 600 U** | **4410** | -- |
| 114-P2-IRM-98D | 114-P2-IRM-98D-20220428 | 4/28/2022 | | N | 4602572301 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 23.1 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-98D | 114-P2-IRM-98D-20220513 | 5/13/2022 | | N | 4602580891 | Treatment | Intermediate | **80400** | **82700** | **90200** | **140000** | 23.9 | 2.68 | 7.19 | 4.056 | 15.56 | 168 | -- | 216 | 231 | -- | 2100 | **< 600 U** | **5120** | -- |
| 114-P2-IRM-98D | 114-P2-IRM-98D-20220527 | 5/27/2022 | | N | 4602589681 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 268 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-98D | 114-P2-IRM-98D-20220609 | 6/9/2022 | | N | 4602597481 | Treatment | Intermediate | **65100** | **80700** | **64500** | **63400** | -67.6 | 3.20 | 8.02 | 5.411 | 20.21 | 404 | -- | 238 | **262** | -- | -- | **< 600 U** | **5910** | -- |
| 114-P2-IRM-98D | 114-P2-IRM-98D-20220620 | 6/20/2022 | | N | 4602604751 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 213 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-98D | 114-P2-IRM-98D-20220711 | 7/11/2022 | | N | 4602617131 | Treatment | Intermediate | **43300** | **40700** | **46900** | **42500** | 41.9 | 3.31 | 7.29 | 7.063 | 21.44 | 98.8 | -- | 184 | **263** | -- | -- | **< 600 U** | **6100** | -- |
| 114-P2-IRM-98D | 114-P2-IRM-98D-20220725 | 7/25/2022 | | N | 4602625591 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 160 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-98D | 114-P2-IRM-98D-20220816 | 8/16/2022 | | N | 4602639181 | Treatment | Intermediate | -- | **34900** | -- | **23000** | 156.2 | 3.23 | 7.18 | 3.994 | 22.31 | 93.6 | -- | 104 | **303** | -- | -- | **541** | **5660** | -- |
| 114-P2-IRM-98D | 114-P2-IRM-98D-20220914 | 9/14/2022 | | N | 4602654911 | Treatment | Intermediate | -- | **22100** | -- | **18800** | 66.0 | 2.25 | 8.00 | 8.394 | 20.01 | 59.6 | -- | 62.7 | **452** | -- | -- | < 120 U | **3600** | -- |
| 114-P2-IRM-98D | 114-P2-IRM-98D-20221011 | 10/11/2022 | | N | 4602672521 | Treatment | Intermediate | **89.8** | **3400** | -- | < 10.0 U | -82.8 | 2.36 | 7.70 | 7.319 | 18.52 | 27 | -- | 11.8 | **546** | -- | -- | **1790** | **2840** | -- |
| 114-P2-IRM-98D | 114-P2-IRM-98D-20221108 | 11/8/2022 | | N | 4602691101 | Treatment | Intermediate | -- | **19300** | -- | **15300** | 50.4 | 5.11 | 8.39 | 8.639 | 16.1 | 72.8 | -- | 41.7 | **536** | -- | -- | **308** | **5190** | -- |
| 114-P2-IRM-98D | 114-P2-IRM-98D-20221208 | 12/8/2022 | | N | 4602709591 | Treatment | Intermediate | **18600** | **26500** | **17500** | **17400** | -49.6 | 1.64 | 7.06 | 7.348 | 15.2 | 93.7 | -- | 45.3 | 124 | -- | -- | < 240 U | **5140** | -- |
| 114-P2-IRM-98D | 114-P2-IRM-98D-53.3-20230220 | 2/20/2023 | 53.3 | N | 4602749361 | Post-Treatment | Intermediate | **171** | **3110** | < 10.0 U | < 10.0 UJ | -180.0 | 0.22 | 6.88 | 7.2 | 13.2 | 42.8 | -- | 28.0 | 202 | < 1 U | -- | **11200** | **6660** | -- |
| 114-P2-IRM-98D | 114-P2-IRM-98D-53.3-20230524 | 5/24/2023 | 53.3 | N | 4602809491 | Post-Treatment | Intermediate | **29800** | **27800** | **18300** | **18600** | 126.3 | 0.26 | 7.00 | 5.855 | 16.21 | 42.3 | -- | 22.2 | **433** | < 1 U | -- | **< 600 U** | **3800** | -- |
| 114-P2-IRM-98D | 114-P2-IRM-98D-53.3-20230822 | 8/22/2023 | 53.3 | N | 4602866741 | Post-Treatment | Intermediate | **34900** | **37500** | R | **38200** | 9.2 | 0.17 | 7.07 | 5.263 | 19.99 | 41.3 | -- | 21.1 | **430** | < 4 U | -- | **< 2400 U** | **3530** | -- |
| 114-P2-IRM-98I | 114-P2-IRM-98I-20-2020324 | 3/24/2020 | 30 | N | JD5095 | Baseline | Intermediate | 45.7 | 62.5 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 13.0 | **1090** | R | 2400 | **543** | **4870** | -- |
| 114-P2-IRM-98I | 114-P2-IRM-98I-30-20210318 | 3/18/2021 | 30 | N | JD21941 | Treatment | Intermediate | **105** | **276** | 8.2 B | < 10 U | -104.7 | 0.31 | 7.17 | 2.909 | -- | 3.99 | -- | 15.5 | **418** | -- | -- | -- | -- | -- |
| 114-P2-IRM-98I | 114-P2-IRM-98I-20210429 | 4/29/2021 | | N | 4602331931 | Treatment | Intermediate | **30400** | **40700** | **25200** | **37300 J+** | 189.5 | 3.21 | 7.09 | 3.408 | -- | 8.89 | -- | 14.7 | **402** | -- | 4600 | **< 600 U** | **6780** | -- |
| 114-P2-IRM-98I | 114-P2-IRM-98I-20210525 | 5/25/2021 | | N | 4602351281 | Treatment | Intermediate | **170** | **515** | < 10.0 U | **77.1 F1** | -- | -- | -- | -- | -- | -- | -- | 17.7 | **361** | -- | 5300 | **338** | **5330** | -- |
| 114-P2-IRM-98I | 114-P2-IRM-98I-20210525-X | 5/25/2021 | | FD | 4602351281 | Treatment | Intermediate | **201** | **428** | **245** | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 15.5 | **370** | -- | 5400 | 266 | **5450** | -- |
| 114-P2-IRM-98I | 114-P2-IRM-98I-30.0-20210625 | 6/25/2021 | 30 | N | 4602374061 | Treatment | Intermediate | 34.0 | **122** | < 10.0 U | < 10.0 U | -57.9 | 4.58 | 7.25 | 2.238 | -- | 6.58 | -- | 12.6 | **564** | -- | -- | **2100** | **6270** | -- |
| 114-P2-IRM-98I | 114-P2-IRM-98I-30.0-20210722 | 7/22/2021 | 30 | N | 4602393171 | Treatment | Intermediate | **1630** | **2410** | **1710** | **3740** | -36.6 | 3.81 | 7.24 | 4.543 | -- | 7.11 | -- | 14.7 | **498** | -- | 3200 | 179 | **5760** | -- |
| 114-P2-IRM-98I | 114-P2-IRM-98I-30.0-20210827 | 8/27/2021 | 30 | N | 4602417371 | Treatment | Intermediate | **6160** | **6520** | **5220** | **5160** | -- | -- | -- | -- | -- | -- | -- | 23.8 | **486** | -- | 4000 | < 120 U | **4580** | -- |
| 114-P2-IRM-98I | 114-P2-IRM-98I-20210922 | 9/22/2021 | | N | 4602433951 | Treatment | Intermediate | **14800** | **15700** | **12700 H** | **12100 H** | 23 | 2.1 | 7.45 | 3.202 | -- | 9.52 | -- | 224 | **320** | -- | 4400 | 64.5 J | **5570** | -- |
| 114-P2-IRM-98I | 114-P2-IRM-98I-20211007 | 10/7/2021 | | N | 4602449131 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 186 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-98I | 114-P2-IRM-98I-20211018 | 10/18/2021 | | N | 4602453121 | Treatment | Intermediate | **3890** | **5850** | **2760** | **2490** | -- | -- | -- | -- | -- | -- | -- | 223 | 225 | -- | 4100 | < 240 U | **8630** | -- |
| 114-P2-IRM-98I | 114-P2-IRM-98I-20211104 | 11/4/2021 | | N | 4602468981 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 260 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-98I | 114-P2-IRM-98I-20211118 | 11/18/2021 | | N | 4602475481 | Treatment | Intermediate | **934** | **2180** | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 245 | 102 | -- | 6300 | **1890** | **9200** | -- |
| 114-P2-IRM-98I | 114-P2-IRM 98I | 12/2/2021 | | N | 4602484621 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 258 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-98I | 114-P2-IRM-98I-20211215 | 12/15/2021 | | N | 4602491921 | Treatment | Intermediate | **78500** | **55600** | **74900** | **77100** | -102.06 | 1.433 | 6.82 | 2.65 | -- | 121.51 *** | -- | 234 | **251** | -- | 8200 | 283 | **3690** | -- |
| 114-P2-IRM-98I | 114-P2-IRM-98I-20211229 | 12/29/2021 | | N | 4602499871 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 257 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-98I | 114-P2-IRM-98I-20220217 | 2/17/2022 | | N | 4602526891 | Treatment | Intermediate | **163** | **959** | < 10.0 U | < 10.0 U | -23.9 | 1.93 | 8.16 | 2.731 | -- | 62 | -- | 267 | 65.6 | -- | 9200 | **4810** | **7830** | -- |
| 114-P2-IRM-98I | 114-P2-IRM-98I-20220304 | 3/4/2022 | | N | 4602537771 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 237 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-98I | 114-P2-IRM-98I-20220317 | 3/17/2022 | | N | 4602545111 | Treatment | Intermediate | **248** | **1800** | < 10.0 U | < 10.0 U | -47.9 | 7.96 | 7.86 | 1.995 | -- | 46.8 | -- | 212 | 82.0 F1 | -- | 4000 | **3000** | **8160** | -- |
| 114-P2-IRM-98I | 114-P2-IRM-98I-20220331 | 3/31/2022 | | N | 4602553841 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 183 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-98I | 114-P2-IRM-98I-20220414 | 4/14/2022 | | N | 4602562981 | Treatment | Intermediate | **285** | **444** | < 10.0 U | 32.7 | -460 | 3.22 | 7.85 | 2.487 | 16.44 | 14.2 | -- | 201 | 48.4 | -- | 9700 | **4440** | **8770** | -- |
| 114-P2-IRM-98I | 114-P2-IRM-98I-20220428 | 4/28/2022 | | N | 4602572301 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 186 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-98I | 114-P2-IRM-98I-20220513 | 5/13/2022 | | N | 4602580891 | Treatment | Intermediate | **386** | **469** | < 10.0 U | < 10.0 U | -33.8 | 3.54 | 7.07 | 1.846 | 15.2 | 63.9 | -- | 199 | 81.0 | -- | 11000 | **5200** | **8790** | -- |
| 114-P2-IRM-98I | 114-P2-IRM-98I-20220527 | 5/27/2022 | | N | 4602589681 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 167 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-98I | 114-P2-IRM-98I-20220609 | 6/9/2022 | | N | 4602597481 | Treatment | Intermediate | **175** | **280** | < 10.0 U | < 10.0 U | 62.2 | 5.98 | 7.25 | 2.081 | 17.35 | 26.7 | -- | 166 | 85.7 | -- | -- | **3460** | **6230** | -- |
| 114-P2-IRM-98I | 114-P2-IRM-98I-20220620 | 6/20/2022 | | N | 4602604751 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 152 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-98I | 114-P2-IRM-98I-20220711 | 7/11/2022 | | N | 4602617131 | Treatment | Intermediate | **322** | **481** | < 10.0 U | < 10.0 U | -101.9 | 3.06 | 7.25 | 2.552 | 18.23 | 54.8 | -- | 167 | 93.2 | -- | -- | **3070** | **6170** | -- |
| 114-P2-IRM-98I | 114-P2-IRM-98I-20220725 | 7/20/2022 | | N | 4602625591 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 160 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-98I | 114-P2-IRM-98I-20220816 | 8/16/2022 | | N | 4602639181 | Treatment | Intermediate | -- | **911** | -- | < 10.0 U | 156.2 | 3.23 | 7.65 | 3.994 | 17.28 | 93.6 | -- | 174 | 98.8 | -- | -- | **4740** | **6350** | -- |
| 114-P2-IRM-98I | 114-P2-IRM-98I-20220914 | 9/14/2022 | | N | 4602654911 | Treatment | Intermediate | -- | **900** | -- | < 10.0 U | -9.5 | 3.39 | 7.22 | 2.464 | 16.96 | 25.0 | -- | 194 | 120 | -- | -- | **6460** | **6390** | -- |
| 114-P2-IRM-98I | 114-P2-IRM-98I-20221011 | 10/11/2022 | | N | 4602672521 | Treatment | Intermediate | **413** | **1250** | -- | **< 100 U** | -47.1 | 2.32 | 7.27 | 1.912 | 18.04 | 34.0 | -- | 114 | 138 | -- | -- | **11500** | **7130** | -- |
| 114-P2-IRM-98I | 114-P2-IRM-98I-20221108 | 11/8/2022 | | N | 4602691101 | Treatment | Intermediate | -- | **856** | -- | < 20.0 U | 2.4 | 4.19 | 7.64 | 2.374 | 15.8 | 47.2 | -- | 102 | 141 | -- | -- | **9780** | **8350** | -- |
| 114-P2-IRM-98I | 114-P2-IRM-98I-20221208 | 12/8/2022 | | N | 4602709591 | Treatment | Intermediate | **286** | **842** | < 10.0 U | < 10.0 U | -49.1 | 1.62 | 7.01 | 2.248 | 15.9 | 22.7 | -- | 110 | **568** | -- | -- | **10400** | **8430** | -- |
| 114-P2-IRM-77D | 114-P2-IRM-77D-45-2020326 | 3/26/2020 | 45 | N | JD5217 | Baseline | Deep | 6.1 J | 28.3 | < 10 U | < 10 U | 100.1 | 6.46 | 8.25 | 4.841 | -- | 7.01 | -- | 5.7 J | **348** | 7.0 | 44.0 | 247 | **97.9** | -- |
| 114-P2-IRM-77D | 114-P2-IRM-77D-20201120 | 11/20/2020 | | N | JD16639 | Treatment | Deep | 35.7 | 35.7 | < 10 U | < 10 U | -71 | 8.25 | 7.02 | 2.25 | -- | 299 | -- | 6.0 | **588** | -- | 52.3 | -- | **3040** | < 0.20 U |
| 114-P2-IRM-77D | 114-P2-IRM-77D-20201218 | 12/18/2020 | | N | JD17977 | Treatment | Deep | 26.8 | 29.2 | < 10 U | **< 100 U** | -198.4 | 2.6 | 7.1 | 3.961 | -- | -- NM | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-77D | 114-P2-IRM-77D-20210114 | 1/14/2021 | | N | JD19032 | Treatment | Deep | 38.6 | **113** | < 10 U | < 10 U | -68.8 | 2.73 | 7.01 | 3.002 | -- | 1053 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-77D | 114-P2-IRM-77D-20210218 | 2/18/2021 | | N | JD20490 | Treatment | Deep | 44.8 | **298** | < 10 U | 32 B | -124.2 | 3.03 | 7.1 | 1.198 | -- | 8.11 | -- | 21.8 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-77D | 114-P2-IRM-77D-48-20210428 | 4/28/2021 | 48 | N | 4602331061 | Treatment | Deep | < 5.7 UB | 19.1 J | **140 J** | 55.6 J | -- | -- | -- | -- | -- | -- | -- | 15.8 | **617** | -- | 1100 | **1670** | **264** | -- |
| 114-P2-IRM-77D | 114-P2-IRM-77D-48-20210428 | 4/28/2021 | 48 | N | 4602331063 | Treatment | Deep | 4.6 | -- | -- | -- | -424 | 0.28 | 9.3 | 8.204 | -- | 3.77 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-77D | 114-P2-IRM-77D-49.0-20210629 | 6/29/2021 | 49 | N | 4602376271 | Treatment | Deep | 5.3 | 16.6 | < 50.0 U | < 50.0 U | -388.1 | 0.49 | 9.34 | 6.681 | -- | 5.88 | -- | 10.9 | **880** | -- | -- | **1550** | **285** | -- |
| 114-P2-IRM-80D | 114-P2-IRM-80D-53-2020326 | 3/26/2020 | 53 | N | JD5245 | Baseline | Deep | **50300** | **51300 J** | **45200** | **45800 J** | 44 | 0 | 8.23 | 2.55 | -- | 7.3 | -- | 3.0 J | **424** | < 2.0 U | 79.1 | **< 500 U** | **478** | -- |
| 114-P2-IRM-80D | 114-P2-IRM-80D-20201120 | 11/20/2020 | | N | JD16639 | Treatment | Deep | **20700** | **25400** | **18500** | **18600** | 242 | 3.26 | 7.22 | 2.29 | -- | 31 | -- | 4.7 | **525** | -- | 88.6 | -- | **2610** | < 0.20 U |
| 114-P2-IRM-80D | 114-P2-IRM-80D-20201218 | 12/18/2020 | | N | JD17977 | Treatment | Deep | **33400** | **38000** | **33800** | **33000** | 105.7 | 3.09 | 7.27 | 3.321 | -- | -- NM | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-80D | 114-P2-IRM-80D-20201218X | 12/18/2020 | | FD | JD17977 | Treatment | Deep | **34900** | **37200** | **33300** | **34600** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-80D | 114-P2-IRM-80D-20210114 | 1/14/2021 | | N | JD19032 | Treatment | Deep | **22900** | **25200** | **27400** | **26400** | 187.1 | 3.12 | 7.11 | 2.957 | -- | 3.13 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-80D | 114-P2-IRM-80D-20210218 | 2/18/2021 | | N | JD20490 | Treatment | Deep | **36200** | **35300** | **33900** | **34600** | 173.9 | 4.03 | 7.12 | 1.38 | -- | 1.7 | -- | 11.5 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-80D | 114-P2-IRM-80D-20210218-X | 2/18/2021 | | FD | JD20490 | Treatment | Deep | **38300** | **35600** | **33000** | **179000** | -- | -- | -- | -- | -- | -- | -- | 11.6 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-80D | 114-P2-IRM-80D-20210319 | 3/19/2021 | | N | JD22003 | Treatment | Deep | **63800** | **58700** | **55600** | **58700** | 227.9 | 3.56 | 7.05 | 2.904 | -- | 5.86 | -- | 26.5 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-80D | 114-P2-IRM-80D-20210319-X | 3/19/2021 | | FD | JD22003 | Treatment | Deep | **62300** | **60200** | **56600** | **53800** | -- | -- | -- | -- | -- | -- | -- | 26.6 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-80D | 114-P2-IRM-80D-20210429 | 4/29/2021 | | N | 4602331931 | Treatment | Deep | **77600** | **87000** | **70500** | **71600 J+** | 200.8 | 3.56 | 7.03 | 2.829 | -- | 12.33 | -- | 15.5 | 245 | -- | 2200 | **< 600 U** | **2230** | -- |
| 114-P2-IRM-80D | 114-P2-IRM-80D-20210525 | 5/25/2021 | | N | 4602351281 | Treatment | Deep | **66500** | **66100** | **66100 H** | **66100 H** | 196.2 | 3.55 | 7.1 | 2.91 | -- | -- NM | -- | 12.7 | **262** | -- | 2900 | **< 600 U** | **2340** | -- |
| 114-P2-IRM-80D | 114-P2-IRM-80D-56.0-20210625 | 6/25/2021 | 56 | N | 4602374061 | Treatment | Deep | **162000** | **140000** | **161000** | **161000** | 180.6 | 1.24 | 7.3 | 2.911 | -- | 7.01 | -- | 8.3 | **532** | -- | -- | **< 2400 U** | **1860** | -- |
| 114-P2-IRM-80D | 114-P2-IRM-80D-20210812 | 8/12/2021 | | N | 4602409051 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 58.9 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-80D | 114-P2-IRM-80D-20210819 | 8/19/2021 | | N | 4602412191 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 68.9 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-80D | 114-P2-IRM-80D-20210824 | 8/24/2021 | | N | 4602414891 | Treatment | Deep | **206000** | **266000** | **208000** | **210000** | 121.9 | 3.84 | 6.99 | 3.899 | -- | 51.1 | -- | 114 | **251** | -- | 420 | **2870** | **3110** | -- |
| 114-P2-IRM-80D | 114-P2-IRM-80D-20210910 | 9/10/2021 | | N | 4602425261 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 51.8 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-80D | 114-P2-IRM-80D-20210921 | 9/21/2021 | | N | 4602432681 | Treatment | Deep | -- | -- | -- | -- | 92.9 | 3.37 | 7.45 | 3.168 | -- | 109 | -- | 45.3 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-80D | 114-P2-IRM-80D-20210921 | 9/21/2021 | | N | 4602432721 | Treatment | Deep | **590000 J** | **208000 J** | **201000** | **205000** | -- | -- | -- | -- | -- | -- | -- | -- | 240 | -- | 390 | **< 600 U** | **3740** | -- |
| 114-P2-IRM-89D | 114-P2-IRM-89D-61.0-20191021 | 10/21/2019 | 61 | N | JC97157 | N/A | Deep | -- | **2380** | -- | **1900** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-89D | 114-P2-IRM-89D-61.0-20191021-X | 10/21/2019 | 61 | FD | JC97157 | N/A | Deep | -- | **2360** | -- | **2100** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-89D | 114-P2-IRM-89D-52-20200820 | 8/20/2020 | 52 | N | JD12024 | Baseline | Deep | **32000** | **34100 J** | **29000 J** | **29700 J** | 236 | 0 | 6.45 | 0.329 | -- | 6.8 | -- | 2.9 | 223 | < 2.0 U | 31.3 | 207 | **184** | -- |
| 114-P2-IRM-89D | 114-P2-IRM-89D-52-20200820-X | 8/20/2020 | 52 | FD | JD12024 | Baseline | Deep | **15900 J** | **2280 J** | **18000 J** | **4300 J** | -- | -- | -- | -- | -- | -- | -- | 2.4 | 190 | < 2.0 U | 31.8 | 224 | **280** | -- |
| 114-P2-IRM-89D | 114-P2-IRM-89D-20201120 | 11/20/2020 | | N | JD16639 | Treatment | Deep | **99300** | **113000** | **193000** | **220000** | 207 | 3.15 | 7.1 | 1.44 | -- | 20.4 | -- | 3.4 | **304** | -- | 39.8 | -- | **75.0 B** | < 0.20 U |
| 114-P2-IRM-89D | 114-P2-IRM-89D-20201218 | 12/18/2020 | | N | JD17977 | Treatment | Deep | **150000** | **117000** | **106000** | **113000** | 239.1 | 3.83 | 6.89 | 2.205 | -- | -- NM | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-89D | 114-P2-IRM-89D-20210114 | 1/14/2021 | | N | JD19032 | Treatment | Deep | **116000** | **97200** | **124000** | **124000** | 25.4 | 3.83 | 7.04 | 1.942 | -- | 0.95 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-89D | 114-P2-IRM-89D-20210429 | 4/29/2021 | | N | 4602331931 | Treatment | Deep | **107000** | **121000** | **111000** | **109000 J+** | 188.1 | 3.43 | 6.9 | 2.064 | -- | 7.72 | -- | 3.0 | 234 | -- | 140 | **< 600 U** | **98.4** | -- |
| 114-P2-IRM-89D | 114-P2-IRM-89D-20210525 | 5/25/2021 | | N | 4602351281 | Treatment | Deep | **90000** | **86800** | **90300 H** | **90300 H** | 191.2 | 3.56 | 6.99 | 2.107 | -- | -- NM | -- | 3.6 | 221 | -- | 140 | **< 600 U** | **103** | -- |
| 114-P2-IRM-89D | 114-P2-IRM-89D-56.0-20210625 | 6/25/2021 | 56 | N | 4602374061 | Treatment | Deep | **36500** | **30400** | **36900** | **36900** | 225.1 | 0.8 | 6.91 | 1.322 | -- | 4.12 | -- | 3.5 | **283** | -- | -- | **< 600 U** | **90.7** | -- |
| 114-P2-IRM-89D | 114-P2-IRM-89D-20210824 | 8/24/2021 | | N | 4602414891 | Treatment | Deep | **57100** | **64500** | **57600** | **59800** | -98.1 | 5.58 | 7.19 | 3.522 | -- | 8.65 | -- | 4.6 | **281** | -- | 280 | **< 600 U** | **88.0** | -- |
| 114-P2-IRM-89D | 114-P2-IRM-89D-20210921 | 9/21/2021 | | N | 4602432721 | Treatment | Deep | **73300 J** | **69700** | **69800** | **69800** | 21.6 | 2.8 | 7.22 | 2.702 | -- | 4.66 | -- | 3.9 | 223 F1 | -- | 360 | < 120 U | **127** | -- |
| 114-P2-IRM-89D | 114-P2-IRM-89D-20210921-X | 9/21/2021 | | FD | 4602432721 | Treatment | Deep | **165000 J** | **72500 J** | **67600** | **68700** | -- | -- | -- | -- | -- | -- | -- | 4.0 | 208 | -- | 380 | < 240 U | **252** | -- |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P2-IRM-89D | 114-P2-IRM-89D-20211018 | 10/18/2021 | | N | 4602453121 | Treatment | Deep | **85500** | **83600** | **83800** | **83800** | -- | -- | -- | -- | -- | -- | -- | 5.0 | **270** | -- | 380 | **< 600 U** | **292** | -- |
| 114-P2-IRM-89D | 114-P2-IRM-89D-20211118 | 11/18/2021 | | N | 4602475481 | Treatment | Deep | **87500** | **87900** | **88100** | **88100** | -- | -- | -- | -- | -- | -- | -- | 4.2 | **270** | -- | 330 | **< 1200 U** | **336** | -- |
| 114-P2-IRM-89D | 114-P2-IRM 89D | 12/2/2021 | | N | 4602484621 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.0 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-89D | 114-P2-IRM-89D-20211215 | 12/15/2021 | | N | 4602491921 | Treatment | Deep | **110000** | **112000** | **88200** | **88200** | -11.22 | 0.27 | 6.87 | 3.29 | -- | 1.367 | -- | 3.9 | **303** | -- | 340 | < 120 U | **400** | -- |
| 114-P2-IRM-89D | 114-P2-IRM-89D-20211229 | 12/29/2021 | | N | 4602499871 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.1 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-89D | 114-P2-IRM-89D-20220110 | 1/10/2022 | | N | 4602504131 | Treatment | Deep | **143000** | **142000** | **131000** | **141000** | 39 | 9.79 | 7.16 | 4.32 | -- | 26.8 | -- | 4.4 | **349** | -- | 440 | < 120 U | **521** | -- |
| 114-P2-IRM-89D | 114-P2-IRM-89D-20220217 | 2/17/2022 | | N | 4602526891 | Treatment | Deep | **103000** | **95900** | **92700** | **90500** | -10.5 | 2.72 | 7.95 | 3.105 | -- | 7.36 | -- | 3.8 | **266** | -- | 420 | **< 600 U** | **374** | -- |
| 114-P2-IRM-89D | 114-P2-IRM-89D-20220304 | 3/4/2022 | | N | 4602537771 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.9 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-89D | 114-P2-IRM-89D-20220331 | 3/31/2022 | | N | 4602553841 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.1 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-89D | 114-P2-IRM-89D-20220414 | 4/14/2022 | | N | 4602562981 | Treatment | Deep | **111000** | **113000** | **69900** | **101000** | -39.4 | 2.66 | 8.03 | 2.952 | 16.99 | 4.32 | -- | 3.9 | 243 | -- | 470 | **< 1200 U** | **518** | -- |
| 114-P2-IRM-89D | 114-P2-IRM-89D-20220428 | 4/28/2022 | | N | 4602572301 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.5 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-89D | 114-P2-IRM-89D-20220513 | 5/13/2022 | | N | 4602580891 | Treatment | Deep | **110000** | **95000** | **130000** | **142000** | 155.5 | 2.6 | 7.19 | 2.168 | 15.61 | 25.1 | -- | 3.4 | **270** | -- | 360 | **< 600 U** | **588** | -- |
| 114-P2-IRM-89D | 114-P2-IRM-89D-20220527 | 5/27/2022 | | N | 4602589681 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.8 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-89D | 114-P2-IRM-89D-20220609 | 6/9/2022 | | N | 4602597481 | Treatment | Deep | **116000** | **111000** | **112000** | **116000** | 63.0 | 5.04 | 7.16 | 2.481 | 17.92 | 29.1 | -- | 3.8 | **296** | -- | -- | **< 600 U** | **705** | -- |
| 114-P2-IRM-89D | 114-P2-IRM-89D-20220620 | 6/20/2022 | | N | 4602604751 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.1 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-89D | 114-P2-IRM-89D-20220711 | 7/11/2022 | | N | 4602617131 | Treatment | Deep | -- | **114000** | -- | **119000** | 103.9 | 3.28 | 7.24 | 3.08 | 18.56 | 1.13 | -- | 4.2 | **257** | -- | -- | -- | -- | -- |
| 114-P2-IRM-89D | 114-P2-IRM-89D-20220725 | 7/20/2022 | | N | 4602625591 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.5 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-89D | 114-P2-IRM-89D-20220816 | 8/16/2022 | | N | 4602639181 | Treatment | Deep | -- | **108000** | -- | **112000** | 91.3 | 5.71 | 7.70 | 2.855 | 18.92 | 0.45 | -- | 4.7 | 247 | -- | -- | **< 600 U** | **1030** | -- |
| 114-P2-IRM-89D | 114-P2-IRM-89D-20220914 | 9/14/2022 | | N | 4602654911 | Treatment | Deep | -- | **116000** | -- | **116000** | 38.8 | 3.02 | 7.15 | 3.001 | 17.88 | 3.87 | -- | 4.5 | **309** | -- | -- | **< 1200 U** | **1080** | -- |
| 114-P2-IRM-89D | 114-P2-IRM-89D-20220914-X | 9/14/2022 | | FD | 4602654911 | Treatment | Deep | -- | **117000** | -- | **117000** | -- | -- | -- | -- | -- | -- | -- | 43.9 | **318** | -- | -- | **< 600 U** | **1090** | -- |
| 114-P2-IRM-89D | 114-P2-IRM-89D-20221011 | 10/11/2022 | | N | 4602672521 | Treatment | Deep | **111000** | **95400** | -- | **121000** | 78.8 | 2.12 | 7.19 | 2.53 | 17.38 | 1.52 | -- | 4.0 | **333** | -- | -- | **< 1200 U** | **1140** | -- |
| 114-P2-IRM-89D | 114-P2-IRM-89D-20221011-X | 10/11/2022 | | FD | 4602672521 | Treatment | Deep | -- | **97900** | -- | **109000** | -- | -- | -- | -- | -- | -- | -- | 4.7 | **326** | -- | -- | < 240 U | **1090** | -- |
| 114-P2-IRM-89D | 114-P2-IRM-89D-20221108 | 11/8/2022 | | N | 4602691101 | Treatment | Deep | -- | **97200** | -- | **98600** | 84.7 | 11 | 7.11 | 0.016 | 11.7 | 1.66 | -- | 4.1 | **307** | -- | -- | **< 600 U** | **1290** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-51-2020326 | 3/26/2020 | 51 | N | JD5217 | Baseline | Deep | **11500** | **12100** | **10300** | **10000** | 277 | 0 | 7.74 | 0.786 | -- | 6.3 | -- | 6.9 J | 186 | < 2.0 U | < 0.44 U | < 100 U | **86.7** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20201120 | 11/20/2020 | | N | JD16639 | Treatment | Deep | **47000** | **70700** | **49800** | **50200** | 223 | 4.31 | 7.25 | 1.77 | -- | 11.7 | -- | 4.5 | **379** | -- | 485 | -- | **575** | < 0.20 U |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20201218 | 12/18/2020 | | N | JD17977 | Treatment | Deep | **88300** | **87100** | **72300** | **72500** | 136.5 | 3.69 | 7.1 | 2.576 | -- | -- NM | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20210114 | 1/14/2021 | | N | JD19032 | Treatment | Deep | **73700** | **70700** | **73000** | **96900** | 175.3 | 3.13 | 7.43 | 2.407 | -- | 1.26 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20210218 | 2/18/2021 | | N | JD20490 | Treatment | Deep | **75200** | **74800** | **87800** | **79000** | 141.2 | 3.86 | 7.23 | 0.849 | -- | 14.2 | -- | 4.8 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20210319 | 3/19/2021 | | N | JD22003 | Treatment | Deep | **88000** | **93900** | **77000** | **80100** | 223.6 | 4.12 | 7.59 | 1.91 | -- | 50.3 | -- | 5.0 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20210429 | 4/29/2021 | | N | 4602331931 | Treatment | Deep | **82100** | **91600 J** | **83800** | **166000 J** | 211.3 | 4.55 | 7.38 | 2.111 | -- | 6.66 | -- | 7.1 | 194 | -- | 1900 | **< 600 U** | **569** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-50.0-20210625 | 6/25/2021 | 50 | N | 4602374061 | Treatment | Deep | **49800** | **44800** | **50700** | **50200** | 81.1 | 0.75 | 8.4 | 1.518 | -- | 9.83 | -- | 7.8 | **306** | -- | -- | **< 600 U** | **211** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20210824 | 8/24/2021 | | N | 4602414891 | Treatment | Deep | **22800** | **24600** | **23100** | **23500** | 214.7 | 5.41 | 7.88 | 1.855 | -- | 2.09 | -- | 6.5 | **259** | -- | 1200 | < 120 U | **463** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20210921 | 9/21/2021 | | N | 4602432721 | Treatment | Deep | **54800 J** | **35500 J** | **38200** | **46100** | 25.9 | 3.77 | 7.42 | 1.99 | -- | 25.9 | -- | 7.1 | 245 | -- | 870 | < 120 U | **506** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20211018 | 10/18/2021 | | N | 4602453121 | Treatment | Deep | **56000** | **59000** | **52200** | **53300** | -- | -- | -- | -- | -- | -- | -- | 12.6 | **287** | -- | 670 | **< 600 U** | **583** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20211118 | 11/18/2021 | | N | 4602475481 | Treatment | Deep | **74600** | **79500** | **74600** | **72300** | -- | -- | -- | -- | -- | -- | -- | 31.8 | **278** | -- | 360 | **< 1200 U** | **697** | -- |
| 114-P2-IRM-93D | 114-P2-IRM 93D | 12/2/2021 | | N | 4602484621 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 27.1 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20211215 | 12/15/2021 | | N | 4602491921 | Treatment | Deep | **136000** | **121000** | **99200** | **101000** | -150.08 | 1.54 | 7.2 | 2.32 | -- | 589.99 *** | -- | 21.3 | **276** | -- | 230 | < 120 U | **554** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20220111 | 1/11/2022 | | N | 4602504631 | Treatment | Deep | **179000** | **161000** | **155000** | **145000** | 1 | 3.8 | 7.82 | 2.55 | -- | 26.1 | -- | 19.6 | **269** | -- | 110 | < 120 U | **557** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20220217 | 2/17/2022 | | N | 4602526891 | Treatment | Deep | **142000** | **153000** | **141000** | **129000** | -38.8 | 3.01 | 8.42 | 2.294 | -- | 197 | -- | 13.0 | **261** | -- | 230 | **< 2400 U** | **405** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20220304 | 3/4/2022 | | N | 4602537771 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 17.4 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20220317 | 3/17/2022 | | N | 4602545111 | Treatment | Deep | **139000** | **185000** | **129000** | **129000** | 73 | 6.96 | 7.96 | 1.595 | -- | 254 | -- | 26.0 ^2 | **260** | -- | 180 | **< 2400 U** | **319** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20220331 | 3/31/2022 | | N | 4602553841 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 35.7 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20220414 | 4/14/2022 | | N | 4602562981 | Treatment | Deep | **140000** | **130000** | **122000** | **129000** | -29.5 | 3.93 | 8.33 | 2.261 | 17.84 | -- OR | -- | 49.4 | 210 | -- | 410 | < 120 U | **472** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20220428 | 4/28/2022 | | N | 4602572301 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 59.6 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20220513 | 5/13/2022 | | N | 4602580891 | Treatment | Deep | **166000** | **160000** | **200000** | **208000** | 147.3 | 2.51 | 7.35 | 1.788 | 16.08 | 279 | -- | 72.9 | 199 | -- | 780 | **< 600 U** | **662** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20220527 | 5/27/2022 | | N | 4602589681 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 85.4 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20220609 | 6/9/2022 | | N | 4602597481 | Treatment | Deep | **172000** | **129000** | **159000** | **156000** | 22.3 | 4.48 | 7.73 | 2.298 | 18.85 | 468 | -- | 90.6 | 180 | -- | -- | **< 600 U** | **774** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20220620 | 6/20/2022 | | N | 4602604751 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 90.4 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20220711 | 7/11/2022 | | N | 4602617131 | Treatment | Deep | **170000** | **210000** | **205000** | **354000** | 132.7 | 3 | 7.27 | 2.876 | 20.53 | 37.7 | -- | 91.5 | 152 | -- | -- | **< 600 U** | **907** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20220725 | 7/20/2022 | | N | 4602625591 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 97.0 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20220816 | 8/16/2022 | | N | 4602639181 | Treatment | Deep | -- | **171000** | -- | **52300** | 80.9 | 5.16 | 7.61 | 2.16 | 20.02 | 4.74 | -- | 97.9 | **339** | -- | -- | **< 600 U** | **773** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20220914 | 9/14/2022 | | N | 4602654911 | Treatment | Deep | -- | **173000** | -- | **174000** | 61.3 | 2.88 | 7.61 | 3.000 | 19.7 | 28.5 | -- | 89.8 | 190 | -- | -- | **539 J** | **963** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20221010 | 10/10/2022 | | N | 4602671561 | Treatment | Deep | -- | **205000** | -- | **179000** | 108.7 | 4.25 | 7.07 | 2.429 | 18.37 | 50.6 | -- | 100 | 155 | -- | -- | **< 600 U** | **1090** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20221108 | 11/8/2022 | | N | 4602691101 | Treatment | Deep | -- | **208000** | -- | **191000** | 40.5 | 8.28 | 7.45 | 2.635 | 16.3 | 26.9 | -- | 90.7 | 196 | -- | -- | **508 J** | **1190** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20221208 | 12/8/2022 | | N | 4602709591 | Treatment | Deep | **184000** | **174000** | **156000** | **151000** | 99.7 | 2.61 | 6.97 | 2.345 | 16.2 | 27.9 | -- | 56.0 | 191 | -- | -- | **< 600 U** | **1040** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20230117 | 1/17/2023 | | N | 4602730721 | Treatment | Deep | **139000** | **148000** | **153000** | **163000** | 182.9 | 7.51 | 7.17 | 2.464 | 12.71 | 74.3 | -- | 30.5 | 249 | -- | -- | **512 J** | **976** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20230221 | 2/21/2023 | | N | 4602750091 | Treatment | Deep | **151000** | **149000** | **137000** | **134000** | 105.4 | 6.4 | 7.34 | 2.538 | 14.4 | 86.8 | -- | 16.3 | 200 | -- | -- | **< 1200 U** | **966** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20230315 | 3/15/2023 | | N | 4602763801 | Treatment | Deep | **291000** | **292000** | **304000** | **306000** | 126.5 | 0.26 | 7.69 | 2.536 | 12.80 | 40 | -- | 20.9 | 215 | -- | -- | **< 6000 U** | **1350** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20230411 | 4/11/2023 | | N | 4602780351 | Treatment | Deep | **251000** | **214000** | **240000** | **235000** | 210.3 | 3.65 | 7.05 | 2.931 | 16.80 | 22.9 | -- | 38.2 | 230 | -- | -- | **< 1200 U** | **1240** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20230504 | 5/4/2023 | | N | 4602795681 | Treatment | Deep | **217000** | **210000** | **233000** | **261000** | 50.1 | 7.85 | 7.01 | 2.297 | 14.50 | 17.5 | -- | 30.9 | 226 | -- | -- | **< 1200 U** | **1140** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20230615 | 6/15/2023 | | N | 4602824081 | Treatment | Deep | **101000** | **101000** | **102000** | **106000** | 157.7 | 4.09 | 6.97 | 1.899 | 19.00 | 30.6 | -- | 21.2 | 150 | -- | -- | **< 1200 U** | **1120** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20230615-X | 6/15/2023 | | FD | 4602824081 | Treatment | Deep | **100000** | **98600** | **105000** | **102000** | -- | -- | -- | -- | -- | -- | -- | 21.3 | 155 | -- | -- | **< 1200 U** | **1120** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20230712 | 7/12/2023 | | N | 4602840741 | Treatment | Deep | -- | **146000** | -- | **154000** | 199.5 | 6.75 | 6.84 | 2.06 | 20.5 | 8.08 | -- | 16.7 | 238 | -- | -- | **< 1200 U** | **840** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20230712-X | 7/12/2023 | | FD | 4602840741 | Treatment | Deep | -- | **146000** | -- | **159000** | -- | -- | -- | -- | -- | -- | -- | 15.5 | 215 | -- | -- | **< 1200 U** | **853** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20230817 | 8/17/2023 | | N | 4602864051 | Treatment | Deep | -- | **33900** | -- | **31200** | 90.3 | 3.62 | 6.93 | 2.07 | 22.05 | 9.92 | -- | 10.4 | 142 | -- | -- | **< 2400 U** | **750** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20230912 | 9/12/2023 | | N | 4602880021 | Treatment | Deep | -- | **27200** | -- | **23800** | 96.6 | 1.29 | 7.29 | 1.069 | 21.78 | 3.8 | -- | 8.6 | 191 | -- | -- | **< 1200 U** | **769** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20231019 | 10/19/2023 | | N | 4602907271 | Treatment | Deep | **10800** | **12600** | **9520** | **9410** | 58 | 0.95 | 6.92 | 2.28 | 17.2 | 18.2 | -- | 16.9 | 169 | -- | -- | **< 2400 U** | **1280** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20231113 | 11/13/2023 | | N | JD76851 | Treatment | Deep | **2760** | **457** | **1600** | **2000** | 20 | 3.9 | 7.84 | 14.8 | 14.5 | 49.3 | -- | 28.5 | 168 | -- | -- | 136 | **1200** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20231221 | 12/21/2023 | | N | JD79358 | Treatment | Deep | **3520** | **3760** | **1700** | **1500** | -13.1 | 0.51 | 6.81 | 2.329 | 12.8 | 28.7 | -- | 35.7 | 155 | -- | -- | 218 B | **1460** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20231221-X | 12/21/2023 | | FD | JD79358 | Treatment | Deep | **3740** | **4480** | **1800** | **1800** | -- | -- | -- | -- | -- | -- | -- | 35.9 | 155 | -- | -- | < 250 U | **1410** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20240125 | 1/25/2024 | | N | JD81190 | Treatment | Deep | **2810** | **4740** | **440** | **1100** | -46.9 | 1.02 | 6.96 | 2.383 | 11.1 | 26.5 | -- | 34.2 | 163 | -- | -- | < 250 U | **960** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20240214 | 2/14/2024 | | N | JD82437 | Treatment | Deep | **4420** | **5570** | **3000** | **3600** | -4.9 | 4.42 | 6.96 | 2.199 | 11.3 | 65.3 | -- | 35.5 | 174 | -- | -- | < 250 U | **1160** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20240214-X | 2/14/2024 | | FD | JD82437 | Treatment | Deep | **5540** | **4790** | **3700** | **3700** | -- | -- | -- | -- | -- | -- | -- | 35.6 | 181 | -- | -- | **324** | **1200** | -- |
| 114-P2-IRM-93D | 114-P2-IRM-93D-20240311 | 3/11/2024 | 51 | N | JD84214 | Treatment | Deep | **2050** | **2750** | **600** | **600** | 49.5 | 1.91 | 7 | 1.836 | 13.7 | 28.5 | -- | 34.3 | 147 | -- | -- | 101 B | **1320** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-52.-2020326 | 3/26/2020 | 52 | N | JD5245 | Baseline | Deep | **23100** | **23400 J** | **22200** | **21300 J** | 133 | 0 | 8.14 | 2.22 | -- | 8.3 | -- | 5.1 J | **633** | < 2.0 U | 305 | **< 500 U** | **133** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20201120 | 11/20/2020 | | N | JD16639 | Treatment | Deep | **11600** **11700** | **1350** **11500** **11600** | **12100** | **11900** | 169 | 3.08 | 7.46 | 1.56 | -- | 10.9 | -- | 3.8 | **541** | -- | 492 | -- | **243** **246** | < 0.20 U |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20201218 | 12/18/2020 | | N | JD17977 | Treatment | Deep | **26000** | **56700** | **33000** | **51000** | 144.3 | 6.28 | 7.2 | 2.985 | -- | -- NM | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20210114 | 1/14/2021 | | N | JD19032 | Treatment | Deep | **6010** | **6130** | **6000** | **6100** | 194.9 | 4.28 | 7.06 | 1.854 | -- | 1.3 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20210218 | 2/18/2021 | | N | JD20490 | Treatment | Deep | **4670** | **4620** | **4600** | **4400** | 123.5 | 3.56 | 7.27 | 0.818 | -- | 5.41 | -- | 3.5 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20210319 | 3/19/2021 | | N | JD22003 | Treatment | Deep | **4280** | **4730** | **3100** | **3700** | 234.9 | 4.67 | 7.2 | 1.677 | -- | 1.07 | -- | 3.7 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-52.0-20210625 | 6/25/2021 | 52 | N | 4602374061 | Treatment | Deep | 42.0 | **182** | < 10.0 U | < 10.0 U | -86.8 | 1.69 | 7.69 | 1.595 | -- | 3.91 | -- | 3.5 | **838** | -- | -- | **481** | **973** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-52.0-20210726 | 7/26/2021 | 52 | N | 4602395391 | Treatment | Deep | 8.3 | **170** | < 10.0 U | < 10.0 U | -19.5 | 0.26 | 6.75 | 1.796 | -- | 1.09 | -- | 2.9 | **627** | -- | 620 | **311** | **506** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20210824 | 8/24/2021 | | N | 4602414891 | Treatment | Deep | **1440** | **1440** | **1420** | **1430** | 234 | 5 | 7.26 | 1.79 | -- | 0.59 | -- | 3.7 | **513** | -- | 410 | < 120 U | **537** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20210921 | 9/21/2021 | | N | 4602432721 | Treatment | Deep | **1930** | **1610** | **1600** | **1490** | 78 | 3.31 | 7.36 | 1.936 | -- | 0.69 | -- | 4.3 | **416** | -- | 600 | < 120 U | **559** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20211018-X | 10/18/2021 | | FD | 4602453121 | Treatment | Deep | **1670** | **1700** | **1360** | **1270** | -- | -- | -- | -- | -- | -- | -- | 4.7 | **426** | -- | 480 | < 120 U | **536** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20211018 | 10/18/2021 | | N | 4602453121 | Treatment | Deep | **1710** | **1730** | **1360** | **1270** | -- | -- | -- | -- | -- | -- | -- | 4.8 F1 | **409** | -- | 660 | < 120 U | **544** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20211118 | 11/18/2021 | | N | 4602475481 | Treatment | Deep | **2340** | **3940** | **2250 F1** | **2310 F1** | -- | -- | -- | -- | -- | -- | -- | 4.7 | **490** | -- | 720 | < 120 U | **599** | -- |
| 114-P2-IRM-94D | 114-P2-IRM 94D | 12/2/2021 | | N | 4602484621 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.7 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20211215 | 12/15/2021 | | N | 4602491921 | Treatment | Deep | **3300** | **3770** | < 10.0 U | < 10.0 U | -96.18 | 1.72 | 7.12 | 2.13 | -- | 199.39 *** | -- | 5.2 | **529** | -- | 680 | < 120 U | **613** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20211229 | 12/29/2021 | | N | 4602499871 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.7 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20220110 | 1/10/2022 | | N | 4602504131 | Treatment | Deep | **12400** | **13000** | **9010** | **9010** | -143 | 10.4 | 7.46 | 2.23 | -- | 31.6 | -- | 8.3 | **476** | -- | 1000 F1 | < 120 U | **694** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20220110-X | 1/10/2022 | | FD | 4602504131 | Treatment | Deep | **12100** | **12800** | **9360** | **9360** | -- | -- | -- | -- | -- | -- | -- | 8.1 | **481** | -- | 950 | < 120 U | **681** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20220217 | 2/17/2022 | | N | 4602526891 | Treatment | Deep | **15100** | **15800** | **10400** | **11500** | -80.8 | 1.69 | 7.92 | 2.037 | -- | 139 | -- | 7.6 | **445** | -- | 1100 F1 | < 120 U | **715** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20220217-X | 2/17/2022 | | FD | 4602526891 | Treatment | Deep | **15200** | **16300** | **10600** | **10900** | -- | -- | -- | -- | -- | -- | -- | 7.9 | **452** | -- | 990 | < 120 U | **710** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20220304 | 3/4/2022 | | N | 4602537771 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.8 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20220304-X | 3/4/2022 | | FD | 4602537771 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.5 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20220317 | 3/17/2022 | | N | 4602545111 | Treatment | Deep | **23300** | **27300** | **16200** | **15900** | -26.8 | 8.16 | 7.19 | 1.355 | -- | 103.5 | -- | 9.6 ^2 | **444** | -- | 490 | **509 J** | **793** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20220331 | 3/31/2022 | | N | 4602553841 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.0 F1 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20220414 | 4/14/2022 | | N | 4602562981 | Treatment | Deep | **37800** | **38500** | **29800** | **29300** | -68.9 | 4.82 | 8.28 | 2.169 | 17.77 | -- OR | -- | 8.3 | **431** | -- | 1000 | < 120 U | **748** | -- |
| 114-P2-IRM-94D | 114-P1-IRM-94D-20220428 | 4/28/2022 | | N | 4602572301 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.8 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20220513 | 5/13/2022 | | N | 4602580891 | Treatment | Deep | **46200** | **39800** | **23200** | **24300** | -76.1 | 2.82 | 7.52 | 1.557 | 15.53 | 390 | -- | 8.9 | **416** | -- | 1200 | < 240 U | **746** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20220527 | 5/27/2022 | | N | 4602589681 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 11.3 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20220609 | 6/9/2022 | | N | 4602597481 | Treatment | Deep | **46400** | **42900** | **39900** | **39300** | 210.3 | 5.50 | 6.92 | 2.195 | 18.27 | 708 | -- | 11.0 | **437** | -- | -- | < 120 U | **783** | -- |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochemical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P2-IRM-94D | 114-P1-IRM-94D-20220620 | 6/20/2022 | | N | 4602604751 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.8 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20220711 | 7/11/2022 | | N | 4602617131 | Treatment | Deep | **46600** | **64900** | **37000** | **41400** | 93.1 | 3.73 | 7.65 | 2.328 | 19.47 | 232 | -- | 10.7 | **380** | -- | -- | < 240 U | **1000** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20220725-X | 7/20/2022 | | FD | 4602625591 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 11.0 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20220725 | 7/20/2022 | | N | 4602625591 | Treatment | Deep | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 11.0 | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20220816 | 8/16/2022 | | N | 4602639181 | Treatment | Deep | -- | **53000** | -- | **36000** | 83.1 | 4.59 | 7.92 | 2.062 | 20.90 | 65 | -- | 9.6 | **405** | -- | -- | **< 600 U** | **1020** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20220914 | 9/14/2022 | | N | 4602654911 | Treatment | Deep | -- | **54100** | -- | **68600** | 27.4 | 2.61 | 7.26 | 2.154 | 17.41 | 59.4 | -- | 7.2 | **469** | -- | -- | < 120 U | **790** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20221011 | 10/11/2022 | | N | 4602672521 | Treatment | Deep | **55200** | **48100** | -- | **54100** | -0.7 | 3.04 | 7.32 | 1.746 | 16.99 | 27.0 | -- | 6.3 | **496** | -- | -- | < 240 U | **803** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20221108 | 11/8/2022 | | N | 4602691101 | Treatment | Deep | -- | **16000** | -- | **40500** | 46.6 | 7.23 | 7.7 | 2.198 | 15.40 | 29.4 | -- | 6.8 | **474** | -- | -- | **< 600 U** | **1050** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20221108-X | 11/8/2022 | | FD | 4602691101 | Treatment | Deep | -- | **38200** | -- | **41100** | -- | -- | -- | -- | -- | -- | -- | 6.7 F1 | **493** | -- | -- | **< 600 U** | **1030** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20221208 | 12/8/2022 | | N | 4602709591 | Treatment | Deep | **36700** | **36900** | **33400** | **34000** | 77.2 | 1.43 | 7.06 | 1.918 | 17.10 | 17.4 | -- | 6.6 | **489** | -- | -- | < 240 U | **1040** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20230117 | 1/17/2023 | | N | 4602730721 | Treatment | Deep | **32500** | **30900** | **33800** | **35500** | 81.7 | 4.31 | 7.27 | 1.825 | 16.42 | 112 | -- | 6.4 | **465** | -- | -- | **< 600 U** | **941** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20230221 | 2/21/2023 | | N | 4602750091 | Treatment | Deep | -- | **29500** | -- | **28500** | 2.6 | 6.76 | 7.24 | 1.948 | 17.07 | 7.01 | -- | 7.1 | **446** | -- | -- | **< 1200 U** | **835** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20230315 | 3/15/2023 | | N | 4602763801 | Treatment | Deep | -- | **20700** | -- | **19100** | -4.2 | 1.18 | 7.6 | 1.601 | 14.5 | 8.06 | -- | 9.9 | **413** | -- | -- | **< 2400 U** | **815** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20230315-X | 3/15/2023 | | FD | 4602763801 | Treatment | Deep | -- | **19100** | -- | **19900** | -- | -- | -- | -- | -- | -- | -- | 9.6 | **424** | -- | -- | **< 2400 U** | **990** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20230411 | 4/11/2023 | | N | 4602780351 | Treatment | Deep | -- | **17400** | -- | **19900** | 210.7 | 5.93 | 7.32 | 1.927 | 16 | 5.54 | -- | 18.8 | **403** | -- | -- | **< 600 U** | **696** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20230411-X | 4/11/2023 | | FD | 4602780351 | Treatment | Deep | -- | **19700** | -- | **19000** | -- | -- | -- | -- | -- | -- | -- | 18.1 | **403** | -- | -- | < 120 U | **696** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20230504 | 5/4/2023 | | N | 4602795681 | Treatment | Deep | -- | **442000** | -- | **6040** | -12.5 | 5.1 | 7.71 | 1.347 | 14.6 | 8.66 | -- | 12.6 | **324** | -- | -- | **< 600 U** | **437** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20230615 | 6/15/2023 | | N | 4602824081 | Treatment | Deep | -- | **3970** | -- | **2160** | -80.2 | 6.81 | 8 | 1.256 | 17.3 | 9.98 | -- | 9.3 | **269** | -- | -- | < 120 U | **352** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20230712 | 7/12/2023 | | N | 4602840741 | Treatment | Deep | -- | **26600** | -- | **22200** | 2.6 | 3.19 | 7.95 | 1.737 | 18.31 | 9.6 | -- | 28.1 | **573** | -- | -- | **< 1200 U** | **1120** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20230817 | 8/17/2023 | | N | 4602864051 | Treatment | Deep | -- | **19500 B** | -- | **14900** | 16 | 5.99 | 7.18 | 1.859 | 17.36 | 9.97 | -- | 26.6 | **400** | -- | -- | < 240 U | **938** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20230817-X | 8/17/2023 | | FD | 4602864051 | Treatment | Deep | -- | **22800 B** | -- | **14000** | -- | -- | -- | -- | -- | -- | -- | 26.9 | **379** | -- | -- | < 240 U | **923** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20230912 | 9/12/2023 | | N | 4602880021 | Treatment | Deep | **11200** | **11800** | **8140** | **8710** | -103.5 | 1.14 | 7.84 | 1.777 | 19.71 | 43.3 | -- | 33.5 | **439** | -- | -- | **< 600 U** | **898** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20230912-X | 9/12/2023 | | FD | 4602880021 | Treatment | Deep | **10900** | **11700** | **8600** | **8140** | -- | -- | -- | -- | -- | -- | -- | 33.8 | **444** | -- | -- | **< 600 U** | **885** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20231019 | 10/19/2023 | | N | 4602907271 | Treatment | Deep | **9150** | **10600** | **7430** | **7430** | -73 | 0.84 | 7.19 | 1.988 | 16.1 | 30.6 | -- | 28.8 | **380** | -- | -- | **< 600 U** | **1050** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20231019-X | 10/19/2023 | | FD | 4602907271 | Treatment | Deep | **9640** | **10500** | **8250** | **7160** | -- | -- | -- | -- | -- | -- | -- | 29.0 | **385** | -- | -- | **< 600 U** | **1050** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20231113 | 11/13/2023 | | N | JD76851 | Treatment | Deep | **7770** | **868** | **6000** | **5900** | -200.7 | 1.71 | 7.93 | 1.742 | 13.8 | 42.3 | -- | 33.2 | **426** | -- | -- | 75.5 | **1020** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20231113-X | 11/13/2023 | | FD | JD76851 | Treatment | Deep | **7310** | **939** | **6000** | **6200** | -- | -- | -- | -- | -- | -- | -- | 31.8 | **424** | -- | -- | 78.7 | **963** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20231221 | 12/21/2023 | | N | JD79358 | Treatment | Deep | **5480** | **6390** | **3100** | **2900** | -43.3 | 1.4 | 7.03 | 1.854 | 13.6 | 48.9 | -- | 34.1 | **367** | -- | -- | **2080** | **896** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20240125 | 1/25/2024 | | N | JD81190 | Treatment | Deep | **2250** | **4570** | **830** | **820** | -95.1 | 0.74 | 7.27 | 1.751 | 13.7 | 56.6 | -- | 34.9 | **330** | -- | -- | 98.8 B | **538** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20240125-X | 1/25/2024 | | FD | JD81190 | Treatment | Deep | **2050** | **4900** | **870** | **850** | -- | -- | -- | -- | -- | -- | -- | 33.7 | **329** | -- | -- | < 250 U | **587** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20240214 | 2/14/2024 | | N | JD82437 | Treatment | Deep | **1420** | **3710** | **390** | **340** | -199.8 | 1.54 | 7.23 | 1.664 | 13.9 | 72.2 | -- | 30.8 | **314** | -- | -- | **501** | **715** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20240311 | 3/11/2024 | 52 | N | JD84214 | Treatment | Deep | **698** | **2550** | 60 | 36 | -52.3 | 2.25 | 7.17 | 0.81 | 14.2 | 57.9 | -- | 27.9 | **256** | -- | -- | **305** | **619** | -- |
| 114-P2-IRM-94D | 114-P2-IRM-94D-20240311-X | 3/11/2024 | 52 | FD | JD84214 | Treatment | Deep | **669** | **2630** | 52 | 50 | -- | -- | -- | -- | -- | -- | -- | 27.3 | **272** | -- | -- | **303** | **599** | -- |
| ***Injection*** | | | | | | | | | | | | | | | | | | | | | | | | | |
| 114-P2-IRM-100I | 114-P2-IRM-100I-41.04-20230216 | 2/16/2023 | 41.04 | N | 4602747701 | Baseline | Intermediate | -- | 31.2 | -- | < 10.0 U | -100.5 | 1.79 | 7.33 | 2.036 | 13.9 | 3.42 | -- | 4.9 | **666** | < 1 U | -- | < 120 U | **1560** | -- |
| 114-P2-IRM-100I | 114-P2-IRM-100I-41.04-20230216-X | 2/16/2023 | 41.04 | FD | 4602747701 | Baseline | Intermediate | -- | 30.9 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 5.2 | **670** | < 1 U | -- | < 120 U | **1530** | -- |
| 114-P2-IRM-100I | 114-P2-IRM-100I-26.04-20230217 | 2/17/2023 | 26.04 | N | 4602748331 | Baseline | Intermediate | -- | 5.0 | -- | < 10.0 U | -129.6 | 0.14 | 7.21 | 2.069 | 13.9 | 1.18 | -- | 4.9 | **674** | < 1 U | -- | **11200** | **1630** | -- |
| 114-P2-IRM-100I | 114-P2-IRM-100I-31.04-20230217 | 2/17/2023 | 31.04 | N | 4602748331 | Baseline | Intermediate | -- | 9.3 | -- | < 10.0 U | -117.9 | 0.41 | 7.24 | 2.018 | 13.7 | 2 | -- | 4.6 | **670** | < 1 U | -- | **11200** | **1640** | -- |
| 114-P2-IRM-100I | 114-P2-IRM-100I-36.04-20230217 | 2/17/2023 | 36.04 | N | 4602748331 | Baseline | Intermediate | -- | 17.6 | -- | < 10.0 U | -108.9 | 0.40 | 7.2 | 1.997 | 13.4 | 4.77 | -- | 4.9 | **671** | < 1 U | -- | **11200** | **1650** | -- |
| 114-P2-IRM-101I | 114-P2-IRM-101I-35.0-20230217 | 2/17/2023 | 35 | N | 4602748331 | Baseline | Intermediate | -- | 9.7 | -- | < 10.0 U | -148.0 | 0.35 | 7.41 | 0.954 | 12.5 | 4.70 | -- | 2.0 | 249 | < 1 U | -- | **3190** | **611** | -- |
| 114-P2-IRM-101I | 114-P2-IRM-101I-40.0-20230217 | 2/17/2023 | 40 | N | 4602748331 | Baseline | Intermediate | -- | 14.7 | -- | < 10.0 U | -144.9 | 0.44 | 7.42 | 0.953 | 12.2 | 8.49 | -- | 2.1 | **251** | < 1 U | -- | **3200** | **617** | -- |
| 114-P2-IRM-101I | 114-P2-IRM-101I-25.0-20230221 | 2/21/2023 | 25 | N | 4602750081 | Baseline | Intermediate | -- | 2.5 J | -- | < 10.0 U | -134.4 | 0.09 | 7.48 | 0.893 | 10.1 | 1.02 | -- | 2.1 JB | **254** | < 1 U | -- | **3670** | **617** | -- |
| 114-P2-IRM-101I | 114-P2-IRM-101I-30.0-20230221 | 2/21/2023 | 30 | N | 4602750081 | Baseline | Intermediate | -- | 5.4 | -- | < 10.0 U | -145.2 | 0.07 | 7.44 | 0.897 | 11.2 | 4.30 | -- | < 1.8 UB | **256** | < 1 U | -- | **3730** | **624** | -- |
| 114-P2-IRM-102I | 114-P2-IRM-102I-28.25-20230220 | 2/20/2023 | 28.25 | N | 4602749371 | Baseline | Intermediate | -- | **75.7** | -- | < 10.0 U | 40.3 | 0.13 | 6.94 | 2.806 | 14.8 | 6.45 | -- | 8.5 | 207 | < 1 U | -- | 191 | **1050** | -- |
| 114-P2-IRM-102I | 114-P2-IRM-102I-33.25-20230220 | 2/20/2023 | 33.25 | N | 4602749371 | Baseline | Intermediate | -- | **101** | -- | < 10.0 U | 32.7 | 0.18 | 6.94 | 2.929 | 14.3 | 7.47 | -- | 8.8 | 219 | < 1 U | -- | 203 | **1080** | -- |
| 114-P2-IRM-102I | 114-P2-IRM-102I-38.25-20230220 | 2/20/2023 | 38.25 | N | 4602749371 | Baseline | Intermediate | 57.2 | **111** | < 10.0 U | < 10.0 U | 10.3 | 0.23 | 6.94 | 3.130 | 13.1 | 24.6 | -- | 9.2 | 228 | < 1 U | -- | 275 | **997** | -- |
| 114-P2-IRM-102I | 114-P2-IRM-102I-23.25-20230221 | 2/21/2023 | 23.25 | N | 4602750081 | Baseline | Intermediate | -- | **128** | -- | < 10.0 U | -9.1 | 0.21 | 6.75 | 2.792 | 12.5 | 9.62 | -- | 9.4 | 234 | < 1 U | -- | **398** | **1140** | -- |
| 114-P2-IRM-103I | 114-P2-IRM-103I-30.0-20230221 | 2/21/2023 | 30 | N | 4602750081 | Baseline | Intermediate | -- | 8.1 | -- | < 10.0 U | -183.0 | 0.62 | 7.37 | 1.500 | 11.2 | 1.62 | -- | 3.2 JB | **427** | < 1 U | -- | **1190** | **3030** | -- |
| 114-P2-IRM-103I | 114-P2-IRM-103I-35.0-20230221 | 2/21/2023 | 35 | N | 4602750081 | Baseline | Intermediate | -- | 13.1 | -- | < 10.0 U | -177.1 | 0.49 | 7.38 | 1.499 | 11.8 | 2.21 | -- | 3.2 JB | **422** | < 1 U | -- | **1180** | **3060** | -- |
| 114-P2-IRM-103I | 114-P2-IRM-103I-35.0-20230221-X | 2/21/2023 | 35 | FD | 4602750081 | Baseline | Intermediate | -- | 11.3 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 3.1 JB | **428** | < 1 U | -- | **1170** | **3050** | -- |
| 114-P2-IRM-103I | 114-P2-IRM-103I-40.0-20230221 | 2/21/2023 | 40 | N | 4602750081 | Baseline | Intermediate | -- | 19.3 | -- | < 10.0 U | -165.8 | 0.53 | 7.38 | 1.518 | 11.2 | 2.44 | -- | 3.2 JB | **425** | < 1 U | -- | **1170** | **3050** | -- |
| 114-P2-IRM-103I | 114-P2-IRM-103I-25.0-20230222 | 2/22/2023 | 25 | N | 4602750751 | Baseline | Intermediate | -- | 5.4 | -- | < 10.0 U | -153.5 | 0.18 | 7.41 | 1.429 | 11.3 | 1.00 | -- | 2.6 | **462** | < 1 U | -- | **1020** | **2840** | -- |
| 114-P2-IRM-10I | 114-P2-IRM-10I-33-20220318 | 3/18/2020 | 33 | N | JD4870 | Baseline | Intermediate | **63200** | **63100** | **54100** | **54900** | 31.2 | 0.68 | 7.3 | 9.19 | -- | 2.06 | -- | 5.3 | **1650** | < 2.0 U | 211 | 237 | **169** | -- |
| 114-P2-IRM-11I | 114-P2-IRM-11I-32.0-20200318 | 3/18/2020 | 32 | N | JD4839 | Baseline | Intermediate | **34400** | **26400** | **24900** | **26100** | 63.1 | 2.75 | 7.3 | 3.02 | -- | 3.91 | -- | 3.3 | **887 J-** | < 2.0 U | 177 | < 100 U | **1050** | -- |
| 114-P2-IRM-12I | 114-P2-IRM-12I-32.0-20200317 | 3/17/2020 | 32 | N | JD4798 | Baseline | Intermediate | **53300** | **52800** | **50600** | **56100** | 49.4 | 0.57 | 7.32 | 5.72 | -- | 7.03 | -- | 4.9 | **604 J-** | R | 157 | 91.0 J | **361** | -- |
| 114-P2-IRM-13I | 114-P2-IRM-13I-32.0-20200318 | 3/18/2020 | 32 | N | JD4839 | Baseline | Intermediate | 41.5 | **127** | 52 | 53 | 200.5 | 2.58 | 12.39 | 3.28 | -- | 4.09 | -- | 8.9 | 193 J- | < 2.0 U | 40.6 J | < 100 U | 1.6 J | -- |
| 114-P2-IRM-14I | 114-P2-IRM-14I-33.0-20200317 | 3/17/2020 | 33 | N | JD4798 | Baseline | Intermediate | **101000** | **103000** | **95700** | **106000** | 119.2 | 0.49 | 7.09 | 3.32 | -- | 7.11 | -- | 4.4 | **373 J-** | R | 199 | 73.5 J | **1330** | -- |
| 114-P2-IRM-15I | 114-P2-IRM-15I-32.0-20200317 | 3/17/2020 | 32 | N | JD4798 | Baseline | Intermediate | **94400** | **93900** | **93900** | **99300** | -8.8 | 1.64 | 8.72 | 3.51 | -- | 5.72 | -- | 13.4 | **462 J-** | R | 1180 | < 100 U | 38.6 J | -- |
| 114-P2-IRM-16I | 114-P2-IRM-16I-32-20200319 | 3/19/2020 | 32 | N | JD4924 | Baseline | Intermediate | **206000** | **206000** | **191000** | **183000** | 188.6 | 0.28 | 7.39 | 0.014 | -- | 4 | -- | 6.7 | **810 J-** | < 2.0 U | 229 | < 100 U | **284** | -- |
| 114-P2-IRM-17I | 114-P2-IRM-17I-30-20200319 | 3/19/2020 | 30 | N | JD4952 | Baseline | Intermediate | 15.0 | < 24.0 U | < 10 RA | < 10 RA | 15.2 | 0.18 | 6.98 | 2.257 | -- | 1.59 | -- | 6.7 | 212 | < 2.0 U | 325 | **925** | **726** | -- |
| 114-P2-IRM-18I | 114-P2-IRM-18I-30-20200319 | 3/19/2020 | 30 | N | JD4952 | Baseline | Intermediate | **263** | **284** | **240 RA** | **240 RA** | -32.6 | 0.75 | 10.85 | 2.282 | -- | 7.38 | -- | 2.7 | **862** | < 2.0 U | 718 | < 100 U | **91.1** | -- |
| 114-P2-IRM-19I | 114-P2-IRM-19I-31.68-2020327 | 3/27/2020 | 31.68 | N | JD5287 | Baseline | Intermediate | **1450** | **1780** | **1100** | **1100** | 188 | 0 | 7.03 | 2.34 | -- | 0 | -- | 4.9 | **683** | < 2.0 U | 341 | < 100 U | **372** | -- |
| 114-P2-IRM-1I | 114-P2-IRM-1I-31.25-20200320 | 3/20/2020 | 31.25 | N | JD4980 | Baseline | Intermediate | **22000** | **21000** | **19600** | **18100** | 195.2 | 0.73 | 6.74 | 2.014 | -- | 3.27 | -- | 5.7 | **601 J-** | < 2.0 U | 137 | 35.2 J | **437** | -- |
| 114-P2-IRM-20D | 114-P2-IRM-20D-52-20200323 | 3/23/2020 | 52 | N | JD5047 | Baseline | Intermediate | **1960** | **2840** | **2100** | **3100** | 28.1 | 0.34 | 8.39 | 3.515 | -- | 0.88 | -- | 17.5 | **1220** | < 2.0 U | 389 | < 100 U | **53.8** | -- |
| 114-P2-IRM-20I | 114-P2-IRM-20I-32-20200323 | 3/23/2020 | 32 | N | JD5047 | Baseline | Intermediate | **27400** | **28200** | **24700** | **25900** | 107.3 | 0.49 | 7.8 | 4.398 | -- | 1.11 | -- | 19.0 | **989** | < 2.0 U | 1180 | < 100 U | **150** | -- |
| 114-P2-IRM-21D | 114-P2-IRM-21D-52-20200323 | 3/23/2020 | 52 | N | JD5047 | Baseline | Intermediate | **4930** | **5080** | **4700** | **4700** | 43.5 | 3.2 | 7.88 | 1.931 | -- | 2.66 | -- | 29.1 | **1430** | < 2.0 U | 2210 | 97.4 J | **143** | -- |
| 114-P2-IRM-21I | 114-P2-IRM-21I-32-20200323 | 3/23/2020 | 32 | N | JD5061 | Baseline | Intermediate | **117** | **129** | < 10 U | < 10 U | -290.1 | 2.2 | 8.71 | 1.766 | -- | 3.08 | -- | 51.3 | **1510** | 23.9 J- | 2300 | 73.4 J | **1240** | -- |
| 114-P2-IRM-22D | 114-P2-IRM-22D-53-20200323 | 3/23/2020 | 53 | N | JD5061 | Baseline | Intermediate | **619** | **3890** | < 10 U | 6.5 J | -374.5 | 0.14 | 7.98 | 4.557 | -- | 8.24 | -- | 336 | < 100 U | 60.0 J- | 10700 | < 200 U | **515** | -- |
| 114-P2-IRM-22I | 114-P2-IRM-22I-32.99-2020326 | 3/26/2020 | 32.99 | N | JD5245 | Baseline | Intermediate | **465** | **515 J** | **< 500 U** | < 10 UJ | -290 | 8.34 | 7.98 | 3.62 | -- | 30.5 | -- | 178 | **276** | 22.7 | 9900 | 175 | **985** | -- |
| 114-P2-IRM-23D | 114-P2-IRM-23D-52-20200327 | 3/27/2020 | 52 | N | JD5287 | Baseline | Intermediate | **17100** | **17300** | **12400** | **14100** | 90 | 0 | 8.89 | 4.79 | -- | 40.1 | -- | 24.7 | **1360** | < 2.0 U | 672 | **< 500 U** | **560** | -- |
| 114-P2-IRM-23I | 114-P2-IRM-23I-33.4-2020326 | 3/26/2020 | 33.4 | N | JD5245 | Baseline | Intermediate | **18200** | **23500 J** | **10200** | **9600 J** | -162 | 0 | 9.27 | 4.01 | -- | 255 | -- | 20.9 | **646** | < 2.0 U | 2530 J | 50.4 J | **187** | -- |
| 114-P2-IRM-24D | 114-P2-IRM-24D-53.59-2020327 | 3/27/2020 | 53.59 | N | JD5287 | Baseline | Intermediate | **701000** | **743000** | **755000** | **683000** | 219 | 0.33 | 8.27 | 6.75 | -- | 9.7 | -- | 31.2 | **1110** | < 2.0 U | 346 | **< 500 U** | **521 J** | -- |
| 114-P2-IRM-24I | 114-P2-IRM-24I-35.85-2020327 | 3/27/2020 | 35.85 | N | JD5287 | Baseline | Intermediate | **182000** | **171000** | **243000 J** | **162000 J** | 185 | 3.49 | 8.09 | 4.05 | -- | 7.7 | -- | 22.7 | **842** | < 2.0 U | 401 | 172 J | **714** | -- |
| 114-P2-IRM-25I | 114-P2-IRM-25I-27-2020327 | 3/27/2020 | 27 | N | JD5287 | Baseline | Intermediate | **174** | **390** | < 10 UJ | < 10 UJ | -210 | 0.6 | 7.01 | 1.71 | -- | 3.8 | -- | 137 | < 2.0 U | 3.8 | 76.3 | 253 | **684** | -- |
| 114-P2-IRM-26I | 114-P2-IRM-26I-28-2020325 | 3/25/2020 | 28 | N | JD5140 | Baseline | Intermediate | 3.7 J | 13.3 | < 10 U | < 10 U | -118 | 0 | 7.38 | 1.86 | -- | 7 | -- | 17.7 | 45.1 | < 2.0 U | 412 | **1980** | **7960** | -- |
| 114-P2-IRM-27D | 114-P2-IRM-27D-53-20200323 | 3/23/2020 | 53 | N | JD5047 | Baseline | Intermediate | **169** | **523** | < 10 U | < 10 U | 8.1 | 3.07 | 7.46 | 1.751 | -- | 6.33 | -- | 24.7 | **1140** | < 2.0 U | 736 | **1380** | **373** | -- |
| 114-P2-IRM-28D | 114-P2-IRM-28D-53-20200323 | 3/23/2020 | 53 | N | JD5047 | Baseline | Intermediate | **35500** | **35600** | **32900** | **35300** | 140 | 0.35 | 7.87 | 3.354 | -- | 1.45 | -- | 27.9 | **1280** | < 2.0 U | 350 | 32.5 J | **88.9** | -- |
| 114-P2-IRM-29D | 114-P2-IRM-29D-40.49-2020327 | 3/27/2020 | 40.49 | N | JD5287 | Baseline | Intermediate | **210** | **216** | < 10 UJ | < 10 UJ | -110 | 0 | 7.62 | 4.53 | -- | 0 | -- | 38.9 | **821** | 1.7 J | 3650 | **614** | **415** | -- |
| 114-P2-IRM-2I | 114-P2-IRM-2I-29.0-20200320 | 3/20/2020 | 29 | N | JD4980 | Baseline | Intermediate | **114** | **161** | < 10 U | < 10 U | -105.9 | 0.53 | 7.43 | 3.515 | -- | 7.06 | -- | 17.2 | **1390 J-** | < 2.0 U | 72.5 | **2160** | **249** | -- |
| 114-P2-IRM-30D | 114-P2-IRM-30D-53.02-2020327 | 3/27/2020 | 53.02 | N | JD5287 | Baseline | Intermediate | **1080** | **2180** | **260** | **240** | 94 | 0 | 8.3 | 5.86 | -- | 110 | -- | 38.7 | **1660** | 0.93 J | 829 | **494** | **1150** | -- |
| 114-P2-IRM-31D | 114-P2-IRM-31D-54.55-2020327 | 3/27/2020 | 54.55 | N | JD5287 | Baseline | Intermediate | **912000** | **938000** | **897000** | **776000** | 163 | 0 | 8.91 | 7.06 | -- | 148 | -- | 47.0 | **1200** | < 2.0 U | 544 | **< 10000 U** | **896 J** | -- |
| 114-P2-IRM-34I | 114-P2-IRM-34I-30.0-20200320 | 3/20/2020 | 30 | N | JD4980 | Baseline | Intermediate | **5200** | **5270** | **5300** | **5300** | 93.6 | 0.42 | 6.68 | 2.307 | -- | 0.84 | -- | 10.8 | 219 J- | < 2.0 U | 151 | < 100 U | **908** | -- |
| 114-P2-IRM-35I | 114-P2-IRM-35I-24.0-20200320 | 3/20/2020 | 24 | N | JD5007 | Baseline | Intermediate | **5330** | **4880** | **4400** | **5100** | 112.5 | 0.4 | 6.8 | 2.224 | -- | 2.96 | -- | 11.1 | **417 J-** | R | 260 | 45.8 J | **1200** | -- |
| 114-P2-IRM-36I | 114-P2-IRM-36I-30.0-2020320 | 3/20/2020 | 30 | N | JD5007 | Baseline | Intermediate | **56100** | **53100** | **54100** | **53600** | 159.6 | 0.45 | 6.74 | 1.541 | -- | 1.85 | -- | 5.4 | **260 J-** | R | 155 | 76.9 J | **739** | -- |
| 114-P2-IRM-37I | 114-P2-IRM-37I-32.0-2020325 | 3/25/2020 | 32 | N | JD5180 | Baseline | Intermediate | **119000** | **117000 J+** | R | R | 161 | 0 | 7.56 | 4.11 | -- | 2.2 | -- | 16.4 | **904** | < 2.0 U | 2160 | 102 | **1260** | -- |
| 114-P2-IRM-38I | 114-P2-IRM-38I-33-20200324 | 3/24/2020 | 33 | N | JD5095 | Baseline | Intermediate | **154000 J** | **53400 J** | **60900** | **66000** | 81 | 1.87 | 7.32 | 3.21 | -- | 0 | -- | 15.9 | **1300** | R | 396 | **< 2000 U** | **454** | -- |
| 114-P2-IRM-39I | 114-P2-IRM-39I-32.0-20200320 | 3/20/2020 | 32 | N | JD5007 | Baseline | Intermediate | **175000** | **163000** | **149000** | **169000** | -33.7 | 0.72 | 9.21 | 3.71 | -- | 1.93 | -- | 62.2 | **462 J-** | R | 1070 | **< 500 U** | 45.4 J | -- |
| 114-P2-IRM-3I | 114-P2-IRM-3I-32-2020324 | 3/24/2020 | 32 | N | JD5095 | Baseline | Intermediate | 18.9 J | 33.2 J | < 10 U | < 10 U | -9 | 0 | 7.17 | 2.8 | -- | 0 | -- | 4.9 | **700** | R | 108 | 251 | **3030** | -- |
| 114-P2-IRM-40I | 114-P2-IRM-40I-33.5-20200319 | 3/19/2020 | 33.5 | N | JD4952 | Baseline | Intermediate | **620** | **1540** | **400 RA** | **300 RA** | -101 | 0.1 | 8.79 | 4.24 | -- | 2.2 | -- | 11.7 | **975** | < 2.0 U | 369 | < 100 U | **109** | -- |
| 114-P2-IRM-40I | 114-P2-IRM-40I-38.5-20200319 | 3/19/2020 | 38.5 | N | JD4952 | Baseline | Intermediate | **599** | **1520** | **300 RA** | **280 RA** | -108.1 | 0.24 | 8.93 | 4.31 | -- | 5.61 | -- | 12.9 | **1120** | < 2.0 U | 286 | < 100 U | **108** | -- |
| 114-P2-IRM-40I | 114-P2-IRM-40I-23.5-20200320 | 3/20/2020 | 23.5 | N | JD4980 | Baseline | Intermediate | **1350** | **1880** | **380** | **390** | 84.1 | 0.74 | 8.11 | 4.55 | -- | 3.98 | -- | 12.0 | **1070** | < 2.0 U | 206 | < 100 U | **118** | -- |
| 114-P2-IRM-40I | 114-P2-IRM-40I-28.5-20200320 | 3/20/2020 | 28.5 | N | JD4980 | Baseline | Intermediate | **1590** | **1820** | **420** | **430** | 96 | 1.01 | 8.16 | 4.62 | -- | 2.13 | -- | 12.0 | **1080 J-** | < 2.0 U | 290 | < 100 U | **134 J** | -- |
| 114-P2-IRM-42I | 114-P2-IRM-42I-32.5-20200319 | 3/19/2020 | 32.5 | N | JD4952 | Baseline | Intermediate | 9.4 J | < 41.0 U | < 10 RA | < 10 RA | -421.3 | 2.03 | 10.17 | 1.727 | -- | 0.54 | -- | 9.5 | **776** | 41.4 | 48.2 J | **2570** | 45.9 | -- |
| 114-P2-IRM-43I | 114-P2-IRM-43I-33-20200319 | 3/19/2020 | 33 | N | JD4924 | Baseline | Intermediate | **141** | **291** | 8.0 J | 5.8 J | -345.1 | 1.53 | 7.6 | 1.761 | -- | 8.02 | -- | 24.5 | **1030 J-** | 49.3 | 916 | **875** | **320 J** | -- |
| 114-P2-IRM-44I | 114-P2-IRM-44I-32.5-20200319 | 3/19/2020 | 32.5 | N | JD4924 | Baseline | Intermediate | **758000** | **769000** | **636000** | **628000** | 176.7 | 2.4 | 6.88 | 1.726 | -- | 1.5 | -- | 11.9 | **1130 J-** | < 2.0 U | 438 | **< 2500 U** | **143 J** | -- |
| 114-P2-IRM-45I | 114-P2-IRM-45I-32-20200319 | 3/19/2020 | 32 | N | JD4924 | Baseline | Intermediate | **404000 J** | **79100 J** | **322000** | **370000 J** | 171.2 | 6.85 | 6.87 | 1.708 | -- | 8.11 | -- | 8.0 | **880 J-** | < 2.0 U | 204 | 47.9 J | **125** | -- |
| 114-P2-IRM-46I | 114-P2-IRM-46I-30.0-20200318 | 3/18/2020 | 30 | N | JD4839 | Baseline | Intermediate | **77200 J** | **31200 J** | **39400** | **40600** | 136.5 | 0.14 | 7.41 | 4.45 | -- | 3.11 | -- | 7.1 | **1310 J-** | < 2.0 U | 350 | < 100 U | **57.5** | -- |
| 114-P2-IRM-47I | 114-P2-IRM-47I-32-20200319 | 3/19/2020 | 32 | N | JD4924 | Baseline | Intermediate | **743000** | **734000** | **470000** | **673000** | 169.1 | 2.6 | 7.06 | 1.832 | -- | 1.07 | -- | 13.3 | **1090 J-** | < 2.0 U | 375 | < 100 U | 42.3 | -- |
| 114-P2-IRM-48I | 114-P2-IRM-48I-32-20200319 | 3/19/2020 | 32 | N | JD4952 | Baseline | Intermediate | **563000** | **533000** | **499000 RA** | **476000 RA** | 109.8 | 0.28 | 7.47 | 3.967 | -- | 3.34 | -- | 8.6 | **659** | < 2.0 U | 274 | < 100 U | **< 750 U** | -- |
| 114-P2-IRM-49I | 114-P2-IRM-49I-30-20200318 | 3/18/2020

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P2-IRM-51I | 114-P2-IRM-51I-38.0-20200317 | 3/17/2020 | 38 | N | JD4798 | Baseline | Intermediate | **364000** | **352000** | **352000** | **389000** | 181.5 | 0.25 | 7.23 | 3.422 | -- | 1.9 | -- | 3.6 | **565 J-** | R | 283 | < 100 U | **84.6 J** | -- |
| 114-P2-IRM-52I | 114-P2-IRM-52I-30-2020324 | 3/24/2020 | 30 | N | JD5104 | Baseline | Intermediate | 8.1 J | 8.9 J | < 10 U | < 10 U | 93 | 0 | 7.37 | 1.63 | -- | 0 | -- | 3.2 | **468** | < 2.0 U | 306 | < 100 U | **3080** | -- |
| 114-P2-IRM-53I | 114-P2-IRM-53I-29-2020325 | 3/25/2020 | 29 | N | JD5140 | Baseline | Intermediate | 4.4 J | 22.4 | < 10 U | < 10 U | -79 | 0 | 7.29 | 1.8 | -- | 9.83 | -- | 3.3 | 61.0 | < 2.0 U | 372 | **1100** | **3850** | -- |
| 114-P2-IRM-54D | 114-P2-IRM-54D-52-20200323 | 3/23/2020 | 52 | N | JD5047 | Baseline | Intermediate | **413** | **484** | < 10 U | < 10 U | 49.2 | 0.4 | 7.51 | 5.488 | -- | 0.81 | -- | 50.0 | **1660** | < 2.0 U | 180 | 131 | **255** | -- |
| 114-P2-IRM-54I | 114-P2-IRM-54I-32-20200323 | 3/23/2020 | 32 | N | JD5061 | Baseline | Intermediate | **287** | **276** | < 10 U | < 10 U | -9.4 | 0.34 | 7.47 | 4.949 | -- | 0.81 | -- | 39.3 | **1430** | R | 642 | 164 | **331** | -- |
| 114-P2-IRM-54I | 114-P2-IRM-54I-32-20200323-X | 3/23/2020 | 32 | FD | JD5061 | Baseline | Intermediate | **275** | **286** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 37.6 | **1430** | R | 584 | 159 | **319** | -- |
| 114-P2-IRM-55D | 114-P2-IRM-55D-52-20200323 | 3/23/2020 | 52 | N | JD5047 | Baseline | Intermediate | **247000** | **284000** | **260000** | **296000** | 119.3 | 1.13 | 8.81 | 6.426 | -- | 5.22 | -- | 49.6 | **1330** | < 2.0 U | 353 | **< 1000 U** | 36.8 J | -- |
| 114-P2-IRM-55I | 114-P2-IRM-55I-53-20200323 | 3/23/2020 | 53 | N | JD5047 | Baseline | Intermediate | **34100** | **34700** | **30400** | **28100** | 111.1 | 0.03 | 7.77 | 3.154 | -- | 8.92 | -- | 22.0 | 153 | < 2.0 U | 2600 | 186 | **72.1** | -- |
| 114-P2-IRM-56D | 114-P2-IRM-56D-46.59-2020327 | 3/27/2020 | 46.59 | N | JD5287 | Baseline | Intermediate | **291000** | **289000** | **260000** | **262000** | 234 | 0 | 8.43 | 6.37 | -- | 40.8 | -- | 42.2 | **2030** | < 2.0 U | 363 | **< 500 U** | **149** | -- |
| 114-P2-IRM-56I | 114-P2-IRM-56I-33.43-2020327 | 3/27/2020 | 33.43 | N | JD5287 | Baseline | Intermediate | **439000** | **433000** | **386000** | **391000** | -13 | 0 | 8.93 | 4.63 | -- | 0 | -- | 28.2 | **822** | < 2.0 U | 1970 | **< 10000 U** | **141 J** | -- |
| 114-P2-IRM-57D | 114-P2-IRM-57D-53.83-2020327 | 3/27/2020 | 53.83 | N | JD5287 | Baseline | Intermediate | **619000** | **716000** | **598000** | **609000** | 182 | 0 | 7.58 | 6.49 | -- | 67.1 | -- | 35.8 | **1230** | < 2.0 U | 516 | **< 10000 U** | **1660** | -- |
| 114-P2-IRM-57D | 114-P2-IRM-57D-53.83-2020327-X | 3/27/2020 | 53.83 | FD | JD5287 | Baseline | Intermediate | **707000** | **664000** | **641000** | **638000** | -- | -- | -- | -- | -- | -- | -- | 35.7 | **1370** | < 2.0 U | 509 | **< 10000 U** | **1800** | -- |
| 114-P2-IRM-57I | 114-P2-IRM-57I-29-2020325 | 3/25/2020 | 29 | N | JD5140 | Baseline | Intermediate | **2670** | **3660** | **580** | **570** | -82 | 0 | 7.46 | 3.7 | -- | 6.8 | -- | 23.7 | **368** | < 2.0 U | 4400 | 142 | **4280** | -- |
| 114-P2-IRM-58D | 114-P2-IRM-58D-52-20200324 | 3/24/2020 | 52 | N | JD5104 | Baseline | Intermediate | **123000** | **121000** | **103000** | **105000** | 185 | 0 | 7.76 | 9.79 | -- | 3.8 | -- | 13.3 | **836** | < 2.0 U | 886 | 39.9 J | **429** | -- |
| 114-P2-IRM-58I | 114-P2-IRM-58I-30-2020324 | 3/24/2020 | 30 | N | JD5104 | Baseline | Intermediate | 21.1 J | **146** | < 10 U | < 10 U | -51 | 0 | 7.96 | 3.85 | -- | 6.8 | -- | 15.9 | 127 | < 2.0 U | 1680 | **493** | **3690** | -- |
| 114-P2-IRM-59D | 114-P2-IRM-59D-45-2020324 | 3/24/2020 | 45 | N | JD5104 | Baseline | Intermediate | **637000 J** | **453000 J** | **411000** | **422000** | 172 | 0 | 7.82 | 5.63 | -- | 6.3 | -- | 14.3 | **527** | < 2.0 U | 347 | **< 2500 U** | **401** | -- |
| 114-P2-IRM-59D | 114-P2-IRM-59D-50-2020324 | 3/24/2020 | 50 | N | JD5104 | Baseline | Intermediate | **568000** | **490000** | **457000** | **453000** | 200 | 0 | 7.82 | 5.82 | -- | 6.5 | -- | 11.9 | **604** | < 2.0 U | 330 | **< 1000 U** | **617** | -- |
| 114-P2-IRM-59D | 114-P2-IRM-59D-55-2020324 | 3/24/2020 | 55 | N | JD5095 | Baseline | Intermediate | **375000** | **339000 J** | **325000** | **325000** | 200 | 0 | 7.82 | 5.82 | -- | 6.5 | -- | 12.3 | **683** | R | 257 | **< 10000 U** | **708 J** | -- |
| 114-P2-IRM-59D | 114-P2-IRM-59D-60.0-2020324 | 3/24/2020 | 60 | N | JD5095 | Baseline | Intermediate | **428000** | **441000 J** | **394000** | **394000** | 199 | 5.31 | 7.71 | 5.81 | -- | 7.4 | -- | 12.7 | **708** | R | 322 | **< 10000 U** | **749 J** | -- |
| 114-P2-IRM-59I | 114-P2-IRM-59I-21-2020324 | 3/24/2020 | 21 | N | JD5104 | Baseline | Intermediate | **17100 J** | **4070 J** | **3700** | **3500** | 168 | 0 | 7.35 | 1.8 | -- | 7.4 | -- | 20.9 | 51.7 | < 2.0 U | 2270 | 188 | **2090** | -- |
| 114-P2-IRM-59I | 114-P2-IRM-59I-26-2020324 | 3/24/2020 | 26 | N | JD5095 | Baseline | Intermediate | **413000** | **447000 J** | **435000** | **435000** | 174 | 0 | 7.86 | 4.87 | -- | 0 | -- | 12.6 | **584** | R | 295 | **< 10000 U** | **1160 J** | -- |
| 114-P2-IRM-59I | 114-P2-IRM-59I-31-2020324 | 3/24/2020 | 31 | N | JD5095 | Baseline | Intermediate | **428000** | **436000 J** | **410000** | **410000** | 175 | 0 | 7.82 | 4.88 | -- | 0.3 | -- | 12.5 | **587** | R | 244 | **< 10000 U** | **1130 J** | -- |
| 114-P2-IRM-59I | 114-P2-IRM-59I-36-2020324 | 3/24/2020 | 36 | N | JD5095 | Baseline | Intermediate | **419000** | **427000 J** | **417000** | **427000** | 174 | 0.03 | 7.8 | 4.88 | -- | 6.5 | -- | 13.4 | **551** | R | 257 | **< 10000 U** | **1100 J** | -- |
| 114-P2-IRM-5I | 114-P2-IRM-5I-32-2020324 | 3/24/2020 | 32 | N | JD5095 | Baseline | Intermediate | 13.0 J | 13.2 J | < 10 U | < 10 U | -69 | 0 | 7.65 | 4 | -- | 0 | -- | 6.7 | **1290** | R | 39.1 | **858** | **1980** | -- |
| 114-P2-IRM-60I | 114-P2-IRM-60I-30-2020325 | 3/25/2020 | 30 | N | JD5140 | Baseline | Intermediate | 2.3 J | 3.5 J | 6.2 J | 6.2 J | -261 | 0 | 7.77 | 6.2 | -- | 3 | -- | 12.6 | **1610** | 3.8 | 1340 | 191 | **795** | -- |
| 114-P2-IRM-61D | 114-P2-IRM-61D-54-20200323 | 3/23/2020 | 54 | N | JD5061 | Baseline | Intermediate | **600000** | **640000** | **608000** | **589000** | 206.2 | 0.33 | 3.26 | 5.123 | -- | 3.37 | -- | 28.6 | **1220** | R | 380 | **< 2500 U** | **93.9 J** | -- |
| 114-P2-IRM-62D | 114-P2-IRM-62D-52-20200323 | 3/23/2020 | 52 | N | JD5061 | Baseline | Intermediate | **226000** | **253000** | **233000** | **243000** | 91.4 | 0.28 | 8.23 | 5.888 | -- | 2.89 | -- | 47.3 | **1810** | R | 223 | **< 1000 U** | **402** | -- |
| 114-P2-IRM-63D | 114-P2-IRM-63D-52-20200323 | 3/23/2020 | 52 | N | JD5061 | Baseline | Intermediate | **322000** | **358000** | **314000** | **354000** | -97.8 | 1.96 | 10.86 | 1.824 | -- | 0 | -- | 35.5 | **1530** | R | 492 | **< 2500 U** | **1630** | -- |
| 114-P2-IRM-64D | 114-P2-IRM-64D-51.10-2020327 | 3/27/2020 | 51.1 | N | JD5287 | Baseline | Intermediate | **1090000** | **1110000** | **1120000** | **1030000** | 210 | 0 | 7.26 | 6.28 | -- | 37.4 | -- | 16.7 | **658** | < 2.0 U | 538 | **< 10000 U** | **329 J** | -- |
| 114-P2-IRM-65D | 114-P2-IRM-65D-54-2020327 | 3/27/2020 | 54 | N | JD5287 | Baseline | Intermediate | **1090000** | **1140000** | **1100000** | **1010000** | 261 | 0 | 7.9 | 6.43 | -- | 59.2 | -- | 26.0 | **1050** | < 2.0 U | 278 | **< 25000 U** | **< 3800 U** | -- |
| 114-P2-IRM-66D | 114-P2-IRM-66D-52-2020324 | 3/24/2020 | 52 | N | JD5095 | Baseline | Intermediate | **9010** | **9250 J** | **8500** | **8300** | 170 | 11.01 ** | 7.71 | 0.97 | -- | 0 | -- | 3.6 | 78.0 | R | < 0.14 U | < 100 U | **54.7** | -- |
| 114-P2-IRM-67I | 114-P2-IRM-67I-29.0-20200320 | 3/20/2020 | 29 | N | JD5007 | Baseline | Intermediate | **107000** | **111000** | **102000** | **109000** | 164.8 | 0.33 | 6.71 | 1.94 | -- | 1.02 | -- | 6.8 | **325 J-** | R | 284 | < 100 U | **771** | -- |
| 114-P2-IRM-68I | 114-P2-IRM-68I-37-2020325 | 3/25/2020 | 37 | N | JD5180 | Baseline | Intermediate | **30300** | **28900 J+** | R | R | -- | -- | -- | -- | -- | -- | -- | 6.9 | **276** | < 2.0 U | 150 | 76.1 J | **208** | -- |
| 114-P2-IRM-68I | 114-P2-IRM-68I-37.0-2020325-X | 3/25/2020 | 37 | FD | JD5180 | Baseline | Intermediate | **29100** | **28900 J+** | R | R | 91 | 0 | 6.92 | 2.52 | -- | 5.6 | -- | 6.9 | **276** | < 2.0 U | 174 | 58.5 J | **203** | -- |
| 114-P2-IRM-69I | 114-P2-IRM-69I-32-2020325 | 3/25/2020 | 32 | N | JD5140 | Baseline | Intermediate | **81600** | **80900** | **66200** | **67800** | 317 | 0 | 6.07 | 2.34 | -- | 0 | -- | 6.6 | 249 | < 2.0 U | 289 | **< 2000 U** | **180 J** | -- |
| 114-P2-IRM-6I | 114-P2-IRM-6I-32.5-20200319 | 3/19/2020 | 32.5 | N | JD4924 | Baseline | Intermediate | 6.4 J | < 10 U | < 10 U | < 10 U | -152.2 | 0.32 | 7.02 | 1.89 | -- | 2.25 | -- | 3.2 | **913 J-** | < 2.0 U | 53.9 | 271 | **2860** | -- |
| 114-P2-IRM-6I | 114-P2-IRM-6I-32.5-20200319-X | 3/19/2020 | 32.5 | FD | JD4924 | Baseline | Intermediate | 5.4 J | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 3.2 | **964 J-** | < 2.0 U | 43.5 | 263 | **2980** | -- |
| 114-P2-IRM-70I | 114-P2-IRM-70I-30-2020324 | 3/24/2020 | 30 | N | JD5104 | Baseline | Intermediate | **65300** | **65500** | **55200** | **55900** | 16 | 0 | 7.41 | 3.3 | -- | 87.5 | -- | 7.4 | **259** | < 2.0 U | 654 | < 100 U | **617** | -- |
| 114-P2-IRM-71I | 114-P2-IRM-71I-31-2020325 | 3/25/2020 | 31 | N | JD5140 | Baseline | Intermediate | **6070** | **7550** | **4800** | **4700** | 280 | 0 | 6.65 | 3.55 | -- | 2.3 | -- | 6.7 | **2320** | < 2.0 U | 276 | **470** | **20300** | -- |
| 114-P2-IRM-72I | 114-P2-IRM-72I-32-2020325 | 3/25/2020 | 32 | N | JD5140 | Baseline | Intermediate | **209000** | **210000** | **161000** | **158000** | 260 | 0 | 7.11 | 4.87 | -- | 0 | -- | 23.3 | **1130** | < 2.0 U | 496 | **< 2500 U** | **104 J** | -- |
| 114-P2-IRM-73I | 114-P2-IRM-73I-32-2020325 | 3/25/2020 | 32 | N | JD5140 | Baseline | Intermediate | **45200** | **44400** | **35700** | **37800** | 252 | 0 | 7.04 | 3.75 | -- | 3.3 | -- | 16.3 | **1260** | < 2.0 U | 507 | **< 1000 U** | **659** | -- |
| 114-P2-IRM-74I | 114-P2-IRM-74I-30-2020325 | 3/25/2020 | 30 | N | JD5180 | Baseline | Intermediate | **2290** | **7250 J+** | **1200** | **1200** | -57 | 0 | 9.13 | 4.69 | -- | 66.5 | -- | 45.4 | **999** | < 2.0 U | 1150 | **341** | **320** | -- |
| 114-P2-IRM-75I | 114-P2-IRM-75I-30-2020326 | 3/26/2020 | 30 | N | JD5245 | Baseline | Intermediate | **13600** | **14100 J** | **290 J** | **< 500 UJ** | -355 | 0 | 10.33 | 8.2 | -- | 163 | -- | 1330 | **778** | 52.8 | 6200 | **5360** | **376** | -- |
| 114-P2-IRM-76I | 114-P2-IRM-76I-31-2020325 | 3/25/2020 | 31 | N | JD5140 | Baseline | Intermediate | **198000** | **200000** | **164000** | **169000** | 149 | 0 | 8.84 | 4.72 | -- | 0 | -- | 28.4 | **821** | < 2.0 U | 739 | **< 2500 U** | **< 380 U** | -- |
| 114-P2-IRM-77I | 114-P2-IRM-77I-31-2020325 | 3/25/2020 | 31 | N | JD5180 | Baseline | Intermediate | 3.1 J | 7.0 J+ | R | R | -489 ** | 12.48 ** | 12.77 | 14.6 | -- | 6 | -- | 25.3 | **271** | 91.6 | 206 | **6080** | 1.5 J | -- |
| 114-P2-IRM-78I | 114-P2-IRM-78I-30-20200319 | 3/19/2020 | 30 | N | JD4952 | Baseline | Intermediate | 4.0 J | < 17.9 UJ | 22 RA | **70 RA** | -418.4 | 1.81 | 11.2 | 1.731 | -- | 0.41 | -- | 12.1 | **550** | 32.8 | 230 | **1480** | 35.6 J | -- |
| 114-P2-IRM-79I | 114-P2-IRM-79I-32-2020324 | 3/24/2020 | 32 | N | JD5095 | Baseline | Intermediate | 54.3 | **917 J** | < 50 U | < 50 U | -355 | 0 | 9.26 | 19.3 | -- | 4.9 | -- | 24.7 | **1340** | 128 J- | 705 | **1460** | **140** | -- |
| 114-P2-IRM-7I | 114-P2-IRM-7I-32-0-20200319 | 3/19/2020 | 32 | N | JD4952 | Baseline | Intermediate | **10300** | **10500** | **9100 RA** | **9400 RA** | -156.1 | 0.38 | 12.2 | 4.41 | -- | 3.43 | -- | 3.3 | **887** | < 2.0 U | 277 | 37.9 J | < 15 U | -- |
| 114-P2-IRM-80I | 114-P2-IRM-80I-32-2020324 | 3/24/2020 | 32 | N | JD5095 | Baseline | Intermediate | **223** | **532 J** | < 50 U | < 50 U | -330 | 0 | 10.51 | 34.9 | -- | 4.7 | -- | 72.5 | **2120** | 116 J- | 688 | **540** | **117** | -- |
| 114-P2-IRM-80I | 114-P2-IRM-80I-32-2020324-X | 3/24/2020 | 32 | FD | JD5095 | Baseline | Intermediate | **221** | **270 J** | < 50 U | < 50 U | -- | -- | -- | -- | -- | -- | -- | 74.4 | **1880** | 113 J- | 718 | **622** | **110** | -- |
| 114-P2-IRM-81I | 114-P2-IRM-81I-23.0-20200318 | 3/18/2020 | 23 | N | JD4839 | Baseline | Intermediate | **38800** | **38300** | **39000** | **39400** | 98.1 | 0.2 | 7.22 | 4.325 | -- | 7.03 | -- | 8.4 | **1010 J-** | < 2.0 U | 290 | 59.7 J | **99.1** | -- |
| 114-P2-IRM-81I | 114-P2-IRM-81I-28.0-20200318 | 3/18/2020 | 28 | N | JD4839 | Baseline | Intermediate | **150000** | **144000** | **141000** | **149000** | 117.6 | 0.3 | 7.22 | 4.895 | -- | 7.51 | -- | 8.4 | **1070 J-** | < 2.0 U | 19.3 | 112 | **110** | -- |
| 114-P2-IRM-81I | 114-P2-IRM-81I-33.0-20200318 | 3/18/2020 | 33 | N | JD4839 | Baseline | Intermediate | **189000** | **191000** | **183000** | **190000** | 157.9 | 0.82 | 7.16 | 5.506 | -- | 6.65 | -- | 7.7 | **1130 J-** | < 2.0 U | 315 | 60.3 J | **105** | -- |
| 114-P2-IRM-81I | 114-P2-IRM-81I-38.0-20200318 | 3/18/2020 | 38 | N | JD4839 | Baseline | Intermediate | **992000** | **988000** | **943000** | **919000** | 238.6 | 0.52 | 7.28 | 6.773 | -- | 4.11 | -- | 11.2 | **1080 J-** | < 2.0 U | 370 | **< 1000 U** | **89.9 J** | -- |
| 114-P2-IRM-82I | 114-P2-IRM-82I-28-2020318 | 3/18/2020 | 28 | N | JD4870 | Baseline | Intermediate | **29200** | **30400** | **26000** | **25400** | 73.8 | 0.36 | 7.25 | 3.481 | -- | 1.11 | -- | 6.4 | **749** | < 2.0 U | 238 | 33.7 J | **62.3** | -- |
| 114-P2-IRM-82I | 114-P2-IRM-82I-28-2020318-X | 3/18/2020 | 28 | FD | JD4870 | Baseline | Intermediate | **28300** | **28800** | **25600** | **26000** | -- | -- | -- | -- | -- | -- | -- | 6.0 | **749** | < 2.0 U | 253 | 52.9 J | **63.1** | -- |
| 114-P2-IRM-83I | 114-P2-IRM-83I-28-2020325 | 3/25/2020 | 28 | N | JD5140 | Baseline | Intermediate | **1690** | **1850** | **980** | **1000** | 93 | 0 | 6.96 | 4.1 | -- | 4.2 | -- | 7.2 | **1040** | < 2.0 U | 324 | 61.5 J | **392** | -- |
| 114-P2-IRM-84I | 114-P2-IRM-84I-29.0-20200320 | 3/20/2020 | 29 | N | JD4980 | Baseline | Intermediate | **132000** | **146000** | **107000** | **135000** | 155.6 | 0.26 | 6.81 | 2.843 | -- | 3.3 | -- | 4.1 | **967 J-** | < 2.0 U | 381 | 41.9 J | **610** | -- |
| 114-P2-IRM-85I | 114-P2-IRM-85I-30-2020325 | 3/25/2020 | 30 | N | JD5140 | Baseline | Intermediate | **9260** | **9930** | **8000** | **8300** | 184 | 0 | 7.1 | 2.35 | -- | 2.1 | -- | 3.3 | **848** | < 2.0 U | 482 | **< 500 U** | **539** | -- |
| 114-P2-IRM-86I | 114-P2-IRM-86I-27-2020326 | 3/26/2020 | 27 | N | JD5180 | Baseline | Intermediate | **154** | **406 J+** | R | R | -100 | 0 | 6.82 | 2.09 | -- | 8.9 | -- | 139 | 36.3 | 1.8 J | 295 | **1820** | **2560** | -- |
| 114-P2-IRM-87I | 114-P2-IRM-87I-29-2020326 | 3/26/2020 | 29 | N | JD5217 | Baseline | Intermediate | **306** | **820** | 22 | 24 | -1 | 0 | 6.97 | 1.99 | -- | 5.8 | -- | 5.5 J | **749** | < 2.0 U | 128 | 156 | **915** | -- |
| 114-P2-IRM-88I | 114-P2-IRM-88I-29-2020324 | 3/24/2020 | 29 | N | JD5104 | Baseline | Intermediate | 20.4 J | 20.6 J | < 10 U | < 10 U | -95 | 0 | 7.66 | 2.61 | -- | 2.9 | -- | 11.4 | **451** | 0.86 J | 491 | 70.3 J | **2740** | -- |
| 114-P2-IRM-8I | 114-P2-IRM-8I-32-20200319 | 3/19/2020 | 32 | N | JD4924 | Baseline | Intermediate | 3.2 J | < 10 U | < 10 U | < 10 U | 80.3 | 0.64 | 6.92 | 1.79 | -- | 3.75 | -- | 1.3 | **901** | < 2.0 U | 7.0 | 137 | **1720** | -- |
| 114-P2-IRM-99I | 114-P2-IRM-99I-35.04-20230216 | 2/16/2023 | 35.04 | N | 4602747701 | Baseline | Intermediate | **78.1** | **440** | < 10.0 U | < 10.0 U | -186.2 | 0.10 | 7.70 | 2.048 | 13.4 | 33.2 | -- | 20.3 | **413** | < 1 U | -- | **4010** | **965** | -- |
| 114-P2-IRM-99I | 114-P2-IRM-99I-40.04-20230216 | 2/16/2023 | 40.04 | N | 4602747701 | Baseline | Intermediate | **72.6** | **508** | < 10.0 U | < 10.0 U | -163.6 | 0.12 | 7.61 | 2.039 | 14.1 | 32.5 | -- | 20.7 | **425** | < 1 U | -- | **3460** | **903** | -- |
| 114-P2-IRM-99I | 114-P2-IRM-99I-30.04-20230217 | 2/17/2023 | 30.04 | N | 4602748331 | Baseline | Intermediate | 21.8 | **173** | < 10.0 U | < 10.0 U | -75.2 | 0.16 | 7.3 | 1.69 | 14.2 | 21.1 | -- | 8.4 | **574** | < 1 U | -- | **5470** | **1310** | -- |
| 114-P2-IRM-99I | 114-P2-IRM-99I-99-25.04-20230220 | 2/20/2023 | 25.04 | N | 4602749371 | Baseline | Intermediate | -- | 7.2 | -- | < 10.0 U | -114.2 | 0.59 | 7.02 | 2.234 | 11.4 | 3.28 | -- | 6.2 | **632** | < 1 U | -- | **10700** | **1920** | -- |
| 114-P2-IRM-9I | 114-P2-IRM-9I-33-20200319 | 3/19/2020 | 33 | N | JD4924 | Baseline | Intermediate | 15.6 | < 10 U | < 10 U | < 10 U | -7.7 | 0.52 | 7.1 | 1.75 | -- | 7.42 | -- | 2.4 | **929 J-** | < 2.0 U | 293 | **1970** | **2700** | -- |
| 114-P2-IRM-100D | 114-P2-IRM-100D-41.0-20230216 | 2/16/2023 | 41 | N | 4602747701 | Baseline | Deep | -- | **82500** | -- | **79600** | 120.8 | 1.50 | 7.66 | 1.715 | 14.93 | 7.94 | -- | 12.9 | **281** | < 1 U | -- | < 120 U | **366** | -- |
| 114-P2-IRM-100D | 114-P2-IRM-100D-46.0-20230216 | 2/16/2023 | 46 | N | 4602747701 | Baseline | Deep | -- | **96900** | -- | **98700** | 109.3 | 3.14 | 7.36 | 9.3 | 14.3 | 6.58 | -- | 13.1 | 236 | < 1 U | -- | < 120 U | **318** | -- |
| 114-P2-IRM-101D | 114-P2-IRM-101D-49.0-20230216 | 2/16/2023 | 49 | N | 4602747701 | Baseline | Deep | -- | **6830** | -- | **6410** | -24.0 | 0.29 | 7.38 | 1.952 | 13.1 | 5.44 | -- | 6.2 | **344** | < 1 U | -- | < 120 U | **280** | -- |
| 114-P2-IRM-101D | 114-P2-IRM-101D-54.0-20230216 | 2/16/2023 | 54 | N | 4602747701 | Baseline | Deep | -- | **8300** | -- | **8160** | -21.5 | 0.37 | 7.44 | 1.451 | 12.6 | 8.66 | -- | 7.0 | **351** | < 1 U | -- | < 120 U | **244** | -- |
| 114-P2-IRM-101D | 114-P2-IRM-101D-59.0-20230216 | 2/16/2023 | 59 | N | 4602747701 | Baseline | Deep | -- | **9280** | -- | **9540** | 3.3 | 0.52 | 7.48 | 1.974 | 12.9 | 9.46 | -- | 7.2 | **348** | < 1 U | -- | < 120 U | **117** | -- |
| 114-P2-IRM-101D | 114-P2-IRM-101D-44.0-20230217 | 2/17/2023 | 44 | N | 4602748331 | Baseline | Deep | -- | **7810** | -- | **7360** | 126.5 | 0.13 | 7.28 | 1.870 | 12.9 | 10 | -- | 6.5 | **350** | < 1 U | -- | < 120 U | **347** | -- |
| 114-P2-IRM-102D | 114-P2-IRM-102D-53.0-20230220 | 2/20/2023 | 53 | N | 4602749371 | Baseline | Deep | -- | **830000** | -- | **886000** | 135.4 | 0.88 | 7.14 | 5.480 | 14.9 | 6.76 | -- | 11.5 | **717** | < 10 U | -- | **< 600 U** | **1100** | -- |
| 114-P2-IRM-102D | 114-P2-IRM-102D-58.0-20230220 | 2/20/2023 | 58 | N | 4602749371 | Baseline | Deep | **787000** | **805000** | **891000** | **886000** | 122.3 | 0.43 | 7.14 | 5.308 | 12.5 | 24.2 | -- | 11.7 | **717** | < 10 U | -- | **< 600 U** | **1180** | -- |
| 114-P2-IRM-102D | 114-P2-IRM-102D-43.0-20230221 | 2/21/2023 | 43 | N | 4602750081 | Baseline | Deep | -- | **982000** | -- | **1000000** | 175.6 | 0.13 | 7.44 | 5.999 | 12.0 | 3.85 | -- | 9.5 | **731** | < 1 U | -- | **< 1200 U** | **809** | -- |
| 114-P2-IRM-102D | 114-P2-IRM-102D-48.0-20230221 | 2/21/2023 | 48 | N | 4602750081 | Baseline | Deep | **873000** | **839000** | **923000** | **875000** | 172.3 | 0.25 | 7.35 | 5.516 | 11.7 | 9.96 | -- | 11.9 | **725** | < 1 U | -- | **< 1200 U** | **1210** | -- |
| 114-P2-IRM-103D | 114-P2-IRM-103D-52.0-20230221 | 2/21/2023 | 52 | N | 4602750081 | Baseline | Deep | -- | **2700** | -- | **2620** | 12.1 | 0.25 | 7.81 | 1.904 | 12.3 | 3.98 | -- | 3.8 JB | **594** | < 1 U | -- | < 120 U | **233** | -- |
| 114-P2-IRM-103D | 114-P2-IRM-103D-57.0-20230221 | 2/21/2023 | 57 | N | 4602750081 | Baseline | Deep | -- | **8360** | -- | **10100** | 27.8 | 0.33 | 7.86 | 1.853 | 11.2 | 9.93 | -- | 3.9 JB | **577** | < 1 U | -- | < 120 U | **207** | -- |
| 114-P2-IRM-103D | 114-P2-IRM-103D-42.0-20230222 | 2/22/2023 | 42 | N | 4602750751 | Baseline | Deep | -- | **3760** | -- | **3680** | -13.5 | 0.12 | 7.89 | 2.064 | 11.3 | 1.68 | -- | 3.6 | **578** | < 1 U | -- | < 120 U | **226** | -- |
| 114-P2-IRM-103D | 114-P2-IRM-103D-47.0-20230222 | 2/22/2023 | 47 | N | 4602750751 | Baseline | Deep | -- | **2740** | -- | **3060** | 29.4 | 0.90 | 7.79 | 1.699 | 12.1 | 1.68 | -- | 3.5 | **594** | < 1 U | -- | < 120 U | **244** | -- |
| 114-P2-IRM-10D | 114-P2-IRM-10D-53-20200318 | 3/18/2020 | 53 | N | JD4870 | Baseline | Deep | 11.6 | 14.5 | < 10 U | < 10 U | 186.3 | 2.06 | 7.31 | 1.5 | -- | 1.91 | -- | 2.3 | 122 | < 2.0 U | 5.35 | < 100 U | **505** | -- |
| 114-P2-IRM-11D | 114-P2-IRM-11D-53.0-20200318 | 3/18/2020 | 53 | N | JD4839 | Baseline | Deep | 6.5 J | 11.4 | < 10 U | < 10 U | 198.1 | 0.56 | 7.27 | 1.44 | -- | 3.05 | -- | 1.9 | 106 J- | < 2.0 U | 9.8 | 258 J | **462** | -- |
| 114-P2-IRM-12D | 114-P2-IRM-12D-51.0-20200317 | 3/17/2020 | 51 | N | JD4798 | Baseline | Deep | **308** | **301** | **270** | **300** | 59.9 | 0.46 | 7.23 | 2.26 | -- | 4.2 | -- | 3.0 | **282** | R | 81.4 | 48.9 J | **1900** | -- |
| 114-P2-IRM-12D | 114-P2-IRM-12D-51.0-20200317-X | 3/17/2020 | 51 | FD | JD4798 | Baseline | Deep | **304** | **305** | **280** | **290** | -- | -- | -- | -- | -- | -- | -- | 3.1 | **290 J-** | R | 60.4 | 40.8 J | **1880** | -- |
| 114-P2-IRM-13D | 114-P2-IRM-13D-52.0-20200318 | 3/18/2020 | 52 | N | JD4839 | Baseline | Deep | **99.9** | **121** | **73** | **75** | 136.7 | 0.77 | 6.87 | 1.24 | -- | 3.22 | -- | 2.5 | 125 J- | < 2.0 U | 33.3 | 243 | **1000** | -- |
| 114-P2-IRM-14D | 114-P2-IRM-14D-53.0-20200317 | 3/17/2020 | 53 | N | JD4798 | Baseline | Deep | **7610** | **7880** | **6800** | **6900** | 29 | 0.82 | 7.69 | 1.64 | -- | 7.8 | -- | 2.6 | 158 J- | R | 7.4 | 47.6 J | **640** | -- |
| 114-P2-IRM-15D | 114-P2-IRM-15D-52.0-20200317 | 3/17/2020 | 52 | N | JD4798 | Baseline | Deep | **2210** | **2260** | **2100** | **2000** | 137.8 | 0.38 | 7.44 | 1.42 | -- | 6.22 | -- | 1.7 | 204 J- | R | 25.4 | < 100 U | **1890** | -- |
| 114-P2-IRM-16D | 114-P2-IRM-16D-52-20200319 | 3/19/2020 | 52 | N | JD4924 | Baseline | Deep | **15900** | **16100** | **13800** | **14700** | 229.8 | 1.13 | 6.96 | 3.887 | -- | 0.1 | -- | 4.1 | **908 J-** | < 2.0 U | 290 | < 100 U | **527** | -- |
| 114-P2-IRM-17D | 114-P2-IRM-17D-52-20200319 | 3/19/2020 | 52 | N | JD4924 | Baseline | Deep | **30700** | **31400** | **27200** | **27800** | 204.1 | 0.37 | 7.08 | 2.538 | -- | 0.41 | -- | 3.1 | **446 J-** | < 2.0 U | 216 | < 100 U | **661** | -- |
| 114-P2-IRM-18D | 114-P2-IRM-18D-50-20200319 | 3/19/2020 | 50 | N | JD4952 | Baseline | Deep | **43200** | **45200** | **36500 RA** | **39300 RA** | -107.8 | 0.28 | 12.6 | 3.27 | -- | 0.82 | -- | 4.2 | < 50 U | < 2.0 U | 165 | 62.1 J | < 15 U | -- |
| 114-P2-IRM-19D | 114-P2-IRM-19D-60.0-20191021 | 10/21/2019 | 60 | N | JC97157 | N/A | Deep | -- | **397** | -- | **310** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2-IRM-19D | 114-P2-IRM-19D-52-20200327 | 3/27/2020 | 52 | N | JD5287 | Baseline | Deep | **630** | **539** | **570** | **440** | 154 | 0 | 7.67 | 2.14 | -- | 1.3 | -- | 3.4 | **754** | < 2.0 U | 301 | 35.8 J | **646** | -- |
| 114-P2-IRM-25D | 114-P2-IRM-25D-52-20200325 | 3/25/2020 | 52 | N | JD5180 | Baseline | Deep | **131000** | **130000 J+** | R | R | 98 | 0 | 7.91 | 1.79 | -- | 8.5 | -- | 11.1 | **379** | < 2.0 U | 84.9 | < 100 U | **60.6 J** | -- |
| 114-P2-IRM-26D | 114-P2-IRM-26D-47-2020327 | 3/27/2020 | 47 | N | JD5287 | Baseline | Deep | **160000** | **151000** | **161000** | **150000** | 68 | 0 | 8.27 | 3.5 | -- | 0 | -- | 13.0 | **789** | < 2.0 U | 357 | **< 500 U** | **563** | -- |
| 114-P2-IRM-32D | 114-P2-IRM-32D-50-20200324 | 3/24/2020 | 50 | N | JD5095 | Baseline | Deep

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P2-IRM-42D | 114-P2-IRM-42D-53-20200319 | 3/19/2020 | 53 | N | JD4952 | Baseline | Deep | **146000** | **253000** | **136000 RA** | **207000 RA** | 139.3 | 0.27 | 8.56 | 6.598 | -- | 7.11 | -- | 13.8 | **819** | < 2.0 U | 102 | 38.6 J | **85.7 J** | -- |
| 114-P2-IRM-43D | 114-P2-IRM-43D-53-20200319 | 3/19/2020 | 53 | N | JD4924 | Baseline | Deep | **1370000** | **13300000** | **1170000** | **1180000** | 219.6 | 0.37 | 7.17 | 8.553 | -- | 0.81 | -- | 12.1 | **792 J-** | < 2.0 U | 391 | **2870 J** | **196 J** | -- |
| 114-P2-IRM-44D | 114-P2-IRM-44D-52.5-20200319 | 3/19/2020 | 52.5 | N | JD4924 | Baseline | Deep | **162000 J** | **71000 J** | **191000 J** | **37200 J** | 222.7 | 0.29 | 7.08 | 10.68 | -- | 3.16 | -- | 4.2 | **490 J-** | < 2.0 U | 70.5 | **< 1000 U** | **1480** | -- |
| 114-P2-IRM-45D | 114-P2-IRM-45D-33.5-20200319 | 3/19/2020 | 33.5 | N | JD4924 | Baseline | Deep | **77700** | **76900** | **65200** | **64000** | 216.6 | 3.09 | 7.16 | 4.629 | -- | 1.99 | -- | 4.8 | **735 J-** | < 2.0 U | 158 | < 100 U | **2280** | -- |
| 114-P2-IRM-46D | 114-P2-IRM-46D-53.0-20200318 | 3/18/2020 | 53 | N | JD4839 | Baseline | Deep | **565000** | **547000** | **485000** | **487000** | 210 | 0.36 | 7.1 | 3.16 | -- | 4.21 | -- | 4.0 | **311 J-** | < 2.0 U | 75.5 | < 100 U | **587** | -- |
| 114-P2-IRM-47D | 114-P2-IRM-47D-53.0-20200319 | 3/19/2020 | 53 | N | JD4924 | Baseline | Deep | **736000** | **622000** | **628000** | **686000** | 223.5 | 0.58 | 7.28 | 6.153 | -- | 1.2 | -- | 7.6 | **629 J-** | < 2.0 U | 179 | < 100 U | **165** | -- |
| 114-P2-IRM-48D | 114-P2-IRM-48D-53-20200319 | 3/19/2020 | 53 | N | JD4924 | Baseline | Deep | **285000** | **284000** | **246000** | **241000** | 109.1 | 0.48 | 7.39 | 2.155 | -- | 0.67 | -- | 3.7 | **250 J-** | < 2.0 U | 56.1 | **< 2500 U** | **219 J** | -- |
| 114-P2-IRM-49D | 114-P2-IRM-49D-53.0-20200317 | 3/17/2020 | 53 | N | JD4798 | Baseline | Deep | **52900 J** | **6290 J** | **39400 J** | **10000 J** | 193.5 | 0.28 | 7.63 | 0.82 | -- | 0.7 | -- | 2.5 | 126 J- | R | 29.2 J | 100 | **162** | -- |
| 114-P2-IRM-50D | 114-P2-IRM-50D-53.0-20200319 | 3/19/2020 | 53 | N | JD4952 | Baseline | Deep | **2240000 J** | **993000 J** | **2140000 RA** | **919000 RA** | 137 | 0.6 | 7.2 | 3.934 | -- | 0.87 | -- | 6.2 | **525** | < 2.0 U | 176 | < 100 U | **< 750 U** | -- |
| 114-P2-IRM-51D | 114-P2-IRM-51D-47.0-20200317 | 3/17/2020 | 47 | N | JD4798 | Baseline | Deep | **793000** | **788000** | **719000** | **706000** | 141.7 | 8.48 | 7.38 | 0.075 | -- | 1.11 | -- | 4.0 | **470 J-** | R | 146 | < 100 U | **380 J** | -- |
| 114-P2-IRM-51D | 114-P2-IRM-51D-52.0-20200317 | 3/17/2020 | 52 | N | JD4798 | Baseline | Deep | **97500** | **96200** | **109000** | **101000** | 113.6 | 12.96 ** | 8.45 | 0.073 | -- | 1 | -- | 2.5 | 63.0 J- | R | 0.57 J | < 100 U | **< 300 U** | -- |
| 114-P2-IRM-51D | 114-P2-IRM-51D-57.0-20200317 | 3/17/2020 | 57 | N | JD4798 | Baseline | Deep | **97400** | **96400** | **92300** | **101000** | 152.3 | 12.43 ** | 8.36 | 0.072 | -- | 2 | -- | 2.3 | 158 J- | R | 0.68 J | < 100 U | **< 300 U** | -- |
| 114-P2-IRM-51D | 114-P2-IRM-51D-62.0-20200317 | 3/17/2020 | 62 | N | JD4798 | Baseline | Deep | **717000** | **640000** | **699000** | **641000** | 110.6 | 10.58 ** | 7.5 | 0.071 | -- | 1.9 | -- | 3.6 | 178 J- | R | 138 | < 100 U | **294 J** | -- |
| 114-P2-IRM-52D | 114-P2-IRM-52D-55.0-20200316 | 3/16/2020 | 55 | N | JD4731 | Baseline | Deep | 6.7 J | 21.1 | < 10 U | < 10 U | 12.5 | 7.6 | 7.7 | 0.455 | -- | 2.21 | -- | 1.8 | 28.6 | < 2.0 U | 24.0 | 79.9 J | **319** | -- |
| 114-P2-IRM-53D | 114-P2-IRM-53D-48.0-20203225 | 3/25/2020 | 48 | N | JD5140 | Baseline | Deep | 6.6 J | 3.0 J | < 10 U | < 10 U | -159 | 0 | 8.6 | 0.551 | -- | 8.58 | -- | 7.5 | 57.7 | < 2.0 U | 87.2 | 85.9 J | **108** | -- |
| 114-P2-IRM-60D | 114-P2-IRM-60D-52-20203225 | 3/25/2020 | 52 | N | JD5140 | Baseline | Deep | **51400** | **38300** | **46100** | **42400** | 168 | 0 | 9.49 | 8.12 | -- | 6.5 | -- | 15.3 | **871** | < 2.0 U | 2100 J | 76.2 J | **68.3 J** | -- |
| 114-P2-IRM-78D | 114-P2-IRM-78D-45-20200319 | 3/19/2020 | 45 | N | JD4952 | Baseline | Deep | **521000** | **424000** | **448000 RA** | **371000 RA** | 100.1 | 6.46 | 8.25 | 4.841 | -- | 7.01 | -- | 9.8 | **794** | < 2.0 U | 118 | **435** | **< 750 U** | -- |
| 114-P2-IRM-79D | 114-P2-IRM-79D-52-2020324 | 3/24/2020 | 52 | N | JD5095 | Baseline | Deep | **2330000** | **2440000 J** | **2090000** | **2140000** | 117 | 0 | 8.17 | 11.3 | -- | 30.7 | -- | 9.8 | **985** | R | 248 | **< 10000 U** | **< 1500 U** | -- |
| 114-P2-IRM-7D | 114-P2-IRM-7D-52-20200319 | 3/19/2020 | 52 | N | JD4952 | Baseline | Deep | **14600** | **14200** | **13400 RA** | **11600 RA** | 49.5 | 4.46 | 7.13 | 5.07 | -- | 7.66 | -- | 4.4 | **841** | < 2.0 U | < 0.11 U | 50.8 J | **1560** | -- |
| 114-P2-IRM-81D | 114-P2-IRM-81D-48.0-20200318 | 3/18/2020 | 48 | N | JD4839 | Baseline | Deep | **17200** | **16800** | **17900** | **17500** | 127.6 | 0.97 | 7.16 | 1.552 | -- | 2.14 | -- | 2.7 | **272 J-** | < 2.0 U | 33.8 | 34.3 J | **672** | -- |
| 114-P2-IRM-81D | 114-P2-IRM-81D-53.0-20200318 | 3/18/2020 | 53 | N | JD4839 | Baseline | Deep | **16800 J** | **11300 J** | **15500** | **15800 J** | 124.8 | 0.85 | 7.24 | 1.577 | -- | 3.04 | -- | 2.5 | 219 J- | < 2.0 U | 11.8 | < 100 U | **660** | -- |
| 114-P2-IRM-81D | 114-P2-IRM-81D-58.0-20200318 | 3/18/2020 | 58 | N | JD4839 | Baseline | Deep | **17700** | **16800** | **17200** | **16800** | 134.7 | 1.6 | 7.19 | 1.65 | -- | 4.13 | -- | 2.6 | **276 J-** | < 2.0 U | 28.5 | 45.3 J | **672** | -- |
| 114-P2-IRM-81D | 114-P2-IRM-81D-63.0-20200318 | 3/18/2020 | 63 | N | JD4839 | Baseline | Deep | **18500** | **19800** | **17500** | **17800** | 128.1 | 2.33 | 7.07 | 1.609 | -- | 6.11 | -- | 2.6 | **279 J-** | < 2.0 U | 53.1 | < 100 U | **657** | -- |
| 114-P2-IRM-82D | 114-P2-IRM-82D-51.5-2020318 | 3/18/2020 | 51.5 | N | JD4870 | Baseline | Deep | **3100000** | **3190000** | **2790000** | **2890000** | 204.9 | 1.26 | 6.95 | 1.631 | -- | 2.08 | -- | 13.2 | **826** | < 2.0 U | 274 J | **< 10000 U** | **182 J** | -- |
| 114-P2-IRM-83D | 114-P2-IRM-83D-53-2020318 | 3/18/2020 | 53 | N | JD4870 | Baseline | Deep | **36600** | **34000** | **30400** | **32400** | 109.6 | 2.12 | 7.28 | 1.587 | -- | 0.72 | -- | 2.7 | 150 | < 2.0 U | 0.49 | < 100 U | **622** | -- |
| 114-P2-IRM-84D | 114-P2-IRM-84D-53.0-20200320 | 3/20/2020 | 53 | N | JD4980 | Baseline | Deep | **660000** | **598000** | **552000** | **535000** | 147.9 | 0.2 | 6.92 | 3.029 | -- | 0.91 | -- | 4.3 | **384 J-** | < 2.0 U | 150 | < 100 U | **264 J** | -- |
| 114-P2-IRM-85D | 114-P2-IRM-85D-53-20203225 | 3/25/2020 | 53 | N | JD5140 | Baseline | Deep | **1430000** | **1380000** | **1180000** | **1140000** | 206 | 0 | 7.17 | 6.63 | -- | 8.4 | -- | 6.1 | **692** | < 2.0 U | 386 | **< 2500 U** | **371 J** | -- |
| 114-P2-IRM-86D | 114-P2-IRM-86D-47.0-20200316 | 3/16/2020 | 47 | N | JD4731 | Baseline | Deep | **5700** | **5900** | **6000** | **5800** | 158.7 | 0.44 | 7 | 2.062 | -- | 2.11 | -- | 5.5 | **521** | < 2.0 U | 475 J | 32.2 J | **345** | -- |
| 114-P2-IRM-87D | 114-P2-IRM-87D-54-2020326 | 3/26/2020 | 54 | N | JD5217 | Baseline | Deep | 2.2 J | 3.5 J | < 10 U | < 10 U | 29 | 0 | 7.09 | 1.09 | -- | 0 | -- | 10.4 | 58.9 | < 2.0 U | 676 | **460** | **662** | -- |
| 114-P2-IRM-88D | 114-P2-IRM-88D-53-2020324 | 3/24/2020 | 53 | N | JD5104 | Baseline | Deep | < 10 U | < 10 U | < 10 U | < 10 U | -106 | 0 | 8.59 | 0.521 | -- | 9.8 | -- | 1.9 | 75.3 | < 2.0 U | 73.2 J | 69.6 J | **219** | -- |
| 114-P2-IRM-8D | 114-P2-IRM-8D-50-20200319 | 3/19/2020 | 50 | N | JD4924 | Baseline | Deep | **131** | **136 J** | **97** | **100** | 38.3 | 0.97 | 7.42 | 1.87 | -- | 7.61 | -- | 2.1 | 247 J- | < 2.0 U | 9.9 J | < 100 U | **805** | -- |
| 114-P2-IRM-99D | 114-P2-IRM-99D-40.08-20230220 | 2/20/2023 | 40.08 | N | 4602749371 | Baseline | Deep | -- | **1700000** | -- | **1990000** | -5.2 | 0.26 | 8.51 | 8.678 | 14.2 | 5.55 | -- | 12.4 | **896** | < 10 U | -- | **< 600 U** | **112** | -- |
| 114-P2-IRM-99D | 114-P2-IRM-99D-45.08-20230220 | 2/20/2023 | 45.08 | N | 4602749371 | Baseline | Deep | -- | **1810000** | -- | **1950000** | 3.7 | 0.31 | 8.52 | 7.750 | 13.3 | 9.04 | -- | 13.3 | **895** | < 10 U | -- | **< 600 U** | **107** | -- |
| 114-P2-IRM-9D | 114-P2-IRM-9D-52-20200319 | 3/19/2020 | 52 | N | JD4924 | Baseline | Deep | **613** | **605** | **530** | **530** | 126.5 | 0.57 | 6.86 | 1.74 | -- | 6.85 | -- | 2.1 | 126 J- | < 2.0 U | 11.8 | 34.0 J | **499** | -- |
| ***Monitoring*** | | | | | | | | | | | | | | | | | | | | | | | | | |
| 114-MC-PZ103 | 114-MC-PZ103-20180129 | 1/29/2018 | 37.35 | N | JC59916 | Baseline | Intermediate | **135** | **3450** | < 10 U | < 10 U | -300 | 3.45 | 7.31 | 12.7 | 10.29 | 22.7 | -- | 13.0 | **1180** | 73.1 | 66.2 | **2050** | **351** | -- |
| 114-MC-PZ103 | 114-MC-PZ 103-20180531 | 5/31/2018 | 37.35 | N | JC67082 | Treatment | Intermediate | **< 100 U** | **50900** | < 10 UJ | < 10 U | -- | -- | -- | -- | -- | -- | -- | 33.3 | -- | -- | 235 | -- | **477** | < 0.20 U |
| 114-MC-PZ103 | 114-MC-PZ 103-20180531 | 5/31/2018 | 37.35 | N | JC67082A | Treatment | Intermediate | | | | | -304 | 0.33 | 7.94 | 18.2 | 16.25 | 934 | -- | -- | **1400** | -- | -- | -- | -- | -- |
| 114-MC-PZ103 | 114-MC-PZ103-20180703 | 7/3/2018 | 37.35 | N | JC69235 | Treatment | Intermediate | **< 100 U** | **13600** | < 10 U | < 10 U | -397 | 0.38 | 7.83 | 17.9 | 21.45 | 47.1 | -- | 17.0 | **1320** | -- | 273 | -- | **462** | 0.20 J |
| 114-MC-PZ103 | 114-MC-PZ103-20180725 | 7/25/2018 | 37.35 | N | JC70550 | Treatment | Intermediate | < 10 U | **17900** | < 10 U | < 10 U | -371 | 0.26 | 8.16 | 4.64 | 22.41 | 103 | -- | 7.6 | **896** | -- | 36.9 | -- | **182** | < 0.20 UJ |
| 114-MC-PZ103 | 114-MC-PZ103-180829 | 8/29/2018 | 37.35 | N | JC72768 | Treatment | Intermediate | **< 100 U** | **37600** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 25.3 | **1070** | -- | 218 | -- | **288** | < 0.20 U |
| 114-MC-PZ103 | 114-P1-MC-PZ103-20180926 | 9/26/2018 | 37.35 | N | JC74616 | Treatment | Intermediate | < 10 U | **679** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 2.1 | **810** | -- | -- | -- | **62.6** | < 0.20 U |
| 114-MC-PZ103 | 114-MC-PZ103-20181031 | 10/31/2018 | 37.35 | N | JC76975 | Treatment | Intermediate | < 10 U | **165** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 2.8 | **1130** | -- | -- | -- | **56.1** | < 0.20 U |
| 114-MC-PZ103 | 114-MC-PZ103-181126 | 11/26/2018 | 37.35 | N | JC78527 | Treatment | Intermediate | < 10 U | **1510** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 3.0 | **934** | -- | 4.9 | -- | **71.8** | < 0.20 U |
| 114-MC-PZ103 | 114-MC-PZ103-181218 | 12/18/2018 | 37.35 | N | JC79966 | Treatment | Intermediate | < 10 U | **488** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 2.6 | **766** | -- | -- | -- | **58.2** | R |
| 114-MC-PZ103 | 114-MC-PZ103-20190325 | 3/25/2019 | 37.35 | N | JC85107 | Treatment | Intermediate | < 10 U | **500** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 9.5 | **708** | -- | 58.7 | -- | **133** | < 0.20 U |
| 114-MC-PZ103 | 114-MC-PZ103-20190429 | 4/29/2019 | 37.35 | N | JC87158 | Treatment | Intermediate | < 10 U | **501** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 9.4 | **770** | -- | 94.3 | -- | **188** | < 0.20 U |
| 114-MC-PZ103 | 114-MC-PZ103-36.0-20190528 | 5/28/2019 | 36 | N | JC88834 | Treatment | Intermediate | < 10 U | **11200** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 17.0 | **970** | -- | < 1.5 UBJ | -- | **132** | < 0.20 UJ |
| 114-MC-PZ103 | 114-MC-PZ103-20190702 | 7/2/2019 | 37.35 | N | JC91049 | Treatment | Intermediate | 12.7 | **13900** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 19.0 | **854** | -- | 567 | -- | **165** | 0.23 |
| 114-MC-PZ103 | 114-MC-PZ103-20190801 | 8/1/2019 | 37.35 | N | JC92580 | Treatment | Intermediate | < 10 U | **2060** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 1.9 | **423** | -- | 0.83 | -- | **97.1** | < 0.20 UJ |
| 114-MC-PZ103 | 114-MC-PZ103-20190827 | 8/27/2019 | 37.35 | N | JC93952 | Treatment | Intermediate | 36.1 | **607** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 5.5 | **503** | -- | 72.0 | -- | **199** | < 0.20 U |
| 114-MC-PZ103 | 114-MC-PZ103-20190925 | 9/25/2019 | 37.35 | N | JC95646 | Treatment | Intermediate | **444** | **1320** | R | R | -- | -- | -- | -- | -- | -- | -- | 24.4 | **1040** | -- | 17.4 J | -- | **227** | < 0.20 U |
| 114-MC-PZ103 | 114-MC-PZ103-20191029 | 10/29/2019 | 37.35 | N | JC97632 | Treatment | Intermediate | 17.1 | **437** | 11 | < 10 U | -- | -- | -- | -- | -- | -- | -- | 24.2 | **763** | -- | 624 | -- | **201** | 0.21 |
| 114-MC-PZ103 | 114-MC-PZ103-20191125 | 11/25/2019 | 37.35 | N | JC99177 | Treatment | Intermediate | 14.8 | **135** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 1.1 | **692** | -- | < 0.16 UB | -- | **97.2** | -- |
| 114-MC-PZ103 | 114-MC-PZ103-20191226 | 12/26/2019 | 37.35 | N | JD923 | Treatment | Intermediate | **70.4 J** | **897** | < 10 U | 18 | -- | -- | -- | -- | -- | -- | -- | 27.9 | **748** | -- | 714 | -- | **328** | -- |
| 114-MC-PZ103 | 114-MC-PZ103-20200127 | 1/27/2020 | 37.35 | N | JD2342 | Treatment | Intermediate | 12.0 | **1780** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 9.5 | **432** | -- | 248 | -- | **233** | -- |
| 114-MC-PZ103 | 114-MC-PZ103-20200225 | 2/25/2020 | 37.35 | N | JD3675 | Treatment | Intermediate | < 10 U | **503 J** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 1.8 | **569** | -- | 12.2 | -- | < 15 U | -- |
| 114-MC-PZ103 | 114-MC-PZ103-20200324 | 3/24/2020 | 37.35 | N | JD5103 | Treatment | Intermediate | < 10 U | **281** | 38 | < 10 U | -- | -- | -- | -- | -- | -- | -- | 2.7 | 169 | -- | 10.7 | -- | 19.0 | -- |
| 114-MC-PZ103 | 114-MC-PZ103-20200817 | 8/17/2020 | 37.35 | N | JD11849 | Post-Treatment | Intermediate | < 10 U | 5.6 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 2.3 | **594** | 3.3 | < 1.4 UB | 73.1 J | 40.6 | -- |
| 114-MC-PZ103 | 114-MC-PZ103-20201112 | 11/12/2020 | 37.35 | N | JD16144 | Post-Treatment | Intermediate | 17.0 | 22.9 | 14 | < 10 U | -- | -- | -- | -- | -- | -- | -- | 1.4 | **304** | < 2.0 U | < 0.11 U | < 100 U | 1.9 J | -- |
| 114-MC-PZ103 | 114-MC-PZ103-20210226 | 2/26/2021 | 37.35 | N | JD20896 | Post-Treatment | Intermediate | < 10 U | 2.6 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | **386** | < 2.0 U | < 0.11 UB | < 100 U | 3.3 J | -- |
| 114-MC-PZ103 | 114-MC-PZ-103-20211001 | 10/1/2021 | 37.35 | N | JD32680 | Post-Treatment | Intermediate | **2840000** | **3250000** | **958000** | **914000** | -- | -- | -- | -- | -- | -- | -- | 43.3 | **1070** | < 2.0 U | 242 | < 100 U | **187 J** | -- |
| 114-MC-PZ103 | 114-MC-PZ103-20211116 | 11/16/2021 | 37.35 | N | JD35372 | Post-Treatment | Intermediate | **2030000** | **2410000** | **1880000** | **1710000** | -- | -- | -- | -- | -- | -- | -- | 56.8 | **1190** | < 2.0 U | 74.0 | < 100 U | **< 1500 U** | -- |
| 114-MC-PZ103 | 114-MC-PZ103-40-20220114 | 1/14/2022 | 40 | N | 4602507311 | Treatment | Intermediate | **2470000** | **2470000** | **2310000** | **2170000** | -37 | 0.58 | 9.74 | 16.1 | -- | 10.14 | -- | 18.6 | **1040** | -- | 320 | **< 2400 U** | **93.0 J** | -- |
| 114-MC-PZ103 | 114-MC-PZ103-40-20220218 | 2/18/2022 | 40 | N | 4602528091 | Treatment | Intermediate | **1640000** | **1820000** | **1700000** | **1880000** | -12.6 | -- | 9.45 | 8.822 | -- | 64.8 | -- | 17.5 | **914** | -- | 310 | **< 600 U** | 9.7 J | -- |
| 114-MC-PZ103 | 114-MC-PZ103-20220222 | 2/22/2022 | 37.35 | N | JD40096 | Post-Treatment | Intermediate | **1840000** | **1890000** | **2000000** | **1940000** | -- | -- | -- | -- | -- | -- | -- | 55.2 | **1130** | < 2.0 U | 316 | **< 10000 U** | **< 7500 U** | -- |
| 114-MC-PZ103 | 114-MC-PZ103-40.0-20220317 | 3/17/2022 | 40 | N | 4602545111 | Treatment | Intermediate | **1510000** | **1700000** | **1550000** | **1520000** | 61.4 | 0.82 | 11.85 | 6.416 | -- | 177 | -- | 17.0 ^2 | **756** | -- | 290 | **< 24000 U** | **434 J** | -- |
| 114-MC-PZ103 | 114-MC-PZ103-40.0-20220413 | 4/13/2022 | 40 | N | 4602562001 | Treatment | Intermediate | **1220000** | **1330000** | **1120000** | **1170000** | -131.6 | 0.27 | 10.01 | 8.269 | 18.15 | 196 | -- | 15.8 ^2 | **687** | -- | 260 | **< 2400 U** | **< 160 U** | -- |
| 114-MC-PZ103 | 114-MC-PZ103-40-20220512 | 5/12/2022 | 40 | N | 4602580081 | Treatment | Intermediate | **1230000** | **796000** | **117000** | **1550000** | -158.3 | 0.19 | 10.15 | 8.189 | 18.44 | 83.1 | -- | 13.6 | **645** | -- | 290 | **< 600 U** | < 40.0 U | -- |
| 114-MC-PZ103 | 114-MC-PZ103-20220525 | 5/25/2022 | 37.35 | N | JD45473 | Post-Treatment | Intermediate | **1090000 J** | **1140000** | **1100000** | **1230000** | -- | -- | -- | -- | -- | -- | -- | 50.6 | **858** | < 2.0 U | 218 | < 100 U | **< 150 U** | -- |
| 114-MC-PZ103 | 114-MC-PZ103-40.0-20220610 | 6/10/2022 | 40 | N | 4602598551 | Treatment | Intermediate | **690000** | **580000** | **627000** | **632000** | -134.7 | 3.5 | 10.34 | 6.095 | 21.68 | 410 | -- | 14.6 | **491** | -- | -- | **< 600 U** | < 40.0 U | -- |
| 114-MC-PZ103 | 114-MC-PZ103-40.0-20220713 | 7/13/2022 | 40 | N | 4602618361 | Treatment | Intermediate | **540000** | **813000** | **594000** | **616000** | 38.1 | 0.11 | 10.20 | 5.958 | 12.61 | 269 | -- | 14.7 | **482** | -- | -- | **< 600 U** | < 40.0 U | -- |
| 114-MC-PZ103 | 114-MC-PZ103-40-20220818 | 8/18/2022 | 40 | N | 4602640741 | Treatment | Intermediate | **500000** | **740000** | **608000** | **590000** | -235.8 | 0.62 | 10.42 | 5.319 | 19.94 | 367 | -- | 15.4 | **643** | -- | -- | **< 12000 U** | < 16.0 U | -- |
| 114-MC-PZ103 | 114-MC-PZ103-39.5-20221207 | 12/7/2022 | 39.5 | N | 4602708821 | Treatment | Intermediate | **489000** | **349000** | **1200000** | **267000** | -311.8 | 0.7 | 11 | 5.08 | 15.2 | 221 | -- | 17.1 | **3750** | -- | -- | < 240 U | 3.5 J | -- |
| 114-MC-PZ103 | 114-MC-PZ103-45.4-20230220 | 2/20/2023 | 45.4 | N | 4602749361 | Post-Treatment | Intermediate | **223000** | **241000** | **228000** | **228000 J-** | 180.7 | 3.05 | 10.3 | 9.633 | 14.45 | 23.8 | -- | 18.9 | **946** | < 1 U | -- | < 240 U | 3.0 J | -- |
| 114-MC-PZ103 | 114-MC-PZ103-45.4-20230412 | 4/12/2023 | 45.4 | N | 4602781101 | Post-Treatment | Intermediate | -- | **263000** | **304000** | **315000** | 227.6 | 1.74 | 10.4 | 10.186 | 31.30 | 48.6 | -- | 17.2 | **857** | < 4 U | -- | **< 2400 U** | **< 160 U** | -- |
| 114-MC-PZ103 | 114-MC-PZ103-45.4-20230816 | 8/16/2023 | 45.4 | N | 4602863141 | Post-Treatment | Intermediate | **162000 J** | **161000 J** | **176000 J** | **190000 J** | -18.2 | 0.3 | 10.21 | 4.63 | 22.74 | 50.5 | -- | 29.6 | **525** | 26.5 J | -- | < 240 U | < 16.0 U | -- |
| 114-MC-PZ103 | 114-MC-PZ103-45.4-20230816-X | 8/16/2023 | 45.4 | FD | 4602863141 | Post-Treatment | Intermediate | **110000 J** | **97100 J** | **102000 J** | **105000 J** | -- | -- | -- | -- | -- | -- | -- | 29.8 | **581** | 19.3 J | -- | < 240 U | < 16.0 U | -- |
| 114-MC-PZ103 | 114-MC-PZ103-45.4-20231117 | 11/17/2023 | 45.4 | N | JD77231 | Post-Treatment | Intermediate | **109000** | **115000** | -- | **26200 RA** | -154.9 | 0.29 | 11.28 | 4.63 | 17.5 | 47.6 | -- | 16.9 | **766** | -- | -- | -- | -- | -- |
| 114-MC-PZ103 | 114-MC-PZ103-45.4-20240214 | 2/14/2024 | 45.4 | N | JD82438 | Post-Treatment | Intermediate | -- | **73200** | -- | **77300** | -103.2 | 2.75 | 10.66 | 5.09 | 7.7 | 74.5 | -- | 14.4 | **909** | -- | -- | -- | -- | -- |
| 114-MC-PZ103 | 114-MC-PZ103-45.4-20240520 | 5/20/2024 | 45.4 | N | JD88833 | Post-Treatment | Intermediate | **59100** | **59900** | **65200** | **62400** | -100.1 | 0.21 | 10.51 | 4.83 | 19.8 | 57.7 | -- | 15.6 | **961** | -- | -- | < 100 U | < 15 U | -- |
| 114-MC-PZ103 | 114-MC-PZ103-45.4-20240821 | 8/21/2024 | 45.4 | N | JD94599 | Post-Treatment | Intermediate | **14800** | **20900** | 3.4 J | 4.5 J | -486.4 | 1 | 10.64 | 5.53 | 20.2 | 80.2 | -- | < 50 U | **1250** | -- | -- | -- | -- | -- |
| 114-MC-PZ103 | 114-MC-PZ103-45.4-20241120 | 11/20/2024 | 45.4 | N | JE1025 | Post-Treatment | Intermediate | **4830 J** | **10200** | **3800 J** | **3800 J-** | -227.2 | 0.41 | 11.14 | 4.93 | 16 | 108 | -- | 17.1 J- | **1030** | -- | -- | -- | -- | -- |
| 114-MC-PZ103 | 114-MC-PZ103-45.4-20241120-X | 11/20/2024 | 45.4 | FD | JE1025 | Post-Treatment | Intermediate | **3560 J** | **13500** | **78 J** | **3200 J-** | -- | -- | -- | -- | -- | -- | -- | 17.1 J- | **1050** | -- | -- | -- | -- | -- |
| 114-MC-PZ203 | 114-MC-PZ203-20180129 | 1/29/2018 | 36.7 | N | JC59916 | Baseline | Intermediate | **128000** | **150000** | **122000** | **171000** | 89 | 0 | 9.02 | 6.46 | 11.54 | 14.7 | -- | 4.0 | **572** | < 2.0 U | 79.9 | **< 1000 U** | **< 150 U** | -- |
| 114-MC-PZ203 | 114-MC-PZ203-20180501 | 5/1/2018 | 36.7 | N | JC65257 | Treatment | Intermediate | **242000 J** | **134000 J** | **275000** | **273000** | 216 | 0.16 | 8.42 | 4.67 | 18.14 | 0 | -- | 2.5 | **439** | -- | 25.0 J | -- | **87.0** | < 0.20 U |
| 114-MC-PZ203 | 114-MC-PZ 203-20180531 | 5/31/2018 | 36.7 | N | JC67082 | Treatment | Intermediate | **275000** | **319000** | **314000 J** | **306000** | -- | -- | -- | -- | -- | -- | -- | 5.5 | -- | -- | 136 | -- | **< 750 U** | < 0.20 U |
| 114-MC-PZ203 | 114-MC-PZ 203-20180531 | 5/31/2018 | 36.7 | N | JC67082A | Treatment | Intermediate | | | | | 65 | 0.44 | 7.84 | 6.63 | 16.09 | 1.4 | -- | -- | **687** | -- | -- | -- | -- | -- |
| 114-MC-PZ203 | 114-MC-PZ203-20180703 | 7/3/2018 | 36.7 | N | JC69235 | Treatment | Intermediate | **251000** | **264000** | **241000** | **254000** | -62 | 0.51 | 8.79 | 7.24 | 21.1 | 3.8 | -- | 5.9 | **753** | -- | 198 | -- | **< 150 U** | < 0.20 UJ |
| 114-MC-PZ203 | 114-MC-PZ203-180829 | 8/29/2018 | 36.7 | N | JC72768 | Treatment | Intermediate | **235000** | **228000** | **174000** | **179000** | -- | -- | -- | -- | -- | -- | -- | 6.9 | **841** | -- | 144 | -- | **< 150 U** | < 0.20 U |
| 114-MC-PZ203 | 114-MC-PZ203_20180925 | 9/25/2018 | 36.7 | N | JC74535 | Treatment | Intermediate | **197000** | **215000** | **225000** | **246000** | -- | -- | -- | -- | -- | -- | -- | 6.5 | **706** | -- | -- | -- | **< 150 U** | < 0.20 U |
| 114-MC-PZ203 | 114-MC-PZ203-20181031 | 10/31/2018 | 36.7 | N | JC76975 | Treatment | Intermediate | **210000** | **190000** | **152000** | **155000** | -- | -- | -- | -- | -- | -- | -- | 7.1 | **738** | -- | -- | -- | **< 150 U** | R |
| 114-MC-PZ203 | 114-MC-PZ203-181128 | 11/28/2018 | 36.7 | N | JC78649 | Treatment | Intermediate | **184000** | **187000** | **154000** | **148000** | -- | -- | -- | -- | -- | -- | -- | 6.1 | **655** | -- | 96.8 | -- | **< 750 U** | < 0.20 U |
| 114-MC-PZ203 | 114-MC-PZ203-181217 | 12/17/2018 | 36.7 | N | JC79904 | Treatment | Intermediate | **143000** | **178000 J** | **134000** | **152000** | -- | -- | -- | -- | -- | -- | -- | 5.2 | **573** | -- | -- | -- | **< 75 U** | R |
| 114-MC-PZ203 | 114-MC-PZ203-20190328 | 3/28/2019 | 36.7 | N | JC85346 | Treatment | Intermediate | **120000** | **121000** | **106000** | **111000** | -- | -- | -- | -- | -- | -- | -- | 7.9 | **779** | -- | 39.7 | -- | < 30 U | 0.48 |
| 114-MC-PZ203 | 114-MC-PZ203-20190502 | 5/2/2019 | 36.7 | N | JC87408 | Treatment | Intermediate | **101000** | **91100** | **89000** | **92300** | -- | -- | -- | -- | -- | -- | -- | 10.9 | **641** | -- | 43 | -- | **< 75 U** | < 0.20 U |
| 114-MC-PZ203 | 114-MC-PZ203-39.5-20190528 | 5/28/2019 | 39.5 | N | JC88834 | Treatment | Intermediate | **90500** | **88700** | **77500** | **84400** | -- | -- | -- | -- | -- | -- | -- | 10.2 | **609** | -- | 21.4 J | -- | **< 300 U** | < 0.20 U |
| 114-MC-PZ203 | 114-MC-PZ203-20190701 | 7/1/2019 | 36.7 | N | JC90966 | Treatment | Intermediate | **83500** | **93400** | **73300** | **76600** | -- | -- | -- | -- | -- | -- | -- | 11.3 | **634** | -- | 72.6 | -- | **< 300 U** | < 0.20 U |
| 114-MC-PZ203 | 114-MC-PZ203-20190801 | 8/1/2019 | 36.7 | N | JC92580 | Treatment | Intermediate | **47400** | **65900** | **46900** | **42500** | -- | -- | -- | -- | -- | -- | -- | 14.9 | **559** | -- | 56.3 J | -- | < 15 U | < 0.20 UJ |
| 114-MC-PZ203 | 114-MC-PZ203-20190826 | 8/26/2019 | 36.7 | N | JC93900 | Treatment | Intermediate | **

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-MC-PZ203 | 114-MC-PZ203-20200225 | 2/25/2020 | 36.7 | N | JD3675 | Treatment | Intermediate | **4610** | **16800 J** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 19.0 | **536** | -- | 79.0 | -- | < 15 U | -- |
| 114-MC-PZ203 | 114-MC-PZ203-20200324 | 3/24/2020 | 36.7 | N | JD5103 | Treatment | Intermediate | **36900** | **39500** | **30800** | **31400** | -- | -- | -- | -- | -- | -- | -- | 16.7 | **559** | -- | 54.0 | -- | < 15 U | -- |
| 114-MC-PZ203 | 114-MC-PZ203-20200814 | 8/14/2020 | 36.7 | N | JD11773 | Post-Treatment | Intermediate | **11000** | **16600** | **850** | **890** | -- | -- | -- | -- | -- | -- | -- | 24.9 | **622 J** | 44.4 | 65.8 | **993** | 25.9 J | -- |
| 114-MC-PZ203 | 114-MC-PZ203-20201111 | 11/11/2020 | 36.7 | N | JD16049 | Post-Treatment | Intermediate | **17400** | **27700** | **240** | **250** | -- | -- | -- | -- | -- | -- | -- | 20.6 | **530** | 42.1 | 39.0 | **798** | 7.2 J | -- |
| 114-MC-PZ203 | 114-MC-PZ203-20210225 | 2/25/2021 | 36.7 | N | JD20780 | Post-Treatment | Intermediate | **7450** | **19200** | R | R | -- | -- | -- | -- | -- | -- | -- | 14.7 | **593** | 26.3 | 107 | **1010** | 39.5 J | -- |
| 114-MC-PZ203 | 114-MC-PZ-203-20211001 | 10/1/2021 | 36.7 | N | JD32680 | Post-Treatment | Intermediate | **986000** | **873000** | **501000** | **515000** | -- | -- | -- | -- | -- | -- | -- | 10.4 | **1040** | < 2.0 U | 64.9 J | < 100 U | 33.4 | -- |
| 114-MC-PZ203 | 114-MC-PZ-203-DUP-2021001 | 10/1/2021 | 36.7 | FD | JD32680 | Post-Treatment | Intermediate | **948000** | **994000** | **460000** | **490000** | -- | -- | -- | -- | -- | -- | -- | < 20 U | **946** | < 2.0 U | 128 J | < 100 U | 33.2 | -- |
| 114-MC-PZ203 | 114-MC-PZ203-20211116 | 11/16/2021 | 36.7 | N | JD35372 | Post-Treatment | Intermediate | **658000** | **852000** | **637000** | **920000** | -- | -- | -- | -- | -- | -- | -- | 32.8 J | **1060** | < 2.0 U | 221 | < 100 U | **< 1500 U** | -- |
| 114-MC-PZ203 | 114-MC-PZ203-40.0-20220113 | 1/13/2022 | 40 | N | 4602506661 | Treatment | Intermediate | **288000** | **231000** | **285000** | **241000** | -115 | 0 | 8.87 | 11.5 | -- | 8.72 | -- | 8.1 | **861** | -- | 170 | **< 1200 U** | **122 J** | -- |
| 114-MC-PZ203 | 114-MC-PZ203-40.0-20220218 | 2/18/2022 | 40 | N | 4602528091 | Treatment | Intermediate | **274000** | **270000** | **251000** | **254000** | -- | -- | -- | -- | -- | -- | -- | 11.5 | **1060** | -- | 310 | **< 600 U** | 12.7 J | -- |
| 114-MC-PZ203 | 114-MC-PZ203-20220221 | 2/21/2022 | 36.7 | N | JD40060 | Post-Treatment | Intermediate | **328000** | **324000** | **300000** | **278000** | -- | -- | -- | -- | -- | -- | -- | 13.5 | **1230** | < 2.0 U | 345 | 79.3 J | 15.5 | -- |
| 114-MC-PZ203 | 114-MC-PZ203-40-20220317 | 3/17/2022 | 40 | N | 4602545111 | Treatment | Intermediate | **275000** | **293000** | **261000** | **261000** | -- | -- | -- | -- | -- | -- | -- | 12.3 ^2 | **600** | -- | 340 | **< 12000 U** | **< 800 U** | -- |
| 114-MC-PZ203 | 114-MC-PZ203-40-20220413 | 4/13/2022 | 40 | N | 4602562001 | Treatment | Intermediate | **68800** | **314000** | **272000** | **277000** | -294 | 0.03 | 9.9 | 11.55 | 15.44 | 41.6 | -- | 17.7 | **983** | -- | 280 | < 120 U | < 8.0 U | -- |
| 114-MC-PZ203 | 114-MC-PZ203-40-20220511 | 5/11/2022 | 40 | N | 4602579551 | Treatment | Intermediate | **276000** | **201000** | **236000** | **238000** | -293.3 | 0.17 | 9.99 | 12.77 | 16.22 | 324 | -- | 16.0 | **994** | -- | 360 | **< 600 U** | 21.5 J | -- |
| 114-MC-PZ203 | 114-MC-PZ203-20220526 | 5/26/2022 | 36.7 | N | JD45556 | Post-Treatment | Intermediate | **271000** | **271000** | **242000** | **297000** | -- | -- | -- | -- | -- | -- | -- | 28.8 | **1110** | < 2.0 U | 230 | < 100 U | **< 750 U** | -- |
| 114-MC-PZ203 | 114-MC-PZ203-40-20220610 | 6/10/2022 | 40 | N | 4602598551 | Treatment | Intermediate | **304000** | **281000** | **262000** | **256000** | -137.8 | 0.1 | 10.23 | 11.52 | 17.49 | -- OR | -- | 20.9 | **912** | -- | -- | **< 600 U** | 12.5 J | -- |
| 114-MC-PZ203 | 114-MC-PZ203-40.0-20220712 | 7/12/2022 | 40 | N | 4602617771 | Treatment | Intermediate | **229000** | **265000** | **243000** | **254000** | -145.0 | 0.12 | 9.75 | 11.68 | 19.64 | 73.2 | -- | 26.7 | **877** | -- | -- | < 240 U | 7.1 J | -- |
| 114-MC-PZ203 | 114-MC-PZ203-40-20220817 | 8/17/2022 | 40 | N | 4602639901 | Treatment | Intermediate | **233000** | **233000** | **113000** | **113000** | -166.1 | 2.08 | 11.28 | 10.48 | 18.63 | 98.0 | -- | 32.7 | **1020** | -- | -- | < 120 U | **< 400 U** | -- |
| 114-MC-PZ203 | 114-MC-PZ203-39.5-20221208 | 12/8/2022 | 39.5 | N | 4602709591 | Treatment | Intermediate | **39000** | **27900** | **53600** | **< 500 U** | -443.0 | 0.5 | 9.3 | 0.125 | 14 | 213 | -- | 27.0 | **1230** | -- | -- | 275 | 13.1 | -- |
| 114-MC-PZ203 | 114-MC-PZ203-45-20230220 | 2/20/2023 | 45 | N | 4602749361 | Post-Treatment | Intermediate | **36300** | **49000** | 42.5 | **6300 J-** | 172.8 | 0.33 | 9.45 | 28.32 | 15.83 | 74 | -- | 27.2 | **1050** | < 1 U | -- | 291 | 16.6 | -- |
| 114-MC-PZ203 | 114-MC-PZ203-45.0-20230523 | 5/23/2023 | 45 | N | 4602808651 | Post-Treatment | Intermediate | **185000** | **194000** | **195000** | **198000** | -205.0 | 1.84 | 11.14 | 5.664 | 18.97 | 56.3 | -- | 25.9 | **792** | < 10 U | -- | **< 1200 U** | **< 80.0 U** | -- |
| 114-MC-PZ203 | 114-MC-PZ203-45.0-20230817 | 8/17/2023 | 45 | N | 4602864001 | Post-Treatment | Intermediate | **3040** | **14600** | < 50.0 U | R | -391.9 | 1.19 | 9.09 | 20.51 | 20.5 | 178 | -- | 31.2 | **1090** | < 10 U | -- | **438** | 22.3 | -- |
| 114-MC-PZ203 | 114-MC-PZ203-45.0-20231117 | 11/17/2023 | 45 | N | JD77231 | Post-Treatment | Intermediate | **3930** | **9870** | < 10 U | 3.2 RA | -422 | 0.16 | 9.41 | 19.46 | 16.3 | 156 | -- | 23.1 | **1180** | -- | -- | -- | -- | -- |
| 114-MC-PZ203 | 114-MC-PZ203-45.0-20240216 | 2/16/2024 | 45 | N | JD82616 | Post-Treatment | Intermediate | **1290** | **7620** | < 10 U | < 10 U | -430.1 | 0.12 | 8.76 | 20.28 | 12.1 | 149 | -- | 24.9 | **1240** | -- | -- | -- | -- | -- |
| 114-MC-PZ203 | 114-MC-PZ203-45.0-20240520 | 5/20/2024 | 45 | N | JD88833 | Post-Treatment | Intermediate | **172** | **4640** | < 10 U | < 10 U | -450.6 | 0.12 | 8.49 | 21.51 | 18 | 71.1 | -- | 37.6 | **1310** | -- | -- | **1130** | **200** | -- |
| 114-MC-PZ203 | 114-MC-PZ203-45.0-20240821 | 8/21/2024 | 45 | N | JD94599 | Post-Treatment | Intermediate | **86.4** | **4330** | 6.7 J | < 20 U | -422.8 | 0.2 | 8.17 | 24246 | 19.6 | 82.8 | -- | 34.8 | **1460** | -- | -- | -- | -- | -- |
| 114-MC-PZ203 | 114-MC-PZ203-45.0-20241120 | 11/20/2024 | 45 | N | JE1025 | Post-Treatment | Intermediate | **1660** | **24300** | 43 J | **< 100 UJ** | -412.9 | 0.12 | 8.3 | 20.92 | 16.7 | 151 | -- | 31.5 J- | **1380** | -- | -- | -- | -- | -- |
| 114-P2-MW-10D | 114-P2-MW-10D-46.0-20210701 | 7/1/2021 | 46 | N | 4602379001 | Treatment | Intermediate | **2320000** | **734000** | **9230** | **8880** | -- | -- | -- | -- | -- | -- | -- | 60.1 | **1060** | -- | -- | **< 6000 U** | **1010** | -- |
| 114-P2-MW-10D | 114-P2-MW-10D-42.5-20211122 | 11/22/2021 | 42.5 | N | 4602477591 | Treatment | Intermediate | **722000** | **731000** | **695000** | **717000** | 128.5 | 5.29 | 11.56 | 3.409 | -- | 11 | -- | 110 | **537** | -- | 320 | **< 12000 U** | **< 800 U** | -- |
| 114-P2-MW-10D | 114-P2-MW-10D-20211223 | 12/23/2021 | | N | 4602497501 | Treatment | Intermediate | **871000** | **656000** | **785000 H** | **750000 H** | -- | -- | -- | -- | -- | -- | -- | 87.4 | **505 F1** | -- | 280 | **< 600 U** | 14.0 J | -- |
| 114-P2-MW-10D | 114-P2-MW-10D-20211223-X | 12/23/2021 | | FD | 4602497501 | Treatment | Intermediate | **874000** | **785000** | **698000 H** | **727000 H** | -- | -- | -- | -- | -- | -- | -- | 85.7 | **500** | -- | 260 | **< 600 U** | 15.4 J | -- |
| 114-P2-MW-10D | 114-P2-MW-10D-51.0-20220203 | 2/3/2022 | 51 | N | 4602517791 | Treatment | Intermediate | **682000** | **786000** | **622000** | **628000** | -- | -- | -- | -- | -- | -- | -- | 80.9 B | **621** | -- | 340 | **< 1200 U** | **< 80.0 U** | -- |
| 114-P2-MW-10D | 114-P2-MW-10D-51-20220316 | 3/16/2022 | 51 | N | 4602544241 | Treatment | Intermediate | **553000** | **562000** | **601000** | **590000** | -38.5 | 3.17 | 12.89 | 8.591 | -- | 4.41 | -- | 70.8 | **784** | -- | 490 | **< 600 U** | < 40.0 U | -- |
| 114-P2-MW-10D | 114-P2-MW-10D-50-20220412 | 4/12/2022 | 50 | N | 4602561091 | Treatment | Intermediate | **551000** | **562000** | **553000** | **652000** | -- DNAPL | -- DNAPL | -- DNAPL | -- DNAPL | -- DNAPL | -- DNAPL | -- | 75.0 | **950** | -- | 570 | **< 2400 U** | **< 160 U** | -- |
| 114-P2-MW-10D | 114-P2-MW-10D-20220511 | 5/11/2022 | | N | 4602579551 | Treatment | Intermediate | **574000** | **457000** | **477000** | **483000** | 134.8 | 5.91 | 12.37 | 10.07 | 13.26 | 12.3 | -- | 73.3 | **872** | -- | 710 | **< 600 U** | < 40.0 U | -- |
| 114-P2-MW-10D | 114-P2-MW-10D-20220615 | 6/15/2022 | | N | 4602601521 | Treatment | Intermediate | **400000** | **355000** | **365000** | **432000** | -15.4 | 3.75 | 11.24 | 8.488 | 21.75 | 15.4 | -- | 132 | **886** | -- | -- | **< 600 U** | **103** | -- |
| 114-P2-MW-10D | 114-P2-MW-10D-20220713 | 7/13/2022 | | N | 4602618361 | Treatment | Intermediate | -- | **394000** | -- | **380000** | -65.1 | 1.35 | 11.12 | 8.339 | 22.41 | 8.88 | -- | 142 | **774** | -- | -- | -- | -- | -- |
| 114-P2-MW-10D | 114-P2-MW-10D-20220817 | 8/17/2022 | | N | 4602639901 | Treatment | Intermediate | **261000** | **325000** | **316000** | **333000** | 31.3 | 1.20 | 10.35 | 7.126 | 20.46 | 26.1 | -- | 352 | **723** | -- | -- | **< 6000 U** | **168** | -- |
| 114-P2-MW-10D | 114-P2-MW-10D-48-20220915 | 9/15/2022 | 48 | N | 4602655901 | Treatment | Intermediate | -- | **187000** | -- | **163000** | 151.2 | 1.47 | 10.13 | 7.491 | 18.19 | 76.7 | -- | 758 | **411** | -- | -- | **< 600 U** | **170** | -- |
| 114-P2-MW-10D | 114-P2-MW-10D-20221012 | 10/12/2022 | | N | 4602673311 | Treatment | Intermediate | -- | **15000** | -- | **7880** | 30.1 | 0.56 | 9.05 | 5.562 | 20.38 | 19.0 | -- | 1020 | **291** | -- | -- | 180 J | **156** | -- |
| 114-P2-MW-10D | 114-P2-MW-10D-20221110 | 11/10/2022 | | N | 4602692751 | Treatment | Intermediate | -- | **8150** | -- | **4620** | 56.6 | 1.1 | 9.86 | 6.565 | 17.54 | 10.0 | -- | 1300 | 186 | -- | -- | **< 1200 U** | **360** | -- |
| 114-P2-MW-10D | 114-P2-MW-10D-20221110-X | 11/10/2022 | | FD | 4602692751 | Treatment | Intermediate | -- | **13500** | -- | **8250** | -- | -- | -- | -- | -- | -- | -- | 1320 | 123 | -- | -- | **425** | **348** | -- |
| 114-P2-MW-10D | 114-P2-MW-10D-20221207 | 12/7/2022 | | N | 4602708821 | Treatment | Intermediate | **10000** | **7220** | **8310** | **501** | -20 | 0.32 | 9.06 | 7.53 | 15.10 | 21.7 | -- | 1250 | 119 | -- | -- | **583 J** | **3310 F1** | -- |
| 114-P2-MW-10D | 114-P2-MW-10D-20221207-X | 12/7/2022 | | FD | 4602708821 | Treatment | Intermediate | **4140** | **6710** | **2350** | **487** | -- | -- | -- | -- | -- | -- | -- | 1290 | 112 | -- | -- | **463** | **370** | -- |
| 114-P2-MW-10D | 114-P2-MW-10D-20230216 | 2/16/2023 | | N | 4602747691 | Post-Treatment | Intermediate | **487** | **5590** | 35.7 J | < 20.0 UJ | 57.6 | 2.09 | 9.86 | 7.35 | 15.37 | 98.6 | -- | 1100 | 166 | < 1 U | -- | **< 600 U** | 31.0 J | -- |
| 114-P2-MW-10D | 114-P2-MW-10D-20230524 | 5/24/2023 | | N | 4602809491 | Post-Treatment | Intermediate | **953 J** | **1850 J** | < 10.0 U | < 20.0 U | -196.9 | 5.81 | 7.56 | 7.314 | 16.77 | 16.3 | -- | 1510 | 73.5 J | 1.28 | -- | **11000 J** | **2220 J** | -- |
| 114-P2-MW-10D | 114-P2-MW-10D-20230524-X | 5/24/2023 | | FD | 4602809491 | Post-Treatment | Intermediate | **923** | **2490** | < 10.0 U | < 20.0 U | -- | -- | -- | -- | -- | -- | -- | 1350 | 109 J | 0.88 J | -- | **10300** | **2100** | -- |
| 114-P2-MW-10D | 114-P2-MW-10D-20230822 | 8/22/2023 | | N | 4602866741 | Post-Treatment | Intermediate | **1130** | **1370** | R | < 20.0 UJ | -167.4 | 0.95 | 7.63 | 7.245 | 19.38 | 47.6 | -- | 1400 | R | < 1 U | -- | **24300** | **3600** | -- |
| 114-P2-MW-10D | 114-P2-MW-10D-20231121 | 11/21/2023 | | N | JD77454 | Post-Treatment | Intermediate | **886** | **910** | 41 J | 55 J | -514.3 | 0.26 | 7.25 | 7.22 | 12.3 | 37 | -- | 1090 | 92.3 | -- | -- | -- | -- | -- |
| 114-P2-MW-10D | 114-P2-MW-10D-20240220 | 2/20/2024 | | N | JD82805 | Post-Treatment | Intermediate | **1170** | **1220** | 6.9 J | 4.6 J | -188.3 | 0.66 | 7.35 | 8.851 | 12.6 | 28.2 | -- | 939 | 199 | -- | -- | -- | -- | -- |
| 114-P2-MW-10D | 114-P2-MW-10D-20240514 | 5/14/2024 | | N | JD88422 | Post-Treatment | Intermediate | **978** | **855** | 7.1 J | 4.7 J | -184.2 | 0.77 | 7.41 | 7.39 | 17.1 | 80.2 | -- | 971 | 66.7 J | -- | -- | **56000** | **6510** | -- |
| 114-P2-MW-10D | 114-P2-MW-10D-20240514-X | 5/14/2024 | | FD | JD88422 | Post-Treatment | Intermediate | **907** | **899** | **140 J** | **140 J** | -- | -- | -- | -- | -- | -- | -- | 971 | 83.3 J | -- | -- | **59300** | **6880** | -- |
| 114-P2-MW-10D | 114-P2-MW-10D-20240815 | 8/15/2024 | | N | JD94204 | Post-Treatment | Intermediate | **876** | **684** | **150 J** | **140 J** | -179.2 | 0.19 | 7.21 | 6.94 | 20.6 | 274 | -- | 1310 | 54.6 | -- | -- | -- | -- | -- |
| 114-P2-MW-10D | 114-P2-MW-10D-20240815-X | 8/15/2024 | | FD | JD94204 | Post-Treatment | Intermediate | **923 J** | **674 J** | **240 J** | **320 J** | -- | -- | -- | -- | -- | -- | -- | 1170 | 55.2 | -- | -- | -- | -- | -- |
| 114-P2-MW-10D | 114-P2-MW-10D-20241120 | 11/20/2024 | | N | JE1025 | Post-Treatment | Intermediate | **889** | **856** | 18 J- | 18 J- | -161.1 | 0.41 | 7.15 | 7.84 | 16.6 | 148 | -- | 1190 J- | 55.7 | -- | -- | -- | -- | -- |
| 114-P2-MW-10I | 114-P2-MW-10I-31.5-20210701 | 7/1/2021 | 31.5 | N | 4602379001 | Treatment | Intermediate | **10700** | **8100** | **9110** | **8420** | -198.1 | 0.2 | 9.55 | 2.91 | -- | 10.1 | -- | 33.6 | **764** | -- | -- | 99.0 J | **336** | -- |
| 114-P2-MW-10I | 114-P2-MW-10I-22.5-20211122 | 11/22/2021 | 32.5 | N | 4602477591 | Treatment | Intermediate | **146** | **718** | < 10.0 U | < 10.0 U | -74.5 | 0.85 | 10.72 | 3.467 | -- | 10.8 | -- | 37.6 | **499** | -- | -- | 151 | **170** | -- |
| 114-P2-MW-10I | 114-P2-MW-10I-31.75-20211215 | 12/15/2021 | 31.75 | N | 4602491921 | Treatment | Intermediate | **122** | **433** | < 10.0 U | < 10.0 U | -271.8 | 0 | 9 | 2.089 | -- | 43.7 | -- | 34.4 | **318** | -- | 24000 | 135 | **136** | -- |
| 114-P2-MW-10I | 114-P2-MW-10I-31.0-20220126 | 1/26/2022 | 31 | N | 4602513121 | Treatment | Intermediate | **131** | **336** | **151** | < 10.0 U | -181.9 | 2.07 | 9.26 | 2.912 | -- | 10.2 | -- | 78.3 | 74.0 | -- | 27000 | 132 | **55.8** | -- |
| 114-P2-MW-10I | 114-P2-MW-10I-20220316 | 3/16/2022 | 31 | N | 4602544241 | Treatment | Intermediate | **89.9** | **499** | **334** | 1.43 | -64.7 | 1.43 | 9.83 | 2.151 | -- | 2.11 | -- | 89.1 | 110 | -- | 29000 | 96.2 J | 43.9 | -- |
| 114-P2-MW-10I | 114-P2-MW-10I-31-20220412 | 4/12/2022 | 31 | N | 4602561091 | Treatment | Intermediate | 65.2 | **488** | < 10.0 UH | < 10.0 UHF1 | -- DNAPL | -- DNAPL | -- DNAPL | -- DNAPL | -- DNAPL | -- DNAPL | -- | 40.6 F1 | 32.7 | -- | 24000 | < 120 U | 14.1 | -- |
| 114-P2-MW-10I | 114-P2-MW-10I-31-20220412-X | 4/12/2022 | 31 | FD | 4602561091 | Treatment | Intermediate | 63.4 | **363** | < 10.0 UH | < 10.0 UH | -- | -- | -- | -- | -- | -- | -- | 38.1 | 28.6 | -- | 19000 | < 120 U | 12.9 | -- |
| 114-P2-MW-10I | 114-P2-MW-10I-31-20220510 | 5/10/2022 | 31 | N | 4602578751 | Treatment | Intermediate | 60.9 | **102** | **123** | < 10.0 U | -197.1 | 1.04 | 10.35 | 1.077 | 16.50 | 8.86 | -- | 73.0 | 6.39 | -- | 17000 | < 120 U | 4.3 J | -- |
| 114-P2-MW-10I | 114-P2-MW-10I-32-20220610 | 6/10/2022 | 32 | N | 4602598551 | Treatment | Intermediate | -- | **212** | -- | < 10.0 U | -88.9 | 0.73 | 9.23 | 1.678 | 16.58 | 7.62 | -- | 70.1 | 8.06 | -- | -- | -- | -- | -- |
| 114-P2-MW-10I | 114-P2-MW-10I-31.25-20220713 | 7/13/2022 | 31.25 | N | 4602618361 | Treatment | Intermediate | -- | **415** | -- | < 10.0 U | -219.9 | 0.15 | 9.29 | 1.790 | 18.90 | 7.77 | -- | 59.5 | 5.29 | -- | -- | -- | -- | -- |
| 114-P2-MW-10I | 114-P2-MW-10I-31-20220816 | 8/16/2022 | 31 | N | 4602639181 | Treatment | Intermediate | -- | 54.6 | -- | < 10.0 U | -241.9 | 0.11 | 8.92 | 1.789 | 19.35 | 7.61 | -- | 58.3 | 7.35 | -- | -- | < 120 U | 32.0 | -- |
| 114-P2-MW-10I | 114-P2-MW-10I-20221209 | 12/9/2022 | | N | 4602710741 | Post-Treatment | Intermediate | 58.9 | **239** | < 10.0 U | < 10.0 U | -243.8 | 0.54 | 8.93 | 2.036 | 13.41 | 11.9 | -- | 38.7 | 2.90 | 4.4 | -- | < 120 U | 40.5 | -- |
| 114-P2-MW-10I | 114-P2-MW-10I-35.1-20230217 | 2/17/2023 | 35.1 | N | 4602748361 | Post-Treatment | Intermediate | -- | **302** | -- | < 10.0 U | -255.8 | 0.11 | 9.98 | 3.383 | 13.18 | 9.71 | -- | 43.4 | 2.66 | 1.04 | -- | 95.9 J | **54.2** | -- |
| 114-P2-MW-10I | 114-P2-MW-10I-35.1-20230616 | 6/16/2023 | 35.1 | N | 4602824851 | Post-Treatment | Intermediate | 61.3 | **343** | < 10.0 U | < 10.0 U | -219 | 0.5 | 8.31 | 2.147 | 18 | 35.9 | -- | 35.5 | 4.87 | < 1 U | -- | 209 | 36.6 | -- |
| 114-P2-MW-10I | 114-P2-MW-10I-32.0-20230821 | 8/21/2023 | 32 | N | 4602866341 | Post-Treatment | Intermediate | 64.5 | 66.6 | < 10.0 UJ | < 10.0 UJ | -160.2 | 0.36 | 6.44 | 2.127 | 19.37 | 16.8 | -- | 32.8 | 5.83 | 1.44 | -- | 215 | **56.6** | -- |
| 114-P2-MW-10I | 114-P2-MW-10I-35.1-20231121 | 11/21/2023 | 35.1 | N | JD77454 | Post-Treatment | Intermediate | 62.6 | **99.4** | < 10 UJ | 7.3 J | -190.4 | 0.15 | 7.97 | 2.645 | 13.1 | 12.4 | -- | 24.4 | 10.8 JB | -- | -- | -- | -- | -- |
| 114-P2-MW-10I | 114-P2-MW-10I-20240220 | 2/20/2024 | | N | JD82805 | Post-Treatment | Intermediate | 62.0 | **260 J** | < 10 U | < 10 U | -179.8 | 0.29 | 9.5 | 2.407 | 11.3 | 40.6 | -- | 22.7 | 7.1 | -- | -- | -- | -- | -- |
| 114-P2-MW-10I | 114-P2-MW-10I-20240220-X | 2/20/2024 | | FD | JD82805 | Post-Treatment | Intermediate | 66.7 | **164 J** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 23.6 | 5.9 | -- | -- | -- | -- | -- |
| 114-P2-MW-10I | 114-P2-MW-10I-33.5-20240514 | 5/14/2024 | 33.5 | N | JD88422 | Post-Treatment | Intermediate | -- | 69.3 | -- | < 10 U | -160.1 | 0.11 | 8.08 | 2.628 | 16 | 1.37 | -- | 32.5 | 2.5 | -- | -- | -- | -- | -- |
| 114-P2-MW-10I | 114-P2-MW-10I-35.1-20240815 | 8/15/2024 | 35.1 | N | JD94204 | Post-Treatment | Intermediate | -- | **87.9** | -- | < 10 U | -192 | 0.11 | 7.97 | 3.21 | 22.7 | 4.72 | -- | 33.5 | < 2.0 UB | -- | -- | -- | -- | -- |
| 114-P2-MW-11D | 114-P2-MW-11D-47.5-20200323 | 3/23/2020 | 47.5 | N | JD5047 | Baseline | Intermediate | **835000** | **826000** | **760000** | **722000** | 88.1 | 0.52 | 8.79 | 6.379 | -- | 6.21 | -- | 28.5 | **991** | < 2.0 U | 285 | **< 2500 U** | **< 380 U** | -- |
| 114-P2-MW-11D | 114-P2-MW-11D-47.5-20210318 | 3/18/2021 | 47.5 | N | JD21941 | Treatment | Intermediate | **557000** | **567000** | **295000** | **263000** | 165 | 0.27 | 8.73 | 6.701 | -- | 1.27 | -- | 26.1 | **1350** | -- | -- | -- | -- | -- |
| 114-P2-MW-11D | 114-P2-MW-11D-48-20210428 | 4/28/2021 | 48 | N | 4602331061 | Treatment | Intermediate | **318000 J** | **210000 J** | **317000** | **280000** | 59.5 | 3.55 | 8.83 | 6.132 | -- | 6.21 | -- | 24.8 | **1140** | -- | 670 | **< 600 U** | 42.8 | -- |
| 114-P2-MW-11D | 114-P2-MW-11D-48.0-20210528 | 5/28/2021 | 48 | N | 4602354051 | Treatment | Intermediate | **205000** | **199000** | **194000** | **216000** | 41.5 | 0.69 | 8.4 | 7.121 | -- | 0.88 | -- | 25.1 | **1260** | -- | 1300 | **< 2400 U** | 44.5 J | -- |
| 114-P2-MW-11D | 114-P2-MW-11D-49.0-20210623 | 6/23/2021 | 49 | N | 4602372171 | Treatment | Intermediate | **287000** | **305000** | **270000** | **286000** | 35.1 | 0.53 | 8.37 | 4.731 | -- | 3.91 | -- | 25.2 | **1470** | -- | 1600 | **< 1200 U** | **50.3 J** | -- |
| 114-P2-MW-11D | 114-P2-MW-11D-49-20210826 | 8/26/2021 | 49 | N | 4602416741 | Treatment | Intermediate | **173000** | **166000** | **185000** | **127000** | 29.4 | 0.82 | 8.41 | 5.613 | -- | 5.77 | -- | 26.4 | **1290** | -- | 1100 | **< 1200 U** | 47.7 J | -- |
| 114-P2-MW-11D | 114-P2-MW-11D-49.0-20210923 | 9/23/2021 | 49 | N | 4602434911 | Treatment | Intermediate | **216000** | **2140000** | **116000** | **117000** | 120.1 | 2.21 | 8.4 | 6.109 | -- | 8.61 | -- | 26.1 | **1200** | -- | 1000 | **< 600 U** | 40.3 | -- |
| 114-P2-MW-11D | 114-P2-MW-11D-49.0-20211019 | 10/19/2021 | 49 | N | 4602454351 | Treatment | Intermediate | **144000** | **140000** | **157000** | **160000** | -24.9 | 0.13 | 8.32 | 6.6 | -- | 8.04 *** | -- | 27.7 B | **1090** | -- | 900 | **< 600 U** | 41.0 | -- |
| 114-P2-MW-11D | 114-P2-MW-11D-49.0-20211118 | 11/18/2021 | 49 | N | 4602475481 | Treatment | Intermediate | **80800** | **79100** | **112000** | **84800** | 6.5 | 0.51 | 8.09 | 3.673 | -- | 3.01 | -- | 64.0 | **938** | -- | 2900 | < 120 U | **52.7** | -- |
| 114-P2-MW-11D | 114-P2-MW-11D-47.5-20211216 | 12/16/2021 | 47.5 | N | 4602492751 | Treatment | Intermediate | **58500** | **65600** | **59900 H** | **62700 F1** | -161.8 | 0.15 | 8.3 | 6.29 | -- | 2.26 | -- | 85.9 | **719** | -- | 3800 F1 | **< 600 U** | **73.1** | -- |
| 114-P2-MW-11D | 114-P2-MW-11D-47.5-20211216-X | 12/16/2021 | 47.5 | FD | 4602492751 | Treatment | Intermediate | **60900** | **71500** | **61000 H** | **64300 H** | -- | -- | -- | -- | -- | -- | -- | 85.2 | **727** | -- | 3800 | **< 600 U** | **80.3** | -- |
| 114-P2-MW-11D | 114-P2-MW-11D-49-20220110 | 1/10/2022 | 49 | N | 4602504131 | Treatment | Intermediate | **50400** | **45600** | **45800** | **38100** | -261 | 0 | 11.03 | 6.26 | -- | 6.75 | -- | 118 | **625** | -- | 4000 | 80.2 J | **133** | -- |
| 114-P2-MW-11D | 114-P2-MW-11D-49.0-20220217 | 2/17/2022 | 49 | N | 4602526891 | Treatment | Intermediate | **8660** | **7320** | **4240** | < 10.0 U | -379.7 | 0.01 | 8.21 | 4.592 | -- | 1.12 | -- | 89.8 | **517** | -- | 9200 | **325** | **200** | -- |
| 114-P2-MW-11D | 114-P2-MW-11D-49-20220315 | 3/15/2022 | 49 | N | 4602542861 | Treatment | Intermediate | **30500** | **23000** | **7690** | **5190** | -268.1 | 0.42 | 8.22 | 4.581 | -- | 10 | -- | 116 | **673** | -- | 18000 | **< 600 U** | **198** | -- |
| 114-P2-MW-11D | 114-P2-MW-11D-49-20220412 | 4/12/2022 | 49 | N | 4602561091 | Treatment | Intermediate | **31200** | **30800** | **20000 H** | **17800 H** | -273.6 | 0.04 | 7.78 | 4.720 | 13.56 | 7.12 | -- | 132 | **591** | -- | 16000 | **818** | **533** | -- |
| 114-P2-MW-11D | 114-P2-MW-11D-49-20220511 | 5/11/2022 | 49 | N | 4602579551 | Treatment | Intermediate | **27900** | **25500** | **22000** | **24100** | 10.6 | 6.89 | 7.75 | 6.161 | 15.24 | 23.8 | -- | 81.2 | **874** | -- | 12000 | 168 | **912** | -- |
| 114-P2-MW-11D | 114-P2-MW-11D-49-20220609 | 6/9/2022 | 49 | N | 4602597481 | Treatment | Intermediate | -- | **13400** | **10500 H** | **10900** | -66.7 | 0.38 | 7.69 | 5.218 | 17.66 | 20 | -- | 71.1 | **777** | -- | -- | -- | -- | -- |
| 114-P2-MW-11D | 114-P2-MW-11D-49.0-20220712 | 7/12/2022 | 49 | N | 4602617771 | Treatment | Intermediate | -- | **4770** | -- | < 10.0 U | -226.4 | 0.57 | 7.99 | 4.340 | 17.51 | 4.99 | -- | 47.7 | **594** | -- | -- | -- | -- | -- |
| 114-P2-MW-11D | 114-P2-MW-11D-49-20220819 | 8/19/2022 | 49 | N | 4602641451 | Treatment | Intermediate | -- | **2300** | -- | < 10.0 U | -300.6 | 8.81 | 7.90 | 10.39 | 17.98 | 9.77 | -- | 43.8 | **411** | -- | -- | 117 J | **970** | -- |
| 114-P2-MW-11D | 114-P2-MW-11D-49-20220914 | 9/14/2022 | 49 | N | 4602654911 | Treatment | Intermediate | -- | **2300** | -- | < 10.0 U | -292.2 | 1.87 | 7.69 | 5.35 | 18.69 | 9.71 | -- | 36.4 | **588** | -- | -- | 157 J | **969** | -- |
| 114-P2-MW-11D | 114-P2-MW-11D-47.5-20221212 | 12/12/2022 | 47.5 | N | 4602712001 | Post-Treatment | Intermediate | -- | **396 J+** | -- | < 10.0 U | -271.0 | -0.05 | 7.6 | 210 | 12.8 | 10 | -- | 34.1 | **519** | < 1 U | -- | **587** | **956** | -- |
| 114-P2-MW-11D | 114-P2-MW-11D-50.1-20230220 | 2/20/2023 | 50.1 | N | 4602749361 | Post-Treatment | Intermediate | -- | **256** | -- | < 10.0 UJ | -272.0 | 0.07 | 7.65 | 9.7 | 14.5 | 9.7 | -- | 33.3 | **577** | < 1 U | -- | **609** | **963** | -- |
| 114-P2-MW-11D | 114-P2-MW-11D-50.1-20230616 | 6/16/2023 | 50.1 | N | 4602824851 | Post-Treatment | Intermediate | **254** | **497** | < 10.0 U | < 10.0 U | 0.6 | 5.197 | 17.6 | 8.03 | 18.75 | -167 | -- | 30.1 | **537** | < 1 U | -- | **859** | **897** | -- |
| 114-P2-MW-11D | 114-P2-MW-11D-50.1-20230817 | 8/17/2023 | 50.1 | N | 4602864001 | Post-Treatment | Intermediate | -- | **1070** | -- | 63.2 | -112.7 | 2.49 | 7.44 | 6.228 | 19.38 | 8.62 | -- | 27.

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P2-MW-11I | 114-P2-MW-11I-35.5-20210318 | 3/18/2021 | 35.5 | N | JD21941 | Treatment | Intermediate | **36300** | **39100** | **39200** | **39500** | 92.7 | 0.12 | 8.22 | 4.255 | -- | 2.39 | -- | 19.9 | **1160** | -- | -- | -- | -- | -- |
| 114-P2-MW-11I | 114-P2-MW-11I-36-20210428 | 4/28/2021 | 36 | N | 4602331061 | Treatment | Intermediate | 62.8 | **563** | < 10.0 U | < 10.0 U | -159.1 | 3.19 | 8.77 | 2.237 | -- | 4.87 | -- | 96.1 | **298** | -- | 380 | < 120 U | 22.9 | -- |
| 114-P2-MW-11I | 114-P2-MW-11I-36.0-20210528 | 5/28/2021 | 36 | N | 4602354051 | Treatment | Intermediate | 57.1 | **100** | < 10.0 U | < 10.0 U | -233.5 | 1.37 | 8.18 | 2.248 | -- | 1.85 | -- | 148 | 87.1 | -- | 240 | 92.0 J | 35.0 | -- |
| 114-P2-MW-11I | 114-P2-MW-11I-37.0-20210623 | 6/23/2021 | 37 | N | 4602372171 | Treatment | Intermediate | **531** | **1390** | < 10.0 U | < 10.0 U | -249.1 | 0.54 | 7.94 | 1.399 | -- | 5.12 | -- | 182 | 9.58 | -- | 190 | **< 1200 U** | 46.7 J | -- |
| 114-P2-MW-11I | 114-P2-MW-11I-37-20210826 | 8/26/2021 | 37 | N | 4602416741 | Treatment | Intermediate | **110** | **157** | < 10.0 U | < 10.0 U | -125.1 | 0.17 | 7.54 | 1.833 | -- | 3.69 | -- | 265 | 0.35 J | -- | 16000 | **361** | **110** | -- |
| 114-P2-MW-11I | 114-P2-MW-11I-37.0-20210923 | 9/23/2021 | 37 | N | 4602434911 | Treatment | Intermediate | **403** | **474** | < 10.0 U | < 10.0 U | -167.2 | 0.89 | 7.14 | 1.842 | -- | 4.77 | -- | 434 | 1.40 | -- | 30000 | **4500** | **884** | -- |
| 114-P2-MW-11I | 114-P2-MW-11I-37.0-20211019 | 10/19/2021 | 37 | N | 4602454351 | Treatment | Intermediate | **1430** | **1490** | **< 100 U** | **< 100 U** | -133.2 | 0.06 | 6.42 | 2.24 | -- | 4.87 *** | -- | 853 B | 1.00 F1F2 | -- | 25000 | **43100** | **2760** | -- |
| 114-P2-MW-11I | 114-P2-MW-11I-37.0-20211118 | 11/18/2021 | 37 | N | 4602475481 | Treatment | Intermediate | **2390** | **2440** | < 20.0 U | **95.2** | -63.2 | 0.98 | 5.87 | 1.338 | -- | 3.22 | -- | 763 | 0.98 | -- | 22000 | **99000** | **4160** | -- |
| 114-P2-MW-11I | 114-P2-MW-11I-35.5-20211216 | 12/16/2021 | 35.5 | N | 4602492751 | Treatment | Intermediate | **4410** | **2960** | < 50.0 U | < 50.0 U | -119.7 | 0.15 | 6.08 | 2.31 | -- | 6.98 | -- | 766 B | < 0.48 U | -- | 23000 | **160000** | **4630** | -- |
| 114-P2-MW-11I | 114-P2-MW-11I-37.0-20220110 | 1/10/2022 | 37 | N | 4602504131 | Treatment | Intermediate | **3270** | **3210** | < 50.0 U | < 50.0 U | -72 | 0 | 6.14 | 2.18 | -- | 6.14 | -- | 845 | 1.28 | -- | 30000 | **175000** | **4340** | -- |
| 114-P2-MW-11I | 114-P2-MW-11I-37.0-20220217 | 2/17/2022 | 37 | N | 4602526891 | Treatment | Intermediate | **3160** | **3140** | **99.6** | **142** | -- | -- | -- | -- | -- | -- | -- | 872 | 1.56 | -- | 29000 | **211000** | **3850** | -- |
| 114-P2-MW-11I | 114-P2-MW-11I-37-20220315 | 3/15/2022 | 37 | N | 4602542861 | Treatment | Intermediate | **3440** | **4300** | < 25.0 U | < 25.0 U | -27.7 | 0.43 | 5.92 | 1.735 | -- | 7.21 | -- | 967 | 6.04 | -- | 24000 | **242000** | **3970** | -- |
| 114-P2-MW-11I | 114-P2-MW-11I-37-20220412 | 4/12/2022 | 37 | N | 4602561091 | Treatment | Intermediate | **4210** | **4880** | < 50.0 U | < 50.0 U | -80.7 | 0.17 | 5.69 | 1.575 | 13.25 | 5.04 | -- | 840 | 5.04 | -- | 27000 | **290000** | **3400** | -- |
| 114-P2-MW-11I | 114-P2-MW-11I-37-20220512 | 5/12/2022 | 37 | N | 4602580081 | Treatment | Intermediate | **2810** | **2330** | < 20.0 U | < 20.0 U | -70.5 | 1.21 | 5.88 | 1.555 | 14.66 | 7.82 | -- | 567 | 1.09 | -- | 19000 | **240000** | **2140** | -- |
| 114-P2-MW-11I | 114-P2-MW-11I-37-20220609 | 6/9/2022 | 37 | N | 4602597481 | Treatment | Intermediate | -- | **1740** | -- | < 10.0 UF1 | -24.3 | 0.83 | 5.75 | 1.163 | 17.2 | 7 | -- | 249 | 0.43 JF1F2 | -- | -- | -- | -- | -- |
| 114-P2-MW-11I | 114-P2-MW-11I-37-20220609-X | 6/9/2022 | 37 | FD | 4602597481 | Treatment | Intermediate | -- | **1840** | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 252 | 0.43 J | -- | -- | -- | -- | -- |
| 114-P2-MW-11I | 114-P2-MW-11I-37.0-20220712 | 7/12/2022 | 37 | N | 4602617771 | Treatment | Intermediate | -- | **1070** | -- | < 10.0 U | -95.7 | 1.25 | 6.26 | 1.003 | 17.71 | 4.64 | -- | 71.2 | 0.11 J | -- | -- | -- | -- | -- |
| 114-P2-MW-11I | 114-P2-MW-11I-37-20220819 | 8/19/2022 | 37 | N | 4602641451 | Treatment | Intermediate | -- | **782** | -- | < 20.0 U | -69.2 | 6.13 | 6.13 | 256.1 | 16.83 | 8.03 | -- | 81.3 | < 2.40 U | -- | -- | **98000** | **855** | -- |
| 114-P2-MW-11I | 114-P2-MW11I-35.5-20221212 | 12/12/2022 | 35.5 | N | 4602712001 | Post-Treatment | Intermediate | **611** | **701 J+** | < 10.0 U | < 10.0 U | -104.2 | 0.41 | 6.45 | 1.633 | 12.15 | 9.08 | -- | 38.8 | 0.36 J | < 1 U | -- | **62500** | **548** | -- |
| 114-P2-MW-11I | 114-P2-MW-11I-37.6-20230220 | 2/20/2023 | 37.6 | N | 4602749361 | Post-Treatment | Intermediate | -- | **697** | -- | < 10.0 UJ | -188.4 | 0.63 | 6.5 | 2.41 | 14.81 | 6.54 | -- | 39.0 | 3.33 | < 1 U | -- | **51900** | **491** | -- |
| 114-P2-MW-11I | 114-P2-MW-11I-37.6-20230616 | 6/16/2023 | 37.6 | N | 4602824851 | Post-Treatment | Intermediate | -- | **580** | -- | < 20.0 U | -76.3 | 0.3 | 6.01 | 1.657 | 17.46 | 5.43 | -- | 41.6 | 2.39 J | < 1 U | -- | **79900** | **752** | -- |
| 114-P2-MW-11I | 114-P2-MW-11I-37.6-20230817 | 8/17/2023 | 37.6 | N | 4602864001 | Post-Treatment | Intermediate | -- | **649** | -- | < 50.0 U | -80.8 | 9.81 | 6.5 | 1.891 | 22.91 | 8.9 | -- | 32.0 | 5.65 | < 1 U | -- | **76600** | **790** | -- |
| 114-P2-MW-11I | 114-P2-MW-11I-37.6-20231120 | 11/20/2023 | 37.6 | N | JD77343 | Post-Treatment | Intermediate | -- | **515** | -- | 32 J- | -530.4 | 0.53 | 6.45 | 1.921 | 14.8 | 4.02 | -- | 35.5 | 3.3 | -- | -- | -- | -- | -- |
| 114-P2-MW-11I | 114-P2-MW-11I-37.6-20240219 | 2/19/2024 | 37.6 | N | JD82732 | Post-Treatment | Intermediate | -- | **468** | -- | **92** | 95.8 | 0.5 | 6.42 | 1.977 | 11.6 | 8 | -- | 34.5 | 1.6 J | -- | -- | -- | -- | -- |
| 114-P2-MW-11I | 114-P2-MW-11I-37.6-20240517 | 5/17/2024 | 37.6 | N | JD88735 | Post-Treatment | Intermediate | -- | **395** | -- | < 10 RA | -205.4 | 0.1 | 6.49 | 1.949 | 16.6 | 5.6 | -- | 34.5 | < 10 U | -- | -- | -- | -- | -- |
| 114-P2-MW-11I | 114-P2-MW-11I-37.6-20240822 | 8/22/2024 | 37.6 | N | JD94702 | Post-Treatment | Intermediate | -- | **362** | -- | 50 | -154.2 | 0.1 | 6.46 | 2259 | 18.7 | 4.2 | -- | 35.1 | 5.1 | -- | -- | -- | -- | -- |
| 114-P2-MW-12D | 114-P2-MW-12D-51.5-20210701 | 7/1/2021 | 51.5 | N | 4602379001 | Treatment | Intermediate | **1980000** | **453000** | **720000** | **743000** | -- | -- | -- | -- | -- | -- | -- | 35.2 | **907** | -- | -- | **< 6000 U** | **< 400 U** | -- |
| 114-P2-MW-12D | 114-P2-MW-12D-47.0-20211122 | 11/22/2021 | 47 | N | 4602477591 | Treatment | Intermediate | **675000** | **675000** | **645000** | **656000** | 193.2 | 3.32 | 10.05 | 5.022 | -- | 3.01 | -- | 56.2 | **565 F1** | -- | 600 | **< 12000 U** | **< 800 U** | -- |
| 114-P2-MW-12D | 114-P2-MW-12D-20211223 | 12/23/2021 | | N | 4602497501 | Treatment | Intermediate | **750000** | **629000** | **651000 H** | **634000 H** | -- | -- | -- | -- | -- | -- | -- | 70.9 | **475** | -- | 200 | **< 600 U** | < 40.0 U | -- |
| 114-P2-MW-12D | 114-P2-MW-12D-53.0-20220203 | 2/3/2022 | 53 | N | 4602517791 | Treatment | Intermediate | **615000** | **692000** | **567000** | **567000** | -- | -- | -- | -- | -- | -- | -- | 77.3 F1B | **451 F1** | -- | 290 | **< 1200 U** | **< 80.0 U** | -- |
| 114-P2-MW-12D | 114-P2-MW-12D-53.0-20220203-X | 2/3/2022 | 53 | FD | 4602517791 | Treatment | Intermediate | **618000** | **686000** | **572000** | **572000** | -- | -- | -- | -- | -- | -- | -- | 75.6 | **452** | -- | 280 | **< 1200 U** | **< 80.0 U** | -- |
| 114-P2-MW-12D | 114-P2-MW-12D-51-20220316 | 3/16/2022 | 51 | N | 4602544241 | Treatment | Intermediate | **644000** | **706000** | **704000** | **693000** | 42 | 3.07 | 12.24 | 8.306 | -- | 10.9 | -- | 45.0 | **619** | -- | 820 | **< 1200 U** | **< 80.0 U** | -- |
| 114-P2-MW-12D | 114-P2-MW-12D-51-20220412 | 4/12/2022 | 51 | N | 4602561091 | Treatment | Intermediate | **611000** | **561000** | **5860 H** | **15100 H** | -- DNAPL | -- DNAPL | -- DNAPL | -- DNAPL | -- DNAPL | -- DNAPL | -- | 59.3 | **518** | -- | 330 | **< 1200 U** | **< 80.0 U** | -- |
| 114-P2-MW-12D | 114-P2-MW-12D-20220510 | 5/10/2022 | | N | 4602578751 | Treatment | Intermediate | **775000** | **698000** | **572000** | **589000** | -149.9 | 3.17 | 14.92 | 12.78 | 13.89 | 18.9 | -- | 62.5 | **545** | -- | 550 F1 | **< 600 U** | < 40.0 U | -- |
| 114-P2-MW-12D | 114-P2-MW-12D-20220510-X | 5/10/2022 | | FD | 4602578751 | Treatment | Intermediate | **777000** | **667000** | **600000** | **595000** | -- | -- | -- | -- | -- | -- | -- | 65.4 | **541** | -- | 490 | **< 600 U** | < 40.0 U | -- |
| 114-P2-MW-12D | 114-P2-MW-12D-20220608 | 6/8/2022 | | N | 4602596671 | Treatment | Intermediate | -- | **562000** | -- | **552000** | -31.5 | 5.2 | 12.29 | 10.63 | 20.24 | 9.92 | -- | 145 | **493** | -- | -- | -- | -- | -- |
| 114-P2-MW-12D | 114-P2-MW-12D-20220608-X | 6/8/2022 | | FD | 4602596671 | Treatment | Intermediate | -- | **571000** | -- | **563000** | -- | -- | -- | -- | -- | -- | -- | 143 | **488** | -- | -- | -- | -- | -- |
| 114-P2-MW-12D | 114-P2-MW-12D-20220713 | 7/13/2022 | | N | 4602618361 | Treatment | Intermediate | **432000** | **438000** | **492000** | **487000** | 23.5 | 1.51 | 10.96 | 8.812 | 19.28 | 17.8 | -- | 182 | **441** | -- | -- | **< 2400 U** | **< 160 U** | -- |
| 114-P2-MW-12D | 114-P2-MW-12D-20220713-X | 7/13/2022 | | FD | 4602618361 | Treatment | Intermediate | **455000** | **491000** | **492000** | **521000** | -- | -- | -- | -- | -- | -- | -- | 168 | **437** | -- | -- | **< 600 U** | 14.2 J | -- |
| 114-P2-MW-12D | 114-P2-MW-12D-20220817 | 8/17/2022 | | N | 4602639901 | Treatment | Intermediate | **343000** | **384000** | **440000** | **451000** | 8.9 | 1.84 | 10.36 | 7.720 | 18.74 | 8.14 | -- | 218 | **502** | -- | -- | **< 2400 U** | **< 160 U** | -- |
| 114-P2-MW-12D | 114-P2-MW-12D-20220817-X | 8/17/2022 | | FD | 4602639901 | Treatment | Intermediate | **314000** | **382000** | **378000** | **429000** | -- | -- | -- | -- | -- | -- | -- | 228 | **498** | -- | -- | **< 6000 U** | 38.7 J | -- |
| 114-P2-MW-12D | 114-P2-MW12D-50-20220914-X | 9/14/2022 | 50 | FD | 4602654911 | Treatment | Intermediate | -- | **311000** | -- | **316000** | -- | -- | -- | -- | -- | -- | -- | 279 | **511** | -- | -- | **< 600 U** | **66.2** | -- |
| 114-P2-MW-12D | 114-P2-MW-12D-51-20220914 | 9/14/2022 | 51 | N | 4602654911 | Treatment | Intermediate | -- | **318000** | -- | **338000** | 108.0 | 1.10 | 10.23 | 7.681 | 17.98 | 20.2 | -- | 282 | **515** | -- | -- | **< 600 U** | **58.7** | -- |
| 114-P2-MW-12D | 114-P2-MW-12D-20221013 | 10/13/2022 | | N | 4602674311 | Treatment | Intermediate | -- | **268000** | -- | **302000** | 126.3 | 1.01 | 9.73 | 6.383 | 17.84 | 31.5 | -- | 312 F2 | **493** | -- | -- | **< 2400 UF2** | **75.3 JF2** | -- |
| 114-P2-MW-12D | 114-P2-MW-12D-20221013-X | 10/13/2022 | | FD | 4602674311 | Treatment | Intermediate | -- | **280000** | -- | **286000** | -- | -- | -- | -- | -- | -- | -- | 314 | **487** | -- | -- | **< 1200 U** | **78.8 J** | -- |
| 114-P2-MW-12D | 114-P2-MW-12D-20221111 | 11/11/2022 | | N | 4602693471 | Treatment | Intermediate | -- | **251000** | -- | **230000** | 26.4 | 0.62 | 9.93 | 6.604 | 17.09 | 38.4 | -- | 305 | **392** | -- | -- | **< 600 U** | **114** | -- |
| 114-P2-MW-12D | 114-P2-MW-12D-20221208 | 12/8/2022 | | N | 4602709591 | Treatment | Intermediate | **265000** | **238000** | **243000** | **236000** | 73.8 | 0.68 | 10.60 | 6.752 | 14.85 | 53.7 | -- | 268 | **546** | -- | -- | **< 1200 U** | **132** | -- |
| 114-P2-MW-12D | 114-P2-MW-12D-20230217 | 2/17/2023 | | N | 4602748361 | Post-Treatment | Intermediate | **180000** | **164000** | **173000** | **179000** | -233.1 | 0.96 | 11.36 | 7.818 | 13.92 | 22.12 | -- | 241 | **536** | < 10 U | -- | **< 6000 U** | 35.3 J | -- |
| 114-P2-MW-12D | 114-P2-MW-12D-20230217-X | 2/17/2023 | | FD | 4602748361 | Post-Treatment | Intermediate | **182000** | **161000** | **184000** | **195000** | -- | -- | -- | -- | -- | -- | -- | 237 | **545** | < 10 U | -- | **< 1200 U** | 40.9 J | -- |
| 114-P2-MW-12D | 114-P2-MW-12D-20230519 | 5/19/2023 | | N | 4602806561 | Post-Treatment | Intermediate | -- | **133000** | -- | **130000** | -71.4 | 0.92 | 11.62 | 7.941 | 17.72 | 9.88 | -- | 207 | **500** | < 5 U | -- | **< 6000 U** | **< 400 U** | -- |
| 114-P2-MW-12D | 114-P2-MW-12D-56.3-20230822 | 8/22/2023 | 56.3 | N | 4602866741 | Post-Treatment | Intermediate | **112000** | **104000** | R | **118000 J-** | -52.8 | 1.69 | 11.11 | 7.084 | 21.18 | 51.6 | -- | 163 | **638 J** | < 4 U | -- | **< 2400 U** | **57.3 J** | -- |
| 114-P2-MW-12D | 114-P2-MW-12D-56.3-20230822-X | 8/22/2023 | 56.3 | FD | 4602866741 | Post-Treatment | Intermediate | **110000** | **113000** | R | **127000 J-** | -- | -- | -- | -- | -- | -- | -- | 182 | 56.8 J | < 4 U | -- | **< 2400 U** | **66.5 J** | -- |
| 114-P2-MW-12D | 114-P2-MW-12D-20231121 | 11/21/2023 | | N | JD77454 | Post-Treatment | Intermediate | **130000** | **120000** | **111000 J** | **109000 J** | -431.7 | 1.09 | 10.63 | 7.2 | 12.6 | 41.9 | -- | 112 | **874** | -- | -- | -- | -- | -- |
| 114-P2-MW-12D | 114-P2-MW-12D-20231121-X | 11/21/2023 | | FD | JD77454 | Post-Treatment | Intermediate | **118000** | **106000** | **108000 J** | **107000 J** | -- | -- | -- | -- | -- | -- | -- | 126 | **738** | -- | -- | -- | -- | -- |
| 114-P2-MW-12D | 114-P2-MW-12D-20240216 | 2/16/2024 | | N | JD82616 | Post-Treatment | Intermediate | **77600** | **87100** | -- | **85000 J+** | 275.1 | 1.29 | 9.8 | 6.565 | 10.9 | 153 | -- | 93.1 | **803** | -- | -- | -- | -- | -- |
| 114-P2-MW-12D | 114-P2-MW-12D-20240515 | 5/15/2024 | | N | JD88509 | Post-Treatment | Intermediate | **87500** | **89600** | **87600** | **85900** | -31.7 | 0.87 | 9.56 | 7.77 | 15.2 | 132 | -- | 51.5 | **909** | -- | -- | 57.5 J | **284** | -- |
| 114-P2-MW-12D | 114-P2-MW-12D-20240815 | 8/15/2024 | | N | JD94204 | Post-Treatment | Intermediate | **105000** | **88300** | -- | **90200** | -110.7 | 2.38 | 9.68 | 6.64 | 24.2 | 195 | -- | 47.8 | **1000** | -- | -- | -- | -- | -- |
| 114-P2-MW-12D | 114-P2-MW-12D-20241115 | 11/15/2024 | | N | JE731 | Post-Treatment | Intermediate | **55300 J** | **57900 J** | **86300 J** | **85700 J** | -109.9 | 1.8 | 9.75 | 7.68 | 17.1 | 146 | -- | 37.7 J | **1060** | -- | -- | -- | -- | -- |
| 114-P2-MW-12D | 114-P2-MW-12D-20241115-X | 11/15/2024 | | FD | JE731 | Post-Treatment | Intermediate | **56000 J** | **56400 J** | **88600 J** | **92100 J** | -- | -- | -- | -- | -- | -- | -- | 46.5 | **1030** | -- | -- | -- | -- | -- |
| 114-P2-MW-12I | 114-P2-MW-12I-36.0-20220325 | 3/25/2022 | 36 | N | JD5140 | Baseline | Intermediate | **102000 J** | **3900 J** | **1200** | **31200** | 179 | 6.51 | 8.72 | 0.497 | -- | 9.2 | -- | 6.2 | 75.2 | < 2.0 U | 6.3 | **< 500 U** | 11.6 J | -- |
| 114-P2-MW-12I | 114-P2-MW-12I-36.5-20210317 | 3/17/2021 | 36.5 | N | JD21863 | Treatment | Intermediate | **51200** | **42500** | **517000** | **477000** | 152.9 | 0.37 | 8.39 | 3.687 | -- | 2.45 | -- | 17.3 | **574** | -- | -- | -- | -- | -- |
| 114-P2-MW-12I | 114-P2-MW-12I-37-20210429 | 4/29/2021 | 37 | N | 4602331931 | Treatment | Intermediate | **422000** | **495000** | **417000** | **384000 J+** | 47.1 | 0.08 | 9.19 | 3.179 | -- | 8.21 | -- | 19.1 | **454** | -- | 940 | **< 600 U** | **59.3** | -- |
| 114-P2-MW-12I | 114-P2-MW-12I-37.0-20210601 | 6/1/2021 | 37 | N | 4602355971 | Treatment | Intermediate | **386000** | **465000** | **389000** | **401000** | -38 | 0.53 | 10.29 | 2.985 | -- | 14.3 | -- | 41.6 | **461** | -- | 740 | **< 600 U** | 42.9 | -- |
| 114-P2-MW-12I | 114-P2-MW-12I-39.0-20210623 | 6/23/2021 | 39 | N | 4602372171 | Treatment | Intermediate | **299000** | **304000** | **304000** | **301000** | -21.4 | 0.39 | 9.37 | 2.498 | -- | 9.92 | -- | 115 | **524** | -- | 1500 | **< 1200 U** | 37.7 J | -- |
| 114-P2-MW-12I | 114-P2-MW-12I-39.0-20210830 | 8/30/2021 | 39 | N | 4602418391 | Treatment | Intermediate | **200000** | **216000** | **197000** | **180000** | 83.2 | 1.57 | 7.73 | 3.091 | -- | 8.77 | -- | 195 | **404** | -- | 750 | **< 2400 U** | **524** | -- |
| 114-P2-MW-12I | 114-P2-MW-12I-39.0-20211023 | 9/23/2021 | 39 | N | 4602434911 | Treatment | Intermediate | **130000** | **152000** | **79800** | **82000** | 130.8 | 0.78 | 6.87 | 2.261 | -- | 7.66 | -- | 267 | **330** | -- | 700 | **497 J** | **1680** | -- |
| 114-P2-MW-12I | 114-P2-MW-12I-39.0-20211020 | 10/20/2021 | 39 | N | 4602455621 | Treatment | Intermediate | **119000** | **128000** | **120000** | **127000** | 168.3 | 0.11 | 6.85 | 3.11 | -- | < 10 *** | -- | 252 | **407** | -- | 940 | **1750** | **1960** | -- |
| 114-P2-MW-12I | 114-P2-MW-12I-39-20211118 | 11/18/2021 | 39 | N | 4602475481 | Treatment | Intermediate | **68800** | **63100** | **57700** | **53700** | 184.5 | 0.56 | 6.38 | 2.392 | -- | 8.7 | -- | 351 | 206 | -- | 420 | **2110** | **2750** | -- |
| 114-P2-MW-12I | 114-P2-MW-12I-36.5-20211216 | 12/16/2021 | 36.5 | N | 4602492751 | Treatment | Intermediate | **9310** | **11800** | < 10.0 U | < 20.0 U | -121.1 | 0.16 | 6.29 | 2.74 | -- | 37.32 | -- | 886 | 44.6 | -- | 200 | **10800** | **4920** | -- |
| 114-P2-MW-12I | 114-P2-MW-12I-39-20220112 | 1/12/2022 | 39 | N | 4602505551 | Treatment | Intermediate | **8930** | **9360** | < 10.0 U | < 10.0 U | -103.9 | 0.12 | 5.95 | 2.236 | -- | 3.67 | -- | 968 | 9.72 | -- | 310 | **25500** | **4930** | -- |
| 114-P2-MW-12I | 114-P2-MW-12I-39-20220217 | 2/17/2022 | 39 | N | 4602526891 | Treatment | Intermediate | **6840** | **7860** | < 50.0 U | < 50.0 U | -77.9 | 5.46 | 6.57 | 2.202 | -- | 5.53 | -- | 811 | 3.98 | -- | 320 | **24100** | **4250** | -- |
| 114-P2-MW-12I | 114-P2-MW-12I-39-20220315 | 3/15/2022 | 39 | N | 4602542861 | Treatment | Intermediate | **16600** | **20100** | < 20.0 U | < 20.0 U | -88.9 | 2.53 | 6.03 | 2.076 | -- | 5.99 | -- | 1150 | 17.7 | -- | 690 | **55900** | **5630** | -- |
| 114-P2-MW-12I | 114-P2-MW-12I-39-20220412 | 4/12/2022 | 39 | N | 4602561091 | Treatment | Intermediate | **11500** | **13800** | < 20.0 U | < 20.0 U | -53.0 | 0.98 | 5.91 | 1.908 | 15.33 | 5.71 | -- | 816 B | 12.2 | -- | 1800 | **50800** | **4130** | -- |
| 114-P2-MW-12I | 114-P2-MW-12I-39-20220510 | 5/10/2022 | 39 | N | 4602578751 | Treatment | Intermediate | **5580** | **5810** | < 20.0 U | < 20.0 U | -52.1 | 0.16 | 6.19 | 2.337 | 15.45 | 9.8 | -- | 558 | 4.79 J | -- | 4900 | **38700** | **2780** | -- |
| 114-P2-MW-12I | 114-P2-MW-12I-39-20220608 | 6/8/2022 | 39 | N | 4602596671 | Treatment | Intermediate | -- | **5080** | -- | < 10.0 U | -56.3 | 2.02 | 6.37 | 2.861 | 18.21 | 6 | -- | 530 | 2.15 J | -- | -- | -- | -- | -- |
| 114-P2-MW-12I | 114-P2-MW-12I-39.0-20220713 | 7/13/2022 | 39 | N | 4602618361 | Treatment | Intermediate | -- | **3670** | -- | < 10.0 U | -113.9 | 1.23 | 6.55 | 2.919 | 19.95 | 9.73 | -- | 456 | 15.2 | -- | -- | -- | -- | -- |
| 114-P2-MW-12I | 114-P2-MW-12I-39-20220817 | 8/17/2022 | 39 | N | 4602639901 | Treatment | Intermediate | -- | **2810** | -- | < 10.0 U | -84.1 | 0.60 | 6.71 | 2.815 | 19.32 | 8 | -- | 381 | 6.04 | -- | -- | **8430** | **1130** | -- |
| 114-P2-MW-12I | 114-P2-MW-12I-36.5-20221212 | 12/12/2022 | 36.5 | N | 4602712001 | Post-Treatment | Intermediate | -- | **1330 J+** | -- | < 10.0 U | -137.4 | 0.31 | 7.18 | 4.001 | 10.77 | 3.07 | -- | 315 | < 4.80 U | < 1 U | -- | **3770** | **561** | -- |
| 114-P2-MW-12I | 114-P2-MW-12I-39.2-20230221 | 2/21/2023 | 39.2 | N | 4602750101 | Post-Treatment | Intermediate | -- | **1360** | -- | < 10.0 U | -64.0 | 0.2 | 7.11 | 3.232 | 12.75 | 8.65 | -- | 101 | 0.59 | < 1 U | -- | **3890** | **625** | -- |
| 114-P2-MW-12I | 114-P2-MW-12I-39.2-20230616 | 6/16/2023 | 39.2 | N | 4602824851 | Post-Treatment | Intermediate | -- | **1100** | -- | < 10.0 U | -213.3 | 0.11 | 6.91 | 3.624 | 26.6 | 6.63 | -- | 56.6 | 1.24 J | < 1 U | -- | **3260** | **611** | -- |
| 114-P2-MW-12I | 114-P2-MW-12I-39.2-20230821 | 8/21/2023 | 39.2 | N | 4602866341 | Post-Treatment | Intermediate | -- | **856** | -- | < 10.0 UJ | -130.2 | 0.35 | 6.06 | 3.245 | 21.01 | 8.51 | -- | 67.6 | 0.63 J | < 1 U | -- | **3770** | **681** | -- |
| 114-P2-MW-12I | 114-P2-MW-12I-39.2-20231120 | 11/20/2023 | 39.2 | N | JD77343 | Post-Treatment | Intermediate | -- | **651** | -- | < 10 UJ | -596.8 | 0.41 | 7.1 | 3.661 | 12.1 | 3.06 | -- | 42.3 | < 2.0 U | -- | -- | -- | -- | -- |
| 114-P2-MW-12I | 114-P2-MW-12I-39.2-20240215 | 2/15/2024 | 39.2 | N | JD82518 | Post-Treatment | Intermediate | -- | **761** | -- | < 10 RA | -332.4 | 0.24 | 7.14 | 3.797 | 9.4 | 4.69 | -- | 37.1 | < 2.0 U | -- | -- | -- | -- | -- |
| 114-P2-MW-12I | 114-P2-MW-12I-39.2-20240517 | 5/17/2024 | 39.2 | N | JD88735 | Post-Treatment | Intermediate | -- | **441** | -- | < 10 RA | -161.6 | 0.11 | 7.07 | 3.178 | 16.1 | 3.85 | -- | 41.7 | 1.1 J | -- | -- | -- | -- | -- |
| 114-P2-MW-12I | 114-P2-MW-12I-39.2-20240517-X | 5/17/2024 | 39.2 | FD | JD88735 | Post-Treatment | Intermediate | -- | **404** | -- | < 10 RA | -- | -- | -- | -- | -- | -- | -- | 43.3 | 1.9 J | -- | -- | -- | -- | -- |
| 114-P2-MW-12I | 114-P2-MW-12I-39.2-20240819 | 8/19/2024 | 39.2 | N | JD94428 | Post-Treatment | Intermediate | -- | **693** | -- | 9.7 J | -250.6 | 0.1 | 7.06 | 3.49 | 20.7 | 3.3 | -- | 42.9 | 1.7 J | -- | -- | -- | -- | -- |
| 114-P2-MW-1I | 114-P2-MW-1I-40.0-20200320 | 3/20/2020 | 40 | N | JD5007 | Baseline | Intermediate | **8370** | **8490** | **8200** | **8500** | -133 | 6.1 | 11.86 | 5.05 | -- | 1.99 | -- | 4.4 | 108 J- | R | 13.5 | < 100 U | < 15 U | -- |
| 114-P2-MW-1I | 114-P2-MW-1I-40-20201117 | 11/17/2020 | 40 | N | JD16409 | Treatment | Intermediate | **16600** | **14100** | **17500**<br>**16300** | **14000**<br>**21300** | 105 | 0.29 | 8.83 | 8.04 | -- | 3.89 | -- | 5.6 | **438** | -- | 167 | -- | 10.0 B | < 0.20 U |
| 114-P2-MW-1I | 114-P2-MW-1I-40.0-20201215 | 12/15/2020 | 40 | N | JD17793 | Treatment | Intermediate | **11700** | **13200** | **12200** | **12200** | 24.7 | 0.25 | 8.8 | 13.33 | -- | 2.13 | -- | 8.5 | **1550** | -- | -- | -- | -- | -- |
| 114-P2-MW-1I | 114-P2-MW-1I-40.0-20210111 | 1/11/2021 | 40 | N | JD18861 | Treatment | Intermediate | **1150** | **1880** | **1000** | **950** | 210.6 | 0.47 | 8.24 | 6.55 | -- | 9.89 | -- | 68.1 | **1290** | -- | -- | -- | -- | -- |
| 114-P2-MW-1I | 114-P2-MW-1I-40.0-20210215 | 2/15/2021 | 40 | N | JD20381 | Treatment | Intermediate | **460** | **1850** | **390** | **1100** | -258.3 | 0.4 | 12.22 | 6.493 | -- | 6.39 | -- | 96.7 | **771** | -- | -- | -- | -- | -- |
| 114-P2-MW-1I | 114-P2-MW-1I-41.0-20210315 | 3/15/2021 | 41 | N | JD21732 | Treatment | Intermediate | 36.8 | **191** | < 10 U | < 10 U | -246.5 | 0.2 | 12.19 | 5.714 | -- | 6.41 | -- | 148 | **657** | -- | -- | -- | -- | -- |
| 114-P2-MW-1I | 114-P2-MW-1I-40.0-20210426 | 4/26/2021 | 40 | N | 4602329401 | Treatment | Intermediate | 59.3 | **162** | 13.0 | 14.2 | -272.1 | 0.31 | 11.45 | 4.706 | -- | 6.22 | -- | 121 | **428** | -- | 160 | 61.5 J | **268** | -- |
| 114-P2-MW-1I | 114-P2-MW-1I-40.0-20210526 | 5/26/2021 | 40 | N | 4602352461 | Treatment | Intermediate | 36.7 | **299** | < 10.0 U | < 10.0 U | -199.3 | 0.36 | 12.15 | 3.926 | -- | 6.23 | -- | 18.3 | **355** | -- | 180 | 88.5 J | **340** | -- |
| 114-P2-MW-1I | 114-P2-MW-1I-40.0-20210624 | 6/24/2021 | 40 | N | 4602373191 | Treatment | Intermediate | 38.4 | 46.4 | < 10.0 U | < 10.0 U | -315.6 | 0 | 9.13 | 3.257 | -- | 1.47 | -- | 35.5 | **620** | -- | 220 | **< 600 U** | **797** | -- |
| 114-P2-MW-1I | 114-P2-MW-1I-43.0-20210719 | 7/19/2021 | 43 | N | 4602390751 | Treatment | Intermediate | **82.0** | 32.7 | < 10.0 U | < 10.0 U | -125.3 | 0.53 | 8.62 | 10.03 | -- | 7.88 | -- | 20.3 | **758** | -- | 320 | **455** | **908** | -- |
| 114-P2-MW-1I | 114-P2-MW-1I-40-20210824 | 8/24/2021 | 40 | N | 4602414891 | Treatment | Intermediate | 31.7 | 53.0 | < 10.0 U | < 10.0 U | -194.5 | 0 | 8.11 | 6.105 | -- | -- NM | -- | 10.6 | **926** | -- | 240 | **315** | **990** | -- |
| 114-P2-MW-1I | 114-P2-MW-1I-40.0-20210920 | 9/20/2021 | 40 | N | 4602432251 | Treatment | Intermediate | 25.0 | **100** | < 10.0 U | < 10.0 U | -183.6 | 1.72 | 8.09 | 7.006 | -- | 7.01 | -- | 9.7 | **792** | -- | 300 | **367** | **1120** | -- |
| 114-P2-MW-1I | 114-P2-MW-1I-40.0-20211018 | 10/18/2021 | 40 | N | 4602453121 | Treatment | Intermediate | 30.4

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P2-MW-1I | 114-P2-MW-1I-40.0-20220412 | 4/12/2022 | 40 | N | 4602561091 | Treatment | Intermediate | 53.4 | **118** | < 10.0 UH | < 10.0 UH | -111.2 | 0.49 | 7.42 | 10.19 | 13.19 | 0.05 | -- | 9.0 | **1360** | -- | 380 | **1710** | **4910** | -- |
| 114-P2-MW-1I | 114-P2-MW-1I-40.0-20220510 | 5/10/2022 | 40 | N | 4602578751 | Treatment | Intermediate | 58.9 | 64.0 | < 10.0 U | < 10.0 U | -96.4 | 2.80 | 7.83 | 9.432 | 15.17 | 150 | -- | 8.7 | **1420** | -- | 400 | **2550** | **6640** | -- |
| 114-P2-MW-1I | 114-P2-MW-1I-40-20220607 | 6/7/2022 | 40 | N | 4602595691 | Treatment | Intermediate | -- | 59.3 | -- | < 10.0 U | -238.2 | 0.14 | 7.36 | 8.587 | 16.66 | 2.68 | -- | 9.9 | **1240** | -- | -- | -- | -- | -- |
| 114-P2-MW-1I | 114-P2-MW-1I-40.0-20220711 | 7/11/2022 | 40 | N | 4602617131 | Treatment | Intermediate | -- | **74.9** | -- | < 10.0 U | -215.5 | 0.73 | 7.34 | 9.7 | 17.95 | 1.52 | -- | 10.7 | **1150** | -- | -- | -- | -- | -- |
| 114-P2-MW-1I | 114-P2-MW-1I-40-20220817 | 8/17/2022 | 40 | N | 4602639901 | Treatment | Intermediate | -- | **105** | -- | < 10.0 U | -206.8 | 7.20 | 7.31 | 9.250 | 19.18 | 9 | -- | 12.3 | **1250** | -- | -- | **2660** | **6590** | -- |
| 114-P2-MW-1I | 114-P2-MW-1I-40-20220817-X | 8/17/2022 | 40 | FD | 4602639901 | Treatment | Intermediate | -- | **89.4** | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 16.7 | **1320** | -- | -- | **2900** | **6550** | -- |
| 114-P2-MW-1I | 114-P2-MW-1I-40.0-20221209 | 12/9/2022 | 40 | N | 4602710741 | Post-Treatment | Intermediate | -- | **99.1** | -- | < 10.0 U | -183.9 | 0.43 | 7.32 | 8.831 | 15.15 | 2.25 | -- | 16.3 J- | **476** | < 1 U | -- | **2470** | **5740** | -- |
| 114-P2-MW-1I | 114-P2-MW-1I-42.4-20230215 | 2/15/2023 | 42.4 | N | 4602746811 | Post-Treatment | Intermediate | -- | **93.9** | -- | < 10.0 U | 39.2 | 8.2 | 7.98 | 0.14 | 19.23 | 8.7 | -- | 18.2 | **827** | < 1 U | -- | **2490** | **4020** | -- |
| 114-P2-MW-1I | 114-P2-MW-1I-42.4-20230519 | 5/19/2023 | 42.4 | N | 4602806561 | Post-Treatment | Intermediate | -- | **170** | -- | < 10.0 U | 188.7 | 1.44 | 7.15 | 6.51 | 19.00 | 7.71 | -- | 19.4 | **638** | < 1 U | -- | **1560** | **3350** | -- |
| 114-P2-MW-1I | 114-P2-MW-1I-42.4-20230818 | 8/18/2023 | 42.4 | N | 4602864961 | Post-Treatment | Intermediate | -- | **85.4** | -- | < 10.0 U | -174.7 | 8.99 | 7.42 | 7.884 | 18.51 | 1.59 | -- | 17.3 J- | **731** | < 1 U | -- | **2160** | **3420** | -- |
| 114-P2-MW-1I | 114-P2-MW-1I-42.4-20231120 | 11/20/2023 | 42.4 | N | JD77343 | Post-Treatment | Intermediate | -- | **90.4** | -- | < 10 UJ | -350.3 | 3.07 | 8.34 | 0.0251 | 15.1 | 5.7 | -- | 17.7 | **791** | -- | -- | -- | -- | -- |
| 114-P2-MW-1I | 114-P2-MW-1I-42.4-20240216 | 2/16/2024 | 42.4 | N | JD82616 | Post-Treatment | Intermediate | -- | **72.6** | -- | 4.8 J+ | -122.2 | 0.18 | 7.35 | 7.57 | 12.1 | 1.96 | -- | 18.5 | **728** | -- | -- | -- | -- | -- |
| 114-P2-MW-1I | 114-P2-MW-1I-42.4-20240516 | 5/16/2024 | 42.4 | N | JD88618 | Post-Treatment | Intermediate | -- | **106** | -- | 6.0 J | -133.1 | 3.67 | 7.4 | 7.02 | 15.3 | 2.33 | -- | 22.2 J- | **656** | -- | -- | -- | -- | -- |
| 114-P2-MW-1I | 114-P2-MW-1I-42.4-20240516-X | 5/16/2024 | 42.4 | FD | JD88618 | Post-Treatment | Intermediate | -- | **92.9** | -- | 3.7 J | -- | -- | -- | -- | -- | -- | -- | 23.6 J- | **638** | -- | -- | -- | -- | -- |
| 114-P2-MW-1I | 114-P2-MW-1I-42.4-20240820 | 8/20/2024 | 42.4 | N | JD94507 | Post-Treatment | Intermediate | -- | **96.2** | -- | 6.2 J | -133 | 0.46 | 7.24 | 7420 | 17.9 | 2.57 | -- | 25.3 | **523** | -- | -- | -- | -- | -- |
| 114-P2-MW-1I | 114-P2-MW-1I-42.4-20240820-X | 8/20/2024 | 42.4 | FD | JD94507 | Post-Treatment | Intermediate | -- | **91.8** | -- | 11 | -- | -- | -- | -- | -- | -- | -- | 24.9 | **533** | -- | -- | -- | -- | -- |
| 114-P2-MW-1I | 114-P2-MW-1I-42.4-20241115 | 11/15/2024 | 42.4 | N | JE731 | Post-Treatment | Intermediate | -- | **95.4 J-** | -- | 4.2 J | -122.3 | 0.15 | 7.22 | 7.34 | 16.9 | 3.26 | -- | 19.7 | **553** | -- | -- | -- | -- | -- |
| 114-P2-MW-2I | 114-P2-MW-2I-38.5-20200319 | 3/19/2020 | 38.5 | N | JD4924 | Baseline | Intermediate | 13.7 | < 10 U | < 10 U | < 10 U | 37.7 | 0.56 | 7.46 | 2.65 | -- | 3.59 | -- | 1.6 | **1100 J-** | < 2.0 U | 3.5 | **509 J** | **2560** | -- |
| 114-P2-MW-2I | 114-P2-MW-21-38.5-20201117 | 11/17/2020 | 38.5 | N | JD16409 | Treatment | Intermediate | 8.7 B | 37.9 | < 10 U | < 10 U | -4 | 0 | 5.43 | 3.26 | -- | 1.9 | -- | 1.3 | **1290** | -- | 96.3 | -- | **3960** | < 0.20 U |
| 114-P2-MW-2I | 114-P2-MW-2I-41.0-20201214 | 12/14/2020 | 41 | N | JD17730 | Treatment | Intermediate | 30.9 | **281** | < 10 U | < 10 U | -77.2 | 0.4 | 7.08 | 6.223 | -- | 1.01 | -- | 2.1 | **1420** | -- | -- | -- | -- | -- |
| 114-P2-MW-2I | 114-P2-MW-2I-41.0-20210111 | 1/11/2021 | 41 | N | JD18861 | Treatment | Intermediate | 44.3 | **116** | 6.5 B | < 10 U | -212.4 | 0.16 | 6.77 | 1.025 | -- | 5.98 | -- | 82.8 | **753** | -- | -- | -- | -- | -- |
| 114-P2-MW-2I | 114-P2-MW-2I-39.0-20210216 | 2/16/2021 | 39 | N | JD20408 | Treatment | Intermediate | **88.3** | **102** | < 10 U | < 10 U | -350.9 | -0.35 ** | 7 | 2.331 | -- | 4.69 | -- | 131 | 187 | -- | -- | -- | -- | -- |
| 114-P2-MW-2I | 114-P2-MW-2I-39.0-20210216-X | 2/16/2021 | 39 | FD | JD20408 | Treatment | Intermediate | **88.2** | **103** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 131 | 195 | -- | -- | -- | -- | -- |
| 114-P2-MW-2I | 114-P2-MW-2I-41.0-20210315 | 3/15/2021 | 41 | N | JD21732 | Treatment | Intermediate | **84.4** | **102** | < 10 U | < 10 U | -359 | -1.66 ** | 7.07 | 3.298 | -- | 7.8 | -- | 134 | **255** | -- | -- | -- | -- | -- |
| 114-P2-MW-2I | 114-P2-MW-2I-41-20210426 | 4/26/2021 | 41 | N | 4602329401 | Treatment | Intermediate | 59.1 | **71.6** | < 10.0 U | < 20.0 U | -330.5 | 1.39 | 6.88 | 2.918 | -- | 4.4 | -- | 42.6 | **302** | -- | 4200 | < 120 U | **5600** | -- |
| 114-P2-MW-2I | 114-P2-MW-2I-40.5-20210526 | 5/26/2021 | 40.5 | N | 4602352461 | Treatment | Intermediate | 35.6 | 38.2 | < 10.0 U | < 10.0 U | -314.2 | 0 | 7.06 | 3.476 | -- | 6.3 | -- | 19.3 | **397** | -- | 4900 | 91.2 J | **5940** | -- |
| 114-P2-MW-2I | 114-P2-MW-2I-40.5-20210624 | 6/24/2021 | 40.5 | N | 4602373191 | Treatment | Intermediate | 27.5 | 36.2 | < 10.0 U | < 10.0 U | -92.7 | 5.96 | 6.69 | 3.038 | -- | 9.62 | -- | 11.0 | **695** | -- | 2800 | **2470** | **7990** | -- |
| 114-P2-MW-2I | 114-P2-MW-2I-38.5-20210719 | 7/19/2021 | 38.5 | N | 4602390751 | Treatment | Intermediate | 39.1 | 39.2 | < 10.0 U | < 10.0 U | -131.8 | 0.59 | 6.97 | 4.423 | -- | 3.5 | -- | 14.8 | **575** | -- | 2700 | **1710** | **6750** | -- |
| 114-P2-MW-2I | 114-P2-MW-2I-40.5-20210824 | 8/24/2021 | 40.5 | N | 4602414891 | Treatment | Intermediate | 29.6 | 31.4 | < 10.0 U | < 10.0 U | -204.1 | 0.49 | 6.92 | 4.225 | -- | -- NM | -- | 9.0 | **534** | -- | 3100 | **1010** | **6390** | -- |
| 114-P2-MW-2I | 114-P2-MW-2I-40.5-20210920 | 9/20/2021 | 40.5 | N | 4602432251 | Treatment | Intermediate | 32.2 | 49.3 | < 10.0 U | < 10.0 U | -310.8 | 0.23 | 6.65 | 3.791 | -- | 5.64 | -- | 21.6 | **468** | -- | 3300 | **2360** | **6230** | -- |
| 114-P2-MW-2I | 114-P2-MW-2I-40.5-20211018 | 10/18/2021 | 40.5 | N | 4602453121 | Treatment | Intermediate | 29.8 | 36.3 | < 10.0 U | < 10.0 U | -244.3 | 0.16 | 6.91 | 4.78 | -- | 5.55 | -- | 10.6 | **477** | -- | 2100 | **3470** | **6120** | -- |
| 114-P2-MW-2I | 114-P2-MW-2I-40.5-20211117 | 11/17/2021 | 40.5 | N | 4602474651 | Treatment | Intermediate | 30.0 | 52.0 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 10.8 | **554** | -- | 2500 | **3110** | **5570** | -- |
| 114-P2-MW-2I | 114-P2-MW-2I-38.5-20211213 | 12/13/2021 | 38.5 | N | 4602490301 | Treatment | Intermediate | 31.7 | 50.7 | < 10.0 U | < 10.0 U | -266.2 | 0.04 | 7.08 | 4.093 | -- | 1.11 | -- | 10.8 | **442** | -- | 2200 | **2570** | **4900** | -- |
| 114-P2-MW-2I | 114-P2-MW-2I-40.5-20220110 | 1/10/2022 | 40.5 | N | 4602504131 | Treatment | Intermediate | 39.0 | 39.5 | < 10.0 U | < 10.0 U | -272 | 3.96 | 7.15 | 4.78 | -- | 9 | -- | 13.1 | **424** | -- | 1200 | **2080** | **4450** | -- |
| 114-P2-MW-2I | 114-P2-MW-2I-40.5-20220210 | 2/10/2022 | 40.5 | N | 4602522631 | Treatment | Intermediate | 64.4 | **113** | < 10.0 U | < 10.0 U | -199 | 0.34 | 7.02 | 5.416 | -- | 7.53 | -- | 14.9 | **398** | -- | 3600 | **8600** | **6140** | -- |
| 114-P2-MW-2I | 114-P2-MW-2I-40.5-20220315 | 3/15/2022 | 40.5 | N | 4602542861 | Treatment | Intermediate | 48.0 | 59.0 | < 10.0 U | < 10.0 U | -93.8 | 0.55 | 7.75 | 3.4 | -- | 5.79 | -- | 15.5 | **274** | -- | 14000 | **8620** | **4690** | -- |
| 114-P2-MW-2I | 114-P2-MW-2I-40.5-20220412 | 4/12/2022 | 40.5 | N | 4602561091 | Treatment | Intermediate | 57.3 | **73.3** | < 10.0 UH | < 10.0 UH | -86.3 | 0.71 | 6.91 | 3.781 | 13.37 | 7.12 | -- | 15.3 | **269** | -- | 14000 | **8450** | **4740** | -- |
| 114-P2-MW-2I | 114-P2-MW-2I-40.5-20220509 | 5/9/2022 | 40.5 | N | 4602578211 | Treatment | Intermediate | 52.1 | 55.2 | < 10.0 U | 13.1 | -96.6 | 0.07 | 6.84 | 3.330 | 15.06 | 4.4 | -- | 15.5 | 229 | -- | 12000 | **7620** | **4200** | -- |
| 114-P2-MW-2I | 114-P2-MW-2I-40.5-20220607 | 6/7/2022 | 40.5 | N | 4602595691 | Treatment | Intermediate | -- | 41.4 | -- | < 10.0 U | -122.2 | 3.54 | 6.97 | 3.199 | 16.91 | 2.12 | -- | 12.9 F1 | **285** | -- | -- | -- | -- | -- |
| 114-P2-MW-2I | 114-P2-MW-2I-40.5-20220711 | 7/11/2022 | 40.5 | N | 4602617131 | Treatment | Intermediate | -- | 65.3 | -- | < 10.0 U | -180.5 | 1.29 | 7.80 | 2.517 | 17.00 | 8.93 | -- | 11.6 | **367** | -- | -- | -- | -- | -- |
| 114-P2-MW-2I | 114-P2-MW-2I-40.5-20220818 | 8/18/2022 | 40.5 | N | 4602640741 | Treatment | Intermediate | -- | 52.9 | -- | < 10.0 U | -96.6 | 0.68 | 7.09 | 2.393 | 17.67 | 6.91 | -- | 10.9 | **501** | -- | -- | **4950** | **3230** | -- |
| 114-P2-MW-2I | 114-P2-MW-2I-38.5-20221212 | 12/12/2022 | 38.5 | N | 4602712001 | Post-Treatment | Intermediate | -- | 31.9 J+ | -- | < 10.0 U | -113.0 | 0.80 | 6.79 | 1.812 | 13.7 | 0.96 | -- | 6.3 | **570** | < 1 U | -- | **8270** | **4550** | -- |
| 114-P2-MW-2I | 114-P2-MW-2I-41.4-20230217 | 2/17/2023 | 41.4 | N | 4602748361 | Post-Treatment | Intermediate | -- | 25.8 | -- | < 10.0 U | -100.9 | 0.25 | 7.03 | 1.434 | 14.39 | 8.4 | -- | 6.2 | **704** | < 1 U | -- | **10300** | **5810** | -- |
| 114-P2-MW-2I | 114-P2-MW-2I-41.4-20230525 | 5/25/2023 | 41.4 | N | 4602810201 | Post-Treatment | Intermediate | -- | 17.0 | -- | < 10.0 U | -122.0 | 0.5 | 6.76 | 1.653 | 16.90 | 1.31 | -- | 5.2 | **805** | < 1 U | -- | **11600** | **6140** | -- |
| 114-P2-MW-2I | 114-P2-MW-2I-41.4-20230821 | 8/21/2023 | 41.4 | N | 4602866341 | Post-Treatment | Intermediate | -- | 18.8 J | -- | **79.7 J** | -163.1 | 0.86 | 6.96 | 2.219 | 22.18 | 1 | -- | 5.2 JB | **698** | < 1 U | -- | **12100** | **6790** | -- |
| 114-P2-MW-2I | 114-P2-MW-2I-41.4-20231121 | 11/21/2023 | 41.4 | N | JD77454 | Post-Treatment | Intermediate | -- | 20.9 | -- | < 10 UJ | -102.6 | 0.48 | 6.89 | 2.277 | 15.7 | 7.1 | -- | 3.3 | **773** | -- | -- | -- | -- | -- |
| 114-P2-MW-2I | 114-P2-MW2I-41.4-20240216 | 2/16/2024 | 41.4 | N | JD82616 | Post-Treatment | Intermediate | -- | 12.8 | -- | < 10 U | -155.7 | 2 | 6.94 | 2.46 | 13.1 | 2.89 | -- | 3.2 | **812** | -- | -- | -- | -- | -- |
| 114-P2-MW-2I | 114-P2-MW-2I-41.4-20240516 | 5/16/2024 | 41.4 | N | JD88618 | Post-Treatment | Intermediate | -- | 13.9 | -- | 20 | -118.5 | 0.14 | 6.91 | 2.331 | 15 | 2.7 | -- | 3.6 J- | **721** | -- | -- | -- | -- | -- |
| 114-P2-MW-2I | 114-P2-MW-2I-41.4-20240820 | 8/20/2024 | 41.4 | N | JD94507 | Post-Treatment | Intermediate | -- | 13.5 | -- | 18 | -113.5 | 0.2 | 7 | 2.65 | 19 | 2.67 | -- | 3.5 | **623** | -- | -- | -- | -- | -- |
| 114-P2-MW-2I | 114-P2-MW-2I-41.4-20241115 | 11/15/2024 | 41.4 | N | JE731 | Post-Treatment | Intermediate | -- | 13.7 J- | -- | 6.6 J | -32.5 | 0.19 | 7.05 | 2.19 | 16.8 | 2.52 | -- | 2.7 | **526** | -- | -- | -- | -- | -- |
| 114-P2-MW-3I | 114-P2-MW-3I-35-20200319 | 3/19/2020 | 35 | N | JD4924 | Baseline | Intermediate | **659000** | **680000** | **606000** | **662000** | 240.1 | 0.385 | 7.01 | 3.693 | -- | 6.2 | -- | 7.6 | **507 J-** | < 2.0 U | 167 | < 100 U | **352** | -- |
| 114-P2-MW-3I | 114-P2-MW-3I-20201120 | 11/20/2020 | 42.5 | N | JD16639 | Treatment | Intermediate | **172000 158000** | **77400 73800** | **72900 135000** | **30000 119000** | -562 | 0 | 7.22 | 2.43 | -- | 9.32 | -- | 512 | 223 | -- | 10.8 | -- | **17400 17500** | < 0.20 U |
| 114-P2-MW-3I | 114-P2-MW-3I-43.0-20201216 | 12/16/2020 | 43 | N | JD17868 | Treatment | Intermediate | **1990** | **4270** | **690** | **980** | 108.3 | 0.42 | 6.59 | 2.752 | -- | 6.32 | -- | 1.3 | **309** | -- | -- | -- | -- | -- |
| 114-P2-MW-3I | 114-P2-MW-3I-44.0-20210112 | 1/12/2021 | 44 | N | JD18928 | Treatment | Intermediate | **567** | **1080** | 6.3 B | < 10 U | -81.2 | 0.81 | 6.6 | 3.535 | -- | 1.71 | -- | 7.7 | **628** | -- | -- | -- | -- | -- |
| 114-P2-MW-3I | 114-P2-MW-3I-43.0-20210217 | 2/17/2021 | 43 | N | JD20435 | Treatment | Intermediate | **357** | **469** | 14 | 32 | -205.5 | 0.47 | 6.52 | 1.955 | -- | 2.81 | -- | 230 | 130 | -- | -- | -- | -- | -- |
| 114-P2-MW-3I | 114-P2-MW-3I-43.0-20210316 | 3/16/2021 | 43 | N | JD21820 | Treatment | Intermediate | **612** | **1890** | < 10 U | 41 | -199.6 | 0.41 | 6.55 | 1.941 | -- | 5.88 | -- | 229 | 90.6 | -- | -- | -- | -- | -- |
| 114-P2-MW-3I | 114-P2-MW-3I-41-20210427 | 4/27/2021 | 41 | N | 4602330111 | Treatment | Intermediate | **2000** | **3070** | < 10.0 U | < 10.0 U | -84.7 | 0.37 | 6.63 | 1.942 | -- | 9.06 | -- | 153 | 46.9 | -- | 150 | **568** | **40900** | -- |
| 114-P2-MW-3I | 114-P2-MW-3I-43-20210525 | 5/25/2021 | 43 | N | 4602351281 | Treatment | Intermediate | **821000** | **748000** | **796000** | **434000** | 98.2 | 0.33 | 8.11 | 5.73 | -- | -- NM | -- | 15.5 | **722** | -- | 370 | **< 600 U** | **3010** | -- |
| 114-P2-MW-3I | 114-P2-MW-3I-43.0-20210622 | 6/22/2021 | 43 | N | 4602371271 | Treatment | Intermediate | **326000** | **338000** | **420000** | **450000** | 152.3 | 0.76 | 7.36 | 2.877 | -- | 37.1 | -- | 19.4 | **600** | -- | 2300 | **< 6000 U** | **16100** | -- |
| 114-P2-MW-3I | 114-P2-MW-3I-42.5-20210720 | 7/20/2021 | 42.5 | N | 4602391431 | Treatment | Intermediate | **239000** | **208000** | **213000** | **215000** | 93.3 | -0.03 ** | 6.91 | 4.907 | -- | 19.2 | -- | 12.6 | **386** | -- | 4000 | **< 2400 U** | **17400** | -- |
| 114-P2-MW-3I | 114-P2-MW-3I-43.0-20210825 | 8/25/2021 | 43 | N | 4602415661 | Treatment | Intermediate | **109000** | **112000** | **125000** | **110000** | 122.3 | 0.71 | 6.92 | 2.637 | -- | 8.22 | -- | 7.8 | **471** | -- | 2100 | **< 600 U** | **12500** | -- |
| 114-P2-MW-3I | 114-P2-MW-3I-43.0-20210922 | 9/22/2021 | 43 | N | 4602433951 | Treatment | Intermediate | **246000** | **220000** | **218000 H** | **223000** | 158 | 1.99 | 15.7 | 3.077 | -- | 19 | -- | 7.2 | **574** | -- | 1800 | < 120 U | **6170** | -- |
| 114-P2-MW-3I | 114-P2-MW-3I-43.0-20211020 | 10/20/2021 | 43 | N | 4602455621 | Treatment | Intermediate | **178** | **450** | < 10.0 U | < 10.0 U | -136.2 | 2.07 | 6.82 | 2.566 | -- | 4.01 | -- | 67.6 | 11.7 | -- | 7900 | **12500** | **32400** | -- |
| 114-P2-MW-3I | 114-P2-MW-3I-43.0-20211118 | 11/18/2021 | 43 | N | 4602475481 | Treatment | Intermediate | **109** | **225** | < 20.0 U | < 20.0 U | -122 | 0.59 | 6.81 | 7.79 | -- | 4.13 | -- | 18.6 | 243 | -- | 12000 | **17800** | **33500** | -- |
| 114-P2-MW-3I | 114-P2-MW-3I-42.5-20211214 | 12/14/2021 | 42.5 | N | 4602491111 | Treatment | Intermediate | **86.7** | **555** | < 20.0 U | < 20.0 U | 178.4 | 0.1 | 6.68 | 2.401 | -- | 5.75 | -- | 20.0 B | **262** | -- | 15000 | **13600** | **30500** | -- |
| 114-P2-MW-3I | 114-P2-MW-3I-43-20220112 | 1/12/2022 | 43 | N | 4602505551 | Treatment | Intermediate | **78.7** | **853** | < 10.0 U | < 10.0 U | -170 | 0 | 7.08 | 2.16 | -- | 7.08 | -- | 19.5 | **316** | -- | 16000 | **13000** | **17000** | -- |
| 114-P2-MW-3I | 114-P2-MW-3I-34-20220211 | 2/11/2022 | 43 | N | 4602523441 | Treatment | Intermediate | **85.2** | **10300** | < 10.0 U | < 50.0 U | -314.5 | 22.68 | 7.03 | 2.105 | -- | 131 | -- | 17.3 | **369** | -- | 8900 | **4330** | **27200** | -- |
| 114-P2-MW-3I | 114-P2-MW-3I-43.0-20220315 | 3/15/2022 | 43 | N | 4602542861 | Treatment | Intermediate | **136** | **36200** | < 50.0 U | < 50.0 U | -303.8 | 0.03 | 7.1 | 2.036 | -- | 111 | -- | 14.8 | **489** | -- | 2400 | < 120 U | **19500** | -- |
| 114-P2-MW-3I | 114-P2-MW-3I-43.0-20220412 | 4/12/2022 | 43 | N | 4602561091 | Treatment | Intermediate | 50.4 | 52.7 | < 20.0 U | < 20.0 U | -301.4 | 0.04 | 7.29 | 2.082 | 17.55 | 9.8 | -- | 11.9 | **554** | -- | 240 | < 120 U | **15600** | -- |
| 114-P2-MW-3I | 114-P2-MW-3I-43-20220509 | 5/9/2022 | 43 | N | 4602578211 | Treatment | Intermediate | 54.0 | **105** | **< 100 U** | **< 100 U** | -391.3 | 5.43 | 7.87 | 2.311 | 16.81 | -- OR | -- | 10.4 | **499** | -- | 73 | < 120 U | **11100** | -- |
| 114-P2-MW-3I | 114-P2-MW-3I-43-20220608 | 6/8/2022 | 43 | N | 4602596671 | Treatment | Intermediate | -- | **139** | -- | **< 100 U** | 166.9 | 0.09 | 6.83 | 2.283 | 17.9 | 7.95 | -- | 12.6 | **765** | -- | -- | -- | -- | -- |
| 114-P2-MW-3I | 114-P2-MW-3I-43.0-20220713 | 7/13/2022 | 43 | N | 4602618361 | Treatment | Intermediate | -- | **108** | -- | < 50.0 U | -361.5 | 8.78 | 8.24 | 2.618 | 17.98 | 9.12 | -- | 15.2 | **680** | -- | -- | -- | -- | -- |
| 114-P2-MW-3I | 114-P2-MW-3I-43.0-20220815 | 8/15/2022 | 43 | N | 4602638581 | Treatment | Intermediate | -- | **120** | -- | < 50.0 U | -334.3 | 1.03 | 6.63 | 2.941 | 19.58 | 4.49 | -- | 13.1 | **1080** | -- | -- | 101 J | **16900** | -- |
| 114-P2-MW-3I | 114-P2-MW-3I-42.5-20221209 | 12/9/2022 | 42.5 | N | 4602710741 | Post-Treatment | Intermediate | -- | **171** | -- | < 10.0 U | -309.8 | 1.26 | 7.06 | 3.594 | 14.3 | 2.49 | -- | 13.8 | **695** | < 1 U | -- | **907** | **15300** | -- |
| 114-P2-MW-3I | 114-P2-MW-3I-45.6-20230217 | 2/17/2023 | 45.6 | N | 4602748361 | Post-Treatment | Intermediate | -- | **95.8** | -- | < 10.0 U | 89.8 | 1.65 | 6.61 | 2.316 | 13.4 | 5.6 | -- | 16.1 | **589** | < 1 U | -- | **4420** | **21900** | -- |
| 114-P2-MW-3I | 114-P2-MW-3I-45.6-20230525 | 5/25/2023 | 45.6 | N | 4602810201 | Post-Treatment | Intermediate | -- | **99.9** | -- | < 10.0 U | -239.3 | 0.12 | 6.66 | 2.029 | 17.57 | 5.31 | -- | 20.4 | **472** | < 1 U | -- | **6450** | **18200** | -- |
| 114-P2-MW-3I | 114-P2-MW-3I-45.6-20230818 | 8/18/2023 | 45.6 | N | 4602864961 | Post-Treatment | Intermediate | -- | **112** | -- | < 10.0 U | -248.4 | 2.92 | 6.67 | 2.349 | 21.52 | 2.06 | -- | 19.1 J- | **401** | < 1 U | -- | **7880** | **18300** | -- |
| 114-P2-MW-3I | 114-P2-MW-3I-45.6-20231117 | 11/17/2023 | 45.6 | N | JD77231 | Post-Treatment | Intermediate | -- | **94.2** | -- | 13 RA | -122.3 | 9.66 | 6.52 | 2.396 | 16.5 | 3.54 | -- | 14.6 | **460** | -- | -- | -- | -- | -- |
| 114-P2-MW-3I | 114-P2-MW-3I-45.6-20240215 | 2/15/2024 | 45.6 | N | JD82518 | Post-Treatment | Intermediate | **75.5** | **72.1** | 7.2 J- | < 10 RA | -201.3 | 0.19 | 6.66 | 2.729 | 10.7 | 7.43 | -- | 13.2 | **556** | -- | -- | -- | -- | -- |
| 114-P2-MW-3I | 114-P2-MW-3I-45.6-20240517 | 5/17/2024 | 45.6 | N | JD88735 | Post-Treatment | Intermediate | -- | 64.0 | -- | < 10 RA | -389 | 0.25 | 7.06 | 2.271 | 16.2 | 3.79 | -- | 14.0 | **663** | -- | -- | -- | -- | -- |
| 114-P2-MW-3I | 114-P2-MW-3I-45.6-20240819 | 8/19/2024 | 45.6 | N | JD94428 | Post-Treatment | Intermediate | -- | **116** | -- | 62 J | -178.4 | 0.63 | 6.7 | 2.947 | 21.6 | 8.28 | -- | 15.9 | **566** | -- | -- | -- | -- | -- |
| 114-P2-MW-3I | 114-P2-MW-3I-45.6-20240819-X | 8/19/2024 | 45.6 | FD | JD94428 | Post-Treatment | Intermediate | -- | **108** | -- | 7.3 J | -- | -- | -- | -- | -- | -- | -- | 15.7 | **573** | -- | -- | -- | -- | -- |
| 114-P2-MW-3I | 114-P2-MW-3I-45.6-20241115 | 11/15/2024 | 45.6 | N | JE731 | Post-Treatment | Intermediate | 50.8 J- | 67.4 J- | 8.9 J | < 10 RA | -475.3 | 0.07 | 6.74 | 2.79 | 17.1 | 48.9 | -- | 11.5 J- | **727** | -- | -- | -- | -- | -- |
| 114-P2-MW-4I | 114-P2-MW-4I-27.5-20200320 | 3/20/2020 | 27.5 | N | JD4980 | Baseline | Intermediate | **44200 J** | **28100 J** | **49200** | **60300 J** | 2.7 | 0.69 | 11.39 | 1.03 | -- | 4.3 | -- | 14.9 | **1140 J-** | < 2.0 U | 355 | 186 | **1330 J** | -- |
| 114-P2-MW-4I | 114-P2-MW-4I-27.5-20201119 | 11/19/2020 | 27.5 | N | JD16573 | Treatment | Intermediate | **29900** | **31400** | **26500 26100** | **27400 24600** | 131 | 0 | 7.65 | 3.18 | -- | 1.13 | -- | 7.9 | **902** | -- | 367 | -- | **154** | < 0.20 U |
| 114-P2-MW-4I | 114-P2-MW-4I-30.0-20201215 | 12/15/2020 | 30 | N | JD17793 | Treatment | Intermediate | **20100** | **16900** | **19200** | **18300** | 71.9 | 0.66 | 7.77 | 5.728 | -- | 1.19 | -- | 5.6 | **792** | -- | -- | -- | -- | -- |
| 114-P2-MW-4I | 114-P2-MW-4I-29.0-20210113 | 1/13/2021 | 29 | N | JD18964 | Treatment | Intermediate | **8560** | **8870** | **8100** | **6900** | -492.7 | 0.38 | 6.28 | 2.967 | -- | 3.22 | -- | 247 | **455** | -- | -- | -- | -- | -- |
| 114-P2-MW4I-28-20210316 | 114-P2-MW4I-28-20210316 | 3/16/2021 | 28 | N | JD21820 | Treatment | Intermediate | **659** | **768** | 40 | 11 | -247.1 | 0.09 | 6.53 | 1.39 | -- | 3.07 | -- | 207 | 16.2 | -- | -- | -- | -- | -- |
| 114-P2-MW-4I | 114-P2-MW-4I-28.0-20210427 | 4/27/2021 | 28 | N | 4602330111 | Treatment | Intermediate | **365** | **1160** | < 10.0 U | < 20.0 U | -310.9 | 5.25 | 6.6 | 1.641 | -- | 9.11 | -- | 161 | 5.83 | -- | 120 | **381** | **3530** | -- |
| 114-P2-MW-4I | 114-P2-MW-4I-29.0-20210526 | 5/26/2021 | 29 | N | 4602352461 | Treatment | Intermediate | **276** | **314** | < 20.0 U | < 20.0 U | -312.8 ** | 56.03 ** | 6.44 | 1.544 | -- | 2.25 | -- | 98.2 | 8.83 | -- | 1100 | **1070** | **5910** | -- |
| 114-P2-MW-4I | 114-P2-MW-4I-29.0-20210623 | 6/23/2021 | 29 | N | 4602372171 | Treatment | Intermediate | **427** | **284** | < 10.0 U | < 10.0 U | -264.9 | -0.06 ** | 6.73 | 1.958 | -- | 1.5 | -- | 67.4 | 55.2 | -- | 4200 | **15300** | **10500** | -- |
| 114-P2-MW-4I | 114-P2-MW-4I-27.5-20210719 | 7/19/2021 | 27.5 | N | 4602390751 | Treatment | Intermediate | **196** | **233** | < 10.0 U | < 10.0 U | -229.4 | 0.04 | 7.06 | 3.129 | -- | 2.97 | -- | 36.4 | 127 | -- | 3100 | **4400** | **4160** | -- |
| 114-P2-MW-4I | 114-P2-MW-4I-29-20210825 | 8/25/2021 | 29 | N | 4602415661 | Treatment | Intermediate | **210** | **246** | < 10.0 U | < 10.0 U | -309.7 | 0.78 | 6.81 | 3.027 | -- | 4.19 | -- | 31.5 | 215 F1 | -- | 4000 F1 | **4950** | **4470** | -- |
| 114-P2-MW-4I | 114-P2-MW-4I-29-20210825-X | 8/25/2021 | 29 | FD | 4602415661 | Treatment | Intermediate | **206** | **237** | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 32.2 | 221 | -- | 4400 | **5120** | **4560** | -- |
| 114-P2-MW-4I | 114-P2-MW-4I-29.0-20210920 | 9/20/2021 | 29 | N | 4602432251 | Treatment | Intermediate | **174** | **199** | < 10.0 U | < 10.0 U | -243.2 | 0.42 | 6.61 | 3.456 | -- | 4.9 | -- | 23.3 F1 | **478** | -- | 6200 | **5060** | **5080** | -- |
| 114-P2-MW-4I | 114-P2-MW-4I-29-20211019 | 10/19/2021 | 29 | N | 4602454351 | Treatment | Intermediate | **171** | **260** | < 10.0 U | < 10.0 U | -196.3 | 0.11 | 6.97 | 4.41 | -- | 4.1 | -- | 21.6 B | **547** | -- | 3200 | **5840** | **5140** | -- |
| 114-P2-MW-4I | 114-P2-MW-4I-29-20211118 | 11/18/2021 | 29 | N | 4602475481 | Treatment | Intermediate | **166** | **179** | < 10.0 U | < 10.0 U | -- | -- | -- | -- | --

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P2-MW-4I | 114-P2-MW-4I-29-20220607 | 6/7/2022 | 29 | N | 4602595691 | Treatment | Intermediate | -- | **120** | -- | < 10.0 U | -77.1 | 0.03 | 7.03 | 5.333 | 17.39 | 3.49 | -- | 14.1 | **621** | -- | -- | -- | -- | -- |
| 114-P2-MW-4I | 114-P2-MW-4I-29.0-20220712 | 7/12/2022 | 29 | N | 4602617771 | Treatment | Intermediate | -- | **208** | -- | < 10.0 U | -136.2 | 15.82 | 7.63 | 5.075 | 17.43 | 4.81 | -- | 15.8 | **598** | -- | -- | -- | -- | -- |
| 114-P2-MW-4I | 114-P2-MW-4I-29-20220817 | 8/17/2022 | 29 | N | 4602639901 | Treatment | Intermediate | -- | **147** | -- | < 10.0 U | -150.0 | 5.20 | 8.79 | 4.210 | 18.09 | 5 | -- | 13.9 | **794** | -- | -- | **4670** | **5220** | -- |
| 114-P2-MW-4I | 114-P2-MW-4I-27.5-20221206 | 12/6/2022 | 27.5 | N | 4602707751 | Post-Treatment | Intermediate | -- | **122** | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 14.3 | **873** | < 1 U | -- | -- | -- | -- |
| 114-P2-MW-4I | 114-P2-MW-4I-27.5-20221212 | 12/12/2022 | 27.5 | N | 4602712001 | Post-Treatment | Intermediate | -- | -- | -- | -- | -10.0 | 0.28 | 7.33 | 4.765 | 12.97 | 2.1 | -- | -- | -- | -- | -- | **3170** | **8550** | -- |
| 114-P2-MW-4I | 114-P2-MW-4I-29.8-20230220 | 2/20/2023 | 29.8 | N | 4602749361 | Post-Treatment | Intermediate | -- | **171** | -- | < 10.0 UJ | -127.6 | 0.36 | 7.22 | 4.422 | 12.48 | 1.02 | -- | 18.5 | **828** | < 1 U | -- | **5300** | **6930** | -- |
| 114-P2-MW-4I | 114-P2-MW-4I-29.8-20230613 | 6/13/2023 | 29.8 | N | 4602822041 | Post-Treatment | Intermediate | -- | **178** | -- | < 10.0 U | -131.9 | 0.24 | 7.65 | 5.207 | 18.8 | 2.25 | -- | 18.1 | **758** | < 1 U | -- | -- | -- | -- |
| 114-P2-MW-4I | 114-P2-MW-4I-29.8-20230613-X | 6/13/2023 | 29.8 | FD | 4602822041 | Post-Treatment | Intermediate | -- | **162** | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 17.8 | **743** | < 1 U | -- | **4290** | **5240** | -- |
| 114-P2-MW-4I | 114-P2-MW-4I-29.8-20230818 | 8/18/2023 | 29.8 | N | 4602864961 | Post-Treatment | Intermediate | -- | **147** | -- | < 10.0 U | -98.7 | 3.81 | 7.16 | 5.35 | 19.19 | 8.52 | -- | 21.0 J- | **987** | < 1 U | -- | **4680** | **4530** | -- |
| 114-P2-MW-4I | 114-P2-MW-4I-29.8-20231120 | 11/20/2023 | 29.8 | N | JD77343 | Post-Treatment | Intermediate | -- | **149** | -- | < 10 UJ | -182.9 | 0.19 | 7.15 | 5.42 | 13.9 | 1.65 | -- | 19.5 | **950** | -- | -- | -- | -- | -- |
| 114-P2-MW-4I | 114-P2-MW-4I-29.8-20240216 | 2/16/2024 | 29.8 | N | JD82616 | Post-Treatment | Intermediate | -- | **147** | -- | < 10 U | -332.5 | 0.19 | 7.2 | 5.87 | 11.1 | 2.36 | -- | 14.3 | **1020** | -- | -- | -- | -- | -- |
| 114-P2-MW-4I | 114-P2-MW-4I-29.8-20240520 | 5/20/2024 | 29.8 | N | JD88833 | Post-Treatment | Intermediate | -- | **132** | -- | < 10 U | -131.9 | 0.3 | 7.15 | 5.46 | 15.8 | 2.48 | -- | 22.3 | **1020** | -- | -- | -- | -- | -- |
| 114-P2-MW-4I | 114-P2-MW-4I-29.8-20240820 | 8/20/2024 | 29.8 | N | JD94507 | Post-Treatment | Intermediate | -- | **154** | -- | 18 | -238.7 | 1 | 7.22 | 5662 | 16.8 | 2.1 | -- | 22.1 | **1010** | -- | -- | -- | -- | -- |
| 114-P2-MW-4I | 114-P2-MW-4I-29.8-20241115 | 11/15/2024 | 29.8 | N | JE731 | Post-Treatment | Intermediate | -- | **130 J-** | -- | < 10 RA | -140.1 | 4.34 | 7.26 | 5.81 | 15.7 | 2.17 | -- | 22.4 J- | **941** | -- | -- | -- | -- | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-38.5-2020325 | 3/25/2020 | 38.5 | N | JD5180 | Baseline | Intermediate | **1500000** | **1300000 J+** | R | R | 257 | 0 | 7.33 | 8.02 | -- | 7.3 | -- | 8.5 | **553** | < 2.0 U | 436 | **< 10000 U** | **< 1500 U** | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-38.5-20201118 | 11/18/2020 | 38.5 | N | JD16478 | Treatment | Intermediate | **1430000** | **1430000** | **1100000**<br>**1110000** | **1200000**<br>**1130000** | 188 | 0 | 7.35 | 5.55 | -- | 0.22 | -- | 10.4 | **620** | -- | 463 | -- | **92.0 B** | 0.13 B |
| 114-P2-MW-5I | 114-P2-MW-5I-41.0-20201214 | 12/14/2020 | 41 | N | JD17730 | Treatment | Intermediate | **1010000** | **1090000** | **999000** | **1030000** | 193 | 0.04 | 7.37 | 12.54 | -- | 1.23 | -- | 9.1 | **899** | -- | -- | -- | -- | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-39.0-20210113 | 1/13/2021 | 39 | N | JD18964 | Treatment | Intermediate | **653000** | **958000** | **779000** | **896000** | 74.4 | 0.29 | 7.21 | 8.808 | -- | 1.61 | -- | 9.6 | **949** | -- | -- | -- | -- | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-41.0-20210316 | 3/16/2021 | 41 | N | JD21820 | Treatment | Intermediate | **681000** | **682000** | **637000** | **605000** | 241.2 | 0.15 | 7.41 | 8.456 | -- | 1.91 | -- | 8.6 | **1180** | -- | -- | -- | -- | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-40-20210428 | 4/28/2021 | 40 | N | 4602331061 | Treatment | Intermediate | **733000 J** | **468000 J** | **735000** | **561000** | 156.5 | 1.06 | 7.39 | 6.749 | -- | 0.31 | -- | 6.1 | **769** | -- | 350 | **< 600 U** | **101** | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-43-20210527 | 5/27/2021 | 43 | N | 4602353531 | Treatment | Intermediate | **946000** | **930000** | **1150000 H** | **953000 F1** | 144.8 | 0.32 | 7.24 | 8.019 | -- | 1.24 | -- | 7.1 | **1040** | -- | 300 | **< 12000 U** | **173 J** | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-43-20210527-X | 5/27/2021 | 43 | FD | 4602353531 | Treatment | Intermediate | **941000** | **916000** | **870000 H** | **870000 H** | -- | -- | -- | -- | -- | -- | -- | 7.4 | **1020** | -- | 300 | **< 12000 U** | **228 J** | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-43.0-20210623 | 6/23/2021 | 43 | N | 4602372171 | Treatment | Intermediate | **691000** | **658000** | **692000** | **708000** | 93.2 | 0.79 | 7.21 | 7.308 | -- | 1.49 | -- | 7.8 | **1200** | -- | 590 | **< 2400 U** | **200** | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-43.0-20210623-X | 6/23/2021 | 43 | FD | 4602372171 | Treatment | Intermediate | **697000** | **709000** | **703000** | **692000** | -- | -- | -- | -- | -- | -- | -- | 8.3 | **1180** | -- | 550 | **< 2400 U** | **164** | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-38.5-20210723 | 7/23/2021 | 38.5 | N | 4602394041 | Treatment | Intermediate | **721000** | **708000** | **719000** | **742000** | 151.2 | 1.11 | 7.27 | 9.344 | -- | 2.08 | -- | 7.2 | **1020** | -- | 410 | **< 6000 U** | **169 J** | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-43.0-20210827 | 8/27/2021 | 43 | N | 4602417371 | Treatment | Intermediate | **2670000** | **2530000** | **2330000** | **2350000** | 161.5 | 0.22 | 6.63 | 10.52 | -- | 2.52 | -- | 11.1 | **944** | -- | 400 | **< 2400 U** | **185** | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-43-20210923 | 9/23/2021 | 43 | N | 4602434911 | Treatment | Intermediate | **691000** | **602000** | **377000** | **388000** | 143.8 | 0.53 | 7.15 | 7.825 | -- | 9.61 | -- | 7.5 | **1150** | -- | 360 | **< 600 U** | **147** | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-43.0-20211019 | 10/19/2021 | 43 | N | 4602454351 | Treatment | Intermediate | **1630000** | **1240000** | **1490000** | **1490000** | 175.8 | 0.79 | 7.19 | 9.77 | -- | 0.62 | -- | 45.2 B | **862** | -- | 370 | **< 600 U** | **105** | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-43.0-20211117 | 11/17/2021 | 43 | N | 4602474651 | Treatment | Intermediate | **1000000** | **1010000** | **962000** | **1010000** | 119.6 | 0.09 | 7.48 | 8.348 | -- | 4.57 | -- | 9.3 | **753** | -- | 370 | **< 1200 U** | **154** | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-38.5-20211215 | 12/15/2021 | 38.5 | N | 4602491921 | Treatment | Intermediate | **1760000** | **2040000** | **1660000** | **1720000** | 154.7 | 0.22 | 7.3 | 9.474 | -- | 3.26 | -- | 17.1 | **730** | -- | 370 | **< 600 U** | **115** | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-43.0-20220112 | 1/12/2022 | 43 | N | 4602505551 | Treatment | Intermediate | **1640000** | **1600000** | **1510000** | **1400000** | 169 | 0 | 7.25 | 8.46 | -- | 6.91 | -- | 16.2 | **658** | -- | 340 | **< 1200 U** | **148** | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-43.0-20220211 | 2/11/2022 | 41 | N | 4602523441 | Treatment | Intermediate | **1900000** | **1510000** | **1670000** | **1760000** | 155.4 | 0.61 | 7.22 | 8.641 | -- | 60.7 | -- | 12.5 | **693** | -- | 360 | **< 1200 U** | **84.5** | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-43.0-20220316 | 3/16/2022 | 43 | N | 4602544241 | Treatment | Intermediate | **1140000** | **1060000** | **1310000** | **1330000** | 189.2 | 3.1 | 7.84 | 5.824 | -- | 7.54 | -- | 13.1 | **690** | -- | 370 | **< 1200 U** | **56.8 J** | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-41.0-20220413 | 4/13/2022 | 41 | N | 4602562001 | Treatment | Intermediate | **561000** | **481000** | **561000** | **511000** | -5.3 | 0.2 | 9.54 | 7.866 | 16.75 | 9.05 | -- | 12.9 | **553** | -- | 110 | **< 600 U** | 24.8 J | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-43.0-20220510 | 5/10/2022 | 43 | N | 4602578751 | Treatment | Intermediate | **1670000** | **1310000** | **943000** | **1240000** | 86 | 2.88 | 7.48 | 8.206 | 15.13 | 3.84 | -- | 10.5 | **835** | -- | 450 | **< 1200 U** | **75.2 J** | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-43-20220608 | 6/8/2022 | 43 | N | 4602596671 | Treatment | Intermediate | -- | **1130000** | -- | **1320000** | 160.9 | 0.25 | 7.53 | 8.13 | 17.57 | 9.15 | -- | 11.7 | **783** | -- | -- | -- | -- | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-43-20220713 | 7/13/2022 | 43 | N | 4602618361 | Treatment | Intermediate | -- | **1430000** | -- | **1090000** | 195.9 | 2.52 | 8.20 | 8.749 | 18.27 | 3.29 | -- | 10.5 | **769** | -- | -- | -- | -- | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-43-20220818 | 8/18/2022 | 43 | N | 4602640741 | Treatment | Intermediate | -- | **1120000** | -- | **1190000** | 123.2 | 2.52 | 7.88 | 7.078 | 20.35 | 5.85 | -- | 15.8 | **720** | -- | -- | **< 600 U^+** | 48.4 | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-43-20220913 | 9/13/2022 | 43 | N | 4602654331 | Treatment | Intermediate | -- | **1140000** | -- | **1220000** | 72.1 | 2.23 | 7.92 | 6.720 | 18.84 | 8.91 | -- | 27.9 | **512** | -- | -- | **< 2400 U** | **151 J** | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-43-20221011 | 10/11/2022 | 43 | N | 4602672521 | Treatment | Intermediate | **1010000** | **894000** | -- | **1150000** | 92.5 | 0.67 | 8.38 | 7.203 | 17.58 | 8.74 | -- | 20.7 | **694** | -- | -- | **< 2400 U** | 33.8 J | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-43-20221011-X | 10/11/2022 | 43 | FD | 4602672521 | Treatment | Intermediate | **1070000** | **908000** | -- | **1170000** | -- | -- | -- | -- | -- | -- | -- | 10.4 | **676** | -- | -- | **< 2400 U** | 48.9 J | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-43-20221110 | 11/10/2022 | 43 | N | 4602692751 | Treatment | Intermediate | -- | **1060000** | -- | **1060000** | 283.1 | 1.33 | 7.85 | 12.827 | 17.7 | 8.64 | -- | 16.3 | **648** | -- | -- | **< 1200 U** | **65.8 J** | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-38.5-20221208 | 12/8/2022 | 38.5 | N | 4602709591 | Treatment | Intermediate | **1040000** | **1080000** | **1020000** | **1010000** | 240.6 | 0.29 | 7.85 | 6.541 | 14.7 | 48.8 | -- | 14.5 | **826** | -- | -- | **< 2400 U** | **62.7 J** | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-41.5-20230220 | 2/20/2023 | 41.5 | N | 4602749361 | Post-Treatment | Intermediate | -- | **353000** | -- | **378000 J-** | -137.6 | 0.32 | 8.46 | 6.264 | 12.25 | 9.13 | -- | 15.7 | **666** | < 1 U | -- | **< 600 U** | 31.2 J | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-41.5-20230518 | 5/18/2023 | 41.5 | N | 4602805391 | Post-Treatment | Intermediate | -- | **242000** | -- | **256000** | -115.6 | 0.23 | 8.54 | 5.078 | 16.5 | 9.59 | -- | 26.3 | **453** | < 40 U | -- | **< 2400 U** | 32.4 J | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-41.5-20230816 | 8/16/2023 | 41.5 | N | 4602863141 | Post-Treatment | Intermediate | **744000** | **721000** | **716000** | **760000** | 101.2 | 0.46 | 8.17 | 13.89 | 18.39 | 5.68 | -- | 15.0 | **519** | < 10 U | -- | **< 1200 U** | 39.4 J | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-41.5-20231117 | 11/17/2023 | 41.5 | N | JD77231 | Post-Treatment | Intermediate | -- | **357000** | -- | **386000 RA** | 79.4 | 0.21 | 8.55 | 6406 | 15.7 | 8.61 | -- | 7.2 J | **751** | -- | -- | -- | -- | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-41.5-20240215 | 2/15/2024 | 41.5 | N | JD82518 | Post-Treatment | Intermediate | -- | **356000 J** | -- | **558000 J-** | -123.8 | 0.19 | 8.32 | 6.78 | 12.6 | 5.41 | -- | 12.9 | **719** | -- | -- | -- | -- | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-41.5-20240521 | 5/21/2024 | 41.5 | N | JD88897 | Post-Treatment | Intermediate | -- | **606000** | -- | **604000** | 137.5 | 0.2 | 7.87 | 6.49 | 15.5 | 3.23 | -- | 15.5 | **780** | -- | -- | -- | -- | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-41.5-20240815 | 8/15/2024 | 41.5 | N | JD94204 | Post-Treatment | Intermediate | -- | **385000** | -- | **485000** | 94.3 | 0.31 | 8.25 | 6.17 | 20.3 | 9.43 | -- | 15.6 | **791** | -- | -- | -- | -- | -- |
| 114-P2-MW-5I | 114-P2-MW-5I-41.5-20241115 | 11/15/2024 | 41.5 | N | JE731 | Post-Treatment | Intermediate | -- | **983000** | -- | **860000 J-** | 120.1 | 0.32 | 7.69 | 7.37 | 15.7 | 3.06 | -- | 10.3 J- | **874** | -- | -- | -- | -- | -- |
| 114-P2-MW-6I | 114-P2-MW-6I-42.5-20200317 | 3/17/2020 | 42.5 | N | JD4798 | Baseline | Intermediate | **2940000** | **2960000** | **3040000** | **3230000** | 253.8 | 0.88 | 6.94 | 8.098 | -- | 0 | -- | 11.7 | **734 J-** | R | 256 | 75.6 J | **< 750 U** | -- |
| 114-P2-MW-6I | 114-P2-MW-6I-45.5-20201118 | 11/18/2020 | 45.5 | N | JD16478 | Treatment | Intermediate | **2620000** | **2600000** | **2570000**<br>**2660000** | **2360000**<br>**2430000** | 248 | 0 | 6.99 | 6.79 | -- | 0.44 | -- | 11.6 | **637** | -- | 243 | -- | **142 B** | < 1.0 U |
| 114-P2-MW-6I | 114-P2-MW-6I-45.0-20201214 | 12/14/2020 | 45 | N | JD17730 | Treatment | Intermediate | **2570000** | **2670000** | **2560000** | **2470000** | 232.6 | 0.19 | 7 | 14.6 | -- | 0.23 | -- | 10.7 | **827** | -- | -- | -- | -- | -- |
| 114-P2-MW-6I | 114-P2-MW-6I-45.0-20210113 | 1/13/2021 | 45 | N | JD18964 | Treatment | Intermediate | **1960000** | **2010000** | **2360000** | **2430000** | 148.2 | 0.37 | 7.1 | 6.499 | -- | 1.08 | -- | 8.9 | **626** | -- | -- | -- | -- | -- |
| 114-P2-MW-6I | 114-P2-MW-6I-45.0-20210316 | 3/16/2021 | 45 | N | JD21820 | Treatment | Intermediate | **1580000** | **1590000** | **2410000** | **2500000** | 207.6 | 0.61 | 6.9 | 6.416 | -- | 0.73 | -- | 9.3 | **738** | -- | -- | -- | -- | -- |
| 114-P2-MW-6I | 114-P2-MW-6I-45-20210427 | 4/27/2021 | 45 | N | 4602330111 | Treatment | Intermediate | **1200000** | **1240000** | **1200000** | **1270000** | 172.1 | 2.19 | 7.1 | 5.325 | -- | 0.31 | -- | 6.8 | **509** | -- | 260 | < 120 U | **167** | -- |
| 114-P2-MW-6I | 114-P2-MW-6I-45.0-20210525 | 5/25/2021 | 45 | N | 4602351281 | Treatment | Intermediate | **1540000** | **1410000** | **1440000 H** | **1390000 H** | 196.5 | 1.56 | 7.17 | 6.236 | -- | 0.08 | -- | 6.2 | **481** | -- | 190 | **< 600 U** | **70.8** | -- |
| 114-P2-MW-6I | 114-P2-MW-6I-45.0-20210622 | 6/22/2021 | 45 | N | 4602371271 | Treatment | Intermediate | **1030000** | **945000** | **1130000** | **1200000** | 200.1 | 0.03 | 7.14 | 4.37 | -- | 1.05 | -- | 4.4 | **518** | -- | 140 | **< 12000 U** | **< 800 U** | -- |
| 114-P2-MW-6I | 114-P2-MW-6I-42.5-20210726 | 7/26/2021 | 42.5 | N | 4602395391 | Treatment | Intermediate | **1190000** | **1130000** | **1180000** | **1220000** | -29.1 | 7.98 | 7.58 | 4.153 | -- | 1456 | -- | 107 | **413** | -- | 200 | **< 12000 U** | **218 J** | -- |
| 114-P2-MW-6I | 114-P2-MW-6I-45.0-20210830 | 8/30/2021 | 45 | N | 4602418391 | Treatment | Intermediate | **1370000** | **1480000** | **1440000** | **1770000** | 144.2 | 3.99 | 7.03 | 6.527 | -- | 69.8 | -- | 122 | **523** | -- | 210 | **< 6000 U** | **392 J** | -- |
| 114-P2-MW-6I | 114-P2-MW-6I-45.0-20210922 | 9/22/2021 | 45 | N | 4602433951 | Treatment | Intermediate | **3560000** | **2870000** | **3250000** | **2780000** | 194.2 | 0.52 | 7.1 | 10.1 | -- | 8.61 | -- | 14.9 | **915** | -- | 360 | **< 600 U** | **261** | -- |
| 114-P2-MW-6I | 114-P2-MW-6I-45.0-20211020 | 10/20/2021 | 45 | N | 4602455621 | Treatment | Intermediate | **3710000** | **2840000** | **2890000** | **3060000** | 218.2 | 1.04 | 6.83 | 10.8 | -- | 8.93 | -- | 14.9 | **848** | -- | 410 | **< 600 U** | **238** | -- |
| 114-P2-MW-6I | 114-P2-MW-6I-45-20211118 | 11/18/2021 | 45 | N | 4602475481 | Treatment | Intermediate | **3570000** | **2700000** | **2880000** | **2820000** | 189 | -- NM | 7.17 | 8.741 | -- | 8.57 | -- | 15.6 | **789** | -- | 500 | **< 600 U** | **197** | -- |
| 114-P2-MW-6I | 114-P2-MW-6I-42.5-20211214 | 12/14/2021 | 42.5 | N | 4602491111 | Treatment | Intermediate | **3340000** | **2830000** | **3570000** | **2840000** | 177.7 | 0.06 | 6.96 | 10.96 | -- | 40.11 | -- | 15.5 B | **760** | -- | 410 | **< 6000 U** | **219 J** | -- |
| 114-P2-MW-6I | 114-P2-MW-6I-45-20220112 | 1/12/2022 | 45 | N | 4602505551 | Treatment | Intermediate | **3480000** | **2920000** | **2720000** | **2740000** | 235 | 0 | 7.8 | 11.1 | -- | 7.12 | -- | 15.7 | **777** | -- | 430 | **< 1200 U** | **183** | -- |
| 114-P2-MW-6I | 114-P2-MW-6I-45-20220211 | 2/11/2022 | 45 | N | 4602523441 | Treatment | Intermediate | **3120000** | **2660000** | **2950000** | **2600000** | 159 | 0.6 | 8.12 | 8.876 | -- | 6.49 | -- | 14.5 | **759** | -- | 430 | **< 1200 U** | **147** | -- |
| 114-P2-MW-6I | 114-P2-MW-6I-45-20220316 | 3/16/2022 | 45 | N | 4602544241 | Treatment | Intermediate | **2780000** | **2120000** | **2900000** | **3010000** | 204.3 | 6.05 | 7.07 | 7.067 | -- | 3.21 | -- | 19.0 | **734** | -- | 470 | **< 1200 U** | **142** | -- |
| 114-P2-MW-6I | 114-P2-MW-6I-45.0-20220414 | 4/14/2022 | 45 | N | 4602562981 | Treatment | Intermediate | **3270000** | **3020000** | **2680000** | **2660000** | 230.9 | 2.48 | 7.52 | 9.980 | 15.10 | 5.32 | -- | 22.2 | **732** | -- | 400 | **< 1200 U** | **141** | -- |
| 114-P2-MW-6I | 114-P2-MW-6I-45.0-20220509 | 5/9/2022 | 45 | N | 4602578211 | Treatment | Intermediate | **2900000** | **2870000** | **3530000** | **3420000** | 237 | 1.02 | 6.91 | 9.998 | 14.58 | 2.92 | -- | 16.6 | **751** | -- | 460 | **< 1200 U** | **129** | -- |
| 114-P2-MW-6I | 114-P2-MW-6I-45.0-20220608 | 6/8/2022 | 45 | N | 4602596671 | Treatment | Intermediate | -- | **2930000** | -- | **2950000** | 205.8 | 5.91 | 7.11 | 10.79 | 18.53 | 5.91 | -- | 16.4 | **727** | -- | -- | -- | -- | -- |
| 114-P2-MW-6I | 114-P2-MW-6I-45.0-20220713 | 7/13/2022 | 45 | N | 4602618361 | Treatment | Intermediate | -- | **2760000** | -- | **2690000** | 233.9 | 2.95 | 7.63 | 9.992 | 18.42 | 7.18 | -- | 23.8 | **687** | -- | -- | -- | -- | -- |
| 114-P2-MW-6I | 114-P2-MW-6I-45-20220819 | 8/19/2022 | 45 | N | 4602641451 | Treatment | Intermediate | -- | **1740000** | -- | **1760000** | 160.6 | 0.16 | 8.03 | 6.139 | 17.91 | 8.40 | -- | 15.1 | **543** | -- | -- | **< 2400 U** | **116 J** | -- |
| 114-P2-MW-6I | 114-P2-MW-6I-45-20220913 | 9/13/2022 | 45 | N | 4602654331 | Treatment | Intermediate | -- | **1530000** | -- | **1310000** | 242.0 | 0.59 | 6.86 | 6.542 | 20.10 | 5.96 | -- | 12.0 F1 | **518** | -- | -- | **< 2400 U** | **110 J** | -- |
| 114-P2-MW-6I | 114-P2-MW-6I-45-20220913-X | 9/13/2022 | 45 | FD | 4602654331 | Treatment | Intermediate | -- | **1450000** | -- | **1390000** | -- | -- | -- | -- | -- | -- | -- | 10.6 | **526** | -- | -- | **< 2400 U** | **111 J** | -- |
| 114-P2-MW-6I | 114-P2-MW-6I-45-20221013 | 10/13/2022 | 45 | N | 4602674311 | Treatment | Intermediate | -- | **1740000** | -- | **1860000** | 196.9 | 1.02 | 7.54 | 6.344 | 17.82 | 7.71 | -- | 12.6 | **740** | -- | -- | **< 2400 U** | **101 J** | -- |
| 114-P2-MW-6I | 114-P2-MW-6I-45-20221110 | 11/10/2022 | 45 | N | 4602692751 | Treatment | Intermediate | -- | **2630000** | -- | **2590000** | 242.6 | 0.78 | 7.13 | 15.013 | 16.1 | 8.2 | -- | 15.6 | **666** | -- | -- | **< 1200 U** | **142** | -- |
| 114-P2-MW-6I | 114-P2-MW-6I-42.5-20221207 | 12/7/2022 | 42.5 | N | 4602708821 | Treatment | Intermediate | -- | **13000000** | -- | **2520000** | 189.0 | 0.93 | 7.11 | 8.225 | 15.1 | 10 | -- | 16.2 | **391** | -- | -- | **< 2400 U** | **154 J** | -- |
| 114-P2-MW-6I | 114-P2-MW-6I-45.6-20230220 | 2/20/2023 | 45.6 | N | 4602749361 | Post-Treatment | Intermediate | **2280000** | **2530000** | **2480000** | **2810000 J-** | 40.7 | 0.32 | 7.38 | 8.686 | 12.96 | 15.5 | -- | 16.3 | **967** | < 1 U | -- | **< 600 U** | **111** | -- |
| 114-P2-MW-6I | 114-P2-MW-6I-45.6-20230519 | 5/19/2023 | 45.6 | N | 4602806561 | Post-Treatment | Intermediate | -- | **2500000** | -- | **2560000** | 443.4 | 4.55 | 6.45 | 8.73 | 16.08 | 7.22 | -- | 13.4 | **861** | < 100 U | -- | **< 2400 U** | **132 J** | -- |
| 114-P2-MW-6I | 114-P2-MW-6I-45.6-20230519-X | 5/19/2023 | 45.6 | FD | 4602806561 | Post-Treatment | Intermediate | -- | **2530000** | -- | **2590000** | -- | -- | -- | -- | -- | -- | -- | 13.3 | **815** | < 100 U | -- | **< 2400 U** | **122 J** | -- |
| 114-P2-MW-6I | 114-P2-MW-6I-45.6-20230816 | 8/16/2023 | 45.6 | N | 4602863141 | Post-Treatment | Intermediate | -- | **2590000** | -- | **1740000** | 333.8 | 2.02 | 7.32 | 10.76 | 26.19 | 3.74 | -- | 14.3 | **698** | < 10 U | -- | **< 1200 U** | **103** | -- |
| 114-P2-MW-6I | 114-P2-MW-6I-45.6-20231117 | 11/17/2023 | 45.6 | N | JD77231 | Post-Treatment | Intermediate | -- | **2280000** | -- | **2110000 RA** | 203.4 | 0.15 | 7.01 | 9.84 | 16.8 | 6.7 | -- | 4.0 J | **1120** | -- | -- | -- | -- | -- |
| 114-P2-MW-6I | 114-P2-MW-6I-45.6-20240215 | 2/15/2024 | 45.6 | N | JD82518 | Post-Treatment | Intermediate | -- | **2140000** | -- | **2250000 J-** | 174.8 | 0.38 | 7.17 | 9.45 | 10.5 | 8.69 | -- | 27.4 | **1120** | -- | -- | -- | -- | -- |
| 114-P2-MW-6I | 114-P2-MW-6I-45.6-20240516 | 5/16/2024 | 45.6 | N | JD88618 | Post-Treatment | Intermediate | -- | **2220000** | -- | **1850000** | 56.9 | 0.2 | 7.14 | 10.5 | 15.3 | 7.52 | -- | 15.7 | **1190** | -- | -- | -- | -- | -- |
| 114-P2-MW-6I | 114-P2-MW-6I-45.6-20240815 | 8/15/2024 | 45.6 | N | JD94204 | Post-Treatment | Intermediate | -- | **1990000** | -- | **2060000** | 131.3 | 0.27 | 7.09 | 9.67 | 22 | 9.17 | -- | 13.4 | **1200** | -- | -- | -- | -- | -- |
| 114-P2-MW-6I | 114-P2-MW-6I-45.6-20241118 | 11/18/2024 | 45.6 | N | JE873 | Post-Treatment | Intermediate | -- | **1950000** | -- | **1620000** | 51 | 0.15 | 7.36 | 9.27 | 17 | 2.42 | -- | R | **1180** | -- | -- | -- | -- | -- |
| 114-P2-MW-7I | 114-P2-MW-7I-24.5-2020326 | 3/26/2020 | 24.5 | N | JD5217 | Baseline | Intermediate | **327000** | **316000** | **278000** | **293000** | 194 | 8.31 | 9.11 | 2.67 | -- | 6.3 | -- | 8.0 J | **1520** | < 2.0 U | 372 | **< 500 U** | **< 75 U** | -- |
| 114-P2-MW-7I | 114-P2-MW-7I-25-20201119 | 11/19/2020 | 25 | N | JD16573 | Treatment | Intermediate | **383000** | **537000** | **448000**<br>**424000** | **416000**<br>**407000** | 131 | 0 | 7.98 | 5.65 | -- | 1.98 | -- | 9.6 | **987** | -- | 628 | -- | **< 150 U** | 0.16 B |
| 114-P2-MW-7I | 114-P2-MW-7I-27.0-20201216 | 12/16/2020 | 27 | N | JD17868 | Treatment | Intermediate | **439000** | **407000** | **372000** | **390000** | 191.3 | 0.56 | 7.68 | 6.67 | -- | 2.83 | -- | 8.3 | **1230** | -- | -- | -- | -- | -- |
| 114-P2-MW-7I | 114-P2-MW-7I-27.0-20210114 | 1/14/2021 | 27 | N | JD19032 | Treatment | Intermediate | **392000** | **353000** | **332000** | **338000** | 100.3 | 1.98 | 7.5 | 6.439 | -- | 2.31 | -- | 8.0 | **1050** | -- | -- | -- | -- | -- |
| 114-P2-MW-7I | 114-P2-MW-7I-27.0-20210316 | 3/16/2021 | 27 | N | JD21820 | Treatment | Intermediate | **109000** | **93300** | **122000** | **129000** | 62.9 | 0.17 | 7.65 | 4.666 | -- | 2.86 | -- | 5.8 | **994** | -- | -- | -- | -- | -- |
| 114-P2-MW-7I | 114-P2-MW-7I-27.0-20210428 | 4/28/2021 | 27 | N | 4602331061 | Treatment | Intermediate | **330000** | **261000** | **313000** | **324000** | 218.6 | 1.81 | 7.4 | 5.571 | -- | 7.42 | -- | 6.3 | **983 F1** | -- | 510 | **< 600 U** | 17.1 J | -- |
| 114-P2-MW-7I | 114-P2-MW-7I-27.0-20210428-X | 4/28/2021 | 27 | FD | 4602331061 | Treatment | Intermediate | **333000** | **284000** | **309000** | **317000** | -- | -- | -- | -- | -- | -- | -- | 6.3 | **956** | -- | 550 | **< 600 U** | 17.1 J | -- |
| 114-P2-MW-7I | 114-P2-MW-7I-27-20210526 | 5/26/2021 | 27 | N | 4602352461 | Treatment | Intermediate | **474000** | **511000** | **503000** | **491000** | 194 | 3.47 | 7.59 | 5.95 | -- | -- NM | -- | 9.3 | **1060** | -- | 700 | **< 600 U** | 17.2 J | -- |
| 114-P2-MW-7I | 114-P2-MW-7I-27.0-20210624 | 6/24/2021 | 27 | N | 4602373191 | Treatment | Intermediate | **740000** | **659000** | **721000** | **744000** | 181.8 | 1.11 | 7.51 | 4.783 | -- | 6.04 | -- | 11.6 | **1100** | -- | 490 | **< 2400 U** | **297** | -- |
| 114-P2-MW-7I | 114-P2-MW-7I-25.5-20210722 | 7/22/2021 | 25.5 | N | 4602393171 | Treatment | Intermediate | **394000** | **372000** | **352000** | **500000** | 97.1 | 1.92 | 7.53 | 5.933 | --

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P2-MW-7I | 114-P2-MW-7I-25.5-20211215 | 12/15/2021 | 25.5 | N | 4602491921 | Treatment | Intermediate | **630000** | **633000** | **480000** | **374000** | -303.1 | 0.01 | 7.8 | 4.767 | -- | 2.41 | -- | 58.2 | **309** | -- | 290 | **< 600 U** | **115** | -- |
| 114-P2-MW-7I | 114-P2-MW-7I-27.0-20220113 | 1/13/2022 | 27 | N | 4602506661 | Treatment | Intermediate | **125000** | **104000** | **111000** | **123000** | -20 | 0 | 6.91 | 2.78 | -- | 7.2 | -- | 421 | 118 | -- | 130 | **< 1200 U** | **1090** | -- |
| 114-P2-MW-7I | 114-P2-MW-7I-27.0-20220216 | 2/16/2022 | 27 | N | 4602526321 | Treatment | Intermediate | **53500** | **64200** | **42400** | **38000** | -181.8 | 6.09 | 7.47 | 2.49 | -- | 83.5 | -- | 432 | 74.8 | -- | 320 | **413 J** | **2190** | -- |
| 114-P2-MW-7I | 114-P2-MW-7I-27-20220316 | 3/16/2022 | 27 | N | 4602544241 | Treatment | Intermediate | **87900** | **106000** | **110000** | **159000** | -- | -- | -- | -- | -- | -- | -- | 474 F1 | 110 | -- | 10000 | **< 600 U** | **3300** | -- |
| 114-P2-MW-7I | 114-P2-MW-7I-27-20220414 | 4/14/2022 | 27 | N | 4602562981 | Treatment | Intermediate | **56700** | **72200** | **20100** | **75300** | 18.0 | 0.30 | 6.99 | 1.937 | 15.40 | 74.0 | -- | 430 | 85.5 | -- | 17000 | **327** | **5520** | -- |
| 114-P2-MW-7I | 114-P2-MW-7I-27.0-20220511 | 5/11/2022 | 27 | N | 4602579551 | Treatment | Intermediate | **41400** | **47000** | **38100** | **41300** | -33.3 | 0.13 | 7.35 | 2.791 | 14.86 | 135 | -- | 312 | 96.8 | -- | 20000 | **< 600 U** | **8100** | -- |
| 114-P2-MW-7I | 114-P2-MW-7I-27-20220609 | 6/9/2022 | 27 | N | 4602597481 | Treatment | Intermediate | -- | **2540** | -- | < 10.0 U | -113.6 | 2.28 | 7.05 | 2.346 | 16.47 | 8.45 | -- | 183 | 36.8 | -- | -- | -- | -- | -- |
| 114-P2-MW-7I | 114-P2-MW-7I-27.0-20220713 | 7/13/2022 | 27 | N | 4602618361 | Treatment | Intermediate | -- | **5620** | -- | **8280** | -46.4 | 1.03 | 7 | 2.392 | 17.3 | 6.32 | -- | 127 | 74.4 | -- | -- | -- | -- | -- |
| 114-P2-MW-7I | 114-P2-MW-7I-27.0-20220713-X | 7/13/2022 | 27 | FD | 4602618361 | Treatment | Intermediate | -- | **6100** | -- | **4030** | -- | -- | -- | -- | -- | -- | -- | 132 | 79.3 | -- | -- | -- | -- | -- |
| 114-P2-MW-7I | 114-P2-MW-7I-27-20220819 | 8/19/2022 | 27 | N | 4602641451 | Treatment | Intermediate | **22300** | **74900** | **53200** | **37500** | 166.8 | 1.02 | 6.52 | 3.117 | 18.46 | 357 | -- | 249 | 88.4 | -- | -- | 246 | **4400** | -- |
| 114-P2-MW-7I | 114-P2-MW-7I-27-20220913 | 9/13/2022 | 27 | N | 4602654331 | Treatment | Intermediate | **101000** | **149000** | **98800** | **112000** | 123.1 | 1.20 | 6.73 | 3.439 | 19.31 | 326 | -- | 167 | 98.9 | -- | -- | **< 1200 U** | **7220** | -- |
| 114-P2-MW-7I | 114-P2-MW-7I-27-20221012 | 10/12/2022 | 27 | N | 4602673311 | Treatment | Intermediate | **457** | **4680** | < 20.0 U | < 20.0 U | -138.4 | 3.58 | 6.78 | 2.833 | 19.57 | 67.5 | -- | 143 | 40.0 | -- | -- | **35400** | **5380** | -- |
| 114-P2-MW-7I | 114-P2-MW-7I-27-20221108 | 11/8/2022 | 27 | N | 4602691101 | Treatment | Intermediate | **130000** | **116000** | **112000** | **94200** | 149.6 | 0.63 | 6.81 | 2.773 | 16.5 | 392 | -- | 207 | 135 | -- | -- | **479 J** | **7370** | -- |
| 114-P2-MW-7I | 114-P2-MW7I-25.5-20221206 | 12/6/2022 | 25.5 | N | 4602707741 | Treatment | Intermediate | **27300** | **33800** | **41700** | **41700** | 67.3 | 0.07 | 6.97 | 2.632 | 14.5 | 97.9 | -- | 88.4 | 52.5 | -- | -- | **446 J** | **3400** | -- |
| 114-P2-MW-7I | 114-P2-MW-7I-28.3-20230221 | 2/21/2023 | 28.3 | N | 4602750101 | Post-Treatment | Intermediate | **337** | **446** | < 20.0 U | < 20.0 U | -126.3 | 0.41 | 6.32 | 2.14 | 11.4 | 58 | -- | 106 | 22.7 | < 1 U | -- | **47500** | **3540** | -- |
| 114-P2-MW-7I | 114-P2-MW-7I-28.3-20230519 | 5/19/2023 | 28.3 | N | 4602806561 | Post-Treatment | Intermediate | **396** | **1260** | < 20.0 U | < 20.0 U | -80.1 | 3.11 | 6.22 | 2.219 | 15.88 | 11.7 | -- | 79.9 | 15.0 | < 1 U | -- | **74200** | **4410** | -- |
| 114-P2-MW-7I | 114-P2-MW-7I-28.3-20230822 | 8/22/2023 | 28.3 | N | 4602866741 | Post-Treatment | Intermediate | -- | **1390** | -- | < 10.0 UJ | 156.2 | 5.34 | 6.43 | 4.48 | 26.78 | 13.4 | -- | 75.7 | 1.42 J | < 1 U | -- | **70700** | **4680** | -- |
| 114-P2-MW-7I | 114-P2-MW-7I-28.3-20231117 | 11/17/2023 | 28.3 | N | JD77231 | Post-Treatment | Intermediate | -- | **483** | -- | 47 RA | -127.7 | 0.15 | 6.56 | 2.343 | 16.5 | 7.87 | -- | 62.3 | < 2.0 U | -- | -- | -- | -- | -- |
| 114-P2-MW-7I | 114-P2-MW-7I-28.3-20240214 | 2/14/2024 | 28.3 | N | JD82438 | Post-Treatment | Intermediate | -- | **679** | -- | 12 | -122.7 | 0.28 | 6.68 | 2.362 | 10.9 | 9.54 | -- | 70.3 | 1.1 J | -- | -- | -- | -- | -- |
| 114-P2-MW-7I | 114-P2-MW-7I-28.3-20240521 | 5/21/2024 | 28.3 | N | JD88897 | Post-Treatment | Intermediate | -- | **555** | -- | 16 | -254 | 0.16 | 6.58 | 2.685 | 15.9 | 9.52 | -- | 73.2 | 5.9 J | -- | -- | -- | -- | -- |
| 114-P2-MW-7I | 114-P2-MW-7I-28.3-20240821 | 8/21/2024 | 28.3 | N | JD94599 | Post-Treatment | Intermediate | -- | **503** | -- | 12 | -119.7 | 0.25 | 6.61 | 2.79 | 21.7 | 7.76 | -- | 73.8 | < 20 U | -- | -- | -- | -- | -- |
| 114-P2-MW-7I | 114-P2-MW-7I-28.3-20241120 | 11/20/2024 | 28.3 | N | JE1025 | Post-Treatment | Intermediate | -- | **486** | -- | 11 | -120.6 | 0.8 | 6.82 | 2.71 | 17 | 9.07 | -- | 68.2 J- | 20.0 | -- | -- | -- | -- | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-36.5-20200320 | 3/20/2020 | 36.5 | N | JD5007 | Baseline | Intermediate | **147000** | **152000** | **153000** | **146000** | 85.9 | 0.25 | 7.27 | 2.423 | -- | 0.89 | -- | 7.0 | **684 J-** | R | 389 | < 100 U | 49.4 J | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-36.5-20200320-X | 3/20/2020 | 36.5 | FD | JD5007 | Baseline | Intermediate | **149000** | **160000** | **163000** | **156000** | -- | -- | -- | -- | -- | -- | -- | 6.9 | **667 J-** | R | 375 | < 100 U | 49.8 J | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-36.5-20201119 | 11/19/2020 | 36.5 | N | JD16573 | Treatment | Intermediate | **283000** | **251000** | **246000**<br>**254000** | **243000**<br>**280000** | 178 | 0 | 7.39 | 2.94 | -- | 8.3 | -- | 5.6 | **718** | -- | 443 | -- | **56.0 B** | < 0.20 U |
| 114-P2-MW-8I | 114-P2-MW-8I-38.0-20201216 | 12/16/2020 | 38 | N | JD17868 | Treatment | Intermediate | **514000** | **578000** | **505000** | **496000** | 42.4 | 0.12 | 7.36 | 7.272 | -- | 1.95 | -- | 7.4 | **788** | -- | -- | -- | -- | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-38.0-20210114 | 1/14/2021 | 38 | N | JD19032 | Treatment | Intermediate | **628000** | **619000** | **534000** | **555000** | 131.2 | 1.95 | 7.05 | 4.404 | -- | 5 | -- | 6.3 | 80.7 | -- | -- | -- | -- | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-36.5-20210317 | 3/17/2021 | 36.5 | N | JD21863 | Treatment | Intermediate | **553000** | **398000** | **501000** | **511000** | 231.1 | 0.69 | 7.22 | 3.818 | -- | 2.45 | -- | 5.6 | **769** | -- | -- | -- | -- | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-37-20210426 | 4/26/2021 | 37 | N | 4602329401 | Treatment | Intermediate | **623000** | **577000** | **694000** | **699000** | 152.9 | 0.46 | 7.17 | 5.134 | -- | 6.01 | -- | 5.6 | **717** | -- | 750 | < 120 U | **103** | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-37.0-20210525 | 5/25/2021 | 37 | N | 4602351281 | Treatment | Intermediate | **957000** | **804000** | **877000** | **963000** | 113 | 0.48 | 7.71 | 5.516 | -- | 3.52 | -- | 8.0 | **804** | -- | 480 | **< 600 U** | **128** | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-37.0-20210622 | 6/22/2021 | 37 | N | 4602371271 | Treatment | Intermediate | **1070000** | **1100000** | **1110000** | **1130000** | 232.7 | 0.56 | 7.17 | 2.268 | -- | 8.26 | -- | 7.7 | **1050** | -- | 800 | **< 6000 U** | **180 J** | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-37.0-20210723 | 7/23/2021 | 36.5 | N | 4602394041 | Treatment | Intermediate | **1090000** | **1230000** | **974000** | **1060000** | 149.6 | 0.75 | 7.69 | 2.671 | -- | 5.19 | -- | 7.7 | 799 | -- | 790 | **< 12000 U** | **< 800 U** | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-37.0-20210826 | 8/26/2021 | 37 | N | 4602416741 | Treatment | Intermediate | **1380000** | **1430000** | **1360000** | **1340000** | 132.9 | 0.5 | 7.05 | 7.156 | -- | -- NM | -- | 8.6 | **787** | -- | 780 | **< 6000 U** | **164 J** | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-37.0-20210922 | 9/22/2021 | 37 | N | 4602433951 | Treatment | Intermediate | **1570000** | **2000000** | **1640000 H** | **1530000 H** | 234.8 | 0.66 | 6.86 | 8.081 | -- | 9.83 | -- | 9.6 | **906** | -- | 670 | **< 600 U** | **161** | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-37.0-20210922-X | 9/22/2021 | 37 | FD | 4602433951 | Treatment | Intermediate | **1810000** | **1910000** | **1250000 H** | **1590000 H** | -- | -- | -- | -- | -- | -- | -- | 15.2 | **920** | -- | 690 | **< 600 U** | **159** | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-37.0-20211021 | 10/21/2021 | 37 | N | 4602456401 | Treatment | Intermediate | **1860000** | **2160000** | **1910000** | **1870000** | 217.6 | 9.31 | 7.18 | 8.501 | -- | 7.3 | -- | 11.4 | **923** | -- | 680 | **< 600 U** | **195** | -- |
| 114-P2-MW-8I | 114-P2--MW-8I-36.5-20211117 | 11/17/2021 | 36.5 | N | 4602474651 | Treatment | Intermediate | **1760000** | **1570000** | **1600000** | **1630000** | 171.3 | -0.87 | 7.14 | 6.325 | -- | 6.85 | -- | 8.3 | **801** | -- | 660 | **< 1200 U** | **254** | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-36.5-20211216 | 12/16/2021 | 36.5 | N | 4602492751 | Treatment | Intermediate | **2340000** | **2500000** | **3260000** | **2840000** | 119.4 | 0.12 | 7.01 | 9.564 | -- | 1.15 | -- | 12.8 | **797** | -- | 780 | **< 1200 U** | **218** | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-37-20220110 | 1/10/2022 | 37 | N | 4602504131 | Treatment | Intermediate | **2560000** | **2230000** | **2030000** | **2270000** | 173 | 0 | 7.81 | 17.4 | -- | 8.66 | -- | 10.5 | **765 F2** | -- | 700 | **< 600 U** | **245** | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-37.0-20220216 | 2/16/2022 | 37 | N | 4602526321 | Treatment | Intermediate | **2400000** | **2620000** | **2070000** | **2780000** | 129.8 | 0.51 | 7.67 | 9.356 | -- | 9.14 | -- | 12.3 | **824** | -- | 750 | **< 60000 U** | **< 4000 U** | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-37-20220315 | 3/15/2022 | 37 | N | 4602542861 | Treatment | Intermediate | **2230000** | **2360000** | **4490000** | **3670000** | 156.2 | 0.95 | 6.82 | 7.843 | -- | 9.82 | -- | 13.4 | **714** | -- | 740 | **< 1200 U** | **169** | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-37-20220413 | 4/13/2022 | 37 | N | 4602562001 | Treatment | Intermediate | **2660000** | **2620000** | **2440000** | **2500000** | 128.2 | 6.00 | 7.04 | 18.23 | 14.61 | 9.7 | -- | 12.6 *2 | **755** | -- | 720 | **< 2400 U** | **189** | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-37-20220511 | 5/11/2022 | 37 | N | 4602579551 | Treatment | Intermediate | **2950000** | **1950000** | **1880000** | **2330000** | 207.9 | 1.89 | 7.15 | 0.938 | 14.96 | 9.15 | -- | 12.5 | **734** | -- | 730 | **< 1200 U** | **340** | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-37-20220608 | 6/8/2022 | 37 | N | 4602596671 | Treatment | Intermediate | -- | **2290000** | -- | **2420000** | 171.1 | 3.47 | 6.65 | 9.263 | 16.77 | 5.55 | -- | 12.4 | **695** | -- | 690 | -- | -- | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-37.0-20220711 | 7/11/2022 | 37 | N | 4602617131 | Treatment | Intermediate | -- | **2820000** | -- | **1670000** | 222.2 | 0.75 | 7.16 | 7.966 | 18.22 | 5.86 | -- | 13.4 | **697** | -- | 680 | -- | -- | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-37-20220816 | 8/16/2022 | 37 | N | 4602639181 | Treatment | Intermediate | -- | **1680000** | -- | **2000000** | 258.1 | 4.30 | 7.04 | 8.107 | 17.61 | 9.84 | -- | 11.3 | **691** | -- | 660 | **< 1200 U** | **218** | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-37-20220914 | 9/14/2022 | 37 | N | 4602654911 | Treatment | Intermediate | -- | **1710000** | -- | **1660000** | 179 | 0.06 | 7.22 | 7.659 | 17.89 | 8.92 | -- | 10.0 | **850** | -- | 640 | **< 600 U** | **271** | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-37-20221012 | 10/12/2022 | 37 | N | 4602673311 | Treatment | Intermediate | -- | **2340000** | -- | **2220000** | 163.3 | 0.27 | 7 | 8.94 | 17.71 | 8.98 | -- | 14.6 | **678** | -- | -- | **< 2400 U** | **278** | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-37-20221110 | 11/10/2022 | 37 | N | 4602692751 | Treatment | Intermediate | -- | **2160000** | -- | **2060000** | 273.2 | 1.85 | 6.74 | 9.898 | 16.9 | 8.22 | -- | 17.2 | **587** | -- | -- | **< 24000 U** | **< 1600 U** | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-37-20221110-X | 11/10/2022 | 37 | FD | 4602692751 | Treatment | Intermediate | -- | **2680000** | -- | **3000000** | -- | -- | -- | -- | -- | -- | -- | 18.2 | **624** | -- | -- | **< 1200 U** | **189** | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-36.5-20221206 | 12/6/2022 | 36.5 | N | 4602707741 | Treatment | Intermediate | **2390000** | **2220000** | **2030000** | **3710000** | 149.1 | 0.43 | 7.93 | 9.156 | 12.76 | 22.2 | -- | 16.4 | **647** | -- | -- | **< 6000 U** | **210 J** | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-39.6-20230220 | 2/20/2023 | 39.6 | N | 4602749361 | Post-Treatment | Intermediate | -- | **1490000** | -- | **1510000 J-** | 179.5 | 0.48 | 7.24 | 7.335 | 15.17 | 8.87 | -- | 15.3 | **840** | < 1 U | -- | **< 600 U** | **121** | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-39.6-20230220-X | 2/20/2023 | 39.6 | FD | 4602749361 | Post-Treatment | Intermediate | -- | **1550000** | -- | **1510000 J-** | -- | -- | -- | -- | -- | -- | -- | 15.6 | **826** | < 1 U | -- | **< 600 U** | **117** | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-39.6-20230518 | 5/18/2023 | 39.6 | N | 4602805391 | Post-Treatment | Intermediate | -- | **799000** | -- | **819000** | 90.1 | 0.64 | 7.2 | 4.886 | 14.9 | 1.26 | -- | 10.9 | **727** | < 40 U | -- | **< 2400 U** | **649** | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-39.6-20230816 | 8/16/2023 | 39.6 | N | 4602863141 | Post-Treatment | Intermediate | -- | **908000** | -- | **901000** | 264.8 | 1.55 | 6.46 | 4.42 | 21.63 | 1.87 | -- | 13.2 | **552** | < 10 U | -- | **< 600 U** | **825** | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-39.6-20231116 | 11/16/2023 | 39.6 | N | JD77165 | Post-Treatment | Intermediate | -- | **818000** | -- | **830000** | 137.6 | 0.28 | 7.39 | 5.75 | 14.4 | 2.39 | -- | < 40 U | **874** | -- | -- | -- | -- | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-39.6-20240215 | 2/15/2024 | 39.6 | N | JD82518 | Post-Treatment | Intermediate | -- | **737000** | -- | **890000 J-** | -57.2 | 0.33 | 7.29 | 5.63 | 12.2 | 1.73 | -- | 10.5 | **820** | -- | -- | -- | -- | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-39.6-20240516 | 5/16/2024 | 39.6 | N | JD88618 | Post-Treatment | Intermediate | -- | **690000** | -- | **769000** | -108.3 | 0.14 | 7.63 | 5.6 | 15.8 | 3.17 | -- | 9.4 | **868** | -- | -- | -- | -- | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-39.6-20240815 | 8/15/2024 | 39.6 | N | JD94204 | Post-Treatment | Intermediate | -- | **603000** | -- | **629000** | -63.6 | 0.17 | 7.68 | 4.92 | 21.1 | 3.12 | -- | 11.7 | **835** | -- | -- | -- | -- | -- |
| 114-P2-MW-8I | 114-P2-MW-8I-39.6-20241118 | 11/18/2024 | 39.6 | N | JE873 | Post-Treatment | Intermediate | -- | **858000** | -- | **909000** | 142.2 | 0.34 | 7.47 | 6.84 | 17.2 | 4.79 | -- | R | **924** | -- | -- | -- | -- | -- |
| 114-P2-MW-9I | 114-P2-MW-9I-46-2020324 | 3/24/2020 | 46 | N | JD5104 | Baseline | Intermediate | **253 J** | 30.1 J | 9.3 J | 6.8 J | -4 | 0 | 7.95 | 18.8 | -- | 6.7 | -- | 11.8 | **1330** | < 2.0 U | 273 | 195 | **702** | -- |
| 114-P2-MW-9I | 114-P2-MW9I-45-20210317 | 3/17/2021 | 45 | N | JD21863 | Treatment | Intermediate | 5.6 B | 7.0 B | 8.2 B | 8.2 B | -30.7 | 0.14 | 7.66 | 9.815 | -- | 0.68 | -- | 10.4 | **1370** | -- | -- | -- | -- | -- |
| 114-P2-MW-9I | 114-P2-MW-9I-46-20210428 | 4/28/2021 | 46 | N | 4602331061 | Treatment | Intermediate | 58.0 | 45.2 | 34.7 | 31.3 | -70.3 | 2.36 | 8.03 | 10.79 | -- | 2.55 | -- | 9.0 | **1090** | -- | 530 | **495** | **924** | -- |
| 114-P2-MW-9I | 114-P2-MW-9I-46.0-20210527 | 5/27/2021 | 46 | N | 4602353531 | Treatment | Intermediate | **210** | **217** | **146 H** | **176 H** | -13.5 | 0.46 | 8.7 | 9.253 | -- | 1.3 | -- | 8.5 | **1130** | -- | 690 | **397** | **984** | -- |
| 114-P2-MW-9I | 114-P2-MW-9I-46.0-20210624 | 6/24/2021 | 46 | N | 4602373191 | Treatment | Intermediate | 15.8 J | **128** | < 10.0 U | **87.8** | -9.2 | 0.05 | 7.67 | 8.6 | -- | 6.66 | -- | 8.8 | **1100** | -- | 480 | **500 J** | **904** | -- |
| 114-P2-MW-9I | 114-P2-MW-9I-46.0-20210721 | 7/21/2021 | 46 | N | 4602392301 | Treatment | Intermediate | **132** | **116** | **96.1 H** | **74.0 H** | -82.3 | 0.17 | 7.95 | 12.62 | -- | 1.27 | -- | 8.9 | **1170** | -- | 880 | **468** | **1090** | -- |
| 114-P2-MW-9I | 114-P2-MW-9I-46.0-20210826 | 8/26/2021 | 46 | N | 4602416741 | Treatment | Intermediate | 12.5 | 32.0 | < 10.0 U | < 10.0 U | -55.6 | 0.34 | 7.63 | 11.9 | -- | 6.71 | -- | 8.4 | **1020** | -- | 840 | **695** | **1220** | -- |
| 114-P2-MW-9I | 114-P2-MW-9I-46.0-20210922 | 9/22/2021 | 46 | N | 4602433951 | Treatment | Intermediate | **237** | **357** | **140** | **183** | -69.1 | 0.23 | 7.54 | 10.67 | -- | 5.68 | -- | 9.0 F1 | **1080** | -- | 640 | **477** | **1070** | -- |
| 114-P2-MW-9I | 114-P2-MW-9I-46.0-20211018 | 10/18/2021 | 40 | N | 4602453121 | Treatment | Intermediate | **146** | **147** | 62.3 | **110** | -- | -- | -- | -- | -- | -- | -- | 9.5 | **1120** | -- | 960 | **557** | **1110** | -- |
| 114-P2-MW-9I | 114-P2-MW-9I-46.0-20211018-X | 10/18/2021 | 40 | FD | 4602453121 | Treatment | Intermediate | **147** | **135** | 52.2 | 62.3 | -- | -- | -- | -- | -- | -- | -- | 9.5 | **1120** | -- | 920 | **517** | **1120** | -- |
| 114-P2-MW-9I | 114-P2-MW-9I-46-20211117 | 11/17/2021 | 46 | N | 4602474651 | Treatment | Intermediate | **183** | **340** | 50.7 | **74.0** | -22.2 | 3.65 | 7.6 | 9.5 | -- | 0.71 | -- | 9.2 | **1120** | -- | 900 | **566** | **1220** | -- |
| 114-P2-MW-9I | 114-P2-MW-9I-45.5-20211216 | 12/16/2021 | 45.5 | N | 4602492751 | Treatment | Intermediate | **185** | **242** | **95.3** | 25.3 | -79.8 | 0.43 | 7.58 | 12.18 | -- | 1.2 | -- | 9.0 | **1050** | -- | 920 | **705** | **1280** | -- |
| 114-P2-MW-9I | 114-P2-MW-9I-46-20220110 | 1/10/2022 | 46 | N | 4602504131 | Treatment | Intermediate | **782** | **1740** | **1510** | **1510** | 265.4 | 4.49 | 6.88 | 11.175 | -- | 19.74 | -- | 9.3 | **1130** | -- | 690 | **571** | **1290** | -- |
| 114-P2-MW-9I | 114-P2-MW-9I-46-20220216 | 2/16/2022 | 46 | N | 4602526321 | Treatment | Intermediate | **338** | **210** | **127** | **111** | -24.2 | 0.23 | 7.66 | 10.28 | -- | 6.83 | -- | 8.5 | **890** | -- | 880 | **473** | **1420** | -- |
| 114-P2-MW-9I | 114-P2-MW-9I-46-20220315 | 3/15/2022 | 46 | N | 4602542861 | Treatment | Intermediate | **198** | **213** | 38.6 | 51.7 | -65.6 | 0.62 | 7.55 | 11.58 | -- | 9.47 | -- | 9.4 | **1060** | -- | 1100 | **702** | **1510** | -- |
| 114-P2-MW-9I | 114-P2-MW-9I-46-20220413 | 4/13/2022 | 46 | N | 4602562001 | Treatment | Intermediate | 58.7 | **100** | < 10.0 U | 8.6 J | -85.6 | 0.30 | 7.60 | 9.162 | 15.95 | 1.87 | -- | 8.4 *2 | **1170** | -- | 1200 | **917** | **1480** | -- |
| 114-P2-MW-9I | 114-P2-MW-9I-46-20220511 | 5/11/2022 | 46 | N | 4602579551 | Treatment | Intermediate | **70.1** | **96.0** | < 10.0 U | < 10.0 U | -76.5 | 0.01 | 7.51 | 11.60 | 14.38 | 1.33 | -- | 8.0 | **945** | -- | 1100 | **771** | **1390** | -- |
| 114-P2-MW-9I | 114-P2-MW-9I-46.0-20220609 | 6/9/2022 | 46 | N | 4602597481 | Treatment | Intermediate | -- | 9.5 | -- | < 10.0 U | -61.4 | 1.7 | 7.64 | 10.64 | 18.49 | 0.1 | -- | 8.4 | **253** | -- | -- | -- | -- | -- |
| 114-P2-MW-9I | 114-P2-MW-9I-46-20220712 | 7/12/2022 | 46 | N | 4602617771 | Treatment | Intermediate | -- | 7.7 | -- | < 10.0 U | -90.6 | 0.65 | 7.73 | 8.756 | 17.35 | 2.85 | -- | 9.1 | **349** | -- | -- | -- | -- | -- |
| 114-P2-MW-9I | 114-P2-MW-9I-46-0-20220815 | 8/15/2022 | 46 | N | 4602638581 | Treatment | Intermediate | -- | 14.8 | -- | < 10.0 U | -94.8 | 0.22 | 7.48 | 9.816 | 18.66 | 2.00 | -- | 9.9 | **1190** | -- | -- | **976** | **1280** | -- |
| 114-P2-MW-9I | 114-P2-MW-9I-46-0-20220815-X | 8/15/2022 | 46 | FD | 4602638581 | Treatment | Intermediate | -- | 18.0 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 9.9 | **1200** | -- | -- | **954** | **1250** | -- |
| 114-P2-MW-9I | 114-P2-MW-9I-45.5-20221207 | 12/7/2022 | 45.5 | N | 4602708801 | Post-Treatment | Intermediate | -- | 21.0 | -- | < 10.0 U | -157.7 | 1.18 | 7.64 | 9.485 | 15.15 | 7.02 | -- | 9.3 | 184 | < 1 U | -- | **1020** | **1320** | -- |
| 114-P2-MW-9I | 114-P2-MW-9I-45.5-20221207-X | 12/7/2022 | 45.5 | FD | 4602708801 | Post-Treatment | Intermediate | -- | 22.7 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 9.5 | 165 | < 1 U | -- | **1040** | **1310** | -- |
| 114-P2-MW-9I | 114-P2-MW-9I-48.3-20230222 | 2/22/2023 | 48.3 | N | 4602750771 | Post-Treatment | Intermediate | -- | 3.6 J | -- | < 10.0 U | -191.6 | 0.37 | 7.74 | 7.77 | 12.46 | 3.88 | -- | 9.7 | **869** | < 1 U | -- | **1090** | **1420** | -- |
| 114-P2-MW-9I | 114-P2-MW-9I-48.3-20230616 | 6/16/2023 | 48.3 | N | 4602824851 | Post-Treatment | Intermediate | -- | 19.6 | -- | < 10.0 U | -209.2 | 0.31 | 7.53 | 9.904 | 16.21 | 5.84 | -- | 9.0 | **1120** | < 1 U | -- | **1020** | **1580** | -- |
| 114-P2-MW-9I | 114-P2-MW-9I-48.3-20230821 | 8/21/2023 | 48.3 | N | 4602866341 | Post-Treatment | Intermediate | -- | 6.3 | -- | < 10.0 UJ | -56.7 | 0.16 | 9.71 | 9.182 | 19.66 | 1.44 | -- | 9.1 | **861** | < 1 U | -- | **946** | **1840** | -- |
| 114-P2-MW-9I | 114-P2-MW-9I-48.3-20231121 | 11/21/2023 | 48.3 | N | JD77454 | Post-Treatment | Intermediate | -- | 4.3 | -- | < 10 UJ | -139 | 0.51 | 7.61 | 10.02 | 13.9 | 2.79 | -- | 6.4 | **1190** | -- | -- | -- | -- | -- |
| 114-P2-MW-9I | 114-P2-MW-9I-48.3-20240219 | 2/19/2024 | 48.3 | N | JD82732 | Post-Treatment | Intermediate | -- | < 10 U | -- | < 10 U | -44.8 | 0.23 | 7.44 | 8.93 | 10.7 | 0.92 | -- | 6.8 | **1220** | -- | -- | -- | -- | -- |
| 114-P2-MW-9I | 114-P2-MW-9I-48.3-20240517 | 5/17/2024 | 48.3 | N | JD88735 | Post-Treatment | Intermediate | -- | 6.8 J | -- | < 10 RA | -200.4 | 0.34 | 7.55 | 9.97 | 17.4 | 2.79 | -- | 7.6 | **1300** | -- | -- | -- | -- | -- |
| 114-P2-MW-9I | 114-P2-MW-9I-48.3-20240819 | 8/19/2024 | 48.3 | N | JD94428 | Post-Treatment | Intermediate | -- | 6.3 J | -- | < 10 U | -138 | 1.29 | 7.38 | 8651 | 20.5 | 4.68 | -- | 8.5 | **1310** | -- | -- | -- | -- | -- |
| 114-P2-MW-9I | 114-P2-MW-9I-48.3-20241118 | 11/18/2024 | 48.3 | N | JE873 | Post-Treatment | Intermediate | -- | 5.0 JB | -- | < 10 U | 41.4 | 0.16 | 7.46 | 10.15 | 16.6 | 2.52 | -- | 7.7 J- | **1190** | -- | -- | -- | -- | -- |
| 114-MW70C | 114-MW70C-90.5-20210216 | 2/16/2021 | 90.5 | N | JD20404 | N/A | Deep (Lower) | -- | 2.4 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW70C | 114-MW70C-90.5-20210216-X | 2/16/2021 | 90.5 | FD | JD20404 | N/A | Deep (Lower) | -- | 2.5 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW70C | 114-MW70C-95.5-20210216 | 2/16/2021 | 95.5 | N | JD20404 | N/A | Deep (Lower) | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW70C | 114-MW70C-95.5-20211229 | 12/29/2021 | 95.5 | N | 4602499441 | Baseline | Deep (Lower) | < 4.0 U | 19.8 | < 10.0 U | < 10.0 U | -269.10 | 0.22 | 8.56 | 4.92 | 13.86 | 1.77 | -- | 1.8 | 137 | -- | 490 | -- | -- | -- |
| 114-MW70C | 114-MW70C-95.5-20220118 | 1/18/2022 | 95.5 | N | 4602508581 | Treatment | Deep (Lower) | < 4.0 U | 13.3 | < 10.0 U | < 10.0 U | -277.00 | 3.2 | 8.90 | 4.74 | 16.79 | 3.21 | -- | 1.8 | 160 | -- | 410 | -- | -- | -- |
| 114-MW70C | 114-MW70C-95.5-20220118-X | 1/18/2022 | 95.5 | FD | 4602508581 | Treatment | Deep (Lower) | < 4.0 U | 12.1 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 1.9 | 144 | -- | 440 | -- | -- | -- |
| 114-MW70C | 114-MW70C-95.5-20220302 | 3/2/2022 | 95.5 | N | 4602534801 | Treatment | Deep (Lower) | < 4.0 U | 56.9 | < 10.0 U | < 10.0 U | -99.10 | 9999.00 | 13.26 | 2.53 | 12.81 | 2.73 | -- | 31.5 | 84.9 | -- | -- | -- | -- | -- |
| 114-MW70C | 114-MW70C-95.5-20220617 | 6/17/2022 | 95.5 |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-MW70C | 114-MW70C-95.5-20231211 | 12/11/2023 | 95.5 | N | JD78573 | Total Cr Isopleth | Deep (Lower) | -- | 12.4 | -- | < 10 U | -209.7 | 0.19 | 8.13 | 4.47 | 13.4 | 1.09 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW70C | 114-MW70C-95.5-20240313 | 3/13/2024 | 95.5 | N | JD84389 | Total Cr Isopleth | Deep (Lower) | -- | 22.3 | -- | < 10 U | -125.1 | 0.24 | 8.18 | 3.983 | 14 | 2.4 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW70C | 114-MW70C-95.5-20240611 | 6/11/2024 | 95.5 | N | JD90213 | Total Cr Isopleth | Deep (Lower) | -- | 15.6 | -- | < 10 U | -238.8 | 0.39 | 7.97 | 3.773 | 16.7 | 2.85 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW70C | 114-MW70C-95.5-20240916 | 9/16/2024 | 95.5 | N | JD96194 | Total Cr Isopleth | Deep (Lower) | -- | 8.1 J | -- | < 10 U | -195.3 | 0.38 | 7.93 | 3.72 | 19.7 | 0.69 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW70C | 114-MW70C-95.5-20241121 | 11/21/2024 | 95.5 | N | JE1118 | Total Cr Isopleth | Deep (Lower) | -- | < 10 U | -- | < 10 U | -200.9 | 0.31 | 8.05 | 3.37 | 15.5 | 0.43 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW70C | 114-MW70C-95.5-20241121-X | 11/21/2024 | 95.5 | FD | JE1118 | Total Cr Isopleth | Deep (Lower) | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2-MW-1D | 114-P2-MW-1D-53.0-20200320 | 3/20/2020 | 53 | N | JD5007 | Baseline | Deep | 12.1 | 19.1 | < 10 U | < 10 U | -12.5 | 0.98 | 7.17 | 2.81 | -- | 6.22 | -- | 3.5 | **554 J-** | R | 89.7 | **651** | **4620** | -- |
| 114-P2-MW-1D | 114-P2-MW-1D-53-20201117 | 11/17/2020 | 53 | N | JD16409 | Treatment | Deep | **70.1** | **89.2** | < 10 U | < 10 U | -88 | 0.52 | 7.12 | 3.35 | -- | 0 | -- | 3.6 | **642** | -- | 148 | -- | **5790** | < 0.20 U |
| 114-P2-MW-1D | 114-P2-MW-1D-56.0-20201215 | 12/15/2020 | 56 | N | JD17793 | Treatment | Deep | **2190** | **1800** | **1600** | **1300** | 3.2 | 0.98 | 7.25 | 5.074 | -- | 2.01 | -- | 12.4 | **671** | -- | -- | -- | -- | -- |
| 114-P2-MW-1D | 114-P2-MW-1D-56.0-20201215X | 12/15/2020 | 56 | FD | JD17793 | Treatment | Deep | **1980** | **2490** | **2000** | **2000** | -- | -- | -- | -- | -- | -- | -- | 10.2 | **644** | -- | -- | -- | -- | -- |
| 114-P2-MW-1D | 114-P2-MW-1D-55.0-20210111 | 1/11/2021 | 55 | N | JD18861 | Treatment | Deep | **137** | **139** | < 10 U | < 10 U | -62.2 | 0.44 | 7.08 | 3.011 | -- | 2.14 | -- | 9.4 | **666** | -- | -- | -- | -- | -- |
| 114-P2-MW-1D | 114-P2-MW-1D-55.0-20210215 | 2/15/2021 | 55 | N | JD20381 | Treatment | Deep | 29.7 | 31.4 | < 10 U | 6.4 B | -69.9 | 2 | 7.02 | 2.828 | -- | 4.11 | -- | 12.7 | **475** | -- | -- | -- | -- | -- |
| 114-P2-MW-1D | 114-P2-MW-1D-55.0-20210315 | 3/15/2021 | 55 | N | JD21732 | Treatment | Deep | 62.4 | 66.9 | < 10 U | < 10 U | -61.2 | 0.43 | 7.23 | 2.972 | -- | 3.44 | -- | 18.0 | **291** | -- | -- | -- | -- | -- |
| 114-P2-MW-1D | 114-P2-MW-1D-54.0-20210426 | 4/26/2021 | 54 | N | 4602329401 | Treatment | Deep | 40.7 | 36.9 | < 10.0 U | < 10.0 U | -21.2 | 0.36 | 6.99 | 2.762 | -- | 3.61 | -- | 24.5 | 42.4 | -- | 1200 | **1040** | **2470** | -- |
| 114-P2-MW-1D | 114-P2-MW-1D-52.0-20210526 | 5/26/2021 | 52 | N | 4602352461 | Treatment | Deep | 41.2 | 45.5 | < 10.0 U | < 10.0 U | 0.5 | 0.59 | 7.87 | 2.582 | -- | 3.25 | -- | 21.5 | 48.6 | -- | 3500 | **846** | **3300** | -- |
| 114-P2-MW-1D | 114-P2-MW-1D-52.0-20210624 | 6/24/2021 | 52 | N | 4602373191 | Treatment | Deep | 53.7 | 46.6 | < 10.0 U | < 10.0 U | -192 | 1.3 | 6.9 | 1.919 | -- | 0.5 | -- | 17.0 | **317** | -- | 8200 | **1310** | **5320** | -- |
| 114-P2-MW-1D | 114-P2-MW-1D-53.0-20210719 | 7/19/2021 | 53 | N | 4602390751 | Treatment | Deep | 43.0 | 48.6 | < 10.0 U | < 10.0 U | -124.3 | -0.05 ** | 7.11 | 4.29 | -- | 3.15 | -- | 15.6 | **574** | -- | 9900 | **1820** | **7650** | -- |
| 114-P2-MW-1D | 114-P2-MW-1D-52-20210824 | 8/24/2021 | 52 | N | 4602414891 | Treatment | Deep | 40.6 | 47.1 | < 10.0 U | < 10.0 U | -71.7 | 0.64 | 6.91 | 2.07 | -- | -- NM | -- | 12.8 | **398** | -- | 6800 | **2260** | **9810** | -- |
| 114-P2-MW-1D | 114-P2-MW-1D-52.0-20210920 | 9/20/2021 | 52 | N | 4602432251 | Treatment | Deep | 40.4 | 44.1 | < 10.0 U | < 10.0 U | -96.1 | 0.37 | 7.05 | 2.118 | -- | 1.31 | -- | 14.5 | **299** | -- | 11000 | **2320** | **11300** | -- |
| 114-P2-MW-1D | 114-P2-MW-1D-52.0-20211018 | 10/18/2021 | 52 | N | 4602453121 | Treatment | Deep | 38.4 | 40.1 | < 10.0 U | < 10.0 U | -38.3 | 1.72 | 7.01 | 2.195 | -- | 0.39 | -- | 15.6 | **307** | -- | 10000 | **2690** | **10900** | -- |
| 114-P2-MW-1D | 114-P2-MW-1D-52-20211117 | 11/17/2021 | 52 | N | 4602474651 | Treatment | Deep | 44.7 | 48.7 | < 10.0 U | < 10.0 U | -130.1 | 0.09 | 7.07 | 2.121 | -- | 0.63 | -- | 15.9 | **334** | -- | 7700 | **2850** | **10800** | -- |
| 114-P2-MW-1D | 114-P2-MW-1D-53-20211213 | 12/13/2021 | 53 | N | 4602490301 | Treatment | Deep | 60.2 | 63.8 | < 10.0 U | < 10.0 U | -101.6 | 10.46 | 6.78 | 2.402 | -- | 1 | -- | 18.3 | 184 | -- | 5000 | **4110** | **13300** | -- |
| 114-P2-MW-1D | 114-P2-MW-1D-52.0-20220110 | 1/10/2022 | 52 | N | 4602504131 | Treatment | Deep | 58.8 | 65.5 | < 10.0 U | 37.0 | -92 | 0 | 4.5 | 2.64 | -- | 4.5 | -- | 17.8 | 238 | -- | 6200 | **4440** | **12800** | -- |
| 114-P2-MW-1D | 114-P2-MW-1D-52-20220210 | 2/10/2022 | 52 | N | 4602522631 | Treatment | Deep | 58.6 | 63.1 | < 10.0 U | < 10.0 U | -98.7 | 2.06 | 6.78 | 2.256 | -- | 1.33 | -- | 17.3 | 181 | -- | 5200 | **4870** | **12900** | -- |
| 114-P2-MW-1D | 114-P2-MW-1D-52.0-20220315 | 3/15/2022 | 52 | N | 4602542861 | Treatment | Deep | 50.4 | 60.5 | < 10.0 U | < 10.0 U | -56.4 | 1.43 | 7.25 | 2.035 | -- | 1.15 | -- | 17.4 | 188 | -- | 5500 | **4600** | **11900** | -- |
| 114-P2-MW-1D | 114-P2-MW-1D-52.0-20220412 | 4/12/2022 | 52 | N | 4602561091 | Treatment | Deep | 52.2 | 52.8 | < 10.0 U | < 10.0 U | -50.2 | 0.60 | 6.76 | 2.498 | 12.56 | 0.89 | -- | 15.4 B | 192 | -- | 5300 | **4710** | **11800** | -- |
| 114-P2-MW-1D | 114-P2-MW-1D-52.0-20220510 | 5/10/2022 | 52 | N | 4602578751 | Treatment | Deep | 45.4 | 48.2 | < 10.0 U | < 10.0 U | -74.1 | 4.30 | 7.25 | 2.727 | 16.46 | 0.62 | -- | 13.5 | **282** | -- | 3400 | **5130** | **13100** | -- |
| 114-P2-MW-1D | 114-P2-MW-1D-52-20220607 | 6/7/2022 | 52 | N | 4602595691 | Treatment | Deep | -- | 36.1 | -- | < 10.0 U | -57.2 | 0.27 | 6.74 | 3.11 | 15.87 | 5.04 | -- | 12.0 | **348** | -- | -- | -- | -- | -- |
| 114-P2-MW-1D | 114-P2-MW-1D-52.0-20220711 | 7/11/2022 | 52 | N | 4602617131 | Treatment | Deep | -- | 51.3 | -- | < 10.0 U | -111.5 | 1.23 | 6.76 | 3.307 | 18.00 | 0.91 | -- | 12.6 | **360** | -- | -- | -- | -- | -- |
| 114-P2-MW-1D | 114-P2-MW-1D-53-20221212 | 12/12/2022 | 53 | N | 4602712001 | Post-Treatment | Deep | -- | 44.8 J+ | -- | < 10.0 U | -109.9 | 0.37 | 6.64 | 2.527 | 13.38 | 1.45 | -- | 9.9 | **372** | < 1 U | -- | **4090** | **9790** | -- |
| 114-P2-MW-1D | 114-P2-MW-1D-53-20221212-X | 12/12/2022 | 53 | FD | 4602712001 | Post-Treatment | Deep | -- | 43.6 J+ | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 9.8 | **367** | < 1 U | -- | **4200** | **9720** | -- |
| 114-P2-MW-1D | 114-P2-MW-1D-55.5-20230215 | 2/15/2023 | 55.5 | N | 4602746811 | Post-Treatment | Deep | -- | 41.0 | -- | < 10.0 U | 4.1 | 14.03 | 6.95 | 4.140 | 15.10 | 4.82 | -- | 11.1 | **371** | < 1 U | -- | **4420** | **10800** | -- |
| 114-P2-MW-1D | 114-P2-MW-1D-55.5-20230519 | 5/19/2023 | 55.5 | N | 4602865561 | Post-Treatment | Deep | -- | 36.2 | -- | < 10.0 U | 230.5 | 3.17 | 6.74 | 2.631 | 16.30 | 2.36 | -- | 10.7 | **305** | < 1 U | -- | **3990** | **9870** | -- |
| 114-P2-MW-1D | 114-P2-MW-1D-55.5-20230818 | 8/18/2023 | 55.5 | N | 4602864961 | Post-Treatment | Deep | -- | 37.3 | -- | < 10.0 U | -56.5 | 1.8 | 6.78 | 2.898 | 20.15 | 0.79 | -- | 10.7 J- | **281** | < 1 U | -- | **4460** | **9300** | -- |
| 114-P2-MW-1D | 114-P2-MW-1D-55.5-20231120 | 11/20/2023 | 55.5 | N | JD77343 | Post-Treatment | Deep | -- | 36.6 | -- | < 10 UJ | -17.8 | 0.22 | 6.69 | 2.955 | 14.9 | 0.97 | -- | 8.7 | 233 | -- | -- | -- | -- | -- |
| 114-P2-MW-1D | 114-P2-MW-1D-55.5-20240216 | 2/16/2024 | 55.5 | N | JD82616 | Post-Treatment | Deep | -- | 30.8 | -- | 4.8 J+ | -64.9 | 0.21 | 6.85 | 2.715 | 11.7 | 0.77 | -- | < 10 U | **295** | -- | -- | -- | -- | -- |
| 114-P2-MW-1D | 114-P2-MW-1D-55.5-20240516 | 5/16/2024 | 55.5 | N | JD88618 | Post-Treatment | Deep | -- | 36.9 | -- | 69 | -76.6 | 0.43 | 6.54 | 2.634 | 15.4 | 0.32 | -- | 9.2 J- | **341** | -- | -- | -- | -- | -- |
| 114-P2-MW-1D | 114-P2-MW-1D-55.5-20240820 | 8/20/2024 | 55.5 | N | JD94507 | Post-Treatment | Deep | -- | 37.4 | -- | 39 | -82.7 | 1.76 | 6.79 | 2887 | 19.4 | 0.5 | -- | 10.1 | **339** | -- | -- | -- | -- | -- |
| 114-P2-MW-1D | 114-P2-MW-1D-55.5-20241115 | 11/15/2024 | 55.5 | N | JE731 | Post-Treatment | Deep | -- | 39.3 J | -- | 61 J | -111.8 | 0.25 | 6.82 | 2.85 | 15.7 | 0.56 | -- | 7.4 | **312** | -- | -- | -- | -- | -- |
| 114-P2-MW-2D | 114-P2-MW-2D-52.5-20200319 | 3/19/2020 | 52.5 | N | JD4924 | Baseline | Deep | **162** | **159** | **130** | **130** | 123.6 | 0.51 | 7.17 | 1.41 | -- | 4.6 | -- | 2.1 | 111 J- | < 2.0 U | 9.9 | < 100 U | **503** | -- |
| 114-P2-MW-2D | 114-P2-MW-2D-52.5-20201117 | 11/17/2020 | 52.5 | N | JD16409 | Treatment | Deep | **146** | **120** | < 10 U<br>< 5.5 U | < 10 U<br>< 5.5 U | -76 | 0 | 5.24 | 2.22 | -- | 0 | -- | 79.2 | 237 | -- | 56.8 | -- | **3940** | 0.20 |
| 114-P2-MW-2D | 114-P2-MW-2D-55.0-20201214 | 12/14/2020 | 55 | N | JD17730 | Treatment | Deep | **319** | **388** | < 10 U | < 10 U | -174.5 | 0.09 | 7.08 | 2.209 | -- | 3.01 | -- | 34.4 | 173 | -- | -- | -- | -- | -- |
| 114-P2-MW-2D | 114-P2-MW-2D-56.0-20210111 | 1/11/2021 | 56 | N | JD18861 | Treatment | Deep | **672** | **1510** | **480** | **1500** | -98.9 | 0.09 | 8.44 | 0.299 | -- | 1.01 | -- | 2.1 | 235 | -- | -- | -- | -- | -- |
| 114-P2-MW-2D | 114-P2-MW-2D-55.0-20210216 | 2/16/2021 | 55 | N | JD20408 | Treatment | Deep | 67.8 | **162** | < 10 U | < 10 U | -123.8 | 0.52 | 7.04 | 1.902 | -- | 9.02 | -- | 5.8 | **427** | -- | -- | -- | -- | -- |
| 114-P2-MW-2D | 114-P2-MW-2D-58.0-20210315 | 3/15/2021 | 58 | N | JD21732 | Treatment | Deep | **138** | **166** | < 10 U | < 10 U | -90.9 | 4.62 | 7.14 | 2.476 | -- | 1.73 | -- | 7.0 | **398** | -- | -- | -- | -- | -- |
| 114-P2-MW-2D | 114-P2-MW-2D-55.5-20210426 | 4/26/2021 | 55.5 | N | 4602329401 | Treatment | Deep | **170** | **377** | **73.6** | 62.4 | -147.5 | 4.34 | 7.07 | 2.065 | -- | 9.3 | -- | 7.5 | **413** | -- | 130 | 217 | **2240** | -- |
| 114-P2-MW-2D | 114-P2-MW-2D-55.5-20210526 | 5/26/2021 | 55.5 | N | 4602352461 | Treatment | Deep | 61.3 | **105** | < 10.0 U | < 10.0 U | -190.4 | 0.41 | 7.16 | 2.414 | -- | 1.51 | -- | 11.9 | **306** | -- | 930 | **415** | **2330** | -- |
| 114-P2-MW-2D | 114-P2-MW-2D-55.5-20210624 | 6/24/2021 | 55.5 | N | 4602373191 | Treatment | Deep | 39.8 | 48.6 | < 10.0 U | < 10.0 U | -22.8 | 5.06 | 6.82 | 1.743 | -- | 5.93 | -- | 13.2 | **324** | -- | 4800 | **526 J** | **1870** | -- |
| 114-P2-MW-2D | 114-P2-MW-2D-55.5-20210624-X | 6/24/2021 | 55.5 | FD | 4602373191 | Treatment | Deep | **< 80.0 U** | 44.3 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 13.4 | **327** | -- | 4800 | **< 2400 U** | **1790** | -- |
| 114-P2-MW-2D | 114-P2-MW-2D-55.5-20210719 | 7/19/2021 | 52.5 | N | 4602390751 | Treatment | Deep | **224** | **151** | < 10.0 U | < 10.0 U | -100.6 | 0.82 | 7.1 | 2.104 | -- | 2.09 | -- | 8.7 | **427** | -- | 2700 | **568** | **1460** | -- |
| 114-P2-MW-2D | 114-P2-MW-2D-55.5-20210824 | 8/24/2021 | 55.5 | N | 4602414891 | Treatment | Deep | **738** | **796** | **558** | **650** | 89.1 | 0.53 | 6.98 | 1.543 | -- | -- NM | -- | 7.4 | **274** | -- | 1700 | 157 | **1030** | -- |
| 114-P2-MW-2D | 114-P2-MW-2D-55.5-20210920 | 9/20/2021 | 55.5 | N | 4602432251 | Treatment | Deep | **1990** | **1980** | **2110 H** | **1940 H** | -84.8 | 0.27 | 7.64 | 1.692 | -- | 3.77 | -- | 4.5 | 191 | -- | 920 | 62.2 J | **421** | -- |
| 114-P2-MW-2D | 114-P2-MW-2D-55.5-20211018 | 10/18/2021 | 55.5 | N | 4602453121 | Treatment | Deep | **1650** | **1920** | **1530** | **1690** | -89.2 | 0.19 | 7.19 | 1.93 | -- | 1.48 | -- | 7.7 | 178 | -- | 1800 | 62.3 J | **597** | -- |
| 114-P2-MW-2D | 114-P2-MW-2D-55.5-20211117 | 11/17/2021 | 55.5 | N | 4602474651 | Treatment | Deep | **774** | **933** | **337** | **231** | -- | -- | -- | -- | -- | -- | -- | 28.9 | 133 | -- | 6900 | 182 | **1280** | -- |
| 114-P2-MW-2D | 114-P2-MW-2D-52.5-20211213 | 12/13/2021 | 52.5 | N | 4602490301 | Treatment | Deep | **847** | **1220** | 68.1 | < 10.0 U | -88.8 | 0.16 | 6.98 | 2.112 | -- | 7.8 | -- | 35.7 | 99.3 | -- | 11000 | 176 | **1150** | -- |
| 114-P2-MW-2D | 114-P2-MW-2D-55.5-20220112 | 1/12/2022 | 55.5 | N | 4602505551 | Treatment | Deep | **1030** | **1360** | **205** | **256** | -111 | 0 | 6.41 | 5.05 | -- | 5 | -- | 15.3 | 134 | -- | 8800 | 200 | **1130** | -- |
| 114-P2-MW-2D | 114-P2-MW-2D-55.5-20220210 | 2/10/2022 | 55.5 | N | 4602522631 | Treatment | Deep | **385** | **528** | **86.3** | **95.2** | -51.2 | 0.31 | 7.04 | 2.006 | -- | 3.24 | -- | 12.0 | 107 | -- | 8900 | 198 | **1220** | -- |
| 114-P2-MW-2D | 114-P2-MW-2D-55.5-20220315 | 3/15/2022 | 55.5 | N | 4602542861 | Treatment | Deep | 51.1 | **105** | < 10.0 U | < 10.0 U | -73.2 | 0.36 | 7.23 | 1.642 | -- | 3.36 | -- | 9.4 | 89.1 | -- | 16000 | **636** | **1400** | -- |
| 114-P2-MW-2D | 114-P2-MW-2D-55.5-20220412 | 4/12/2022 | 55.5 | N | 4602561091 | Treatment | Deep | 35.2 | **527** | < 10.0 UH | < 10.0 UH | -91.2 | 0.78 | 7.03 | 1.799 | 12.98 | 3.81 | -- | 6.3 | 91.2 | -- | 11000 | **1150** | **1980** | -- |
| 114-P2-MW-2D | 114-P2-MW-2D-55.5-20220511 | 5/11/2022 | 55.5 | N | 4602579551 | Treatment | Deep | 27.5 | **180** | < 10.0 U | < 10.0 U | -149.2 | 10.59 | 7.08 | 1.786 | 15.09 | 2.09 | -- | 4.2 | 107 | -- | 6600 | **1860** | **2050** | -- |
| 114-P2-MW-2D | 114-P2-MW-2D-55.5-20220607 | 6/7/2022 | 55.5 | N | 4602595691 | Treatment | Deep | -- | **120** | -- | < 10.0 U | -70.5 | 1.20 | 9.50 | 1.540 | 16.91 | 1.38 | -- | 4.6 | 111 | -- | -- | -- | -- | -- |
| 114-P2-MW-2D | 114-P2-MW-2D-55.5-20220711 | 7/11/2022 | 55.5 | N | 4602617131 | Treatment | Deep | -- | **121** | -- | < 10.0 U | -158.2 | 1.25 | 7.75 | 1.595 | 18.46 | 2.10 | -- | 5.7 | 106 | -- | -- | -- | -- | -- |
| 114-P2-MW-2D | 114-P2-MW-2D-55.5-20220818 | 8/18/2022 | 55.5 | N | 4602640741 | Treatment | Deep | -- | 40.1 | -- | < 10.0 U | -108.8 | 0.89 | 7.01 | 1.546 | 19.17 | 6.02 | -- | 4.9 | 113 | -- | -- | **2920** | **1880** | -- |
| 114-P2-MW-2D | 114-P2-MW-2D-52.5-20221209 | 12/9/2022 | 52.5 | N | 4602710741 | Post-Treatment | Deep | -- | 64.4 | -- | < 10.0 U | -128.3 | 0.54 | 6.97 | 1.690 | 14.05 | 5.85 | -- | 7.3 | 69.6 | < 1 U | -- | **2330** | **2110** | -- |
| 114-P2-MW-2D | 114-P2-MW-2D-52.5-20221209-X | 12/9/2022 | 52.5 | FD | 4602710741 | Post-Treatment | Deep | -- | 62.2 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 6.8 | 79.9 | < 1 U | -- | **2360** | **2090** | -- |
| 114-P2-MW-2D | 114-P2-MW-2D-55.4-20230215 | 2/15/2023 | 55.4 | N | 4602746811 | Post-Treatment | Deep | -- | **71.1** | -- | < 10.0 U | -137.3 | 9.96 | 7.16 | 2.571 | 14.61 | 2.36 | -- | 11.9 | 163 | < 1 U | -- | **1400** | **2000** | -- |
| 114-P2-MW-2D | 114-P2-MW-2D-55.4-20230522 | 5/22/2023 | 55.4 | N | 4602807921 | Post-Treatment | Deep | -- | 31.6 | -- | < 10.0 UJ | 219.8 | 6.57 | 6.17 | 1.991 | 16.48 | 2.11 | -- | 7.9 | 233 | < 1 U | -- | **1170** | **1960** | -- |
| 114-P2-MW-2D | 114-P2-MW-2D-55.4-20230522-X | 5/22/2023 | 55.4 | FD | 4602807921 | Post-Treatment | Deep | -- | 31.3 | -- | < 10.0 UJ | -- | -- | -- | -- | -- | -- | -- | 8.2 | **280** | < 1 U | -- | **1170** | **2010** | -- |
| 114-P2-MW-2D | 114-P2-MW-2D-55.4-20230821 | 8/21/2023 | 55.4 | N | 4602866341 | Post-Treatment | Deep | -- | 24.8 | -- | < 10.0 UJ | -152.1 | 0.88 | 7.13 | 2.173 | 22.79 | 0.83 | -- | 5.9 JB | **253** | < 1 U | -- | **1360** | **1930** | -- |
| 114-P2-MW-2D | 114-P2-MW-2D-55.4-20231121 | 11/21/2023 | 55.4 | N | JD77454 | Post-Treatment | Deep | -- | **103** | -- | < 10 UJ | -100.9 | 0.16 | 6.94 | 2.668 | 15.4 | 1.58 | -- | 5.9 | **403** | -- | -- | -- | -- | -- |
| 114-P2-MW-2D | 114-p2-MW2D-55.4-20240216 | 2/16/2024 | 55.4 | N | JD82616 | Post-Treatment | Deep | -- | **108** | -- | < 10 U | -311.1 | 0.19 | 6.92 | 3.381 | 13.4 | 2.13 | -- | 5.9 | **399** | -- | -- | -- | -- | -- |
| 114-P2-MW-2D | 114-P2-MW-2D-55.4-20240516 | 5/16/2024 | 55.4 | N | JD88618 | Post-Treatment | Deep | -- | 45.6 | -- | 22 | -108.5 | 0.1 | 6.74 | 3.207 | 15.1 | 0.41 | -- | 8.4 J- | **381** | -- | -- | -- | -- | -- |
| 114-P2-MW-2D | 114-P2-MW-2D-55.4-20240820 | 8/20/2024 | 55.4 | N | JD94507 | Post-Treatment | Deep | -- | 43.2 | -- | 8.5 J | -180.6 | 0.11 | 6.79 | 3328 | 18 | 0.53 | -- | 8.1 | **333** | -- | -- | -- | -- | -- |
| 114-P2-MW-2D | 114-P2-MW-2D-55.4-20241115 | 11/15/2024 | 55.4 | N | JE731 | Post-Treatment | Deep | -- | 45.4 J- | -- | 22 J- | -18.2 | 0.47 | 6.74 | 2.83 | 16 | 0.86 | -- | 7.6 J- | **348** | -- | -- | -- | -- | -- |
| 114-P2-MW-3D | 114-P2-MW-3D-45.0-20200319 | 3/19/2020 | 45 | N | JD4924 | Baseline | Deep | **43800 J** | **30100 J** | **28200** | **30000** | 163.8 | 2.69 | 7.38 | 1.215 | -- | 6.04 | -- | 2.5 | 207 J- | < 2.0 U | 0.30 | < 100 U | **173** | -- |
| 114-P2-MW-3D | 114-P2-MW-3D-20201120 | 11/20/2020 | 52.5 | N | JD16639 | Treatment | Deep | **477000**<br>**390000** | **488000**<br>**419000** | **384000**<br>**354000** | **379000**<br>**375000** | 86 | 0 | 7.18 | 2.18 | -- | 9.24 | -- | 145 | **473** | -- | 104 | -- | **2500**<br>**2120** | < 0.20 U |
| 114-P2-MW-3D | 114-P2-MW-3D-53.0-20201214 | 12/14/2020 | 53 | N | JD17730 | Treatment | Deep | **245000** | **269000** | **218000** | **251000** | 1.27 | 1.27 | 6.88 | 5.702 | -- | 2 | -- | 224 | **520** | -- | -- | -- | -- | -- |
| 114-P2-MW-3D | 114-P2-MW-3D-55.0-20210112 | 1/12/2021 | 55 | N | JD18928 | Treatment | Deep | **264000** | **302000** | **245000** | **252000** | 194.7 | 0.34 | 6.57 | 4.341 | -- | 6.91 | -- | 130 | **579** | -- | -- | -- | -- | -- |
| 114-P2-MW-3D | 114-P2-MW-3D-54.0-20210217 | 2/17/2021 | 54 | N | JD20435 | Treatment | Deep | **160000** | **175000** | **214000** | **226000** | 211.5 | 0.4 | 6.92 | 4.083 | -- | 9.71 | -- | 44.2 | **608** | -- | -- | -- | -- | -- |
| 114-P2-MW-3D | 114-P2-MW-3D-55.0-20210316 | 3/16/2021 | 55 | N | JD21820 | Treatment | Deep | **373000** | **494000** | **403000** | **424000** | 229.6 | 3.98 | 7.01 | 4.086 | -- | 5.68 | -- | 41.7 | **541** | -- | -- | -- | -- | -- |
| 114-P2-MW-3D | 114-P2-MW-3D-53-20210427 | 4/27/2021 | 53 | N | 4602330111 | Treatment | Deep | **380000** | **412000** | **382000** | **382000** | 135.9 | 0.71 | 7.11 | 4.799 | -- | 10.84 | -- | 10.7 | **457 F1** | -- | 360 | < 120 U | **7650** | -- |
| 114-P2-MW-3D | 114-P2-MW-3D-53-20210525 | 5/25/2021 | 53 | N | 4602351281 | Treatment | Deep | **192000** | **180000** | **181000 H** | **197000 H** | 143.3 | 0.9 | 7.25 | 4.08 | -- | -- NM | -- | 28.7 | **324** | -- | 240 | **< 600 U** | **6690** | -- |
| 114-P2-MW-3D | 114-P2-MW-3D-53.0-20210622 | 6/22/2021 | 53 | N | 4602371271 | Treatment | Deep | **315000** | **322000** | **348000** | **326000** | 166.7 | 0.77 | 7.33 | 3.94 | -- | 6.07 | -- | 9.9 | **519** | -- | 250 | **< 6000 U** | **4790** | -- |
| 114-P2-MW-3D | 114-P2-MW-3D-52.5-20210720 | 7/20/2021 | 52.5 | N | 4602391431 | Treatment | Deep | **606000** | **540000** | **605000** | **622000** | 78.5 | -0.94 ** | 7.13 | 8.977 | -- | 7.56 | -- | 10.4 | **403 F1** | -- | 280 | **< 6000 U** | **3890 F1** | -- |
| 114-P2-MW-3D | 114-P2-MW-3D-52.5-20210720X | 7/20/2021 | 52.5 | FD | 4602391431 | Treatment | Deep | **621000** | **581000** | **662000** | **667000** | -- | -- | -- | -- | -- | -- | -- | 9.9 | **398** | -- | 280 | **< 2400 U** | **4040** | -- |
| 114-P2-MW-3D | 114-P2-MW-3D-53.0-20210825 | 8/25/2021 | 53 | N | 4602415661 | Treatment | Deep | **528000** | **606000** | **513000** | **562000** | 151.6 | 0.77 | 7.17 | 4.219 | -- | 7.71 | -- | 7.6 | **398** | -- | 220 | **< 6000 U** | **3610** | -- |
| 114-P2-MW-3D | 114-P2-MW-3D-53-20211020 | 10/20/2021 | 53 | N | 4602455621 | Treatment | Deep | **720000** | **738000** | **828000** | **762000** | 137.5 | 3.58 | 7.31 | 5.036 | -- | 7.68 | -- | 10.7 | 23.1 | -- | 260 | **< 600 U** | **1630** | -- |
| 114-P2-MW-3D | 114-P2-MW-3D-53.0-20211118 | 11/18/2021 | 53 | N | 4602475481 | Treatment | Deep | **641000** | **593000** | **622000** | **588000** | 112.2 | 0.07 | 7.34 | 4.8 | -- | 4.02 | -- | 9.4 | **427** | -- | 240 | **< 600 U** | **3820** | -- |
| 114-P2-MW-3D | 114-P2-MW-3D-52.5-20211214 | 12/14/2021 | 52.5 | N | 4602491111 | Treatment | Deep | **745000** | **641000** | **609000** | **609000** | 187 | 0.16 | 7.45 | 4.652 | -- | 4.07 | -- | 15.3 B | **414** | -- | 190 | **< 600 U** | **2120** | -- |
| 114-P2-MW-3D | 114-P2-MW-3D-53-20220112 | 1/12/2022 | 53 | N | 4602505551 | Treatment | Deep | **371000** | **383000** | **307000** | **315000** | 141 | 0 | 6.08 | 3.71 | -- | 6.08 | -- | 11.5 | **373** | -- | 170 | **< 1200 U** | **3980** | -- |
| 114-P2-MW-3D | 114-P2-MW-3D-53-20220211 | 2/11/2022 | 53 | N | 4602523441 | Treatment | Deep | **363000** | **372000** | **358000** | **363000** | 123.8 | 6.69 | 8.11 | 3.479 | -- | 3.49 | -- | 8.2 | **333** | -- | 180 | **< 1200 U** | **501** | -- |
| 114-P2-MW-3D | 114-P2-MW-3D-53-20220317 | 3/17/2022 | 53 | N | 4602545111 | Treatment | Deep | **88200** | **72300** | **105000** | **83100** | 127.2 | 5.66 | 7.67 | 1.7 | -- | 7.95 | -- | 20.0 ^2 | **329** | -- | 160 | **< 600 U** | **1570** | -- |
| 114-P2-MW-3D | 114-P2-MW-3D-53.0-20220412 | 4/12/2022 | 53 | N | 4602561091 | Treatment | Deep | **25200** | **42900** | **22600** | **22600** | 36.9 | 0.4 | 7.59 | 2.599 | 16.46 | 92 | -- | 24.7 B | 172 | -- | 210 | < 120 U | **1940** | -- |
| 114-P2-MW-3D | 114-P2-MW-3D-53.0-20220509 | 5/9/2022 | 53 | N | 4602578211 | Treatment | Deep | **1860** | **17600** | **1610** | **21400** | -34.4 | 0.05 | 7.91 | 2.267 | 19.01 | 9.4 | -- | 98.2 | 55.1 | -- | 1300 | < 120 U | **7510** | -- |
| 114-P2-MW-3D | 114-P2-MW-3D-53-20220608 | 6/8/2022 | 53 | N | 4602596671 | Treatment | Deep | **4360** | **7080** | **3480** | **3150** | 164.9 | 0.05 | 6.9 | 2.534 | 20.2 | 35 | -- | 197 | 63.0 | -- | -- | **2120** | **10200** | -- |
| 114-P2-MW-3D | 114-P2-MW-3D-53.0-20220713 | 7/13/2022 | 53 | N | 4602618361 | Treatment | Deep | -- | **752** | -- | < 10.0 U | -98.6 | 1.62 | 7.50 | 2.628 | 18.55 | 8.80 | -- | 225 | 8.34 | -- | -- | -- | -- | -- |
| 114-P2-MW-3D | 114-P2-MW-3D-53-20220816 | 8/16/2022 | 53 | N | 4602639181 | Treatment | Deep | -- | **220** | -- | < 10.0 U | -82.5 | 2.89 | 6.95 | 2.922 | 19.23 | 9.66 | -- | 136 | 15.6 | -- | -- | **14000** | **10700** | -- |
| 114-P2-MW-3D | 114-P2-MW-3D-53-20220913 | 9/13/2022 | 53 | N | 4602654331 | Treatment | Deep | -- | **1700** | -- | < 20.0 U | -116.7 | 1.03 | 6.86 | 2.997 | 18.33 | 9.73 | -- | 102 | 26.7 | -- | -- | **12800** | **9580** | -- |
| 114-P2-MW-3D | 114-P2-MW-3D-52.5-20221209 | 12/9/2022 | 52.5 | N | 4602710741 | Post-Treatment | Deep | -- | **471** |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P2-MW-3D | 114-P2-MW-3D-55.9-20231117-X | 11/17/2023 | 55.9 | FD | JD77231 | Post-Treatment | Deep | -- | **414** | -- | 15 RA | -- | -- | -- | -- | -- | -- | -- | 19.7 | **314** | -- | -- | -- | -- | -- |
| 114-P2-MW-3D | 114-P2-MW-3D-55.9-20240215 | 2/15/2024 | 55.9 | N | JD82518 | Post-Treatment | Deep | -- | **487** | -- | < 10 RA | -518.8 | 0.13 | 6.85 | 2.737 | 12.5 | 8.98 | -- | 17.6 | **603** | -- | -- | -- | -- | -- |
| 114-P2-MW-3D | 114-P2-MW-3D-55.9-20240516 | 5/16/2024 | 55.9 | N | JD88618 | Post-Treatment | Deep | -- | **995** | -- | 9.5 J | -359.5 | 0.99 | 6.87 | 2.826 | 15.7 | 8.93 | -- | 18.2 J- | **569** | -- | -- | -- | -- | -- |
| 114-P2-MW-3D | 114-P2-MW-3D-55.9-20240819 | 8/19/2024 | 55.9 | N | JD94428 | Post-Treatment | Deep | -- | **415** | -- | 9.7 J | -348.9 | 1.49 | 6.91 | 2.695 | 21.9 | 7.99 | -- | 19.4 | **485** | -- | -- | -- | -- | -- |
| 114-P2-MW-3D | 114-P2-MW-3D-55.9-20241115 | 11/15/2024 | 55.9 | N | JE731 | Post-Treatment | Deep | -- | **391 J-** | -- | < 10 RA | -315.7 | 0.14 | 6.92 | 2.4 | 15.6 | 4.08 | -- | 17.8 J- | 133 | -- | -- | -- | -- | -- |
| 114-P2-MW-4D | 114-P2-MW-4D-59.5-20200320 | 3/20/2020 | 59.5 | N | JD4980 | Baseline | Deep | 6.2 J | 8.2 J | < 10 U | < 10 U | 25.6 | 0.75 | 7.86 | 6.87 | -- | 5.75 | -- | 2.8 | 63.1 J- | < 2.0 U | 5.3 | 275 | **83.9 J** | -- |
| 114-P2-MW-4D | 114-P2-MW-4D-59.5-20201119 | 11/19/2020 | 59.5 | N | JD16573 | Treatment | Deep | 2.0 B | 5.2 B | < 10 U | < 10 U | -38 | 0 | 7.67 | 0.738 | -- | 1.26 | -- | 3.7 | 73.1 | -- | 9.15 | -- | **197** | < 0.20 U |
| 114-P2-MW-4D | 114-P2-MW-4D-59.0-20201215 | 12/15/2020 | 59 | N | JD17793 | Treatment | Deep | 2.5 B | 3.0 B | < 10 U | < 10 U | 25.8 | 0.57 | 7.81 | 0.942 | -- | 1.54 | -- | 2.2 | 93.0 | -- | -- | -- | -- | -- |
| 114-P2-MW-4D | 114-P2-MW-4D-60.0-20210113 | 1/13/2021 | 60 | N | JD18964 | Treatment | Deep | < 10 U | 2.9 B | < 10 U | < 10 U | 15.7 | 0.39 | 7.56 | 1.006 | -- | 3.2 | -- | 2.0 | 83.5 | -- | -- | -- | -- | -- |
| 114-P2-MW-4D | 114-P2-MW4D-58-20210316 | 3/16/2021 | 58 | N | JD21820 | Treatment | Deep | 3.2 B | 3.7 B | < 10 U | < 10 U | -187.9 | 0.44 | 8.61 | 0.781 | -- | 3.19 | -- | 5.2 | 90.9 | -- | -- | -- | -- | -- |
| 114-P2-MW-4D | 114-P2-MW-4D-59.0-20210427 | 4/27/2021 | 59 | N | 4602330111 | Treatment | Deep | < 4.0 UB | 4.0 | < 10.0 U | < 10.0 U | -208.2 | 0.43 | 7.68 | 0.962 | -- | 8.61 | -- | 3.5 | 158 | -- | 32 | **382** | **2160** | -- |
| 114-P2-MW-4D | 114-P2-MW-4D-60.0-20210526 | 5/26/2021 | 60 | N | 4602352461 | Treatment | Deep | 4.0 | **80.6** | < 10.0 U | < 50.0 U | -292.2 | 3.38 | 7.3 | 1.167 | -- | 127 | -- | 3.9 | 231 | -- | 23 | **659** | **4630** | -- |
| 114-P2-MW-4D | 114-P2-MW-4D-60.0-20210623 | 6/23/2021 | 60 | N | 4602372171 | Treatment | Deep | 29.0 J | 61.2 J | < 10.0 U | < 10.0 U | -295.5 ** | 17.5 ** | 6.98 | 1.363 | -- | 8.45 | -- | 9.9 | **749** | -- | 37 | **< 1200 U** | **11200** | -- |
| 114-P2-MW-4D | 114-P2-MW-4D-59.5-20210720 | 7/20/2021 | 59.5 | N | 4602391431 | Treatment | Deep | < 4.0 U | 4.8 | < 10.0 U | < 10.0 U | -120.9 | 0.24 | 7.11 | 1.516 | -- | 27.2 | -- | 3.3 | **383** | -- | 33 | **1940** | **13000** | -- |
| 114-P2-MW-4D | 114-P2-MW-4D-60-20210825 | 8/25/2021 | 60 | N | 4602415661 | Treatment | Deep | 7.6 | 38.0 | < 10.0 U | < 10.0 U | -128.9 | 0.76 | 6.89 | 1.562 | -- | 167 | -- | 11.5 | **374** | -- | 51 | **3190** | **15500** | -- |
| 114-P2-MW-4D | 114-P2-MW-4D-60.0-20210920 | 9/20/2021 | 60 | N | 4602432251 | Treatment | Deep | 3.6 J | 11.4 | < 10.0 U | < 10.0 U | -158.8 | 0.37 | 17.13 | 1.55 | -- | 25.3 | -- | 6.5 | **355** | -- | 47 | **2570** | **10900** | -- |
| 114-P2-MW-4D | 114-P2-MW-4D-60-20211019 | 10/19/2021 | 60 | N | 4602454351 | Treatment | Deep | 4.6 | 5.1 | < 10.0 U | < 10.0 U | -186.6 | 0.18 | 7.13 | 1.53 | -- | 8.93 | -- | 5.9 B | **309** | -- | 60 | **1730** | **7700** | -- |
| 114-P2-MW-4D | 114-P2-MW-4D-60-20211118 | 11/18/2021 | 60 | N | 4602475481 | Treatment | Deep | 23.4 | 23.6 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 14.6 | **303** | -- | 200 | **4820** | **17200** | -- |
| 114-P2-MW-4D | 114-P2-MW-4D-62.7-20211214 | 12/14/2021 | 62.7 | N | 4602491111 | Treatment | Deep | 12.2 | 12.3 | < 10.0 U | < 10.0 U | -81.1 | 4.59 | 6.95 | 1.844 | -- | 6.73 | -- | 7.9 B | **287** | -- | 80 | **3490** | **12900** | -- |
| 114-P2-MW-4D | 114-P2-MW-4D-62.7-20211214-X | 12/14/2021 | 62.7 | FD | 4602491111 | Treatment | Deep | 10.2 | 12.0 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 8.8 B | **284** | -- | 87 | **3420** | **11600** | -- |
| 114-P2-MW-4D | 114-P2-MW-4D-60.0-20220112 | 1/12/2022 | 60 | N | 4602550551 | Treatment | Deep | 36.9 | 14.6 | < 10.0 U | < 10.0 U | -123 | 0 | 6.33 | 4.55 | -- | 5.6 | -- | 8.6 | **273** | -- | 620 | **3700** | **11900** | -- |
| 114-P2-MW-4D | 114-P2-MW-4D-60-20220210 | 2/10/2022 | 60 | N | 4602522631 | Treatment | Deep | 4.2 | 6.0 | < 10.0 U | < 10.0 U | -151.2 | 0.003 | 7.12 | 1.621 | -- | 2.49 | -- | 5.8 | **260** | -- | 140 | < 120 U | **9930** | -- |
| 114-P2-MW-4D | 114-P2-MW-4D-60-20220317 | 3/17/2022 | 60 | N | 4602545111 | Treatment | Deep | 3.0 J | 4.1 | < 10.0 U | < 10.0 U | -96 | 1.86 | 11.62 | 1.233 | -- | 8.8 | -- | 4.2 ^2 | 237 | -- | 59 | **1390** | **7620** | -- |
| 114-P2-MW-4D | 114-P2-MW-4D-60-20220412 | 4/12/2022 | 60 | N | 4602561091 | Treatment | Deep | < 4.0 U | 7.2 | < 10.0 U | < 10.0 U | 52.9 | 0.05 | 7.28 | 1.370 | 14.56 | 9.98 | -- | 4.1 | 145 | -- | 58 | **1190** | **6560** | -- |
| 114-P2-MW-4D | 114-P2-MW-4D-60-20220510 | 5/10/2022 | 60 | N | 4602578751 | Treatment | Deep | < 4.0 UF1 | 19.1 | < 10.0 U | < 10.0 U | -165.6 | 0.13 | 7.36 | 1.335 | 16.12 | 34.1 | -- | 2.5 | 168 | -- | 65 | **1020** | **6000** | -- |
| 114-P2-MW-4D | 114-P2-MW-4D-62-20220607 | 6/7/2022 | 62 | N | 4602595691 | Treatment | Deep | < 4.0 U | 4.1 | < 10.0 U | < 10.0 U | -110.9 | 0.02 | 7.07 | 1.234 | 17.20 | 14.4 | -- | 2.6 | 148 | -- | -- | **897** | **4850** | -- |
| 114-P2-MW-4D | 114-P2-MW-4D-60.0-20220712 | 7/12/2022 | 60 | N | 4602617771 | Treatment | Deep | -- | 28.6 | -- | < 10.0 U | -265.4 | 15.43 | 8.29 | 1.401 | 16.98 | 8.25 | -- | 4.1 | 143 | -- | -- | -- | -- | -- |
| 114-P2-MW-4D | 114-P2-MW-4D-59.5-20221206 | 12/6/2022 | 59.5 | N | 4602707751 | Post-Treatment | Deep | -- | < 9.1 UB | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 2.6 | 86.3 | < 1 U | -- | -- | -- | -- |
| 114-P2-MW-4D | 114-P2-MW-4D-59.5-20221212 | 12/12/2022 | 59.5 | N | 4602712001 | Post-Treatment | Deep | -- | -- | -- | -- | -6.8 | 0.29 | 7.37 | 1.3 | 13.7 | 7.02 | -- | -- | -- | -- | -- | **891** | **3950** | -- |
| 114-P2-MW-4D | 114-P2-MW-4D-62.1-20230217 | 2/17/2023 | 62.1 | N | 4602748361 | Post-Treatment | Deep | < 4.0 U | 4.9 | < 10.0 U | < 10.0 U | -130.0 | 0.2 | 7.4 | 1.075 | 14.2 | 49 | -- | 2.3 | 108 | < 1 U | -- | **862** | **3840** | -- |
| 114-P2-MW-4D | 114-P2-MW-4D-62.1-20230613 | 6/13/2023 | 62.1 | N | 4602822041 | Post-Treatment | Deep | -- | 4.8 | -- | < 10.0 U | -127 | 0.68 | 7.73 | 1.268 | 17.5 | 8.5 | -- | 1.5 | 86.7 | < 1 U | -- | **896** | **3590** | -- |
| 114-P2-MW-4D | 114-P2-MW-4D-62.1-20230818 | 8/18/2023 | 62.1 | N | 4602864961 | Post-Treatment | Deep | -- | 3.9 J | -- | < 10.0 U | -156.2 | 1.95 | 7.44 | 1.212 | 18.06 | 9.7 | -- | 2.5 JB | 75.5 | < 1 U | -- | **788** | **3110** | -- |
| 114-P2-MW-4D | 114-P2-MW-4D-62.1-20231120 | 11/20/2023 | 62.1 | N | JD77343 | Post-Treatment | Deep | 2.8 | 47.3 | < 10 U | < 10 U | -205.4 | 0.16 | 7.22 | 1.267 | 14.8 | 134 | -- | 1.3 | 71.7 | -- | -- | -- | -- | -- |
| 114-P2-MW-4D | 114-P2-MW-4D-62.1-20240216 | 2/16/2024 | 62.1 | N | JD82616 | Post-Treatment | Deep | -- | 3.6 J | -- | < 10 U | -332 | 0.12 | 7.23 | 1.369 | 11.7 | 4.56 | -- | 1.5 | 97.5 | -- | -- | -- | -- | -- |
| 114-P2-MW-4D | 114-P2-MW-4D-62.1-20240520 | 5/20/2024 | 62.1 | N | JD88833 | Post-Treatment | Deep | < 10 U | 3.9 J | 5.7 J | < 10 U | -142 | 0.14 | 7.13 | 1.286 | 16.1 | 12.5 | -- | 1.8 | 86.1 | -- | -- | **984** | **3110** | -- |
| 114-P2-MW-4D | 114-P2-MW-4D-62.1-20240820 | 8/20/2024 | 62.1 | N | JD94507 | Post-Treatment | Deep | < 10 U | 46.7 | 6.2 J | 9.7 J | -153.3 | 0.09 | 7.21 | 1.45 | 18.9 | 250 | -- | 2.4 | 101 | -- | -- | -- | -- | -- |
| 114-P2-MW-4D | 114-P2-MW-4D-62.1-20241115 | 11/15/2024 | 62.1 | N | JE731 | Post-Treatment | Deep | -- | < 10 UJ | -- | 3.1 J | -163 | 1.42 | 7.24 | 1.38 | 16.8 | 8.9 | -- | 1.4 J- | 86.8 | -- | -- | -- | -- | -- |
| 114-P2-MW-5D | 114-P2-MW-5D-58.5-2020325 | 3/25/2020 | 58.5 | N | JD5180 | Baseline | Deep | **993 J** | **526 J** | R | R | 90 | 0 | 7.61 | 1.32 | -- | 8.1 | -- | 2.6 | 223 | < 2.0 U | 24.3 | 44.7 J | **582** | -- |
| 114-P2-MW-5D | 114-P2-MW-5D-58.5-20201118-X | 11/18/2020 | 58.5 | FD | JD16478 | Treatment | Deep | **369000** | **309000** | **331000** **355000** | **217000** **250000** | -- | -- | -- | -- | -- | -- | -- | 26.3 | **374** | -- | 44.9 | -- | **1130** | < 0.20 U |
| 114-P2-MW-5D | 114-P2-MW-5D-58.5-20201118 | 11/18/2020 | 58.8 | N | JD16478 | Treatment | Deep | **378000** | **378000** | **347000** **316000** | **217000** **233000** | 133 | 7.38 | 7.51 | 1.27 | -- | 2.45 | -- | 29.0 | **313** | -- | 66.6 | -- | **1180 B** | < 0.20 U |
| 114-P2-MW-5D | 114-P2-MW-5D-59.0-20201214 | 12/14/2020 | 59 | N | JD17730 | Treatment | Deep | **60200** | **57200** | **69400** | **51100** | 117.1 | 0.55 | 7.1 | 4.471 | -- | 3.12 | -- | 229 | 67.8 | -- | -- | -- | -- | -- |
| 114-P2-MW-5D | 114-P2-MW-5D-59.0-20210113 | 1/13/2021 | 58 | N | JD18964 | Treatment | Deep | **181000** | **169000** | **163000** | **145000** | 121.7 | 0.47 | 7.08 | 2.63 | -- | 4.53 | -- | 117 | 223 | -- | -- | -- | -- | -- |
| 114-P2-MW-5D | 114-P2-MW-5D-60.0-20210316 | 3/16/2021 | 60 | N | JD21820 | Treatment | Deep | **121000** | **126000** | **91100** | **108000** | -256.2 | 0.06 | 9.82 | 1.669 | -- | 9.61 | -- | 5.6 | 227 | -- | -- | -- | -- | -- |
| 114-P2-MW-5D | 114-P2-MW-5D-59-20210427 | 4/27/2021 | 59 | N | 4602330111 | Treatment | Deep | **116000** | **154000** | **27800** | **30400** | -387.4 | 1.47 | 11.01 | 2.302 | -- | 577 | -- | 3.1 | 181 | -- | 100 | < 120 U | 6.3 J | -- |
| 114-P2-MW-5D | 114-P2-MW-5D-60-20210527 | 5/27/2021 | 60 | N | 4602353531 | Treatment | Deep | **174000** | **89700** | **82300 H** | **100000** | -383.9 | 0.12 | 11.75 | 2.426 | -- | 301 | -- | 2.7 | 248 | -- | 110 | **< 2400 U** | **< 160 U** | -- |
| 114-P2-MW-5D | 114-P2-MW-5D-60.0-20210623 | 6/23/2021 | 60 | N | 4602372171 | Treatment | Deep | **2010** | **7680** | **< 500 U** | **< 500 U** | -412.5 | 0.81 | 9.32 | 2.001 | -- | 113 | -- | 47.7 | 199 | -- | 240 | **< 1200 U** | **56.1 J** | -- |
| 114-P2-MW-5D | 114-P2-MW-5D-58.5-20210726 | 7/26/2021 | 58.5 | N | 4602395391 | Treatment | Deep | **210000** | **177000** | **173000** | **178000** | 189.7 | 10.22 | 9.89 | 3.702 | -- | 228 | -- | 105 | **251 F1** | -- | 250 | **< 6000 U** | **< 400 U** | -- |
| 114-P2-MW-5D | 114-P2-MW-5D-60.0-20210827 | 8/27/2021 | 60 | N | 4602417371 | Treatment | Deep | **372000** | **392000** | **328000** | **328000** | -144.8 | 0.67 | 9.75 | 2.479 | -- | 75 | -- | 13.5 | **404 F1** | -- | 170 | **< 2400 U** | **< 160 U** | -- |
| 114-P2-MW-5D | 114-P2-MW-5D-60.0-20210827-X | 8/27/2021 | 60 | FD | 4602417371 | Treatment | Deep | **375000** | **402000** | **378000** | **367000** | -- | -- | -- | -- | -- | -- | -- | 13.2 | **349** | -- | 170 | **< 2400 U** | **< 160 U** | -- |
| 114-P2-MW-5D | 114-P2-MW-5D-60-20210923 | 9/23/2021 | 60 | N | 4602434911 | Treatment | Deep | **300000** | **306000** | **161000** | **164000** | 2 | 2.34 | 10.21 | 2.155 | -- | 99.1 | -- | 76.7 | **340** | -- | 160 | **< 600 U** | < 40.0 U | -- |
| 114-P2-MW-5D | 114-P2-MW-5D-60.0-20211019 | 10/19/2021 | 60 | N | 4602454351 | Treatment | Deep | **397000** | **388000** | **437000** | **454000** | 88.7 | 0.16 | 8.93 | 3.131 | -- | 8.01 | -- | 10.0 B | **404** | -- | 180 | **< 600 U** | < 40.0 U | -- |
| 114-P2-MW-5D | 114-P2-MW-5D-60.0-20211118 | 11/18/2021 | 60 | N | 4602475481 | Treatment | Deep | **415000** | **418000** | **424000** | **435000** | 117.6 | 0.4 | 9.08 | 3.008 | -- | 5 | -- | 19.4 | **325** | -- | 180 | **< 600 U** | 11.3 J | -- |
| 114-P2-MW-5D | 114-P2-MW-5D-58.5-20211215 | 12/15/2021 | 58.5 | N | 4602491921 | Treatment | Deep | **391000** | **364000** | **330000** | **369000** | 40.9 | 0.01 | 9.01 | 3.057 | -- | 6.09 | -- | 13.3 | **331** | -- | 200 | **< 600 U** | < 40.0 U | -- |
| 114-P2-MW-5D | 114-P2-MW-5D-60.0-20220114 | 1/14/2022 | 60 | N | 4602507311 | Treatment | Deep | **453000** | **449000** | **453000** | **481000** | 94.2 | 0 | 8.63 | 3.03 | -- | 8.21 | -- | 5.9 | **323** | -- | 160 | **< 1200 U** | 34.3 J | -- |
| 114-P2-MW-5D | 114-P2-MW-5D-61-20220211 | 2/11/2022 | 61 | N | 4602523441 | Treatment | Deep | **375000** | **350000** | **391000** | **385000** | 25.6 | 0 | 8.94 | 2.702 | -- | 7.31 | -- | 9.4 | **305** | -- | 160 | **< 1200 U** | **< 80.0 U** | -- |
| 114-P2-MW-5D | 114-P2-MW-5D-60-20220316 | 3/16/2022 | 60 | N | 4602544241 | Treatment | Deep | **245000** | **288000** | **280000** | **300000** | 194.3 | 7.5 | 8.71 | 1.854 | -- | 8.07 | -- | 11.9 | **307** | -- | 120 | **< 600 U** | < 40.0 U | -- |
| 114-P2-MW-5D | 114-P2-MW-5D-61-0-20220414 | 4/14/2022 | 61 | N | 4602562981 | Treatment | Deep | **166000** | **154000** | **133000** | **83400** | 5.1 | 0.69 | 8.52 | 2.269 | 14.70 | 9.52 | -- | 34.9 | 240 | -- | 38 | **< 600 U** | 14.4 J | -- |
| 114-P2-MW-5D | 114-P2-MW-5D-60-20220510 | 5/10/2022 | 60 | N | 4602578751 | Treatment | Deep | **78700** | **73300** | **97700** | **98800** | -7.6 | 2.38 | 7.28 | 2.308 | 16.18 | 40.8 | -- | 42.8 | 193 | -- | 820 | **< 600 U** | **195** | -- |
| 114-P2-MW-5D | 114-P2-MW-5D-60-20220608 | 6/8/2022 | 60 | N | 4602596671 | Treatment | Deep | **11000** | -- | < 10.0 U | -- | -195.4 | 6.04 | 7.27 | 1.722 | 17.82 | 149 | -- | -- | -- | -- | -- | 86.9 J | **636** | -- |
| 114-P2-MW-5D | 114-P2-MW-5D-60-20220608 | 6/8/2022 | 60 | N | 4602597161 | Treatment | Deep | -- | **19400** | -- | **< 100 U** | -- | -- | -- | -- | -- | -- | -- | 52.2 | 112 | -- | -- | -- | -- | -- |
| 114-P2-MW-5D | 114-P2-MW-5D-60.0-20220712 | 7/12/2022 | 60 | N | 4602617771 | Treatment | Deep | -- | **442** | -- | < 10.0 U | -311.8 | 7.87 | 691 | 1.973 | 18.65 | 8.94 | -- | 37.0 | 112 | -- | -- | -- | -- | -- |
| 114-P2-MW-5D | 114-P2-MW-5D-60-20220818 | 8/18/2022 | 60 | N | 4602640741 | Treatment | Deep | -- | **471** | -- | < 10.0 U | -315.9 | 5.73 | 7.30 | 1.890 | 18.61 | 7.60 | -- | 26.3 | **264** | -- | -- | < 120 U | **287** | -- |
| 114-P2-MW-5D | 114-P2-MW-5D-58.5-20221206 | 12/6/2022 | 58.5 | N | 4602707741 | Treatment | Deep | -- | **533** | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 19.3 | **261** | -- | -- | -- | -- | -- |
| 114-P2-MW-5D | 114-P2-MW-5D-58.5-20221209 | 12/9/2022 | 58.5 | N | 4602711631 | Treatment | Deep | -- | -- | -- | -- | -315.7 | 0.61 | 6.95 | 2.554 | 14.52 | 8.76 | -- | -- | -- | -- | -- | 82.8 J | **441** | -- |
| 114-P2-MW-5D | 114-P2-MW-5D-61.4-20230217 | 2/17/2023 | 61.4 | N | 4602748361 | Post-Treatment | Deep | **181** | **1050** | < 10.0 U | < 10.0 U | 86.5 | 0 | 8.79 | 1.86 | 13.88 | 13.9 | -- | 18.2 | 201 | 1.04 | -- | 84.6 J | **452** | -- |
| 114-P2-MW-5D | 114-P2-MW-5D-61.4-20230614 | 6/14/2023 | 61.4 | N | 4602823061 | Post-Treatment | Deep | -- | **1010** | -- | < 10.0 U | -254.5 | 0.18 | 7.81 | 2.283 | 19.4 | 6.44 | -- | 16.4 | **329** | 11.2 | -- | < 120 U | **209** | -- |
| 114-P2-MW-5D | 114-P2-MW-5D-61.4-20230816 | 8/16/2023 | 61.4 | N | 4602863141 | Post-Treatment | Deep | -- | **294** | -- | < 10.0 U | -298.3 | 0.32 | 7.01 | 5.164 | 18.36 | 9.6 | -- | 15.9 | **361** | 15 | -- | < 120 U | **339** | -- |
| 114-P2-MW-5D | 114-P2-MW-5D-61.4-20231117 | 11/17/2023 | 61.4 | N | JD77231 | Post-Treatment | Deep | **38100** | **33400** | **27500** | **24700 RA** | -280.9 | 0.2 | 7.33 | 2162 | 16.4 | 77.1 | -- | 5.9 | **440** | -- | -- | -- | -- | -- |
| 114-P2-MW-5D | 114-P2-MW-5D-61.4-20240215 | 2/15/2024 | 61.4 | N | JD82518 | Post-Treatment | Deep | **39300** | **43200** | **51000 J-** | **49800 J-** | -286.3 | 0.43 | 7.74 | 2.4 | 11.6 | 125 | -- | 6.4 | **398** | -- | -- | -- | -- | -- |
| 114-P2-MW-5D | 114-P2-MW-5D-61.4-20240521 | 5/21/2024 | 61.4 | N | JD88897 | Post-Treatment | Deep | **162** | **2190** | < 10 U | < 10 U | -320.5 | 0.14 | 7.2 | 2.521 | 17 | 47.5 | -- | 10.1 | **420** | -- | -- | < 100 U | **139** | -- |
| 114-P2-MW-5D | 114-P2-MW-5D-61.4-20240815 | 8/15/2024 | 61.4 | N | JD94204 | Post-Treatment | Deep | **131** | **1630** | 4.7 J | < 10 U | -315.6 | 0.25 | 6.69 | 2.96 | 20.8 | 72.1 | -- | 10.8 | **536** | -- | -- | -- | -- | -- |
| 114-P2-MW-5D | 114-P2-MW-5D-61.4-20241115 | 11/15/2024 | 61.4 | N | JE731 | Post-Treatment | Deep | -- | **423 J-** | -- | < 10 RA | -332.7 | 0.27 | 6.68 | 2.90 | 16.3 | 9.12 | -- | 11.0 J- | **572** | -- | -- | -- | -- | -- |
| 114-P2-MW-6D | 114-P2-MW-6D-57.5-20200317 | 3/17/2020 | 57.5 | N | JD4798 | Baseline | Deep | **178000** | **164000** | **168000** | **186000** | 215.3 | 0.24 | 7.61 | 1.235 | -- | 4.16 | -- | 3.2 | 167 J- | R | 45.4 | < 100 U | **444 J** | -- |
| 114-P2-MW-6D | 114-P2-MW-6D-56.5-20201118 | 11/18/2020 | 56.5 | N | JD16478 | Treatment | Deep | **165000** | **139000** | **116000** **136000** | **121000** **125000** | 133 | 7.38 | 7.51 | 1.27 | -- | 2.45 | -- | 2.9 | 180 | -- | 60.2 | -- | **424** | < 0.20 U |
| 114-P2-MW-6D | 114-P2-MW-6D-58.0-20201214 | 12/14/2020 | 58 | N | JD17730 | Treatment | Deep | **86800** | **90400** | **80900** | **83600** | 223.8 | 0.46 | 7.25 | 2.159 | -- | 3.71 | -- | 2.9 | 166 | -- | -- | -- | -- | -- |
| 114-P2-MW-6D | 114-P2-MW-6D-58.0-20210113 | 1/13/2021 | 58 | N | JD18964 | Treatment | Deep | **38800** | **29600** | **50700** | **34300** | 75.1 | 0.65 | 7.57 | 0.898 | -- | 2.18 | -- | 1.8 | 140 | -- | -- | -- | -- | -- |
| 114-P2-MW-6D | 114-P2-MW-6D-58.0-20210316 | 3/16/2021 | 58 | N | JD21820 | Treatment | Deep | **61600** | **40300** | **90100** | **81400** | -13.3 | 0 | 7.26 | 0.783 | -- | 7.36 | -- | 20.5 | 87.3 | -- | -- | -- | -- | -- |
| 114-P2-MW-6D | 114-P2-MW-6D-58-20210427 | 4/27/2021 | 58 | N | 4602330111 | Treatment | Deep | **319** | **1060** | **249** | **262** | 140 | 2.47 | 7.34 | 0.765 | -- | 5.88 | -- | 3.5 | 90.1 | -- | 52 | 59.4 J | **976** | -- |
| 114-P2-MW-6D | 114-P2-MW-6D-58.0-20210525 | 5/25/2021 | 58 | N | 4602351281 | Treatment | Deep | **1210** | **960** | **321** | **98.3** | -68.9 | 0.83 | 7.4 | 0.889 | -- | 3.05 | -- | 3.6 | 114 | -- | 73 | **987** | **1010** | -- |
| 114-P2-MW-6D | 114-P2-MW-6D-58.0-20210622 | 6/22/2021 | 58 | N | 4602371271 | Treatment | Deep | **2910** | **164000** | **2080** | **1320** | -88 | 0.1 | 7.23 | 1.349 | -- | 21.9 | -- | 20.8 | 168 | -- | 73 | **341** | **3910** | -- |
| 114-P2-MW-6D | 114-P2-MW-6D-56.5-20210723 | 7/23/2021 | 56.5 | N | 4602394041 | Treatment | Deep | 15.4 | **163** | < 10.0 U | < 10.0 U | -54.7 | 11.85 | 7.24 | 0.844 | -- | 4.72 | -- | 3.0 | 144 | -- | 88 | **1240** | **1560** | -- |
| 114-P2-MW-6D | 114-P2-MW-6D-58.0-20210830 | 8/30/2021 | 58 | N | 4602418391 | Treatment | Deep | 20.0 | 32.0 | < 10.0 U | < 50.0 U | -370.3 | 9.53 | 7.74 | 1.358 | -- | 478 | -- | 6.4 | 203 | -- | 66 | < 120 U | **1470** | -- |
| 114-P2-MW-6D | 114-P2-MW-6D-55.0-20210922 | 9/22/2021 | 55 | N | 4602433951 | Treatment | Deep | 28.0 | 58.0 | < 50.0 U | < 50.0 U | -405.9 | 0.3 | 7.9 | 1.52 | -- | 8.61 | -- | 18.6 | **258** | -- | 30 | < 120 U | **2000** | -- |
| 114-P2-MW-6D | 114-P2-MW-6D-58.0-20211020 | 10/20/2021 | 58 | N | 4602455621 | Treatment | Deep | 55.6 | **174** | < 10.0 U | < 10.0 U | -169.7 | 0.71 | 6.8 | 7.168 | -- | 6.98 | -- | 9.6 | 37.1 | -- | 93 | **483** | **5720** | -- |
| 114-P2-MW-6D | 114-P2-MW-6D-58-20211118 | 11/18/2021 | 58 | N | 4602475481 | Treatment | Deep | **144** | **341** | < 10.0 U | < 10.0 U | -183.6 | 48.2 | 6.78 | 2.133 | -- | 4.4 | -- | 7.3 | **546** | -- | 130 | 218 | **5770** | -- |
| 114-P2-MW-6D | 114-P2-MW-6D-56.6-20211214 | 12/14/2021 | 56.6 | N | 4602491111 | Treatment | Deep | **117** | **275** | < 50.0 U | < 50.0 U | -371.7 | 0.09 | 7.56 | 2.558 | -- | 178.69 | -- | 10.4 | **540** | -- | 94 | < 120 U | **3000** | -- |
| 114-P2-MW-6D | 114-P2-MW-6D-58-20220113 | 1/13/2022 | 58 | N | 4602506661 | Treatment | Deep | 27.8 | **83.3** | **< 500 UF1** | **< 500 UF1** | -417 | 0 | 9.33 | 2.89 | -- | 463 | -- | 16.5 | **497** | -- | 57 F1 | **< 600 U** | **1530** | -- |
| 114-P2-MW-6D | 114-P2-MW-6D-58-20220113-X | 1/13/2022 | 58 | FD | 4602506661 | Treatment | Deep | 27.8 | 69.5 | **< 250 U** | **< 250 U** | -- | -- | -- | -- | -- | -- | -- | 16.8 | **401** | -- | 66 | < 120 U | **1510** | -- |
| 114-P2-MW-6D | 114-P2-MW-6D-58-20220211 | 2/11/2022 | 58 | N | 4602523441 | Treatment | Deep | 31.2 | **161** | **< 500 U** | **< 500 U** | -425.4 | 0 | 11.05 | 2.603 | -- | 428 | -- | 12.3 | **515** | -- | 58 | < 240 U | **1160** | -- |
| 114-P2-MW-6D | 114-P2-MW-6D-58-20220316 | 3/16/2022 | 58 | N | 4602544241 | Treatment | Deep | 16.4 | **83.5** | **< 1000 U** | **< 1000 U** | -431.2 | 0.44 | 8.5 | 2.021 | -- | 2.61 | -- | 17.1 | **550** | -- | 60 | < 120 U | **550** | -- |
| 114-P2-MW-6D | 114-P2-MW-6D-58.0-20220414 | 4/14/2022 | 58 | N | 4602562981 | Treatment | Deep | 25.5 | **202** | 37.1 | **71.0** | -393.4 | 3.41 | 8.58 | 2.213 | 17.42 | 3.30 | -- | 10.8 | **457** | -- | 58 | < 120 U | **748** | -- |
| 114-P2-MW-6D | 114-P2-MW-6D-58.0-20220509 | 5/9/2022 | 58 | N | 4602578211 | Treatment | Deep | 31.9 | **100** | < 20.0 U | < 10.0 U | -355.0 | 0.47 | 7.15 | 1.870 | 15.57 | 1.60 | -- | 9.5 | **492** | -- | 73 | < 120 U | **952** | -- |
| 114-P2-MW-6D | 114-P2-MW-6D-58.0-20220608 | 6/8/2022 | 58 | N | 4602596671 | Treatment | Deep | -- | **99.7** | -- | **82.7** | -326.2 | 3.24 | 6.97 | 1.989 | 17.97 | 0.51 | -- | 9.6 | **583** | -- | -- | -- | -- | -- |
| 114-P2-MW-6D | 114-P2-MW-6D-58.0-20220715 | 7/15/2022 | 58 | N | 4602619741 | Treatment | Deep | -- | **76.9** | -- | < 10.0 U | -328.4 | 1.72 | 6.89 | 2.024 | 17.17 | 1.34 | -- | 10.9 | **628** | -- | -- | -- | -- | -- |
| 114-P2-MW-6D | 114-P2-MW-6D-58-20220819 | 8/19/2022 | 58 | N | 4602641451 | Treatment | Deep | -- | **121** | -- | < 10.0 U | -305.4 | 5.41 | 7.11 | 1.728 | 17.90 | 3.47 | -- | 12.3 | **655** | -- | -- | 94.5 J | **2690** | -- |
| 114-P2-MW-6D | 114-P2-MW-6D-58.5-20221214 | 12/14/2022 | 58.5 | N | 4602713641 | Treatment | Deep | -- | **171** | -- | < 10.0 U | -241.8 | 0.17 | 6.75 | 2.064 | 9.79 | 5.95 | -- | 12.5 | **654** | -- | -- | 162 | **3290** | -- |
| 114-P2-MW-6D | 114-P2-MW-6D-59.4-20230220 | 2/20/2023 | 59.4 | N | 4602749361 | Post-Treatment | Deep | -- | **226** | -- | < 10.0 UJ | -290.6 | 0.39 | 6.65 | 2.236 | 14.03 | 1.41 | -- | 12.9 | **834** | 9.84 | -- | 203 | **3890** | -- |
| 114-P2-MW-6D | 114-P2-MW-6D-59.4-20230616 | 6/16/2023 | 59.4 | N | 4602824851 | Post-Treatment | Deep | -- | **181** | -- | **107** | -237 | 3.05 | 6.79 | 2.533 | 21.7 | 2.42 | -- | 20.7 | **902** | 8.24 | -- | **728** | **5350** | -- |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P2-MW-6D | 114-P2-MW-6D-59.4-20240516 | 5/16/2024 | 59.4 | N | JD88618 | Post-Treatment | Deep | -- | **101** | -- | 7.2 J | -314.8 | 0.96 | 7.29 | 2.755 | 15 | 0.66 | -- | 12.3 J- | **822** | -- | -- | -- | -- | -- |
| 114-P2-MW-6D | 114-P2-MW-6D-59.4-20240815 | 8/15/2024 | 59.4 | N | JD94204 | Post-Treatment | Deep | -- | **111** | -- | 11 | -302.1 | 0.68 | 6.59 | 2.61 | 19.4 | 1.55 | -- | 12.5 | **867** | -- | -- | -- | -- | -- |
| 114-P2-MW-6D | 114-P2-MW-6D-59.4-20241118 | 11/18/2024 | 59.4 | N | JE873 | Post-Treatment | Deep | -- | **87.9** | -- | < 10 U | -424.9 | 0.45 | 7 | 2.42 | 16.8 | 0.68 | -- | 8.9 J- | **886** | -- | -- | -- | -- | -- |
| 114-P2-MW-8D | 114-P2-MW-8D-64.5-20200320 | 3/20/2020 | 64.5 | N | JD5007 | Baseline | Deep | 9.6 J | 24.5 | < 10 U | 7.3 J | 46.3 | 0.28 | 7.85 | 0.651 | -- | 4.28 | -- | 1.9 | 135 J- | R | 39.5 | < 100 U | **136** | -- |
| 114-P2-MW-8D | 114-P2-MW-8D-64.5-20201119 | 11/19/2020 | 64.5 | N | JD16573 | Treatment | Deep | **9410** | **8930** | **9600**<br>**8400** | **9800**<br>**9200** | 127 | 0 | 7.81 | 0.651 | -- | 1.58 | -- | 2.5 | 166 | -- | 67.2 | -- | **145** | < 0.20 U |
| 114-P2-MW-8D | 114-P2-MW-8D-66.0-20201216 | 12/16/2020 | 66 | N | JD17868 | Treatment | Deep | **2560** | **2260** | **2000** | **2100** | 173.3 | 0.65 | 7.81 | 0.866 | -- | 0.65 | -- | 1.4 | 149 | -- | -- | -- | -- | -- |
| 114-P2-MW-8D | 114-P2-MW-8D-66.0-20210114 | 1/14/2021 | 66 | N | JD19032 | Treatment | Deep | **496** | **331** | **550** | **440** | 176.1 | 0.8 | 7.34 | 0.851 | -- | 3.98 | -- | 1.4 | 146 | -- | -- | -- | -- | -- |
| 114-P2-MW-8D | 114-P2-MW-8D-64.5-20210317 | 3/17/2021 | 64.5 | N | JD21863 | Treatment | Deep | 54.0 | 40.9 | 55 | 68 | 183.9 | 0.53 | 7.69 | 0.727 | -- | 1.53 | -- | 2.1 | 138 | -- | -- | -- | -- | -- |
| 114-P2-MW-8D | 114-P2-MW-8D-65-20210426 | 4/26/2021 | 65 | N | 4602329401 | Treatment | Deep | 8.0 | 10.7 | < 10.0 U | < 10.0 U | 0.4 | 2.7 | 7.45 | 0.933 | -- | 4.88 | -- | 1.8 | 136 | -- | 150 | < 120 U | **164** | -- |
| 114-P2-MW-8D | 114-P2-MW-8D-65.0-20210525 | 5/25/2021 | 65 | N | 4602351281 | Treatment | Deep | 5.3 | 4.6 | < 10.0 U | < 10.0 U | 46.2 | 0.51 | 8.46 | 0.871 | -- | 1.38 | -- | 1.9 | 139 | -- | 110 | < 120 U | **143** | -- |
| 114-P2-MW-8D | 114-P2-MW-8D-65.0-20210622 | 6/22/2021 | 65 | N | 4602371271 | Treatment | Deep | **16100** | **14800** | **14600** | **15200** | 169.3 | 0.85 | 7.71 | 1.11 | -- | 2.38 | -- | 3.2 | **251** | -- | 150 | **< 1200 U** | **228** | -- |
| 114-P2-MW-8D | 114-P2-MW-8D-64.5-20210723 | 7/23/2021 | 64.5 | N | 4602394041 | Treatment | Deep | **159** | **232** | **154** | **188** | 123 | 0.25 | 8.21 | 0.735 | -- | 2.78 | -- | 1.9 | 142 | -- | 180 | < 120 U | **159** | -- |
| 114-P2-MW-8D | 114-P2-MW-8D-65.0-20210826 | 8/26/2021 | 65 | N | 4602416741 | Treatment | Deep | 7.4 | 8.1 | < 10.0 U | < 10.0 U | 37.6 | 0.54 | 7.76 | 0.962 | -- | -- NM | -- | 1.8 | 165 | -- | 160 | < 120 U | **149** | -- |
| 114-P2-MW-8D | 114-P2-MW-8D-65.0-20210922 | 9/22/2021 | 65 | N | 4602433951 | Treatment | Deep | 31.0 | 39.9 | < 10.0 U | 0.3 | 105.9 | 0.3 | 7.45 | 0.948 | -- | 5.95 | -- | 2.2 | 188 | -- | 160 | < 120 U | **220** | -- |
| 114-P2-MW-8D | 114-P2-MW-8D-65.0-20211021 | 10/21/2021 | 65 | N | 4602456401 | Treatment | Deep | **4310** | **7960** | **100** | **5230** | 120.1 | 3.34 | 7.97 | 1.162 | -- | 1.23 | -- | 8.5 | 214 | -- | 200 | < 120 U | **185** | -- |
| 114-P2-MW-8D | 114-P2-MW-8D-64.5-20211118 | 11/18/2021 | 64.5 | N | 4602475481 | Treatment | Deep | 4.3 | 13.1 | < 10.0 U | < 10.0 U | -23.5 | 0.32 | 7.45 | 1.166 | -- | 0.2 | -- | 26.4 | 139 | -- | 130 | < 120 U | **288** | -- |
| 114-P2-MW-8D | 114-P2-MW-8D-64.5-20211216 | 12/16/2021 | 64.5 | N | 4602492751 | Treatment | Deep | **103** | **113** | < 10.0 U | < 10.0 U | -304.4 | 0.1 | 6.95 | 1.351 | -- | 1.57 | -- | 69.7 | 238 | -- | 94 | 241 | **803** | -- |
| 114-P2-MW-8D | 114-P2-MW-8D-65-20220110 | 1/10/2022 | 65 | N | 4602504131 | Treatment | Deep | **114** | **94.7** | < 20.0 U | < 20.0 U | -312 | 0.33 | 7.71 | 2.18 | -- | 3.42 | -- | 62.9 | **267** | -- | 94 | 129 | **916** | -- |
| 114-P2-MW-8D | 114-P2-MW-8D-65.0-20220216 | 2/16/2022 | 65 | N | 4602526321 | Treatment | Deep | **179** | **196** | < 20.0 U | < 20.0 U | -361 | 0.48 | 7.43 | 1.45 | -- | 2.41 | -- | 69.0 | 180 | -- | 78 | **372** | **1390** | -- |
| 114-P2-MW-8D | 114-P2-MW-8D-65-20220315 | 3/15/2022 | 65 | N | 4602542861 | Treatment | Deep | 68.6 | **102** | < 10.0 U | < 10.0 U | -310.1 | 0.11 | 7.25 | 1.1 | -- | 2.08 | -- | 27.8 | 181 | -- | 96 | 155 | **928** | -- |
| 114-P2-MW-8D | 114-P2-MW-8D-67.0-20220413 | 4/13/2022 | 67 | N | 4602562001 | Treatment | Deep | 30.7 | **124** | < 10.0 U | < 10.0 U | -196.5 | 3.90 | 7.46 | 2.231 | 14.90 | 3.25 | -- | 12.5 | 121 | -- | 96 | **595** | **1350** | -- |
| 114-P2-MW-8D | 114-P2-MW-8D-65-20220511 | 5/11/2022 | 65 | N | 4602579551 | Treatment | Deep | 27.2 | 64.6 | < 10.0 U | < 10.0 U | -260.0 | 3.94 | 7.45 | 0.105 | 14.55 | 2.07 | -- | 10.2 F1 | 158 | -- | 110 | **514** | **1120** | -- |
| 114-P2-MW-8D | 114-P2-MW-8D-65-20220608 | 6/8/2022 | 65 | N | 4602596671 | Treatment | Deep | -- | **70.3** | -- | < 10.0 U | -64.8 | 1.64 | 7.06 | 1.028 | 17.31 | 1.93 | -- | 10.0 | 140 | -- | -- | -- | -- | -- |
| 114-P2-MW-8D | 114-P2-MW-8D-65.0-20220711 | 7/11/2022 | 65 | N | 4602617131 | Treatment | Deep | -- | 29.3 | -- | < 10.0 U | -158.2 | 0.42 | 7.51 | 0.927 | 17.39 | 0.86 | -- | 6.9 | 140 | -- | -- | -- | -- | -- |
| 114-P2-MW-8D | 114-P2-MW-8D-65-20220816 | 8/16/2022 | 65 | N | 4602639181 | Treatment | Deep | -- | 21.9 | -- | < 10.0 U | -146.9 | 1.62 | 7.13 | 1.029 | 17.73 | 1.50 | -- | 14.4 | 118 | -- | -- | **495** | **888** | -- |
| 114-P2-MW-8D | 114-P2-MW-8D-64.5-20221206 | 12/6/2022 | 64.5 | N | 4602707741 | Treatment | Deep | -- | 62.3 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 57.4 | 48.0 | -- | -- | -- | -- | -- |
| 114-P2-MW-8D | 114-P2-MW-8D-64.5-20221213 | 12/13/2022 | 64.5 | N | 4602713971 | Treatment | Deep | -- | -- | -- | -- | -339 | 0.02 | 6.88 | 1.607 | 12.7 | 1.51 | -- | -- | -- | -- | -- | **2300** | **2060** | -- |
| 114-P2-MW-8D | 114-P2-MW-8D-67.5-20230220 | 2/20/2023 | 67.5 | N | 4602749361 | Post-Treatment | Deep | -- | **83.2** | -- | < 10.0 UJ | -220.1 | 21.71 | 6.69 | 1.925 | 12.14 | 1.99 | -- | 130 J+ | 3.17 J+ | < 1 U | -- | **11700** | **3600** | -- |
| 114-P2-MW-8D | 114-P2-MW-8D-67.5-20230614 | 6/14/2023 | 67.5 | N | 4602823061 | Post-Treatment | Deep | -- | **218** | -- | < 10.0 U | -36.4 | 16.94 | 6.73 | 2.518 | 19.2 | 4.23 | -- | 87.3 | 0.93 J | < 1 U | -- | **27800** | **4340** | -- |
| 114-P2-MW-8D | 114-P2-MW-8D-67.5-20230816 | 8/16/2023 | 67.5 | N | 4602863141 | Post-Treatment | Deep | -- | **96.5** | -- | < 10.0 U | -245 | 1.45 | 6.95 | 1.072 | 20.22 | 4.25 | -- | 45.9 J | 2.34 J | 3.84 J | -- | **28600** | **3840** | -- |
| 114-P2-MW-8D | 114-P2-MW-8D-67.5-20230816-X | 8/16/2023 | 67.5 | FD | 4602863141 | Post-Treatment | Deep | -- | **90.3** | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 61.6 J | 1.78 J | 1.04 J | -- | **25600** | **3750** | -- |
| 114-P2-MW-8D | 114-P2-MW-8D-67.5-20231116 | 11/16/2023 | 67.5 | N | JD77165 | Post-Treatment | Deep | -- | **126** | -- | 48 J | -311.9 | 0.27 | 6.82 | 1.71 | 13.1 | 1.95 | -- | 28.9 | 18.1 J | -- | -- | -- | -- | -- |
| 114-P2-MW-8D | 114-P2-MW-8D-67.5-20231116-x | 11/16/2023 | 67.5 | FD | JD77165 | Post-Treatment | Deep | -- | **161** | -- | 7.6 J | -- | -- | -- | -- | -- | -- | -- | 29.2 | 28.9 J | -- | -- | -- | -- | -- |
| 114-P2-MW-8D | 114-P2-MW-8D-67.5-20240215 | 2/15/2024 | 67.5 | N | JD82518 | Post-Treatment | Deep | -- | **121** | -- | 6.0 J- | -362.1 | 0.24 | 6.86 | 1.83 | 9.8 | 5.1 | -- | 18.0 | 84.5 | -- | -- | -- | -- | -- |
| 114-P2-MW-8D | 114-P2-MW-8D-67.5-20240516 | 5/16/2024 | 67.5 | N | JD88618 | Post-Treatment | Deep | -- | **142** | -- | 6.0 J | -353.9 | 0.14 | 6.95 | 1.773 | 15.4 | 3.01 | -- | 21.3 J- | 120 | -- | -- | -- | -- | -- |
| 114-P2-MW-8D | 114-P2-MW-8D-67.5-20240815 | 8/15/2024 | 67.5 | N | JD94204 | Post-Treatment | Deep | -- | **140** | -- | 58 | -289.4 | 0.35 | 6.69 | 2.09 | 21.9 | 2.19 | -- | 24.3 | 56.6 | -- | -- | -- | -- | -- |
| 114-P2-MW-8D | 114-P2-MW-8D-67.5-20241118 | 11/18/2024 | 67.5 | N | JE873 | Post-Treatment | Deep | -- | **119** | -- | 55 J- | -115.7 | 0.15 | 6.89 | 2.08 | 16.6 | 2.53 | -- | 19.4 J- | 86.4 | -- | -- | -- | -- | -- |
| 114-P2-MW-9D | 114-P2-MW-9D-61-2020324 | 3/24/2020 | 61 | N | JD5104 | Baseline | Deep | < 10 U | < 10 U | < 10 U | < 10 U | 108 | 0 | 7.89 | 4.46 | -- | 0 | -- | 2.6 | **262** | < 2.0 U | 198 | **302** | **337** | -- |
| 114-P2-MW-9D | 114-P2-MW9D-60-20210317 | 3/17/2021 | 60 | N | JD21863 | Treatment | Deep | < 10 U | < 10 U | 6.9 B | 6.9 B | -139 | 0.29 | 7.81 | 3.641 | -- | 1.24 | -- | 2.4 | **327** | -- | -- | -- | -- | -- |
| 114-P2-MW-9D | 114-P2-MW-9D-52-20210428 | 4/28/2021 | 52 | N | 4602331061 | Treatment | Deep | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -131.4 | 1.94 | 8.06 | 4.114 | -- | 8.72 | -- | 2.5 | **290** | -- | 310 | **722** | **456** | -- |
| 114-P2-MW-9D | 114-P2-MW-9D-60.0-20210527 | 5/27/2021 | 60 | N | 4602353531 | Treatment | Deep | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -99.3 | 0.58 | 9.58 | 3.176 | -- | 0.42 | -- | 1.7 | **286** | -- | 240 | **571** | **433** | -- |
| 114-P2-MW-9D | 114-P2-MW-9D-60.0-20210624 | 6/24/2021 | 60 | N | 4602373191 | Treatment | Deep | < 20.0 U | 4.2 | < 10.0 U | < 10.0 U | -139.6 | 0.72 | 7.77 | 2.518 | -- | 3.11 | -- | 1.6 | **290** | -- | 250 | **366 J** | **333** | -- |
| 114-P2-MW-9D | 114-P2-MW-9D-60.0-20210721 | 7/21/2021 | 60 | N | 4602392301 | Treatment | Deep | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -128.9 | 1.29 | 8.05 | 4.642 | -- | 2.77 | -- | 2.3 | **289** | -- | 260 | **693** | **455** | -- |
| 114-P2-MW-9D | 114-P2-MW-9D-60.0-20210721X | 7/21/2021 | 60 | FD | 4602392301 | Treatment | Deep | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 1.9 | **285** | -- | 260 | **694** | **443** | -- |
| 114-P2-MW-9D | 114-P2-MW-9D-60.0-20210826 | 8/26/2021 | 60 | N | 4602416741 | Treatment | Deep | < 4.0 U | 4.2 | < 10.0 U | < 10.0 U | -192.2 | 0.47 | 7.84 | 2.435 | -- | 4.08 | -- | 3.8 | 186 | -- | 270 | **453** | **384** | -- |
| 114-P2-MW-9D | 114-P2-MW-9D-60.0-20210922 | 9/22/2021 | 60 | N | 4602433951 | Treatment | Deep | < 4.0 U | 6.4 | < 10.0 U | < 10.0 U | -293 | 0.37 | 7.67 | 3.22 | -- | 9.36 | -- | 4.0 | 224 | -- | 250 | **301** | **373** | -- |
| 114-P2-MW-9D | 114-P2-MW-9D-60.0-20211018 | 10/18/2021 | 60 | N | 4602453121 | Treatment | Deep | < 4.0 U | 3.6 J | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 5.6 | 175 | -- | 270 | 250 | **372** | -- |
| 114-P2-MW-9D | 114-P2-MW-9D-60-20211118 | 11/18/2021 | 60 | N | 4602475481 | Treatment | Deep | < 4.0 U | 27.7 | < 10.0 U | < 10.0 U | -232 | 0.41 | 7.72 | 3.971 | -- | 0.47 | -- | 8.7 | 205 | -- | 390 | 222 | **410** | -- |
| 114-P2-MW-9D | 114-P2-MW-9D-60.5-20211216 | 12/16/2021 | 60.5 | N | 4602492751 | Treatment | Deep | < 4.0 U | 13.1 | < 10.0 UH | < 10.0 UH | -255.7 | 0.79 | 7.8 | 4.2 | -- | 2.67 | -- | 5.8 | 199 | -- | 410 | 162 | **406** | -- |
| 114-P2-MW-9D | 114-P2-MW-9D-60-20220112 | 1/12/2022 | 60 | N | 4602526551 | Treatment | Deep | < 4.0 U | 8.6 | < 10.0 U | < 10.0 U | -293.5 | 0.08 | 7.87 | 2.263 | -- | 3.72 | -- | 6.5 | 54.0 | -- | 14000 | < 120 U | **304** | -- |
| 114-P2-MW-9D | 114-P2-MW-9D-60-20220216 | 2/16/2022 | 60 | N | 4602526321 | Treatment | Deep | < 4.0 U | < 20.0 U | < 10.0 U | < 10.0 U | -172.8 | 0.3 | 8 | 3.835 | -- | 8.33 | -- | 2.8 | 241 | -- | 12000 | 248 | **477** | -- |
| 114-P2-MW-9D | 114-P2-MW-9D-60-20220315 | 3/15/2022 | 60 | N | 4602542861 | Treatment | Deep | < 4.0 U | 13.0 | < 10.0 U | < 10.0 U | -119.2 | 0.8 | 7.74 | 5.322 | -- | 5.93 | -- | 3.1 | **323** | -- | 3600 | **619** | **572** | -- |
| 114-P2-MW-9D | 114-P2-MW-9D-60-20220413 | 4/13/2022 | 60 | N | 4602562001 | Treatment | Deep | 3.6 J | 13.1 | < 10.0 U | < 10.0 U | -261.2 | 0.69 | 8.00 | 3.311 | 15.45 | 1.06 | -- | 3.1 ^2 | **342** | -- | 2700 | **592** | **599** | -- |
| 114-P2-MW-9D | 114-P2-MW-9D-60-20220511 | 5/11/2022 | 60 | N | 4602579551 | Treatment | Deep | < 4.0 U | 4.6 | < 10.0 U | < 10.0 U | -86.8 | 0 | 7.65 | 4.016 | 14.00 | 0.41 | -- | 2.7 | **394** | -- | 4700 F1 | **517** | **553** | -- |
| 114-P2-MW-9D | 114-P2-MW-9D-60-20220511-X | 5/11/2022 | 60 | FD | 4602579551 | Treatment | Deep | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 2.6 | **392** | -- | 5900 | **587** | **557** | -- |
| 114-P2-MW-9D | 114-P2-MW-9D-60.0-20210609 | 6/9/2022 | 60 | N | 4602597481 | Treatment | Deep | -- | 13.8 | -- | < 10.0 U | -122.6 | 5.12 | 7.89 | 4.171 | 18.8 | 1 | -- | 2.1 | **297** | -- | -- | -- | -- | -- |
| 114-P2-MW-9D | 114-P2-MW-9D-60-20220712 | 7/12/2022 | 60 | N | 4602617771 | Treatment | Deep | -- | 20.4 | -- | < 10.0 U | -146.4 | 0.63 | 7.81 | 4.154 | 16.73 | 2.02 | -- | 3.4 | **376** | -- | -- | -- | -- | -- |
| 114-P2-MW-9D | 114-P2-MW-9D-60.5-20221209 | 12/9/2022 | 60.5 | N | 4602710741 | Post-Treatment | Deep | -- | 4.0 | -- | < 10.0 U | -184.8 | 0.5 | 7.77 | 3.312 | 13.6 | 3.62 | -- | 2.3 J- | 184 | < 1 U | -- | **633** | **498** | -- |
| 114-P2-MW-9D | 114-P2-MW-9D-63.5-20230221 | 2/21/2023 | 63.5 | N | 4602750101 | Post-Treatment | Deep | -- | 5.0 | -- | < 10.0 U | -92.4 | 8.01 | 7.76 | 5.734 | 12.56 | 3.8 | -- | 3.1 JB | **491** | < 1 U | -- | **856** | **607** | -- |
| 114-P2-MW-9D | 114-P2-MW-9D-63.5-20230616 | 6/16/2023 | 63.5 | N | 4602824851 | Post-Treatment | Deep | -- | 8.2 | -- | < 10.0 U | -245.6 | 0.35 | 7.7 | 4.327 | 17.2 | 2.37 | -- | 2.1 | **360** | < 1 U | -- | **626** | **470** | -- |
| 114-P2-MW-9D | 114-P2-MW-9D-63.5-20230821 | 8/21/2023 | 63.5 | N | 4602866341 | Post-Treatment | Deep | -- | < 4.0 U | -- | < 10.0 UJ | -102.1 | 0.57 | 7.88 | 4.95 | 19.08 | 2.77 | -- | 3.7 JB | **444** | < 1 U | -- | **884** | **659** | -- |
| 114-P2-MW-9D | 114-P2-MW-9D-63.5-20231121 | 11/21/2023 | 63.5 | N | JD77454 | Post-Treatment | Deep | -- | 1.3 J | -- | < 10 UJ | -166.2 | 0.43 | 7.77 | 5.31 | 13 | 1.77 | -- | 2.1 | **478** | -- | -- | -- | -- | -- |
| 114-P2-MW-9D | 114-P2-MW-9D-63.5-20240219 | 2/19/2024 | 63.5 | N | JD82732 | Post-Treatment | Deep | -- | < 10 U | -- | < 10 U | -405 | 6.52 | 7.66 | 5.86 | 11 | 4.32 | -- | 2.3 | **573** | -- | -- | -- | -- | -- |
| 114-P2-MW-9D | 114-P2-MW-9D-63.5-20240517 | 5/17/2024 | 63.5 | N | JD88735 | Post-Treatment | Deep | -- | < 10 U | -- | < 10 RA | -113.3 | 2.19 | 7.73 | 5.55 | 15.8 | 1.39 | -- | 2.2 | **489** | -- | -- | -- | -- | -- |
| 114-P2-MW-9D | 114-P2-MW-9D-63.5-20240819 | 8/19/2024 | 63.5 | N | JD94428 | Post-Treatment | Deep | -- | < 10 U | -- | < 10 U | 174.2 | 1.13 | 7.63 | 4598 | 19.7 | 8.44 | -- | 3.0 | **558** | -- | -- | -- | -- | -- |
| 114-P2-MW-9D | 114-P2-MW-9D-63.5-20241118 | 11/18/2024 | 63.5 | N | JE873 | Post-Treatment | Deep | -- | < 10 U | -- | < 10 UJ | 19 | 0.34 | 7.69 | 4.37 | 16.2 | 1.94 | -- | 1.8 J- | **366** | -- | -- | -- | -- | -- |
| 114-P2-MW-9D | 114-P2-MW-9D-63.5-20241118-X | 11/18/2024 | 63.5 | FD | JE873 | Post-Treatment | Deep | -- | < 10 U | -- | < 10 UJ | -- | -- | -- | -- | -- | -- | -- | 1.5 J- | **360** | -- | -- | -- | -- | -- |
| ***Phase II*** | | | | | | | | | | | | | | | | | | | | | | | | | |
| ***Injection*** | | | | | | | | | | | | | | | | | | | | | | | | | |
| 199-P3-IRM-001S | 199-P3-IRM-001S-16.92-20211230 | 12/30/2021 | 16.92 | N | 4602499921 | Baseline | Shallow | **539** | **726** | **454** | **459** | 56 | 0.87 | 7.12 | 1.22 | 14.86 | 1.7 | -- | 4.1 | 61.9 | < 1.0 U | 2100 | < 120 U | **1230** | -- |
| 199-P3-IRM-002S | 199-P3-IRM-002S-17.5-20220103 | 1/3/2022 | 17.5 | N | 4602500491 | Baseline | Shallow | **43500** | **38000** | **41800** | **39000** | 184 | 1.51 | 7.59 | 1.61 | 10.41 | 3.8 | -- | 6.2 | 166 | < 10.0 U | 2500 | < 120 U | **150** | -- |
| 199-P3-IRM-003S | 199-P3-IRM-003S-16.9-20220104 | 1/4/2022 | 16.9 | N | 4602500781 | Baseline | Shallow | **16900** | **30500 J** | **16600** | **42700 J** | 187 | 1.42 | 5.97 | 2.60 | 15.40 | 0 | -- | 11.1 | **462 J** | < 10.0 U | 4500 | < 120 U | **1110** | -- |
| 199-P3-IRM-003S | 199-P3-IRM-003S-16.9-20220104-X | 1/4/2022 | 16.9 | FD | 4602500781 | Baseline | Shallow | **17500** | **151000 J** | **20400** | **42200** | -- | -- | -- | -- | -- | -- | -- | 6.1 | **653 J** | < 10.0 U | 4300 | < 120 U | **1130** | -- |
| 199-P3-IRM-004S | 199-P3-IRM-004S-19.1-20211230 | 12/30/2021 | 19.1 | N | 4602499921 | Baseline | Shallow | **87500** | **90800** | **81300** | **82400** | -161.00 | 0 | 12.72 | 7.17 | 17.05 | 3.20 | -- | 3.2 | 17.4 | < 1.0 U | 48 JB | **< 600 U** | < 40.0 U | -- |
| 199-P3-IRM-005S | 199-P3-IRM-005S-13.5-20230330 | 3/30/2023 | 13.5 | N | 4602773201 | Baseline | Shallow | -- | **11200** | -- | **10900** | 27.3 | 0.5 | 7.72 | 1.269 | 13.40 | 5.56 | -- | 64.7 | 160 | -- | -- | -- | -- | -- |
| 199-P3-IRM-005S | 199-P3-IRM-005S-13.5-20230330X | 3/30/2023 | 13.5 | FD | 4602773201 | Baseline | Shallow | -- | **10500** | -- | **103** | -- | -- | -- | -- | -- | -- | -- | 63.2 | 159 | -- | -- | -- | -- | -- |
| 199-P3-IRM-005S | 199-P3-IRM-005S-18.5-20230330 | 3/30/2023 | 18.5 | N | 4602773201 | Baseline | Shallow | -- | **9770** | -- | **9900** | 6.52 | 0.51 | 7.63 | 1.222 | 12.3 | 8.56 | -- | 68.4 F1 | 150 | -- | -- | -- | -- | -- |
| 132-P3-IRM-001I | 132-P3-IRM-001I-33.3-20211019 | 10/19/2021 | 33.3 | N | 4602454421 | Baseline | Intermediate | **6640** | **7230** | **6450** | **6770** | 127.30 | 0.24 | 6.50 | 0.82 | 17.29 | 3.22 | -- | 2.6 JB | 63.8 | < 1.0 U | 230 | < 120 U | **520** | -- |
| 132-P3-IRM-001I | 132-P3-IRM-001I-33.3-20220425 | 4/25/2022 | 33.3 | N | 4602569361 | Baseline | Intermediate | -- | **849** | -- | < 50.0 U | 18 | 0.85 | 4.99 | 4.458 | 13.51 | 15.5 | -- | 3220 ^2 | -- | -- | -- | -- | -- | -- |
| 132-P3-IRM-002I-A | 132-P3-IRM-002I-A-33.55-20211012 | 10/12/2021 | 33.55 | N | 4602448821 | Baseline | Intermediate | **77700** | **75900** | **82700** | **96400** | 163.70 | 0.08 | 6.88 | 1.97 | 16.74 | 7.77 | -- | 2.1 | 237 | < 1.0 U | 170 | < 120 U | **112** | -- |
| 132-P3-IRM-002I-A | 132-P3-IRM-002I-A-33.55-20220421 | 4/21/2022 | 33.55 | N | 4602567031 | Baseline | Intermediate | -- | **6220** | -- | **5860** | 54.3 | 3.69 | 8.48 | 0.922 | 14.4 | 9.58 | -- | 1.0 | -- | -- | -- | -- | -- | -- |
| 132-P3-IRM-002I-B | 132-P3-IRM-002I-B-53.35-20211013 | 10/13/2021 | 53.35 | N | 4602450251 | Baseline | Intermediate | **32500** | **33500** | **31800** | **32400** | 16.80 | 0.10 | 7.86 | 0.88 | 16.95 | 5.32 | -- | 1.1 | 193 J- | R | 22 J- | **< 600 U** | **94.3** | -- |
| 132-P3-IRM-002I-B | 132-P3-IRM-002I-B-60.0-20211013 | 10/13/2021 | 60 | N | 4602450251 | Baseline | Intermediate | **28800** | **31000** | **29500** | **32900** | 9.50 | 0.13 | 7.88 | 0.86 | 16.03 | 6.73 | -- | 1.1 | 184 | R | 18 | **< 600 U** | **98.4** | -- |
| 132-P3-IRM-002I-B | 132-P3-IRM-002I-B-60.0-20220421 | 4/21/2022 | 60 | N | 4602567031 | Baseline | Intermediate | -- | **5370** | -- | **5860 H** | 45.6 | 2.78 | 8.68 | 0.686 | 15.09 | 9 | -- | 0.53 J | -- | -- | -- | -- | -- | -- |
| 132-P3-IRM-003I-A | 132-P3-IRM-003I-A-32-20211014 | 10/14/2021 | 32 | N | 4602450901 | Baseline | Intermediate | **16500** | **15800** | **5030** | **5640** | 211.40 | 1.24 | 6.99 | 1.04 | 17.21 | 7.85 | -- | 3.7 | 70.0 | < 1.0 U | 180 | **< 600 U** | **378** | -- |
| 132-P3-IRM-003I-B | 132-P3-IRM-003I-B-54-20211013 | 10/13/2021 | 54 | N | 4602450251 | Baseline | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -17.70 | 0.67 | 7.73 | 5.31 | 16.21 | 2.82 | -- | 11.1 | 9.77 | R | < 5.0 U | < 120 U | **78.6** | -- |
| 132-P3-IRM-004I-A | 132-P3-IRM-004I-A-28.6-20211018 | 10/18/2021 | 28.6 | N | 4602453241 | Baseline | Intermediate | **78300** | **81100** | **84900** | **83800** | 197.50 | 0.71 | 7.75 | 1.16 | 17.30 | 2.01 | -- | 2.0 | **272** | < 1.0 U | 87 | **< 600 U** | 38.9 J | -- |
| 132-P3-IRM-004I-A | 132-P3-IRM-004I-A-28.6-20220422 | 4/22/2022 | 28.6 | N | 4602567961 | Baseline | Intermediate | -- | **4360** | -- | < 50.0 U | 10 | 12.83 | 4.58 | 3.612 | 14.66 | 17.4 | -- | 3880 | -- | -- | -- | -- | -- | -- |
| 132-P3-IRM-004I-B | 132-P3-IRM-004I-B-44.8-20211018 | 10/18/2021 | 44.8 | N | 4602453241 | Baseline | Intermediate | **946** | **1050** | **680** | **635** | 187.30 | 3.47 | 7.44 | 0.37 | 15.99 | 5.98 | -- | 5.3 | 11.4 | < 1.0 U | 3.3 J | < 120 U | 18.7 | -- |
| 132-P3-IRM-004I-B | 132-P3-IRM-004I-B-57.8-20211018 | 10/18/2021 | 57.8 | N | 4602453241 | Baseline | Intermediate | **79700** | **83600** | **84000** | **97500** | 196.40 | 1.06 | 7.88 | 1.06 | 14.99 | 2.10 | -- | 3.0 | 200 | < 1.0 U | 49 | **< 600 U** | **97.0** | -- |
| 132-P3-IRM-004I-B | 132-P3-IRM-004I-B-57.8-20220421 | 4/21/2022 | 57.8 | N | 4602567031 | Baseline | Intermediate | -- | **2140** | -- | **< 100 U** | -49.2 | 18.52 | 4.84 | 6.300 | 13.81 | 13.4 | -- | 5360 | -- | -- | -- | -- | -- | -- |
| 132-P3-IRM-005I-A | 132-P3-IRM-005I-A-42-20211014 | 10/14/2021 | 42 | N | 4602450901 | Baseline | Intermediate | **75700** | **84500** | **50900** | **53100** | 153.80 | 1.48 | 6.78 | 3.88 | 17.44 | 6.72 | -- | 4.7 | **1000** | < 1.0 U | 310 | **< 600 U** | **317** | -- |
| 132-P3-IRM-005I-A | 132-P3-IRM-005I-A-27-20211018 | 10/18/2021 | 27 | N | 4602453241 | Baseline | Intermediate | **60500** | **61600** | **65900** | **65900** | 187.50 | 2.90 | 6.82 | 3.10 | 15.39 | 0.26 | -- | 5.4 | **823** | < 1.0 U | 1300 | **< 600 U** | **233** | -- |
| 132-P3-IRM-005I-A | 132-P3-IRM-005I-A-42.0-20220420 | 4/20/2022 | 42 | N | 4602566161 | Baseline | Intermediate | -- | **84800** | -- | **101000** | 145.4 | 3.34 | 6.78 | 3.748 | 14.44 | 5.36 | -- | 4.2 | -- | -- | -- | -- | -- | -- |
| 132-P3-IRM-005I-B | 132-P3-IRM-005I-B-62-20211008 | 10/8/2021 | 62 | N | 4602446561 | Baseline | Intermediate | < 4.0 U | 3.2 J | < 10.0 U | < 10.0 U | -6.50 | 0.10 | 8.15 | 0.62 | 17.75 | 0.59 | -- | 0.36 J | 26.4 | < 1.0 U | < 5.0 U | < 120 U | **66.6** | -- |
| 132-P3-IRM-005I-B | 132-P3-IRM-005I-B-62.0-20220420 | 4/20/2022 | 62 | N | 4602566161 | Baseline | Intermediate | -- | **14800** | -- | **14000** | 89.9 | 1.68 | 7.22 | 2.299 | 13.91 | 8.74 | -- | 1.5 | -- | -- | -- | -- | -- | -- |
| 132-P3-IRM-006I | 132-P3-IRM-006I-30.7-20211019 | 10/19/2021 | 30.7 | N | 4602454421 | Baseline | Intermediate | **53000** | **56400** | **52300** | **54500** | 85.70 | 1.13 | 6.78 | 2.82 | 15.41 | 2.81 | -- | 4.4 JB | **261** | < 1.0 U | 210 | < 120 U | **658** | -- |
| 132-P3-IRM-006I | 132-P3-IRM-006I-48.7-20211019 | 10/19/2021 | 48.7 | N | 4602454421 | Baseline | Intermediate | **64300** | **66500** | **65500** | **61100** | 80.90 | 1.17 | 6.64 | 3.21 | 14.57 | 6.73 | -- | 4.5 | **305** | < 1.0 U | 220 | < 120 U | **670** | -- |
| 132-P3-IRM-007I-A | 132

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 132-P3-IRM-008I-A | 132-P3-IRM-008I-A-30.6-20220420 | 4/20/2022 | 30.6 | N | 4602566161 | Baseline | Intermediate | -- | **9020** | -- | **6190** | 142.6 | 3.21 | 6.88 | 2.986 | 12.87 | 8.37 | -- | 4.4 | -- | -- | -- | -- | -- | -- |
| 132-P3-IRM-008I-B | 132-P3-IRM-008I-B-50.6-20211013 | 10/13/2021 | 50.6 | N | 4602450251 | Baseline | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -55.70 | 0.27 | 7.71 | 2.77 | 16.60 | 2.88 | -- | 0.65 J | 110 | R | < 5.0 U | 80.0 J | **244** | -- |
| 132-P3-IRM-008I-B | 132-P3-IRM-008I-B-65.6-20211014 | 10/14/2021 | 65.6 | N | 4602450901 | Baseline | Intermediate | < 4.0 U | 3.3 J | < 10.0 U | < 10.0 U | -27.40 | 2.02 | 8.00 | 2.48 | 17.28 | 3.61 | -- | 0.68 J | 110 | < 1.3 UB | < 5.0 U | 59.6 J | **223** | -- |
| 132-P3-IRM-008I-B | 132-P3-IRM-008I-B-65.6-20220420 | 4/20/2022 | 65.6 | N | 4602566161 | Baseline | Intermediate | -- | 59.2 | -- | < 10.0 U | -21.7 | 3.29 | 7.53 | 3.885 | 14.22 | 4.58 | -- | 0.69 J | -- | -- | -- | -- | -- | -- |
| 132-P3-IRM-009I-A | 132-P3-IRM-009I-A-41.0-20211007 | 10/7/2021 | 41 | N | 4602445441 | Baseline | Intermediate | **150000** | **139000** | **159000 J-** | **137000** | 246.30 | 0.24 | 6.75 | 2.80 | 18.60 | 85.20 | -- | 5.6 | **655** | < 1.0 U | 7300 | **< 600 U** | **2130** | -- |
| 132-P3-IRM-009I-A | 132-P3-IRM-009I-A-25-20211008 | 10/8/2021 | 25 | N | 4602446561 | Baseline | Intermediate | **146000** | **149000** | **150000** | **140000** | 226.90 | 5.21 | 6.68 | 3.11 | 19.20 | 89.00 | -- | 5.6 | **647** | < 1.0 U | 8100 | **< 600 U** | **2360** | -- |
| 132-P3-IRM-009I-A | 132-P3-IRM-009I-A-25-20220420 | 4/20/2022 | 25 | N | 4602566161 | Baseline | Intermediate | -- | **7410** | -- | < 10.0 U | -76.1 | 1.91 | 7.27 | 4.184 | 12.21 | 8.87 | -- | 6.9 | -- | -- | -- | -- | -- | -- |
| 132-P3-IRM-009I-B | 132-P3-IRM-009I-B-61.1-20211007 | 10/7/2021 | 61.1 | N | 4602445441 | Baseline | Intermediate | < 4.0 U | 3.1 J | < 10.0 U | < 10.0 U | -14.50 | 4.83 | 7.92 | 1.32 | 17.80 | 1.26 | -- | 0.36 J | 47.9 | < 1.0 U | < 5.0 U | < 120 U | **94.8** | -- |
| 132-P3-IRM-009I-B | 132-P3-IRM-009I-B-61.1-20220420 | 4/20/2022 | 61.1 | N | 4602566161 | Baseline | Intermediate | -- | **210000** | -- | **213000** | 162.5 | 3.74 | 7.65 | 2.780 | 13.43 | 9.75 | -- | 2.9 | -- | -- | -- | -- | -- | -- |
| 132-P3-IRM-010I-A | 132-P3-IRM-010I-A-29-20211018 | 10/18/2021 | 29 | N | 4602453241 | Baseline | Intermediate | **14600** | **15500** | **16100** | **16000** | 110.00 | 0.96 | 6.74 | 2.72 | 15.89 | 4.30 | -- | 5.2 | 220 | < 1.0 U | 260 | < 120 U | **294** | -- |
| 132-P3-IRM-010I-A | 132-P3-IRM-010I-A-29-20211018-X | 10/18/2021 | 29 | FD | 4602453241 | Baseline | Intermediate | **14600** | **14800** | **16200** | **15500** | -- | -- | -- | -- | -- | -- | -- | 5.3 | 216 | < 1.0 U | 260 | < 120 U | **289** | -- |
| 132-P3-IRM-010I-A | 132-P3-IRM-010I-A-45-20211018 | 10/18/2021 | 45 | N | 4602453241 | Baseline | Intermediate | **22900** | **23000** | **25500** | **25500** | 98.90 | 0.93 | 6.71 | 3.00 | 15.24 | 7.89 | -- | 4.2 | **372** | < 1.0 U | 150 | < 240 U | **402** | -- |
| 132-P3-IRM-011I-A | 132-P3-IRM-011I-A-40-20211011 | 10/11/2021 | 40 | N | 4602448291 | Baseline | Intermediate | **234000 J** | **150000 J** | **121000** | **134000** | 205.00 | 0.81 | 6.74 | 4.47 | 18.30 | 132.00 | -- | 9.3 | **873** | < 1.0 U | 6200 | **462 J** | **1490** | -- |
| 132-P3-IRM-011I-A | 132-P3-IRM-011I-A-25-20211012 | 10/12/2021 | 25 | N | 4602448821 | Baseline | Intermediate | **170000** | **171000** | **160000** | **215000** | 191.30 | 0.30 | 6.83 | 4.12 | 18.90 | 128.00 | -- | 9.1 | **766** | < 1.0 U | 5000 | 60.9 J | **1290** | -- |
| 132-P3-IRM-011I-A | 132-P3-IRM-011I-A-25-20220420 | 4/20/2022 | 25 | N | 4602566161 | Baseline | Intermediate | -- | **15900** | -- | **16600** | 89.8 | 0.31 | 6.91 | 4.206 | 14.23 | 13.7 | -- | 6.4 | -- | -- | -- | -- | -- | -- |
| 132-P3-IRM-011I-B | 132-P3-IRM-011I-B-56.1-20211013 | 10/13/2021 | 56.1 | N | 4602450251 | Baseline | Intermediate | < 4.0 U | 8.6 | < 10.0 U | < 10.0 U | 8.20 | 0.37 | 8.14 | 1.79 | 17.70 | 2.67 | -- | 0.60 J | 76.2 | R | < 5.0 U | < 120 U | **86.0** | -- |
| 132-P3-IRM-011I-B | 132-P3-IRM-011I-B-56.1-20220420 | 4/20/2022 | 56.1 | N | 4602566161 | Baseline | Intermediate | -- | **264000** | -- | **275000** | 140.8 | 2.57 | 7.21 | 2.738 | 14.36 | 4.91 | -- | 3.4 | -- | -- | -- | -- | -- | -- |
| 137A-P3-IRM-001I-R | 137A-P3-IRM-001I-R-32.8-20211013 | 10/13/2021 | 32.8 | N | 4602450251 | Baseline | Intermediate | **125000** | **125000** | **134000** | **125000** | 164.70 | 0.29 | 7.01 | 2.75 | 16.64 | 1.48 | -- | 5.8 | 209 | R | 300 | **< 600 U** | **55.3** | -- |
| 137A-P3-IRM-001I-R | 137A-P3-IRM-001I-R-32.8-20220421 | 4/21/2022 | 32.8 | N | 4602567031 | Baseline | Intermediate | -- | **42300** | -- | **48000** | 205.7 | 0.86 | 7.05 | 2.805 | 13.65 | 1.29 | -- | 6.4 | -- | -- | -- | -- | -- | -- |
| 137A-P3-IRM-002I-A | 137A-P3-IRM-002I-A-27.0-20211012 | 10/12/2021 | 27 | N | 4602448821 | Baseline | Intermediate | **129000** | **121000** | **124000** | **124000** | 176.60 | 0.15 | 7.06 | 0.29 | 18.34 | 2.32 | -- | 7.1 | 237 | < 1.0 U | 440 | < 120 U | **88.2** | -- |
| 137A-P3-IRM-002I-A | 137A-P3-IRM-002I-A-43.0-20211013 | 10/13/2021 | 43 | N | 4602450251 | Baseline | Intermediate | **194000** | **238000** | **191000** | **209000** | 232.30 | 0.22 | 7.00 | 3.06 | 16.84 | 5.55 | -- | 6.6 | **332** | R | 720 J | **< 600 U** | **77.6** | -- |
| 137A-P3-IRM-002I-A | 137A-P3-IRM-002I-A-43.0-20211013-X | 10/13/2021 | 43 | FD | 4602450251 | Baseline | Intermediate | **199000** | **208000** | **218000** | **197000** | -- | -- | -- | -- | -- | -- | -- | 6.7 | **312** | R | 480 J | **< 600 U** | **74.5** | -- |
| 137A-P3-IRM-002I-A | 137A-P3-IRM-002I-A-43-20220421 | 4/21/2022 | 43 | N | 4602567031 | Baseline | Intermediate | -- | **181000** | -- | **169000** | 180.1 | 0.72 | 6.96 | 2.987 | 14.04 | 1.42 | -- | 6.7 | -- | -- | -- | -- | -- | -- |
| 137A-P3-IRM-002I-B | 137A-P3-IRM-002I-B-63.0-20211013 | 10/13/2021 | 63 | N | 4602450251 | Baseline | Intermediate | **168** | **190** | **150 J** | 55.7 J | -125.80 | 0.20 | 7.71 | 5.98 | 17.05 | 6.97 | -- | 0.53 J | 148 | R | 3.4 J | < 120 U | **285** | -- |
| 137A-P3-IRM-002I-B | 137A-P3-IRM-002I-B-63-20220421 | 4/21/2022 | 63 | N | 4602567031 | Baseline | Intermediate | -- | **323000** | -- | **317000** | 202.5 | 0.81 | 6.95 | 5.900 | 14.47 | 2.71 | -- | 5.0 | -- | -- | -- | -- | -- | -- |
| 143-P3-IRM-001I | 143-P3-IRM-001I-38.40-20211013 | 10/13/2021 | 38.4 | N | 4602450251 | Baseline | Intermediate | **8110** | **14600** | 41.0 | **8650** | 138.40 | 0.12 | 6.72 | 1.19 | 16.83 | 6.54 | -- | 2.5 | 136 | R | 41 | **< 600 U** | **469** | -- |
| 143-P3-IRM-001I | 143-P3-IRM-001I-24.4-20211014 | 10/14/2021 | 24.4 | N | 4602450901 | Baseline | Intermediate | **7970** | **8790** | **4870** | **4870** | 118.40 | 0.08 | 6.81 | 1.18 | 18.35 | 9.02 | -- | 1.4 | 145 | < 1.0 U | 38 | **< 600 U** | **418** | -- |
| 143-P3-IRM-001I | 143-P3-IRM-001I-24.4-20211014-X | 10/14/2021 | 24.4 | FD | 4602450901 | Baseline | Intermediate | **7990** | **8470** | **5360** | **5310** | -- | -- | -- | -- | -- | -- | -- | 1.6 | 146 | < 1.0 U | 34 | **< 600 U** | **422** | -- |
| 143-P3-IRM-001I | 143-P3-IRM-001I-38.4-20220420 | 4/20/2022 | 38.4 | N | 4602566161 | Baseline | Intermediate | -- | **2800** | -- | **5300** | 41.8 | 1.08 | 6.68 | 2.079 | 13.87 | 5.06 | -- | 24.1 | -- | -- | -- | -- | -- | -- |
| 143-P3-IRM-001I | 143-P3-IRM-001I-38.4-20220420-X | 4/20/2022 | 38.4 | FD | 4602566161 | Baseline | Intermediate | -- | **4940** | -- | **6190** | -- | -- | -- | -- | -- | -- | -- | 23.8 | -- | -- | -- | -- | -- | -- |
| 143-P3-IRM-002I | 143-P3-IRM-002I-37.6-20211019 | 10/19/2021 | 37.6 | N | 4602454421 | Baseline | Intermediate | **6810** | **6200** | **5680** | **5900** | 171.40 | 0.50 | 6.41 | 0.79 | 15.19 | 5.19 | -- | 3.8 JB | 147 | < 1.0 U | 790 | < 120 U | **2800** | -- |
| 143-P3-IRM-002I | 143-P3-IRM-002I-37.6-20220421 | 4/21/2022 | 37.6 | N | 4602567031 | Baseline | Intermediate | -- | 44.0 | -- | **< 100 U** | -52.6 | 11.04 | 5.32 | 7.366 | 14.78 | 9.8 | -- | 3320 | -- | -- | -- | -- | -- | -- |
| 143-P3-IRM-003I-A | 143-P3-IRM-003I-A-24.0-20211008 | 10/8/2021 | 24 | N | 4602446561 | Baseline | Intermediate | **57200** | **57800** | **58400** | **62800** | 180.70 | 0.68 | 6.71 | 2.16 | 19.48 | 9.87 | -- | 4.4 | 167 | < 1.0 U | 1300 | **< 600 U** | **1580** | -- |
| 143-P3-IRM-003I-A | 143-P3-IRM-003I-A-36.0-20211008 | 10/8/2021 | 36 | N | 4602446561 | Baseline | Intermediate | **96000** | **86100 J** | **93000** | **124000 J** | 194.40 | 0.63 | 6.76 | 2.33 | 17.90 | 8.21 | -- | 4.1 J- | 212 J- | < 1.0 U | 850 J- | **< 2400 U** | **891** | -- |
| 143-P3-IRM-003I-A | 143-P3-IRM-003I-A-36-20220420 | 4/20/2022 | 36 | N | 4602566161 | Baseline | Intermediate | -- | **163000** | -- | **159000** | 107.8 | 0.86 | 6.81 | 2.229 | 11.39 | 7.77 | -- | 28.1 | -- | -- | -- | -- | -- | -- |
| 143-P3-IRM-003I-B | 143-P3-IRM-003I-B-47.0-20211008 | 10/8/2021 | 47 | N | 4602446561 | Baseline | Intermediate | **130000** | **121000** | **120000** | **121000** | 27.60 | 0.29 | 9.18 | 1.13 | 17.39 | 9.70 | -- | 2.9 | 185 | < 1.0 U | 250 | **< 600 U** | 14.5 J | -- |
| 143-P3-IRM-003I-B | 143-P3-IRM-003I-B-47-20220420 | 4/20/2022 | 47 | N | 4602566161 | Baseline | Intermediate | -- | **212000** | -- | **191000** | 90.4 | 1 | 6.88 | 2.221 | 10.93 | 8.77 | -- | 3.7 | -- | -- | -- | -- | -- | -- |
| 143-P3-IRM-004I-A | 143-P3-IRM-004I-A-30.5-20211007 | 10/7/2021 | 30.5 | N | 4602445441 | Baseline | Intermediate | **112** | **314** | R | < 10.0 U | -92.20 | 0.03 | 7.03 | 1.38 | 17.29 | 9.91 | -- | 5.3 | 18.3 | < 1.0 U | 12000 | **1080** | **420** | -- |
| 143-P3-IRM-004I-A | 143-P3-IRM-004I-A-30.5-20220420 | 4/20/2022 | 30.5 | N | 4602566161 | Baseline | Intermediate | -- | 45.6 | -- | < 10.0 U | -65.6 | 0.53 | 7.63 | 1.093 | 13.96 | 4.60 | -- | 3.9 | -- | -- | -- | -- | -- | -- |
| 143-P3-IRM-004I-B | 143-P3-IRM-004I-B-43.0-20211007 | 10/7/2021 | 43 | N | 4602445441 | Baseline | Intermediate | **81700** | **90900** | **84200** | **87100** | 167.40 | 0.08 | 7.79 | 1.06 | 17.53 | 7.66 | -- | 1.2 | 187 | < 1.0 U | 52 | **< 600 U** | < 40.0 U | -- |
| 143-P3-IRM-004I-B | 143-P3-IRM-004I-B-54.5-20211007 | 10/7/2021 | 54.5 | N | 4602445441 | Baseline | Intermediate | **86800** | **91100** | **89300** | **93300** | 174.90 | 0.06 | 7.77 | 1.04 | 17.20 | 8.21 | -- | 1.2 | 186 | < 1.0 U | 49 | **< 600 U** | < 40.0 U | -- |
| 143-P3-IRM-004I-B | 143-P3-IRM-004I-B-54.5-20220420 | 4/20/2022 | 54.5 | N | 4602566161 | Baseline | Intermediate | -- | **106000** | -- | **108000** | 191 | 0.73 | 7.42 | 1.522 | 13.65 | 7.79 | -- | 1.6 | -- | -- | -- | -- | -- | -- |
| 143-P3-IRM-004I-B | 143-P3-IRM-004I-B-54.5-20220420-X | 4/20/2022 | 54.5 | FD | 4602566161 | Baseline | Intermediate | -- | **103000** | -- | **104000** | -- | -- | -- | -- | -- | -- | -- | 1.4 | -- | -- | -- | -- | -- | -- |
| 143-P3-IRM-005I-A | 143-P3-IRM-005I-A-24.3-20211011 | 10/11/2021 | 24.3 | N | 4602448291 | Baseline | Intermediate | 28.7 | **566** | < 10.0 U | < 10.0 U | -230.10 | 0.56 | 7.72 | 1.96 | 19.80 | 5.17 | -- | 6.9 | 19.4 | < 1.0 U | 6000 | < 120 U | **243** | -- |
| 143-P3-IRM-005I-A | 143-P3-IRM-005I-A-24.3-20220421 | 4/21/2022 | 24.3 | N | 4602567031 | Baseline | Intermediate | -- | **289** | -- | < 10.0 UF1 | -100.1 | 0.48 | 7.74 | 1.783 | 11.14 | 3.21 | -- | 4.4 | -- | -- | -- | -- | -- | -- |
| 143-P3-IRM-005I-B | 143-P3-IRM-005I-B-40.5-20211011 | 10/11/2021 | 40.5 | N | 4602448291 | Baseline | Intermediate | **184000** | **196000** | **189000** | **191000** | 140.90 | 0.36 | 7.78 | 1.49 | 18.87 | 5.00 | -- | 1.9 | **286** | < 1.0 U | 81 | **< 600 U** | < 40.0 U | -- |
| 143-P3-IRM-005I-B | 143-P3-IRM-005I-B-57.5-20211011 | 10/11/2021 | 57.5 | N | 4602448291 | Baseline | Intermediate | **181000** | **201000** | **185000** | **188000** | 166.70 | 0.46 | 7.79 | 1.48 | 17.66 | 9.04 | -- | 1.9 | **289** | < 1.0 U | 81 | **< 600 U** | < 40.0 U | -- |
| 143-P3-IRM-005I-B | 143-P3-IRM-005I-B-40.5-20220422 | 4/22/2022 | 40.5 | N | 4602567961 | Baseline | Intermediate | -- | **175000** | -- | **187000** | 56.8 | 0.86 | 7.12 | 1.676 | 12.81 | 3.12 | -- | 2.5 | -- | -- | -- | -- | -- | -- |
| 199-P3-IRM-001I-A | 199-P3-IRM-001I-A-27.7-20220103 | 1/3/2022 | 27.7 | N | 4602500491 | Baseline | Intermediate | **144000** | **128000 J** | **152000** | **200000 J** | 243 | 2.07 | 6.75 | 3.95 | 8.42 | 4.0 | -- | 12.6 | **813** | < 10.0 U | 700 | **< 600 U** | **415** | -- |
| 199-P3-IRM-001I-A | 199-P3-IRM-001I-A-38.7-20220103 | 1/3/2022 | 38.7 | N | 4602500491 | Baseline | Intermediate | **177000** | **176000** | **180000** | **182000** | 210 | 1.16 | 7.06 | 4.08 | 12.08 | 6.1 | -- | 14.6 | **878** | < 10.0 U | 810 | **< 600 U** | **398** | -- |
| 199-P3-IRM-001I-B | 199-P3-IRM-001I-B-48.62-20211229 | 12/29/2021 | 48.62 | N | 4602499461 | Baseline | Intermediate | 46.1 | 57.0 | 10.8 | 14.2 | 34 | 0.97 | 6.87 | 2.71 | 14.19 | 3.44 | -- | 9.0 | **284** | < 1.0 U | 1400 | 108 J | **2120** | -- |
| 199-P3-IRM-002I-A | 199-P3-IRM-002I-A-29.9-20220104 | 1/4/2022 | 29.9 | N | 4602500781 | Baseline | Intermediate | **51600** | **49800** | **47500** | **52800** | 137 | 1.47 | 8.71 | 3.05 | 9.93 | 1.3 | -- | 6.5 | **568** | < 10.0 U | 1800 | < 120 U | 47.2 | -- |
| 199-P3-IRM-002I-A | 199-P3-IRM-002I-A-38.9-20220104 | 1/4/2022 | 38.9 | N | 4602500781 | Baseline | Intermediate | **61600** | **53000** | **58800** | **54600** | 117 | 1.01 | 8.67 | 3.05 | 12.35 | 8.6 | -- | 7.0 | **571** | < 10.0 U | 1500 | < 120 U | **68.6** | -- |
| 199-P3-IRM-002I-B | 199-P3-IRM-002I-B-48-20211229 | 12/29/2021 | 48 | N | 4602499461 | Baseline | Intermediate | **147** | **178** | < 10.0 U | < 10.0 U | 57 | 0 | 6.88 | 2.72 | 14.71 | 5.9 | -- | 8.7 | **339** | < 1.0 U | 2600 | 90.1 J | **2090** | -- |
| 199-P3-IRM-003I-A | 199-P3-IRM-003I-A-41.3-20211230 | 12/30/2021 | 41.3 | N | 4602499921 | Baseline | Intermediate | 38.2 | 62.3 | < 20.0 U | < 20.0 U | -313 | 4.47 | 7.3 | 5.78 | 15.1 | 8.96 | -- | 29.8 | **884** | 3.0 | 3700 | **9120** | **7110** | -- |
| 199-P3-IRM-003I-A | 199-P3-IRM-003I-A-30.3-20220105 | 1/5/2022 | 30.3 | N | 4602501431 | Baseline | Intermediate | 30.9 | 39.4 | < 10.0 U | < 10.0 U | -335 | 0 | 6.95 | 5.65 | 12.8 | 6.3 | -- | 41.4 | **984** | 3.9 | 3600 | **5100** | **7330** | -- |
| 199-P3-IRM-003I-B | 199-P3-IRM-003I-B-48.95-20220105 | 1/5/2022 | 48.95 | N | 4602501431 | Baseline | Intermediate | 23.9 | 29.1 | < 10.0 U | < 10.0 U | -109 | 0 | 6.75 | 2.40 | 14.20 | 5.0 | -- | 9.3 | **377** | < 1.0 U | 3000 | **2950** | **1900** | -- |
| 199-P3-IRM-004I-A | 199-P3-IRM-004I-A-28.35-20220105 | 1/5/2022 | 28.35 | N | 4602501431 | Baseline | Intermediate | 28.2 | **147** | < 10.0 U | < 10.0 U | -121.8 | 0.11 | 6.72 | 2.54 | 12.63 | 4.57 | -- | 9.5 | **634** | < 1.0 U | 7500 | **8110** | **22100** | -- |
| 199-P3-IRM-004I-A | 199-P3-IRM-004I-A-38.35-20220105 | 1/5/2022 | 38.35 | N | 4602501431 | Baseline | Intermediate | 28.1 | **86.2** | < 10.0 U | < 10.0 U | -136.3 | 0.13 | 6.78 | 2.4 | 14.31 | 7.25 | -- | 9.0 | **676** | < 1.0 U | 7700 | **8040** | **23100** | -- |
| 199-P3-IRM-004I-B | 199-P3-IRM-004I-B-51.2-20211230 | 12/30/2021 | 51 | N | 4602499921 | Baseline | Intermediate | **76.5** | **90.9** | < 20.0 U | < 20.0 U | -135.00 | 0 | 6.75 | 2.49 | 14.90 | 9.70 | -- | 30.7 | 39.4 | < 1.0 U | 11000 | **2080** | **2350** | -- |
| 199-P3-IRM-005I-A | 199-P3-IRM-005I-A-35-20211230 | 12/30/2021 | 35 | N | 4602499921 | Baseline | Intermediate | **413** | **445** | **360** | **378** | 178.6 | 0.15 | 6.96 | 1.86 | 14.14 | 12.70 | -- | 5.9 | **410** | < 1.0 U | 6100 | < 120 U | **4760** | -- |
| 199-P3-IRM-005I-B | 199-P3-IRM-005I-B-56.4-20220106 | 1/6/2022 | 56.4 | N | 4602502281 | Baseline | Intermediate | 35.7 | 31.7 | 13.9 J | < 10.0 UJ | -158.00 | 0.13 | 6.82 | 2.28 | 13.48 | 5.62 | -- | 58.8 | 47.1 J- | < 1.0 U | 20000 | **15800** | **4550** | -- |
| CAR-P3-IRM-001I | CAR-P3-IRM-001I-23-20210830 | 8/30/2021 | 23 | N | 4602418351 | Baseline | Intermediate | < 4.0 U | 13.9 | < 10.0 U | < 10.0 U | -48.60 | 0.19 | 7.00 | 0.83 | 20.83 | 5.12 | -- | 3.0 | 221 | < 1.0 U | 400 | **3280** | **667** | -- |
| CAR-P3-IRM-002I-B | CAR-P3-IRM-002I-B-24-20210830 | 8/30/2021 | 24 | N | 4602418351 | Baseline | Intermediate | < 4.0 U | 3.6 J | < 10.0 U | < 10.0 U | -92.40 | 0.55 | 6.93 | 1.43 | 21.76 | 5.05 | -- | 2.0 | **683** | < 1.0 U | 270 | **6220** | **1400** | -- |
| CAR-P3-IRM-002I-B | CAR-P3-IRM-002I-B-36-20210830 | 8/30/2021 | 36 | N | 4602418351 | Baseline | Intermediate | < 4.0 U | 8.1 | < 10.0 U | < 10.0 U | -104.20 | 0.60 | 6.99 | 14.67 | 20.22 | 6.52 | -- | 1.8 | **562** | < 1.0 U | 240 | **6240** | **1460** | -- |
| CAR-P3-IRM-003I-A | CAR-P3-IRM-003I-A-23.4-20210831 | 8/31/2021 | 23.4 | N | 4602419131 | Baseline | Intermediate | 42.3 | 67.6 | < 10.0 U | < 10.0 U | 14.30 | 4.32 | 7.04 | 2.97 | 17.58 | 5.62 | -- | 10.5 | **334** | < 1.0 U | 250 | **391** | **2730** | -- |
| CAR-P3-IRM-003I-B | CAR-P3-IRM-003I-B-42.7-20210831 | 8/31/2021 | 42.7 | N | 4602419131 | Baseline | Intermediate | **58600** | **68900** | **52500** | **59400** | 238.00 | 3.30 | 6.95 | 3.66 | 18.37 | 9.10 | -- | 7.4 | **873** | < 1.0 U | 5500 | **< 600 U** | **243** | -- |
| CAR-P3-IRM-003I-B | CAR-P3-IRM003I-B-29.7-20210901 | 9/1/2021 | 29.7 | N | 4602419751 | Baseline | Intermediate | **63800** | **60300** | **56800 J** | **55700 J** | 185.50 | 3.80 | 7.17 | 3.61 | 17.54 | 7.63 | -- | 6.8 J | **790 J** | < 1.0 UJ | 4500 J | < 120 U | **132** | -- |
| CAR-P3-IRM-004I-A | CAR-P3-IRM-004I-A-27.9-20210831 | 8/31/2021 | 27.9 | N | 4602419131 | Baseline | Intermediate | **40000 J** | **25500 J** | **31900** | **30800** | 160.10 | 1.09 | 6.76 | 2.53 | 17.19 | 5.31 | -- | 4.6 | 162 | < 1.0 U | 930 | **< 600 U** | **197** | -- |
| CAR-P3-IRM-004I-B | CAR-P3-IRM-004I-B-37.6-20210831 | 8/31/2021 | 37.6 | N | 4602419131 | Baseline | Intermediate | **107000 J** | **74400 J** | **97100** | **94800 J** | 156.70 | 0.19 | 7.03 | 2.04 | 17.83 | 7.55 | -- | 4.1 | **473** | < 1.0 U | 930 | **< 600 U** | **78.3** | -- |
| CAR-P3-IRM-004I-B | CAR-P3-IRM-004I-B-46.6-20210831 | 8/31/2021 | 46.6 | N | 4602419131 | Baseline | Intermediate | **102000 J** | **93000 J** | **491000 J** | **434000 J** | 202.80 | 0.24 | 7.12 | 1.98 | 17.22 | 57.20 | -- | 4.1 | **468** | < 1.0 U | 1000 | **< 600 U** | **80.9** | -- |
| CAR-P3-IRM-005I-A | CAR-P3-IRM-005I-A-29.3-20210907 | 9/7/2021 | 29.3 | N | 4602422511 | Baseline | Intermediate | **129000** | **165000** | **127000** | **127000** | 84.00 | 4.62 | 7.09 | 2.15 | 18.29 | 7.11 | -- | 6.9 | 176 | < 1.0 U | 260 | **< 600 U** | **744** | -- |
| CAR-P3-IRM-005I-B | CAR-P3-IRM-005I-B-47.2-20210903 | 9/3/2021 | 47.2 | N | 4602421631 | Baseline | Intermediate | **293000** | **278000** | **334000** | **284000** | 181.20 | 1.63 | 7.58 | 1.89 | 22.04 | 9.23 | -- | 2.1 | **295** | < 1.0 U | 130 | **< 600 U** | 25.9 J | -- |
| CAR-P3-IRM-005I-B | CAR-P3-IRM-005I-B-58.2-20210907 | 9/7/2021 | 58.2 | N | 4602422511 | Baseline | Intermediate | **302000** | **291000** | **288000** | **288000** | 96.80 | 1.71 | 7.57 | 1.85 | 18.17 | 9.29 | -- | 2.1 | **303** | < 1.0 U | 110 | **< 600 U** | 25.6 J | -- |
| CAR-P3-IRM-006I | CAR-P3-IRM-006I-32-20210901 | 9/1/2021 | 28 | N | 4602419751 | Baseline | Intermediate | **179000** | **170000** | **151000 J** | **165000 J** | 151.40 | 6.74 | 6.96 | 2.41 | 17.05 | 9.48 | -- | 3.3 J | 199 J | < 1.0 UJ | 420 J | **< 600 U** | **359** | -- |
| CAR-P3-IRM-007I-A | CAR-P3-IRM-007I-A-29.2-20210903 | 9/3/2021 | 29.2 | N | 4602421631 | Baseline | Intermediate | **83.5** | **158** | 37.9 | 47.9 | 50.20 | 1.20 | 7.00 | 2.58 | 16.81 | 9.08 | -- | 9.3 | 132 | < 1.0 U | 290 | < 120 U | **279** | -- |
| CAR-P3-IRM-007I-B | CAR-P3-IRM-007I-B-46.3-20210907 | 9/7/2021 | 46.3 | N | 4602422511 | Baseline | Intermediate | **140000** | **144000** | **136000** | **136000** | 146.20 | 1.68 | 7.15 | 1.52 | 21.55 | 24.20 | -- | 2.2 | **283** | < 1.0 U | 270 | **< 2400 U** | **647** | -- |
| CAR-P3-IRM-007I-B | CAR-P3-IRM-007I-B-46.3-20210907-X | 9/7/2021 | 46.3 | FD | 4602422511 | Baseline | Intermediate | **138000** | **148000** | **140000** | **131000** | -- | -- | -- | -- | -- | -- | -- | 2.3 | **280** | < 1.0 U | 250 | **< 600 U** | **618** | -- |
| CAR-P3-IRM-007I-B | CAR-P3-IRM-007I-B-64.3-20210908 | 9/8/2021 | 64.3 | N | 4602423391 | Baseline | Intermediate | **119000** | **124000** | **123000** | **126000** | 208.20 | 2.20 | 7.34 | 1.44 | 21.30 | 9.10 | -- | 2.5 JB | **288** | < 1.0 U | 220 | < 120 U | **550** | -- |
| CAR-P3-IRM-008I-B | CAR-P3-IRM-008I-B-32.7-20210903 | 9/3/2021 | 32.7 | N | 4602421631 | Baseline | Intermediate | **145** | **197** | 17.9 | 14.6 | -95.70 | 1.02 | 7.11 | 1.79 | 17.87 | 7.99 | -- | 3.6 | **436** | < 1.0 U | 2200 | **325** | **810** | -- |
| CAR-P3-IRM-009I | CAR-P3-IRM-009I-26.1-20210908 | 9/8/2021 | 26.1 | N | 4602423391 | Baseline | Intermediate | 39.0 | 38.5 | < 10.0 U | < 10.0 U | -55 | 1.95 | 7.17 | 2.101 | 19.96 | 9.54 | -- | 4.2 | **471** | < 1.0 U | 680 | **3750** | **1030** | -- |
| CAR-P3-IRM-010I-B | CAR-P3-IRM-010I-B-30.7-20210908 | 9/8/2021 | 30.7 | N | 4602423391 | Baseline | Intermediate | **684** | **663 J** | **904** | **926 J** | 52.40 | 0.69 | 7.34 | 1.81 | 18.38 | 5.32 | -- | 3.8 | **336** | < 1.0 U | 740 | < 120 U | 34.3 | -- |
| CAR-P3-IRM-011I-A | CAR-P3-IRM-011I-A-25.2-20210907 | 9/7/2021 | 25.2 | N | 4602422511 | Baseline | Intermediate | < 4.0 U | < 4.0 U | < 50.0 U | < 50.0 U | -121.40 | 8.92 | 7.37 | 1.69 | 20.03 | 5.70 | -- | 1.9 | **600** | < 1.0 U | 1100 | **8330** | **1890** | -- |
| CAR-P3-IRM-011I-A | CAR-P3-IRM-011I-A-40.2-20210907 | 9/7/2021 | 40.2 | N | 4602422511 | Baseline | Intermediate | < 4.0 U | < 4.0 U | < 50.0 U | < 50.0 U | -121.90 | 2.80 | 7.06 | 1.80 | 20.30 | 6.50 | -- | 2.0 | **586** | < 1.0 U | 970 | **8250** | **1890** | -- |
| CAR-P3-IRM-011I-B | CAR-P3-IRM-011I-B-50-20210908 | 9/8/2021 | 50 | N | 4602423391 | Baseline | Intermediate | **9610** | **10600** | **9710** | **9820** | 47.10 | 0.52 | 12.47 | 2.45 | 18.85 | 8.40 | -- | 3.5 JB | 177 | < 1.0 U | 130 | < 120 U | < 8.0 U | -- |
| CAR-P3-IRM-012I-A | CAR-P3-IRM-012I-A-31.0-20210910 | 9/10/2021 | 31 | N | 4602425191 | Baseline | Intermediate | **140000** | **148000** | **129000** | **138000** | 176.30 | 9999.00 | 7.08 | 2.28 | 17.12 | 8.73 | -- | 3.9 JB | **390** | < 1.0 U | 1200 | < 120 U | **411** | -- |
| CAR-P3-IRM-012I-A | CAR-P3-IRM-012I-A-42.0-20210910 | 9/10/2021 | 42 | N | 4602425191 | Baseline | Intermediate | **151000** | **159000** | **160000** | **155000** | 223.30 | 9999.00 | 7.07 | 2.33 | 17.19 | 9.50 | -- | 3.9 JB | **353** | < 1.0 U | 1200 | < 120 U | **449** | -- |
| CAR-P3-IRM-012I-B | CAR-P3-IRM-012I-B-51.9-20210909 | 9/9/2021 | 51.9 | N | 4602424381 | Baseline | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -138.20 | 0.06 | 8.20 | 0.77 | 17.55 | 14.20 | -- | < 1.3 UB | 219 | < 1.0 U | 89 | 78.8 J | **161** | -- |
| CAR-P3-IRM-013I-A | CAR-P3-IRM-013I-A-26.0-20210909 | 9/9/2021 | 26 | N | 4602424381 | Baseline | Intermediate | **156000** | **137000** | **139000** | **148000** | 95.10 | 0.18 | 7.60 | 7.12 | 19.18 | 3.29 | -- | 3.9 JB | **547** | < 1.0 U | 890 | < 120 U | **178** | -- |
| CAR-P3-IRM-013I-A | CAR-P3-IRM-013I-A-39.0-20210909 | 9/9/2021 | 39 | N | 4602424381 | Baseline | Intermediate | **145000** | **127000** | **123000** | **120000** | 130.70 | 0.11 | 7.39 | 6.59 | 19.87 | 

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| CAR-P3-IRM-016I-B | CAR-P3-IRM-016I-B-57.5 | 6/22/2021 | 57.5 | N | 4602371281 | Baseline | Intermediate | -- | 55.0 | -- | < 10.0 U | -67.00 | 0.30 | 8.12 | 4.03 | 18.69 | 4.90 | -- | 0.63 J | 133 | < 1.0 U | 220 | -- | -- | -- |
| CAR-P3-IRM-016I-B | CAR-P3-IRM-016I-B-57.5-F | 6/22/2021 | 57.5 | N | 4602371281 | Baseline | Intermediate | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 131 | **187** | -- |
| CAR-P3-IRM-017I-A | CAR-P3-IRM-017I-A-41.6-20210716 | 7/16/2021 | 41.6 | N | 4602389731 | Baseline | Intermediate | **265000** | **308000** | **277000** | **316000** | 69.20 | 2.48 | 8.71 | 5.73 | 17.83 | 23.90 | -- | 14.9 | **867** | < 1.0 U | 680 | **< 600 U** | **62.8** | -- |
| CAR-P3-IRM-017I-A | CAR-P3-IRM-017I-A-26.6-20210719 | 7/19/2021 | 26.6 | N | 4602390761 | Baseline | Intermediate | **253000** | **306000** | **288000** | **266000** | 92.80 | 1.93 | 8.76 | 5.80 | 18.10 | 19.50 | -- | 15.6 | **1030** | < 1.0 U | 800 | **< 600 U** | **66.5** | -- |
| CAR-P3-IRM-017I-A | CAR-P3-IRM-017I-A-31.6-20210719 | 7/19/2021 | 31.6 | N | 4602390761 | Baseline | Intermediate | **251000** | **283000** | **259000** | **243000** | 102.20 | 1.88 | 8.77 | 5.79 | 17.41 | 15.00 | -- | 15.7 | **1070** | < 1.0 U | 820 | **< 600 U** | **63.4** | -- |
| CAR-P3-IRM-017I-A | CAR-P3-IRM-017I-A-36.6-20210719 | 7/19/2021 | 36.6 | N | 4602390761 | Baseline | Intermediate | **261000** | **267000** | **230000** | **237000** | 94.10 | 2.00 | 8.77 | 5.78 | 16.67 | 42.40 | -- | 15.7 | **1070** | < 1.0 U | 790 | **< 600 U** | **62.7** | -- |
| CAR-P3-IRM-017I-B | CAR-P3-IRM-017I-B-46.25-20210715 | 7/15/2021 | 46.25 | N | 4602388581 | Baseline | Intermediate | **601000** | **551000** | **637000 J+** | **577000 J+** | -58.60 | 0.63 | 8.05 | 12.71 | 22.58 | 15.70 | -- | 21.2 | **1060** | R | 820 | **< 2400 U** | **367** | -- |
| CAR-P3-IRM-017I-B | CAR-P3-IRM-017I-B-46.25-20210715-X | 7/15/2021 | 46.25 | FD | 4602388581 | Baseline | Intermediate | **510000** | **567000** | **553000 J+** | **649000 J+** | -- | -- | -- | -- | -- | -- | -- | 22.3 | **1060** | R | 770 | **< 2400 U** | **391** | -- |
| CAR-P3-IRM-017I-B | CAR-P3-IRM-017I-B-51.25-20210715 | 7/15/2021 | 51.25 | N | 4602388581 | Baseline | Intermediate | **530000** | **487000** | **703000 J+** | **523000 J+** | -54.40 | 0.36 | 8.02 | 13.85 | 21.20 | 39.40 | -- | 19.1 | **1070** | R | 480 | **< 2400 U** | **447** | -- |
| CAR-P3-IRM-017I-B | CAR-P3-IRM-017I-B-56.25-20210715 | 7/15/2021 | 56.25 | N | 4602388581 | Baseline | Intermediate | **426000** | **445000** | **463000 J+** | **344000 J+** | -56.20 | 0.12 | 7.74 | 16.76 | 20.55 | 67.40 | -- | 19.9 | **1110** | R | 290 | **< 2400 U** | **562** | -- |
| CAR-P3-IRM-017I-B | CAR-P3-IRM-017I-B-61.25-20210715 | 7/15/2021 | 61.25 | N | 4602388581 | Baseline | Intermediate | **391000** | **379000** | **422000 J+** | **446000 J+** | -7.40 | 0.94 | 7.64 | 18.04 | 19.81 | 225.00 | -- | 17.7 | **1090** | R | 370 | **< 2400 U** | **660** | -- |
| CAR-P3-IRM-017I-C | CAR-P3-IRM-017I-C-66.4-20210716 | 7/16/2021 | 66.4 | N | 4602389731 | Baseline | Intermediate | 2.6 J | < 4.9 UB | < 10.0 U | < 10.0 U | -162.90 | 0.16 | 7.68 | 18.76 | 18.27 | 84.60 | -- | 3.7 | **510** | < 1.0 U | 25 | **1430** | **1010** | -- |
| CAR-P3-IRM-017I-C | CAR-P3-IRM-017I-C-71.4-20210716 | 7/16/2021 | 71.4 | N | 4602389731 | Baseline | Intermediate | 3.1 J | < 20.0 U | < 10.0 U | < 20.0 U | -132.80 | 0.14 | 7.66 | 18.80 | 17.40 | 3.88 | -- | 3.3 | **566** | < 1.0 U | 27 | **1380** | **1010** | -- |
| CAR-P3-IRM-018I-A | CAR-P3-IRM-018I-A-29.0 | 6/11/2021 | 29 | N | 4602363611 | Baseline | Intermediate | -- | **78500** | -- | **60600** | 42.00 | 0.44 | 8.79 | 4.51 | 13.98 | 40.20 | -- | 19.7 | **856** | < 1.0 U | 8700 | -- | -- | -- |
| CAR-P3-IRM-018I-A | CAR-P3-IRM-018I-A-29.0-F | 6/11/2021 | 29 | N | 4602363611 | Baseline | Intermediate | **67100** | -- | **61100** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 600 U** | 43.6 | -- |
| CAR-P3-IRM-018I-A | CAR-P3-IRM-018I-A-34.0 | 6/11/2021 | 34 | N | 4602363611 | Baseline | Intermediate | -- | **56600** | -- | **54400** | -68.90 | 0.30 | 8.65 | 4.22 | 14.20 | 31.60 | -- | 21.0 | **837** | < 1.0 U | 8800 | -- | -- | -- |
| CAR-P3-IRM-018I-A | CAR-P3-IRM-018I-A-34.0-F | 6/11/2021 | 34 | N | 4602363611 | Baseline | Intermediate | **59600** | -- | **53900** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 600 U** | 42.1 | -- |
| CAR-P3-IRM-018I-A | CAR-P3-IRM-018I-A-39.0 | 6/14/2021 | 39 | N | 4602365231 | Baseline | Intermediate | -- | **105000** | -- | **94900** | -45.00 | 0.30 | 9.61 | 4.83 | 14.24 | 42.70 | -- | 21.2 | **1240** | R | 1400 | -- | -- | -- |
| CAR-P3-IRM-018I-A | CAR-P3-IRM-018I-A-39.0-F | 6/14/2021 | 39 | N | 4602365231 | Baseline | Intermediate | **92000** | -- | **108000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 600 U** | 27.8 J | -- |
| CAR-P3-IRM-018I-A | CAR-P3-IRM-018I-A-44.0 | 6/14/2021 | 44 | N | 4602365231 | Baseline | Intermediate | -- | **102000** | -- | **104000** | 22.60 | 0.28 | 9.51 | 5.06 | 14.21 | 37.50 | -- | 21.1 | **1320** | R | 950 | -- | -- | -- |
| CAR-P3-IRM-018I-A | CAR-P3-IRM-018I-A-44.0-F | 6/14/2021 | 44 | N | 4602365231 | Baseline | Intermediate | **105000** | -- | **105000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 600 U** | 21.7 J | -- |
| CAR-P3-IRM-018I-B | CAR-P3-IRM-018I-B-49.3 | 6/14/2021 | 49.3 | N | 4602365231 | Baseline | Intermediate | -- | **127000** | -- | **125000** | 10.40 | 0.41 | 9.21 | 5.63 | 14.10 | 27.70 | -- | 12.8 | **848** | R | 450 | -- | -- | -- |
| CAR-P3-IRM-018I-B | CAR-P3-IRM-018I-B-49.3-F | 6/14/2021 | 49.3 | N | 4602365231 | Baseline | Intermediate | **117000** | -- | **123000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 600 U** | **358** | -- |
| CAR-P3-IRM-018I-B | CAR-P3-IRM-018I-B-54.3 | 6/14/2021 | 54.3 | N | 4602365231 | Baseline | Intermediate | -- | **126000** | -- | **125000** | 66.00 | 0.39 | 9.00 | 5.84 | 14.01 | 30.30 | -- | 10.5 | **716** | R | 330 | -- | -- | -- |
| CAR-P3-IRM-018I-B | CAR-P3-IRM-018I-B-54.3-F | 6/14/2021 | 54.3 | N | 4602365231 | Baseline | Intermediate | **130000** | -- | **135000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 600 U** | **355** | -- |
| CAR-P3-IRM-018I-B | CAR-P3-IRM-018I-B-59.3 | 6/14/2021 | 59.3 | N | 4602365231 | Baseline | Intermediate | -- | **132000** | -- | **119000** | 81.20 | 0.32 | 9.04 | 5.85 | 14.15 | 44.90 | -- | 10.9 | **812** | R | 350 | -- | -- | -- |
| CAR-P3-IRM-018I-B | CAR-P3-IRM-018I-B-59.3-F | 6/14/2021 | 59.3 | N | 4602365231 | Baseline | Intermediate | **128000** | -- | **126000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 600 U** | **357** | -- |
| CAR-P3-IRM-018I-B | CAR-P3-IRM-018I-B-64.3 | 6/14/2021 | 64.3 | N | 4602365231 | Baseline | Intermediate | -- | **156000** | -- | **145000** | 59.80 | 0.30 | 9.25 | 5.64 | 14.12 | 44.50 | -- | 12.6 | **961** | R | 410 | -- | -- | -- |
| CAR-P3-IRM-018I-B | CAR-P3-IRM-018I-B-64.3-F | 6/14/2021 | 64.3 | N | 4602365231 | Baseline | Intermediate | **158000** | -- | **153000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 600 U** | **285** | -- |
| CAR-P3-IRM-018I-B | CAR-P3-IRM-018I-B-64.3-X | 6/14/2021 | 64.3 | FD | 4602365231 | Baseline | Intermediate | -- | **159000** | -- | **156000** | -- | -- | -- | -- | -- | -- | -- | 12.8 | **939** | R | 420 | -- | -- | -- |
| CAR-P3-IRM-018I-B | CAR-P3-IRM-018I-B-64.3-X-F | 6/14/2021 | 64.3 | FD | 4602365231 | Baseline | Intermediate | **161000** | -- | **149000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 600 U** | **271** | -- |
| CAR-P3-IRM-018I-C | CAR-P3-IRM-018IC-69.0-20210714 | 7/14/2021 | 69 | N | 4602387571 | Baseline | Intermediate | < 4.0 U | 12.5 | < 10.0 U | < 50.0 U | -257.80 | 0.14 | 7.90 | 10.61 | 21.44 | 9999.00 | -- | 1.2 J+ | 197 | < 1.0 U | 13 | **1440** | **1130** | -- |
| CAR-P3-IRM-018I-C | CAR-P3-IRM-018IC-74.0-20210714 | 7/14/2021 | 74 | N | 4602387571 | Baseline | Intermediate | < 4.0 U | 8.1 | < 10.0 U | < 50.0 U | -225.90 | 0.04 | 7.87 | 9.40 | 26.81 | 9999.00 | -- | < 1.0 U | 172 | < 1.0 U | 12 | **856** | **942** | -- |
| CAR-P3-IRM-018I-C | CAR-P3-IRM-018IC-79.0-20210714 | 7/14/2021 | 79 | N | 4602387571 | Baseline | Intermediate | < 4.0 U | 9.0 | < 10.0 U | < 50.0 U | -122.20 | 0.26 | 7.78 | 8.65 | 27.35 | 9999.00 | -- | 1.1 J+ | 159 | < 1.0 U | 12 | **414** | **834** | -- |
| CAR-P3-IRM-018I-C | CAR-P3-IRM-018I-C-84.0-20210719 | 7/19/2021 | 84 | N | 4602390761 | Baseline | Intermediate | < 4.0 U | 7.2 | < 10.0 U | < 20.0 U | -169.20 | 0.73 | 7.95 | 11.12 | 21.65 | 197.00 | -- | 0.73 J | 202 | < 1.0 U | 9.6 | **1690** | **1200** | -- |
| CAR-P3-IRM-019I | CAR-P3-IRM-019I-41-20210830 | 8/30/2021 | 41 | N | 4602418351 | Baseline | Intermediate | **87200** | **91700** | **89600** | **82000** | 126.20 | 0.42 | 7.65 | 1.20 | 17.21 | 7.96 | -- | 1.9 | 205 | < 1.0 U | 180 | **< 600 U** | 42.5 | -- |
| CAR-P3-IRM-020I-A | CAR-P3-IRM-020I-A-28.6-20210922 | 9/22/2021 | 28.6 | N | 4602433991 | Baseline | Intermediate | **360000** | **325000 J** | **367000** | **488000 J** | 22.10 | 2.68 | 9.04 | 4.71 | 19.30 | 4.21 | -- | 19.3 | **1090** | < 1.0 U | 950 | **< 600 U** | **121** | -- |
| CAR-P3-IRM-020I-A | CAR-P3-IRM-020I-A-43.6-20210922 | 9/22/2021 | 43.6 | N | 4602433991 | Baseline | Intermediate | **366000** | **362000** | **365000** | **342000** | -9.90 | 3.21 | 9.08 | 4.75 | 18.86 | 6.43 | -- | 19.4 | **1120** | < 1.0 U | 450 | **< 600 U** | **122** | -- |
| CAR-P3-IRM-020I-B | CAR-P3-IRM-020I-B-63.5-20210922 | 9/22/2021 | 63.5 | N | 4602433991 | Baseline | Intermediate | **366000** | **391000** | **429000** | **371000** | -82.50 | 0.80 | 8.24 | 11.40 | 18.47 | 3.67 | -- | 13.8 | **858** | < 1.0 U | 390 | **< 600 U** | **124** | -- |
| CAR-P3-IRM-021I-A | CAR-P3-IRM-021I-A-28.5-20210923 | 9/23/2021 | 28.5 | N | 4602434981 | Baseline | Intermediate | 6.7 | 8.0 | < 10.0 U | < 10.0 U | -174.60 | 0.77 | 7.63 | 7.04 | 17.59 | 3.57 | -- | 15.6 | **770** | < 1.0 U | 1100 | **7880** | **1200** | -- |
| CAR-P3-IRM-021I-B | CAR-P3-IRM-021I-B-48.4-20210923 | 9/23/2021 | 48.4 | N | 4602434981 | Baseline | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -186.10 | 0.97 | 7.73 | 14.83 | 19.27 | 5.52 | -- | 8.3 | 86.0 | < 1.0 U | 110 | **6960** | **1160** | -- |
| CAR-P3-IRM-021I-B | CAR-P3-IRM-021I-B-63.4-20210923 | 9/23/2021 | 63.4 | N | 4602434981 | Baseline | Intermediate | < 4.0 U | 2.9 J | < 10.0 U | < 10.0 U | -171.20 | 0.48 | 7.62 | 13.70 | 18.63 | 10.20 | -- | 8.1 | 80.8 | < 1.0 U | 96 | **7730** | **1190** | -- |
| FS-P3-IRM-001I | FS-P3-IRM-001I-19.0-20210706 | 7/6/2021 | 19 | N | 4602380991 | Baseline | Intermediate | **2480** | **2470** | **2360** | **2310** | 50.60 | 3.10 | 7.85 | 0.61 | 18.97 | 8.76 | -- | 2.0 J+ | 118 | < 1.0 U | 69 | < 120 U | **828** | -- |
| FS-P3-IRM-001I | FS-P3-IRM-001I-24.0-20210706 | 7/6/2021 | 24 | N | 4602380991 | Baseline | Intermediate | **5700** | **5620** | **5670** | **5500** | 77.20 | 2.65 | 7.64 | 1.03 | 19.26 | 7.96 | -- | 2.3 J+ | 236 | < 1.0 U | 110 | < 120 U | **1370** | -- |
| FS-P3-IRM-001I | FS-P3-IRM-001I-29.0-20210706 | 7/6/2021 | 29 | N | 4602380991 | Baseline | Intermediate | **6290** | **7170** | **6580** | **6860** | 149.20 | 1.80 | 7.52 | 1.11 | 21.46 | 8.26 | -- | 2.3 J+ | **265** | < 1.0 U | 120 | < 120 U | **1450** | -- |
| FS-P3-IRM-002I | FS-P3-IRM-002I-19.5-20210708 | 7/8/2021 | 19.5 | N | 4602383071 | Baseline | Intermediate | **20900** | **21600** | **19400** | **20900** | 175.20 | 0.79 | 7.71 | 1.39 | 20.60 | 7.76 | -- | 3.4 | **362 J** | R | 230 J | **< 600 U** | **1140** | -- |
| FS-P3-IRM-002I | FS-P3-IRM-002I-24.5-20210708 | 7/8/2021 | 24.5 | N | 4602383071 | Baseline | Intermediate | **18300** | **19800** | **16300** | **18000** | 173.60 | 0.14 | 7.60 | 1.68 | 21.93 | 8.22 | -- | 3.2 | **437 J** | R | 180 J | **< 600 U** | **1290** | -- |
| FS-P3-IRM-002I | FS-P3-IRM-002I-29.5-20210708 | 7/8/2021 | 29.5 | N | 4602383071 | Baseline | Intermediate | **19300** | **22300** | **17600** | **20200** | 170.10 | 0.10 | 7.57 | 1.65 | 18.89 | 8.21 | -- | 3.0 | **491 J** | R | 220 J | **< 600 U** | **1310** | -- |
| FS-P3-IRM-002I | FS-P3-IRM-002I-34.5-20210708 | 7/8/2021 | 34.5 | N | 4602383071 | Baseline | Intermediate | **15900** | **16800** | **14300** | **14800** | 164.80 | 0.11 | 7.53 | 1.64 | 18.36 | 9.61 | -- | 3.0 | **500 J** | R | 220 J | **< 600 U** | **1310** | -- |
| FS-P3-IRM-003I | FS-P3-IRM-003I-12.5-20210709 | 7/9/2021 | 12.5 | N | 4602383801 | Baseline | Intermediate | **5510** | **4680** | **5930** | **6150** | 201.60 | 0.15 | 7.03 | 2.16 | 20.30 | 8.22 | -- | 2.7 | **920** | < 1.0 U | 150 | < 120 U | **1060** | -- |
| FS-P3-IRM-003I | FS-P3-IRM-003I-17.5-20210709 | 7/9/2021 | 17.5 | N | 4602383801 | Baseline | Intermediate | **6370** | **6270** | **6200** | **6320** | 200.60 | 0.11 | 7.03 | 2.27 | 19.92 | 8.68 | -- | 2.4 | **944** | < 1.0 U | 150 | < 120 U | **710** | -- |
| FS-P3-IRM-003I | FS-P3-IRM-003I-22.5-20210709 | 7/9/2021 | 22.5 | N | 4602383801 | Baseline | Intermediate | **6530** | **6990** | **6760** | **7100** | 200.90 | 0.07 | 7.03 | 2.33 | 20.21 | 7.61 | -- | 2.2 | **935** | < 1.0 U | 130 | < 120 U | **649** | -- |
| FS-P3-IRM-003I | FS-P3-IRM-003I-27.5-20210709 | 7/9/2021 | 27.5 | N | 4602383801 | Baseline | Intermediate | **6870** | **5610** | **6880** | **6930** | -- | -- | -- | -- | -- | -- | -- | 2.2 | **934** | < 1.0 U | 140 | < 120 U | **657** | -- |
| FS-P3-IRM-004I | FS-P3-IRM-004I-17.5-20210707 | 7/7/2021 | 17.5 | N | 4602381971 | Baseline | Intermediate | **4140** | **4340** | **3980** | **3780** | 201.00 | 0.77 | 7.03 | 2.04 | 20.10 | 8.61 | -- | 3.0 | **680** | < 1.0 U | 150 | < 120 U | **1500** | -- |
| FS-P3-IRM-004I | FS-P3-IRM-004I-22.5-20210707 | 7/7/2021 | 22.5 | N | 4602381971 | Baseline | Intermediate | **4170** | **4660** | **4230** | **4280** | 200.20 | 0.50 | 7.00 | 2.06 | 23.12 | 7.11 | -- | 2.2 | **694** | < 1.0 U | 160 | < 120 U | **1470** | -- |
| FS-P3-IRM-004I | FS-P3-IRM-004I-27.5-20210707 | 7/7/2021 | 27.5 | N | 4602381971 | Baseline | Intermediate | **4240** | **4560** | **4170** | **4060** | 185.10 | 0.53 | 7.01 | 2.06 | 20.01 | 8.21 | -- | 1.9 | **687** | < 1.0 U | 150 | < 120 U | **1470** | -- |
| FS-P3-IRM-004I | FS-P3-IRM-004I-27.5-20210707-X | 7/7/2021 | 27.5 | FD | 4602381971 | Baseline | Intermediate | **4390** | **4380** | **4110** | **4170** | -- | -- | -- | -- | -- | -- | -- | 2.1 | **685** | < 1.0 U | 160 | < 120 U | **1440** | -- |
| FS-P3-IRM-004I | FS-P3-IRM-004I-32.5-20210707 | 7/7/2021 | 32.5 | N | 4602381971 | Baseline | Intermediate | **4200** | **4390** | **4090** | **4090** | -- | -- | -- | -- | -- | -- | -- | 1.9 | **686** | < 1.0 U | 150 | < 120 U | **1460** | -- |
| FSP-P3-IRM-001I-A | FSP-P3-IRM-001I-A-30.6-20211230 | 12/30/2021 | 30.6 | N | 4602499921 | Baseline | Intermediate | 15.0 | 20.5 | < 20.0 U | < 20.0 U | -176.4 | 0.14 | 6.77 | 2.15 | 14.61 | 7.86 | -- | 8.8 | **434** | < 1.0 U | 3900 | **4240** | **14400** | -- |
| FSP-P3-IRM-001I-A | FSP-P3-IRM-001I-A-41.6-20211230 | 12/30/2021 | 41.6 | N | 4602499921 | Baseline | Intermediate | 17.7 | 19.6 | < 20.0 U | < 20.0 U | -188.9 | 0.16 | 6.84 | 2.15 | 14.92 | 1.4 | -- | 9.5 | **390** | < 1.0 U | 3900 | **4680** | **15000** | -- |
| FSP-P3-IRM-001I-A | FSP-P3-IRM-001I-A-41.6-20211230-X | 12/30/2021 | 41.6 | FD | 4602499921 | Baseline | Intermediate | 16.7 | 19.8 | < 20.0 U | < 20.0 U | -- | -- | -- | -- | -- | -- | -- | 9.4 | **391** | < 1.0 U | 4000 | **4660** | **15200** | -- |
| FSP-P3-IRM-001I-B | FSP-P3-IRM-001I-B-58.6-20211230 | 12/30/2021 | 58.6 | N | 4602499921 | Baseline | Intermediate | 64.7 | **843** | < 10.0 U | < 10.0 U | -198.7 | 0.19 | 6.91 | 2.69 | 14.48 | 7.54 | -- | 6.7 | **304** | < 1.0 U | 3700 | **516** | **2900** | -- |
| FSP-P3-IRM-002I-A | FSP-P3-IRM-002I-A-40.4-20220103 | 1/3/2022 | 40.4 | N | 4602500491 | Baseline | Intermediate | **762** | **957** | **868** | **770** | 36.3 | 1.61 | 7.52 | 1.5 | 8.91 | 7.23 | -- | 5.6 | **375** | < 1.0 U | 250 | 236 | **3220** | -- |
| FSP-P3-IRM-002I-A | FSP-P3-IRM-002I-A-50.4-20220103 | 1/3/2022 | 50.4 | N | 4602500491 | Baseline | Intermediate | **93.3** | **132** | 34.6 J | 17.2 J | 8.8 | 0.31 | 7.01 | 2.95 | 11.08 | 5.55 | -- | 13.9 | **404** | < 1.0 U | 1100 | < 120 U | **6900** | -- |
| FSP-P3-IRM-002I-B | FSP-P3-IRM-002I-B-60.15-20220103 | 1/3/2022 | 60.15 | N | 4602500491 | Baseline | Intermediate | < 4.0 U | 17.5 | < 10.0 U | < 10.0 U | -236 | 0.34 | 7.3 | 1.09 | 10.93 | 8.13 | -- | 21.6 | 64.7 | < 1.0 U | 50 | **602** | **353** | -- |
| FSP-P3-IRM-002I-B | FSP-P3-IRM-002I-B-69.15-20220103 | 1/3/2022 | 69.15 | N | 4602500491 | Baseline | Intermediate | < 4.0 U | 26.1 | < 10.0 U | < 10.0 U | -243.9 | 0.37 | 7.37 | 1.08 | 11.51 | 9.59 | -- | 22.3 | 62.6 | < 1.0 U | 53 | **563** | **337** | -- |
| HAL-P3-IRM-001I-A | HAL-P3-IRM-001I-A-32.8-20211001 | 10/1/2021 | 32.8 | N | 4602441231 | Baseline | Intermediate | **211000** | **201000** | **116000** | **108000 J** | 1.70 | 0.58 | 8.85 | 4.46 | 16.70 | 4.50 | -- | 19.6 | **525** | < 1.0 U | 9900 | **< 600 U** | 35.8 J | -- |
| HAL-P3-IRM-001I-B | HAL-P3-IRM-001I-B-47.5-20210930 | 9/30/2021 | 47.5 | N | 4602440301 | Baseline | Intermediate | **868000** | **949000** | **803000** | **1010000** | 2.40 | 2.00 | 9.13 | 8.97 | 17.42 | 9.80 | -- | 26.4 | **887** | < 1.0 U | 980 | **< 600 U** | **115** | -- |
| HAL-P3-IRM-001I-B | HAL-P3-IRM-001I-B-58.5-20210930-X | 9/30/2021 | 58.5 | FD | 4602440301 | Baseline | Intermediate | **894000** | **768000** | **744000** | **678000 J** | -- | -- | -- | -- | -- | -- | -- | 22.2 | **802** | < 1.0 U | 650 | **< 600 U** | **90.0** | -- |
| HAL-P3-IRM-001I-B | HAL-P3-IRM-001I-B-58.5-20210930 | 9/30/2021 | 58.5 | N | 4602440301 | Baseline | Intermediate | **835000** | **712000 J** | **736000** | **1410000 J** | 2.40 | 2.00 | 9.13 | 6.970 | 17.42 | 9.80 | -- | 21.9 | **796** | < 1.0 U | 580 | **< 600 U** | **85.9** | -- |
| HAL-P3-IRM-002I-A | HAL-P3-IRM-002I-A-31.5-20210927 | 9/27/2021 | 31.5 | N | 4602437291 | Baseline | Intermediate | **243000** | **253000** | **223000** | **247000** | 71.30 | 0.26 | 8.94 | 3.01 | 16.97 | 3.74 | -- | 23.3 | **371** | < 1.0 U | 12000 | **366 J** | **167** | -- |
| HAL-P3-IRM-002I-B | HAL-P3-IRM-002I-B-53.1-20210927 | 9/27/2021 | 53.1 | N | 4602437291 | Baseline | Intermediate | **201000** | **165000** | **184000** | **191000** | 109.00 | 0.30 | 8.47 | 12.82 | 16.89 | 4.11 | -- | 14.7 | **900** | < 1.0 U | 220 | **< 600 U** | **367** | -- |
| HAL-P3-IRM-002I-B | HAL-P3-IRM-002I-B-66.1-20210927 | 9/27/2021 | 66.1 | N | 4602437291 | Baseline | Intermediate | **110000** | **91100** | **75300** | **94300** | 129.30 | 0.17 | 8.21 | 14.20 | 16.43 | 7.25 | -- | 10 | **926** | < 1.0 U | 140 | **< 600 U** | **404** | -- |
| HAL-P3-IRM-003I-A | HAL-P3-IRM-003I-A-23.1-20210929 | 9/29/2021 | 23.1 | N | 4602439241 | Baseline | Intermediate | **166000** | **148000** | **87300** | **86200** | 2.70 | 0.36 | 9.45 | 2.26 | 16.76 | 9.80 | -- | 25.5 | **397** | < 1.0 U | 4800 | **< 600 U** | **131** | -- |
| HAL-P3-IRM-003I-A | HAL-P3-IRM-003I-A-33.1-20210929 | 9/29/2021 | 33.1 | N | 4602439241 | Baseline | Intermediate | **146000 J** | **100000 J** | **74000** | **65100** | 0.64 | 1.40 | 9.85 | 3.57 | 15.79 | 5.90 | -- | 24.3 | **352** | < 1.0 U | 6200 | **< 600 U** | **121** | -- |
| HAL-P3-IRM-003I-B | HAL-P3-IRM-003I-B-65.8 | 6/10/2021 | 65.8 | N | 4602362281 | Baseline | Intermediate | -- | 13.8 | -- | < 10.0 U | -72.20 | 0.34 | 8.25 | 10.68 | 17.60 | 38.90 | -- | 1.5 J | 242 | < 1.0 U | 70 | -- | -- | -- |
| HAL-P3-IRM-003I-B | HAL-P3-IRM-003I-B-65.8-F | 6/10/2021 | 65.8 | N | 4602362281 | Baseline | Intermediate | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **724** | **1210** | -- |
| HAL-P3-IRM-003I-B | HAL-P3-IRM-003I-B-70.8 | 6/10/2021 | 70.8 | N | 4602362281 | Baseline | Intermediate | -- | 13.7 | -- | < 10.0 U | -83.00 | 0.36 | 8.27 | 10.70 | 18.98 | 37.00 | -- | 1.3 J | 237 | < 1.0 U | 72 | -- | -- | -- |
| HAL-P3-IRM-003I-B | HAL-P3-IRM-003I-B-70.8-F | 6/10/2021 | 70.8 | N | 4602362281 | Baseline | Intermediate | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **507** | **1210** | -- |
| HAL-P3-IRM-003I-B | HAL-P3-IRM-003I-B-75.8 | 6/10/2021 | 75.8 | N | 4602362281 | Baseline | Intermediate | -- | 17.9 | -- | < 20.0 U | -96.40 | 0.22 | 8.32 | 9.71 | 17.71 | 35.10 | -- | 1.3 J | 190 | < 1.0 U | 110 | -- | -- | -- |
| HAL-P3-IRM-003I-B | HAL-P3-IRM-003I-B-75.8-F | 6/10/2021 | 75.8 | N | 4602362281 | Baseline | Intermediate | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **352** | **1080** | -- |
| HAL-P3-IRM-003I-B | HAL-P3-IRM-003I-B-80.8 | 6/10/2021 | 80.8 | N | 4602362281 | Baseline | Intermediate | -- | 8.1 | -- | < 10.0 U | -85.30 | 0.12 | 8.37 | 9.49 | 16.75 | 44.00 | -- | 1.1 J | 180 | < 1.0 U | 110 | -- | -- | -- |
| HAL-P3-IRM-003I-B | HAL-P3-IRM-003I-B-80.8-F | 6/10/2021 | 80.8 | N | 4602362281 | Baseline | Intermediate | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 277 | **1030** | -- |
| HAL-P3-IRM-004I-A | HAL-P3-IRM-004I-A-33.2-20210920 | 9/20/2021 | 33.2 | N | 4602432261 | Baseline | Intermediate | 23.7 | 29.9 | < 20.0 U | < 20.0 U | -238.20 | 0.04 | 7.64 | 3.17 | 16.43 | 5.82 | -- | 10.7 | 206 | 13.6 | 3400 | < 120 U | **4300** | -- |
| HAL-P3-IRM-004I-B | HAL-P3-IRM-004I-B-66.0 | 6/9/2021 | 66 | N | 4602361231 | Baseline | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -125.90 | 0.32 | 8.61 | 6.13 | 14.95 | 37.00 | -- | < 1.0 U | 51.7 | < 1.0 U | 240 | 91.6 J | **514** | -- |
| HAL-P3-IRM-004I-B | HAL-P3-IRM-004I-B-71.0 | 6/9/2021 | 71 | N | 4602361231 | Baseline | Intermediate | < 4.0 U | 4.0 | < 10.0 U | < 20.0 U | -121.10 | 0.25 | 8.54 | 6.21 | 20.11 | 45.40 | -- | < 1.0 U | 51.0 | < 1.0 U | 250 | 83.3 J | **509** | -- |
| HAL-P3-IRM-004I-B | HAL-P3-IRM-004I-B-76.0 | 6/9/2021 | 76 | N | 4602361231 | Baseline | Intermediate | < 4.0 U | 4.4 | < 10.0 U | < 20.0 U | -123.80 | 0.19 | 8.40 | 6.03 | 20.16 | 43.20 | -- | < 1.0 U | 50.4 | < 1.0 U | 230 | 63.9 J | **493** | -- |
| HAL-P3-IRM-004I-B | HAL-P3-IRM-004I-B-81.0 | 6/9/2021 | 81 | N | 4602361231 | Baseline | Intermediate | < 4.0 U | 3.8 J | < 10.0 U | < 20.0 U | -152.50 | 0.25 | 8.45 | 5.00 | 19.74 | 9999.00 | -- | 0.37 J | 42.3 | < 1.0 U | 260 | < 120 U | **456** | -- |
| HAL-P3-IRM-005I-A | HAL-P3-IRM-005I-A-32.4-20210928 | 9/28/2021 | 32.4 | N | 4602438321 | Baseline | Intermediate | **3510** | **3600** | **3520** | **3520** | 7.00 | 0.91 | 8.54 | 7.49 | 17.64 | 8.80 | -- | 13.3 | **264** | < 1.0 U | 2200 | < 120 U | 5.7 J | -- |
| HAL-P3-IRM-005I-A | HAL-P3-IRM-005I-A-44.4-20210928 | 9/28/2021 | 44.4 | N | 4602438321 | Baseline | Intermediate | **3720** | **3820** | **4170** | **4410** | 7.00 | 0.55 | 8.56 | 7.48 | 17.59 | 3.40 | -- | 13.3 | **264** | < 1.0 U | 2500 | < 120 U | 6.0 J | -- |
| HAL-P3-IRM-005I-B | HAL-P3-IRM-005I-B-64.0-20210928 | 9/28/2021 | 64 | N | 4602438321 | Baseline | Intermediate | **120** | **278** | 13.2 | 38.2 | -38.40 | 0.49 | 7.76 | 10.92 | 17.34 | 2.50 | -- | < 1.0 U | 219 | < 1.0 U | 67 | 60.8 J | **1500** | -- |
| HAL-P3-IRM-006I-A | HAL-P3-IRM-006I-A-29.5-20210929 | 9/29/2021 | 29.5 | N | 4602439241 | Baseline | Intermediate | **99.2** |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| HAL-P3-IRM-010I-B-R | HAL-P3-IRM-010I-B-66.2 | 6/10/2021 | 66.2 | N | 4602362281 | Baseline | Intermediate | -- | 7.9 | -- | < 10.0 U | -100.80 | 0.44 | 8.67 | 5.70 | 17.39 | 39.60 | -- | 1.3 J | 55.5 | < 1.0 U | 170 | -- | -- | -- |
| HAL-P3-IRM-010I-B-R | HAL-P3-IRM-010I-B-66.2-F | 6/10/2021 | 66.2 | N | 4602362281 | Baseline | Intermediate | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 235 | **515** | -- |
| HAL-P3-IRM-010I-B-R | HAL-P3-IRM-010I-B-71.2 | 6/11/2021 | 71.2 | N | 4602363611 | Baseline | Intermediate | -- | 7.4 | -- | < 20.0 U | -99.10 | 0.63 | 8.60 | 5.61 | 14.77 | 40.50 | -- | < 1.0 U | 55.1 | < 1.0 U | 160 | -- | -- | -- |
| HAL-P3-IRM-010I-B-R | HAL-P3-IRM-010I-B-71.2-F | 6/11/2021 | 71.2 | N | 4602363611 | Baseline | Intermediate | < 20.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 600 U** | **522** | -- |
| HAL-P3-IRM-010I-B-R | HAL-P3-IRM-010I-B-76.2 | 6/11/2021 | 76.2 | N | 4602363611 | Baseline | Intermediate | -- | 10.5 | -- | < 50.0 U | -88.70 | 0.20 | 8.56 | 5.38 | 14.50 | 38.50 | -- | < 1.0 U | 51.2 | < 1.0 U | 150 | -- | -- | -- |
| HAL-P3-IRM-010I-B-R | HAL-P3-IRM-010I-B-76.2-F | 6/11/2021 | 76.2 | N | 4602363611 | Baseline | Intermediate | < 20.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 600 U** | **513** | -- |
| HAL-P3-IRM-010I-B-R | HAL-P3-IRM-010I-B-81.2 | 6/11/2021 | 81.2 | N | 4602363611 | Baseline | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -27.50 | 0.35 | 8.51 | 5.77 | 14.28 | 46.70 | -- | < 1.0 U | 53.6 | < 1.0 U | 160 | -- | -- | -- |
| HAL-P3-IRM-010I-B-R | HAL-P3-IRM-010I-B-81.2-F | 6/11/2021 | 81.2 | N | 4602363611 | Baseline | Intermediate | < 20.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 600 U** | **546** | -- |
| HAL-P3-IRM-011I-A | HAL-P3-IRM-011I-A-26.8-20210924 | 9/24/2021 | 26.8 | N | 4602435991 | Baseline | Intermediate | **143000** | **139000** | **128000** | **156000** | -59.70 | 0.48 | 8.01 | 7.44 | 16.90 | 8.28 | -- | 18.9 | 129 | < 1.0 U | 7500 | **< 600 U** | **1910** | -- |
| HAL-P3-IRM-011I-B | HAL-P3-IRM-011I-B-41.6-20210916 | 9/16/2021 | 41.6 | N | 4602429471 | Baseline | Intermediate | **779000** | **657000** | **727000** | **689000** | 178.20 | 0.46 | 9.47 | 7.65 | 18.88 | 9.64 | -- | 21.3 | **757** | < 1.0 U | 1300 | **< 600 U** | 44.7 | -- |
| HAL-P3-IRM-011I-B | HAL-P3-IRM-011I-B-53.6-20210916 | 9/16/2021 | 53.6 | N | 4602429471 | Baseline | Intermediate | **663000** | **668000** | **689000** | **678000** | 178.50 | 0.51 | 9.39 | 7.67 | 19.31 | 3.00 | -- | 21.5 | **756** | < 1.0 U | 1300 | **< 600 U** | 48.0 | -- |
| HAL-P3-IRM-011I-B | HAL-P3-IRM-011I-B-43.3-20210924 | 9/24/2021 | 43.3 | N | 4602435991 | Baseline | Intermediate | **734000** | **706000** | **736000** | **698000** | 16.80 | 0.59 | 9.45 | 6.22 | 16.65 | 5.06 | -- | 21.8 | **792** | < 1.0 U | 1300 | **< 600 U** | 39.2 J | -- |
| HAL-P3-IRM-011I-B | HAL-P3-IRM-011I-B-55.3-20210924 | 9/24/2021 | 55.3 | N | 4602435991 | Baseline | Intermediate | **735000** | **695000** | **736000** | **720000** | 20.90 | 0.82 | 9.44 | 6.18 | 16.48 | 9.02 | -- | 21.6 | **799** | < 1.0 U | 1300 | **< 600 U** | 36.0 J | -- |
| HAL-P3-IRM-012I-A | HAL-P3-IRM-012I-A-33.5-20210928 | 9/28/2021 | 33.5 | N | 4602438321 | Baseline | Intermediate | **257** | **305** | < 10.0 U | < 10.0 U | -239.10 | 0.44 | 7.30 | 2.67 | 17.10 | 7.80 | -- | 13.6 | 19.9 | < 1.4 U | 9200 | 59.9 J | **6810** | -- |
| HAL-P3-IRM-012I-B | HAL-P3-IRM-012I-B-47.7-20210928 | 9/28/2021 | 47.7 | N | 4602438321 | Baseline | Intermediate | **6110 J** | **28300** | **9780 J** | **33600** | 71.70 | 0.36 | 7.97 | 9.11 | 18.43 | 9.60 | -- | 2.4 JB | 185 | < 1.0 U | 110 | < 120 U | **944** | -- |
| HAL-P3-IRM-012I-B | HAL-P3-IRM-012I-B-63.7-20210928 | 9/28/2021 | 63.7 | N | 4602438321 | Baseline | Intermediate | **119** | **123** | **160 J** | **95.3 J** | -82.20 | 0.32 | 7.86 | 10.11 | 17.64 | 22.50 | -- | < 1.0 U | 168 | < 1.0 U | 52 | 125 | **1010** | -- |
| HAL-P3-IRM-013I-A | HAL-P3-IRM-013I-A-32.7-20210915 | 9/15/2021 | 32.7 | N | 4602428441 | Baseline | Intermediate | 38.9 | 67.9 | < 10.0 U | < 10.0 U | -128.90 | 0.92 | 7.06 | 2.78 | 16.58 | 9.72 | -- | 14.6 | **471** | < 1.0 U | 3700 | **9240** | **7380** | -- |
| HAL-P3-IRM-013I-B | HAL-P3-IRM-013I-B-48.2-20210915 | 9/15/2021 | 48.2 | N | 4602428441 | Baseline | Intermediate | **1050000** | **1030000** | **1000000** | **1000000** | 119.20 | 0.61 | 8.85 | 6.88 | 16.49 | 5.45 | -- | 13.5 | **583** | < 1.0 U | 690 | < 240 U | 25.5 | -- |
| HSTD-P3-IRM-001I-A | HSTD-P3-IRM-001I-A-25.3-20211103 | 11/3/2021 | 25.3 | N | 4602465061 | Baseline | Intermediate | **1080000** | **836000** | **866000** | **871000** | 112.90 | 0.49 | 9.37 | 9.81 | 15.34 | 4.55 | -- | 17.9 | **658** | < 1.0 U | 1000 | **< 600 U** | 11.2 J | -- |
| HSTD-P3-IRM-001I-A | HSTD-P3-IRM-001I-A-40.3-20211103 | 11/3/2021 | 40.3 | N | 4602465061 | Baseline | Intermediate | **907000** | **771000** | **815000** | **798000** | 111.60 | 0.28 | 9.46 | 12.03 | 16.54 | 4.30 | -- | 16.3 | **674** | < 1.0 U | 820 | **< 600 U** | 29.7 J | -- |
| HSTD-P3-IRM-001I-A | HSTD-P3-IRM-001I-A-40.3-20211103-X | 11/3/2021 | 40.3 | FD | 4602465061 | Baseline | Intermediate | **983000** | **764000** | **798000** | **798000** | -- | -- | -- | -- | -- | -- | -- | 16.7 | **679** | < 1.0 U | 900 | **< 600 U** | < 40.0 U | -- |
| HSTD-P3-IRM-001I-A | HSTD-P3-IRM-001I-A-25-20230103 | 1/3/2023 | 25 | N | 4602722821 | Baseline | Intermediate | -- | **598000** | -- | **701000** | 133.7 | 0.78 | 9.48 | 8.974 | 13.22 | 7.8 | -- | 20.4 | **747** | -- | -- | -- | -- | -- |
| HSTD-P3-IRM-001I-B | HSTD-P3-IRM-001I-B-59.0-20211102 | 11/2/2021 | 59 | N | 4602463911 | Baseline | Intermediate | **330000** | **320000 J** | **343000** | **616000 J** | 81.60 | 0.38 | 9.62 | 15.63 | 15.98 | 8.22 | -- | 13.6 | **659** | < 1.0 U | 390 | **515 J** | 35.9 J | -- |
| HSTD-P3-IRM-001I-B | HSTD-P3-IRM-001I-B-59-20230103 | 1/3/2023 | 59 | N | 4602722821 | Baseline | Intermediate | -- | **40700** | -- | **39400** | 101.1 | 0.13 | 7.78 | 27.721 | 14.01 | 19.6 | -- | 12.0 | **811** | -- | -- | -- | -- | -- |
| HSTD-P3-IRM-002I-A | HSTD-P3-IRM-002I-A-33-20211103 | 11/3/2021 | 33 | N | 4602465061 | Baseline | Intermediate | **387000** | **345000** | **362000** | **367000** | 66.80 | 1.01 | 8.65 | 4.76 | 15.84 | 9.15 | -- | 17.7 | **715** | < 1.0 U | 3600 | **< 600 U** | **3380** | -- |
| HSTD-P3-IRM-002I-A | HSTD-P3-IRM-002I-A-33-20230104 | 1/4/2023 | 33 | N | 4602723311 | Baseline | Intermediate | -- | **251000** | -- | **141000** | -241.6 | 1.69 | 8.08 | 4.361 | 14.39 | 9.43 | -- | 67.0 | **296** | -- | -- | -- | -- | -- |
| HSTD-P3-IRM-002I-B | HSTD-P3-IRM-002I-B-48.7-20211025 | 10/25/2021 | 48.7 | N | 4602458571 | Baseline | Intermediate | **53300** | **65600** | **55000** | **52200** | 171.00 | 0.11 | 7.30 | 24.72 | 20.14 | 35.00 | -- | 11.9 | **829** | < 1.0 U | 120 | **< 600 U** | **1020** | -- |
| HSTD-P3-IRM-002I-B | HSTD-P3-IRM-002I-B-64.7-20211103 | 11/3/2021 | 64.7 | N | 4602465061 | Baseline | Intermediate | **71.4** | **650** | < 10.0 U | < 10.0 U | -114.30 | 0.49 | 7.40 | 21.20 | 15.85 | 9.89 | -- | 10.4 | **908** | < 1.0 U | 63 | **7510** | **1420** | -- |
| HSTD-P3-IRM-002I-B | HSTD-P3-IRM-002I-B-49-20230104 | 1/4/2023 | 49 | N | 4602723311 | Baseline | Intermediate | -- | **272** | -- | < 10.0 U | -113.1 | 2.66 | 7.17 | 25.39 | 15.19 | 9.56 | -- | 12.0 | **1040** | -- | -- | -- | -- | -- |
| HSTD-P3-IRM-002I-B | HSTD-P3-IRM-002I-B-49-20230104-X | 1/4/2023 | 49 | FD | 4602723311 | Baseline | Intermediate | -- | **248** | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 11.9 | **703** | -- | -- | -- | -- | -- |
| HSTD-P3-IRM-003I-A | HSTD-P3-IRM-003I-A-27-20211103 | 11/3/2021 | 27 | N | 4602465061 | Baseline | Intermediate | **895000** | **745000** | **754000** | **742000** | 90.90 | 0.46 | 8.03 | 6.75 | 15.93 | 4.56 | -- | 23.5 | **539** | < 1.0 U | 5300 | **< 600 U** | **1240** | -- |
| HSTD-P3-IRM-003I-A | HSTD-P3-IRM-003I-A-27-20230104 | 1/4/2023 | 27 | N | 4602723311 | Baseline | Intermediate | -- | **235** | -- | < 10.0 U | -212 | 0.57 | 7.36 | 3.004 | 14.07 | 4.75 | -- | 20.6 | 228 | -- | -- | -- | -- | -- |
| HSTD-P3-IRM-003I-B | HSTD-P3-IRM-003I-B-44-20211104 | 11/4/2021 | 44 | N | 4602465811 | Baseline | Intermediate | **1300000** | **1020000** | **1000000** | **1010000** | 109.20 | 0.43 | 8.87 | 13.29 | 14.79 | 3.17 | -- | 21.9 | **685** | R | 1200 | **< 600 U** | **67.8** | -- |
| HSTD-P3-IRM-003I-B | HSTD-P3-IRM-003I-B-56-20211104 | 11/4/2021 | 56 | N | 4602465811 | Baseline | Intermediate | **1080000** | **1200000** | **99.1** | **106** | 98.60 | 0.35 | 8.76 | 15.96 | 15.98 | 5.20 | -- | 20.9 | **688** | R | 1100 J | **< 600 U** | **83.4** | -- |
| HSTD-P3-IRM-003I-B | HSTD-P3-IRM-003I-B-56-20211104-X | 11/4/2021 | 56 | FD | 4602465811 | Baseline | Intermediate | **859000** | **1110000** | **100** | **126** | -- | -- | -- | -- | -- | -- | -- | 20.8 | **689** | R | 370 J | **< 600 U** | **73.6** | -- |
| HSTD-P3-IRM-003I-B | HSTD-P3-IRM-003I-B-44-20230104 | 1/4/2023 | 44 | N | 4602723311 | Baseline | Intermediate | -- | **970000** | -- | **1040000** | -21.8 | 1.14 | 8.9 | 6.526 | 15.33 | 4.92 | -- | 24.8 | **682** | -- | -- | -- | -- | -- |
| HSTD-P3-IRM-003I-A-R | HSTD-P3-IRM-003I-A-R-28-20240228 | 2/28/2024 | 28 | N | JD83363 | Treatment | Intermediate | -- | 29.7 | -- | < 10 RA | -385.6 | 0.98 | 7.35 | 3.976 | 13.1 | 8.93 | -- | 54.4 | 50.9 | -- | -- | -- | -- | -- |
| HSTD-P3-IRM-004I-A | HSTD-P3-IRM-004I-A-27-20211105 | 11/5/2021 | 27 | N | 4602466631 | Baseline | Intermediate | **666000** | **648000** | **481000** | **424000** | 93.10 | 1.25 | 9.45 | 5.31 | 14.97 | 7.43 | -- | 23.1 | **548** | < 1.0 U | 4400 | **< 600 U** | **411** | -- |
| HSTD-P3-IRM-004I-A | HSTD-P3-IRM-004I-A-41-20211105 | 11/5/2021 | 41 | N | 4602466631 | Baseline | Intermediate | **1010000** | **983000** | **796000** | **802000** | 97.60 | 0.89 | 9.81 | 7.37 | 15.42 | 7.69 | -- | 24.0 | **679** | < 1.0 U | 2500 | **< 600 U** | **105** | -- |
| HSTD-P3-IRM-004I-A | HSTD-P3-IRM-004I-A-41-20230104 | 1/4/2023 | 41 | N | 4602723311 | Baseline | Intermediate | -- | **402** | -- | < 10.0 U | -126.8 | 0.25 | 6.84 | 2.41 | 14.47 | 6.47 | -- | 77.2 F1 | 230 | -- | -- | -- | -- | -- |
| HSTD-P3-IRM-003I-B-R | HSTD-P3-IRM-003I-B-R-45.5-20240228 | 2/28/2024 | 45.5 | N | JD83363 | Treatment | Intermediate | **95300** | **91500** | < 10 RA | < 10 RA | -457.3 | 0.48 | 11.8 | 10.96 | 13.7 | 55.3 | -- | 15.8 J | **451** | -- | -- | -- | -- | -- |
| HSTD-P3-IRM-004I-B | HSTD-P3-IRM-004I-B-58.0-20211108 | 11/8/2021 | 58 | N | 4602468181 | Baseline | Intermediate | **709000** | **622000** | **582000** | **571000** | 57.20 | 2.15 | 9.08 | 9.48 | 17.47 | 5.46 | -- | 19.8 | **620** | < 1.0 U | 1200 | **< 600 U** | **183** | -- |
| HSTD-P3-IRM-004I-B | HSTD-P3-IRM-004I-B-58-20230104 | 1/4/2023 | 58 | N | 4602723311 | Baseline | Intermediate | -- | **897000** | -- | **885000** | 88.4 | 0.98 | 9.04 | 8.137 | 15.31 | 6.11 | -- | 24.3 | **714** | -- | -- | -- | -- | -- |
| HSTD-P3-IRM-005I-A | HSTD-P3-IRM-005I-A-33.2-20211108 | 11/8/2021 | 33.2 | N | 4602468181 | Baseline | Intermediate | **320000** | **489000** | **317000** | **416000** | 2.60 | 1.83 | 9.56 | 4.68 | 17.39 | 6.11 | -- | 18.1 | **420** | < 1.0 U | 2300 | **1280** | **4800** | -- |
| HSTD-P3-IRM-005I-B | HSTD-P3-IRM-005I-B-46.8-20211108 | 11/8/2021 | 46.8 | N | 4602468181 | Baseline | Intermediate | **686000** | **663000** | **600000** | **622000** | 87.10 | 1.78 | 9.32 | 7.71 | 17.50 | 5.12 | -- | 15.3 | **565** | < 1.0 U | 1000 | **< 600 U** | 36.5 J | -- |
| HSTD-P3-IRM-005I-B | HSTD-P3-IRM-005I-B-58.8-20211108 | 11/8/2021 | 58.8 | N | 4602468181 | Baseline | Intermediate | **645000** | **569000** | **571000** | **604000** | 78.20 | 1.94 | 8.95 | 9.17 | 17.64 | 9.77 | -- | 13.1 | **543** | < 1.0 U | 860 | **< 600 U** | 20.7 J | -- |
| HSTD-P3-IRM-005I-B-R | HSTD-P3-IRM-005I-B-R-47.5-20240228 | 2/28/2024 | 47.5 | N | JD83363 | Treatment | Intermediate | -- | **128 J** | -- | < 10 RA | 14 | 7.79 | -- | -- | -- | -- | -- | 46.0 | 42.3 | -- | -- | -- | -- | -- |
| HSTD-P3-IRM-005I-B-R | HSTD-P3-IRM-005I-B-R-47.5-20240228-X | 2/28/2024 | 47.5 | FD | JD83363 | Treatment | Intermediate | -- | **128 J** | -- | < 10 RA | -- | -- | -- | -- | -- | -- | -- | 46.3 | 43.7 | -- | -- | -- | -- | -- |
| HSTD-P3-IRM-006I-A | HSTD-P3-IRM-006I-A-29.0-20211108 | 11/8/2021 | 29 | N | 4602468181 | Baseline | Intermediate | 45.5 | **350** | < 10.0 U | < 10.0 U | -145.20 | 2.70 | 6.91 | 2.44 | 15.32 | 7.11 | -- | 15.1 | **375** | < 1.0 U | 6300 | **14400** | **3520** | -- |
| HSTD-P3-IRM-006I-A | HSTD-P3-IRM-006I-A-43.0-20211108 | 11/8/2021 | 43 | N | 4602468181 | Baseline | Intermediate | **85500 J** | **45100 J** | **462000 J** | **418000 J** | 34.10 | 1.78 | 7.16 | 2.84 | 15.85 | 6.01 | -- | 16.1 | **538 J-** | < 1.0 U | 3500 | **698** | **4390** | -- |
| HSTD-P3-IRM-006I-A | HSTD-P3-IRM-006I-A-43-20221221 | 12/21/2022 | 43 | N | 4602718921 | Baseline | Intermediate | -- | **141** | -- | < 10.0 U | -174.7 | 0.99 | 7.14 | 2.328 | 9.9 | 2.54 | -- | 86.3 | 0.96 | -- | -- | -- | -- | -- |
| HSTD-P3-IRM-006I-B | HSTD-P3-IRM-006I-B-54.8-20211108 | 11/8/2021 | 54.8 | N | 4602468181 | Baseline | Intermediate | **271000 J** | **40500 J** | **229000 J** | **78100 J** | 71.60 | 1.48 | 7.94 | 2.73 | 16.90 | 9.11 | -- | 15.1 | **578** | < 1.0 U | 2000 | **< 600 U** | **825** | -- |
| HSTD-P3-IRM-006I-B | HSTD-P3-IRM-006I-B-55-20221221 | 12/21/2022 | 55 | N | 4602718921 | Baseline | Intermediate | -- | **618000** | -- | **644000** | -144.2 | 0.41 | 9.74 | 5.44 | 13.58 | 8.43 | -- | 101 | **605** | -- | -- | -- | -- | -- |
| HSTD-P3-IRM-007I-A | HSTD-P3-IRM-007I-A-31.0-20211025 | 10/25/2021 | 31 | N | 4602458571 | Baseline | Intermediate | **504000** | **577000** | **596000** | **569000** | -74.70 | 0.40 | 8.99 | 9.16 | 17.50 | 7.02 | -- | 17.8 | **461** | < 1.0 U | 3900 J- | **< 1200 U** | 38.2 J | -- |
| HSTD-P3-IRM-007I-B | HSTD-P3-IRM-007I-B-47.0-20211025 | 10/25/2021 | 47 | N | 4602458571 | Baseline | Intermediate | **50600** | **125000** | **58800** | **109000** | 47.80 | 0.37 | 7.47 | 23.73 | 17.32 | 35.60 | -- | 12.9 | **834** | < 1.0 U | 220 | **< 600 U** | **636** | -- |
| HSTD-P3-IRM-007I-B | HSTD-P3-IRM-007I-B-64.5-20211027 | 10/27/2021 | 64.5 | N | 4602459861 | Baseline | Intermediate | **49500** | **60900** | **49300** | **48200** | 11.40 | 0.52 | 7.28 | 25.04 | 16.54 | 24.70 | -- | 11.6 | **952** | < 1.0 U | 140 | < 120 U | **712** | -- |
| HSTD-P3-IRM-008I-A | HSTD-P3-IRM-008I-A-31.5-20211027 | 10/27/2021 | 31.5 | N | 4602459861 | Baseline | Intermediate | **109000 J** | **78800 J** | **97400 J** | **66400 J** | 119.30 | 1.91 | 7.51 | 2.12 | 17.14 | 4.72 | -- | 15.4 | **377** | < 1.0 U | 7500 | **< 600 U** | **2880** | -- |
| HSTD-P3-IRM-008I-B | HSTD-P3-IRM-008I-B-47.8-20211027 | 10/27/2021 | 47.8 | N | 4602459861 | Baseline | Intermediate | **952000** | **939000** | **1020000** | **952000** | 112.00 | 1.01 | 9.16 | 6.95 | 17.09 | 3.04 | -- | 18.7 | **622** | < 1.0 U | 1400 | **< 600 U** | **71.9** | -- |
| HSTD-P3-IRM-008I-B | HSTD-P3-IRM-008I-B-64.8-20211028 | 10/28/2021 | 64.8 | N | 4602460571 | Baseline | Intermediate | **766000** | **740000 J** | **800000** | **1070000 J** | -37.40 | 0.49 | 8.31 | 12.08 | 15.55 | 8.34 | -- | 15.8 | **643** | < 1.0 U | 940 | **< 600 U** | **92.9** | -- |
| HSTD-P3-IRM-009I-A | HSTD-P3-IRM-009I-A-27.9-20211028 | 10/28/2021 | 27.9 | N | 4602460571 | Baseline | Intermediate | **66300** | **49200** | **65200** | **50100** | 25.90 | 3.36 | 7.44 | 2.32 | 14.99 | 7.82 | -- | 15.9 | **288** | < 1.0 U | 5500 | 200 | **4520** | -- |
| HSTD-P3-IRM-009I-A | HSTD-P3-IRM-009I-A-43.90-20211028 | 10/28/2021 | 43.9 | N | 4602460571 | Baseline | Intermediate | **402000** | **380000** | **385000** | **452000** | 32.60 | 0.97 | 8.61 | 4.67 | 16.32 | 6.10 | -- | 21.1 | **448** | < 1.0 U | 4500 | **< 600 U** | **2690** | -- |
| HSTD-P3-IRM-009I-A | HSTD-P3-IRM-009I-A-43.90-20211028-X | 10/28/2021 | 43.9 | FD | 4602460571 | Baseline | Intermediate | **377000** | **431000** | **385000** | **374000** | -- | -- | -- | -- | -- | -- | -- | 20.3 | **449** | < 1.0 U | 4600 | **< 600 U** | **2710** | -- |
| HSTD-P3-IRM-009I-B | HSTD-P3-IRM-009I-B-47.90-20211028 | 10/28/2021 | 47.9 | N | 4602460571 | Baseline | Intermediate | **572000** | **552000** | **632000** | **688000** | 70.20 | 0.95 | 8.41 | 9.96 | 17.30 | 3.11 | -- | 12.8 | **510** | < 1.0 U | 760 | **1600** | **346** | -- |
| HSTD-P3-IRM-009I-B | HSTD-P3-IRM-009I-B-58.90-20211028 | 10/28/2021 | 58.9 | N | 4602460571 | Baseline | Intermediate | **656000** | **615000** | **609000** | **632000** | 31.20 | 0.81 | 8.50 | 9.71 | 17.25 | 7.71 | -- | 13.1 | **542** | < 1.0 U | 770 | **< 600 U** | **256** | -- |
| CAR-P3-IRM-006D | CAR-P3-IRM-006D-51.8 | 6/18/2021 | 51.8 | N | 4602369821 | Baseline | Deep | -- | **330000** | -- | **361000** | 95.20 | 0.70 | 7.54 | 2.65 | 17.40 | 8.11 | -- | 3.1 J+ | **510** | < 1.0 U | 140 | -- | -- | -- |
| CAR-P3-IRM-006D | CAR-P3-IRM-006D-51.8-F | 6/18/2021 | 51.8 | N | 4602369821 | Baseline | Deep | **379000** | -- | **350000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 2400 U** | **55.3 J** | -- |
| CAR-P3-IRM-006D | CAR-P3-IRM-006D-56.8 | 6/18/2021 | 56.8 | N | 4602369821 | Baseline | Deep | -- | **382000** | -- | **366000** | 105.30 | 0.75 | 7.51 | 2.81 | 18.03 | 7.91 | -- | 2.8 J+ | **528** | < 1.0 U | 160 | -- | -- | -- |
| CAR-P3-IRM-006D | CAR-P3-IRM-006D-56.8-F | 6/18/2021 | 56.8 | N | 4602369821 | Baseline | Deep | **415000** | -- | **388000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 2400 U** | 41.6 J | -- |
| CAR-P3-IRM-007D | CAR-P3-IRM-007D-46.0-20210816 | 8/16/2021 | 46 | N | 4602409661 | Baseline | Deep | **78300** | **70600** | **78200** | **74700** | 209.10 | 4.65 | 8.12 | 1.18 | 23.71 | 9999.00 | -- | 1.9 | 235 J- | R | 58 J- | **< 600 U** | **67.2** | -- |
| CAR-P3-IRM-007D | CAR-P3-IRM-007D-51.0-20210816 | 8/16/2021 | 51 | N | 4602409661 | Baseline | Deep | **87500** | **74800** | **84100** | **85300** | 205.40 | 5.70 | 8.08 | 1.23 | 21.43 | 9999.00 | -- | 1.8 | **302 J-** | R | 58 J- | **726** | **120** | -- |
| CAR-P3-IRM-007D | CAR-P3-IRM-007D-56.0-20210816 | 8/16/2021 | 56 | N | 4602409661 | Baseline | Deep | **86300** | **81900** | **87600** | **90000** | 142.10 | 5.92 | 8.11 | 1.23 | 20.42 | 9999.00 | -- | 2.0 | 236 J- | R | 39 J- | **< 600 U** | **82.5** | -- |
| CAR-P3-IRM-008D | CAR-P3-IRM-008D-42.1 | 6/18/2021 | 42.1 | N | 4602369821 | Baseline | Deep | -- | **6350** | -- | **6440** | 168.30 | 0.56 | 6.99 | 0.24 | 19.49 | 9.19 | -- | 17.8 | **2720** | < 1.0 U | 8400 | -- | -- | -- |
| CAR-P3-IRM-008D | CAR-P3-IRM-008D-42.1-F | 6/18/2021 | 42.1 | N | 4602369821 | Baseline | Deep | **6960** | -- | **6330** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 2400 U** | **2030** | -- |
| CAR-P3-IRM-008D | CAR-P3-IRM-008D-47.1 | 6/18/2021 | 47.1 | N | 4602369821 | Baseline | Deep | -- | **7010** | -- | **6510** | 144.40 | 0.52 | 7.00 | 6.04 | 19.64 | 5.85 | -- | 17.5 | **2600** | < 1.0 U | 8500 | -- | -- | -- |
| CAR-P3-IRM-008D | CAR-P3-IRM-008D-47.1-F | 6/18/2021 | 47.1 | N | 4602369821 | Baseline | Deep | **7480** | -- | **6660** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 2400 U** | **2000** | -- |
| CAR-P3-IRM-008D | CAR-P3-IRM-008D-52.1 | 6/18/2021 | 52.1 | N | 4602369821 | Baseline | Deep | -- | **8350** | -- | **7540** | 148.40 | 1.50 | 6.99 | 6.28 | 19.69 | 4.99 | -- | 18.7 | **2720** | < 1.0 U | 6300 | -- | -- | -- |
| CAR-P3-IRM-008D | CAR-P3-IRM-008D-52.1-F | 6/18/2021 | 52.1 | N | 4602369821 | Baseline | Deep | **8290** | -- | **7650** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 2400 U** | **2080** | -- |
| CAR-P3-IRM-008D | CAR-P3-IRM-008D-57.1 | 6/21/2021 | 57.1 | N | 4602370641 | Baseline | Deep | -- | **5710** | -- | **5110 J+** | 152.00 | 1.26 | 7.08 | 6.49 | 18.14 | 6.40 | -- | 20.4 | **2830** | < 1.0 UJ | 5300 | -- | -- | -- |
| CAR-P3-IRM-008D | CAR-P3-IRM-008D-57.1-F | 6/21/2021 | 57.1 | N | 4602370641 | Baseline | Deep | **6020** | -- | **4990 J+** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 2400 U** | **2240** | -- |
| CAR-P3-IRM-010D | CAR-P3-IRM-010D-46.0 | 6/21/2021 | 46 | N | 4602370641 | Baseline | Deep | -- | **60800** | -- | **49700 J+** | 182.80 | 1.81 | 7.77 | 1.48 | 22.23 | 5.28 | -- | 2.1 J+ | **316** | < 1.0 UJ | 85 | -- | -- | -- |
| CAR-P3-IRM-010D | CAR-P3-IRM-010D-46.0-F | 6/21/2021 | 46 | N | 4602370641 | Baseline | Deep | **56600** | -- | **50300 J+** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 2400 U** | **226** | -- |
| CAR-P3-IRM-010D | CAR-P3-IRM-010D-46.0-F-X | 6/21/2021 | 46 | FD | 4602370641 | Baseline | Deep | **57100** | -- | **49700 J+** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 2400 U** | **228** | -- |
| CAR-P3-IRM-010D | CAR-P3-IRM-010D-46.0-X | 6/21/2021 | 46 | FD | 4602370641 | Baseline | Deep | -- | **5910** | -- | **50900 J+** | -- | -- | -- | -- | -- | -- | -- | 2.2 J+ | **316** | < 1.0 UJ | 82 | -- | -- | -- |
| CAR-P3-IRM-010D | CAR-P3-IRM-010D-51.0 | 6/21/2021 | 51 | N | 4602370641 | Baseline | Deep | -- | **59300** | -- | **49700 J+** | 166.80 | 2.38 | 7.72 | 1.43 | 20.94 | 4.91 | -- | 2.2 J+ | **319** | < 1.0 UJ | 86 | -- | -- | -- |
| CAR-P3-IRM-010D | CAR-P3-IRM-010D-51.0-F | 6/21/2021 | 51 | N | 4602370641 | Baseline | Deep | **56500** | -- | **50900 J+** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 2400 U** | **226** | -- |
| CAR-P3-IRM-010D | CAR-P3-IRM-010D-56.0 | 6/21/2021 | 56 | N | 4602370641 | Baseline | Deep | -- | **58900** | -- | **51500 J+** | 130.50 | 1.17 | 7.71 | 1.44 | 20.43 | 4.85 | -- | 2.1 J+ | **324** | < 1.0 UJ | 75 | -- | -- | -- |
| CAR-P3-IRM-010D | CAR-P3-IRM-010D-56.0-F | 6/21/2021 | 56 | N | 4602370641 | Baseline | Deep | **59700** | -- | **49100 J+** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 2400 U** | **233** | -- |
| CAR-P3-IRM-010D | CAR-P3-IRM-010D-61.0 | 6/21/2021 | 61 | N | 4602370641 | Baseline | Deep | -- | **60300** | -- | **63800 J+** | 144.20 | 1.77 | 7.64 | 1.57 | 20.16 | 3.91 | -- | 2.3 J+ | **342** | < 1.0 UJ | 73 | -- | -- | -- |
| CAR-P3-IRM-010D | CAR-P3-IRM-010D-61.0-F | 6/21/2021 | 61 | N | 4602370641 | Baseline | Deep | **61700** | -- | **63800 J+** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 2400 U** | **228** | -- |
| CAR-P3-IRM-011D | CAR-P3-IRM-011D-36-20210816 | 8/16/2021 | 36 | N | 4602409661 | Baseline | Deep | < 4.0 U | 17.7 | < 10.0 U | < 10.0 U | -126.70 | 0.50 | 8.15 | 0.80 | 22.40 | 35.60 | -- | 0.86 J | 238 J- | R | 70 J- | 293 | **154** | -- |
| CAR-P3-IRM-011D | CAR-P3-IRM-011D-36-20210816-X | 8/16/2021 | 36 | FD | 4602409661 | Baseline | Deep | < 4.0 U | 17.2 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 0.78 J | 225 J- | R | 68 J- | 292 | **154** | -- |
| CAR-P3-IRM-011D | CAR-P3-IRM-011D-41-20210816 | 8/16/2021 | 41 | N | 4602409661 | Baseline | Deep | < 4.0 U | 21.6 | < 10.0 U | < 10.0 U | -123.40 | 0.50 | 8.19 | 0.79 | 19.79 | 65.80 | -- | 0.79 J | 226 J- | R | 69 J- | **332** | **153** | -- |
| CAR-P3-IRM-011D | CAR-P3-IRM-011D-46-20210816 | 8/16/2021 | 46 | N | 4602409661 | Baseline | Deep | < 4.0 U | 27.9 | < 10.0 U | < 10.0 U | -119.40 | 0.45 | 8.18 | 0.79 | 18.71 | 57.20 | -- | 

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| HAL-P3-IRM-003D | HAL-P3-IRM-003D-93-20230103 | 1/3/2023 | 93 | N | 4602722831 | N/A | Deep | -- | 2.6 J | -- | < 10.0 U | -188.2 | 0.67 | 7.8 | 1.671 | 12.99 | 8.76 | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-IRM-003D | HAL-P3-IRM-003D-88.0-20230314 | 3/14/2023 | 88 | N | 4602762891 | N/A | Deep | -- | **108** | -- | 36.8 | -214.8 | 3.8 | 11.6 | 1.745 | 7.59 | 5.58 | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-IRM-003D | HAL-P3-IRM-003D-93.0-20230314 | 3/14/2023 | 93 | N | 4602762891 | N/A | Deep | -- | **129** | -- | **75.3** | -150.3 | 7.01 | 11.67 | 1.728 | 7.93 | 6.56 | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-IRM-003D | HAL-P3-IRM-003D-88.0-20230504 | 5/4/2023 | 88 | N | 4602795671 | N/A | Deep | -- | 6.3 | -- | < 10.0 U | -305.5 | 10.1 | 7.83 | 1.859 | 13.60 | 12.4 | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-IRM-003D | HAL-P3-IRM-003D-93.0-20230504 | 5/4/2023 | 93 | N | 4602795671 | N/A | Deep | -- | 8.6 | -- | < 10.0 U | 250.3 | 29 | 7.82 | 1.853 | 13.20 | 7.3 | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-IRM-003D | HAL-P3-IRM-003D-88.0-20230912 | 9/12/2023 | 88 | N | 4602879871 | Total Cr Isopleth | Deep | -- | 7.5 | -- | < 10.0 U | -271.2 | 0.55 | 7.82 | 2.37 | 22.34 | 8.15 | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-IRM-003D | HAL-P3-IRM-003D-93.0-20230912 | 9/12/2023 | 93 | N | 4602879871 | Total Cr Isopleth | Deep | -- | 10.2 | -- | < 10.0 U | -192.8 | 0.54 | 7.7 | 2.321 | 20.4 | 29.7 | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-IRM-003D | HAL-P3-IRM-003D-88.0-20231211 | 12/11/2023 | 88 | N | JD78573 | Total Cr Isopleth | Deep | -- | < 10 U | -- | < 10 U | -272.5 | 0.27 | 7.75 | 2.657 | 12.4 | 2.65 | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-IRM-003D | HAL-P3-IRM-003D-93.0-20231211 | 12/11/2023 | 93 | N | JD78573 | Total Cr Isopleth | Deep | -- | < 10 U | -- | < 10 U | -253.1 | 0.32 | 7.76 | 2.774 | 13 | 5.29 | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-IRM-003D | HAL-P3-IRM-003D-88.0-20240312 | 3/12/2024 | 88 | N | JD84279 | Total Cr Isopleth | Deep | -- | < 10 U | -- | < 10 U | -195.7 | 0.46 | 7.76 | 2.454 | 15.1 | 3.49 | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-IRM-003D | HAL-P3-IRM-003D-93.0-20240312 | 3/12/2024 | 93 | N | JD84279 | Total Cr Isopleth | Deep | -- | < 10 U | -- | < 10 U | -179.7 | 0.25 | 7.79 | 2.425 | 15.2 | 1.27 | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-IRM-003D | HAL-P3-IRM-003D-88.0-20240613 | 6/13/2024 | 88 | N | JD90407 | Total Cr Isopleth | Deep | -- | < 10 U | -- | < 10 U | -566.8 | 0.39 | 7.68 | 2.436 | 19.5 | 5.33 | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-IRM-003D | HAL-P3-IRM-003D-88.0-20240613-X | 6/13/2024 | 88 | FD | JD90407 | Total Cr Isopleth | Deep | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-IRM-003D | HAL-P3-IRM-003D-93.0-20240613 | 6/13/2024 | 93 | N | JD90407 | Total Cr Isopleth | Deep | -- | < 10 U | -- | < 10 U | -536.7 | 1.04 | 7.71 | 2.422 | 19.2 | 0.56 | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-IRM-003D | HAL-P3-IRM-003D-88.0-20240916 | 9/16/2024 | 88 | N | JD96194 | Total Cr Isopleth | Deep | -- | < 10 U | -- | < 10 U | -311 | 0.09 | 7.63 | 2.60 | 19.5 | 1.18 | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-IRM-003D | HAL-P3-IRM-003D-93.0-20240916 | 9/16/2024 | 93 | N | JD96194 | Total Cr Isopleth | Deep | -- | < 10 U | -- | < 10 U | -221.5 | 0.09 | 7.63 | 2.65 | 19.3 | 2 | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-IRM-003D | HAL-P3-IRM-003D-88.0-20241119 | 11/19/2024 | 88 | N | JE946 | Total Cr Isopleth | Deep | -- | 9.6 JB | -- | < 10 U | -299.4 | 0.8 | 7.78 | 2.24 | 17.8 | 3.1 | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-IRM-003D | HAL-P3-IRM-003D-93.0-20241119 | 11/19/2024 | 93 | N | JE946 | Total Cr Isopleth | Deep | -- | < 10 UB | -- | < 10 U | -231.1 | 0.8 | 7.77 | 2.22 | 16.3 | 8.73 | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-IRM-003I-A-R | HAL-P3-IRM-003I-A-R-26-20240229 | 2/29/2024 | 26 | N | JD83465 | Treatment | Intermediate | **4380** | **3720** | 8.5 J | 3.8 J | -60.9 | 0.29 | 5.18 | 3.614 | 11.2 | 52.2 | -- | 1920 J- | 59.9 | -- | -- | -- | -- | -- |
| HAL-P3-IRM-005I-A-R | HAL-P3-IRM-005I-A-R-31-20240229 | 2/29/2024 | 31 | N | JD83465 | Treatment | Intermediate | -- | **1330** | -- | 6.2 J | -125.1 | 0.35 | 6.7 | 3.657 | 10.1 | 9.26 | -- | 656 J- | 5.7 | -- | -- | -- | -- | -- |
| ***Monitoring*** | | | | | | | | | | | | | | | | | | | | | | | | | |
| 114-MW22AR | 114-MW22AR-10.5-20200720 | 7/20/2020 | 10.5 | N | JD10357 | N/A | Shallow | 5.1 J | 3.0 J | < 10 U | < 50 U | -58.40 | 0.35 | 7.38 | 3.82 | 20.82 | 9.60 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW22AR | 114-MW22AR-11.0-20201110 | 11/10/2020 | 11 | N | JD15968 | N/A | Shallow | 2.1 J | 6.5 J | < 10 U | < 50 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW22AR | 114-MW22AR-10-20210723 | 7/23/2021 | 10 | N | 4602394131 | N/A | Shallow | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW22AR | 114-MW22AR-10.5-20210914 | 9/14/2021 | 10.5 | N | 4602427561 | Baseline | Shallow | 5.7 | 14.0 | < 10.0 U | < 10.0 U | -132.40 | 0.21 | 7.44 | 1.86 | 22.23 | 9.11 | -- | 6.0 | **598** | < 1.0 U | 41 | **5490** | **2340** | -- |
| 114-MW22AR | 114-MW22AR-9.7-20220909 | 9/9/2022 | 9.7 | N | 4602651811 | N/A | Shallow | 14.6 | 17.2 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW25A | 114-MW25A-20180530 | 5/30/2018 | 11.2 | N | JC66971 | N/A | Shallow | **3320 J** | **3670** | **3500 J** | **3400** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW25A | 114-MW25A-20180823 | 8/23/2018 | 11.2 | N | JC72445 | N/A | Shallow | **10400** | **10100** | **9200** | **9700** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW25A | 114-MW25A-20180927 | 9/27/2018 | 11.2 | N | JC74695 | N/A | Shallow | -- | **6240** | -- | **5800** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW25A | 114-MW25A-20180927X | 9/27/2018 | 11.2 | FD | JC74695 | N/A | Shallow | -- | **6090** | -- | **5800** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW25A | 114-MW25A-20181026 | 10/26/2018 | 11.2 | N | JC76718 | N/A | Shallow | -- | **9160 J** | -- | **8000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW25A | 114-MW25A-20181026X | 10/26/2018 | 11.2 | FD | JC76718 | N/A | Shallow | -- | **1830 J** | -- | **9100** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW25A | 114-MW25A-20181129 | 11/29/2018 | 11.2 | N | JC78731 | N/A | Shallow | **16000** | **16000** | **14400 J** | **13400 J** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW25A | 114-MW25A-20181129X | 11/29/2018 | 11.2 | FD | JC78731 | N/A | Shallow | **15400 J** | **15200 J** | **15300 J** | **16300 J** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW25A | 114-MW25A-20190228 | 2/28/2019 | 11.2 | N | JC83586 | N/A | Shallow | **25400** | **25900** | **24800** | **24100** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW25A | 114-MW25A-20190228X | 2/28/2019 | 11.2 | FD | JC83586 | N/A | Shallow | **25900** | **27600** | **24600 J** | **22800 J** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW25A | 114-MW25A-11.5-20200401 | 4/1/2020 | 11.5 | N | JD5447 | N/A | Shallow | -- | **115** | -- | < 10 U | 3.2 | 1.47 | 8.01 | 2.555 | 12.36 | 5.16 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW25A | 114-MW25A-11.5-20200722 | 7/22/2020 | 11.5 | N | JD10482 | N/A | Shallow | 9.3 J | 47.6 | < 10 U | < 10 U | -112.10 | 0.03 | 6.42 | 1.86 | 19.78 | 5.06 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW25A | 114-MW25A-11.5-20210914 | 9/14/2021 | 11.5 | N | 4602427561 | Baseline | Shallow | **304** | **480** | **170** | **146** | 42.00 | 2.84 | 7.15 | 2.45 | 18.82 | 8.70 | -- | 3.1 | **780** | < 1.0 U | 120 | 175 | **2850** | -- |
| 114-MW25A | 114-MW25A-11.5-20220225 | 2/25/2022 | 11.5 | N | 4602532391 | Baseline | Shallow | -- | **1210** | -- | **1280** | 150.90 | 9999.00 | 6.93 | 2.35 | 11.37 | 3.46 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW25A | 114-MW25A-11.5-20220613 | 6/13/2022 | 11.5 | N | 4602600101 | Treatment | Shallow | -- | **1130** | -- | **1040** | 212.9 | 0.59 | 6.83 | 2.345 | 17.56 | 2.51 | -- | 3.1 | **653** | -- | -- | -- | -- | -- |
| 114-MW25A | 114-MW25A-11.5-20220829 | 8/29/2022 | 11.5 | N | 4602645761 | N/A | Shallow | **1130** | **1180** | **1050** | **1060** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW25A | 114-MW25A-11.5-20220922 | 9/22/2022 | 11.5 | N | 4602660731 | Treatment | Shallow | -- | **1170** | -- | **827** | 94.1 | 0.43 | 6.81 | 2.566 | 19.95 | 4.88 | -- | 3.5 | **594** | -- | -- | -- | -- | -- |
| 114-MW25A | 114-MW25A-11.5-20221216 | 12/16/2022 | 11.5 | N | 4602715551 | Treatment | Shallow | -- | **418** | -- | **282** | -111.0 | 0.54 | 7.13 | 2.325 | 14.31 | 6.16 | -- | 4.0 | **609** | -- | -- | -- | -- | -- |
| 114-MW25A | 114-MW25A-11.5-20230323 | 3/23/2023 | 11.5 | N | 4602768691 | Treatment | Shallow | -- | **706** | -- | **633** | 91.1 | 0.82 | 7.23 | 3.656 | 12.12 | 5.3 | -- | 4.1 | **579** | -- | -- | -- | -- | -- |
| 114-MW25A | 114-MW25A-11.5-20230323-X | 3/23/2023 | 11.5 | FD | 4602768691 | Treatment | Shallow | -- | **745** | -- | **699** | -- | -- | -- | -- | -- | -- | -- | 4.7 | **556** | -- | -- | -- | -- | -- |
| 114-MW25A | 114-MW25A-11.5-20230503 | 5/3/2023 | 11.5 | N | 4602794711 | N/A | Shallow | -- | **96.2** | -- | < 10.0 U | -269.1 | 19.7 | 7.03 | 2.251 | 14.10 | 3.91 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW25A | 114-MW25A-11.5-20230913 | 9/13/2023 | 11.5 | N | 4602880871 | Total Cr Isopleth | Shallow | -- | **109** | -- | < 10.0 U | -158.7 | 0.44 | 6.58 | 2.102 | 20.87 | 3.79 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW25A | 114-MW25A-11.5-20231115 | 11/15/2023 | 11.5 | N | JD77054 | Total Cr Isopleth | Shallow | -- | **92.1** | -- | < 10 U | 48.1 | 0.15 | 7.2 | 2.077 | 17.1 | 6.57 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW25A | 114-MW25A-11.5-20240315 | 3/15/2024 | 11.5 | N | JD84590 | Total Cr Isopleth | Shallow | -- | 28.0 | -- | < 10 U | -56.9 | 0.55 | 7.2 | 1.226 | 14.1 | 3.11 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW25A | 114-MW25A-11.5-20240618 | 6/18/2024 | 11.5 | N | JD90651 | Total Cr Isopleth | Shallow | -- | 30.4 | -- | 6.7 J | -247.8 | 0.2 | 7.03 | 2.024 | 18 | 1.58 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW25A | 114-MW25A-11.5-20240911 | 9/11/2024 | 11.5 | N | JD95856 | Total Cr Isopleth | Shallow | -- | 32.6 | -- | 9.9 J | -108.8 | 0.16 | 6.78 | 2.27 | 21.9 | 1.36 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW25A | 114-MW25A-11.5-20241212 | 12/12/2024 | 11.5 | N | JE2543 | Total Cr Isopleth | Shallow | -- | 20.7 | -- | 5.5 J | -102.1 | 0.31 | 6.92 | 1.97 | 15.1 | 2.29 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW36A | 114-MW36A-20190227 | 2/27/2019 | 12.1 | N | JC83510 | N/A | Shallow | -- | 6.1 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW36A | 114-MW36A-12.5-20200402 | 4/2/2020 | 12.5 | N | JD5521 | N/A | Shallow | -- | 11.8 | -- | 8.6 J | 138.8 | 0.49 | 11.73 | 2.823 | 12.91 | 3.91 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW36A | 114-MW36A-12.5-20210915 | 9/15/2021 | 12.5 | N | 4602428441 | Baseline | Shallow | 13.9 | 2.5 J | < 10.0 U | < 10.0 U | -157.00 | 0.88 | 11.24 | 1.20 | 20.22 | 8.80 | -- | 5.4 | 69.3 | 1.1 | 150 | 65.4 J | **82.2** | -- |
| 114-MW36A | 114-MW36A-12.5-20220225 | 2/25/2022 | 12.5 | N | 4602532391 | Baseline | Shallow | -- | < 4.0 U | -- | < 10.0 U | -55.60 | 3.09 | 11.67 | 1.37 | 11.96 | 2.87 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW36A | 114-MW36A-12.5-20220613 | 6/13/2022 | 12.5 | N | 4602600101 | Treatment | Shallow | -- | 5.5 | -- | < 10.0 U | 18.3 | 0.85 | 11.27 | 1.372 | 18.66 | 6.91 | -- | 4.9 | **262** | -- | -- | -- | -- | -- |
| 114-MW36A | 114-MW36A-12.5-20220923 | 9/23/2022 | 12.5 | N | 4602661551 | Treatment | Shallow | -- | 8.0 | -- | < 10.0 U | -63.5 | 0.76 | 10.45 | 1.932 | 18.83 | 5.20 | -- | 4.7 | **419** | -- | -- | -- | -- | -- |
| 114-MW36A | 114-MW36A-12.5-20221216 | 12/16/2022 | 12.5 | N | 4602715551 | Treatment | Shallow | < 4.0 U | 4.5 | < 10.0 U | < 10.0 U | -118.4 | 0.24 | 10.38 | 1.499 | 15.42 | 11.5 | -- | 4.7 | **436** | -- | -- | < 120 U | **182** | -- |
| 114-MW36A | 114-MW36A-12.5-20230323 | 3/23/2023 | 12.5 | N | 4602768691 | Treatment | Shallow | -- | < 4.0 U | -- | < 10.0 U | -90.5 | 0.32 | 10.40 | 1.756 | 13.80 | 9.04 | -- | 4.9 | **373** | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-20180420 | 4/20/2018 | 16 | N | JC64643 | N/A | Shallow | -- | **65600** | -- | **66900** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20211229 | 12/29/2021 | 15.7 | N | 4602499461 | Baseline | Shallow | **10700** | **11200** | **9920** | **10400** | -284.4 | 0.54 | 9.2 | 1.23 | 17.12 | 5.81 | -- | 8.4 | **323** | < 1.0 U | 440 | < 120 U | 4.9 J | -- |
| 114-MW41A | 114-MW41A-15.7-20220825 | 8/25/2022 | 15.7 | N | 4602644081 | Treatment | Shallow | **6460** | **19500** | **< 100 U** | **< 100 U** | -31.7 | 10.08 | 6.44 | 4.158 | 19.21 | 106 | -- | 2040 | **689** | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20220923 | 9/23/2022 | 15.7 | N | 4602661551 | Treatment | Shallow | **4700** | **14500** | < 20.0 U | < 20.0 U | -210.3 | 1.15 | 5.94 | 4.552 | 18.60 | 164 | -- | 1960 | **557** | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20221020 | 10/20/2022 | 15.7 | N | 4602678821 | Treatment | Shallow | **7690** | **15300** | < 50.0 U | < 50.0 U | -187.9 | 0.58 | 6.53 | 4.404 | 18.99 | 73.5 | -- | 1590 | **521** | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20221117 | 11/17/2022 | 15.7 | N | 4602697441 | Treatment | Shallow | **992** | **3290** | < 50.0 U | < 50.0 U | -123.4 | 0.53 | 6.66 | 5.695 | 14.80 | 39.7 | -- | 1050 | 168 | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20221219 | 12/19/2022 | 15.7 | N | 4602717111 | Treatment | Shallow | **631** | **11000** | **< 100 U** | < 50.0 U | -188.3 | 0.35 | 6.73 | 4.484 | 15.86 | 28.7 | -- | 498 *+ | **565** | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20230126 | 1/26/2023 | 15.7 | N | 4602735991 | Treatment | Shallow | **645** | **8530** | < 50.0 UF1 | < 50.0 UF1 | -254.1 | 1.28 | 6.96 | 2.979 | 14.50 | 82 | -- | 238 F1 | **265** | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20230227 | 2/27/2023 | 15.7 | N | 4602753411 | Treatment | Shallow | **1020** | **1030** | < 10.0 U | < 10.0 U | -276.6 | 0.42 | 6.69 | 2.927 | 17.14 | 36.8 | -- | 264 | **409** | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20230322 | 3/22/2023 | 15.7 | N | 4602768001 | Treatment | Shallow | **1350** | **1940 2010** | < 50.0 U | < 50.0 U | -472.1 | 0.63 | 6.9 | 5.894 | 15.80 | 78.4 | -- | 178 | **420** | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20230424 | 4/24/2023 | 15.7 | N | 4602787991 | Treatment | Shallow | **429** | **891** | < 20.0 U | < 50.0 U | 188.4 | 6.58 | 6.75 | 2.527 | 17.20 | 136 | -- | 125 | **512** | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20230517 | 5/17/2023 | 15.7 | N | 4602804541 | Treatment | Shallow | **432** | **479** | < 50.0 U | < 50.0 U | -178.4 | 0.11 | 6.65 | 2.732 | 19.20 | -- OR | -- | 108 | **478** | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20230517-X | 5/17/2023 | 15.7 | FD | 4602804541 | Treatment | Shallow | **443** | **467** | < 20.0 U | < 50.0 U | -- | -- | -- | -- | -- | -- | -- | 111 | **556** | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20230619 | 6/19/2023 | 15.7 | N | 4602826571 | Treatment | Shallow | **370** | **604** | < 50.0 U | < 50.0 U | -218 | 1.15 | 6.74 | 2.536 | 22.50 | 24.6 | -- | 118 F1 | **327** | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20230717 | 7/17/2023 | 15.7 | N | 4602844061 | Treatment | Shallow | **570** | **653** | < 50.0 U | < 50.0 U | -183.2 | 0.07 | 6.61 | 4.059 | 19.52 | 12.5 | -- | 255 | **327** | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20230717-X | 7/17/2023 | 15.7 | FD | 4602844061 | Treatment | Shallow | **523** | **864** | **< 100 U** | < 50.0 U | -- | -- | -- | -- | -- | -- | -- | 273 | **341** | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20230822 | 8/22/2023 | 15.7 | N | 4602866771 | Treatment | Shallow | **625** | **644** | < 50.0 U | < 50.0 U | -247.2 | 7.92 | 6.47 | 2.577 | 21.72 | 35.9 | -- | 131 | **382** | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20230915 | 9/15/2023 | 15.7 | N | 4602882761 | Treatment | Shallow | **572** | **597** | < 20.0 U | < 20.0 U | -265 | 1.08 | 6.61 | 3.089 | 18.62 | 29.6 | -- | 82.2 | **326** | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20231010 | 10/10/2023 | 15.7 | N | 4602900121 | Treatment | Shallow | **527** | **479** | < 50.0 U | < 50.0 U | -197.8 | 0.61 | 6.76 | 3.089 | 19.8 | 12.3 | -- | 76.9 | **436** | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20231113 | 11/13/2023 | 15.7 | N | JD76852 | Treatment | Shallow | -- | **533** | -- | 25 | -213.2 | 0.12 | 6.95 | 285.5 | 18.3 | 7.24 | -- | 63.0 | **299** | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20231214 | 12/14/2023 | 15.7 | N | JD78891 | Treatment | Shallow | -- | **357** | -- | 4.0 B | -133.5 | 0 | 6.71 | 2.484 | 17.3 | 7.36 | -- | 52.4 | **293** | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20240122 | 1/22/2024 | 15.7 | N | JD80935 | Treatment | Shallow | -- | **303** | -- | **97** | -185.9 | 0.08 | 6.91 | 2.649 | 11.3 | 4.35 | -- | 60.7 | 231 | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20240223 | 2/23/2024 | 15.7 | N | JD83100 | Treatment | Shallow | -- | **348** | -- | 21 | -126.5 | 0.26 | 6.87 | 2.232 | 14.2 | 8.86 | -- | 49.3 | 172 | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20240314 | 3/14/2024 | 15.7 | N | JD84495 | Treatment | Shallow | -- | **308** | -- | < 10 U | -40.9 | 0.14 | 6.85 | 2.243 | 19 | 5.84 | -- | 40.6 | 176 | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-12.5-20240411 | 4/11/2024 | 12.5 | N | JD86317 | Post-Treatment | Shallow | -- | **253** | -- | 15 | -173 | 0.06 | 6.89 | 2.31 | 16.1 | 3.4 | -- | 44.8 J+ | 158 | 0.55 J | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-12.5-20240715 | 7/15/2024 | 12.5 | N | JD92183 | Post-Treatment | Shallow | -- | **332 J-** | -- | 8.7 J | -162.7 | 0.07 | 7.11 | 2.855 | 21.1 | 3.29 | -- | 43.3 | **451** | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-13.5-20241015 | 10/15/2024 | 13.5 | N | JD98256 | Post-Treatment | Shallow | -- | **392 J-** | -- | 51 | -152.4 | 0.18 | 6.86 | 2.29 | 17.3 | 6.06 | -- | 47.4 | **300 J-** | -- | -- | -- | -- | -- |
| 132-P3A-MW103S | 132-P3A-MW103S-13.5-20211014 | 10/14/2021 | 13.5 | N | 4602450901 | Baseline | Shallow | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | 26.10 | 0.17 | 6.80 | 1.29 | 19.80 | 0.81 | -- | 1.6 | **562** | < 1.7 UB | 320 | **672** | **1180** | -- |
| 137-P3B-MW101S | 137-P3B-MW101S-12.5-20200722 | 7/22/2020 | 12.5 | N | JD10482 | N/A | Shallow | < 10 U | 3.4 J | < 10 U | < 50 U | -77.50 | 0.44 | 6.92 | 2.52 | 22.61 | 2.91 | -- | -- | -- | -- | -- | -- | -- | -- |
| 137-P3B-MW101S | 137-P3B-MW101S-18.5-20200722 | 7/22/2020 | 18.5 | N | JD10482 | N/A | Shallow | < 10 U | 5.6 J | < 10 U | < 50 U | -55.00 | 0.36 | 6.90 | 2.16 | 21.65 | 9.40 | -- | -- | -- | -- | -- | -- | -- | -- |
| 137-P3B-MW101S | 137-P3B-MW101S-8.5-20211004 | 10/4/2021 | 8.5 | N | 4602442631 | N/A | Shallow | < 4.0 U | < 4.0 U | < 10.0 U | 8.2 J | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 137-P3B-MW101S | 137-P3B-MW101S-13.5-20211004 | 10/4/2021 | 13.5 | N | 4602442631 | N/A | Shallow | < 4.0 U | 2.9 J | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 137-P3B-MW101S | 137-P3B-MW101S-13.5-20211015 | 10/15/2021 | 13.5 | N | 4602452041 | Baseline | Shallow | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -129.00 | 0.19 | 7.14 | 1.36 | 20.84 | 1.27 | -- | 2.6 | **571** | < 1.0 U | 660 | **5980** | **1620** | -- |
| 137-P3B-MW101S | 137-P3B-MW101S-13.5-20220906 | 9/6/2022 | 13.5 | N | 4602649481 | N/A | Shallow | < 4.0 U | 7.1 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 137-P3B-MW101S | 137-P3B-MW101S-8.6-20220907 | 9/7/2022 | 8.6 | N | 4602650311 | N/A | Shallow | -- | 7.4 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 143-P3A-MW101S | 143-P3A-MW101S-6.5-20200721 | 7/21/2020 | 6.5 | N | JD10407 | N/A | Shallow | < 10 U | < 10 U | < 10 U | < 10 U | -47.00 | 0.03 | 6.51 | 1.86 | 23.78 | 0.97 | -- | -- | -- | -- | -- | -- | -- | -- |
| 143-P3A-MW101S | 143-P3A-MW101S-11.5-20200721 | 7/21/2020 | 11.5 | N | JD10407 | N/A | Shallow | < 10 U | < 10 U | < 10 U | < 10 U | 124.80 | 0.03 | 6.32 | 2.17 | 21.02 | 1.98 | -- | -- | -- | -- | -- | -- | -- | -- |
| 143-P3A-MW101S | 143-P3A-MW101S-7.0-20211001 | 10/1/2021 | 7 | N | 4602440821 | N/A | Shallow | 2.5 J | 2.7 J | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 143-P3A-MW101S | 143-P3A-MW101S-12.0-20211001 | 10/1/2021 | 12 | N | 4602440821 | N/A | Shallow | < 4.0 U | 4.0 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 143-P3A-MW101S | 143-P3A-MW101S-9-20211011 | 10/11/2021 | 9 | N | 4602448291 | Baseline | Shallow | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | 23.40 | 0.90 | 6.90 | 0.92 | 21.37 | 1.79 | -- | 1.7 | **309** | < 1.0 U | 4000 | 235 | **243** | -- |
| 143-P3A-MW101S | 143-P3A-MW101S-8.3-20220906 | 9/6/2022 | 8.3 | N | 4602649481 | N/A | Shallow | -- | < 4.0 U | -- | < 20.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 143-P3A-MW101S | 143-P3A-MW101S-11-20220906 | 9/6/2022 | 11 | N | 4602649481 | N/A | Shallow | < 4.0 U | < 4.0 U | < 20.0 U | < 20.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 143-P3-MW001S | 143-P3-MW001S-13.5-20230118 | 1/18/2023 | 13.5 | N | 4602731501 | N/A | Shallow | -- | < 4.0 U | -- | < 10.0 U | 146.6 | 0.75 | 7.2 | 2.048 | 12.3 | 8.43 | -- | -- | -- | -- | -- | -- | -- | -- |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochemical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 143-P3-MW001S | 143-P3-MW001S-13.5-20230425 | 4/25/2023 | 13.5 | N | 4602788811 | Treatment | Shallow | -- | < 4.0 U | -- | < 10.0 U | 212.5 | 0.09 | 7.06 | 1.912 | 13.8 | 3.94 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20211228 | 12/28/2021 | 16.3 | N | 4602498971 | Baseline | Shallow | 1870 | 1950 | 1810 | 1810 | -22.00 | 0 | 7.58 | 2.03 | 16.18 | 9.24 | -- | 15.5 | 263 | < 1.0 UJ | 2100 | 163 | 604 | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20220826 | 8/26/2022 | 16.3 | N | 4602644761 | Treatment | Shallow | -- | 918 | -- | < 10.0 U | -58.1 | 4.61 | 8.19 | 2.268 | 20.20 | 4.96 | -- | 35.3 | 364 | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20220826-X | 8/26/2022 | 16.3 | FD | 4602644761 | Treatment | Shallow | -- | 434 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 30.1 | 358 | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20220921 | 9/21/2022 | 16.3 | N | 4602659871 | Treatment | Shallow | -- | 414 | -- | < 20.0 U | 6.6 | 1.97 | 7.68 | 2.083 | 22.09 | 2.06 | -- | 33.1 | 381 | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20221020 | 10/20/2022 | 16.3 | N | 4602678821 | Treatment | Shallow | -- | 857 | -- | 462 | -188.2 | 1.07 | 7.48 | 1.984 | 16.82 | 2.41 | -- | 12.3 | 436 | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20221117 | 11/17/2022 | 16.3 | N | 4602697441 | Treatment | Shallow | -- | 442 F2 | -- | < 10.0 UF1 | -84.1 | 2.83 | 7.54 | 2.307 | 16.27 | 3.47 | -- | 32.1 | 370 | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20221219 | 12/19/2022 | 16.3 | N | 4602717111 | Treatment | Shallow | -- | 667 | -- | 387 | -72.6 | 1.02 | 8.02 | 2.463 | 12.4 | 1.88 | -- | 26.8 ^+ | 762 | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230127 | 1/27/2023 | 16.3 | N | 4602736701 | Treatment | Shallow | -- | 1130 | -- | < 20.0 U | -86.8 | 4.92 | 7.56 | 6.149 | 12 | 4.2 | -- | 56.9 | 450 | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230228 | 2/28/2023 | 16.3 | N | 4602753821 | Treatment | Shallow | -- | 361 | -- | < 10.0 U | -156.1 | 1.92 | 8.12 | 2.713 | 12.3 | 1.3 | -- | 49.2 F1 | 634 | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230228-X | 2/28/2023 | 16.3 | FD | 4602753821 | Treatment | Shallow | -- | 356 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 29.8 | 325 | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230321 | 3/21/2023 | 16.3 | N | 4602767381 | Treatment | Shallow | -- | 320<br>208 | -- | < 10.0 U | 81.5 | 0.93 | 7.36 | 1.8 | 12.23 | 8.5 | -- | 13.8 F1<br>12.2 | 209<br>344 | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230424 | 4/24/2023 | 16.3 | N | 4602787991 | Treatment | Shallow | -- | 205 | -- | < 10.0 U | 24.3 | 2.06 | 7.33 | 1.508 | 14.2 | 0.78 | -- | 19.2 | 201 | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230424-X | 4/24/2023 | 16.3 | FD | 4602787991 | Treatment | Shallow | -- | 185 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 19.2 | 194 | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230516 | 5/16/2023 | 16.3 | N | 4602803921 | Treatment | Shallow | -- | 44.2 | -- | < 10.0 U | -129.8 | 0.39 | 7.31 | 1.562 | 19.95 | 0.63 | -- | 6.9 | 128 | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230620 | 6/20/2023 | 16.3 | N | 4602827171 | Treatment | Shallow | -- | 137 | -- | < 10.0 U | 0.6 | 1.19 | 6.81 | 1.834 | 17.11 | 0.92 | -- | 16.8 | 124 | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230620-X | 6/20/2023 | 16.3 | FD | 4602827171 | Treatment | Shallow | -- | 134 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 16.4 | 135 | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230717 | 7/17/2023 | 16.3 | N | 4602844061 | Treatment | Shallow | -- | 271 | -- | 172 | 46.1 | 1.74 | 8.74 | 1.094 | 20.01 | 1.7 | -- | 11.9 | 108 | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230822 | 8/22/2023 | 16.3 | N | 4602866771 | Treatment | Shallow | -- | 1010 | -- | 959 F1 | 7.9 | 2.2 | 7.02 | 1.19 | 22.01 | 0.52 | -- | 10.2 | 125 | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230915 | 9/15/2023 | 16.3 | N | 4602882761 | Treatment | Shallow | -- | 731 | -- | 67.3 | -39.2 | 0.4 | 7.68 | 2.585 | 20.48 | 1.97 | -- | 28.0 | 199 | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20231010 | 10/10/2023 | 16.3 | N | 4602900121 | Treatment | Shallow | -- | 638 | -- | < 10.0 U | -112.6 | 0.46 | 7.71 | 2.626 | 17.88 | 3.79 | -- | 32.5 | 290 | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20231010-X | 10/10/2023 | 16.3 | FD | 4602900121 | Treatment | Shallow | -- | 522 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 26.8 | 277 | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20231113 | 11/13/2023 | 16.3 | N | JD76852 | Treatment | Shallow | -- | 295 | -- | < 10 U | 4.9 | 0.08 | 7.2 | 2.076 | 17.2 | 2.01 | -- | 15.0 | 190 | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20231113-X | 11/13/2023 | 16.3 | FD | JD76852 | Treatment | Shallow | -- | 246 | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | 16.7 | 177 | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20231214 | 12/14/2023 | 16.3 | N | JD78891 | Treatment | Shallow | -- | 378 | -- | < 10 U | -138.2 | 2.08 | 7.52 | 2.803 | 13.2 | 1.39 | -- | 32.9 | 276 | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20231214-X | 12/14/2023 | 16.3 | FD | JD78891 | Treatment | Shallow | -- | 303 | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | 30.4 | 255 | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20240122 | 1/22/2024 | 16.3 | N | JD80935 | Treatment | Shallow | -- | 79.9 | -- | < 10 U | -69.3 | 0.29 | 7.04 | 1.599 | 11 | 4.11 | -- | 13.2 | 133 | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20240122-X | 1/22/2024 | 16.3 | FD | JD80935 | Treatment | Shallow | -- | 77.1 | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | 13.1 | 127 | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20240223 | 2/23/2024 | 16.3 | N | JD83100 | Treatment | Shallow | -- | 94.4 | -- | < 10 U | -83 | 0.23 | 7.19 | 1.511 | 13.1 | 0.74 | -- | 7.9 | 107 | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20240223-X | 2/23/2024 | 16.3 | FD | JD83100 | Treatment | Shallow | -- | 85.9 | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | 8.0 | 102 | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20240315 | 3/15/2024 | 16.3 | N | JD84558 | Treatment | Shallow | -- | 94.4 | -- | < 10 U | -73.6 | 0.19 | 6.81 | 1.429 | 14 | 3 | -- | 21.9 | 130 | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20240315-X | 3/15/2024 | 16.3 | FD | JD84558 | Treatment | Shallow | -- | 76.3 | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | 12.8 | 49.1 | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-8.5-20240411 | 4/11/2024 | 8.5 | N | JD86317 | Post-Treatment | Shallow | -- | 10.6 | -- | 6.0 J | -66 | 0.31 | 6.68 | 1.038 | 13.2 | 1.51 | -- | < 1.0 U | 24.5 | < 2.0 U | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-13.5-20240411 | 4/11/2024 | 13.5 | N | JD86317 | Post-Treatment | Shallow | -- | 9.6 | -- | < 10 U | -17.4 | 1.54 | 6.7 | 1.036 | 13.4 | 1.29 | -- | 5.0 J+ | 25.3 | < 2.0 U | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-13.5-20240411-X | 4/11/2024 | 13.5 | FD | JD86317 | Post-Treatment | Shallow | -- | 9.1 | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | 5.0 J+ | 24.7 | < 2.0 U | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-13.5-20240716 | 7/16/2024 | 13.5 | N | JD92267 | Post-Treatment | Shallow | -- | 575 | -- | 680 J- | -26.2 | 2.19 | 6.81 | 0.736 | 21.1 | 2.53 | -- | 1.6 | 67.8 | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-13.5-20240716-X | 7/16/2024 | 13.5 | FD | JD92267 | Post-Treatment | Shallow | -- | 542 | -- | 590 J- | -- | -- | -- | -- | -- | -- | -- | 1.9 | 70.3 | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-13.5-20241016 | 10/16/2024 | 13.5 | N | JD98354 | Post-Treatment | Shallow | -- | 144 | -- | 25 | 16.6 | 0.44 | 6.98 | 1.56 | 20 | 0.92 | -- | 12.9 J+ | 163 | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-13.5-20241016-X | 10/16/2024 | 13.5 | FD | JD98354 | Post-Treatment | Shallow | -- | 128 | -- | 23 | -- | -- | -- | -- | -- | -- | -- | 12.7 J+ | 168 | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.05-20220105 | 1/5/2022 | 17.05 | N | 4602501431 | Baseline | Shallow | 54400 | 53000 | 54000 | 51800 | -164 | 1.03 | 11.07 | 1.39 | 12.87 | 3.2 | -- | 3.1 J | 275 | < 1.0 U | 3400 | < 120 U | < 8.0 U | -- |
| 199-P3-MW004S | 199-P3-MW004S-17-20220826 | 8/26/2022 | 17 | N | 4602644761 | Treatment | Shallow | -- | 59600 | -- | 58200 | -139.1 | 1.18 | 10.10 | 1.520 | 21.45 | 4.76 | -- | 36.2 | 163 | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17-0-20220921 | 9/21/2022 | 17 | N | 4602659871 | Treatment | Shallow | -- | 57700 | -- | 50800 | -85 | 0.66 | 12.52 | 1.95 | 22.53 | 0.95 | -- | 166 | 111 | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17-20221020 | 10/20/2022 | 17 | N | 4602678821 | Treatment | Shallow | -- | 48600 | -- | 42400 | -164.4 | 0.58 | 11.92 | 2.594 | 18.7 | 0.5 | -- | 209 | 216 | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17-20221117 | 11/17/2022 | 17 | N | 4602697441 | Treatment | Shallow | -- | 34500 | -- | 33300 | -8.6 | 2.38 | 12.1 | 2.473 | 15.46 | 1.59 | -- | 303 | 132 | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17-20221117-X | 11/17/2022 | 17 | FD | 4602697441 | Treatment | Shallow | -- | 34400 | -- | 35500 | -- | -- | -- | -- | -- | -- | -- | 340 | 189 | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17-20221219 | 12/19/2022 | 17 | N | 4602717111 | Treatment | Shallow | -- | 33700 | -- | 35100 | -187.9 | 0.71 | 12.10 | 2.450 | 13.20 | 2.91 | -- | 269 ^+ | 202 | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17-20221219-X | 12/19/2022 | 17 | FD | 4602717111 | Treatment | Shallow | -- | 35000 | -- | 42900 | -- | -- | -- | -- | -- | -- | -- | 267 ^+ | 232 | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3MW004S-17-20230127 | 1/27/2023 | 17 | N | 4602736701 | Treatment | Shallow | -- | 39000 | -- | 37000 H | -101.8 | 1.87 | 11.70 | 1.535 | 11.80 | 9.91 | -- | 43.9 | 501 | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20230228 | 2/28/2023 | 17 | N | 4602753821 | Treatment | Shallow | -- | 25400 | -- | 28800 | 28.1 | 5.58 | 10.68 | 1.300 | 10.60 | 3.3 | -- | 17.8 | 480 | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20230321 | 3/21/2023 | 17 | N | 4602767381 | Treatment | Shallow | -- | 8510 | -- | 9280 | -89.6 | 0.65 | 8.40 | 1.871 | 14.68 | 8.08 | -- | 198 | 460 | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20230425 | 4/25/2023 | 17 | N | 4602788811 | Treatment | Shallow | -- | -- | -- | -- | -244.3 | 0.04 | 7.31 | 1.939 | 14.66 | 33.9 | -- | 656 | 124 | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17-20230517 | 5/17/2023 | 17 | N | 4602804541 | Treatment | Shallow | 2780 | 7090 | 551 | 435 | -253.6 | 0.11 | 7.69 | 2.185 | 19.1 | 75 | -- | 671 | 95.9 | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20230620 | 6/20/2023 | 17 | N | 4602827171 | Treatment | Shallow | 2480 | 7070 | < 10.0 U | < 10.0 U | -249.5 | 3.5 | 6.95 | 4.27 | 19 | 133 | -- | 2080 | 116 | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20230720 | 7/20/2023 | 17 | N | 4602846391 | Treatment | Shallow | 1820 | 2410 | < 10.0 U | < 10.0 U | -305.2 | 3.19 | 6.93 | 3.126 | 21.7 | 24.3 | -- | 1390 | 46.2 | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20230823 | 8/23/2023 | 17 | N | 4602867511 | Treatment | Shallow | 3230 | 3620 | 374 | < 10.0 U | -264.9 | 3.49 | 7.73 | 2.753 | 20.63 | 27.7 | -- | 892 | 38.6 | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20230915 | 9/15/2023 | 17 | N | 4602882761 | Treatment | Shallow | -- | 516 | -- | < 10.0 U | -324.7 | 0.26 | 7.07 | 2.861 | 22.72 | 8.97 | -- | 553 | 18.4 | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20231010 | 10/10/2023 | 17 | N | 4602900121 | Treatment | Shallow | 467 | 528 | < 10.0 U | < 10.0 U | -108 | 5.08 | 7.16 | 2.167 | 20.87 | 21.3 | -- | 434 | 22.0 | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20231114 | 11/14/2023 | 17 | N | JD76935 | Treatment | Shallow | -- | 144 | -- | < 10 U | -377.1 | 1.29 | 7.52 | 1.988 | 18.1 | 9.68 | -- | 162 | 23.7 | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20231214 | 12/14/2023 | 17 | N | JD78891 | Treatment | Shallow | -- | 290 | -- | 2.9 B | -345.5 | 0 | 7.65 | 2.018 | 15.1 | 9.95 | -- | 72.3 | 19.4 | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20240122 | 1/22/2024 | 17 | N | JD80935 | Treatment | Shallow | -- | 618 | -- | < 10 U | -348.4 | 0.12 | 8.02 | 1.546 | 12 | 6.98 | -- | 88.8 | 31.8 | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20240223 | 2/23/2024 | 17 | N | JD83100 | Treatment | Shallow | 249 | 281 | < 10 U | < 10 U | -147.9 | 0.09 | 7.54 | 1.341 | 13.2 | 1000 | -- | 830 | 33.3 B | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20240314 | 3/14/2024 | 17 | N | JD84495 | Treatment | Shallow | 505 | 480 | 77 | 7.0 B | -353.7 | 0.42 | 6.62 | 2.183 | 22.3 | 1000 | -- | 2840 | 29.8 B | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-13.5-20240411 | 4/11/2024 | 13.5 | N | JD86317 | Post-Treatment | Shallow | 118 | 557 | 130 | 160 | -212 | 0.2 | 7.05 | 3.372 | 15 | 1000 | -- | 1380 J+ | 10.4 | 1.8 J | -- | 13200 | 4250 | -- |
| 199-P3-MW004S | 199-P3-MW004S-18.5-20240412 | 4/12/2024 | 18.5 | N | JD86439 | Post-Treatment | Shallow | 99.0 | 1520 | < 10 U | < 10 U | -185 | 1.23 | 7.18 | 2.9 | 14.2 | 1000 | -- | 907 | 3.2 | 1.4 J | -- | 14000 | 3950 | -- |
| 199-P3-MW004S | 199-P3-MW004S-13.5-20240716 | 7/16/2024 | 13.5 | N | JD92267 | Post-Treatment | Shallow | 123 | 1930 | 93.4 J- | 8.2 J- | -263.1 | 4.03 | 6.82 | 2.482 | 31.6 | 137 | -- | 359 | 3.8 | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-16.5-20241016 | 10/16/2024 | 16.5 | N | JD98354 | Post-Treatment | Shallow | 158 J- | 256 J- | < 10 U | 9.8 J | -147.9 | 0.16 | 7.01 | 3.44 | 19.2 | 113 | -- | 194 J+ | < 2.0 U | -- | -- | -- | -- | -- |
| FSP-P3-MW001S | FSP-P3-MW001S-14.0-20210917 | 9/17/2021 | 14 | N | 4602430721 | Baseline | Shallow | < 4.0 U | 2.6 J | < 10.0 U | < 10.0 U | -32.50 | 3.14 | 6.83 | 0.98 | 21.96 | 5.50 | -- | 2.1 JB | 378 | < 1.0 U | 350 | 2100 | 712 | -- |
| FSP-P3-MW001S | FSP-P3-MW001S-14-20220826 | 8/26/2022 | 14 | N | 4602644761 | Treatment | Shallow | -- | < 4.0 U | -- | < 10.0 U | -116.9 | 5.92 | 7.89 | 6.858 | 21.09 | 2.40 | -- | 4.7 | 123 | -- | -- | -- | -- | -- |
| FSP-P3-MW001S | FSP-P3-MW001S-14.0-20220922 | 9/22/2022 | 14 | N | 4602660731 | Treatment | Shallow | -- | < 4.0 U | -- | < 10.0 U | -90.7 | 10.05 | 7.33 | 1.008 | 21.63 | 3.38 | -- | 4.8 | 252 | -- | -- | -- | -- | -- |
| FSP-P3-MW001S | FSP-P3-MW001S-14-20221021 | 10/21/2022 | 14 | N | 4602679761 | Treatment | Shallow | -- | < 4.0 U | -- | < 10.0 U | -54.9 | 2.1 | 6.69 | 1.838 | 18.09 | 4.19 | -- | 2.4 | 504 | -- | -- | -- | -- | -- |
| FSP-P3-MW001S | FSP-P3-MW001S-14-20221118 | 11/18/2022 | 14 | N | 4602697961 | Treatment | Shallow | -- | < 4.0 U | -- | < 10.0 U | -53.30 | 7.04 | 6.88 | 2.24 | 12.14 | 3.79 | -- | 2.1 | 1050 | -- | -- | -- | -- | -- |
| FSP-P3-MW001S | FSP-P3-MW001S-14-20221220 | 12/20/2022 | 14 | N | 4602718081 | Treatment | Shallow | -- | < 40.0 U | -- | < 10.0 U | -0.6 | 2.22 | 6.83 | 2.276 | 13.82 | 6.43 | -- | 1.9 | 53.1 | -- | -- | -- | -- | -- |
| FSP-P3-MW001S | FSP-P3-MW001S-14.0-20230321 | 3/21/2023 | 14 | N | 4602767381 | Treatment | Shallow | -- | 57.2 | -- | < 10.0 U | 40.1 | 1.82 | 6.96 | 1.392 | 14.20 | 8.7 | -- | 2.8 | 681 | -- | -- | -- | -- | -- |
| FSP-P3-MW001S | FSP-P3-MW001S-14.0-20230620 | 6/20/2023 | 14 | N | 4602827171 | Treatment | Shallow | -- | < 4.0 U | -- | < 10.0 U | -39.3 | 1.23 | 7.12 | 0.744 | 20.57 | 4.07 | -- | < 1.0 U | 244 | -- | -- | -- | -- | -- |
| FSP-P3-MW001S | FSP-P3-MW001S-14.0-20230920 | 9/20/2023 | 14 | N | 4602886061 | Treatment | Shallow | -- | < 4.0 U | -- | < 10.0 U | -23.5 | 1.75 | 7.08 | 1.986 | 23.2 | 4.11 | -- | 1.2 | 929 | -- | -- | -- | -- | -- |
| FSP-P3-MW001S | FSP-P3-MW001S-14.0-20231219 | 12/19/2023 | 14 | N | JD79187 | Treatment | Shallow | -- | < 10 U | -- | < 10 U | 58.3 | 0.73 | 7.05 | 0.82 | 13 | 2.85 | -- | < 1.0 U | 389 | -- | -- | -- | -- | -- |
| FSP-P3-MW001S | FSP-P3-MW001S-14.0-20240315 | 3/15/2024 | 14 | N | JD84558 | Treatment | Shallow | -- | < 10 U | -- | < 10 U | -42.6 | 0.3 | 7.24 | 0.4158 | 12.1 | 0.95 | -- | 5.6 | 96.2 | -- | -- | -- | -- | -- |
| FSP-P3-MW001S | FSP-P3-MW001S-12.5-20240416 | 4/16/2024 | 12.5 | N | JD86606 | Post-Treatment | Shallow | -- | 0.63 J | -- | 10 | -113.4 | 0.38 | 7.14 | 0.556 | 13.1 | 0.74 | -- | 6.4 J+ | 83.9 | < 2.0 U | -- | -- | -- | -- |
| FSP-P3-MW001S | FSP-P3-MW001S-16.5-20240417 | 4/17/2024 | 16.5 | N | JD86699 | Post-Treatment | Shallow | -- | < 2.0 UB | -- | 5.1 J- | -109.8 | 0.52 | 7.19 | 0.536 | 13.6 | 3.32 | -- | 6.0 | 74.7 | < 2.0 U | -- | -- | -- | -- |
| FSP-P3-MW001S | FSP-P3-MW001S-12.5-20240726 | 7/26/2024 | 12.5 | N | JD92935 | Post-Treatment | Shallow | -- | < 10 U | -- | < 10 U | -82.8 | 0.33 | 7.01 | 1074 | 21 | 7.85 | -- | 3.1 | 332 J+ | -- | -- | -- | -- | -- |
| FSP-P3-MW001S | FSP-P3-MW001S-15.5-20241010 | 10/10/2024 | 15.5 | N | JD97909 | Post-Treatment | Shallow | -- | < 10 UJ | -- | 39 J | -112.7 | 0.24 | 6.84 | 1.16 | 20.3 | 2.5 | -- | 4.3 J+ | 225 | -- | -- | -- | -- | -- |
| HAL-P3-MW001S | HAL-P3-MW001S-10.5-20230118 | 1/18/2023 | 10.5 | N | 4602731501 | N/A | Shallow | -- | < 4.0 U | -- | < 10.0 U | -79.3 | 1.04 | 6.96 | 1.801 | 12.3 | 9.8 | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-MW001S | HAL-P3-MW001S-10.5-20230425 | 4/25/2023 | 10.5 | N | 4602788811 | Treatment | Shallow | -- | < 4.0 U | -- | < 10.0 U | -3.7 | 17.29 | 6.96 | 2.000 | 13.72 | 4.79 | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-MW002S | HAL-P3-MW002S-12.5-20230118 | 1/18/2023 | 12.5 | N | 4602731501 | N/A | Shallow | -- | 4.6 | -- | < 10.0 U | -72.1 | 0.72 | 7.11 | 1.804 | 11.4 | 5.5 | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-MW002S | HAL-P3-MW002S-12.5-20230425 | 4/25/2023 | 12.5 | N | 4602788811 | Treatment | Shallow | -- | < 4.0 U | -- | < 10.0 U | 208.7 | 3.03 | 7.02 | 1.483 | 13.3 | 3.2 | -- | -- | -- | -- | -- | -- | -- | -- |
| HSTD-P3-MW001S | HSTD-P3-MW001S-14.7-20211028 | 10/28/2021 | 14.7 | N | 4602460571 | Baseline | Shallow | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -105.40 | 0.67 | 6.93 | 1.96 | 20.09 | 0.03 | -- | 4.8 JB | 562 | < 1.0 U | 1800 J+ | 6290 | 3050 | -- |
| HSTD-P3-MW003S | HSTD-P3-MW003S-14.2-20211029 | 10/29/2021 | 14.2 | N | 4602461931 | Baseline | Shallow | 6.6 | < 4.0 U | < 10.0 U | < 10.0 U | -184.30 | 0.57 | 7.72 | 2.14 | 19.20 | 0 | -- | 4.2 JB | 661 | < 1.0 U | 280 | 4050 | 485 | -- |
| MW1C-3 | MW1C-3-11.15-20211229 | 12/29/2021 | 11.15 | N | 4602499461 | Baseline | Shallow | 62 J | 462 | 40.5 | 41.6 | 117 | 1.62 | 7.32 | 1.41 | 13.99 | 5.89 | -- | 4.7 JB | 105 | < 1.0 U | 320 | < 120 U | 466 | -- |
| MW1C-3 | MW1C-3-11.2-20220825 | 8/25/2022 | 11.2 | N | 4602644081 | Treatment | Shallow | -- | 60.2 | -- | < 10.0 U | -31.6 | 4.38 | 7.45 | 1.505 | 30.08 | 5.48 | -- | 6.0 | 140 | -- | -- | -- | -- | -- |
| MW1C-3 | MW1C-3-12.1-20220921 | 9/21/2022 | 12.1 | N | 4602659871 | Treatment | Shallow | -- | 330 | -- | 81.7 | -100.2 | 0.70 | 7.7 | 1.590 | 21.26 | 9.63 | -- | 4.9 | 146 | -- | -- | -- | -- | -- |
| MW1C-3 | MW1C-3-11.2-20221021 | 10/21/2022 | 11.2 | N | 4602679761 | Treatment | Shallow | -- | 1220 | -- | 1910 | 57.2 | 1.56 | 7.03 | 1.476 | 18.96 | 2.02 | -- | 6.0 | 159 | -- | -- | -- | -- | -- |
| MW1C-3 | MW1C-3-11.2-20221117 | 11/17/2022 | 11.2 | N | 4602697441 | Treatment | Shallow | -- | 1140 | -- | 1010 | -8.1 | 0.77 | 7.06 | 1.525 | 16.37 | 8.54 | -- | 5.5 | 165 | -- | -- | -- | -- | -- |
| MW1C-3 | MW1C-3-11.2-20221220 | 12/20/2022 | 11.2 | N | 4602718081 | Treatment | Shallow | -- | 311 | -- | 91.8 | -10.5 | 1.87 | 7 | 1.555 | 15 | 6.5 | -- | 5.1 | 138 | -- | -- | -- | -- | -- |
| MW1C-3 | MW1C-3-11.2-20230127 | 1/27/2023 | 11.2 | N | 4602736701 | Treatment | Shallow | -- | 174 | -- | < 10.0 U | 1 | 2.61 | 7.19 | 1.224 | 11.8 | 9.81 | -- | 4.1 | 130 | -- | -- | -- | -- | -- |
| MW1C-3 | MW1C-3-11.2-20230228 | 2/28/2023 | 11.2 | N | 4602753821 | Treatment | Shallow | -- | 396 | -- | 226 | 81.0 | 8.66 | 7.19 | 1.582 | 9.68 | 4.56 | -- | 5.0 | 120 | -- | -- | -- | -- | -- |
| MW1C-3 | MW1C-3-12.0-20230322 | 3/22/2023 | 12 | N | 4602768001 | Treatment | Shallow | -- | 777 | -- | 446 | 105.1 | 3.57 | 6.93 | 1.572 | 14.27 | 9.89 | -- | 4.7 | 127 | -- | -- | -- | -- | -- |
| MW1C-3 | MW1C-3-12.0-20230322-X | 3/22/2023 | 12 | FD | 4602768001 | Treatment | Shallow | -- | 802 | -- | 490 | -- | -- | -- | -- | -- | -- | -- | 4.8 | 127 | -- | -- | -- | -- | -- |
| MW1C-3 | MW1C-3-11.2-20230424 | 4/24/2023 | 11.2 | N | 4602787991 | Treatment | Shallow | -- | 384 | -- | 62.7 | 51.2 | 0.15 | 6.49 | 1.186 | 16.2 | 6.97 | -- | 4.3 | 132 | -- | -- | -- | -- | -- |
| MW1C-3 | MW1C-3-11.2-20230516 | 5/16/2023 | 11.2 | N | 4602803921 | Treatment | Shallow | 328 | 468 | 269 | 316 | -27.3 | 0.55 | 6.97 | 1.503 | 19.2 | 10 | -- | 3.8 | 118 | -- | -- | -- | -- | -- |
| MW1C-3 | MW1C-3-11.2-20230620 | 6/20/2023 | 11.2 | N | 4602827171 | Treatment | Shallow | -- | 1870 | -- | < 10.0 U | -47.2 | 0.83 | 6.88 | 0.427 | 17.9 | 5.57 | -- | 9.5 | 91.6 | -- | -- | -- | -- | -- |
| MW1C-3 | MW1C-3-11.2-20230714 | 7/14/2023 | 11.2 | N | 4602842251 | Treatment | Shallow | -- | 87.2 | -- | < 10.0 U | 6.3 | 6.38 | 6.39 | 1.437 | 22.03 | 5.32 | -- | 5.8 F1 | 120 | -- | -- | -- | -- | -- |
| MW1C-3 | MW1C-3-11.2-20230823 | 8/23/2023 | 11.2 | N | 4602867511 | Treatment | Shallow | -- | 57.4 | -- | < 10.0 U | 27.9 | 7.16 | 6.8 | 1.594 | 20.29 | 7.48 | -- | 5.7 | 119 | -- | -- | -- | -- | -- |
| MW1C-3 | MW1C-3-11.2-20230915 | 9/15/2023 | 11.2 | N | 4602882761 | Treatment | Shallow | -- | 56.2 | -- | < 10.0 U | -9.8 | 1.54 | 6.83 | 1.903 | 20.9 | 3.07 | -- | 4.6 | 111 | -- | -- | -- | -- | -- |
| MW1C-3 | MW1C-3-11.2-20231011 | 10/11/2023 | 11.2 | N | 4602901161 | Treatment | Shall

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| MW1C-3 | MW1C-3-11.2-20231113 | 11/13/2023 | 11.2 | N | JD76852 | Treatment | Shallow | -- | 47.9 | -- | < 10 U | -45.8 | 1.76 | 7.35 | 1.769 | 17.3 | 1.79 | -- | 3.9 JB | 164 | -- | -- | -- | -- | -- |
| MW1C-3 | MW1C-3-11.2-20231213 | 12/13/2023 | 11.2 | N | JD78776 | Treatment | Shallow | -- | 125 | -- | < 10 U | 184.3 | 0.88 | 6.72 | 1.818 | 12.8 | 6.01 | -- | 6.2 | 173 | -- | -- | -- | -- | -- |
| MW1C-3 | MW1C-3-11.2-20240122 | 1/23/2024 | 11.2 | N | JD80935 | Treatment | Shallow | -- | 66.1 | -- | 8.5 B | -47.6 | 8.58 | 6.94 | 1.623 | 14 | 5.32 | -- | 5.1 | 167 | -- | -- | -- | -- | -- |
| MW1C-3 | MW1C-3-11.2-20240223 | 2/23/2024 | 11.2 | N | JD83100 | Treatment | Shallow | -- | 123 | -- | < 10 U | -31.4 | 0.57 | 6.87 | 1.789 | 14.2 | 9.47 | -- | 3.7 | 179 | -- | -- | -- | -- | -- |
| MW1C-3 | MW1C-3-11.2-20240315 | 3/15/2024 | 11.2 | N | JD84558 | Treatment | Shallow | -- | 45.3 | -- | < 10 U | -34.5 | 0.28 | 6.8 | 1.774 | 16 | 9.89 | -- | 4.9 | 183 | -- | -- | -- | -- | -- |
| MW1C-3 | MW1C-3-12.5-20240416 | 4/16/2024 | 12.5 | N | JD86606 | Post-Treatment | Shallow | -- | 683 | -- | 6.7 J | -145 | 0.74 | 7.3 | 1.945 | 17 | 8.18 | -- | 4.3 | 177 | < 2.0 U | -- | -- | -- | -- |
| MW1C-3 | MW1C-3-14.0-20240417 | 4/17/2024 | 14 | N | JD86699 | Post-Treatment | Shallow | -- | 73.9 | -- | 6.3 J- | -59.2 | 0.32 | 6.65 | 1.935 | 15.2 | 6.65 | -- | 4.4 | 166 | < 2.0 U | -- | -- | -- | -- |
| MW1C-3 | MW1C-3-14.0-20240716 | 7/16/2024 | 14 | N | JD92267 | Post-Treatment | Shallow | -- | 32.5 | -- | 3.5 J- | -191.8 | 0.18 | 6.79 | 1.91 | 21.1 | 1.06 | -- | 7.6 | 163 | -- | -- | -- | -- | -- |
| MW1C-3 | MW1C-3-14.0-20241010 | 10/10/2024 | 14 | N | JD97909 | Post-Treatment | Shallow | -- | 37.2 | -- | 13 | -49.3 | 1.41 | 6.73 | 1.59 | 19.1 | 6.48 | -- | 4.7 J+ | 152 | -- | -- | -- | -- | -- |
| MW1C-4 | MW1C-4-15.5-20220104 | 1/4/2022 | 15.5 | N | 4602500781 | Baseline | Shallow | 29800 | 34200 | 30100 | 35700 | 115.3 | 0.27 | 7.28 | 3.18 | 15.24 | 1.21 | -- | 24.2 | 839 | < 10.0 U | 1800 | < 120 U | 471 | -- |
| MW1C-4 | MW1C-4-15.5-20220826 | 8/26/2022 | 15.5 | N | 4602644761 | Treatment | Shallow | 1370 | 1360 | < 20.0 U | < 20.0 U | -18.2 | 1.98 | 6.24 | 4.429 | 22.30 | 161 | -- | 749 | 987 | -- | -- | -- | -- | -- |
| MW1C-4 | MW1C-4-15.5-20220923 | 9/23/2022 | 15.5 | N | 4602661551 | Treatment | Shallow | -- | 422 | -- | < 10.0 U | -160.2 | 3.27 | 6.91 | 3.915 | 18.1 | 5.88 | -- | 163 | 393 | -- | -- | -- | -- | -- |
| MW1C-4 | MW1C-4-15.5-20221020 | 10/20/2022 | 15.5 | N | 4602678821 | Treatment | Shallow | 35200 | 15300 | < 50.0 U | < 50.0 U | -102.6 | 0.26 | 6.71 | 41.301 | 20.12 | 111 | -- | 189 | 1000 | -- | -- | -- | -- | -- |
| MW1C-4 | MW1C-4-15.5-20221117 | 11/17/2022 | 15.5 | N | 4602697441 | Treatment | Shallow | -- | 1270 | -- | < 50.0 U | -47.1 | 1.45 | 6.83 | 4.572 | 13.95 | 8.13 | -- | 42.5 | 1290 | -- | -- | -- | -- | -- |
| MW1C-4 | MW1C-4-15.5-20221220 | 12/20/2022 | 15.5 | N | 4602718081 | Treatment | Shallow | 371 | 7170 | < 20.0 U | < 100 U | -88.0 | 0.3 | 8.6 | 9.785 | 15.8 | 15 | -- | 156 | 1990 | -- | -- | -- | -- | -- |
| MW1C-4 | MW1C-4-15.5-20230130 | 1/30/2023 | 15.5 | N | 4602737381 | Treatment | Shallow | 123 | 265 | < 50.0 U | < 50.0 U | -92.5 | 1.04 | 6.61 | 3.096 | 17.2 | 15 | -- | 25.0 | 824 | -- | -- | -- | -- | -- |
| MW1C-4 | MW1C-4-15.5-20230227 | 2/27/2023 | 15.5 | N | 4602753411 | Treatment | Shallow | 190 | 10500 | < 10.0 U | 4470 | -91.4 | 8.5 | 6.73 | 1.832 | 15.9 | 9 | -- | 27.6 | 972 | -- | -- | -- | -- | -- |
| MW1C-4 | MW1C-4-15.5-20230322 | 3/22/2023 | 15.5 | N | 4602768001 | Treatment | Shallow | -- | 572 | -- | < 20.0 U | -106.2 | 2.38 | 6.79 | 2.936 | 14.31 | 8.89 | -- | 32.3 | 847 | -- | -- | -- | -- | -- |
| MW1C-4 | MW1C-4-15.5-20230424 | 4/24/2023 | 15.5 | N | 4602787991 | Treatment | Shallow | -- | 287 | -- | < 50.0 U | -17.7 | 0.27 | 6.68 | 2.802 | 16.87 | 2.56 | -- | 27.4 | 985 | -- | -- | -- | -- | -- |
| MW1C-4 | MW1C-4-15.5-20230512 | 5/12/2023 | 15.5 | N | 4602802081 | Treatment | Shallow | -- | 864 | -- | < 20.0 U | -78.0 | 0.24 | 7.04 | 3.149 | 20.84 | 7.77 | -- | 40.1 | 1280 | -- | -- | -- | -- | -- |
| MW1C-4 | MW1C-4-15.5-20230620 | 6/20/2023 | 15.5 | N | 4602827171 | Treatment | Shallow | -- | 527 | -- | < 10.0 U | -112.7 | 0.99 | 6.72 | 0.952 | 20.1 | 4.09 | -- | 20.6 | 632 | -- | -- | -- | -- | -- |
| MW1C-4 | MW1C-4-15.5-20230714 | 7/14/2023 | 15.5 | N | 4602842251 | Treatment | Shallow | -- | 691 | -- | < 20.0 U | -36 | 0.13 | 6.59 | 3.267 | 21.07 | 5.39 | -- | 27.4 | 1200 | -- | -- | -- | -- | -- |
| MW1C-4 | MW1C-4-15.5-20230823 | 8/23/2023 | 15.5 | N | 4602867511 | Treatment | Shallow | -- | 364 | -- | < 50.0 U | -169.8 | 0.19 | 7.03 | 6.396 | 21.49 | 9.45 | -- | 75.1 | 2030 | -- | -- | -- | -- | -- |
| MW1C-4 | MW1C-4-15.5-20230915 | 9/15/2023 | 15.5 | N | 4602882761 | Treatment | Shallow | -- | 167 | -- | < 10.0 U | -75.1 | 0.74 | 6.84 | 3.973 | 21.81 | 8.79 | -- | 28.1 | 1060 | -- | -- | -- | -- | -- |
| MW1C-4 | MW1C-4-15.5-20231011 | 10/11/2023 | 15.5 | N | 4602901161 | Treatment | Shallow | -- | 124 | -- | < 10.0 UH | -25.9 | 3.42 | 7 | 3.153 | 20.02 | 1.69 | -- | 22.6 | 1130 | -- | -- | -- | -- | -- |
| MW1C-4 | MW1C-4-15.5-20231113 | 11/13/2023 | 15.5 | N | JD76852 | Treatment | Shallow | -- | 117 | -- | < 10 U | -124.9 | 0.3 | 7.22 | 3.411 | 17.7 | 3 | -- | 22.6 | 1350 | -- | -- | -- | -- | -- |
| MW1C-4 | MW1C-4-15.5-20231213 | 12/13/2023 | 15.5 | N | JD78776 | Treatment | Shallow | -- | 82.8 | -- | 16 | 95.9 | 0.2 | 6.51 | 3.154 | 15.3 | 2.14 | -- | 22.9 | 1280 | -- | -- | -- | -- | -- |
| MW1C-4 | MW1C-4-15.5-20240122 | 1/22/2024 | 15.5 | N | JD80935 | Treatment | Shallow | -- | 150 | -- | 97 | -198.3 | 0.13 | 6.65 | 3.533 | 14.7 | 4.51 | -- | 28.8 | 1380 | -- | -- | -- | -- | -- |
| MW1C-4 | MW1C-4-15.5-20240223 | 2/23/2024 | 15.5 | N | JD83100 | Treatment | Shallow | -- | 205 | -- | 41 | -231.3 | 0.27 | 7.21 | 4.76 | 14.2 | 9.2 | -- | 34.6 | 1640 | -- | -- | -- | -- | -- |
| MW1C-4 | MW1C-4-15.5-20240314 | 3/14/2024 | 15.5 | N | JD84495 | Treatment | Shallow | -- | 639 | -- | 4.9 B | -192.9 | 0.03 | 7.07 | 5.71 | 17.1 | 8.02 | -- | 44.1 | 1770 | -- | -- | -- | -- | -- |
| MW1C-4 | MW1C-4-7.5-20240416 | 4/16/2024 | 7.5 | N | JD86606 | Post-Treatment | Shallow | -- | 53.4 | -- | < 10 U | -184.4 | 0.29 | 6.5 | 1.965 | 16.3 | 2.52 | -- | 6.7 J+ | 653 | < 2.0 U | -- | -- | -- | -- |
| MW1C-4 | MW1C-4-12.5-20240416 | 4/16/2024 | 12.5 | N | JD86606 | Post-Treatment | Shallow | -- | 173 | -- | 42 | -213.4 | 0.21 | 6.79 | 4.171 | 16 | 3.98 | -- | 41.8 | 1250 | < 2.0 U | -- | -- | -- | -- |
| MW1C-4 | MW1C-4-12.5-20240717 | 7/17/2024 | 12.5 | N | JD92334 | Post-Treatment | Shallow | -- | 60.1 | -- | 39 J | -115.5 | 4.99 | 6.55 | 2.661 | 19.5 | 1.55 | -- | 27.6 J | 1020 | -- | -- | -- | -- | -- |
| MW1C-4 | MW1C-4-12.5-20240717-X | 7/17/2024 | 12.5 | FD | JD92334 | Post-Treatment | Shallow | -- | 71.3 | -- | 23 J | -- | -- | -- | -- | -- | -- | -- | 17.1 J | 1060 | -- | -- | -- | -- | -- |
| MW1C-4 | MW1C-4-12.5-20241010 | 10/10/2024 | 12.5 | N | JD97909 | Post-Treatment | Shallow | -- | 43.4 | -- | 36 | -133.8 | 0.17 | 6.5 | 2.55 | 18.8 | 0.78 | -- | 10.4 J+ | 943 | -- | -- | -- | -- | -- |
| 114-MW22BR | 114-MW22BR-28.5-20200720 | 7/20/2020 | 29.5 | N | JD10357 | N/A | Intermediate | 17900 | 18900 | 18000 | 18600 | 226.70 | 1.75 | 6.80 | 1.27 | 18.96 | 8.74 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW22BR | 114-MW22BR-27.8-20210914 | 9/14/2021 | 27.8 | N | 4602427561 | Baseline | Intermediate | 9490 | 9400 | 12100 | 9210 | -- | -- | -- | -- | -- | -- | -- | 2.2 | 323 | < 1.0 U | 210 | < 120 U | 59.5 | -- |
| 114-MW22BR | 114-MW22BR-27.8-20211116 | 11/16/2021 | 27.8 | N | 4602474031 | Treatment | Intermediate | 8760 | 9130 | 7510 | 8960 | 145.50 | 2.50 | 7.56 | 1.25 | 15.79 | 7.59 | -- | 2.1 | 242 F1 | -- | 170 F1 | -- | -- | -- |
| 114-MW22BR | 114-MW-22BR-27.8-20211221 | 12/21/2021 | 27.8 | N | 4602495851 | Treatment | Intermediate | 9370 | 8870 | 9340 | 9120 | 166.10 | 0.12 | 6.98 | 1.47 | 13.77 | 6.28 | -- | 4.6 | 230 | -- | 280 | -- | -- | -- |
| 114-MW22BR | 114-MW22BR-27.8-20220120 | 1/20/2022 | 27.8 | N | 4602510021 | Treatment | Intermediate | 5690 | 6340 | 4980 | 5150 | 175.70 | 0.20 | 6.90 | 1.57 | 13.21 | 6.53 | -- | 8.0 | 169 F1 | -- | 270 | -- | -- | -- |
| 114-MW22BR | 114-MW22BR-27.8-20220223 | 2/23/2022 | 27.8 | N | 4602530771 | Treatment | Intermediate | 2900 | 2790 | 2790 | 2470 | 132.60 | 0.72 | 7.10 | 1.77 | 15.00 | 6.21 | -- | 14.0 | 129 F1 | -- | 220 | -- | -- | -- |
| 114-MW22BR | 114-MW22BR-27.8-20220322 | 3/22/2022 | 27.8 | N | 4602547911 | Treatment | Intermediate | 3160 | 3480 | 2930 | 3110 | 107.60 | 0.40 | 6.96 | 1.61 | 15.29 | 4.55 | -- | 11.6 ^2 | 107 | -- | 280 | -- | -- | -- |
| 114-MW22BR | 114-MW22BR-27.8-20220421 | 4/21/2022 | 27.8 | N | 4602567031 | Treatment | Intermediate | 1780 | 1870 | 1690 F1 | 1880 | 122.3 | 0.57 | 6.89 | 1.83 | 12.03 | 5.91 | -- | 18.6 | 79.7 F1 | -- | 250 | 82.5 J | 7570 | -- |
| 114-MW22BR | 114-MW22BR-27.8-20220517 | 5/17/2022 | 27.8 | N | 4602582941 | Treatment | Intermediate | 1410 | 1940 | 1160 | 1370 | 115.1 | 2.71 | 6.76 | 2.003 | 16.57 | 5.78 | -- | 28.2 | 68.8 | -- | -- | -- | -- | -- |
| 114-MW22BR | 114-MW-22BR-27.8-20220518 | 5/18/2022 | 27.8 | N | 4602583551 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 420 | -- | -- | -- |
| 114-MW22BR | 114-MW22BR-27.8-20220615 | 6/15/2022 | 27.8 | N | 4602601501 | Treatment | Intermediate | -- | 2530 | -- | 1420 | 40.6 | 0.18 | 7.11 | 1.801 | 17.01 | 6.29 | -- | 29.3 | 55.8 | -- | -- | -- | -- | -- |
| 114-MW22BR | 114-MW22BR-27.8-20220615-X | 6/15/2022 | 27.8 | FD | 4602601501 | Treatment | Intermediate | -- | 2130 | -- | 1280 | -- | -- | -- | -- | -- | -- | -- | 29.0 | 65.4 | -- | -- | -- | -- | -- |
| 114-MW22BR | 114-MW22BR-27.8-20220718 | 7/18/2022 | 27.8 | N | 4602621141 | Treatment | Intermediate | -- | 1380 | -- | < 50.0 U | 178.1 | 0.96 | 6.56 | 1.946 | 19.18 | 6.99 | -- | 797 | 30.2 | -- | -- | -- | -- | -- |
| 114-MW22BR | 114-MW22BR-27.8-20220823 | 8/23/2022 | 27.8 | N | 4602642801 | Treatment | Intermediate | -- | 979 | -- | < 10.0 U | -93.6 | 1.79 | 7.00 | 2.102 | 19.76 | 9.0 | -- | 51.6 | 34.0 | -- | -- | -- | -- | -- |
| 114-MW22BR | 114-MW22BR-28.5-20220907 | 9/7/2022 | 28.5 | N | 4602650311 | N/A | Intermediate | 31.1 | 911 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW22BR | 114-MW22BR-27.8-20220919 | 9/19/2022 | 27.8 | N | 4602658321 | Treatment | Intermediate | -- | 106 | -- | 103 | 19.3 | 6.52 | 7.35 | 0.766 | 20.96 | 3.23 | -- | 3.2 | 276 | -- | -- | -- | -- | -- |
| 114-MW22BR | 114-MW22BR-27.8-20221013 | 10/13/2022 | 27.8 | N | 4602674321 | Treatment | Intermediate | -- | 1880 | -- | 1630 | 156.8 | 1.05 | 7.02 | 1.224 | 18.58 | 6.54 | -- | 5.2 | 98.1 | -- | -- | -- | -- | -- |
| 114-MW22BR | 114-MW22BR-27.8-20221013-X | 10/13/2022 | 27.8 | FD | 4602674321 | Treatment | Intermediate | -- | 3010 | -- | 2390 | -- | -- | -- | -- | -- | -- | -- | 6.5 | 110 | -- | -- | -- | -- | -- |
| 114-MW22BR | 114-MW22BR-27.8-20221111 | 11/1/2022 | 27.8 | N | 4602693491 | Treatment | Intermediate | -- | 5210 | -- | 7890 | 115.6 | 1.44 | 6.85 | 1.586 | 18.71 | 7.65 | -- | 6.7 | 98.5 | -- | -- | -- | -- | -- |
| 114-MW22BR | 114-MW22BR-27.8-20221214 | 12/14/2022 | 27.8 | N | 4602713561 | Treatment | Intermediate | -- | 949 | -- | 487 | 182.9 | 0.74 | 7.02 | 0.788 | 13.98 | 5.91 | -- | 3.8 | 59.8 | -- | -- | -- | -- | -- |
| 114-MW22BR | 114-MW22BR-27.8-20230119 | 1/19/2023 | 27.8 | N | 4602732351 | Treatment | Intermediate | -- | 103 | -- | 75.5 | 134.7 | 2.99 | 11.26 | 0.458 | 11.41 | 9.8 | -- | 1.2 | 4.06 | -- | -- | -- | -- | -- |
| 114-MW22BR | 114-MW22BR-27.8-20230223 | 2/23/2023 | 27.8 | N | 4602751411 | Treatment | Intermediate | -- | 978 | -- | 1360 | 137.3 | 5.52 | 7.86 | 0.836 | 12.80 | 9.41 | -- | 4.0 F1 | 69.6 | -- | -- | -- | -- | -- |
| 114-MW22BR | 114-MW22BR-27.8-20230322 | 3/22/2023 | 27.8 | N | 4602768001 | Treatment | Intermediate | 1440 | 1490<br>1580 | 1250 | 1140 | 26.5 | 3.18 | 7.13 | 0.73 | 14.40 | 8 | -- | 3.5 | 50.5 | -- | -- | -- | -- | -- |
| 114-MW22BR | 114-MW22BR-27.8-20230417 | 4/17/2023 | 27.8 | N | 4602783601 | Treatment | Intermediate | -- | 158 | -- | 136 | 113.4 | 0.96 | 6.92 | 1.246 | 15.60 | 8.5 | -- | 3.3 | 109 | -- | -- | -- | -- | -- |
| 114-MW22BR | 114-MW22BR-27.8-20230509 | 5/9/2023 | 27.8 | N | 4602799431 | Treatment | Intermediate | -- | 35.4 | -- | 14.0 | 48.0 | 2.32 | 7.42 | 0.347 | 17.30 | 6.54 | -- | 2.3 | 32.5 | -- | -- | -- | -- | -- |
| 114-MW22BR | 114-MW22BR-27.8-20230620 | 6/20/2023 | 27.8 | N | 4602827171 | Treatment | Intermediate | -- | 79.6 | -- | < 10.0 U | -131.8 | 0.85 | 7.49 | 0.378 | 18.10 | 2.45 | -- | 1.5 | 27.5 | -- | -- | -- | -- | -- |
| 114-MW22BR | 114-MW22BR-27.8-20230713 | 7/13/2023 | 27.8 | N | 4602841571 | Post-Treatment | Intermediate | -- | 34.4 | -- | < 10.0 U | -37.4 | 1.94 | 6.87 | 0.363 | 22.76 | 6.67 | -- | 1.5 | 42.4 | < 1 U | -- | -- | -- | -- |
| 114-MW22BR | 114-MW22BR-27.8-20231018 | 10/18/2023 | 27.8 | N | 4602906421 | Post-Treatment | Intermediate | -- | 1430 | -- | 744 | -1 | 0.56 | 7.04 | 1.052 | 18.4 | 6.13 | -- | 7.2 | 79.7 | -- | -- | -- | -- | -- |
| 114-MW22BR | 114-MW22BR-27.8-20240122 | 1/22/2024 | 27.8 | N | JD80934 | Post-Treatment | Intermediate | -- | 309 J | -- | 500 J | -13.9 | 0.98 | 7.17 | 0.4215 | 12.5 | 6.96 | -- | 0.92 J | 61.8 | -- | -- | -- | -- | -- |
| 114-MW22BR | 114-MW22BR-28.0-20240416 | 4/16/2024 | 28 | N | JD86606 | Post-Treatment | Intermediate | -- | 210 | -- | 200 | 32.1 | 0.29 | 6.56 | 1.659 | 16.7 | 5.22 | -- | 8.6 J+ | 150 | < 2.0 U | -- | -- | -- | -- |
| 114-MW22BR | 114-MW22BR-28.0-20240715 | 7/15/2024 | 28 | N | JD92183 | Post-Treatment | Intermediate | -- | 1240 J- | -- | 1300 J- | 83.3 | 1.2 | 7.08 | 1.159 | 20.8 | 8.48 | -- | 1.8 | 200 J+ | -- | -- | -- | -- | -- |
| 114-MW22BR | 114-MW22BR-28.0-20241008 | 10/8/2024 | 28 | N | JD97686 | Post-Treatment | Intermediate | -- | 2050 | -- | 1900 | 163.7 | 0.21 | 6.83 | 1.26 | 18.2 | 1.35 | -- | 1.6 J+ | 207 J- | -- | -- | -- | -- | -- |
| 114-MW24B | FORREST-114-MW24B-20171207 | 12/7/2017 | 32.2 | N | JC56859 | N/A | Intermediate | -- | -- | -- | 152000 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW24B | FORREST-114-MW24B-20171207 | 12/7/2017 | 32.2 | N | JC56859A | N/A | Intermediate | -- | 190000 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW24B | 114-MW24B-20180312 | 3/12/2018 | 32.2 | N | JC62130 | N/A | Intermediate | -- | 3.5 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW24B | 114-MW-24B-32.5-20200330 | 3/30/2020 | 32.5 | N | JD5344 | N/A | Intermediate | -- | 3.8 J | -- | < 10 U | 47.7 | 4.17 | 7.26 | 1.174 | 14.29 | 2.47 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW24B | 114-MW-24B-32.5-20200330X | 3/30/2020 | 32.5 | FD | JD5344 | N/A | Intermediate | -- | 3.8 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW24B | 114-MW24B-32.5-20211005 | 10/5/2021 | 32.5 | N | 4602443541 | Baseline | Intermediate | < 4.0 U | < 4.0 U | < 10.0 UJ | < 10.0 UJ | 10.20 | 0.63 | 7.98 | 0.64 | 17.65 | 9.50 | -- | 2.4 | 86.2 | < 1.0 U | < 5.0 U | < 120 U | 4.9 J | -- |
| 114-MW24B | 114-MW24B-32.5-20220427 | 4/27/2022 | 32.5 | N | 4602570871 | Treatment | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | 104.2 | 3.08 | 6.55 | 0.018 | 15.32 | 3.28 | -- | < 1.0 U | < 0.48 U | -- | < 5.0 U | -- | -- | -- |
| 114-MW24B | 114-MW24B-32.5-20220519 | 5/19/2022 | 32.5 | N | 4602584291 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | 131.2 | 0.26 | 8.18 | 0.411 | 14.97 | 5.54 | -- | 0.95 J | 1.75 J | -- | -- | -- | -- | -- |
| 114-MW24B | 114-MW24B-32.5-20220613 | 6/13/2022 | 32.5 | N | 4602600101 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | 173.6 | 0.87 | 6.26 | 0.230 | 18.15 | 3.41 | -- | 2.5 | 6.36 | -- | -- | -- | -- | -- |
| 114-MW24B | 114-MW24B-32.5-20220613-X | 6/13/2022 | 32.5 | FD | 4602600101 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 2.5 | 0.97 | -- | -- | -- | -- | -- |
| 114-MW24B | 114-MW24B-32.5-20220719 | 7/19/2022 | 32.5 | N | 4602621891 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -20.4 | 0.28 | 6.45 | 0.111 | 19.55 | 8.55 | -- | 5.0 | < 0.48 U | -- | -- | -- | -- | -- |
| 114-MW24B | 114-MW24B-32.5-20220823 | 8/23/2022 | 32.5 | N | 4602642801 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | 16.3 | 0.71 | 6.70 | 0.075 | 20.66 | 9.03 | -- | 16.0 | 3.04 | -- | -- | -- | -- | -- |
| 114-MW24B | 114-MW24B-32.5-20220922 | 9/22/2022 | 32.5 | N | 4602660731 | Treatment | Intermediate | -- | 156 | -- | < 10.0 U | 138.2 | 0.57 | 6.11 | 0.04 | 21.94 | 7.16 | -- | 3.4 | 2.55 | -- | -- | -- | -- | -- |
| 114-MW24B | 114-MW24B-32.5-20220922-X | 9/22/2022 | 32.5 | FD | 4602660731 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 2.8 | 1.37 | -- | -- | -- | -- | -- |
| 114-MW24B | 114-MW24B-32.5-20221018 | 10/18/2022 | 32.5 | N | 4602677121 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | 97.7 | 2.5 | 6.2 | 0.033 | 19.23 | 8.46 | -- | 2.4 | 1.87 | -- | -- | -- | -- | -- |
| 114-MW24B | 114-MW24B-32.5-20221115 | 11/15/2022 | 32.5 | N | 4602695881 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | 73.0 | 1.75 | 6.75 | 33 | 17 | 2.61 | -- | 2.1 | 1.21 | -- | -- | -- | -- | -- |
| 114-MW24B | 114-MW24B-32.5-20221216 | 12/16/2022 | 32.5 | N | 4602715551 | Treatment | Intermediate | -- | 2.9 J | -- | < 10.0 U | -57.4 | 10.31 | 6.52 | 7 | 12.58 | 6.02 | -- | 0.69 J | 0.17 J | -- | -- | -- | -- | -- |
| 114-MW24B | 114-MW24B-32.5-20230126 | 1/26/2023 | 32.5 | N | 4602735991 | Treatment | Intermediate | -- | 4.2 | -- | < 10.0 U | 146.5 | 8.74 | 6.62 | 0.008 | 11.5 | 3.55 | -- | 0.49 J | 0.32 J | -- | -- | -- | -- | -- |
| 114-MW24B | 114-MW24B-32.5-20230227 | 2/27/2023 | 32.5 | N | 4602753411 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | 153.7 | 2.61 | 6.36 | 0.016 | 13.64 | 3.03 | -- | 1.4 F1 | 1.01 | -- | -- | -- | -- | -- |
| 114-MW24B | 114-MW24B-32.5-20230323 | 3/23/2023 | 32.5 | N | 4602768891 | Treatment | Intermediate | -- | 6.2 | -- | < 10.0 U | 144.2 | 6.53 | 6.42 | 0.543 | 13.18 | 9.54 | -- | 1.3 | 4.08 | -- | -- | -- | -- | -- |
| 114-MW24B | 114-MW24B-32.5-20230420 | 4/20/2023 | 32.5 | N | 4602786061 | Treatment | Intermediate | -- | 31.4 | -- | 30.9 | 70.8 | 2.53 | 6.27 | 0.396 | 15.63 | 7.6 | -- | 1.3 | 32.2 | -- | -- | -- | -- | -- |
| 114-MW24B | 114-MW24B-32.5-20230516 | 5/16/2023 | 32.5 | N | 4602803921 | Treatment | Intermediate | < 4.0 U | 10.5 | < 10.0 U | < 10.0 U | 460.0 | 0.55 | 5.54 | 0.065 | 18 | 27.1 | -- | 0.68 J | 2.20 J | -- | -- | -- | -- | -- |
| 114-MW24B | 114-MW24B-32.5-20230619 | 6/19/2023 | 32.5 | N | 4602826571 | Treatment | Intermediate | -- | 5.6 | -- | < 10.0 U | 7.9 | 1.89 | 5.61 | 0.113 | 20.22 | 8.55 | -- | 11.4 | 2.99 | -- | -- | -- | -- | -- |
| 114-MW24B | 114-MW24B-32.5-20230713 | 7/13/2023 | 32.5 | N | 4602841571 | Post-Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | 6.7 | 0.55 | 5.06 | 0.047 | 21.68 | 4.55 | -- | 10.2 | 1.59 | < 1 U | -- | -- | -- | -- |
| 114-MW24B | 114-MW24B-32.5-20231012 | 10/12/2023 | 32.5 | N | 4602902271 | Post-Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | 28.7 | 0.56 | 4.06 | 0.069 | 21.17 | 9.83 | -- | 16.8 | 1.09 | -- | -- | -- | -- | -- |
| 114-MW24B | 114-MW24B-32.5-20240124 | 1/24/2024 | 32.5 | N | JD81089 | Post-Treatment | Intermediate | -- | < 10 U | -- | < 10 U | -153.9 | 0.15 | 6.48 | 2.878 | 13.5 | 10.7 | -- | 6.7 | 2.8 | -- | -- | -- | -- | -- |
| 114-MW24B | 114-MW24B-32.5-20240409 | 4/9/2024 | 32.5 | N | JD86110 | Post-Treatment | Intermediate | -- | < 10 U | -- | < 10 U | 195.2 | 4.18 | 5.55 | 0.0179 | 15.7 | 2.16 | -- | < 1.0 U | 1.3 J | -- | -- | -- | -- | -- |
| 114-MW24B | 114-MW24B-32.5-20240725 | 7/25/2024 | 32.5 | N | JD92814 | Post-Treatment | Intermediate | -- | < 10 UB | -- | < 10 U | -122.5 | 0.26 | 6.31 | 0.048 | 22.8 | 9.34 | -- | 8.8 | 2.1 | -- | -- | -- | -- | -- |
| 114-MW24B | 114-MW24B-32.5-20241009 | 10/9/2024 | 32.5 | N | JD97776 | Post-Treatment | Intermediate | -- | 3.9 J | -- | 4.6 J- | -102.8 | 0.26 | 6.62 | 0.15 | 21.2 | 2.89 | -- | 11.0 | 7.6 | -- | -- | -- | -- | -- |
| 114-MW26B | 114-MW26B-20180313 | 3/13/2018 | 35.2 | N | JC62228 | N/A | Intermediate | < 10 U | 5.0 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 100 U | 33.8 | -- |
| 114-MW26B | 114-MW26B-20180313X | 3/13/2018 | 35.2 | FD | JC62228 | N/A | Intermediate | < 10 U | 2.4 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 100 U | 38.8 | -- |
| 114-MW26B | 114-MW26B-35.5-20210915 | 9/15/2021 | 35.5 | N | 4602428441 | Baseline | Intermediate | 5.2 | < 4.0 U | < 10.0 U | < 10.0 U | -129.00 | 0.66 | 7.44 | 0.33 | 19.40 | 7.70 | -- | 9.3 | 9.66 | < 1.0 U | 130 | 1070 | 518 | -- |
| 114-MW26B | 114-MW26B-35.5-20220301 | 3/1/2022 | 35.5 | N | 4602534221 | Baseline | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -132.50 | 0.05 | 7.54 | 0.62 | 13.35 | 9.90 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW26B | 114-MW26B-35.5-20220427 | 4/27/2022 | 35.5 | N | 4602570871 | Treatment | Intermediate | < 4.0 U | 5.7 | < 10.0 U | < 10.0 U | -69.7 | 0.23 | 7.54 | 0.723 | 16.04 | 9.5 | -- | 83.3 | 63.8 | -- | 480 | -- | -- | -- |
| 114-MW26B | 114-MW26B-35.0-20220519 | 5/19/2022 | 35 | N | 4602584291 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -84.5 | 0.12 | 6.64 | 0.335 | 15.65 | 8.23 | -- | 23.6 | 31.0 | -- | -- | -- | -- | -- |
| 114-MW26B | 114-MW26B-35.5-20220613 | 6/13/2022 | 35.5 | N | 4602600101 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -140.8 | 0.26 | 6.67 | 0.280 | 19.1 | 8.12 | -- | 24.4 | 7.47 | -- | -- | -- | -- | -- |
| 114-MW26B | 114-MW26B-35.5-20220719 | 7/19/2022 | 35.5 | N | 4602621891 | Treatment | Intermediate | -- | 7.8 | -- | < 10.0 U | 144.1 | 0.35 | 8.79 | 0.728 | 19.22 | 4.28 | -- | 41.1 | 42.7 | -- | -- | -- | -- | -- |

https://aecom.sharepoint.com/sites/PPG/Shared Documents/Groundwater/500_Deliverables/RAPRs/2024-Q4/00_Report Components/Appendices/Appendix A - Analytical Results/excels/Appendix

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-MW26B | 114-MW26B-35.5-20220822 | 8/22/2022 | 35.5 | N | 4602642131 | Treatment | Intermediate | -- | 4.4 | -- | < 10.0 U | -62.9 | 0.98 | 7.25 | 0.549 | 20.21 | 9.71 | -- | 34.6 | 13.9 | -- | -- | -- | -- | -- |
| 114-MW26B | 114-MW26B-35.5-20220922 | 9/22/2022 | 35.5 | N | 4602660731 | Treatment | Intermediate | -- | 5.5 | -- | < 10.0 U | -138.5 | 0.72 | 6.67 | 0.490 | 19.53 | 9.91 | -- | 36.0 | 5.56 | -- | -- | -- | -- | -- |
| 114-MW26B | 114-MW26B-35.5-20221216 | 12/16/2022 | 35.5 | N | 4602715551 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | 156.6 | 9.39 | 6.52 | 22 | 10.73 | 9.36 | -- | 3.5 | 0.48 | -- | -- | -- | -- | -- |
| 114-MW26B | 114-MW26B-35.5-20230126 | 1/26/2023 | 35.5 | N | 4602735991 | Treatment | Intermediate | 7.4 | 9.2 | < 10.0 U | < 10.0 U | -31.4 | 0.89 | 6.33 | 0.092 | 11.5 | 200 | -- | 3.0 | 2.08 | -- | -- | -- | -- | -- |
| 114-MW26B | 114-MW26B-35.5-20230323 | 3/23/2023 | 35.5 | N | 4602768691 | Treatment | Intermediate | < 4.0 U | 3.5 J | < 10.0 U | < 10.0 U | -118.7 | 0.3 | 6.9 | 0.777 | 14.8 | 15.1 | -- | 14.7 | 29.5 | -- | -- | -- | -- | -- |
| 114-MW26B | 114-MW26B-35.5-20230619 | 6/19/2023 | 35.5 | N | 4602826571 | Treatment | Intermediate | 3.5 J | 10.9 | < 10.0 U | < 10.0 U | -149.7 | 1.69 | 6.12 | 0.994 | 19.01 | 64 | -- | 261 | 1.81 J | -- | -- | -- | -- | -- |
| 114-MW26B | 114-MW26B-35.5-20230713 | 7/13/2023 | 35.5 | N | 4602841571 | Post-Treatment | Intermediate | 9.5 | 16.6 | < 10.0 U | < 10.0 U | -115.2 | 8.48 | 5.33 | 1.652 | 21.11 | 88.5 | -- | 380 | 11.6 | < 1 U | -- | **14800** | **470** | -- |
| 114-MW26B | 114-MW26B-35.5-20231012 | 10/12/2023 | 35.5 | N | 4602902271 | Post-Treatment | Intermediate | 3.0 J | 16.7 | < 10.0 U | < 10.0 U | -130.4 | 0.21 | 6.16 | 0.787 | 17.56 | 79.4 | -- | 163 | 1.99 J | -- | -- | -- | -- | -- |
| 114-MW26B | 114-MW26B-35.5-20240313 | 3/13/2024 | 35.5 | N | JD84390 | Post-Treatment | Intermediate | 4.2 J | 12.0 | < 10 U | < 10 U | -221 | 0.19 | 6.42 | 3.456 | 16.4 | 41.2 | -- | 147 | 5.1 | -- | -- | -- | -- | -- |
| 114-MW26B | 114-MW26B-35.5-20240409 | 4/10/2024 | 35.5 | N | JD86110 | Post-Treatment | Intermediate | < 10 U | 3.9 J | < 10 U | < 10 U | -244.3 | 0.13 | 6.75 | 2.65 | 19.6 | 22 | -- | 145 | 11.5 | -- | -- | **5120** | **1850** | -- |
| 114-MW26B | 114-MW26B-35.5-20240726 | 7/26/2024 | 35.5 | N | JD92935 | Post-Treatment | Intermediate | < 10 U | 3.7 J | < 10 U | < 10 U | -310.5 | 0.2 | 6.85 | 1.226 | 22.2 | 7.84 | -- | 72.9 | 7.9 J+ | -- | -- | -- | -- | -- |
| 114-MW26B | 114-MW26B-35.5-20241009 | 10/9/2024 | 35.5 | N | JD97776 | Post-Treatment | Intermediate | < 10 U | 59.4 | < 10 UJ | 6.9 J- | -407.3 | 0.07 | 6.6 | 1.02 | 19.8 | 66.5 | -- | 38.1 | 17.7 | -- | -- | -- | -- | -- |
| 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | 12/6/2017 | 35.4 | N | JC56729 | N/A | Intermediate | -- | -- | -- | **8800** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206 | 12/6/2017 | 35.4 | N | JC56729A | N/A | Intermediate | -- | **9940** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | 12/6/2017 | 35.4 | FD | JC56729 | N/A | Intermediate | -- | -- | -- | **9300** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW2B1-2I | FORREST-114-MW2B1-2I-20171206X | 12/6/2017 | 35.4 | FD | JC56729A | N/A | Intermediate | -- | **9930** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW2B1-2I | 114-MW2B1-2I-35.5-20200330 | 3/30/2020 | 35.5 | N | JD5344 | N/A | Intermediate | -- | **4660** | -- | **5100** | 114.4 | 0.79 | 7.18 | 2.199 | 14.4 | 1.8 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW2B1-2I | 114-MW2B1-2I-35.5-20200330X | 3/30/2020 | 35.5 | FD | JD5344 | N/A | Intermediate | -- | **4730** | -- | **4900** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW2B1-2I | 114-MW2B1-2I-35.5-20210917 | 9/17/2021 | 35.5 | N | 4602430721 | Baseline | Intermediate | **3540** | **3610** | **3450** | **3510** | 162.00 | 1.25 | 6.60 | 1.91 | 15.98 | 6.15 | -- | 2.6 JB | **667** | < 1.0 U | 650 | < 120 U | **163** | -- |
| 114-MW2B1-2I | 114-MW2B1-2I-35.5-20220825 | 8/25/2022 | 35.5 | N | 4602644081 | Treatment | Intermediate | -- | **334** | -- | **282** | 125.3 | 1.04 | 7.11 | 1.781 | 18.35 | 1.80 | -- | 3.8 | **438** | -- | -- | -- | -- | -- |
| 114-MW2B1-2I | 114-MW2B1-2I-35.5-20220922 | 9/22/2022 | 35.5 | N | 4602660731 | Treatment | Intermediate | -- | **342** | -- | **412** | 128.5 | 3.88 | 7.11 | 1.763 | 17.89 | 4.66 | -- | 3.6 | **411** | -- | -- | -- | -- | -- |
| 114-MW2B1-2I | 114-MW2B1-2I-35.5-20221019 | 10/19/2022 | 35.5 | N | 4602677971 | Treatment | Intermediate | -- | **300** | -- | **190** | 70.2 | 2.38 | 6.99 | 1.609 | 15.29 | 7.11 | -- | 2.8 F1 | **409** | -- | -- | -- | -- | -- |
| 114-MW2B1-2I | 114-MW2B1-2I-35.5-20221115 | 11/15/2022 | 35.5 | N | 4602695881 | Treatment | Intermediate | -- | **274** | -- | **167** | 64.6 | 0.7 | 7.02 | 1.124 | 14.4 | 8.66 | -- | 3.1 | **466** | -- | -- | -- | -- | -- |
| 114-MW2B1-2I | 114-MW2B1-2I-35.5-20221216 | 12/16/2022 | 35.5 | N | 4602715551 | Treatment | Intermediate | -- | **245** | -- | **178** | 109.0 | 7.94 | 7.09 | 1.377 | 13.63 | 5.6 | -- | 2.9 | **401** | -- | -- | -- | -- | -- |
| 114-MW2B1-2I | 114-MW2B1-2I-35.5-20230126 | 1/26/2023 | 35.5 | N | 4602735991 | Treatment | Intermediate | -- | **294** | -- | **218** | 96.0 | 1.2 | 7.31 | 1.685 | 12.81 | 8.94 | -- | 2.3 | **399** | -- | -- | -- | -- | -- |
| 114-MW2B1-2I | 114-MW2B1-2I-35.5-20230227 | 2/27/2023 | 35.5 | N | 4602753411 | Treatment | Intermediate | -- | **219** | -- | **156** | 150.5 | 3.55 | 7.11 | 1.215 | 12.9 | 9.09 | -- | 2.9 | **396** | -- | -- | -- | -- | -- |
| 114-MW2B1-2I | 114-MW2B1-2I-35.5-20230321 | 3/21/2023 | 35.5 | N | 4602767381 | Treatment | Intermediate | -- | **143** | -- | **99.4** | 150.7 | 0.5 | 7.01 | 1.269 | 15.1 | 8 | -- | 3.1 | **350** | -- | -- | -- | -- | -- |
| 114-MW2B1-2I | 114-MW2B1-2I-35.5-20230420 | 4/20/2023 | 35.5 | N | 4602786061 | Treatment | Intermediate | -- | 24.1 | -- | < 10.0 U | -80.1 | 8.37 | 6.98 | 1.264 | 16.2 | 4.9 | -- | 4.8 | **309** | -- | -- | -- | -- | -- |
| 114-MW2B1-2I | 114-MW2B1-2I-35.5-20230516 | 5/16/2023 | 35.5 | N | 4602803921 | Treatment | Intermediate | -- | 17.4 | -- | < 10.0 U | -81.6 | 0.59 | 6.95 | 1.3 | 20.2 | 1.42 | -- | 4.4 | 241 | -- | -- | -- | -- | -- |
| 114-MW2B1-2I | 114-MW2B1-2I-35.5-20230619 | 6/19/2023 | 35.5 | N | 4602826571 | Treatment | Intermediate | -- | 35.9 | -- | < 10.0 U | 85.9 | 0.74 | 6.96 | 0.95 | 19.3 | 3.1 | -- | 5.0 | 183 | -- | -- | -- | -- | -- |
| 114-MW2B1-2I | 114-MW2B1-2I-35.5-20230719 | 7/19/2023 | 35.5 | N | 4602845491 | Treatment | Intermediate | -- | 23.6 | -- | < 10.0 U | -418.5 | 0.15 | 8.21 | 1.317 | 13.8 | 1.28 | -- | 14.2 | 214 | -- | -- | -- | -- | -- |
| 114-MW2B1-2I | 114-MW2B1-2I-35.5-20230824 | 8/24/2023 | 35.5 | N | 4602868441 | Treatment | Intermediate | -- | 35.3 | -- | < 10.0 U | 32.6 | 0.83 | 6.91 | 1.01 | 17.75 | 3.08 | -- | 4.0 | 200 | -- | -- | -- | -- | -- |
| 114-MW2B1-2I | 114-MW2B1-2I-35.5-20230914 | 9/14/2023 | 35.5 | N | 4602882011 | Treatment | Intermediate | -- | 30.0 | -- | < 10.0 U | 100.2 | 0.87 | 6.04 | 1.366 | 20.92 | 4.03 | -- | 4.6 | 125 | -- | -- | -- | -- | -- |
| 114-MW2B1-2I | 114-MW2B1-2I-35.5-20231012 | 10/12/2023 | 35.5 | N | 4602902281 | Treatment | Intermediate | -- | 18.7 | -- | < 10.0 U | 67.6 | 2.15 | 7.2 | 1.063 | 16.43 | 2.29 | -- | 11.8 | 170 | -- | -- | -- | -- | -- |
| 114-MW2B1-2I | 114-MW2B1-2I-35.5-20231115 | 11/15/2023 | 35.5 | N | JD77052 | Treatment | Intermediate | -- | 24.5 | -- | < 10 U | 18.1 | 0.29 | 7.07 | 1.331 | 16.2 | 2.72 | -- | 7.0 | 158 | -- | -- | -- | -- | -- |
| 114-MW2B1-2I | 114-MW2B1-2I-35.5-20231219 | 12/19/2023 | 35.5 | N | JD79187 | Treatment | Intermediate | -- | 13.3 | -- | < 10 U | -30.4 | 0.22 | 6.87 | 1.133 | 13.9 | 1.19 | -- | 4.7 | 212 | -- | -- | -- | -- | -- |
| 114-MW2B1-2I | 114-MW2B1-2I-35.5-20240124 | 1/24/2024 | 35.5 | N | JD81088 | Treatment | Intermediate | -- | 14.8 | -- | < 10 U | -141.1 | 0.21 | 6.97 | 1.553 | 14.2 | 5.42 | -- | 7.1 | 172 | -- | -- | -- | -- | -- |
| 114-MW2B1-2I | 114-MW2B1-2I-35.5-20240221 | 2/21/2024 | 35.5 | N | JD82924 | Treatment | Intermediate | -- | 17.8 | -- | 7.9 B | -61.3 | 0.12 | 6.86 | 1.358 | 13.9 | 2.28 | -- | 9.5 | 120 | -- | -- | -- | -- | -- |
| 114-MW2B1-2I | 114-MW2B1-2I-35.5-20240315 | 3/15/2024 | 35.5 | N | JD84558 | Treatment | Intermediate | -- | 24.1 | -- | < 10 U | -74.7 | 0.29 | 6.86 | 1.36 | 16.6 | 2.95 | -- | 10.8 | 118 | -- | -- | -- | -- | -- |
| 114-MW2B1-2I | 114-MW2B1-2I-35.5-20240409 | 4/9/2024 | 35.5 | N | JD86110 | Post-Treatment | Intermediate | -- | 19.7 | -- | 8.6 J | -312.2 | 2.8 | 6.92 | 1.231 | 15.5 | 2.94 | -- | 10.4 | 126 | < 2.0 U | -- | -- | -- | -- |
| 114-MW2B1-2I | 114-MW2B1-2I-35.5-20240725 | 7/25/2024 | 35.5 | N | JD92814 | Post-Treatment | Intermediate | -- | 27.2 | -- | < 10 U | -137.2 | 0.26 | 6.99 | 1.152 | 18.5 | 7.32 | -- | 4.1 | 160 | -- | -- | -- | -- | -- |
| 114-MW2B1-2I | 114-MW2B1-2I-35.5-20241009 | 10/9/2024 | 35.5 | N | JD97776 | Post-Treatment | Intermediate | -- | 18.8 | -- | 9.2 J- | -110.2 | 0.25 | 6.82 | 1.36 | 16.6 | 4.26 | -- | 4.9 | 150 | -- | -- | -- | -- | -- |
| 114-MW36B | 114-MW36B-20190301 | 3/1/2019 | 32 | N | JC83670 | N/A | Intermediate | -- | 8.8 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW36B | 114-MW36B-32.5-20200402 | 4/2/2020 | 32.5 | N | JD5521 | N/A | Intermediate | -- | 13.0 | -- | < 10 U | 70.4 | 0.76 | 8.14 | 0.592 | 14.35 | 61.8 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW36B | 114-MW36B-32.5-20210915 | 9/15/2021 | 32.5 | N | 4602428441 | Baseline | Intermediate | 57.6 J | < 4.0 UJ | < 10.0 U | < 10.0 U | 8.80 | 0.29 | 7.67 | 0.45 | 19.29 | 53.50 | -- | < 1.0 UB | 114 | 1.1 | 18 | 94.8 J | **345** | -- |
| 114-MW36B | 114-MW36B-32-20220225 | 2/25/2022 | 32 | N | 4602532391 | Baseline | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | 115.90 | 0.61 | 8.45 | 0.43 | 13.27 | 9.57 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW36B | 114-MW36B-32.5-20220427 | 4/27/2022 | 32.5 | N | 4602570871 | Treatment | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | 4.8 | 0.8 | 7.99 | 0.444 | 11.82 | 2.01 | -- | 1.6 J | 94.2 | -- | 22 | -- | -- | -- |
| 114-MW36B | 114-MW36B-32.5-20220519 | 5/19/2022 | 32.5 | N | 4602584291 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | 23.7 | 0.62 | 7.55 | 1.319 | 15.19 | 9.6 | -- | 0.50 J | 84.8 | -- | -- | -- | -- | -- |
| 114-MW36B | 114-MW36B-32.5-20220614 | 6/14/2022 | 32.5 | N | 4602600641 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | 0.78 | 0.59 | 8.24 | 0.487 | 16.0 | 4.91 | -- | 0.57 J | 90.9 | -- | -- | -- | -- | -- |
| 114-MW36B | 114-MW36B-32.5-20220719 | 7/19/2022 | 32.5 | N | 4602621891 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -16.2 | 0.89 | 7.47 | 0.488 | 17.3 | 6.18 | -- | 0.76 J | 89.5 | -- | -- | -- | -- | -- |
| 114-MW36B | 114-MW36B-32.5-20220823 | 8/23/2022 | 32.5 | N | 4602642801 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | 49.6 | 0.77 | 7.88 | 0.507 | 18.94 | 7.06 | -- | 0.80 J | 89.4 | -- | -- | -- | -- | -- |
| 114-MW36B | 114-MW36B-32.5-20220922 | 9/22/2022 | 32.5 | N | 4602660731 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -43.6 | 0.59 | 7.8 | 0.581 | 19.27 | 7.61 | -- | 0.56 J | 113 | -- | -- | -- | -- | -- |
| 114-MW36B | 114-MW36B-32.5-20221216 | 12/16/2022 | 32.5 | N | 4602715551 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -119.7 | 0.19 | 8.15 | 0.593 | 14.84 | 8.12 | -- | 0.85 J | 154 | -- | -- | -- | -- | -- |
| 114-MW36B | 114-MW36B-32.5-20230323 | 3/23/2023 | 32.5 | N | 4602768691 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -12.1 | 1.42 | 7.09 | 0.587 | 14.09 | 6.33 | -- | 0.60 J | 110 | -- | -- | -- | -- | -- |
| 114-MW36B | 114-MW36B-32.5-20230619 | 6/19/2023 | 32.5 | N | 4602826571 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -73.1 | 0.66 | 7.85 | 0.555 | 20.1 | 9.87 | -- | < 1.0 U | 69.0 | -- | -- | -- | -- | -- |
| 114-MW36B | 114-MW36B-32.5-20230713 | 7/13/2023 | 32.5 | N | 4602841571 | Post-Treatment | Intermediate | -- | 23.4 J | -- | < 10.0 U | 19.9 | 0.57 | 7 | 0.547 | 20.52 | 3.39 | -- | 0.48 J | 88.6 | < 1 U | -- | -- | -- | -- |
| 114-MW36B | 114-MW36B-32.5-20230713-X | 7/13/2023 | 32.5 | FD | 4602841571 | Post-Treatment | Intermediate | -- | < 4.0 UJ | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | 85.8 | < 1 U | -- | -- | -- | -- |
| 114-MW36B | 114-MW36B-30.9-20231012 | 10/12/2023 | 30.9 | N | 4602902271 | Post-Treatment | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -44 | 0.26 | 7.71 | 0.553 | 18.68 | 24.2 | -- | 0.52 J | 90.0 | -- | -- | -- | -- | -- |
| 114-MW36B | 114-MW36B-32.5-20240124 | 1/24/2024 | 32.5 | N | JD81089 | Post-Treatment | Intermediate | -- | < 10 U | -- | < 10 U | -255 | 0.4 | 7.95 | 0.532 | 13 | 9.35 | -- | < 1.0 U | 107 | -- | -- | -- | -- | -- |
| 114-MW36B | 114-MW36B-32.5-20240124-X | 1/24/2024 | 32.5 | FD | JD81089 | Post-Treatment | Intermediate | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | 107 | -- | -- | -- | -- | -- |
| 114-MW36B | 114-MW36B-32.5-20240409 | 4/9/2024 | 32.5 | N | JD86110 | Post-Treatment | Intermediate | -- | < 10 U | -- | < 10 U | 31.9 | 0.71 | 7.89 | 0.588 | 16.2 | 4.99 | -- | 1.4 | 102 | -- | -- | -- | -- | -- |
| 114-MW36B | 114-MW36B-32.5-20240409-X | 4/9/2024 | 32.5 | FD | JD86110 | Post-Treatment | Intermediate | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | 0.80 J | 101 | -- | -- | -- | -- | -- |
| 114-MW36B | 114-MW36B-32.5-20240726 | 7/26/2024 | 32.5 | N | JD92935 | Post-Treatment | Intermediate | -- | < 10 U | -- | < 10 U | -95.7 | 0.14 | 7.76 | 0.515 | 18.8 | 7.34 | -- | < 1.0 U | 47.6 J+ | -- | -- | -- | -- | -- |
| 114-MW36B | 114-MW36B-32.5-20241009 | 10/9/2024 | 32.5 | N | JD97776 | Post-Treatment | Intermediate | -- | < 10 U | -- | < 10 UJ | -139.4 | 0.65 | 7.7 | 0.58 | 18.7 | 3.21 | -- | < 1.0 UB | 120 | -- | -- | -- | -- | -- |
| 114-MW39B | 114-MW39B-20180212 | 2/12/2018 | 42 | N | JC60652 | N/A | Intermediate | -- | 6.3 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW39B | 114-MW39B-20180212X | 2/12/2018 | 42 | FD | JC60652 | N/A | Intermediate | -- | 5.2 J | -- | 9.2 J | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW39B | 114-MW39B-42.5-20220325 | 3/25/2022 | 42.5 | N | 4602550291 | Treatment | Intermediate | < 4.0 U | 5.7 | < 10.0 U | < 10.0 U | -139.80 | 0.18 | 7.18 | 25.33 | 14.44 | 6.91 | -- | 12.9 | **856** | < 1.0 U | 35 | -- | -- | -- |
| 114-MW39B | 114-MW39B-42.5-20220325-X | 3/25/2022 | 42.5 | FD | 4602550291 | Treatment | Intermediate | < 4.0 U | 4.5 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 12.7 | **848** | < 1.0 U | 38 | -- | -- | -- |
| 114-MW39B | 114-MW39B-42.5-20220614 | 6/14/2022 | 42.5 | N | 4602600641 | Treatment | Intermediate | -- | 14.5 | -- | < 10.0 U | -117.7 | 0.88 | 7.22 | 27.09 | 18.34 | 7.0 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW39B | 114-MW39B-42.5-20220721 | 7/21/2022 | 42.5 | N | 4602623381 | Treatment | Intermediate | -- | 6.8 | -- | < 10.0 U | -93.8 | 7.9 | 6.99 | 25.95 | 19.05 | 6.85 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW39B | 114-MW39B-42.5-20220822 | 8/22/2022 | 42.5 | N | 4602642131 | Treatment | Intermediate | -- | 5.2 | -- | < 10.0 U | -106.1 | 0.38 | 7.27 | 26.84 | 17.57 | 6.95 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW39B | 114-MW39B-42.5-20220921 | 9/21/2022 | 42.5 | N | 4602659871 | Treatment | Intermediate | -- | 4.8 | -- | < 10.0 U | 34.6 | 0.66 | 6.92 | 2.315 | 18.56 | 9.58 | -- | 12.8 | **885** | -- | -- | -- | -- | -- |
| 114-MW39B | 114-MW39B-42.5-20221018 | 10/18/2022 | 42.5 | N | 4602677121 | Treatment | Intermediate | -- | 7.1 | -- | < 10.0 U | -65.3 | 1.42 | 7.23 | 15.73 | 18.32 | 12 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW39B | 114-MW39B-42.5-20221116 | 11/16/2022 | 42.5 | N | 4602696581 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | 86.2 | 1.63 | 7.89 | 6.068 | 15.4 | 7.35 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW39B | 114-MW39B-42.5-20221213 | 12/13/2022 | 42.5 | N | 4602712771 | Treatment | Intermediate | -- | **141** | -- | < 10.0 U | -26.3 | 0.67 | 7.17 | 14.67 | 13.95 | 7.16 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW39B | 114-MW39B-42.5-20230124 | 1/24/2023 | 42.5 | N | 4602734531 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -22.6 | 0.2 | 7.11 | 19.06 | 13.82 | 6.82 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW39B | 114-MW39B-42.5-20230223 | 2/23/2023 | 42.5 | N | 4602751411 | Treatment | Intermediate | -- | 17.0 | -- | < 10.0 U | 4.4 | 0.63 | 7.32 | 13.68 | 12.74 | 8.18 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW39B | 114-MW39B-42.5-20230317 | 3/17/2023 | 42.5 | N | 4602765401 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | 50.9 | 0.51 | 7.28 | 14.39 | 15.4 | 4.27 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW39B | 114-MW39B-42.5-20230421 | 4/21/2023 | 42.5 | N | 4602786851 | Treatment | Intermediate | -- | 4.0 | -- | < 10.0 U | -96.4 | 0.34 | 7.06 | 21.97 | 17.6 | 9.11 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW39B | 114-MW39B-42.5-20230510 | 5/10/2023 | 42.5 | N | 4602800211 | Treatment | Intermediate | -- | 3.0 J | -- | < 10.0 U | 38.5 | 0.99 | 7.18 | 20.79 | 18.3 | 7.81 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW39B | 114-MW39B-42.5-20230622 | 6/22/2023 | 42.5 | N | 4602828851 | Treatment | Intermediate | -- | 3.8 J | -- | < 10.0 U | -42.8 | 0.46 | 7.06 | 22.62 | 17.17 | 8.14 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW39B | 114-MW39B-42.5-20230720 | 7/20/2023 | 42.5 | N | 4602846391 | Treatment | Intermediate | < 4.0 U | 12.8 | < 10.0 UF1 | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW39B | 114-MW39B-42.5-20230720 | 7/20/2023 | 42.5 | N | 4602846531 | Treatment | Intermediate | -- | -- | -- | -- | -77.8 | 0.51 | 7.12 | 16.65 | 22.2 | 31.3 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW39B | 114-MW39B-42.5-20230824 | 8/24/2023 | 42.5 | N | 4602868441 | Treatment | Intermediate | < 4.0 U | 15.9 | < 10.0 U | < 10.0 U | -76.1 | 0.4 | 7.32 | 22.79 | 17.87 | 11.4 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW39B | 114-MW39B-42.5-20230919 | 9/19/2023 | 42.5 | N | 4602885251 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -84.8 | 0.16 | 7.37 | 23.53 | 20 | 4.28 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW39B | 114-MW39B-42.5-20231012 | 10/12/2023 | 42.5 | N | 4602902281 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -60.5 | 0.56 | 7.05 | 23.22 | 18.85 | 7.81 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW39B | 114-MW39B-42.5-20231116 | 11/16/2023 | 42.5 | N | JD77164 | Treatment | Intermediate | -- | 2.8 | -- | < 10 U | -87.2 | 0.33 | 7.02 | 23.79 | 16.8 | 6.99 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW39B | 114-MW39B-42.5-20231222 | 12/22/2023 | 42.5 | N | JD79442 | Treatment | Intermediate | -- | < 10 U | -- | < 10 U | -1.4 | 8.16 | 7.31 | 18.23 | 13.7 | 0.84 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW39B | 114-MW39B-42.5-20240123 | 1/23/2024 | 42.5 | N | JD81013 | Treatment | Intermediate | -- | < 10 U | -- | < 10 U | 65.1 | 0.25 | 7.23 | 20.19 | 13.6 | 4.08 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW39B | 114-MW39B-42.5-20240221 | 2/21/2024 | 42.5 | N | JD82924 | Treatment | Intermediate | -- | < 10 U | -- | < 10 U | 30.5 | 0.27 | 7 | 21.72 | 12.9 | 6.61 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW39B | 114-MW39B-42.5-20240320 | 3/20/2024 | 42.5 | N | JD84851 | Treatment | Intermediate | < 10 U | 6.7 B | < 10 U | < 10 U | -159.2 | 0.11 | 7.17 | 20.5 | 14 | 16.2 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW39B | 114-MW39B-42.5-20240415 | 4/15/2024 | 42.5 | N | JD86534 | Treatment | Intermediate | -- | < 10 U | -- | < 10 U | 88.8 | 0.29 | 7.3 | 12.45 | 16.8 | 7.25 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW39B | 114-MW39B-42.5-20240711 | 7/11/2024 | 42.5 | N | JD92004 | Treatment | Intermediate | -- | < 10 U | -- | < 10 U | 2.8 | 0.22 | 6.98 | 23.49 | 20.7 | 5.05 | -- | 10.2 | **954** | -- | -- | -- | -- | -- |
| 114-MW39B | 114-MW39B-42.5-20241007 | 10/7/2024 | 42.5 | N | JD97612 | Treatment | Intermediate | -- | < 10 U | -- | 7.2 B | -82.2 | 0.15 | 7.12 | 17.36 | 19.4 | 8.29 | -- | 10.4 | **876** | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-20180420 | 4/20/2018 | 27.2 | N | JC64643 | N/A | Intermediate | -- | **282000** | -- | **275000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20211229 | 12/29/2021 | 28.2 | N | 4602499461 | Baseline | Intermediate | **46300** | **50200** | **44200** | **47100** | -7.20 | 0.21 | 7.53 | 1.73 | 16.93 | 7.64 | -- | 5.7 JB | **474** | < 1.0 U | 1800 | < 120 U | **1040** | -- |
| 114-MW41B | 114-MW41B-28.2-20220825 | 8/25/2022 | 28.2 | N | 4602644081 | Treatment | Intermediate | -- | **80400** | -- | **90800** | 4.9 | 0.82 | 8.77 | 1.715 | 19.71 | 3.70 | -- | 17.1 | **514** | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20220921 | 9/21/2022 | 28.2 | N | 4602659871 | Treatment | Intermediate | -- | **456** | -- | < 10.0 U | -137.2 | 0.26 | 7.45 | 1.907 | 18.62 | 8.06 | -- | 347 | **347** | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20220921-X | 9/21/2022 | 28.2 | FD | 4602659871 | Treatment | Intermediate | -- | **510** | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 327 | **358** | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20221020 | 10/20/2022 | 28.2 | N | 4602678821 | Treatment | Intermediate | -- | **369** | -- | < 10.0 U | -338.1 | 1.73 | 7.64 | 1.538 | 17.92 | 9.91 | -- | 227 | **412** | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20221020-X | 10/20/2022 | 28.2 | FD | 4602678821 | Treatment | Intermediate | -- | **363** | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 155 | **426** | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20221118 | 11/18/2022 | 28.2 | N | 4602697961 | Treatment | Intermediate | -- | **452** | -- | < 10.0 U | -343.3 | 0.28 | 7.19 | 1.967 | 11.48 | 7.29 | -- | 249 | **250** | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20221220 | 12/20/2022 | 28.2 | N | 4602718081 | Treatment | Intermediate | -- | **1200** | -- | < 20.0 U | -129.7 | 0.74 | 8.65 | 1.75 | 14.26 | 9.29 | -- | 171 | **253** | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20230126 | 1/26/2023 | 28.2 | N | 4602735991 | Treatment | Intermediate | -- | **611** | -- | < 10.0 U | -375.1 | 6.73 | 7.03 | 1.579 | 13.72 | 9.8 | -- | 38.9 | **421** | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20230126-X | 1/26/2023 | 28.2 | FD | 4602735991

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-MW41B | 114-MW41B-28.2-20230227 | 2/27/2023 | 28.2 | N | 4602753411 | Treatment | Intermediate | **176** | **247** | < 10.0 U | < 10.0 U | -312.0 | 9999 | 7.04 | 1.572 | 15.22 | 21.2 | -- | 96.7 | 246 | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20230322 | 3/22/2023 | 28.2 | N | 4602768001 | Treatment | Intermediate | 58.6 | **85.3 86.3** | < 10.0 U | < 10.0 U | -327.9 | 10.87 | 6.76 | 2.113 | 16.7 | 12.7 | -- | 12.3 | **374** | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20230424 | 4/24/2023 | 28.2 | N | 4602787991 | Treatment | Intermediate | **128** | **156** | < 10.0 UF1 | < 10.0 U | -33.7 | 0.96 | 7.11 | 12.14 | 19.6 | 39.4 | -- | 43.3 | **322** | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20230517 | 5/17/2023 | 28.2 | N | 4602804541 | Treatment | Intermediate | -- | **148** | -- | < 10.0 U | -272.9 | 0.57 | 6.87 | 1.012 | 19.8 | 9.76 | -- | 4.8 F1 | **362** | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20230619 | 6/19/2023 | 28.2 | N | 4602826571 | Treatment | Intermediate | **179** | **1320** | < 10.0 U | < 10.0 U | -227.7 | 0.55 | 7.11 | 1.043 | 21.2 | 21.6 | -- | 12.5 | 232 | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20230717 | 7/17/2023 | 28.2 | N | 4602844061 | Treatment | Intermediate | **106** | **460** | < 10.0 U | < 10.0 U | 33.1 | 0.2 | 6.99 | 1.304 | 17.87 | 10.1 | -- | 6.0 | **264** | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20230822 | 8/22/2023 | 28.2 | N | 4602866771 | Treatment | Intermediate | 42.0 | **825** | < 10.0 U | < 10.0 U | -82.4 | 0.28 | 7.51 | 1.11 | 20.35 | 13.5 | -- | 4.8 | **334** | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20230822-X | 8/22/2023 | 28.2 | FD | 4602866771 | Treatment | Intermediate | 45.8 | **802** | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 5.0 | **336** | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20230915 | 9/15/2023 | 28.2 | N | 4602882761 | Treatment | Intermediate | -- | **498** | -- | < 10.0 U | -210 | 1.42 | 6.9 | 1.15 | 20.42 | 8.72 | -- | 3.6 | **292** | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20230915-X | 9/15/2023 | 28.2 | FD | 4602882761 | Treatment | Intermediate | -- | **495** | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 3.6 | **278** | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20231010 | 10/10/2023 | 28.2 | N | 4602900121 | Treatment | Intermediate | -- | **71.2** | -- | < 10.0 UF1 | -102.3 | 0.92 | 6.94 | 1.014 | 17.42 | 1.56 | -- | 4.2 | **381** | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20231113 | 11/13/2023 | 28.2 | N | JD76852 | Treatment | Intermediate | -- | **370** | -- | 9.5 J | -127.2 | 0.27 | 7.02 | 131.3 | 17.9 | 5.34 | -- | 8.2 | **357** | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20231214 | 12/14/2023 | 28.2 | N | JD78891 | Treatment | Intermediate | -- | 52.0 | -- | 7.6 B | -117.4 | 0.12 | 7.01 | 0.954 | 17.4 | 0.82 | -- | 4.7 | **331** | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20240122 | 1/22/2024 | 28.2 | N | JD80935 | Treatment | Intermediate | -- | 52.7 | -- | 3.8 B | -194.8 | 0.12 | 7.08 | 1.133 | 10.7 | 2.07 | -- | 8.6 | **258** | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20240223 | 2/23/2024 | 28.2 | N | JD83100 | Treatment | Intermediate | -- | **238** | -- | < 10 U | -108.2 | 0.26 | 6.95 | 1.039 | 14.7 | 6.67 | -- | 9.6 | 220 | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20240315 | 3/15/2024 | 28.2 | N | JD84558 | Treatment | Intermediate | -- | 56.5 | -- | < 10 U | -7.6 | 0.13 | 7.06 | 1.039 | 17.3 | 1.48 | -- | 7.8 | 211 | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-24.5-20240412 | 4/12/2024 | 24.5 | N | JD86439 | Post-Treatment | Intermediate | -- | 47.0 | -- | < 10 U | -134.4 | 2.87 | 7.18 | 0.907 | 15.1 | 1.53 | -- | 8.2 | 194 | < 2.0 U | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-24.5-20240715 | 7/15/2024 | 24.5 | N | JD92183 | Post-Treatment | Intermediate | -- | **257 J-** | -- | < 10 RA | -121.7 | 0.15 | 7.34 | 1.495 | 19.2 | 2.84 | -- | 2.9 | 239 | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-24.5-20241015 | 10/15/2024 | 24.5 | N | JD98256 | Post-Treatment | Intermediate | -- | **321 J-** | -- | < 10 U | -121.9 | 0.21 | 7.16 | 1.40 | 16.3 | 2.18 | -- | 16.3 | 231 J- | -- | -- | -- | -- | -- |
| 132-P3A-MW102I | 132-P3A-MW102I-24.4-20211019 | 10/19/2021 | 24.4 | N | 4602454421 | Baseline | Intermediate | 20.2 J | 13.8 J | 12.0 | 9.8 J | 162.00 | 0.81 | 6.90 | 0.58 | 17.02 | 8.47 | -- | 1.8 JB | 101 | < 1.0 U | 52 | < 120 U | **1420** | -- |
| 132-P3A-MW102I | 132-P3A-MW102I-24.4-20211227 | 12/27/2021 | 24.4 | N | 4602498521 | Treatment | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -50.80 | 0.21 | 6.69 | 1.15 | 14.31 | 6.40 | -- | 4.5 F1 | 21.1 F1 | -- | 180 | -- | -- | -- |
| 132-P3A-MW102I | 132-P3A-MW102I-24.4-20220117 | 1/17/2022 | 24.4 | N | 4602508211 | Treatment | Intermediate | < 4.0 U | 3.1 J | < 10.0 U | < 10.0 U | -68.00 | 1.15 | 7.11 | 1.12 | 18.01 | 8.70 | -- | 4.9 | 30.6 | -- | 130 | -- | -- | -- |
| 132-P3A-MW102I | 132-P3A-MW102I-24.4-20220223 | 2/23/2022 | 24.4 | N | 4602530771 | Treatment | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -83.50 | 0.10 | 7.07 | 0.94 | 15.05 | 9.40 | -- | 5.5 | 16.6 | -- | 2600 | -- | -- | -- |
| 132-P3A-MW102I | 132-P3A-MW102I-24.4-20220322 | 3/22/2022 | 24.4 | N | 4602547911 | Treatment | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -97.10 | 2.93 | 6.99 | 1.51 | 15.70 | 9.80 | -- | 6.0 ^2 | 15.6 | -- | 3800 | -- | -- | -- |
| 132-P3A-MW102I | 132-P3A-MW102I-24.4-20220422 | 4/22/2022 | 24.4 | N | 4602567961 | Treatment | Intermediate | < 4.0 U | < 4.0 U | < 20.0 U | < 20.0 U | -121.9 | 0.82 | 7.44 | 0.93 | 15.19 | 7.76 | -- | 5.6 | 14.8 | -- | 4500 | -- | -- | -- |
| 132-P3A-MW102I | 132-P3A-MW102I-24.4-20220518 | 5/18/2022 | 24.4 | N | 4602583551 | Treatment | Intermediate | -- | 5.1 | -- | < 10.0 U | -102.6 | 1.23 | 7.06 | 1.037 | 14.58 | 7.53 | -- | 5.3 | 21.4 | -- | -- | -- | -- | -- |
| 132-P3A-MW102I | 132-P3A-MW102I-24.4-20220615 | 6/15/2022 | 24.4 | N | 4602601501 | Treatment | Intermediate | -- | 3.2 J | -- | < 10.0 U | -101.7 | 2.58 | 6.93 | 1.026 | 16.29 | 9.83 | -- | 5.6 | 18.0 | -- | -- | -- | -- | -- |
| 132-P3A-MW102I | 132-P3A-MW102I-24.4-20220720 | 7/20/2022 | 24.4 | N | 4602622601 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -103.6 | 0.67 | 6.58 | 0.904 | 19.71 | 4.11 | -- | 6.1 | 19.7 | -- | -- | -- | -- | -- |
| 132-P3A-MW102I | 132-P3A-MW102I-24.4-20220919 | 9/19/2022 | 24.4 | N | 4602658321 | Treatment | Intermediate | -- | < 4.0 U | -- | < 20.0 U | -99.8 | 1.23 | 6.75 | 0.962 | 18.33 | 6.88 | -- | 4.7 | 47.8 | -- | -- | -- | -- | -- |
| 132-P3A-MW102I | 132-P3A-MW102I-24.4-20221214 | 12/14/2022 | 24.4 | N | 4602713561 | Treatment | Intermediate | -- | < 4.0 U | -- | < 20.0 U | -145.3 | 0.53 | 6.91 | 0.882 | 14.74 | 2.99 | -- | 6.1 | 27.1 | -- | -- | -- | -- | -- |
| 132-P3A-MW102I | 132-P3A-MW102I-24.4-20230321 | 3/21/2023 | 24.4 | N | 4602767381 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -130.2 | 1.89 | 6.85 | 5.432 | 16.23 | 3.91 | -- | 7.2 | 23.9 | -- | -- | -- | -- | -- |
| 132-P3A-MW102I | 132-P3A-MW102I-24.4-20230620 | 6/20/2023 | 24.4 | N | 4602827171 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -135.1 | 1.19 | 6.85 | 1.041 | 20.6 | 2.21 | -- | 6.0 | 23.5 | -- | -- | -- | -- | -- |
| 132-P3A-MW102I | 132-P3A-MW102I-24.4-20230920 | 9/20/2023 | 24.4 | N | 4602886061 | Treatment | Intermediate | -- | < 4.0 U | -- | < 20.0 U | -101.3 | 0.17 | 6.97 | 1.255 | 18.6 | 0.57 | -- | 6.6 | 26.7 | -- | -- | -- | -- | -- |
| 132-P3A-MW102I | 132-P3A-MW102I-24.4-20231219 | 12/19/2023 | 24.4 | N | JD79187 | Treatment | Intermediate | -- | < 10 U | -- | < 10 U | 114.2 | 0.13 | 6.78 | 1.077 | 14.8 | 9.11 | -- | 4.6 | 38.4 | -- | -- | -- | -- | -- |
| 132-P3A-MW102I | 132-P3A-MW102I-24.4-20240321 | 3/21/2024 | 24.4 | N | JD84944 | Treatment | Intermediate | -- | < 10 U | -- | < 10 U | -149.8 | 0.15 | 6.87 | 1.104 | 10.9 | 3.52 | -- | 4.0 | 30.9 | -- | -- | -- | -- | -- |
| 132-P3A-MW102I | 132-P3A-MW102I-24.4-20240621 | 6/21/2024 | 24.4 | N | JD90887 | Treatment | Intermediate | -- | < 10 U | -- | < 10 U | -242.5 | 5.65 | 6.84 | 1.162 | 19.9 | 1.82 | -- | 3.9 | 33.3 | -- | -- | -- | -- | -- |
| 132-P3A-MW102I | 132-P3A-MW102I-22.6-20240722 | 7/22/2024 | 22.6 | N | JD92598 | Post-Treatment | Intermediate | -- | < 10 U | -- | 44 J | -106.4 | 0.36 | 6.97 | 1.277 | 21.8 | 0.77 | -- | 5.2 | 33.9 | < 2.0 U | -- | -- | -- | -- |
| 132-P3A-MW102I | 132-P3A-MW102I-27.6-20240722 | 7/22/2024 | 27.6 | N | JD92598 | Post-Treatment | Intermediate | -- | < 10 U | -- | 35 J | -104 | 0.33 | 6.98 | 1.296 | 18.6 | 0.68 | -- | 5.1 | 32.3 | < 2.0 U | -- | -- | -- | -- |
| 132-P3A-MW102I | 132-P3A-MW102I-22.6-20241010 | 10/10/2024 | 22.6 | N | JD97909 | Post-Treatment | Intermediate | -- | < 10 U | -- | 9.2 J | -142.8 | 0.35 | 7.28 | 1.21 | 18.2 | 0.35 | -- | 4.9 J+ | 23.6 | -- | -- | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39.0-20211014 | 10/14/2021 | 39 | N | 4602450901 | Baseline | Intermediate | **51600** | **54300** | **33200** | **32100** | 175.70 | 0.14 | 6.94 | 3.82 | 17.16 | 0.67 | -- | 2.8 | **303 J-** | < 1.0 U | 100 | **< 600 U** | **458** | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39.0-20211116 | 11/16/2021 | 39 | N | 4602474031 | Treatment | Intermediate | **43000** | **36100** | **37100** | **34900** | 80.80 | 0.36 | 7.32 | 3.87 | 15.15 | 5.42 | -- | 2.4 | **261** | -- | 90 | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39-20211227 | 12/27/2021 | 39 | N | 4602498521 | Treatment | Intermediate | **21500** | **24700** | **19000** | **20100** | 209.0 | 4.49 | 7.43 | 2.866 | 13.20 | 3.17 | -- | 49.8 | **254** | -- | 82 | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39-20220119 | 1/19/2022 | 39 | N | 4602509341 | Treatment | Intermediate | **18600** | **16200** | **15000** | **13500** | 252.00 | 0 | 7.510 | 3.63 | 19.02 | 5.88 | -- | 2.5 | **253** | -- | 67 | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39-20220223 | 2/23/2022 | 39 | N | 4602530771 | Treatment | Intermediate | **56400** | **53900** | **53600** | **53600** | 125.10 | 0.17 | 7.22 | 2.88 | 14.17 | 4.33 | -- | 2.7 | 231 | -- | 120 | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39-20220323 | 3/23/2022 | 39 | N | 4602548831 | Treatment | Intermediate | **59700** | **63700** | **56200** | **56700** | 144.10 | 2.41 | 7.21 | 2.15 | 11.75 | 7.65 | -- | 2.9 | 196 F1 | -- | 130 F1 | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39-20220428 | 4/28/2022 | 39 | N | 4602571561 | Treatment | Intermediate | **30400** | **31700** | **33300** | **32200** | 157.6 | 2.77 | 7.48 | 2.251 | 12.18 | 5.81 | -- | 2.2 | **275** | -- | 82 | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39-20220517 | 5/17/2022 | 39 | N | 4602582941 | Treatment | Intermediate | **81300** | **70600** | **77300** | **74100** | 91.6 | 0.64 | 7.07 | 2.904 | 16.31 | 8.36 | -- | 2.8 | 223 | -- | -- | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39-20220615 | 6/15/2022 | 39 | N | 4602601501 | Treatment | Intermediate | -- | **35500** | -- | **32100** | 120.7 | 5.21 | 8.30 | 2.627 | 16.89 | 2.64 | -- | 2.5 | 129 | -- | -- | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39-20220719 | 7/19/2022 | 39 | N | 4602621891 | Treatment | Intermediate | -- | **27000** | -- | **27800** | 126.8 | 0.05 | 7.14 | 3.041 | 18.64 | 7.08 | -- | 2.9 | 233 | -- | -- | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39-20220824 | 8/24/2022 | 39 | N | 4602643471 | Treatment | Intermediate | -- | **30100** | -- | **27400** | 67.2 | 1.40 | 7.27 | 3.453 | 19.45 | 5.46 | -- | 3.7 | 227 | -- | -- | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39-20220919 | 9/19/2022 | 39 | N | 4602658321 | Treatment | Intermediate | -- | **4870** | -- | **3740** | 15.5 | 0.53 | 7.27 | 5.599 | 21.05 | 7.61 | -- | 15.5 | **268** | -- | -- | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39-20221014 | 10/14/2022 | 39 | N | 4602675261 | Treatment | Intermediate | -- | **31200** | -- | **29400** | 49.6 | 1.82 | 7.04 | 3.032 | 16.78 | 5.72 | -- | 14.1 | 187 | -- | -- | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39-20221114 | 11/14/2022 | 39 | N | 4602695301 | Treatment | Intermediate | -- | **588** | -- | < 10.0 U | -288.4 | 5.14 | 7.2 | 3.293 | 13.6 | 7.96 | -- | 45.9 | 41.2 | -- | -- | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39.0-20221214 | 12/14/2022 | 39 | N | 4602713561 | Treatment | Intermediate | -- | **1020** | -- | < 10.0 UF1 | -261.3 | 1.35 | 7.44 | 3.426 | 13.16 | 5.77 | -- | 60.5 | 63.5 | -- | -- | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39-20230120 | 1/20/2023 | 39 | N | 4602733031 | Treatment | Intermediate | **328** | **2470** | < 10.0 U | < 20.0 U | -376.6 | 9999 | 6.94 | 3.753 | 13.5 | 167 | -- | 166 | 22.5 | -- | -- | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39.0-20230223 | 2/23/2023 | 39 | N | 4602751411 | Treatment | Intermediate | -- | **1750** | -- | < 10.0 U | -76.2 | 1.07 | 7.54 | 2.54 | 12.08 | 3.28 | -- | 28.4 | 134 | -- | -- | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39.0-20230321 | 3/21/2023 | 39 | N | 4602767381 | Treatment | Intermediate | -- | **402** | -- | < 10.0 U | -281.2 | 0.28 | 6.96 | 2.535 | 14.49 | 6.63 | -- | 86.7 | 27.2 | -- | -- | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39.0-20230620 | 6/20/2023 | 39 | N | 4602827171 | Treatment | Intermediate | **137** | **1560** | < 10.0 U | < 10.0 U | -230.1 | 0.34 | 7.23 | 2.918 | 17.9 | 33 | -- | 39.9 | 28.3 | -- | -- | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39.0-20230714 | 7/14/2023 | 39 | N | 4602842251 | Treatment | Intermediate | -- | **626** | -- | < 10.0 U | -211.8 | 0.33 | 7.07 | 2.918 | 20.62 | 7.21 | -- | 28.3 | 31.7 | -- | -- | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39.0-20230815 | 8/15/2023 | 39 | N | 4602862031 | Treatment | Intermediate | **13300** | **12100** | **11700** | **9280** | 30.02 | 0.63 | 7.37 | 2.525 | 17.99 | 43.7 | -- | 20.1 | 130 | -- | -- | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39.0-20230915 | 9/15/2023 | 39 | N | 4602882761 | Treatment | Intermediate | **468** | **475** | **489** | 48.6 | -89.3 | 0.8 | 6.85 | 2.49 | 18.59 | 38.9 | -- | 17.7 | 128 | -- | -- | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39.0-20231011 | 10/11/2023 | 39 | N | 4602901161 | Treatment | Intermediate | -- | **637** | -- | < 10.0 U | -15.6 | 5.45 | 7.4 | 2.637 | 18.64 | 7.11 | -- | 16.5 | 179 | -- | -- | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39.0-20231114 | 11/14/2023 | 39 | N | JD76935 | Treatment | Intermediate | -- | **303** | -- | 7.5 B | 23.1 | 0.02 | 7.48 | 1.956 | 15.3 | 3.42 | -- | 15.0 | **265** | -- | -- | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39.0-20231213 | 12/13/2023 | 39 | N | JD78776 | Treatment | Intermediate | -- | **462** | -- | 19 | -130 | 0.15 | 7.06 | 2.587 | 13.7 | 8.69 | -- | 9.2 | **359** | -- | -- | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39.0-20231213-X | 12/13/2023 | 39 | FD | JD78776 | Treatment | Intermediate | -- | **427** | -- | 19 | -- | -- | -- | -- | -- | -- | -- | 9.3 | **370** | -- | -- | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39-20240118 | 1/18/2024 | 39 | N | JD80778 | Treatment | Intermediate | -- | **515** | -- | 24 | -362.5 | 0.24 | 7.01 | 3.385 | 10.3 | 9.1 | -- | 10.5 | **399** | -- | -- | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39-20240118-X | 1/18/2024 | 39 | FD | JD80778 | Treatment | Intermediate | -- | **486** | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | 10.4 | **437** | -- | -- | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39-20240222 | 2/22/2024 | 39 | N | JD82990 | Treatment | Intermediate | -- | **373** | -- | < 10 U | -52.8 | 0.11 | 7.06 | 3.374 | 12.2 | 3.56 | -- | 9.7 | **540** | -- | -- | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39.0-20240222-X | 2/22/2024 | 39 | FD | JD82990 | Treatment | Intermediate | -- | **618** | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | 10.4 | **552** | -- | -- | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39.0-20240318 | 3/18/2024 | 39 | N | JD84685 | Treatment | Intermediate | -- | **300** | -- | < 10 U | -152.9 | 0.32 | 7.11 | 3.824 | 11.3 | 3.11 | -- | 11.5 | **523** | -- | -- | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39.0-20240318-X | 3/18/2024 | 39 | FD | JD84685 | Treatment | Intermediate | -- | **293** | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | 11.5 | **520** | -- | -- | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39.0-20240411 | 4/11/2024 | 39 | N | JD86321 | Treatment | Intermediate | -- | **488** | -- | 40 | -311.7 | 0.1 | 6.69 | 3.649 | 14 | 6.97 | -- | 17.6 | **472** | -- | -- | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39.0-20240411-X | 4/11/2024 | 39 | FD | JD86321 | Treatment | Intermediate | -- | **454** | -- | 34 | -- | -- | -- | -- | -- | -- | -- | 16.8 | **458** | -- | -- | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39.0-20240522 | 5/22/2024 | 39 | N | JD88961 | Treatment | Intermediate | -- | **375** | -- | 11 | -145 | 0.49 | 6.88 | 3.675 | 17.2 | 3.9 | -- | 21.2 | **337** | -- | -- | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39.0-20240522-X | 5/22/2024 | 39 | FD | JD88961 | Treatment | Intermediate | -- | **374** | -- | 51 | -- | -- | -- | -- | -- | -- | -- | 21.9 | **289** | -- | -- | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39.0-20240620 | 6/20/2024 | 39 | N | JD90821 | Treatment | Intermediate | -- | **407** | -- | **75** | -99.9 | 0.83 | 7.19 | 4.05 | 19.7 | 7.06 | -- | 28.4 | **301** | -- | -- | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-39.0-20240620-X | 6/20/2024 | 39 | FD | JD90821 | Treatment | Intermediate | -- | **348** | -- | 17 | -- | -- | -- | -- | -- | -- | -- | 26.3 | **303** | -- | -- | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-36.5-20240722 | 7/22/2024 | 36.5 | N | JD92598 | Post-Treatment | Intermediate | -- | **275** | -- | 62 J | 36.2 | 0.7 | 6.76 | 3.835 | 20.93 | 3.42 | -- | 22.1 | **309** | < 2.0 U | -- | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-36.5-20240722-X | 7/22/2024 | 36.5 | FD | JD92598 | Post-Treatment | Intermediate | -- | **287** | -- | **92 J** | -- | -- | -- | -- | -- | -- | -- | 22.3 | **311** | < 2.0 U | -- | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-41.5-20240722 | 7/22/2024 | 41.5 | N | JD92598 | Post-Treatment | Intermediate | -- | **217** | -- | **110 J** | 44.3 | 0.76 | 6.68 | 3.917 | 19.7 | 7.22 | -- | 18.8 | **424** | < 2.0 U | -- | -- | -- | -- |
| 132-P3A-MW103I | 132-P3A-MW103I-41.5-20241010 | 10/10/2024 | 41.5 | N | JD97909 | Post-Treatment | Intermediate | -- | **341** | -- | 61 | -111 | 0.27 | 7.11 | 4.18 | 18.4 | 5.86 | -- | 22.6 J+ | 245 | -- | -- | -- | -- | -- |
| 132-P3A-MW104I | 132-P3A-MW104I-44.3-20211020 | 10/20/2021 | 44.3 | N | 4602455611 | Baseline | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | 172.40 | 0.50 | 6.94 | 0.999 | 15.65 | 1.68 | -- | < 1.3 UB | 190 | < 1.0 U | < 5.0 U | < 120 U | **678** | -- |
| 132-P3A-MW104I | 132-P3A-MW104I-44.3-20211228 | 12/28/2021 | 44.3 | N | 4602498981 | Treatment | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | 95.80 | 0.40 | 7.74 | 0.636 | 13.37 | 3.01 | -- | 12.1 | 77.1 | -- | < 5.0 U | -- | -- | -- |
| 132-P3A-MW104I | 132-P3A-MW104I-44.3-20220118 | 1/18/2022 | 44.3 | N | 4602508581 | Treatment | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | 110.70 | 0.2 | 6.94 | 3.10 | 12.70 | 4.28 | -- | 1.2 | **277** | -- | < 5.0 U | -- | -- | -- |
| 132-P3A-MW104I | 132-P3A-MW104I-44.3-20220224 | 2/24/2022 | 44.3 | N | 4602531681 | Treatment | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | 144.10 | 1.76 | 7.09 | 2.01 | 11.21 | 8.80 | -- | 1.2 | 169 | -- | < 5.0 U | -- | -- | -- |
| 132-P3A-MW104I | 132-P3A-MW104I-44.3-20220323 | 3/23/2022 | 44.3 | N | 4602548831 | Treatment | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | 123.40 | 2.53 | 7.17 | 1.68 | 13.61 | 9.80 | -- | 1.3 | 177 | -- | < 5.0 U | -- | -- | -- |
| 132-P3A-MW104I | 132-P3A-MW104I-44.3-20220425 | 4/25/2022 | 44.3 | N | 4602569361 | Treatment | Intermediate | < 4.0 U | 2.8 J | < 10.0 U | < 10.0 U | -10.6 | 0.87 | 7.59 | 1.986 | 12.04 | 1.87 | -- | 0.74 J | 209 | -- | < 5.0 U | -- | -- | -- |
| 132-P3A-MW104I | 132-P3A-MW104I-44.3-20220517 | 5/17/2022 | 44.3 | N | 4602582941 | Treatment | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | 29.2 | 0.93 | 7.19 | 2.124 | 17.49 | 5.24 | -- | 0.77 J | 152 | < 2.0 U | -- | -- | -- | -- |
| 132-P3A-MW104I | 132-P3A-MW104I-44.3-20220615 | 6/15/2022 | 44.3 | N | 4602601501 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | 113.10 | 0.24 | 7.26 | 1.821 | 16.81 | 6.48 | -- | 0.94 J | 145 | -- | -- | -- | -- | -- |
| 132-P3A-MW104I | 132-P3A-MW104I-44.3-20220720 | 7/20/2022 | 44.3 | N | 4602622601 | Treatment | Intermediate | -- | 3.6 J | -- | < 10.0 U | 106.1 | 4.93 | 8.41 | 0.218 | 18.39 | 3.96 | -- | 0.70 J | 7.65 | -- | -- | -- | -- | -- |
| 132-P3A-MW104I | 132-P3A-MW104I-44.3-20220916 | 9/16/2022 | 44.3 | N | 4602657011 | Treatment | Intermediate | -- | 2.5 J | -- | < 10.0 U | 50.6 | 9.07 | 6.99 | 1.592 | 17.73 | 2 | -- | 1.0 | 10.5 | -- | -- | -- | -- | -- |
| 132-P3A-MW104I | 132-P3A-MW104I-44.3-20221215 | 12/15/2022 | 44.3 | N | 4602714561 | Treatment | Intermediate | -- | 17.7 | -- | < 10.0 U | 62.7 | 0.68 | 7.24 | 16.74 | 11.9 | 0.9 | -- | 8.9 | 204 | -- | -- | -- | -- | -- |
| 132-P3A-MW104I | 132-P3A-MW104I-44.3-20230321 | 3/21/2023 | 44.3 | N | 4602767381 | Treatment | Intermediate | -- | 3.4 J | -- | < 10.0 U | 204.8 | 0.49 | 7.12 | 1.383 | 13.52 | 2.82 | -- | 1.4 | 131 | -- | -- | -- | -- | -- |
| 132-P3A-MW104I | 132-P3A-MW104I-44.3-20230616 | 6/16/2023 | 44.3 | N | 4602824871 | Treatment | Intermediate | -- | 2.8 J | -- | < 10.0 U | 24 | 4.02 | 6.96 | 1.546 | 17.76 | 2.16 | -- | 0.61 J | 119 | -- | -- | -- | -- | -- |
| 132-P3A-MW104I | 132-P3A-MW104I-44.3-20230920 | 9/20/2023 | 44.3 | N | 4602886061 | Treatment | Intermediate | -- | 12.1 | -- | < 10.0 U | 93.5 | 0.17 | 7.03 | 1.843 | 19.8 | 1.63 | -- | 17.0 | 64.1 | -- | -- | -- | -- | -- |
| 132-P3A-MW104I | 132-P3A-MW104I-44.3-20231221 | 12/21/2023 | 44.3 | N | JD79357 | Treatment | Intermediate | -- | < 10 U | -- | < 10 U | 91.4 | 1.3 | 6.92 | 1.665 | 11.9 | 1.44 | -- | 0.57 B | 145 | -- | -- | -- | -- | -- |
| 132-P3A-MW104I | 132-P3A-MW104I-44.3-20240321 | 3/21/2024 | 44.3 | N | JD84944 | Treatment | Intermediate | -- | < 10 U | -- | < 10 U | -49.4 | 0.89 | 6.99 | 1.897 | 11.1 | 1.09 | -- | 0.79 B | 132 | -- | -- | -- | -- | -- |
| 132-P3A-MW104I | 132-P3A-MW104I-44.3-20240620 | 6/20/2024 | 44.3 | N | JD90821 | Treatment | Intermediate | -- | < 10 U | -- | < 10 U | 52.3 | 0.29 | 7.38 | 1.729 | 21.3 | 2.61 | -- | 1.8 | 153 | -- | -- | -- | -- | -- |
| 132-P3A-MW104I | 132-P3A-MW104I-40.2-20240717 | 7/17/2024 | 40.2 | N | JD92334 | Post-Treatment | Intermediate | -- | 4.8 J | -- | < 10 RA | 134 | 1.69 | 6.92 | 1.544 | 20.5 | 4.7 | -- | < 1.0 UJ | 167 | < 2.0 U | -- | -- | -- | -- |
| 132-P3A-MW104I | 132-P3A-MW104I-45.2-20240717 | 7/17/2024 | 45.2 | N | JD92334 | Post-Treatment | Intermediate | -- | 3.9 J | -- | < 10 RA | -5.3 | 0.85 | 6.84 | 3.478 | 21 | 

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 132-P3-MW001I-A | 132-P3-MW001I-A-40-20220120 | 1/20/2022 | 40 | N | 4602510021 | Treatment | Intermediate | **173000** | **138000** | **147000** | **147000** | 143.30 | 0.55 | 7.39 | 2.78 | 11.56 | 9.21 | -- | 4.4 | **379** | -- | 460 | -- | -- | -- |
| 132-P3-MW001I-A | 132-P3-MW001I-A-40-20220120-X | 1/20/2022 | 40 | FD | 4602510021 | Treatment | Intermediate | **167000** | **171000** | **153000** | **141000** | -- | -- | -- | -- | -- | -- | -- | 4.1 | **392** | -- | 530 E | -- | -- | -- |
| 132-P3-MW001I-A | 132-P3-MW001I-A-40-20220224 | 2/24/2022 | 40 | N | 4602531681 | Treatment | Intermediate | 13.7 | **431** | < 10.0 U | < 10.0 U | -103.00 | 0.22 | 7.25 | 2.67 | 9.97 | 9.54 | -- | 12.7 | **308** | -- | 6700 | -- | -- | -- |
| 132-P3-MW001I-A | 132-P3-MW001I-A-40-20220324 | 3/24/2022 | 40 | N | 4602549601 | Treatment | Intermediate | 16.8 | **524** | < 10.0 U | < 10.0 U | -124.20 | 0.35 | 7.16 | 2.60 | 12.66 | 8.77 | -- | 13.5 | 230 | -- | 8200 | -- | -- | -- |
| 132-P3-MW001I-A | 132-P3-MW001I-A-39-20220425 | 4/25/2022 | 39 | N | 4602569361 | Treatment | Intermediate | 10 | **1010** | < 10.0 U | < 50.0 U | -142.3 | 11.81 | 7.28 | 2.539 | 13.29 | 9.76 | -- | 12.6 | 223 | -- | 5000 | -- | -- | -- |
| 132-P3-MW001I-A | 132-P3-MW001I-A-40.0-20220517 | 5/17/2022 | 40 | N | 4602582941 | Treatment | Intermediate | 8.1 | **758** | < 10.0 U | < 10.0 U | -119.3 | 0.92 | 7.22 | 2.654 | 17.15 | 8.51 | -- | 11.2 | 221 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-A | 132-P3-MW001I-A-40-20220616 | 6/16/2022 | 40 | N | 4602602381 | Treatment | Intermediate | -- | **595** | -- | < 10.0 U | -135.9 | 0.32 | 7.581 | 2.549 | 15.59 | 9.3 | -- | 10.4 | **252** | -- | -- | -- | -- | -- |
| 132-P3-MW001I-A | 132-P3-MW001I-A-40-20220721 | 7/21/2022 | 40 | N | 4602623381 | Treatment | Intermediate | -- | **490** | -- | < 10.0 U | -119.0 | 1.73 | 7.2 | 2.736 | 19.51 | 8.36 | -- | 9.6 | **260** | -- | -- | -- | -- | -- |
| 132-P3-MW001I-A | 132-P3-MW001I-A-40-20220823 | 8/23/2022 | 40 | N | 4602642801 | Treatment | Intermediate | -- | **471** | -- | < 10.0 U | -134.1 | 7.08 | 7.27 | 2.289 | 19.49 | 9.05 | -- | 10.0 | 218 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-A | 132-P3-MW001I-A-40-20220920 | 9/20/2022 | 40 | N | 4602659081 | Treatment | Intermediate | -- | **7430** | -- | **5570** | 90 | 0.2 | 6.56 | 3.068 | 19.86 | 6.9 | -- | 74.2 | 172 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-A | 132-P3-MW001I-A-40-20221017 | 10/17/2022 | 40 | N | 4602676401 | Treatment | Intermediate | -- | **1080** | -- | < 10.0 U | -144.9 | 1.74 | 7.14 | 2.179 | 18.52 | 9.31 | -- | 11.2 | 198 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-A | 132-P3-MW001I-A-40-20221114 | 11/14/2022 | 40 | N | 4602695301 | Treatment | Intermediate | **107** | **257** | < 10.0 U | < 10.0 U | -130.8 | 7.86 | 6.27 | 2.345 | 14.61 | 33.7 | -- | 11.1 | 206 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-A | 132-P3-MW001I-A-40-20221215 | 12/15/2022 | 40 | N | 4602714561 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -184.8 | 0.77 | 6.96 | 3.304 | 11.75 | 4.18 | -- | 1.4 | 127 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-A | 132-P3-MW001I-A-40-20230120 | 1/20/2023 | 40 | N | 4602733031 | Treatment | Intermediate | -- | 29.6 | -- | < 10.0 U | -202 | 0.06 | 7.06 | 2.234 | 13 | 9.7 | -- | 7.6 | 206 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-A | 132-P3-MW001I-A-40.0-20230223 | 2/23/2023 | 40 | N | 4602751411 | Treatment | Intermediate | 5.3 | **1070** | < 10.0 U | < 10.0 U | -128 | 0.54 | 7.06 | 2.08 | 12.8 | 65.8 | -- | 7.9 | 245 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-A | 132-P3-MW001I-A-40.0-20230321 | 3/21/2023 | 40 | N | 4602767381 | Treatment | Intermediate | 3.8 J | **71.3** | < 10.0 U | < 10.0 U | -107.5 | 3.14 | 7.29 | 1.956 | 13.74 | 16.7 | -- | 7.8 | **325** | -- | -- | -- | -- | -- |
| 132-P3-MW001I-A | 132-P3-MW001I-A-40.0-20230620 | 6/20/2023 | 40 | N | 4602827171 | Treatment | Intermediate | 33.6 | **126** | < 10.0 U | < 10.0 U | -220.1 | 0.67 | 6.53 | 1.642 | 17.7 | 30.1 | -- | 6.7 | 164 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-A | 132-P3-MW001I-A-40.0-20230714 | 7/14/2023 | 40 | N | 4602842251 | Treatment | Intermediate | 26.9 | **80.9** | < 50.0 U | < 50.0 U | -174.2 | 0.15 | 6.74 | 1.65 | 18.77 | 12.8 | -- | 6.9 | 211 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-A | 132-P3-MW001I-A-40.0-20230815 | 8/15/2023 | 40 | N | 4602862031 | Treatment | Intermediate | 32.8 | 68.9 | < 10.0 U | < 10.0 U | -132 | 1.6 | 7.16 | 1.736 | 21.68 | 15.5 | -- | 8.0 | 172 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-A | 132-P3-MW001I-A-40.0-20230815-X | 8/15/2023 | 40 | FD | 4602862031 | Treatment | Intermediate | 31.4 | 68.5 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 8.0 | 163 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-A | 132-P3-MW001I-A-40.0-20230915 | 9/15/2023 | 40 | N | 4602882761 | Treatment | Intermediate | -- | 34.8 | -- | < 10.0 U | 7.7 | 2.21 | 6.53 | 1.475 | 20.81 | 9.43 | -- | 8.1 | 128 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-A | 132-P3-MW001I-A-40.0-20231011 | 10/11/2023 | 40 | N | 4602901161 | Treatment | Intermediate | **78.4** | 50.0 | < 10.0 U | < 10.0 U | -102.4 | 0.51 | 6.69 | 1.87 | 19.41 | 16.9 | -- | 7.2 | 162 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-A | 132-P3-MW001I-A-40.0-20231114 | 11/14/2023 | 40 | N | JD76935 | Treatment | Intermediate | -- | 64.2 | -- | < 10 U | 43.1 | 0.02 | 7.13 | 1.878 | 16.4 | 9.51 | -- | 6.5 | 133 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-A | 132-P3-MW001I-A-40.0-20231213 | 12/13/2023 | 40 | N | JD78776 | Treatment | Intermediate | 44.7 | **95.6** | 32 | 30 | -111.3 | 0.13 | 6.33 | 1.68 | 14.1 | 35.1 | -- | 5.7 | 113 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-A | 132-P3-MW001I-A-40.0-20240119 | 1/19/2024 | 40 | N | JD80858 | Treatment | Intermediate | -- | 40.7 | -- | < 10 U | -162.4 | 0.16 | 6.56 | 1.941 | 10.6 | 6.81 | -- | 6.8 | 138 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-A | 132-P3-MW001I-A-40.0-20240222 | 2/22/2024 | 40 | N | JD82990 | Treatment | Intermediate | -- | 67.5 | -- | 6.5 B | -85.9 | 0 | 6.35 | 1.628 | 10.5 | 9.75 | -- | 5.0 | 145 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-A | 132-P3-MW001I-A-40.0-20240318 | 3/18/2024 | 40 | N | JD84685 | Treatment | Intermediate | -- | 30.7 | -- | < 10 U | -144.3 | 0.35 | 6.23 | 1.688 | 12.3 | 4.87 | -- | 5.1 | 177 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-A | 132-P3-MW001I-A-40.0-20240410 | 4/10/2024 | 40 | N | JD86199 | Treatment | Intermediate | -- | **77.8** | -- | < 10 U | -137.3 | 0.17 | 6.26 | 1.614 | 14.1 | 5.27 | -- | 5.2 | 108 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-A | 132-P3-MW001I-A-40.0-20240522 | 5/22/2024 | 40 | N | JD88961 | Treatment | Intermediate | -- | 50.2 | -- | 4.7 B | -173.5 | 0.24 | 5.99 | 1.441 | 19.1 | 6.73 | -- | 6.5 | 76.9 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-A | 132-P3-MW001I-A-40.0-20240617 | 6/17/2024 | 40 | N | JD90602 | Treatment | Intermediate | -- | 47.3 | -- | < 10 U | -460.1 | 0.15 | 6.09 | 1.224 | 20.8 | 4.76 | -- | 8.4 | 78.0 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-A | 132-P3-MW001I-A-24.5-20240716 | 7/16/2024 | 24.5 | N | JD92267 | Post-Treatment | Intermediate | -- | 34.6 | -- | < 10 RA | 40.4 | 0.21 | 6.42 | 1445 | 23.9 | 7.69 | -- | 7.7 | 101 | < 2.0 U | -- | -- | -- | -- |
| 132-P3-MW001I-A | 132-P3-MW001I-A-29.5-20240716 | 7/16/2024 | 29.5 | N | JD92267 | Post-Treatment | Intermediate | -- | **85.0** | -- | 21 J- | 38.4 | 0.15 | 6.43 | 1436 | 21.6 | 8.53 | -- | 7.4 | 103 | < 2.0 U | -- | -- | -- | -- |
| 132-P3-MW001I-A | 132-P3-MW001I-A-34.5-20240717 | 7/17/2024 | 34.5 | N | JD92334 | Post-Treatment | Intermediate | -- | 57.8 | -- | 20 J | 34 | 0.21 | 6.51 | 1422 | 19.5 | 3.09 | -- | 19.6 J | 87.8 | 0.62 J | -- | -- | -- | -- |
| 132-P3-MW001I-A | 132-P3-MW001I-A-39.5-20240717 | 7/17/2024 | 39.5 | N | JD92334 | Post-Treatment | Intermediate | -- | 59.1 | -- | < 10 RA | 35.8 | 0.19 | 6.48 | 1436 | 19.2 | 8.69 | -- | 8.6 J | 89.1 | 0.69 J | -- | -- | -- | -- |
| 132-P3-MW001I-A | 132-P3-MW001I-A-29.5-20241010 | 10/10/2024 | 29.5 | N | JD97909 | Post-Treatment | Intermediate | 8.8 J | 19.2 | 22 J | 27 | -122.8 | 1.29 | 6.51 | 1.48 | 18.6 | 33.9 | -- | 7.3 J+ | 75.8 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-62-20211012 | 10/12/2021 | 62 | N | 4602448821 | Baseline | Intermediate | 25.8 J | 48.4 | 38.0 J | 15.2 J | -45.40 | 0.86 | 7.99 | 0.63 | 18.19 | 2.62 | -- | 0.89 J | 204 | < 1.0 U | 15 JB | < 120 U | **175** | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-62-20211227 | 12/27/2021 | 62 | N | 4602498521 | Treatment | Intermediate | **137** | **137** | **109** | **110** | 193.1 | 0.21 | 8.15 | 0.65 | 13.43 | 1.27 | -- | 1.3 | 180 | -- | 25 | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-62-20220120 | 1/20/2022 | 62 | N | 4602510021 | Treatment | Intermediate | **3320** | **4130** | **3030** | **6210** | -- | -- | -- | -- | -- | -- | -- | 0.98 J | 172 | -- | 25 | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-62-20220224 | 2/24/2022 | 62 | N | 4602531681 | Treatment | Intermediate | 36.4 | **154** | 26.6 | 18.9 | -28.50 | 0.37 | 8.46 | 0.65 | 11.88 | 3.20 | -- | 1.1 | 174 | -- | 24 | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-62-20220324 | 3/24/2022 | 62 | N | 4602549601 | Treatment | Intermediate | 21.5 | **94.9** | 10.7 | < 10.0 UF1 | -81.80 | 0.87 | 8.05 | 0.52 | 12.12 | 1.92 | -- | 1.0 | 176 | -- | 22 | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-61-20220425 | 4/25/2022 | 61 | N | 4602569361 | Treatment | Intermediate | **8560** | **8620** | **8790** | **9480** | -- | -- | -- | -- | -- | -- | -- | 0.55 J | 204 | -- | 36 | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-62.0-20220517 | 5/17/2022 | 62 | N | 4602582941 | Treatment | Intermediate | **19400** | **21500** | **18400** | **21000** | 46.9 | 0.58 | 8.20 | 0.906 | 17.23 | 1.45 | -- | 1.1 | 200 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-62-20220615 | 6/15/2022 | 62 | N | 4602601501 | Treatment | Intermediate | -- | **3700** | -- | **3960** | 8.3 | 0.25 | 8.22 | 0.791 | 17.87 | 4.37 | -- | 1.1 | 181 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-62-20220721 | 7/21/2022 | 62 | N | 4602623381 | Treatment | Intermediate | -- | **19000** | 2.4 | **17600** | 108.9 | 2.4 | 7.97 | 1.024 | 18.99 | 3.4 | -- | 1.5 | 176 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-62-20220823 | 8/23/2022 | 62 | N | 4602642801 | Treatment | Intermediate | -- | **6990** | -- | **6330** | -4.9 | 0.68 | 8.17 | 0.773 | 18.67 | 3.40 | -- | 1.4 | 155 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-62-20220920 | 9/20/2022 | 62 | N | 4602659081 | Treatment | Intermediate | -- | **38800** | -- | **39400** | 81 | 0.27 | 7.57 | 1.212 | 19.45 | 4.68 | -- | 3.4 | 177 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-62-20221017 | 10/17/2022 | 62 | N | 4602676401 | Treatment | Intermediate | -- | **69400** | -- | **64500** | 44.4 | 0.88 | 7.95 | 1.249 | 17.77 | 4.33 | -- | 3.9 | **257** | -- | -- | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-62-20221111 | 11/11/2022 | 62 | N | 4602693491 | Treatment | Intermediate | -- | **109000** | -- | **102000** | 90.5 | 0.25 | 7.79 | 1.545 | 16.8 | 5.59 | -- | 4.0 | 226 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-62-20221214 | 12/14/2022 | 62 | N | 4602713561 | Treatment | Intermediate | -- | **8050** | -- | **5660** | -135 | 0.23 | 8.42 | 0.68 | 12.94 | 7.5 | -- | 1.8 | 240 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-62-20230120 | 1/20/2023 | 62 | N | 4602733031 | Treatment | Intermediate | -- | **82500** | -- | **299000** | -54 | 0.45 | 8.03 | 0.78 | 12.4 | 9.05 | -- | 1.2 | 230 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-62.0-20230223 | 2/23/2023 | 62 | N | 4602751411 | Treatment | Intermediate | 4.2 | **1760** | < 10.0 U | < 10.0 U | -119.6 | 0.32 | 8.3 | 0.786 | 13.3 | 247 | -- | 1.3 | 214 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-62-20230321 | 3/21/2023 | 62 | N | 4602767381 | Treatment | Intermediate | -- | **429** | -- | < 10.0 U | 31.6 | 0.88 | 8.23 | 0.693 | 15.09 | 5.12 | -- | 1.5 | 216 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-62-20230620 | 6/20/2023 | 62 | N | 4602827171 | Treatment | Intermediate | -- | **417** | -- | < 10.0 U | -40.3 | 0.71 | 7.86 | 0.596 | 19.62 | 1 | -- | 0.60 J | 131 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-62-20230714 | 7/14/2023 | 62 | N | 4602842251 | Treatment | Intermediate | -- | **6690** | -- | **5910** | 105.3 | 0.2 | 8.21 | 0.834 | 18.65 | 4.25 | -- | 0.94 J | 222 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-62-20230815 | 8/15/2023 | 62 | N | 4602862031 | Treatment | Intermediate | -- | **20000** | -- | **20600** | 268.7 | 0.41 | 7.09 | 1.022 | 20.61 | 0.97 | -- | 2.0 | 168 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-62.0-20230915 | 9/15/2023 | 62 | N | 4602882761 | Treatment | Intermediate | -- | **58400** | -- | **49700** | 33.2 | 0.72 | 7.69 | 1.549 | 18.12 | 0.78 | -- | 4.3 | 248 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-62.0-20231011 | 10/11/2023 | 62 | N | 4602901161 | Treatment | Intermediate | -- | **28200** | -- | **25500** | 25.9 | 0.31 | 7.92 | 1.409 | 20.02 | 8.21 | -- | 10.5 | 248 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-62.0-20231115 | 11/15/2023 | 62 | N | JD77052 | Treatment | Intermediate | -- | **32200** | -- | **36000** | 141.8 | 0.18 | 7.45 | 2.003 | 15.9 | 5.24 | -- | 39.2 | **258** | -- | -- | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-62.0-20231213 | 12/13/2023 | 62 | N | JD78776 | Treatment | Intermediate | -- | **2130** | -- | **1700** | -2 | 0.13 | 7.53 | 1.317 | 13.8 | 1.52 | -- | 19.8 | 231 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-62.0-20231213-X | 12/13/2023 | 62 | FD | JD78776 | Treatment | Intermediate | -- | **1920** | -- | **1400** | -- | -- | -- | -- | -- | -- | -- | 16.1 | 230 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-62.0-20240119 | 1/19/2024 | 62 | N | JD80858 | Treatment | Intermediate | -- | **911** | -- | < 10 U | -209.5 | 0.15 | 6.94 | 1.61 | 10.5 | 9.96 | -- | 66.0 | 182 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-62.0-20240119-X | 1/19/2024 | 62 | FD | JD80858 | Treatment | Intermediate | -- | **731** | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | 65.0 | 183 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-62-20240222 | 2/22/2024 | 62 | N | JD82990 | Treatment | Intermediate | -- | **212** | -- | < 10 U | -139.6 | 0.2 | 7.58 | 0.758 | 10.2 | 4.33 | -- | 0.99 B | 227 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-62-20240222-X | 2/22/2024 | 62 | FD | JD82990 | Treatment | Intermediate | -- | **112** | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | 0.90 B | 227 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-62-20240318 | 3/18/2024 | 62 | N | JD84685 | Treatment | Intermediate | -- | **131** | -- | < 10 U | -183.6 | 0.14 | 7.85 | 0.79 | 12.8 | 2.6 | -- | 0.94 B | 233 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-62-20240318-X | 3/18/2024 | 62 | FD | JD84685 | Treatment | Intermediate | -- | 69.6 | -- | 3.9 B | -- | -- | -- | -- | -- | -- | -- | 0.79 B | 232 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-62-20240410 | 4/10/2024 | 62 | N | JD86199 | Treatment | Intermediate | -- | **389** | -- | < 10 U | -57.2 | 0.95 | 7.79 | 0.715 | 14.9 | 7.45 | -- | < 1.0 U | 204 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-62-20240522 | 5/22/2024 | 62 | N | JD88961 | Treatment | Intermediate | -- | 33.4 | -- | < 10 U | -156.3 | 0.21 | 7.57 | 0.744 | 18.5 | 4.36 | -- | 1.0 | 221 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-62-20240522-X | 5/22/2024 | 62 | FD | JD88961 | Treatment | Intermediate | -- | 26.0 | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | 0.90 B | 221 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-62-20240617 | 6/17/2024 | 62 | N | JD90602 | Treatment | Intermediate | -- | 8.7 B | -- | < 10 U | -428.2 | 0.2 | 7.44 | 0.642 | 20.7 | 99 | -- | 0.94 B | 230 | -- | -- | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-46.5-20240718 | 7/18/2024 | 46.5 | N | JD92447 | Post-Treatment | Intermediate | -- | 16.3 | -- | < 10 UJ | -101.2 | 0.54 | 7.45 | 0.647 | 22.9 | 0.38 | -- | 0.75 J | 201 | < 2.0 U | -- | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-51.5-20240718 | 7/18/2024 | 51.5 | N | JD92447 | Post-Treatment | Intermediate | -- | 46.4 | -- | < 10 UJ | -111 | 0.38 | 7.41 | 0.644 | 24.6 | 0.93 | -- | 0.78 J | 200 | < 2.0 U | -- | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-56.5-20240718 | 7/18/2024 | 56.5 | N | JD92447 | Post-Treatment | Intermediate | -- | **107** | -- | < 10 UJ | -123.9 | 0.14 | 7.43 | 0.66 | 23.4 | 1.05 | -- | 0.77 J | 203 | < 2.0 U | -- | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-61.5-20240719 | 7/19/2024 | 61.5 | N | JD92501 | Post-Treatment | Intermediate | -- | **241** | -- | < 10 U | -98.3 | 0.23 | 7.39 | 0.738 | 20.6 | 5.69 | -- | 1.0 J+ | 201 | < 2.0 U | -- | -- | -- | -- |
| 132-P3-MW001I-B | 132-P3-MW001I-B-61.5-20241010 | 10/10/2024 | 61.5 | N | JD97909 | Post-Treatment | Intermediate | -- | **362** | -- | < 10 U | -134.7 | 1.33 | 6.93 | 0.85 | 16.9 | 3.57 | -- | 1.2 J+ | 200 | -- | -- | -- | -- | -- |
| 132-P3-MW002I-A | 132-P3-MW002I-A-31-20211011 | 10/11/2021 | 31 | N | 4602448291 | Baseline | Intermediate | **12000** | **13700** | **12900 J** | **9430 J** | 183.20 | 3.33 | 6.79 | 1.56 | 16.37 | 2.47 | -- | 2.0 | 76.1 | < 1.0 U | 310 | < 240 U | **68.8** | -- |
| 132-P3-MW002I-A | 132-P3-MW002I-A-31.0-20211116 | 11/16/2021 | 31 | N | 4602474031 | Treatment | Intermediate | **21100** | **19800** | **19200** | **22000** | 145.30 | 3.24 | 7.31 | 1.70 | 14.67 | 9.20 | -- | 2.1 | 72.8 | -- | 390 | -- | -- | -- |
| 132-P3-MW002I-A | 132-P3-MW002I-A-31-20211223 | 12/23/2021 | 31 | N | 4602497541 | Treatment | Intermediate | **17400** | **17900** | **15000 H** | **12100 H** | 221.40 | 0.26 | 6.79 | 1.39 | 11.77 | 1.19 | -- | 2.0 | 60.4 | -- | 210 | -- | -- | -- |
| 132-P3-MW002I-A | 132-P3-MW002I-A-31-20220117 | 1/17/2022 | 31 | N | 4602508211 | Treatment | Intermediate | **1830** | **1920** | **1040** | **810** | 51.10 | 0.18 | 6.24 | 2.50 | 12.07 | 5.75 | -- | 578 | 76.4 | -- | 160 | -- | -- | -- |
| 132-P3-MW002I-A | 132-P3-MW002I-A-31.0-20220222 | 2/22/2022 | 31 | N | 4602529771 | Treatment | Intermediate | **332** | **1460** | < 20.0 U | < 20.0 U | -130.10 | 0.50 | 6.31 | 2.65 | 13.21 | 9.10 | -- | 544 | 22.7 | -- | 190 | -- | -- | -- |
| 132-P3-MW002I-A | 132-P3-MW002I-A-31-20220323 | 3/23/2022 | 31 | N | 4602548831 | Treatment | Intermediate | **479** | **1090** | < 20.0 U | < 20.0 U | -69.80 | 0.09 | 6.33 | 2.69 | 13.17 | 9.69 | -- | 755 | 22.3 | -- | 140 | -- | -- | -- |
| 132-P3-MW002I-A | 132-P3-MW002I-A-31-20220422 | 4/22/2022 | 31 | N | 4602567961 | Treatment | Intermediate | **262** | **344** | < 50.0 U | < 50.0 U | -89.0 | 0.29 | 6.48 | 2.900 | 14.15 | 3.05 | -- | 460 | 20.5 | -- | 120 | -- | -- | -- |
| 132-P3-MW002I-A | 132-P3-MW002I-A-31-20220517 | 5/17/2022 | 31 | N | 4602582941 | Treatment | Intermediate | **126** | **144** | < 50.0 U | < 50.0 U | -104.3 | 3.69 | 6.55 | 2.714 | 15.91 | 3.84 | -- | 331 | 12.4 | -- | -- | -- | -- | -- |
| 132-P3-MW002I-A | 132-P3-MW002I-A-31-20220616 | 6/16/2022 | 31 | N | 4602602381 | Treatment | Intermediate | -- | **125** | -- | < 10.0 U | -110.8 | 0.410 | 6.64 | 2.557 | 15.57 | 3.29 | -- | 198 | 13.2 | -- | -- | -- | -- | -- |
| 132-P3-MW002I-A | 132-P3-MW002I-A-31-20220720 | 7/20/2022 | 31 | N | 4602622601 | Treatment | Intermediate | -- | 59.1 | -- | < 50.0 U | -125.4 | 4.440 | 6.83 | 1.975 | 18.07 | 3.59 | -- | 84.0 | 3.47 | -- | -- | -- | -- | -- |
| 132-P3-MW002I-A | 132-P3-MW002I-A-31-20220720-X | 7/20/2022 | 31 | FD | 4602622601 | Treatment | Intermediate | -- | 60.0 | -- | < 50.0 U | -- | -- | -- | -- | -- | -- | -- | 83.4 | 3.60 | -- | -- | -- | -- | -- |
| 132-P3-MW002I-A | 132-P3-MW002I-A-31-20220823 | 8/23/2022 | 31 | N | 4602642801 | Treatment | Intermediate | -- | 56.9 | -- | < 10.0 U | -139.7 | 2.01 | 6.96 | 1.988 | 18.12 | 3.29 | -- | 53.3 | 8.35 | -- | -- | -- | -- | -- |
| 132-P3-MW002I-A | 132-P3-MW002I-A-31-20220919 | 9/19/2022 | 31 | N | 4602658321 | Treatment | Intermediate | -- | **1230** | -- | **< 100 U** | -108.2 | 0.93 | 6.4 | 3.662 | 20.22 | 2.86 | -- | 1170 | 23.7 | -- | -- | -- | -- | -- |
| 132-P3-MW002I-A | 132-P3-MW002I-A-31-20221017 | 10/17/2022 | 31 | N | 4602676401 | Treatment | Intermediate | -- | **359** | -- | **< 100 U** | -136.5 | 2.47 | 6.67 | 2.922 | 16.39 | 7.31 | -- | 514 | 0.85 JF1 | 16.9 | -- | -- | -- | -- |
| 132-P3-MW002I-A | 132-P3-MW002I-A-31-20221114 | 11/14/2022 | 31 | N | 4602695301 | Treatment | Intermediate | -- | **208** | -- | < 50.0 U | -135.6 | 1.09 | 6.68 | 3.762 | 14.47 | 9.93 | -- | 317 | 3.22 | -- | -- | -- | -- | -- |
| 132-P3-MW002I-A | 132-P3-MW002I-A-31-20221215 | 12/15/2022 | 31 | N | 4602714561 | Treatment | Intermediate | **235** | **268** | **< 100 UH** | **< 100 U** | -129.5 | 0.43 | 6.69 | 2.254 | 9.95 | 18.98 | -- | 177 | 2.34 J | -- | -- | -- | -- | -- |
| 132-P3-MW002I-A | 132-P3-MW002I-A-31-20230120 | 1/20/2023 | 31 | N | 4602733031 | Treatment | Intermediate | **277** | **315** | < 20.0 U | < 50.0 U | -103.8 | 0.81 | 6.62 | 2.402 | 11.8 | 23.9 | -- | 101 | 6.64 | -- | -- | -- | -- | -- |
| 132-P3-MW002I-A | 132-P3-MW002I-A-31.0-20230224 | 2/24/2023 | 31 | N | 4602752361 | Treatment | Intermediate | **220** | **287** | < 20.0 U | < 20.0 U | -134.3 | 0.13 | 7.54 | 2.227 | 11.9 | 16.8 | -- | 88.0 | 2.42 | -- | -- | -- | -- | -- |
| 132-P3-MW002I-A | 132-P3-MW002I-A-31.0-20230322 | 3/22/2023 | 31 | N | 4602768001 | Treatment | Intermediate | **223** | **258** | < 10.0 U | < 50.0 U | -101.5 | 0.28 | 6.49 | 1.836 | 15 | 17.5 | -- | 79.9 | 1.23 | -- | -- | -- | -- | -- |
| | | | | | | | | | **263** | | | | | | | | | | | | | | | | |
| 132-P3-MW002I-A | 132-P3-MW002I-A-31-20230621 | 6/21/2023 | 31 | N | 4602828031 | Treatment | Intermediate | **214** | **245** | **< 100 U** | **< 100 U** | -113.2 | 0.46 | 6.43 | 1.978 | 17.23 | 15.7 | -- | 63.6 | 4.01 | -- | -- | -- | -- | -- |
| 132-P3-MW002I-A | 132-P3-MW002I-A-31.0-20230719 | 7/19/2023 | 31 | N | 4602845491 | Treatment | Intermediate | **140** | **203** | < 50.0 U | < 50.0 U | -138 | 0.27 | 6.51 | 1.641 | 18.26 | 30.9 | -- | 53.9 | 4.66 | -- | -- | -- | -- | -- |
| 132-P3-MW002I-A | 132-P3-MW002I-A-31-20230815 | 8/15/2023 | 31 | N | 4602862031 | Treatment | Intermediate | **144** | **144** | < 50.0 U | < 50.0 U | -130.5 | 1.719 | 19.8 | 6.79 | 20 | 13.5 | -- | 53.0 | 4.49 J | -- | -- | -- | -- | -- |
| 132-P3-MW002I-A | 132-P3-MW002I-A-31.0-20230918 | 9/18/2023 | 31 | N | 4602884721 | Treatment | Intermediate | -- | **175** | -- | < 20.0 U | -120 | 0.24 | 6.35 | 2.62 | 17.98 | 9.28 | -- | 94.3 | 5.81 | -- | -- | -- | -- | -- |
| 132-P3-MW002I-A | 132-P3-MW002I-A-31.0-20231011 | 10/11/2023 | 31 | N | 4602901161 | Treatment | Intermediate | -- | **237** | -- | < 20.0 U | -112.8 | 0.59 | 6.73 | 1.857 | 17.82 | 9.44 | -- | 138 | 2.79 J | -- | -- | -- | -- | -- |
| 132-P3-MW002I-A | 132-P3-MW002I-A-31.0-20231114 | 11/14/2023 |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 132-P3-MW002I-A | 132-P3-MW002I-A-31.0-20240412 | 4/12/2024 | 31 | N | JD86437 | Treatment | Intermediate | **391** | **380** | < 10 U | < 10 U | -297.9 | 0.1 | 6.46 | 2.725 | 14.6 | 26.2 | -- | 179 | 10.5 B | -- | -- | -- | -- | -- |
| 132-P3-MW002I-A | 132-P3-MW002I-A-31.0-20240522 | 5/22/2024 | 31 | N | JD88961 | Treatment | Intermediate | **542** | **582** | 8.3 B | 9.5 B | -177.8 | 0.17 | 6.48 | 2.331 | 16.9 | 26.8 | -- | 197 | < 40 U | -- | -- | -- | -- | -- |
| 132-P3-MW002I-A | 132-P3-MW002I-A-31.0-20240620 | 6/20/2024 | 31 | N | JD90821 | Treatment | Intermediate | **602** | **563** | 4.0 B | 4.0 B | -166 | 0.02 | 6.59 | 2.225 | 23 | 20.6 | -- | 244 | < 10 U | -- | -- | -- | -- | -- |
| 132-P3-MW002I-A | 132-P3-MW002I-A-30.9-20240717 | 7/17/2024 | 30.9 | N | JD92334 | Post-Treatment | Intermediate | **475** | **497** | 31 J | 33 J | -302.3 | 0.04 | 6.61 | 2.63 | 24.1 | 16.5 | -- | 239 J | < 40 U | 0.71 J | -- | -- | -- | -- |
| 132-P3-MW002I-A | 132-P3-MW002I-A-35.9-20240717 | 7/17/2024 | 35.9 | N | JD92334 | Post-Treatment | Intermediate | **477** | **509** | 21 J | 23 J | -299.6 | 0.11 | 6.64 | 2.609 | 20.1 | 15.3 | -- | 241 J | < 40 U | 0.79 J | -- | -- | -- | -- |
| 132-P3-MW002I-A | 132-P3-MW002I-A-25.9-20240718 | 7/18/2024 | 25.9 | N | JD92447 | Post-Treatment | Intermediate | **413** | **467** | 21 | 16 J | -272.8 | 0.03 | 6.61 | 2.502 | 24.9 | 24.9 | -- | 184 | < 40 U | 0.49 J | -- | **196000** | **9070** | -- |
| 132-P3-MW002I-A | 132-P3-MW002I-A-30.9-20241010 | 10/10/2024 | 30.9 | N | JD97909 | Post-Treatment | Intermediate | -- | **363** | -- | **73** | -150.8 | 0.05 | 6.5 | 2.59 | 18.3 | 7.96 | -- | 184 J+ | < 40 U | -- | -- | -- | -- | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-46-20211008 | 10/8/2021 | 46 | N | 4602446561 | Baseline | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -29.00 | 0.64 | 8.43 | 0.44 | 17.51 | 3.80 | -- | < 1.0 U | 17.5 | < 1.0 U | < 5.0 U | < 120 U | **75.0** | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-46-20211117 | 11/17/2021 | 46 | N | 4602474671 | Treatment | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -261.70 | 2.16 | 9.00 | 0.40 | 14.76 | 3.67 | -- | 3.3 JB | 17.1 | -- | 5.1 | < 120 U | 43.9 | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-46-20211223 | 12/23/2021 | 46 | N | 4602497541 | Treatment | Intermediate | < 4.0 U | 6.6 | < 10.0 UH | < 10.0 UH | -204.8 | 0.73 | 8.27 | 0.42 | 12.12 | 2.29 | -- | 20.7 B | 5.24 F1 | -- | 32 | -- | -- | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-46-20220119 | 1/19/2022 | 46 | N | 4602509341 | Treatment | Intermediate | < 4.0 U | 3.5 J | < 10.0 U | < 10.0 U | -123.10 | 0.04 | 7.46 | 0.63 | 11.63 | 4.35 | -- | 108 | 2.54 F1 | -- | 22 | -- | -- | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-46-20220222 | 2/22/2022 | 46 | N | 4602529771 | Treatment | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -127.40 | 5.68 | 7.50 | 0.65 | 13.15 | 1.01 | -- | 71.2 | 0.97 | -- | 1200 | -- | -- | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-46-20220323 | 3/23/2022 | 46 | N | 4602548831 | Treatment | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -162.80 | 1.25 | 7.66 | 0.53 | 12.26 | 0.96 | -- | 60.2 | 3.27 | -- | 850 | -- | -- | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-46-20220422 | 4/22/2022 | 46 | N | 4602567961 | Treatment | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -100.8 | -0.37 | 7.91 | 0.590 | 14.68 | 0.32 | -- | 46.6 | 0.25 J | -- | 1800 | -- | -- | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-46-20220517 | 5/17/2022 | 46 | N | 4602582941 | Treatment | Intermediate | **183** | **181** | < 10.0 U | < 10.0 U | -113.4 | 0.51 | 6.91 | 1.373 | 16.44 | 3.83 | -- | 343 | 0.63 | -- | -- | -- | -- | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-46-20220616 | 6/16/2022 | 46 | N | 4602602381 | Treatment | Intermediate | -- | **93.6** | -- | < 10.0 U | -86.40 | 0.13 | 7.04 | 1.062 | 16.19 | 1.51 | -- | 176 | 0.87 | -- | -- | -- | -- | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-46-20220720 | 7/20/2022 | 46 | N | 4602622601 | Treatment | Intermediate | -- | 9.5 | -- | < 10.0 U | -116.70 | 1.27 | 7.41 | 0.604 | 19.77 | 2.12 | -- | 48.4 | 0.53 | -- | -- | -- | -- | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-46-20220823 | 8/23/2022 | 46 | N | 4602642801 | Treatment | Intermediate | -- | 4.3 | -- | < 10.0 U | -177.4 | 1.15 | 7.66 | 0.596 | 19.16 | 1.15 | -- | 33.3 F1 | 0.32 J | -- | -- | -- | -- | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-46-20220920 | 9/20/2022 | 46 | N | 4602659081 | Treatment | Intermediate | -- | **2570** | -- | **< 100 U** | -72.9 | 10.19 | 6.02 | 3.179 | 18.91 | 2.43 | -- | 1250 | 90.1 | -- | -- | -- | -- | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-46-20221014 | 10/14/2022 | 46 | N | 4602675261 | Treatment | Intermediate | -- | **5000** | -- | < 20.0 U | -119.8 | 3.66 | 5.74 | 4.003 | 17.83 | 8.14 | -- | 1960 | 54.5 | -- | -- | -- | -- | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-46-20221114 | 11/14/2022 | 46 | N | 4602695301 | Treatment | Intermediate | -- | **4170** | -- | **< 100 U** | -110.2 | 2.06 | 5.56 | 4.867 | 14.92 | 6.76 | -- | 1820 | 71.9 | -- | -- | -- | -- | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-46-20221214 | 12/14/2022 | 46 | N | 4602713561 | Treatment | Intermediate | -- | **2680** | -- | < 50.0 U | -90 | 0.26 | 5.99 | 3.241 | 12.4 | 0.98 | -- | 1300 | 4.14 J | -- | -- | -- | -- | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-46-20230120 | 1/20/2023 | 46 | N | 4602733031 | Treatment | Intermediate | -- | **1460** | -- | < 50.0 U | -83.1 | 0.75 | 6.37 | 3.02 | 12.83 | 5.02 | -- | 786 | 2.60 | -- | -- | -- | -- | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-46.0-20230223 | 2/23/2023 | 46 | N | 4602751411 | Treatment | Intermediate | -- | **859** | -- | **< 100 U** | -121.1 | 6.73 | 7.44 | 2.363 | 11.52 | 7.04 | -- | 440 | 1.15 | -- | -- | -- | -- | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-46.0-20230321 | 3/21/2023 | 46 | N | 4602767381 | Treatment | Intermediate | -- | **603** | -- | < 50.0 U | -173 | 0.45 | 6.38 | 2.123 | 15.3 | 7.9 | -- | 310 | 0.82 J | -- | -- | -- | -- | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-46-20230621 | 6/21/2023 | 46 | N | 4602828031 | Treatment | Intermediate | -- | **358** | -- | **< 100 U** | -89.5 | 0.2 | 6.32 | 1.623 | 16.65 | 9.6 | -- | 87.5 | 0.56 J | -- | -- | -- | -- | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-46.0-20230714 | 7/14/2023 | 46 | N | 4602842251 | Treatment | Intermediate | -- | **943** | -- | < 50.0 U | -113.6 | 0.09 | 6.5 | 2.685 | 24.02 | 9.5 | -- | 506 | 0.89 | -- | -- | -- | -- | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-46-20230815 | 8/15/2023 | 46 | N | 4602862031 | Treatment | Intermediate | -- | **1460** | -- | **< 100 U** | -127.1 | 0.33 | 6.77 | 1.904 | 20.07 | 8.57 | -- | 543 | 10.4 | -- | -- | -- | -- | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-46.0-20230918 | 9/18/2023 | 46 | N | 4602884721 | Treatment | Intermediate | **1380** | **1350** | < 20.0 U | < 20.0 U | -135.5 | 8.71 | 6.55 | 2.068 | 18.32 | 10.6 | -- | 335 | 6.05 | -- | -- | -- | -- | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-46.0-20231011 | 10/11/2023 | 46 | N | 4602901161 | Treatment | Intermediate | -- | **1050** | -- | < 50.0 U | 119 | 0.34 | 6.63 | 1.394 | 18.67 | 8.21 | -- | 135 | 0.95 J | -- | -- | -- | -- | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-46-20231114 | 11/14/2023 | 46 | N | JD76935 | Treatment | Intermediate | -- | **729** | -- | 3.9 B | -174.4 | 0.05 | 6.62 | 1.666 | 15.5 | 7.37 | -- | 89.1 | 1.0 B | -- | -- | -- | -- | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-46.0-20231214 | 12/14/2023 | 46 | N | JD78891 | Treatment | Intermediate | -- | **267** | -- | < 10 U | -91.6 | 0.11 | 6.72 | 1.127 | 11.4 | 7.01 | -- | 44.1 | 2.9 | -- | -- | -- | -- | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-46.0-20240119 | 1/19/2024 | 46 | N | JD80858 | Treatment | Intermediate | -- | **462** | -- | < 10 U | -98.9 | 0.09 | 6.72 | 1.518 | 10.7 | 7.79 | -- | 100 | < 20 U | -- | -- | -- | -- | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-46.0-20240223 | 2/23/2024 | 46 | N | JD83100 | Treatment | Intermediate | -- | **85.2** | -- | 6.5 B | -80.2 | 0 | 6.7 | 1.128 | 11.9 | 4.87 | -- | 25.1 | 1.5 B | -- | -- | -- | -- | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-46.0-20240318 | 3/18/2024 | 46 | N | JD84685 | Treatment | Intermediate | -- | **90.4** | -- | 7.5 B | -134.6 | 0.16 | 6.73 | 1.032 | 12.9 | 9.3 | -- | 23.0 | 1.2 B | -- | -- | -- | -- | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-46.0-20240412 | 4/12/2024 | 46 | N | JD86437 | Treatment | Intermediate | -- | **121** | -- | < 10 U | -312 | 0 | 6.64 | 1.165 | 14.1 | 9.73 | -- | 32.8 | < 2.0 U | -- | -- | -- | -- | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-46.0-20240522 | 5/22/2024 | 46 | N | JD88961 | Treatment | Intermediate | -- | **78.5** | -- | 25 | -114.6 | 0.17 | 6.78 | 0.907 | 16.7 | 9.87 | -- | 30.2 | < 2.0 U | -- | -- | -- | -- | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-46.0-20240620 | 6/20/2024 | 46 | N | JD90821 | Treatment | Intermediate | -- | **63.7** | -- | 23 | -113.9 | 0.08 | 7.01 | 0.819 | 18.5 | 2.59 | -- | 30.8 | < 2.0 U | -- | -- | -- | -- | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-45.9-20240717 | 7/17/2024 | 45.9 | N | JD92334 | Post-Treatment | Intermediate | -- | **82.9** | -- | 26 J | -81.6 | 7 | 6.7 | 1.068 | 21.8 | 2.78 | -- | 37.4 J | < 2.0 U | < 2.0 U | -- | -- | -- | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-50.9-20240717 | 7/17/2024 | 50.9 | N | JD92334 | Post-Treatment | Intermediate | -- | **95.1** | -- | 13 J | -73.6 | 0.11 | 6.7 | 1.086 | 19.6 | 2.1 | -- | 42.5 J | < 2.0 U | < 2.0 U | -- | -- | -- | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-40.9-20240718 | 7/18/2024 | 40.9 | N | JD92447 | Post-Treatment | Intermediate | -- | **94.8** | -- | 23 J | -233.5 | 0.12 | 6.9 | 1.016 | 23.8 | 5.02 | -- | 32.8 | < 2.0 U | < 2.0 U | -- | -- | -- | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-40.9-20240718-X | 7/18/2024 | 40.9 | FD | JD92447 | Post-Treatment | Intermediate | -- | **90.7** | -- | 10 J | -- | -- | -- | -- | -- | -- | -- | 33.1 | < 2.0 U | < 2.0 U | -- | -- | -- | -- |
| 132-P3-MW002I-B-R | 132-P3-MW002I-B-R-45.9-20241010 | 10/10/2024 | 45.9 | N | JD97909 | Post-Treatment | Intermediate | -- | **72.0** | -- | < 10 U | -107.4 | 0.2 | 6.82 | 1.05 | 15.9 | 3.17 | -- | 34.8 J+ | < 2.0 U | -- | -- | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-32-20211007 | 10/7/2021 | 32 | N | 4602445441 | Baseline | Intermediate | **10300** | **17100** | **96.6 J-** | **11300** | 127.80 | 0.15 | 6.76 | 2.67 | 18.26 | 9999.00 | -- | 5.3 | **1000** | < 1.0 U | 1100 | 147 | **3900** | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-32-20211228 | 12/28/2021 | 32 | N | 4602498981 | Treatment | Intermediate | **219000** | **222000** | **208000** | **246000** | 187.1 | 2.91 | 6.73 | 2.705 | 13.57 | 9.18 | -- | 36.1 | **463 F1** | -- | 1000 | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-32-20220118 | 1/18/2022 | 32 | N | 4602508581 | Treatment | Intermediate | **230000** | **202000** | **216000** | **221000** | 149.00 | 0 | 6.930 | 2.56 | 17.23 | 7.78 | -- | 4.8 | **450** | -- | 1000 | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-32-20220223 | 2/23/2022 | 32 | N | 4602530771 | Treatment | Intermediate | 14.0 | **690** | < 10.0 U | < 10.0 U | -72.00 | 1.15 | 6.93 | 3.97 | 13.71 | 8.50 | -- | 5.6 | **1030** | -- | 1400 | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-32-20220323 | 3/23/2022 | 32 | N | 4602548831 | Treatment | Intermediate | 12.2 | **487** | < 10.0 U | < 10.0 U | -67.90 | 3.42 | 6.95 | 1.94 | 12.19 | 9.20 | -- | 5.6 | **926** | -- | 1300 | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-32-20220422 | 4/22/2022 | 32 | N | 4602567961 | Treatment | Intermediate | 12.6 | **373** | < 10.0 U | < 10.0 U | -72.8 | 0.43 | 6.86 | 3.204 | 13.82 | 7.69 | -- | 5.8 | **1080** | -- | 1400 | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-32-20220517 | 5/17/2022 | 32 | N | 4602582941 | Treatment | Intermediate | 11.8 | **203** | < 10.0 U | < 10.0 U | -42.5 | 3.98 | 6.84 | 3.011 | 14.65 | 9.00 | -- | 6.7 | **803** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-32-20220616 | 6/16/2022 | 32 | N | 4602602381 | Treatment | Intermediate | -- | **401** | -- | < 10.0 U | -75.10 | 1.74 | 7.03 | 3.145 | 15.05 | 7.35 | -- | 9.2 | **674** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-32-20220719 | 7/19/2022 | 32 | N | 4602621891 | Treatment | Intermediate | -- | **336** | -- | < 10.0 U | -103.80 | 7.25 | 6.96 | 2.902 | 18.19 | 4.25 | -- | 14.3 | **413** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-32-20220824 | 8/24/2022 | 32 | N | 4602643471 | Treatment | Intermediate | -- | **1110** | -- | < 10.0 U | -80.0 | 1.28 | 7.15 | 3.057 | 18.97 | 8.98 | -- | 10.9 | **416** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-32-20220919 | 9/19/2022 | 32 | N | 4602658321 | Treatment | Intermediate | -- | **39800** | -- | **46500** | 137 | 0.36 | 7.03 | 2.905 | 20.15 | 8.65 | -- | 5.2 | **476** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-32-20221014 | 10/14/2022 | 32 | N | 4602675261 | Treatment | Intermediate | -- | **763** | -- | < 10.0 U | -75.6 | 1.24 | 7.18 | 2.899 | 17.45 | 9.36 | -- | 12.0 F1 | **605** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-32-20221115 | 11/15/2022 | 32 | N | 4602695881 | Treatment | Intermediate | -- | **386** | -- | < 20.0 U | -110.6 | 0.67 | 7.15 | 3.682 | 12.98 | 9.84 | -- | 14.4 | **692** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-32-20221215 | 12/15/2022 | 32 | N | 4602714561 | Treatment | Intermediate | -- | **280** | -- | < 10.0 U | -121.9 | 0.48 | 6.99 | 2.806 | 11.89 | 7.47 | -- | 15.2 | **712** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-32-20230120 | 1/20/2023 | 32 | N | 4602733031 | Treatment | Intermediate | -- | **216** | -- | < 20.0 U | -198.8 | 1.19 | 6.99 | 3.17 | 12.08 | 5.72 | -- | 14.9 | **661** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-32.0-20230223 | 2/23/2023 | 32 | N | 4602751411 | Treatment | Intermediate | -- | **2250** | -- | < 10.0 U | -111 | 0.7 | 7.28 | 3.14 | 12.74 | 9.7 | -- | 17.0 | **642** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-32.0-20230323 | 3/23/2023 | 32 | N | 4602768691 | Treatment | Intermediate | -- | **200** | -- | < 10.0 U | -26.9 | 3.19 | 7 | 2.707 | 12.81 | 9.63 | -- | 18.2 | **665** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-32-20230621 | 6/21/2023 | 32 | N | 4602828031 | Treatment | Intermediate | -- | **276** | -- | < 20.0 U | -102.7 | 1.92 | 6.96 | 2.808 | 17.1 | 9.05 | -- | 21.2 | **416** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-32-20230621-X | 6/21/2023 | 32 | FD | 4602828031 | Treatment | Intermediate | -- | **275** | -- | < 20.0 U | -- | -- | -- | -- | -- | -- | -- | 21.5 | **398** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-32.0-20230717 | 7/17/2023 | 32 | N | 4602844061 | Treatment | Intermediate | -- | **219** | -- | < 10.0 U | -117.1 | 0.3 | 6.95 | 2.907 | 21.87 | 6.15 | -- | 21.6 | **392** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-32.0-20230822 | 8/22/2023 | 32 | N | 4602866771 | Treatment | Intermediate | **109** | **1000** | < 20.0 U | < 10.0 U | -105.5 | 1.05 | 6.52 | 4.51 | 18.72 | 37.8 | -- | 22.8 | **691** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-32.0-20230918 | 9/18/2023 | 32 | N | 4602884721 | Treatment | Intermediate | -- | **311** | -- | < 10.0 U | -96.8 | 0.45 | 7.09 | 3.321 | 18.72 | 6.66 | -- | 22.4 | **667** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-32.0-20231011 | 10/11/2023 | 32 | N | 4602901161 | Treatment | Intermediate | -- | **470** | -- | < 20.0 U | -117.4 | 0.39 | 7.11 | 2.521 | 19.81 | 8.96 | -- | 19.7 | **642** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-32.0-20231114 | 11/14/2023 | 32 | N | JD76935 | Treatment | Intermediate | **20500** | **31700** | **31000** | **41200** | 48.9 | 0.15 | 7.03 | 3.442 | 13.3 | 37.9 | -- | < 10 U | **821** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-32.0-20231214 | 12/14/2023 | 32 | N | JD78891 | Treatment | Intermediate | **44900** | **47400** | **56800** | **62100** | 160.7 | 0.13 | 6.64 | 3.694 | 13.3 | 46.8 | -- | 4.5 B | **746** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-32.0-20240119 | 1/19/2024 | 32 | N | JD80858 | Treatment | Intermediate | -- | **524** | -- | 4.9 B | -180.2 | 0.09 | 6.38 | 3.08 | 6.1 | 9.32 | -- | 20.8 | **719** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-32.0-20240222 | 2/22/2024 | 32 | N | JD82990 | Treatment | Intermediate | **126** | **1350** | 4.1 B | 5.3 B | -56 | 0.28 | 6.51 | 2.947 | 8.9 | 26.3 | -- | 15.9 | **752** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-32.0-20240318 | 3/18/2024 | 32 | N | JD84685 | Treatment | Intermediate | **152** | **460** | 7.5 B | 2.7 B | -87.7 | 0.08 | 6.41 | 2.962 | 12.8 | 11.5 | -- | 16.6 | **630** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-32.0-20240410 | 4/10/2024 | 32 | N | JD86199 | Treatment | Intermediate | -- | **350** | -- | 5.1 B | -142.5 | 0.08 | 6.52 | 2.729 | 14.6 | 8.66 | -- | 19.1 | **498** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-32.0-20240522 | 5/22/2024 | 32 | N | JD88961 | Treatment | Intermediate | -- | **285** | -- | 15 | -147.3 | 0.15 | 6.32 | 2.809 | 19 | 8.02 | -- | 23.0 | **517** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-32.0-20240612 | 6/12/2024 | 32 | N | JD90299 | Treatment | Intermediate | **70.3** | **597** | 11 | 12 | -77.9 | 0.17 | 6.38 | 2.767 | 19.9 | 16.6 | -- | 31.2 | 46.8 | -- | -- | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-34.8-20240717 | 7/17/2024 | 34.8 | N | JD92334 | Post-Treatment | Intermediate | -- | **172** | -- | 20 J | -90.1 | 5.42 | 6.59 | 2.399 | 24.49 | 8.45 | -- | 29.1 J | **363** | 0.67 J | -- | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-39.8-20240717 | 7/17/2024 | 39.8 | N | JD92334 | Post-Treatment | Intermediate | 27.1 | **379** | 17 J | 23 J | -80.2 | 4.89 | 6.64 | 2.255 | 24.97 | 25.1 | -- | 31.2 J | **361** | 0.53 J | -- | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-24.8-20240718 | 7/18/2024 | 24.8 | N | JD92447 | Post-Treatment | Intermediate | -- | 42.9 | -- | 11 J | -21.2 | 1.84 | 6.68 | 2.678 | 26.01 | 2.59 | -- | 14.0 | **381** | < 2.0 U | -- | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-29.8-20240718 | 7/18/2024 | 29.8 | N | JD92447 | Post-Treatment | Intermediate | -- | **226** | -- | 22 J | -13.6 | 3.08 | 6.71 | 2.663 | 22.1 | 8.41 | -- | 25.4 | **377** | < 2.0 U | -- | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-39.8-20241014 | 10/14/2024 | 39.8 | N | JD98166 | Post-Treatment | Intermediate | -- | **247 J** | -- | 43 J | -107.1 | 0.26 | 6.94 | 2.50 | 18.7 | 7.42 | -- | 24.8 | **381** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-A | 132-P3-MW003I-A-39.8-20241014-X | 10/14/2024 | 39.8 | FD | JD98166 | Post-Treatment | Intermediate | -- | **150 J** | -- | 30 J | -- | -- | -- | -- | -- | -- | -- | 27.7 | **366** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-B | 132-P3-MW003I-B-52.8-20211008 | 10/8/2021 | 52.8 | N | 4602446561 | Baseline | Intermediate | < 4.0 U | 13.4 | < 10.0 U | < 10.0 U | -53.90 | 0.24 | 8.05 | 1.14 | 17.01 | 0.60 | -- | 0.41 J | 80.6 | < 1.0 U | 14 | < 120 U | **103** | -- |
| 132-P3-MW003I-B | 132-P3-MW003I-B-52.8-20211008-X | 10/8/2021 | 52.8 | FD | 4602446561 | Baseline | Intermediate | < 4.0 U | 11.5 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 0.41 J | 80.3 | < 1.0 U | 13 | < 120 U | **100** | -- |
| 132-P3-MW003I-B | 132-P3-MW003I-B-52.8-20211228 | 12/28/2021 | 52.8 | N | 4602498981 | Treatment | Intermediate | 5.7 | 7.9 | < 10.0 U | < 10.0 U | 130.1 | 0.99 | 8.11 | 0.718 | 13.34 | 0.81 | -- | 7.4 | 66.9 | -- | 5.0 | -- | -- | -- |
| 132-P3-MW003I-B | 132-P3-MW003I-B-52.8-20220119 | 1/19/2022 | 52.8 | N | 4602509341 | Treatment | Intermediate | 11.4 | 15.6 | < 10.0 U | < 10.0 U | 25.00 | 0 | 8.00 | 0.55 | 18.32 | 1.15 | -- | 0.64 J | 93.0 | -- | 5.3 | -- | -- | -- |
| 132-P3-MW003I-B | 132-P3-MW003I-B-52.8-20220119-X | 1/19/2022 | 52.8 | FD | 4602509341 | Treatment | Intermediate | 16.0 | 9.7 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 0.74 J | 79.3 | -- | 4.9 J | -- | -- | -- |
| 132-P3-MW003I-B | 132-P3-MW003I-B-52.8-20220223 | 2/23/2022 | 52.8 | N | 4602530771 | Treatment | Intermediate | **1100** | **344** | **1160** | **352** | 77.00 | 8.34 | 8.58 | 0.81 | 13.76 | 4.10 | -- | 0.91 J | 72.2 | -- | < 5.0 U | -- | -- | -- |
| 132-P3-MW003I-B | 132-P3-MW003I-B-52.8-20220323 | 3/23/2022 | 52.8 | N | 4602548831 | Treatment | Intermediate | **1040** | **1110** | **1010** | **1000** | 16.20 | 9999.00 | 8.26 | 1.64 | 11.72 | 1.46 | -- | 0.68 J | 65.5 | -- | < 5.0 U | -- | -- | -- |
| 132-P3-MW003I-B | 132-P3-MW003I-B-52.8-20220422 | 4/22/2022 | 52.8 | N | 4602567961 | Treatment | Intermediate | **722** | **652** | **749** | **705** | 27.3 | 1.05 | 9.07 | 0.804 | 14.13 | 2.12 | -- | < 1.0 U | 72.5 | -- | < 5.0 U | -- | -- | -- |
| 132-P3-MW003I-B | 132-P3-MW003I-B-52.8-20220517 | 5/17/2022 | 52.8 | N | 4602582941 | Treatment | Intermediate | **52500** | **56400** | **55900** | **41000** | -42.6 | 3.78 | 6.85 | 3.008 | 15.03 | 8.8 | -- | 1.4 | 146 | -- | -- | -- | -- | -- |
| 132-P3-MW003I-B | 132-P3-MW003I-B-52.8-20220616 | 6/16/2022 | 52.8 | N | 4602602381 | Treatment | Intermediate | -- | **40200** | -- | **49800** | 117.5 | 1.28 | 7.43 | 1.322 | 16.00 | 0.16 | -- | 1.2 | 119 | -- | -- | -- | -- | -- |
| 132-P3-MW003I-B | 132-P3-MW003I-B-52.8-20220719 | 7/19/2022 | 52.8 | N | 4602621891 | Treatment | Intermediate | -- | **48200** | -- | **45600** | 141.6 | 0.66 | 6.87 | 1.315 | 19.88 | -- | -- | 1.3 | 115 | -- | -- | -- | -- | -- |
| 132-P3-MW003I-B | 132-P3-MW003I-B-52.8-20220823 | 8/23/2022 | 52.8 | N | 4602642801 | Treatment | Intermediate | -- | **39100** | -- | **40600** | 72.3 | 1.10 | 7.31 | 1.317 | 19.47 | 1.96 | -- | 1.4 | 94.5 | -- | -- | -- | -- | -- |
| 132-P3-MW003I-B | 132-P3-MW003I-B-52.8-20220919 | 9/19/2022 | 52.8 | N | 4602658321 | Treatment | Intermediate | -- | **90000** | -- | **109000** | 100.3 | 0.4 | 7.02 | 1.713 | 21.1 | 1.13 | -- | 1.8 | 236 | -- | -- | -- | -- | -- |
| 132-P3-MW003I-B | 132-P3-MW003I-B-52.8-20221014 | 10/14/2022 | 52.8 | N | 4602675261 | Treatment | Intermediate | -- | **78100** | -- | **71900** | 150.1 | 0.98 | 7.18 | 1.514 | 18.43 | 1 | -- | 5.9 | 198 | -- | -- | -- | -- | -- |
| 132-P3-MW003I-B | 132-P3-MW003I-B-52.8-20221115 | 11/15/2022 | 52.8 | N | 4602695881 | Treatment | Intermediate | -- | **91200** | -- | **94900** | 116.4 | 0.47 | 7.34 | 2.206 | 14.14 | 3.62 | -- | 6.0 | 237 | -- | -- | -- | -- | -- |
| 132-P3-MW003I-B | 132-P3-MW003I-B-52.8-20221219 | 12/19/2022 | 52.8 | N | 4602717111 | Treatment | Intermediate | -- | **523** | -- | < 10.0 U | -125.2 | 3.39 | 8.29 | 0.834 | 11.79 | 5.29 | -- | 12.5 | 52.3 | -- | -- | -- | -- | -- |
| 132-P3-MW003I-B | 132-P3-MW003I-B-52.8-20230120 | 1/20/2023 | 52.8 | N | 4602733031 | Treatment | Intermediate | -- | **

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 132-P3-MW003I-B | 132-P3-MW003I-B-52.8-20231114 | 11/14/2023 | 52.8 | N | JD76935 | Treatment | Intermediate | -- | **139000** | -- | **153000** | -4 | 0.25 | 6.99 | 2.853 | 16.1 | 1.58 | -- | < 20 U | **572** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-B | 132-P3-MW003I-B-52.8-20231114-X | 11/14/2023 | 52.8 | FD | JD76935 | Treatment | Intermediate | -- | **123000** | -- | **152000** | -- | -- | -- | -- | -- | -- | -- | < 10 U | **541** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-B | 132-P3-MW003I-B-52.8-20231214 | 12/14/2023 | 52.8 | N | JD78891 | Treatment | Intermediate | -- | **158000** | -- | **178000** | 147.8 | 0.16 | 6.84 | 3.303 | 14 | 1.62 | -- | 3.7 B | **552** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-B | 132-P3-MW003I-B-52.8-20240119 | 1/19/2024 | 52.8 | N | JD80858 | Treatment | Intermediate | -- | **118000** | -- | **164000** | 41.8 | 0.2 | 7.09 | 3.03 | 6.3 | 2.59 | -- | < 10 U | **552** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-B | 132-P3-MW003I-B-52.8-20240119-X | 1/19/2024 | 52.8 | FD | JD80858 | Treatment | Intermediate | -- | **121000** | -- | **173000** | -- | -- | -- | -- | -- | -- | -- | < 10 U | **542** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-B | 132-P3-MW003I-B-52.8-20240222 | 2/22/2024 | 52.8 | N | JD82990 | Treatment | Intermediate | -- | **107000** | -- | **122000** | 142.8 | 0.26 | 7.06 | 2.648 | 11.8 | 4.03 | -- | 5.5 | **496** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-B | 132-P3-MW003I-B-52.8-20240222-X | 2/22/2024 | 52.8 | FD | JD82990 | Treatment | Intermediate | -- | **105000** | -- | **119000** | -- | -- | -- | -- | -- | -- | -- | 5.8 | **467** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-B | 132-P3-MW003I-B-52.8-20240318 | 3/18/2024 | 52.8 | N | JD84685 | Treatment | Intermediate | -- | **119000** | -- | **107000** | 135.1 | 0.17 | 7.17 | 3.027 | 13.3 | 4.18 | -- | 4.1 B | **535** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-B | 132-P3-MW003I-B-52.8-20240318-X | 3/18/2024 | 52.8 | FD | JD84685 | Treatment | Intermediate | -- | **117000** | -- | **107000** | -- | -- | -- | -- | -- | -- | -- | 4.0 B | **520** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-B | 132-P3-MW003I-B-52.8-20240410 | 4/10/2024 | 52.8 | N | JD86199 | Treatment | Intermediate | -- | **96800** | -- | **94200** | 91 | 0.17 | 7.22 | 2.57 | 14.8 | 6.14 | -- | 7.9 | **373** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-B | 132-P3-MW003I-B-52.8-20240410-X | 4/10/2024 | 52.8 | FD | JD86199 | Treatment | Intermediate | -- | **89400** | -- | **90600** | -- | -- | -- | -- | -- | -- | -- | 8.0 | **361** | -- | -- | -- | -- | -- |
| 132-P3-MW003I-B | 132-P3-MW003I-B-52.8-20240522 | 5/22/2024 | 52.8 | N | JD88961 | Treatment | Intermediate | -- | **951** | -- | < 10 U | -302 | 0.35 | 8.26 | 1.041 | 19 | 9.22 | -- | 29.0 | 45.8 | -- | -- | -- | -- | -- |
| 132-P3-MW003I-B | 132-P3-MW003I-B-52.8-20240612 | 6/12/2024 | 52.8 | N | JD90299 | Treatment | Intermediate | -- | **633** | -- | < 10 U | -190.1 | 0.2 | 7.92 | 0.949 | 17.7 | 8.04 | -- | 21.2 | 35.1 | -- | -- | -- | -- | -- |
| 132-P3-MW003I-B | 132-P3-MW003I-B-52.8-20240612-X | 6/12/2024 | 52.8 | FD | JD90299 | Treatment | Intermediate | -- | **531** | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | 21.3 | 35.1 | -- | -- | -- | -- | -- |
| 132-P3-MW003I-B | 132-P3-MW003I-B-45.7-20240719 | 7/19/2024 | 45.7 | N | JD92501 | Post-Treatment | Intermediate | -- | **753** | -- | < 10 U | -219.1 | 1.17 | 8.19 | 0.803 | 25.2 | 3.83 | -- | 2.2 J+ | 42.6 | 0.80 J | -- | -- | -- | -- |
| 132-P3-MW003I-B | 132-P3-MW003I-B-50.7-20240719 | 7/19/2024 | 50.7 | N | JD92501 | Post-Treatment | Intermediate | -- | 11.2 | -- | < 10 U | -190.5 | 1.87 | 8.16 | 0.83 | 24.37 | 6.39 | -- | 2.6 J+ | 45.4 | 0.53 J | -- | -- | -- | -- |
| 132-P3-MW003I-B | 132-P3-MW003I-B-55.7-20240723 | 7/23/2024 | 55.7 | N | JD92657 | Post-Treatment | Intermediate | -- | **500** | -- | < 10 U | -402.6 | 0.3 | 8.22 | 0.954 | 21.4 | 4.35 | -- | 2.9 | 60.8 | < 2.0 U | -- | -- | -- | -- |
| 132-P3-MW003I-B | 132-P3-MW003I-B-60.7-20240723 | 7/23/2024 | 60.7 | N | JD92657 | Post-Treatment | Intermediate | -- | **1120** | -- | < 10 U | -414.9 | 1.14 | 8.24 | 0.959 | 20.4 | 8.93 | -- | 1.7 | 62.6 | < 2.0 U | -- | -- | -- | -- |
| 132-P3-MW003I-B | 132-P3-MW003I-B-60.7-20241014 | 10/14/2024 | 60.7 | N | JD98166 | Post-Treatment | Intermediate | -- | **122** | -- | < 10 UJ | -212.4 | 0.52 | 8.14 | 1.14 | 19.7 | 2 | -- | 2.7 | 156 | -- | -- | -- | -- | -- |
| 135-MW2B | 135-MW2B-20180425 | 4/25/2018 | 30.1 | N | JC64901 | N/A | Intermediate | -- | 5.5 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 135-MW2B | 135-MW2B-30-20211102 | 11/2/2021 | 30 | N | 4602463911 | Baseline | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -11.60 | 0.99 | 6.60 | 1.74 | 16.29 | 6.23 | -- | 3.2 JB | 26.8 J- | < 1.0 UB | 120 J- | 178 | **140** | -- |
| 135-MW2B | 135-MW2B-30-20220222 | 2/22/2022 | 30 | N | 4602529771 | Treatment | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -51.20 | 1.07 | 6.97 | 4.58 | 13.20 | 4.20 | -- | 4.9 | 33.4 | -- | 110 | -- | -- | -- |
| 135-MW2B | 135-MW2B-30-20220321 | 3/21/2022 | 30 | N | 4602547381 | Treatment | Intermediate | < 4.0 U | 2.8 J | < 10.0 U | < 10.0 U | 57.20 | 1.47 | 7.09 | 5.48 | 17.15 | 5.01 | -- | 4.6 | 80.9 | -- | 250 | -- | -- | -- |
| 135-MW2B | 135-MW2B-30-20220321-X | 3/21/2022 | 30 | FD | 4602547381 | Treatment | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 5.2 | 55.0 | -- | 280 | -- | -- | -- |
| 135-MW2B | 135-MW2B-30.0-20220425 | 4/25/2022 | 30 | N | 4602569361 | Treatment | Intermediate | < 4.0 U | 3.3 J | < 10.0 U | < 10.0 U | -32.7 | 0.27 | 7.68 | 4.596 | 14.97 | 8.45 | -- | 5.4 | 41.7 | -- | 800 | -- | -- | -- |
| 135-MW2B | 135-MW2B-30-20220523 | 5/23/2022 | 30 | N | 4602586501 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -16.9 | 2.93 | 7.28 | 9.086 | 16.13 | 1.97 | -- | 5.6 | 113 | -- | -- | -- | -- | -- |
| 135-MW2B | 135-MW2B-30-20220617 | 6/17/2022 | 30 | N | 4602603591 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | 128.4 | 0.02 | 7.00 | 5.171 | 18.90 | 4.09 | -- | 5.9 | 60.1 | -- | -- | -- | -- | -- |
| 135-MW2B | 135-MW2B-30-20220722 | 7/22/2022 | 30 | N | 4602624001 | Treatment | Intermediate | -- | 3.1 J | -- | < 10.0 U | 31.8 | 0.77 | 6.67 | 5.539 | 19.23 | 2.87 | -- | 6.8 | 52.5 | -- | -- | -- | -- | -- |
| 135-MW2B | 135-MW2B-30-20220920 | 9/20/2022 | 30 | N | 4602659081 | Treatment | Intermediate | -- | 2.6 J | -- | < 10.0 U | -90.4 | 0.25 | 6.75 | 5.983 | 17.28 | 6.96 | -- | 6.2 | 80.8 | -- | -- | -- | -- | -- |
| 135-MW2B | 135-MW2B-30-20221214 | 12/14/2022 | 30 | N | 4602713561 | Treatment | Intermediate | -- | 8.0 | -- | < 10.0 U | -140.4 | 0.24 | 7.31 | 4.859 | 13.17 | 5.73 | -- | 5.5 | 104 | -- | -- | -- | -- | -- |
| 135-MW2B | 135-MW2B-30.0-20230320 | 3/20/2023 | 30 | N | 4602766501 | Treatment | Intermediate | -- | 3.3 J | -- | < 10.0 U | -46 | 1.38 | 7.1 | 5 | 14.56 | 9.78 | -- | 7.6 | 62.8 | -- | -- | -- | -- | -- |
| 135-MW2B | 135-MW2B-30-20230623 | 6/23/2023 | 30 | N | 4602829671 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -80.1 | 0.48 | 7 | 5.34 | 17.24 | 1.77 | -- | 7.2 | 75.3 | -- | -- | -- | -- | -- |
| 135-MW2B | 135-MW2B-30-20230623-X | 6/23/2023 | 30 | FD | 4602829671 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 7.0 | 73.8 | -- | -- | -- | -- | -- |
| 135-MW2B | 135-MW2B-30.0-20230919 | 9/19/2023 | 30 | N | 4602885251 | Treatment | Intermediate | -- | 3.2 J | -- | < 10.0 U | -144.3 | 0.75 | 8.01 | 6.308 | 19.27 | 7.67 | -- | 7.3 | 66.8 | -- | -- | -- | -- | -- |
| 135-MW2B | 135-MW2B-30.0-20231226 | 12/26/2023 | 30 | N | JD79561 | Treatment | Intermediate | -- | 3.2 B | -- | < 10 U | -97.4 | 0.28 | 7.16 | 6.37 | 15.1 | 4.81 | -- | 4.9 | 61.5 | -- | -- | -- | -- | -- |
| 135-MW2B | 135-MW2B-30.0-20240320 | 3/20/2024 | 30 | N | JD84851 | Treatment | Intermediate | -- | < 10 U | -- | < 10 U | -448 | 0.12 | 7.26 | 6.06 | 14.4 | 1.2 | -- | 4.7 | 53.2 | -- | -- | -- | -- | -- |
| 135-MW2B | 135-MW2B-30.0-20240621 | 6/21/2024 | 30 | N | JD90887 | Treatment | Intermediate | -- | < 10 U | -- | < 10 U | -54.5 | 1.1 | 7.07 | 5.5 | 19.71 | 9.76 | -- | 5.4 | 75.2 | -- | -- | -- | -- | -- |
| 135-MW2B | 135-MW2B-30.0-20240717 | 7/17/2024 | 30 | N | JD92334 | Post-Treatment | Intermediate | -- | < 10 U | -- | < 10 RA | -106.9 | 1.82 | 7.09 | 6.11 | 20.2 | 5.89 | -- | 9.4 J | 53.9 | < 2.0 U | -- | -- | -- | -- |
| 135-MW2B | 135-MW2B-30.0-20241008 | 10/8/2024 | 30 | N | JD97686 | Post-Treatment | Intermediate | -- | < 10 U | -- | < 10 U | -104.2 | 0.16 | 7.22 | 5.78 | 19.8 | 2.22 | -- | 7.8 J+ | 56.9 J- | -- | -- | -- | -- | -- |
| 135-MW2B | 135-MW2B-30.0-20241008-X | 10/8/2024 | 30 | FD | JD97686 | Post-Treatment | Intermediate | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | 7.9 J+ | 55.4 J- | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-A | 137A-P3-MW001I-A-36-20211008 | 10/8/2021 | 36 | N | 4602446561 | Baseline | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -73.10 | 0.40 | 6.53 | 4.35 | 17.49 | 1.33 | -- | 5.5 | **525** | < 1.0 U | 1500 | **3150** | **3320** | -- |
| 137A-P3-MW001I-A | 137A-P3-MW001I-A-36-20211116 | 11/16/2021 | 36 | N | 4602474031 | Treatment | Intermediate | < 4.0 U | 3.9 J | < 10.0 U | < 10.0 U | -53.70 | 4.97 | 6.88 | 4.55 | 14.62 | 10.00 | -- | 6.4 | **449** | -- | 2300 | -- | -- | -- |
| 137A-P3-MW001I-A | 137A-P3-MW001I-A-36-20211222 | 12/22/2021 | 36 | N | 4602496971 | Treatment | Intermediate | < 4.0 U | < 4.0 U | < 10.0 UF1 | < 10.0 U | 11.20 | 0.21 | 6.49 | 5.51 | 13.18 | 2.36 | -- | 71.8 | **679** | -- | 150 | -- | -- | -- |
| 137A-P3-MW001I-A | 137A-P3-MW001I-A-36.0-20220118 | 1/18/2022 | 36 | N | 4602508581 | Treatment | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -46.00 | 0 | 6.00 | 5.39 | 11.77 | 0 | -- | 5.3 | **611** | -- | 250 | -- | -- | -- |
| 137A-P3-MW001I-A | 137A-P3-MW001I-A-36-20220222 | 2/22/2022 | 36 | N | 4602529771 | Treatment | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -64.40 | 4.37 | 6.48 | 4.000 | 13.99 | 2.24 | -- | 5.8 | **292** | -- | 2200 | -- | -- | -- |
| 137A-P3-MW001I-A | 137A-P3-MW001I-A-36-20220322 | 3/22/2022 | 36 | N | 4602547911 | Treatment | Intermediate | < 4.0 U | 2.6 J | < 10.0 U | < 10.0 U | -45.60 | 0.16 | 6.80 | 4.31 | 14.55 | 2.51 | -- | 5.6 ^2 | 152 | -- | 2600 | -- | -- | -- |
| 137A-P3-MW001I-A | 137A-P3-MW001I-A-36-20220426 | 4/26/2022 | 36 | N | 4602569961 | Treatment | Intermediate | < 4.0 U | 29.2 | < 10.0 UH | < 10.0 UH | -70.0 | 6.58 | 6.82 | 2.583 | 13.31 | 1.08 | -- | 6.7 | 65.4 | -- | 3400 | -- | -- | -- |
| 137A-P3-MW001I-A | 137A-P3-MW001I-A-36-20220426-X | 4/26/2022 | 36 | FD | 4602569961 | Treatment | Intermediate | < 4.0 U | 30.6 | < 10.0 UH | < 10.0 UH | -- | -- | -- | -- | -- | -- | -- | 6.3 | 65.1 | -- | 3300 | -- | -- | -- |
| 137A-P3-MW001I-A | 137A-P3-MW001I-A-36-20220518 | 5/18/2022 | 36 | N | 4602583551 | Treatment | Intermediate | -- | 7.8 | -- | < 10.0 U | -80.1 | 0.64 | 6.82 | 2.933 | 15.32 | 3.62 | -- | 6.5 | 65.0 | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-A | 137A-P3-MW001I-A-36-20220616 | 6/16/2022 | 36 | N | 4602602381 | Treatment | Intermediate | -- | 3.2 J | -- | < 10.0 U | -18.5 | 0.02 | 6.57 | 2.513 | 15.28 | 1.14 | -- | 7.4 | 176 | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-A | 137A-P3-MW001I-A-36-20220721 | 7/21/2022 | 36 | N | 4602623381 | Treatment | Intermediate | -- | 7.6 | -- | < 10.0 U | -41.6 | 1.04 | 6.25 | 2.831 | 19.65 | 3.44 | -- | 6.5 | 134 | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-A | 137A-P3-MW001I-A-36-20220920 | 9/20/2022 | 36 | N | 4602659081 | Treatment | Intermediate | -- | 5.4 | -- | < 10.0 U | -142.7 | 0.39 | 6.63 | 3.013 | 18.88 | 1.33 | -- | 10.6 | 27.4 | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-A | 137A-P3-MW001I-A-36-20221215 | 12/15/2022 | 36 | N | 4602714561 | Treatment | Intermediate | -- | 5.8 | -- | < 10.0 U | -135.5 | 0.93 | 6.75 | 2.997 | 9.57 | 2.93 | -- | 97.8 | 1.07 J | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-A | 137A-P3-MW001I-A-36.0-20230322 | 3/22/2023 | 36 | N | 4602768001 | Treatment | Intermediate | -- | 4.4 | -- | < 10.0 U | -126.4 | 1.6 | 7.04 | 3.048 | 11.41 | 3.76 | -- | 21.1 | 2.67 | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-A | 137A-P3-MW001I-A-36-20230621 | 6/21/2023 | 36 | N | 4602828031 | Treatment | Intermediate | -- | 6.2 | -- | < 20.0 U | -96.3 | 1.1 | 6.56 | 3 | 18.2 | 3.41 | -- | 9.1 | 174 | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-A | 137A-P3-MW001I-A-36.0-20230920 | 9/20/2023 | 36 | N | 4602886061 | Treatment | Intermediate | -- | 12.5 | -- | < 10.0 U | -126.5 | 0.32 | 6.06 | 3.078 | 19.4 | 1.66 | -- | 16.5 | **277** | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-A | 137A-P3-MW001I-A-36.0-20231113 | 11/13/2023 | 36 | N | JD76852 | Treatment | Intermediate | -- | 9.1 | -- | 5.9 J | -114.4 | 0.29 | 7.21 | 3.388 | 15.6 | 1.25 | -- | 21.6 | 24.6 | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-A | 137A-P3-MW001I-A-36.0-20231214 | 12/14/2023 | 36 | N | JD78891 | Treatment | Intermediate | -- | 10 | -- | 6.4 B | -- | -- | -- | -- | -- | -- | -- | 21.7 | 24.8 | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-A | 137A-P3-MW001I-A-36.0-20240119 | 1/19/2024 | 36 | N | JD80858 | Treatment | Intermediate | -- | 33.8 | -- | < 10 U | -152.7 | 0.28 | 6.65 | 2.92 | 12 | 2.03 | -- | 48.9 | < 20 U | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-A | 137A-P3-MW001I-A-36.0-20240223 | 2/23/2024 | 36 | N | JD83100 | Treatment | Intermediate | -- | 10 | -- | < 10 U | -172.6 | 0.19 | 6.51 | 3.598 | 11.9 | 1.82 | -- | 31.8 | 1.6 B | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-A | 137A-P3-MW001I-A-36.0-20240319 | 3/19/2024 | 36 | N | JD84759 | Treatment | Intermediate | -- | 17.8 | -- | < 10 U | -122.7 | 0.27 | 6.59 | 2.99 | 13 | 3.52 | -- | 39.5 | 1.2 B | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-A | 137A-P3-MW001I-A-36.0-20240412 | 4/12/2024 | 36 | N | JD86437 | Treatment | Intermediate | -- | 13.8 | -- | < 10 U | -118 | 0.77 | 6.59 | 3.48 | 14 | 4.99 | -- | 47.8 | 2.5 | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-A | 137A-P3-MW001I-A-36.0-20240523 | 5/23/2024 | 36 | N | JD89054 | Treatment | Intermediate | -- | 24.1 | -- | 18 | -109.2 | 0.16 | 6.58 | 3.52 | 15.2 | 2.09 | -- | 51.2 | 2.6 | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-A | 137A-P3-MW001I-A-36.0-20240620 | 6/20/2024 | 36 | N | JD90821 | Treatment | Intermediate | -- | 21.6 | -- | 9.8 B | -165.6 | 0.11 | 6.62 | 30.042 | 17.1 | 1.77 | -- | 55.0 | 2.5 | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-A | 137A-P3-MW001I-A-30.7-20240718 | 7/18/2024 | 30.7 | N | JD92447 | Post-Treatment | Intermediate | -- | 21.7 | -- | 29 J | 10.7 | 1.12 | 6.58 | 3.084 | 27.05 | 5.34 | -- | 44.8 | 6.9 | < 2.0 U | -- | -- | -- | -- |
| 137A-P3-MW001I-A | 137A-P3-MW001I-A-35.7-20240719 | 7/19/2024 | 35.7 | N | JD92501 | Post-Treatment | Intermediate | -- | 25.1 | -- | < 10 U | 55.4 | 0.38 | 6.53 | 3.55 | 21.73 | 4.61 | -- | 52.2 | 14.1 | < 2.0 U | -- | -- | -- | -- |
| 137A-P3-MW001I-A | 137A-P3-MW001I-A-40.7-20240719 | 7/19/2024 | 40.7 | N | JD92501 | Post-Treatment | Intermediate | -- | 23.1 | -- | < 10 U | 61.1 | 0.77 | 6.53 | 3.502 | 20.83 | 3.65 | -- | 47.8 | 8.4 | 0.50 J | -- | -- | -- | -- |
| 137A-P3-MW001I-A | 137A-P3-MW001I-A-45.7-20240719 | 7/19/2024 | 45.7 | N | JD92501 | Post-Treatment | Intermediate | -- | 25.2 | -- | < 10 U | 61.3 | 0.57 | 6.53 | 3.809 | 19.17 | 4.67 | -- | 42.2 | 73.9 | 0.49 J | -- | -- | -- | -- |
| 137A-P3-MW001I-A | 137A-P3-MW001I-A-30.7-20241014 | 10/14/2024 | 30.7 | N | JD98166 | Post-Treatment | Intermediate | -- | 14.8 J | -- | 59 J | -15.8 | 1.01 | 6.61 | 3.30 | 17.1 | 1.75 | -- | 45.1 | 2.3 | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-B | 137A-P3-MW001I-B-56-20211008 | 10/8/2021 | 56 | N | 4602446561 | Baseline | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -80.00 | 0.20 | 7.75 | 3.26 | 16.29 | 1.82 | -- | 0.72 J | 129 | < 1.0 U | < 5.0 U | 136 | **223** | -- |
| 137A-P3-MW001I-B | 137A-P3-MW001I-B-56-20211116 | 11/16/2021 | 56 | N | 4602474031 | Treatment | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -19.50 | 1.44 | 8.27 | 3.91 | 14.15 | 9.14 | -- | 0.87 J | 141 | -- | < 5.0 U | -- | -- | -- |
| 137A-P3-MW001I-B | 137A-P3-MW001I-B-56-20211222 | 12/22/2021 | 56 | N | 4602496971 | Treatment | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | 27.00 | 0.23 | 6.97 | 6.99 | 13.37 | 2.71 | -- | 32.6 | **480** | -- | 41 | -- | -- | -- |
| 137A-P3-MW001I-B | 137A-P3-MW001I-B-56.0-20220118 | 1/18/2022 | 56 | N | 4602508581 | Treatment | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -56.00 | 0 | 6.65 | 8.70 | 9.56 | 0 | -- | 3.7 | **583** | -- | 84 | -- | -- | -- |
| 137A-P3-MW001I-B | 137A-P3-MW001I-B-56-20220222 | 2/22/2022 | 56 | N | 4602529771 | Treatment | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -79.30 | 0.85 | 6.88 | 9.66 | 14.17 | 9.19 | -- | 4.2 | **603** | -- | 64 | -- | -- | -- |
| 137A-P3-MW001I-B | 137A-P3-MW001I-B-56-20220322 | 3/22/2022 | 56 | N | 4602547911 | Treatment | Intermediate | < 4.0 U | 4.4 | < 10.0 U | < 10.0 U | -35.40 | 0.82 | 7.10 | 10.70 | 13.54 | 7.81 | -- | 4.7 ^2 | **844** | -- | 92 | -- | -- | -- |
| 137A-P3-MW001I-B | 137A-P3-MW001I-B-56-20220426 | 4/26/2022 | 56 | N | 4602569961 | Treatment | Intermediate | < 4.0 U | 2.8 J | < 10.0 U | < 10.0 U | -69.4 | 6.21 | 7.09 | 9.039 | 13.53 | 2.59 | -- | 4.4 | **572** | -- | 79 | -- | -- | -- |
| 137A-P3-MW001I-B | 137A-P3-MW001I-B-56-20220518 | 5/18/2022 | 56 | N | 4602583551 | Treatment | Intermediate | -- | 3.5 J | -- | < 10.0 U | -61.6 | 0.62 | 7.08 | 11.15 | 14.59 | 6.13 | -- | 4.2 | **571** | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-B | 137A-P3-MW001I-B-56-20220518-X | 5/18/2022 | 56 | FD | 4602583551 | Treatment | Intermediate | -- | 3.3 J | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 4.1 | **513** | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-B | 137A-P3-MW001I-B-56-20220616 | 6/16/2022 | 56 | N | 4602602381 | Treatment | Intermediate | -- | 3.5 J | -- | < 10.0 U | 71.8 | 0.02 | 6.83 | 4.348 | 17.31 | 2.89 | -- | 56.1 | **319** | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-B | 137A-P3-MW001I-B-56-20220721 | 7/21/2022 | 56 | N | 4602623381 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -42.5 | 6.07 | 6.81 | 11.77 | 17.84 | 4.49 | -- | 6.8 | **986** | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-B | 137A-P3-MW001I-B-56-20220920 | 9/20/2022 | 56 | N | 4602659081 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -59.4 | 0.67 | 6.88 | 12.49 | 17.9 | 1.82 | -- | 6.8 | 134 | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-B | 137A-P3-MW001I-B-56-20221215 | 12/15/2022 | 56 | N | 4602714561 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -119.0 | 1 | 7.07 | 12.38 | 11.82 | 3.42 | -- | 7.9 | **1020** | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-B | 137A-P3-MW001I-B-56.0-20230322 | 3/22/2023 | 56 | N | 4602768001 | Treatment | Intermediate | -- | **153** | -- | < 10.0 U | -59.7 | 0.77 | 7.44 | 12.42 | 13.00 | 2.92 | -- | 7.5 F1 | **1250** | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-B | 137A-P3-MW001I-B-56.0-20230421 | 4/21/2023 | 56 | N | 4602786851 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -0.4 | 0.27 | 6.95 | 8.507 | 15.32 | 7.18 | -- | 7.0 | 142 | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-B | 137A-P3-MW001I-B-56-20230509 | 5/9/2023 | 56 | N | 4602799431 | Treatment | Intermediate | -- | 2.7 J | -- | < 10.0 U | 25.5 | 4.94 | 6.92 | 11 | 16.3 | 5.83 | -- | 5.9 | **1140** | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-B | 137A-P3-MW001I-B-56-20230621 | 6/21/2023 | 56 | N | 4602828031 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -82.1 | 0.61 | 6.88 | 9.798 | 18.6 | 1.26 | -- | 6.4 | **866** | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-B | 137A-P3-MW001I-B-56.0-20230717 | 7/17/2023 | 56 | N | 4602844061 | Treatment | Intermediate | -- | 4.9 | -- | < 10.0 U | -59.8 | 0.25 | 6.94 | 12.14 | 22.25 | 2.7 | -- | 6.5 | **793** | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-B | 137A-P3-MW001I-B-56.0-20230823 | 8/23/2023 | 56 | N | 4602867511 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -46.8 | 2.07 | 7 | 11.29 | 19.82 | 7.27 | -- | 8.0 | **1070** | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-B | 137A-P3-MW001I-B-56.0-20230918 | 9/18/2023 | 56 | N | 4602884721 | Treatment | Intermediate | -- | 9.8 | -- | < 10.0 U | -81.2 | 0.52 | 7.19 | 10.94 | 17.79 | 1.43 | -- | 6.6 | **1170** | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-B | 137A-P3-MW001I-B-56.0-20231011 | 10/11/2023 | 56 | N | 4602901161 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -25.7 | 1.08 | 7.43 | 11.88 | 19.65 | 2.43 | -- | 7.3 | **1040** | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-B | 137A-P3-MW001I-B-56.0-20231114 | 11/14/2023 | 56 | N | JD76935 | Treatment | Intermediate | -- | 7.4 B | -- | 28 | -104.4 | 0.16 | 7.06 | 9438 | 14.8 | 4.7 | -- | 5.4 | **1490** | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-B | 137A-P3-MW001I-B-56.0-20231214 | 12/14/2023 | 56 | N | JD78891 | Treatment | Intermediate | -- | 6.9 B | -- | 26 | -61.7 | 0.1 | 6.89 | 13.65 | 12.8 | 1.93 | -- | 5.0 | **1280** | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-B | 137A-P3-MW001I-B-56.0-20240119 | 1/19/2024 | 56 | N | JD80858 | Treatment | Intermediate | -- | < 10 U | -- | 14 | -111.7 | 0.28 | 7.04 | 10.69 | 10.9 | 2.59 | -- | 6.6 | **1240** | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-B | 137A-P3-MW001I-B-56.0-20240223 | 2/23/2024 | 56 | N | JD83100 | Treatment | Intermediate | -- | < 10 U | -- | < 10 U | -236.3 | 0 | 6.94 | 12.31 | 12 | 3.18 | -- | 5.1 | **1320** | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-B | 137A-P3-MW001I-B-56.0-20240319 | 3/19/2024 | 56 | N | JD84759 | Treatment | Intermediate | -- | < 10 U | -- | < 10 U | -122.1 | 1.64 | 6.99 | 10.39 | 11.7 | 2.23 | -- | 5.2 | **1190** | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-B | 137A-P3-MW001I-B-56.0-20240412 | 4/12/2024 | 56 | N | JD86437 | Treatment | Intermediate | -- | < 10 U | -- | < 10 U | -69.3 | 1.1 | 6.99 | 11.86 | 13.2 | 5.21 | -- | 5.8 | **1170** | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-B | 137A-P3-MW001I-B-56.0-20240522 | 5/22/2024 | 56 | N | JD88961 | Treatment | Intermediate | -- | < 10 U | -- | 45 | -76.1 | 0.21 | 6.99 | 10.48 | 16.7 | 5.22 | -- | 6.5 | **1250** | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-B | 137A-P3-MW001I-B-56.0-20240620 | 6/20/2024 | 56 | N | JD90821 | Treatment | Intermediate | -- | < 10 U | -- | 6.3 B | -150.5 | 0.6 | 7.03 | 10.72 | 18.4 | 3.18 | -- | 9.1 | **1260** | -- | -- | -- | -- | -- |
| 137A-P3-MW001I-B | 137A-P3-MW001I-B-63.8-20240724 | 7/24/2024 | 63.8 | N | JD92734 | Post-Treatment | Intermediate | -- | < 10 U | -- | < 10 U | -88.4 | 0.62 | 7.1 | 10.47 | 21.1 | 4.

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 137A-P3-MW002I-A | 137A-P3-MW002I-A-36.9-20211222 | 12/22/2021 | 36.9 | N | 4602496971 | Treatment | Intermediate | **148000** | **164000** | **147000** | **152000** | 64.90 | 0.16 | 7.09 | 3.13 | 13.65 | 1.56 | -- | 8.1 | **260** | -- | 210 | -- | -- | -- |
| 137A-P3-MW002I-A | 137A-P3-MW002I-A-36.9-20220119 | 1/19/2022 | 36.9 | N | 4602509341 | Treatment | Intermediate | **172000** | **167000** | **169000** | **169000** | 152.00 | 0.98 | 7.37 | 2.85 | 12.21 | 5.82 | -- | 5.5 | **270** | -- | 270 | -- | -- | -- |
| 137A-P3-MW002I-A | 137A-P3-MW002I-A-36.9-20220223 | 2/23/2022 | 36.9 | N | 4602530771 | Treatment | Intermediate | **150000** | **158000** | **151000** | **152000** | 172.70 | 6.00 | 7.18 | 4.55 | 13.46 | 3.75 | -- | 6.3 | 224 | -- | 340 | -- | -- | -- |
| 137A-P3-MW002I-A | 137A-P3-MW002I-A-36.9-20220323 | 3/23/2022 | 36.9 | N | 4602548831 | Treatment | Intermediate | **158000** | **158000** | **164000** | **186000** | 196.40 | 1.00 | 7.18 | 5.95 | 12.02 | 4.42 | -- | 6.6 | 182 | -- | 290 | -- | -- | -- |
| 137A-P3-MW002I-A | 137A-P3-MW002I-A-36.9-20220427 | 4/27/2022 | 36.9 | N | 4602570871 | Treatment | Intermediate | **130000** | **146000** | **141000** | **149000** | 110.2 | 0.23 | 7.71 | 3.857 | 13.65 | 5.95 | -- | 18.7 | 248 | -- | 330 | -- | -- | -- |
| 137A-P3-MW002I-A | 137A-P3-MW002I-A-36.9-20220518 | 5/18/2022 | 36.9 | N | 4602583551 | Treatment | Intermediate | -- | **169000** | -- | **192000** | 181.7 | 5.41 | 7.23 | 2.313 | 14.8 | 1.37 | -- | 5.5 | 236 | -- | -- | -- | -- | -- |
| 137A-P3-MW002I-A | 137A-P3-MW002I-A-36.9-20220615 | 6/15/2022 | 36.9 | N | 4602601501 | Treatment | Intermediate | -- | **177000** | -- | **16700** | 161.5 | 0.56 | 7.09 | 3.026 | 18.39 | 3.69 | -- | 5.9 | 56.5 | -- | -- | -- | -- | -- |
| 137A-P3-MW002I-A | 137A-P3-MW002I-A-36.9-20220720 | 7/20/2022 | 36.9 | N | 4602622601 | Treatment | Intermediate | -- | **169000** | -- | **160000** | 60.9 | 3.89 | 9.02 | 2.870 | 22.88 | 4.00 | -- | 6.0 | 229 | -- | -- | -- | -- | -- |
| 137A-P3-MW002I-A | 137A-P3-MW002I-A-36.9-20220824 | 8/24/2022 | 36.9 | N | 4602643471 | Treatment | Intermediate | -- | **193000** | -- | **186000** | 104.8 | 1.45 | 7.19 | 3.245 | 20.57 | 1.59 | -- | 6.4 | 219 | -- | -- | -- | -- | -- |
| 137A-P3-MW002I-A | 137A-P3-MW002I-A-36.9-20220915 | 9/15/2022 | 36.9 | N | 4602655931 | Treatment | Intermediate | -- | **188000** | -- | **196000** | 30.8 | 0.74 | 6.91 | 3.175 | 18.49 | 3.96 | -- | 6.5 | 218 | -- | -- | -- | -- | -- |
| 137A-P3-MW002I-A | 137A-P3-MW002I-A-36.9-20221017 | 10/17/2022 | 36.9 | N | 4602676401 | Treatment | Intermediate | -- | **199000** | -- | **204000** | 150.8 | 1.05 | 7.07 | 3.104 | 16.08 | 3.28 | -- | 12.9 | **273** | -- | -- | -- | -- | -- |
| 137A-P3-MW002I-A | 137A-P3-MW002I-A-36.9-20221115 | 11/15/2022 | 36.9 | N | 4602695881 | Treatment | Intermediate | -- | **76200** | -- | **76700** | 60.3 | 6.37 | 7.78 | 2.185 | 9.77 | 8.88 | -- | 7.5 | 186 | -- | -- | -- | -- | -- |
| 137A-P3-MW002I-A | 137A-P3-MW002I-A-36.9-20221215 | 12/15/2022 | 36.9 | N | 4602714561 | Treatment | Intermediate | -- | **144000** | -- | **133000** | 217.3 | 0.83 | 7.12 | 3.025 | 9.72 | 6.87 | -- | 7.5 | 232 | -- | -- | -- | -- | -- |
| 137A-P3-MW002I-A | 137A-P3-MW002I-A-36.9-20230120 | 1/20/2023 | 36.9 | N | 4602733031 | Treatment | Intermediate | -- | **110000** | -- | **109000** | -127.1 | 1.62 | 7.1 | 3.087 | 11.6 | 2.99 | -- | 10.4 | 222 | -- | -- | -- | -- | -- |
| 137A-P3-MW002I-A | 137A-P3-MW002I-A-36.9-20230224 | 2/24/2023 | 36.9 | N | 4602752361 | Treatment | Intermediate | -- | 5.6 | -- | < 10.0 U | -152.5 | 9.56 | 6.6 | 4.349 | 11.31 | 2.21 | -- | 24.1 | 24.6 | -- | -- | -- | -- | -- |
| 137A-P3-MW002I-A | 137A-P3-MW002I-A-36.9-20230322 | 3/22/2023 | 36.9 | N | 4602768001 | Treatment | Intermediate | -- | **175000** | -- | **172000** | 168.6 | 1.39 | 7.36 | 3.004 | 13.27 | 7.01 | -- | 6.5 | **290** | -- | -- | -- | -- | -- |
| 137A-P3-MW002I-B | 137A-P3-MW002I-B-58.9-20211007 | 10/7/2021 | 58.9 | N | 4602445441 | Baseline | Intermediate | < 4.0 U | 51.5 | R | < 10.0 U | -65.30 | 0.06 | 7.50 | 13.45 | 17.47 | 8.82 | -- | 2.2 | **411** | < 1.0 U | 12 JB | **1980** | **859** | -- |
| 137A-P3-MW002I-B | 137A-P3-MW002I-B-58.9-20211116 | 11/16/2021 | 58.9 | N | 4602474031 | Treatment | Intermediate | 6.9 | 29.2 | < 10.0 U | **97.3** | -99.20 | 0.50 | 8.01 | 24.00 | 14.65 | 9.35 | -- | 3.0 F1 | **408** | -- | 7.1 | -- | -- | -- |
| 137A-P3-MW002I-B | 137A-P3-MW002I-B-58.9-20211227 | 12/27/2021 | 58.9 | N | 4602498521 | Treatment | Intermediate | 2.7 J | 7.2 | < 10.0 U | < 10.0 U | -69.0 | 0.18 | 7.39 | 13.43 | 12.75 | 4.56 | -- | 3.7 | **371 F1** | -- | 6.8 | -- | -- | -- |
| 137A-P3-MW002I-B | 137A-P3-MW002I-B-58.9-20220119 | 1/19/2022 | 58.9 | N | 4602509341 | Treatment | Intermediate | 3.7 J | 12.1 | < 10.0 U | < 10.0 U | -150.00 | 2.4 | 7.78 | 11.90 | 12.24 | 6.11 | -- | 5.2 | **541** | -- | 8.7 | -- | -- | -- |
| 137A-P3-MW002I-B | 137A-P3-MW002I-B-58.9-20220223 | 2/23/2022 | 58.9 | N | 4602530771 | Treatment | Intermediate | 2.7 J | 8.0 | < 10.0 U | < 10.0 U | -125.90 | 0.25 | 7.49 | 17.73 | 13.47 | 8.97 | -- | 5.7 | **556** | -- | 5.8 | -- | -- | -- |
| 137A-P3-MW002I-B | 137A-P3-MW002I-B-58.9-20220323 | 3/23/2022 | 58.9 | N | 4602548831 | Treatment | Intermediate | 2.9 J | 8.9 | < 10.0 U | < 10.0 U | -20.70 | 0.36 | 7.46 | 22.47 | 13.03 | 5.25 | -- | 5.4 | **498** | -- | 5.9 | -- | -- | -- |
| 137A-P3-MW002I-B | 137A-P3-MW002I-B-58.9-20220425 | 4/25/2022 | 58.9 | N | 4602569361 | Treatment | Intermediate | 3.0 J | 7.1 | < 10.0 U | < 10.0 U | 195.0 | 27.34 | 7.33 | 11.20 | 13.62 | 2.82 | -- | 5.7 ^2 | **602** | -- | 6.2 | -- | -- | -- |
| 137A-P3-MW002I-B | 137A-P3-MW002I-B-58.9-20220518 | 5/18/2022 | 58.9 | N | 4602583551 | Treatment | Intermediate | -- | 31.4 | -- | < 10.0 U | -64.9 | 2.49 | 7.57 | 6.954 | 15.20 | 5.35 | -- | 5.3 | **410** | -- | -- | -- | -- | -- |
| 137A-P3-MW002I-B | 137A-P3-MW002I-B-56-20220615 | 6/15/2022 | 56 | N | 4602601501 | Treatment | Intermediate | -- | **22700** | -- | **17400** | 26.0 | 0.40 | 7.59 | 6.825 | 17.53 | 5.49 | -- | 5.1 | **361** | -- | -- | -- | -- | -- |
| 137A-P3-MW002I-B | 137A-P3-MW002I-B-58.9-20220719 | 7/19/2022 | 58.9 | N | 4602621891 | Treatment | Intermediate | -- | **619** | -- | < 10.0 U | -115.2 | 0.88 | 7.74 | 14.500 | 18.41 | 9.84 | -- | 5.9 | **507** | -- | -- | -- | -- | -- |
| 137A-P3-MW002I-B | 137A-P3-MW002I-B-58.9-20220823 | 8/23/2022 | 58.9 | N | 4602642801 | Treatment | Intermediate | -- | **15200** | -- | **17300** | 19.1 | 0.26 | 7.40 | 7.478 | 19.41 | 9.46 | -- | 6.0 | **377** | -- | -- | -- | -- | -- |
| 137A-P3-MW002I-B | 137A-P3-MW002I-B-58.9-20220915 | 9/15/2022 | 58.9 | N | 4602655931 | Treatment | Intermediate | -- | **51300** | -- | **40000** | 91 | 2.66 | 7.28 | 6.160 | 18.39 | 9 | -- | 6.3 | **319** | -- | -- | -- | -- | -- |
| 137A-P3-MW002I-B | 137A-P3-MW002I-B-58.9-20221017 | 10/17/2022 | 58.9 | N | 4602676401 | Treatment | Intermediate | -- | **38700** | -- | **37200** | 79.3 | 0.81 | 7.57 | 8.743 | 16.52 | 7.95 | -- | 8.0 | **455** | -- | -- | -- | -- | -- |
| 137A-P3-MW002I-B | 137A-P3-MW002I-B-58.9-20221017-X | 10/17/2022 | 58.9 | FD | 4602676401 | Treatment | Intermediate | -- | **46300** | -- | **41700** | -- | -- | -- | -- | -- | -- | -- | 10.6 | **436** | -- | -- | -- | -- | -- |
| 137A-P3-MW002I-B | 137A-P3-MW002I-B-58.9-20221114 | 11/14/2022 | 58.9 | N | 4602695301 | Treatment | Intermediate | -- | **68400** | -- | **48400** | -11.1 | 0.33 | 7.63 | 5.648 | 14.25 | 9.6 | -- | 5.8 | **404** | -- | -- | -- | -- | -- |
| 137A-P3-MW002I-B | 137A-P3-MW002I-B-58.9-20221215 | 12/15/2022 | 58.9 | N | 4602714561 | Treatment | Intermediate | -- | **35900** | -- | **44800** | 38.2 | 0.21 | 7.23 | 7.949 | 11.22 | 8.01 | -- | 5.7 | **459** | -- | -- | -- | -- | -- |
| 137A-P3-MW002I-B | 137A-P3-MW002I-B-58.9-20230124 | 1/24/2023 | 58.9 | N | 4602733531 | Treatment | Intermediate | -- | **165000** | -- | **183000** | 121.7 | 0.42 | 7.17 | 2.879 | 12.32 | 2.74 | -- | 7.1 | 245 | -- | -- | -- | -- | -- |
| 137A-P3-MW002I-B | 137A-P3-MW002I-B-58.9-20230224 | 2/24/2023 | 58.9 | N | 4602752361 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -49.5 | 1.66 | 6.99 | 17.59 | 12.27 | 2.35 | -- | 7.2 | **1200** | -- | -- | -- | -- | -- |
| 137A-P3-MW002I-B | 137A-P3-MW002I-B-58.9-20230322 | 3/22/2023 | 58.9 | N | 4602768001 | Treatment | Intermediate | -- | **26700** | -- | **28100** | 147.9 | 0.4 | 7.44 | 8.25 | 11.7 | 5.69 | -- | 6.0 | **473** | -- | -- | -- | -- | -- |
| 137A-P3-MW003I-A | 137A-P3-MW003I-A-34.5-20230302 | 3/2/2023 | 34.5 | N | 4602755581 | Baseline | Intermediate | -- | **79.4** | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 31.5 | **1360** | < 1.0 U | -- | -- | -- | -- |
| 137A-P3-MW003I-A | 137A-P3-MW003I-A-39.5-20230302 | 3/2/2023 | 39.5 | N | 4602755581 | Baseline | Intermediate | -- | **99.7** | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 34.8 | **1560** | < 1.0 U | -- | -- | -- | -- |
| 137A-P3-MW003I-A | 137A-P3-MW003I-A-44.5-20230302 | 3/2/2023 | 44.5 | N | 4602755581 | Baseline | Intermediate | 23.6 | **128** | < 10.0 U | < 20.0 U | -- | -- | -- | -- | -- | -- | -- | 44.7 | **2120** | < 1.0 U | -- | **21800** | **2700** | -- |
| 137A-P3-MW003I-A | 137A-P3-MW003I-A-29.5-20230303 | 3/3/2023 | 29.5 | N | 4602756331 | Baseline | Intermediate | -- | **109** | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 35.0 | **1470** | < 1.0 U | -- | -- | -- | -- |
| 137A-P3-MW003I-A | 137A-P3-MW003I-A-44.5-20230419 | 4/19/2023 | 44.5 | N | 4602784981 | Treatment | Intermediate | -- | 40.1 | -- | < 10.0 U | -136.4 | 0.19 | 7.36 | 4.857 | 13.41 | 4.82 | -- | 20.4 | **725** | -- | -- | -- | -- | -- |
| 137A-P3-MW003I-A | 137A-P3-MW003I-A-44.5-20230509 | 5/9/2023 | 44.5 | N | 4602799431 | Treatment | Intermediate | -- | **113 F1** | -- | < 10.0 UF1 | 217.9 | 0.64 | 7.3 | 10.87 | 15.31 | 8.11 | -- | 59.7 | **2300** | -- | -- | -- | -- | -- |
| 137A-P3-MW003I-A | 137A-P3-MW003I-A-44.5-20230621 | 6/21/2023 | 44.5 | N | 4602828031 | Treatment | Intermediate | -- | 64.6 | -- | < 10.0 U | -157.5 | 0.62 | 7.24 | 4.028 | 16.6 | 5.1 | -- | 21.2 | **392** | -- | -- | -- | -- | -- |
| 137A-P3-MW003I-A | 137A-P3-MW003I-A-44.5-20230714 | 7/14/2023 | 44.5 | N | 4602842251 | Treatment | Intermediate | -- | 47.0 | -- | < 10.0 U | -32.4 | 5.58 | 7.22 | 6.589 | 18.84 | 6.2 | -- | 27.0 | **1000** | -- | -- | -- | -- | -- |
| 137A-P3-MW003I-A | 137A-P3-MW003I-A-44.5-20230823 | 8/23/2023 | 44.5 | N | 4602867511 | Treatment | Intermediate | -- | **91.1** | -- | < 10.0 U | -91.5 | 0.52 | 7.49 | 7.288 | 19.55 | 4.66 | -- | 39.9 | **1810** | -- | -- | -- | -- | -- |
| 137A-P3-MW003I-A | 137A-P3-MW003I-A-44.5-20230918 | 9/18/2023 | 44.5 | N | 4602884721 | Treatment | Intermediate | -- | **118** | -- | < 20.0 U | -113.8 | 0.24 | 7.4 | 7.978 | 18.27 | 6.03 | -- | 36.1 | **1940** | -- | -- | -- | -- | -- |
| 137A-P3-MW003I-A | 137A-P3-MW003I-A-44.5-20231013 | 10/13/2023 | 44.5 | N | 4602903221 | Treatment | Intermediate | -- | 55.1 | -- | < 10.0 U | -62.6 | 0.57 | 7.2 | 7.358 | 18.76 | 4.27 | -- | 35.3 | **1180** | -- | -- | -- | -- | -- |
| 137A-P3-MW003I-A | 137A-P3-MW003I-A-44.5-20231114 | 11/14/2023 | 44.5 | N | JD76935 | Treatment | Intermediate | -- | 26.4 | -- | < 10 U | -246.2 | 0.12 | 7.16 | 4101 | 15.3 | 4.21 | -- | 22.9 | **858** | -- | -- | -- | -- | -- |
| 137A-P3-MW003I-A | 137A-P3-MW003I-A-44.5-20231214 | 12/14/2023 | 44.5 | N | JD78891 | Treatment | Intermediate | -- | 35.0 | -- | < 10 U | -101.2 | 0.19 | 7.2 | 7.1 | 10.3 | 3.34 | -- | 19.6 | **1670** | < 2.0 U | -- | -- | -- | -- |
| 137A-P3-MW003I-A | 137A-P3-MW003I-A-44.5-20240118 | 1/18/2024 | 44.5 | N | JD80778 | Treatment | Intermediate | -- | 34.5 | -- | < 10 U | -230.9 | 0 | 7.2 | 7.22 | 7.2 | 5.56 | -- | 27.2 | **1740** | -- | -- | -- | -- | -- |
| 137A-P3-MW003I-A | 137A-P3-MW003I-A-44.5-20240223 | 2/23/2024 | 44.5 | N | JD83100 | Treatment | Intermediate | -- | 18.0 | -- | < 10 U | -299.9 | 0.47 | 7.11 | 5.49 | 12.2 | 5.32 | -- | 14.3 | **1040** | < 2.0 U | -- | -- | -- | -- |
| 137A-P3-MW003I-A | 137A-P3-MW003I-A-44.5-20240319 | 3/19/2024 | 44.5 | N | JD84759 | Treatment | Intermediate | -- | 20.0 | -- | < 10 U | -146.6 | 0.07 | 7.15 | 5.36 | 13.2 | 0.92 | -- | 13.7 | **1030** | -- | -- | -- | -- | -- |
| 137A-P3-MW003I-A | 137A-P3-MW003I-A-44.5-20240411 | 4/11/2024 | 44.5 | N | JD86321 | Treatment | Intermediate | -- | 19.4 | -- | < 10 U | -130.6 | 0.35 | 7.25 | 5.52 | 14.2 | 0.64 | -- | 16.3 | **995** | < 2.0 U | -- | -- | -- | -- |
| 137A-P3-MW003I-A | 137A-P3-MW003I-A-44.5-20240523 | 5/23/2024 | 44.5 | N | JD89054 | Treatment | Intermediate | -- | 20.4 | -- | < 10 U | -279 | 0.17 | 7.05 | 5.96 | 17 | 3.07 | -- | 16.3 | **988** | -- | -- | -- | -- | -- |
| 137A-P3-MW003I-A | 137A-P3-MW003I-A-44.5-20240620 | 6/20/2024 | 44.5 | N | JD90821 | Treatment | Intermediate | 12.5 | 18.5 | < 10 U | < 10 U | -131.6 | 0.27 | 7.14 | 2.067 | 19.86 | 11.9 | -- | 19.2 | 3.0 | -- | -- | -- | -- | -- |
| 137A-P3-MW003I-A | 137A-P3-MW003I-A-35.0-20240718 | 7/18/2024 | 35 | N | JD92447 | Post-Treatment | Intermediate | -- | 11.7 | -- | < 10 UJ | -154.8 | 1.35 | 7.21 | 2.945 | 18.7 | 0.9 | -- | 11.4 | **534** | < 2.0 U | -- | -- | -- | -- |
| 137A-P3-MW003I-A | 137A-P3-MW003I-A-40.0-20240718 | 7/18/2024 | 40 | N | JD92447 | Post-Treatment | Intermediate | -- | 14.5 | -- | < 10 UJ | -158.4 | 1.23 | 7.21 | 3.233 | 18.5 | 0.92 | -- | 12.2 | **603** | < 2.0 U | -- | -- | -- | -- |
| 137A-P3-MW003I-A | 137A-P3-MW003I-A-45.0-20240718 | 7/18/2024 | 45 | N | JD92447 | Post-Treatment | Intermediate | -- | 25.6 | -- | < 10 UJ | -162.4 | 2.58 | 7.21 | 4.234 | 18.1 | 2.55 | -- | 16.9 | **843** | < 2.0 U | -- | -- | -- | -- |
| 137A-P3-MW003I-A | 137A-P3-MW003I-A-30.0-20240726 | 7/26/2024 | 30 | N | JD92935 | Post-Treatment | Intermediate | -- | 22.7 | -- | < 10 U | 445.8 | 6.59 | 6.8 | 3922 | 21.2 | 3.01 | -- | 13.2 | **649 J+** | < 2.0 U | -- | -- | -- | -- |
| 137A-P3-MW003I-A | 137A-P3-MW003I-A-45.0-20241014 | 10/14/2024 | 45 | N | JD98166 | Post-Treatment | Intermediate | -- | 42.4 | -- | 3.0 J- | -285.4 | 0.28 | 7.08 | 5.36 | 18 | 1.92 | -- | 21.8 | **701** | -- | -- | -- | -- | -- |
| 137A-P3-MW003I-B | 137A-P3-MW003I-B-61.5-20230303 | 3/3/2023 | 61.5 | N | 4602756331 | Baseline | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 10.1 | **779** | < 1.0 U | -- | -- | -- | -- |
| 137A-P3-MW003I-B | 137A-P3-MW003I-B-61.5-20230303X | 3/3/2023 | 61.5 | FD | 4602756331 | Baseline | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 10.2 | **863** | < 1.0 U | -- | -- | -- | -- |
| 137A-P3-MW003I-B | 137A-P3-MW003I-B-66.5-20230303 | 3/3/2023 | 66.5 | N | 4602756331 | Baseline | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 10.8 | **879** | < 1.0 U | -- | **9910** | **1330** | -- |
| 137A-P3-MW003I-B | 137A-P3-MW003I-B-51.5-20230306 | 3/6/2023 | 51.5 | N | 4602757661 | Baseline | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 10.7 | **874** | < 1.0 U | -- | -- | -- | -- |
| 137A-P3-MW003I-B | 137A-P3-MW003I-B-56.5-20230306 | 3/6/2023 | 56.5 | N | 4602757661 | Baseline | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 11.7 | **1010** | < 1.0 U | -- | -- | -- | -- |
| 137A-P3-MW003I-B | 137A-P3-MW003I-B-66.5-20230419 | 4/19/2023 | 66.5 | N | 4602784981 | Treatment | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -130.2 | 1.03 | 7.49 | 17.814 | 14.61 | 14.3 | -- | 9.7 | **1070** | -- | -- | **459** | **76.1** | -- |
| 137A-P3-MW003I-B | 137A-P3-MW003I-B-66.5-20230509 | 5/9/2023 | 66.5 | N | 4602799431 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | 216.0 | 0.67 | 7.39 | 23.83 | 15.1 | 9.84 | -- | 9.6 | **1140** | -- | -- | -- | -- | -- |
| 137A-P3-MW003I-B | 137A-P3-MW003I-B-66.5-20230621 | 6/21/2023 | 66.5 | N | 4602828031 | Treatment | Intermediate | < 4.0 U | **90.9** | < 10.0 U | < 10.0 U | -129.6 | 0.72 | 7.42 | 20.13 | 18.1 | 19.7 | -- | 9.4 | **694** | -- | -- | -- | -- | -- |
| 137A-P3-MW003I-B | 137A-P3-MW003I-B-66.5-20230714 | 7/14/2023 | 66.5 | N | 4602842251 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -64.3 | 0.63 | 7.3 | 20.729 | 20.3 | 8.32 | -- | 9.9 | **1010** | -- | -- | -- | -- | -- |
| 137A-P3-MW003I-B | 137A-P3-MW003I-B-66.5-20230823 | 8/23/2023 | 66.5 | N | 4602867511 | Treatment | Intermediate | < 8.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -99.8 | 0.01 | 7.56 | 11.63 | 21.2 | 9.79 | -- | 11.8 | **883** | -- | -- | -- | -- | -- |
| 137A-P3-MW003I-B | 137A-P3-MW003I-B-66.5-20230915 | 9/15/2023 | 66.5 | N | 4602882761 | Treatment | Intermediate | < 4.0 U | < 12.0 U | < 10.0 U | < 10.0 U | -138.3 | 0.67 | 7.09 | 19.38 | 18.66 | 29.9 | -- | 10 | **1030** | -- | -- | -- | -- | -- |
| 137A-P3-MW003I-B | 137A-P3-MW003I-B-66.5-20231013 | 10/13/2023 | 66.5 | N | 4602903221 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -56.2 | 0.67 | 7.22 | 23.84 | 17.1 | 9.54 | -- | 10.5 | **1120** | -- | -- | -- | -- | -- |
| 137A-P3-MW003I-B | 137A-P3-MW003I-B-66.5-20231114 | 11/14/2023 | 66.5 | N | JD76935 | Treatment | Intermediate | -- | 10 U | -- | 2.7 B | -178.3 | 0.2 | 7.17 | 24.33 | 12.9 | 9.39 | -- | 9.0 | **1320** | -- | -- | -- | -- | -- |
| 137A-P3-MW003I-B | 137A-P3-MW003I-B-66.5-20231215 | 12/15/2023 | 66.5 | N | JD78996 | Treatment | Intermediate | 7.1 B | 6.2 B | 8.7 B | 15 | -101.8 | 0.17 | 7.22 | 17.45 | 15.7 | 31.3 | -- | 8.6 | **1170** | -- | -- | -- | -- | -- |
| 137A-P3-MW003I-B | 137A-P3-MW003I-B-66.5-20240118 | 1/18/2024 | 66.5 | N | JD80778 | Treatment | Intermediate | -- | < 10 U | -- | 47 | -211.3 | 0 | 7.23 | 23.53 | 6 | 9.89 | -- | 8.8 | **1160** | -- | -- | -- | -- | -- |
| 137A-P3-MW003I-B | 137A-P3-MW003I-B-66.5-20240223 | 2/23/2024 | 66.5 | N | JD83100 | Treatment | Intermediate | -- | < 10 U | -- | 7.6 B | -271.7 | 1.33 | 7.14 | 23.28 | 11.7 | 9.03 | -- | 8.8 | **1190** | -- | -- | -- | -- | -- |
| 137A-P3-MW003I-B | 137A-P3-MW003I-B-66.5-20240319 | 3/19/2024 | 66.5 | N | JD84759 | Treatment | Intermediate | -- | < 10 U | -- | < 10 U | -116.9 | 0.14 | 7.18 | 21.13 | 11.2 | 4.68 | -- | 8.2 | **1110** | -- | -- | -- | -- | -- |
| 137A-P3-MW003I-B | 137A-P3-MW003I-B-66.5-20240411 | 4/11/2024 | 66.5 | N | JD86321 | Treatment | Intermediate | -- | 7.7 B | -- | 20 | -105.6 | 0.66 | 7.26 | 23.16 | 13.4 | 9.24 | -- | 9.8 | **1170** | -- | -- | -- | -- | -- |
| 137A-P3-MW003I-B | 137A-P3-MW003I-B-66.5-20240523 | 5/23/2024 | 66.5 | N | JD89054 | Treatment | Intermediate | -- | < 10 U | -- | 17 | -362.9 | 2.76 | 7.04 | 22.67 | 17.8 | 9.03 | -- | 72.0 | **1210** | -- | -- | -- | -- | -- |
| 137A-P3-MW003I-B | 137A-P3-MW003I-B-66.5-20240620 | 6/20/2024 | 66.5 | N | JD90821 | Treatment | Intermediate | -- | < 10 U | -- | 49 | -122.1 | 0.25 | 7.22 | 10.7 | 23.39 | 9.4 | -- | 11.8 | **1140** | -- | -- | -- | -- | -- |
| 137A-P3-MW003I-B | 137A-P3-MW003I-B-62.0-20240718 | 7/18/2024 | 62 | N | JD92447 | Post-Treatment | Intermediate | -- | < 10 U | -- | 26 J | -115 | 0.19 | 7.19 | 18.63 | 22.2 | 3.43 | -- | 10 | **1090** | < 2.0 U | -- | -- | -- | -- |
| 137A-P3-MW003I-B | 137A-P3-MW003I-B-67.0-20240718 | 7/18/2024 | 67 | N | JD92447 | Post-Treatment | Intermediate | -- | < 10 UJ | -- | 54 J | -114.4 | 0.21 | 7.21 | 19.01 | 19.8 | 9.98 | -- | 10.3 | **1080** | < 2.0 U | -- | -- | -- | -- |
| 137A-P3-MW003I-B | 137A-P3-MW003I-B-52.0-20240719 | 7/19/2024 | 52 | N | JD92501 | Post-Treatment | Intermediate | -- | < 10 U | -- | < 10 U | -144.5 | 0.85 | 7.24 | 14.57 | 23.5 | 3.79 | -- | 9.2 J+ | **895** | < 2.0 U | -- | -- | -- | -- |
| 137A-P3-MW003I-B | 137A-P3-MW003I-B-57.0-20240719 | 7/19/2024 | 57 | N | JD92501 | Post-Treatment | Intermediate | -- | < 10 U | -- | < 10 U | -138.1 | 1.13 | 7.22 | 17.63 | 21 | 7.81 | -- | 10.3 J+ | **1080** | < 2.0 U | -- | -- | -- | -- |
| 137A-P3-MW003I-B | 137A-P3-MW003I-B-67.0-20241014 | 10/14/2024 | 67 | N | JD98166 | Post-Treatment | Intermediate | -- | < 10 UJ | -- | 24 J | -148.8 | 0.22 | 7.08 | 22.6 | 19.3 | 5.42 | -- | 11.1 | **1080** | -- | -- | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-24.5-20200721 | 7/21/2020 | 24.5 | N | JD10407 | N/A | Intermediate | 6.5 J | **1720** | < 10 U | < 50 U | -14.60 | 0.64 | 6.33 | 6.13 | 27.50 | 59.20 | -- | -- | -- | -- | -- | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-29.5-20200721 | 7/21/2020 | 29.5 | N | JD10407 | N/A | Intermediate | 7.9 J | **2490** | < 10 U | < 50 U | 13.40 | 0.55 | 6.27 | 5.96 | 22.66 | 74.90 | -- | -- | -- | -- | -- | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-23.0-20211001 | 10/1/2021 | 23 | N | 4602440821 | N/A | Intermediate | **2080** | **2480** | **1300** | **1210** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-28.0-20211001 | 10/1/2021 | 28 | N | 4602440821 | N/A | Intermediate | **3600** | **4530** | **2070** | **2110** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-28.0-20211001-X | 10/1/2021 | 28 | FD | 4602440821 | N/A | Intermediate | **3590** | **4410** | **2090** | **2140** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-25-20211011 | 10/11/2021 | 25 | N | 4602448291 | Baseline | Intermediate | **36100** | **38100** | **39000** | **37400** | 162.70 | 2.19 | 7.18 | 1.25 | 18.81 | 3.33 | -- | 1.7 | **399** | < 1.0 U | 84 | < 240 U | **730** | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-25.0-20211116 | 11/16/2021 | 25 | N | 4602474031 | Treatment | Intermediate | **863** | **2790** | < 50.0 U | < 50.0 U | -66.50 | -- | 6.54 | 3.46 | 15.72 | 9.91 | -- | 1140 | 8.79 | -- | 83 | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-25-20211222 | 12/22/2021 | 25 | N | 4602496971 | Treatment | Intermediate | **443** | **3600** | **< 200 U** | **< 200 U** | -165.70 | 0.77 | 6.52 | 3.56 | 14.14 | 9.87 | -- | 1020 | 7.29 | -- | 310 | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-25-20211222-X | 12/22/2021 | 25 | FD | 4602496971 | Treatment | Intermediate | **456** | **6860** | **< 200 U** | **< 200 U** | -- | -- | -- | -- | -- | -- | -- | 1080 | 6.81 | -- | 250 | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-25-20220117 | 1/17/2022 | 25 | N | 4602508211 | Treatment | Intermediate | **1280** | **14000** | **< 100 U** | **< 100 U** | -176.00 | 1.3 | 6.45 | 5.51 | 18.63 | 8.22 | -- | 1630 | 15.0 | -- | 2600 | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-25-20220222 | 2/22/2022 | 25 | N | 4602529771 | Treatment | Intermediate | **1310** | **1490** | < 50.0 U | < 20.0 U | -62.40 | 1.41 | 6.12 | 4.21 | 14.30 | 8.67 | -- | 1670 | 1.72 | -- | 18000 | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-25-20220322 | 3/23/2022 | 25 | N | 4602547911 | Treatment | Intermediate | **1300** | **2680** | < 20.0 U | < 20.0 U | -63.40 | 1.36 | 6.17 | 3.88 | 13.92 | 5.21 | -- | 1760 | 3.01 | -- | 19000 | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-25-20220425 | 4/25/2022 | 25 | N | 4602569361 | Treatment | Intermediate | **1670** | **2740** | < 50.0 U | < 50.0 U | 151.3 | 10.20 | 5.90 | 4.145 | 13.87 | 4.09 | -- | 1360 | 0.

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 143-P3A-MW101I | 143-P3A-MW101I-25-20220920 | 9/20/2022 | 25 | N | 4602659081 | Treatment | Intermediate | -- | **4700** | -- | **< 100 U** | -188.8 | 9.42 | 6.41 | 3.029 | 20.1 | 9.05 | -- | 579 | 4.74 | -- | -- | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-25-20221017 | 10/17/2022 | 25 | N | 4602676401 | Treatment | Intermediate | -- | **4120** | -- | < 10.0 U | -125.8 | 1.91 | 6.65 | 2.948 | 19.54 | 9.44 | -- | 362 | 1.19 J | -- | -- | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-25-20221115 | 11/15/2022 | 25 | N | 4602695881 | Treatment | Intermediate | **2100** | **2300** | < 50.0 UH | < 50.0 U | -86.4 | 2.8 | 6.65 | 2.301 | 15.84 | 12.9 | -- | 314 | 8.94 | -- | -- | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-25-20221215 | 12/15/2022 | 25 | N | 4602714561 | Treatment | Intermediate | **2170** | **2440** | **< 100 U** | **< 100 U** | -88.0 | 0.91 | 3.6 | 2.973 | 13 | 43 | -- | 219 | 3.24 J | -- | -- | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-25-0-20230123 | 1/23/2023 | 25 | N | 4602734111 | Treatment | Intermediate | -- | **1990** | -- | **< 100 U** | -208.5 | 2.5 | 6.69 | 2.307 | 8.79 | 9.48 | -- | 166 | 15.8 | -- | -- | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-25-0-20230224 | 2/24/2023 | 25 | N | 4602752361 | Treatment | Intermediate | **1490** | **1460** | < 50.0 U | < 50.0 U | -101.3 | 7.67 | 6.57 | -- | 13.5 | 9.46 | -- | 153 | 9.33 | -- | -- | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-25-0-20230323 | 3/23/2023 | 25 | N | 4602768691 | Treatment | Intermediate | -- | **1350** | -- | < 50.0 U | -142.4 | 0.19 | 6.71 | 2.054 | 13.9 | 7.91 | -- | 136 | 3.78 | -- | -- | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-25-0-20230420 | 4/20/2023 | 25 | N | 4602786061 | Treatment | Intermediate | **1230** | **1300** | < 50.0 U | < 50.0 U | 207.5 | 0.77 | 6.42 | 2.342 | 16.5 | 15.9 | -- | 123 | 1.70 J | -- | -- | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-25-20230509 | 5/9/2023 | 25 | N | 4602799431 | Treatment | Intermediate | **1080** | **1200** | **< 100 U** | **< 100 U** | -87.1 | 1.52 | 6.47 | 2.193 | 18.8 | 10.2 | -- | 125 | 2.63 | -- | -- | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-25-0-20230621 | 6/21/2023 | 25 | N | 4602828031 | Treatment | Intermediate | -- | **1060** | -- | **< 100 U** | -115.0 | 1.18 | 6.49 | 2.072 | 17.3 | 8.51 | -- | 101 | 6.96 | -- | -- | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-25-0-20230718 | 7/18/2023 | 25 | N | 4602844591 | Treatment | Intermediate | -- | **1010** | -- | < 50.0 U | -63.3 | 0.12 | 6.49 | 2.703 | 18.61 | 5.45 | -- | 97.1 | < 2.40 U | -- | -- | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-25-0-20230718-X | 7/18/2023 | 25 | FD | 4602844591 | Treatment | Intermediate | -- | **1000** | -- | < 50.0 U | -- | -- | -- | -- | -- | -- | -- | 103 | 2.07 J | -- | -- | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-25-0-20230823 | 8/23/2023 | 25 | N | 4602867511 | Treatment | Intermediate | -- | **886** | -- | < 50.0 U | -89.4 | 0.17 | 6.38 | 3.005 | 22.37 | 5.71 | -- | 92.2 | 18.5 | -- | -- | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-25-0-20230918 | 9/18/2023 | 25 | N | 4602884721 | Treatment | Intermediate | **2080** | **2430** | < 20.0 U | < 20.0 U | -107 | 2.85 | 6.23 | 2.165 | 18.87 | 14.1 | -- | 215 | 30.6 | -- | -- | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-25-0-20231016 | 10/16/2023 | 25 | N | 4602904731 | Treatment | Intermediate | **1430** | **1450** | < 50.0 U | < 50.0 U | -70.7 | 0.81 | 6 | 2.795 | 17.97 | 10.5 | -- | 137 | 24.7 | -- | -- | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-25-0-20231115 | 11/15/2023 | 25 | N | JD77052 | Treatment | Intermediate | -- | **1210** | -- | 14 | -133.1 | 0.09 | 6.56 | 2.549 | 16.8 | 9.72 | -- | 98.6 | 29.9 | -- | -- | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-25-0-20231115-X | 11/15/2023 | 25 | FD | JD77052 | Treatment | Intermediate | -- | **1390** | -- | 14 | -- | -- | -- | -- | -- | -- | -- | 120 | 33.9 | -- | -- | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-25-0-20231215 | 12/15/2023 | 25 | N | JD78996 | Treatment | Intermediate | **848** | **913** | 57 | 52 | -111.7 | 0.15 | 6.5 | 2.078 | 16.8 | 14.3 | -- | 93.9 | 29.6 | -- | -- | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-25-0-20240118 | 1/18/2024 | 25 | N | JD80778 | Treatment | Intermediate | -- | **551** | -- | 4.9 B | -93 | 0.29 | 6.52 | 2.213 | 13 | 7.27 | -- | 77.5 | 17.1 B | -- | -- | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-25-0-20240226 | 2/26/2024 | 25 | N | JD83185 | Treatment | Intermediate | -- | **494** | -- | 26 | -149.1 | 1.51 | 6.44 | 2.179 | 12.3 | 4.61 | -- | 67.8 | 8.1 | -- | -- | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-25-0-20240321 | 3/21/2024 | 25 | N | JD84944 | Treatment | Intermediate | -- | **549** | -- | < 10 U | -165.9 | 0.22 | 6.49 | -165.9 | 10.6 | 2.87 | -- | 58.8 | 14.1 | -- | -- | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-25-0-20240412 | 4/12/2024 | 25 | N | JD86437 | Treatment | Intermediate | -- | **515** | -- | < 10 U | -129.3 | 0.08 | 6.49 | 2.263 | 14.5 | 3.67 | -- | 80.1 | 11.4 B | -- | -- | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-25-0-20240523 | 5/23/2024 | 25 | N | JD89054 | Treatment | Intermediate | -- | **489** | -- | **450** | -- | -- | -- | -- | -- | -- | -- | 8.1 | 22.9 | -- | -- | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-25-0-20240620 | 6/20/2024 | 25 | N | JD90821 | Treatment | Intermediate | -- | **526** | -- | 32 | -92.2 | 0.88 | 6.92 | 2.287 | 19.3 | 5.57 | -- | 85.0 | 23.7 | -- | -- | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-24.5-20240719 | 7/19/2024 | 24.5 | N | JD92501 | Post-Treatment | Intermediate | -- | **407** | -- | < 10 U | -98.7 | 0.09 | 6.62 | 2.301 | 21.3 | 3.71 | -- | 55.5 | 37.8 | < 2.0 U | -- | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-29.5-20240719 | 7/19/2024 | 29.5 | N | JD92501 | Post-Treatment | Intermediate | -- | **387** | -- | < 10 U | -106.7 | 0.11 | 6.64 | 2.317 | 18.7 | 3.87 | -- | 51.7 | 37.7 | < 2.0 U | -- | -- | -- | -- |
| 143-P3A-MW101I | 143-P3A-MW101I-29.5-20241009 | 10/9/2024 | 29.5 | N | JD97776 | Post-Treatment | Intermediate | -- | **502** | -- | < 10 U | -109.9 | 0.1 | 6.39 | 2.10 | 19.5 | 8.93 | -- | 53.3 | 26.5 | -- | -- | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30.0-20211012 | 10/12/2021 | 30 | N | 4602448821 | Baseline | Intermediate | **29100** | **36800** | **32100** | **34400** | 149.40 | 0.09 | 7.16 | 0.97 | 16.58 | 9.76 | -- | 1.4 | 148 | < 1.0 U | 90 | < 120 U | 38.1 | -- |
| 143-P3-MW001I | 143-P3-MW001I-30-20211116 | 11/16/2021 | 30 | N | 4602474031 | Treatment | Intermediate | **2830** | **2930** | **2500** | **2390** | 109.60 | 2.42 | 7.51 | 1.25 | 15.20 | 5.03 | -- | 37.1 | 115 | -- | 35 | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30-20211222 | 12/22/2021 | 30 | N | 4602496971 | Treatment | Intermediate | **204** | **6160** | < 10.0 U | < 10.0 U | -100.90 | 0.02 | 6.69 | 3.99 | 13.59 | 23.00 | -- | 298 | 118 | -- | 42 | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30-20220119 | 1/19/2022 | 30 | N | 4602509341 | Treatment | Intermediate | **153** | **2090** | < 10.0 U | < 10.0 U | -158.80 | 0.09 | 6.63 | 1.88 | 14.42 | 9.88 | -- | 184 | 40.7 | -- | 79 | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30.0-20220222 | 2/22/2022 | 30 | N | 4602529771 | Treatment | Intermediate | **202** | **1360** | < 10.0 U | < 10.0 U | -52.50 | 1.65 | 6.53 | 2.49 | 12.80 | 9.20 | -- | 312 | 18.7 | -- | 3600 | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30-20220322 | 3/22/2022 | 30 | N | 4602547911 | Treatment | Intermediate | **189** | **770** | < 20.0 U | < 20.0 U | -115.40 | 3.07 | 6.54 | 1.73 | 13.03 | 6.89 | -- | 331 | 16.9 | -- | 5700 | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30-20220322-X | 3/22/2022 | 30 | FD | 4602547911 | Treatment | Intermediate | **188** | **1000** | < 20.0 U | < 20.0 U | -- | -- | -- | -- | -- | -- | -- | 328 | 13.3 | -- | 5300 | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30-20220426 | 4/26/2022 | 30 | N | 4602569961 | Treatment | Intermediate | **225** | **307** | < 50.0 U | < 50.0 U | -79.6 | 1.48 | 6.54 | 2.259 | 12.12 | 8.77 | -- | 360 F1 | 3.78 JF1 | -- | 15000 F1 | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30-20220518 | 5/18/2022 | 30 | N | 4602583551 | Treatment | Intermediate | -- | **381** | -- | < 20.0 U | -68.5 | 3.91 | 6.53 | 2.272 | 15.2 | 8.76 | -- | 387 | 2.80 | -- | -- | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30-20220616 | 6/16/2022 | 30 | N | 4602602381 | Treatment | Intermediate | -- | **376** | -- | < 10.0 U | -72.1 | 0.10 | 7.24 | 2.006 | 15.75 | 9.68 | -- | 82.0 | 7.51 | -- | -- | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30-20220720 | 7/20/2022 | 30 | N | 4602622601 | Treatment | Intermediate | -- | **220** | -- | < 10.0 U | -86 | 0.03 | 6.49 | 1.759 | 20.25 | 5.93 | -- | 36.9 | 12.5 | -- | -- | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30-20220823 | 8/23/2022 | 30 | N | 4602642801 | Treatment | Intermediate | -- | **345** | -- | < 10.0 U | -18.0 | 1.36 | 6.46 | 1.811 | 20.33 | 8.02 | -- | 27.2 | 26.6 | -- | -- | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30.0-20220919 | 9/19/2022 | 30 | N | 4602658321 | Treatment | Intermediate | -- | **204** | -- | < 10.0 U | -44.7 | 3.12 | 6.46 | 2.165 | 21.66 | 6.72 | -- | 156 | 10.6 | -- | -- | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30-20221017 | 10/17/2022 | 30 | N | 4602676401 | Treatment | Intermediate | -- | **198** | -- | < 10.0 U | -97.2 | 1.53 | 6.57 | 2.135 | 17.53 | 5.33 | -- | 94.7 F1 | 9.64 | -- | -- | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30-20221115 | 11/15/2022 | 30 | N | 4602695881 | Treatment | Intermediate | -- | **193** | -- | < 10.0 U | -98.2 | 0.9 | 6.58 | 2.649 | 15.11 | 5.8 | -- | 95.9 | 6.89 | -- | -- | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30-20221215 | 12/15/2022 | 30 | N | 4602714561 | Treatment | Intermediate | -- | **206** | -- | < 10.0 U | -95 | 0.51 | 3.37 | 2.203 | 13 | 1.8 | -- | 56.7 | 5.99 | -- | -- | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30-20221215-X | 12/15/2022 | 30 | FD | 4602714561 | Treatment | Intermediate | -- | **181** | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 55.0 | 6.01 | -- | -- | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30-20230123 | 1/23/2023 | 30 | N | 4602734111 | Treatment | Intermediate | -- | **90.1** | -- | < 10.0 U | -160 | 2.46 | 6.34 | 1.794 | 10.33 | 3 | -- | 33.3 | 17.4 | -- | -- | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30-0-20230224 | 2/24/2023 | 30 | N | 4602752361 | Treatment | Intermediate | -- | **238** | -- | < 20.0 U | -91.3 | 2.85 | 6.75 | 1.876 | 10.83 | 8.59 | -- | 91.8 | 6.29 | -- | -- | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30.0-20230322 | 3/22/2023 | 30 | N | 4602768001 | Treatment | Intermediate | -- | **254** | -- | < 20.0 U | -72.6 | 1.18 | 5.87 | 2.21 | 15.67 | 9.65 | -- | 94.6 | 2.68 | -- | -- | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30.0-20230420 | 4/20/2023 | 30 | N | 4602786061 | Treatment | Intermediate | -- | **123** | -- | < 10.0 U | 303.1 | 30.4 | 6.36 | 1.488 | 16 | 3.96 | -- | 40.3 | 95.9 | -- | -- | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30.0-20230420-X | 4/20/2023 | 30 | FD | 4602786061 | Treatment | Intermediate | -- | **125** | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 40.7 | 97.5 | -- | -- | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30.0-20230509 | 5/9/2023 | 30 | N | 4602799431 | Treatment | Intermediate | -- | **227** | -- | < 10.0 U | -88.6 | 1.47 | 6.35 | 1.797 | 15.3 | 5.81 | -- | 106 | 18.0 | -- | -- | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30.0-20230509-X | 5/9/2023 | 30 | FD | 4602799431 | Treatment | Intermediate | -- | **216** | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 94.4 | 17.7 | -- | -- | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30-20230621 | 6/21/2023 | 30 | N | 4602828031 | Treatment | Intermediate | -- | **317** | -- | < 10.0 U | -96.4 | 1.28 | 6.33 | 1.57 | 19.59 | 5.43 | -- | 104 | 8.27 | -- | -- | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30-20230717 | 7/17/2023 | 30 | N | 4602844061 | Treatment | Intermediate | -- | **252** | -- | < 10.0 U | -70.3 | 0.21 | 6.31 | 2.1 | 23.91 | 5.32 | -- | 96.0 | 6.57 | -- | -- | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30-0-20230823 | 8/23/2023 | 30 | N | 4602867511 | Treatment | Intermediate | -- | **170** | -- | < 50.0 U | -67.5 | 3.52 | 6.25 | 2.464 | 18.33 | 4.78 | -- | 82.5 F1 | 14.4 F1 | -- | -- | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30-0-20230914 | 9/14/2023 | 30 | N | 4602882011 | Treatment | Intermediate | -- | **135** | -- | < 10.0 U | -72.3 | 1.18 | 6.46 | 2.078 | 21.53 | 4.6 | -- | 47.0 | 12.6 | -- | -- | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30-0-20231013 | 10/13/2023 | 30 | N | 4602903221 | Treatment | Intermediate | -- | **87.5** | -- | < 10.0 U | 69.1 | 5.17 | 6.77 | 1.448 | 18.01 | 3.31 | -- | 39.4 | 20.2 | -- | -- | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30-0-20231114 | 11/14/2023 | 30 | N | JD76935 | Treatment | Intermediate | -- | 66.5 | -- | 7.5 B | -175.1 | 0.13 | 6.46 | 1.963 | 14 | 3.03 | -- | 24.2 | 48.2 | -- | -- | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30-0-20231213 | 12/13/2023 | 30 | N | JD78776 | Treatment | Intermediate | -- | 47.7 | -- | 5.6 B | -85.6 | 0 | 6.58 | 1.792 | 14.4 | 2.08 | -- | 19.6 | 55.9 | -- | -- | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30-0-20240118 | 1/18/2024 | 30 | N | JD80778 | Treatment | Intermediate | -- | 43.5 | -- | 8.4 B | -67.4 | 0.1 | 6.66 | 1.599 | 12.6 | 4.81 | -- | 17.4 | 57.3 | -- | -- | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30-0-20240220 | 2/20/2024 | 30 | N | JD82806 | Treatment | Intermediate | -- | 39.9 | -- | 35 | -144.8 | 0.21 | 6.57 | 1.859 | 12.1 | 1.98 | -- | 14.5 | 70.7 | -- | -- | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30-0-20240319 | 3/19/2024 | 30 | N | JD84759 | Treatment | Intermediate | -- | 43.3 | -- | < 10 U | -120.8 | 0.16 | 6.57 | 1.567 | 13.6 | 3.14 | -- | 16.1 | 49.9 | -- | -- | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30-0-20240412 | 4/12/2024 | 30 | N | JD86437 | Treatment | Intermediate | -- | 45.3 | -- | < 10 U | -120.1 | 0.11 | 6.58 | 1.811 | 13.7 | 4.37 | -- | 20.5 | 49.9 | -- | -- | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30-0-20240521 | 5/21/2024 | 30 | N | JD88880 | Treatment | Intermediate | -- | 34.3 | -- | < 10 U | -110.6 | 0.6 | 6.84 | 1.306 | 16.6 | 1.23 | -- | 9.0 | 144 | -- | -- | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-30-0-20240619 | 6/19/2024 | 30 | N | JD90730 | Treatment | Intermediate | -- | 28.5 | -- | 2.7 B | -164.7 | 0.41 | 7.04 | 1.336 | 19.3 | 1.24 | -- | 7.2 | 136 | -- | -- | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-34.6-20240717 | 7/17/2024 | 34.6 | N | JD92334 | Post-Treatment | Intermediate | -- | 53.0 | -- | 56 J | -7.8 | 0.27 | 7.23 | 1217 | 19.5 | 2.64 | -- | 9.9 J | 110 | < 2.0 U | -- | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-24.6-20240718 | 7/18/2024 | 24.6 | N | JD92447 | Post-Treatment | Intermediate | -- | 58.6 | -- | 24 J | -5.3 | 0.23 | 7.18 | 1242 | 18.6 | 2.37 | -- | 8.8 | 106 | < 2.0 U | -- | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-29.6-20240718 | 7/18/2024 | 29.6 | N | JD92447 | Post-Treatment | Intermediate | -- | 32.9 | -- | 5.5 J | -7.6 | 0.42 | 7.23 | 1227 | 17.6 | 2.46 | -- | 8.1 | 109 | < 2.0 U | -- | -- | -- | -- |
| 143-P3-MW001I | 143-P3-MW001I-34.6-20241016 | 10/16/2024 | 34.6 | N | JD98354 | Post-Treatment | Intermediate | -- | 35.7 | -- | 45 | -1.5 | 0.24 | 6.9 | 1.15 | 15.9 | 3.18 | -- | 8.9 J+ | 112 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-A | 143-P3-MW002I-A-31.6-20211012 | 10/12/2021 | 31.6 | N | 4602448821 | Baseline | Intermediate | < 4.0 U | 14.9 | < 10.0 U | < 10.0 U | -146.10 | 0.72 | 7.29 | 1.07 | 18.36 | 2.00 | -- | 5.0 | 1.06 | < 1.0 U | 5800 | **1080** | **515** | -- |
| 143-P3-MW002I-A | 143-P3-MW002I-A-31.6-20211221 | 12/21/2021 | 31.6 | N | 4602495851 | Treatment | Intermediate | **64600** | **43000** | **39500** | **77300** | 175.80 | 0.95 | 6.76 | 1.93 | 12.54 | 2.88 | -- | 3.7 | 113 | -- | 390 | -- | -- | -- |
| 143-P3-MW002I-A | 143-P3-MW002I-A-31.6-20220117 | 1/17/2022 | 31.6 | N | 4602508211 | Treatment | Intermediate | **7180** | **7350** | **7770** | **7330** | 211.00 | 0.35 | 7.02 | 2.64 | 10.64 | 5.12 | -- | 4.6 | 145 | -- | 1900 | -- | -- | -- |
| 143-P3-MW002I-A | 143-P3-MW002I-A-31.6-20220222 | 2/22/2022 | 31.6 | N | 4602529771 | Treatment | Intermediate | 7.4 | **109** | < 10.0 U | < 10.0 U | -154.60 | 1.37 | 7.37 | 1.53 | 12.44 | 3.76 | -- | 4.4 | 18.1 | -- | 3100 | -- | -- | -- |
| 143-P3-MW002I-A | 143-P3-MW002I-A-31.6-20220322 | 3/22/2022 | 31.6 | N | 4602547911 | Treatment | Intermediate | 6.0 | **154** | < 10.0 U | < 10.0 U | -162.20 | 0.50 | 7.53 | 1.50 | 13.45 | 4.40 | -- | 4.5 ^2 | 6.08 F1 | -- | 3100 | -- | -- | -- |
| 143-P3-MW002I-A | 143-P3-MW002I-A-31.6-20220422 | 4/22/2022 | 31.6 | N | 4602567961 | Treatment | Intermediate | 3.8 J | **85.5** | < 10.0 U | < 10.0 U | -98.2 | 0.83 | 7.96 | 1.284 | 15.21 | 2.00 | -- | 4.2 | 6.55 | -- | 4400 | -- | -- | -- |
| 143-P3-MW002I-A | 143-P3-MW002I-A-31.6-20220518 | 5/18/2022 | 31.6 | N | 4602583551 | Treatment | Intermediate | -- | 30.8 | -- | < 10.0 U | 81.6 | 0.49 | 7.13 | 1.450 | 15.65 | 2.50 | -- | 4.2 | 6.88 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-A | 143-P3-MW002I-A-31.6-20220616 | 6/16/2022 | 31.6 | N | 4602602381 | Treatment | Intermediate | -- | 68.8 | -- | < 10.0 U | -140 | 0.56 | 7.65 | 1.157 | 16.06 | 1.00 | -- | 4.6 | 5.58 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-A | 143-P3-MW002I-A-31.6-20220720 | 7/20/2022 | 31.6 | N | 4602622601 | Treatment | Intermediate | -- | 16.2 | -- | < 10.0 U | -77.1 | 2.69 | 7.05 | 1.147 | 17.65 | 0.94 | -- | 4.7 | 1.45 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-A | 143-P3-MW002I-A-31.6-20220824 | 8/24/2022 | 31.6 | N | 4602643471 | Treatment | Intermediate | -- | 12.5 | -- | < 10.0 U | -26.5 | 0.68 | 7.12 | 1.340 | 18.32 | 0.50 | -- | 6.1 | 3.21 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-A | 143-P3-MW002I-A-31.6-20220920 | 9/20/2022 | 31.6 | N | 4602659081 | Treatment | Intermediate | -- | **12700** | -- | **12700** | 136.7 | 0.96 | 6.66 | 2.203 | 18.49 | 6.9 | -- | 12.7 | 33.1 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-A | 143-P3-MW002I-A-31.6-20220920-X | 9/20/2022 | 31.6 | FD | 4602659081 | Treatment | Intermediate | -- | **13300** | -- | **14600** | -- | -- | -- | -- | -- | -- | -- | 11.8 | 35.5 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-A | 143-P3-MW002I-A-31.6-20221017 | 10/17/2022 | 31.6 | N | 4602676401 | Treatment | Intermediate | -- | **600** | -- | < 10.0 U | -102.1 | 0.79 | 7.19 | 1.149 | 17.98 | 6.86 | -- | 6.0 | 0.76 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-A | 143-P3-MW002I-A-31.6-20221115 | 11/15/2022 | 31.6 | N | 4602695881 | Treatment | Intermediate | -- | **81.5** | -- | < 10.0 U | -122.5 | 1.16 | 7.17 | 1.097 | 14.46 | 8.34 | -- | 5.0 | 0.64 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-A | 143-P3-MW002I-A-31.6-20221215 | 12/15/2022 | 31.6 | N | 4602714561 | Treatment | Intermediate | -- | 52.6 | -- | < 10.0 U | 24.2 | 1.78 | 7.06 | 1.189 | 12.12 | 3.49 | -- | 5.6 | 0.53 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-A | 143-P3-MW002I-A-31.6-20230124 | 1/24/2023 | 31.6 | N | 4602734531 | Treatment | Intermediate | -- | 38.3 | -- | < 10.0 U | -81.7 | 0.36 | 7.18 | 1.072 | 10.45 | 1.72 | -- | 5.5 | 2.30 F1 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-A | 143-P3-MW002I-A-31.6-20230224 | 2/24/2023 | 31.6 | N | 4602752361 | Treatment | Intermediate | -- | 36.0 | -- | < 10.0 U | -79.1 | 0.89 | 7.09 | 1.753 | 12.3 | 9.8 | -- | 8.1 F1 | 1.10 F1 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-A | 143-P3-MW002I-A-31.6-20230223-X | 2/24/2023 | 31.6 | FD | 4602752361 | Treatment | Intermediate | -- | 27.0 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 8.7 | 7.32 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-A | 143-P3-MW002I-A-31.6-20230322 | 3/22/2023 | 31.6 | N | 4602768001 | Treatment | Intermediate | -- | 30.2 | -- | < 10.0 U | -91.3 | 0.75 | 6.82 | 1.308 | 14.26 | 3.07 | -- | 6.3 | 3.13 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-A | 143-P3-MW002I-A-31.6-20230420 | 4/20/2023 | 31.6 | N | 4602786061 | Treatment | Intermediate | -- | **5420** | -- | < 10.0 U | -29.1 | 8.84 | 6.79 | 1.123 | 15.5 | 8.48 | -- | 5.4 | 7.49 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-A | 143-P3-MW002I-A-31.6-20230509 | 5/9/2023 | 31.6 | N | 4602799431 | Treatment | Intermediate | -- | 34.5 | -- | < 10.0 U | -97.4 | 0.34 | 7.25 | 1.246 | 16.83 | 8.46 | -- | 4.5 | 4.48 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-A | 143-P3-MW002I-A-31.6-20230622 | 6/22/2023 | 31.6 | N | 4602828851 | Treatment | Intermediate | 12.0 | **108** | < 10.0 U | < 10.0 U | -138.9 | 0.56 | 7.19 | 1.381 | 16.23 | 150 | -- | 17.4 | 2.36 J | -- | -- | -- | -- | -- |
| 143-P3-MW002I-A | 143-P3-MW002I-A-31.6-20230718 | 7/18/2023 | 31.6 | N | 4602844591 | Treatment | Intermediate | -- | 24.1 | -- | < 10.0 U | 48 | 0.11 | 6.54 | 1.478 | 21.14 | 9.25 | -- | 6.1 | 0.70 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-A | 143-P3-MW002I-A-31.6-20230823 | 8/23/2023 | 31.6 | N | 4602867511 | Treatment | Intermediate | -- | 27.0 | -- | < 10.0 U | -12.6 | 2.83 | 6.74 | 1.208 | 21.85 | 4.43 | -- | 5.9 | 0.59 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-A | 143-P3-MW002I-A-31.6-20230918 | 9/18/2023 | 31.6 | N | 4602884721 | Treatment | Intermediate | 3.4 J | **77.4** | < 10.0 U | < 10.0 U | 45.1 | 1.92 | 6.78 | 1.395 | 19.09 | 128 | -- | 5.3 | 0.81 J | -- | -- | -- | -- | -- |
| 143-P3-MW002I-A | 143-P3-MW002I-A-31.6-20231013 | 10/13/2023 | 31.6 | N | 4602903221 | Treatment | Intermediate | 3.5 J | 53.2 | < 10.0 U | < 10.0 U | -56.4 | 0.29 | 6.76 | 1.419 | 17.95 | 86.7 | -- | 5.8 | 1.17 J | -- | -- | -- | -- | -- |
| 143-P3-MW002I-A | 143-P3-MW002I-A-31.6-20231115 | 11/15/2023 | 31.6 | N | JD77052 | Treatment | Intermediate | 11.9 | 56.0 | < 10 U | < 10 U | -139.4 | 0.49 | 6.72 | 1.436 | 16 | 37.8 | -- | 6.3 | 3.6 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-A | 143-P3-MW002I-A-31.6-20231215 | 12/15/2023 | 31.6 | N | JD78996 | Treatment | Intermediate | **114** | **284** | < 10 U | < 10 U | -112.5 | 0.11 | 6.92 | 1.326 | 13.7 | 47.5 | -- | 7.7 | 2.8 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-A | 143-P3-MW002I-A-31.6-20240118 | 1/18/2024 | 31.6 | N | JD80778 | Treatment | Intermediate | < 10 U | 10.8 | < 10 U | 3.7 B | -144.8 | 0.49 | 7.11 | 1.289 | 10.6 | 51.5 | -- | 4.1 | 1.0 B | -- | -- | -- | -- | -- |
| 143-P3-MW002I-A | 143-P3-MW002I-A-31.6-20240226 | 2/26/2024 | 31.6 | N | JD83185 | Treatment | Intermediate | -- | 15.8 | -- | < 10 U | -126.3 | 1.09 | 7.07 | 1.31 | 10.3 | 8.89 | -- | 3.6 | 67.0 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-A | 143-P3-MW002I-A-31.6-20240319 | 3/19/2024 | 31.6 | N | JD84759 | Treatment | Intermediate | 4.0 B | 26.3 | < 10 U | < 10 U | -168.1 | 0.22 | 7.18 | 1.407 | 12.7 | 59.5 | -- | 3.9 | 2.1 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-A | 143-P3-MW002I-A-31.6-20240412 | 4/12/2024 | 31.6 | N | JD86437 | Treatment | Intermediate | -- | 6.3 B | -- | < 10 

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 143-P3-MW002I-A | 143-P3-MW002I-A-21.2-20241015 | 10/15/2024 | 21.2 | N | JD98256 | Post-Treatment | Intermediate | -- | 23.6 J- | -- | 21 | -121.8 | 0.14 | 6.52 | 1.43 | 17.5 | 8.87 | -- | 9.4 | 1.6 J | -- | -- | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-38.5-20211012 | 10/12/2021 | 38.5 | N | 4602448821 | Baseline | Intermediate | **1830** | **2380** | **1850** | **1560** | 158.30 | 0.53 | 7.97 | 0.59 | 17.31 | 3.55 | -- | 0.75 J | 83.3 | < 1.0 U | 17 JB | < 120 U | **571** | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-38.5-20211221 | 12/21/2021 | 38.5 | N | 4602495851 | Treatment | Intermediate | **26100** | **25700** | **27600** | **26000** | 86.10 | 2.74 | 7.51 | 0.81 | 12.16 | 4.12 | -- | 0.99 J | 70.9 | -- | 27 | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-38.5-20220117 | 1/17/2022 | 38.5 | N | 4602508211 | Treatment | Intermediate | **41300** | **37500** | **41000** | **36600** | 189.00 | 0.51 | 7.09 | 0.939 | 11.21 | 1.69 | -- | 1.3 | 76.0 | -- | 340 | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-38.5-20220222 | 2/22/2022 | 38.5 | N | 4602529771 | Treatment | Intermediate | **79100** | **73700** | **76600** | **77100** | 146.40 | 9999.00 | 7.07 | 1.44 | 13.15 | 3.25 | -- | 2.6 | 116 F1 | -- | 1400 | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-38.5-20220322 | 3/22/2022 | 38.5 | N | 4602547911 | Treatment | Intermediate | **48000** | **50800** | **49400** | **50000** | 97.00 | 1.68 | 7.34 | 0.72 | 13.46 | 2.01 | -- | 1.7 ^2 | 94.8 | -- | 350 | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-38.5-20220419 | 4/19/2022 | 38.5 | N | 4602565511 | Treatment | Intermediate | **96100** | **103000** | **93800** | **96000** | 164.2 | 0.96 | 7.02 | 1.455 | 12.84 | 0.99 | -- | 2.2 | 138 | -- | 970 | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-38.5-20220518 | 5/18/2022 | 38.5 | N | 4602583551 | Treatment | Intermediate | -- | **85600** | -- | **81200** | 79.50 | 0.50 | 7.13 | 1.445 | 15.70 | 1.73 | -- | 2.1 | 113 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-38.5-20220616 | 6/16/2022 | 38.5 | N | 4602602381 | Treatment | Intermediate | -- | **14900** | -- | **14900** | 94.9 | 0.65 | 7.73 | 0.668 | 16.73 | 0.52 | -- | 0.80 J | 59.6 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-38.5-20220720 | 7/20/2022 | 38.5 | N | 4602622601 | Treatment | Intermediate | -- | **13900** | -- | **14400** | 175.1 | 1.35 | 7.3 | 0.64 | 18.11 | 3.74 | -- | 0.59 J | 58.3 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-38.5-20220824 | 8/24/2022 | 38.5 | N | 4602643471 | Treatment | Intermediate | -- | **15000** | -- | **14200** | 170.0 | 0.56 | 7.53 | 0.701 | 18.26 | 1.30 | -- | 0.64 J | 56.3 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-38.5-20220919 | 9/19/2022 | 38.5 | N | 4602658321 | Treatment | Intermediate | -- | **14100** | -- | **15000** | 91.3 | 0.30 | 7.57 | 0.733 | 19.93 | 4.08 | -- | 6.3 | 56.3 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-38.5-20221017 | 10/17/2022 | 38.5 | N | 4602676401 | Treatment | Intermediate | -- | **1150** | -- | **1210** | 52.3 | 0.42 | 8.21 | 0.758 | 17.31 | 5.55 | -- | 15.1 | 97.5 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-38.5-20221115 | 11/15/2022 | 38.5 | N | 4602695881 | Treatment | Intermediate | -- | **1080** | -- | **862** | -117.7 | 0.64 | 7.65 | 0.827 | 15.23 | 4.33 | -- | 96.4 | 65.9 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-38.5-20221215 | 12/15/2022 | 38.5 | N | 4602714561 | Treatment | Intermediate | -- | **92.5** | -- | < 10.0 U | -119.6 | 0.85 | 7.48 | 0.886 | 11.99 | 6.85 | -- | 66.6 | 6.48 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-38.5-20230123 | 1/23/2023 | 38.5 | N | 4602734111 | Treatment | Intermediate | -- | **4510** | -- | **2100** | -216.9 | 2.41 | 7.57 | 1.091 | 12.88 | 3.51 | -- | 21.2 | 84.1 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-38.5-20230224 | 2/24/2023 | 38.5 | N | 4602752361 | Treatment | Intermediate | -- | **4520** | -- | < 50.0 U | -81.0 | 1.12 | 7.12 | 1.777 | 12.45 | 9.5 | -- | 1200 | 1.79 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-38.5-20230323 | 3/23/2023 | 38.5 | N | 4602768691 | Treatment | Intermediate | -- | **336** | -- | 15.9 | -289.3 | 0.34 | 7.69 | 0.639 | 13.21 | 3.49 | -- | 8.2 F1 | 28.9 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-38.5-20230420 | 4/20/2023 | 38.5 | N | 4602786061 | Treatment | Intermediate | 23.8 | **98.2** | < 10.0 U | < 10.0 U | -164.1 | 7.04 | 7.33 | 0.806 | 16.8 | 7.66 | -- | 20.9 | 5.78 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-38.5-20230509 | 5/9/2023 | 38.5 | N | 4602799431 | Treatment | Intermediate | -- | **548** | -- | **216** | -188.1 | 0.44 | 7.58 | 0.98 | 15.5 | 2.53 | -- | 9.2 | 30.0 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-38.5-20230622 | 6/22/2023 | 38.5 | N | 4602828851 | Treatment | Intermediate | -- | 34.2 | -- | < 10.0 U | -333.4 | 0.3 | 7.77 | 0.778 | 16.66 | 1.12 | -- | 39.0 | 6.67 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-38.5-20230719 | 7/19/2023 | 38.5 | N | 4602845491 | Treatment | Intermediate | -- | **118** | -- | < 10.0 U | -323.4 | 0.67 | 7.78 | 0.629 | 18.71 | 2.6 | -- | 20.8 | 20.2 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-38.5-20230823 | 8/23/2023 | 38.5 | N | 4602867511 | Treatment | Intermediate | -- | **652** | -- | < 10.0 U | -262.8 | 1.77 | 7.54 | 1.8 | 20.5 | 2.02 | -- | 336 | 11.0 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-38.5-20230823-X | 8/23/2023 | 38.5 | FD | 4602867511 | Treatment | Intermediate | -- | **726** | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 363 | 12.0 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-38.5-20230918 | 9/18/2023 | 38.5 | N | 4602884721 | Treatment | Intermediate | -- | **331** | -- | < 10.0 U | -26.5 | 1.7 | 7.34 | 2.062 | 19.15 | 1.29 | -- | 171 | 3.52 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-38.5-20231013 | 10/13/2023 | 38.5 | N | 4602903221 | Treatment | Intermediate | -- | **97.7** | -- | < 10.0 U | -261.3 | 0.19 | 7.35 | 1.538 | 18.17 | 2.89 | -- | 29.4 | 4.67 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-38.5-20231115 | 11/15/2023 | 38.5 | N | JD77052 | Treatment | Intermediate | -- | 43.6 | -- | < 10 U | -314.1 | 0.15 | 7.37 | 0.872 | 15.9 | 1.31 | -- | 5.4 | 28.9 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-38.5-20231215 | 12/15/2023 | 38.5 | N | JD78996 | Treatment | Intermediate | -- | **70.7** | -- | < 10 U | -282 | 0.08 | 7.33 | 0.954 | 14.7 | 1.15 | -- | 5.9 | 83.6 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-38.5-20240118 | 1/18/2024 | 38.5 | N | JD80778 | Treatment | Intermediate | -- | **267** | -- | 6.0 B | -159.5 | 0.29 | 7.36 | 1.174 | 10.3 | 2.2 | -- | 4.7 | 211 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-38.6-20240226 | 2/26/2024 | 38.5 | N | JD83185 | Treatment | Intermediate | -- | 31.3 | -- | < 10 U | -151.4 | 0.29 | 7.44 | 0.811 | 11.2 | 2.02 | -- | 6.2 | 35.0 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-38.5-20240319 | 3/19/2024 | 38.5 | N | JD84759 | Treatment | Intermediate | -- | **1260** | -- | **750** | -154.7 | 0.09 | 7.56 | 1.249 | 13.4 | 3.11 | -- | 4.4 | 236 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-38.5-20240412 | 4/12/2024 | 38.5 | N | JD86437 | Treatment | Intermediate | -- | **4820** | -- | **3600** | -84.4 | 0.04 | 7.79 | 1.402 | 14.1 | 3 | -- | 4.3 | **293** | -- | -- | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-38.5-20240523 | 5/23/2024 | 38.5 | N | JD89054 | Treatment | Intermediate | -- | 18.1 | -- | < 10 U | -155.2 | 0.59 | 7.41 | 0.867 | 17 | 0.86 | -- | 8.3 | 59.5 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-38.5-20240620 | 6/20/2024 | 38.5 | N | JD90821 | Treatment | Intermediate | -- | 22.2 | -- | < 10 U | -109.6 | 0.2 | 7.42 | 0.764 | 20.8 | 6.14 | -- | 10.3 | 45.4 | -- | -- | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-36.0-20240814 | 8/14/2024 | 36 | N | JD94094 | Post-Treatment | Intermediate | -- | **87.7** | -- | < 10 U | -102.9 | 0.07 | 7.39 | 0.962 | 24.4 | 1.49 | -- | 8.5 | 56.9 | < 2.0 U | -- | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-41.0-20240814 | 8/14/2024 | 41 | N | JD94094 | Post-Treatment | Intermediate | -- | 56.2 | -- | 4.5 J | -108.3 | 0.16 | 7.41 | 0.935 | 21.6 | 1.22 | -- | 7.8 | 54.2 | < 2.0 U | -- | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-46.0-20240814 | 8/14/2024 | 46 | N | JD94094 | Post-Treatment | Intermediate | -- | **246** | -- | 5.6 J | -102.7 | 0.4 | 7.38 | 0.875 | 20.7 | 4.21 | -- | 8.3 | 49.8 | < 2.0 U | -- | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-46.0-20240814-X | 8/14/2024 | 46 | FD | JD94094 | Post-Treatment | Intermediate | -- | **133** | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | 8.1 | 52.1 | < 2.0 U | -- | -- | -- | -- |
| 143-P3-MW002I-B | 143-P3-MW002I-B-46.0-20241015 | 10/15/2024 | 46 | N | JD98256 | Post-Treatment | Intermediate | -- | 20.6 J- | -- | < 10 U | -174 | 0.12 | 7.44 | 0.83 | 17.2 | 0.51 | -- | 9.2 | 44.6 J- | -- | -- | -- | -- | -- |
| 199-P3-MW001I | 199-P3-MW001I-29.23-20211230 | 12/30/2021 | 29.23 | N | 4602499921 | Baseline | Intermediate | **54900** | **56900** | **48700** | **49800** | 154 | 1.03 | 7.17 | 4.06 | 14.55 | 1.0 | -- | 13.5 | **979** | < 1.0 U | 650 | **< 600 U** | **837** | -- |
| 199-P3-MW001I | 199-P3-MW001I-41.23-20211230 | 12/30/2021 | 41.23 | N | 4602499921 | Baseline | Intermediate | **49100** | **55900** | **44300** | **43800** | 165 | 0.95 | 7.07 | 3.95 | 14.95 | 4.4 | -- | 13.6 | **947** | < 1.0 U | 990 | **< 600 U** | **850** | -- |
| 199-P3-MW001I | 199-P3-MW001I-29.2-20220825 | 8/25/2022 | 29.2 | N | 4602644081 | Treatment | Intermediate | -- | **41700** | -- | **34300** | -22.6 | 4.12 | 7.58 | 3.840 | 20.08 | 8.71 | -- | 175 | **818** | -- | -- | -- | -- | -- |
| 199-P3-MW001I | 199-P3-MW001I-29.2-20220921 | 9/21/2022 | 29.2 | N | 4602659871 | Treatment | Intermediate | -- | **58500** | -- | **53000** | 23.1 | 0.02 | 9.21 | 5.323 | 20.88 | 9.22 | -- | 185 | **722** | -- | -- | -- | -- | -- |
| 199-P3-MW001I | 199-P3-MW001I-29.2-20221020 | 10/20/2022 | 29.2 | N | 4602678821 | Treatment | Intermediate | **10900** | **36700** | **7290** | **6960** | 23.1 | 1.29 | 6.99 | 5.659 | 17.25 | 334 | -- | 641 | **822** | -- | -- | -- | -- | -- |
| 199-P3-MW001I | 199-P3-MW001I-29.2-20221117 | 11/17/2022 | 29.2 | N | 4602697441 | Treatment | Intermediate | **64100** | **74900** | **58500** | **59000** | -32.8 | 6.13 | 7.27 | 5.327 | 15.7 | 170.0 | -- | 323 | **934** | -- | -- | -- | -- | -- |
| 199-P3-MW001I | 199-P3-MW001I-29.2-20221220 | 12/20/2022 | 29.2 | N | 4602718081 | Treatment | Intermediate | **25200** | **39300** | **17300** | **18400** | -183.8 | -0.45 | 7.34 | 4.882 | 15.18 | 401 | -- | 420 | **860** | -- | -- | -- | -- | -- |
| 199-P3-MW001I | 199-P3-MW001I-29.2-20230125 | 1/25/2023 | 29.2 | N | 4602735311 | Treatment | Intermediate | **4360** | **27300** | < 50.0 U | **< 100 U** | -311.9 | 0.26 | 6.49 | 5.852 | 11.7 | 310 | -- | 891 | **588** | -- | -- | -- | -- | -- |
| 199-P3-MW001I | 199-P3-MW001I-29.2-20230228 | 2/28/2023 | 29.2 | N | 4602753821 | Treatment | Intermediate | **15800** | **20200** | **2700** | 44.9 J | -198.4 | 0.87 | 8.56 | 0.87 | 14.5 | 21.8 | -- | 102 | **1290** | -- | -- | **1330** | **3940** | -- |
| 199-P3-MW001I | 199-P3-MW001I-29.2-20230324 | 3/24/2023 | 29.2 | N | 4602769361 | Treatment | Intermediate | **54500** | **76100** | **35500** | **45300** | -20.6 | 3.07 | 7.18 | 5.254 | 14.7 | 623 | -- | 453 | **1190** | -- | -- | -- | -- | -- |
| 199-P3-MW001I | 199-P3-MW001I-29.2-20230324-X | 3/24/2023 | 29.2 | FD | 4602769361 | Treatment | Intermediate | **39200** | **77700** | **40100** | **44700** | -- | -- | -- | -- | -- | -- | -- | 440 | **1120** | -- | -- | -- | -- | -- |
| 199-P3-MW001I | 199-P3-MW001I-29.2-20230424 | 4/24/2023 | 29.2 | N | 4602787991 | Treatment | Intermediate | **3430** | **38800** | < 10.0 U | **< 100 U** | -251.9 | 0.1 | 6.42 | 4.147 | 17.4 | -- OR | -- | 519 | **1030** | -- | -- | -- | -- | -- |
| 199-P3-MW001I | 199-P3-MW001I-29.2-20230517 | 5/17/2023 | 29.2 | N | 4602804541 | Treatment | Intermediate | **75100** | **104000** | **80500** | **70700** | -115.4 | 0.73 | 8.66 | 6.128 | 18.4 | 421 | -- | 177 | **1340** | -- | -- | -- | -- | -- |
| 199-P3-MW001I | 199-P3-MW001I-29.2-20230619 | 6/19/2023 | 29.2 | N | 4602826571 | Treatment | Intermediate | **11400** | **18800** | < 50.0 UH | < 50.0 UH | -285.7 | 0.38 | 7.14 | 4.841 | 19.3 | 290 | -- | 432 | **433** | -- | -- | -- | -- | -- |
| 199-P3-MW001I | 199-P3-MW001I-29.2-20230714 | 7/14/2023 | 29.2 | N | 4602842251 | Treatment | Intermediate | **47800** | **83500** | **45100** | **10200** | -210 | 0.58 | 7.25 | 5.619 | 20.19 | 395 | -- | 246 | **1020** | -- | -- | -- | -- | -- |
| 199-P3-MW001I | 199-P3-MW001I-29.2-20230822 | 8/22/2023 | 29.2 | N | 4602866771 | Treatment | Intermediate | **67100** | **101000** | **60700** | **46200** | -331.4 | 11.79 | 8.14 | 6.088 | 23.02 | -- N/A | -- | 153 | **1300** | -- | -- | -- | -- | -- |
| 199-P3-MW001I | 199-P3-MW001I-29.2-20230919 | 9/19/2023 | 29.2 | N | 4602885251 | Treatment | Intermediate | **66400** | **95400** | **43000** | **41600** | -190.7 | 0.25 | 7.92 | 6.54 | 21.1 | 798 | -- | 217 | **1070** | -- | -- | -- | -- | -- |
| 199-P3-MW001I | 199-P3-MW001I-29.2-20231011 | 10/11/2023 | 29.2 | N | 4602901161 | Treatment | Intermediate | **85000** | **108000** | **63300** | **63300** | -245.2 | 0.41 | 8.01 | 7.425 | 19.87 | 648 | -- | 128 | **378** | -- | -- | -- | -- | -- |
| 199-P3-MW001I | 199-P3-MW001I-29.2-20231114 | 11/14/2023 | 29.2 | N | JD76935 | Treatment | Intermediate | **54800**<br>**57500** | **71200**<br>**55300** | **56400**<br>**72600** | **72600**<br>**72600** | -310.3 | 1.49 | 9.02 | 7.2 | 17.4 | 294 | -- | 99.2<br>94.0 | **1780**<br>**1840** | -- | -- | -- | -- | -- |
| 199-P3-MW001I | 199-P3-MW001I-29.2-20231214 | 12/14/2023 | 29.2 | N | JD78891 | Treatment | Intermediate | **41500** | **43900** | **28900** | **27800** | -95.6 | 0.13 | 7.98 | 6.3 | 13.1 | 280 | -- | 171 | **1950** | -- | -- | -- | -- | -- |
| 199-P3-MW001I | 199-P3-MW001I-29.2-20231214-X | 12/14/2023 | 29.2 | FD | JD78891 | Treatment | Intermediate | **41400** | **48100** | **24300** | **23300** | -- | -- | -- | -- | -- | -- | -- | 130 | **1550** | -- | -- | -- | -- | -- |
| 199-P3-MW001I | 199-P3-MW001I-29.2-20240122 | 1/22/2024 | 29.2 | N | JD80935 | Treatment | Intermediate | **5680** | **17800** | **470** | < 10 U | -276.2 | 0.33 | 7.84 | 4.155 | 15.1 | 269 | -- | 102 | **978** | -- | -- | -- | -- | -- |
| 199-P3-MW001I | 199-P3-MW001I-29.2-20240122-X | 1/22/2024 | 29.2 | FD | JD80935 | Treatment | Intermediate | **8400** | **19200** | **610** | < 10 U | -- | -- | -- | -- | -- | -- | -- | 65.0 | **963** | -- | -- | -- | -- | -- |
| 199-P3-MW001I | 199-P3-MW001I-29.2-20240222 | 2/22/2024 | 29.2 | N | JD82990 | Treatment | Intermediate | **1440** | **1670** | 7.6 B | 10 | -225.4 | 0.14 | 7.1 | 3.033 | 14.4 | 301 | -- | 206 | **260** | -- | -- | -- | -- | -- |
| 199-P3-MW001I | 199-P3-MW001I-29.2-20240222-X | 2/22/2024 | 29.2 | FD | JD82990 | Treatment | Intermediate | **1510** | **1520** | 2.9 B | < 10 U | -- | -- | -- | -- | -- | -- | -- | 195 | 240 | -- | -- | -- | -- | -- |
| 199-P3-MW001I | 199-P3-MW001I-29.2-20240314 | 3/14/2024 | 29.2 | N | JD84495 | Treatment | Intermediate | **910** | **1870** | 2.7 B | 7.0 B | -380.8 | 0.03 | 7.15 | 3.667 | 18.5 | 15.8 | -- | 65.4 | **400** | -- | -- | -- | -- | -- |
| 199-P3-MW001I | 199-P3-MW001I-29.2-20240314-X | 3/14/2024 | 29.2 | FD | JD84495 | Treatment | Intermediate | **895** | **1640** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 64.2 | **470** | -- | -- | -- | -- | -- |
| 199-P3-MW001I | 199-P3-MW001I-37.5-20240416 | 4/16/2024 | 37.5 | N | JD86606 | Post-Treatment | Intermediate | **1080** | **2090** | < 10 U | < 10 U | -431.6 | 0.12 | 7.07 | 3.547 | 17.3 | 17.6 | -- | 41.0 | **572** | 12.0 | -- | 117 | **4960** | -- |
| 199-P3-MW001I | 199-P3-MW001I-27.5-20240417 | 4/17/2024 | 27.5 | N | JD86699 | Post-Treatment | Intermediate | **5730** | **7310** | **2500 J-** | **2500 J-** | -351.8 | 0.2 | 7.28 | 3.915 | 15.6 | 91 | -- | 54.9 | **669** | 1.0 J | -- | 148 | **3790** | -- |
| 199-P3-MW001I | 199-P3-MW001I-32.5-20240417 | 4/17/2024 | 32.5 | N | JD86699 | Post-Treatment | Intermediate | **5420** | **9380** | **420 J** | 2.8 J | -360.6 | 0.09 | 7.28 | 3.839 | 16.8 | 184 | -- | 50.9 | **688** | 5.0 | -- | 271 | **4710** | -- |
| 199-P3-MW001I | 199-P3-MW001I-22.5-20240418 | 4/18/2024 | 22.5 | N | JD86789 | Post-Treatment | Intermediate | **5820** | **8110** | **220 J** | 9.8 J | -308.3 | 0.13 | 7.35 | 3.91 | 13.5 | 173 | -- | 49.8 | **727** | 7.3 | -- | 114 | **4280** | -- |
| 199-P3-MW001I | 199-P3-MW001I-27.5-20240715 | 7/15/2024 | 27.5 | N | JD92183 | Post-Treatment | Intermediate | **3430 J-** | **6480 J-** | < 10 RA | 9.9 J- | -349.8 | 0.02 | 9.47 | 6.12 | 25.3 | 295 | -- | 129 | **2270** | -- | -- | -- | -- | -- |
| 199-P3-MW001I | 199-P3-MW001I-27.5-20241010 | 10/10/2024 | 27.5 | N | JD97909 | Post-Treatment | Intermediate | -- | **5850** | -- | 38 | -323.6 | 0.08 | 9.24 | 6.43 | 18.2 | 6.54 | -- | 119 J+ | **2050** | -- | -- | -- | -- | -- |
| 199-P3-MW001I-B | 199-P3-MW001I-B-47.8-20211228 | 12/28/2021 | 47.8 | N | 4602498971 | Baseline | Intermediate | **169** | **412** | **76.2** | **77.3** | 28.00 | 0 | 6.87 | 2.95 | 14.92 | 5.90 | -- | 8.0 J- | **549** | < 1.0 UJ | 5300 | 257 | **4940** | -- |
| 199-P3-MW001I-B | 199-P3-MW001I-B-47.8-20220825 | 8/25/2022 | 47.8 | N | 4602644081 | Treatment | Intermediate | -- | **240** | -- | < 10.0 U | -55.9 | 6.85 | 7.65 | 2.727 | 20.31 | 3.11 | -- | 627 | 2.27 J | -- | -- | -- | -- | -- |
| 199-P3-MW001I-B | 199-P3-MW001I-B-47.8-20220921 | 9/21/2022 | 47.8 | N | 4602659871 | Treatment | Intermediate | -- | **965** | -- | < 50.0 U | 75.5 | 0.6 | 5.88 | 3.102 | 19.19 | 4.82 | -- | 1040 | 8.14 | -- | -- | -- | -- | -- |
| 199-P3-MW001I-B | 199-P3-MW001I-B-47.8-20221019 | 10/19/2022 | 47.8 | N | 4602677971 | Treatment | Intermediate | -- | **1410** | -- | < 20.0 U | -90.2 | 3.82 | 6.44 | 3.849 | 16.1 | 7.41 | -- | 1090 | 4.08 | -- | -- | -- | -- | -- |
| 199-P3-MW001I-B | 199-P3-MW001I-B-47.8-20221116 | 11/16/2022 | 47.8 | N | 4602696581 | Treatment | Intermediate | -- | **1430** | -- | < 20.0 U | -109.8 | 6.58 | 6.36 | 3.901 | 16.97 | 5.61 | -- | 1300 | 11.3 | -- | -- | -- | -- | -- |
| 199-P3-MW001I-B | 199-P3-MW001I-B-47.8-20221116-X | 11/16/2022 | 47.8 | FD | 4602696581 | Treatment | Intermediate | -- | **1510** | -- | < 20.0 U | -- | -- | -- | -- | -- | -- | -- | 1360 | 12.6 | -- | -- | -- | -- | -- |
| 199-P3-MW001I-B | 199-P3-MW001I-B-47.8-20221220 | 12/20/2022 | 47.8 | N | 4602718081 | Treatment | Intermediate | -- | **1050** | -- | < 20.0 U | -123.8 | 0.58 | 6.12 | 3.981 | 15.13 | 9.43 | -- | 1200 | 1.14 J | -- | -- | -- | -- | -- |
| 199-P3-MW001I-B | 199-P3-MW001I-B-47.8-20230127 | 1/27/2023 | 47.8 | N | 4602736701 | Treatment | Intermediate | **236** | **446** | < 20.0 U | < 20.0 U | -105.2 | 0.47 | 6.92 | 2.871 | 11.38 | 17.6 | -- | 362 | 2.53 | -- | -- | -- | -- | -- |
| 199-P3-MW001I-B | 199-P3-MW001I-B-47.8-20230228 | 2/28/2023 | 47.8 | N | 4602753821 | Treatment | Intermediate | **305** | **210** | < 50.0 U | < 50.0 U | -128.7 | 1.43 | 6.57 | 5.19 | 13.9 | 20.8 | -- | 89.2 | 114 | -- | -- | **70300** | **19100** | -- |
| 199-P3-MW001I-B | 199-P3-MW001I-B-47.8-20230324 | 3/24/2023 | 47.8 | N | 4602769361 | Treatment | Intermediate | -- | **167** | -- | < 50.0 U | -157.1 | 0.1 | 5.03 | 3.722 | 15.7 | 9.01 | -- | 78.8 | 113 | -- | -- | -- | -- | -- |
| 199-P3-MW001I-B | 199-P3-MW001I-B-47.8-20230424 | 4/24/2023 | 47.8 | N | 4602787991 | Treatment | Intermediate | -- | **330** | -- | < 50.0 U | -39.3 | 1.86 | 6.55 | 2.87 | 17.3 | 8.99 | -- | 490 | 6.14 | -- | -- | -- | -- | -- |
| 199-P3-MW001I-B | 199-P3-MW001I-B-47.8-20230516 | 5/16/2023 | 47.8 | N | 4602803921 | Treatment | Intermediate | **169** | **188** | < 20.0 U | < 20.0 U | -175.5 | 0.17 | 6.82 | 2.726 | 21.51 | 14.6 | -- | 69.4 | 62.2 | -- | -- | -- | -- | -- |
| 199-P3-MW001I-B | 199-P3-MW001I-B-47.8-20230619 | 6/19/2023 | 47.8 | N | 4602826571 | Treatment | Intermediate | -- | **245** | -- | < 50.0 U | -115.1 | 0.71 | 6.54 | 2.412 | 19.45 | 10 | -- | 84.3 | 2.88 J | -- | -- | -- | -- | -- |
| 199-P3-MW001I-B | 199-P3-MW001I-B-47.8-20230717 | 7/17/2023 | 47.8 | N | 4602844061 | Treatment | Intermediate | -- | **297** | -- | < 50.0 U | -139.9 | 0.78 | 7.8 | 2.066 | 21.82 | 9.76 | -- | 100 | 6.51 | -- | -- | -- | -- | -- |
| 199-P3-MW001I-B | 199-P3-MW001I-B-47.8-20230822 | 8/22/2023 | 47.8 | N | 4602866771 | Treatment | Intermediate | **183** | **288** | < 50.0 U | < 50.0 U | -111.1 | 2.41 | 7.19 | 2.84 | 24.51 | 13.1 | -- | 76.6 | 28.7 | -- | -- | -- | -- | -- |
| 199-P3-MW001I-B | 199-P3-MW001I-B-47.8-20230915 | 9/15/2023 | 47.8 | N | 4602882761 | Treatment | Intermediate | -- | **188** | -- | < 10.0 U | -120.2 | 0.55 | 6.78 | 2.326 | 16.92 | 6.23 | -- | 56.6 | 49.0 | -- | -- | -- | -- | -- |
| 199-P3-MW001I-B | 199-P3-MW001I-B-47.8-20231010 | 10/10/2023 | 47.8 | N | 4602900121 | Treatment | Intermediate | -- | **106** | -- | < 10.0 U | -92.2 | 0.49 | 6.93 | 2.071 | 18.02 | 6.52 | -- | 23.8 | **361** | -- | -- | -- | -- | -- |
| 199-P3-MW001I-B | 199-P3-MW001I-B-47.8-20231113 | 11/13/2023 | 47.8 | N | JD76852 | Treatment | Intermediate | -- | 60.7 | -- | 62 | -141.3 | 0.15 | 7.09 | 1.763 | 16.4 | 8.76 | -- | 11.1 | **452** | -- | -- | -- | -- | -- |
| 199-P3-MW001I-B | 199-P3-MW001I-B-47.8-20231213 | 12/13/2023 | 47.8 | N | JD78776 | Treatment | Intermediate | -- | 40.0 | -- | < 10 U | -109.3 | 0 | 6.8 | 1.904 | 15.5 | 1.29 | -- | 8.3 | **530** | -- | -- | -- | -- | -- |
| 199-P3-MW001I-B | 199-P3-MW001I-B-47.8-20240122 | 1/22/2024 | 47.8 | N | JD80935 | Treatment | Intermediate | -- | 21.6 | -- | 42 | -96.5 | 0.18 | 6.8 | 1.703 | 13.6 | 1.28 | -- | 6.5 | **533** | -- | -- | -- | -- | -- |
| 199-P3-MW001I-B | 199-P3-MW001I-B-47.8-20240222 | 2/22/2024 | 47.8 | N | JD82990 | Treatment | Intermediate | -- | 24.3 | -- | 10 | -122.3 | 0.27 | 7.01 | 1.594 | 14.6 | 0.94 | -- | 5.4 | **534** | -- | -- | -- | -- | -- |
| 199-P3-MW001I-B | 199-P3-MW001I-B-47.8-20240314 | 3/14/2024 | 47.8 | N | JD84495 | Treatment | Intermediate | -- | 25.2 | -- | < 10 U | -114.6 | 0.27 | 6.94 | 1.826 | 17.9 | 4.97 | -- | 5.8 | **541** | -- | -- | -- | -- | -- |
| 199-P3-MW001I-B | 199-P3-MW001I-B-37.5-20240416 | 4/16/2024 | 37.5 | N | JD86606 | Post-Treatment | Intermediate | -- | 14.9 | -- | 6.7 J | -126.4 | 0.13 | 6.89 | 1.7 | 17.4 | 1.6 | -- | 3.9 J+ | **459** | < 2.0 U | -- | -- | -- | -- |
| 199-P3-MW001I-B | 199-P3-MW001I-B-42.5-20240416 | 4/16/2024 | 42.5 | N | JD86606 | Post-Treatment | Intermediate | -- | 21.1 | -- | 29 | -125.3 | 0.16 | 6.86 | 1.885 | 16.8 | 0.9 | -- | 4.2 J+ | **492** | < 2.0 U | -- | -- | -- | -- |
| 199-P3-MW001I-B | 199-P3-MW001I-B-42.5-20240716 | 7/16/2024 | 42.5 | N | JD92267 | Post-Treatment | Intermediate | -- | 18.4 | -- | 3.5 J- | -128.4 | 0.27 | 7.05 | 1.334 | 21.57 | 1.91 | -- | 4.5 | **541** | -- | -- | -- | -- | -- |
| 199-P3-MW001I-B | 199-P3-MW001I-B-42.5-20241014 | 10/14/2024 | 42.5 | N | JD98166 | Post-Treatment | Intermediate | -- | 19.7 | -- | 11 J- | -47.1 | 0.19 | 6.91 | 1.79 | 17.4 | 0.85 | -- | 6.1 | **495** | -- | -- | -- | -- | -- |
| 199-P3-MW004I | 199-P3-MW004I-27.9-20211229 | 12/29/2021 | 27.9 | N | 4602499461 

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 199-P3-MW004I | 199-P3-MW004I-38-20221220 | 12/20/2022 | 38 | N | 4602718081 | Treatment | Intermediate | **1170** | **1010** | **< 100 U** | **< 100 U** | -19.3 | 3.34 | 4.14 | 3.809 | 15.21 | 110 | -- | 8260 | **1120** | -- | -- | -- | -- | -- |
| 199-P3-MW004I | 199-P3-MW004I-38-20230130 | 1/30/2023 | 38 | N | 4602737381 | Treatment | Intermediate | **912** | **799** | < 50.0 U | < 50.0 U | 95.0 | 6 | 3.45 | 3.788 | 14.3 | 140 | -- | 7020 | **1300** | -- | -- | -- | -- | -- |
| 199-P3-MW004I | 199-P3-MW004I-38-20230228 | 2/28/2023 | 38 | N | 4602753821 | Treatment | Intermediate | **5670** | **4610** | < 50.0 U | < 50.0 U | -3.0 | 1.93 | 4.06 | 4.06 | 11.19 | 35.3 | -- | 3290 | **719** | -- | -- | **326000** | **121000** | -- |
| 199-P3-MW004I | 199-P3-MW004I-38-20230321 | 3/21/2023 | 38 | N | 4602767381 | Treatment | Intermediate | **219** | **293** | < 50.0 U | < 50.0 U | -15.8 | 2.7 | 4.59 | 2.286 | 15.22 | 63 | -- | 2380 | 125 | -- | -- | -- | -- | -- |
| 199-P3-MW004I | 199-P3-MW004I-38-20230425 | 4/25/2023 | 38 | N | 4602788811 | Treatment | Intermediate | -- | -- | -- | -- | -297.8 | 0 | 3.91 | 2.96 | 17.3 | 272 | -- | 5110 | **1720** | -- | -- | -- | -- | -- |
| 199-P3-MW004I | 199-P3-MW004I-38-20230517 | 5/17/2023 | 38 | N | 4602804541 | Treatment | Intermediate | 61.6 J | 21.0 | **< 100 U** | **< 100 U** | -104.1 | 0.4 | 3.85 | 2.539 | 20.29 | 224 | -- | 3560 | 232 | -- | -- | -- | -- | -- |
| 199-P3-MW004I | 199-P3-MW004I-38-0-20230620 | 6/20/2023 | 38 | N | 4602827171 | Treatment | Intermediate | **78.2** | 67.2 | < 50.0 U | < 50.0 U | 48.5 | 0.33 | 3.81 | 3.362 | 24.26 | 260 | -- | 5150 | **654** | -- | -- | -- | -- | -- |
| 199-P3-MW004I | 199-P3-MW004I-38-0-20230718 | 7/18/2023 | 38 | N | 4602844591 | Treatment | Intermediate | 41.4 | 36.9 | < 50.0 U | < 50.0 U | 42.2 | 0.36 | 3.76 | 2.487 | 24.3 | 138 | -- | 3630 | **407** | -- | -- | -- | -- | -- |
| 199-P3-MW004I | 199-P3-MW004I-38-0-20230822 | 8/22/2023 | 38 | N | 4602866771 | Treatment | Intermediate | **99.4** | **92.8** | **< 10000 U** | **< 10000 U** | -81.3 | 0.94 | 4.88 | 0.961 | 25.17 | -- N/A | -- | 14500 | 25.5 | -- | -- | -- | -- | -- |
| 199-P3-MW004I | 199-P3-MW004I-38-0-20230915 | 9/15/2023 | 38 | N | 4602882761 | Treatment | Intermediate | **116** | **108** | **< 10000 U** | **< 10000 U** | -1.7 | OUT OF RANG | 4.2 | 1.275 | 20.88 | -- OR | -- | 12100 | 21.4 J | -- | -- | -- | -- | -- |
| 199-P3-MW004I | 199-P3-MW004I-38-0-20231010 | 10/10/2023 | 38 | N | 4602900121 | Treatment | Intermediate | **569** | **598** | **< 5000 U** | **< 5000 U** | -8.3 | 3.05 | 4.7 | 1.701 | 19.18 | 1000 | -- | 6450 | 80.3 | -- | -- | -- | -- | -- |
| 199-P3-MW004I | 199-P3-MW004I-38-0-20231113 | 11/13/2023 | 38 | N | JD76852 | Treatment | Intermediate | **238** | **214** | **< 500 U** | **< 500 U** | 151.5 | 0.02 | 4.55 | 0.1032 | 16.8 | 1000 | -- | 10300 | **255** | -- | -- | -- | -- | -- |
| 199-P3-MW004I | 199-P3-MW004I-38-0-20231215 | 12/15/2023 | 38 | N | JD78996 | Treatment | Intermediate | 30.7 | 38.5 | **< 500 U** | **< 500 U** | -98.6 | 0.07 | 5.58 | 0.59 | 14.9 | 1000 | -- | 5370 | 64.3 | -- | -- | -- | -- | -- |
| 199-P3-MW004I | 199-P3-MW004I-38-0-20240123 | 1/23/2024 | 38 | N | JD81013 | Treatment | Intermediate | **104** | **118** | **2000** | **2400** | -35.9 | 0.14 | 4.99 | 1.021 | 12.9 | 99999 | -- | 6040 | 163 | -- | -- | -- | -- | -- |
| 199-P3-MW004I | 199-P3-MW004I-38-0-20240223 | 2/23/2024 | 38 | N | JD83100 | Treatment | Intermediate | **130** | **127** | < 10 U | < 10 U | -6.2 | 0.06 | 5.09 | 1.124 | 13.3 | 1000 | -- | 2620 | 61.1 | -- | -- | -- | -- | -- |
| 199-P3-MW004I | 199-P3-MW004I-38-0-20240315 | 3/15/2024 | 38 | N | JD84558 | Treatment | Intermediate | **225** | **226** | 3.4 B | 3.4 B | 131.3 | 0.15 | 4.54 | 1.64 | 15.8 | 1000 | -- | 4210 | 92.6 | -- | -- | -- | -- | -- |
| 199-P3-MW004I | 199-P3-MW004I-34.5-20240416 | 4/16/2024 | 34.5 | N | JD86606 | Post-Treatment | Intermediate | **202** | **197** | **510 J** | **540 J** | -41.9 | 0.08 | 4.72 | 1.059 | 21.2 | 1000 | -- | 1680 | 40.4 | 3.5 | -- | **98600** | **4410** | -- |
| 199-P3-MW004I | 199-P3-MW004I-39.5-20240416 | 4/16/2024 | 39.5 | N | JD86606 | Post-Treatment | Intermediate | **151** | **138** | < 50 U | 22 J | -17 | 0.08 | 4.65 | 1.037 | 18.9 | 1000 | -- | 2720 | < 40 U | 4.9 | -- | **82300** | **3110** | -- |
| 199-P3-MW004I | 199-P3-MW004I-24.5-20240417 | 4/17/2024 | 24.5 | N | JD86699 | Post-Treatment | Intermediate | **278** | **295** | **190 J-** | **190 J-** | 101.6 | 0.14 | 4.88 | 1.553 | 13.9 | 1000 | -- | 1400 | < 20 U | 3.8 | -- | **123000** | **7230** | -- |
| 199-P3-MW004I | 199-P3-MW004I-29.5-20240417 | 4/17/2024 | 29.5 | N | JD86699 | Post-Treatment | Intermediate | **237** | **242** | **99 J-** | **89 J-** | 100 | 0.09 | 4.91 | 1.443 | 18.3 | 1000 | -- | 1610 | < 20 U | 4.0 | -- | **110000** | **5860** | -- |
| 199-P3-MW004I | 199-P3-MW004I-34.5-20240716 | 7/16/2024 | 34.5 | N | JD92267 | Post-Treatment | Intermediate | **326** | **357** | 17 J- | 21 J- | -168.7 | 0.05 | 5.51 | 1.943 | 29.83 | 1000 | -- | 1420 | < 40 U | -- | -- | -- | -- | -- |
| 199-P3-MW004I | 199-P3-MW004I-34.5-20241016 | 10/16/2024 | 34.5 | N | JD98354 | Post-Treatment | Intermediate | **344** | **457** | < 20 U | 15 J | -100.7 | 0.29 | 6.11 | 2.42 | 19.4 | 805 | -- | 985 J+ | < 10 U | -- | -- | -- | -- | -- |
| CAR-P3-MW001I-A | CAR-P3-MW001I-A-27.1-20210901 | 9/1/2021 | 27.1 | N | 4602419751 | Baseline | Intermediate | **38100** | **38600** | **33000 J** | **37500 J** | 185.20 | 0.52 | 6.72 | 1.86 | 16.64 | 1.00 | -- | 3.4 J | 101 J | < 1.0 UJ | 380 J | < 120 U | **2610** | -- |
| CAR-P3-MW001I-A | CAR-P3-MW001I-A-27.1-20211116 | 11/16/2021 | 27.1 | N | 4602474031 | Treatment | Intermediate | **137000** | **101000** | **112000** | **181000** | 227.20 | 0.14 | 7.02 | 2.55 | 16.07 | 2.23 | -- | 325 | 168 | -- | 540 | -- | -- | -- |
| CAR-P3-MW001I-A | CAR-P3-MW001I-A-27.1-20211221 | 12/21/2021 | 27.1 | N | 4602495851 | Treatment | Intermediate | **32600** | **29400** | **28000** | **24700** | 218.30 | 0.05 | 6.10 | 3.34 | 13.40 | 5.14 | -- | 1310 | 183 | -- | 290 | -- | -- | -- |
| CAR-P3-MW001I-A | CAR-P3-MW001I-A-27.1-20220119 | 1/19/2022 | 27.1 | N | 4602509341 | Treatment | Intermediate | **56100** | **78800** | **44000** | **45100** | 265.00 | 0.55 | 5.88 | 2.73 | 20.09 | 142.00 | -- | 1100 | 140 | -- | 360 | -- | -- | -- |
| CAR-P3-MW001I-A | CAR-P3-MW001I-A-27.1-20220224 | 2/24/2022 | 27.1 | N | 4602531681 | Treatment | Intermediate | **46600** | **44600** | **35300** | **28700** | 255.00 | 9999.00 | 5.92 | 3.01 | 12.25 | 464.00 | -- | 917 | 86.9 | -- | 480 | -- | -- | -- |
| CAR-P3-MW001I-A | CAR-P3-MW001I-A-27.1-20220322 | 3/22/2022 | 27.1 | N | 4602547911 | Treatment | Intermediate | **97300** | **132000** | **84000** | **88500** | 279.80 | 4.46 | 5.79 | 1.91 | 14.64 | 531.00 | -- | 743 ^2 | 143 | -- | 830 | -- | -- | -- |
| CAR-P3-MW001I-A | CAR-P3-MW001I-A-27.1-20220419 | 4/19/2022 | 27.1 | N | 4602565511 | Treatment | Intermediate | **73600** | **104000** | **56300** | **84000** | 218.7 | 0.59 | 5.75 | 3.038 | 11.8 | 498 | -- | 732 | 114 | -- | 1100 | **1860** | **131000** | -- |
| CAR-P3-MW001I-A | CAR-P3-MW001I-A-27.1-20220419-X | 4/19/2022 | 27.1 | FD | 4602565511 | Treatment | Intermediate | **69400** | **105000** | **48500** | **51900** | -- | -- | -- | -- | -- | -- | -- | 755 | 116 | -- | 1200 | **2110** | **127000** | -- |
| CAR-P3-MW001I-A | CAR-P3-MW001I-A-27-20220517 | 5/17/2022 | 27 | N | 4602582941 | Treatment | Intermediate | **101000** | **104000** | **81300** | **95200** | 270.8 | 1.39 | 5.91 | 3.119 | 19.13 | 366 | -- | 656 | 101 | -- | 1500 | -- | -- | -- |
| CAR-P3-MW001I-A | CAR-P3-MW001I-A-37.0-20220519 | 5/19/2022 | 37 | N | 4602584291 | Treatment | Intermediate | **130000** | **145000** | **135000** | **148000** | 162.6 | 1.48 | 5.89 | 2.294 | 14.80 | 390 | -- | 251 | 102 | -- | 1500 | -- | -- | -- |
| CAR-P3-MW001I-A | CAR-P3-MW001I-A-27-20220615 | 6/15/2022 | 27 | N | 4602601501 | Treatment | Intermediate | **6580** | **7990** | **56400** | **55900** | 309.2 | 0.03 | 5.95 | 2.893 | 18.63 | 4.63 | -- | 596 | 87.2 | -- | -- | -- | -- | -- |
| CAR-P3-MW001I-A | CAR-P3-MW001I-A-27-20220719 | 7/19/2022 | 27 | N | 4602621891 | Treatment | Intermediate | **6300** | **58200** | **16300** | **2630** | 198.8 | 0.82 | 6.05 | 4.343 | 21.31 | 790 | -- | 824 | 44.9 | -- | -- | -- | -- | -- |
| CAR-P3-MW001I-A | CAR-P3-MW001I-A-27-20220823 | 8/23/2022 | 27 | N | 4602642801 | Treatment | Intermediate | **1590** | **3050** | < 20.0 U | < 20.0 U | -48.1 | 4.97 | 6.8 | 3.455 | 21.77 | -- OR | -- | 1040 | 3.41 | -- | -- | -- | -- | -- |
| CAR-P3-MW001I-A | CAR-P3-MW001I-A-27-20220919 | 9/19/2022 | 27 | N | 4602658321 | Treatment | Intermediate | **923** | **2320** | < 50.0 U | **< 100 U** | -16.6 | 0.76 | 6.31 | 3.411 | 20.28 | 26.6 | -- | 600 | 4.00 | -- | -- | -- | -- | -- |
| CAR-P3-MW001I-A | CAR-P3-MW001I-A-27-20221014 | 10/14/2022 | 27 | N | 4602675261 | Treatment | Intermediate | -- | **1200** | -- | < 50.0 U | -83.1 | 0.9 | 6.74 | 3.311 | 17.01 | 9.28 | -- | 429 | 0.68 J | -- | -- | -- | -- | -- |
| CAR-P3-MW001I-A | CAR-P3-MW001I-A-27-20221114 | 11/14/2022 | 27 | N | 4602695301 | Treatment | Intermediate | -- | **1510** | -- | **< 100 UF1** | -113.6 | 2.02 | 6.61 | 3.301 | 14.73 | 9.21 | -- | 432 | 1.17 J | -- | -- | -- | -- | -- |
| CAR-P3-MW001I-A | CAR-P3-MW001I-A-27-20221216 | 12/16/2022 | 27 | N | 4602715551 | Treatment | Intermediate | -- | **1000** | -- | < 20.0 U | -110.7 | 1.77 | 6.77 | 3.488 | 11.45 | 9.78 | -- | 321 | 0.79 J | -- | -- | -- | -- | -- |
| CAR-P3-MW001I-A | CAR-P3-MW001I-A-27-20230124 | 1/24/2023 | 27 | N | 4602734531 | Treatment | Intermediate | -- | **733** | -- | < 50.0 U | -109 | 0.74 | 6.73 | 3.155 | 13.95 | 9.78 | -- | 280 | 2.51 | -- | -- | -- | -- | -- |
| CAR-P3-MW001I-A | CAR-P3-MW001I-A-27.0-20230224 | 2/24/2023 | 27 | N | 4602752361 | Treatment | Intermediate | -- | **509** | -- | < 20.0 U | -121.5 | 0.82 | 6.62 | 2.778 | 12.86 | 7.68 | -- | 146 | 0.73 J | -- | -- | -- | -- | -- |
| CAR-P3-MW001I-A | CAR-P3-MW001I-A-28.0-20230418 | 4/18/2023 | 28 | N | 4602784501 | Post-Treatment | Intermediate | -- | **582** | -- | < 50.0 UJ | -88.4 | 0.4 | 6.68 | 2.655 | 13.95 | 8.13 | -- | 110 | **1030** | < 1 U | -- | -- | -- | -- |
| CAR-P3-MW001I-A | CAR-P3-MW001I-A-28.0-20230418-X | 4/18/2023 | 28 | FD | 4602784501 | Post-Treatment | Intermediate | -- | **573** | -- | < 50.0 UJ | -- | -- | -- | -- | -- | -- | -- | 112 | **975** | < 1 U | -- | -- | -- | -- | -- |
| CAR-P3-MW001I-A | CAR-P3-MW001I-A-33.0-20230418 | 4/18/2023 | 33 | N | 4602784501 | Post-Treatment | Intermediate | -- | **607** | -- | < 20.0 U | -102.9 | 0.18 | 6.72 | 2.612 | 14.92 | 9.91 | -- | 122 | **1180** | < 1 U | -- | -- | -- | -- | -- |
| CAR-P3-MW001I-A | CAR-P3-MW001I-A-38.0-20230418 | 4/18/2023 | 38 | N | 4602784501 | Post-Treatment | Intermediate | -- | **604** | -- | < 50.0 UJ | -86.8 | 0.15 | 6.7 | 2.592 | 14.38 | 9.53 | -- | 126 | 249 J | < 1 U | -- | -- | -- | -- |
| CAR-P3-MW001I-A | CAR-P3-MW001I-A-38.0-20230712 | 7/12/2023 | 38 | N | 4602840751 | Post-Treatment | Intermediate | -- | **521** | -- | < 50.0 U | -79.5 | 6.92 | 5.03 | 2.577 | 19.77 | 9.21 | -- | 105 | 4.00 | < 1 U | -- | -- | -- | -- |
| CAR-P3-MW001I-A | CAR-P3-MW001I-A-38.0-20230712-X | 7/12/2023 | 38 | FD | 4602840751 | Post-Treatment | Intermediate | -- | **485** | -- | < 50.0 U | -- | -- | -- | -- | -- | -- | -- | 104 | 2.26 J | < 1 U | -- | -- | -- | -- |
| CAR-P3-MW001I-A | CAR-P3-MW001I-A-38.0-20231017 | 10/17/2023 | 38 | N | 4602905601 | Post-Treatment | Intermediate | -- | **360** | -- | < 20.0 U | -111.3 | 0.16 | 6.46 | 3.359 | 18.8 | 5.54 | -- | 75.6 | 2.04 J | -- | -- | -- | -- | -- |
| CAR-P3-MW001I-A | CAR-P3-MW001I-A-38.0-20240122 | 1/22/2024 | 38 | N | JD80934 | Post-Treatment | Intermediate | -- | **191** | -- | **240** | 26 | 0.34 | 6.51 | 2.556 | 12.6 | 3.78 | -- | 75.2 | 2.9 JB | -- | -- | -- | -- | -- |
| CAR-P3-MW001I-A | CAR-P3-MW001I-A-38.0-20240417 | 4/17/2024 | 38 | N | JD86699 | Post-Treatment | Intermediate | -- | **285** | -- | < 10 UJ | -149 | 0.22 | 6.18 | 2.843 | 15.7 | 5.01 | -- | 66.5 | 2.3 | -- | -- | -- | -- | -- |
| CAR-P3-MW001I-A | CAR-P3-MW001I-A-38.0-20240417-X | 4/17/2024 | 38 | FD | JD86699 | Post-Treatment | Intermediate | -- | **284** | -- | < 10 UJ | -- | -- | -- | -- | -- | -- | -- | 66.5 | 2.4 | -- | -- | -- | -- | -- |
| CAR-P3-MW001I-A | CAR-P3-MW001I-A-38.0-20240717 | 7/17/2024 | 38 | N | JD92334 | Post-Treatment | Intermediate | -- | **852** | -- | < 10 RA | -84.8 | 2.14 | 6.47 | 1.494 | 21.6 | 7.87 | -- | 66.3 J | 5.7 | -- | -- | -- | -- | -- |
| CAR-P3-MW001I-A | CAR-P3-MW001I-A-38.0-20241015 | 10/15/2024 | 38 | N | JD98256 | Post-Treatment | Intermediate | -- | **462 J-** | -- | **230** | -73 | 0.14 | 6.4 | 2.61 | 17.2 | 9.2 | -- | 75.9 | 7.8 J- | -- | -- | -- | -- | -- |
| CAR-P3-MW001I-B | CAR-P3-MW001I-B-42.3-20210917 | 9/17/2021 | 42.3 | N | 4602430721 | Baseline | Intermediate | **27200** | **25600** | **28200** | **24600** | 146.40 | 0.37 | 8.06 | 0.58 | 18.85 | 111.00 | -- | < 1.0 UB | 51.7 J- | < 1.0 U | 17 | **< 600 U** | **204** | -- |
| CAR-P3-MW001I-B | CAR-P3-MW001I-B-42.3-20211117 | 11/17/2021 | 42.3 | N | 4602474671 | Treatment | Intermediate | 50.6 J | **83.6** | < 10.0 U | < 10.0 U | 39.30 | 0.20 | 8.14 | 0.33 | 16.26 | 2.02 | -- | < 1.0 UB | 46.2 | -- | 3.3 J | 203 | **128** | -- |
| CAR-P3-MW001I-B | CAR-P3-MW001I-B-42.3-20211117-X | 11/17/2021 | 42.3 | FD | 4602474671 | Treatment | Intermediate | 27.5 J | **78.6** | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | 47.6 | -- | 3.7 J | 75.8 J | **123** | -- |
| CAR-P3-MW001I-B | CAR-P3-MW001I-B-42.3-20211221 | 12/21/2021 | 42.3 | N | 4602495851 | Treatment | Intermediate | **109** | **515** | < 10.0 U | < 10.0 U | -179.60 | 0 | 7.11 | 0.69 | 13.51 | 3.31 | -- | 103 | 38.8 | -- | 8.3 | -- | -- | -- |
| CAR-P3-MW001I-B | CAR-P3-MW001I-B-42.3-20220118 | 1/18/2022 | 42.3 | N | 4602508581 | Treatment | Intermediate | **1990** | **1960** | < 10.0 U | 16.0 | -241.00 | 2.81 | 6.39 | 2.09 | 15.85 | 1.51 | -- | 833 | 56.5 | -- | 22 | -- | -- | -- |
| CAR-P3-MW001I-B | CAR-P3-MW001I-B-42.3-20220223 | 2/23/2022 | 42.3 | N | 4602530771 | Treatment | Intermediate | **4620** | **4590** | < 20.0 U | < 20.0 U | -137.30 | 9999.00 | 5.99 | 3.12 | 15.30 | 8.57 | -- | 1590 | 82.8 | -- | 120 | -- | -- | -- |
| CAR-P3-MW001I-B | CAR-P3-MW001I-B-42.3-20220322 | 3/22/2022 | 42.3 | N | 4602547911 | Treatment | Intermediate | **128** | **131** | < 10.0 U | < 10.0 U | -169.10 | 0.20 | 6.66 | 2.38 | 13.29 | 3.80 | -- | 450 | 10.4 | -- | 240 | -- | -- | -- |
| CAR-P3-MW001I-B | CAR-P3-MW001I-B-42.3-20220419 | 4/19/2022 | 42.3 | N | 4602565511 | Treatment | Intermediate | **1580** | **1430** | < 20.0 U | < 20.0 U | -72.4 | 1.03 | 6.25 | 2.014 | 13.54 | 2.52 | -- | 790 | 2.80 | -- | 3900 | **42400** | **9990** | -- |
| CAR-P3-MW001I-B | CAR-P3-MW001I-B-42-20220517 | 5/17/2022 | 42 | N | 4602582941 | Treatment | Intermediate | **1420** | **752** | < 50.0 U | < 50.0 U | -84.7 | 2.12 | 6.45 | 2.227 | 20.55 | 9.26 | -- | 725 | 1.53 | -- | 9200 | -- | -- | -- |
| CAR-P3-MW001I-B | CAR-P3-MW001I-B-42-20220615 | 6/15/2022 | 42 | N | 4602601501 | Treatment | Intermediate | -- | **185** | -- | < 10.0 U | -75.4 | 0.15 | 6.76 | 1.876 | 17.41 | 7.69 | -- | 311 | 0.65 | -- | -- | -- | -- | -- |
| CAR-P3-MW001I-B | CAR-P3-MW001I-B-42-20220718 | 7/18/2022 | 42 | N | 4602621141 | Treatment | Intermediate | -- | **231** | -- | < 10.0 U | -83.8 | 0.6 | 6.63 | 1.73 | 19.85 | 6.28 | -- | 142 | 0.59 | -- | -- | -- | -- | -- |
| CAR-P3-MW001I-B | CAR-P3-MW001I-B-42-20220824 | 8/24/2022 | 42 | N | 4602643471 | Treatment | Intermediate | -- | **165** | -- | < 10.0 U | -18.5 | 1.04 | 6.80 | 1.745 | 19.56 | 7.74 | -- | 117 | 0.32 J | -- | -- | -- | -- | -- |
| CAR-P3-MW001I-B | CAR-P3-MW001I-B-42-20220919 | 9/19/2022 | 42 | N | 4602658321 | Treatment | Intermediate | -- | **138** | -- | < 20.0 U | -81.2 | 0.81 | 6.84 | 1.842 | 21.22 | 5.44 | -- | 196 | 0.52 J | -- | -- | -- | -- | -- |
| CAR-P3-MW001I-B | CAR-P3-MW001I-B-42-20221013 | 10/13/2022 | 42 | N | 4602674321 | Treatment | Intermediate | -- | **203** | -- | < 10.0 U | -118.1 | 4.2 | 6.88 | 1.64 | 18.94 | 7.89 | -- | 18.3 | 0.23 J | -- | -- | -- | -- | -- |
| CAR-P3-MW001I-B | CAR-P3-MW001I-B-42-20221111 | 11/11/2022 | 42 | N | 4602693491 | Treatment | Intermediate | -- | **324** | -- | < 20.0 U | -117.4 | 0.84 | 6.78 | 2.242 | 17.2 | 9.13 | -- | 87.2 | 0.47 J | -- | -- | -- | -- | -- |
| CAR-P3-MW001I-B | CAR-P3-MW001I-B-42-20221215 | 12/15/2022 | 42 | N | 4602714561 | Treatment | Intermediate | -- | **140** | -- | < 10.0 U | 19 | 1.97 | 6.83 | 1.974 | 13.84 | 9.04 | -- | 72.6 | 0.46 J | -- | -- | -- | -- | -- |
| CAR-P3-MW001I-B | CAR-P3-MW001I-B-42-20230124 | 1/24/2023 | 42 | N | 4602734531 | Treatment | Intermediate | -- | **5050** | -- | < 20.0 U | -93.3 | 1.18 | 6.44 | 1.82 | 11.82 | 9.9 | -- | 62.9 | 0.68 | -- | -- | -- | -- | -- |
| CAR-P3-MW001I-B | CAR-P3-MW001I-B-42-20230124-X | 1/24/2023 | 42 | FD | 4602734531 | Treatment | Intermediate | -- | 9.2 | -- | < 20.0 U | -- | -- | -- | -- | -- | -- | -- | 63.2 | 0.41 J | -- | -- | -- | -- | -- |
| CAR-P3-MW001I-B | CAR-P3-MW001I-B-42.0-20230224 | 2/24/2023 | 42 | N | 4602752361 | Treatment | Intermediate | -- | **141** | -- | < 20.0 U | -92.4 | 2.22 | 6.86 | 1.49 | 12.7 | 6.85 | -- | 61.8 | 0.71 | -- | -- | -- | -- | -- |
| CAR-P3-MW001I-B | CAR-P3-MW001I-B-43-20230418 | 4/18/2023 | 43 | N | 4602784501 | Post-Treatment | Intermediate | -- | **91.4** | -- | < 10.0 UJ | -126.8 | 1.84 | 7.1 | 1.214 | 13.9 | 5.48 | -- | 46.3 | **4910** | < 1 U | -- | -- | -- | -- |
| CAR-P3-MW001I-B | CAR-P3-MW001I-B-48-20230418 | 4/18/2023 | 48 | N | 4602784501 | Post-Treatment | Intermediate | -- | **83.2** | -- | < 10.0 UJ | -87.9 | 1.33 | 7.16 | 1.218 | 14.88 | 5.94 | -- | 46.6 | **639 J** | < 1 U | -- | -- | -- | -- |
| CAR-P3-MW001I-B | CAR-P3-MW001I-B-53.0-20230418 | 4/18/2023 | 53 | N | 4602784501 | Post-Treatment | Intermediate | -- | **100** | -- | < 10.0 UJ | -106.1 | 0.62 | 7.12 | 1.234 | 14.73 | 8.33 | -- | 47.5 | **572 J** | < 1 U | -- | -- | -- | -- |
| CAR-P3-MW001I-B | CAR-P3-MW001I-B-53.0-20230712 | 7/12/2023 | 53 | N | 4602840751 | Post-Treatment | Intermediate | -- | 66.9 | -- | < 10.0 U | -83.4 | 1.59 | 6.95 | 1.251 | 20.41 | 6.03 | -- | 39.8 | 2.40 | < 1 U | -- | -- | -- | -- |
| CAR-P3-MW001I-B | CAR-P3-MW001I-B-53.0-20231017 | 10/17/2023 | 53 | N | 4602905601 | Post-Treatment | Intermediate | -- | **271** | -- | < 10.0 U | -137.3 | 0.13 | 6.76 | 2.08 | 17.4 | 4.37 | -- | 66.1 | 0.96 J | -- | -- | -- | -- | -- |
| CAR-P3-MW001I-B | CAR-P3-MW001I-B-53.0-20240122 | 1/22/2024 | 53 | N | JD80934 | Post-Treatment | Intermediate | -- | **309** | -- | **220** | -198.5 | 0.11 | 6.77 | 2.337 | 9.3 | 5.49 | -- | 76.6 | < 2.2 UB | -- | -- | -- | -- | -- |
| CAR-P3-MW001I-B | CAR-P3-MW001I-B-53.0-20240417 | 4/17/2024 | 53 | N | JD86699 | Post-Treatment | Intermediate | -- | **130** | -- | 25 J- | -112.4 | 0.11 | 6.75 | 1.297 | 15.7 | 1.62 | -- | 56.3 | < 2.0 U | -- | -- | -- | -- | -- |
| CAR-P3-MW001I-B | CAR-P3-MW001I-B-53.0-20240717 | 7/17/2024 | 53 | N | JD92334 | Post-Treatment | Intermediate | -- | 30.1 | -- | 18 J | -120.8 | 2.39 | 7 | 0.624 | 21.72 | 1.17 | -- | 32.3 J | < 2.0 U | -- | -- | -- | -- | -- |
| CAR-P3-MW001I-B | CAR-P3-MW001I-B-53.0-20241016 | 10/16/2024 | 53 | N | JD98354 | Post-Treatment | Intermediate | -- | 20.5 | -- | 20 | 9.3 | 0.1 | 6.8 | 1.01 | 17 | 1.31 | -- | 29.4 J+ | < 2.0 U | -- | -- | -- | -- | -- |
| CAR-P3-MW003I-A | CAR-P3-MW003I-A-30.9-20210914 | 9/14/2021 | 30.9 | N | 4602427561 | Baseline | Intermediate | **184000** | **171000** | **173000** | **169000** | 195.60 | 0.94 | 7.41 | 2.36 | 17.13 | 2.10 | -- | 6.1 | **391** | < 1.0 U | 2200 | < 240 U | **126** | -- |
| CAR-P3-MW003I-A | CAR-P3-MW003I-A-30.9-20211117 | 11/17/2021 | 30.9 | N | 4602474671 | Treatment | Intermediate | **29000** | **32100** | **30400** | **26600** | 96.50 | 0.54 | 7.57 | 2.33 | 16.97 | 9.50 | -- | 116 | **297** | -- | 2500 | **< 1200 U** | **89.5** | -- |
| CAR-P3-MW003I-A | CAR-P3-MW003I-A-30.9-20211223 | 12/23/2021 | 30.9 | N | 4602497541 | Treatment | Intermediate | **43700** | **49400** | **47100 H** | **49400 H** | 121.30 | 3.02 | 7.36 | 2.68 | 12.13 | 0.57 | -- | 6.1 B | 240 | -- | 1800 | -- | -- | -- |
| CAR-P3-MW003I-A | CAR-P3-MW003I-A-30.9-20220118 | 1/18/2022 | 30.9 | N | 4602508581 | Treatment | Intermediate | **322000** | **311000** | **329000** | **317000** | 154.00 | 0 | 6.89 | 3.45 | 10.54 | 2.89 | -- | 5.0 | **343** | -- | 760 | -- | -- | -- |
| CAR-P3-MW003I-A | CAR-P3-MW003I-A-30.9-20220223 | 2/23/2022 | 30.9 | N | 4602530771 | Treatment | Intermediate | **181000** | **206000** | **168000** | **173000** | 107.80 | 6.67 | 7.36 | 2.927 | 14.02 | 3.29 | -- | 13.3 | **261** | -- | 1200 | -- | -- | -- |
| CAR-P3-MW003I-A | CAR-P3-MW003I-A-30.9-20220321 | 3/21/2022 | 30.9 | N | 4602547381 | Treatment | Intermediate | **178000** | **183000** | **168000** | **197000** | 85.10 | 0.32 | 7.17 | 3.29 | 15.24 | 9.00 | -- | 57.6 | **270** | -- | 1000 | -- | -- | -- |
| CAR-P3-MW003I-A | CAR-P3-MW003I-A-30.9-20220419 | 4/19/2022 | 30.9 | N | 4602565511 | Treatment | Intermediate | **144000** | **149000** | **160000** | **171000** | 84.5 | 13.14 | 6.81 | 3.467 | 12.47 | 8.46 | -- | 127 | **321** | -- | 170 | **< 600 U** | **805** | -- |
| CAR-P3-MW003I-A | CAR-P3-MW003I-A-30.9-20220520 | 5/20/2022 | 30.9 | N | 4602585231 | Treatment | Intermediate | **10600** | **14000** | **7770** | **6730** | 106.5 | 1.55 | 6.31 | 2.857 | 16.27 | 163 | -- | 500 | 118 | -- | 2100 | -- | -- | -- |
| CAR-P3-MW003I-A | CAR-P3-MW003I-A-27-20220615 | 6/15/2022 | 27 | N | 4602601501 | Treatment | Intermediate | -- | **1830** | -- | < 20.0 U | -51.4 | 4.93 | 6.48 | 3.329 | 17.02 | 6.19 | -- | 570 | 4.46 | -- | -- | -- | -- | -- |
| CAR-P3-MW003I-A | CAR-P3-MW003I-A-30.9-20220718 | 7/18/2022 | 30.9 | N | 4602621141 | Treatment | Intermediate | -- | **744** | -- | < 50.0 U | -149.8 | 1.59 | 6.56 | 2.92 | 20.15 | 9.72 | -- | 450 | 5.98 | -- | -- | -- | -- | -- |
| CAR-P3-MW003I-A | CAR-P3-MW003I-A-30.9-20220822 | 8/22/2022 | 30.9 | N | 4602642131 | Treatment | Intermediate | -- | **1130** | -- | < 10.0 U | -130.0 | 1.15 | 6.73 | 3.200 | 20.55 | 7.50 | -- | 305 | 12.1 | -- | -- | -- | -- | -- |
| CAR-P3-MW003I-A | CAR-P3-MW003I-A-30.9-20220919 | 9/19/2022 | 30.9 | N | 4602658321 | Treatment | Intermediate | -- | **434** | -- | < 10.0 U | -290.9 | 0.37 | 6.95 | 2.807 | 21.54 | 8.93 | -- | 86.3 | 26.8 | -- | -- | -- | -- | -- |
| CAR-P3-MW003I-A | CAR-P3-MW003I-A-30.9-20221013 | 10/13/2022 | 30.9 | N | 4602674321 | Treatment | Intermediate | -- | **442** | -- | < 10.0 U | -257 | 2.08 | 7.52 | 2.684 | 20.06 | 8.56 | -- | 97.4 | 3.76 | -- | -- | -- | -- | -- |
| CAR-P3-MW003I-A | CAR-P3-MW003I-A-30.9-20221111 | 11/11/2022 | 30.9 | N | 4602693491 | Treatment | Intermediate | -- | **724** | -- | < 20.0 U | -98.1 | 0.8 | 6.81 | 3.24 | 18.54 | 8.39 | -- | 217 | 0.57 J | -- | -- | -- | -- | -- |
| CAR-P3-MW003I-A | CAR-P3-MW003I-A-30.9-20221216 | 12/16/2022 | 30.9 | N | 4602715551 | Treatment | Intermediate | **626** | **2050** | < 20.0 U | < 20.0 U | -120.0 | 0.7 | 4 | 0.315 | 7.7 | 78 | -- | 349 | 0.79 J | -- | -- | **40400** | **8280** | -- |
| CAR-P3-MW003I-A | CAR-P3-MW003I-A-30.9-20230124 | 1/24/2023 | 30.9 | N | 4602734531 | Treatment | Intermediate | **4650** | **4950** | < 50.0 U

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| CAR-P3-MW003I-A | CAR-P3-MW003I-A-37.0-20240712 | 7/12/2024 | 37 | N | JD92106 | Post-Treatment | Intermediate | -- | **607** | -- | 30 | -143.1 | 0.05 | 6.68 | 3.789 | 20.8 | 8.99 | -- | 116 | 20.4 | -- | -- | -- | -- | -- |
| CAR-P3-MW003I-A | CAR-P3-MW003I-A-37.0-20241015 | 10/15/2024 | 37 | N | JD98256 | Post-Treatment | Intermediate | -- | **515 J-** | -- | 8.2 J | -36.6 | 0.07 | 6.71 | 3.89 | 18.1 | 6.54 | -- | 133 | 19.5 J- | -- | -- | -- | -- | -- |
| CAR-P3-MW003I-B | CAR-P3-MW003I-B-41.0-20210913 | 9/13/2021 | 41 | N | 4602426701 | Baseline | Intermediate | **204000** | **187000** | **211000** | **192000** | 200.3 | 0.73 | 8.11 | 2.797 | 18.81 | 5.98 | -- | 7.1 | **303** | < 1.0 U | 840 | **< 600 U** | **198** | -- |
| CAR-P3-MW003I-B | CAR-P3-MW003I-B-51.0-20210913 | 9/13/2021 | 51 | N | 4602426701 | Baseline | Intermediate | **239000** | **253000** | **227000** | **227000** | 210.9 | 2.63 | 7.9 | 2.901 | 19.08 | 6.98 | -- | 6.7 | **317** | < 1.0 U | 920 | **< 600 U** | **223** | -- |
| CAR-P3-MW003I-B | CAR-P3-MW003I-B-51.0-20211117 | 11/17/2021 | 51 | N | 4602474671 | Treatment | Intermediate | **24100** | **23300** | **20300** | **23100** | 67.40 | 0.42 | 8.21 | 1.66 | 15.88 | 7.34 | -- | 43.9 | 135 | -- | 120 | **< 1200 U** | **188** | -- |
| CAR-P3-MW003I-B | CAR-P3-MW003I-B-51-20211227 | 12/27/2021 | 51 | N | 4602498521 | Treatment | Intermediate | **109** | **150** | < 10.0 U | < 10.0 U | -190.7 | 1.25 | 6.70 | 2.327 | 13.48 | 5.23 | -- | 372 | 29.4 | -- | 73 | -- | -- | -- |
| CAR-P3-MW003I-B | CAR-P3-MW003I-B-51.0-20220119 | 1/19/2022 | 51 | N | 4602509341 | Treatment | Intermediate | **155** | **179** | < 10.0 U | < 10.0 U | -203.00 | 0 | 6.35 | 2.53 | 11.52 | 2.06 | -- | 435 | 7.57 | -- | 70 | -- | -- | -- |
| CAR-P3-MW003I-B | CAR-P3-MW003I-B-51-20220223 | 2/23/2022 | 51 | N | 4602530771 | Treatment | Intermediate | 65.2 | **112** | < 10.0 U | < 10.0 U | -291.10 | 9999.00 | 7.23 | 2.155 | 14.41 | 5.67 | -- | 94.4 | 55.3 | -- | 450 | -- | -- | -- |
| CAR-P3-MW003I-B | CAR-P3-MW003I-B-51.0-20220321 | 3/21/2022 | 51 | N | 4602547381 | Treatment | Intermediate | **273** | **380** | < 20.0 U | < 20.0 U | -286.00 | 1.10 | 7.05 | 0.19 | 15.04 | 6.21 | -- | 353 | 5.20 | -- | 2400 | -- | -- | -- |
| CAR-P3-MW003I-B | CAR-P3-MW003I-B-51-20220419 | 4/19/2022 | 51 | N | 4602565511 | Treatment | Intermediate | **540** | **560** | < 10.0 U | < 10.0 U | -251.9 | 7.16 | 7.03 | 2.955 | 12.45 | 6.8 | -- | 216 | 49.9 | -- | 15000 | **2710** | **2790** | -- |
| CAR-P3-MW003I-B | CAR-P3-MW003I-B-51.0-20220519 | 5/19/2022 | 51 | N | 4602584291 | Treatment | Intermediate | -- | **8560** | -- | < 50.0 U | -123.1 | 1.02 | 6.68 | 2.210 | 14.89 | 8.6 | -- | 297 | 132 | -- | 15000 | -- | -- | -- |
| CAR-P3-MW003I-B | CAR-P3-MW003I-B-51.0-20220519-X | 5/19/2022 | 51 | FD | 4602584291 | Treatment | Intermediate | -- | **9630** | -- | < 20.0 U | -- | -- | -- | -- | -- | -- | -- | 325 | 148 | -- | 15000 | -- | -- | -- |
| CAR-P3-MW003I-B | CAR-P3-MW003I-B-51-20220614 | 6/14/2022 | 51 | N | 4602600641 | Treatment | Intermediate | -- | **12300** | -- | < 50.0 UF1 | -173.9 | 3.39 | 6.77 | 3.331 | 18.20 | 9.40 | -- | 417 | 172 | -- | -- | -- | -- | -- |
| CAR-P3-MW003I-B | CAR-P3-MW003I-B-51-20220719 | 7/19/2022 | 51 | N | 4602621891 | Treatment | Intermediate | **8740** | **15600** | **71.8** | < 50.0 U | -227.4 | 5.30 | 6.65 | 3.433 | 22.99 | 90.00 | -- | 569 | 161 | -- | -- | -- | -- | -- |
| CAR-P3-MW003I-B | CAR-P3-MW003I-B-51-20220822 | 8/22/2022 | 51 | N | 4602642131 | Treatment | Intermediate | -- | **8910** | -- | < 10.0 U | -146.1 | 1.74 | 6.11 | 4.471 | 19.30 | 5.90 | -- | 907 | 13.7 | -- | -- | -- | -- | -- |
| CAR-P3-MW003I-B | CAR-P3-MW003I-B-51-20220919 | 9/19/2022 | 51 | N | 4602658321 | Treatment | Intermediate | -- | **1370** | -- | < 50.0 U | -127.7 | 1.98 | 6.51 | 3.765 | 19.54 | 6.1 | -- | 452 | 4.83 | -- | -- | -- | -- | -- |
| CAR-P3-MW003I-B | CAR-P3-MW003I-B-51-20220919-X | 9/19/2022 | 51 | FD | 4602658321 | Treatment | Intermediate | -- | **1560** | -- | < 50.0 U | -- | -- | -- | -- | -- | -- | -- | 526 | 3.76 | -- | -- | -- | -- | -- |
| CAR-P3-MW003I-B | CAR-P3-MW003I-B-51-20221014 | 10/14/2022 | 51 | N | 4602675261 | Treatment | Intermediate | -- | **521** | -- | < 20.0 U | -332.1 | 7.3 | 7.09 | 1.961 | 18.45 | 7.77 | -- | 61.3 | 5.92 | -- | -- | -- | -- | -- |
| CAR-P3-MW003I-B | CAR-P3-MW003I-B-51-20221114 | 11/14/2022 | 51 | N | 4602695301 | Treatment | Intermediate | -- | **350** | -- | < 10.0 U | -329.9 | 1.22 | 7.32 | 2.011 | 16.73 | 3.99 | -- | 30.5 | 12.8 | -- | -- | -- | -- | -- |
| CAR-P3-MW003I-B | CAR-P3-MW003I-B-51-20221219 | 12/19/2022 | 51 | N | 4602717111 | Treatment | Intermediate | -- | **308** | -- | < 10.0 U | -235.2 | 2.35 | 7.36 | 2.870 | 11.81 | 2.40 | -- | 19.3 | 79.6 | -- | -- | -- | -- | -- |
| CAR-P3-MW003I-B | CAR-P3-MW003I-B-51-20230124 | 1/24/2023 | 51 | N | 4602734531 | Treatment | Intermediate | -- | **290** | -- | < 10.0 U | -290.2 | 6.25 | 6.91 | 2.604 | 12.05 | 3.32 | -- | 25.9 F1 | 8.80 | -- | -- | -- | -- | -- |
| CAR-P3-MW003I-B | CAR-P3-MW003I-B-51.0-20230224 | 2/24/2023 | 51 | N | 4602752361 | Treatment | Intermediate | -- | **5200** | -- | < 20.0 U | -88.3 | 2.89 | 6.32 | 3.996 | 10.69 | 9.02 | -- | 883 | 3.03 | -- | -- | -- | -- | -- |
| CAR-P3-MW003I-B | CAR-P3-MW003I-B-39.0-20230419 | 4/19/2023 | 39 | N | 4602784921 | Post-Treatment | Intermediate | -- | **3090** | -- | < 20.0 U | -68.4 | 1.93 | 6.21 | 4.555 | 12.3 | 3.78 | -- | 900 | **1150 J** | < 1 U | -- | -- | -- | -- |
| CAR-P3-MW003I-B | CAR-P3-MW003I-B-44.0-20230419 | 4/19/2023 | 44 | N | 4602784921 | Post-Treatment | Intermediate | -- | **3080** | -- | < 20.0 U | -61.5 | 0.86 | 5.98 | 4.6 | 15.8 | 3.34 | -- | 874 | **1260 J** | < 1 U | -- | -- | -- | -- |
| CAR-P3-MW003I-B | CAR-P3-MW003I-B-49.0-20230419 | 4/19/2023 | 49 | N | 4602784921 | Post-Treatment | Intermediate | -- | **3270** | -- | < 50.0 U | -74.1 | 4.05 | 5.88 | 4.73 | 16.7 | 3.17 | -- | 899 | **2060 J** | < 1 U | -- | -- | -- | -- |
| CAR-P3-MW003I-B | CAR-P3-MW003I-B-54.0-20230419 | 4/19/2023 | 54 | N | 4602784921 | Post-Treatment | Intermediate | -- | **5580** | -- | < 50.0 U | -47.3 | 6.09 | 5.65 | 5.333 | 16.97 | 3.58 | -- | 1230 | **2530 J** | < 1 U | -- | -- | -- | -- |
| CAR-P3-MW003I-B | CAR-P3-MW003I-B-54.0-20230712 | 7/12/2023 | 54 | N | 4602840751 | Post-Treatment | Intermediate | -- | **5700** | -- | < 50.0 U | -46.3 | 1.13 | 6.47 | 4.7 | 22.36 | 7.41 | -- | 984 | 0.78 J | < 1 U | -- | -- | -- | -- |
| CAR-P3-MW003I-B | CAR-P3-MW003I-B-54.0-20231020 | 10/20/2023 | 54 | N | 4602908131 | Post-Treatment | Intermediate | **4300** | **5440** | < 50.0 U | < 50.0 U | -130.7 | 0.07 | 6.53 | 4.801 | 18 | 14.9 | -- | 628 | 6.66 | -- | -- | -- | -- | -- |
| CAR-P3-MW003I-B | CAR-P3-MW003I-B-54.0-20240125 | 1/25/2024 | 54 | N | JD81189 | Post-Treatment | Intermediate | -- | **6870** | -- | 22 | -145.2 | 0.09 | 6.58 | 4.287 | 14.4 | 8.24 | -- | 600 | < 20 U | -- | -- | -- | -- | -- |
| CAR-P3-MW003I-B | CAR-P3-MW003I-B-54.0-20240418 | 4/18/2024 | 54 | N | JD86789 | Post-Treatment | Intermediate | -- | **7660** | -- | 66 | -180.1 | 0.23 | 6.35 | 5.23 | 12.1 | 9.63 | -- | 678 | < 2.0 U | -- | -- | -- | -- | -- |
| CAR-P3-MW003I-B | CAR-P3-MW003I-B-54.0-20240712 | 7/12/2024 | 54 | N | JD92106 | Post-Treatment | Intermediate | -- | **1180** | -- | 48 | -132.3 | 0.06 | 6.63 | 3.965 | 21.4 | 9.31 | -- | 447 | 0.90 J | -- | -- | -- | -- | -- |
| CAR-P3-MW003I-B | CAR-P3-MW003I-B-54.0-20241015 | 10/15/2024 | 54 | N | JD98256 | Post-Treatment | Intermediate | -- | **719 J-** | -- | **70** | -34.8 | 0.1 | 6.76 | 3.52 | 16.4 | 7.59 | -- | 103 | < 2.0 UJ | -- | -- | -- | -- | -- |
| CAR-P3-MW004I-A | CAR-P3-MW-004I-A-27.8 | 6/24/2021 | 27.8 | N | 4602373171 | Baseline | Intermediate | -- | **524000** | -- | **548000** | 85.80 | 0.39 | 9.22 | 0.81 | 22.88 | 4.31 | -- | 18.0 | **1180** | < 1.0 U | 980 | -- | -- | -- |
| CAR-P3-MW004I-A | CAR-P3-MW-004I-A-27.8-F | 6/24/2021 | 27.8 | N | 4602373171 | Baseline | Intermediate | **519000** | -- | **548000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 2400 U** | **115 J** | -- |
| CAR-P3-MW004I-A | CAR-P3-MW-004I-A-32.8 | 6/24/2021 | 32.8 | N | 4602373171 | Baseline | Intermediate | -- | **506000** | -- | **536000** | 104.40 | 0.72 | 9.24 | 6.90 | 23.84 | 5.11 | -- | 18.5 | **1180** | < 1.0 U | 490 | -- | -- | -- |
| CAR-P3-MW004I-A | CAR-P3-MW-004I-A-32.8-F | 6/24/2021 | 32.8 | N | 4602373171 | Baseline | Intermediate | **504000** | -- | **514000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 2400 U** | **105 J** | -- |
| CAR-P3-MW004I-A | CAR-P3-MW-004I-A-37.8 | 6/24/2021 | 37.8 | N | 4602373171 | Baseline | Intermediate | -- | **529000** | -- | **497000** | 99.80 | 0.25 | 9.21 | 6.85 | 20.59 | 7.70 | -- | 18.6 | **1180** | < 1.0 U | 730 | -- | -- | -- |
| CAR-P3-MW004I-A | CAR-P3-MW-004I-A-37.8-F | 6/24/2021 | 37.8 | N | 4602373171 | Baseline | Intermediate | **476000** | -- | **497000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 2400 U** | **115 J** | -- |
| CAR-P3-MW004I-A | CAR-P3-MW-004I-A-42.8 | 6/24/2021 | 42.8 | N | 4602373171 | Baseline | Intermediate | -- | **513000** | -- | **503000** | 117.60 | 0.31 | 9.23 | 6.83 | 20.46 | 3.81 | -- | 18.3 | **1180** | < 1.0 U | 870 | -- | -- | -- |
| CAR-P3-MW004I-A | CAR-P3-MW-004I-A-42.8-F | 6/24/2021 | 42.8 | N | 4602373171 | Baseline | Intermediate | **489000** | -- | **492000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 2400 U** | **97.5 J** | -- |
| CAR-P3-MW004I-A | CAR-P3-MW004I-A-24.5-20211116 | 11/16/2021 | 24.5 | N | 4602474031 | Treatment | Intermediate | **18300** | **16500** | **17600** | **17000** | 12.70 | 0.31 | 8.49 | 5.41 | 13.54 | 2.52 | -- | 6.4 | **450** | -- | 270 | -- | -- | -- |
| CAR-P3-MW004I-A | CAR-P3-MW004I-A-24.5-20211227 | 12/27/2021 | 24.5 | N | 4602498521 | Treatment | Intermediate | **58800** | **60000** | **56000** | **62600** | 67.0 | 1.14 | 8.62 | 7.27 | 11.12 | 4.12 | -- | 7.5 | **488** | -- | 300 | -- | -- | -- |
| CAR-P3-MW004I-A | CAR-P3-MW004I-A-24.5-20220117 | 1/17/2022 | 24.5 | N | 4602508211 | Treatment | Intermediate | **12700** | **12600** | **13000** | **14400** | 40.00 | 0 | 8.60 | 9.17 | 10.42 | 0 | -- | 5.3 | **396** | -- | 140 | -- | -- | -- |
| CAR-P3-MW004I-A | CAR-P3-MW004I-A-27.8-20220224 | 2/24/2022 | 27.8 | N | 4602531681 | Treatment | Intermediate | **2130** | **401** | **2430**<br>**311 H** | **316**<br>**2490 H** | 187.60 | 0.39 | 8.90 | 6.22 | 9.90 | 2.76 | -- | 5.8 | **444** | -- | 260 | -- | -- | -- |
| CAR-P3-MW004I-A | CAR-P3-MW004I-A-27.8-20220322 | 3/22/2022 | 27.8 | N | 4602547911 | Treatment | Intermediate | **120** | **208** | 41.5 | 12.8 | 113.00 | 1.53 | 8.51 | 5.18 | 12.44 | 2.26 | -- | 5.6 | **426** | -- | 390 | -- | -- | -- |
| CAR-P3-MW004I-A | CAR-P3-MW004I-A-27.8-20220419 | 4/19/2022 | 27.8 | N | 4602565511 | Treatment | Intermediate | 22.7 | **141** | < 10.0 U | < 10.0 U | 60.1 | 0.96 | 8 | 5.006 | 11.43 | 1.28 | -- | 10.7 | **433** | < 120 U | **117** | -- | -- | -- |
| CAR-P3-MW004I-A | CAR-P3-MW004I-A-27.8-20220520 | 5/20/2022 | 27.8 | N | 4602585231 | Treatment | Intermediate | -- | **1640** | -- | 20.8 | -264.1 | 0.18 | 7.64 | 5.253 | 16.23 | 4.65 | -- | 159 | **467** | -- | 1300 | -- | -- | -- |
| CAR-P3-MW004I-A | CAR-P3-MW004I-A-27.8-20220615 | 6/15/2022 | 27.8 | N | 4602601501 | Treatment | Intermediate | -- | **620** | -- | < 20.0 U | -570.50 | 6.84 | 7.16 | 4.934 | 18.35 | 9.5 | -- | 370 | 44.1 | -- | -- | -- | -- | -- |
| CAR-P3-MW004I-A | CAR-P3-MW004I-A-27.8-20220718 | 7/18/2022 | 27.8 | N | 4602621141 | Treatment | Intermediate | -- | **2490** | -- | **1380** | -328.00 | 18.16 | 6.88 | 4.21 | 18.97 | 8.89 | -- | 38.3 | 45.5 | -- | -- | -- | -- | -- |
| CAR-P3-MW004I-A | CAR-P3-MW004I-A-27.8-20220822 | 8/22/2022 | 27.8 | N | 4602642131 | Treatment | Intermediate | -- | **4610** | -- | < 10.0 U | -259.70 | 3.38 | 6.22 | 5.085 | 19.49 | 9.60 | -- | 1270 | 4.67 | -- | -- | -- | -- | -- |
| CAR-P3-MW004I-A | CAR-P3-MW004I-A-27.8-20220919 | 9/19/2022 | 27.8 | N | 4602658321 | Treatment | Intermediate | -- | **12500** | -- | < 50.0 U | -232.6 | 1.63 | 6.19 | 4.946 | 18.51 | 1.21 | -- | 1330 | 53.3 | -- | -- | -- | -- | -- |
| CAR-P3-MW004I-A | CAR-P3-MW004I-A-27.8-20221014 | 10/14/2022 | 27.8 | N | 4602675261 | Treatment | Intermediate | -- | **10300** | -- | < 20.0 U | -345.2 | 7.71 | 5.97 | 5.13 | 20.75 | 9.91 | -- | 1430 | 19.5 | -- | -- | -- | -- | -- |
| CAR-P3-MW004I-A | CAR-P3-MW004I-A-27.8-20221114 | 11/14/2022 | 27.8 | N | 4602695301 | Treatment | Intermediate | -- | **1100** | -- | < 50.0 U | -266.0 | 1.59 | 5.96 | 6.573 | 13.56 | 4.77 | -- | 493 | 22.8 | -- | -- | -- | -- | -- |
| CAR-P3-MW004I-A | CAR-P3-MW004I-A-27.8-20221219 | 12/19/2022 | 27.8 | N | 4602717111 | Treatment | Intermediate | -- | **11300** | -- | < 20.0 U | -118.4 | 0.3 | 6.25 | 4.191 | 11.42 | 9.69 | -- | 1180 | 9.05 | -- | -- | -- | -- | -- |
| CAR-P3-MW004I-A | CAR-P3-MW004I-A-27.8-20230124 | 1/24/2023 | 27.8 | N | 4602734531 | Treatment | Intermediate | -- | **16400** | -- | < 50.0 U | -304.1 | 4.08 | 5.35 | 3.069 | 13.61 | 8.9 | -- | 1370 | 59.3 | -- | -- | -- | -- | -- |
| CAR-P3-MW004I-A | CAR-P3-MW004I-A-27.8-20230227 | 2/27/2023 | 27.8 | N | 4602753411 | Treatment | Intermediate | **12000** | **13100** | **< 100 U** | **< 100 U** | -79.9 | 1.71 | 5.88 | 7.89 | 13.59 | 17.02 | -- | 1770 | 34.7 | -- | -- | -- | -- | -- |
| CAR-P3-MW004I-A | CAR-P3-MW004I-A-28.0-20230419 | 4/19/2023 | 28 | N | 4602784921 | Post-Treatment | Intermediate | -- | **9510** | -- | < 20.0 U | -40 | 1.72 | 5.8 | 4.777 | 13.9 | 8.87 | -- | 1610 | **10900** | < 1 U | -- | -- | -- | -- |
| CAR-P3-MW004I-A | CAR-P3-MW004I-A-33.0-20230419 | 4/19/2023 | 33 | N | 4602784921 | Post-Treatment | Intermediate | -- | **10300** | -- | < 20.0 U | -69.3 | 1.96 | 5.76 | 4.829 | 15.9 | 9.66 | -- | 1710 | **14600** | < 1 U | -- | -- | -- | -- |
| CAR-P3-MW004I-A | CAR-P3-MW004I-A-38.0-20230419 | 4/19/2023 | 38 | N | 4602784921 | Post-Treatment | Intermediate | -- | **10700** | -- | < 20.0 U | -69.1 | 2.04 | 5.74 | 4.892 | 16.2 | 9.86 | -- | 1670 | **17800** | < 1 U | -- | -- | -- | -- |
| CAR-P3-MW004I-A | CAR-P3-MW004I-A-43.0-20230420 | 4/20/2023 | 43 | N | 4602786071 | Post-Treatment | Intermediate | **9660** | **10400** | < 50.0 U | < 50.0 U | -256.8 | 0.8 | 5.95 | 5.222 | 18.6 | 12.4 | -- | 1670 | **25200** | 2.8 | -- | **438000** | **6480** | -- |
| CAR-P3-MW004I-A | CAR-P3-MW004I-A-43.0-20230712 | 7/12/2023 | 43 | N | 4602840751 | Post-Treatment | Intermediate | -- | **6990** | -- | < 50.0 U | -103.6 | 4.12 | 6.21 | 6.991 | 23.68 | 9.11 | -- | 1340 | 1.36 J | < 1 U | -- | -- | -- | -- |
| CAR-P3-MW004I-A | CAR-P3-MW004I-A-43.0-20231020 | 10/20/2023 | 43 | N | 4602908131 | Post-Treatment | Intermediate | -- | **12400** | -- | < 20.0 U | 49.1 | 2.55 | 6.2 | 3.832 | 17.8 | 9.99 | -- | 1600 | 6.30 | -- | -- | -- | -- | -- |
| CAR-P3-MW004I-A | CAR-P3-MW004I-A-43.0-20240123 | 1/23/2024 | 43 | N | JD81017 | Post-Treatment | Intermediate | **15500** | **16400** | 8.8 J | < 10 U | -115.4 | 0.05 | 6.03 | 4.126 | 11.4 | 29.6 | -- | 1560 | 10.5 J | -- | -- | -- | -- | -- |
| CAR-P3-MW004I-A | CAR-P3-MW004I-A-43.0-20240418 | 4/18/2024 | 43 | N | JD86789 | Post-Treatment | Intermediate | **6930** | **7640** | 60 | 55 | -174.9 | 0.16 | 6.37 | 4.91 | 13.8 | 16 | -- | 1180 | 4.1 | -- | -- | **432000** | **9150** | -- |
| CAR-P3-MW004I-A | CAR-P3-MW004I-A-43.0-20240712 | 7/12/2024 | 43 | N | JD92106 | Post-Treatment | Intermediate | **4720** | **5490** | 60 | 64 | -220.1 | 0.05 | 6.78 | 6.52 | 19.9 | 20.8 | -- | 698 | 3.8 | -- | -- | -- | -- | -- |
| CAR-P3-MW004I-A | CAR-P3-MW004I-A-43.0-20241015 | 10/15/2024 | 43 | N | JD98256 | Post-Treatment | Intermediate | -- | **3670 J-** | -- | **110** | -109 | 0.06 | 6.78 | 6.47 | 17.7 | 8.97 | -- | 691 | < 40 UJ | -- | -- | -- | -- | -- |
| CAR-P3-MW004I-B | CAR-P3-MW004I-B-48.5 | 6/23/2021 | 48.5 | N | 4602372181 | Baseline | Intermediate | -- | **94.2** | -- | < 20.0 U | 33.90 | 0.36 | 8.10 | 5.09 | 22.45 | 3.81 | -- | 0.77 J | **324** | < 1.0 U | 9.1 | -- | -- | -- |
| CAR-P3-MW004I-B | CAR-P3-MW004I-B-48.5-F | 6/23/2021 | 48.5 | N | 4602372181 | Baseline | Intermediate | 5.6 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 213 | **273** | -- |
| CAR-P3-MW004I-B | CAR-P3-MW004I-B-53.5 | 6/23/2021 | 53.5 | N | 4602372181 | Baseline | Intermediate | -- | **90.6** | -- | < 20.0 U | -53.90 | 0.33 | 8.05 | 5.41 | 23.08 | 8.87 | -- | 0.74 J | **328** | < 1.0 U | 8.2 | -- | -- | -- |
| CAR-P3-MW004I-B | CAR-P3-MW004I-B-53.5-F | 6/23/2021 | 53.5 | N | 4602372181 | Baseline | Intermediate | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 227 | **272** | -- |
| CAR-P3-MW004I-B | CAR-P3-MW-004I-B-58.5 | 6/24/2021 | 58.5 | N | 4602373171 | Baseline | Intermediate | -- | 45.1 | -- | < 10.0 U | 14.40 | 0.33 | 8.07 | 5.13 | 20.57 | 7.49 | -- | < 1.0 U | **344** | < 1.0 U | 7.2 | -- | -- | -- |
| CAR-P3-MW004I-B | CAR-P3-MW-004I-B-58.5-F | 6/24/2021 | 58.5 | N | 4602373171 | Baseline | Intermediate | < 20.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 600 U** | **229** | -- |
| CAR-P3-MW004I-B | CAR-P3-MW-004I-B-63.5 | 6/24/2021 | 63.5 | N | 4602373171 | Baseline | Intermediate | -- | 23.1 | -- | < 10.0 U | -64.40 | 0.29 | 8.02 | 5.22 | 21.75 | 8.69 | -- | < 1.0 U | **348** | < 1.0 U | 6.9 | -- | -- | -- |
| CAR-P3-MW004I-B | CAR-P3-MW-004I-B-63.5-F | 6/24/2021 | 63.5 | N | 4602373171 | Baseline | Intermediate | < 20.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 600 U** | **242** | -- |
| CAR-P3-MW004I-B | CAR-P3-MW004I-B-60.5-20211116 | 11/16/2021 | 60.5 | N | 4602474031 | Treatment | Intermediate | < 4.0 U | 38.3 | < 10.0 U | < 10.0 U | -104.40 | 0.40 | 8.07 | 7.39 | 14.24 | 3.90 | -- | 1.1 | 196 | -- | 12 | -- | -- | -- |
| CAR-P3-MW004I-B | CAR-P3-MW004I-B-60.5-20211227 | 12/27/2021 | 60.5 | N | 4602498521 | Treatment | Intermediate | **42500** | **44700** | **44000** | **40700** | 85.30 | 1.72 | 7.72 | 16.75 | 12.55 | 8.63 | -- | 6.6 | **684** | -- | 92 | -- | -- | -- |
| CAR-P3-MW004I-B | CAR-P3-MW004I-B-60.5-20220117 | 1/17/2022 | 60.5 | N | 4602508211 | Treatment | Intermediate | **103000** | **109000** | **104000** | **104000** | 214.00 | 0 | 8.17 | 22.60 | 16.67 | 8.21 | -- | 8.3 F1 | **692** | -- | 120 | -- | -- | -- |
| CAR-P3-MW004I-B | CAR-P3-MW004I-B-63.5-20220224 | 2/24/2022 | 63.5 | N | 4602531681 | Treatment | Intermediate | **53100** | **50900** | **52400** | **55800** | 172.40 | 0.26 | 8.27 | 16.99 | 12.25 | 6.87 | -- | 6.3 | **688** | -- | 110 | -- | -- | -- |
| CAR-P3-MW004I-B | CAR-P3-MW004I-B-63.5-20220322 | 3/22/2022 | 63.5 | N | 4602547911 | Treatment | Intermediate | **83000** | **85400** | **85100** | **95400** | 180.20 | 1.97 | 8.04 | 14.81 | 13.12 | 8.12 | -- | 7.6 | **713** | -- | 130 | -- | -- | -- |
| CAR-P3-MW004I-B | CAR-P3-MW004I-B-63.5-20220419 | 4/19/2022 | 63.5 | N | 4602565511 | Treatment | Intermediate | **145000** | **157000** | **143000** | **154000** | 64.1 | 0.61 | 7.97 | 14.75 | 12.69 | 3.1 | -- | 8.8 | **874** | -- | 160 | **< 1200 U** | **500** | -- |
| CAR-P3-MW004I-B | CAR-P3-MW004I-B-63.5-20220520 | 5/20/2022 | 63.5 | N | 4602585231 | Treatment | Intermediate | -- | **112000** | -- | **154000** | -6.5 | 0.23 | 8.05 | 17.01 | 16.38 | 7.21 | -- | 9.8 | **888** | -- | 170 | -- | -- | -- |
| CAR-P3-MW004I-B | CAR-P3-MW004I-B-63.5-20220615 | 6/15/2022 | 63.5 | N | 4602601501 | Treatment | Intermediate | -- | **99500** | -- | **75300** | -70.5 | 2.38 | 8.23 | 14.69 | 20.79 | 3.50 | -- | 9.6 | **777** | -- | -- | -- | -- | -- |
| CAR-P3-MW004I-B | CAR-P3-MW004I-B-63.5-20220720 | 7/20/2022 | 63.5 | N | 4602622601 | Treatment | Intermediate | -- | **31500** | -- | **19900** | 58.1 | 0.3 | 12.07 | 15.56 | 22.46 | 9.00 | -- | 20.3 | **739** | -- | -- | -- | -- | -- |
| CAR-P3-MW004I-B | CAR-P3-MW004I-B-63.5-20220822 | 8/22/2022 | 63.5 | N | 4602642131 | Treatment | Intermediate | -- | **11400** | -- | **9370** | -58.6 | 1.03 | 7.95 | 16.99 | 19.79 | 8.21 | -- | 40.3 | **864** | -- | -- | -- | -- | -- |
| CAR-P3-MW004I-B | CAR-P3-MW004I-B-63.5-20220919 | 9/19/2022 | 63.5 | N | 4602658321 | Treatment | Intermediate | **15600** | **15900** | **16800** | **16800** | -85.7 | 0.93 | 7.98 | 17.81 | 21.46 | 28.9 | -- | 33.4 | **709** | -- | -- | -- | -- | -- |
| CAR-P3-MW004I-B | CAR-P3-MW004I-B-63.5-20221014 | 10/14/2022 | 63.5 | N | 4602675261 | Treatment | Intermediate | **6760** | **61600** | **6100** | **6540** | -45 | 1.47 | 8.23 | 16.97 | 19.63 | 20.7 | -- | 51.5 | **799** | -- | -- | -- | -- | -- |
| CAR-P3-MW004I-B | CAR-P3-MW004I-B-63.5-20221114 | 11/14/2022 | 63.5 | N | 4602695301 | Treatment | Intermediate | **1340** | **7230** | **561** | **556** | -206.3 | 0.3 | 8.1 | 13.85 | 13.2 | 47.5 | -- | 103 | **764** | -- | -- | -- | -- | -- |
| CAR-P3-MW004I-B | CAR-P3-MW004I-B-63.5-20221220 | 12/20/2022 | 63.5 | N | 4602718081 | Treatment | Intermediate | **255** | **611** | < 10.0 U | < 10.0 U | -351.2 | 1.28 | 7.61 | 20.09 | 9.88 | 32.6 | -- | 217 | **687** | -- | -- | -- | -- | -- |
| CAR-P3-MW004I-B | CAR-P3-MW004I-B-63.5-20230124 | 1/24/2023 | 63.5 | N | 4602734531 | Treatment | Intermediate | **175** | **1800** | < 10.0 U | < 20.0 U | -354.2 | 2.01 | 6.85 | 13.59 | 12.7 | 86 | -- | 210 | **527** | -- | -- | -- | -- | -- |
| CAR-P3-MW004I-B | CAR-P3-MW004I-B-63.5-20230224 | 2/24/2023 | 63.5 | N | 4602752361 | Treatment | Intermediate | **189** | **198** | < 10.0 U | < 10.0 U | -377.9 | 1.25 | 7.1 | 12 | 11.4 | 85.4 | -- | 269 | **600** | -- | -- | -- | -- | -- |
| CAR-P3-MW004I-B | CAR-P3-MW004I-B-49.0-20230419 | 4/19/2023 | 49 | N | 4602784921 | Post-Treatment | Intermediate | -- | **1200** | -- | **< 100 U** | -356 | 0.01 | 7.55 | 8.97 | 14.3 | 8 | -- | 155 | **534000** | 14.8 J- | -- | -- | -- | -- |
| CAR-P3-MW004I-B | CAR-P3-MW004I-B-54.0-20230419 | 4/19/2023 | 54 | N | 4602784921 | Post-Treatment | Intermediate | -- | **910** | -- | < 20.0 U | -400 | -0.01 | 7.52 | 13.277 | 16.2 | 7 | -- | 92.2 | **868000** | 6.8 | -- | -- | -- | -- |
| CAR-P3-MW004I-B | CAR-P3-MW004I-B-59.0-20230419 | 4/19/2023 | 59 | N | 4602784921 | Post-Treatment | Intermediate | -- | **643** | -- | < 20.0 U | -417 | 0 | 7.46 | 13.512 | 18.5 | 9.7 | -- | 171 | **564000** | 6.8 | -- | -- | -- | -- |
| CAR-P3-MW004I-B | CAR-P3-MW004I-B-64.0-20230420 | 4/20/2023 | 64 | N | 4602786071 | Post-Treatment | Intermediate | 27.1 | **1300** | < 10.0 U | < 10.0 U | 204.6 | 1.2 | 7.39 | 17.648 | 16 | 16.4 | -- | 29.5 | **889000** | 4.8 | -- | **938** | **1280** | -- |
| CAR-P3-MW004I-B | CAR-P3-MW004I-B-49.0-20230712 | 7/12/2023 | 49 | N | 4602840751 | Post-Treatment | Intermediate | **74.2** | **108** | < 10.0 U | < 10.0 U | -345.3 | 0.52 | 7.14 | 17.402 | 23.46 | 20.9 | -- | 70.2 | **634** | 3.04 | -- | -- | -- | -- |
| CAR-P3-MW004I-B | CAR-P3-MW004I-B-49.0-20231020 | 10/20/2023 | 49 | N | 4602908131 | Post-Treatment | Intermediate | **110** | **155** | < 10.0 U | < 10.0 U | -22.3 | 0.19 | 7.45 | 12.57 | 17.6 | 12.6 | -- | 51.7 | **511** | -- | -- | -- | -- | -- |
| CAR-P3-MW004I-B | CAR-P3-MW004I-B-49.0-20240123 | 1/23/2024 | 49 | N | JD81017 | Post-Treatment | Intermediate | **215** | **308** | 8.8 J | 8.

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| EW-P3-MW001I-A | EW-P3-MW001I-A-33-20220614 | 6/14/2022 | 33 | N | 4602600641 | Treatment | Intermediate | -- | **30600** | -- | **26800** | -11.90 | 0.11 | 7.73 | 17.19 | 17.44 | 8.21 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-38-20220614 | 6/14/2022 | 38 | N | 4602600641 | Treatment | Intermediate | -- | **17500** | -- | **19900** | -10.10 | 0.10 | 7.69 | 15.75 | 17.66 | 6.48 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-23-20220721 | 7/21/2022 | 23 | N | 4602623381 | Treatment | Intermediate | -- | **34000** | -- | **40100** | 139.7 | 0.92 | 8.18 | 11.08 | 21.88 | 7.11 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-28-20220822 | 8/22/2022 | 28 | N | 4602642131 | Treatment | Intermediate | -- | **12800** | -- | **10700** | -35.8 | 1.21 | 7.51 | 13.72 | 19.11 | 7.11 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-28-20220921 | 9/21/2022 | 28 | N | 4602659871 | Treatment | Intermediate | -- | **14900** | -- | **16600** | 35.6 | 0.01 | 8.4 | 18.87 | 18.17 | 9.32 | -- | 11.1 | **534** | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-28-20221018 | 10/18/2022 | 28 | N | 4602677121 | Treatment | Intermediate | -- | **9380** | -- | **8430** | 125.1 | 0.1 | 7.77 | 15.431 | 17.92 | 8.18 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-28-20221116 | 11/16/2022 | 28 | N | 4602696581 | Treatment | Intermediate | -- | **14000** | -- | **13900** | -33 | 0.5 | 7.78 | 14.86 | 15.98 | 9.87 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-28-20221213 | 12/13/2022 | 28 | N | 4602712771 | Treatment | Intermediate | **7260** | **5050** | **5140** | **2350** | -14.4 | 0.54 | 7.59 | 17.24 | 13.8 | 11.7 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-36.5-20230125 | 1/25/2023 | 36.5 | N | 4602735311 | Treatment | Intermediate | **4220** | **3590** | **2720** | **3160** | 23.1 | 0.6 | 7.34 | 33.86 | 12.9 | 18.24 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-21.5-20230127 | 1/27/2023 | 21.5 | N | 4602736701 | Treatment | Intermediate | -- | **3030** | -- | **2060** | -24.9 | 1.25 | 8.09 | 13.39 | 13.11 | 9.88 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-26.5-20230127 | 1/27/2023 | 26.5 | N | 4602736701 | Treatment | Intermediate | -- | **3200** | -- | **2190** | 96.9 | 0.57 | 7.63 | 15.11 | 9.15 | 9.85 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-31.5-20230127 | 1/27/2023 | 31.5 | N | 4602736701 | Treatment | Intermediate | -- | **5500** | -- | **4080** | 116.9 | 0.72 | 7.78 | 14.9 | 14.65 | 9.78 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-26.5-20230223 | 2/23/2023 | 26.5 | N | 4602751411 | Treatment | Intermediate | **1620** | **2270** | **1610** | **1600** | 1.6 | 3.3 | 8.31 | 17.61 | 14.7 | 10.5 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-31.5-20230223 | 2/23/2023 | 31.5 | N | 4602751411 | Treatment | Intermediate | **2150** | **2410** | **1950** | **1980** | 4.0 | 6.56 | 8.25 | 18.22 | 14.3 | 11.8 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-36.5-20230223 | 2/23/2023 | 36.5 | N | 4602751411 | Treatment | Intermediate | **2040** | **2610** | **2240** | **2200** | -19.1 | 6.83 | 8.14 | 19.63 | 14.4 | 12.3 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-21.5-20230224 | 2/24/2023 | 21.5 | N | 4602752361 | Treatment | Intermediate | -- | **3780** | -- | **2180** | 14 | 7.61 | 7.62 | 17.2 | 13.8 | 9.71 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-26.5-20230317 | 3/17/2023 | 26.5 | N | 4602765401 | Treatment | Intermediate | -- | **2960** | -- | **2260** | 101.2 | 0.15 | 8.28 | 14.56 | 14.71 | 9.5 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-31.5-20230317 | 3/17/2023 | 31.5 | N | 4602765401 | Treatment | Intermediate | -- | **2570** | -- | **2240** | 91.0 | 0.22 | 7.91 | 17.86 | 14.8 | 9.93 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-36.5-20230317 | 3/17/2023 | 36.5 | N | 4602765401 | Treatment | Intermediate | **1450** | **2740** | **1140** | **954** | -3.3 | 0.23 | 7.7 | 19.68 | 14.76 | 21.53 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-21.5-20230320 | 3/20/2023 | 21.5 | N | 4602766501 | Treatment | Intermediate | **1210** | **2100** | **1110** | **1330** | 11.8 | 0.18 | 7.94 | 29.65 | 14.9 | 23.8 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-45.5-20230421 | 4/21/2023 | 45.5 | N | 4602786851 | Treatment | Intermediate | **508** | **1900** | **410** | **529** | 200.0 | 0.18 | 7.17 | 16.184 | 17 | 16 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-21.5-20230510 | 5/10/2023 | 21.5 | N | 4602800211 | Treatment | Intermediate | **450** | **1250** | **531** | **439** | 164.9 | 2.64 | 7.65 | 14.36 | 19.6 | 17.2 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-26.5-20230510 | 5/10/2023 | 26.5 | N | 4602800211 | Treatment | Intermediate | **174** | **790** | **81.2** | **83.4** | 159.4 | 2.49 | 7.6 | 14.39 | 19.4 | 18.2 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-31.5-20230511 | 5/11/2023 | 31.5 | N | 4602801171 | Treatment | Intermediate | **283** | **1030** | **201** | **181** | -24.7 | 0.14 | 7.59 | 15.76 | 20.22 | 15.3 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-36.5-20230511 | 5/11/2023 | 36.5 | N | 4602801171 | Treatment | Intermediate | -- | **904** | -- | **173** | -95.5 | 0.12 | 7.6 | 17.45 | 18.4 | 9.19 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-21.5-20230622 | 6/22/2023 | 21.5 | N | 4602828851 | Treatment | Intermediate | **92.8** | **1710** | < 10.0 U | < 10.0 U | -3.3 | 4.84 | 7.49 | 17.06 | 16.9 | 30.9 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-26.5-20230720 | 7/20/2023 | 26.5 | N | 4602846391 | Treatment | Intermediate | **75.1** | **757** | 32.8 | 32.8 | 8.8 | 1.18 | 7.61 | 16.55 | 21.41 | 14.8 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-31.5-20230720 | 7/20/2023 | 31.5 | N | 4602846391 | Treatment | Intermediate | **168** | **829** | 69.4 H | **83.3** | 2.7 | 0.67 | 7.6 | 17.13 | 22.56 | 17.6 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-36.5-20230720 | 7/20/2023 | 36.5 | N | 4602846391 | Treatment | Intermediate | 59.3 | **924** | < 10.0 U | < 10.0 U | -19.4 | 0.74 | 7.55 | 17.88 | 18.96 | 16.9 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-21.5-20230721 | 7/21/2023 | 21.5 | N | 4602847281 | Treatment | Intermediate | **826** | **1050** | **84.7** | 66.4 | 49.3 | 0.23 | 7.57 | 19.66 | 19.6 | 18.6 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-21.5-20230824 | 8/24/2023 | 21.5 | N | 4602868441 | Treatment | Intermediate | **91.8** | **1400** | < 10.0 U | < 10.0 U | -120.1 | 0.09 | 7.46 | 21.14 | 20.47 | 25.4 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-21.5-20230919 | 9/19/2023 | 21.5 | N | 4602885251 | Treatment | Intermediate | 25.7 | **1100** | < 10.0 U | < 10.0 U | -113.9 | 0.13 | 7.7 | 20.01 | 20.73 | 21.7 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-21.5-20231013 | 10/13/2023 | 21.5 | N | 4602902221 | Treatment | Intermediate | 37.5 | **843** | < 10.0 U | < 10.0 U | -131.5 | 0.44 | 7.47 | 18.88 | 19.57 | 14.7 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | Ew-P3-MW001I-A-21.5-20231116 | 11/16/2023 | 21.5 | N | JD77164 | Treatment | Intermediate | -- | **403** | -- | < 10 U | -119.4 | 0.09 | 7.79 | 21.64 | 17.9 | 8.77 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-21.5-20231222 | 12/22/2023 | 21.5 | N | JD79442 | Treatment | Intermediate | **222** | **1320** | < 10 U | 6.4 B | -172.7 | 0.15 | 7.53 | 20.05 | 11.9 | 23.7 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-21.5-20240123 | 1/23/2024 | 21.5 | N | JD81013 | Treatment | Intermediate | -- | 59.0 | -- | 7.7 B | -157 | 1.24 | 7.83 | 19.01 | 13.6 | 0.79 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-21.5-20240221 | 2/21/2024 | 21.5 | N | JD82924 | Treatment | Intermediate | -- | **71.1** | -- | 16 | -15.7 | 0.42 | 7.31 | 20.74 | 13.8 | 1.13 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-21.5-20240320 | 3/20/2024 | 21.5 | N | JD84851 | Treatment | Intermediate | -- | **84.0** | -- | < 10 U | -156.2 | 0.45 | 7.72 | 21.9 | 13.3 | 1.92 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-21.5-20240415 | 4/15/2024 | 21.5 | N | JD86534 | Treatment | Intermediate | -- | **379** | -- | 8.5 B | -143.5 | 0.51 | 7.55 | 17.37 | 17.4 | 5.37 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-21.5-20240711 | 7/11/2024 | 21.5 | N | JD92004 | Treatment | Intermediate | -- | **434** | -- | 16 | -154 | 0.08 | 7.53 | 21.46 | 22.1 | 6.94 | -- | 12.0 | **846** | -- | -- | -- | -- | -- |
| EW-P3-MW001I-A | EW-P3-MW001I-A-21.5-20241007 | 10/7/2024 | 21.5 | N | JD97612 | Treatment | Intermediate | -- | **118** | -- | 6.0 B | -151.9 | 0.15 | 7.51 | 21.69 | 19.3 | 1.5 | -- | 12.2 | **779** | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-45-20220418 | 4/18/2022 | 45 | N | 4602564851 | Baseline | Intermediate | 69.0 J | **334** | < 10.0 U | < 10.0 UJ | -77.6 | 0.38 | 7.28 | 21.24 | 13.53 | 6.01 | -- | 11.6 | **556 J-** | < 1.0 U | 300 | **2330** | **545** | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-55-20220418 | 4/18/2022 | 55 | N | 4602564851 | Baseline | Intermediate | 30.7 J | **124** | < 10.0 U | < 10.0 UJ | 21.6 | 0.59 | 7.22 | 21.24 | 12.76 | 6.01 | -- | 11.3 | **545 J-** | < 1.0 U | 180 | **3410** | **687** | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-55-20220418-X | 4/18/2022 | 55 | FD | 4602564851 | Baseline | Intermediate | 28.0 J | **101** | < 10.0 U | < 10.0 UJ | -- | -- | -- | -- | -- | -- | -- | 11.3 | **549 J-** | < 1.0 U | 180 | **3460** | **679** | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-43-20220614 | 6/14/2022 | 43 | N | 4602600641 | Treatment | Intermediate | -- | 63.6 | -- | < 10.0 U | -27.40 | 0.07 | 7.27 | 18.79 | 17.69 | 6.43 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-48-20220614 | 6/14/2022 | 48 | N | 4602600641 | Treatment | Intermediate | -- | **105** | -- | < 10.0 U | -72.00 | 0.07 | 7.28 | 19.19 | 17.59 | 5.43 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-53-20220614 | 6/14/2022 | 53 | N | 4602600641 | Treatment | Intermediate | -- | **102** | -- | < 10.0 U | -80.1 | 0.05 | 7.30 | 19.39 | 17.56 | 7.21 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-58-20220614 | 6/14/2022 | 58 | N | 4602600641 | Treatment | Intermediate | -- | **98.4** | -- | < 10.0 U | -68.40 | 0.07 | 7.28 | 19.58 | 17.80 | 7.91 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-58-20220721 | 7/21/2022 | 58 | N | 4602623381 | Treatment | Intermediate | -- | 31.3 | -- | < 10.0 U | -120.60 | 1.64 | 6.96 | 19.40 | 21.28 | 8.81 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-48-20220822 | 8/22/2022 | 48 | N | 4602642131 | Treatment | Intermediate | -- | **362** | -- | < 10.0 U | -101.3 | 0.82 | 7.84 | 20.58 | 19.76 | 8.00 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-48-20220921 | 9/21/2022 | 48 | N | 4602659871 | Treatment | Intermediate | -- | **219** | -- | < 10.0 U | -141.7 | 0.04 | 7.7 | 18.57 | 18.39 | 5.05 | -- | 11.7 | **643** | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-48-20221018 | 10/18/2022 | 48 | N | 4602677121 | Treatment | Intermediate | -- | **81.8** | -- | < 10.0 U | -125.5 | 0.07 | 7.51 | 19.192 | 18 | 0.97 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-48-20221116 | 11/16/2022 | 48 | N | 4602696581 | Treatment | Intermediate | -- | 27.7 | -- | < 10.0 U | -141.7 | 0.6 | 7.57 | 16.49 | 16.53 | 5.29 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-48-20221213 | 12/13/2022 | 48 | N | 4602712771 | Treatment | Intermediate | -- | 15.3 | -- | < 10.0 U | -158.4 | 0.58 | 7.44 | 20.38 | 13.72 | 3.63 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-42.5-20230125 | 1/25/2023 | 42.5 | N | 4602735311 | Treatment | Intermediate | -- | 8.2 | -- | < 10.0 U | -157.7 | 5.13 | 7.31 | 21.86 | -- | 0.99 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-47.5-20230125 | 1/25/2023 | 47.5 | N | 4602735311 | Treatment | Intermediate | -- | 9.1 | -- | < 10.0 U | -137.4 | 4.79 | 7.28 | 21.84 | 12.22 | 2 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-52.5-20230125 | 1/25/2023 | 52.5 | N | 4602735311 | Treatment | Intermediate | -- | 15.1 | -- | < 10.0 U | -118.1 | 3.11 | 7.27 | 21.72 | 13.13 | 3.24 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-57.5-20230125 | 1/25/2023 | 57.5 | N | 4602735311 | Treatment | Intermediate | -- | 20.9 | -- | < 10.0 U | -118.7 | 4.35 | 7.15 | 23.09 | 13.97 | 4.43 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-42.5-20230223 | 2/23/2023 | 42.5 | N | 4602751411 | Treatment | Intermediate | -- | 5.7 | -- | < 10.0 U | -61.3 | 0.48 | 7.63 | 22.19 | 11.58 | 2.58 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-47.5-20230223 | 2/23/2023 | 47.5 | N | 4602751411 | Treatment | Intermediate | -- | 7.4 | -- | < 10.0 U | -175.3 | 0.16 | 7.66 | 22.11 | 13.24 | 2.34 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-52.5-20230223 | 2/23/2023 | 52.5 | N | 4602751411 | Treatment | Intermediate | -- | 14.9 | -- | < 10.0 U | -160.5 | 0.27 | 7.65 | 20.22 | 13.2 | 2.81 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-57.5-20230223 | 2/23/2023 | 57.5 | N | 4602751411 | Treatment | Intermediate | -- | 31.6 | -- | < 10.0 U | -151.9 | 0.25 | 7.52 | 23.17 | 13.94 | 5.82 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-47.5-20230317 | 3/17/2023 | 47.5 | N | 4602765401 | Treatment | Intermediate | -- | 7.7 | -- | < 10.0 U | -137.3 | 0.12 | 7.48 | 24.87 | 14.94 | 2 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-52.5-20230317 | 3/17/2023 | 52.5 | N | 4602765401 | Treatment | Intermediate | -- | 11.5 | -- | < 10.0 U | -131.8 | 0.22 | 7.46 | 24.89 | 14.9 | 1.69 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-57.5-20230317 | 3/17/2023 | 57.5 | N | 4602765401 | Treatment | Intermediate | -- | 29.4 | -- | < 10.0 U | -134.9 | 0.29 | 7.39 | 25.92 | 15.02 | 4.27 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-42.5-20230320 | 3/20/2023 | 42.5 | N | 4602766501 | Treatment | Intermediate | -- | 31.0 | -- | < 10.0 U | -145.1 | 0.37 | 7.42 | 20.61 | 12.42 | 5.46 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-50.5-20230421 | 4/21/2023 | 50.5 | N | 4602786851 | Treatment | Intermediate | -- | **121** | -- | < 10.0 U | -130.5 | 0.30 | 7.27 | 19.780 | 16.81 | 4.4 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-42.5-20230510 | 5/10/2023 | 42.5 | N | 4602800211 | Treatment | Intermediate | -- | 8.0 | -- | < 10.0 U | -129.2 | 0.12 | 7.37 | 20.15 | 21.23 | 0.71 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-47.5-20230510 | 5/10/2023 | 47.5 | N | 4602800211 | Treatment | Intermediate | -- | 7.6 | -- | < 10.0 U | -125.3 | 0.11 | 7.36 | 20.20 | 20.39 | 0.51 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-52.5-20230510 | 5/10/2023 | 52.5 | N | 4602800211 | Treatment | Intermediate | -- | 16.1 | -- | < 10.0 U | -120.3 | 0.20 | 7.35 | 20.21 | 19.01 | 2.99 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-57.5-20230510 | 5/10/2023 | 57.5 | N | 4602800211 | Treatment | Intermediate | -- | 21.8 | -- | < 10.0 U | -113.3 | 0.16 | 7.26 | 21.45 | 17 | 4.62 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-57.5-20230622 | 6/22/2023 | 57.5 | N | 4602828851 | Treatment | Intermediate | -- | 42.3 | -- | < 10.0 U | -7.3 | 5.29 | 7.36 | 18.99 | 17.1 | 4.54 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-42.5-20230720 | 7/20/2023 | 42.5 | N | 4602846391 | Treatment | Intermediate | -- | 9.1 | -- | < 10.0 U | -160.5 | 0.9 | 7.66 | 19.76 | 24.8 | 2.82 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-47.5-20230720 | 7/20/2023 | 47.5 | N | 4602846391 | Treatment | Intermediate | -- | 12.1 | -- | < 10.0 U | -148.8 | 0.95 | 7.67 | 19.98 | 25 | 3.66 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-52.5-20230720 | 7/20/2023 | 52.5 | N | 4602846391 | Treatment | Intermediate | -- | 22.3 | -- | **74.4** | -138.6 | 0.81 | 7.67 | 18.86 | 22.44 | 7.57 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-57.5-20230720 | 7/20/2023 | 57.5 | N | 4602846391 | Treatment | Intermediate | 3.2 J | **105** | < 10.0 U | < 10.0 U | -115.3 | 0.79 | 7.61 | 18.86 | 21.09 | 16.5 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-57.5-20230824 | 8/24/2023 | 57.5 | N | 4602868441 | Treatment | Intermediate | -- | 31.4 | -- | < 10.0 U | -110.4 | 0.2 | 7.57 | 21.08 | 19.71 | 3.5 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-57.5-20230919 | 9/19/2023 | 57.5 | N | 4602885251 | Treatment | Intermediate | -- | 12.2 | -- | < 10.0 U | -144.2 | 0.65 | 7.38 | 22.8 | 19.6 | 2.55 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-57.5-20231012 | 10/12/2023 | 57.5 | N | 4602902281 | Treatment | Intermediate | -- | 16.2 | -- | < 10.0 U | -14.2 | 0.56 | 6.43 | 23.75 | 20.15 | 3.44 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-57.5-20231116 | 11/16/2023 | 57.5 | N | JD77164 | Treatment | Intermediate | -- | 17.2 | -- | 2.9 B | -124.3 | 0.19 | 7.63 | 24.52 | 17.2 | 4.89 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-57.5-20231222 | 12/22/2023 | 57.5 | N | JD79442 | Treatment | Intermediate | -- | 15.8 | -- | < 10 U | -156.3 | 0.13 | 7.35 | 25.23 | 12.1 | 2.71 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-57.5-20240123 | 1/23/2024 | 57.5 | N | JD81013 | Treatment | Intermediate | -- | 21.4 | -- | 7.7 B | -118.7 | 0.23 | 7.34 | 27.08 | 12.6 | 9.46 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-57.5-20240221 | 2/21/2024 | 57.5 | N | JD82924 | Treatment | Intermediate | -- | 17.7 | -- | 3.2 B | 18.2 | 0.61 | 7.2 | 24.17 | 8.8 | 5.1 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-57.5-20240320 | 3/20/2024 | 57.5 | N | JD84851 | Treatment | Intermediate | -- | 7.8 B | -- | < 10 U | -129.3 | 0.21 | 7.4 | 26.34 | 14.5 | 0.95 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-57.5-20240415 | 4/15/2024 | 57.5 | N | JD86534 | Treatment | Intermediate | -- | 7.7 B | -- | 15 | -126.5 | 0.75 | 7.26 | 22.31 | 17.1 | 2.25 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-57.5-20240711 | 7/11/2024 | 57.5 | N | JD92004 | Treatment | Intermediate | -- | 14.7 | -- | 11 | -136.6 | 0.1 | 7.25 | 25.75 | 21.7 | 8.74 | -- | 13.5 | **911** | -- | -- | -- | -- | -- |
| EW-P3-MW001I-B | EW-P3-MW001I-B-57.5-20241007 | 10/7/2024 | 57.5 | N | JD97612 | Treatment | Intermediate | -- | 9.9 B | -- | 7.2 B | -138.7 | 0.2 | 7.31 | 25.66 | 18.2 | 2.76 | -- | 13.5 | **855** | -- | -- | -- | -- | -- |
| EW-P3-MW002I | EW-P3-MW002I-24-20220418 | 4/18/2022 | 24 | N | 4602564851 | Baseline | Intermediate | 2.6 J | 3.5 J | < 10.0 U | < 10.0 UJ | -94.3 | 0.54 | 7.36 | 6.07 | 15.63 | 9.15 | -- | 13.1 | **513 J-** | < 1.0 U | 190 | **3580** | **236** | -- |
| EW-P3-MW002I | EW-P3-MW002I-38-20220418 | 4/18/2022 | 38 | N | 4602564851 | Baseline | Intermediate | 4.4 J | < 4.0 U | < 10.0 U | < 10.0 UJ | -95.8 | 0.40 | 7.12 | 24.17 | 15.10 | 1.66 | -- | 14.3 | **648 J-** | < 1.0 U | 41 | **16400** | **656** | -- |
| EW-P3-MW002I | EW-P3-MW002I-23-20220614 | 6/14/2022 | 23 | N | 4602600641 | Treatment | Intermediate | -- | 5.1 | -- | < 10.0 U | -123.90 | 0.07 | 7.33 | 21.93 | 18.66 | 2.50 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW002I | EW-P3-MW002I-28-20220614 | 6/14/2022 | 28 | N | 4602600641 | Treatment | Intermediate | -- | 2.6 J | -- | < 10.0 U | -121.40 | 0.07 | 7.39 | 19.48 | 18.09 | 4.08 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW002I | EW-P3-MW002I-33-20220614 | 6/14/2022 | 33 | N | 4602600641 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -105.40 | 0.08 | 7.34 | 25.03 | 17.42 | 7.74 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW002I | EW-P3-MW002I-38-20220614 | 6/14/2022 | 38 | N | 4602600641 | Treatment | Intermediate | -- | 2.9 J | -- | < 10.0 U | -90.70 | 0.16 | 7.24 | 26.18 | 16.74 | 8.20 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW002I | EW-P3-MW002I-38-20220721 | 7/21/2022 | 38 | N | 4602623381 | Treatment | Intermediate | -- | 4.2 | -- | < 10.0 U | -110.90 | 7.48 | 7.14 | 21.47 | 19.73 | 4.11 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW002I | EW-P3-MW002I-28-20220822 | 8/22/2022 | 28 | N | 4602642131 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -112.5 | 0.41 | 7.36 | 22.56 | 18.98 | 3.67 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW002I | EW-P3-MW002I-28-20220921 | 9/21/2022 | 28 | N | 4602659871 | Treatment | Intermediate | -- | **2070** | -- | < 10.0 U | 47.6 | 0.5 | 7.04 | 22.84 | 19 | 2.71 | -- | 12.4 | **585** | -- | -- | -- | -- | -- |
| EW-P3-MW002I | EW-P3-MW002I-28-20221018 | 10/18/2022 | 28 | N | 4602677121 | Treatment | Intermediate | -- | 2.6 J | -- | < 10.0 U | -177 | 0.64 | 7.37 | 22.695 | 18.72 | 6.5 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW002I | EW-P3-MW002I-28-20221116 | 11/16/2022 | 28 | N | 4602696581 | Treatment | Intermediate | -- | 4.9 | -- | < 10.0 U | -110.2 | 0.33 | 7.32 | 24.83 | 14.36 | 3.59 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW002I | EW-P3-MW002I-28-20221213 | 12/13/2022 | 28 | N | 4602712771 | Treatment | Intermediate | -- | 10.8 | -- | < 10.0 U | -147.6 | 0.31 | 7.16 | 22.63 | 13.63 | 1.05 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW002I | EW-P3-MW002I-21.5-20230125 | 1/25/2023 | 21.5 | N | 4602735311 | Treatment | Intermediate | -- | 9.5 | -- | < 10.0 U | -351.5 | 0.10 | 7.20 | 19.42 | 10.49 | 9.18 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW002I | EW-P3-MW002I-26.5-20230125 | 1/25/2023 | 26.5 | N | 4602735311 | Treatment | Intermediate | -- | 6.4 | -- | < 10.0 U | -357 | 0.1 | 7.22 | 19.45 | 11.72 | 7.78 | -- | -- | -- | -- | -- | -- | -- | -

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| EW-P3-MW002I | EW-P3-MW002I-31.5-20230223 | 2/23/2023 | 31.5 | N | 4602751411 | Treatment | Intermediate | -- | 4.3 | -- | < 10.0 U | -101.9 | 9.88 | 7.82 | 18.85 | 12.27 | 2.02 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW002I | EW-P3-MW002I-36.5-20230223 | 2/23/2023 | 36.5 | N | 4602751411 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -100.2 | 4.85 | 7.60 | 23.96 | 13.25 | 1.35 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW002I | EW-P3-MW002I-36.5-20230317 | 3/17/2023 | 36.5 | N | 4602765401 | Treatment | Intermediate | -- | 2.7 J | -- | < 10.0 U | -123.9 | 0.23 | 7.24 | 27.07 | 15.35 | 2.66 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW002I | EW-P3-MW002I-36.5-20230421 | 4/21/2023 | 36.5 | N | 4602786851 | Treatment | Intermediate | -- | 5.3 | -- | < 10.0 U | -127.5 | 0.71 | 7.17 | 23.12 | 16.51 | 8.31 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW002I | EW-P3-MW002I-31.5-20230510 | 5/10/2023 | 31.5 | N | 4602800211 | Treatment | Intermediate | -- | 5.1 | -- | < 10.0 U | -132.5 | 16.00 | 7.49 | 2.4 | 22.6 | 3.56 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW002I | EW-P3-MW002I-36.5-20230510 | 5/10/2023 | 36.5 | N | 4602800211 | Treatment | Intermediate | -- | 4.0 | -- | < 10.0 U | -125.7 | 18 | 7.42 | 2.28 | 18.5 | 5.46 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW002I | EW-P3-MW002I-21.5-20230511 | 5/11/2023 | 21.5 | N | 4602801171 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -120.0 | 1.04 | 7.24 | 18.97 | 23.4 | 5.25 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW002I | EW-P3-MW002I-26.5-20230511 | 5/11/2023 | 26.5 | N | 4602801171 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -115.5 | 1.37 | 7.21 | 21.15 | 21.1 | 4.62 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW002I | EW-P3-MW002I-36.5-20230622 | 6/22/2023 | 36.5 | N | 4602828851 | Treatment | Intermediate | -- | 2.6 J | -- | < 10.0 U | -113.1 | 0.43 | 7.21 | 23.27 | 17.52 | 4.12 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW002I | EW-P3-MW002I-36.5-20230721 | 7/21/2023 | 36.5 | N | 4602847281 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -104.6 | 1.12 | 6.95 | 22.79 | 18.86 | 3.18 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW002I | EW-P3-MW002I-36.5-20230824 | 8/24/2023 | 36.5 | N | 4602868441 | Treatment | Intermediate | -- | 4.2 | -- | < 10.0 U | -88.3 | 1.87 | 7.39 | 23.08 | 19.41 | 3.3 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW002I | EW-P3-MW002I-36.5-20230919 | 9/19/2023 | 36.5 | N | 4602885251 | Treatment | Intermediate | -- | 2.8 J | -- | < 10.0 U | -113.3 | 0.13 | 7.26 | 24.619 | 19.3 | 0.96 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW002I | EW-P3-MW002I-36.5-20231012 | 10/12/2023 | 36.5 | N | 4602902281 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -121.2 | 0.44 | 7.17 | 24.26 | 18.97 | 1.93 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW002I | EW-P3-MW002I-36.5-20231116 | 11/16/2023 | 36.5 | N | JD77164 | Treatment | Intermediate | -- | 1.6 B | -- | 2.9 B | -163.8 | 0.31 | 7.17 | 24.79 | 17.5 | 4.1 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW002I | EW-P3-MW002I-36.5-20231222 | 12/22/2023 | 36.5 | N | JD79442 | Treatment | Intermediate | -- | 4.5 B | -- | < 10 U | -124.7 | 4.88 | 7.22 | 22.78 | 13 | 6.5 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW002I | EW-P3-MW002I-36.5-20240123 | 1/23/2024 | 36.5 | N | JD81013 | Treatment | Intermediate | -- | < 10 U | -- | 8.8 B | -72.4 | 0.13 | 7.23 | 28.69 | 14 | 3.61 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW002I | EW-P3-MW002I-36.5-20240221 | 2/21/2024 | 36.5 | N | JD82924 | Treatment | Intermediate | -- | < 10 U | -- | 6.7 B | -127.6 | 0.25 | 7.08 | 24.68 | 12.4 | 9.23 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW002I | EW-P3-MW002I-36.5-20240320 | 3/20/2024 | 36.5 | N | JD84851 | Treatment | Intermediate | -- | < 10 U | -- | < 10 U | -314.7 | 0.08 | 7.28 | 24.02 | 13.8 | 8.17 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW002I | EW-P3-MW002I-36.5-20240415 | 4/15/2024 | 36.5 | N | JD86534 | Treatment | Intermediate | -- | < 10 U | -- | 44 | -168.3 | 0.13 | 7.26 | 25.41 | 17.8 | 3.64 | -- | -- | -- | -- | -- | -- | -- | -- |
| EW-P3-MW002I | EW-P3-MW002I-36.5-20240711 | 7/11/2024 | 36.5 | N | JD92004 | Treatment | Intermediate | -- | < 10 U | -- | 23 | -109.5 | 0.48 | 7.16 | 23.9 | 23.1 | 6.43 | -- | 15.1 | **913** | -- | -- | -- | -- | -- |
| EW-P3-MW002I | EW-P3-MW002I-36.5-20241007 | 10/7/2024 | 36.5 | N | JD97612 | Treatment | Intermediate | -- | < 10 U | -- | 25 | -154.1 | 0.19 | 7.27 | 24.4 | 20 | 1.22 | -- | 14.3 | **869** | -- | -- | -- | -- | -- |
| EW-P3-MW002I | EW-P3-MW002I-36.5-20241007-X | 10/7/2024 | 36.5 | FD | JD97612 | Treatment | Intermediate | -- | < 10 U | -- | 13 | -- | -- | -- | -- | -- | -- | -- | 14.4 | **836** | -- | -- | -- | -- | -- |
| FS-P3-MW001I | FS-P3-MW001I-23.0-20210914 | 9/14/2021 | 23 | N | 4602427561 | Baseline | Intermediate | **1210** | **1300** | **1170** | **1160** | 76.20 | 2.62 | 7.11 | 2.60 | 17.82 | 8.15 | -- | 2.5 | **825** | < 1.0 U | 100 | < 120 U | **2660** | -- |
| FS-P3-MW001I | FS-P3-MW001I-23-20220225 | 2/25/2022 | 23 | N | 4602532391 | Baseline | Intermediate | **919** | **946** | **883** | **872** | 202.60 | 0.70 | 7.05 | 2.01 | 12.30 | 8.21 | -- | -- | -- | -- | -- | -- | -- | -- |
| FS-P3-MW001I | FS-P3-MW001I-23-20220427 | 4/27/2022 | 23 | N | 4602570871 | Treatment | Intermediate | **833** | **971** | **898** | **875** | 203.8 | 0.73 | 6.81 | 2.259 | 13.34 | 4.06 | -- | 2.6 | **675** | -- | 290 | -- | -- | -- |
| FS-P3-MW001I | FS-P3-MW001I-23-20220519 | 5/19/2022 | 23 | N | 4602584291 | Treatment | Intermediate | -- | **1190** | -- | **935** | 72.2 | 1.13 | 6.97 | 2.605 | 14.04 | 8.53 | -- | 2.8 | **581** | -- | -- | -- | -- | -- |
| FS-P3-MW001I | FS-P3-MW001I-23-20220613 | 6/13/2022 | 23 | N | 4602600101 | Treatment | Intermediate | -- | **954** | -- | **862** | 160.80 | 0.31 | 7.02 | 2.329 | 18.03 | 3.31 | -- | 3.0 | **641** | -- | -- | -- | -- | -- |
| FS-P3-MW001I | FS-P3-MW001I-23-20220719 | 7/19/2022 | 23 | N | 4602621891 | Treatment | Intermediate | -- | **974** | -- | **804** | 120.50 | 5.26 | 6.89 | 2.38 | 17.95 | 3.14 | -- | 3.7 | **588** | -- | -- | -- | -- | -- |
| FS-P3-MW001I | FS-P3-MW001I-23-20220822 | 8/22/2022 | 23 | N | 4602642131 | Treatment | Intermediate | -- | **813** | -- | **681** | -12.8 | 3.40 | 6.75 | 2.268 | 20.20 | 4.10 | -- | 4.0 | **646** | -- | -- | -- | -- | -- |
| FS-P3-MW001I | FS-P3-MW001I-15.5-20220829 | 8/29/2022 | 15.5 | N | 4602645761 | N/A | Intermediate | -- | **975** | -- | **915** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FS-P3-MW001I | FS-P3-MW001I-30.5-20220829 | 8/29/2022 | 30.5 | N | 4602645761 | N/A | Intermediate | **938** | **1030** | **871** | **871** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FS-P3-MW001I | FS-P3-MW001I-23-20220922 | 9/22/2022 | 23 | N | 4602660731 | Treatment | Intermediate | -- | **1020** | -- | **920** | 67.5 | 0.45 | 6.85 | 2.613 | 19.78 | 2.65 | -- | 3.6 | **577** | -- | -- | -- | -- | -- |
| FS-P3-MW001I | FS-P3-MW001I-23-20221018 | 10/18/2022 | 23 | N | 4602677121 | Treatment | Intermediate | -- | **958** | -- | **778** | 139.9 | 2.85 | 6.81 | 1.92 | 17.19 | 7.7 | -- | 3.8 | **599** | -- | -- | -- | -- | -- |
| FS-P3-MW001I | FS-P3-MW001I-23-20221115 | 11/15/2022 | 23 | N | 4602695881 | Treatment | Intermediate | -- | **608** | -- | **528** | 91.2 | 0.37 | 6.89 | 1.914 | 15.99 | 3.85 | -- | 4.1 | **457** | -- | -- | -- | -- | -- |
| FS-P3-MW001I | FS-P3-MW001I-23-20221220 | 12/20/2022 | 23 | N | 4602718081 | Treatment | Intermediate | -- | **704** | -- | **589** | 77.3 | 2.81 | 6.81 | 2.176 | 14.68 | 3.63 | -- | 4.1 | **603** | -- | -- | -- | -- | -- |
| FS-P3-MW001I | FS-P3-MW001I-23-20230126 | 1/26/2023 | 23 | N | 4602735991 | Treatment | Intermediate | -- | **1200** | -- | **975** | 116.0 | 3.46 | 6.95 | 2.383 | 12.03 | 6.78 | -- | 3.4 | **592** | -- | -- | -- | -- | -- |
| FS-P3-MW001I | FS-P3-MW001I-23.0-20230227 | 2/27/2023 | 23 | N | 4602753411 | Treatment | Intermediate | -- | **1640** | -- | **1420** | 5.9 | 2.29 | 6.2 | 2.13 | 13.6 | 2.95 | -- | 4.1 | **608** | -- | -- | -- | -- | -- |
| FS-P3-MW001I | FS-P3-MW001I-23.0-20230323 | 3/23/2023 | 23 | N | 4602768691 | Treatment | Intermediate | -- | **1660** | -- | **1440** | 39.5 | 0.09 | 6.83 | 1.995 | 13.35 | 6.56 | -- | 4.7 | **583** | -- | -- | -- | -- | -- |
| FS-P3-MW001I | FS-P3-MW001I-23-20230420 | 4/20/2023 | 23 | N | 4602786061 | Treatment | Intermediate | -- | **1480** | -- | **1170** | 46.6 | 1.51 | 6.86 | 1.658 | 13.93 | 4.62 | -- | 5.3 | **537** | -- | -- | -- | -- | -- |
| FS-P3-MW001I | FS-P3-MW001I-23-20230516 | 5/16/2023 | 23 | N | 4602803921 | Treatment | Intermediate | -- | **104** | -- | 37.9 | -142.1 | 0.33 | 6.92 | 1.582 | 16.6 | 4.56 | -- | 6.2 | 224 | -- | -- | -- | -- | -- |
| FS-P3-MW001I | FS-P3-MW001I-23.0-20230619 | 6/19/2023 | 23 | N | 4602826571 | Treatment | Intermediate | -- | **129** | -- | 48.2 | 19.5 | 1.1 | 6.87 | 1.791 | 19.98 | 1.54 | -- | 5.4 | **277** | -- | -- | -- | -- | -- |
| FS-P3-MW001I | FS-P3-MW001I-16.0-20230713 | 7/13/2023 | 16 | N | 4602841571 | Post-Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -108.1 | 1.47 | 7.88 | 1.243 | 22.71 | 3.72 | -- | 1.1 | 121 | < 1 U | -- | -- | -- | -- |
| FS-P3-MW001I | FS-P3-MW001I-21.0-20230713 | 7/13/2023 | 21 | N | 4602841571 | Post-Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -86.8 | 1.5 | 7.88 | 1.227 | 21.76 | 4.12 | -- | 0.76 J | 118 | < 1 U | -- | -- | -- | -- |
| FS-P3-MW001I | FS-P3-MW001I-26.0-20230713 | 7/13/2023 | 26 | N | 4602841571 | Post-Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -65.1 | 1.67 | 7.89 | 1.334 | 20.25 | 5.07 | -- | 0.92 J | 123 | < 1 U | -- | -- | -- | -- |
| FS-P3-MW001I | FS-P3-MW001I-31.0-20230713 | 7/13/2023 | 31 | N | 4602841571 | Post-Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -82.4 | 2 | 8.2 | 2.176 | 18.89 | 5.2 | -- | 1.3 | 101 | < 1 U | -- | -- | -- | -- |
| FS-P3-MW001I | FS-P3-MW001I-31.0-20231012 | 10/12/2023 | 31 | N | 4602902271 | Treatment | Intermediate | -- | **1530** | -- | **1350** | 65.1 | 2.52 | 7.19 | 0.754 | 17.97 | 4.98 | -- | 2.3 | 171 | -- | -- | -- | -- | -- |
| FS-P3-MW001I | FS-P3-MW001I-31.0-20231012-X | 10/12/2023 | 31 | FD | 4602902271 | Treatment | Intermediate | -- | **1620** | -- | **1620** | -- | -- | -- | -- | -- | -- | -- | 2.4 | 178 | -- | -- | -- | -- | -- |
| FS-P3-MW001I | FS-P3-MW001I-31.0-20240124 | 1/24/2024 | 31 | N | JD81089 | Post-Treatment | Intermediate | -- | 14.8 | -- | < 10 U | -21.9 | 0.96 | 6.97 | 0.594 | 12 | 5.7 | -- | 2.3 | 58.1 | -- | -- | -- | -- | -- |
| FS-P3-MW001I | FS-P3-MW001I-31.0-20240416 | 4/16/2024 | 31 | N | JD86606 | Post-Treatment | Intermediate | -- | 19.2 | -- | 16 | 46 | 4.22 | 7.38 | 0.179 | 13.8 | 2.24 | -- | < 1.0 U | 14.4 | -- | -- | -- | -- | -- |
| FS-P3-MW001I | FS-P3-MW001I-31.0-20240725 | 7/25/2024 | 31 | N | JD92814 | Post-Treatment | Intermediate | -- | 29.8 | -- | < 10 U | 0.4 | 0.25 | 6.93 | 2.516 | 20 | 2.33 | -- | 9.5 | 147 | -- | -- | -- | -- | -- |
| FS-P3-MW001I | FS-P3-MW001I-31.0-20241009 | 10/9/2024 | 31 | N | JD97776 | Post-Treatment | Intermediate | -- | 23.7 | -- | < 10 UJ | -85.6 | 6.93 | 6.96 | 2.25 | 18.3 | 1.14 | -- | 8.5 | 198 | -- | -- | -- | -- | -- |
| FS-P3-MW002I | FS-P3-MW002I-23-20210916 | 9/16/2021 | 23 | N | 4602429471 | Baseline | Intermediate | **6210** | **5690** | **6080** | **6510** | 46.30 | 1.89 | 6.43 | 1.82 | 17.72 | 10.10 | -- | 2.4 JB | **664** | < 1.0 U | 230 | 236 J | **1050** | -- |
| FS-P3-MW002I | FS-P3-MW002I-23-20220301 | 3/1/2022 | 23 | N | 4602534221 | Baseline | Intermediate | **4260** | **4620** | **181** | **4550** | 161.20 | 9999.00 | 7.04 | 2.08 | 11.88 | 3.41 | -- | -- | -- | -- | -- | -- | -- | -- |
| FS-P3-MW002I | FS-P3-MW002I-23-20220427 | 4/27/2022 | 23 | N | 4602570871 | Treatment | Intermediate | **315** | **366** | < 10.0 U | < 10.0 U | -14.4 | 0.23 | 6.44 | 3.902 | 14.04 | 5.59 | -- | 949 | **510** | -- | 190 | -- | -- | -- |
| FS-P3-MW002I | FS-P3-MW002I-23-20220519 | 5/19/2022 | 23 | N | 4602584291 | Treatment | Intermediate | -- | **1660** | -- | < 10.0 U | -61.1 | 0.26 | 6.01 | 3.422 | 15.06 | 9.06 | -- | 2230 | 170 | -- | -- | -- | -- | -- |
| FS-P3-MW002I | FS-P3-MW002I-23-20220614 | 6/14/2022 | 23 | N | 4602600641 | Treatment | Intermediate | -- | **1500** | -- | < 10.0 U | -91.9 | 2.81 | 5.49 | 2.628 | 19.13 | 7.0 | -- | 1690 | 196 | -- | -- | -- | -- | -- |
| FS-P3-MW002I | FS-P3-MW002I-23-20220719 | 7/19/2022 | 23 | N | 4602621891 | Treatment | Intermediate | -- | **3250** | -- | **< 100 U** | 10.7 | 1.49 | 5.03 | 3.761 | 18.49 | 7.88 | -- | 1890 | 131 | -- | -- | -- | -- | -- |
| FS-P3-MW002I | FS-P3-MW002I-23-20220719-X | 7/19/2022 | 23 | FD | 4602621891 | Treatment | Intermediate | -- | **3070** | -- | **< 100 U** | -- | -- | -- | -- | -- | -- | -- | 1990 | 128 | -- | -- | -- | -- | -- |
| FS-P3-MW002I | FS-P3-MW002I-23-20220822 | 8/22/2022 | 23 | N | 4602642131 | Treatment | Intermediate | -- | **4750** | -- | < 10.0 U | -89.7 | 0.22 | 4.98 | 3.488 | 11.39 | 7.21 | -- | 2260 | **390** | -- | -- | -- | -- | -- |
| FS-P3-MW002I | FS-P3-MW002I-23-20220923 | 9/23/2022 | 23 | N | 4602661551 | Treatment | Intermediate | -- | **7570** | -- | < 20.0 U | 252.9 | 1.35 | 4.06 | 2.687 | 18.23 | 7.6 | -- | 2580 | 112 | -- | -- | -- | -- | -- |
| FS-P3-MW002I | FS-P3-MW002I-23-20221018 | 10/18/2022 | 23 | N | 4602677121 | Treatment | Intermediate | -- | **10700** | -- | **< 100 U** | 114.6 | 6.98 | 4.37 | 3.141 | 18.51 | 5.67 | -- | 2680 | 216 | -- | -- | -- | -- | -- |
| FS-P3-MW002I | FS-P3-MW002I-23-20221115 | 11/15/2022 | 23 | N | 4602695881 | Treatment | Intermediate | -- | **3880** | -- | < 20.0 U | 12.9 | 0.58 | 4.51 | 1.903 | 17.13 | 9.1 | -- | 3040 | **567** | -- | -- | -- | -- | -- |
| FS-P3-MW002I | FS-P3-MW002I-23-20221220 | 12/20/2022 | 23 | N | 4602718081 | Treatment | Intermediate | -- | **5980** | -- | **< 100 U** | 84.4 | 10.09 | 4.4 | 1.806 | 10.82 | 7.67 | -- | 2560 | **293** | -- | -- | -- | -- | -- |
| FS-P3-MW002I | FS-P3-MW002I-23-20221220-X | 12/20/2022 | 23 | FD | 4602718081 | Treatment | Intermediate | -- | **5680** | -- | **< 100 U** | -- | -- | -- | -- | -- | -- | -- | 2920 | **319** | -- | -- | -- | -- | -- |
| FS-P3-MW002I | FS-P3-MW002I-23-20230126 | 1/26/2023 | 23 | N | 4602735991 | Treatment | Intermediate | -- | 7.4 | -- | < 10.0 U | 23.1 | 9.83 | 7.09 | 0.515 | 8.41 | 3.05 | -- | 3.1 | 160 | -- | -- | -- | -- | -- |
| FS-P3-MW002I | FS-P3-MW002I-23-20230227 | 2/27/2023 | 23 | N | 4602753411 | Treatment | Intermediate | **5810** | **5680** | **< 100 U** | **< 100 U** | -69.0 | 10.22 | 3.65 | 2.14 | 13.4 | 23.6 | -- | 2020 | **261** | -- | -- | -- | -- | -- |
| FS-P3-MW002I | FS-P3-MW002I-23-20230323 | 3/23/2023 | 23 | N | 4602768691 | Treatment | Intermediate | -- | **3020** | -- | < 20.0 U | 25.3 | 3.79 | 4.11 | 1.864 | 13.78 | 9.72 | -- | 1900 | **268** | -- | -- | -- | -- | -- |
| FS-P3-MW002I | FS-P3-MW002I-23-20230420 | 4/20/2023 | 23 | N | 4602786061 | Treatment | Intermediate | -- | **5440** | -- | < 50.0 U | -21.9 | 20.04 | 4.6 | 2.674 | 14.97 | 9.75 | -- | 3010 | **737** | -- | -- | -- | -- | -- |
| FS-P3-MW002I | FS-P3-MW002I-23-20230516 | 5/16/2023 | 23 | N | 4602803921 | Treatment | Intermediate | -- | **6530** | -- | < 20.0 U | 95.1 | 0.33 | 4.48 | 2.781 | 16.14 | 8.91 | -- | 2520 | **865** | -- | -- | -- | -- | -- |
| FS-P3-MW002I | FS-P3-MW002I-23-20230619 | 6/19/2023 | 23 | N | 4602826571 | Treatment | Intermediate | -- | **5370** | -- | < 50.0 U | -16.3 | 1.84 | 4.87 | 2.358 | 19.6 | 9.72 | -- | 2410 | **430** | -- | -- | -- | -- | -- |
| FS-P3-MW002I | FS-P3-MW002I-23-20230619-X | 6/19/2023 | 23 | FD | 4602826571 | Treatment | Intermediate | -- | **5290** | -- | < 50.0 U | -- | -- | -- | -- | -- | -- | -- | 2250 | **468** | -- | -- | -- | -- | -- |
| FS-P3-MW002I | FS-P3-MW002I-16.0-20230717 | 7/17/2023 | 16 | N | 4602844071 | Post-Treatment | Intermediate | **3150** | **2870** | < 20.0 U | < 20.0 U | 80.4 | 0.23 | 4.73 | 2134 | 22.29 | 26.2 | -- | 949 | 21.9 | < 1 U | -- | **162000** | **33100** | -- |
| FS-P3-MW002I | FS-P3-MW002I-21.0-20230717 | 7/17/2023 | 21 | N | 4602844071 | Post-Treatment | Intermediate | **2990** | **3020** | < 10.0 U | < 20.0 U | 131.9 | 0.18 | 4.8 | 2146 | 24.85 | 29.4 | -- | 933 | 20.1 | < 1 U | -- | **161000** | **33400** | -- |
| FS-P3-MW002I | FS-P3-MW002I-26.0-20230719 | 7/19/2023 | 26 | N | 4602845431 | Post-Treatment | Intermediate | **3160** | **3170** | < 10.0 U | < 20.0 U | 22.4 | 0.19 | 5.2 | 1.778 | 18.98 | 25.9 | -- | 943 | 47.1 | < 1 U | -- | **159000** | **34500** | -- |
| FS-P3-MW002I | FS-P3-MW002I-31.0-20230719 | 7/19/2023 | 31 | N | 4602845431 | Post-Treatment | Intermediate | **3020** | **3110** | < 10.0 U | < 20.0 U | 17.5 | 0.14 | 5.27 | 1.775 | 19.62 | 32.1 | -- | 936 | 47.8 | < 1 U | -- | **162000** | **34600** | -- |
| FS-P3-MW002I | FS-P3-MW002I-31-20231016 | 10/16/2023 | 31 | N | 4602904751 | Post-Treatment | Intermediate | -- | **199** | -- | < 10.0 U | -28.2 | 0.07 | 6.44 | 0.232 | 19.2 | 9.63 | -- | 23.4 | 16.3 | -- | -- | -- | -- | -- |
| FS-P3-MW002I | FS-P3-MW002I-31.0-20240221 | 2/21/2024 | 31 | N | JD82911 | Post-Treatment | Intermediate | -- | **335** | -- | < 10 RA | -84.5 | 0.27 | 6.16 | 1.152 | 12.7 | 8.89 | -- | 51.5 | 35.1 J | -- | -- | -- | -- | -- |
| FS-P3-MW002I | FS-P3-MW002I-31.0-20240725 | 7/25/2024 | 31 | N | JD92814 | Post-Treatment | Intermediate | -- | **166** | -- | < 10 U | -84.1 | 1.2 | 6.32 | 1.969 | 21.1 | 6.42 | -- | 40.2 | 84.4 | -- | -- | -- | -- | -- |
| FS-P3-MW002I | FS-P3-MW002I-31.0-20241009 | 10/9/2024 | 31 | N | JD97776 | Post-Treatment | Intermediate | -- | **166** | -- | **100 J-** | -122.5 | 0.18 | 6.24 | 1.87 | 19.1 | 4.4 | -- | 49.4 | 66.6 | -- | -- | -- | -- | -- |
| FS-P3-MW003I | FS-P3-MW003I-20.0-20210916 | 9/16/2021 | 20 | N | 4602429471 | Baseline | Intermediate | **379 J** | **604** | **537 J** | **531** | 123.30 | 6.66 | 7.88 | 1.29 | 18.70 | 8.50 | -- | 2.1 JB | **267** | < 1.0 U | 83 | < 120 U | **549** | -- |
| FS-P3-MW003I | FS-P3-MW003I-20-20220301 | 3/1/2022 | 20 | N | 4602534221 | Baseline | Intermediate | **8320** | **10400** | **9680** | **9240** | 125.90 | 14.92 | 7.94 | 1.62 | 13.97 | 8.18 | -- | -- | -- | -- | -- | -- | -- | -- |
| FS-P3-MW003I | FS-P3-MW003I-20-20220322 | 3/22/2022 | 20 | N | 4602547911 | Treatment | Intermediate | **10100** | **8560** | **10100 F1** | **8850 F1** | 208.30 | 0.49 | 7.78 | 1.62 | 14.10 | 3.61 | -- | 2.6 | **295 F1** | -- | 120 | -- | -- | -- |
| FS-P3-MW003I | FS-P3-MW003I-20-20220427 | 4/27/2022 | 20 | N | 4602570871 | Treatment | Intermediate | **6430** | **7130** | **6790** | **7250** | 117.3 | 0.06 | 7.83 | 1.415 | 14.9 | 7.54 | -- | 1.8 | **336** | -- | 110 | -- | -- | -- |
| FS-P3-MW003I | FS-P3-MW003I-20-20220519 | 5/19/2022 | 20 | N | 4602584291 | Treatment | Intermediate | -- | **4310** | -- | **4560** | -60.3 | 0.23 | 6.01 | 3.390 | 15.09 | 8.57 | -- | 7.5 | 229 | -- | -- | -- | -- | -- |
| FS-P3-MW003I | FS-P3-MW003I-20-20220613 | 6/13/2022 | 20 | N | 4602600101 | Treatment | Intermediate | -- | **2850** | -- | **2550** | 203.00 | 0.003 | 7.5 | 1.313 | 17.35 | 1.88 | -- | 1.8 | **307** | -- | -- | -- | -- | -- |
| FS-P3-MW003I | FS-P3-MW003I-20-20220719 | 7/19/2022 | 20 | N | 4602621891 | Treatment | Intermediate | -- | **5300** | -- | **4830** | 129.80 | 0.56 | 7.67 | 1.418 | 19.2 | 3.21 | -- | 3.1 | **304** | -- | -- | -- | -- | -- |
| FS-P3-MW003I | FS-P3-MW003I-20-20220822 | 8/22/2022 | 20 | N | 4602642131 | Treatment | Intermediate | -- | **823** | -- | **725** | 46.7 | 0.26 | 7.66 | 1.609 | 17.95 | 6.62 | -- | 10.5 | **253** | -- | -- | -- | -- | -- |
| FS-P3-MW003I | FS-P3-MW003I-20-20220922 | 9/22/2022 | 20 | N | 4602660731 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | 235.7 | 0.76 | 7.55 | 0.83 | 20.15 | 7.01 | -- | 43.5 | 106 | -- | -- | -- | -- | -- |
| FS-P3-MW003I | FS-P3-MW003I-20-20221018 | 10/18/2022 | 20 | N | 4602677121 | Treatment | Intermediate | -- | 18.0 | -- | < 10.0 U | -18.2 | 7.17 | 7.52 | 0.334 | 17.19 | 3.82 | -- | 27.8 | 28.7 | -- | -- | -- | -- | -- |
| FS-P3-MW003I | FS-P3-MW003I-20-20221115 | 11/15/2022 | 20 | N | 4602695881 | Treatment | Intermediate | -- | 31.8 | -- | < 10.0 U | -107.4 | 0.42 | 6.82 | 0.925 | 16.34 | 9.02 | -- | 183 | 51.0 | -- | -- | -- | -- | -- |
| FS-P3-MW003I | FS-P3-MW003I-20-20221220 | 12/20/2022 | 20 | N | 4602718081 | Treatment | Intermediate | 44.6 | 51.2 | < 10.0 U | < 10.0 U | -102.4 | 1.75 | 6.81 | 1.142 | 13.44 | 10.8 | -- | 149 | 1.40 J | -- | -- | -- | -- | -- |
| FS-P3-MW003I | FS-P3-MW003I-20-20230126 | 1/26/2023 | 20 | N | 4602735991 | Treatment | Intermediate | -- | 14.2 | -- | < 10.0 U | 27.0 | 6.26 | 6.66 | 0.134 | 11.00 | 9.05 | -- | 14.8 | 2.90 | -- | -- | -- | -- | -- |
| FS-P3-MW003I | FS-P3-MW003I-20-20230227 | 2/27/2023 | 20 | N | 4602753411 | Treatment | Intermediate | -- | **129** | -- | < 10.0 U | -109.2 | 5.38 | 6.49 | 1.318 | 13.39 | 9.15 | -- | 91.2 | 1.53 | -- | -- | -- | -- | -- |
| FS-P3-MW003I | FS-P3-MW003I-20-20230323 | 3/23/2023 | 20 | N | 4602768691 | Treatment | Intermediate | **88.4** | **101** | < 10.0 U | < 10.0 U | -6.0 | 3.77 | 6.62 | 1.82 | 13.76 | 43.6 | -- | 204 | 1.17 | -- | -- | -- | -- | -- |
| FS-P3-MW003I | FS-P3-MW003I-20-20230420 | 4/20/2023 | 20 | N | 4602786061 | Treatment | Intermediate | -- | **70.0** | -- | < 10.0 U | -201.8 | 0.35 | 6.94 | 2.548 | 14.4 | 7.11 | -- | 116 | 25.9 | -- | -- | -- | -- | -- |
| FS-P3-MW003I | FS-P3-MW003I-20-20230516 | 5/16/2023 | 20 | N | 4602803921 | Treatment | Intermediate | -- | **183** | -- | < 10.0 U | -226.8 | 1.62 | 6.54 | 1.611 | 18.38 | 9.72 | -- | 260 | 3.99 | -- | -- | -- | -- | -- |
| FS-P3-MW003I | FS-P3-MW003I-20.0-20230619 | 6/19/2023 | 20 | N | 4602826571 | Treatment | Intermediate | -- | **129** | -- | < 10.0 U | -266.7 | 1.22 | 6.62 | 1.489 | 21.37 | 5.84 | -- | 147 | 10.7 | -- | -- | -- | -- | -- |
| FS-P3-MW003I | FS-P3-MW003I-23.0-20230713 | 7/13/2023 | 23 | N | 4602841571 | Post-Treatment | Intermediate | **223** | **241** | < 10.0 U | < 10.0 U | -55.3 | 1.14 | 6.39 | 1.727 | 23.31 | 11.1 | -- | 250 | 2.44 | < 1 U | -- | **25300** | **17400** | -- |
| FS-P3-MW003I | FS-P3-MW003I-28.0-20230713 | 7/13/2023 | 28 | N | 4602841571 | Post-Treatment | Intermediate | **166** | **175** | < 10.0 U | < 10.0 U | -67.1 | 0.85 | 6.34 | 1.205 | 20.73 | 22.9 | -- | 218 | 2.95 | < 1 U | -- | **17400** | **12300** | -- |
| FS-P3-MW003I | FS-P3-MW003I-13.0-20230717 | 7/17/2023 | 13 | N | 4602844071 | Post-Treatment | Intermediate | -- | **133** | -- | < 10.0 U | -95.5 | 0.13 | 6.42 | 0.649 | 20.81 | 5.01 | -- | 134 | 2.18 | < 1 U | -- | -- | -- | -- |
| FS-P3-MW003I | FS-P3-MW003I-18.0-20230717 | 7/17/2023 | 18 | N | 4602844071 | Post-Treatment | Intermediate | -- | **72.5** | -- | < 10.0 U | -77.8 | 0.24 | 6.42 | 0.056 | 21.31 | 9.06 | -- | 57.1 | 1.11 | < 1 U | -- | -- | -- | -- |
| FS-P3-MW003I | FS-P3-MW003I-28.0-20231012 | 10/12/2023 | 28 | N | 4602902271 | Post-Treatment | Intermediate | -- | **333** | -- | < 10.0 U | -134.6 | 0.31 | 6.27 | 0.996 | 19.03 | 8.95 | -- | 245 | 1.92 J | -- | -- | -- | -- | -- |
| FS-P3-MW003I | FS-P3-MW003I-28.0-20240124 | 1/24/2024 | 28 | N | JD81089 | Post-Treatment | Intermediate | 66.9 | **72.3** | < 10 U | 3.0 J | 60.6 | 0.7 | 6.34 | 13.95 |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| FS-P3-MW003I | FS-P3-MW003I-28.0-20241009 | 10/9/2024 | 28 | N | JD97776 | Post-Treatment | Intermediate | -- | **164** | -- | < 10 UJ | -329.3 | 0.19 | 6.29 | 1.21 | 20.1 | 4.65 | -- | 31.7 | 72.6 | -- | -- | -- | -- | -- |
| FS-P3-MW003I | FS-P3-MW003I-28.0-20241009-X | 10/9/2024 | 28 | FD | JD97776 | Post-Treatment | Intermediate | -- | **182** | -- | 5.7 J | -- | -- | -- | -- | -- | -- | -- | 33.3 | 60.1 | -- | -- | -- | -- | -- |
| FS-P3-MW004I | FS-P3-MW004I-14-20220823 | 8/23/2022 | 14 | N | 4602642801 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -145.9 | 1.29 | 7.37 | 2.741 | 17.72 | 0.51 | -- | 4.4 | 90.4 | -- | -- | -- | -- | -- |
| FS-P3-MW004I | FS-P3-MW004I-14-20220823-X | 8/23/2022 | 14 | FD | 4602642801 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 4.5 | 89.7 | -- | -- | -- | -- | -- |
| FS-P3-MW004I | FS-P3-MW004I-19-20220823 | 8/23/2022 | 19 | N | 4602642801 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -104.2 | 0.87 | 7.22 | 4.131 | 19.00 | 1.36 | -- | 4.7 | 77.0 | -- | -- | -- | -- | -- |
| FS-P3-MW004I | FS-P3-MW004I-24-20220823 | 8/23/2022 | 24 | N | 4602642801 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -110.8 | 0.77 | 7.44 | 2.531 | 19.26 | 2.71 | -- | 5.1 | 69.8 | -- | -- | -- | -- | -- |
| FS-P3-MW004I | FS-P3-MW004I-29-20220823 | 8/23/2022 | 29 | N | 4602642801 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -120.8 | 0.72 | 7.30 | 1.913 | 17.99 | 1.41 | -- | 5.0 | 72.0 | -- | -- | -- | -- | -- |
| FS-P3-MW004I | FS-P3-MW004I-29-20220922 | 9/22/2022 | 29 | N | 4602660731 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -83.9 | 1.46 | 7.8 | 0.723 | 18.98 | 8.75 | -- | 3.0 | 108 | -- | -- | -- | -- | -- |
| FSP-P3-MW001I | FSP-P3-MW001I-31.0-20210917 | 9/17/2021 | 31 | N | 4602430721 | Baseline | Intermediate | 10.1 | 13.8 | < 10.0 U | < 10.0 U | -6.10 | 1.50 | 6.74 | 2.12 | 15.83 | 9.97 | -- | 17.2 | **303** | < 1.0 U | 1900 | **869** | **7520** | -- |
| FSP-P3-MW001I | FSP-P3-MW001I-31-20220826 | 8/26/2022 | 31 | N | 4602644761 | Treatment | Intermediate | -- | 3.1 J | -- | < 10.0 U | -110.5 | 6.91 | 7.83 | 0.954 | 20.90 | 2.47 | -- | 5.2 | 103 | -- | -- | -- | -- | -- |
| FSP-P3-MW001I | FSP-P3-MW001I-31-20220922 | 9/22/2022 | 31 | N | 4602660731 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -70.6 | 1.42 | 7.3 | 1.037 | 19.86 | 8.76 | -- | 5.9 | 130 | -- | -- | -- | -- | -- |
| FSP-P3-MW001I | FSP-P3-MW001I-31-20221021 | 10/21/2022 | 31 | N | 4602679761 | Treatment | Intermediate | -- | 2.8 J | -- | < 10.0 U | -100.9 | 1.27 | 6.88 | 1.105 | 15.59 | 5.99 | -- | 5.1 | **539** | -- | -- | -- | -- | -- |
| FSP-P3-MW001I | FSP-P3-MW001I-31-20221117 | 11/17/2022 | 31 | N | 4602697441 | Treatment | Intermediate | -- | 29.3 | -- | < 10.0 U | -88 | 0.63 | 6.89 | 2.696 | 14.47 | 6.64 | -- | 13.5 | **536** | -- | -- | -- | -- | -- |
| FSP-P3-MW001I | FSP-P3-MW001I-31-20221220 | 12/20/2022 | 31 | N | 4602718081 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 UF1 | -126.8 | 1.18 | 7.09 | 1.825 | 10.93 | 0.5 | -- | 4.0 | **850** | -- | -- | -- | -- | -- |
| FSP-P3-MW001I | FSP-P3-MW001I-31.0-20230321 | 3/21/2023 | 31 | N | 4602767381 | Treatment | Intermediate | < 4.0 U | 43.0 | < 10.0 U | < 10.0 U | 21.2 | 1.54 | 6.72 | 5.9 | 13.9 | 9 | -- | 1.5 | **921** | -- | -- | -- | -- | -- |
| FSP-P3-MW001I | FSP-P3-MW001I-31.0-20230620 | 6/20/2023 | 31 | N | 4602827171 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -112.3 | 1.82 | 7.17 | 0.94 | 22.72 | 1.51 | -- | 2.2 | **281** | -- | -- | -- | -- | -- |
| FSP-P3-MW001I | FSP-P3-MW001I-31.0-20230920 | 9/20/2023 | 31 | N | 4602886061 | Treatment | Intermediate | -- | 5.0 | -- | < 10.0 U | -159 | 1.11 | 7.28 | 1.849 | 21 | 6.11 | -- | 23.7 | **706** | -- | -- | -- | -- | -- |
| FSP-P3-MW001I | FSP-P3-MW001I-31.0-20231219 | 12/19/2023 | 31 | N | JD79187 | Treatment | Intermediate | -- | < 10 U | -- | < 10 U | -153.2 | 0.06 | 7.14 | 1.035 | 14.8 | 7.95 | -- | 1.7 | **414** | -- | -- | -- | -- | -- |
| FSP-P3-MW001I | FSP-P3-MW001I-31.0-20240315 | 3/15/2024 | 31 | N | JD84558 | Treatment | Intermediate | -- | < 10 U | -- | < 10 U | -136.7 | 0.15 | 7.42 | 0.588 | 13.9 | 2.18 | -- | 2.6 | 87.3 | -- | -- | -- | -- | -- |
| FSP-P3-MW001I | FSP-P3-MW001I-24.5-20240416 | 4/16/2024 | 24.5 | N | JD86606 | Post-Treatment | Intermediate | -- | 0.66 J | -- | < 10 U | -223 | 0.11 | 7 | 0.631 | 19 | 1.81 | -- | 2.5 J+ | 78.1 | < 2.0 U | -- | -- | -- | -- |
| FSP-P3-MW001I | FSP-P3-MW001I-29.5-20240416 | 4/16/2024 | 29.5 | N | JD86606 | Post-Treatment | Intermediate | -- | 2.9 | -- | 9.1 J | -217.6 | 0.14 | 7.28 | 0.628 | 17.1 | 0.85 | -- | 2.3 J+ | 78.2 | < 2.0 U | -- | -- | -- | -- |
| FSP-P3-MW001I | FSP-P3-MW001I-34.5-20240416 | 4/16/2024 | 34.5 | N | JD86606 | Post-Treatment | Intermediate | -- | 0.64 J | -- | 7.9 J | -221.6 | 0.13 | 7.27 | 0.636 | 15.9 | 1.65 | -- | 2.2 J+ | 79.6 | < 2.0 U | -- | -- | -- | -- |
| FSP-P3-MW001I | FSP-P3-MW001I-39.5-20240416 | 4/16/2024 | 39.5 | N | JD86606 | Post-Treatment | Intermediate | -- | < 2.0 U | -- | 15 | -226.8 | 0.21 | 7.21 | 0.629 | 14.6 | 1.8 | -- | 2.1 J+ | 80.4 | < 2.0 U | -- | -- | -- | -- |
| FSP-P3-MW001I | FSP-P3-MW001I-39.5-20240725 | 7/25/2024 | 39.5 | N | JD92814 | Post-Treatment | Intermediate | -- | < 10 U | -- | < 10 U | -3.9 | 0.13 | 8.38 | 1059 | 18.9 | 52.8 | -- | 4.1 | 165 | -- | -- | -- | -- | -- |
| FSP-P3-MW001I | FSP-P3-MW001I-39.5-20241009 | 10/9/2024 | 39.5 | N | JD97776 | Post-Treatment | Intermediate | -- | < 10 U | -- | < 10 UJ | -151.1 | 0.33 | 6.99 | 1.11 | 19.1 | 8.45 | -- | 5.2 | 176 | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-24.3-20211001 | 10/1/2021 | 24.3 | N | 4602441231 | Baseline | Intermediate | **6630** | **5140** | **877 J** | **579 J** | -33.60 | 0.80 | 6.75 | 7.53 | 18.14 | 4.40 | -- | 11.0 | **324** | 1.0 | 14000 | < 120 U | **170** | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.3-20211001 | 10/1/2021 | 39.3 | N | 4602441231 | Baseline | Intermediate | **48400** | **54800** | **23200** | **22700 J** | 8.00 | 1.45 | 8.00 | 12.15 | 16.75 | 9.30 | -- | 12.7 | **570** | < 1.0 U | 1900 | < 120 U | **79.9** | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.3-20211228 | 12/28/2021 | 39.3 | N | 4602498981 | Treatment | Intermediate | **363000** | **356000** | **350000** | **328000** | -116.20 | 0.16 | 9.23 | 12.04 | 14.45 | 7.99 | -- | 38.9 | **648** | -- | 400 | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.3-20220120 | 1/20/2022 | 39.3 | N | 4602510051 | Treatment | Intermediate | **367000** | **402000** | **358000** | **363000** | 57.80 | 0.18 | 9.24 | 11.50 | 13.00 | 6.56 | -- | 14.6 | **644** | -- | 450 | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.3-20220224 | 2/24/2022 | 39.3 | N | 4602531681 | Treatment | Intermediate | **153000** | **161000** | **149000** | **155000** | -8.10 | 9.30 | 9.79 | 10.15 | 11.88 | 7.96 | -- | 11.3 | **646** | -- | 340 | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.3-20220323 | 3/23/2022 | 39.3 | N | 4602548831 | Treatment | Intermediate | **61500** | **56400** | **58400** | **59500** | 60.20 | 0.20 | 9.14 | 7.98 | 13.51 | 4.21 | -- | 8.4 | **413** | -- | 330 | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.3-20220426 | 4/26/2022 | 39.3 | N | 4602569961 | Treatment | Intermediate | **50000** | **51100** | **45900** | **59900** | 110.6 | 0.25 | 10.26 | 8.892 | 14.28 | 1.3 | -- | 7.0 | **448** | -- | 390 | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.3-20220520 | 5/20/2022 | 39.3 | N | 4602585231 | Treatment | Intermediate | -- | **82000** | -- | **83500** | 50.8 | 0.68 | 9.92 | 7.155 | 15.27 | 9.10 | -- | 11.3 | **539** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.3-20220616 | 6/16/2022 | 39.3 | N | 4602602381 | Treatment | Intermediate | -- | **77900** | -- | **82800** | 72.7 | 0.32 | 9.78 | 5.595 | 17.11 | 8.95 | -- | 15.7 | **588** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.3-20220722 | 7/22/2022 | 39.3 | N | 4602624001 | Treatment | Intermediate | -- | **45500** | -- | **39000** | -0.3 | 0.12 | 9.52 | 5.019 | 18.42 | 6.96 | -- | 13.3 | **601** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.3-20220824 | 8/24/2022 | 39.3 | N | 4602643471 | Treatment | Intermediate | -- | **18200** | -- | **19600 H** | -66.0 | 1.05 | 9.15 | 5.321 | 18.21 | 6.52 | -- | 14.6 | **628** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.3-20220920 | 9/20/2022 | 39.3 | N | 4602659081 | Treatment | Intermediate | -- | **16700** | -- | **17500** | -0.4 | 0.39 | 8.9 | 5.858 | 19.07 | 8.07 | -- | 12.4 | **663** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.3-20221018 | 10/18/2022 | 39.3 | N | 4602677121 | Treatment | Intermediate | -- | **14400** | -- | **12900** | 154.8 | 0.83 | 8.99 | 4.26 | 14.74 | 5.23 | -- | 12.5 | **679** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.3-20221116 | 11/16/2022 | 39.3 | N | 4602696581 | Treatment | Intermediate | -- | **19600** | -- | **17000** | 7.1 | 0.43 | 8.96 | 6.052 | 15.3 | 4.43 | -- | 13.4 | **774** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.3-20221214 | 12/14/2022 | 39.3 | N | 4602713561 | Treatment | Intermediate | -- | **35100** | -- | **33400** | -134.3 | 0.16 | 9.01 | 4.665 | 12.79 | 6.16 | -- | 13.0 | **818** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.3-20230118 | 1/18/2023 | 39.3 | N | 4602731501 | Treatment | Intermediate | -- | **26700** | -- | **23100** | 198 | 0.52 | 8.86 | 5.95 | 13.35 | 4.36 | -- | 13.2 | **759 J** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.3-20230222 | 2/22/2023 | 39.3 | N | 4602750761 | Treatment | Intermediate | -- | **41300** | -- | **39700** | -27.4 | 0.1 | 8.8 | 6.569 | 13.2 | 6.15 | -- | 13.3 | **819** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-24.0-20230317 | 3/17/2023 | 24 | N | 4602765401 | Treatment | Intermediate | **28600** | **89500** | **31300** | **85600** | -38.0 | 0.42 | 8.9 | 6.23 | 13.7 | 21 | -- | 12.9 | **706** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-29.0-20230317 | 3/17/2023 | 29 | N | 4602765401 | Treatment | Intermediate | -- | **18100** | -- | **18800** | -29.0 | 0.45 | 8.56 | 5.834 | 14.30 | 8 | -- | 12.9 | **743** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-34.0-20230317 | 3/17/2023 | 34 | N | 4602765401 | Treatment | Intermediate | -- | **26300** | -- | **35700** | -31 | 0.41 | 8.79 | 6.134 | 14.35 | 6 | -- | 12.9 | **719** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.0-20230317 | 3/17/2023 | 39 | N | 4602765401 | Treatment | Intermediate | -- | **30100** | -- | **31900** | -34.6 | 0.43 | 8.71 | 6.051 | 14.38 | 6.3 | -- | 12.3 | **671** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-24.0-20230413 | 4/13/2023 | 24 | N | 4602781941 | Treatment | Intermediate | -- | **28800** | -- | **31300** | 420.6 | 0.3 | 6.92 | 6.087 | 20.9 | 4.21 | -- | 11.8 | **778** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-29.0-20230414 | 4/14/2023 | 29 | N | 4602782821 | Treatment | Intermediate | -- | **29700** | -- | **28400** | 229.8 | 6.65 | 8.09 | 6.807 | 18.70 | 5.03 | -- | 11.4 | **714** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-34.0-20230414 | 4/14/2023 | 34 | N | 4602782821 | Treatment | Intermediate | -- | **32200** | -- | **26300** | 271.1 | 5.67 | 7.91 | 6.865 | 19.5 | 3.51 | -- | 12.0 | **708** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39-20230417 | 4/17/2023 | 39 | N | 4602783601 | Treatment | Intermediate | -- | **19800** | -- | **20800** | 104.8 | 0.94 | 8.53 | 7.238 | 14 | 4.69 | -- | 11.8 | **702** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-34-20230509 | 5/9/2023 | 34 | N | 4602799431 | Treatment | Intermediate | -- | **8750** | -- | **15000** | -44.9 | 0.26 | 8.65 | 7.472 | 16.24 | 2.47 | -- | 11.3 | **773** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39-20230509 | 5/9/2023 | 39 | N | 4602799431 | Treatment | Intermediate | -- | **31000** | -- | **30000** | -44.9 | 0.24 | 8.81 | 8.133 | 15.49 | 2.1 | -- | 11.4 | **799** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-29-20230510 | 5/10/2023 | 29 | N | 4602800211 | Treatment | Intermediate | -- | **14700** | -- | **13800** | 55.9 | 0.39 | 8.77 | 5.967 | 18.87 | 9.02 | -- | 11.3 | **771** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-24.0-20230512 | 5/12/2023 | 24 | N | 4602802081 | Treatment | Intermediate | -- | **9390** | -- | **17800** | 49.3 | 0.12 | 8 | 1.44 | 25.9 | 5.77 | -- | 10.6 | **681** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39-20230623 | 6/23/2023 | 39 | N | 4602829671 | Treatment | Intermediate | -- | **26400** | -- | **29400** | 70.1 | 0.35 | 8.72 | 6.615 | 16.78 | 7.53 | -- | 10.5 | **778** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39-20230717 | 7/17/2023 | 39 | N | 4602844061 | Treatment | Intermediate | **19800** | **19500** | **16100** | **21900** | 10.2 | 0.79 | 11.59 | 5.983 | 19.79 | 23.1 | -- | 10.4 | **425** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.0-20230824 | 8/24/2023 | 39 | N | 4602868441 | Treatment | Intermediate | -- | **17900** | -- | **18200** | 9.1 | 0.76 | 8.76 | 7.945 | 17.34 | 9.03 | -- | 9.9 | **540** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.0-20230918 | 9/18/2023 | 39 | N | 4602884721 | Treatment | Intermediate | -- | **11600** | -- | -- | -115.3 | 0.65 | 8.6 | 7.225 | 17.71 | 8.56 | -- | 9.6 | **641** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.0-20230918-X | 9/18/2023 | 39 | FD | 4602884721 | Treatment | Intermediate | -- | **11600** | -- | **12000** | -- | -- | -- | -- | -- | -- | -- | 9.5 | **655** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.0-20231013 | 10/13/2023 | 39 | N | 4602903221 | Treatment | Intermediate | -- | **10500** | -- | **10700** | 44.8 | 0.43 | 8.41 | 7.343 | 18.73 | 5.61 | -- | 8.1 | **507** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.0-20231115 | 11/15/2023 | 39 | N | JD77052 | Treatment | Intermediate | -- | **8220** | -- | **7800** | -155.2 | 0.93 | 8.6 | 9.42 | 15.6 | 3.74 | -- | 6.1 | **636** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.0-20231221 | 12/21/2023 | 39 | N | JD79357 | Treatment | Intermediate | -- | **4870** | -- | **< 500 U** | 147 | 0.1 | 8.47 | 8.14 | 13.2 | 8.91 | -- | 5.4 | **600** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.0-20240117 | 1/17/2024 | 39 | N | JD80687 | Treatment | Intermediate | -- | **2510** | -- | **2600** | -21.5 | 0 | 8.54 | 8.33 | 6.6 | 5.37 | -- | 5.3 | **538** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.0-20240222 | 2/22/2024 | 39 | N | JD82990 | Treatment | Intermediate | -- | **1880** | -- | **1600** | -85.2 | 0 | 8.21 | 7.24 | 12.5 | 8.66 | -- | 5.2 | **584** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.0-20240319 | 3/19/2024 | 39 | N | JD84759 | Treatment | Intermediate | -- | **1360** | -- | **900** | 69.9 | 0.02 | 8.34 | 7.68 | 10.1 | 9.83 | -- | 5.0 | **497** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.0-20240415 | 4/15/2024 | 39 | N | JD86534 | Treatment | Intermediate | -- | **1080** | -- | **640** | -61.1 | 0.68 | 8.25 | 8.25 | 16.3 | 9.62 | -- | 4.8 | **446** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.0-20240522 | 5/22/2024 | 39 | N | JD88961 | Treatment | Intermediate | -- | **358** | -- | **260** | -53.8 | 0.01 | 7.9 | 6.142 | 17.3 | 2.33 | -- | 5.7 | **453** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.0-20240619 | 6/19/2024 | 39 | N | JD90730 | Treatment | Intermediate | -- | **261** | -- | **130** | -60.6 | 0.1 | 7.91 | 8.54 | 18.2 | 3.79 | -- | 5.1 | **457** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.0-20240711 | 7/11/2024 | 39 | N | JD92004 | Treatment | Intermediate | -- | **189** | -- | 65 | -103.9 | 0.17 | 7.76 | 8.43 | 18.4 | 4.22 | -- | 5.4 | **451** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.0-20240816 | 8/16/2024 | 39 | N | JD94325 | Treatment | Intermediate | -- | **470** | -- | **100** | -110.4 | 0.14 | 8.23 | 9.39 | 19.8 | 7.97 | -- | 6.1 | **624** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.0-20240919 | 9/19/2024 | 39 | N | JD96458 | Treatment | Intermediate | -- | **257** | -- | 16 | -11 | 0.19 | 8.23 | 9.96 | 20.6 | 8.69 | -- | 4.1 | **559** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.0-20241007 | 10/7/2024 | 39 | N | JD97612 | Treatment | Intermediate | -- | **133** | -- | 4.9 B | -189.6 | 0.56 | 7.73 | 8.6 | 17.2 | 1.93 | -- | 5.2 | **416** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.0-20241113 | 11/13/2024 | 39 | N | JE526 | Treatment | Intermediate | -- | **317** | -- | < 10 U | -110.7 | 0.19 | 7.44 | 7.01 | 14.5 | 9.32 | -- | 4.5 | **382** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.0-20241209 | 12/9/2024 | 39 | N | JE2209 | Treatment | Intermediate | -- | **145** | -- | **79** | -92.5 | 0.13 | 8.02 | 10.8 | 15.4 | 1.37 | -- | 6.0 | **536** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39.0-20241209-X | 12/9/2024 | 39 | FD | JE2209 | Treatment | Intermediate | -- | **136** | -- | **79** | -- | -- | -- | -- | -- | -- | -- | 5.9 | **509** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-59.2-20211001-X | 10/1/2021 | 59.2 | FD | 4602441231 | Baseline | Intermediate | **298000** | **315000** | **172000** | **174000 J** | -- | -- | -- | -- | -- | -- | -- | 11.7 J+ | **675** | < 1.0 U | 260 | **< 600 U** | 22.9 J | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-59.2-20211001 | 10/1/2021 | 59.2 | N | 4602441231 | Baseline | Intermediate | **302000** | **307000** | **173000 J** | **117000 J** | 6.70 | 1.47 | 8.40 | 13.98 | 15.53 | 5.10 | -- | 11.4 J+ | **668** | < 1.0 U | 240 | **< 600 U** | 43.8 | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-59.2-20211222 | 12/22/2021 | 59.2 | N | 4602496971 | Treatment | Intermediate | **69700** | **60500** | **78000** | **61500** | 59.90 | 0.31 | 7.72 | 23.43 | 13.37 | 5.36 | -- | 12.2 | **924** | -- | 180 | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-59.2-20220120 | 1/20/2022 | 59.2 | N | 4602510051 | Treatment | Intermediate | **125000** | **145000** | **126000** | **140000** | 83.30 | 0.19 | 7.92 | 20.05 | 11.66 | 4.28 | -- | 10.7 | **815** | -- | 270 | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-59.2-20220224 | 2/24/2022 | 59.2 | N | 4602531681 | Treatment | Intermediate | **588** | **757** | **563** | **585** | 73.40 | 9999.00 | 7.90 | 25.18 | 10.74 | 8.66 | -- | 9.7 | **936** | -- | 230 | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-59.2-20220323 | 3/23/2022 | 59.2 | N | 4602548831 | Treatment | Intermediate | 52.0 | **1420** | < 10.0 U | < 10.0 U | -37.80 | 0.17 | 7.17 | 24.78 | 13.50 | 8.22 | -- | 10.1 | **320** | -- | 230 | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-59.2-20220426 | 4/26/2022 | 59.2 | N | 4602569961 | Treatment | Intermediate | 11.5 | **821** | < 10.0 U | < 10.0 U | -71.7 | 0.53 | 7.25 | 24.58 | 14.24 | 9.56 | -- | 9.9 | **1000** | -- | 230 | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-59.2-20220520 | 5/20/2022 | 59.2 | N | 4602585231 | Treatment | Intermediate | -- | **804** | -- | < 10.0 U | -107.6 | 2.20 | 8.57 | 18.09 | 15.48 | 8.36 | -- | 9.9 | **978** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-59.2-20220616 | 6/16/2022 | 59.2 | N | 4602602381 | Treatment | Intermediate | -- | **240** | -- | < 10.0 U | -86.8 | 0.12 | 7.47 | 26.73 | 16.06 | 5.21 | -- | 10.9 | 221 | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-59.2-20220722 | 7/22/2022 | 59.2 | N | 4602624001 | Treatment | Intermediate | -- | **345** | -- | < 10.0 U | -100 | 0.73 | 7.43 | 19.18 | 19.37 | 8.49 | -- | 12.1 | 161 | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-59.2-20220824 | 8/24/2022 | 59.2 | N | 4602643471 | Treatment | Intermediate | -- | **1770** | -- | < 10.0 U | -82.0 | 0.27 | 7.98 | 25.01 | 17.60 | 7.46 | -- | 12.5 | **773** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-59.2-20220920 | 9/20/2022 | 59.2 | N | 4602659081 | Treatment | Intermediate | -- | **679** | -- | < 10.0 U | -0.2 | 0.47 | 7.16 | 27.36 | 18.39 | 9.02 | -- | 11.2 | **802** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-59.2-20221017 | 10/17/2022 | 59.2 | N | 4602676401 | Treatment | Intermediate | -- | **501** | -- | < 10.0 U | -99.8 | 0.51 | 7.05 | 24.08 | 17.02 | 7.58 | -- | 12.0 | **949** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-59.2-20221116 | 11/16/2022 | 59.2 | N | 4602696581 | Treatment | Intermediate | -- | **3570** | -- | < 10.0 U | -100.8 | 0.3 | 7.23 | 27.98 | 15.12 | 5.57 | -- | 13.2 | **1090** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-59.2-20221213 | 12/13/2022 | 59.2 | N | 4602712771 | Treatment | Intermediate | -- | **1260** | -- | < 10.0 U | 85.2 | 0.26 | 7.30 | 32.87 | 12.88 | 9.87 | -- | 11.8 | **389** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-59.2-20230118 | 1/18/2023 | 59.2 | N | 4602731501 | Treatment | Intermediate | -- | **277** | -- | < 10.0 U | -59.8 | 1.04 | 7.22 | 25.3 | 13.86 | 4.72 | -- | 11.8 | **1050 J** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-59.2-20230222 | 2/22/2023 | 59.2 | N | 4602750761 | Treatment | Intermediate | -- | **188** | -- | < 10.0 U | -123.0 | 0.17 | 6.89 | 21.81 | 13.19 | 2.79 | -- | 12.0 | **878** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-59.2-20230320 | 3/20/2023 | 59.2 | N | 4602766501 | Treatment | Intermediate | -- | **429** | -- | < 10.0 U | -66 | 0.68 | 7.13 | 24.34 | 12.48 | 6.2 | -- | 12.3 | **1130** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-59.2-20230320-X | 3/20/2023 | 59.2 | FD | 4602766501 | Treatment | Intermediate | -- | **534** | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 12.4 | **972** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-58.0-20230413 | 4/13/2023 | 58 | N | 4602781941 | Treatment | Intermediate | -- | **2330** | -- | **1480** | -140.7 | 1.81 | 7.19 | 22.18 | 22.60 | 9.23 | -- | 11.5 F1 | **1050** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-43.0-20230414 | 4/14/2023 | 43 | N | 4602782821 | Treatment | Intermediate | -- | **43900 J** | -- | **81700 J** | 105.5 | 0.55 | 7.48 | 20.27 | 23.23 | 8.03 | -- | 11.7 | **1000** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-48.0-20230414 | 4/14/2023 | 48 | N | 4602782821 | Treatment | Intermediate | -- | **16600 J** | -- | **25700 J** | 121.2 | 0.34 | 7.36 | 23.27 | 25.40 | 6.82 | -- | 11.4 | **1040** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-53.0-20230414 | 4/14/2023 | 53 | N | 4602782821 | Treatment | Intermediate | -- | **2800** | -- | **1360 J** | -26.1 | 0.25 | 7.27 | 25.58 | 21.3 | 9.21 | -- | 11.4 | **1090** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-53.0-20230414-X | 4/14/2023 | 53 | FD | 4602782821 | Treatment | Intermediate | -- | **3490** | -- | **3170 J** | -- | -- | -- | -- | -- | -- | -- | 11.5 | **1090** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-54-20230511 | 5/11/2023 | 54 | N | 4602801171 | Treatment | Intermediate | -- | **738** | -- | < 10.0 U | 16.1 | 0.18 | 7.3 | 22.38 | 22 | 9.8 | -- | 11.3 | **1100** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-59-

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | D | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-44-20230623 | 6/23/2023 | 44 | N | 4602829671 | Treatment | Intermediate | -- | **30600** | -- | **33200** | 157.0 | 0.47 | 7.31 | 19.65 | 18.65 | 8.41 | -- | 10.6 | **1030** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-44.0-20230718 | 7/18/2023 | 44 | N | 4602844591 | Treatment | Intermediate | **26500** | **30000** | **27900** | **32000** | 123 | 0.13 | 7.44 | 21.37 | 23.23 | 11.1 | -- | 11.0 | **823** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-44.0-20230824 | 8/24/2023 | 44 | N | 4602868441 | Treatment | Intermediate | **82100** | **82000** | **61500** | **62600** | 172.5 | 0.47 | 7.64 | 21.68 | 18.59 | 12 | -- | 11.5 | **903** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-44.0-20230919 | 9/19/2023 | 44 | N | 4602885251 | Treatment | Intermediate | **40600** | **30300** | **41900** | **39600** | -40.4 | 0.34 | 7.28 | 23.11 | 20.2 | 18 | -- | 11.0 | **1010** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-44.0-20231017 | 10/17/2023 | 44 | N | 4602905591 | Treatment | Intermediate | -- | **551** | -- | < 50.0 U | -160.1 | 0.17 | 7.39 | 28.721 | 17.1 | 6.67 | -- | 11.4 F1 | **1080** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-44.0-20231115 | 11/15/2023 | 44 | N | JD77052 | Treatment | Intermediate | -- | **562** | -- | < 10 U | -206.8 | 2.31 | 7.27 | 29.66 | 14.1 | 9.07 | -- | 11.4 | **1150** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-44.0-20231221 | 12/21/2023 | 44 | N | JD79357 | Treatment | Intermediate | 64.8 | **951** | < 10 U | < 10 U | -127.9 | 0.25 | 7.13 | 27.07 | 10.5 | 15.5 | -- | 9.8 | **1170** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-44.0-20240117 | 1/17/2024 | 44 | N | JD80687 | Treatment | Intermediate | -- | **580** | -- | < 10 U | -163.8 | 0 | 7.29 | 28.54 | 8 | 9.82 | -- | 9.4 | **1090** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-44.0-20240222 | 2/22/2024 | 44 | N | JD82990 | Treatment | Intermediate | -- | **465** | -- | < 10 U | -164.4 | 0 | 7.03 | 24.26 | 13.1 | 8.33 | -- | 9.7 | **1220** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-44.0-20240315 | 3/15/2024 | 44 | N | JD84558 | Treatment | Intermediate | 45.0 | **942** | < 10 U | < 10 U | -28.6 | 0.57 | 7.09 | 24.37 | 14.9 | 15.9 | -- | 8.9 | **1120** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-44.0-20240415 | 4/15/2024 | 44 | N | JD86534 | Treatment | Intermediate | **353** | **611** | 47 | 47 | -122.7 | 0.12 | 7.35 | 24.79 | 16.8 | 13.6 | -- | 11.6 | **1070** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-44.0-20240522 | 5/22/2024 | 44 | N | JD88961 | Treatment | Intermediate | **6400** | **7760** | **6200** | **5800** | 81.6 | 0.16 | 7.27 | 22.84 | 16.9 | 18.9 | -- | 11.6 | **1080** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-44.0-20240619 | 6/19/2024 | 44 | N | JD90730 | Treatment | Intermediate | **3800** | **4820** | **3700** | **3500** | -119.5 | 0.9 | 7.19 | 26.77 | 18.6 | 19.4 | -- | 12.0 | **1130** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-44.0-20240711 | 7/11/2024 | 44 | N | JD92004 | Treatment | Intermediate | -- | **8150** | -- | **8000** | 40 | 0.28 | 7.37 | 26.57 | 19.1 | 9.78 | -- | 11.4 | **1110** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-44.0-20240816 | 8/16/2024 | 44 | N | JD94325 | Treatment | Intermediate | -- | **394** | -- | < 10 U | -95 | 0.22 | 7.2 | 26.29 | 19 | 9.37 | -- | 11.5 | **1220** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-44.0-20240919 | 9/19/2024 | 44 | N | JD96458 | Treatment | Intermediate | -- | **21900** | -- | **23500** | 22 | 1.58 | 7.4 | 25.85 | 20.5 | 8.3 | -- | 5.4 | **1050** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-44.0-20241007 | 10/7/2024 | 44 | N | JD97612 | Treatment | Intermediate | -- | **1210** | -- | **1400** | 17.5 | 1.83 | 7.64 | 27.15 | 17.7 | 4.18 | -- | 11.0 | **1070** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-44.0-20241113 | 11/13/2024 | 44 | N | JE526 | Treatment | Intermediate | -- | **40500** | -- | **45100** | 72.3 | 0.18 | 7.76 | 19.49 | 15.6 | 1.86 | -- | 10.3 | **987** | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-44.0-20241210 | 12/10/2024 | 44 | N | JE2339 | Treatment | Intermediate | -- | **22300** | -- | **22300** | 173.8 | 6 | 7.92 | 21.68 | 15 | 2.82 | -- | < 20 U | **937** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-33.40-20211029 | 10/29/2021 | 33.4 | N | 4602461931 | Baseline | Intermediate | **394000** | **482000** | **363000** | **460000** | 40.60 | 0.92 | 8.76 | 9.66 | 16.44 | 5.65 | -- | 13.5 | **427** | < 1.0 U | 1700 | **< 600 U** | 36.2 J | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-33.4-20211221 | 12/21/2021 | 33.4 | N | 4602495851 | Treatment | Intermediate | **601000** | **581000** | **62300** | **61200** | 40.60 | 0.61 | 9.45 | 11.42 | 13.87 | 5.66 | -- | 15.5 | **666** | -- | 1000 | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-33.4-20220120 | 1/20/2022 | 33.4 | N | 4602510051 | Treatment | Intermediate | **366000** | **365000** | **316000** | **322000** | 46.00 | 0 | 8.67 | 6.09 | 12.08 | 9.40 | -- | 16.0 | **333** | -- | 5800 E | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-33.4-20220224 | 2/24/2022 | 33.4 | N | 4602531681 | Treatment | Intermediate | **131000** | **168000** | **227000** | **171000** | -33.50 | 0.28 | 9.55 | 5.81 | 9.60 | 8.00 | -- | 63.2 | 227 F1 | -- | 6600 | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-33.4-20220323 | 3/23/2022 | 33.4 | N | 4602548831 | Treatment | Intermediate | **8850** | **20200** | **12600** | **8780** | -211.00 | 1.65 | 9.23 | 1.78 | 12.70 | 9.50 | -- | 90.9 | **314** | -- | 5900 | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-33.4-20220428 | 4/28/2022 | 33.4 | N | 4602571561 | Treatment | Intermediate | **30400** | **40700** | **38800** | **41000** | -5.8 | 9999 | 11.4 | 8.526 | 13.77 | 9.1 | -- | 13.7 | **434** | -- | 4400 | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-33.4-20220518 | 5/18/2022 | 33.4 | N | 4602583551 | Treatment | Intermediate | -- | **12800** | -- | **13100** | -32.4 | 2.28 | 8.80 | 4.366 | 16.98 | 4.11 | -- | 12.0 | **348** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-33.4-20220617 | 6/17/2022 | 33.4 | N | 4602603591 | Treatment | Intermediate | -- | **516** | -- | **163** | 17.2 | 0.86 | 7.81 | 5.605 | 17.02 | 3.56 | -- | 10.5 | **460** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-33.4-20220722 | 7/22/2022 | 33.4 | N | 4602624001 | Treatment | Intermediate | -- | **5980** | -- | **2730** | -61.5 | 0.2 | 8.16 | 5.539 | 19.16 | 6.23 | -- | 9.2 | **339** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-33.4-20220824 | 8/24/2022 | 33.4 | N | 4602643471 | Treatment | Intermediate | -- | **12100** | -- | **10900** | -73.8 | 10.99 | 8.29 | 6.729 | 19.85 | 2.00 | -- | 9.4 | **266** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-33.4-20220920 | 9/20/2022 | 33.4 | N | 4602659081 | Treatment | Intermediate | -- | **9180** | -- | **8640** | 38.1 | 1.44 | 8.26 | 5.273 | 18.96 | 6.23 | -- | 7.8 | 234 | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-33.4-20221018 | 10/18/2022 | 33.4 | N | 4602677121 | Treatment | Intermediate | -- | **22600** | -- | **24100** | -46.3 | 1.37 | 7.87 | 4.218 | 16.72 | 6 | -- | 8.3 | 233 | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-33.4-20221115 | 11/15/2022 | 33.4 | N | 4602695881 | Treatment | Intermediate | -- | **429** | -- | 36.8 | -59.1 | 1.22 | 7.46 | 3.46 | 13.8 | 7.26 | -- | 8.2 | 128 | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-33.4-20221213 | 12/13/2022 | 33.4 | N | 4602712771 | Treatment | Intermediate | -- | **23600** | -- | **20400** | 138.7 | 0.28 | 8.19 | 6.607 | 13.15 | 8.94 | -- | 6.6 | 132 | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-33.4-20230118 | 1/18/2023 | 33.4 | N | 4602731501 | Treatment | Intermediate | -- | **40200** | -- | **42700** | -61.6 | 0.47 | 8.64 | 5.316 | 13.92 | 3.57 | -- | 6.0 | **1200 J** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-33.4-20230118I-X | 1/18/2023 | 33.4 | FD | 4602731501 | Treatment | Intermediate | -- | **49100** | -- | **44900** | -- | -- | -- | -- | -- | -- | -- | 6.4 | 187 J | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-33.4-20230222 | 2/22/2023 | 33.4 | N | 4602750761 | Treatment | Intermediate | -- | **73600 F2** | -- | **54100** | -5.0 | 0.32 | 8.58 | 5.000 | 13.04 | 1.35 | -- | 7.1 | **264** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-33.4-20230222-X | 2/22/2023 | 33.4 | FD | 4602750761 | Treatment | Intermediate | -- | **73600** | -- | **77200** | -- | -- | -- | -- | -- | -- | -- | 7.1 | **256** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-27.0-20230317 | 3/17/2023 | 27 | N | 4602765401 | Treatment | Intermediate | -- | **19000** | -- | **16500** | 13.1 | 0.50 | 7.93 | 3.020 | 14.21 | 5.27 | -- | 6.9 | 181 | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-32.0-20230317 | 3/17/2023 | 32 | N | 4602765401 | Treatment | Intermediate | -- | **13100** | -- | **15700** | 86.1 | 0.49 | 8.32 | 3.511 | 14.88 | 4.58 | -- | 5.6 | 203 | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-37.0-20230317 | 3/17/2023 | 37 | N | 4602765401 | Treatment | Intermediate | -- | **165000** | -- | **206000** | 160.3 | 0.59 | 8.9 | 5.592 | 14.48 | 3.25 | -- | 9.2 | **446** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-42.0-20230317 | 3/17/2023 | 42 | N | 4602765401 | Treatment | Intermediate | -- | **338000** | -- | **395000** | 184.8 | 0.81 | 9.15 | 8.969 | 12.76 | 5.29 | -- | 12.5 | **778** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-41.5-20230417 | 4/17/2023 | 41.5 | N | 4602783601 | Treatment | Intermediate | -- | **363000** | -- | **401000** | 141.7 | 1.46 | 8.94 | 12.090 | 14.60 | 8.77 | -- | 12.1 | **810** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-42-20230509 | 5/9/2023 | 42 | N | 4602799431 | Treatment | Intermediate | -- | **186000** | -- | 40.7 | 28.3 | 1.11 | 9.15 | 9.284 | 18.30 | 9.88 | -- | 7.8 | **604** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-27-20230511 | 5/11/2023 | 27 | N | 4602801171 | Treatment | Intermediate | -- | **137** | -- | **359** | 226.1 | 1.11 | 7.22 | 5.798 | 23.41 | 8.16 | -- | 6.1 | 175 | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-32-20230511 | 5/11/2023 | 32 | N | 4602801171 | Treatment | Intermediate | -- | **3430** | -- | **2780** | 227.3 | 0.70 | 8.28 | 6.266 | 20.60 | 1.08 | -- | 5.0 | 223 | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-37-20230511 | 5/11/2023 | 37 | N | 4602801171 | Treatment | Intermediate | -- | **446000 F2** | -- | **209000** | 227.7 | 0.94 | 8.72 | 8.568 | 18.31 | 5.61 | -- | 9.6 | **661** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-42-20230621 | 6/21/2023 | 42 | N | 4602828031 | Treatment | Intermediate | -- | **237000** | -- | **239000** | 330.1 | 0.47 | 8.54 | 13.26 | 19 | 6.43 | -- | 8.8 | **554** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-42.0-20230719 | 7/19/2023 | 42 | N | 4602845491 | Treatment | Intermediate | -- | **240000** | -- | **179000** | -10.5 | 0.44 | 9.36 | 10.64 | 20.46 | 9.23 | -- | 9.8 | **614** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-42.0-20230824 | 8/24/2023 | 42 | N | 4602868441 | Treatment | Intermediate | -- | **253000** | -- | **289000** | 26.9 | 0.19 | 9.16 | 13.7 | 19.95 | 6.34 | -- | 10.9 | **649** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-42.0-20230919 | 9/19/2023 | 42 | N | 4602885251 | Treatment | Intermediate | -- | **229000** | -- | **246000** | -24.2 | 0.34 | 8.48 | 11 | 20.95 | 8.61 | -- | 12.1 | **600** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-42.0-20231016 | 10/16/2023 | 42 | N | 4602904731 | Treatment | Intermediate | -- | **328000** | -- | **306000** | 24.1 | 0.84 | 8.97 | 11.98 | 19.42 | 5.02 | -- | 14.3 | **796** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-42.0-20231115 | 11/15/2023 | 42 | N | JD77052 | Treatment | Intermediate | -- | **181000** | -- | **268000** | 74.3 | 0.15 | 8.68 | 9.55 | 13.3 | 6.89 | -- | 11.3 B | **757** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-42.0-20231215 | 12/15/2023 | 42 | N | JD78996 | Treatment | Intermediate | -- | **168000** | -- | **157000** | 152.7 | 1.22 | 9.08 | 8.7 | 13.6 | 8.63 | -- | 9.8 | **830** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-42.0-20240117 | 1/17/2024 | 42 | N | JD80687 | Treatment | Intermediate | -- | **151000** | -- | **191000** | -142.8 | 0.16 | 8.88 | 8.51 | 10.8 | 4.73 | -- | < 40 U | **743** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-42.0-20240222 | 2/22/2024 | 42 | N | JD82990 | Treatment | Intermediate | -- | **166000** | -- | **171000** | 1.2 | 0.13 | 8.99 | 11.91 | 12.3 | 6.74 | -- | 8.3 | **906** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-42.0-20240314 | 3/14/2024 | 42 | N | JD84495 | Treatment | Intermediate | -- | **408000** | -- | **318000** | -115.5 | 0.34 | 9.32 | 14.54 | 15.6 | 9.99 | -- | 7.5 | **946** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-42.0-20240415 | 4/15/2024 | 42 | N | JD86534 | Treatment | Intermediate | -- | **223000** | -- | **200000** | -29.2 | 0.46 | 9.07 | 10.62 | 16.8 | 4.43 | -- | 12.7 | **738** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-42.0-20240521 | 5/21/2024 | 42 | N | JD88880 | Treatment | Intermediate | -- | **168000** | -- | **189000** | 11.6 | 0.22 | 8.91 | 11.8 | 17.3 | 9.6 | -- | 13.7 | **1040** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-42.0-20240614 | 6/14/2024 | 42 | N | JD90507 | Treatment | Intermediate | -- | **327000** | -- | **448000** | -323.8 | 0.17 | 9.05 | 13.484 | 19.2 | 8.75 | -- | 13.7 | **993** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-42.0-20240711 | 7/11/2024 | 42 | N | JD92004 | Treatment | Intermediate | -- | **145000** | -- | **187000** | -94.8 | 0.13 | 8.82 | 11.05 | 20.2 | 5.22 | -- | 11.2 | **831** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-42.0-20240816 | 8/16/2024 | 42 | N | JD94325 | Treatment | Intermediate | -- | **178000** | -- | **215000** | -34.3 | 0.27 | 8.74 | 10.75 | 21.6 | 4.48 | -- | 17.9 | **796** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-42.0-20240816-X | 8/16/2024 | 42 | FD | JD94325 | Treatment | Intermediate | -- | **162000** | -- | **180000** | -- | -- | -- | -- | -- | -- | -- | 16.3 | **756** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-42.0-20240917 | 9/17/2024 | 42 | N | JD96275 | Treatment | Intermediate | -- | **147000** | -- | **136000** | 113.1 | 0.07 | 8.31 | 9.91 | 18.4 | 6.05 | -- | 7.9 | **661** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-42.0-20241007 | 10/7/2024 | 42 | N | JD97612 | Treatment | Intermediate | -- | **150000** | -- | **189000** | -105.4 | 3.66 | 8.61 | 7.61 | 18.9 | 9.83 | -- | 15.3 | **594** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-42.0-20241113 | 11/13/2024 | 42 | N | JE526 | Treatment | Intermediate | -- | **235000** | -- | **247000** | 75 | 0.41 | 8.95 | 15.5 | 14.8 | 4.22 | -- | 6.2 | **978** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-42.0-20241113-X | 11/13/2024 | 42 | FD | JE526 | Treatment | Intermediate | -- | **189000** | -- | **249000** | -- | -- | -- | -- | -- | -- | -- | 5.7 | **987** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-A | HSTD-P3-MW001I-A-42.0-20241211 | 12/11/2024 | 42 | N | JE2415 | Treatment | Intermediate | **55400** | **71900** | **57500** | **59700** | -442.4 | 0.03 | 9.33 | 11.67 | 15.2 | 597 | -- | 20.9 | **681** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-B | HSTD-P3-MW001I-B-57.20-20211029 | 10/29/2021 | 57.2 | N | 4602461931 | Baseline | Intermediate | **247000** | **426000** | **132000** | **347000** | 70.10 | 0.71 | 8.40 | 9.62 | 16.25 | 6.21 | -- | 12.1 | **897** | < 1.0 U | 290 | **< 600 U** | **712** | -- |
| HSTD-P3-MW001I-B | HSTD-P3-MW001I-B-57.2-20211221 | 12/21/2021 | 57.2 | N | 4602495851 | Treatment | Intermediate | **147000** | **154000** | **174000** | **167000** | 49.60 | 1.56 | 8.76 | 10.09 | 13.87 | 7.71 | -- | 13.9 | **938** | -- | 210 | -- | -- | -- |
| HSTD-P3-MW001I-B | HSTD-P3-MW001I-B-57.2-20220120 | 1/20/2022 | 57.2 | N | 4602510051 | Treatment | Intermediate | 6.4 | **857** | < 10.0 U | < 10.0 U | -138.00 | 0 | 7.07 | 30.20 | 11.65 | 6.50 | -- | 11.5 | **973** | -- | 86 | -- | -- | -- |
| HSTD-P3-MW001I-B | HSTD-P3-MW001I-B-57.2-20220224 | 2/24/2022 | 57.2 | N | 4602531681 | Treatment | Intermediate | 13.1 | **319** | < 10.0 U | < 10.0 U | -27.50 | 1.60 | 7.18 | 26.64 | 10.68 | 9.50 | -- | 12.0 | **969** | -- | 90 | -- | -- | -- |
| HSTD-P3-MW001I-B | HSTD-P3-MW001I-B-57.2-20220323 | 3/23/2022 | 57.2 | N | 4602548831 | Treatment | Intermediate | 12.5 | **522** | < 10.0 U | < 10.0 U | -66.30 | 0.25 | 7.24 | 54.45 | 14.35 | 10.00 | -- | 11.6 | **333** | -- | 90 | -- | -- | -- |
| HSTD-P3-MW001I-B | HSTD-P3-MW001I-B-57.2-20220428 | 4/28/2022 | 57.2 | N | 4602571561 | Treatment | Intermediate | 8.8 | **237** | < 10.0 U | < 10.0 U | -55 | 6.36 | 7.43 | 44.59 | 14.59 | 8.89 | -- | 12.1 | **1150** | -- | 74 | -- | -- | -- |
| HSTD-P3-MW001I-B | HSTD-P3-MW001I-B-57.2-20220518 | 5/18/2022 | 57.2 | N | 4602583551 | Treatment | Intermediate | -- | **955** | -- | < 10.0 U | -57.8 | 0.71 | 7.30 | 30.03 | 16.88 | 3.6 | -- | 11.6 | **323** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-B | HSTD-P3-MW001I-B-57.2-20220617 | 6/17/2022 | 57.2 | N | 4602603591 | Treatment | Intermediate | -- | **370** | -- | < 10.0 U | -89.6 | 1.97 | 7.24 | 30.02 | 18.14 | 9.84 | -- | 13.1 | 244 | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-B | HSTD-P3-MW001I-B-57.2-20220722 | 7/22/2022 | 57.2 | N | 4602624001 | Treatment | Intermediate | -- | **228** | -- | < 20.0 U | -98.1 | 0.01 | 7.07 | 26.3 | 19.7 | 6.35 | -- | 13.8 | 157 | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-B | HSTD-P3-MW001I-B-57.2-20220824 | 8/24/2022 | 57.2 | N | 4602643471 | Treatment | Intermediate | -- | **556** | -- | < 10.0 U | -133.6 | 2.46 | 7.16 | 31.11 | 20.4 | 5.00 | -- | 14.2 | **483** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-B | HSTD-P3-MW001I-B-57.2-20220920 | 9/20/2022 | 57.2 | N | 4602659081 | Treatment | Intermediate | -- | **676** | -- | < 10.0 U | -16.3 | 0.44 | 7.14 | 29.23 | 19.06 | 6.62 | -- | 13.4 | **928** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-B | HSTD-P3-MW001I-B-57.2-20221019 | 10/19/2022 | 57.2 | N | 4602677971 | Treatment | Intermediate | -- | **533** | -- | < 10.0 U | -116.6 | 0.4 | 7.13 | 23.38 | 16.41 | 8.05 | -- | 13.5 | **4480** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-B | HSTD-P3-MW001I-B-57.2-20221115 | 11/15/2022 | 57.2 | N | 4602695881 | Treatment | Intermediate | -- | **497** | -- | < 10.0 U | -121.2 | 0.58 | 7.43 | 36.20 | 15.06 | 8.71 | -- | 14.1 | **1110** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-B | HSTD-P3-MW001I-B-57.2-20221213 | 12/13/2022 | 57.2 | N | 4602712771 | Treatment | Intermediate | -- | **298** | -- | < 20.0 U | 113.4 | 0.52 | 7.1 | 29.30 | 12.03 | 4.99 | -- | 13.5 | **438** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-B | HSTD-P3-MW001I-B-57.2-20230119 | 1/19/2023 | 57.2 | N | 4602732351 | Treatment | Intermediate | -- | **320** | -- | < 20.0 U | -123.3 | 0.33 | 7.11 | 26.30 | 12.3 | 9.4 | -- | 13.4 | **1120** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-B | HSTD-P3-MW001I-B-57.2-20230222 | 2/22/2023 | 57.2 | N | 4602750761 | Treatment | Intermediate | -- | **9730** | -- | < 10.0 U | -88.3 | 0.2 | 7.21 | 25.23 | 13.23 | 9.15 | -- | 17.8 | **1140** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-B | HSTD-P3-MW001I-B-57.2-20230320 | 3/20/2023 | 57.2 | N | 4602766501 | Treatment | Intermediate | -- | **1420** | -- | < 10.0 U | -99 | 0.47 | 7.18 | 25.72 | 12.65 | 7.36 | -- | 14.4 | **1100** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-B | HSTD-P3-MW001I-B-57.2-20230417 | 4/17/2023 | 57.2 | N | 4602783601 | Treatment | Intermediate | -- | **639** | -- | < 10.0 U | -113.80 | 3.22 | 6.84 | 24.579 | 14.70 | 9.33 | -- | 14.0 | **1150** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-B | HSTD-P3-MW001I-B-57-20230512 | 5/12/2023 | 57 | N | 4602802081 | Treatment | Intermediate | -- | **339** | -- | < 10.0 U | 225.8 | 2.45 | 7.64 | 48.3 | 24.25 | 9.87 | -- | 12.3 | **1030** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-B | HSTD-P3-MW001I-B-62-20230512 | 5/12/2023 | 62 | N | 4602802081 | Treatment | Intermediate | **230** | **1600** | < 10.0 U | < 10.0 U | 227.10 | 2.34 | 7.62 | 48.28 | 20.63 | 14.35 | -- | 13.1 | **966** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-B | HSTD-P3-MW001I-B-47.0-20230515 | 5/15/2023 | 47 | N | 4602803281 | Treatment | Intermediate | -- | **183** | -- | < 10.0 U | 153.2 | 0.20 | 7.13 | 24.8 | 21.97 | 4.04 | -- | 13.4 | **981** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-B | HSTD-P3-MW001I-B-47.0-20230515 | 5/15/2023 | 52 | N | 4602803281 | Treatment | Intermediate | -- | **506** | -- | < 10.0 U | 159.6 | 0.21 | 7.13 | 25.81 | 20.20 | 7.91 | -- | 12.8 | 100 | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-B | HSTD-P3-MW001I-B-47-20230621 | 6/21/2023 | 47 | N | 4602828031 | Treatment | Intermediate | -- | **5770** | -- | **286** | 7.2 | 0.75 | 6.87 | 23.28 | 17.72 | 9.8 | -- | 12.7 | **646** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-B | HSTD-P3-MW001I-B-47.0-20230719 | 7/19/2023 | 47 | N | 4602845491 | Treatment | Intermediate | -- | **397** | -- | < 10.0 U | -456.1 | 0.13 | 8 | 5.388 | 17.7 | 6.65 | -- | 13.7 | **1010** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-B | HSTD-P3-MW001I-B-47.0-20230824 | 8/24/2023 | 47 | N | 4602868441 | Treatment | Intermediate | 37.2 | **982** | < 10.0 U | < 10.0 U | -94 | 0.5 | 7.05 | 29.23 | 20.51 | 42.2 | -- | 13.7 | **972** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-B | HSTD-P3-MW001I-B-47.0-20230920 | 9/20/2023 | 47 | N | 4602886061 | Treatment | Intermediate | -- | **704** | -- | < 10.0 U | -38.4 | 0.2 | 7.23 | 30.14 | 20.5 | 7.65 | -- | 13.6 | **982** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-B | HSTD-P3-MW001I-B-47.0-20231016 | 10/16/2023 | 47 | N | 4602904731 | Treatment | Intermediate | -- | **523** | -- | < 10.0 U | -130.3 | 0.95 | 7.22 | 30.95 | 15.66 | 6.97 | -- | 14.6 | **1140** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-B | HSTD-P3-MW001I-B-47.0-20231016-X | 10/16/2023 | 47 | FD | 4602904731 | Treatment | Intermediate | -- | **511** | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 15.0 | **1150** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-B | HSTD-P3-MW001I-B-47.0-20231115 | 11/15/2023 | 47 | N | JD77052 | Treatment | Intermediate | -- | **478** | -- | 11 | -132.8 | 0.14 | 7.11 | 26.82 | 13 | 7.12 | -- | 10.9 | **1200** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-B | HSTD-P3-MW001I-B-47.0-20231215 | 12/15/2023 | 47 | N | JD78996 | Treatment | Intermediate | -- | **360** | -- | 4.0 B | -65.1 | 2.4 | 7.23 | 1.853 | 13.9 | 7.5 | -- | 2.7 | 119 | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-B | HSTD-P3-MW001I-B-47.0-20240117 | 1/17/2024 | 47 | N | JD80687 | Treatment | Intermediate | -- | 68.4 | -- | 35 | -270.2 | 0.22 | 7.17 | 31.1 | 8.6 | 4.14 | -- | 10.9 | **1190** | -- | -- | -- | --

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| HSTD-P3-MW001I-B | HSTD-P3-MW001I-B-47.0-20240917 | 9/17/2024 | 47 | N | JD96275 | Treatment | Intermediate | 13.0 | **354** | 30 | 29 | -94.1 | 0 | 7.22 | 29.7 | 20.1 | 9.72 | -- | 14.4 | **1140** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-B | HSTD-P3-MW001I-B-47.0-20241007 | 10/7/2024 | 47 | N | JD97612 | Treatment | Intermediate | **101** | **741** | 14 | 13 | -99.8 | 3 | 7.25 | 25.84 | 20.6 | 17 | -- | 12.7 | **1160** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-B | HSTD-P3-MW001I-B-47.0-20241113 | 11/13/2024 | 47 | N | JE526 | Treatment | Intermediate | **119000** | **138000** | **118000** | **130000** | 64.3 | 0.36 | 7.89 | 21.56 | 13.8 | 13.2 | -- | 12.2 | **1090** | -- | -- | -- | -- | -- |
| HSTD-P3-MW001I-B | HSTD-P3-MW001I-B-47.0-20241211 | 12/11/2024 | 47 | N | JE2415 | Treatment | Intermediate | **4910** | **5700** | **6100** | **6500** | 114.6 | 0.96 | 7.32 | 24.43 | 14.7 | 17 | -- | 19.0 | **1020** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20211101 | 11/1/2021 | 30.7 | N | 4602463131 | Baseline | Intermediate | **367000** | **374000** | **372000** | **372000** | 141.30 | 15.90 | 7.10 | 4.20 | 16.44 | 9.40 | -- | 26.2 | **331** | < 1.0 U | 9400 | **352 J** | **151** | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20211222 | 12/22/2021 | 30.7 | N | 4602496971 | Treatment | Intermediate | **776000** | **797000** | **851000** | **851000** | 21.70 | 0.71 | 9.01 | 6.93 | 14.06 | 12.80 | -- | 79.2 | **715** | -- | 1700 | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20220120 | 1/20/2022 | 30.7 | N | 4602510051 | Treatment | Intermediate | **704000** | **672000** | **677000** | **677000** | 13.30 | 0.52 | 8.92 | 5.77 | 11.36 | 6.28 | -- | 34.9 | **897** | -- | 1300 E | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20220225 | 2/25/2022 | 30.7 | N | 4602532391 | Treatment | Intermediate | **836000** | **930000** | **721000** | **745000** | 69.00 | 5.43 | 9.73 | 5.98 | 10.79 | 6.62 | -- | 44.8 | **712** | -- | 1400 | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20220225-X | 2/25/2022 | 30.7 | FD | 4602532391 | Treatment | Intermediate | **694000** | **761000** | **710000** | **791000** | -- | -- | -- | -- | -- | -- | -- | 45.6 | **737** | -- | 1400 | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-36.9-20220324 | 3/24/2022 | 36.9 | N | 4602549601 | Treatment | Intermediate | **457000** | **999000** | **634000** | **802000** | 47.70 | 0.10 | 9.44 | 10.31 | 12.01 | 5.64 | -- | 78.5 | **548** | -- | 910 | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20220428 | 4/28/2022 | 30.7 | N | 4602571561 | Treatment | Intermediate | **11900** | **4160** | < 20.0 U | **119000** | 147.9 | 1.88 | 7.15 | 4.710 | 13.91 | 9.33 | -- | 729 | 57.8 | -- | 3100 | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20220519 | 5/19/2022 | 30.7 | N | 4602584291 | Treatment | Intermediate | -- | **257000** | -- | **282000** | 118.3 | 2.18 | 7.71 | 5.444 | 14.39 | 9.88 | -- | 228 | **424** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20220617 | 6/17/2022 | 30.7 | N | 4602603591 | Treatment | Intermediate | **279000** | **348000** | **204000** | **288000** | 114.6 | 0.59 | 7.17 | 6.051 | 17.19 | 31.4 | -- | 119 | **347** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20220721 | 7/21/2022 | 30.7 | N | 4602623381 | Treatment | Intermediate | **178000** | **241000** | **183000** | **140000** | 75.3 | 1.95 | 8.74 | 5.725 | 21.24 | 15 | -- | 192 | 219 | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20220825 | 8/25/2022 | 30.7 | N | 4602644081 | Treatment | Intermediate | **400000** | **242000** | **328000** | **395000** | 142.0 | 1.19 | 7.75 | 5.997 | 21.03 | 103 | -- | 151 | **435** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20220920 | 9/20/2022 | 30.7 | N | 4602659081 | Treatment | Intermediate | **343000** | **235000** | **493000** | **344000** | 62 | 0.52 | 7.59 | 5.547 | 19.85 | 25.2 | -- | 107 | 222 | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20221019 | 10/19/2022 | 30.7 | N | 4602677971 | Treatment | Intermediate | -- | **281000** | -- | **125000** | 37.9 | 2.63 | 7.07 | 4.118 | 17.04 | 9.45 | -- | 473 | 181 | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20221117 | 11/17/2022 | 30.7 | N | 4602697441 | Treatment | Intermediate | -- | **33800** | -- | **55700** | 42.1 | 0.65 | 6.28 | 3578 | 14.53 | 9.89 | -- | 757 | 155 | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20221214 | 12/14/2022 | 30.7 | N | 4602713561 | Treatment | Intermediate | **7160** | **10900** | < 10.0 U | < 10.0 U | -277.8 | 17.31 | 6.13 | 4.852 | 12.05 | 40.4 | -- | 781 | 41.4 | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20230119 | 1/19/2023 | 30.7 | N | 4602732351 | Treatment | Intermediate | **6220** | **8500** | < 10.0 U | < 20.0 U | -290.0 | 0.11 | 6.33 | 4.3 | 13.6 | 12.7 | -- | 530 | 25.4 | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20230222 | 2/22/2023 | 30.7 | N | 4602750761 | Treatment | Intermediate | **9110** | **7760** | **10000** | **< 100 U** | 145.4 | 2.56 | 6.88 | 7.378 | 12.47 | 78.1 | -- | 579 | 25.8 | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20230320 | 3/20/2023 | 30.7 | N | 4602766501 | Treatment | Intermediate | **47900** | **51100** | **37000** | **37000** | -74.0 | 3.96 | 6.71 | 3.546 | 13.87 | 97.1 | -- | 418 | 127 | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-33.0-20230414 | 4/14/2023 | 33 | N | 4602782821 | Treatment | Intermediate | **5580** | **8900** | **3220** | **3270** | -6.8 | 0.01 | 6.69 | 4.730 | 20.06 | 51.20 | -- | 421 | 87.1 | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-38.0-20230414 | 4/14/2023 | 38 | N | 4602782821 | Treatment | Intermediate | **4330** | **7400** | **2300** | **1820** | -65.0 | 0.04 | 6.70 | 4.640 | 17.36 | 34.4 | -- | 399 | 80.0 | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-23-20230417 | 4/17/2023 | 23 | N | 4602783601 | Treatment | Intermediate | -- | **7650** | -- | **655** | 142.5 | 0.50 | 7.23 | 4.452 | 14.40 | 61 | -- | 386 | 96.0 | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-28-20230417 | 4/17/2023 | 28 | N | 4602783601 | Treatment | Intermediate | -- | **11200** | -- | **3970** | -20.8 | 0.60 | 7.46 | 4.925 | 16.40 | 42.50 | -- | 357 | 133 | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20230512 | 5/12/2023 | 30.7 | N | 4602802081 | Treatment | Intermediate | **44600** | **45700** | **41200** | **41800** | 11.2 | 0.31 | 7.15 | 4.233 | 17.69 | 41.9 | -- | 392 | 161 | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20230623 | 6/23/2023 | 30.7 | N | 4602829671 | Treatment | Intermediate | **4520** | **6170** | **1660** | < 10.0 U | -182.6 | 0.08 | 6.91 | 4.977 | 17.60 | 39.8 | -- | 344 | 47.1 | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20230720 | 7/20/2023 | 30.7 | N | 4602846391 | Treatment | Intermediate | **42900** | **121000** | **76000** | **59700** | 153.4 | 1.38 | 6.29 | 3.639 | 22.53 | 29 | -- | 347 | **310** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20230825 | 8/25/2023 | 30.7 | N | 4602869101 | Treatment | Intermediate | **4270** | **10900** | **2250** | **1780** | -70.3 | 3.57 | 7.11 | 3.7 | 20.43 | 80.3 | -- | 202 | 21.5 | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20230920 | 9/20/2023 | 30.7 | N | 4602886061 | Treatment | Intermediate | **871** | **2980** | < 10.0 U | < 10.0 U | -224.5 | 0.16 | 6.51 | 3.692 | 22.7 | 27.3 | -- | 281 | 13.5 | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20231016 | 10/16/2023 | 30.7 | N | 4602904731 | Treatment | Intermediate | **1430** | **2320** | < 20.0 U | < 20.0 U | -259.1 | 3.96 | 5.76 | 3.284 | 19.14 | 18.9 | -- | 316 | 49.1 | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20231116 | 11/16/2023 | 30.7 | N | JD77164 | Treatment | Intermediate | -- | **996** | -- | 45 | -312.4 | 1.19 | 6.72 | 3.458 | 16.4 | 7.89 | -- | 202 | 103 | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20231222 | 12/22/2023 | 30.7 | N | JD79442 | Treatment | Intermediate | -- | **999** | -- | < 10 U | -337.2 | 0.15 | 6.53 | 3.525 | 12.8 | 6.1 | -- | 274 | 10.1 | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20240117 | 1/17/2024 | 30.7 | N | JD80687 | Treatment | Intermediate | **752** | **728** | < 10 U | < 10 U | -378.1 | 0.11 | 6.75 | 2.871 | 8.3 | 20.4 | -- | 38.6 | 25.4 B | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20240222 | 2/22/2024 | 30.7 | N | JD82990 | Treatment | Intermediate | -- | **565** | -- | 10 | -395.8 | 0.12 | 6.81 | 3.07 | 12.2 | 9.58 | -- | 140 | 4.8 | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20240315 | 3/15/2024 | 30.7 | N | JD84558 | Treatment | Intermediate | **671** | **705** | < 10 U | < 10 U | -254.5 | 0.13 | 6.62 | 2.805 | 14.1 | 21.6 | -- | 25.8 | 171 | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20240411 | 4/11/2024 | 30.7 | N | JD86321 | Treatment | Intermediate | **468** | **517** | 11 | 11 | -458.1 | 0.16 | 6.64 | 3.136 | 14.2 | 20.5 | -- | 121 | 25.3 | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20240521 | 5/21/2024 | 30.7 | N | JD88880 | Treatment | Intermediate | **523** | **536** | 8.3 B | 3.5 B | -453.5 | 0.05 | 6.57 | 3.286 | 20.4 | 22.2 | -- | 111 | 133 | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20240614 | 6/14/2024 | 30.7 | N | JD90507 | Treatment | Intermediate | **519** | **441** | < 10 U | < 10 U | -370.7 | 0.06 | 6.52 | 3.083 | 20.9 | 13.1 | -- | 122 | 56.8 | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20240712 | 7/12/2024 | 30.7 | N | JD92107 | Treatment | Intermediate | -- | **486** | -- | < 10 U | -297.2 | 0.13 | 6.31 | 2958 | 18.7 | 7.87 | -- | 87.7 | 48.7 | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20240816 | 8/16/2024 | 30.7 | N | JD94325 | Treatment | Intermediate | -- | **495** | -- | < 10 U | -300.9 | 0.15 | 6.48 | 2.96 | 20.7 | 6.11 | -- | 64.2 | 1.0 B | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20240918 | 9/18/2024 | 30.7 | N | JD96353 | Treatment | Intermediate | -- | **795** | -- | 3.4 B | -301.7 | 0.11 | 6.55 | 2.04 | 19.4 | 5.07 | -- | 70.7 | 109 | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20241007 | 10/7/2024 | 30.7 | N | JD97612 | Treatment | Intermediate | -- | **468** | -- | 4.9 B | -300.7 | 0.1 | 6.63 | 2.33 | 22.7 | 3.34 | -- | 92.0 | 11.4 | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20241114 | 11/14/2024 | 30.7 | N | JE597 | Treatment | Intermediate | -- | **523** | -- | 6.8 B | -352.1 | 0.27 | 6.75 | 2.31 | 17.2 | 9.02 | -- | 61.2 | 17.1 B | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-30.7-20241210 | 12/10/2024 | 30.7 | N | JE2339 | Treatment | Intermediate | -- | **453** | -- | 28 | -310.8 | 0.33 | 7.05 | 2.43 | 13.2 | 7.39 | -- | 58.1 | 44.7 | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-42-20211102 | 11/2/2021 | 42 | N | 4602463911 | Baseline | Intermediate | -- | **797000** | -- | **969000** | 54.50 | 1.19 | 9.05 | 7.10 | 15.60 | 6.52 | -- | 31.9 | **666** | < 1.0 U | 1200 | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-42-0-20211222 | 12/22/2021 | 42 | N | 4602496971 | Treatment | Intermediate | **883000** | **864000** | **456000** | **445000** | 39.20 | 0.60 | 9.01 | 7.60 | 13.47 | 5.21 | -- | 98.1 | **742** | -- | 1000 | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-42-20220120 | 1/20/2022 | 42 | N | 4602510051 | Treatment | Intermediate | **822000** | **890000** | **861000** | **816000** | 25.40 | 1.22 | 8.62 | 7.14 | 12.21 | 6.23 | -- | 38.7 | **726** | -- | 830 E | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-42-20220228 | 2/28/2022 | 42 | N | 4602533341 | Treatment | Intermediate | **878000** | **781000** | **950000** | **971000** | 2.30 | 0.64 | 9.24 | 6.24 | 11.66 | 1.30 | -- | 36.5 F1 | **722** | -- | 1100 | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-42-20220324 | 3/24/2022 | 42 | N | 4602549601 | Treatment | Intermediate | **1090000** | **1030000** | **1100000** | **1120000** | 172.40 | 0.45 | 9.62 | 4.90 | 12.46 | 8.29 | -- | 32.5 | **623** | -- | 1100 | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-42-20220428 | 4/28/2022 | 42 | N | 4602571561 | Treatment | Intermediate | **940000** | **1040000** | **1040000** | **1090000** | 97.6 | 2.17 | 9.21 | 6.306 | 12.24 | 4.28 | -- | 34.2 | **785** | -- | 1000 | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-42-20220519 | 5/19/2022 | 42 | N | 4602584291 | Treatment | Intermediate | -- | **988000** | -- | **1080000** | -138.3 | 1.47 | 9.62 | 6.725 | 14.57 | 2.13 | -- | 31.7 | **729** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-42-20220617 | 6/17/2022 | 42 | N | 4602603591 | Treatment | Intermediate | -- | **1020000** | -- | **1060000** | 15.7 | 9.81 | 9.08 | 7.348 | 18.11 | 4.18 | -- | 30.5 | **640** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-42-20220722 | 7/22/2022 | 42 | N | 4602624001 | Treatment | Intermediate | -- | **1020000** | -- | **1100000** | 107 | 0.93 | 16.96 | 7.163 | 19.46 | 3.14 | -- | 32.9 | **620** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-42-20220826 | 8/26/2022 | 42 | N | 4602644761 | Treatment | Intermediate | -- | **861000** | -- | **906000** | 118.1 | 4.49 | 9.76 | 8.022 | 18.94 | 8.65 | -- | 34.4 | **702** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-42-20220921 | 9/21/2022 | 42 | N | 4602659871 | Treatment | Intermediate | -- | **855000** | -- | **795000** | 63.9 | 9.03 | 9.11 | 7.710 | 19.20 | 8.81 | -- | 27.9 | **581** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-42-0-20221019 | 10/19/2022 | 42 | N | 4602677971 | Treatment | Intermediate | -- | **780000** | -- | **918000** | 27.1 | 0.74 | 9.18 | 7.716 | 17.66 | 8.64 | -- | 33.8 | **626** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-42-20221116 | 11/16/2022 | 42 | N | 4602696581 | Treatment | Intermediate | -- | **645000** | -- | **683000** | 101.1 | 0.64 | 9.02 | 8.034 | 15.33 | 8.15 | -- | 32.8 | **721** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-42-20221214 | 12/14/2022 | 42 | N | 4602713561 | Treatment | Intermediate | -- | **583000** | -- | **713000** | -31.3 | 3.52 | 8.89 | 4.224 | 13.25 | 8.62 | -- | 27.6 | **779** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-42-20221214-X | 12/14/2022 | 42 | FD | 4602713561 | Treatment | Intermediate | -- | **636000** | -- | **623000** | -- | -- | -- | -- | -- | -- | -- | 27.9 | **772** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-42-20230120 | 1/20/2023 | 42 | N | 4602733031 | Treatment | Intermediate | -- | **511000** | -- | **229000** | -38.1 | 0.18 | 9.2 | 11.832 | 13.4 | 9.7 | -- | 29.3 | **750** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-42-0-20230223 | 2/23/2023 | 42 | N | 4602751411 | Treatment | Intermediate | -- | **451000** | -- | **446000** | -43.0 | 0.78 | 9.39 | 11.87 | 11.85 | 3.98 | -- | 29.3 | **805** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-42-0-20230320 | 3/20/2023 | 42 | N | 4602766501 | Treatment | Intermediate | -- | **534000** | -- | **564000** | -11.1 | 0.25 | 9.29 | 10.96 | 12.25 | 6.93 | -- | 36.1 | **772** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-44-20230417 | 4/17/2023 | 44 | N | 4602783601 | Treatment | Intermediate | -- | **618000** | -- | **674000** | -24.1 | 0.27 | 9.39 | 10.062 | 14.7 | 7.34 | -- | 25.9 | **791** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-49-20230417 | 4/17/2023 | 49 | N | 4602783601 | Treatment | Intermediate | -- | **630000** | -- | **680000** | -14.9 | 0.31 | 9.40 | 9.816 | 14.36 | 7.57 | -- | 26.9 | **758** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-54-20230417 | 4/17/2023 | 54 | N | 4602783601 | Treatment | Intermediate | -- | **629000** | -- | **691000** | -31.6 | 0.11 | 9.42 | 10.611 | 14.28 | 3.53 | -- | 25.9 | **762** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-59-20230417 | 4/17/2023 | 59 | N | 4602783601 | Treatment | Intermediate | -- | **589000** | -- | **799000** | 31.5 | 0.09 | 9.14 | 9.773 | 16.82 | 1.94 | -- | 25.7 | **768** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-42-0-20230515 | 5/15/2023 | 42 | N | 4602803281 | Treatment | Intermediate | -- | **569000** | -- | **643000** | 184.5 | 0.49 | 8.84 | 9.065 | 20.20 | 2.3 | -- | 27.6 | **723** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-42-20230623 | 6/23/2023 | 42 | N | 4602829671 | Treatment | Intermediate | -- | **378000** | -- | **415000** | -9.5 | 0.12 | 9.06 | 12.38 | 17.70 | 9.04 | -- | 30.6 | **766** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-42-0-20230720 | 7/20/2023 | 42 | N | 4602846391 | Treatment | Intermediate | -- | **454000** | -- | **524000** | 224.9 | 0.73 | 8.12 | 9.117 | 23.6 | 6.05 | -- | 37.0 | **700** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-42-0-20230825 | 8/25/2023 | 42 | N | 4602869101 | Treatment | Intermediate | -- | **350000** | -- | **376000** | 182.9 | 0.63 | 10 | 10.02 | 19.59 | 4.3 | -- | 62.3 | **508** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-42-0-20230920 | 9/20/2023 | 42 | N | 4602886061 | Treatment | Intermediate | -- | **427000** | -- | **461000** | -3.3 | 0.37 | 8.39 | 8.883 | 18.99 | 2.67 | -- | 93.2 | **633** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-42-0-20231016 | 10/16/2023 | 42 | N | 4602904731 | Treatment | Intermediate | **683000** | **625000** | **698000** | **709000** | 8.4 | 0.89 | 8.9 | 10.52 | 19.43 | 19.6 | -- | 57.2 | **18100** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-42-0-20231116 | 11/16/2023 | 42 | N | JD77164 | Treatment | Intermediate | -- | **397000** | -- | **517000** | -66.2 | 0.85 | 8.93 | 11.02 | 17.4 | 9.26 | -- | 48.3 | **693** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-42-0-20231222 | 12/22/2023 | 42 | N | JD79442 | Treatment | Intermediate | -- | **665000** | -- | **599000** | -65.8 | 0.13 | 8.77 | 11.02 | 13.4 | 7.34 | -- | 26.3 | **777** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-42-0-20240117 | 1/17/2024 | 42 | N | JD80687 | Treatment | Intermediate | **450000** | **439000** | **629000** | **642000** | -77.5 | 0.58 | 9.03 | 9.22 | 7.8 | 15.7 | -- | < 40 U | **703** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-42-0-20240222 | 2/22/2024 | 42 | N | JD82990 | Treatment | Intermediate | **460000** | **458000** | **650000** | **532000** | -65.6 | 0.37 | 8.68 | 10.51 | 12 | 18.9 | -- | 23.7 | **758** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-42-0-20240314 | 3/14/2024 | 42 | N | JD84495 | Treatment | Intermediate | **623000** | **633000** | **527000** | **497000** | 36.5 | 0.19 | 8.83 | 9.86 | 14.9 | 17.3 | -- | 20.8 | **756** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-42-0-20240415 | 4/15/2024 | 42 | N | JD86534 | Treatment | Intermediate | **551000** | **431000** | **502000** | **567000** | -166 | 0.11 | 8.63 | 11.65 | 19.3 | 14.1 | -- | 37.4 | **636** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-20240515 | 5/15/2024 | | N | JD88510 | Treatment | Intermediate | **517000** | **511000** | **478000** | **570000** | -4.4 | 0.84 | 9.79 | 9.67 | 16.4 | 69.5 | -- | 35.6 | **649** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-20240515-X | 5/15/2024 | | FD | JD88510 | Treatment | Intermediate | **551000** | **538000** | **492000** | **607000** | -- | -- | -- | -- | -- | -- | -- | 20.2 | **666** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-20240620 | 6/20/2024 | | N | JD90821 | Treatment | Intermediate | -- | **620000** | -- | **672000** | 73.3 | 1.89 | 8.73 | 11.19 | 20.7 | 5.5 | -- | 44.1 | **726** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-20240620-X | 6/20/2024 | | FD | JD90821 | Treatment | Intermediate | -- | **535000** | -- | **701000** | -- | -- | -- | -- | -- | -- | -- | 46.7 | **727** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-20240716 | 7/16/2024 | | N | JD92253 | Treatment | Intermediate | -- | **423000** | -- | **528000** | -58.4 | 0.27 | 8.59 | 12.05 | 22.2 | 8.65 | -- | 80.4 | **757** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-20240716-X | 7/16/2024 | | FD | JD92253 | Treatment | Intermediate | -- | **452000** | -- | **534000** | -- | -- | -- | -- | -- | -- | -- | 93.4 | **758** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-20240814 | 8/14/2024 | | N | JD94091 | Treatment | Intermediate | -- | **466000** | -- | **572000** | 24 | 0.53 | 8.71 | 9.15 | 23.4 | 5.81 | -- | 36.3 | **765** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-20240814-X | 8/14/2024 | | FD | JD94091 | Treatment | Intermediate | -- | **421000** | -- | **590000** | -- | -- | -- | -- | -- | -- | -- | 38.3 | **787** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-20240918 | 9/18/2024 | | N | JD96353 | Treatment | Intermediate | -- | **442000** | -- | **457000** | 123.4 | 0.29 | 8.65 | 9.61 | 18.5 | 3.93 | -- | 36.5 | **755** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-20240918-X | 9/18/2024 | | FD | JD96353 | Treatment | Intermediate | -- | **544000** | -- | **529000** | -- | -- | -- | -- | -- | -- | -- | 34.1 | **755** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-20241009 | 10/9/2024 | | N | JD97777 | Treatment | Intermediate | -- | **521000** | -- | **546000** | 24 | 0.53 | 8.71 | 9.15 | 23.4 | 5.81 | -- | 52.9 | **731** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-20241009-X | 10/9/2024 | | FD | JD97777 | Treatment | Intermediate | -- | **596000** | -- | **505000** | -- | -- | -- | -- | -- | -- | -- | 44.9 | **732** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-20241114 | 11/14/2024 | | N | JE597 | Treatment | Intermediate | -- | **592000** | -- | **489000** | -69.2 | 0.25 | 8.86 | 8.87 | 16.3 | 4.28 | -- | 23.4 | **748** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-20241114-X | 11/14/2024 | | FD | JE597 | Treatment | Intermediate | -- | **486000** | -- | **498000** | -- | -- | -- | -- | -- | -- | -- | 25.7 | **761** | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-42-0-20241218 | 12/18/2024 | 42 | N | JE2952 | Treatment | Intermediate | **374000** | **320000** | **402000** | **400000** | 30.8 | 0.22 | 8.96 | 10.81 | 15.4 | 19.1 | -- | 59.4 | **535** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-A | HSTD-P3-MW003I-A-32.1-20211101 | 11/1/2021 | 32.1 | N | 4602463131 | Baseline | Intermediate | **908000** | **718000** | **792000** | **826000** | 96.80 | 0.56 | 9.24 | 6.06 | 16.23 | 1.98 | -- | 18.4 | **608** | < 1.0 U | 2000 | **< 600 U** | **58.5** | -- |
| HSTD-P3-MW003I-A | HSTD-P3-MW003I-A-32.1-20211222 | 12/22/2021 | 32.1 | N | 4602496971 | Treatment | Intermediate | **833000** | **829000** | **840000** | **824000** | 48.20 | 0.49 | 9.52 | 7.06 | 14.20 | 4.89 | -- | 28.9 | **744** | -- | 1500 | -- | -- | -- |
| HSTD-P3-MW003I-A | HSTD-P3-MW003I-A-32.1-20220120 | 1/20/2022 | 32.1 | N | 4602510051 | Treatment | Intermediate | **806000** | **916000** | **872000** | **844000** | 65.50 | 0.35 | 10.22 | 7.698 | 13.90 | 2.11 | -- | 20.8 | **701** | -- | 1200 E | -- | -- | -- |
| HSTD-P3-MW003I-A | HSTD-P3-MW003I-A-32.1-20220224 | 2/24/2022 | 32.1 | N | 4602531681 | Treatment | Intermediate | **869000** | **744000** | **817000** | **828000** | -7.50

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| HSTD-P3-MW003I-A | HSTD-P3-MW003I-A-32.1-20220920 | 9/20/2022 | 32.1 | N | 4602659081 | Treatment | Intermediate | -- | **685000** | -- | **954000** | 29.3 | 1.01 | 9.29 | 7.450 | 19.95 | 2.5 | -- | 22.0 | **623** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-A | HSTD-P3-MW003I-A-32.1-20221019 | 10/19/2022 | 32.1 | N | 4602677971 | Treatment | Intermediate | -- | **941000** | -- | **907000** | -64.3 | 5.94 | 10.09 | 7.463 | 16.68 | 4.88 | -- | 23.3 | **667** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-A | HSTD-P3-MW003I-A-32.1-20221115 | 11/15/2022 | 32.1 | N | 4602695881 | Treatment | Intermediate | -- | **923000** | -- | **885000** | -0.6 | 5.24 | 9.83 | 7.263 | 15.02 | 6.26 | -- | 23.8 | **754** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-A | HSTD-P3-MW003I-A-32.1-20221213 | 12/13/2022 | 32.1 | N | 4602712771 | Treatment | Intermediate | -- | **888000** | -- | **836000** | 108.3 | 0.39 | 10 | 6.969 | 13.84 | 5.52 | -- | 22.7 | **631** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-A | HSTD-P3-MW003I-A-32.1-20230119 | 1/19/2023 | 32.1 | N | 4602732351 | Treatment | Intermediate | -- | **1050000** | -- | **889000** | 122.2 | 0.41 | 9.56 | 6.894 | 12.14 | 1.67 | -- | 23.6 | **621** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-A | HSTD-P3-MW003I-A-32.1-20230119-X | 1/19/2023 | 32.1 | FD | 4602732351 | Treatment | Intermediate | -- | **902000** | -- | **917000** | -- | -- | -- | -- | -- | -- | -- | 23.4 | **791** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-A | HSTD-P3-MW003I-A-32.1-20230222 | 2/22/2023 | 32.1 | N | 4602750761 | Treatment | Intermediate | -- | **792000** | -- | **805000** | -33.9 | 0.07 | 10.08 | 6.723 | 14 | 3.5 | -- | 34.3 | **840** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-A | HSTD-P3-MW003I-A-32.1-20230320 | 3/20/2023 | 32.1 | N | 4602766501 | Treatment | Intermediate | -- | **815000** | -- | **877000** | -118.8 | 0.1 | 10.21 | 10.84 | 14.59 | 6.27 | -- | 33.9 | **779** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-A | HSTD-P3-MW003I-A-32.1-20230421 | 4/21/2023 | 32.1 | N | 4602786851 | Treatment | Intermediate | -- | **685000** | -- | **743000** | 226.3 | 1.7 | 9.89 | 6.348 | 17.9 | 1.08 | -- | 27.7 | **776** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-A | HSTD-P3-MW003I-A-32.1-20230512 | 5/12/2023 | 32.1 | N | 4602802081 | Treatment | Intermediate | -- | **623000** | -- | **609000** | 198.0 | 0.89 | 9.5 | 5.05 | 18.1 | 3.96 | -- | 30.3 | **764** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-A | HSTD-P3-MW003I-A-32.1-20230623 | 6/23/2023 | 32.1 | N | 4602829671 | Treatment | Intermediate | **366000** | **286000** | **354000** | **360000** | 161.7 | 0.28 | 10.7 | 4.308 | 16.9 | 15.2 | -- | 92.9 | **730** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-A | HSTD-P3-MW003I-A-32.1-20230718 | 7/18/2023 | 32.1 | N | 4602844591 | Treatment | Intermediate | **114000** | **130000** | **132000** | **139000** | -215.7 | 0.13 | 10.91 | 4.917 | 19.65 | 34 | -- | 104 | **294** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-A | HSTD-P3-MW003I-A-32.1-20230824 | 8/24/2023 | 32.1 | N | 4602868441 | Treatment | Intermediate | **9470** | **13500** | **1280** | **1310** | -176.8 | 3.08 | 10.27 | 4.842 | 19.11 | 18 | -- | 153 | **322** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-A | HSTD-P3-MW003I-A-32.1-20230920 | 9/20/2023 | 32.1 | N | 4602886061 | Treatment | Intermediate | **242** | **3610** | < 10.0 U | < 10.0 U | -425.9 | 0.07 | 9.36 | 4.049 | 19.42 | 18.1 | -- | 220 | **345** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-A | HSTD-P3-MW003I-A-32.1-20231017 | 10/17/2023 | 32.1 | N | 4602905591 | Treatment | Intermediate | -- | **890** | -- | < 50.0 U | -442.3 | 0.03 | 9.46 | 5.457 | 16.6 | 2.5 | -- | 375 | **288** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-A | HSTD-P3-MW003I-A-32.1-20231115 | 11/15/2023 | 32.1 | N | JD77052 | Treatment | Intermediate | -- | **694** | -- | 3.5 B | -468.8 | 0.05 | 9.18 | 5.36 | 16.1 | 3.56 | -- | 440 | 237 | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-A | HSTD-P3-MW003I-A-32.1-20231215 | 12/15/2023 | 32.1 | N | JD78996 | Treatment | Intermediate | -- | **574** | -- | < 10 U | -464.9 | 0.05 | 8.44 | 5.26 | 16 | 6.95 | -- | 525 | **337** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-A | HSTD-P3-MW003I-A-32.1-20240118 | 1/18/2024 | 32.1 | N | JD80778 | Treatment | Intermediate | -- | **492** | -- | < 10 U | -565.9 | 0.03 | 8.78 | 6.36 | 13.1 | 4.98 | -- | 691 | **270** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-A | HSTD-P3-MW003I-A-32.1-20240220 | 2/20/2024 | 32.1 | N | JD82806 | Treatment | Intermediate | -- | **517** | -- | 21 | -424.8 | 0.77 | 8.94 | 5.53 | 14 | 3.26 | -- | 538 | 156 | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-A | HSTD-P3-MW003I-A-32.1-20240314 | 3/14/2024 | 32.1 | N | JD84495 | Treatment | Intermediate | -- | **386** | -- | < 10 U | -424.6 | 2.23 | 8.85 | 5.86 | 13.6 | 3.62 | -- | 522 | 126 | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-A | HSTD-P3-MW003I-A-32.1-20240411 | 4/11/2024 | 32.1 | N | JD86321 | Treatment | Intermediate | -- | **376** | -- | < 10 U | -436.3 | 0.28 | 8.59 | 6.42 | 15.8 | 2.75 | -- | 530 | 168 | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-A | HSTD-P3-MW003I-A-32.1-20240521 | 5/21/2024 | 32.1 | N | JD88880 | Treatment | Intermediate | -- | **508** | -- | < 10 U | -384.5 | 0.06 | 7.9 | 5.97 | 16.5 | 3.5 | -- | 393 | **1510** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-A | HSTD-P3-MW003I-A-32.1-20240614 | 6/14/2024 | 32.1 | N | JD90507 | Treatment | Intermediate | -- | **378** | -- | < 10 U | -442.5 | 0.09 | 7.87 | 7.64 | 19.8 | 3.34 | -- | 291 | **287** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-A | HSTD-P3-MW003I-A-32.1-20240712 | 7/12/2024 | 32.1 | N | JD92107 | Treatment | Intermediate | -- | **342** | -- | < 10 U | -412.1 | 0.06 | 7.35 | 7177 | 19.1 | 4.48 | -- | 213 | **354** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-A | HSTD-P3-MW003I-A-32.1-20240816 | 8/16/2024 | 32.1 | N | JD94325 | Treatment | Intermediate | -- | **223** | -- | < 10 U | -461.2 | 0.08 | 7.47 | 7.26 | 21.7 | 1.4 | -- | 186 | **317** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-A | HSTD-P3-MW003I-A-32.1-20240917 | 9/17/2024 | 32.1 | N | JD96275 | Treatment | Intermediate | -- | **212** | -- | 7.7 B | -414.6 | 0.06 | 7.56 | 6.18 | 18.4 | 2.84 | -- | 52.7 | **387** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-A | HSTD-P3-MW003I-A-32.1-20241008 | 10/8/2024 | 32.1 | N | JD97685 | Treatment | Intermediate | -- | **160** | -- | < 10 U | -420.5 | 3.87 | 7.59 | 6.89 | 18.3 | 3.36 | -- | 128 | **413** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-A | HSTD-P3-MW003I-A-32.1-20241114 | 11/14/2024 | 32.1 | N | JE597 | Treatment | Intermediate | -- | **173** | -- | < 10 U | -413.9 | 5.22 | 7.68 | 6.21 | 15.8 | 1.7 | -- | 46.8 | **486** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-A | HSTD-P3-MW003I-A-32.1-20241210 | 12/10/2024 | 32.1 | N | JE2339 | Treatment | Intermediate | -- | **305** | -- | < 10 U | -420.3 | 0.1 | 7.62 | 6.31 | 15.4 | 3.52 | -- | 72.7 | **602** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20211101 | 11/1/2021 | 52.7 | N | 4602463131 | Baseline | Intermediate | **633000** | **547000** | **571000** | **571000** | 124.90 | 0.48 | 8.85 | 7.08 | 16.56 | 7.59 | -- | 12.1 | **536** | < 1.0 U | 1200 | **< 600 U** | 16.4 J | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20211222 | 12/22/2021 | 52.7 | N | 4602496971 | Treatment | Intermediate | **705000** | **739000** | **763000** | **785000** | 55.20 | 0.94 | 8.96 | 7.10 | 13.77 | 5.41 | -- | 26.6 | **605** | -- | 1500 | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20220120 | 1/20/2022 | 52.7 | N | 4602510051 | Treatment | Intermediate | **731000** | **845000** | **771000** | **771000** | 97.20 | 0.58 | 9.71 | 7.453 | 12.83 | 7.42 | -- | 17.4 | **578** | -- | 1000 E | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20220224 | 2/24/2022 | 52.7 | N | 4602531681 | Treatment | Intermediate | **791000** | **795000** | **740000** | **718000** | 38.40 | 0.53 | 9.14 | 7.07 | 12.97 | 4.23 | -- | 16.7 | **560** | -- | 1400 | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20220324 | 3/24/2022 | 52.7 | N | 4602549601 | Treatment | Intermediate | **791000** | **843000** | **746000** | **813000** | 154.80 | 0.18 | 9.49 | 11.74 | 13.27 | 7.70 | -- | 16.1 | **500** | -- | 1500 | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20220428 | 4/28/2022 | 52.7 | N | 4602571561 | Treatment | Intermediate | **664000** | **742000** | **865000** | **799000** | -125.4 | 0.15 | 9.47 | 5.858 | 15 | 1 | -- | 16.5 | **617** | -- | 1200 | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20220518 | 5/18/2022 | 52.7 | N | 4602583551 | Treatment | Intermediate | -- | **759000** | -- | **779000** | 34.4 | 1.40 | 9.29 | 6.975 | 17.37 | 2.48 | -- | 17.4 | **564** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20220617 | 6/17/2022 | 52.7 | N | 4602603591 | Treatment | Intermediate | -- | **722000** | -- | **750000** | 96.7 | 0.33 | 9.67 | 6.896 | 19.92 | 3.37 | -- | 16.1 | **531** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20220722 | 7/22/2022 | 52.7 | N | 4602624001 | Treatment | Intermediate | -- | **779000** | -- | **766000** | 129.9 | 0.77 | 9.34 | 11.95 | 19.82 | 3.87 | -- | 17.9 | **538** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20220824 | 8/24/2022 | 52.7 | N | 4602643471 | Treatment | Intermediate | -- | **722000** | -- | **776000** | 12.6 | 3.05 | 9.95 | 6.672 | 19.97 | 18.5 | -- | 19.1 | **494** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20220920 | 9/20/2022 | 52.7 | N | 4602659081 | Treatment | Intermediate | -- | **670000** | -- | **795000** | 52.1 | 0.05 | 8.9 | 7.246 | 19.37 | 3.38 | -- | 16.6 | **544** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20221019 | 10/19/2022 | 52.7 | N | 4602677971 | Treatment | Intermediate | -- | **749000** | -- | **744000** | -0.7 | 0.26 | 9.3 | 10.816 | 16.96 | 5.41 | -- | 17.4 | **565** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20221115 | 11/15/2022 | 52.7 | N | 4602695881 | Treatment | Intermediate | -- | **766000** | -- | **788000** | -8.4 | 1.85 | 9.25 | 7.26 | 15.52 | 3.01 | -- | 18.9 | **651** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20221213 | 12/13/2022 | 52.7 | N | 4602712771 | Treatment | Intermediate | -- | **752000** | -- | **689000** | 104.9 | 0.13 | 9.11 | 7.218 | 13.62 | 4.97 | -- | 16.4 | **536** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20230119 | 1/19/2023 | 52.7 | N | 4602732351 | Treatment | Intermediate | -- | **882000** | -- | **739000** | 119.4 | 0.52 | 8.74 | 7.129 | 12.5 | 3.45 | -- | 17.2 F1 | **655** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20230222 | 2/22/2023 | 52.7 | N | 4602750761 | Treatment | Intermediate | -- | **751000** | -- | **722000** | 96 | 0.13 | 9.2 | 7.653 | 14 | 3.48 | -- | 17.7 | **689** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20230320 | 3/20/2023 | 52.7 | N | 4602766501 | Treatment | Intermediate | -- | **684000** | -- | **745000** | -21 | 1.13 | 9.17 | 6.652 | 13.87 | 3.7 | -- | 19.5 | **576** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20230421 | 4/21/2023 | 52.7 | N | 4602786851 | Treatment | Intermediate | -- | **643000** | -- | **711000** | 227.0 | 1.14 | 8.78 | 6.578 | 17.8 | 4.98 | -- | 15.0 | **661** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20230509 | 5/9/2023 | 52.7 | N | 4602799431 | Treatment | Intermediate | -- | **741000** | -- | **737000** | 219.0 | 0.6 | 8.89 | 8.077 | 16.76 | 1.69 | -- | 15.1 | **698** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20230623 | 6/23/2023 | 52.7 | N | 4602829671 | Treatment | Intermediate | -- | **675000** | -- | **698000** | 158.8 | 0.45 | 8.98 | 5.379 | 18.08 | 6.04 | -- | 13.5 | **710** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20230719 | 7/19/2023 | 52.7 | N | 4602845491 | Treatment | Intermediate | -- | **587000** | -- | **588000** | 94.8 | 0.37 | 8.94 | 6.468 | 19 | 4.48 | -- | 14.4 | **670** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20230823 | 8/23/2023 | 52.7 | N | 4602867511 | Treatment | Intermediate | -- | **616000** | -- | **750000** | 38.9 | 5.65 | 8.89 | 7.261 | 21.87 | 3.51 | -- | 16.6 | **627** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20230921 | 9/21/2023 | 52.7 | N | 4602887321 | Treatment | Intermediate | -- | **639000** | -- | **669000** | 7.6 | 0.42 | 9.6 | 7.255 | 18.82 | 4.74 | -- | 16.5 | **639** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20231017 | 10/17/2023 | 52.7 | N | 4602905591 | Treatment | Intermediate | -- | **678000** | -- | **959000** | -149.6 | 0.44 | 8.97 | 8.399 | 18.5 | 1.15 | -- | 14.1 | **705** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20231115 | 11/15/2023 | 52.7 | N | JD77052 | Treatment | Intermediate | -- | **614000** | -- | **623000** | -150 | 1.03 | 8.87 | 8.62 | 16.2 | 2.72 | -- | 4.7 B | **733** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20231213 | 12/13/2023 | 52.7 | N | JD78776 | Treatment | Intermediate | -- | **672000** | -- | **650000** | -34.6 | 0.72 | 8.96 | 6.96 | 15.2 | 2.8 | -- | 9.7 B | **810** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20240118 | 1/18/2024 | 52.7 | N | JD80778 | Treatment | Intermediate | -- | **466000** | -- | **558000** | -71.5 | 0.26 | 9.92 | 8.03 | 11.6 | 5.82 | -- | 21.7 | **817** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20240220 | 2/20/2024 | 52.7 | N | JD82806 | Treatment | Intermediate | -- | **620000** | -- | **689000** | -91.1 | 5.79 | 9.76 | 7.75 | 14 | 5.87 | -- | 17.7 | **773** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20240314 | 3/14/2024 | 52.7 | N | JD84495 | Treatment | Intermediate | -- | **676000** | -- | **547000** | -154.7 | 0.14 | 8.93 | 8.01 | 14.9 | -- | -- | 10.9 | **794** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20240415 | 4/15/2024 | 52.7 | N | JD86534 | Treatment | Intermediate | -- | **544000** | -- | **604000** | -87.6 | 0.66 | 9.05 | 8.44 | 17.4 | 2.26 | -- | 14.5 | **737** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20240521 | 5/21/2024 | 52.7 | N | JD88880 | Treatment | Intermediate | -- | **523000** | -- | **583000** | -131.1 | 0.15 | 8.79 | 7.31 | 17.1 | 4.4 | -- | 15.3 | **1050** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20240614 | 6/14/2024 | 52.7 | N | JD90507 | Treatment | Intermediate | -- | **607000** | -- | **615000** | -50 | 0.36 | 8.84 | 8.84 | 20.3 | 0.88 | -- | 18.1 | **859** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20240711 | 7/11/2024 | 52.7 | N | JD92004 | Treatment | Intermediate | -- | **494000** | -- | **498000** | -51 | 0.09 | 8.86 | 8.33 | 20.9 | 2.19 | -- | 16.4 | **803** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20240816 | 8/16/2024 | 52.7 | N | JD94325 | Treatment | Intermediate | -- | **491000** | -- | **576000** | -120.3 | 0.23 | 8.89 | 8.43 | 22.1 | 1.88 | -- | 16.7 | **801** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20240917 | 9/17/2024 | 52.7 | N | JD96275 | Treatment | Intermediate | -- | **530000** | -- | **579000** | -94.4 | 0.29 | 8.95 | 7.16 | 18.8 | 4.39 | -- | 10.9 | **781** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20241008 | 10/8/2024 | 52.7 | N | JD97685 | Treatment | Intermediate | -- | **604000** | -- | **554000** | -58 | 1.79 | 9.12 | 8.2 | 16.9 | 3.89 | -- | 18.2 | **782** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20241114 | 11/14/2024 | 52.7 | N | JE597 | Treatment | Intermediate | -- | **549000** | -- | **526000** | 81.9 | 7.63 | 8.95 | 7.89 | 15.1 | 2.23 | -- | 10.3 | **810** | -- | -- | -- | -- | -- |
| HSTD-P3-MW003I-B | HSTD-P3-MW003I-B-52.7-20241210 | 12/10/2024 | 52.7 | N | JE2339 | Treatment | Intermediate | -- | **538000** | -- | **544000** | -101.2 | 0.23 | 9.06 | 8.09 | 15.2 | 2.42 | -- | < 40 U | **749** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-A | HSTD-P3-MW004I-A-32.7-20211101 | 11/1/2021 | 32.7 | N | 4602463131 | Baseline | Intermediate | **963** | **1140** | 52.8 J | < 10.0 UJ | -135.20 | 1.29 | 7.41 | 3.84 | 16.58 | 4.19 | -- | 13.9 | **508** | 3.1 | 3100 | 165 | **7060** | -- |
| HSTD-P3-MW004I-A | HSTD-P3-MW004I-A-32.7-20211221 | 12/21/2021 | 32.7 | N | 4602495851 | Treatment | Intermediate | **64700** | **49800** | **58900** | **56700** | -146.80 | 0.26 | 8.93 | 4.75 | 13.10 | 6.11 | -- | 14.3 | **426** | -- | 2400 | -- | -- | -- |
| HSTD-P3-MW004I-A | HSTD-P3-MW004I-A-32.7-20220120 | 1/20/2022 | 32.7 | N | 4602510051 | Treatment | Intermediate | **121000** | **116000** | **122000** | **112000** | -254.00 | 0 | 9.70 | 4.34 | 16.38 | 62.60 | -- | 20.1 | **493** | -- | 1700 E | -- | -- | -- |
| HSTD-P3-MW004I-A | HSTD-P3-MW004I-A-32.7-20220301 | 3/1/2022 | 32.7 | N | 4602534221 | Treatment | Intermediate | **7180** | **10800** | **< 100 U** | < 50.0 U | -322.60 | 9999.00 | 7.97 | 3.87 | 12.64 | 27.90 | -- | 673 F1 | 139 F1 | -- | 1200 | -- | -- | -- |
| HSTD-P3-MW004I-A | HSTD-P3-MW004I-A-32.7-20220324 | 3/24/2022 | 32.7 | N | 4602549601 | Treatment | Intermediate | **1460** | **1760** | < 10.0 U | < 50.0 U | -361.60 | 5.10 | 6.91 | 3.641 | 11.77 | 9.90 | -- | 1050 | 20.1 | -- | 690 | -- | -- | -- |
| HSTD-P3-MW004I-A | HSTD-P3-MW004I-A-32.7-20220428 | 4/28/2022 | 32.7 | N | 4602571561 | Treatment | Intermediate | **4330** | **5120** | < 20.0 U | < 50.0 U | -283.8 | 6 | 6.38 | 3.047 | 12.98 | 4 | -- | 1330 | 80.7 | -- | 640 | -- | -- | -- |
| HSTD-P3-MW004I-A | HSTD-P3-MW004I-A-32.7-20220520 | 5/20/2022 | 32.7 | N | 4602585231 | Treatment | Intermediate | -- | **6920** | -- | **< 500 U** | -290.1 | 1.58 | 6.25 | 2.142 | 16.28 | 9.27 | -- | 1500 | 104 | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-A | HSTD-P3-MW004I-A-32.7-20220617 | 6/17/2022 | 32.7 | N | 4602603591 | Treatment | Intermediate | -- | **6210** | -- | < 20.0 U | -255 | 0.56 | 5.84 | 3.634 | 17.01 | 8.45 | -- | 576 | 173 | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-A | HSTD-P3-MW004I-A-32.7-20220721 | 7/21/2022 | 32.7 | N | 4602623381 | Treatment | Intermediate | -- | **1690** | -- | < 10.0 U | -267.1 | 3.78 | 6.06 | 3.191 | 21.52 | 9.56 | -- | 494 | **1940** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-A | HSTD-P3-MW004I-A-32.7-20220826 | 8/26/2022 | 32.7 | N | 4602644761 | Treatment | Intermediate | -- | **1980** | -- | < 20.0 U | -254.8 | 6.97 | 5.74 | 3.439 | 18.73 | 4.87 | -- | 384 | **338** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-A | HSTD-P3-MW004I-A-32.7-20220921 | 9/21/2022 | 32.7 | N | 4602659871 | Treatment | Intermediate | -- | **1410** | -- | < 50.0 U | -201.2 | 1.29 | 5.96 | 3.737 | 19.54 | 3.87 | -- | 273 F1 | 170 | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-A | HSTD-P3-MW004I-A-32.7-20221019 | 10/19/2022 | 32.7 | N | 4602677971 | Treatment | Intermediate | -- | **1200** | -- | < 20.0 U | -218.4 | 0.43 | 5.92 | 5.662 | 13.11 | 8.22 | -- | 171 | 217 | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-A | HSTD-P3-MW004I-A-32.7-20221117 | 11/17/2022 | 32.7 | N | 4602697441 | Treatment | Intermediate | -- | **992** | -- | < 10.0 U | -241.9 | 2.44 | 6.08 | 3.777 | 14.65 | 8.96 | -- | 186 | 99.8 | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-A | HSTD-P3-MW004I-A-32.7-20221214 | 12/14/2022 | 32.7 | N | 4602713561 | Treatment | Intermediate | -- | **1020** | -- | < 10.0 UF1 | -230 | 0.54 | 6.04 | 3.844 | 12.23 | 4.7 | -- | 86.2 | 209 | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-A | HSTD-P3-MW004I-A-32.7-20230119 | 1/19/2023 | 32.7 | N | 4602732351 | Treatment | Intermediate | -- | **1210** | -- | < 10.0 U | -242.5 | 1.79 | 6.23 | 3.565 | 10.28 | 9.45 | -- | 97.1 | 175 | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-A | HSTD-P3-MW004I-A-32.7-20230223 | 2/23/2023 | 32.7 | N | 4602751411 | Treatment | Intermediate | -- | **380000** | -- | **368000** | -218.1 | 0.17 | 9.57 | 5.12 | 11.9 | 7.91 | -- | 134 F1 | **343** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-A | HSTD-P3-MW004I-A-32.7-20230320 | 3/20/2023 | 32.7 | N | 4602766501 | Treatment | Intermediate | -- | **480** | -- | < 50.0 U | -352.4 | 9.68 | 6.86 | 5.014 | 12.63 | 5.32 | -- | 52.5 | 203 | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-A | HSTD-P3-MW004I-A-32.7-20230421 | 4/21/2023 | 32.7 | N | 4602786851 | Treatment | Intermediate | -- | **745** | -- | < 50.0 U | -283.9 | 0.34 | 6.76 | 2.394 | 18.29 | 8.98 | -- | 63.1 | 85.0 | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-A | HSTD-P3-MW004I-A-32.7-20230421-X | 4/21/2023 | 32.7 | FD | 4602786851 | Treatment | Intermediate | -- | **642** | -- | **< 100 U** | -- | -- | -- | -- | -- | -- | -- | 49.8 | 137 | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-A | HSTD-P3-MW004I-A-32.7-20230512 | 5/12/2023 | 32.7 | N | 4602802081 | Treatment | Intermediate | -- | **441** | -- | **< 100 U** | -301.3 | 0.29 | 0.77 | 2.543 | 24.7 | 5.19 | -- | 36.8 | **315** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-A | HSTD-P3-MW004I-A-32.7-20230627 | 6/27/2023 | 32.7 | N | 4602831921 | Treatment | Intermediate | **381** | **673** | < 50.0 U | < 50.0 U | -332.2 | 9.51 | 6.74 | 3.612 | 17.27 | 14.4 | -- | 44.2 | **299** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-A | HSTD-P3-MW004I-A-32.7-20230719 | 7/19/2023 | 32.7 | N | 4602845491 | Treatment | Intermediate | -- | **655** | -- | < 50.0 U | -361.5 | 0.26 | 7.13 | 3.012 | 18.28 | 9.1 | -- | 49.5 | 188 | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-A | HSTD-P3-MW004I-A-32.7-20230824 | 8/24/2023 | 32.7 | N | 4602868441 | Treatment | Intermediate | -- | **560** | -- | **< 100 U** | -329.3 | 3.26 | 8.29 | 2.904 | 18.79 | 8.44 | -- | 32.5 | 248 | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-A | HSTD-P3-MW004I-A-32.7-20230918 | 9/18/2023 | 32.7 | N | 4602884721 | Treatment | Intermediate | -- | **685** | -- | < 50.0 U | -355.8 | 6.41 | 7.18 | 3.885 | 18.73 | 9.37 | -- | 34.0 | **354** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-A | HSTD-P3-MW004I-A-32.7-20231017 | 10/17/2023 | 32.7 | N | 4602905591 | Treatment | Intermediate | **293** | **285** | < 10.0 U | < 10.0 U | -31.6 | 0.28 | 7.35 | 3.73 | 17.5 | 14.7 | -- | 35.1 | **496** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-A | HSTD-P3-MW004I-A-32.7-20231116 | 11/16/2023 | 32.7 | N | JD77164 | Treatment | Intermediate | -- | **988** | -- | 60 | -398 | 0.09 | 7.53 | 3.57 | 17.3 | 9.67 | -- | 31.1 | **523** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-A | HSTD-P3-MW004I-A-32.7-20231222 | 12/22/2023 | 32.7 | N | JD79442 | Treatment | Intermediate | -- | **277** | -- | < 10 U | -386 | 0.78 | 7.48 | 3.967 | 14.5 | 3.71 | -- | 47.3 | **383** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-A | HSTD-P3-MW004I-A-32.7-20240117 | 1/17/2024 | 32.7 | N | JD80687 | Treatment | Intermediate | -- | **630** | -- | < 10 U | -379.1 | 0.18 | 7.81 | 3.837 | 11.6 | 9.29 | -- | 13.3 | 221 | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-A | HSTD-P3-MW004I-A-32.7-20240220 | 2/20/2024 | 32.7 | N | JD82806 | Treatment | Intermediate | -- | **471** | -- | < 10 U | -379 | 1.27 | 7.43 | 4.369 | 12.6 | 4.43 | -- | 1160 | 55.3 | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-A | HSTD-P3-MW004I-A-32.7-20240314 | 3/14/2024 | 32.7 | N | JD84495 | Treatment | Intermediate | -- | **404** | -- | < 10 U | -379.8 | 0 | 7.54 | 4.77 | 16.8 | 7.17 | -- | 197 | 19.8 | -- | -- | -- | -- | -- |
| HSTD-P3

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | D | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| HSTD-P3-MW004I-A | HSTD-P3-MW004I-A-32.7-20241007 | 10/7/2024 | 32.7 | N | JD97612 | Treatment | Intermediate | -- | **428** | -- | 2.6 B | -375.8 | 1.22 | 7.61 | 4.56 | 18.8 | 3.39 | -- | 257 | 1.5 B | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-A | HSTD-P3-MW004I-A-32.7-20241113 | 11/13/2024 | 32.7 | N | JE526 | Treatment | Intermediate | -- | **441** | -- | 45 | -257.9 | 0.13 | 7.86 | 4.53 | 14.3 | 3.67 | -- | 157 | < 10 U | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-A | HSTD-P3-MW004I-A-32.7-20241210 | 12/10/2024 | 32.7 | N | JE2339 | Treatment | Intermediate | -- | **468** | -- | 20 | -408.4 | 0.36 | 7.97 | 4.64 | 14.2 | 4.51 | -- | 277 | 1.6 B | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20211101 | 11/1/2021 | 49.7 | N | 4602463131 | Baseline | Intermediate | **16200** | **15700** | **18100** | **17300** | 20.60 | 1.40 | 7.77 | 9.45 | 17.30 | 3.20 | -- | 1.4 JB | 199 | < 1.0 U | 110 | < 120 U | **1110** | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20211221 | 12/21/2021 | 49.7 | N | 4602495851 | Treatment | Intermediate | **802000** | **819000** | **828000** | **817000** | -56.1 | 0.9 | 8.70 | 7.095 | 13.51 | 5.91 | -- | 17.2 | **608** | -- | 1000 | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20211221-X | 12/21/2021 | 49.7 | FD | 4602495851 | Treatment | Intermediate | **776000** | **794000** | **834000** | **845000** | -- | -- | -- | -- | -- | -- | -- | 16.8 | **610** | -- | 1000 | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20220120 | 1/20/2022 | 49.7 | N | 4602510051 | Treatment | Intermediate | **645000** | **763000** | **710000** | **710000** | -309.60 | 0.47 | 8.35 | 7.89 | 12.58 | 1.96 | -- | 20.6 | **598** | -- | 840 E | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20220224 | 2/24/2022 | 49.7 | N | 4602531681 | Treatment | Intermediate | **643000** | **556000** | **< 100000 U 760000 H** | **< 100000 U 926000 H** | -220.50 | 0.57 | 9.74 | 7.53 | 12.32 | 9.10 | -- | 31.2 | **585** | -- | 1200 | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20220324 | 3/24/2022 | 49.7 | N | 4602549601 | Treatment | Intermediate | **477000** | **586000** | **507000** | **490000** | -114.80 | 0.12 | 9.70 | 5.410 | 11.12 | 8.63 | -- | 117 | **501** | -- | 1300 | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20220428 | 4/28/2022 | 49.7 | N | 4602571561 | Treatment | Intermediate | **481000** | **565000** | **575000** | **564000** | -271.9 | 1.51 | 9.62 | 5.923 | 13.21 | 8.77 | -- | 127 | **595** | -- | 1100 | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20220520 | 5/20/2022 | 49.7 | N | 4602585231 | Treatment | Intermediate | -- | **419000** | -- | **528000** | -219.1 | 0.90 | 9.85 | 6.009 | 16.15 | 9.88 | -- | 125 | **502** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20220617 | 6/17/2022 | 49.7 | N | 4602603591 | Treatment | Intermediate | -- | **459000** | -- | **343000** | -88.4 | 0.25 | 9.59 | 5.944 | 18.68 | 9.78 | -- | 219 | **366** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20220721 | 7/21/2022 | 49.7 | N | 4602623381 | Treatment | Intermediate | -- | **512000** | -- | **501000** | -51.7 | 0.01 | 9.22 | 6.412 | 21.6 | 8.06 | -- | 79.1 | **487** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20220721-X | 7/21/2022 | 49.7 | FD | 4602623381 | Treatment | Intermediate | -- | **497000** | -- | **495000** | -- | -- | -- | -- | -- | -- | -- | 93.3 | **465** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20220825 | 8/25/2022 | 49.7 | N | 4602644081 | Treatment | Intermediate | -- | **412000** | -- | **391000** | -5.2 | 0.78 | 9.01 | 6.345 | 19.91 | 8.19 | -- | 158 | **523** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20220921 | 9/21/2022 | 49.7 | N | 4602659871 | Treatment | Intermediate | -- | **286000** | -- | **375000** | 71.3 | 0.25 | 9.25 | 5.959 | 17.49 | 9.84 | -- | 76.1 | **428** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20221019 | 10/19/2022 | 49.7 | N | 4602677971 | Treatment | Intermediate | -- | **323000** | -- | **290000** | -91.6 | 0.62 | 9.12 | 8.989 | 15.72 | 9.81 | -- | 117 | **331** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20221117 | 11/17/2022 | 49.7 | N | 4602697441 | Treatment | Intermediate | -- | **371000** | -- | **192000** | -154.9 | 1.36 | 9.14 | 4.694 | 15.1 | 9.87 | -- | 182 | **1950** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20221214 | 12/14/2022 | 49.7 | N | 4602713561 | Treatment | Intermediate | **123000** | **107000** | **109000** | **98900** | -174.0 | 0.44 | 9.3 | 5.739 | 12 | 42 | -- | 168 | **455** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20230119 | 1/19/2023 | 49.7 | N | 4602732351 | Treatment | Intermediate | **146000** | **116000** | **139000** | **131000** | -185.4 | 0.44 | 9.57 | 5.016 | 10.6 | 70.6 | -- | 84.2 | **446** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20230224 | 2/24/2023 | 49.7 | N | 4602752361 | Treatment | Intermediate | -- | **387000** | -- | **410000** | -156.2 | 0.13 | 10.21 | 6.21 | 13 | 9.77 | -- | 27.1 | **596** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20230320 | 3/20/2023 | 49.7 | N | 4602766501 | Treatment | Intermediate | **444000** | **422000** | **443000** | **471000** | 103.2 | 0.08 | 9.4 | 9.307 | 12.13 | 5.21 | -- | 27.4 | **610** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20230425 | 4/25/2023 | 49.7 | N | 4602788811 | Treatment | Intermediate | -- | -- | -- | -- | 48.4 | 11.57 | 9.16 | 7.072 | 16.02 | 16.1 | -- | 19.9 | **570** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20230512 | 5/12/2023 | 49.7 | N | 4602802081 | Treatment | Intermediate | **424000** | **479000** | **483000** | **489000** | 10.2 | 0.14 | 8.2 | 1.281 | 19.1 | 13.3 | -- | 23.5 | **595** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20230623 | 6/23/2023 | 49.7 | N | 4602829671 | Treatment | Intermediate | -- | **433000** | -- | **459000** | 157.5 | 0.36 | 9.06 | 4.5 | 17.4 | 4.49 | -- | 19.9 | **667** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20230719 | 7/19/2023 | 49.7 | N | 4602845491 | Treatment | Intermediate | -- | **392000** | -- | **391000** | -16.2 | 0.4 | 9 | 5.611 | 18.81 | 2.97 | -- | 21.6 | **623** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20230825 | 8/25/2023 | 49.7 | N | 4602869101 | Treatment | Intermediate | -- | **372000** | -- | **456000** | -93.4 | 0.3 | 8.84 | 7.144 | 18.31 | 7.11 | -- | 26.1 | **444** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20230918 | 9/18/2023 | 49.7 | N | 4602884721 | Treatment | Intermediate | -- | **417000** | -- | **424000** | -6.8 | 0.73 | 9.06 | 6.261 | 18.72 | 8.95 | -- | 24.5 | **581** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20231017 | 10/17/2023 | 49.7 | N | 4602905591 | Treatment | Intermediate | **391000** | **410000** | **481000** | **447000** | -123.9 | 0.27 | 8.96 | 6.92 | 17.6 | 10.7 | -- | 27.4 | **635** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20231116 | 11/16/2023 | 49.7 | N | JD77164 | Treatment | Intermediate | **312000** | **310000** | **372000** | **413000** | -144.7 | 0.65 | 9.29 | 6.18 | 17.1 | 15.4 | -- | 12.7 B | **728** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20231227 | 12/27/2023 | 49.7 | N | JD79682 | Treatment | Intermediate | **290000** | **283000** | **309000** | **308000** | -275.1 | 0.28 | 9.34 | 6.71 | 14.1 | 71.7 | -- | < 20 U | **723** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20240117 | 1/17/2024 | 49.7 | N | JD80687 | Treatment | Intermediate | **294000** | **282000** | **372000** | **384000** | -104.7 | 0.17 | 9.9 | 6.01 | 11.9 | 866 | -- | < 40 U | **722** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20240220 | 2/20/2024 | 49.7 | N | JD82806 | Treatment | Intermediate | **278000** | **277000** | **267000** | **284000** | -205.7 | 0 | 9.72 | 5.94 | 13.7 | -- | -- | < 40 U | **757** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20240314 | 3/14/2024 | 49.7 | N | JD84495 | Treatment | Intermediate | **142000** | **141000** | **141000** | **134000** | -136.3 | 0.68 | 9.83 | 6.27 | 14.3 | 1000 | -- | 84.2 | **835** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20240411 | 4/11/2024 | 49.7 | N | JD86321 | Treatment | Intermediate | **14000** | **44400** | 3.7 B | < 10 U | -408 | 0.07 | 10.45 | 5.99 | 14.4 | 1000 | -- | < 50 U | **770** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20240521 | 5/21/2024 | 49.7 | N | JD88880 | Treatment | Intermediate | 33.1 | **928** | < 10 U | 4.7 B | -446.4 | 0.21 | 8.66 | 6.56 | 18 | 1000 | -- | < 50 U | **830** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20240614 | 6/14/2024 | 49.7 | N | JD90507 | Treatment | Intermediate | **427** | **693** | < 10 U | < 10 U | -411.6 | 0.12 | 7.77 | 5.22 | 18.8 | 999 | -- | 42.5 | **782** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20240712 | 7/12/2024 | 49.7 | N | JD92107 | Treatment | Intermediate | 45.0 | **2130** | < 10 U | < 10 U | -377.6 | 0.49 | 7.6 | 5.75 | 19.9 | 31.6 | -- | 21.1 | **881** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20240816 | 8/16/2024 | 49.7 | N | JD94325 | Treatment | Intermediate | **446** | **509** | < 10 U | < 10 U | -415.9 | 0.58 | 8.46 | 6 | 20.2 | 1000 | -- | 68.6 | **804** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20240917 | 9/17/2024 | 49.7 | N | JD96275 | Treatment | Intermediate | -- | **669** | -- | 10 | -355.2 | 0.3 | 7.87 | 5.03 | 19.3 | 7.09 | -- | 16.0 | **771** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20241007 | 10/7/2024 | 49.7 | N | JD97612 | Treatment | Intermediate | -- | **494** | -- | < 10 U | -414.4 | 0.98 | 7.73 | 5.32 | 19.7 | 9.4 | -- | 17.5 | **733** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20241113 | 11/13/2024 | 49.7 | N | JE526 | Treatment | Intermediate | | | **310 B** | | -336.2 | 0.21 | 8.7 | 5.66 | 15.6 | 0 | -- | -- | | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20241115 | 11/15/2024 | 49.7 | N | JE742 | Treatment | Intermediate | **590** | **2320** | **< 1000 U** | **< 1000 U** | -479.6 | 0.2 | 8.74 | 6.49 | 17.4 | 199 | -- | 10.4 | **786** | -- | -- | -- | -- | -- |
| HSTD-P3-MW004I-B | HSTD-P3-MW004I-B-49.7-20241210 | 12/10/2024 | 49.7 | N | JE2339 | Treatment | Intermediate | **410** | **3720** | 16 B | 11 B | -437.2 | 0.15 | 7.94 | 5.06 | 15.1 | 14.7 | -- | 20.7 | **723** | -- | -- | -- | -- | -- |
| MW8D | MW8D-41.0-20180425 | 4/25/2018 | 41 | N | JC64901 | N/A | Intermediate | -- | **63100** | -- | **77100** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW8D | MW8D-41.0-20180425X | 4/25/2018 | 41 | FD | JC64901 | N/A | Intermediate | -- | **70800** | -- | **69600** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW8D | MW8D-45.0-20180425 | 4/25/2018 | 45 | N | JC64901 | N/A | Intermediate | **398** | **1390** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW8D | MW8D-41.0-20211102 | 11/2/2021 | 41 | N | 4602463911 | Baseline | Intermediate | **11000** | **10500** | **11000** | **10300** | 117.40 | 0.33 | 7.95 | 22.99 | 17.83 | 1.07 | -- | 10 | **806** | < 1.0 U | 260 | < 120 U | **239** | -- |
| MW8D | MW8D-46.0-20211102 | 11/2/2021 | 46 | N | 4602463911 | Baseline | Intermediate | 37.2 | **569** | < 10.0 U | < 10.0 U | -122.90 | 0.30 | 7.41 | 25.54 | 17.71 | 7.86 | -- | 10.8 | **867** | < 1.0 UB | 180 | **2770** | **522** | -- |
| MW8D | MW8D-41.0-20211228 | 12/28/2021 | 41 | N | 4602498981 | Treatment | Intermediate | **105000** | **111000** | **110000** | **112000** | -31.2 | 0.18 | 7.99 | 21.34 | 15.65 | 8.61 | -- | 43.1 | **797** | -- | 490 | -- | -- | -- |
| MW8D | MW-8D-41-20220119 | 1/19/2022 | 41 | N | 4602509341 | Treatment | Intermediate | **98600** | **104000** | **78900** | **110000** | 28.00 | 1.41 | 8.46 | 22.80 | 14.72 | 4.28 | -- | 11.3 | **783** | -- | 450 | -- | -- | -- |
| MW8D | MW8D-41-20220302 | 3/2/2022 | 41 | N | 4602534801 | Treatment | Intermediate | **5190** | **103000** | **93800** | **94900** | 128.40 | 0.82 | 8.95 | 17.56 | 14.29 | 9.52 | -- | 10.3 | **765** | -- | 370 | -- | -- | -- |
| MW8D | MW-8D-41-20220324 | 3/24/2022 | 41 | N | 4602549601 | Treatment | Intermediate | **49400** | **58600** | **47400** | **46800** | 4.20 | 0.10 | 7.67 | 20.40 | 16.00 | 6.10 | -- | 10.3 | **734** | -- | 350 | -- | -- | -- |
| MW8D | MW8D-41-20220427 | 4/27/2022 | 41 | N | 4602570871 | Treatment | Intermediate | **135000** | **151000** | **147000** | **155000** | 80.8 | 0.25 | 8.86 | 15.53 | 13.99 | 8.43 | -- | 10.7 | **771** | -- | 640 | -- | -- | -- |
| MW8D | MW8D-41-20220520 | 5/20/2022 | 41 | N | 4602585231 | Treatment | Intermediate | -- | **2120** | -- | < 10.0 U | -85.0 | 1.45 | 8.57 | 17.24 | 17.30 | 9.93 | -- | 9.6 | **837** | -- | -- | -- | -- | -- |
| MW8D | MW8D-41-20220617 | 6/17/2022 | 41 | N | 4602603591 | Treatment | Intermediate | -- | **362** | -- | < 10.0 U | -98.7 | 0.21 | 7.41 | 25.26 | 19.32 | 4.11 | -- | 9.4 | 210 | -- | -- | -- | -- | -- |
| MW8D | MW8D-46-20220617 | 6/17/2022 | 46 | N | 4602603591 | Treatment | Intermediate | -- | **765** | -- | < 10.0 U | -107.6 | 0.17 | 7.4 | 25.26 | 19.13 | 4.81 | -- | 9.8 | 206 | -- | -- | -- | -- | -- |
| MW8D | MW8D-41-20220722 | 7/22/2022 | 41 | N | 4602624001 | Treatment | Intermediate | -- | **63200** | -- | **56300** | -132 | 0.51 | 15.63 | 18.5 | 22.16 | 8.44 | -- | 10.7 | **811** | -- | -- | -- | -- | -- |
| MW8D | MW8D-41-20220825 | 8/25/2022 | 41 | N | 4602644081 | Treatment | Intermediate | -- | **5000** | -- | **4650** | -23.4 | 0.40 | 7.40 | 22.09 | 20.95 | 3.82 | -- | 10.8 | **953** | -- | -- | -- | -- | -- |
| MW8D | MW8D-41-20220921 | 9/21/2022 | 41 | N | 4602659871 | Treatment | Intermediate | -- | **475** | -- | < 10.0 U | -137 | 0.05 | 7.39 | 27.04 | 20.91 | 6.35 | -- | 9.8 | **835** | -- | -- | -- | -- | -- |
| MW8D | MW8D-41-20221019 | 10/19/2022 | 41 | N | 4602677971 | Treatment | Intermediate | -- | **595** | -- | < 10.0 U | -122.8 | 0.47 | 7.16 | 24.858 | 17.52 | 6.38 | -- | 10.2 | **2160** | -- | -- | -- | -- | -- |
| MW8D | MW8D-41-20221116 | 11/16/2022 | 41 | N | 4602696581 | Treatment | Intermediate | -- | **573** | -- | < 20.0 U | 130.3 | 0.72 | 7.37 | 22.694 | 16.68 | 7.92 | -- | 10.9 | **857** | -- | -- | -- | -- | -- |
| MW8D | MW8D-41-20221214 | 12/14/2022 | 41 | N | 4602713561 | Treatment | Intermediate | -- | **325** | -- | < 10.0 U | 243.7 | 0.93 | 7.2 | 25.28 | 14.09 | 1.94 | -- | 10.6 | **958** | -- | -- | -- | -- | -- |
| MW8D | MW8D-41-20230127 | 1/27/2023 | 41 | N | 4602736701 | Treatment | Intermediate | -- | **258** | -- | < 10.0 U | -128.8 | 0.24 | 7.47 | 21.57 | 13.23 | 1.93 | -- | 10 | **964** | -- | -- | -- | -- | -- |
| MW8D | MW8D-41-20230223 | 2/23/2023 | 41 | N | 4602751411 | Treatment | Intermediate | -- | **128000** | -- | **111000** | -5.5 | 0.36 | 9.08 | 15.24 | 14.39 | 9.97 | -- | 12.7 | **783** | -- | -- | -- | -- | -- |
| MW8D | MW8D-41-20230320 | 3/20/2023 | 41 | N | 4602766501 | Treatment | Intermediate | -- | **428** | -- | < 10.0 U | -134.9 | 0.17 | 7.32 | 21.98 | 15.17 | 4.31 | -- | 11.1 | **1010** | -- | -- | -- | -- | -- |
| MW8D | MW8D-41-20230421 | 4/21/2023 | 41 | N | 4602786851 | Treatment | Intermediate | -- | **256** | -- | < 10.0 U | -239.8 | 33.4 | 7.18 | 22.81 | 17.3 | 2.4 | -- | 11.0 | **1120** | -- | -- | -- | -- | -- |
| MW8D | MW8D-41-20230515 | 5/15/2023 | 41 | N | 4602803281 | Treatment | Intermediate | -- | **400** | -- | < 10.0 U | -76.8 | 4.06 | 7.23 | 20.13 | 19.21 | 5.17 | -- | 10.1 | **894** | -- | -- | -- | -- | -- |
| MW8D | MW8D-46-20230515 | 5/15/2023 | 46 | N | 4602803281 | Treatment | Intermediate | -- | **201** | -- | < 10.0 U | -112.0 | 4.05 | 7.22 | 20.35 | 18.61 | 2.45 | -- | 10.3 | **861** | -- | -- | -- | -- | -- |
| MW8D | MW8D-41-20230622 | 6/22/2023 | 41 | N | 4602828851 | Treatment | Intermediate | -- | **328** | -- | < 10.0 U | -23.6 | 0.53 | 7.25 | 21.66 | 19.2 | 2.82 | -- | 10 | **1010** | -- | -- | -- | -- | -- |
| MW8D | MW8D-46-20230720 | 7/20/2023 | 46 | N | 4602846391 | Treatment | Intermediate | -- | **322** | -- | < 10.0 U | -119.3 | 0.45 | 6.87 | 22.18 | 23.15 | 3.98 | -- | 10.9 | **886** | -- | -- | -- | -- | -- |
| MW8D | MW8D-41-20230721 | 7/21/2023 | 41 | N | 4602847281 | Treatment | Intermediate | -- | **502** | -- | < 10.0 U | -120.9 | 0.25 | 7.08 | 25.39 | 20.49 | 6.89 | -- | 10.6 | **870** | -- | -- | -- | -- | -- |
| MW8D | MW8D-41-20230824 | 8/24/2023 | 41 | N | 4602868441 | Treatment | Intermediate | -- | **378** | -- | < 10.0 U | -51.8 | 0.94 | 7.29 | 24.78 | 22.58 | 5.39 | -- | 10.7 | **863** | -- | -- | -- | -- | -- |
| MW8D | MW8D-41-20230919 | 9/19/2023 | 41 | N | 4602885251 | Treatment | Intermediate | -- | **431** | -- | < 10.0 U | -119.7 | 0.15 | 7.61 | 24.79 | 23.3 | 3.94 | -- | 10.0 | **739** | -- | -- | -- | -- | -- |
| MW8D | MW8D-41-20231016 | 10/16/2023 | 41 | N | 4602904731 | Treatment | Intermediate | -- | **1230 F2** | -- | < 10.0 UF1 | -131.1 | 0.09 | 7.27 | 27.36 | 18.1 | 2.28 | -- | 10.8 | **996** | -- | -- | -- | -- | -- |
| MW8D | MW8D-41-20231116 | 11/16/2023 | 41 | N | JD77164 | Treatment | Intermediate | -- | **350** | -- | 8.8 B | -116.8 | 0.16 | 7.47 | 26.25 | 18.9 | 3.18 | -- | 8.1 | **1020** | -- | -- | -- | -- | -- |
| MW8D | MW8D-41-20231227 | 12/27/2023 | 41 | N | JD79682 | Treatment | Intermediate | -- | **319** | -- | 16 | -459.5 | 0.15 | 7.14 | 28.33 | 15.3 | 2.6 | -- | 8.3 | **1100** | -- | -- | -- | -- | -- |
| MW8D | MW8D-41-20240119 | 1/19/2024 | 41 | N | JD80858 | Treatment | Intermediate | -- | **427** | -- | < 10 U | -140 | 0.27 | 7.22 | 24.34 | 10.7 | 2.47 | -- | 11.2 | **1010** | -- | -- | -- | -- | -- |
| MW8D | MW8D-41-20240221 | 2/21/2024 | 41 | N | JD82924 | Treatment | Intermediate | -- | **141 149** | -- | 15 | -147.6 | 0.25 | 7.4 | 29.71 | 11.8 | 1.93 | -- | 8.5 | **990** | -- | -- | -- | -- | -- |
| MW8D | MW8D-41-20240320 | 3/20/2024 | 41 | N | JD84851 | Treatment | Intermediate | -- | **211** | -- | < 10 U | -141.2 | 0.11 | 7.24 | 27.84 | 14.1 | 2.29 | -- | 8.5 | **927** | -- | -- | -- | -- | -- |
| MW8D | MW8D-41-20240415 | 4/15/2024 | 41 | N | JD86534 | Treatment | Intermediate | -- | **262** | -- | 21 | -103.9 | 0.06 | 7.09 | 25.99 | 17.5 | 2.79 | -- | 10.6 | **968** | -- | -- | -- | -- | -- |
| MW8D | MW8D-41-20240523 | 5/23/2024 | 41 | N | JD89054 | Treatment | Intermediate | -- | **268** | -- | 4.9 B | -125.7 | 0.1 | 7.29 | 22.45 | 18.8 | 4.95 | -- | 10.3 | **1100** | -- | -- | -- | -- | -- |
| MW8D | MW8D-41-20240619 | 6/19/2024 | 41 | N | JD90730 | Treatment | Intermediate | -- | **218** | -- | 48 | -257.2 | 2.24 | 7.25 | 26.47 | 19.7 | 6.75 | -- | 10.2 | **1050** | -- | -- | -- | -- | -- |
| MW8D | MW8D-41-20240711 | 7/11/2024 | 41 | N | JD92004 | Treatment | Intermediate | -- | **150** | -- | 18 | -126.2 | 0.21 | 6.92 | 2639 | 19.6 | 1.9 | -- | 11.6 | **1000** | -- | -- | -- | -- | -- |
| MW8D | MW8D-41-20240711-X | 7/11/2024 | 41 | FD | JD92004 | Treatment | Intermediate | -- | **134** | -- | 19 | -- | -- | -- | -- | -- | -- | -- | 10.7 | **1050** | -- | -- | -- | -- | -- |
| MW8D | MW8D-41-20240816 | 8/16/2024 | 41 | N | JD94325 | Treatment | Intermediate | -- | **193** | -- | < 10 U | -115.2 | 0.1 | 7.23 | 28.81 | 20.7 | 3.55 | -- | 10.4 | **1060** | -- | -- | -- | -- | -- |
| MW8D | MW8D-41-20240918 | 9/18/2024 | 41 | N | JD96353 | Treatment | Intermediate | -- | **192** | -- | 5.7 B | -100.8 | 0.6 | 7.41 | 25.63 | 22.3 | 3.61 | -- | 9.3 | **983** | -- | -- | -- | -- | -- |
| MW8D | MW8D-41-20241008 | 10/8/2024 | 41 | N | JD97685 | Treatment | Intermediate | -- | **102** | -- | 18 | -144.4 | 1.49 | 7.44 | 26.72 | 20.4 | 2.45 | -- | 10.5 | **946** | -- | -- | -- | -- | -- |
| MW8D | MW8D-41-20241114 | 11/14/2024 | 41 | N | JE597 | Treatment | Intermediate | -- | **178** | -- | < 10 U | -128.3 | 0.13 | 7.47 | 26.03 | 17.7 | 6.38 | -- | 7.8 | **913** | -- | -- | -- | -- | -- |
| MW8D | MW8D-41-20241209 | 12/9/2024 | 41 | N | JE2209 | Treatment | Intermediate | -- | 67.6 | -- | < 10 U | -109.3 | 0.57 | 7.6 | 24.72 | 16.4 | 1.8 | -- | 11.1 | **912** | -- | -- | -- | -- | -- |
| PAC-P3-MW001I | PAC-P3-MW001I-41.5-20211101 | 11/1/2021 | 41.5 | N | 4602463131 | Baseline | Intermediate | < 4.0 U | 15.5 | < 10.0 U | < 10.0 U | -137.00 | 0.41 | 7.05 | 28.95 | 17.81 | 7.33 | -- | 12.4 | **923** | < 1.0 U | 48 | **13300** | **876** | -- |
| PAC-P3-MW001I | PAC-P3-MW001I-41.5-20211227 | 12/27/2021 | 41.5 | N | 4602498521 | Treatment | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -86.70 | 0.15 | 6.99 | 30.92 | 15.00 | 5.14 | -- | 11.9 | **752** | -- | 61 | -- | -- | -- |
| PAC-P3-MW001I | PAC-P3-MW001I-41.5-20211227-X | 12/27/2021 | 41.5 | FD | 4602498521 | Treatment | Intermediate | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 12.4 | **749** | -- | 64 | -- | -- | -- |
| PAC-P3-MW001I | PAC-P3-MW001I-41.5-20220222 | 2/22/2022 | 41.5 | N | 4602529771 | Treatment | Intermediate | 2.6 J | 3.7 J | < 10.0 U | < 10.0 U | -92.00 | 0.58 | 7.02 | 3.80 | 13.70 | 8.10 | -- | 5.9 | 22.7 | -- | 240 | -- | -- | -- |
| PAC-P3-MW001I | PAC-P3-MW001I-41.5-20220321 | 3/21/2022 | 41.5 | N | 4602547381 | Treatment | Intermediate | < 4.0 U | 6.8 | < 10.0 U | < 10.0 U | -10.90 | 1.74 | 6.98 | 3.07 | 15.25 | 9.11 | -- | 5.3 | 10.8 | -- | 470 | -- | -- | -- |
| PAC-P3-MW001I | PAC-P3-MW001I-41.5-20220426 | 4/26/2022 | 41.5 | N | 4602569961 | Treatment | Intermediate | < 4.0 U | 2.7 J | < 10.0 U | < 10.0 U | 124.8 | 0.31 | 7.65 | 1.679 | 14.71 | 9 | -- | 3.0 | 13.0 | -- | 140 | -- | -- | -- |
| PAC-P3-MW001I | PAC-P3-MW001I-41.5-20220523 | 5/23/2022 | 41.5 | N | 4602586501 | Treatment | Intermediate | < 4.0 U | 11.7 | < 10.0 U | < 10.0 U | 70.8 | 0.50 | 7.00 | 1.071 | 17.15 | 10.9 | -- | 5.2 | 11.8 | -- | -- | -- | -- | -- |
| PAC-P3-MW001I | PAC-P3-MW001I-41.5-20220617 | 6/17/2022 | 41.5 | N | 4602603591 | Treatment | Intermediate | -- | 7.6 | -- | < 10.0 U | -67.1 | 1.17 | 7.46 | 1.783 | 24.29 | 6.89 | -- | 9.0 | 13.2 | -- | -- | -- | -- | -- |
| PAC-P3-MW001I | PAC-P3-MW001I-41.5-20220722 | 7/22/2022 | 41.5 | N | 4602624001 | Treatment | Intermediate | -- | 7.1 | -- | < 10.0 U | 4.3 | 0.61 | 6.72 | 1.538 | 18.13 | 6.29 | -- | 9.4 | 9.31 | -- | -- | -- | -- | -- |
| PAC-P3-MW001I | PAC-P3-MW001I-41.5-20220920 | 9/20/2022 | 41.5 | N | 4602659081 | Treatment | Intermediate | -- | 5.3 | -- | < 10.0 U | -164.7 | 0.17 | 7.3 | 1.173 | 17.82 | 1.83 | -- | 5.9 | 10.1 | -- | -- | -- | -- | -- |
| PAC-P3-MW001I | PAC-P3-MW001I-41.5-20221214 | 12/14/2022 | 41.5 | N | 4602713561 | Treatment | Intermediate | -- | 2.8 J | -- | < 10.0 U | -142.5 | 0.2 | 7.28 | 6.206 | 14.22 | 7.69 | -- | 6.4 | 65.7 | -- | -- | -- | -- | -- |
| PAC-P3-MW001I | PAC-P3-MW001I-41.5-20221214-X | 12/14/2022 | 41.5 | FD | 4602713561 | Treatment | Intermediate | -- | 3.1 J | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 6.3 | 62.2 | -- | -- | -- | -- | -- |
| PAC-P3-MW001I | PAC-P3-MW001I-41.5-20230320 | 3/20/2023 | 41.5 | N | 4602766501 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -106.5 | 0.28 | 7.53 | 17.36 | 14.36 | 7.76 | -- | 4.8 | 98.0 | -- | -- | -- | -- | -- |

https://aecom.sharepoint.com/sites/PPG/Shared Documents/Groundwater/500_Deliverables/RAPRs/2024-Q4/00_Report Components/Appendices/Appendix A - Analytical Results/excels/Appendix A-1_Cr_Cr6_Geochem-012925

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**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| PAC-P3-MW001I | PAC-P3-MW001I-41.5-20230622 | 6/22/2023 | 41.5 | N | 4602828851 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -108.8 | 0.72 | 7.23 | 14.76 | 17.43 | 4.87 | -- | 5.3 | 858 | -- | -- | -- | -- | -- |
| PAC-P3-MW001I | PAC-P3-MW001I-41.5-20230920 | 9/20/2023 | 41.5 | N | 4602886061 | Treatment | Intermediate | -- | 21.7 | -- | < 10.0 U | -118.7 | 0.08 | 7.26 | 9.001 | 20.16 | 9.57 | -- | 6.9 | 307 | -- | -- | -- | -- | -- |
| PAC-P3-MW001I | PAC-P3-MW001I-41.5-20231226 | 12/26/2023 | 41.5 | N | JD79561 | Treatment | Intermediate | -- | < 10 U | -- | 3.7 B | -137.6 | 0.15 | 7.07 | 7.44 | 14.7 | 5.51 | -- | 4.6 | 115 | -- | -- | -- | -- | -- |
| PAC-P3-MW001I | PAC-P3-MW001I-41.5-20240320 | 3/20/2024 | 41.5 | N | JD84851 | Treatment | Intermediate | -- | < 10 U | -- | < 10 U | -124.5 | 0.13 | 7.1 | 9.44 | 14 | 2.46 | -- | 4.9 | 191 | -- | -- | -- | -- | -- |
| PAC-P3-MW001I | PAC-P3-MW001I-41.5-20240619 | 6/19/2024 | 41.5 | N | JD90730 | Treatment | Intermediate | -- | 3.8 B | -- | < 10 U | -204.5 | 0.14 | 7.19 | 9.99 | 20.2 | 7.92 | -- | 5.6 | 223 | -- | -- | -- | -- | -- |
| PAC-P3-MW001I | PAC-P3-MW001I-41.5-20240919 | 9/19/2024 | 41.5 | N | JD96458 | Treatment | Intermediate | -- | < 10 U | -- | 5.7 B | -119.9 | 0.11 | 7.19 | 12.77 | 18.5 | 2.86 | -- | 6.5 | 317 | -- | -- | -- | -- | -- |
| PAC-P3-MW001I | PAC-P3-MW001I-41.5-20241210 | 12/10/2024 | 41.5 | N | JE2339 | Treatment | Intermediate | -- | 4.1 B | -- | 4.4 B | -222.8 | 4.95 | 7.19 | 17.15 | 15.8 | 2.1 | -- | 9.5 | 417 | -- | -- | -- | -- | -- |
| PAC-P3-MW002I | PAC-P3-MW002I-25.5-20230320 | 3/20/2023 | 25.5 | N | 4602766501 | Baseline | Intermediate | -- | 349 | -- | 130 | -8.7 | 0.21 | 7.31 | 7.788 | 14.59 | 7.43 | -- | 7.7 | 309 | -- | -- | -- | -- | -- |
| PAC-P3-MW002I | PAC-P3-MW002I-30.5-20230320 | 3/20/2023 | 30.5 | N | 4602766501 | Baseline | Intermediate | -- | 335 | -- | 127 | -1 | 0.23 | 7.32 | 6.955 | 14.28 | 6.53 | -- | 7.5 | 314 | -- | -- | -- | -- | -- |
| PAC-P3-MW002I | PAC-P3-MW002I-35.5-20230320 | 3/20/2023 | 35.5 | N | 4602766501 | Baseline | Intermediate | -- | 254 | -- | 30.4 | -45.2 | 0.3 | 7.36 | 6.609 | 14.29 | 7.47 | -- | 6.9 | 264 | -- | -- | -- | -- | -- |
| PAC-P3-MW002I | PAC-P3-MW002I-40.5-20230320 | 3/20/2023 | 40.5 | N | 4602766501 | Baseline | Intermediate | -- | 479 | -- | 262 | -6.8 | 0.36 | 7.37 | 12.57 | 14 | 9.84 | -- | 8.0 F1 | 375 | -- | -- | -- | -- | -- |
| PAC-P3-MW002I | PAC-P3-MW002I-40.5-20230421 | 4/21/2023 | 40.5 | N | 4602786851 | Treatment | Intermediate | -- | 1610 | -- | 1170 | 228.7 | 0.23 | 7.55 | 14.647 | 16.3 | 8.38 | -- | 8.7 | 596 | -- | -- | -- | -- | -- |
| PAC-P3-MW002I | PAC-P3-MW002I-22.5-20230515 | 5/15/2023 | 22.5 | N | 4602803281 | Treatment | Intermediate | -- | 26.5 | -- | < 10.0 U | -12.5 | 0.44 | 7.2 | 3.673 | 17.25 | 4.88 | -- | 5.0 | 75.1 | -- | -- | -- | -- | -- |
| PAC-P3-MW002I | PAC-P3-MW002I-27.5-20230515 | 5/15/2023 | 27.5 | N | 4602803281 | Treatment | Intermediate | -- | 23.2 | -- | < 10.0 U | -30.8 | 0.29 | 7.31 | 5.063 | 17.76 | 8.29 | -- | 5.9 | 125 | -- | -- | -- | -- | -- |
| PAC-P3-MW002I | PAC-P3-MW002I-32.5-20230515 | 5/15/2023 | 32.5 | N | 4602803281 | Treatment | Intermediate | -- | 19.5 | -- | < 10.0 U | -40.8 | 0.22 | 7.36 | 5.518 | 18.21 | 4.98 | -- | 6.2 | 147 | -- | -- | -- | -- | -- |
| PAC-P3-MW002I | PAC-P3-MW002I-37.5-20230515 | 5/15/2023 | 37.5 | N | 4602803281 | Treatment | Intermediate | -- | 21.8 | -- | < 10.0 U | -35.7 | 0.28 | 7.34 | 5.214 | 18.15 | 4.22 | -- | 6.1 | 132 | -- | -- | -- | -- | -- |
| PAC-P3-MW002I | PAC-P3-MW002I-37.5-20230622 | 6/22/2023 | 37.5 | N | 4602828851 | Treatment | Intermediate | -- | 12800 | -- | 15200 | 30.7 | 0.74 | 7.96 | 16.79 | 18.3 | 5.25 | -- | 8.6 | 743 | -- | -- | -- | -- | -- |
| PAC-P3-MW002I | PAC-P3-MW002I-22.5-20230721 | 7/21/2023 | 22.5 | N | 4602847281 | Treatment | Intermediate | -- | 9950 | -- | 10200 | 310.7 | 0.36 | 7.36 | 11.71 | 22.25 | 4.3 | -- | 8.7 | 504 | -- | -- | -- | -- | -- |
| PAC-P3-MW002I | PAC-P3-MW002I-27.5-20230721 | 7/21/2023 | 27.5 | N | 4602847281 | Treatment | Intermediate | -- | 9460 | -- | 10200 | 314.5 | 0.42 | 6.54 | 11.35 | 22.33 | 4.33 | -- | 8.7 | 502 | -- | -- | -- | -- | -- |
| PAC-P3-MW002I | PAC-P3-MW002I-32.5-20230721 | 7/21/2023 | 32.5 | N | 4602847281 | Treatment | Intermediate | 7880 | 9090 | 8950 | 9600 | 266 | 0.46 | 9.17 | 10.43 | 20.01 | 10.2 | -- | 8.3 | 459 | -- | -- | -- | -- | -- |
| PAC-P3-MW002I | PAC-P3-MW002I-37.5-20230824 | 8/24/2023 | 37.5 | N | 4602868441 | Treatment | Intermediate | -- | 14100 | -- | 14500 | 88.4 | 0.39 | 7.97 | 12.73 | 21 | 8.55 | -- | 9.1 | 491 | -- | -- | -- | -- | -- |
| PAC-P3-MW002I | PAC-P3-MW002I-37.5-20230919 | 9/19/2023 | 37.5 | N | 4602885251 | Treatment | Intermediate | -- | 5830 | -- | 7480 | 164.2 | 0.14 | 7.93 | 14.24 | 20 | 3.14 | -- | 8.0 | 443 | -- | -- | -- | -- | -- |
| PAC-P3-MW002I | PAC-P3-MW002I-37.5-20231016 | 10/16/2023 | 37.5 | N | 4602904731 | Treatment | Intermediate | -- | 28.0 | -- | < 10.0 U | 72.9 | 0.82 | 7.58 | 4.322 | 18.52 | 7.57 | -- | 5.9 | 118 | -- | -- | -- | -- | -- |
| PAC-P3-MW002I | PAC-P3-MW002I-37.5-20231116 | 11/16/2023 | 37.5 | N | JD77164 | Treatment | Intermediate | -- | 679 | -- | 840 | 93 | 0.23 | 7.38 | 11.11 | 17.5 | 2.72 | -- | 6.4 | 424 | -- | -- | -- | -- | -- |
| PAC-P3-MW002I | PAC-P3-MW002I-37.5-20231227 | 12/27/2023 | 37.5 | N | JD79682 | Treatment | Intermediate | -- | 15.2 | -- | < 10 U | -6.2 | 7.1 | 7.08 | 5.3 | 17 | 2.4 | -- | 4.3 | 118 | -- | -- | -- | -- | -- |
| PAC-P3-MW002I | PAC-P3-MW002I-37.5-20240119 | 1/19/2024 | 37.5 | N | JD80858 | Treatment | Intermediate | -- | 21.8 | -- | < 10 U | -64.2 | 0.17 | 7.29 | 5.02 | 13.7 | 5.61 | -- | 5.7 | 112 | -- | -- | -- | -- | -- |
| PAC-P3-MW002I | PAC-P3-MW002I-37.5-20240221 | 2/21/2024 | 37.5 | N | JD82924 | Treatment | Intermediate | -- | 20.5 | -- | < 10 U | -79.8 | 0.12 | 7.11 | 9.38 | 12.8 | 3.29 | -- | 5.9 | 263 | -- | -- | -- | -- | -- |
| PAC-P3-MW002I | PAC-P3-MW002I-37.5-20240320 | 3/20/2024 | 37.5 | N | JD84851 | Treatment | Intermediate | -- | 28.7 | -- | < 10 U | -45.7 | 0.25 | 7.24 | 9.27 | 14.3 | 7.92 | -- | 5.4 | 266 | -- | -- | -- | -- | -- |
| PAC-P3-MW002I | PAC-P3-MW002I-37.5-20240415 | 4/15/2024 | 37.5 | N | JD86534 | Treatment | Intermediate | -- | 16.6 | -- | < 10 U | -92.2 | 0.25 | 7.33 | 6.95 | 17.5 | 3.82 | -- | 5.5 | 195 | -- | -- | -- | -- | -- |
| PAC-P3-MW002I | PAC-P3-MW002I-37.5-20240523 | 5/23/2024 | 37.5 | N | JD89054 | Treatment | Intermediate | -- | 25.7 | -- | < 10 U | -105.8 | 0.1 | 7.31 | 15.68 | 17.3 | 3.67 | -- | 7.2 | 491 | -- | -- | -- | -- | -- |
| PAC-P3-MW002I | PAC-P3-MW002I-37.5-20240619 | 6/19/2024 | 37.5 | N | JD90730 | Treatment | Intermediate | -- | 17.3 | -- | < 10 U | -79.7 | 0.11 | 7.38 | 13.15 | 19.1 | 3.96 | -- | 6.8 | 425 | -- | -- | -- | -- | -- |
| PAC-P3-MW002I | PAC-P3-MW002I-37.5-20240711 | 7/11/2024 | 37.5 | N | JD92004 | Treatment | Intermediate | -- | 24.4 | -- | < 10 U | -62.4 | 0.09 | 7.42 | 16.12 | 20 | 3.24 | -- | 7.6 | 297 | -- | -- | -- | -- | -- |
| PAC-P3-MW002I | PAC-P3-MW002I-37.5-20240816 | 8/16/2024 | 37.5 | N | JD94325 | Treatment | Intermediate | -- | 27.8 | -- | < 10 U | -120 | 0.21 | 7.25 | 12.49 | 22.3 | 2.63 | -- | 6.5 | 462 | -- | -- | -- | -- | -- |
| PAC-P3-MW002I | PAC-P3-MW002I-37.5-20240918 | 9/18/2024 | 37.5 | N | JD96353 | Treatment | Intermediate | -- | 250 | -- | 280 | 48.1 | 0.12 | 7.63 | 19.11 | 21 | 6.36 | -- | 6.5 | 640 | -- | -- | -- | -- | -- |
| PAC-P3-MW002I | PAC-P3-MW002I-37.5-20241008 | 10/8/2024 | 37.5 | N | JD97685 | Treatment | Intermediate | -- | 28.8 | -- | < 10 U | -1.9 | 0.07 | 7.77 | 16.43 | 19.5 | 1.68 | -- | 7.9 | 611 | -- | -- | -- | -- | -- |
| PAC-P3-MW002I | PAC-P3-MW002I-37.5-20241114 | 11/14/2024 | 37.5 | N | JE597 | Treatment | Intermediate | -- | 7930 | -- | 9200 | 34.8 | 0.13 | 8.13 | 18.46 | 17.5 | 6.5 | -- | 6.8 | 820 | -- | -- | -- | -- | -- |
| PAC-P3-MW002I | PAC-P3-MW002I-37.5-20241209 | 12/9/2024 | 37.5 | N | JE2209 | Treatment | Intermediate | -- | 20.0 | -- | < 10 U | 93.8 | 0.25 | 8.26 | 15.64 | 16.3 | 3.63 | -- | 8.7 | 708 | -- | -- | -- | -- | -- |
| 114-MW67C | 114-MW67C-55-20210215 | 2/15/2021 | 55 | N | JD20379 | N/A | Deep (Lower) | -- | 547000 | -- | 397000 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW67C | 114-MW67C-55.0-20211117 | 11/17/2021 | 55 | N | 4602474671 | Baseline | Deep (Lower) | 364000 | 330000 | 372000 | 374000 | 136.70 | 0.55 | 8.00 | 3.83 | 14.98 | 3.29 | -- | 7.8 | 503 J- | -- | 110 | < 1200 U | 122 | -- |
| 114-MW67C | 114-MW67C-55-20211227 | 12/27/2021 | 55 | N | 4602498521 | Treatment | Deep (Lower) | 342000 | 359000 | 407000 | 423000 | 83.3 | 0.2 | 7.96 | 3.91 | 12.57 | 6.04 | -- | 43.3 | 468 | -- | 150 | -- | -- | -- |
| 114-MW67C | 114-MW67C-55-20220120 | 1/20/2022 | 55 | N | 4602510051 | Treatment | Deep (Lower) | 338000 | 342000 | 320000 | 331000 | 175.00 | 1.36 | 8.46 | 4.54 | 12.04 | 7.44 | -- | 8.0 | 467 | -- | 140 | -- | -- | -- |
| 114-MW67C | 114-MW67C-55.0-20220301 | 3/1/2022 | 55.5 | N | 4602534221 | Treatment | Deep (Lower) | 107000 | 51400 | 67700 | 4160 | -433.40 | 0.26 | 12.57 | 16.51 | 13.36 | 27.00 | -- | 14.5 | 500 | -- | -- | -- | -- | -- |
| 114-MW67C | 114-MW67C-55-20220616 | 6/16/2022 | 55 | N | 4602602381 | Treatment | Deep (Lower) | -- | 296000 | -- | 345000 | 68.90 | 5.1 | 8.55 | 4.541 | 18.35 | 6.53 | -- | -- | 451 | -- | -- | -- | -- | -- |
| 114-MW67C | 114-MW67C-55-20220616-X | 6/16/2022 | 55 | FD | 4602602381 | Treatment | Deep (Lower) | -- | 305000 | -- | 345000 | -- | -- | -- | -- | -- | -- | -- | -- | 451 | -- | -- | -- | -- | -- |
| 114-MW67C | 114-MW67C-55-20220923 | 9/23/2022 | 55 | N | 4602661551 | Treatment | Deep (Lower) | -- | 38600 | -- | 12300 | -6 | 0.29 | 11.32 | 7.788 | 16.20 | 7.65 | -- | 8.6 | 505 | -- | -- | -- | -- | -- |
| 114-MW67C | 114-MW67C-55-20221221 | 12/21/2022 | 55 | N | 4602718921 | Treatment | Deep (Lower) | -- | 1020 | -- | < 10.0 U | -430.6 | 1.54 | 12.49 | 8.765 | 11.99 | 6.23 | -- | 9.3 | 535 | -- | -- | -- | -- | -- |
| 114-MW67C | 114-MW67C-55.0-20230324 | 3/24/2023 | 55 | N | 4602769361 | Treatment | Deep (Lower) | -- | 10300 | -- | 117 | -356 | 1.15 | 12 | 8.096 | 12.15 | 8 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW67C | 114-MW67C-55-20230626 | 6/26/2023 | 55 | N | 4602831381 | Treatment | Deep (Lower) | 55300 | 28300 | 62900 | 46700 | -321.1 | 0.48 | 11.3 | 6.189 | 19.5 | 26.3 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW67C | 114-MW67C-55-20230920 | 9/20/2023 | 55 | N | 4602886061 | Treatment | Deep (Lower) | 12500 | 13700 | 11600 | 11900 | -218.9 | 0.09 | 11.12 | 7.47 | 21.4 | 15.8 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW67C | 114-MW67C-55.0-20231220 | 12/20/2023 | 55 | N | JD79284 | Treatment | Deep (Lower) | -- | 3880 | -- | 880 | -169.6 | 2.3 | 11.49 | 5.95 | 11.8 | 5.53 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW67C | 114-MW67C-55-20240321 | 3/21/2024 | 55 | N | JD84944 | Treatment | Deep (Lower) | -- | 277 | -- | < 10 U | -169.7 | 0.07 | 11.67 | 6.03 | 12.5 | 2.32 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW67C | 114-MW67C-55.0-20240621 | 6/21/2024 | 55 | N | JD90887 | Treatment | Deep (Lower) | -- | 292 | -- | < 10 U | -276 | 3.39 | 11.37 | 6.36 | 19.9 | 6.08 | -- | 7.6 | 874 | -- | -- | -- | -- | -- |
| 114-MW67C | 114-MW67C-55.0-20240919 | 9/19/2024 | 55 | N | JD96458 | Treatment | Deep (Lower) | 29.5 | 250 | < 10 U | < 10 U | -193.3 | 0.05 | 11.14 | 6.84 | 20 | 10.6 | -- | 7.8 | 808 | -- | -- | -- | -- | -- |
| 114-MW67C | 114-MW67C-55.0-20241210 | 12/10/2024 | 55 | N | JE2339 | Treatment | Deep (Lower) | -- | 250 | -- | < 10 U | -254 | 0.23 | 11.34 | 6.29 | 14.4 | 9.05 | -- | 2.8 | 1500 | -- | -- | -- | -- | -- |
| 114-P3-MW002D | 114-P3-MW002D-45.7-20211229 | 12/29/2021 | 45.7 | N | 4602499461 | Baseline | Deep (Lower) | 236000 | 226000 | 110000 | 112000 | 180.10 | 0.21 | 6.9 | 3.85 | 13.93 | 5.28 | -- | 5.2 JB | 484 | < 1.0 U | 840 | < 600 U | 42.2 | -- |
| 114-P3-MW002D | 114-P3-MW002D-45.7-20220301 | 3/1/2022 | 45.7 | N | 4602534221 | Treatment | Deep (Lower) | 183000 | 166000 | 174000 | 186000 | 154.20 | 1.00 | 7.10 | 3.58 | 12.14 | 1.38 | -- | 4.1 | 434 | -- | -- | -- | -- | -- |
| 114-P3-MW002D | 114-P3-MW002D-45.7-20220616 | 6/16/2022 | 45.7 | N | 4602602381 | Treatment | Deep (Lower) | -- | 220000 | -- | 253000 | 158.2 | 0.50 | 7.04 | 4.227 | 15.75 | 4.36 | -- | -- | 439 | -- | -- | -- | -- | -- |
| 114-P3-MW002D | 114-P3-MW002D-45.7-20220923 | 9/22/2022 | 45.7 | N | 4602660731 | Treatment | Deep (Lower) | -- | 990000 | -- | 195000 | 171.6 | 0.23 | 7.31 | 3.879 | 16.01 | 8.5 | -- | 4.5 | 389 | -- | -- | -- | -- | -- |
| 114-P3-MW002D | 114-P3-MW002D-45.7-20221221 | 12/21/2022 | 45.7 | N | 4602718921 | Treatment | Deep (Lower) | -- | 140000 | -- | 145000 | 12.4 | 1.54 | 7.23 | 2.876 | 12.66 | 5.36 | -- | 4.4 | 424 | -- | -- | -- | -- | -- |
| 114-P3-MW002D | 114-P3-MW002D-45.7-20230324 | 3/24/2023 | 45.7 | N | 4602769361 | Treatment | Deep (Lower) | 4050 | 8110 | 4590 | 5220 | 11.2 | 0.26 | 7.17 | 3.099 | 13.00 | 48.2 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P3-MW002D | 114-P3-MW002D-45.7-20230627 | 6/27/2023 | 45.7 | N | 4602831921 | Treatment | Deep (Lower) | 431 | 1470 | < 10.0 U | < 10.0 U | -315.9 | 0.45 | 7.04 | 2.481 | 18.7 | 20.9 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P3-MW002D | 114-P3-MW002D-45.7-20230921 | 9/21/2023 | 45.7 | N | 4602887321 | Treatment | Deep (Lower) | 1310 | 3590 | < 10.0 U | < 10.0 U | -151.9 | 1.05 | 7.22 | 2.56 | 19.6 | 32.5 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P3-MW002D | 114-P3-MW002D-45.7-20231221 | 12/21/2023 | 45.7 | N | JD79357 | Treatment | Deep (Lower) | 81.9 | 327 | < 10 U | < 10 U | -442.8 | 0.09 | 6.81 | 2.594 | 10.6 | 22.1 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P3-MW002D | 114-P3-MW002D-45.7-20240321 | 3/21/2024 | 45.7 | N | JD84944 | Treatment | Deep (Lower) | 155 | 320 | < 10 U | < 10 U | -204.3 | 0.06 | 6.72 | 3.2 | 11.9 | 10.4 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P3-MW002D | 114-P3-MW002D-45.7-20240621 | 6/21/2024 | 45.7 | N | JD90887 | Treatment | Deep (Lower) | -- | 273 | -- | < 10 U | -119.6 | 0.1 | 6.69 | 2.938 | 19.6 | 9.68 | -- | 86.0 | 2.5 | -- | -- | -- | -- | -- |
| 114-P3-MW002D | 114-P3-MW002D-45.7-20240919 | 9/19/2024 | 45.7 | N | JD96458 | Treatment | Deep (Lower) | -- | 341 | -- | 53 | -112.8 | 0.05 | 6.92 | 3.37 | 20.2 | 9.88 | -- | 64.0 | 40.2 | -- | -- | -- | -- | -- |
| 114-P3-MW002D | 114-P3-MW002D-45.7-20241210 | 12/10/2024 | 45.7 | N | JE2339 | Treatment | Deep (Lower) | -- | 428 | -- | 98 | -143 | 0.22 | 6.81 | 3.08 | 14.1 | 9.85 | -- | 45.4 | 201 | -- | -- | -- | -- | -- |
| 114-P3-MW003D | 114-P3-MW003D-56.8-20211229 | 12/29/2021 | 56.8 | N | 4602499461 | Baseline | Deep (Lower) | 867000 J | 139000 J | 780000 | 802000 J | 206 | 0 | 6.82 | 9.63 | 14.4 | 9.71 | -- | 13.4 | 828 | < 1.0 U | 930 | < 600 U | 145 | -- |
| 114-P3-MW003D | 114-P3-MW003D-56.8-20220228 | 2/28/2022 | 56.8 | N | 4602533341 | Treatment | Deep (Lower) | 496000 | 394000 | 448000 | 502000 | 101.60 | 2.95 | 7.69 | 7.24 | 11.59 | 1.06 | -- | 6.6 | 781 | -- | -- | -- | -- | -- |
| 114-P3-MW003D | 114-P3-MW003D-56.8-20220616 | 6/16/2022 | 56.8 | N | 4602602381 | Treatment | Deep (Lower) | -- | 488000 | -- | 509000 | 117.9 | 0.01 | 7.74 | 6.635 | 16.06 | 6.42 | -- | 8.4 | 734 | -- | -- | -- | -- | -- |
| 114-P3-MW003D | 114-P3-MW003D-56.8-20220923 | 9/23/2022 | 56.8 | N | 4602661551 | Treatment | Deep (Lower) | -- | 296000 | -- | 297000 H<br>299000 H | -72.1 | 0.06 | 9.89 | 5.115 | 15.34 | 5.63 | -- | 5.4 | 700 | -- | -- | -- | -- | -- |
| 114-P3-MW003D | 114-P3-MW003D-56.8-20221221 | 12/21/2022 | 56.8 | N | 4602718921 | Treatment | Deep (Lower) | -- | 308000 | -- | 324000 | 105.9 | 0.85 | 9.01 | 5.764 | 11.51 | 8.59 | -- | 6.5 | 846 | -- | -- | -- | -- | -- |
| 114-P3-MW003D | 114-P3-MW003D-56.8-20230324 | 3/24/2023 | 56.8 | N | 4602769361 | Treatment | Deep (Lower) | -- | 256000 | -- | 320000 | 128.6 | 0.18 | 9.75 | 4.141 | 12.30 | 6.54 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P3-MW003D | 114-P3-MW003D-56.8-20230627 | 6/27/2023 | 56.8 | N | 4602831921 | Treatment | Deep (Lower) | -- | 334000 | -- | 345000 | -16.7 | 0.49 | 8 | 6.156 | 18.9 | 6.21 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P3-MW003D | 114-P3-MW003D-56.8-20230921 | 9/21/2023 | 56.8 | N | 4602887321 | Treatment | Deep (Lower) | -- | 393000 | -- | 424000 | 115.6 | 0.42 | 7.63 | 6.55 | 17.8 | 2.62 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P3-MW003D | 114-P3-MW003D-56.8-20231221 | 12/21/2023 | 56.8 | N | JD79357 | Treatment | Deep (Lower) | -- | 353000 | -- | 329000 | 118.2 | 0.42 | 7.55 | 5.89 | 12.9 | 1.34 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P3-MW003D | 114-P3-MW003D-56.8-20240321 | 3/21/2024 | 56.8 | N | JD84944 | Treatment | Deep (Lower) | -- | 334000 | -- | 293000 | 69.3 | 0.41 | 7.73 | 5.65 | 13.2 | 1.3 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P3-MW003D | 114-P3-MW003D-56.8-20240621 | 6/21/2024 | 56.8 | N | JD90887 | Treatment | Deep (Lower) | -- | 330000 | -- | 307000 | 101.6 | 0.32 | 7.93 | 5.28 | 18.1 | 1.56 | -- | 6.4 | 1040 | -- | -- | -- | -- | -- |
| 114-P3-MW003D | 114-P3-MW003D-56.8-20240918 | 9/18/2024 | 56.8 | N | JD96353 | Treatment | Deep (Lower) | -- | 272000 | -- | 287000 | 39.5 | 2.38 | 8.18 | 5.66 | 18.5 | 0.94 | -- | < 5.0 U | 982 | -- | -- | -- | -- | -- |
| 114-P3-MW003D | 114-P3-MW003D-56.8-20241211 | 12/11/2024 | 56.8 | N | JE2415 | Treatment | Deep (Lower) | -- | 334000 | -- | 301000 | 155.3 | 4.72 | 7.56 | 5.84 | 15.2 | 0.56 | -- | < 40 U | 872 | -- | -- | -- | -- | -- |
| 114-P3-MW004D | 114-P3-MW004D-59.8-20211229 | 12/29/2021 | 59.8 | N | 4602499461 | Baseline | Deep (Lower) | 942000 | 808000 | 791000 | 797000 | 205 | 0 | 7.14 | 7.75 | 14.13 | 1 | -- | 12.2 | 798 | < 1.0 U | 730 | < 600 U | 122 | -- |
| 114-P3-MW004D | 114-P3-MW004D-54.8-20220228 | 2/28/2022 | 54.8 | N | 4602533341 | Treatment | Deep (Lower) | 742000 | 743000 | 775000 | 742000 | 178.10 | 3.01 | 7.49 | 6.25 | 12.70 | 4.23 | -- | 9.0 | 796 | -- | -- | -- | -- | -- |
| 114-P3-MW004D | 114-P3-MW004D-54.8-20220616 | 6/16/2022 | 54.8 | N | 4602602381 | Treatment | Deep (Lower) | -- | 608000 | -- | 688000 | 116.8 | 0.16 | 7.52 | 7.538 | 17.11 | 4.91 | -- | -- | 749 | -- | -- | -- | -- | -- |
| 114-P3-MW004D | 114-P3-MW004D-54.8-20220922 | 9/22/2022 | 54.8 | N | 4602660731 | Treatment | Deep (Lower) | -- | 603000 | -- | 592000 | 240.3 | 0.61 | 7.44 | 5.969 | 17.04 | 9.29 | -- | 9.1 | 681 | -- | -- | -- | -- | -- |
| 114-P3-MW004D | 114-P3-MW004D-54.8-20221221 | 12/21/2022 | 54.8 | N | 4602718921 | Treatment | Deep (Lower) | -- | 568000 | -- | 695000 | 186.1 | 1.01 | 7.33 | 7.104 | 10.82 | 8.77 | -- | 10.3 | 766 | -- | -- | -- | -- | -- |
| 114-P3-MW004D | 114-P3-MW004D-54.8-20230324 | 3/24/2023 | 54.8 | N | 4602769361 | Treatment | Deep (Lower) | -- | 637000 | -- | 729000 | 162.8 | 1.46 | 7.8 | 5.827 | 11.86 | 8.08 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P3-MW004D | 114-P3-MW004D-54.8-20230627 | 6/27/2023 | 54.8 | N | 4602831921 | Treatment | Deep (Lower) | -- | 641000 | -- | 674000 | 272.1 | 4.08 | 6.84 | 6.591 | 19.5 | 2.87 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P3-MW004D | 114-P3-MW004D-54.8-20230921 | 9/21/2023 | 54.8 | N | 4602887321 | Treatment | Deep (Lower) | -- | 643000 | -- | 713000 | 162.8 | 0.56 | 7.4 | 8.58 | 16.5 | 0.8 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P3-MW004D | 114-P3-MW004D-54.8-20231221 | 12/21/2023 | 54.8 | N | JD79357 | Treatment | Deep (Lower) | -- | 655000 | -- | 708000 | 110.6 | 0.26 | 7.29 | 7.3 | 12.2 | 2.29 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P3-MW004D | 114-P3-MW004D-54.8-20240321 | 3/21/2024 | 54.8 | N | JD84944 | Treatment | Deep (Lower) | -- | 722000 | -- | 567000 | 142.4 | 0.3 | 7.33 | 7.68 | 12.5 | 3.44 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P3-MW004D | 114-P3-MW004D-54.8-20240621 | 6/21/2024 | 54.8 | N | JD90887 | Treatment | Deep (Lower) | -- | 811000 | -- | 636000 | 3.1 | 0.46 | 7.33 | 6.99 | 21.7 | 10.6 | -- | 9.1 | 1060 | -- | -- | -- | -- | -- |
| 114-P3-MW004D | 114-P3-MW004D-54.8-20240918 | 9/18/2024 | 54.8 | N | JD96353 | Treatment | Deep (Lower) | -- | 560000 | -- | 518000 | 146.6 | 0.21 | 7.28 | 7.74 | 18.4 | 0.82 | -- | 5.3 | 1220 | -- | -- | -- | -- | -- |
| 114-P3-MW004D | 114-P3-MW004D-54.8-20241211 | 12/11/2024 | 54.8 | N | JE2415 | Treatment | Deep (Lower) | -- | 533000 | -- | 478000 | 164.9 | 0.34 | 7.24 | 7.56 | 15.3 | 0.46 | -- | 36.8 B | 863 | -- | -- | -- | -- | -- |
| 114-P3-MW006D | 114-P3-MW006D-50.55-20211229 | 12/29/2021 | 50 | N | 4602499461 | Baseline | Deep (Lower) | 36.2 | 39.2 | < 10.0 U | < 10.0 U | -117.0 | 0.51 | 7.67 | 2.06 | 14.11 | 3.75 | -- | 7.0 JB | 306 | < 1.0 U | 23000 | 2210 | 373 | -- |
| 114-P3-MW006D | 114-P3-MW006D-50.0-20220228 | 2/28/2022 | 50 | N | 4602533341 | Treatment | Deep (Lower) | 32.2 | 35.5 | < 10.0 U | < 10.0 U | -129.90 | 8.80 | 7.65 | 1.44 | 12.10 | 4.50 | -- | 9.7 | 117 | -- | -- | -- | -- | -- |
| 114-P3-MW006D | 114-P3-MW006D-50-20220617 | 6/17/2022 | 50 | N | 4602603591 | Treatment | Deep (Lower) | -- | 90.9 | -- | < 10.0 U | -145.8 | 1.53 | 6.77 | 1.937 | 19.03 | 3.76 | -- | -- | 73.0 | -- | -- | -- | -- | -- |
| 114-P3-MW006D | 114-P3-MW006D-50-20220922 | 9/22/2022 | 50 | N | 4602660731 | Treatment | Deep (Lower) | -- | 16.7 | -- | < 10.0 U | -29.3 | 1 | 6.57 | 1.748 | 16.87 | 3.70 | -- | 21.2 | 26.1 | -- | -- | -- | -- | -- |
| 114-P3-MW006D | 114-P3-MW006D-50-20221221 | 12/21/2022 | 50 | N | 4602718921 | Treatment | Deep (Lower) | -- | 80.4 | -- | < 10.0 U | -139.5 | 0.59 | 7.20 | 1.492 | 13.78 | 2.95 | -- | 14.2 | 68.0 | -- | -- | -- | -- | -- |
| 114-P3-MW006D | 114-P3-MW006D-50.0-20230324 | 3/24/2023 | 50 | N | 4602769361 | Treatment | Deep (Lower) | -- | 134 | -- | < 10.0 U | -82.1 | 1.07 | 6.87 | 1.916 | 13.08 | 8.73 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P3-MW006D | 114-P3-MW006D-50.0-20230627 | 6/27/2023 | 50 | N | 4602831921 | Treatment | Deep (Lower) | -- | 101 | -- | < 10.0 U | -72.3 | 11.3 | 6.14 | 2.304 | 20.12 | 4.02 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P3-MW006D | 114-P3-MW006D-50.0-20230921 | 9/21/2023 | 50 | N | 4602887321 | Treatment | Deep (Lower) | -- | 76.5 | -- | < 10.0 U | -117.7 | 0.17 | 6.91 | 3.175 | 17.3 | 2.2 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P3-MW006D | 114-P3-MW006D-50.0-20231220 | 12/20/2023 | 50 | N | JD79284 | Treatment | Deep (Lower) | -- | 61.0 | -- | < 10 U | -247.9 | 2.32 | 7.17 | 3.213 | 13.4 | 2.

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P3-MW006D | 114-P3-MW006D-50.0-20240813 | 8/13/2024 | 50 | N | JD93988 | Treatment | Deep (Lower) | -- | **26100** | -- | **29400** | 11 | 0.53 | 7.27 | 4.28 | 18.3 | 5.6 | -- | < 5.0 U | **373** | -- | -- | -- | -- | -- |
| 114-P3-MW006D | 114-P3-MW006D-50.0-20240919 | 9/19/2024 | 50 | N | JD96458 | Treatment | Deep (Lower) | -- | **40900** | -- | **42500** | -28.3 | 0.68 | 7.36 | 4.23 | 19.1 | 2.85 | -- | 10.4 | 95.4 | -- | -- | -- | -- | -- |
| 114-P3-MW006D | 114-P3-MW006D-50.0-20241210 | 12/10/2024 | 50 | N | JE2339 | Treatment | Deep (Lower) | -- | **32700** | -- | **36000** | -78.6 | 2.03 | 7.57 | 4.83 | 14.8 | 2.06 | -- | < 30 U | **385** | -- | -- | -- | -- | -- |
| 132-P3A-MW104D-1 | 132-P3A-MW104D-1-52.0-20180426 | 4/26/2018 | 52 | N | JC64986 | N/A | Deep | -- | 45.3 | -- | 17 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 132-P3A-MW104D-1 | 132-P3A-MW104D-1-52.0-20180426X | 4/26/2018 | 52 | FD | JC64986 | N/A | Deep | -- | 41.8 | -- | 18 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 132-P3A-MW104D-1 | 132-P3A-MW104D-1-52.5-20211015 | 10/15/2021 | 52.5 | N | 4602452041 | Baseline | Deep | 30.6 | 33.1 | < 10.0 U | < 10.0 U | -142.70 | 3.91 | 12.23 | 9.01 | 17.86 | 3.21 | -- | 119 | 96.5 | < 1.0 U | < 5.0 U | < 120 U | < 8.0 U | -- |
| 132-P3A-MW104D-1 | 132-P3A-MW104D-1-52.5-20211227 | 12/27/2021 | 52.5 | N | 4602498521 | Treatment | Deep | < 4.0 U | 3.3 J | < 10.0 U | < 10.0 U | -34.1 | 2.66 | 9.95 | 7.946 | 11.60 | 9.51 | -- | 14.8 | **413** | -- | 3.2 J | -- | -- | -- |
| 132-P3A-MW104D-1 | 132-P3A-MW104D-1-52.5-20220117 | 1/17/2022 | 52.5 | N | 4602508211 | Treatment | Deep | 5.2 | 23.6 | < 10.0 U | < 10.0 U | -92.70 | 2.70 | 12.280 | 9.34 | 11.92 | 7.88 | -- | 15.2 | **532** | -- | < 5.0 U | -- | -- | -- |
| 132-P3A-MW104D-1 | 132-P3A-MW104D-1-52.5-20220223 | 2/23/2022 | 52.5 | N | 4602530771 | Treatment | Deep | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | 10.90 | 0.51 | 8.40 | 10.10 | 15.00 | 4.28 | -- | 3.5 | **643** | -- | < 5.0 U | -- | -- | -- |
| 132-P3A-MW104D-1 | 132-P3A-MW104D-1-52.5-20220323 | 3/23/2022 | 52.5 | N | 4602548831 | Treatment | Deep | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | 4.20 | 0.19 | 8.54 | 9.21 | 13.75 | 2.66 | -- | 3.5 | **446** | -- | 9.8 | -- | -- | -- |
| 132-P3A-MW104D-1 | 132-P3A-MW104D-1-52.5-20220422 | 4/22/2022 | 52.5 | N | 4602567961 | Treatment | Deep | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | 16.8 | 0.77 | 10.04 | 9.188 | 14.12 | 1.96 | -- | 3.4 | **697** | -- | 53 | -- | -- | -- |
| 132-P3A-MW104D-1 | 132-P3A-MW104D-1-52.5-20220517 | 5/17/2022 | 52.5 | N | 4602582941 | Treatment | Deep | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -29.8 | 0.35 | 8.21 | 10.71 | 15.64 | 7.44 | -- | 3.2 | **720** | -- | -- | -- | -- | -- |
| 132-P3A-MW104D-1 | 132-P3A-MW104D-1-52.5-20220615 | 6/15/2022 | 52.5 | N | 4602601501 | Treatment | Deep | -- | 2.9 J | -- | < 10.0 U | -114.1 | 0.20 | 8.38 | 9.791 | 16.2 | 5.28 | -- | 3.3 | **443** | -- | -- | -- | -- | -- |
| 132-P3A-MW104D-1 | 132-P3A-MW104D-1-52.5-20220720 | 7/20/2022 | 52.5 | N | 4602622601 | Treatment | Deep | -- | < 4.0 U | -- | < 10.0 U | 116.2 | 0.58 | 8.97 | 8.974 | 17.95 | 3.21 | -- | 5.7 | **604** | -- | -- | -- | -- | -- |
| 132-P3A-MW104D-1 | 132-P3A-MW104D-1-52.5-20220916 | 9/16/2022 | 52.5 | N | 4602657011 | Treatment | Deep | -- | < 4.0 U | -- | < 10.0 U | -211.2 | 8.48 | 8.58 | 9.27 | 16.6 | 3.49 | -- | 3.3 | **801** | -- | -- | -- | -- | -- |
| 132-P3A-MW104D-1 | 132-P3A-MW104D-1-52.5-20221214 | 12/14/2022 | 52.5 | N | 4602713561 | Treatment | Deep | -- | < 4.0 U | -- | < 10.0 U | -171.6 | 0.31 | 8.8 | 10.28 | 12.43 | 2.34 | -- | 3.5 | **693** | -- | -- | -- | -- | -- |
| 132-P3A-MW104D-1 | 132-P3A-MW104D-1-52.5-20230321 | 3/21/2023 | 52.5 | N | 4602767381 | Treatment | Deep | -- | < 4.0 U | -- | < 10.0 U | -151.9 | 0.1 | 8.34 | 9.548 | 15.9 | 3.47 | -- | 3.7 | **912** | -- | -- | -- | -- | -- |
| 132-P3A-MW104D-1 | 132-P3A-MW104D-1-52.5-20230620 | 6/20/2023 | 52.5 | N | 4602827171 | Treatment | Deep | -- | **329** | -- | < 10.0 U | -89.8 | 0.36 | 8.67 | 2.676 | 18.4 | 8.41 | -- | 5.2 | **658** | -- | -- | -- | -- | -- |
| 132-P3A-MW104D-1 | 132-P3A-MW104D-1-52.5-20230815 | 8/15/2023 | 52.5 | N | 4602862031 | Treatment | Deep | -- | < 4.0 U | -- | < 10.0 U | -149.1 | 0.71 | 9.11 | 8.788 | 19.61 | 6.78 | -- | -- | -- | -- | -- | -- | -- | -- |
| 132-P3A-MW104D-1 | 132-P3A-MW104D-1-52.5-20230918 | 9/18/2023 | 52.5 | N | 4602884721 | Treatment | Deep | -- | < 4.0 U | -- | < 10.0 U | -117.2 | 0.41 | 8.05 | 8.85 | 16.92 | 4.36 | -- | 3.3 | **820** | -- | -- | -- | -- | -- |
| 132-P3A-MW104D-1 | 132-P3A-MW104D-1-52.5-20231214 | 12/14/2023 | 52.5 | N | JD78891 | Treatment | Deep | -- | 3.7 B | -- | < 10 U | -236.8 | 0.55 | 8.18 | 11.06 | 12.9 | 3.02 | -- | 2.3 | **1070** | -- | -- | -- | -- | -- |
| 132-P3A-MW104D-1 | 132-P3A-MW104D-1-52.5-20240320 | 3/20/2024 | 52.5 | N | JD84851 | Treatment | Deep | -- | < 10 U | -- | < 10 U | -163.9 | 0.42 | 8.46 | 9.72 | 14 | 8.77 | -- | 2.7 | **1050** | -- | -- | -- | -- | -- |
| 132-P3A-MW104D-1 | 132-P3A-MW104D-1-52.5-20240620 | 6/20/2024 | 52.5 | N | JD90821 | Treatment | Deep | -- | < 10 U | -- | < 10 U | -114 | 0.22 | 8.17 | 8.88 | 20.3 | 6.75 | -- | 4.2 | **1110** | -- | -- | -- | -- | -- |
| 132-P3A-MW104D-1 | 132-P3A-MW104D-1-52.5-20240716 | 7/16/2024 | 52.5 | N | JD92267 | Post-Treatment | Deep | < 10 U | < 10 U | < 10 RA | < 10 RA | -204.4 | 0.28 | 8.35 | 8.484 | 23.2 | 18.9 | -- | 5.2 J | **1100** | < 2.0 U | -- | 46.4 J | **159** | -- |
| 132-P3A-MW104D-1 | 132-P3A-MW104D-1-52.5-20240716-X | 7/16/2024 | 52.5 | FD | JD92267 | Post-Treatment | Deep | < 10 U | < 10 U | < 10 RA | < 10 RA | -- | -- | -- | -- | -- | -- | -- | 10.4 J | **959** | < 2.0 U | -- | 33.4 J | **142** | -- |
| 132-P3A-MW104D-1 | 132-P3A-MW104D-1-52.5-20241010 | 10/10/2024 | 52.5 | N | JD97909 | Post-Treatment | Deep | -- | < 10 U | -- | < 10 U | -148.3 | 0.18 | 8.36 | 10.57 | 16.1 | 3.63 | -- | 3.9 J+ | **944** | -- | -- | -- | -- | -- |
| 132-P3A-MW104D-2 | 132-P3A-MW104D-2-69.0-20180426 | 4/26/2018 | 69 | N | JC64986 | N/A | Deep | -- | 3.8 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 132-P3A-MW104D-2 | 132-P3A-MW104D-2-65.5-20211020 | 10/20/2021 | 65.5 | N | 4602455611 | Baseline | Deep | < 4.0 U | 51.1 | < 10.0 U | **< 100 U** | -255.80 | 1.87 | 7.30 | 2.84 | 18.42 | 9999.00 | -- | 5.1 | 94.9 | < 1.0 U | 120 | **966** | **517** | -- |
| 132-P3A-MW104D-2 | 132-P3A-MW104D-2-65.5-20211228 | 12/28/2021 | 65.5 | N | 4602498981 | Treatment | Deep | < 4.0 U | 2.7 J | < 10.0 U | < 10.0 U | -109 | 0.21 | 7.56 | 3.161 | 13.79 | 5.42 | -- | 9.0 | 141 | -- | 140 | -- | -- | -- |
| 132-P3A-MW104D-2 | 132-P3A-MW104D-2-65.5-20220118 | 1/18/2022 | 65.5 | N | 4602508581 | Treatment | Deep | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -146.50 | 0.16 | 7.40 | 4.03 | 12.90 | 9.62 | -- | 2.6 | 127 | -- | 140 | -- | -- | -- |
| 132-P3A-MW104D-2 | 132-P3A-MW104D-2-65.5-20220223 | 2/23/2022 | 65.5 | N | 4602530771 | Treatment | Deep | < 4.0 U | 5.7 | < 10.0 U | < 10.0 U | -132.60 | 0.68 | 7.57 | 4.03 | 13.69 | 3.09 | -- | 2.5 | 130 | -- | 150 | -- | -- | -- |
| 132-P3A-MW104D-2 | 132-P3A-MW104D-2-65.5-20220323 | 3/23/2022 | 65.5 | N | 4602548831 | Treatment | Deep | < 4.0 U | 6.2 | < 10.0 U | < 10.0 U | -114.90 | 1.79 | 7.59 | 3.80 | 12.97 | 5.46 | -- | 2.1 | 102 | -- | 170 | -- | -- | -- |
| 132-P3A-MW104D-2 | 132-P3A-MW104D-2-65.5-20220422 | 4/22/2022 | 65.5 | N | 4602567961 | Treatment | Deep | < 4.0 U | 6.5 | < 10.0 U | < 10.0 U | 20.6 | 0.77 | 7.57 | 3.688 | 12.51 | 1.56 | -- | 1.5 | 154 | -- | 130 | -- | -- | -- |
| 132-P3A-MW104D-2 | 132-P3A-MW104D-2-65.5-20220517 | 5/17/2022 | 65.5 | N | 4602582941 | Treatment | Deep | < 4.0 U | 3.1 J | < 10.0 U | < 10.0 U | -97.7 | 0.71 | 7.64 | 4.308 | 16.25 | 6.94 | -- | 2.2 | 130 | -- | -- | -- | -- | -- |
| 132-P3A-MW104D-2 | 132-P3A-MW104D-2-65.5-20220517-X | 5/17/2022 | 65.5 | FD | 4602582941 | Treatment | Deep | 4.8 | 6.9 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 1.9 | 109 | -- | -- | -- | -- | -- |
| 132-P3A-MW104D-2 | 132-P3A-MW104D-2-65.5-20220615 | 6/15/2022 | 65.5 | N | 4602601501 | Treatment | Deep | -- | 3.8 J | -- | < 10.0 U | -138.2 | 0.13 | 7.67 | 4.006 | 16.79 | 2.96 | -- | 1.8 | 140 | -- | -- | -- | -- | -- |
| 132-P3A-MW104D-2 | 132-P3A-MW104D-2-65.5-20220720 | 7/20/2022 | 65.5 | N | 4602622601 | Treatment | Deep | -- | 4.0 | -- | < 10.0 U | -14.6 | 0.84 | 7.07 | 4.209 | 16.98 | 4.21 | -- | 1.5 | 166 | -- | -- | -- | -- | -- |
| 132-P3A-MW104D-2 | 132-P3A-MW104D-2-65.5-20220916 | 9/16/2022 | 65.5 | N | 4602657011 | Treatment | Deep | -- | 5.1 | -- | < 10.0 U | -198.7 | 8.03 | 7.66 | 4.5 | 16.97 | 1.61 | -- | 1.1 | 122 | -- | -- | -- | -- | -- |
| 132-P3A-MW104D-2 | 132-P3A-MW104D-2-65.5-20221214 | 12/14/2022 | 65.5 | N | 4602713561 | Treatment | Deep | -- | < 4.0 U | -- | < 10.0 U | -187.1 | 0.36 | 8.05 | 5.644 | 11.75 | 1.15 | -- | 1.4 | 181 | -- | -- | -- | -- | -- |
| 132-P3A-MW104D-2 | 132-P3A-MW104D-2-65.5-20230322 | 3/22/2023 | 65.5 | N | 4602768001 | Treatment | Deep | -- | 31.1 | -- | < 10.0 U | -82 | 0.48 | 7.8 | 4.448 | 13.64 | 8.8 | -- | 1.6 | 185 | -- | -- | -- | -- | -- |
| 132-P3A-MW104D-2 | 132-P3A-MW104D-2-65.5-20230616 | 6/16/2023 | 65.5 | N | 4602824871 | Treatment | Deep | -- | 3.4 J | -- | < 10.0 U | -288 | 0.35 | 7.79 | 4.559 | 17.5 | 4.98 | -- | 0.68 J | 181 | -- | -- | -- | -- | -- |
| 132-P3A-MW104D-2 | 132-P3A-MW104D-2-65.5-20230919 | 9/19/2023 | 65.5 | N | 4602885251 | Treatment | Deep | -- | < 4.0 U | -- | < 10.0 U | -147.6 | 0.21 | 7.78 | 5.376 | 19.5 | 0.65 | -- | 1.2 | 203 | -- | -- | -- | -- | -- |
| 132-P3A-MW104D-2 | 132-P3A-MW104D-2-65.5-20231220 | 12/20/2023 | 65.5 | N | JD79284 | Treatment | Deep | -- | < 10 U | -- | < 10 U | -173.8 | 0.37 | 7.73 | 5.54 | 12 | 0.93 | -- | < 1.0 U | 224 | -- | -- | -- | -- | -- |
| 132-P3A-MW104D-2 | 132-P3A-MW104D-2-65.5-20240321 | 3/21/2024 | 65.5 | N | JD84944 | Treatment | Deep | -- | < 10 U | -- | < 10 U | -281.7 | 1.43 | 7.76 | 6.46 | 10.8 | 1.48 | -- | 0.80 B | 203 | -- | -- | -- | -- | -- |
| 132-P3A-MW104D-2 | 132-P3A-MW104D-2-65.5-20240619 | 6/19/2024 | 65.5 | N | JD90730 | Treatment | Deep | -- | < 10 U | -- | < 10 U | -197.3 | 0.27 | 7.9 | 5.58 | 18.1 | 1.86 | -- | 1.3 | 222 | -- | -- | -- | -- | -- |
| 132-P3A-MW104D-2 | 132-P3A-MW104D-2-65.5-20240716 | 7/16/2024 | 65.5 | N | JD92267 | Post-Treatment | Deep | -- | < 10 U | -- | 3.5 J- | -187.2 | 0.33 | 7.59 | 4.446 | 24.5 | 0.66 | -- | 0.96 J | 209 | < 2.0 U | -- | -- | -- | -- |
| 132-P3A-MW104D-2 | 132-P3A-MW104D-2-65.5-20240716-X | 7/16/2024 | 65.5 | FD | JD92267 | Post-Treatment | Deep | -- | < 10 U | -- | < 10 RA | -- | -- | -- | -- | -- | -- | -- | 0.88 J | 213 | < 2.0 U | -- | -- | -- | -- |
| 132-P3A-MW104D-2 | 132-P3A-MW104D-2-65.5-20241010 | 10/10/2024 | 65.5 | N | JD97909 | Post-Treatment | Deep | -- | < 10 U | -- | 3.4 J | -207.7 | 0.15 | 7.71 | 4.95 | 18.2 | 1.17 | -- | 1.5 J+ | 173 | -- | -- | -- | -- | -- |
| 199-P3-MW003D | 199-P3-MW003D-46.7-20220104 | 1/4/2022 | 46.7 | N | 4602500781 | Baseline | Deep | 18.6 | 21.5 | < 10.0 U | < 10.0 U | -50.9 | 0.20 | 7.01 | 2.77 | 13.58 | 1.83 | -- | 7.8 | **359** | < 1.0 U | 600 | **2040** | **1900** | -- |
| 199-P3-MW003D | 199-P3-MW003D-43.5-20221229 | 12/29/2022 | 43.5 | N | 4602721691 | N/A | Deep | -- | 51.4 | -- | < 10.0 U | -148 | 0.59 | 7.14 | 7.032 | 12.55 | 2.99 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW003D | 199-P3-MW003D-43.5-20230315 | 3/15/2023 | 43.5 | N | 4602763791 | N/A | Deep | -- | 54.7 | -- | < 10.0 U | -252.3 | 1.71 | 7.45 | 5.516 | 14.67 | 1.43 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW003D | 199-P3-MW003D-43.5-20230509 | 5/9/2023 | 43.5 | N | 4602799211 | N/A | Deep | -- | 54.4 | -- | < 10.0 U | -281.5 | 5.74 | 7.26 | 6.000 | 17.10 | 2.49 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW003D | 199-P3-MW003D-43.5-20230914 | 9/14/2023 | 43.5 | N | 4602882001 | Total Cr Isopleth | Deep | -- | 50.8 | -- | < 10.0 UJ | -267.5 | 1.73 | 7.28 | 5.82 | 20.06 | 1.9 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW003D | 199-P3-MW003D-43.5-20231213 | 12/13/2023 | 43.5 | N | JD78777 | Total Cr Isopleth | Deep | -- | 58.2 | -- | 28 J- | -142.1 | 0.08 | 6.91 | 5.14 | 16.2 | 1.5 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW003D | 199-P3-MW003D-43.5-20240313 | 3/13/2024 | 43.5 | N | JD84389 | Total Cr Isopleth | Deep | -- | 46.7 | -- | < 10 U | -167.5 | 0.16 | 7.06 | 6.29 | 17 | 0.82 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW003D | 199-P3-MW003D-43.5-20240611 | 6/11/2024 | 43.5 | N | JD90213 | Total Cr Isopleth | Deep | -- | **112** | -- | 27 | -193 | 0.17 | 6.62 | 3.843 | 17.6 | 5.02 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW003D | 199-P3-MW003D-43.5-20240912 | 9/12/2024 | 43.5 | N | JD95972 | Total Cr Isopleth | Deep | -- | **142** | -- | 66 | -89.4 | 0.15 | 6.62 | 3.02 | 20.1 | 6.67 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW003D | 199-P3-MW003D-43.5-20241211 | 12/11/2024 | 43.5 | N | JE2416 | Total Cr Isopleth | Deep | -- | **140** | -- | 37 | -112.1 | 0.27 | 6.74 | 3.39 | 16 | 4.67 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-38.35-20220105 | 1/5/2022 | 38.35 | N | 4602501431 | Baseline | Deep | 60.3 | 60.5 | < 10.0 U | < 10.0 U | -127 | 1.17 | 6.78 | 2.47 | 8.61 | 1.4 | -- | 37.4 | 8.58 | < 1.0 U | 20000 | **20000** | **2290** | -- |
| 199-P3-MW004D | 199-P3-MW004D-38.35-20220105-X | 1/5/2022 | 38.35 | FD | 4602501431 | Baseline | Deep | 57.0 | 63.0 | < 10.0 U | < 10.0 U | -127 | 1.17 | 6.78 | 2.47 | 8.61 | 1.4 | -- | 37.5 | 8.46 | < 1.0 U | 20000 | **20100** | **2300** | -- |
| 199-P3-MW004D | 199-P3-MW004D-53.35-20220105 | 1/5/2022 | 53.35 | N | 4602501431 | Baseline | Deep | **74.7** | **78.2** | < 10.0 U | < 10.0 U | -124 | 0.93 | 6.83 | 2.52 | 12.59 | 6.8 | -- | 41.0 | 3.99 | < 1.0 U | 22000 | **25700** | **2570** | -- |
| 199-P3-MW004D | 199-P3-MW004D-38-20221229 | 12/29/2022 | 38 | N | 4602721691 | N/A | Deep | -- | **424** | -- | < 10.0 U | -178 | 5.4 | 5.8 | 3 | 11.7 | 9.71 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-43-20221229 | 12/29/2022 | 43 | N | 4602721691 | N/A | Deep | -- | **395** | -- | < 10.0 U | -179 | 2.45 | 5.8 | 3.06 | 10.89 | 7.45 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-48-20221229 | 12/29/2022 | 48 | N | 4602721691 | N/A | Deep | -- | **435** | -- | < 50.0 U | -116 | 1.74 | 5.87 | 3.07 | 10.6 | 5.73 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-53-20221229 | 12/29/2022 | 53 | N | 4602721691 | N/A | Deep | -- | **414** | -- | < 20.0 U | -129 | 2 | 5.94 | 2.96 | 9.43 | 5.38 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-38.0-20230315 | 3/15/2023 | 38 | N | 4602763791 | N/A | Deep | -- | **135** | -- | < 20.0 U | -94.1 | 0.81 | 6.60 | 2.869 | 12.86 | 9.98 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-43.0-20230315 | 3/15/2023 | 43 | N | 4602763791 | N/A | Deep | -- | **132** | -- | < 20.0 U | -87.4 | 0.72 | 6.60 | 2.800 | 11.60 | 9.77 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-48.0-20230315 | 3/15/2023 | 48 | N | 4602763791 | N/A | Deep | -- | **149** | -- | < 50.0 U | -85.8 | 0.84 | 6.6 | 3.208 | 13.37 | 9.46 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-53.0-20230315 | 3/15/2023 | 53 | N | 4602763791 | N/A | Deep | -- | **143** | -- | < 20.0 U | -83.5 | 0.87 | 6.60 | 2.243 | 11.49 | 10.0 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-38-20230508 | 5/8/2023 | 38 | N | 4602798181 | N/A | Deep | -- | **133** | -- | < 50.0 U | -89.5 | 1.33 | 6.22 | 2.87 | 19.80 | 3.55 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-43-20230508 | 5/8/2023 | 43 | N | 4602798181 | N/A | Deep | -- | **126** | -- | < 50.0 U | -82.1 | 1.09 | 6.44 | 2.855 | 22.40 | 5.09 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-48-20230508 | 5/8/2023 | 48 | N | 4602798181 | N/A | Deep | -- | **131** | -- | < 20.0 U | -84.8 | 0.82 | 6.46 | 2.854 | 23.50 | 5.56 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-53-20230508 | 5/8/2023 | 53 | N | 4602798181 | N/A | Deep | -- | **154** | -- | < 50.0 U | -71.9 | 0.72 | 6.31 | 2.975 | 21.40 | 6.61 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-38.0-20230914 | 9/14/2023 | 38 | N | 4602882001 | Total Cr Isopleth | Deep | -- | **162** | -- | < 20.0 UJ | -120.6 | 0.23 | 6.88 | 3.236 | 20.49 | 5.25 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-43.0-20230914 | 9/14/2023 | 43 | N | 4602882001 | Total Cr Isopleth | Deep | -- | **147** | -- | < 20.0 UJ | -122.1 | 0.2 | 6.81 | 3.202 | 21.36 | 3.91 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-48.0-20230914 | 9/14/2023 | 48 | N | 4602882001 | Total Cr Isopleth | Deep | -- | **147** | -- | < 20.0 UJ | -199.4 | 0.23 | 6.8 | 3.432 | 24.01 | 4.68 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-53.0-20230914 | 9/14/2023 | 53 | N | 4602882001 | Total Cr Isopleth | Deep | -- | **144** | -- | < 20.0 UJ | -118.9 | 0.16 | 6.79 | 3.578 | 26.29 | 4.61 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-38.0-20231212 | 12/12/2023 | 38 | N | JD78686 | Total Cr Isopleth | Deep | -- | **134** | -- | 24 | -100.2 | -0.22 | 6.72 | 3.213 | 13.3 | 1.62 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-43.0-20231212 | 12/12/2023 | 43 | N | JD78686 | Total Cr Isopleth | Deep | -- | **139** | -- | 13 | -88.1 | -0.23 | 6.72 | 3.204 | 13.2 | 1.42 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-48.0-20231212 | 12/12/2023 | 48 | N | JD78686 | Total Cr Isopleth | Deep | -- | **139** | -- | 38 | -89.4 | -0.21 | 6.72 | 3.185 | 13.5 | 1.43 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-53.0-20231212 | 12/12/2023 | 53 | N | JD78686 | Total Cr Isopleth | Deep | -- | **158** | -- | < 10 U | -92.5 | -0.15 | 6.7 | 3.296 | 13.8 | 2.26 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-38.0-20240314 | 3/14/2024 | 38 | N | JD84494 | Total Cr Isopleth | Deep | -- | 65.3 | -- | < 10 U | -146.6 | 0.1 | 6.79 | 3.059 | 19.1 | 0.77 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-43.0-20240314 | 3/14/2024 | 43 | N | JD84494 | Total Cr Isopleth | Deep | -- | 68.2 | -- | < 10 U | -141.9 | 0.1 | 6.8 | 3.023 | 17.6 | 0.7 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-48.0-20240314 | 3/14/2024 | 48 | N | JD84494 | Total Cr Isopleth | Deep | -- | 58.8 | -- | < 10 U | -151.2 | 0.12 | 6.82 | 2.953 | 16.2 | 0.65 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-53.0-20240314 | 3/14/2024 | 53 | N | JD84494 | Total Cr Isopleth | Deep | -- | **87.9** | -- | < 10 U | -152.3 | 0.12 | 6.79 | 3.13 | 14.5 | 0.88 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-38.0-20240613 | 6/13/2024 | 38 | N | JD90407 | Total Cr Isopleth | Deep | -- | 66.5 | -- | 26 | -102.3 | 0.1 | 6.72 | 3.362 | 27.3 | 0.76 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-43.0-20240613 | 6/13/2024 | 43 | N | JD90407 | Total Cr Isopleth | Deep | -- | 64.3 | -- | 35 | -101.7 | 0.1 | 6.73 | 3.351 | 25.1 | 0.7 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-48.0-20240613 | 6/13/2024 | 48 | N | JD90407 | Total Cr Isopleth | Deep | -- | 65.7 | -- | < 10 U | -95.5 | 0.12 | 6.76 | 3.286 | 22.1 | 0.68 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-53.0-20240613 | 6/13/2024 | 53 | N | JD90407 | Total Cr Isopleth | Deep | -- | **78.2** | -- | 3.7 J | -91.2 | 0.4 | 6.73 | 3.537 | 20.3 | 1.11 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-38.0-20240912 | 9/12/2024 | 38 | N | JD95972 | Total Cr Isopleth | Deep | -- | 63.1 | -- | 49 | -98.7 | 0.11 | 6.72 | 3.44 | 21.3 | 0.56 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-43.0-20240912 | 9/12/2024 | 43 | N | JD95972 | Total Cr Isopleth | Deep | -- | 62.1 | -- | < 10 U | -100.7 | 0.18 | 6.72 | 2.97 | 21 | 0.55 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-48.0-20240912 | 9/12/2024 | 48 | N | JD95972 | Total Cr Isopleth | Deep | -- | 61.3 | -- | < 10 U | -104.3 | 0.15 | 6.74 | 3.56 | 18.6 | 0.63 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-53.0-20240912 | 9/12/2024 | 53 | N | JD95972 | Total Cr Isopleth | Deep | -- | **73.5** | -- | 35 | -110.3 | 0.23 | 6.71 | 3.46 | 18 | 0.69 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-38.0-20241211 | 12/11/2024 | 38 | N | JE2416 | Total Cr Isopleth | Deep | -- | 64.7 | -- | < 10 U | -119.5 | 0.6 | 6.74 | 3.31 | 14.7 | 0.73 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-48.0-20241216 | 12/16/2024 | 48 | N | JE2745 | Total Cr Isopleth | Deep | -- | 58.3 | -- | 9.8 J | -110 | 0.17 | 6.77 | 3.56 | 13.5 | 1.61 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-43.0-20241217 | 12/17/2024 | 43 | N | JE2866 | Total Cr Isopleth | Deep | -- | 59.0 | -- | 11 | -100.7 | 0.12 | 6.75 | 3.62 | 16.4 | 0.87 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004D | 199-P3-MW004D-53.0-20241217 | 12/17/2024 | 53 | N | JE2866 | Total Cr Isopleth | Deep | -- | 69.5 | -- | 15 | -101 | 0.17 | 6.69 | 3.82 | 15.6 | 1.42 | -- | -- | -- | -- | -- | -- | -- | -- |
| CAR-P3-MW001D | CAR-P3-MW-001D-55.7-F | 6/22/2021 | 56.7 | N | 4602371281 | Baseline | Deep | **156000** | -- | **126000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 2400 U** | **87.4 J** | -- |
| CAR-P3-MW001D | CAR-P3-MW-001D-56.7 | 6/22/2021 | 56.7 | N | 4602371281 | Baseline | Deep | -- | **144000** | -- | **162000** | 139.30 | 0.66 | 7.65 | 1.77 | 16.60 | 7.57 | -- | 2.9 | **428** | < 1.0 U | 210 | -- | -- | -- |
| CAR-P3-MW001D | CAR-P3-MW001D-53.5-20211116 | 11/16/2021 | 53.5 | N | 4602474031 | Treatment | Deep | **123000** | **109000** | **114000** | **107000** | 134.30 | 0.82 | 8.17 | 1.79 |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | Analyte | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | CAS-RN | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | Fraction | | | | | | | | | | | | | | | | | | | |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| CAR-P3-MW001D | CAR-P3-MW001D-56.7-20220419 | 4/19/2022 | 56.7 | N | 4602565511 | Treatment | Deep | 21.1 | 60.2 | < 10.0 U | < 10.0 U | -10.7 | 0.55 | 8.20 | 0.393 | 13.98 | 5.80 | -- | 8.5 | 50.6 | -- | 11 | -- | -- | -- |
| CAR-P3-MW001D | CAR-P3-MW001D-56.7-20220419-X | 4/19/2022 | 56.7 | FD | 4602565511 | Treatment | Deep | 20.1 | 55.8 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 14.6 | 54.2 | -- | 11 | -- | -- | -- |
| CAR-P3-MW001D | CAR-P3-MW001D-56.7-20220519 | 5/19/2022 | 56.7 | N | 4602584291 | Treatment | Deep | -- | **83.2** | -- | < 10.0 U | 31.10 | 0.56 | 7.47 | 0.305 | 15.05 | 3.60 | -- | 130 | 29.4 | -- | -- | -- | -- | -- |
| CAR-P3-MW001D | CAR-P3-MW001D-56.7-20220615 | 6/15/2022 | 56.7 | N | 4602601501 | Treatment | Deep | -- | **94.7** | -- | < 10.0 U | -133.8 | 0.56 | 7.09 | 0.943 | 19.15 | 1.40 | -- | 162 | 16.1 | -- | -- | -- | -- | -- |
| CAR-P3-MW001D | CAR-P3-MW001D-56.7-20220718 | 7/18/2022 | 56.7 | N | 4602621141 | Treatment | Deep | -- | **126** | -- | < 10.0 U | -119.1 | 1.86 | 6.98 | 0.769 | 18.56 | 2.00 | -- | 163 | 5.83 | -- | -- | -- | -- | -- |
| CAR-P3-MW001D | CAR-P3-MW001D-56.7-20220823 | 8/23/2022 | 56.7 | N | 4602642801 | Treatment | Deep | -- | **188** | -- | < 10.0 U | -129.9 | 0.67 | 8.62 | 0.586 | 20.42 | 2.38 | -- | 65.7 | 19.0 | -- | -- | -- | -- | -- |
| CAR-P3-MW001D | CAR-P3-MW001D-56.7-20220919 | 9/19/2022 | 56.7 | N | 4602658321 | Treatment | Deep | -- | 28.2 | -- | < 10.0 U | -54.9 | 0.27 | 7.69 | 0.418 | 20.26 | 3.36 | -- | 3.1 | 40.2 | -- | -- | -- | -- | -- |
| CAR-P3-MW001D | CAR-P3-MW001D-56.7-20221013 | 10/13/2022 | 56.7 | N | 4602674321 | Treatment | Deep | -- | **96.1** | -- | < 10.0 U | -27.9 | 2.14 | 8.43 | 0.358 | 19.63 | 1.18 | -- | 0.94 JF1 | 44.2 | -- | -- | -- | -- | -- |
| CAR-P3-MW001D | CAR-P3-MW001D-56.7-20221111 | 11/11/2022 | 56.7 | N | 4602693491 | Treatment | Deep | -- | 38.0 | -- | < 10.0 U | -0.2 | 0.56 | 8 | 0.354 | 18.15 | 9.81 | -- | 0.71 J | 44.1 | -- | -- | -- | -- | -- |
| CAR-P3-MW001D | CAR-P3-MW001D-56.7-20221215 | 12/15/2022 | 56.7 | N | 4602714561 | Treatment | Deep | -- | 11.4 | -- | < 10.0 U | -13.7 | 0.65 | 8.03 | 0.461 | 12.87 | 7.05 | -- | 1.3 | 46.9 | -- | -- | -- | -- | -- |
| CAR-P3-MW001D | CAR-P3-MW001D-56.7-20230323 | 3/23/2023 | 56.7 | N | 4602768691 | Treatment | Deep | -- | 25.8 | -- | < 10.0 U | 85.6 | 9999 | 7.13 | 0.862 | 13.93 | 1.71 | -- | 26.4 | 13.6 | -- | -- | -- | -- | -- |
| CAR-P3-MW001D | CAR-P3-MW001D-56.7-20230419 | 4/19/2023 | 56.7 | N | 4602784921 | Post-Treatment | Deep | -- | 66.1 | -- | < 10.0 U | 37 | 3.95 | 7.9 | 0.903 | 15.9 | 5.81 | -- | 23.5 | **13800** | < 1 U | -- | -- | -- | -- |
| CAR-P3-MW001D | CAR-P3-MW001D-56.7-20230712 | 7/12/2023 | 56.7 | N | 4602840751 | Post-Treatment | Deep | -- | **111** | -- | < 10.0 U | -77.1 | 3.78 | 5.27 | 1.075 | 20.46 | 6.72 | -- | 18.7 | 28.7 | < 1 U | -- | -- | -- | -- |
| CAR-P3-MW001D | CAR-P3-MW001D-56.7-20231017 | 10/17/2023 | 56.7 | N | 4602905601 | Post-Treatment | Deep | -- | 26.4 | -- | < 10.0 U | -150.8 | 0.29 | 7.19 | 0.842 | 17.3 | 1.38 | -- | 7.9 | 22.7 | -- | -- | -- | -- | -- |
| CAR-P3-MW001D | CAR-P3-MW001D-56.7-20240124 | 1/24/2024 | 56.7 | N | JD81089 | Post-Treatment | Deep | -- | 29.0 | -- | 7.7 J | -195.5 | 0.16 | 6.99 | 1.281 | 13.7 | 0.79 | -- | 19.6 | 18.6 | -- | -- | -- | -- | -- |
| CAR-P3-MW001D | CAR-P3-MW001D-56.7-20240417 | 4/17/2024 | 56.7 | N | JD86699 | Post-Treatment | Deep | -- | **80.2** | -- | 35 J- | -144.8 | 0.18 | 6.66 | 1.702 | 15.6 | 7.64 | -- | 30.6 | 11.9 | -- | -- | -- | -- | -- |
| CAR-P3-MW001D | CAR-P3-MW001D-56.7-20240715 | 7/15/2024 | 56.7 | N | JD92183 | Post-Treatment | Deep | -- | **122** | -- | 16 J- | -101.8 | 0.15 | 6.8 | 2.353 | 21.5 | 2.67 | -- | 56.0 | 1.7 J+ | -- | -- | -- | -- | -- |
| CAR-P3-MW001D | CAR-P3-MW001D-56.7-20241015 | 10/15/2024 | 56.7 | N | JD98256 | Post-Treatment | Deep | -- | **260 J-** | -- | **140** | -112.5 | 0.14 | 6.62 | 2.86 | 15.6 | 1.51 | -- | 190 | 1.2 J | -- | -- | -- | -- | -- |
| CAR-P3-MW002D | CAR-P3-MW002D-56.0-20210922 | 9/22/2021 | 56 | N | 4602433991 | Baseline | Deep | **89000** | **93200** | **30100** | **30100** | 125.20 | 1.19 | 7.50 | 1.68 | 18.45 | 8.80 | -- | 4.8 | **570** | < 1.0 U | 200 | < 120 U | **125** | -- |
| CAR-P3-MW002D | CAR-P3-MW002D-56.0-20211117 | 11/17/2021 | 56 | N | 4602474671 | Treatment | Deep | **60800** | **63400** | **58600** | **58600** | -99.20 | -- | 6.77 | 2.35 | 15.85 | 4.72 | -- | 324 J+ | **533** | -- | 290 | **< 1200 U** | **325** | -- |
| CAR-P3-MW002D | CAR-P3-MW002D-56.0-20211117-X | 11/17/2021 | 56 | FD | 4602474671 | Treatment | Deep | **63500** | **65000** | **69800** | **61400** | -- | -- | -- | -- | -- | -- | -- | 314 | **524** | -- | 290 | **< 1200 U** | **323** | -- |
| CAR-P3-MW002D | CAR-P3-MW002D-56-20211228 | 12/28/2021 | 56 | N | 4602498981 | Treatment | Deep | **6310** | **6610** | < 20.0 U | < 20.0 U | -196.2 | 0.11 | 5.78 | 3.89 | 13.42 | 5.85 | -- | 2130 | 128 | -- | 49 | -- | -- | -- |
| CAR-P3-MW002D | CAR-P3-MW002D-56-20220119 | 1/19/2022 | 56 | N | 4602509341 | Treatment | Deep | **3900** | **4740** | < 20.0 U | < 50.0 U | -130.00 | 1.50 | 5.62 | 4.11 | 12.14 | 7.66 | -- | 2500 | 23.7 | -- | 19 | -- | -- | -- |
| CAR-P3-MW002D | CAR-P3-MW002D-56-20220223 | 2/23/2022 | 56 | N | 4602530771 | Treatment | Deep | **4400** | **4920** | **< 100 U** | **< 100 U** | -86.20 | 2.28 | 5.77 | 5.17 | 14.34 | 9.30 | -- | 2280 | 90.8 | -- | 22 | -- | -- | -- |
| CAR-P3-MW002D | CAR-P3-MW002D-56.0-20220322 | 3/22/2022 | 56 | N | 4602547911 | Treatment | Deep | **2920** | **5370** | < 50.0 U | < 50.0 U | -15.00 | 0.08 | 5.94 | 6.810 | 13.89 | 9.91 | -- | 2140 | 3.71 | -- | 21 | -- | -- | -- |
| CAR-P3-MW002D | CAR-P3-MW002D-56-20220419 | 4/19/2022 | 56 | N | 4602565511 | Treatment | Deep | **4590** | **4360** | < 20.0 U | < 20.0 U | -48.5 | 9.55 | 5.95 | 4.644 | 13.25 | 5.15 | -- | 1740 | 7.82 | -- | 26 | -- | -- | -- |
| CAR-P3-MW002D | CAR-P3-MW002D-56-20220520 | 5/20/2022 | 56 | N | 4602585231 | Treatment | Deep | -- | **3160** | -- | **< 100 U** | -53.2 | 2.26 | 5.86 | 3.479 | 15.50 | 9.19 | -- | 2310 | 5.48 | -- | -- | -- | -- | -- |
| CAR-P3-MW002D | CAR-P3-MW002D-56-20220615 | 6/15/2022 | 56 | N | 4602601501 | Treatment | Deep | -- | **3240** | -- | **< 100 U** | -51.8 | 1.34 | 5.87 | 4.95 | 18.35 | 8.73 | -- | 1960 | 7.82 | -- | -- | -- | -- | -- |
| CAR-P3-MW002D | CAR-P3-MW002D-56-20220719 | 7/19/2022 | 56 | N | 4602621891 | Treatment | Deep | -- | **3750** | -- | **< 100 U** | -54.4 | 0.09 | 5.93 | 4.14 | 19 | 9.1 | -- | 2400 | 7.08 | -- | -- | -- | -- | -- |
| CAR-P3-MW002D | CAR-P3-MW002D-56-20220824 | 8/24/2022 | 56 | N | 4602643471 | Treatment | Deep | -- | **2360** | -- | **< 100 U** | -51 | 3.09 | 6.16 | 4.448 | 18.93 | 8.19 | -- | 1730 | 2.16 F1 | -- | -- | -- | -- | -- |
| CAR-P3-MW002D | CAR-P3-MW002D-56-20220824-X | 8/24/2022 | 56 | FD | 4602643471 | Treatment | Deep | -- | **2340** | -- | **< 100 U** | -- | -- | -- | -- | -- | -- | -- | 1650 | 1.83 | -- | -- | -- | -- | -- |
| CAR-P3-MW002D | CAR-P3-MW002D-56-20220919 | 9/19/2022 | 56 | N | 4602658321 | Treatment | Deep | -- | **2460** | -- | **< 100 U** | -28.6 | 1.53 | 6.15 | 3.949 | 21.63 | 8.9 | -- | 1230 | 16.3 | -- | -- | -- | -- | -- |
| CAR-P3-MW002D | CAR-P3-MW002D-56-20221014 | 10/14/2022 | 56 | N | 4602675261 | Treatment | Deep | -- | **2560** | -- | < 50.0 U | -88.8 | 2.71 | 6.24 | 4.08 | 16.8 | 8.69 | -- | 1460 | 0.78 | -- | -- | -- | -- | -- |
| CAR-P3-MW002D | CAR-P3-MW002D-56-20221114 | 11/14/2022 | 56 | N | 4602695301 | Treatment | Deep | -- | **1950** | -- | < 50.0 U | -67.7 | 1.36 | 6.35 | 3.39 | 15.04 | 9.19 | -- | 1370 | 3.09 | -- | -- | -- | -- | -- |
| CAR-P3-MW002D | CAR-P3-MW002D-56-20221114-X | 11/14/2022 | 56 | FD | 4602695301 | Treatment | Deep | -- | **1970** | -- | **< 100 U** | -- | -- | -- | -- | -- | -- | -- | 1400 | 3.80 | -- | -- | -- | -- | -- |
| CAR-P3-MW002D | CAR-P3-MW002D-56-20221216 | 12/16/2022 | 56 | N | 4602715551 | Treatment | Deep | **1600** | **2140** | < 20.0 U | < 20.0 U | -70.3 | 1.53 | 6.29 | 4.048 | 11.41 | 204.7 | -- | 1610 | 1.55 | -- | -- | **210000** | **54100** | -- |
| CAR-P3-MW002D | CAR-P3-MW002D-56.0-20230323 | 3/23/2023 | 56 | N | 4602768691 | Treatment | Deep | -- | **2140** | -- | < 20.0 U | -8.3 | 6.84 | 6.19 | 4.721 | 12.93 | 7.94 | -- | 1920 | 2.10 | -- | -- | -- | -- | -- |
| CAR-P3-MW002D | CAR-P3-MW002D-54.0-20230419 | 4/19/2023 | 54 | N | 4602784921 | Post-Treatment | Deep | < 20.0 U | **1850** | < 10.0 U | < 20.0 U | -105.9 | 2.69 | 6.29 | 4.391 | 13.3 | 12.3 | -- | 1600 | **13000** | < 1 U | -- | **10300** | **1200** | -- |
| CAR-P3-MW002D | CAR-P3-MW002D-59.0-20230419 | 4/19/2023 | 59 | N | 4602784921 | Post-Treatment | Deep | -- | **1830** | -- | < 20.0 U | -90.8 | 1.7 | 6.21 | 4.891 | 15.1 | 9.96 | -- | 1880 | **11900** | < 1 U | -- | -- | -- | -- |
| CAR-P3-MW002D | CAR-P3-MW002D-59.0-20230712 | 7/12/2023 | 59 | N | 4602840751 | Post-Treatment | Deep | -- | **1880** | -- | < 20.0 U | -146.5 | 2.11 | 6.64 | 4.142 | 20.92 | 8.82 | -- | 1380 | 5.70 | < 1 U | -- | -- | -- | -- |
| CAR-P3-MW002D | CAR-P3-MW002D-59.0-20231017 | 10/17/2023 | 59 | N | 4602905601 | Post-Treatment | Deep | **705** | **940** | < 10.0 U | 14.0 | -158.9 | 0.54 | 6.54 | 3.297 | 17.2 | 19.8 | -- | 284 | 1.0 J | -- | -- | -- | -- | -- |
| CAR-P3-MW002D | CAR-P3-MW002D-59.0-20240123 | 1/23/2024 | 59 | N | JD81017 | Post-Treatment | Deep | **563** | **650** | 18 | 19 | -164 | 0.11 | 6.58 | 2.626 | 11.6 | 17.9 | -- | 148 | 36.7 | -- | -- | -- | -- | -- |
| CAR-P3-MW002D | CAR-P3-MW002D-59.0-20240417 | 4/17/2024 | 59 | N | JD86699 | Post-Treatment | Deep | -- | **534** | -- | 2.8 J- | -153.4 | 0.15 | 6.49 | 2.129 | 15.1 | 5.44 | -- | 118 | < 2.0 U | -- | -- | -- | -- | -- |
| CAR-P3-MW002D | CAR-P3-MW002D-59.0-20240712 | 7/12/2024 | 59 | N | JD92106 | Post-Treatment | Deep | -- | **606** | -- | 49 | -136.8 | 0.05 | 6.52 | 2.722 | 18.2 | 6.88 | -- | 126 | < 2.0 U | -- | -- | -- | -- | -- |
| CAR-P3-MW002D | CAR-P3-MW002D-59.0-20241015 | 10/15/2024 | 59 | N | JD98256 | Post-Treatment | Deep | -- | **646 J-** | -- | 14 | -276.3 | 0.22 | 6.3 | 2.90 | 17.2 | 5.74 | -- | 184 | < 40 UJ | -- | -- | -- | -- | -- |
| CAR-P3-MW003D | CAR-P3-MW003D-59.7 | 6/17/2021 | 59.7 | N | 4602368761 | Baseline | Deep | -- | 18.3 | -- | < 10.0 U | -83.50 | 0.91 | 7.98 | 0.77 | 19.37 | 20.20 | -- | 3.6 | 236 | < 1.0 U | 140 | -- | -- | -- |
| CAR-P3-MW003D | CAR-P3-MW-003D-59.7-F | 6/17/2021 | 59.7 | N | 4602368761 | Baseline | Deep | 9.1 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 147 | **145** | -- |
| CAR-P3-MW003D | CAR-P3-MW-003D-64.7 | 6/17/2021 | 64.7 | N | 4602368761 | Baseline | Deep | -- | 25.7 | -- | < 10.0 U | -114.20 | 0.68 | 7.95 | 0.78 | 19.41 | 21.90 | -- | 4.3 | 236 | < 1.0 U | 140 | -- | -- | -- |
| CAR-P3-MW003D | CAR-P3-MW-003D-64.7-F | 6/17/2021 | 64.7 | N | 4602368761 | Baseline | Deep | 12.4 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 172 | **158** | -- |
| CAR-P3-MW003D | CAR-P3-MW-003D-69.7 | 6/17/2021 | 69.7 | N | 4602368761 | Baseline | Deep | -- | 28.6 | -- | < 10.0 U | -142.00 | 0.49 | 8.02 | 0.79 | 19.52 | 5.53 | -- | 4.1 | 237 | < 1.0 U | 130 | -- | -- | -- |
| CAR-P3-MW003D | CAR-P3-MW-003D-69.7-F | 6/17/2021 | 69.7 | N | 4602368761 | Baseline | Deep | 12.2 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 210 | **156** | -- |
| CAR-P3-MW003D | CAR-P3-MW003D-66.5-20211117 | 11/17/2021 | 65.5 | N | 4602474671 | Treatment | Deep | 9.0 | 8.1 | < 10.0 U | < 10.0 U | -308.20 | 0.77 | 7.22 | 0.74 | 13.47 | 2.40 | -- | 99.2 | 89.2 | -- | 100 | 141 J | **337** | -- |
| CAR-P3-MW003D | CAR-P3-MW003D-66.5-20211228 | 12/28/2021 | 66.5 | N | 4602498981 | Treatment | Deep | 28.6 | 24.2 | < 10.0 U | < 10.0 U | -194.4 | 0.13 | 5.93 | 1.95 | 13.22 | 4.68 | -- | 724 | 6.91 | -- | 61 | -- | -- | -- |
| CAR-P3-MW003D | CAR-P3-MW003D-66.5-20220119 | 1/19/2022 | 66.5 | N | 4602509341 | Treatment | Deep | 25.0 | 29.9 | < 10.0 U | < 20.0 U | 203.00 | 0 | 7.75 | 0.91 | 12.13 | 0 | -- | 866 | 12.8 | -- | 88 | -- | -- | -- |
| CAR-P3-MW003D | CAR-P3-MW003D-69.7-20220228 | 2/28/2022 | 69.7 | N | 4602533341 | Treatment | Deep | 44.2 | 18.3 | < 20.0 U | < 20.0 U | -139.80 | 9.49 | 8.05 | 0.68 | 7.55 | 6.00 | -- | 196 | 5.61 | -- | 690 | -- | -- | -- |
| CAR-P3-MW003D | CAR-P3-MW003D-69.7-20220228-X | 2/28/2022 | 69.7 | N | 4602533341 | Treatment | Deep | 42.7 | 34.1 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 754 | 2.66 | -- | 650 | -- | -- | -- |
| CAR-P3-MW003D | CAR-P3-MW003D-69.7-20220321 | 3/21/2022 | 69.7 | N | 4602547381 | Treatment | Deep | 61.1 | 69.9 | < 20.0 U | < 20.0 U | -125.30 | 2.21 | 6.17 | 3.25 | 14.63 | 5.97 | -- | 869 F1 | 3.79 | -- | 3300 | -- | -- | -- |
| CAR-P3-MW003D | CAR-P3-MW003D-69.7-20220419 | 4/19/2022 | 69.7 | N | 4602565511 | Treatment | Deep | 52.1 | 56.1 | < 50.0 U | < 50.0 U | -139.1 | 4.93 | 6.35 | 3.267 | 12.53 | 9.22 | -- | 956 | 2.12 | -- | 22000 | -- | -- | -- |
| CAR-P3-MW003D | CAR-P3-MW003D-69.7-20220520 | 5/20/2022 | 69.7 | N | 4602585231 | Treatment | Deep | -- | 38.5 | -- | < 20.0 U | -232.6 | 4.17 | 6.48 | 2.18 | 15.68 | 9.66 | -- | 303 | 4.51 | -- | -- | -- | -- | -- |
| CAR-P3-MW003D | CAR-P3-MW003D-69.7-20220615 | 6/15/2022 | 69.7 | N | 4602601501 | Treatment | Deep | -- | 39.3 | -- | < 50.0 U | -112.1 | 7.51 | 6.59 | 3.706 | 17.66 | 3.73 | -- | 459 | 1.85 | -- | -- | -- | -- | -- |
| CAR-P3-MW003D | CAR-P3-MW003D-69.7-20220718 | 7/18/2022 | 69.7 | N | 4602621141 | Treatment | Deep | -- | 65.5 | -- | < 50.0 U | -136.2 | 0.91 | 6.68 | 3.578 | 20.59 | 7.35 | -- | 228 | 0.95 J | -- | -- | -- | -- | -- |
| CAR-P3-MW003D | CAR-P3-MW003D-69.7-20220919 | 9/19/2022 | 69.7 | N | 4602658321 | Treatment | Deep | -- | 37.5 | -- | **< 100 U** | -123.1 | 0.74 | 6.59 | 2.83 | 20.22 | 7.71 | -- | 113 | 1.83 | -- | -- | -- | -- | -- |
| CAR-P3-MW003D | CAR-P3-MW003D-69.7-20221216 | 12/16/2022 | 69.7 | N | 4602715551 | Treatment | Deep | 29.3 | 61.1 | < 20.0 U | < 20.0 U | -101.0 | 1.8 | 3.6 | 2.89 | 11 | 160 | -- | 108 | 2.49 | -- | -- | **39200** | **4940** | -- |
| CAR-P3-MW003D | CAR-P3-MW003D-69.7-20230323 | 3/23/2023 | 69.7 | N | 4602768691 | Treatment | Deep | -- | **141** | -- | < 20.0 U | -99.2 | 2.12 | 6.65 | 3.927 | 12.8 | 9.71 | -- | 119 | 9.89 | -- | -- | -- | -- | -- |
| CAR-P3-MW003D | CAR-P3-MW003D-60.0-20230418 | 4/18/2023 | 60 | N | 4602784501 | Post-Treatment | Deep | 30.1 J | 28.3 | R | < 10.0 UJ | -99 | 2.25 | 6.68 | 1.96 | 13.4 | 17.3 | -- | 47.9 | **580 J+** | < 1 U | -- | **34100** | **3360** | -- |
| CAR-P3-MW003D | CAR-P3-MW003D-65.0-20230418 | 4/18/2023 | 65 | N | 4602784501 | Post-Treatment | Deep | -- | 24.5 | -- | < 10.0 UJ | -91.5 | 1.96 | 6.72 | 2.012 | 13.3 | 6.99 | -- | 51.7 | **608 J** | < 1 U | -- | -- | -- | -- |
| CAR-P3-MW003D | CAR-P3-MW003D-70.0-20230418 | 4/18/2023 | 70 | N | 4602784501 | Post-Treatment | Deep | -- | 25.7 | -- | < 10.0 UJ | -92.3 | 1.91 | 6.67 | 2.264 | 14.73 | 8.93 | -- | 60.0 | **559 J** | < 1 U | -- | -- | -- | -- |
| CAR-P3-MW003D | CAR-P3-MW003D-70.0-20230712 | 7/12/2023 | 70 | N | 4602840751 | Post-Treatment | Deep | -- | 20.9 | -- | < 10.0 U | -6.6 | 1.16 | 6.46 | 1.858 | 22.87 | 7.98 | -- | 46.6 | 0.52 | < 1 U | -- | -- | -- | -- |
| CAR-P3-MW003D | CAR-P3-MW003D-70.0-20231017 | 10/17/2023 | 70 | N | 4602905601 | Post-Treatment | Deep | -- | 14.3 | -- | < 50.0 U | -139 | 0.21 | 6.55 | 1.912 | 16 | 3.47 | -- | 39.9 | < 4.80 U | -- | -- | -- | -- | -- |
| CAR-P3-MW003D | CAR-P3-MW003D-70.0-20240123 | 1/23/2024 | 70 | N | JD81017 | Post-Treatment | Deep | -- | 9.8 J | -- | 4.1 J | -150.9 | 0.7 | 6.68 | 1.809 | 12.3 | 3.11 | -- | 36.2 | < 2.0 UB | -- | -- | -- | -- | -- |
| CAR-P3-MW003D | CAR-P3-MW003D-70.0-20240417 | 4/17/2024 | 70 | N | JD86699 | Post-Treatment | Deep | -- | 9.3 | -- | 5.1 J- | -156.4 | 0.2 | 6.49 | 1.876 | 13.9 | 3.97 | -- | 31.5 | < 2.0 U | -- | -- | -- | -- | -- |
| CAR-P3-MW003D | CAR-P3-MW003D-70.0-20240712 | 7/12/2024 | 70 | N | JD92106 | Post-Treatment | Deep | -- | 9.1 J | -- | < 10 U | -140 | 0.07 | 6.67 | 1.638 | 17.9 | 4.39 | -- | 32.8 | 16.1 | -- | -- | -- | -- | -- |
| CAR-P3-MW003D | CAR-P3-MW003D-70.0-20241015 | 10/15/2024 | 70 | N | JD98256 | Post-Treatment | Deep | -- | 9.8 J | -- | < 10 U | -236.9 | 0.11 | 6.41 | 1.76 | 18.3 | 5.43 | -- | 46.7 | 18.9 J- | -- | -- | -- | -- | -- |
| 132-P3-MW001D | 132-P3-MW-001D-84.0 | 6/24/2021 | 84 | N | 4602373171 | Baseline | Basal Till | -- | < 4.0 U | -- | < 10.0 U | -67.20 | 1.14 | 7.79 | 1.08 | 22.01 | 5.41 | -- | -- | -- | -- | -- | -- | -- | -- |
| 132-P3-MW001D | 132-P3-MW-001D-89.0 | 6/24/2021 | 89 | N | 4602373171 | Baseline | Basal Till | -- | < 4.0 U | -- | < 10.0 U | -32.00 | 1.09 | 7.75 | 1.10 | 18.03 | 4.95 | -- | -- | -- | -- | -- | -- | -- | -- |
| 132-P3-MW001D | 132-P3-MW-001D-89.0-X | 6/24/2021 | 89 | FD | 4602373171 | Baseline | Basal Till | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 132-P3-MW001D | 132-P3-MW001D-84-20230505 | 5/5/2023 | 84 | N | 4602796721 | N/A | Basal Till | -- | 61.2 | -- | 49.3 | 6.2 | 4.82 | 7.67 | 0.811 | 14.43 | 5.08 | -- | -- | -- | -- | -- | -- | -- | -- |
| 132-P3-MW001D | 132-P3-MW001D-89-20230505 | 5/5/2023 | 89 | N | 4602796721 | N/A | Basal Till | -- | 25.5 | -- | 30.0 | -132.9 | 2.24 | 7.58 | 0.828 | 15.60 | 5.32 | -- | -- | -- | -- | -- | -- | -- | -- |
| 132-P3-MW001D | 132-P3-MW001D-84.0-20230914 | 9/14/2023 | 84 | N | 4602882001 | Total Cr Isopleth | Basal Till | -- | < 4.0 U | -- | < 10.0 UJ | 211.8 | 0.79 | 6.95 | 1.177 | 21.05 | 8.46 | -- | -- | -- | -- | -- | -- | -- | -- |
| 132-P3-MW001D | 132-P3-MW001D-84.0-20230914-X | 9/14/2023 | 84 | FD | 4602882001 | Total Cr Isopleth | Basal Till | -- | < 4.0 U | -- | < 10.0 UJ | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 132-P3-MW001D | 132-P3-MW001D-89.0-20230914 | 9/14/2023 | 89 | N | 4602882001 | Total Cr Isopleth | Basal Till | -- | 33.4 | -- | **< 100 UJ** | 8.8 | 0.88 | 6.99 | 1.14 | 19.52 | 623 | -- | -- | -- | -- | -- | -- | -- | -- |
| 132-P3-MW001D | 132-P3-MW001D-84.0-20231211 | 12/11/2023 | 84 | N | JD78573 | Total Cr Isopleth | Basal Till | -- | < 10 U | -- | < 10 U | 96 | 0.96 | 7.62 | 1.286 | 9.1 | 7.36 | -- | -- | -- | -- | -- | -- | -- | -- |
| 132-P3-MW001D | 132-P3-MW001D-89.0-20231211 | 12/11/2023 | 89 | N | JD78573 | Total Cr Isopleth | Basal Till | -- | < 10 U | -- | < 10 U | 138 | 1 | 7.6 | 1.287 | 10.4 | 8.71 | -- | -- | -- | -- | -- | -- | -- | -- |
| 132-P3-MW001D | 132-P3-MW001D-84.0-20240313 | 3/13/2024 | 84 | N | JD84389 | Total Cr Isopleth | Basal Till | -- | < 10 U | -- | < 10 U | -62.5 | 0.36 | 7.33 | 1.224 | 15.2 | 8.82 | -- | -- | -- | -- | -- | -- | -- | -- |
| 132-P3-MW001D | 132-P3-MW001D-89.0-20240313 | 3/13/2024 | 89 | N | JD84389 | Total Cr Isopleth | Basal Till | -- | < 10 U | -- | < 10 U | -29.5 | 0.3 | 7.32 | 1.227 | 14.8 | 9.91 | -- | -- | -- | -- | -- | -- | -- | -- |
| 132-P3-MW001D | 132-P3-MW001D-84.0-20240612 | 6/12/2024 | 84 | N | JD90298 | Total Cr Isopleth | Basal Till | -- | < 10 U | -- | < 10 U | -57.5 | 0.26 | 7.37 | 1.254 | 20.3 | 4.86 | -- | -- | -- | -- | -- | -- | -- | -- |
| 132-P3-MW001D | 132-P3-MW001D-89.0-20240612 | 6/12/2024 | 89 | N | JD90298 | Total Cr Isopleth | Basal Till | -- | < 10 U | -- | < 10 U | -24.3 | 1.38 | 7.39 | 1.261 | 18.2 | 9.69 | -- | -- | -- | -- | -- | -- | -- | -- |
| 132-P3-MW001D | 132-P3-MW001D-84.0-20240916 | 9/16/2024 | 84 | N | JD96194 | Total Cr Isopleth | Basal Till | -- | < 10 U | -- | < 10 U | -84.6 | 0.22 | 7.35 | 1.36 | 17.6 | 1.56 | -- | -- | -- | -- | -- | -- | -- | -- |
| 132-P3-MW001D | 132-P3-MW001D-89.0-20240916 | 9/16/2024 | 89 | N | JD96194 | Total Cr Isopleth | Basal Till | -- | < 10 U | -- | < 10 U | -81.1 | 0.25 | 7.4 | 1.36 | 17.7 | 7.06 | -- | -- | -- | -- | -- | -- | -- | -- |
| 132-P3-MW001D | 132-P3-MW001D-89.0-20240916-X | 9/16/2024 | 89 | FD | JD96194 | Total Cr Isopleth | Basal Till | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 132-P3-MW001D | 132-P3-MW001D-84.0-20241121 | 11/21/2024 | 84 | N | JE1118 | Total Cr Isopleth | Basal Till | -- | < 10 U | -- | < 10 U | 58 | 0.38 | 7.38 | 1.11 | 12.9 | 5.92 | -- | -- | -- | -- | -- | -- | -- | -- |
| 132-P3-MW001D | 132-P3-MW001D-89.0-20241121 | 11/21/2024 | 89 | N | JE1118 | Total Cr Isopleth | Basal Till | -- | < 10 U | -- | < 10 U | 83.3 | 0.57 | 7.36 | 1.10 | 13.2 | 8.43 | -- | -- | -- | -- | -- | -- | -- | -- |
| ***Basal Till Remedial Action*** | | | | | | | | | | | | | | | | | | | | | | | | | |
| ***Monitoring*** | | | | | | | | | | | | | | | | | | | | | | | | | |
| 114-PMW-01T | 114-PMW-01T-60.8-20240529 | 5/29/2024 | 60.8 | N | JD89361 | Baseline | Basal Till | **544000** | **509000** | **487000** | **496000** | 98.6 | 0.18 | 7.4 | 3.05 | 17.6 | 12.6 | -- | < 5.0 U | **582** | -- | 248 | < 250 U | **63.3** | -- |
| 114-PMW-01T | 114-PMW-01T-62.8-20240529 | 5/29/2024 | 62.8 | N | JD89361 | Baseline | Basal Till | **442000** | **441000** | **473000** | **490000** | 94.8 | 0.18 | 7.41 | 2.844 | 18.2 | 8.11 | -- | < 5.0 U | **551** | -- | 202 | < 250 U | **64.6** | -- |
| 114-PMW-01T | 114-PMW-01T-60.8-20240610 | 6/10/2024 | 60.8 | N | JD90120 | Baseline | Basal Till | **236000** | **283000** | **262000** | **288000** | -163.2 | 0.42 | 10.85 | 2.516 | 18.8 | 28.3 | -- | 2.8 | **341** | -- | 204 | < 250 U | < 10 U | -- |
| 114-PMW-01T | 114-PMW-01T-63.6-20240610 | 6/10/2024 | 63.6 | N | JD90120 | Baseline | Basal Till | **206000** | **231000** | **240000** | **235000** | -- | 0.26 | 9.68 | 2.189 | 23.6 | 24.9 | -- | 2.4 | **319** | -- | 181 | < 250 U | 12.7 | -- |
| 114-PMW-01T | 114-PMW-01T-67.6-20240611 | 6/11/2024 | 67.6 | N | JD90212 | Baseline | Basal Till | **177000** | **185000** | **168000** | **197000** | -62.8 | 0.52 | 10.98 | 2008 | 17.6 | 33.7 | -- | 2.3 | **301** | -- | 187 | < 250 U | 21.1 | -- |
| 114-PMW-01T | 114-PMW-01T-PM-20240613 | 6/13/2024 | | N | JD90554 | Pilot Test | Basal Till | -- | -- | -- | -- | -28.4 | 0.45 | 11.34 | 1.423 | 19.6 | 18.3 | -- | 2.2 | -- | -- | -- | -- | -- | -- |
| 114-PMW-01T | 114-PMW-01T-AM-20240614 | 6/14/2024 | | N | JD90554 | Pilot Test | Basal Till | -- | -- | -- | -- | -139 | 0.24 | 11.86 | 3.99 | 19.6 | 543 | -- | 861 | -- | -- | -- | -- | -- | -- |
| 114-PMW-01T | 114-PMW-01T-PM-20240614 | 6/14/2024 | | N | JD90554 | Pilot Test | Basal Till | -- | -- | -- | -- | -83.3 | 2.42 | 8.19 | 3.606 | 21.7 | 1000 | -- | 11000 | -- |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-PMW-01T | 114-PMW-01T-PM-20240620 | 6/20/2024 | | N | JD91289 | Pilot Test | Basal Till | -- | -- | -- | -- | -151.8 | 0.5 | 9.24 | 2821 | 27.5 | 361 | -- | 325 | -- | -- | -- | -- | -- | -- |
| 114-PMW-01T | 114-PMW-01T-PM-20240626 | 6/26/2024 | | N | JD91289 | Pilot Test | Basal Till | -- | -- | -- | -- | -115.9 | 0.29 | 9.7 | 3.631 | 21.4 | 38.2 | -- | 120 | -- | -- | -- | -- | -- | -- |
| 114-PMW-01T | 114-PMW-01T-67.6-20240723 | 7/23/2024 | 67.6 | N | JD92648 | Post-Treatment | Basal Till | **697** | **1070** | 8.8 J | < 10 U | -74.4 | 0.09 | 6.51 | 1.76 | 19.6 | 9.29 | -- | 179 | **255** | -- | -- | -- | -- | -- |
| 114-PMW-01T | 114-PMW-01T-60.8-20240724 | 7/24/2024 | 60.8 | N | JD92729 | Post-Treatment | Basal Till | **727** | **951** | < 10 U | < 10 U | -65.3 | 0.11 | 6.51 | 1.855 | 21.4 | 9.85 | -- | 183 | **284** | -- | -- | -- | -- | -- |
| 114-PMW-01T | 114-PMW-01T-63.6-20240724 | 7/24/2024 | 63.6 | N | JD92729 | Post-Treatment | Basal Till | **686** | **1340** | 10 | 5.4 B | -63.1 | 0.08 | 6.53 | 1.859 | 19.3 | 17 | -- | 186 | **282** | -- | -- | -- | -- | -- |
| 114-PMW-01T | 114-PMW-01T-60.8-20240820 | 8/20/2024 | 60.8 | N | JD94515 | Post-Treatment | Basal Till | **421** | **1640** | 3.9 B | 3.9 B | -272 | 0.19 | 6.52 | 1.94 | 22.2 | 49.8 | -- | 125 | 156 | -- | -- | -- | -- | -- |
| 114-PMW-01T | 114-PMW-01T-60.8-20240906 | 9/6/2024 | 60.8 | N | JD95614 | Post-Treatment | Basal Till | **362** | **719** | < 10 U | < 10 U | -361.4 | 0.15 | 6.46 | 1.66 | 21.3 | 5.34 | -- | 93.6 | 148 | -- | -- | -- | -- | -- |
| 114-PMW-01T | 114-PMW-01T-60.8-20241002 | 10/2/2024 | 60.8 | N | JD97277 | Post-Treatment | Basal Till | **185** | **249** | < 10 U | < 10 U | -275 | 0.12 | 6.97 | 1.76 | 19 | 3.8 | -- | 48.6 | 124 | -- | -- | -- | -- | -- |
| 114-PMW-01T | 114-PMW-01T-60.8-20241106 | 11/6/2024 | 60.8 | N | JD99782 | Post-Treatment | Basal Till | **213** | **397** | 6.1 B | 4.9 B | -144.9 | 0.3 | 6.71 | 1.68 | 23.5 | 4.74 | -- | 61.8 | 113 | -- | -- | -- | -- | -- |
| 114-PMW-01T | 114-PMW-01T-60.8-20241202 | 12/2/2024 | 60.8 | N | JE1724 | Post-Treatment | Basal Till | **182** | **279** | < 10 U | < 10 U | -183 | 0.21 | 6.84 | 2.11 | 13.9 | 6.97 | -- | 257 | 3.3 | -- | -- | -- | -- | -- |
| 114-PMW-02T | 114-PMW-02T-64.0-20240531 | 5/31/2024 | 64 | N | JD89525 | Baseline | Basal Till | **164000** | **143000 J** | **196000** | **201000 J** | -40.1 | 0.16 | 7.55 | 2.578 | 19.4 | 24.2 | -- | 3.7 J | **486** | -- | 446 | < 250 U | **67.3** | -- |
| 114-PMW-02T | 114-PMW-02T-69.0-20240603 | 6/3/2024 | 69 | N | JD89648 | Baseline | Basal Till | **146000** | **133000** | **177000** | **137000** | -7.2 | 0.62 | 7.92 | 2.148 | 22.2 | 8.87 | -- | 3.7 J | **456** | -- | 537 | < 250 U | **53.1** | -- |
| 114-PMW-02T | 114-PMW-02T-PM-20240613 | 6/13/2024 | | N | JD90554 | Pilot Test | Basal Till | -- | -- | -- | -- | 9.8 | 0.36 | 7.92 | 2.417 | 18.1 | 35.8 | -- | 3.2 | -- | -- | -- | -- | -- | -- |
| 114-PMW-02T | 114-PMW-02T-PM-20240614 | 6/14/2024 | | N | JD90968 | Pilot Test | Basal Till | -- | -- | -- | -- | 7.4 | 0.23 | 7.72 | 2.319 | 19 | 543 | -- | 4.9 B | -- | -- | -- | -- | -- | -- |
| 114-PMW-02T | 114-PMW-02T-AM-20240618 | 6/18/2024 | | N | JD90968 | Pilot Test | Basal Till | -- | -- | -- | -- | 41.9 | 0.32 | 8.04 | 2.223 | 17.5 | 24.3 | -- | 69.8 | -- | -- | -- | -- | -- | -- |
| 114-PMW-02T | 114-PMW-02T-AM-20240619 | 6/19/2024 | | N | JD90968 | Pilot Test | Basal Till | -- | -- | -- | -- | 46.9 | 0.33 | 7.8 | 2.576 | 19.7 | 33.1 | -- | 545 | -- | -- | -- | -- | -- | -- |
| 114-PMW-02T | 114-PMW-02T-PM-20240619 | 6/19/2024 | | N | JD90968 | Pilot Test | Basal Till | -- | -- | -- | -- | 25.5 | 0.27 | 7.65 | 2.802 | 20 | 17.3 | -- | 1070 | -- | -- | -- | -- | -- | -- |
| 114-PMW-02T | 114-PMW-02T-PM-20240621 | 6/21/2024 | | N | JD91289 | Pilot Test | Basal Till | -- | -- | -- | -- | 71.3 | 0.46 | 6.86 | 3.558 | 22.6 | 19.2 | -- | 1950 | -- | -- | -- | -- | -- | -- |
| 114-PMW-02T | 114-PMW-02T-AM-20240625 | 6/25/2024 | | N | JD91289 | Pilot Test | Basal Till | -- | -- | -- | -- | 94.1 | 0.22 | 6.61 | 2.746 | 18.9 | 33.8 | -- | 1310 | -- | -- | -- | -- | -- | -- |
| 114-PMW-02T | 114-PMW-02T-AM-20240625-X | 6/25/2024 | | FD | JD91289 | Pilot Test | Basal Till | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1340 | -- | -- | -- | -- | -- | -- |
| 114-PMW-02T | 114-PMW-02T-PM-20240626 | 6/26/2024 | | N | JD91289 | Pilot Test | Basal Till | -- | -- | -- | -- | 19.7 | 0.34 | 6.39 | 3.433 | 22 | 22.1 | -- | 1460 | -- | -- | -- | -- | -- | -- |
| 114-PMW-02T | 114-PMW-02T-64.0-20240725 | 7/25/2024 | 64 | N | JD92815 | Post-Treatment | Basal Till | **2010** | **2560** | **2200** | **2300** | -37.9 | 0.36 | 7.58 | 1.276 | 23.1 | 7.55 | -- | 8.4 | 241 | -- | -- | -- | -- | -- |
| 114-PMW-02T | 114-PMW-02T-69.0-20240725 | 7/25/2024 | 69 | N | JD92815 | Post-Treatment | Basal Till | **2210** | **2590** | **2700** | **2500** | -50.7 | 0.69 | 7.57 | 1.263 | 21 | 7.27 | -- | 8.4 | 242 | -- | -- | -- | -- | -- |
| 114-PMW-02T | 114-PMW-02T-69.0-20240725-X | 7/25/2024 | 69 | FD | JD92815 | Post-Treatment | Basal Till | **2190** | **2430** | **2700** | **2400** | -- | -- | -- | -- | -- | -- | -- | 8.0 | 239 | -- | -- | -- | -- | -- |
| 114-PMW-02T | 114-PMW-02T-64.0-20240820 | 8/20/2024 | 64 | N | JD94515 | Post-Treatment | Basal Till | **3520** | **4010** | **3200** | **3200** | 23.3 | 0.3 | 7.53 | 1.33 | 20.1 | 6.05 | -- | 3.1 | 232 | -- | -- | -- | -- | -- |
| 114-PMW-02T | 114-PMW-02T-64.0-20240906 | 9/6/2024 | 64 | N | JD95614 | Post-Treatment | Basal Till | **4610** | **4930** | **5100** | **5400** | 25.9 | 0.35 | 7.4 | 1.22 | 21 | 3.63 | -- | 2.7 | 218 | -- | -- | -- | -- | -- |
| 114-PMW-02T | 114-PMW-02T-64.0-20241002 | 10/2/2024 | 64 | N | JD97277 | Post-Treatment | Basal Till | **8010** | **9850** | **8800** | **9400** | 40.7 | 0.47 | 7.53 | 1.50 | 19.6 | 8.91 | -- | 2.5 | 226 | -- | -- | -- | -- | -- |
| 114-PMW-02T | 114-PMW-02T-64.0-20241106 | 11/6/2024 | 64 | N | JD99782 | Post-Treatment | Basal Till | **4510** | **4410** | 56 | 63 | -114.5 | 0.04 | 5.7 | 3.73 | 20.7 | 9.58 | -- | 2040 | 200 | -- | -- | -- | -- | -- |
| 114-PMW-02T | 114-PMW-02T-64.0-20241202 | 12/2/2024 | 64 | N | JE1724 | Post-Treatment | Basal Till | **688** | **679** | < 10 U | < 10 U | -33.2 | 0.14 | 5.67 | 4.23 | 13.8 | 11.9 | -- | 1840 | 154 | -- | -- | -- | -- | -- |
| 114-PMW-03T | 114-PMW-03T-64.5-20240610 | 6/10/2024 | 64.5 | N | JD90120 | Baseline | Basal Till | **432** | **373** | **320** | **290** | -48.2 | 0.64 | 7.77 | 2148 | 17.4 | 9.48 | -- | 5.8 | **382** | -- | 1720 | 105 JB | **193** | -- |
| 114-PMW-03T | 114-PMW-03T-67.0-20240610 | 6/10/2024 | 67 | N | JD90120 | Baseline | Basal Till | **666** | **703** | **670** | **610** | -43 | 0.62 | 7.37 | 2246 | 16.9 | 8.4 | -- | 5.8 | **365** | -- | 2050 | < 250 U | **209** | -- |
| 114-PMW-03T | 114-PMW-03T-PM-20240613 | 6/13/2024 | | N | JD90554 | Pilot Test | Basal Till | -- | -- | -- | -- | 70.6 | 2.83 | 7.55 | 2.284 | 18.1 | 26.9 | -- | 9.3 | -- | -- | -- | -- | -- | -- |
| 114-PMW-03T | 114-PMW-03T-PM-20240617 | 6/17/2024 | | N | JD90968 | Pilot Test | Basal Till | -- | -- | -- | -- | -463.8 | 8.36 | 7.38 | 2685 | 19.6 | 47.9 | -- | 997 | -- | -- | -- | -- | -- | -- |
| 114-PMW-03T | 114-PMW-03T-AM-20240618 | 6/18/2024 | | N | JD90968 | Pilot Test | Basal Till | -- | -- | -- | -- | -527.5 | 0.51 | -- | 3109 | 18.8 | 105 | -- | 1010 | -- | -- | -- | -- | -- | -- |
| 114-PMW-03T | 114-PMW-03T-PM-20240618 | 6/18/2024 | | N | JD90968 | Pilot Test | Basal Till | -- | -- | -- | -- | -443.5 | 0.28 | 5.19 | 4507 | 20.5 | 1000 | -- | 8340 | -- | -- | -- | -- | -- | -- |
| 114-PMW-03T | 114-PMW-03T-AM-20240619 | 6/19/2024 | | N | JD90968 | Pilot Test | Basal Till | -- | -- | -- | -- | -47.2 | 0.27 | 5.43 | 4.573 | 19.3 | 1000 | -- | 5240 | -- | -- | -- | -- | -- | -- |
| 114-PMW-03T | 114-PMW-03T-PM-20240619 | 6/19/2024 | | N | JD90968 | Pilot Test | Basal Till | -- | -- | -- | -- | -264.2 | 0.08 | 4.23 | 4.721 | 21.5 | 1000 | -- | 9140 | -- | -- | -- | -- | -- | -- |
| 114-PMW-03T | 114-PMW-03T-AM-20240621 | 6/21/2024 | | N | JD91289 | Pilot Test | Basal Till | -- | -- | -- | -- | -88.8 | 0.18 | 3.77 | 5.08 | 19.3 | 1000 | -- | 10100 | -- | -- | -- | -- | -- | -- |
| 114-PMW-03T | 114-PMW-03T-PM-20240626 | 6/26/2024 | | N | JD91289 | Pilot Test | Basal Till | -- | -- | -- | -- | 142 | 0.18 | 4.38 | 3.815 | 22 | 1000 | -- | 7660 | -- | -- | -- | -- | -- | -- |
| 114-PMW-03T | 114-PMW-03T-AM-20240627 | 6/27/2024 | | N | JD91289 | Pilot Test | Basal Till | -- | -- | -- | -- | 20.9 | 0.27 | 4.26 | 3.559 | 20 | 849 | -- | 6850 | -- | -- | -- | -- | -- | -- |
| 114-PMW-03T | 114-PMW-03T-64.5-20240725 | 7/25/2024 | 64.5 | N | JD92815 | Post-Treatment | Basal Till | **6010** | **6120** | 2.6 B | 14 | -90.1 | 0.02 | 5.23 | 6.58 | 20.1 | 26.9 | -- | 3500 | **801** | -- | -- | -- | -- | -- |
| 114-PMW-03T | 114-PMW-03T-67.0-20240725 | 7/25/2024 | 67 | N | JD92815 | Post-Treatment | Basal Till | **5590** | **5850** | 9.7 B | 12 | -91.8 | 0.04 | 5.2 | 6.94 | 17.8 | 41.2 | -- | 3470 | **823** | -- | -- | -- | -- | -- |
| 114-PMW-03T | 114-PMW-03T-67.0-20240819 | 8/19/2024 | 67 | N | JD94429 | Post-Treatment | Basal Till | **5060** | **4340** | < 10 U | < 10 U | -103.3 | 0.05 | 5.47 | 6.91 | 19.1 | 71.2 | -- | 2080 | **573** | -- | -- | -- | -- | -- |
| 114-PMW-03T | 114-PMW-03T-67.0-20240909 | 9/9/2024 | 67 | N | JD95696 | Post-Treatment | Basal Till | **386** | **382** | **110** | **91** | -38.9 | 0.04 | 4.86 | 6.65 | 20.9 | 162 | -- | 2070 | **384** | -- | -- | -- | -- | -- |
| 114-PMW-03T | 114-PMW-03T-67.0-20241002 | 10/2/2024 | 67 | N | JD97277 | Post-Treatment | Basal Till | **2820** | **3010** | 65 | **70** | -104.2 | 0.1 | 4.85 | 5.29 | 17.7 | 142 | -- | 3220 | **255** | -- | -- | -- | -- | -- |
| 114-PMW-03T | 114-PMW-03T-67.0-20241108 | 11/8/2024 | 67 | N | JE131 | Post-Treatment | Basal Till | **3600** | **3630** | < 10 U | < 10 U | -125.5 | 0.07 | 5.12 | 7.62 | 18.2 | 204 | -- | 3580 | **278** | -- | -- | -- | -- | -- |
| 114-PMW-03T | 114-PMW-03T-67.0-20241203 | 12/3/2024 | 67 | N | JE1799 | Post-Treatment | Basal Till | **2860** | **3120** | 8.7 B | 7.6 B | -195.7 | 0.09 | 5.27 | 6.55 | 14.2 | 173 | -- | 3080 | 175 | -- | -- | -- | -- | -- |
| 114-PMW-04T | 114-PMW-04T-64.5-20240604 | 6/4/2024 | 64.5 | N | JD89719 | Baseline | Basal Till | **875** | **961** | **860** | **860** | 14.5 | 0.28 | 7.16 | 1.952 | 18.8 | 4.92 | -- | 10.5 | 175 | -- | 4880 J | < 250 U | **170** | -- |
| 114-PMW-04T | 114-PMW-04T-64.5-20240604-X | 6/4/2024 | 64.5 | FD | JD89719 | Baseline | Basal Till | **828** | **974** | **840** | **820** | -- | -- | -- | -- | -- | -- | -- | 10.4 | 180 | -- | 5240 J | < 250 U | **160** | -- |
| 114-PMW-04T | 114-PMW-04T-70.5-20240604 | 6/4/2024 | 70.5 | N | JD89719 | Baseline | Basal Till | **990** | **991** | **910** | **900** | 0.8 | 0.21 | 7.07 | 2.046 | 19.4 | 5.84 | -- | 10.6 | 173 | -- | 4960 J | < 250 U | **198** | -- |
| 114-PMW-04T | 114-PMW-04T-PM-20240613 | 6/13/2024 | | N | JD90554 | Pilot Test | Basal Till | -- | -- | -- | -- | -96.5 | 9.75 | 7.13 | 0.0242 | 25.6 | 36.6 | -- | 8.6 | -- | -- | -- | -- | -- | -- |
| 114-PMW-04T | 114-PMW-04T-PM-20240617 | 6/17/2024 | | N | JD90968 | Pilot Test | Basal Till | -- | -- | -- | -- | -140.1 | 0.39 | 8.12 | 1305 | 21 | 6.72 | -- | 12.6 | -- | -- | -- | -- | -- | -- |
| 114-PMW-04T | 114-PMW-04T-PM-20240618 | 6/18/2024 | | N | JD90968 | Pilot Test | Basal Till | -- | -- | -- | -- | -201.6 | 0.21 | 7.08 | 1603 | 21.7 | 7.76 | -- | 1130 | -- | -- | -- | -- | -- | -- |
| 114-PMW-04T | 114-PMW-04T-AM-20240619 | 6/19/2024 | | N | JD90968 | Pilot Test | Basal Till | -- | -- | -- | -- | -302.9 | 0.14 | 6.66 | 2.1 | 19.9 | 13.5 | -- | 450 | -- | -- | -- | -- | -- | -- |
| 114-PMW-04T | 114-PMW-04T-PM-20240619 | 6/19/2024 | | N | JD90968 | Pilot Test | Basal Till | -- | -- | -- | -- | -299 | 0.09 | 6.46 | 2.476 | 22 | 19.9 | -- | 194 | -- | -- | -- | -- | -- | -- |
| 114-PMW-04T | 114-PMW-04T-AM-20240621 | 6/21/2024 | | N | JD91289 | Pilot Test | Basal Till | -- | -- | -- | -- | -334.8 | 22 | 5.71 | 3.257 | 20.7 | 920 | -- | 2460 | -- | -- | -- | -- | -- | -- |
| 114-PMW-04T | 114-PMW-04T-PM-20240626 | 6/26/2024 | | N | JD91289 | Pilot Test | Basal Till | -- | -- | -- | -- | 78.7 | 0.12 | 5.48 | 3.207 | 19.4 | 591 | -- | 2700 | -- | -- | -- | -- | -- | -- |
| 114-PMW-04T | 114-PMW-04T-AM-20240627 | 6/27/2024 | | N | JD91289 | Pilot Test | Basal Till | -- | -- | -- | -- | -263.8 | 0.16 | 5.04 | 3.248 | 20.5 | 167 | -- | 2320 | -- | -- | -- | -- | -- | -- |
| 114-PMW-04T | 114-PMW-04T-65.5-20240722 | 7/22/2024 | 65.5 | N | JD92595 | Post-Treatment | Basal Till | **6570** | **6750** | 9.7 B | 5.0 B | -90 | 0.08 | 5.85 | 4.225 | 20.9 | 8.59 | -- | 1780 | 234 | -- | -- | -- | -- | -- |
| 114-PMW-04T | 114-PMW-04T-70.5-20240722 | 7/22/2024 | 70.5 | N | JD92595 | Post-Treatment | Basal Till | **6400** | **6020** | < 10 U | 3.8 B | -110.6 | 0.07 | 5.84 | 4.259 | 18.8 | 9.51 | -- | 1740 | **251** | -- | -- | -- | -- | -- |
| 114-PMW-04T | 114-PMW-04T-70.5-20240819 | 8/19/2024 | 70.5 | N | JD94429 | Post-Treatment | Basal Till | **8220** | **8660** | **150** | **180** | -217.7 | 0.23 | 5.77 | 5.58 | 21.6 | 14.3 | -- | 1530 | 93.5 | -- | -- | -- | -- | -- |
| 114-PMW-04T | 114-PMW-04T-70.5-20240909 | 9/9/2024 | 70.5 | N | JD95696 | Post-Treatment | Basal Till | **494** | **578** | **210** | **200** | -240.9 | 0.11 | 5.85 | 5.98 | 20.1 | 17 | -- | 1220 | 45.4 B | -- | -- | -- | -- | -- |
| 114-PMW-04T | 114-PMW-04T-70.5-20241002 | 10/2/2024 | 70.5 | N | JD97277 | Post-Treatment | Basal Till | **3220** | **3560** | **100** | **120** | -131.1 | 0.9 | 5.85 | 2.43 | 17.9 | 12.3 | -- | 1280 | 40.3 | -- | -- | -- | -- | -- |
| 114-PMW-04T | 114-PMW-04T-70.5-20241108 | 11/8/2024 | 70.5 | N | JE131 | Post-Treatment | Basal Till | **2210** | **2280** | 7.2 B | < 10 U | -347 | 0.04 | 6.36 | 3.39 | 19.4 | 33.2 | -- | 524 | 31.5 | -- | -- | -- | -- | -- |
| 114-PMW-04T | 114-PMW-04T-70.5-20241204 | 12/4/2024 | 70.5 | N | JE1940 | Post-Treatment | Basal Till | **1970** | **1330** | **260** | **250** | -245.5 | 2.53 | 6.39 | 3.58 | 12.1 | 29 | -- | 460 | **2460** | -- | -- | -- | -- | -- |
| 114-PZ-57I | 114-PZ-57I-30.2-20240529 | 5/29/2024 | 30.2 | N | JD89361 | Baseline | Intermediate | **45000** | **44500** | **48400** | **53500** | -194.6 | 0.12 | 8.2 | 3.627 | 17.4 | 4.55 | -- | 7.0 | **918** | -- | 2480 | < 250 U | **234** | -- |
| 114-PZ-57I | 114-PZ-57I-30.2-20240729 | 7/29/2024 | 30.2 | N | JD93029 | Post-Treatment | Intermediate | **34700** | **39300** | **34400** | **39400** | -256.7 | 0.17 | 9.16 | 4.203 | 20.6 | 7.49 | -- | 9.4 | **1070** | -- | -- | -- | -- | -- |
| 114-PZ-57I | 114-PZ-57I-30.2-20240821 | 8/21/2024 | 30.2 | N | JD94597 | Post-Treatment | Intermediate | **33100 J** | **50700** | **50400 J** | **54300** | -101.9 | 0.1 | 8.52 | 3.43 | 19.5 | 2.8 | -- | 9.8 | **1040** | -- | -- | -- | -- | -- |
| 114-PZ-57I | 114-PZ-57I-30.2-20240910 | 9/10/2024 | 30.2 | N | JD95772 | Post-Treatment | Intermediate | **57100** | **58700** | **59800** | **62400** | -112.6 | 0.23 | 8.65 | 3.84 | 22.2 | 1.06 | -- | 9.0 | **1000** | -- | -- | -- | -- | -- |
| 114-PZ-57I | 114-PZ-57I-30.2-20241001 | 10/1/2024 | 30.2 | N | JD97187 | Post-Treatment | Intermediate | **64000** | **62100** | **65000** | **67300** | -94.9 | 0.3 | 8.41 | 3.9 | 19.9 | 1.39 | -- | 9.1 | **1060** | -- | -- | -- | -- | -- |
| 114-PZ-57I | 114-PZ-57I-30.2-20241107 | 11/7/2024 | 30.2 | N | JD99895 | Post-Treatment | Intermediate | **61400** | **63600** | **67700** | **72900** | 39.3 | 0.33 | 8.63 | 4.55 | 21 | 2.14 | -- | 10.6 | **1090** | -- | -- | -- | -- | -- |
| 114-PZ-57I | 114-PZ-57I-30.2-20241203 | 12/3/2024 | 30.2 | N | JE1799 | Post-Treatment | Intermediate | **49400** | **54600** | **65100** | **64500** | 30.7 | 0.42 | 8.93 | 4.01 | 14 | 8.57 | -- | < 20 U | **1040** | -- | -- | -- | -- | -- |
| 114-PZ-57T | 114-PZ-57T-67.5-20240530 | 5/30/2024 | 67.5 | N | JD89452 | Baseline | Basal Till | 5.7 J | 16.8 | < 10 U | < 10 U | -236.4 | 0.16 | 7.8 | 0.787 | 17.9 | 6.81 | -- | 1.7 | 206 | -- | 162 | < 250 U | **503** | -- |
| 114-PZ-57T | 114-PZ-57T-PM-20240613 | 6/13/2024 | | N | JD90554 | Pilot Test | Basal Till | -- | -- | -- | -- | -150.6 | 3.4 | 7.89 | 0.949 | 17.3 | 35.2 | -- | 1.0 | -- | -- | -- | -- | -- | -- |
| 114-PZ-57T | 114-PZ-57T-PM-20240619 | 6/19/2024 | | N | JD90968 | Pilot Test | Basal Till | -- | -- | -- | -- | -150.3 | 0.94 | 7.73 | 0.96 | 20.1 | 39.5 | -- | 3.5 | -- | -- | -- | -- | -- | -- |
| 114-PZ-57T | 114-PZ-57T-AM-20240625 | 6/25/2024 | | N | JD91289 | Pilot Test | Basal Till | -- | -- | -- | -- | -170.5 | 0.69 | 7.73 | 0.907 | 20.4 | 8.8 | -- | 1.2 | -- | -- | -- | -- | -- | -- |
| 114-PZ-57T | 114-PZ-57T-AM-20240626 | 6/26/2024 | | N | JD91289 | Pilot Test | Basal Till | -- | -- | -- | -- | -175.1 | 0.29 | 7.9 | 1.053 | 20.8 | 542 | -- | 1.5 | -- | -- | -- | -- | -- | -- |
| 114-PZ-57T | 114-PZ-57T-AM-20240627 | 6/27/2024 | | N | JD91289 | Pilot Test | Basal Till | -- | -- | -- | -- | -108.2 | 0.26 | 7.79 | 0.883 | 19.9 | 716 | -- | 1.3 | -- | -- | -- | -- | -- | -- |
| 114-PZ-57T | 114-PZ-57T-67.5-20240726 | 7/26/2024 | 67.5 | N | JD92936 | Post-Treatment | Basal Till | **1810** | **1890** | < 10 U | 9.2 J | -91.9 | 0.11 | 4.89 | 2.629 | 21.8 | 118 | -- | 4280 | **261** | -- | -- | -- | -- | -- |
| 114-PZ-57T | 114-PZ-57T-67.5-20240821 | 8/21/2024 | 67.5 | N | JD94597 | Post-Treatment | Basal Till | **822** | **878** | < 10 U | < 10 U | -79.5 | 0.05 | 5.05 | 2.1 | 20.3 | 59.2 | -- | 1830 | 158 | -- | -- | -- | -- | -- |
| 114-PZ-57T | 114-PZ-57T-67.5-20240910 | 9/10/2024 | 67.5 | N | JD95772 | Post-Treatment | Basal Till | **161** | **163** | < 10 U | < 10 U | -150.6 | 0.12 | 5.39 | 0.73 | 21.7 | 39.9 | -- | 161 | 2.2 | -- | -- | -- | -- | -- |
| 114-PZ-57T | 114-PZ-57T-67.5-20241001 | 10/1/2024 | 67.5 | N | JD97187 | Post-Treatment | Basal Till | **155** | **168** | 3.5 B | 4.7 B | -38.4 | 0.52 | 5.11 | 0.79 | 20 | 32.6 | -- | 495 | < 40 U | -- | -- | -- | -- | -- |
| 114-PZ-57T | 114-PZ-57T-67.5-20241107 | 11/7/2024 | 67.5 | N | JD99895 | Post-Treatment | Basal Till | **188** | **214** | < 10 U | < 10 U | 5 | 0.16 | 4.66 | 1.16 | 21.6 | 25.5 | -- | 525 | 21.2 | -- | -- | -- | -- | -- |
| 114-PZ-57T | 114-PZ-57T-67.5-20241203 | 12/3/2024 | 67.5 | N | JE1799 | Post-Treatment | Basal Till | **310** | **342** | 8.7 B | 8.7 B | -11 | 0.41 | 4.93 | 1.87 | 14.6 | 148 | -- | 3130 | 97.9 | -- | -- | -- | -- | -- |
| 114-MW56C | 114-MW56C-72.0-20200821 | 8/21/2020 | 72 | N | JD12104 | N/A | Basal Till | -- | **1930** | -- | **1800** | 55.70 | 0.49 | 7.09 | 1.54 | 21.01 | 19.81 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW56C | 114-MW56C-72.0-20200821 | 8/21/2020 | 72 | N | JD12104R | N/A | Basal Till | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.3 | -- | -- | -- | -- | -- | -- |
| 114-MW56C | 114-MW56C-72.0-20230317 | 3/17/2023 | 72 | N | 4602765431 | N/A | Basal Till | -- | **18900** | -- | **17300** | 206.4 | 0.42 | 7.43 | 0.935 | 14.4 | 4.62 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW56C | 114-MW56C-72.0-20230711 | 7/11/2023 | 72 | N | 4602839741 | Basal Till | Basal Till | -- | **11200** | -- | **11400** | 313.4 | 1.02 | 7.06 | 0.857 | 21.63 | 7.07 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW56C | 114-MW56C-72.0-20240312 | 3/12/2024 | 72 | N | JD84295 | Basal Till | Basal Till | -- | **28700** | -- | **38700** | 50.1 | 0.28 | 8.16 | 1.181 | 14.3 | 6.23 | -- | < 5.0 U | **279** | -- | -- | -- | -- | -- |
| 114-MW56C | 114-MW56C-71.5-20240520 | 5/20/2024 | 71.5 | N | JD88834 | Baseline | Basal Till | **36400** | **37000** | **35000** | **35600** | -83.9 | 0.45 | 8.17 | 1.166 | 16.4 | 6.93 | -- | < 5.0 U | **283** | -- | 46.9 | < 250 U | 25.6 | -- |
| 114-MW56C | 114-MW56C-PM-20240613 | 6/13/2024 | | N | JD90554 | Pilot Test | Basal Till | -- | -- | -- | -- | 22.5 | 0.9 | 8.21 | 1.124 | 16.8 | 57.2 | -- | < 1.0 U | -- | -- | -- | -- | -- | -- |
| 114-MW56C | 114-MW56C-PM-20240619 | 6/19/2024 | | N | JD90968 | Pilot Test | Basal Till | -- | -- | -- | -- | -14.7 | 0.48 | 8.29 | 1.177 | 18.8 | 27.9 | -- | 1.1 | -- | -- | -- | -- | -- | -- |
| 114-MW56C | 114-MW56C-PM-20240626 | 6/26/2024 | | N | JD91289 | Pilot Test | Basal Till | -- | -- | -- | -- | -19.8 | 0.36 | 8.2 | 1.192 | 20.1 | 33.9 | -- | < 5.0 U | -- | -- | -- | -- | -- | -- |
| 114-MW56C | 114-MW56C-AM-20240627 | 6/27/2024 | | N | JD91289 | Pilot Test | Basal Till | -- | -- | -- | -- | 59.5 | 0.61 | 8.08 | 1.004 | 20.5 | 94.6 | -- | < 5.0 U | -- | -- | -- | -- | -- | -- |
| 114-MW56C | 114-MW-56C-71.5-20240729 | 7/29/2024 | 71.5 | N | JD93029 | Post-Treatment | Basal Till | **11700** | **11700** | **11800** | **12700** | 19 | 0.37 | 7.96 | 0.997 | 20.5 | 2.23 | -- | < 5.0 U | **264** | -- | -- | -- | -- | -- |
| 114-MW56C | 114-MW56C-71.5-20240820 | 8/20/2024 | 71.5 | N | JD94515 | Post-Treatment | Basal Till | **8620** | **8660** | **8500** | **8700** | 91 | 0.79 | 7.91 | -- | 18.6 | 8.12 | -- | 1.2 | **252** | -- | -- | -- | -- | -- |
| 114-MW56C | 114-MW56C-71.5-20240820-X | 8/20/2024 | 71.5 | FD | JD94515 | Post-Treatment | Basal Till | **8030** | **7930** | **8700** | **8900** | -- | -- | -- | -- | -- | -- | -- | 1.2 | **253** | -- | -- | -- | -- | -- |
| 114-MW56C | 114-MW56C-71.5-20240911 | 9/11/2024 | 71.5 | N | JD95855 | Post-Treatment | Basal Till | **6180** | **6490** | **7300** | **7300** | 28.9 | 0.47 | 7.94 | 1.11 | 18.1 | 2.67 | -- | 3.1 | 230 | -- | -- | -- | -- | -- |
| 114-MW56C | 114-MW56C-71.5-20240911-X | 9/11/2024 | 71.5 | FD | JD95855 | Post-Treatment | Basal Till | **5830** | **7270** | **7200** | **7500** | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | 231 | -- | -- | -- | -- | -- |
| 114-MW56C | 114-MW56C-71.5-20241003 | 10/3/2024 | 71.5 | N | JD97377 | Post-Treatment | Basal Till | **5670** | **5590** | **5900** | **5900** | 80.9 | 0.35 | 7.92 | 1.24 | 18.7 | 2.85 | -- | 1.2 | 231 | -- | -- | -- | -- | -- |
| 114-MW56C | 114-MW56C-71.5-20241003-X | 10/3/2024 | 71.5 | FD | JD97377 | Post-Treatment | Basal Till | **5430** | **5460** | **5900** | **6100** | -- | -- | -- | -- | -- | -- | -- | 1.1 | 233 | -- | -- | -- | -- | -- |
| 114-MW56C | 114-MW56C-71.5-20241106 | 11/6/2024 | 71.5 | N | JD99782 | Post-Treatment | Basal Till | **4450** | **4780** | **4900** | **5100** | 12.1 | 0.55 | 7.67 | 1.12 | 21.2 | 3.29 | -- | 1.2 | 227 | -- | -- | -- | -- | -- |
| 114-MW56C | 114-MW56C-71.5-20241106-X | 11/6/2024 | 71.5 | FD | JD99782 | Post-Treatment | Basal Till | **4440** | **4500** | **4900** | **5100** | -- | -- | -- | -- | -- | -- | -- | 1.2 | 227 | -- | -- | -- | -- | -- |
| 114-MW56C | 114-MW56C-71.5-20241202 | 12/2/2024 | 71.5 | N | JE1724 | Post-Treatment | Basal Till | **4020** | **4160** | **3800** | **3900** | 41 | 0.67 | 7.67 | 1.15 | 14.9 | 2.29 | -- | 4.6 B | 220 | -- | -- | -- | -- | -- |
| 114-MW56C | 114-MW56C-71.5-20241202-X | 12/2/2024 | 71.5 | FD | JE1724 | Post-Treatment | Basal Till | **4070** | **3290** | **4100** | **4000** | -- | -- | -- | -- | -- | -- | -- | < 5.0 U | 217 | -- | -- | -- | -- | -- |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-MW57C | 114-MW57C-70-20200825 | 8/25/2020 | 70 | N | JD12215 | N/A | Weathered Bedrock | -- | **32100** | -- | **30200** | 50.00 | 0.17 | 8.09 | 1.23 | 31.19 | 8.23 | -- | 5.1 | -- | -- | -- | -- | -- | -- |
| 114-MW57C | 114-MW57C-71-20230630 | 6/30/2023 | 71 | N | 4602833941 | N/A | Weathered Bedrock | **11100 J** | **13100 J** | **22400 J** | **23000 J** | 129.3 | 1.83 | 7.63 | 1.152 | 21.98 | 23.6 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW57C | 114-MW57C-71-20230630 | 6/30/2023 | 71 | N | 4602833942 | N/A | Weathered Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.3 | **412** | -- | -- | < 120 U | -- | < 0.10 UHFF1 |
| 114-MW57C | 114-MW57C-71-20230630-X | 6/30/2023 | 71 | FD | 4602833941 | N/A | Weathered Bedrock | **11300 J** | **14000 J** | **20800 J** | **23500 J** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW57C | 114-MW57C-71-20230630-X | 6/30/2023 | 71 | FD | 4602833942 | N/A | Weathered Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.2 | **408** | -- | -- | < 120 U | -- | < 0.10 UHF |
| 114-MW57C | 114-MW57C-71.0-20230925 | 9/25/2023 | 71 | N | 4602889531 | Bedrock Monitoring | Weathered Bedrock | -- | **11600** | -- | **10700 J** | 84 | 1.46 | 8.68 | 1.058 | 16.94 | 7.93 | -- | 3.0 | **300** | -- | -- | **< 600 U** | -- | R |
| 114-MW57C | 114-MW57C-71.0-20230925-X | 9/25/2023 | 71 | FD | 4602889531 | Bedrock Monitoring | Weathered Bedrock | -- | **11300** | -- | **11400** | -- | -- | -- | -- | -- | -- | -- | 2.9 | **285** | -- | -- | **< 600 U** | -- | R |
| 114-MW57C | 114-MW57C-71.0-20231219 | 12/19/2023 | 71 | N | JD79185 | Bedrock Monitoring | Weathered Bedrock | -- | **15600** | -- | **15400** | 13.3 | 1.13 | 7.88 | 1.641 | 14.7 | 5.16 | -- | 2.4 | **501** | -- | -- | < 250 U | **82.5** | -- |
| 114-MW57C | 114-MW57C-71.0-20231219-X | 12/19/2023 | 71 | FD | JD79185 | Bedrock Monitoring | Weathered Bedrock | -- | **15400** | -- | **14700** | -- | -- | -- | -- | -- | -- | -- | < 5.0 U | **502** | -- | -- | < 250 U | **87.2** | -- |
| 114-MW57C | 114-MW57C-71.0-20240319 | 3/19/2024 | 71 | N | JD84758 | Bedrock Monitoring | Weathered Bedrock | -- | **12000** | -- | **13500** | 19.6 | 2.62 | 7.88 | 1.415 | 11.5 | 2.87 | -- | 2.8 | **522** | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW57C | 114-MW57C-71.0-20240319-X | 3/19/2024 | 71 | FD | JD84758 | Bedrock Monitoring | Weathered Bedrock | -- | **11900** | -- | **13800** | -- | -- | -- | -- | -- | -- | -- | 2.8 | **529** | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW57C | 114-MW57C-70.9-20240520 | 5/20/2024 | 70.9 | N | JD88834 | Baseline | Weathered Bedrock | **17700** | **15800** | **15500** | **16200** | -61.8 | 4.69 | 7.78 | 2.039 | 16.9 | 3.12 | -- | 4.6 J | **571** | -- | 363 | < 250 U | **99.0** | -- |
| 114-MW57C | 114-MW57C-70.9-20240520 | 5/20/2024 | 70.9 | N | JD88834R | Baseline | Weathered Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW57C | 114-MW57C-70.9-20240530 | 5/30/2024 | 70.9 | N | JD89452 | Baseline | Weathered Bedrock | **17300** | **16000** | **17100** | **18200** | 106.1 | 1 | 7.81 | 1.644 | 16.8 | 8.93 | -- | < 5.0 U | **536** | -- | 306 | < 250 U | **91.9** | -- |
| 114-MW57C | 114-MW57C-70.9-20240530-X | 5/30/2024 | 70.9 | FD | JD89452 | Baseline | Weathered Bedrock | **17200** | **17200** | **17800** | **18200** | -- | -- | -- | -- | -- | -- | -- | < 5.0 U | **518** | -- | 287 | < 250 U | **95.4** | -- |
| 114-MW57C | 114-MW57C-AM-20240621 | 6/21/2024 | | N | JD91289 | Pilot Test | Weathered Bedrock | -- | -- | -- | -- | 81.1 | 8.23 | 8.22 | 1.769 | 20.3 | 6.35 | -- | < 5.0 U | -- | -- | -- | -- | -- | -- |
| 114-MW57C | 114-MW57C-PM-20240626 | 6/26/2024 | | N | JD91289 | Pilot Test | Weathered Bedrock | -- | -- | -- | -- | -67.5 | 13 | 7.73 | 1.633 | 20.7 | 9.15 | -- | 7.3 | -- | -- | -- | -- | -- | -- |
| 114-MW57C | 114-MW57C-AM-20240711 | 7/11/2024 | | N | JD93226 | Pilot Test | Weathered Bedrock | -- | -- | -- | -- | 112.5 | 1.12 | 7.74 | 1.782 | 21.4 | 6.6 | -- | < 5.0 U | -- | -- | -- | -- | -- | -- |
| 114-MW57C | 114-MW57C-AM-20240717 | 7/17/2024 | | N | JD93226 | Pilot Test | Weathered Bedrock | -- | -- | -- | -- | -90.1 | 0.47 | 8.07 | 1.881 | 20.9 | 36.4 | -- | 149 | -- | -- | -- | -- | -- | -- |
| 114-MW57C | 114-MW57C-PM-20240719 | 7/19/2024 | | N | JD93226 | Pilot Test | Weathered Bedrock | -- | -- | -- | -- | 37.3 | 1.47 | 6.45 | 2.523 | 19 | 8.99 | -- | 517 | -- | -- | -- | -- | -- | -- |
| 114-MW57C | 114-MW57C-PM-20240724 | 7/24/2024 | | N | JD93226 | Pilot Test | Weathered Bedrock | -- | -- | -- | -- | 30.4 | 0.3 | 6.54 | 2.226 | 20.8 | 3.85 | -- | 372 | -- | -- | -- | -- | -- | -- |
| 114-MW57C | 114-MW57C-70.9-20240726 | 7/26/2024 | 70.9 | N | JD92936 | Post-Treatment | Weathered Bedrock | **1610** | **1580** | 4.4 J | 4.4 J | -96.5 | 0.05 | 5.7 | 3.174 | 22.7 | 5.1 | -- | 1150 | **335** | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW57C | 114-MW57C-PM-20240731 | 7/31/2024 | | N | JD93226 | Pilot Test | Weathered Bedrock | -- | -- | -- | -- | 23.1 | 0.43 | 5.37 | 3.224 | 22 | 26.9 | -- | 995 | -- | -- | -- | -- | -- | -- |
| 114-MW57C | 114-MW57C-70.9-20240805 | 8/5/2024 | 70.9 | N | JD93435 | Post-Treatment | Weathered Bedrock | **2090** | **2360** | < 10 U | 9.6 B | 2.3 | 0.93 | 5.75 | 4.46 | 22.8 | 4.37 | -- | 1550 | **343** | -- | -- | -- | -- | -- |
| 114-MW57C | 114-MW57C-70.9-20240821 | 8/21/2024 | 70.9 | N | JD94597 | Post-Treatment | Weathered Bedrock | **1960** | **2130** | 57 | 57 | -51.3 | 0.09 | 5.77 | 4.52 | 22.9 | 9.04 | -- | 1820 | **419** | -- | -- | -- | -- | -- |
| 114-MW57C | 114-MW57C-70.9-20240903 | 9/3/2024 | 70.9 | N | JD95322 | Post-Treatment | Weathered Bedrock | **2120** | **2610** | < 10 U | < 10 U | -51.9 | 0.15 | 5.7 | 5.11 | 21.6 | 9.98 | -- | 2190 | **255** | -- | -- | -- | -- | -- |
| 114-MW57C | 114-MW57C-70.9-20240930 | 9/30/2024 | 70.9 | N | JD97124 | Post-Treatment | Weathered Bedrock | **1790** | **2330** | 3.7 B | 9.5 B | -129.6 | 0.2 | 5.59 | 3.82 | 21.3 | 9.33 | -- | 1670 | < 40 U | -- | -- | -- | -- | -- |
| 114-MW57C | 114-MW57C-70.9-20241104 | 11/4/2024 | 70.9 | N | JD99628 | Post-Treatment | Weathered Bedrock | **1090** | **1280** | **200** | **240** | -45.7 | 0.16 | 5.75 | 3.62 | 18.3 | 8.32 | -- | 1540 | 50.7 | -- | -- | -- | -- | -- |
| 114-MW57C | 114-MW57C-70.9-20241206 | 12/6/2024 | 70.9 | N | JE2113 | Post-Treatment | Weathered Bedrock | **629** | **743** | < 10 U | 9.0 B | -161.1 | 0.05 | 5.93 | 4.66 | 11.3 | 9.93 | -- | 1690 | < 40 U | -- | -- | -- | -- | 31.5 |
| 114-MW65C | 114-MW65C-62.5-20200824 | 8/24/2020 | 62.5 | N | JD12146 | N/A | Basal Till | -- | **26800** | -- | **25400** | 109.60 | 0 | 7.83 | 1.72 | 23.81 | 11.30 | -- | 3.1 | -- | -- | -- | -- | -- | -- |
| 114-MW65C | 114-MW65C-65.0-20230314 | 3/14/2023 | 65 | N | 4602762891 | N/A | Basal Till | -- | **67300** | -- | **59600** | 76.9 | 2.06 | 7.97 | 2.405 | 12.05 | 6.6 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW65C | 114-MW65C-65.0-20230711 | 7/11/2023 | 65 | N | 4602839741 | Basal Till | Basal Till | **48900** | **47200** | **45300** | **46400** | 305.3 | 3.65 | 6.6 | 1.878 | 20.47 | 6.12 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW65C | 114-MW65C-65.0-20240312 | 3/12/2024 | 65 | N | JD84295 | Basal Till | Basal Till | -- | **27800 J** | -- | **39700 J** | 39.7 | 2.3 | 7.43 | 2.689 | 15.2 | 8.24 | -- | 6.1 | **436** | -- | -- | -- | -- | -- |
| 114-MW65C | 114-MW65C-64.3-20240523 | 5/23/2024 | 64.3 | N | JD89052 | Baseline | Basal Till | **18100** | **17700** | **19200** | **18900** | -235.4 | 0.1 | 7.42 | 2.576 | 15 | 2.8 | -- | 10.8 | **400** | -- | 3530 | < 250 U | **173** | -- |
| 114-MW65C | 114-MW65C-PM-20240613 | 6/13/2024 | | N | JD90554 | Pilot Test | Basal Till | -- | -- | -- | -- | 55.1 | 0.87 | 7.44 | 2.518 | 19.2 | 74.2 | -- | 7.8 | -- | -- | -- | -- | -- | -- |
| 114-MW65C | 114-MW65C-PM-20240619 | 6/19/2024 | | N | JD90968 | Pilot Test | Basal Till | -- | -- | -- | -- | 71.2 | 0.17 | 7.57 | 2.547 | 20 | 42.7 | -- | 6.4 | -- | -- | -- | -- | -- | -- |
| 114-MW65C | 114-MW65C-PM-20240626 | 6/26/2024 | | N | JD91289 | Pilot Test | Basal Till | -- | -- | -- | -- | -25.7 | 0.11 | 7.34 | 2.146 | 20.1 | 41.6 | -- | 17.1 | -- | -- | -- | -- | -- | -- |
| 114-MW65C | 114-MW65C-AM-20240627 | 6/27/2024 | | N | JD91289 | Pilot Test | Basal Till | -- | -- | -- | -- | -269.4 | 0.29 | 7.16 | 2.165 | 18.3 | 48.7 | -- | 10.2 | -- | -- | -- | -- | -- | -- |
| 114-MW65C | 114-MW-65C-64.3-20240725 | 7/25/2024 | 64.3 | N | JD92815 | Post-Treatment | Basal Till | **3020** | **3320** | **3500** | **3300** | -38.4 | 0.2 | 7.06 | 2.206 | 18.7 | 5.35 | -- | 7.5 | **349** | -- | -- | -- | -- | -- |
| 114-MW65C | 114-MW65C-64.3-20240819 | 8/19/2024 | 64.3 | N | JD94429 | Post-Treatment | Basal Till | **135** | **980** | < 10 U | 2.6 B | -95.4 | 0.3 | 6.92 | 2.47 | 21.6 | 8.93 | -- | 7.2 | **344** | -- | -- | -- | -- | -- |
| 114-MW65C | 114-MW65C-64.3-20240912 | 9/12/2024 | 64.3 | N | JD95973 | Post-Treatment | Basal Till | **88.3** | **300** | < 10 U | < 10 U | -97 | 0.31 | 7.11 | 2.31 | 20.9 | 3.61 | -- | 7.7 | **297** | -- | -- | -- | -- | -- |
| 114-MW65C | 114-MW65C-64.3-20241003 | 10/3/2024 | 64.3 | N | JD97377 | Post-Treatment | Basal Till | **96.5** | **170** | < 10 U | < 10 U | -120.4 | 0.32 | 6.99 | 2.55 | 17.8 | 1.74 | -- | 29.7 | 182 | -- | -- | -- | -- | -- |
| 114-MW65C | 114-MW65C-64.3-20241108 | 11/8/2024 | 64.3 | N | JE131 | Post-Treatment | Basal Till | **497** | **832** | < 10 U | < 10 U | -266.8 | 0.77 | 6.97 | 3.97 | 18.6 | 7.66 | -- | 444 | 2.3 | -- | -- | -- | -- | -- |
| 114-MW65C | 114-MW65C-64.3-20241203 | 12/3/2024 | 64.3 | N | JE1799 | Post-Treatment | Basal Till | **360** | **510** | **73** | **74** | -172 | 0.1 | 6.72 | 3.67 | 14.4 | 3.32 | -- | 539 | < 2.0 U | -- | -- | -- | -- | -- |
| 114-MW68C | 114-MW68C-55-20210216 | 2/16/2021 | 55 | N | JD20404 | N/A | Deep (Lower) | -- | **76000** | -- | **66800** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW68C | 114-MW68C-55.0-20211116 | 11/16/2021 | 55 | N | 4602474031 | Baseline | Deep (Lower) | **67700** | **64200** | **65100** | **65100** | 118.70 | 0.43 | 9.27 | 1.36 | 15.73 | 1.57 | -- | 2.8 | 224 | -- | 47 | -- | -- | -- |
| 114-MW68C | 114-MW68C-55.0-20211227 | 12/27/2021 | 55 | N | 4602498521 | Treatment | Deep (Lower) | **238000** | **241000** | **267000** | **242000** | 40.00 | 0.36 | 7.27 | 2.95 | 13.34 | 6.41 | -- | 22.9 | **290** | -- | 290 | -- | -- | -- |
| 114-MW68C | 114-MW68C-55-20220120 | 1/20/2022 | 55 | N | 4602510051 | Treatment | Deep (Lower) | **287000** | **300000** | **269000** | **269000** | 185.00 | 0.94 | 7.55 | 2.66 | 16.75 | 5.40 | -- | 3.1 | **312** | -- | 300 | -- | -- | -- |
| 114-MW68C | 114-MW68C-55.0-20220301 | 3/1/2022 | 55 | N | 4602534221 | Treatment | Deep (Lower) | **257000** | **222000** | **282000** | **262000** | 132.70 | 5.23 | 7.73 | 1.91 | 12.30 | 1.80 | -- | 3.1 | **293** | -- | 260 | -- | -- | -- |
| 114-MW68C | 114-MW68C-55-20220616 | 6/16/2022 | 55 | N | 4602602381 | Treatment | Deep (Lower) | -- | **327000** | -- | **163000** | 107.8 | 0.12 | 7.65 | 2.113 | 16.8 | 4.06 | -- | -- | 240 | -- | -- | -- | -- | -- |
| 114-MW68C | 114-MW68C-55-20220923 | 9/23/2022 | 55 | N | 4602661551 | Treatment | Deep (Lower) | -- | **74800** | -- | **82400 H**<br>**83500 H** | 106.6 | 0.35 | 7.30 | 2.441 | 17.20 | 7.79 | -- | 6.0 | 234 | -- | -- | -- | -- | -- |
| 114-MW68C | 114-MW68C-55-20221220 | 12/20/2022 | 55 | N | 4602718081 | Treatment | Deep (Lower) | -- | **4460** | -- | **39600** | -30.1 | 0.98 | 7.45 | 4.021 | 13.97 | 9.9 | -- | 5.7 | **344** | -- | -- | -- | -- | -- |
| 114-MW68C | 114-MW68C-55.0-20230324 | 3/24/2023 | 55 | N | 4602769361 | Treatment | Deep (Lower) | -- | **31800** | -- | **41200** | 61 | 1.98 | 7.34 | 5.889 | 12.71 | 7 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW68C | 114-MW68C-55-20230627 | 6/27/2023 | 55 | N | 4602831921 | Treatment | Deep (Lower) | -- | **22400** | -- | **22900** | 15.8 | 14.19 | 7.28 | 5.632 | 17.84 | 8.52 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW68C | 114-MW68C-55.0-20230921 | 9/21/2023 | 55 | N | 4602887321 | Treatment | Deep (Lower) | -- | **14700** | -- | **15600** | 36.6 | 0.58 | 7.49 | 4.458 | 19.17 | 4 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW68C | 114-MW68C-55.0-20231220 | 12/20/2023 | 55 | N | JD79284 | Treatment | Deep (Lower) | -- | **24200** | -- | **22600** | 124.8 | 0.18 | 7.3 | 4.8 | 14 | 3.21 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW68C | 114-MW68C-55-20240321 | 3/21/2024 | 55 | N | JD84944 | Treatment | Deep (Lower) | -- | **36200** | -- | **36700** | 272.5 | 0.24 | 7.42 | 4.196 | 10.3 | 2.01 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW68C | 114-MW68C-54.7-20240523 | 5/23/2024 | 54.7 | N | JD89052 | Baseline | Deep (Lower) | **37900** | **41100** | **44900** | **46500** | 64.7 | 0.23 | 7.43 | 4.697 | 17.4 | 3.12 | -- | 4.1 J | **508** | -- | 1720 | < 250 U | **72.5** | -- |
| 114-MW68C | 114-MW68C-AM-20240624 | 6/24/2024 | | N | JD91289 | Pilot Test | Deep (Lower) | -- | -- | -- | -- | 61.5 | 0.34 | 7.77 | 3.174 | 17.3 | 10.6 | -- | 6.1 | -- | -- | -- | -- | -- | -- |
| 114-MW68C | 114-MW68C-PM-20240626 | 6/26/2024 | | N | JD91289 | Pilot Test | Deep (Lower) | -- | -- | -- | -- | -115.2 | 0.51 | 7.9 | 2.343 | 20.4 | 4.56 | -- | 10.4 | -- | -- | -- | -- | -- | -- |
| 114-MW68C | 114-MW68C-54.7-20240729 | 7/29/2024 | 54.7 | N | JD93029 | Post-Treatment | Deep (Lower) | **26300** | **27600** | **26700** | **28100** | -104.2 | 0.15 | 7.37 | 5.28 | 19.9 | 2.8 | -- | < 5.0 U | **497** | -- | -- | -- | -- | -- |
| 114-MW68C | 114-MW68C-54.7-20240820 | 8/20/2024 | 54.7 | N | JD94515 | Post-Treatment | Deep (Lower) | **20500** | **20500** | **25000** | **25000** | 75.5 | 0.53 | 7.33 | 5.01 | 19.2 | 3.81 | -- | 4.1 B | **484** | -- | -- | -- | -- | -- |
| 114-MW68C | 114-MW68C-54.7-20240906 | 9/6/2024 | 54.7 | N | JD95614 | Post-Treatment | Deep (Lower) | **27700** | **29400** | **32000** | **31400** | 77.9 | 0.26 | 7.47 | 4.12 | 19.6 | 2.83 | -- | 3.2 | **468** | -- | -- | -- | -- | -- |
| 114-MW68C | 114-MW68C-54.7-20241002 | 10/2/2024 | 54.7 | N | JD97277 | Post-Treatment | Deep (Lower) | **30700** | **32800** | **31900** | **31400** | 118.1 | 0.43 | 7.35 | 3.88 | 18.8 | 2.2 | -- | < 5.0 U | **465** | -- | -- | -- | -- | -- |
| 114-MW68C | 114-MW68C-54.7-20241106 | 11/6/2024 | 54.7 | N | JD99782 | Post-Treatment | Deep (Lower) | **43700** | **44000** | **49400** | **51400** | 48.1 | 0.45 | 7.34 | 3.60 | 19.1 | 1.09 | -- | < 5.0 U | **406** | -- | -- | -- | -- | -- |
| 114-MW68C | 114-MW68C-54.7-20241203 | 12/3/2024 | 54.7 | N | JE1799 | Post-Treatment | Deep (Lower) | **50400** | **52900** | **55200** | **60100** | 61.8 | 0.25 | 7.31 | 3.54 | 14.7 | 7.19 | -- | < 20 U | **364** | -- | -- | -- | -- | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-62.5-20200326 | 3/26/2020 | 62.5 | N | JD5217 | Baseline | Deep | **138** | **1120 J** | **120** | **13600 J** | 350 | 0 | 7.59 | 0.927 | -- | 2.1 | -- | 2.6 J | 184 | < 2.0 U | 11.9 | 38.4 J | **169** | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-63-20201119 | 11/19/2020 | 63 | N | JD16573 | Treatment | Deep | **15400** | **14900** | **13500**<br>**13800** | **11000**<br>**13900** | 94 | 0 | 7.45 | 1.55 | -- | 0.61 | -- | 3.6 | 198 | -- | 16.1 | -- | **142** | < 0.20 U |
| 114-P2-MW-7D | 114-P2-MW-7D-65.0-20201216 | 12/16/2020 | 65 | N | JD17868 | Treatment | Deep | **13200** | **13400** | **13200** | **12400** | 143.6 | 0.22 | 7.69 | 2.808 | -- | 2.07 | -- | 1.6 | 182 | -- | -- | -- | -- | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-64.0-20210114 | 1/14/2021 | 64 | N | JD19032 | Treatment | Deep | **5550** | **5690** | **7100** | **6400** | 45.2 | 0.65 | 7.18 | 1.51 | -- | 1.71 | -- | 2.0 | 166 | -- | -- | -- | -- | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-60.0-20210316 | 3/16/2021 | 60 | N | JD21820 | Treatment | Deep | **129** | **121** | 45 | 65 | -85.5 | 0.19 | 7.9 | 1.17 | -- | 4.91 | -- | 2.8 | 137 | -- | -- | -- | -- | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-60.0-20210316-X | 3/16/2021 | 60 | FD | JD21820 | Treatment | Deep | **115** | **111** | **81** | 69 | -- | -- | -- | -- | -- | -- | -- | 3.2 | 137 | -- | -- | -- | -- | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-64.0-20210428 | 4/28/2021 | 64 | N | 4602331061 | Treatment | Deep | 48.9 | **80.5** | 8.9 J | < 10.0 U | 18.7 | 1.52 | 7.36 | 1.253 | -- | 2.86 | -- | 4.4 | 110 | -- | 49 | 127 | **191** | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-64-20210526 | 5/26/2021 | 64 | N | 4602352461 | Treatment | Deep | 23.0 | **74.0** | < 10.0 U | < 10.0 U | -117.3 | 1.73 | 7.24 | 1.36 | -- | -- NM | -- | 11.5 | 60.7 | -- | 80 | **584** | **254** | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-64.0-20210624 | 6/24/2021 | 64 | N | 4602373191 | Treatment | Deep | **1090000** | **957000** | **1110000** | **1030000** | 199.9 | 1.42 | 7.23 | 4.327 | -- | 0.47 | -- | 6.4 | **713** | -- | 260 | **< 2400 U** | **138 J** | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-62.5-20210722 | 7/22/2021 | 62.5 | N | 4602393171 | Treatment | Deep | **385000** | **423000** | **396000** | **434000** | -117.2 | 1.72 | 7.62 | 1.233 | -- | 5.24 | -- | 10 | **1220** | -- | 650 | **< 4800 U** | **< 320 U** | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-64-20210826 | 8/26/2021 | 64 | N | 4602416741 | Treatment | Deep | 38.1 | 48.7 | < 10.0 U | < 10.0 U | -304.5 | 1.09 | 6.98 | 1.741 | -- | 1.18 | -- | 47.2 | **332** | -- | 130 | 60.6 J | **366** | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-64-20210923 | 9/23/2021 | 64 | N | 4602434911 | Treatment | Deep | 36.3 | **476** | < 10.0 U | < 10.0 U | -338 | 0.6 | 7.24 | 1.499 | -- | 0.9 | -- | 31.3 | **269** | -- | 130 | < 120 U | **300** | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-64.0-20211021 | 10/21/2021 | 64 | N | 4602456401 | Treatment | Deep | 46.1 | 55.7 | 28.9 | < 20.0 U | -344.7 | 0.11 | 7.2 | 2.08 | -- | 0.95 | -- | 17.8 | 130 | -- | 120 | < 120 U | **259** | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-65.0-20211118 | 11/18/2021 | 65 | N | 4602475481 | Treatment | Deep | 31.2 | 61.0 | < 50.0 U | < 50.0 U | -353 | 3.08 | 7.3 | 2.258 | -- | 3.13 | -- | 19.1 | 124 | -- | 230 | < 120 U | **218** | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-62.5-20211215 | 12/15/2021 | 62.5 | N | 4602491921 | Treatment | Deep | 24.3 | **209** | **< 100 U** | **< 100 U** | -378.9 | 0.05 | 7.56 | 1.99 | -- | 8.9 | -- | 12.1 | 149 | -- | 200 | < 120 U | **195** | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-64.0-20220113 | 1/13/2022 | 64 | N | 4602506661 | Treatment | Deep | 30.3 | **107** | **< 100 U** | **< 100 U** | -388 | 0 | 7.41 | 2.28 | -- | 0 | -- | 22.0 F1 | 197 | -- | 240 | < 120 U | **182** | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-64.0-20220216 | 2/16/2022 | 64 | N | 4602526321 | Treatment | Deep | 43.5 | **1180** | < 10.0 U | < 10.0 U | -370.2 | -1 | 7.59 | 1.81 | -- | 1.78 | -- | 41.9 | 188 | -- | 300 | < 240 U | **225** | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-64-20220316 | 3/16/2022 | 64 | N | 4602544241 | Treatment | Deep | 39.9 | 66.2 | < 10.0 U | < 50.0 U | -367.3 | 0.05 | 8.92 | 1.202 | -- | 1.37 | -- | 49.9 | 85.1 F1 | -- | 430 | < 120 U | **207** | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-64-20220414 | 4/14/2022 | 64 | N | 4602562981 | Treatment | Deep | **117** | **165** | < 10.0 U | < 10.0 U | -321.3 | 1.31 | 7.49 | 3.958 | 14.48 | 3.68 | -- | 185 | 56.5 | -- | 1300 | **808** | **741** | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-64.0-20220511 | 5/11/2022 | 64 | N | 4602579551 | Treatment | Deep | **182** | **198** | < 20.0 U | < 10.0 U | -316.2 | 2.83 | 7.25 | 2.372 | 15.95 | 4.55 | -- | 321 | 5.19 | -- | 6300 | **2390** | **1220** | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-64-20220610 | 6/10/2022 | 64 | N | 4602598551 | Treatment | Deep | -- | **215** | -- | < 20.0 U | 185.5 | 5.26 | 7.49 | 2.006 | 16.34 | 3.47 | -- | 141 | 59.8 | -- | -- | -- | -- | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-64.0-20220713 | 7/13/2022 | 64 | N | 4602618361 | Treatment | Deep | -- | **174** | -- | < 10.0 U | -343.5 | 0.58 | 6.99 | 1.907 | 18.08 | 4.96 | -- | 259 | 3.32 | -- | -- | -- | -- | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-64-20220816 | 8/16/2022 | 64 | N | 4602639181 | Treatment | Deep | -- | **240** | -- | < 10.0 U | -291.8 | 9.63 | 6.89 | 2.279 | 19.12 | 9.03 | -- | 130 | 0.73 J | -- | -- | **1530** | **1020** | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-64-20220914 | 9/14/2022 | 64 | N | 4602654911 | Treatment | Deep | -- | **368** | -- | < 10.0 U | -319.7 | 2.06 | 7.04 | 2.179 | 17.95 | 1.23 | -- | 75.6 | 3.24 | -- | -- | **2180** | **985** | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-62.5-20221206 | 12/6/2022 | 62.5 | N | 4602707741 | Treatment | Deep | -- | **168** | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 32.8 | 2.11 J | -- | -- | -- | -- | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-62.5-20221213 | 12/13/2022 | 62.5 | N | 4602713971 | Treatment | Deep | -- | -- | -- | -- | -334.3 | 2.21 | 6.93 | 2.219 | 12.14 | 1.62 | -- | -- | -- | -- | -- | **2210** | **983** | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-65.4-20230220 | 2/20/2023 | 65.4 | N | 4602749361 | Post-Treatment | Deep | -- | **115** | -- | < 10.0 UJ | -167.3 | 0.93 | 7.15 | 1.934 | 13.59 | 2.29 | -- | 26.3 | 17.6 | 8.24 | -- | **543** | **1000** | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-65.4-20230614 | 6/14/2023 | 65.4 | N | 4602823061 | Post-Treatment | Deep | -- | **157** | -- | < 10.0 U | -60.6 | 6.49 | 7.08 | 2.308 | 17.9 | 4.65 | -- | 16.4 | 54.1 | 2.4 | -- | **1540** | **902** | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-65.4-20230818 | 8/18/2023 | 65.4 | N | 4602864961 | Post-Treatment | Deep | -- | **94.6** | -- | < 10.0 U | -268.7 | 3.92 | 7.03 | 1.934 | 19.13 | 1.01 | -- | 18.2 J- | 13.3 | 2.24 | -- | **1940** | **979** | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-65.4-20231117 | 11/17/2023 | 65.4 | N | JD77231 | Post-Treatment | Deep | -- | **75.8** | -- | 10 RA | -247.6 | 0.16 | 6.99 | 1.872 | 15.1 | 2.01 | -- | 13.4 | 53.0 | -- | -- | -- | -- | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-65.4-20240219 | 2/19/2024 | 65.4 | N | JD82732 | Post-Treatment | Deep | -- | 48.5 | -- | < 10 U | -252 | 0.64 | 7.11 | 1.927 | 10.2 | 0.97 | -- | 10.6 | 192 | -- | -- | -- | -- | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-65.4-20240524 | 5/24/2024 | 65.4 | N | JD89188 | Baseline | Deep | -- | 42.2 | -- | < 10 U | -432.2 | 0.48 | 7.1 | 2.451 | 19.5 | 0.4 | -- | 10.9 | 149 | -- | 7100 J | **647** | **533** | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-65.4-20240524-X | 5/24/2024 | 65.4 | FD | JD89188 | Baseline | Deep | -- | 39.1 | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | 12.7 | 150 | -- | 8910 J | **631** | **537** | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-AM-20240619 | 6/19/2024 | | N | JD90968 | Pilot Test | Deep | -- | -- | -- | -- | -234.9 | 0.4 | 7.16 | 2.227 | 20.7 | 6.37 | -- | 11.3 | -- | -- | -- | -- | -- | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-AM-20240626 | 6/26/2024 | | N | JD91289 | Pilot Test | Deep | -- | -- | -- | -- | -33.1 | 4.11 | 7.45 | 1.901 | 20.4 | 23.6 | -- | 11.6 | -- | -- | -- | -- | -- | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-65.4-20240723 | 7/23/2024 | 65.4 | N | JD92648 | Post-Treatment | Deep | 51.2 | 50.2 | < 10 U | < 10 U | -241.3 | 0.09 | 6.93 | 1.869 | 17.9 | 0.88 | -- | 13.7 | 149 | -- | -- | -- | -- | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-65.4-20240822 | 8/22/2024 | 65.4 | N | JD94712 | Post-Treatment | Deep | 50.6 | 55.0 | < 10 U | < 10 U | -199 | 0.33 | 6.99 | 1.84 | 19.8 | 1.98 | -- | 12.3 J- | 139 | -- | -- | -- | -- | -- |

https://aecom.sharepoint.com/sites/PPG/Shared Documents/Groundwater/500_Deliverables/RAPRs/2024-Q4/00_Report Components/Appendices/Appendix A - Analyt

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P2-MW-7D | 114-P2-MW-7D-65.4-20240912 | 9/12/2024 | 65.4 | N | JD95973 | Post-Treatment | Deep | 52.5 | 58.8 | < 10 U | < 10 U | -231.3 | 0.19 | 7.01 | 1.99 | 18.7 | 1.34 | -- | 13.0 | 135 | -- | -- | -- | -- | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-65.4-20241002 | 10/2/2024 | 65.4 | N | JD97277 | Post-Treatment | Deep | 56.2 | 51.7 | < 10 U | < 10 U | -214.5 | 0.45 | 6.96 | 1.84 | 19.2 | 1.3 | -- | 12.3 | 134 | -- | -- | -- | -- | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-65.4-20241108 | 11/8/2024 | 65.4 | N | JE131 | Post-Treatment | Deep | 50.3 | 51.8 | < 10 U | < 10 U | -228.1 | 0.19 | 6.86 | 2.25 | 17.5 | 0.71 | -- | 12.1 | 146 | -- | -- | -- | -- | -- |
| 114-P2-MW-7D | 114-P2-MW-7D-65.4-20241202 | 12/2/2024 | 65.4 | N | JE1724 | Post-Treatment | Deep | 52.9 | 57.6 | < 10 U | < 10 U | -170.3 | 0.23 | 6.97 | 1.96 | 13.8 | 1.78 | -- | 13.2 | 139 | -- | -- | -- | -- | -- |
| 114-P3-MW001D | 114-P3-MW001D-45.5-20211229 | 12/29/2021 | 45.5 | N | 4602499461 | Baseline | Deep (Lower) | 8.1 | < 4.0 U | < 10.0 U | < 10.0 U | -133 | 1.19 | 8.36 | 1.77 | 12.79 | 7.32 | -- | < 1.9 UB | **545** | < 1.0 U | 300 | 70.3 J | **500** | -- |
| 114-P3-MW001D | 114-P3-MW001D-45.5-20220301 | 3/1/2022 | 45.5 | N | 4602534221 | Treatment | Deep (Lower) | < 4.0 U | 2.7 J | < 10.0 U | < 10.0 U | -15.90 | 8.41 | 10.36 | 1.28 | 11.15 | 9.87 | -- | 3.3 | **454** | -- | -- | -- | -- | -- |
| 114-P3-MW001D | 114-P3-MW001D-45.5-20220616 | 6/16/2022 | 45.5 | N | 4602602381 | Treatment | Deep (Lower) | -- | 14.4 | -- | < 10.0 U | -86.9 | 0.17 | 9.37 | 1.73 | 16.06 | 2.0 | -- | 2.1 | **523** | -- | -- | -- | -- | -- |
| 114-P3-MW001D | 114-P3-MW001D-45.5-20220922 | 9/22/2022 | 45.5 | N | 4602660731 | Treatment | Deep (Lower) | -- | **2060** | -- | < 10.0 U | -20.5 | 0.48 | 10.65 | 1.532 | 17.14 | 7.47 | -- | 3.1 | **531** | -- | -- | -- | -- | -- |
| 114-P3-MW001D | 114-P3-MW001D-45.5-20221221 | 12/21/2022 | 45.5 | N | 4602718921 | Treatment | Deep (Lower) | -- | 4.6 | -- | < 10.0 U | -176.2 | 0.91 | 9.09 | 1.498 | 11.04 | 1.18 | -- | 2.8 | **593** | -- | -- | -- | -- | -- |
| 114-P3-MW001D | 114-P3-MW001D-45.5-20230324 | 3/24/2023 | 45.5 | N | 4602769361 | Treatment | Deep (Lower) | -- | 6.1 | -- | < 10.0 U | -234.8 | 0.15 | 9.11 | 1.719 | 12.20 | 8.59 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P3-MW001D | 114-P3-MW001D-45.5-20230626 | 6/26/2023 | 45.5 | N | 4602831381 | Treatment | Deep (Lower) | -- | 5.3 | -- | < 10.0 U | -113.9 | 0.43 | 7.91 | 1.867 | 18.71 | 3.17 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P3-MW001D | 114-P3-MW001D-45.5-20230921 | 9/21/2023 | 45.5 | N | 4602887321 | Treatment | Deep (Lower) | -- | 7.3 | -- | < 10.0 U | -151.7 | 0.26 | 8.42 | 1.899 | 18.04 | 3.8 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P3-MW001D | 114-P3-MW001D-45.5-20231220 | 12/20/2023 | 45.5 | N | JD79284 | Treatment | Deep (Lower) | -- | 7.3 B | -- | < 10 U | -403.9 | 0.16 | 7.9 | 2.088 | 13.5 | 1.26 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P3-MW001D | 114-P3-MW001D-45.5-20240321 | 3/21/2024 | 45.5 | N | JD84944 | Treatment | Deep (Lower) | -- | 42.6 | -- | < 10 U | -134.7 | 0.02 | 8.33 | 1.89 | 12.2 | 2.17 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P3-MW001D | 114-P3-MW001D-45.5-20240524 | 5/24/2024 | 45.5 | N | JD89188 | Baseline | Deep (Lower) | -- | 6.6 J | -- | < 10 U | -328.7 | 0.33 | 8.29 | 2.29 | 20.8 | 0.85 | -- | 5.3 | **587** | -- | 350 | **327** | **615** | -- |
| 114-P3-MW001D | 114-P3-MW001D-PM-20240619 | 6/19/2024 | | N | JD90968 | Pilot Test | Deep (Lower) | -- | -- | -- | -- | -140.4 | 0.34 | 8.73 | 2.084 | 21.7 | 7.17 | -- | 4.1 | -- | -- | -- | -- | -- | -- |
| 114-P3-MW001D | 114-P3-MW001D-PM-20240626 | 6/26/2024 | | N | JD91289 | Pilot Test | Deep (Lower) | -- | -- | -- | -- | -300.5 | 0.78 | 8.82 | 1.923 | 19.7 | 7.46 | -- | 3.1 | -- | -- | -- | -- | -- | -- |
| 114-P3-MW001D | 114-P3-MW001D-45.5-20240729 | 7/29/2024 | 45.5 | N | JD93029 | Post-Treatment | Deep (Lower) | 6.4 B | 7.8 B | < 10 U | < 10 U | -184.3 | 1.01 | 8.4 | 1.9 | 19.8 | 2.86 | -- | 3.5 | **670** | -- | -- | -- | -- | -- |
| 114-P3-MW001D | 114-P3-MW001D-45.5-20240819 | 8/19/2024 | 45.5 | N | JD94429 | Post-Treatment | Deep (Lower) | 5.7 B | 7.4 B | < 10 U | < 10 U | -153.6 | 0.42 | 8.19 | 2.15 | 21.6 | 1.42 | -- | 3.8 | **691** | -- | -- | -- | -- | -- |
| 114-P3-MW001D | 114-P3-MW001D-45.5-20240913 | 9/13/2024 | 45.5 | N | JD96078 | Post-Treatment | Deep (Lower) | 7.2 B | 9.5 B | < 10 U | < 10 U | -107.8 | 0.21 | 7.32 | 1.88 | 21 | 1.73 | -- | 3.6 | **524** | -- | -- | -- | -- | -- |
| 114-P3-MW001D | 114-P3-MW001D-45.5-20241007 | 10/7/2024 | 45.5 | N | JD97615 | Post-Treatment | Deep (Lower) | 7.4 B | 7.5 B | 2.6 B | 6.0 B | -133 | 0.33 | 7.62 | 1.84 | 18.1 | 0.94 | -- | 4.4 | **407** | -- | -- | -- | -- | -- |
| 114-P3-MW001D | 114-P3-MW001D-45.5-20241108 | 11/8/2024 | 45.5 | N | JE131 | Post-Treatment | Deep (Lower) | 10.1 | 12.5 | < 10 U | 3.7 B | -198.9 | 0.29 | 6.92 | 2.22 | 19.1 | 2.63 | -- | 5.0 | **265** | -- | -- | -- | -- | -- |
| 114-P3-MW001D | 114-P3-MW001D-45.5-20241202 | 12/2/2024 | 45.5 | N | JE1724 | Post-Treatment | Deep (Lower) | 8.8 B | 9.7 B | < 10 U | < 10 U | -138.8 | 0.55 | 7.36 | 1.69 | 13.6 | 2.11 | -- | 4.9 | **293** | -- | -- | -- | -- | -- |
| 114-P3-MW005D | 114-P3-MW005D-50.75-20211229 | 12/29/2021 | 50.75 | N | 4602499461 | Baseline | Deep (Lower) | **135000** | **137000** | **122000** | **122000** | 162.0 | 0.59 | 7.74 | 5.08 | 13.82 | 4.12 | -- | 3.9 JB | **308** | < 1.0 U | 6100 | **< 600 U** | **274** | -- |
| 114-P3-MW005D | 114-P3-MW005D-50.75-20220301 | 3/1/2022 | 50.75 | N | 4602534221 | Treatment | Deep (Lower) | **44100** | **44200** | **46200** | **46200** | 145.30 | 1.58 | 7.51 | 5.67 | 10.45 | 9.12 | -- | 2.4 | **276** | -- | -- | -- | -- | -- |
| 114-P3-MW005D | 114-P3-MW005D-50.75-20220616 | 6/16/2022 | 50.75 | N | 4602602381 | Treatment | Deep (Lower) | -- | **9060** | -- | **8950** | 139.5 | 0.40 | 7.59 | 7.555 | 19.08 | 1.50 | -- | -- | 211 | -- | -- | -- | -- | -- |
| 114-P3-MW005D | 114-P3-MW005D-50.8-20220922 | 9/22/2022 | 50.8 | N | 4602660731 | Treatment | Deep (Lower) | -- | < 4.0 U | -- | **9660** | 85.2 | 9.88 | 7.77 | 4.195 | 19.56 | 6.59 | -- | 3.6 | 194 | -- | -- | -- | -- | -- |
| 114-P3-MW005D | 114-P3-MW005D-50.75-20221221 | 12/21/2022 | 50.75 | N | 4602718921 | Treatment | Deep (Lower) | -- | **21200** | -- | **24000** | 75.0 | 0.29 | 7.96 | 4.690 | 13.19 | 1.19 | -- | 4.4 | **261** | -- | -- | -- | -- | -- |
| 114-P3-MW005D | 114-P3-MW005D-50.75-20230324 | 3/24/2023 | 50.75 | N | 4602769361 | Treatment | Deep (Lower) | -- | **219000** | -- | **280000** | 197.2 | 0.32 | 7.63 | 4.581 | 12.02 | 4.24 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P3-MW005D | 114-P3-MW005D-50.75-20230627 | 6/27/2023 | 50.75 | N | 4602831921 | Treatment | Deep (Lower) | -- | **193000** | -- | **227000** | 48.3 | 0.4 | 7.31 | 4.518 | 20.2 | 3.98 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P3-MW005D | 114-P3-MW005D-50.75-20230921 | 9/21/2023 | 50.75 | N | 4602887321 | Treatment | Deep (Lower) | -- | **270000** | -- | **290000** | 119.1 | 0.14 | 7.3 | 5.611 | 19.1 | 0.23 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P3-MW005D | 114-P3-MW005D-50.75-20231221 | 12/21/2023 | 50.75 | N | JD79357 | Treatment | Deep (Lower) | -- | **86300** | -- | **156000** | 44.1 | 0.52 | 7.3 | 4.953 | 10.4 | 1.22 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P3-MW005D | 114-P3-MW005D-50.75-20240321 | 3/21/2024 | 50.75 | N | JD84944 | Treatment | Deep (Lower) | -- | **250000** | -- | **231000** | 113.2 | 0.33 | 7.14 | 5.24 | 9.5 | 0.9 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P3-MW005D | 114-P3-MW005D-50.3-20240530 | 5/30/2024 | 50.3 | N | JD89452 | Baseline | Deep (Lower) | **206000** | **210000** | **254000** | **281000** | 99.7 | 0.22 | 7.04 | 6.29 | 17.4 | 0.78 | -- | < 5.0 U | **600** | -- | 2150 | < 250 U | **386** | -- |
| 114-P3-MW005D | 114-P3-MW005D-50.3-20240726 | 7/26/2024 | 50.3 | N | JD92936 | Post-Treatment | Deep (Lower) | **181000** | **179000** | **195000** | **198000** | -42.3 | 0.15 | 7 | 5.52 | 19.5 | 0.23 | -- | 5.3 | **606** | -- | -- | -- | -- | -- |
| 114-P3-MW005D | 114-P3-MW005D-50.3-20240821 | 8/21/2024 | 50.3 | N | JD94597 | Post-Treatment | Deep (Lower) | **35600** | **34800** | **35100** | **34800** | -14.5 | 0.23 | 7.29 | 4.28 | 18.8 | 5.97 | -- | 5.1 | **401** | -- | -- | -- | -- | -- |
| 114-P3-MW005D | 114-P3-MW005D-50.3-20240913 | 9/13/2024 | 50.3 | N | JD96078 | Post-Treatment | Deep (Lower) | **175000** | **176000** | **192000** | **184000** | 89.8 | 0.41 | 7.2 | 4.69 | 20.7 | 0.63 | -- | 4.0 | **614** | -- | -- | -- | -- | -- |
| 114-P3-MW005D | 114-P3-MW005D-50.3-20241002 | 10/2/2024 | 50.3 | N | JD97277 | Post-Treatment | Deep (Lower) | **177000** | **183000** | **162000** | **185000** | 133.5 | 0.35 | 7.25 | 5.64 | 19.4 | 0.31 | -- | 4.4 B | **632** | -- | -- | -- | -- | -- |
| 114-P3-MW005D | 114-P3-MW005D-50.3-20241107 | 11/7/2024 | 50.3 | N | JD99895 | Post-Treatment | Deep (Lower) | **133000** | **98400** | **142000** | **143000** | 54.7 | 0.25 | 7.3 | 5.82 | 21 | 0.53 | -- | 4.0 B | **496** | -- | -- | -- | -- | -- |
| 114-P3-MW005D | 114-P3-MW005D-50.3-20241203 | 12/3/2024 | 50.3 | N | JE1799 | Post-Treatment | Deep (Lower) | **136000** | **143000** | **141000** | **174000** | 93.7 | 0.2 | 7.12 | 5.69 | 13.8 | 6.49 | -- | < 40 U | **522** | -- | -- | -- | -- | -- |
| ***Weathered Bedrock Remedial Action*** | | | | | | | | | | | | | | | | | | | | | | | | | |
| ***Injection*** | | | | | | | | | | | | | | | | | | | | | | | | | |
| 114-PW-01T | 114-PW-01T-69.0-20240530 | 5/30/2024 | 69 | N | JD89452 | Baseline | Basal Till | **33900** | **35800** | **38700** | **39100** | 129.5 | 0.53 | 7.66 | 1.809 | 17.1 | 9.01 | -- | < 5.0 U | 236 | -- | 134 | < 250 U | **133** | -- |
| 114-PW-01T | 114-PW-01T-74.0-20240530 | 5/30/2024 | 74 | N | JD89452 | Baseline | Basal Till | **41800** | **48400** | **47300** | **48600** | 54.8 | 0.58 | 7.79 | 1.823 | 18.3 | 8.05 | -- | 2.1 | **257** | -- | 134 | < 250 U | **133** | -- |
| 114-PW-01WR | 114-PW-01WR-83.5-20240603 | 6/3/2024 | 83.5 | N | JD89648 | Baseline | Weathered Bedrock | **15000** | **14700** | **16000** | **16100** | -393.8 | 0.21 | 8.15 | 1.209 | 20.3 | 8.76 | -- | < 5.0 U | 225 | -- | 282 | < 250 U | **50.3** | -- |
| 114-PW-01WR | 114-PW-01WR-88.5-20240603 | 6/3/2024 | 88.5 | N | JD89648 | Baseline | Weathered Bedrock | **29400** | **29800** | **33000** | **35100** | -407.7 | 0.17 | 7.87 | 1.394 | 21.2 | 9.75 | -- | < 5.0 U | 244 | -- | 273 | < 250 U | **60.9** | -- |
| 114-PW-02T | 114-PW-02T-70.5-20240603 | 6/3/2024 | 70.5 | N | JD89648 | Baseline | Basal Till | **142000** | **150000** | **178000** | **191000** | 4.3 | 1.63 | 7.79 | 2.476 | 22.6 | 9.96 | -- | < 5.0 U | **491** | -- | 507 | < 250 U | **56.7** | -- |
| 114-PW-02WR | 114-PW-02WR-88.8-20240606 | 6/6/2024 | 88.8 | N | JD89884 | Baseline | Weathered Bedrock | **98400** | **105000** | **110000** | **106000** | -197.3 | 0.4 | 7.9 | 1.761 | 21 | 1.3 | -- | 2.5 | **260** | -- | 91.7 | < 250 U | 33.9 | -- |
| 114-PW-02WR | 114-PW-02WR-93.8-20240606 | 6/6/2024 | 93.8 | N | JD89884 | Baseline | Weathered Bedrock | **121000** | **110000** | **104000** | **110000** | -281.1 | 0.19 | 7.79 | 1.809 | 20.5 | 3.5 | -- | 2.5 | **265** | -- | 103 | < 250 U | 36.7 | -- |
| 114-PW-03T | 114-PW-03T-63.1-20240605 | 6/5/2024 | 63.1 | N | JD89782 | Baseline | Basal Till | **140000** | **143000** | **140000** | **144000** | 84.6 | 0.39 | 8.04 | 4.524 | 18 | 6.04 | -- | 7.7 | **916** | -- | 650 | < 250 U | **186** | -- |
| 114-PW-03T | 114-PW-03T-68.1-20240605 | 6/5/2024 | 68.1 | N | JD89782 | Baseline | Basal Till | **132000** | **138000** | **162000** | **159000** | 67.3 | 0.25 | 8.08 | 4.511 | 18.3 | 6.54 | -- | 7.8 | **881** | -- | 748 | < 250 U | **171** | -- |
| 114-PW-03WR | 114-PW-03WR-87.0-20240620 | 6/20/2024 | 87 | N | JD90827 | Baseline | Weathered Bedrock | **440000** | **432000** | **417000** | **457000** | 128.6 | 0.94 | 7.13 | 3217 | 17.8 | 10.7 | -- | < 5.0 U | **427** | -- | 261 | **< 250000 U** | **< 10000 U** | -- |
| 114-PW-03WR | 114-PW-03WR-92.0-20240620 | 6/20/2024 | 92 | N | JD90827 | Baseline | Weathered Bedrock | **425000** | **418000** | **398000** | **460000** | 118.5 | 0.55 | 7.13 | 3216 | 17.8 | 9.48 | -- | 3.7 J | **452** | -- | 348 | **< 250000 U** | **< 10000 U** | -- |
| 114-PW-03WR | 114-PW-03WR-92.0-20240620-X | 6/20/2024 | 92 | FD | JD90827 | Baseline | Weathered Bedrock | **399000** | **452000** | **419000** | **498000** | -- | -- | -- | -- | -- | -- | -- | 3.6 J | **447** | -- | 312 | **< 250000 U** | **< 10000 U** | -- |
| 114-PW-04T | 114-PW-04T-69.0-20240604 | 6/4/2024 | 69 | N | JD89719 | Baseline | Basal Till | 55.4 | **142** | < 10 U | < 10 U | -73.9 | 0.37 | 7.05 | 1817 | 20.9 | 14.3 | -- | 9.2 | 235 | -- | 3530 J | **1740** | **379** | -- |
| 114-PW-04T | 114-PW-04T-74.0-20240604 | 6/4/2024 | 74 | N | JD89719 | Baseline | Basal Till | 47.2 | **108** | < 10 U | < 10 U | -67.4 | 0.42 | 7.05 | 1839 | 19.4 | 28.8 | -- | 9.8 | **253** | -- | 3770 J | **1640** | **398** | -- |
| 114-PW-04WR | 114-PW-04WR-50.0-20240621 | 6/21/2024 | 50 | N | JD90888 | Baseline | Weathered Bedrock | **6160** | **6320** | **7100** | **6900** | -89.9 | 2.24 | 8.49 | 2318 | 19.5 | 14.8 | -- | 3.1 | **507** | -- | 673 | < 250 U | **112** | -- |
| 114-PW-04WR | 114-PW-04WR-55.0-20240621 | 6/21/2024 | 55 | N | JD90888 | Baseline | Weathered Bedrock | **7260** | **7240** | **7400** | **7400** | -73.4 | 1.04 | 8.18 | 2355 | 19.9 | 9.81 | -- | 2.2 | **542** | -- | 705 | < 250 U | **125** | -- |
| 114-PW-05WR | 114-PW-05WR-86.0-20240606 | 6/6/2024 | 86.9 | N | JD89884 | Baseline | Weathered Bedrock | **6280** | **4590** | **7000** | **6700** | -457.2 | 0.3 | 7.83 | 1019 | 20.2 | 8.68 | -- | 2.1 | 196 | -- | 61.2 | < 250 U | **51.0** | -- |
| 114-PW-05WR | 114-PW-05WR-91.9-20240606 | 6/6/2024 | 91.9 | N | JD89884 | Baseline | Weathered Bedrock | **12400** | **13000** | **12600** | **12900** | -322.4 | 0.27 | 7.74 | 1045 | 19.4 | 19.2 | -- | 1.8 | 201 | -- | 90.6 | < 250 U | **60.6** | -- |
| 114-PW-06WR | 114-PW-06WR-81.5-20240603 | 6/3/2024 | 81.5 | N | JD89648 | Baseline | Weathered Bedrock | **752** | **766** | **780** | **760** | -242 | 0.31 | 8.08 | 1.074 | 22 | 3.58 | -- | 1.5 | 184 | -- | 6.31 | < 250 U | **86.5** | -- |
| 114-PW-06WR | 114-PW-06WR-86.5-20240603 | 6/3/2024 | 86.5 | N | JD89648 | Baseline | Weathered Bedrock | **908** | **901** | **860** | **910** | -275 | 0.23 | 8.05 | 1.096 | 21.4 | 5.31 | -- | 1.6 | 182 | -- | 4.09 | < 250 U | **78.8** | -- |
| 114-PW-07WR | 114-PW-07WR-72.0-20240612 | 6/12/2024 | 72 | N | JD90312 | Baseline | Weathered Bedrock | 16.8 | 34.7 | 8.4 J | 6.1 J | -201.8 | 0.27 | 9.16 | 0.85 | 18 | 9.81 | -- | 1.4 | **270** | -- | 157 J | < 250 U | 13.0 | -- |
| 114-PW-07WR | 114-PW-07WR-77.0-20240612 | 6/12/2024 | 77 | N | JD90312 | Baseline | Weathered Bedrock | **443** | **479** | **490** | **490** | -204.8 | 0.17 | 9.06 | 0.866 | 18.6 | 9.47 | -- | 1.4 | **263** | -- | 132 J | < 250 U | 16.2 | -- |
| ***Monitoring*** | | | | | | | | | | | | | | | | | | | | | | | | | |
| 114-MW76WR | 114-MW76WR-60.0-20240521 | 5/21/2024 | 60 | N | JD88878 | Baseline | Weathered Bedrock | -- | **87800** | -- | **83400** | -80.4 | 2.99 | 11.77 | 5.09 | 21.7 | 3.66 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW76WR | 114-MW76WR-57.5-20240528 | 5/28/2024 | 57.5 | N | JD89297 | Baseline | Weathered Bedrock | **74500** | **76500** | **78000** | **85700** | -68.4 | 0.44 | 12.01 | 4.106 | 18.5 | 1.52 | -- | 9.0 | **405** | -- | 466 | < 250 U | < 10 U | -- |
| 114-MW76WR | 114-MW76WR-62.5-20240528 | 5/28/2024 | 62.5 | N | JD89297 | Baseline | Weathered Bedrock | **76200** | **71100** | **67700** | **74200** | -80.5 | 0.4 | 12.07 | 4.083 | 18.9 | 1.33 | -- | 9.0 | **334** | -- | 614 | < 250 U | < 10 U | -- |
| 114-MW76WR | 114-MW76WR-PM-20240715 | 7/15/2024 | | N | JD93226 | Pilot Test | Weathered Bedrock | -- | -- | -- | -- | -22.5 | 0.23 | 11.63 | 3.934 | 20.2 | 3.81 | -- | 9.6 | -- | -- | -- | -- | -- | -- |
| 114-MW76WR | 114-MW76WR-AM-20240725 | 7/25/2024 | | N | JD93226 | Pilot Test | Weathered Bedrock | -- | -- | -- | -- | -288.7 | 0.33 | 12.05 | 4.643 | 18.4 | 1.66 | -- | 7.2 | -- | -- | -- | -- | -- | -- |
| 114-MW76WR | 114-MW76WR-57.0-20240805 | 8/5/2024 | 57 | N | JD93435 | Treatment | Weathered Bedrock | **50200** | **49500** | **62300** | **64700** | -228.6 | 0.16 | 11.98 | 4.44 | 20.3 | 0.98 | -- | 6.9 | **329** | -- | -- | -- | -- | -- |
| 114-MW76WR | 114-MW76WR-62.0-20240806 | 8/6/2024 | 62 | N | JD93519 | Treatment | Weathered Bedrock | **45700** | **47400** | **64400** | **66000** | -253.8 | 0.36 | 12.05 | 4.58 | 19.9 | 3.83 | -- | 7.4 | **320** | -- | -- | -- | -- | -- |
| 114-MW76WR | 114-MW76WR-57.0-20240904 | 9/4/2024 | 57 | N | JD95426 | Treatment | Weathered Bedrock | **53900** | **50800** | **54600** | **57200** | 32.4 | 0.89 | 12.55 | 4671 | 19.9 | 1.75 | -- | 7.6 | **282** | -- | -- | -- | -- | -- |
| 114-MW76WR | 114-MW76WR-57.0-20241016 | 10/16/2024 | 57 | N | JD98353 | Treatment | Weathered Bedrock | **51300** | **54400** | **55600** | **56500** | 84.9 | 0.34 | 11.99 | 4.19 | 16.6 | 2.02 | -- | 16.8 | **268** | -- | -- | -- | -- | -- |
| 114-MW76WR | 114-MW76WR-57.0-20241104 | 11/4/2024 | 57 | N | JD99628 | Treatment | Weathered Bedrock | **51200** | **49900** | **51500** | **52300** | -376.2 | 0.45 | 12.17 | 4.50 | 16.3 | 0.62 | -- | 19.0 | **259** | -- | -- | -- | -- | -- |
| 114-MW76WR | 114-MW76WR-57.0-20241205 | 12/5/2024 | 57 | N | JE2028 | Treatment | Weathered Bedrock | **35800** | **34000** | **43800** | **45800** | -145.1 | 0.13 | 12.05 | 3.64 | 12.3 | 3.33 | -- | 47.0 | 233 | -- | -- | -- | -- | -- |
| 114-MW77WR | 114-MW77WR-60.0-20240521 | 5/21/2024 | 60 | N | JD88878 | Baseline | Weathered Bedrock | -- | **27300** | -- | **30300** | -182.2 | 0.75 | 11.65 | 2.08 | 17.5 | 8.56 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW77WR | 114-MW77WR-57.0-20240528 | 5/28/2024 | 57 | N | JD89297 | Baseline | Weathered Bedrock | **20600** | **18700** | **21800** | **22200** | -138.5 | 0.32 | 12.16 | 2.236 | 19 | 3.16 | -- | 4.4 J | 141 | -- | 142 | < 250 U | < 10 U | -- |
| 114-MW77WR | 114-MW77WR-62.0-20240528 | 5/28/2024 | 62 | N | JD89297 | Baseline | Weathered Bedrock | **19300** | **18400** | **20600** | **21400** | -142.6 | 0.26 | 12.2 | 2.358 | 18.8 | 2.38 | -- | 3.9 J | 130 | -- | 130 | < 250 U | < 10 U | -- |
| 114-MW77WR | 114-MW77WR-AM-20240715 | 7/15/2024 | | N | JD93226 | Pilot Test | Weathered Bedrock | -- | -- | -- | -- | -72.7 | 0.33 | 11.78 | 2.354 | 20.9 | 26.8 | -- | 3.6 B | -- | -- | -- | -- | -- | -- |
| 114-MW77WR | 114-MW77WR-AM-20240725 | 7/25/2024 | | N | JD93226 | Pilot Test | Weathered Bedrock | -- | -- | -- | -- | -269.9 | 0.26 | 12.07 | 2.767 | 18.7 | 5.74 | -- | 3.9 B | -- | -- | -- | -- | -- | -- |
| 114-MW77WR | 114-MW77WR-57.0-20240805 | 8/5/2024 | 57 | N | JD93435 | Treatment | Weathered Bedrock | **11100** | **11100** | **17300** | **15900** | -216.4 | 0.08 | 11.88 | 2.66 | 20.5 | 0.8 | -- | < 5.0 U | 136 | -- | -- | -- | -- | -- |
| 114-MW77WR | 114-MW77WR-62.0-20240805 | 8/5/2024 | 62 | N | JD93435 | Treatment | Weathered Bedrock | **9430** | **10000** | **11500** | **11600** | -208.1 | 0.11 | 11.94 | 2.78 | 19.3 | 0.58 | -- | < 5.0 U | 96.6 | -- | -- | -- | -- | -- |
| 114-MW77WR | 114-MW77WR-57.0-20240903 | 9/3/2024 | 57 | N | JD95322 | Treatment | Weathered Bedrock | **16500** | **17900** | **19000** | **19300** | -146.7 | 0.19 | 11.78 | 2.00 | 22.6 | 0.63 | -- | 2.7 | 159 | -- | -- | -- | -- | -- |
| 114-MW78WR | 114-MW78WR-79.0-20240522 | 5/22/2024 | 79 | N | JD88951 | Baseline | Weathered Bedrock | -- | 4.9 J | < 10 U | < 10 U | -124.1 | 0.69 | 10.28 | 1.483 | 19.9 | 13.9 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW78WR | 114-MW78WR-76.5-20240529 | 5/29/2024 | 76.5 | N | JD89361 | Baseline | Weathered Bedrock | 5.7 J | 5.6 J | < 10 U | < 10 U | -63.6 | 0.83 | 9.51 | 1.146 | 17.2 | 6.15 | -- | 4.3 | **448** | -- | 131 | < 250 U | < 10 U | -- |
| 114-MW78WR | 114-MW78WR-81.5-20240529 | 5/29/2024 | 81.5 | N | JD89361 | Baseline | Weathered Bedrock | 5.9 J | 4.8 J | < 10 U | < 10 U | -102 | 0.61 | 10.09 | 1.162 | 17.2 | 3.35 | -- | 3.6 | **444** | -- | 144 | < 250 U | < 10 U | -- |
| 114-MW78WR | 114-MW78WR-AM-20240711 | 7/11/2024 | | N | JD93226 | Pilot Test | Weathered Bedrock | -- | -- | -- | -- | -84.5 | 0.25 | 10.25 | 1.345 | 19.5 | 3.73 | -- | 3.3 | -- | -- | -- | -- | -- | -- |
| 114-MW78WR | 114-MW78WR-AM-20240724 | 7/24/2024 | | N | JD93226 | Pilot Test | Weathered Bedrock | -- | -- | -- | -- | -197.6 | 0.38 | 10.47 | 1.333 | 18.5 | 2.02 | -- | 3.2 | -- | -- | -- | -- | -- | -- |
| 114-MW78WR | 114-MW78WR-76.0-20240806 | 8/6/2024 | 76 | N | JD93519 | Treatment | Weathered Bedrock | 3.7 B | 5.2 B | < 10 U | < 10 U | -19.1 | 0.9 | 10.19 | 1.37 | 23.4 | 1.14 | -- | 3.8 | **437** | -- | -- | -- | -- | -- |
| 114-MW78WR | 114-MW78WR-81.0-20240806 | 8/6/2024 | 81 | N | JD93519 | Treatment | Weathered Bedrock | 4.8 B | 5.5 B | < 10 U | < 10 U | -57.9 | 5.78 | 10.34 | 1.38 | 20.6 | 1.19 | -- | 3.9 | **428** | -- | -- | -- | -- | -- |
| 114-MW78WR | 114-MW78WR-81.0-20240905 | 9/5/2024 | 81 | N | JD95510 | Treatment | Weathered Bedrock | 6.5 B | 5.7 B | < 10 U | < 10 U | -238.1 | 0.32 | 11.75 | 1.89 | 21.5 | 3.93 | -- | 4.3 | **361** | -- | -- | -- | -- | -- |
| 114-MW78WR | 114-MW78WR-81.0-20240930 | 9/30/2024 | 81 | N | JD97124 | Treatment | Weathered Bedrock | 3.1 B | 4.5 B | < 10 U | < 10 U | -92.2 | 0.13 | 10.74 | 1.39 | 19.9 | 1.96 | -- | 4.0 | **398** | -- | -- | -- | -- | -- |
| 114-MW78WR | 114-MW78WR-81.0-20241104 | 11/4/2024 | 81 | N | JD99628 | Treatment | Weathered Bedrock | < 10 U | < 10 U | < 10 U | < 10 U | -2.3 | 0.63 | 11.51 | 1.69 | 17.7 | 2.5 | -- | 3.8 | **345** | -- | -- | -- | -- | -- |
| 114-MW78WR | 114-MW78WR-81.0-20241205 | 12/5/2024 | 81 | N | JE2028 | Treatment | Weathered Bedrock | 3.1 B | 4.0 B | < 10 U | < 10 U | -177.3 | 0.22 | 11.5 | 1.74 | 14 | 3.84 | -- | 5.0 | **367** | -- | -- | -- | -- | -- |
| 114-MW79WR | 114-MW79WR-73.0-20240619 | 6/19/2024 | 73 | N | JD90731 | Baseline | Weathered Bedrock | **2210** | **2120** | **2200** | **2200** | -201.9 | 0.72 | 11.47 | 1053 | 18.3 | 5.05 | -- | 2.6 | 140 | -- | 76.0 | < 250 U | < 10 U | -- |
| 114-MW79WR | 114-MW79WR-78.5-20240619 | 6/19/2024 | 78.5 | N | JD90731 | Baseline | Weathered Bedrock | **5120** | **4810** | **5500** | **5600** | -163.2 | 0.73 | 11.36 | 1126 | 17.4 | 19.4 | -- | 3.2 | 144 | -- | 110 | < 250 U | 3.8 J | -- |
| 114-MW79WR | 114-MW79WR-AM-20240624 | 6/24/2024 | | N | JD91289 | Pilot Test | Weathered Bedrock | -- | -- | -- | -- | -239.7 | 0.21 | 11.39 | 1.083 | 18.4 | 39.5 | -- | 2.4 | -- | -- | -- | -- | -- | -- |
| 114-MW79WR | 114-MW79WR-PM-20240626 | 6/26/2024 | | N | JD91289 | Pilot Test | Weathered Bedrock | -- | -- | -- | -- | -643.6 | 0.54 | 11.26 | 1.015 | 18.3 | 28.6 | -- | 1.7 | -- | -- | -- | -- | -- | -- |
| 114-MW79WR | 114-MW79WR-AM-20240711 | 7/11/2024 | | N | JD93226 | Pilot Test | Weathered Bedrock | -- | -- | -- | -- | -127.6 | 0.53 | 9.25 | 0.703 | 21.2 | 42.1 | -- | 2.4 | -- | -- | -- | -- | -- | -- |
| 114-MW79WR | 114-MW79WR-PM-20240711 | 7/11/2024 | | N | JD93226 | Pilot Test | Weathered Bedrock | -- | -- | -- | -- | -7.6 | 0.15 | 7.51 | 1.376 | 21 | 30.2 | -- | 861 | -- | -- | -- | -- | -- | -- |
| 114-MW79WR | 114-MW79WR-PM-20240716 | 7/16/2024 | | N | JD93226 | Pilot Test | Weathered Bedrock | -- | -- | -

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-MW79WR | 114-MW79WR-73.0-20240807 | 8/7/2024 | 73 | N | JD93595 | Treatment | Weathered Bedrock | **825** | **929** | 51 | 35 | -154.8 | 0.28 | 5.58 | 4.80 | 18.4 | 45.6 | -- | 3200 | 207 | -- | -- | -- | -- | -- |
| 114-MW79WR | 114-MW79WR-78.0-20240807 | 8/7/2024 | 78 | N | JD93595 | Treatment | Weathered Bedrock | **921** | **991** | 48 | 51 | -141.4 | 0.2 | 5.62 | 5 | 17.8 | 58.4 | -- | 943 | 206 | -- | -- | -- | -- | -- |
| 114-MW79WR | 114-MW79WR-78.0-20240807-X | 8/7/2024 | 78 | FD | JD93595 | Treatment | Weathered Bedrock | **967** | **982** | 45 | 53 | -- | -- | -- | -- | -- | -- | -- | 986 | 204 | -- | -- | -- | -- | -- |
| 114-MW79WR | 114-MW79WR-78.0-20240903 | 9/3/2024 | 78 | N | JD95322 | Treatment | Weathered Bedrock | **592** | **612** | < 10 U | < 10 U | -119.9 | 0.07 | 5.52 | 4450 | 24.7 | 43.6 | -- | 2470 | 84.0 | -- | -- | -- | -- | -- |
| 114-MW79WR | 114-MW79WR-78.0-20240903-X | 9/3/2024 | 78 | FD | JD95322 | Treatment | Weathered Bedrock | **593** | **625** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 2260 | 86.3 | -- | -- | -- | -- | -- |
| 114-MW79WR | 114-MW79WR-78.0-20240930 | 9/30/2024 | 78 | N | JD97124 | Treatment | Weathered Bedrock | **691** | **692** | 14 | 14 | -158.9 | 0.1 | 5.42 | 4.68 | 22.2 | 51 | -- | 2900 | 35.4 B | -- | -- | -- | -- | -- |
| 114-MW79WR | 114-MW79WR-78.0-20240930-X | 9/30/2024 | 78 | FD | JD97124 | Treatment | Weathered Bedrock | **722** | **691** | 7.2 B | 4.9 B | -- | -- | -- | -- | -- | -- | -- | 2900 | 21.0 B | -- | -- | -- | -- | -- |
| 114-MW79WR | 114-MW79WR-78.0-20241104 | 11/4/2024 | 78 | N | JD99628 | Treatment | Weathered Bedrock | **1090** | **997** | **110** | **110** | -330.4 | 0.14 | 5.66 | 6.72 | 18.7 | 28.5 | -- | 2950 | 29.5 B | -- | -- | -- | -- | -- |
| 114-MW79WR | 114-MW79WR-78.0-20241104-X | 11/4/2024 | 78 | FD | JD99628 | Treatment | Weathered Bedrock | **1030** | **994** | 26 | 26 | -- | -- | -- | -- | -- | -- | -- | 2950 | 25.1 B | -- | -- | -- | -- | -- |
| 114-MW79WR | 114-MW79WR-78.0-20241204 | 12/4/2024 | 78 | N | JE1940 | Treatment | Weathered Bedrock | **679** | **698** | 7.8 B | 4.3 B | -237.7 | 0.05 | 5.66 | 4.16 | 12 | 38.7 | -- | 2420 | 19.4 B | -- | -- | -- | -- | -- |
| 114-PZ-66D | 114-PZ-66D-48.3-20240604 | 6/4/2024 | 48.3 | N | JD89719 | Baseline | Deep (Lower) | **9140** | **9640** | **10400** | **10100** | -197.7 | 0.23 | 8.21 | 1.98 | 19.8 | 3.03 | -- | < 5.0 U | **607** | -- | 438 J | < 250 U | **239** | -- |
| 114-PZ-66D | 114-PZ-66D-AM-20240619 | 6/19/2024 | | N | JD90968 | Pilot Test | Deep (Lower) | -- | -- | -- | -- | -22.7 | 0.33 | 8.25 | 1.799 | 18.6 | 817 | -- | 1.1 | -- | -- | -- | -- | -- | -- |
| 114-PZ-66D | 114-PZ-66D-AM-20240626 | 6/26/2024 | | N | JD91289 | Pilot Test | Deep (Lower) | -- | -- | -- | -- | -75 | 0.68 | 8.16 | 1.65 | 19.8 | 77.5 | -- | 1.0 | -- | -- | -- | -- | -- | -- |
| 114-PZ-66D | 114-PZ-66D-AM-20240715 | 7/15/2024 | | N | JD93226 | Pilot Test | Deep (Lower) | -- | -- | -- | -- | -27.8 | 0.56 | 8.03 | 1.481 | 21.1 | 33.8 | -- | 1.0 | -- | -- | -- | -- | -- | -- |
| 114-PZ-66D | 114-PZ-66D-AM-20240725 | 7/25/2024 | | N | JD93226 | Pilot Test | Deep (Lower) | -- | -- | -- | -- | 139.7 | 0.56 | 8.09 | 1.885 | 18.8 | 74.4 | -- | 1.1 | -- | -- | -- | -- | -- | -- |
| 114-PZ-66D | 114-PZ-66D-48.5-20240806 | 8/6/2024 | 48.5 | N | JD93519 | Treatment | Deep (Lower) | **6250** | **6570** | **8300** | **7500** | -188.3 | 0.31 | 8.45 | 1.52 | 20.2 | 0.59 | -- | < 5.0 U | **605** | -- | -- | -- | -- | -- |
| 114-PZ-66D | 114-PZ-66D-48.5-20240904 | 9/4/2024 | 48.5 | N | JD95426 | Treatment | Deep (Lower) | **8250** | **8020** | **9400** | **9600** | 11.4 | 0.61 | 8.2 | 1.87 | 19.3 | 5.73 | -- | 1.7 | **617** | -- | -- | -- | -- | -- |
| 114-PZ-66D | 114-PZ-66D-48.5-20240930 | 9/30/2024 | 48.5 | N | JD97124 | Treatment | Deep (Lower) | **1070** | **1060** | **1200** | **1200** | -84.7 | 0.21 | 8.2 | 1.77 | 20 | 0.51 | -- | 1.3 | **546** | -- | -- | -- | -- | -- |
| 114-PZ-66D | 114-PZ-66D-48.5-20241106 | 11/6/2024 | 48.5 | N | JD99782 | Treatment | Deep (Lower) | 40.0 | 41.1 | < 10 U | < 10 U | -281.6 | 0.25 | 7.46 | 2.36 | 20.5 | 1.21 | -- | 176 | 66.7 | -- | -- | -- | -- | -- |
| 114-PZ-66D | 114-PZ-66D-48.5-20241205 | 12/5/2024 | 48.5 | N | JE2028 | Treatment | Deep (Lower) | **97.5** | **102** | 11 | 11 | -30.2 | 0.67 | 6.67 | 3.11 | 12.5 | 3.43 | -- | 583 | 1.2 B | -- | -- | -- | -- | -- |
| 114-PZ-66D | 114-PZ-66D-48.5-20241205-X | 12/5/2024 | 48.5 | FD | JE2028 | Treatment | Deep (Lower) | **97.5** | **106** | 10 | 10 | -- | -- | -- | -- | -- | -- | -- | 552 | 2.2 | -- | -- | -- | -- | -- |
| 114-PZ-66I | 114-PZ-66I-39.8-20240531 | 5/31/2024 | 39.8 | N | JD89525 | Baseline | Intermediate | **465000** | **474000** | **558000** | **578000** | 161 | 0.36 | 7.49 | 5.73 | 17 | 0.89 | -- | 14.7 | **964** | -- | 1790 | < 250 U | **289** | -- |
| 114-PZ-66I | 114-PZ-66I-AM-20240619 | 6/19/2024 | | N | JD90968 | Pilot Test | Intermediate | -- | -- | -- | -- | 45 | 0.33 | 7.57 | 5.34 | 18.5 | 167 | -- | 15.0 | -- | -- | -- | -- | -- | -- |
| 114-PZ-66I | 114-PZ-66I-AM-20240626 | 6/26/2024 | | N | JD91289 | Pilot Test | Intermediate | -- | -- | -- | -- | 16.1 | 58 | 7.59 | 4.91 | 20.2 | 130 | -- | 7.5 | -- | -- | -- | -- | -- | -- |
| 114-PZ-66I | 114-PZ-66I-AM-20240627 | 6/27/2024 | | N | JD91289 | Pilot Test | Intermediate | -- | -- | -- | -- | 82.7 | 0.45 | 7.55 | 4.704 | 19.6 | 130 | -- | 14.9 | -- | -- | -- | -- | -- | -- |
| 114-PZ-66I | 114-PZ-66I-AM-20240715 | 7/15/2024 | | N | JD93226 | Pilot Test | Intermediate | -- | -- | -- | -- | 94.8 | 0.81 | 7.64 | 4.366 | 22 | 275 | -- | 12.8 | -- | -- | -- | -- | -- | -- |
| 114-PZ-66I | 114-PZ-66I-AM-20240725 | 7/25/2024 | | N | JD93226 | Pilot Test | Intermediate | -- | -- | -- | -- | 142.9 | 0.35 | 7.39 | 5.66 | 18.5 | 195 | -- | 12.7 | -- | -- | -- | -- | -- | -- |
| 114-PZ-66I | 114-PZ-66I-40.0-20240806 | 8/6/2024 | 40 | N | JD93519 | Treatment | Intermediate | **436000** | **417000** | **480000** | **503000** | -10 | 0.29 | 7.67 | 4.48 | 20 | 3.83 | -- | 14.5 | **902** | -- | -- | -- | -- | -- |
| 114-PZ-66I | 114-PZ-66I-40.0-20240904 | 9/4/2024 | 40 | N | JD95426 | Treatment | Intermediate | **527000** | **518000** | **576000** | **664000** | 87.4 | 0.36 | 7.53 | 5.36 | 22 | 4.35 | -- | 13.8 | **888** | -- | -- | -- | -- | -- |
| 114-PZ-66I | 114-PZ-66I-40.0-20241001 | 10/1/2024 | 40 | N | JD97187 | Treatment | Intermediate | **480000** | **456000** | **489000** | **498000** | 145.5 | 0.33 | 7.68 | 6.02 | 18.1 | 1.9 | -- | 13.2 | **915** | -- | -- | -- | -- | -- |
| 114-PZ-66I | 114-PZ-66I-40.0-20241105 | 11/5/2024 | 40 | N | JD99684 | Treatment | Intermediate | **352000** | **461000** | **566000** | **581000** | 86 | 0.26 | 7.77 | 5.91 | 19.4 | 1.58 | -- | 12.9 | **928** | -- | -- | -- | -- | -- |
| 114-PZ-66I | 114-PZ-66I-40.0-20241205 | 12/5/2024 | 40 | N | JE2028 | Treatment | Intermediate | **466000** | **474000** | **682000** | **707000** | 17.5 | 0.76 | 7.69 | 5.5 | 13 | 3.56 | -- | 14.3 | **943** | -- | -- | -- | -- | -- |
| 114-PZ-66T | 114-PZ-66T-69.8-20240531 | 5/31/2024 | 69.8 | N | JD89525 | Baseline | Basal Till | **140000 J** | **145000** | **222000 J** | **193000** | 134.5 | 0.48 | 6.98 | 2.666 | 17 | 1.62 | -- | 3.8 J | **406** | -- | 1050 | < 250 U | **133** | -- |
| 114-PZ-66T | 114-PZ-66T-AM-20240619 | 6/19/2024 | | N | JD90968 | Pilot Test | Basal Till | -- | -- | -- | -- | 74 | 0.4 | 7.05 | 2.261 | 19.2 | 44.1 | -- | 3.1 | -- | -- | -- | -- | -- | -- |
| 114-PZ-66T | 114-PZ-66T-AM-20240626 | 6/26/2024 | | N | JD91289 | Pilot Test | Basal Till | -- | -- | -- | -- | -40 | 12.3 | 7.2 | 1.942 | 19.5 | 6.06 | -- | < 5.0 U | -- | -- | -- | -- | -- | -- |
| 114-PZ-66T | 114-PZ-66T-AM-20240715 | 7/15/2024 | | N | JD93226 | Pilot Test | Basal Till | -- | -- | -- | -- | 2.46 | 2.48 | 7.09 | 1.635 | 21.6 | 18.7 | -- | 3.9 B | -- | -- | -- | -- | -- | -- |
| 114-PZ-66T | 114-PZ-66T-AM-20240725 | 7/25/2024 | | N | JD93226 | Pilot Test | Basal Till | -- | -- | -- | -- | 164.8 | 0.39 | 6.9 | 2.142 | 19 | 3.91 | -- | 7.0 | -- | -- | -- | -- | -- | -- |
| 114-PZ-66T | 114-PZ-66T-70.0-20240807 | 8/7/2024 | 70 | N | JD93595 | Treatment | Basal Till | **57400** | **55800** | **55200** | **55700** | -107.2 | 0.22 | 7.54 | 2.17 | 17.2 | 0.66 | -- | 79.2 | **305** | -- | -- | -- | -- | -- |
| 114-PZ-66T | 114-PZ-66T-70.0-20240905 | 9/5/2024 | 70 | N | JD95510 | Treatment | Basal Till | **309** | **278** | < 10 U | < 10 U | 130.2 | 0.16 | 6.67 | 2202 | 21.5 | 3 | -- | 315 | **280** | -- | -- | -- | -- | -- |
| 114-PZ-66T | 114-PZ-66T-70.0-20241001 | 10/1/2024 | 70 | N | JD97187 | Treatment | Basal Till | **804** | **799** | 7.0 B | 7.0 B | -212.9 | 0.1 | 6.56 | 3.71 | 19.2 | 1.91 | -- | 651 | 56.4 | -- | -- | -- | -- | -- |
| 114-PZ-66T | 114-PZ-66T-70.0-20241105 | 11/5/2024 | 70 | N | JD99684 | Treatment | Basal Till | **5620** | **5430** | < 10 U | 6.7 B | -164 | 0.25 | 5.88 | 4.08 | 17.9 | 1.83 | -- | 1210 | 7.2 | -- | -- | -- | -- | -- |
| 114-PZ-66T | 114-PZ-66T-70.0-20241206 | 12/6/2024 | 70 | N | JE2113 | Treatment | Basal Till | **780** | **829** | 4.4 B | 6.7 B | -18.1 | 0.26 | 5.91 | 3.03 | 11.5 | 1.72 | -- | 441 | < 20 U | -- | -- | -- | -- | -- |
| 114-MW80WR | 114-MW80WR-86.5-20240627 | 6/27/2024 | 86.5 | N | JD91283 | Baseline | Weathered Bedrock | 4.2 | 6.3 J | < 10 U | < 10 U | -469.3 | 0.33 | 8.91 | 0.808 | 20.9 | 9.6 | -- | 9.8 | 70.4 | -- | 11800 | 89.3 JB | 26.3 | -- |
| 114-MW80WR | 114-MW80WR-91.5-20240627 | 6/27/2024 | 91.5 | N | JD91283 | Baseline | Weathered Bedrock | < 10 U | 5.1 J | < 10 U | < 10 U | -441.1 | 0.11 | 8.65 | 0.812 | 19.1 | 9.47 | -- | 9.9 | 74.7 | -- | 8510 | 146 JB | 46.4 | -- |
| 114-MW80WR | 114-MW80WR-AM-20240711 | 7/11/2024 | | N | JD93226 | Pilot Test | Weathered Bedrock | -- | -- | -- | -- | -134.8 | 0.33 | 8.88 | 0.857 | 20.5 | 8.31 | -- | 7.8 | -- | -- | -- | -- | -- | -- |
| 114-MW80WR | 114-MW80WR-PM-20240724 | 7/24/2024 | | N | JD93226 | Pilot Test | Weathered Bedrock | -- | -- | -- | -- | -115.7 | 0.32 | 9.05 | 0.855 | 20.7 | 2.51 | -- | 8.3 | -- | -- | -- | -- | -- | -- |
| 114-MW80WR | 114-MW80WR-86.5-20240807 | 8/7/2024 | 86.5 | N | JD93595 | Treatment | Weathered Bedrock | < 10 U | < 10 U | < 10 U | < 10 U | -180.5 | 0.32 | 8.92 | 0.89 | 20.1 | 0.94 | -- | 9.5 | 78.6 | -- | -- | -- | -- | -- |
| 114-MW80WR | 114-MW80WR-91.5-20240807 | 8/7/2024 | 91.5 | N | JD93595 | Treatment | Weathered Bedrock | < 10 U | 4.5 B | < 10 U | < 10 U | -172.7 | 0.18 | 9.08 | 0.88 | 20.4 | 1.99 | -- | 9.5 | 80.1 | -- | -- | -- | -- | -- |
| 114-MW80WR | 114-MW80WR-91.5-20240905 | 9/5/2024 | 91.5 | N | JD95510 | Treatment | Weathered Bedrock | 6.0 B | 5.5 B | < 10 U | < 10 U | -147.9 | 0.35 | 9.32 | 0.79 | 22.5 | 4.72 | -- | 9.8 | 80.4 | -- | -- | -- | -- | -- |
| 114-MW80WR | 114-MW80WR-91.5-20240930 | 9/30/2024 | 91.5 | N | JD97124 | Treatment | Weathered Bedrock | < 10 U | 3.5 B | < 10 U | < 10 U | -122.2 | 0.15 | 9.15 | 0.85 | 18.5 | 1.46 | -- | 9.3 | 75.0 | -- | -- | -- | -- | -- |
| 114-MW80WR | 114-MW80WR-91.5-20241105 | 11/5/2024 | 91.5 | N | JD99684 | Treatment | Weathered Bedrock | < 10 U | 4.2 B | < 10 U | < 10 U | 19.9 | 0.25 | 9.01 | 0.82 | 17.9 | 2.09 | -- | 8.3 | 68.0 | -- | -- | -- | -- | -- |
| 114-MW80WR | 114-MW80WR-91.5-20241205 | 12/5/2024 | 91.5 | N | JE2028 | Treatment | Weathered Bedrock | < 10 U | 6.1 B | < 10 U | < 10 U | -167.9 | 0.14 | 9.09 | 0.95 | 13.3 | 3.12 | -- | 11.8 | 53.6 | -- | -- | -- | -- | -- |
| 114-MW53C | 114-MW53C-47.0-20200825 | 8/25/2020 | 47 | N | JD12215 | N/A | Weathered Bedrock | -- | **55000** | -- | **46700** | 104.00 | 0.94 | 7.00 | 2.46 | 21.09 | 4.12 | -- | 4.2 | -- | -- | -- | -- | -- | -- |
| 114-MW53C | 114-MW53C-47.5-20230703 | 7/3/2023 | 47.5 | N | 4602835471 | Bedrock Monitoring | Weathered Bedrock | -- | **39100** | -- | **37900 J** | 178.7 | 1.2 | 6.83 | 2.889 | 17.85 | 5.15 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW53C | 114-MW53C-47.5-20230703 | 7/3/2023 | 47.5 | N | 4602835472 | Bedrock Monitoring | Weathered Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.8 | **452** | -- | -- | < 120 U | -- | < 0.10 UHF |
| 114-MW53C | 114-MW53C-47.5-20230922 | 9/22/2023 | 47.5 | N | 4602888091 | Bedrock Monitoring | Weathered Bedrock | -- | **28400** | -- | **29200** | 97.6 | 0.9 | 7.52 | 3.332 | 20.8 | 6.9 | -- | 4.6 JB | **297** | -- | -- | < 120 U | -- | < 0.10 UJ |
| 114-MW53C | 114-MW53C-47.5-20231219 | 12/19/2023 | 47.5 | N | JD79185 | Bedrock Monitoring | Weathered Bedrock | -- | **14900 J** | -- | **20300 J** | 94.3 | 0.22 | 7.32 | 3.095 | 14.5 | 4.19 | -- | < 5.0 U | **371** | -- | -- | < 250 U | **286** | -- |
| 114-MW53C | 114-MW53C-47.5-20240319 | 3/19/2024 | 47.5 | N | JD84758 | Bedrock Monitoring | Weathered Bedrock | -- | **14100** | -- | **15500** | 20.9 | 5.59 | 7.23 | 2.51 | 9.4 | 9.95 | -- | 3.2 | **384** | -- | -- | -- | -- | 0.067 J |
| 114-MW53C | 114-MW53C-47.9-20240528 | 5/28/2024 | 47.9 | N | JD89297 | Baseline | Weathered Bedrock | **10900** | **11000** | **12700** | **12600** | 75.3 | 0.25 | 7.2 | 3.036 | 17.5 | 0.53 | -- | 4.6 J | **411** | -- | 2690 | < 250 U | **305** | -- |
| 114-MW53C | 114-MW53C-47.9-20240528 | 5/28/2024 | 47.9 | N | JD89297FR | Baseline | Weathered Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW53C | 114-MW53C-AM-20240711 | 7/11/2024 | | N | JD93226 | Pilot Test | Weathered Bedrock | -- | -- | -- | -- | 130.7 | 0.61 | 7.16 | 3.149 | 19.3 | 2.07 | -- | 5.4 | -- | -- | -- | -- | -- | -- |
| 114-MW53C | 114-MW53C-PM-20240716 | 7/16/2024 | | N | JD93226 | Pilot Test | Weathered Bedrock | -- | -- | -- | -- | -104.4 | 1.31 | 7.1 | 3.137 | 22 | 1.17 | -- | 5.6 | -- | -- | -- | -- | -- | -- |
| 114-MW53C | 114-MW53C-AM-20240724 | 7/24/2024 | | N | JD93226 | Pilot Test | Weathered Bedrock | -- | -- | -- | -- | -17.7 | 0.34 | 7.36 | 3.125 | 17.8 | 5.11 | -- | 4.4 | -- | -- | -- | -- | -- | -- |
| 114-MW53C | 114-MW53C-48.0-20240805 | 8/5/2024 | 48 | N | JD93435 | Treatment | Weathered Bedrock | **836** | **968** | < 10 U | 3.7 B | -77.7 | 0.09 | 6.2 | 4.02 | 23.7 | 3.5 | -- | 547 | **428** | -- | -- | -- | -- | -- |
| 114-MW53C | 114-MW53C-48.0-20240904 | 9/4/2024 | 48 | N | JD95426 | Treatment | Weathered Bedrock | **2750** | **3080** | **70** | 62 | -27.3 | 1.68 | 5.77 | 5591 | 20.4 | 2.71 | -- | 1780 | 123 | -- | -- | -- | -- | -- |
| 114-MW53C | 114-MW53C-48.0-20241001 | 10/1/2024 | 48 | N | JD97187 | Treatment | Weathered Bedrock | **1280** | **1410** | **290** | **340** | -147.1 | 0.16 | 5.93 | 4.15 | 17.8 | 4.68 | -- | 1530 | < 40 U | -- | -- | -- | -- | -- |
| 114-MW53C | 114-MW53C-48.0-20241104 | 11/4/2024 | 48 | N | JD99628 | Treatment | Weathered Bedrock | **994** | **1040** | 25 | 23 | -101.8 | 0.15 | 6.28 | 4.16 | 17.3 | 6.71 | -- | 860 | 18.9 B | -- | -- | -- | -- | -- |
| 114-MW53C | 114-MW53C-48.0-20241205 | 12/5/2024 | 48 | N | JE2028 | Treatment | Weathered Bedrock | **742** | **910** | **390** | **400** | -158.2 | 1.17 | 6.62 | 4.07 | 14.4 | 9.75 | -- | 924 | 3.7 | -- | -- | -- | -- | 179 |
| 114-MW75WR | 114-MW75WR-118.5-20240116 | 1/16/2024 | 118.5 | N | JD80633 | Bedrock Monitoring | Weathered Bedrock | < 10 U | < 10 U | < 10 U | < 10 U | -310.8 | 0.18 | 7.87 | 1.959 | 11.8 | 13.4 | -- | 5.9 | 60.5 | -- | -- | -- | -- | < 0.20 U |
| 114-MW75WR | 114-MW75WR-118.5-20240321 | 3/21/2024 | 118.5 | N | JD84943 | Bedrock Monitoring | Weathered Bedrock | -- | 1.6 J | -- | < 10 U | -197.9 | 0.24 | 7.66 | 1.847 | 10.6 | 1.53 | -- | 3.2 | 117 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW75WR | 114-MW75WR-118.0-20240530 | 5/30/2024 | 118 | N | JD89452 | Baseline | Weathered Bedrock | < 10 U | < 10 U | < 10 U | < 10 U | -202.1 | 0.32 | 7.59 | 2.038 | 15.5 | 1.57 | -- | 0.76 J | 127 | -- | 17.4 | < 250 U | **157** | < 0.20 UJ |
| 114-MW75WR | 114-MW75WR-AM-20240711 | 7/11/2024 | | N | JD93226 | Pilot Test | Weathered Bedrock | -- | -- | -- | -- | -340.3 | 0.03 | 6.63 | 1.926 | 21.5 | 158 | -- | 8.2 | -- | -- | -- | -- | -- | -- |
| 114-MW75WR | 114-MW75WR-AM-20240724 | 7/24/2024 | | N | JD93226 | Pilot Test | Weathered Bedrock | -- | -- | -- | -- | -32.9 | 0.19 | 7.61 | 2.054 | 18.7 | 9.62 | -- | 1.9 | -- | -- | -- | -- | -- | -- |
| 114-MW75WR | 114-MW75WR-118.0-20240807 | 8/7/2024 | 118 | N | JD93595 | Treatment | Weathered Bedrock | < 10 U | 7.2 B | 9.8 B | 8.6 B | -32.2 | 0.15 | 6.59 | 1.74 | 19.5 | 311 | -- | 30.6 | 105 | -- | -- | -- | -- | -- |
| 114-MW75WR | 114-MW75WR-118.0-20240906 | 9/6/2024 | 118 | N | JD95614 | Treatment | Weathered Bedrock | 5.3 B | < 10 U | < 10 U | < 10 U | -227.4 | 0.18 | 7.62 | 2.10 | 19.3 | 6.72 | -- | < 1.0 U | 126 | -- | -- | -- | -- | -- |
| 114-MW75WR | 114-MW75WR-118.0-20241001 | 10/1/2024 | 118 | N | JD97187 | Treatment | Weathered Bedrock | < 10 U | < 10 U | < 10 U | < 10 U | -255 | 0.16 | 7.73 | 2.35 | 19.9 | 3.74 | -- | 1.1 | 131 | -- | -- | -- | -- | -- |
| 114-MW75WR | 114-MW75WR-118.0-20241105 | 11/5/2024 | 118 | N | JD99684 | Treatment | Weathered Bedrock | < 10 U | < 10 U | < 10 U | < 10 U | -62.7 | 0.14 | 7.68 | 1.87 | 20.3 | 2.79 | -- | < 1.0 U | 130 | -- | -- | -- | -- | -- |
| 114-MW75WR | 114-MW75WR-118.0-20241204 | 12/4/2024 | 118 | N | JE1940 | Treatment | Weathered Bedrock | < 10 U | < 10 U | 5.5 B | < 10 U | -263.2 | 2.38 | 7.33 | 2.05 | 11.9 | 3.87 | -- | 1.7 | < 2.0 U | -- | -- | -- | -- | < 0.20 U |
| 114-PZ-52WR | 114-PZ-52WR-74.0-20211217 | 12/17/2021 | 74 | N | 4602493661 | N/A | Weathered Bedrock | -- | **30400** | -- | **27100** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-PZ-52WR | 114-PZ-52WR-74-20230630 | 6/30/2023 | 74 | N | 4602833941 | N/A | Weathered Bedrock | **294** | **5340** | **< 1000 U** | **< 2000 U** | 41.3 | 8.42 | 5.13 | 0.813 | 18.63 | -- OR | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-PZ-52WR | 114-PZ-52WR-74-20230630 | 6/30/2023 | 74 | N | 4602833942 | N/A | Weathered Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6550 | 2.53 J | -- | -- | **35800** | -- | < 10.0 UHF |
| 114-PZ-52WR | 114-PZ-52WR-74.0-20230922 | 9/22/2023 | 74 | N | 4602888091 | Bedrock Monitoring | Weathered Bedrock | **1260** | **3170** | **< 200 U** | **< 500 U** | 90.1 | 0.36 | 4.91 | 1.518 | 20.5 | -- OR | -- | 3390 | 243 | -- | -- | **55400** | -- | 57.4 J |
| 114-PZ-52WR | 114-PZ-52WR-74.0-20231219 | 12/19/2023 | 74 | N | JD79185 | Bedrock Monitoring | Weathered Bedrock | **734** | **862** | 47 | 48 | -200.1 | 0.1 | 4.8 | 1.229 | 13.6 | 945 | -- | 1530 | 158 | -- | -- | **68200** | **3330** | -- |
| 114-PZ-52WR | 114-PZ-52WR-74.0-20240320 | 3/20/2024 | 74 | N | JD84853 | Bedrock Monitoring | Weathered Bedrock | **466** | **474** | < 10 U | < 10 U | 66.2 | 0.04 | 4.37 | 1.563 | 13.9 | 47.7 | -- | 1190 | **280** | -- | -- | -- | -- | 21.7 J |
| 114-PZ-52WR | 114-PZ-52WR-74.0-20240531 | 5/31/2024 | 74 | N | JD89525 | Baseline | Weathered Bedrock | **547** | **640** | < 20 U | < 20 U | -54.3 | 0.05 | 4.59 | 1.404 | 17.8 | 1000 | -- | 1720 | 39.7 | -- | 3330 | **53300** | **2630** | 47.6 J |
| 114-PZ-52WR | 114-PZ-52WR-AM-20240715 | 7/15/2024 | | N | JD93226 | Pilot Test | Weathered Bedrock | -- | -- | -- | -- | 15.5 | 0.42 | 4.63 | 1.821 | 21.2 | 53 | -- | 1480 | -- | -- | -- | -- | -- | -- |
| 114-PZ-52WR | 114-PZ-52WR-AM-20240719 | 7/19/2024 | | N | JD93226 | Pilot Test | Weathered Bedrock | -- | -- | -- | -- | 120.3 | 0.78 | 5.01 | 2.132 | 18.2 | 26.6 | -- | 1600 | -- | -- | -- | -- | -- | -- |
| 114-PZ-52WR | 114-PZ-52WR-PM-20240724 | 7/24/2024 | | N | JD93226 | Pilot Test | Weathered Bedrock | -- | -- | -- | -- | -114.2 | 0.31 | 4.64 | 2.288 | 18.7 | 56.6 | -- | 1520 | -- | -- | -- | -- | -- | -- |
| 114-PZ-52WR | 114-PZ-52WR-PM-20240731 | 7/31/2024 | | N | JD93226 | Pilot Test | Weathered Bedrock | -- | -- | -- | -- | -108 | 1.74 | 4.89 | 2.36 | 24.9 | 37.9 | -- | 1350 | -- | -- | -- | -- | -- | -- |
| 114-PZ-52WR | 114-PZ-52WR-74.0-20240806 | 8/6/2024 | 74 | N | JD93519 | Treatment | Weathered Bedrock | **619** | **743** | < 10 U | < 10 U | -207.1 | 0.63 | 5.16 | 1.80 | 24.4 | 881 | -- | 1230 | 10 | -- | -- | -- | -- | -- |
| 114-PZ-52WR | 114-PZ-52WR-74.0-20240905 | 9/5/2024 | 74 | N | JD95510 | Treatment | Weathered Bedrock | **521** | **507** | **81** | **85** | 10.8 | 0.12 | 4.84 | 2732 | 22.6 | 132 | -- | 2080 | < 40 U | -- | -- | -- | -- | -- |
| 114-PZ-52WR | 114-PZ-52WR-74.0-20241001 | 10/1/2024 | 74 | N | JD97187 | Treatment | Weathered Bedrock | **873** | **863** | 31 | 27 | -77.9 | 0.1 | 4.6 | 2.52 | 18.3 | 328 | -- | 2420 | 158 | -- | -- | -- | -- | -- |
| 114-PZ-52WR | 114-PZ-52WR-74.0-20241104 | 11/4/2024 | 74 | N | JD99628 | Treatment | Weathered Bedrock | **762** | **967** | 53 | 61 | -55.8 | 0.1 | 4.21 | 2.78 | 16.8 | 173 | -- | 2610 | 211 | -- | -- | -- | -- | -- |
| 114-PZ-52WR | 114-PZ-52WR-74.0-20241204 | 12/4/2024 | 74 | N | JE1940 | Treatment | Weathered Bedrock | **1850** | **1040** | < 10 U | < 10 U | -64.3 | 0.19 | 4.19 | 3.63 | 12.1 | 111 | -- | 4610 | **451** | -- | -- | -- | -- | 132 |
| 114-PZ-66WR | 114-PZ-66WR-82.2-20211216 | 12/16/2021 | 82.2 | N | 4602492741 | N/A | Weathered Bedrock | -- | **195000** | -- | **198000 J+** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-PZ-66WR | 114-PZ-66WR-83-20230629 | 6/29/2023 | 83 | N | 4602833321 | N/A | Weathered Bedrock | -- | **111000** | -- | **124000 J** | 67.9 | 4.79 | 7.36 | 2.06 | 20.38 | 4.13 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-PZ-66WR | 114-PZ-66WR-83-20230629 | 6/29/2023 | 83 | N | 4602833322 | N/A | Weathered Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.5 | 171 | -- | -- | < 120 U | -- | < 0.10 UHFF1 |
| 114-PZ-66WR | 114-PZ-66WR-83-20230629-X | 6/29/2023 | 83 | FD | 4602833321 | N/A | Weathered Bedrock | -- | **109000 J** | -- | **233000 J** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-PZ-66WR | 114-PZ-66WR-83-20230629-X | 6/29/2023 | 83 | FD | 4602833322 | N/A | Weathered Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.4 | 174 | -- | -- | < 120 U | -- | 0.16 HF |
| 114-PZ-66WR | 114-PZ-66WR-83-0-20230922 | 9/22/2023 | 83 | N | 4602888091 | Bedrock Monitoring | Weathered Bedrock | -- | **120000** | -- | **112000** | 77 | 0.51 | 7.83 | 1.714 | 19.17 | 6.55 | -- | 3.5 JB | **296** | -- | -- | < 120 U | -- | R |
| 114-PZ-66WR | 114-PZ-66WR-83.0-20230922-X | 9/22/2023 | 83 | FD | 4602888091 | Bedrock Monitoring | Weathered Bedrock | -- | **119000** | -- | **111000** | -- | -- | -- | -- | -- | -- | -- | 3.4 JB | **296** | -- | -- | < 120 U | -- | < 0.10 UJ |
| 114-PZ-66WR | 114-PZ-66WR-83.0-20231220 | 12/20/2023 | 83 | N | JD79285 | Bedrock Monitoring | Weathered Bedrock | -- | **159000** | -- | **157000** | -147.8 | 0.33 | 7.31 | 2.465 | 13.7 | 1.13 | -- | 1.8 J | **374** | -- | -- | **< 2500 U** | **146** | 0.48 J- |
| 114-PZ-66WR | 114-PZ-66WR-83.0-20231220-X | 12/20/2023 | 83 | FD | JD79285 | Bedrock Monitoring | Weathered Bedrock | -- | **155000** | -- | **164000** | -- | -- | -- | -- | -- | -- | -- | 2.4 | **375** | -- | -- | < 250 U | **155** | 0.53 J- |
| 114-PZ-66WR | 114-PZ-66WR-83.0-20240320 | 3/20/2024 | 83 | N | JD84853 | Bedrock Monitoring | Weathered Bedrock | -- | **195000** | -- | **167000** | 2.

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-PZ-66WR | 114-PZ-66WR-84.0-20240531 | 5/31/2024 | 84 | N | JD89525 | Baseline | Weathered Bedrock | **141000** | **149000 J** | **183000** | **209000 J** | 81 | 0.33 | 7.23 | 2.66 | 19.3 | 5.87 | -- | 4.6 J | **378** | -- | 696 | < 250 U | **145** | < 0.20 UJ |
| 114-PZ-66WR | 114-PZ-66WR-AM-20240619 | 6/19/2024 | | N | JD90968 | Pilot Test | Weathered Bedrock | -- | -- | -- | -- | 74 | 0.22 | 7.27 | 2.481 | 19.5 | 25.6 | -- | 5.7 | -- | -- | -- | -- | -- | -- |
| 114-PZ-66WR | 114-PZ-66WR-AM-20240626 | 6/26/2024 | | N | JD91289 | Pilot Test | Weathered Bedrock | -- | -- | -- | -- | -48.5 | 0.51 | 7.38 | 2.241 | 19.9 | 12.4 | -- | < 5.0 U | -- | -- | -- | -- | -- | -- |
| 114-PZ-66WR | 114-PZ-66WR-AM-20240711 | 7/11/2024 | | N | JD93226 | Pilot Test | Weathered Bedrock | -- | -- | -- | -- | 130.3 | 0.6 | 7.28 | 2.405 | 21.8 | 9.86 | -- | 4.7 B | -- | -- | -- | -- | -- | -- |
| 114-PZ-66WR | 114-PZ-66WR-PM-20240716 | 7/16/2024 | | N | JD93226 | Pilot Test | Weathered Bedrock | -- | -- | -- | -- | -115.5 | 0.49 | 7.13 | 2.529 | 22.8 | 18.1 | -- | < 5.0 U | -- | -- | -- | -- | -- | -- |
| 114-PZ-66WR | 114-PZ-66WR-AM-20240726 | 7/26/2024 | | N | JD93226 | Pilot Test | Weathered Bedrock | -- | -- | -- | -- | -19.9 | 0.3 | 7.5 | 2.304 | 18.4 | 10.6 | -- | 17.5 | -- | -- | -- | -- | -- | -- |
| 114-PZ-66WR | 114-PZ-66WR-84.0-20240807 | 8/7/2024 | 84 | N | JD93595 | Treatment | Weathered Bedrock | **21000** | **25100** | **20400** | **22300** | -328.6 | 0.09 | 6.97 | 2.79 | 17 | 5.62 | -- | 124 | **335** | -- | -- | -- | -- | -- |
| 114-PZ-66WR | 114-PZ-66WR-84.0-20240903 | 9/3/2024 | 84 | N | JD95322 | Treatment | Weathered Bedrock | **5720** | **5690** | **150** | **150** | 122.1 | 0.41 | 5.92 | 3826 | 20 | 2.92 | -- | 1360 | **291** | -- | -- | -- | -- | -- |
| 114-PZ-66WR | 114-PZ-66WR-84.0-20240930 | 9/30/2024 | 84 | N | JD97124 | Treatment | Weathered Bedrock | **3530** | **4220** | 9.5 B | 8.4 B | 27.9 | 0.22 | 5.86 | 4.93 | 20.7 | 2.93 | -- | 1560 | **256** | -- | -- | -- | -- | -- |
| 114-PZ-66WR | 114-PZ-66WR-84.0-20241106 | 11/6/2024 | 84 | N | JD99782 | Treatment | Weathered Bedrock | **6100** | **5800** | 51 | 63 | -224 | 0.17 | 6.01 | 4.95 | 20.7 | 3.98 | -- | 1400 | 69.9 | -- | -- | -- | -- | -- |
| 114-PZ-66WR | 114-PZ-66WR-84.0-20241206 | 12/6/2024 | 84 | N | JE2113 | Treatment | Weathered Bedrock | **6950** | **6690** | 4.4 B | < 10 U | -130 | 0.28 | 5.82 | 4.63 | 13 | 6.26 | -- | 1830 | < 40 U | -- | -- | -- | -- | 24.2 |
| ***Monitoring/Injection*** | | | | | | | | | | | | | | | | | | | | | | | | | |
| 114-PW-09WR | 114-PW-09WR-77.0-20240624 | 6/24/2024 | 77 | N | JD91036 | Baseline | Weathered Bedrock | < 10 U | < 10 U | < 10 U | < 10 U | -88.1 | 4.98 | 8.45 | 1020 | 18.9 | 5.19 | -- | < 3.0 UB | 236 | -- | 1050 | **414** | **85.3** | -- |
| 114-PW-09WR | 114-PW-09WR-77.0-20240624-X | 6/24/2024 | 77 | FD | JD91036 | Baseline | Weathered Bedrock | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | < 3.9 UB | 237 | -- | 1070 | **417** | **86.3** | -- |
| 114-PW-09WR | 114-PW-09WR-82.0-20240624 | 6/24/2024 | 82 | N | JD91036 | Baseline | Weathered Bedrock | < 10 U | 3.3 J | < 10 U | < 10 U | -80.6 | 0.3 | 8.32 | 1046 | 18 | 7.69 | -- | < 4.3 UB | 242 | -- | 1070 | **380** | **90.0** | -- |
| 114-PW-10WR | 114-PW-10WR-82.0-20240627 | 6/27/2024 | 82 | N | JD91283 | Baseline | Weathered Bedrock | < 10 U | 3.8 J | < 10 U | < 10 U | -121.6 | 2.69 | 9.12 | 0.84 | 20.3 | 6.41 | -- | 2.9 | 168 | -- | 57.1 | < 250 U | 21.9 | -- |
| 114-PW-10WR | 114-PW-10WR-87.0-20240627 | 6/27/2024 | 87 | N | JD91283 | Baseline | Weathered Bedrock | < 10 U | < 10 U | < 10 U | < 10 U | -127.6 | 0.14 | 9.15 | 0.861 | 18.2 | 6.81 | -- | 3.1 | 170 | -- | 61.5 | < 250 U | 24.3 | -- |
| ***Sumps*** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Forrest-Sump-E | FORREST-SUMP-E-20180627 | 6/27/2018 | | N | JC68842 | N/A | N/A | -- | **199** | -- | 35 J- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Forrest-Sump-E | FORREST-SUMP-E-20180627 | 6/27/2018 | | N | JC68842R | N/A | N/A | 37.6 | -- | 11 RA | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Forrest-Sump-E | FORREST-SUMP-E-20190225 | 2/25/2019 | | N | JC83378 | N/A | N/A | -- | **411** | **370 J-** | **390 J-** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Forrest-Sump-E | FS-SUMP-E-20200402 | 4/2/2020 | | N | JD5521 | N/A | N/A | -- | **808** | -- | **730** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Forrest-Sump-E | FORREST-SUMP-E-20221230 | 12/30/2022 | | N | 4602722451 | N/A | N/A | 13.1 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Forrest-Sump-E | FORREST-SUMP-E-20230315 | 3/15/2023 | | N | 4602763791 | N/A | N/A | 14.5 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FORREST-SUMP-E | FORREST-SUMP-E-20230504 | 5/4/2023 | | N | 4602795671 | N/A | N/A | 20.5 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Forrest-Sump-S | FORREST-SUMP-S-20190225 | 2/25/2019 | | N | JC83378 | N/A | N/A | -- | **4360** | **5400 J-** | **4300 J-** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Forrest-Sump-S | FS-SUMP-S-20200402 | 4/2/2020 | | N | JD5521 | N/A | N/A | -- | **3530** | -- | **760** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Forrest-Sump-S | FORREST-SUMP-S-20221230 | 12/30/2022 | | N | 4602722451 | N/A | N/A | **98.7** | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Forrest-Sump-S | FORREST-SUMP-S-20230316 | 3/16/2023 | | N | 4602764731 | N/A | N/A | 12.0 | -- | 8.7 J | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FORREST-SUMP-S | FORREST-SUMP-S-20230504 | 5/4/2023 | | N | 4602795671 | N/A | N/A | 4.3 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Forrest-Sump-W | FORREST-SUMP-W-20190225 | 2/25/2019 | | N | JC83378 | N/A | N/A | -- | **328** | **280 J-** | **280 J-** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Forrest-Sump-W | FS-SUMP-W-20200402 | 4/2/2020 | | N | JD5521 | N/A | N/A | -- | 23.2 | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Forrest-Sump-W | FORREST-SUMP-W-20221230 | 12/30/2022 | | N | 4602722451 | N/A | N/A | 3.8 J | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Forrest-Sump-W | FORREST-SUMP-W-20221230-X | 12/30/2022 | | FD | 4602722451 | N/A | N/A | 3.0 J | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Forrest-Sump-W | FORREST-SUMP-W-20230315 | 3/15/2023 | | N | 4602763791 | N/A | N/A | 3.6 J | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FORREST-SUMP-W | FORREST-SUMP-W-20230504 | 5/4/2023 | | N | 4602795671 | N/A | N/A | 3.3 J | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| ***Temporary Wells*** | | | | | | | | | | | | | | | | | | | | | | | | | |
| 199-TW-1 | 199-TW-1 | 3/22/2023 | | N | 4602768021 | N/A | N/A | **887** | -- | **1140** | -- | -70.3 | 0.3 | 9.53 | 17.73 | 12.17 | -- OR | -- | 972 | -- | -- | -- | -- | -- | -- |
| 199-TW-2 | 199-TW-2 | 3/22/2023 | | N | 4602768021 | N/A | N/A | < 4.0 U | -- | < 10.0 U | -- | -263.8 | 2 | 7.05 | 2 | 12.27 | -- OR | -- | 26.1 | -- | -- | -- | -- | -- | -- |
| 199-TW-3 | 199-TW-3 | 3/22/2023 | | N | 4602768021 | N/A | N/A | < 4.0 U | -- | < 10.0 U | -- | -57.7 | 1.24 | 7.34 | 13.5 | 12.51 | -- OR | -- | 7.7 | -- | -- | -- | -- | -- | -- |
| ***Other Site-Wide Monitoring Wells*** | | | | | | | | | | | | | | | | | | | | | | | | | |
| 199-P3-IRM-004D | 199-P3-IRM-004D-66.45-20220105 | 1/5/2022 | 66.45 | N | 4602501431 | Baseline | Basal Till | **1040** | **1600** | **1400** | **1310** | 30 | 0.17 | 7.13 | 1.76 | 14.34 | 3.3 | -- | 11.2 | 39.3 J- | < 1.0 U | 17000 | 143 | **581** | -- |
| 199-P3-IRM-004D | 199-P3-IRM-004D-66.5-20220930 | 9/30/2022 | 66.5 | N | 4602666011 | Treatment | Basal Till | -- | 59.5 | -- | < 10.0 U | -21.9 | 0.05 | 6.73 | 1.637 | 15.66 | 5.29 | -- | 3.4 | 104 | -- | -- | -- | -- | -- |
| 199-P3-IRM-004D | 199-P3-IRM-004D-62.5-20221229 | 12/29/2022 | 62.5 | N | 4602721691 | N/A | Basal Till | -- | 59.3 | -- | < 10.0 U | -7.6 | 0.73 | 6.91 | 1.828 | 14.73 | 9.02 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-IRM-004D | 199-P3-IRM-004D-62.5-20230314 | 3/14/2023 | 62.5 | N | 4602762891 | N/A | Basal Till | -- | 68.4 | -- | < 10.0 U | -36.2 | 0.60 | 7.05 | 1.697 | 11.84 | 6.24 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-IRM-004D | 199-P3-IRM-004D-62.5-20230508 | 5/8/2023 | 62.5 | N | 4602798181 | N/A | Basal Till | -- | **73.9** | -- | < 10.0 U | -15.4 | 1.33 | 6.97 | 1.392 | 19.40 | 2.62 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-IRM-004D | 199-P3-IRM-004D-62.5-20230914 | 9/14/2023 | 62.5 | N | 4602882001 | Total Cr Isopleth | Basal Till | -- | 40.8 | -- | < 10.0 UJ | -24.5 | 0.82 | 6.97 | 1.645 | 19.62 | 2.63 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-IRM-004D | 199-P3-IRM-004D-62.5-20231213 | 12/13/2023 | 62.5 | N | JD78777 | Total Cr Isopleth | Basal Till | -- | **103** | -- | < 10 UJ | -46 | 0.19 | 7 | 1.375 | 15.8 | 3.02 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-IRM-004D | 199-P3-IRM-004D-62.5-20240313 | 3/13/2024 | 62.5 | N | JD84389 | Total Cr Isopleth | Basal Till | -- | **118** | -- | < 10 U | -104.9 | 0.23 | 7.07 | 1.73 | 16.2 | 2.92 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-IRM-004D | 199-P3-IRM-004D-62.5-20240613 | 6/13/2024 | 62.5 | N | JD90407 | Total Cr Isopleth | Basal Till | -- | **82.5** | -- | < 10 U | -48 | 0.2 | 6.85 | 1.606 | 20.4 | 3.77 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-IRM-004D | 199-P3-IRM-004D-62.5-20240912 | 9/12/2024 | 62.5 | N | JD95972 | Total Cr Isopleth | Basal Till | -- | 64.0 | -- | < 10 U | -36.8 | 0.38 | 7.04 | 1.42 | 19 | 2.53 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-IRM-004D | 199-P3-IRM-004D-62.5-20241211 | 12/11/2024 | 62.5 | N | JE2416 | Total Cr Isopleth | Basal Till | -- | 37.4 | -- | < 10 U | -44.7 | 0.25 | 7.19 | 1.63 | 15.9 | 2.51 | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-IRM-006S-R | 199-P3-IRM-006S-R-12.0-20231113 | 11/13/2023 | 12 | N | JD76852 | Treatment | Shallow | -- | 7.8 | -- | < 10 U | -215.8 | 0.17 | 9.08 | 1.068 | 16.9 | 6.65 | -- | 38.2 | 32.8 | -- | -- | -- | -- | -- |
| 199-P3-IRM-006S-R | 199-P3-IRM-006S-R-16.0-20231113 | 11/13/2023 | 16 | N | JD76852 | Treatment | Shallow | -- | 12.1 | -- | < 10 U | -255.8 | 0.11 | 8.39 | 1.578 | 17.9 | 8.08 | -- | 31.0 | 14.3 | -- | -- | -- | -- | -- |
| 114-MW14A | 114-MW14A-5.0-20171219 | 12/19/2017 | 5 | N | JC57638 | N/A | Shallow | -- | 21.4 | -- | 28 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW14A | 114-MW14A-10.0-20171219 | 12/19/2017 | 10 | N | JC57638 | N/A | Shallow | -- | 16.9 J | -- | 40 J | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW15A | 114-MW15A-20180417 | 4/17/2018 | 4 | N | JC64376 | N/A | Shallow | 3.1 J | 5.0 JB | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 100 U | 5.0 JB | -- |
| 114-MW20AR | 114-MW20AR-11.5-20200728 | 7/28/2020 | 11.5 | N | JD10766 | N/A | Shallow | **< 200 U** | **< 200 U** | < 10 UJ | < 50 UJ | -108.90 | 0.07 | 6.99 | 7.36 | 27.63 | 9.80 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW20AR | 114-MW20AR-11.5-20200728X | 7/28/2020 | 11.5 | FD | JD10766 | N/A | Shallow | < 10 U | **< 200 U** | < 10 UJ | < 50 UJ | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW20AR | 114-MW20AR-11.0-20201109 | 11/9/2020 | 11 | N | JD15932 | N/A | Shallow | < 10 U | < 10 U | < 10 UJ | < 10 RA | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW20AR | 114-MW20AR-10-20210311 | 3/11/2021 | 10 | N | 4602297181 | N/A | Shallow | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW20AR | 114-MW20AR-11.3-20210713 | 7/13/2021 | 11.3 | N | 4602386701 | N/A | Shallow | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 UJ | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW24AR | 114-MW24AR-20180502 | 5/2/2018 | | N | JC65325 | N/A | Shallow | < 10 U | 3.6 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW24AR | 114-MW24AR-20180823 | 8/23/2018 | | N | JC72445 | N/A | Shallow | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW24AR | 114-MW24AR-20181130 | 11/30/2018 | | N | JC78789 | N/A | Shallow | < 10 U | 4.7 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW24AR | 114-MW24AR-20190227 | 2/27/2019 | | N | JC83510 | N/A | Shallow | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW24AR | 114-MW24AR-11.5-20200330 | 3/30/2020 | 11.5 | N | JD5344 | N/A | Shallow | -- | 4.9 J | -- | < 10 U | -56.4 | 7.66 | 7.81 | 1.358 | 13.37 | 5.68 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW24AR | 114-MW24AR-11.5-20221230 | 12/30/2022 | 11.5 | N | 4602722451 | N/A | Shallow | -- | < 4.0 U | -- | < 10.0 U | -111.30 | 0.15 | 7.14 | 0.99 | 13.60 | 7.46 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW24AR | 114-MW24AR-11.5-20230314 | 3/14/2023 | 11.5 | N | 4602762891 | N/A | Shallow | -- | 5.4 | -- | < 10.0 U | 285.9 | 2.35 | 7.45 | 0.627 | 8.27 | 3.95 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW24AR | 114-MW24AR-11.5-20230503 | 5/3/2023 | 11.5 | N | 4602794711 | N/A | Shallow | -- | 23.6 | -- | < 20.0 U | -326.7 | 3.7 | 7.03 | 1.598 | 16.10 | 2.5 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW24AR | 114-MW24AR-11.5-20230503-X | 5/3/2023 | 11.5 | FD | 4602794711 | N/A | Shallow | -- | 20.3 | -- | < 20.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW24AR | 114-MW24AR-11.5-20230913 | 9/13/2023 | 11.5 | N | 4602880871 | Total Cr Isopleth | Shallow | -- | < 4.0 U | -- | < 10.0 U | -94.5 | 0.42 | 6.8 | 0.915 | 23.4 | 0.84 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW24AR | 114-MW24AR-11.5-20231115 | 11/15/2023 | 11.5 | N | JD77054 | Total Cr Isopleth | Shallow | -- | 19.2 | -- | 3.5 J | 3.5 | 0.13 | 6.91 | 1.069 | 18.6 | 2.4 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW24AR | 114-MW24AR-11.5-20240313 | 3/13/2024 | 11.5 | N | JD84389 | Total Cr Isopleth | Shallow | -- | < 10 U | -- | < 10 U | -120.1 | 0.13 | 6.81 | 1.037 | 12.7 | 0.58 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW24AR | 114-MW24AR-11.5-20240313-X | 3/13/2024 | 11.5 | FD | JD84389 | Total Cr Isopleth | Shallow | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW24AR | 114-MW24AR-11.5-20240618 | 6/18/2024 | 11.5 | N | JD90651 | Total Cr Isopleth | Shallow | -- | < 10 U | -- | < 10 U | -74.2 | 0.1 | 6.99 | 1.024 | 21.9 | 0.14 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW24AR | 114-MW24AR-11.5-20240911 | 9/11/2024 | 11.5 | N | JD95856 | Total Cr Isopleth | Shallow | -- | < 10 U | -- | < 10 RA | -86.1 | 0.3 | 6.98 | 1.07 | 26.5 | 0.27 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW24AR | 114-MW24AR-11.5-20241212 | 12/12/2024 | 11.5 | N | JE2543 | Total Cr Isopleth | Shallow | -- | < 10 U | -- | 10 | -213 | 0.16 | 7.03 | 1.14 | 16.3 | 2.43 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW26A | FORREST-114-MW26A-20171218 | 12/18/2017 | 12.2 | N | JC57565 | N/A | Shallow | -- | 2.2 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW26A | 114-MW26A-20190225 | 2/25/2019 | 12.2 | N | JC83378 | N/A | Shallow | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW27A | 114-MW27A-20190228 | 2/28/2019 | | N | JC83586 | N/A | Shallow | -- | 5.5 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW27A | 114-MW27A-13.5-20200401 | 4/1/2020 | 13.5 | N | JD5447 | N/A | Shallow | -- | 28.7 | -- | < 10 U | 249.4 | 1.31 | 6.93 | 2.459 | 11.56 | 2.41 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW27A | 114-MW27A-13.5-20221230 | 12/30/2022 | 13.5 | N | 4602722451 | N/A | Shallow | -- | **84.4** | -- | 68.0 | 81.80 | 0.18 | 7.12 | 2.26 | 14.20 | 3.87 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW27A | 114-MW27A-13.5-20230315 | 3/15/2023 | 13.5 | N | 4602763791 | N/A | Shallow | -- | 52.9 | -- | 37.8 | -23.0 | 0.25 | 6.78 | 2.286 | 12.73 | 1.92 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW27A | 114-MW27A-13.5-20230503 | 5/3/2023 | 13.5 | N | 4602794711 | N/A | Shallow | -- | 29.4 | -- | 14.2 | 250.0 | 0.67 | 7.20 | 2.51 | 14.52 | 1.68 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW27A | 114-MW27A-13.5-20230913 | 9/13/2023 | 13.5 | N | 4602880871 | Total Cr Isopleth | Shallow | -- | 39.4 | -- | 8.9 J | 32.3 | 1.33 | 6.8 | 2.488 | 19.97 | 1.32 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW27A | 114-MW27A-13.5-20231115 | 11/15/2023 | 13.5 | N | JD77054 | Total Cr Isopleth | Shallow | -- | 19.1 | -- | < 10 U | 180.7 | 0.17 | 6.92 | 2.404 | 17.1 | 0.76 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW27A | 114-MW27A-13.5-20240313 | 3/13/2024 | 13.5 | N | JD84389 | Total Cr Isopleth | Shallow | -- | 13.6 | -- | < 10 U | 80.1 | -0.2 | 6.74 | 2.777 | 14.2 | 0.68 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW27A | 114-MW27A-13.5-20240618 | 6/18/2024 | 13.5 | N | JD90651 | Total Cr Isopleth | Shallow | -- | 11.3 | -- | < 10 U | -59.6 | 0.39 | 7.02 | 2.37 | 17.9 | 0.6 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW27A | 114-MW27A-13.5-20240911 | 9/11/2024 | 13.5 | N | JD95856 | Total Cr Isopleth | Shallow | -- | 8.9 J | -- | < 10 RA | 87.4 | 0.35 | 6.95 | 2.35 | 21.6 | 0.51 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW27A | 114-MW27A-13.5-20241213 | 12/13/2024 | 13.5 | N | JE2640 | Total Cr Isopleth | Shallow | -- | 18.7 | -- | 18 | 1.5 | 1.82 | 7.04 | 1.70 | 14.2 | 0.89 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW28A | FORREST-114-MW28A-20171218 | 12/18/2017 | 11.3 | N | JC57565 | N/A | Shallow | -- | 3.5 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW28A | 114-MW28A-20190225 | 2/25/2019 | 11.3 | N | JC83378 | N/A | Shallow | -- | 4.1 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | 12/6/2017 | | N | JC56729 | N/A | Shallow | -- | -- | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW2B1-2 | FORREST-114-MW2B1-2-20171206 | 12/6/2017 | | N | JC56729A | N/A | Shallow | -- | 3.9 J | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW2B1-2 | 114-MW2B1-2-18.0-20190228 | 2/28/2019 | | N | JC83586 | N/A | Shallow | -- | **409** | -- | **360** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW2B1-2 | 114-MW2B1-2-23.0-20190228 | 2/28/2019 | | N | JC83586 | N/A | Shallow | -- | **394** | -- | **360** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW2B1-2 | 114-MW2B1-2-18.5-20200330 | 3/30/2020 | 18.5 | N | JD5344 | N/A | Shallow | -- | **163** | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW2B1-2 | 114-MW2B1-2-23.5-20200330 | 3/30/2020 | 23.5 | N | JD5344 | N/A | Shallow | -- | 49.3 | -- | < 10 U | -9.7 | 0.88 | 7.21 | 0.7 | 12.63 | 1.32 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW2B1-2 | 114-MW2B1-2-17.5-20221230 | 12/30/2022 | 17.5 | N | 4602722451 | N/A | Shallow | -- | **160** | -- | **116** | -26.3 | 1.37 | 7.18 | 0.762 | 14.18 | 1.19 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW2B1-2 | 114-MW2B1-2-22.5-20221230 | 12/30/2022 | 22.5 | N | 4602722451 | N/A | Shallow | -- | **140** | -- | **76.6** | -62.10 | 0.98 | 7.15 | 0.765 | 15.90 | 1.65 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW2B1-2 | 114-MW2B1-2-17.5-20230314 | 3/14/2023 | 17.5 | N | 4602762891 | N/A | Shallow | -- | 33.2 | -- | < 10.0 U | 252.9 | 0.35 | 7.10 | 0.629 | 11.40 | 1.90 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW2B1-2 | 114-MW2B1-2-22.5-20230314 | 3/14/2023 | 22.5 | N | 4602762891 | N/A | Shallow | -- | 37.7 | -- | < 10.0 U | 255.4 | 0.44 | 7.14 | 0.617 | 13.12 | 5.20 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW2B1-2 | 114-MW2B1-2-17.5-20230503 | 5/3/2023 | 17.5 | N | 4602794711 | N/A | Shallow | -- | **297** | -- | **212** | 118.9 | 1.31 | 7.54 | 0.776 | 15.2 | 3.74 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW2B1-2 | 114-MW2B1-2-22.5-20230503 | 5/3/2023 | 22.5 | N | 4602794711 | N/A | Shallow | -- | **277** | -- | **115** | 126.5 | 1.08 | 7.55 | 0.773 | 14.46 | 6.31 | -- | -- | -- | -- | -- | -- | -- | -- |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochemical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-MW2B1-2 | 114-MW2B1-2-17.5-20230913 | 9/13/2023 | 17.5 | N | 4602880871 | Total Cr Isopleth | Shallow | -- | 7.8 | -- | < 10.0 U | -68.2 | 0.36 | 6.81 | 0.689 | 18.86 | 0.44 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW2B1-2 | 114-MW2B1-2-22.5-20230913 | 9/13/2023 | 22.5 | N | 4602880871 | Total Cr Isopleth | Shallow | -- | 9.8 | -- | < 10.0 U | -72.6 | 0.43 | 6.86 | 0.656 | 18.32 | 2.48 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW2B1-2 | 114-MW2B1-2-17.5-20231115 | 11/15/2023 | 17.5 | N | JD77054 | Total Cr Isopleth | Shallow | -- | 8.3 | -- | < 10 U | 24.7 | -0.12 | 7.91 | 0.797 | 18.1 | 1.78 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW2B1-2 | 114-MW2B1-2-22.5-20231115 | 11/15/2023 | 22.5 | N | JD77054 | Total Cr Isopleth | Shallow | -- | 7.7 | -- | 3.5 J | 30.2 | -0.12 | 7.84 | 0.785 | 17.8 | 1.49 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW2B1-2 | 114-MW2B1-2-17.5-20240313 | 3/13/2024 | 17.5 | N | JD84389 | Total Cr Isopleth | Shallow | -- | 32.0 | -- | < 10 U | -87.5 | 0.23 | 7.06 | 1.053 | 14.1 | 2.53 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW2B1-2 | 114-MW2B1-2-22.5-20240313 | 3/13/2024 | 22.5 | N | JD84389 | Total Cr Isopleth | Shallow | -- | 31.2 | -- | < 10 U | -85.6 | 1.59 | 7.08 | 1.066 | 13.8 | 5.77 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW2B1-2 | 114-MW2B1-2-17.5-20240618 | 6/18/2024 | 17.5 | N | JD90651 | Total Cr Isopleth | Shallow | -- | 5.1 J | -- | 9.1 J | -242.8 | 2.78 | 6.94 | 1.116 | 20.3 | 0.87 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW2B1-2 | 114-MW2B1-2-22.5-20240618 | 6/18/2024 | 22.5 | N | JD90651 | Total Cr Isopleth | Shallow | -- | 5.1 J | -- | 52 J | -248.9 | 1.81 | 7.03 | 1.152 | 17.7 | 1.44 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW2B1-2 | 114-MW2B1-2-17.5-20240911 | 9/11/2024 | 17.5 | N | JD95856 | Total Cr Isopleth | Shallow | -- | 8.2 J | -- | 20 J | -100.5 | 0.97 | 6.89 | 1.19 | 20.6 | 1.32 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW2B1-2 | 114-MW2B1-2-22.5-20240911 | 9/11/2024 | 22.5 | N | JD95856 | Total Cr Isopleth | Shallow | -- | 5.6 J | -- | 22 J | -99 | 0.33 | 7.04 | 1.27 | 20.5 | 2.69 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW2B1-2 | 114-MW2B1-2-19.0-20241212 | 12/12/2024 | 19 | N | JE2543 | Total Cr Isopleth | Shallow | -- | < 10 UB | -- | 6.7 J | -93 | 0.6 | 6.97 | 1.24 | 9 | 2.77 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW2B1-2 | 114-MW2B1-2-22.5-20241212 | 12/12/2024 | 22.5 | N | JE2543 | Total Cr Isopleth | Shallow | -- | < 10 UB | -- | 9.0 J | -114.7 | 0.38 | 6.92 | 1.25 | 11.5 | 2 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW30A | FORREST-114-MW30A-20171207 | 12/7/2017 | 11.2 | N | JC56859 | N/A | Shallow | -- | -- | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW30A | FORREST-114-MW30A-20171207 | 12/7/2017 | 11.2 | N | JC56859A | N/A | Shallow | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW30A | 114-MW30A-20190226 | 2/26/2019 | 11.2 | N | JC83437 | N/A | Shallow | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW37A | 114-MW37A-20190226 | 2/26/2019 | 12.1 | N | JC83437 | N/A | Shallow | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW38A | FORREST-114-MW38A-20171204 | 12/4/2017 | 22.2 | N | JC56504 | N/A | Shallow | -- | -- | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW38A | FORREST-114-MW38A-20171204 | 12/4/2017 | 22.2 | N | JC56504A | N/A | Shallow | -- | 20.4 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW38A | 114-MW38A-20190227 | 2/27/2019 | 22.2 | N | JC83510 | N/A | Shallow | -- | 10.1 | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW42A | 114-MW42A-20180417 | 4/17/2018 | | N | JC64376 | N/A | Shallow | -- | 3.5 JB | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW42A | 114-MW42A-9.5-20221228 | 12/28/2022 | 9.5 | N | 4602721191 | N/A | Shallow | -- | < 4.0 U | -- | < 10.0 U | 88.50 | 1.97 | 6.81 | 1.23 | 13.23 | 9.77 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW42A | 114-MW42A-9.5-20230316 | 3/16/2023 | 9.5 | N | 4602764731 | N/A | Shallow | -- | < 4.0 U | -- | < 10.0 U | 68.0 | 1.69 | 6.88 | 1.265 | 13.88 | 3.21 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW42A | 114-MW42A-9.5-20230503 | 5/3/2023 | 9.5 | N | 4602794711 | N/A | Shallow | -- | < 4.0 U | -- | < 10.0 U | 34.2 | 1.19 | 7.08 | 1.05 | 15.57 | 6.34 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW42A | 114-MW42A-9.5-20230913 | 9/13/2023 | 9.5 | N | 4602880871 | Total Cr Isopleth | Shallow | -- | < 4.0 U | -- | < 10.0 U | 59 | 2.26 | 6.66 | 1.065 | 22.64 | 2.23 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW42A | 114-MW42A-9.5-20231212 | 12/12/2023 | 9.5 | N | JD78686 | Total Cr Isopleth | Shallow | -- | < 10 U | -- | < 10 U | 39.2 | 0.11 | 6.76 | 0.976 | 15 | 7.54 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW42A | 114-MW42A-9.5-20240320 | 3/20/2024 | 9.5 | N | JD84852 | Total Cr Isopleth | Shallow | -- | < 10 U | -- | < 10 U | 90.7 | 0.19 | 6.71 | 1.113 | 13.3 | 2.89 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW42A | 114-MW42A-9.5-20240618 | 6/18/2024 | 9.5 | N | JD90651 | Total Cr Isopleth | Shallow | -- | < 10 U | -- | < 10 U | 75.7 | 0.68 | 6.7 | 0.951 | 20.2 | 4.65 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW42A | 114-MW42A-9.5-20240911 | 9/11/2024 | 9.5 | N | JD95856 | Total Cr Isopleth | Shallow | -- | < 10 U | -- | < 10 RA | 15.6 | 0.07 | 6.6 | 1.12 | 21.7 | 0.89 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW42A | 114-MW42A-9.5-20241213 | 12/13/2024 | 9.5 | N | JE2640 | Total Cr Isopleth | Shallow | -- | < 10 U | -- | < 10 U | 32 | 0.83 | 6.63 | 1.08 | 15.8 | 6.57 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW43A | 114-MW43A-20180417 | 4/17/2018 | | N | JC64376 | N/A | Shallow | -- | < 20 U | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW43A | 114-MW43A-9.5-20221228 | 12/28/2022 | 9.5 | N | 4602721191 | N/A | Shallow | -- | 8.5 | -- | < 10.0 U | -93.10 | 0.71 | 6.78 | 1.98 | 11.07 | 7.7 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW43A | 114-MW43A-9.5-20230316 | 3/16/2023 | 9.5 | N | 4602764731 | N/A | Shallow | -- | < 4.0 U | -- | < 10.0 U | -102.7 | 1.76 | 6.99 | 1.974 | 10.27 | 8.33 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW43A | 114-MW43A-9.5-20230503 | 5/3/2023 | 9.5 | N | 4602794711 | N/A | Shallow | -- | < 4.0 U | -- | < 10.0 U | -84.0 | 0.27 | 6.66 | 1.903 | 15.06 | 3.22 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW43A | 114-MW43A-9.5-20230913 | 9/13/2023 | 9.5 | N | 4602880871 | Total Cr Isopleth | Shallow | -- | < 4.0 U | -- | < 10.0 U | -89.6 | 0.6 | 6.89 | 1.842 | 24.37 | 8.76 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW43A | 114-MW43A-9.5-20231212 | 12/12/2023 | 9.5 | N | JD78686 | Total Cr Isopleth | Shallow | -- | < 10 U | -- | < 10 U | -110.3 | 0.15 | 6.79 | 1.681 | 12.7 | 6.27 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW43A | 114-MW43A-9.5-20240312 | 3/12/2024 | 9.5 | N | JD84279 | Total Cr Isopleth | Shallow | -- | < 10 U | -- | < 10 U | -103.7 | 4.3 | 6.85 | 1715 | 12.1 | 6.18 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW43A | 114-MW43A-9.5-20240613 | 6/13/2024 | 9.5 | N | JD90407 | Total Cr Isopleth | Shallow | -- | < 10 U | -- | 12 | -148.1 | 0.09 | 6.62 | 1.844 | 22.4 | 3.54 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW43A | 114-MW43A-9.5-20240911 | 9/11/2024 | 9.5 | N | JD95856 | Total Cr Isopleth | Shallow | < 10 U | 5.0 J | 9.9 J | 11 J- | -92.4 | 0.06 | 6.77 | 1.84 | 23.9 | 77.4 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW43A | 114-MW43A-9.5-20241213 | 12/13/2024 | 9.5 | N | JE2640 | Total Cr Isopleth | Shallow | -- | < 10 U | -- | < 10 U | -53.4 | 0.31 | 6.8 | 1.64 | 13.5 | 9.31 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW44A | 114-MW44A | 11/13/2017 | 9 | N | JC55349 | N/A | Shallow | -- | -- | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW44A | 114-MW44A | 11/13/2017 | 9 | N | JC55349A | N/A | Shallow | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW44A | 114-MW44A-20190225 | 2/25/2019 | 9 | N | JC83378 | N/A | Shallow | -- | **160** | -- | 64 J- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW44A | 114-MW44A-9.5-20220225 | 2/25/2022 | 9.5 | N | 4602532391 | Treatment | Shallow | -- | **134** | -- | < 10.0 U | 112.61 | 0.65 | 6.84 | 1.54 | 14.29 | 4.78 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW44A | 114-MW44A-9.5-20220613 | 6/13/2022 | 9.5 | N | 4602600101 | Treatment | Shallow | -- | **147** | -- | 58.8 | 129.3 | 1.47 | 6.73 | 1.710 | 16.22 | 3.7 | -- | 3.6 | **507** | -- | -- | -- | -- | -- |
| 114-MW44A | 114-MW44A-9.5-20220921 | 9/21/2022 | 9.5 | N | 4602659871 | Treatment | Shallow | -- | **92.1** | -- | 15.4 | 24.5 | 0.57 | 6.81 | 1.743 | 18.82 | 2.83 | -- | 4.1 | **509** | -- | -- | -- | -- | -- |
| 114-MW44A | 114-MW-44A-9.5-20221216 | 12/16/2022 | 9.5 | N | 4602715551 | Treatment | Shallow | -- | **123** | -- | 23.7 | -75.9 | 0.5 | 7.02 | 1.725 | 16.77 | 4.18 | -- | 4.4 | **512** | -- | -- | -- | -- | -- |
| 114-MW44A | 114-MW44A-9.5-20230323 | 3/23/2023 | 9.5 | N | 4602768691 | Treatment | Shallow | -- | **117** | -- | 46.6 | 86.9 | 0.32 | 7 | 1.536 | 15.43 | 3.66 | -- | 4.5 | **474** | -- | -- | -- | -- | -- |
| 114-MW44A | 114-MW44A-9.5-20230504 | 5/4/2023 | 9.5 | N | 4602795671 | N/A | Shallow | -- | **79.5** | -- | 38.9 | 90.3 | 0.32 | 6.83 | 1.565 | 15.70 | 1.84 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW44A | 114-MW44A-9.5-20230913 | 9/13/2023 | 9.5 | N | 4602880871 | Total Cr Isopleth | Shallow | -- | 13.1 | -- | < 10.0 U | 29 | 3.21 | 6.84 | 1.782 | 19.03 | 0.53 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW44A | 114-MW44A-9.5-20231115 | 11/15/2023 | 9.5 | N | JD77054 | Total Cr Isopleth | Shallow | -- | 20.4 | -- | < 10 U | 22.8 | -0.09 | 7.97 | 1.431 | 18.4 | 3.9 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW44A | 114-MW44A-9.5-20240315 | 3/15/2024 | 9.5 | N | JD84590 | Total Cr Isopleth | Shallow | -- | 26.6 | -- | < 10 U | -15.9 | 0.11 | 7.07 | 1.518 | 17.5 | 1.12 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW44A | 114-MW44A-9.5-20240618 | 6/18/2024 | 9.5 | N | JD90651 | Total Cr Isopleth | Shallow | -- | 9.2 J | -- | < 10 U | -137 | 0.38 | 7.03 | 1.45 | 18.3 | 5.66 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW44A | 114-MW44A-9.5-20240911 | 9/11/2024 | 9.5 | N | JD95856 | Total Cr Isopleth | Shallow | -- | 19.7 | -- | < 10 RA | 10.6 | 0.27 | 6.99 | 1.44 | 19.7 | 3.96 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW44A | 114-MW44A-9.5-20241212 | 12/12/2024 | 9.5 | N | JE2543 | Total Cr Isopleth | Shallow | -- | 7.38 | -- | < 10 U | -102.1 | 0.23 | 6.78 | 1.46 | 19.5 | 4.34 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1A-MW101S | 114-P1A-MW101S-5.0-20200723 | 7/23/2020 | 5 | N | JD10545 | N/A | Shallow | 7.1 J | 10.9 | < 10 U | < 50 U | -366.30 | 0.02 | 6.46 | 1.64 | 21.61 | 8.93 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1A-MW101S | 114-P1A-MW101S-10.0-20200723 | 7/23/2020 | 10 | N | JD10545 | N/A | Shallow | 10.1 | 16.2 | < 10 U | < 50 U | -388.50 | 0.02 | 6.53 | 1.76 | 19.68 | 6.94 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1A-MW101S | 114-P1A-MW101S-7.5-20210930 | 9/30/2021 | 7.5 | N | 4602440201 | N/A | Shallow | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1A-MW101S | 114-P1A-MW101S-12.5-20210930 | 9/30/2021 | 12.5 | N | 4602440201 | N/A | Shallow | < 4.0 U | 3.9 J | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1A-MW101S | 114-P1A-MW101S-9.4-20220901 | 9/1/2022 | 9.4 | N | 4602647551 | N/A | Shallow | 8.6 | 24.1 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1A-MW101S | 114-P1A-MW101S-12.9-20220901 | 9/1/2022 | 12.9 | N | 4602647551 | N/A | Shallow | 12.6 | 18.0 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW101S | 114-P1B-MW101S-4.0-4.5 | 5/29/2019 | 4 - 4.5 | N | JC88879 | N/A | Shallow | 2.2 J | 2.8 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW101S | 114-P1B-MW101S-4.0-4.5X | 5/29/2019 | 4 - 4.5 | FD | JC88879 | N/A | Shallow | < 10 U | 3.0 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW101S | 114-P1B-MW101S-10.5-11.0 | 5/29/2019 | 10.5 - 11 | N | JC88879 | N/A | Shallow | < 10 U | 2.6 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW101S | 114-P1B-MW101S-5.5-20200724 | 7/24/2020 | 5.5 | N | JD10630 | N/A | Shallow | 2.0 J | 4.3 J | < 10 U | < 10 U | -84.90 | 3.75 | 9.32 | 1.66 | 23.45 | 8.70 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW101S | 114-P1B-MW101S-10.5-20200724 | 7/24/2020 | 10.5 | N | JD10630 | N/A | Shallow | < 10 U | 2.7 J | < 10 U | < 10 U | -24.80 | 9.31 | 7.92 | 1.48 | 20.75 | 9.80 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW101S | 114-P1B-MW101S-5.5-20211005 | 10/5/2021 | 5.5 | N | 4602443701 | N/A | Shallow | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW101S | 114-P1B-MW101S-10-20211005 | 10/5/2021 | 10 | N | 4602443701 | N/A | Shallow | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW101S | 114-P1B-MW101S-9.5-20220908 | 9/8/2022 | 9.5 | N | 4602651221 | N/A | Shallow | < 4.0 U | < 4.0 U | < 10.0 U | 9.1 J | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW102S | 114-P1B-MW102S-8.5-20190823 | 8/23/2019 | 8.5 | N | JC93834 | N/A | Shallow | **196** | **201** | 6.0 J | < 10 UJ | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW102S | 114-P1B-MW102S-13.5-20190823 | 8/23/2019 | 13.5 | N | JC93834 | N/A | Shallow | **244** | **250** | < 10 UJ | < 10 UJ | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW102S | 114-P1B-MW102S-13.5-20190823-X | 8/23/2019 | 13.5 | FD | JC93834 | N/A | Shallow | **240** | **248** | 21 J | 25 J | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW102S | 114-P1B-MW102S-8.0-20200729 | 7/29/2020 | 8 | N | JD10883 | N/A | Shallow | < 10 U | 7.3 J | < 10 U | < 10 U | -157.80 | -0.17 | 7.30 | 1.00 | 22.40 | 4.14 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW102S | 114-P1B-MW102S-13.0-20200729 | 7/29/2020 | 13 | N | JD10883 | N/A | Shallow | 19.5 | 24.2 | < 10 U | < 10 U | -155.00 | -0.26 | 7.42 | 0.91 | 19.55 | 8.90 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW102S | 114-P1B-MW102S-8.0-20200918 | 9/18/2020 | 8 | N | JD13328 | N/A | Shallow | -- | 48.1 | -- | 18 J- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW102S | 114-P1B-MW102S-13.0-20200918 | 9/18/2020 | 13 | N | JD13328 | N/A | Shallow | -- | **98.3** | -- | 9.4 J- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW102S | 114-P1B-MW102S-13.0-20200918X | 9/18/2020 | 13 | FD | JD13328 | N/A | Shallow | -- | **97.7** | -- | < 10 UJ | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW102S | 114-P1B-MW102S-9.0-20210930 | 9/30/2021 | 9 | N | 4602440201 | N/A | Shallow | 17.2 J | 41.7 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW102S | 114-P1B-MW102S-14.0-20210930 | 9/30/2021 | 14 | N | 4602440201 | N/A | Shallow | 24.5 | 56.3 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW102S | 114-P1B-MW102S-9-20211119 | 11/19/2021 | 9 | N | 4602476331 | N/A | Shallow | 18.1 | 43.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW102S | 114-P1B-MW102S-14-20211119 | 11/19/2021 | 14 | N | 4602476331 | N/A | Shallow | 26.5 J | 43.8 J | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW102S | 114-P1B-MW102S-14-20211119-X | 11/19/2021 | 14 | FD | 4602476331 | N/A | Shallow | 18.7 J | 17.7 J | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW102S | 114-P1B-MW102S-8.6-20220908 | 9/8/2022 | 8.6 | N | 4602651221 | N/A | Shallow | -- | 23.4 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW102S | 114-P1B-MW102S-13.3-20220908 | 9/8/2022 | 13.3 | N | 4602651221 | N/A | Shallow | 16.3 | 47.5 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW103S | 114-P1B-MW103S-9.5-10.0 | 5/29/2019 | 9.5 - 10 | N | JC88879 | N/A | Shallow | 15.6 | 19.2 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW103S | 114-P1B-MW103S-13.5-14.0 | 5/29/2019 | 13.5 - 14 | N | JC88879 | N/A | Shallow | 15.8 | 18.9 | < 10 U | 12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW103S | 114-P1B-MW103S-12.0-20190611 | 6/11/2019 | 12 | N | JC89662 | N/A | Shallow | 15.2 | 19.6 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 2.0 U | -- | 216 | -- | -- |
| 114-P1B-MW103S | 114-P1B-MW-103S-12.0-20190801 | 8/1/2019 | 12 | N | JC92572 | N/A | Shallow | 10.7 | 12.2 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.1 B | -- | 190 | -- | -- |
| 114-P1B-MW103S | 114-P1B-MW103S-8.5-20200729 | 7/29/2020 | 8.5 | N | JD10883 | N/A | Shallow | 2.3 J | < 10 U | < 10 U | < 10 U | -206.70 | 0.01 | 8.97 | 1.22 | 22.23 | 4.32 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW103S | 114-P1B-MW103S-13.5-20200729 | 7/29/2020 | 13.5 | N | JD10883 | N/A | Shallow | < 10 U | < 10 U | < 10 U | < 10 U | -127.70 | 0.01 | 6.93 | 1.33 | 20.35 | 4.20 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW103S | 114-P1B-MW103S-14.0-20211004 | 10/4/2021 | 14 | N | 4602442631 | N/A | Shallow | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW103S | 114-P1B-MW103S-9.0-20211005 | 10/5/2021 | 9 | N | 4602443701 | N/A | Shallow | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW103S | 114-P1B-MW103S-8.8-20220908 | 9/8/2022 | 8.8 | N | 4602651221 | N/A | Shallow | -- | 5.3 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW103S | 114-P1B-MW103S-13.6-20220908 | 9/8/2022 | 13.6 | N | 4602651221 | N/A | Shallow | < 4.0 U | 6.7 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1C-MW101S | 114-P1C-MW101S-8-20190822 | 8/22/2019 | 8 | N | JC93729 | N/A | Shallow | 2.3 J | 3.0 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1C-MW101S | 114-P1C-MW101S-13-20190822 | 8/22/2019 | 13 | N | JC93729 | N/A | Shallow | < 10 U | 2.2 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1C-MW101S | 114-P1C-MW101S-8.0-20200723 | 7/23/2020 | 8 | N | JD10545 | N/A | Shallow | 3.3 J | < 10 U | < 10 U | < 10 U | 102.70 | 0.16 | 6.02 | 0.33 | 21.97 | 3.99 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1C-MW101S | 114-P1C-MW101S-13.0-20200723 | 7/23/2020 | 13 | N | JD10545 | N/A | Shallow | < 10 U | < 10 U | < 10 U | < 10 U | 94.10 | 0.14 | 6.06 | 0.34 | 21.93 | 3.60 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1C-MW101S | 114-P1C-MW101S-4.5-20210930 | 9/30/2021 | 4.5 | N | 4602440201 | N/A | Shallow | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1C-MW101S | 114-P1C-MW101S-9.5-20210930 | 9/30/2021 | 9.5 | N | 4602440201 | N/A | Shallow | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1C-MW101S | 114-P1C-MW101S-11.0-20220830 | 8/30/2022 | 11 | N | 4602646321 | N/A | Shallow | 3.5 J | 4.2 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1C-MW102S | 114-P1C-MW102S-10-20190823 | 8/23/2019 | 10 | N | JC93834 | N/A | Shallow | 3.3 J | 16.2 | < 10 UJ | < 10 UJ | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1C-MW102S | 114-P1C-MW102S-15-20190823 | 8/23/2019 | 15 | N | JC93834 | N/A | Shallow | 3.8 J | 29.3 | < 10 UJ | < 10 UJ | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1C-MW102S | 114-P1C-MW102S-6.5-20200728 | 7/28/2020 | 6.5 | N | JD10766 | N/A | Shallow | 2.4 J | 3.8 J | < 10 UJ | < 50 UJ | -128.70 | 0.01 | 6.92 | 1.07 | 30.03 | 17.40 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1C-MW102S | 114-P1C-MW102S-11.5-20200728 | 7/28/2020 | 11.5 | N | JD10766 | N/A | Shallow | 3.8 J | 8.0 J | < 10 UJ | < 50 UJ | -145.50 | -0.16 | 7.10 | 1.29 | 27.21 | 16.30 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1C-MW102S | 114-P1C-MW102S-6.5-20211006 | 10/6/2021 | 6.5 | N | 4602444411 | N/A | Shallow | 2.7 J | 4.6 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P1C-MW102S | 114-P1C-MW102S-11.5-20211006 | 10/6/2021 | 11.5 | N | 4602444411 | N/A | Shallow | 2.8 J | 5.6 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1C-MW102S | 114-P1C-MW102S-8.8-20220901 | 9/1/2022 | 8.8 | N | 4602647551 | N/A | Shallow | -- | 48.0 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1C-MW102S | 114-P1C-MW102S-12.5-20220901 | 9/1/2022 | 12.5 | N | 4602647551 | N/A | Shallow | 3.0 J | 27.8 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1C-MW102S | 114-P1C-MW102S-12.5-20220901-X | 9/1/2022 | 12.5 | FD | 4602647551 | N/A | Shallow | 2.5 J | 28.5 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1C-MW104S | 114-P1C-MW104S-10-20190822 | 8/22/2019 | 10 | N | JC93729 | N/A | Shallow | < 10 U | < 10 U | < 10 U | 7.8 J | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1C-MW104S | 114-P1C-MW104S-15-20190822 | 8/22/2019 | 15 | N | JC93729 | N/A | Shallow | < 10 U | 4.5 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1C-MW104S | 114-P1C-MW104S-9.5-20200723 | 7/23/2020 | 9.5 | N | JD10545 | N/A | Shallow | < 10 U | 2.4 J | < 10 U | < 50 U | -79.30 | 1.25 | 6.87 | 1.06 | 19.84 | 7.45 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1C-MW104S | 114-P1C-MW104S-9.5-20200723X | 7/23/2020 | 9.5 | FD | JD10545 | N/A | Shallow | < 10 U | 2.8 J | < 10 U | < 50 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1C-MW104S | 114-P1C-MW104S-14.5-20200723 | 7/23/2020 | 14.5 | N | JD10545 | N/A | Shallow | < 10 U | 3.4 J | < 10 U | < 50 U | -82.60 | 0.24 | 7.02 | 1.38 | 18.00 | 9.80 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1C-MW104S | 114-P1C-MW104S-7.0-20210930 | 9/30/2021 | 7 | N | 4602440201 | N/A | Shallow | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1C-MW104S | 114-P1C-MW104S-12.0-20210930 | 9/30/2021 | 12 | N | 4602440201 | N/A | Shallow | < 4.0 U | < 4.0 U | < 20.0 U | < 20.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1C-MW104S | 114-P1C-MW104S-12-20220830 | 8/30/2022 | 12 | N | 4602646321 | N/A | Shallow | < 4.0 U | 3.7 J | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1C-MW104S | 114-P1C-MW104S-12-20220830-X | 8/30/2022 | 12 | FD | 4602646321 | N/A | Shallow | < 4.0 U | 3.6 J | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B2-MW101S | 114-P2B2-MW101S-7.0-20200403 | 4/3/2020 | 7 | N | JD5600 | N/A | Shallow | -- | < 10 U | -- | 6.1 J | -65.9 | 0.69 | 8.69 | 2.414 | 11.94 | 9.82 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B2-MW101S | 114-P2B2-MW101S-12.0-20200403 | 4/3/2020 | 12 | N | JD5600 | N/A | Shallow | -- | 2.2 J | -- | 7.3 J | -69.6 | 0.48 | 8.7 | 2.516 | 11.38 | 9.8 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B3-MW2R | 114-P2B3-MW2R-11.5-20200722 | 7/22/2020 | 11.5 | N | JD10482 | N/A | Shallow | < 10 U | 2.4 J | < 10 U | < 50 U | -137.50 | 0.03 | 6.58 | 2.69 | 21.81 | 8.30 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B3-MW2R | 114-P2B3-MW2R-11.5-20200722X | 7/22/2020 | 11.5 | FD | JD10482 | N/A | Shallow | < 10 U | 2.4 J | < 10 U | < 50 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B3-MW2R | 114-P2B3-MW2R-12.0-20201110 | 11/10/2020 | 12 | N | JD15968 | N/A | Shallow | 2.4 J | 4.0 J | < 10 U | < 50 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B3-MW2R | 114-P2B3-MW2R-11-20210315 | 3/15/2021 | 11 | N | 4602299261 | N/A | Shallow | < 4.0 U | < 4.0 U | < 10.0 U | < 20.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B3-MW2R | 114-P2B3-MW2R-11-20210315X | 3/15/2021 | 11 | FD | 4602299261 | N/A | Shallow | < 4.0 U | < 4.0 U | < 10.0 U | < 20.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B3-MW2R | 114-P2B3-MW2R-12.5-20210712 | 7/12/2021 | 12.5 | N | 4602385351 | N/A | Shallow | < 4.0 U | < 4.0 U | < 20.0 U | < 20.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B4-MW102S | 114-P2B4-MW102S-16.5-20200813 | 8/13/2020 | 16.5 | N | JD11685 | N/A | Shallow | 2.7 J | 5.7 J | < 10 U | < 50 U | -227.30 | 7.94 | 6.86 | 5.70 | 19.22 | 3.71 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B4-MW102S | 114-P2B4-MW102S-19.0-20200813 | 8/13/2020 | 19 | N | JD11685 | N/A | Shallow | 3.1 J | 5.1 J | < 10 U | < 50 U | -262.30 | 6.58 | 6.79 | 7.47 | 18.24 | 3.34 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B4-MW102S | 114-P2B4-MW102S-8.5-20211001 | 10/1/2021 | 8.5 | N | 4602440821 | N/A | Shallow | 4.1 | 5.7 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B4-MW102S | 114-P2B4-MW102S-13.5-20211001 | 10/1/2021 | 13.5 | N | 4602440821 | N/A | Shallow | 3.7 J | 4.5 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B4-MW102S | 114-P2B4-MW102S-13.2-20220908 | 9/8/2022 | 13.2 | N | 4602651221 | N/A | Shallow | < 4.0 U | 8.9 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B4-MW2R | 114-P2B4-MW2R-11.5-20200813 | 8/13/2020 | 11.5 | N | JD11685 | N/A | Shallow | 2.2 J | 36.0 | < 10 U | < 50 U | -124.50 | 2.47 | 7.15 | 6.66 | 19.47 | 9.47 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B4-MW2R | 114-P2B4-MW2R-12.0-20201109 | 11/9/2020 | 12 | N | JD15932 | N/A | Shallow | < 10 U | 36.7 | < 10 UJ | < 10 RA | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B4-MW2R | 114-P2B4-MW2R-12.0-20201109-X | 11/9/2020 | 12 | FD | JD15932 | N/A | Shallow | < 10 U | 33.1 | < 10 UJ | < 10 RA | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B4-MW2R | 114-P2B4-MW2R-11-20210312 | 3/12/2021 | 11 | N | 4602298001 | N/A | Shallow | < 4.0 UJ | 15.4 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B4-MW2R | 114-P2B4-MW2R-11-20210312X | 3/12/2021 | 11 | FD | 4602298001 | N/A | Shallow | 13.7 J | 17.1 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B4-MW2R | 114-P2B4-MW2R-12.4-20210713 | 7/13/2021 | 12.4 | N | 4602386701 | N/A | Shallow | < 4.0 U | 32.7 | < 10.0 U | < 10.0 UJ | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B4-MW2R | 114-P2B4-MW2R-12.4-20210713X | 7/13/2021 | 12.4 | FD | 4602386701 | N/A | Shallow | < 4.0 U | 33.9 | < 10.0 U | < 10.0 UJ | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 132-MW2A | 132-MW2A-11.0-20180426 | 4/26/2018 | 11 | N | JC64986 | N/A | Shallow | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 132-MW2A | 132-MW2A-11.0-20180426X | 4/26/2018 | 11 | FD | JC64986 | N/A | Shallow | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 132-P3A-MW102S | 132-P3A-MW102S-11.0-20180426 | 4/26/2018 | 11 | N | JC64986 | N/A | Shallow | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 132-P3A-MW1R | 132-P3A-MW1R-5.5-20200721 | 7/21/2020 | 5.5 | N | JD10407 | N/A | Shallow | < 10 U | < 10 U | < 10 U | < 50 U | -96.30 | 0.13 | 6.81 | 3.30 | 24.41 | 14.00 | -- | -- | -- | -- | -- | -- | -- | -- |
| 132-P3A-MW1R | 132-P3A-MW1R-5-20210723 | 7/23/2021 | 5 | N | 4602394131 | N/A | Shallow | < 4.0 U | < 4.0 U | < 50.0 U | < 50.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 133-MW6A | 133-MW6A-20171215 | 12/15/2017 | 11.6 | N | JC57501 | N/A | Shallow | -- | -- | -- | 8.4 J | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 133-MW6A | 133-MW6A-20171215 | 12/15/2017 | 11.6 | N | JC57501A | N/A | Shallow | -- | 7.3 J | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 133-MW6A | 133-MW6A-20180209 | 2/9/2018 | 11.6 | N | JC60563 | N/A | Shallow | -- | 9.9 J | -- | < 10 UJ | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 135-MW1AR | 135-MW1A-13.0-20180501 | 5/1/2018 | 13 | N | JC65255 | N/A | Shallow | -- | 19.5 | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 135-MW2A | 135-MW2A-6.0-20180423 | 4/23/2018 | 6 | N | JC64763 | N/A | Shallow | -- | 1.1 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 135-MW2A | 135-MW2A-10.0-20180423 | 4/23/2018 | 10 | N | JC64763 | N/A | Shallow | -- | 1.0 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 135-MW2A | 135-MW2A-14.0-20180423 | 4/23/2018 | 14 | N | JC64763 | N/A | Shallow | -- | 2.3 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 135-P3C-MW101S | 135-P3C-MW101S-20180530 | 5/30/2018 | 9.2 | N | JC66971 | N/A | Shallow | 2.2 J | 5.3 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 135-P3C-MW101S | 135-P3C-MW101S-20180823 | 8/23/2018 | 9.2 | N | JC72445 | N/A | Shallow | < 10 U | 4.7 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 135-P3C-MW101S | 135-P3C-MW101S-20181130 | 11/30/2018 | 9.2 | N | JC78789 | N/A | Shallow | < 10 U | 5.0 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 135-P3C-MW101S | 135-P3C-MW101S-20190301 | 3/1/2019 | 9.2 | N | JC83670 | N/A | Shallow | < 10 U | 2.8 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **15500** | **7180** | -- |
| 135-P3C-MW102S | 135-P3C-MW102S-12.0-20180423 | 4/23/2018 | 12 | N | JC64763 | N/A | Shallow | -- | 3.4 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 135-P3C-MW102S | 135-P3C-MW102S-20180530 | 5/30/2018 | 12 | N | JC66971 | N/A | Shallow | 1.9 J | 8.2 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 135-P3C-MW102S | 135-P3C-MW102S-20180823 | 8/23/2018 | 12 | N | JC72445 | N/A | Shallow | < 10 U | 2.6 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 135-P3C-MW102S | 135-P3C-MW102S-20181130 | 11/30/2018 | 12 | N | JC78789 | N/A | Shallow | < 10 U | 5.3 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 135-P3C-MW102S | 135-P3C-MW102S-20190301 | 3/1/2019 | 12 | N | JC83670 | N/A | Shallow | < 10 U | 4.5 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **2400** | **615** | -- |
| 186-MW02R | 186-MW02R-8.0-20180531 | 5/31/2018 | 8 | N | JC67069 | N/A | Shallow | -- | 2.1 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 186-MW02R | 186-MW02R-13.0-20180531 | 5/31/2018 | 13 | N | JC67069 | N/A | Shallow | -- | 1.6 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FS-MW101S | FS-MW101S-20180530 | 5/30/2018 | | N | JC66971 | N/A | Shallow | 1.0 J | 1.5 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FS-MW101S | FS-MW101S-20180530-X | 5/30/2018 | | FD | JC66971 | N/A | Shallow | 1.0 J | 1.9 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FS-MW101S | FS-MW101S-20180823 | 8/23/2018 | | N | JC72445 | N/A | Shallow | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FS-MW101S | FS-MW101S-20180823-X | 8/23/2018 | | FD | JC72445 | N/A | Shallow | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FS-MW101S | FS-MW101S-20181129 | 11/29/2018 | | N | JC78731 | N/A | Shallow | 3.0 J | < 10 UJ | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FS-MW101S | FS-MW101S-20190227 | 2/27/2019 | | N | JC83510 | N/A | Shallow | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FS-MW101S | FS-MW101S-6.5-20200403 | 4/3/2020 | 6.5 | N | JD5600 | N/A | Shallow | -- | < 10 U | -- | 6.1 J | -104.1 | 0.56 | 9.07 | 0.565 | 11.71 | 3.24 | -- | -- | -- | -- | -- | -- | -- | -- |
| FS-MW101S | FS-MW101S-6.5-20200722 | 7/22/2020 | 6.5 | N | JD10482 | N/A | Shallow | < 10 U | < 10 U | < 10 U | < 10 U | -51.10 | 0.34 | 7.15 | 1.06 | 24.38 | 1.30 | -- | -- | -- | -- | -- | -- | -- | -- |
| FS-MW101S | FS-MW101S-6.5-20211004 | 10/4/2021 | | N | 4602442631 | N/A | Shallow | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FS-MW101S | FS-MW101S-6.5-20220830 | 8/30/2022 | 6.5 | N | 4602646321 | N/A | Shallow | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FS-MW101S | FS-MW101S-6.5-20221230 | 12/30/2022 | 6.5 | N | 4602722451 | N/A | Shallow | -- | 13.8 | -- | < 10.0 U | -92.00 | 1.20 | 7.20 | 0.93 | 13.00 | 6.8 | -- | -- | -- | -- | -- | -- | -- | -- |
| FS-MW101S | FS-MW101S-6.5-20230316 | 3/16/2023 | 6.5 | N | 4602764731 | N/A | Shallow | -- | 69.6 J | -- | < 10.0 U | -61.0 | 2.71 | 7.22 | 1.686 | 10.2 | 8.7 | -- | -- | -- | -- | -- | -- | -- | -- |
| FS-MW101S | FS-MW101S-6.5-20230316-X | 3/16/2023 | 6.5 | FD | 4602764731 | N/A | Shallow | -- | 34.7 J | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FS-MW101S | FS-MW101S-6.5-20230504 | 5/4/2023 | 6.5 | N | 4602795671 | N/A | Shallow | -- | < 4.0 U | -- | < 10.0 U | -79.1 | 0.43 | 7.19 | 0.858 | 15.00 | 1.06 | -- | -- | -- | -- | -- | -- | -- | -- |
| FS-MW101S | FS-MW101S-6.5-20230913 | 9/13/2023 | 6.5 | N | 4602880871 | Total Cr Isopleth | Shallow | -- | < 4.0 U | -- | < 20.0 U | -98.5 | 3 | 6.81 | 1.804 | 27.33 | 5.93 | -- | -- | -- | -- | -- | -- | -- | -- |
| FS-MW101S | FS-MW101S-6.5-20231212 | 12/12/2023 | 6.5 | N | JD78686 | Total Cr Isopleth | Shallow | -- | < 10 UJ | -- | **100 J** | -104.1 | 0.19 | 6.8 | 0.667 | 12.9 | 3.47 | -- | -- | -- | -- | -- | -- | -- | -- |
| FS-MW101S | FS-MW101S-6.5-20240313 | 3/13/2024 | 6.5 | N | JD84389 | Total Cr Isopleth | Shallow | -- | < 10 U | -- | < 10 U | -17.2 | -0.17 | 6.95 | 0.483 | 9.9 | 6.62 | -- | -- | -- | -- | -- | -- | -- | -- |
| FS-MW101S | FS-MW101S-6.5-20240618 | 6/18/2024 | 6.5 | N | JD90651 | Total Cr Isopleth | Shallow | -- | < 10 U | -- | 6.7 J | -270 | 0.55 | 7.3 | 0.393 | 23.6 | 5.97 | -- | -- | -- | -- | -- | -- | -- | -- |
| FS-MW101S | FS-MW101S-6.5-20240911 | 9/11/2024 | 6.5 | N | JD95856 | Total Cr Isopleth | Shallow | -- | < 10 U | -- | 18 J- | -171.6 | 1.93 | 7.26 | 0.63 | 26.2 | 4.3 | -- | -- | -- | -- | -- | -- | -- | -- |
| FS-MW101S | FS-MW101S-6.5-20241213 | 12/13/2024 | 6.5 | N | JE2640 | Total Cr Isopleth | Shallow | -- | < 10 U | -- | < 10 U | -96.9 | 0.79 | 7.12 | 0.66 | 12.2 | 6.02 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW4S | GPS-MW4S-20171221 | 12/21/2017 | 14.92 | N | JC57859 | N/A | Shallow | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 40.6 | 22.6 | 4.2 J | 5260 | < 100 U | < 15 U | -- |
| GPS-MW4S | GPS-MW4S-20180409 | 4/9/2018 | 14.92 | N | JC63852 | N/A | Shallow | < 10 U | 18.1 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 42.7 | 119 | 3.9 | 4810 | 198 | < 15 U | -- |
| GPS-MW4S | GPS-MW4S_20181220 | 12/20/2018 | 14.92 | N | JC80137 | N/A | Shallow | < 10 UJ | 19.5 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 47.6 | 154 | -- | 7320 | -- | < 15 U | R |
| GPS-MW4S | GPS-MW4S-20200813 | 8/13/2020 | 14.92 | N | JD11673 | N/A | Shallow | 7.2 J | 11.9 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 54.8 | 174 | 4.4 | 8330 | 38.7 J | < 15 U | -- |
| GPS-MW4S | GPS-MW4S-20201111 | 11/11/2020 | 14.92 | N | JD16049 | N/A | Shallow | 14.3 | 31.8 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 66.1 | 185 | 6.9 | 6950 | 53.5 J | < 15 U | -- |
| GPS-MW4S | GPS-MW4S_20210930 | 9/30/2021 | 14.92 | N | JD32569 | N/A | Shallow | 18.6 | 23.9 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 59.2 | 165 | 7.1 | 6700 | 54.7 J | < 15 U | -- |
| GPS-MW4S | GPS-MW4S-BD-20211116 | 11/16/2021 | 14.92 | FD | JD35372 | N/A | Shallow | < 32.7 UB | 60.1 | < 10 U | 2.9 J | -- | -- | -- | -- | -- | -- | -- | 107 J | 199 | 10.6 | 7160 | 33.4 J | < 15 U | -- |
| GPS-MW4S | GPS-MW-4S-20211116 | 11/16/2021 | 14.92 | N | JD35372 | N/A | Shallow | 31.4 | < 53.2 UB | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 77.1 J | 199 | 8.9 | 7180 | 47.7 J | 2.1 J | -- |
| GPS-MW4S | GPS-MW4S-20220224 | 2/24/2022 | 14.92 | N | JD40291 | N/A | Shallow | 12.8 | **106** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 50.6 | 154 | 6.0 | 8470 | 35.2 J | 3.1 J | -- |
| GPS-MW4S | GPS-MW4S-20220523 | 5/23/2022 | 14.92 | N | JD45334 | N/A | Shallow | < 23.4 UB | 57.7 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 83.7 | 154 | 8.1 | 7360 | 32.6 J | < 15 U | -- |
| GPS-MW4S | GPS-MW4S-14-20220902 | 9/2/2022 | 14 | N | 4602648361 | N/A | Shallow | 2.7 J | 15.4 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW4S | GPS-MW4S-14.5-20230315 | 3/15/2023 | 14.5 | N | 4602763791 | N/A | Shallow | -- | 13.8 | -- | < 10.0 U | -179.9 | 0.63 | 11.95 | 1.55 | 10.14 | 3 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW4S | GPS-MW4S-14.5-20230315-X | 3/15/2023 | 14.5 | FD | 4602763791 | N/A | Shallow | -- | 13.2 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW4S | GPS-MW4S-14.5-20230508 | 5/8/2023 | 14.5 | N | 4602798181 | N/A | Shallow | -- | 9.2 | -- | < 10.0 U | -314.3 | 0.37 | 11.29 | 1.77 | 15.18 | 5.02 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW4S | GPS-MW4S-14.5-20230912 | 9/12/2023 | 14.5 | N | 4602879871 | Total Cr Isopleth | Shallow | -- | 11.0 | -- | < 10.0 U | -209.7 | 0.23 | 10.57 | 1.8 | 20.43 | 1.38 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW4S | GPS-MW4S-14.5-20231211 | 12/11/2023 | 14.5 | N | JD78573 | Total Cr Isopleth | Shallow | -- | < 10 U | -- | < 10 U | -291.2 | 0.07 | 11.8 | 1.961 | 14 | 5.22 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW4S | GPS-MW4S-14.5-20240314 | 3/14/2024 | 14.5 | N | JD84494 | Total Cr Isopleth | Shallow | -- | 14.8 | -- | < 10 U | -268.2 | 0.21 | 11.54 | 2.136 | 12 | 1.54 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW4S | GPS-MW4S-14.5-20240612 | 6/12/2024 | 14.5 | N | JD90298 | Total Cr Isopleth | Shallow | -- | 7.9 J | -- | < 10 U | -546 | 0.14 | 11.57 | 2.275 | 17.1 | 2.1 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW4S | GPS-MW4S-14.5-20240912 | 9/12/2024 | 14.5 | N | JD95972 | Total Cr Isopleth | Shallow | -- | 6.5 J | -- | < 10 U | -185.2 | 0.12 | 11.14 | 1.79 | 21.9 | 4.19 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW4S | GPS-MW4S-14.5-20241211 | 12/11/2024 | 14.5 | N | JE2416 | Total Cr Isopleth | Shallow | -- | 12.8 | -- | < 10 U | -289.7 | 0.13 | 11.76 | 2.04 | 15.7 | 2.38 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW5S | GPS-MW5S-20180130 | 1/30/2018 | 11 | N | JC59976 | Treatment | Shallow | **108** | **134** | < 10 U | < 10 U | -292 | 20.01 | 10.92 | 3.09 | 9.57 | 0.1 | -- | 46.9 | **260** | 19.5 | 1250 | **< 1000 U** | **75.8** | -- |
| GPS-MW5S | GPS-MW5S-20180409 | 4/9/2018 | 11 | N | JC63852 | Treatment | Shallow | 42.1 | 48.5 | 16 | < 10 U | -- | -- | -- | -- | -- | -- | -- | 5.1 | **331** | < 2.0 U | 460 | **11000 J** | **13300 J** | -- |
| GPS-MW5S | GPS-MW5S-DUP-20200814 | 8/14/2020 | 11 | FD | JD11773 | Post-Treatment | Shallow | 65.8 | **75.2** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 1.1 J | 138 J | 23.7 | 2260 | 43.9 J | 39.1 J | -- |
| GPS-MW5S | GPS-MW5S-20200814 | 8/14/2020 | 11 | N | JD11773 | Post-Treatment | Shallow | 63.3 | **74.3** | < 10 U | < 50 U | -- | -- | -- | -- | -- | -- | -- | 52.0 J | 130 J | 24.2 | 1870 | 51.2 J | 39.2 J | -- |
| GPS-MW5S | GPS-MW5S-20201113 | 11/13/2020 | 11 | N | JD16259 | Post-Treatment | Shallow | 55.6 | **94.3** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 45.3 | 120 | 19.0 | 3570 | 37.6 J | 23.6 | -- |
| GPS-MW5S | GPS-MW5S-20210226 | 2/26/2021 | 11 | N | JD20896 | Post-Treatment | Shallow | 29.7 | 66.0 | **< 100 U** | **< 100 U** | -- | -- | -- | -- | -- | -- | -- | 28.7 | 1.9 J | 12.1 | 5330 | < 100 U | 8.1 J | -- |
| GPS-MW5S | GPS-MW-5S-20211011 | 10/11/2021 | 11 | N | JD33262 | Post-Treatment | Shallow | 69.8 | **78.2** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 58.4 | 198 | 26.3 | 1590 | 55.1 J | **60.8** | -- |
| GPS-MW5S | GPS-MW5S-20211118 | 11/18/2021 | 11 | N | JD35530 | Post-Treatment | Shallow | **128 J** | **100** | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 62.8 | 176 | 22.1 | 3620 | < 100 U | **62.9** | -- |
| GPS-MW5S | GPS-MW5S-20220224 | 2/24/2022 | 11 | N | JD40291 | Post-Treatment | Shallow | **112** | **97.7** | < 10 U | 6.6 J | -- | -- | -- | -- | -- | -- | -- | 58.2 | 216 | 18.6 | 2510 | < 100 U | **98.4** | -- |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| GPS-MW5S | GPS-MW5S-20220524 | 5/24/2022 | 11 | N | JD45395 | Post-Treatment | Shallow | **73.1** | **145** | < 10 U | 6.8 J | -- | -- | -- | -- | -- | -- | -- | 93.4 | 181 | 29.8 | 3070 | < 100 U | **66.0** | -- |
| GPS-MW5S | GPS-MW5S-11-20220902 | 9/2/2022 | 11 | N | 4602648361 | N/A | Shallow | 39.0 | **85.8** | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW5S | GPS-MW5S-11-20221229 | 12/29/2022 | 11 | N | 4602721691 | N/A | Shallow | -- | 31.8 | -- | < 10.0 U | -363 | 0.21 | 10.58 | 2.568 | 11.56 | 4.55 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW5S | GPS-MW5S-11-20230315 | 3/15/2023 | 11 | N | 4602763791 | N/A | Shallow | -- | **238** | -- | < 10.0 U | -160.4 | 0.60 | 7.15 | 2.347 | 13.70 | 3.4 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW5S | GPS-MW5S-11-20230508 | 5/8/2023 | 11 | N | 4602798181 | N/A | Shallow | -- | **84.1** | -- | < 10.0 U | -297.1 | 0.44 | 9.64 | 2.56 | 14.53 | 6.30 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW5S | GPS-MW5S-11.0-20230912 | 9/12/2023 | 11 | N | 4602879871 | Total Cr Isopleth | Shallow | -- | **101** | -- | < 10.0 U | -352.9 | 0.24 | 9.74 | 3.315 | 23.58 | 10.2 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW5S | GPS-MW5S-9.0-20231213 | 12/13/2023 | 9 | N | JD78777 | Total Cr Isopleth | Shallow | -- | 63.4 | -- | < 10 UJ | -274.7 | -0.23 | 9.99 | 3.038 | 13.6 | 1.01 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW5S | GPS-MW5S-14.0-20231213 | 12/13/2023 | 14 | N | JD78777 | Total Cr Isopleth | Shallow | -- | **77.3** | -- | < 10 UJ | -272.1 | -0.23 | 9.85 | 3.502 | 12.3 | 5.13 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW5S | GPS-MW5S-9.0-20240314 | 3/14/2024 | 9 | N | JD84494 | Total Cr Isopleth | Shallow | -- | 18.5 | -- | < 10 U | -353.3 | 0.05 | 10.01 | 3.382 | 12.1 | 3 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW5S | GPS-MW5S-14.0-20240314 | 3/14/2024 | 14 | N | JD84494 | Total Cr Isopleth | Shallow | -- | **92.7** | -- | 4.9 J | -358.6 | 0.05 | 9.99 | 3.463 | 11.7 | 4.45 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW5S | GPS-MW5S-9.0-20240612 | 6/12/2024 | 9 | N | JD90298 | Total Cr Isopleth | Shallow | -- | **109** | -- | < 10 U | -379 | 0.02 | 9.89 | 3.202 | 17.5 | 6.2 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW5S | GPS-MW5S-14.0-20240612 | 6/12/2024 | 14 | N | JD90298 | Total Cr Isopleth | Shallow | -- | **126** | -- | < 10 U | -366 | 0.14 | 9.84 | 3.523 | 15.8 | 8.2 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW5S | GPS-MW5S-14.0-20240612-X | 6/12/2024 | 14 | FD | JD90298 | Total Cr Isopleth | Shallow | -- | **112** | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW5S | GPS-MW5S-9.0-20240913 | 9/13/2024 | 9 | N | JD96081 | Total Cr Isopleth | Shallow | -- | **97.2 J-** | -- | < 10 U | -314.7 | 0.1 | 9.82 | 3.41 | 21.8 | 2.81 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW5S | GPS-MW5S-14.0-20240913 | 9/13/2024 | 14 | N | JD96081 | Total Cr Isopleth | Shallow | -- | **120 J-** | -- | < 10 U | -389.6 | 0.08 | 9.78 | 3.66 | 20.2 | 8.47 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW5S | GPS-MW5S-9.0-20241119 | 11/19/2024 | 9 | N | JE946 | Total Cr Isopleth | Shallow | -- | **101** | -- | < 10 U | -129.4 | 0.04 | 9.89 | 2.58 | 18.3 | 1.82 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW5S | GPS-MW5S-14.0-20241119 | 11/19/2024 | 14 | N | JE946 | Total Cr Isopleth | Shallow | -- | **119** | -- | 5.2 J | -138.3 | 0.14 | 9.78 | 2.63 | 18 | 9.26 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW6S | GPS-MW6S-8.5-20200724 | 7/24/2020 | 8.5 | N | JD10630 | N/A | Shallow | < 10 U | 7.0 J | < 10 U | < 10 U | -34.10 | 1.07 | 7.54 | 0.81 | 22.05 | 5.03 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW6S | GPS-MW6S-11.5-20200724 | 7/24/2020 | 11.5 | N | JD10630 | N/A | Shallow | < 10 U | < 10 U | < 10 U | < 10 U | -49.40 | 0.89 | 7.50 | 0.61 | 21.96 | 6.32 | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW6S | GPS-MW6S-20200814 | 8/14/2020 | 6 | N | JD11773 | Post-Treatment | Shallow | 2.2 J | 3.6 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 5.1 | 194 J | 2.2 | 599 | 84.8 J | **128 J** | -- |
| GPS-MW6S | GPS-MW6S-20201113 | 11/13/2020 | 6 | N | JD16259 | Post-Treatment | Shallow | < 10 U | 3.5 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 2.0 | 81.9 | < 2.0 U | 21.2 | 214 | **50.3** | -- |
| GPS-MW6S | GPS-MW6S-20210226 | 2/26/2021 | 6 | N | JD20896 | Post-Treatment | Shallow | < 10 U | 11.8 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 5.8 | 142 | 3.6 | 2610 | 33.2 J | 46.1 | -- |
| GPS-MW6S | GPS-MW6S_20210930 | 9/30/2021 | 6 | N | JD32569 | Post-Treatment | Shallow | < 10 U | 16.4 | < 10 U | **< 100 U** | -- | -- | -- | -- | -- | -- | -- | 3.0 | 104 | < 2.0 U | 312 | 147 | **270** | -- |
| GPS-MW6S | GPS-MW-6S-20211117 | 11/17/2021 | 6 | N | JD35453 | Post-Treatment | Shallow | < 10 U | 9.9 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | < 2.9 UB | 85.1 | 0.50 J | 1240 | 229 | **258** | -- |
| GPS-MW6S | GPS-MW6S-20220223 | 2/23/2022 | 6 | N | JD40159 | Post-Treatment | Shallow | < 10 U | 13.9 | < 10 U | 11 | -- | -- | -- | -- | -- | -- | -- | < 1.9 UB | 47.8 | 0.60 J | 1630 | 239 | **127** | -- |
| GPS-MW6S | GPS-MW6S-20220524 | 5/24/2022 | 6 | N | JD45395 | Post-Treatment | Shallow | < 10 U | 6.7 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 3.2 | 35.7 | 0.62 J | 834 | 188 | **92.1** | -- |
| GPS-MW6S | GPS-MW6S-8.8-20220902 | 9/2/2022 | 8.8 | N | 4602648361 | N/A | Shallow | < 4.0 U | 5.2 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-P2Z5 | GPS-P2Z5-20190325 | 3/25/2019 | 10.7 | N | JC85107 | Treatment | Shallow | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 54.5 | 143 | -- | 2920 | -- | < 15 U | < 0.20 U |
| GPS-P2Z3 | GPS-P2Z3S-20190325 | 3/25/2019 | 10.6 | N | JC85107 | Treatment | Shallow | 11.9 | 12.9 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 28.8 | 138 | -- | 7070 | -- | 23.6 | < 0.20 U |
| HSS-P3C-MW1S | HSS-P3C-MW1S-12.5-20200728 | 7/28/2020 | 12.5 | N | JD10766 | N/A | Shallow | < 10 U | 2.7 J | < 10 UJ | < 50 UJ | -111.50 | 0.01 | 7.07 | 3.09 | 20.01 | 6.64 | -- | -- | -- | -- | -- | -- | -- | -- |
| HSS-P3C-MW1S | HSS-P3C-MW1S-17.5-20200728 | 7/28/2020 | 17.5 | N | JD10766 | N/A | Shallow | < 10 U | 2.9 J | < 10 UJ | < 50 UJ | -110.80 | 0.05 | 7.06 | 3.11 | 19.88 | 9.94 | -- | -- | -- | -- | -- | -- | -- | -- |
| HSS-P3C-MW1S | HSS-P3C-MW1S-9.5-20211004 | 10/4/2021 | 9.5 | N | 4602442631 | N/A | Shallow | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HSS-P3C-MW1S | HSS-P3C-MW1S-9.5-20211004-X | 10/4/2021 | 9.5 | FD | 4602442631 | N/A | Shallow | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HSS-P3C-MW1S | HSS-P3C-MW1S-14.5-20211004 | 10/4/2021 | 14.5 | N | 4602442631 | N/A | Shallow | < 4.0 U | 8.4 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW10S | MW10S-8.0-20180426 | 4/26/2018 | 8 | N | JC64986 | N/A | Shallow | < 10 U | 1.4 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW10S | MW10S-12.0-20180426 | 4/26/2018 | 12 | N | JC64986 | N/A | Shallow | -- | 2.2 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW7S | MW7S-10.0-20180430 | 4/30/2018 | 10 | N | JC65178 | N/A | Shallow | 2.0 J | 4.0 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW8S | MW8S-20180427 | 4/27/2018 | 9 | N | JC65066 | N/A | Shallow | 1.6 J | 6.2 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-CR-3 | MW-CR-3-11.0-20180418 | 4/18/2018 | 11 | N | JC64444 | N/A | Shallow | -- | 2.0 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-CR-3 | MW-CR-3-16.0-20180418 | 4/18/2018 | 16 | N | JC64444 | N/A | Shallow | -- | 2.1 J | -- | 9.3 J | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-CR-3 | MW-CR-3-21.0-20180418 | 4/18/2018 | 21 | N | JC64444 | N/A | Shallow | -- | 3.0 J | -- | 8.1 J | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-MORRIS1A | MW-MORRIS1A-202109220 | 9/20/2021 | 17.3 | N | 4602432251 | Treatment | Shallow | -- | -- | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10W-MW105I | 10W-MW105I-20180312 | 3/12/2018 | 37.2 | N | JC62130 | N/A | Intermediate | -- | 23.3 | -- | 26 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW14B | 114-MW14B-20171219 | 12/19/2017 | 29.7 | N | JC57638 | N/A | Intermediate | -- | 5.9 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW17B | 114-MW17B-20180418 | 4/18/2018 | | N | JC64444 | N/A | Intermediate | -- | 7.4 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW17B | 114-MW17B-27.5-20221228 | 12/28/2022 | 27.5 | N | 4602721191 | N/A | Intermediate | -- | 12.0 | -- | < 10.0 U | 12.60 | 1.04 | 6.96 | 2.64 | 13.90 | 1.80 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW17B | 114-MW17B-27.5-20230315 | 3/15/2023 | 27.5 | N | 4602763791 | N/A | Intermediate | -- | 10.4 | -- | < 10.0 U | -39.0 | 4.06 | 7 | 2.089 | 12.68 | 0.23 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW17B | 114-MW17B-27.5-20230503 | 5/3/2023 | 27.5 | N | 4602794711 | N/A | Intermediate | -- | 8.4 | -- | < 10.0 U | 53.8 | 0.47 | 6.9 | 2.493 | 13.61 | 0.98 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW17B | 114-MW17B-27.5-20230913 | 9/13/2023 | 27.5 | N | 4602880871 | Total Cr Isopleth | Intermediate | -- | 19.8 | -- | < 10.0 U | 7.7 | 0.6 | 7.08 | 2.182 | 18.09 | 2.85 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW17B | 114-MW17B-27.5-20231212 | 12/12/2023 | 27.5 | N | JD78686 | Total Cr Isopleth | Intermediate | -- | 9.7 J | -- | < 10 U | -59.2 | 0.08 | 7.11 | 1.905 | 14.1 | 0.71 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW17B | 114-MW17B-27.5-20240320 | 3/20/2024 | 27.5 | N | JD84852 | Total Cr Isopleth | Intermediate | -- | 14.4 | -- | < 10 U | -15.3 | 0.35 | 7.04 | 2.098 | 12.7 | 0.93 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW17B | 114-MW17B-27.5-20240618 | 6/18/2024 | 27.5 | N | JD90651 | Total Cr Isopleth | Intermediate | -- | 9.4 J | -- | < 10 U | -16.3 | 0.63 | 7.13 | 1.665 | 16.4 | 0.91 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW17B | 114-MW17B-27.5-20240911 | 9/11/2024 | 27.5 | N | JD95856 | Total Cr Isopleth | Intermediate | -- | 46.4 J | -- | < 10 RA | -4.9 | 0.29 | 7.15 | 1.83 | 16.8 | 0.85 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW17B | 114-MW17B-27.5-20240911-X | 9/11/2024 | 27.5 | FD | JD95856 | Total Cr Isopleth | Intermediate | -- | 21.3 J | -- | < 10 RA | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW17B | 114-MW17B-27.5-20241213 | 12/13/2024 | 27.5 | N | JE2640 | Total Cr Isopleth | Intermediate | -- | 6.5 JB | -- | < 10 U | -46 | 0.26 | 7.15 | 1.65 | 13.9 | 0.92 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW19B | 114-MW19B20180501 | 5/1/2018 | 49.5 | N | JC65255 | N/A | Intermediate | -- | **168** | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW20B | 114-MW20B-20180419 | 4/19/2018 | 37.5 | N | JC64571 | N/A | Intermediate | -- | **412000** | -- | **211000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW27B | 114-MW27B-20190228 | 2/28/2019 | 32.1 | N | JC83586 | N/A | Intermediate | -- | 4.8 J | -- | 8.7 J | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW27B | 114-MW27B-32.5-20200401 | 4/1/2020 | 32.5 | N | JD5447 | N/A | Intermediate | -- | 4.9 J | -- | < 10 U | 93.3 | 2.46 | 7.52 | 1.104 | 13.01 | 20.6 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW37B | 114-MW37B-20190226 | 2/26/2019 | 32.1 | N | JC83437 | N/A | Intermediate | -- | 2.4 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW38B | FORREST-114-MW38B-20171204 | 12/4/2017 | | N | JC56504 | N/A | Intermediate | -- | -- | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW38B | FORREST-114-MW38B-20171204 | 12/4/2017 | | N | JC56504A | N/A | Intermediate | -- | 5.9 J | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW38B | 114-MW38B-39.5-20230316 | 3/16/2023 | 39.5 | N | 4602764731 | N/A | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -63.4 | 0.57 | 7.63 | 0.569 | 13.57 | 1.06 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW38B | 114-MW38B-39.5-20230504 | 5/4/2023 | 39.5 | N | 4602795671 | N/A | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -76.7 | 0.03 | 7.74 | 0.655 | 14.60 | 5.33 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW38B | 114-MW38B-39.5-20230913 | 9/13/2023 | 39.5 | N | 4602880871 | Total Cr Isopleth | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -84.3 | 0.37 | 7.63 | 0.318 | 16.9 | 6.15 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW38B | 114-MW38B-39.5-20231115 | 11/15/2023 | 39.5 | N | JD77054 | Total Cr Isopleth | Intermediate | -- | < 2.0 U | -- | < 10 U | -144.9 | 0.14 | 8.61 | 0.3622 | 15.8 | 0.88 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW38B | 114-MW38B-39.5-20240313 | 3/13/2024 | 39.5 | N | JD84389 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -108 | 0.55 | 7.93 | 0.3298 | 15.1 | 0.61 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW38B | 114-MW38B-39.5-20240618 | 6/18/2024 | 39.5 | N | JD90651 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -71.3 | 0.48 | 8 | 0.3203 | 16.1 | 0.67 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW38B | 114-MW38B-39.5-20240911 | 9/11/2024 | 39.5 | N | JD95856 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 RA | -8.8 | 0.53 | 8 | 0.36 | 18.7 | 1.99 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW38B | 114-MW38B-39.5-20240911-X | 9/11/2024 | 39.5 | FD | JD95856 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 RA | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW38B | 114-MW38B-39.5-20241212 | 12/12/2024 | 39.5 | N | JE2543 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -73.2 | 0.55 | 8.04 | 0.37 | 12.9 | 0.38 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW38B | 114-MW38B-39.5-20241212-X | 12/12/2024 | 39.5 | FD | JE2543 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW40B | 114-MW40B-20180427 | 4/27/2018 | 40 | N | JC65066 | Baseline | Intermediate | < 10 U | 1.3 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW40B | 114-MW40B-40.5-20221018 | 10/18/2022 | 40.5 | N | 4602677121 | Treatment | Intermediate | -- | 7.1 | -- | < 10.0 U | -97.8 | 3.75 | 7.63 | 5.586 | 18.43 | 1.48 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW40B | 114-MW40B-40.5-20221116 | 11/16/2022 | 40.5 | N | 4602696581 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -78.5 | 0.6 | 7.85 | 7.566 | 17.02 | 8.28 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW40B | 114-MW40B-40.5-20221213 | 12/13/2022 | 40.5 | N | 4602712771 | Treatment | Intermediate | -- | 3.8 J | -- | < 10.0 U | -133.6 | 1.06 | 7.58 | 4.839 | 15.22 | 5.53 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW40B | 114-MW40B-40.5-20230124 | 1/24/2023 | 40.5 | N | 4602734531 | Treatment | Intermediate | -- | 2.5 J | -- | < 10.0 U | -71.1 | 0.44 | 7.85 | 2.7 | 13.71 | 9.88 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW40B | 114-MW40B-40.5-20230223 | 2/23/2023 | 40.5 | N | 4602751411 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -90.4 | 2.44 | 7.73 | 4.494 | 9.79 | 1.28 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW40B | 114-MW40B-40.5-20230317 | 3/17/2023 | 40.5 | N | 4602765401 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -78.8 | 3.81 | 7.72 | 4.131 | 15.47 | 3.11 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW40B | 114-MW40B-40.5-20230421 | 4/21/2023 | 40.5 | N | 4602786851 | Treatment | Intermediate | -- | 7.4 | -- | < 10.0 U | 7.6 | 0.31 | 7.61 | 3.857 | 16.9 | 8.86 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW40B | 114-MW40B-40.5-20230510 | 5/10/2023 | 40.5 | N | 4602800211 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | 66.6 | 0.48 | 8 | 2.647 | 19.1 | 1.14 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW40B | 114-MW40B-40.5-20230622 | 6/22/2023 | 40.5 | N | 4602828851 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -16.9 | 0.38 | 7.75 | 4.591 | 17.4 | 2.9 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW40B | 114-MW40B-40.5-20230720 | 7/20/2023 | 40.5 | N | 4602846391 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW40B | 114-MW40B-40.5-20230720 | 7/20/2023 | 40.5 | N | 4602846531 | Treatment | Intermediate | -- | -- | -- | -- | -92.9 | 0.87 | 7.63 | 4.607 | 22.1 | 8.35 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW40B | 114-MW40B-40.5-20230720-X | 7/20/2023 | 40.5 | FD | 4602846391 | Treatment | Intermediate | -- | 3.4 J | -- | 10.3 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW40B | 114-MW40B-40.5-20230824 | 8/24/2023 | 40.5 | N | 4602868441 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -40.1 | 0.68 | 7.89 | 5.034 | 18.88 | 4.25 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW40B | 114-MW40B-40.5-20230919 | 9/19/2023 | 40.5 | N | 4602885251 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -77.3 | OUT OF RANG | 7.39 | 5.601 | 33.06 | 1.48 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW40B | 114-MW40B-40.5-20231012 | 10/12/2023 | 40.5 | N | 4602902281 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -96.8 | 0.42 | 7.57 | 4.907 | 18.53 | 3.42 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW40B | 114-MW40B-40.5-20231116 | 11/16/2023 | 40.5 | N | JD77164 | Treatment | Intermediate | -- | 0.74 B | -- | < 10 U | -145.3 | 0.49 | 7.59 | 5.21 | 17.7 | 1.37 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW40B | 114-MW40B-40.5-20231222 | 12/22/2023 | 40.5 | N | JD79442 | Treatment | Intermediate | -- | < 10 U | -- | < 10 U | 86.5 | 1.02 | 7.7 | 5.39 | 11.5 | 0.48 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW40B | 114-MW40B-40.5-20240123 | 1/23/2024 | 40.5 | N | JD81013 | Treatment | Intermediate | -- | < 10 U | -- | < 10 U | 106.4 | 0.34 | 7.77 | 4.825 | 14.1 | 0.71 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW40B | 114-MW40B-40.5-20240221 | 2/21/2024 | 40.5 | N | JD82924 | Treatment | Intermediate | -- | < 10 U | -- | < 10 U | 90.1 | 2.28 | 7.5 | 4.822 | 13.7 | 3.1 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW40B | 114-MW40B-40.5-20240320 | 3/20/2024 | 40.5 | N | JD84851 | Treatment | Intermediate | -- | < 10 U | -- | < 10 U | -149.1 | 0.2 | 7.73 | 4.873 | 15 | 3.56 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW40B | 114-MW40B-40.5-20240415 | 4/15/2024 | 40.5 | N | JD86534 | Treatment | Intermediate | -- | < 10 U | -- | < 10 U | 3.6 | 0.32 | 7.62 | 5.16 | 21.4 | 4.19 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW40B | 114-MW40B-40.5-20240711 | 7/11/2024 | 40.5 | N | JD92004 | Treatment | Intermediate | -- | < 10 U | -- | < 10 U | -48.8 | 0.91 | 7.61 | 5.25 | 25.9 | 3.42 | -- | 2.8 | 124 | -- | -- | -- | -- | -- |
| 114-MW40B | 114-MW40B-40.5-20241008 | 10/8/2024 | 40.5 | N | JD97685 | Treatment | Intermediate | -- | < 10 U | -- | < 10 U | -46.6 | 0.27 | 7.52 | 6.09 | 21 | 2.3 | -- | 2.5 | 120 | -- | -- | -- | -- | -- |
| 114-P2A-MW102I | 114-P2A-MW102I-30.0-20200403 | 4/3/2020 | 30 | N | JD5600 | N/A | Intermediate | -- | 5.8 J | -- | < 10 U | -159 | 0.3 | 7.74 | 1.437 | 12.61 | 28.6 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW102I | 114-P2A-MW102I-35.0-20200403 | 4/3/2020 | 35 | N | JD5600 | N/A | Intermediate | -- | 5.9 J | -- | 6.1 J | -157.7 | 0.18 | 7.71 | 1.451 | 12.61 | 24.3 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW102I | 114-P2A-MW102I-31.0-20221229 | 12/29/2022 | 31 | N | 4602721691 | N/A | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -168 | 0.68 | 7.51 | 1.045 | 13.7 | 3.41 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW102I | 114-P2A-MW102I-36.0-20221229 | 12/29/2022 | 36 | N | 4602721691 | N/A | Intermediate | -- | < 4.0 U | -- | < 10.0 U | 140.0 | 0.69 | 7.49 | 1.088 | 14 | 1.1 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW102I | 114-P2A-MW102I-31-20230314 | 3/14/2023 | 31 | N | 4602762891 | N/A | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -141.2 | 0.41 | 7.54 | 1.138 | 10.30 | 5.29 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW102I | 114-P2A-MW102I-36-20230314 | 3/14/2023 | 36 | N | 4602762891 | N/A | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -144.0 | 0.78 | 7.48 | 1.129 | 11.44 | 9.7 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW102I | 114-P2A-MW102I-31-20230504 | 5/4/2023 | 31 | N | 4602795671 | N/A | Intermediate | -- | 3.3 J | -- | < 10.0 U | -115.2 | 1.03 | 7.49 | 1.223 | 13.70 | 6.06 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW102I | 114-P2A-MW102I-36-20230505 | 5/5/2023 | 36 | N | 4602796721 | N/A | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -202.1 | 0.57 | 7.40 | 1.018 | 14.72 | 9.77 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW102I | 114-P2A-MW102I-31.0-20230914 | 9/14/2023 | 31 | N | 4602882001 | Total Cr Isopleth | Intermediate | -- | < 4.0 U | -- | < 10.0 UJ | -131.3 | 1.22 | 7.45 | 1.363 | 21.86 | 2.37 | -- | -- | -- | -- | -- | -- | -- | -- |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P2A-MW102I | 114-P2A-MW102I-36.0-20230914 | 9/14/2023 | 36 | N | 4602882001 | Total Cr Isopleth | Intermediate | -- | < 4.0 U | -- | < 10.0 UJ | -132.5 | 2.97 | 7.49 | 1.386 | 18.71 | 4.7 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW102I | 114-P2A-MW102I-36.0-20231212 | 12/12/2023 | 36 | N | JD78686 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | 4.8 J | -172.6 | 0.06 | 7.44 | 0.948 | 13.6 | 5.75 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW102I | 114-P2A-MW102I-31.0-20231213 | 12/13/2023 | 31 | N | JD78777 | Total Cr Isopleth | Intermediate | -- | 63.4 | -- | < 10 UJ | -157 | 0.21 | 7.49 | 1.114 | 12.5 | 7.64 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW102I | 114-P2A-MW102I-31.0-20240313 | 3/13/2024 | 31 | N | JD84389 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -83.4 | 0.2 | 7.22 | 972 | 13 | 9.77 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW102I | 114-P2A-MW102I-36.0-20240313 | 3/13/2024 | 36 | N | JD84389 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -77.9 | 0.63 | 7.38 | 1025 | 13.4 | 5.1 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW102I | 114-P2A-MW102I-31.0-20240611 | 6/11/2024 | 31 | N | JD90213 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | 5.4 J | -254.2 | 0.33 | 7.47 | 0.841 | 18.2 | 7.14 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW102I | 114-P2A-MW102I-36.0-20240611 | 6/11/2024 | 36 | N | JD90213 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | 4.3 J | -257.6 | 0.21 | 7.55 | 0.836 | 17.1 | 7.62 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW102I | 114-P2A-MW102I-36.0-20240611-X | 6/11/2024 | 36 | FD | JD90213 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | 5.4 J | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW102I | 114-P2A-MW102I-31.0-20240913 | 9/13/2024 | 31 | N | JD96081 | Total Cr Isopleth | Intermediate | < 10 UJ | < 10 UJ | < 10 U | < 10 U | -132 | 0.37 | 7.52 | 0.89 | 20.6 | 29.6 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW102I | 114-P2A-MW102I-36.0-20240913 | 9/13/2024 | 36 | N | JD96081 | Total Cr Isopleth | Intermediate | -- | < 10 UJ | -- | < 10 U | -129.9 | 0.22 | 7.43 | 0.95 | 20.8 | 9.04 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW102I | 114-P2A-MW102I-31.0-20241121 | 11/21/2024 | 31 | N | JE1118 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -165.9 | 0.24 | 7.6 | 0.89 | 14.5 | 5.35 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW102I | 114-P2A-MW102I-36.0-20241121 | 11/21/2024 | 36 | N | JE1118 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -169.9 | 0.18 | 7.56 | 0.89 | 14.6 | 8.24 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B4-MW102I | 114-P2B4-MW102I-20180125 | 1/25/2018 | 23 | N | JC59745 | Baseline | Intermediate | 2100 | 3270 | 1200 | < 10 U | 186 | 0.4 | 7.24 | 3.47 | 11.97 | 29.9 | -- | 10.4 | 231 | < 2.0 U | 2790 | 395 | 90.3 | -- |
| 114-P2B4-MW102I | 114-P2B4-MW102I-20180502 | 5/2/2018 | 23 | N | JC65331 | Treatment | Intermediate | 2600 | 3980 | 1400 | 1700 | 150 | 0.13 | 7.49 | 3.37 | 20.7 | 15.1 | -- | 12.5 | 345 | -- | 8770 | -- | 77.6 | < 0.20 U |
| 114-P2B4-MW102I | 114-P2B4-MW102I-20180604 | 6/4/2018 | 23 | N | JC67259 | Treatment | Intermediate | < 10 U | 303 | 29 | 28 | -102 | 0 | 6.57 | 55.2 | 15.26 | 0 | -- | 35.2 | -- | -- | 11300 | -- | 16700 | 4.6 |
| 114-P2B4-MW102I | 114-P2B4-MW102I-20180604 | 6/4/2018 | 23 | N | JC67259A | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2980 | -- | -- | -- | -- | -- |
| 114-P2B4-MW102I | 114-P2B4-MW102I-28.5-20190601 | 6/1/2019 | 28.5 | N | JC89077 | Treatment | Intermediate | 7000 | 8950 | 6300 | 6200 | -- | -- | -- | -- | -- | -- | -- | 17.8 | 252 | -- | 7790 J | -- | 60.8 | R |
| 114-P2B4-MW102I | 114-P2B4-MW102I-20200817 | 8/17/2020 | 23 | N | JD11849 | Treatment | Intermediate | 6090 | 8000 | 5600 | 5600 | -- | -- | -- | -- | -- | -- | -- | 16.6 | 186 | < 2.0 U | 7770 | 472 | 65.6 | -- |
| 114-P2B4-MW102I | 114-P2B4-MW-102I-DUP-20201110 | 11/10/2020 | 23 | FD | JD15969 | Treatment | Intermediate | 124 | 4820 | < 10 U | 4300 | -- | -- | -- | -- | -- | -- | -- | 15.1 | 200 J | < 2.0 U | 7590 | 767 | 45.6 | -- |
| 114-P2B4-MW102I | 114-P2B4-MW-102I-20201110 | 11/10/2020 | 23 | N | JD15969 | Treatment | Intermediate | 127 | 6000 | < 10 U | 5700 | -- | -- | -- | -- | -- | -- | -- | 15.9 | 202 J | < 2.0 U | 7620 | 785 | 46.4 | -- |
| 114-P2B4-MW102I | 114-P2B4-MW102I-20210225 | 2/25/2021 | 23 | N | JD20780 | Treatment | Intermediate | 1640 | 2790 | R | R | -- | -- | -- | -- | -- | -- | -- | 16.3 | 126 | < 2.0 U | 9400 | 251 | 45.7 | -- |
| 114-P2B4-MW102I | 114-P2B4-MW102I-33-20210318 | 3/18/2021 | 33 | N | JD21941 | Treatment | Intermediate | 6.6 B | 8.1 B | 27 | 32 | -253.4 | 1.87 | 6.94 | 5.373 | -- | 2.86 | -- | 10.8 | 1420 | -- | -- | -- | -- | -- |
| 114-P2B4-MW102I | 114-P2B4-MW102I-33-20210428 | 4/28/2021 | 33 | N | 4602331061 | Treatment | Intermediate | 763 | 893 | R | 36.9 J | 4 | 13.81 ** | 7.91 | 3.738 | -- | 6.66 | -- | 13.2 | 161 | -- | 14000 | 239 | 28.1 | -- |
| 114-P2B4-MW102I | 114-P2B4-MW-102I-34.0-20210601 | 6/1/2021 | 34 | N | 4602355971 | Treatment | Intermediate | 554 | 3100 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 12.7 | 116 | -- | 19000 | 242 | 23.2 | -- |
| 114-P2B4-MW102I | 114-P2B4-MW-102I-34.0-20210624 | 6/24/2021 | 34 | N | 4602373191 | Treatment | Intermediate | 307 | 330 | < 10.0 U | < 10.0 U | -40.2 | 0.69 | 7.31 | 2.998 | -- | 4.66 | -- | 13.9 | 131 | -- | 21000 | 493 | 29.8 | -- |
| 114-P2B4-MW102I | 114-P2B4-MW102I-31.0-20210726 | 7/26/2021 | 31 | N | 4602395391 | Treatment | Intermediate | 136 | 523 | < 10.0 U | < 10.0 U | -47.1 | 0.48 | 7.24 | 3.538 | -- | 3.71 | -- | 14.1 | 106 | -- | 21000 | 688 | 30.8 | -- |
| 114-P2B4-MW102I | 114-P2B4-MW102I-34.0-20210830 | 8/30/2021 | 34 | N | 4602418391 | Treatment | Intermediate | 106 | 242 | < 10.0 U | < 10.0 U | -119.1 | 1.59 | 7.2 | 3.76 | -- | 3.12 | -- | 15.2 | 76.4 | -- | 20000 | 1630 | 51.4 | -- |
| 114-P2B4-MW102I | 114-P2B4-MW102I-34.0-20210923 | 9/23/2021 | 34 | N | 4602434911 | Treatment | Intermediate | 103 | 166 F1 | < 10.0 U | < 10.0 U | -163.8 | 0.98 | 7.24 | 3.121 | -- | 4.44 | -- | 15.5 | 81.8 F1 | -- | 20000 | 1760 | 55.9 | -- |
| 114-P2B4-MW102I | 114-P2B4-MW102I-34.0-20210923-X | 9/23/2021 | 34 | FD | 4602434911 | Treatment | Intermediate | 104 | 166 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 15.1 F1 | 82.5 | -- | 20000 | 1880 | 55.8 | -- |
| 114-P2B4-MW102I | 114-P2B4-MW102I-34.0-20211019 | 10/19/2021 | 34 | N | 4602454351 | Treatment | Intermediate | 68.0 | 197 | < 10.0 U | < 10.0 U | -168.4 | 0.07 | 7.06 | 4 | -- | 31.89 *** | -- | 25.9 B | 130 | -- | 21000 | 2590 | 101 | -- |
| 114-P2B4-MW102I | 114-P2B4-MW102I-34.0-20211118 | 11/18/2021 | 34 | N | 4602475481 | Treatment | Intermediate | 105 | 114 | < 10.0 U | < 10.0 U | -179.81 | 1.03 | 6.79 | 2.407 | -- | 1.36 | -- | 19.8 | 43.6 | -- | 19000 | 739 | 97.3 | -- |
| 114-P2B4-MW102I | 114-P2B4-MW102I-34.0-20211216 | 12/16/2021 | 34 | N | 4602492751 | Treatment | Intermediate | 124 | 158 | < 10.0 UH | < 10.0 UH | -322.9 | 0.81 | 7.06 | 3.815 | -- | 0.26 | -- | 44.7 | 1.40 J | -- | 16000 | 805 | 92.4 | -- |
| 114-P2B4-MW102I | 114-P2B4-MW-102I-32-20220113 | 1/13/2022 | 31 | N | 4602506661 | Treatment | Intermediate | 97.9 | 148 | < 10.0 U | < 10.0 U | -172 | 0 | 7.84 | 4.19 | -- | 4.82 | -- | 25.8 | 29.1 F1 | -- | 13000 | 2270 | 105 | -- |
| 114-P2B4-MW102I | 114-P2B4-MW102I-31-20220113-X | 1/13/2022 | 31 | FD | 4602506661 | Treatment | Intermediate | 104 | 130 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 25.7 | 28.9 | -- | 13000 | 2240 | 93.5 | -- |
| 114-P2B4-MW102I | 114-P2B4-MW102I-31-20220217 | 2/17/2022 | 31 | N | 4602526891 | Treatment | Intermediate | 142 | 161 | < 10.0 U | < 10.0 U | -324.3 | 0.12 | 7.53 | 3.809 | -- | 1.38 | -- | 25.1 | 18.5 | -- | 13000 | 421 | 125 | -- |
| 114-P2B4-MW102I | 114-P2B4-MW102I-31-20220314 | 3/14/2022 | 31 | N | 4602542351 | Treatment | Intermediate | 97.1 | 173 | < 10.0 U | < 10.0 U | 142.9 | 0.34 | 7.3 | 3.864 | -- | 4.24 | -- | 42.6 | 6.97 J | -- | 16000 | 363 | 93.8 | -- |
| 114-P2B4-MW102I | 114-P2B4-MW102I-31-20220412 | 4/12/2022 | 31 | N | 4602561091 | Treatment | Intermediate | 105 | 148 | < 10.0 U | < 10.0 U | -175.6 | 0.05 | 7.22 | 2.996 | 13.64 | 4.9 | -- | 45.4 | 21.0 | -- | 14000 | 509 | 115 | -- |
| 114-P2B4-MW102I | 114-P2B4-MW-102I-31-20220512 | 5/12/2022 | 31 | N | 4602580081 | Treatment | Intermediate | 107 | 125 | < 10.0 U | < 10.0 UF1 | -125.8 | 0.06 | 7.11 | 3.741 | 14.52 | 4.73 | -- | 54.2 | 2.09 F1 | -- | 13000 F1 | 1400 | 142 | -- |
| 114-P2B4-MW102I | 114-P2B4-MW-102I-31-20220512-X | 5/12/2022 | 31 | FD | 4602580081 | Treatment | Intermediate | 108 | 118 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 57.5 | 1.90 | -- | 12000 | 1540 | 142 | -- |
| 114-P2B4-MW102I | 114-P2B4-MW-102I-31-20220608 | 6/8/2022 | 31 | N | 4602596671 | Treatment | Intermediate | -- | 332 | -- | < 10.0 U | -39.5 | 1.58 | 6.96 | 3.687 | 16.84 | 6.85 | -- | 71.8 | < 2.40 U | -- | -- | -- | -- | -- |
| 114-P2B4-MW102I | 114-P2B4-MW102I-31.0-20220715 | 7/15/2022 | 31 | N | 4602619741 | Treatment | Intermediate | -- | 341 | -- | < 10.0 U | -97.50 | 3.08 | 7.85 | 3.65 | 17.70 | 5.59 | -- | 75.8 | < 2.40 U | -- | -- | -- | -- | -- |
| 114-P2B4-MW102I | 114-P2B4-MW102I-31-20220818 | 8/18/2022 | 31 | N | 4602640741 | Treatment | Intermediate | -- | 482 | -- | < 10.0 U | -145.5 | 3.34 | 7.03 | 7.156 | 20.73 | 7.51 | -- | 73.7 | < 2.40 U | -- | -- | 6640 | 200 | -- |
| 114-P2B4-MW102I | 114-P2B4-MW102I-28.5-20221212 | 12/12/2022 | 28.5 | N | 4602712001 | Post-Treatment | Intermediate | -- | 509 J+ | -- | < 10.0 U | -125.8 | 0.46 | 7.06 | 3.692 | 11.33 | 8.23 | -- | 27.2 | < 4.80 U | < 1 U | -- | 9440 | 177 | -- |
| 114-P2B4-MW102I | 114-P2B4-MW102I-33.5-20221212 | 12/12/2022 | 33.5 | N | 4602712001 | Post-Treatment | Intermediate | -- | 899 J+ | -- | < 10.0 U | -130.9 | 0.47 | 7.08 | 3.552 | 12.40 | 8.01 | -- | 50.8 | < 4.80 U | < 1 U | -- | 8710 | 182 | -- |
| 114-P2B4-MW102I | 114-P2B4-MW102I-26.7-20230221 | 2/21/2023 | 26.7 | N | 4602750101 | Post-Treatment | Intermediate | -- | 645 | -- | < 10.0 U | -146.1 | 10.41 | 6.96 | 4.8 | 11.95 | 6.9 | -- | 25.5 | 1.21 | < 1 U | -- | 2750 | 146 | -- |
| 114-P2B4-MW102I | 114-P2B4-MW102I-31.7-20230221 | 2/21/2023 | 31.7 | N | 4602750101 | Post-Treatment | Intermediate | -- | 486 | -- | < 10.0 U | -148.0 | 8.4 | 6.95 | 4.8 | 12.46 | 6.4 | -- | 25.1 | 6.25 | < 1 U | -- | 3630 | 144 | -- |
| 114-P2B4-MW102I | 114-P2B4-MW102I-26.7-20230412 | 4/12/2023 | 26.7 | N | 4602781101 | Post-Treatment | Intermediate | -- | 34.3 | -- | < 10.0 U | -182.1 | 0.01 | 7.33 | 6.664 | 13.82 | 2.7 | -- | 14.8 | 729 | < 1 U | -- | 1980 | 2200 | -- |
| 114-P2B4-MW102I | 114-P2B4-MW102I-31.7-20230412 | 4/12/2023 | 31.7 | N | 4602781101 | Post-Treatment | Intermediate | -- | 36.3 | -- | < 50.0 U | -254.3 | 0.01 | 7.42 | 7.8 | 13.4 | 6.33 | -- | 24.4 | 688 | 25.6 | -- | 192 | 2200 | -- |
| 114-P2B4-MW102I | 114-P2B4-MW102I-31.7-20230821 | 8/21/2023 | 31.7 | N | 4602866341 | Post-Treatment | Intermediate | -- | 249 | -- | < 10.0 UJ | -51.3 | 1.94 | 7.08 | 3.479 | 21.01 | 3.08 | -- | 26.3 | 0.68 J+ | < 1 U | -- | 4990 | 162 | -- |
| 114-P2B4-MW102I | 114-P2B4-MW102I-31.7-20231120 | 11/20/2023 | 31.7 | N | JD77343 | Post-Treatment | Intermediate | -- | 1230 | -- | 4.4 J | -125.9 | 0.13 | 7.07 | 4.227 | 15.2 | 8.78 | -- | 21.2 | 2.8 | -- | -- | -- | -- | -- |
| 114-P2B4-MW102I | 114-P2B4-MW102I-31.7-20240219 | 2/19/2024 | 31.7 | N | JD82732 | Post-Treatment | Intermediate | -- | 244 | -- | 5.4 J | 106.3 | 0.37 | 7.16 | 3.78 | 10.2 | 3.21 | -- | 25.8 | 5.9 | -- | -- | -- | -- | -- |
| 114-P2B4-MW102I | 114-P2B4-MW102I-31.7-20240517 | 5/17/2024 | 31.7 | N | JD88735 | Post-Treatment | Intermediate | -- | 660 | -- | < 10 RA | -154.5 | 0.11 | 7.01 | 3.128 | 15.6 | 4.78 | -- | 32.4 | 1.5 J | -- | -- | -- | -- | -- |
| 114-P2B4-MW102I | 114-P2B4-MW102I-31.7-20240819 | 8/19/2024 | 31.7 | N | JD94428 | Post-Treatment | Intermediate | -- | 353 | -- | 27 | -123.5 | 0.17 | 6.92 | 3.56 | 20 | 2.05 | -- | 34.3 | 1.7 J | -- | -- | -- | -- | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-20180125 | 1/23/2018 | 28 | N | JC59556 | Baseline | Intermediate | < 10 U | < 10 U | < 10 U | < 10 U | -148 | 0.79 | 7.54 | 3.81 | 11.75 | 10 | -- | 14.4 | 4.3 | < 2.0 U | 3470 | 4310 | 4320 | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-20180531 | 5/31/2018 | 28 | N | JC67082 | Treatment | Intermediate | < 10 U | < 10 U | < 10 UJ | < 10 U | -- | -- | -- | -- | -- | -- | -- | 14.8 | -- | -- | 3130 | -- | 7220 | < 0.20 U |
| 114-P2B4-MW103I | 114-P2B4-MW103I-20180531 | 5/31/2018 | 28 | N | JC67082A | Treatment | Intermediate | -- | -- | -- | -- | -134 | 0 | 7.15 | 4.4 | 18.27 | 0.4 | -- | -- | 184 | -- | -- | -- | -- | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-20180703 | 7/3/2018 | 28 | N | JC69235 | Treatment | Intermediate | < 10 U | < 10 U | < 10 U | 10 | -183 | 0.43 | 6.87 | 4.5 | 26.91 | 4.5 | -- | 12.8 | 211 | -- | 4570 | -- | 7840 | < 0.20 UJ |
| 114-P2B4-MW103I | 114-P2B4-MW103I_20180723 | 7/23/2018 | 28 | N | | Treatment | Intermediate | -- | -- | -- | -- | -154 | 0 | 7.31 | 5.62 | 16.88 | 9.4 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I_20180723 | 7/23/2018 | 28 | N | JC70405 | Treatment | Intermediate | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 15.3 | 478 | -- | 4230 | -- | 7050 | < 0.20 U |
| 114-P2B4-MW103I | 114-P2B4-MW103I-180830 | 8/30/2018 | 28 | N | JC72843 | Treatment | Intermediate | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 16.0 | 261 | -- | 5680 | -- | 8360 | < 0.20 U |
| 114-P2B4-MW103I | 114-P2B4-MW103I-20180927 | 9/27/2018 | 28 | N | JC74699 | Treatment | Intermediate | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 16.2 | 258 | -- | -- | -- | 7680 | 0.66 |
| 114-P2B4-MW103I | 114-P2B4-MW103I-181101 | 11/1/2018 | 28 | N | JC77088 | Treatment | Intermediate | < 10 UJ | 12.0 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 15.4 | 219 | -- | -- | -- | 7690 | < 0.20 UJ |
| 114-P2B4-MW103I | 114-P2B4-MW-103I-181128 | 11/28/2018 | 28 | N | JC78649 | Treatment | Intermediate | 10.2 | 13.1 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 16.3 | 157 | -- | 3750 | -- | 6290 | < 0.20 U |
| 114-P2B4-MW103I | 114-P2B4-MW103I-181217 | 12/17/2018 | 28 | N | JC79904 | Treatment | Intermediate | 12.1 | 14.6 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 15.2 | 173 | -- | -- | -- | 6510 | R |
| 114-P2B4-MW103I | 114-P2B4-MW103I-20190325 | 3/25/2019 | 28 | N | JC85107 | Treatment | Intermediate | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 14.4 | 163 | -- | 4690 J | -- | 6200 | < 0.20 U |
| 114-P2B4-MW103I | 114-P2B4-MW103I-20190430 | 4/30/2019 | 28 | N | JC87228 | Treatment | Intermediate | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 14.4 | 672 | -- | 2700 | -- | 5310 | < 0.20 U |
| 114-P2B4-MW103I | 114-P2B4-MW103I-24.50-20190528 | 5/28/2019 | 24.5 | N | JC88834 | Treatment | Intermediate | < 10 U | 172 | 20 | 20 | -- | -- | -- | -- | -- | -- | -- | 13.6 | 415 | -- | 3830 J | -- | 6340 | < 0.20 UJ |
| 114-P2B4-MW103I | 114-P2B4-MW103I-29.50-20190528 | 5/28/2019 | 29.5 | N | JC88834 | Treatment | Intermediate | < 10 U | 32.0 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 13.3 | 915 | -- | 145 J | -- | 5860 | < 0.20 UJ |
| 114-P2B4-MW103I | 114-P2B4-MW103I-20190628 | 6/28/2019 | 28 | N | JC90869 | Treatment | Intermediate | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 13.0 | 668 | -- | 4590 | -- | 7130 | 0.59 J |
| 114-P2B4-MW103I | 114-P2B4-MW103I-20190727 | 7/27/2019 | 28 | N | JC92354 | Treatment | Intermediate | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 13.4 | 344 | -- | 1650 | -- | 7590 | < 0.20 U |
| 114-P2B4-MW103I | 114-P2B4-MW103I-20190826 | 8/26/2019 | 28 | N | JC93900 | Treatment | Intermediate | < 10 U | 10.3 | < 10 U | 14 | -- | -- | -- | -- | -- | -- | -- | 14.3 | 945 | -- | 4520 | -- | 10700 | 1.6 |
| 114-P2B4-MW103I | 114-P2B4-MW-103I-20190927 | 9/27/2019 | 28 | N | JC95808 | Treatment | Intermediate | < 10 U | 29.3 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 14.0 | 1420 | -- | 1790 | -- | 11000 | R |
| 114-P2B4-MW103I | 114-P2B4-MW-103I-20191031 | 10/31/2019 | 28 | N | JC97796 | Treatment | Intermediate | < 10 U | 178 | < 10 U | 15 | -- | -- | -- | -- | -- | -- | -- | 13.4 | 798 | -- | 3600 | -- | 10600 | < 0.20 U |
| 114-P2B4-MW103I | 114-P2B4-MW103I-20191123 | 11/23/2019 | 28 | N | JC99155 | Treatment | Intermediate | < 10 U | < 10 U | 13 | 18 | -- | -- | -- | -- | -- | -- | -- | 16.9 | 464 | -- | 5970 | -- | 8570 | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-20191227 | 12/27/2019 | 28 | N | JD963 | Treatment | Intermediate | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 17.8 | 94.1 | -- | 2820 J | -- | 6900 J | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-20200325 | 3/25/2020 | 28 | N | JD5175 | Treatment | Intermediate | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 16.6 | 42.6 | -- | 2730 | -- | 6470 | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-20200814 | 8/14/2020 | 28 | N | JD11773 | Treatment | Intermediate | 6.7 J | 6.9 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 15.5 | 151 J | < 2.0 U | 1860 | 5520 | 5850 J | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-20201112 | 11/12/2020 | 28 | N | JD16144 | Treatment | Intermediate | 8.7 J | 10.1 | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | 18.1 | 19.6 J | 8.1 | 5400 | 192 | 5430 | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-20210226 | 2/26/2021 | 28 | N | JD20896 | Treatment | Intermediate | 9.6 J | 11.0 | < 10 U | < 50 U | -- | -- | -- | -- | -- | -- | -- | 14.4 | 433 | 1.3 J | 2230 | 778 | 4640 | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-27-20210318 | 3/18/2021 | 27 | N | JD21941 | Treatment | Intermediate | 10.8 | 12.8 | < 10 U | 6.9 B | -230.9 | 1.71 | 7.32 | 2.06 | -- | 3.97 | -- | 14.4 | 352 | -- | -- | -- | -- | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-32-20210429 | 4/29/2021 | 32 | N | 4602331931 | Treatment | Intermediate | 11.2 JB | 19.6 JB | < 10.0 U | < 10.0 U | -219.5 | 1.39 | 7.29 | 2.099 | -- | 2.22 | -- | 13.1 | 338 | -- | 1800 | 361 | 3210 | -- |
| 114-P2B4-MW103I | 114-P2B4-MW-103I-32.0-20210527 | 5/27/2021 | 32 | N | 4602353531 | Treatment | Intermediate | 11.7 | 12.8 | < 10.0 U | < 10.0 U | -138.2 | 0.35 | 9.42 | 2.048 | -- | 1.99 | -- | 13.0 | 255 | -- | 2200 | 714 | 2570 | -- |
| 114-P2B4-MW103I | 114-P2B4-MW-103I-32.0-20210624 | 6/24/2021 | 32 | N | 4602373191 | Treatment | Intermediate | < 20.0 U | 11.8 | < 10.0 U | < 10.0 U | -126.2 | 0.65 | 7.3 | 2.265 | -- | 3.18 | -- | 13.0 | 293 | -- | 2900 | 4360 | 2710 | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-32.0-20210721 | 7/21/2021 | 32 | N | 4602392301 | Treatment | Intermediate | 9.3 | 11.9 | < 10.0 U | < 10.0 U | -131.3 | 0.47 | 7.51 | 3.179 | -- | 2.2 | -- | 16.4 | 409 | -- | 2000 | 1440 | 2700 | -- |
| 114-P2B4-MW103I | 114-P2B4-MW-103I-32.0-20210826 | 8/26/2021 | 32 | N | 4602416741 | Treatment | Intermediate | 21.0 | 19.7 | < 10.0 U | < 10.0 U | -300.1 | 1.62 | 7.33 | 3.438 | -- | -- NM | -- | 152 | 154 | -- | 1700 | 256 | 2620 | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-32.0-20210923 | 9/23/2021 | 32 | N | 4602434911 | Treatment | Intermediate | 76.8 | 98.0 | < 10.0 U | < 10.0 U | -132.1 | 0.66 | 6.82 | 2.845 | -- | 9.41 | -- | 673 | 2.58 | -- | 450 | 12000 | 8850 | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-32.0-20211021 | 10/21/2021 | 32 | N | 4602456401 | Treatment | Intermediate | 55.1 | 61.0 | < 20.0 U | < 20.0 U | -167.1 | 0.08 | 6.93 | 3.49 | -- | 1.55 *** | -- | 1060 | 1.11 F1 | -- | 1500 | 17600 | 14600 | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-32.0-20211021-X | 10/21/2021 | 32 | FD | 4602456401 | Treatment | Intermediate | 53.0 | 58.5 | < 50.0 U | < 50.0 U | -- | -- | -- | -- | -- | -- | -- | 1080 | 7.48 | -- | 1500 | 16100 | 14400 | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-32-20211118 | 11/18/2021 | 32 | N | 4602475481 | Treatment | Intermediate | 57.5 | 57.1 | < 20.0 U | < 20.0 U | -81.2 | 0.44 | 6.89 | 2.78 | -- | 1.72 | -- | 133 | 123 | -- | 1500 | 14200 | 13000 | -- |
| 114-P2B4-MW103I | 114-P2B4-MW-103I-29-20211217 | 12/17/2021 | 29 | N | 4602493781 | Treatment | Intermediate | 31.5 | 34.3 | < 20.0 U | < 20.0 U | -283.9 | 0.42 | 7.05 | 2.315 | -- | 1.99 | -- | 136 | 49.2 | -- | 5200 | 2630 | 10200 | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-32-20220112 | 1/12/2022 | 32 | N | 4602505551 | Treatment | Intermediate | 33.4 | 37.5 | < 10.0 U | < 10.0 U | -287 | 0 | 7.52 | 2.43 | -- | 8.06 | -- | 112 | 3.20 | -- | 5900 | 789 | 7960 | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-32-20220217 | 2/17/2022 | 32 | N | 4602526891 | Treatment | Intermediate | 24.4 | 25.1 | < 10.0 U | < 10.0 U | -105.2 | 2.29 | 7.81 | 2.019 | -- | 9.32 | -- | 169 | 2.31 JF1 | -- | 7600 F1 | 4550 | 7900 | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-32-20220217-X | 2/17/2022 | 32 | FD | 4602526891 | Treatment | Intermediate | 41.1 | 22.2 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 174 | 2.10 J | -- | 9000 | 4660 | 7700 | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-32-20220315 | 3/15/2022 | 32 | N | 4602542861 | Treatment | Intermediate | 33.8 | 38.1 | < 10.0 U | < 10.0 U | -82.6 | 0.78 | 7.24 | 2.807 | -- | 2.23 | -- | 199 | 0.33 J | -- | 4700 F1 | 5630 | 5460 | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-32-20220315-X | 3/15/2022 | 32 | FD | 4602542861 | Treatment | Intermediate | 32.6 | 37.9 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 206 | < 4.80 U | -- | 5300 | 5590 | 5350 | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-32-20220413 | 4/13/2022 | 32 | N | 4602562001 | Treatment | Intermediate | 45.8 | 43.0 | < 10.0 U | < 10.0 U | -122.8 | 0.19 | 7.47 | 2.455 | 14.62 | 4.21 | -- | 325 F1^2 | 0.13 JF1 | -- | 11000 | 4760 | 4660 | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-32-20220413-X | 4/13/2022 | 32 | FD | 4602562001 | Treatment | Intermediate | 70.7 | 40.3 | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 62.0 ^2 | 26.1 | -- | 11000 | 4800 | 4580 | -- |
| 114-P2B4-MW103I | 114-P2B4-MW-103I-32-20220511 | 5/11/2022 | 32 | N | 4602579551 | Treatment | Intermediate | 30.7 | 30.0 | < 10.0 U | < 10.0 U | -132.6 | 0.01 | 7.33 | 2.841 | 14.92 | 5.29 | -- | 233 | 0.38 J | -- | 12000 | 5140 | 4770 | -- |
| 114-P2B4-MW103I | 114-P2B4-MW-103I-32-20220608 | 6/8/2022 | 32 | N | 4602596671 | Treatment | Intermediate | -- | 27.5 | -- | < 10.0 U | -117.8 | 1.15 | 7.42 | 2.738 | 17.5 | 7 | -

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-P2B4-MW103I | 114-P2B4-MW103I-31.7-20230613 | 6/13/2023 | 31.7 | N | 4602822041 | Post-Treatment | Intermediate | -- | 12.4 | -- | < 10.0 U | -235 | 1.02 | 6.76 | 2.044 | 19.7 | 3.45 | -- | 8.9 | 349 | < 1 U | -- | 903 | 3690 | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-26.7-20230616 | 6/16/2023 | 26.7 | N | 4602824851 | Post-Treatment | Intermediate | 7.6 | 9.6 | < 10.0 U | < 10.0 U | -235.2 | 0.81 | 7.35 | 1.81 | 17.7 | 1.91 | -- | 11.1 | 322 | < 1 U | -- | 319 | 3760 | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-26.7-20230822 | 8/22/2023 | 26.7 | N | 4602886741 | Post-Treatment | Intermediate | -- | 6.6 | -- | < 10.0 UJ | -193.5 | 3.8 | 7.36 | 1.805 | 23.55 | 1.55 | -- | 11.2 | 276 | < 1 U | -- | 222 | 3790 | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-31.7-20230822 | 8/22/2023 | 31.7 | N | 4602886741 | Post-Treatment | Intermediate | -- | 8.9 | -- | < 10.0 UJ | -184.8 | 0.91 | 7.48 | 1.817 | 20.56 | 2.49 | -- | 8.9 | 369 | < 1 U | -- | 451 | 3480 | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-26.7-20231120 | 11/20/2023 | 26.7 | N | JD77343 | Post-Treatment | Intermediate | -- | 9.0 JB | -- | < 10 UJ | -109.6 | 0.39 | 7.23 | 1.881 | 14.2 | 9.57 | -- | 8.1 | 335 | -- | -- | -- | -- | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-31.7-20231120 | 11/20/2023 | 31.7 | N | JD77343 | Post-Treatment | Intermediate | -- | 9.6 JB | -- | < 10 UJ | -90.3 | 0.26 | 7.21 | 1.87 | 13.1 | 4.95 | -- | 8.8 | 340 | -- | -- | -- | -- | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-26.7-20240220 | 2/20/2024 | 26.7 | N | JD82805 | Post-Treatment | Intermediate | -- | 6.4 J | -- | < 10 U | -422.8 | 0.17 | 7.39 | 1.72 | 8.7 | 1.33 | -- | 10.7 | 183 | -- | -- | -- | -- | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-31.7-20240220 | 2/20/2024 | 31.7 | N | JD82805 | Post-Treatment | Intermediate | -- | 6.6 J | -- | < 10 U | -405.3 | 0.19 | 7.39 | 1.735 | 10.4 | 1.71 | -- | 9.3 | 194 | -- | -- | -- | -- | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-26.7-20240517 | 5/17/2024 | 26.7 | N | JD88735 | Post-Treatment | Intermediate | -- | 5.6 J | -- | < 10 RA | -265.2 | 0.19 | 7.49 | 1.319 | 16.8 | 3.05 | -- | 9.7 | 96.4 | -- | -- | -- | -- | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-31.7-20240517 | 5/17/2024 | 31.7 | N | JD88735 | Post-Treatment | Intermediate | -- | 8.4 J | -- | < 10 RA | -219.9 | 0.64 | 7.57 | 1.513 | 15.6 | 6.55 | -- | 9.7 | 100 | -- | -- | -- | -- | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-26.7-20240819 | 8/19/2024 | 26.7 | N | JD94428 | Post-Treatment | Intermediate | -- | 3.7 J | -- | < 10 U | -279.7 | 0.15 | 7.31 | 1.58 | 21.7 | 2.21 | -- | 10.2 | 63.1 | -- | -- | -- | -- | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-31.7-20240819 | 8/19/2024 | 31.7 | N | JD94428 | Post-Treatment | Intermediate | -- | 5.7 J | -- | < 10 U | -235.6 | 0.15 | 7.33 | 1.68 | 20.7 | 2.41 | -- | 10.3 | 112 | -- | -- | -- | -- | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-26.7-20241118 | 11/18/2024 | 26.7 | N | JE873 | Post-Treatment | Intermediate | -- | 6.9 JB | -- | < 10 U | -255.2 | 0.18 | 7.41 | 1.38 | 17.4 | 1.07 | -- | 8.1 J- | 34.3 | -- | -- | -- | -- | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-31.7-20241118 | 11/18/2024 | 31.7 | N | JE873 | Post-Treatment | Intermediate | -- | 7.6 JB | -- | < 10 UJ | -277.1 | 0.19 | 7.48 | 1.5 | 16.7 | 2.28 | -- | 8.5 J- | 88.2 | -- | -- | -- | -- | -- |
| 132-P3A-MW105I | 132-P3A-MW105I-20180208 | 2/8/2018 | 39.2 | N | JC60477 | N/A | Intermediate | -- | 30.8 | -- | 28 JB | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 132-P3A-MW105I | 132-P3A-MW105I-20180209X | 2/9/2018 | 39.2 | FD | JC60564 | N/A | Intermediate | -- | 14.3 | -- | 15 JB | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 132-P3A-MW105I | 132-P3A-MW105I-20180209Xa | 2/9/2018 | 39.2 | FD | JC60564 | N/A | Intermediate | -- | 17.4 | -- | 21 JB | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 133-P3C-MW101I | 133-P3C-MW101I-39-20230103 | 1/3/2023 | 39 | N | 4602722831 | N/A | Intermediate | -- | 7.4 | -- | < 10.0 U | -136 | 0.36 | 7.8 | 10.216 | 12.5 | 9.4 | -- | -- | -- | -- | -- | -- | -- | -- |
| 133-P3C-MW101I | 133-P3C-MW101I-44-20230103 | 1/3/2023 | 44 | N | 4602722831 | N/A | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -138 | 0.26 | 7.8 | 10.954 | 13.35 | 9 | -- | -- | -- | -- | -- | -- | -- | -- |
| 133-P3C-MW101I | 133-P3C-MW101I-39-20230315 | 3/15/2023 | 39 | N | 4602763791 | N/A | Intermediate | -- | 2.8 J | -- | < 10.0 U | -195.9 | 1.2 | 8.03 | 12.46 | 10.89 | 4.81 | -- | -- | -- | -- | -- | -- | -- | -- |
| 133-P3C-MW101I | 133-P3C-MW101I-44-20230315 | 3/15/2023 | 44 | N | 4602763791 | N/A | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -157.9 | 1.81 | 7.93 | 12.42 | 10.58 | 0.85 | -- | -- | -- | -- | -- | -- | -- | -- |
| 133-P3C-MW101I | 133-P3C-MW101I-39-20230504 | 5/4/2023 | 39 | N | 4602795671 | N/A | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -100.7 | 0.51 | 7.47 | 14.96 | 12.80 | 8.96 | -- | -- | -- | -- | -- | -- | -- | -- |
| 133-P3C-MW101I | 133-P3C-MW101I-39-20230504-X | 5/4/2023 | 39 | FD | 4602795671 | N/A | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 133-P3C-MW101I | 133-P3C-MW101I-44-20230504 | 5/4/2023 | 44 | N | 4602795671 | N/A | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -103.8 | 0.61 | 7.49 | 15.76 | 12.30 | 6.36 | -- | -- | -- | -- | -- | -- | -- | -- |
| 133-P3C-MW101I | 133-P3C-MW101I-39.0-20230912 | 9/12/2023 | 39 | N | 4602879871 | Total Cr Isopleth | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -131.5 | 0.46 | 7.32 | 11.36 | 20.02 | 0 | -- | -- | -- | -- | -- | -- | -- | -- |
| 133-P3C-MW101I | 133-P3C-MW101I-44.0-20230912 | 9/12/2023 | 44 | N | 4602879871 | Total Cr Isopleth | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -127.7 | 0.98 | 7.37 | 13.69 | 18.58 | 2.98 | -- | -- | -- | -- | -- | -- | -- | -- |
| 133-P3C-MW101I | 133-P3C-MW101I-44.0-20230912-X | 9/12/2023 | 44 | FD | 4602879871 | Total Cr Isopleth | Intermediate | -- | < 4.0 U | -- | 12.9 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 133-P3C-MW101I | 133-P3C-MW101I-39.0-20231211 | 12/11/2023 | 39 | N | JD78573 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | 9.1 J | -209 | 0.16 | 7.46 | 12.6 | 12.2 | 3.72 | -- | -- | -- | -- | -- | -- | -- | -- |
| 133-P3C-MW101I | 133-P3C-MW101I-44.0-20231211 | 12/11/2023 | 44 | N | JD78573 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | 9.1 J | -195.8 | 0.17 | 7.41 | 14.56 | 12.7 | 2.47 | -- | -- | -- | -- | -- | -- | -- | -- |
| 133-P3C-MW101I | 133-P3C-MW101I-44.0-20231211-X | 12/11/2023 | 44 | FD | JD78573 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | 34 J | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 133-P3C-MW101I | 133-P3C-MW101I-39.0-20240312 | 3/12/2024 | 39 | N | JD84279 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -145.6 | 0.29 | 7.47 | 12.45 | 17.6 | 3.19 | -- | -- | -- | -- | -- | -- | -- | -- |
| 133-P3C-MW101I | 133-P3C-MW101I-44.0-20240312 | 3/12/2024 | 44 | N | JD84279 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -140.2 | 0.29 | 7.38 | 16.83 | -- | 5.22 | -- | -- | -- | -- | -- | -- | -- | -- |
| 133-P3C-MW101I | 133-P3C-MW101I-39.0-20240612 | 6/12/2024 | 39 | N | JD90298 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | 18 | -223.5 | 0.12 | 7.53 | 10 | 15.9 | 8.8 | -- | -- | -- | -- | -- | -- | -- | -- |
| 133-P3C-MW101I | 133-P3C-MW101I-44.0-20240612 | 6/12/2024 | 44 | N | JD90298 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -204.5 | 0.21 | 7.4 | 12.12 | 15.7 | 9.28 | -- | -- | -- | -- | -- | -- | -- | -- |
| 133-P3C-MW101I | 133-P3C-MW101I-39.0-20240912 | 9/12/2024 | 39 | N | JD95972 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | 12 | -210 | 0.13 | 7.54 | 11.86 | 19.9 | 1.48 | -- | -- | -- | -- | -- | -- | -- | -- |
| 133-P3C-MW101I | 133-P3C-MW101I-44.0-20240912 | 9/12/2024 | 44 | N | JD95972 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | 17 J | -200.7 | 0.1 | 7.41 | 14.9 | 17.8 | 2.82 | -- | -- | -- | -- | -- | -- | -- | -- |
| 133-P3C-MW101I | 133-P3C-MW101I-44.0-20240912-X | 9/12/2024 | 44 | FD | JD95972 | Total Cr Isopleth | Intermediate | -- | < 10 UJ | -- | 26 J | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 133-P3C-MW101I | 133-P3C-MW101I-39.0-20241121 | 11/21/2024 | 39 | N | JE1118 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | 4.9 J | -294.5 | 1.04 | 8.87 | 8.38 | 13.7 | 3.02 | -- | -- | -- | -- | -- | -- | -- | -- |
| 133-P3C-MW101I | 133-P3C-MW101I-44.0-20241121 | 11/21/2024 | 44 | N | JE1118 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | 2.6 J | -168.2 | 3.75 | 7.83 | 10.74 | 14 | 2.82 | -- | -- | -- | -- | -- | -- | -- | -- |
| 135-MW1B | 135-MW1B-31.0-20180501 | 5/1/2018 | 31 | N | JC65255 | N/A | Intermediate | -- | 9.9 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 135-MW1B | 135-MW1B-31.0-20180501X | 5/1/2018 | 31 | FD | JC65255 | N/A | Intermediate | -- | 9.6 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 135-MW3BR | 135-MW3B-30.0-20180501 | 5/1/2018 | 30 | N | JC65255 | N/A | Intermediate | -- | 1.2 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 137-P3B-MW102I | 137-P3B-MW102I-43-20230103 | 1/3/2023 | 43 | N | 4602722831 | N/A | Intermediate | -- | 14.4 | -- | < 10.0 U | -118.6 | 5.48 | 12.59 | 2.586 | 9.88 | 9.2 | -- | -- | -- | -- | -- | -- | -- | -- |
| 137-P3B-MW102I | 137-P3B-MW102I-48-20230103 | 1/3/2023 | 48 | N | 4602722831 | N/A | Intermediate | -- | 28.5 | -- | < 10.0 U | -216.9 | 0.74 | 12.43 | 2.697 | 13.81 | 9.71 | -- | -- | -- | -- | -- | -- | -- | -- |
| 137-P3B-MW102I | 137-P3B-MW102I-43.0-20230316 | 3/16/2023 | 43 | N | 4602764731 | N/A | Intermediate | -- | 4.0 | -- | < 10.0 U | -22.0 | 6.85 | 12.1 | 2.755 | 10.47 | 3.42 | -- | -- | -- | -- | -- | -- | -- | -- |
| 137-P3B-MW102I | 137-P3B-MW102I-48.0-20230316 | 3/16/2023 | 48 | N | 4602764731 | N/A | Intermediate | -- | 5.6 | -- | < 10.0 U | -25.6 | 6.69 | 12.18 | 2.761 | 10.21 | 4.79 | -- | -- | -- | -- | -- | -- | -- | -- |
| 137-P3B-MW102I | 137-P3B-MW102I-43-20230505 | 5/5/2023 | 43 | N | 4602796721 | N/A | Intermediate | -- | < 4.0 U | -- | < 10.0 U | 67.8 | 0.8 | 10.96 | 3.301 | 15.55 | 5.64 | -- | -- | -- | -- | -- | -- | -- | -- |
| 137-P3B-MW102I | 137-P3B-MW102I-48-20230505 | 5/5/2023 | 48 | N | 4602796721 | N/A | Intermediate | -- | < 4.0 U | -- | < 10.0 U | 17.5 | 5.90 | 12.67 | 2.366 | 15.25 | 0.88 | -- | -- | -- | -- | -- | -- | -- | -- |
| 137-P3B-MW102I | 137-P3B-MW102I-43.0-20230914 | 9/14/2023 | 43 | N | 4602882001 | Total Cr Isopleth | Intermediate | -- | < 4.0 U | -- | < 10.0 UJ | -246.6 | 0.51 | 9.51 | 3.736 | 22.75 | 26.7 | -- | -- | -- | -- | -- | -- | -- | -- |
| 137-P3B-MW102I | 137-P3B-MW102I-48.0-20230914 | 9/14/2023 | 48 | N | 4602882001 | Total Cr Isopleth | Intermediate | -- | < 4.0 U | -- | < 10.0 UJ | -187.5 | 0.62 | 7.74 | 5.368 | 21.52 | 2.17 | -- | -- | -- | -- | -- | -- | -- | -- |
| 137-P3B-MW102I | 137-P3B-MW102I-48-20231212 | 12/12/2023 | 48 | N | JD78686 | Total Cr Isopleth | Intermediate | -- | 8.9 J | -- | 21 J | -144.2 | 0.19 | 7.37 | 6.65 | 12.2 | 9.66 | -- | -- | -- | -- | -- | -- | -- | -- |
| 137-P3B-MW102I | 137-P3B-MW102I-43.0-20231213 | 12/13/2023 | 43 | N | JD78777 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | 20 J- | -154.4 | 0.15 | 7.43 | 5.89 | 11.3 | 9.11 | -- | -- | -- | -- | -- | -- | -- | -- |
| 137-P3B-MW102I | 137-P3B-MW102I-48.0-20240313 | 3/13/2024 | 48 | N | JD84389 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -112.7 | 0.14 | 7.48 | 5.6 | 14.1 | 2.61 | -- | -- | -- | -- | -- | -- | -- | -- |
| 137-P3B-MW102I | 137-P3B-MW102I-43.0-20240314 | 3/14/2024 | 43 | N | JD84494 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | -- | -164.5 | 0.56 | 7.7 | 5.57 | 13 | 5.27 | -- | -- | -- | -- | -- | -- | -- | -- |
| 137-P3B-MW102I | 137-P3B-MW102I-43.0-20240613 | 6/13/2024 | 43 | N | JD90407 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -28.2 | 2.53 | 11.37 | 2.713 | 23.5 | 6.03 | -- | -- | -- | -- | -- | -- | -- | -- |
| 137-P3B-MW102I | 137-P3B-MW102I-48.0-20240613 | 6/13/2024 | 48 | N | JD90407 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -197.3 | 0.51 | 7.92 | 4.78 | 19.6 | 5.65 | -- | -- | -- | -- | -- | -- | -- | -- |
| 137-P3B-MW102I | 137-P3B-MW102I-43.0-20240912 | 9/12/2024 | 43 | N | JD95972 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -40.1 | 0.37 | 9.2 | 4.41 | 22 | 2.01 | -- | -- | -- | -- | -- | -- | -- | -- |
| 137-P3B-MW102I | 137-P3B-MW102I-48.0-20240912 | 9/12/2024 | 48 | N | JD95972 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | 3.8 J | -192.7 | 0.2 | 8 | 4.71 | 20.2 | 1.56 | -- | -- | -- | -- | -- | -- | -- | -- |
| 137-P3B-MW102I | 137-P3B-MW102I-43.0-20241216 | 12/16/2024 | 43 | N | JE2745 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | 18 | -110.2 | 0.17 | 7.56 | 4.41 | 12.5 | 1.44 | -- | -- | -- | -- | -- | -- | -- | -- |
| 137-P3B-MW102I | 137-P3B-MW102I-48-20241216 | 12/16/2024 | 48 | N | JE2745 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | 52 J | -83.3 | 0.19 | 7.26 | 6.76 | 12.9 | 1.25 | -- | -- | -- | -- | -- | -- | -- | -- |
| 137-P3B-MW102I | 137-P3B-MW102I-48.0-20241216-X | 12/16/2024 | 48 | FD | JE2745 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | 12 J | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW7D | MW7D-41.0-20180423 | 4/23/2018 | 41 | N | JC64763 | N/A | Intermediate | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW7D | MW7D-45.0-20180423 | 4/23/2018 | 45 | N | JC64763 | N/A | Intermediate | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW7D | MW7D-40.5-20220617 | 6/17/2022 | 40.5 | N | 4602603591 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | 117.7 | 0.03 | 7.32 | 1.241 | 17.78 | 2.95 | -- | 1.3 F1 | 58.4 | -- | -- | -- | -- | -- |
| MW7D | MW7D-45.5-20220617 | 6/17/2022 | 45.5 | N | 4602603591 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | 125.2 | 0.02 | 7.28 | 1.224 | 17.97 | 2.18 | -- | 1.4 | 58.5 | -- | -- | -- | -- | -- |
| MW7D | MW7D-43-20221219 | 12/19/2022 | 43 | N | 4602717111 | Treatment | Intermediate | -- | 18.0 | -- | < 10.0 U | 17.3 | 1.12 | 7.25 | 1.487 | 14.41 | 6.53 | -- | 1.8 F+ | 72.7 | -- | -- | -- | -- | -- |
| MW7D | MW7D-43.0-20230321 | 3/21/2023 | 43 | N | 4602767381 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | 40.7 | 0.43 | 7.27 | 1.298 | 16.1 | 7.83 | -- | 1.8 | 73.1 | -- | -- | -- | -- | -- |
| MW7D | MW7D-43-20230505 | 5/5/2023 | 43 | N | 4602796721 | Post-Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | 108.1 | 1.42 | 7.17 | 1.099 | 16.70 | 5.15 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW7D | MW7D-48-20230505 | 5/5/2023 | 48 | N | 4602796721 | Post-Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -23.6 | 4.52 | 7.26 | 1.095 | 16.10 | 9.15 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW7D | MW7D-43.0-20230913 | 9/13/2023 | 43 | N | 4602880871 | Total Cr Isopleth | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -63.5 | 1.27 | 7.43 | 1.365 | 20.72 | 0.67 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW7D | MW7D-48-20230913 | 9/13/2023 | 48 | N | 4602880871 | Total Cr Isopleth | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -69.6 | 2.03 | 7.4 | 1.364 | 20.26 | 3.23 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW7D | MW7D-43-20231212 | 12/12/2023 | 43 | N | JD78686 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | 65.3 | 3.45 | 7.27 | 1.359 | 10.7 | 1.6 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW7D | MW7D-48-20231212 | 12/12/2023 | 48 | N | JD78686 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | 66.3 | 1.01 | 7.26 | 1.36 | 8.9 | 4.05 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW7D | MW7D-48-20231212-X | 12/12/2023 | 48 | FD | JD78686 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW7D | MW7D-43.0-20240312 | 3/12/2024 | 43 | N | JD84279 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -78.9 | 0.65 | 7.32 | 1.179 | 14.8 | 3.65 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW7D | MW7D-43.0-20240312-X | 3/12/2024 | 43 | FD | JD84279 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW7D | MW7D-48.0-20240312 | 3/12/2024 | 48 | N | JD84279 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -95.6 | 0.3 | 7.3 | 1.181 | 12.4 | 9 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW7D | MW7D-43.0-20240613 | 6/13/2024 | 43 | N | JD90407 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -100.5 | 0.43 | 7.2 | 1.641 | 21.8 | 1.42 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW7D | MW7D-48.0-20240613 | 6/13/2024 | 48 | N | JD90407 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -93.4 | 0.58 | 7.22 | 1.648 | 19.2 | 1.74 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW7D | MW7D-43.0-20240912 | 9/12/2024 | 43 | N | JD95972 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -33.3 | 0.25 | 7.3 | 1.40 | 19.8 | 4.92 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW7D | MW7D-48.0-20240912 | 9/12/2024 | 48 | N | JD95972 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -41.8 | 0.27 | 7.3 | 1.41 | 20.5 | 4.84 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW7D | MW7D-43.0-20241216 | 12/16/2024 | 43 | N | JE2745 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -59.9 | 0.27 | 7.34 | 1.34 | 14.4 | 6.2 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW7D | MW7D-48-20241216 | 12/16/2024 | 48 | N | JE2745 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -79.4 | 0.17 | 7.37 | 1.34 | 14.4 | 3.03 | -- | -- | -- | -- | -- | -- | -- | -- |
| PSEG-MW-104B | PSEG-MW-104B-22.5-20220824 | 8/24/2022 | 22.5 | N | 4602643471 | Treatment | Intermediate | -- | 43.9 | -- | < 10.0 U | -116.6 | 12.07 | 7.12 | 2.418 | 17.32 | 8.81 | -- | 28.8 | 0.75 J | -- | -- | -- | -- | -- |
| PSEG-MW-104B | PSEG-MW-104B-27.5-20220824 | 8/24/2022 | 27.5 | N | 4602643471 | Treatment | Intermediate | -- | **646** | -- | < 10.0 U | -103.1 | 6.12 | 7.16 | 2.454 | 17.96 | 11.3 | -- | 26.2 | 37.0 | -- | -- | -- | -- | -- |
| PSEG-MW-104B | PSEG-MW104B-27.5-20221019 | 10/19/2022 | 27.5 | N | 4602677971 | Treatment | Intermediate | -- | -- | -- | < 10.0 U | -188.8 | 2.85 | 7.32 | 2.722 | 15.53 | 7.23 | -- | -- | -- | -- | -- | -- | -- | -- |
| PSEG-MW-104B | PSEG-MW104B-27.5-20221214 | 12/14/2022 | 27.5 | N | 4602713561 | Treatment | Intermediate | -- | 47.4 | -- | < 10.0 U | -174.3 | 0.55 | 7.29 | 2.252 | 15.65 | 3.77 | -- | 79.6 | 0.89 J | -- | -- | -- | -- | -- |
| PSEG-MW-104B | PSEG-MW104B-27.5-20230320 | 3/20/2023 | 27.5 | N | 4602766501 | Treatment | Intermediate | -- | **2210** | -- | < 20.0 U | -148.2 | 3.6 | 7.3 | 2.363 | 14.9 | 9.5 | -- | 28.2 | 38.8 | -- | -- | -- | -- | -- |
| PSEG-MW-104B | PSEG-MW104B-27.5-20230623 | 6/23/2023 | 27.5 | N | 4602829671 | Treatment | Intermediate | -- | 62.2 | -- | < 10.0 U | -157.2 | 0.22 | 7.56 | 3.217 | 17.4 | 3.79 | -- | 32.1 | 28.8 | -- | -- | -- | -- | -- |
| PSEG-MW-104B | PSEG-MW104B-27.5-20230919 | 9/19/2023 | 27.5 | N | 4602885251 | Treatment | Intermediate | -- | **90.8** | -- | < 10.0 U | -331.5 | 0.3 | 8.34 | 2.581 | 17.56 | 2.77 | -- | 25.6 | 162 | -- | -- | -- | -- | -- |
| PSEG-MW-104B | PSEG-MW104B-27.5-20231221 | 12/21/2023 | 27.5 | N | JD79357 | Treatment | Intermediate | -- | 69.8 | -- | < 10 U | -395.1 | 0.13 | 7.3 | 3.116 | 15.2 | 7.51 | -- | 19.9 | **586** | -- | -- | -- | -- | -- |
| PSEG-MW-104B | PSEG-MW104B-27.5-20240321 | 3/21/2024 | 27.5 | N | JD84944 | Treatment | Intermediate | -- | **89.8** | -- | < 10 U | -175 | 0.08 | 7.35 | 2.996 | 13.4 | 0.91 | -- | 22.7 | **480** | -- | -- | -- | -- | -- |
| PSEG-MW-104B | PSEG-MW-104B-27.5-20240620 | 6/20/2024 | 27.5 | N | JD90821 | Treatment | Intermediate | -- | **112** | -- | 12 | -180.4 | 0.34 | 7.15 | 3.413 | 20 | 1.66 | -- | 37.6 | **361** | -- | -- | -- | -- | -- |
| PSEG-MW-104B | PSEG-MW-104B-27.5-20240919 | 9/19/2024 | 27.5 | N | JD96458 | Treatment | Intermediate | -- | **126** | -- | 5.7 B | -152.7 | 2.9 | 7.16 | 3.50 | 17.5 | 1.21 | -- | 34.9 | 248 | -- | -- | -- | -- | -- |
| PSEG-MW-104B | PSEG-MW-104B-27.5-20241209 | 12/9/2024 | 27.5 | N | JE2209 | Treatment | Intermediate | -- | **108** | -- | < 10 U | -199.8 | 0.24 | 7.17 | 3.26 | 14.6 | 3.23 | -- | 38.2 | 93.2 | -- | -- | -- | -- | -- |
| PSEG-MW-42D | PSEG-MW-42D-23.5-20221228 | 12/28/2022 | 23.5 | N | 4602721191 | N/A | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -17.7 | 1.35 | 6.81 | 1.821 | 12.40 | 9.8 | -- | -- | -- | -- | -- | -- | -- | -- |
| PSEG-MW-42D | PSEG-MW-42D-23.5-20230316 | 3/16/2023 | 23.5 | N | 4602764731 | N/A | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -53.0 | 2.06 | 6.89 | 1.808 | 13.85 | 9.93 | -- | -- | -- | -- | -- | -- | -- | -- |
| PSEG-MW-42D | PSEG-MW-42D-23.5-20230503 | 5/3/2023 | 23.5 | N | 4602794711 | N/A | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -51.0 | 2.47 | 7.2 | 1.641 | 15.00 | 6.91 | -- | -- | -- | -- | -- | -- | -- | -- |
| PSEG-MW-42D | PSEG-MW-42D-23.5-20230913 | 9/13/2023 | 23.5 | N | 4602880871 | Total Cr Isopleth | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -51.6 | 0.9 | 6.68 | 2.796 | 19.49 | 2.52 | -- | -- | -- | -- | -- | -- | -- | -- |
| PSEG-MW-42D | PSEG-MW-42D-23.5-20230913-X | 9/13/2023 | 23.5 | FD | 4602880871 | Total Cr Isopleth | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PSEG-MW-42D | PSEG-MW-42D-23.5-20231212 | 12/12/2023 | 23.5 | N | JD78686 | Total Cr Isopleth | Intermediate | -- | < 10 UJ | -- | 27 J | -132.1 | -0.02 | 6.73 | 1.456 | 15 | 10.8 | -- | -- | -- | -- | -- | -- | -- | -- |
| PSEG-MW-42D | PSEG-MW-42D-23.5-20240312 | 3/12/2024 | 23.5 | N | JD84279 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -103.3 | 0.27 | 6.67 | 1.45 | 15.2 | 6.97 | -- | -- | -- | -- | -- | -- | -- | -- |
| PSEG-MW-42D | PSEG-MW-42D-23.5-20240613 | 6/13/2024 | 23.5 | N | JD90407 | Total Cr Isopleth | Intermediate | -- | < 10 UJ | -- | 28 J | -131.3 | 0.38 | 6.79 | 1.516 | 19.5 | 7.99 | -- | -- | -- | -- | -- | -- | -- | -- |
| PSEG-MW-42D | PSEG-MW-42D-23.5-20240911 | 9/11/2024 | 23.5 | N | JD95856 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | 4.2 J | -147 | 0.12 | 6.62 | 1.79 | 19.8 | 2.07 | -- | -- | -- | -- | -- | -- | -- | -- |
| PSEG-MW-42D | PSEG-MW-42D-23.5-20241213 | 12/13/2024 | 23.5 | N | JE2640 | Total

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| PSEG-MW-7F | PSEG-MW-7F-27.5-20221219 | 12/19/2022 | 27.5 | N | 4602717111 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -124.3 | 2.14 | 7.21 | 2.588 | 13.38 | 5.79 | -- | -- | -- | -- | -- | -- | -- | -- |
| PSEG-MW-7F | PSEG-MW-7F-32.5-20221219 | 12/19/2022 | 32.5 | N | 4602717111 | Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -125.6 | 2.8 | 7.24 | 2.599 | 14.56 | 1.85 | -- | -- | -- | -- | -- | -- | -- | -- |
| PSEG-MW-7F | PSEG-MW7F-30.0-20230505 | 5/5/2023 | 30 | N | 4602796721 | Post-Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -299.9 | 4.70 | 7.13 | 1.796 | 16.50 | 1.76 | -- | -- | -- | -- | -- | -- | -- | -- |
| PSEG-MW-7F | PSEG-MW7F-35.0-20230505 | 5/5/2023 | 35 | N | 4602796721 | Post-Treatment | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -247.6 | 5.10 | 7.16 | 1.726 | 16.20 | 5.04 | -- | -- | -- | -- | -- | -- | -- | -- |
| PSEG-MW-7F | PSEG-MW7F-30.0-20230913 | 9/13/2023 | 30 | N | 4602880871 | Total Cr Isopleth | Intermediate | -- | 2.5 J | -- | < 10.0 U | -90.7 | 0.43 | 6.74 | 2.374 | 19.26 | 2.42 | -- | -- | -- | -- | -- | -- | -- | -- |
| PSEG-MW-7F | PSEG-MW7F-35.0-20230913 | 9/13/2023 | 35 | N | 4602880871 | Total Cr Isopleth | Intermediate | -- | < 4.0 U | -- | < 10.0 U | -84.9 | 0.51 | 6.63 | 2.276 | 18.3 | 0.83 | -- | -- | -- | -- | -- | -- | -- | -- |
| PSEG-MW-7F | PSEG-MW7F-30.0-20231212 | 12/12/2023 | 30 | N | JD78686 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | 14 | -124.9 | 0.1 | 7.15 | 2.172 | 14.3 | 0.3 | -- | -- | -- | -- | -- | -- | -- | -- |
| PSEG-MW-7F | PSEG-MW7F-35-20231212 | 12/12/2023 | 35 | N | JD78686 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -129.3 | 0.11 | 7.14 | 2.174 | 14.1 | 4.76 | -- | -- | -- | -- | -- | -- | -- | -- |
| PSEG-MW-7F | PSEG-MW7F-30.0-20240312 | 3/12/2024 | 30 | N | JD84279 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -122.4 | 4.62 | 7.34 | 2456 | 13.4 | 1.9 | -- | -- | -- | -- | -- | -- | -- | -- |
| PSEG-MW-7F | PSEG-MW-7F-30.0-20240312-X | 3/12/2024 | 30 | FD | JD84279 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| PSEG-MW-7F | PSEG-MW-7F-35.0-20240312 | 3/12/2024 | 35 | N | JD84279 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -124.4 | -- | 7.37 | 2475 | 15.1 | 2.15 | -- | -- | -- | -- | -- | -- | -- | -- |
| PSEG-MW-7F | PSEG-MW7F-30.0-20240613 | 6/13/2024 | 30 | N | JD90407 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -208 | 0.1 | 7.27 | 2.22 | 18.6 | 0.6 | -- | -- | -- | -- | -- | -- | -- | -- |
| PSEG-MW-7F | PSEG-MW7F-35.0-20240613 | 6/13/2024 | 35 | N | JD90407 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -205.7 | 0.19 | 7.28 | 2.22 | 17.2 | 0.75 | -- | -- | -- | -- | -- | -- | -- | -- |
| PSEG-MW-7F | PSEG-MW7F-30.0-20240912 | 9/12/2024 | 30 | N | JD95972 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | 5.0 J | -131.3 | 0.1 | 7.23 | 2.75 | 17.3 | 0.67 | -- | -- | -- | -- | -- | -- | -- | -- |
| PSEG-MW-7F | PSEG-MW7F-35.0-20240912 | 9/12/2024 | 35 | N | JD95972 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -122.6 | 0.07 | 7.23 | 2.75 | 16.9 | 0.38 | -- | -- | -- | -- | -- | -- | -- | -- |
| PSEG-MW-7F | PSEG-MW-7F-30.0-20241216 | 12/16/2024 | 30 | N | JE2745 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -158.3 | 0.12 | 7.33 | 2.58 | 14.9 | 0.49 | -- | -- | -- | -- | -- | -- | -- | -- |
| PSEG-MW-7F | PSEG-MW-7F-35.0-20241216 | 12/16/2024 | 35 | N | JE2745 | Total Cr Isopleth | Intermediate | -- | < 10 U | -- | < 10 U | -152.1 | 0.28 | 7.34 | 2.58 | 15.7 | 0.56 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW20C | 114-MW20C-20180419 | 4/19/2018 | 80.2 | N | JC64571 | N/A | Deep | -- | 4.8 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW25C | 114-MW25C-20180313 | 3/13/2018 | 43.9 | N | JC62228 | N/A | Deep | 1.1 J | 41.5 J | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 100 U | **1360** | -- |
| 114-MW25C | 114-MW25C-44.5-20200401 | 4/1/2020 | 44.5 | N | JD5447 | N/A | Deep | -- | < 10 U | -- | 18 | -154.9 | 0.21 | 7.87 | 0.639 | 14.54 | 12.8 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW103D | 114-P1B-MW103D-20171214 | 12/14/2017 | 56.7 | N | JC57385 | N/A | Deep | -- | **101000** | -- | **95500** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW103D | 114-P1B-MW103D-20171214X | 12/14/2017 | 56.7 | FD | JC57385 | N/A | Deep | -- | **104000** | -- | **95000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1B-MW103D | 114-P1B-MW103D-53.5-20190611 | 6/11/2019 | 53.5 | N | JC89662 | N/A | Deep | **106000** | **108000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 2.0 U | -- | < 100 U | -- | -- |
| 114-P1B-MW103D | 114-PB1-MW103D-53.5-20190801 | 8/1/2019 | 53.5 | N | JC92572 | N/A | Deep | **6000** | **7220** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.0 | -- | < 100 U | -- | -- |
| 114-P1B-MW103D | 114-P1B-MW103D-DUP-20210930 | 9/30/2021 | 34 | FD | JD32569 | Post-Treatment | Deep | 9.3 J | **223** | 2.6 J | **< 100 U** | -- | -- | -- | -- | -- | -- | -- | 31.3 | **318** | 29.2 | 163 | 58.5 J | < 15 U | -- |
| 114-P1B-MW103D | 114-P1B-MW103D-20210930 | 9/30/2021 | 34 | N | JD32569 | Post-Treatment | Deep | 9.1 J | **274** | 3.8 J | **< 100 U** | -- | -- | -- | -- | -- | -- | -- | 31.6 | **350** | 25.5 | 137 | 47.3 J | < 15 U | -- |
| 114-P1B-MW103D | 114-P1B-MW103D-20220224 | 2/24/2022 | 34 | N | JD40291 | Post-Treatment | Deep | R | R | **510** | 25 | -- | -- | -- | -- | -- | -- | -- | 367 | 126 | 1.4 J | 18.9 | < 100 U | **975** | -- |
| 114-P1B-MW103D | 114-P1B-MW103D-20220524 | 5/24/2022 | 34 | N | JD45395 | Post-Treatment | Deep | **1350** | **1240** | 6.8 J | 9.2 J | -- | -- | -- | -- | -- | -- | -- | 822 | < 2.0 U | 1.7 J | 726 | R | **74000** | -- |
| 114-P1B-MW103D | 114-P1B-MW103D-34-20220923 | 9/23/2022 | 34 | N | 4602661551 | Treatment | Deep | -- | 34.9 | -- | < 50.0 U | -515.6 | 1.89 | 13.8 | -- | 17.21 | 3.55 | -- | 24.4 | 194 | -- | -- | -- | -- | -- |
| 114-P1B-MW103D | 114-P1B-MW103D-57-20221228 | 12/28/2022 | 57 | N | 4602721191 | Enhanced Attenuation | Deep | -- | **1850** | -- | < 20.0 U | -167.70 | 0.57 | 7.02 | 1.425 | 13.47 | 9999 | -- | 53.3 | 21.7 | < 1.0 U | -- | **8850** | -- | -- |
| 114-P1B-MW103D | 114-P1B-MW103D-56-20230412 | 4/12/2023 | 56 | N | 4602781101 | Enhanced Attenuation | Deep | -- | **345** | -- | < 10.0 U | -39.3 | 1.26 | 7.1 | 1.276 | 17.58 | 50.9 | -- | 36.5 | 23.5 | < 1 U | -- | **6280** | **3600** | -- |
| 114-P1B-MW103D | 114-P1B-MW103D-57.0-20240410 | 4/10/2024 | 57 | N | JD86198 | Enhanced Attenuation | Deep | 54.7 | **77.5** | 2.7 J | < 10 U | -412.6 | 0.16 | 7.06 | 1.53 | 14.7 | 42.7 | -- | 17.6 | 12.8 | < 2.0 U | -- | **3490** | **2660** | -- |
| 137-MW1C | 137-MW1C-70.5-20220119 | 1/19/2022 | 70.5 | N | 4602530341 | Treatment | Deep | 13.2 | 44.0 | < 10.0 U | < 10.0 U | -163.00 | 0 | 8.40 | 0.64 | 13.94 | 2.00 | -- | 22.5 | 144 | -- | 120 | -- | -- | -- |
| 137-MW1C | 137-MW1C-72.5-20220223 | 2/23/2022 | 72.5 | N | 4602530771 | Treatment | Deep | 2.9 J | 7.2 | < 10.0 U | < 10.0 U | -105.90 | 1.09 | 12.13 | 2.03 | 14.78 | 3.79 | -- | 18.0 | 111 | -- | 150 | -- | -- | -- |
| 137-MW1C | 137-MW1C-72.5-20220323 | 3/23/2022 | 72.5 | N | 4602548831 | Treatment | Deep | < 4.0 U | 12.0 | < 10.0 U | < 10.0 U | -162.10 | 0.31 | 12.09 | 1.31 | -- | 1.61 | -- | 14.6 | 89.9 | -- | 210 | -- | -- | -- |
| 137-MW1C | 137-MW1C-72.5-20220422 | 4/22/2022 | 72.5 | N | 4602567961 | Treatment | Deep | < 4.0 U | 3.6 J | < 10.0 U | < 10.0 U | -113.8 | 1.50 | 12.09 | 1.571 | 15.78 | 3.48 | -- | 11.1 | 76.9 | -- | 170 | -- | -- | -- |
| 137-MW1C | 137-MW1C-72.5-20220518 | 5/18/2022 | 72.5 | N | 4602583551 | Treatment | Deep | -- | 6.3 | -- | < 10.0 U | -42.3 | 0.93 | 11.86 | 1.450 | 16.41 | 3.95 | -- | 11.4 | 80.1 | -- | -- | -- | -- | -- |
| 137-MW1C | 137-MW1C-72.5-20220615 | 6/15/2022 | 72.5 | N | 4602601501 | Treatment | Deep | -- | 8.5 | -- | < 10.0 U | -192.1 | 0.12 | 11.10 | 1.056 | 17.98 | 4.51 | -- | 13.9 | 58.7 | -- | -- | -- | -- | -- |
| 137-MW1C | 137-MW1C-72.5-20220720 | 7/20/2022 | 72.5 | N | 4602622601 | Treatment | Deep | -- | 8.9 | -- | < 10.0 U | -199.0 | 0.18 | 11.47 | 0.749 | 18.37 | 6.64 | -- | 14.8 | 46.6 | -- | -- | -- | -- | -- |
| 137-MW1C | 137-MW1C-72.5-20220921 | 9/21/2022 | 72.5 | N | 4602659871 | Treatment | Deep | -- | 18.8 | -- | < 10.0 U | -211.4 | 0.82 | 10.63 | 0.625 | 18.86 | 8.17 | -- | 17.3 | 27.7 | -- | -- | -- | -- | -- |
| 137-MW1C | 137-MW1C-72.5-20220921-X | 9/21/2022 | 72.5 | FD | 4602659871 | Treatment | Deep | -- | 18.4 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 17.2 | 26.0 | -- | -- | -- | -- | -- |
| 137-MW1C | 137-MW1C-72.5-20221215 | 12/15/2022 | 72.5 | N | 4602714561 | Treatment | Deep | -- | 26.3 | -- | < 10.0 UF1 | -92.9 | 0.8 | 9.16 | 1.323 | 11.8 | 7.71 | -- | 10.2 | 148 | -- | -- | -- | -- | -- |
| 137-MW1C | 137-MW1C-72.5-20230322 | 3/22/2023 | 72.5 | N | 4602768001 | Treatment | Deep | -- | 31.9 | -- | < 10.0 U | -246.5 | 0.35 | 9.16 | 1.291 | 12.55 | 4.87 | -- | 12.5 | 137 | -- | -- | -- | -- | -- |
| 137-MW1C | 137-MW1C-72.5-20230621 | 6/21/2023 | 72.5 | N | 4602828031 | Treatment | Deep | -- | 40.6 | -- | < 10.0 U | -267.4 | 0.53 | 9.33 | 1.275 | 18.54 | 6.81 | -- | 11.3 | 87.5 | -- | -- | -- | -- | -- |
| 137-MW1C | 137-MW1C-72.5-20230920 | 9/20/2023 | 72.5 | N | 4602886061 | Treatment | Deep | -- | < 4.0 U | -- | < 10.0 U | -142.6 | 0.26 | 9.63 | 1.233 | 21.38 | 9.19 | -- | 1.2 | 144 | -- | -- | -- | -- | -- |
| 137-MW1C | 137-MW1C-72.5-20230920-X | 9/20/2023 | 72.5 | FD | 4602886061 | Treatment | Deep | -- | 22.0 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 6.8 | **317** | -- | -- | -- | -- | -- |
| 137-MW1C | 137-MW1C-72.5-20231114 | 11/14/2023 | 72.5 | N | JD76935 | Treatment | Deep | -- | 15.5 | -- | < 10 U | -267.7 | 0.25 | 9.69 | 1.767 | 16.1 | 8.29 | -- | 4.2 | **385** | -- | -- | -- | -- | -- |
| 137-MW1C | 137-MW1C-72.5-20231219 | 12/19/2023 | 72.5 | N | JD79187 | Treatment | Deep | -- | 8.9 B | -- | < 10 U | -229.6 | 0.24 | 9.52 | 0.946 | 11.5 | 3.62 | -- | 3.4 | **385** | -- | -- | -- | -- | -- |
| 137-MW1C | 137-MW1C-72.5-20240119 | 1/19/2024 | 72.5 | N | JD80858 | Treatment | Deep | -- | 11.9 | -- | < 10 U | -218.1 | 1.91 | 9.4 | 1.672 | 8.4 | 3.77 | -- | 4.0 | **358** | -- | -- | -- | -- | -- |
| 137-MW1C | 137-MW1C-72.5-20240226 | 2/26/2024 | 72.5 | N | JD83185 | Treatment | Deep | -- | 6.0 B | -- | < 10 U | -230.3 | 0.43 | 9.24 | 1.638 | 13.6 | 3.3 | -- | 4.3 | **309** | -- | -- | -- | -- | -- |
| 137-MW1C | 137-MW1C-72.5-20240319 | 3/19/2024 | 72.5 | N | JD84759 | Treatment | Deep | -- | 13.1 | -- | < 10 U | -286.2 | 0.03 | 9.35 | 1.474 | 13.2 | 5.36 | -- | 3.9 | **328** | -- | -- | -- | -- | -- |
| 137-MW1C | 137-MW1C-72.5-20240412 | 4/12/2024 | 72.5 | N | JD86437 | Treatment | Deep | -- | 22.5 | -- | < 10 U | -190.6 | 0.2 | 9.43 | 1.718 | 13.8 | 6.12 | -- | 5.0 | **269** | -- | -- | -- | -- | -- |
| 137-MW1C | 137-MW1C-72.5-20240522 | 5/22/2024 | 72.5 | N | JD88961 | Treatment | Deep | -- | 18.3 | -- | < 10 U | -227.1 | 0.48 | 9.23 | 1.651 | 18.4 | 3.74 | -- | 6.2 | **264** | -- | -- | -- | -- | -- |
| 137-MW1C | 137-MW1C-72.5-20240614 | 6/14/2024 | 72.5 | N | JD90507 | Treatment | Deep | -- | 32.1 | -- | < 10 U | -224 | 0.21 | 9.17 | 1.642 | 20.3 | 4.29 | -- | 8.2 | **254** | -- | -- | -- | -- | -- |
| 137-MW1C | 137-MW1C-72.5-20240719 | 7/19/2024 | 72.5 | N | JD92501 | Post-Treatment | Deep | -- | **904** | -- | < 10 U | -17.3 | 0.17 | 8.96 | 1.443 | 21.4 | 2.59 | -- | 8.5 | 202 | 0.74 J | -- | -- | -- | -- |
| 137-MW1C | 137-MW1C-72.5-20241008 | 10/8/2024 | 72.5 | N | JD97686 | Post-Treatment | Deep | -- | 9.5 J | -- | < 10 U | -166.7 | 0.14 | 8.72 | 1.38 | 19.4 | 1.21 | -- | 10.4 J+ | 161 J- | -- | -- | -- | -- | -- |
| 137-MW2C | 137-MW2C-80.5-20221229 | 12/29/2022 | 80.5 | N | 4602721691 | N/A | Deep | -- | **124** | -- | 26.6 | -61.4 | 5.29 | 8.01 | 4.226 | 14.24 | 5.09 | -- | -- | -- | -- | -- | -- | -- | -- |
| 137-MW2C | 137-MW2C-80.5-2221229-X | 12/29/2022 | 80.5 | FD | 4602721691 | N/A | Deep | -- | **122** | -- | 32.5 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 137-MW2C | 137-MW2C-80.5-20230314 | 3/14/2023 | 80.5 | N | 4602762891 | N/A | Deep | -- | 57.6 | -- | < 10.0 U | -186.7 | 1.48 | 8.32 | 5.089 | 10.72 | 17.1 | -- | -- | -- | -- | -- | -- | -- | -- |
| 137-MW2C | 137-MW2C-80.5-20230505 | 5/5/2023 | 80.5 | N | 4602796721 | N/A | Deep | -- | **103** | -- | < 10.0 U | -94.4 | 0.47 | 8.06 | 4.352 | 15.04 | 25.6 | -- | -- | -- | -- | -- | -- | -- | -- |
| 137-MW2C | 137-MW2C-80.5-20230815 | 8/15/2023 | 80.5 | N | 4602862031 | Total Cr Isopleth | Deep | < 4.0 U | **91.1** | < 10.0 U | < 10.0 U | -125.7 | 1.1 | 8.04 | 4.612 | 20.13 | 23.9 | -- | -- | -- | -- | -- | -- | -- | -- |
| 137-MW2C | 137-MW2C-79.0-20230914 | 9/14/2023 | 79 | N | 4602882001 | Total Cr Isopleth | Deep | -- | **445** | -- | < 10.0 UJ | -139.5 | 0.9 | 7.95 | 5.2 | 19.44 | 86.7 | -- | -- | -- | -- | -- | -- | -- | -- |
| 137-MW2C | 137-MW2C-79.0-20231212 | 12/12/2023 | 79 | N | JD78686 | Total Cr Isopleth | Deep | **166** | **521** | < 10 U | < 10 U | -114.4 | 0.17 | 7.92 | 5.51 | 12.8 | 45.5 | -- | -- | -- | -- | -- | -- | -- | -- |
| 137-MW2C | 137-MW2C-80.5-20240312 | 3/12/2024 | 80.5 | N | JD84279 | Total Cr Isopleth | Deep | < 10 U | 31.7 | < 10 U | < 10 U | -154.5 | 1.04 | 7.77 | 4.65 | 15.9 | 22.3 | -- | -- | -- | -- | -- | -- | -- | -- |
| 137-MW2C | 137-MW2C-80.5-20240613 | 6/13/2024 | 80.5 | N | JD90407 | Total Cr Isopleth | Deep | < 10 U | 30.6 | < 10 U | < 10 U | -481.6 | 0.81 | 7.89 | 5.883 | 20.9 | 27.2 | -- | -- | -- | -- | -- | -- | -- | -- |
| 137-MW2C | 137-MW2C-80.5-20240916 | 9/16/2024 | 80.5 | N | JD96194 | Total Cr Isopleth | Deep | 16.1 | 39.4 | < 10 U | < 10 U | -89.6 | 0.58 | 7.78 | 5.4 | 20 | 58 | -- | -- | -- | -- | -- | -- | -- | -- |
| 137-MW2C | 137-MW2C-80.5-20241212 | 12/12/2024 | 80.5 | N | JE2543 | Total Cr Isopleth | Deep | 6.2 J | 29.4 | < 10 U | 4.3 J | -260 | 0.81 | 8.51 | 5.88 | 12.1 | 79 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW8F | MW8F-20180425 | 4/25/2018 | 80 | N | JC64901 | N/A | Deep | -- | 2.0 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW9C | MW9C-50-20230315 | 3/15/2023 | 50 | N | 4602763791 | N/A | Deep | -- | 31.1 | -- | 8.8 J | 79.2 | 0.60 | 6.63 | 0.996 | 13.86 | 3.8 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW9C | MW9C-55-20230315 | 3/15/2023 | 55 | N | 4602763791 | N/A | Deep | -- | 36.3 | -- | 8.8 J | 79.1 | 0.67 | 6.64 | 1.005 | 13.59 | 6.3 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW9C | MW9C-50.0-20230508 | 5/8/2023 | 50 | N | 4602798181 | N/A | Deep | -- | 14.5 | -- | < 10.0 U | 128.5 | 1.49 | 6.66 | 1.213 | 18.32 | 4.39 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW9C | MW9C-55.0-20230508 | 5/8/2023 | 55 | N | 4602798181 | N/A | Deep | -- | 15.4 | -- | < 10.0 U | 135.1 | 3.01 | 6.64 | 1.21 | 16.30 | 3.18 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW9C | MW9C-50.0-20230914 | 9/14/2023 | 50 | N | 4602882001 | Total Cr Isopleth | Deep | -- | 12.2 | -- | 8.4 J- | 17.5 | 1.29 | 6.61 | 1.526 | 19.7 | 0.82 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW9C | MW9C-55.0-20230914 | 9/14/2023 | 55 | N | 4602882001 | Total Cr Isopleth | Deep | -- | 13.9 | -- | < 10.0 UJ | 18.7 | 1.25 | 6.6 | 1.524 | 19.72 | 1.31 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW9C | MW9C-50.0-20231213 | 12/13/2023 | 50 | N | JD78777 | Total Cr Isopleth | Deep | -- | 6.8 J | -- | < 10 UJ | 116.7 | 0.16 | 6.55 | 1.523 | 10.8 | 0.4 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW9C | MW9C-55.0-20231213 | 12/13/2023 | 55 | N | JD78777 | Total Cr Isopleth | Deep | -- | 7.8 J | -- | < 10 UJ | 136.1 | 0.06 | 6.54 | 1.516 | 11.1 | 0.95 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW9C | MW9C-50.0-20240314 | 3/14/2024 | 50 | N | JD84494 | Total Cr Isopleth | Deep | -- | 8.2 J | -- | < 10 U | 15.4 | 0.31 | 6.76 | 1.454 | 14.7 | 1.48 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW9C | MW9C-55.0-20240314 | 3/14/2024 | 55 | N | JD84494 | Total Cr Isopleth | Deep | -- | 9.6 J | -- | < 10 U | 43.5 | 0.13 | 6.78 | 1.46 | 11.9 | 2.53 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW9C | MW9C-50.0-20240612 | 6/12/2024 | 50 | N | JD90298 | Total Cr Isopleth | Deep | -- | 3.5 J | -- | < 10 U | 65.4 | 0.28 | 6.58 | 1.335 | 18 | 1.86 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW9C | MW9C-55.0-20240612 | 6/12/2024 | 55 | N | JD90298 | Total Cr Isopleth | Deep | -- | 7.8 J | -- | < 10 U | 61.1 | 0.48 | 6.57 | 1.344 | 16.4 | 4.89 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW9C | MW9C-50.0-20240913 | 9/13/2024 | 50 | N | JD96081 | Total Cr Isopleth | Deep | -- | 7.0 J | -- | < 10 U | 92 | 0.42 | 6.61 | 1.50 | 21.1 | 0.62 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW9C | MW9C-55.0-20240913 | 9/13/2024 | 55 | N | JD96081 | Total Cr Isopleth | Deep | -- | 9.6 J | -- | < 10 U | 120.5 | 0.45 | 6.61 | 1.49 | 19.3 | 1.18 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW9C | MW9C-50.0-20241119 | 11/19/2024 | 50 | N | JE946 | Total Cr Isopleth | Deep | -- | 8.7 JB | -- | < 10 U | 164.7 | 0.39 | 6.67 | 1.56 | 16.3 | 0.64 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW9C | MW9C-55.0-20241119 | 11/19/2024 | 55 | N | JE946 | Total Cr Isopleth | Deep | -- | 8.5 JB | -- | 2.9 J | 108.5 | 0.45 | 6.67 | 1.55 | 15.5 | 0.72 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW9C | MW9C-55.0-20241119-X | 11/19/2024 | 55 | FD | JE946 | Total Cr Isopleth | Deep | -- | 8.0 JB | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-CR-3D | MW-CR-3D-20180418 | 4/18/2018 | 43.2 | N | JC64444 | N/A | Deep | -- | 2.0 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW19C | 114-MW19C-99.0-20180427 | 4/27/2018 | 99 | N | JC65066 | N/A | Basal Till | -- | 33.7 | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW45C | 114-MW45C-70.5-20191021 | 10/21/2019 | | N | JC97157 | N/A | Basal Till | -- | 10.2 | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW45C | 114-MW45C-71.0-20200820 | 8/20/2020 | 71 | N | JD12022 | N/A | Basal Till | -- | 7.9 J | -- | < 10 U | -83.60 | 0.39 | 7.35 | 2.42 | 22.19 | 10.70 | -- | 3.1 | -- | -- | -- | -- | -- | -- |
| 114-MW45C | 114-MW45C-71.0-20230314 | 3/14/2023 | 71 | N | 4602762891 | N/A | Basal Till | -- | 10.4 | -- | < 10.0 U | -110.1 | 0.7 | 7.34 | 1.515 | 10.09 | 9.82 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW45C | 114-MW45C-71.0-20230711 | 7/11/2023 | 71 | N | 4602839741 | Basal Till | Basal Till | -- | 13.2 | -- | < 10.0 U | -101.3 | 0.43 | 6.84 | 1.222 | 19.1 | 9.11 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW45C | 114-MW45C-71.0-20240311 | 3/11/2024 | 71 | N | JD84213 | Basal Till | Basal Till | -- | 7.5 J- | -- | < 10 UJ | -161.6 | 0.26 | 7.16 | 1.797 | 12 | 4.08 | -- | 8.1 | 105 | -- | -- | -- | -- | -- |
| 114-MW45C | 114-MW45C-71.0-20240710 | 7/10/2024 | 71 | N | JD91944 | Basal Till | Basal Till | -- | 9.9 J | -- | < 10 U | -118.7 | 0.14 | 7.03 | 1.635 | 19.9 | 4.89 | -- | 10.5 | 137 | -- | -- | -- | -- | -- |
| 114-MW45C | 114-MW45C-71.0-20241120 | 11/20/2024 | 71 | N | JE1009 | Basal Till | Basal Till | -- | 9.7 J | -- | < 10 U | -133.8 | 0.17 | 7.06 | 1.55 | 16.4 | 9.14 | -- | 10.1 J- | 159 | -- | -- | -- | -- | -- |
| 114-MW48C | 114-MW48C-56.2-20200819 | 8/19/2020 | 56.2 | N | JD11956 | N/A | Basal Till | -- | 11.3 JB | -- | < 10 U | 3.20 | 0.47 | 6.65 | 1.26 | 16.98 | 5.94 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW49C | 114-MW49C-69.0-20200819 | 8/19/2020 | 69 | N | JD11956 | N/A | Basal Till | -- | 15.2 JB | -- | < 10 U | -98.80 | 0.60 | 7.06 | 17.47 | 17.49 | 24.50 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW49C | 114-MW49C-69.0-20230316 | 3/16/2023 | 69 | N | 4602764731 | N/A | Basal Till | -- | 16.0 | -- | < 10.0 U | -87.1 | 1.81 | 6.90 | 1.600 | 12.79 | 8.12 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW49C | 114-MW49C-69.0-20230711 | 7/11/2023 | 69 | N | 4602839741 | Basal Till | Basal Till | 8.0 | 15.1 | < 10.0 U | < 10.0 U | -65.7 | 4.45 | 6.08 | 1.321 | 22.88 | 20.3 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW49C | 114-MW49C-69.0-20240311 | 3/11/2024 | 69 | N | JD84213 | Basal Till | Basal Till | -- | 16.9 J- | -- | < 10 UJ | -140.6 | 0.36 | 6.84 | 1.985 | 12.7 | 7.59 | -- | 7.0 | 105 | -- | -- | -- | -- | -- |
| 114-MW49C | 114-MW49C-69.0-20240710 | 7/10/2024 | 69 | N | JD91944 | Basal Till | Basal Till | -- | 11.6 | -- | < 10 U | -94.3 | 0.36 | 7.03 | 1.309 | 21 | 8 | -- | 3.2 | 111 | -- | -- | -- | -- | -- |
| 114-MW49C | 114-MW49C-69.0-20240710-X | 7/10/2024 | 69 | FD | JD91944 | Basal Till | Basal Till | -- | 11.4 | -- | 5.2 J | -- | -- | -- | -- | -- | -- | -- | 3.1 | 110 | -- | -- | -- | -- | -- |
| 114-MW49C | 114-MW49C-69.0-20241120 | 11/20/2024 | 69 | N | JE1009 | Basal Till | Basal Till | -- | 6.4 J | -- | < 10 U | -107.5 | 0.36 | 7.01 | 1.53 | 17.8 | 4.54 | -- | 3.1 J- | 114 | -- | -- | -- | -- | -- |
| 114-MW49C | 114-MW49C-69.0-20241120-X | 11/20/2024 | 69 | FD | JE1009 | Basal Till | Basal Till | -- | 5.6 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | 3.0 J- | 114 | -- | -- | -- | -- | -- |
| 114-MW50C | 114-MW50C-61.5-20200820 | 8/20/2020 | 61.5 | N | JD12022 | N/A | Basal Till | -- | 2.1 J | -- | < 10 U | 74.90 | 0.41 | 6.54 | 2.91 | 19.48 | 8.04 | -- | 2.4 | -- | -- | -- | -- | -- | -- |
| 114-MW50C | 114-MW50C-62.0-20230317 | 3/17/2023 | 62 | N | 4602765431 | N/A | Basal Till | -- | < 4.0 U | -- | < 10.0 U | 206.3 | 0.67 | 6.25 | 1.44 | 13.27 | 9.21 | -- | -- | -- | -- | -- | -- | -- | -- |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-MW50C | 114-MW50C-62.0-20230711 | 7/11/2023 | 62 | N | 4602839741 | Basal Till | Basal Till | -- | < 4.0 U | -- | < 10.0 U | 78.8 | 0.52 | 6.55 | 1.141 | 17.9 | 3.38 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW50C | 114-MW50C-62.0-20240312 | 3/12/2024 | 62 | N | JD84295 | Basal Till | Basal Till | -- | 27.4 | -- | < 10 U | 85.4 | 1.41 | 6.73 | 1.653 | 12.1 | 0.56 | -- | 1.5 | 62.0 | -- | -- | -- | -- | -- |
| 114-MW50C | 114-MW50C-62.0-20240710 | 7/10/2024 | 62 | N | JD91944 | Basal Till | Basal Till | -- | < 10 U | -- | < 10 U | 168.5 | 0.28 | 6.65 | 1.558 | 20.8 | 1.95 | -- | 2.3 | 67.6 | -- | -- | -- | -- | -- |
| 114-MW50C | 114-MW50C-62.0-20241120 | 11/20/2024 | 62 | N | JE1009 | Basal Till | Basal Till | -- | < 10 U | -- | < 10 U | 90.1 | 0.5 | 6.76 | 1.51 | 16.6 | 2.44 | -- | 1.7 J- | 77.0 | -- | -- | -- | -- | -- |
| 114-MW51C | 114-MW51C-76.0-20200828 | 8/28/2020 | 76 | N | JD12393 | N/A | Basal Till | -- | 3.3 J | -- | < 10 U | -4.30 | 9.58 | 8.07 | 0.96 | 18.94 | 18.70 | -- | 2.4 | -- | -- | -- | -- | -- | -- |
| 114-MW51C | 114-MW51C-76.0-20230316 | 3/16/2023 | 76 | N | 4602764731 | N/A | Basal Till | -- | < 4.0 U | -- | < 10.0 U | -92.3 | 0.41 | 7.75 | 0.654 | 12.88 | 5.26 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW51C | 114-MW51C-76.0-20230711 | 7/11/2023 | 76 | N | 4602839741 | Basal Till | Basal Till | -- | 2.8 J | -- | < 10.0 U | -113.4 | 0.67 | 7.44 | 0.507 | 20.31 | 8.89 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW51C | 114-MW51C-76.0-20240311 | 3/11/2024 | 76 | N | JD84213 | Basal Till | Basal Till | -- | < 10 UJ | -- | < 10 UJ | -163.1 | 0.35 | 7.78 | 0.664 | 13.1 | 3.36 | -- | < 1.0 U | 79.4 | -- | -- | -- | -- | -- |
| 114-MW51C | 114-MW51C-76.0-20240710 | 7/10/2024 | 76 | N | JD91944 | Basal Till | Basal Till | -- | < 10 U | -- | < 10 U | -128.2 | 0.22 | 7.79 | 0.664 | 20.2 | 6.22 | -- | 1.6 | 97.9 | -- | -- | -- | -- | -- |
| 114-MW51C | 114-MW51C-76.0-20241120 | 11/20/2024 | 76 | N | JE1009 | Basal Till | Basal Till | -- | < 10 U | -- | < 10 U | -139.6 | 0.42 | 7.81 | 0.61 | 16.4 | 4.64 | -- | 1.6 J- | 99.0 | -- | -- | -- | -- | -- |
| 114-MW52C | 114-MW52C-72.5-20200824 | 8/24/2020 | 72.5 | N | JD12146 | N/A | Basal Till | -- | **989** | -- | **1000** | 63.00 | 0.56 | 7.17 | 2.05 | 24.27 | 7.95 | -- | 3.7 | -- | -- | -- | -- | -- | -- |
| 114-MW52C | 114-MW52C-73-20230316 | 3/16/2023 | 73 | N | 4602764731 | N/A | Basal Till | -- | **6770** | -- | **4710** | -13.8 | 1.88 | 7.27 | 1.479 | 14.33 | 17.6 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW52C | 114-MW52C-73.0-20230711 | 7/11/2023 | 73 | N | 4602839741 | Basal Till | Basal Till | -- | **449** | -- | < 10.0 U | 11.8 | 0.64 | 6.74 | 1.356 | 20.72 | 6.63 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW52C | 114-MW52C-73.0-20240311 | 3/11/2024 | 73 | N | JD84213 | Basal Till | Basal Till | -- | **423 J-** | -- | 7.2 J- | -145.5 | 0.96 | 6.6 | 1.752 | 14 | 9.16 | -- | 38.9 | 7.8 | -- | -- | -- | -- | -- |
| 114-MW52C | 114-MW52C-73.0-20240710 | 7/10/2024 | 73 | N | JD91944 | Basal Till | Basal Till | **10700** | **9530** | **8700** | **8500** | -14.7 | 0.08 | 6.66 | 2.194 | 20.8 | 32.6 | -- | 25.4 | 55.6 | -- | -- | -- | -- | -- |
| 114-MW52C | 114-MW52C-73.0-20241003 | 10/3/2024 | 73 | N | JD97377 | Basal Till | Basal Till | **720** | **1420** | < 10 U | < 10 U | -152.7 | 0.18 | 6.7 | 1.7 | 19.4 | 21.5 | -- | 12.2 | 98.2 | -- | -- | -- | -- | -- |
| 114-MW52C | 114-MW52C-73.0-20241107 | 11/7/2024 | 73 | N | JD99895 | Basal Till | Basal Till | **109** | **201** | 3.7 B | 6.1 B | -142.5 | 0.16 | 6.8 | 1.91 | 18.3 | 3.72 | -- | 9.4 | 92.0 | -- | -- | -- | -- | -- |
| 114-MW52C | 114-MW52C-73.0-20241204 | 12/4/2024 | 73 | N | JE1940 | Basal Till | Basal Till | 40.7 | **124** | 7.8 B | 5.5 B | -185.4 | 0.2 | 6.62 | 1.95 | 14.1 | 6.57 | -- | 27.1 | 15.7 | -- | -- | -- | -- | -- |
| 114-MW54C | 114-MW54C-76.5-20200827 | 8/27/2020 | 76.5 | N | JD12322 | N/A | Basal Till | -- | < 10 U | -- | < 10 U | -119.10 | 0.51 | 8.69 | 1.65 | 15.43 | 7.01 | -- | 2.6 | -- | -- | -- | -- | -- | -- |
| 114-MW54C | 114-MW54C-77.0-20230317 | 3/17/2023 | 77 | N | 4602765431 | N/A | Basal Till | -- | < 4.0 U | -- | < 10.0 U | -53.3 | 0.55 | 7.42 | 0.865 | 12.02 | 0.83 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW54C | 114-MW54C-77.0-20230711 | 7/11/2023 | 77 | N | 4602839741 | Basal Till | Basal Till | -- | 4.0 | -- | < 10.0 U | -30.5 | 0.71 | 7.07 | 0.801 | 20.78 | 2.23 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW54C | 114-MW54C-77.0-20240312 | 3/12/2024 | 77 | N | JD84295 | Basal Till | Basal Till | -- | 12.8 | -- | < 10 U | -122.5 | 0.5 | 7.88 | 1.055 | 16.3 | 0.85 | -- | 1.3 | 179 | -- | -- | -- | -- | -- |
| 114-MW54C | 114-MW54C-77.0-20240710 | 7/10/2024 | 77 | N | JD91944 | Basal Till | Basal Till | -- | < 10 U | -- | < 10 U | -106.3 | 0.42 | 7.86 | 1.02 | 18.6 | 0.9 | -- | 1.6 | 196 | -- | -- | -- | -- | -- |
| 114-MW54C | 114-MW54C-77.0-20241003 | 10/3/2024 | 77 | N | JD97377 | Basal Till | Basal Till | < 10 U | 3.6 B | 5.9 B | 3.6 B | -233.8 | 0.73 | 6.85 | 1.63 | 17.7 | 1.12 | -- | 171 | 14.6 | -- | -- | -- | -- | -- |
| 114-MW54C | 114-MW54C-77.0-20241107 | 11/7/2024 | 77 | N | JD99895 | Basal Till | Basal Till | 7.5 B | 5.2 B | 7.2 B | 3.7 B | -333.7 | 0.22 | 6.87 | 1.96 | 18.3 | 0.9 | -- | 222 | 1.8 B | -- | -- | -- | -- | -- |
| 114-MW54C | 114-MW54C-77.0-20241203 | 12/3/2024 | 77 | N | JE1799 | Basal Till | Basal Till | < 10 U | 3.1 B | < 10 U | < 10 U | -240.9 | 0.22 | 7.03 | 1.69 | 14.2 | 4.71 | -- | 191 | < 2.0 U | -- | -- | -- | -- | -- |
| 114-MW59C | 114-MW59C-92.5-20200902 | 9/2/2020 | 92.5 | N | JD12593 | N/A | Basal Till | < 10 U | 22.7 | < 10 U | < 50 U | -16.00 | 0 | 8.34 | 0.33 | 21.21 | 722.00 | -- | 2.3 | -- | -- | -- | -- | -- | -- |
| 114-MW61C | 114-MW61C-67.5-20200825 | 8/25/2020 | 67.5 | N | JD12215 | N/A | Basal Till | -- | **90400** | -- | **88900** | 119.30 | 1.64 | 6.94 | 1.51 | 19.58 | 5.26 | -- | 3.6 | -- | -- | -- | -- | -- | -- |
| 114-MW61C | 114-MW61C-67.5-20200825X | 8/25/2020 | 67.5 | FD | JD12215 | N/A | Basal Till | -- | **94100** | -- | **86300** | -- | -- | -- | -- | -- | -- | -- | 2.6 | -- | -- | -- | -- | -- | -- |
| 114-MW61C | 114-MW61C-67.5-20230629 | 6/29/2023 | 67.5 | N | 4602833321 | N/A | Basal Till | **5490** | **6250** | **5480** | **4650 J** | 243.3 | 6.03 | 6.63 | 1.612 | 24.92 | 300 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW61C | 114-MW61C-67.5-20230629 | 6/29/2023 | 67.5 | N | 4602833322 | N/A | Basal Till | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.2 | 65.7 | -- | -- | < 120 U | -- | 0.12 HF |
| 114-MW61C | 114-MW61C-67.5-20230922 | 9/22/2023 | 67.5 | N | 4602888091 | Basal Till | Basal Till | **3880** | **3860** | **3600** | **3650** | 93.5 | 0.35 | 7.21 | 1.626 | 20.8 | 15.5 | -- | 1.7 JB | 94.7 | -- | -- | < 120 U | -- | < 0.10 UJ |
| 114-MW61C | 114-MW61C-67.5-20240312 | 3/12/2024 | 67.5 | N | JD84295 | Basal Till | Basal Till | -- | **12900 J** | -- | **26600 J** | 101.1 | 0.35 | 6.91 | 1.751 | 15 | 1.45 | -- | < 5.0 U | 153 | -- | -- | -- | -- | -- |
| 114-MW61C | 114-MW61C-67.5-20240710 | 7/10/2024 | 67.5 | N | JD91944 | Basal Till | Basal Till | -- | 3.2 J | -- | < 10 U | -159.8 | 4.66 | 8.85 | 304.1 | 19.4 | 3.78 | -- | 1.0 | 42.4 | -- | -- | -- | -- | -- |
| 114-MW61C | 114-MW61C-67.5-20241002 | 10/2/2024 | 67.5 | N | JD97277 | Basal Till | Basal Till | **1710** | **2300** | **800** | **820** | -41.4 | 0.31 | 6.46 | 1.8 | 18.8 | 13.6 | -- | 217 | 108 | -- | -- | -- | -- | -- |
| 114-MW61C | 114-MW61C-67.5-20241107 | 11/7/2024 | 67.5 | N | JD99895 | Basal Till | Basal Till | **632** | **796** | < 10 U | < 10 U | -200.4 | 0.23 | 6.66 | 2.00 | 19.4 | 9.33 | -- | 105 | 40.7 | -- | -- | -- | -- | -- |
| 114-MW61C | 114-MW61C-67.5-20241204 | 12/4/2024 | 67.5 | N | JE1940 | Basal Till | Basal Till | **554** | **586** | < 10 U | < 10 U | -151.2 | 1.04 | 6.55 | 2.04 | 12.7 | 3.96 | -- | 229 | 1.7 B | -- | -- | -- | -- | -- |
| 114-MW63C | 114-MW63C-67.0-20200827 | 8/27/2020 | 67 | N | JD12322 | N/A | Basal Till | -- | **167** | -- | **150** | -67.70 | 0.53 | 12.25 | 10.98 | 27.90 | 0.53 | -- | 5.8 | -- | -- | -- | -- | -- | -- |
| 114-MW63C | 114-MW63C-67.0-20230314 | 3/14/2023 | 67 | N | 4602762891 | N/A | Basal Till | -- | 59.5 | -- | 57.7 | -145.0 | 0.56 | 12.91 | 2.443 | 8.72 | 4.25 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW63C | 114-MW63C-67.0-20230711 | 7/11/2023 | 67 | N | 4602839741 | Basal Till | Basal Till | -- | 35.9 | -- | 31.0 | -97.3 | 0.53 | 10.86 | 1.819 | 18.19 | 3.31 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW63C | 114-MW63C-67.0-20240311 | 3/11/2024 | 67 | N | JD84213 | Basal Till | Basal Till | -- | 7.1 J- | -- | 6.0 J- | -141 | 0.97 | 12.17 | 2.4 | 12.2 | 1.89 | -- | 5.7 J | 39.4 | -- | -- | -- | -- | -- |
| 114-MW63C | 114-MW63C-67.0-20240311-X | 3/11/2024 | 67 | FD | JD84213 | Basal Till | Basal Till | -- | 5.9 J- | -- | < 10 UJ | -- | -- | -- | -- | -- | -- | -- | 3.3 J | 36.7 | -- | -- | -- | -- | -- |
| 114-MW63C | 114-MW63C-67.0-20240710 | 7/10/2024 | 67 | N | JD91944 | Basal Till | Basal Till | -- | 6.8 J | -- | < 10 U | -147.3 | 0.37 | 12 | 1.773 | 20.2 | 3.99 | -- | 4.7 | 44.0 | -- | -- | -- | -- | -- |
| 114-MW63C | 114-MW63C-67.0-20241120 | 11/20/2024 | 67 | N | JE1009 | Basal Till | Basal Till | -- | < 10 U | -- | < 10 U | -221.8 | 0.16 | 12.05 | 2.14 | 15.9 | 1 | -- | 5.2 J- | 39.7 | -- | -- | -- | -- | -- |
| 114-MW55C | 114-MW55C-70.5-20200901 | 9/1/2020 | 70.5 | N | JD12508 | N/A | Weathered Bedrock | -- | 6.8 J | -- | < 10 U | -55.30 | 11.36 | 8.42 | 0.80 | 19.51 | 6.47 | -- | 3.2 | -- | -- | -- | -- | -- | -- |
| 114-MW55C | 114-MW-55C-70.5-20230629 | 6/29/2023 | 70.5 | N | 4602833321 | N/A | Weathered Bedrock | -- | 10.8 | -- | < 10.0 UJ | -50.9 | 1.5 | 11.9 | 15.21 | 20.9 | 6.45 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW55C | 114-MW-55C-70.5-20230629 | 6/29/2023 | 70.5 | N | 4602833322 | N/A | Weathered Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 120 U | -- | 0.11 HF |
| 114-MW58C | 114-MW58C-76.0-20200831 | 8/31/2020 | 76 | N | JD12474 | N/A | Weathered Bedrock | -- | 4.4 J | -- | < 10 U | -120.70 | 0.16 | 7.31 | 1.82 | 18.91 | 26.10 | -- | 3.8 | -- | -- | -- | -- | -- | -- |
| 114-MW58C | 114-MW58C-75.0-20230629 | 6/29/2023 | 75 | N | 4602833321 | N/A | Weathered Bedrock | -- | 2.9 J | -- | < 10.0 UJ | -56.9 | 2.13 | 7.99 | 0.836 | 18.3 | 8.66 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW58C | 114-MW58C-75.0-20230629 | 6/29/2023 | 75 | N | 4602833322 | N/A | Weathered Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.4 | 131 | -- | -- | 143 | -- | < 0.10 UHF |
| 114-MW60C | 114-MW60C-121.0-20200828 | 8/28/2020 | 121 | N | JD12393 | N/A | Weathered Bedrock | -- | < 10 U | -- | < 10 U | -138.00 | 5.64 | 7.50 | 0.57 | 25.37 | 6.00 | -- | < 2.0 U | -- | -- | -- | -- | -- | -- |
| 114-MW60C | 114-MW60C-121.0-20200828X | 8/28/2020 | 121 | FD | JD12393 | N/A | Weathered Bedrock | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | < 2.0 U | -- | -- | -- | -- | -- | -- |
| 114-MW60C | 114-MW60C-122-20230628 | 6/28/2023 | 122 | N | 4602832531 | N/A | Weathered Bedrock | -- | **117** | -- | < 10.0 U | -189.7 | 0.69 | 9.85 | 3.095 | 22.29 | 22.5 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW60C | 114-MW60C-122-20230628 | 6/28/2023 | 122 | N | 4602832532 | N/A | Weathered Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 15.5 | 64.6 | -- | -- | < 120 U | -- | 0.11 HF |
| 114-MW60C | 114-MW60C-122-20230726 | 7/26/2023 | 122 | N | 4602849651 | Bedrock Monitoring | Weathered Bedrock | -- | 8.4 | -- | < 10.0 U | -263.1 | 0.09 | 11.32 | 4.893 | 26.17 | 3.61 | -- | 38.4 J | 67.9 J | -- | -- | < 120 U | -- | 0.099 J |
| 114-MW60C | 114-MW60C-122-20230726-X | 7/26/2023 | 122 | FD | 4602849651 | Bedrock Monitoring | Weathered Bedrock | -- | 6.0 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 23.8 J | 104 J | -- | -- | < 120 U | -- | 0.15 J |
| 114-MW60C | 114-MW60C-122-20230823 | 8/23/2023 | 122 | N | 4602867531 | Bedrock Monitoring | Weathered Bedrock | -- | 4.2 | -- | < 10.0 U | -163.5 | 99.2 | 10.15 | 4.545 | 24.19 | 1.32 | -- | 42.6 | 60.4 | -- | -- | -- | -- | -- |
| 114-MW60C | 114-MW60C-122-20230823-X | 8/23/2023 | 122 | FD | 4602867531 | Bedrock Monitoring | Weathered Bedrock | -- | 5.7 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 37.3 | 54.2 | -- | -- | -- | -- | -- |
| 114-MW62C | 114-MW62C-73.0-20200824 | 8/24/2020 | 73 | N | JD12146 | N/A | Weathered Bedrock | -- | < 10 U | -- | < 10 U | 104.30 | 0.89 | 6.38 | 2.15 | 25.2 | 3.12 | -- | 2.1 | -- | -- | -- | -- | -- | -- |
| 114-MW62C | 114-MW62C-73-20230629 | 6/29/2023 | 73 | N | 4602833321 | N/A | Weathered Bedrock | -- | < 4.0 U | -- | < 10.0 UJ | 19.2 | 1.99 | 6.7 | 1.27 | 19.23 | 7.15 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW62C | 114-MW62C-73-20230629 | 6/29/2023 | 73 | N | 4602833322 | N/A | Weathered Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 31.6 | 34.0 | -- | -- | < 120 U | -- | < 0.10 UHF |
| 114-MW62C | 114-MW62C-73.0-20230925 | 9/25/2023 | 73 | N | 4602889531 | Bedrock Monitoring | Weathered Bedrock | -- | 7.3 | -- | < 10.0 U | 134.9 | 0.25 | 7.14 | 1.388 | 16.5 | 1.26 | -- | 1.8 | 48.4 | -- | -- | < 120 U | -- | R |
| 114-MW62C | 114-MW62C-73.0-20231222 | 12/22/2023 | 73 | N | JD79443 | Bedrock Monitoring | Weathered Bedrock | -- | 9.5 J | -- | 5.2 J | 94.1 | 0.58 | 6.95 | 1.457 | 9.2 | 0.83 | -- | 1.0 | 57.6 | -- | -- | < 250 U | -- | -- |
| 114-MW62C | 114-MW62C-73.0-20240319 | 3/19/2024 | 73 | N | JD84758 | Bedrock Monitoring | Weathered Bedrock | -- | < 10 U | -- | < 10 U | 374.9 | 0.31 | 6.78 | 1.429 | 12.3 | 1.01 | -- | 0.99 J | 55.5 | -- | -- | -- | -- | 0.042 J |
| 114-MW62C | 114-MW62C-73.0-20240617 | 6/17/2024 | 73 | N | JD90605 | Bedrock Monitoring | Weathered Bedrock | -- | < 10 U | -- | < 10 U | 74 | 0.37 | 6.94 | 1.159 | 16.8 | 1.03 | -- | 2.1 | 52.0 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW62C | 114-MW62C-73.0-20240918 | 9/18/2024 | 73 | N | JD96352 | Bedrock Monitoring | Weathered Bedrock | -- | 4.7 J | -- | < 10 U | -76 | 0.6 | 6.79 | 1.45 | 17.9 | 1.82 | -- | < 1.0 U | 61.2 | -- | -- | -- | -- | < 0.20 U |
| 114-MW62C | 114-MW62C-73.0-20241213 | 12/13/2024 | 73 | N | JE2642 | Bedrock Monitoring | Weathered Bedrock | -- | < 10 U | -- | < 10 U | 85.3 | 0.29 | 7.01 | 1.55 | 9.6 | 9.02 | -- | 2.0 | 65.3 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW64C | 114-MW64C-96.5-20200901 | 9/1/2020 | 96.5 | N | JD12508 | N/A | Weathered Bedrock | -- | 5.7 J | -- | < 10 U | -145.00 | 0.47 | 8.35 | 0.75 | 19.84 | 14.10 | -- | 2.1 | -- | -- | -- | -- | -- | -- |
| 114-MW64C | 114-MW64C-94.5-20230628 | 6/28/2023 | 94.5 | N | 4602832531 | N/A | Weathered Bedrock | -- | 14.0 | -- | < 10.0 U | -152.5 | 0.92 | 7.85 | 1.28 | 19.96 | 5.57 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW64C | 114-MW64C-94.5-20230628 | 6/28/2023 | 94.5 | N | 4602832532 | N/A | Weathered Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.4 | 72.1 | -- | -- | < 120 U | -- | < 0.10 UHF |
| 114-MW16B | 114-MW16B-33.0-20200821 | 8/21/2020 | 33 | N | JD12104 | N/A | Bedrock | -- | -- | -- | < 10 U | 108.30 | 3.68 | 7.28 | 0.70 | 21.83 | 5.45 | -- | 2.2 | -- | -- | -- | -- | -- | -- |
| 114-MW16B | 114-MW16B-33.0-20200821 | 8/21/2020 | 33 | N | JD12104R | N/A | Bedrock | -- | 2.8 J | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW4D | 114-MW4D-89.5-90.0 | 5/30/2019 | 89.5 - 90 | N | JC88938 | N/A | Bedrock | -- | 9.0 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW4D | 114-MW4D-94.5-95.0 | 5/30/2019 | 94.5 - 95 | N | JC88938 | N/A | Bedrock | -- | 16.0 | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW4D | 114-MW4D-99.5-100.0 | 5/30/2019 | 99.5 - 100 | N | JC88938 | N/A | Bedrock | -- | 10.5 | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW4D | 114-MW4D-104.5-105.0 | 5/30/2019 | 104.5 - 105 | N | JC88938 | N/A | Bedrock | -- | 11.3 | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW4D | 114-MW4D-104.5-105.0X | 5/30/2019 | 104.5 - 105 | FD | JC88938 | N/A | Bedrock | -- | 9.8 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW4D | 114-MW4D-97.0-20190611 | 6/11/2019 | 97 | N | JC89662 | N/A | Bedrock | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 2.0 U | -- | < 100 U | -- | -- |
| 114-MW4D | 114-MW4D-97.0-20190801 | 8/1/2019 | 97 | N | JC92572 | N/A | Bedrock | < 10 U | 2.5 B | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 2.0 U | -- | < 100 U | -- | -- |
| 114-MW4D | 114-MW4D-85-20200826 | 8/26/2020 | 85 | N | JD12249 | N/A | Bedrock | -- | 2.0 J | -- | < 10 UJ | -20.00 | 5.22 | 8.85 | 0.11 | 25.42 | 6.95 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW4D | 114-MW4D-85-20200826 | 8/26/2020 | 85 | N | JD12249R | N/A | Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 2.0 U | -- | -- | -- | -- | -- | -- |
| 114-MW4D | 114-MW4D-90-20200826 | 8/26/2020 | 90 | N | JD12249 | N/A | Bedrock | -- | < 10 U | -- | < 10 UJ | -30.00 | 6.67 | 8.86 | 0.11 | 24.04 | 7.07 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW4D | 114-MW4D-90-20200826 | 8/26/2020 | 90 | N | JD12249R | N/A | Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 2.0 U | -- | -- | -- | -- | -- | -- |
| 114-MW4D | 114-MW4D-95-20200826 | 8/26/2020 | 95 | N | JD12249 | N/A | Bedrock | -- | < 10 U | -- | < 10 UJ | -37.00 | 6.18 | 8.83 | 0.11 | 23.51 | 8.73 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW4D | 114-MW4D-95-20200826 | 8/26/2020 | 95 | N | JD12249R | N/A | Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 2.0 U | -- | -- | -- | -- | -- | -- |
| 114-MW4D | 114-MW4D-100-20200826 | 8/26/2020 | 100 | N | JD12249 | N/A | Bedrock | -- | < 10 U | -- | < 10 UJ | -36.00 | 0 | 8.70 | 0.11 | 24.20 | 8.32 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW4D | 114-MW4D-100-20200826 | 8/26/2020 | 100 | N | JD12249R | N/A | Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 2.0 U | -- | -- | -- | -- | -- | -- |
| 114-MW4D | 114-MW-4D-106.3-20211216 | 12/16/2021 | 106.3 | N | 4602492741 | N/A | Bedrock | -- | 2.5 J | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW4D | 114-MW-4D-112.3-20211216 | 12/16/2021 | 112.3 | N | 4602492741 | N/A | Bedrock | -- | 3.0 J | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW4D | 114-MW4D-118.8-20211217 | 12/17/2021 | 118.8 | N | 4602493661 | N/A | Bedrock | -- | 2.6 J | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW4D | 114-MW4D-122.3-20211217 | 12/17/2021 | 122.3 | N | 4602493661 | N/A | Bedrock | -- | 3.0 J | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW4D | 114-MW4D-123.8-20211217 | 12/17/2021 | 123.8 | N | 4602493661 | N/A | Bedrock | -- | 2.9 J | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW4D-Port1 | 114-MW4D-90-94-20230627 | 6/27/2023 | 92 | N | 4602831931 | N/A | Weathered Bedrock | -- | < 4.0 U | -- | < 10.0 U | -102.5 | 2.7 | 11.21 | 0.841 | 18.60 | 1.14 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW4D-Port1 | 114-MW4D-90-94-20230627 | 6/27/2023 | 92 | N | 4602831932 | N/A | Weathered Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 21.6 | 116 | -- | -- | < 120 U | -- | < 0.10 UHF |
| 114-MW4D-Port1 | 114-MW4D-90.0-94.0-20230926 | 9/26/2023 | 92 | N | 4602890021 | Bedrock Monitoring | Weathered Bedrock | -- | 11.9 | -- | 9.7 J | -23.2 | 5.35 | 12.83 | 5.685 | 14.95 | 3.09 | -- | 36.9 | 39.3 | -- | -- | 127 | -- | 0.13 J |
| 114-MW4D-Port1 | 114-MW4D-90-94-20231219 | 12/19/2023 | 92 | N | JD79185 | Bedrock Monitoring | Weathered Bedrock | -- | < 10 U | -- | 9.5 J | -258.6 | 1.39 | 12.18 | 7.2 | 11.9 | 1.77 | -- | 26.1 | 50.2 | -- | -- | 116 J | < 10 U | -- |
| 114-MW4D-Port1 | 114-MW4D-90-94-20240319 | 3/19/2024 | 92 | N | JD84758 | Bedrock Monitoring | Weathered Bedrock | -- | 4.0 J | -- | < 10 U | -252.5 | 1.19 | 12.75 | 11.77 | 13.8 | 1.77 | -- | 34.6 | 47.8 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW4D-Port1 | 114-MW4D-90-94-20240617 | 6/17/2024 | 92 | N | JD90605 | Bedrock Monitoring | Weathered Bedrock | -- | < 10 U | -- | < 10 U | -199.6 | 0.71 | 12.26 | 8.4 | 28.7 | 1.62 | -- | 45.3 | 51.4 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW4D-Port1 | 114-MW4D-90-94-20240918 | 9/18/2024 | 92 | N | JD96352 | Bedrock Monitoring | Weathered Bedrock | -- | < 10 U | -- | < 10 U | -333.6 | 1.42 | 12.28 | 5.7 | 20.3 | 1.15 | -- | 17.6 | 52.9 | -- | -- | -- | -- | < 0.20 U |
| 114-MW4D-Port1 | 114-MW4D-90-94-20241218 | 12/18/2024 | 92 | N | JE2940 | Bedrock Monitoring | Weathered Bedrock | -- | < 10 U | -- | < 10 U | -153.9 | 3.73 | 12.2 | 3.601 | 14.1 | 1.38 | -- | 14.4 | 56.4 | -- | -- | -- | -- | < 0.20 U |
| 114-MW4D-Port2 | 114-MW4D-98-102-20230627 | 6/27/2023 | 100 | N | 4602831931 | N/A | Bedrock | -- | < 4.0 U | -- | < 10.0 U | -205.5 | 4.05 | 12.27 | 5.659 | 19.3 | 1.59 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW4D-Port2 | 114-MW4D-98-102-20230627 | 6/27/2023 | 100 | N | 4602831932 | N/A | Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 45.1 | 44.2 | -- | -- | < 120 U | -- | < 0.10 UHF |
| 114-MW4D-Port2 | 114-MW4D-98.0-102.0-20230926 | 9/26/2023 | 100 | N | 4602890021 | Bedrock Monitoring | Bedrock | -- | < 4.0 U | -- | < 10.0 U | -17.1 | 3.85 | 12.87 | 3.002 | 15 | 8.07 | -- | 81.1 | 21.4 | -- | -- | < 120 U | -- | 0.087 J |
| 114-MW4D-Port2 | 114-MW4D-98-102-20231219 | 12/19/2023 | 100 | N | JD79185 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -295.5 | 0.84 | 12.18 | 4.417 | 11.4 | 0.66 | -- | 82.2 | 40.2 | -- | -- | < 250 U | < 10 U | -- |
| 114-MW4D-Port2 | 114-MW4D-98-102-20240319 | 3/19/2024 | 100 | N | JD84758 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -241.4 | 1.61 | 12.44 | 4.207 | 12.3 | 0.75 | -- | 58.0 | 48.2 | -- | -- | -- | -- | < 0.20 UJ |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochemical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-MW4D-Port2 | 114-MW4D-98-102-20240617 | 6/17/2024 | 100 | N | JD90605 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -161.3 | 1.52 | 11.74 | 2.817 | 27.5 | 0.37 | -- | 96.9 | 59.2 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW4D-Port2 | 114-MW4D-98-102-20240918 | 9/18/2024 | 100 | N | JD96352 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -317.1 | 1.34 | 12.1 | 3.081 | 20.7 | 2.14 | -- | 54.1 | 53.7 | -- | -- | -- | -- | < 0.20 U |
| 114-MW4D-Port2 | 114-MW4D-98-102-20241218 | 12/18/2024 | 100 | N | JE2940 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -192.6 | 2.67 | 12.03 | 2.413 | 14.3 | 0.65 | -- | 44.3 | 54.7 | -- | -- | -- | -- | < 0.20 U |
| 114-MW4D-Port3 | 114-MW4D-111-115-20230627 | 6/27/2023 | 113 | N | 4602831931 | N/A | Bedrock | -- | < 4.0 U | -- | < 10.0 U | -303.9 | 4.31 | 12.32 | 6.683 | 20.39 | 1.78 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW4D-Port3 | 114-MW4D-111-115-20230627 | 6/27/2023 | 113 | N | 4602831932 | N/A | Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 99.0 | **572** | -- | -- | **921** | -- | 0.94 HF |
| 114-MW4D-Port3 | 114-MW4D-111.0-115.0-20230926 | 9/26/2023 | 113 | N | 4602890021 | Bedrock Monitoring | Bedrock | -- | 8.4 | -- | < 10.0 U | -30.9 | 6.3 | 12.97 | 7.846 | 14.8 | 5.35 | -- | 96.1 | 215 | -- | -- | **333** | -- | < 0.10 UJ |
| 114-MW4D-Port3 | 114-MW4D-111-115-20231219 | 12/19/2023 | 113 | N | JD79185 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -261.6 | 1.51 | 12.07 | 3.496 | 10.9 | 0.5 | -- | 56.3 | 203 | -- | -- | 190 J | < 10 U | -- |
| 114-MW4D-Port3 | 114-MW4D-111-115-20240319 | 3/19/2024 | 113 | N | JD84758 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | 1.93 | -- | 50.6 | 90.1 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW4D-Port3 | 114-MW4D-111-115-20240617 | 6/17/2024 | 113 | N | JD90605 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | 7.0 J | -180.8 | 2.34 | 11.97 | 5.03 | 29.4 | 0.61 | -- | 86.0 | 61.1 | -- | -- | -- | -- | 0.14 J |
| 114-MW4D-Port3 | 114-MW4D-111-115-20240918 | 9/18/2024 | 113 | N | JD96352 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | 15 | -332.8 | 3.9 | 12.43 | 6.72 | 21.8 | 1.02 | -- | 55.6 | 30.9 | -- | -- | -- | -- | < 0.20 U |
| 114-MW4D-Port3 | 114-MW4D-111-115-20241218 | 12/18/2024 | 113 | N | JE2940 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | 12 | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | -- | 71.4 J- | 23.7 | -- | -- | -- | -- | < 0.20 U |
| 114-MW4D-Port4 | 114-MW4D-121-125-20230627 | 6/27/2023 | 123 | N | 4602831931 | N/A | Bedrock | -- | 3.8 J | -- | < 10.0 U | -209.1 | 1.83 | 12.34 | 21.77 | 20.64 | 0.73 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW4D-Port4 | 114-MW4D-121-125-20230627 | 6/27/2023 | 123 | N | 4602831932 | N/A | Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 117 | **331** | -- | -- | **887** | -- | 0.26 HFF1 |
| 114-MW4D-Port4 | 114-MW4D-121.0-125.0-20230926 | 9/26/2023 | 123 | N | 4602890021 | Bedrock Monitoring | Bedrock | -- | 4.0 | -- | < 10.0 U | -16.3 | 4.64 | 13.14 | 12.91 | 15.08 | 1.13 | -- | 112 | 70.2 | -- | -- | **619** | -- | < 0.10 UJ |
| 114-MW4D-Port4 | 114-MW4D-121-125-20231219 | 12/19/2023 | 123 | N | JD79185 | Bedrock Monitoring | Bedrock | -- | < 10 UJ | -- | 28 J | -257.8 | 1.14 | 12.47 | 18.51 | 12.1 | 2.29 | -- | 129 | 71.1 | -- | -- | **636** | < 10 U | -- |
| 114-MW4D-Port4 | 114-MW4D-121-125-20240319 | 3/19/2024 | 123 | N | JD84758 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -224.6 | 1.5 | 12.97 | 21.93 | 11.7 | 0.84 | -- | 119 | 55.7 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW4D-Port4 | 114-MW4D-121-125-20240617 | 6/17/2024 | 123 | N | JD90605 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | 7.0 J | -199.3 | 0.93 | 12.62 | 18.81 | 28 | 0.62 | -- | 185 | 34.8 | -- | -- | -- | -- | 0.45 J |
| 114-MW4D-Port4 | 114-MW4D-121-125-20240918 | 9/18/2024 | 123 | N | JD96352 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | 17 | -363.6 | 1.95 | 12.85 | 1.285 | 20.3 | 0.51 | -- | 182 | 26.4 | -- | -- | -- | -- | < 0.20 U |
| 114-MW4D-Port4 | 114-MW4D-121-125-20241218 | 12/18/2024 | 123 | N | JE2940 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | 13 | -207 | 3.08 | 13.01 | 18.54 | 13.6 | 0.57 | -- | 118 J- | 20.2 | -- | -- | -- | -- | < 0.20 U |
| 114-MW52D | 114-MW52D-81-20210211 | 2/11/2021 | 81 | N | JD20260 | N/A | Bedrock | -- | **44000** | -- | **47300** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW52D | 114-MW52D-83.5-20210211 | 2/11/2021 | 83.5 | N | JD20260 | N/A | Bedrock | -- | **43000** | -- | **44500** | -- | -- | -- | -- | N/A | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW52D | 114-MW52D-88-20210211 | 2/11/2021 | 88 | N | JD20260 | N/A | Bedrock | -- | **44100** | -- | **47300** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW52D | 114-MW52D-102-20210211 | 2/11/2021 | 102 | N | JD20260 | N/A | Bedrock | -- | **42200** | -- | **47000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW52D | 114-MW52D-105-20210211 | 2/11/2021 | 105 | N | JD20260 | N/A | Bedrock | -- | **46500** | -- | **46500** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW52D | 114-MW-52D-104-20211123 | 11/23/2021 | 104 | N | 4602478531 | N/A | Bedrock | -- | **5500** | -- | **5860 J+** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW52D | 114-MW-52D-104-20211123-X | 11/23/2021 | 104 | FD | 4602478531 | N/A | Bedrock | -- | **5630** | -- | **6150 J+** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW52D-Port1 | 114-MW52D-80-83-20220421 | 4/21/2022 | 81.5 | N | 4602567051 | N/A | Bedrock | -- | **79.7** | -- | 21.4 J | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW52D-Port1 | 114-MW52D-80-83-20220603 | 6/3/2022 | 81.5 | N | 4602593611 | N/A | Bedrock | -- | 66.6 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 60.3 | -- | -- | -- | -- | -- | -- |
| 114-MW52D-Port1 | 114-MW52D-80-83-20220705 | 7/5/2022 | 81.5 | N | 4602613181 | N/A | Bedrock | -- | 47.7 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 50.5 | -- | -- | -- | -- | -- | -- |
| 114-MW52D-Port1 | 114-MW52D-80-83-20230629 | 6/29/2023 | 81.5 | N | 4602833321 | N/A | Bedrock | -- | 24.2 | -- | < 10.0 UJ | -- | -- | -- | -- | -- | 1.1 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW52D-Port1 | 114-MW52D-80-83-20230629 | 6/29/2023 | 81.5 | N | 4602833322 | N/A | Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 77.1 | 22.4 | -- | -- | 109 J | -- | 0.14 HF |
| 114-MW52D-Port1 | 114-MW52D-80.0-83.0-20230927 | 9/27/2023 | 81.5 | N | 4602890621 | Bedrock Monitoring | Bedrock | -- | 17.6 | -- | < 10.0 U | 32.1 | 8.29 | 12.1 | 0.112 | 18.96 | 1.29 | -- | 161 | 29.1 | -- | -- | 83.3 J | -- | 0.15 J |
| 114-MW52D-Port1 | 114-MW52D-80-83-20231227 | 12/27/2023 | 81.5 | N | JD79684 | Bedrock Monitoring | Bedrock | -- | 5.0 J | -- | < 10 UJ | -- | -- | -- | -- | -- | -- | -- | 146 | -- | -- | -- | -- | -- | -- |
| 114-MW52D-Port1 | 114-MW52D-80-83-20240329 | 3/29/2024 | 81.5 | N | JD85454 | Bedrock Monitoring | Bedrock | -- | 16.3 | -- | < 10 U | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | -- | 332 J- | 76.1 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW52D-Port1 | 114-MW52D-80-83-20240621 | 6/21/2024 | 81.5 | N | JD90886 | Bedrock Monitoring | Bedrock | -- | 20.7 | -- | < 10 U | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | -- | 172 | 85.9 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW52D-Port1 | 114-MW52D-80-83-20240919 | 9/19/2024 | 81.5 | N | JD96459 | Bedrock Monitoring | Bedrock | -- | **455** | -- | 66 | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | -- | 145 J+ | 52.0 | -- | -- | -- | -- | -- |
| 114-MW52D-Port1 | 114-MW52D-80-83-20241218 | 12/18/2024 | 81.5 | N | JE2940 | Bedrock Monitoring | Bedrock | -- | **884** | -- | 67 | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | -- | 196 J- | 70.0 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW52D-Port2 | 114-MW52D-87-90-20220421 | 4/21/2022 | 88.5 | N | 4602567051 | N/A | Bedrock | -- | **748** | -- | **644 J** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW52D-Port2 | 114-MW52D-87-90-20220603 | 6/3/2022 | 88.5 | N | 4602593611 | N/A | Bedrock | -- | 10.4 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 19.2 | -- | -- | -- | -- | -- | -- |
| 114-MW52D-Port2 | 114-MW52-87-90-20220705 | 7/5/2022 | 88.5 | N | 4602613181 | N/A | Bedrock | -- | 9.4 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 16.6 | -- | -- | -- | -- | -- | -- |
| 114-MW52D-Port2 | 114-MW52D-87-90-20230629 | 6/29/2023 | 88.5 | N | 4602833321 | N/A | Bedrock | -- | 9.5 | -- | < 10.0 UJ | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW52D-Port2 | 114-MW52D-87-90-20230629 | 6/29/2023 | 88.5 | N | 4602833322 | N/A | Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 32.5 | 60.6 | -- | -- | < 120 U | -- | < 0.10 UHF |
| 114-MW52D-Port2 | 114-MW52D-87.0-90.0-20230927 | 9/27/2023 | 88.5 | N | 4602890621 | Bedrock Monitoring | Bedrock | -- | 41.4 | -- | < 20.0 U | -23.1 | 6.89 | 12.38 | 20.62 | 20.65 | 5.78 | -- | 110 | 85.7 | -- | -- | 57.6 J | -- | 0.094 J |
| 114-MW52D-Port2 | 114-MW52D-87-90-20231227 | 12/27/2023 | 88.5 | N | JD79684 | Bedrock Monitoring | Bedrock | -- | 11.1 | -- | 4.9 J | -- | -- | -- | -- | -- | -- | -- | 42.1 | -- | -- | -- | -- | -- | -- |
| 114-MW52D-Port2 | 114-MW52D-87-90-20240329 | 3/29/2024 | 88.5 | N | JD85454 | Bedrock Monitoring | Bedrock | -- | 20.4 | -- | < 10 U | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | -- | 45.1 J- | 139 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW52D-Port2 | 114-MW52D-87-90-20240621 | 6/21/2024 | 88.5 | N | JD90886 | Bedrock Monitoring | Bedrock | -- | 5.5 J | -- | < 10 U | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | -- | 43.9 | 148 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW52D-Port2 | 114-MW52D-87-90-20240919 | 9/19/2024 | 88.5 | N | JD96459 | Bedrock Monitoring | Bedrock | -- | 29.5 J | -- | 53 J | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | -- | 87.8 J+ | 66.1 | -- | -- | -- | -- | -- |
| 114-MW52D-Port2 | 114-MW52D-87-90-20241218 | 12/18/2024 | 88.5 | N | JE2940 | Bedrock Monitoring | Bedrock | -- | 19.6 | -- | < 10 U | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | -- | 131 J- | 75.9 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW52D-Port3 | 114-MW52D-102-105-20220421 | 4/21/2022 | 103.5 | N | 4602567051 | N/A | Bedrock | -- | **878** | -- | **709 J** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW52D-Port3 | 114-MW52D-102-105-20220603 | 6/3/2022 | 103.5 | N | 4602593611 | N/A | Bedrock | -- | < 4.0 UJ | -- | **99.1 J** | -- | -- | -- | -- | -- | -- | -- | 13.5 | -- | -- | -- | -- | -- | -- |
| 114-MW52D-Port3 | 114-MW52D-102-105-20220705 | 7/5/2022 | 103.5 | N | 4602613181 | N/A | Bedrock | -- | 57.1 | -- | 22.7 | -- | -- | -- | -- | -- | -- | -- | 19.4 F1 | -- | -- | -- | -- | -- | -- |
| 114-MW52D-Port3 | 114-MW52D-102-105-20230629 | 6/29/2023 | 103.5 | N | 4602833321 | N/A | Bedrock | -- | 16.2 | -- | < 10.0 UJ | -- | -- | -- | -- | -- | 2.78 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW52D-Port3 | 114-MW52D-102-105-20230629 | 6/29/2023 | 103.5 | N | 4602833322 | N/A | Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 35.5 | 75.4 | -- | -- | < 120 U | -- | < 0.10 UHF |
| 114-MW52D-Port3 | 114-MW52D-102.0-105.0-20230927 | 9/27/2023 | 103.5 | N | 4602890621 | Bedrock Monitoring | Bedrock | -- | 7.4 | -- | < 10.0 UJ | 35.9 | 8.04 | 11.08 | 5.118 | 20.95 | 2.27 | -- | 56.6 | 111 | -- | -- | 25.2 J | -- | < 0.10 UJ |
| 114-MW52D-Port3 | 114-MW52D-102-105-20231227 | 12/27/2023 | 103.5 | N | JD79684 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 UJ | -- | -- | -- | -- | -- | -- | -- | 45.3 | -- | -- | -- | -- | -- | -- |
| 114-MW52D-Port3 | 114-MW52D-102-105-20240329 | 3/29/2024 | 103.5 | N | JD85454 | Bedrock Monitoring | Bedrock | -- | 3.2 J | -- | < 10 U | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | -- | 44.5 J- | 129 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW52D-Port3 | 114-MW52D-102-105-20240621 | 6/21/2024 | 103.5 | N | JD90886 | Bedrock Monitoring | Bedrock | -- | 7.2 J | -- | < 10 U | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | -- | 57.2 | 156 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW52D-Port3 | 114-MW52D-102-105-20240919 | 9/19/2024 | 103.5 | N | JD96459 | Bedrock Monitoring | Bedrock | -- | 7.2 J | -- | < 10 U | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | -- | 1.42 J+ | 120 | -- | -- | -- | -- | -- |
| 114-MW52D-Port3 | 114-MW52D-102-105-20241218 | 12/18/2024 | 103.5 | N | JE2940 | Bedrock Monitoring | Bedrock | -- | 8.2 J | -- | < 10 U | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | -- | -- | -- | -- | -- | -- | -- | < 0.20 U |
| 114-MW57D | 114-MW57D.87.25-20210209 | 2/9/2021 | 87.25 | N | JD20125 | N/A | Bedrock | -- | **108** | -- | < 10 UJ | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW57D | 114-MW57D-90-20210209 | 2/9/2021 | 90 | N | JD20125 | N/A | Bedrock | -- | **82.4** | -- | < 10 UJ | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW57D | 114-MW57D-98-20210210 | 2/10/2021 | 98 | N | JD20166 | N/A | Bedrock | -- | **112** | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW57D | 114-MW57D-98-20210210-X | 2/10/2021 | 98 | FD | JD20166 | N/A | Bedrock | -- | **114** | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW57D | 114-MW57D-102-20210210 | 2/10/2021 | 102 | N | JD20166 | N/A | Bedrock | -- | 69.3 | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW57D | 114-MW57D.87.25-20220804 | 8/4/2022 | 87.25 | N | 4602632541 | N/A | Bedrock | -- | **322** | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW57D | 114-MW57D-90-20220804 | 8/4/2022 | 90 | N | 4602632541 | N/A | Bedrock | -- | **489** | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW57D | 114-MW57D-98-20220805 | 8/5/2022 | 98 | N | 4602633361 | N/A | Bedrock | -- | **375** | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW57D-Port1 | 114-MW57D.87.5-91.5-20230628 | 6/28/2023 | 89.5 | N | 4602832531 | N/A | Bedrock | -- | 11.5 | -- | < 10.0 U | -4.1 | 0.81 | 9.1 | 0.924 | 25 | 1.15 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW57D-Port1 | 114-MW57D.87.5-91.5-20230628 | 6/28/2023 | 89.5 | N | 4602832532 | N/A | Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | 95.7 | -- | -- | < 120 U | -- | 0.15 HF |
| 114-MW57D-Port1 | 114-MW57D.87.5-91.5-20230926 | 9/26/2023 | 89.5 | N | 4602890021 | Bedrock Monitoring | Bedrock | -- | 5.1 | -- | < 10.0 U | 17.3 | 4.19 | 9.17 | 0.823 | 15.67 | 0.91 | -- | 26.2 | 74.9 | -- | -- | < 120 U | -- | < 0.10 UJ |
| 114-MW57D-Port1 | 114-MW57D.87.5-91.5-20231219 | 12/19/2023 | 89.5 | N | JD79185 | Bedrock Monitoring | Bedrock | -- | 6.8 J | -- | < 10 U | -- | -- | -- | -- | -- | 3.62 | -- | 22.5 | 97.2 | -- | -- | < 250 U | 17.5 | -- |
| 114-MW57D-Port1 | 114-MW57D.87.5-91.5-20240329 | 3/29/2024 | 89.5 | N | JD85454 | Bedrock Monitoring | Bedrock | -- | 5.3 J | -- | < 10 U | -306.6 | 0.63 | 8.16 | 1.718 | 10.7 | 1.16 | -- | 21.3 J- | 86.7 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW57D-Port1 | 114-MW57D.87.5-91.5-20240621 | 6/21/2024 | 89.5 | N | JD90886 | Bedrock Monitoring | Bedrock | -- | 7.9 J | -- | < 10 U | -195.3 | 1.16 | 8.28 | 1.876 | 28.7 | 2.79 | -- | 31.6 | 84.5 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW57D-Port1 | 114-MW57D.87.5-91.5-20240918 | 9/18/2024 | 89.5 | N | JD96352 | Bedrock Monitoring | Bedrock | -- | 6.1 J | -- | < 10 U | -334.3 | 0.52 | 8.12 | 1.259 | 20.6 | 1.21 | -- | 22.2 | 87.8 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW57D-Port1 | 114-MW57D.87.5-91.5-20241218 | 12/18/2024 | 89.5 | N | JE2940 | Bedrock Monitoring | Bedrock | 63.7 | **78.4** | 3.4 J | < 10 U | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | 27.8 | -- | 232 | 3.0 J+ | -- | -- | -- | -- | < 0.20 U |
| 114-MW57D-Port2 | 114-MW57D.96.5-100.5-20230628 | 6/28/2023 | 98.5 | N | 4602832531 | N/A | Bedrock | -- | 3.3 J | -- | < 10.0 U | -3.3 | 3 | 8.44 | 0.799 | 21.05 | 0.97 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW57D-Port2 | 114-MW57D.96.5-100.5-20230628 | 6/28/2023 | 98.5 | N | 4602832532 | N/A | Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.7 | 88.0 | -- | -- | < 120 U | -- | < 0.10 UHF |
| 114-MW57D-Port2 | 114-MW57D.96.5-100.5-20230926 | 9/26/2023 | 98.5 | N | 4602890021 | Bedrock Monitoring | Bedrock | -- | 40.5 | -- | < 10.0 U | 24.5 | 5.37 | 8.5 | 1.02 | 15.52 | 2.15 | -- | 51.0 | 50.6 | -- | -- | 38.9 J | -- | < 0.10 UJ |
| 114-MW57D-Port2 | 114-MW57D.96.5-100.5-20231219 | 12/19/2023 | 98.5 | N | JD79185 | Bedrock Monitoring | Bedrock | -- | 35.2 | -- | < 10 U | -- | -- | -- | -- | -- | 6.52 | -- | 27.2 | 94.5 | -- | -- | < 250 U | 13.2 | -- |
| 114-MW57D-Port2 | 114-MW57D.96.5-100.5-20240329 | 3/29/2024 | 98.5 | N | JD85454 | Bedrock Monitoring | Bedrock | -- | 13.6 | -- | < 10 U | -316.3 | 0.74 | 8.21 | 1.68 | 11.1 | 1.02 | -- | 29.8 J- | 82.0 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW57D-Port2 | 114-MW57D.96.5-100.5-20240621 | 6/21/2024 | 98.5 | N | JD90886 | Bedrock Monitoring | Bedrock | -- | 8.6 J | -- | < 10 U | -169.4 | 1.34 | 8.27 | 1.621 | 27.8 | 1.89 | -- | 28.7 | 92.3 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW57D-Port2 | 114-MW57D.96.5-100.5-20240918 | 9/18/2024 | 98.5 | N | JD96352 | Bedrock Monitoring | Bedrock | -- | 6.4 J | -- | < 10 U | -346.8 | 2.37 | 8.19 | 1.247 | 19.6 | 0.65 | -- | 18.7 J- | 90.2 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW57D-Port2 | 114-MW57D.96.5-100.5-20241218 | 12/18/2024 | 98.5 | N | JE2940 | Bedrock Monitoring | Bedrock | -- | 67.3 | < 10 U | < 10 U | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | 23.1 | -- | 214 | 5.4 J+ | -- | -- | -- | -- | < 0.20 U |
| 114-MW57D-Port3 | 114-MW57D-104-108-20230628 | 6/28/2023 | 106 | N | 4602832531 | N/A | Bedrock | -- | < 4.0 U | -- | < 10.0 U | -13.2 | 3.1 | 8.11 | 0.761 | 21.37 | 2.21 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW57D-Port3 | 114-MW57D-104-108-20230628 | 6/28/2023 | 106 | N | 4602832532 | N/A | Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.6 | 96.9 | -- | -- | < 120 U | -- | < 0.10 UHF |
| 114-MW57D-Port3 | 114-MW57D-104.0-108.0-20230926 | 9/26/2023 | 106 | N | 4602890021 | Bedrock Monitoring | Bedrock | -- | **174** | -- | < 10.0 U | 29.8 | 4.04 | 8.16 | 0.667 | 15.35 | 3.91 | -- | 16.6 | 106 | -- | -- | 44.5 J | -- | 0.30 J |
| 114-MW57D-Port3 | 114-MW57D-104-108-20231219 | 12/19/2023 | 106 | N | JD79185 | Bedrock Monitoring | Bedrock | -- | 11.3 | -- | < 10 U | -- | -- | -- | -- | -- | 3.47 | -- | 15.1 | 124 | -- | -- | < 250 U | 23.7 | -- |
| 114-MW57D-Port3 | 114-MW57D-104-108-20240329 | 3/29/2024 | 106 | N | JD85454 | Bedrock Monitoring | Bedrock | -- | 8.4 J | -- | < 10 U | -344.5 | 0.71 | 8.17 | 1.398 | 10 | 0.93 | -- | 22.1 J- | 76.9 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW57D-Port3 | 114-MW57D-104-108-20240621 | 6/21/2024 | 106 | N | JD90886 | Bedrock Monitoring | Bedrock | -- | 8.6 J | -- | < 10 U | -149.2 | 1.63 | 8.1 | 1.201 | 31.6 | 0.77 | -- | 17.4 | 128 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW57D-Port3 | 114-MW57D-104-108-20240918 | 9/18/2024 | 106 | N | JD96352 | Bedrock Monitoring | Bedrock | -- | 5.5 J | -- | < 10 U | -341.4 | 0.79 | 8.1 | 1.088 | 19.8 | 1.06 | -- | 14.7 J- | 107 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW57D-Port3 | 114-MW57D-104-108-20241218 | 12/18/2024 | 106 | N | JE2940 | Bedrock Monitoring | Bedrock | -- | **87.4** | 5.8 J | < 10 U | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | 32.1 | -- | 387 J- | 4.6 J+ | -- | -- | -- | -- | < 0.20 U |
| 114-MW57D-Port4 | 114-MW57D-109-113-20230628 | 6/28/2023 | 111 | N | 4602832531 | N/A | Bedrock | -- | < 4.0 U | -- | < 10.0 U | 3 | 3.06 | 8.02 | 0.77 | 21.08 | 1.34 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW57D-Port4 | 114-MW57D-109-113-20230628 | 6/28/2023 | 111 | N | 4602832532 | N/A | Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.2 | 97.2 | -- | -- | < 120 U | -- | 0.11 HF |
| 114-MW57D-Port4 | 114-MW57D.109.0-113.0-20230926 | 9/26/2023 | 111 | N | 4602890021 | Bedrock Monitoring | Bedrock | -- | 3.2 J | -- | < 10.0 U | 13.2 | 3.61 | 8.29 | 0.662 | 15.52 | 0.86 | -- | 20.6 | 87.0 | -- | -- | 24.9 J | -- | < 0.10 UJ |
| 114-MW57D-Port4 | 114-MW57D-109-113-20231219 | 12/19/2023 | 111 | N | JD79185 | Bedrock Monitoring | Bedrock | -- | 6.8 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | 17.5 | 111 | -- | -- | < 250 U | 24.0 | -- |
| 114-MW57D-Port4 | 114-MW57D-109-113-20240329 | 3/29/2024 | 111 | N | JD85454 | Bedrock Monitoring | Bedrock | -- | 3.5 J | -- | < 10 U | -348.4 | 0.35 | 8.25 | 1.321 | 11.7 | 0.8 | -- | 21.1 J- | 49.7 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW57D-Port4 | 114-MW57D-109-113-20240621 | 6/21/2024 | 111 | N | JD90886 | Bedrock Monitoring | Bedrock | -- | 3.6 J | -- | < 10 U | -179.3 | 0.97 | 8.12 | 1.207 | 30.7 | 0.71 | -- | 20.6 | 123 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW57D-Port4 | 114-MW57D-109-113-20240918 | 9/18/2024 | 111 | N | JD96352 | Bedrock Monitoring | Bedrock | -- | 5.2 J | -- | < 10 U | -340.3 | 2.08 | 8.18 | 1.063 | 20.5 | 1.7 | -- | 16.8 J- | 100 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW57D-Port4 | 114-MW57D-109-113-20241218 | 12/18/2024 | 111 | N | JE2940 | Bedrock Monitoring | Bedrock | -- | **77.0** | < 10 U | 4.6 J | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | 22.5 | -- | 355 J- | 7.4 J+ | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW61D | 114-MW61D-88-20210212 | 2/12/2021 | 88 | N | JD20313 | N/A | Bedrock | -- | 4.5 J | -- | 6.0 J | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW61D | 114-MW61D-91-20210212 | 2/12/2021 | 91 | N | JD20313 | N/A | Bedrock | -- | 2.7 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW61D | 114-MW61D-93.5-20210212 | 2/12/2021 | 93.5 | N | JD20313 | N/A | Bedrock | -- | 2.3 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW61D | 114-MW61D-102-20210212 | 2/12/2021 | 102 | N | JD20313 | N/A | Bedrock | -- | 3.2 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW61D | 114-MW61D-106.5-20210215 | 2/15/2021 | 106.5 | N | JD20380 | N/A | Bedrock | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW61D | 114-MW61D-110-20210215 | 2/15/2021 | 110 | N |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochmical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-MW61D | 114-MW-61D-117.3-20211215 | 12/15/2021 | 117.3 | N | 4602492051 | N/A | Bedrock | -- | 42.9 | -- | 37.4 JB | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW61D | 114-MW-61D-120.8-20211215 | 12/15/2021 | 120.8 | N | 4602492051 | N/A | Bedrock | -- | 40.8 | -- | 53.9 JB | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW61D | 114-MW-61D-125.8-20211215 | 12/15/2021 | 125.8 | N | 4602492051 | N/A | Bedrock | -- | 35.0 | -- | < 31.9 UB | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW61D | 114-MW-61D-130.8-20211216 | 12/16/2021 | 130.8 | N | 4602492741 | N/A | Bedrock | -- | 67.3 | -- | 58.6 J+ | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW61D | 114-MW-61D-130.8-20211216X | 12/16/2021 | 130.8 | FD | 4602492741 | N/A | Bedrock | -- | **88.3** | -- | 68.6 J+ | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW61D | 114-MW-61D-135.8-20211216 | 12/16/2021 | 135.8 | N | 4602492741 | N/A | Bedrock | -- | 59.8 | -- | 45.3 J+ | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW61D | 114-MW61D-130.8-20220421 | 4/21/2022 | 130.8 | N | 4602567051 | N/A | Bedrock | -- | 28.3 | -- | 26.4 J | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW61D | 114-MW61D-117-20230629 | 6/29/2023 | 117 | N | 4602833321 | N/A | Bedrock | < 4.0 U | 20.0 | < 10.0 U | < 10.0 UJ | -68.5 | 0.95 | 9.12 | 0.282 | 24.26 | 46.5 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW61D | 114-MW61D-117-20230629 | 6/29/2023 | 117 | N | 4602833322 | N/A | Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.1 | 20.6 | -- | -- | < 120 U | -- | < 0.10 UHF |
| 114-MW61D | 114-MW61D-121-20230630 | 6/30/2023 | 121 | N | 4602833941 | N/A | Bedrock | -- | 13.6 | -- | < 10.0 U | -67.9 | 0.66 | 9.19 | 0.305 | 31.78 | 24.7 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW61D | 114-MW61D-121-20230630 | 6/30/2023 | 121 | N | 4602833942 | N/A | Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.6 | 43.3 | -- | -- | < 120 U | -- | < 0.10 UHF |
| 114-MW61D | 114-MW61D-126-20230630 | 6/30/2023 | 126 | N | 4602833941 | N/A | Bedrock | -- | 10.0 | -- | < 10.0 U | -98.4 | 0.81 | 9.11 | 0.298 | 25.08 | 12 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW61D | 114-MW61D-126-20230630 | 6/30/2023 | 126 | N | 4602833942 | N/A | Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.3 | 39.6 | -- | -- | < 120 U | -- | < 0.10 UHF |
| 114-MW61D | 114-MW61D-131-20230703 | 7/3/2023 | 131 | N | 4602835471 | Bedrock Monitoring | Bedrock | < 4.0 U | 17.1 | < 10.0 RA | < 10.0 RA | -19.6 | 3.45 | 8.96 | 0.331 | 28.91 | 53.6 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW61D | 114-MW61D-131-20230703 | 7/3/2023 | 131 | N | 4602835472 | Bedrock Monitoring | Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 15.7 | 30.8 | -- | -- | < 120 U | -- | < 0.10 UHF |
| 114-MW61D | 114-MW61D-136-20230703 | 7/3/2023 | 136 | N | 4602835471 | Bedrock Monitoring | Bedrock | < 4.0 U | **157** | < 10.0 RA | < 10.0 RA | 0.9 | 3.44 | 8.94 | 0.36 | 34.94 | -- OR | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW61D | 114-MW61D-136-20230703 | 7/3/2023 | 136 | N | 4602835472 | Bedrock Monitoring | Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 21.3 | 25.9 | -- | -- | < 120 U | -- | < 0.10 UHF |
| 114-MW61D | 114-MW61D-117-20230921 | 9/21/2023 | 117 | N | 4602887311 | Bedrock Monitoring | Bedrock | -- | 3.3 J | -- | < 10.0 U | -149.7 | 0.42 | 8.24 | 0.2783 | 23.2 | 9.17 | -- | 2.5 | 28.5 | -- | -- | < 120 U | -- | < 0.10 UJ |
| 114-MW61D | 114-MW61D-121-20230922 | 9/22/2023 | 121 | N | 4602888091 | Bedrock Monitoring | Bedrock | 4.2 | 6.4 | < 10.0 U | < 10.0 U | 33.3 | 0.18 | 8.51 | 0.308 | 22 | 40.2 | -- | 3.3 JB | 28.9 | -- | -- | < 120 U | -- | < 0.10 UJ |
| 114-MW61D | 114-MW61D-126.0-20230926 | 9/26/2023 | 126 | N | 4602890021 | Bedrock Monitoring | Bedrock | < 4.0 U | 21.0 | < 10.0 U | < 10.0 U | -49 | 4.16 | 9.26 | 0.231 | 15.55 | 102 | -- | 4.8 | 24.1 | -- | -- | 102 J | -- | 0.93 J |
| 114-MW61D | 114-MW61D-131.0-20230926 | 9/26/2023 | 131 | N | 4602890021 | Bedrock Monitoring | Bedrock | < 4.0 U | 4.4 | < 10.0 U | < 10.0 U | -3.8 | 2.42 | 9.23 | 0.233 | 15.27 | 15.8 | -- | 4.0 | 23.8 | -- | -- | 37.0 J | -- | 0.20 J |
| 114-MW61D | 114-MW61D-136.0-20230927 | 9/27/2023 | 136 | N | 4602890621 | Bedrock Monitoring | Bedrock | < 4.0 U | 10.7 | < 10.0 U | < 10.0 U | 17 | 1.79 | 8.64 | 0.267 | 16.39 | 43.4 | -- | 2.4 JB | 39.6 | -- | -- | < 120 U | -- | 0.17 J |
| 114-MW61D | 114-MW61D-131.0-20231219 | 12/19/2023 | 131 | N | JD79185 | Bedrock Monitoring | Bedrock | < 10 U | < 10 U | < 10 U | < 10 U | -91.2 | 8.39 | 8.94 | 0.4016 | 11 | 17.9 | -- | 0.81 J | 42.5 | -- | -- | < 250 U | < 10 U | -- |
| 114-MW61D | 114-MW61D-136.0-20231219 | 12/19/2023 | 136 | N | JD79185 | Bedrock Monitoring | Bedrock | < 10 U | 6.2 J | < 10 U | < 10 U | -215.9 | 0.49 | 9.05 | 0.4033 | 14.3 | 43 | -- | 1.7 | 40.1 | -- | -- | < 250 U | < 10 U | -- |
| 114-MW61D | 114-MW61D-121.0-20231220 | 12/20/2023 | 121 | N | JD79285 | Bedrock Monitoring | Bedrock | < 10 U | < 10 U | < 10 U | < 10 U | -1.7 | 11.57 | 8.9 | 0.3988 | 14 | 14.1 | -- | 0.69 J | 48.7 | -- | -- | < 250 U | < 10 U | < 0.20 UJ |
| 114-MW61D | 114-MW61D-126.0-20231220 | 12/20/2023 | 126 | N | JD79285 | Bedrock Monitoring | Bedrock | < 10 U | 5.0 J | < 10 U | < 10 U | -49.6 | 3.17 | 9 | 0.3762 | 11.9 | 19.7 | -- | 0.71 J | 46.1 | -- | -- | < 250 U | < 10 U | < 0.20 UJ |
| 114-MW61D | 114-MW61D-117.0-20231222 | 12/22/2023 | 117 | N | JD79443 | Bedrock Monitoring | Bedrock | 0.64 J | 7.8 J | < 10 U | < 10 U | 16 | 12.71 | 9.14 | 0.286 | 10.9 | 29 | -- | 1.0 | 56.8 | -- | -- | 25.7 J | 0.68 J | -- |
| 114-MW61D | 114-MW61D-117.0-20240318 | 3/18/2024 | 117 | N | JD84684 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | 37.2 | 0.09 | 8.76 | 0.339 | 13 | 4.97 | -- | 1.1 | 46.9 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW61D | 114-MW61D-121.0-20240318 | 3/18/2024 | 121 | N | JD84684 | Bedrock Monitoring | Bedrock | -- | 3.3 J | -- | < 10 U | 38.7 | 0.23 | 8.76 | 0.3416 | 14 | 6.01 | -- | 1.1 | 45.7 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW61D | 114-MW61D-126.0-20240318 | 3/18/2024 | 126 | N | JD84684 | Bedrock Monitoring | Bedrock | -- | 3.1 J | -- | < 10 U | 44.5 | 0.26 | 8.79 | 0.3507 | 13.1 | 5.5 | -- | 0.97 J | 43.7 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW61D | 114-MW61D-131.0-20240319 | 3/19/2024 | 131 | N | JD84758 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | 78.2 | 0.27 | 8.8 | 0.3274 | 12.4 | 9.26 | -- | 1.5 | 41.6 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW61D | 114-MW61D-136.0-20240319 | 3/19/2024 | 136 | N | JD84758 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | 56 | 0.25 | 8.79 | 0.3295 | 12.9 | 8.12 | -- | 2.0 | 42.6 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW61D | 114-MW61D-117-20240617 | 6/17/2024 | 117 | N | JD90605 | Bedrock Monitoring | Bedrock | -- | < 10 UB | -- | < 10 U | -236.1 | 0.86 | 8.79 | 0.2741 | 25.2 | 8.33 | -- | 0.96 J | 44.0 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW61D | 114-MW61D-117.0-20240617-X | 6/17/2024 | 117 | FD | JD90605 | Bedrock Monitoring | Bedrock | -- | < 10 UB | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | 42.7 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW61D | 114-MW61D-121.0-20240617 | 6/17/2024 | 121 | N | JD90605 | Bedrock Monitoring | Bedrock | -- | < 10 UB | -- | < 10 U | -233.8 | 0.94 | 8.76 | 0.2714 | 27.1 | 4.54 | -- | 2.5 | 41.7 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW61D | 114-MW61D-126.0-20240619 | 6/19/2024 | 126 | N | JD90728 | Bedrock Monitoring | Bedrock | -- | 5.1 J | -- | < 10 U | -23.7 | 0.02 | 8.24 | 0.14 | 22.76 | 8.7 | -- | < 1.0 U | 39.6 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW61D | 114-MW61D-131.0-20240619 | 6/19/2024 | 131 | N | JD90728 | Bedrock Monitoring | Bedrock | -- | 4.4 J | -- | < 10 U | -56.3 | 0.02 | 8.14 | 0.172 | 22.58 | 67.2 | -- | 2.1 | 40.9 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW61D | 114-MW61D-136.0-20240619 | 6/19/2024 | 136 | N | JD90728 | Bedrock Monitoring | Bedrock | -- | 4.6 J | -- | < 10 U | -50.5 | 0.02 | 8.17 | 0.147 | 25.1 | 9.54 | -- | 0.78 J | 44.1 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW61D | 114-MW61D-117.0-20240916 | 9/16/2024 | 117 | N | JD96195 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -118.5 | 0.27 | 8.88 | 0.30 | 21.1 | 8.52 | -- | < 1.0 U | 39.3 J | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW61D | 114-MW61D-121.0-20240916 | 9/16/2024 | 121 | N | JD96195 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -119.4 | 0.77 | 8.85 | 0.30 | 24.1 | 4.26 | -- | 0.95 J | 39.1 J | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW61D | 114-MW61D-121.0-20240916-X | 9/16/2024 | 121 | FD | JD96195 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | 0.74 J | 38.9 J | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW61D | 114-MW61D-126.0-20240917 | 9/17/2024 | 126 | N | JD96274 | Bedrock Monitoring | Bedrock | -- | 3.8 J | -- | < 10 U | -214.5 | 2.33 | 8.66 | 0.28 | 17.9 | 8.82 | -- | < 1.0 U | 39.1 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW61D | 114-MW61D-131.0-20240917 | 9/17/2024 | 131 | N | JD96274 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -225.3 | 0.34 | 8.7 | 0.28 | 18.7 | 7.45 | -- | < 1.0 U | 39.7 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW61D | 114-MW61D-136.0-20240918 | 9/18/2024 | 136 | N | JD96352 | Bedrock Monitoring | Bedrock | -- | 4.2 J | -- | < 10 U | -326.9 | 0.65 | 8.77 | 0.29 | 17.1 | 9.1 | -- | 0.73 J | 39.1 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW61D | 114-MW61D-117.0-20241213 | 12/13/2024 | 117 | N | JE2642 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 UJ | -173.2 | 7.63 | 9.1 | 0.29 | 9.6 | 3.05 | -- | 1.4 | 32.9 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW61D | 114-MW61D-121.0-20241217 | 12/17/2024 | 121 | N | JE2865 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | 4.2 J | -- | -- | -- | -- | -- | -- | -- | 2.7 J+ | 33.8 | -- | -- | -- | -- | < 0.20 U |
| 114-MW61D | 114-MW61D-121.0-20241217-X | 12/17/2024 | 121 | FD | JE2865 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | 4.2 J | -- | -- | -- | -- | -- | -- | -- | 2.6 J+ | 33.4 | -- | -- | -- | -- | < 0.20 U |
| 114-MW61D | 114-MW61D-126.0-20241217 | 12/17/2024 | 126 | N | JE2865 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -155.6 | 0.32 | 8.8 | 0.28 | 14.4 | 4.21 | -- | 2.6 J+ | 33.3 | -- | -- | -- | -- | < 0.20 U |
| 114-MW61D | 114-MW61D-131.0-20241218 | 12/18/2024 | 131 | N | JE2940 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -163.7 | 0.4 | 8.88 | 0.28 | 12.9 | 4.65 | -- | 2.2 | 33.4 | -- | -- | -- | -- | < 0.20 U |
| 114-MW61D | 114-MW61D-136.0-20241218 | 12/18/2024 | 136 | N | JE2940 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | 3.4 J | -173.3 | 0.42 | 8.83 | 0.29 | 14.8 | 7.81 | -- | 2.3 | 34.2 | -- | -- | -- | -- | < 0.20 U |
| 114-MW66D | 114-MW66D-92-20210210 | 2/10/2021 | 92 | N | JD20166 | N/A | Bedrock | -- | **6450** | -- | **5900** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW66D | 114-MW66D-94-20210210 | 2/10/2021 | 94 | N | JD20166 | N/A | Bedrock | -- | **6350** | -- | **6000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW66D | 114-MW66D-110-20210210 | 2/10/2021 | 110 | N | JD20166 | N/A | Bedrock | -- | **596** | -- | **260** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW66D | 114-MW66D-114-20210210 | 2/10/2021 | 114 | N | JD20166 | N/A | Bedrock | -- | **393** | -- | **86** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW66D | 114-MW-66D-118.5-20211214 | 12/14/2021 | 118.5 | N | 4602491481 | N/A | Bedrock | -- | **58600** | -- | **55700** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW66D | 114-MW-66D-121.5-20211214 | 12/14/2021 | 121.5 | N | 4602491481 | N/A | Bedrock | -- | **61300** | -- | **56800** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW66D | 114-MW-66D-124.0-20211214 | 12/14/2021 | 124 | N | 4602491481 | N/A | Bedrock | -- | **62100** | -- | **54000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW66D | 114-MW-66D-128.0-20211215 | 12/15/2021 | 128 | N | 4602492051 | N/A | Bedrock | -- | **49600** | -- | **54500** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW66D | 114-MW-66D-128.0-20211215X | 12/15/2021 | 128 | FD | 4602492051 | N/A | Bedrock | -- | **50900** | -- | **50700** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW66D | 114-MW-66D-140.0-20211221 | 12/21/2021 | 140 | N | 4602496041 | N/A | Bedrock | -- | **57300** | -- | **55000** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW66D-Port1 | 114-MW66D-91-97-20220421 | 4/21/2022 | 94 | N | 4602567051 | N/A | Bedrock | -- | **805 J** | -- | **2410 J** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW66D-Port1 | 114-MW66D-91-97-20220421-X | 4/21/2022 | 94 | FD | 4602567051 | N/A | Bedrock | -- | 3.1 J | -- | < 10.0 UJ | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW66D-Port1 | 114-MW66D-91-97-20220513 | 5/13/2022 | 94 | N | 4602588871 | N/A | Bedrock | -- | **2580** | -- | **161** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW66D-Port1 | 114-MW66D-91-97-20220513-X | 5/13/2022 | 94 | FD | 4602588871 | N/A | Bedrock | -- | **2470** | -- | **164** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW66D-Port1 | 114-MW66D-91-97-20220603 | 6/3/2022 | 94 | N | 4602593611 | N/A | Bedrock | -- | **1600 J** | -- | **1050 J** | -- | -- | -- | -- | -- | -- | -- | 6.9 | -- | -- | -- | -- | -- | -- |
| 114-MW66D-Port1 | 114-MW66D-91-97-20220603-X | 6/3/2022 | 94 | FD | 4602593611 | N/A | Bedrock | -- | **299 J** | -- | **1090 J** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW66D-Port1 | 114-MW66D-91-97-20220705 | 7/5/2022 | 94 | N | 4602613181 | N/A | Bedrock | -- | **427** | -- | 51.4 | -- | -- | -- | -- | -- | -- | -- | 6.2 | -- | -- | -- | -- | -- | -- |
| 114-MW66D-Port1 | 114-MW66D-91-97-20220705-X | 7/5/2022 | 94 | FD | 4602613181 | N/A | Bedrock | -- | **385** | -- | 58.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW66D-Port1 | 114-MW66D-91-97-20220804 | 8/4/2022 | 94 | N | 4602632541 | N/A | Bedrock | -- | **909** | -- | **389** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW66D-Port1 | 114-MW66D-91-97-20220804-X | 8/4/2022 | 94 | FD | 4602632541 | N/A | Bedrock | -- | **1110** | -- | **422** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW66D-Port1 | 114-MW66D-91-97-20230628 | 6/28/2023 | 94 | N | 4602832531 | N/A | Bedrock | -- | **4110** | -- | **3870** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW66D-Port1 | 114-MW66D-91-97-20230628 | 6/28/2023 | 94 | N | 4602832532 | N/A | Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 5.3 | 28.9 | -- | -- | < 120 U | -- | < 0.10 UHF |
| 114-MW66D-Port1 | 114-MW66D-91.0-97.0-20230927 | 9/27/2023 | 94 | N | 4602890621 | Bedrock Monitoring | Bedrock | -- | **3120** | -- | **2720** | 37.1 | 6.62 | 10.28 | 0.942 | 20.57 | 3.57 | -- | 6.6 | 91.5 | -- | -- | < 120 U | -- | < 0.10 UJ |
| 114-MW66D-Port1 | 114-MW66D-91.0-97.0-20230927X | 9/27/2023 | 94 | FD | 4602890621 | Bedrock Monitoring | Bedrock | -- | **2810** | -- | **2570** | -- | -- | -- | -- | -- | -- | -- | 6.5 | 91.5 | -- | -- | < 120 U | -- | < 0.10 UJ |
| 114-MW66D-Port1 | 114-MW66D-91-97-20231215 | 12/15/2023 | 94 | N | JD78984 | Bedrock Monitoring | Bedrock | -- | **2820 J** | -- | **4100 RA** | -50.4 | 2.58 | 10.57 | 0.995 | 12.1 | 4.94 | -- | 5.5 | 98.8 | -- | -- | < 250 U | < 10 U | -- |
| 114-MW66D-Port1 | 114-MW66D-91-97-20240319 | 3/19/2024 | 94 | N | JD84758 | Bedrock Monitoring | Bedrock | -- | **1310** | -- | **330** | -88.7 | 2.2 | 10.76 | 1.077 | 8.9 | 9.12 | -- | 7.3 | 96.2 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW66D-Port1 | 114-MW66D-91-97-20240617 | 6/17/2024 | 94 | N | JD90605 | Bedrock Monitoring | Bedrock | -- | **1370** | -- | **660** | -73.3 | 0.92 | 10.62 | 1.176 | 27.7 | 5.16 | -- | 12.0 | 100 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW66D-Port1 | 114-MW66D-91-97-20240917 | 9/17/2024 | 94 | N | JD96274 | Bedrock Monitoring | Bedrock | -- | **4710** | -- | **4300** | -159.5 | 1.94 | 10.92 | 0.962 | 19.9 | 3.5 | -- | 6.1 J+ | 114 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW66D-Port1 | 114-MW66D-91-97-20241217 | 12/17/2024 | 94 | N | JE2865 | Bedrock Monitoring | Bedrock | -- | **2540** | -- | **3300** | 117.9 | 5.27 | 10.04 | 0.931 | 16.7 | 2.25 | -- | 15.8 | 109 | -- | -- | -- | -- | < 0.20 U |
| 114-MW66D-Port2 | 114-MW66D-107-111-20220421 | 4/21/2022 | 109 | N | 4602567051 | N/A | Bedrock | -- | 2.8 J | -- | < 10.0 UJ | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW66D-Port2 | 114-MW66D-107-111-20220603 | 6/3/2022 | 109 | N | 4602593611 | N/A | Bedrock | -- | 4.1 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 3.0 | -- | -- | -- | -- | -- | -- |
| 114-MW66D-Port2 | 114-MW66D-107-111-20220705 | 7/5/2022 | 109 | N | 4602613181 | N/A | Bedrock | -- | 4.1 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 3.7 | -- | -- | -- | -- | -- | -- |
| 114-MW66D-Port2 | 114-MW66D-107-111-20230628 | 6/28/2023 | 109 | N | 4602832531 | N/A | Bedrock | -- | **82.2** | -- | 51.6 | 57.2 | 5.03 | 8.25 | 0.696 | 26.94 | 1.78 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW66D-Port2 | 114-MW66D-107-111-20230628 | 6/28/2023 | 109 | N | 4602832532 | N/A | Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.0 | 71.3 | -- | -- | < 120 U | -- | < 0.10 UHF |
| 114-MW66D-Port2 | 114-MW66D-107.0-111.0-20230927 | 9/27/2023 | 109 | N | 4602890621 | Bedrock Monitoring | Bedrock | -- | **110** | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 2.6 JB | 112 | -- | -- | < 120 U | -- | 0.16 J |
| 114-MW66D-Port2 | 114-MW66D-107-111-20231215 | 12/15/2023 | 109 | N | JD78984 | Bedrock Monitoring | Bedrock | -- | **102** | -- | 17 RA | -113.5 | 1.71 | 9.03 | 0.753 | 12.1 | 2.42 | -- | 1.9 | 123 | -- | -- | < 250 U | 11.8 | -- |
| 114-MW66D-Port2 | 114-MW66D-107-111-20240319 | 3/19/2024 | 109 | N | JD84758 | Bedrock Monitoring | Bedrock | -- | 48.5 | -- | < 10 U | -87.5 | 2.75 | 8.72 | 0.789 | 8.3 | 2.71 | -- | 1.6 | 134 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW66D-Port2 | 114-MW66D-107-111-20240617 | 6/17/2024 | 109 | N | JD90605 | Bedrock Monitoring | Bedrock | -- | 12.2 | -- | < 10 U | -61.2 | 2.25 | 8.34 | 0.701 | 28.5 | 2.81 | -- | 2.5 | 139 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW66D-Port2 | 114-MW66D-107-111-20240917 | 9/17/2024 | 109 | N | JD96274 | Bedrock Monitoring | Bedrock | -- | 41.5 | -- | < 10 U | -193.4 | 2.26 | 8.52 | 0.7 | 19.5 | 1.68 | -- | 0.87 J | 128 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW66D-Port2 | 114-MW66D-107-111-20241217 | 12/17/2024 | 109 | N | JE2865 | Bedrock Monitoring | Bedrock | -- | 39.1 | -- | < 10 U | -2.2 | 3.34 | 8.55 | 0.712 | 16.3 | 1.57 | -- | 4.1 J+ | 116 | -- | -- | -- | -- | < 0.20 U |
| 114-MW66D-Port3 | 114-MW66D-118-123-20220421 | 4/21/2022 | 120.5 | N | 4602567051 | N/A | Bedrock | -- | < 4.0 U | -- | < 10.0 UJ | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW66D-Port3 | 114-MW66D-118-123-20220603 | 6/3/2022 | 120.5 | N | 4602593611 | N/A | Bedrock | -- | 3.4 J | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 3.7 | -- | -- | -- | -- | -- | -- |
| 114-MW66D-Port3 | 114-MW66D-118-123-20220705 | 7/5/2022 | 120.5 | N | 4602613181 | N/A | Bedrock | -- | 2.5 J | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 3.7 | -- | -- | -- | -- | -- | -- |
| 114-MW66D-Port3 | 114-MW66D-118-123-20230628 | 6/28/2023 | 120.5 | N | 4602832531 | N/A | Bedrock | -- | 4.2 | -- | < 10.0 U | 8.6 | 4.66 | 8.19 | 0.643 | 26.6 | 1.32 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW66D-Port3 | 114-MW66D-118-123-20230628 | 6/28/2023 | 120.5 | N | 4602832532 | N/A | Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.3 | 72.6 | -- | -- | < 120 U | -- | < 0.10 UHF |
| 114-MW66D-Port3 | 114-MW66D-118.0-123.0-20230927 | 9/27/2023 | 120.5 | N | 4602890621 | Bedrock Monitoring | Bedrock | -- | 8.2 | -- | < 10.0 U | 29.5 | 3.69 | 8.73 | 0.731 | 19.81 | 0.93 | -- | 5.5 | 111 | -- | -- | < 120 U | -- | < 0.10 UJ |
| 114-MW66D-Port3 | 114-MW66D-118-123-20231215 | 12/15/2023 | 120.5 | N | JD78984 | Bedrock Monitoring | Bedrock | -- | 15.7 | -- | < 10 RA | -185.4 | 1.64 | 8.91 | 0.755 | 11.9 | 0.74 | -- | 4.2 | 127 | -- | -- | < 250 U | 5.5 J | -- |
| 114-MW66D-Port3 | 114-MW66D-118-123-20240319 | 3/19/2024 | 120.5 | N | JD84758 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -157.9 | 2.32 | 8.67 | 0.794 | 7.3 | 1.21 | -- | 3.9 | 133 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW66D-Port3 | 114-MW66D-118-123-20240617 | 6/17/2024 | 120.5 | N | JD90605 | Bedrock Monitoring | Bedrock | -- | < 10 UB | -- | < 10 U | -126.9 | 0.99 | 8.64 | 0.707 | 30.3 | 0.82 | -- | 5.9 | 134 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW66D-Port3 | 114-MW66D-118-123-20240917 | 9/17/2024 | 120.5 | N | JD96274 | Bedrock Monitoring | Bedrock | -- | 34.7 | -- | < 10 U | -250.1 | 1.83 | 9.06 | 0.719 | 19.9 | 0.92 | -- | 3.4 J+ | 135 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW66D-Port3 | 114-MW66D-118-123-20241217 | 12/17/2024 | 120.5 | N | JE2865 | Bedrock Monitoring | Bedrock | -- | 40.0 | -- | < 10 U | -63 | 3.8 | 9.16 | 0.719 | 15.5 | 1.12 | -- | 9.6 | 116 | -- | -- | -- | -- | < 0.20 U |
| 114-MW66D-Port4 | 114-MW66D-124-129-20220421 | 4/21/2022 | 126.5 | N | 4602567051 | N/A | Bedrock | -- | **189** | -- | **164 J** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW66D-Port4 | 114-MW66D-124-129-20220603 | 6/3/2022 | 126.5 | N | 4602593611 | N/A | Bedrock | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 3.7 | -- | -- | -- | -- | -- | -- |
| 114-MW66D-Port4 | 114-MW66D-124-129-20220705 | 7/5/2022 | 126.5 | N | 4602613181 | N/A | Bedrock | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 3.9 | -- | -- | -- | -- | -- | -- |
| 114-MW66D-Port4 | 114-MW66D-124-129-20230628 | 6/28/2023 | 126.5 | N | 4602832531 | N/A | Bedrock | -- | 4.6 | -- | < 10.0 U | -40 | 2.99 | 8.15 | 0.613 | 27.59 | 0.68 | -- | -- | -- | -- | -- | -- | -- | -- |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochemical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-MW66D-Port4 | 114-MW66D-124-129-20230628 | 6/28/2023 | 126.5 | N | 4602832532 | N/A | Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7.3 | 57.9 | -- | -- | < 120 U | -- | < 0.10 UHF |
| 114-MW66D-Port4 | 114-MW66D-124.0-129.0-20230927 | 9/27/2023 | 126.5 | N | 4602890621 | Bedrock Monitoring | Bedrock | -- | 3.8 J | -- | < 10.0 U | 9.5 | 3.01 | 8.55 | 0.685 | 20.8 | 0.48 | -- | 9.4 | 97.8 | -- | -- | < 120 U | -- | < 0.10 UJ |
| 114-MW66D-Port4 | 114-MW66D-124-129-20231215 | 12/15/2023 | 126.5 | N | JD78984 | Bedrock Monitoring | Bedrock | -- | 3.9 J | -- | < 10 RA | -208.9 | 1.8 | 9.08 | 0.72 | 11.6 | 0.61 | -- | 6.8 | 113 | -- | -- | < 250 U | 5.9 J | -- |
| 114-MW66D-Port4 | 114-MW66D-124-129-20240319 | 3/19/2024 | 126.5 | N | JD84758 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -169.5 | 2.21 | 8.55 | 0.686 | 7.8 | 1.58 | -- | 6.4 | 97.9 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW66D-Port4 | 114-MW66D-124-129-20240617 | 6/17/2024 | 126.5 | N | JD90605 | Bedrock Monitoring | Bedrock | -- | < 10 UB | -- | < 10 U | -140.8 | 0.73 | 8.47 | 0.66 | 29.5 | 0.46 | -- | 9.8 | 118 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW66D-Port4 | 114-MW66D-124-129-20240917 | 9/17/2024 | 126.5 | N | JD96274 | Bedrock Monitoring | Bedrock | -- | 8.3 J | -- | < 10 U | -305.2 | 1.52 | 9.36 | 0.722 | 20.3 | 0.7 | -- | 6.0 J+ | 128 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW66D-Port4 | 114-MW66D-124-129-20241217 | 12/17/2024 | 126.5 | N | JE2865 | Bedrock Monitoring | Bedrock | -- | 6.0 J | -- | < 10 U | -87 | 2.43 | 8.28 | 0.3764 | 15.3 | 0.79 | -- | 12.1 | 106 | -- | -- | -- | -- | < 0.20 U |
| 114-MW66D-Port5 | 114-MW66D-137-140-20220421 | 4/21/2022 | 138.5 | N | 4602567051 | N/A | Bedrock | -- | **181** | -- | **165 J** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW66D-Port5 | 114-MW66D-137-140-20220603 | 6/3/2022 | 138.5 | N | 4602593611 | N/A | Bedrock | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 3.1 | -- | -- | -- | -- | -- | -- |
| 114-MW66D-Port5 | 114-MW66D-137-140-20220705 | 7/5/2022 | 138.5 | N | 4602613181 | N/A | Bedrock | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 3.2 | -- | -- | -- | -- | -- | -- |
| 114-MW66D-Port5 | 114-MW66D-137-140-20230628 | 6/28/2023 | 138.5 | N | 4602832531 | N/A | Bedrock | -- | 3.5 J | -- | < 10.0 U | 2.4 | 5.26 | 8.05 | 0.612 | 31.86 | 3.68 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW66D-Port5 | 114-MW66D-137-140-20230628 | 6/28/2023 | 138.5 | N | 4602832532 | N/A | Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 18.9 | 54.0 | -- | -- | < 120 U | -- | 0.12 HF |
| 114-MW66D-Port5 | 114-MW66D-137.0-140.0-20230927 | 9/27/2023 | 138.5 | N | 4602890621 | Bedrock Monitoring | Bedrock | -- | 3.2 J | -- | < 10.0 U | 34.7 | 2.87 | 8.13 | 0.684 | 21.38 | 0.48 | -- | 22.5 | 84.3 | -- | -- | < 120 U | -- | 0.099 J |
| 114-MW66D-Port5 | 114-MW66D-137-140-20231215 | 12/15/2023 | 138.5 | N | JD78984 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 RA | -252.7 | 2.19 | 8.62 | 0.696 | 11.8 | 0.44 | -- | 16.7 | 103 | -- | -- | < 250 U | 5.7 J | -- |
| 114-MW66D-Port5 | 114-MW66D-137-140-20240319 | 3/19/2024 | 138.5 | N | JD84758 | Bedrock Monitoring | Bedrock | -- | 3.3 J | -- | < 10 U | -174.8 | 1.53 | 8.46 | 0.713 | 7.6 | 1.18 | -- | 16.2 | 99.8 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW66D-Port5 | 114-MW66D-137-140-20240617 | 6/17/2024 | 138.5 | N | JD90605 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -164.9 | 0.54 | 8.17 | 0.663 | 30.1 | 0.35 | -- | 28.0 | 114 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW66D-Port5 | 114-MW66D-137-140-20240917 | 9/17/2024 | 138.5 | N | JD96274 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -- | -- | 9.02 | -- | 21.2 | 0.46 | -- | 16.1 J+ | 127 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW66D-Port5 | 114-MW66D-137-140-20241217 | 12/17/2024 | 138.5 | N | JE2865 | Bedrock Monitoring | Bedrock | -- | 4.1 J | -- | < 10 U | -187 | 1.87 | 9 | 0.678 | 15.6 | 0.87 | -- | 22.5 | 98.4 | -- | -- | -- | -- | < 0.20 U |
| 114-MW6D | 114-MW6D-89.5-90.0 | 5/30/2019 | 89.5 - 90 | N | JC88938 | N/A | Bedrock | -- | 6.9 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW6D | 114-MW6D-94.5-95.0 | 5/30/2019 | 94.5 - 95 | N | JC88938 | N/A | Bedrock | -- | 7.6 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW6D | 114-MW6D-99.5-100.0 | 5/30/2019 | 99.5 - 100 | N | JC88938 | N/A | Bedrock | -- | 7.8 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW6D | 114-MW6D-104.5-105.0 | 5/30/2019 | 104.5 - 105 | N | JC88938 | N/A | Bedrock | -- | 5.3 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW6D | 114-MW6D-109.5-110.0 | 5/30/2019 | 109.5 - 110 | N | JC88938 | N/A | Bedrock | -- | 3.8 J | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW6D | 114-MW6D-103.5-20200826 | 8/26/2020 | 103.5 | N | JD12249 | N/A | Bedrock | -- | < 10 U | -- | < 10 UJ | -69.10 | 0.60 | 9.56 | 0.51 | 23.83 | 9.91 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW6D | 114-MW6D-103.5-20200826 | 8/26/2020 | 103.5 | N | JD12249R | N/A | Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 2.0 U | -- | -- | -- | -- | -- | -- |
| 114-MW6D | 114-MW6D-108.5-20200826 | 8/26/2020 | 108.5 | N | JD12249 | N/A | Bedrock | -- | 3.4 J | -- | < 10 UJ | -56.10 | 0.12 | 9.54 | 0.52 | 27.75 | 36.75 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW6D | 114-MW6D-108.5-20200826 | 8/26/2020 | 108.5 | N | JD12249R | N/A | Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | N/A | -- | -- | < 2.0 U | -- | -- | -- | -- | -- | -- |
| 114-MW6D | 114-MW6D-88.5-20200827 | 8/27/2020 | 88.5 | N | JD12322 | N/A | Bedrock | -- | < 10 U | -- | < 10 U | -78.00 | 0 | 8.95 | 0.11 | 23.33 | 5.01 | -- | 1.5 | -- | -- | -- | -- | -- | -- |
| 114-MW6D | 114-MW6D-93.5-20200827 | 8/27/2020 | 93.5 | N | JD12322 | N/A | Bedrock | -- | < 10 U | -- | < 10 U | -57.00 | 0 | 9.02 | 0.11 | 24.03 | 6.11 | -- | 1.6 | -- | -- | -- | -- | -- | -- |
| 114-MW6D | 114-MW6D-98.5-20200827 | 8/27/2020 | 98.5 | N | JD12322 | N/A | Bedrock | -- | < 10 U | -- | < 10 U | -71.00 | 0 | 9.00 | 0.11 | 23.06 | 7.21 | -- | 1.9 | -- | -- | -- | -- | -- | -- |
| 114-MW71D | 114-MW-71D-119.0-20211214 | 12/14/2021 | 119 | N | 4602491481 | N/A | Bedrock | -- | 42.9 | -- | 17.3 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW71D | 114-MW-71D-126.0-20211214 | 12/14/2021 | 126 | N | 4602491481 | N/A | Bedrock | -- | 53.5 | -- | 25.2 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW71D | 114-MW-71D-132.5-20211214 | 12/14/2021 | 132.5 | N | 4602491481 | N/A | Bedrock | -- | 54.8 | -- | 19.5 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW71D | 114-MW-71D-137.0-20211215 | 12/15/2021 | 137 | N | 4602492051 | N/A | Bedrock | -- | 44.2 | -- | < 21.9 UB | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW71D | 114-MW-71D-141.5-20211221 | 12/21/2021 | 141.5 | N | 4602496041 | N/A | Bedrock | -- | 29.0 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW72D | 114-MW-72D-103.5-20211215 | 12/15/2021 | 103.5 | N | 4602492051 | N/A | Bedrock | -- | **2200** | -- | **2400** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW72D | 114-MW-72D-113.5-20211215 | 12/15/2021 | 113.5 | N | 4602492051 | N/A | Bedrock | -- | **2250** | -- | **2490** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW72D | 114-MW-72D-125.0-20211216 | 12/16/2021 | 125 | N | 4602492741 | N/A | Bedrock | -- | **2580** | -- | **2480 J+** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW72D-Port1 | 114-MW72D-102-106-20220421 | 4/21/2022 | 104 | N | 4602567051 | N/A | Bedrock | -- | **130** | -- | **136 J** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW72D-Port1 | 114-MW72D-102-106-20220603 | 6/3/2022 | 104 | N | 4602593611 | N/A | Bedrock | -- | 29.0 | -- | 20.4 | -- | -- | -- | -- | -- | -- | -- | 13.8 | -- | -- | -- | -- | -- | -- |
| 114-MW72D-Port1 | 114-MW72D-102-106-20220705 | 7/5/2022 | 104 | N | 4602613181 | N/A | Bedrock | -- | **79.6** | -- | **76.8** | -- | -- | -- | -- | -- | -- | -- | 8.9 | -- | -- | -- | -- | -- | -- |
| 114-MW72D-Port1 | 114-MW72D-102-106-20220804 | 8/4/2022 | 104 | N | 4602632541 | N/A | Bedrock | -- | 43.8 | -- | 36.7 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW72D-Port1 | 114-MW72D-102-106-20230627 | 6/27/2023 | 104 | N | 4602831931 | N/A | Bedrock | -- | **98.2** | -- | 54.7 | -53.6 | 2.24 | 12.47 | 6.784 | 18 | 3.21 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW72D-Port1 | 114-MW72D-102-106-20230627 | 6/27/2023 | 104 | N | 4602831932 | N/A | Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 14.0 | 2.49 | -- | -- | < 120 U | -- | < 0.10 UHF |
| 114-MW72D-Port1 | 114-MW72D-102-106-20230726 | 7/26/2023 | 104 | N | 4602849651 | Bedrock Monitoring | Bedrock | -- | **104** | -- | **92.8** | -132 | 1.67 | 12.72 | 6.98 | 25.35 | 0.9 | -- | 9.7 J- | 3.16 | -- | -- | < 120 U | -- | < 0.10 UJ |
| 114-MW72D-Port1 | 114-MW72D-102.0-106.0-20230927 | 9/27/2023 | 104 | N | 4602890621 | Bedrock Monitoring | Bedrock | **117** | **124** | **99.5** | **108** | 3.3 | 3.13 | 12.7 | 8.959 | 17.41 | 0.37 | -- | 27.0 | 1.95 | -- | -- | < 120 U | -- | 0.095 J |
| 114-MW72D-Port1 | 114-MW72D-102-106-20231220 | 12/20/2023 | 104 | N | JD79285 | Bedrock Monitoring | Bedrock | **132** | **134** | **120** | **120** | -221.3 | 5.68 | 12.88 | 8.24 | 4.4 | 16.9 | -- | 20.5 | 3.5 JB | -- | -- | < 250 U | < 10 U | < 0.20 UJ |
| 114-MW72D-Port1 | 114-MW72D-102-106-20240319 | 3/19/2024 | 104 | N | JD84758 | Bedrock Monitoring | Bedrock | -- | **105** | -- | **110** | -180.8 | 1.49 | 12.73 | 9.52 | 15.3 | 0.55 | -- | 26.1 | 3.3 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW72D-Port1 | 114-MW72D-102-106-20240621 | 6/21/2024 | 104 | N | JD90886 | Bedrock Monitoring | Bedrock | **154** | **403** | **130** | **150** | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | 34.5 | -- | 15.7 | 6.2 JB | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW72D-Port1 | 114-MW72D-102-106-20240813 | 8/13/2024 | 104 | N | JD93987 | Bedrock Monitoring | Bedrock | -- | **183** | -- | **140** | -134.8 | 2.36 | 12.42 | 7.45 | 19.8 | 2.5 | -- | 14.3 | 5.0 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW72D-Port1 | 114-MW72D-102-106-20240919 | 9/19/2024 | 104 | N | JD96459 | Bedrock Monitoring | Bedrock | -- | **285** | -- | **300** | -90.7 | 2 | 12.47 | 6.82 | 21.1 | 0.41 | -- | 12.7 J+ | 6.8 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW72D-Port1 | 114-MW72D-102-106-20241217 | 12/17/2024 | 104 | N | JE2865 | Bedrock Monitoring | Bedrock | **407** | **517** | **520** | **530** | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | 17.1 | -- | 11.9 | 10.0 | -- | -- | -- | -- | < 0.20 U |
| 114-MW72D-Port2 | 114-MW72D-110-114-20220421 | 4/21/2022 | 112 | N | 4602567051 | N/A | Bedrock | -- | **143** | -- | **83.7 J** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW72D-Port2 | 114-MW72D-110-114-20220603 | 6/3/2022 | 112 | N | 4602593611 | N/A | Bedrock | -- | 63.6 | -- | 53.6 | -- | -- | -- | -- | -- | -- | -- | 9.2 | -- | -- | -- | -- | -- | -- |
| 114-MW72D-Port2 | 114-MW72D-110-114-20220705 | 7/5/2022 | 112 | N | 4602613181 | N/A | Bedrock | -- | **86.8** | -- | **92.2** | -- | -- | -- | -- | -- | -- | -- | 10.5 | -- | -- | -- | -- | -- | -- |
| 114-MW72D-Port2 | 114-MW72D-110-114-20220804 | 8/4/2022 | 112 | N | 4602632541 | N/A | Bedrock | -- | 52.4 | -- | 62.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW72D-Port2 | 114-MW72D-110-114-20230627 | 6/27/2023 | 112 | N | 4602831931 | N/A | Bedrock | -- | **125** | -- | 61.3 | -54.2 | 2.18 | 12.55 | 7.543 | 18.81 | 1.39 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW72D-Port2 | 114-MW72D-110-114-20230627 | 6/27/2023 | 112 | N | 4602831932 | N/A | Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 18.0 | 2.31 | -- | -- | < 120 U | -- | < 0.10 UHF |
| 114-MW72D-Port2 | 114-MW72D-110-114-20230726 | 7/26/2023 | 112 | N | 4602849651 | Bedrock Monitoring | Bedrock | -- | **136** | -- | **129** | -108 | 9.12 | 12.86 | 7.73 | 24.4 | 8.85 | -- | 10.9 J- | 2.76 | -- | -- | < 120 U | -- | < 0.10 UJ |
| 114-MW72D-Port2 | 114-MW72D-110.0-114.0-20230927 | 9/27/2023 | 112 | N | 4602890621 | Bedrock Monitoring | Bedrock | **82.7** | **90.6** | **78.6** | **80.8** | 13.8 | 4.59 | 12.79 | 8.06 | 16.2 | 0.62 | -- | 19.3 | 2.42 | -- | -- | < 120 U | -- | < 0.10 UJ |
| 114-MW72D-Port2 | 114-MW72D-110-114-20231220 | 12/20/2023 | 112 | N | JD79285 | Bedrock Monitoring | Bedrock | **138** | **131** | **110** | **100** | -219.4 | 6.54 | 12.94 | 8.82 | 4 | 15.7 | -- | 32.6 | < 2.3 UB | -- | -- | < 250 U | < 10 U | < 0.20 UJ |
| 114-MW72D-Port2 | 114-MW72D-110-114-20240319 | 3/19/2024 | 112 | N | JD84758 | Bedrock Monitoring | Bedrock | -- | **128 J** | -- | **180 J** | -173.2 | 2.2 | 12.78 | 9.83 | 13.7 | 2.21 | -- | 36.5 | 2.3 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW72D-Port2 | 114-MW72D-110-114-20240621 | 6/21/2024 | 112 | N | JD90886 | Bedrock Monitoring | Bedrock | 67.2 | **196** | 69 | **100** | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | -- | 18.1 | 7.9 JB | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW72D-Port2 | 114-MW72D-110-114-20240813 | 8/13/2024 | 112 | N | JD93987 | Bedrock Monitoring | Bedrock | -- | **144** | -- | **130** | -161.9 | 1.67 | 12.56 | 8.34 | 20 | 1.82 | -- | 31.9 | 3.2 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW72D-Port2 | 114-MW72D-110-114-20240919 | 9/19/2024 | 112 | N | JD96459 | Bedrock Monitoring | Bedrock | -- | **204** | -- | **220** | -98.6 | 1.69 | 12.61 | 7.2 | 20.6 | 0.68 | -- | 17.2 J+ | 3.8 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW72D-Port2 | 114-MW72D-110-114-20241217 | 12/17/2024 | 112 | N | JE2865 | Bedrock Monitoring | Bedrock | -- | **259** | -- | **340** | -133 | 3.5 | 12.66 | 7.47 | 15.3 | 4.48 | -- | 19.7 | 5.6 | -- | -- | -- | -- | < 0.20 U |
| 114-MW72D-Port3 | 114-MW72D-116-119-20220421 | 4/21/2022 | 117.5 | N | 4602567051 | N/A | Bedrock | -- | **1710** | -- | **923 J** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW72D-Port3 | 114-MW72D-116-119-20220603 | 6/3/2022 | 117.5 | N | 4602593611 | N/A | Bedrock | -- | 25.3 | -- | 22.6 | -- | -- | -- | -- | -- | -- | -- | 12.6 | -- | -- | -- | -- | -- | -- |
| 114-MW72D-Port3 | 114-MW72D-116-119-20220705 | 7/5/2022 | 117.5 | N | 4602613181 | N/A | Bedrock | -- | 31.5 | -- | 19.4 | -- | -- | -- | -- | -- | -- | -- | 13.9 | -- | -- | -- | -- | -- | -- |
| 114-MW72D-Port3 | 114-MW72D-116-119-20230627 | 6/27/2023 | 117.5 | N | 4602831931 | N/A | Bedrock | -- | 62.8 | -- | 42.4 | -88.6 | 1.97 | 12.48 | 7.322 | 19.14 | 0.97 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW72D-Port3 | 114-MW72D-116-119-20230627 | 6/27/2023 | 117.5 | N | 4602831932 | N/A | Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 23.2 | 2.44 | -- | -- | < 120 U | -- | < 0.10 UHF |
| 114-MW72D-Port3 | 114-MW72D-116-119-20230726 | 7/26/2023 | 117.5 | N | 4602849651 | Bedrock Monitoring | Bedrock | -- | 23.5 | -- | 33.0 | -156 | 8.82 | 12.97 | 7.7 | 24.38 | 9.6 | -- | 20.9 J- | 3.24 | -- | -- | < 120 U | -- | < 0.10 UJ |
| 114-MW72D-Port3 | 114-MW72D-116.0-119.0-20230927 | 9/27/2023 | 117.5 | N | 4602890621 | Bedrock Monitoring | Bedrock | 57.8 | 59.0 | 56.5 | 60.9 | -9.9 | 4.66 | 12.75 | 8.058 | 15.86 | 1.52 | -- | 45.9 | 1.91 J | -- | -- | < 120 U | -- | < 0.10 UJ |
| 114-MW72D-Port3 | 114-MW72D-116-119-20231220 | 12/20/2023 | 117.5 | N | JD79285 | Bedrock Monitoring | Bedrock | **72.1** | **75.1** | **78** | **76** | -240.1 | 5.74 | 12.99 | 8.46 | 4.5 | 20.2 | -- | 43.4 | < 2.4 UB | -- | -- | < 250 U | < 10 U | < 0.20 UJ |
| 114-MW72D-Port3 | 114-MW72D-116-119-20240319 | 3/19/2024 | 117.5 | N | JD84758 | Bedrock Monitoring | Bedrock | -- | **78.0 J** | -- | **130 J** | -182.9 | 1.84 | 12.77 | 9.38 | 13.7 | 1.05 | -- | 46.5 | 2.1 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW72D-Port3 | 114-MW72D-116-119-20240621 | 6/21/2024 | 117.5 | N | JD90886 | Bedrock Monitoring | Bedrock | 26.6 | **168** | 30 | **110** | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | -- | 27.1 | 9.2 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW72D-Port3 | 114-MW72D-116-119-20240813 | 8/13/2024 | 117.5 | N | JD93987 | Bedrock Monitoring | Bedrock | -- | **79.2** | -- | **84** | -160.8 | 1.55 | 12.56 | 8.32 | 19.9 | 4.05 | -- | 27.1 | 3.3 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW72D-Port3 | 114-MW72D-116-119-20240919 | 9/19/2024 | 117.5 | N | JD96459 | Bedrock Monitoring | Bedrock | -- | **89.0** | -- | **93** | -127.2 | 1.21 | 12.59 | 7.81 | 21.2 | 1.1 | -- | 23.3 J+ | 3.8 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW72D-Port3 | 114-MW72D-116-119-20241217 | 12/17/2024 | 117.5 | N | JE2865 | Bedrock Monitoring | Bedrock | -- | **145** | -- | **150** | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | -- | 27.8 | 5.6 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW72D-Port4 | 114-MW72D-123-126-20220421 | 4/21/2022 | 124.5 | N | 4602567051 | N/A | Bedrock | -- | **994** | -- | **247 J** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW72D-Port4 | 114-MW72D-123-126-20220603 | 6/3/2022 | 124.5 | N | 4602593611 | N/A | Bedrock | -- | 18.0 | -- | 12.6 | -- | 4.5 | -- | -- | -- | -- | -- | 10.6 | -- | -- | -- | -- | -- | -- |
| 114-MW72D-Port4 | 114-MW72D-123-126-20220705 | 7/5/2022 | 124.5 | N | 4602613181 | N/A | Bedrock | -- | 12.8 | -- | < 10.0 U | -- | -- | -- | -- | -- | -- | -- | 13.1 | -- | -- | -- | -- | -- | -- |
| 114-MW72D-Port4 | 114-MW72D-123-126-20230627 | 6/27/2023 | 124.5 | N | 4602831931 | N/A | Bedrock | -- | 23.4 | -- | 22.4 | -108.9 | 1.92 | 12.46 | 7.105 | 19.54 | 0.96 | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW72D-Port4 | 114-MW72D-123-126-20230627 | 6/27/2023 | 124.5 | N | 4602831932 | N/A | Bedrock | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 31.7 | 2.68 | -- | -- | < 120 U | -- | < 0.10 UHF |
| 114-MW72D-Port4 | 114-MW72D-123-126-20230726 | 7/26/2023 | 124.5 | N | 4602849651 | Bedrock Monitoring | Bedrock | -- | 69.1 | -- | 63.5 | -176 | 7.89 | 12.94 | 7.57 | 24.88 | 3.1 | -- | 14.6 J- | 2.88 | -- | -- | < 120 U | -- | < 0.10 UJ |
| 114-MW72D-Port4 | 114-MW72D-123.0-126.0-20230927 | 9/27/2023 | 124.5 | N | 4602890621 | Bedrock Monitoring | Bedrock | 21.3 J | 23.2 J | 42.1 J | 35.5 J | -36.2 | 4.22 | 12.72 | 7.72 | 16.25 | 1.04 | -- | 50.8 | 2.05 J | -- | -- | < 120 U | -- | < 0.10 UJ |
| 114-MW72D-Port4 | 114-MW72D-123-126-20231220 | 12/20/2023 | 124.5 | N | JD79285 | Bedrock Monitoring | Bedrock | 33.7 J | 36.3 | 55 J | 36 J | -255.6 | 3.83 | 12.92 | 8.36 | 4.6 | 24.5 | -- | 37.1 | < 2.5 UB | -- | -- | < 250 U | < 10 U | < 0.20 UJ |
| 114-MW72D-Port4 | 114-MW72D-123-126-20240319 | 3/19/2024 | 124.5 | N | JD84758 | Bedrock Monitoring | Bedrock | -- | 44.0 J | -- | **120 J** | -195.8 | 2.37 | 12.77 | 5.25 | 13.7 | 3.02 | -- | 57.1 | 2.3 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW72D-Port4 | 114-MW72D-123-126-20240621 | 6/21/2024 | 124.5 | N | JD90886 | Bedrock Monitoring | Bedrock | 10.6 | **125** | 19 | 20 | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | -- NEV | -- | 24.3 | 6.8 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW72D-Port4 | 114-MW72D-123-126-20240813 | 8/13/2024 | 124.5 | N | JD93987 | Bedrock Monitoring | Bedrock | -- | **72.6** | -- | **95** | -166 | 1.43 | 12.59 | 8.36 | 19.9 | 9.96 | -- | 29.7 | 3.1 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW72D-Port4 | 114-MW72D-123-126-20240919 | 9/19/2024 | 124.5 | N | JD96459 | Bedrock Monitoring | Bedrock | -- | 55.1 | -- | 66 | -127.1 | 1.6 | 12.59 | 7.63 | 20.8 | 0.98 | -- | 11.8 J+ | 3.6 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW72D-Port4 | 114-MW72D-123-126-20241217 | 12/17/2024 | 124.5 | N | JE2865 | Bedrock Monitoring | Bedrock | -- | **103** | -- | **120** | -137.4 | 2.73 | 12.75 | 7.38 | 15.1 | 1.49 | -- | 27.1 | 5.5 | -- | -- | -- | -- | < 0.20 U |
| 114-MW7D | 114-MW7D-87.5-88.0 | 5/31/2019 | 87.5 - 88 | N | JC89029 | N/A | Bedrock | -- | 6.3 J | -- | 7.5 J- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW7D | 114-MW7D-87.5-20200831 | 8/31/2020 | 87.5 | N | JD12474 | N/A | Bedrock | -- | 3.6 J | -- | < 10 U | -175.70 | 0.12 | 7.46 | 2.32 | 20.49 | 27.74 | -- | 12.4 | -- | -- | -- | -- | -- | -- |
| 114-MW58C-R | 114-MW58C-R-84.5-20240214 | 2/14/2024 | 84.5 | N | JD82442 | Bedrock Monitoring | Weathered Bedrock | -- | 47.1 | -- | 56 | -515.2 | 0.46 | 12.88 | 8.34 | 12.1 | 3.51 | -- | 8.2 | 22.6 | -- | -- | -- | -- | < 0.20 U |
| 114-MW58C-R | 114-MW58C-R-84.5-20240214-X | 2/14/2024 | 84.5 | FD | JD82442 | Bedrock Monitoring | Weathered Bedrock | -- | 46.4 | -- | 50 | -- | -- | -- | -- | -- | -- | -- | 7.6 | 25.7 | -- | -- | -- | -- | < 0.20 U |
| 114-MW58C-R | 114-MW58C-R-84.5-20240617 | 6/17/2024 | 84.5 | N | JD90605 | Bedrock Monitoring | Weathered Bedrock | -- | < 10 U | -- | < 10 U | -97.2 | 3.38 | 11.14 | 0.625 | 17.4 | 9.09 | -- | 3.6 | 146 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW58C-R | 114-MW58C-R-84.5-20240919 | 9/19/2024 | 84.5 | N | JD96459 | Bedrock Monitoring | Weathered Bedrock | -- | < 10 U | -- | < 10 U | -148.6 | 0.15 | 11.75 | 1.42 | 17.7 | 0.4 | -- | 1.1 J+ | 117 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW58C-R | 114-MW58C-R-84.5-20241213 | 12/13/2024 | 84.5 | N | JE2642 | Bedrock Monitoring | Weathered Bedrock | -- | < 10 U | -- | < 10 UJ | -64.8 | 0.19 | 11.1 | 0.88 | 14.1 | 0.28 | -- | 2.3 | 149 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW60C-R | 114-MW60C-R-117.5-20240214 | 2/14/2024 | 117.5 | N | JD82442 | Bedrock Monitoring | Weathered Bedrock | -- | 29.1 | -- | 33 | -541.8 | 0.4 | 12.72 | 7.32 | 13.4 | 5.97 | -- | 13.2 | 2.2 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW60C-R | 114-MW60C-R-117.5-20240619 | 6/19/2024 | 117.5 | N | JD90728 | Bedrock Monitoring | Weathered Bedrock | -- | 59.4 | -- | 66 | -129 | 0.27 | 12.11 | 3.568 | 20.8 | 5.5 | -- | 1.0 | 13.5 JB | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW60C-R | 114-MW60C-R-117.5-20240619-X | 6/19/2024 | 117.5 | FD | JD90728 | Bedrock Monitoring | Weathered Bedrock | -- | 59.3 | -- | **70** | -- | -- | -- | -- | -- | -- | -- | 1.1 | 12.9 JB | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW60C-R | 114-MW60C-R-117.5-20240918 | 9/18/2024 | 117.5 | N | JD96352 | Bedrock Monitoring | Weathered Bedrock | -- | 68.3 | -- | **76** | -169.6 | 0.11 | 12.28 | 4.96 | 18.1 | 0.76 | -- | 1.9 J | 23.0 | -- | -- | -- | -- | < 0.20 U |
| 114-MW60C-R | 114-MW60C-R-117.5-20240918-X | 9/18/2024 | 117.5 | FD | JD96352 | B

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | | | Chromium | | | | Field Geochemical Parameters | | | | | | Laboratory Geochemical Parameters | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | Oxidation-Reduction Potential (ORP) | Oxygen, Dissolved | pH | Specific Conductivity (Field) | Temperature (Field) | Turbidity | TOTAL ORGANIC CARBON | | SULFATE | Sulfide | METHANE | IRON | MANGANESE | IRON (FERROUS) |
| | | | | | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | REDOX | DO | pH | SC-F | TEMP-F | TURB | TOC | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 | 15438-31-0 |
| | | | | | | | Fraction | D | T | D | T | T | T | T | T | T | T | D | T | T | T | T | D | D | D |
| | | | | | | | GWQS | 70 | 70 | 70 | 70 | | | | | | | | | 250 | | | 300 | 50 | |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | mv | mg/L | su | mS/cm | deg C | NTU | mg/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L | mg/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water Bearing Zone | | | | | | | | | | | | | | | | | | |
| 114-MW76D | 114-MW76D-103.75-20240705 | 7/5/2024 | 103.75 | N | JD91702 | Bedrock Monitoring | Bedrock | -- | 0.67 J | -- | < 10 U | -276.1 | 0.7 | 11.8 | 2.323 | 25.3 | 5.22 | -- | 4.4 | -- | -- | -- | -- | -- | -- |
| 114-MW76D | 114-MW76D-108.75-20240709 | 7/9/2024 | 108.75 | N | JD91859 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -330.5 | 0.28 | 11.96 | 2.395 | 22.3 | 3.6 | -- | 4.4 | -- | -- | -- | -- | -- | -- |
| 114-MW76D | 114-MW76D-108.75-20240709-X | 7/9/2024 | 108.75 | FD | JD91859 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | 4.4 | -- | -- | -- | -- | -- | -- |
| 114-MW76D | 114-MW76D-113.75-20240709 | 7/9/2024 | 113.75 | N | JD91859 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -304.8 | 1.31 | 12 | 2.372 | 22.2 | 8.37 | -- | 4.2 | -- | -- | -- | -- | -- | -- |
| 114-MW76D | 114-MW76D-118.75-20240709 | 7/9/2024 | 118.75 | N | JD91859 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -368 | 1.66 | 12 | 2.395 | 20.5 | 9.49 | -- | 4.4 | -- | -- | -- | -- | -- | -- |
| 114-MW76D | 114-MW76D-123.75-20240710 | 7/10/2024 | 123.75 | N | JD91932 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -413.6 | 3.3 | 12 | 2.33 | 21.4 | 9.63 | -- | 4.8 | -- | -- | -- | -- | -- | -- |
| 114-MW76D | 114-MW76D-103.75-20240812 | 8/12/2024 | 103.75 | N | JD93902 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -235.9 | 0.17 | 11.84 | 2.123 | 22.8 | 1.6 | -- | 4.4 | 53.6 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW76D | 114-MW76D-108.75-20240812 | 8/12/2024 | 108.75 | N | JD93902 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -254.9 | 0.09 | 11.78 | 2.111 | 24.3 | 3.32 | -- | 4.3 | 51.1 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW76D | 114-MW76D-113.75-20240813 | 8/13/2024 | 113.75 | N | JD93987 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -254.9 | 0.09 | 11.78 | 2.111 | 24.3 | 3.32 | -- | 3.8 | 57.8 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW76D | 114-MW76D-113.75-20240813-X | 8/13/2024 | 113.75 | FD | JD93987 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | 4.3 | 56.8 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW76D | 114-MW76D-118.75-20240813 | 8/13/2024 | 118.75 | N | JD93987 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -187 | 0.1 | 12.16 | 2.049 | 18.6 | 9.47 | -- | 4.1 | 56.8 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW76D | 114-MW76D-123.75-20240813 | 8/13/2024 | 123.75 | N | JD93987 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -119 | 0.1 | 12.09 | 2.039 | 20.2 | 9.22 | -- | 3.8 | 56.4 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW76D | 114-MW76D-103.75-20240916 | 9/16/2024 | 103.75 | N | JD96195 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -147.5 | 0.31 | 11.8 | 1.80 | 19.3 | 2.49 | -- | 1.7 | 62.6 J | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW76D | 114-MW76D-108.75-20240916 | 9/16/2024 | 108.75 | N | JD96195 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -126 | 0.22 | 11.81 | 1.82 | 21 | 3.23 | -- | 2.8 | 63.3 J | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW76D | 114-MW76D-113.75-20240917 | 9/17/2024 | 113.75 | N | JD96274 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -272.5 | 0.23 | 11.94 | 1.57 | 19.3 | 6.64 | -- | < 2.0 U | 65.5 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW76D | 114-MW76D-118.75-20240917 | 9/17/2024 | 118.75 | N | JD96274 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -321.7 | 0.13 | 11.91 | 1.55 | 20 | 7.71 | -- | 4.5 J+ | 65.5 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW76D | 114-MW76D-123.75-20240918 | 9/18/2024 | 123.75 | N | JD96352 | Bedrock Monitoring | Bedrock | -- | 3.4 J | -- | < 10 U | -375.9 | 0.22 | 12.04 | 1.77 | 17.9 | 7.97 | -- | < 1.0 U | 63.1 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW76D | 114-MW76D-103.75-20241216 | 12/16/2024 | 103.75 | N | JE2768 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -163.9 | 0.19 | 11.84 | 1.06 | 11 | 2.27 | -- | 3.0 JB | 69.7 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW76D | 114-MW76D-108.75-20241216 | 12/16/2024 | 108.75 | N | JE2768 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -189.2 | 0.32 | 11.93 | 1.08 | 11.4 | 4.43 | -- | 3.2 JB | 68.7 | -- | -- | -- | -- | < 0.20 UJ |
| 114-MW76D | 114-MW76D-113.75-20241217 | 12/17/2024 | 113.75 | N | JE2865 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -173.9 | 0.2 | 11.93 | 1.11 | 14 | 4.76 | -- | 3.2 J+ | 70.0 | -- | -- | -- | -- | < 0.20 U |
| 114-MW76D | 114-MW76D-118.75-20241217 | 12/17/2024 | 118.75 | N | JE2865 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -187.5 | 0.2 | 1.85 | 1.12 | 15.2 | 1.95 | -- | 2.8 J+ | 70.4 | -- | -- | -- | -- | < 0.20 U |
| 114-MW76D | 114-MW76D-123.75-20241218 | 12/18/2024 | 123.75 | N | JE2940 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -182.8 | 0.38 | 11.74 | 1.20 | 14.8 | 8.03 | -- | 2.9 | 71.7 | -- | -- | -- | -- | < 0.20 U |
| 114-MW76D | 114-MW76D-123.75-20241218-X | 12/18/2024 | 123.75 | FD | JE2940 | Bedrock Monitoring | Bedrock | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | 3.0 | 71.7 | -- | -- | -- | -- | < 0.20 U |

**Appendix A-1**
**Groundwater Analytical Results - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

**Notes:**

1. There is no established NJ GWQS for hexavalent chromium. Results are compared to the 70 ug/L GWQS for total chromium.

2. Samples collected as part of treatment monitoring events, or other miscellaneous purposes and not used in remedial decision making, are not subject to data validation.

| | |
|---|---|
| < 10.0 U | Constituent not detected at concentration greater than the sample reporting limit. |
| 13.6 | Constituent detected at concentration greater than the sample reporting limit. |
| **311** | Constituent detected at concentration greater than the applicable NJ GWQS. |

**Abbreviations:**

| | |
|---|---|
| bTOIC | below top of inner casing |
| CAS-RN | Chemical Abstracts Service Registry Number |
| D | dissolved |
| deg C | degree Celsius |
| FD | field duplicate |
| ft | feet |
| GWQS | Groundwater Quality Standard(s) |
| mg/L | milligrams per liter |
| mS/cm | micro Siemens per centimeter |
| mv | millivolts |
| N | normal sample type |
| NA | not applicable |
| NEV | not enough volume |
| NM | not measured |
| NTU | nephelometric turbidity units |
| OR | over range |
| ORP | oxidation-reduction potential |
| SDG | sample delivery group |
| su | standard pH units |
| T | total |
| TOC | total organic carbon |
| ug/L | micrograms per liter |
| -- | analyte not tested |
| ** | suspect field measurement due to instrument error |
| *** | Turbidity meter on Aquatroll 600 was malfunctioning. Turbidity was checked with a calibrated Lamotte. |

**Data Qualifiers:**

| | |
|---|---|
| B | Indicates the analyte was detected in the blank but not greater than the sample reporting limit. |
| F1 | Indicates the matrix spike and/or matrix spike duplicate recovery exceeds control limits. |
| F2 | Indicates the matrix spike and/or matrix spike duplicate relative percent difference exceeds control limits. |
| H | Indicates the analysis was performed outside of the sample holding time. |
| J | The compound was positively identified; however, the associated numerical value is an estimated concentration only. |
| J- | Indicates the analyte was positively identified; the associated numerical value is an estimated quantity with a potential low bias. |
| J+ | Indicates the analyte was positively identified; the associated numerical value is an estimated quantity with a potential high bias. |
| JB | Indicates the analyte concentration is greater than three times, but less than or equal to ten times the concentration in the associated method/prep blank. The presence of that analyte in the sample is considered "real". The concentration is quantitatively qualified (JB) due to method blank contamination. |
| R | The sample result was rejected due to serious deficiencies; the presence or absence of the analyte could not be confirmed. |
| RA | The sample results are rejected but still considered useable. |
| U | Indicates the analyte was analyzed for but not detected. |
| UB | Indicates the analyte was detected in the sample and blank, but not above the sample reporting limit. |
| UF1 | Indicates the matrix spike and/or matrix spike duplicate recovery exceeds control limits, but analyte not detected |
| UJ | Indicates the analyte was not detected greater than the reporting limit and the reporting limit was approximate. |

**Appendix A-2**
**Groundwater Analytical Results - Volatile Organic Compounds**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

AECOM

| Analyte | | | | | | | | 1,1,1-TRICHLOROETHANE | 1,1,2,2-TETRACHLOROETHANE | 1,1,2-TRICHLOROETHANE | 1,1,2-TRICHLOROTRIFLUORO-ETHANE | 1,1-DICHLOROETHANE | 1,1-DICHLOROETHYLENE | 1,2,3-TRICHLOROBENZENE | 1,2,4-TRICHLOROBENZENE | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 1,2-DIBROMOETHANE(EDB) | 1,2-DICHLOROBENZENE | 1,2-DICHLOROETHANE | 1,2-DICHLOROPROPANE | 1,4-DICHLOROBENZENE | 2-BUTANONE (MEK) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS-RN | 71-55-6 | 79-34-5 | 79-00-5 | 76-13-1 | 75-34-3 | 75-35-4 | 87-61-6 | 120-82-1 | 96-12-8 | 106-93-4 | 95-50-1 | 107-06-2 | 78-87-5 | 106-46-7 | 78-93-3 |
| | | | | | | | Fraction | T | T | T | T | T | T | N/A | T | T | T | T | T | T | T | T |
| | | | | | | | GWQS | 30 | 1 | 3 | 20000 | 50 | 1 | N/A | 9 | 0.02 | 0.03 | 600 | 2 | 1 | 75 | 300 |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water-Bearing Zone | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result |
| **Phase I** | | | | | | | | | | | | | | | | | | | | | | |
| ***Monitoring Wells*** | | | | | | | | | | | | | | | | | | | | | | |
| GPS-MW1S | GPS-MW1S-20200811 | 8/11/2020 | 11.0 | N | JD11542 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW1S | GPS-MW1S-20201113 | 11/13/2020 | 11.0 | N | JD16259 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW1S | GPS-MW1S-20210225 | 2/25/2021 | 11.0 | N | JD20780 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | 8.4 J |
| GPS-MW1S | GPS-MW-1S-20211011 | 10/11/2021 | 11.0 | N | JD33262 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 UJ |
| GPS-MW1S | GPS-MW-1S-20211116 | 11/16/2021 | 11.0 | N | JD35372 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 UJ | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW1S | GPS-MW1S-20220223 | 2/23/2022 | 11.0 | N | JD40159 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW1S | GPS-MW1S-20220525 | 5/25/2022 | 11.0 | N | JD45473 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW1S | GPS-MW1S-DUP-20220525 | 5/25/2022 | 11.0 | FD | JD45473 | Post Treatment-FD | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW2S | GPS-MW2S-20200812 | 8/12/2020 | 10.0 | N | JD11593 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW2S | GPS-MW2S-20201113 | 11/13/2020 | 10.0 | N | JD16259 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW2S | GPS-MW2S-20210226 | 2/26/2021 | 10.0 | N | JD20896 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW2S | GPS-MW-2S-20211011 | 10/11/2021 | 10.0 | N | JD33262 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW2S | GPS-MW2S-20211115 | 11/15/2021 | 10.0 | N | JD35301 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW2S | GPS-MW2S-20220223 | 2/23/2022 | 10.0 | N | JD40159 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW2S | GPS-MW2S-20220525 | 5/25/2022 | 10.0 | N | JD45473 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW2S | GPS-MW2S-20200812 | 8/12/2020 | 11.0 | N | JD11593 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW3S | GPS-MW3S-20201111 | 11/11/2020 | 11.0 | N | JD16049 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 UJ** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW3S | GPS-MW3S-20210222 | 2/22/2021 | 11.0 | N | JD20592 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW3S | GPS-MW-3S-20211011 | 10/11/2021 | 11.0 | N | JD33262 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW3S | GPS-MW-3S-20211116 | 11/16/2021 | 11.0 | N | JD35372 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 UJ | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW3S | GPS-MW3S-20220223 | 2/23/2022 | 11.0 | N | JD40159 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW3S | GPS-MW3S-20220523 | 5/23/2022 | 11.0 | FD | JD45334 | Post Treatment-FD | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW7S | GPS-MW7S-20200814 | 8/14/2020 | 11.0 | N | JD11773 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW7S | GPS-MW7S-20201113 | 11/13/2020 | 11.0 | N | JD16259 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW7S | GPS-MW7S-20210223 | 2/23/2021 | 11.0 | N | JD20642 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | 15.4 |
| GPS-MW7S | GPS-MW7S-20210226 | 2/26/2021 | 11.0 | N | JD20896 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW7S | GPS-MW7S_20210930 | 9/30/2021 | 11.0 | N | JD32569 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW7S | GPS-MW7S-20211115 | 11/15/2021 | 11.0 | N | JD35301 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW7S | GPS-MW7S-20220223 | 2/23/2022 | 11.0 | N | JD40159 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW7S | GPS-MW7S-20220524 | 5/24/2022 | 11.0 | N | JD45395 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1A-MW101I | 114-P1A-MW101I-20200817 | 8/17/2020 | 30.0 | N | JD11849 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1A-MW101I | 114-P1A-MW101I-20201112 | 11/12/2020 | 30.0 | N | JD16144 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1A-MW101I | 114-P1A-MW101I-20210225 | 2/25/2021 | 30.0 | N | JD20780 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1B-MW101I | 114-P1B-MW101I-20200817 | 8/17/2020 | 28.0 | N | JD11849 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1B-MW101I | 114-P1B-MW101I-20201112 | 11/12/2020 | 28.0 | N | JD16144 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1B-MW101I | 114-P1B-MW101I-20210224 | 2/24/2021 | 28.0 | N | JD20709 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1B-MW101I | 114-P1B-MW101I-20210929 | 9/29/2021 | 28.0 | N | JD32460 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 2.0 U | **< 5.0 U** | **< 2.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U |
| 114-P1B-MW101I | 114-P1B-MW101I-20211117 | 11/17/2021 | 28.0 | N | JD35453 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1B-MW102I | 114-P1B-MW102I-20200812 | 8/12/2020 | 29.0 | N | JD11593 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1B-MW102I | 114-P1B-MW102I-DUP-20201112 | 11/12/2020 | 29.0 | FD | JD16144 | Post Treatment-FD | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1B-MW102I | 114-P1B-MW102I-20201112 | 11/12/2020 | 29.0 | N | JD16144 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1B-MW102I | 114-P1B-MW102I-20210929 | 9/29/2021 | 29.0 | N | JD32460 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | **< 5.0 U** | **< 2.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U |
| 114-P1B-MW102I | 114-P1B-MW-102I-20211118 | 11/18/2021 | 29.0 | N | JD35530 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1B-MW102I | 114-P1B-MW102I-20220222 | 2/22/2022 | 29.0 | N | JD40096 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1B-MW102I | 114-P1B-MW102I-20220524 | 5/24/2022 | 29.0 | N | JD45395 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 2.0 U | **< 5.0 U** | **< 2.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 UJ |
| 114-P1C-MW101I | 114-P1C-MW101I-20200811 | 8/11/2020 | 30.0 | N | JD11542 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1C-MW101I | 114-P1C-MW101I-20201112 | 11/12/2020 | 30.0 | N | JD16144 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1C-MW101I | 114-P1C-MW-1101-20201112 | 11/12/2020 | 30.0 | N | JD11593 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1C-PZ1 | 114-P1C-PZ1-20200812 | 8/12/2020 | 31.0 | N | JD11593 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1C-PZ1 | 114-P1C-PZ1-20201110 | 11/10/2020 | 31.0 | N | JD15969 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | 26.1 |
| 114-P1C-PZ1 | 114-P1C-PZ1-20210225 | 2/25/2021 | 31.0 | N | JD20780 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | 9.7 J |
| 114-P1C-PZ1 | 114-P1C-PZ120210928 | 9/28/2021 | 31.0 | N | JD32334 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 2.0 U | **< 5.0 U** | **< 2.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U |
| 114-P1C-PZ1 | 114-P1C-PZ1-20211117 | 11/17/2021 | 31.0 | N | JD35453 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1C-PZ1 | 114-P1C-PZ1-20220223 | 2/23/2022 | 31.0 | N | JD40159 | Post Treatment | Intermediate | **< 50 U** | **< 50 U** | **< 50 U** | < 250 U | < 50 U | **< 50 U** | < 50 U | **< 50 U** | **< 100 UJ** | **< 50 U** | < 50 U | **< 50 U** | **< 50 U** | < 50 U | **23700** |
| 114-P1C-PZ2 | 114-P1C-PZ2-20200812 | 8/12/2020 | 25.0 | N | JD11593 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 UJ** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1C-PZ2 | 114-P1C-PZ2-20201110 | 11/10/2020 | 25.0 | N | JD15969 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | 288 |
| 114-P1C-PZ2 | 114-P1C-PZ220210928 | 9/28/2021 | 25.0 | N | JD32334 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 2.0 U | **< 5.0 U** | **< 2.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U |
| 114-P1C-PZ2 | 114-P1C-PZ2-20211117 | 11/17/2021 | 25.0 | N | JD35453 | Post Treatment | Intermediate | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 5.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | **< 2.0 UJ** | **< 1.0 UJ** | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 10 UJ |
| 114-P1C-PZ2 | 114-P1C-PZ2-20220222 | 2/22/2022 | 25.0 | N | JD40096 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1C-PZ2 | 114-P1C-PZ2-20220526 | 5/26/2022 | 25.0 | N | JD45556 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-1I | 114-P1-MW-1I-20200810 | 8/10/2020 | 30.4 | N | JD11480 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-1I | 114-P1-MW1I-20201110 | 11/10/2020 | 30.4 | N | JD15969 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-1I | 114-P1-MW-1I-20210223 | 2/23/2021 | 30.4 | N | JD20642 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-1I | 114-P1-MW-1I-20210930 | 9/30/2021 | 30.4 | N | JD32569 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-1I | 114-P1-MW-1I-20211118 | 11/18/2021 | 30.4 | N | JD35530 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-1I | 114-P1-MW-1I-20220222 | 2/22/2022 | 30.4 | N | JD40096 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-1I | 114-P1-MW-1I-20220523 | 5/23/2022 | 30.4 | N | JD45334 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-2D | 114-P1-MW-2D-20200811 | 8/11/2020 | 34.6 | N | JD11542 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-2D | 114-P1-MW-2D-20201110 | 11/10/2020 | 34.6 | N | JD15969 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-2D | 114-P1-MW2D-20210223 | 2/23/2021 | 34.6 | N | JD20642 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-2D | 114-P1-MW-2D-20210930 | 9/30/2021 | 34.6 | N | JD32569 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-2D | 114-P1-MW-2D-20211118 | 11/18/2021 | 34.6 | N | JD35530 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-2D | 114-P1-MW-2D-20220221 | 2/21/2022 | 34.6 | N | JD40060 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-2D | 114-P1-MW-2D-20220525 | 5/25/2022 | 34.6 | N | JD45473 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-3I | 114-P1-MW-3I-20200810 | 8/10/2020 | 32.7 | N | JD11480 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | 0.99 J | 0.73 J | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-3I | 114-P1-MW-3I-20201109 | 11/9/2020 | 32.7 | N | JD15931 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | 0.96 J | **1.1** | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-3I | 114-P1-MW3I-20210223 | 2/23/2021 | 32.7 | N | JD20642 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | 1.1 | **1.1** | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-3I | 114-P1-MW-3I-20210927 | 9/27/2021 | 32.7 | N | JD32281 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | 0.64 J | 0.73 J | < 2.0 U | < 2.0 U | **< 5.0 U** | **< 2.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U |
| 114-P1-MW-3I | 114-P1-MW-3I-20211117 | 11/17/2021 | 32.7 | N | JD35453 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | 0.64 J | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-3I | 114-P1-MW-3I-20220221 | 2/21/2022 | 32.7 | N | JD40060 | Post Treatment | Intermediate | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-3I | 114-P1-MW-3I-20220523 | 5/23/2022 | 32.

**Appendix A-2**
**Groundwater Analytical Results - Volatile Organic Compounds**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

AECOM

| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water-Bearing Zone | Analyte | 4-METHYL-2-PENTANONE (MIBK) | ACETONE | BENZENE | BROMODICHLORO-METHANE | BROMOMETHANE | CARBON DISULFIDE | CARBON TETRACHLORIDE | CHLOROBENZENE | CHLOROBROMO-METHANE | CHLORODIBROMO-METHANE | CHLOROETHANE | CHLOROFORM | CHLOROMETHANE | CIS-1,2-DICHLOROETHENE | CIS-1,3-DICHLOROPROPENE | CYCLOHEXANE | DICHLORODIFLUOROMETHANE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | CAS-RN | 108-10-1 | 67-64-1 | 71-43-2 | 75-27-4 | 74-83-9 | 75-15-0 | 56-23-5 | 108-90-7 | 74-97-5 | 124-48-1 | 75-00-3 | 67-66-3 | 74-87-3 | 156-59-2 | 10061-01-5 | 110-82-7 | 75-71-8 |
| | | | | | | | | Fraction | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T |
| | | | | | | | | GWQS | N/A | 6000 | 1 | 1 | 10 | 700 | 1 | 50 | N/A | 1 | 5 | 70 | N/A | 70 | N/A | N/A | 1000 |
| | | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| | | | | | | | | | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result |
| **Phase I** | | | | | | | | | | | | | | | | | | | | | | | | | |
| ***Monitoring Wells*** | | | | | | | | | | | | | | | | | | | | | | | | | |
| GPS-MW1S | GPS-MW1S-20200811 | 8/11/2020 | 11.0 | N | JD11542 | Post Treatment | Shallow | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW1S | GPS-MW1S-20201113 | 11/13/2020 | 11.0 | N | JD16259 | Post Treatment | Shallow | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW1S | GPS-MW1S-20210225 | 2/25/2021 | 11.0 | N | JD20780 | Post Treatment | Shallow | | < 5.0 U | 11.4 | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW1S | GPS-MW-1S-20211011 | 10/11/2021 | 11.0 | N | JD33262 | Post Treatment | Shallow | | < 5.0 UJ | < 10 UJ | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW1S | GPS-MW-1S-20211116 | 11/16/2021 | 11.0 | N | JD35372 | Post Treatment | Shallow | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | 0.73 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW1S | GPS-MW1S-20220223 | 2/23/2022 | 11.0 | N | JD40159 | Post Treatment | Shallow | | < 5.0 U | < 10 U | 1.0 | < 1.0 U | < 2.0 U | 1.4 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW1S | GPS-MW1S-20220525 | 5/25/2022 | 11.0 | N | JD45473 | Post Treatment | Shallow | | < 5.0 U | 3.2 J | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW1S | GPS-MW1S-DUP-20220525 | 5/25/2022 | 11.0 | FD | JD45473 | Post Treatment-FD | Shallow | | < 5.0 U | 3.4 J | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW2S | GPS-MW2S-20200812 | 8/12/2020 | 10.0 | N | JD11593 | Post Treatment | Shallow | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW2S | GPS-MW2S-20201113 | 11/13/2020 | 10.0 | N | JD16259 | Post Treatment | Shallow | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW2S | GPS-MW2S-20210226 | 2/26/2021 | 10.0 | N | JD20896 | Post Treatment | Shallow | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | 0.62 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW2S | GPS-MW-2S-20211011 | 10/11/2021 | 10.0 | N | JD33262 | Post Treatment | Shallow | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | 0.62 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW2S | GPS-MW2S-20211115 | 11/15/2021 | 10.0 | N | JD35301 | Post Treatment | Shallow | | < 5.0 U | < 10 UJ | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW2S | GPS-MW2S-20220223 | 2/23/2022 | 10.0 | N | JD40159 | Post Treatment | Shallow | | < 5.0 U | 3.4 J | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW2S | GPS-MW2S-20220525 | 5/25/2022 | 10.0 | N | JD45473 | Post Treatment | Shallow | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | 0.55 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW3S | GPS-MW3S-20200812 | 8/12/2020 | 11.0 | N | JD11593 | Post Treatment | Shallow | | < 5.0 U | < 10 U | 0.81 | < 1.0 U | < 2.0 U | 3.9 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW3S | GPS-MW3S-20201111 | 11/11/2020 | 11.0 | N | JD16049 | Post Treatment | Shallow | | < 5.0 U | < 10 UJ | 0.79 | < 1.0 U | < 2.0 U | 3.2 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW3S | GPS-MW3S-20210222 | 2/2/2021 | 11.0 | N | JD20592 | Post Treatment | Shallow | | < 5.0 U | < 10 UJ | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW3S | GPS-MW-3S-20211011 | 10/11/2021 | 11.0 | N | JD33262 | Post Treatment | Shallow | | < 5.0 U | < 10 U | 0.89 | < 1.0 U | < 2.0 U | 6.8 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW3S | GPS-MW-3S-20211116 | 11/16/2021 | 11.0 | N | JD35372 | Post Treatment | Shallow | | < 5.0 U | < 10 U | 0.77 | < 1.0 U | < 2.0 U | 6.2 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 UJ |
| GPS-MW3S | GPS-MW3S-20220223 | 2/23/2022 | 11.0 | N | JD40159 | Post Treatment | Shallow | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW3S | GPS-MW3S-20220523 | 5/23/2022 | 11.0 | N | JD45334 | Post Treatment | Shallow | | < 5.0 U | 4.6 J | 0.85 | < 1.0 U | < 2.0 U | 1.3 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 UJ | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW3S | GPS-MW3S-DUP-20220523 | 5/23/2022 | 11.0 | FD | JD45334 | Post Treatment-FD | Shallow | | 1.9 J | 4.4 J | 0.94 | < 1.0 U | < 2.0 U | 1.5 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW7S | GPS-MW7S-20200814 | 8/14/2020 | 11.0 | N | JD11773 | Post Treatment | Shallow | | < 5.0 U | < 10 U | 0.45 J | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 UJ | < 2.0 UJ |
| GPS-MW7S | GPS-MW7S-20201113 | 11/13/2020 | 11.0 | N | JD16259 | Post Treatment | Shallow | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | 0.90 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW7S | GPS-MW7S-20210223 | 2/23/2021 | 11.0 | N | JD20642 | Post Treatment | Shallow | | 5.0 | 109 | 1.4 | < 1.0 U | < 2.0 U | 3.5 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW7S | GPS-MW7S-20210226 | 2/26/2021 | 11.0 | N | JD20896 | Post Treatment | Shallow | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | 0.69 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW7S | GPS-MW7S_20210930 | 9/30/2021 | 11.0 | N | JD32569 | Post Treatment | Shallow | | < 5.0 U | < 10 U | 0.72 | < 1.0 U | < 2.0 U | 0.63 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW7S | GPS-MW7S-20211115 | 11/15/2021 | 11.0 | N | JD35301 | Post Treatment | Shallow | | < 5.0 U | 8.8 J | 0.94 | < 1.0 U | < 2.0 U | 0.59 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW7S | GPS-MW7S-20220223 | 2/23/2022 | 11.0 | N | JD40159 | Post Treatment | Shallow | | < 5.0 U | 3.8 J | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW7S | GPS-MW7S-20220524 | 5/24/2022 | 11.0 | N | JD45395 | Post Treatment | Shallow | | < 5.0 U | 5.9 J | 0.54 | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1A-MW101I | 114-P1A-MW101I-20200817 | 8/17/2020 | 30.0 | N | JD11849 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1A-MW101I | 114-P1A-MW101I-20201112 | 11/12/2020 | 30.0 | N | JD16144 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1A-MW101I | 114-P1A-MW101I-20210225 | 2/25/2021 | 30.0 | N | JD20780 | Post Treatment | Intermediate | | < 5.0 U | 11.2 | < 0.50 U | < 1.0 U | < 2.0 U | 0.89 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1B-MW101I | 114-P1B-MW101I-20200817 | 8/17/2020 | 28.0 | N | JD11849 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1B-MW101I | 114-P1B-MW101I-20201112 | 11/12/2020 | 28.0 | N | JD16144 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1B-MW101I | 114-P1B-MW101I-20210224 | 2/24/2021 | 28.0 | N | JD20709 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1B-MW101I | 114-P1B-MW101I-20210929 | 9/29/2021 | 28.0 | N | JD32460 | Post Treatment | Intermediate | | < 5.0 U | < 25 UJ | < 1.0 U | < 1.0 U | < 5.0 UJ | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 UJ | < 1.0 UJ | < 2.0 UJ | < 1.0 UJ | < 2.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 2.0 UJ |
| 114-P1B-MW101I | 114-P1B-MW101I-20211117 | 11/17/2021 | 28.0 | N | JD35453 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1B-MW102I | 114-P1B-MW102I-20200812 | 8/12/2020 | 29.0 | N | JD11593 | Post Treatment | Intermediate | | < 5.0 U | 8.9 J | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1B-MW102I | 114-P1B-MW102I-DUP-20201112 | 11/12/2020 | 29.0 | FD | JD16144 | Post Treatment-FD | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1B-MW102I | 114-P1B-MW102I-20201112 | 11/12/2020 | 29.0 | N | JD16144 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1B-MW102I | 114-P1B-MW102I-20210929 | 9/29/2021 | 29.0 | N | JD32460 | Post Treatment | Intermediate | | < 5.0 U | < 25 UJ | < 1.0 U | < 1.0 U | < 5.0 UJ | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1B-MW102I | 114-P1B-MW-102I-20211118 | 11/18/2021 | 29.0 | N | JD35530 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 UJ | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1B-MW102I | 114-P1B-MW102I-20220524 | 5/24/2022 | 29.0 | N | JD40096 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1C-MW101I | 114-P1C-MW101I-20200811 | 8/11/2020 | 30.0 | N | JD11542 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1C-MW101I | 114-P1C-MW101I-20201112 | 11/12/2020 | 30.0 | N | JD16144 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1C-PZ1 | 114-P1C-PZ1-20200812 | 8/12/2020 | 31.0 | N | JD11593 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1C-PZ1 | 114-P1C-PZ1-20201110 | 11/10/2020 | 31.0 | N | JD15969 | Post Treatment | Intermediate | | < 5.0 U | 12.3 | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1C-PZ1 | 114-P1C-PZ1-20210225 | 2/25/2021 | 31.0 | N | JD20780 | Post Treatment | Intermediate | | < 5.0 U | 7.1 J | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1C-PZ1 | 114-P1C-PZ1-20210928 | 9/28/2021 | 31.0 | N | JD32334 | Post Treatment | Intermediate | | < 5.0 U | < 25 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 2.0 UJ | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 UJ |
| 114-P1C-PZ1 | 114-P1C-PZ1-20211117 | 11/17/2021 | 31.0 | N | JD35453 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1C-PZ1 | 114-P1C-PZ1-20220223 | 2/23/2022 | 31.0 | N | JD40159 | Post Treatment | Intermediate | | < 250 U | **20200** | **< 25 U** | **< 50 U** | **< 100 U** | < 100 UJ | **< 50 U** | **< 50 U** | < 50 U | **< 50 U** | **< 50 U** | **91.7** | < 50 U | < 50 U | < 50 U | < 250 U | < 100 U |
| 114-P1C-PZ2 | 114-P1C-PZ2-20200812 | 8/12/2020 | 25.0 | N | JD11593 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1C-PZ2 | 114-P1C-PZ2-20201110 | 11/10/2020 | 25.0 | N | JD15969 | Post Treatment | Intermediate | | < 5.0 U | 38.9 | < 0.50 U | < 1.0 U | < 2.0 U | 0.54 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | 1.5 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1C-PZ2 | 114-P1C-PZ2-20210928 | 9/28/2021 | 25.0 | N | JD32334 | Post Treatment | Intermediate | | < 5.0 U | < 25 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 2.0 UJ | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 UJ |
| 114-P1C-PZ2 | 114-P1C-PZ2-20211117 | 11/17/2021 | 25.0 | N | JD35453 | Post Treatment | Intermediate | | < 5.0 UJ | 3.4 J | < 0.50 UJ | < 1.0 UJ | < 2.0 UJ | < 2.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 5.0 UJ | < 2.0 UJ |
| 114-P1C-PZ2 | 114-P1C-PZ2-20220222 | 2/22/2022 | 25.0 | N | JD40096 | Post Treatment | Intermediate | | < 5.0 U | 3.8 J | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1C-PZ2 | 114-P1C-PZ2-20220526 | 5/26/2022 | 25.0 | N | JD45556 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-1I | 114-P1-MW-1I-20200810 | 8/10/2020 | 30.4 | N | JD11480 | Post Treatment | Intermediate | | < 5.0 U | 7.1 J | **1.0** | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-1I | 114-P1-MW1I-20201110 | 11/10/2020 | 30.4 | N | JD15969 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | **1.2** | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-1I | 114-P1-MW1I-20210223 | 2/23/2021 | 30.4 | N | JD20642 | Post Treatment | Intermediate | | < 5.0 U | < 10 UJ | **1.2** | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-1I | 114-P1-MW-1I-20210930 | 9/30/2021 | 30.4 | N | JD32569 | Post Treatment | Intermediate | | < 5.0 U | 4.3 J | 0.89 | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-1I | 114-P1-MW-1I-20211118 | 11/18/2021 | 30.4 | N | JD35530 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | **1.2** | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-1I | 114-P1-MW-1I-20220222 | 2/22/2022 | 30.4 | N | JD40096 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | **1.2** | < 1.0 U | < 2.0 U | 0.56 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-1I | 114-P1-MW-1I-20220523 | 5/23/2022 | 30.4 | N | JD45334 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | **1.3** | < 1.0 U | < 2.0 U | 0.69 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-2D | 114-P1-MW-2D-20200811 | 8/11/2020 | 34.6 | N | JD11542 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-2D | 114-P1-MW-2D-20201110 | 11/10/2020 | 34.6 | N | JD15969 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-2D | 114-P1-MW2D-20210223 | 2/23/2021 | 34.6 | N | JD20642 | Post Treatment | Intermediate | | < 5.0 U | < 10 UJ | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-2D | 114-P1-MW-2D-20210930 | 9/30/2021 | 34.6 | N | JD32569 | Post Treatment | Intermediate | | < 5.0 U | < 10 UJ | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-2D | 114-P1-MW-2D-20211118 | 11/18/2021 | 34.6 | N | JD35530 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 UJ | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-2D | 114-P1-MW-2D-20220221 | 2/21/2022 | 34.6 | N | JD40060 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-2D | 114-P1-MW2D-20220525 | 5/25/2022 | 34.6 | N | JD45473 | Post Treatment | Intermediate |

| | | | | | | | | Analyte | DICHLOROMETHANE | ETHYLBENZENE | ISOPROPYLBENZENE | M+P-XYLENE | M-DICHLOROBENZENE | METHYL ACETATE | METHYL N-BUTYL KETONE | METHYLCYCLOHEXANE | METHYL-TERT-BUTYL ETHER | O-XYLENE | STYRENE (MONOMER) | TETRACHLOROETHENE (PCE) | TOLUENE | TRANS-1,2-DICHLOROETHENE | TRANS-1,3-DICHLOROPROPENE | TRIBROMOMETHANE | TRICHLOROETHYLENE (TCE) | TRICHLOROFLUOROMETHANE | VINYL CHLORIDE | XYLENES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | CAS-RN | 75-09-2 | 100-41-4 | 98-82-8 | M+P-XYLENE | 541-73-1 | 79-20-9 | 591-78-6 | 108-87-2 | 1634-04-4 | 95-47-6 | 100-42-5 | 127-18-4 | 108-88-3 | 156-60-5 | 10061-02-6 | 75-25-2 | 79-01-6 | 75-69-4 | 75-01-4 | 1330-20-7 |
| | | | | | | | | Fraction | T | T | T | N/A | T | T | T | N/A | T | T | T | T | T | T | T | T | T | T | T |
| | | | | | | | | GWQS | 3 | 700 | 700 | N/A | 600 | 7000 | 300 | N/A | 70 | N/A | 100 | 1 | 600 | 100 | N/A | 4 | 1 | 2000 | 1 | 1000 |
| | | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water-Bearing Zone | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result |
| **Phase I** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ***Monitoring Wells*** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GPS-MW1S | GPS-MW1S-20200811 | 8/11/2020 | 11.0 | N | JD11542 | Post Treatment | Shallow | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | 0.80 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW1S | GPS-MW1S-20201113 | 11/13/2020 | 11.0 | N | JD16259 | Post Treatment | Shallow | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | 0.78 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW1S | GPS-MW1S-20210225 | 2/25/2021 | 11.0 | N | JD20780 | Post Treatment | Shallow | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW1S | GPS-MW-1S-20211011 | 10/11/2021 | 11.0 | N | JD33262 | Post Treatment | Shallow | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | 1.1 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW1S | GPS-MW-1S-20211116 | 11/16/2021 | 11.0 | N | JD35372 | Post Treatment | Shallow | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | 1.0 | < 1.0 U | 0.62 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW1S | GPS-MW1S-20220223 | 2/23/2022 | 11.0 | N | JD40159 | Post Treatment | Shallow | < 2.0 U | 1.3 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | 5.5 | < 1.0 U | 1.9 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW1S | GPS-MW1S-20220525 | 5/25/2022 | 11.0 | N | JD45473 | Post Treatment | Shallow | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | 0.63 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW1S | GPS-MW1S-DUP-20220525 | 5/25/2022 | 11.0 | FD | JD45473 | Post Treatment-FD | Shallow | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | 0.50 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW2S | GPS-MW2S-20200812 | 8/12/2020 | 10.0 | N | JD11593 | Post Treatment | Shallow | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW2S | GPS-MW2S-20201113 | 11/13/2020 | 10.0 | N | JD16259 | Post Treatment | Shallow | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | 0.51 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW2S | GPS-MW2S-20210226 | 2/26/2021 | 10.0 | N | JD20896 | Post Treatment | Shallow | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | 0.63 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW2S | GPS-MW-2S-20211011 | 10/11/2021 | 10.0 | N | JD33262 | Post Treatment | Shallow | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | 0.90 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW2S | GPS-MW2S-20211115 | 11/15/2021 | 10.0 | N | JD35301 | Post Treatment | Shallow | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 UJ | < 5.0 UJ | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW2S | GPS-MW2S-20220223 | 2/23/2022 | 10.0 | N | JD40159 | Post Treatment | Shallow | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW2S | GPS-MW-2S-20220525 | 5/25/2022 | 10.0 | N | JD45473 | Post Treatment | Shallow | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | 0.76 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW3S | GPS-MW3S-20200812 | 8/12/2020 | 11.0 | N | JD11593 | Post Treatment | Shallow | < 2.0 U | 1.0 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | 4.6 | < 1.0 U | 2.5 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW3S | GPS-MW3S-20201111 | 11/11/2020 | 11.0 | N | JD16049 | Post Treatment | Shallow | < 2.0 U | 0.95 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 UJ | < 5.0 U | < 1.0 U | < 1.0 U | 7.1 | < 1.0 U | 2.2 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW3S | GPS-MW3S-20210222 | 2/22/2021 | 11.0 | N | JD20592 | Post Treatment | Shallow | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 UJ | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW3S | GPS-MW-3S-20211011 | 10/11/2021 | 11.0 | N | JD33262 | Post Treatment | Shallow | < 2.0 U | 1.4 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | 7.1 | < 1.0 U | 2.6 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW3S | GPS-MW-3S-20211116 | 11/16/2021 | 11.0 | N | JD35372 | Post Treatment | Shallow | < 2.0 U | 1.0 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | 5.9 | < 1.0 U | 2.3 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW3S | GPS-MW3S-20220223 | 2/23/2022 | 11.0 | N | JD40159 | Post Treatment | Shallow | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | 1.2 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW3S | GPS-MW3S-20220523 | 5/23/2022 | 11.0 | N | JD45334 | Post Treatment | Shallow | < 2.0 U | 1.1 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 UJ | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | 5.7 | < 1.0 U | 1.7 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW3S | GPS-MW3S-DUP-20220523 | 5/23/2022 | 11.0 | FD | JD45334 | Post Treatment-FD | Shallow | < 2.0 U | 1.1 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 UJ | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | 5.5 | < 1.0 U | 1.6 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW7S | GPS-MW7S-20200814 | 8/14/2020 | 11.0 | N | JD11773 | Post Treatment | Shallow | < 2.0 U | 0.99 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 5.0 UJ | < 1.0 U | < 1.0 U | < 1.0 U | 3.4 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW7S | GPS-MW7S-20201113 | 11/13/2020 | 11.0 | N | JD16259 | Post Treatment | Shallow | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | 2.3 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW7S | GPS-MW7S-20210223 | 2/23/2021 | 11.0 | N | JD20642 | Post Treatment | Shallow | < 2.0 U | 4.0 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | 24.8 | < 1.0 U | 2.7 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW7S | GPS-MW7S-20210226 | 2/26/2021 | 11.0 | N | JD20896 | Post Treatment | Shallow | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | 0.54 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW7S | GPS-MW7S_20210930 | 9/30/2021 | 11.0 | N | JD32569 | Post Treatment | Shallow | < 2.0 U | 1.3 | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 UJ | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | 4.4 | < 1.0 U | 0.70 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW7S | GPS-MW7S-20211115 | 11/15/2021 | 11.0 | N | JD35301 | Post Treatment | Shallow | < 2.0 U | 1.4 | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 UJ | < 5.0 UJ | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | 3.9 | < 1.0 U | 0.76 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW7S | GPS-MW7S-20220223 | 2/23/2022 | 11.0 | N | JD40159 | Post Treatment | Shallow | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | 1.3 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW7S | GPS-MW7S-20220524 | 5/24/2022 | 11.0 | N | JD45395 | Post Treatment | Shallow | < 2.0 U | 1.1 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | 2.6 | < 1.0 U | 0.63 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1A-MW101I | 114-P1A-MW101I-20200817 | 8/17/2020 | 30.0 | N | JD11849 | Post Treatment | Intermediate | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 4.3 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1A-MW101I | 114-P1A-MW101I-20201112 | 11/12/2020 | 30.0 | N | JD16144 | Post Treatment | Intermediate | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 2.3 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1A-MW101I | 114-P1A-MW101I-20210225 | 2/25/2021 | 30.0 | N | JD20780 | Post Treatment | Intermediate | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 1.6 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1B-MW101I | 114-P1B-MW101I-20200817 | 8/17/2020 | 28.0 | N | JD11849 | Post Treatment | Intermediate | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 1.2 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1B-MW101I | 114-P1B-MW101I-20201112 | 11/12/2020 | 28.0 | N | JD16144 | Post Treatment | Intermediate | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 1.4 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1B-MW101I | 114-P1B-MW101I-20210224 | 2/24/2021 | 28.0 | N | JD20709 | Post Treatment | Intermediate | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 1.8 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1B-MW101I | 114-P1B-MW101I-20210929 | 9/29/2021 | 28.0 | N | JD32460 | Post Treatment | Intermediate | < 5.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 20 U | < 10 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 3.0 U |
| 114-P1B-MW101I | 114-P1B-MW101I-20211117 | 11/17/2021 | 28.0 | N | JD35453 | Post Treatment | Intermediate | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 1.8 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1B-MW101I | 114-P1B-MW101I-20220223 | 2/23/2022 | 28.0 | N | JD40159 | Post Treatment | Intermediate | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 1.6 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1B-MW101I | 114-P1B-MW101I-20220524 | 5/24/2022 | 28.0 | N | JD45395 | Post Treatment | Intermediate | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 1.6 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1B-MW101I | 114-P1B-MW101I-20220812 | 8/12/2020 | 29.0 | N | JD11593 | Post Treatment | Intermediate | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1B-MW102I | 114-P1B-MW102I-DUP-20201112 | 11/12/2020 | 29.0 | FD | JD16144 | Post Treatment-FD | Intermediate | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1B-MW102I | 114-P1B-MW102I-20201112 | 11/12/2020 | 29.0 | N | JD16144 | Post Treatment | Intermediate | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1B-MW102I | 114-P1B-MW102I-20210929 | 9/29/2021 | 29.0 | N | JD32460 | Post Treatment | Intermediate | < 5.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 20 U | < 10 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 3.0 U |
| 114-P1B-MW102I | 114-P1B-MW102I-20211118 | 11/18/2021 | 29.0 | N | JD35530 | Post Treatment | Intermediate | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1B-MW102I | 114-P1B-MW102I-20220224 | 2/24/2022 | 29.0 | N | JD40096 | Post Treatment | Intermediate | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1B-MW102I | 114-P1B-MW102I-20220524 | 5/24/2022 | 29.0 | N | JD45395 | Post Treatment | Intermediate | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1C-MW101I | 114-P1C-MW101I-20200811 | 8/11/2020 | 30.0 | N | JD11542 | Post Treatment | Intermediate | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1C-MW101I | 114-P1C-MW101I-20201112 | 11/12/2020 | 30.0 | N | JD16144 | Post Treatment | Intermediate | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1C-MW101I | 114-P1C-MW101I-20210224 | 2/24/2021 | 30.0 | N | JD20709 | Post Treatment | Intermediate | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1C-MW101I | 114-P1C-MW101I-20210929 | 9/29/2021 | 30.0 | N | JD32460 | Post Treatment | Intermediate | < 5.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 20 U | < 10 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 UJ | < 3.0 U |
| 114-P1C-MW101I | 114-P1C-MW101I-20211117 | 11/17/2021 | 30.0 | N | JD35453 | Post Treatment | Intermediate | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1C-PZ1 | 114-P1C-PZ1-20200812 | 8/12/2020 | 31.0 | N | JD11593 | Post Treatment | Intermediate | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1C-PZ1 | 114-P1C-PZ1-20201110 | 11/10/2020 | 31.0 | N | JD15969 | Post Treatment | Intermediate | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 UJ | < 5.0 U | < 5.0 UJ | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1C-PZ1 | 114-P1C-PZ1-20210225 | 2/25/2021 | 31.0 | N | JD20780 | Post Treatment | Intermediate | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1C-PZ1 | 114-P1C-PZ1-20210928 | 9/28/2021 | 31.0 | N | JD32324 | Post Treatment | Intermediate | < 5.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 20 U | < 10 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 3.0 U |
| 114-P1C-PZ1 | 114-P1C-PZ1-20211117 | 11/17/2021 | 31.0 | N | JD35453 | Post Treatment | Intermediate | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1C-PZ2 | 114-P1C-PZ2-20220223 | 2/23/2022 | 31.0 | N | JD40159 | Post Treatment | Intermediate | < 100 U | < 50 U | < 50 U | < 50 U | < 50 U | < 250 U | < 250 U | < 250 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 50 U | < 100 U | < 50 U | < 50 U |
| 114-P1C-PZ2 | 114-P1C-PZ2-20200812 | 8/12/2020 | 25.0 | N | JD11593 | Post Treatment | Intermediate | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 0.62 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1C-PZ2 | 114-P1C-PZ2-20201110 | 11/10/2020 | 25.0 | N | JD15969 | Post Treatment | Intermediate | 3.8 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 UJ | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1C-PZ2 | 114-P1C-PZ22201928 | 9/28/2021 | 25.0 | N | JD32334 | Post Treatment | Intermediate | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 20 U | < 10 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | 0.62 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 3.0 U |
| 114-P1C-PZ2 | 114-P1C-PZ2-20211117 | 11/17/2021 | 25.0 | N | JD35453 | Post Treatment | Intermediate | < 2.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 5.0 UJ | < 5.0 UJ | < 

**Appendix A-2**
**Groundwater Analytical Results - Volatile Organic Compounds**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

AECOM

| Analyte | | | | | | | | | 1,1,1-TRICHLOROETHANE | 1,1,2,2-TETRACHLOROETHANE | 1,1,2-TRICHLOROETHANE | 1,1,2-TRICHLOROTRIFLUORO-ETHANE | 1,1-DICHLOROETHANE | 1,1-DICHLOROETHYLENE | 1,2,3-TRICHLOROBENZENE | 1,2,4-TRICHLOROBENZENE | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 1,2-DIBROMOETHANE(EDB) | 1,2-DICHLOROBENZENE | 1,2-DICHLOROETHANE | 1,2-DICHLOROPROPANE | 1,4-DICHLOROBENZENE | 2-BUTANONE (MEK) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | CAS-RN | 71-55-6 | 79-34-5 | 79-00-5 | 76-13-1 | 75-34-3 | 75-35-4 | 87-61-6 | 120-82-1 | 96-12-8 | 106-93-4 | 95-50-1 | 107-06-2 | 78-87-5 | 106-46-7 | 78-93-3 |
| | | | | | | | | Fraction | T | T | T | T | T | T | N/A | T | T | T | T | T | T | T |
| | | | | | | | | GWQS | 30 | 1 | 3 | 20000 | 50 | 1 | N/A | 9 | 0.02 | 0.03 | 600 | 2 | 1 | 75 | 300 |
| | | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water-Bearing Zone | | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result |
| 114-P2A-MW101I | 114-P2A-MW101I-20220224 | 2/24/2022 | 36.0 | N | JD40291 | Post Treatment | Intermediate | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | 1.5 | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P2A-MW101I | 114-P2A-MW101I-20220525 | 5/25/2022 | 36.0 | N | JD45473 | Post Treatment | Intermediate | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **616** |
| 114-P2A-MW101I | 114-P2A-MW101I-34.0-20230418 | 4/18/2023 | 34.0 | N | 4602784511 | N/A | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW101I | 114-P2A-MW101I-39.0-20230418 | 4/18/2023 | 39.0 | N | 4602784511 | N/A | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW103I | 114-P2A-MW103I-39.0-20230412 | 4/12/2023 | 39.0 | N | 4602781101 | N/A | Intermediate | | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | -- | **4.1** | -- | -- | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-20200814 | 8/14/2020 | 35.0 | N | JD11773 | Post Treatment | Intermediate | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P2B1-MW101I | 114-P2B1-MW101I-20201112 | 11/12/2020 | 35.0 | N | JD16144 | Post Treatment | Intermediate | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P2B2-MW101I | 114-P2B2-MW101I-20200813 | 8/13/2020 | 32.0 | N | JD11673 | Post Treatment | Intermediate | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P2B2-MW101I | 114-P2B2-MW101I-20201112 | 11/12/2020 | 32.0 | N | JD16144 | Post Treatment | Intermediate | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20200817 | 8/17/2020 | 30.0 | N | JD11849 | Post Treatment | Intermediate | | < 5.0 U | **< 5.0 U** | **< 5.0 UJ** | < 25 UJ | 8.5 J | **12.3 J** | < 5.0 U | < 5.0 UJ | **< 10 UJ** | **< 5.0 UJ** | < 5.0 UJ | **< 5.0 U** | **< 5.0 U** | < 5.0 UJ | **529 J** |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20201113 | 11/13/2020 | 30.0 | N | JD16259 | Post Treatment | Intermediate | | < 5.0 U | **< 5.0 U** | **< 5.0 U** | < 25 U | 4.3 J | **< 5.0 U** | < 5.0 U | < 5.0 U | **< 10 U** | **< 5.0 U** | < 5.0 U | **< 5.0 U** | **< 5.0 U** | < 5.0 U | **483** |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20210224 | 2/24/2021 | 30.0 | N | JD20709 | Post Treatment | Intermediate | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | 3.1 | **2.1** | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **415** |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20210929 | 9/29/2021 | 30.0 | N | JD32460 | Post Treatment | Intermediate | | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | 4.2 J | **4.9 J** | < 2.0 UJ | < 2.0 UJ | **< 5.0 UJ** | **< 2.0 UJ** | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | 129 J |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20211117 | 11/17/2021 | 30.0 | N | JD35453 | Post Treatment | Intermediate | | < 2.5 U | **< 2.5 U** | < 2.5 U | < 13 U | < 2.5 U | **< 2.5 U** | < 2.5 U | < 2.5 U | **< 5.0 U** | **< 2.5 U** | < 2.5 U | **< 2.5 U** | **< 2.5 U** | < 2.5 U | < 25 U |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20220224 | 2/24/2022 | 30.0 | N | JD40291 | Post Treatment | Intermediate | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | 5.1 | **7.4** | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | 243 |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20220525 | 5/25/2022 | 30.0 | N | JD45473 | Post Treatment | Intermediate | | < 5.0 U | **< 5.0 U** | **< 5.0 U** | < 25 U | 5.0 | **8.1** | < 5.0 U | < 5.0 U | **< 10 U** | **< 5.0 U** | < 5.0 U | **< 5.0 U** | **< 5.0 U** | < 5.0 U | **4120 D** |
| 114-P2B3-MW101I | 114-P2B3-MW101I-33.6-20230411 | 4/11/2023 | 33.6 | N | 4602780811 | N/A | Intermediate | | -- | -- | -- | -- | -- | **6.4** | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B3-MW101I | 114-P2B3-MW101I-33.6-20230411-X | 4/11/2023 | 33.6 | FD | 4602780811 | N/A | Intermediate | | -- | -- | -- | -- | -- | **6.0** | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B3-MW101I | 114-P2B3-MW101I-28.6-20230411 | 4/11/2023 | 28.6 | N | 4602780811 | N/A | Intermediate | | -- | -- | -- | -- | -- | **4.9** | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B4-MW101I | 114-P2B4-MW101I-20200817 | 8/17/2020 | 44.0 | N | JD11849 | Post Treatment | Intermediate | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P2B4-MW101I | 114-P2B4-MW-101I-20211118 | 11/18/2021 | 44.0 | N | JD35530 | Post Treatment | Intermediate | | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 5.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | **< 2.0 UJ** | **< 1.0 UJ** | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 10 UJ |
| 114-P2B4-MW101I | 114-P2B4-MW-101I-20220224 | 2/24/2022 | 44.0 | N | JD40291 | Post Treatment | Intermediate | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P2B4-MW101I | 114-P2B4-MW-101I-20220525 | 5/25/2022 | 44.0 | N | JD45473 | Post Treatment | Intermediate | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P2B4-MW101I | 114-P2B4-MW101I-43.8-20230411 | 4/11/2023 | 43.8 | N | 4602780811 | N/A | Intermediate | | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B4-MW101I | 114-P2B4-MW101I-48.8-20230411 | 4/11/2023 | 48.8 | N | 4602780811 | N/A | Intermediate | | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW2I | GPS-MW2I-20200812 | 8/12/2020 | 31.0 | N | JD11593 | Post Treatment | Intermediate | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW2I | GPS-MW2I-20201113 | 11/13/2020 | 31.0 | N | JD16259 | Post Treatment | Intermediate | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW2I | GPS-MW2I-20210222 | 2/22/2021 | 31.0 | N | JD20592 | Post Treatment | Intermediate | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW2I | GPS-MW2I-20211001 | 10/1/2021 | 31.0 | N | JD32680 | Post Treatment | Intermediate | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW2I | GPS-MW2I-20211115 | 11/15/2021 | 31.0 | N | JD35301 | Post Treatment | Intermediate | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW3I | GPS-MW2I-20220223 | 2/23/2022 | 31.0 | N | JD40159 | Post Treatment | Intermediate | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW2I | GPS-MW2I-20220523 | 5/23/2022 | 31.0 | N | JD45334 | Post Treatment | Intermediate | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW3I | GPS-MW3I-20200813 | 8/13/2020 | 35.0 | N | JD11673 | Post Treatment | Intermediate | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW3I | GPS-MW3I-20201113 | 11/13/2020 | 35.0 | N | JD16259 | Post Treatment | Intermediate | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW3I | GPS-MW3I-20210226 | 2/26/2021 | 35.0 | N | JD20896 | Post Treatment | Intermediate | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | 23.1 |
| GPS-MW3I | GPS-MW3I-20211001 | 10/1/2021 | 35.0 | N | JD32680 | Post Treatment | Intermediate | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | 20.1 J |
| GPS-MW3I | GPS-MW3I-20211115 | 11/15/2021 | 35.0 | N | JD35301 | Post Treatment | Intermediate | | < 2.5 U | **< 2.5 U** | < 2.5 U | < 13 U | < 2.5 U | **< 2.5 U** | < 2.5 U | < 2.5 U | **< 5.0 U** | **< 2.5 U** | < 2.5 U | **< 2.5 U** | **< 2.5 U** | < 2.5 U | 104 |
| GPS-MW3I | GPS-MW3I-20220223 | 2/23/2022 | 35.0 | N | JD40159 | Post Treatment | Intermediate | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | 21.6 |
| GPS-MW3I | GPS-MW3I-20220523 | 5/23/2022 | 35.0 | N | JD45334 | Post Treatment | Intermediate | | < 2.5 U | **< 2.5 U** | < 2.5 U | < 13 U | < 2.5 U | **< 2.5 U** | < 2.5 U | < 2.5 U | **< 5.0 U** | **< 2.5 U** | < 2.5 U | **< 2.5 U** | **< 2.5 U** | < 2.5 U | < 25 U |
| GPS-MW5I | GPS-MW5I-20200812 | 8/12/2020 | 35.0 | N | JD11593 | Post Treatment | Intermediate | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW5I | GPS-MW5I-20201111 | 11/11/2020 | 35.0 | N | JD16049 | Post Treatment | Intermediate | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 UJ** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW5I | GPS-MW5I-20210223 | 2/23/2021 | 35.0 | N | JD20642 | Post Treatment | Intermediate | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW6I | GPS-MW6I-20200814 | 8/14/2020 | 30.0 | N | JD11773 | Post Treatment | Intermediate | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | 1.5 | **2.2** | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW6I | GPS-MW6I-20201113 | 11/13/2020 | 30.0 | N | JD16259 | Post Treatment | Intermediate | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW6I | BD-20210226 | 2/26/2021 | 30.0 | FD | JD20896 | Post Treatment | Intermediate | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW6I | GPS-MW6I-20210226 | 2/26/2021 | 30.0 | N | JD20896 | Post Treatment | Intermediate | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-1D | 114-P1-MW-1D-DUP-20200810 | 8/10/2020 | 46.4 | FD | JD11480 | Post Treatment-FD | Deep | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-1D | 114-P1-MW-1D-20200810 | 8/10/2020 | 46.4 | N | JD11480 | Post Treatment | Deep | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-1D | 114-P1-MW-1D-20201112 | 11/12/2020 | 46.4 | N | JD16144 | Post Treatment | Deep | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-1D | 114-P1-MW-1D-20210224 | 2/24/2021 | 46.4 | N | JD20709 | Post Treatment | Deep | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-1D | 114-P1-MW-1D-20210929 | 9/29/2021 | 46.4 | N | JD32460 | Post Treatment | Deep | | < 20 U | **< 20 U** | **< 20 U** | < 20 U | < 20 U | **< 20 U** | < 40 U | **< 40 U** | **< 100 U** | **< 40 U** | < 20 U | **< 20 U** | **< 20 U** | < 20 U | < 100 U |
| 114-P1-MW-1D | 114-P1-MW-1D-20211116 | 11/16/2021 | 46.4 | N | JD35372 | Post Treatment | Deep | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 UJ | < 1.0 U | < 1.0 UJ | < 1.0 UJ | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-1D | 114-P1-MW-1D-20220221 | 2/21/2022 | 46.4 | N | JD40060 | Post Treatment | Deep | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | 24.4 |
| 114-P1-MW-1D | 114-P1-MW-1D-20220523 | 5/23/2022 | 46.4 | N | JD45334 | Post Treatment | Deep | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | 151 |
| 114-P1-MW-4D | 114-P1-MW-4D-20200811 | 8/11/2020 | 56.8 | N | JD11542 | Post Treatment | Deep | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-4D | 114-P1-MW-4D-20201110 | 11/10/2020 | 56.8 | N | JD15969 | Post Treatment | Deep | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-4D | BD-20210225 | 2/25/2021 | 56.8 | FD | JD20780 | Post Treatment-FD | Deep | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-4D | 114-P1-MW-4D-20210225 | 2/25/2021 | 56.8 | N | JD20780 | Post Treatment | Deep | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-4D | 114-P1-MW-4D-20210927 | 9/27/2021 | 56.8 | N | JD32281 | Post Treatment | Deep | | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 2.0 UJ | < 2.0 UJ | **< 5.0 UJ** | **< 2.0 UJ** | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 5.0 UJ |
| 114-P1-MW-4D | 114-P1-MW-4D-20211118 | 11/18/2021 | 56.8 | N | JD35530 | Post Treatment | Deep | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 UJ** | **< 1.0 UJ** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 UJ |
| 114-P1-MW-4D | 114-P1-MW-4D-20220222 | 2/22/2022 | 56.8 | N | JD40096 | Post Treatment | Deep | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-4D | 114-P1-MW4D-20220525 | 5/25/2022 | 56.8 | N | JD45473 | Post Treatment | Deep | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-5D | 114-P1-MW-5D-20200812 | 8/12/2020 | 54.9 | N | JD11593 | Post Treatment | Deep | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | 0.79 J | 0.89 J | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-5D | 114-P1-MW-5D-20201109 | 11/9/2020 | 54.9 | N | JD15931 | Post Treatment | Deep | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | 2.0 | **2.1** | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-5D | 114-P1-MW-5D-20210224 | 2/24/2021 | 54.9 | N | JD20709 | Post Treatment | Deep | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | 0.96 J | **1.0** | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 UJ** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-5D | 114-P1-MW-5D-20210927 | 9/27/2021 | 54.9 | FD | JD32281 | Post Treatment-FD | Deep | | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | 0.59 J | 0.57 J | < 2.0 UJ | < 2.0 UJ | **< 5.0 UJ** | **< 2.0 UJ** | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 5.0 UJ |
| 114-P1-MW-5D | 114-P1-MW-5D-20210927 | 9/27/2021 | 54.9 | N | JD32281 | Post Treatment | Deep | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | 0.59 J | 0.58 J | < 2.0 U | < 2.0 U | **< 5.0 U** | **< 2.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U |
| 114-P1-MW-5D | BD-20211118 | 11/18/2021 | 54.9 | FD | JD35530 | Post Treatment-FD | Deep | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | 0.66 J | 0.61 J | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-5D | 114-P1-MW-5D-20211118 | 11/18/2021 | 54.9 | N | JD35530 | Post Treatment | Deep | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | 0.65 J | 0.69 J | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-5D | 114-P1-MW-5D-DUP-20220222 | 2/22/2022 | 54.9 | FD | JD40096 | Post Treatment-FD | Deep | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-5D | 114-P1-MW-5D-20220222 | 2/22/2022 | 54.9 | N | JD40096 | Post Treatment | Deep | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-5D | 114-P1-MW-5D-20220524 | 5/24/2022 | 54.9 | N | JD45395 | Post Treatment | Deep | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 UJ |
| 114-P1-MW-5D | 114-P1-MW-5D-47.4-20230413 | 4/13/2023 | 47.4 | N | 4602781921 | N/A | Deep | | -- | -- | -- | -- | -- | 0.48 J | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-MW-5D | 114-P1-MW-5D-52.4-20230413 | 4/13/2023 | 52.4 | N | 4602781921 | N/A | Deep | | -- | -- | -- | -- | -- | 0.40 J | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-MW-5D | 114-P1-MW-5D-57.4-20230414 | 4/14/2023 | 57.4 | N | 4602782861 | N/A | Deep | | -- | -- | -- | -- | -- | 0.85 J | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-MW-5D | 114-P1-MW-5D-62.4-20230414 | 4/14/2023 | 62.4 | N | 4602782861 | N/A | Deep | | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-20200810 | 8/10/2020 | 50.5 | N | JD11480 | Post Treatment | Deep | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-6D | 114-P1-MW-6D-20201111 | 11/11/2020 | 50.5 | N | JD16049 | Post Treatment | Deep | | 0.99 J | < 1.0 U | < 1.0 U | < 5.0 U | 1.5 | **3.0** | < 1.0 U | < 1.0 U | **< 2.0 UJ** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-6D | 114-P1-MW-6D-20210224 | 2/24/2021 | 50.5 | N | JD20709 | Post Treatment | Deep | | 1.2 | < 1.0 U | < 1.0 U | < 5.0 U | 2.0 | **5.0** | < 1.0 UJ | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-6D | 114-P1-MW-6D-20210928 | 9/28/2021 | 50.5 | N | JD32334 | Post Treatment | Deep | | < 20 U | **< 20 U** | **< 20 U** | < 20 U | < 20 U | **< 20 U** | < 40 U | **< 40 U** | **< 100 U** | **< 40 U** | < 20 U | **< 20 U** | **< 20 U** | < 20 U | < 100 U |
| 114-P1-MW-6D | 114-P1-MW-6D-20211117 | 11/17/2021 | 50.5 | N | JD35453 | Post Treatment | Deep | | 0.66 J | < 1.0 U | < 1.0 U | < 5.0 U | 1.3 | **2.5** | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-6D | 114-P1-MW-6D-20220222 | 2/22/2022 | 50.5 | N | JD40096 | Post Treatment | Deep | | 0.80 J | < 1.0 U | < 1.0 U | < 5.0 U | 1.8 | **3.6** | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-6D | 114-P1-MW-6D-20220526 | 5/26/2022 | 50.5 | N | JD45556 | Post Treatment | Deep | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | 0.71 J | **1.4** | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | 17.3 |
| 114-P1-MW-7D | 114-P1-MW-7D-20200811 | 8/11/2020 | 50.9 | N | JD11542 | Post Treatment | Deep | | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P1-MW-7D | 114-P1-MW-7D-20201111 | 11/11/2020 | 50.9 | N

**Appendix A-2**
**Groundwater Analytical Results - Volatile Organic Compounds**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

AECOM

| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water-Bearing Zone | Analyte | 4-METHYL-2-PENTANONE (MIBK) | ACETONE | BENZENE | BROMODICHLORO-METHANE | BROMOMETHANE | CARBON DISULFIDE | CARBON TETRACHLORIDE | CHLOROBENZENE | CHLORODIBROMO-METHANE | CHLORODIBROMO-METHANE | CHLOROETHANE | CHLOROFORM | CHLOROMETHANE | CIS-1,2-DICHLOROETHENE | CIS-1,3-DICHLOROPROPENE | CYCLOHEXANE | DICHLORODIFLUOROMETHANE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | CAS-RN | 108-10-1 | 67-64-1 | 71-43-2 | 75-27-4 | 74-83-9 | 75-15-0 | 56-23-5 | 108-90-7 | 74-97-5 | 124-48-1 | 75-00-3 | 67-66-3 | 74-87-3 | 156-59-2 | 10061-01-5 | 110-82-7 | 75-71-8 |
| | | | | | | | | Fraction | T | T | T | T | T | T | T | T | N/A | T | T | T | T | T | T | T | T |
| | | | | | | | | GWQS | N/A | 6000 | 1 | 1 | 10 | 700 | 1 | 50 | N/A | 1 | 5 | 70 | N/A | 70 | N/A | N/A | 1000 |
| | | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| 114-P2A-MW103I | 114-P2A-MW103I-39.0-20230412 | 4/12/2023 | 39.0 | N | 4602781101 | N/A | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-20200814 | 8/14/2020 | 35.0 | N | JD11773 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | **1.8** | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | 0.70 J | < 1.0 U | 5.4 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 UJ | < 2.0 UJ |
| 114-P2B1-MW101I | 114-P2B1-MW101I-20201112 | 11/12/2020 | 35.0 | N | JD16144 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | 1.5 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P2B2-MW101I | 114-P2B2-MW101I-20200813 | 8/13/2020 | 32.0 | N | JD11673 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P2B2-MW101I | 114-P2B2-MW101I-20201112 | 11/12/2020 | 32.0 | N | JD16144 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20200817 | 8/17/2020 | 30.0 | N | JD11849 | Post Treatment | Intermediate | | < 25 UJ | 51.6 J | **699 J** | **< 5.0 UJ** | < 10 UJ | < 10 UJ | **< 5.0 UJ** | < 5.0 UJ | < 5.0 UJ | **< 5.0 UJ** | < 5.0 UJ | < 5.0 UJ | < 5.0 UJ | < 5.0 UJ | < 5.0 UJ | < 25 UJ | < 10 UJ |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20201113 | 11/13/2020 | 30.0 | N | JD16259 | Post Treatment | Intermediate | | < 25 U | 63.4 | **525** | < 5.0 U | < 10 U | 2.5 J | **< 5.0 U** | < 5.0 U | < 5.0 U | **< 5.0 U** | < 5.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 25 U | < 10 U |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20210224 | 2/24/2021 | 30.0 | N | JD20709 | Post Treatment | Intermediate | | < 5.0 U | 87.2 | **306 D** | < 1.0 U | < 2.0 U | 1.8 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | 0.61 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20210929 | 9/29/2021 | 30.0 | N | JD32460 | Post Treatment | Intermediate | | < 5.0 UJ | 35.4 J | **360 DJ** | < 1.0 UJ | < 5.0 UJ | 1.2 J | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 2.0 UJ | < 1.0 UJ | < 2.0 UJ | 0.44 J | < 1.0 UJ | < 1.0 UJ | < 2.0 UJ |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20211117 | 11/17/2021 | 30.0 | N | JD35453 | Post Treatment | Intermediate | | < 13 U | < 25 UJ | **979 D** | **< 2.5 U** | < 5.0 U | < 5.0 U | **< 2.5 U** | < 2.5 U | < 2.5 U | **< 2.5 U** | < 2.5 U | < 2.5 UB | < 2.5 U | < 2.5 U | < 2.5 U | < 13 U | < 5.0 U |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20220224 | 2/24/2022 | 30.0 | N | JD40291 | Post Treatment | Intermediate | | < 5.0 U | 46.3 | **579 D** | < 1.0 U | < 2.0 U | 0.77 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | 0.61 J | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20220525 | 5/25/2022 | 30.0 | N | JD45473 | Post Treatment | Intermediate | | < 25 U | 838 | **482** | **< 5.0 U** | < 10 U | 2.6 J | **< 5.0 U** | < 5.0 U | < 5.0 U | **< 5.0 U** | < 5.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 25 U | < 10 U |
| 114-P2B3-MW101I | 114-P2B3-MW101I-33.6-20230411 | 4/11/2023 | 33.6 | N | 4602780811 | N/A | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B3-MW101I | 114-P2B3-MW101I-33.6-20230411-X | 4/11/2023 | 33.6 | FD | 4602780811 | N/A | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B3-MW101I | 114-P2B3-MW101I-28.6-20230411 | 4/11/2023 | 28.6 | N | 4602780811 | N/A | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B4-MW101I | 114-P2B4-MW101I-20200817 | 8/17/2020 | 44.0 | N | JD11849 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | **222 D** | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P2B4-MW101I | 114-P2B4-MW-101I-20211118 | 11/18/2021 | 44.0 | N | JD35530 | Post Treatment | Intermediate | | 1.9 J | < 10 UJ | **106 J** | < 1.0 UJ | < 2.0 UJ | 1.3 J | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 5.0 UJ | < 2.0 UJ |
| 114-P2B4-MW101I | 114-P2B4-MW-101I-20220224 | 2/24/2022 | 44.0 | N | JD40291 | Post Treatment | Intermediate | | 2.6 J | < 10 U | **97.5** | < 1.0 U | < 2.0 U | 1.1 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P2B4-MW101I | 114-P2B4-MW-101I-20220525 | 5/25/2022 | 44.0 | N | JD45473 | Post Treatment | Intermediate | | < 5.0 U | 3.2 J | **108** | < 1.0 U | < 2.0 U | 1.4 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P2B4-MW101I | 114-P2B4-MW101I-43.8-20230411 | 4/11/2023 | 43.8 | N | 4602780811 | N/A | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B4-MW101I | 114-P2B4-MW101I-48.8-20230411 | 4/11/2023 | 48.8 | N | 4602780811 | N/A | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW2I | GPS-MW2I-20200812 | 8/12/2020 | 31.0 | N | JD11593 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW2I | GPS-MW2I-20201113 | 11/13/2020 | 31.0 | N | JD16259 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW2I | GPS-MW2I-20210222 | 2/22/2021 | 31.0 | N | JD20592 | Post Treatment | Intermediate | | < 5.0 U | < 10 UJ | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW2I | GPS-MW2I-20211001 | 10/1/2021 | 31.0 | N | JD32680 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 UJ | < 2.0 U |
| GPS-MW2I | GPS-MW2I-20211115 | 11/15/2021 | 31.0 | N | JD35301 | Post Treatment | Intermediate | | < 5.0 U | 5.1 J | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW3I | GPS-MW3I-20200813 | 8/13/2020 | 35.0 | N | JD11673 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW3I | GPS-MW3I-20201113 | 11/13/2020 | 35.0 | N | JD16259 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW3I | GPS-MW3I-20210226 | 2/26/2021 | 35.0 | N | JD20896 | Post Treatment | Intermediate | | < 5.0 U | 23.6 | < 0.50 U | < 1.0 U | < 2.0 U | 0.48 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | 1.1 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW3I | GPS-MW3I-20211001 | 10/1/2021 | 35.0 | N | JD32680 | Post Treatment | Intermediate | | < 5.0 U | 18.0 J | < 0.50 U | < 1.0 U | < 2.0 U | 7.8 J | < 1.0 U | < 1.0 U | < 1.0 UJ | < 1.0 UJ | < 1.0 U | 8.0 J | < 1.0 U | < 1.0 U | < 1.0 UJ | < 1.0 UJ | < 5.0 UJ | < 2.0 U |
| GPS-MW3I | GPS-MW3I-20211115 | 11/15/2021 | 35.0 | N | JD35301 | Post Treatment | Intermediate | | < 13 U | 26.9 J | **< 1.3 U** | **< 2.5 U** | < 5.0 U | 5.7 | **< 2.5 U** | < 2.5 U | < 2.5 U | **< 2.5 U** | < 2.5 U | 6.4 | < 2.5 U | < 2.5 U | < 2.5 U | < 13 U | < 5.0 U |
| GPS-MW3I | GPS-MW3I-20220223 | 2/23/2022 | 35.0 | N | JD40159 | Post Treatment | Intermediate | | < 5.0 U | 31.3 | < 0.50 U | < 1.0 U | < 2.0 U | 5.4 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 3.8 UB | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW3I | GPS-MW3I-20220523 | 5/23/2022 | 35.0 | N | JD45334 | Post Treatment | Intermediate | | < 13 U | 16.9 J | **< 1.3 U** | **< 2.5 U** | < 5.0 U | 5.2 | **< 2.5 U** | < 2.5 U | < 2.5 U | **< 2.5 U** | < 2.5 U | < 2.5 UB | < 2.5 U | < 2.5 U | < 2.5 U | < 13 U | < 5.0 U |
| GPS-MW5I | GPS-MW5I-20200812 | 8/12/2020 | 35.0 | N | JD11593 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW5I | GPS-MW5I-20201111 | 11/11/2020 | 35.0 | N | JD16049 | Post Treatment | Intermediate | | < 5.0 U | < 10 UJ | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW5I | GPS-MW5I-20210223 | 2/23/2021 | 35.0 | N | JD20642 | Post Treatment | Intermediate | | < 5.0 U | < 10 UJ | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW6I | GPS-MW6I-20200814 | 8/14/2020 | 30.0 | N | JD11773 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | 0.43 J | < 1.0 U | < 2.0 U | 2.2 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 UJ | < 2.0 UJ |
| GPS-MW6I | GPS-MW6I-20201113 | 11/13/2020 | 30.0 | N | JD16259 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | 0.55 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW6I | BD-20210226 | 2/26/2021 | 30.0 | FD | JD20896 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW6I | GPS-MW6I-20210226 | 2/26/2021 | 30.0 | N | JD20896 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW6I | GPS-MW6I-20211113 | 11/13/2020 | 30.0 | N | JD16259 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | 0.55 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW6I | BD-20210226 | 2/26/2021 | 30.0 | FD | JD20896 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW6I | GPS-MW6I-20210226 | 2/26/2021 | 30.0 | N | JD20896 | Post Treatment | Intermediate | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-1D | 114-P1-MW-1D-DUP-20200810 | 8/10/2020 | 46.4 | FD | JD11480 | Post Treatment | Deep | | < 5.0 U | 6.6 J | 1.2 | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-1D | 114-P1-MW-1D-20200810 | 8/10/2020 | 46.4 | N | JD11480 | Post Treatment | Deep | | < 5.0 U | 6.6 J | **1.2** | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-1D | 114-P1-MW-1D-20201112 | 11/12/2020 | 46.4 | N | JD16144 | Post Treatment | Deep | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-1D | 114-P1-MW-1D-20210224 | 2/24/2021 | 46.4 | N | JD20709 | Post Treatment | Deep | | < 5.0 U | < 10 U | 0.98 | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-1D | 114-P1-MW-1D-20210929 | 9/29/2021 | 46.4 | N | JD32460 | Post Treatment | Deep | | < 100 U | < 500 U | **< 20 U** | **< 20 U** | **< 100 U** | < 40 U | **< 20 U** | < 20 U | < 20 U | **< 20 U** | **< 40 U** | < 20 U | < 40 U | < 20 U | < 20 U | < 20 U | < 40 U |
| 114-P1-MW-1D | 114-P1-MW-1D-20211116 | 11/16/2021 | 46.4 | N | JD35372 | Post Treatment | Deep | | < 5.0 U | < 10 U | **1.7** | < 1.0 U | < 2.0 U | 0.46 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 UJ |
| 114-P1-MW-1D | 114-P1-MW-1D-20220221 | 2/21/2022 | 46.4 | N | JD40060 | Post Treatment | Deep | | < 5.0 U | 14.2 | 0.64 | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-1D | 114-P1-MW-1D-20220523 | 5/23/2022 | 46.4 | N | JD45334 | Post Treatment | Deep | | < 5.0 U | 19.7 | 0.74 | < 1.0 U | < 2.0 U | 1.3 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-4D | 114-P1-MW-4D-20200811 | 8/11/2020 | 56.8 | N | JD11542 | Post Treatment | Deep | | < 5.0 U | < 10 U | **2.4** | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-4D | 114-P1-MW-4D-20201110 | 11/10/2020 | 56.8 | N | JD15969 | Post Treatment | Deep | | < 5.0 U | < 10 U | **2.0** | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-4D | BD-20210225 | 2/25/2021 | 56.8 | FD | JD20780 | Post Treatment-FD | Deep | | < 5.0 U | < 10 U | **1.3** | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-4D | 114-P1-MW-4D-20210225 | 2/25/2021 | 56.8 | N | JD20780 | Post Treatment | Deep | | < 5.0 U | < 10 U | **1.2** | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-4D | 114-P1-MW-4D-20210927 | 9/27/2021 | 56.8 | N | JD32281 | Post Treatment | Deep | | < 5.0 UJ | < 25 UJ | **1.5 J** | < 1.0 UJ | < 5.0 UJ | < 2.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 2.0 UJ | < 1.0 UJ | < 2.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 2.0 UJ |
| 114-P1-MW-4D | 114-P1-MW-4D-20211118 | 11/18/2021 | 56.8 | N | JD35530 | Post Treatment | Deep | | < 5.0 UJ | < 10 UJ | **1.1 J** | < 1.0 UJ | < 2.0 UJ | < 2.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 5.0 UJ | < 2.0 UJ |
| 114-P1-MW-4D | 114-P1-MW-4D-20220222 | 2/22/2022 | 56.8 | N | JD40096 | Post Treatment | Deep | | < 5.0 U | < 10 U | **1.2** | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-4D | 114-P1-MW4D-20220525 | 5/25/2022 | 56.8 | N | JD45473 | Post Treatment | Deep | | < 5.0 U | < 10 U | 0.47 J | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-5D | 114-P1-MW-5D-20200812 | 8/12/2020 | 54.9 | N | JD11593 | Post Treatment | Deep | | < 5.0 U | < 10 U | 0.93 | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-5D | 114-P1-MW-5D-20201109 | 11/9/2020 | 54.9 | N | JD15931 | Post Treatment | Deep | | < 5.0 U | < 10 U | **6.2** | < 1.0 U | < 2.0 UJ | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-5D | 114-P1-MW-5D-20210224 | 2/24/2021 | 54.9 | N | JD20709 | Post Treatment | Deep | | < 5.0 U | < 10 U | **5.8** | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-5D | 114-P1-MW-5D-DUP-20210927 | 9/27/2021 | 54.9 | FD | JD32281 | Post Treatment-FD | Deep | | < 5.0 UJ | < 25 UJ | **2.5 J** | < 1.0 UJ | < 5.0 UJ | < 2.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 2.0 UJ | < 1.0 UJ | < 2.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 2.0 UJ | < 2.0 UJ |
| 114-P1-MW-5D | 114-P1-MW-5D-20210927 | 9/27/2021 | 54.9 | N | JD32281 | Post Treatment | Deep | | < 5.0 U | < 25 UJ | **2.5** | < 1.0 U | < 5.0 UJ | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 2.0 U |
| 114-P1-MW-5D | BD-20211118 | 11/18/2021 | 54.9 | FD | JD35530 | Post Treatment-FD | Deep | | < 5.0 U | < 10 U | **3.3** | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-5D | 114-P1-MW-5D-20211118 | 11/18/2021 | 54.9 | N | JD35530 | Post Treatment | Deep | | < 5.0 U | < 10 U | **3.1** | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-5D | 114-P1-MW-5D-DUP-20220222 | 2/22/2022 | 54.9 | FD | JD40096 | Post Treatment-FD | Deep | | < 5.0 U | < 10 U | 0.65 | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-5D | 114-P1-MW-5D-20220222 | 2/22/2022 | 54.9 | N | JD40096 | Post Treatment | Deep | | < 5.0 U | < 10 U | 0.61 | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-5D | 114-P1-MW-5D-20220524 | 5/24/2022 | 54.9 | N | JD45395 | Post Treatment | Deep | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-5D | 114-P1-MW-5D-47.4-20230413 | 4/13/2023 | 47.4 | N | 4602781921 | N/A | Deep | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-MW-5D | 114-P1-MW-5D-52.4-20230413 | 4/13/2023 | 52.4 | N | 4602781921 | N/A | Deep | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-MW-5D | 114-P1-MW-5D-57.4-20230414 | 4/14/2023 | 57.4 | N | 4602782861 | N/A | Deep | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-MW-5D | 114-P1-MW-5D-62.4-20230414 | 4/14/2023 | 62.4 | N | 4602782861 | N/A | Deep | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P1-MW-6D | 114-P1-MW-6D-20200810 | 8/10/2020 | 50.5 | N | JD11480 | Post Treatment | Deep | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 UJ |
| 114-P1-MW-6D | 114-P1-MW-6D-20201111 | 11/11/2020 | 50.5 | N | JD16049 | Post Treatment | Deep | | < 5.0 U | < 10 UJ | **1.3** | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-6D | 114-P1-MW-6D-20210224 | 2/24/2021 | 50.5 | N | JD20709 | Post Treatment | Deep | | < 5.0 U | < 10 U | **2.1** | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1-MW-6D | 114-P1-MW-6D-20210928 | 9/28/2021 | 50.5 | N | JD32334 | Post Treatment | Deep | | < 100 U | < 500 U | **< 20 U** | **< 20 U** | **< 100 U** | < 40 U | **< 20 U** | < 20 U | < 20 U | **< 20 U** | **< 40 U** | < 20 U | < 40 UJ | < 20 U | < 20 U | < 20 U

**Appendix A-2**
**Groundwater Analytical Results - Volatile Organic Compounds**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

AECOM

| | | | | | | | | Analyte | DICHLOROMETHANE | ETHYLBENZENE | ISOPROPYLBENZENE | M+P-XYLENE | M-DICHLOROBENZENE | METHYL ACETATE | METHYL N-BUTYL KETONE | METHYLCYCLOHEXANE | METHYL-TERT-BUTYL ETHER | O-XYLENE | STYRENE (MONOMER) | TETRACHLOROETHENE (PCE) | TOLUENE | TRANS-1,2-DICHLOROETHENE | TRANS-1,3-DICHLOROPROPENE | TRIBROMOMETHANE | TRICHLOROETHYLENE (TCE) | TRICHLOROFLUOROMETHANE | VINYL CHLORIDE | XYLENES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | CAS-RN | 75-09-2 | 100-41-4 | 98-82-8 | M+P-XYLENE | 541-73-1 | 79-20-9 | 591-78-6 | 108-87-2 | 1634-04-4 | 95-47-6 | 100-42-5 | 127-18-4 | 108-88-3 | 156-60-5 | 10061-02-6 | 75-25-2 | 79-01-6 | 75-69-4 | 75-01-4 | 1330-20-7 |
| | | | | | | | | Fraction | T | T | T | N/A | T | T | T | N/A | T | T | T | T | T | T | T | T | T | T | T | T |
| | | | | | | | | GWQS | 3 | 700 | 700 | N/A | 600 | 7000 | 300 | N/A | 70 | N/A | 100 | 1 | 600 | 100 | N/A | 4 | 1 | 2000 | 1 | 1000 |
| | | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOC) | Sample Type | Lab SDG | Sample Timeframe | Water-Bearing Zone | | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result |
| 114-P2A-MW101I | 114-P2A-MW101I-20220224 | 2/24/2022 | 36.0 | N | JD40291 | Post Treatment | Intermediate | | < 2.0 U | 43.4 | 5.8 | 190 | < 1.0 U | < 5.0 U | < 5.0 U | 0.95 J | < 1.0 U | 135 | **116** | < 1.0 U | 37.5 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | 325 |
| 114-P2A-MW101I | 114-P2A-MW101I-20220525 | 5/25/2022 | 36.0 | N | JD45473 | Post Treatment | Intermediate | | < 2.0 U | 15.8 | 18.2 | 1.1 | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | 2.8 | < 1.0 U | < 1.0 U | 0.96 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | 3.9 |
| 114-P2A-MW101I | 114-P2A-MW101I-34.0-20230418 | 4/18/2023 | 34.0 | N | 4602784511 | N/A | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **150 J+** | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW101I | 114-P2A-MW101I-39.0-20230418 | 4/18/2023 | 39.0 | N | 4602784511 | N/A | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **120** | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2A-MW103I | 114-P2A-MW103I-39.0-20230412 | 4/12/2023 | 39.0 | N | 4602781101 | N/A | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **2.0** | -- | -- | -- |
| 114-P2B1-MW101I | 114-P2B1-MW101I-20200814 | 8/14/2020 | 35.0 | N | JD11773 | Post Treatment | Intermediate | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 1.2 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P2B1-MW101I | 114-P2B1-MW101I-20201112 | 11/12/2020 | 35.0 | N | JD16144 | Post Treatment | Intermediate | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 2.2 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P2B2-MW101I | 114-P2B2-MW101I-20200813 | 8/13/2020 | 32.0 | N | JD11673 | Post Treatment | Intermediate | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P2B2-MW101I | 114-P2B2-MW101I-20201112 | 11/12/2020 | 32.0 | N | JD16144 | Post Treatment | Intermediate | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20200817 | 8/17/2020 | 30.0 | N | JD11849 | Post Treatment | Intermediate | | **< 10 UJ** | 377 J | 29.5 J | 174 J | < 5.0 UJ | < 25 UJ | < 25 UJ | < 25 UJ | < 5.0 UJ | 278 J | < 5.0 UJ | **< 5.0 UJ** | 307 J | < 5.0 UJ | < 5.0 UJ | **< 5.0 UJ** | **< 5.0 UJ** | < 10 UJ | **< 5.0 UJ** | 452 J |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20201113 | 11/13/2020 | 30.0 | N | JD16259 | Post Treatment | Intermediate | | **< 10 U** | 388 | 26.6 | 162 | < 5.0 U | < 25 U | < 25 U | < 25 U | < 5.0 U | 268 | < 5.0 U | **< 5.0 U** | 242 | < 5.0 U | < 5.0 U | **< 5.0 U** | **< 5.0 U** | < 10 U | **< 5.0 U** | 430 |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20210224 | 2/24/2021 | 30.0 | N | JD20709 | Post Treatment | Intermediate | | 1.7 J | 277 D | 27.0 | 125 | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 0.58 J | 191 D | < 1.0 U | < 1.0 U | 155 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | 316 D |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20210929 | 9/29/2021 | 30.0 | N | JD32460 | Post Treatment | Intermediate | | **< 5.0 UJ** | 269 DJ | 31.3 J | 138 J | < 1.0 UJ | < 20 UJ | < 10 UJ | < 1.0 UJ | 0.56 J | 200 DJ | < 1.0 UJ | < 1.0 UJ | 162 DJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 2.0 UJ | < 1.0 UJ | 306 DJ |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20211117 | 11/17/2021 | 30.0 | N | JD35453 | Post Treatment | Intermediate | | **< 5.0 U** | 65.0 | 7.6 | < 2.5 U | < 2.5 U | < 13 U | < 13 U | < 13 U | < 2.5 U | < 2.5 U | < 2.5 U | **< 2.5 U** | < 2.5 U | < 2.5 U | < 2.5 U | < 2.5 U | **< 2.5 U** | < 5.0 U | **< 2.5 U** | < 2.5 U |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20220224 | 2/24/2022 | 30.0 | N | JD40291 | Post Treatment | Intermediate | | < 2.0 U | 373 D | 35.0 | 143 | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 1.3 | 279 D | < 1.0 U | < 1.0 U | 281 D | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | 422 D |
| 114-P2B3-MW101I | 114-P2B3-MW101I-20220525 | 5/25/2022 | 30.0 | N | JD45473 | Post Treatment | Intermediate | | **< 10 U** | 321 | 37.6 | 159 | < 5.0 U | < 25 U | < 25 U | < 25 U | < 5.0 U | 254 | < 5.0 U | **< 5.0 U** | 222 | < 5.0 U | < 5.0 U | **< 5.0 U** | **< 5.0 U** | < 10 U | **< 5.0 U** | 413 |
| 114-P2B3-MW101I | 114-P2B3-MW101I-33.6-20230411 | 4/11/2023 | 33.6 | N | 4602780811 | N/A | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B3-MW101I | 114-P2B3-MW101I-33.6-20230411-X | 4/11/2023 | 33.6 | FD | 4602780811 | N/A | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B3-MW101I | 114-P2B3-MW101I-28.6-20230411 | 4/11/2023 | 28.6 | N | 4602780811 | N/A | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B4-MW101I | 114-P2B4-MW101I-20200817 | 8/17/2020 | 44.0 | N | JD11849 | Post Treatment | Intermediate | | < 2.0 U | 60.9 | 4.6 | 2.0 | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | 6.7 | < 1.0 U | < 1.0 U | 2.1 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | 8.7 |
| 114-P2B4-MW101I | 114-P2B4-MW101I-20211118 | 11/18/2021 | 44.0 | N | JD35530 | Post Treatment | Intermediate | | < 2.0 UJ | 2.6 J | 1.4 J | 4.8 J | < 1.0 UJ | < 5.0 UJ | < 5.0 UJ | < 5.0 UJ | < 1.0 UJ | 4.8 J | < 1.0 UJ | < 1.0 UJ | 0.79 J | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 2.0 UJ | < 1.0 UJ | 9.6 J |
| 114-P2B4-MW101I | 114-P2B4-MW101I-20220224 | 2/24/2022 | 44.0 | N | JD40291 | Post Treatment | Intermediate | | < 2.0 U | 4.3 | 1.6 | 6.5 | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | 6.3 | < 1.0 U | < 1.0 U | 1.3 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | 12.8 |
| 114-P2B4-MW101I | 114-P2B4-MW101I-20220525 | 5/25/2022 | 44.0 | N | JD45473 | Post Treatment | Intermediate | | < 2.0 U | 6.2 | 1.8 | 5.9 | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | 6.0 | < 1.0 U | < 1.0 U | 1.4 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | 11.9 |
| 114-P2B4-MW101I | 114-P2B4-MW101I-43.8-20230411 | 4/11/2023 | 43.8 | N | 4602780811 | N/A | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B4-MW101I | 114-P2B4-MW101I-48.8-20230411 | 4/11/2023 | 48.8 | N | 4602780811 | N/A | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW2I | GPS-MW2I-20200812 | 8/12/2020 | 31.0 | N | JD11593 | Post Treatment | Intermediate | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 13.3 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW2I | GPS-MW2I-20201113 | 11/13/2020 | 31.0 | N | JD16259 | Post Treatment | Intermediate | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 4.4 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW2I | GPS-MW2I-20210222 | 2/22/2021 | 31.0 | N | JD20592 | Post Treatment | Intermediate | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 UJ | < 5.0 UJ | < 5.0 U | 11.4 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW2I | GPS-MW2I-20211001 | 10/1/2021 | 31.0 | N | JD32680 | Post Treatment | Intermediate | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 UJ | < 5.0 UJ | < 5.0 U | 5.8 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW2I | GPS-MW2I-20211115 | 11/15/2021 | 31.0 | N | JD35301 | Post Treatment | Intermediate | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 UJ | < 5.0 UJ | < 5.0 U | 4.5 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW3I | GPS-MW3I-20220223 | 2/23/2022 | 31.0 | N | JD40159 | Post Treatment | Intermediate | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 2.1 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW3I | GPS-MW3I-20220523 | 5/23/2022 | 31.0 | N | JD45334 | Post Treatment | Intermediate | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 6.7 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW3I | GPS-MW3I-20200813 | 8/13/2020 | 35.0 | N | JD11673 | Post Treatment | Intermediate | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 6.5 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW3I | GPS-MW3I-20201113 | 11/13/2020 | 35.0 | N | JD16259 | Post Treatment | Intermediate | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 5.6 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW3I | GPS-MW3I-20210226 | 2/26/2021 | 35.0 | N | JD20896 | Post Treatment | Intermediate | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 1.2 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW3I | GPS-MW3I-20211001 | 10/1/2021 | 35.0 | N | JD32680 | Post Treatment | Intermediate | | 1.4 J | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 5.0 UJ | < 5.0 UJ | < 5.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 2.0 UJ | < 1.0 UJ | < 1.0 UJ |
| GPS-MW3I | GPS-MW3I-20211115 | 11/15/2021 | 35.0 | N | JD35301 | Post Treatment | Intermediate | | **< 5.0 U** | < 2.5 U | < 2.5 U | < 2.5 U | < 2.5 U | < 2.5 U | < 13 UJ | < 13 UJ | < 13 U | < 2.5 U | < 2.5 U | **< 2.5 U** | < 2.5 U | < 2.5 U | < 2.5 U | < 2.5 U | < 2.5 U | **< 2.5 U** | < 5.0 U | **< 2.5 U** | < 2.5 U |
| GPS-MW3I | GPS-MW3I-20220223 | 2/23/2022 | 35.0 | N | JD40159 | Post Treatment | Intermediate | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW3I | GPS-MW3I-20220523 | 5/23/2022 | 35.0 | N | JD45334 | Post Treatment | Intermediate | | **< 5.0 U** | < 2.5 U | < 2.5 U | < 2.5 U | < 2.5 U | < 2.5 U | < 13 U | < 13 U | < 13 U | < 2.5 U | < 2.5 U | **< 2.5 U** | < 2.5 U | < 2.5 U | < 2.5 U | < 2.5 U | < 2.5 U | **< 2.5 U** | < 5.0 U | **< 2.5 U** | < 2.5 U |
| GPS-MW5I | GPS-MW5I-20200812 | 8/12/2020 | 35.0 | N | JD11593 | Post Treatment | Intermediate | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 3.3 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW5I | GPS-MW5I-20201111 | 11/11/2020 | 35.0 | N | JD16049 | Post Treatment | Intermediate | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 UJ | < 5.0 U | 2.6 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW5I | GPS-MW5I-20210223 | 2/23/2021 | 35.0 | N | JD20642 | Post Treatment | Intermediate | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 UJ | < 5.0 U | < 5.0 U | 5.2 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW6I | GPS-MW6I-20200814 | 8/14/2020 | 30.0 | N | JD11773 | Post Treatment | Intermediate | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 2.8 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | 0.77 J | < 1.0 U | < 1.0 U |
| GPS-MW6I | GPS-MW6I-20201113 | 11/13/2020 | 30.0 | N | JD16259 | Post Treatment | Intermediate | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW6I | BD-20210226 | 2/26/2021 | 30.0 | FD | JD20896 | Post Treatment | Intermediate | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW6I | GPS-MW6I-20210226 | 2/26/2021 | 30.0 | N | JD20896 | Post Treatment | Intermediate | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1-MW-1D | 114-P1-MW-1D-DUP-20200810 | 8/10/2020 | 46.4 | FD | JD11480 | Post Treatment-FD | Deep | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 2.7 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1-MW-1D | 114-P1-MW-1D-20200810 | 8/10/2020 | 46.4 | N | JD11480 | Post Treatment | Deep | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 2.7 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1-MW-1D | 114-P1-MW-1D-20201112 | 11/12/2020 | 46.4 | N | JD16144 | Post Treatment | Deep | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 3.7 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1-MW-1D | 114-P1-MW-1D-20210224 | 2/24/2021 | 46.4 | N | JD20709 | Post Treatment | Deep | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 3.0 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1-MW-1D | 114-P1-MW-1D-20210929 | 9/29/2021 | 46.4 | N | JD32460 | Post Treatment | Deep | | **< 100 U** | < 20 U | < 20 U | < 40 U | < 20 U | < 400 U | < 200 U | < 20 U | < 20 U | < 20 U | < 20 U | **< 20 U** | < 20 U | < 20 U | < 20 U | **< 20 U** | **< 20 U** | < 40 U | **< 20 U** | < 60 U |
| 114-P1-MW-1D | 114-P1-MW-1D-20211116 | 11/16/2021 | 46.4 | N | JD35372 | Post Treatment | Deep | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 3.7 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1-MW-1D | 114-P1-MW-1D-20220222 | 2/21/2022 | 46.4 | N | JD40060 | Post Treatment | Deep | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 1.2 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1-MW-1D | 114-P1-MW-1D-20220523 | 5/23/2022 | 46.4 | N | JD45334 | Post Treatment | Deep | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 1.1 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1-MW-4D | 114-P1-MW-4D-20200811 | 8/11/2020 | 56.8 | N | JD11542 | Post Treatment | Deep | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1-MW-4D | 114-P1-MW-4D-20201110 | 11/10/2020 | 56.8 | N | JD15969 | Post Treatment | Deep | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1-MW-4D | BD-20210225 | 2/25/2021 | 56.8 | FD | JD20780 | Post Treatment-FD | Deep | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1-MW-4D | 114-P1-MW-4D-20210225 | 2/25/2021 | 56.8 | N | JD20780 | Post Treatment | Deep | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1-MW-4D | 114-P1-MW-4D-20210927 | 9/27/2021 | 56.8 | N | JD32281 | Post Treatment | Deep | | **< 5.0 UJ** | < 1.0 UJ | 0.26 J | < 2.0 UJ | < 1.0 UJ | < 20 UJ | < 10 UJ | < 1.0 UJ | 0.64 J | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 2.0 UJ | < 1.0 UJ | < 3.0 UJ |
| 114-P1-MW-4D | 114-P1-MW-4D-20211118 | 11/18/2021 | 56.8 | N | JD35530 | Post Treatment | Deep | | < 2.0 U | < 1.0 U | 0.73 J | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 UJ | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1-MW-4D | 114-P1-MW-4D-20220222 | 2/22/2022 | 56.8 | N | JD40096 | Post Treatment | Deep | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 0.53 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1-MW-4D | 114-P1-MW-4D-20220525 | 5/25/2022 | 56.8 | N | JD45473 | Post Treatment | Deep | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1-MW-5D | 114-P1-MW-5D-20200812 | 8/12/2020 | 54.9 | N | JD11593 | Post Treatment | Deep | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 1.6 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1-MW-5D | 114-P1-MW-5D-20201109 | 11/9/2020 | 54.9 | N | JD15931 | Post Treatment | Deep | | < 2.0 U | 1.7 | 3.3 | 2.5 | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 1.3 | 2.6 | < 1.0 U | < 1.0 U | 1.2 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | 5.1 |
| 114-P1-MW-5D | 114-P1-MW-5D-20210224 | 2/24/2021 | 54.9 | N | JD20709 | Post Treatment | Deep | | < 2.0 U | 5.7 | 1.4 | 6.5 | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 1.4 | 5.5 | < 1.0 U | < 1.0 U | 5.2 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | 12.0 |
| 114-P1-MW-5D | 114-P1-MW-5D-DUP-20210927 | 9/27/2021 | 54.9 | FD | JD32281 | Post Treatment-FD | Deep | | **< 5.0 UJ** | 0.72 J | 0.58 J | 2.2 J | < 1.0 UJ | < 20 UJ | < 10 UJ | < 1.0 UJ | 1.4 J | 1.6 J | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 2.0 UJ | < 1.0 UJ | 3.8 J |
| 114-P1-MW-5D | 114-P1-MW-5D-20210927 | 9/27/2021 | 54.9 | N | JD32281 | Post Treatment | Deep | | **< 5.0 U** | 0.67 J | 0.53 J | 2.0 | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | 1.3 | 1.5 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | 3.5 |
| 114-P1-MW-5D | BD-20211118 | 11/18/2021 | 54.9 | FD | JD35530 | Post Treatment-FD | Deep | | < 2.0 U | < 1.0 U | 0.69 J | 1.9 | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 1.1 | 1.7 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | 3.6 |
| 114-P1-MW-5D | 114-P1-MW-5D-20211118 | 11/18/2021 | 54.9 | N | JD35530 | Post Treatment | Deep | | < 2.0 U | < 1.0 U | 0.68 J | 1.8 | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 1.0 | 1.7 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | 3.5 |
| 114-P1-MW-5D | 114-P1-MW-5D-DUP-20220222 | 2/22/2022 | 54.9 | FD | JD40096 | Post Treatment-FD | Deep | | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | 0.92 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1-MW-5D | 114-P

**Appendix A-2**
**Groundwater Analytical Results - Volatile Organic Compounds**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

AECOM

| Analyte | | | | | | | | 1,1,1-TRICHLOROETHANE | 1,1,2,2-TETRACHLOROETHANE | 1,1,2-TRICHLOROETHANE | 1,1,2-TRICHLOROTRIFLUORO-ETHANE | 1,1-DICHLOROETHANE | 1,1-DICHLOROETHYLENE | 1,2,3-TRICHLOROBENZENE | 1,2,4-TRICHLOROBENZENE | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 1,2-DIBROMOETHANE(EDB) | 1,2-DICHLOROBENZENE | 1,2-DICHLOROETHANE | 1,2-DICHLOROPROPANE | 1,4-DICHLOROBENZENE | 2-BUTANONE (MEK) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CAS-RN | | | | | | | | 71-55-6 | 79-34-5 | 79-00-5 | 76-13-1 | 75-34-3 | 75-35-4 | 87-61-6 | 120-82-1 | 96-12-8 | 106-93-4 | 95-50-1 | 107-06-2 | 78-87-5 | 106-46-7 | 78-93-3 |
| Fraction | | | | | | | | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T |
| GWQS | | | | | | | | 30 | 1 | 3 | 20000 | 50 | 1 | N/A | 9 | 0.02 | 0.03 | 600 | 2 | 1 | 75 | 300 |
| Units | | | | | | | | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water-Bearing Zone | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result |
| **Phase III** | | | | | | | | | | | | | | | | | | | | | | |
| ***Injection Wells*** | | | | | | | | | | | | | | | | | | | | | | |
| 199-P3-IRM-003S | 199-P3-IRM-003S-16.9-20220104 | 1/4/2022 | 16.9 | N | 4602500781 | Baseline | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-IRM-003S | 199-P3-IRM-003S-16.9-20220104-X | 1/4/2022 | 16.9 | FD | 4602500781 | Baseline-FD | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-IRM-004S | 199-P3-IRM-004S-19.1-20211230 | 12/30/2021 | 19.1 | N | 4602499921 | Baseline | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-IRM-005S | 199-P3-IRM-005S-18.5-20230330 | 3/30/2023 | 18.5 | N | 4602773201 | Baseline | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-IRM-005S | 199-P3-IRM-005S-13.5-20230330 | 3/30/2023 | 13.5 | N | 4602773201 | Baseline | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-IRM-005S | 199-P3-IRM-005S-13.5-20230330X | 3/30/2023 | 13.5 | FD | 4602773201 | Baseline-FD | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| ***Monitoring Wells*** | | | | | | | | | | | | | | | | | | | | | | |
| 114-MW41A | 114-MW41A-15.7-20211229 | 12/29/2021 | 15.7 | N | 4602499461 | Baseline | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20220825 | 8/25/2022 | 15.7 | N | 4602644081 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20220923 | 9/23/2022 | 15.7 | N | 4602661551 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20221020 | 10/20/2022 | 15.7 | N | 4602678821 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20221117 | 11/17/2022 | 15.7 | N | 4602697441 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20221219 | 12/19/2022 | 15.7 | N | 4602717111 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20230126 | 1/26/2023 | 15.7 | N | 4602735991 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20230227 | 2/27/2023 | 15.7 | N | 4602753411 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20230322 | 3/22/2023 | 15.7 | N | 4602768001 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20230424 | 4/24/2023 | 15.7 | N | 4602787991 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20230517 | 5/17/2023 | 15.7 | N | 4602804541 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20230517-X | 5/17/2023 | 15.7 | FD | 4602804541 | Treatment-FD | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20230717 | 7/17/2023 | 15.7 | N | 4602844061 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20230717-X | 7/17/2023 | 15.7 | FD | 4602844061 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20230822 | 8/22/2023 | 15.7 | N | 4602866771 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20230915 | 9/15/2023 | 15.7 | N | 4602882761 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20231010 | 10/10/2023 | 15.7 | N | 4602900121 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20231113 | 11/13/2023 | 15.7 | N | JD76852 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20231214 | 12/14/2023 | 15.7 | N | JD78891 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20240223 | 2/23/2024 | 15.7 | N | JD83100 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20240314 | 3/14/2024 | 15.7 | N | JD84495 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-12.5-20240411 | 4/11/2024 | 12.5 | N | JD86317 | Post-Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-12.5-20240715 | 7/15/2024 | 12.5 | N | JD92183 | Post-Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41A | 114-MW41A-13.5-20241015 | 10/15/2024 | 13.5 | N | JD98256 | Post-Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20211228 | 12/28/2021 | 16.3 | N | 4602498971 | Baseline | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20220826 | 8/26/2022 | 16.3 | N | 4602644761 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20220826-X | 8/26/2022 | 16.3 | FD | 4602644761 | Treatment-FD | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20220921 | 9/21/2022 | 16.3 | N | 4602659871 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20221020 | 10/20/2022 | 16.3 | N | 4602678821 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20221117 | 11/17/2022 | 16.3 | N | 4602697441 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20221219 | 12/19/2022 | 16.3 | N | 4602717111 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230127 | 1/27/2023 | 16.3 | N | 4602736701 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230228 | 2/28/2023 | 16.3 | N | 4602753821 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230228-X | 2/28/2023 | 16.3 | FD | 4602753821 | Treatment-FD | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230321 | 3/21/2023 | 16.3 | N | 4602767381 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230424 | 4/24/2023 | 16.3 | N | 4602787991 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230424-X | 4/24/2023 | 16.3 | FD | 4602787991 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230516 | 5/16/2023 | 16.3 | N | 4602803921 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230717 | 7/17/2023 | 16.3 | N | 4602844061 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230822 | 8/22/2023 | 16.3 | N | 4602866771 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230915 | 9/15/2023 | 16.3 | N | 4602882761 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20231010 | 10/10/2023 | 16.3 | N | 4602900121 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230424-X | 4/24/2023 | 16.3 | FD | 4602787991 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230516 | 5/16/2023 | 16.3 | N | 4602803921 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230717 | 7/17/2023 | 16.3 | N | 4602844061 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230822 | 8/22/2023 | 16.3 | N | 4602866771 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230915 | 9/15/2023 | 16.3 | N | 4602882761 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20231010 | 10/10/2023 | 16.3 | N | 4602900121 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20231010-X | 10/10/2023 | 16.3 | FD | 4602900121 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20231113 | 11/13/2023 | 16.3 | N | JD76852 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20231113-X | 11/13/2023 | 16.3 | FD | JD76852 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20231214 | 12/14/2023 | 16.3 | N | JD78891 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20231214-x | 12/14/2023 | 16.3 | FD | JD78891 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20240122 | 1/22/2024 | 16.3 | N | JD80935 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20240122-X | 1/22/2024 | 16.3 | FD | JD80935 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20240223 | 2/23/2024 | 16.3 | N | JD83100 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20240223-X | 2/23/2024 | 16.3 | FD | JD83100 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20240315 | 3/15/2024 | 16.3 | N | JD84558 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20240315-X | 3/15/2024 | 16.3 | FD | JD84558 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-8.5-20240411 | 4/11/2024 | 8.5 | N | JD86317 | Post-Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-13.5-20240411 | 4/11/2024 | 13.5 | N | JD86317 | Post-Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-13.5-20240411-X | 4/11/2024 | 13.5 | FD | JD86317 | Post-Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-13.5-20240716 | 7/16/2024 | 13.5 | N | JD92267 | Post-Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-13.5-20240716-X | 7/16/2024 | 13.5 | FD | JD92267 | Post-Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-13.5-20241016 | 10/16/2024 | 13.5 | N | JD98354 | Post-Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-13.5-20241016-X | 10/16/2024 | 13.5 | FD | JD96354 | Post-Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.05-20220105 | 1/5/2022 | 17.1 | N | 4602501431 | Baseline | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17-20220826 | 8/26/2022 | 17.0 | N | 4602644761 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20220921 | 9/21/2022 | 17.0 | N | 4602659871 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17-20221020 | 10/20/2022 | 17.0 | N | 4602678821 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17-20221117 | 11/17/2022 | 17.0 | N | 4602697441 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17-20221117-X | 11/17/2022 | 17.0 | FD | 4602697441 | Treatment-FD | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17-20221219 | 12/19/2022 | 17.0 | N | 4602717111 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17-20221219-X | 12/19/2022 | 17.0 | FD | 4602717111 | Treatment-FD | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3MW004S-17-20230127 | 1/27/2023 | 17.0 | N | 4602736701 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20230228 | 2/28/2023 | 17.0 | N | 4602753821 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20230321 | 3/21/2023 | 17.0 | N | 4602767381 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20230425 | 4/25/2023 | 17.0 | N | 4602788811 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17-20230517 | 5/17/2023 | 17.0 | N | 4602804541 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20230720 | 7/20/2023 | 17.0 | N | 4602846391 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20230823 | 8/23/2023 | 17.0 | N | 4602867511 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20230915 | 9/15/2023 | 17.0 | N | 4602882761 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20231010 | 10/10/2023 | 17 | N | 4602900121 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20231114 | 11/14/2023 | 17 | N | JD76935 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20231214 | 12/14/2023 | 17 | N | JD78891 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20240122 | 1/22/2024 | 17 | N | JD80935 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20240223 | 2/23/2024 | 17 | N | JD83100 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20240314 | 3/14/2024 | 17 | N | JD84495 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-13.5-20240411 | 4/11/2024 | 13.5 | N | JD86317 | Post-Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-18.5-20240412 | 4/12/2024 | 18.5 | N | JD86439 | Post-Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-13.5-20240716 | 7/16/2024 | 13.5 | N | JD92267 | Post-Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-16.5-20241016 | 10/16/2024 | 16.5 | N | JD98354 | Post-Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FSP-P3-MW001S | FSP-P3-MW001S-14.0-20210917 | 9/17/2021 | 14.0 | N | 4602430721 | Baseline | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FSP-P3-MW001S | FSP-P3-MW001S-14-20220826 | 8/26/2022 | 14.0 | N | 4602644761 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FSP-P3-MW001S | FSP-P3-MW001S-14.0-20220922 | 9/22/2022 | 14.0 | N | 4602660731 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FSP-P3-MW001S | FSP-P3-MW001S-14-20221021 | 10/21/2022 | 14.0 | N | 4602679761 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FSP-P3-MW001S | FSP-P3-MW001S-14-20221118 | 11/18/2022 | 14.0 | N | 4602697961 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| FSP-P3-MW001S | FSP-P3-MW001S-14-20221220 | 12/20/2022 | 14.0 | N | 4602718081 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW1C-4 | MW1C-4-15.5-20220104 | 1/4/2022 | 15.5 | N | 4602500781 | Baseline | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20211229 | 12/29/2021 | 28.2 | N | 4602499461 | Baseline | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20220825 | 8/25/2022 | 28.2 | N | 4602644081 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20220921 | 9/21/2022 | 28.2 | N | 4602659871 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20220921-X | 9/21/2022 | 28.2 | FD | 4602659871 | Treatment-FD | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20221020 | 10/20/2022 | 28.2 | N | 4602678821 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20221020-X | 10/20/2022 | 28.2 | FD | 4602678821 | Treatment-FD | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20221118 | 11/18/2022 | 28.2 | N | 4602697961 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20221220 | 12/20/2022 | 28.2 | N | 4602718081 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20230126 | 1/26/2023 | 28.2 | N | 4602735991 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20230126-X | 1/26/2023 | 28.2 | FD | 4602735991 | Treatment-FD | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20230227 | 2/27/2023 | 28.2 | N | 4602753411 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20230322 | 3/22/2023 | 28.2 | N | 4602768001 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20230424 | 4/24/2023 | 28.2 | N | 4602787991 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

**Appendix A-2**
**Groundwater Analytical Results - Volatile Organic Compounds**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

AECOM

| Analyte | | | | | | | | | 4-METHYL-2-PENTANONE (MIBK) | ACETONE | BENZENE | BROMODICHLORO-METHANE | BROMOMETHANE | CARBON DISULFIDE | CARBON TETRACHLORIDE | CHLOROBENZENE | CHLOROBROMO-METHANE | CHLORODIBROMO-METHANE | CHLOROETHANE | CHLOROFORM | CHLOROMETHANE | CIS-1,2-DICHLOROETHENE | CIS-1,3-DICHLOROPROPENE | CYCLOHEXANE | DICHLORODIFLUOROMETHANE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CAS-RN | | | | | | | | | 108-10-1 | 67-64-1 | 71-43-2 | 75-27-4 | 74-83-9 | 75-15-0 | 56-23-5 | 108-90-7 | 74-97-5 | 124-48-1 | 75-00-3 | 67-66-3 | 74-87-3 | 156-59-2 | 10061-01-5 | 110-82-7 | 75-71-8 |
| Fraction | | | | | | | | | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T |
| GWQS | | | | | | | | | N/A | 6000 | 1 | 1 | 10 | 700 | 1 | 50 | N/A | 1 | 5 | 70 | N/A | 70 | N/A | N/A | 1000 |
| Units | | | | | | | | | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water-Bearing Zone | | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result |
| **Phase III** | | | | | | | | | | | | | | | | | | | | | | | | | |
| ***Injection Wells*** | | | | | | | | | | | | | | | | | | | | | | | | | |
| 199-P3-IRM-003S | 199-P3-IRM-003S-16.9-20220104 | 1/4/2022 | 16.9 | N | 4602500781 | Baseline | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 199-P3-IRM-003S | 199-P3-IRM-003S-16.9-20220104-X | 1/4/2022 | 16.9 | FD | 4602500781 | Baseline-FD | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 199-P3-IRM-004S | 199-P3-IRM-004S-19.1-20211230 | 12/30/2021 | 19.1 | N | 4602499921 | Baseline | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 199-P3-IRM-005S | 199-P3-IRM-005S-18.5-20230330 | 3/30/2023 | 18.5 | N | 4602773201 | Baseline | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| 199-P3-IRM-005S | 199-P3-IRM-005S-13.5-20230330 | 3/30/2023 | 13.5 | N | 4602773201 | Baseline | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| 199-P3-IRM-005S | 199-P3-IRM-005S-13.5-20230330X | 3/30/2023 | 13.5 | FD | 4602773201 | Baseline-FD | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| ***Monitoring Wells*** | | | | | | | | | | | | | | | | | | | | | | | | | |
| 114-MW41A | 114-MW41A-15.7-20211229 | 12/29/2021 | 15.7 | N | 4602499461 | Baseline | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20220825 | 8/25/2022 | 15.7 | N | 4602644081 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20220923 | 9/23/2022 | 15.7 | N | 4602661551 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20221020 | 10/20/2022 | 15.7 | N | 4602678821 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20221117 | 11/17/2022 | 15.7 | N | 4602697441 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20221219 | 12/19/2022 | 15.7 | N | 4602717111 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.45 | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20230126 | 1/26/2023 | 15.7 | N | 4602735991 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.77 | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20230227 | 2/27/2023 | 15.7 | N | 4602753411 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.41 | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20230322 | 3/22/2023 | 15.7 | N | 4602768001 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.44 | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20230424 | 4/24/2023 | 15.7 | N | 4602787991 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.41 | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20230517 | 5/17/2023 | 15.7 | N | 4602804541 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.46 | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20230517-X | 5/17/2023 | 15.7 | FD | 4602804541 | Treatment-FD | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.42 | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20230717 | 7/17/2023 | 15.7 | N | 4602844061 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.54 J | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20230717-X | 7/17/2023 | 15.7 | FD | 4602844061 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.56 J | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20230822 | 8/22/2023 | 15.7 | N | 4602866771 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.40 J | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20230915 | 9/15/2023 | 15.7 | N | 4602882761 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.79 J | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20231010 | 10/10/2023 | 15.7 | N | 4602900121 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.40 J | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20231113 | 11/13/2023 | 15.7 | N | JD76852 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.55 J | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20231214 | 12/14/2023 | 15.7 | N | JD78891 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.68 J | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20240122 | 1/22/2024 | 15.7 | N | JD80935 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.64 J | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20240223 | 2/23/2024 | 15.7 | N | JD83100 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 114-MW41A | 114-MW41A-15.7-20240314 | 3/14/2024 | 15.7 | N | JD84495 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 114-MW41A | 114-MW41A-12.5-20240411 | 4/11/2024 | 12.5 | N | JD86317 | Post-Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.66 J | -- | -- | -- |
| 114-MW41A | 114-MW41A-12.5-20240715 | 7/15/2024 | 12.5 | N | JD92183 | Post-Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 114-MW41A | 114-MW41A-13.5-20241015 | 10/15/2024 | 13.5 | N | JD98256 | Post-Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20211228 | 12/28/2021 | 16.3 | N | 4602498971 | Baseline | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20220826 | 8/26/2022 | 16.3 | N | 4602644761 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.23 | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20220826-X | 8/26/2022 | 16.3 | FD | 4602644761 | Treatment-FD | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.27 | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20220921 | 9/21/2022 | 16.3 | N | 4602659871 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20221020 | 10/20/2022 | 16.3 | N | 4602678821 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20221117 | 11/17/2022 | 16.3 | N | 4602697441 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20221219 | 12/19/2022 | 16.3 | N | 4602717111 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 5.0 | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230127 | 1/27/2023 | 16.3 | N | 4602736701 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 5.0 | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230228 | 2/28/2023 | 16.3 | N | 4602753821 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230228-X | 2/28/2023 | 16.3 | FD | 4602753821 | Treatment-FD | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.24 | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230321 | 3/21/2023 | 16.3 | N | 4602767381 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230424 | 4/24/2023 | 16.3 | N | 4602787991 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230424-X | 4/24/2023 | 16.3 | FD | 4602787991 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230516 | 5/16/2023 | 16.3 | N | 4602803921 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230717 | 7/17/2023 | 16.3 | N | 4602844061 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230822 | 8/22/2023 | 16.3 | N | 4602866771 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230915 | 9/15/2023 | 16.3 | N | 4602882761 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 UF1 | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20231010 | 10/10/2023 | 16.3 | N | 4602900121 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20231010-X | 10/10/2023 | 16.3 | FD | 4602900121 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20231113 | 11/13/2023 | 16.3 | N | JD76852 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20231113-X | 11/13/2023 | 16.3 | FD | JD76852 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20231214 | 12/14/2023 | 16.3 | N | JD78891 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20231214-x | 12/14/2023 | 16.3 | FD | JD78891 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20240122 | 1/22/2024 | 16.3 | N | JD80935 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20240122-X | 1/22/2024 | 16.3 | FD | JD80935 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20240223 | 2/23/2024 | 16.3 | N | JD83100 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20240223-X | 2/23/2024 | 16.3 | FD | JD83100 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20240315 | 3/15/2024 | 16.3 | N | JD84558 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20240315-X | 3/15/2024 | 16.3 | FD | JD84558 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-8.5-20240411 | 4/11/2024 | 8.5 | N | JD86317 | Post-Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-13.5-20240411 | 4/11/2024 | 13.5 | N | JD86317 | Post-Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-13.5-20240411-X | 4/11/2024 | 13.5 | FD | JD86317 | Post-Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-13.5-20240716 | 7/16/2024 | 13.5 | N | JD92267 | Post-Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-13.5-20240716-X | 7/16/2024 | 13.5 | FD | JD92267 | Post-Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-13.5-20241016 | 10/16/2024 | 13.5 | N | JD98354 | Post-Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 199-P3-MW001S | 199-P3-MW001S-13.5-20241016-X | 10/16/2024 | 13.5 | FD | JD98354 | Post-Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.05-20220105 | 1/5/2022 | 17.1 | N | 4602501431 | Baseline | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17-20220826 | 8/26/2022 | 17.0 | N | 4602644761 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20220921 | 9/21/2022 | 17.0 | N | 4602659871 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17-20221020 | 10/20/2022 | 17.0 | N | 4602678821 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17-20221117 | 11/17/2022 | 17.0 | N | 4602697441 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17-20221117-X | 11/17/2022 | 17.0 | FD | 4602697441 | Treatment-FD | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17-20221219 | 12/19/2022 | 17.0 | N | 4602717111 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17-20221219-X | 12/19/2022 | 17.0 | FD | 4602717111 | Treatment-FD | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| 199-P3-MW004S | 199-P3MW004S-17-20230127 | 1/27/2023 | 17.0 | N | 4602736701 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20230228 | 2/28/2023 | 17.0 | N | 4602753821 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20230321 | 3/21/2023 | 17.0 | N | 4602767381 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20230425 | 4/25/2023 | 17.0 | N | 4602788811 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.58 | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17-20230517 | 5/17/2023 | 17.0 | N | 4602804541 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.0 | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20230720 | 7/20/2023 | 17.0 | N | 4602846391 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 4.2 | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20230823 | 8/23/2023 | 17.0 | N | 4602867511 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2.6 | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20230915 | 9/15/2023 | 17.0 | N | 4602882761 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.3 | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20231010 | 10/10/2023 | 17 | N | 4602900121 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.9 | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20231114 | 11/14/2023 | 17 | N | JD76935 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1.4 | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20232124 | 12/14/2023 | 17 | N | JD78891 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.74 J | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20240122 | 1/22/2024 | 17 | N | JD80935 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.73 J | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20240223 | 2/23/2024 | 17 | N | JD83100 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 10 U | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20240314 | 3/14/2024 | 17 | N | JD84495 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 1000 U** | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-13.5-20240411 | 4/11/2024 | 13.5 | N | JD86317 | Post-Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-18.5-20240412 | 4/12/2024 | 18.5 | N | JD86439 | Post-Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-13.5-20240716 | 7/16/2024 | 13.5 | N | JD92267 | Post-Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 199-P3-MW004S | 199-P3-MW004S-16.5-20241016 | 10/16/2024 | 16.5 | N | JD98354 | Post-Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| FSP-P3-MW001S | FSP-P3-MW001S-14.0-20210917 | 9/17/2021 | 14.0 | N | 4602430721 | Baseline | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| FSP-P3-MW001S | FSP-P3-MW001S-14-20220826 | 8/26/2022 | 14.0 | N | 4602644761 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| FSP-P3-MW001S | FSP-P3-MW001S-14.0-20220922 | 9/22/2022 | 14.0 | N | 4602660731 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| FSP-P3-MW001S | FSP-P3-MW001S-14-20221021 | 10/21/2022 | 14.0 | N | 4602678761 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| FSP-P3-MW001S | FSP-P3-MW001S-14-20221118 | 11/18/2022 | 14.0 | N | 4602697961 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| FSP-P3-MW001S | FSP-P3-MW001S-14-20221220 | 12/20/2022 | 14.0 | N | 4602718081 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| MW1C-4 | MW1C-4-15.5-20220104 | 1/4/2022 | 15.5 | N | 4602500781 | Baseline | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20211229 | 12/29/2021 | 28.2 | N | 4602499461 | Baseline | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20220825 | 8/25/2022 | 28.2 | N | 4602644081 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20220921 | 9/21/2022 | 28.2 | N | 4602659871 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20220921-X | 9/21/2022 | 28.2 | FD | 4602659871 | Treatment-FD | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20221020 | 10/20/2022 | 28.2 | N | 4602678821 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20221020-X | 10/20/2022 | 28.2 | FD | 4602678821 | Treatment-FD | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20221118 | 11/18/2022 | 28.2 | N | 4602697961 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20221220 | 12/20/2022 | 28.2 | N | 4602718081 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20230126 | 1/26/2023 | 28.2 | N | 4602735991 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20230126-X | 1/26/2023 | 28.2 | FD | 4602735991 | Treatment-FD | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.22 | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20230227 | 2/27/2023 | 28.2 | N | 4602753411 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.43 | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20230322 | 3/22/2023 | 28.2 | N | 4602768001 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20230424 | 4/24/2023 | 28.2 | N | 4602787991 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |

**Appendix A-2**
**Groundwater Analytical Results - Volatile Organic Compounds**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

AECOM

| Analyte | | | | | | | | DICHLOROMETHANE | ETHYLBENZENE | ISOPROPYLBENZENE | M+P-XYLENE | M-DICHLOROBENZENE | METHYL ACETATE | METHYL N-BUTYL KETONE | METHYLCYCLOHEXANE | METHYL-TERT-BUTYL ETHER | O-XYLENE | STYRENE (MONOMER) | TETRACHLOROETHENE (PCE) | TOLUENE | TRANS-1,2-DICHLOROETHENE | TRANS-1,3-DICHLOROPROPENE | TRIBROMOMETHANE | TRICHLOROETHYLENE (TCE) | TRICHLOROFLUOROMETHANE | VINYL CHLORIDE | XYLENES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CAS-RN | | | | | | | | 75-09-2 | 100-41-4 | 98-82-8 | M+P-XYLENE | 541-73-1 | 79-20-9 | 591-78-6 | 108-87-2 | 1634-04-4 | 95-47-6 | 100-42-5 | 127-18-4 | 108-88-3 | 156-60-5 | 10061-02-6 | 75-25-2 | 79-01-6 | 75-69-4 | 75-01-4 | 1330-20-7 |
| Fraction | | | | | | | | T | T | T | N/A | T | T | T | N/A | T | N/A | T | T | T | T | N/A | T | T | T | T | T |
| GWQS | | | | | | | | 3 | 700 | 700 | 600 | 600 | 7000 | 300 | N/A | 70 | N/A | 100 | 1 | 600 | 100 | N/A | 4 | 1 | 2000 | 1 | 1000 |
| Units | | | | | | | | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water-Bearing Zone | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result |
| **Phase III** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ***Injection Wells*** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 199-P3-IRM-003S | 199-P3-IRM-003S-16.9-20220104 | 1/4/2022 | 16.9 | N | 4602500781 | Baseline | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.63 J | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 199-P3-IRM-003S | 199-P3-IRM-003S-16.9-20220104-X | 1/4/2022 | 16.9 | FD | 4602500781 | Baseline-FD | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.66 J | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 199-P3-IRM-004S | 199-P3-IRM-004S-19.1-20211230 | 12/30/2021 | 19.1 | N | 4602499921 | Baseline | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.58 J | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 199-P3-IRM-005S | 199-P3-IRM-005S-18.5-20230330 | 3/30/2023 | 18.5 | N | 4602773201 | Baseline | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **16** | -- | -- | -- | -- | 0.85 | -- | < 1.0 | -- |
| 199-P3-IRM-005S | 199-P3-IRM-005S-13.5-20230330 | 3/30/2023 | 13.5 | N | 4602773201 | Baseline | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **17** | -- | -- | -- | -- | 0.93 | -- | < 1.0 | -- |
| 199-P3-IRM-005S | 199-P3-IRM-005S-13.5-20230330X | 3/30/2023 | 13.5 | FD | 4602773201 | Baseline-FD | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **18** | -- | -- | -- | -- | 0.98 | -- | < 1.0 | -- |
| ***Monitoring Wells*** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 114-MW41A | 114-MW41A-15.7-20211229 | 12/29/2021 | 15.7 | N | 4602499461 | Baseline | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **2.4** | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 114-MW41A | 114-MW41A-15.7-20220825 | 8/25/2022 | 15.7 | N | 4602644081 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **3.6** | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| 114-MW41A | 114-MW41A-15.7-20220923 | 9/23/2022 | 15.7 | N | 4602661551 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **4.3** | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| 114-MW41A | 114-MW41A-15.7-20221020 | 10/20/2022 | 15.7 | N | 4602678821 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **5.0** | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| 114-MW41A | 114-MW41A-15.7-20221117 | 11/17/2022 | 15.7 | N | 4602697441 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **8.2** | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| 114-MW41A | 114-MW41A-15.7-20221219 | 12/19/2022 | 15.7 | N | 4602717111 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **4.0** | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| 114-MW41A | 114-MW41A-15.7-20230126 | 1/26/2023 | 15.7 | N | 4602735991 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.46 | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| 114-MW41A | 114-MW41A-15.7-20230227 | 2/27/2023 | 15.7 | N | 4602753411 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.70 | -- | -- | -- | -- | 0.35 | -- | < 1.0 | -- |
| 114-MW41A | 114-MW41A-15.7-20230322 | 3/22/2023 | 15.7 | N | 4602768001 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **1.5** | -- | -- | -- | -- | 0.54 | -- | < 1.0 | -- |
| 114-MW41A | 114-MW41A-15.7-20230424 | 4/24/2023 | 15.7 | N | 4602787991 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.27 | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| 114-MW41A | 114-MW41A-15.7-20230517 | 5/17/2023 | 15.7 | N | 4602804541 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.48 | -- | -- | -- | -- | 0.63 | -- | < 1.0 | -- |
| 114-MW41A | 114-MW41A-15.7-20230517-X | 5/17/2023 | 15.7 | FD | 4602804541 | Treatment-FD | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.45 | -- | -- | -- | -- | 0.52 | -- | < 1.0 | -- |
| 114-MW41A | 114-MW41A-15.7-20230717 | 7/17/2023 | 15.7 | N | 4602844061 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.61 J | -- | -- | -- | -- | 0.57 J | -- | < 1.0 U | -- |
| 114-MW41A | 114-MW41A-15.7-20230717-X | 7/17/2023 | 15.7 | FD | 4602844061 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.67 J | -- | -- | -- | -- | 0.53 J | -- | < 1.0 U | -- |
| 114-MW41A | 114-MW41A-15.7-20230822 | 8/22/2023 | 15.7 | N | 4602866771 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 114-MW41A | 114-MW41A-15.7-20230915 | 9/15/2023 | 15.7 | N | 4602882761 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | 0.46 J | -- | < 1.0 U | -- |
| 114-MW41A | 114-MW41A-15.7-20231010 | 10/10/2023 | 15.7 | N | 4602900121 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | 0.46 J | -- | < 1.0 U | -- |
| 114-MW41A | 114-MW41A-15.7-20231113 | 11/13/2023 | 15.7 | N | JD76852 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 114-MW41A | 114-MW41A-15.7-20231214 | 12/14/2023 | 15.7 | N | JD78891 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 114-MW41A | 114-MW41A-15.7-20240122 | 1/22/2024 | 15.7 | N | JD80935 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 114-MW41A | 114-MW41A-15.7-20240223 | 2/23/2024 | 15.7 | N | JD83100 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 114-MW41A | 114-MW41A-15.7-20240314 | 3/14/2024 | 15.7 | N | JD84495 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 114-MW41A | 114-MW41A-12.5-20240411 | 4/11/2024 | 12.5 | N | JD86317 | Post-Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 114-MW41A | 114-MW41A-12.5-20240715 | 7/15/2024 | 12.5 | N | JD92183 | Post-Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 114-MW41A | 114-MW41A-13.5-20241015 | 10/15/2024 | 13.5 | N | JD98256 | Post-Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20211228 | 12/28/2021 | 16.3 | N | 4602498971 | Baseline | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.38 J | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20220826 | 8/26/2022 | 16.3 | N | 4602644761 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20220826-X | 8/26/2022 | 16.3 | FD | 4602644761 | Treatment-FD | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.25 | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20220921 | 9/21/2022 | 16.3 | N | 4602659871 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20221020 | 10/20/2022 | 16.3 | N | 4602678821 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.33 | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20221117 | 11/17/2022 | 16.3 | N | 4602697441 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20221219 | 12/19/2022 | 16.3 | N | 4602717111 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 5.0** | -- | -- | -- | -- | **< 5.0** | -- | **< 5.0** | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230127 | 1/27/2023 | 16.3 | N | 4602736701 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 5.0** | -- | -- | -- | -- | **< 5.0** | -- | **< 5.0** | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230228 | 2/28/2023 | 16.3 | N | 4602753821 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230228-X | 2/28/2023 | 16.3 | FD | 4602753821 | Treatment-FD | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230321 | 3/21/2023 | 16.3 | N | 4602767381 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230424 | 4/24/2023 | 16.3 | N | 4602787991 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230424-X | 4/24/2023 | 16.3 | FD | 4602787991 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230516 | 5/16/2023 | 16.3 | N | 4602803921 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230717 | 7/17/2023 | 16.3 | N | 4602844061 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230822 | 8/22/2023 | 16.3 | N | 4602866771 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.26 J | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20230915 | 9/15/2023 | 16.3 | N | 4602882761 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.25 J | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20231010 | 10/10/2023 | 16.3 | N | 4602900121 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.26 J | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20231113 | 11/13/2023 | 16.3 | N | JD76852 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20231113-X | 11/13/2023 | 16.3 | FD | JD76852 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20231214 | 12/14/2023 | 16.3 | N | JD78891 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20231214-x | 12/14/2023 | 16.3 | FD | JD78891 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20240122 | 1/22/2024 | 16.3 | N | JD80935 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20240122-X | 1/22/2024 | 16.3 | FD | JD80935 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20240223 | 2/23/2024 | 16.3 | N | JD83100 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20240223-X | 2/23/2024 | 16.3 | FD | JD83100 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20240315 | 3/15/2024 | 16.3 | N | JD84558 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 199-P3-MW001S | 199-P3-MW001S-16.3-20240315-X | 3/15/2024 | 16.3 | FD | JD84558 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 199-P3-MW001S | 199-P3-MW001S-8.5-20240411 | 4/11/2024 | 8.5 | N | JD86317 | Post-Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 199-P3-MW001S | 199-P3-MW001S-13.5-20240411 | 4/11/2024 | 13.5 | N | JD86317 | Post-Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 199-P3-MW001S | 199-P3-MW001S-13.5-20240411-X | 4/11/2024 | 13.5 | FD | JD86317 | Post-Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 199-P3-MW001S | 199-P3-MW001S-13.5-20240716 | 7/16/2024 | 13.5 | N | JD92267 | Post-Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 199-P3-MW001S | 199-P3-MW001S-13.5-20240716-X | 7/16/2024 | 13.5 | FD | JD92267 | Post-Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 199-P3-MW001S | 199-P3-MW001S-13.5-20241016 | 10/16/2024 | 13.5 | N | JD98354 | Post-Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 199-P3-MW001S | 199-P3-MW001S-13.5-20241016-X | 10/16/2024 | 13.5 | FD | JD98354 | Post-Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.05-20220105 | 1/5/2022 | 17.1 | N | 4602501431 | Baseline | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **6.8** | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 199-P3-MW004S | 199-P3-MW004S-17-20220826 | 8/26/2022 | 17.0 | N | 4602644761 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **5.4** | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20220921 | 9/21/2022 | 17.0 | N | 4602659871 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **5.6** | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| 199-P3-MW004S | 199-P3-MW004S-17-20221020 | 10/20/2022 | 17.0 | N | 4602678821 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **6.7** | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| 199-P3-MW004S | 199-P3-MW004S-17-20221117 | 11/17/2022 | 17.0 | N | 4602697441 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **8.6** | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| 199-P3-MW004S | 199-P3-MW004S-17-20221117-X | 11/17/2022 | 17.0 | FD | 4602697441 | Treatment-FD | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **7.4** | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| 199-P3-MW004S | 199-P3-MW004S-17-20221219 | 12/19/2022 | 17.0 | N | 4602717111 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **6.9** | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| 199-P3-MW004S | 199-P3-MW004S-17-20221219-X | 12/19/2022 | 17.0 | FD | 4602717111 | Treatment-FD | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **7.1** | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| 199-P3-MW004S | 199-P3MW004S-17-20230127 | 1/27/2023 | 17.0 | N | 4602736701 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **5.9** | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20230228 | 2/28/2023 | 17.0 | N | 4602753821 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **5.5** | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20230321 | 3/21/2023 | 17.0 | N | 4602767381 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **2.9** | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20230425 | 4/25/2023 | 17.0 | N | 4602788811 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **5.0** | -- | -- | -- | -- | **1.1** | -- | < 1.0 | -- |
| 199-P3-MW004S | 199-P3-MW004S-17-20230517 | 5/17/2023 | 17.0 | N | 4602804541 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **2.6** | -- | -- | -- | -- | 0.69 | -- | < 1.0 | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20230720 | 7/20/2023 | 17.0 | N | 4602846391 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **2.4** | -- | -- | -- | -- | 0.37 J | -- | 0.50 J | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20230823 | 8/23/2023 | 17.0 | N | 4602867511 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **2.3** | -- | -- | -- | -- | 0.38 J | -- | 0.97 J | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20230915 | 9/15/2023 | 17.0 | N | 4602882761 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **1.4** | -- | -- | -- | -- | 0.42 J | -- | **1.2** | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20231010 | 10/10/2023 | 17 | N | 4602900121 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **1.3** | -- | -- | -- | -- | 0.43 J | -- | **1.0** | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20231114 | 11/14/2023 | 17 | N | JD76935 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.75 J | -- | -- | -- | -- | < 1.0 U | -- | **1.5** | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20231214 | 12/14/2023 | 17 | N | JD78891 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | **2.5** | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20240122 | 1/22/2024 | 17 | N | JD80935 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **1.7** | -- | -- | -- | -- | < 1.0 U | -- | **2.4** | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20240223 | 2/23/2024 | 17 | N | JD83100 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 10 U** | -- | -- | -- | -- | **< 10 U** | -- | **< 10 U** | -- |
| 199-P3-MW004S | 199-P3-MW004S-17.0-20240314 | 3/14/2024 | 17 | N | JD84495 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **< 1000 U** | -- | -- | -- | -- | **< 1000 U** | -- | **< 1000 U** | -- |
| 199-P3-MW004S | 199-P3-MW004S-13.5-20240411 | 4/11/2024 | 13.5 | N | JD86317 | Post-Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.58 J | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 199-P3-MW004S | 199-P3-MW004S-18.5-20240412 | 4/12/2024 | 18.5 | N | JD86439 | Post-Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 199-P3-MW004S | 199-P3-MW004S-13.5-20240716 | 7/16/2024 | 13.5 | N | JD92267 | Post-Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 199-P3-MW004S | 199-P3-MW004S-16.5-20241016 | 10/16/2024 | 16.5 | N | JD98354 | Post-Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| FSP-P3-MW001S | FSP-P3-MW001S-14.0-20210917 | 9/17/2021 | 14.0 | N | 4602430721 | Baseline | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| FSP-P3-MW001S | FSP-P3-MW001S-14-20220826 | 8/26/2022 | 14.0 | N | 4602644761 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| FSP-P3-MW001S | FSP-P3-MW001S-14.0-20220922 | 9/22/2022 | 14.0 | N | 4602660731 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| FSP-P3-MW001S | FSP-P3-MW001S-14-20221021 | 10/21/2022 | 14.0 | N | 4602679761 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| FSP-P3-MW001S | FSP-P3-MW001S-14-20221118 | 11/18/2022 | 14.0 | N | 4602697961 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| FSP-P3-MW001S | FSP-P3-MW001S-14-20221220 | 12/20/2022 | 14.0 | N | 4602718081 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| MW1C-4 | MW1C-4-15.5-20220104 | 1/4/2022 | 15.5 | N | 4602500781 | Baseline | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 114-MW41B | 114-MW41B-28.2-20211229 | 12/29/2021 | 28.2 | N | 4602499461 | Baseline | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **1.1** | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 114-MW41B | 114-MW41B-28.2-20220825 | 8/25/2022 | 28.2 | N | 4602644081 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| 114-MW41B | 114-MW41B-28.2-20220921 | 9/21/2022 | 28.2 | N | 4602659871 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| 114-MW41B | 114-MW41B-28.2-20220921-X | 9/21/2022 | 28.2 | FD | 4602659871 | Treatment-FD | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| 114-MW41B | 114-MW41B-28.2-20221020 | 10/20/2022 | 28.2 | N | 4602678821 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| 114-MW41B | 114-MW41B-28.2-20221020-X | 10/20/2022 | 28.2 | FD | 4602678821 | Treatment-FD | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- | -- | 0.55 | -- | < 1.0 | -- |
| 114-MW41B | 114-MW41B-28.2-20221118 | 11/18/2022 | 28.2 | N | 4602697961 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- | -- | 0.60 | -- | < 1.0 | -- |
| 114-MW41B | 114-MW41B-28.2-20221220 | 12/20/2022 | 28.2 | N | 4602718081 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| 114-MW41B | 114-MW41B-28.2-

**Appendix A-2**
**Groundwater Analytical Results - Volatile Organic Compounds**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

AECOM

| Analyte | | | | | | | | 1,1,1-TRICHLOROETHANE | 1,1,2,2-TETRACHLOROETHANE | 1,1,2-TRICHLOROETHANE | 1,1,2-TRICHLOROTRIFLUORO-ETHANE | 1,1-DICHLOROETHANE | 1,1-DICHLOROETHYLENE | 1,2,3-TRICHLOROBENZENE | 1,2,4-TRICHLOROBENZENE | 1,2-DIBROMO-3-CHLOROPROPANE (DBCP) | 1,2-DIBROMOETHANE(EDB) | 1,2-DICHLOROBENZENE | 1,2-DICHLOROETHANE | 1,2-DICHLOROPROPANE | 1,4-DICHLOROBENZENE | 2-BUTANONE (MEK) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | CAS-RN | 71-55-6 | 79-34-5 | 79-00-5 | 76-13-1 | 75-34-3 | 75-35-4 | 87-61-6 | 120-82-1 | 96-12-8 | 106-93-4 | 95-50-1 | 107-06-2 | 78-87-5 | 106-46-7 | 78-93-3 |
| | | | | | | | Fraction | T | T | T | T | T | T | T | T | T | T | T | T | T | T | T |
| | | | | | | | GWQS | 30 | 1 | 3 | 20000 | 50 | 1 | N/A | 9 | 0.02 | 0.03 | 600 | 2 | 1 | 75 | 300 |
| | | | | | | | Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water-Bearing Zone | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result |
| 114-MW41B | 114-MW41B-28.2-20230517 | 5/17/2023 | 28.2 | N | 4602804541 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20230717 | 7/17/2023 | 28.2 | N | 4602844061 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20230822 | 8/22/2023 | 28.2 | N | 4602866771 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20230822-X | 8/22/2023 | 28.2 | FD | 4602866771 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20230915 | 9/15/2023 | 28.2 | N | 4602882761 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20230915-X | 9/15/2023 | 28.2 | FD | 4602882761 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20231010 | 10/10/2023 | 28.2 | N | 4602900121 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20231113 | 11/13/2023 | 28.2 | N | JD76852 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20231214 | 12/14/2023 | 28.2 | N | JD78891 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20240122 | 1/22/2024 | 28.2 | N | JD80935 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20240223 | 2/23/2024 | 28.2 | N | JD83100 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20240315 | 3/15/2024 | 28.2 | N | JD84558 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-24.5-20240412 | 4/12/2024 | 24.5 | N | JD86439 | Post-Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-24.5-20240715 | 7/15/2024 | 24.5 | N | JD92183 | Post-Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-MW41B | 114-MW41B-24.5-20241015 | 10/15/2024 | 24.5 | N | JD98256 | Post-Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| ***Other Site-Wide Monitoring Wells*** | | | | | | | | | | | | | | | | | | | | | | |
| HAL-P3-MW001I | HAL-P3-MW001-24.0-20230413 | 4/13/2023 | 24.0 | N | 4602781941 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001-29.0-20230414 | 4/14/2023 | 29.0 | N | 4602782821 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001-34.0-20230414 | 4/14/2023 | 34.0 | N | 4602782821 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001-39-20230417 | 4/17/2023 | 39.0 | N | 4602783601 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001B-58.0-20230413 | 4/13/2023 | 58.0 | N | 4602781941 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001-B-53.0-20230414 | 4/14/2023 | 53.0 | N | 4602782821 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001-B-53.0-20230414-X | 4/14/2023 | 53.0 | FD | 4602782821 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001B-48.0-20230414 | 4/14/2023 | 48.0 | N | 4602782821 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001B-43.0-20230414 | 4/14/2023 | 43.0 | N | 4602782821 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-38.0-20230414 | 4/14/2023 | 38.0 | N | 4602782821 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-33.0-20230414 | 4/14/2023 | 33.0 | N | 4602782821 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-23-20230417 | 4/17/2023 | 23.0 | N | 4602783601 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-28-20230417 | 4/17/2023 | 28.0 | N | 4602783601 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-44-20230417 | 4/17/2023 | 44.0 | N | 4602783601 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-49-20230417 | 4/17/2023 | 49.0 | N | 4602783601 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-54-20230417 | 4/17/2023 | 54.0 | N | 4602783601 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-59-20230417 | 4/17/2023 | 59.0 | N | 4602783601 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW4S | GPS-MW4S-20200813 | 8/13/2020 | 13.5 | N | JD11673 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW4S | GPS-MW4S-20201111 | 11/11/2020 | 13.5 | N | JD16049 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW4S | GPS-MW4S_20210930 | 9/30/2021 | 13.5 | N | JD32569 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW4S | GPS-MW4S-BD-20211116 | 11/16/2021 | 13.5 | FD | JD35372 | Post Treatment-FD | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 UJ | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW4S | GPS-MW-4S-20211116 | 11/16/2021 | 13.5 | N | JD35372 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 UJ | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW4S | GPS-MW4S-20220224 | 2/24/2022 | 13.5 | N | JD40291 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW4S | GPS-MW4S-20220523 | 5/23/2022 | 13.5 | N | JD45334 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW5S | GPS-MW5S-DUP-20200814 | 8/14/2020 | 11.0 | FD | JD11773 | Post Treatment-FD | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW5S | GPS-MW5S-20200814 | 8/14/2020 | 11.0 | N | JD11773 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW5S | GPS-MW5S-20201113 | 11/13/2020 | 11.0 | N | JD16259 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW5S | GPS-MW5S-20210226 | 2/26/2021 | 11.0 | N | JD20896 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW5S | GPS-MW-5S-20211011 | 10/11/2021 | 11.0 | N | JD33262 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 UJ |
| GPS-MW5S | GPS-MW5S-20211118 | 11/18/2021 | 11.0 | N | JD35530 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW5S | GPS-MW5S-20220224 | 2/24/2022 | 11.0 | N | JD40291 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW5S | GPS-MW5S-20220524 | 5/24/2022 | 11.0 | N | JD45395 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 UJ |
| GPS-MW6S | GPS-MW6S-20200814 | 8/14/2020 | 10.0 | N | JD11773 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW6S | GPS-MW6S-20201113 | 11/13/2020 | 10.0 | N | JD16259 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW6S | GPS-MW6S-20210226 | 2/26/2021 | 10.0 | N | JD20896 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW6S | GPS-MW6S_20210930 | 9/30/2021 | 10.0 | N | JD32569 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW6S | GPS-MW-6S-20211117 | 11/17/2021 | 10.0 | N | JD35453 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW6S | GPS-MW6S-20220223 | 2/23/2022 | 10.0 | N | JD40159 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| GPS-MW6S | GPS-MW6S-20220524 | 5/24/2022 | 10.0 | N | JD45395 | Post Treatment | Shallow | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 U |
| 114-P2B4-MW102I | 114-P2B4-MW102I-20200817 | 8/17/2020 | 29.0 | N | JD11849 | Post Treatment | Intermediate | < 10 U | **< 10 U** | **< 10 U** | < 50 U | < 10 U | **< 10 U** | < 10 U | **< 10 U** | **< 20 U** | **< 10 U** | < 10 U | **< 10 U** | **< 10 U** | < 10 U | < 100 U |
| 114-P2B4-MW102I | 114-P2B4-MW-102I-DUP-20201110 | 11/10/2020 | 29.0 | FD | JD15969 | Post Treatment-FD | Intermediate | < 10 U | **< 10 U** | **< 10 U** | < 50 U | < 10 U | **< 10 U** | < 10 U | **< 10 U** | **< 20 U** | **< 10 U** | < 10 U | **< 10 U** | **< 10 U** | < 10 U | < 100 U |
| 114-P2B4-MW102I | 114-P2B4-MW-102I-20201110 | 11/10/2020 | 29.0 | N | JD15969 | Post Treatment | Intermediate | < 10 U | **< 10 U** | **< 10 U** | < 50 U | < 10 U | **< 10 U** | < 10 U | **< 10 U** | **< 20 U** | **< 10 U** | < 10 U | **< 10 U** | **< 10 U** | < 10 U | < 100 U |
| 114-P2B4-MW102I | 114-P2B4-MW102I-20210225 | 2/25/2021 | 29.0 | N | JD20780 | Post Treatment | Intermediate | < 20 U | **< 20 U** | **< 20 U** | < 100 U | < 20 U | **< 20 U** | < 20 U | **< 20 U** | **< 40 U** | **< 20 U** | < 20 U | **< 20 U** | **< 20 U** | < 20 U | < 200 U |
| 114-P2B4-MW102I | 114-P2B4-MW102I-26.7-20230412 | 4/12/2023 | 26.7 | N | 4602781101 | N/A | Intermediate | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B4-MW102I | 114-P2B4-MW102I-31.7-20230412 | 4/12/2023 | 31.7 | N | 4602781101 | N/A | Intermediate | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-20200814 | 8/14/2020 | 27.0 | N | JD11773 | Post Treatment | Intermediate | < 10 U | **< 10 U** | **< 10 U** | < 50 U | < 10 U | **< 10 U** | < 10 U | **< 10 U** | **< 20 U** | **< 10 U** | < 10 U | **< 10 U** | **< 10 U** | < 10 U | < 100 U |
| 114-P2B4-MW103I | 114-P2B4-MW103I-20201112 | 11/12/2020 | 27.0 | N | JD16144 | Post Treatment | Intermediate | < 25 U | **< 25 U** | **< 25 U** | < 130 U | < 25 U | **< 25 U** | < 25 U | **< 25 U** | **< 50 U** | **< 25 U** | < 25 U | **< 25 U** | **< 25 U** | < 25 U | < 250 U |
| 114-P2B4-MW103I | 114-P2B4-MW103I-20210226 | 2/26/2021 | 27.0 | N | JD20896 | Post Treatment | Intermediate | < 5.0 U | **< 5.0 U** | **< 5.0 U** | < 25 U | < 5.0 U | **< 5.0 U** | < 5.0 U | < 5.0 U | **< 10 U** | **< 5.0 U** | < 5.0 U | **< 5.0 U** | **< 5.0 U** | < 5.0 U | < 50 U |
| 114-P1B-MW103D | 114-P1B-MW103D-DUP-20210930 | 9/30/2021 | 53.5 | FD | JD32569 | Post Treatment-FD | Deep | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 5.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | **< 2.0 UJ** | **< 1.0 UJ** | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | 135 J |
| 114-P1B-MW103D | 114-P1B-MW103D-20210930 | 9/30/2021 | 53.5 | N | JD32569 | Post Treatment | Deep | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 10 UJ |
| 114-P1B-MW103D | 114-P1B-MW103D-20220224 | 2/24/2022 | 53.5 | N | JD40291 | Post Treatment | Deep | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **477** |
| 114-P1B-MW103D | 114-P1B-MW103D-20220524 | 5/24/2022 | 53.5 | N | JD45395 | Post Treatment | Deep | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **< 2.0 U** | **< 1.0 U** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | **754** |
| 199-P3-IRM-006S-R | 199-P3-IRM-006S-R-12.0-20231113 | 11/13/2023 | 12 | N | JD76852 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-P3-IRM-006S-R | 199-P3-IRM-006S-R-16.0-20231113 | 11/13/2023 | 16 | N | JD76852 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| ***Temporary Wells*** | | | | | | | | | | | | | | | | | | | | | | |
| 199-TW-1 | 199-TW-1 | 3/22/2023 | 15.0 | N | 4602768021 | N/A | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-TW-2 | 199-TW-2 | 3/22/2023 | 14.0 | N | 4602768021 | N/A | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-TW-3 | 199-TW-3 | 3/22/2023 | 17.0 | N | 4602768021 | N/A | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

**Appendix A-2**
**Groundwater Analytical Results - Volatile Organic Compounds**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

AECOM

| Analyte | | | | | | | | | 4-METHYL-2-PENTANONE (MIBK) | ACETONE | BENZENE | BROMODICHLORO-METHANE | BROMOMETHANE | CARBON DISULFIDE | CARBON TETRACHLORIDE | CHLOROBENZENE | CHLORODIBROMO-METHANE | CHLORODIBROMO-METHANE | CHLOROETHANE | CHLOROFORM | CHLOROMETHANE | CIS-1,2-DICHLOROETHENE | CIS-1,3-DICHLOROPROPENE | CYCLOHEXANE | DICHLORODIFLUOROMETHANE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CAS-RN | | | | | | | | | 108-10-1 | 67-64-1 | 71-43-2 | 75-27-4 | 74-83-9 | 75-15-0 | 56-23-5 | 108-90-7 | 74-97-5 | 124-48-1 | 75-00-3 | 67-66-3 | 74-87-3 | 156-59-2 | 10061-01-5 | 110-82-7 | 75-71-8 |
| Fraction | | | | | | | | | T | T | T | T | T | T | T | T | N/A | T | T | T | N/A | T | N/A | T | T |
| GWQS Units | | | | | | | | | N/A ug/L | 6000 ug/L | 1 ug/L | 1 ug/L | 10 ug/L | 700 ug/L | 1 ug/L | 50 ug/L | ug/L | 1 ug/L | 5 ug/L | 70 ug/L | ug/L | 70 ug/L | N/A ug/L | N/A ug/L | 1000 ug/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOIC) | Sample Type | Lab SDG | Sample Timeframe | Water-Bearing Zone | | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result |
| 114-MW41B | 114-MW41B-28.2-20230517 | 5/17/2023 | 28.2 | N | 4602804541 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20230717 | 7/17/2023 | 28.2 | N | 4602844061 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20230822 | 8/22/2023 | 28.2 | N | 4602866771 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20230822-X | 8/22/2023 | 28.2 | FD | 4602866771 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20230915 | 9/15/2023 | 28.2 | N | 4602882761 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.24 J | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20230915-X | 9/15/2023 | 28.2 | FD | 4602882761 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.31 J | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20231010 | 10/10/2023 | 28.2 | N | 4602900121 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20231113 | 11/13/2023 | 28.2 | N | JD76852 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20231214 | 12/14/2023 | 28.2 | N | JD78891 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20240122 | 1/22/2024 | 28.2 | N | JD80935 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20240223 | 2/23/2024 | 28.2 | N | JD83100 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 114-MW41B | 114-MW41B-28.2-20240315 | 3/15/2024 | 28.2 | N | JD84558 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 114-MW41B | 114-MW41B-24.5-20240412 | 4/12/2024 | 24.5 | N | JD86439 | Post-Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 114-MW41B | 114-MW41B-24.5-20240715 | 7/15/2024 | 24.5 | N | JD92183 | Post-Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| 114-MW41B | 114-MW41B-24.5-20241015 | 10/15/2024 | 24.5 | N | JD98256 | Post-Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- |
| ***Other Site-Wide Monitoring Wells*** | | | | | | | | | | | | | | | | | | | | | | | | | |
| HAL-P3-MW001I | HAL-P3-MW001I-24.0-20230413 | 4/13/2023 | 24.0 | N | 4602781941 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-29.0-20230414 | 4/14/2023 | 29.0 | N | 4602782821 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-34.0-20230414 | 4/14/2023 | 34.0 | N | 4602782821 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39-20230417 | 4/17/2023 | 39.0 | N | 4602783601 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-58.0-20230413 | 4/13/2023 | 58.0 | N | 4602781941 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-53.0-20230414 | 4/14/2023 | 53.0 | N | 4602782821 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-53.0-20230414-X | 4/14/2023 | 53.0 | FD | 4602782821 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-48.0-20230414 | 4/14/2023 | 48.0 | N | 4602782821 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-MW001I-B | HAL-P3-MW001I-B-43.0-20230414 | 4/14/2023 | 43.0 | N | 4602782821 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-38.0-20230414 | 4/14/2023 | 38.0 | N | 4602782821 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-33.0-20230414 | 4/14/2023 | 33.0 | N | 4602782821 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-23-20230417 | 4/17/2023 | 23.0 | N | 4602783601 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-28-20230417 | 4/17/2023 | 28.0 | N | 4602783601 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-44-20230417 | 4/17/2023 | 44.0 | N | 4602783601 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-49-20230417 | 4/17/2023 | 49.0 | N | 4602783601 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-54-20230417 | 4/17/2023 | 54.0 | N | 4602783601 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-59-20230417 | 4/17/2023 | 59.0 | N | 4602783601 | Treatment | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW4S | GPS-MW4S-20200813 | 8/13/2020 | 13.5 | N | JD11673 | Post Treatment | Shallow | | 6.7 | 11.6 | **1.4** | < 1.0 U | < 2.0 U | 2.5 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW4S | GPS-MW4S-20201111 | 11/11/2020 | 13.5 | N | JD16049 | Post Treatment | Shallow | | 6.9 | 18.9 | **1.4** | < 1.0 U | < 2.0 U | 2.6 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW4S | GPS-MW4S_20210930 | 9/30/2021 | 13.5 | N | JD32569 | Post Treatment | Shallow | | 5.0 | 11.0 J | **1.4 J** | < 1.0 U | < 2.0 U | 2.3 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW4S | GPS-MW4S-BD-20211116 | 11/16/2021 | 13.5 | FD | JD35372 | Post Treatment-FD | Shallow | | 6.2 | 15.3 | **1.8** | < 1.0 U | < 2.0 U | 2.7 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW4S | GPS-MW-4S-20211116 | 11/16/2021 | 13.5 | N | JD35372 | Post Treatment | Shallow | | 6.4 | 22.7 | **1.6** | < 1.0 U | < 2.0 U | 2.9 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW4S | GPS-MW4S-20220224 | 2/24/2022 | 13.5 | N | JD40291 | Post Treatment | Shallow | | 7.9 | 28.8 | **1.6** | < 1.0 U | < 2.0 U | 1.7 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW4S | GPS-MW4S-20220523 | 5/23/2022 | 13.5 | N | JD45334 | Post Treatment | Shallow | | 5.9 | 22.6 | **1.5** | < 1.0 U | < 2.0 U | 3.0 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW5S | GPS-MW5S-DUP-20200814 | 8/14/2020 | 11.0 | FD | JD11773 | Post Treatment-FD | Shallow | | 4.0 J | < 10 U | **1.3** | < 1.0 U | < 2.0 U | 1.8 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 UJ | < 2.0 UJ |
| GPS-MW5S | GPS-MW5S-20200814 | 8/14/2020 | 11.0 | N | JD11773 | Post Treatment | Shallow | | 4.3 J | < 10 U | **1.3** | < 1.0 U | < 2.0 U | 1.9 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 UJ | < 2.0 UJ |
| GPS-MW5S | GPS-MW5S-20201113 | 11/13/2020 | 11.0 | N | JD16259 | Post Treatment | Shallow | | 2.7 J | < 10 U | **1.3** | < 1.0 U | < 2.0 U | 1.3 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW5S | GPS-MW5S-20210226 | 2/26/2021 | 11.0 | N | JD20896 | Post Treatment | Shallow | | < 5.0 U | < 10 U | 0.81 | < 1.0 U | < 2.0 U | 0.74 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW5S | GPS-MW-5S-20211011 | 10/11/2021 | 11.0 | N | JD33262 | Post Treatment | Shallow | | 4.9 J | < 10 UJ | **1.8** | < 1.0 U | < 2.0 U | 2.3 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW5S | GPS-MW5S-20211118 | 11/18/2021 | 11.0 | N | JD35530 | Post Treatment | Shallow | | 7.4 | 3.7 J | **1.5** | < 1.0 U | < 2.0 U | 2.6 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW5S | GPS-MW5S-20220224 | 2/24/2022 | 11.0 | N | JD40291 | Post Treatment | Shallow | | 9.8 | 3.6 J | **1.4** | < 1.0 U | < 2.0 U | 2.6 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW5S | GPS-MW5S-20220524 | 5/24/2022 | 11.0 | N | JD45395 | Post Treatment | Shallow | | 10.5 | 3.8 J | **1.9** | < 1.0 U | < 2.0 UJ | 2.2 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 UJ | < 1.0 U | < 1.0 UJ | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW6S | GPS-MW6S-20200814 | 8/14/2020 | 10.0 | N | JD11773 | Post Treatment | Shallow | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 UJ | < 2.0 UJ |
| GPS-MW6S | GPS-MW6S-20201113 | 11/13/2020 | 10.0 | N | JD16259 | Post Treatment | Shallow | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW6S | GPS-MW6S-20210226 | 2/26/2021 | 10.0 | N | JD20896 | Post Treatment | Shallow | | < 5.0 U | 6.0 J | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW6S | GPS-MW6S_20210930 | 9/30/2021 | 10.0 | N | JD32569 | Post Treatment | Shallow | | < 5.0 U | < 10 UJ | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 UJ |
| GPS-MW6S | GPS-MW-6S-20211117 | 11/17/2021 | 10.0 | N | JD35453 | Post Treatment | Shallow | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 UJ | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW6S | GPS-MW6S-20220223 | 2/23/2022 | 10.0 | N | JD40159 | Post Treatment | Shallow | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| GPS-MW6S | GPS-MW6S-20220524 | 5/24/2022 | 10.0 | N | JD45395 | Post Treatment | Shallow | | < 5.0 U | < 10 U | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P2B4-MW102I | 114-P2B4-MW102I-20200817 | 8/17/2020 | 29.0 | N | JD11849 | Post Treatment | Intermediate | | < 50 U | < 100 U | **3200 D** | **< 10 U** | **< 20 U** | < 20 U | **< 10 U** | < 10 U | < 10 U | **< 10 U** | **< 10 U** | < 10 U | < 10 U | < 10 U | < 10 U | < 50 U | < 20 U |
| 114-P2B4-MW102I | 114-P2B4-MW-102I-DUP-20201110 | 11/10/2020 | 29.0 | FD | JD15969 | Post Treatment-FD | Intermediate | | < 50 U | < 100 U | **1560** | **< 10 U** | **< 20 U** | < 20 U | **< 10 U** | < 10 U | < 10 U | **< 10 U** | **< 10 U** | < 10 U | < 10 U | < 10 U | < 10 U | < 50 U | < 20 U |
| 114-P2B4-MW102I | 114-P2B4-MW-102I-20201110 | 11/10/2020 | 29.0 | N | JD15969 | Post Treatment | Intermediate | | < 50 U | < 100 U | **1630** | **< 10 U** | **< 20 U** | < 20 U | **< 10 U** | < 10 U | < 10 U | **< 10 U** | **< 10 U** | < 10 U | < 10 U | < 10 U | < 10 U | < 50 U | < 20 U |
| 114-P2B4-MW102I | 114-P2B4-MW102I-20210225 | 2/25/2021 | 29.0 | N | JD20780 | Post Treatment | Intermediate | | < 100 U | < 200 U | **2560** | **< 20 U** | **< 40 U** | < 40 U | **< 20 U** | < 20 U | < 20 U | **< 20 U** | **< 20 U** | < 20 U | < 20 U | < 20 U | < 20 U | < 100 U | < 40 U |
| 114-P2B4-MW102I | 114-P2B4-MW102I-26.7-20230412 | 4/12/2023 | 26.7 | N | 4602781101 | N/A | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B4-MW102I | 114-P2B4-MW102I-31.7-20230412 | 4/12/2023 | 31.7 | N | 4602781101 | N/A | Intermediate | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-20200814 | 8/14/2020 | 27.0 | N | JD11773 | Post Treatment | Intermediate | | < 50 U | < 100 U | **1320 J** | **< 10 U** | **< 20 U** | < 20 U | **< 10 U** | < 10 U | < 10 U | **< 10 U** | **< 10 U** | < 10 U | < 10 U | < 10 U | < 10 U | < 50 UJ | < 20 UJ |
| 114-P2B4-MW103I | 114-P2B4-MW103I-20201112 | 11/12/2020 | 27.0 | N | JD16144 | Post Treatment | Intermediate | | < 130 U | < 250 U | **4050** | **< 25 U** | **< 50 U** | < 50 U | **< 25 U** | < 25 U | < 25 U | **< 25 U** | **< 25 U** | < 25 U | < 25 U | < 25 U | < 25 U | < 130 U | < 50 U |
| 114-P2B4-MW103I | 114-P2B4-MW103I-20210226 | 2/26/2021 | 27.0 | N | JD20896 | Post Treatment | Intermediate | | < 25 U | < 50 U | **2380 D** | **< 5.0 U** | < 10 U | < 10 U | **< 5.0 U** | < 5.0 U | < 5.0 U | **< 5.0 U** | < 5.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 25 U | < 10 U |
| 114-P1B-MW103D | 114-P1B-MW103D-DUP-20210930 | 9/30/2021 | 53.5 | FD | JD32569 | Post Treatment-FD | Deep | | < 5.0 UJ | 81.5 J | **1.6 J** | < 1.0 UJ | < 2.0 UJ | 0.62 J | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 5.0 UJ | < 2.0 UJ |
| 114-P1B-MW103D | 114-P1B-MW103D-20210930 | 9/30/2021 | 53.5 | N | JD32569 | Post Treatment | Deep | | < 5.0 U | < 10 UJ | < 0.50 UJ | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1B-MW103D | 114-P1B-MW103D-20220224 | 2/24/2022 | 53.5 | N | JD40291 | Post Treatment | Deep | | < 5.0 U | 42.4 | < 0.50 U | < 1.0 U | < 2.0 U | 0.88 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | 0.66 J | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 114-P1B-MW103D | 114-P1B-MW103D-20220524 | 5/24/2022 | 53.5 | N | JD45395 | Post Treatment | Deep | | < 5.0 U | 153 | < 0.50 U | < 1.0 U | < 2.0 U | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 UJ | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 2.0 U |
| 199-P3-IRM-006S-R | 199-P3-IRM-006S-R-12.0-20231113 | 11/13/2023 | 12 | N | JD76852 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 9.0 | -- | -- | -- |
| 199-P3-IRM-006S-R | 199-P3-IRM-006S-R-16.0-20231113 | 11/13/2023 | 16 | N | JD76852 | Treatment | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6.6 | -- | -- | -- |
| ***Temporary Wells*** | | | | | | | | | | | | | | | | | | | | | | | | | |
| 199-TW-1 | 199-TW-1 | 3/22/2023 | 15.0 | N | 4602768021 | N/A | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-TW-2 | 199-TW-2 | 3/22/2023 | 14.0 | N | 4602768021 | N/A | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-TW-3 | 199-TW-3 | 3/22/2023 | 17.0 | N | 4602768021 | N/A | Shallow | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

**Appendix A-2**
**Groundwater Analytical Results - Volatile Organic Compounds**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

AECOM

| Analyte | | | | | | | | DICHLOROMETHANE | ETHYLBENZENE | ISOPROPYLBENZENE | M+P-XYLENE | M-DICHLOROBENZENE | METHYL ACETATE | METHYL N-BUTYL KETONE | METHYLCYCLOHEXANE | METHYL-TERT-BUTYL ETHER | O-XYLENE | STYRENE (MONOMER) | TETRACHLOROETHENE (PCE) | TOLUENE | TRANS-1,2-DICHLOROETHENE | TRANS-1,3-DICHLOROPROPENE | TRIBROMOMETHANE | TRICHLOROETHYLENE (TCE) | TRICHLOROFLUOROMETHANE | VINYL CHLORIDE | XYLENES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CAS-RN | | | | | | | | 75-09-2 | 100-41-4 | 98-82-8 | M+P-XYLENE | 541-73-1 | 79-20-9 | 591-78-6 | 108-87-2 | 1634-04-4 | 95-47-6 | 100-42-5 | 127-18-4 | 108-88-3 | 156-60-5 | 10061-02-6 | 75-25-2 | 79-01-6 | 75-69-4 | 75-01-4 | 1330-20-7 |
| Fraction | | | | | | | | T | T | T | N/A | T | T | T | N/A | T | N/A | T | T | T | T | N/A | T | T | T | T | T |
| GWQS | | | | | | | | 3 | 700 | 700 | 600 | 600 | 7000 | 300 | N/A | 70 | N/A | 100 | 1 | 600 | 100 | N/A | 4 | 1 | 2000 | 1 | 1000 |
| Units | | | | | | | | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| Well ID | Sample ID | Sample Date | Sample Depth Interval (ft bTOC) | Sample Type | Lab SDG | Sample Timeframe | Water-Bearing Zone | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result |
| 114-MW41B | 114-MW41B-28.2-20230517 | 5/17/2023 | 28.2 | N | 4602804541 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 | -- | -- | -- | -- | < 1.0 | -- | < 1.0 | -- |
| 114-MW41B | 114-MW41B-28.2-20230717 | 7/17/2023 | 28.2 | N | 4602844061 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 114-MW41B | 114-MW41B-28.2-20230822 | 8/22/2023 | 28.2 | N | 4602866771 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 114-MW41B | 114-MW41B-28.2-20230822-X | 8/22/2023 | 28.2 | FD | 4602866771 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 114-MW41B | 114-MW41B-28.2-20230915 | 9/15/2023 | 28.2 | N | 4602882761 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 114-MW41B | 114-MW41B-28.2-20230915-X | 9/15/2023 | 28.2 | FD | 4602882761 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 114-MW41B | 114-MW41B-28.2-20231010 | 10/10/2023 | 28.2 | N | 4602900121 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 114-MW41B | 114-MW41B-28.2-20231113 | 11/13/2023 | 28.2 | N | JD76852 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 114-MW41B | 114-MW41B-28.2-20231214 | 12/14/2023 | 28.2 | N | JD78891 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 114-MW41B | 114-MW41B-28.2-20240122 | 1/22/2024 | 28.2 | N | JD80935 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 114-MW41B | 114-MW41B-28.2-20240223 | 2/23/2024 | 28.2 | N | JD83100 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 114-MW41B | 114-MW41B-28.2-20240315 | 3/15/2024 | 28.2 | N | JD84558 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 114-MW41B | 114-MW41B-24.5-20240412 | 4/12/2024 | 24.5 | N | JD86439 | Post-Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 114-MW41B | 114-MW41B-24.5-20240715 | 7/15/2024 | 24.5 | N | JD92183 | Post-Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| 114-MW41B | 114-MW41B-24.5-20241015 | 10/15/2024 | 24.5 | N | JD98256 | Post-Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | < 1.0 U | -- | < 1.0 U | -- |
| ***Other Site-Wide Monitoring Wells*** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| HAL-P3-MW001I | HAL-P3-MW001I-24.0-20230413 | 4/13/2023 | 24.0 | N | 4602781941 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-29.0-20230414 | 4/14/2023 | 29.0 | N | 4602782821 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-34.0-20230414 | 4/14/2023 | 34.0 | N | 4602782821 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-MW001I | HAL-P3-MW001I-39-20230417 | 4/17/2023 | 39.0 | N | 4602783601 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-MW001B | HAL-P3-MW001B-58.0-20230413 | 4/13/2023 | 58.0 | N | 4602781941 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-MW001B | HAL-P3-MW001B-53.0-20230414 | 4/14/2023 | 53.0 | N | 4602782821 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-MW001B | HAL-P3-MW001B-53.0-20230414-X | 4/14/2023 | 53.0 | FD | 4602782821 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-MW001B | HAL-P3-MW001B-48.0-20230414 | 4/14/2023 | 48.0 | N | 4602782821 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HAL-P3-MW001B | HAL-P3-MW001B-43.0-20230414 | 4/14/2023 | 43.0 | N | 4602782821 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-38.0-20230414 | 4/14/2023 | 38.0 | N | 4602782821 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-33.0-20230414 | 4/14/2023 | 33.0 | N | 4602782821 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-23-20230417 | 4/17/2023 | 23.0 | N | 4602783601 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-A | HSTD-P3-MW002I-A-28-20230417 | 4/17/2023 | 28.0 | N | 4602783601 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-44-20230417 | 4/17/2023 | 44.0 | N | 4602783601 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-49-20230417 | 4/17/2023 | 49.0 | N | 4602783601 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-54-20230417 | 4/17/2023 | 54.0 | N | 4602783601 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| HSTD-P3-MW002I-B | HSTD-P3-MW002I-B-59-20230417 | 4/17/2023 | 59.0 | N | 4602783601 | Treatment | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| GPS-MW4S | GPS-MW4S-20200813 | 8/13/2020 | 13.5 | N | JD11673 | Post Treatment | Shallow | < 2.0 U | 4.2 | < 1.0 U | 0.95 J | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | 0.70 J | 27.4 | < 1.0 U | 2.9 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | 1.7 |
| GPS-MW4S | GPS-MW4S-20201111 | 11/11/2020 | 13.5 | N | JD16049 | Post Treatment | Shallow | < 2.0 U | 4.0 | < 1.0 U | 0.81 J | < 1.0 U | < 5.0 UJ | < 5.0 U | < 5.0 U | < 1.0 U | 0.63 J | 37.2 | < 1.0 U | 2.6 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | 1.4 |
| GPS-MW4S | GPS-MW4S_20210930 | 9/30/2021 | 13.5 | N | JD32569 | Post Treatment | Shallow | < 2.0 U | 3.9 | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | 0.76 J | 25.8 | < 1.0 U | 2.6 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | 0.76 J |
| GPS-MW4S | GPS-MW4S-BD-20211116 | 11/16/2021 | 13.5 | FD | JD35372 | Post Treatment-FD | Shallow | < 2.0 U | 4.3 | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | 26.3 | < 1.0 U | 2.9 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW4S | GPS-MW-4S-20211116 | 11/16/2021 | 13.5 | N | JD35372 | Post Treatment | Shallow | < 2.0 U | 3.8 | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | 26.9 | < 1.0 U | 2.6 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW4S | GPS-MW4S-20220224 | 2/24/2022 | 13.5 | N | JD40291 | Post Treatment | Shallow | < 2.0 U | 4.9 | < 1.0 U | 0.98 J | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | 0.80 J | 30.5 | < 1.0 U | 3.1 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | 1.8 |
| GPS-MW4S | GPS-MW4S-20220523 | 5/23/2022 | 13.5 | N | JD45334 | Post Treatment | Shallow | < 2.0 U | 3.8 | < 1.0 U | 0.82 J | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | 0.69 J | 24.5 | < 1.0 U | 2.8 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | 1.5 |
| GPS-MW5S | GPS-MW5S-DUP-20200814 | 8/14/2020 | 11.0 | FD | JD11773 | Post Treatment-FD | Shallow | < 2.0 U | 5.7 | < 1.0 U | 1.1 | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 UJ | < 1.0 U | 0.94 J | 15.8 | < 1.0 U | 3.0 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | 2.0 |
| GPS-MW5S | GPS-MW5S-20200814 | 8/14/2020 | 11.0 | N | JD11773 | Post Treatment | Shallow | < 2.0 U | 5.7 | < 1.0 U | 1.2 | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 UJ | < 1.0 U | 0.97 J | 17.5 | < 1.0 U | 3.0 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | 2.2 |
| GPS-MW5S | GPS-MW5S-20201113 | 11/13/2020 | 11.0 | N | JD16259 | Post Treatment | Shallow | < 2.0 U | 6.5 | < 1.0 U | 1.3 | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | 0.98 J | 18.0 | < 1.0 U | 3.3 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | 2.3 |
| GPS-MW5S | GPS-MW5S-20210226 | 2/26/2021 | 11.0 | N | JD20896 | Post Treatment | Shallow | < 2.0 U | 5.4 | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | 0.60 J | 10.4 | < 1.0 U | 2.1 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | 0.60 J |
| GPS-MW5S | GPS-MW-5S-20211011 | 10/11/2021 | 11.0 | N | JD33262 | Post Treatment | Shallow | < 2.0 U | 6.8 | < 1.0 U | 1.4 | < 1.0 U | < 5.0 UJ | < 5.0 U | < 5.0 U | < 1.0 U | 1.0 | 15.6 | < 1.0 U | 3.4 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | 2.4 |
| GPS-MW5S | GPS-MW5S-20211118 | 11/18/2021 | 11.0 | N | JD35530 | Post Treatment | Shallow | < 2.0 U | 5.5 | < 1.0 U | 1.0 | < 1.0 U | < 5.0 UJ | < 5.0 U | < 5.0 U | < 1.0 U | 0.86 J | 9.7 | < 1.0 U | 2.6 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | 1.9 |
| GPS-MW5S | GPS-MW5S-20220224 | 2/24/2022 | 11.0 | N | JD40291 | Post Treatment | Shallow | < 2.0 U | 5.2 | < 1.0 U | 1.1 | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | 0.90 J | 13.1 | < 1.0 U | 2.4 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | 2.0 |
| GPS-MW5S | GPS-MW5S-20220524 | 5/24/2022 | 11.0 | N | JD45395 | Post Treatment | Shallow | < 2.0 U | 6.3 | < 1.0 U | 1.3 | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | 1.1 | 16.6 | < 1.0 U | 3.0 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 UJ | < 1.0 UJ | 2.4 |
| GPS-MW6S | GPS-MW6S-20200814 | 8/14/2020 | 10.0 | N | JD11773 | Post Treatment | Shallow | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 UJ | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW6S | GPS-MW6S-20201113 | 11/13/2020 | 10.0 | N | JD16259 | Post Treatment | Shallow | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW6S | GPS-MW6S-20210226 | 2/26/2021 | 10.0 | N | JD20896 | Post Treatment | Shallow | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW6S | GPS-MW6S_20210930 | 9/30/2021 | 10.0 | N | JD32569 | Post Treatment | Shallow | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW6S | GPS-MW-6S-20211117 | 11/17/2021 | 10.0 | N | JD35453 | Post Treatment | Shallow | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW6S | GPS-MW6S-20220223 | 2/23/2022 | 10.0 | N | JD40159 | Post Treatment | Shallow | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| GPS-MW6S | GPS-MW6S-20220524 | 5/24/2022 | 10.0 | N | JD45395 | Post Treatment | Shallow | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P2B4-MW102I | 114-P2B4-MW102I-20200817 | 8/17/2020 | 29.0 | N | JD11849 | Post Treatment | Intermediate | **< 20 U** | 396 | 41.5 | 59.8 | < 10 U | < 50 U | < 50 U | < 50 U | < 10 U | 99.0 | < 10 U | **< 10 U** | 8.8 J | < 10 U | < 10 U | < 10 U | **< 10 U** | **< 10 U** | < 20 U | **< 10 U** | 159 |
| 114-P2B4-MW102I | 114-P2B4-MW-102I-DUP-20201110 | 11/10/2020 | 29.0 | FD | JD15969 | Post Treatment-FD | Intermediate | **< 20 U** | 64.9 | 7.9 J | 15.8 | < 10 U | < 50 U | < 50 U | < 50 U | < 10 U | 27.5 | < 10 U | **< 10 U** | < 10 U | < 10 U | < 10 U | < 10 U | **< 10 U** | **< 10 U** | < 20 U | **< 10 U** | 43.3 |
| 114-P2B4-MW102I | 114-P2B4-MW-102I-20201110 | 11/10/2020 | 29.0 | N | JD15969 | Post Treatment | Intermediate | **< 20 U** | 67.9 | 8.2 J | 15.7 | < 10 U | < 50 U | < 50 U | < 50 U | < 10 U | 28.5 | < 10 U | **< 10 U** | < 10 U | < 10 U | < 10 U | < 10 U | **< 10 U** | **< 10 U** | < 20 U | **< 10 U** | 44.2 |
| 114-P2B4-MW102I | 114-P2B4-MW102I-20210225 | 2/25/2021 | 29.0 | N | JD20780 | Post Treatment | Intermediate | **< 40 U** | 195 | 29.7 | 47.4 | < 20 U | < 100 U | < 100 U | < 100 U | < 20 U | 59.3 | < 20 U | **< 20 U** | < 20 U | < 20 U | < 20 U | < 20 U | **< 20 U** | **< 20 U** | < 40 U | **< 20 U** | 107 |
| 114-P2B4-MW102I | 114-P2B4-MW102I-26.7-20230412 | 4/12/2023 | 26.7 | N | 4602781101 | N/A | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B4-MW102I | 114-P2B4-MW102I-31.7-20230412 | 4/12/2023 | 31.7 | N | 4602781101 | N/A | Intermediate | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 114-P2B4-MW103I | 114-P2B4-MW103I-20200814 | 8/14/2020 | 27.0 | N | JD11773 | Post Treatment | Intermediate | **< 20 U** | **2710 D** | 130 | 113 | < 10 U | < 50 U | < 50 U | < 50 UJ | < 10 U | 225 | < 10 U | **< 10 U** | 9.3 J | < 10 U | < 10 U | **< 10 U** | **< 10 U** | < 20 U | **< 10 U** | 338 |
| 114-P2B4-MW103I | 114-P2B4-MW103I-20201112 | 11/12/2020 | 27.0 | N | JD16144 | Post Treatment | Intermediate | **< 50 U** | **3330** | 73.4 | 93.1 | < 25 U | < 130 U | < 130 U | < 130 U | < 25 U | 68.9 | < 25 U | **< 25 U** | < 25 U | < 25 U | < 25 U | < 25 U | **< 25 U** | **< 25 U** | < 50 U | **< 25 U** | 162 |
| 114-P2B4-MW103I | 114-P2B4-MW103I-20210226 | 2/26/2021 | 27.0 | N | JD20896 | Post Treatment | Intermediate | **< 10 U** | **2720 D** | 90.8 | 43.5 | < 5.0 U | < 25 U | < 25 U | < 25 U | < 5.0 U | 49.7 | < 5.0 U | **< 5.0 U** | 6.4 | < 5.0 U | < 5.0 U | **< 5.0 U** | **< 5.0 U** | **< 5.0 U** | < 10 U | **< 5.0 U** | 93.2 |
| 114-P1B-MW103D | 114-P1B-MW103D-DUP-20210930 | 9/30/2021 | 53.5 | FD | JD32569 | Post Treatment-FD | Deep | < 2.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 5.0 UJ | < 5.0 UJ | < 5.0 UJ | 0.55 J | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | 5.6 J | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 1.0 UJ | < 2.0 UJ | < 1.0 UJ | < 1.0 UJ |
| 114-P1B-MW103D | 114-P1B-MW103D-20210930 | 9/30/2021 | 53.5 | N | JD32569 | Post Treatment | Deep | < 2.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 UJ | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1B-MW103D | 114-P1B-MW103D-20220224 | 2/24/2022 | 53.5 | N | JD40291 | Post Treatment | Deep | **4.2** | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | 0.81 J | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | 4.5 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 114-P1B-MW103D | 114-P1B-MW103D-20220524 | 5/24/2022 | 53.5 | N | JD45395 | Post Treatment | Deep | 1.1 J | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 5.0 U | < 5.0 U | < 5.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | 4.3 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U | < 2.0 U | < 1.0 U | < 1.0 U |
| 199-P3-IRM-006S-R | 199-P3-IRM-006S-R-12.0-20231113 | 11/13/2023 | 12 | N | JD76852 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **1.2** | -- | -- | -- | -- | **2.1** | -- | **2.2** | -- |
| 199-P3-IRM-006S-R | 199-P3-IRM-006S-R-16.0-20231113 | 11/13/2023 | 16 | N | JD76852 | Treatment | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | **1.6** | -- | **3.7** | -- |
| ***Temporary Wells*** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 199-TW-1 | 199-TW-1 | 3/22/2023 | 15.0 | N | 4602768021 | N/A | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **8.1** | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-TW-2 | 199-TW-2 | 3/22/2023 | 14.0 | N | 4602768021 | N/A | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **1.0** | -- | -- | -- | -- | -- | -- | -- | -- |
| 199-TW-3 | 199-TW-3 | 3/22/2023 | 17.0 | N | 4602768021 | N/A | Shallow | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.70 | -- | -- | -- | -- | -- | -- | -- | -- |

**Appendix A-2**
**Groundwater Analytical Results - Volatile Organic Compounds**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

**Notes:**

1. Samples collected as part of treatment monitoring events are not subject to data validation.

| | |
|---|---|
| < 1.0 U | Constituent not detected at concentration greater than the sample reporting limit. |
| 13.6 | Constituent detected at concentration greater than the sample reporting limit. |
| **311** | Constituent detected at concentration greater than the applicable NJ GWQS. |

**Abbreviations:**

| | |
|---|---|
| bTOIC | below top of inner casing |
| CAS-RN | Chemical Abstracts Service Registry Number |
| FD | field duplicate |
| ft | feet |
| GWQS | Groundwater Quality Standard(s) |
| N | normal sample type |
| N/A | not applicable |
| NJ | New Jersey |
| SDG | sample delivery group |
| T | total |
| ug/L | micrograms per liter |
| -- | analyte not tested |

**Data Qualifiers:**

| | |
|---|---|
| D | Sample was diluted. |
| J | The compound was positively identified; however, the associated numerical value is an estimated concentration only. |
| J+ | Indicates the analyte was positively identified; the associated numerical value is an estimated quantity with a potential high bias. |
| U | Indicates the analyte was analyzed for but not detected. |
| UB | Indicates the analyte was detected in the sample and blank, but not above the sample reporting limit. |
| UF1 | Indicates the matrix spike and/or matrix spike duplicate recovery exceeds control limits, but analyte not detected. |
| UJ | Indicates the analyte was not detected greater than the reporting limit and the reporting limit was approximate. |

**Appendix A-3**
**Analytical Results from QA/QC Samples - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | Chromium | | | | Geochemical Parameters | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | TOTAL ORGANIC | SULFATE | SULFIDE | METHANE | IRON | MANGANESE |
| | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 |
| | | | Fraction | D | T | D | T | T | T | T | T | D | D |
| | | | Units | ug/L | ug/L | ug/L | ug/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L |
| Sample ID | Sample Date | Sample Type | Lab SDG | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result |
| 114-FB20171113A | 11/13/2017 | EB | JC55349 | -- | -- | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| 114-FB20171113A | 11/13/2017 | EB | JC55349A | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- |
| FORREST-FB20171204 | 12/4/2017 | EB | JC56504 | -- | -- | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FORREST-FB20171204 | 12/4/2017 | EB | JC56504A | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- |
| FORREST-FB20171206 | 12/6/2017 | EB | JC56729 | -- | -- | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FORREST-FB20171206 | 12/6/2017 | EB | JC56729A | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- |
| FORREST-FB20171207 | 12/7/2017 | EB | JC56859 | -- | -- | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FORREST-FB20171207 | 12/7/2017 | EB | JC56859A | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- |
| FB-20171214 | 12/14/2017 | EB | JC57385 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20171215 | 12/15/2017 | EB | JC57501 | -- | -- | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20171215 | 12/15/2017 | EB | JC57501A | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- |
| FORREST-FB-20171218 | 12/18/2017 | EB | JC57565 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FIELD BLANK-20171219 | 12/19/2017 | EB | JC57638 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20171220 | 12/20/2017 | EB | JC57752 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20171221-ARC | 12/21/2017 | EB | JC57864 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | 0.14 | < 100 U | < 15 U |
| FB-20171221 | 12/21/2017 | EB | JC57820 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20171222 | 12/22/2017 | EB | JC57943 | -- | -- | -- | 8.2 J | -- | -- | -- | -- | -- | -- |
| FB-20171222 | 12/22/2017 | EB | JC57943A | -- | 4.8 J | -- | -- | -- | -- | -- | -- | -- | -- |
| FB-20171226 | 12/26/2017 | EB | JC58028 | -- | -- | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20171226 | 12/26/2017 | EB | JC58028A | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- |
| FB-20171227 | 12/27/2017 | EB | JC58073 | -- | -- | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20171227 | 12/27/2017 | EB | JC58073A | -- | < 10 U | -- | -- | -- | -- | -- | -- | -- | -- |
| FB-20180116-ARC | 1/16/2018 | EB | JC58932 | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | < 100 U | < 15 U |
| FB-20180116 | 1/16/2018 | EB | JC58942 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20180117 | 1/17/2018 | EB | JC59023 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | 0.73 | < 100 U | < 15 U |
| FB 20180118 | 1/18/2018 | EB | JC59349 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | 1.3 | < 100 U | < 15 U |
| FB-20180119 | 1/19/2018 | EB | JC59431 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | 1.4 | < 100 U | < 15 U |
| FB-20180122 | 1/22/2018 | EB | JC59495 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | < 0.11 U | < 100 U | < 15 U |
| FB-20180123 | 1/23/2018 | EB | JC59556 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | < 0.11 U | < 100 U | < 15 U |
| FB-20180124 | 1/24/2018 | EB | JC59667 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | 1.2 | < 100 U | < 15 U |
| FB-20180125 | 1/25/2018 | EB | JC59745 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | < 0.11 U | < 100 U | < 15 U |
| FB-20180126 | 1/26/2018 | EB | JC59838 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | 1.4 | < 100 U | < 15 U |
| FB-20180129 | 1/29/2018 | EB | JC59916 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | 1.8 | < 100 U | < 15 U |
| FB-20180130 | 1/30/2018 | EB | JC59976 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | 1.2 | < 100 U | < 15 U |
| FB-20180131 | 1/31/2018 | EB | JC60035 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | 0.88 | < 100 U | < 15 U |
| FB-20180208 | 2/8/2018 | EB | JC60477 | -- | 1.4 J | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20180209 | 2/9/2018 | EB | JC60564 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20180209-A | 2/9/2018 | EB | JC60563 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20180212 | 2/12/2018 | EB | JC60652 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20180312 | 3/12/2018 | EB | JC62130 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20180313 | 3/13/2018 | EB | JC62228 | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | < 100 U | 0.90 J |
| FB-20180417 | 4/17/2018 | EB | JC64376 | < 10 U | 1.0 J | < 10 U | < 10 U | -- | -- | -- | -- | < 100 U | 0.50 J |
| FB-20180418 | 4/18/2018 | EB | JC64444 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20180419 | 4/19/2018 | EB | JC64571 | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | < 100 U | < 15 U |
| FB-20180420 | 4/20/2018 | EB | JC64643 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20180423 | 4/23/2018 | EB | JC64763 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20180425 | 4/25/2018 | EB | JC64901 | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20180426 | 4/26/2018 | EB | JC64986 | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20180427 | 4/27/2018 | EB | JC65066 | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20180430 | 4/30/2018 | EB | JC65178 | -- | < 10 U<br>< 10 U | -- | < 10 U<br>< 10 U | -- | -- | -- | -- | -- | -- |
| FB-20180501 | 5/1/2018 | EB | JC65255 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20180502 | 5/2/2018 | EB | JC65325 | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20180530 | 5/30/2018 | EB | JC66971 | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20180531 | 5/31/2018 | EB | JC67069 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20180823 | 8/23/2018 | EB | JC72445 | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20180927 | 9/27/2018 | EB | JC74695 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20181026 | 10/26/2018 | EB | JC76718 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20181129 | 11/29/2018 | EB | JC78731 | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20181130 | 11/30/2018 | EB | JC78789 | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20190225 | 2/25/2019 | EB | JC83378 | -- | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- |

**Appendix A-3**
**Analytical Results from QA/QC Samples - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | Chromium | | | | Geochemical Parameters | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | TOTAL ORGANIC | SULFATE | SULFIDE | METHANE | IRON | MANGANESE |
| | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 |
| | | | Fraction | D | T | D | T | T | T | T | T | D | D |
| | | | Units | ug/L | ug/L | ug/L | ug/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L |
| Sample ID | Sample Date | Sample Type | Lab SDG | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result |
| FB-20190226 | 2/26/2019 | EB | JC83437 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20190227 | 2/27/2019 | EB | JC83510 | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20190228 | 2/28/2019 | EB | JC83586 | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20190301 | 3/1/2019 | EB | JC83670 | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | < 100 U | < 15 U |
| FB-20190529 | 5/29/2019 | EB | JC88879 | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-201905300 | 5/30/2019 | EB | JC88938 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB20190531 | 5/31/2019 | EB | JC89029 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB20190822 | 8/22/2019 | EB | JC93729 | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- |
| FB20190823 | 8/23/2019 | EB | JC93834 | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20191021 | 10/21/2019 | EB | JC97157 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20191022 | 10/22/2019 | EB | JC97214 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20200127 | 1/27/2020 | FB | JD2342 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | -- | 0.51 | -- | < 15 U |
| FB-20200128 | 1/28/2020 | FB | JD2398 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | -- | 0.42 | -- | < 15 U |
| FB-20200129 | 1/29/2020 | FB | JD2452 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | -- | < 0.11 U | -- | < 15 U |
| FB-20200130 | 1/30/2020 | FB | JD2521 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | -- | 0.12 | -- | < 15 U |
| FB-20200131 | 1/31/2020 | FB | JD2559 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | -- | 0.49 | -- | < 15 U |
| FB-20200224 | 2/24/2020 | FB | JD3618 | < 10 UJ | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | -- | 0.45 | -- | < 15 U |
| FB-20200225 | 2/25/2020 | FB | JD3675 | < 10 U | < 10 UJ | < 10 U | < 10 U | < 1.0 U | < 2.0 U | -- | 0.42 | -- | < 15 U |
| FB-20200226 | 2/26/2020 | FB | JD3741 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | -- | < 0.11 U | -- | < 15 U |
| FB-20200227 | 2/27/2020 | FB | JD3810 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | -- | 0.26 | -- | < 15 U |
| P2IRM-TB-20200316 | 3/16/2020 | TB | JD4731 | -- | -- | -- | -- | -- | -- | -- | 1.1 | -- | -- |
| P2IRM-FB-20200316 | 3/16/2020 | FB | JD4731 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | < 0.11 U | < 100 U | < 15 U |
| P2IRM-FB-20200317 | 3/17/2020 | FB | JD4798 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | < 0.11 U | < 100 U | < 15 U |
| P2IRM-TB-20200317 | 3/17/2020 | TB | JD4798 | -- | -- | -- | -- | -- | -- | -- | 1.1 | -- | -- |
| P2IRM-TB-20200318 | 3/18/2020 | TB | JD4839 | -- | -- | -- | -- | -- | -- | -- | 0.83 | -- | -- |
| P2IRM-TB-20200318 | 3/18/2020 | TB | JD4870 | -- | -- | -- | -- | -- | -- | -- | 0.84 | -- | -- |
| P2IRM-FB-20200318 | 3/18/2020 | FB | JD4870 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | 0.21 | < 100 U | < 15 U |
| TRIP BLANK-20200319 | 3/19/2020 | TB | JD4924 | -- | -- | -- | -- | -- | -- | -- | 0.13 | -- | -- |
| P21RM-FB-20200319 | 3/19/2020 | FB | JD4924 | < 10 U | 15.8 | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | < 0.11 U | < 100 U | < 15 U |
| TRIP BLANKS-20200319 | 3/19/2020 | TB | JD4952 | -- | -- | -- | -- | -- | -- | -- | 0.42 | -- | -- |
| P21RM-TB-20200320 | 3/20/2020 | TB | JD4980 | -- | -- | -- | -- | -- | -- | -- | 2.1 | -- | -- |
| P2IRM-FB-20200320 | 3/20/2020 | FB | JD5007 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | 0.64 J | < 0.11 U | < 100 U | < 15 U |
| P2IRM-TB-20200320 | 3/20/2020 | TB | JD5007 | -- | -- | -- | -- | -- | -- | -- | 1.5 | -- | -- |
| TB-20200323 | 3/23/2020 | TB | JD5047 | -- | -- | -- | -- | -- | -- | -- | 1.5 | -- | -- |
| P2IRM-TB-20200323 | 3/23/2020 | TB | JD5061 | -- | -- | -- | -- | -- | -- | -- | 1.5 | -- | -- |
| P2IRM-FB-20200323 | 3/23/2020 | FB | JD5061 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | < 0.11 U | < 100 U | < 15 U |
| FB-200200323 | 3/23/2020 | FB | JD5060 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | -- | 0.61 | -- | < 15 U |
| P2IRM-TB-20200324B | 3/24/2020 | TB | JD5095 | -- | -- | -- | -- | -- | -- | -- | 2.0 | -- | -- |
| P2IRM-FB-2020324 | 3/24/2020 | FB | JD5104 | 2.3 J | 2.1 J | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | < 0.11 U | < 100 U | < 15 U |
| P2IRM-TB-2020324 | 3/24/2020 | TB | JD5104 | -- | -- | -- | -- | -- | -- | -- | 0.65 | -- | -- |
| FB-20200324 | 3/24/2020 | FB | JD5103 | < 10 U | < 10 U | < 10 U | < 10 U | -- | < 2.0 U | -- | 0.76 | -- | < 15 U |
| FB-20200324-ARCADIS | 3/24/2020 | FB | JD5103 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | -- | 0.76 | -- | < 15 U |
| P2IRM-TB-20200325 | 3/25/2020 | TB | JD5140 | -- | -- | -- | -- | -- | -- | -- | 0.62 | -- | -- |
| FB-20200325 | 3/25/2020 | FB | JD5175 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | -- | 0.60 | -- | < 15 U |
| P2IRM-TB-2020325 | 3/25/2020 | TB | JD5180 | -- | -- | -- | -- | -- | -- | -- | 0.64 | -- | -- |
| P2IRM-FB-2020325 | 3/25/2020 | FB | JD5180 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | < 0.11 U | < 100 U | < 15 U |
| P2IRM-TB-20200326 | 3/26/2020 | TB | JD5217 | -- | -- | -- | -- | -- | -- | -- | 0.71 | -- | -- |
| FB-20200326 | 3/26/2020 | FB | JD5246 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | -- | 0.51 | -- | < 15 U |
| P21RM-FB-2020326 | 3/26/2020 | FB | JD5245 | < 10 U | < 10 U | < 10 U | < 10 U | 0.85 J | < 2.0 U | < 2.0 U | < 0.11 U | < 100 U | < 15 U |
| P21RM-TB-2020326 | 3/26/2020 | TB | JD5245 | -- | -- | -- | -- | -- | -- | -- | 0.61 | -- | -- |
| FB-20200327 | 3/27/2020 | FB | JD5288 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | -- | 0.68 | -- | < 15 U |
| P2IRM-TB-20200327 | 3/27/2020 | TB | JD5287 | -- | -- | -- | -- | -- | -- | -- | 0.55 | -- | -- |
| P2IRM-FB-20200327 | 3/27/2020 | FB | JD5287 | < 10 U | < 10 U | < 10 UJ | < 10 UJ | < 1.0 U | < 2.0 U | < 2.0 U | < 0.11 U | < 100 U | < 15 U |
| FSPGW-FB-20200330 | 3/30/2020 | EB | JD5344 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FSPGW-FB-20200401 | 4/1/2020 | EB | JD5447 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FSPGW-FB-20200402 | 4/2/2020 | EB | JD5521 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FSPGW-FB-20200403 | 4/3/2020 | EB | JD5600 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB20200720 | 7/20/2020 | EB | JD10357 | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- |
| FB20200721 | 7/21/2020 | EB | JD10407 | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- |
| FB20200722 | 7/22/2020 | EB | JD10482 | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- |
| FB20200723 | 7/23/2020 | EB | JD10545 | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- |

**Appendix A-3**
**Analytical Results from QA/QC Samples - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | Chromium | | | | Geochemical Parameters | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | TOTAL ORGANIC | SULFATE | SULFIDE | METHANE | IRON | MANGANESE |
| | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 |
| | | | Fraction | D | T | D | T | T | T | T | T | D | D |
| | | | Units | ug/L | ug/L | ug/L | ug/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L |
| Sample ID | Sample Date | Sample Type | Lab SDG | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result |
| FB20200724 | 7/24/2020 | EB | JD10630 | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20200727 | 7/27/2020 | EB | JD10717 | < 10 U | < 10 U | < 10 UJ | < 10 UJ | -- | -- | -- | -- | -- | -- |
| FB20200728 | 7/28/2020 | EB | JD10766 | < 10 U | < 10 U | < 10 UJ | < 10 UJ | -- | -- | -- | -- | < 100 U | < 15 U |
| FB20200729 | 7/29/2020 | EB | JD10883 | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20200810 | 8/10/2020 | FB | JD11480 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | 0.36 | < 100 U | < 15 U |
| FB-20200811 | 8/11/2020 | FB | JD11542 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | 0.46 | < 100 U | < 15 U |
| FB-20200812 | 8/12/2020 | FB | JD11593 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | 0.34 | < 100 U | < 15 U |
| FB20200813 | 8/13/2020 | EB | JD11685 | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20200813 | 8/13/2020 | FB | JD11673 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | 0.34 | < 100 U | < 15 U |
| FB-20200814 | 8/14/2020 | FB | JD11773 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | 0.16 | < 100 U | < 15 UJ |
| FB-20200817 | 8/17/2020 | FB | JD11849 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | 0.29 | < 100 U | < 15 U |
| FB20200819 | 8/19/2020 | EB | JD11956 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| P2IRM-FB-20200820 | 8/20/2020 | FB | JD12024 | < 10 U | < 10 U | < 10 U | < 10 U | < 2.0 U | < 2.0 U | < 2.0 U | 0.11 | < 100 U | < 15 U |
| P2IRM-TB-20200820 | 8/20/2020 | TB | JD12024 | -- | -- | -- | -- | -- | -- | -- | 0.25 | -- | -- |
| FB20200820 | 8/20/2020 | EB | JD12022 | -- | < 10 U | -- | < 10 U | < 1.0 U | -- | -- | -- | -- | -- |
| FB20200821 | 8/21/2020 | EB | JD12104 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB20200821 | 8/21/2020 | EB | JD12104R | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | -- |
| FB20200824 | 8/24/2020 | EB | JD12146 | -- | < 10 U | -- | < 10 U | < 1.0 U | -- | -- | -- | -- | -- |
| FB-GWRI-20200825 | 8/25/2020 | EB | JD12215 | -- | < 10 U | -- | < 10 UJ | < 1.0 U | -- | -- | -- | -- | -- |
| FB-GWRI-20200826 | 8/26/2020 | EB | JD12249 | -- | < 10 U | -- | < 10 UJ | -- | -- | -- | -- | -- | -- |
| FB-GWRI-20200826 | 8/26/2020 | EB | JD12249R | -- | -- | -- | -- | < 2.0 U | -- | -- | -- | -- | -- |
| FB-GWRI-20200827 | 8/27/2020 | EB | JD12322 | -- | < 10 U | -- | < 10 U | < 1.0 U | -- | -- | -- | -- | -- |
| FB20200828 | 8/28/2020 | EB | JD12393 | -- | < 10 U | -- | < 10 U | < 2.0 U | -- | -- | -- | -- | -- |
| FB-GWRI-20200831 | 8/31/2020 | EB | JD12474 | -- | < 10 U | -- | < 10 U | < 1.0 U | -- | -- | -- | -- | -- |
| FB-GWRI-20200901 | 9/1/2020 | EB | JD12508 | -- | < 10 U | -- | < 10 U | < 1.0 U | -- | -- | -- | -- | -- |
| FB-GWRI-20200902 | 9/2/2020 | EB | JD12593 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | -- | -- | -- | -- | -- |
| 114-FB-20200918 | 9/18/2020 | EB | JD13328 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-GW-20201109 | 11/9/2020 | EB | JD15932 | < 10 U | < 10 U | < 10 UJ | < 10 RA | -- | -- | -- | -- | -- | -- |
| FB-20201109 | 11/9/2020 | FB | JD15931 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | 1.2 J | < 2.0 U | 0.67 | < 100 U | < 15 U |
| FB-GW-20201110 | 11/10/2020 | FB | JD15968 | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20201110 | 11/10/2020 | FB | JD15969 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | 0.98 J | < 2.0 U | 0.40 | < 100 U | < 15 U |
| FB-20201111 | 11/11/2020 | FB | JD16049 | 2.5 J | 2.3 J | < 10 U | < 10 U | 0.97 J | 1.0 J | < 2.0 U | 0.46 | < 100 U | < 15 U |
| FB-20201112 | 11/12/2020 | FB | JD16144 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | 0.65 | < 100 U | < 15 U |
| FB-20201113 | 11/13/2020 | FB | JD16259 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 UB | < 2.0 U | 0.12 | < 100 U | < 15 U |
| TRIP BLANK-20201117 | 11/17/2020 | TB | JD16409 | -- | -- | -- | -- | -- | -- | -- | 0.70 | -- | -- |
| P2IRM-FB-20201117 | 11/17/2020 | FB | JD16409 | < 10 U | < 10 U | < 10 U<br>< 5.5 U | < 10 U<br>< 5.5 U | < 1.0 U | 1.6 B | -- | 0.47 | -- | < 15 U |
| TRIP BLANK-20201118 | 11/18/2020 | TB | JD16478 | -- | -- | -- | -- | -- | -- | -- | 0.77 | -- | -- |
| P2IRM-FB-20201118 | 11/18/2020 | FB | JD16478 | 2.1 B | 4.0 B | < 10 U<br>< 5.5 U | < 10 U<br>< 5.5 U | < 1.0 U | 1.1 B | -- | < 0.11 U | -- | < 15 U |
| TRIP BLANK-20201119 | 11/19/2020 | TB | JD16573 | -- | -- | -- | -- | -- | -- | -- | < 0.11 U | -- | -- |
| P2IRM-FB-20201119 | 11/19/2020 | FB | JD16573 | < 10 U | < 10 U | < 10 U<br>< 5.5 U | < 10 U<br>< 5.5 U | < 2.0 U | 1.2 B | -- | < 0.11 U | -- | < 15 U |
| TRIP BLANK-20201120 | 11/20/2020 | TB | JD16639 | -- | -- | -- | -- | -- | -- | -- | 0.65 | -- | -- |
| P2IRM-FB20201120 | 11/20/2020 | FB | JD16639 | < 10 U<br>< 10 U | < 10 U<br>< 10 U | < 10 U<br>< 5.5 U | < 10 U<br>< 5.5 U | < 1.0 U | 6.6 | -- | 0.13 | -- | < 15 U<br>3.0 B |
| P2IRM-FB20201214 | 12/14/2020 | FB | JD17730 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P2IRM-FB-20201215 | 12/15/2020 | FB | JD17793 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P2IRM-FB-20201216 | 12/16/2020 | FB | JD17868 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P2IRM-FB-20201218 | 12/18/2020 | FB | JD17977 | < 10 U | < 10 U | < 10 U | < 10 U | -- | -- | -- | -- | -- | -- |
| P2-IRM-FB-20210111 | 1/11/2021 | FB | JD18861 | < 10 U | < 10 U | < 10 U | < 10 U | 0.43 B | < 2.0 U | -- | -- | -- | -- |
| P2-IRM-FB-20210112 | 1/12/2021 | FB | JD18928 | < 10 U | < 10 U | < 10 U | < 10 U | 0.26 B | < 2.0 U | -- | -- | -- | -- |
| P2-IRM-FB-20210113 | 1/13/2021 | FB | JD18964 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P2-IRM-FB-20210114 | 1/14/2021 | FB | JD19032 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| FB-GWRI-20210209 | 2/9/2021 | FB | JD20125 | -- | < 10 U | -- | < 10 UJ | -- | -- | -- | -- | -- | -- |
| FB-GWRI-20210210 | 2/10/2021 | FB | JD20166 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-GWRI-20210211 | 2/11/2021 | FB | JD20260 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-GWRI-20210212 | 2/12/2021 | FB | JD20313 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| P2-IRM-FB-20210215 | 2/15/2021 | FB | JD20381 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| FB-GWRI-20210215A | 2/15/2021 | FB | JD20379 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-GWRI-20210215B | 2/15/2021 | FB | JD20380 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |

**Appendix A-3**
**Analytical Results from QA/QC Samples - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | Chromium | | | | Geochemical Parameters | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | TOTAL ORGANIC | SULFATE | SULFIDE | METHANE | IRON | MANGANESE |
| | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 |
| | | | Fraction | D | T | D | T | T | T | T | T | D | D |
| | | | Units | ug/L | ug/L | ug/L | ug/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L |
| Sample ID | Sample Date | Sample Type | Lab SDG | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result |
| P2-IRM-FB-20210216 | 2/16/2021 | FB | JD20408 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| FB-GWPDI-20210216 | 2/16/2021 | FB | JD20404 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| P2-IRM-FB-20210217 | 2/17/2021 | FB | JD20435 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P2-IRM-FB-20210218 | 2/18/2021 | FB | JD20490 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | -- | -- | -- | -- | -- |
| FB-20210222 | 2/22/2021 | FB | JD20592 | < 10 U | < 10 U | < 10 U | < 10 U | 0.74 J | < 2.0 U | < 2.0 U | 0.78 | < 100 U | < 15 U |
| FB-20210223 | 2/23/2021 | FB | JD20642 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | 0.40 | < 100 U | < 15 U |
| FB-20210224 | 2/24/2021 | FB | JD20709 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | 0.60 | < 100 U | < 15 U |
| FB-20210225 | 2/25/2021 | FB | JD20780 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | 0.52 | < 100 U | < 15 U |
| FB-20210226 | 2/26/2021 | FB | JD20896 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | 0.54 | < 100 U | < 15 U |
| FB-20210311 | 3/11/2021 | FB | 4602297181 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- |
| FB-20210312 | 3/12/2021 | FB | 4602298001 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- |
| FB-20210315 | 3/15/2021 | FB | 4602299261 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- |
| P2-IRM-FB-20210315 | 3/15/2021 | FB | JD21732 | < 10 U | < 10 U | < 10 U | < 10 U | 0.89 B | < 2.0 U | -- | -- | -- | -- |
| FB-20210315-2 | 3/15/2021 | FB | JD21731 | -- | -- | -- | -- | 0.89 B | -- | -- | -- | -- | -- |
| P2-IRM-FB-20210316 | 3/16/2021 | FB | JD21820 | 2.6 B | < 10 U | < 10 U | < 10 U | < 1.0 U | 4.2 | -- | -- | -- | -- |
| P2-IRM-FB-20210317 | 3/17/2021 | FB | JD21863 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P2-IRM-FB-20210318 | 3/18/2021 | FB | JD21941 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P2-IRM-FB-20210319 | 3/19/2021 | FB | JD22003 | < 10 U | < 10 U | 7.3 B | 7.3 B | < 1.0 U | -- | -- | -- | -- | -- |
| P2-IRM-FB-20210426 | 4/26/2021 | FB | 4602329401 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | < 120 U | < 8.0 U |
| P2-IRM-FB-20210427 | 4/27/2021 | FB | 4602330111 | < 6.5 UB | < 4.0 U | < 10.0 U | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | < 120 U | < 8.0 U |
| P2-IRM-FB-20210428 | 4/28/2021 | FB | 4602331061 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | < 1.0 U | < 0.48 U | -- | 3.9 J | < 120 U | < 8.0 U |
| P2-IRM-FB-20210429 | 4/29/2021 | FB | 4602331931 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | < 120 U | < 8.0 U |
| P2-IRM-FB-20210525 | 5/25/2021 | FB | 4602351281 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | < 120 U | < 8.0 U |
| P2-IRM-FB-20210526 | 5/26/2021 | FB | 4602352461 | -- | < 4.0 U | -- | < 10.0 U | 0.72 J | < 0.48 U | -- | < 5.0 U | -- | -- |
| P2-IRM-FB-20210527 | 5/27/2021 | FB | 4602353531 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | < 120 U | < 8.0 U |
| P2-IRM-FB-20210528 | 5/28/2021 | FB | 4602354051 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | < 120 U | < 8.0 U |
| P2-IRM-FB-20210601 | 6/1/2021 | FB | 4602355971 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | < 120 U | < 8.0 U |
| P3-IRM-FB-20210609 | 6/9/2021 | FB | 4602361231 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1.0 U | 4.3 J | -- | -- |
| P3-IRM-FB-20210610 | 6/10/2021 | FB | 4602362281 | -- | < 4.0 U | -- | < 10.0 U | 0.56 J | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| P3-IRM-FB-20210610-F | 6/10/2021 | FB | 4602362281 | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | < 120 U | < 8.0 U |
| P3-IRM-FB-20210611 | 6/11/2021 | FB | 4602363611 | -- | < 4.0 U | -- | < 10.0 U | 0.66 J | < 0.48 U | < 1.0 U | 3.9 J | -- | -- |
| P3-IRM-FB-20210611-F | 6/11/2021 | FB | 4602363611 | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | < 120 U | < 8.0 U |
| IRM-P3-FB-20210614 | 6/14/2021 | FB | 4602365231 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | R | < 5.0 U | -- | -- |
| IRM-P3-FB-20210614-F | 6/14/2021 | FB | 4602365231 | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | < 120 U | < 8.0 U |
| P3-IRM-FB-20210616 | 6/16/2021 | FB | 4602367471 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | < 1.0 U | < 0.48 U | < 1.0 U | < 5.0 U | < 120 U | < 8.0 U |
| P3-IRM-FB-20210617 | 6/17/2021 | FB | 4602368761 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | < 1.0 U | < 0.48 U | < 1.0 U | < 5.0 U | < 120 U | < 8.0 U |
| P3-IRM-FB-20210618 | 6/18/2021 | FB | 4602369821 | -- | < 4.0 U | -- | < 10.0 U | 0.54 J | < 0.48 U | < 1.0 U | 3.4 J | -- | -- |
| P3-IRM-FB-20210618-F | 6/18/2021 | FB | 4602369821 | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | < 120 U | < 8.0 U |
| FB-210618 | 6/18/2021 | FB | JD26872 | -- | 4.9 J | < 10 U | < 10 U | 0.98 J | -- | -- | -- | -- | -- |
| P3-IRM-FB-20210621 | 6/21/2021 | FB | 4602370641 | -- | < 4.0 U | -- | < 10.0 U | 0.61 J | < 0.48 U | < 1.0 UJ | < 5.0 U | -- | -- |
| P3-IRM-FB-20210621-F | 6/21/2021 | FB | 4602370641 | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | < 120 U | < 8.0 U |
| P2-IRM-FB-20210622 | 6/22/2021 | FB | 4602371271 | < 4.0 U | 3.5 J | < 10.0 U | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | < 120 U | < 8.0 U |
| P3-IRM-FB-20210622 | 6/22/2021 | FB | 4602371281 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| P3-IRM-FB-20210622-F | 6/22/2021 | FB | 4602371281 | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | < 120 U | < 8.0 U |
| P3-IRM-FB-20210623 | 6/23/2021 | FB | 4602372181 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| P3-IRM-FB-20210623-F | 6/23/2021 | FB | 4602372181 | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | < 120 U | < 8.0 U |
| P2-IRM-FB-20210623 | 6/23/2021 | FB | 4602372171 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | 0.47 J | < 0.48 U | -- | < 5.0 U | < 120 U | < 8.0 U |
| FB-20210623 | 6/23/2021 | FB | JD27142 | -- | < 10 U | < 10 U | < 10 U | < 1.0 U | -- | -- | -- | -- | -- |
| P3-IRM-FB-20210624 | 6/24/2021 | FB | 4602373171 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| P3-IRM-FB-20210624-F | 6/24/2021 | FB | 4602373171 | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | < 120 U | < 8.0 U |
| P2-IRM-FB-20210624 | 6/24/2021 | FB | 4602373191 | < 8.0 U | < 4.0 U | < 10.0 U | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | < 240 U | < 16.0 U |
| FB-202106924 | 6/24/2021 | FB | JD27239 | -- | < 10 UJ | < 10 U | < 10 U | 0.88 J | -- | -- | -- | -- | -- |
| P2-IRM-FB-20210625 | 6/25/2021 | FB | 4602374061 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | < 120 U | < 8.0 U |
| P2-IRM-FB-20210628 | 6/28/2021 | FB | 4602376551 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | < 120 U | < 8.0 U |
| P2-IRM-FB-20210629 | 6/29/2021 | FB | 4602376271 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | < 120 U | < 8.0 U |
| P2-IRM-FB-20210701 | 7/1/2021 | FB | 4602379001 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | < 120 U | < 8.0 U |
| P3-IRM-FB-20210706 | 7/6/2021 | FB | 4602380991 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | 0.58 J | < 0.48 U | < 1.0 U | < 5.0 U | < 120 U | < 8.0 U |
| P3-IRM-FB-20210707 | 7/7/2021 | FB | 4602381971 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | < 1.0 U | < 0.48 U | < 1.0 U | < 5.0 U | < 120 U | < 8.0 U |
| P3-IRM-FB-20210708 | 7/8/2021 | FB | 4602383071 | < 4.0 U | < 4.0 U | R | < 10.0 U | < 1.0 U | < 0.48 U | R | < 5.0 UJ | < 120 U | < 8.0 U |
| P3-IRM-FB-20210709 | 7/9/2021 | FB | 4602383801 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | < 1.0 U | < 0.48 U | < 1.0 U | < 5.0 U | < 120 U | < 8.0 U |
| 114FB-20210712 | 7/12/2021 | FB | 4602385351 | < 4.0 U | < 4.0 U | < 10.0 UJ | < 10.0 U | -- | -- | -- | -- | -- | -- |

**Appendix A-3**
**Analytical Results from QA/QC Samples - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | Chromium | | | | Geochemical Parameters | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | TOTAL ORGANIC | SULFATE | SULFIDE | METHANE | IRON | MANGANESE |
| | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 |
| | | | Fraction | D | T | D | T | T | T | T | T | D | D |
| | | | Units | ug/L | ug/L | ug/L | ug/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L |
| Sample ID | Sample Date | Sample Type | Lab SDG | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result |
| 114-FB2021713 | 7/13/2021 | FB | 4602386701 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 UJ | -- | -- | -- | -- | -- | -- |
| P3-IRM-FB-20210714 | 7/14/2021 | FB | 4602387571 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | 0.41 J | < 0.48 U | < 1.0 U | < 5.0 U | < 120 U | < 8.0 U |
| P3-IRM-FB-20210715 | 7/15/2021 | FB | 4602388581 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | < 1.0 U | < 0.48 U | < 1.0 U | < 5.0 U | < 120 U | < 8.0 U |
| P3-IRM-FB-20210716 | 7/16/2021 | FB | 4602389731 | < 4.0 U | 3.2 J | R | < 10.0 U | < 1.0 U | < 0.48 U | < 1.0 U | < 5.0 U | < 120 U | < 8.0 U |
| P3-IRM-FB-20210719 | 7/19/2021 | FB | 4602390761 | < 4.0 U | < 4.0 U | < 10.0 U | < 50000 U | < 1.0 U | < 0.48 U | < 1.0 U | < 5.0 U | < 120 U | < 8.0 U |
| FB-07192021 | 7/19/2021 | FB | JD28478 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | -- | -- | -- | -- | -- |
| P2-FB-20210719 | 7/19/2021 | FB | 4602390751 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | < 120 U | < 8.0 U |
| P2-IRM-FB-20210720 | 7/20/2021 | FB | 4602391431 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | < 120 U | < 8.0 U |
| P2-IRM-FB-20210721 | 7/21/2021 | FB | 4602392301 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | < 120 U | < 8.0 U |
| FB-07212021 | 7/21/2021 | FB | JD28676 | < 10 U | < 10 U | < 10 U | < 10 U | 1.1 | -- | -- | -- | -- | -- |
| P2-IRM-FB-20210722 | 7/22/2021 | FB | 4602393171 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | < 120 U | < 8.0 U |
| P2-IRM-FB-20210723 | 7/23/2021 | FB | 4602394041 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | < 120 U | < 8.0 U |
| 114-FB-20210723 | 7/23/2021 | FB | 4602394131 | < 4.0 U | < 4.0 U | R | < 10.0 U | -- | -- | -- | -- | -- | -- |
| P2-IRM-FB-20210726 | 7/26/2021 | FB | 4602395391 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | < 120 U | < 8.0 U |
| P3-IRM-FB-20210729 | 7/29/2021 | FB | 4602398091 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | 0.63 J | < 0.48 U | < 1.0 U | < 5.0 U | < 120 U | < 8.0 U |
| P3-IRM-FB-20210730 | 7/30/2021 | FB | 4602398611 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | < 1.0 U | < 0.48 U | < 1.0 U | < 5.0 U | < 120 U | < 8.0 U |
| FB-20210806 | 8/6/2021 | FB | JD29574 | < 10 U | < 10 U | < 10 U | < 10 U | 0.75 J | -- | -- | -- | -- | -- |
| FIELD BLANK-20210812 | 8/12/2021 | FB | 4602409051 | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | -- |
| P3-IRM-FB-20210816 | 8/16/2021 | FB | 4602409661 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | < 1.0 U | < 0.48 U | < 1.0 U | < 5.0 U | < 120 U | < 8.0 U |
| 114-P2-IRM-FB-20210819 | 8/19/2021 | FB | 4602412191 | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | -- |
| P2-IRM-FB20210824 | 8/24/2021 | FB | 4602414891 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | < 120 U | < 8.0 U |
| P2-IRM-FB20210825 | 8/25/2021 | FB | 4602415661 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | < 120 U | < 8.0 U |
| P2-IRM-FB20210826 | 8/26/2021 | FB | 4602416741 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | -- | -- |
| P2-IRM-FB20210827 | 8/27/2021 | FB | 4602417371 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20210830 | 8/30/2021 | FB | 4602418351 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| P2-IRM-FB20210830 | 8/30/2021 | FB | 4602418391 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20210831 | 8/31/2021 | FB | 4602419131 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | 2.2 | 3.5 J | -- | -- |
| P2-IRM-FB-20210831 | 8/31/2021 | FB | 4602418991 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20210901 | 9/1/2021 | FB | 4602419751 | -- | < 4.0 U | -- | < 10.0 UJ | < 1.0 UJ | < 0.48 UJ | < 1.0 UJ | < 5.0 UJ | -- | -- |
| P3-IRM-FB-20210903 | 9/3/2021 | FB | 4602421631 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| P3-IRM-FB-20210907 | 9/7/2021 | FB | 4602422511 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| P3-IRM-FB-20210908 | 9/8/2021 | FB | 4602423391 | -- | < 4.0 U | -- | < 10.0 U | 0.35 J | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| P3-IRM-FB-20210909 | 9/9/2021 | FB | 4602424381 | -- | < 4.0 U | -- | < 10.0 U | 0.73 J | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| P3-IRM-FB-20210910 | 9/10/2021 | FB | 4602425191 | -- | < 4.0 U | -- | < 10.0 U | 1.1 | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| 114-P2-IRM-FB-20210910 | 9/10/2021 | FB | 4602425261 | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | -- |
| P3-IRM-FB-20210913 | 9/13/2021 | FB | 4602426701 | -- | < 4.0 U | -- | < 10.0 U | 0.56 J | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| P3-IRM-FB-20210914 | 9/14/2021 | FB | 4602427561 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | 1.1 | < 5.0 U | -- | -- |
| P3-IRM-FB-20210915 | 9/15/2021 | FB | 4602428441 | -- | < 4.0 U | -- | < 10.0 U | 0.39 J | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| P3-IRM-FB-20210916 | 9/16/2021 | FB | 4602429471 | -- | < 4.0 U | -- | < 10.0 U | 0.37 J | 10.4 | < 1.0 U | < 5.0 U | -- | -- |
| P3-IRM-FB-20210917 | 9/17/2021 | FB | 4602430721 | -- | < 4.0 U | -- | < 10.0 U | 0.44 J | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| P2-IRM-FB-20210920 | 9/20/2021 | FB | 4602432251 | -- | < 4.0 U | -- | < 10.0 U | 0.43 J | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20210920 | 9/20/2021 | FB | 4602432261 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| P2-IRM-FB-20210921 | 9/21/2021 | FB | 4602432721 | -- | < 4.0 U | -- | < 10.0 U | 0.45 J | < 0.48 U | -- | 3.7 J | -- | -- |
| P3-IRM-FB-20210921 | 9/21/2021 | FB | 4602432711 | -- | < 4.0 U | -- | < 10.0 U | 0.34 J | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| P3-IRM-FB-20210922 | 9/22/2021 | FB | 4602433991 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| P2-IRM-FB-20210922 | 9/22/2021 | FB | 4602433951 | -- | < 4.0 U | -- | < 10.0 U | 0.34 J | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20210923 | 9/23/2021 | FB | 4602434981 | -- | < 4.0 U | -- | < 10.0 U | 0.38 J | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| P2-IRM-FB-20210923 | 9/23/2021 | FB | 4602434911 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | 4.3 J | -- | -- |
| P2-IRM-FB-20210924 | 9/24/2021 | FB | 4602436001 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20210924 | 9/24/2021 | FB | 4602435991 | -- | < 4.0 U | -- | < 10.0 U | 0.39 J | < 0.48 U | < 1.0 U | 3.7 J | -- | -- |
| P3-IRM-FB-20210927 | 9/27/2021 | FB | 4602437291 | -- | < 4.0 U | -- | < 10.0 U | 0.45 J | < 0.48 U | < 1.0 U | 3.7 J | -- | -- |
| FB-20210927 | 9/27/2021 | FB | JD32281 | < 10 U | < 10 U | 3.6 J | < 10 UJ | 1.2 | < 2.0 U | < 2.0 U | 1.33 | < 100 U | < 15 U |
| P3-IRM-FB-20210928 | 9/28/2021 | FB | 4602438321 | -- | < 4.0 U | -- | < 10.0 U | 0.39 J | < 0.48 U | 1.1 | < 5.0 U | -- | -- |
| FB20210928 | 9/28/2021 | FB | JD32334 | < 10 U | 5.4 J | 4.5 J | 4.5 J | 1.1 | < 4.0 U | < 2.0 U | 1.73 | < 100 U | < 15 U |
| P3-IRM-FB-20210929 | 9/29/2021 | FB | 4602439241 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | 1.1 | < 5.0 U | -- | -- |
| FB-20210929 | 9/29/2021 | FB | JD32460 | 2.1 J | < 10 U | 9.5 J | 9.5 J | 0.92 J | < 2.0 U | < 2.0 U | 0.19 | < 100 U | < 15 U |
| P3-IRM-FB-20210930 | 9/30/2021 | FB | 4602440301 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | 1.4 | < 5.0 U | -- | -- |
| 114-GW-FB-20210930 | 9/30/2021 | FB | 4602440201 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| FB-20210930_arcadis | 9/30/2021 | FB | JD32569 | < 10 U | < 10 U | < 10 U | < 10 U | 0.83 J | < 2.0 U | < 2.0 U | 0.84 | < 100 U | < 15 U |
| P3-IRM-FB-20211001 | 10/1/2021 | FB | 4602441231 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| 114-GW-FB-20211001 | 10/1/2021 | FB | 4602440821 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |

**Appendix A-3**
**Analytical Results from QA/QC Samples - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | Chromium | | | | Geochemical Parameters | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | TOTAL ORGANIC | SULFATE | SULFIDE | METHANE | IRON | MANGANESE |
| | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 |
| | | | Fraction | D | T | D | T | T | T | T | T | D | D |
| | | | Units | ug/L | ug/L | ug/L | ug/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L |
| Sample ID | Sample Date | Sample Type | Lab SDG | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result |
| FB-20211001 | 10/1/2021 | FB | JD32680 | 29.3 | < 10 U | < 10 U | < 10 U | 1.2 | < 2.0 U | < 2.0 U | 0.44 | < 100 U | < 15 U |
| 114-GW-FB-20211004 | 10/4/2021 | FB | 4602442631 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| P3-IRM-FB-20211005 | 10/5/2021 | FB | 4602443541 | -- | < 4.0 U | -- | < 10.0 UJ | < 1.0 U | < 0.48 U | 1.1 | < 5.0 U | -- | -- |
| 114-GW-FB-20211005 | 10/5/2021 | FB | 4602443701 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| 114-GW-FB-20211006 | 10/6/2021 | FB | 4602444411 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| P3-IRM-FB-20211007 | 10/7/2021 | FB | 4602445441 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1.0 U | 3.5 J | -- | -- |
| P3-IRM-FB-20211008 | 10/8/2021 | FB | 4602446561 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| P3-IRM-FB-20211011 | 10/11/2021 | FB | 4602448291 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1.0 U | 3.0 J | -- | -- |
| FB-20211011 | 10/11/2021 | FB | JD33262 | < 10 U | < 10 U | < 10 U | < 10 U | 0.92 J | < 2.0 U | < 2.0 U | 0.35 | < 300 U | < 15 U |
| P3-IRM-FB-20211012 | 10/12/2021 | FB | 4602448821 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1.0 U | 3.6 J | -- | -- |
| P3-IRM-FB-20211013 | 10/13/2021 | FB | 4602450251 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | 1.1 | < 5.0 U | -- | -- |
| P3-IRM-FB-20211014 | 10/14/2021 | FB | 4602450901 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | 1.3 | < 5.0 U | -- | -- |
| P3-IRM-FB-20211015 | 10/15/2021 | FB | 4602452041 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| P2-IRM-FB-2021018 | 10/18/2021 | FB | 4602453121 | -- | < 4.0 U | -- | < 10.0 U | 0.44 J | < 0.48 U | -- | 3.5 J | -- | -- |
| P3-IRM-FB-20211018 | 10/18/2021 | FB | 4602453241 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| P3-IRM-FB-20211019 | 10/19/2021 | FB | 4602454421 | -- | < 4.0 U | -- | < 10.0 U | 0.45 J | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| P2-IRM-FB-20211019 | 10/19/2021 | FB | 4602454351 | -- | < 4.0 U | -- | < 10.0 U | 0.45 JB | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20211020 | 10/20/2021 | FB | 4602455611 | -- | < 4.0 U | -- | < 10.0 U | 0.38 J | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| P2-IRM-FB-20211020 | 10/20/2021 | FB | 4602455621 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | -- | -- |
| P2-IRM-FB-20211021 | 10/21/2021 | FB | 4602456401 | -- | < 4.0 U | -- | < 10.0 U | 0.43 J | < 0.48 U | -- | < 5.0 U | -- | -- |
| P2-IRM-FB-20211022 | 10/22/2021 | FB | 4602457501 | -- | < 4.0 U | -- | < 10.0 U | 0.50 J | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20211027 | 10/27/2021 | FB | 4602459861 | -- | < 4.0 U | -- | < 10.0 U | 0.45 J | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| P3-IRM-FB-20211028 | 10/28/2021 | FB | 4602460571 | -- | < 4.0 U | -- | < 10.0 U | 0.50 J | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| P3-IRM-FB-20211029 | 10/29/2021 | FB | 4602461931 | -- | < 4.0 U | -- | < 10.0 U | 0.63 J | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| P3-IRM-FB-20211101 | 11/1/2021 | FB | 4602463131 | -- | < 4.0 U | -- | < 10.0 U | 0.42 J | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| P3-IRM-FB-20211102 | 11/2/2021 | FB | 4602463911 | -- | < 4.0 U | -- | < 10.0 U | 0.51 J | < 0.48 U | 1.3 | < 5.0 U | -- | -- |
| P3-IRM-FB-20211103 | 11/3/2021 | FB | 4602465061 | -- | < 4.0 U | -- | < 10.0 U | 0.51 J | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| P3-IRM-FB-20211104 | 11/4/2021 | FB | 4602465811 | -- | < 4.0 U | -- | < 10.0 U | 0.49 J | < 0.48 U | R | < 5.0 U | -- | -- |
| P3-IRM-FB-20211105 | 11/5/2021 | FB | 4602466631 | -- | < 4.0 U | -- | < 10.0 U | 0.52 J | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| P3-IRM-FB-20211108 | 11/8/2021 | FB | 4602468181 | -- | < 4.0 U | -- | < 10.0 U | 0.80 J | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| FB-20211115 | 11/15/2021 | FB | JD35301 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | 1.29 | < 100 U | < 15 U |
| P3-IRM-FB-20211116 | 11/16/2021 | FB | 4602474031 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | -- | -- |
| FB-20211116 | 11/16/2021 | FB | JD35372 | < 10 U | 11.5 | < 10 U | < 10 U | 0.72 J | < 2.0 U | < 2.0 U | < 0.11 U | < 100 U | < 15 U |
| P2-IRM-FB-20211117 | 11/17/2021 | FB | 4602474651 | -- | < 4.0 U | -- | < 10.0 U | 0.55 J | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20211117 | 11/17/2021 | FB | 4602474671 | -- | < 4.0 U | -- | < 10.0 U | 0.44 J | < 0.48 U | -- | < 5.0 U | -- | -- |
| FB-20211117 | 11/17/2021 | FB | JD35453 | < 10 U | R | < 10 U | < 10 U | 1.3 | 3.6 | < 2.0 U | 0.31 | < 100 U | < 15 U |
| P2-IRM-FB-20211118 | 11/18/2021 | FB | 4602475481 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | -- | -- |
| FB-20211118 | 11/18/2021 | FB | JD35530 | < 10 U | < 10 U | < 10 U | < 10 U | 0.98 J | < 2.0 U | < 2.0 U | 0.55 | < 100 U | < 15 U |
| 114-P1B-FB-20211119 | 11/19/2021 | FB | 4602476331 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| P2-IRM-FB-20211119 | 11/19/2021 | FB | 4602476321 | -- | < 4.0 U | -- | < 10.0 U | 0.64 J | < 0.48 U | -- | < 5.0 U | -- | -- |
| P2-IRM-FB-20211122 | 11/22/2021 | FB | 4602477591 | -- | 2.5 J | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | -- | -- |
| 114-BEDROCK RI-FB-20211123 | 11/23/2021 | FB | 4602478531 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| P2-IRM-FB-20211213 | 12/13/2021 | FB | 4602490301 | -- | < 4.0 U | -- | < 10.0 U | 0.61 J | < 0.48 U | -- | < 5.0 U | -- | -- |
| FB-20211214 | 12/14/2021 | FB | 4602491481 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| P2-IRM-FB-20211214 | 12/14/2021 | FB | 4602491111 | -- | < 4.0 U | -- | < 10.0 U | 0.77 JB | < 0.48 U | -- | 6.0 | -- | -- |
| FB-20211215-1 | 12/15/2021 | FB | 4602492051 | -- | < 4.0 U | -- | 12.0 | -- | -- | -- | -- | -- | -- |
| FB-20211216 | 12/16/2021 | FB | 4602492741 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| P2-IRM-FB-20211216 | 12/16/2021 | FB | 4602492751 | -- | < 4.0 U | -- | < 10.0 U | 0.97 J | < 0.48 U | -- | < 5.0 U | -- | -- |
| FB-20211217 | 12/17/2021 | FB | 4602493661 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| P2-IRM-FB-20211217 | 12/17/2021 | FB | 4602493781 | -- | < 4.0 U | -- | < 10.0 U | 0.57 J | < 0.48 U | -- | < 5.0 U | -- | -- |
| P2-IRM-FB-20211220 | 12/20/2021 | FB | 4602495141 | -- | < 4.0 U | -- | < 10.0 U | 0.46 J | < 0.48 U | -- | < 5.0 U | -- | -- |
| P2-IRM-FB-20211221 | 12/21/2021 | FB | 4602495931 | -- | < 4.0 U | -- | < 10.0 U | 0.59 J | < 0.48 U | -- | < 5.0 U | -- | -- |
| FB-20211221 | 12/21/2021 | FB | 4602496041 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| P3-IRM-FB-20211221 | 12/21/2021 | FB | 4602495851 | -- | < 4.0 U | -- | < 10.0 U | 0.64 J | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20211222 | 12/22/2021 | FB | 4602496971 | -- | < 4.0 U | -- | < 10.0 U | 0.56 J | < 0.48 U | -- | < 5.0 U | -- | -- |
| P2-IRM-FB-20211223 | 12/23/2021 | FB | 4602497501 | -- | < 4.0 U | -- | < 10.0 UH | 0.34 J | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20211223 | 12/23/2021 | FB | 4602497541 | -- | < 4.0 U | -- | < 10.0 UH | 0.34 JB | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20211227 | 12/27/2021 | FB | 4602498521 | -- | < 4.0 U | -- | < 10.0 U | 0.41 J | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20211228 | 12/28/2021 | FB | 4602498971 | -- | < 4.0 U | -- | < 10.0 U | 0.62 J | < 0.48 U | < 1.0 UJ | < 5.0 U | -- | -- |
| P3-IRM-FB-20211228a | 12/28/2021 | FB | 4602498981 | -- | < 4.0 U | -- | -- | < 1.0 U | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20211229a | 12/29/2021 | FB | 4602499441 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | -- | -- |

**Appendix A-3**
**Analytical Results from QA/QC Samples - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | Chromium | | | | Geochemical Parameters | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | TOTAL ORGANIC | SULFATE | SULFIDE | METHANE | IRON | MANGANESE |
| | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 |
| | | | Fraction | D | T | D | T | T | T | T | T | D | D |
| | | | Units | ug/L | ug/L | ug/L | ug/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L |
| Sample ID | Sample Date | Sample Type | Lab SDG | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result |
| P3-IRM-FB-20211229 | 12/29/2021 | FB | 4602499461 | -- | < 4.0 U | -- | < 10.0 U | 0.81 J | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| P3-IRM-FB-20211230 | 12/30/2021 | FB | 4602499921 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1.0 U | 7.8 | -- | -- |
| P3-IRM-FB-20220103 | 1/3/2022 | FB | 4602500491 | -- | < 4.0 U | -- | < 10.0 U | 0.48 J | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| P3-IRM-FB-20220104 | 1/4/2022 | FB | 4602500781 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| P3-IRM-FB-20220105 | 1/5/2022 | FB | 4602501431 | -- | < 4.0 U | -- | < 10.0 U | 0.60 J | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| P3-IRM-FB-20220106 | 1/6/2022 | FB | 4602502281 | -- | < 4.0 U | -- | < 10.0 U | 0.85 J | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| P2-IRM-FB-20220110 | 1/10/2022 | FB | 4602504131 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | -- | -- |
| P2-IRM-FB-20220111 | 1/11/2022 | FB | 4602504631 | -- | < 4.0 U | -- | < 10.0 U | 0.43 J | < 0.48 U | -- | < 5.0 U | -- | -- |
| P2-IRM-FB-20220112 | 1/12/2022 | FB | 4602505551 | -- | < 4.0 U | -- | < 10.0 U | 0.42 J | < 0.48 U | -- | < 5.0 U | -- | -- |
| P2-IRM-FB-20220113 | 1/13/2022 | FB | 4602506661 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | 4.5 J | -- | -- |
| P2-IRM-FB-20220114 | 1/14/2022 | FB | 4602507311 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20220117 | 1/17/2022 | FB | 4602508211 | -- | < 4.0 U | -- | < 10.0 U | 0.35 J | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20220118 | 1/18/2022 | FB | 4602508581 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20220119 | 1/19/2022 | FB | 4602509341 | -- | < 4.0 U | -- | < 10.0 U | 0.82 J | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20220120 | 1/20/2022 | FB | 4602510051 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | -- | -- |
| P2-IRM-FB-20220126 | 1/26/2022 | FB | 4602513121 | -- | < 4.0 U | -- | < 10.0 U | 0.43 J | < 0.48 U | -- | 12 | -- | -- |
| P2-IRM-FB-20220203 | 2/3/2022 | FB | 4602517791 | -- | < 4.0 U | -- | < 10.0 U | 0.88 J | < 0.48 U | -- | < 5.0 U | -- | -- |
| P2-IRM-FB-20220210 | 2/10/2022 | FB | 4602522631 | -- | < 4.0 U | -- | < 10.0 U | 1.0 | < 0.48 U | -- | < 5.0 U | -- | -- |
| PR-IRM-FB-20220211 | 2/11/2022 | FB | 4602523441 | -- | < 4.0 U | -- | < 10.0 U | 0.39 J | < 0.48 U | -- | < 5.0 U | -- | -- |
| P2-IRM-FB-20220216 | 2/16/2022 | FB | 4602526321 | -- | < 20.0 U | -- | < 10.0 U | 0.45 J | < 0.48 U | -- | < 5.0 U | -- | -- |
| P2-IRM-FB20220217 | 2/17/2022 | FB | 4602526891 | -- | < 4.0 U | -- | < 10.0 U | 0.53 J | < 0.48 U | -- | 3.6 J | -- | -- |
| P2-IRM-FB-20220218 | 2/18/2022 | FB | 4602528091 | -- | < 4.0 U | -- | < 10.0 U | 0.86 J | < 0.48 U | -- | < 5.0 U | -- | -- |
| FB-20220221 | 2/21/2022 | FB | JD40060 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | 0.56 | < 100 U | < 15 U |
| P3-IRM-FB-202202212 | 2/22/2022 | FB | 4602529771 | -- | < 4.0 U | -- | < 10.0 U | 0.86 J | < 0.48 U | -- | < 5.0 U | -- | -- |
| FB-20220222 | 2/22/2022 | FB | JD40096 | 2.0 J | < 10 U | < 10 U | < 10 U | 0.75 J | < 2.0 U | < 2.0 U | 0.52 | < 100 U | < 15 U |
| P3-IRM-FB-20220223 | 2/23/2022 | FB | 4602530771 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | -- | -- |
| FB-20220223 | 2/23/2022 | FB | JD40159 | < 10 U | < 10 U | < 10 U | < 10 U | 0.75 J | < 2.0 U | < 2.0 U | 0.59 | < 100 U | < 15 U |
| P3-IRM-FB-20220224 | 2/24/2022 | FB | 4602531681 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | -- | -- |
| FB-20220224 | 2/24/2022 | FB | JD40291 | -- | < 10 U | -- | < 100 U | 0.75 J | < 2.0 U | < 2.0 U | 0.73 | -- | -- |
| P3-IRM-FB-20220225 | 2/25/2022 | FB | 4602532391 | -- | < 4.0 U | -- | < 10.0 U | 0.48 J | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20220228 | 2/28/2022 | FB | 4602533341 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20220301 | 3/1/2022 | FB | 4602534221 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20220302 | 3/2/2022 | FB | 4602534801 | -- | < 4.0 U | -- | < 10.0 U | 6.3 | < 0.48 U | -- | < 5.0 U | -- | -- |
| P2-IRM-FB-20220304 | 3/4/2022 | FB | 4602537771 | -- | -- | -- | -- | 0.75 J | -- | -- | -- | -- | -- |
| P2-IRM-FB-20220314 | 3/14/2022 | FB | 4602542351 | -- | < 4.0 U | -- | < 10.0 U | 0.80 J | < 0.48 U | -- | 4.2 J | -- | -- |
| P2-IRM-FB-20220315 | 3/15/2022 | FB | 4602542861 | -- | < 4.0 U | -- | < 10.0 U | 0.60 J | < 0.48 U | -- | < 5.0 U | -- | -- |
| P2-IRM-FB-20220316 | 3/16/2022 | FB | 4602544241 | -- | < 4.0 U | -- | < 10.0 U | 0.90 J | < 0.48 U | -- | < 5.0 U | -- | -- |
| P2-IRM-FB-20220317 | 3/17/2022 | FB | 4602545111 | -- | < 4.0 U | -- | < 10.0 U | 0.99 J | < 0.48 U | -- | 3.1 J | -- | -- |
| P2-IRM-FB-20220318 | 3/18/2022 | FB | 4602546031 | -- | < 4.0 U | -- | < 10.0 U | 0.78 J | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20220321 | 3/21/2022 | FB | 4602547381 | -- | < 4.0 U | -- | < 10.0 U | 0.88 J | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20220322 | 3/22/2022 | FB | 4602547911 | -- | < 4.0 U | -- | < 10.0 U | 0.73 J^2 | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20220323 | 3/23/2022 | FB | 4602548831 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20220324 | 3/24/2022 | FB | 4602549601 | -- | < 4.0 U | -- | < 10.0 U | 0.59 J | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20220325 | 3/25/2022 | FB | 4602550291 | -- | < 4.0 U | -- | < 10.0 U | 0.52 J | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| P2-IRM-FB-20220331 | 3/31/2022 | FB | 4602553841 | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | -- |
| P2-IRM-FB-20220412 | 4/12/2022 | FB | 4602561091 | -- | < 4.0 U | -- | < 10.0 U | 0.56 J | < 0.48 U | -- | 3.9 J | -- | -- |
| 92-IRM-FB-20220413 | 4/13/2022 | FB | 4602562001 | -- | < 4.0 U | -- | < 10.0 U | 0.71 J | < 0.48 U | -- | 7.1 | -- | -- |
| P2-IRM-FB-20220414 | 4/14/2022 | FB | 4602562981 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | 3.4 J | -- | -- |
| P3-IRM-FB-20220418 | 4/18/2022 | FB | 4602564851 | -- | < 4.0 U | -- | < 10.0 U | 0.61 J | < 0.48 U | < 1.0 U | < 5.0 U | -- | -- |
| P3-IRM-FB-20220419 | 4/19/2022 | FB | 4602565511 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20220420 | 4/20/2022 | FB | 4602566161 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | -- | -- | -- | -- | -- |
| GW-RI-FB-20220421 | 4/21/2022 | FB | 4602567051 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| P3-IRM-FB-20220421 | 4/21/2022 | FB | 4602567031 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20220422 | 4/22/2022 | FB | 4602567961 | -- | < 4.0 U | -- | < 10.0 U | 0.51 J | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20220425 | 4/25/2022 | FB | 4602569361 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20220426 | 4/26/2022 | FB | 4602569961 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20220427 | 4/27/2022 | FB | 4602570871 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20220428 | 4/28/2022 | FB | 4602571561 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | -- | -- |
| P2-IRM-FB-20220428 | 4/28/2022 | FB | 4602572301 | -- | -- | -- | -- | 0.60 J | -- | -- | -- | -- | -- |
| P2-IRM-FB-20220509 | 5/9/2022 | FB | 4602578211 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | 3.6 J | -- | -- |
| P2-IRM-FB-20220510 | 5/10/2022 | FB | 4602578751 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | -- | -- |

**Appendix A-3**
**Analytical Results from QA/QC Samples - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | Chromium | | | | Geochemical Parameters | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | TOTAL ORGANIC | SULFATE | SULFIDE | METHANE | IRON | MANGANESE |
| | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 |
| | | | Fraction | D | T | D | T | T | T | T | T | D | D |
| | | | Units | ug/L | ug/L | ug/L | ug/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L |
| Sample ID | Sample Date | Sample Type | Lab SDG | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result |
| P2-IRM-FB-20220511 | 5/11/2022 | FB | 4602579551 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | -- | -- |
| P2-IRM-FB-20220512 | 5/12/2022 | FB | 4602580081 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | -- | -- |
| GW-RI-FB-20220513 | 5/13/2022 | FB | 4602580871 | -- | < 4.0 U | -- | < 20.0 U | -- | -- | -- | -- | -- | -- |
| P2-IRM-FB-20220513 | 5/13/2022 | FB | 4602580891 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20220517 | 5/17/2022 | FB | 4602582941 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20220518 | 5/18/2022 | FB | 4602583551 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | 3.4 J | -- | -- |
| P3-IRM-FB-20220519 | 5/19/2022 | FB | 4602584291 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20220520 | 5/20/2022 | FB | 4602585231 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | < 5.0 U | -- | -- |
| P3-IRM-FB-20222523 | 5/23/2022 | FB | 4602586501 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| FB-20220523 | 5/23/2022 | FB | JD45334 | 8.2 J | 9.3 J | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | 0.87 | < 100 U | < 15 U |
| FB-20220524 | 5/24/2022 | FB | JD45395 | < 10 U | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | 0.84 | < 100 U | 2.0 J |
| FB-20220525 | 5/25/2022 | FB | JD45473 | < 10 UJ | < 10 U | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | 0.97 | < 100 U | < 15 U |
| FB-20220526 | 5/26/2022 | FB | JD45556 | 2.9 J | 3.1 J | < 10 U | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | 0.73 | < 100 U | < 15 U |
| P2-IRM-FB-20220527 | 5/27/2022 | FB | 4602589681 | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | -- |
| GW-RI-FB-20220603 | 6/3/2022 | FB | 4602593611 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| P2-IRM-FB-20220607 | 6/7/2022 | FB | 4602595691 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20220608 | 6/8/2022 | FB | 4602596671 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20220609-1 | 6/9/2022 | FB | 4602597161 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20220609 | 6/9/2022 | FB | 4602597481 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20220610 | 6/10/2022 | FB | 4602598551 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20220613 | 6/13/2022 | FB | 4602600111 | -- | < 4.0 U | -- | < 10.0 U | 0.48 J | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20220613 | 6/13/2022 | FB | 4602600101 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20220614 | 6/14/2022 | FB | 4602600641 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20220615 | 6/15/2022 | FB | 4602601521 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20220615 | 6/15/2022 | FB | 4602601501 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20220616 | 6/16/2022 | FB | 4602602381 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20220617 | 6/17/2022 | FB | 4602603591 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20220620 | 6/20/2022 | FB | 4602604751 | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | -- |
| GW-RI-FB-20220705 | 7/5/2022 | FB | 4602613181 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| P2-IRM-FB-20220711 | 7/11/2022 | FB | 4602617131 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20220712 | 7/12/2022 | FB | 4602617771 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20220713 | 7/13/2022 | FB | 4602618361 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20220714 | 7/14/2022 | FB | 4602619011 | -- | < 4.0 U | -- | < 10.0 U | 0.49 J | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20220715 | 7/15/2022 | FB | 4602619741 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20220718 | 7/18/2022 | FB | 4602621141 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20220719 | 7/19/2022 | FB | 4602621891 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20220720 | 7/20/2022 | FB | 4602622601 | -- | < 4.0 U | -- | < 10.0 U | 0.53 J | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20220721 | 7/21/2022 | FB | 4602623381 | -- | < 4.0 U | -- | < 10.0 U | 0.49 J | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20220722 | 7/22/2022 | FB | 4602624001 | -- | < 4.0 U | -- | < 10.0 U | 0.48 J | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20220725 | 7/25/2022 | FB | 4602625591 | -- | -- | -- | -- | 0.48 J | -- | -- | -- | -- | -- |
| GW-RI-FB-20220804 | 8/4/2022 | FB | 4602632541 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| GW-RI-FB-20220805 | 8/5/2022 | FB | 4602633361 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| P2-IRM-FB-20220815 | 8/15/2022 | FB | 4602638581 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 2.40 U | -- | -- | -- | -- |
| P2-IRM-FB-20220816 | 8/16/2022 | FB | 4602639181 | -- | < 4.0 U | -- | < 10.0 U | 0.53 J | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20220817 | 8/17/2022 | FB | 4602639901 | -- | < 4.0 U | -- | < 10.0 U | 0.75 J | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20220818 | 8/18/2022 | FB | 4602640741 | -- | < 4.0 U | -- | < 10.0 U | 0.80 J | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20220819 | 8/19/2022 | FB | 4602641451 | -- | < 4.0 U | -- | < 10.0 U | 0.48 J | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20220822 | 8/22/2022 | FB | 4602642131 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20220823 | 8/23/2022 | FB | 4602642801 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20220824 | 8/24/2022 | FB | 4602643471 | -- | < 4.0 U | -- | < 10.0 U | 0.49 J | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20220825 | 8/25/2022 | FB | 4602644081 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20220826 | 8/26/2022 | FB | 4602644761 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| FB-GW-20220829 | 8/29/2022 | FB | 4602645761 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- |
| FB-GW-20220830 | 8/30/2022 | FB | 4602646321 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- |
| FB-GW-20220831 | 8/31/2022 | FB | 4602646891 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- |
| FB-GW-20220901 | 9/1/2022 | FB | 4602647551 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- |
| FB-GW-20220902 | 9/2/2022 | FB | 4602648361 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- |
| FB-GW-20220906 | 9/6/2022 | FB | 4602649481 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- |
| FB-GW-20220907 | 9/7/2022 | FB | 4602650311 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- |
| FB-GW-20220908 | 9/8/2022 | FB | 4602651221 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- |
| FB-GW-20220909 | 9/9/2022 | FB | 4602651811 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- |

**Appendix A-3**
**Analytical Results from QA/QC Samples - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | Chromium | | | | Geochemical Parameters | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | TOTAL ORGANIC | SULFATE | SULFIDE | METHANE | IRON | MANGANESE |
| | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 |
| | | | Fraction | D | T | D | T | T | T | T | T | D | D |
| | | | Units | ug/L | ug/L | ug/L | ug/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L |
| Sample ID | Sample Date | Sample Type | Lab SDG | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result |
| FB-GW-20220913 | 9/13/2022 | FB | 4602654381 | < 4.0 U | < 4.0 U | < 10.0 U | < 10.0 U | -- | -- | -- | -- | -- | -- |
| P2-IRM-FB-20220913 | 9/13/2022 | FB | 4602654331 | -- | < 4.0 U | -- | < 10.0 U | 0.91 J | < 0.48 U | -- | -- | < 120 U | < 8.0 U |
| P2-IRM-FB-20220914 | 9/14/2022 | FB | 4602654911 | -- | < 4.0 U | -- | < 10.0 U | 0.83 J | < 0.48 U | -- | -- | < 120 U | < 8.0 U |
| P2-IRM-FB-20220915 | 9/15/2022 | FB | 4602655901 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | < 120 U | < 8.0 U |
| P3-IRM-20220915 | 9/15/2022 | FB | 4602655931 | -- | 3.6 J | -- | < 10.0 U | 0.55 J | < 2.40 U | -- | -- | -- | -- |
| P3-IRM-FB-20220916 | 9/16/2022 | FB | 4602657011 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 2.40 U | -- | -- | -- | -- |
| P3-IRM-20220919 | 9/19/2022 | FB | 4602658321 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20220920 | 9/20/2022 | FB | 4602659081 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20220921 | 9/21/2022 | FB | 4602659871 | -- | < 4.0 U | -- | < 10.0 U | 0.52 J | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20220922 | 9/22/2022 | FB | 4602660731 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20220923 | 9/23/2022 | FB | 4602661551 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20220930 | 9/30/2022 | FB | 4602666011 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 2.40 U | -- | -- | -- | -- |
| P2-IRM-FB-20221010 | 10/10/2022 | FB | 4602671561 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20221011 | 10/11/2022 | FB | 4602672521 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20221012 | 10/12/2022 | FB | 4602673311 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20221013 | 10/13/2022 | FB | 4602674311 | -- | < 4.0 U | -- | < 10.0 U | 0.56 J | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20221013 | 10/13/2022 | FB | 4602674321 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20221014 | 10/14/2022 | FB | 4602675261 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20221017 | 10/17/2022 | FB | 4602676401 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20221018 | 10/18/2022 | FB | 4602677121 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20221019 | 10/19/2022 | FB | 4602677971 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20221020 | 10/20/2022 | FB | 4602678821 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20221021 | 10/21/2022 | FB | 4602679761 | -- | < 4.0 U | -- | < 10.0 U | 0.56 J | < 2.40 U | -- | -- | -- | -- |
| P2-IRM-FB-20221108 | 11/8/2022 | FB | 4602691101 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20221109 | 11/9/2022 | FB | 4602691941 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20221110 | 11/10/2022 | FB | 4602692751 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20221111 | 11/11/2022 | FB | 4602693471 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20221111 | 11/11/2022 | FB | 4602693491 | -- | < 4.0 U | -- | < 10.0 U | 0.69 J | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20221114 | 11/14/2022 | FB | 4602695301 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20221115 | 11/15/2022 | FB | 4602695881 | -- | < 4.0 U | -- | < 10.0 U | 0.86 J | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20221116 | 11/16/2022 | FB | 4602696581 | -- | < 4.0 U | -- | < 10.0 U | 0.96 J | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20221117 | 11/17/2022 | FB | 4602697441 | -- | < 4.0 U | -- | < 10.0 U | 0.82 J | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20221118 | 11/18/2022 | FB | 4602697961 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20221206-T | 12/6/2022 | FB | 4602707741 | -- | 13.7 | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20221206-PT | 12/6/2022 | FB | 4602707751 | -- | 6.3 | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1 U | -- | -- | -- |
| P2-IRM-FB-20221207-PT | 12/7/2022 | FB | 4602708801 | -- | < 4.0 U | -- | < 10.0 U | 0.51 J | < 0.48 U | < 1 U | -- | -- | -- |
| P2-IRM-FB-20221207-T | 12/7/2022 | FB | 4602708821 | -- | 2.8 J | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20221208-T | 12/8/2022 | FB | 4602709591 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-202212109-PT | 12/9/2022 | FB | 4602710741 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 UJ | < 0.48 U | < 1 U | -- | -- | -- |
| P2-IRM-FB-20221212-PT | 12/12/2022 | FB | 4602712001 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1 U | -- | -- | -- |
| P2-IRM-FB-20221213-PT | 12/13/2022 | FB | 4602712801 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1 U | -- | -- | -- |
| P2-IRM-FB-20221213-T | 12/13/2022 | FB | 4602713971 | -- | -- | -- | -- | -- | -- | -- | -- | < 120 U | < 8.0 U |
| P3-IRM-FB-20221213 | 12/13/2022 | FB | 4602712771 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20221214-T | 12/14/2022 | FB | 4602713641 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20221214 | 12/14/2022 | FB | 4602713561 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20221215 | 12/15/2022 | FB | 4602714561 | -- | < 4.0 U | -- | < 10.0 U | 0.56 J | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20221216 | 12/16/2022 | FB | 4602715551 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20221219 | 12/19/2022 | FB | 4602717111 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20221220 | 12/20/2022 | FB | 4602718081 | -- | < 4.0 U | -- | < 10.0 U | 0.49 J | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20221221 | 12/21/2022 | FB | 4602718921 | -- | < 4.0 U | -- | < 10.0 U | 0.90 J | < 0.48 U | -- | -- | -- | -- |
| FB-20221227 | 12/27/2022 | FB | 4602720661 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 UJ | R | < 1.0 UJ | -- | -- | -- |
| FB-20221228 | 12/28/2022 | FB | 4602721191 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 5.0 U | < 1.0 U | -- | -- | -- |
| FB-20221229 | 12/29/2022 | FB | 4602721691 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| FB-20221230 | 12/30/2022 | FB | 4602722451 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| FB-20230103 | 1/3/2023 | FB | 4602722831 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| FB-20230103-1 | 1/3/2023 | FB | 4602722821 | -- | < 4.0 U | -- | -- | 0.55 J | < 0.48 U | -- | -- | -- | -- |
| FB-20230104 | 1/4/2023 | FB | 4602723311 | -- | < 4.0 U | -- | < 10.0 U | 0.78 J | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20230117 | 1/17/2023 | FB | 4602730721 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230118 | 1/18/2023 | FB | 4602731501 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 UJ | -- | -- | -- | -- |
| P3-IRM-FB-20230119 | 1/19/2023 | FB | 4602732351 | -- | 2.6 J | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230120 | 1/20/2023 | FB | 4602733031 | -- | 5.9 | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |

**Appendix A-3**
**Analytical Results from QA/QC Samples - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | Chromium | | | | Geochemical Parameters | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | TOTAL ORGANIC | SULFATE | SULFIDE | METHANE | IRON | MANGANESE |
| | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 |
| | | | Fraction | D | T | D | T | T | T | T | T | D | D |
| | | | Units | ug/L | ug/L | ug/L | ug/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L |
| Sample ID | Sample Date | Sample Type | Lab SDG | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result |
| P3+IRM-FB-20230123 | 1/23/2023 | FB | 4602734111 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230124 | 1/24/2023 | FB | 4602734531 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230115 | 1/25/2023 | FB | 4602735311 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230126 | 1/26/2023 | FB | 4602735991 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230127 | 1/27/2023 | FB | 4602736701 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230130 | 1/30/2023 | FB | 4602737381 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20230215-PT | 2/15/2023 | FB | 4602746811 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1 U | -- | -- | -- |
| P2-IRM-FB-20230216-B | 2/16/2023 | FB | 4602747701 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1 U | -- | -- | -- |
| P2-IRM-FB-20230216-PT | 2/16/2023 | FB | 4602747691 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1 U | -- | -- | -- |
| P2-IRM-FB-20230217-B | 2/17/2023 | FB | 4602748331 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1 U | -- | -- | -- |
| P2-IRM-FB-20230217-PT | 2/17/2023 | FB | 4602748361 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1 U | -- | -- | -- |
| P2-IRM-FB-20230220-B | 2/20/2023 | FB | 4602749371 | -- | < 4.0 U | -- | < 10.0 U | 0.49 J | < 0.48 U | < 1 U | -- | < 120 U | < 8.0 U |
| P2-IRM-FB-20230220-PT | 2/20/2023 | FB | 4602749361 | -- | < 4.0 U | -- | < 10.0 UJ | < 1.0 U | < 0.48 U | < 1 U | -- | -- | -- |
| P2-IRM-FB-20230221-T | 2/21/2023 | FB | 4602750091 | -- | 3.5 J | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20230221-B | 2/21/2023 | FB | 4602750081 | -- | < 4.0 U | -- | < 10.0 U | 0.64 J | < 0.48 U | < 1 U | -- | < 120 U | < 8.0 U |
| P2-IRM-FB-20230221-PT | 2/21/2023 | FB | 4602750101 | -- | < 4.0 U | -- | < 10.0 U | 0.74 J | < 0.48 U | < 1 U | -- | -- | -- |
| P2-IRM-FB-20230222-B | 2/22/2023 | FB | 4602750751 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1 U | -- | < 120 U | < 8.0 U |
| P3-IRM-FB-20230222 | 2/22/2023 | FB | 4602750761 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20230222-PT | 2/22/2023 | FB | 4602750771 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1 U | -- | -- | -- |
| P3-IRM-FB-20230223 | 2/23/2023 | FB | 4602751411 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230224 | 2/24/2023 | FB | 4602752361 | -- | < 4.0 U | -- | < 10.0 U | 0.83 J | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230227 | 2/27/2023 | FB | 4602753411 | -- | < 4.0 U | -- | < 10.0 U | 0.66 J | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230228 | 2/28/2023 | FB | 4602753821 | -- | < 4.0 U | -- | < 10.0 U | 0.74 J | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230302 | 3/2/2023 | FB | 4602755581 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1.0 U | -- | -- | -- |
| P3-IRM-FB-20230303 | 3/3/2023 | FB | 4602756331 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1.0 U | -- | -- | -- |
| P3-IRM-FB-20230306 | 3/6/2023 | FB | 4602757661 | -- | < 4.0 U | -- | < 10.0 U | 0.77 J | < 0.48 U | < 1.0 U | -- | -- | -- |
| FB-20230314 | 3/14/2023 | FB | 4602762891 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| P2-IRM-FB-20230315 | 3/15/2023 | FB | 4602763801 | -- | < 4.0 U | -- | < 10.0 U | 0.51 J | < 0.48 U | -- | -- | -- | -- |
| FB-20230315 | 3/15/2023 | FB | 4602763791 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| FB-20230316 | 3/16/2023 | FB | 4602764731 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| FB-20230317 | 3/17/2023 | FB | 4602765431 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| P3-IRM-FB-20230317 | 3/17/2023 | FB | 4602765401 | -- | < 4.0 U | -- | < 10.0 U | 0.64 J | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230320 | 3/20/2023 | FB | 4602766501 | -- | < 4.0 U | -- | < 10.0 U | 0.62 J | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230321 | 3/21/2023 | FB | 4602767381 | -- | < 4.0 U | -- | < 10.0 U | 0.55 J | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230322 | 3/22/2023 | FB | 4602768001 | -- | < 4.0 U | -- | < 10.0 U | 0.83 J | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230323 | 3/23/2023 | FB | 4602768691 | -- | < 4.0 U | -- | < 10.0 U | 0.74 J | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230324 | 3/24/2023 | FB | 4602769361 | -- | < 4.0 U | -- | < 10.0 U | 0.62 J | < 0.48 U | -- | -- | -- | -- |
| GW-FB-20230329 | 3/29/2023 | FB | 4602772691 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | < 120 U | < 8.0 U |
| P3-IRM-FB-20230330 | 3/30/2023 | FB | 4602773201 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20230330 | 3/30/2023 | FB | 4602773211 | -- | < 4.0 U | -- | < 1000 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20230411 | 4/11/2023 | FB | 4602780351 | -- | 2.9 J | -- | < 10.0 U | 0.84 J | < 0.48 U | -- | -- | -- | -- |
| FB-20230411 | 4/11/2023 | FB | 4602780811 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1 U | -- | -- | -- |
| FB-20230412 | 4/12/2023 | FB | 4602781121 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1 U | -- | -- | -- |
| P2-IRM-FB-20230412 | 4/12/2023 | FB | 4602781111 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230413 | 4/13/2023 | FB | 4602781941 | -- | 2.6 J | -- | < 10.0 U | 0.51 J | < 0.48 U | -- | -- | -- | -- |
| FB-20230413 | 4/13/2023 | FB | 4602781921 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1 U | -- | -- | -- |
| FB-20230414 | 4/14/2023 | FB | 4602782861 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1 U | -- | -- | -- |
| P3-IRM-FB-20230414 | 4/14/2023 | FB | 4602782821 | -- | < 4.0 U | -- | < 10.0 U | 0.82 J | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230417 | 4/17/2023 | FB | 4602783601 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| FB-20230417 | 4/17/2023 | FB | 4602783651 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1 U | -- | -- | -- |
| FB-20230418 | 4/18/2023 | FB | 4602784511 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| P3-PT-FB-20230418 | 4/18/2023 | FB | 4602784501 | -- | < 4.0 U | -- | < 10.0 UJ | < 1.0 U | < 480 U | < 1 U | -- | -- | -- |
| P3-IRM-FB-20230419 | 4/19/2023 | FB | 4602784981 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-PT-FB-20230419 | 4/19/2023 | FB | 4602784921 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 480 U | < 1 U | -- | -- | -- |
| P3-PT-FB-20230420 | 4/20/2023 | FB | 4602786071 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 480 U | < 1 U | -- | -- | -- |
| P3-IRM-FB-20230420 | 4/20/2023 | FB | 4602786061 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230421 | 4/21/2023 | FB | 4602786851 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230424 | 4/24/2023 | FB | 4602787991 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230425 | 4/25/2023 | FB | 4602788811 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| FB-20230503 | 5/3/2023 | FB | 4602794711 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| P2-IRM-FB-20230504 | 5/4/2023 | FB | 4602795681 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |

**Appendix A-3**
**Analytical Results from QA/QC Samples - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | Chromium | | | | Geochemical Parameters | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | TOTAL ORGANIC | SULFATE | SULFIDE | METHANE | IRON | MANGANESE |
| | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 |
| | | | Fraction | D | T | D | T | T | T | T | T | D | D |
| | | | Units | ug/L | ug/L | ug/L | ug/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L |
| Sample ID | Sample Date | Sample Type | Lab SDG | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result |
| FB-20230504 | 5/4/2023 | FB | 4602795671 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| FB-20230505 | 5/5/2023 | FB | 4602796721 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| P2-IRM-FB-20230505 | 5/5/2023 | FB | 4602796711 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| FB-20230508 | 5/8/2023 | FB | 4602798181 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| FB-20230509 | 5/9/2023 | FB | 4602799211 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| P3-IRM-FB-20230509 | 5/9/2023 | FB | 4602799431 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230510 | 5/10/2023 | FB | 4602800211 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230511 | 5/11/2023 | FB | 4602801171 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230512 | 5/12/2023 | FB | 4602802081 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230515 | 5/15/2023 | FB | 4602803281 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230516 | 5/16/2023 | FB | 4602803921 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20230517-PT | 5/17/2023 | FB | 4602804511 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1.0 U | -- | -- | -- |
| P3-IRM-FB-20230517 | 5/17/2023 | FB | 4602804541 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20230518-PT | 5/18/2023 | FB | 4602805391 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1 U | -- | -- | -- |
| P2-IRM-FB-20230519-PT | 5/19/2023 | FB | 4602806561 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1 U | -- | -- | -- |
| P2-IRM-FB-20230522-PT | 5/22/2023 | FB | 4602807921 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1 U | -- | -- | -- |
| P2-IRM-FB-20230523-PT | 5/23/2023 | FB | 4602808651 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1 U | -- | -- | -- |
| P2-IRM-FB-20230524-PT | 5/24/2023 | FB | 4602809491 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1 U | -- | < 120 U | < 8.0 U |
| P2-IRM-FB-20230525-PT | 5/25/2023 | FB | 4602810201 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1 U | -- | -- | -- |
| P2-IRM-FB-20230526-PT | 5/26/2023 | FB | 4602810841 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1 U | -- | -- | -- |
| P2-IRM-FB-20230613-PT | 6/13/2023 | FB | 4602822041 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1 U | -- | -- | -- |
| P2-IRM-FB-20230614-PT | 6/14/2023 | FB | 4602823061 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1 U | -- | -- | -- |
| P2-IRM-FB-20230615 | 6/15/2023 | FB | 4602824081 | < 4.0 U | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | < 120 U | < 8.0 U |
| P2-IRM-FB-20230615-PT | 6/15/2023 | FB | 4602824101 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20230616 | 6/16/2023 | FB | 4602824881 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| P2-IRM-FB-20230616-PT | 6/16/2023 | FB | 4602824851 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1 U | -- | -- | -- |
| P3-IRM-FB-20230616 | 6/16/2023 | FB | 4602824871 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230619 | 6/19/2023 | FB | 4602826571 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230620 | 6/20/2023 | FB | 4602827171 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230621 | 6/21/2023 | FB | 4602828031 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230622 | 6/22/2023 | FB | 4602828851 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230623 | 6/23/2023 | FB | 4602829671 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20230626 | 6/26/2023 | FB | 4602831371 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| P3-IRM-FB-20230626 | 6/26/2023 | FB | 4602831381 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| GW-RI-FB-20230627 | 6/27/2023 | FB | 4602831931 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| GW-RI-FB-20230627 | 6/27/2023 | FB | 4602831932 | -- | -- | -- | -- | < 1.0 U | < 0.48 U | -- | -- | < 120 U | -- |
| P3-IRM-FB-20230627 | 6/27/2023 | FB | 4602831921 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| GW-RI-FB-20230628 | 6/28/2023 | FB | 4602832531 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| GW-RI-FB-20230628 | 6/28/2023 | FB | 4602832532 | -- | -- | -- | -- | < 1.0 U | < 0.48 U | -- | -- | < 120 U | -- |
| GW-RI-FB-20230629 | 6/29/2023 | FB | 4602833321 | -- | < 4.0 U | -- | < 10.0 UJ | -- | -- | -- | -- | -- | -- |
| GW-RI-FB-20230629 | 6/29/2023 | FB | 4602833322 | -- | -- | -- | -- | < 1.0 U | < 0.48 U | -- | -- | < 120 U | -- |
| GW-RI-FB-20230630 | 6/30/2023 | FB | 4602833941 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| GW-RI-FB-20230630 | 6/30/2023 | FB | 4602833942 | -- | -- | -- | -- | 10.9 | < 0.48 U | -- | -- | < 120 U | -- |
| GW-RI-FB-20230703 | 7/3/2023 | FB | 4602835471 | -- | < 4.0 U | -- | R | -- | -- | -- | -- | -- | -- |
| GW-RI-FB-20230703 | 7/3/2023 | FB | 4602835472 | -- | -- | -- | -- | < 1.0 U | < 0.48 U | -- | -- | < 120 U | -- |
| FB-20230711 | 7/11/2023 | FB | 4602839741 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| P2-IRM-FB-20230711 | 7/11/2023 | FB | 4602839751 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 2.40 U | -- | -- | -- | -- |
| P2-IRM-FB-20230712 | 7/12/2023 | FB | 4602840741 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230712-PT | 7/12/2023 | FB | 4602840751 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1 U | -- | -- | -- |
| P3-IRM-FB-20230713-PT | 7/13/2023 | FB | 4602841571 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1 U | -- | -- | -- |
| P3-IRM-FB-20230714 | 7/14/2023 | FB | 4602842251 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230717-PT | 7/17/2023 | FB | 4602844071 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1 U | -- | -- | -- |
| P3-IRM-FB-20230717 | 7/17/2023 | FB | 4602844061 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230718 | 7/18/2023 | FB | 4602844591 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230719 | 7/19/2023 | FB | 4602845431 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | < 1 U | -- | -- | -- |
| P3-IRM-FB-20230719 | 7/19/2023 | FB | 4602845491 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230720 | 7/20/2023 | FB | 4602846391 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230721 | 7/21/2023 | FB | 4602847281 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| GW-RI-FB-20230726 | 7/26/2023 | FB | 4602849651 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | < 120 U | -- |
| 20230810_90FS_FB | 8/10/2023 | FB | JD70819 | -- | < 10 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| P2-IRM-FB-20230815 | 8/15/2023 | FB | 4602862021 | -- | < 4.0 U | -- | < 10.0 U | 0.87 J | < 0.48 U | -- | -- | -- | -- |

**Appendix A-3**
**Analytical Results from QA/QC Samples - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | Chromium | | | | Geochemical Parameters | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | TOTAL ORGANIC | SULFATE | SULFIDE | METHANE | IRON | MANGANESE |
| | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 |
| | | | Fraction | D | T | D | T | T | T | T | T | D | D |
| | | | Units | ug/L | ug/L | ug/L | ug/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L |
| Sample ID | Sample Date | Sample Type | Lab SDG | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result |
| P3-IRM-FB-20230815 | 8/15/2023 | FB | 4602862031 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20230816-PT | 8/16/2023 | FB | 4602863141 | -- | < 4.0 U | -- | < 10.0 U | 0.86 J | < 0.48 U | < 1 U | -- | -- | -- |
| P2-IRM-FB-20230817 | 8/17/2023 | FB | 4602864051 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20230817-PT | 8/17/2023 | FB | 4602864001 | -- | < 4.0 U | -- | < 10.0 U | 0.84 J | < 0.48 U | < 1 U | -- | -- | -- |
| P2-IRM-FB-20230818-PT | 8/18/2023 | FB | 4602864961 | -- | < 4.0 U | -- | < 10.0 U | 0.71 J- | < 0.48 U | < 1 U | -- | -- | -- |
| P2-IRM-FB-20230821-PT | 8/21/2023 | FB | 4602866341 | -- | < 4.0 U | -- | < 10.0 UJ | 0.85 J | < 0.48 U | < 1 U | -- | < 120 U | < 8.0 U |
| P2-IRM-FB-20230822-PT | 8/22/2023 | FB | 4602866741 | -- | < 4.0 U | -- | < 10.0 U | 0.85 J | < 0.48 U | < 1 U | -- | -- | -- |
| P3-IRM-FB-20230822 | 8/22/2023 | FB | 4602866771 | -- | < 4.0 U | -- | < 10.0 U | 0.93 J | 392 | -- | -- | -- | -- |
| GW-RI-FB-20230823 | 8/23/2023 | FB | 4602867531 | -- | < 4.0 U | -- | < 10.0 U | 0.79 J | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230823 | 8/23/2023 | FB | 4602867511 | -- | < 4.0 U | -- | < 10.0 U | 0.88 J | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230824 | 8/24/2023 | FB | 4602868441 | -- | < 4.0 U | -- | < 10.0 U | 0.73 J | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230825 | 8/25/2023 | FB | 4602869101 | -- | < 4.0 U | -- | < 10.0 U | 0.78 J | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20230912 | 9/12/2023 | FB | 4602880021 | -- | < 4.0 U | -- | < 10.0 U | 0.76 J | < 0.48 U | -- | -- | -- | -- |
| FB-20230912 | 9/12/2023 | FB | 4602879871 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| FB-20230913 | 9/13/2023 | FB | 4602880871 | -- | < 4.0 U | -- | < 10.0 U | -- | -- | -- | -- | -- | -- |
| FB-20230914 | 9/14/2023 | FB | 4602882001 | -- | < 4.0 U | -- | < 10.0 UJ | -- | -- | -- | -- | -- | -- |
| P3-IRM-FB-20230914 | 9/14/2023 | FB | 4602882011 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230915 | 9/15/2023 | FB | 4602882761 | -- | < 4.0 U | -- | < 10.0 U | 0.85 J | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB20230918 | 9/18/2023 | FB | 4602884721 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230919 | 9/19/2023 | FB | 4602885251 | -- | < 4.0 U | -- | < 10.0 U | 0.54 J | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230920 | 9/20/2023 | FB | 4602886061 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| GW-RI-FB-20230921 | 9/21/2023 | FB | 4602887311 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20230921 | 9/21/2023 | FB | 4602887321 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| GW-RI-FB-20230922 | 9/22/2023 | FB | 4602888091 | -- | < 4.0 U | -- | < 10.0 U | 0.50 J | < 0.48 U | -- | -- | -- | -- |
| GW-RI-FB-20230925 | 9/25/2023 | FB | 4602889531 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| GW-RI-FB-20230926 | 9/26/2023 | FB | 4602890021 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| GW-RI-FB-20230927 | 9/27/2023 | FB | 4602890621 | -- | < 4.0 U | -- | < 10.0 U | 0.50 J | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20231010 | 10/10/2023 | FB | 4602900121 | -- | < 4.0 U | -- | < 10.0 U | 0.70 J | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20231011 | 10/11/2023 | FB | 4602901161 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20231012 | 10/12/2023 | FB | 4602902281 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20231012-PT | 10/12/2023 | FB | 4602902271 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20231013 | 10/13/2023 | FB | 4602903221 | -- | < 4.0 U | -- | < 10.0 U | < 1.0 U | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20231016 | 10/16/2023 | FB | 4602904731 | -- | < 4.0 U | -- | < 10.0 U | 0.50 J | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20231016-PT | 10/16/2023 | FB | 4602904751 | -- | < 4.0 U | -- | < 10.0 U | 0.59 J | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20231017 | 10/17/2023 | FB | 4602905591 | -- | < 4.0 U | -- | < 10.0 U | 0.70 J | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20231017-PT | 10/17/2023 | FB | 4602905601 | -- | < 4.0 U | -- | < 10.0 U | 0.61 J | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20231018 | 10/18/2023 | FB | 4602906411 | -- | < 4.0 U | -- | < 10.0 U | 0.86 J | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20231018-PT | 10/18/2023 | FB | 4602906421 | -- | < 4.0 U | -- | < 10.0 U | 0.65 J | < 0.48 U | -- | -- | -- | -- |
| P2-IRM-FB-20231019 | 10/19/2023 | FB | 4602907271 | -- | < 4.0 U | -- | < 10.0 U | 0.64 J | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20231020-PT | 10/20/2023 | FB | 4602908131 | -- | < 4.0 U | -- | < 10.0 U | 0.49 J | < 0.48 U | -- | -- | -- | -- |
| P3-IRM-FB-20231113 | 11/13/2023 | FB | JD76852 | -- | < 2.0 U | -- | < 10 U | 0.46 B | 1.3 B | -- | -- | -- | -- |
| P2-IRM-FB-20-20231113 | 11/13/2023 | FB | JD76851 | -- | < 2.0 U | -- | < 10 U | 0.38 B | 1.4 B | -- | -- | -- | -- |
| P3-IRM-FB-20231114 | 11/14/2023 | FB | JD76935 | -- | 7.2 B | -- | < 10 U | < 1.0 U | 1.4 B | -- | -- | -- | -- |
| P3-IRM-FB-20231115 | 11/15/2023 | FB | JD77052 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| FB-20231115 | 11/15/2023 | FB | JD77054 | -- | < 2.0 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| P3-IRM-FB-20231116 | 11/16/2023 | FB | JD77164 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P2-IRM-FB-20231116-PT | 11/16/2023 | FB | JD77165 | -- | 1.6 J | -- | < 10 U | < 1.0 U | < 2.0 UB | < 2.0 U | -- | -- | -- |
| P2-IRM-FB-20231117-PT | 11/17/2023 | FB | JD77231 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P2-IRM-FB-20231120-PT | 11/20/2023 | FB | JD77343 | -- | 1.0 J | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P2-IRM-FB-20231121-PT | 11/21/2023 | FB | JD77454 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | 1.4 J | -- | -- | -- | -- |
| FB-20231211 | 12/11/2023 | FB | JD78573 | -- | < 2.0 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20231212 | 12/12/2023 | FB | JD78686 | -- | < 2.0 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20231213 | 12/13/2023 | FB | JD78777 | -- | < 2.0 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| P3-IRM-FB-20231213 | 12/13/2023 | FB | JD78776 | -- | < 2.0 U | -- | < 10 U | 0.24 B | 1.4 B | -- | -- | -- | -- |
| P3-IRM-FB-20231214 | 12/14/2023 | FB | JD78891 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | 1.4 B | -- | -- | -- | -- |
| GW-RI-FB-20231215 | 12/15/2023 | FB | JD78984 | -- | < 2.0 U | < 10 U | -- | < 1.0 U | 1.4 J | -- | -- | < 50 U | < 2.0 U |
| P3-IRM-FB-20231215 | 12/15/2023 | FB | JD78996 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | 1.2 B | -- | -- | -- | -- |
| P3-IRM-FB-20231219 | 12/19/2023 | FB | JD79187 | -- | < 2.0 U | -- | < 10 U | 5.3 | 1.2 B | -- | -- | -- | -- |
| GW-RI-FB-20231219 | 12/19/2023 | FB | JD79185 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | < 50 U | < 2.0 U |
| GW-RI-FB-20231220 | 12/20/2023 | FB | JD79285 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | 1.0 J | -- | -- | < 50 U | < 2.0 U |
| P3-IRM-FB-20231220 | 12/20/2023 | FB | JD79284 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | 1.2 B | -- | -- | -- | -- |

**Appendix A-3**
**Analytical Results from QA/QC Samples - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | Chromium | | | | Geochemical Parameters | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | TOTAL ORGANIC | SULFATE | SULFIDE | METHANE | IRON | MANGANESE |
| | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 |
| | | | Fraction | D | T | D | T | T | T | T | T | D | D |
| | | | Units | ug/L | ug/L | ug/L | ug/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L |
| Sample ID | Sample Date | Sample Type | Lab SDG | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result |
| P2-IRM-FB-2023121 | 12/21/2023 | FB | JD79358 | -- | < 2.0 U | -- | < 10 U | 0.13 B | 2.2 | -- | -- | < 50 U | < 2.0 U |
| P3-IRM-FB-20231221 | 12/21/2023 | FB | JD79357 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | 1.5 B | -- | -- | -- | -- |
| GW-RI-FB-20231222 | 12/22/2023 | FB | JD79443 | -- | 0.63 J | -- | < 10 U | < 1.0 U | 1.4 J | -- | -- | -- | -- |
| P3-IRM-FB-20231222 | 12/22/2023 | FB | JD79442 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | 1.4 B | -- | -- | -- | -- |
| P2-IRM-FB-20231222 | 12/22/2023 | FB | JD79445 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | 1.5 B | -- | -- | -- | -- |
| P3-IRM-FB-20231226 | 12/26/2023 | FB | JD79561 | -- | < 2.0 U | -- | < 10 U | 0.86 B | 1.4 B | -- | -- | -- | -- |
| GW-RI-FB-20231227 | 12/27/2023 | FB | JD79684 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | -- | -- | -- | -- | -- |
| P3-IRM-FB-20231227 | 12/27/2023 | FB | JD79682 | -- | 1.2 B | -- | < 10 U | 0.80 B | 1.4 B | -- | -- | -- | -- |
| P3-IRM-FB-20240117 | 1/17/2024 | FB | JD80687 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | 1.1 B | -- | -- | -- | -- |
| P3-IRM-FB-20240118 | 1/18/2024 | FB | JD80778 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | 0.90 B | -- | -- | -- | -- |
| P3-IRM-FB-20240119 | 1/19/2024 | FB | JD80858 | -- | 1.9 B | -- | < 10 U | < 1.0 U | 0.92 B | -- | -- | -- | -- |
| P3-IRM-FB-20240122-PT | 1/22/2024 | FB | JD80934 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | 0.92 J | -- | -- | -- | -- |
| P3-IRM-FB-20240122 | 1/22/2024 | FB | JD80935 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20240123 | 1/23/2024 | FB | JD81013 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | 1.0 B | -- | -- | -- | -- |
| P3-IRM-FB-20240123-PT | 1/23/2024 | FB | JD81017 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | 1.0 J | -- | -- | -- | -- |
| P3-IRM-FB-20240124 | 1/24/2024 | FB | JD81088 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20240124-PT | 1/24/2024 | FB | JD81089 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20240125-PT | 1/25/2024 | FB | JD81189 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P2-IRM-FB-20240125 | 1/25/2024 | FB | JD81190 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | 0.90 B | -- | -- | < 50 U | < 2.0 U |
| P2-IRM-FB-20240126 | 1/26/2024 | FB | JD81264 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | 1.1 B | -- | -- | < 50 U | < 2.0 U |
| P2-IRM-FB-20240214 | 2/14/2024 | FB | JD82437 | -- | 1.3 B | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | < 50 U | < 2.0 U |
| GW-RI-FB-20240214 | 2/14/2024 | FB | JD82442 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P2-IRM-FB-20240214-PT | 2/14/2024 | FB | JD82438 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P2-IRM-FB-20240215-PT | 2/15/2024 | FB | JD82518 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P2-IRM-FB-20240216-PT | 2/16/2024 | FB | JD82616 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P2-IRM-FB-20240219-PT | 2/19/2024 | FB | JD82732 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20240220 | 2/20/2024 | FB | JD82806 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P2-IRM-FB-20240220-PT | 2/20/2024 | FB | JD82805 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20240221 | 2/21/2024 | FB | JD82924 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20240221-PT | 2/21/2024 | FB | JD82911 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20240222 | 2/22/2024 | FB | JD82990 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20240223 | 2/23/2024 | FB | JD83100 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20240226 | 2/26/2024 | FB | JD83185 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20240228 | 2/28/2024 | FB | JD83363 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20240229 | 2/29/2024 | FB | JD83465 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| FB-20240311 | 3/11/2024 | FB | JD84213 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P2-IRM-FB-20240311 | 3/11/2024 | FB | JD84214 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | < 50 U | < 2.0 U |
| FB-20240312 | 3/12/2024 | FB | JD84295 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| FB-20240312a | 3/12/2024 | FB | JD84279 | -- | < 2.0 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20240313 | 3/13/2024 | FB | JD84389 | -- | < 2.0 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| P3-IRM-FB-202403-PT | 3/13/2024 | FB | JD84390 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| FB-20240314 | 3/14/2024 | FB | JD84494 | -- | < 2.0 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| P3-IRM-FB-20240314 | 3/14/2024 | FB | JD84495 | -- | < 2.0 U | -- | < 10 U | 0.92 B | < 2.0 U | -- | -- | -- | -- |
| FB-20240315 | 3/15/2024 | FB | JD84590 | -- | < 2.0 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| P3-IRM-FB-20240315 | 3/15/2024 | FB | JD84558 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| GW-RI-FB-20240318 | 3/18/2024 | FB | JD84684 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20240318 | 3/18/2024 | FB | JD84685 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20240319 | 3/19/2024 | FB | JD84759 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| GW-RI-FB-20240319 | 3/19/2024 | FB | JD84758 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| GW-RI-FB-20240320 | 3/20/2024 | FB | JD84853 | -- | 0.72 J | -- | < 10 U | < 1.0 U | < 2.0 UB | -- | -- | -- | -- |
| FB-20240320 | 3/20/2024 | FB | JD84852 | -- | < 2.0 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| P3-IRM-FB-20240320 | 3/20/2024 | FB | JD84851 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | 1.2 B | -- | -- | -- | -- |
| GW-RI-FB-20240321 | 3/21/2024 | FB | JD84943 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | 1.1 J | -- | -- | -- | -- |
| P3-IRM-FB-20240321 | 3/21/2024 | FB | JD84944 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | 1.2 B | -- | -- | -- | -- |
| GW-RI-FB-20240329 | 3/29/2024 | FB | JD85454 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| FB-20240409 | 4/9/2024 | FB | JD86109 | -- | 0.77 J | -- | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | -- | < 50 U | < 2.0 U |
| P3-IRM-FB-20240409-PT | 4/9/2024 | FB | JD86110 | -- | < 10 U | -- | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | -- | -- | -- |
| P2-IRM-FB-20240409 | 4/9/2024 | FB | JD86108 | -- | 0.72 B | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | < 50 U | < 2.0 U |
| FB-20240410 | 4/10/2024 | FB | JD86198 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | -- | < 50 U | < 2.0 U |
| P3-IRM-FB-20240410 | 4/10/2024 | FB | JD86199 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| FB-20240411 | 4/11/2024 | FB | JD86320 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | -- | < 50 UB | < 2.0 U |

**Appendix A-3**
**Analytical Results from QA/QC Samples - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | Chromium | | | | Geochemical Parameters | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | TOTAL ORGANIC | SULFATE | SULFIDE | METHANE | IRON | MANGANESE |
| | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 |
| | | | Fraction | D | T | D | T | T | T | T | T | D | D |
| | | | Units | ug/L | ug/L | ug/L | ug/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L |
| Sample ID | Sample Date | Sample Type | Lab SDG | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result |
| P3-IRM-FB-20240411-PT | 4/11/2024 | FB | JD86317 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | -- | -- | -- |
| P3-IRM-FB-20240411 | 4/11/2024 | FB | JD86321 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20240412 | 4/12/2024 | FB | JD86437 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20240412-PT | 4/12/2024 | FB | JD86439 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | -- | -- | -- |
| P2-IRM-FB-20240415 | 4/15/2024 | FB | JD86535 | -- | 0.72 J | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| P3-IRM-FB-20240415 | 4/15/2024 | FB | JD86534 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20240416-PT | 4/16/2024 | FB | JD86606 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | -- | -- | -- |
| P3-IRM-FB-20240417-PT | 4/17/2024 | FB | JD86699 | -- | 0.65 J | -- | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | -- | -- | -- |
| P3-IRM-FB-20240418-PT | 4/18/2024 | FB | JD86789 | -- | 0.99 J | -- | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | -- | -- | -- |
| P3-IRM-EB-20240429 | 4/29/2024 | EB | JD87412 | -- | < 4.0 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20240506 | 5/6/2024 | FB | JD87869 | -- | 1.3 B | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20240514 | 5/14/2024 | FB | JD88423 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | -- | -- | -- |
| P2-IRM-FB-20240514-PT | 5/14/2024 | FB | JD88422 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20240515 | 5/15/2024 | FB | JD88510 | -- | 1.6 B | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P2-IRM-FB-20240515-PT | 5/15/2024 | FB | JD88509 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P2-IRM-FB-20240516-PT | 5/16/2024 | FB | JD88618 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P2-IRM-FB-20240517-PT | 5/17/2024 | FB | JD88735 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P4-IRM-FB-20240520 | 5/20/2024 | FB | JD88834 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | < 0.11 U | -- | -- |
| P2-IRM-FB-20240520-PT | 5/20/2024 | FB | JD88833 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | -- | -- | -- |
| P2-IRM-FB-20240521-PT | 5/21/2024 | FB | JD88897 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | -- | -- | -- |
| P3-IRM-FB-20240521 | 5/21/2024 | FB | JD88880 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P4-IRM-FB-20240521 | 5/21/2024 | FB | JD88878 | -- | 0.68 B | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| P3-IRM-FB-20240522 | 5/22/2024 | FB | JD88961 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P4-IRM-FB-20240522 | 5/22/2024 | FB | JD88951 | -- | < 2.0 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| P3-IRM-FB-20240523 | 5/23/2024 | FB | JD89054 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P4-IRM-TB-20240523 | 5/23/2024 | TB | JD89052 | -- | -- | -- | -- | -- | -- | -- | 0.10 J | -- | -- |
| P4-IRM-FB-20240523 | 5/23/2024 | FB | JD89052 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | 0.12 | -- | -- |
| P2-IRM-FB-20240524 | 5/24/2024 | FB | JD89187 | -- | 0.64 B | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | < 50 U | < 2.0 U |
| P4-IRM-FB-20240524 | 5/24/2024 | FB | JD89188 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | < 0.11 U | -- | -- |
| P4-IRM-TB-20240528 | 5/28/2024 | TB | JD89297 | -- | -- | -- | -- | -- | -- | -- | < 0.11 U | -- | -- |
| P4-IRM-FB-20240528 | 5/28/2024 | FB | JD89297 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | < 0.11 U | -- | -- |
| P4-IRM-TB-20240529 | 5/29/2024 | TB | JD89361 | -- | -- | -- | -- | -- | -- | -- | < 0.11 U | -- | -- |
| P4-IRM-FB-20240529 | 5/29/2024 | FB | JD89361 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | 0.10 J | -- | -- |
| P4-IRM-TB-20240530 | 5/30/2024 | TB | JD89452 | -- | -- | -- | -- | -- | -- | -- | 0.15 | -- | -- |
| P4-IRM-FB-20240530 | 5/30/2024 | FB | JD89452 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | < 0.11 U | -- | -- |
| P4-IRM-TB-20240531 | 5/31/2024 | TB | JD89525 | -- | -- | -- | -- | -- | -- | -- | 0.14 | -- | -- |
| P4-IRM-FB-20240531 | 5/31/2024 | FB | JD89525 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | 0.11 | -- | -- |
| P4-IRM-TB-20240603 | 6/3/2024 | TB | JD89648 | -- | -- | -- | -- | -- | -- | -- | 0.16 | -- | -- |
| P4-IRM-FB-20240603 | 6/3/2024 | FB | JD89648 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | 0.10 J | -- | -- |
| P4-IRM-TB-20240604 | 6/4/2024 | TB | JD89719 | -- | -- | -- | -- | -- | -- | -- | 0.20 | -- | -- |
| P4-IRM-FB-20240604 | 6/4/2024 | FB | JD89719 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | < 0.11 U | -- | -- |
| P4-IRM-TB-20240605 | 6/5/2024 | TB | JD89782 | -- | -- | -- | -- | -- | -- | -- | 0.10 J | -- | -- |
| P4-IRM-FB-20240605 | 6/5/2024 | FB | JD89782 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | < 0.11 U | -- | -- |
| P4-IRM-TB-20240606 | 6/6/2024 | TB | JD89884 | -- | -- | -- | -- | -- | -- | -- | 0.12 | -- | -- |
| P4-IRM-FB-20240606 | 6/6/2024 | FB | JD89884 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | < 0.11 U | -- | -- |
| P4-IRM-TB-20240610 | 6/10/2024 | TB | JD90120 | -- | -- | -- | -- | -- | -- | -- | 0.11 | -- | -- |
| P4-IRM-FB-20240610 | 6/10/2024 | FB | JD90120 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | < 0.11 U | -- | -- |
| P4-IRM-TB-20240611 | 6/11/2024 | TB | JD90212 | -- | -- | -- | -- | -- | -- | -- | 0.12 | -- | -- |
| P4-IRM-FB-20240611 | 6/11/2024 | FB | JD90212 | -- | 0.71 J | -- | < 10 U | < 1.0 U | 1.1 J | -- | < 0.11 U | -- | -- |
| P2-IRM-FB-20240611 | 6/11/2024 | FB | JD90227 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | 0.93 B | -- | -- | 46.4 B | 1.2 B |
| FB-20240611 | 6/11/2024 | FB | JD90213 | -- | < 2.0 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| P4-IRM-FB-20240612 | 6/12/2024 | FB | JD90312 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | 1.1 B | -- | < 0.11 U | -- | -- |
| P4-IRM-TB-20240612 | 6/12/2024 | TB | JD90312 | -- | -- | -- | -- | -- | -- | -- | 0.13 | -- | -- |
| FB-20240612 | 6/12/2024 | FB | JD90298 | -- | < 2.0 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| P3-IRM-FB-20240612 | 6/12/2024 | FB | JD90299 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | 0.90 B | -- | -- | -- | -- |
| FB-20240613 | 6/13/2024 | FB | JD90407 | -- | < 2.0 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| P3-IRM-FB-20240614 | 6/14/2024 | FB | JD90507 | -- | 1.3 B | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| GW-RI-FB-20240617 | 6/17/2024 | FB | JD90605 | -- | 0.69 B | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20240617 | 6/17/2024 | FB | JD90602 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | 0.95 B | -- | -- | -- | -- |
| FB-20240618 | 6/18/2024 | FB | JD90651 | -- | < 2.0 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| GW-RI-FB-20240619 | 6/19/2024 | FB | JD90728 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | 1.1 B | -- | -- | -- | -- |

**Appendix A-3**
**Analytical Results from QA/QC Samples - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | Chromium | | | | Geochemical Parameters | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | TOTAL ORGANIC | SULFATE | SULFIDE | METHANE | IRON | MANGANESE |
| | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 |
| | | | Fraction | D | T | D | T | T | T | T | T | D | D |
| | | | Units | ug/L | ug/L | ug/L | ug/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L |
| Sample ID | Sample Date | Sample Type | Lab SDG | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result |
| PA-IRM-TB-20240619 | 6/19/2024 | TB | JD90731 | -- | -- | -- | -- | -- | -- | -- | 0.12 | -- | -- |
| PA-IRM-FB-20240619 | 6/19/2024 | FB | JD90731 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | 1.1 B | -- | < 0.11 U | -- | -- |
| P3-IRM-FB-20240619 | 6/19/2024 | FB | JD90730 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | 1.1 B | -- | -- | -- | -- |
| P4-IRM-TB-20240620 | 6/20/2024 | TB | JD90827 | -- | -- | -- | -- | -- | -- | -- | 0.11 | -- | -- |
| P4-IRM-FB-20240620 | 6/20/2024 | FB | JD90827 | -- | 2.9 | -- | < 10 U | < 1.0 U | < 2.0 U | -- | < 0.11 U | -- | -- |
| P3-IRM-FB-204240620 | 6/20/2024 | FB | JD90821 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P4-IRM-FB-20240621 | 6/21/2024 | FB | JD90888 | -- | 0.73 B | -- | < 10 U | < 1.0 U | < 2.0 U | -- | 0.080 J | -- | -- |
| P4-IRM-TB-20240621 | 6/21/2024 | TB | JD90888 | -- | -- | -- | -- | -- | -- | -- | 0.14 | -- | -- |
| P3-IRM-FB-20240621 | 6/21/2024 | FB | JD90887 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| GW-RI-FB-20240621 | 6/21/2024 | FB | JD90886 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P4-IRM-FB-20240624 | 6/24/2024 | FB | JD91036 | -- | < 2.0 U | -- | < 10 U | 1.8 | < 2.0 U | -- | < 0.11 U | -- | -- |
| P4-IRM-TB-20240624 | 6/24/2024 | TB | JD91036 | -- | -- | -- | -- | -- | -- | -- | 0.12 | -- | -- |
| P4-IRM-FB-20240627-B | 6/27/2024 | FB | JD91283 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | 0.49 | -- | -- |
| P4-IRM-TB-20240627 | 6/27/2024 | TB | JD91283 | -- | -- | -- | -- | -- | -- | -- | 0.19 | -- | -- |
| P4-IRM-FB-20240627 | 6/27/2024 | FB | JD91289 | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | -- |
| GW-RI-FB-20240705 | 7/5/2024 | FB | JD91702 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | -- | -- | -- | -- | -- |
| GW-RI-FB-20240709 | 7/9/2024 | FB | JD91859 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | -- | -- | -- | -- | -- |
| FB-20240710 | 7/10/2024 | FB | JD91944 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| GW-RI-FB-20240710 | 7/10/2024 | FB | JD91932 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | -- | -- | -- | -- | -- |
| P3-IRM-FB-20240711 | 7/11/2024 | FB | JD92004 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20240712-PT | 7/12/2024 | FB | JD92106 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20240712 | 7/12/2024 | FB | JD92107 | -- | < 2.0 U | -- | 51 | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20240715-PT | 7/15/2024 | FB | JD92183 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20240716 | 7/16/2024 | FB | JD92253 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20240716-PT | 7/16/2024 | FB | JD92267 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | -- | -- | -- |
| P3-IRM-FB-20240717-PT | 7/17/2024 | FB | JD92334 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | -- | -- | -- |
| P3-IRM-FB-20244718-PT | 7/18/2024 | FB | JD92447 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | -- | -- | -- |
| P3-IRM-FB-20240719-PT | 7/19/2024 | FB | JD92501 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | -- | -- | -- |
| P3-IRM-FB-20240722-PT | 7/22/2024 | FB | JD92598 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | -- | -- | -- |
| FB-20240722 | 7/22/2024 | FB | JD92595 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| FB-20240723 | 7/23/2024 | FB | JD92648 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20240723-PT | 7/23/2024 | FB | JD92657 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | -- | -- | -- |
| P3-IRM-FB-20240724-PT | 7/24/2024 | FB | JD92734 | -- | 0.42 J | -- | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | -- | -- | -- |
| FB-20240724 | 7/24/2024 | FB | JD92729 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20240725-PT | 7/25/2024 | FB | JD92814 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| FB-20240725 | 7/25/2024 | FB | JD92815 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20240726-PT | 7/26/2024 | FB | JD92935 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | -- | -- | -- |
| FB-20240726 | 7/26/2024 | FB | JD92936 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| FB-20240729 | 7/29/2024 | FB | JD93029 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| FB-20240801 | 8/1/2024 | FB | JD93226 | -- | -- | -- | -- | < 1.0 U | -- | -- | -- | -- | -- |
| WB-FB-2024085 | 8/5/2024 | FB | JD93435 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| WB-FB-20240806 | 8/6/2024 | FB | JD93519 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| WB-FB-20240807 | 8/7/2024 | FB | JD93595 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| FB-20240812 | 8/12/2024 | FB | JD93902 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| FB-20240813 | 8/13/2024 | FB | JD93987 | -- | 0.99 J | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20240813 | 8/13/2024 | FB | JD93988 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20240814 | 8/14/2024 | FB | JD94091 | -- | < 2.0 U | -- | < 10 U | 1.2 | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20240814-PT | 8/14/2024 | FB | JD94094 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | -- | -- | -- |
| P2-IRM-FB-20240815-PT | 8/15/2024 | FB | JD94204 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | 1.3 J | -- | -- | -- | -- |
| P3-IRM-FB-20240816 | 8/16/2024 | FB | JD94325 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P2-IRM-FB-20240819-PT | 8/19/2024 | FB | JD94428 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| BT-FB-20240819 | 8/19/2024 | FB | JD94429 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| BT-FB-20240820 | 8/20/2024 | FB | JD94515 | -- | 1.2 B | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P2-IRM-FB-20240820-PT | 8/20/2024 | FB | JD94507 | -- | < 2.0 UB | -- | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | -- | -- | -- |
| P2-IRM-FB-20240821-PT | 8/21/2024 | FB | JD94599 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | < 2.0 U | -- | -- | -- |
| BT-FB-20240821 | 8/21/2024 | FB | JD94597 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P2-IRM-FB-20240822-PT | 8/22/2024 | FB | JD94702 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| BT-FB-20240822 | 8/22/2024 | FB | JD94712 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| WB-BT-FB-20240903 | 9/3/2024 | FB | JD95322 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| WB-BT-FB-20240904 | 9/4/2024 | FB | JD95426 | -- | 1.0 B | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| WB-BT-FB-20240905 | 9/5/2024 | FB | JD95510 | -- | 0.88 B | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |

**Appendix A-3**
**Analytical Results from QA/QC Samples - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | Chromium | | | | Geochemical Parameters | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | TOTAL ORGANIC | SULFATE | SULFIDE | METHANE | IRON | MANGANESE |
| | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 |
| | | | Fraction | D | T | D | T | T | T | T | T | D | D |
| | | | Units | ug/L | ug/L | ug/L | ug/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L |
| Sample ID | Sample Date | Sample Type | Lab SDG | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result |
| WB-BT-FB-20240906 | 9/6/2024 | FB | JD95614 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| WB-BT-FB-20240909 | 9/9/2024 | FB | JD95696 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| WB-BT-FB-20240910 | 9/10/2024 | FB | JD95772 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| WB-BT-FB-20240911 | 9/11/2024 | FB | JD95855 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| FB-20240911 | 9/11/2024 | FB | JD95856 | -- | < 2.0 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20240912 | 9/12/2024 | FB | JD95972 | -- | < 2.0 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| WB-BT-FB-20240912 | 9/12/2024 | FB | JD95973 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| WB-BT-FB-20240913 | 9/13/2024 | FB | JD96078 | -- | < 2.0 U | -- | < 10 U | 1.7 | < 2.0 U | -- | -- | -- | -- |
| FB-20240913 | 9/13/2024 | FB | JD96081 | -- | < 2.0 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20240916 | 9/16/2024 | FB | JD96194 | -- | < 2.0 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| GW-RI-FB-20240916 | 9/16/2024 | FB | JD96195 | -- | 0.67 J | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| GW-RI-FB-20240917 | 9/17/2024 | FB | JD96274 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20240917 | 9/17/2024 | FB | JD96275 | -- | 0.64 B | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| GW-RI-FB-20240918 | 9/18/2024 | FB | JD96352 | -- | < 2.0 U | -- | < 10 U | < 1.0 UJ | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20240918 | 9/18/2024 | FB | JD96353 | -- | 0.90 B | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20240919 | 9/19/2024 | FB | JD96458 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| GW-RI-FB-20240919 | 9/19/2024 | FB | JD96459 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| WBBT-FB-20240930 | 9/30/2024 | FB | JD97124 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| WBBT-FB-20241001 | 10/1/2024 | FB | JD97187 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| WBBT-FB-20241002 | 10/2/2024 | FB | JD97277 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| WBBT-FB-20241003 | 10/3/2024 | FB | JD97377 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20241007 | 10/7/2024 | FB | JD97612 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| WBBT-FB-20241007 | 10/7/2024 | FB | JD97615 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20241008-PT | 10/8/2024 | FB | JD97686 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20241008 | 10/8/2024 | FB | JD97685 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20241009 | 10/9/2024 | FB | JD97777 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20241009-PT | 10/9/2024 | FB | JD97776 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20241010-PT | 10/10/2024 | FB | JD97909 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20241014-PT | 10/14/2024 | FB | JD98166 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20241015-PT | 10/15/2024 | FB | JD98256 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20241016-PT | 10/16/2024 | FB | JD98354 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| WBBT-FB-20241016 | 10/16/2024 | FB | JD98353 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| WBBT-FB-20241104 | 11/4/2024 | FB | JD99628 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| WBBT-FB-20241105 | 11/5/2024 | FB | JD99684 | -- | 1.4 B | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| WBBT-FB-20241106 | 11/6/2024 | FB | JD99782 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | 1.1 B | -- | -- | -- | -- |
| WBBT-FB-20241107 | 11/7/2024 | FB | JD99895 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | 0.99 B | -- | -- | -- | -- |
| WBBT-FB-20241108 | 11/8/2024 | FB | JE131 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20241113 | 11/13/2024 | FB | JE526 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20241114 | 11/14/2024 | FB | JE597 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P2-IRM-FB-20241114-PT | 11/14/2024 | FB | JE610 | -- | < 2.0 UB | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P2-IRM-FB-20241115-PT | 11/15/2024 | FB | JE731 | -- | < 2.0 U | -- | < 10 U | R | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20241115 | 11/15/2024 | FB | JE742 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P2-IRM-FB-20241118-PT | 11/18/2024 | FB | JE873 | -- | < 2.0 U | -- | < 10 U | R | < 2.0 U | -- | -- | -- | -- |
| FB-20241119 | 11/19/2024 | FB | JE946 | -- | 1.9 JB | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20241120 | 11/20/2024 | FB | JE1009 | -- | < 2.0 U | -- | < 10 U | R | < 2.0 U | -- | -- | -- | -- |
| P2-IRM-FB-20241120-PT | 11/20/2024 | FB | JE1025 | -- | < 2.0 U | -- | < 10 U | R | < 2.0 U | -- | -- | -- | -- |
| FB-20241121 | 11/21/2024 | FB | JE1118 | -- | < 2.0 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| P2-IRM-FB-20241122-PT | 11/22/2024 | FB | JE1234 | -- | < 2.0 U | -- | < 10 U | R | < 2.0 U | -- | -- | -- | -- |
| WBBT-FB-20241202 | 12/2/2024 | FB | JE1724 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | 0.89 B | -- | -- | -- | -- |
| WBBT-FB-20241203 | 12/3/2024 | FB | JE1799 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| WBBT-FB-20241204 | 12/4/2024 | FB | JE1940 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| WBBT-FB-20241205 | 12/5/2024 | FB | JE2028 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20241209 | 12/9/2024 | FB | JE2209 | -- | 0.68 B | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20241210 | 12/10/2024 | FB | JE2339 | -- | < 2.0 U | -- | < 10 U | 0.96 B | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20241211 | 12/11/2024 | FB | JE2415 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| FB-20241211 | 12/11/2024 | FB | JE2416 | -- | < 2.0 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20241212 | 12/12/2024 | FB | JE2543 | -- | < 2.0 UB | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| FB-20241213 | 12/13/2024 | FB | JE2640 | -- | < 2.0 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| GW-RI-FB-20241213 | 12/13/2024 | FB | JE2642 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 2.0 U | -- | -- | -- | -- |
| GW-RI-FB-20241216 | 12/16/2024 | FB | JE2768 | -- | < 2.0 U | -- | < 10 U | 0.86 J | < 2.0 U | -- | -- | -- | -- |
| FB-20241216 | 12/16/2024 | FB | JE2745 | -- | < 2.0 UB | -- | < 10 U | -- | -- | -- | -- | -- | -- |

**Appendix A-3**
**Analytical Results from QA/QC Samples - Hexavalent Chromium, Total Chromium, and Geochemistry**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | Chromium | | | | Geochemical Parameters | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Analyte | CHROMIUM | | CHROMIUM (HEXAVALENT) | | TOTAL ORGANIC | SULFATE | SULFIDE | METHANE | IRON | MANGANESE |
| | | | CAS-RN | 7440-47-3 | 7440-47-3 | 18540-29-9 | 18540-29-9 | TOC | 14808-79-8 | 18496-25-8 | 74-82-8 | 7439-89-6 | 7439-96-5 |
| | | | Fraction | D | T | D | T | T | T | T | T | D | D |
| | | | Units | ug/L | ug/L | ug/L | ug/L | mg/L | mg/L | mg/L | ug/L | ug/L | ug/L |
| Sample ID | Sample Date | Sample Type | Lab SDG | Result | Result | Result | Result | Result | Result | Result | Result | Result | Result |
| FB-20241217 | 12/17/2024 | FB | JE2866 | -- | < 2.0 U | -- | < 10 U | -- | -- | -- | -- | -- | -- |
| GW-RI-FB-20241217 | 12/17/2024 | FB | JE2865 | -- | 0.68 J | -- | < 10 U | 0.75 J | < 2.0 U | -- | -- | -- | -- |
| P3-IRM-FB-20241218 | 12/18/2024 | FB | JE2952 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | < 200 U | -- | -- | -- | -- |
| GW-RI-FB-20241218 | 12/18/2024 | FB | JE2940 | -- | < 2.0 U | -- | < 10 U | < 1.0 U | 0.89 B | -- | -- | -- | -- |

**Notes:**

1. Samples collected as part of treatment monitoring events, or other miscellaneous purposes and not used in remedial decision making, are not subject to data validation.

| | |
|---|---|
| < 10.0 U | Constituent not detected at concentration greater than the sample reporting limit. |
| 3.4 | Constituent detected at concentration greater than the sample reporting limit. |

**Abbreviations:**

| | |
|---|---|
| CAS-RN | Chemical Abstracts Service Registry Number |
| D | dissolved |
| EB | equipment blank |
| FB | field blank |
| mg/L | milligrams per liter |
| QA | quality assurance |
| QC | quality control |
| SDG | sample delivery group |
| T | total |
| TB | trip blank |
| ug/L | micrograms per liter |
| -- | analyte not tested |

**Data Qualifiers:**

| | |
|---|---|
| B | Indicates the analyte was detected in the blank but not greater than the sample reporting limit. |
| J | The compound was positively identified; however, the associated numerical value is an estimated concentration only. |
| JB | Indicates the analyte concentration is greater than three times, but less than or equal to ten times the concentration in the associated method/prep blank. The presence of that analyte in the sample is considered "real". The concentration is quantitatively qualified (JB) due to method blank contamination. |
| U | Indicates the analyte was analyzed for but not detected. |
| UB | Indicates the analyte was detected in the sample and blank, but not above the sample reporting limit. |
| R | The sample result was rejected due to serious deficiencies; the presence or absence of the analyte could not be confirmed. |

**Appendix A-4**
**Analytical Results from QA/QC Samples - Volatile Organic Compounds**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | Analyte | CIS-1,2-DICHLOROETHENE | TETRACHLOROETHENE | TRICHLOROETHYLENE | VINYL CHLORIDE |
|---|---|---|---|---|---|---|---|
| | | | CAS-RN | 156-59-2 | 127-18-4 | 79-01-6 | 75-01-4 |
| | | | Units | ug/L | ug/L | ug/L | ug/L |
| Sample ID | Sample Date | Sample Type | Lab SDG | Result | Result | Result | Result |
| FB-20200810 | 8/10/2020 | FB | JD11480 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| FB-20200811 | 8/11/2020 | FB | JD11542 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| FB-20200812 | 8/12/2020 | FB | JD11593 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| FB-20200813 | 8/13/2020 | FB | JD11673 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| FB-20200814 | 8/14/2020 | FB | JD11773 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| FB-20200817 | 8/17/2020 | FB | JD11849 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| FB-20201109 | 11/9/2020 | FB | JD15931 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| FB-20201110 | 11/10/2020 | FB | JD15969 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| FB-20201111 | 11/11/2020 | FB | JD16049 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| FB-20201112 | 11/12/2020 | FB | JD16144 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| FB-20201113 | 11/13/2020 | FB | JD16259 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| FB-20210222 | 2/22/2021 | FB | JD20592 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| FB-20210223 | 2/23/2021 | FB | JD20642 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| FB-20210224 | 2/24/2021 | FB | JD20709 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| FB-20210225 | 2/25/2021 | FB | JD20780 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| FB-20210226 | 2/26/2021 | FB | JD20896 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| FB-20210927 | 9/27/2021 | FB | JD32281 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| FB20210928 | 9/28/2021 | FB | JD32334 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| FB-20210929 | 9/29/2021 | FB | JD32460 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| FB-20210930 | 9/30/2021 | FB | JD32569 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| FB-20211001 | 10/1/2021 | FB | JD32680 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| FB-20211011 | 10/11/2021 | FB | JD33262 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| FB-20211115 | 11/15/2021 | FB | JD35301 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| FB-20211116 | 11/16/2021 | FB | JD35372 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| FB-20211117 | 11/17/2021 | FB | JD35453 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| FB-20211118 | 11/18/2021 | FB | JD35530 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| FB-20220221 | 2/21/2022 | FB | JD40060 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| FB-20220222 | 2/22/2022 | FB | JD40096 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| FB-20220223 | 2/23/2022 | FB | JD40159 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| FB-20220224 | 2/24/2022 | FB | JD40291 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| FB-20220523 | 5/23/2022 | FB | JD45334 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| FB-20220524 | 5/24/2022 | FB | JD45395 | R | R | R | R |
| FB-20220525 | 5/25/2022 | FB | JD45473 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| FB-20220526 | 5/26/2022 | FB | JD45556 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| FB-20230411 | 4/11/2023 | FB | 4602780811 | -- | -- | -- | -- |
| FB-20230412 | 4/12/2023 | FB | 4602781121 | -- | -- | < 1.0 U | -- |
| FB-20230413 | 4/13/2023 | FB | 4602781921 | -- | -- | -- | -- |
| FB-20230414 | 4/14/2023 | FB | 4602782861 | -- | -- | -- | -- |
| FB-20230418 | 4/18/2023 | FB | 4602784511 | -- | -- | -- | -- |

**Appendix A-4**
**Analytical Results from QA/QC Samples - Volatile Organic Compounds**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | Analyte | CIS-1,2-DICHLOROETHENE | TETRACHLOROETHENE | TRICHLOROETHYLENE | VINYL CHLORIDE |
|---|---|---|---|---|---|---|---|
| | | | CAS-RN | 156-59-2 | 127-18-4 | 79-01-6 | 75-01-4 |
| | | | Units | ug/L | ug/L | ug/L | ug/L |
| Sample ID | Sample Date | Sample Type | Lab SDG | Result | Result | Result | Result |
| P2-IRM-FB-20220922 | 9/22/2022 | FB | 4602660731 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| P3-IRM-FB-20210917 | 9/17/2021 | FB | 4602430721 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-FB-20211228 | 12/28/2021 | FB | 4602498971 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-FB-20211229 | 12/29/2021 | FB | 4602499461 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-FB-20220104 | 1/4/2022 | FB | 4602500781 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-FB-20220105 | 1/5/2022 | FB | 4602501431 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-FB-20220825 | 8/25/2022 | FB | 4602644081 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| P3-IRM-FB-20220826 | 8/26/2022 | FB | 4602644761 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| P3-IRM-FB-20220921 | 9/21/2022 | FB | 4602659871 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| P3-IRM-FB-20220923 | 9/23/2022 | FB | 4602661551 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| P3-IRM-FB-20221020 | 10/20/2022 | FB | 4602678821 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| P3-IRM-FB-20221021 | 10/21/2022 | FB | 4602679761 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| P3-IRM-FB-20221117 | 11/17/2022 | FB | 4602697441 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| P3-IRM-FB-20221118 | 11/18/2022 | FB | 4602697961 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| P3-IRM-FB-20221219 | 12/19/2022 | FB | 4602717111 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| P3-IRM-FB-20221220 | 12/20/2022 | FB | 4602718081 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| P3-IRM-FB-20230126 | 1/26/2023 | FB | 4602735991 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| P3-IRM-FB-20230127 | 1/27/2023 | FB | 4602736701 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| P3-IRM-FB-20230227 | 2/27/2023 | FB | 4602753411 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| P3-IRM-FB-20230228 | 2/28/2023 | FB | 4602753821 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| P3-IRM-FB-20230322 | 3/22/2023 | FB | 4602768001 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| P3-IRM-FB-20230330 | 3/30/2023 | FB | 4602773201 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| P3-IRM-FB-20230413 | 4/13/2023 | FB | 4602781941 | -- | -- | -- | -- |
| P3-IRM-FB-20230414 | 4/14/2023 | FB | 4602782821 | -- | -- | -- | -- |
| P3-IRM-FB-20230417 | 4/17/2023 | FB | 4602783601 | -- | -- | -- | -- |
| P3-IRM-FB-20230424 | 4/24/2023 | FB | 4602787991 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| P3-IRM-FB-20230425 | 4/25/2023 | FB | 4602788811 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| P3-IRM-FB-20230516 | 5/16/2023 | FB | 4602803921 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| P3-IRM-FB-20230517 | 5/17/2023 | FB | 4602804541 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| P3-IRM-FB-20230717 | 7/17/2023 | FB | 4602844061 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-FB-20230720 | 7/20/2023 | FB | 4602846391 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-FB-20230720-PSE | 7/20/2023 | FB | 4602846531 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-FB-20230822 | 8/22/2023 | FB | 4602866771 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-FB-20230823 | 8/23/2023 | FB | 4602867511 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-FB-20230915 | 9/15/2023 | FB | 4602882761 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-FB-20231010 | 10/10/2023 | FB | 4602900121 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-FB-20231113 | 11/13/2023 | FB | JD76852 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-FB-20231114 | 11/14/2023 | FB | JD76935 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-FB-20231214 | 12/14/2023 | FB | JD78891 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |

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**Analytical Results from QA/QC Samples - Volatile Organic Compounds**
**Groundwater Remedial Action Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | Analyte | CIS-1,2-DICHLOROETHENE | TETRACHLOROETHENE | TRICHLOROETHYLENE | VINYL CHLORIDE |
|---|---|---|---|---|---|---|---|
| | | | CAS-RN | 156-59-2 | 127-18-4 | 79-01-6 | 75-01-4 |
| | | | Units | ug/L | ug/L | ug/L | ug/L |
| Sample ID | Sample Date | Sample Type | Lab SDG | Result | Result | Result | Result |
| P3-IRM-FB-20240122 | 1/22/2024 | FB | JD80935 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-FB-20240314 | 3/14/2024 | FB | JD84495 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-FB-20240315 | 3/15/2024 | FB | JD84558 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-FB-20240412-PT | 4/12/2024 | FB | JD86439 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-FB-20240715-PT | 7/15/2024 | FB | JD92183 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-FB-20240716-PT | 7/16/2024 | FB | JD92267 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-FB-20241015-PT | 10/15/2024 | FB | JD98256 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-FB-20241016-PT | 10/16/2024 | FB | JD98354 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-TB-20230330 | 3/30/2023 | TB | 4602773201 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| P3-IRM-TB-20230424 | 4/24/2023 | TB | 4602787991 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| P3-IRM-TB-20230425 | 4/25/2023 | TB | 4602788811 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| P3-IRM-TB-20230717 | 7/17/2023 | TB | 4602844061 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-TB-20230720 | 7/20/2023 | TB | 4602846391 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-TB-20230720-PSE | 7/20/2023 | TB | 4602846531 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-TB-20230822 | 8/22/2023 | TB | 4602866771 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-TB-20230823 | 8/23/2023 | TB | 4602867511 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-TB-20230915 | 9/15/2023 | TB | 4602882761 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-TB-20231010 | 10/10/2023 | TB | 4602900121 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-TB-20231113 | 11/13/2023 | TB | JD76852 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-TB-20231114 | 11/14/2023 | TB | JD76935 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-TB-20240122 | 1/22/2024 | TB | JD80935 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-TB-20240223 | 2/23/2024 | TB | JD83100 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-TB-20240314 | 3/14/2024 | FB | JD84495 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-TB-20240315 | 3/15/2024 | TB | JD84558 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-TB-20240411-PT | 4/11/2024 | TB | JD86317 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-TB-20240412-PT | 4/12/2024 | TB | JD86439 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-TB-20240715-PT | 7/15/2024 | TB | JD92183 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-TB-20240716-PT | 7/16/2024 | TB | JD92267 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-TB-20241015-PT | 10/15/2024 | TB | JD98256 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| P3-IRM-TB-20241016-PT | 10/16/2024 | TB | JD98354 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| TB-20200810 | 8/10/2020 | TB | JD11480 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| TB-20200811 | 8/11/2020 | TB | JD11542 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| TB-20200812 | 8/12/2020 | TB | JD11593 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| TB-20200813 | 8/13/2020 | TB | JD11673 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| TB-20200814 | 8/14/2020 | TB | JD11773 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| TB-20200817 | 8/17/2020 | TB | JD11849 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| TB-20201109 | 11/9/2020 | TB | JD15931 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| TB-20201110 | 11/10/2020 | TB | JD15969 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| TB-20201111 | 11/11/2020 | TB | JD16049 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |

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**PPG, Jersey City, New Jersey**

| | | | Analyte | CIS-1,2-DICHLOROETHENE | TETRACHLOROETHENE | TRICHLOROETHYLENE | VINYL CHLORIDE |
|---|---|---|---|---|---|---|---|
| | | | CAS-RN | 156-59-2 | 127-18-4 | 79-01-6 | 75-01-4 |
| | | | Units | ug/L | ug/L | ug/L | ug/L |
| Sample ID | Sample Date | Sample Type | Lab SDG | Result | Result | Result | Result |
| TB-20201112 | 11/12/2020 | TB | JD16144 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| TB-20201113 | 11/13/2020 | TB | JD16259 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| TB-20210222 | 2/22/2021 | TB | JD20592 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| TB-20210223 | 2/23/2021 | TB | JD20642 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| TB-20210224 | 2/24/2021 | TB | JD20709 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| TB-20210225 | 2/25/2021 | TB | JD20780 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| TB-20210226 | 2/26/2021 | TB | JD20896 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| TB-20210927 | 9/27/2021 | TB | JD32281 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| TB20210928 | 9/28/2021 | TB | JD32334 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| TB-20210929 | 9/29/2021 | TB | JD32460 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| TB-20210930 | 9/30/2021 | TB | JD32569 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| TB-20211011 | 10/11/2021 | TB | JD33262 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| TB-20211115 | 11/15/2021 | TB | JD35301 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| TB-20211116 | 11/16/2021 | TB | JD35372 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| TB-20211117 | 11/17/2021 | TB | JD35453 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| TB-20211118 | 11/18/2021 | TB | JD35530 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| TB-20220221 | 2/21/2022 | TB | JD40060 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| TB-20220222 | 2/22/2022 | TB | JD40096 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| TB-20220223 | 2/23/2022 | TB | JD40159 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| TB-20220523 | 5/23/2022 | TB | JD45334 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| TB-20220524 | 5/24/2022 | TB | JD45395 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 UJ |
| TB-20220525 | 5/25/2022 | TB | JD45473 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| TB-20220526 | 5/26/2022 | TB | JD45556 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |
| TB-20230411 | 4/11/2023 | TB | 4602780811 | -- | -- | -- | -- |
| TB-20230412 | 4/12/2023 | TB | 4602781121 | -- | -- | < 1.0 U | -- |
| TB-20230413 | 4/13/2023 | TB | 4602781921 | -- | -- | -- | -- |
| TB-20230414 | 4/14/2023 | TB | 4602782861 | -- | -- | -- | -- |
| TB-20230418 | 4/18/2023 | TB | 4602784511 | -- | -- | -- | -- |
| TB-20230516 | 5/16/2023 | TB | 4602803921 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TB-20230517 | 5/17/2023 | TB | 4602804541 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TB-20231214 | 12/14/2023 | TB | JD78891 | < 1.0 U | < 1.0 U | < 1.0 U | < 1.0 U |

# Appendix A-4
# Analytical Results from QA/QC Samples - Volatile Organic Compounds
# Groundwater Remedial Action Report, Q4 2024
# Garfield Avenue Group Sites
# PPG, Jersey City, New Jersey

**Notes:**

1. Samples collected as part of treatment monitoring evemts, or other miscellaneous purposes and not used in remedial decision making, are not subject to data validation.

| | |
|---|---|
| < 2.0 U | Constituent not detected at concentration greater than the sample reporting limit. |
| 0.0972 | Constituent detected at concentration greater than the sample reporting limit. |

**Abbreviations:**

| | |
|---|---|
| CAS-RN | Chemical Abstracts Service Registry Number |
| FB | field blank sample |
| QA | quality assurance |
| QC | quality control |
| SDG | sample delivery group |
| TB | trip blank sample |
| ug/L | micrograms per liter |
| -- | analyte not tested |

**Data Qualifiers:**

| | |
|---|---|
| U | Indicates the analyte was analyzed for but not detected. |
| UJ | Indicates the analyte was not detected greater than the reporting limit and the reporting limit was approximate. |
| R | The sample result was rejected due to serious deficiencies; the presence or absence of the analyte could not be confirmed. |

## Introduction to Appendix B, Performance Trend Charts

Quantitative and qualitative data collected during ongoing groundwater monitoring programs serve as multiple lines of evidence to evaluate the progression of treatment operations: reductions in hexavalent chromium (Cr[VI]) and total chromium (Cr) concentrations, total organic carbon (TOC) distribution, and development of geochemical conditions conducive for sustaining future Cr(VI) *in situ* anaerobic bioprecipitation (ISAB) and *in situ* chemical reduction (ISCR).

Through ongoing assessment of groundwater remedy operations, select indicators have emerged as the primary parameters for performance review and decision-making purposes based on ongoing trend analyses and treatment observations, including Cr, Cr(VI), TOC, sulfate, oxidation-reduction potential (ORP), and dissolved oxygen (DO).

The indicator parameters are displayed in the "at-a-glance" trend charts provided in this appendix. These graphics allow direct comparison of multiple lines of evidence at individual monitoring wells through the various operational and post-treatment phases. The parameters are also listed below in conjunction with their relevance to ongoing data review and the target ranges relevant to continued ISAB and ISCR remedy performance.

| Parameter | Evaluation Considerations | Target Range |
|---|---|---|
| Cr and Cr(VI) | Direct demonstration of ISAB and ISCR treatment. Injection and extraction programs target areas where Cr(VI) > 1,000 micrograms per liter (µg/L) and the monitoring program evaluates where Cr is less than the New Jersey (NJ) Groundwater Quality Standard (GWQS) of 70 µg/L. | Cr(VI): < 1,000 µg/L (active remedy)<br>Cr: < 70 µg/L |
| TOC | Direct indicator of reagent distribution within treatment areas. Increased TOC concentrations relative to baseline provide demonstration that molasses, emulsified vegetable oil (EVO), or residual organic matter exists in the vicinity of the monitoring well to sustain reducing conditions and biological and geochemical processes conducive to ISAB and ISCR. | > Baseline |
| Sulfate | Electron acceptor reduced in the presence of organic carbon electron donor. Sulfate reduction yields sulfide, which reacts in the presence of ferrous iron to form reactive iron sulfide, a key mechanism of treatment. Declines in sulfate relative to baseline values indicate sulfide formation is ongoing, and residual sulfate demonstrates sustained capacity for future sulfide formation. | Declines in sulfate concentrations by approximately 25 mg/L or more as evidence of sulfide formation for iron sulfide precipitation |
| ORP | Field measurement of the oxidation-reduction potential of the groundwater system. Trends compared to baseline, with declines (i.e., lower positive and/or increasingly negative ORP values) indicative of influence from the reactive zone and propagation of reducing conditions conducive to ISAB and ISCR mechanisms. | Presence of low positive and increasingly negative values as qualitative demonstration of reducing conditions |
| DO | Field measurement of dissolved oxygen as a competing electron acceptor. Targeted values of less than 2 milligrams per litre (mg/L) are indicative of sustained anaerobic conditions. | < 2 mg/L |

Performance trend charts are separated and organized by Phase as follows: Phase I, Phase II, Phase III, Basal Till and Bedrock Remedy, Bedrock, and Other Wells. Individual wells can be located using the bookmark function.

# Appendix B-1
# Performance Trend Charts - Chromium, Hexavalent Chromium, and Geochemistry - Phase I

**Appendix B−1**
**Performance Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Phase I**

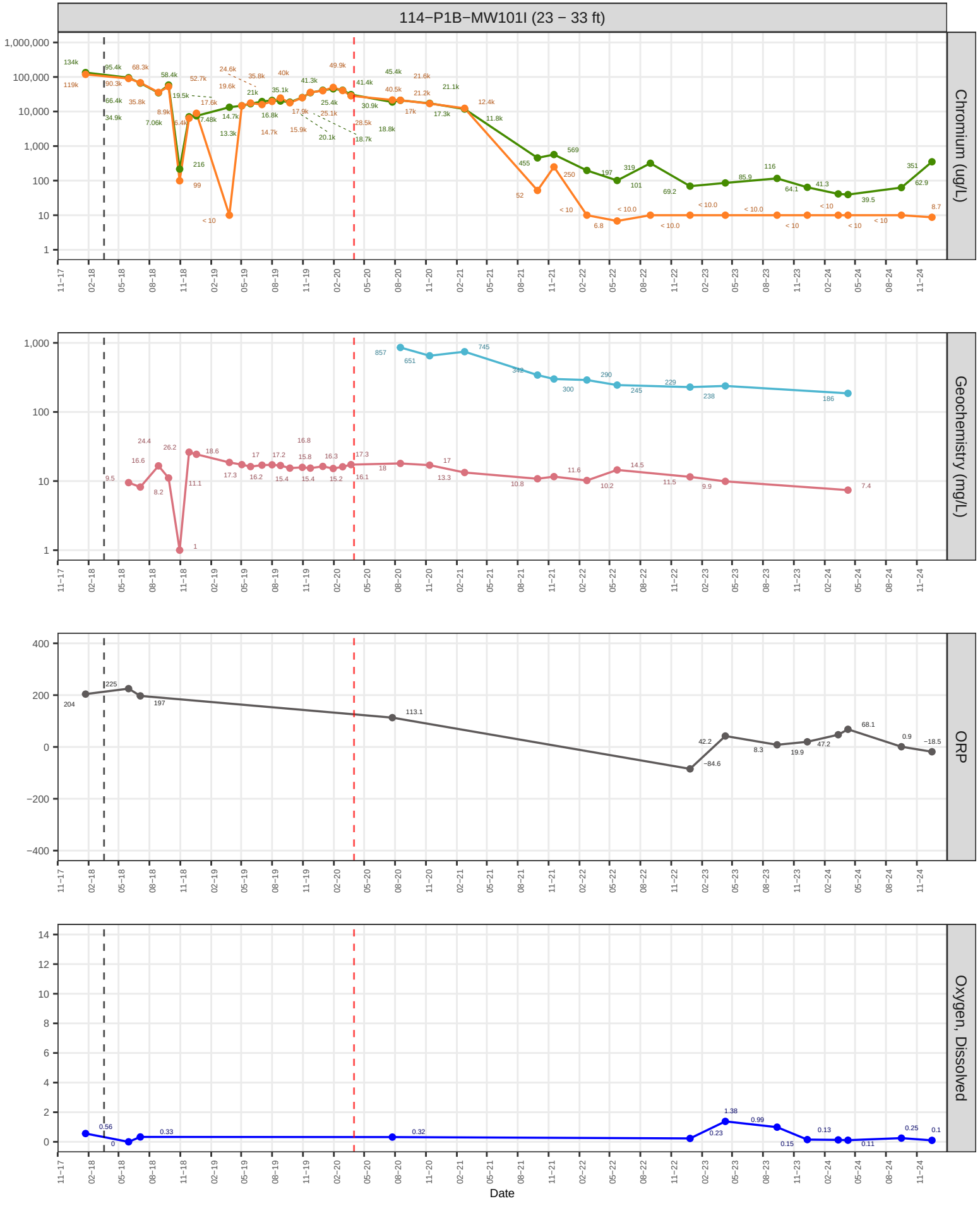

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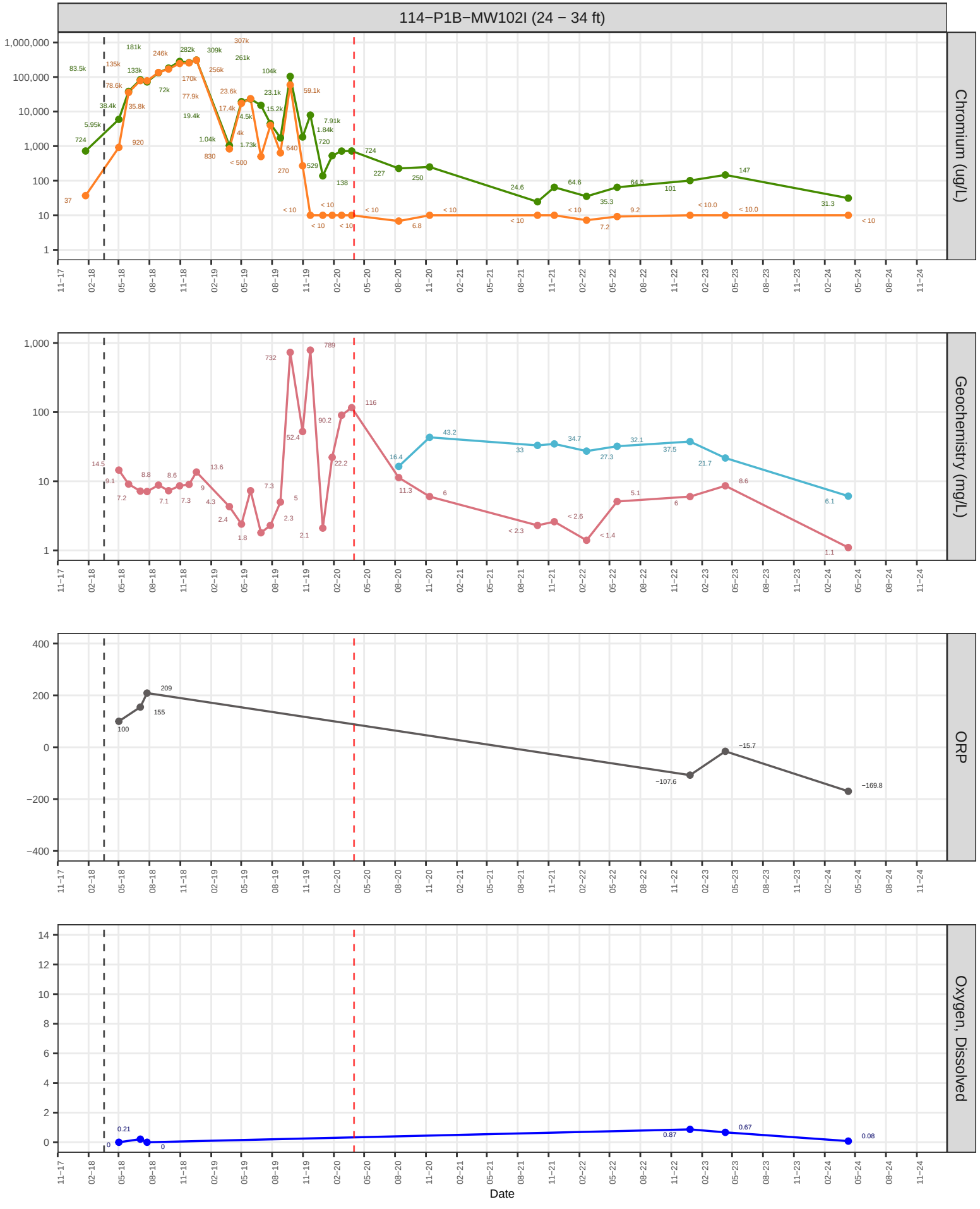

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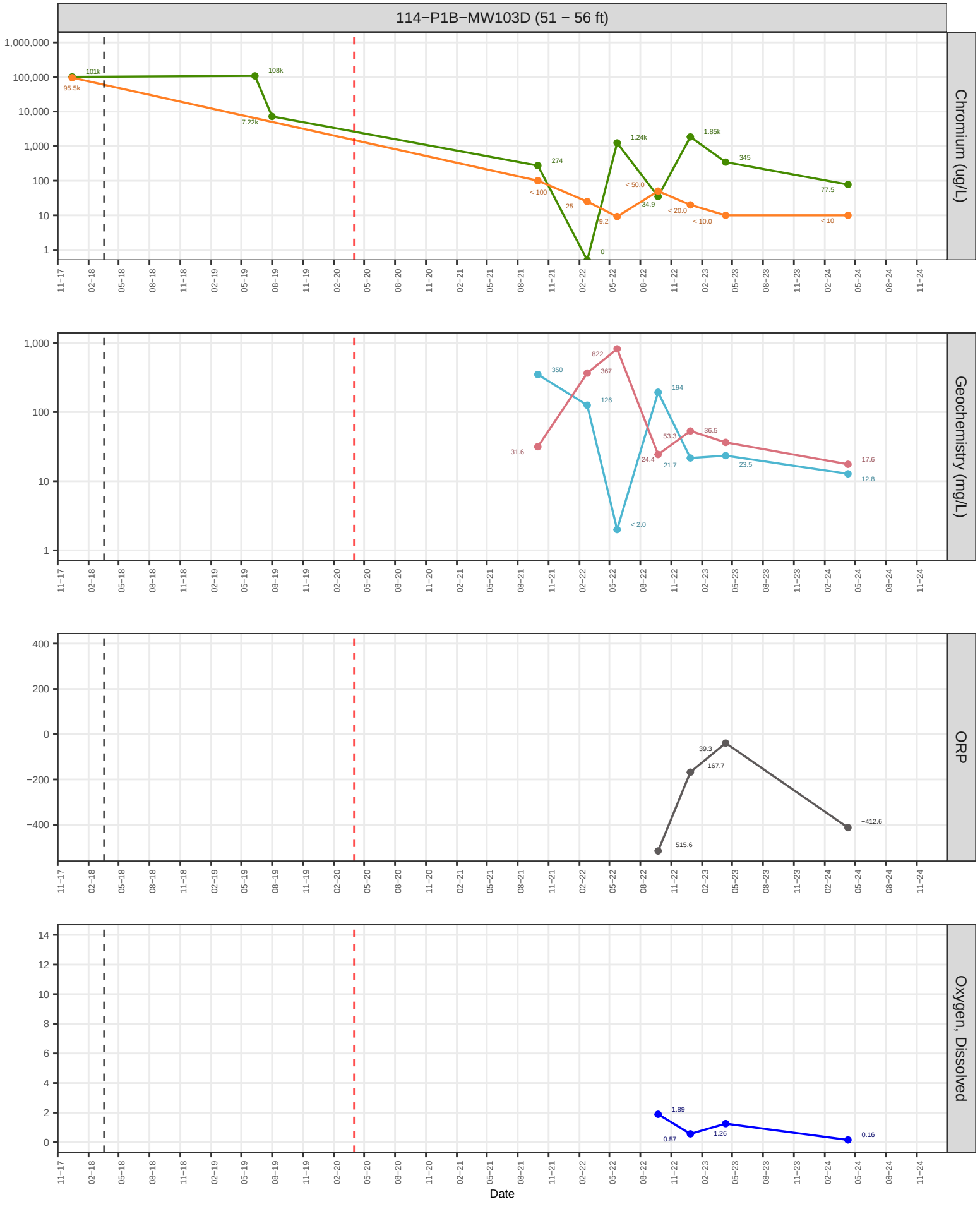

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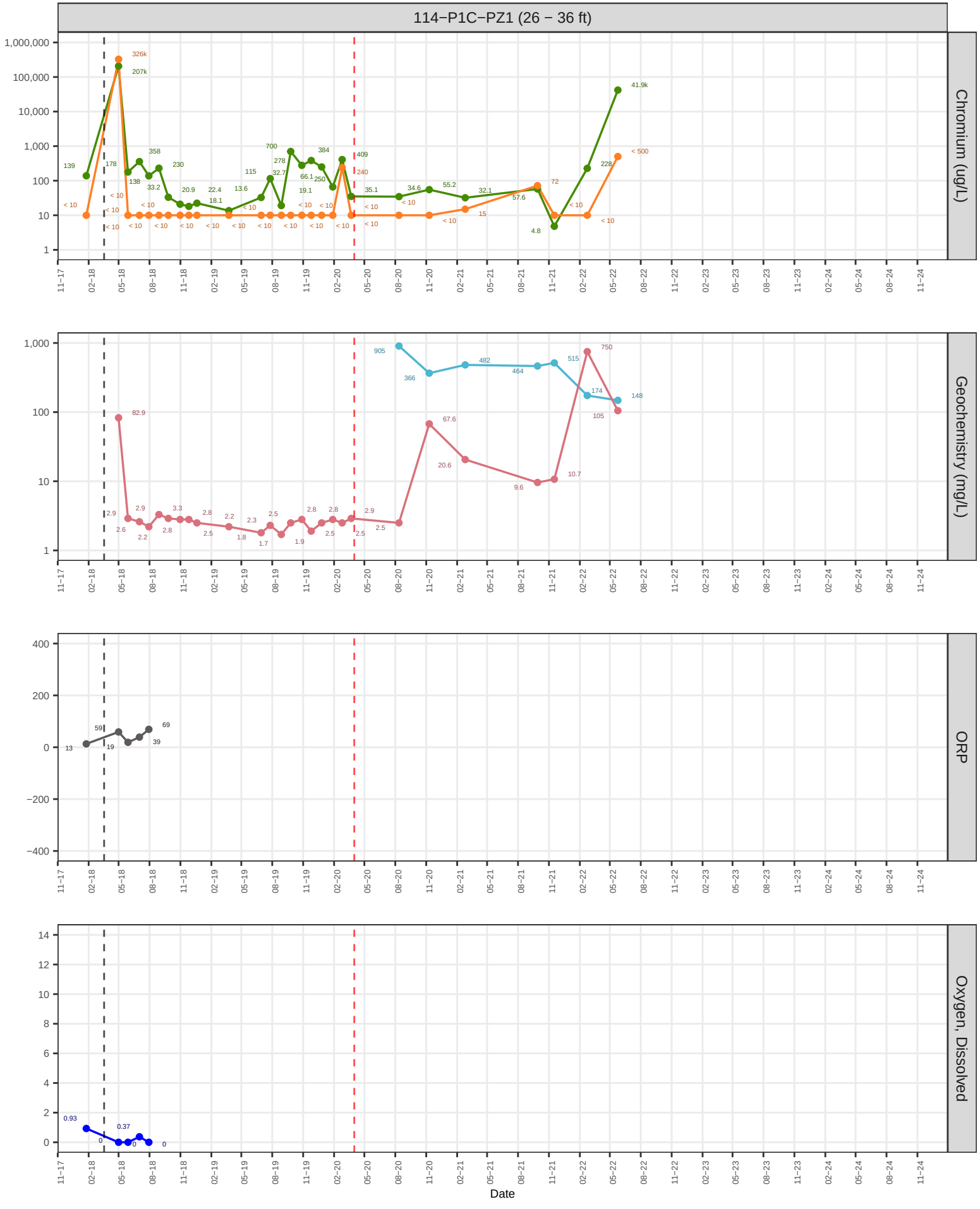

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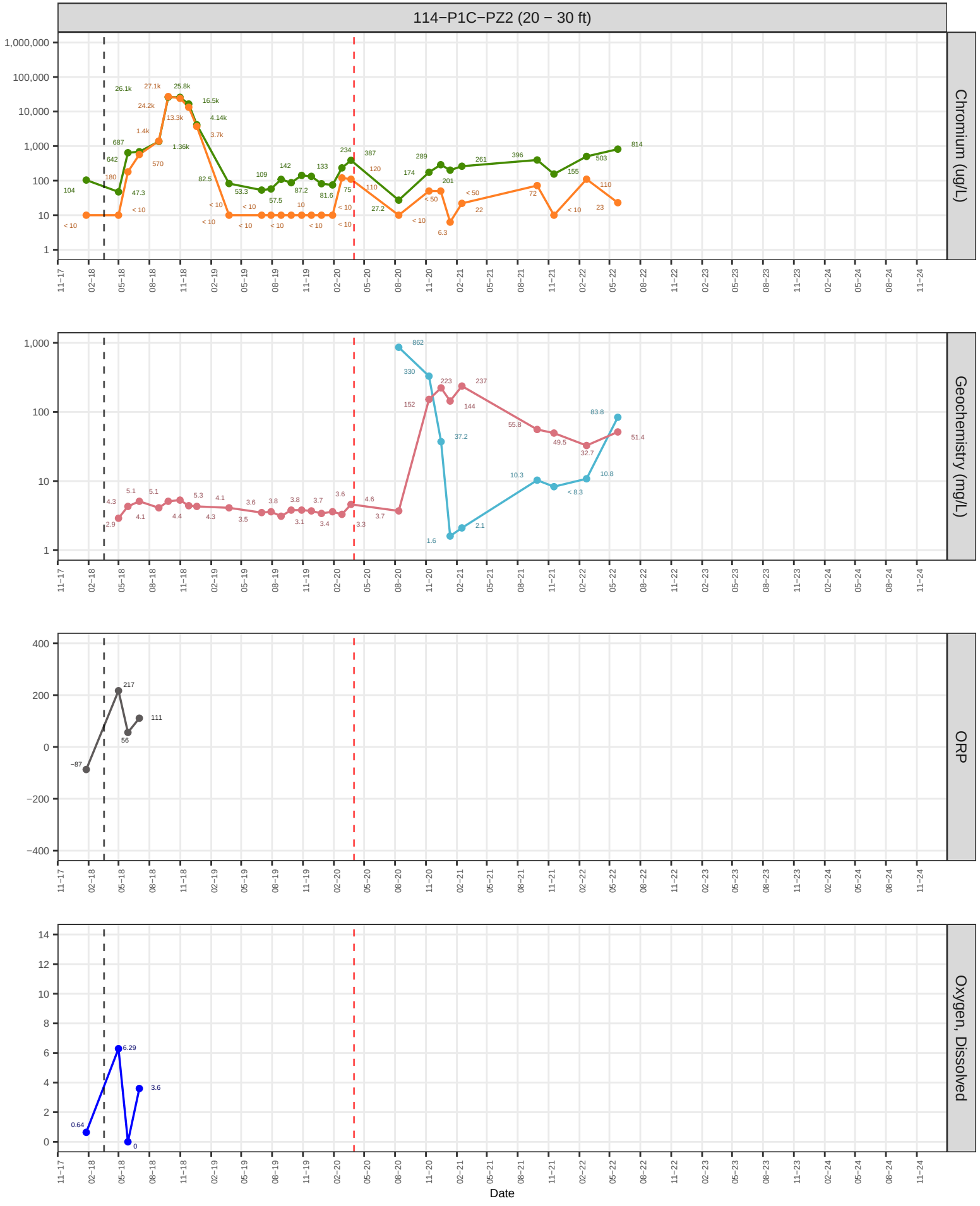

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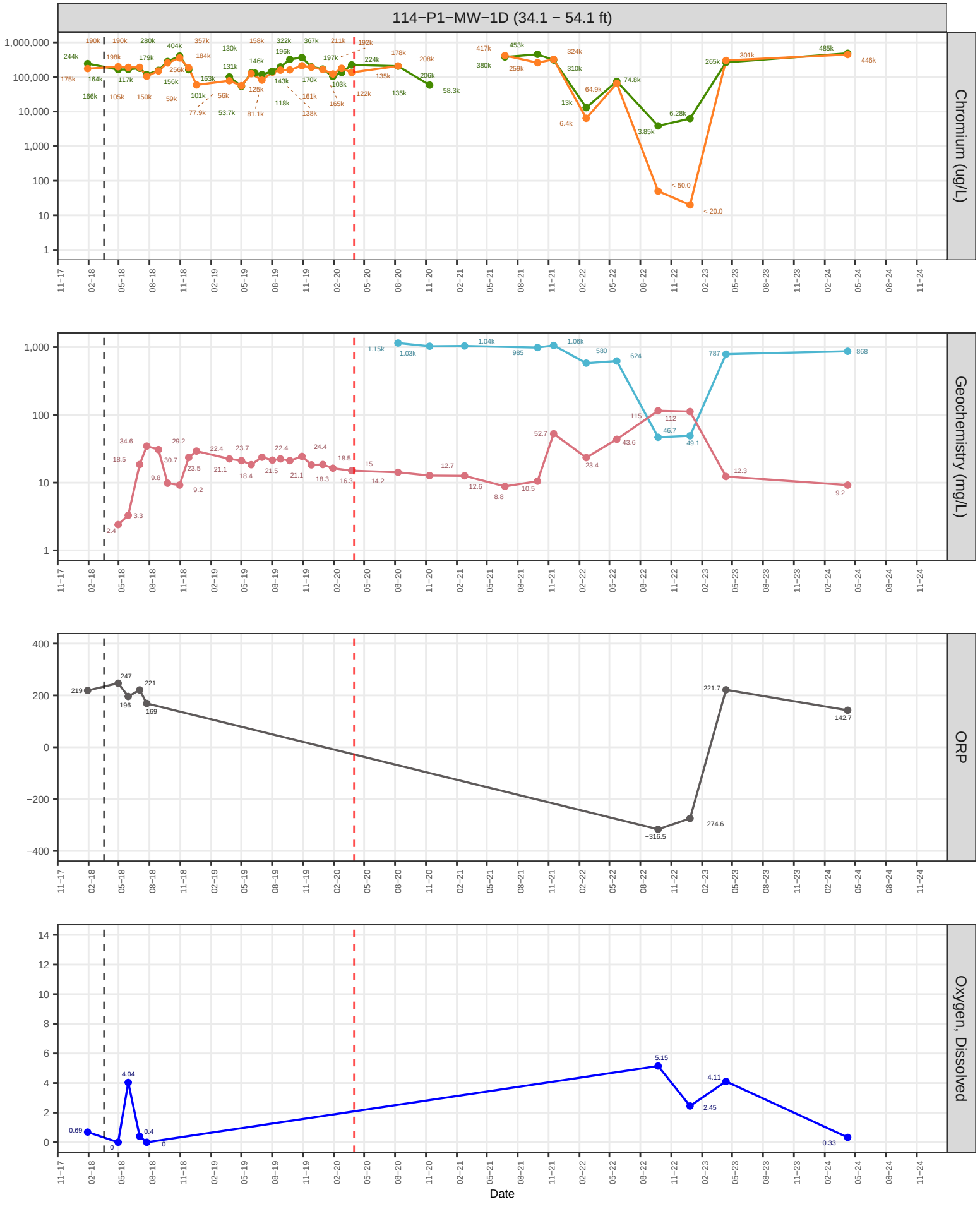

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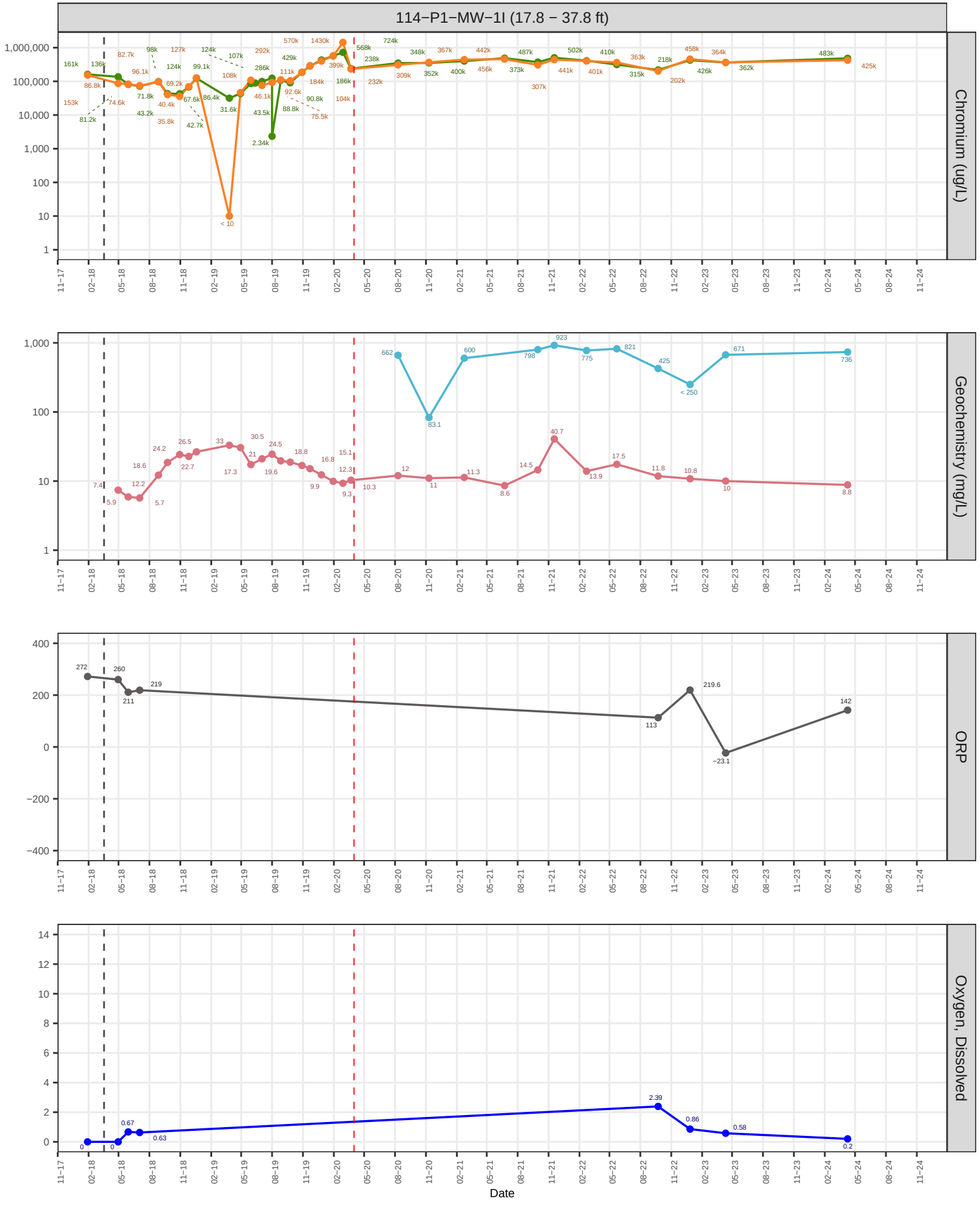

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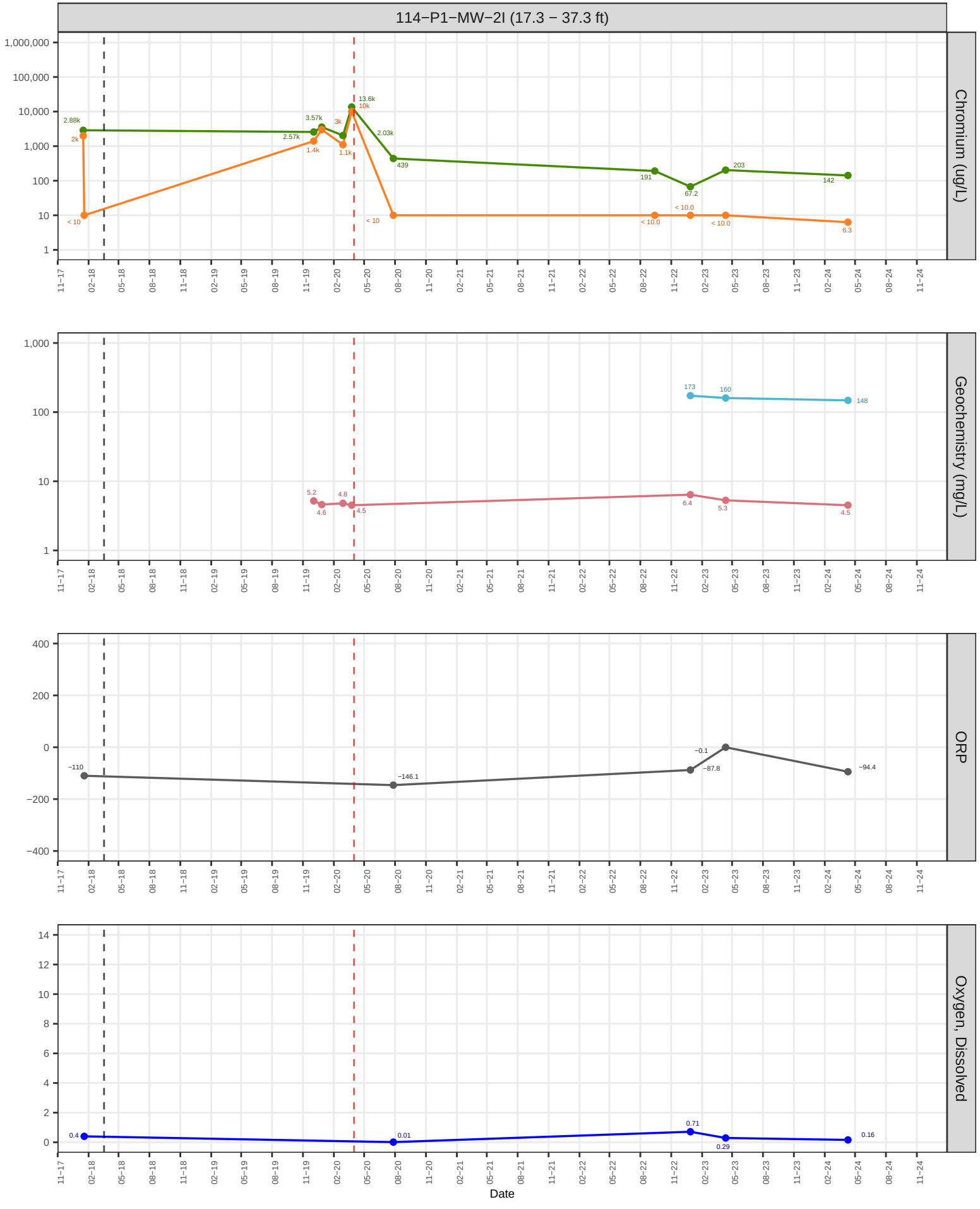

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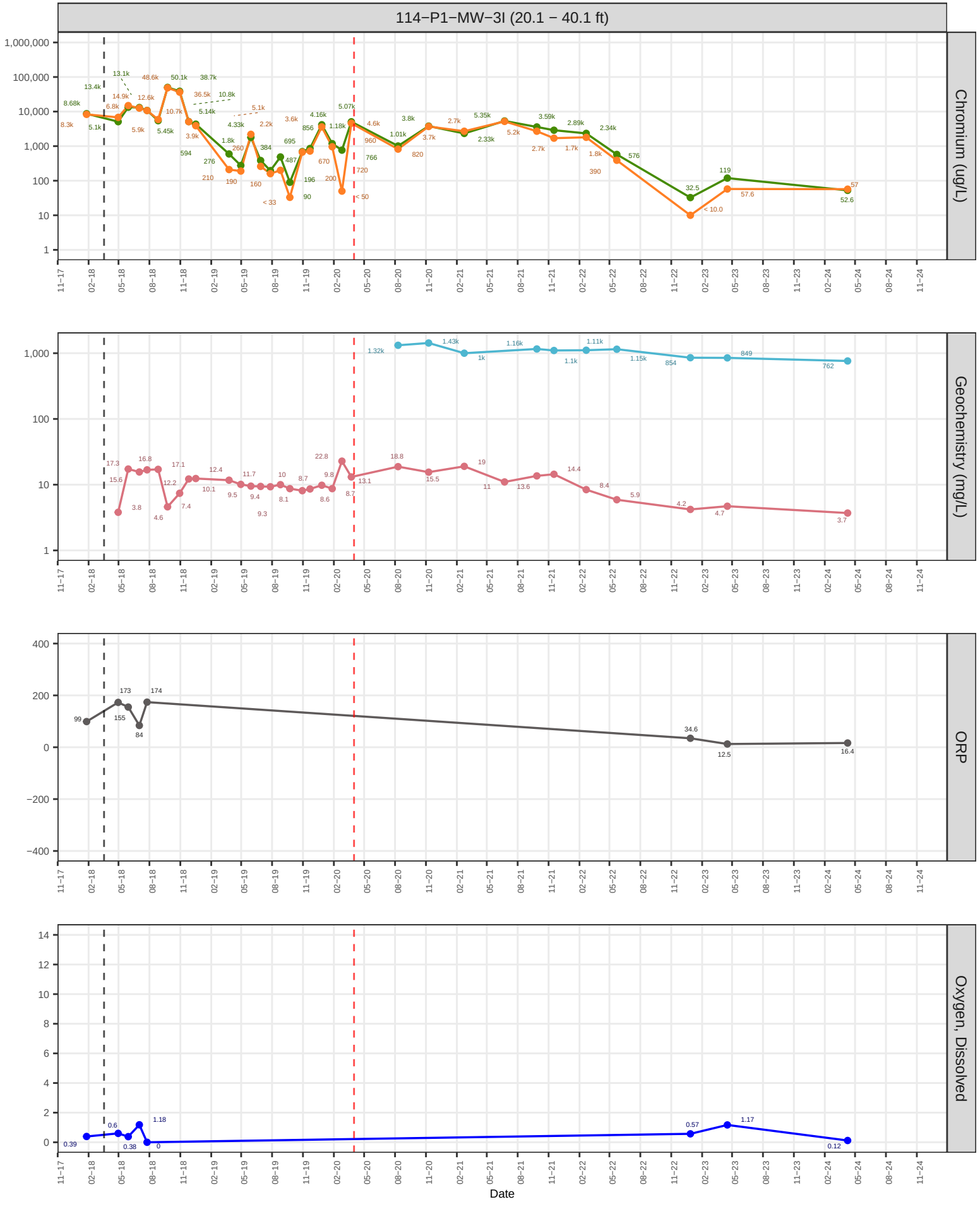

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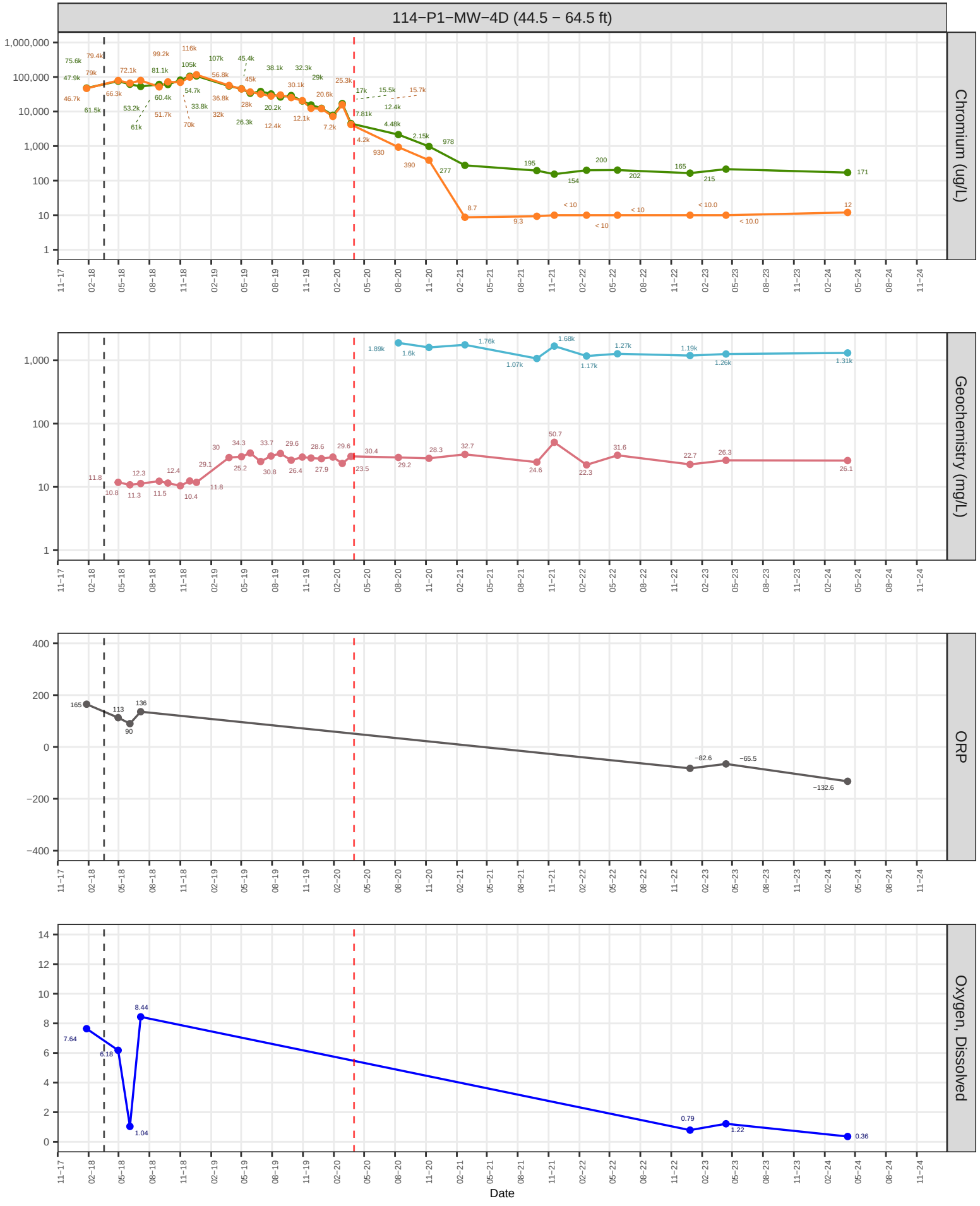

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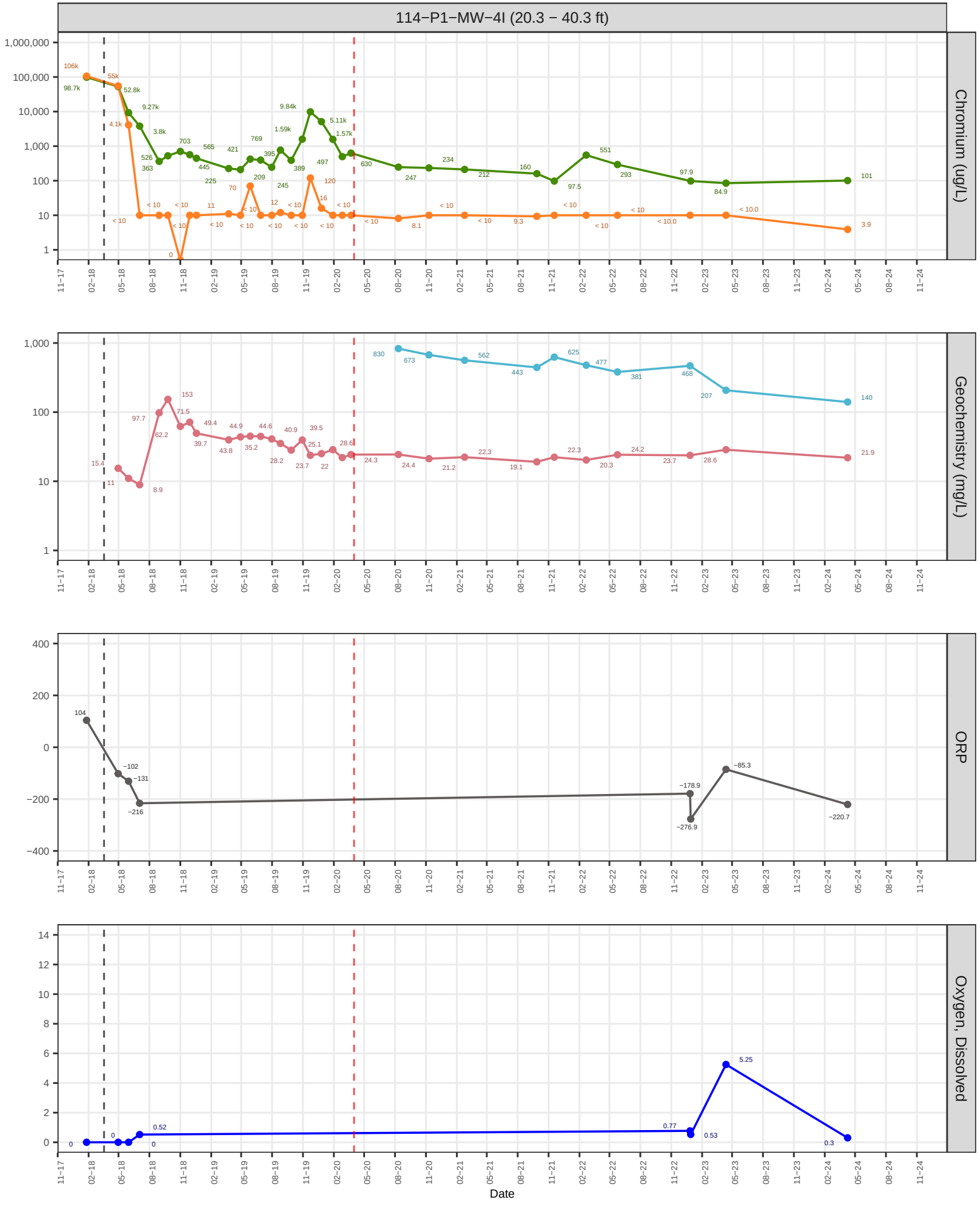

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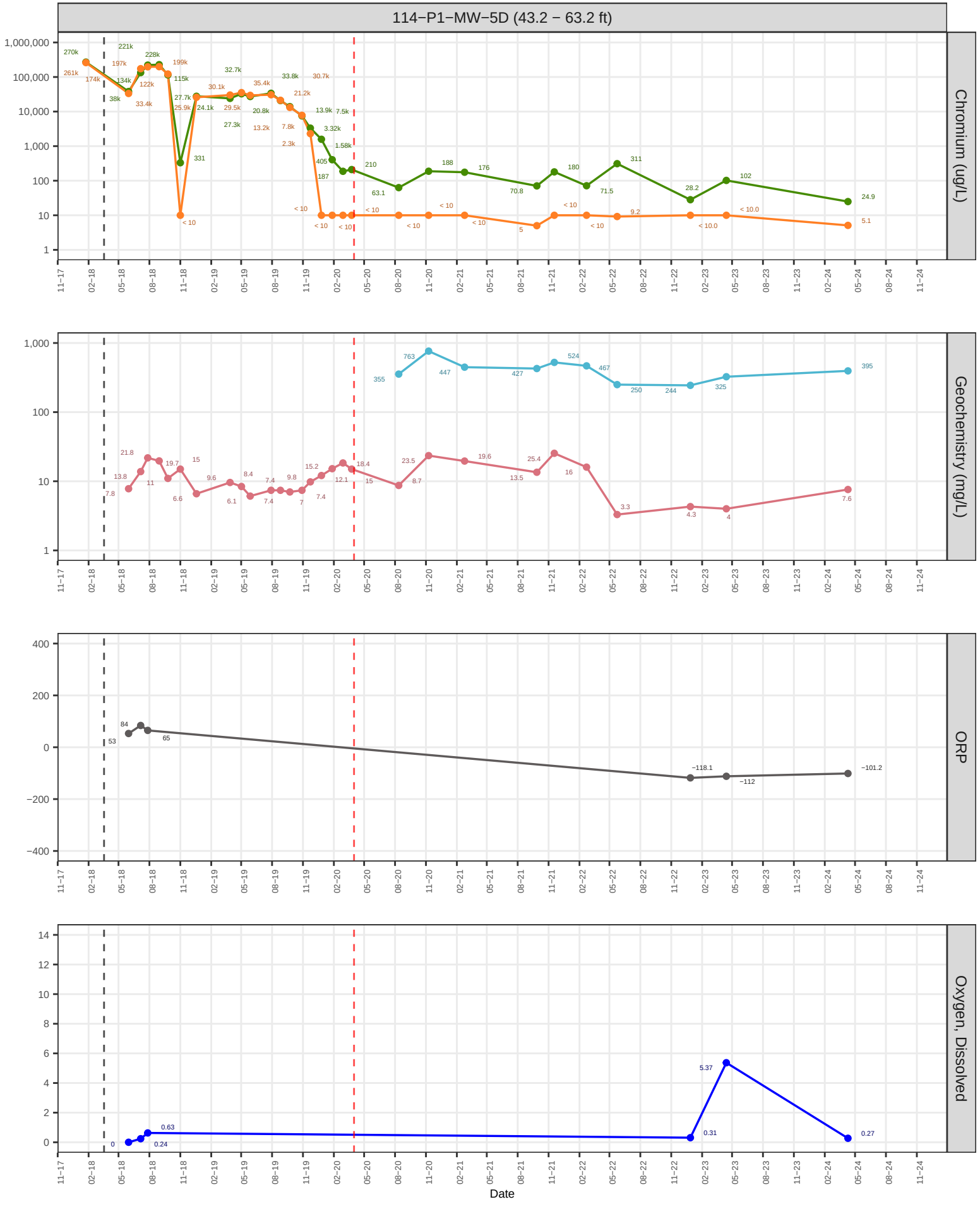

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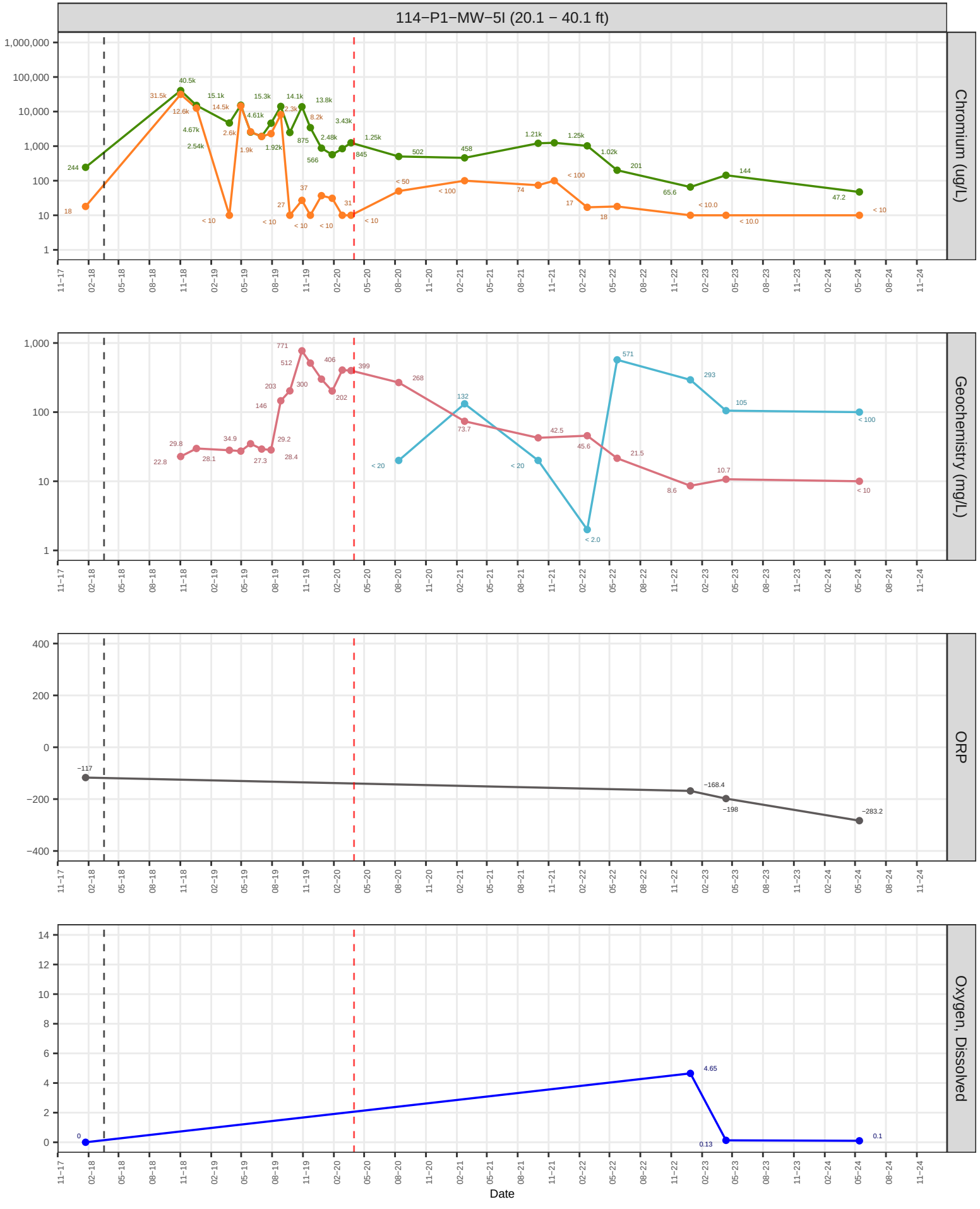

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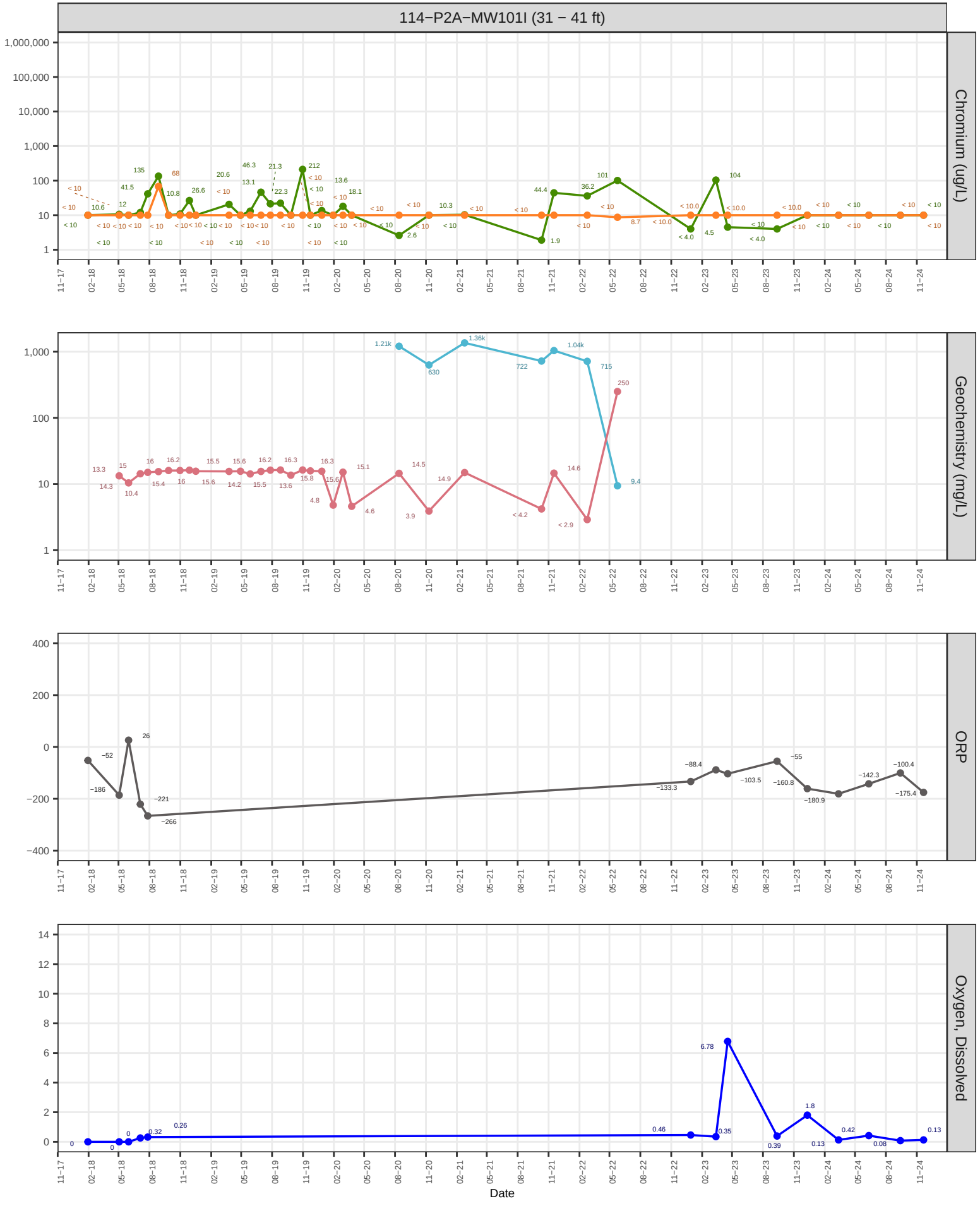

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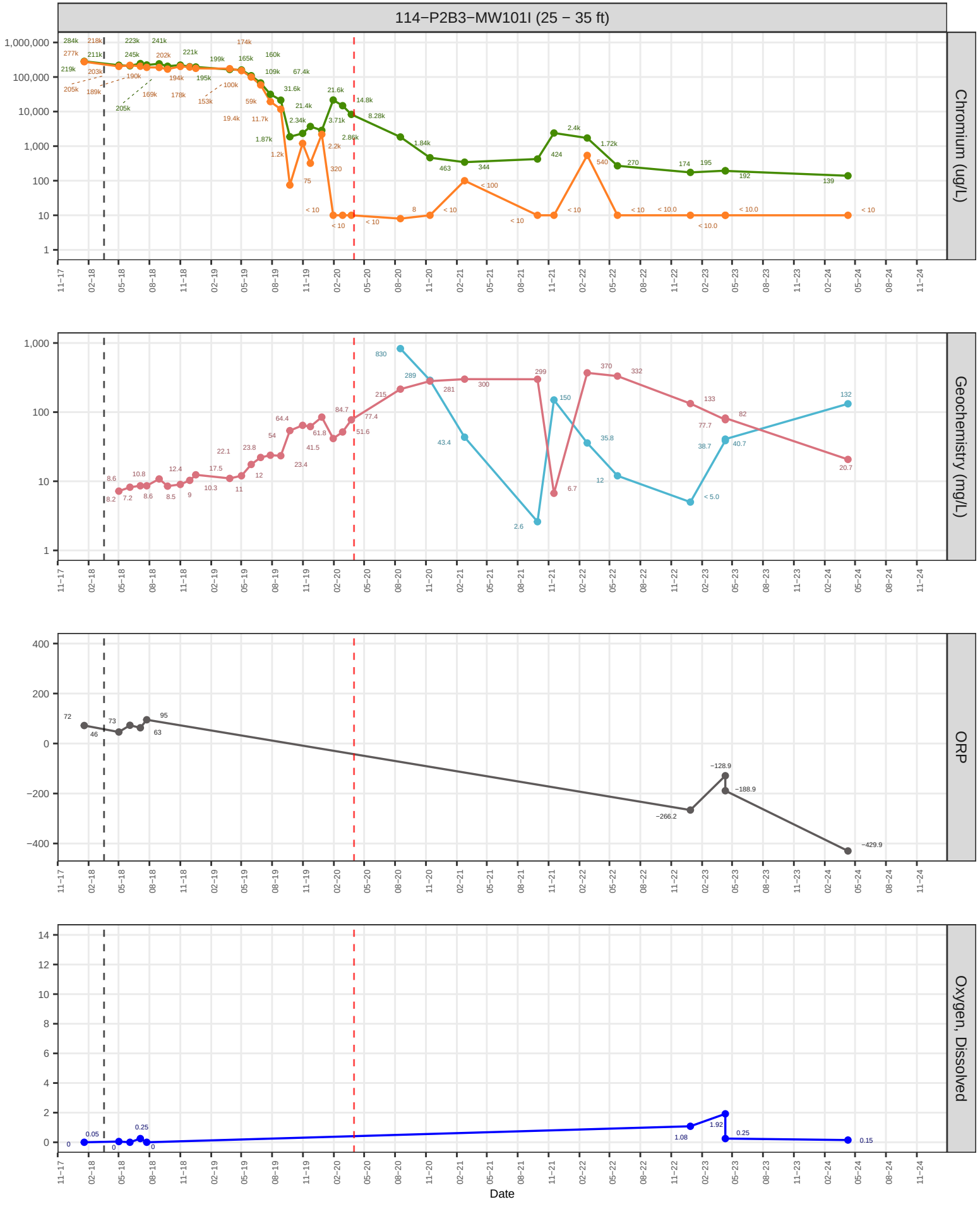

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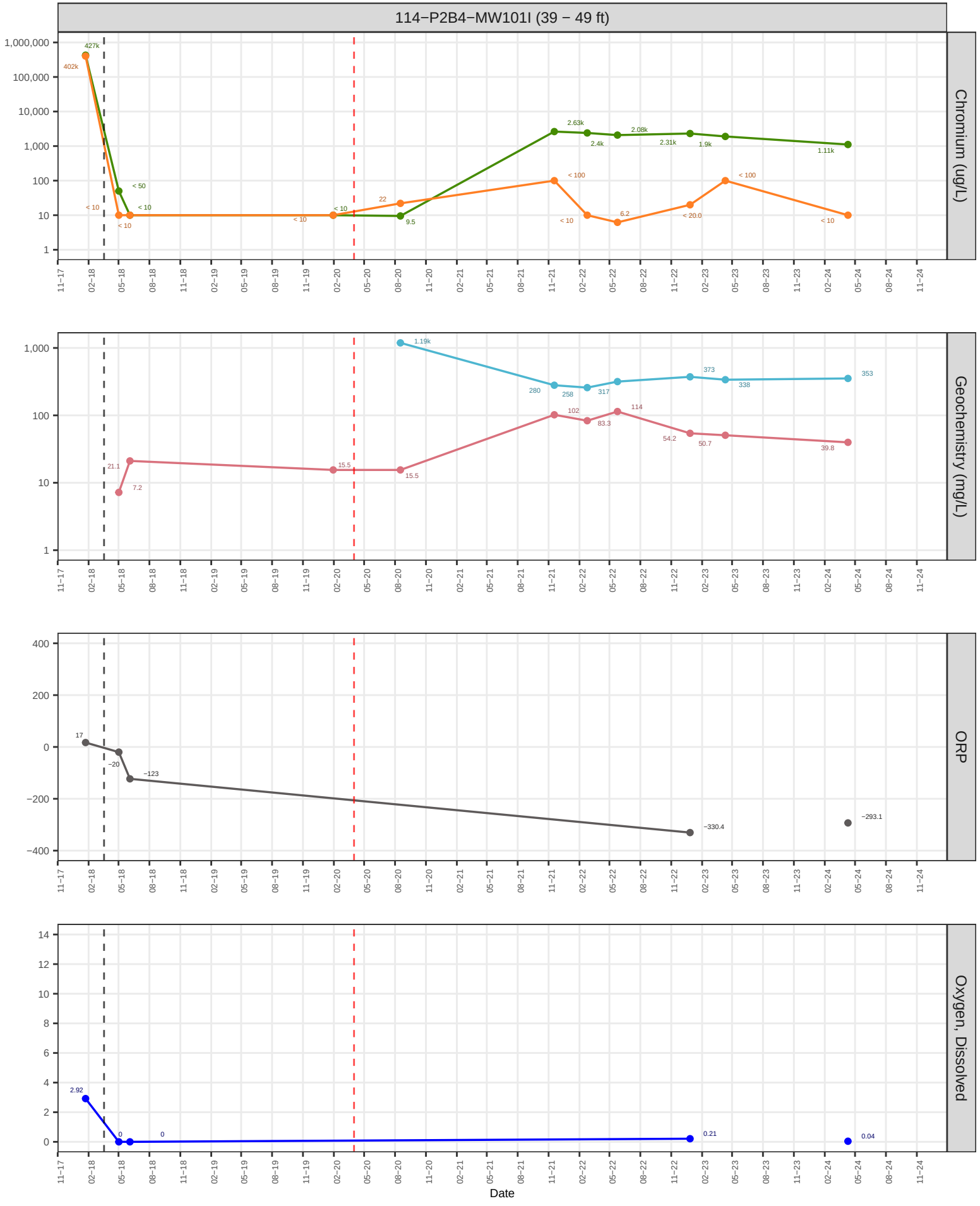

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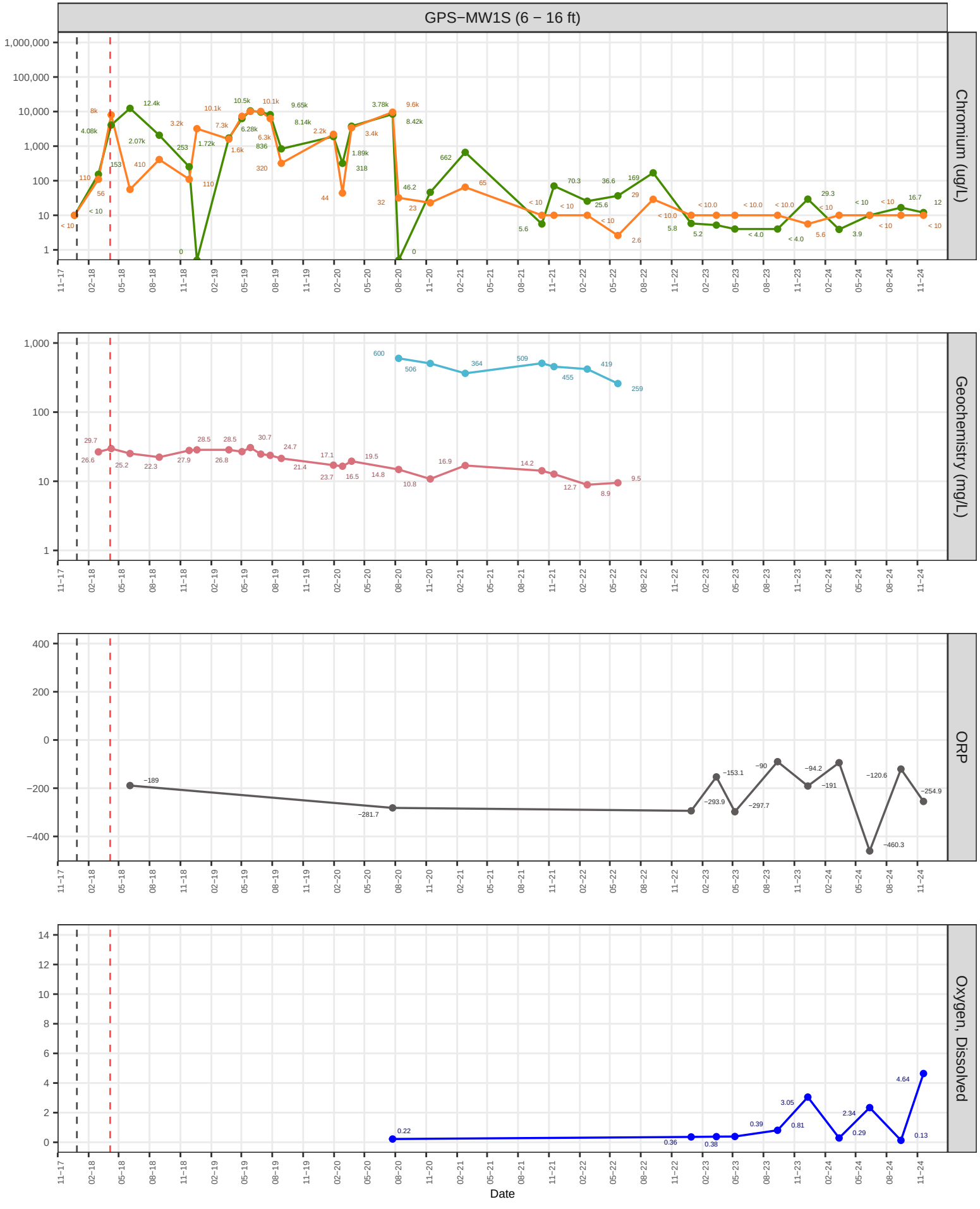

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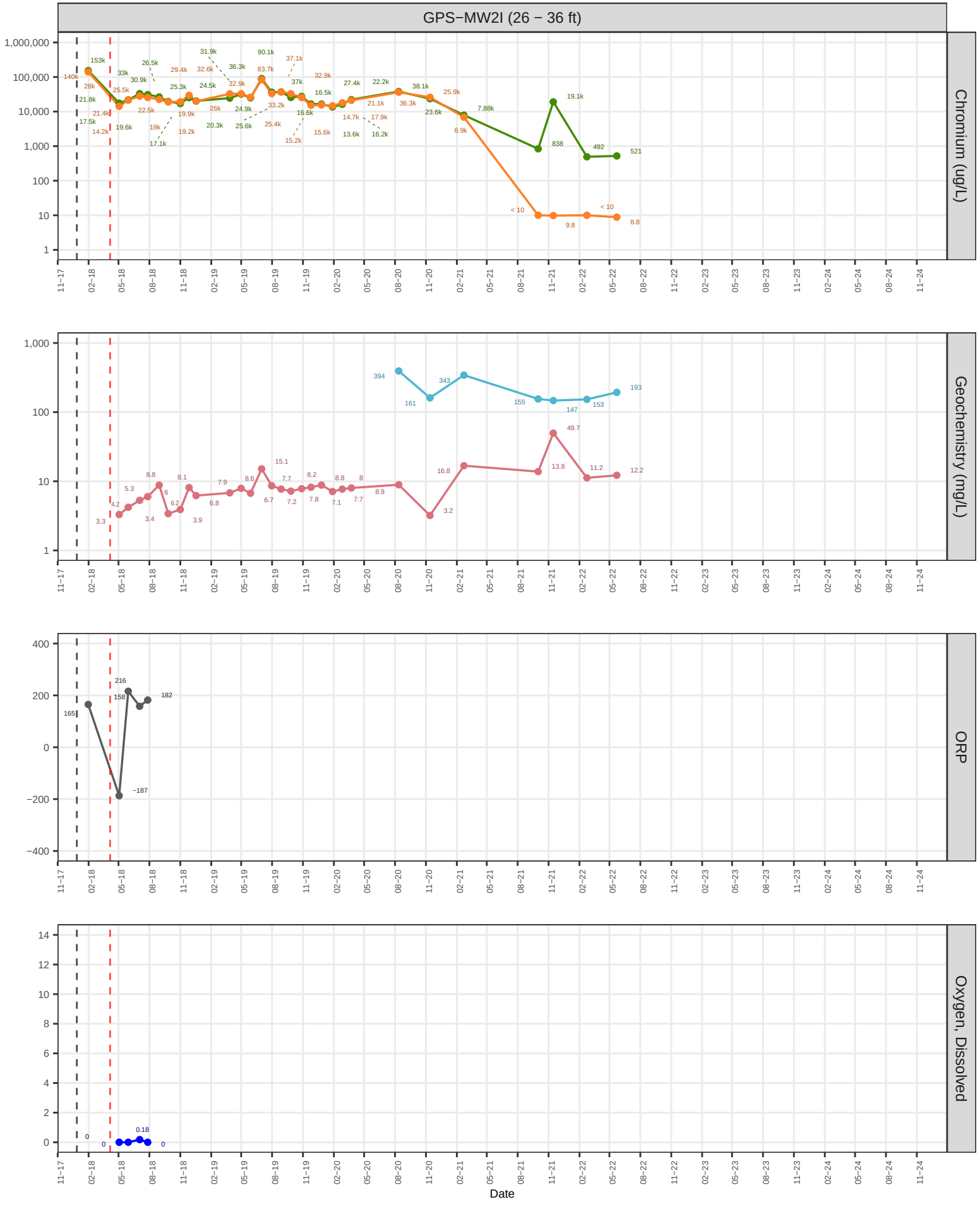

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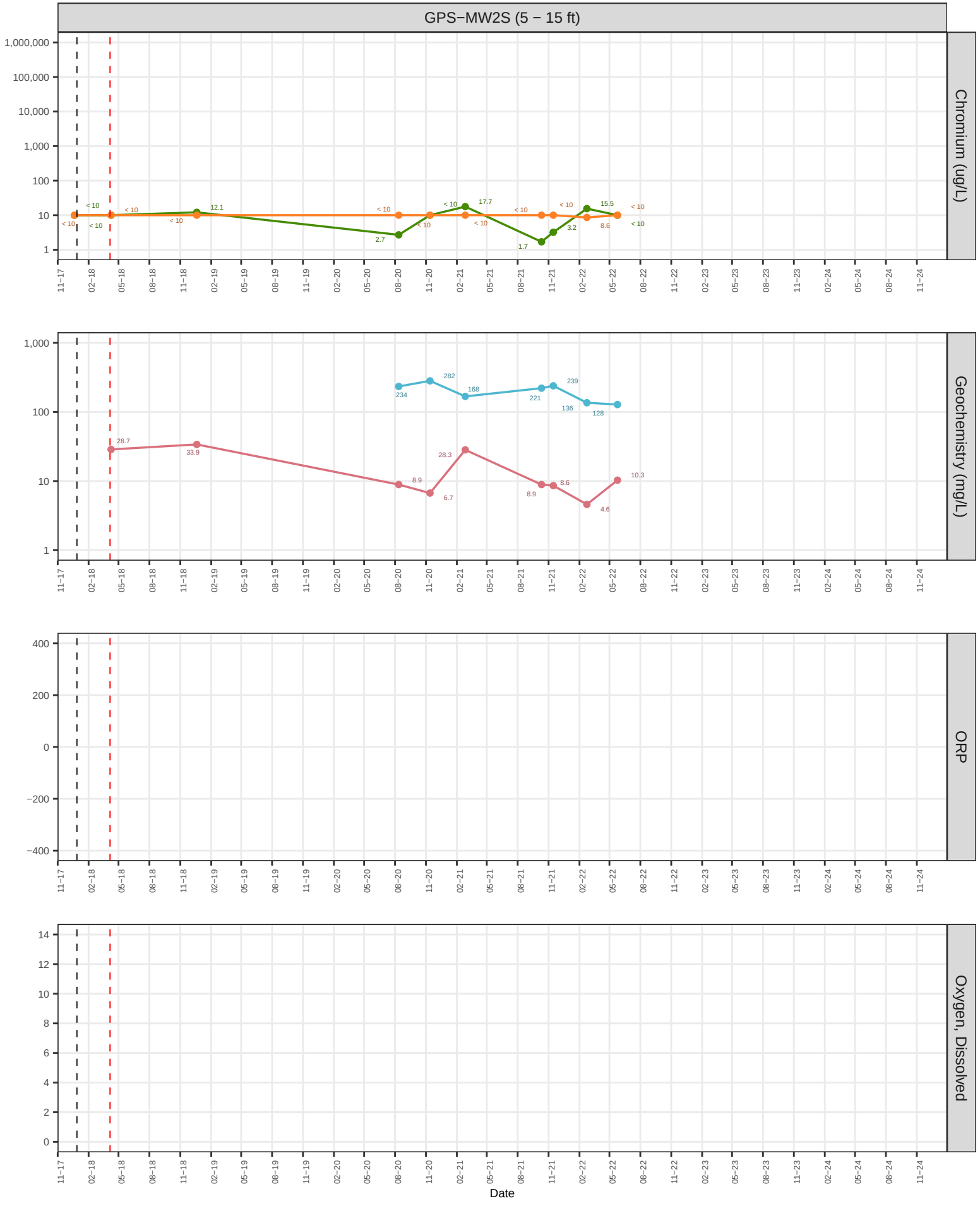

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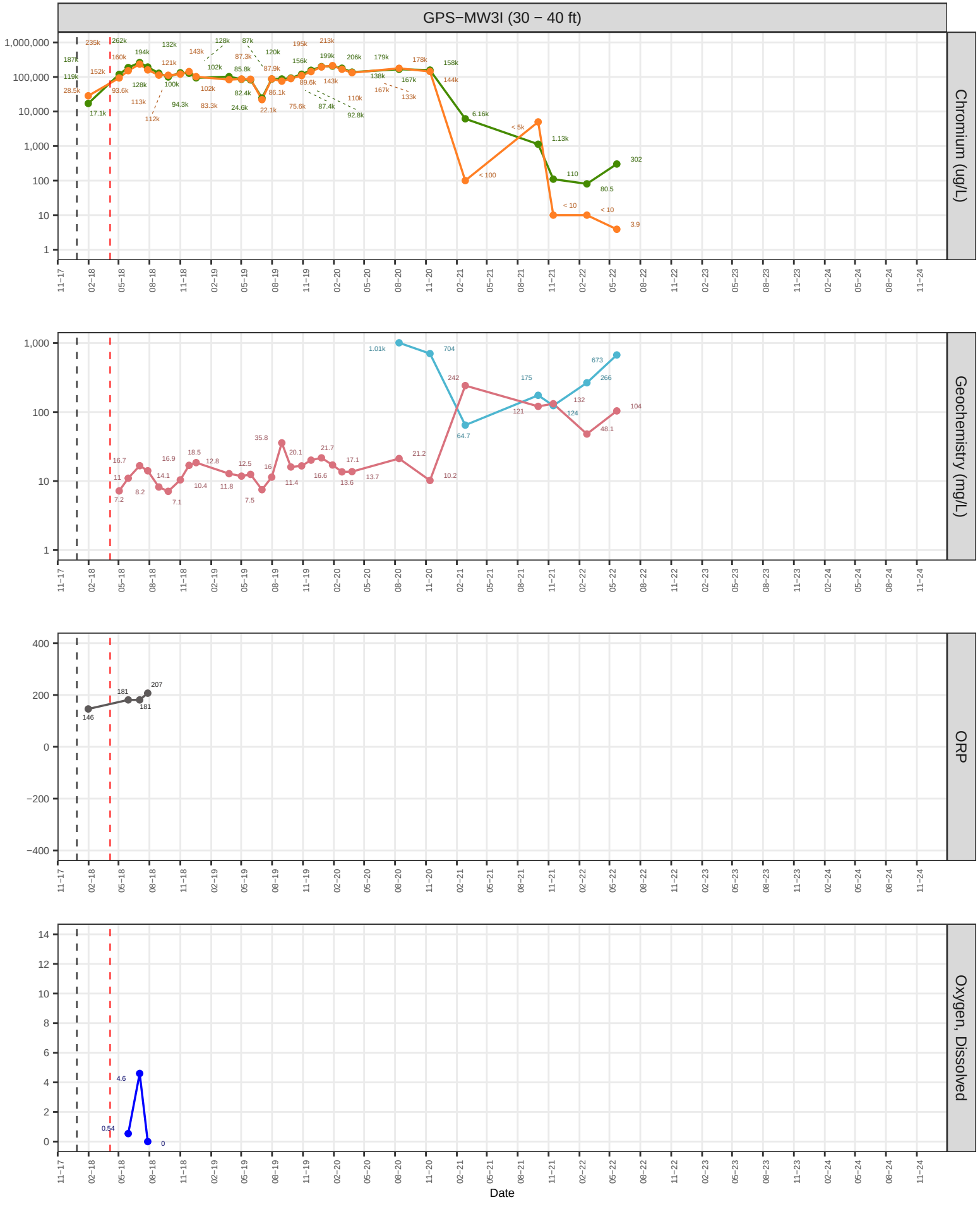

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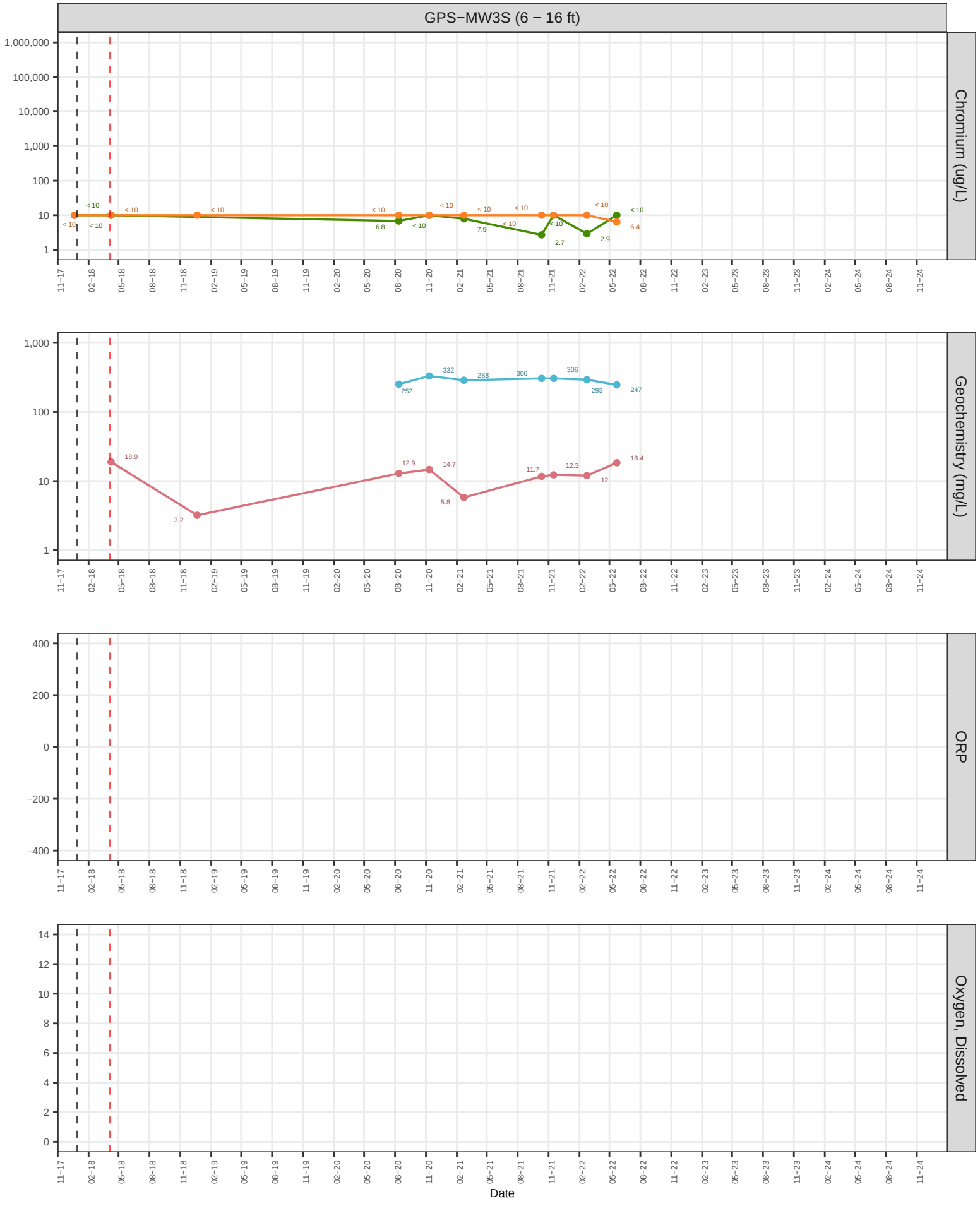

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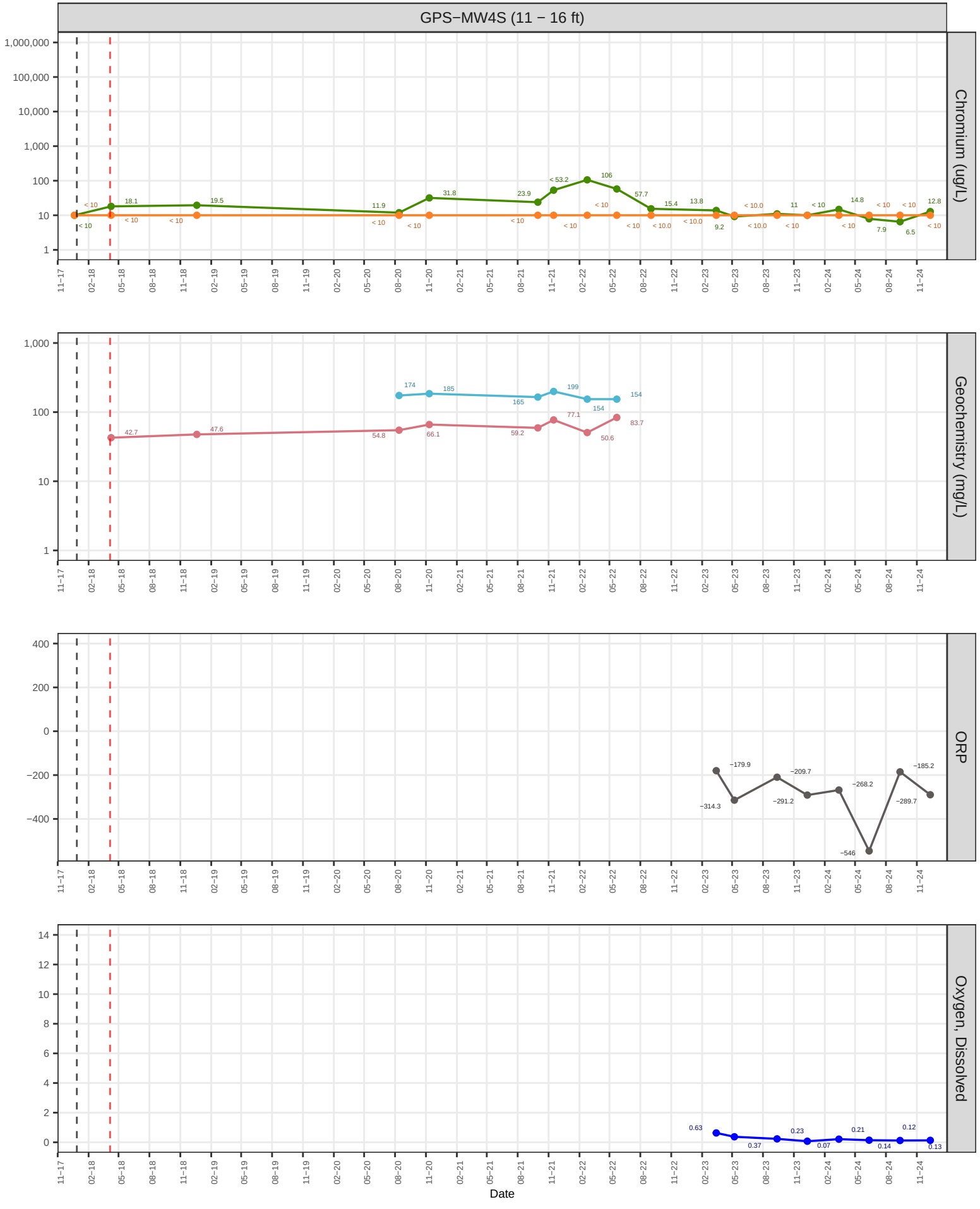

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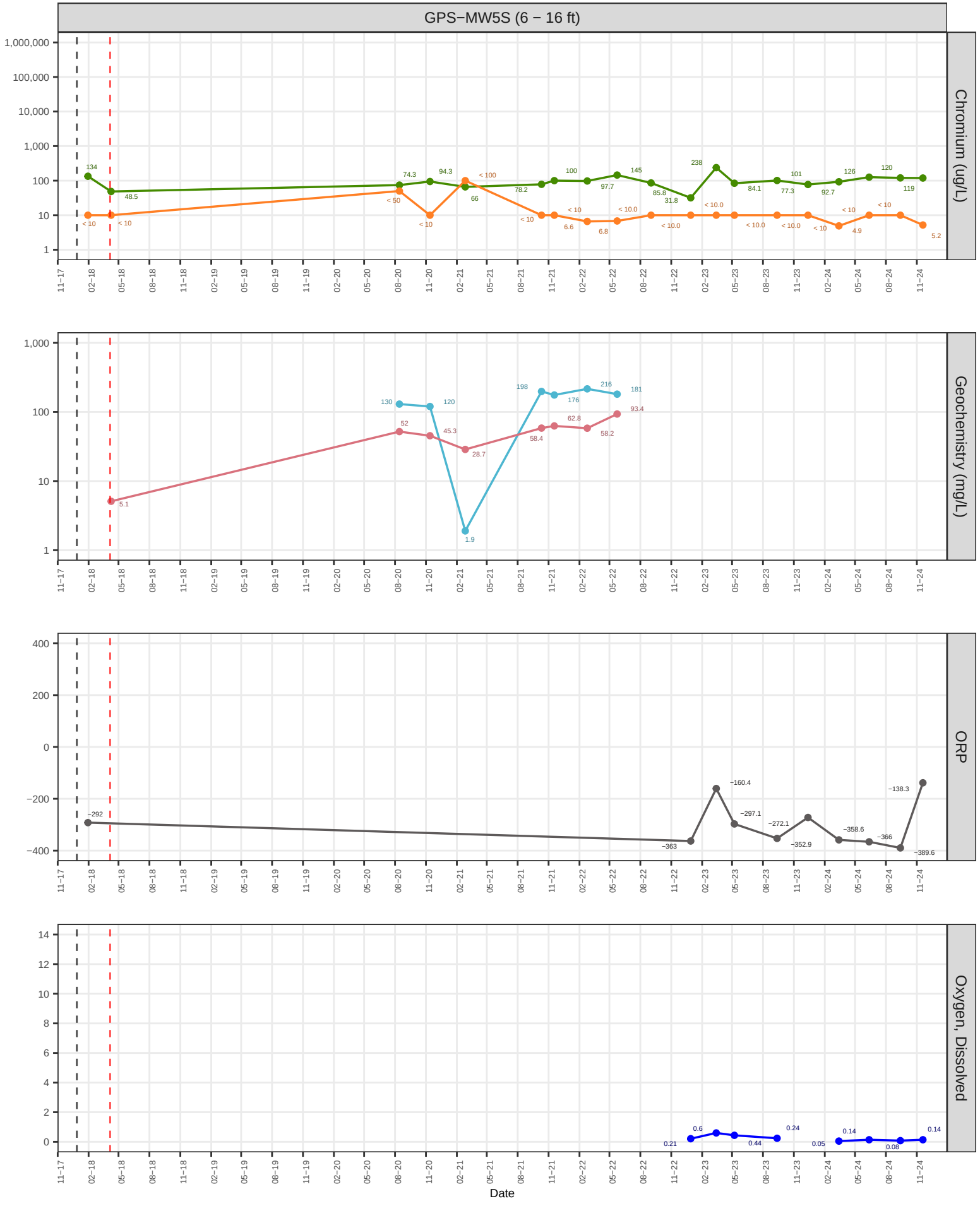

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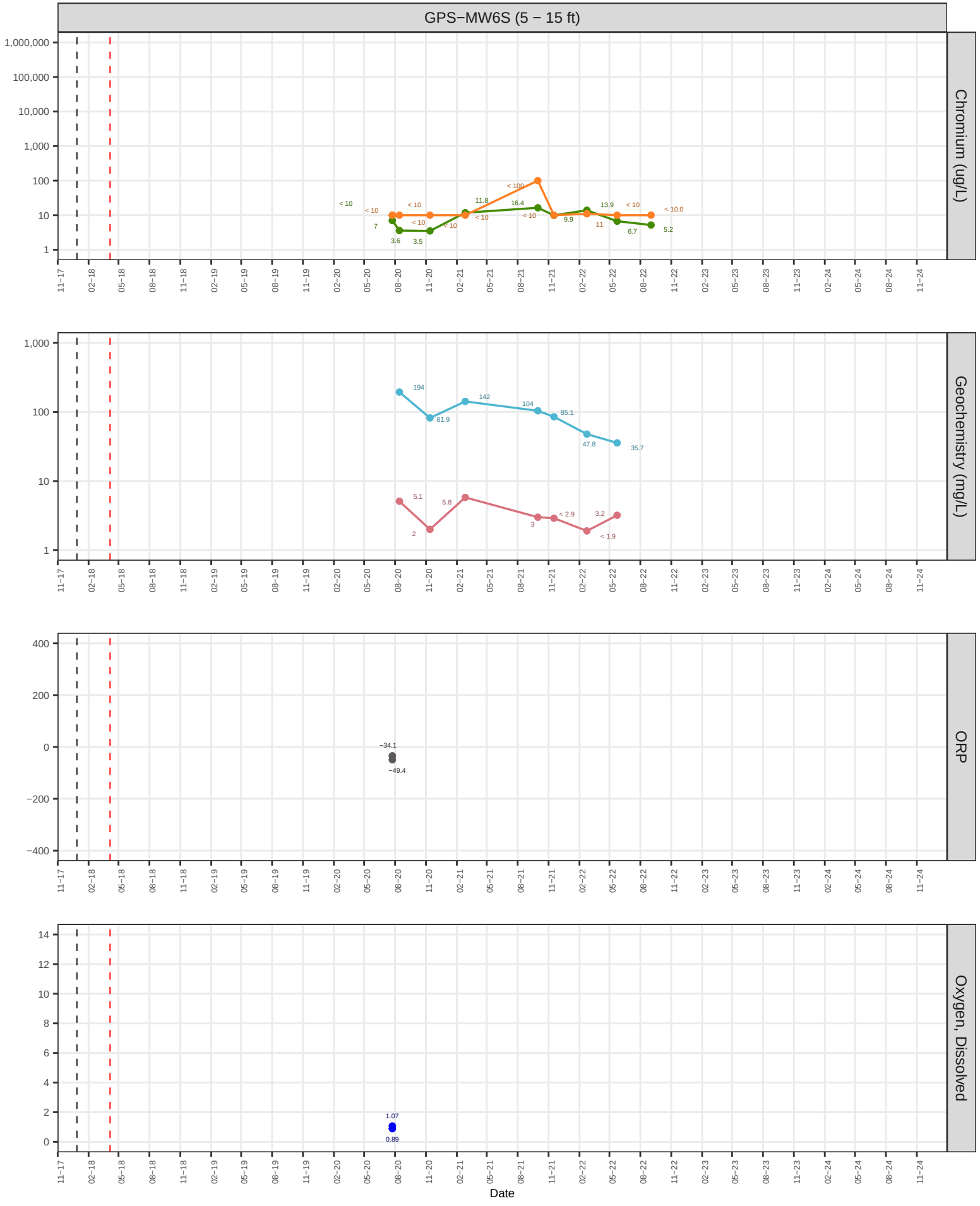

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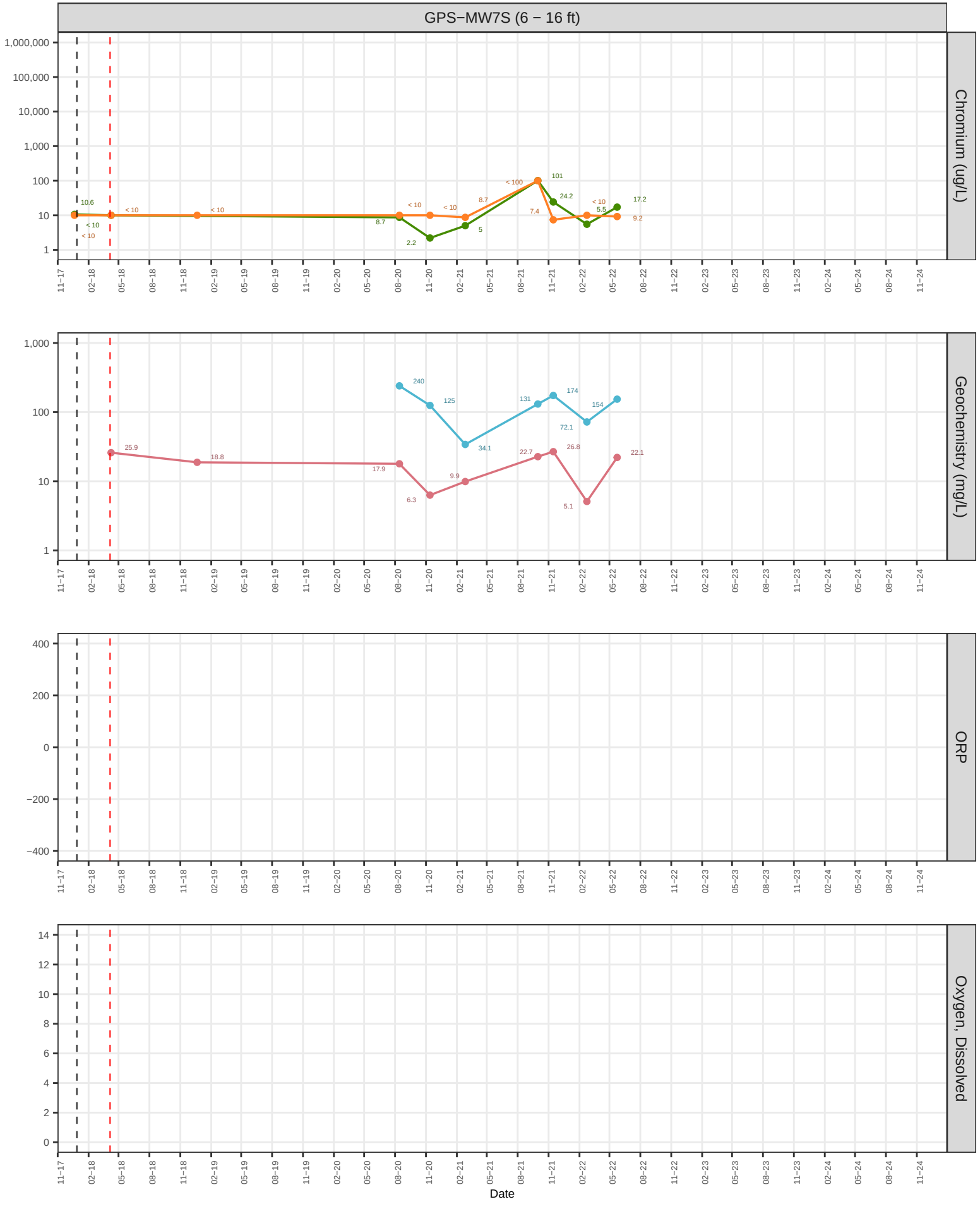

# Appendix B-2
# Performance Trend Charts - Chromium, Hexavalent Chromium, and Geochemistry - Phase II

**Appendix B−2**
**Performance Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Phase II**

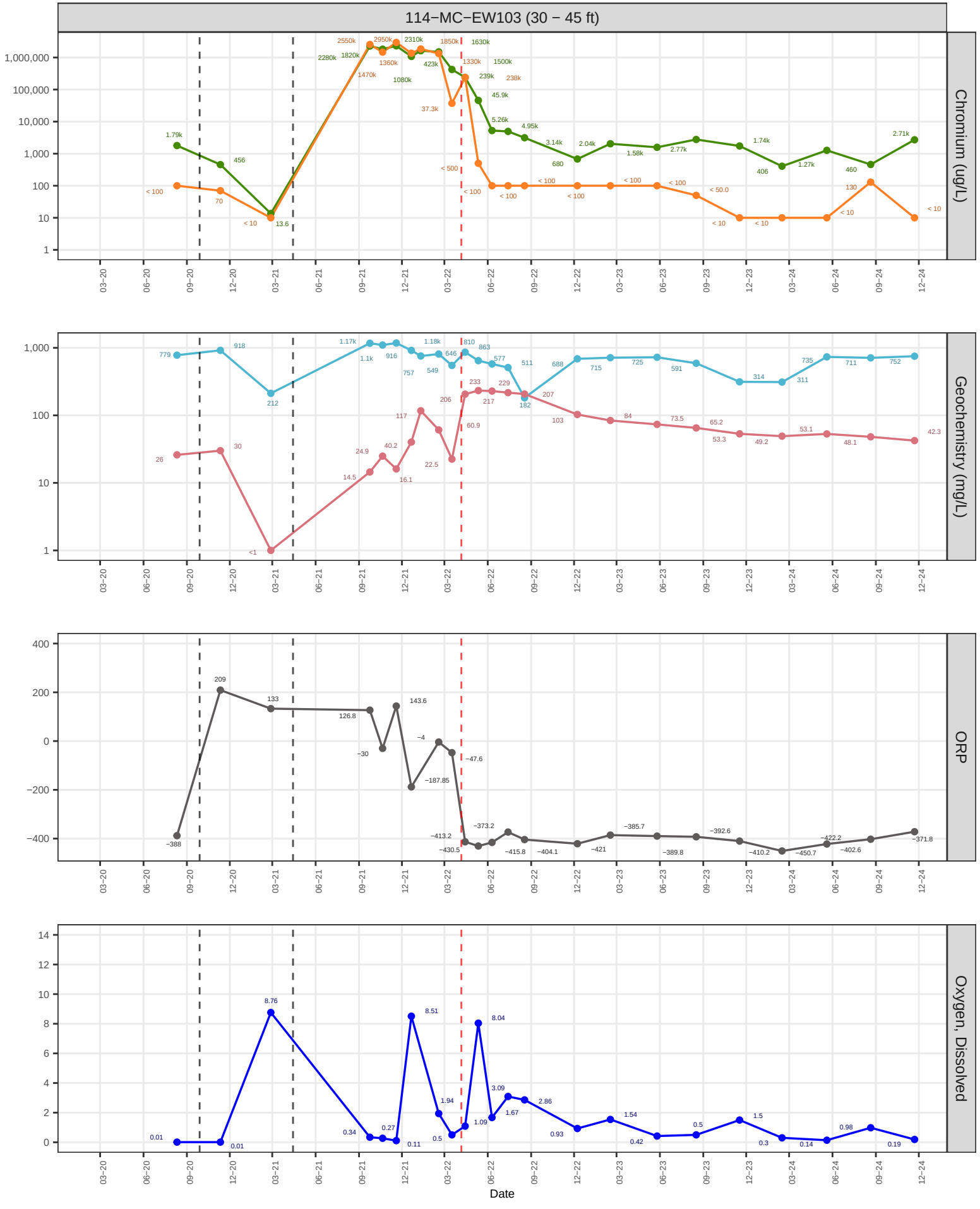

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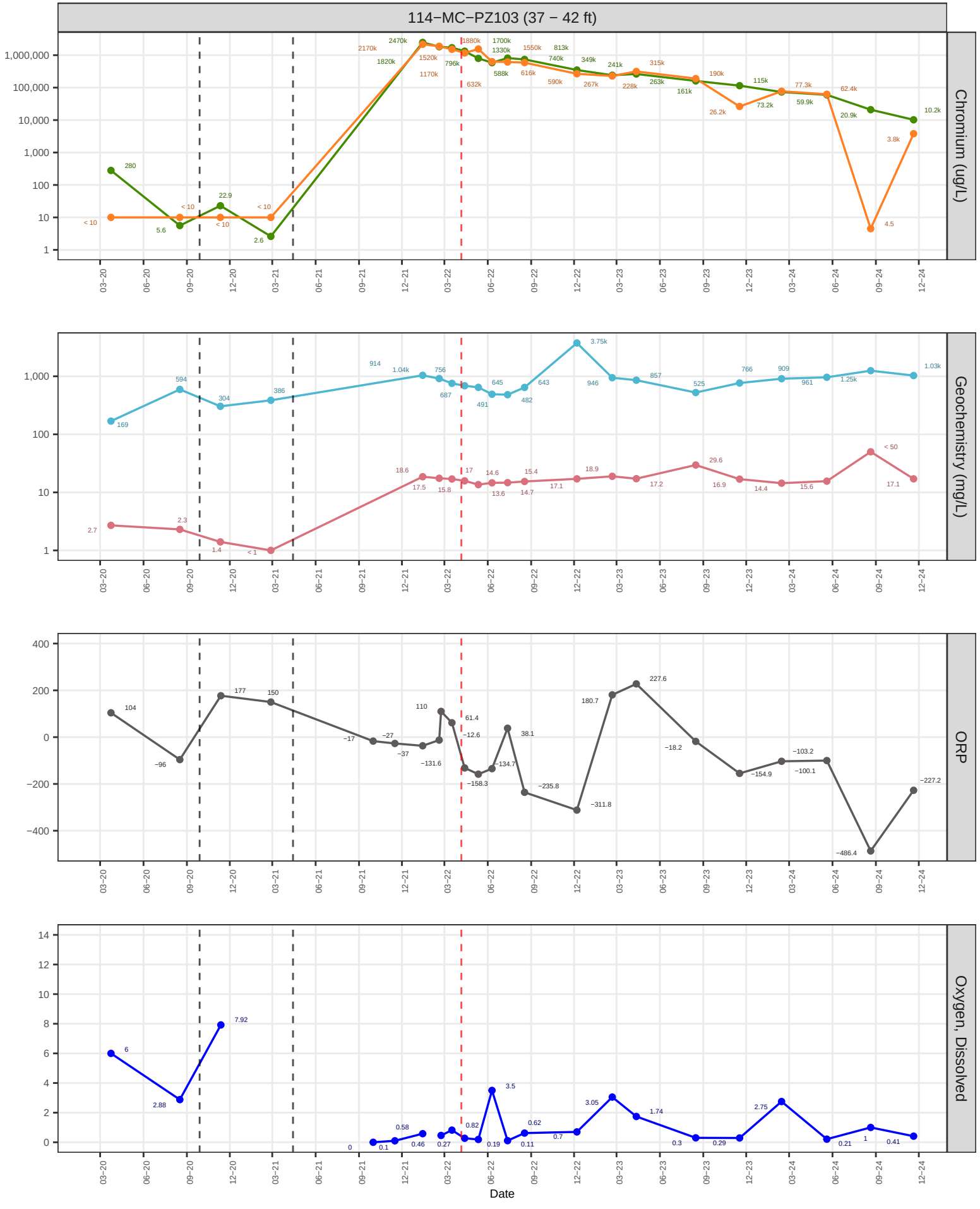

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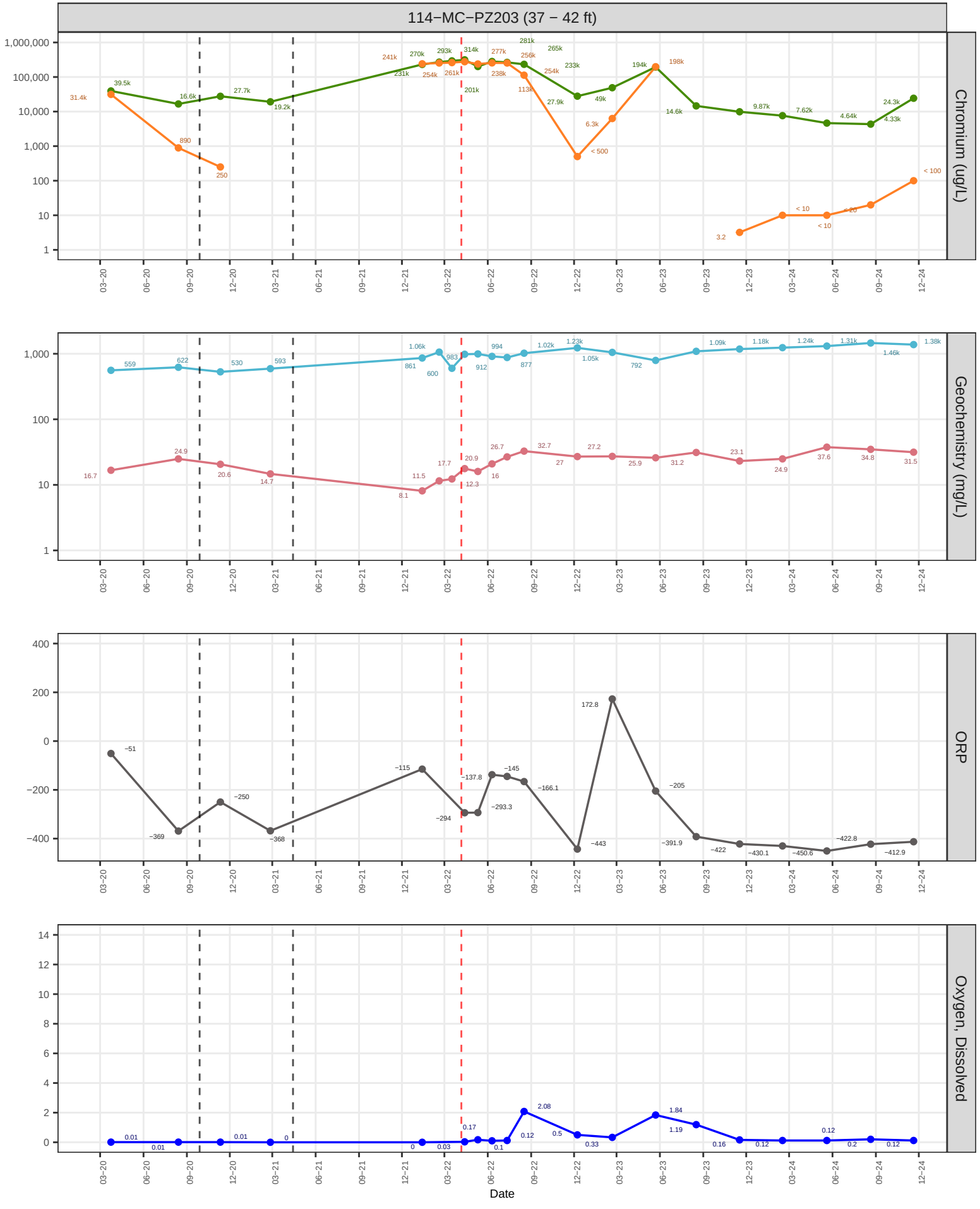

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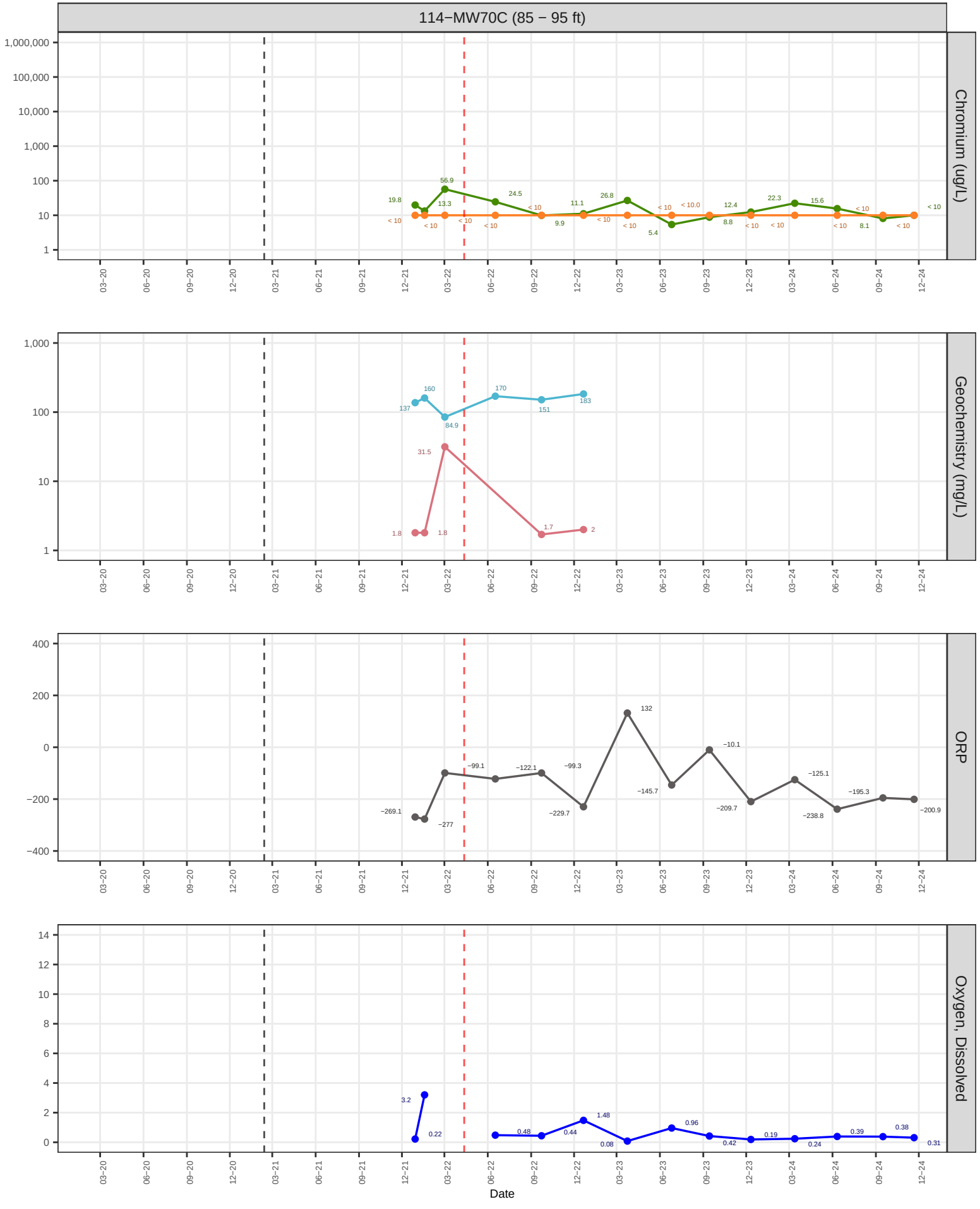

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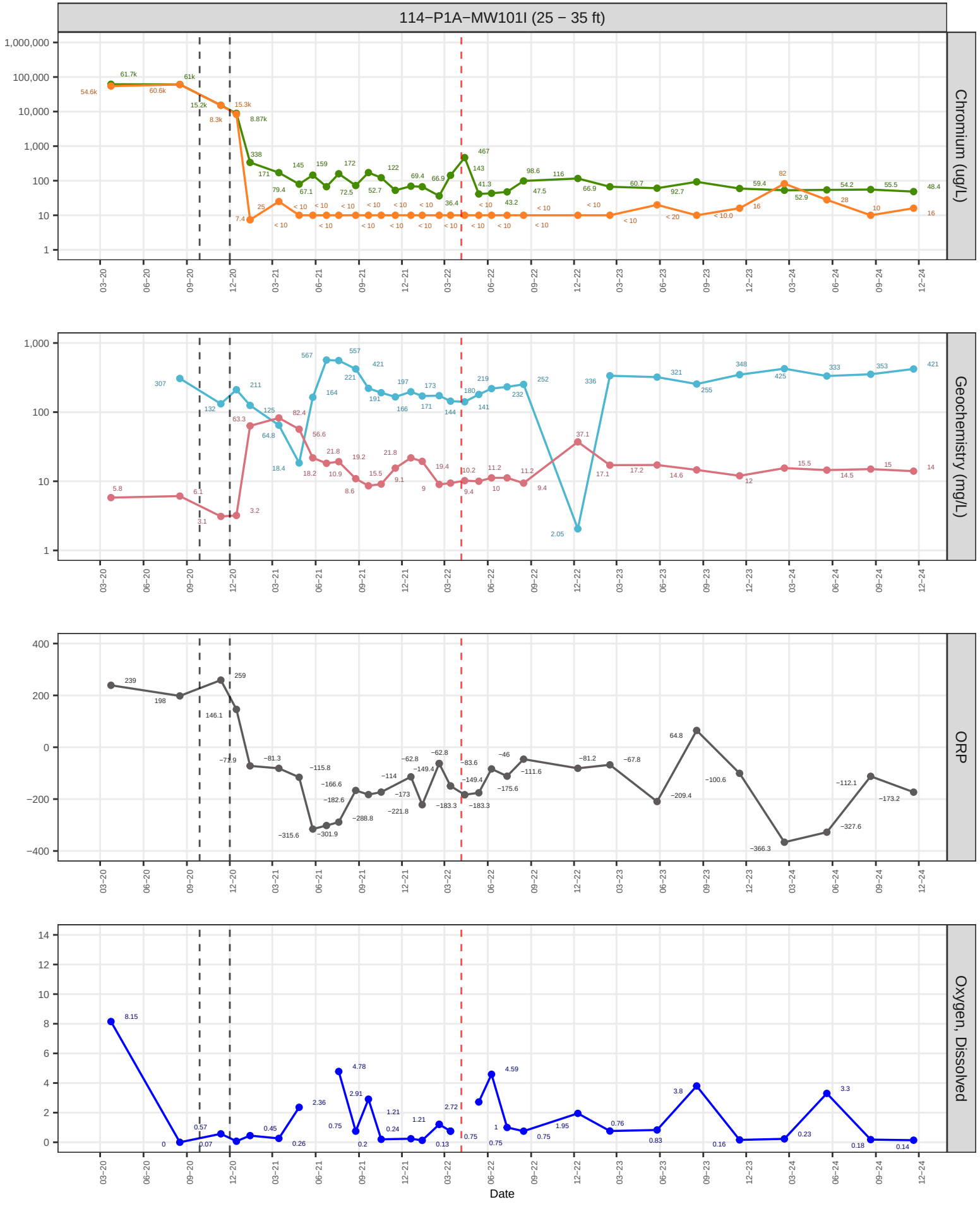

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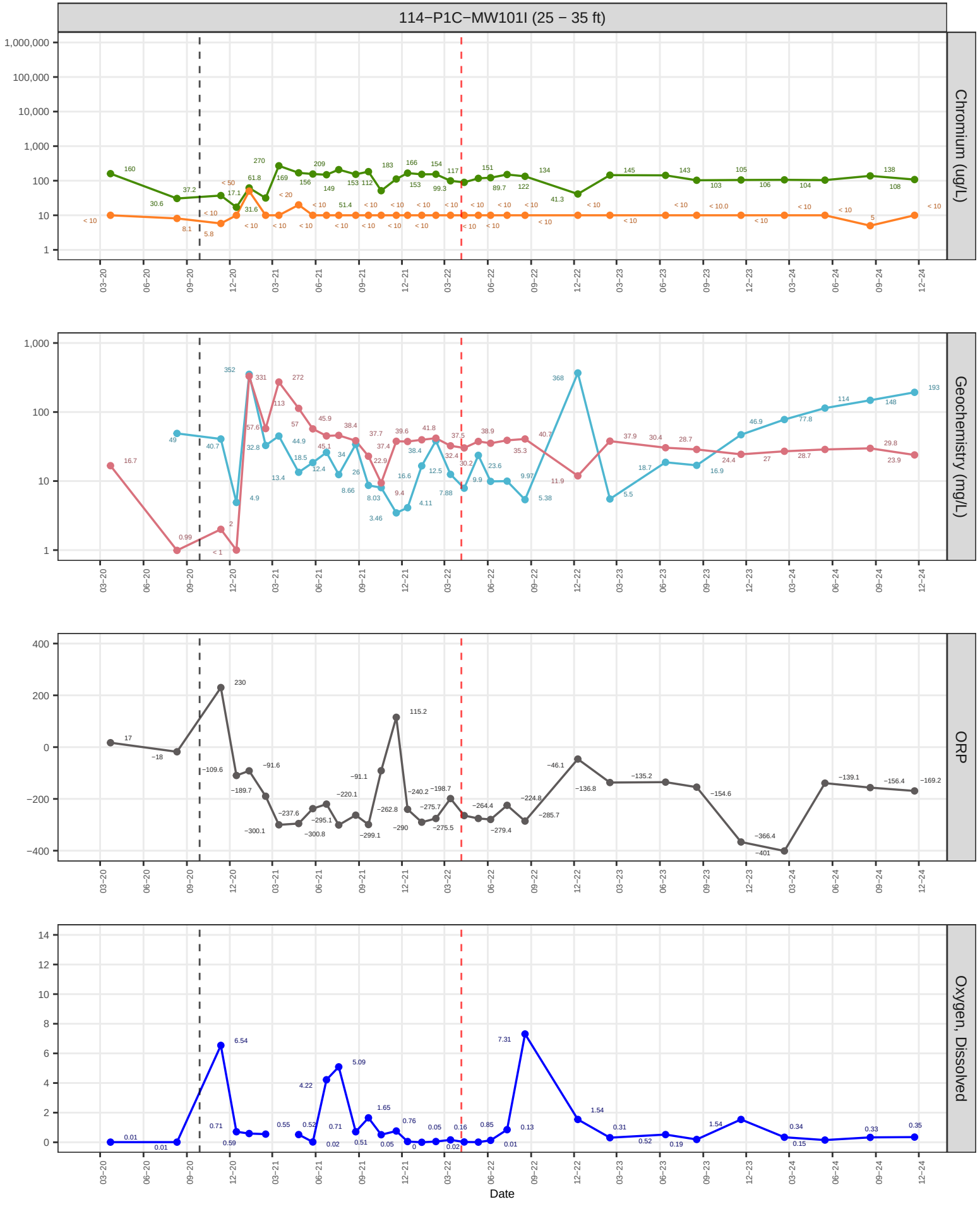

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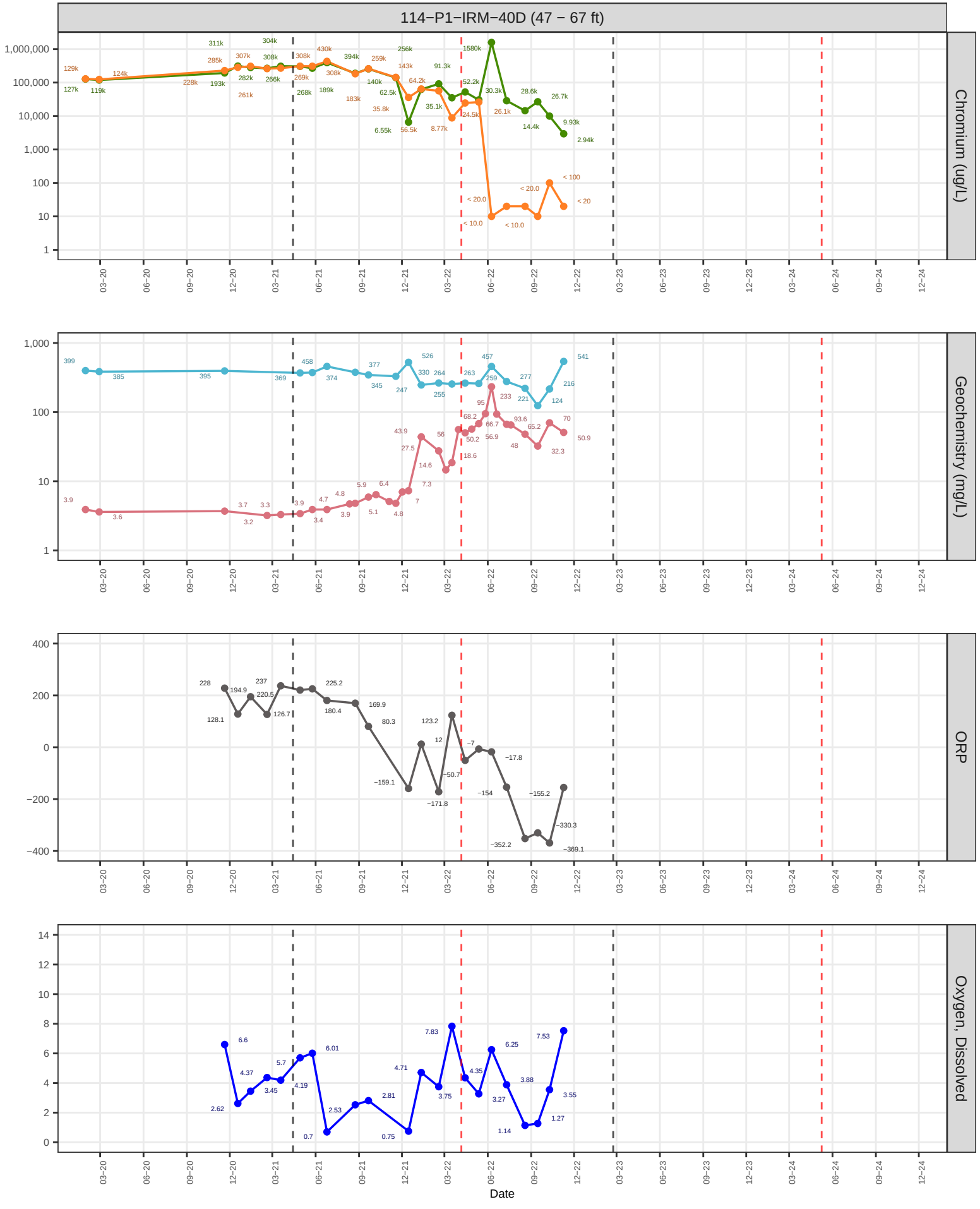

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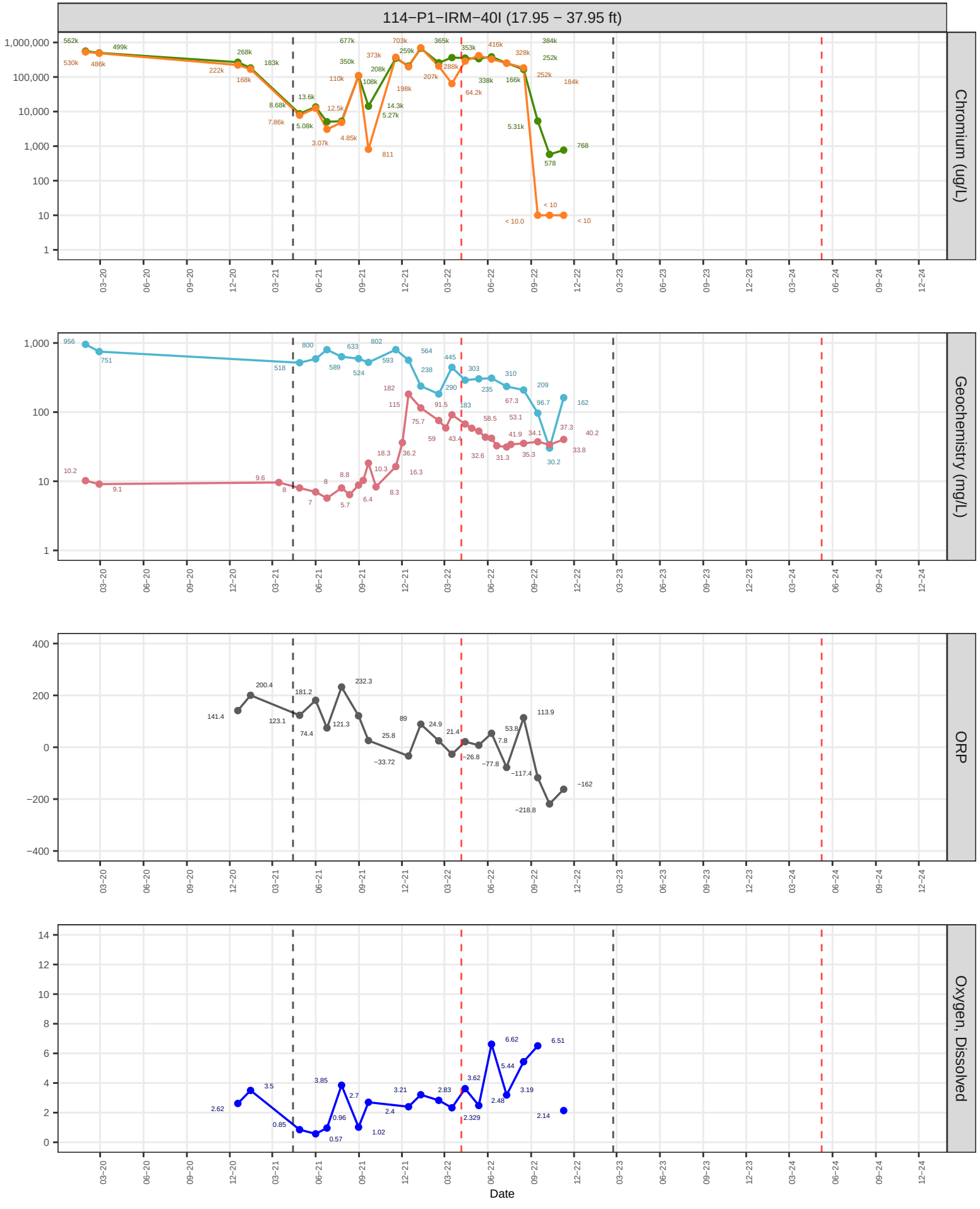

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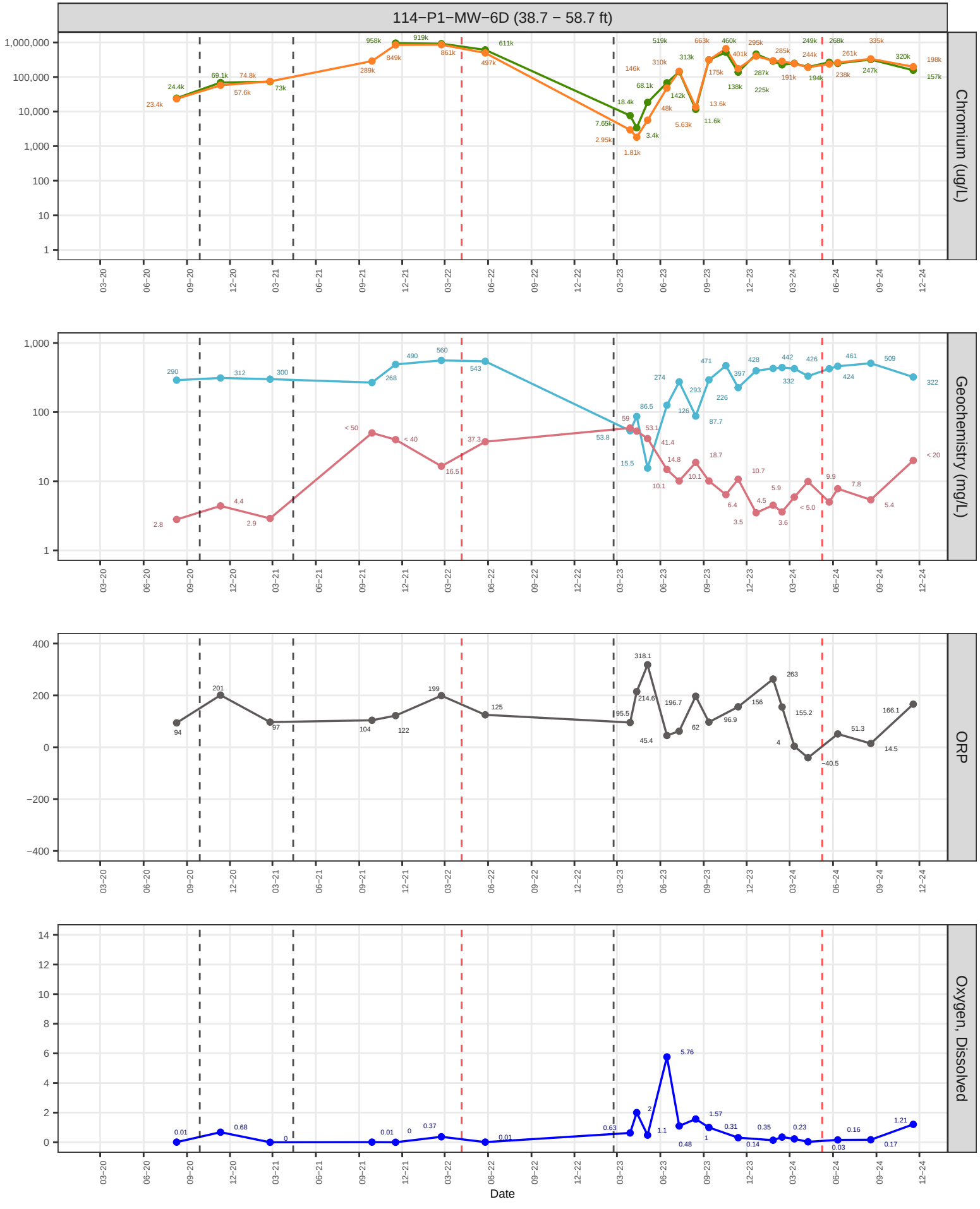

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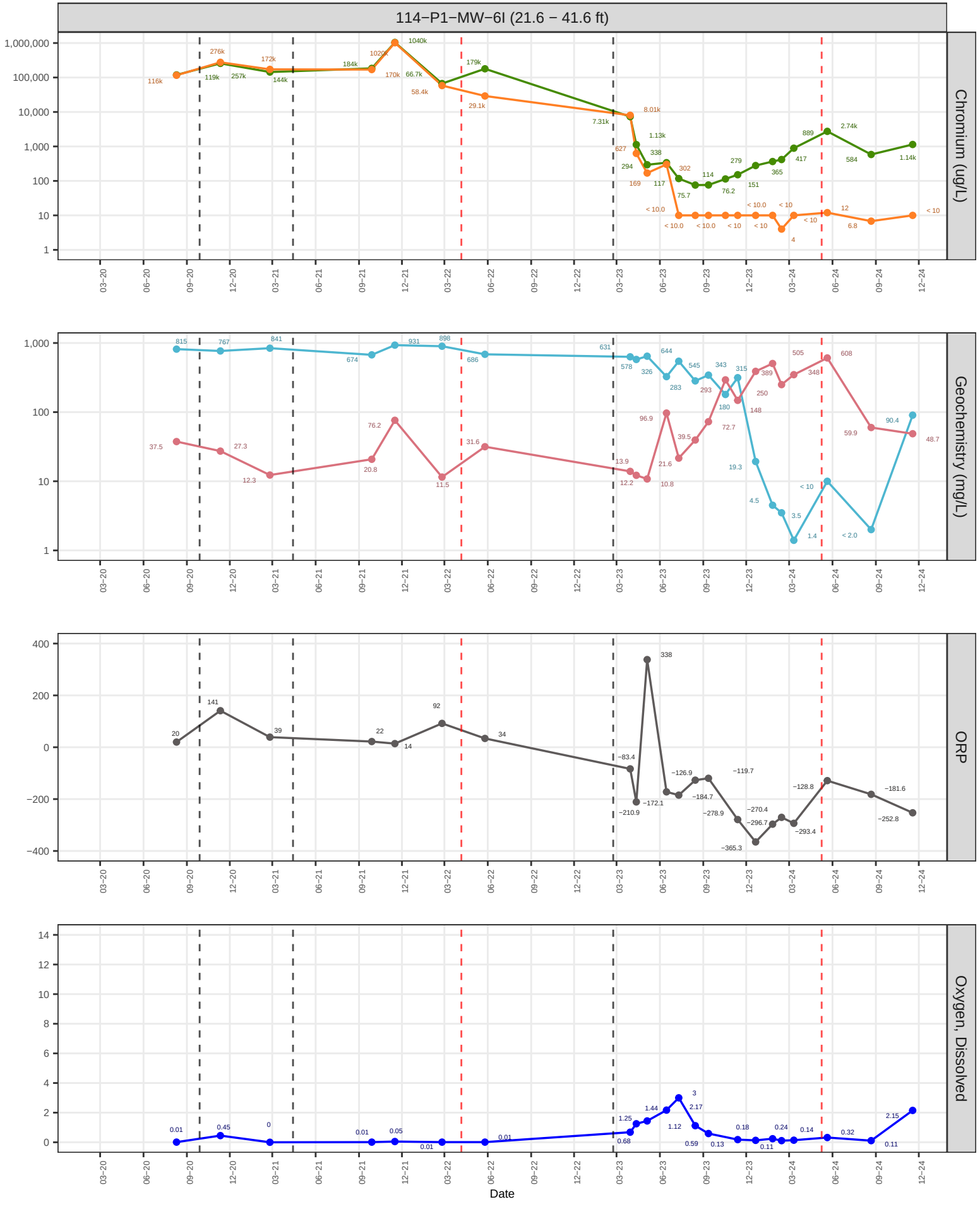

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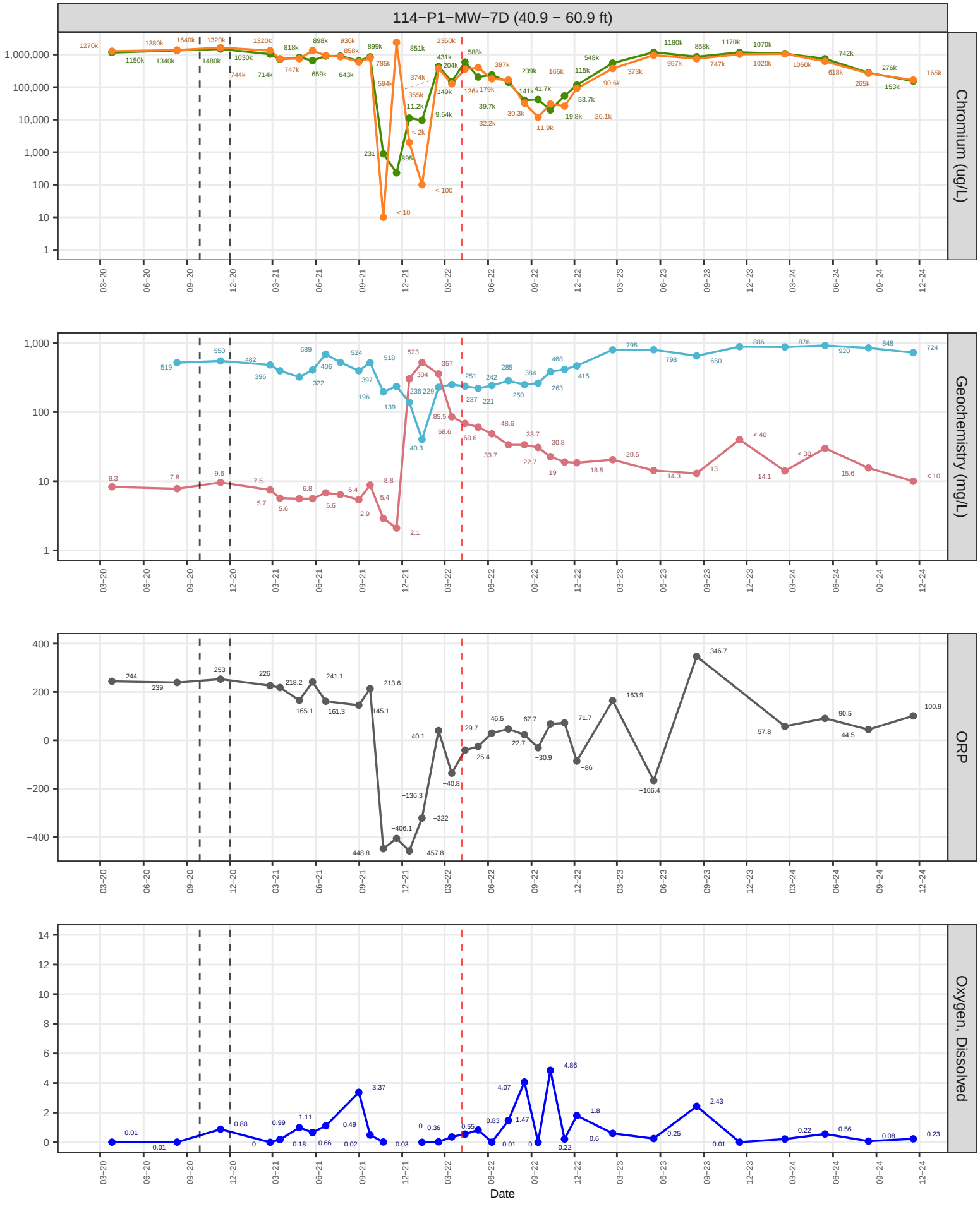

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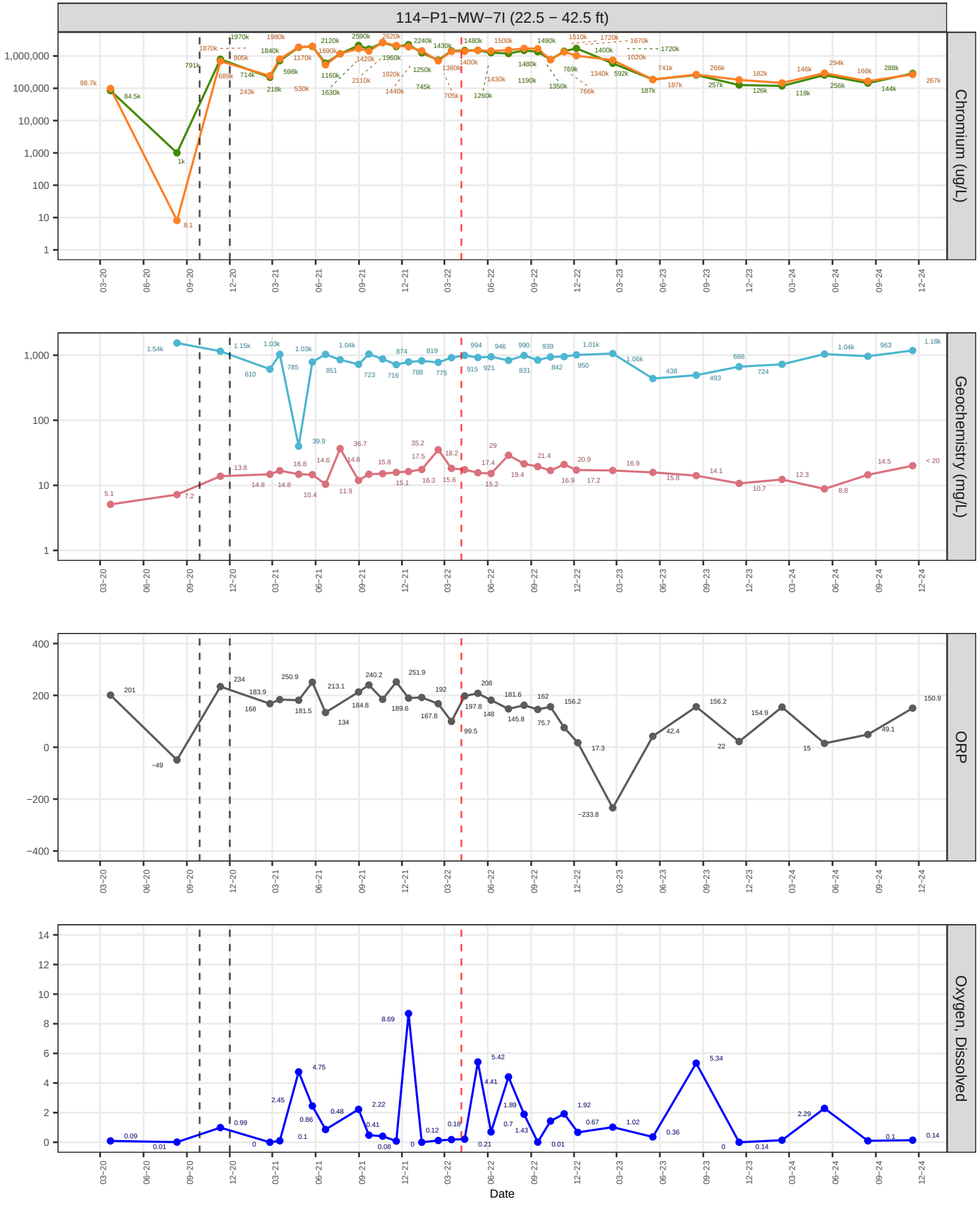

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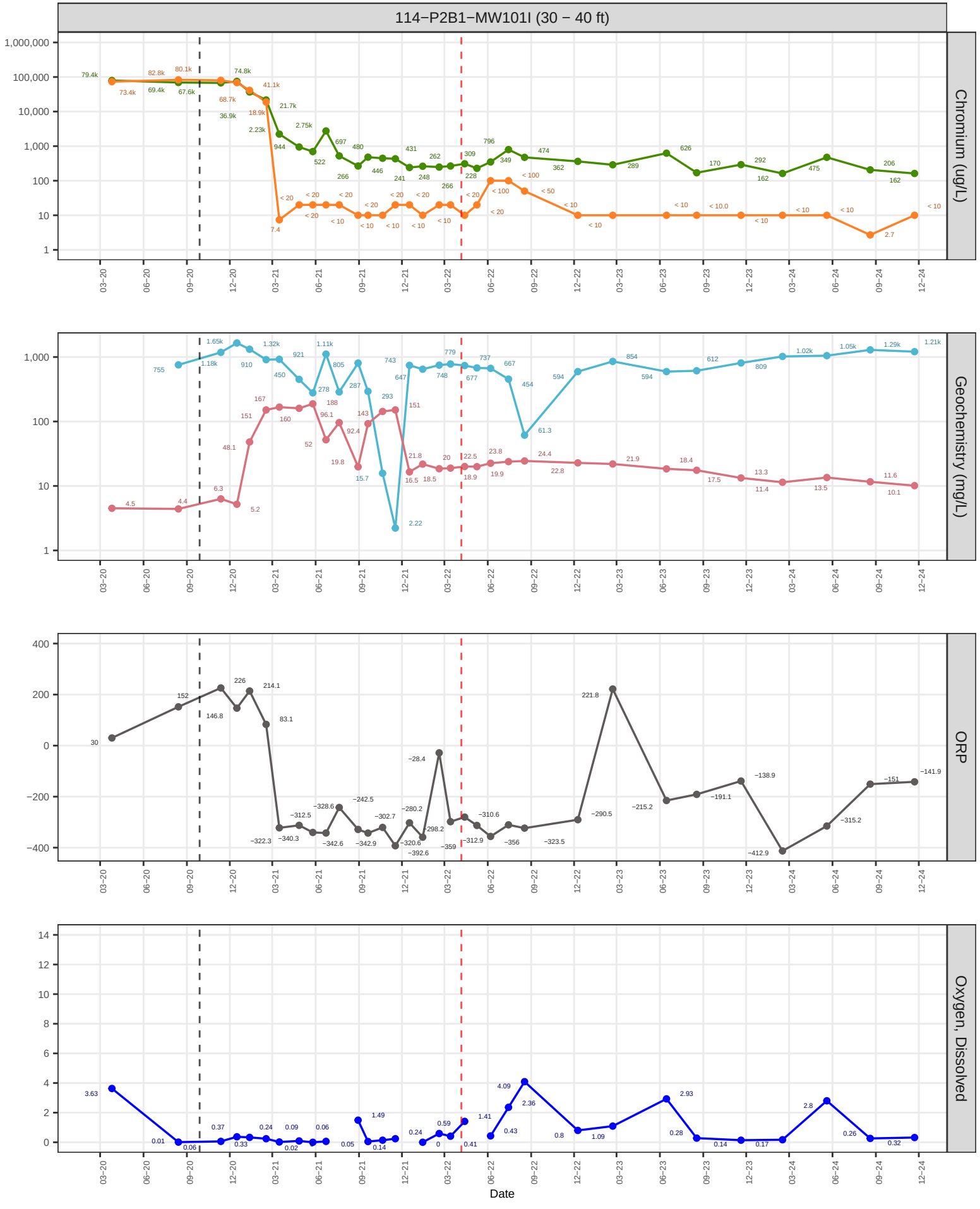

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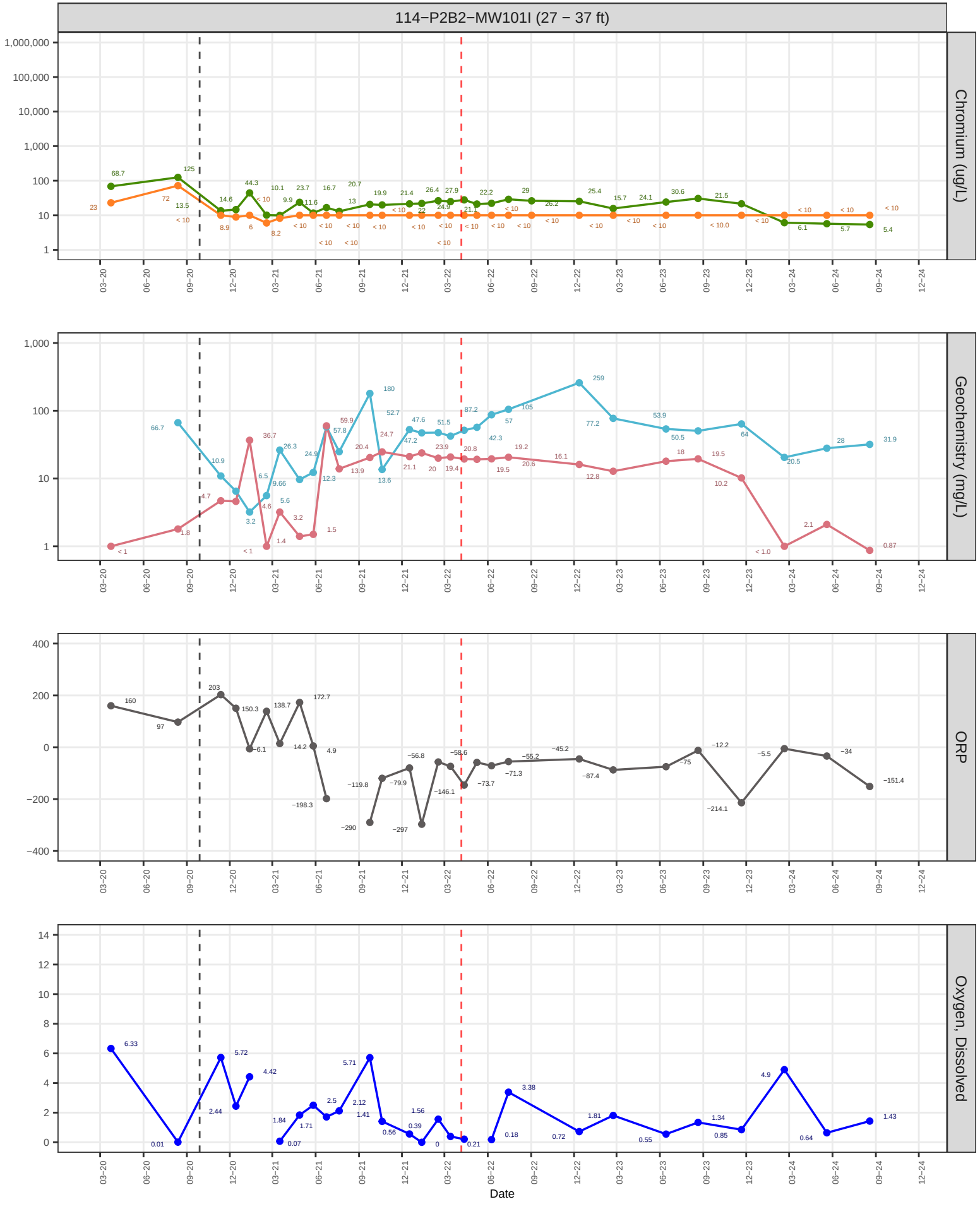

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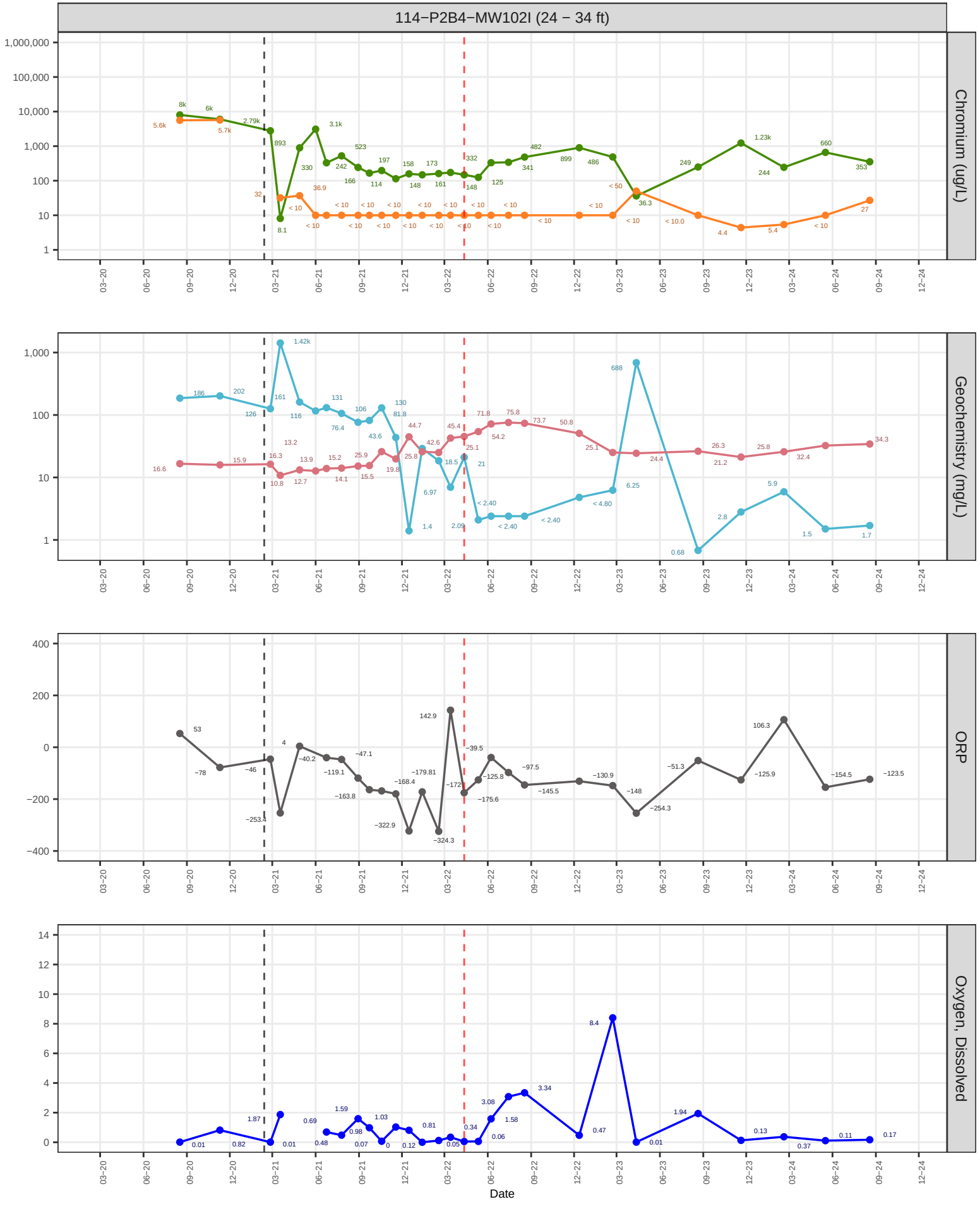

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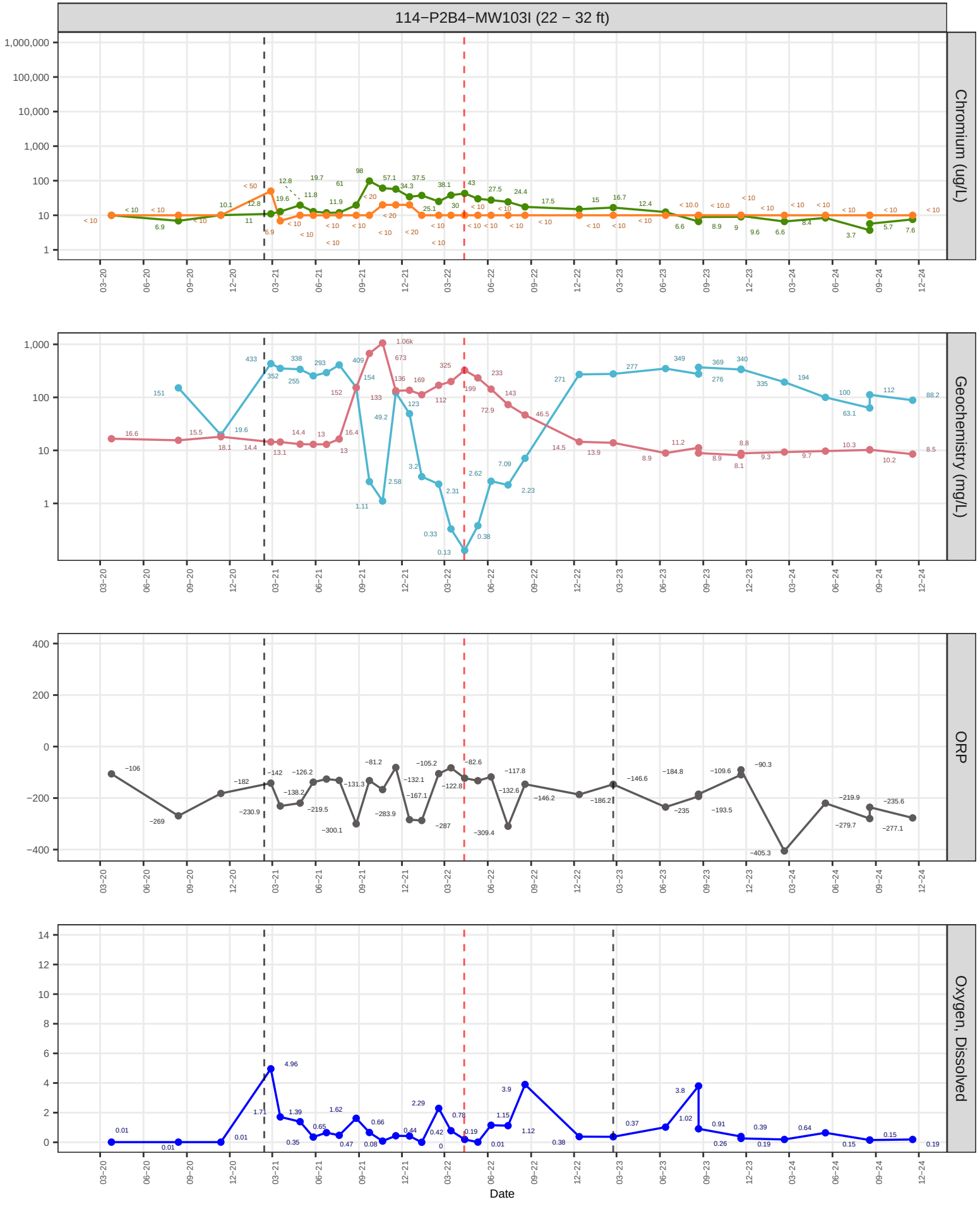

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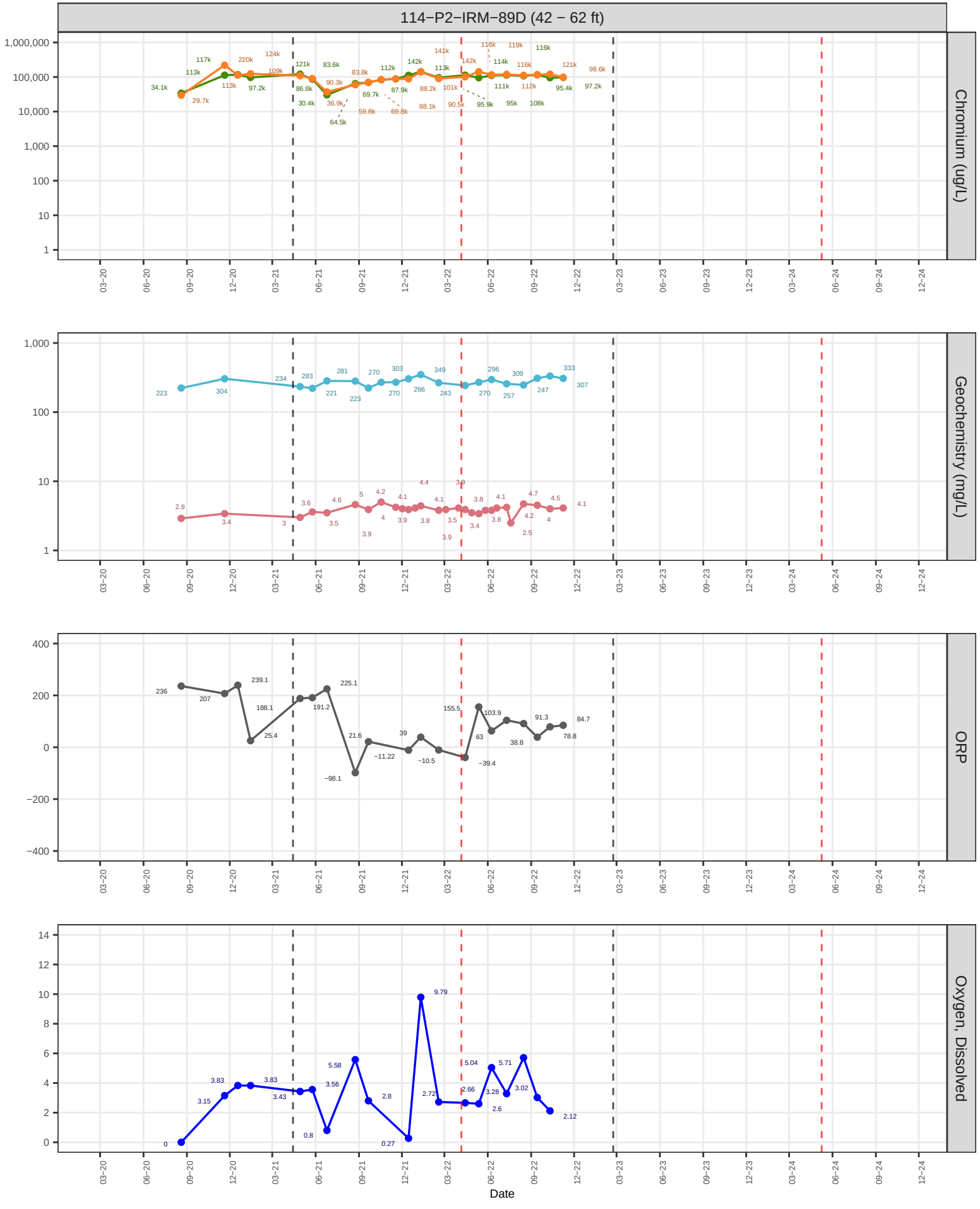

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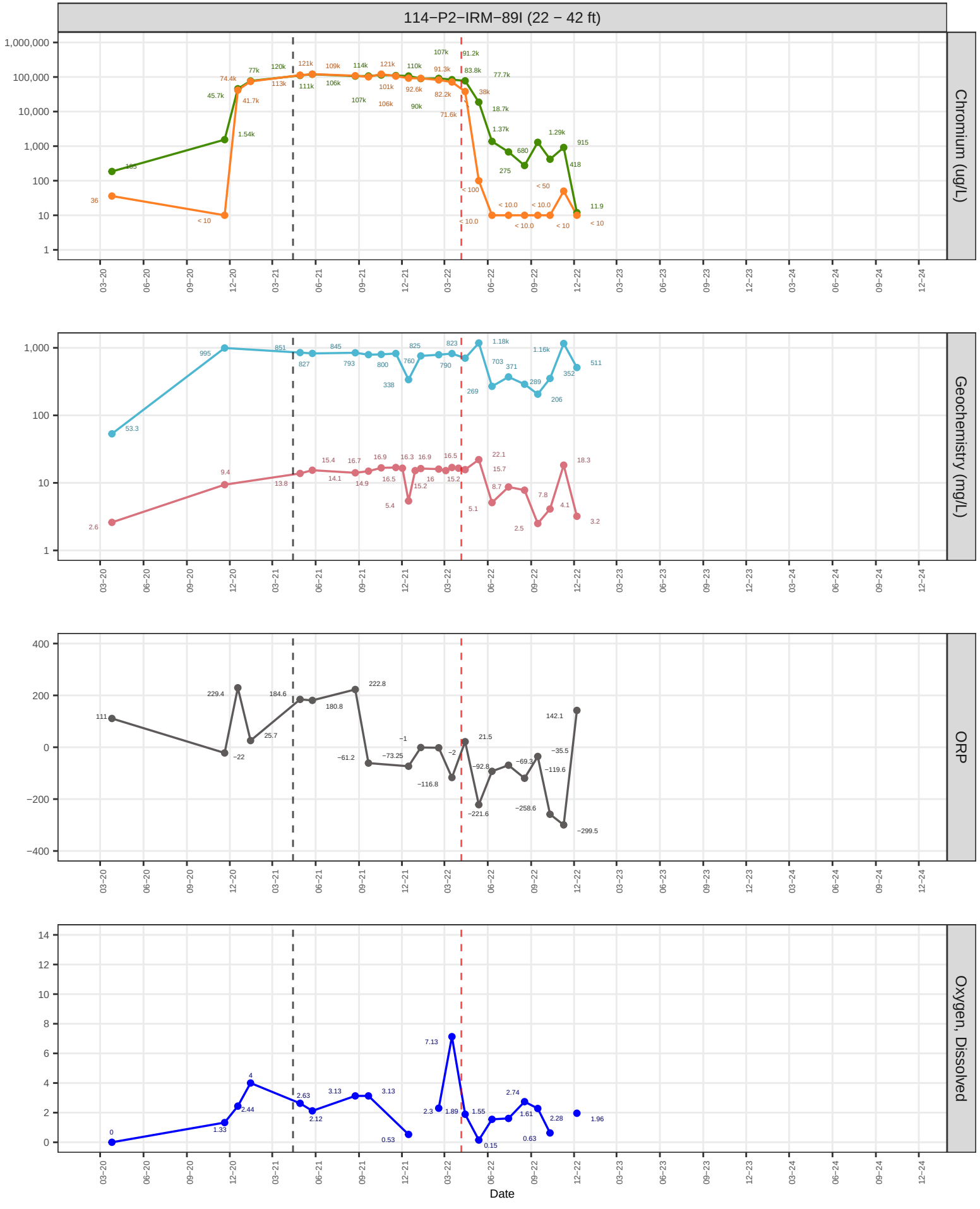

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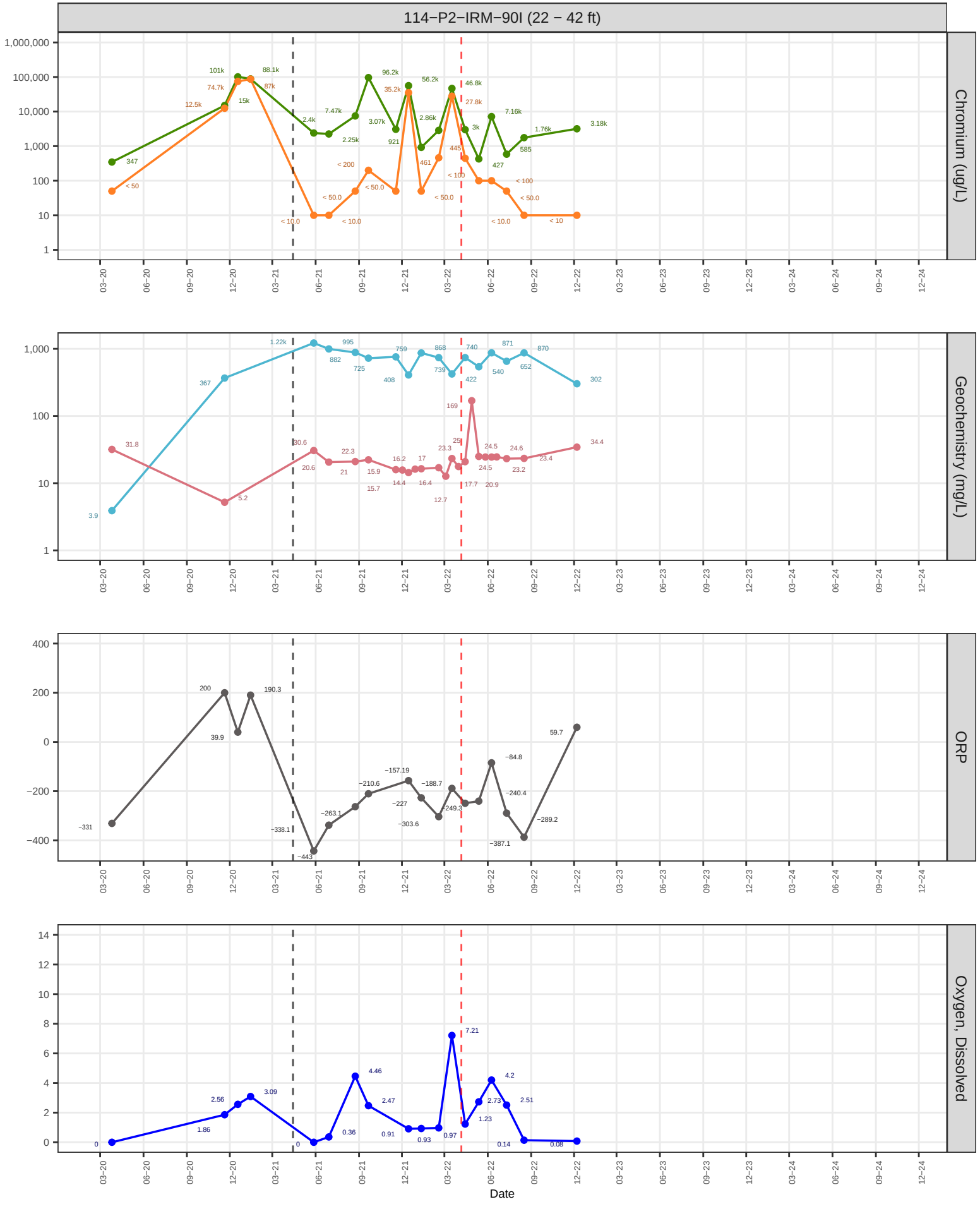

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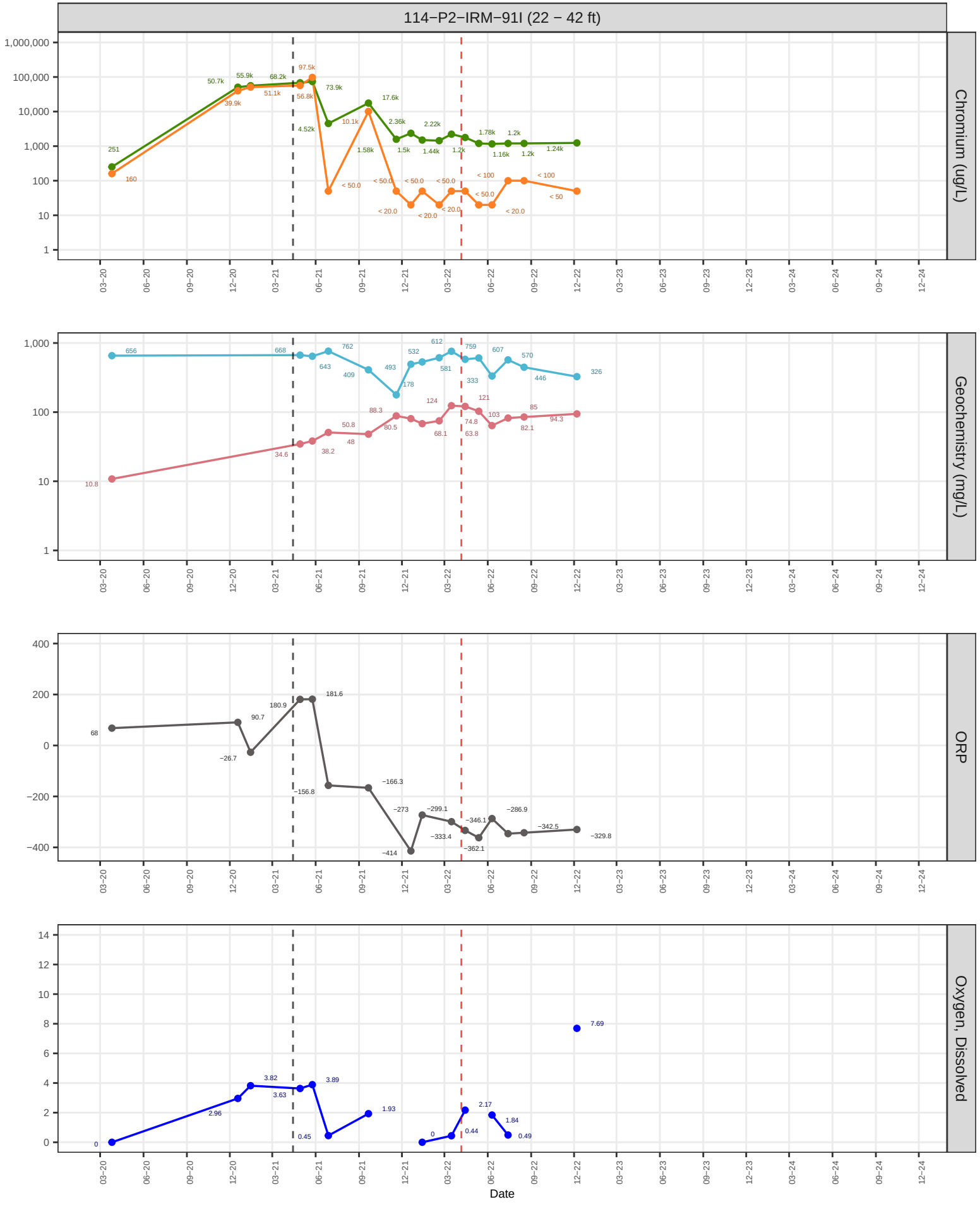

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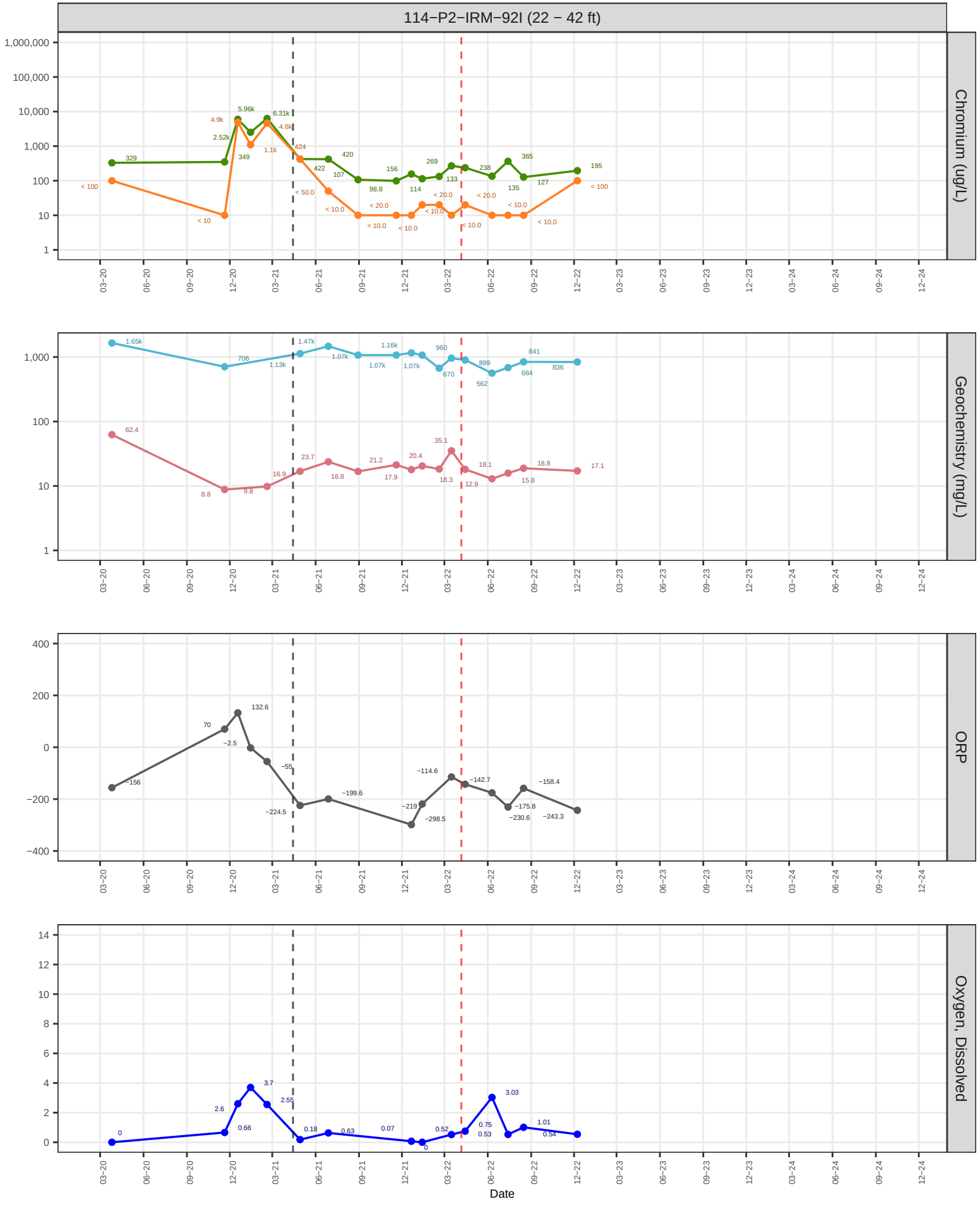

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**Performance Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Phase II**

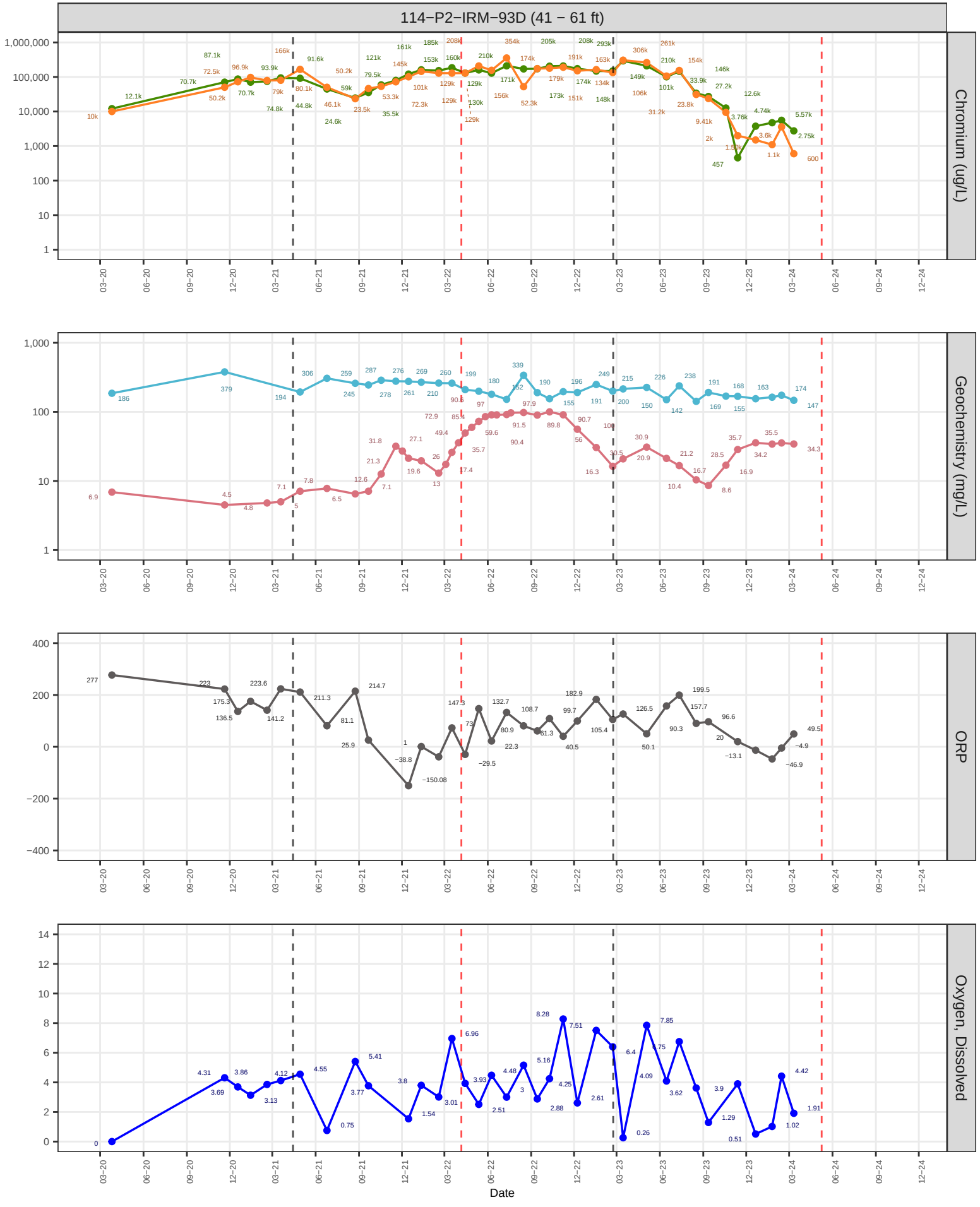

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**Performance Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Phase II**

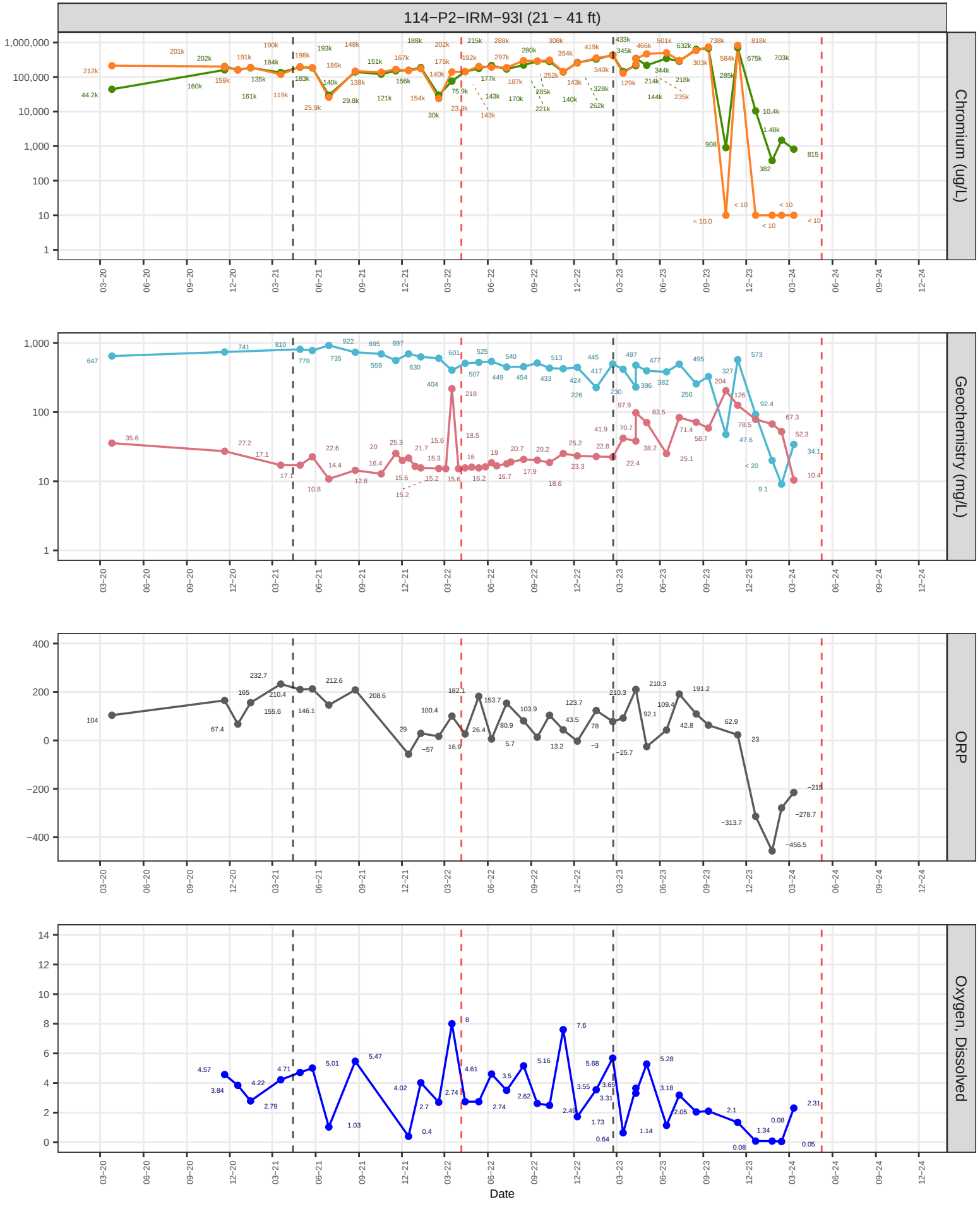

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**Performance Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Phase II**

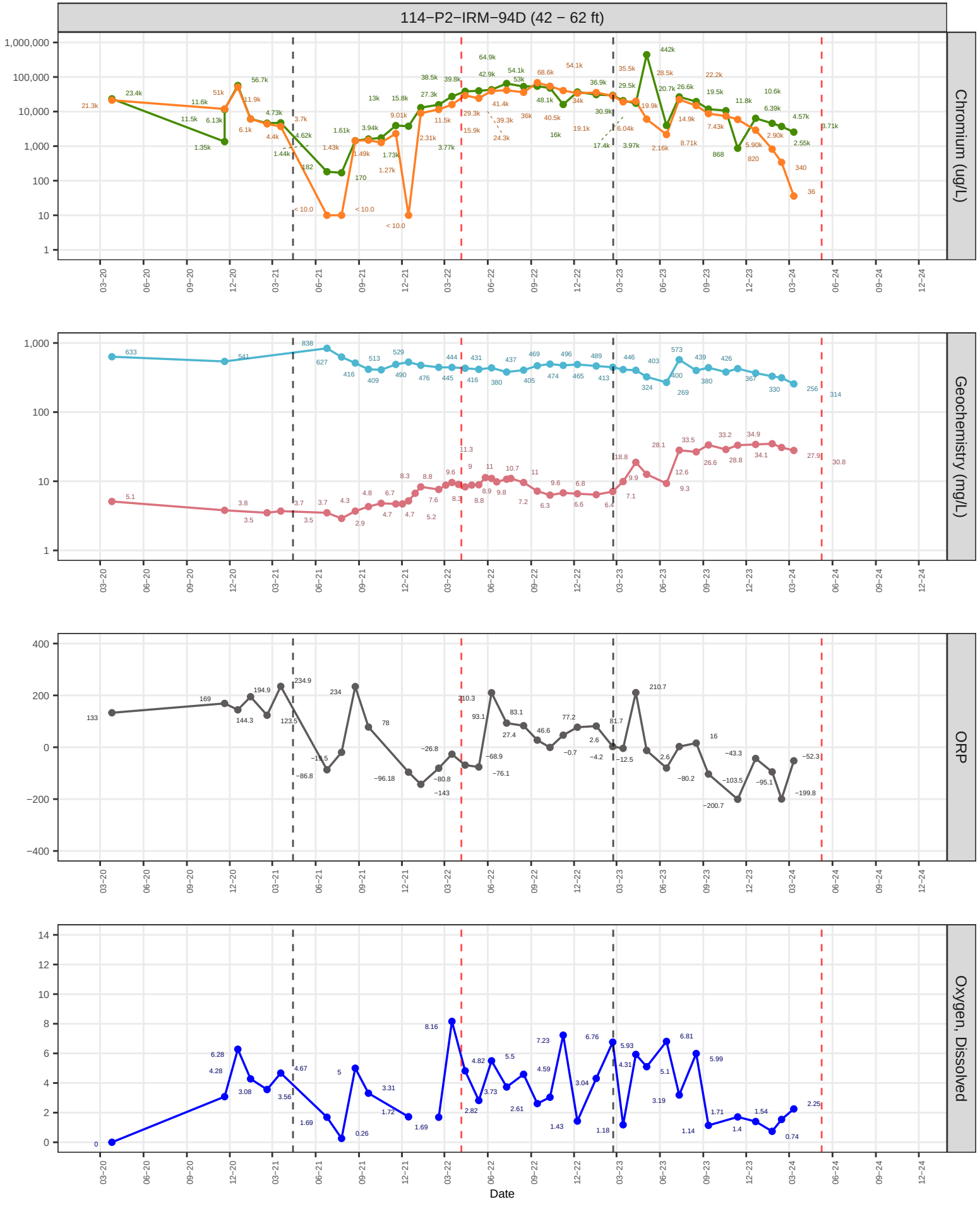

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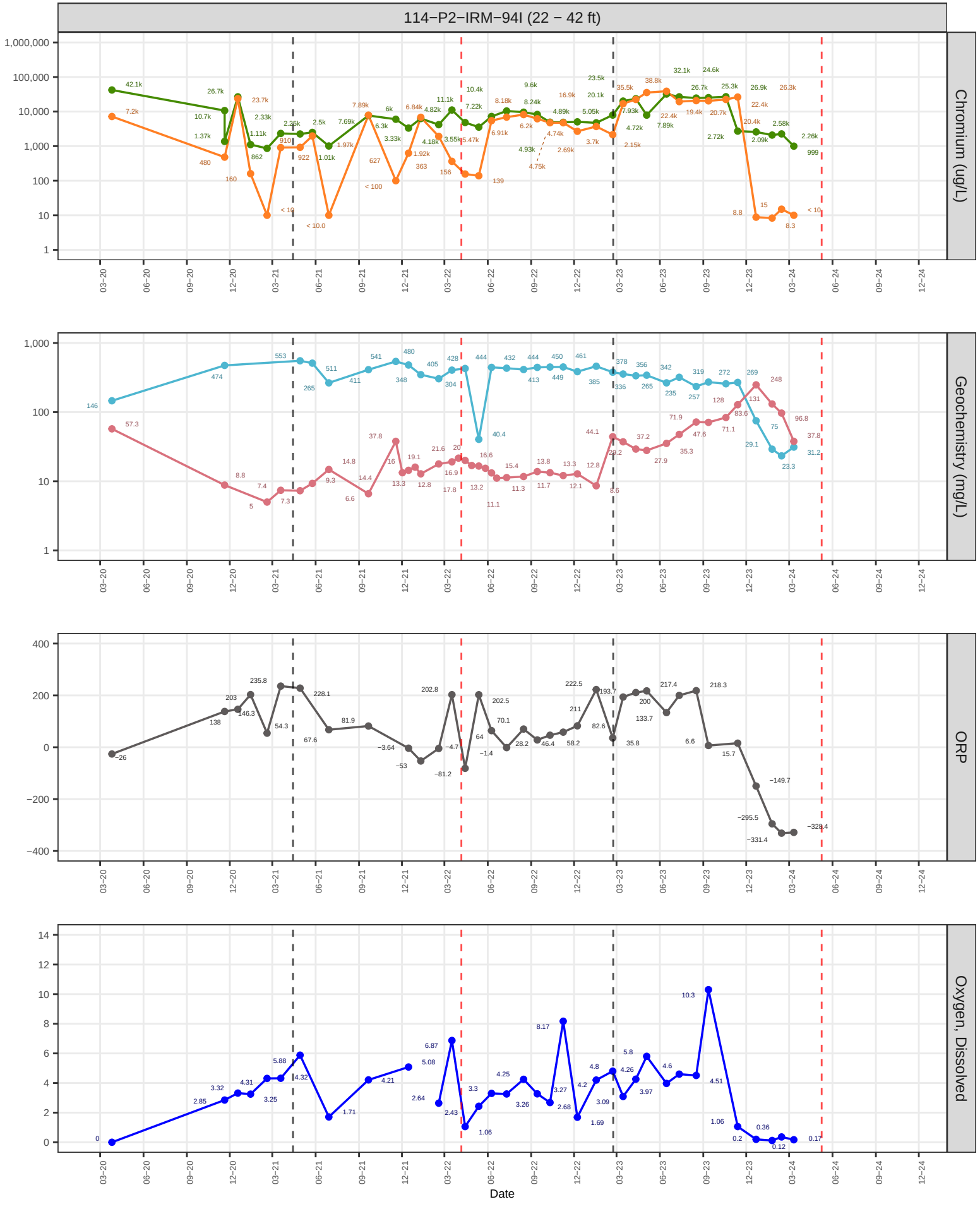

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**Performance Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Phase II**

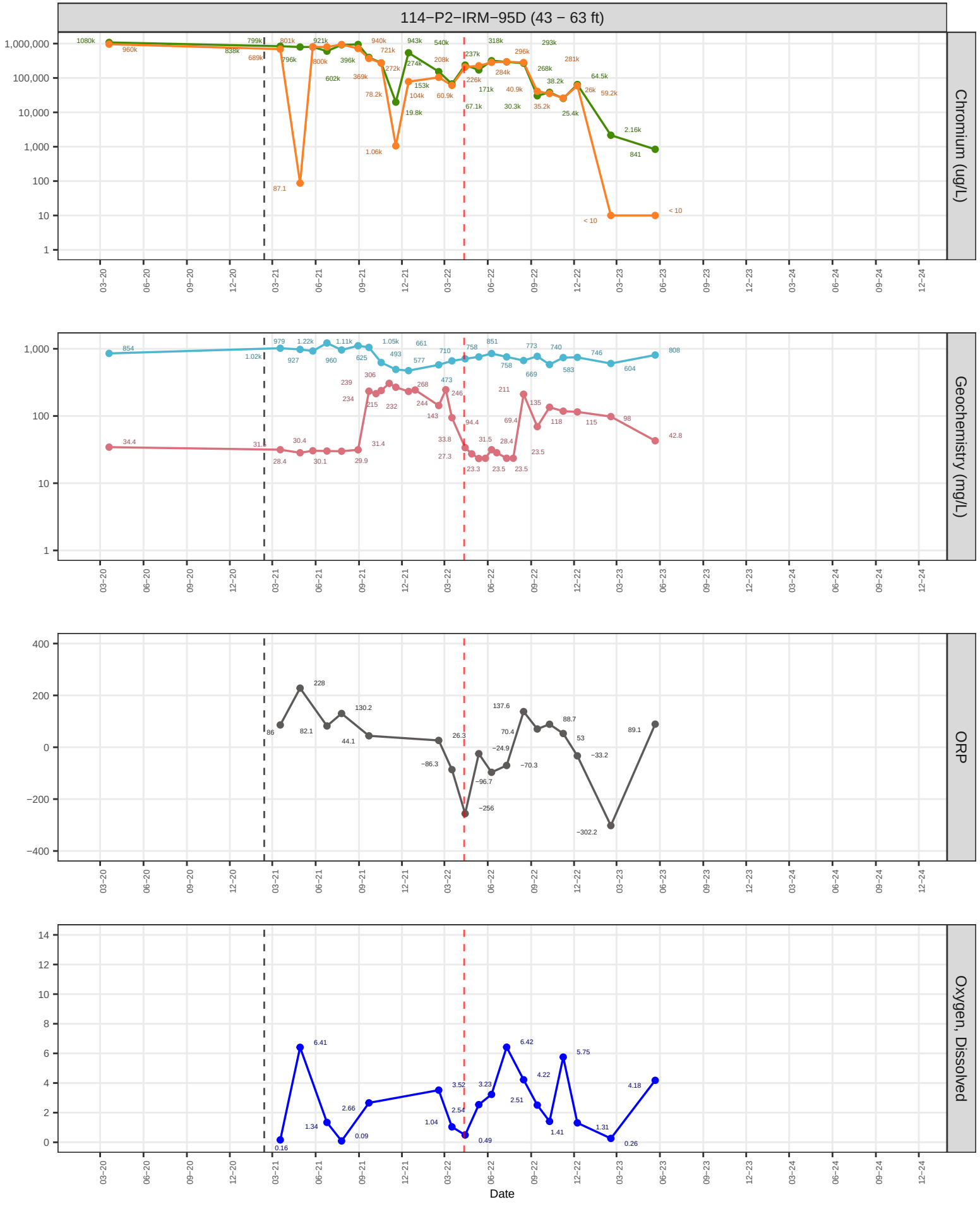

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**Performance Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Phase II**

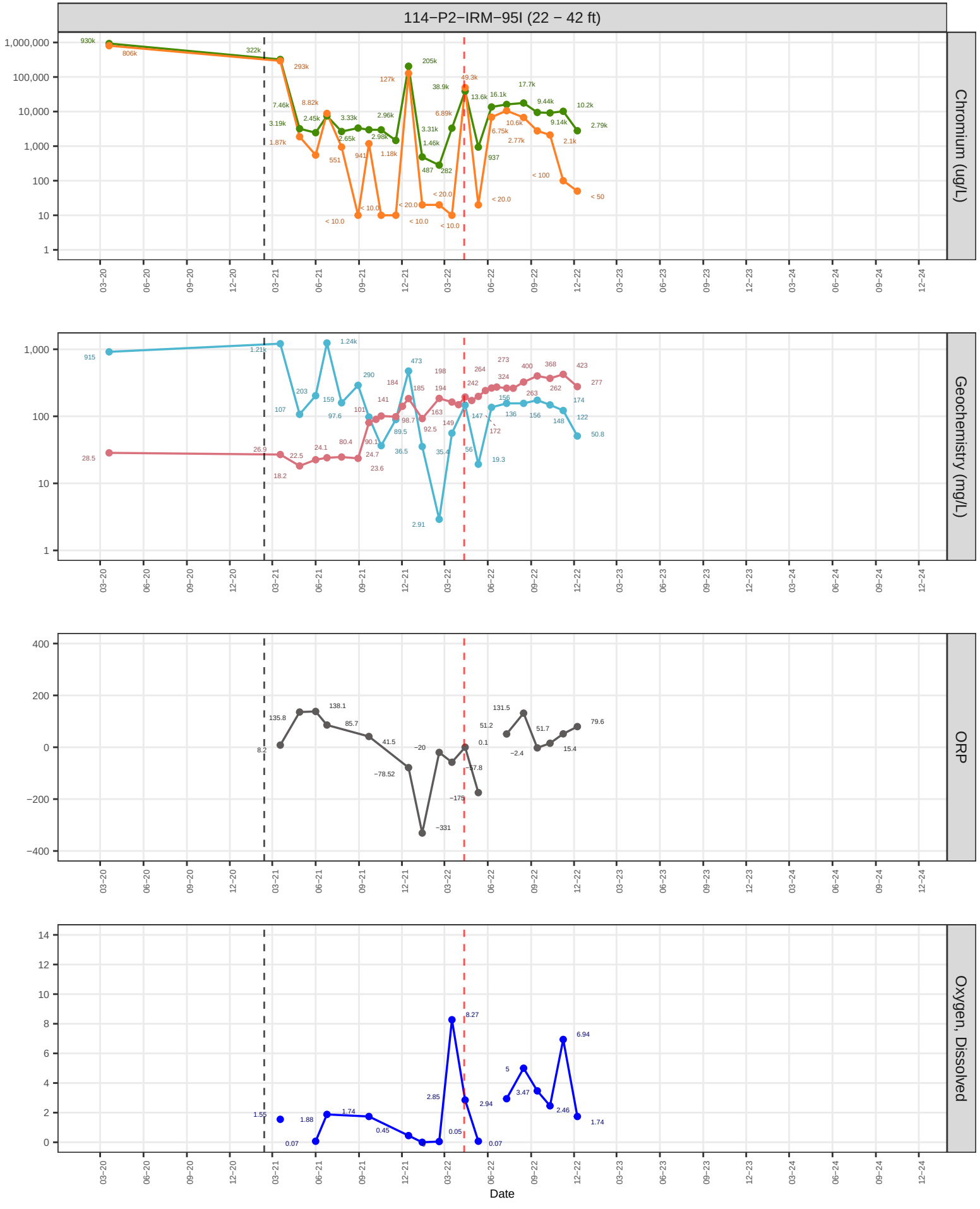

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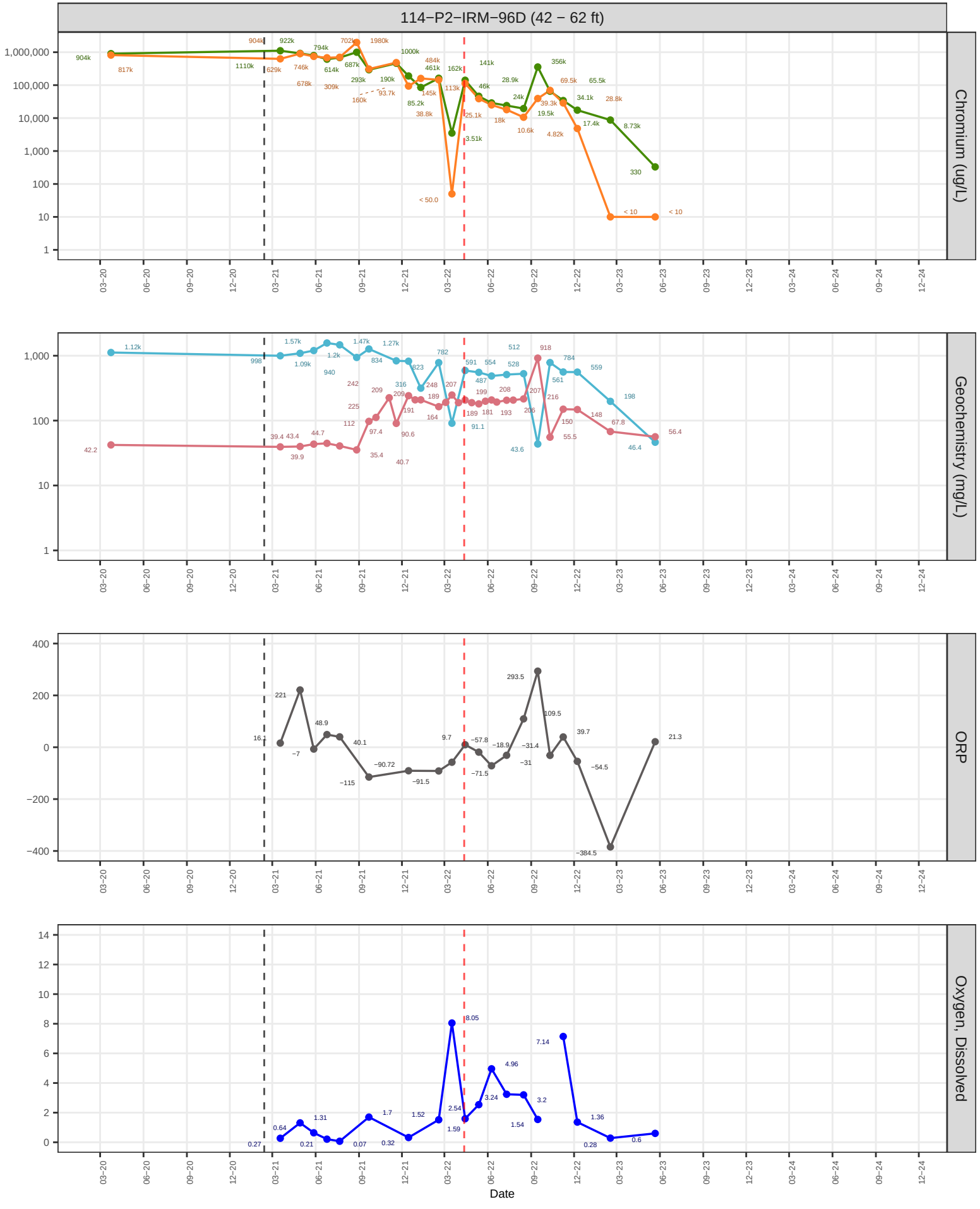

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**Performance Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Phase II**

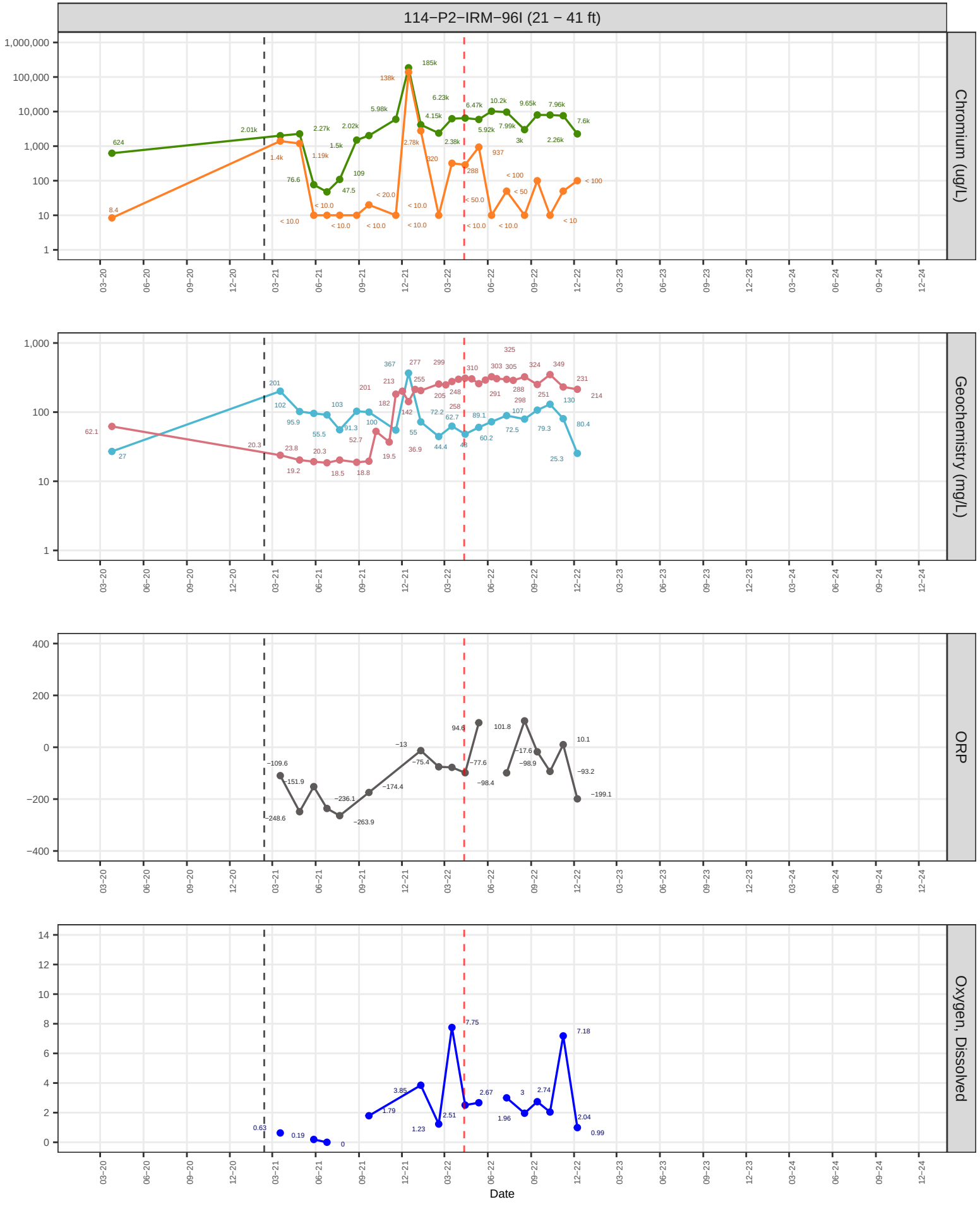

**Appendix B−2**
**Performance Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Phase II**

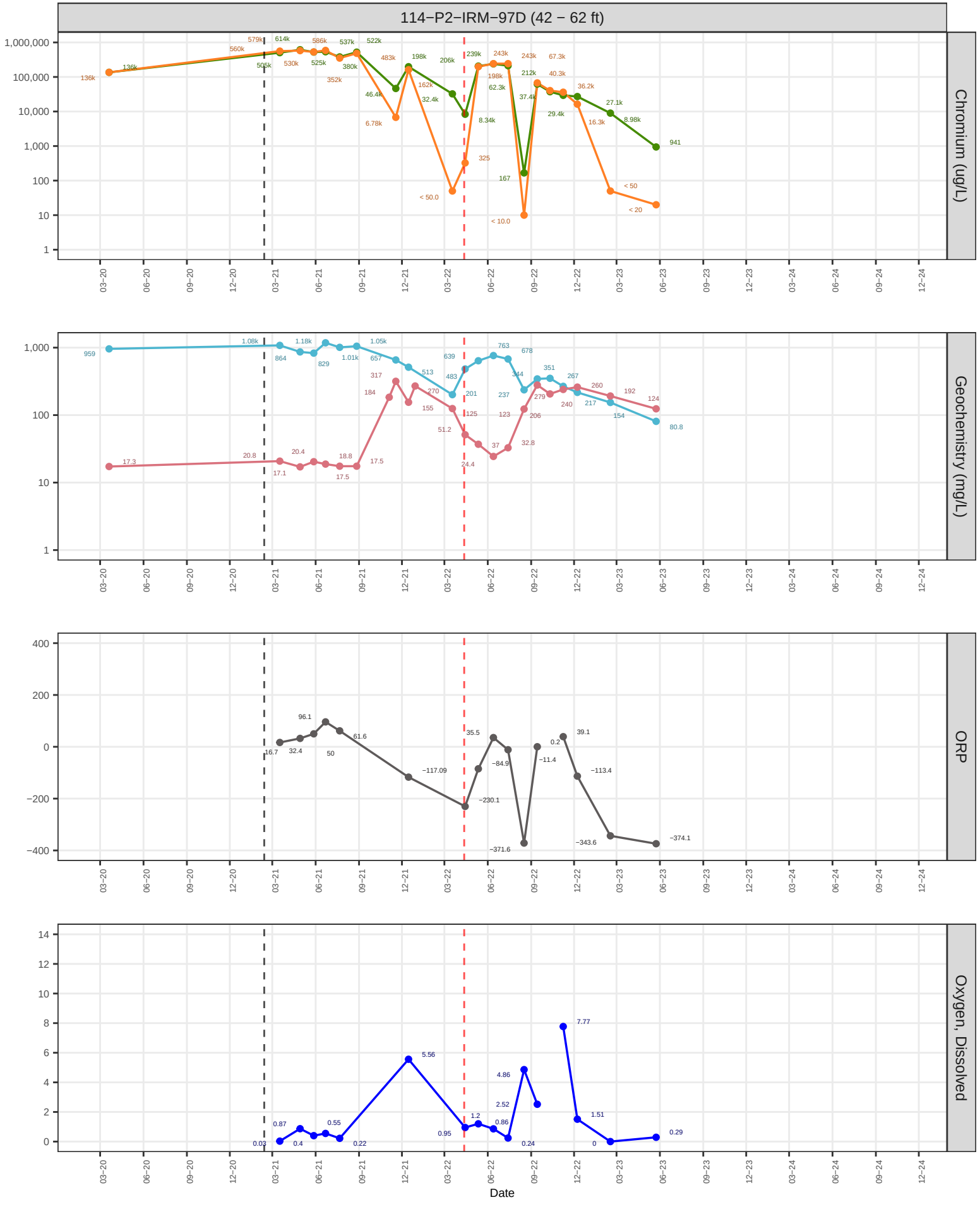

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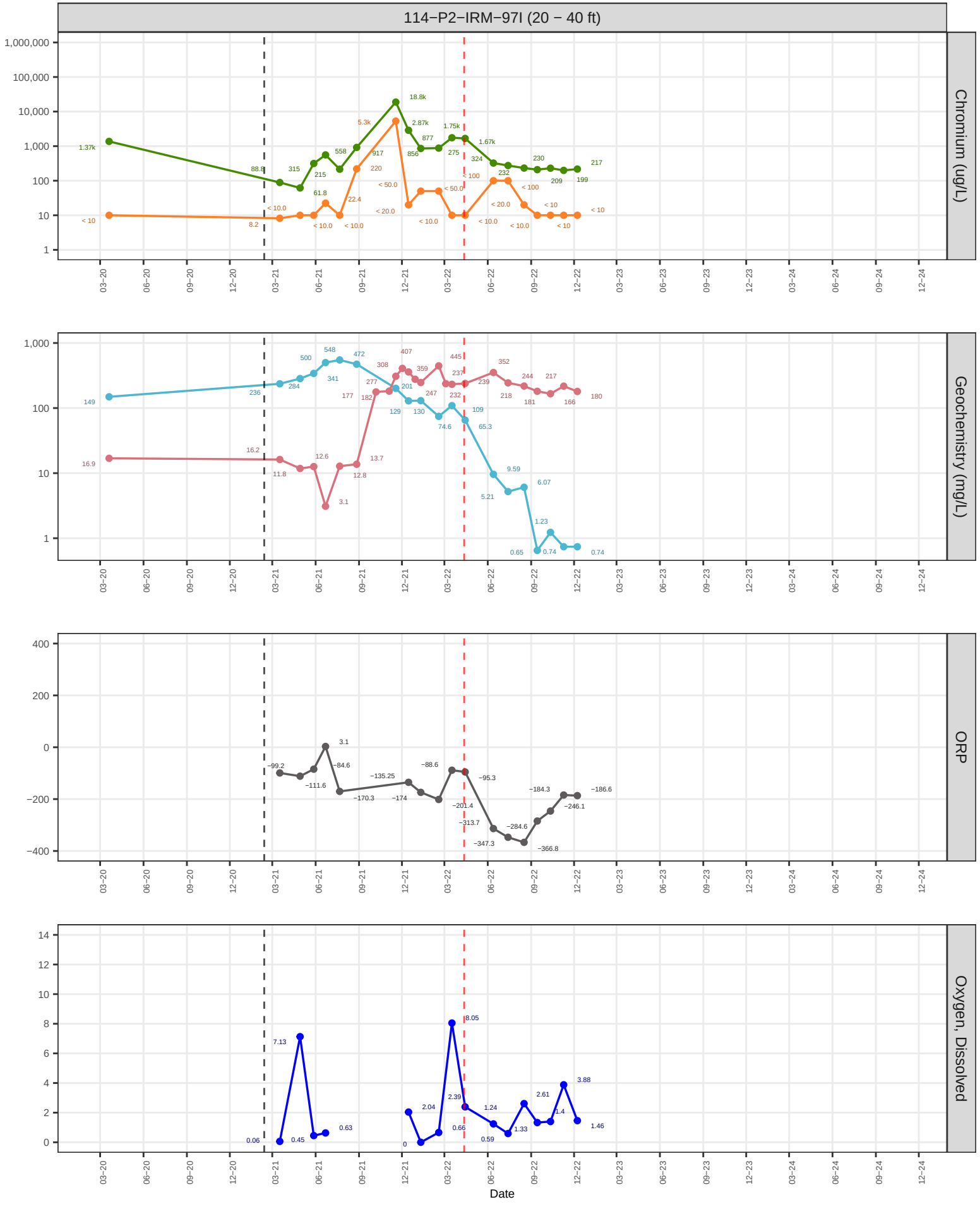

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**Performance Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Phase II**

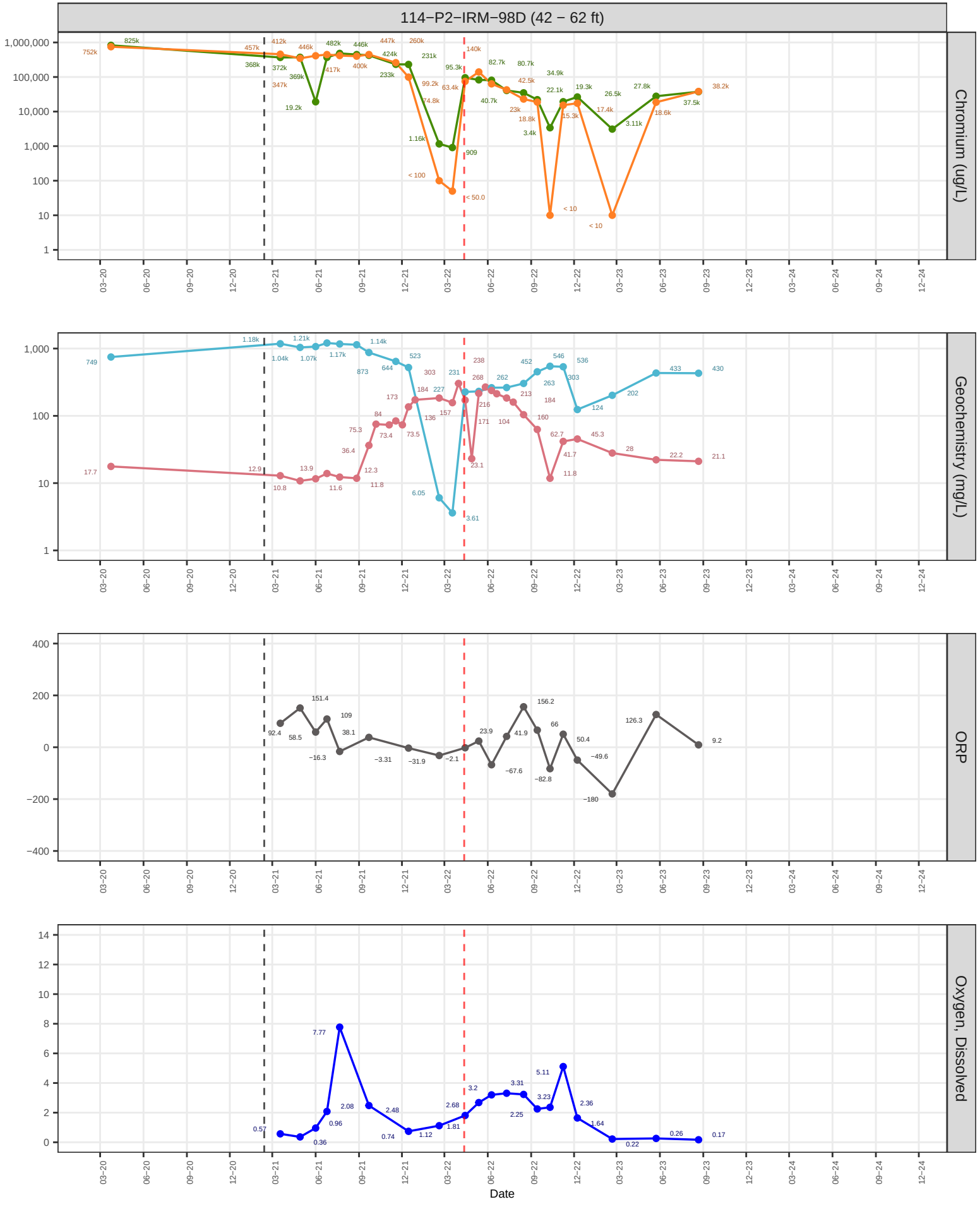

**Appendix B−2**
**Performance Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Phase II**

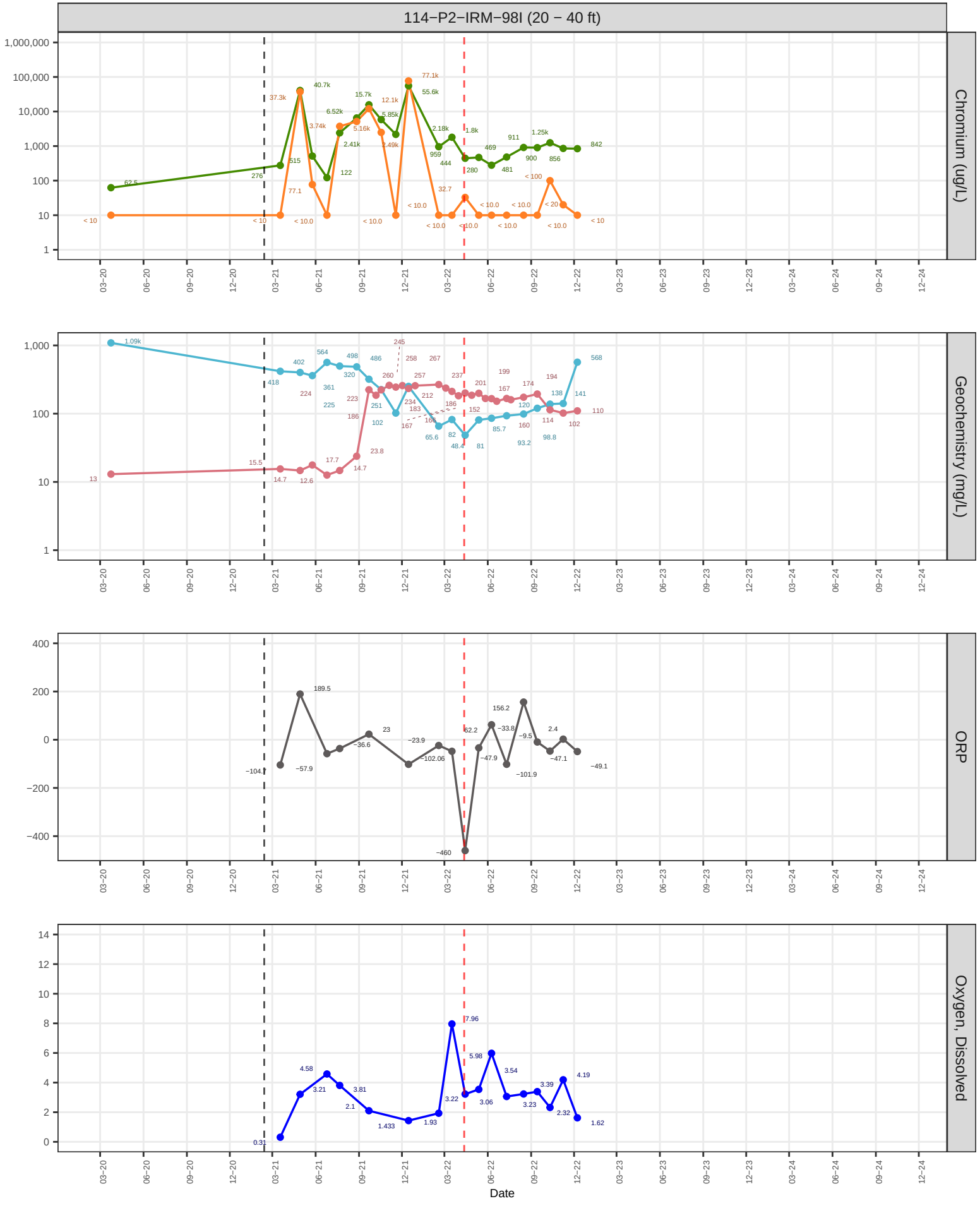

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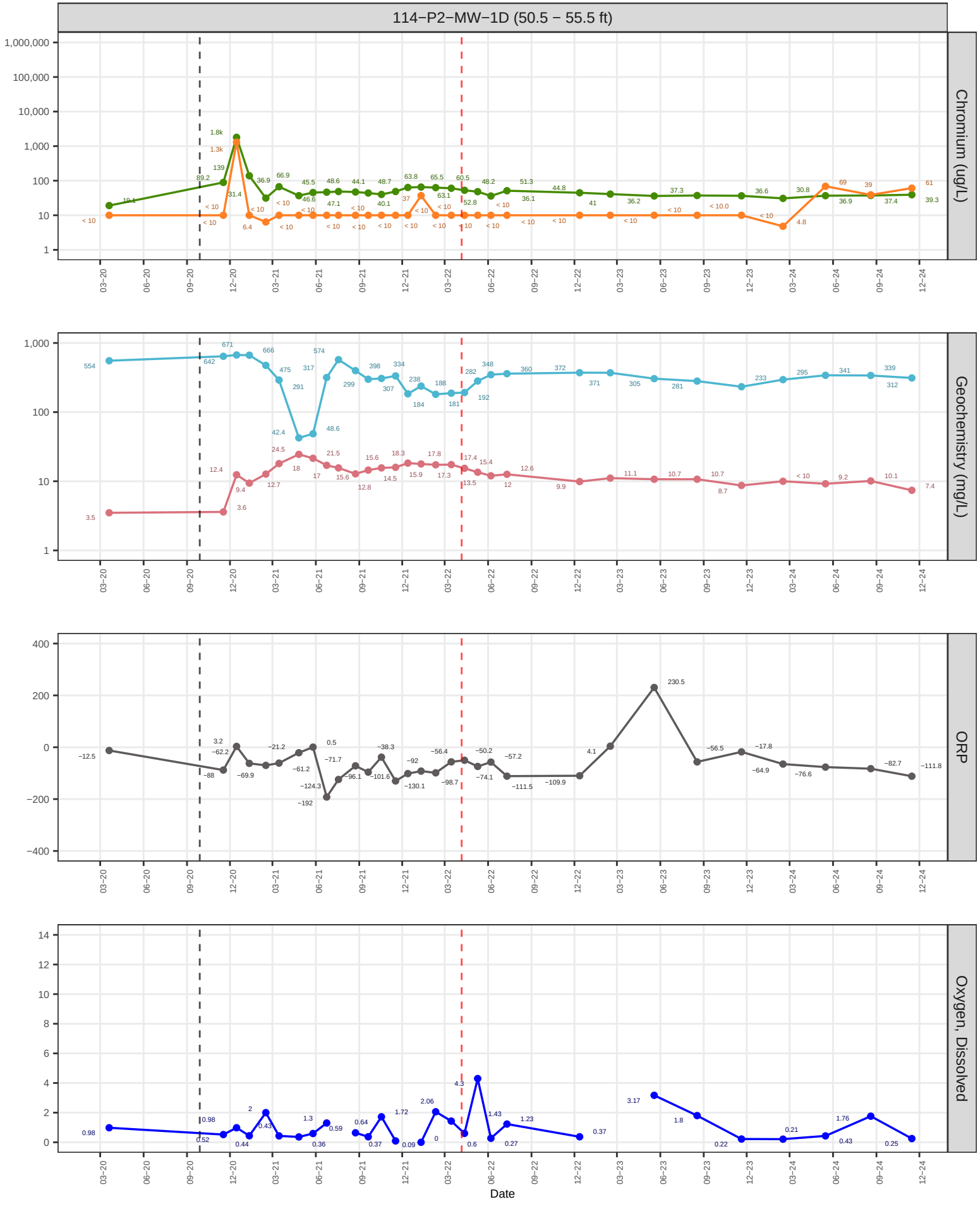

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**Performance Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Phase II**

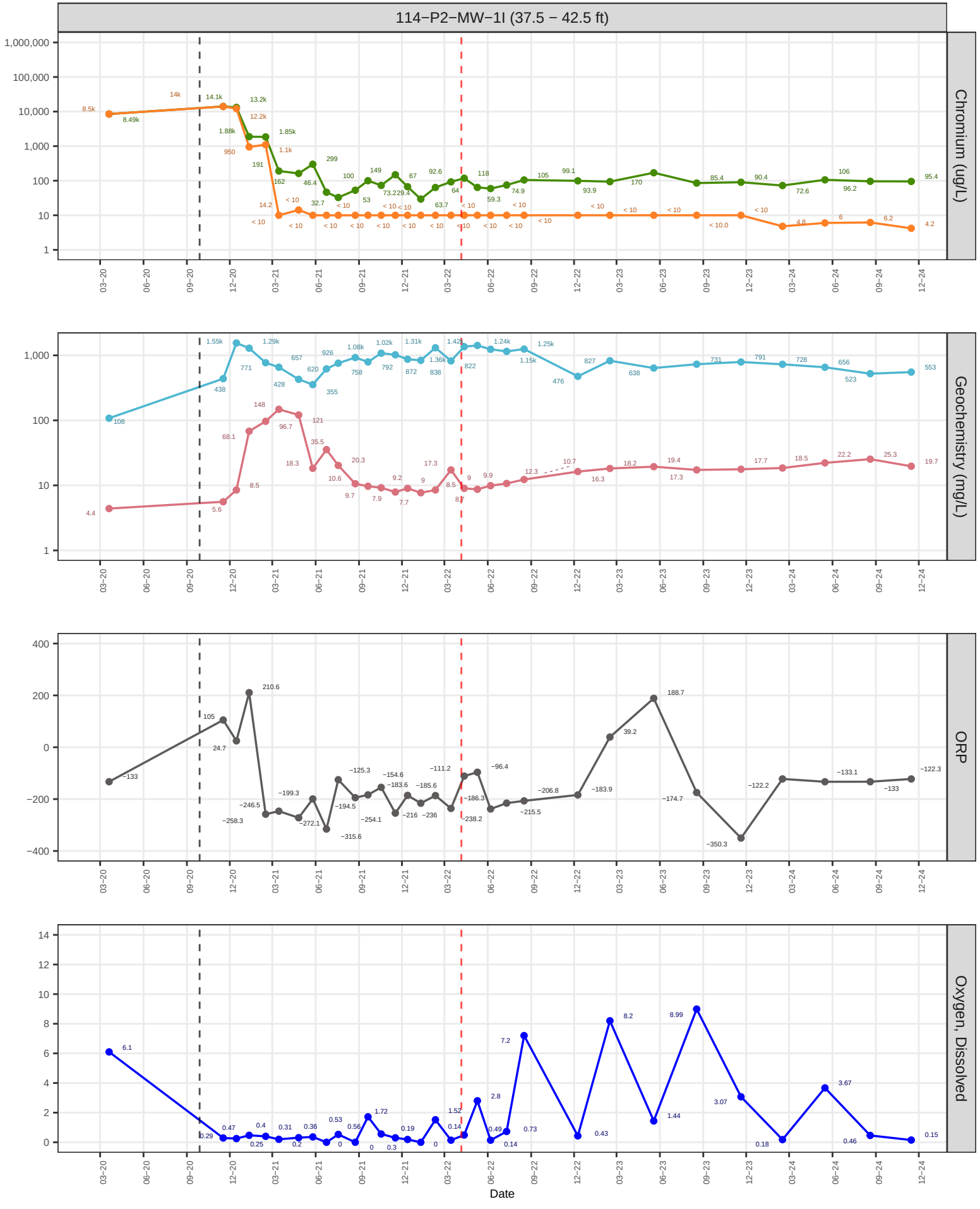

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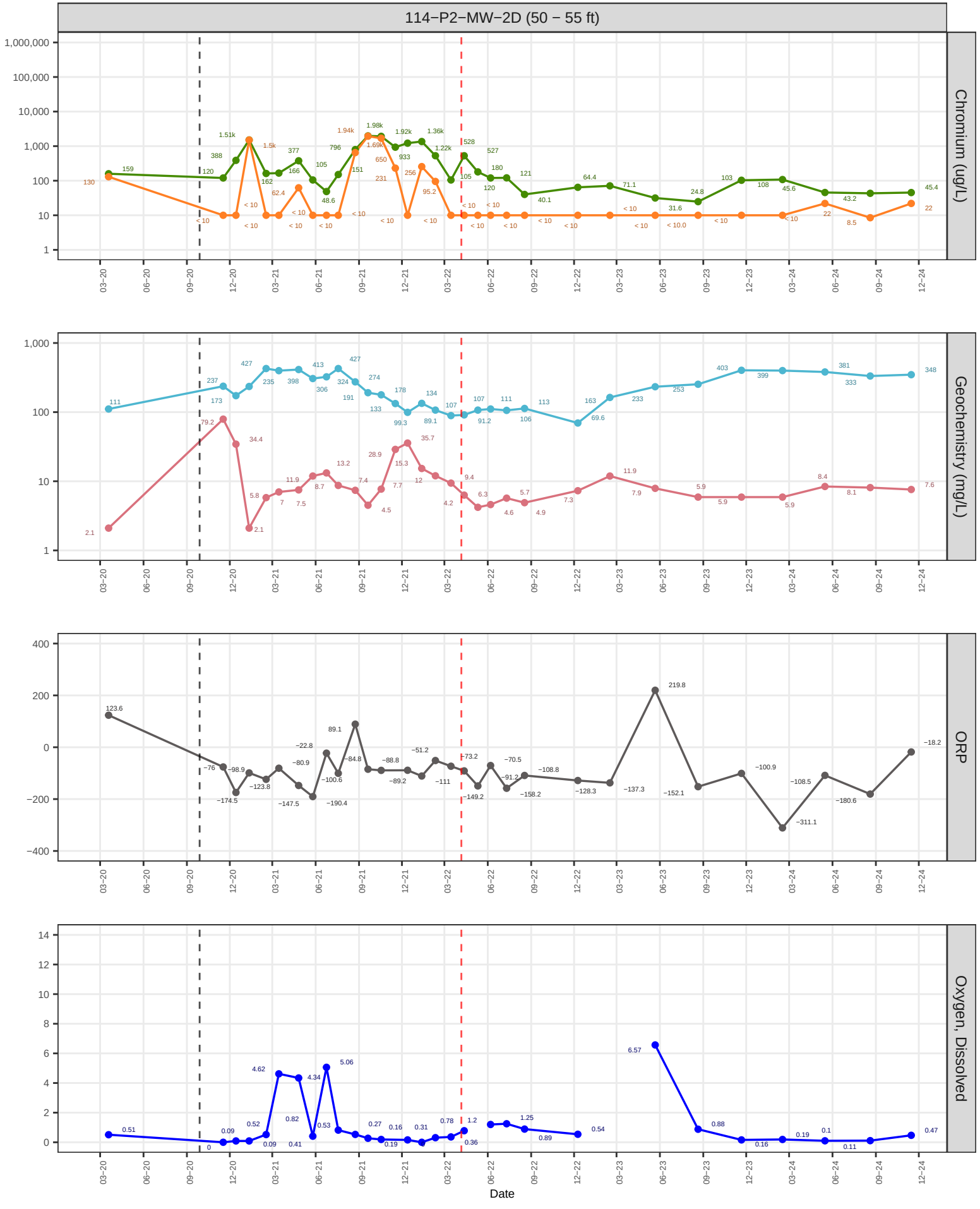

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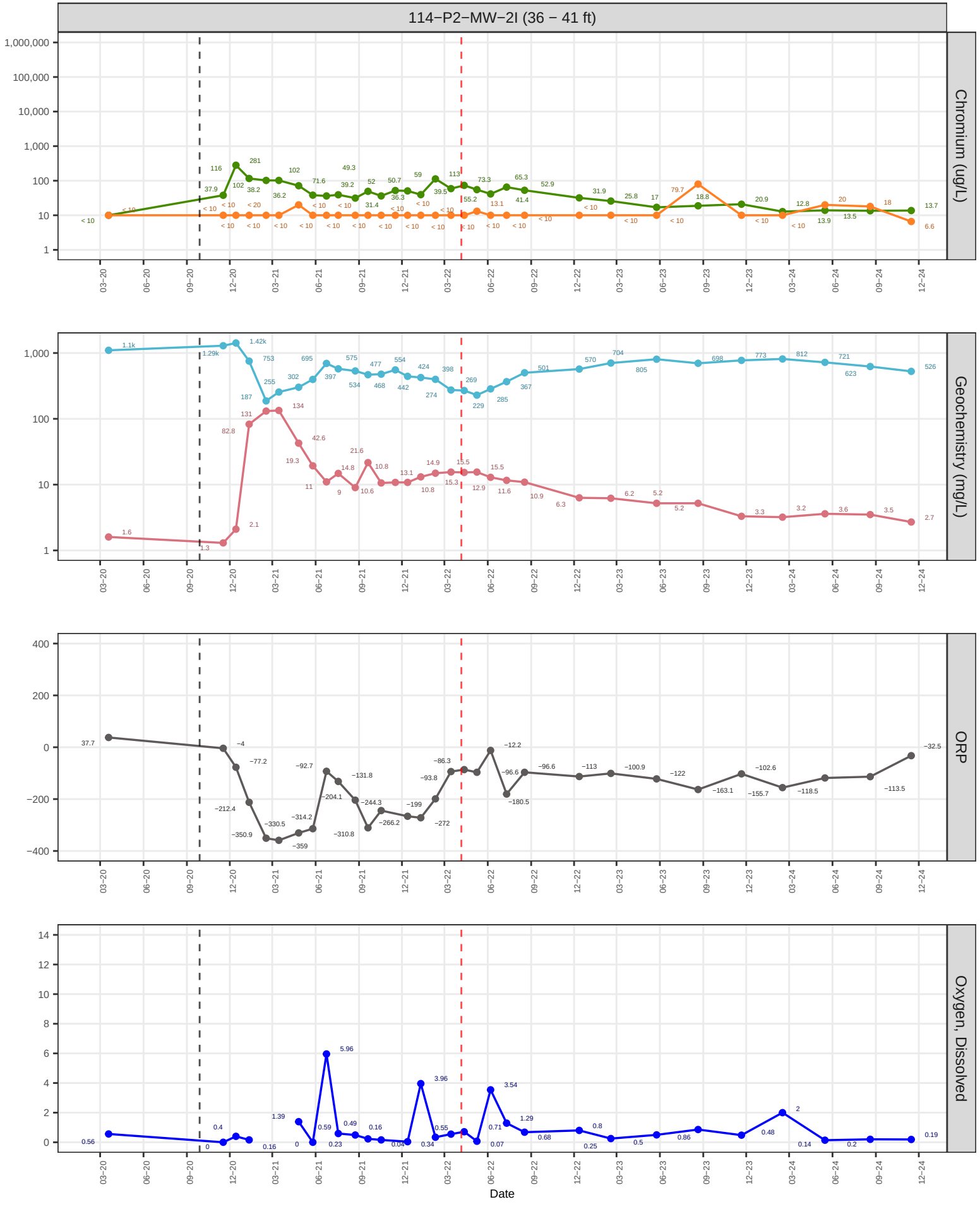

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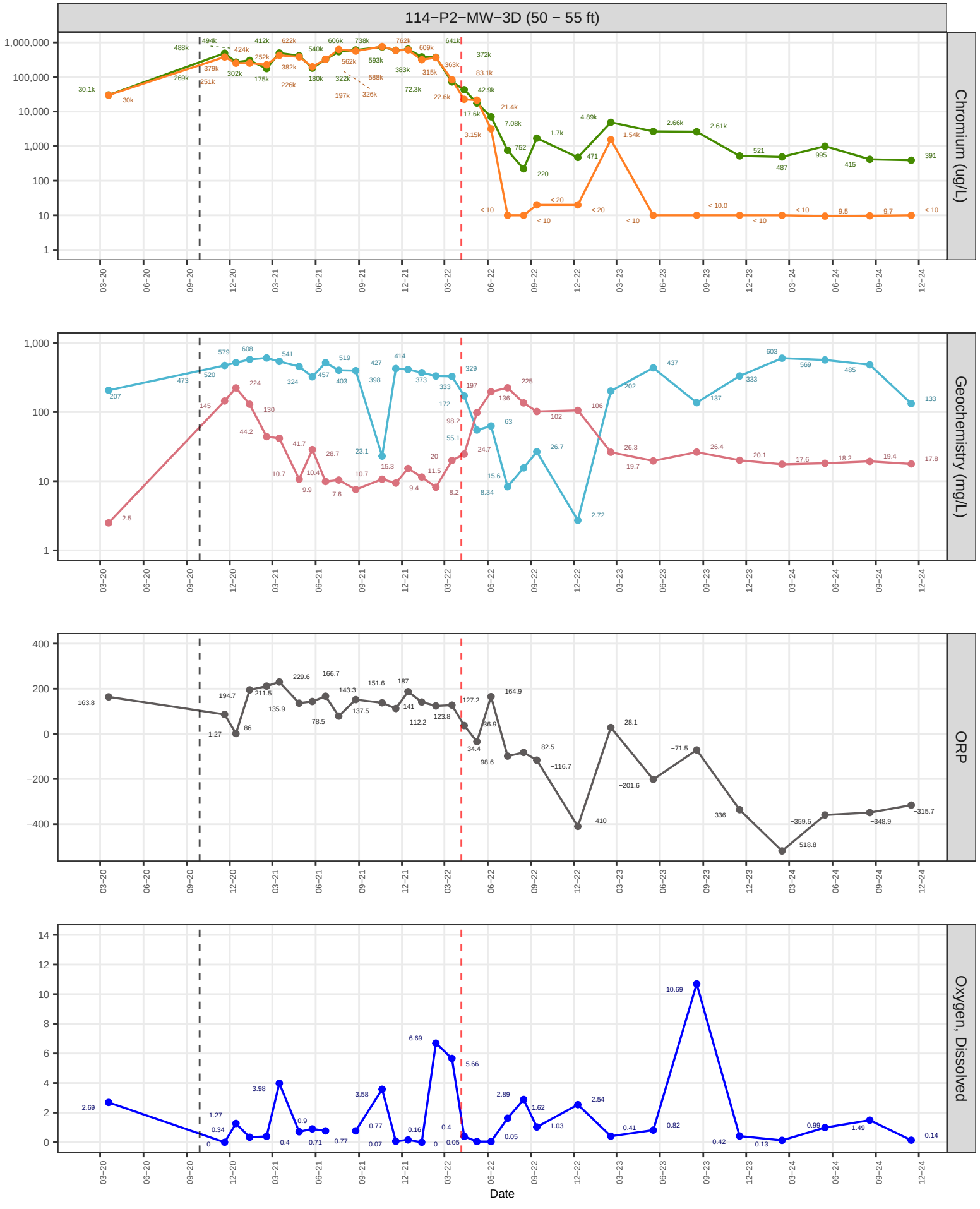

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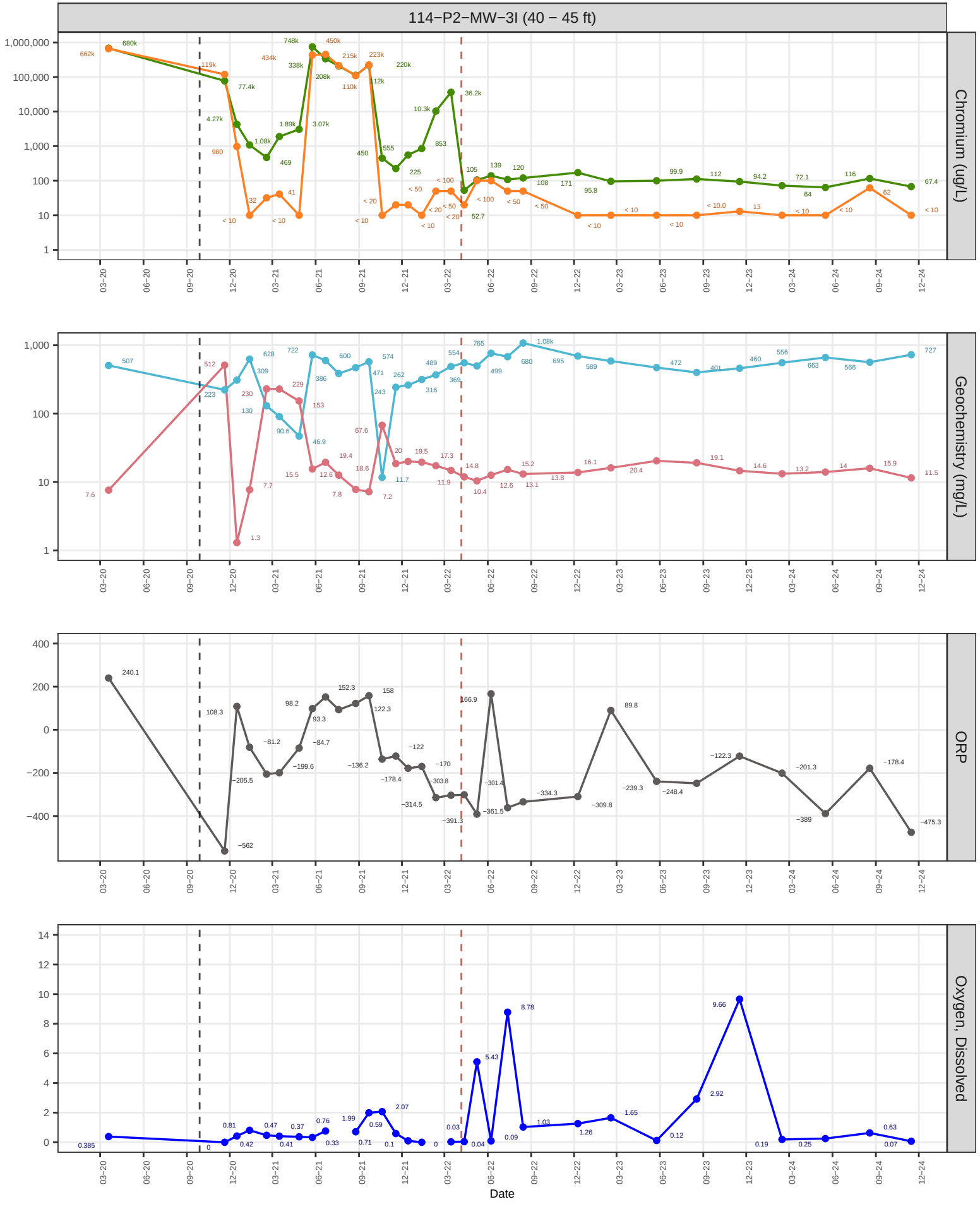

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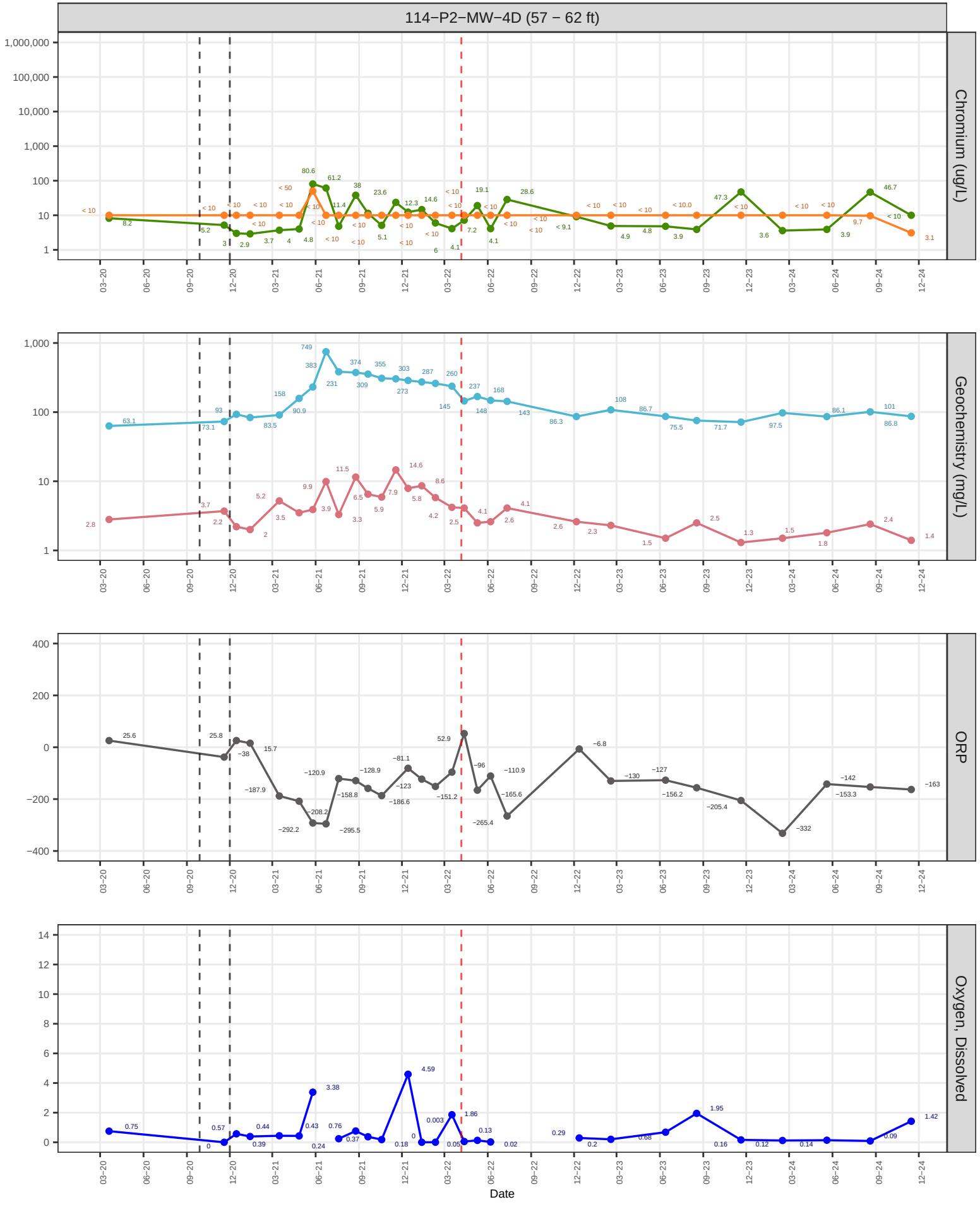

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**Performance Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Phase II**

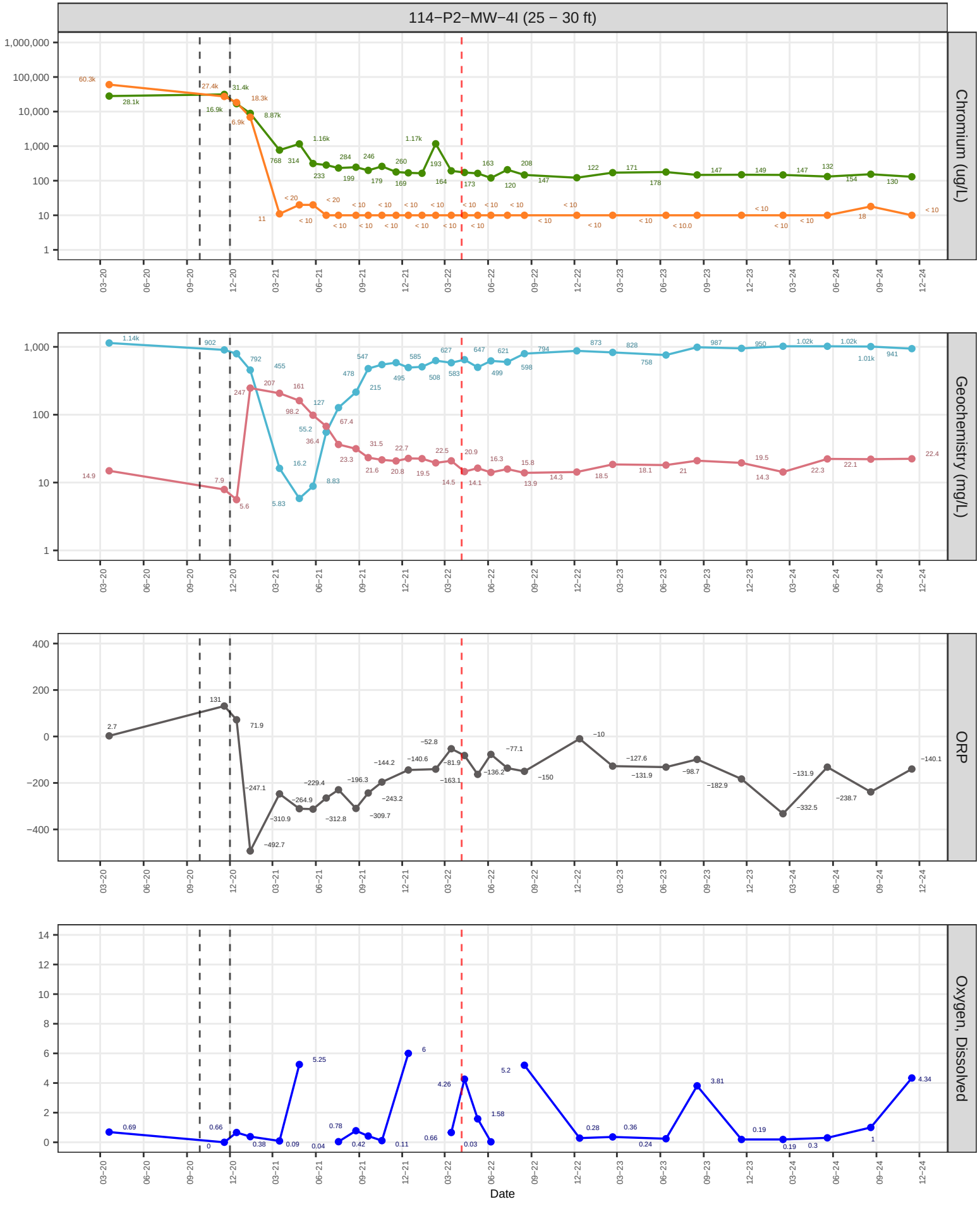

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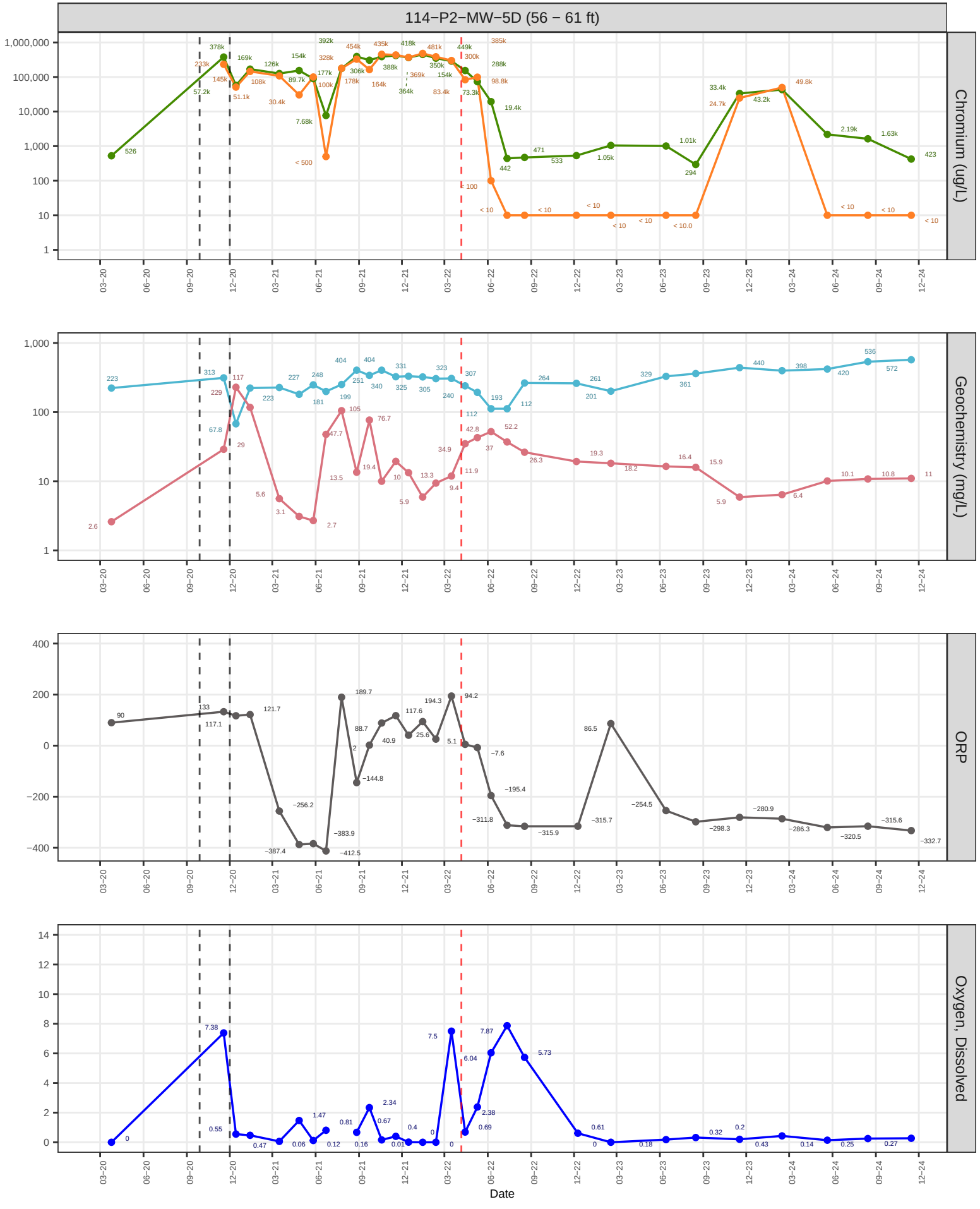

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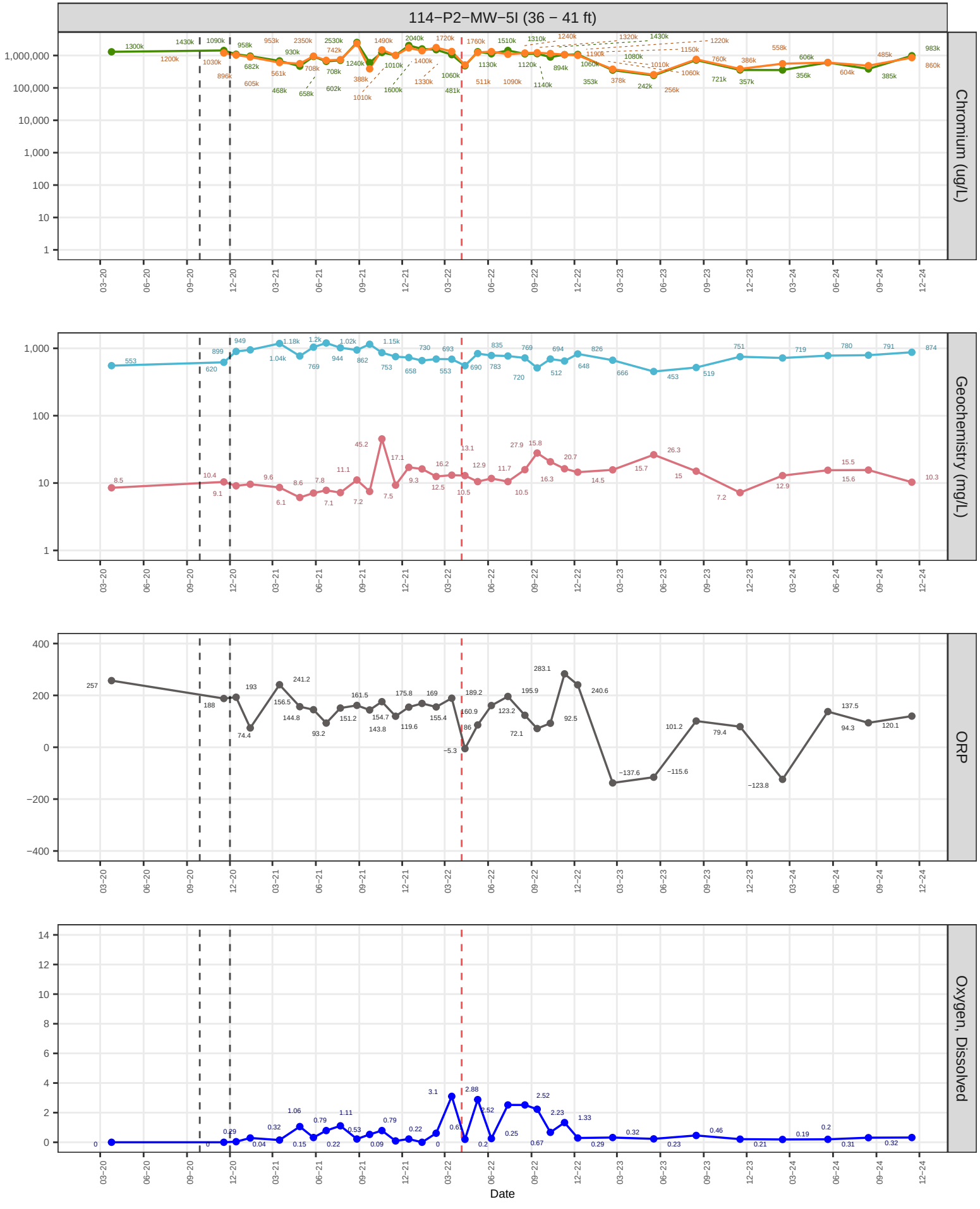

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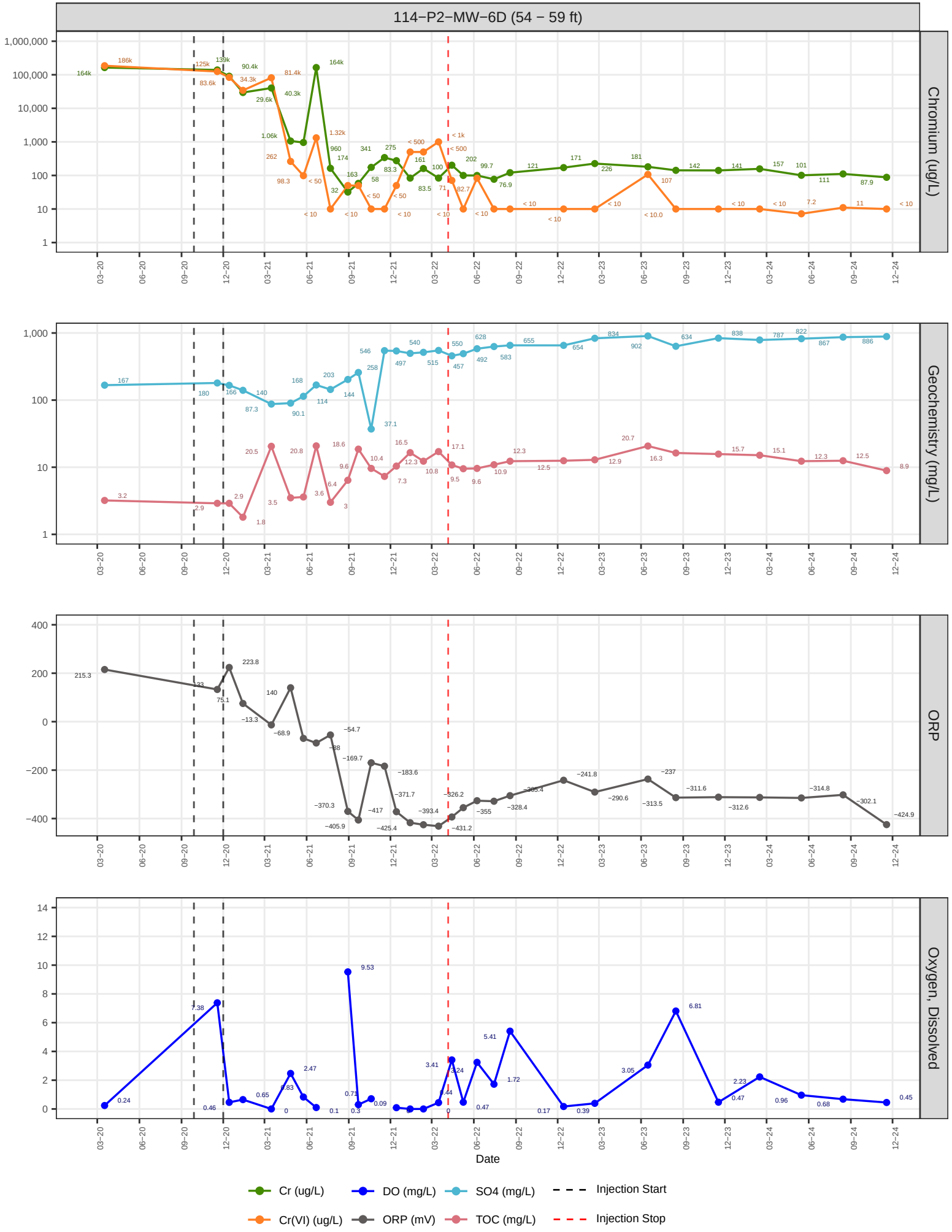

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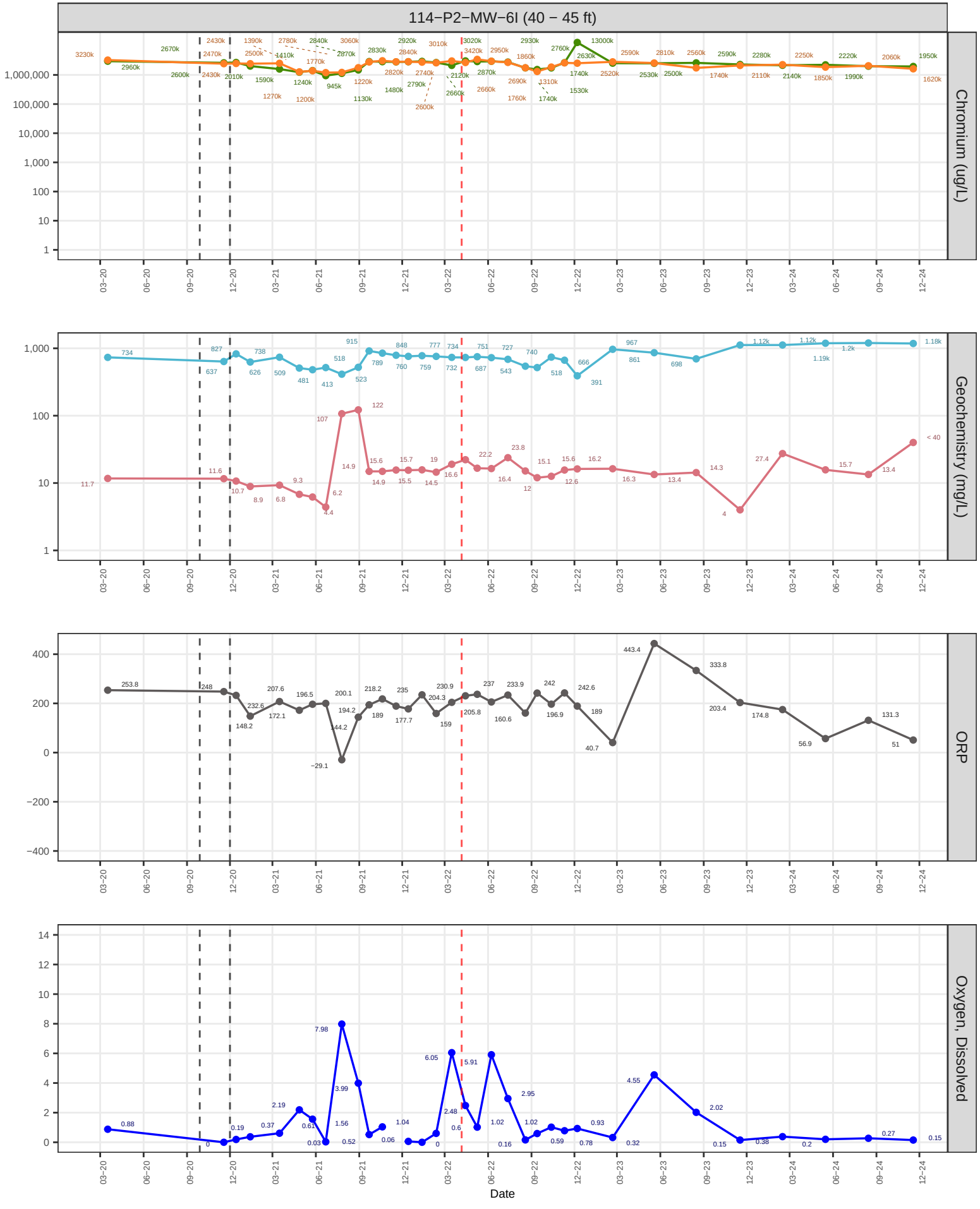

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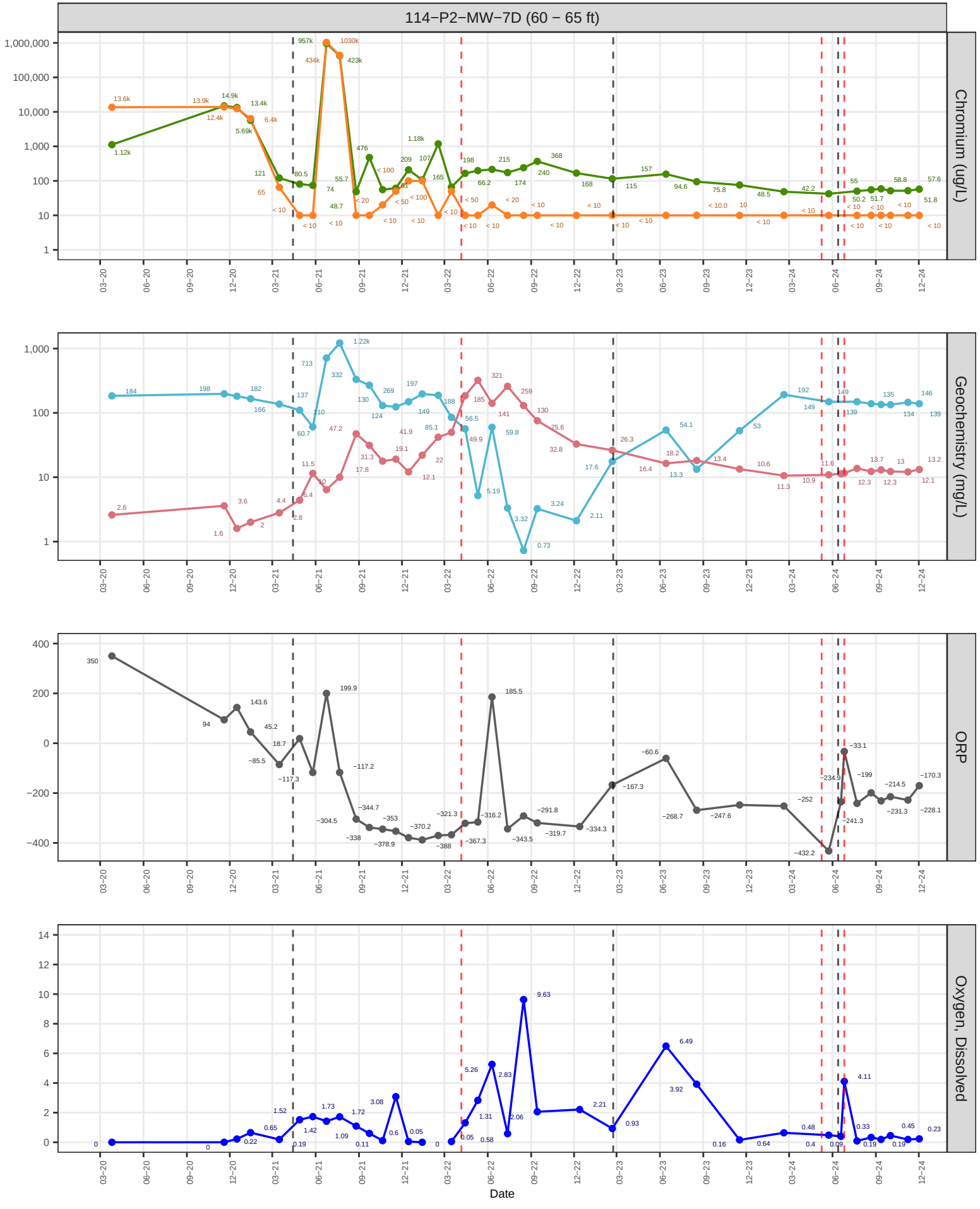

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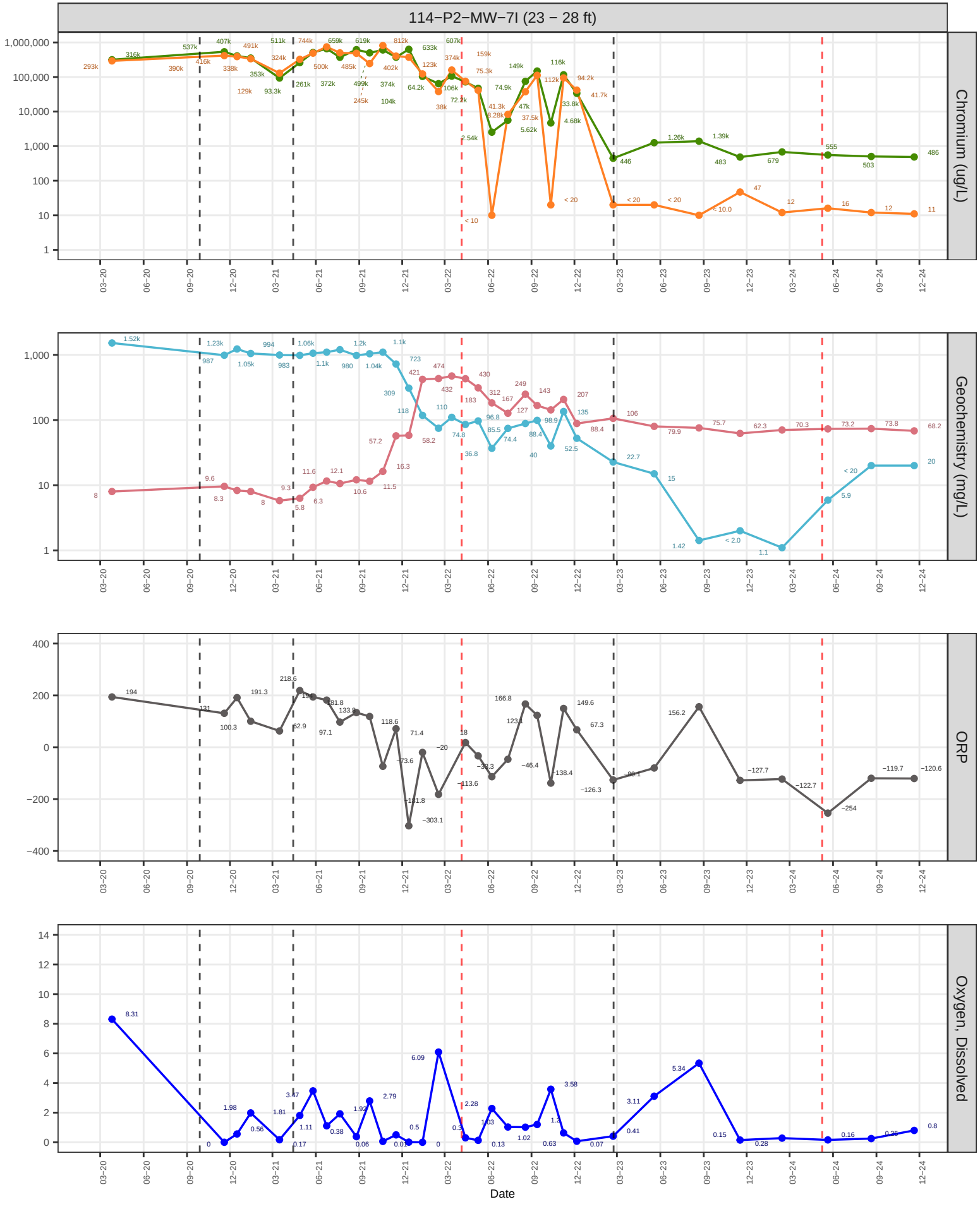

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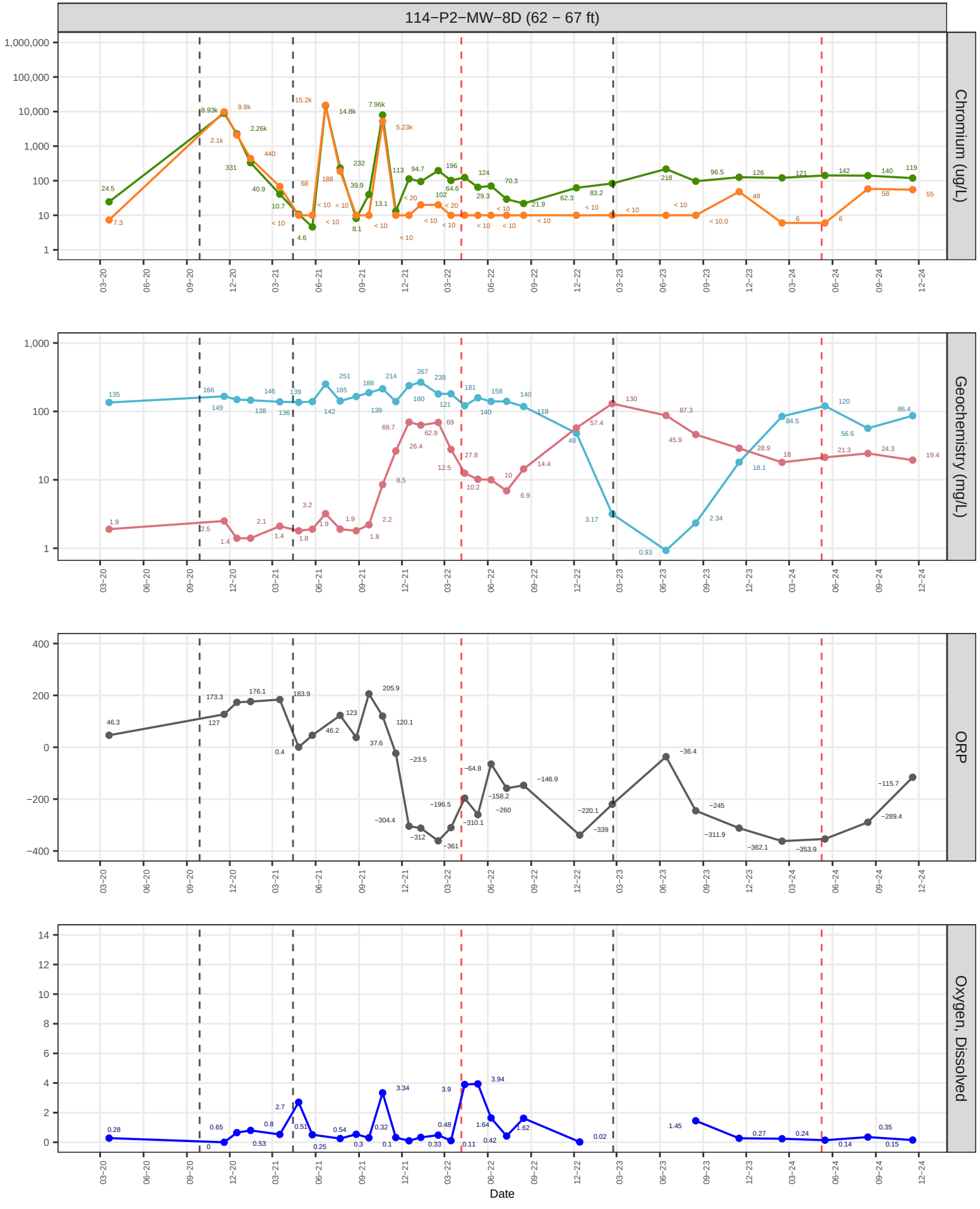

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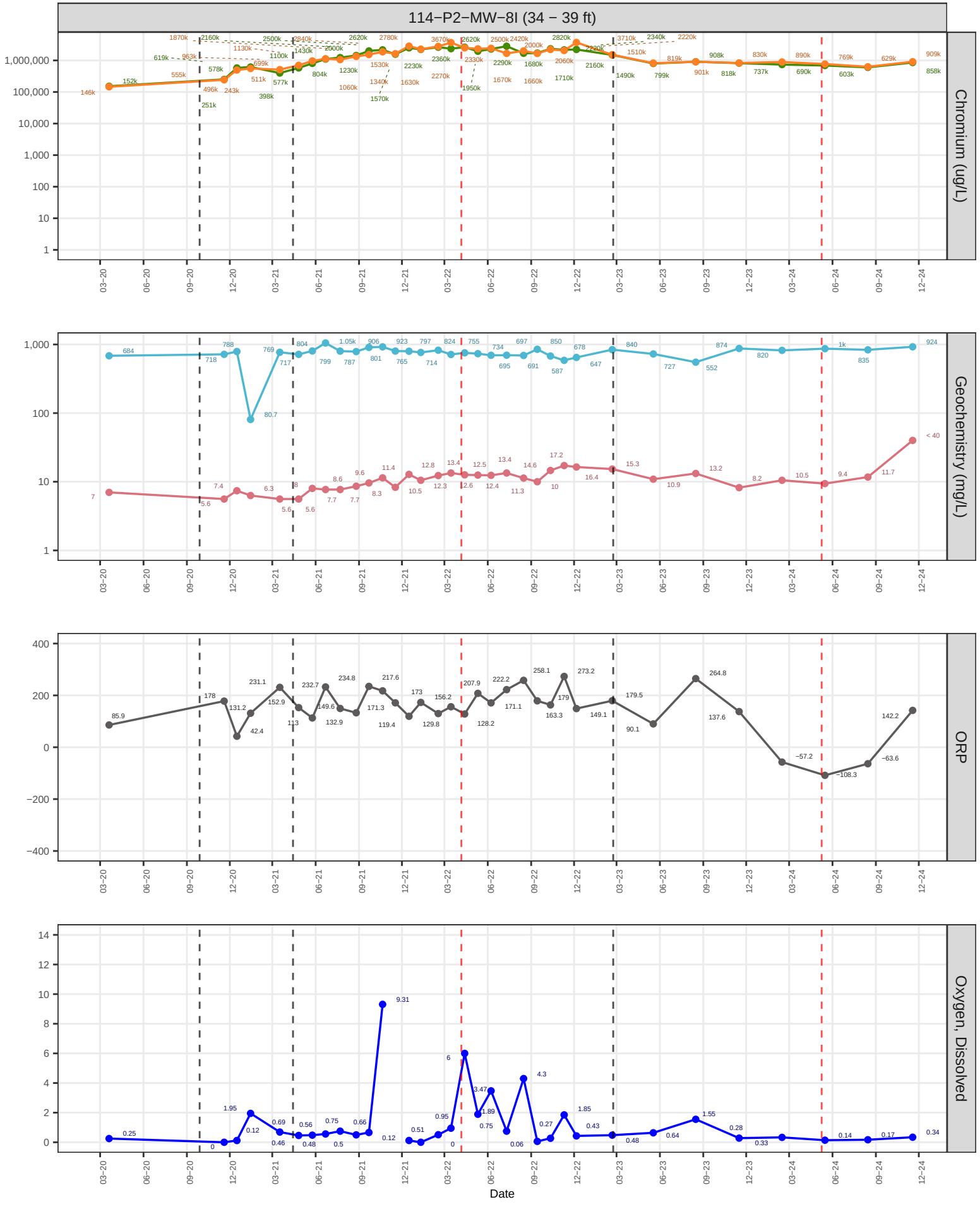

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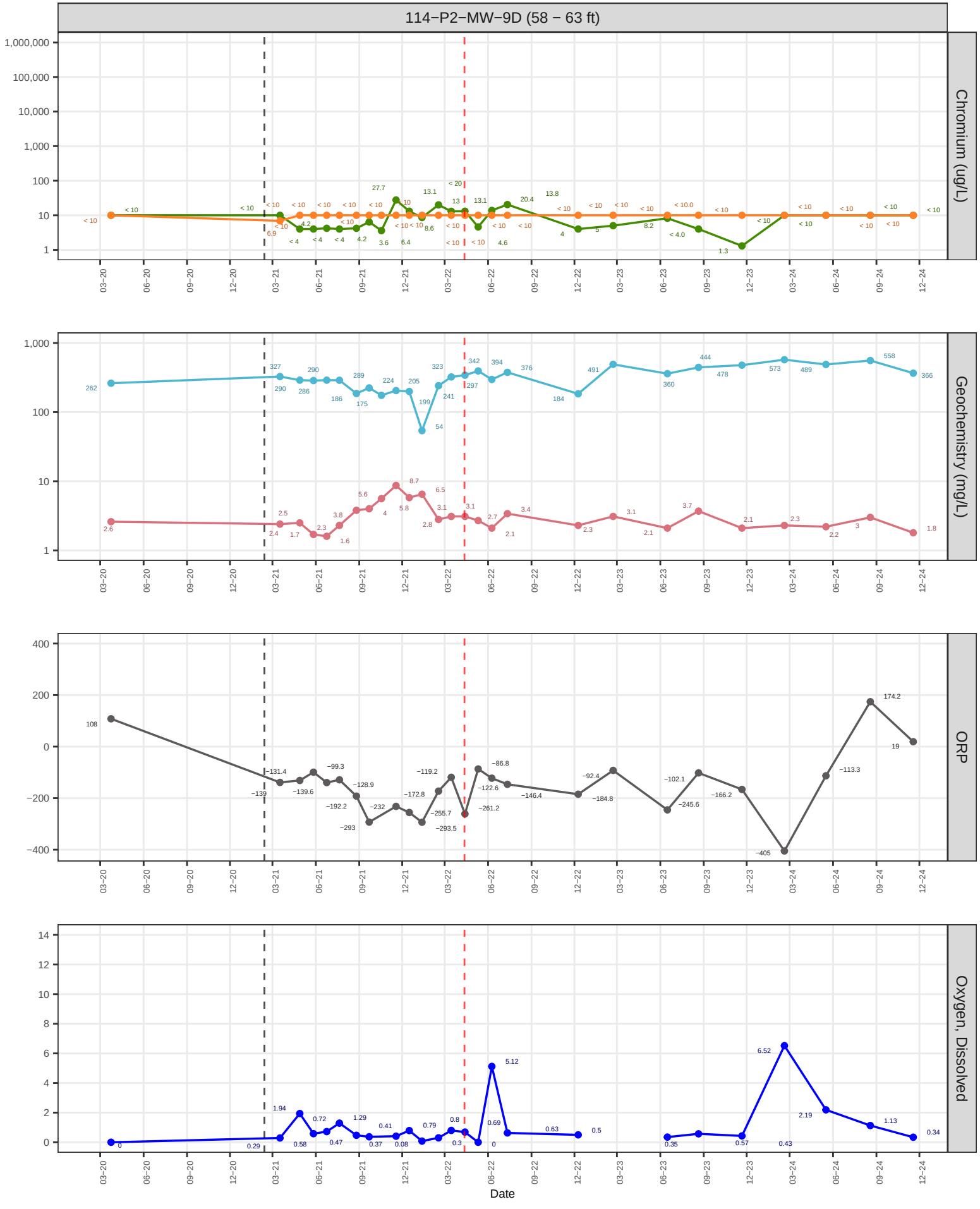

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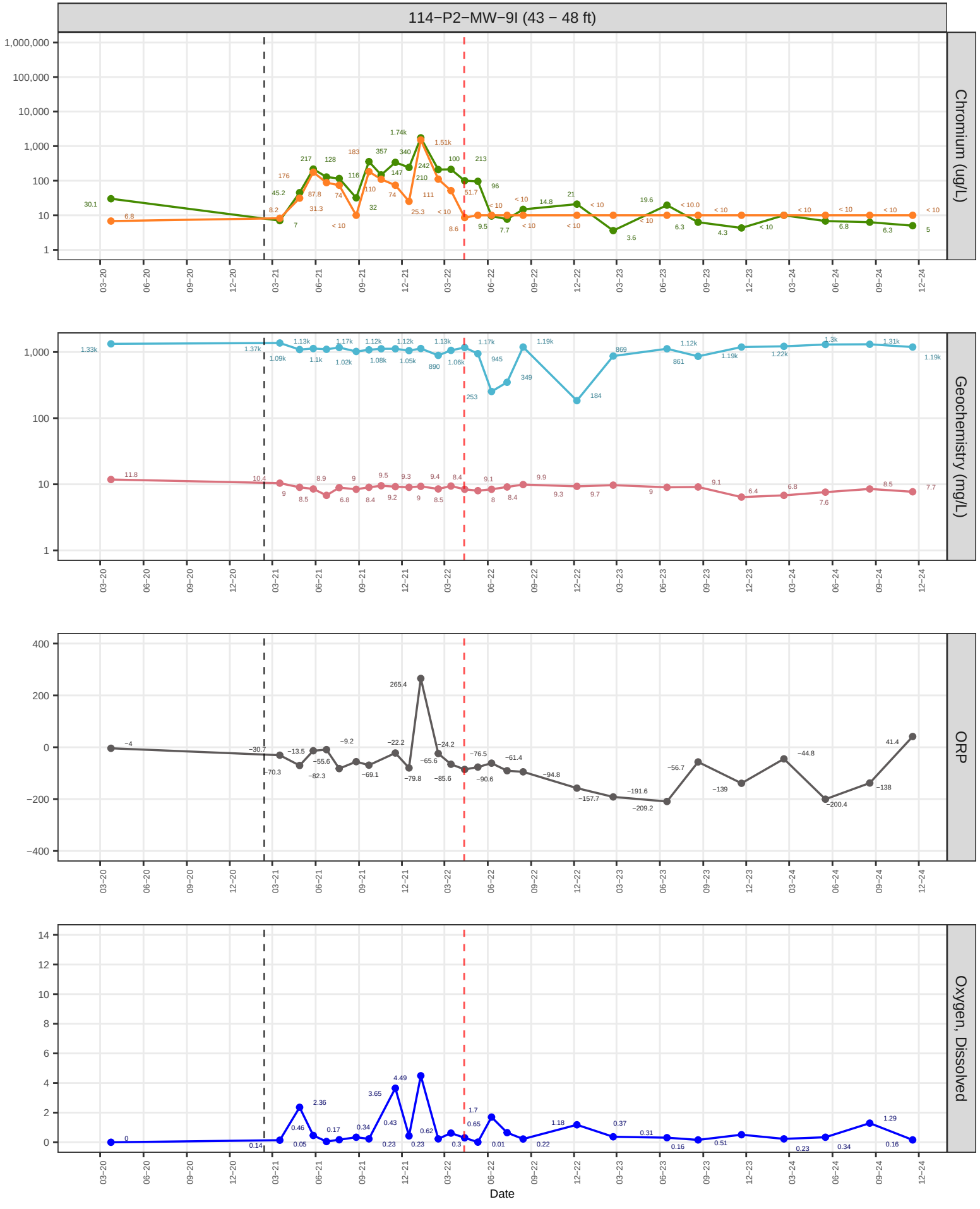

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**Performance Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Phase II**

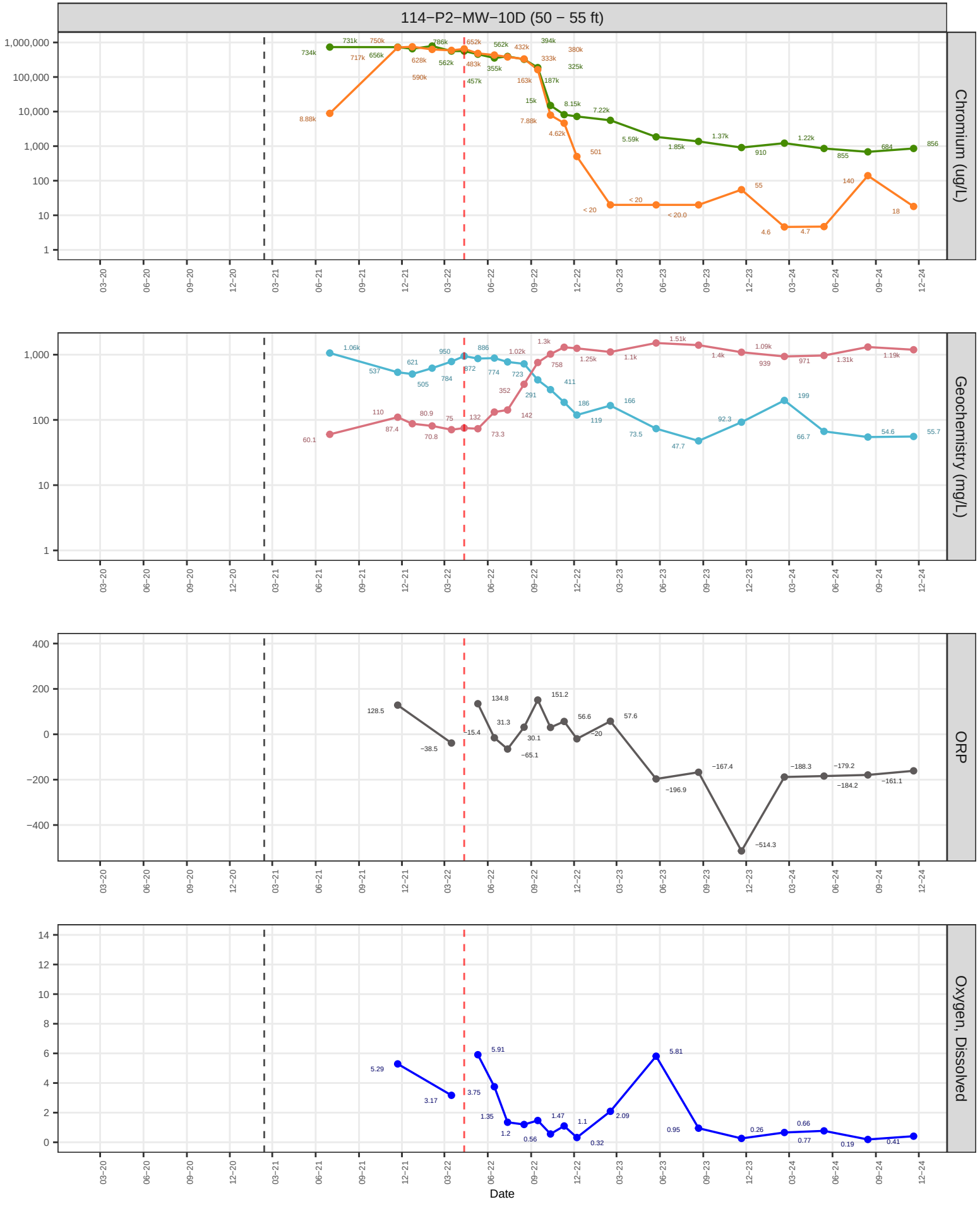

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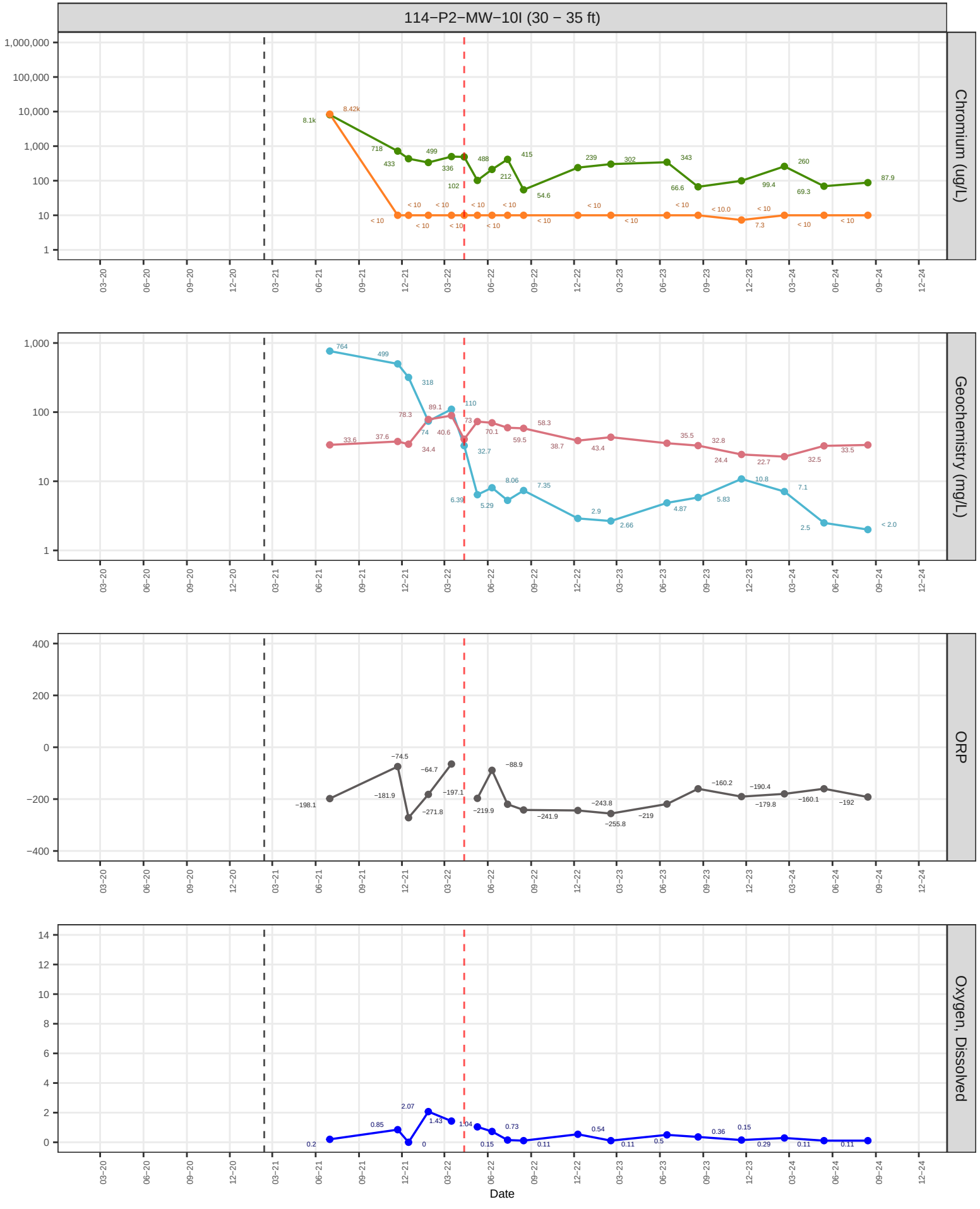

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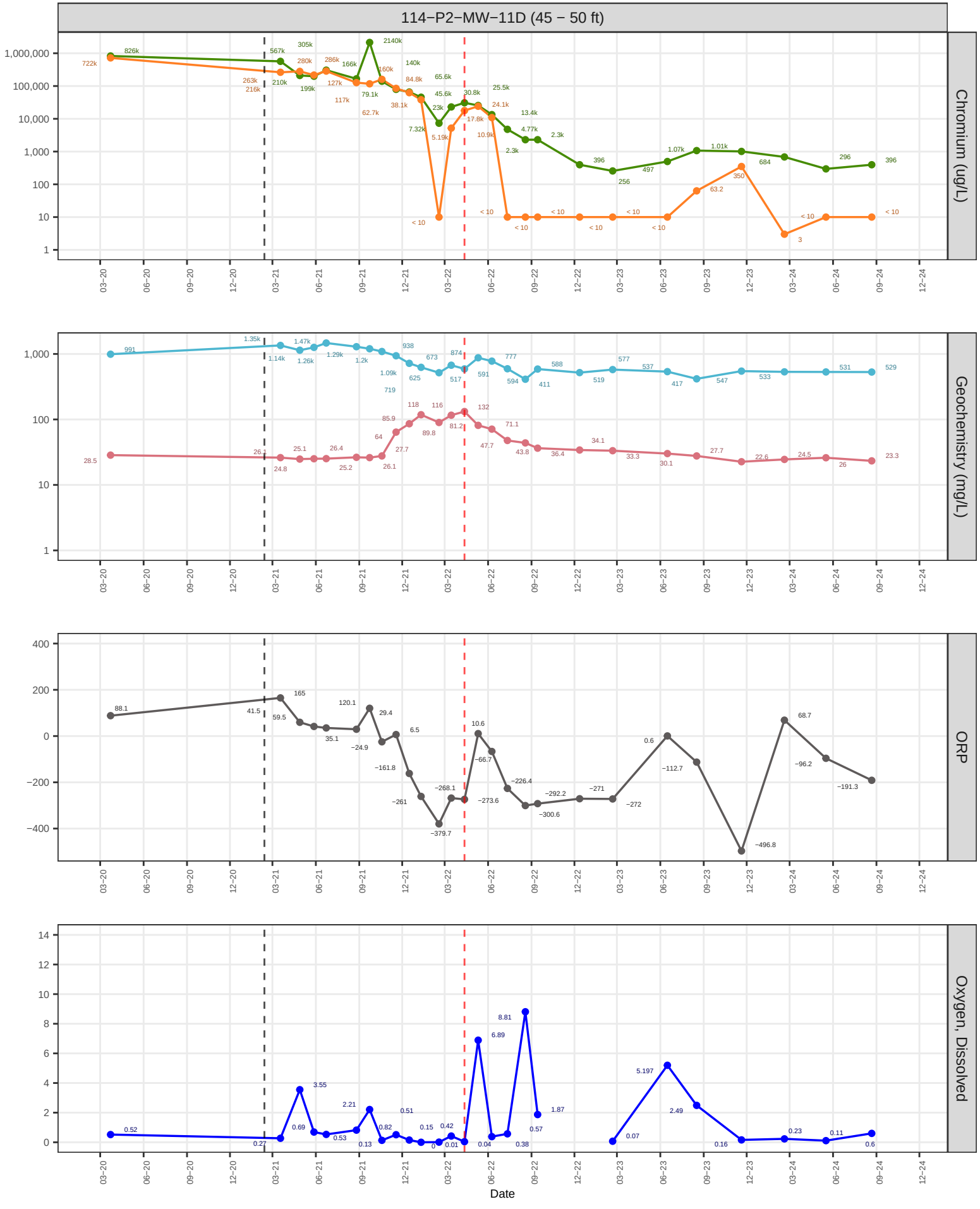

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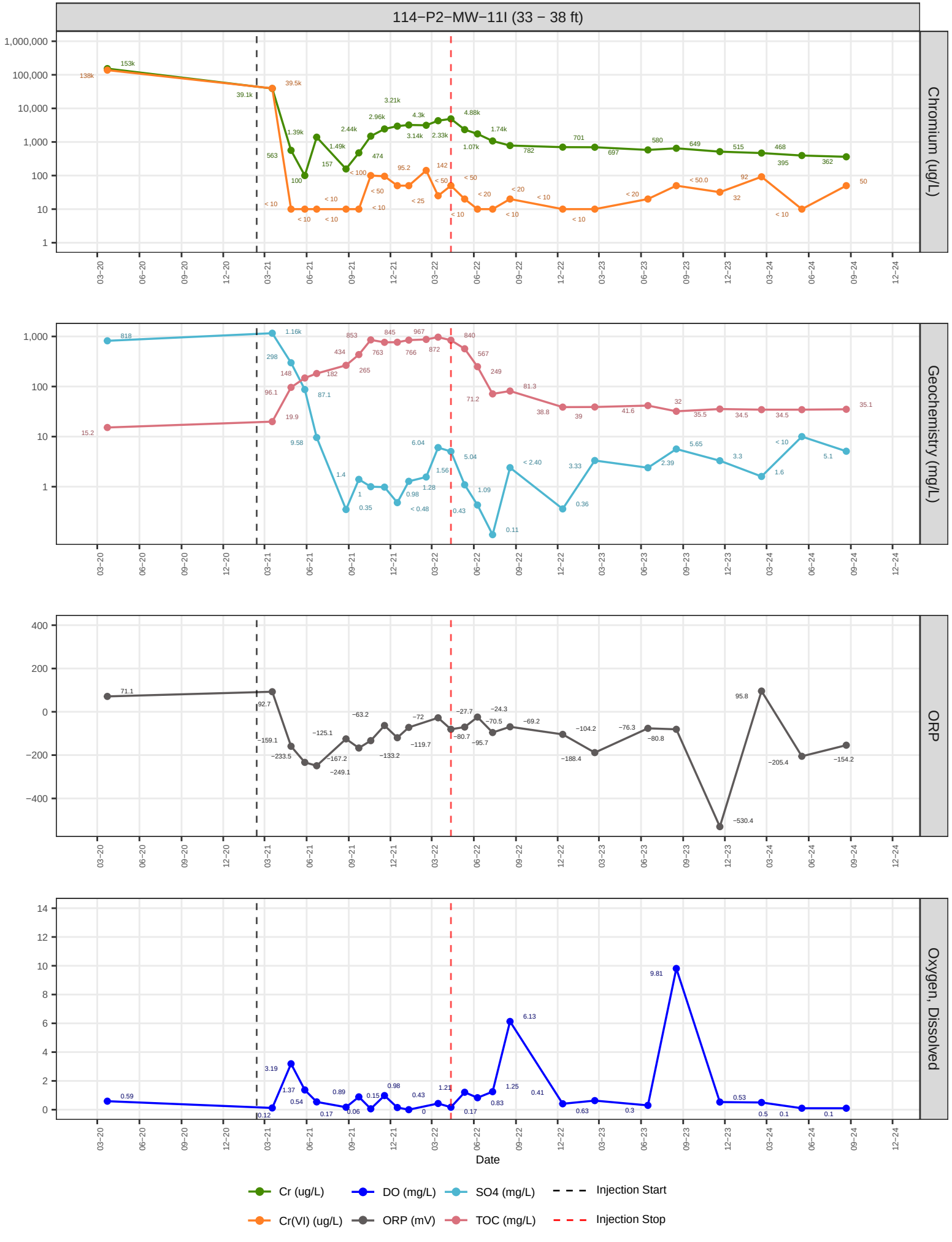

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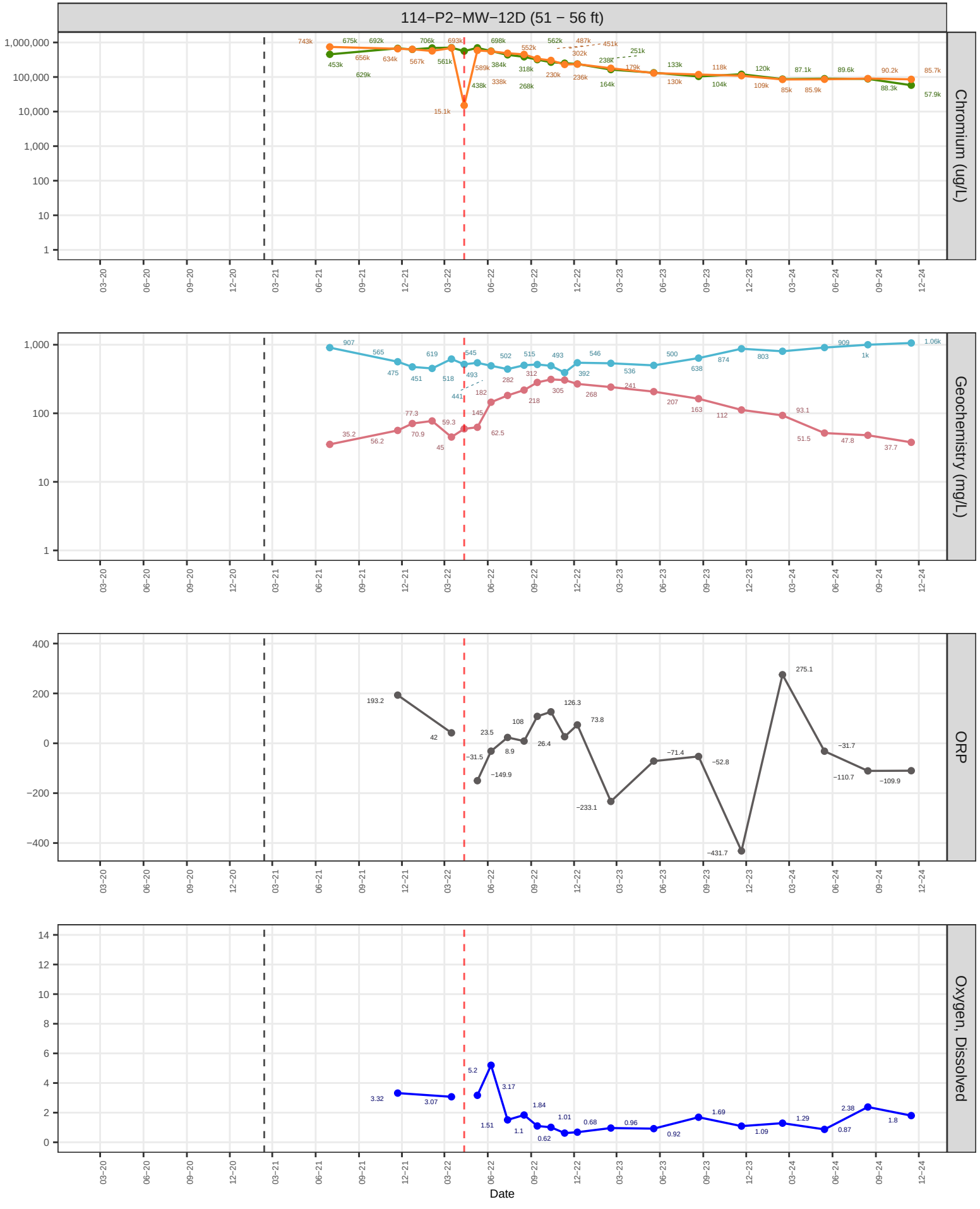

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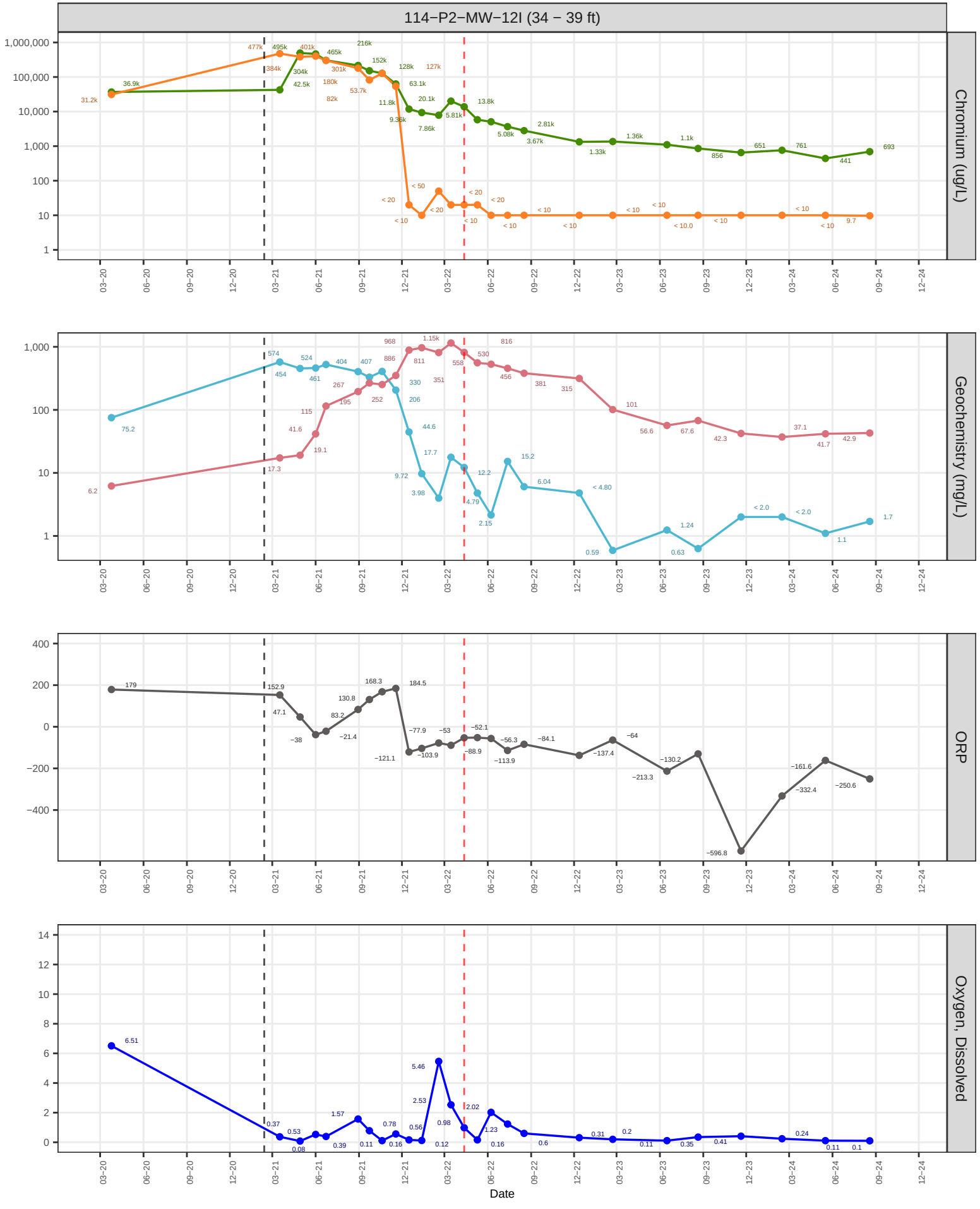

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**Performance Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Phase II**

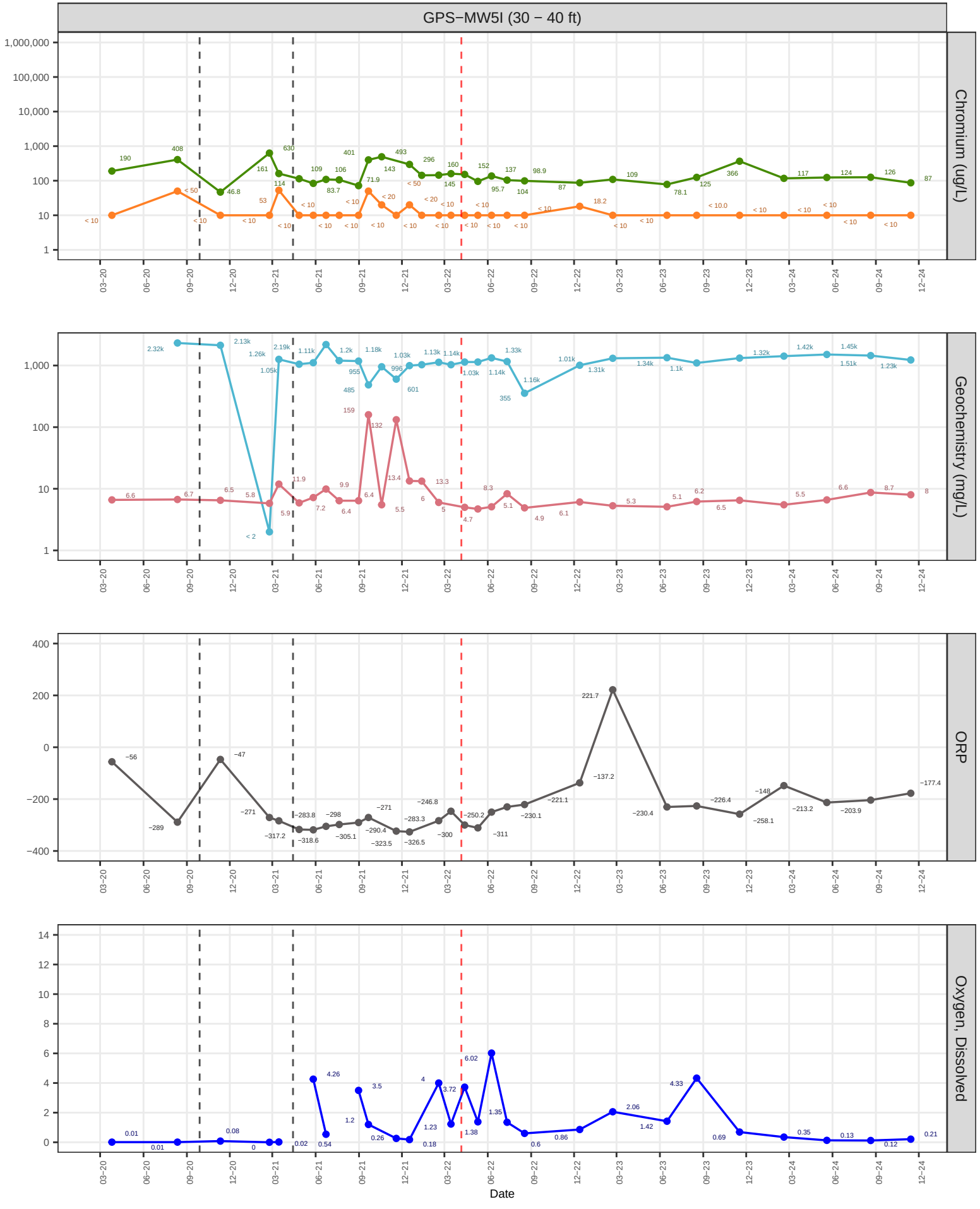

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**Performance Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Phase II**

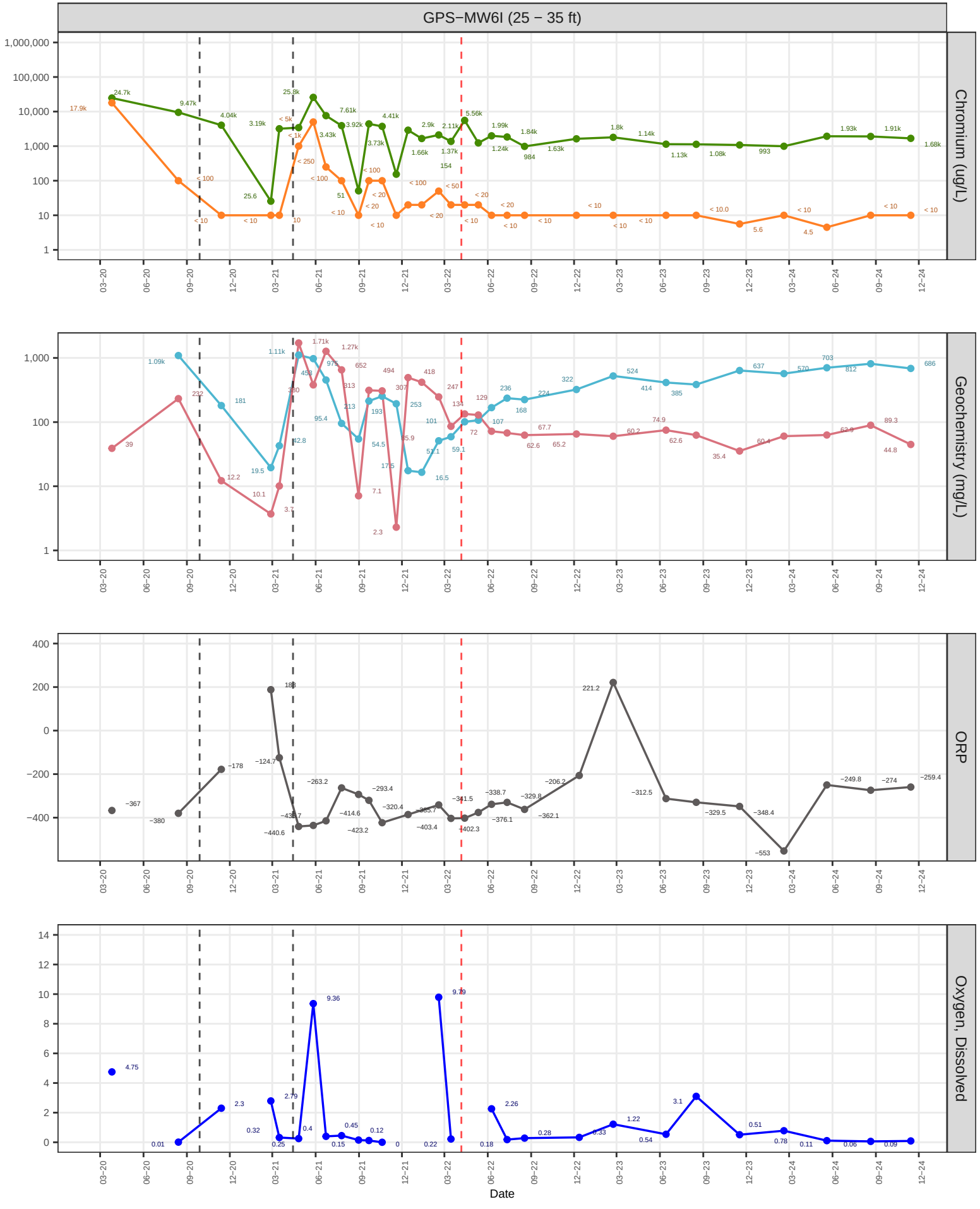

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**Performance Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Phase II**

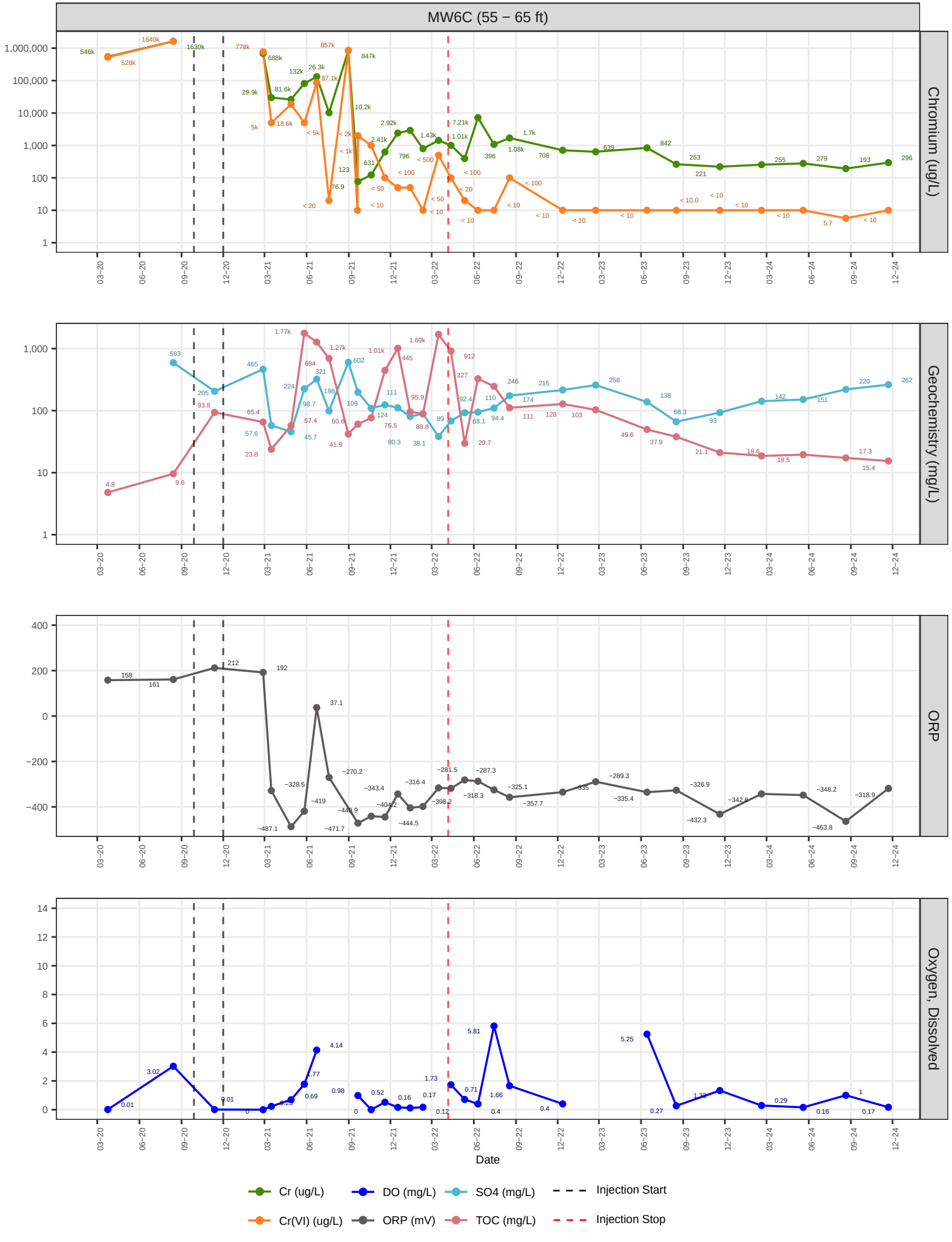

# Appendix B-3
# Performance Trend Charts - Chromium, Hexavalent Chromium, and Geochemistry - Phase III

**Appendix B−3**
**Performance Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Phase III**

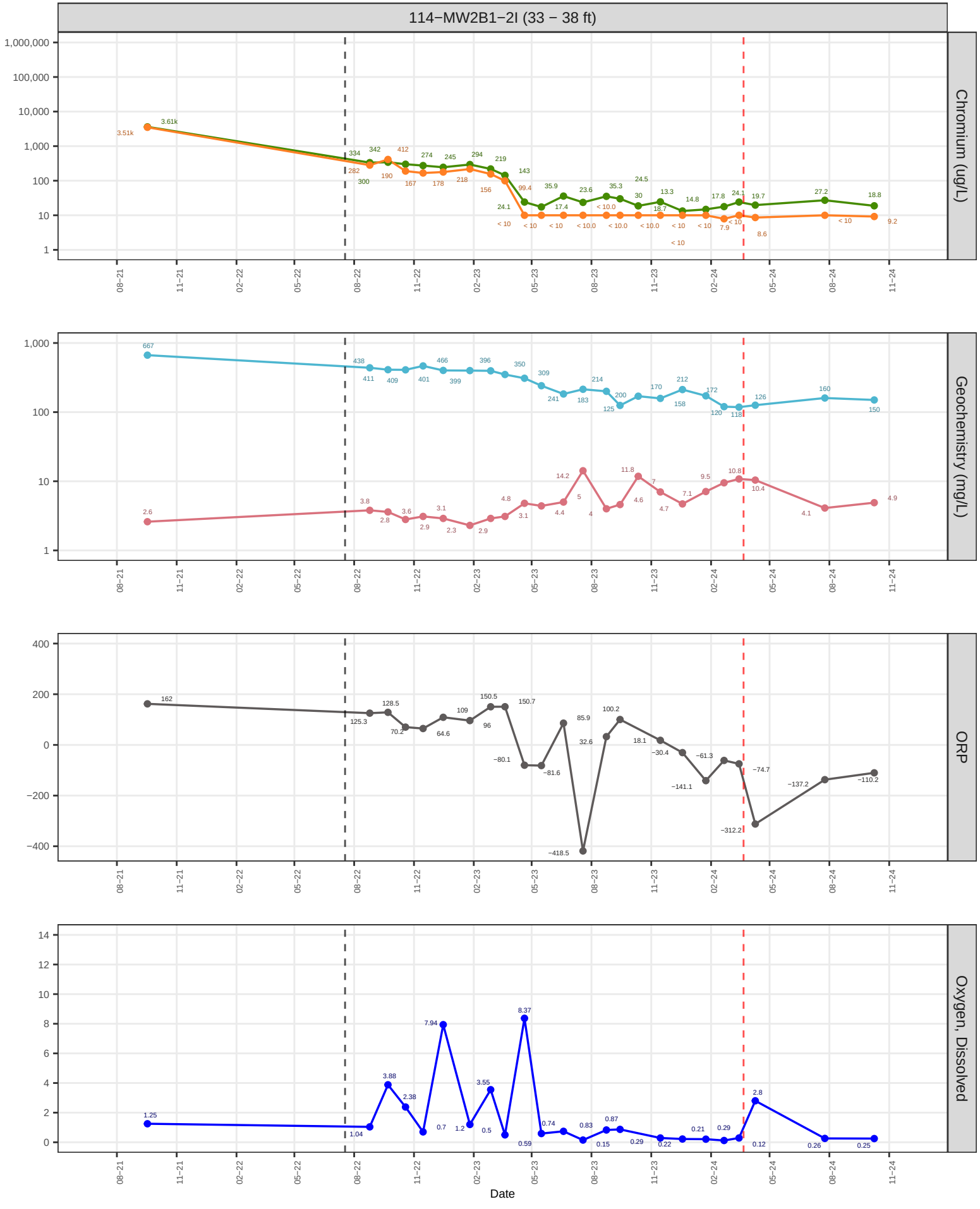

**Appendix B−3**
**Performance Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Phase III**

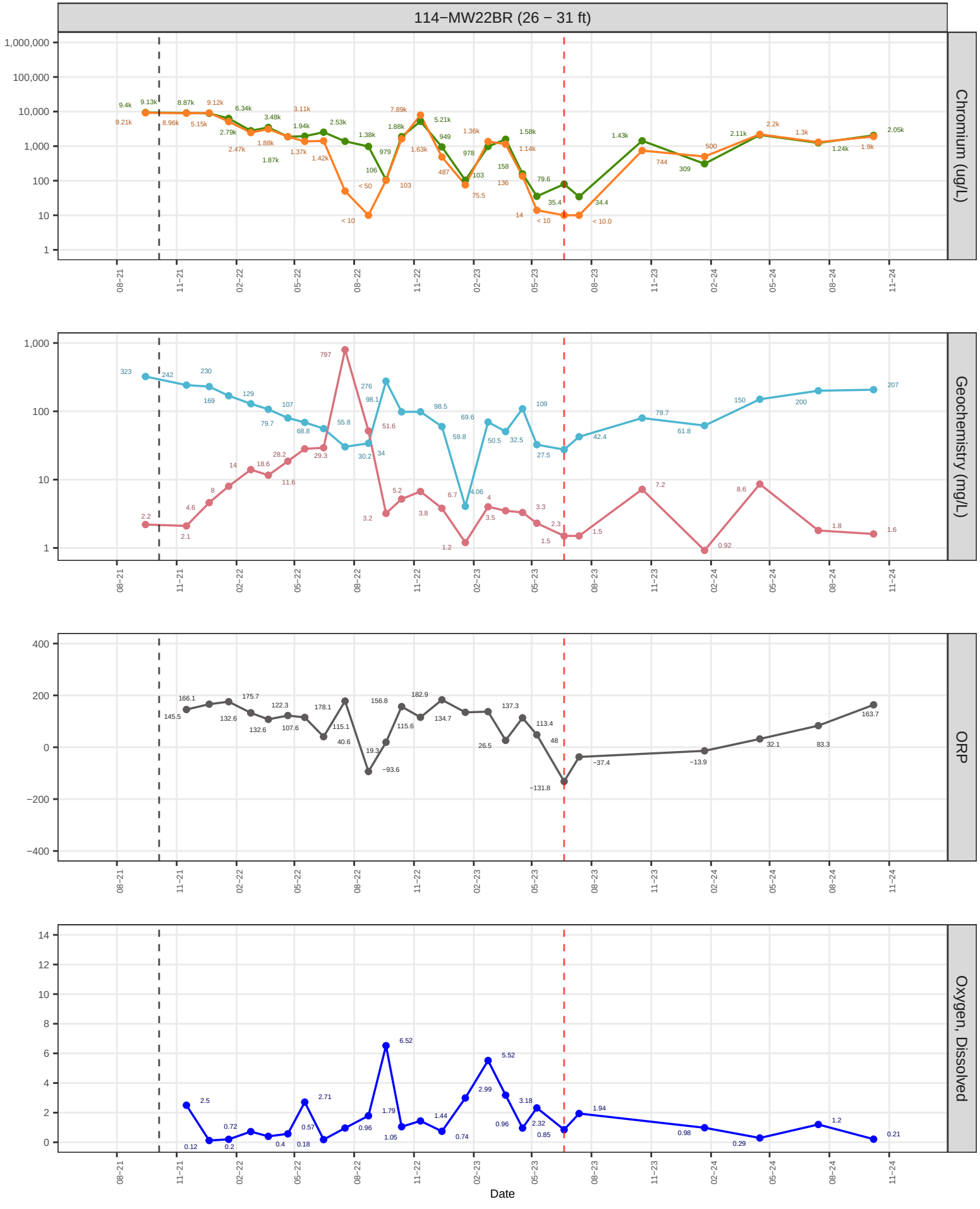

**Appendix B−3**
**Performance Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Phase III**

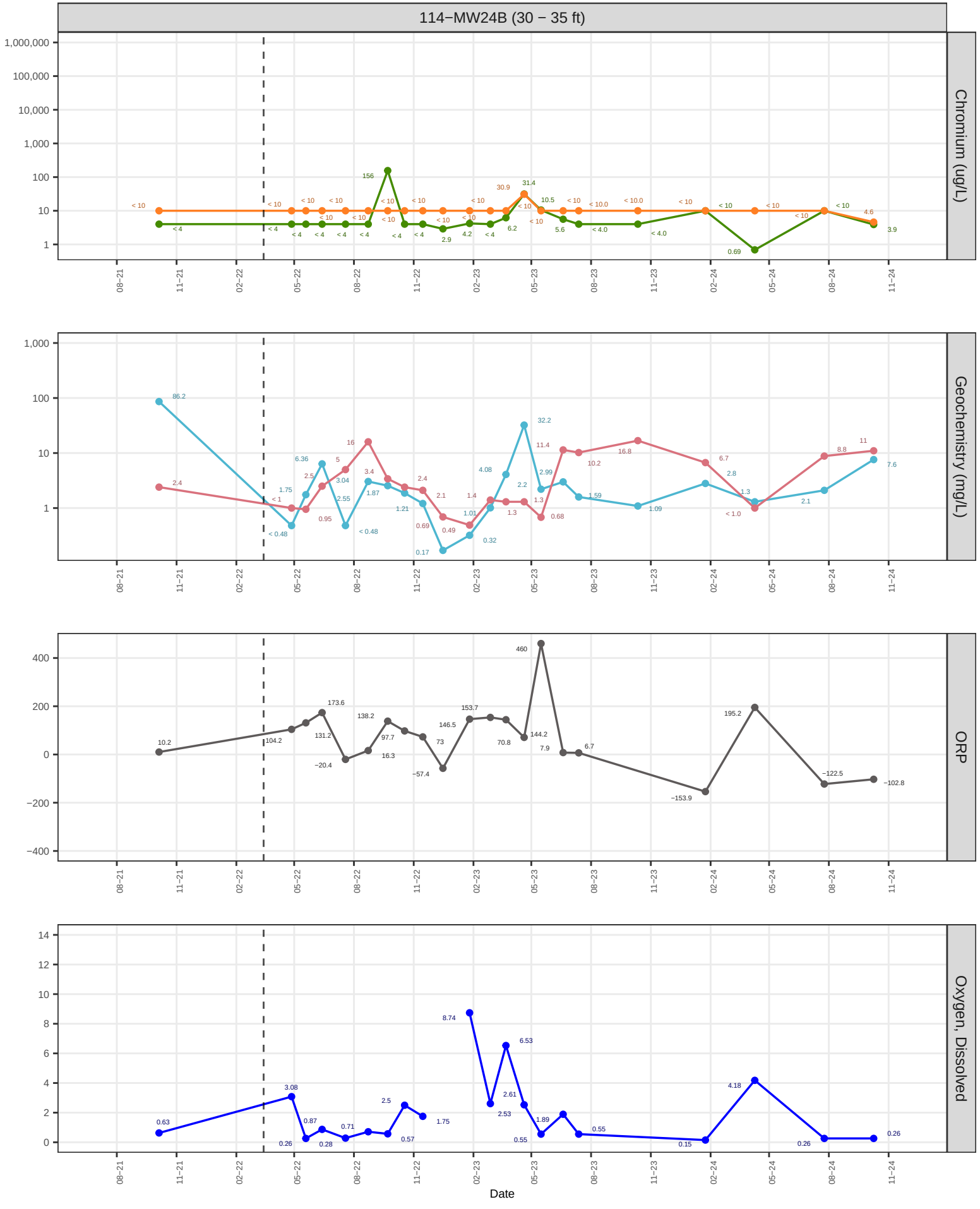

**Appendix B−3**
**Performance Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Phase III**

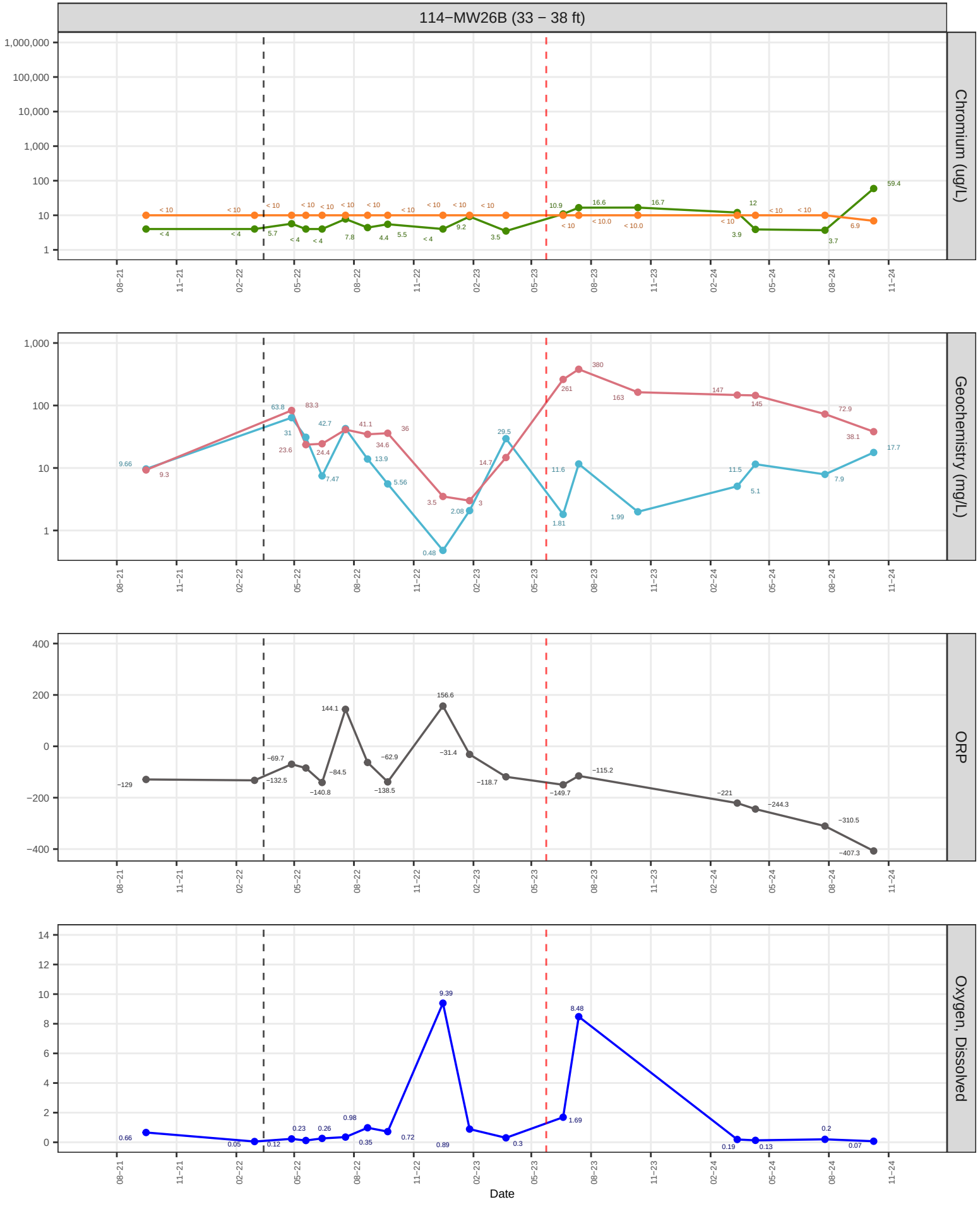

**Appendix B−3**
**Performance Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Phase III**

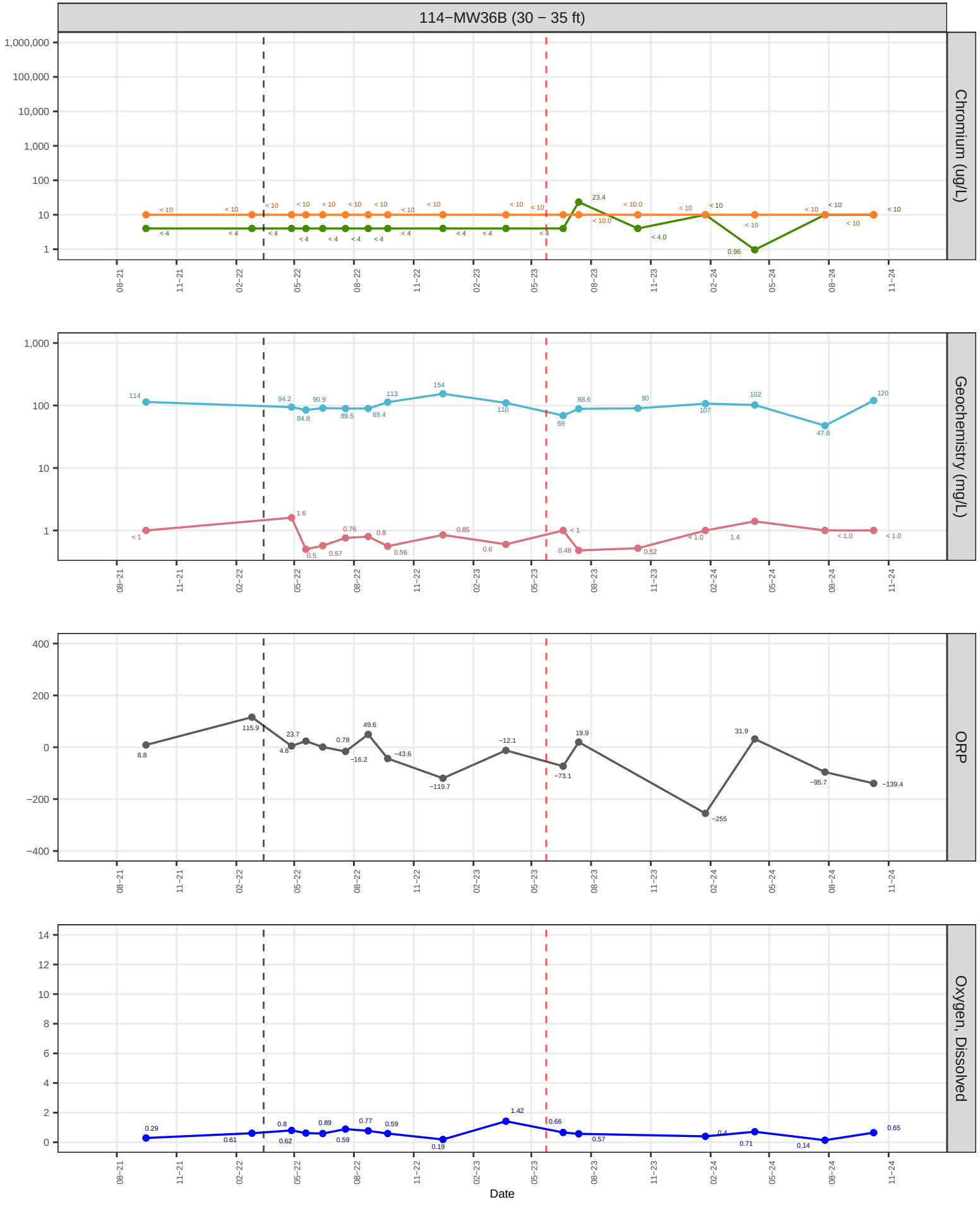

**Appendix B−3**
**Performance Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Phase III**

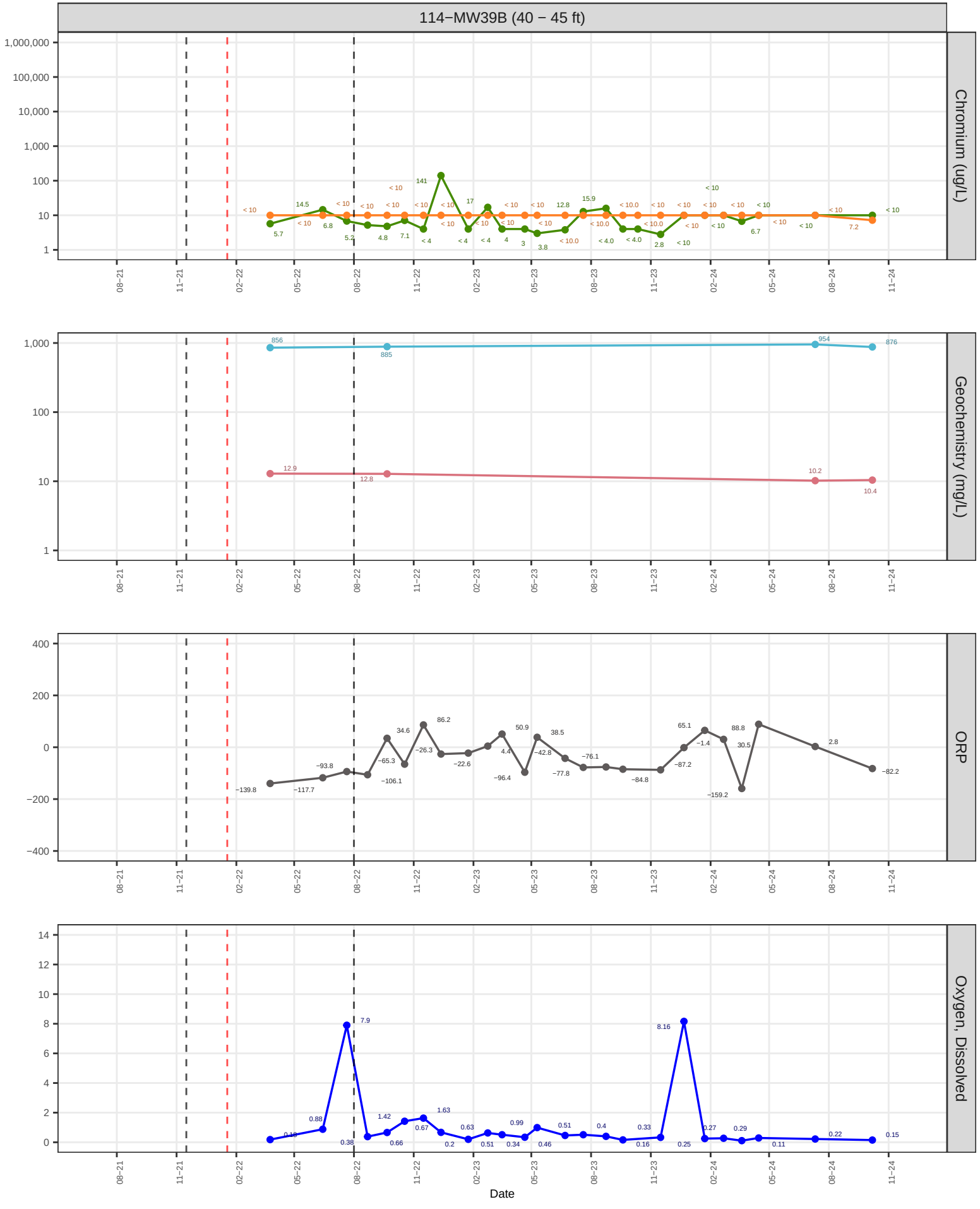

**Appendix B−3**
**Performance Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Phase III**

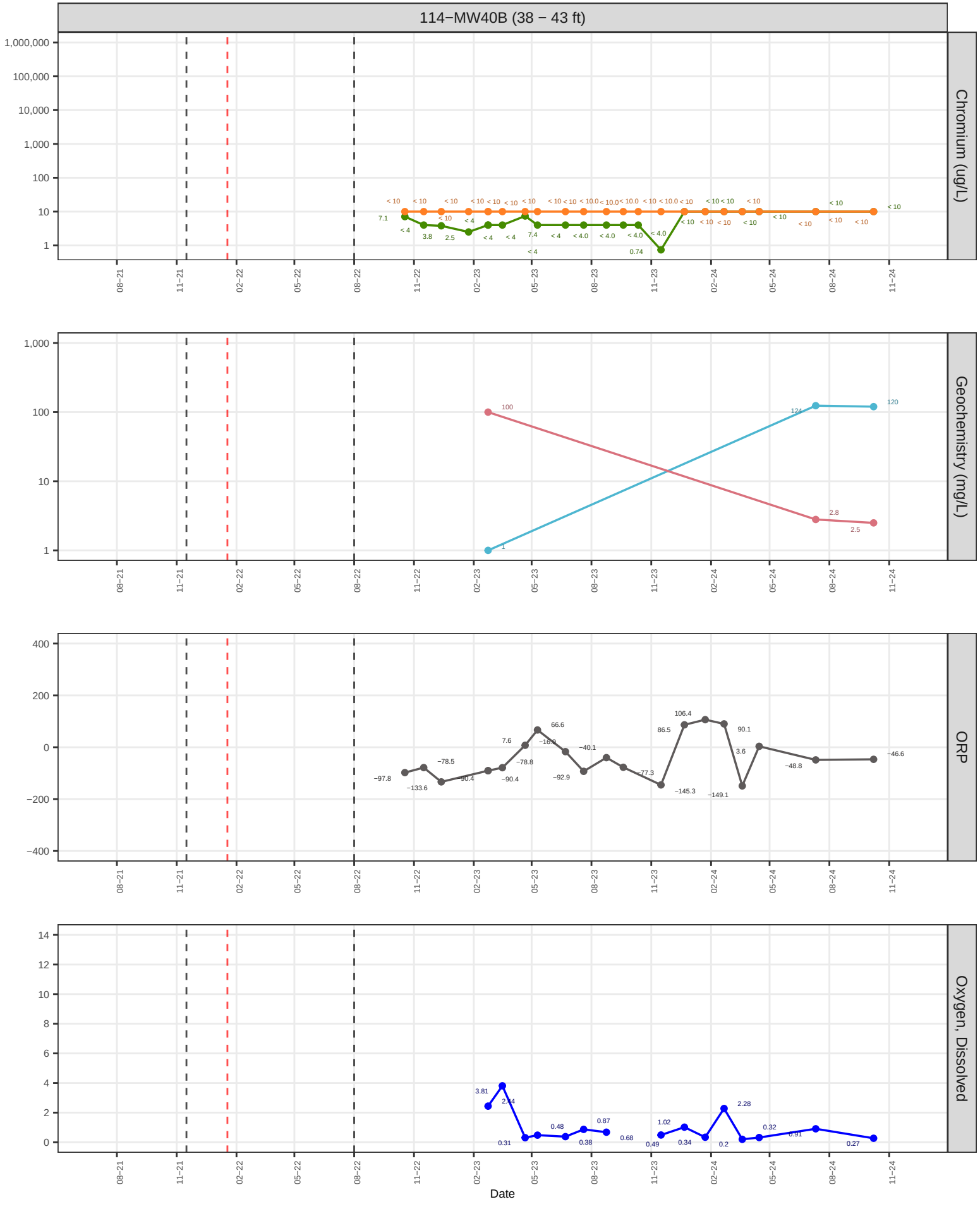

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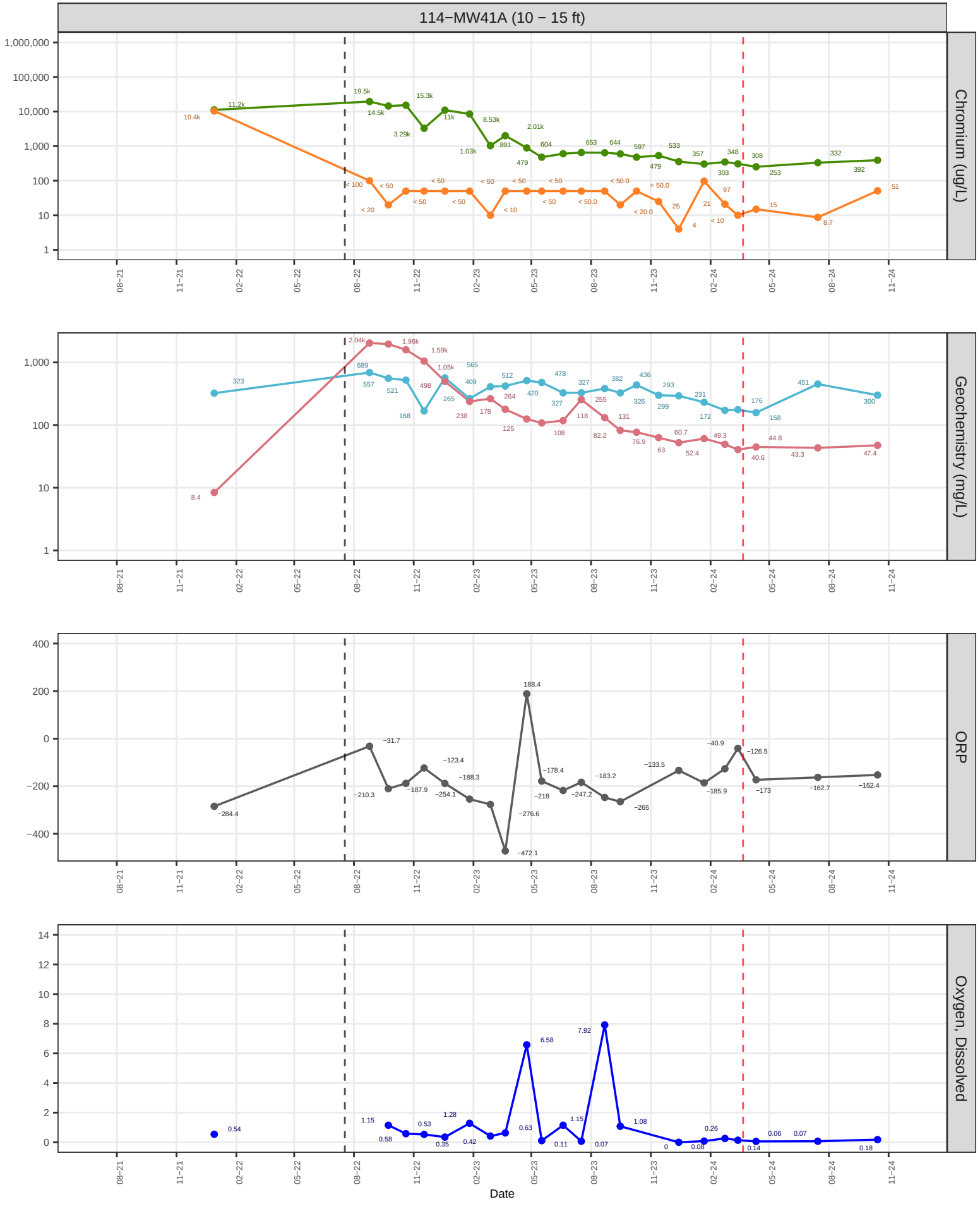

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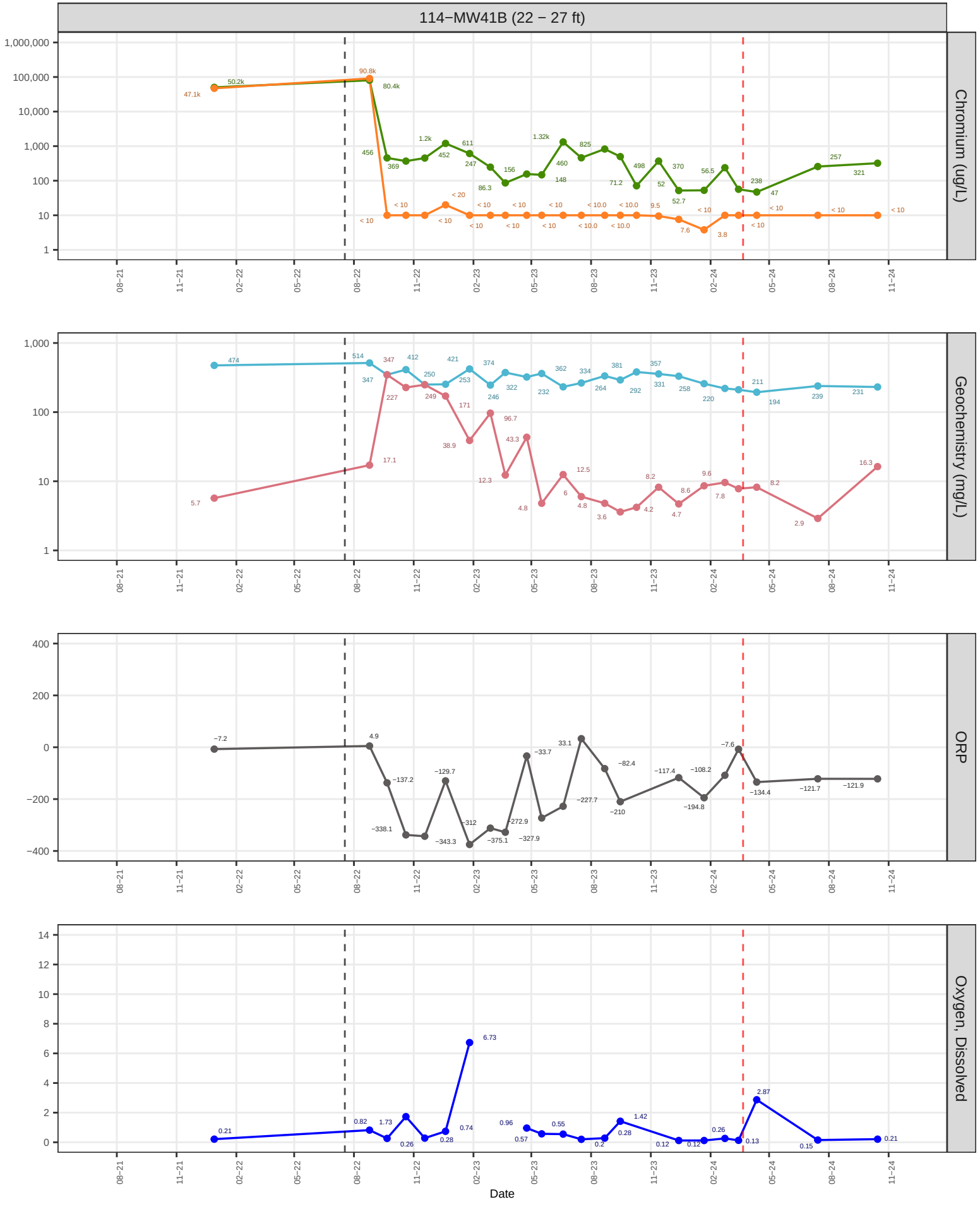

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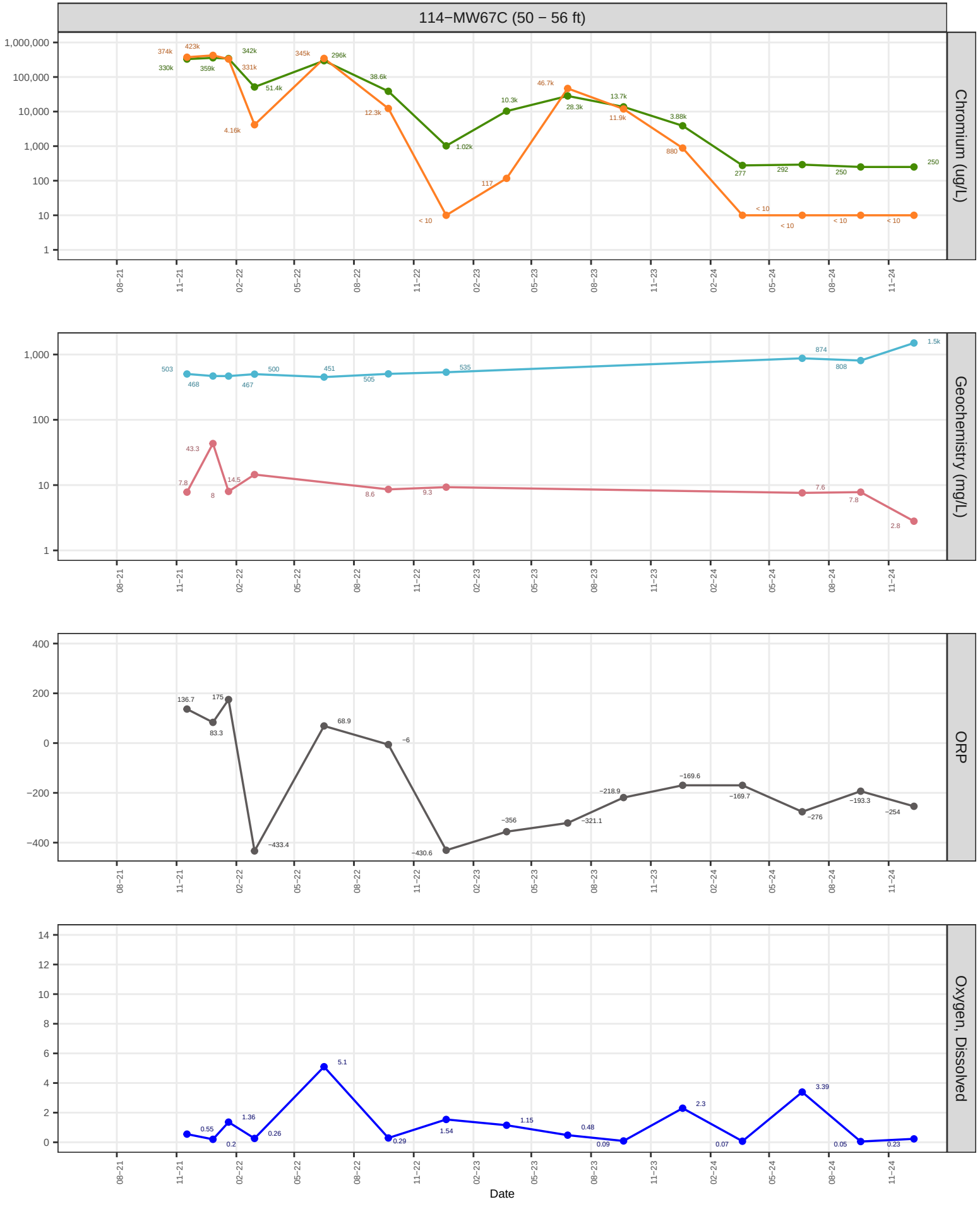

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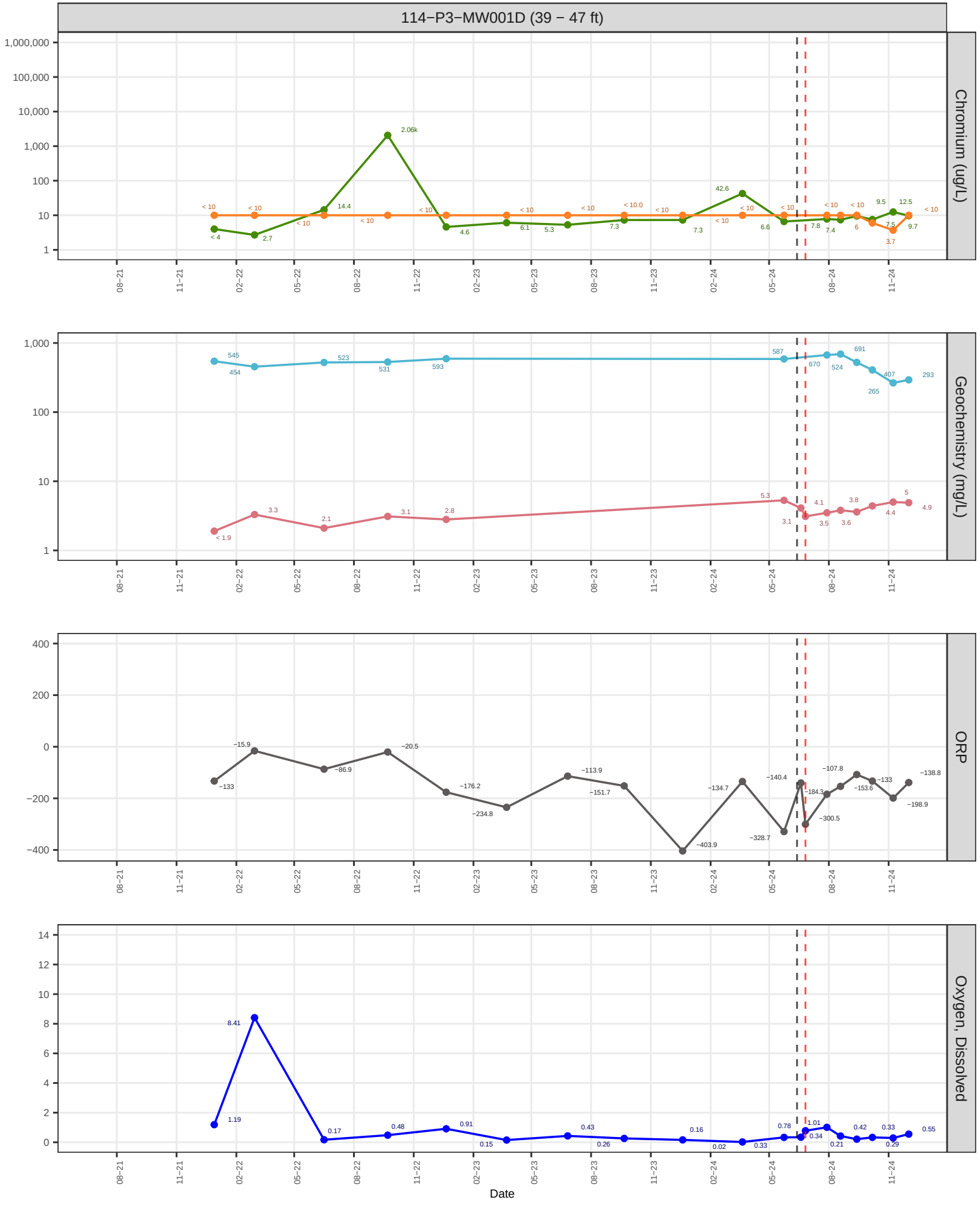

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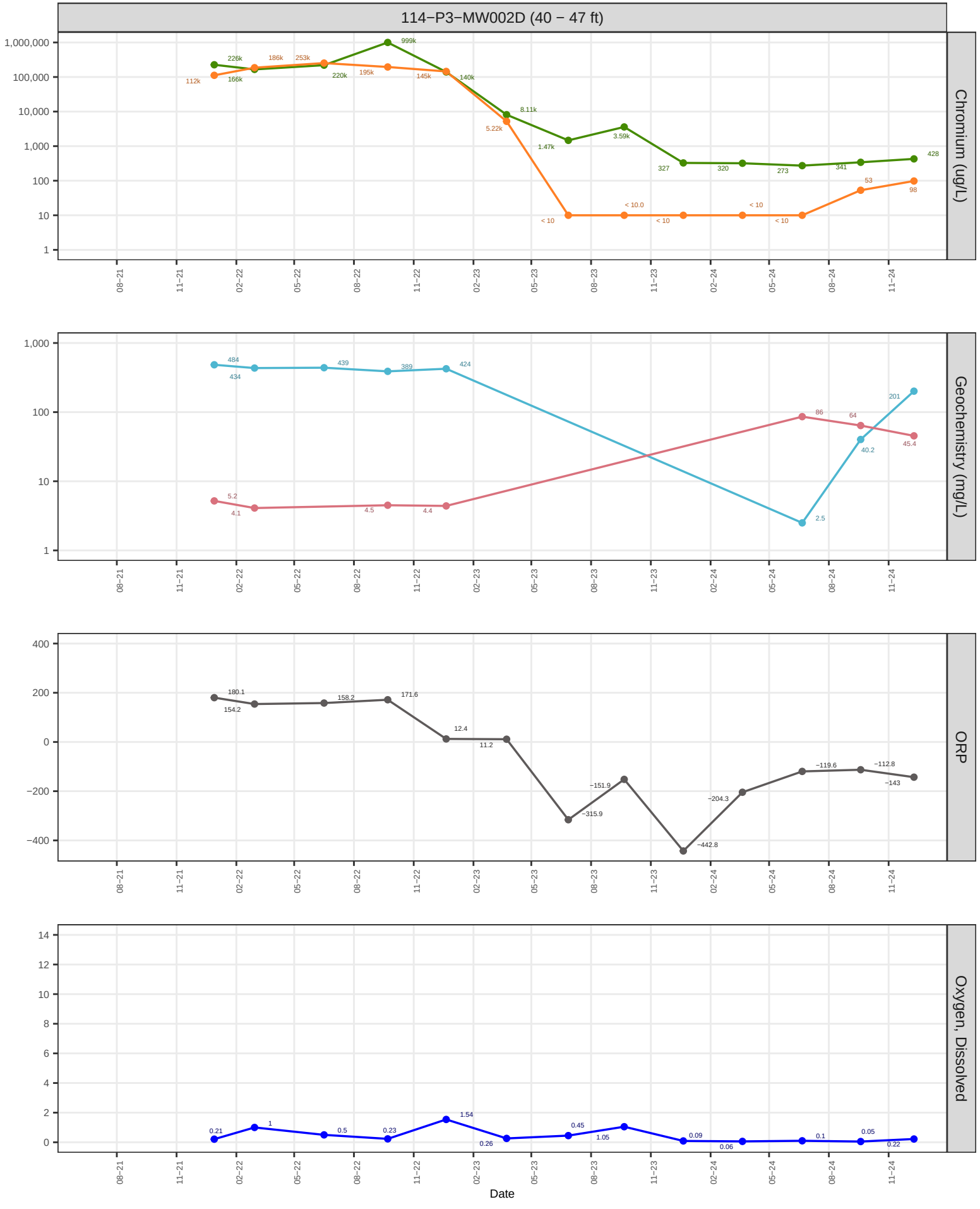

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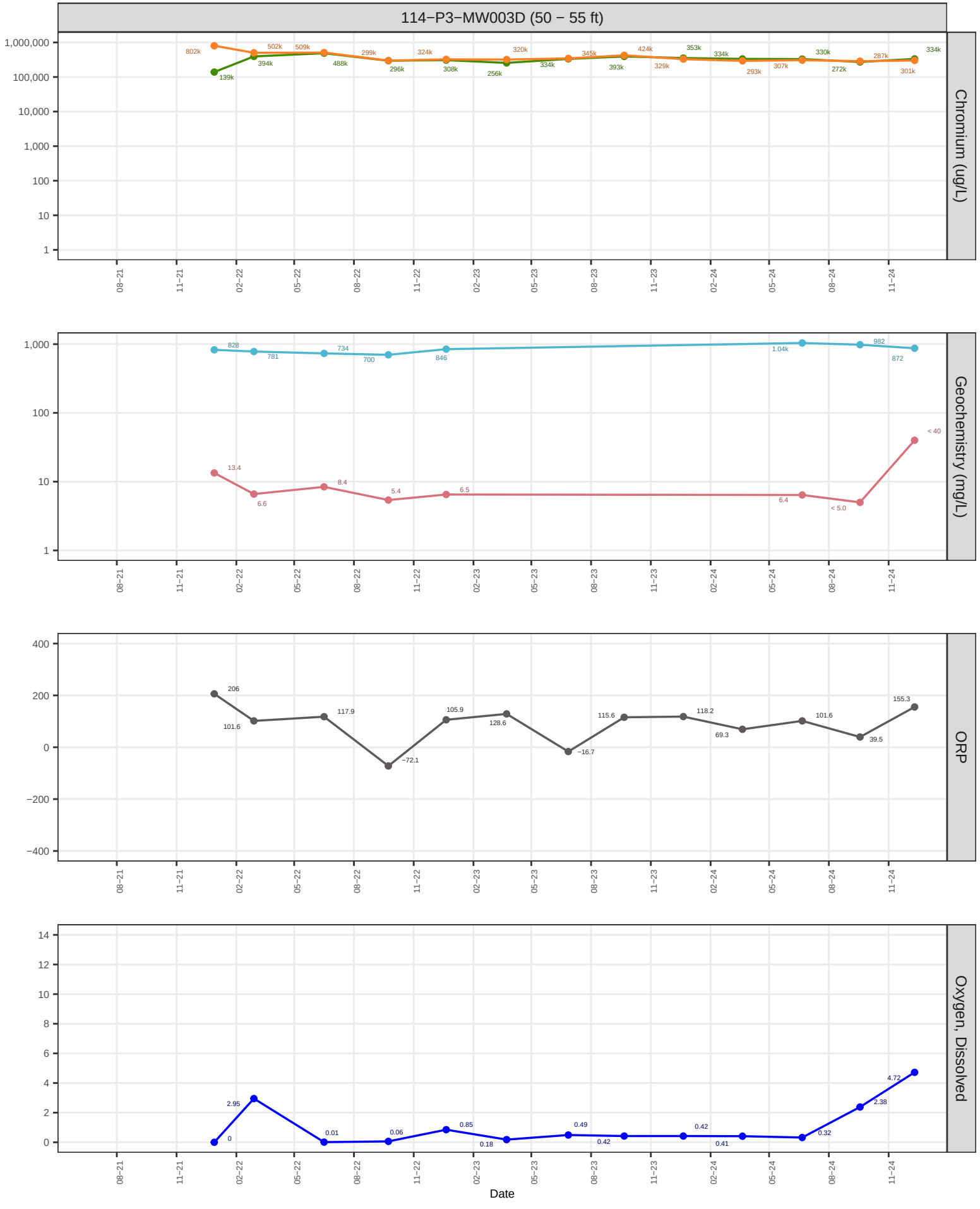

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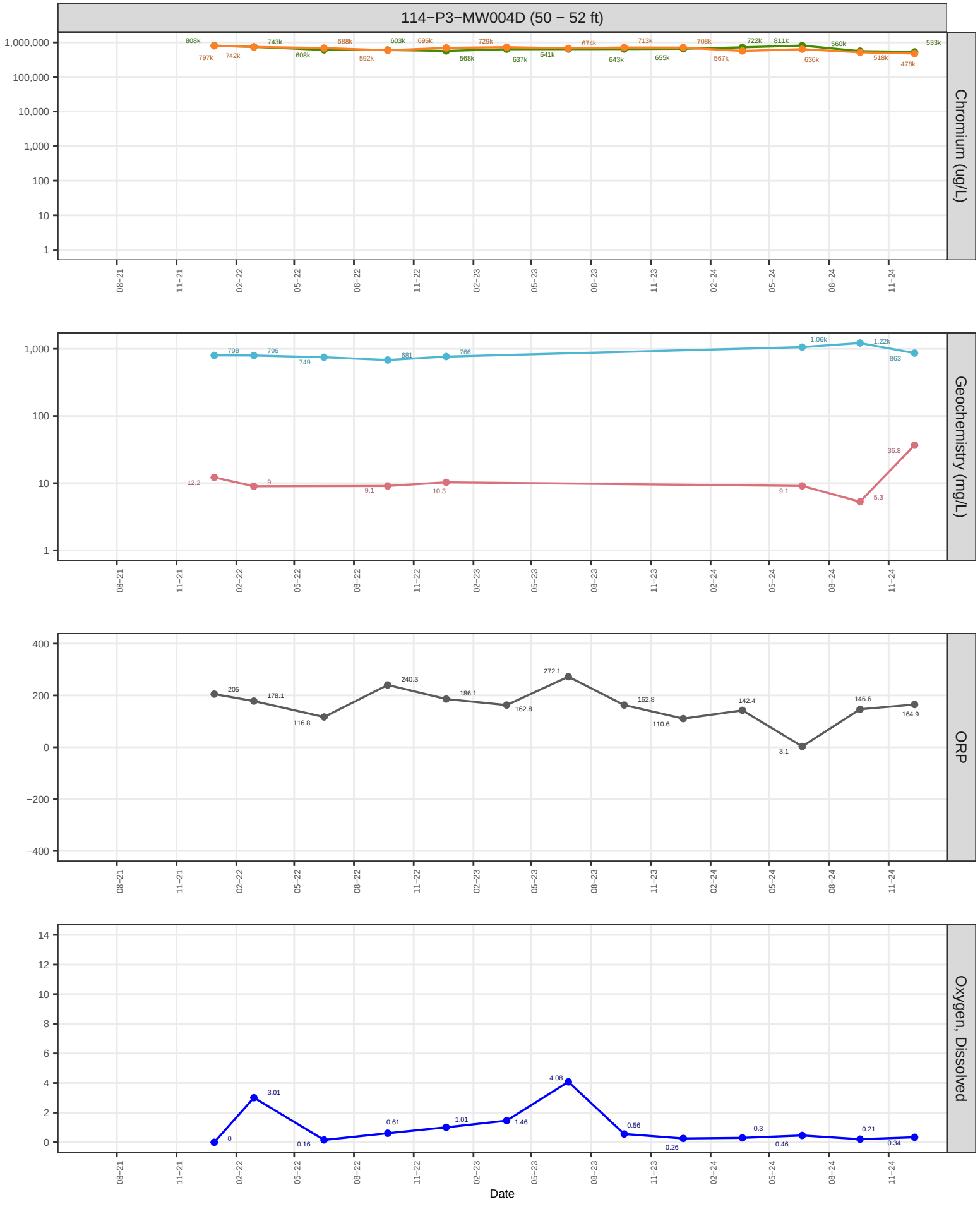

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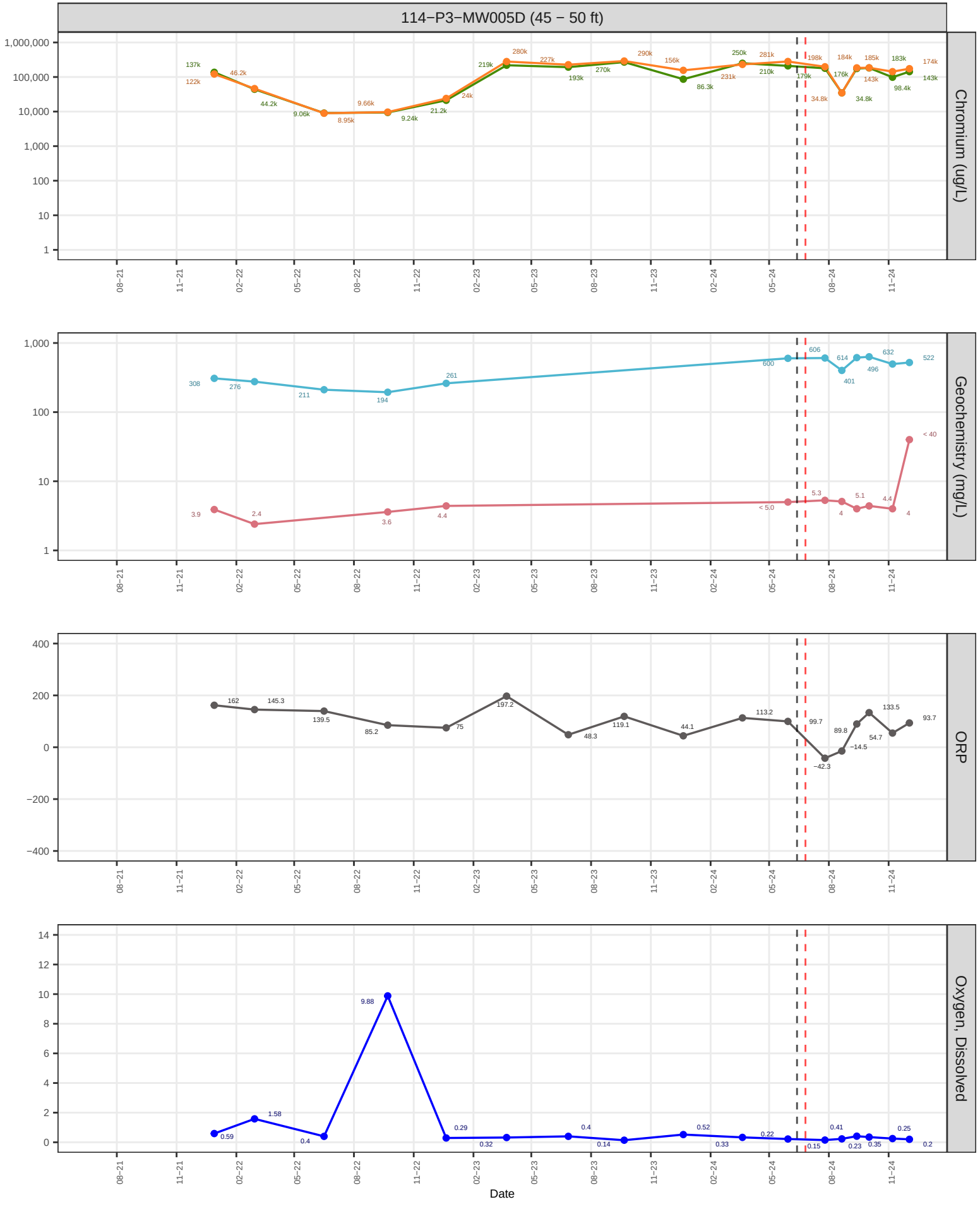

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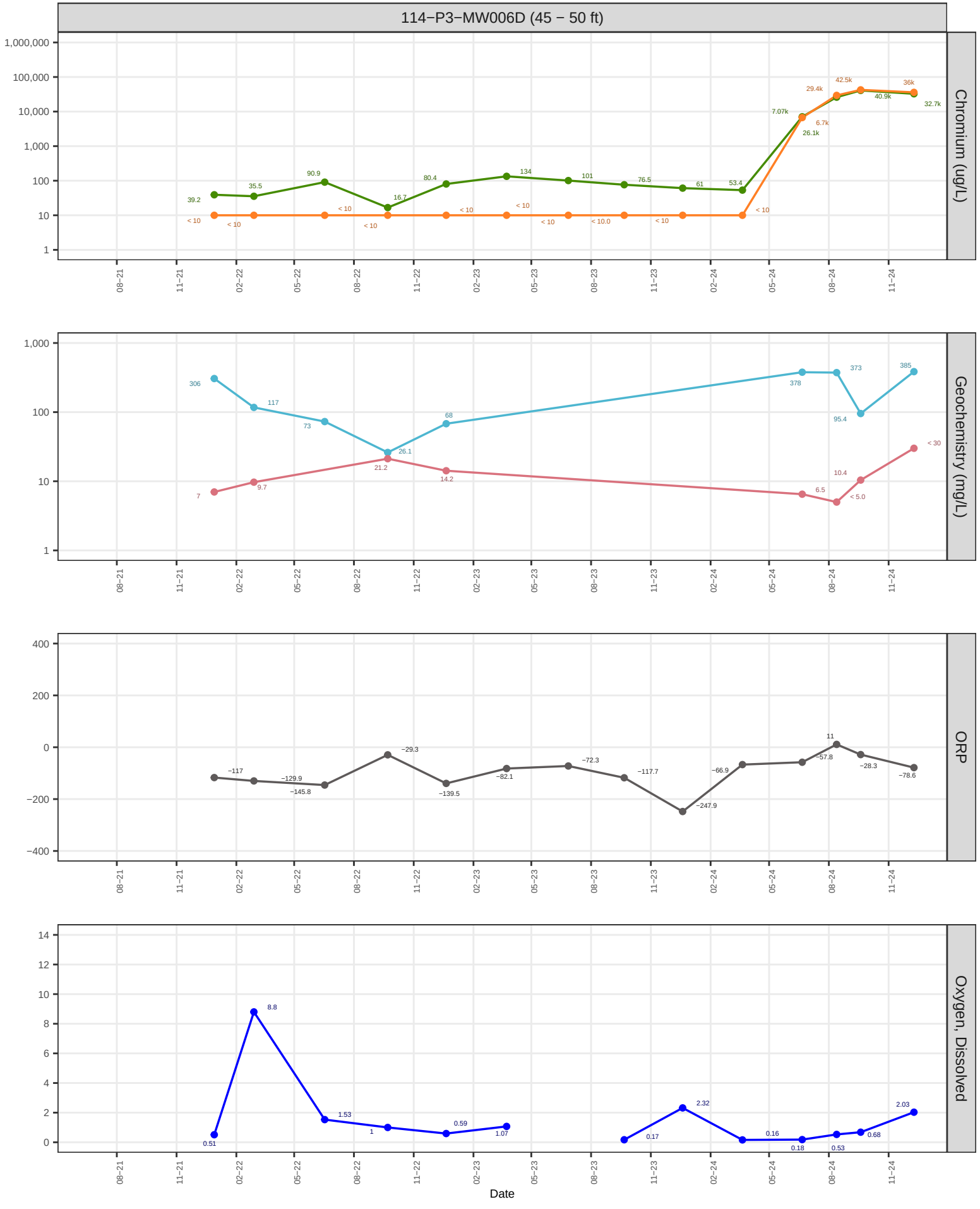

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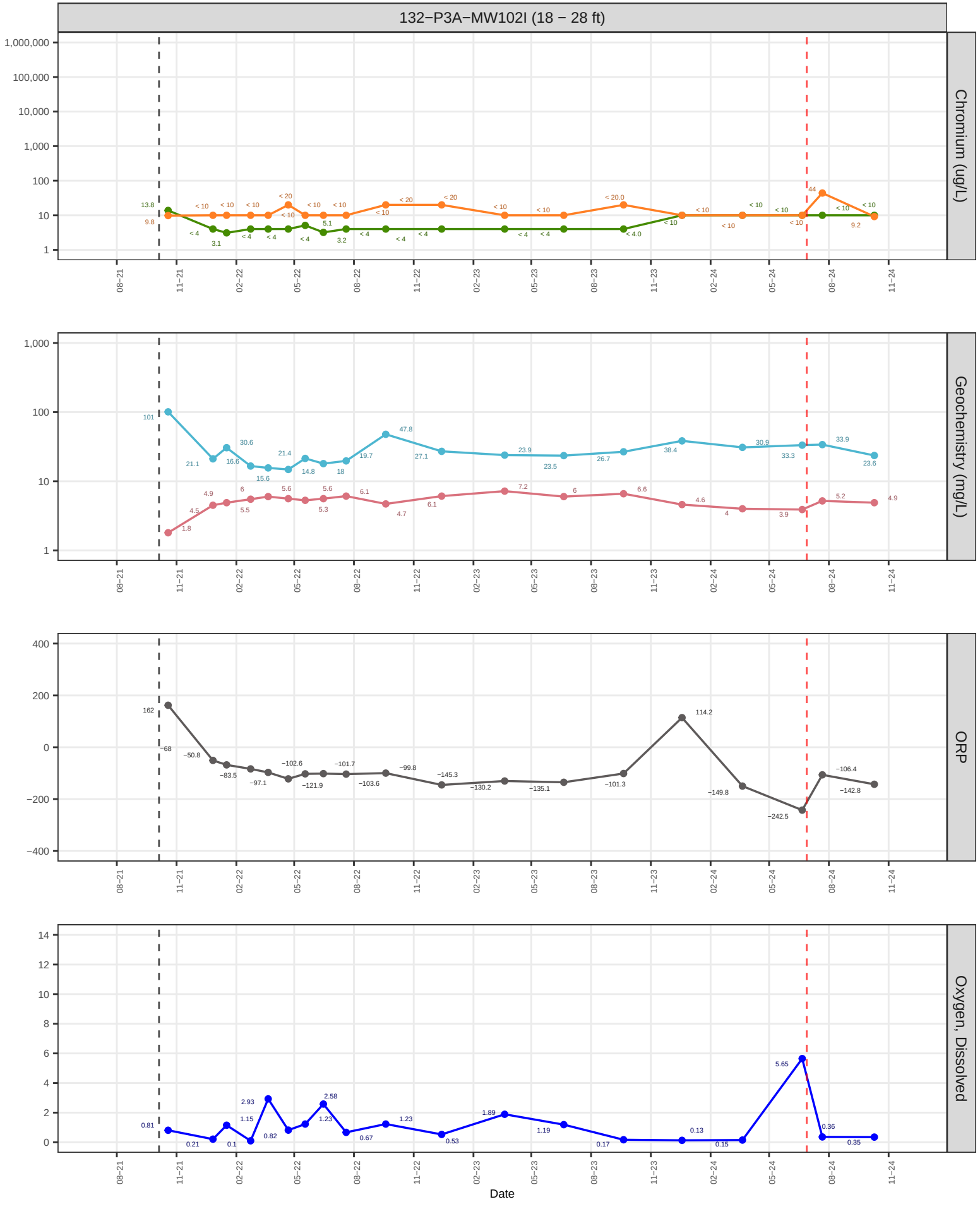

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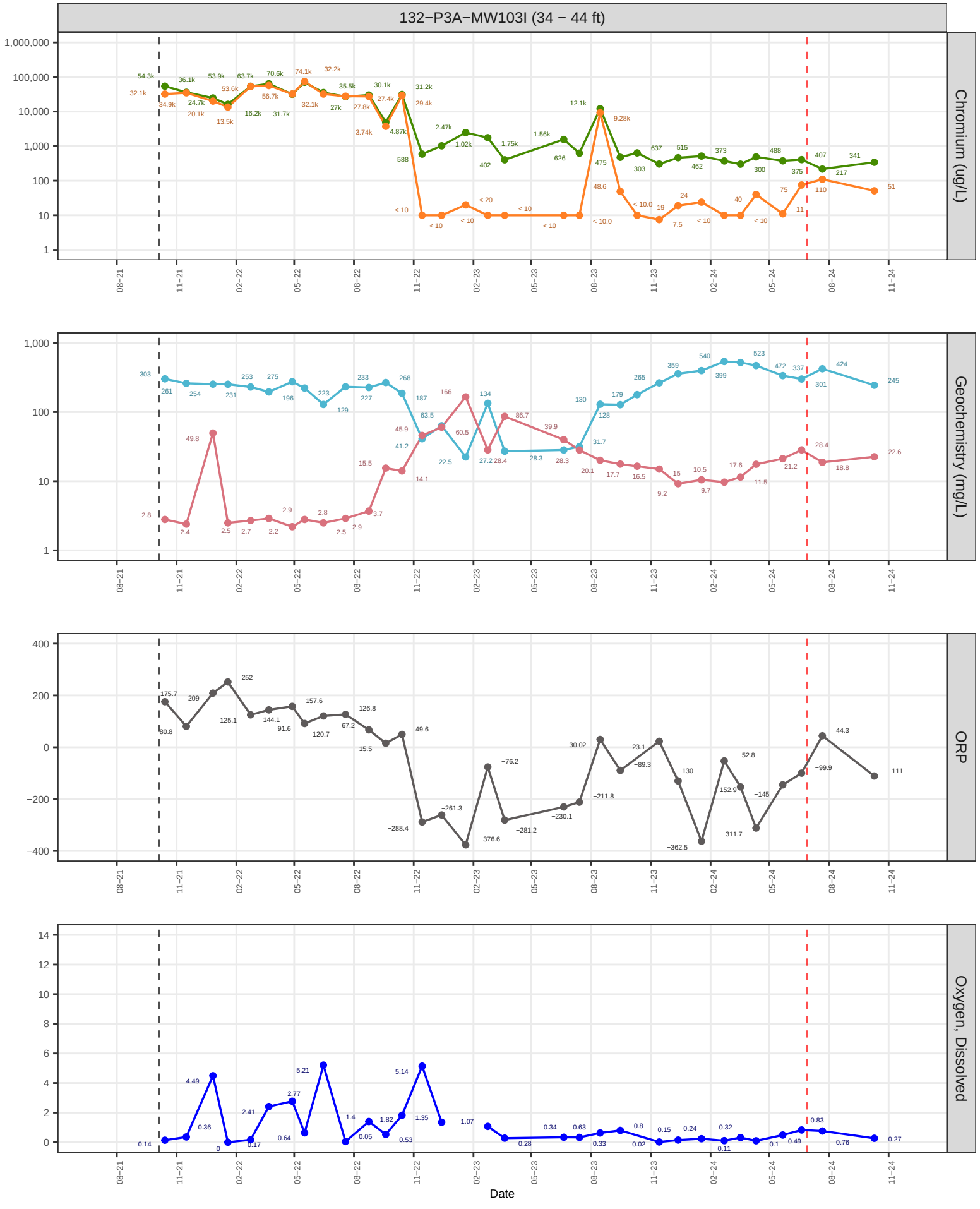

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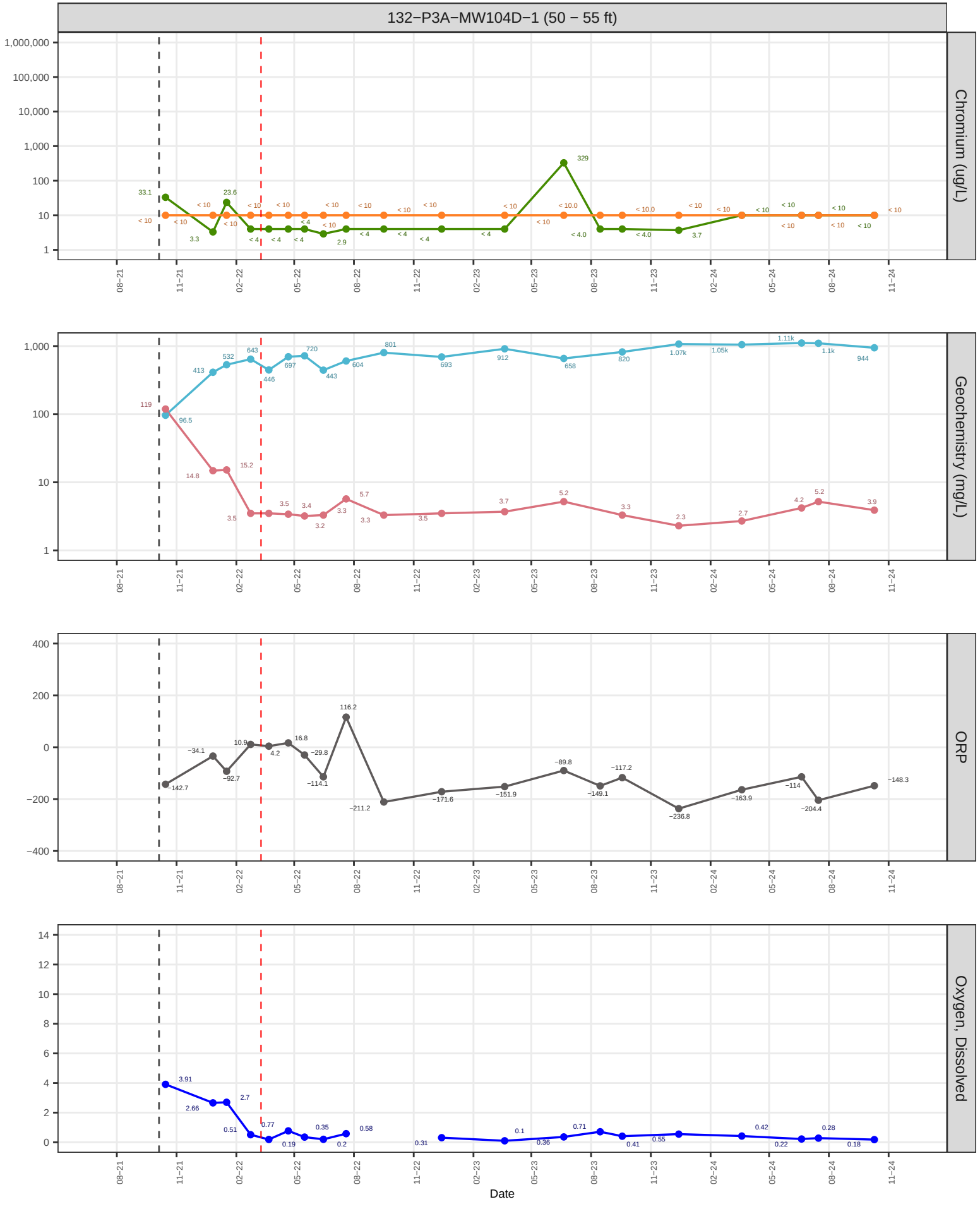

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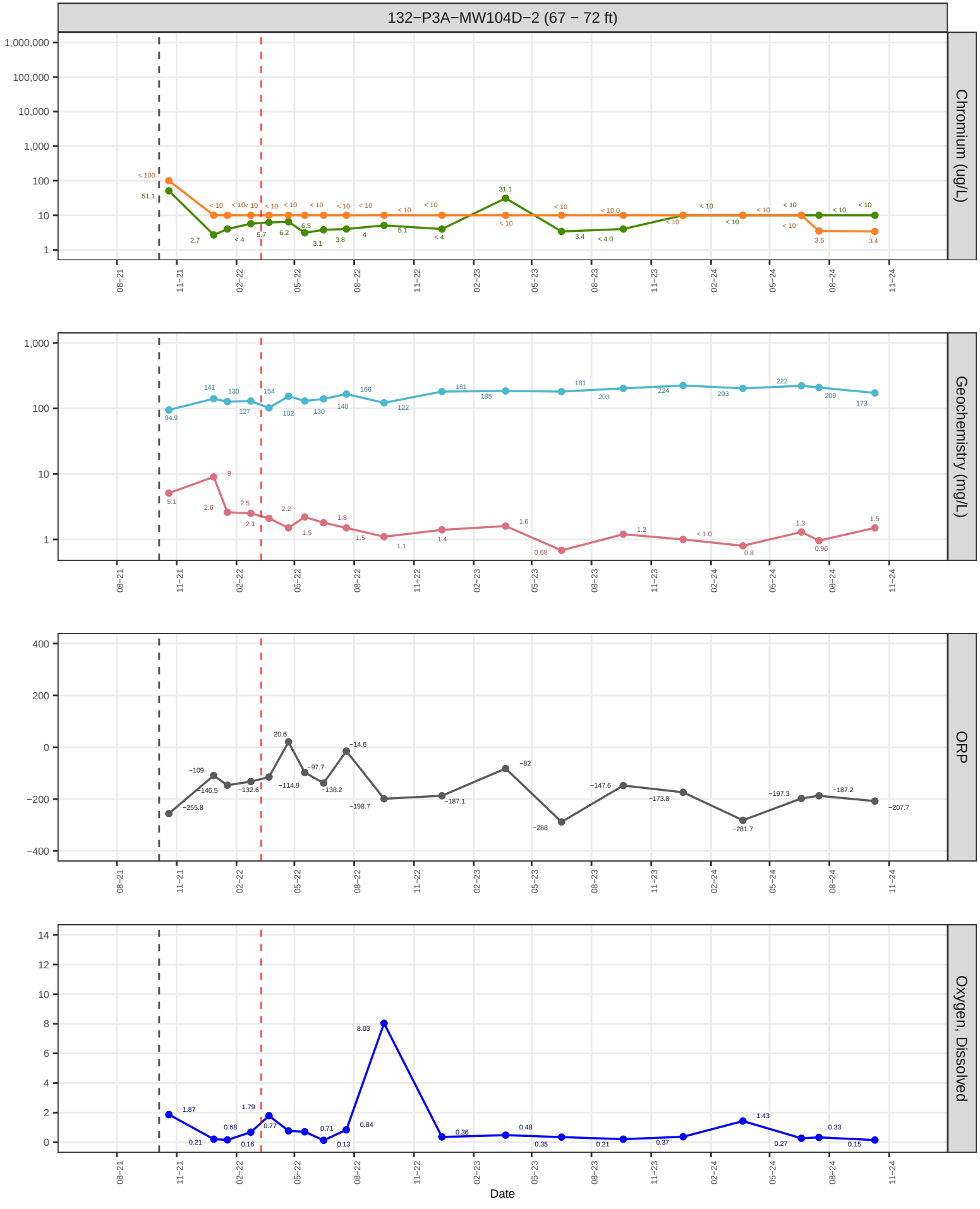

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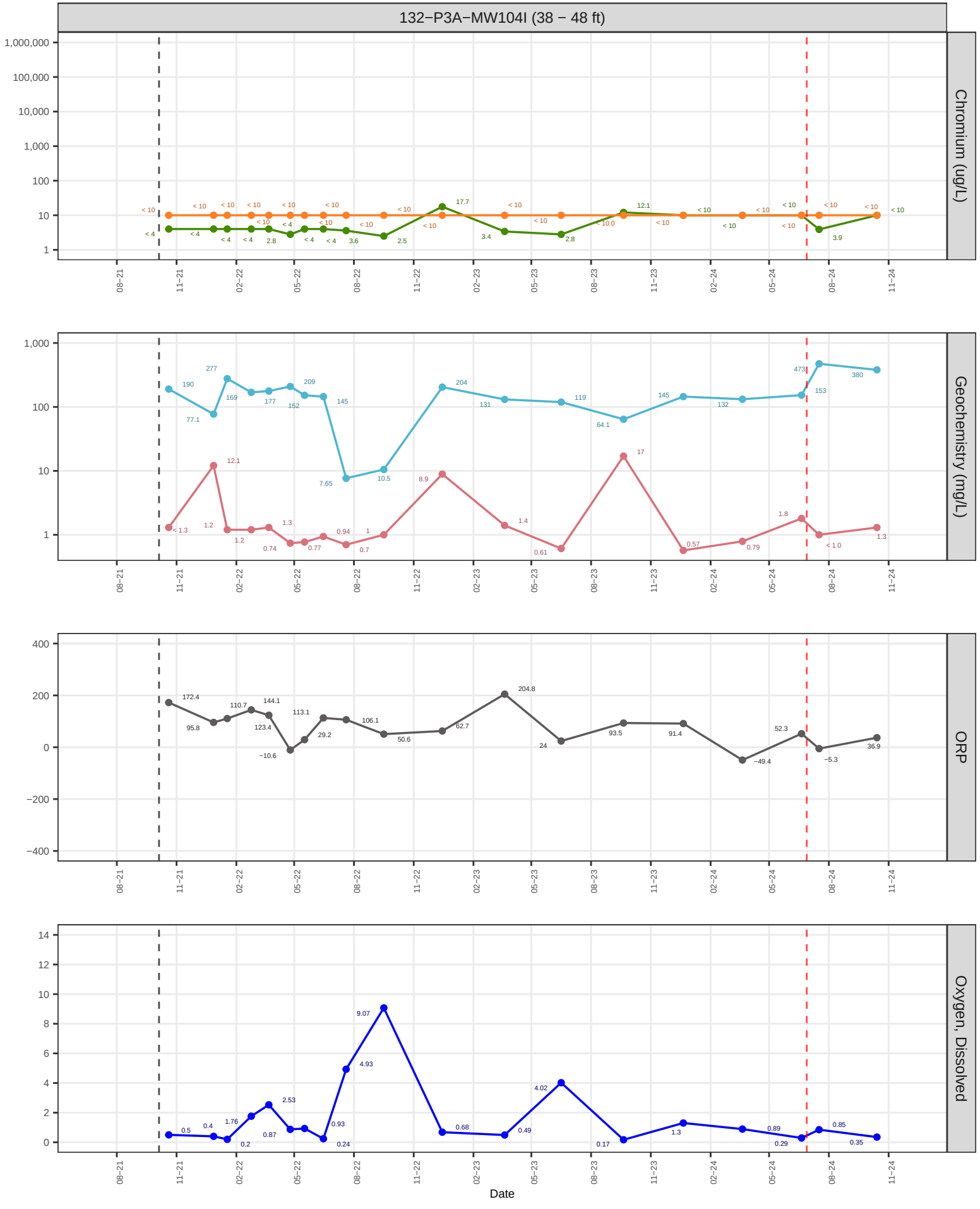

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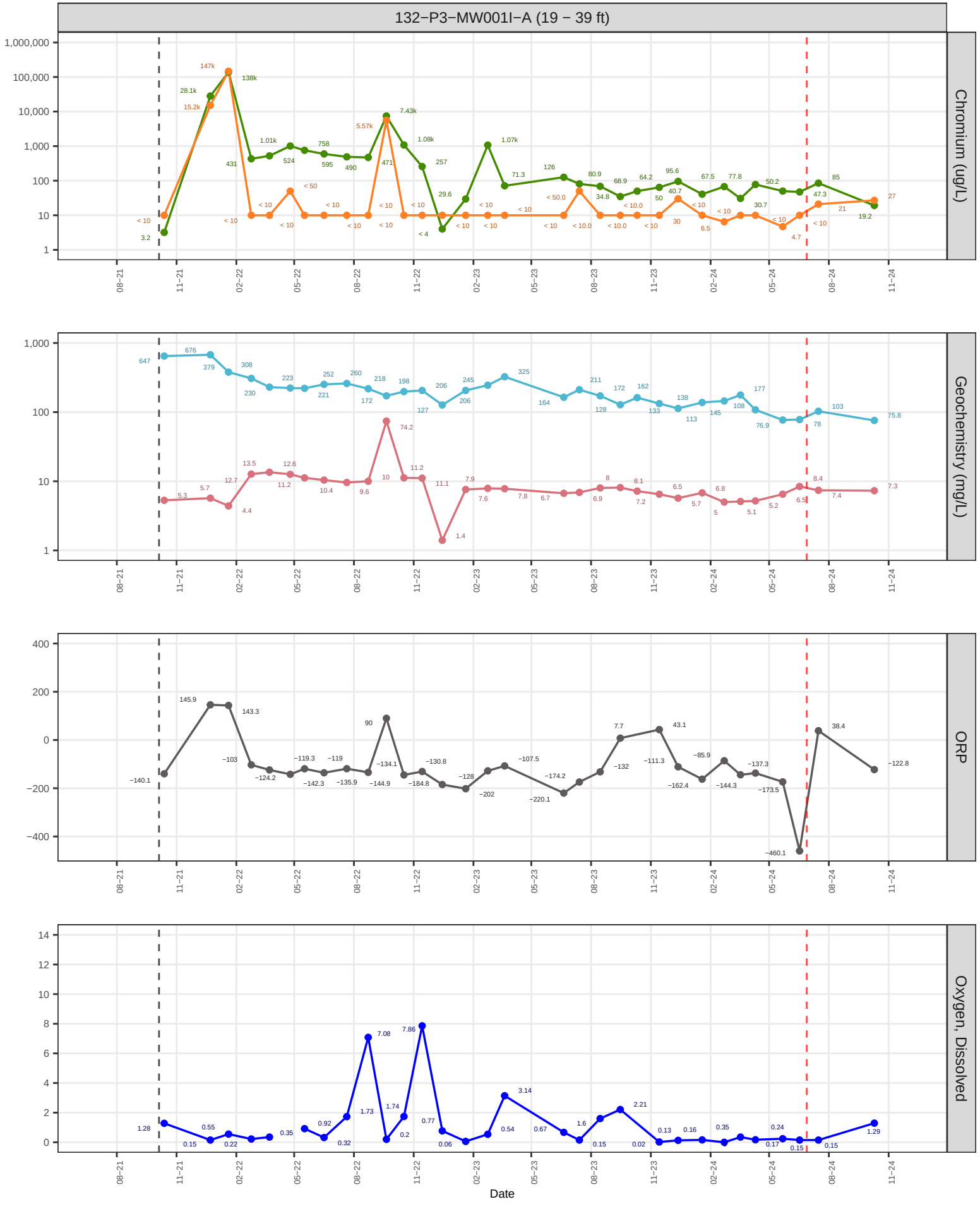

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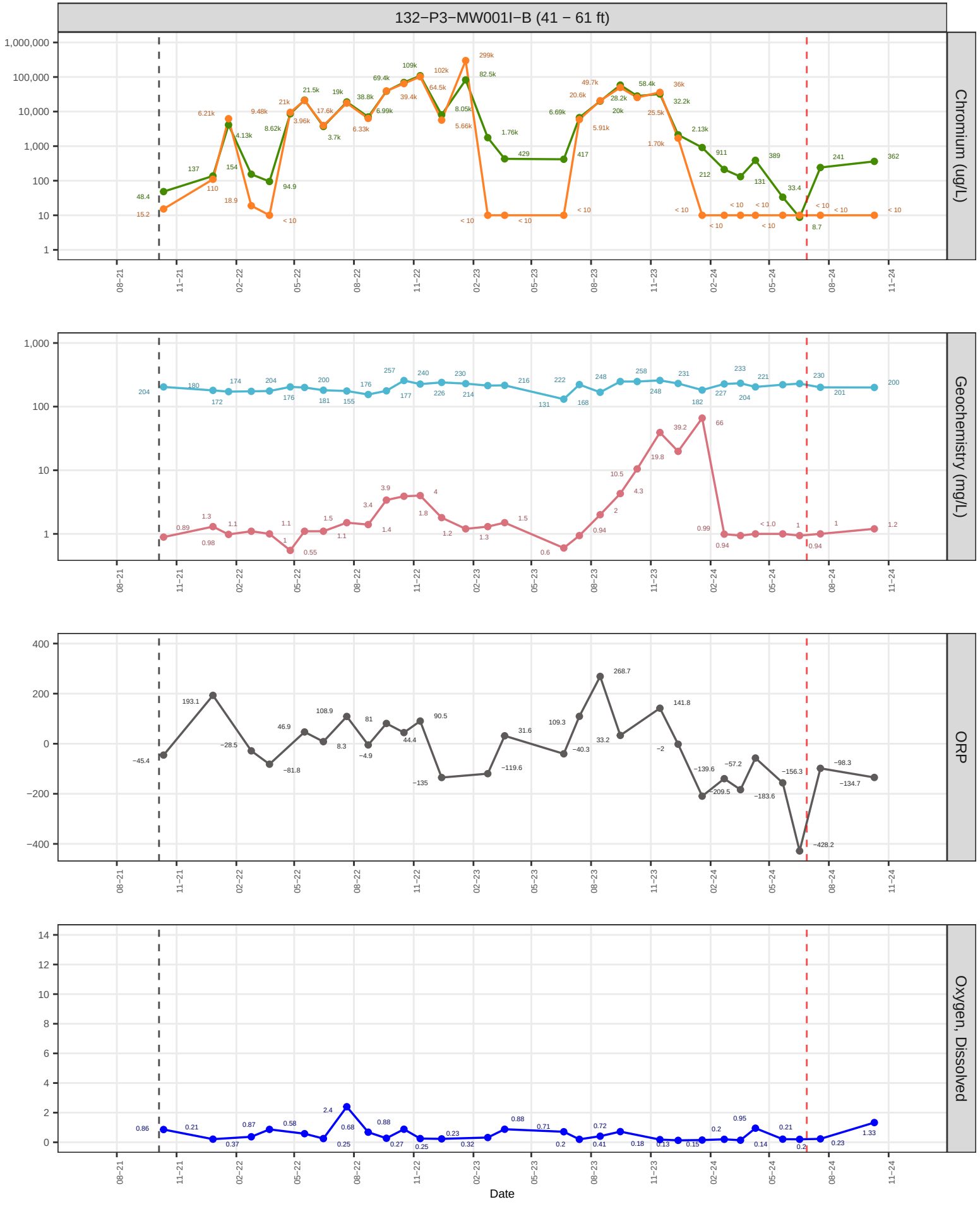

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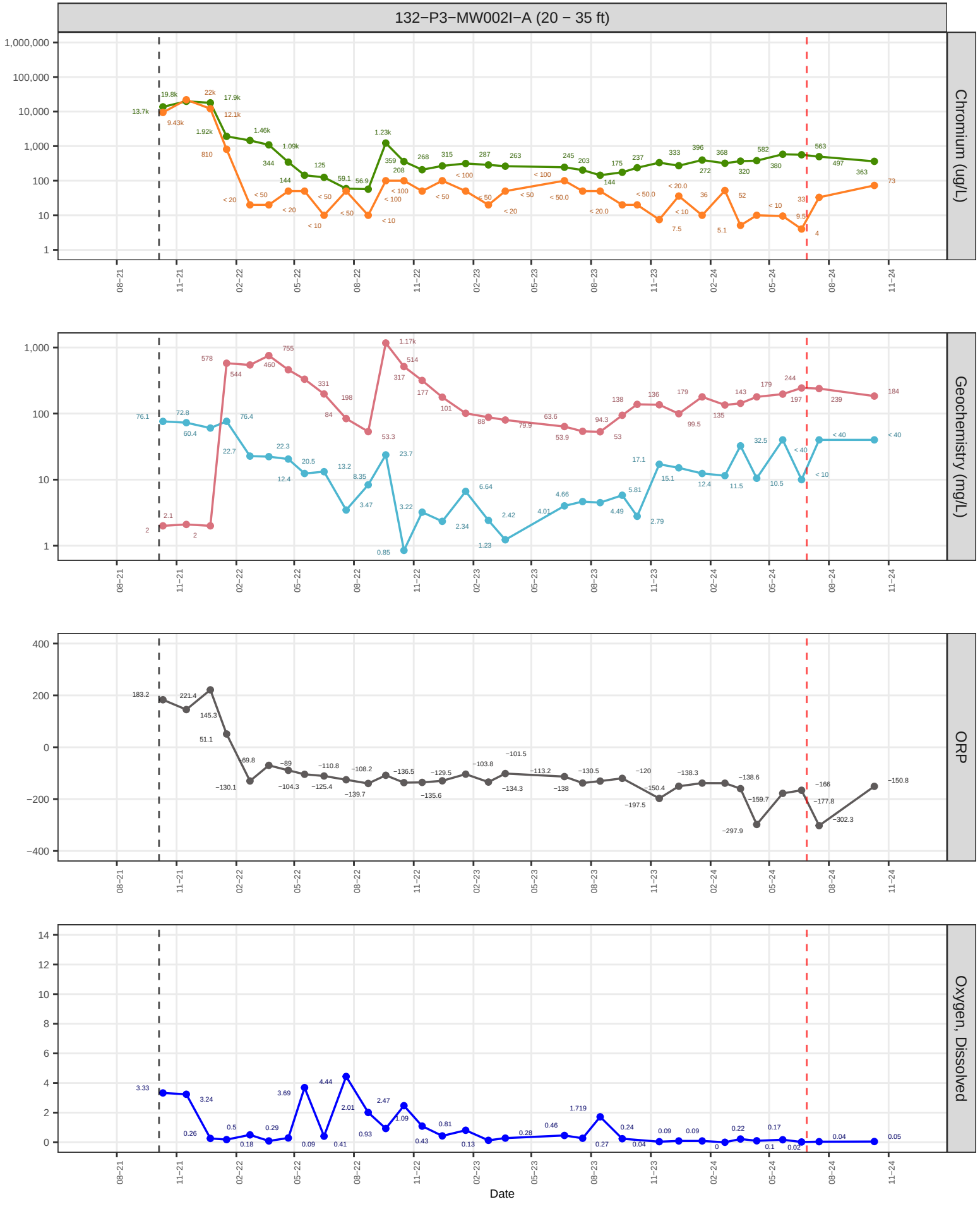

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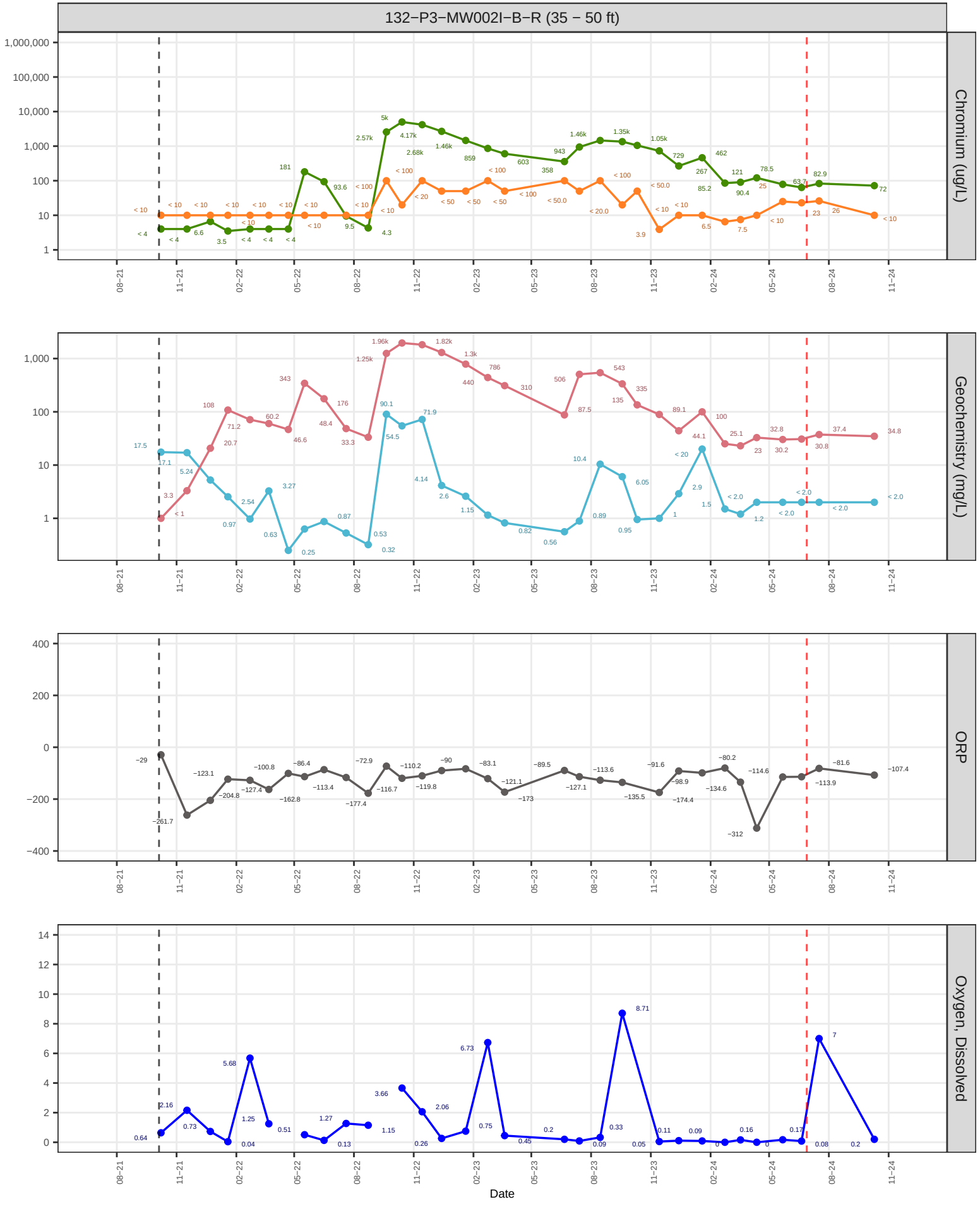

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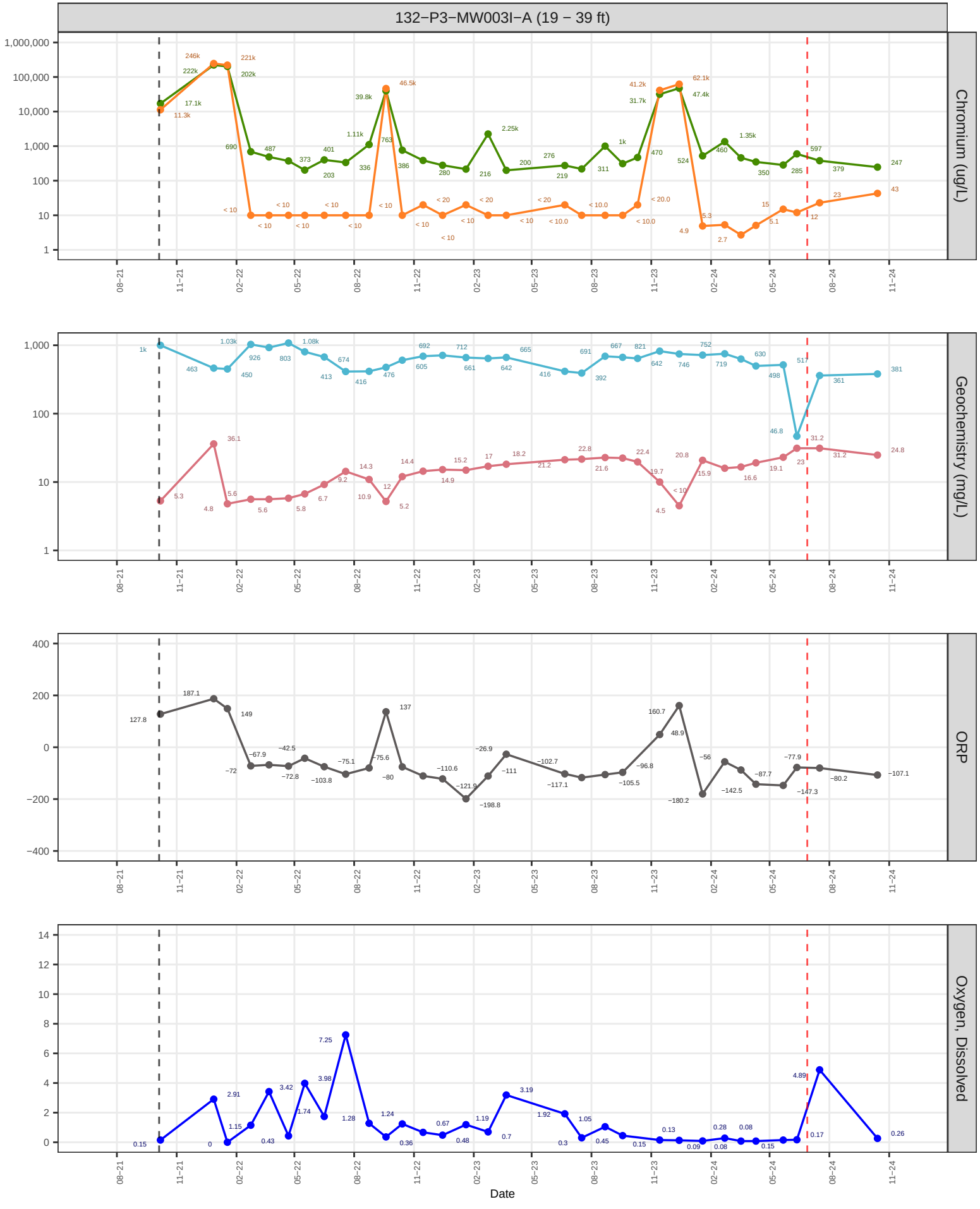

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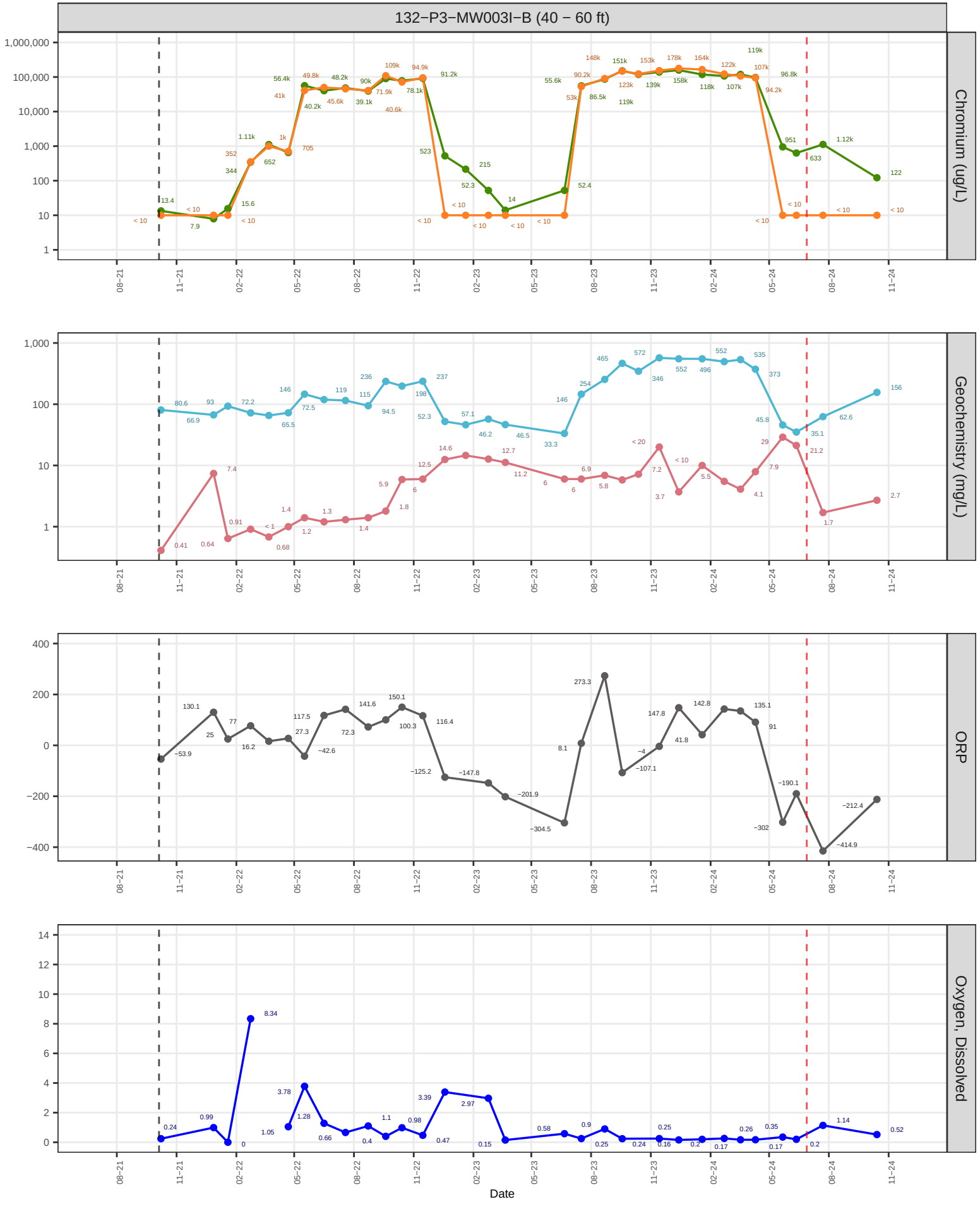

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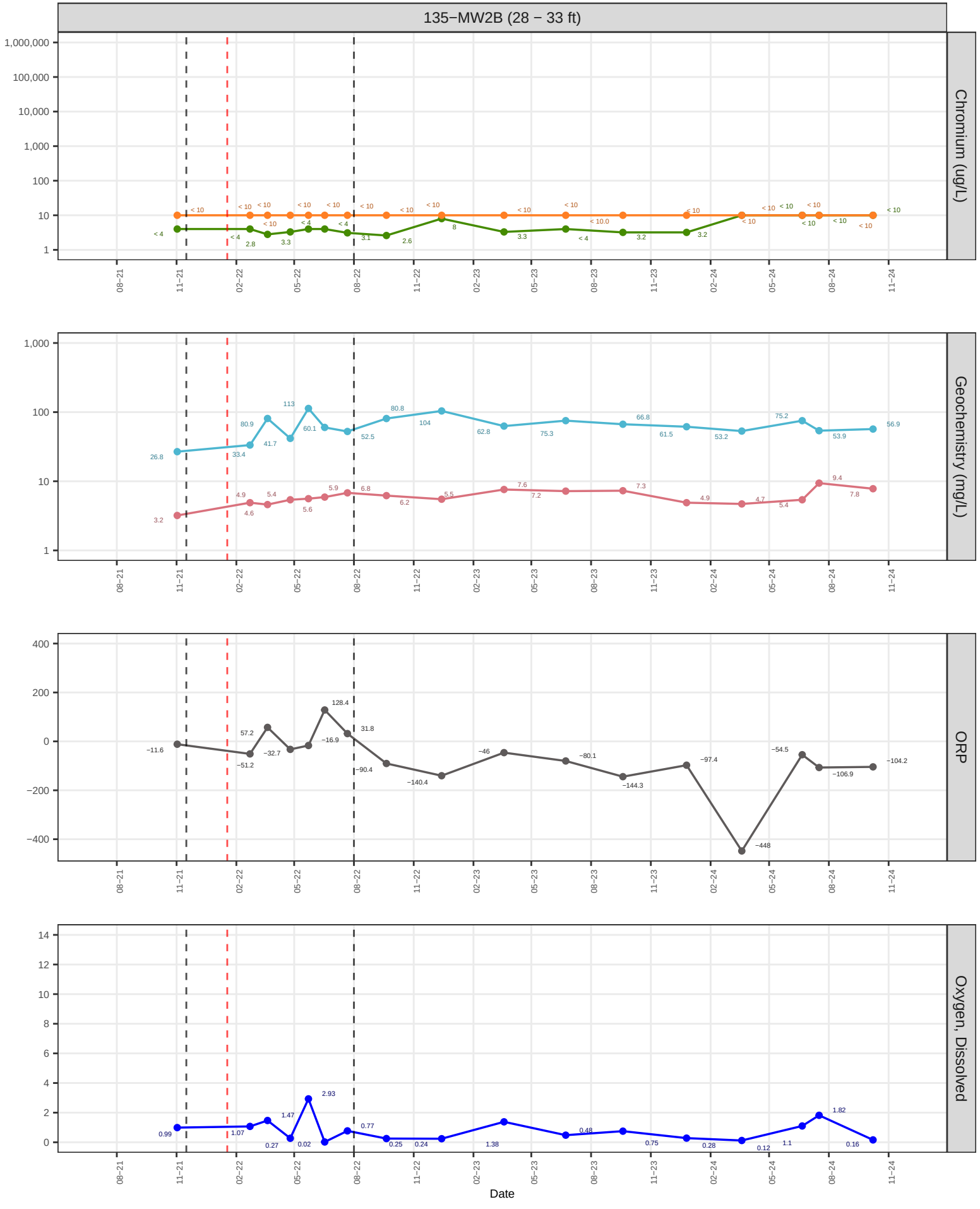

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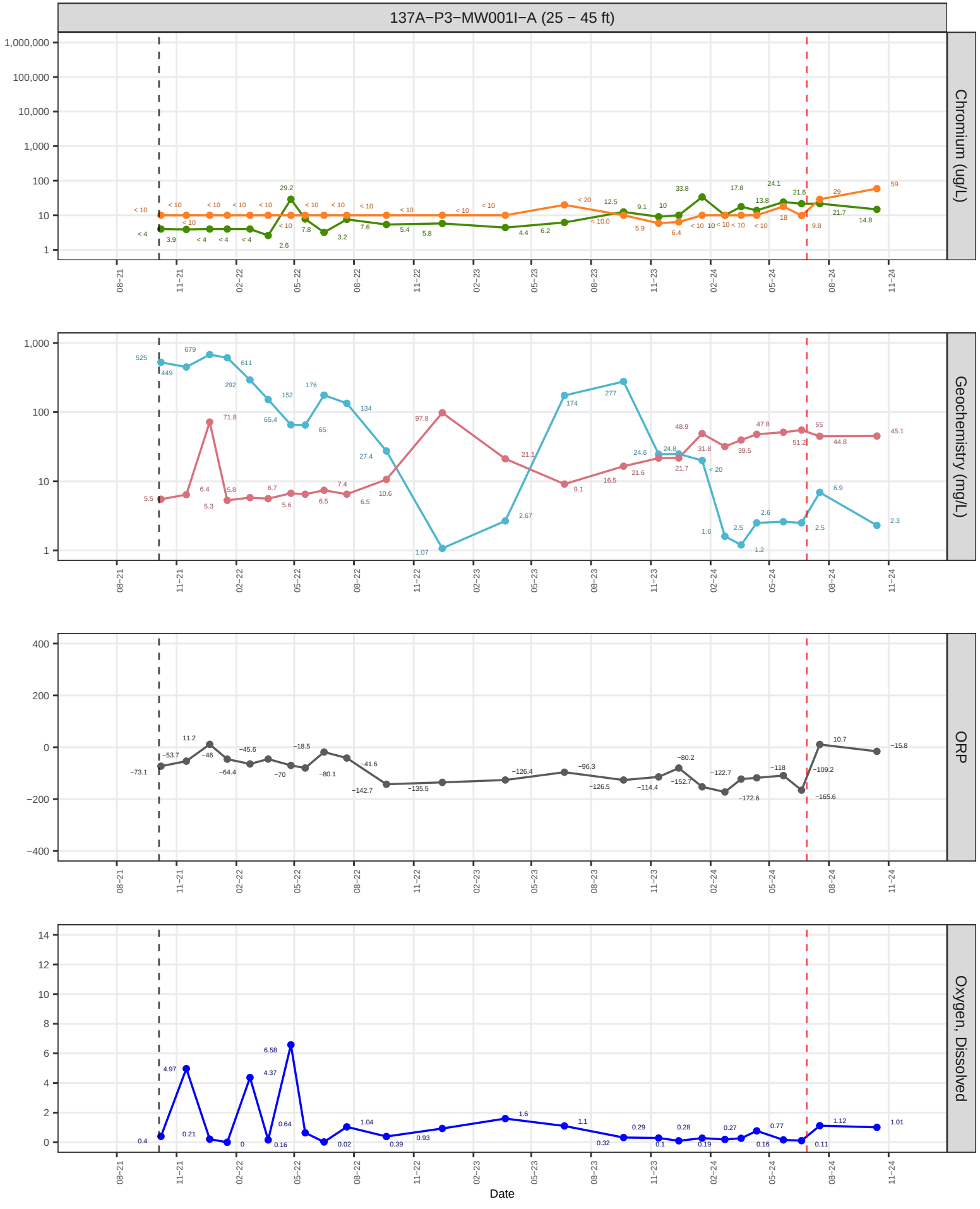

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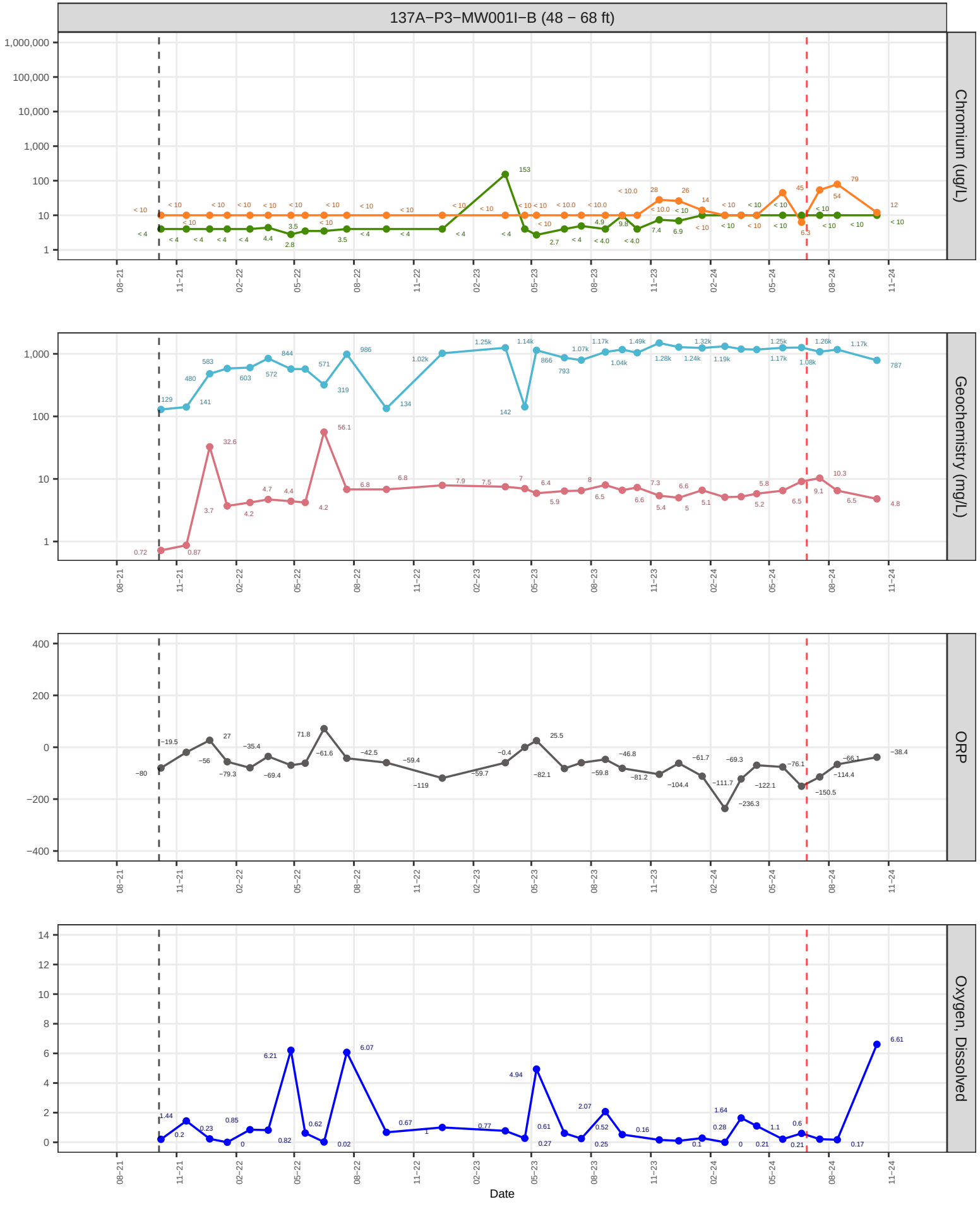

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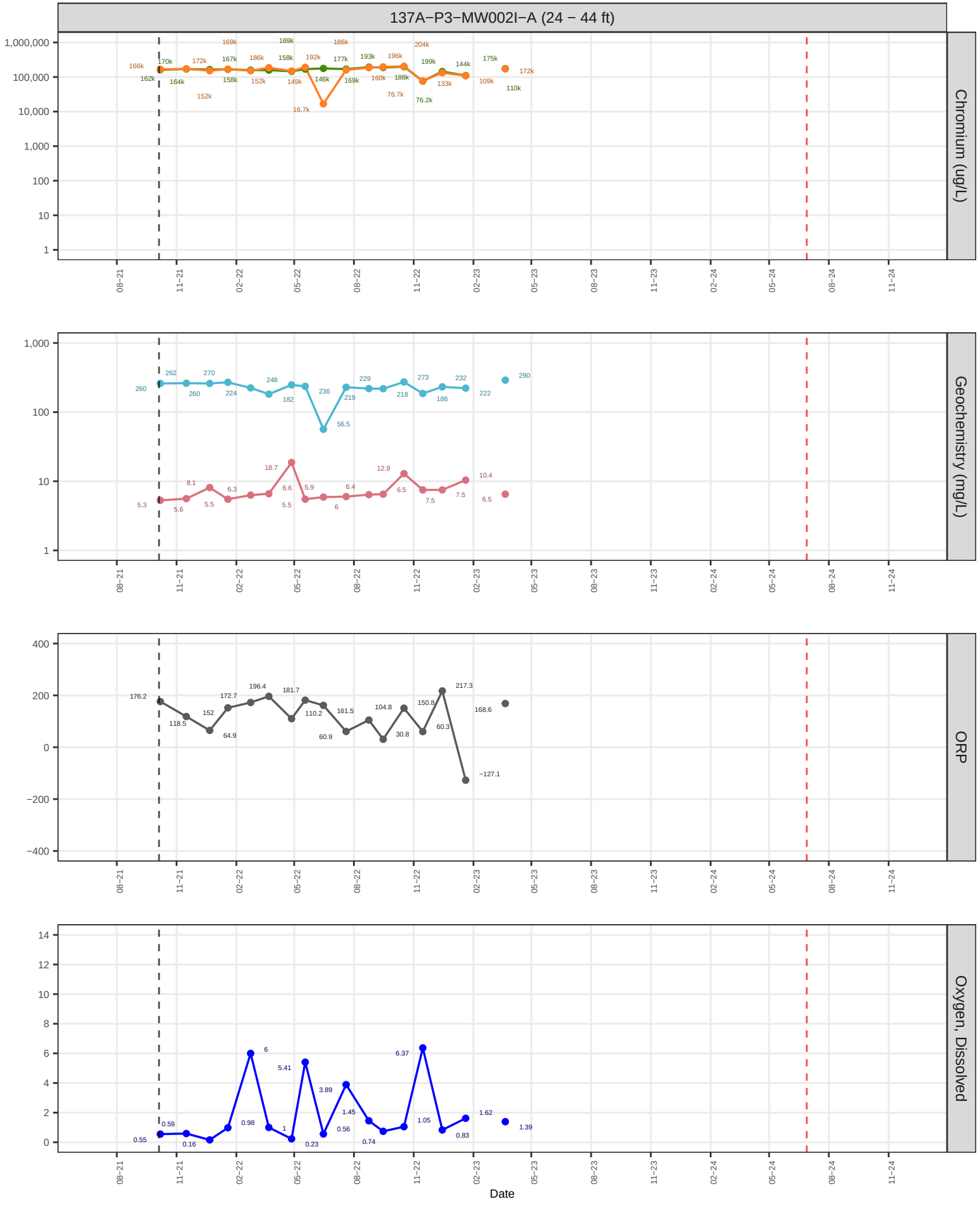

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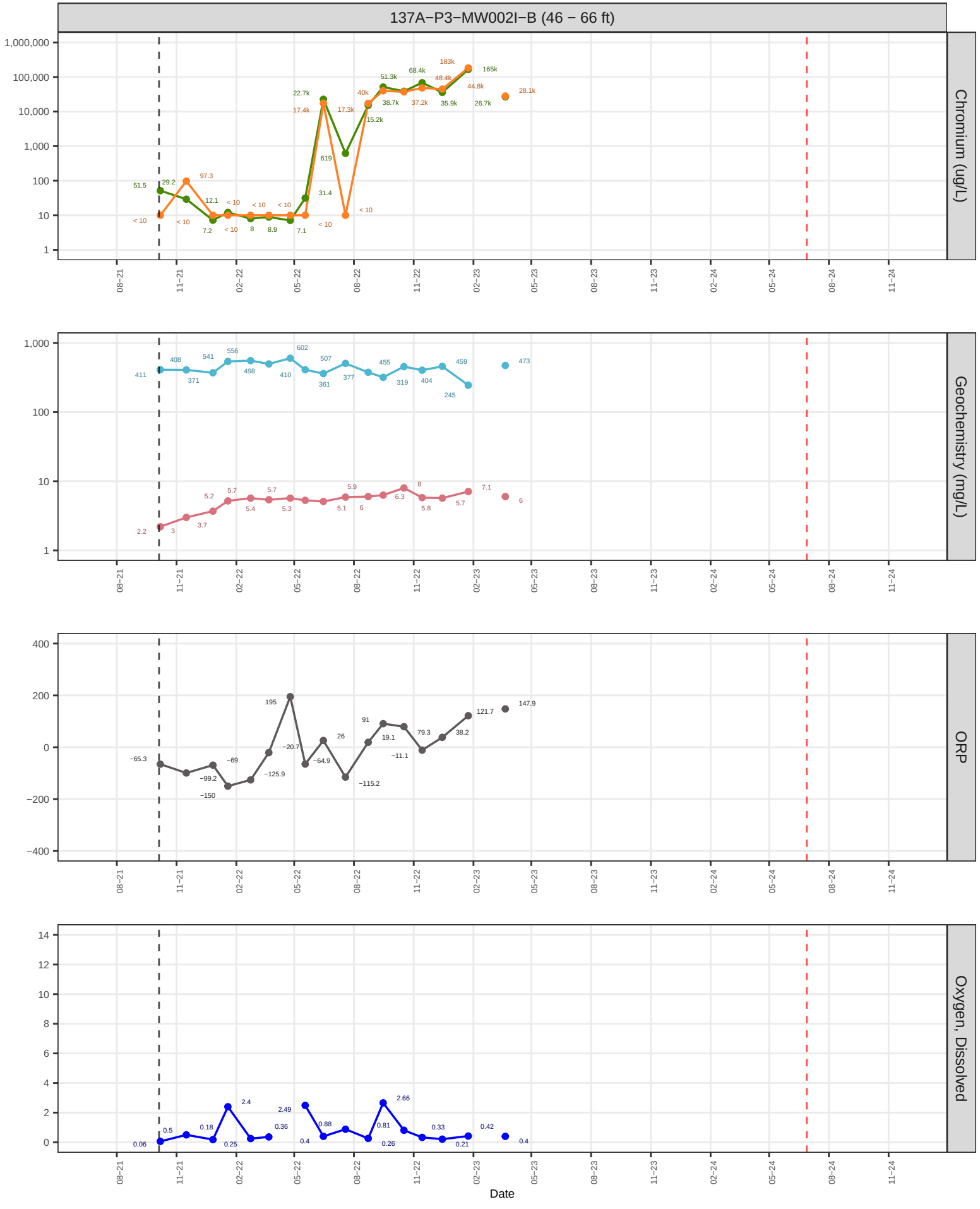

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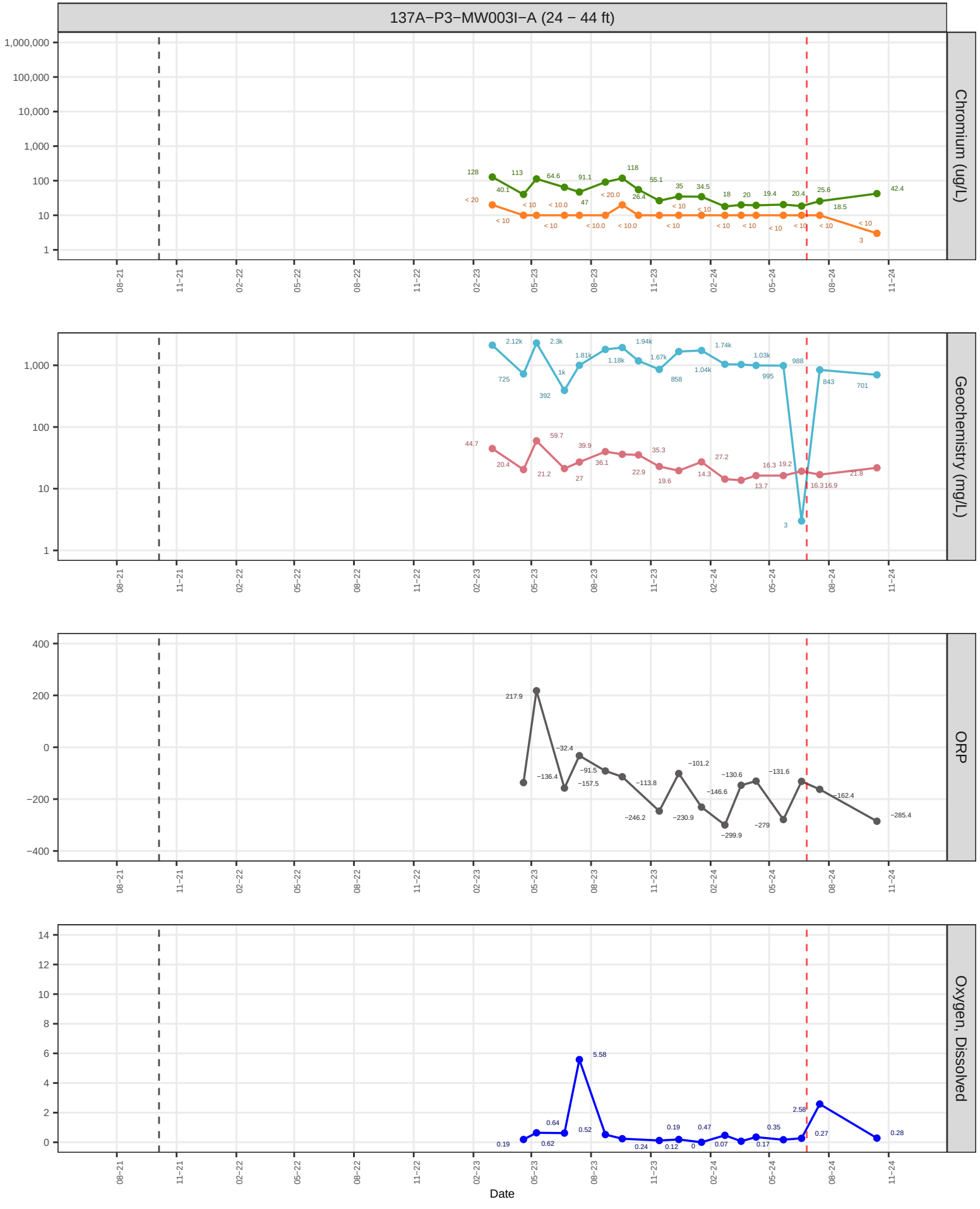

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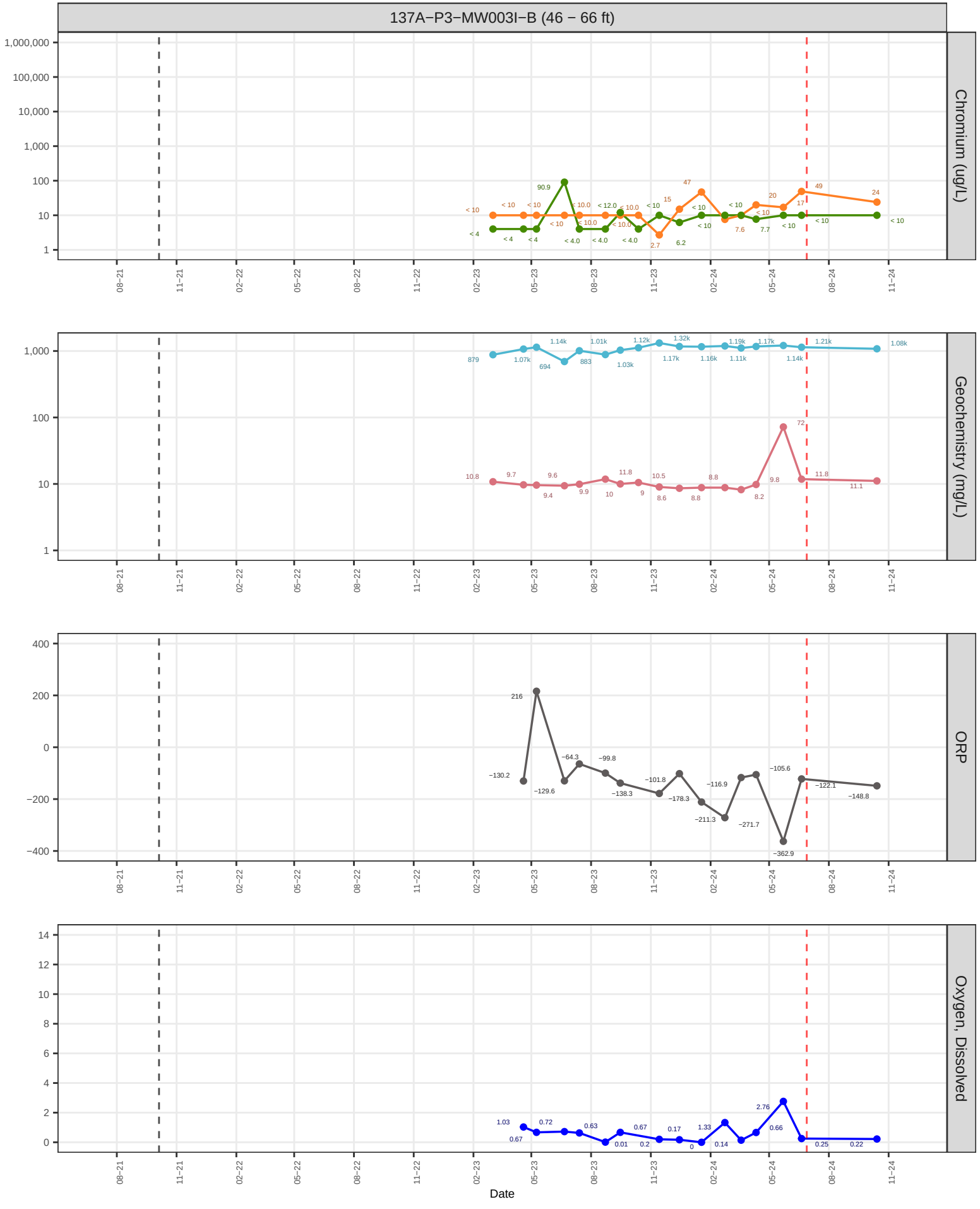

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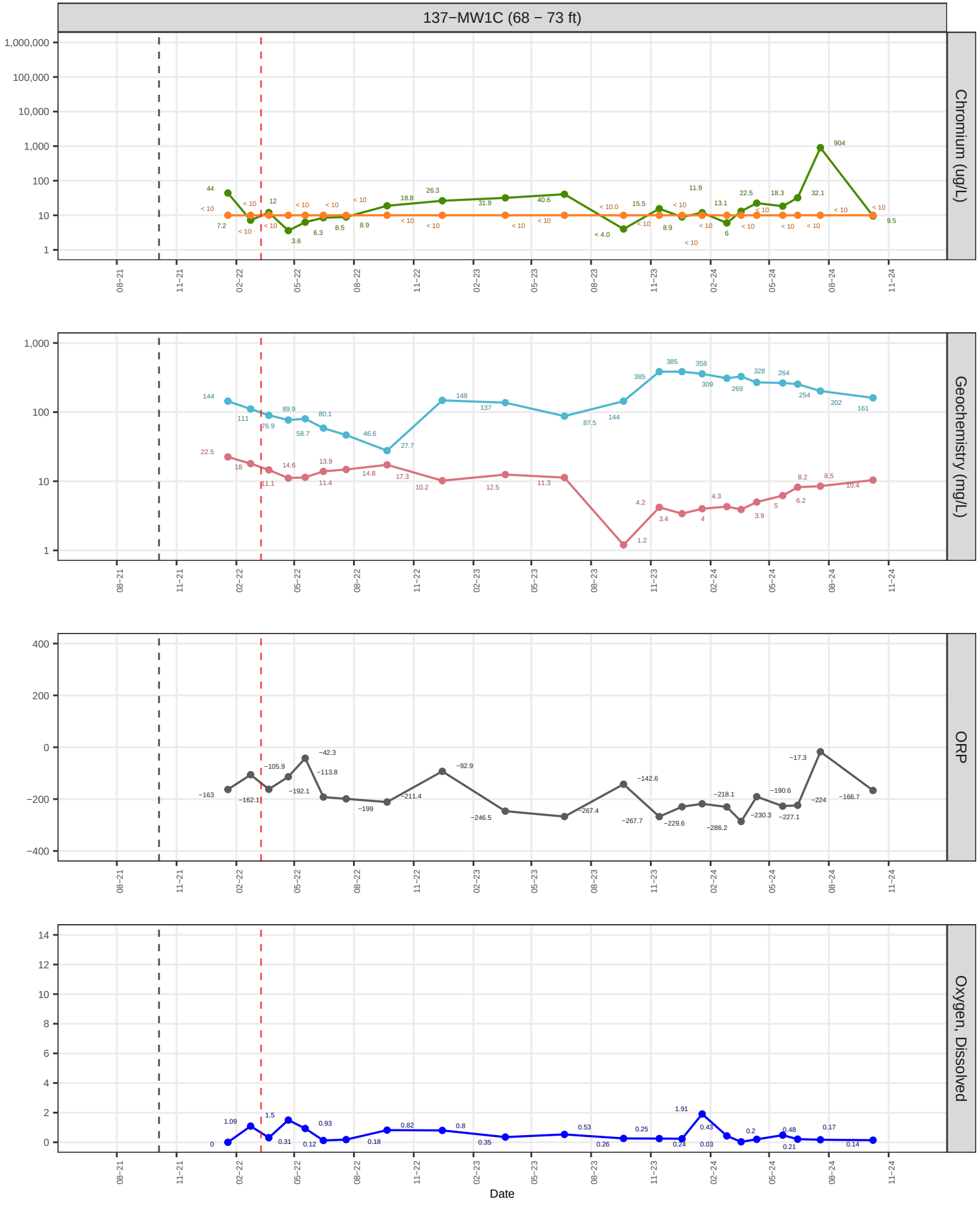

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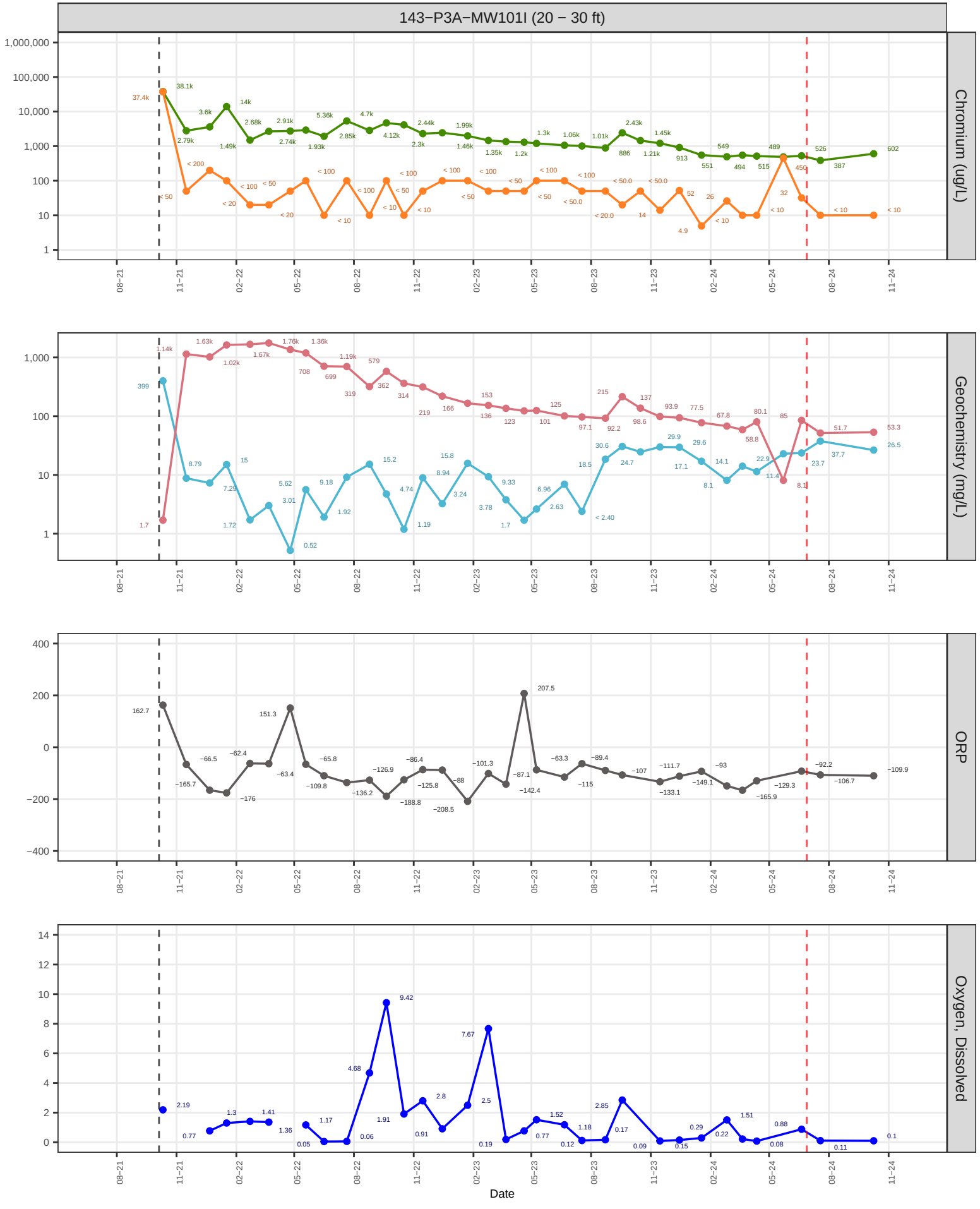

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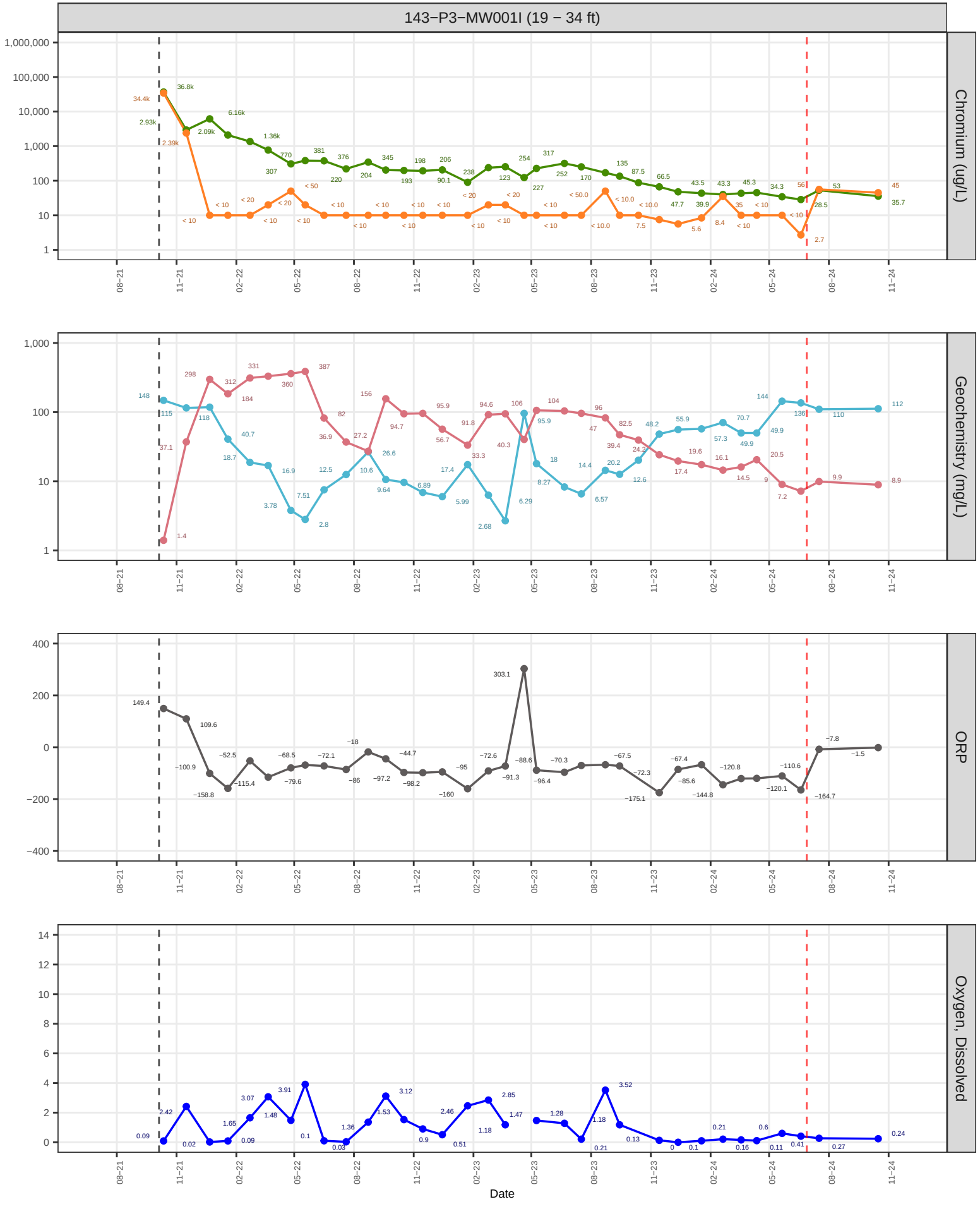

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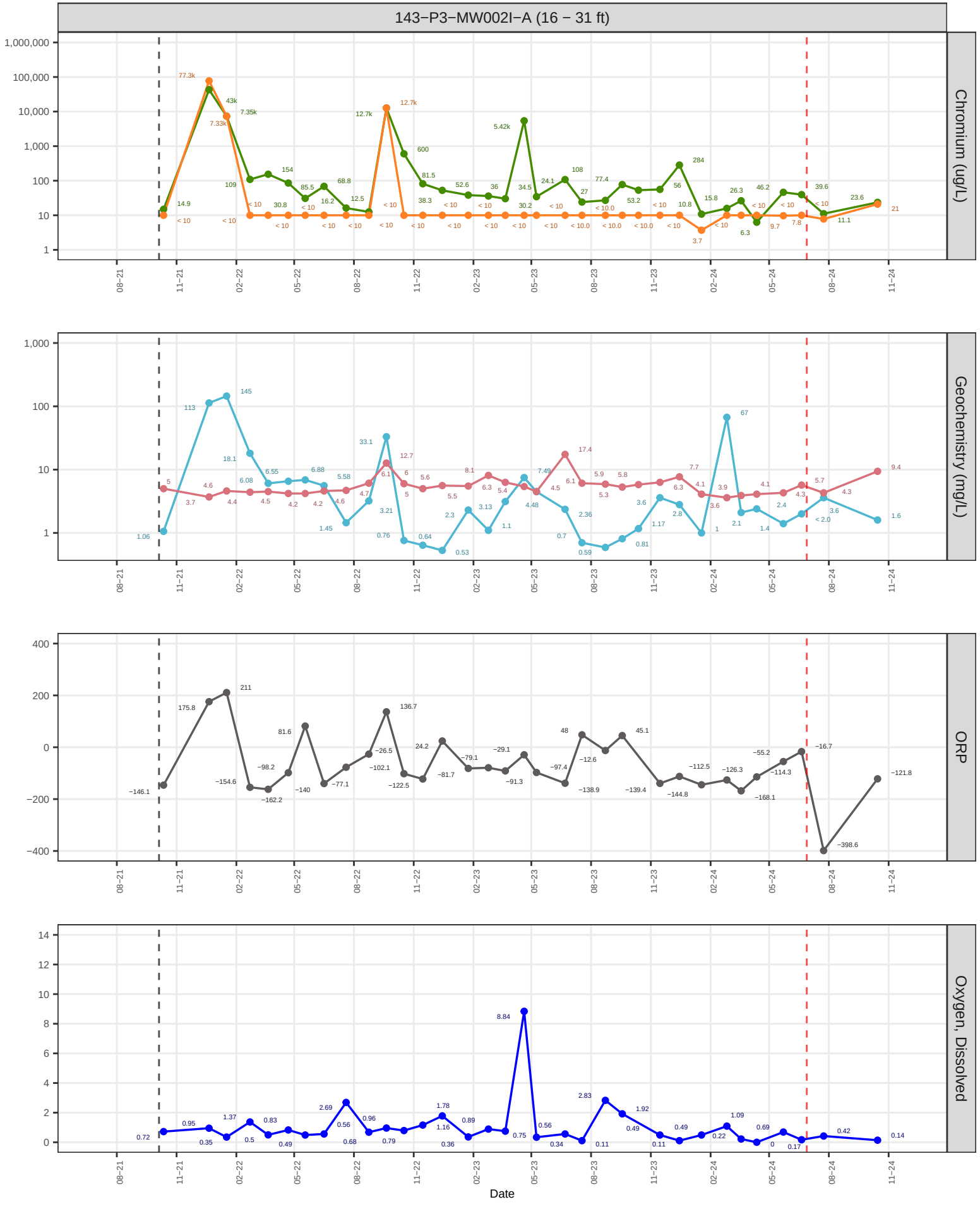

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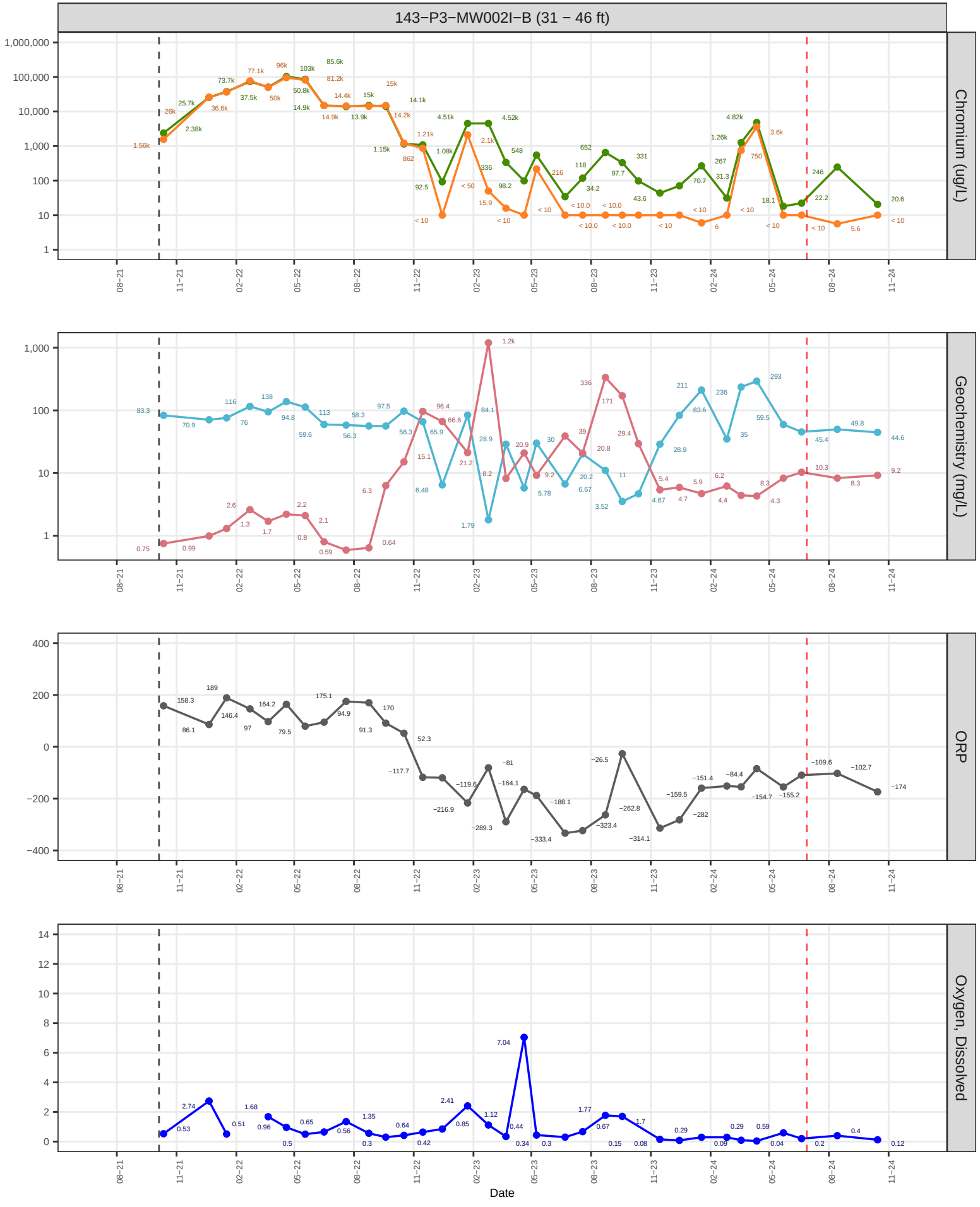

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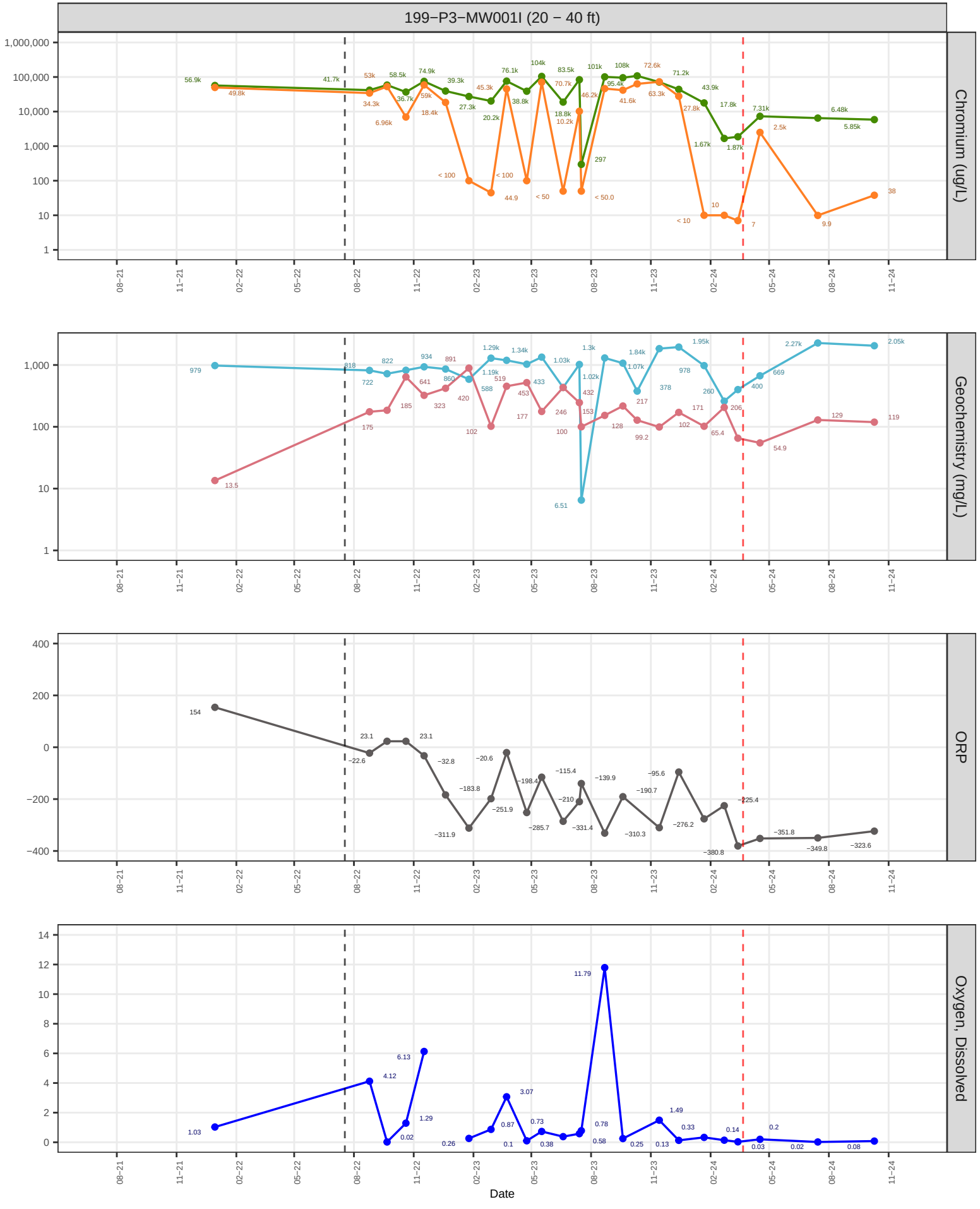

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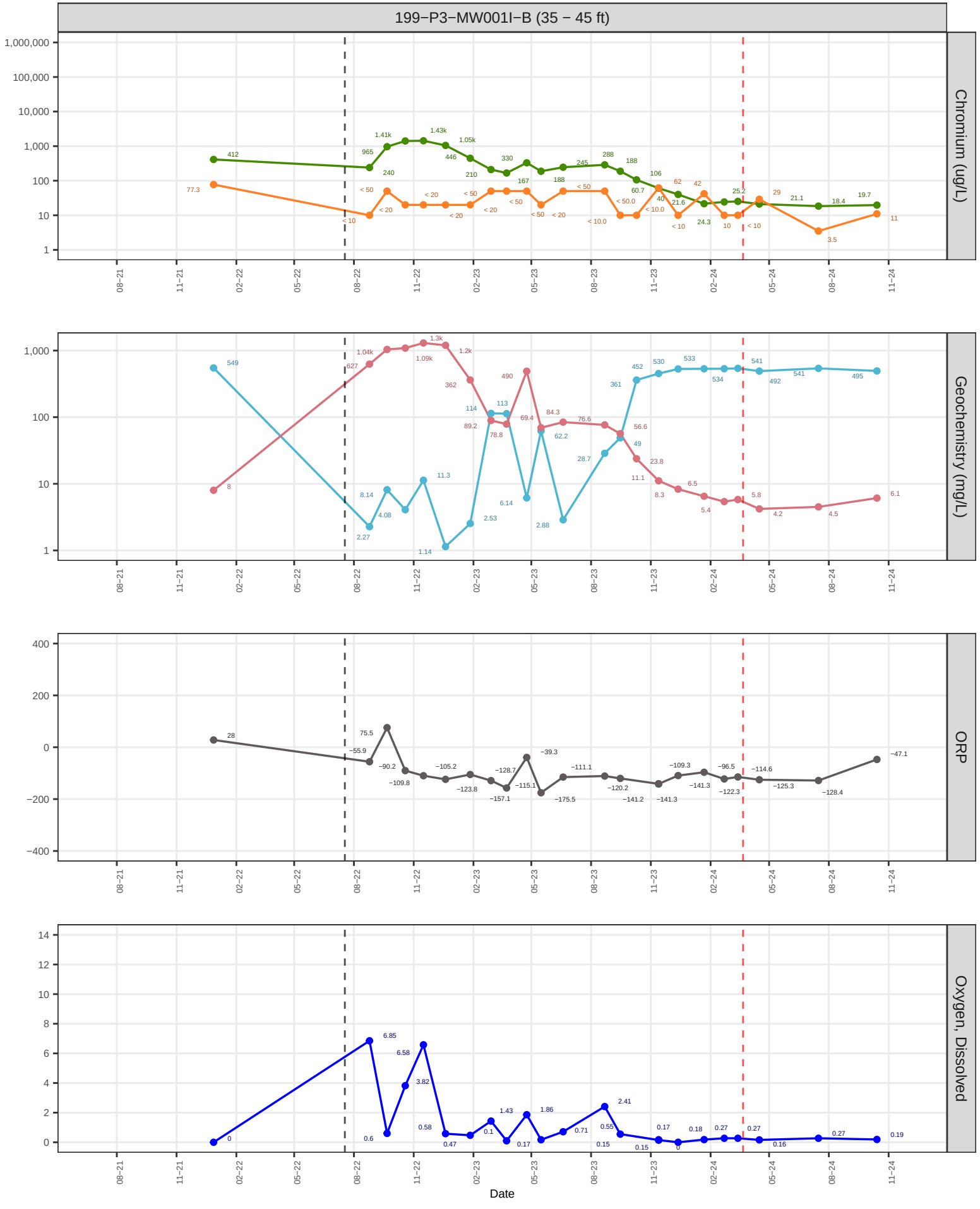

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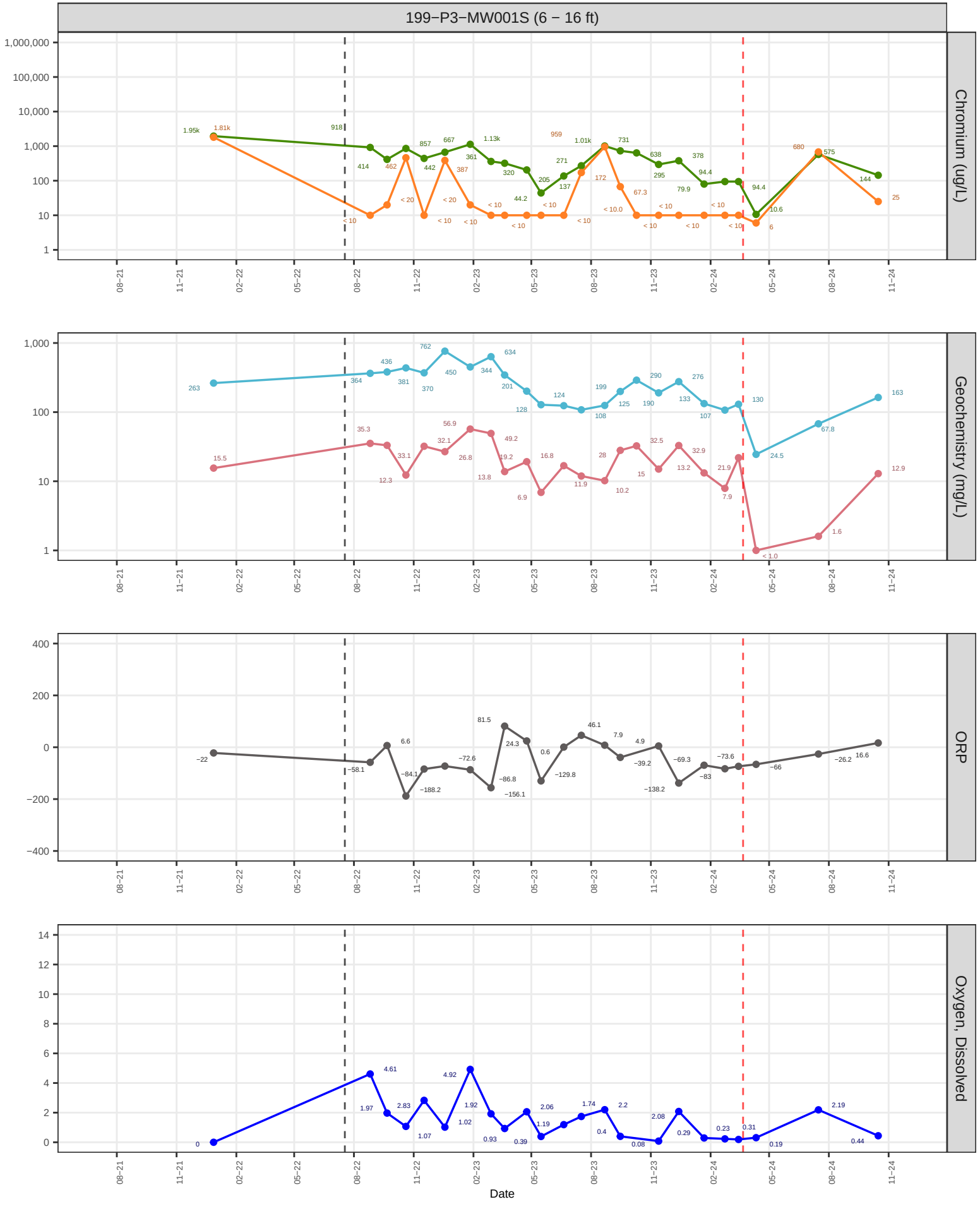

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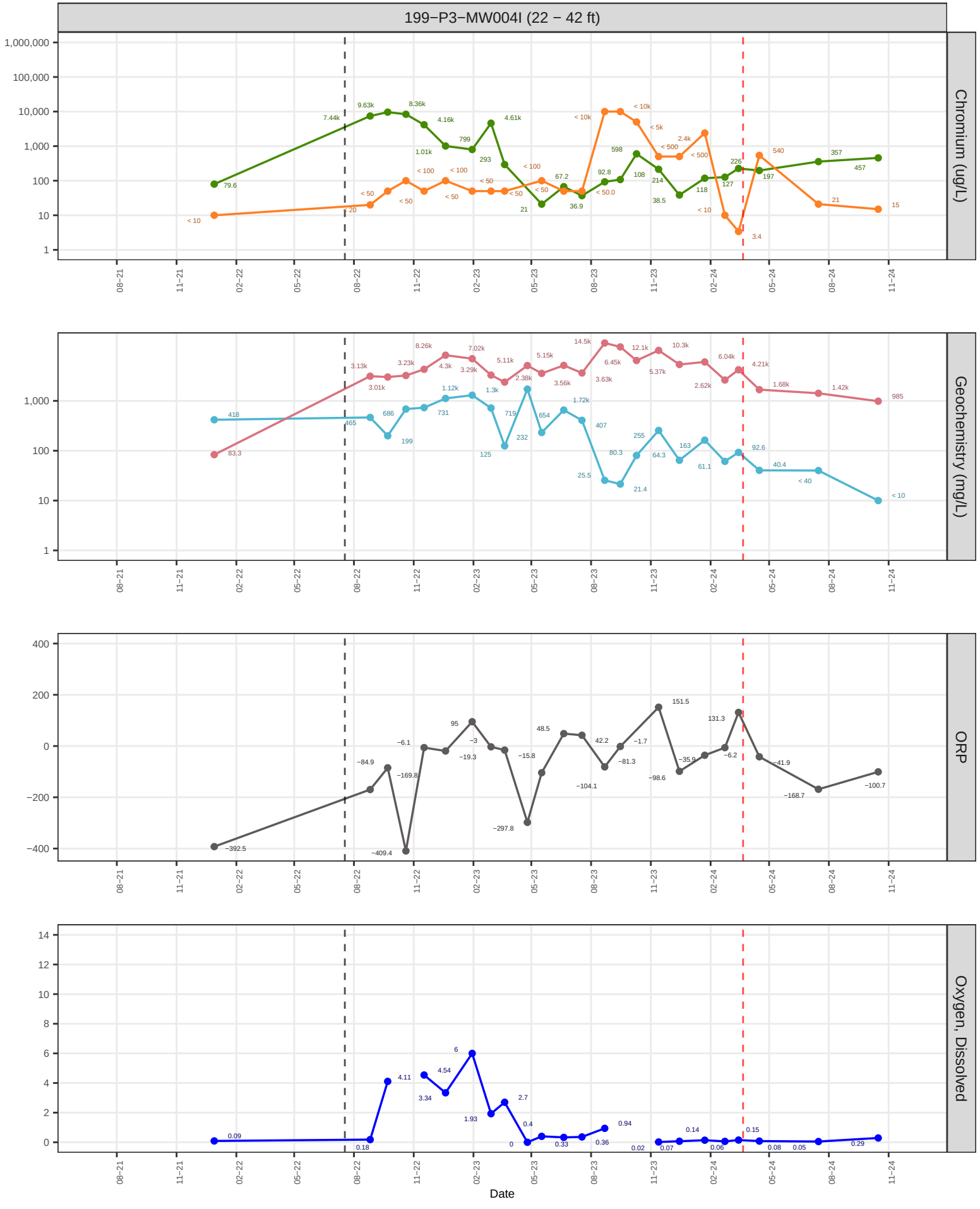

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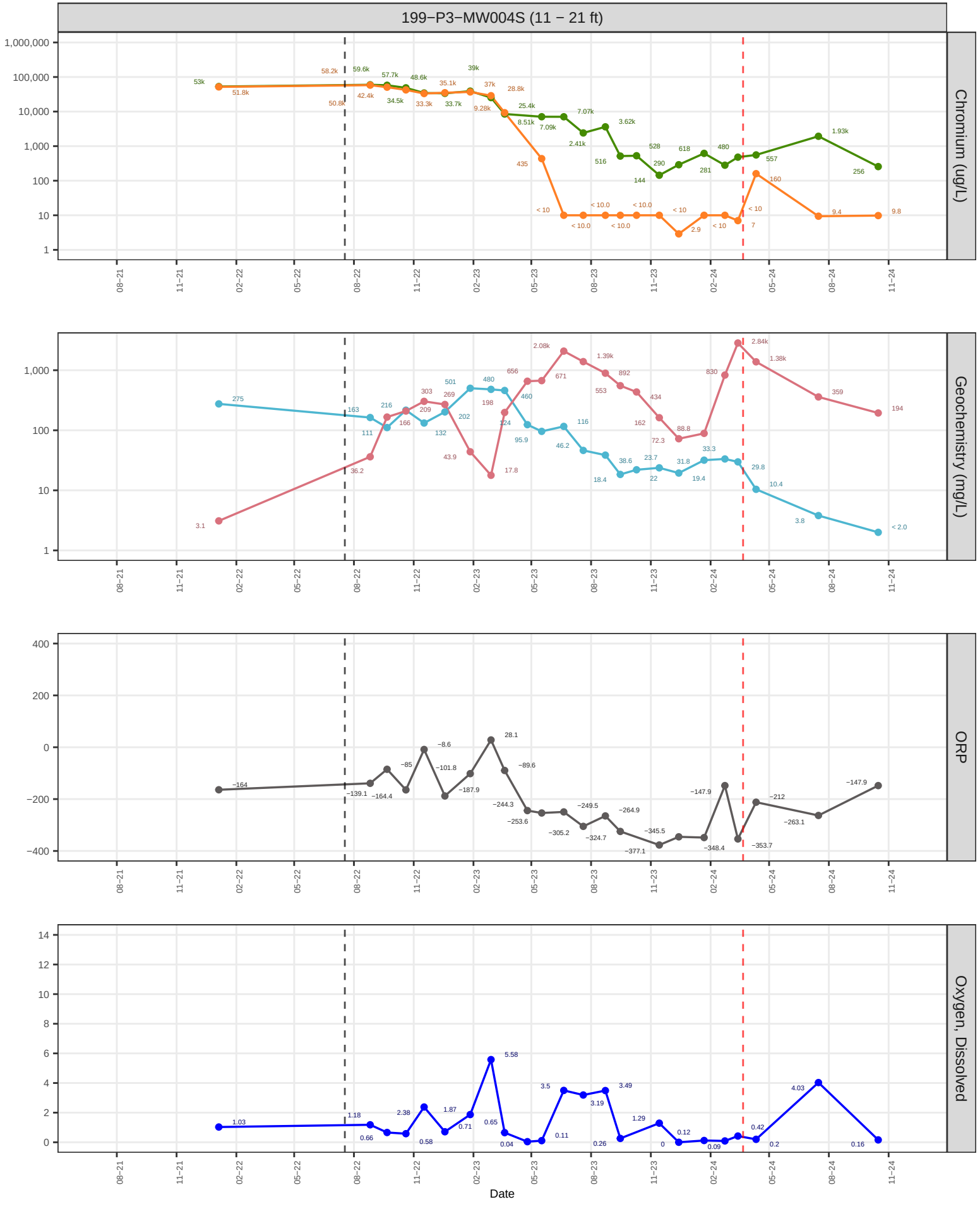

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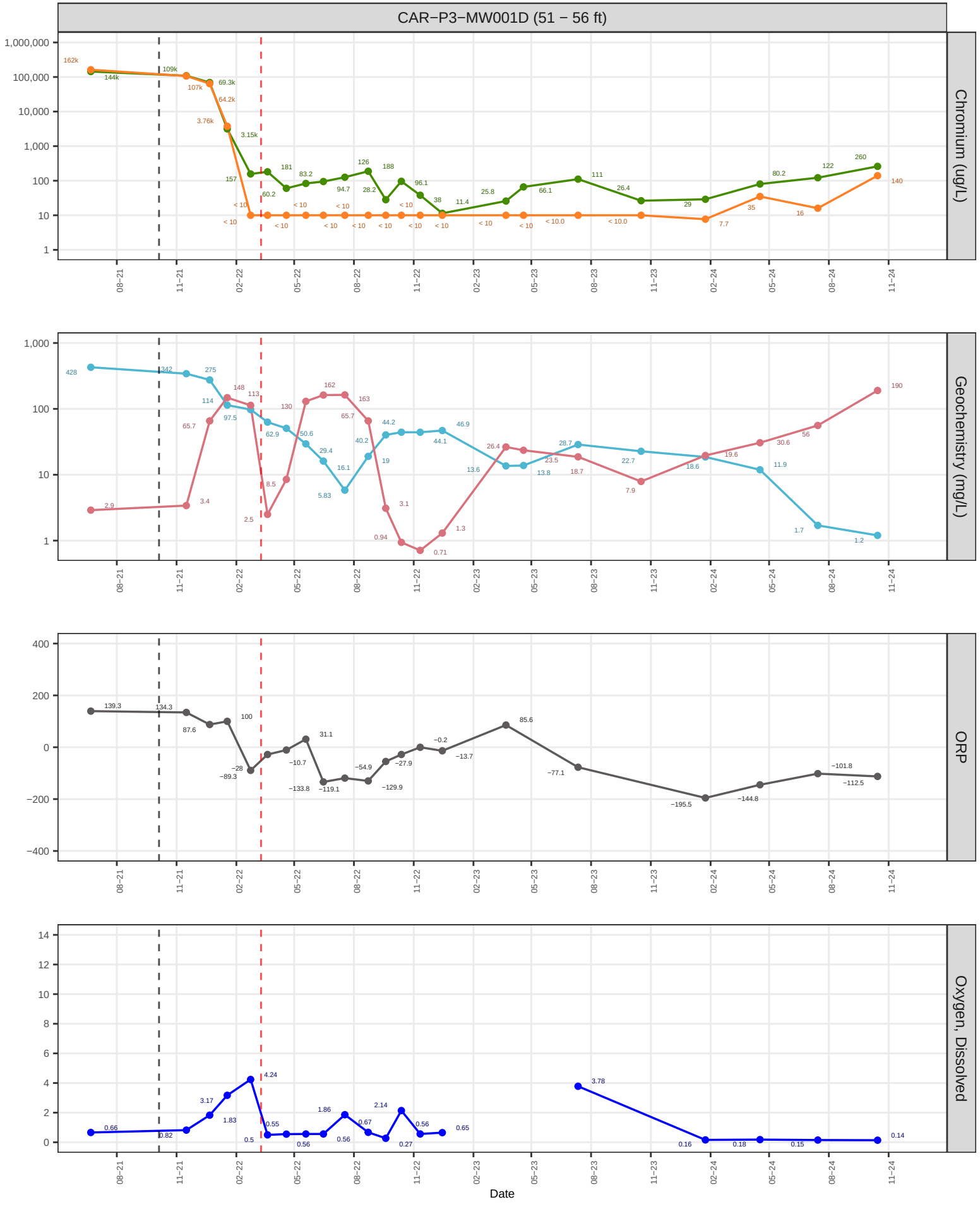

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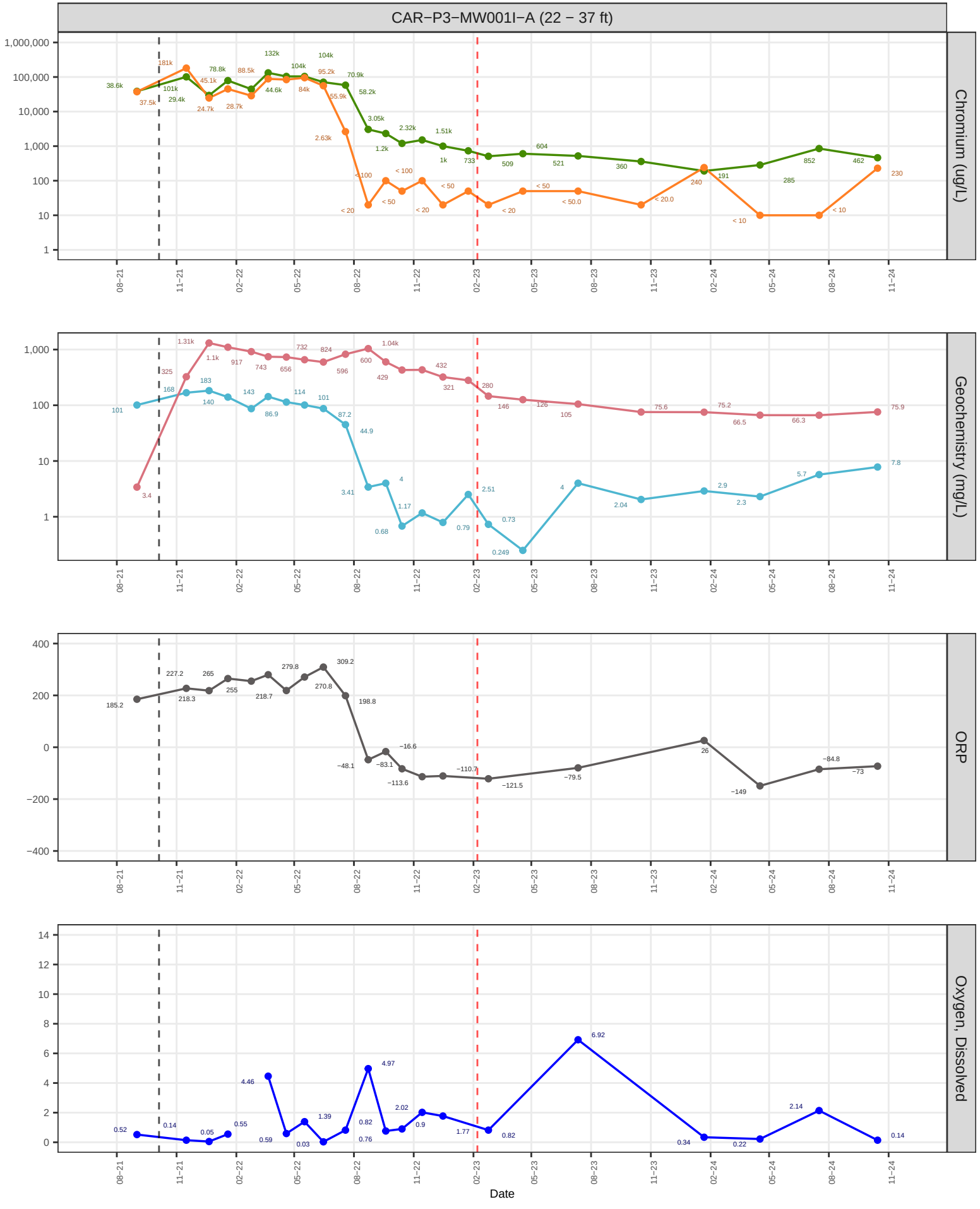

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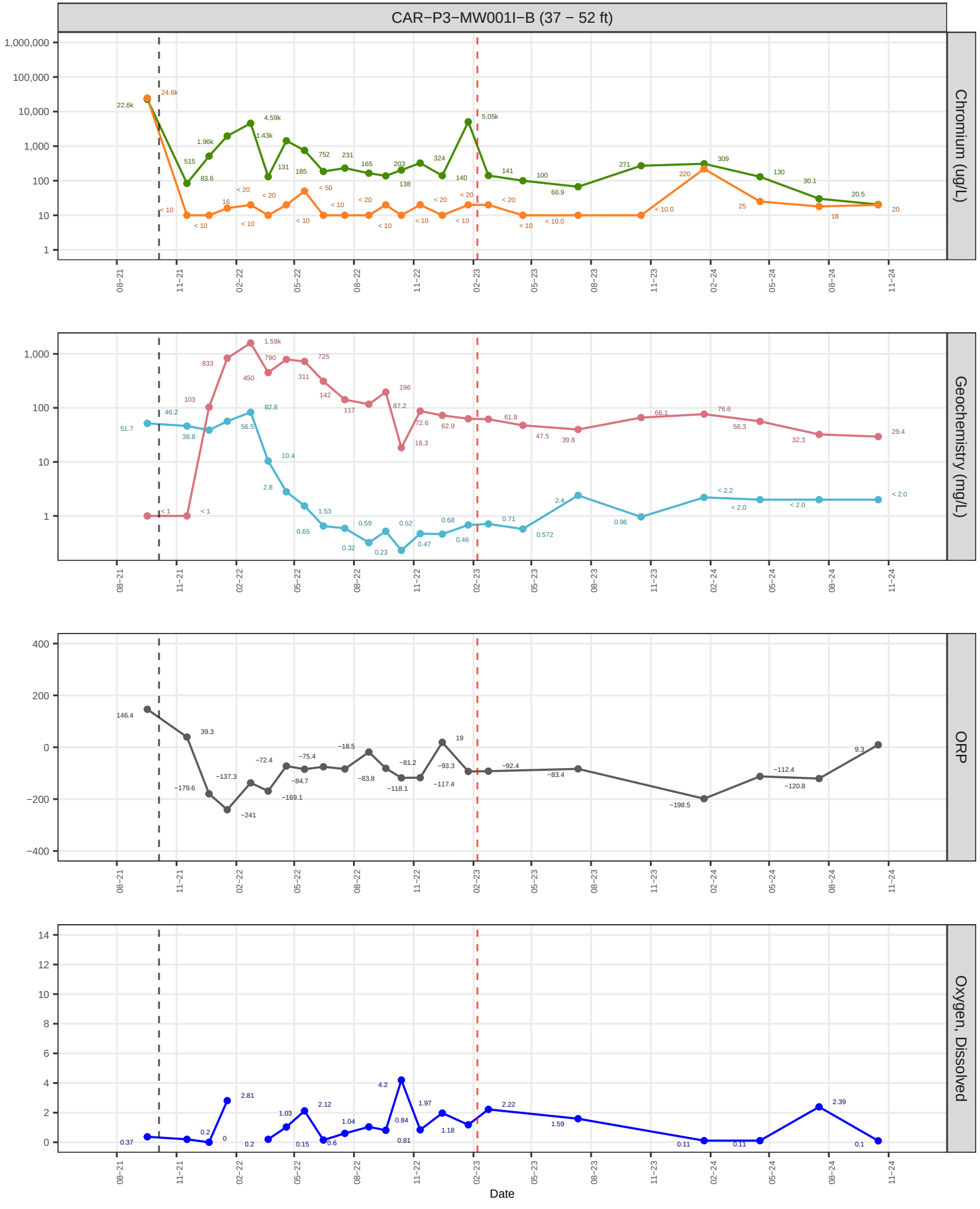

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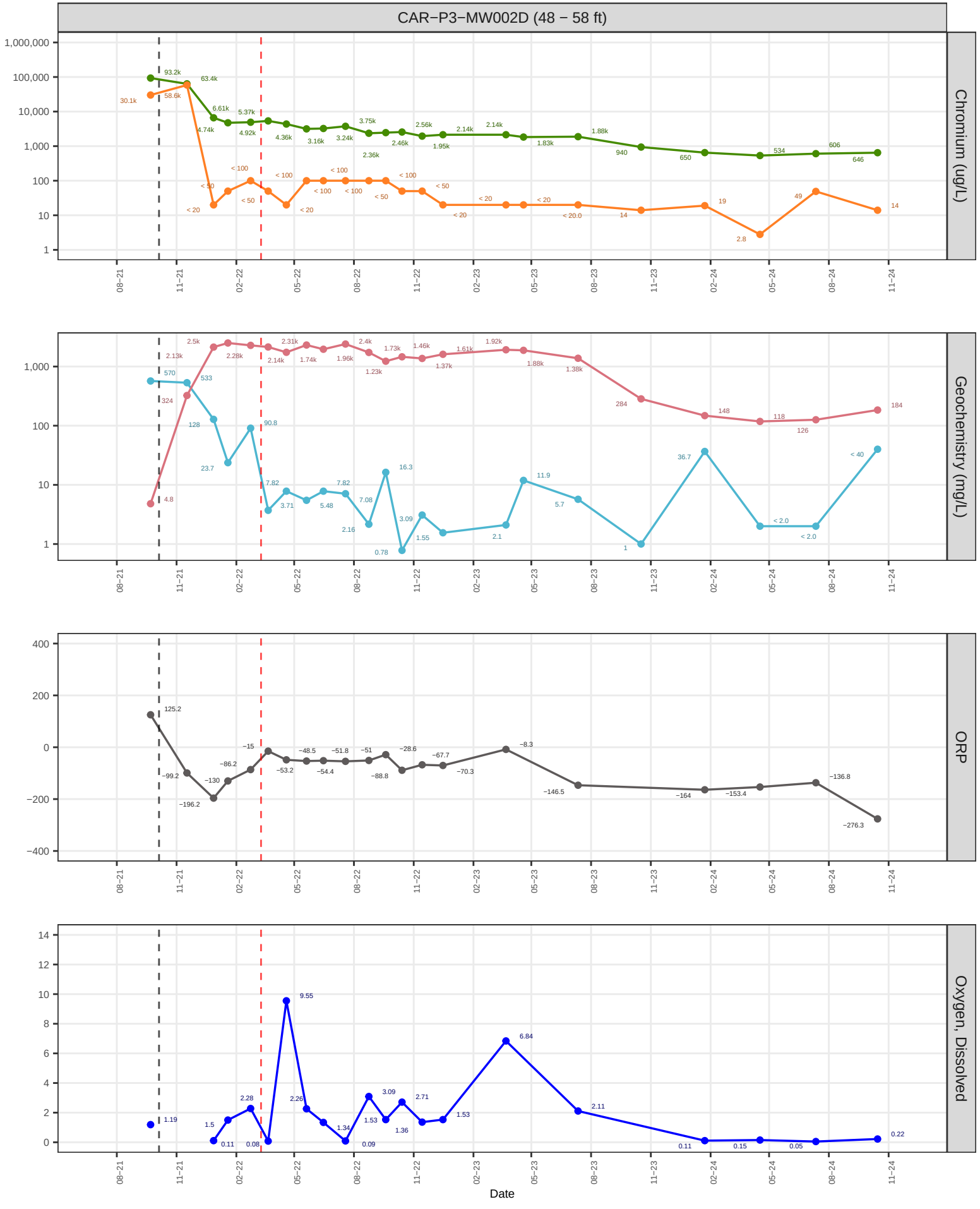

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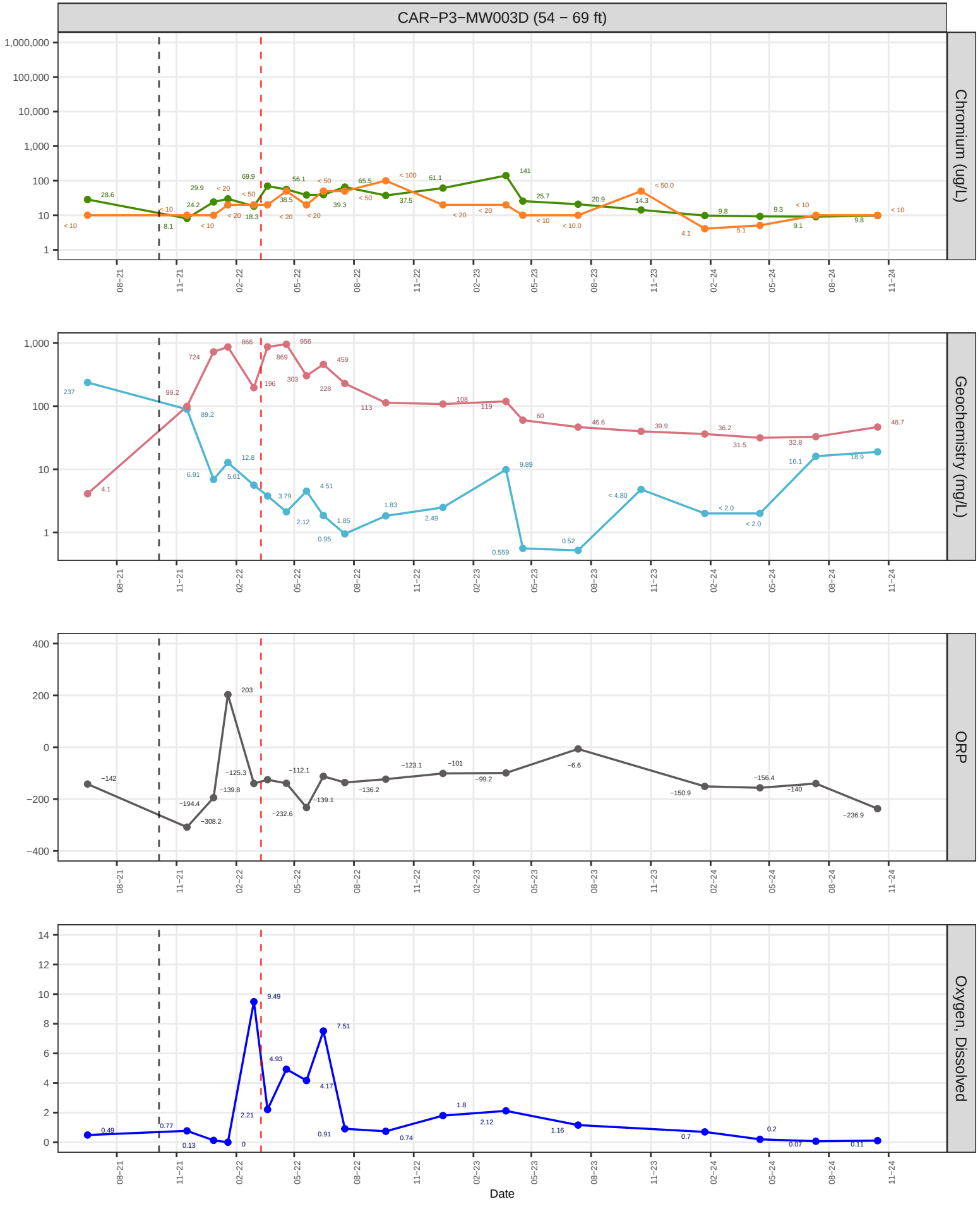

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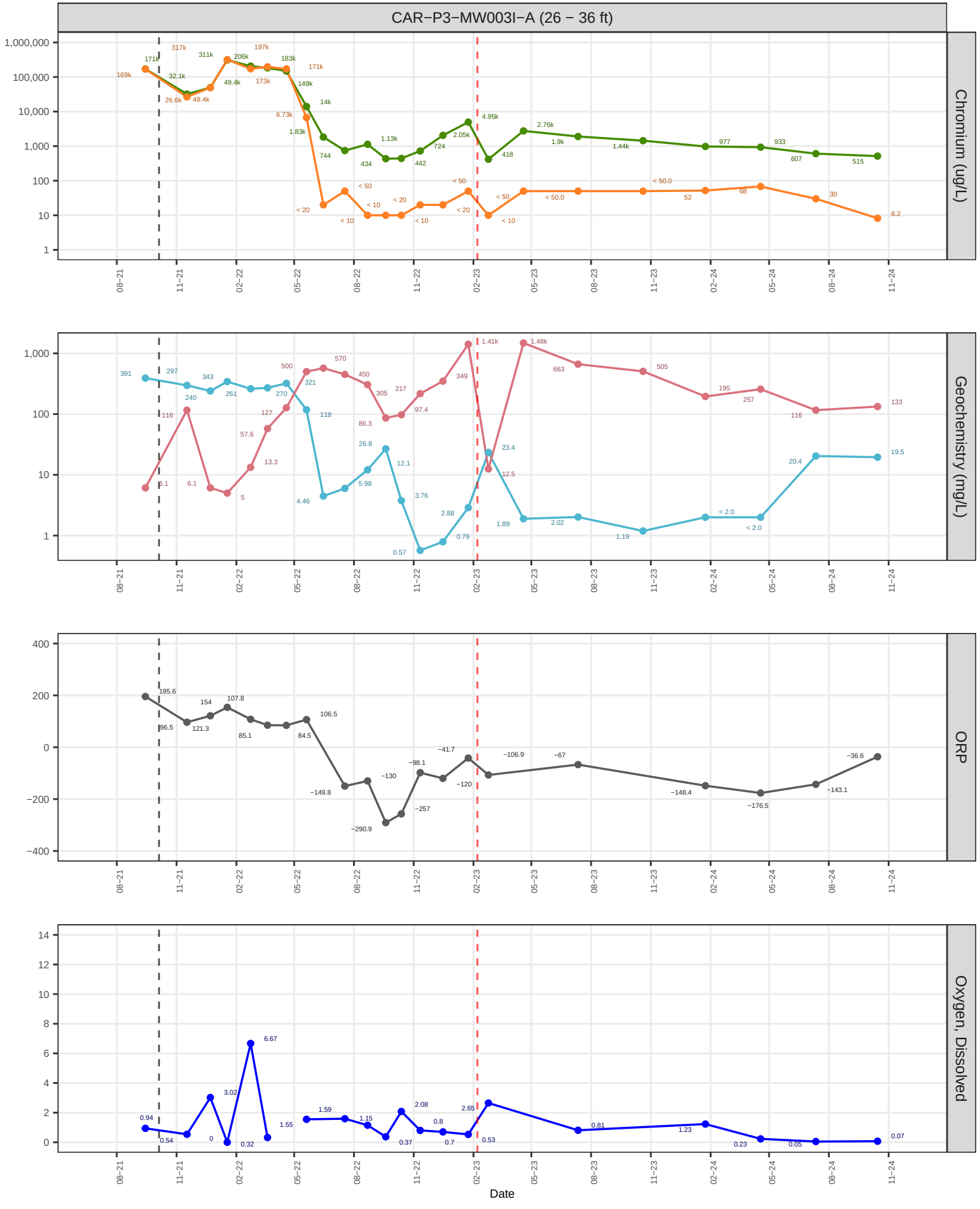

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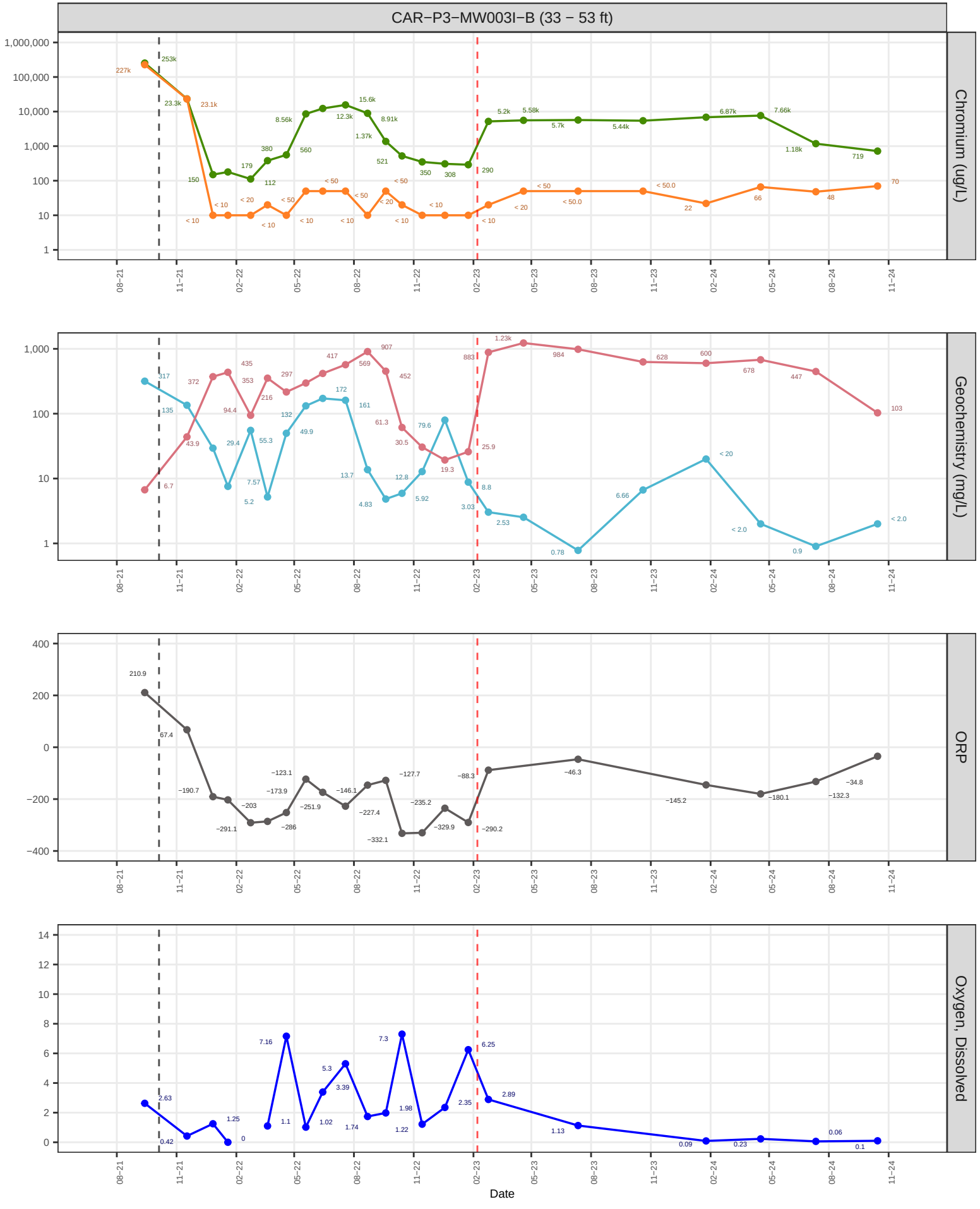

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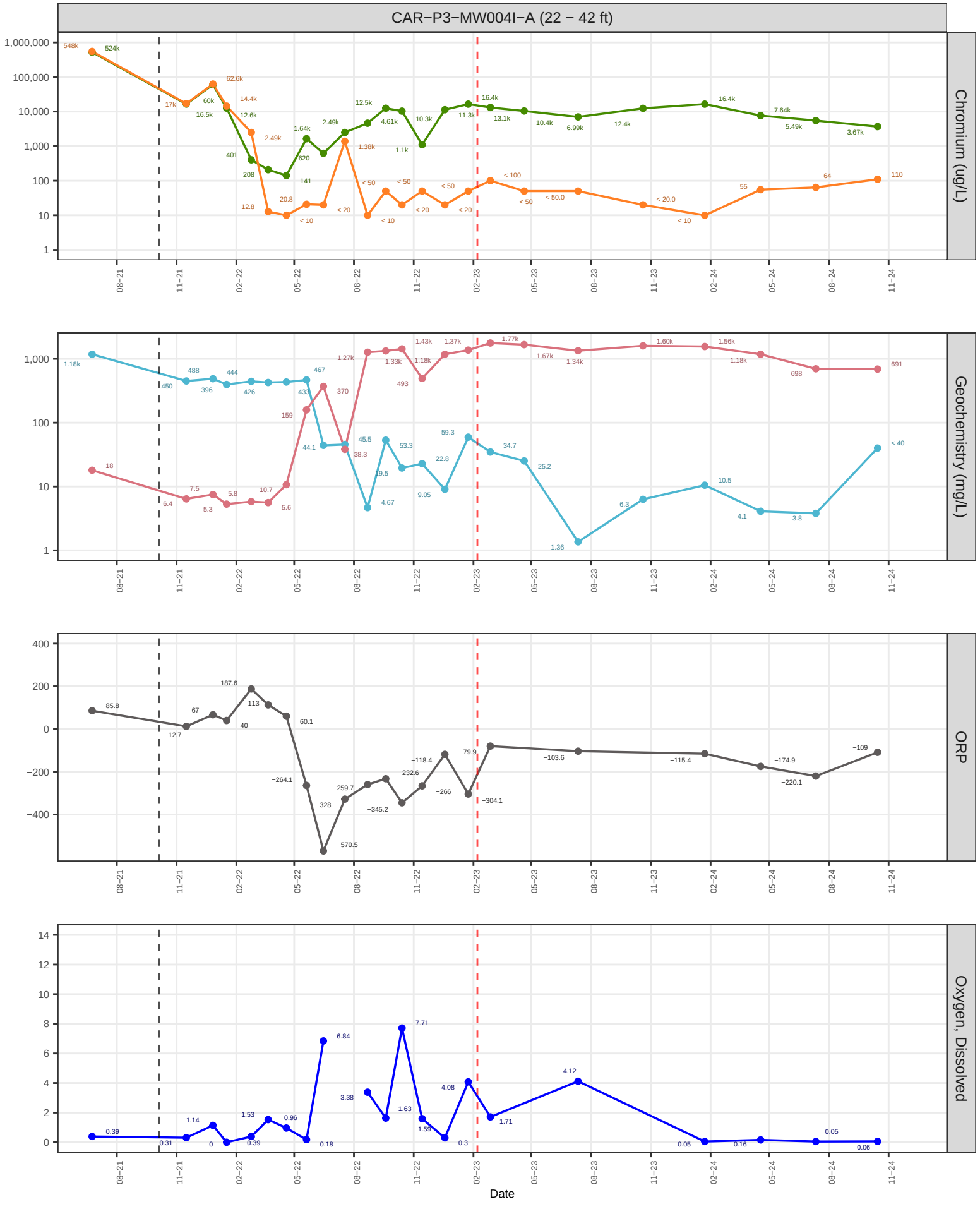

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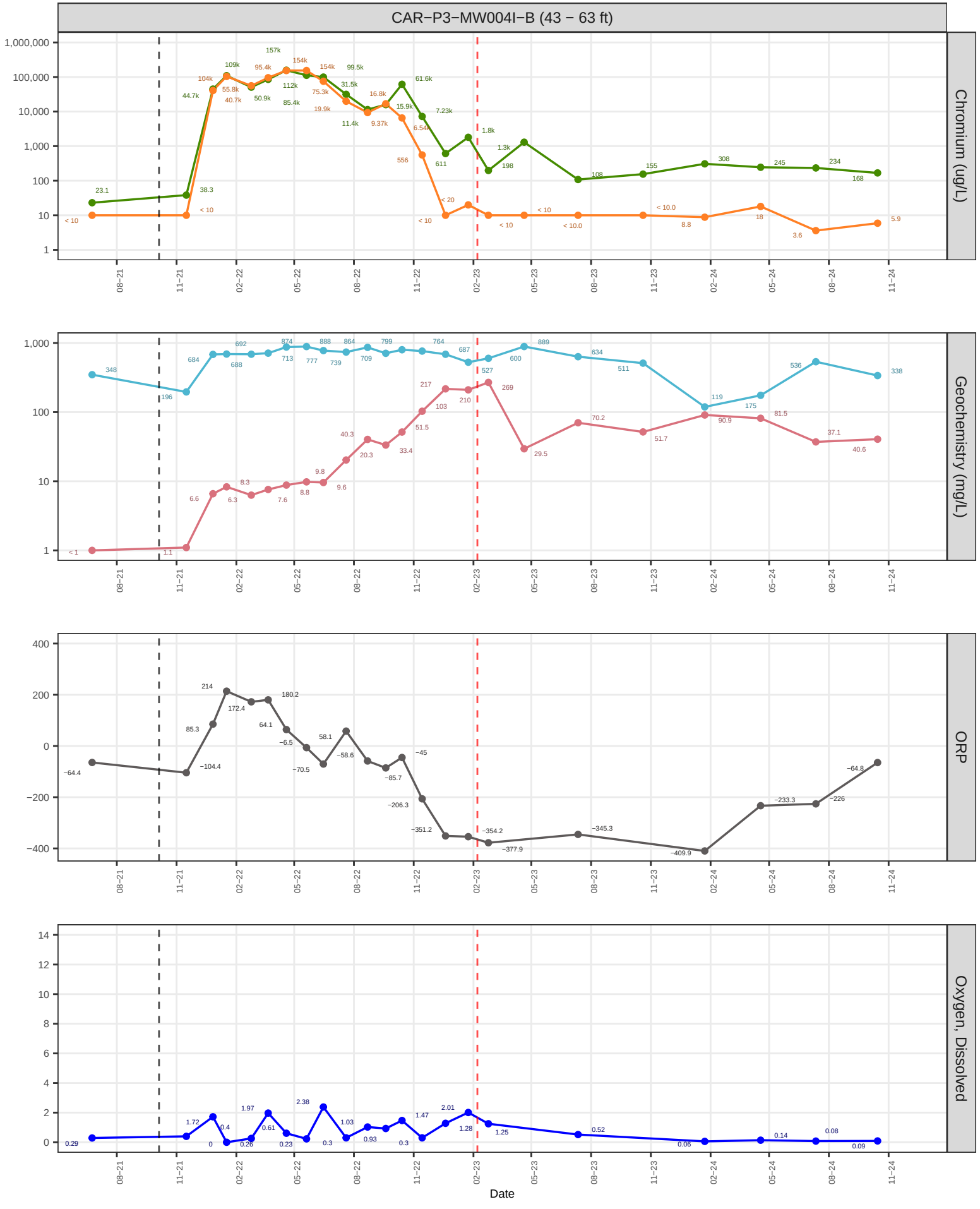

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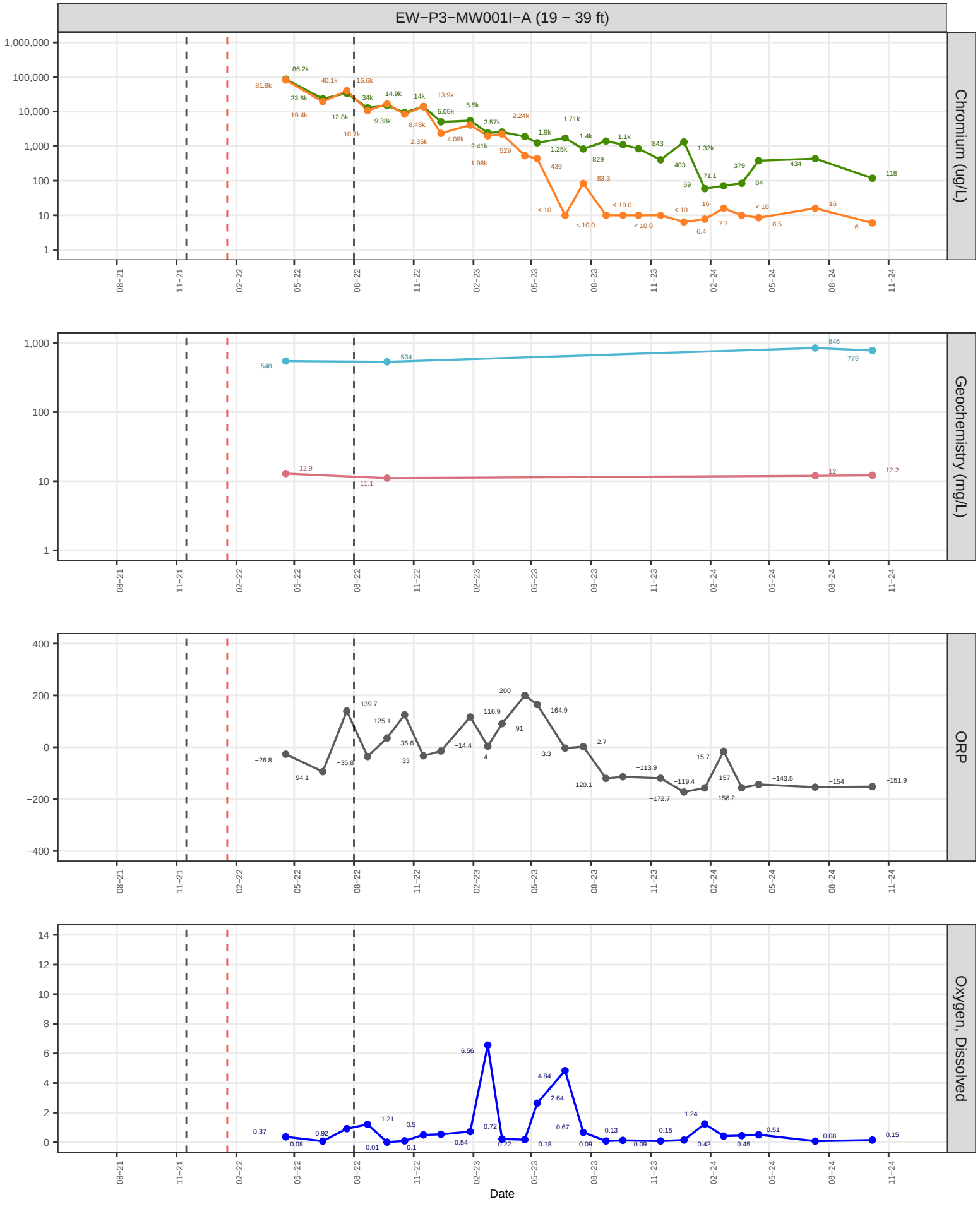

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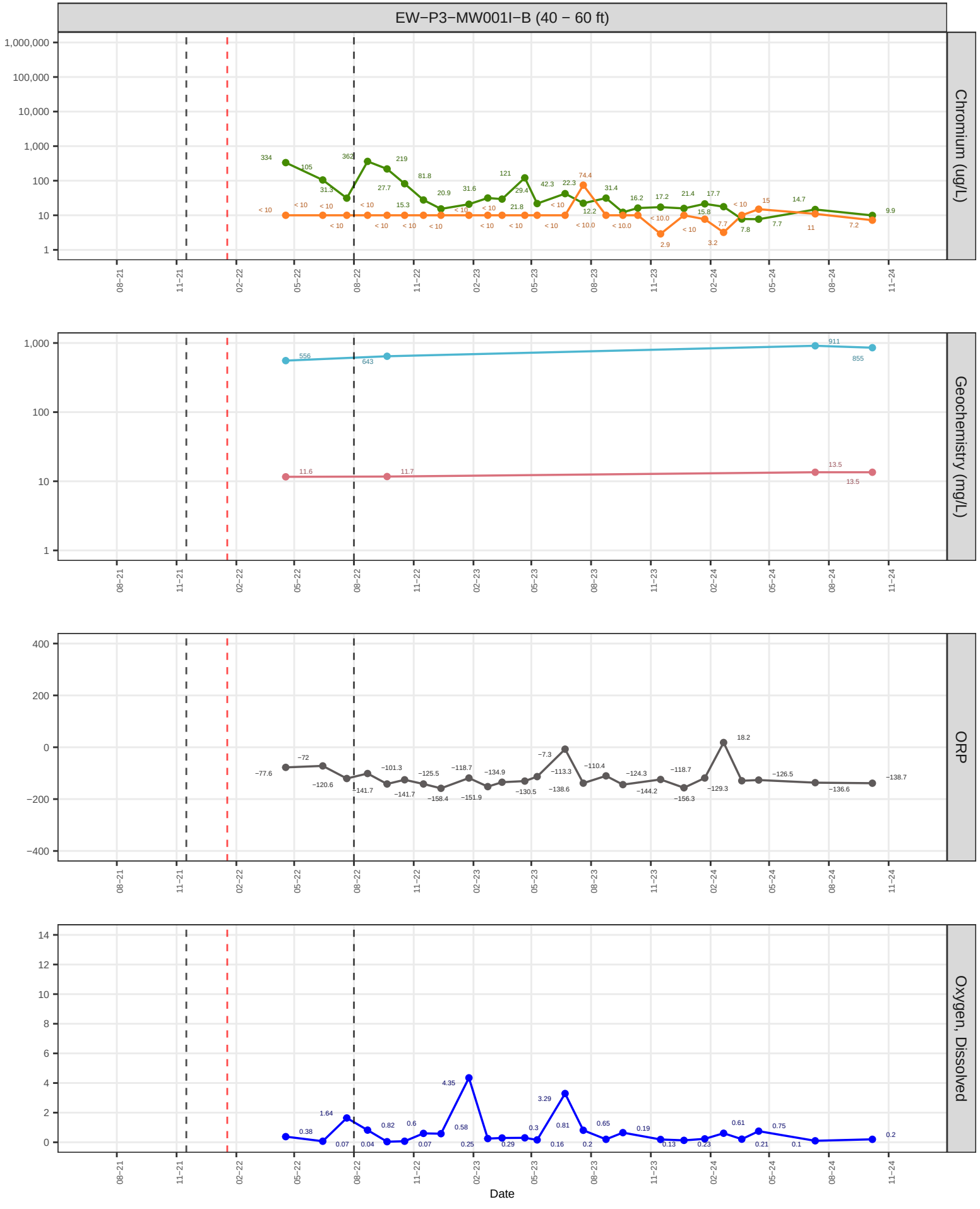

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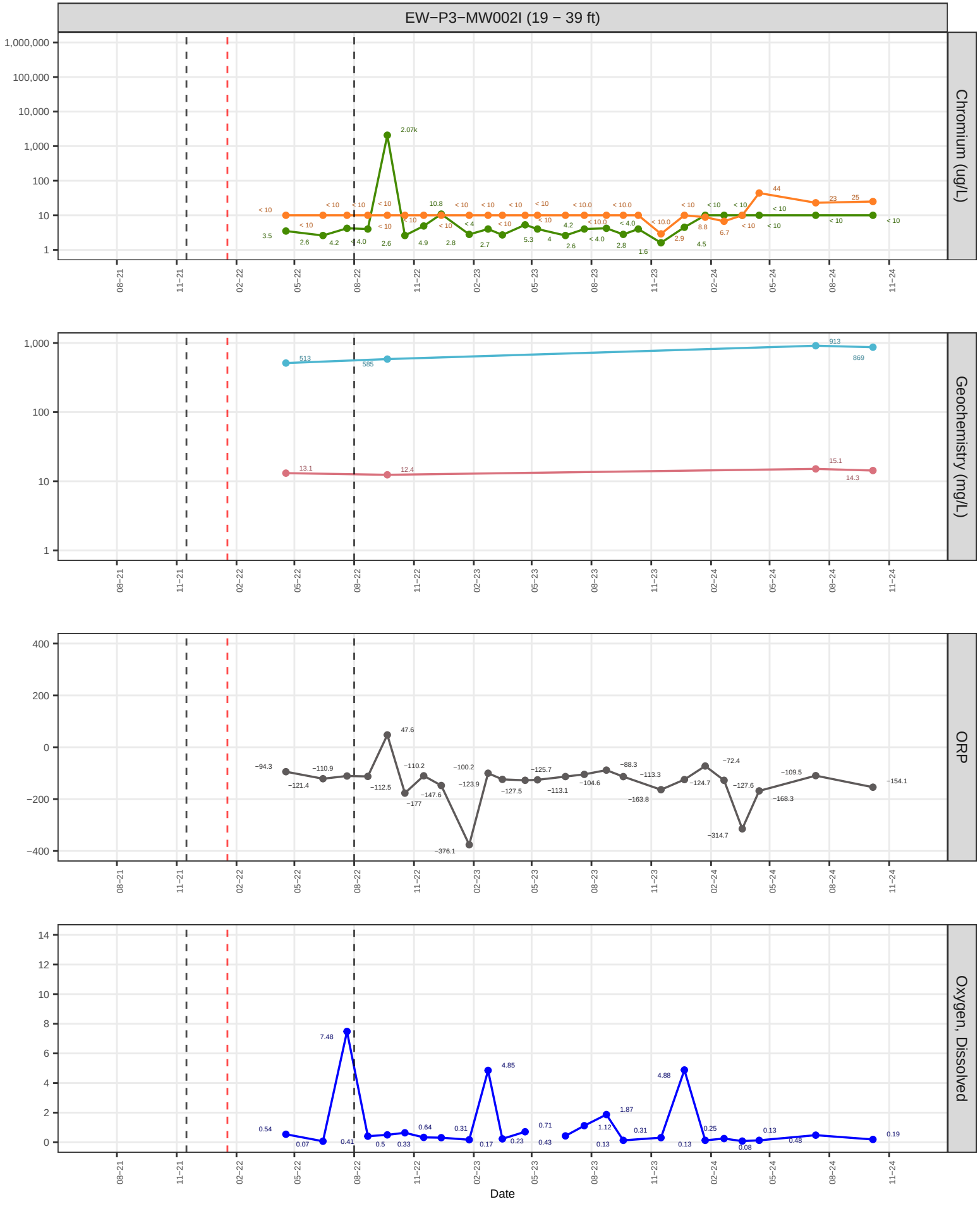

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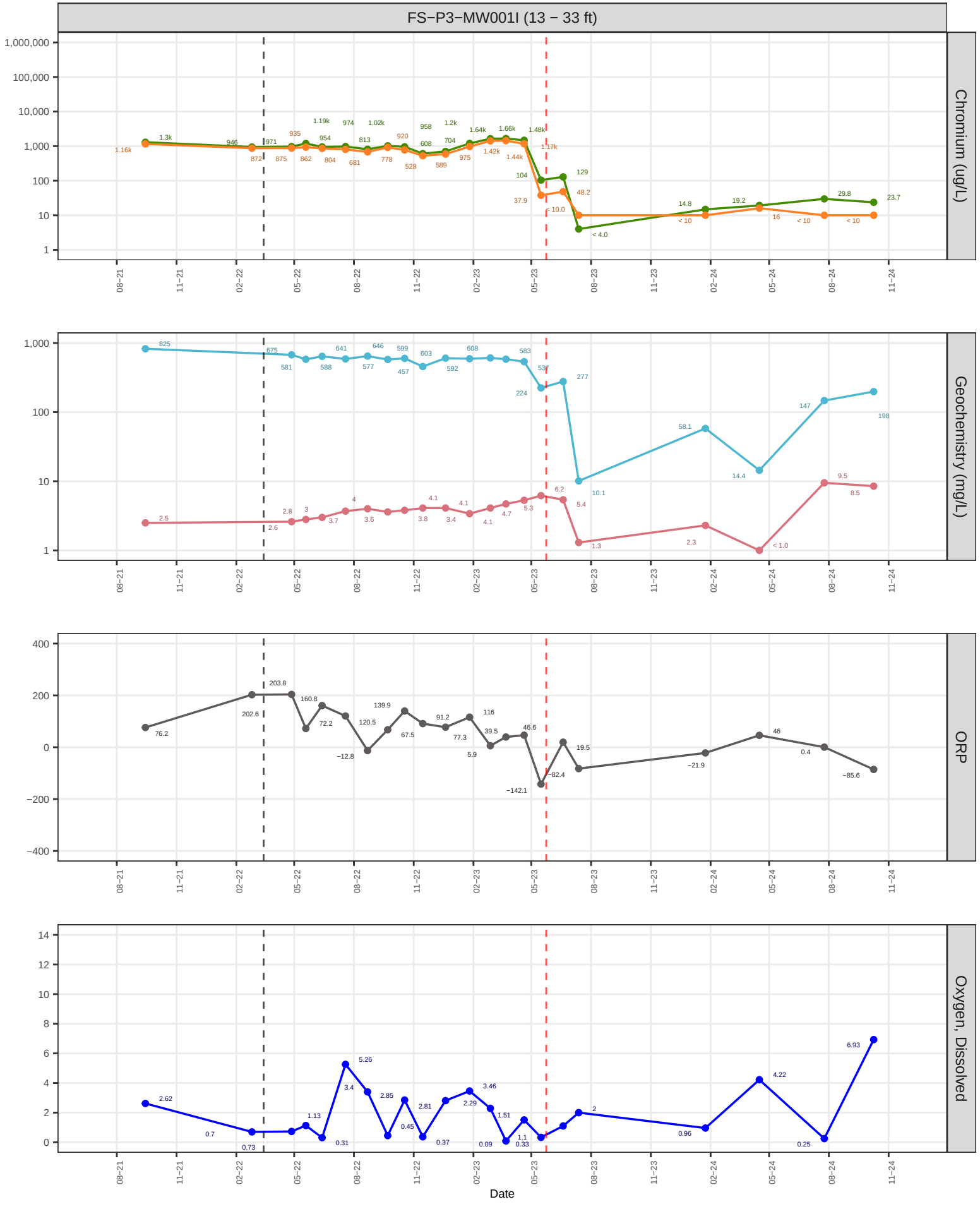

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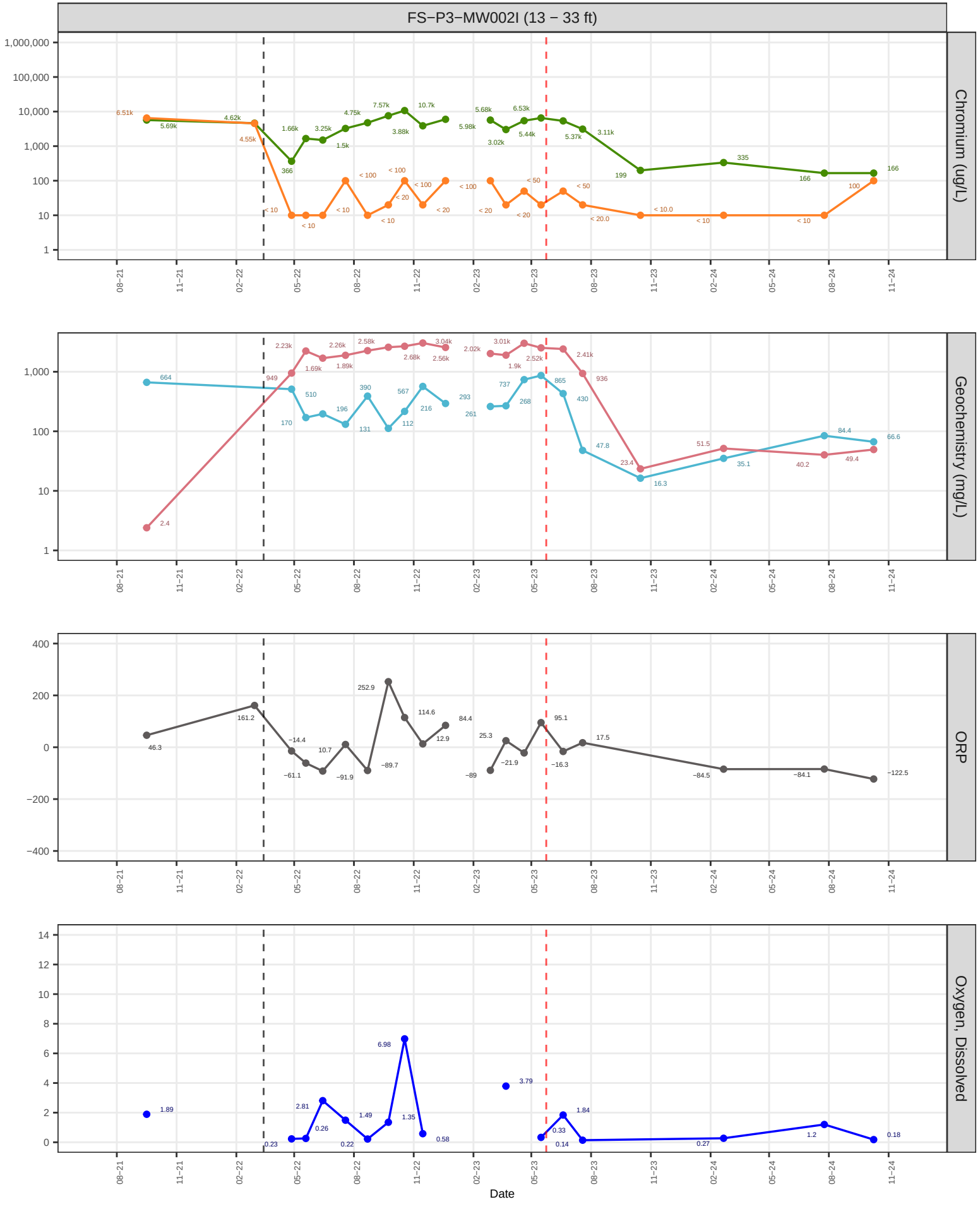

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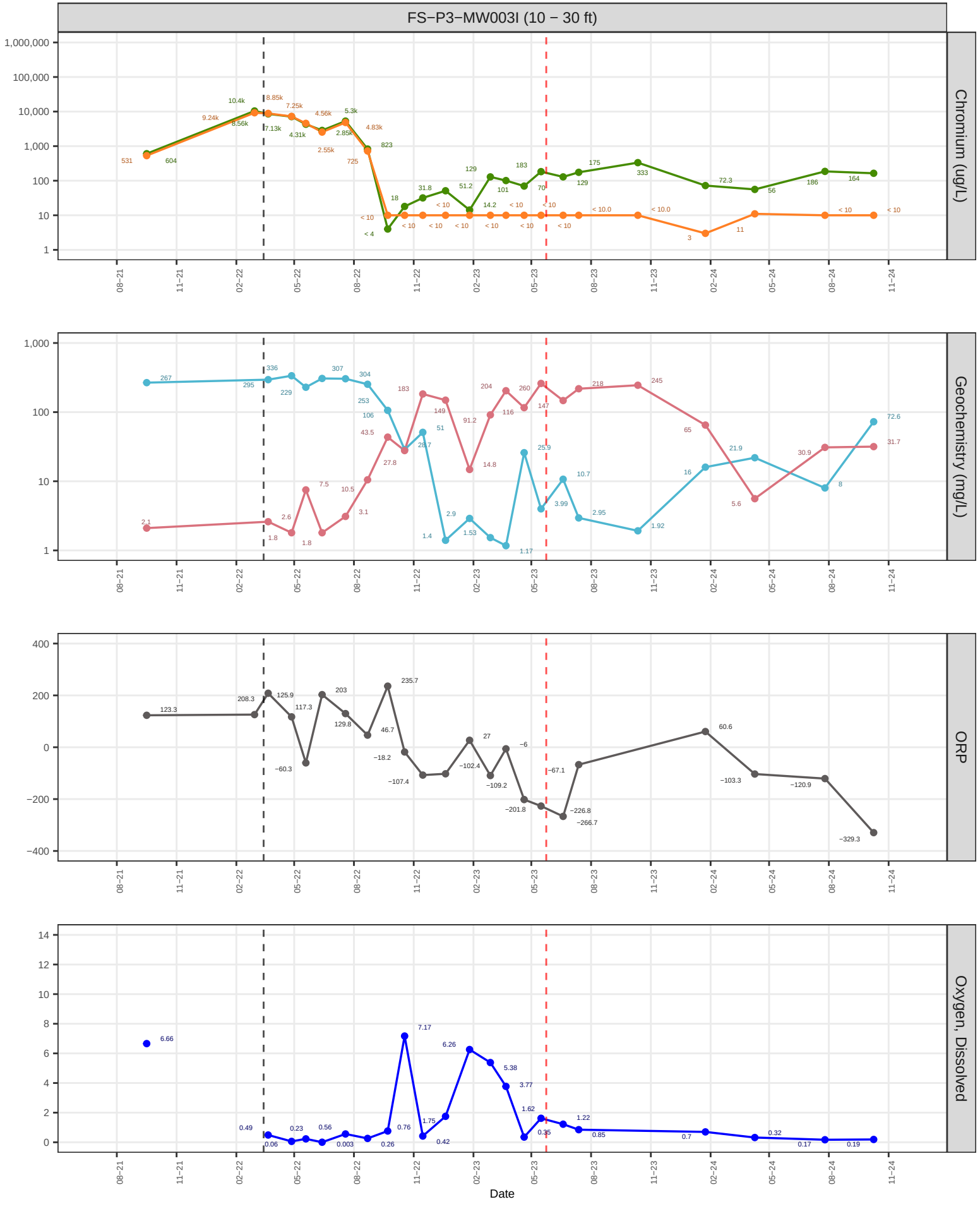

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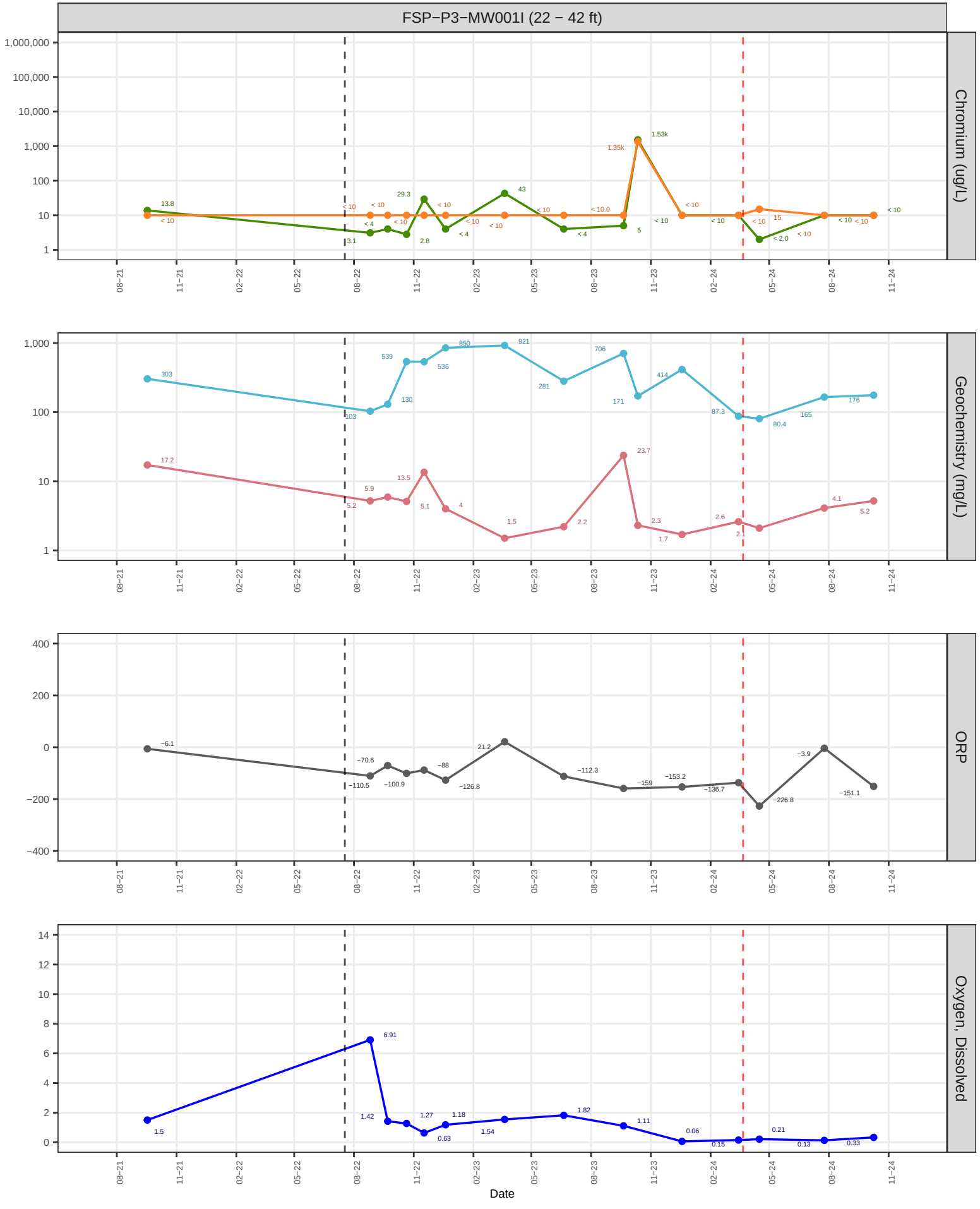

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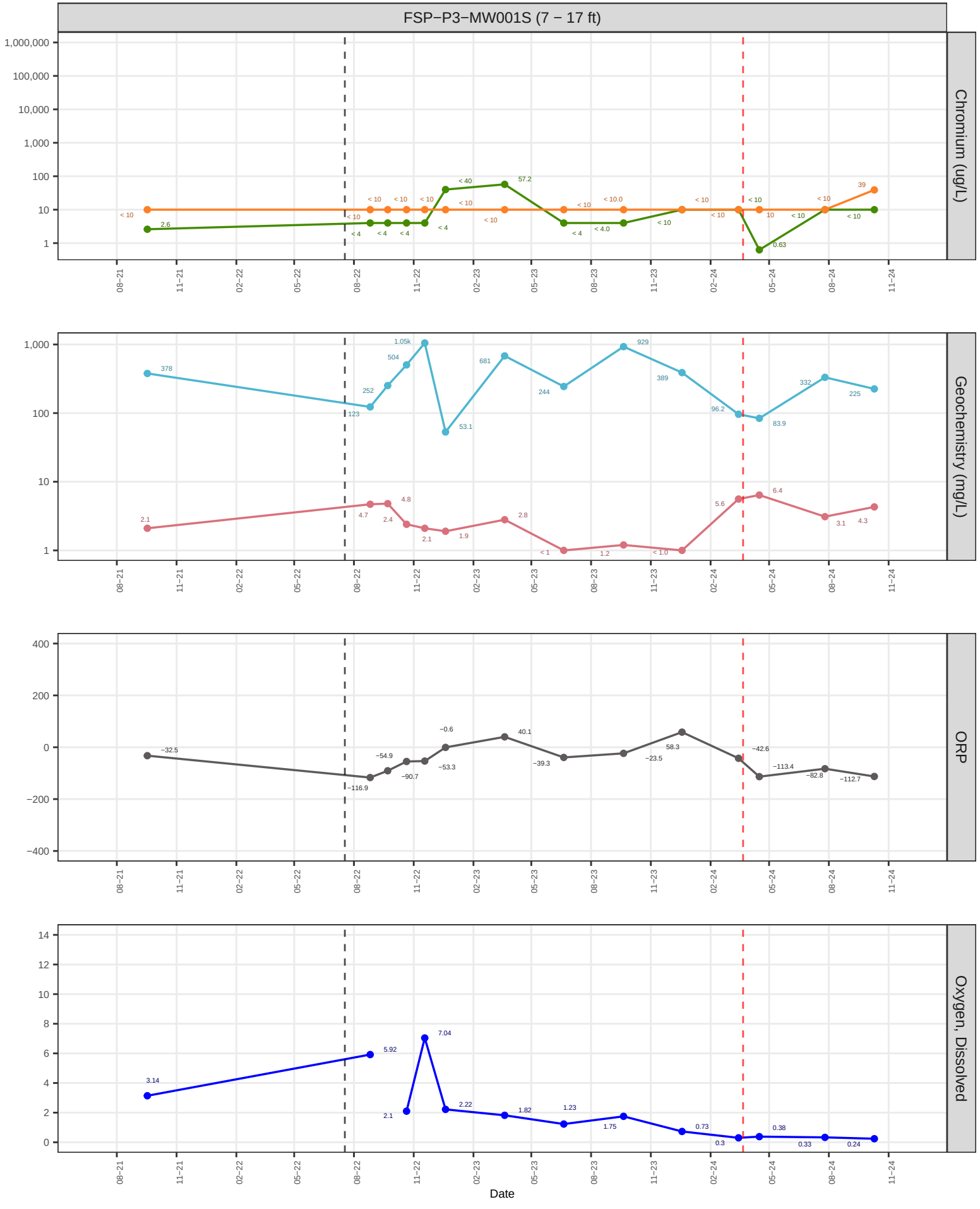

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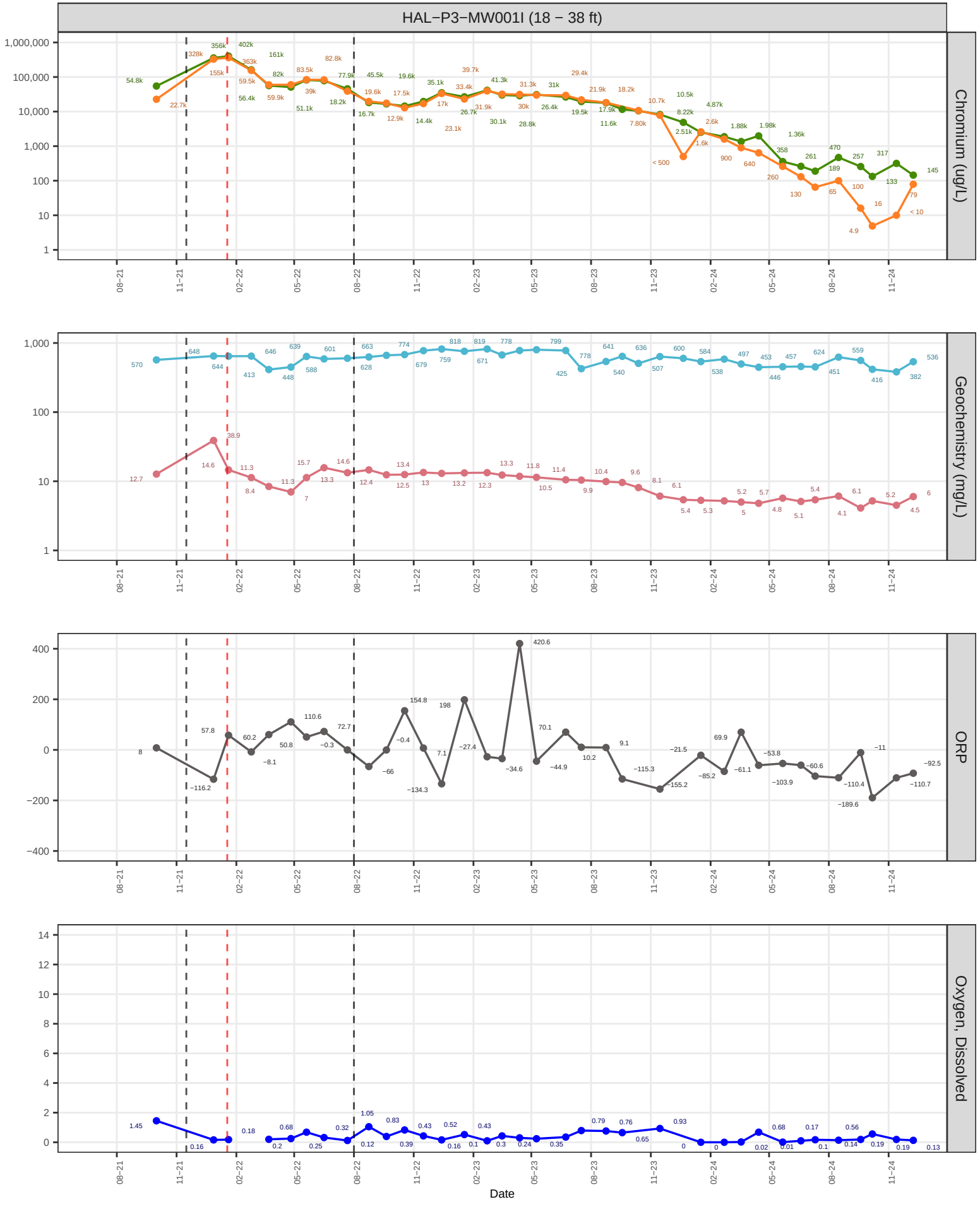

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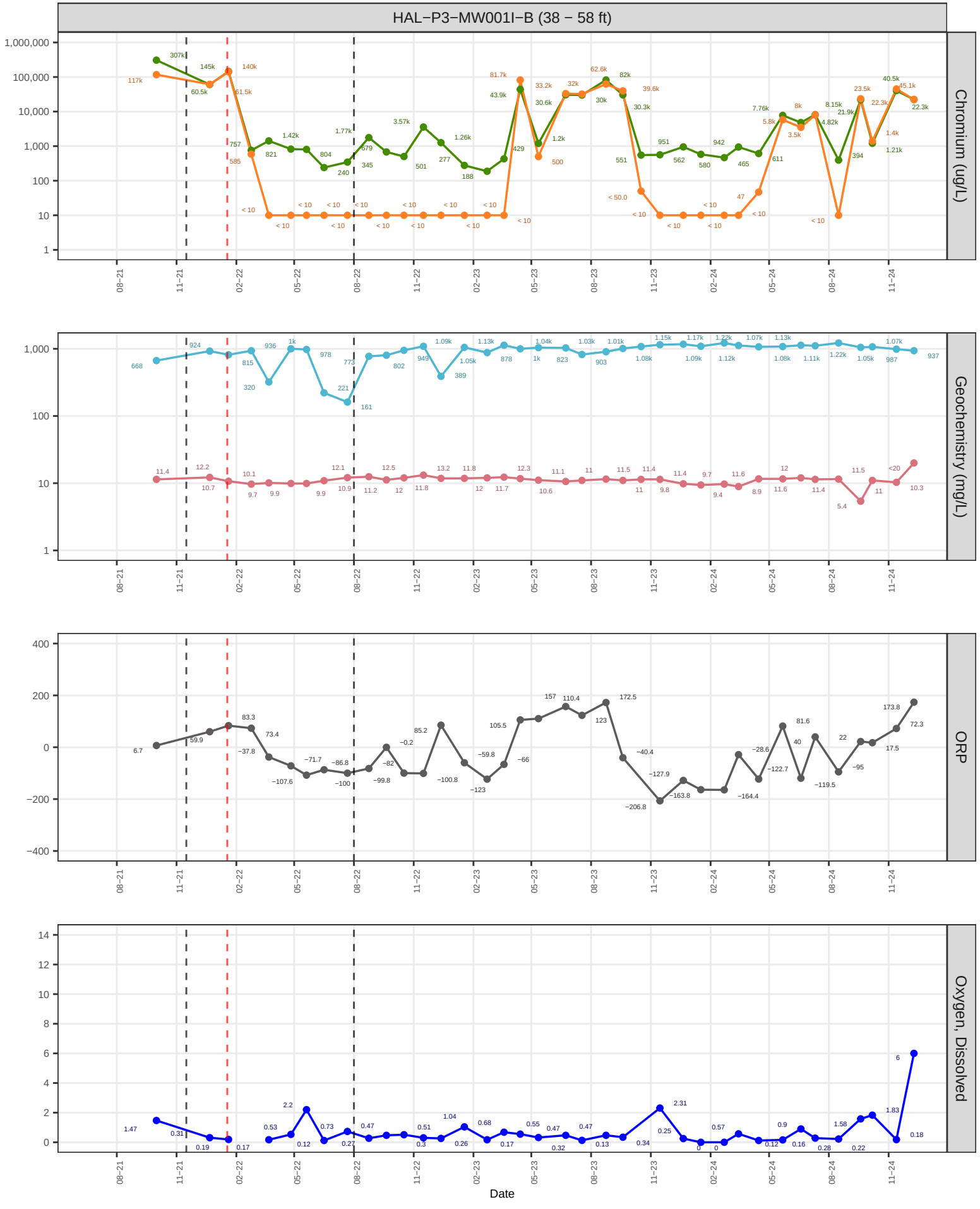

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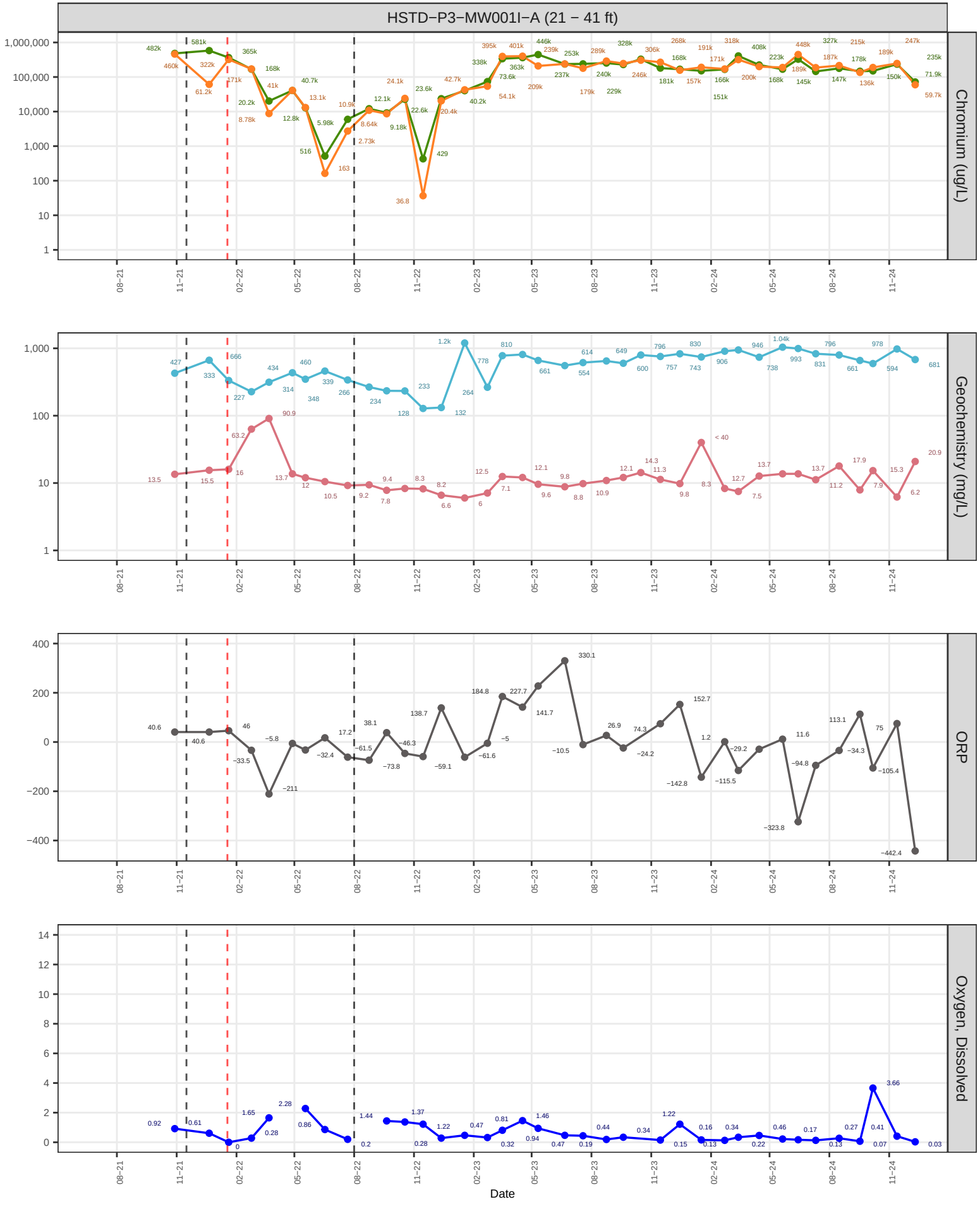

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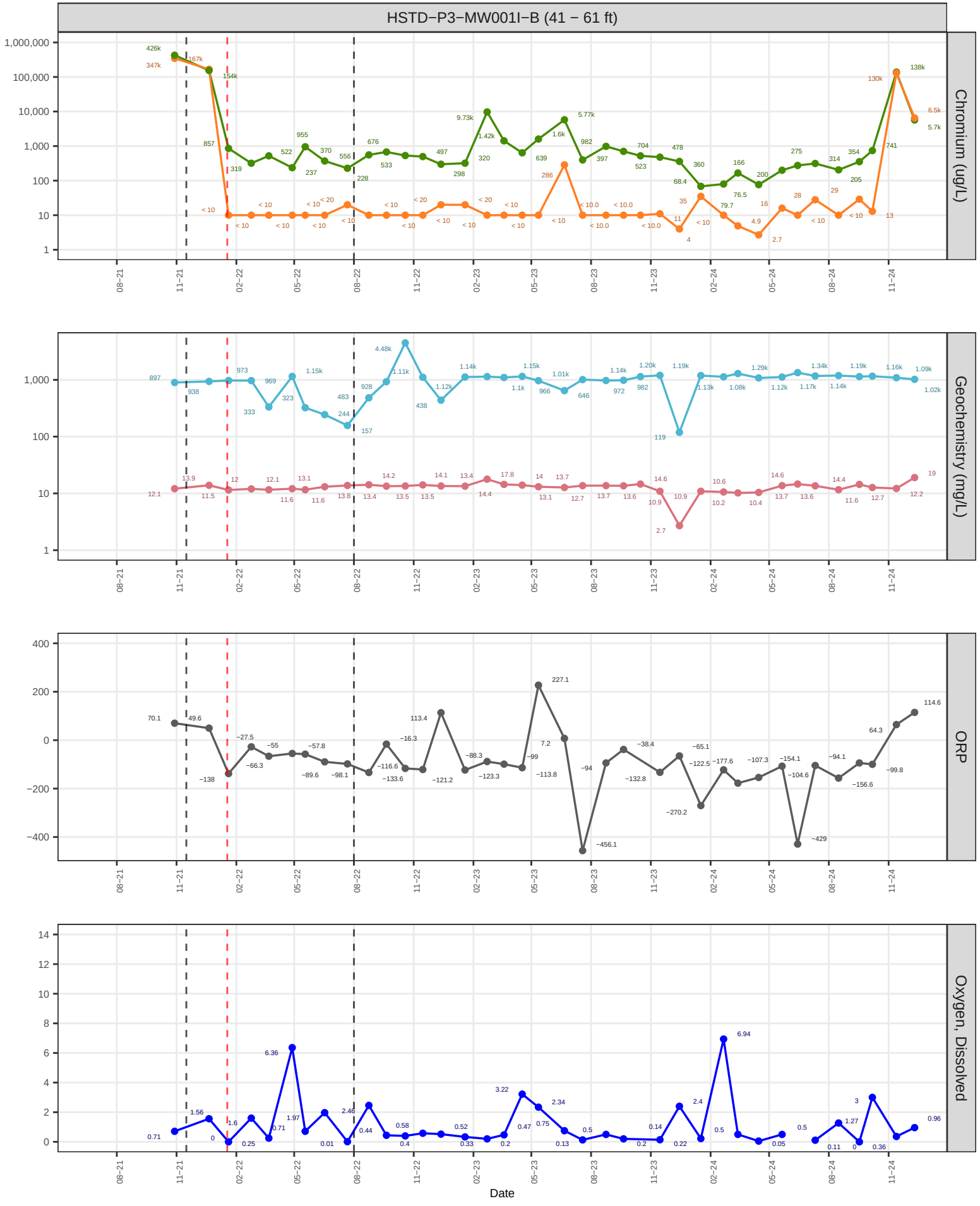

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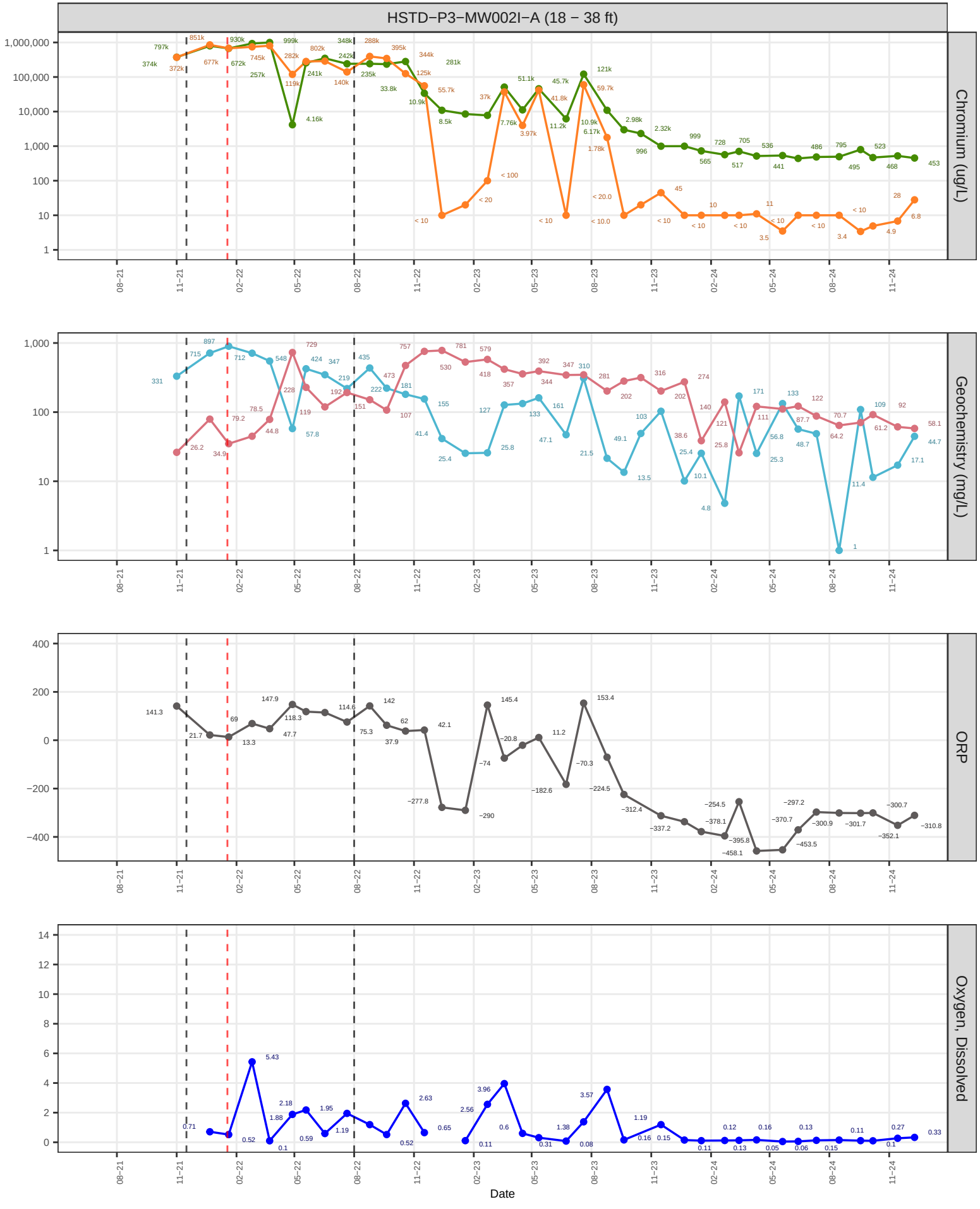

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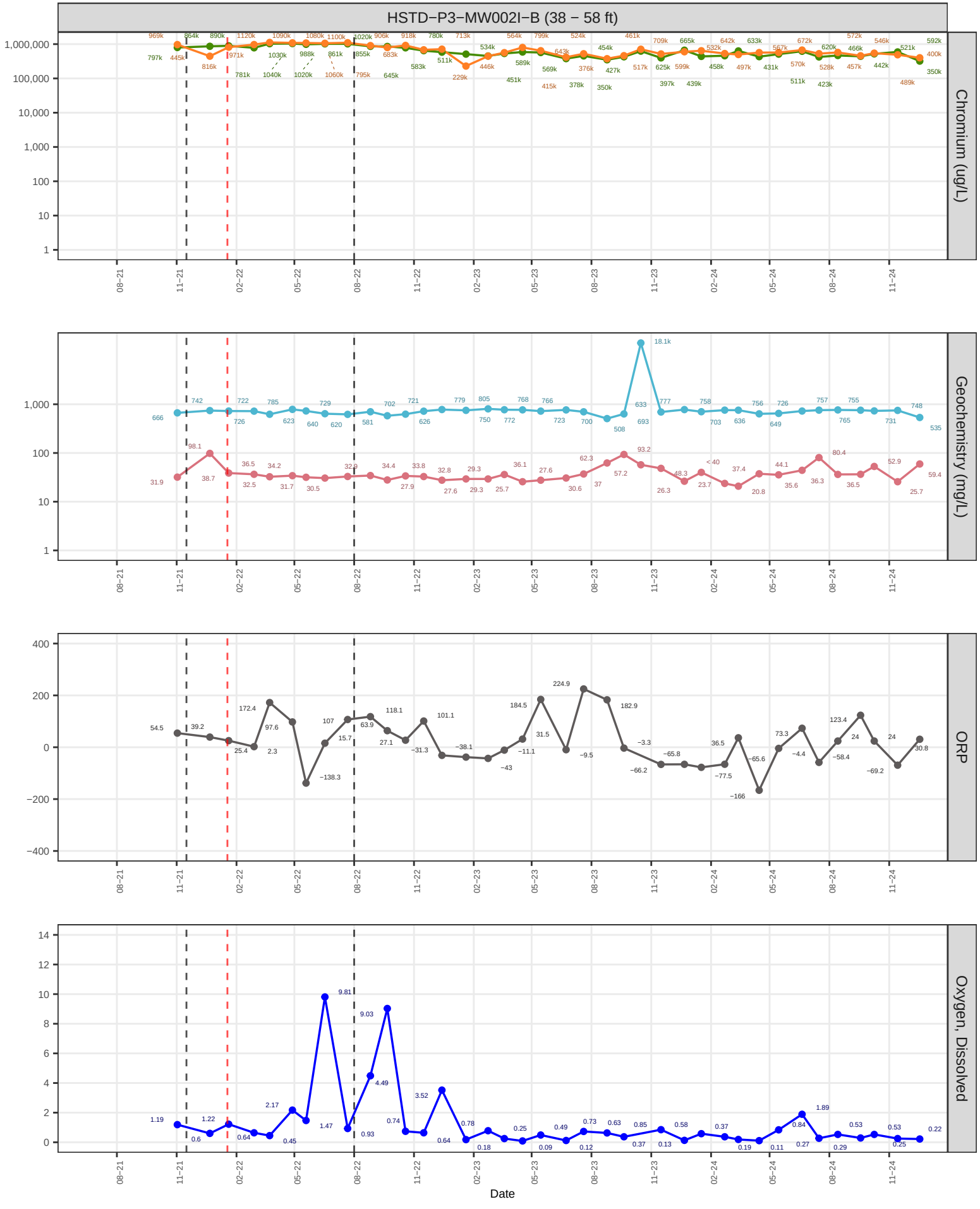

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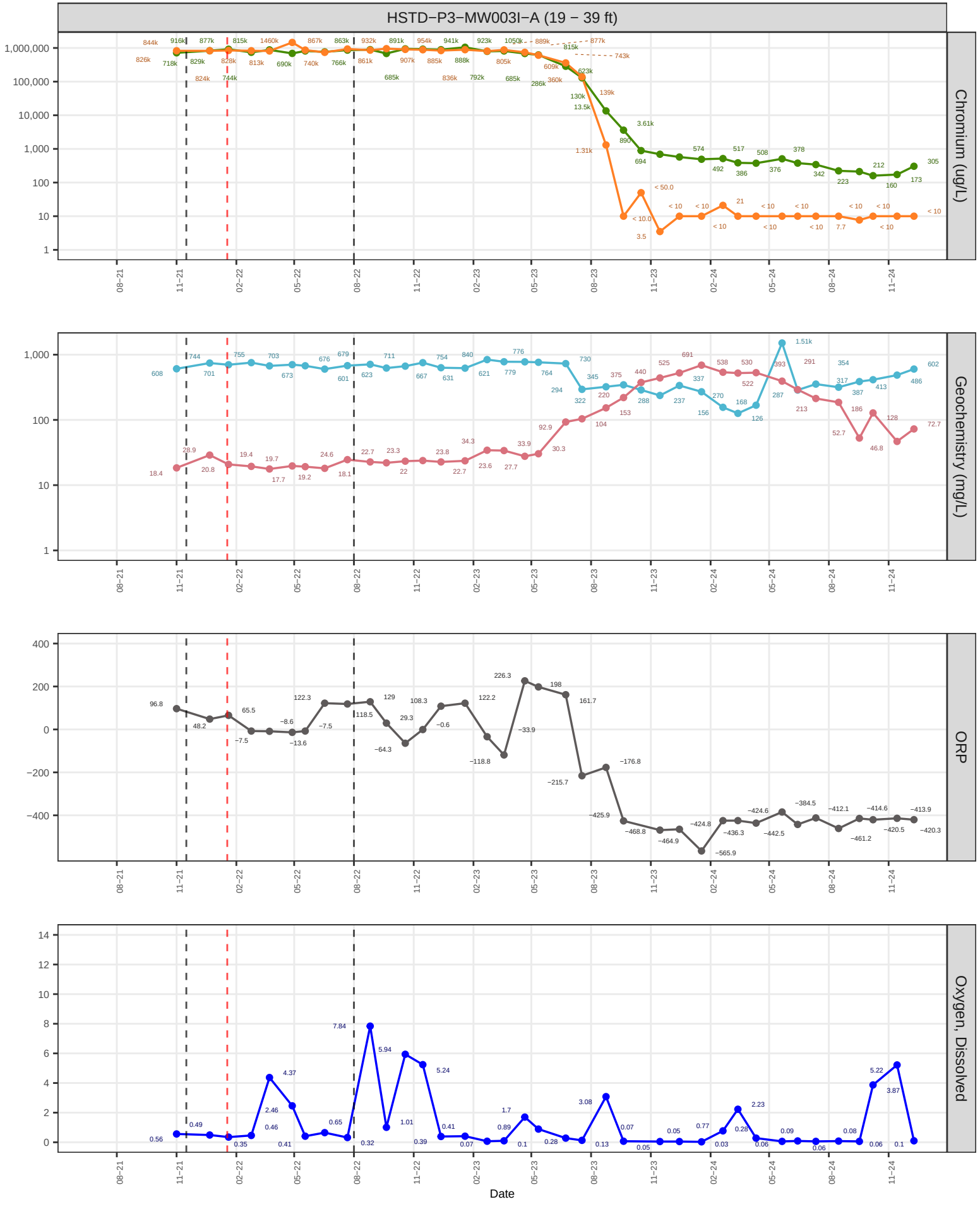

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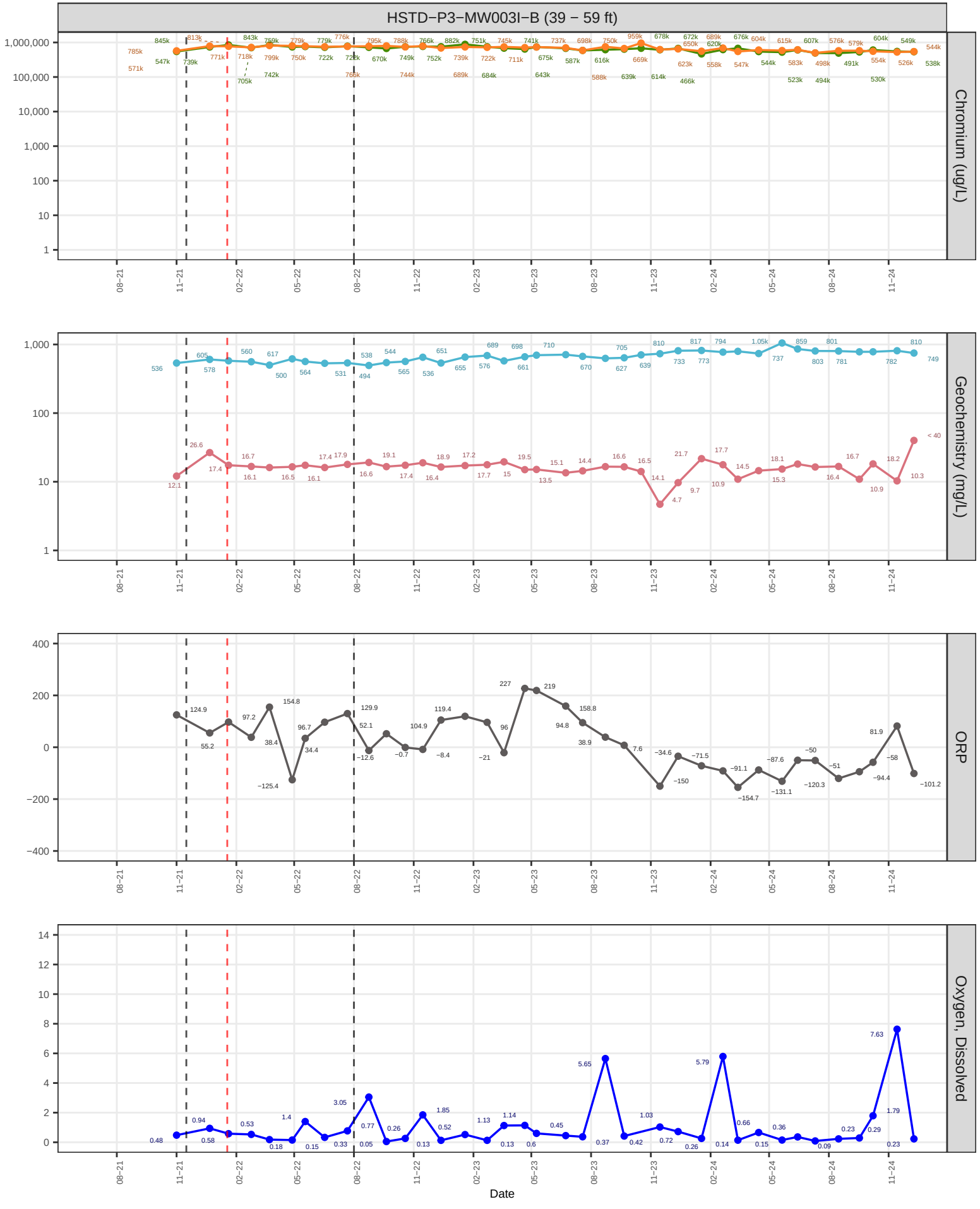

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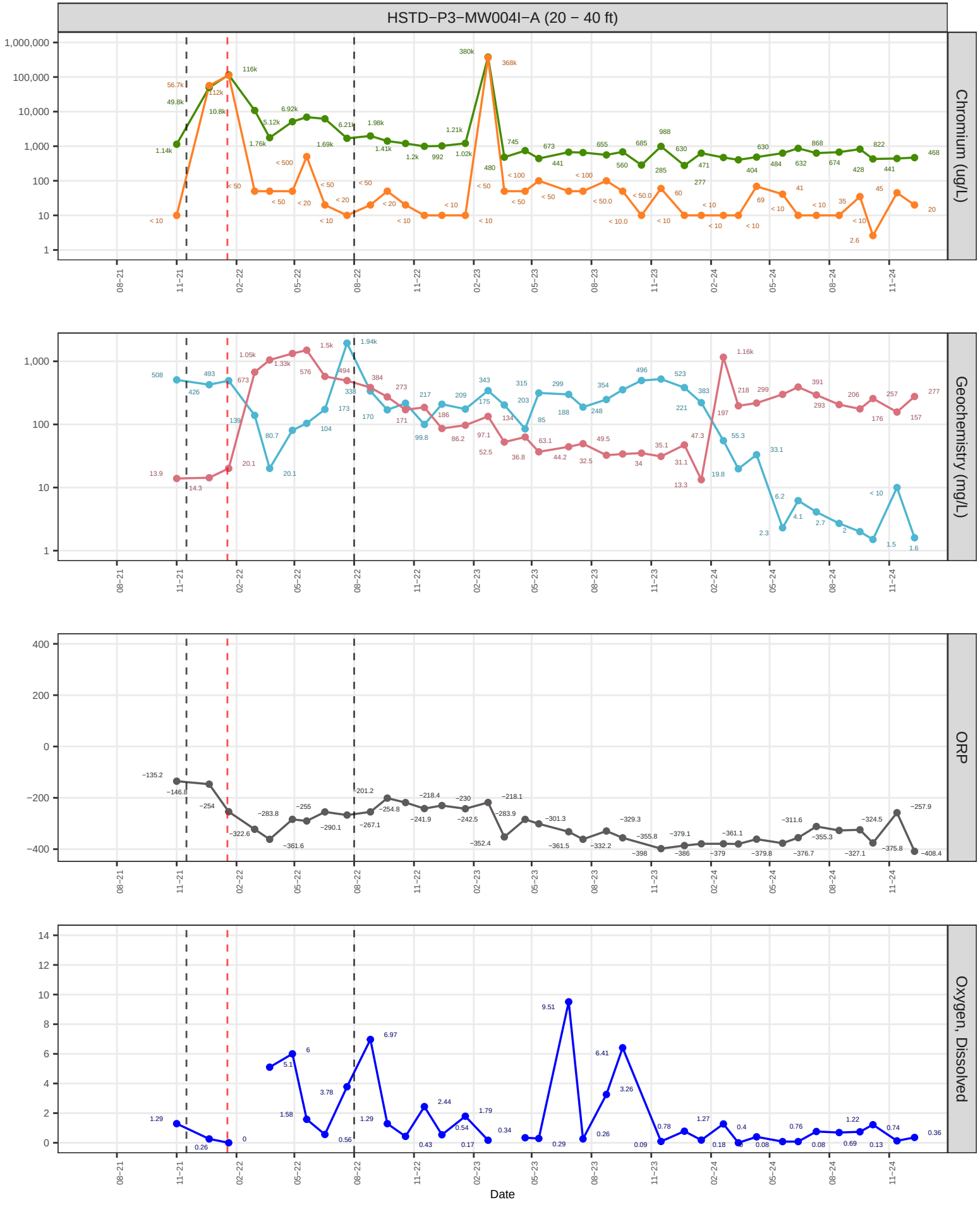

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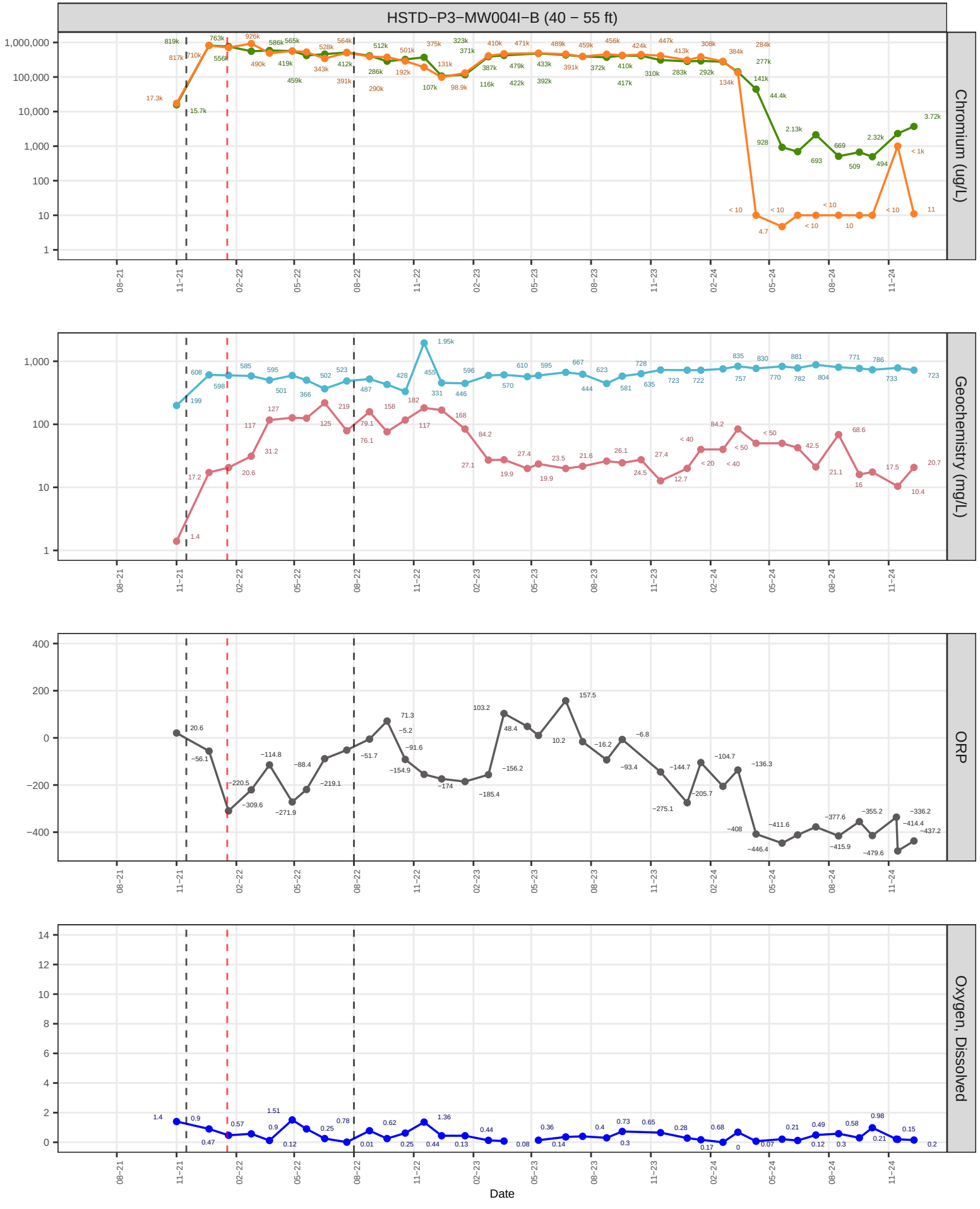

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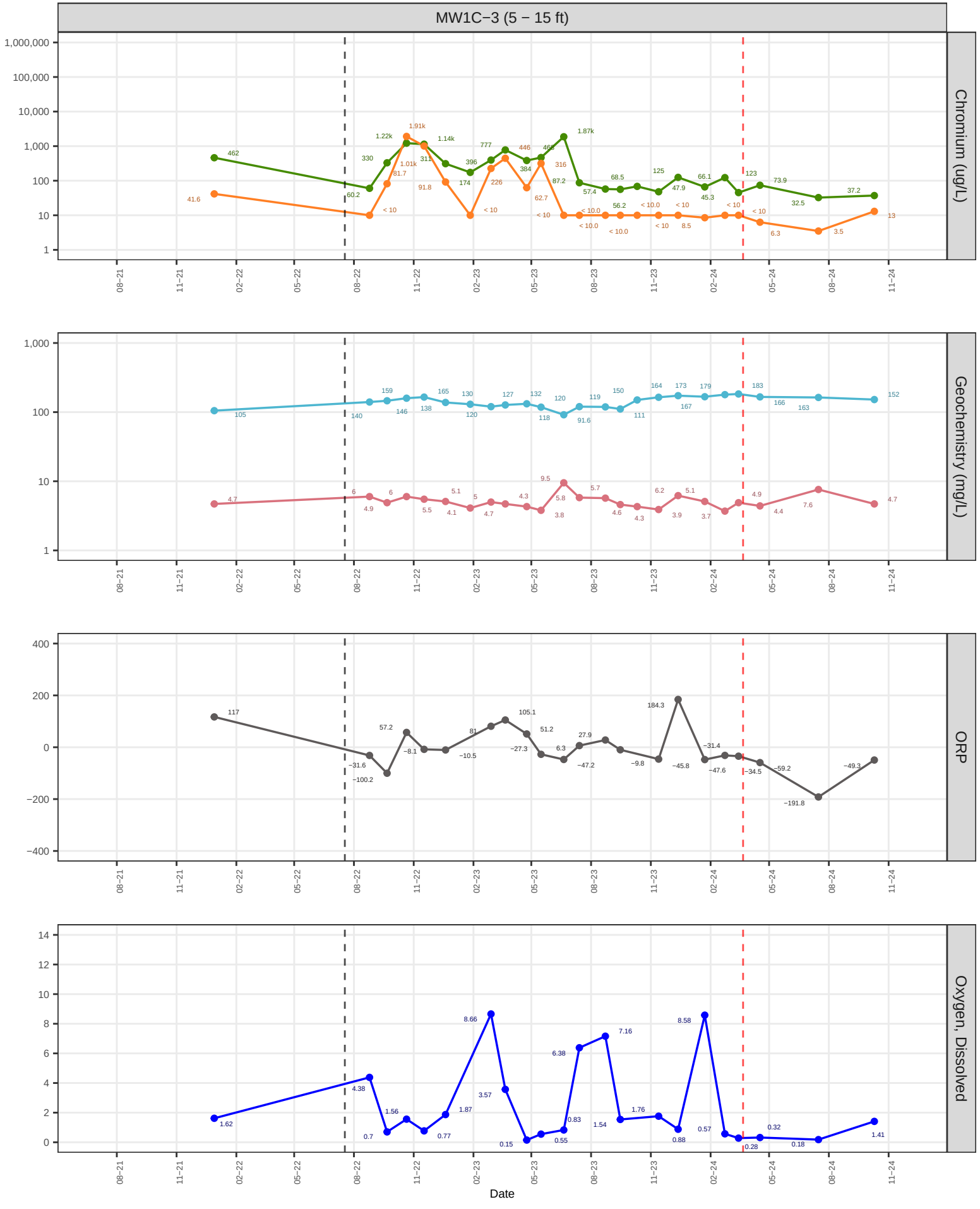

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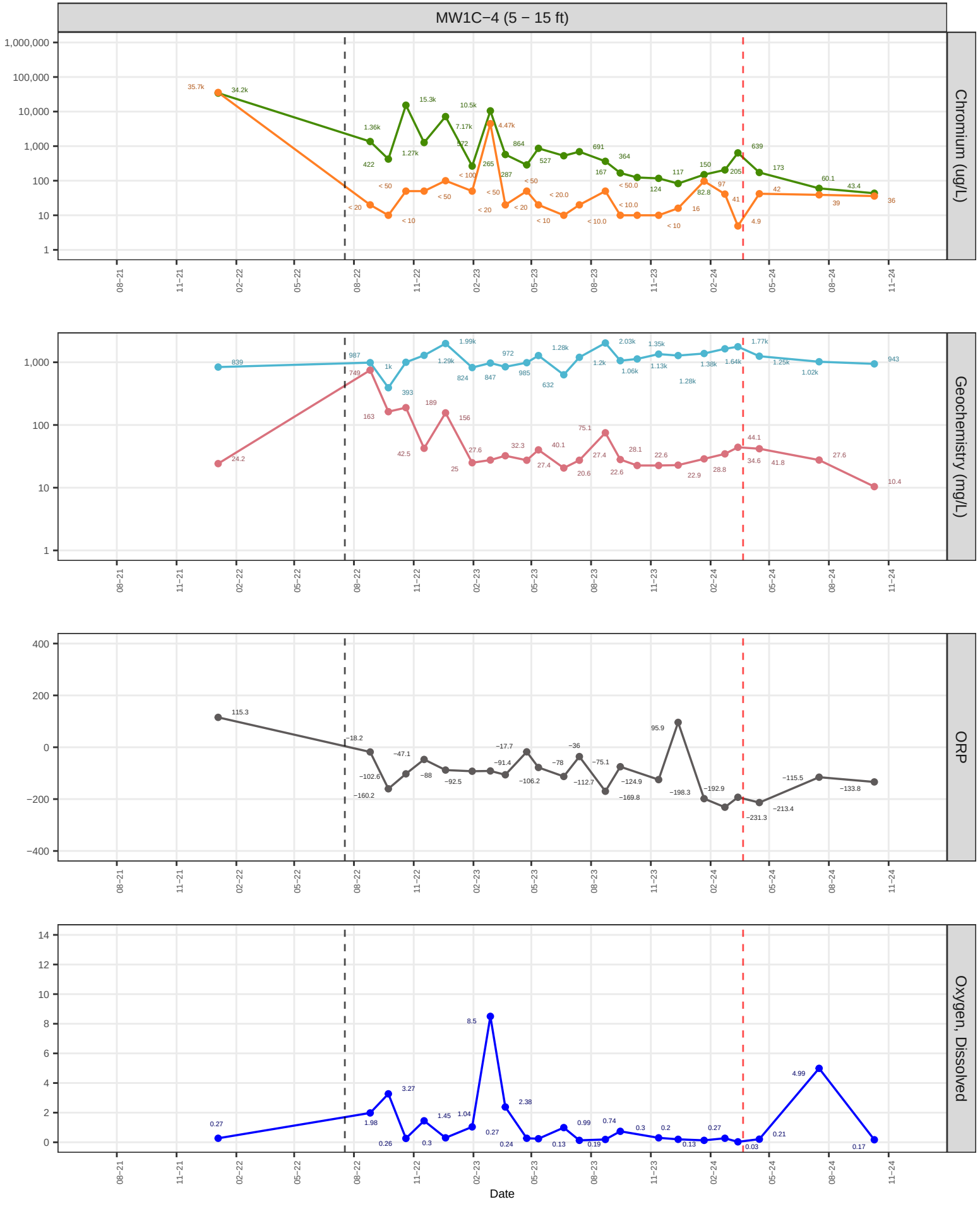

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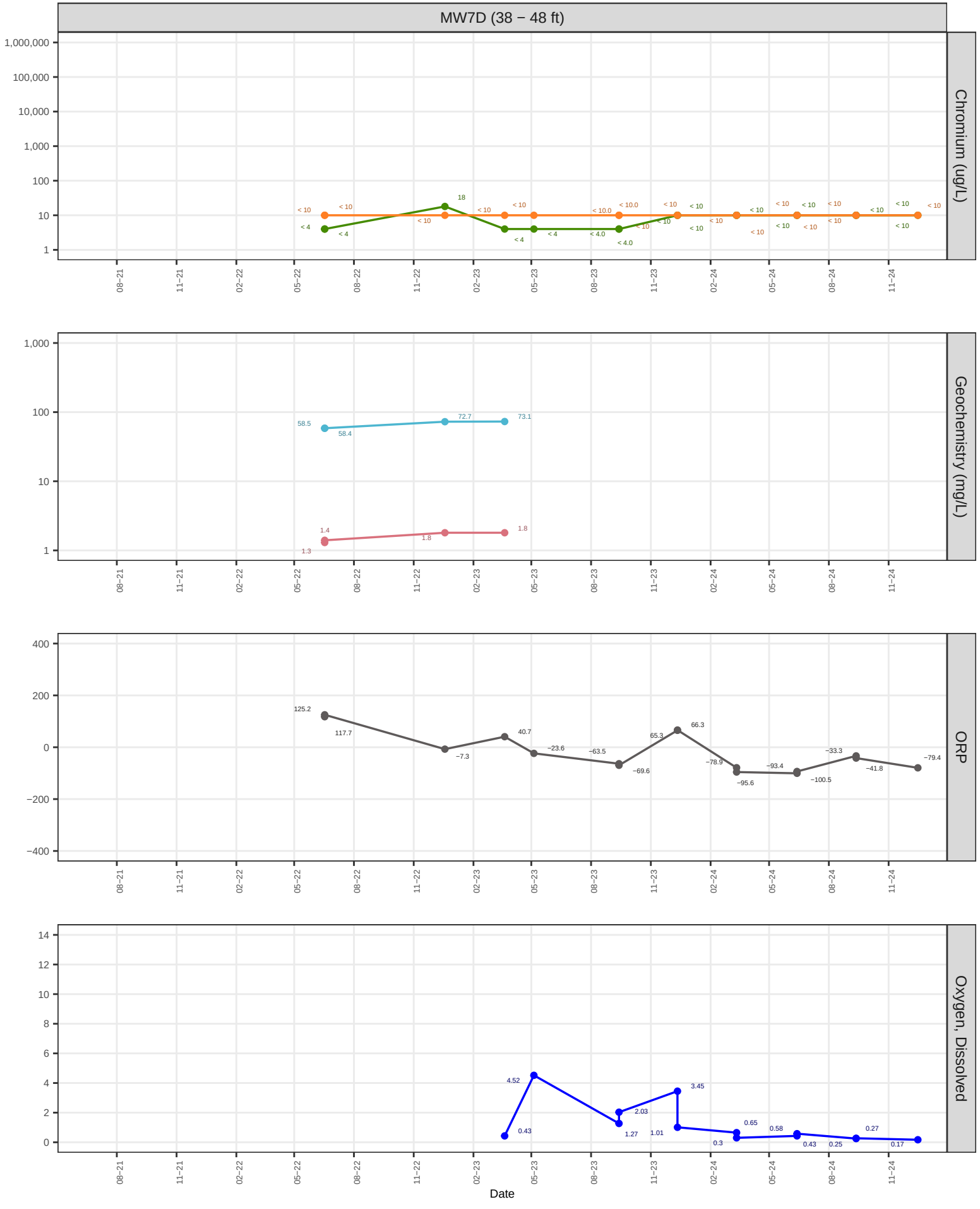

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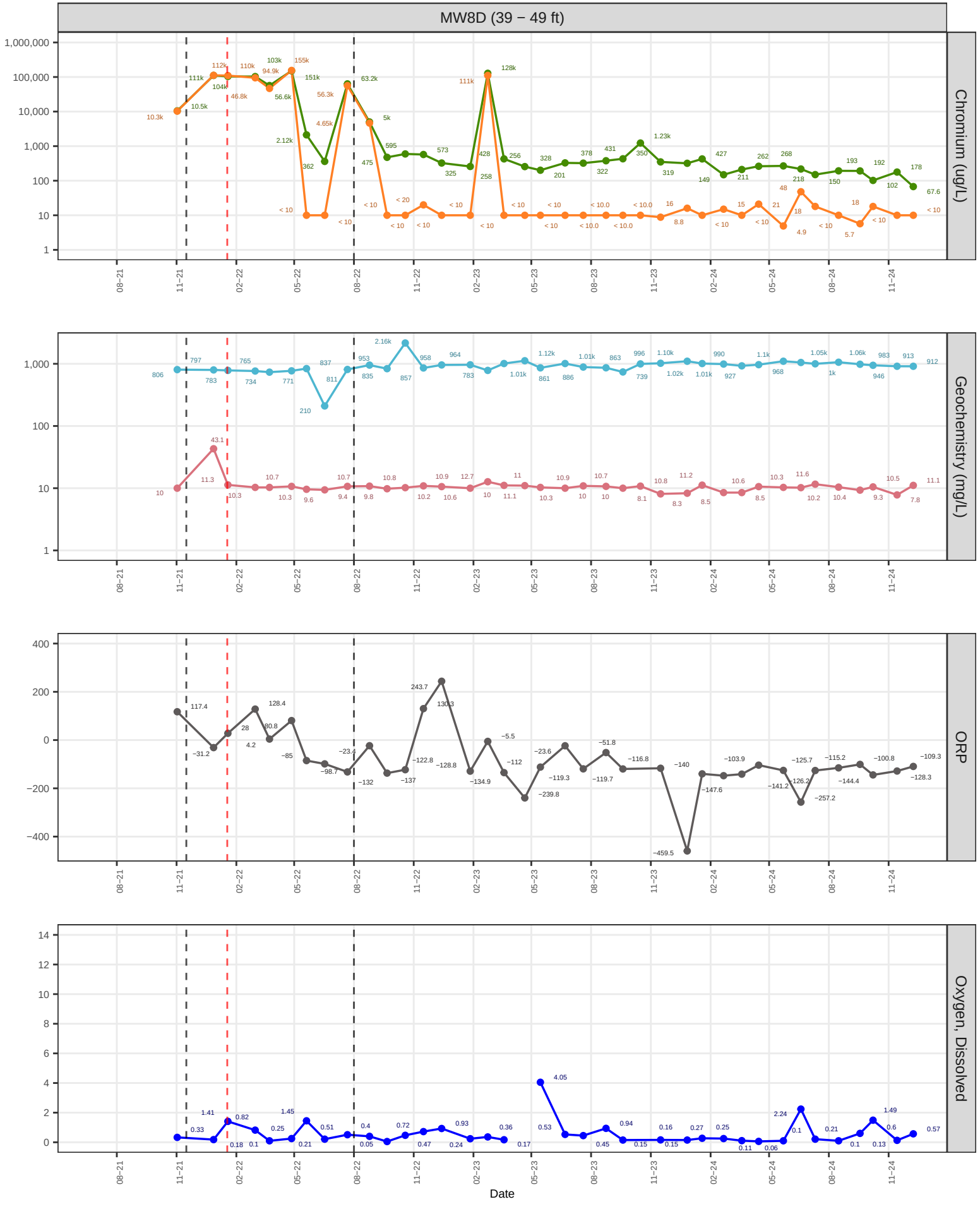

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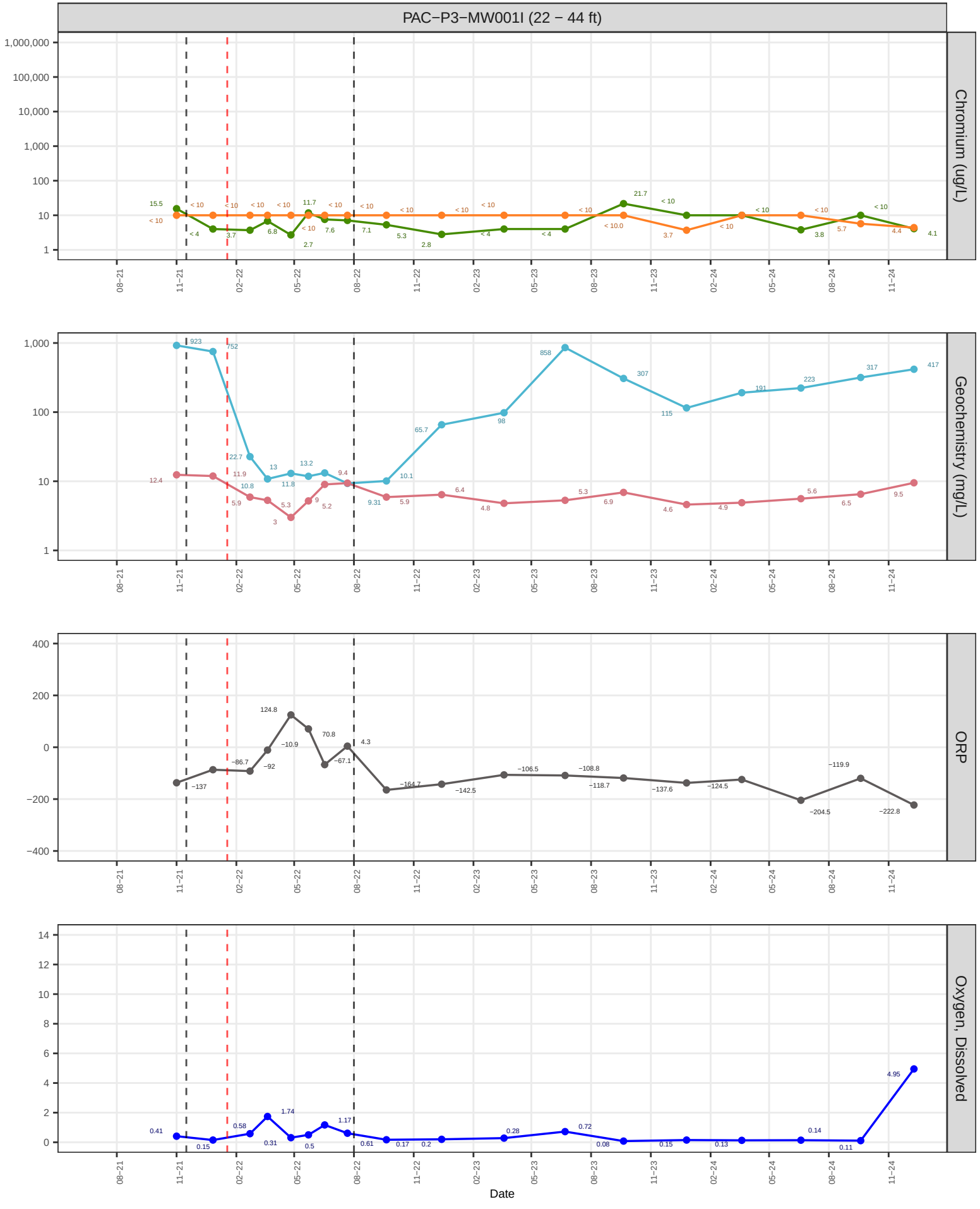

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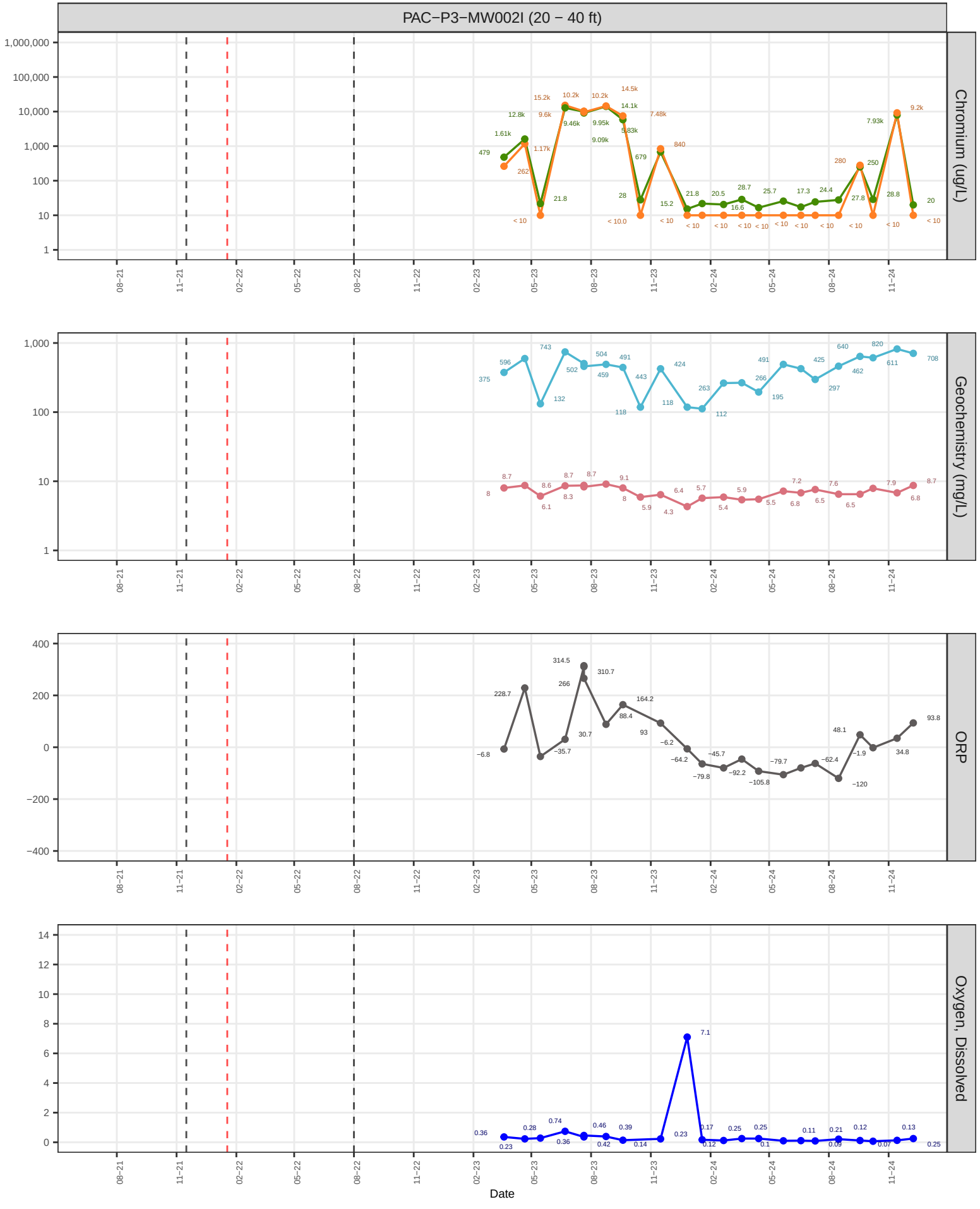

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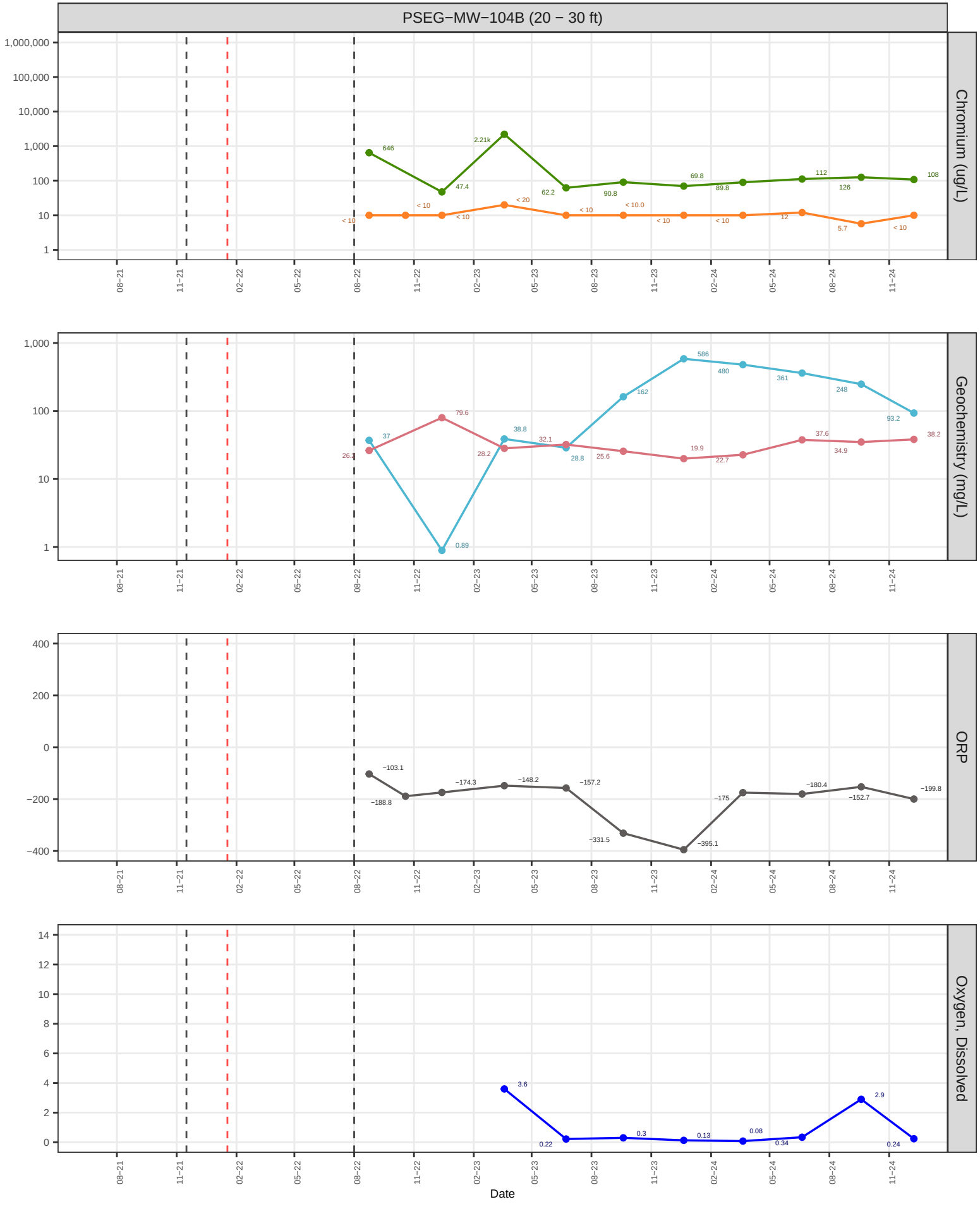

# Appendix B-4
# Performance Trend Charts - Chromium, Hexavalent Chromium, and Geochemistry - Basal Till & Bedrock Remediation

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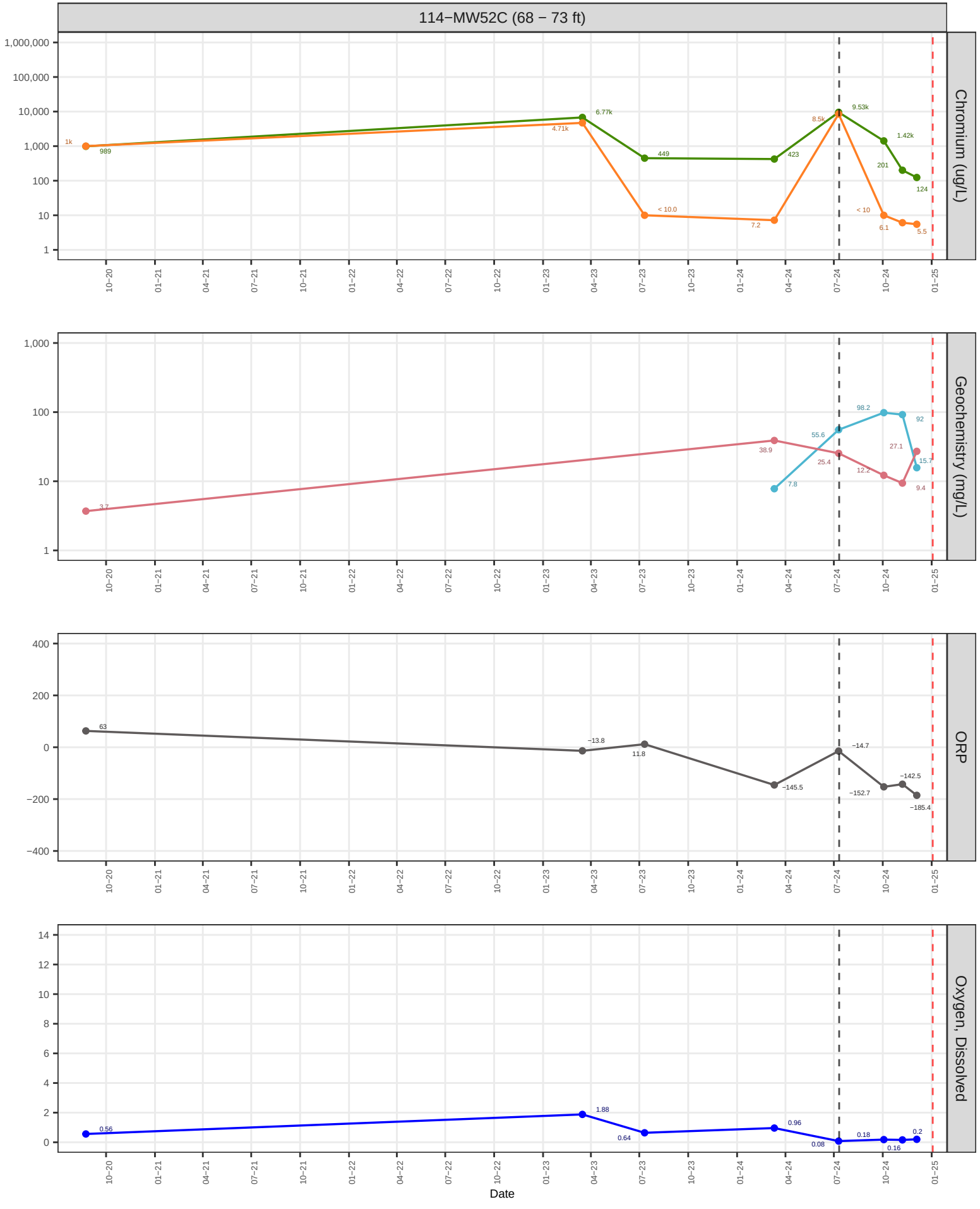

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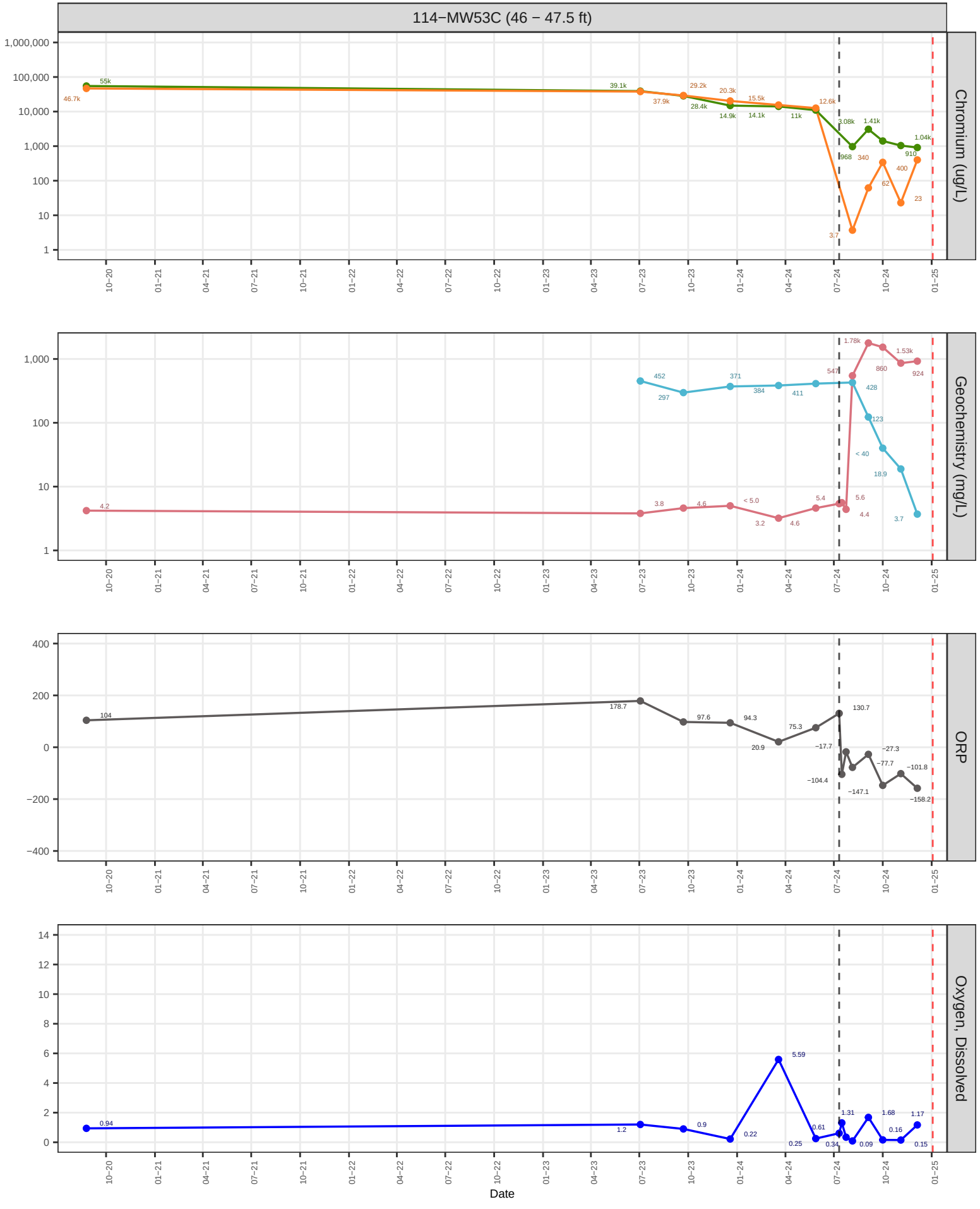

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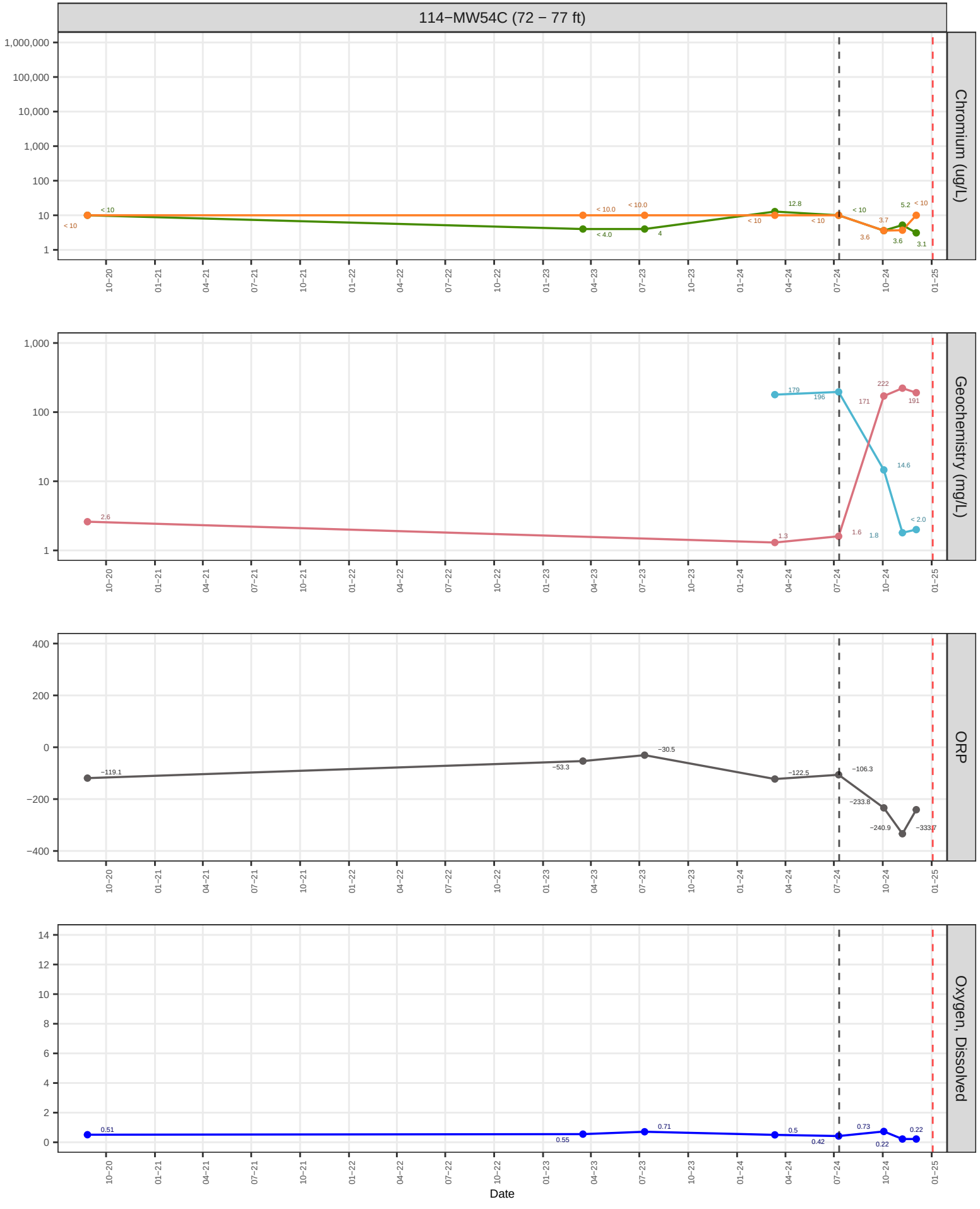

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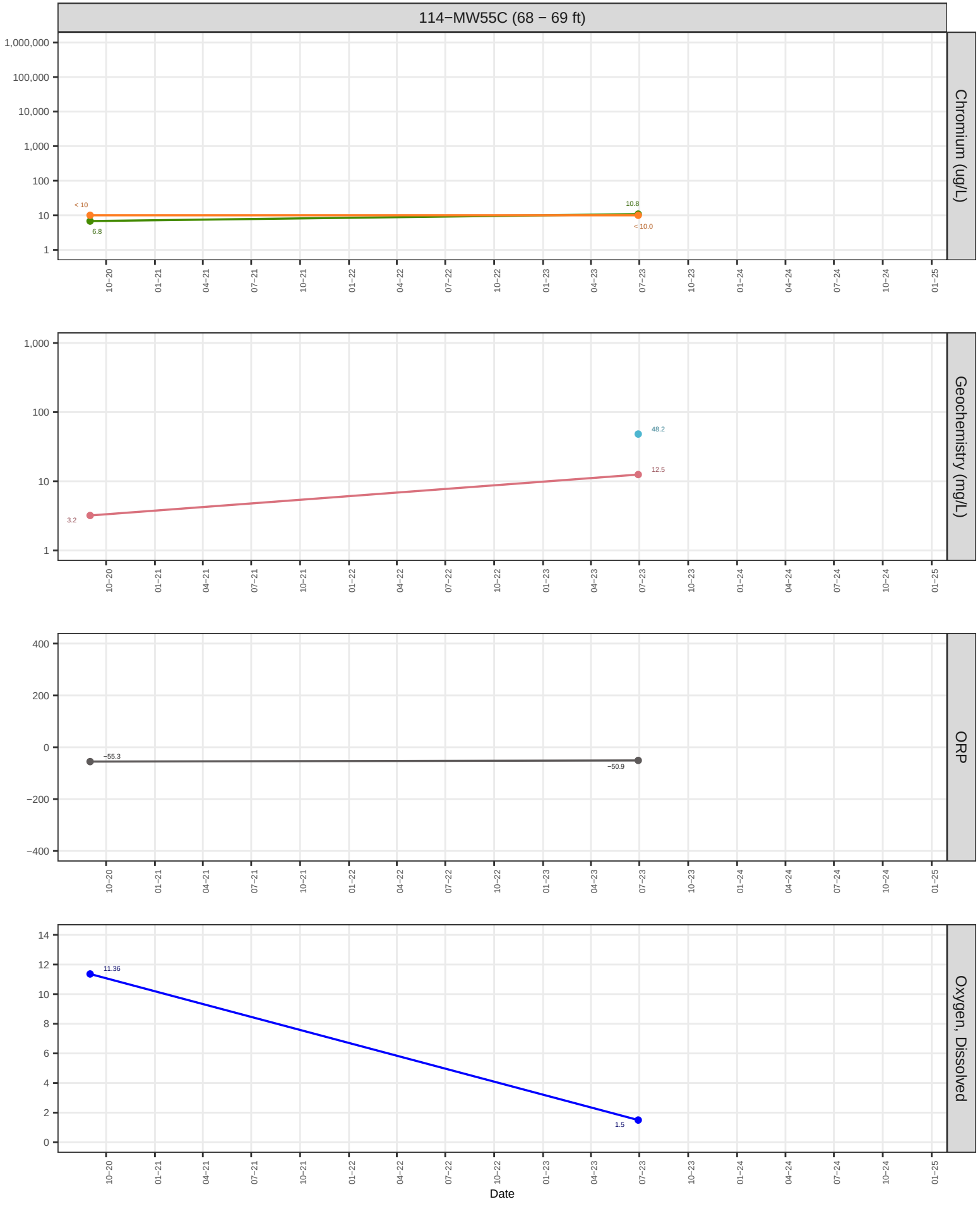

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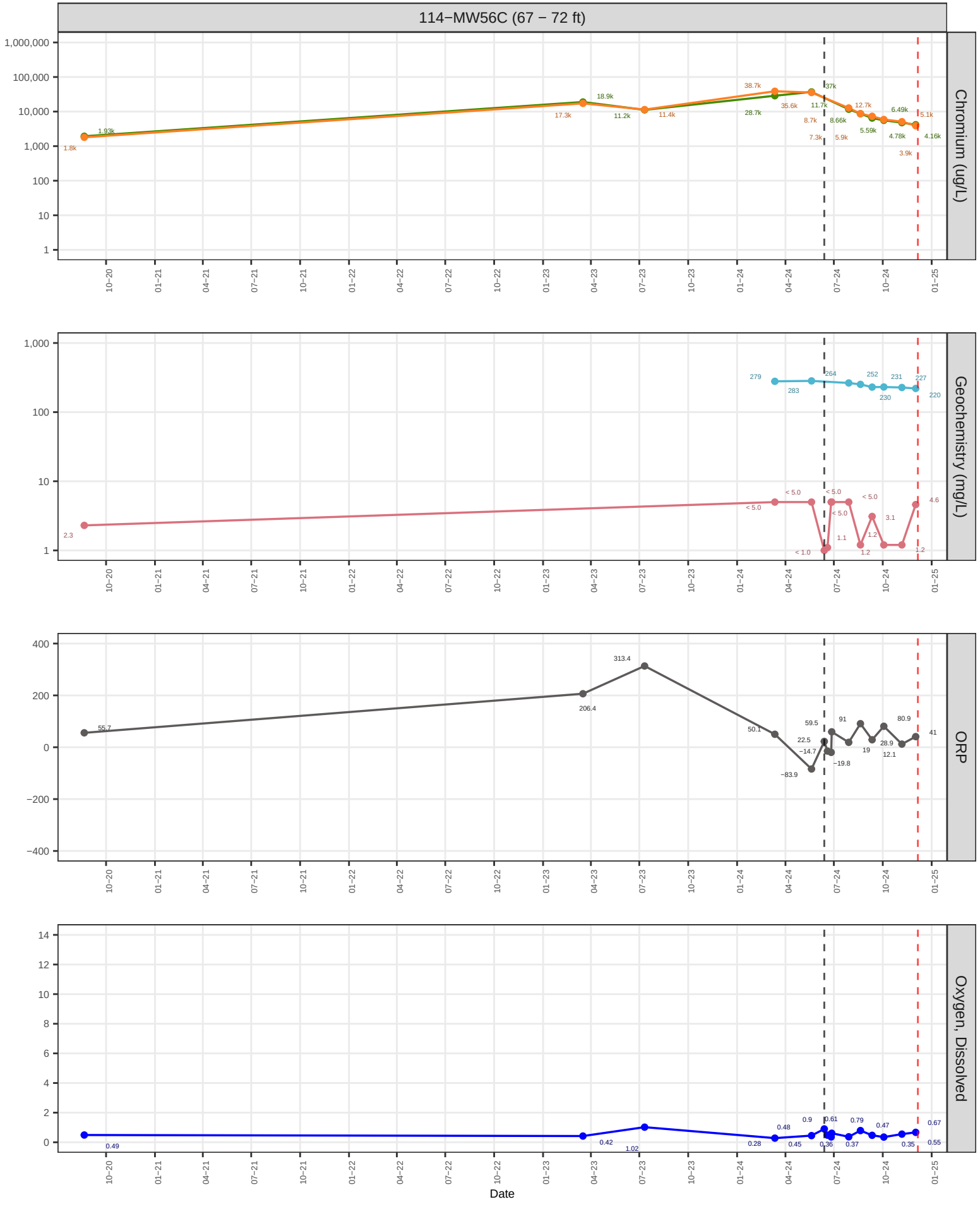

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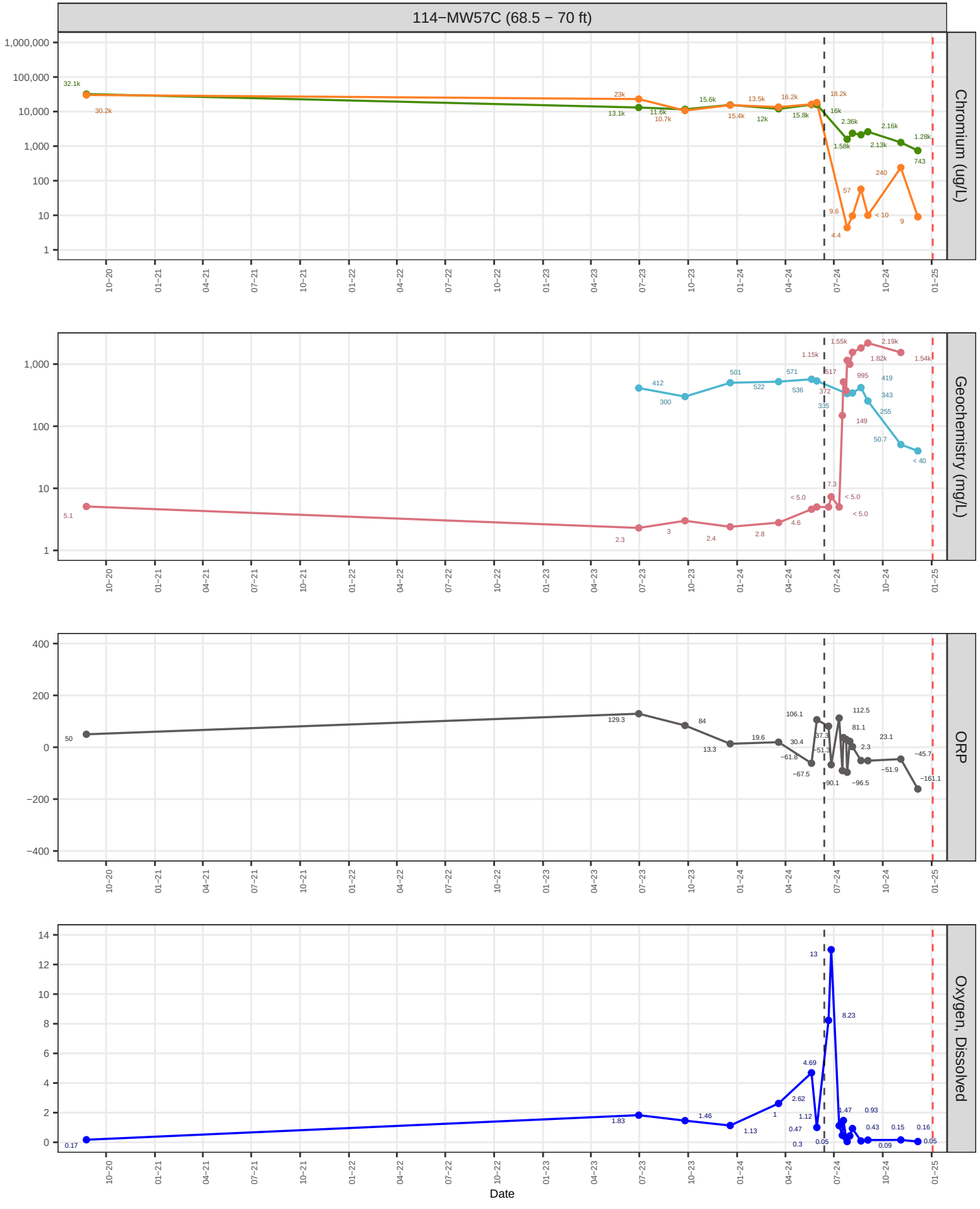

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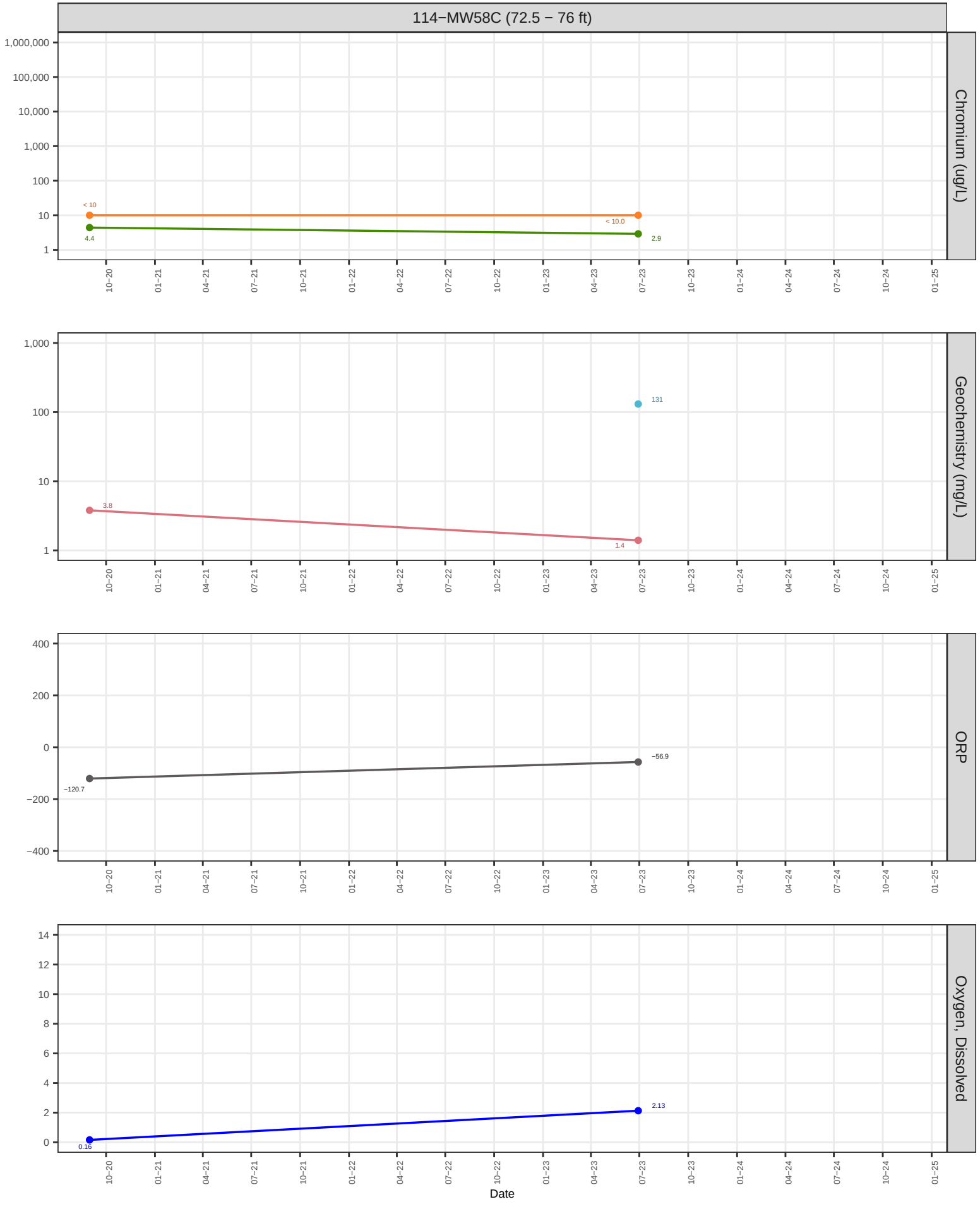

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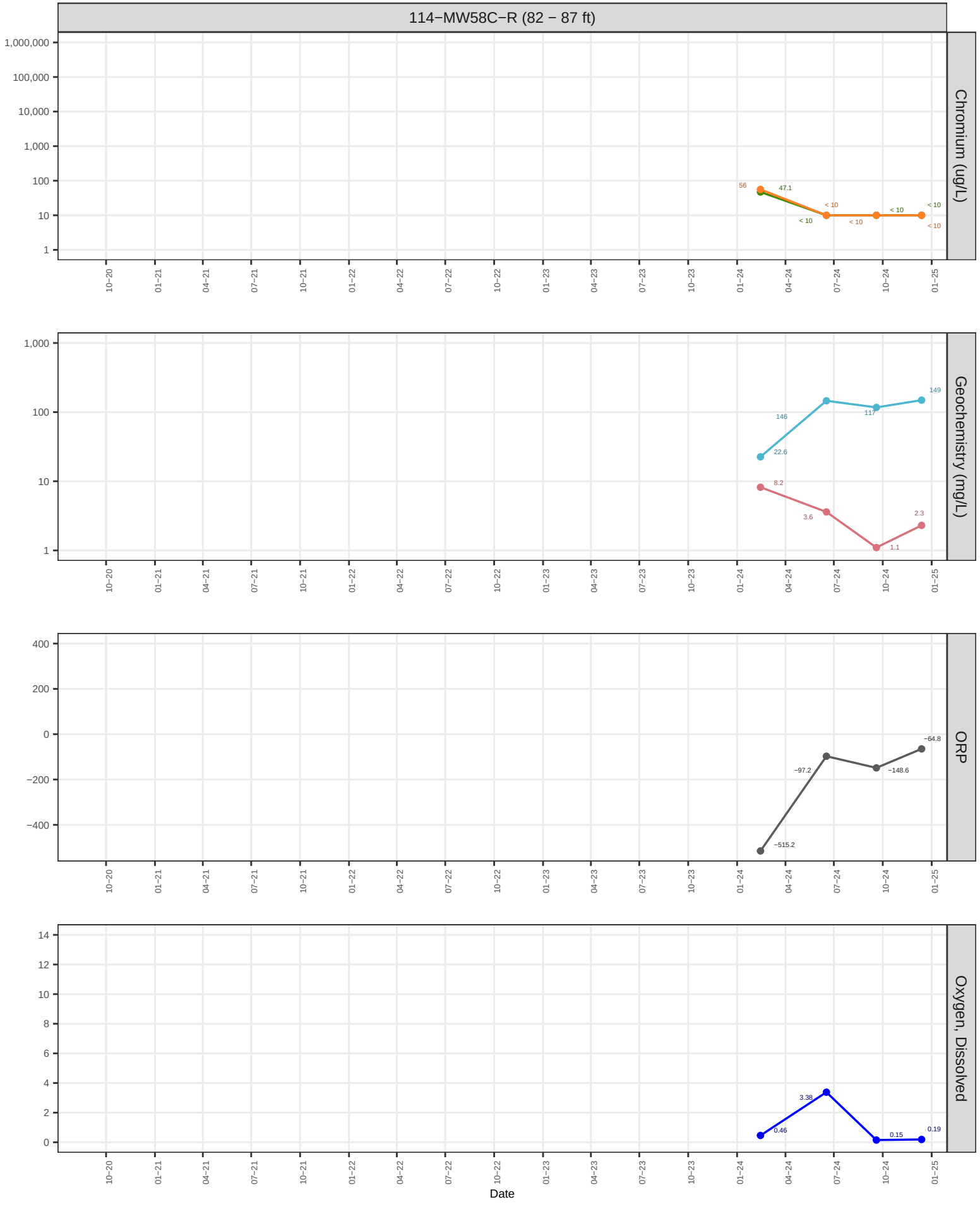

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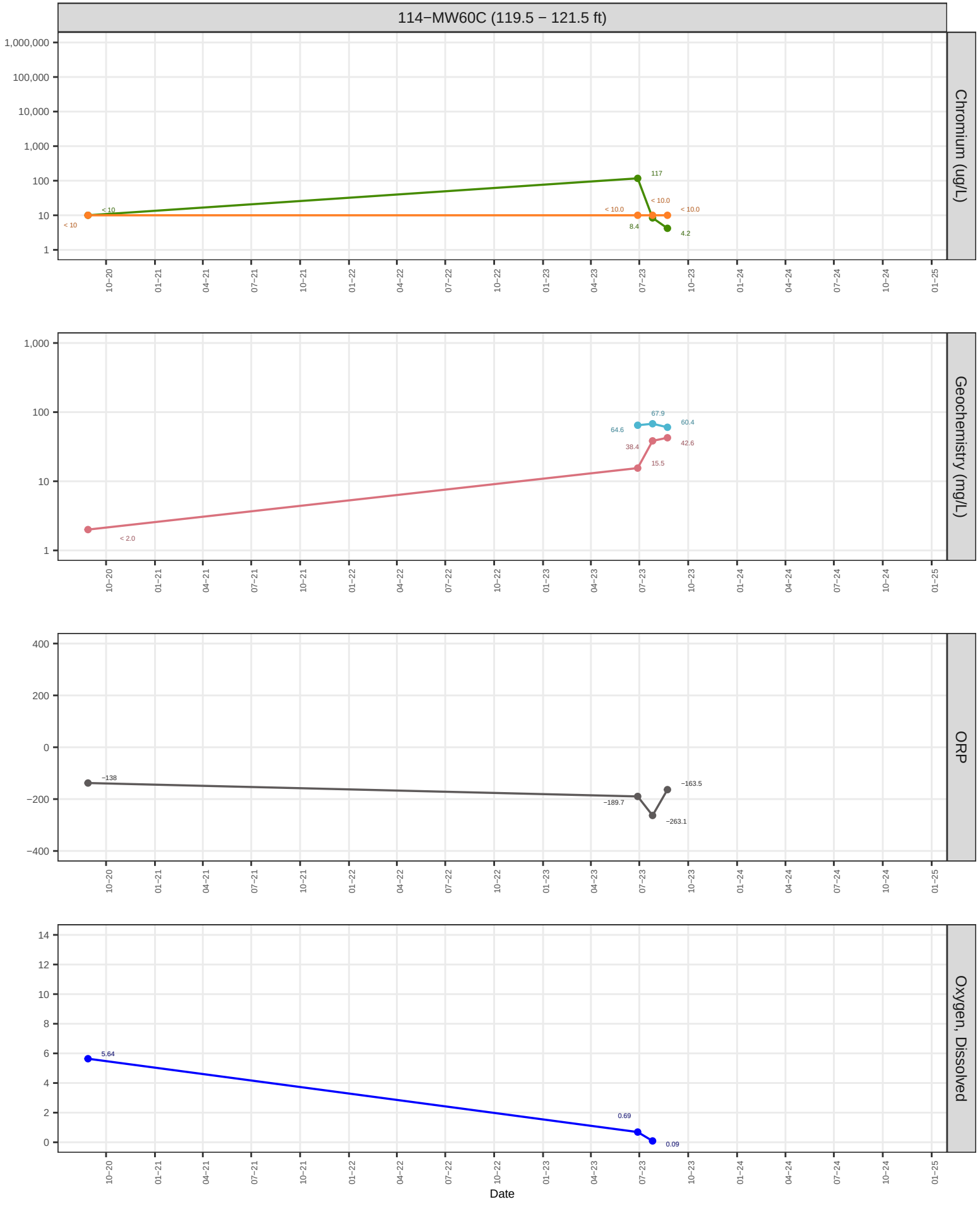

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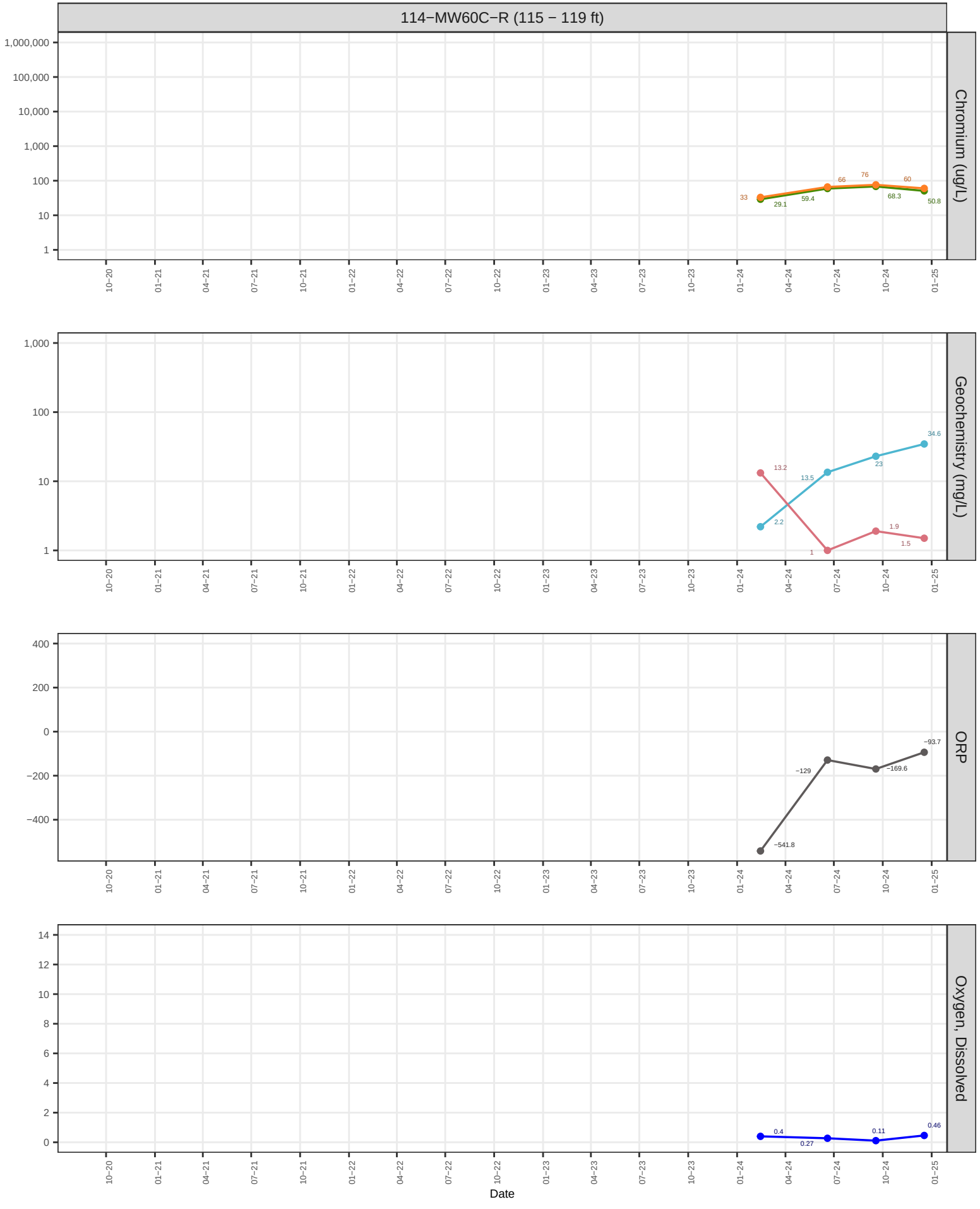

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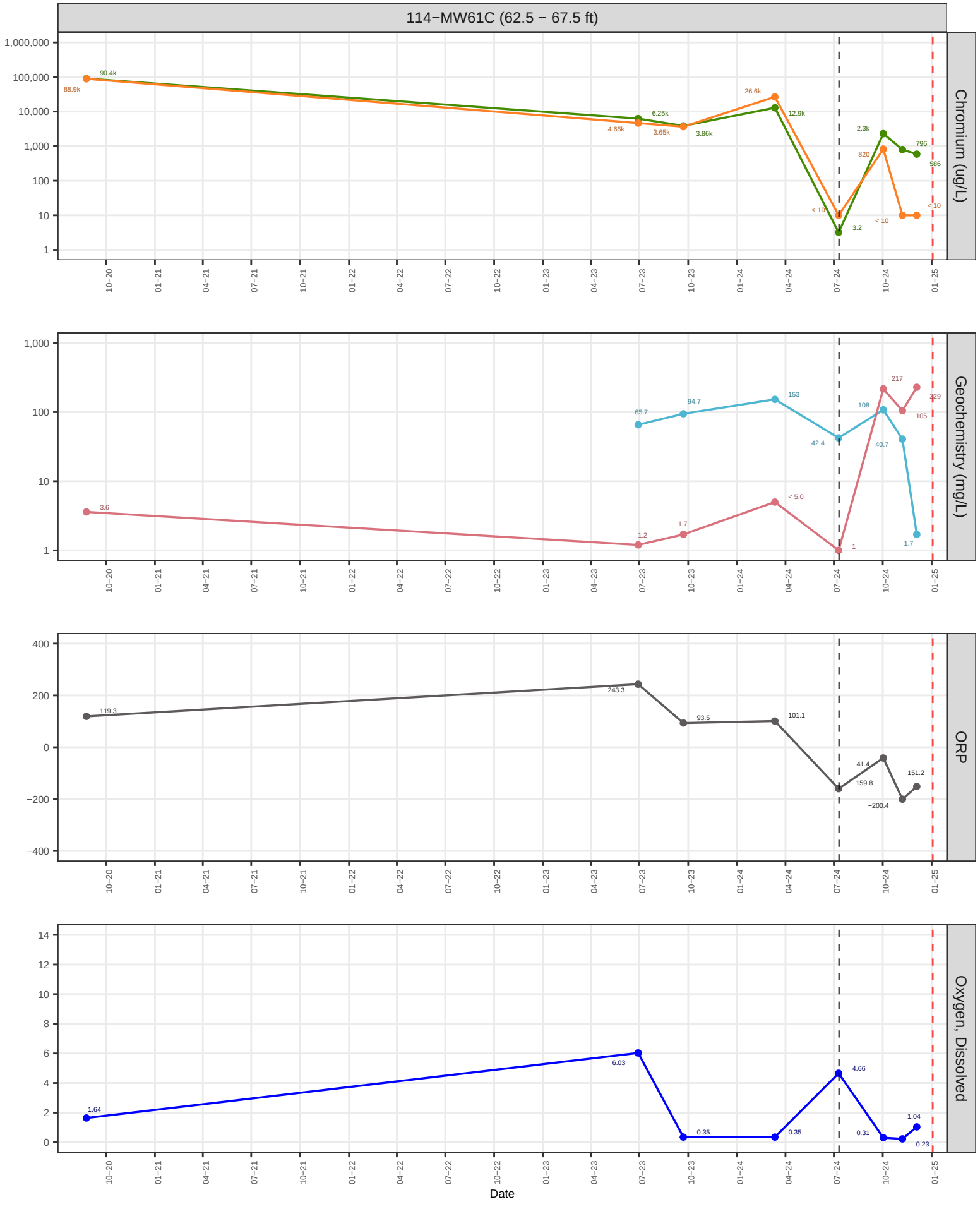

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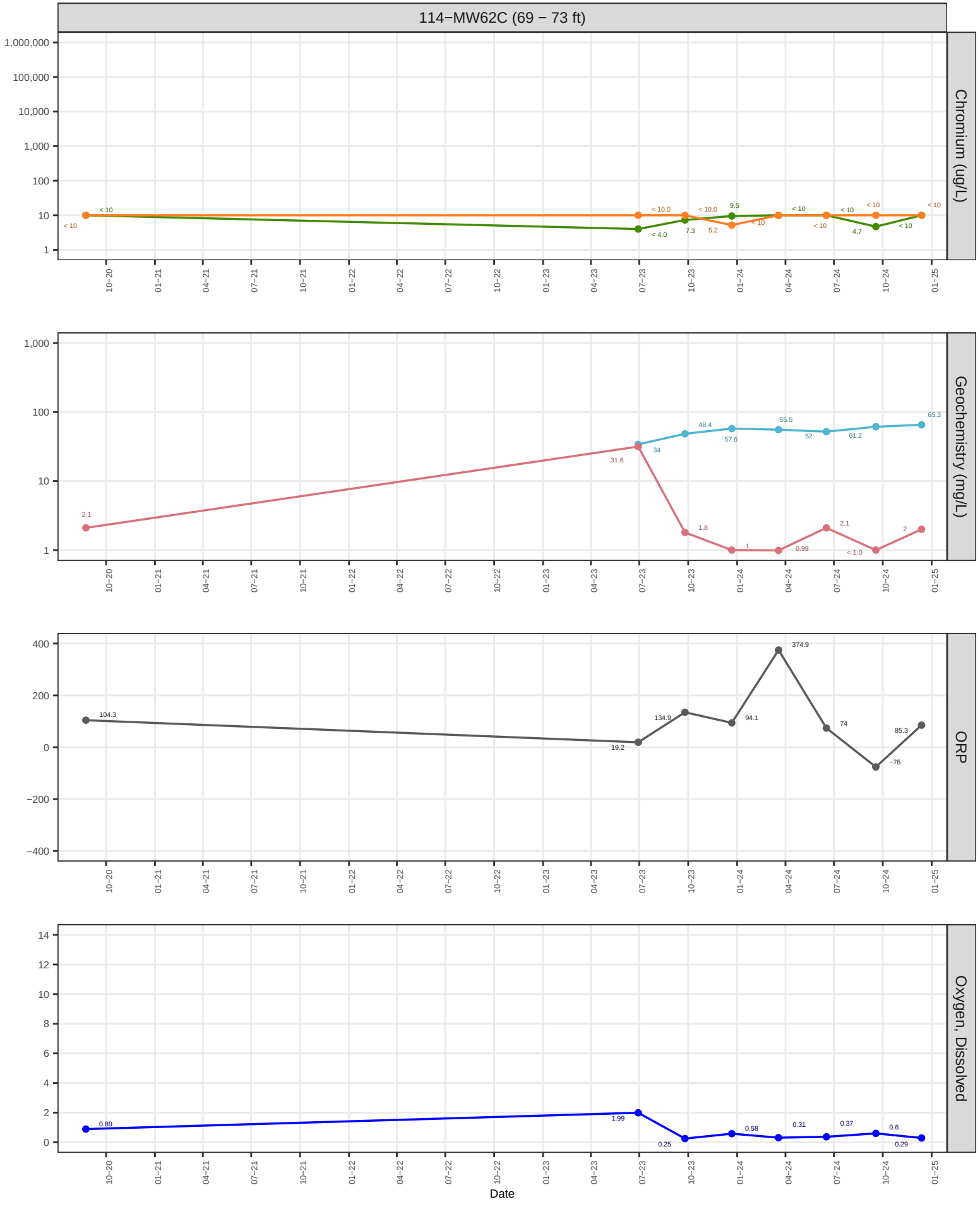

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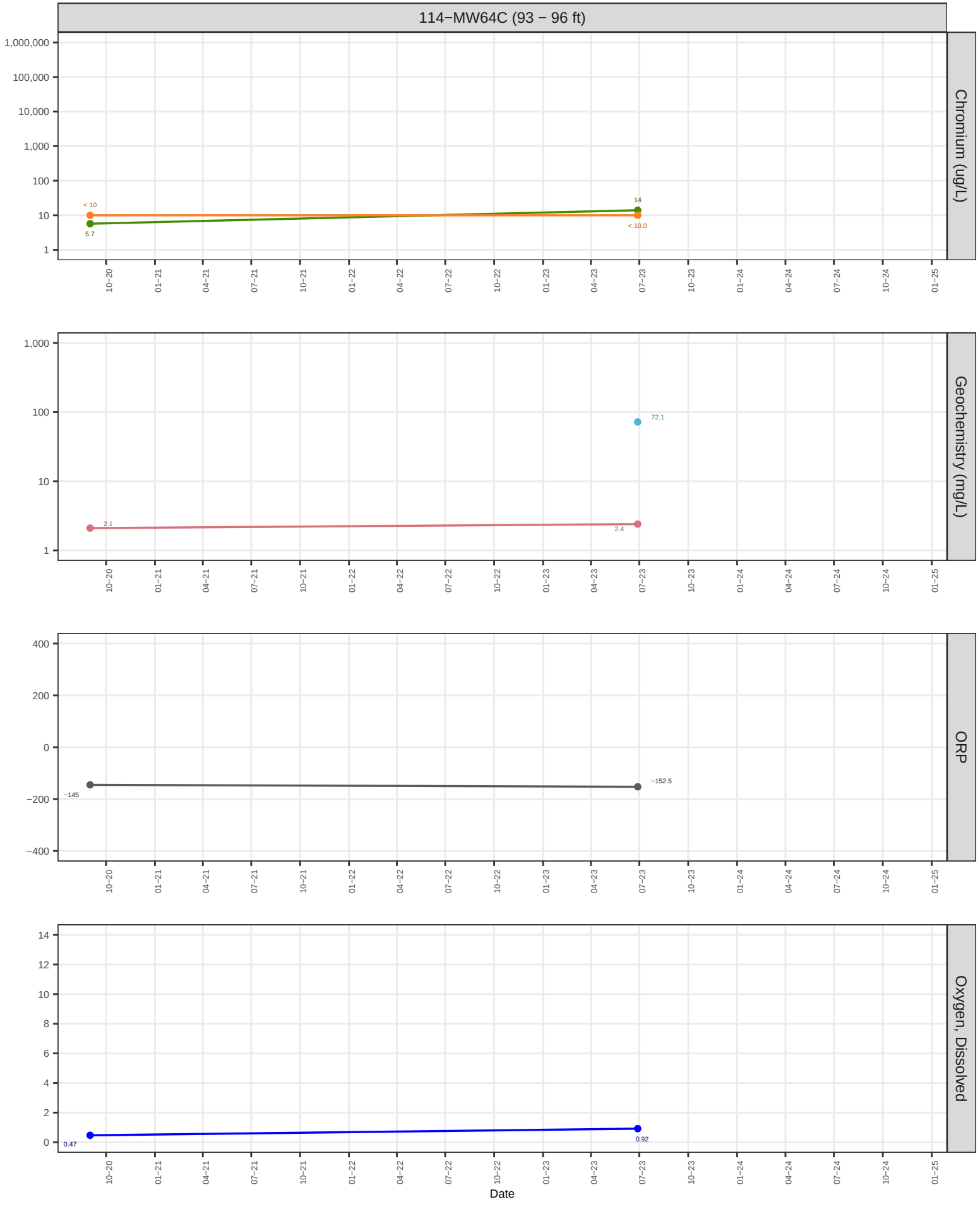

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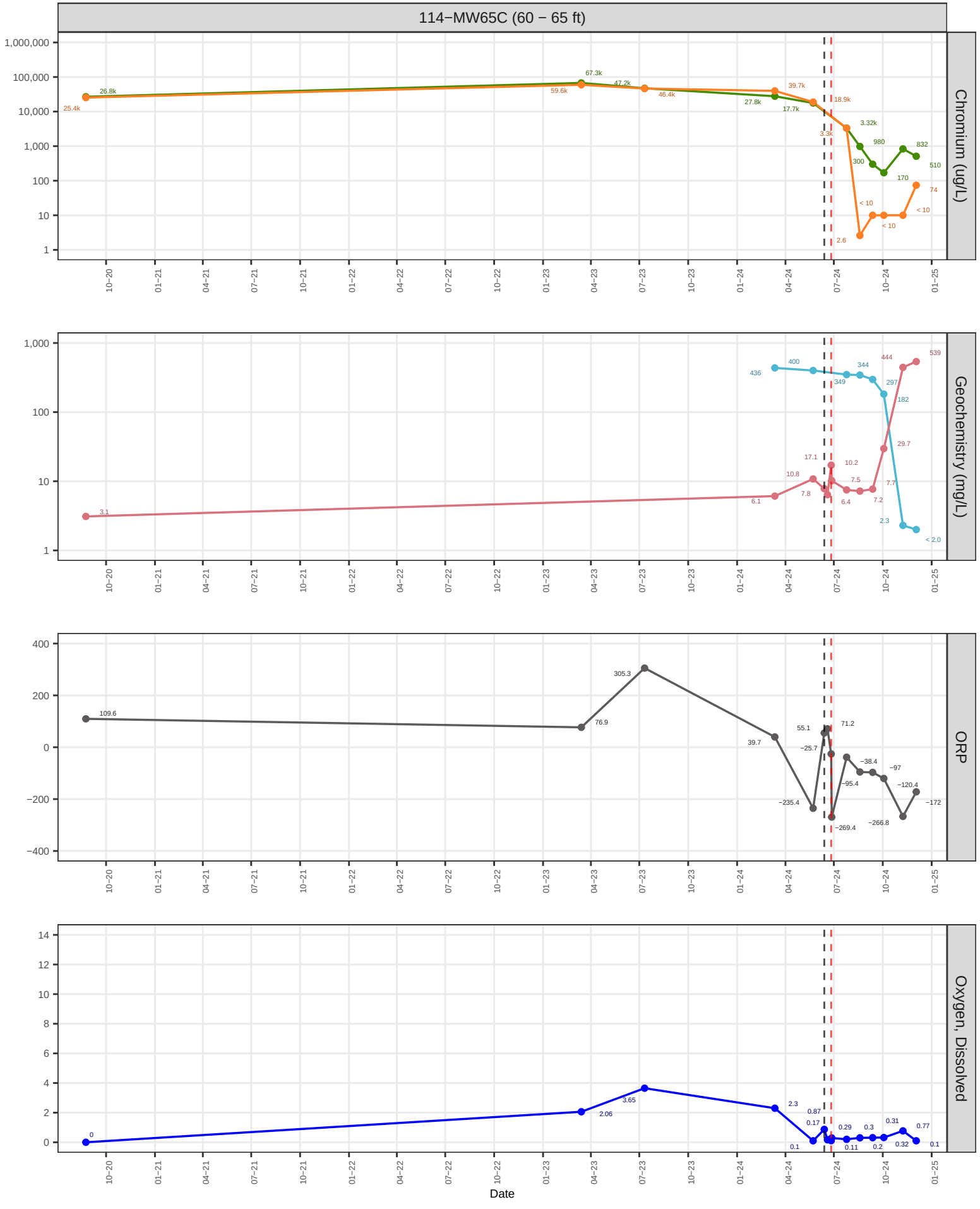

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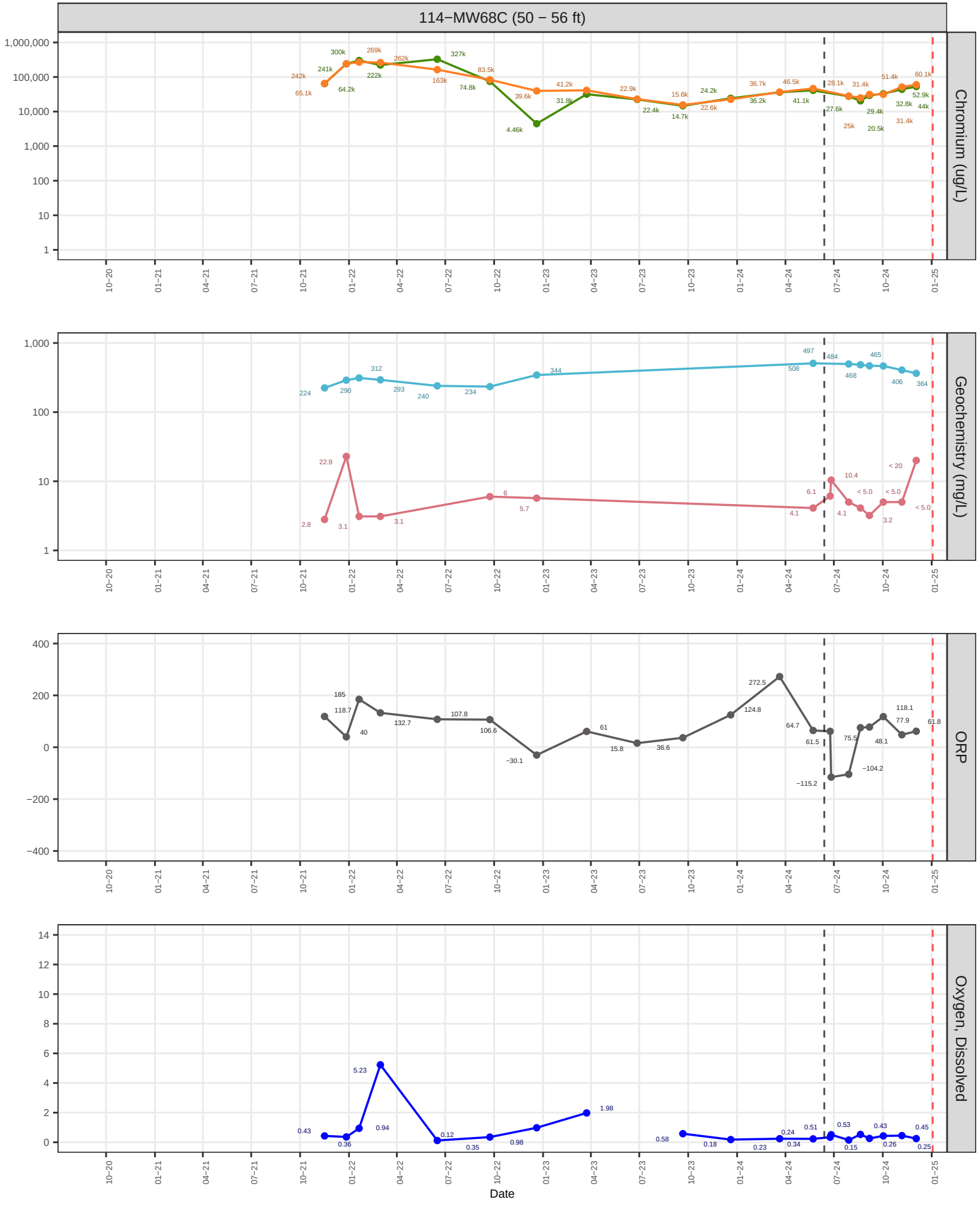

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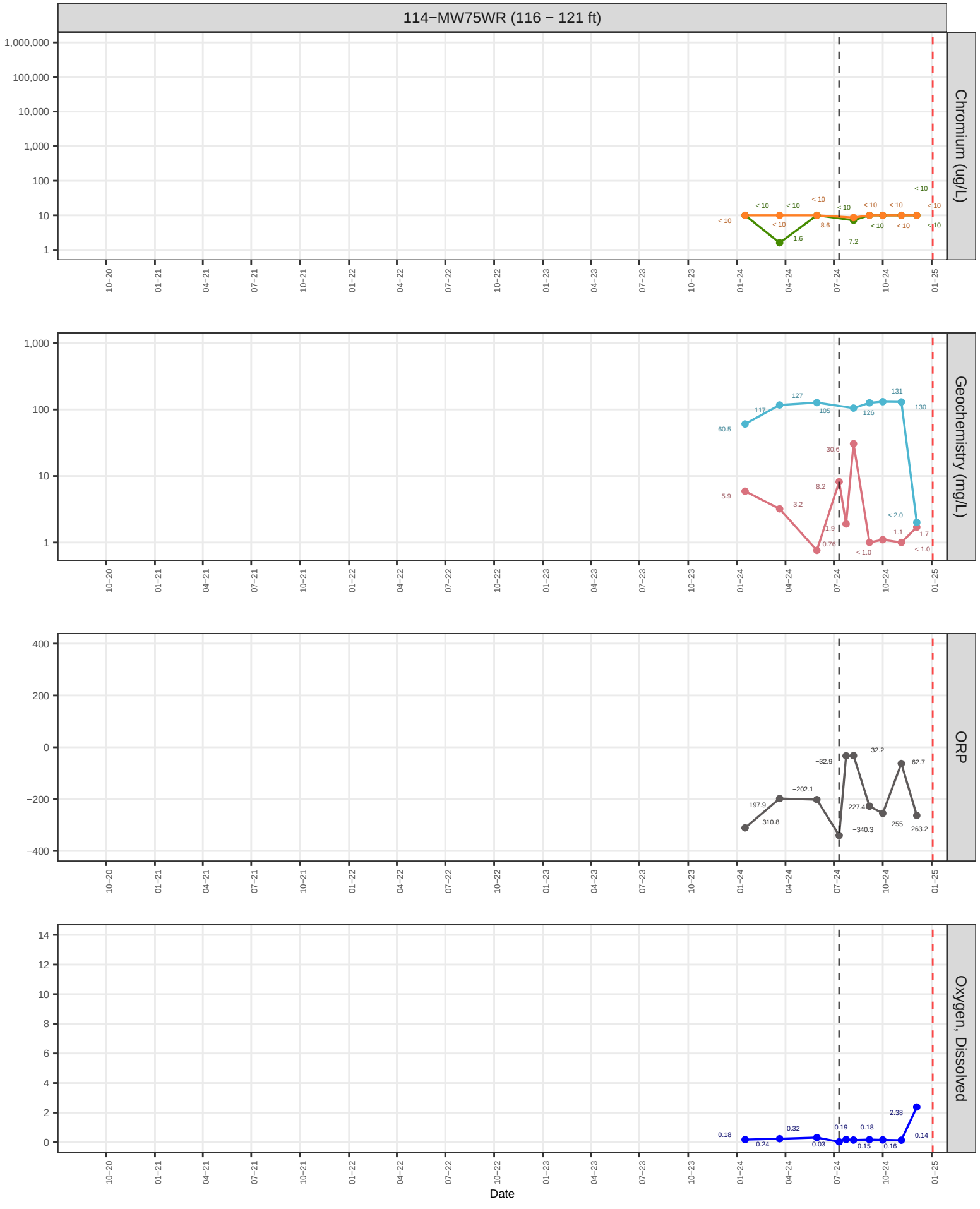

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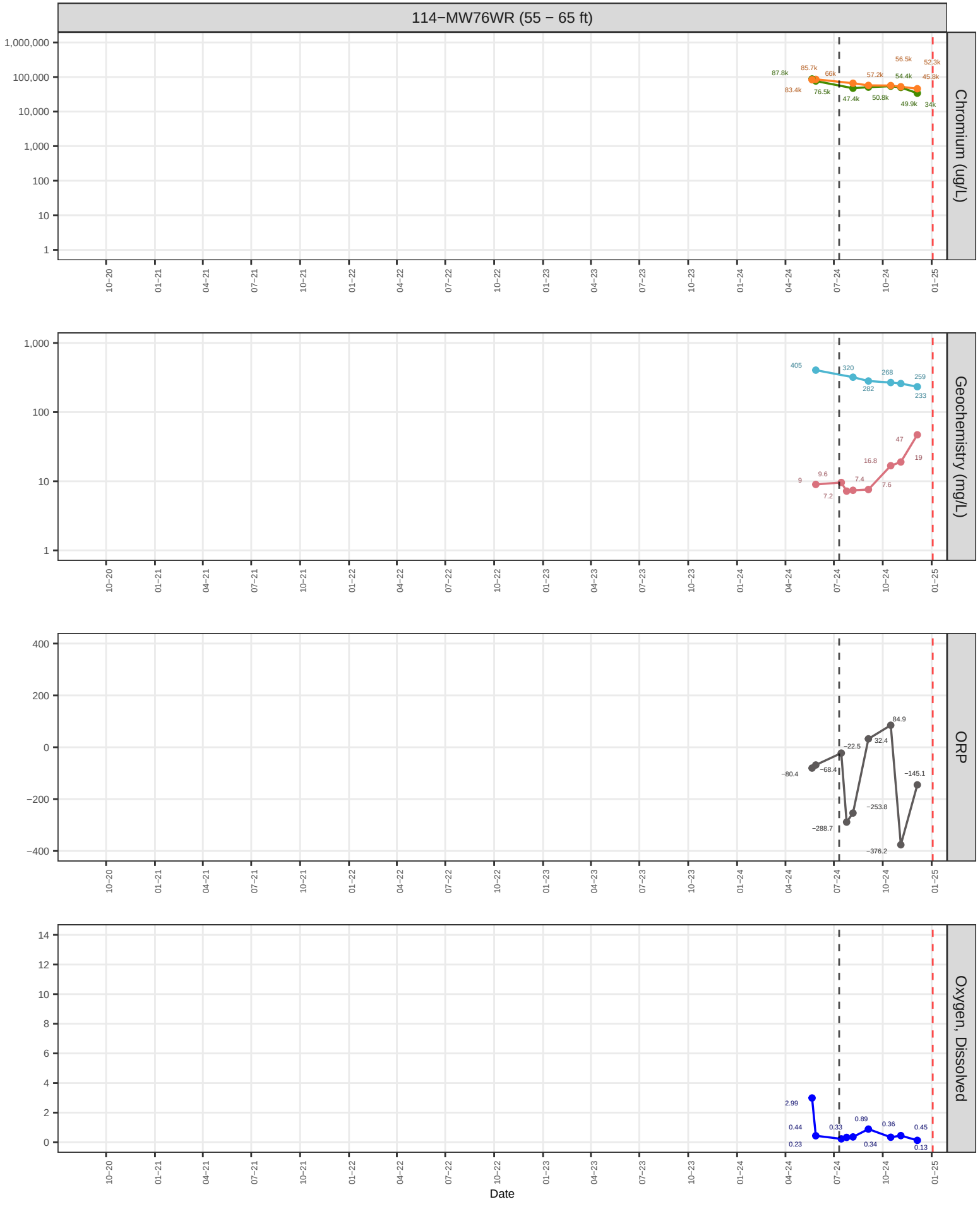

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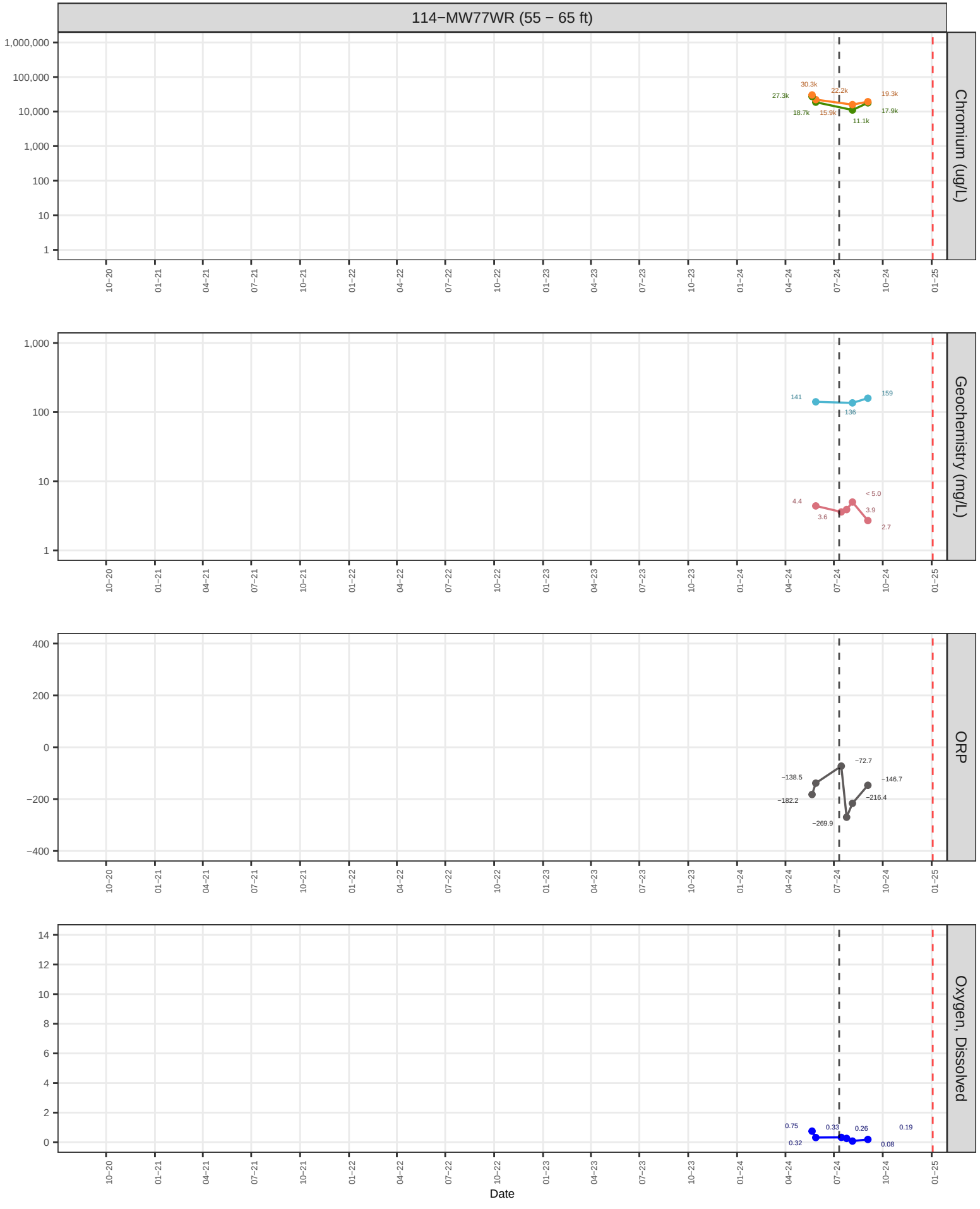

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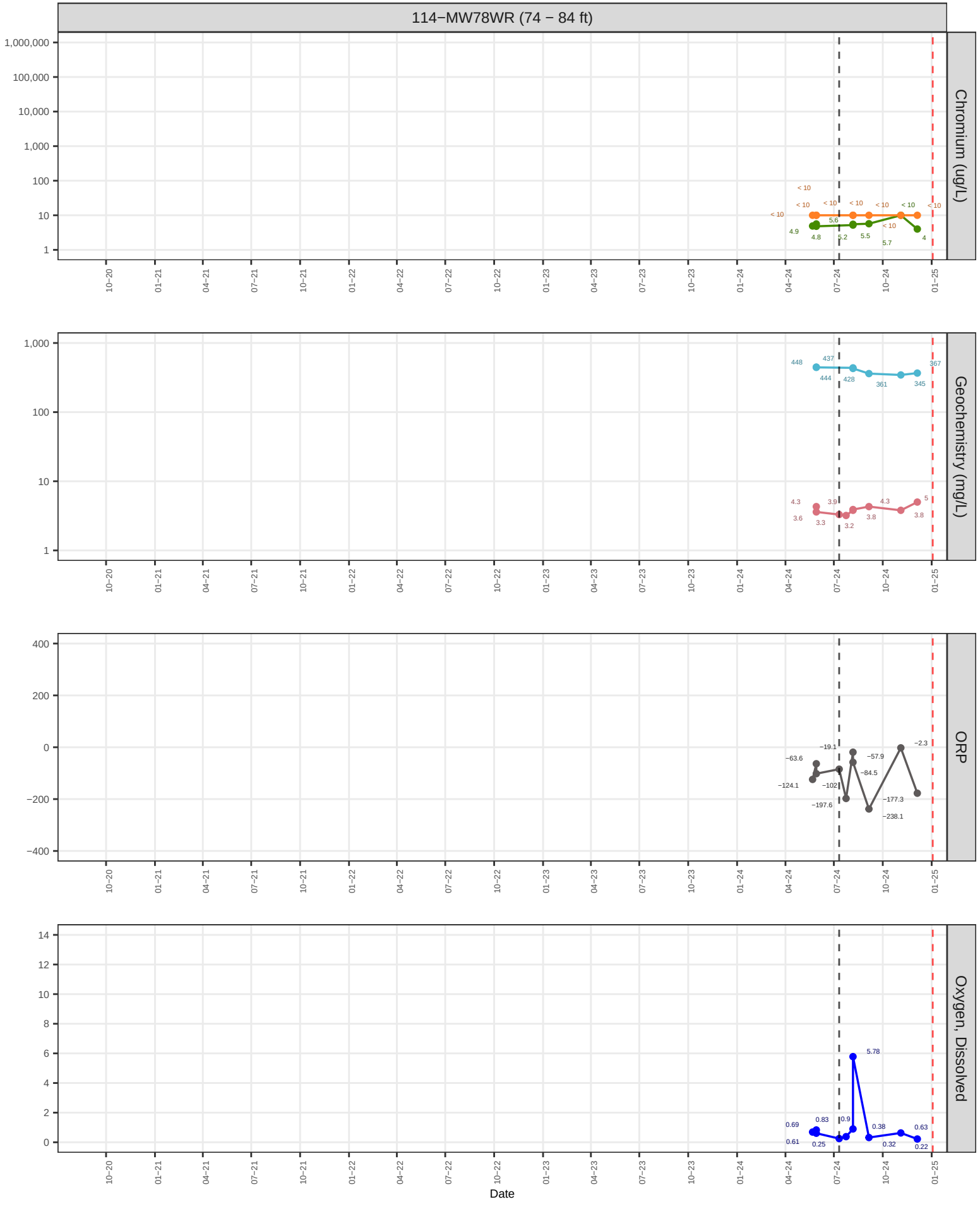

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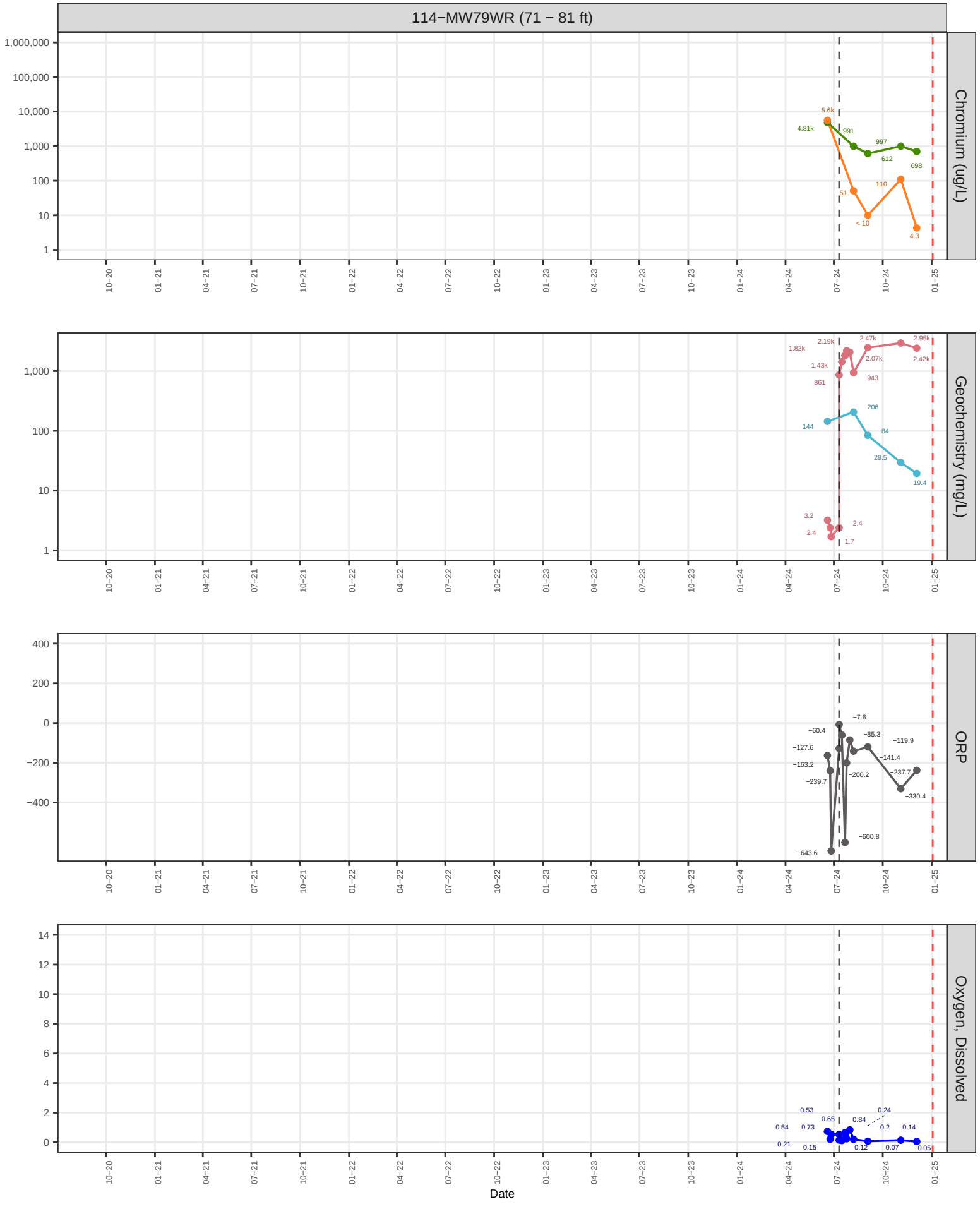

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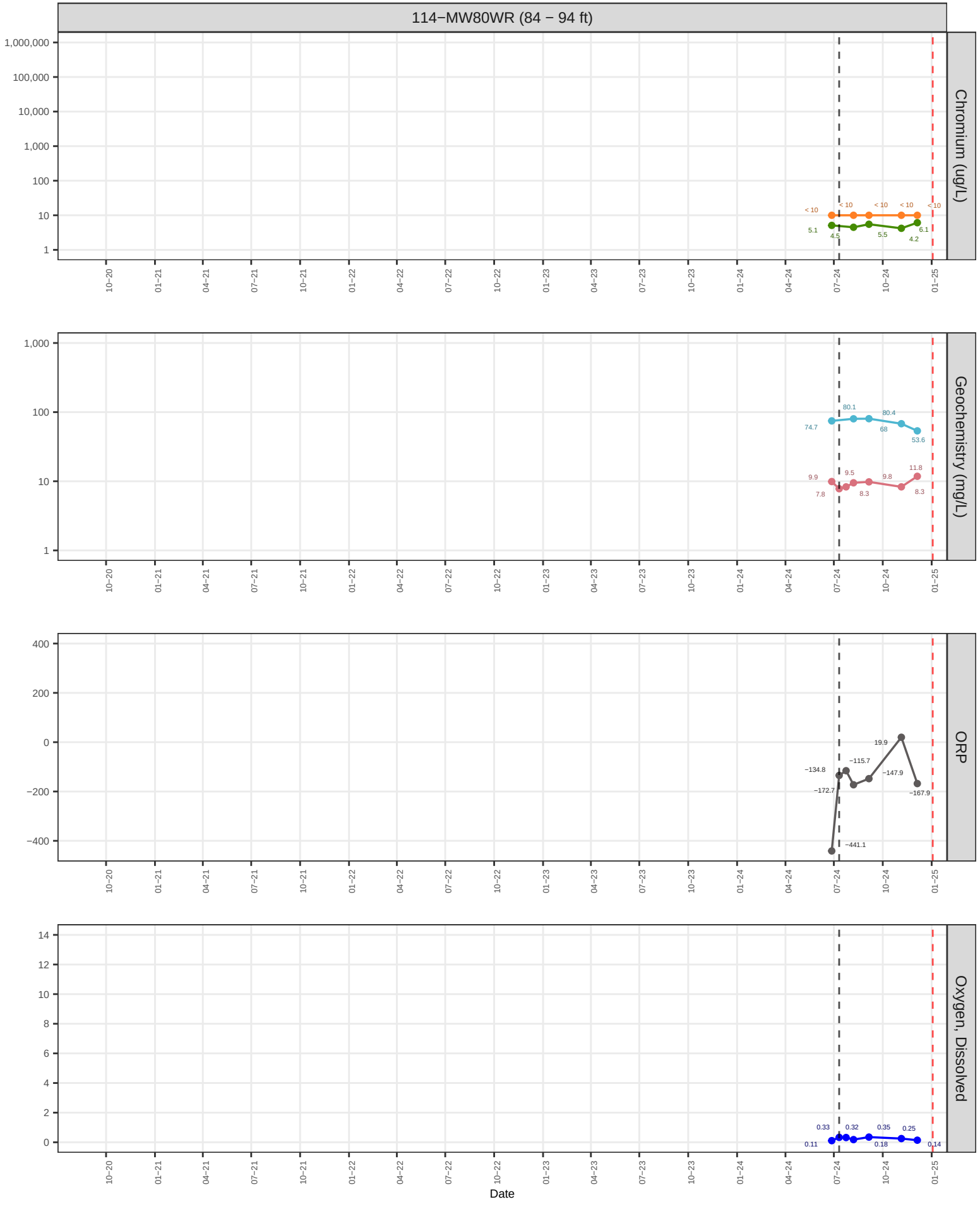

**Appendix B−4**
**Performance Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Basal Till & Bedrock Remediation**

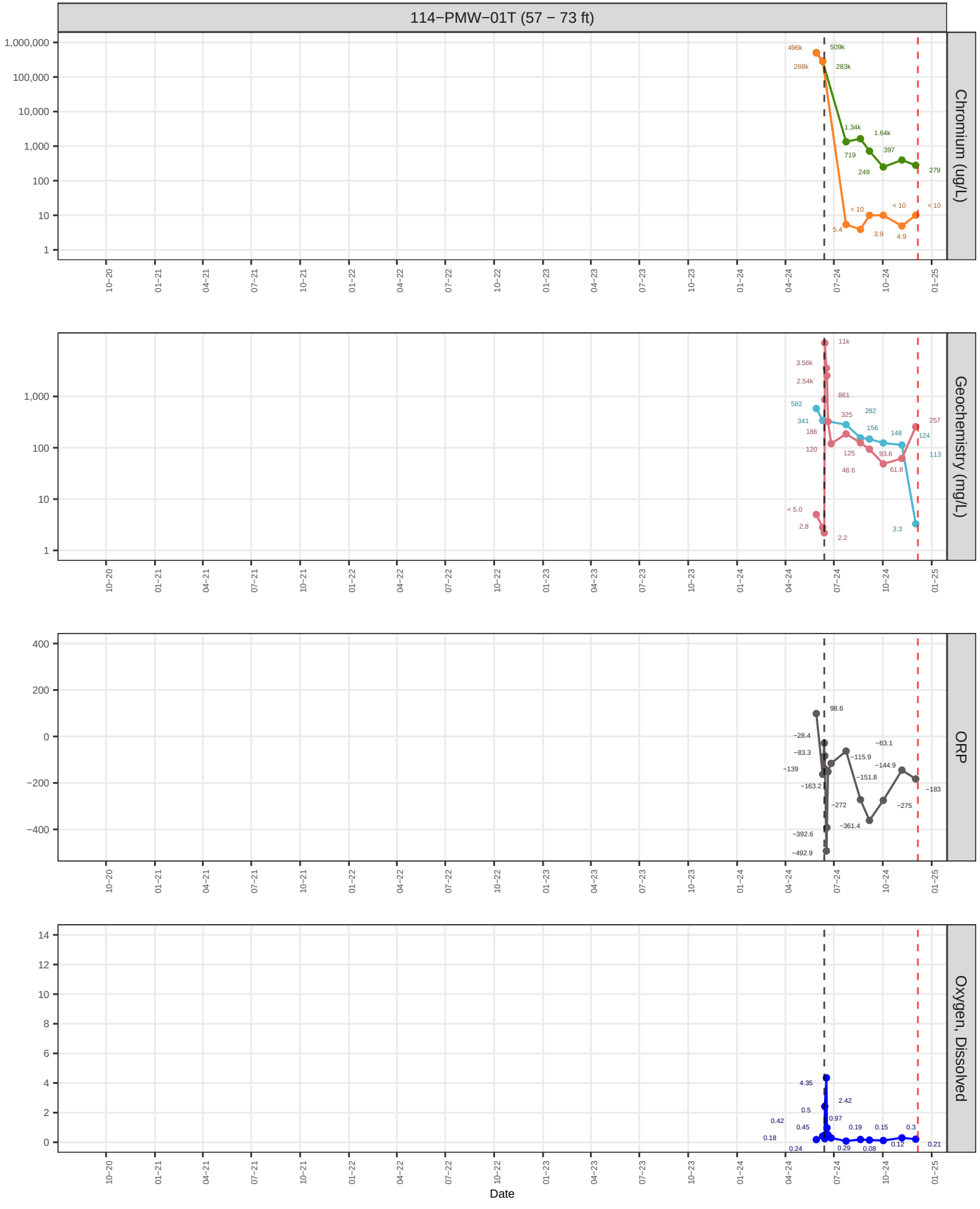

**Appendix B−4**
**Performance Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Basal Till & Bedrock Remediation**

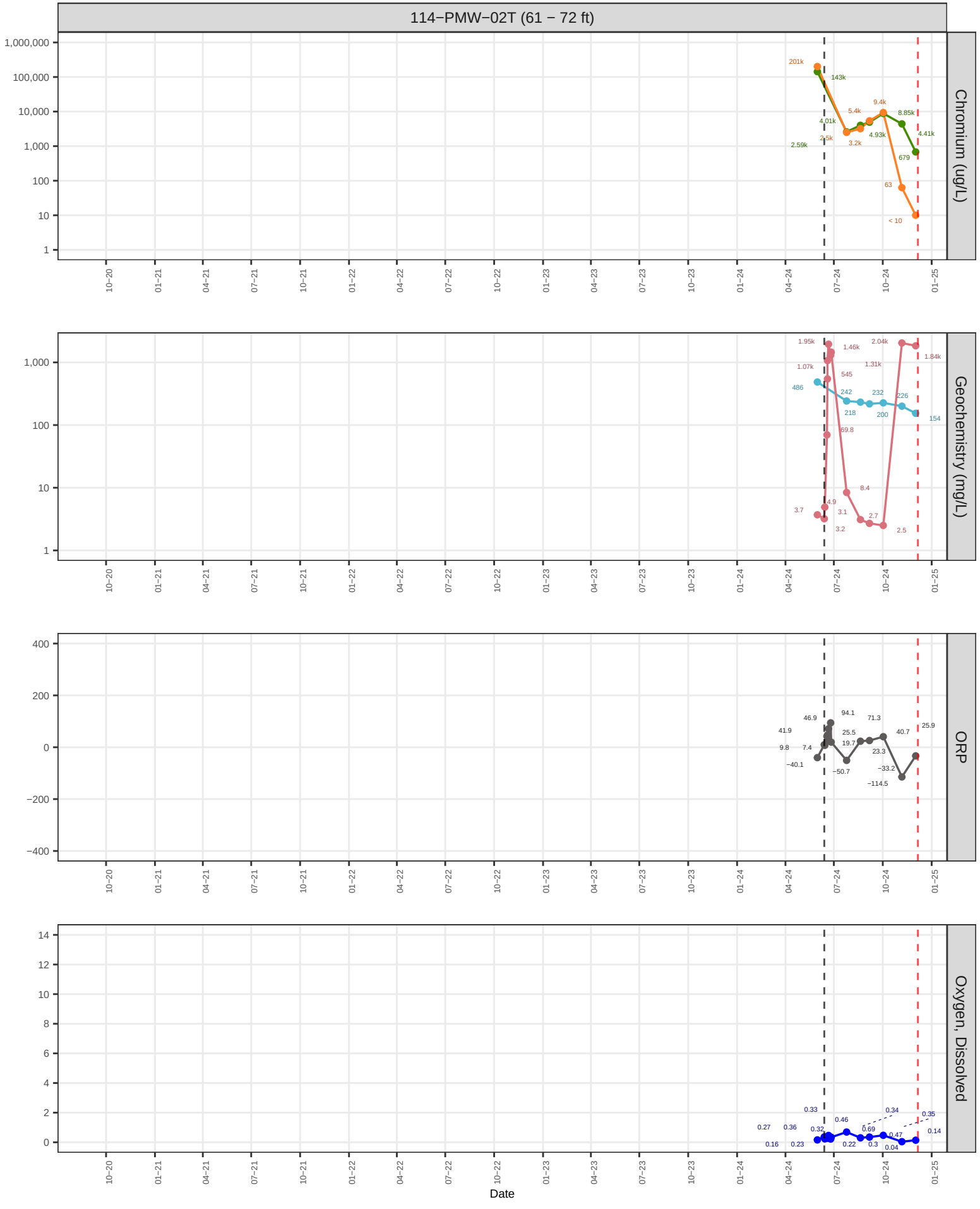

**Appendix B−4**
**Performance Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Basal Till & Bedrock Remediation**

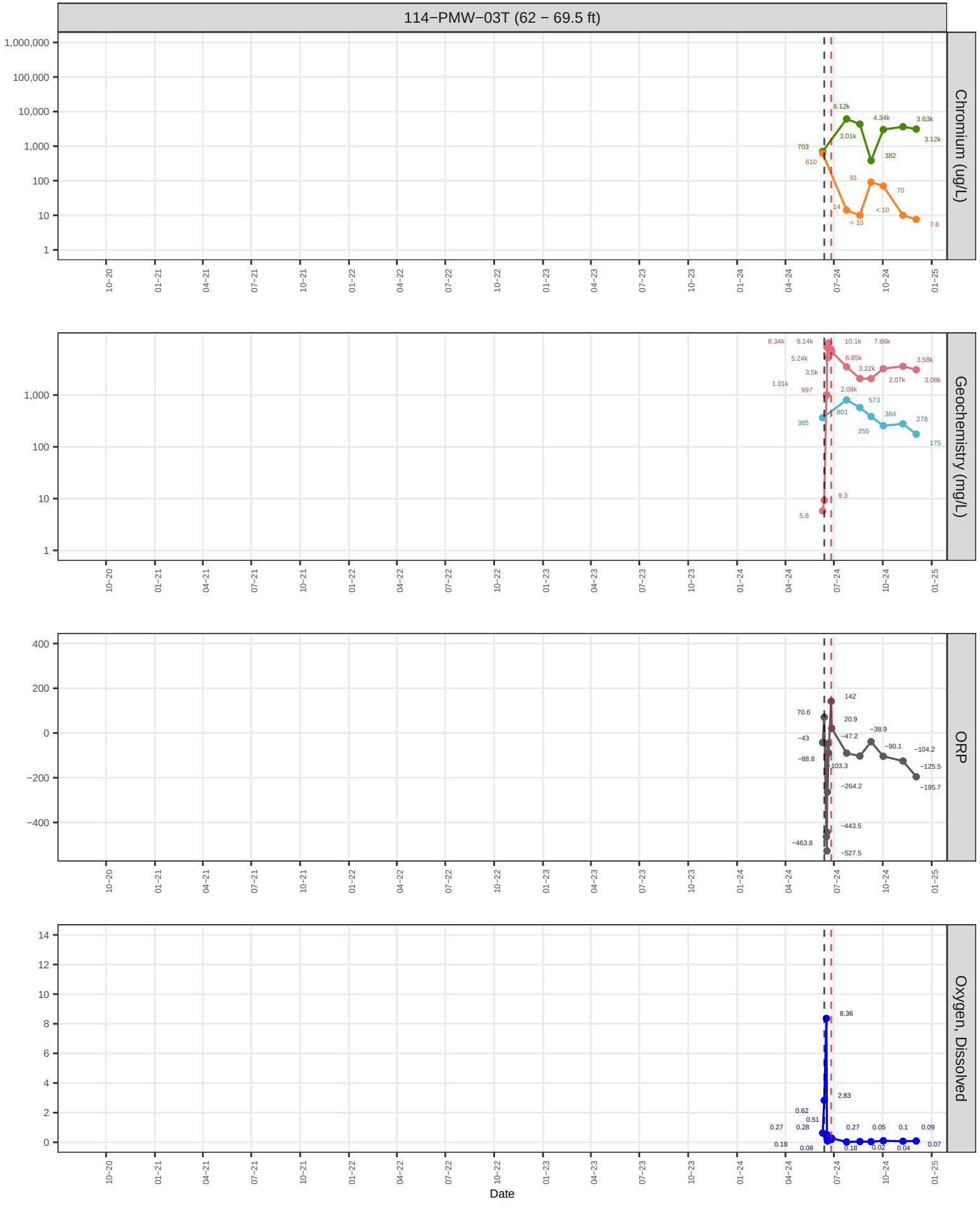

**Appendix B−4**
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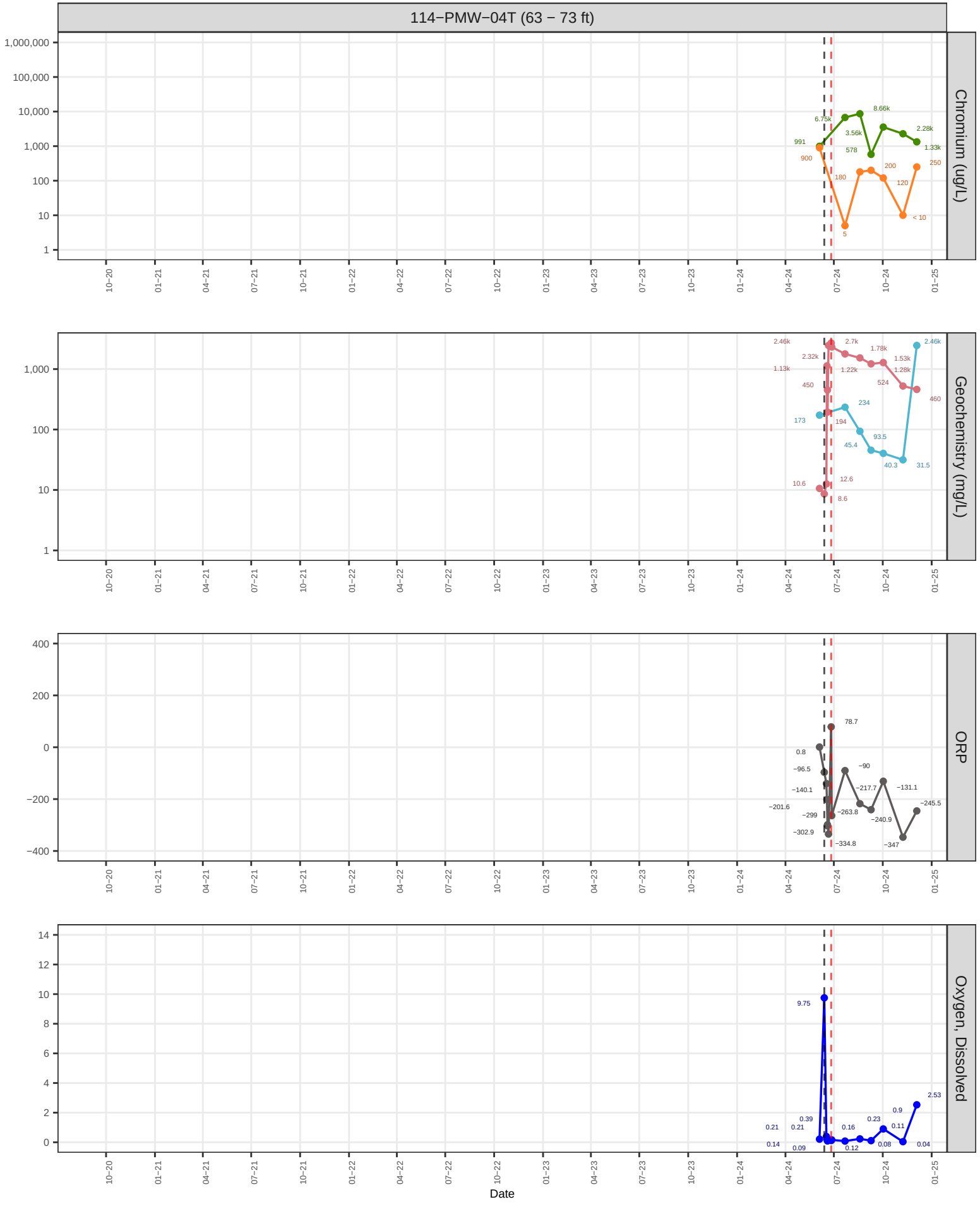

**Appendix B−4**
**Performance Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Basal Till & Bedrock Remediation**

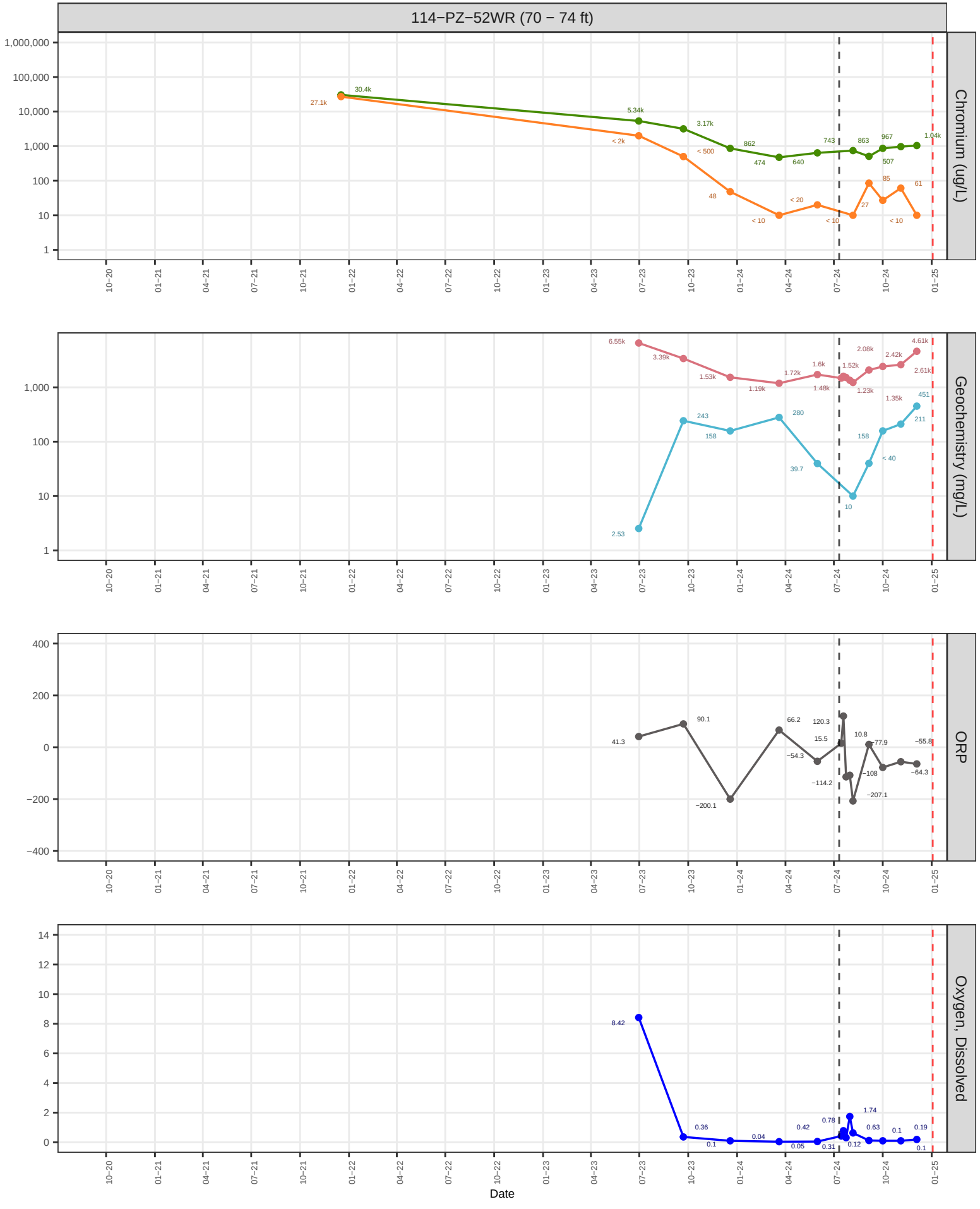

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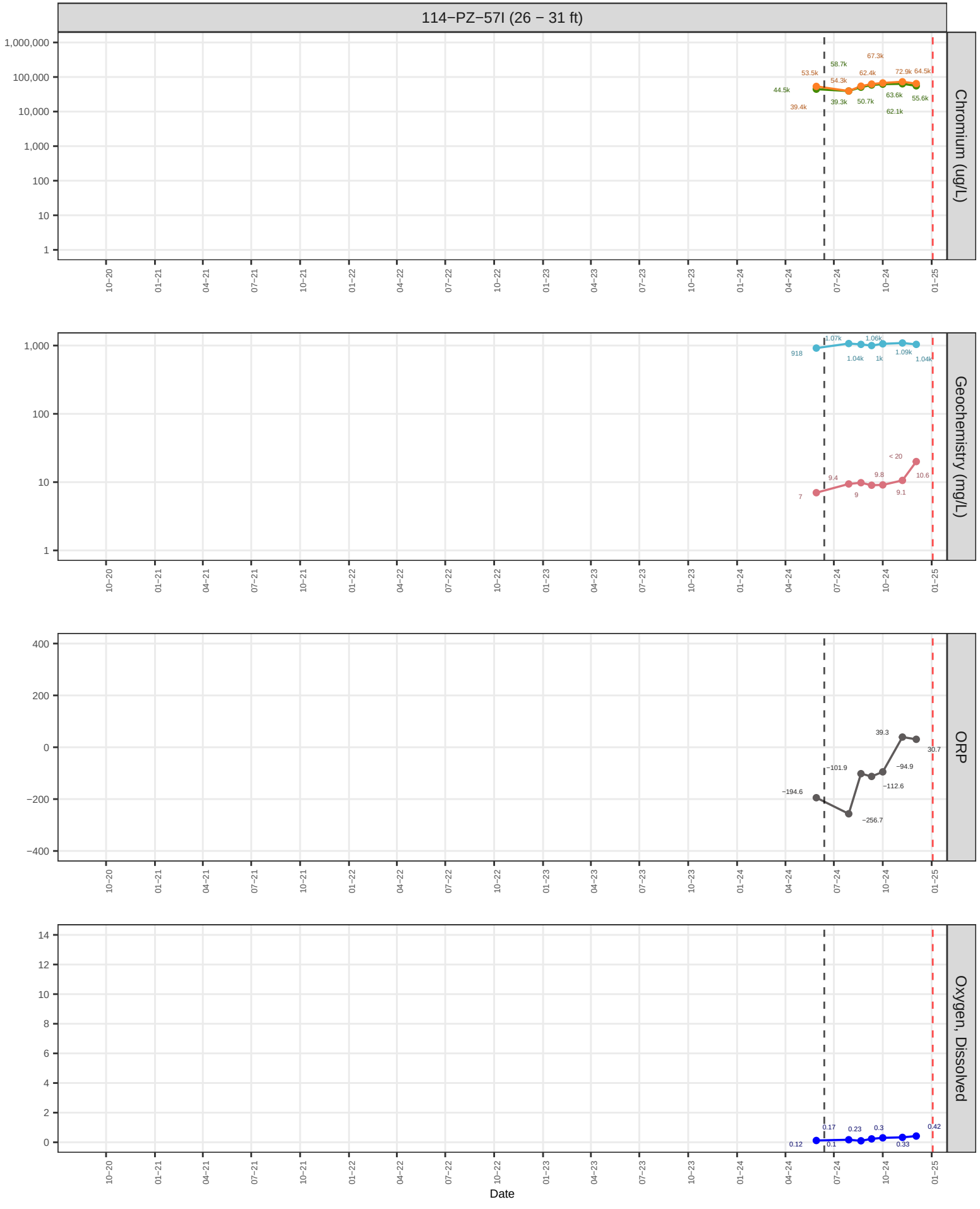

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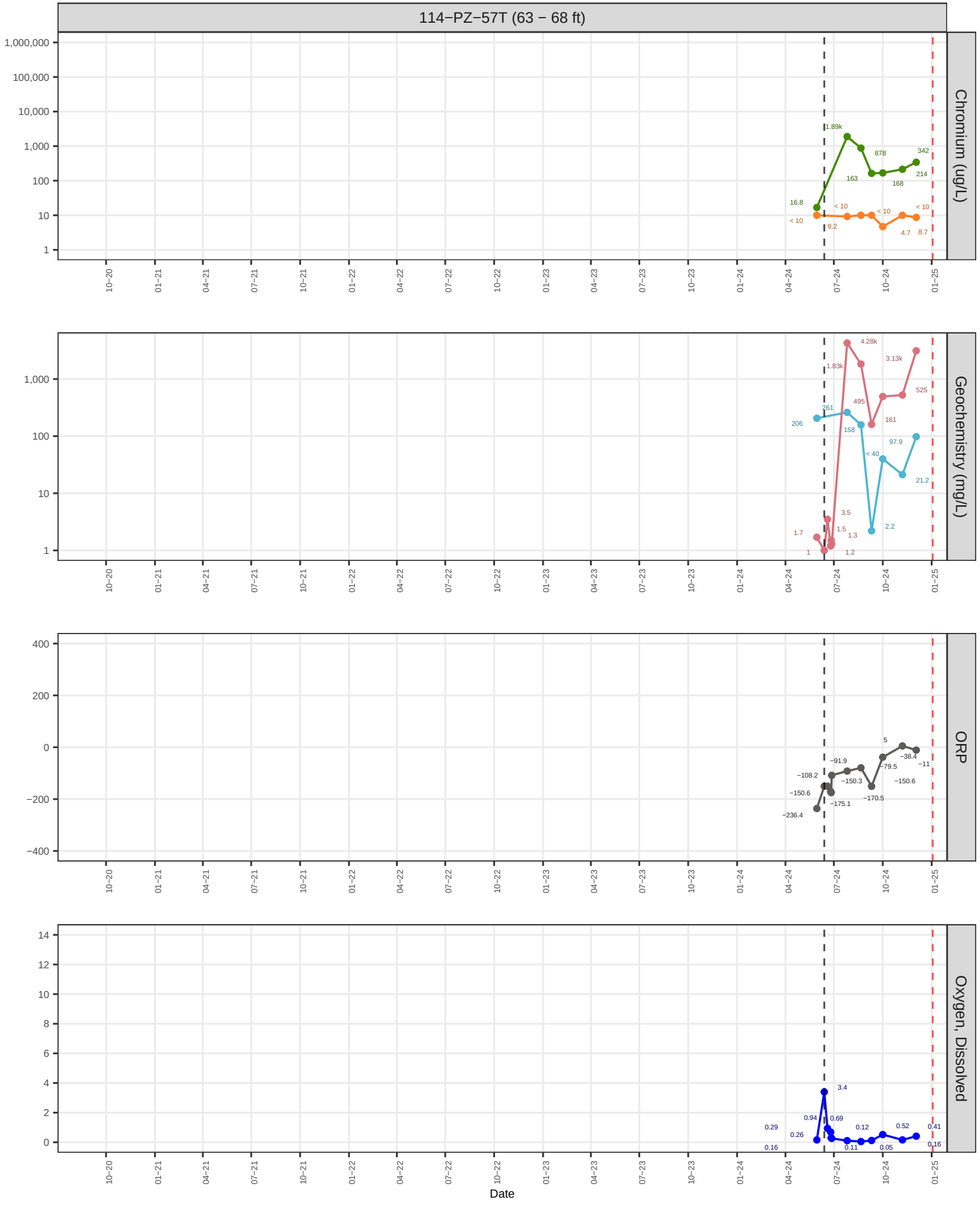

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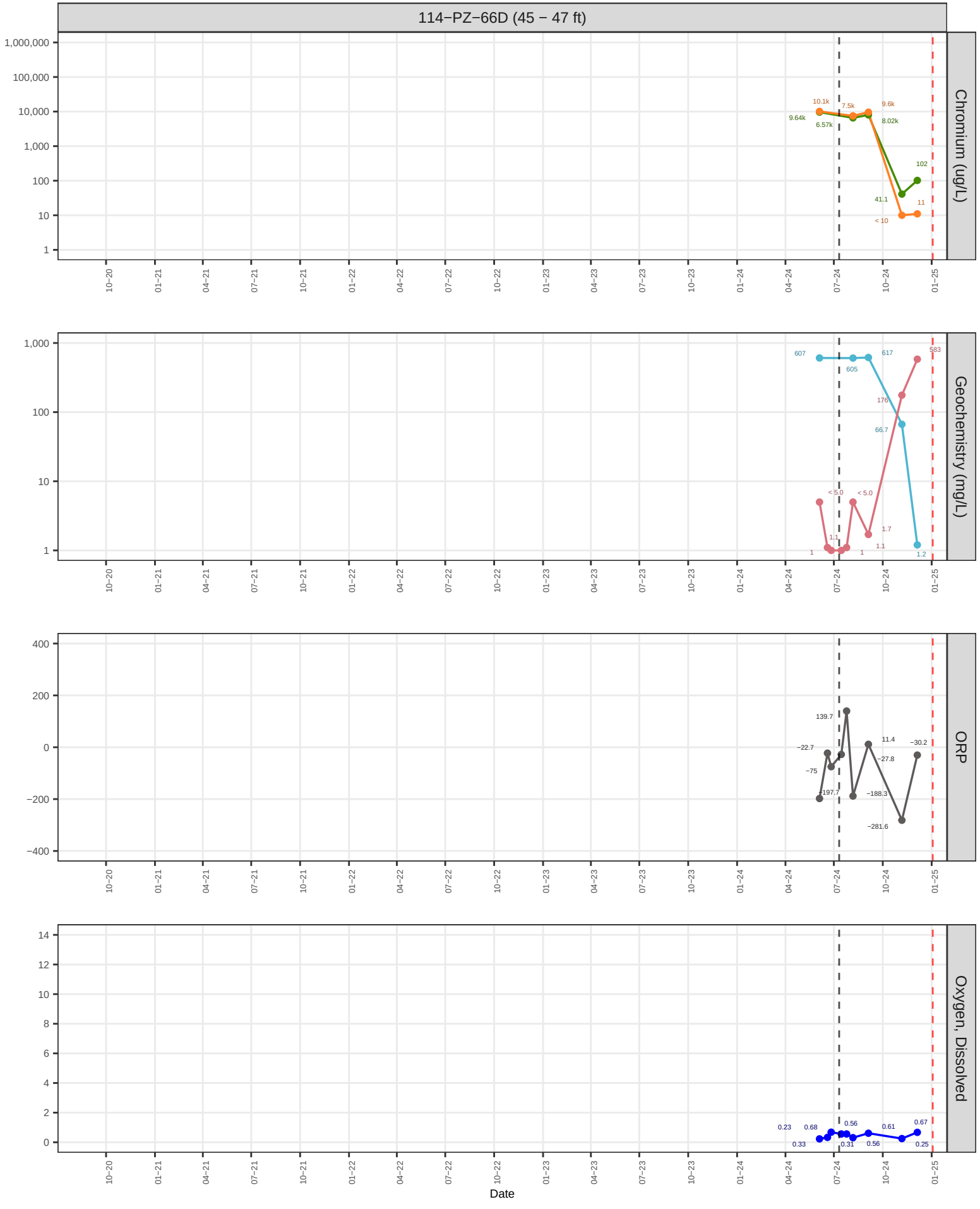

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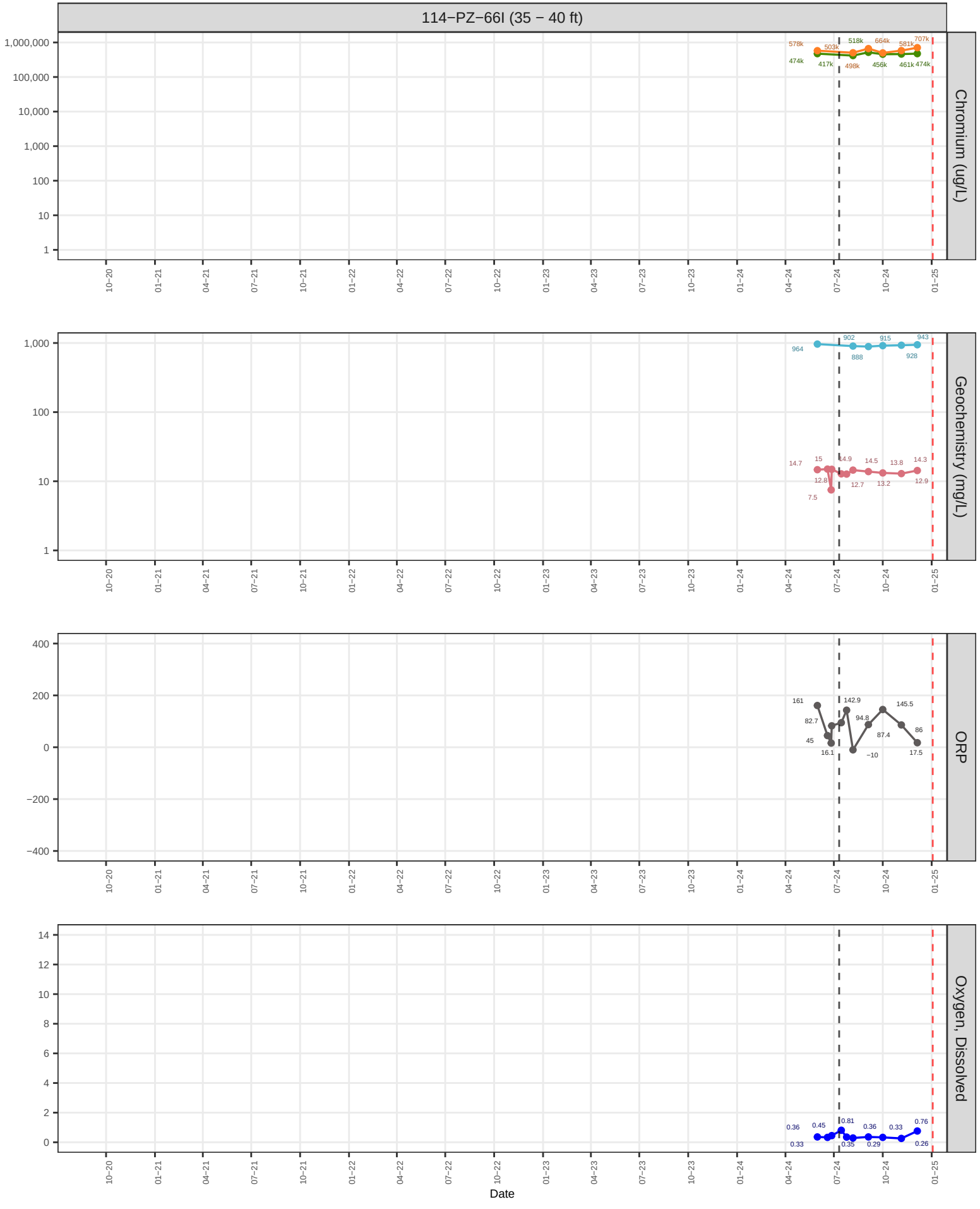

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**Performance Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Basal Till & Bedrock Remediation**

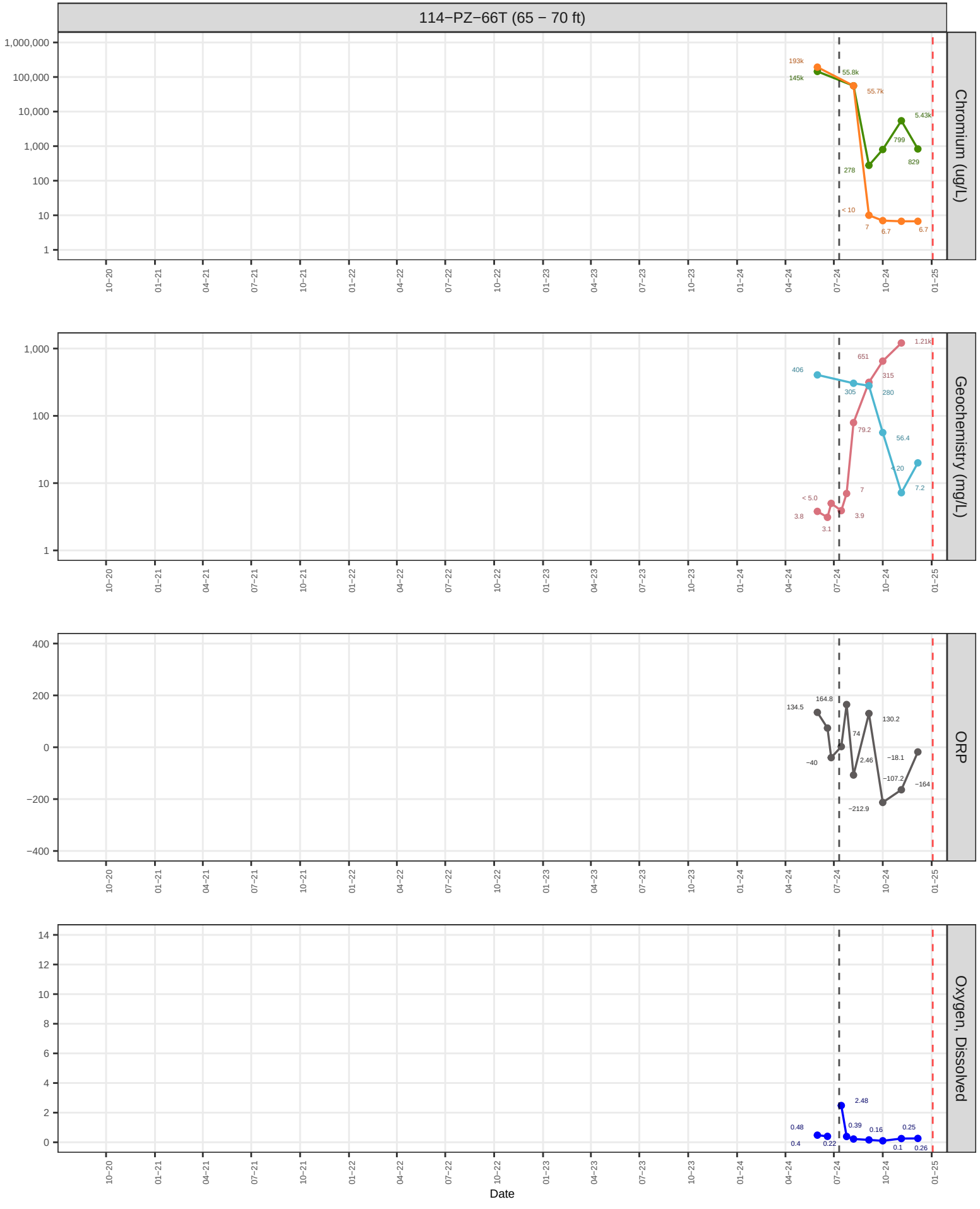

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**Performance Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Basal Till & Bedrock Remediation**

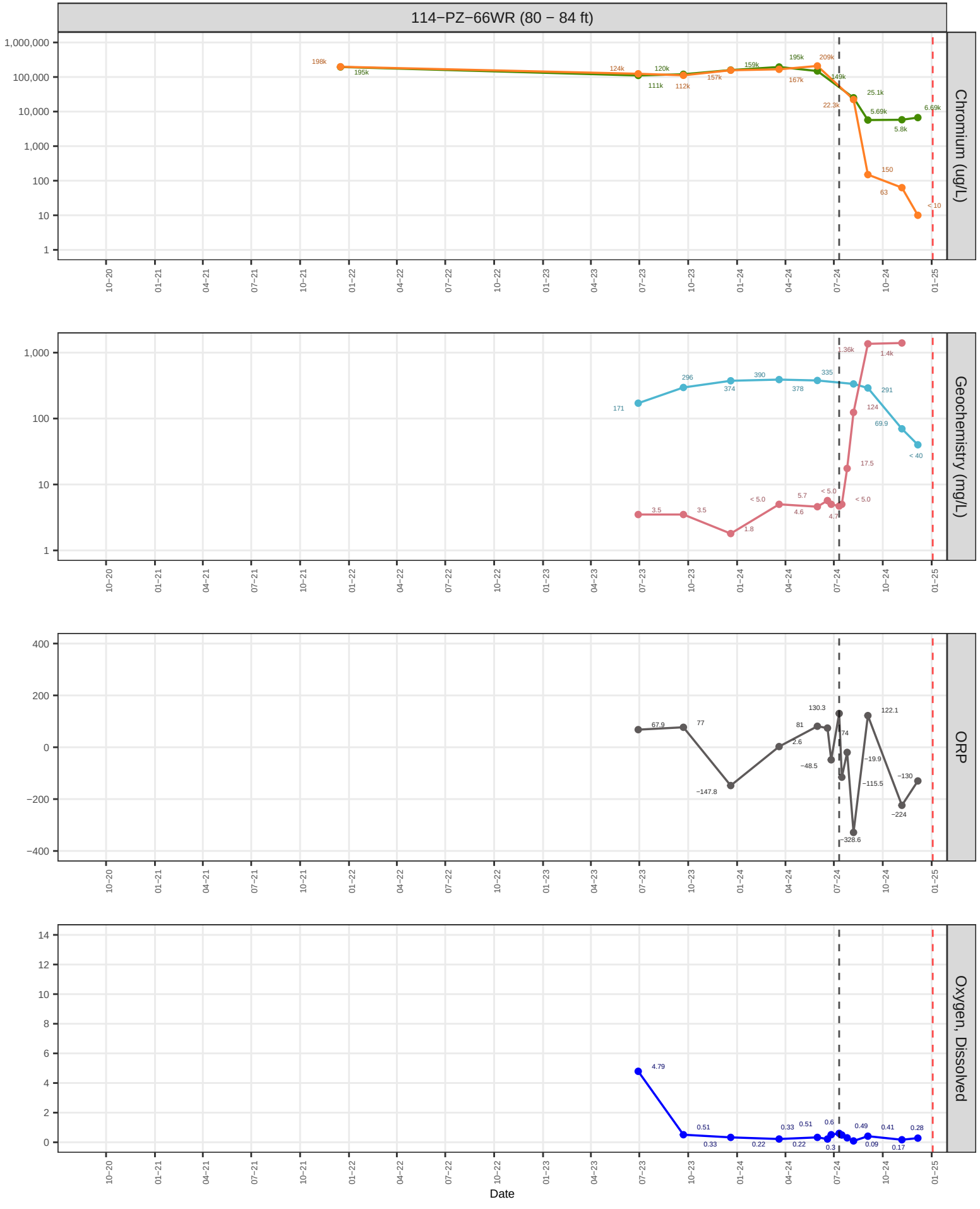

# Appendix B-5
# Performance Trend Charts - Chromium, Hexavalent Chromium, and Geochemistry - Bedrock Wells

**Appendix B−5**
**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Bedrock**

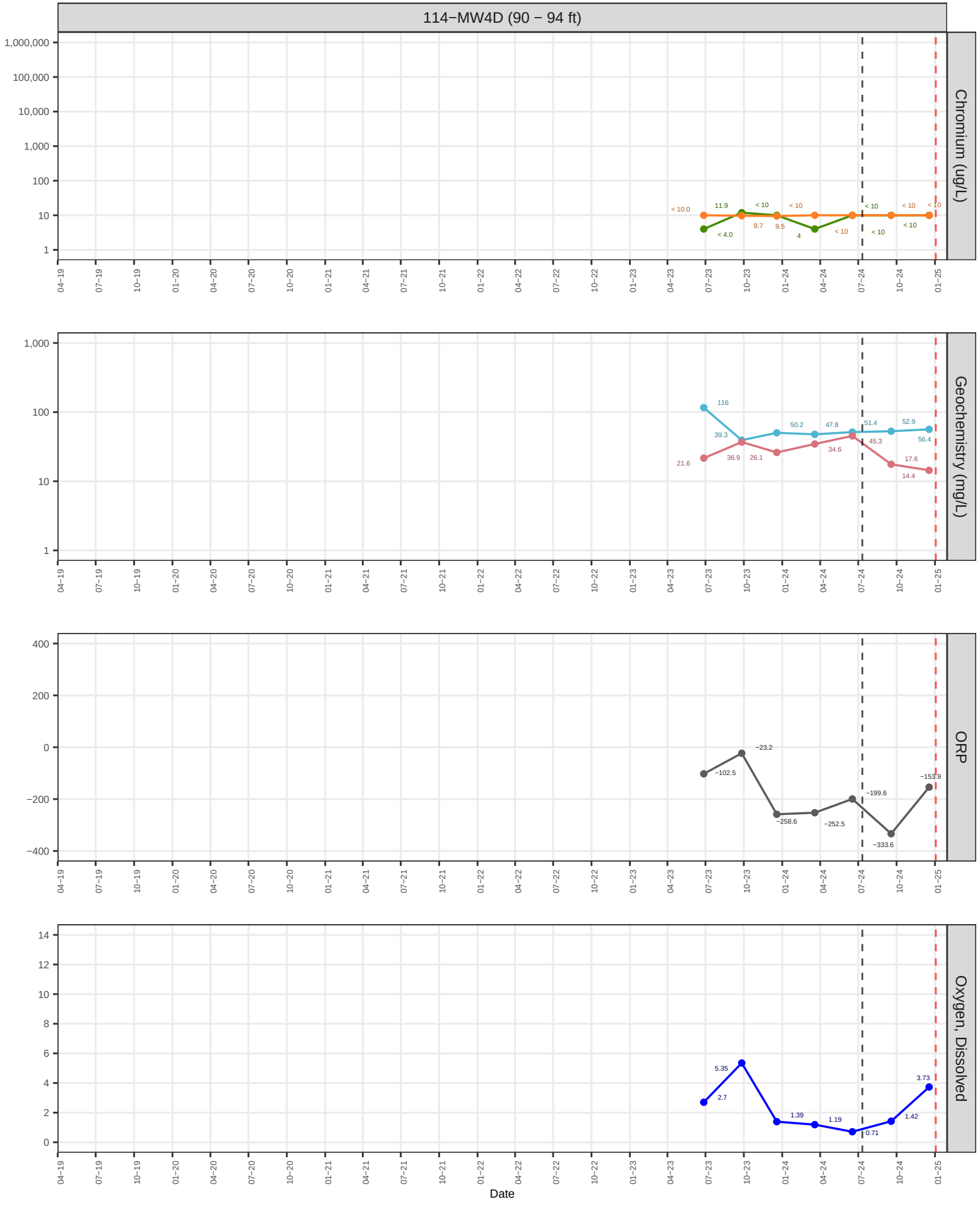

**Appendix B−5**
**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Bedrock**

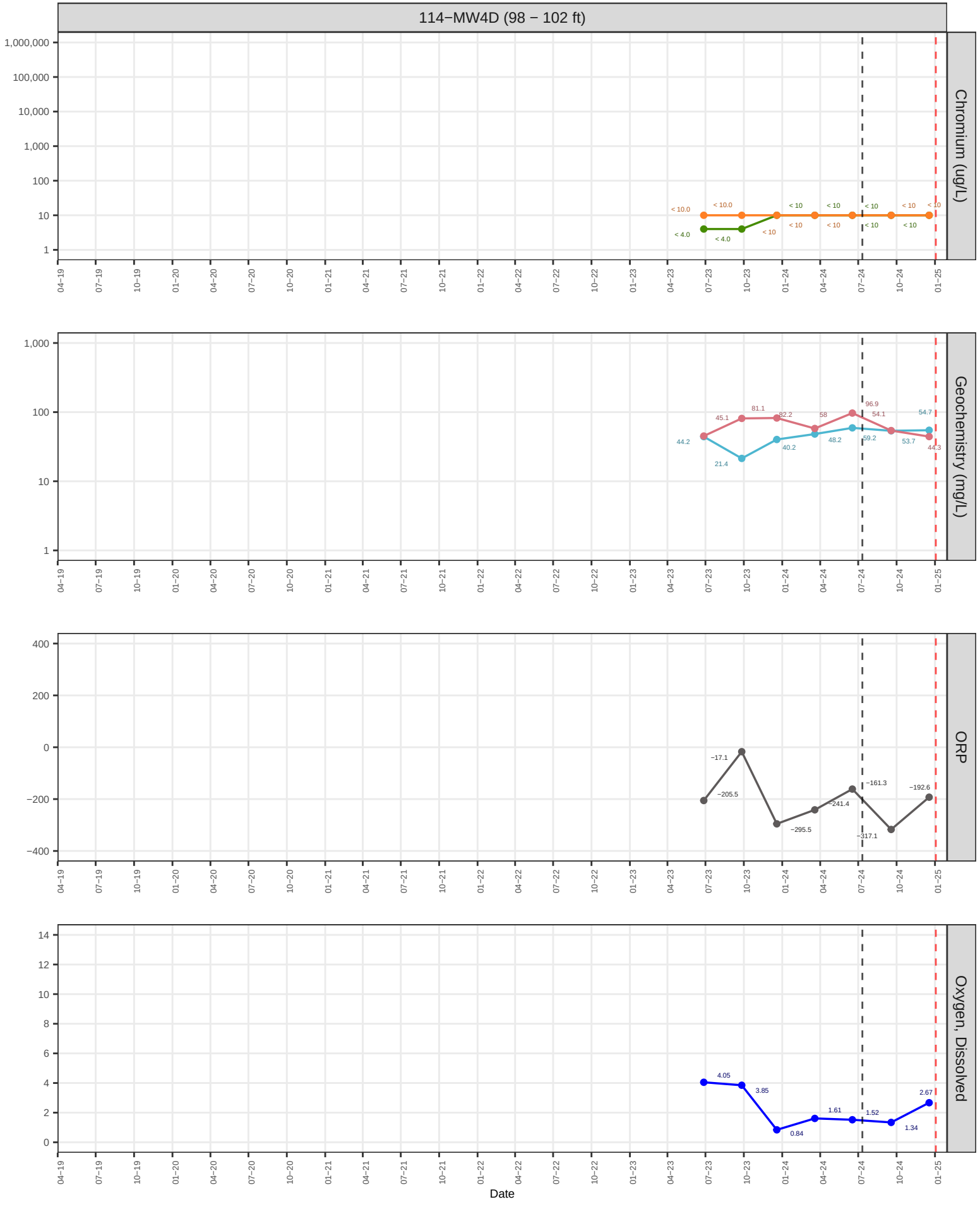

**Appendix B−5**
**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Bedrock**

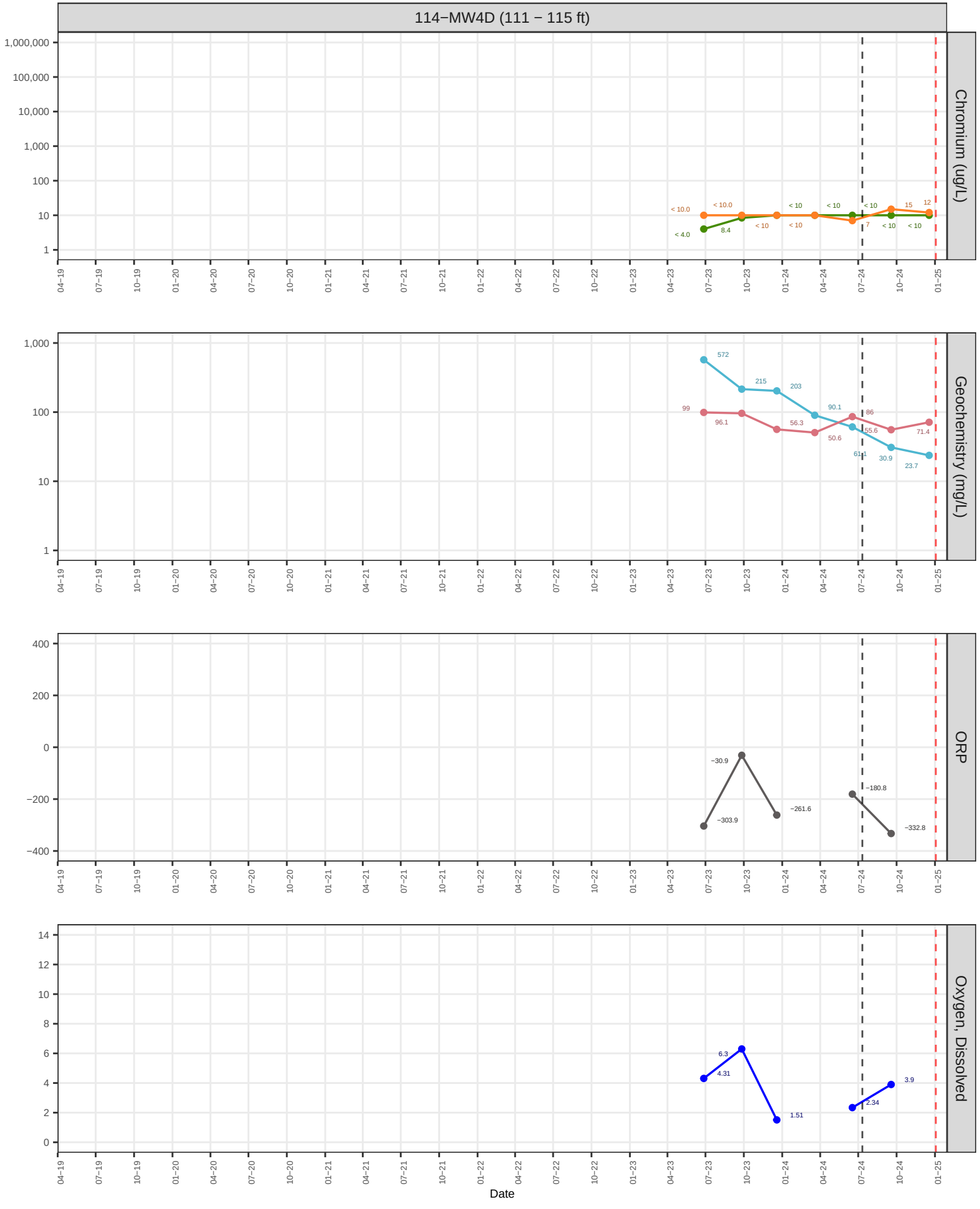

**Appendix B−5**
**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Bedrock**

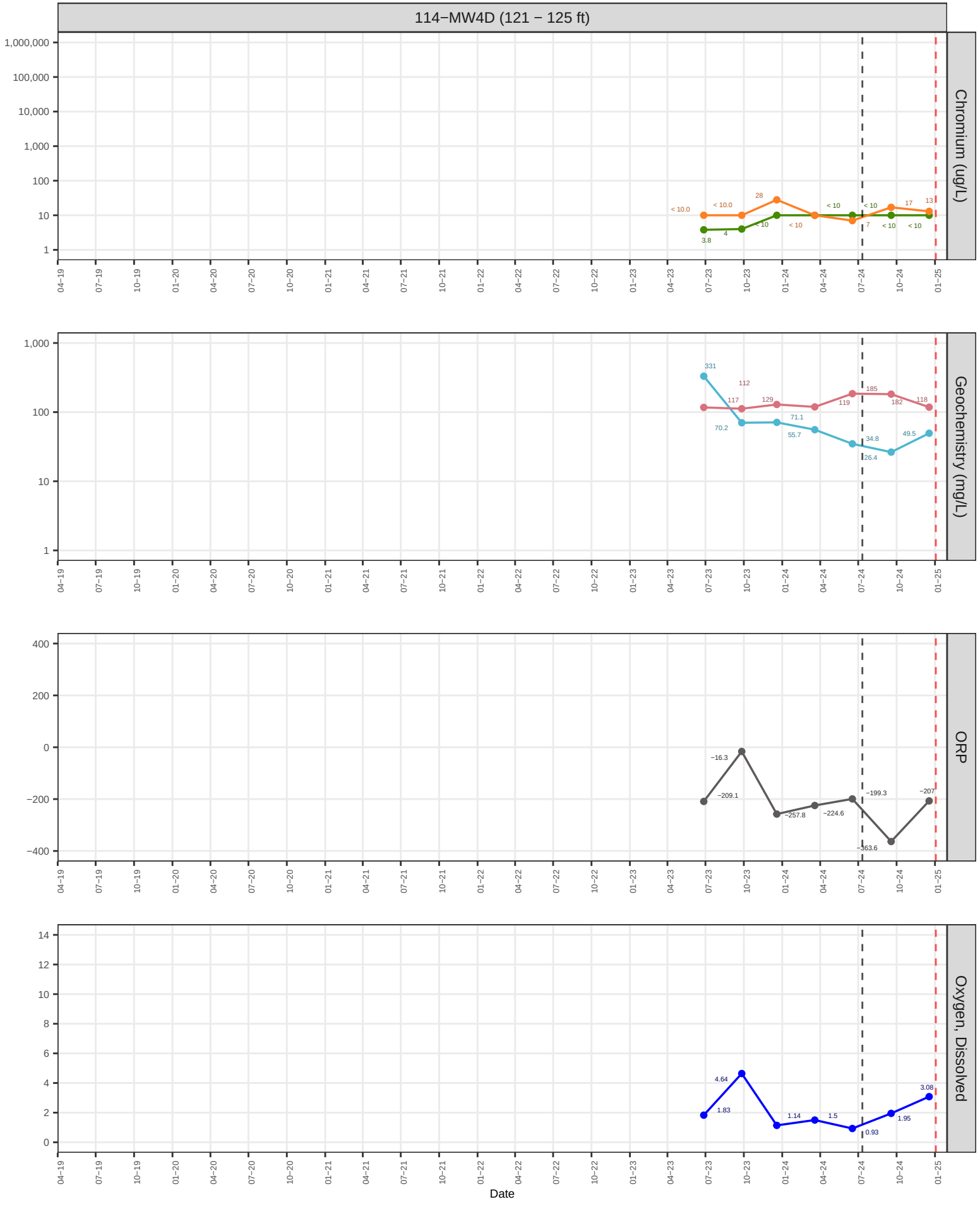

**Appendix B−5**
**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Bedrock**

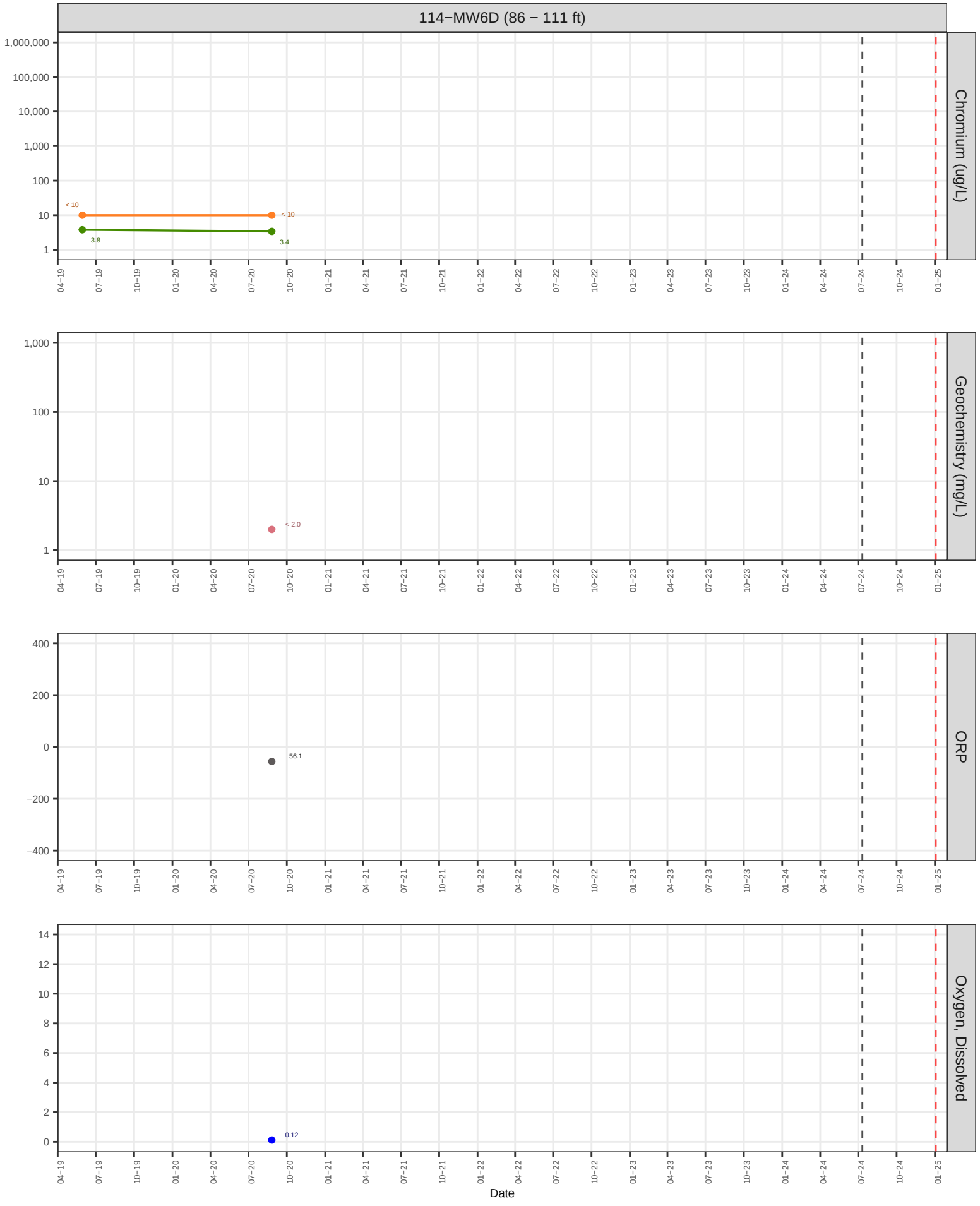

**Appendix B−5**
**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Bedrock**

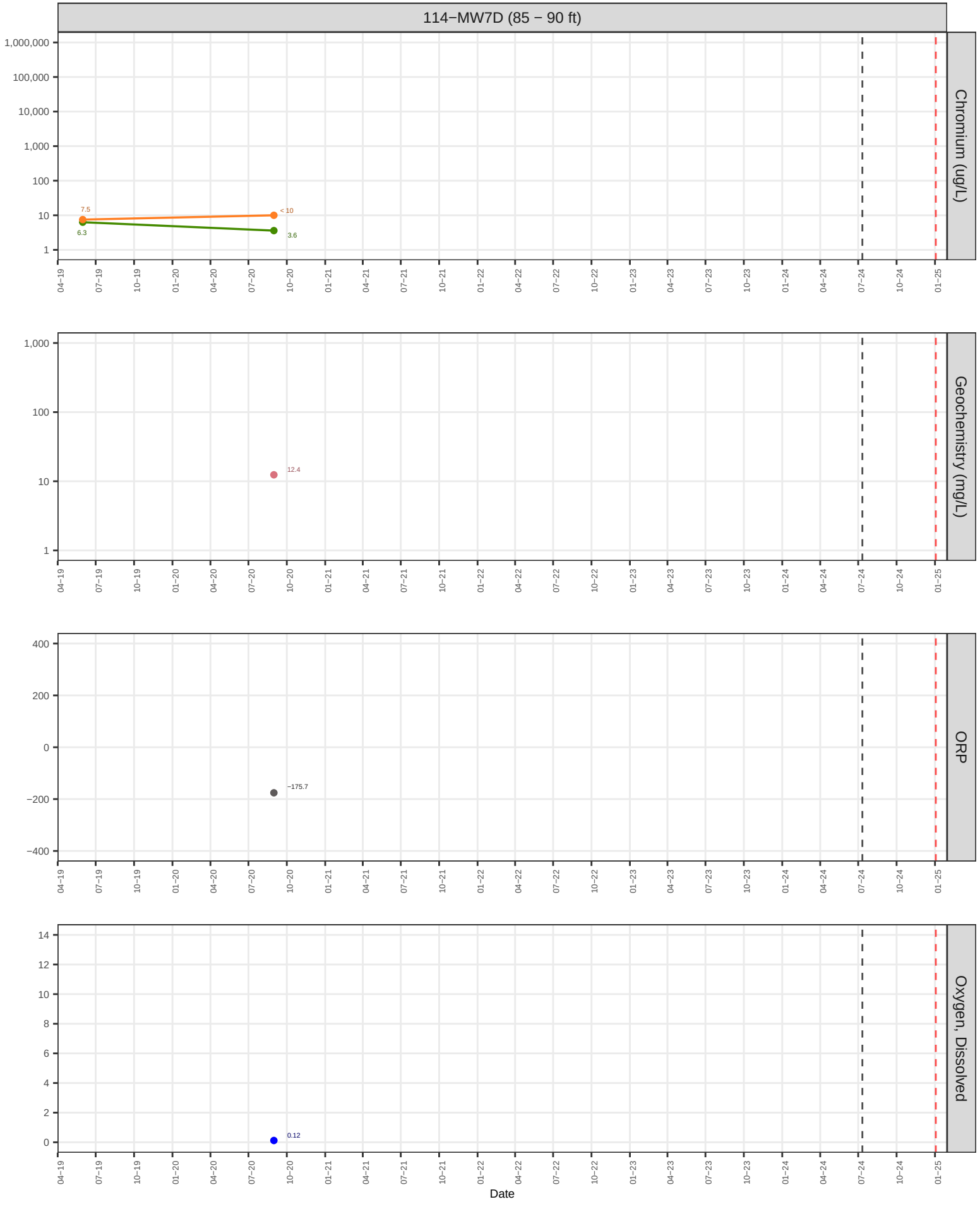

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**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Bedrock**

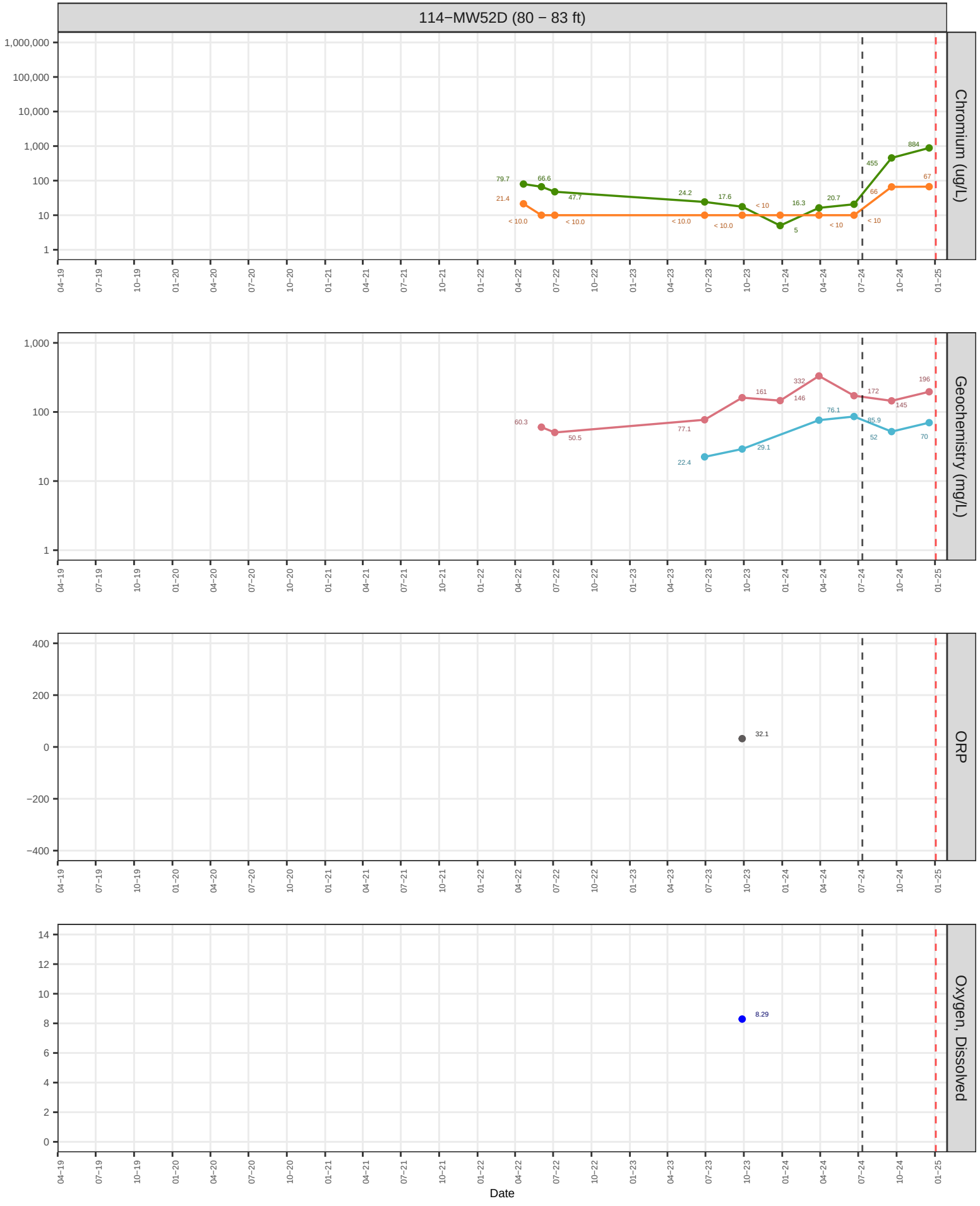

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**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Bedrock**

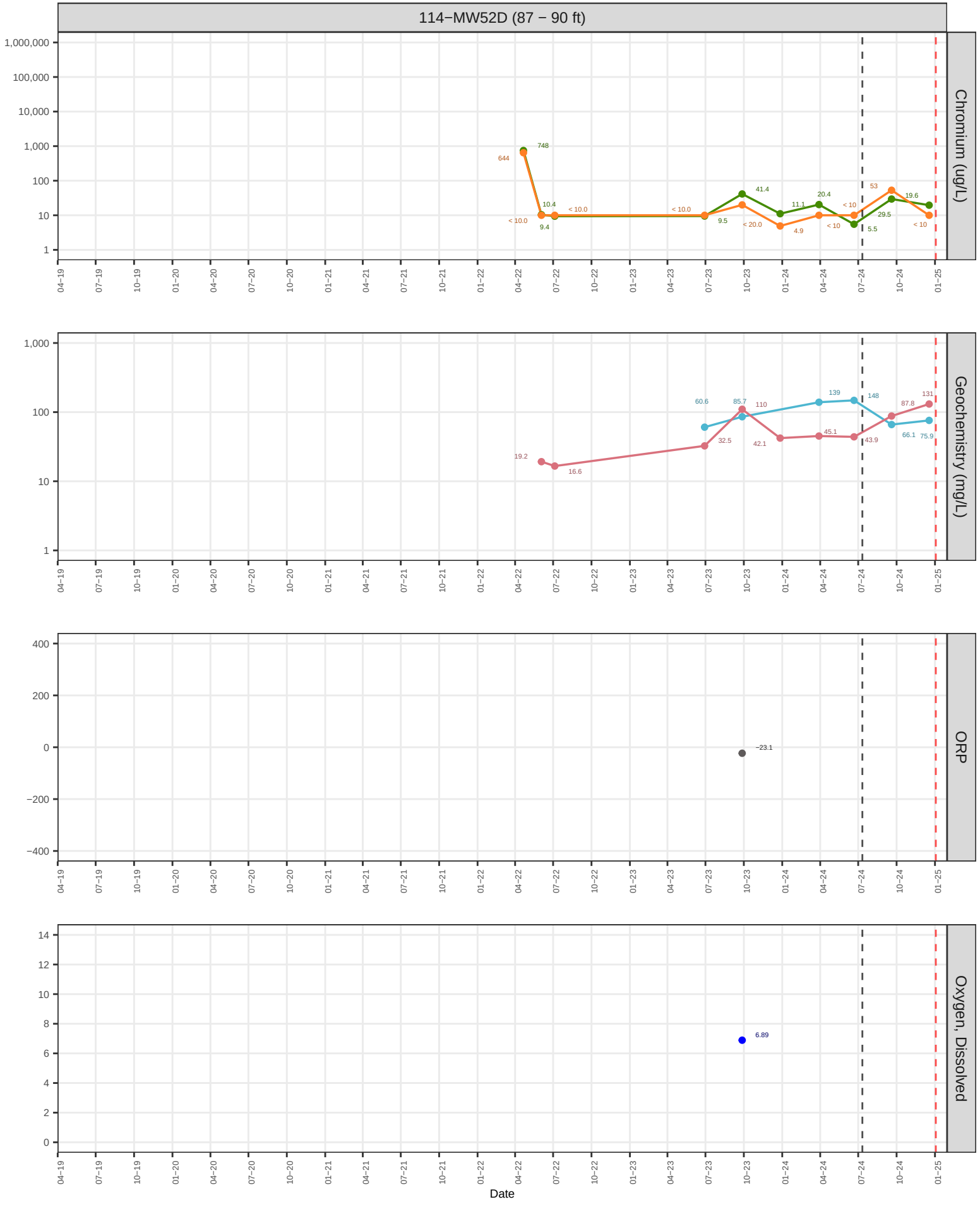

**Appendix B−5**
**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Bedrock**

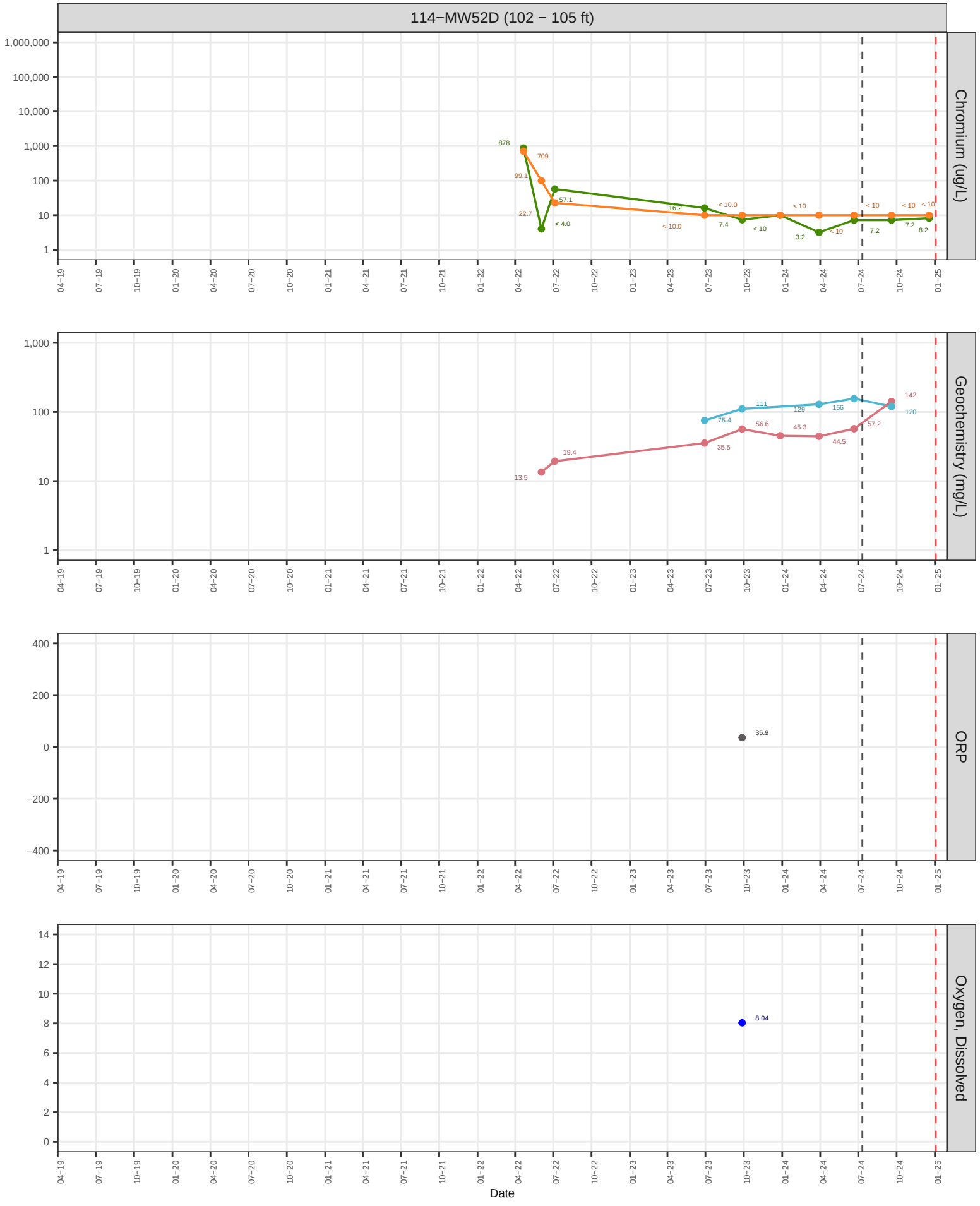

**Appendix B−5**
**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Bedrock**

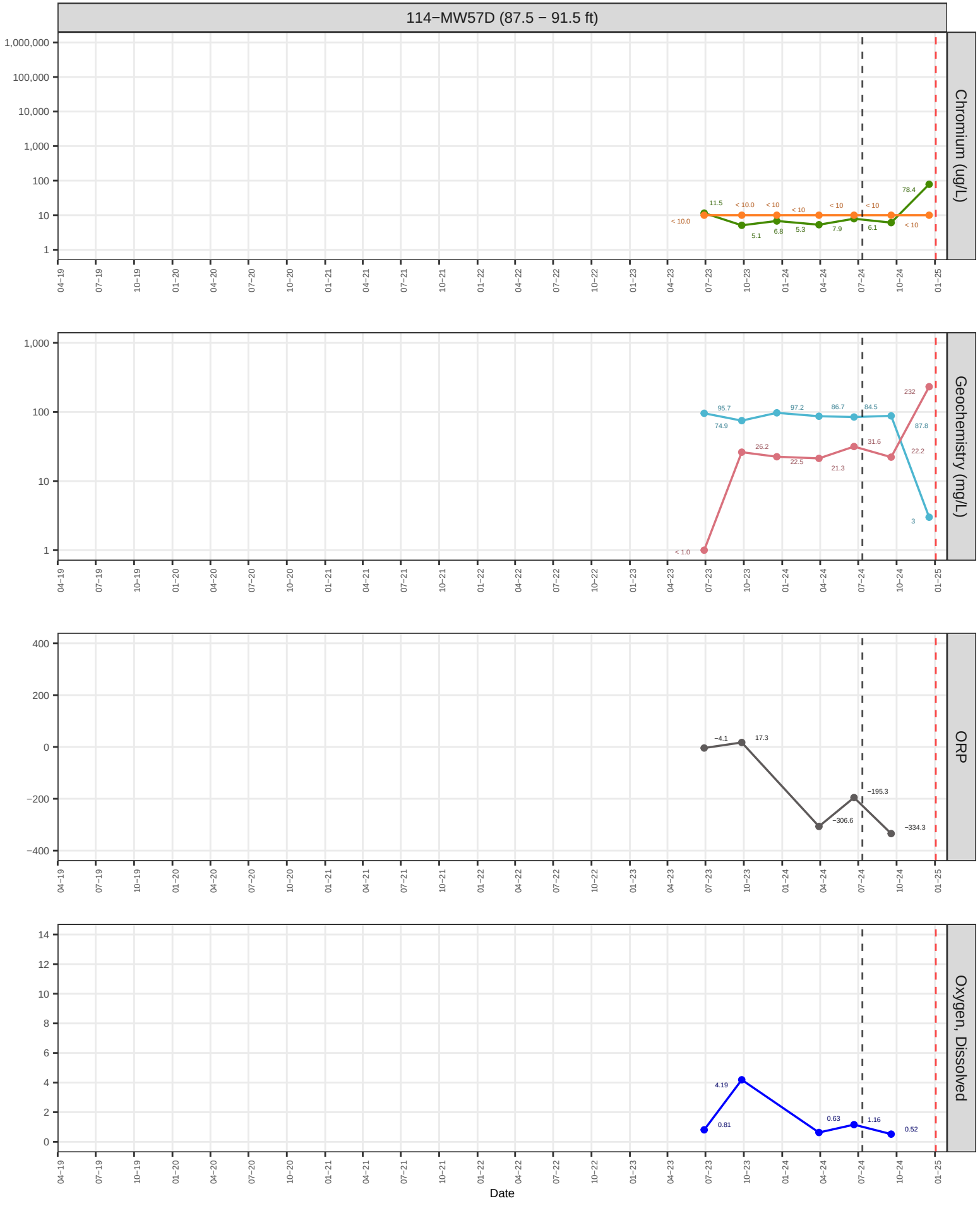

**Appendix B−5**
**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Bedrock**

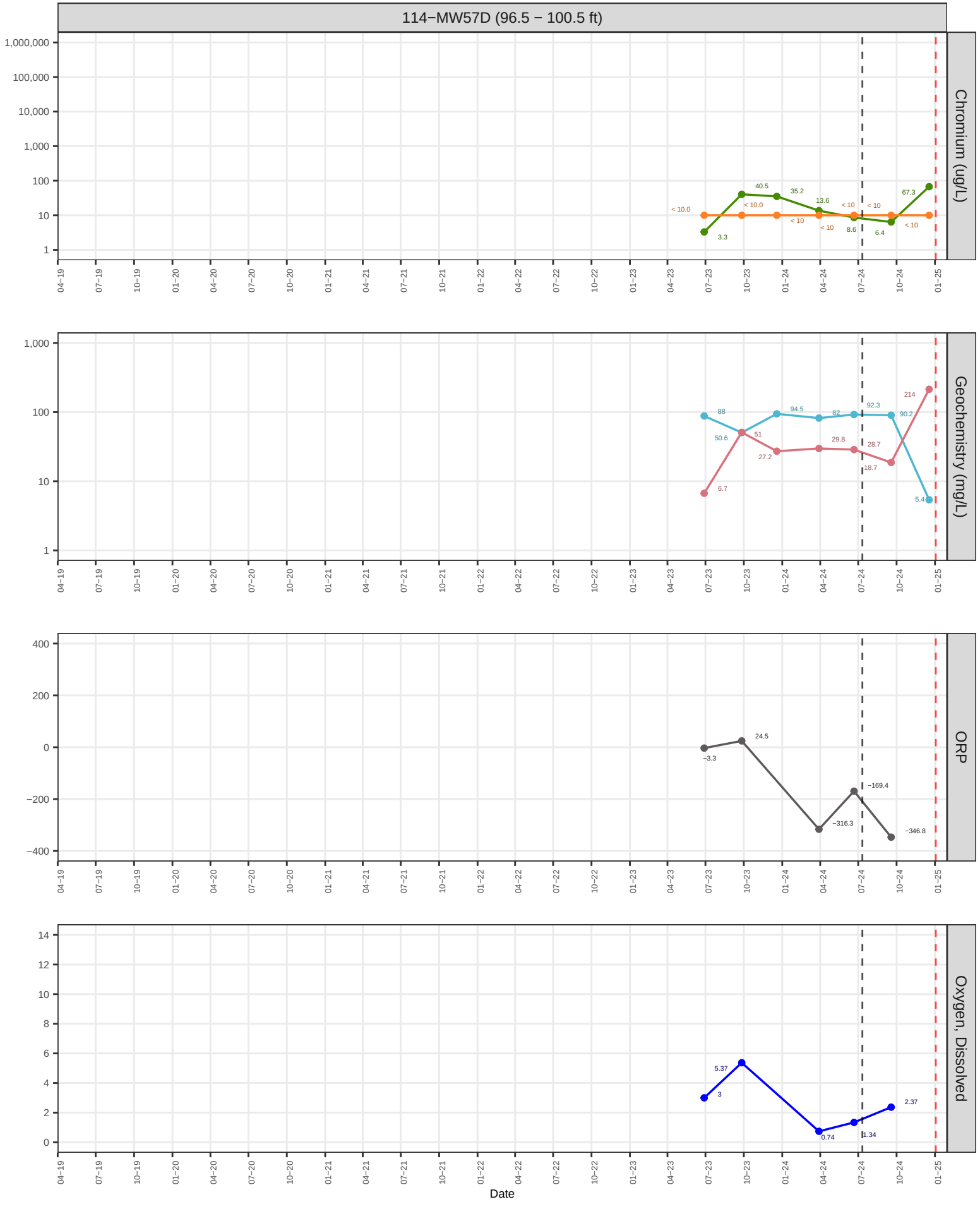

**Appendix B−5**
**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Bedrock**

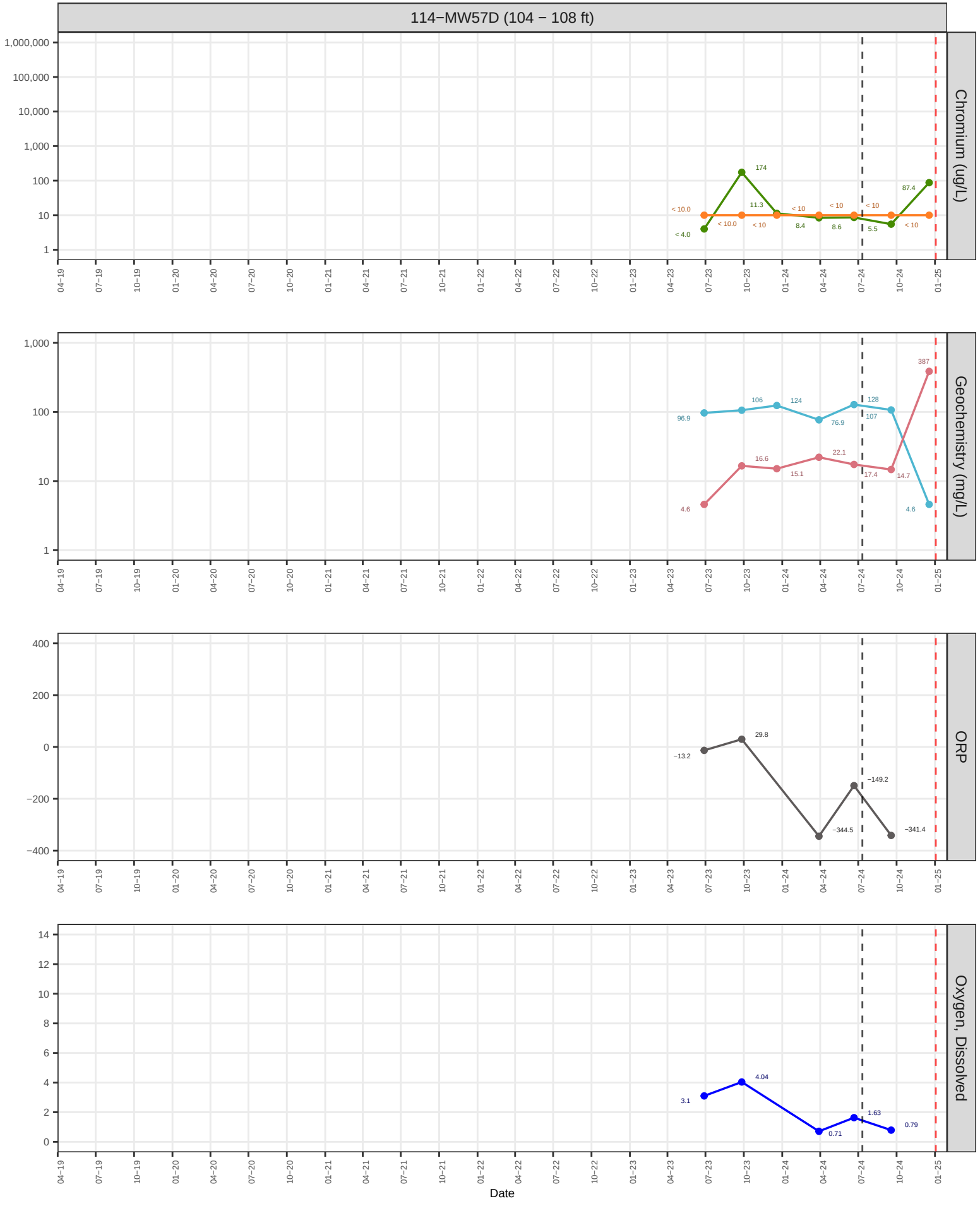

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**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Bedrock**

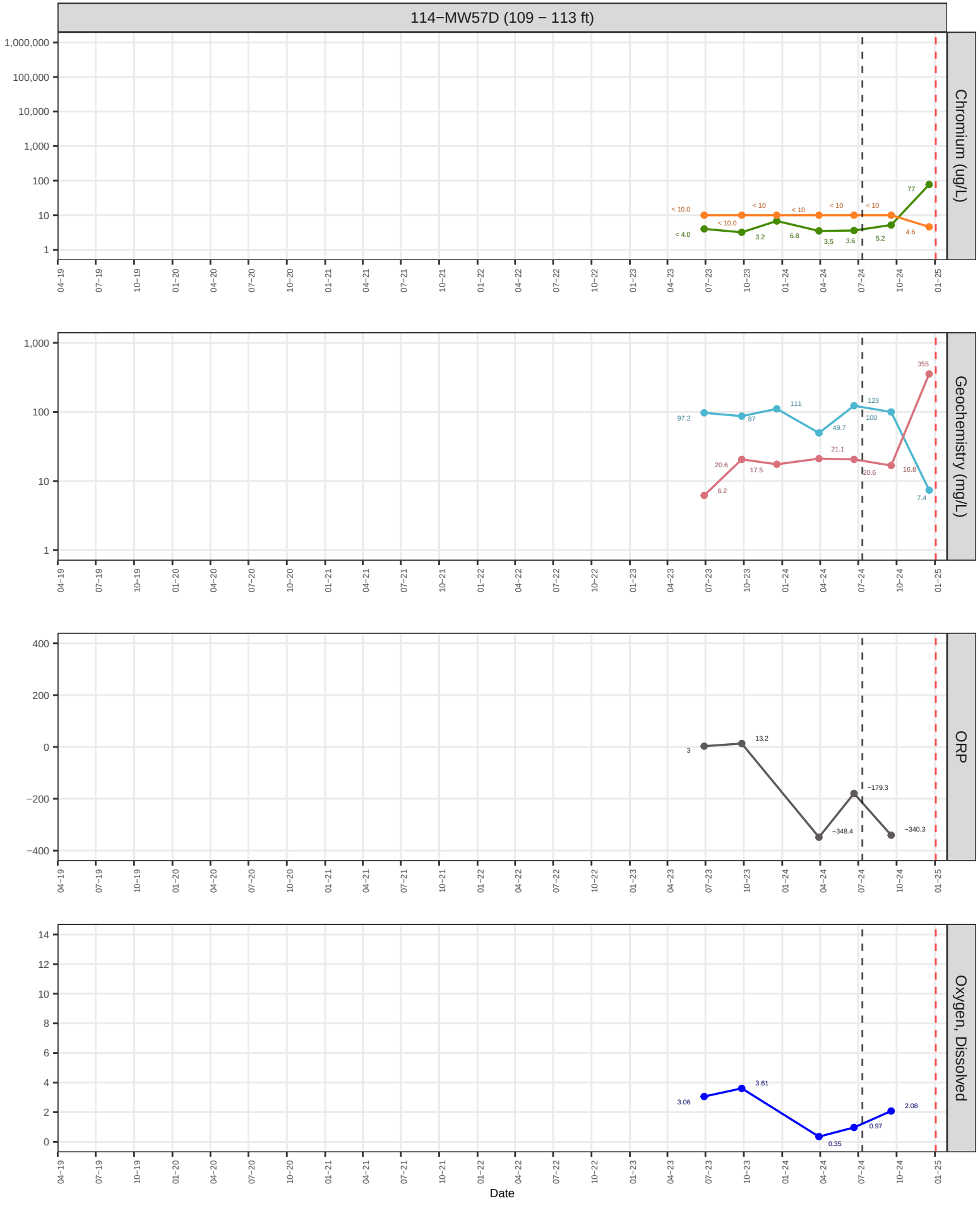

**Appendix B−5**
**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Bedrock**

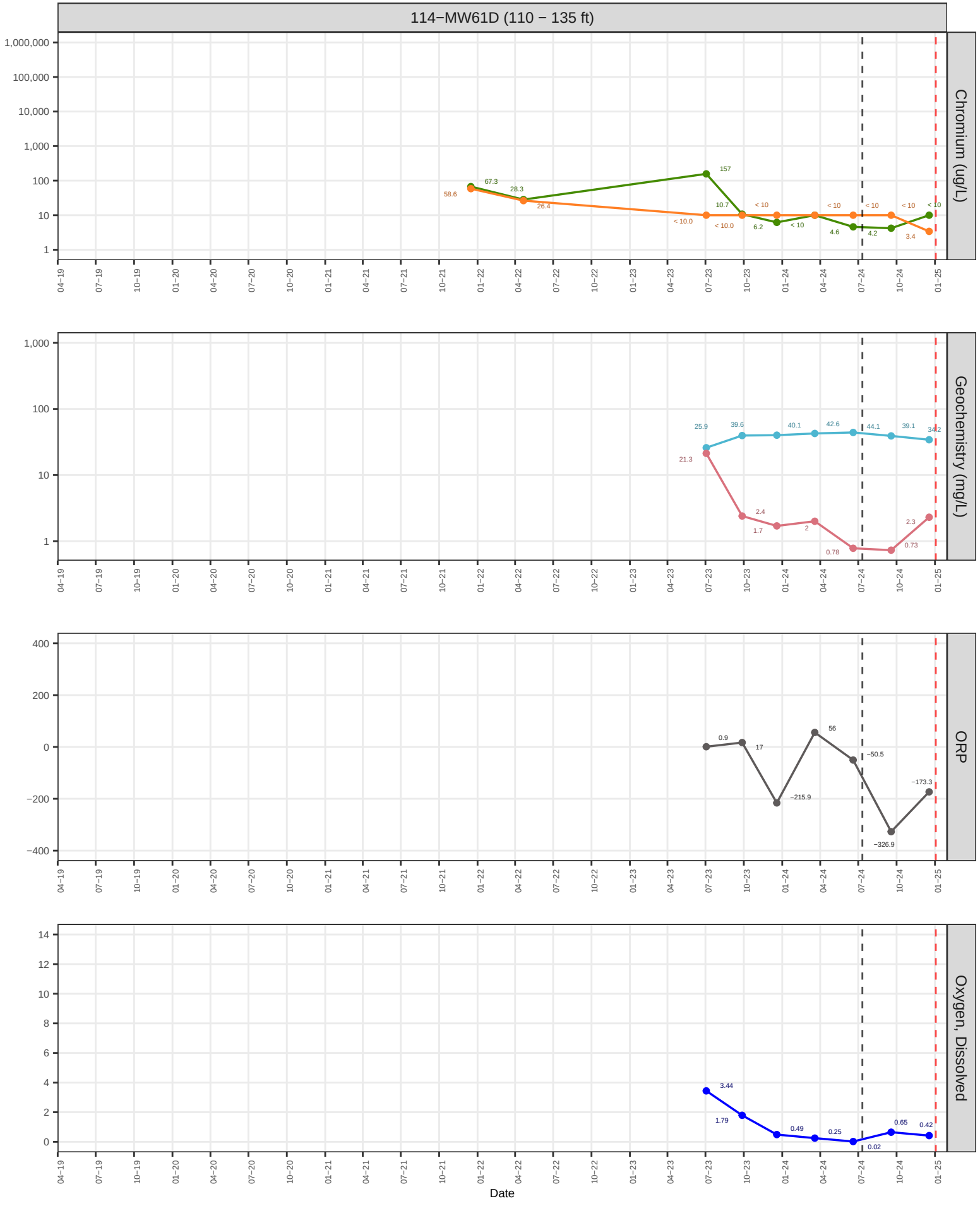

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**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Bedrock**

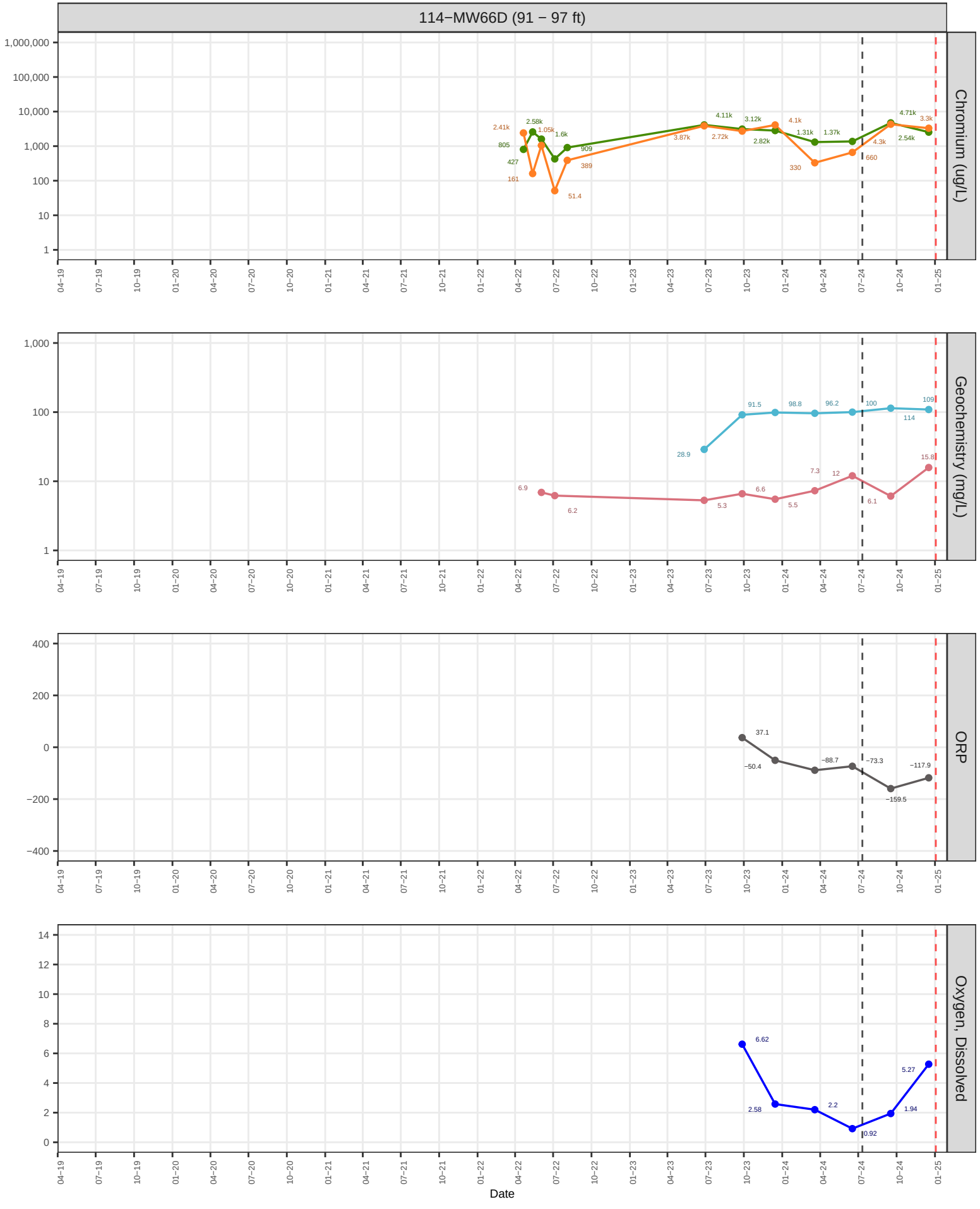

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**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Bedrock**

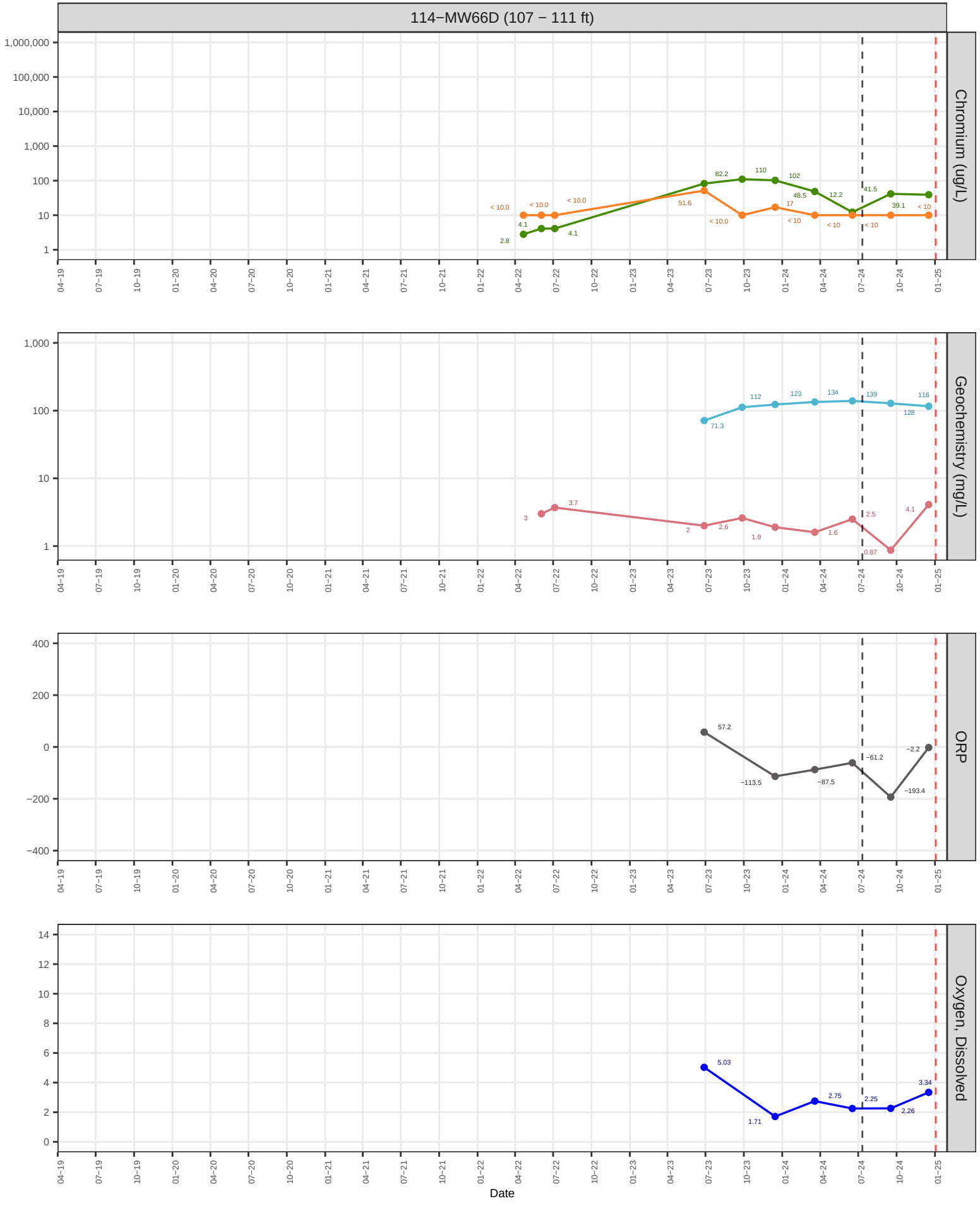

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**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Bedrock**

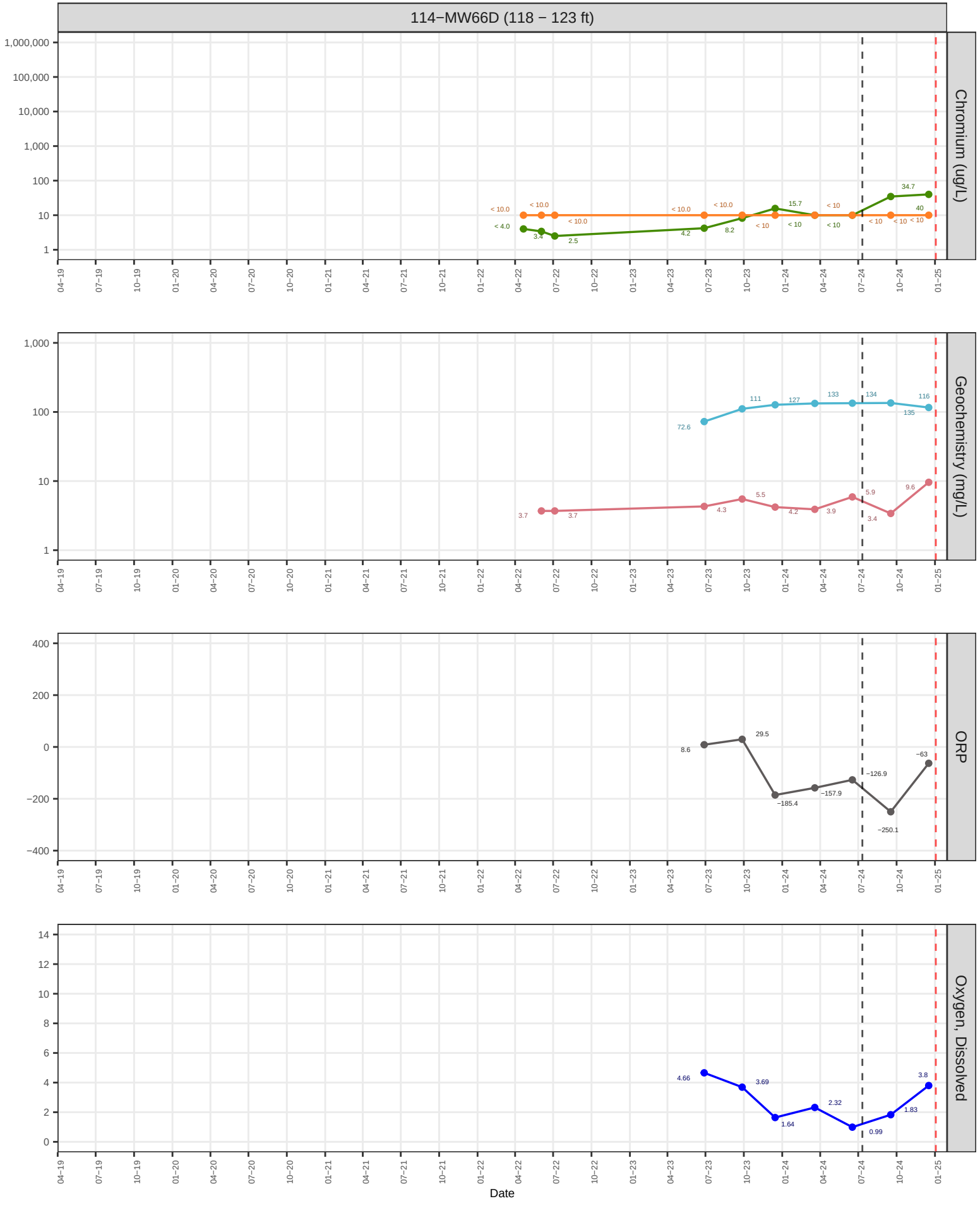

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**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Bedrock**

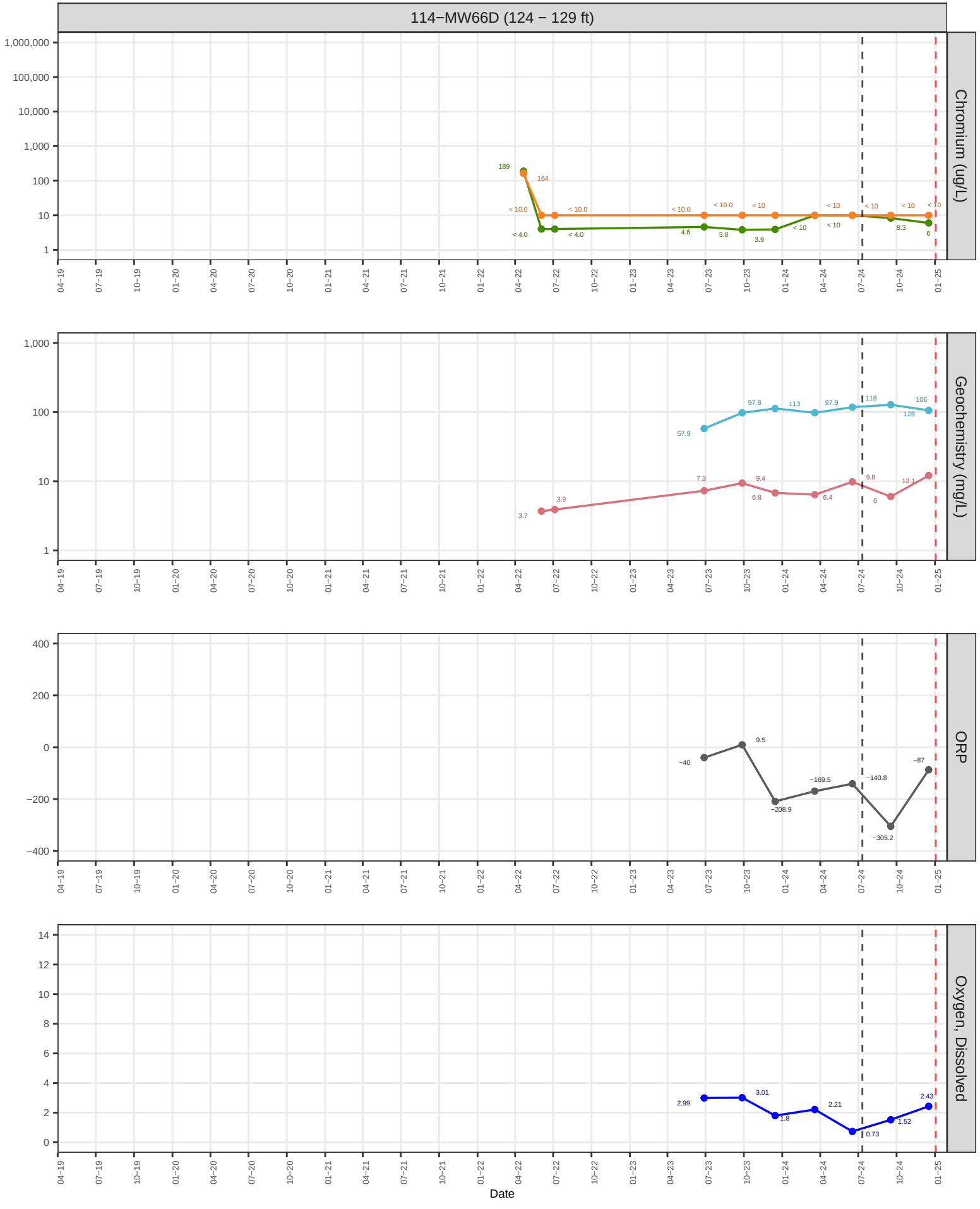

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**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Bedrock**

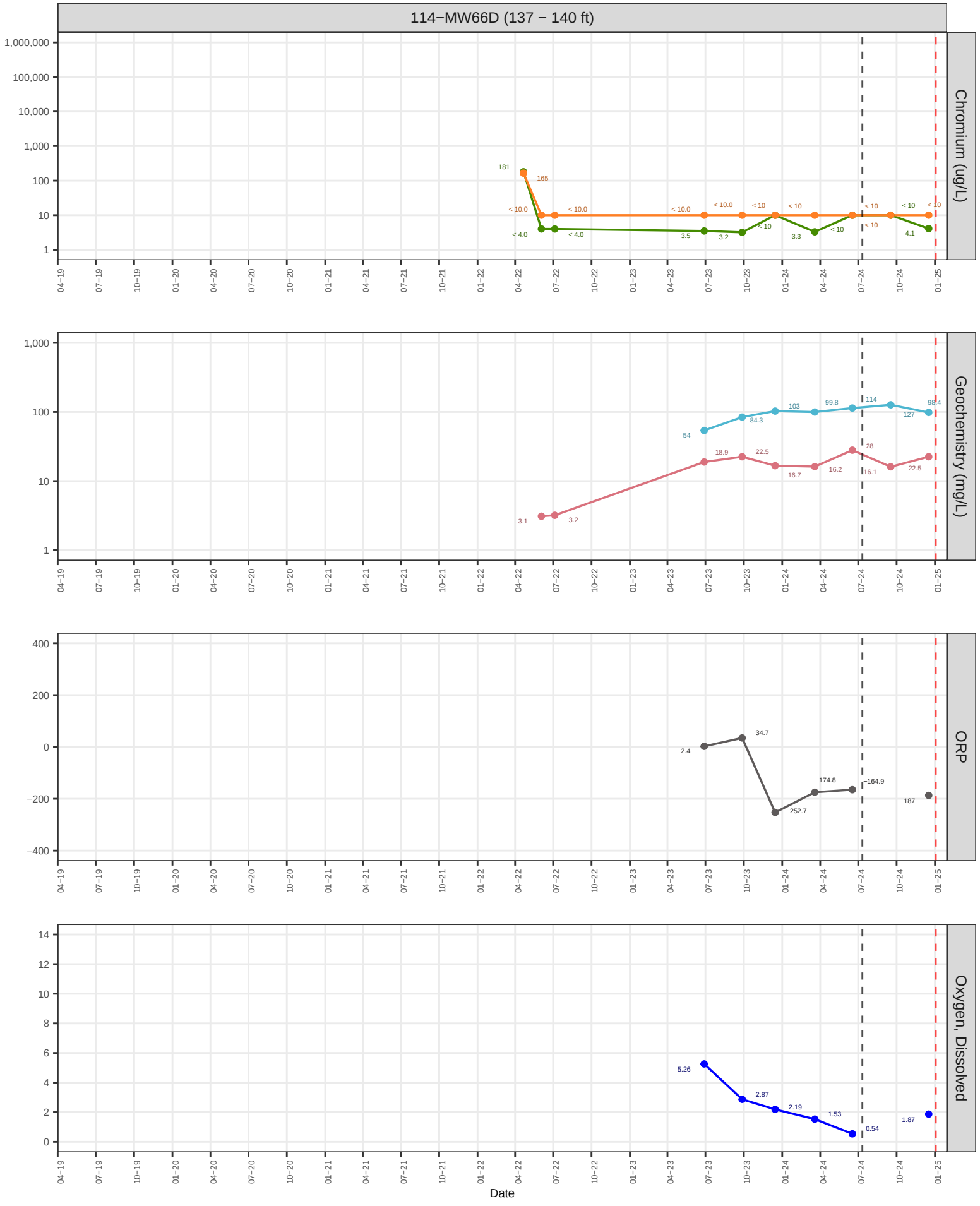

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**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Bedrock**

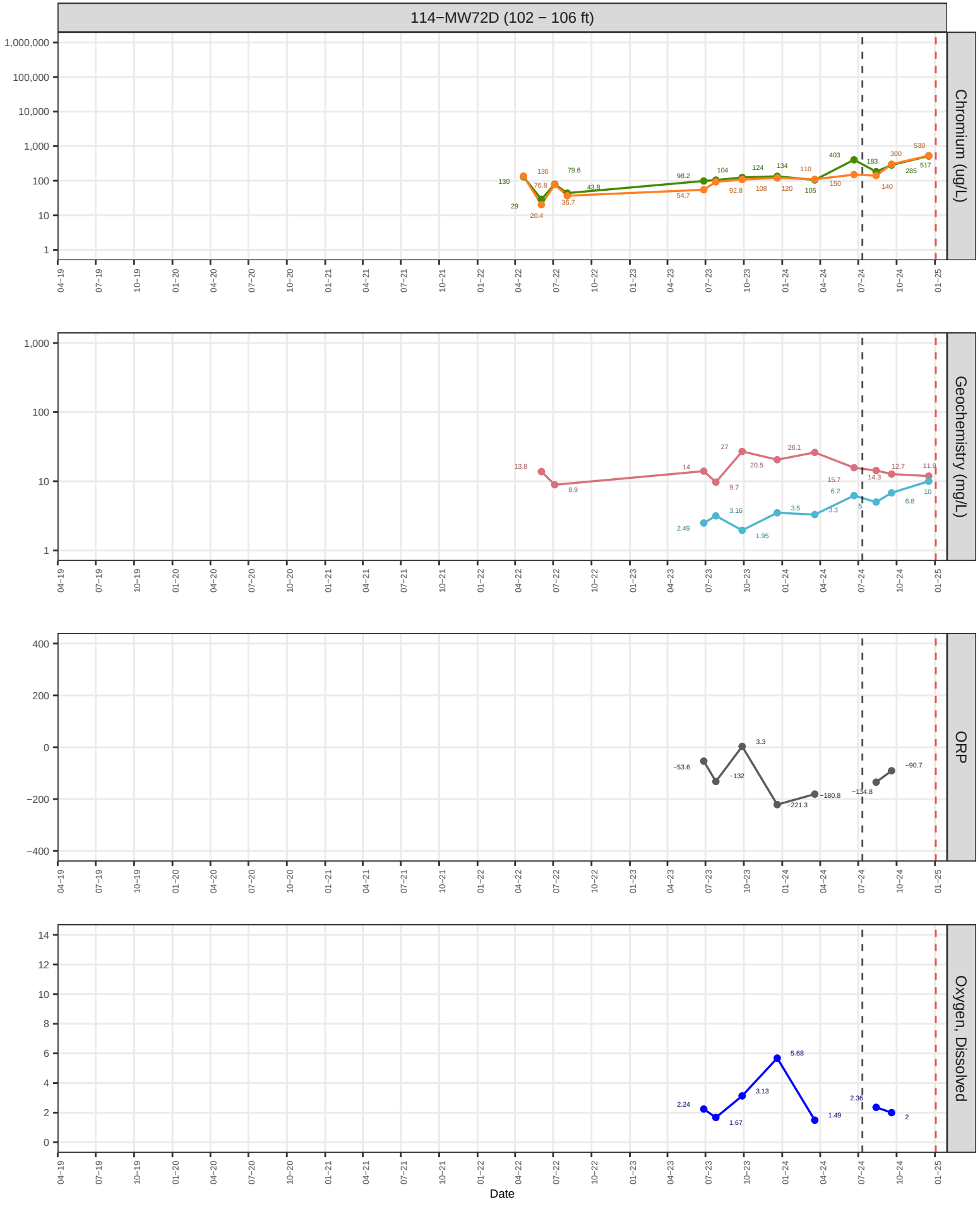

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**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Bedrock**

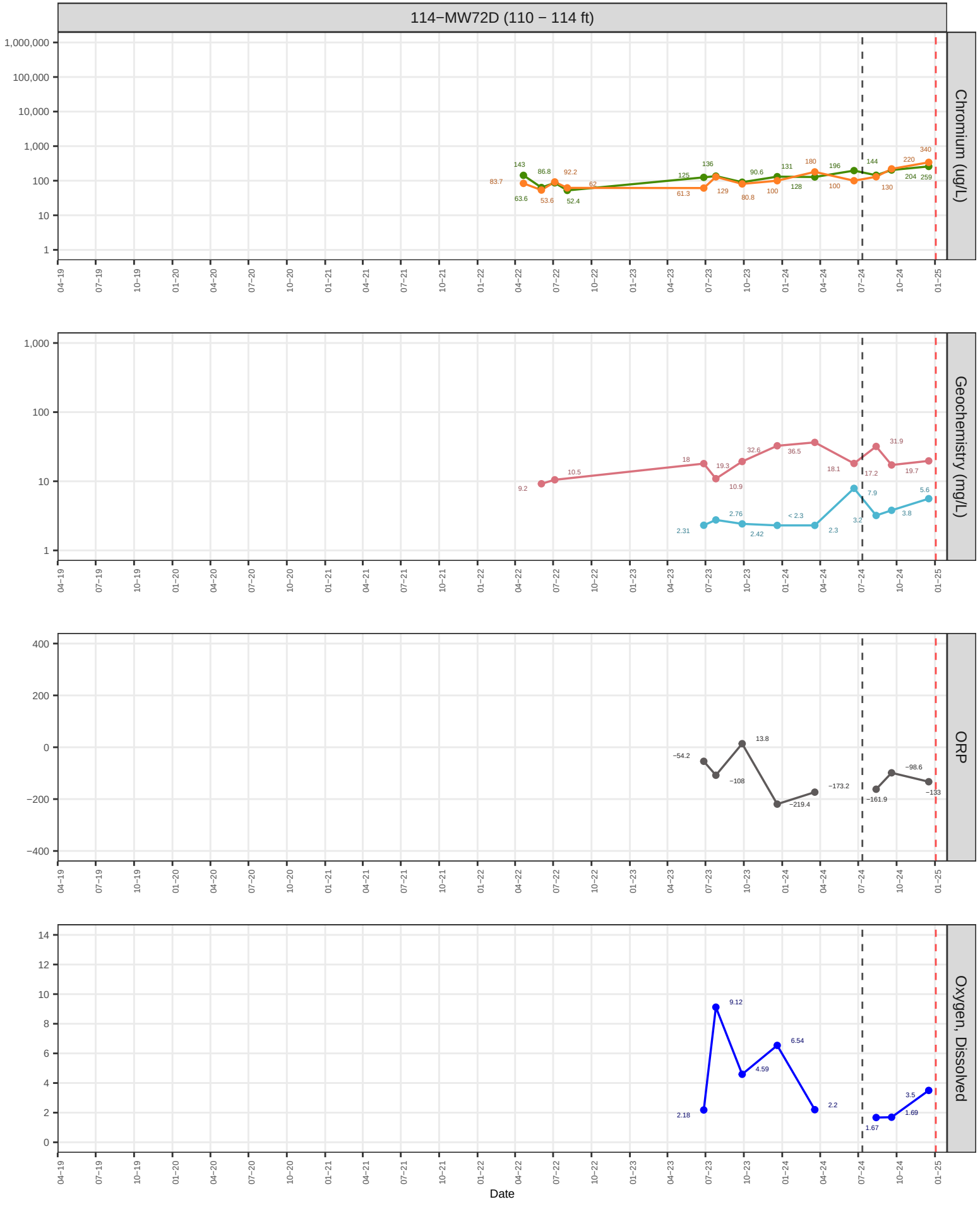

**Appendix B−5**
**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Bedrock**

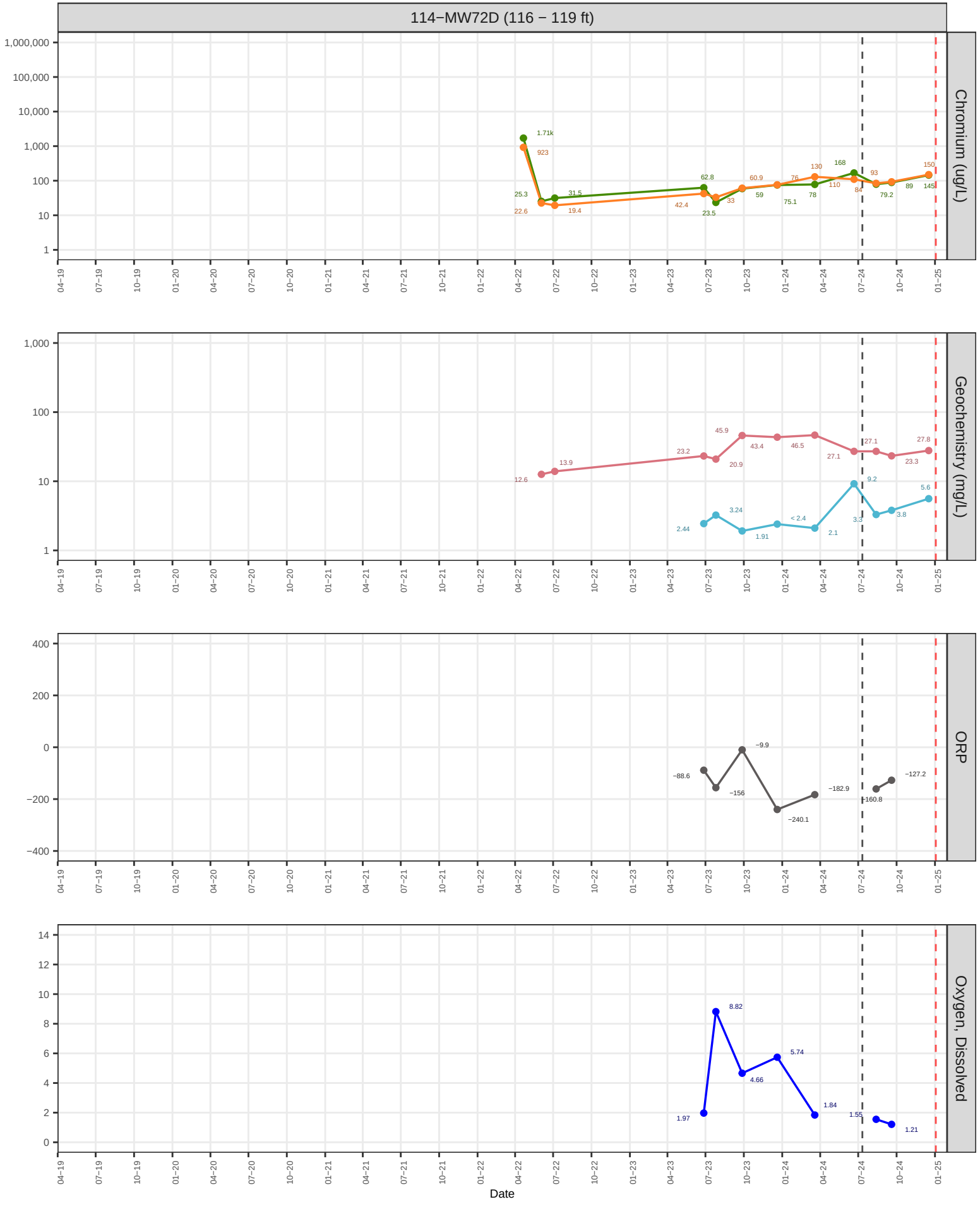

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**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Bedrock**

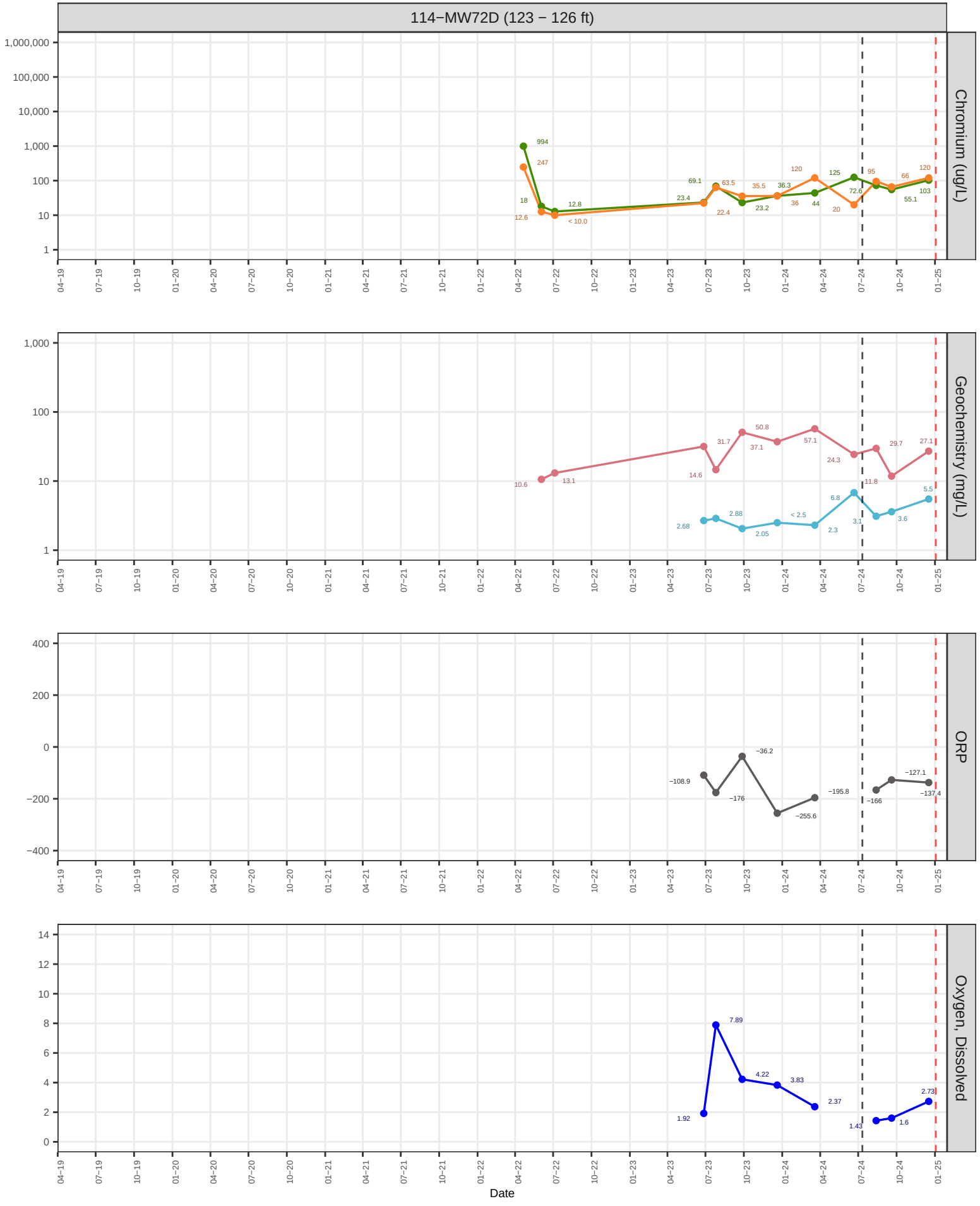

**Appendix B−5**
**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Bedrock**

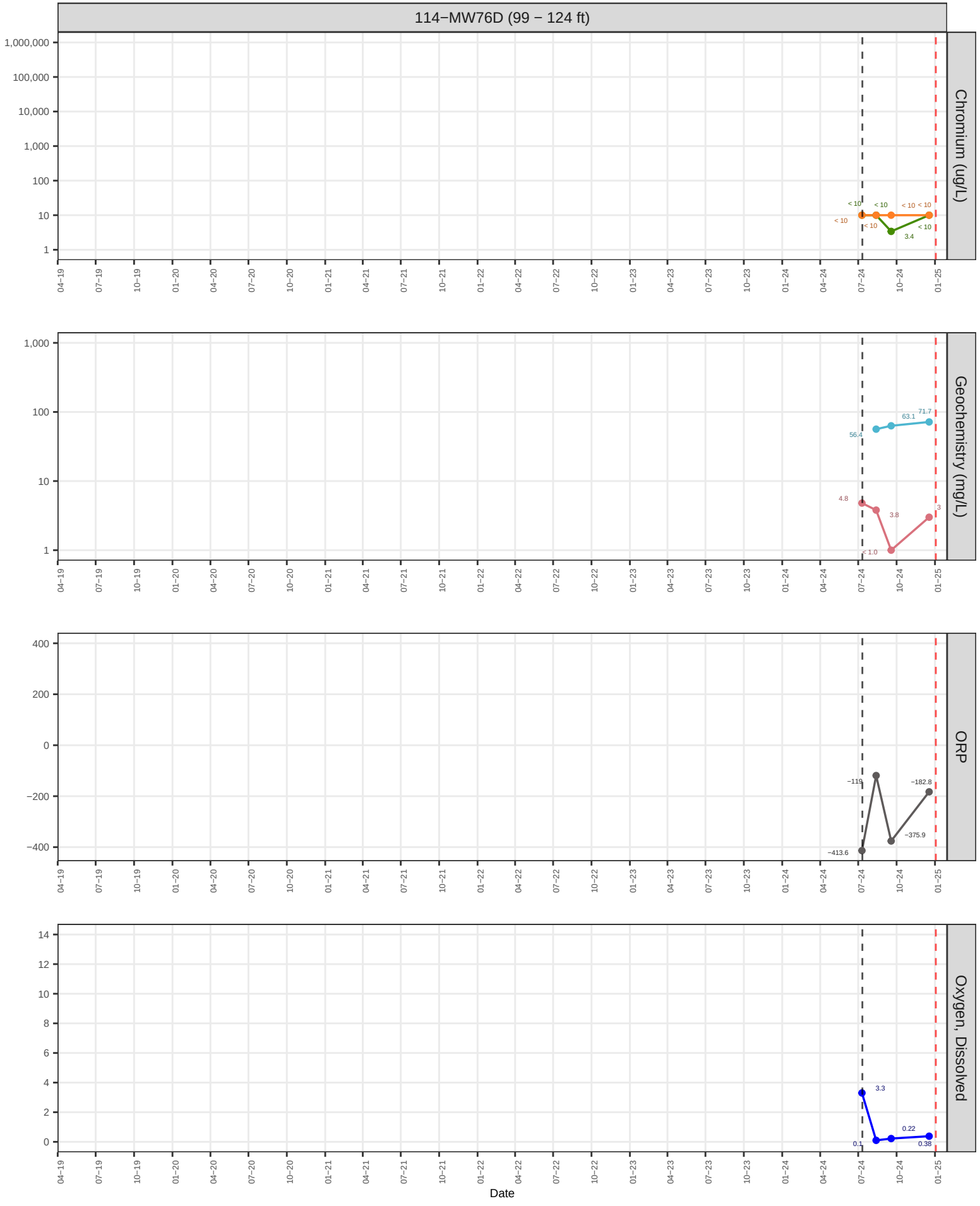

# Appendix B-6
# Performance Trend Charts - Chromium, Hexavalent Chromium, and Geochemistry - Other Wells

**Appendix B−6**
**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Other Wells**

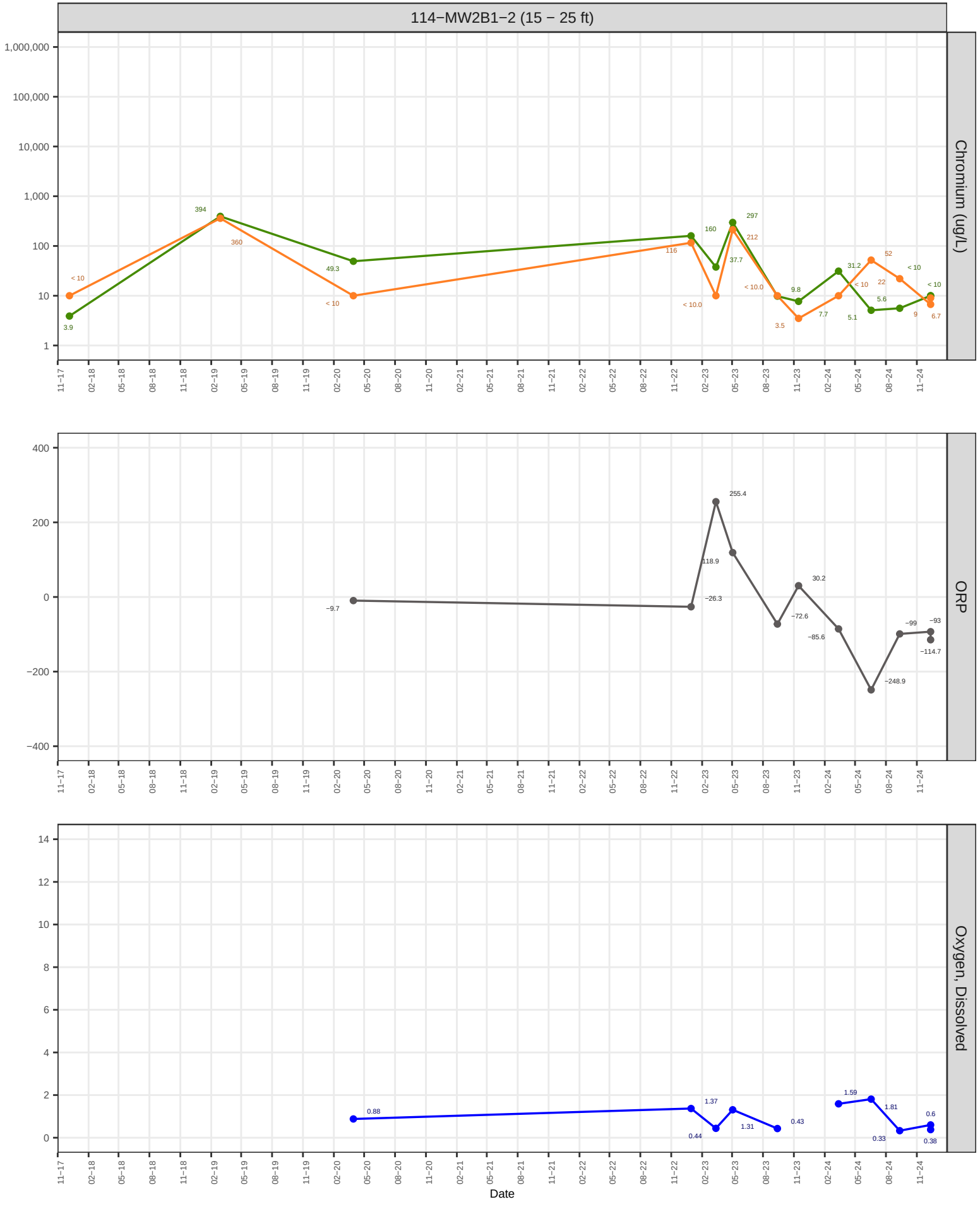

**Appendix B−6**
**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Other Wells**

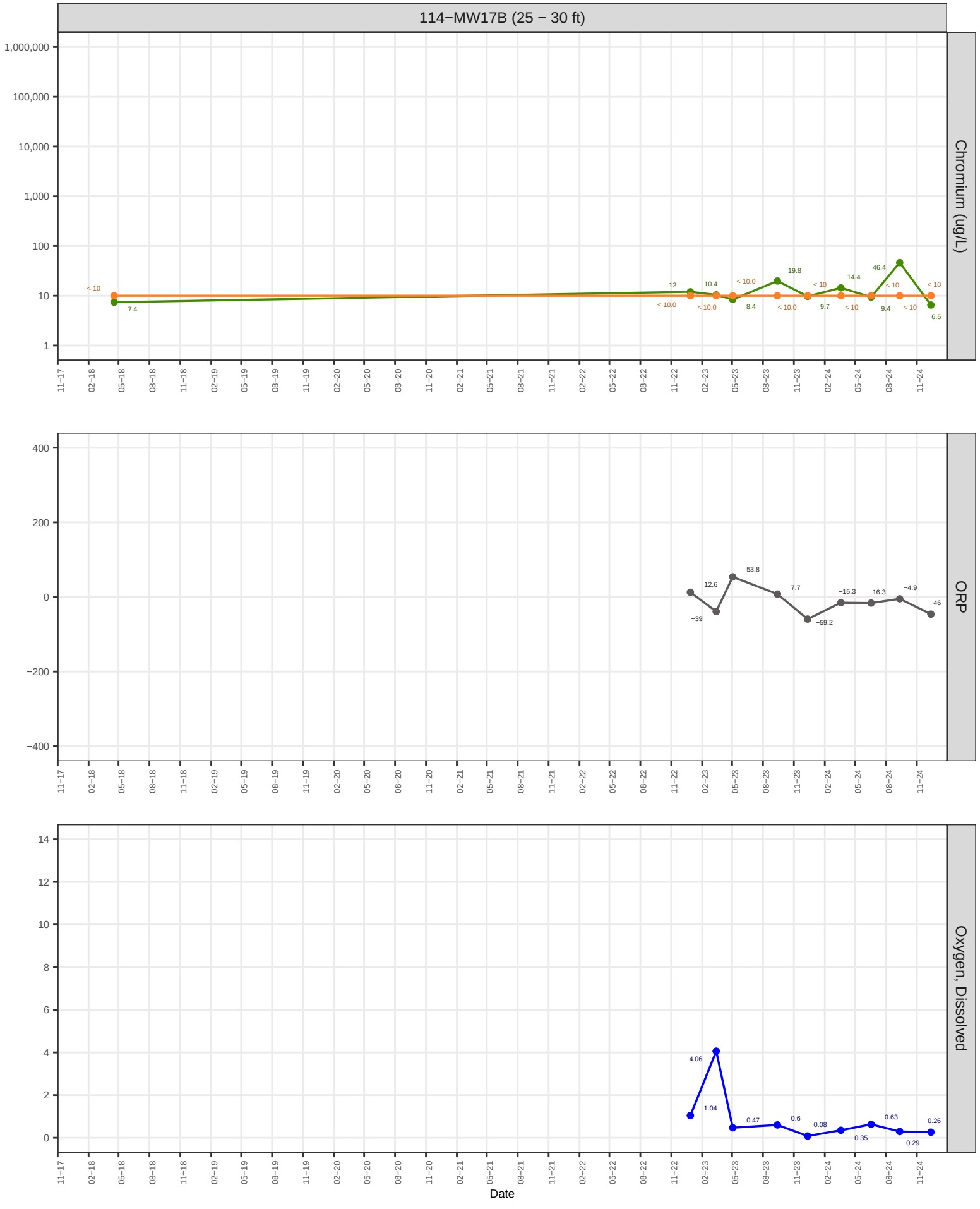

**Appendix B−6**
**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Other Wells**

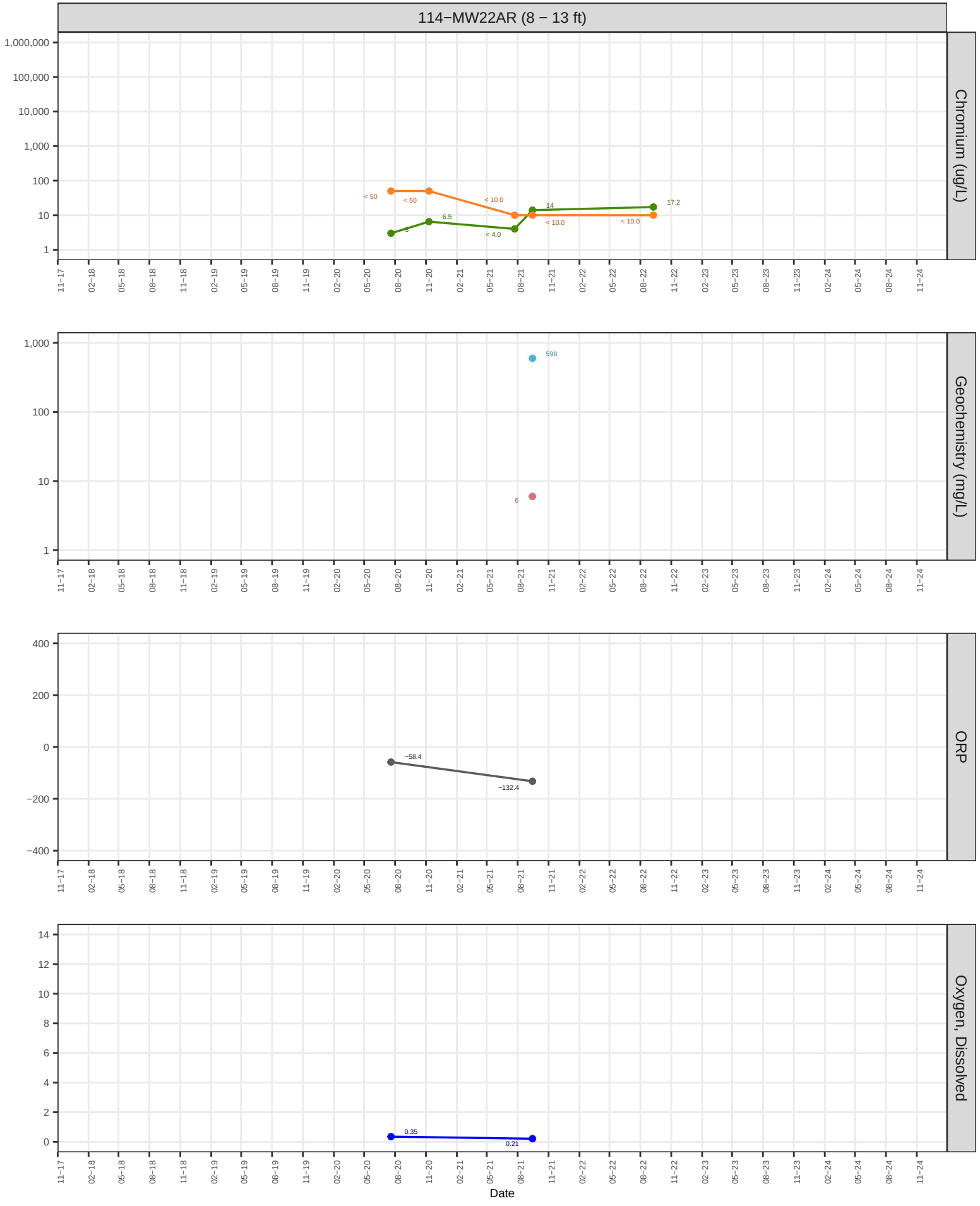

**Appendix B−6**
**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Other Wells**

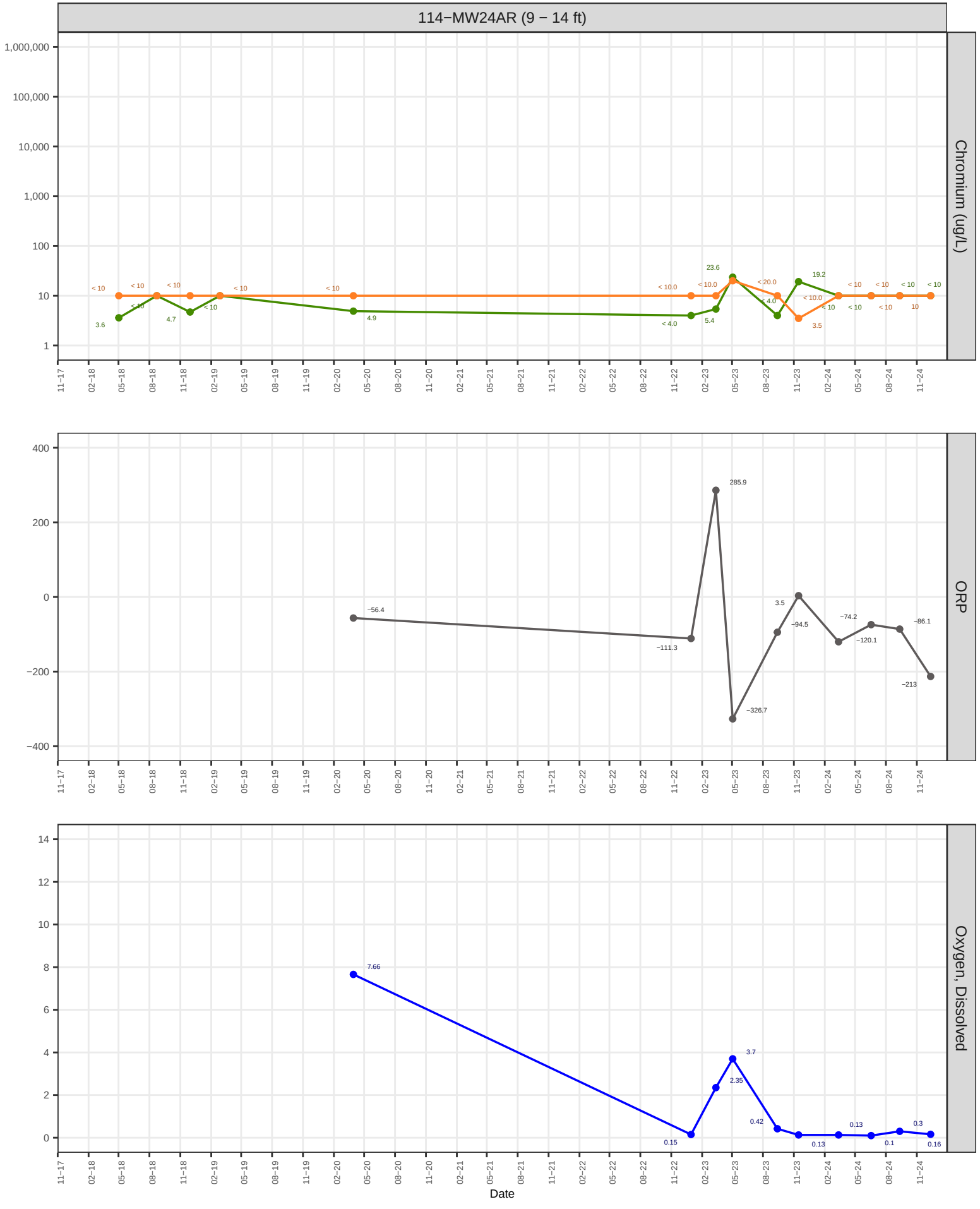

**Appendix B−6**
**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Other Wells**

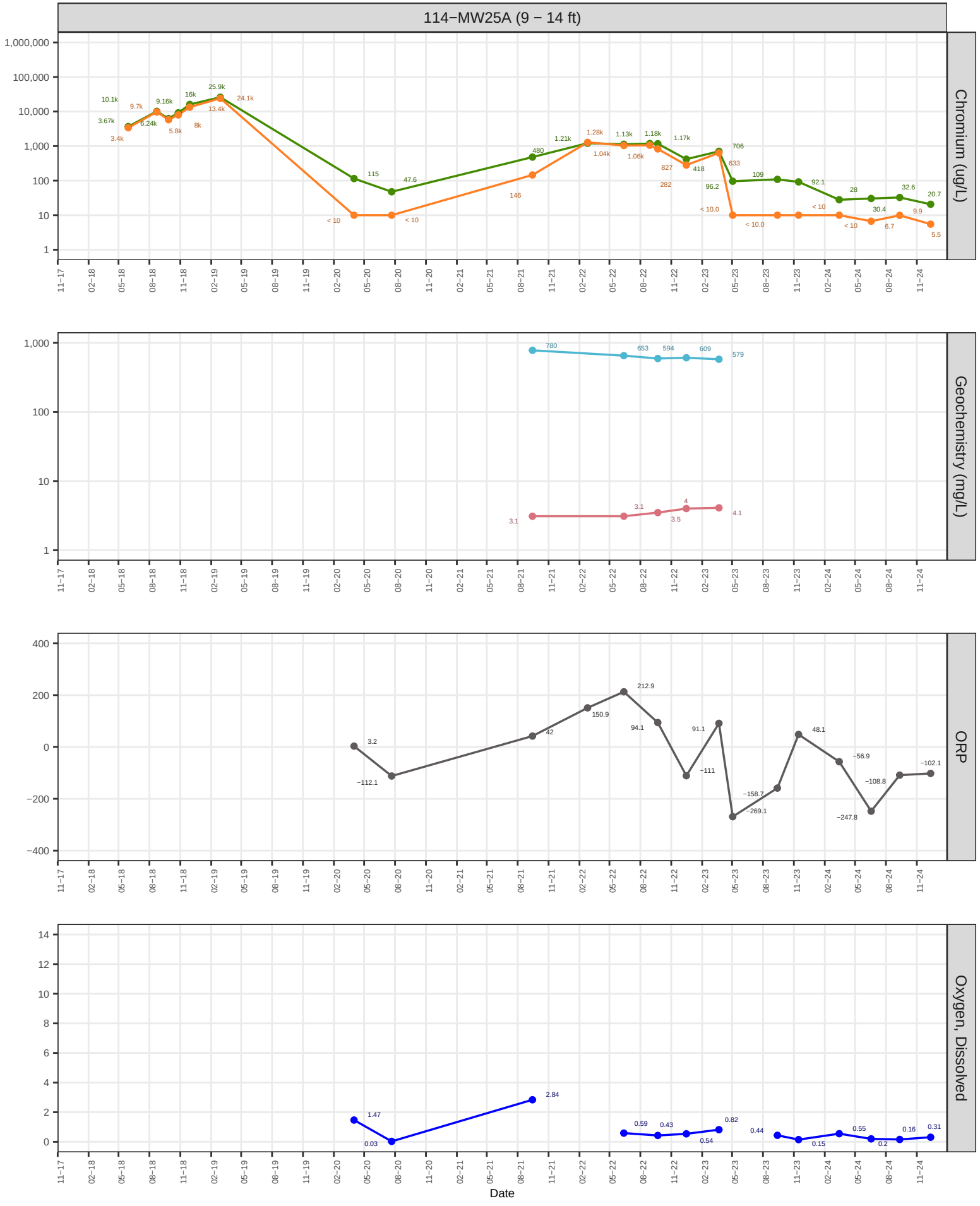

**Appendix B−6**
**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Other Wells**

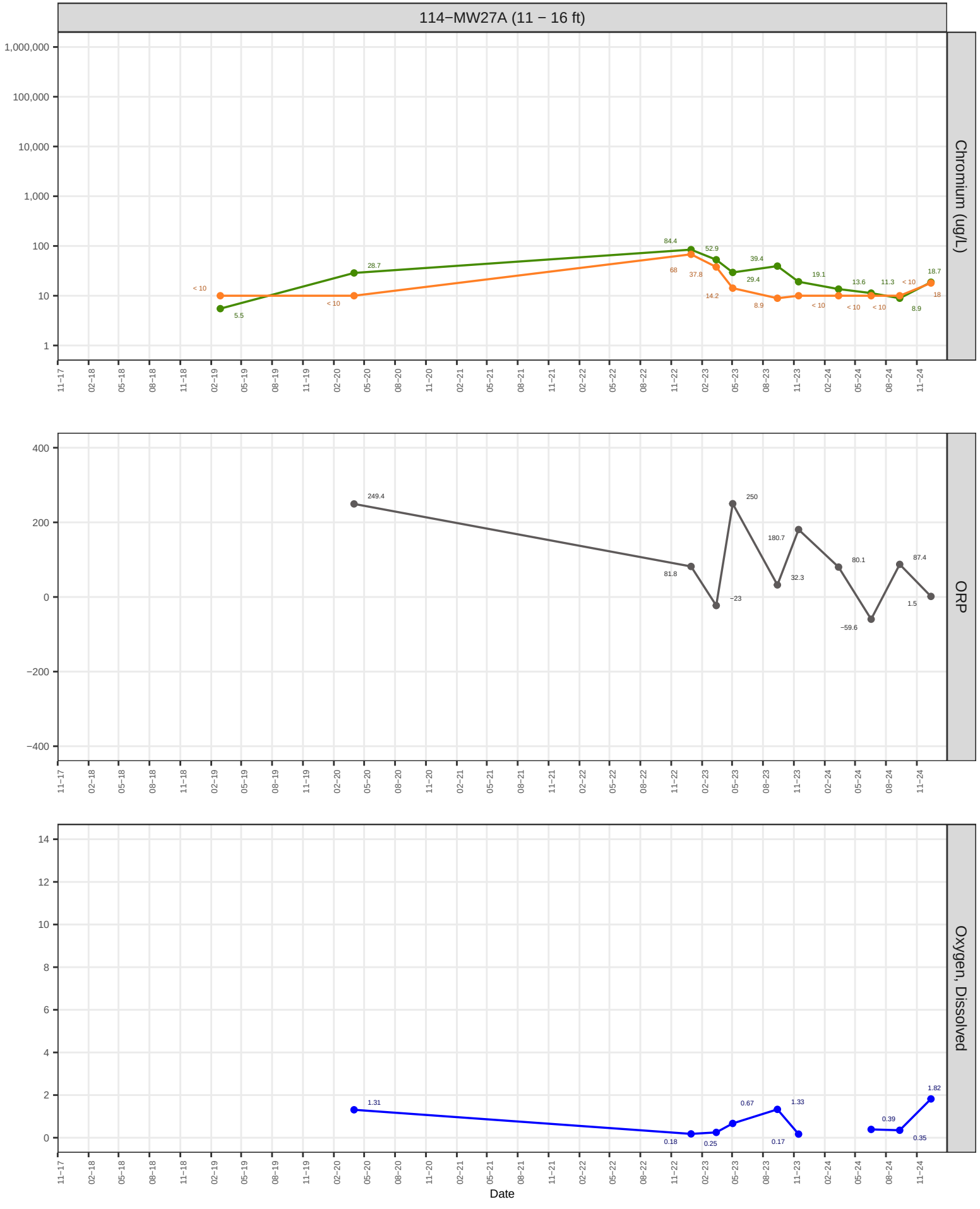

**Appendix B−6**
**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Other Wells**

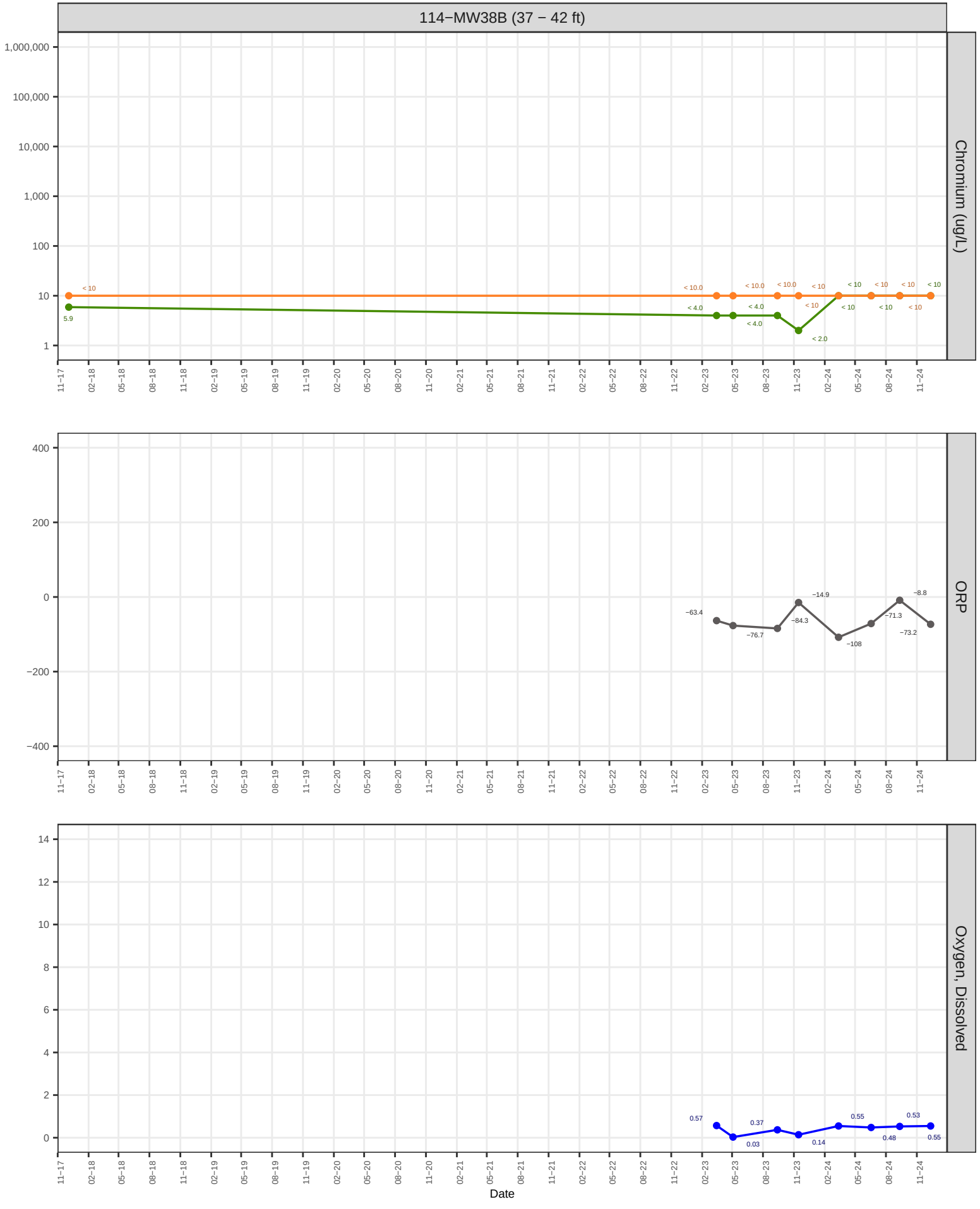

**Appendix B−6**
**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Other Wells**

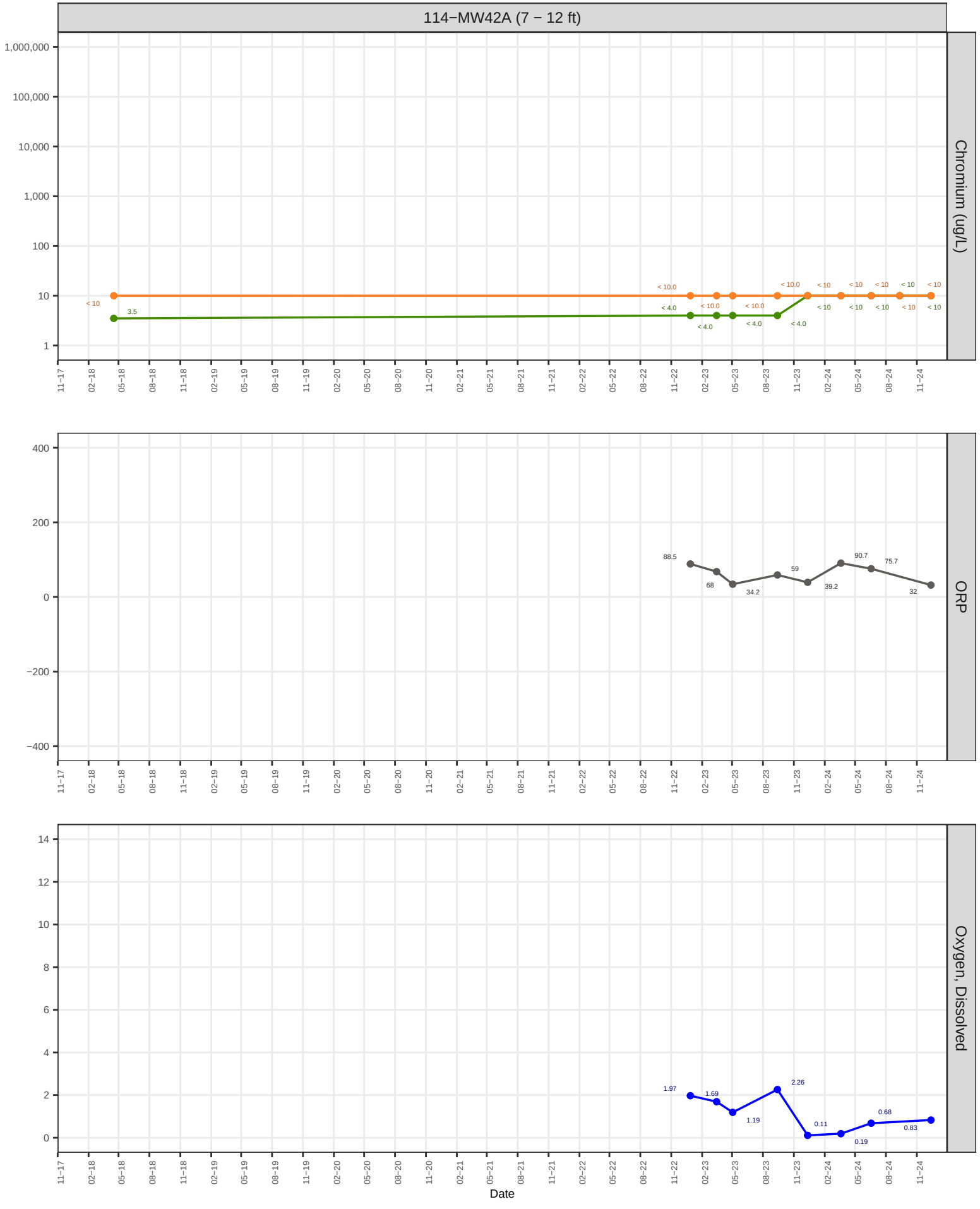

**Appendix B−6**
**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Other Wells**

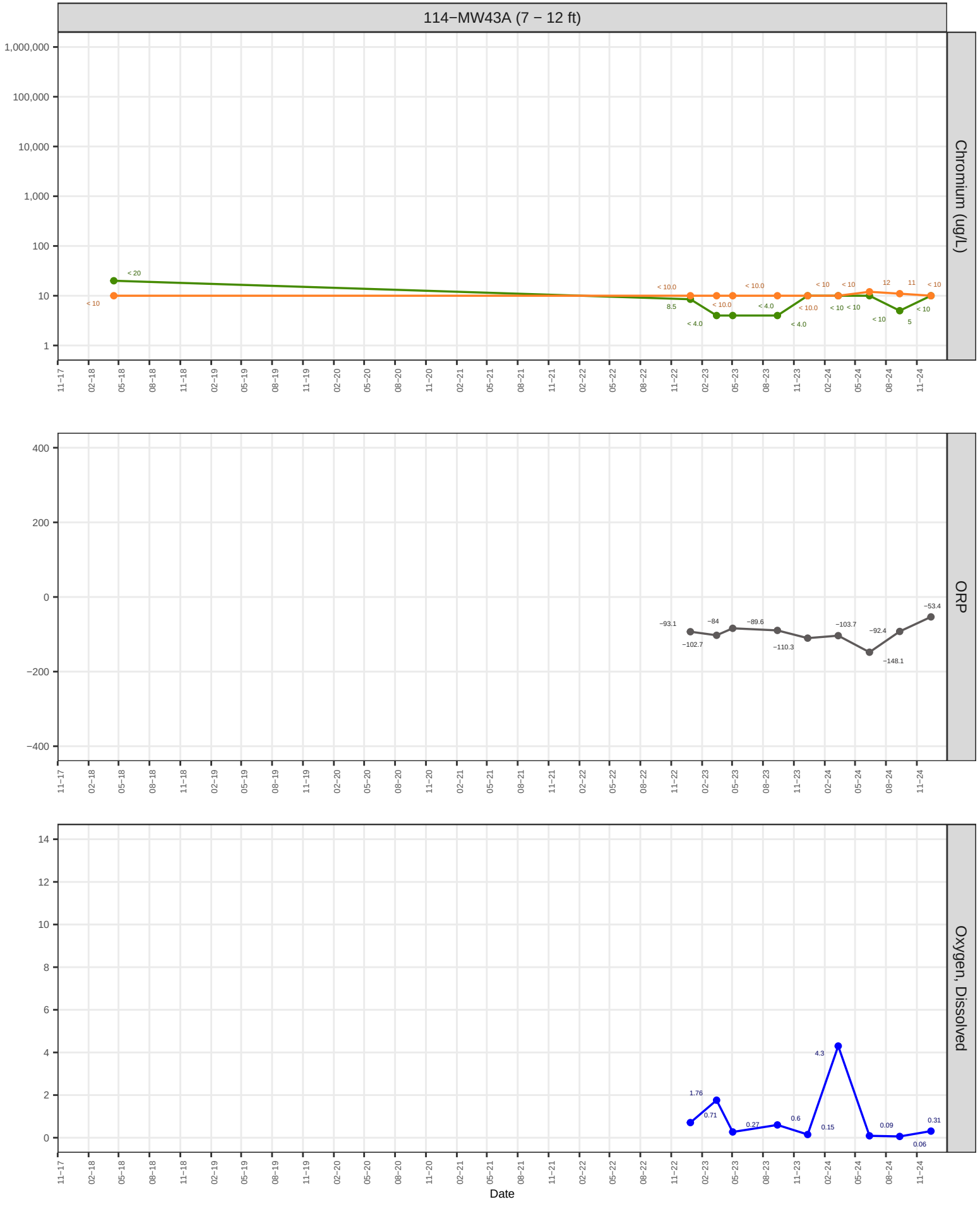

**Appendix B−6**
**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Other Wells**

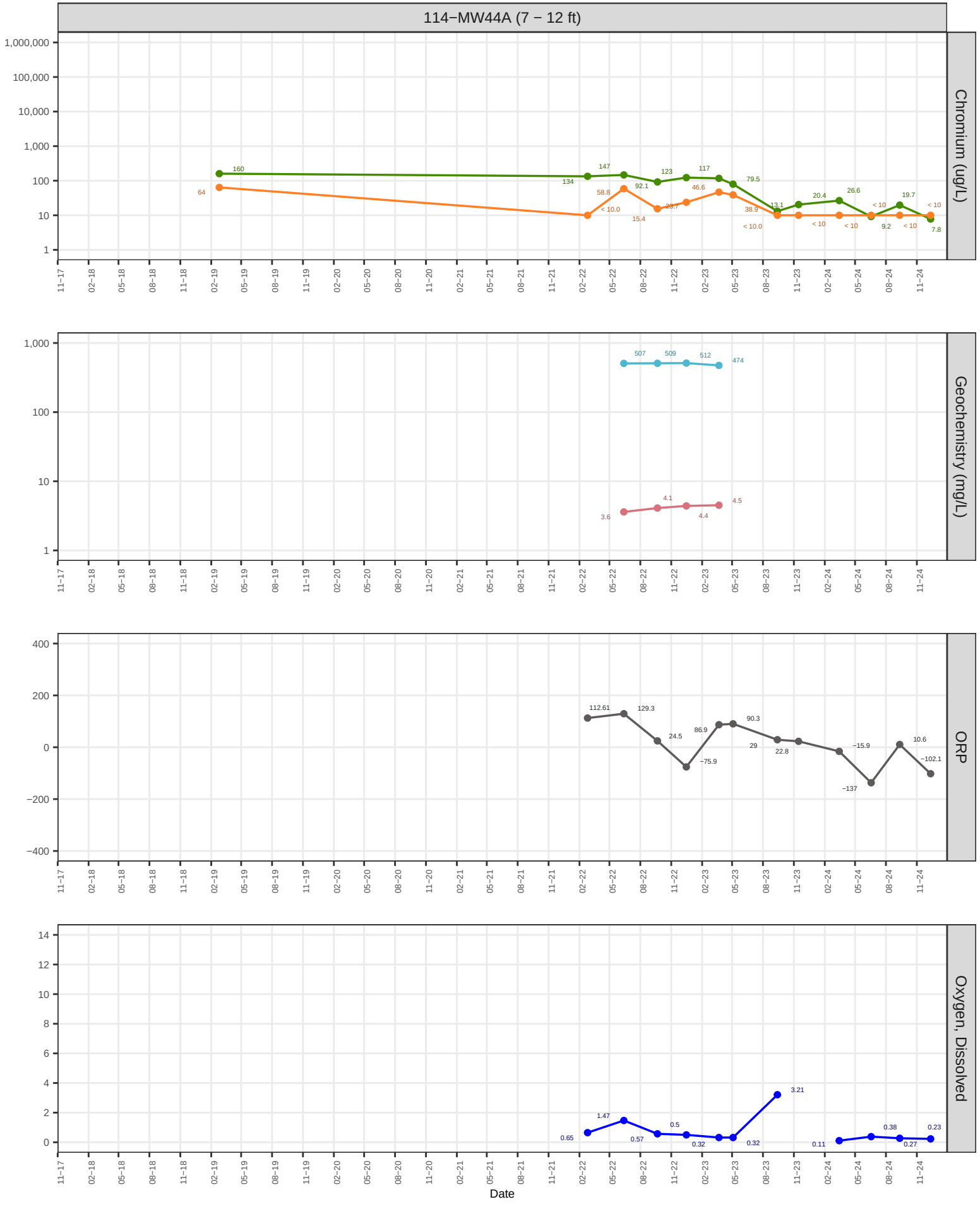

**Appendix B−6**
**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Other Wells**

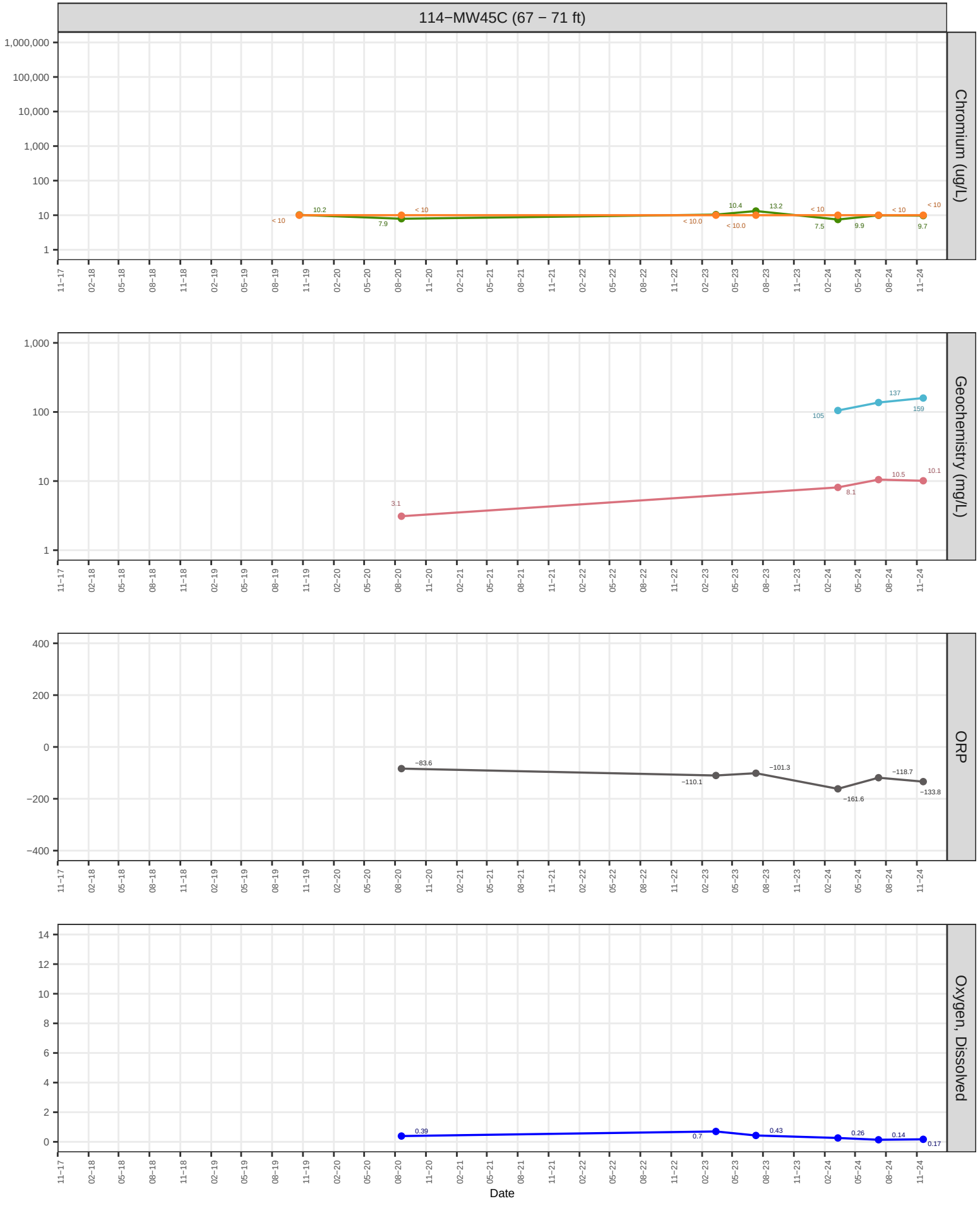

**Appendix B−6**
**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Other Wells**

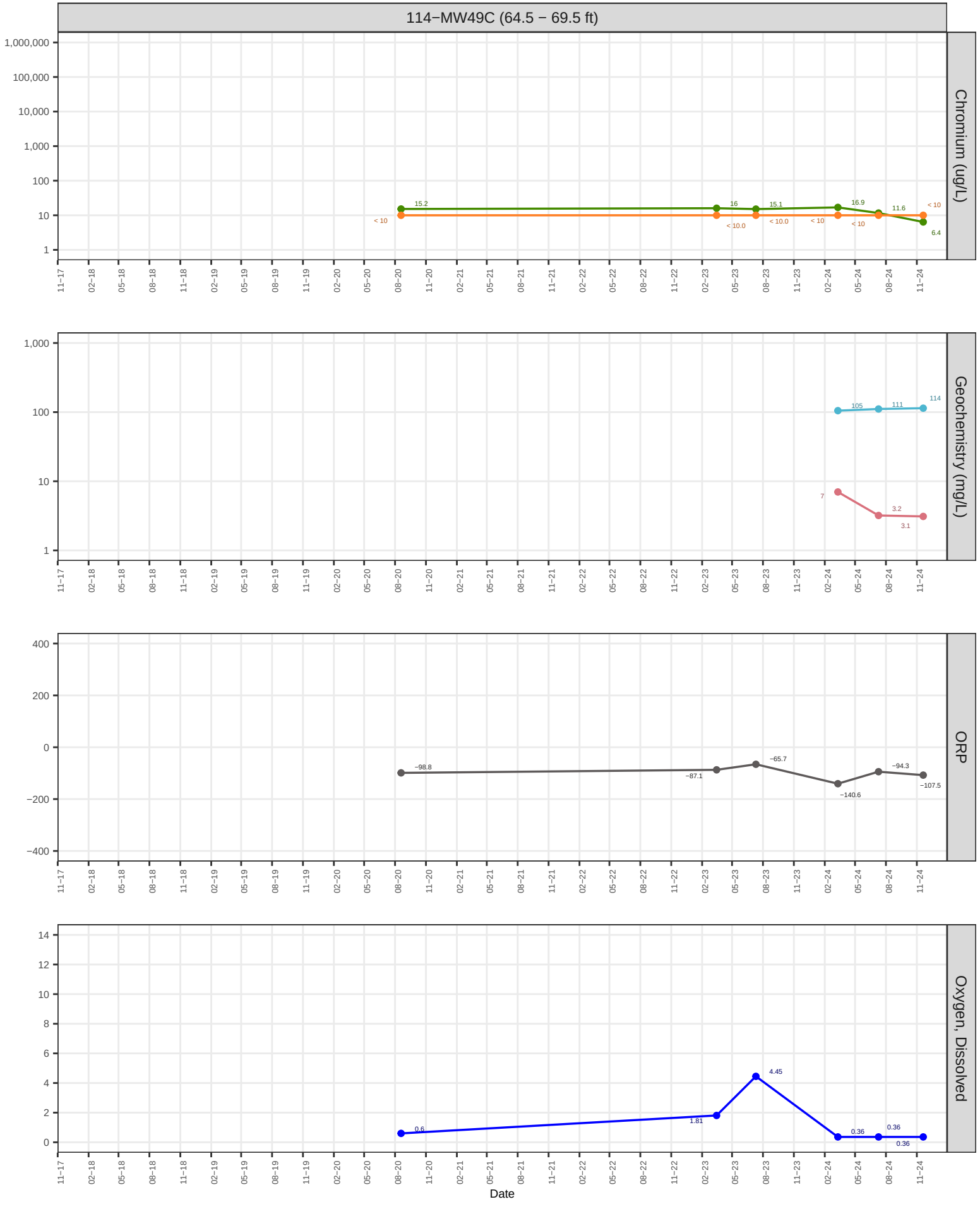

**Appendix B−6**
**Trend Charts − Chromium, Hexavalent Chromium, and Geochemistry − Other Wells**

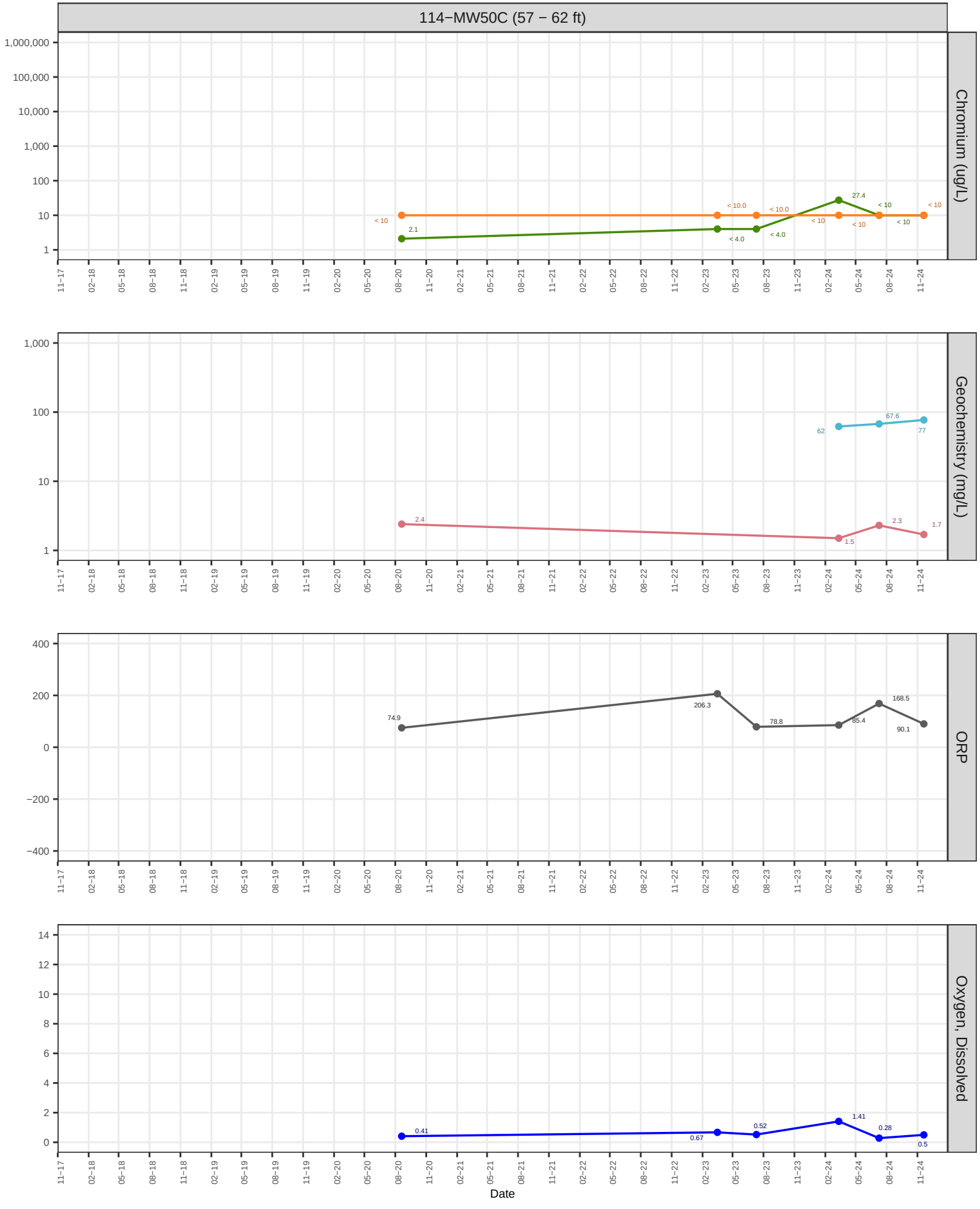

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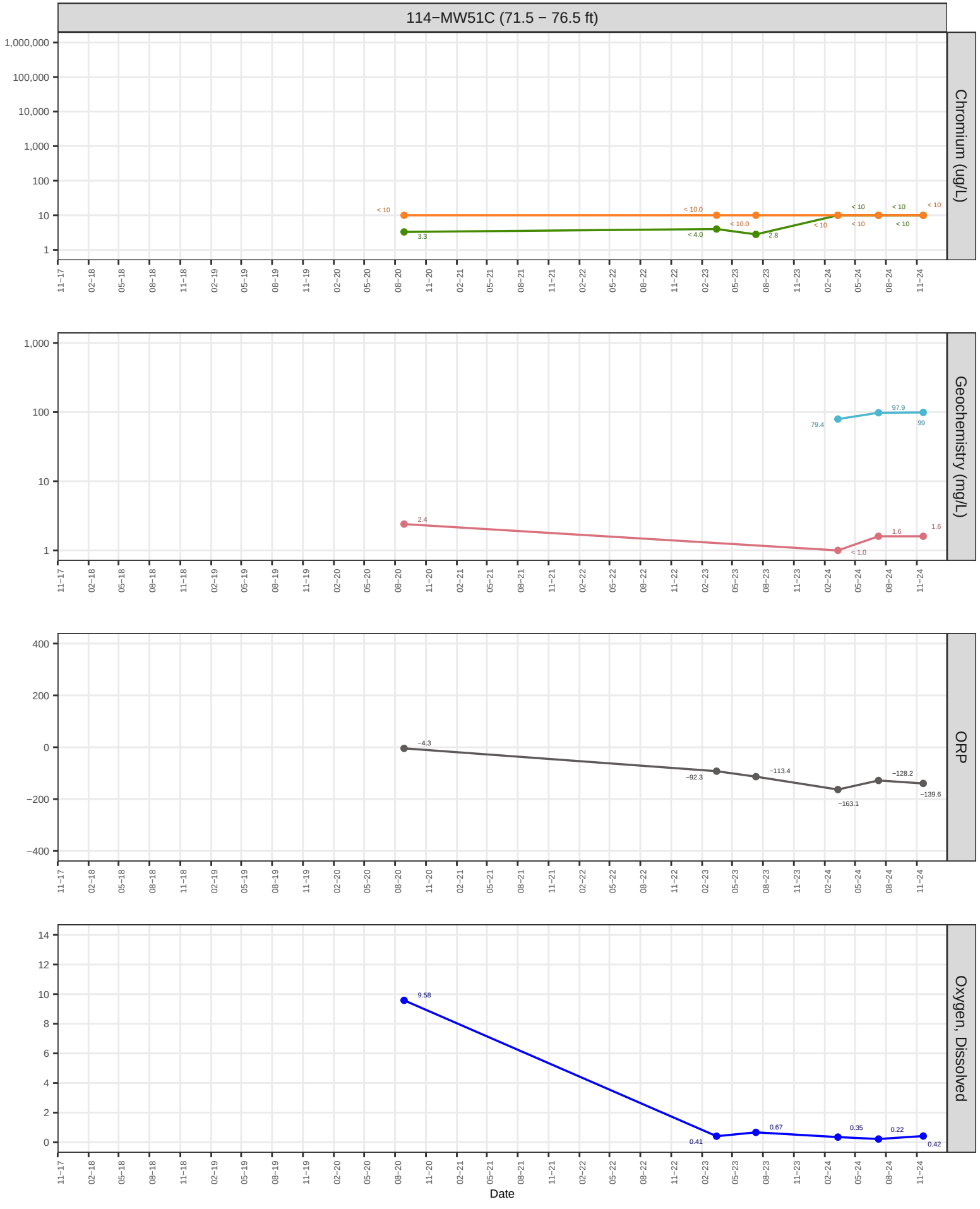

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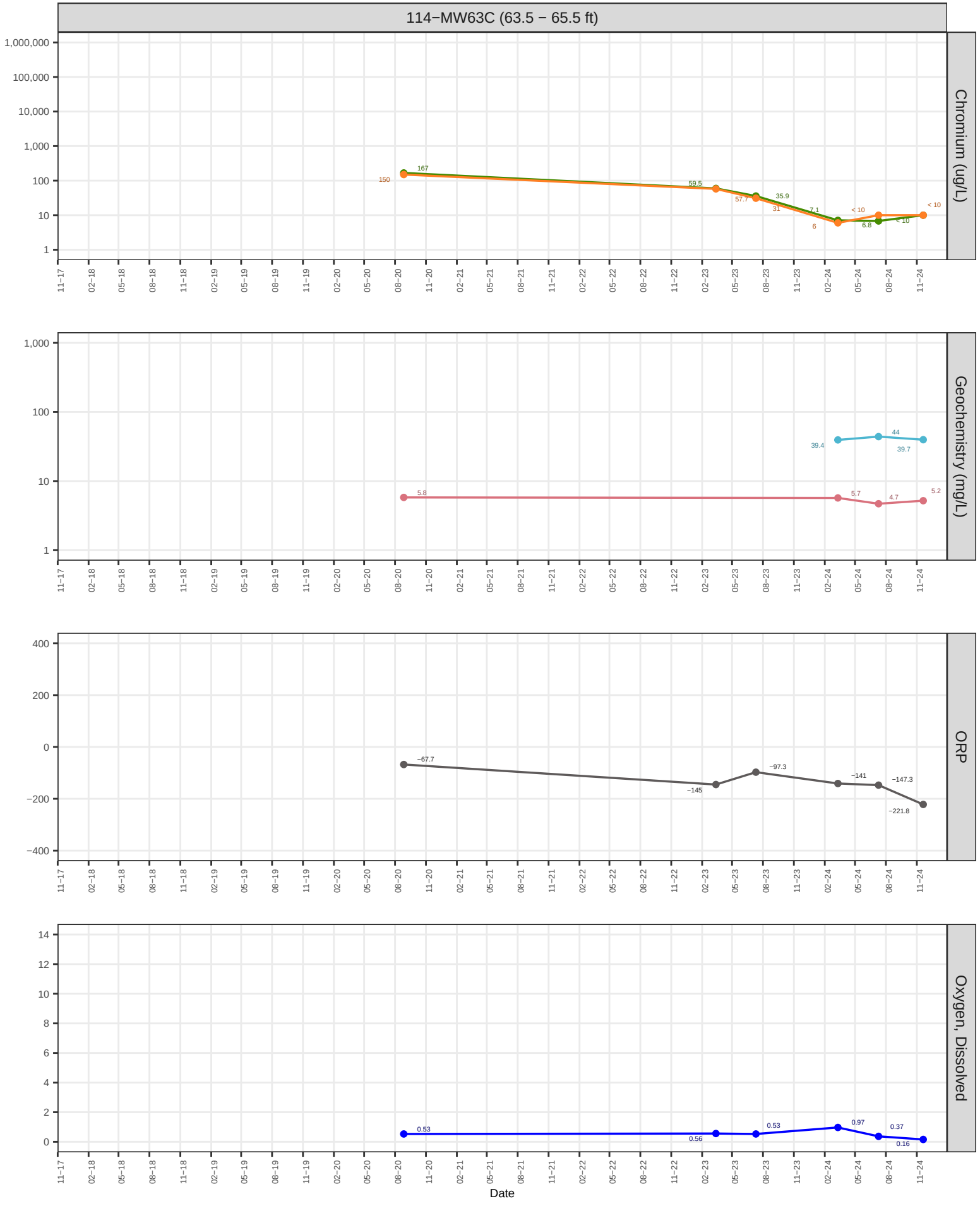

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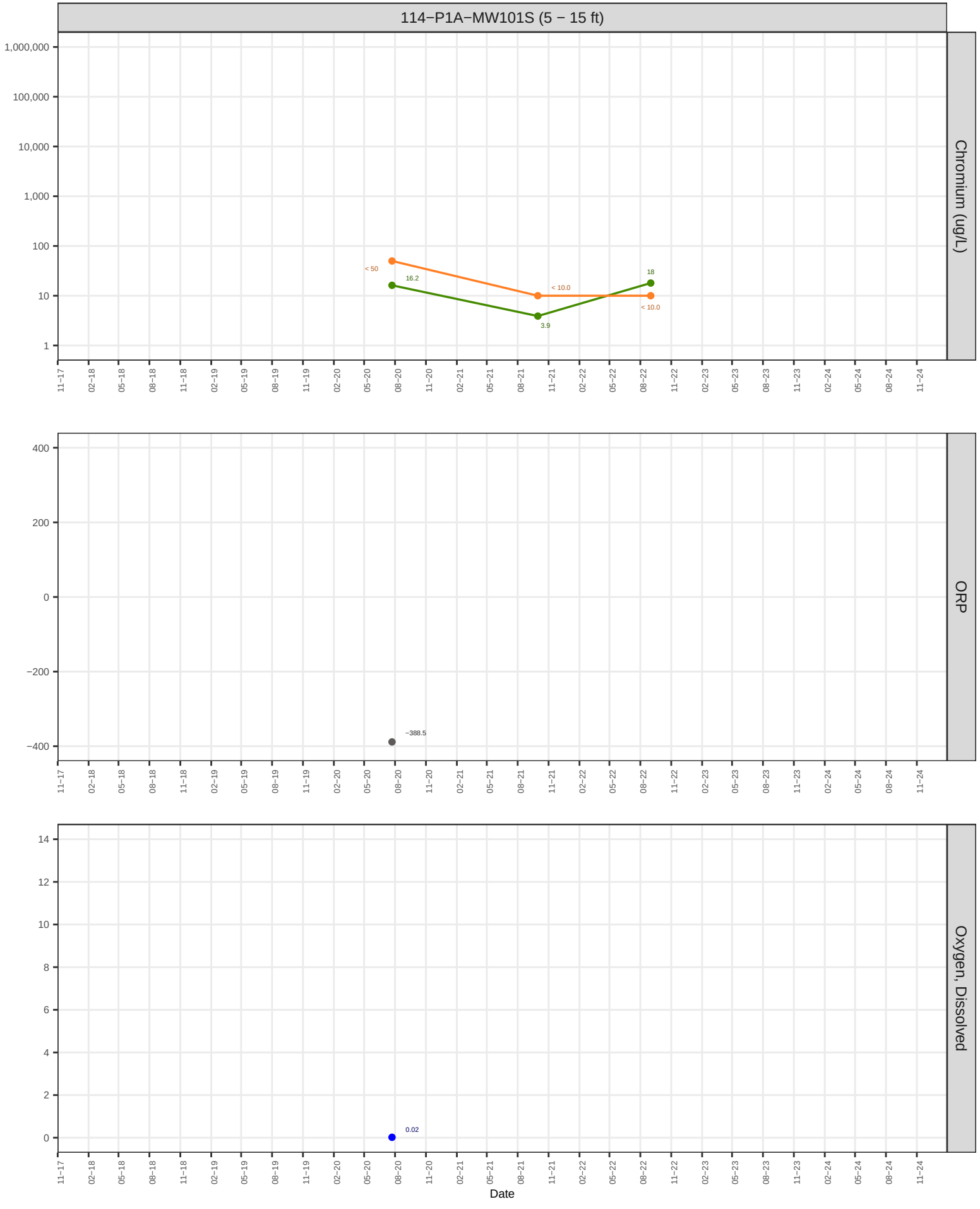

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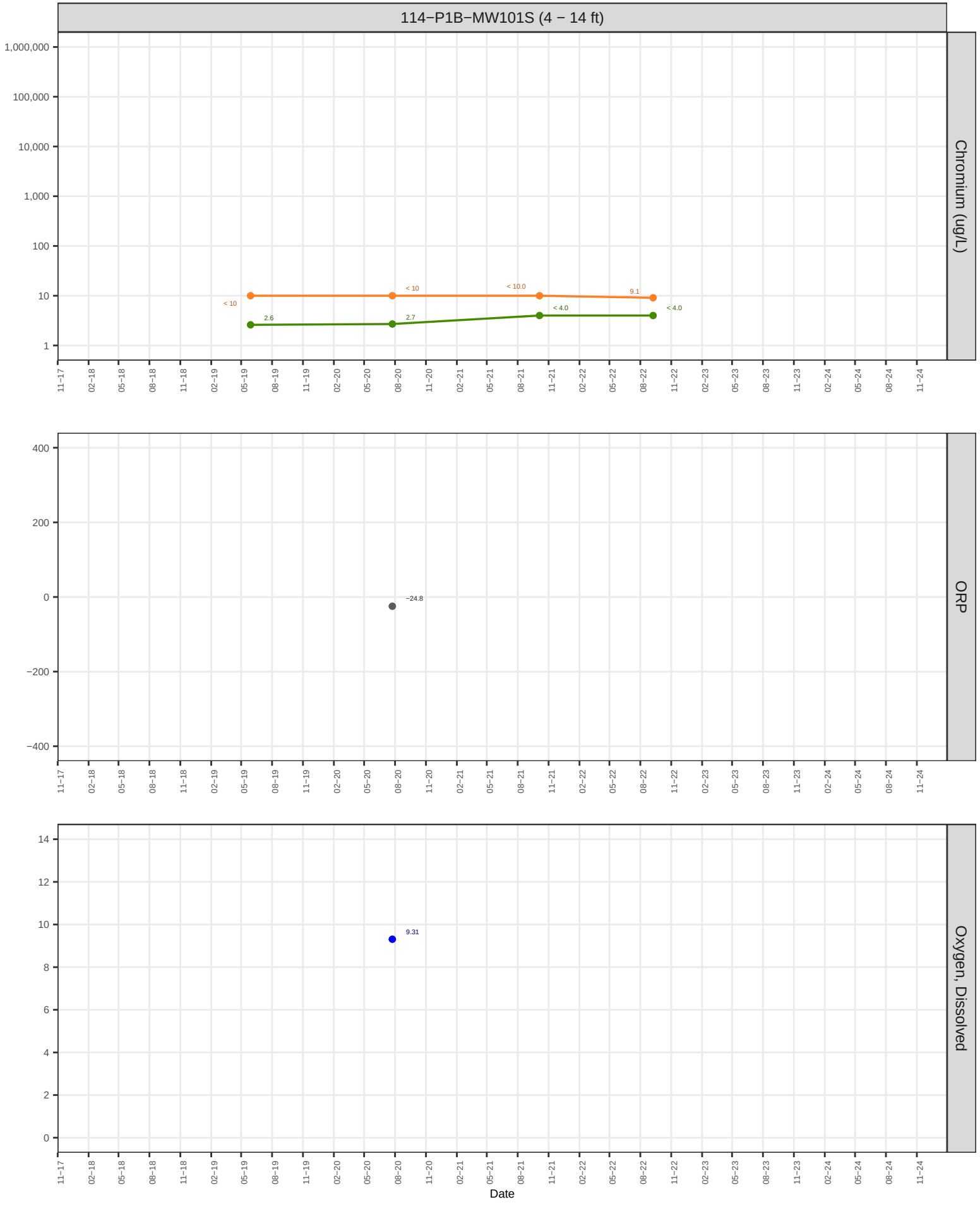

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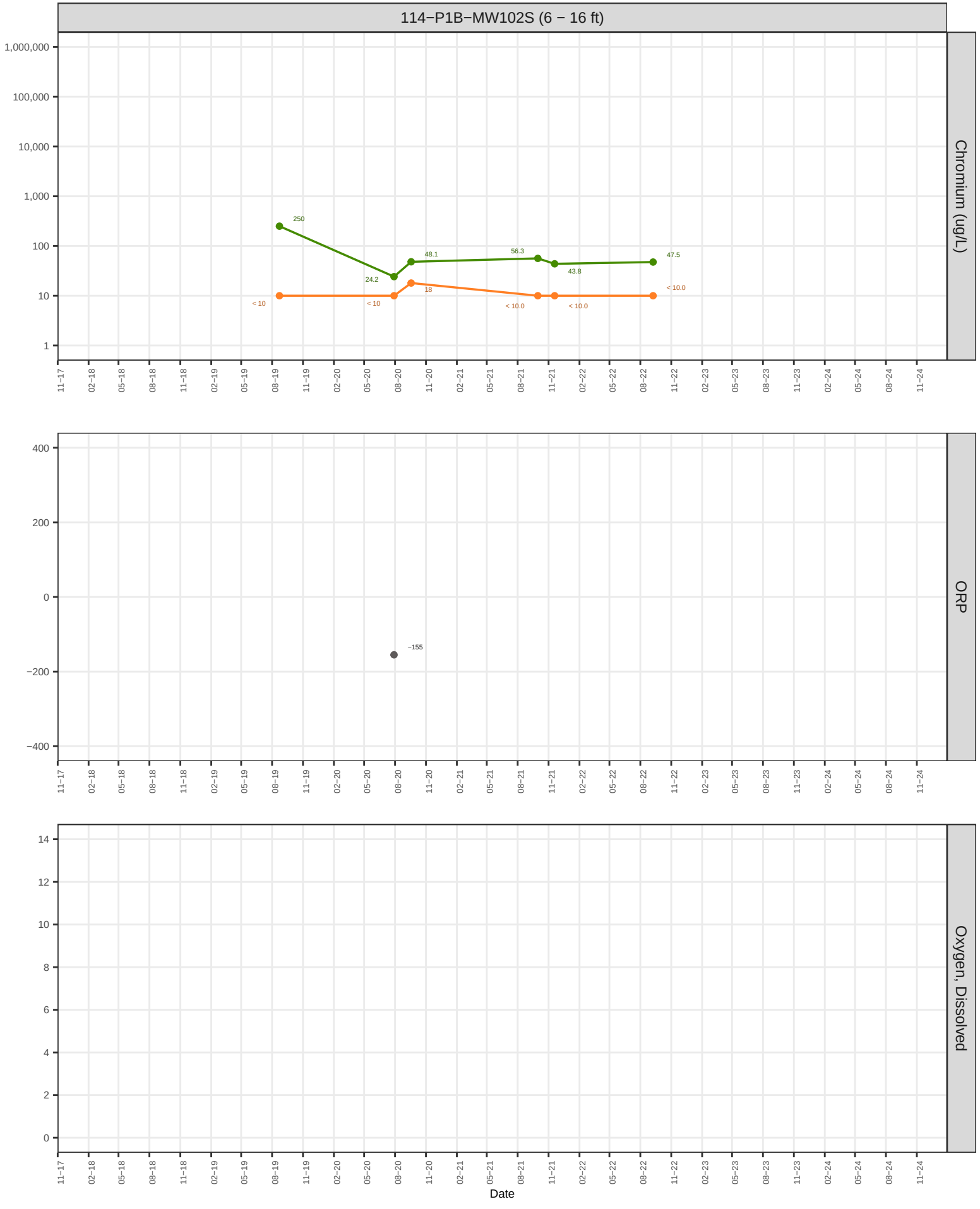

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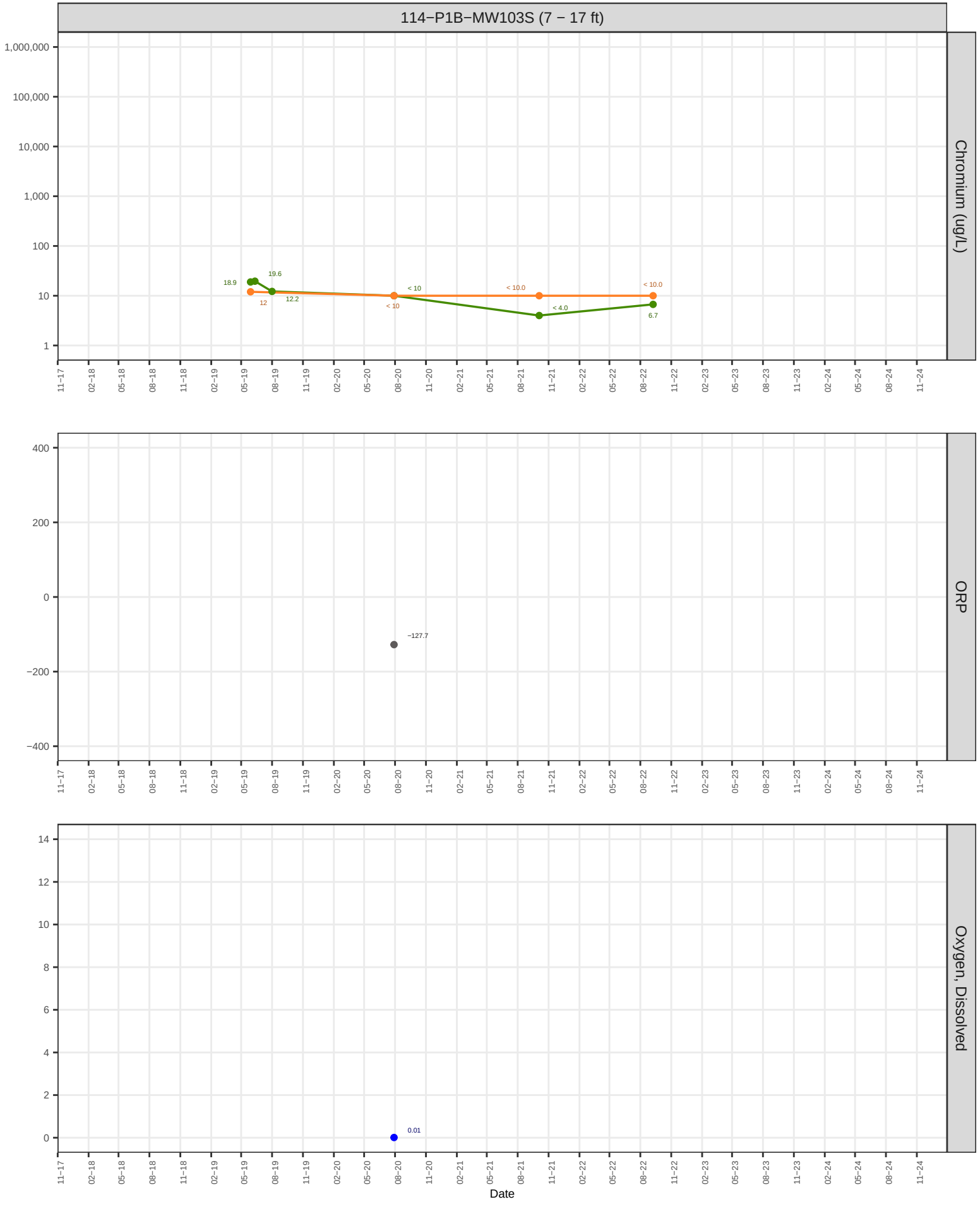

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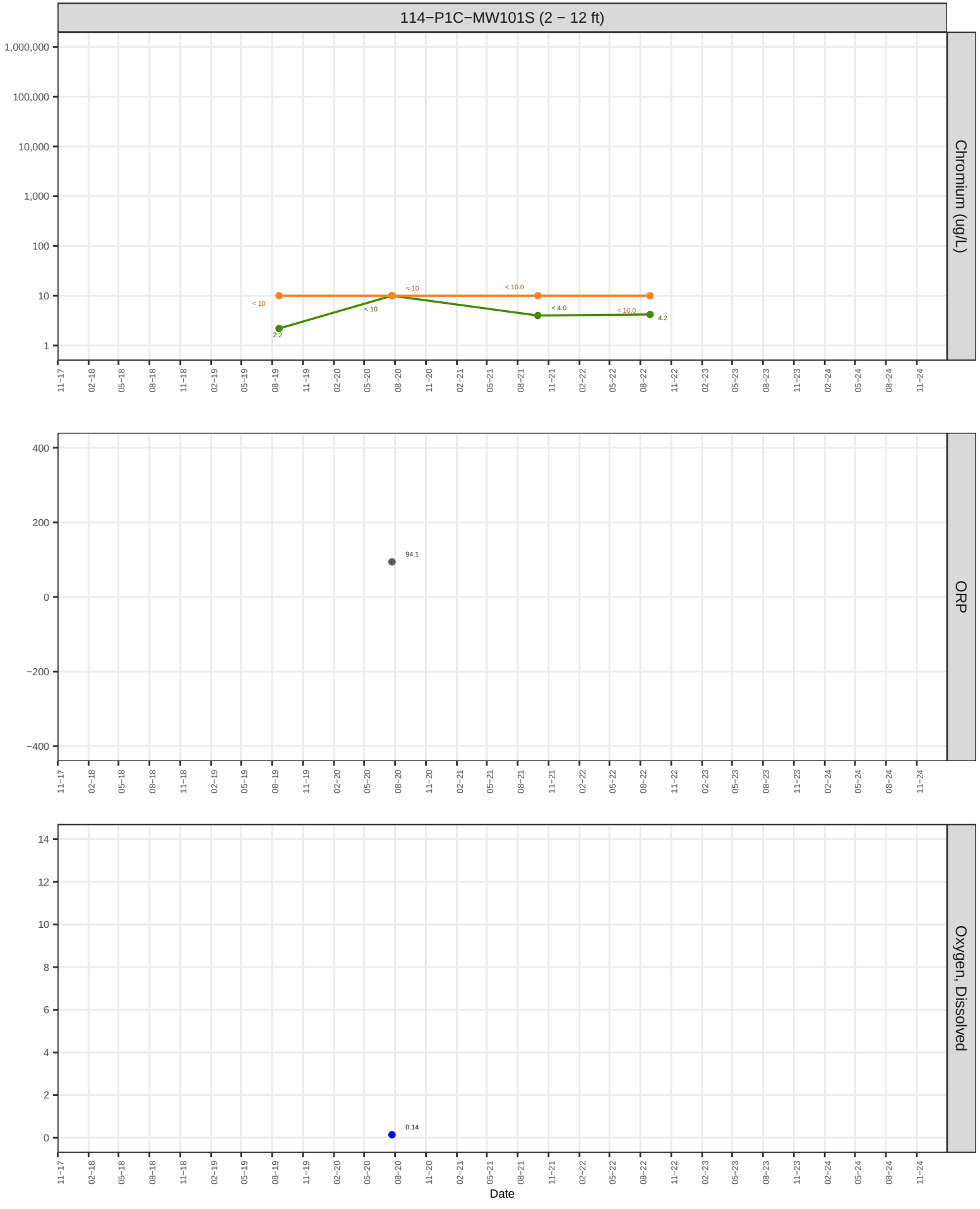

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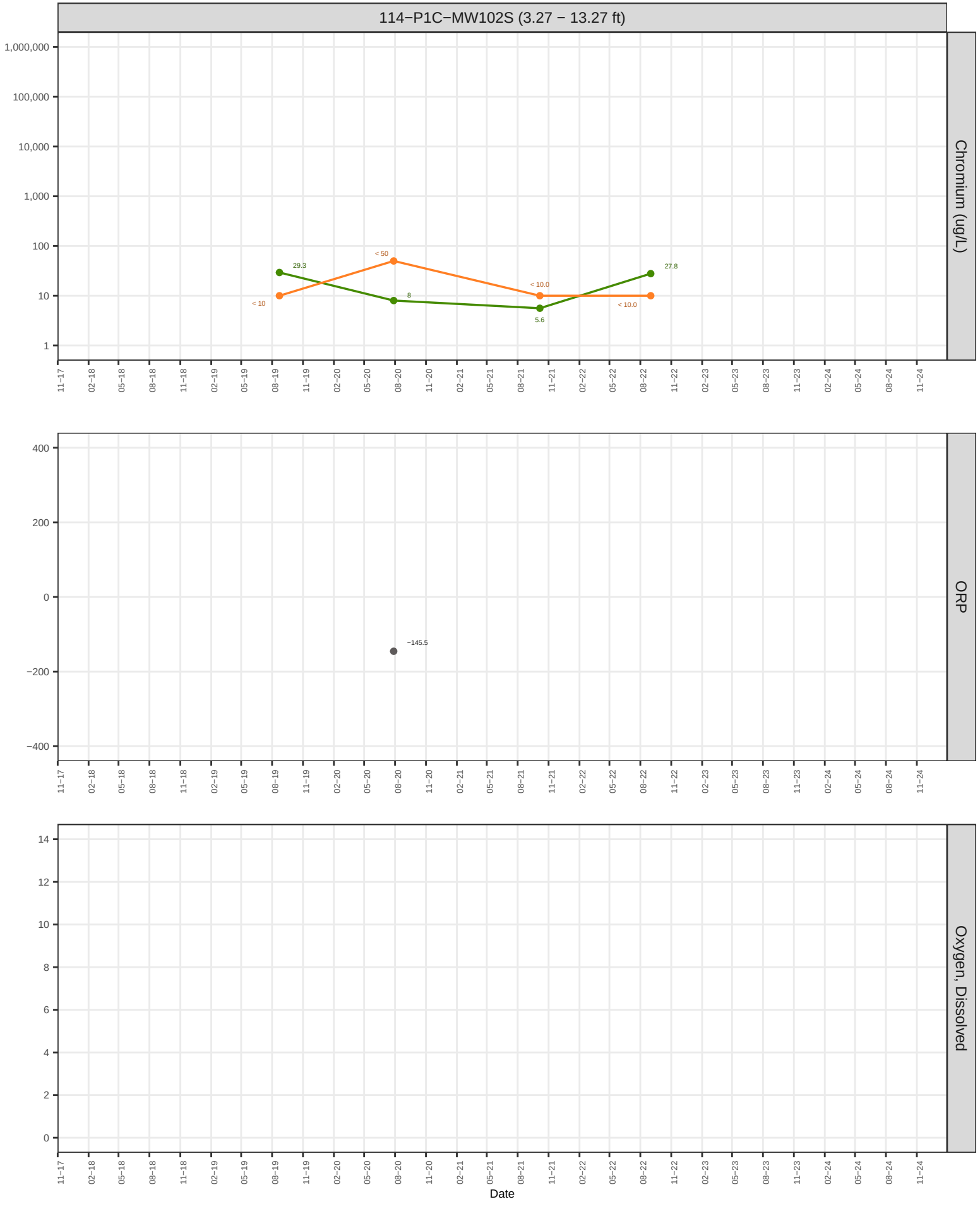

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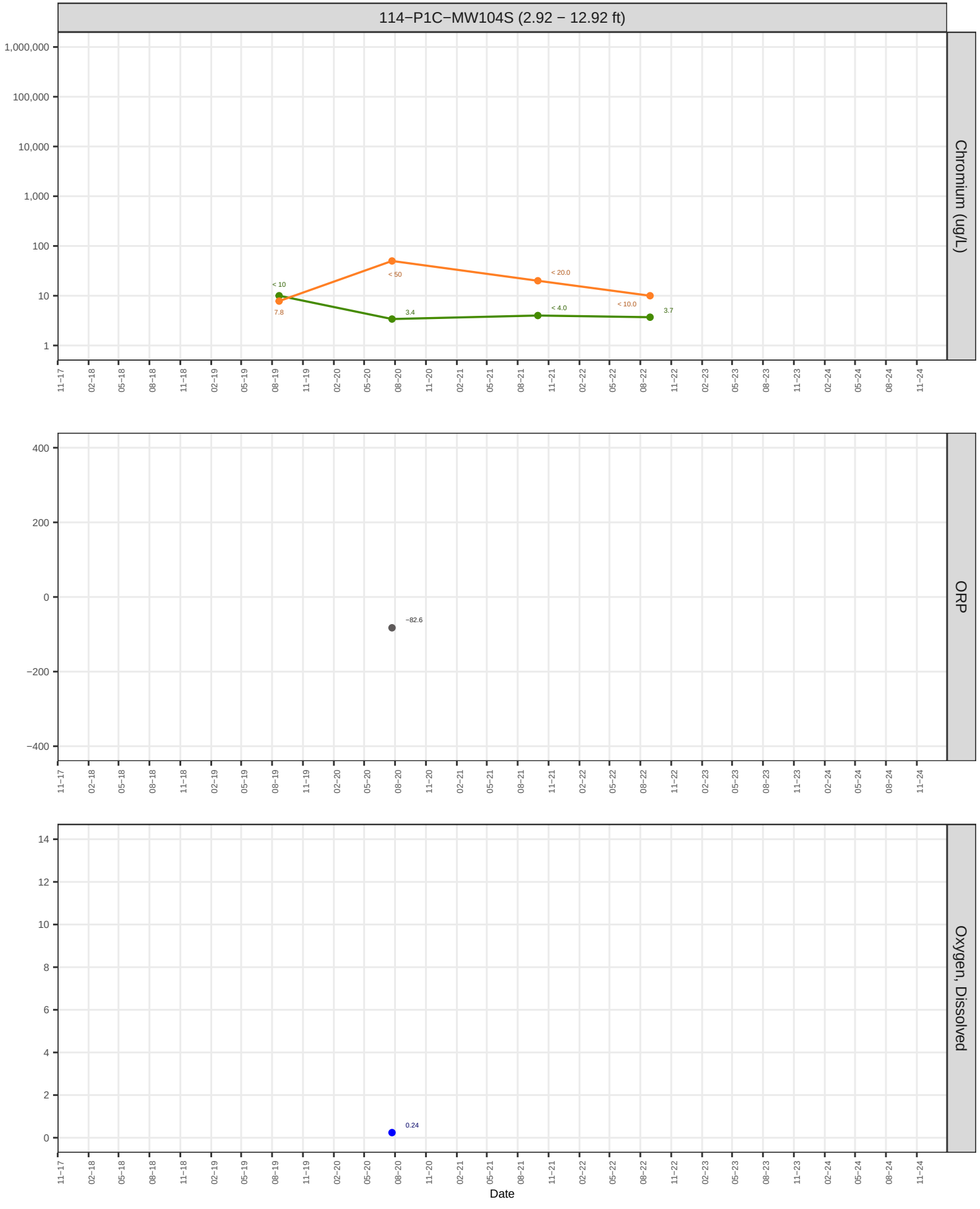

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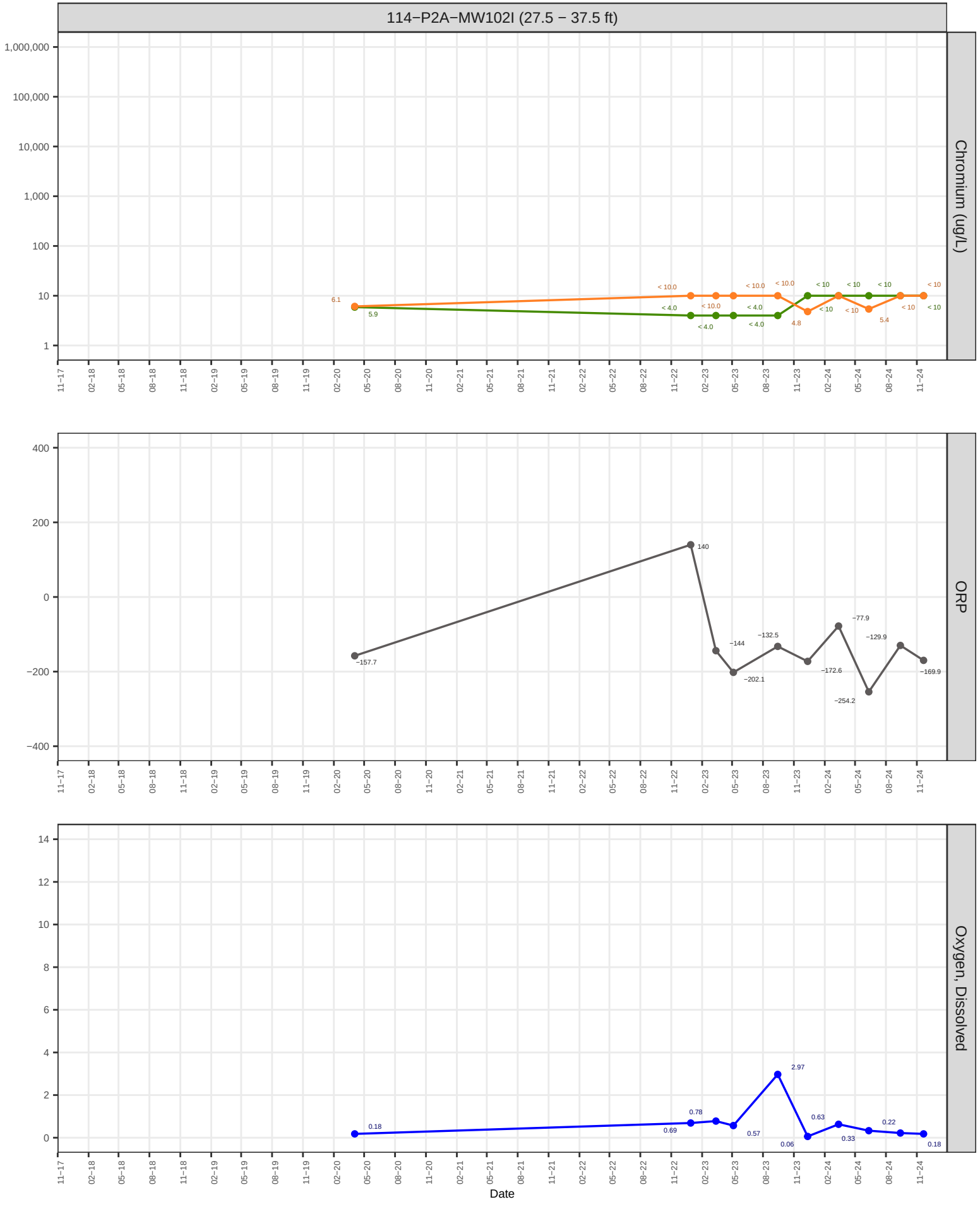

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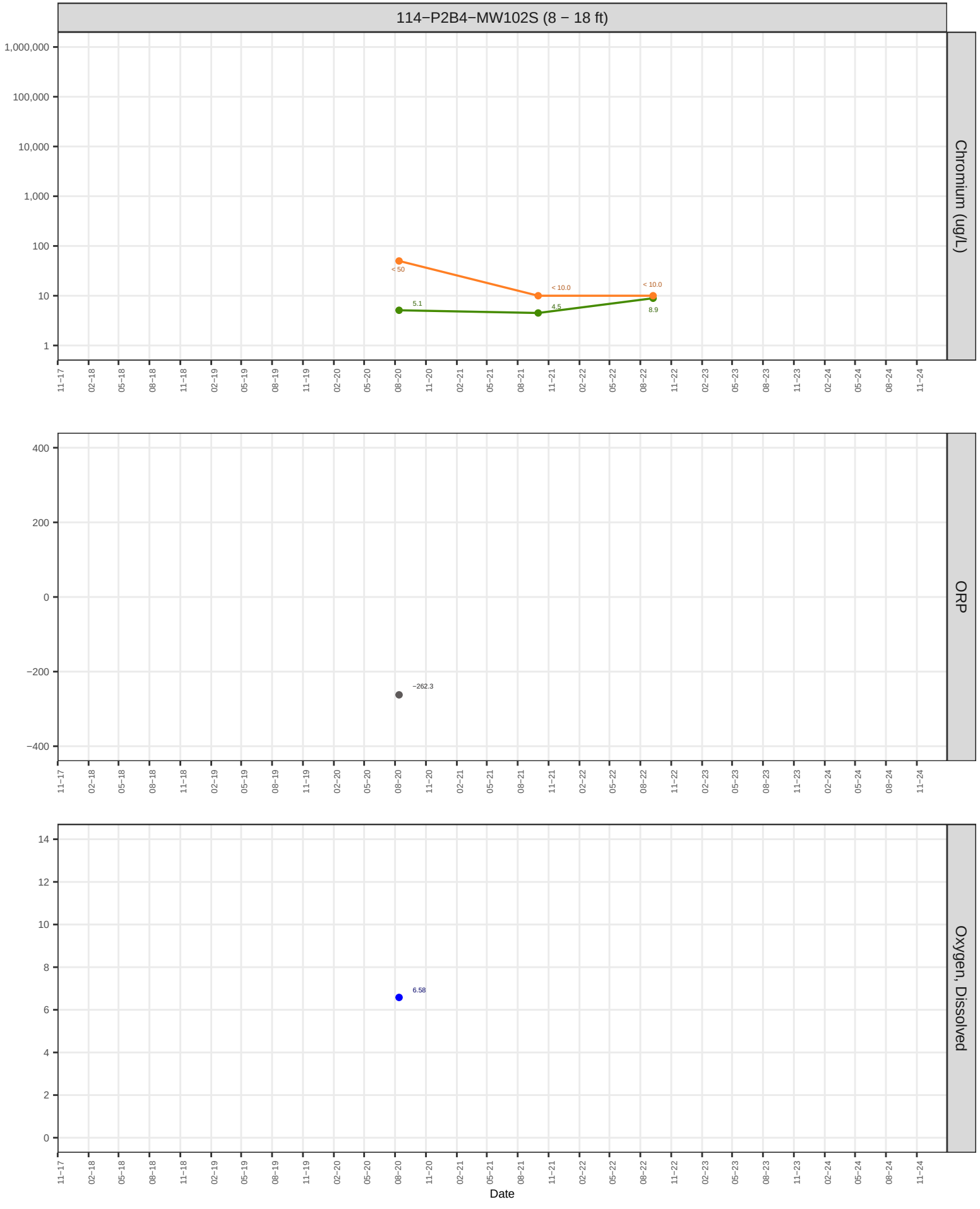

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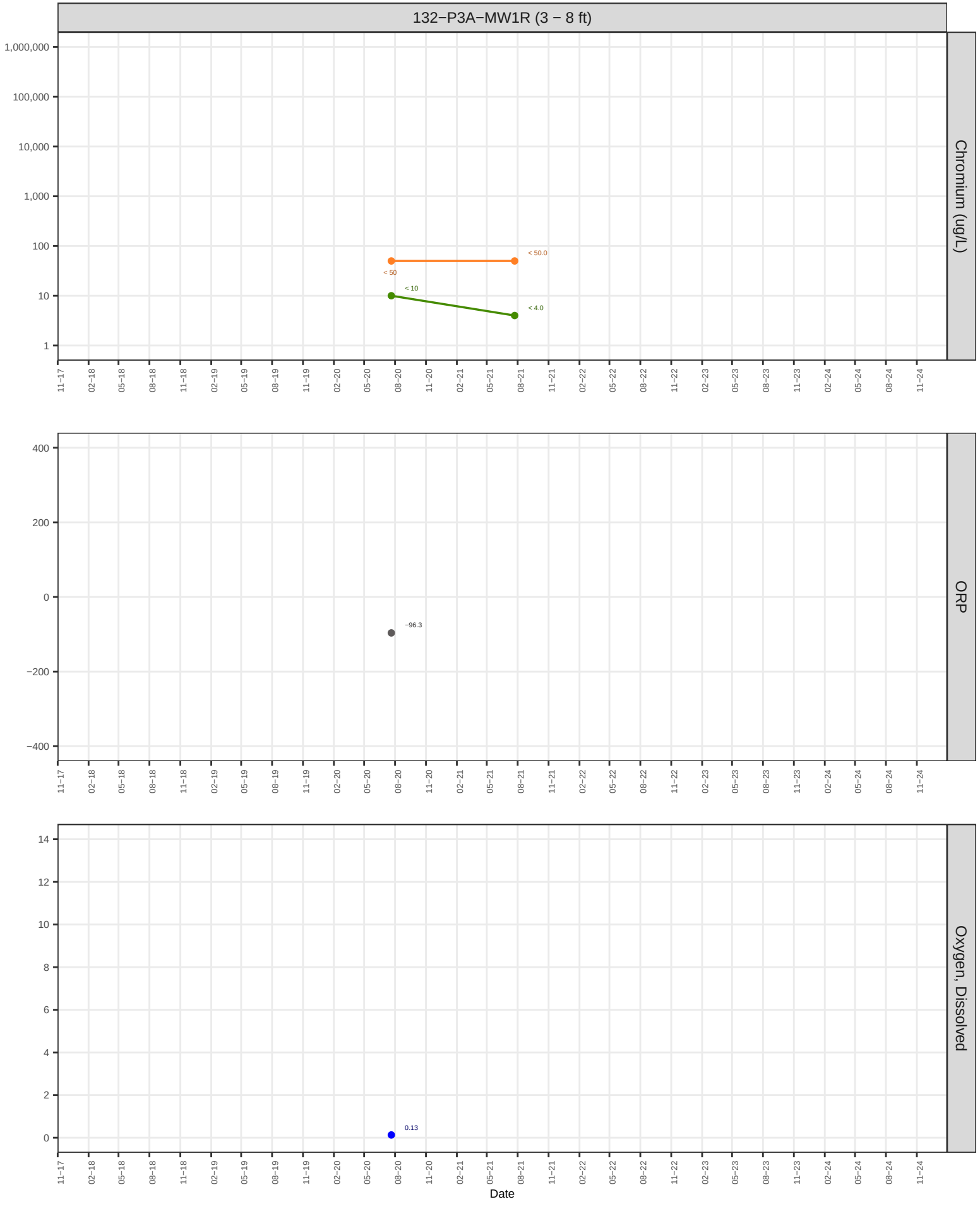

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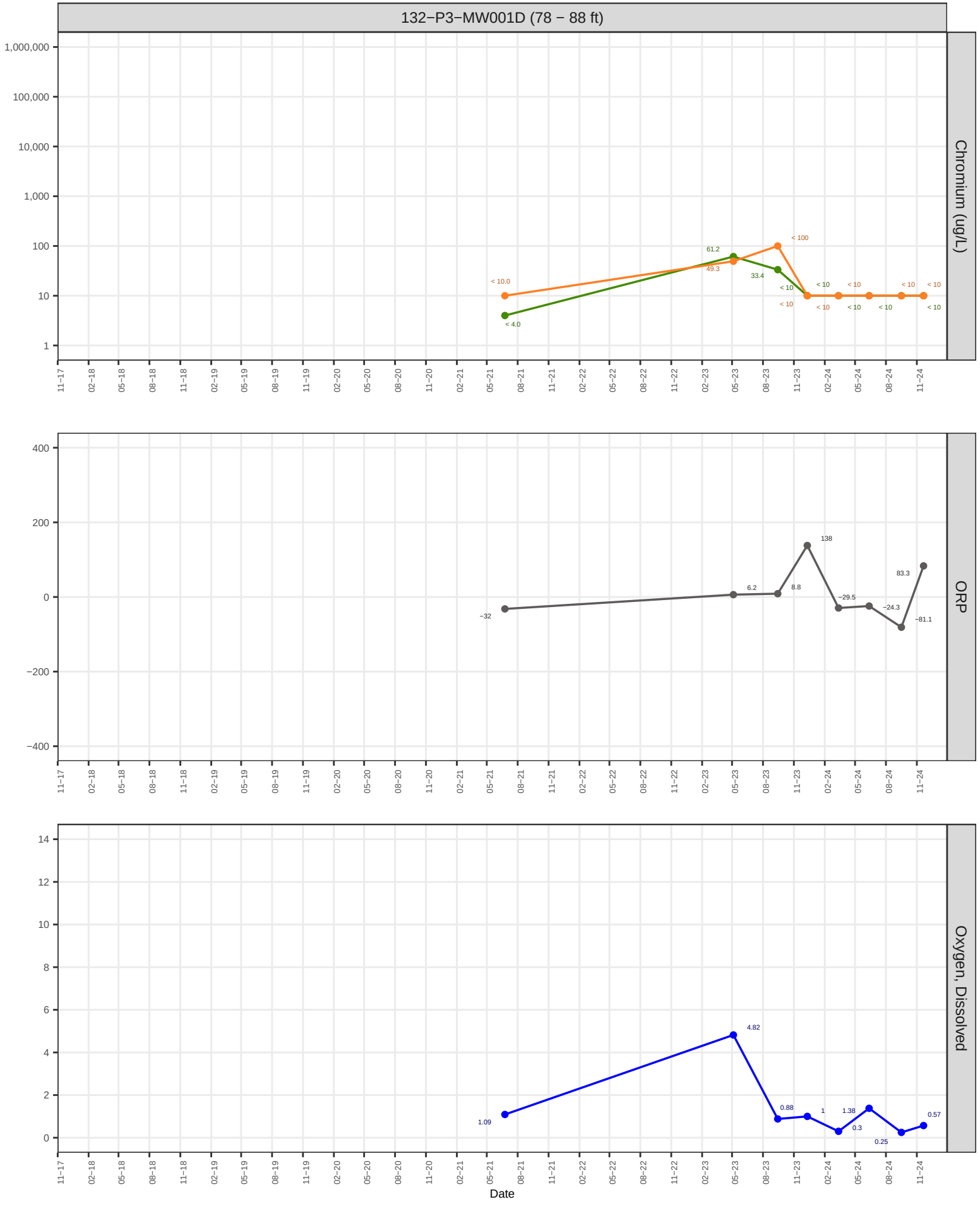

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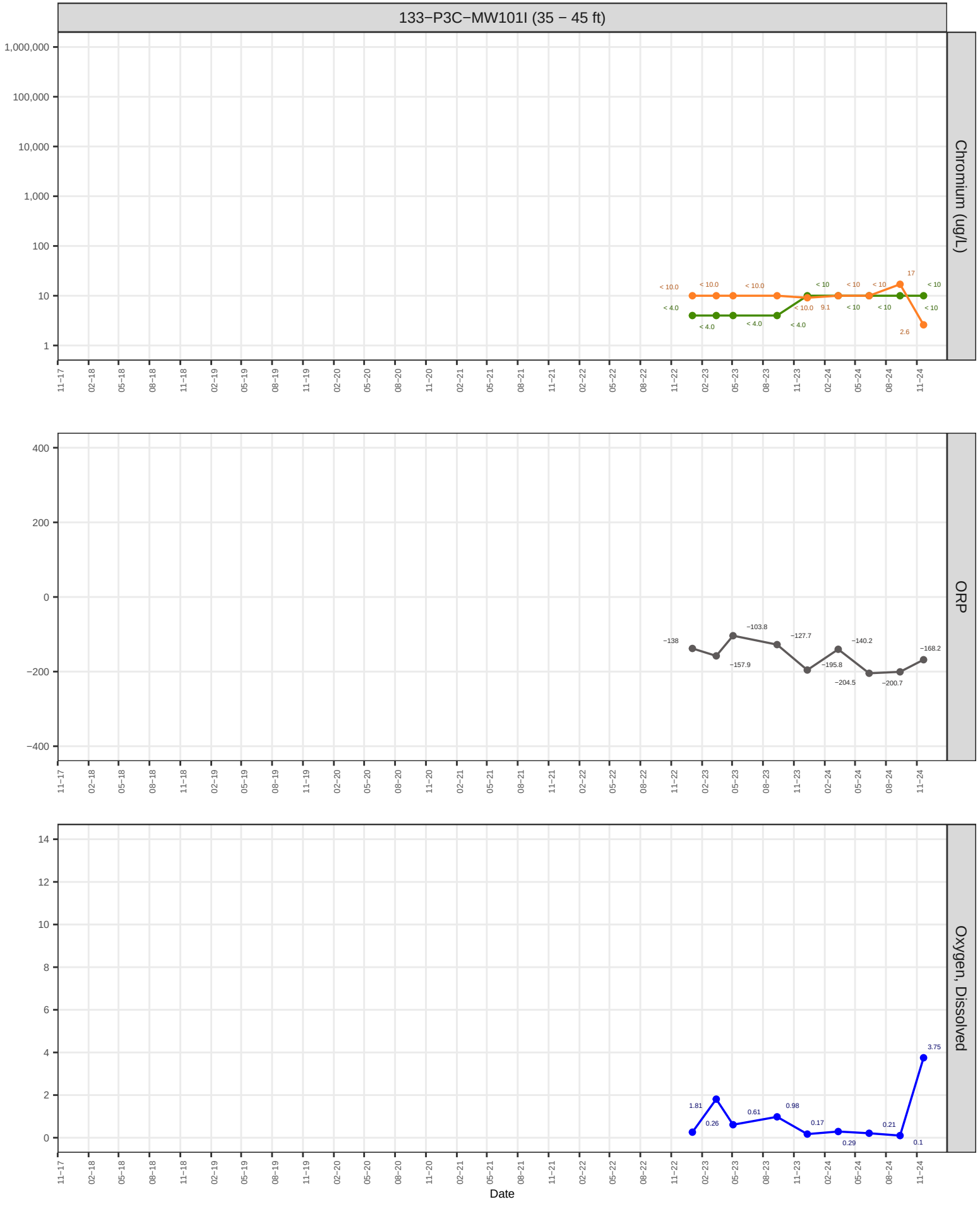

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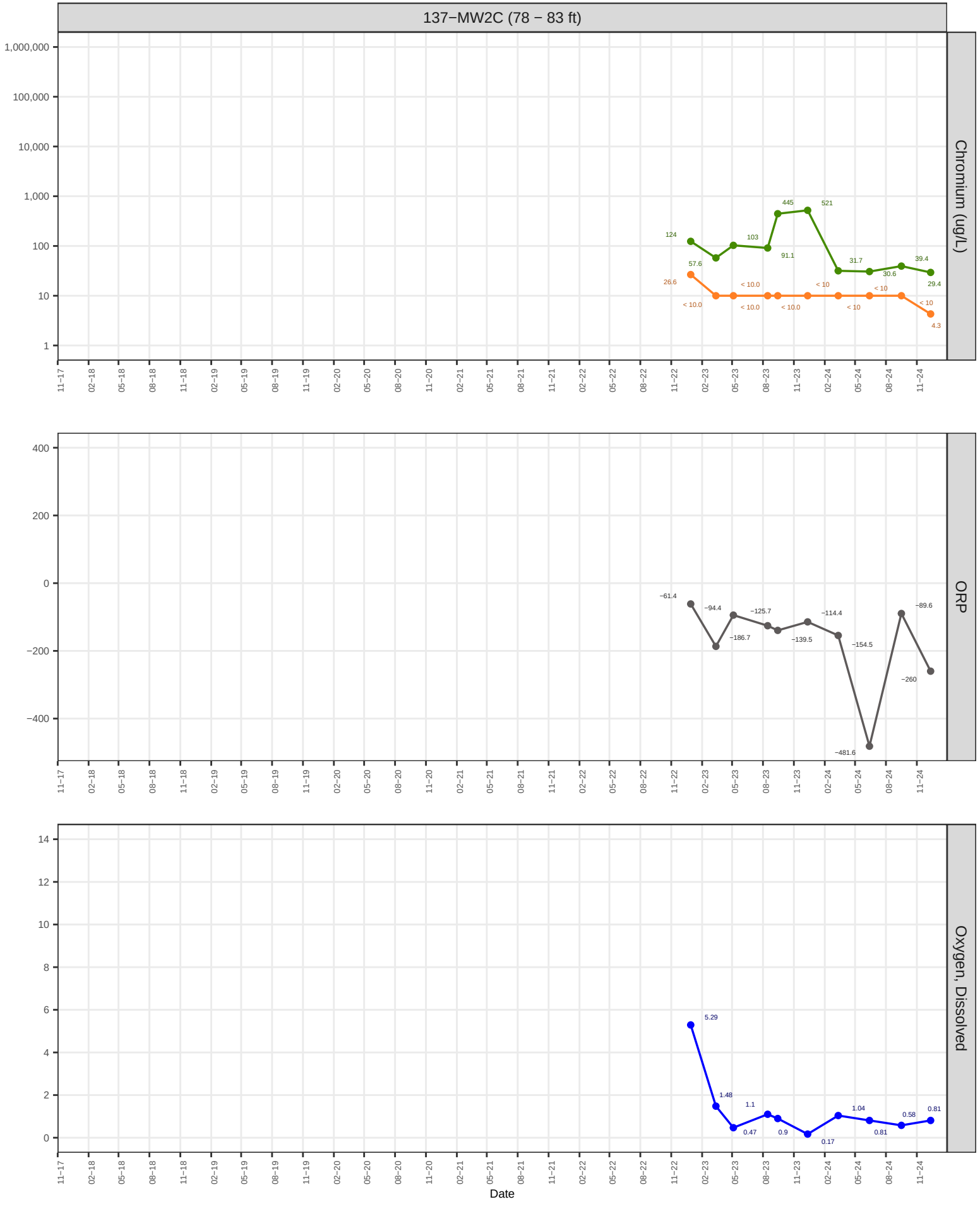

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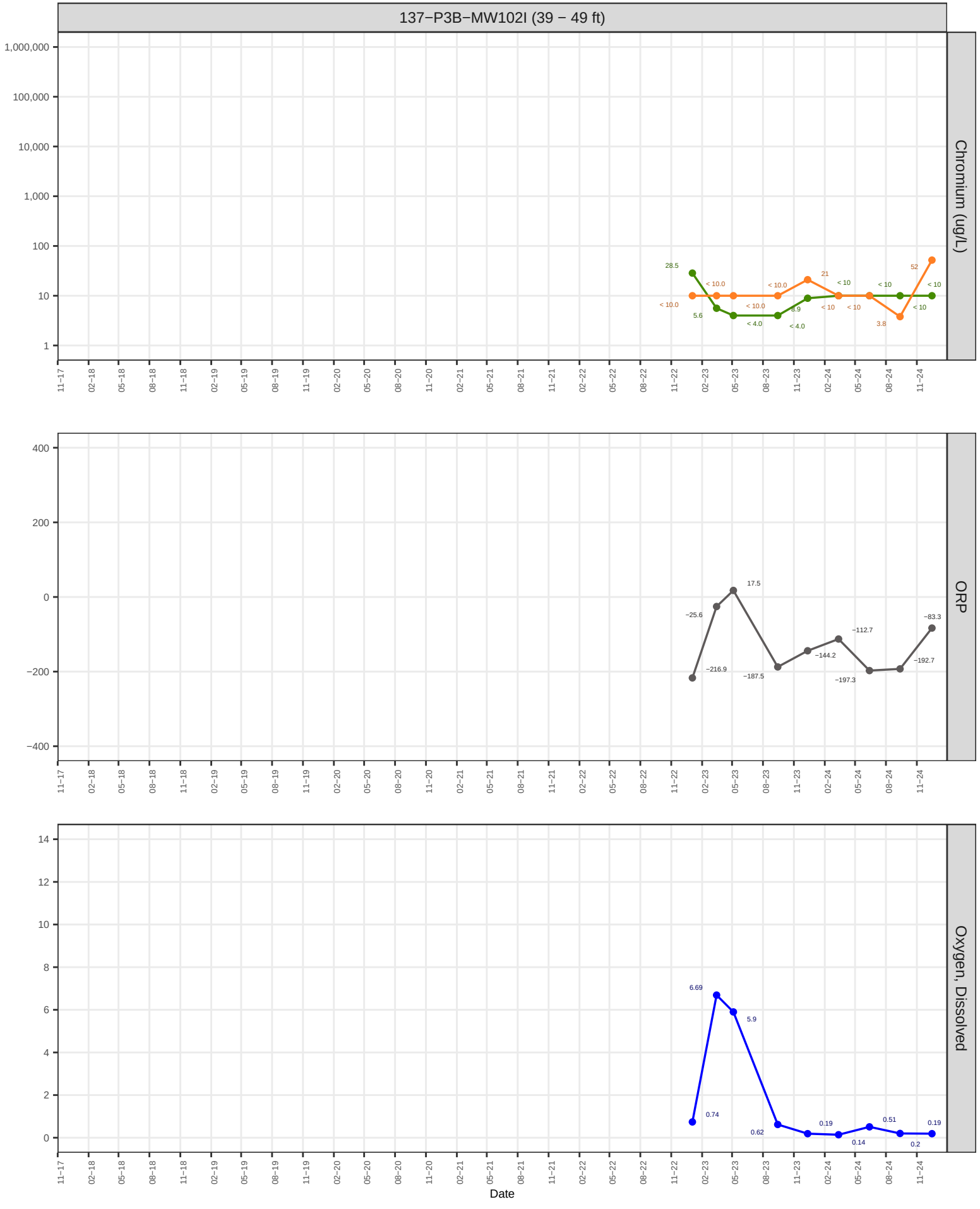

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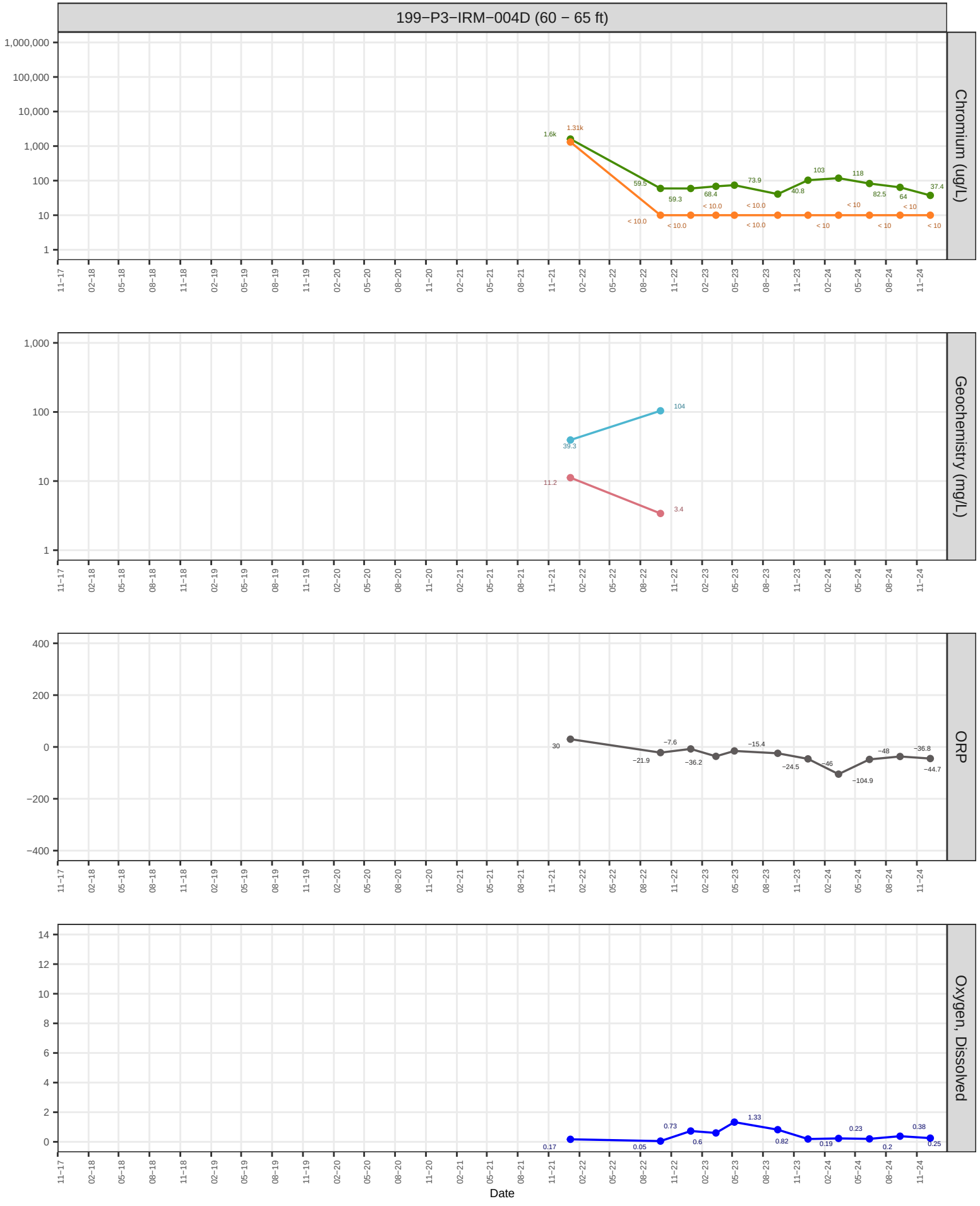

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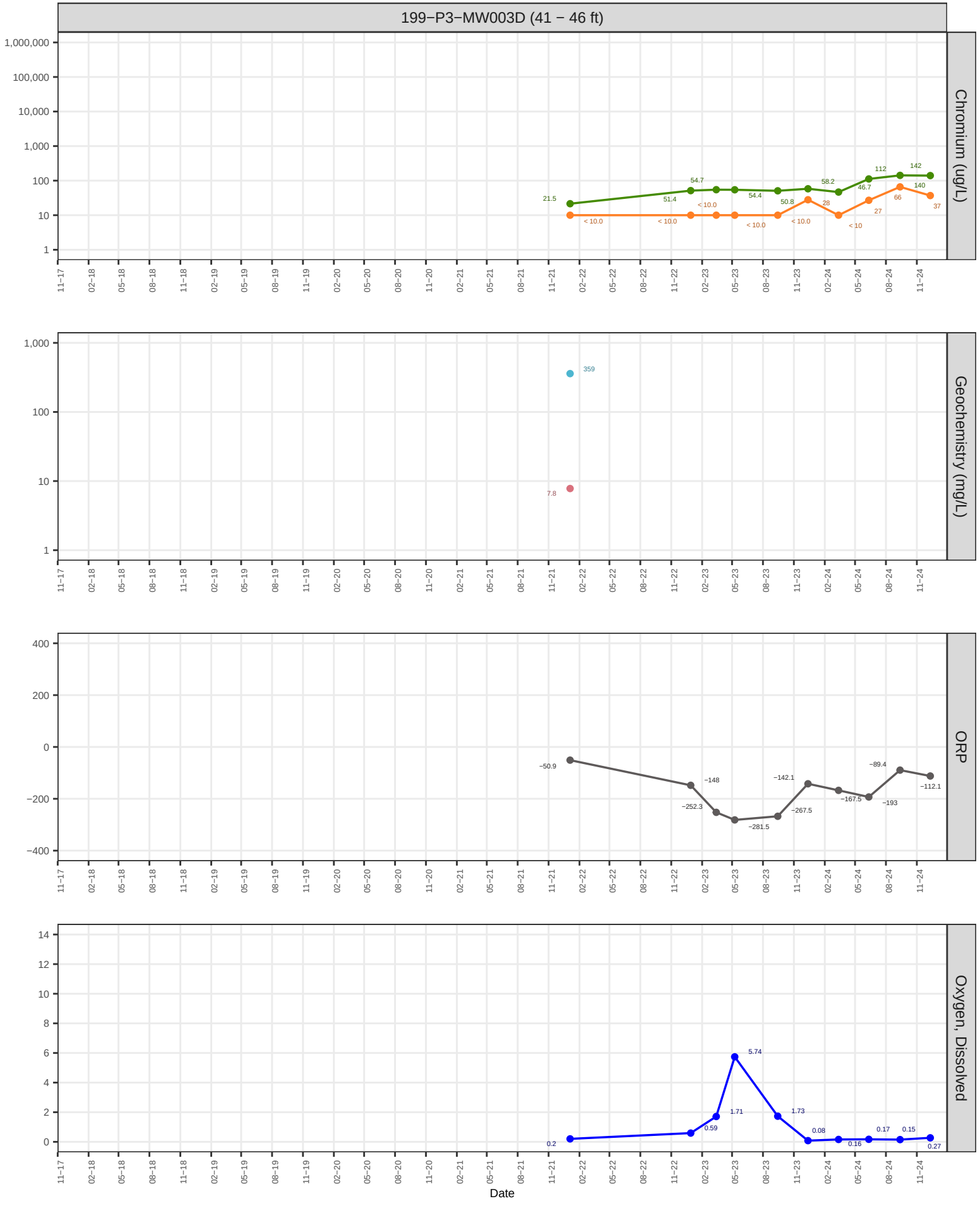

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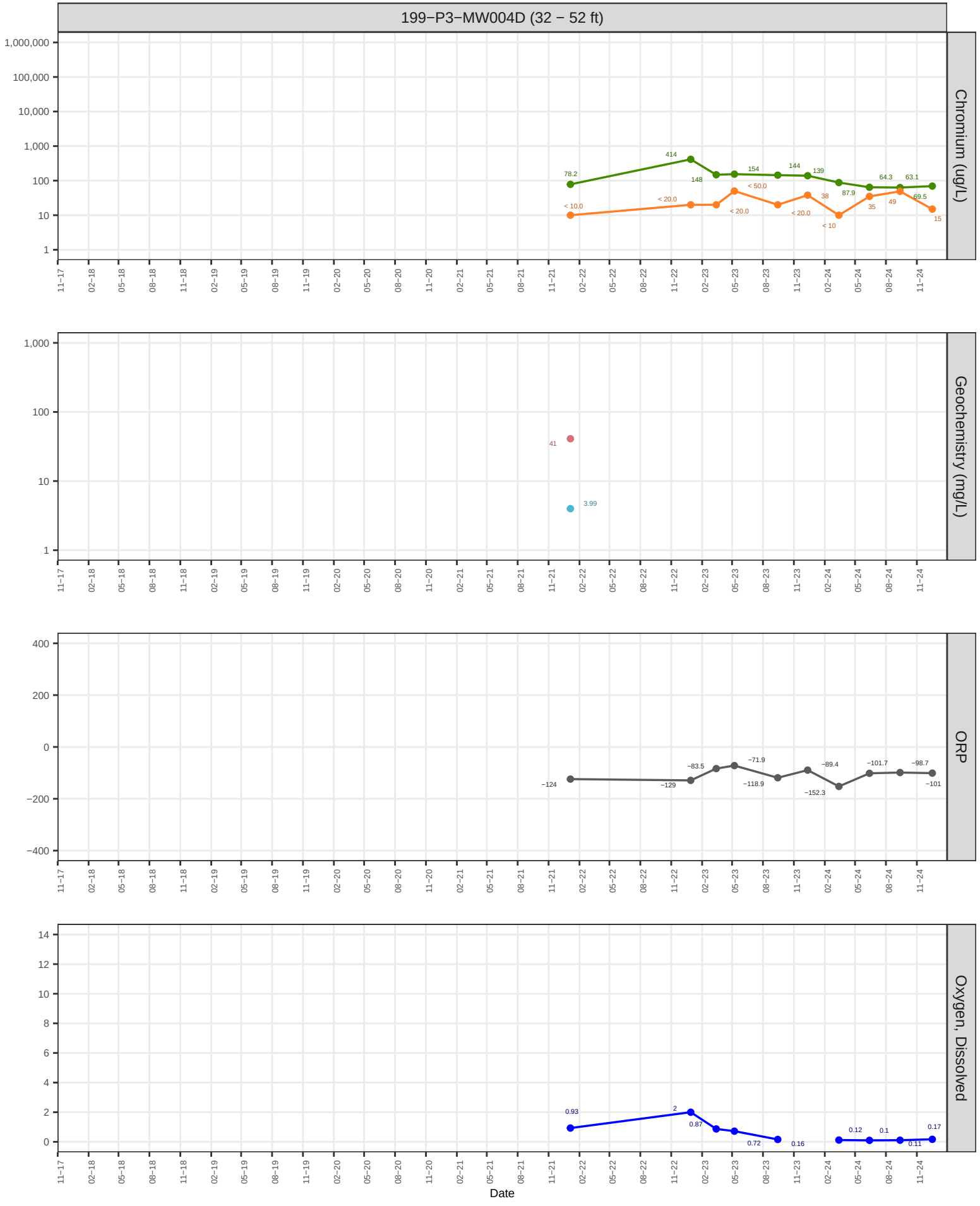

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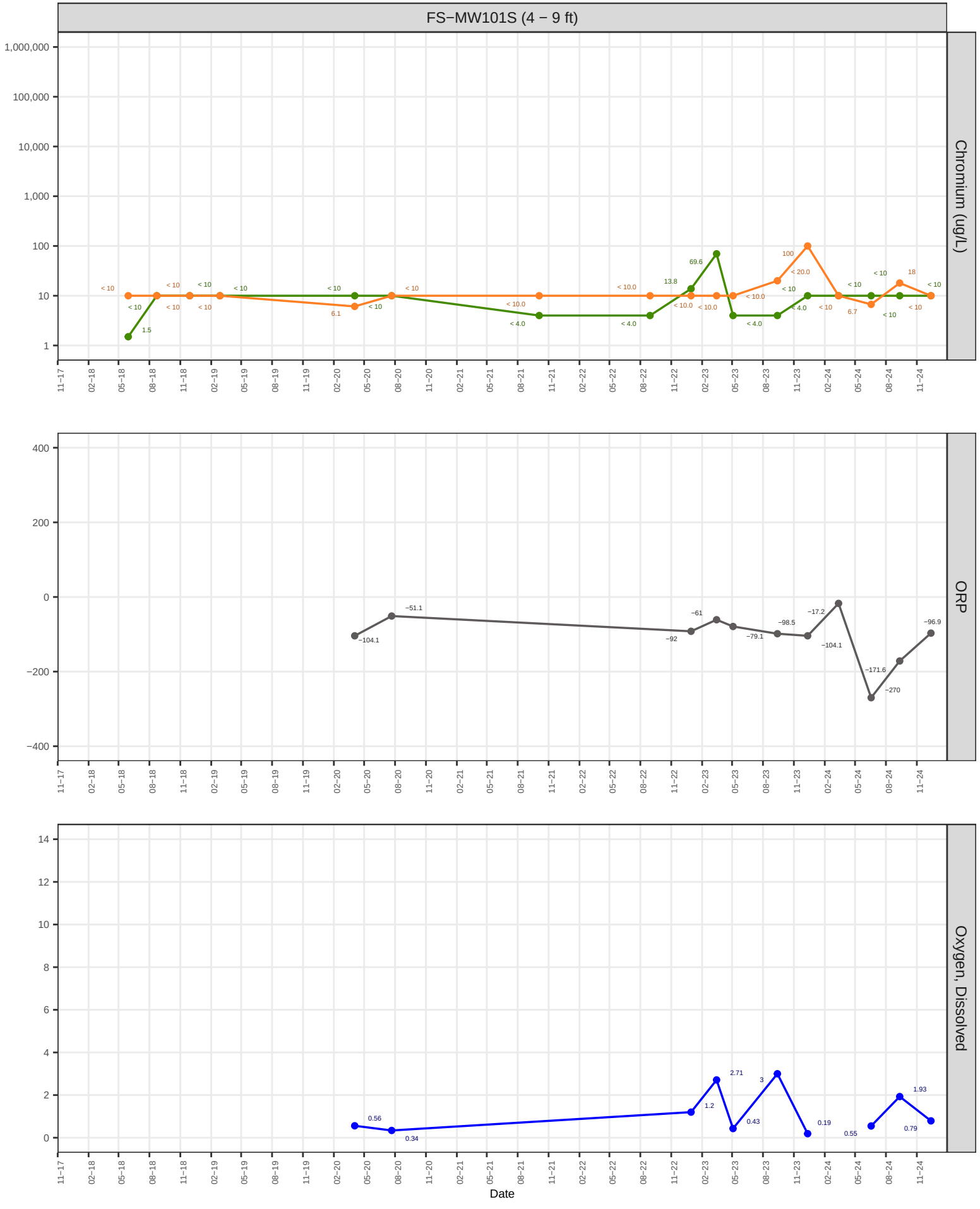

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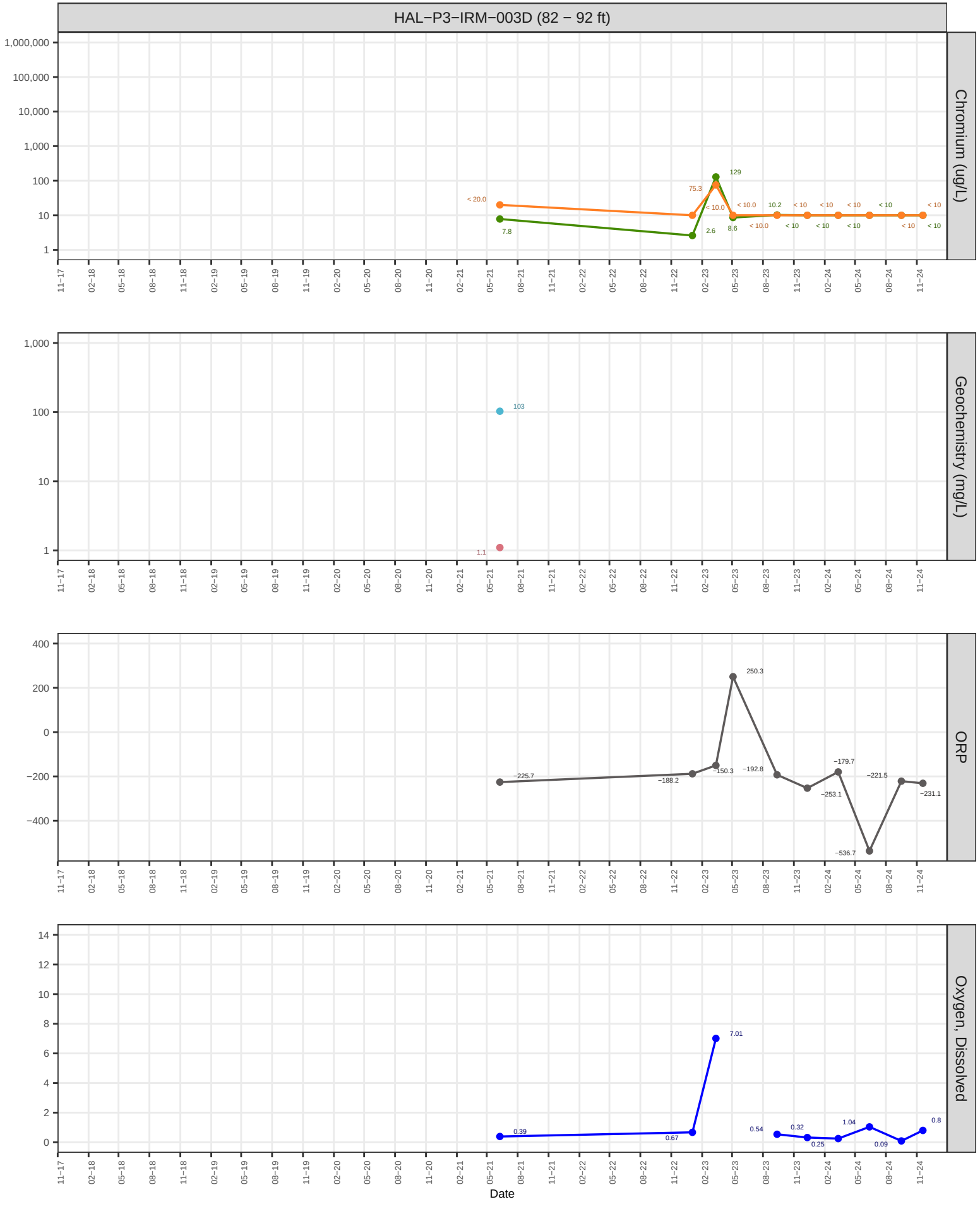

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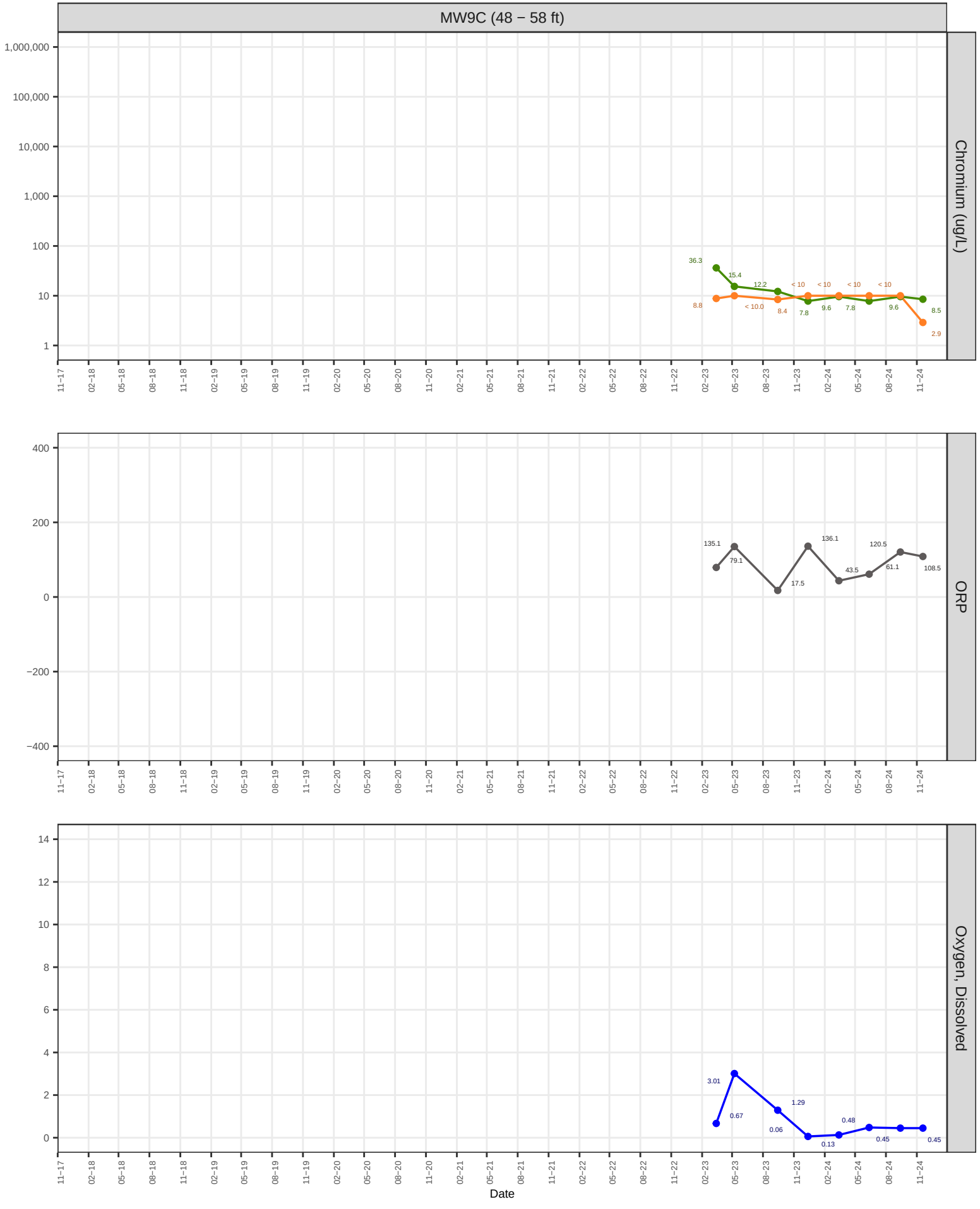

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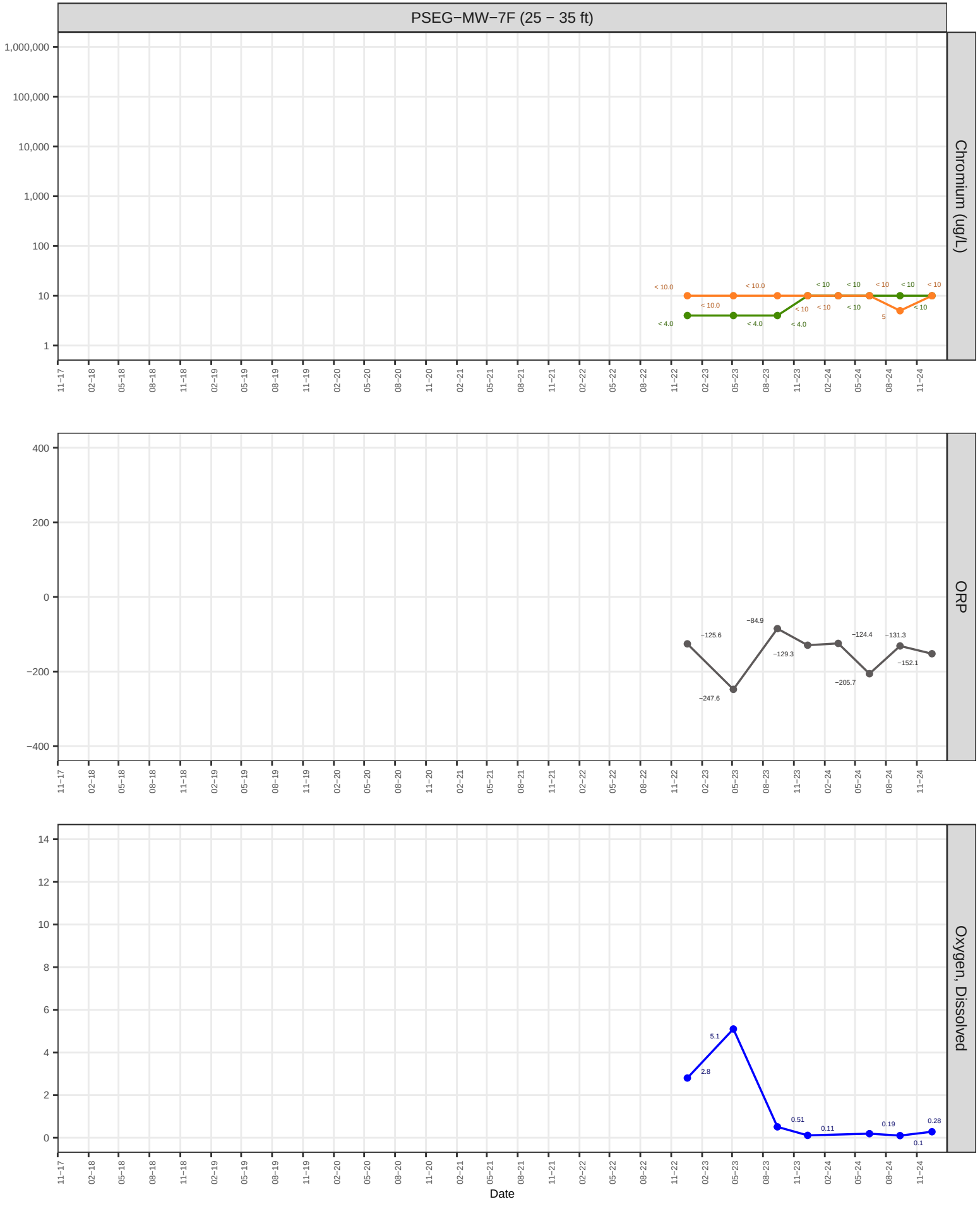

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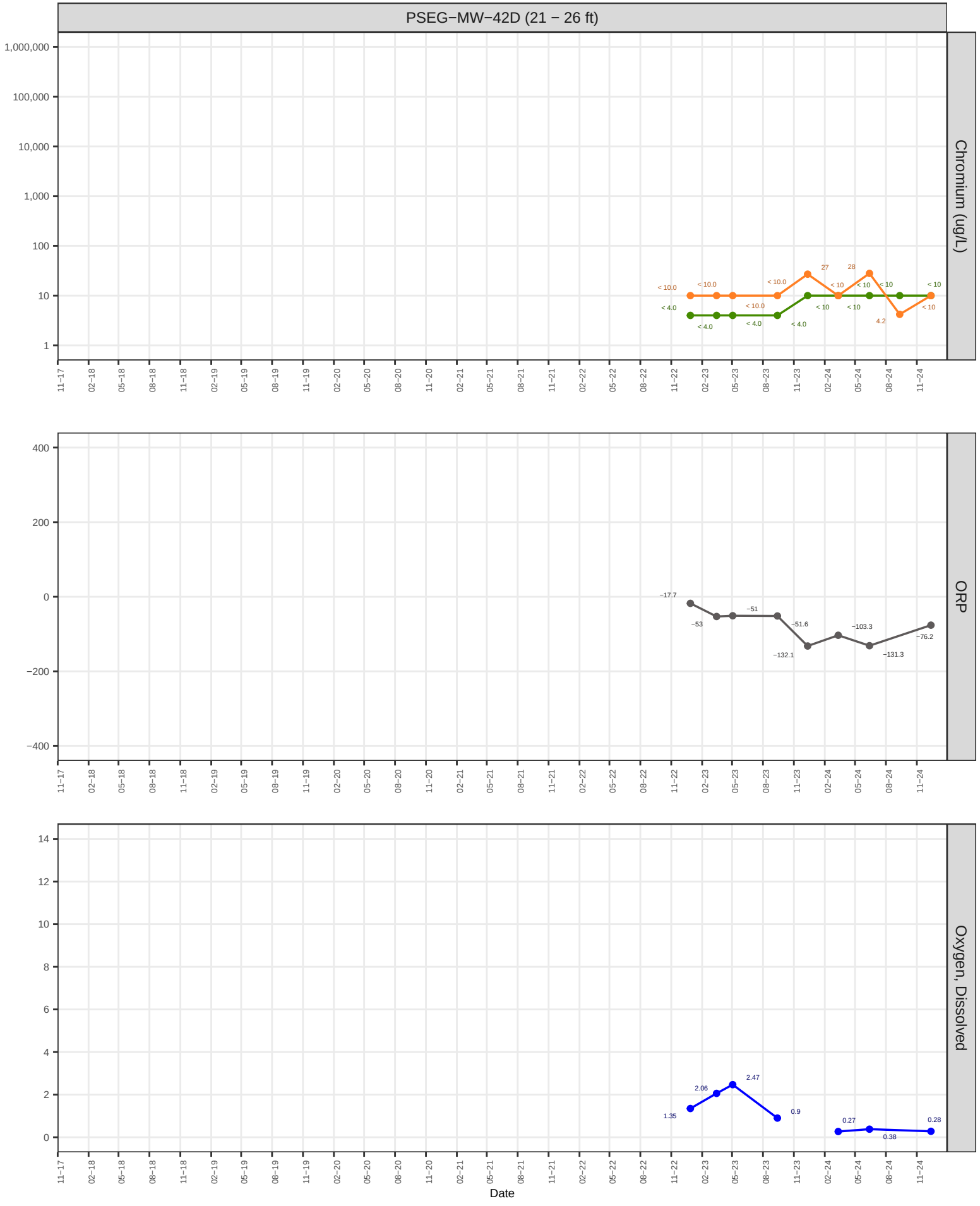

**Appendix B-7**
**Statistical Analysis of Groundwater Monitoring Data**
**Groundwater Remedial Action Progress Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| | | | | | | Linear Regression | | | | Mann-Kendall Statistics | | | | | Estimation of Timeframe to Achieve 1,000 µg/L | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Well ID [1] | Number of Observations [2] | Number of Non-Detects [3] | Years with Data [2] | Date Range [2] | Data Use Objective Met? [4] | OLS Slope | OLS Intercept | OLS R-squared | OLS p-value | Mann Kendall S | Mann Kendall Z | Mann Kendall tau | Mann Kendall p-value | Trend [5] | First-Order Decay Rate ($day^{-1}$) | First-Order Decay Rate ($year^{-1}$) | Most Recent Concentration (µg/L) | Estimated Time to Reach 1,000 µg/L (years) |
| 114-MC-PZ103 | 10 | 0 | 3 | 8/18/22 - 11/20/24 | Yes | -0.001327141 | 19865.33765 | 0.784 | 0.0006 | -35 | -3.041052449 | -0.777777778 | 0.002357528 | Decreasing | -0.009 | -3.285 | 3800 | 0.4 |
| 114-MW22BR | 6 | 1 | 2 | 7/13/23 - 10/8/24 | Yes | 0.169671262 | 19587.54772 | 0.621 | 0.0627 | 9 | 1.502938299 | 0.6 | 0.132854956 | No Trend | -- | -- | -- | -- |
| 114-MW56C | 7 | 0 | 1 | 5/20/24 - 12/2/24 | No | -- | -- | -- | -- | -- | -- | -- | -- | NA | -- | -- | -- | -- |
| 114-P1-MW-1D | 11 | 2 | 5 | 3/25/20 - 4/9/24 | Yes | 0.000314432 | 18988.03687 | 0.015 | 0.7206 | -2 | -0.078086881 | -0.036363636 | 0.937758943 | No Trend | -- | -- | -- | -- |
| 114-P1-MW-1I | 13 | 0 | 5 | 3/23/20 - 4/12/23 | Yes | 0.001375024 | 18480.94297 | 0.075 | 0.3654 | 12 | 0.671097764 | 0.153846154 | 0.502158252 | No Trend | -- | -- | -- | -- |
| 114-P1-MW-6D | 5 | 0 | 1 | 4/9/24 - 11/18/24 | No | -- | -- | -- | -- | -- | -- | -- | -- | NA | -- | -- | -- | -- |
| 114-P1-MW-7D | 9 | 0 | 3 | 12/6/22 - 11/18/24 | Yes | -4.05759E-05 | 19704.27423 | 0.004 | 0.8737 | 0 | 0 | 0 | 1 | No Trend | -- | -- | -- | -- |
| 114-P1-MW-7I | 9 | 0 | 3 | 12/6/22 - 11/18/24 | Yes | -0.000546161 | 19878.26679 | 0.461 | 0.0443 | -14 | -1.355343691 | -0.388888889 | 0.175308081 | No Trend [9] | -0.0017 | -0.6205 | 267000 | 9.0 |
| 114-P2-MW-12D | 9 | 0 | 3 | 12/8/22 - 11/15/24 | Yes | -0.00409019 | 20189.23379 | 0.746 | 0.0027 | -28 | -2.81494459 | -0.777777778 | 0.004878564 | Decreasing | -0.0013 | -0.4745 | 85700 | 9.4 |
| 114-P2-MW-5D | 10 | 8 | 3 | 8/18/22 - 11/15/24 | No | -- | -- | -- | -- | -- | -- | -- | -- | NA | -- | -- | -- | -- |
| 114-P2-MW-5I | 9 | 0 | 3 | 12/8/22 - 11/15/24 | Yes | 5.63877E-05 | 19647.25714 | 0.003 | 0.8847 | 6 | 0.521286035 | 0.166666667 | 0.602167528 | No Trend | -- | -- | -- | -- |
| 114-P2-MW-6I | 9 | 0 | 3 | 12/7/22 - 11/18/24 | Yes | -0.000468338 | 20695.99547 | 0.588 | 0.0159 | -20 | -1.980886934 | -0.555555556 | 0.047603955 | Decreasing | -0.0006 | -0.219 | 1620000 | 33.7 |
| 114-P2-MW-8I | 9 | 0 | 3 | 12/6/22 - 11/18/24 | Yes | -0.00016395 | 19879.67047 | 0.414 | 0.0616 | -16 | -1.563858105 | -0.444444444 | 0.117850895 | No Trend [9] | -0.0015 | -0.5475 | 909000 | 12.4 |
| 114-PMW-02T | 7 | 1 | 1 | 5/31/24 - 12/2/24 | No | -- | -- | -- | -- | -- | -- | -- | -- | NA | -- | -- | -- | -- |
| 199-P3-MW001I | 3 | 0 | 1 | 4/17/24 - 10/10/24 | No | -- | -- | -- | -- | -- | -- | -- | -- | NA | -- | -- | -- | -- |
| ***Lower Deep Zone (Site 114)*** | | | | | | | | | | | | | | | | | | |
| 114-P3-MW003D [10] | 13 | 0 | 4 | 12/29/21 - 12/11/24 | Yes | -0.001708775 | 20190.66504 | 0.491 | 0.0076 | -42 | -2.501364392 | -0.538461538 | 0.012371581 | Decreasing | -0.0006 | -0.219 | 301000 | 26.1 |
| 114-P3-MW004D [10] | 13 | 0 | 4 | 12/29/21 - 12/11/24 | Yes | -0.002875614 | 21416.23943 | 0.569 | 0.0029 | -46 | -2.745399942 | -0.58974359 | 0.006043719 | Decreasing | -0.0003 | -0.1095 | 478000 | 56.3 |
| 114-P3-MW005D [10] | 17 | 0 | 4 | 12/29/21 - 12/3/24 | Yes | 0.001677308 | 19376.11999 | 0.201 | 0.0714 | 22 | 0.865045182 | 0.161764706 | 0.38701399 | No Trend | -- | -- | -- | -- |
| 114-P3-MW006D [10] | 14 | 10 | 4 | 12/29/21 - 12/10/24 | Yes | 0.017457229 | 19373.1846 | 0.463 | 0.0074 | 44 | 2.976746943 | 0.483516484 | 0.002913244 | Increasing | -- | -- | -- | -- |

**Notes:**

1. Only those monitoring wells where Cr(VI) concentrations were greater than 1,000 ug/L in one or more of the four most recent sampling events, are included in this statistical analysis. The full list of wells where Cr(VI) has remained < 1,000 ug/L over four or more sampling events, is included in the following page.

2. Only wells that are in areas where injections have been completed, and where quarterly post-treatment monitoring has been initiated, have been included in this analysis. The dataset for each well is comprised of the last treatment monitoring data point (considered as the "baseline") and available post-treatment monitoring data.

3. Non-detects are assigned a value equal to half of the minimum detected concentration in each well.

4. Only those wells that have a minimum of four detected observations over at least two years are carried forward in this analysis. These are denoted by a "Yes" or "No" under the Data Use Objectives field. Wells that have not met this criteria have been grayed out.

5. The determination of trend is made based on the following conditions:

- If Mann-Kendall p-value < 0.05 & Mann-Kendall tau < 0 --> Decreasing
- If Mann-Kendall p-value < 0.05 & Mann-Kendall tau > 0 --> Increasing
- If Mann-Kendall p-value > 0.05 --> No Trend

6. The Mann-Kendall analysis was performed using the EnvStats package in R. Source: Millard SP (2013). EnvStats: An R Package for Environmental Statistics. Springer, New York. ISBN 978-1-4614-8455-4, https://www.springer.com.

7. First-order decay rates were obtained by determining the slope of the line plotting the natural logarithm of Cr(VI) concentrations versus time.

8. Calculations of estimated timeframes for Cr(VI) to attenuate to 1,000 µg/L must be interpreted with caution as these numbers are based on an assumption that current trends and decay rate constants will remain consistent over several years. Decay rates may vary significantly as additional data are collected.

9. For certain wells with a "No Trend" determination, visual interpretation indicates a decreasing pattern. Therefore, timeframes for Cr(VI) to attenuate to 1,000 µg/L have been calculated for these wells.

10. These wells are located within the Lower Deep Zone and did not receive reagent via direct injections, but rather, were wtihin the FerroBlack-H Reactive Zones emplaced on Site 114. These wells are located in an area identified for active injections.

**Abbreviations:**

Cr(VI) = hexavalent chromium

OLS = ordinary least square

ug/L = micrograms per liter

**Appendix B-7**
**Statistical Analysis of Groundwater Monitoring Data**
**Groundwater Remedial Action Progress Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

***Wells where Cr(VI) has been < 1,000 ug/L in at least the past 4 sampling events ****
*(not included in statistical analysis)*

| | | | |
|---|---|---|---|
| 114-MC-EW103 | 114-P1C-PZ2 | 114-PZ-57T | GPS-MW5S |
| 114-MC-PZ203 | 114-P1-IRM-40D | 132-P3A-MW102I | GPS-MW6I |
| 114-MW17B | 114-P1-MW-2I | 132-P3A-MW103I | GPS-MW6S |
| 114-MW22AR | 114-P1-MW-3I | 132-P3A-MW103S | GPS-MW7S |
| 114-MW24AR | 114-P1-MW-4D | 132-P3A-MW104D-1 | HAL-P3-IRM-003D |
| 114-MW24B | 114-P1-MW-4I | 132-P3A-MW104D-2 | HAL-P3-MW001I |
| 114-MW25A | 114-P1-MW-5D | 132-P3A-MW104I | HSTD-P3-MW002I-A |
| 114-MW26B | 114-P1-MW-5I | 132-P3A-MW1R | HSTD-P3-MW003I-A |
| 114-MW27A | 114-P1-MW-6I | 132-P3-MW001D | HSTD-P3-MW004I-A |
| 114-MW2B1-2 | 114-P2A-MW101I | 132-P3-MW001I-A | MW1C-3 |
| 114-MW2B1-2I | 114-P2A-MW102I | 132-P3-MW001I-B | MW1C-4 |
| 114-MW36B | 114-P2B1-MW101I | 132-P3-MW002I-A | MW6C |
| 114-MW38B | 114-P2B2-MW101I | 132-P3-MW002I-B-R | MW7D |
| 114-MW39B | 114-P2B3-MW101I | 132-P3-MW003I-A | MW8D |
| 114-MW40B | 114-P2B4-MW101I | 133-P3C-MW101I | MW9C |
| 114-MW41A | 114-P2B4-MW102I | 135-MW2B | PAC-P3-MW001I |
| 114-MW41B | 114-P2B4-MW102S | 137A-P3-MW001I-A | PSEG-MW-104B |
| 114-MW42A | 114-P2B4-MW103I | 137A-P3-MW001I-B | PSEG-MW-42D |
| 114-MW43A | 114-P2-IRM-89D | 137A-P3-MW003I-A | PSEG-MW-7F |
| 114-MW44A | 114-P2-IRM-89I | 137A-P3-MW003I-B | 114-MW57C |
| 114-MW45C | 114-P2-IRM-90I | 137-MW1C | 114-MW65C |
| 114-MW49C | 114-P2-IRM-91I | 137-MW2C | 114-PMW-01T |
| 114-MW4D | 114-P2-IRM-92I | 137-P3B-MW102I | 132-P3-MW003I-B |
| 114-MW50C | 114-P2-IRM-93D | 143-P3A-MW101I | 114-MW53C |
| 114-MW51C | 114-P2-IRM-93I | 143-P3-MW001I | 114-MW61C |
| 114-MW52D | 114-P2-IRM-94D | 143-P3-MW002I-A | 114-MW79WR |
| 114-MW54C | 114-P2-IRM-94I | 143-P3-MW002I-B | 114-PZ-66T |
| 114-MW55C | 114-P2-IRM-95D | 199-P3-IRM-004D | |
| 114-MW57D | 114-P2-IRM-95I | 199-P3-MW001I-B | |
| 114-MW58C | 114-P2-IRM-96D | 199-P3-MW001S | |
| 114-MW58C-R | 114-P2-IRM-96I | 199-P3-MW003D | |
| 114-MW60C | 114-P2-IRM-97D | 199-P3-MW004D | |
| 114-MW60C-R | 114-P2-IRM-97I | 199-P3-MW004I | |
| 114-MW61D | 114-P2-IRM-98D | 199-P3-MW004S | |
| 114-MW62C | 114-P2-IRM-98I | CAR-P3-MW001D | |
| 114-MW63C | 114-P2-MW-10D | CAR-P3-MW001I-A | |
| 114-MW64C | 114-P2-MW-10I | CAR-P3-MW001I-B | |
| 114-MW67C | 114-P2-MW-11D | CAR-P3-MW002D | |
| 114-MW6D | 114-P2-MW-11I | CAR-P3-MW003D | |
| 114-MW70C | 114-P2-MW-12I | CAR-P3-MW003I-A | |
| 114-MW72D | 114-P2-MW-1D | CAR-P3-MW003I-B | |
| 114-MW75WR | 114-P2-MW-1I | CAR-P3-MW004I-A | |
| 114-MW76D | 114-P2-MW-2D | CAR-P3-MW004I-B | |
| 114-MW78WR | 114-P2-MW-2I | EW-P3-MW001I-A | |
| 114-MW7D | 114-P2-MW-3D | EW-P3-MW001I-B | |
| 114-MW80WR | 114-P2-MW-3I | EW-P3-MW002I | |
| 114-P1A-MW101I | 114-P2-MW-4D | FS-MW101S | |
| 114-P1A-MW101S | 114-P2-MW-4I | FS-P3-MW001I | |
| 114-P1B-MW101I | 114-P2-MW-6D | FS-P3-MW002I | |
| 114-P1B-MW101S | 114-P2-MW-7D | FS-P3-MW003I | |
| 114-P1B-MW102I | 114-P2-MW-7I | FSP-P3-MW001I | |
| 114-P1B-MW102S | 114-P2-MW-8D | FSP-P3-MW001S | |
| 114-P1B-MW103D | 114-P2-MW-9D | GPS-MW1S | |
| 114-P1B-MW103S | 114-P2-MW-9I | GPS-MW2I | |
| 114-P1C-MW101I | 114-P3-MW001D | GPS-MW2S | |
| 114-P1C-MW101S | 114-P3-MW002D | GPS-MW3I | |
| 114-P1C-MW102S | 114-PMW-03T | GPS-MW3S | |
| 114-P1C-MW104S | 114-PMW-04T | GPS-MW4S | |
| 114-P1C-PZ1 | 114-PZ-52WR | GPS-MW5I | |

** In a limited number of the wells noted above, there are less than 4 sampling events in total, all of which are < 1,000 ug/L.*

***Wells where Cr(VI) has been > 1,000 ug/L in one or more of the past 4 sampling events***
*(included in statistical analysis - see Page 1)*

114-MC-PZ103
114-MW22BR
114-MW56C
114-P1-MW-1D
114-P1-MW-1I
114-P1-MW-6D
114-P1-MW-7D
114-P1-MW-7I
114-P2-MW-12D
114-P2-MW-5D
114-P2-MW-5I
114-P2-MW-6I
114-P2-MW-8I
114-P3-MW003D
114-P3-MW004D
114-P3-MW005D
114-P3-MW006D
114-PMW-02T
199-P3-MW001I

***Wells where Cr(VI) has been > 1,000 ug/L in one or more of the past 4 sampling events.***
***Well has been converted to an injection well***
*(not included in statistical analysis)*

114-P1-IRM-40I
137A-P3-MW002I-A
137A-P3-MW002I-B
114-MW77WR

***Wells where Cr(VI) has been > 1,000 ug/L in one or more of the past 4 sampling events and are located in the vicinity of ongoing reagent injections***
*(not included in statistical analysis)*

114-MW52C
114-MW66D
114-MW76WR
114-PZ-66D
114-PZ-66WR
HAL-P3-MW001I-B
HSTD-P3-MW001I-A
HSTD-P3-MW001I-B
HSTD-P3-MW002I-B
HSTD-P3-MW003I-B
HSTD-P3-MW004I-B
PAC-P3-MW002I

***Wells where Cr(VI) has been > 1,000 ug/L in one or more of the past 4 sampling events and are located in the vicinity of recently completed reagent injections with no quarterly post-treatment data available***
*(not included in statistical analysis)*

114-MW68C
114-PZ-57I
114-PZ-66I

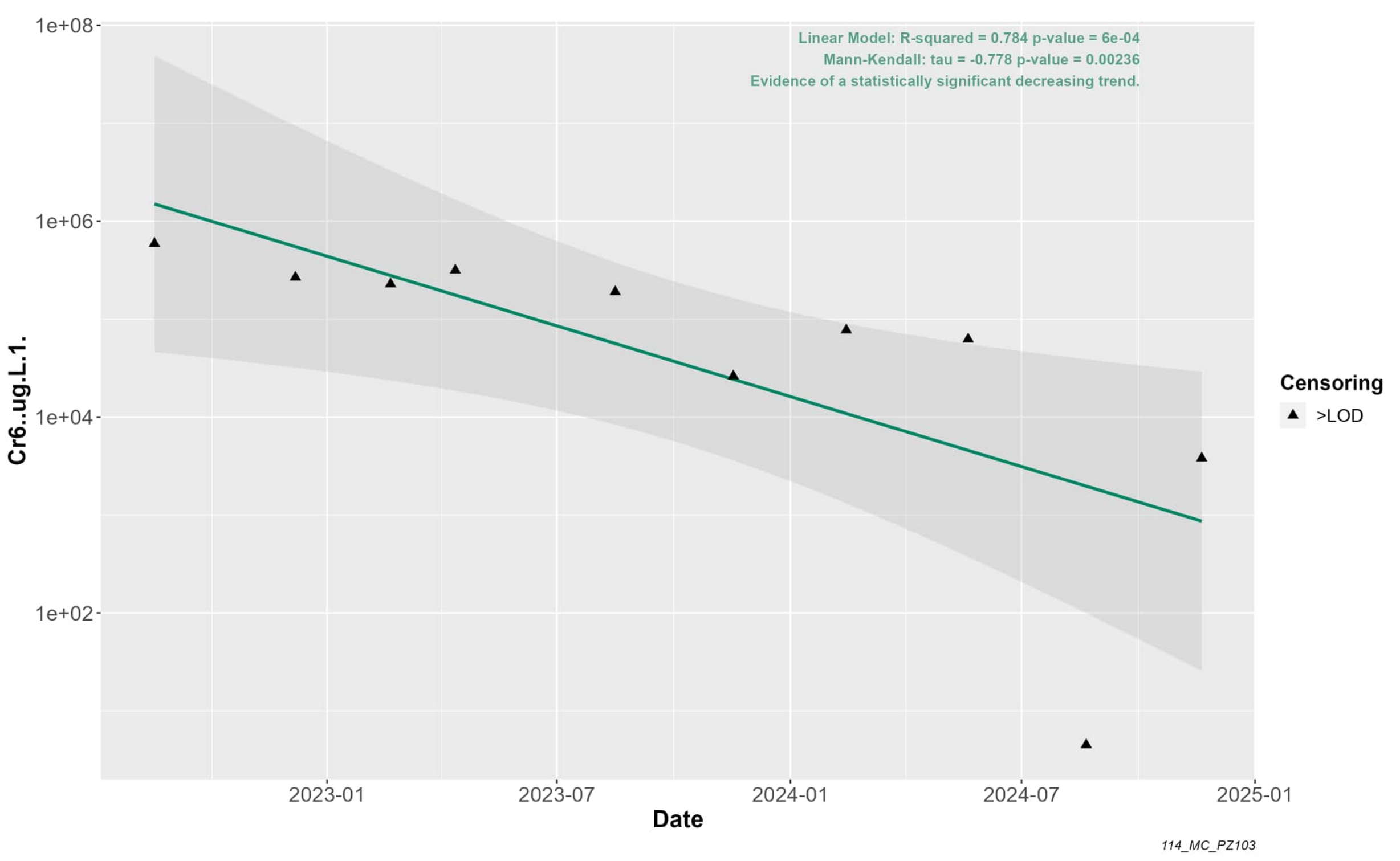
Linear Model: R-squared = 0.784 p-value = 6e-04
Mann-Kendall: tau = -0.778 p-value = 0.00236
Evidence of a statistically significant decreasing trend.
1e+08
1e+06
1e+04
1e+02
Cr6..ug.L.1.
2023-01
2023-07
2024-01
2024-07
2025-01
Date
Censoring
>LOD
114_MC_PZ103

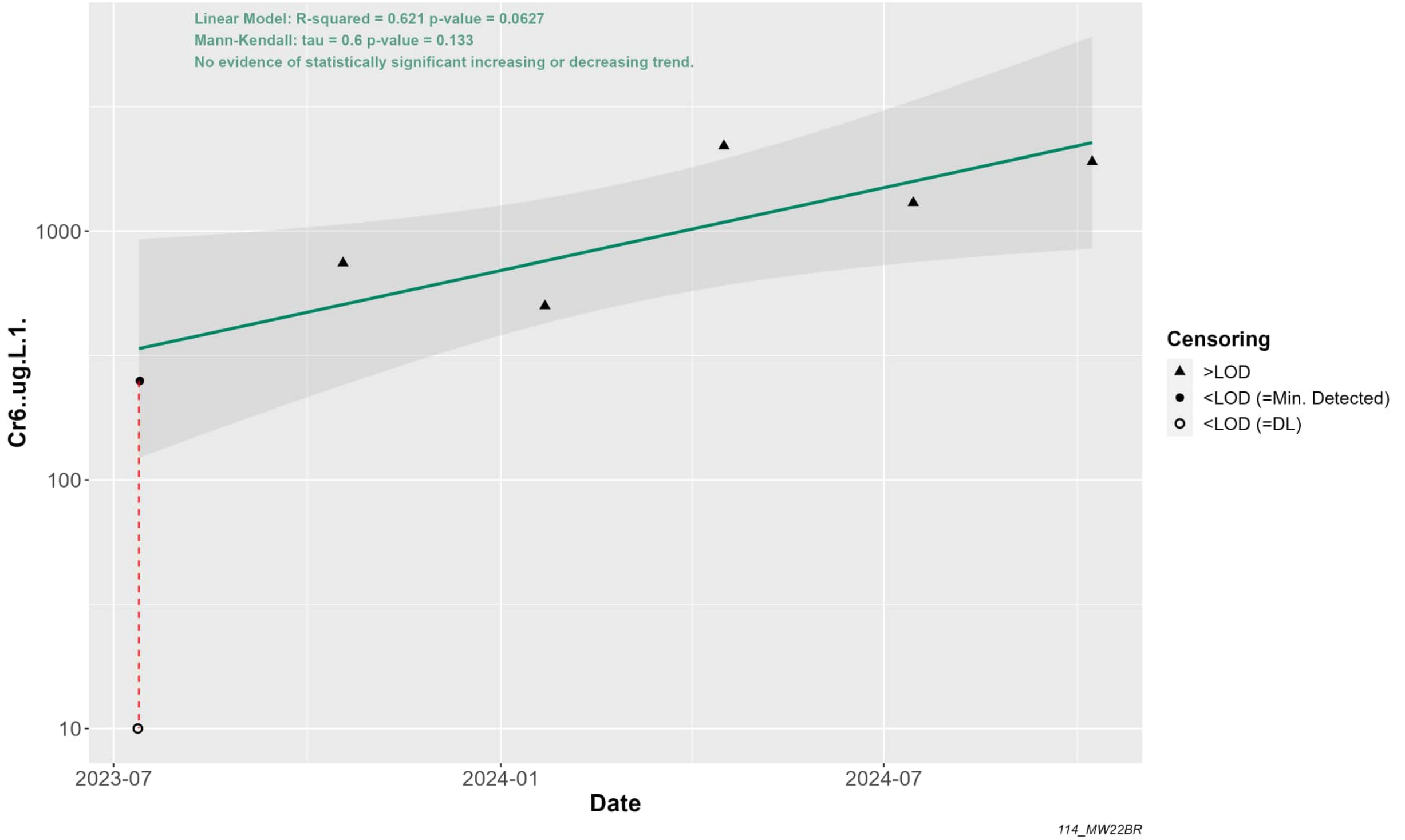
Linear Model: R-squared = 0.621 p-value = 0.0627
Mann-Kendall: tau = 0.6 p-value = 0.133
No evidence of statistically significant increasing or decreasing trend.
1000
100
10
Cr6..ug.L.1.
2023-07
2024-01
2024-07
Date
Censoring
>LOD
<LOD (=Min. Detected)
<LOD (=DL)
114_MW22BR

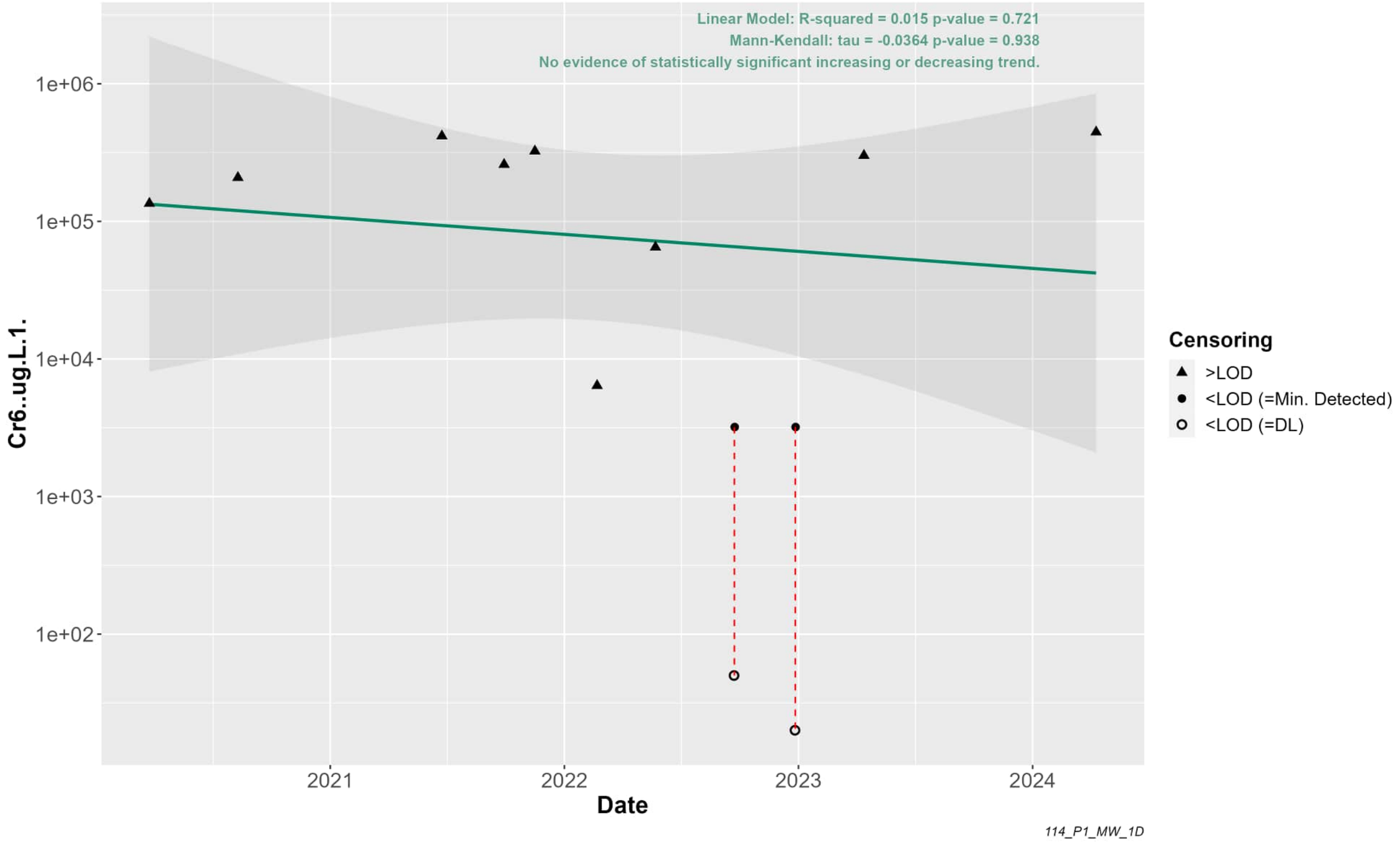
Linear Model: R-squared = 0.015 p-value = 0.721
Mann-Kendall: tau = -0.0364 p-value = 0.938
No evidence of statistically significant increasing or decreasing trend.
1e+06
1e+05
1e+04
1e+03
1e+02
Cr6..ug.L.1.
2021
2022
2023
2024
Date
Censoring
>LOD
<LOD (=Min. Detected)
<LOD (=DL)
114_P1_MW_1D

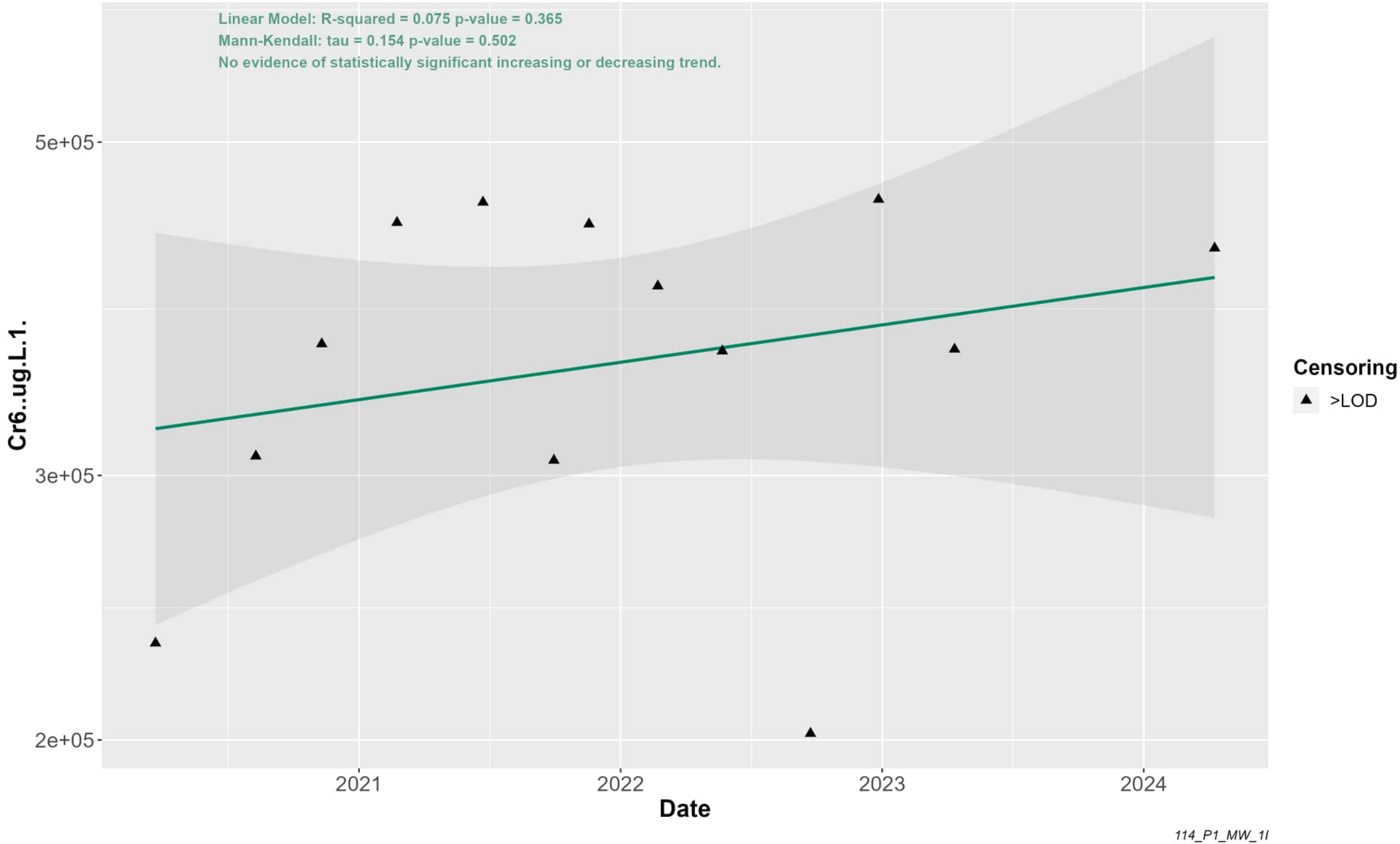
Linear Model: R-squared = 0.075 p-value = 0.365
Mann-Kendall: tau = 0.154 p-value = 0.502
No evidence of statistically significant increasing or decreasing trend.
5e+05
3e+05
2e+05
Cr6..ug.L.1.
2021
2022
2023
2024
Date
Censoring
>LOD
114_P1_MW_1I

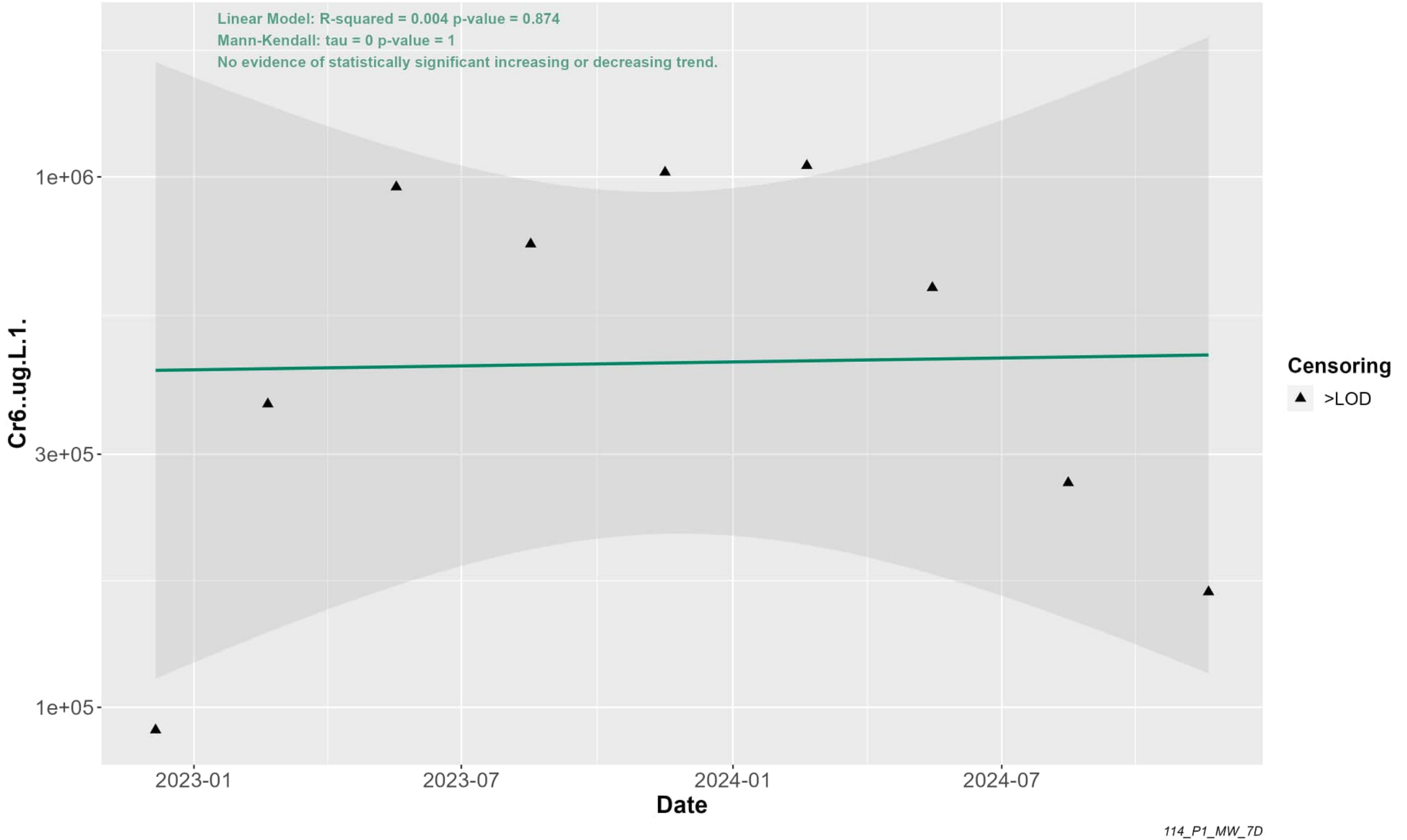
Linear Model: R-squared = 0.004 p-value = 0.874
Mann-Kendall: tau = 0 p-value = 1
No evidence of statistically significant increasing or decreasing trend.
1e+06
3e+05
1e+05
Cr6..ug.L.1.
2023-01
2023-07
2024-01
2024-07
Date
Censoring
>LOD
114_P1_MW_7D

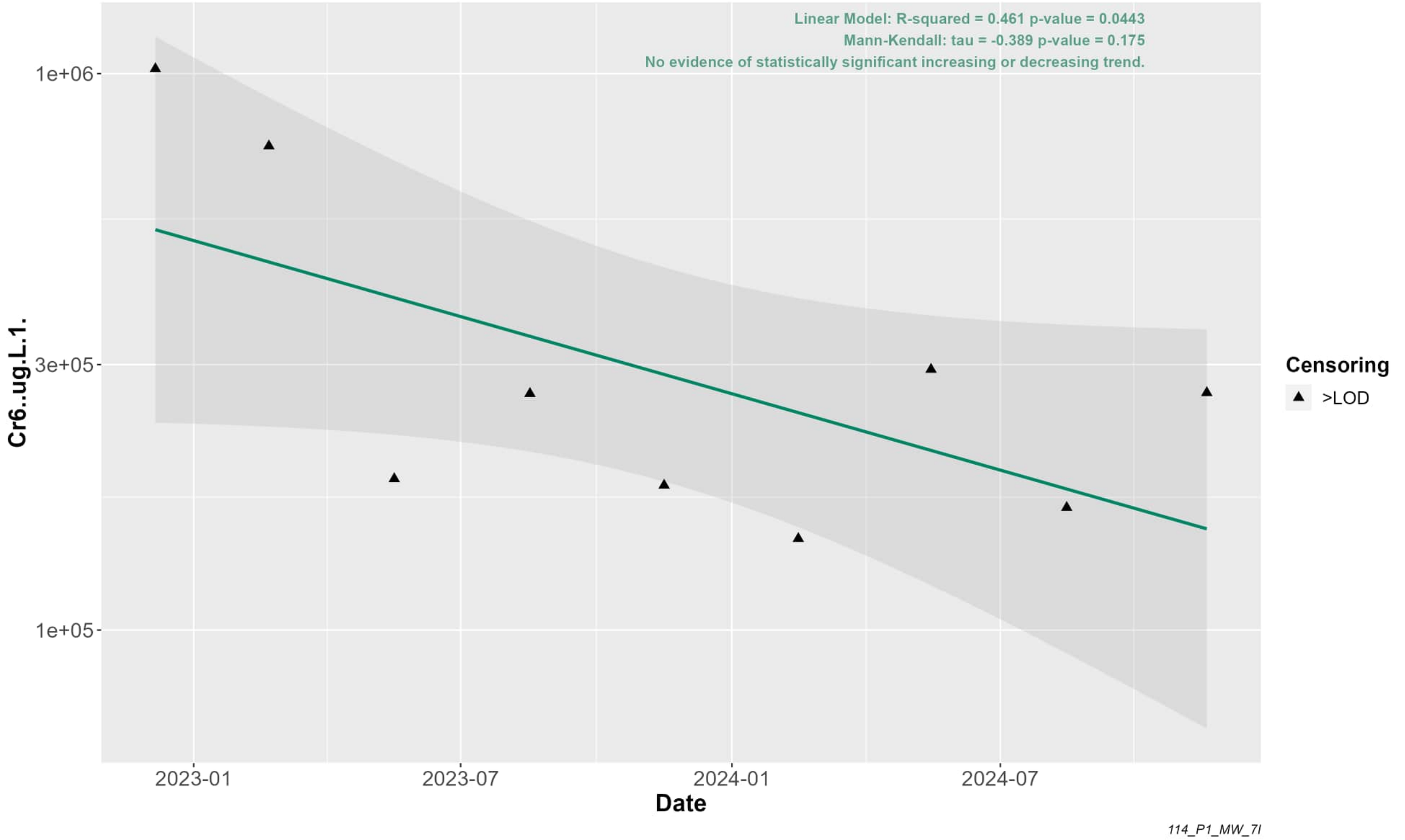
Linear Model: R-squared = 0.461 p-value = 0.0443
Mann-Kendall: tau = -0.389 p-value = 0.175
No evidence of statistically significant increasing or decreasing trend.
1e+06
3e+05
1e+05
Cr6..ug.L.1.
2023-01
2023-07
2024-01
2024-07
Date
Censoring
>LOD
114_P1_MW_7I

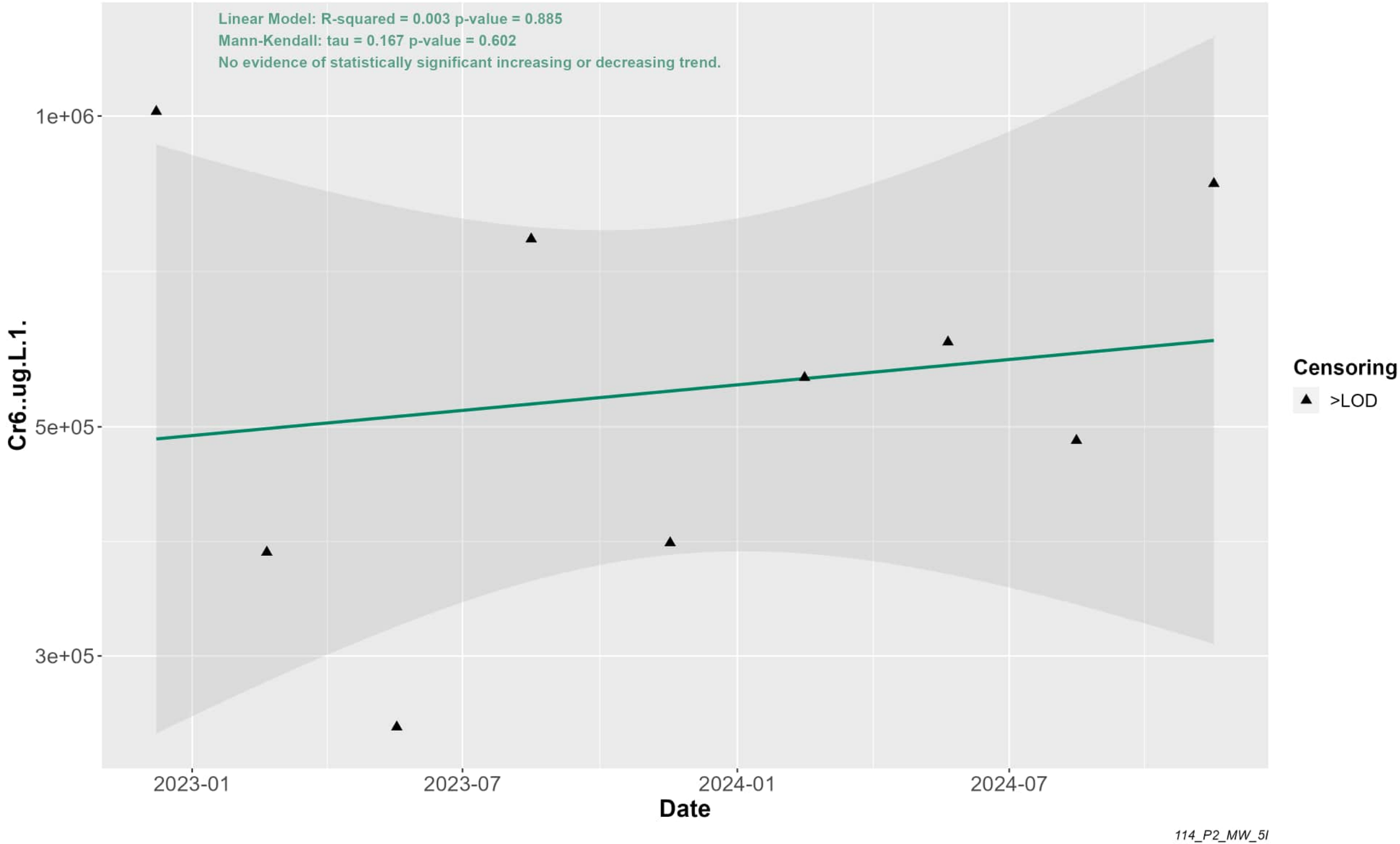
Linear Model: R-squared = 0.003 p-value = 0.885
Mann-Kendall: tau = 0.167 p-value = 0.602
No evidence of statistically significant increasing or decreasing trend.
1e+06
5e+05
3e+05
Cr6..ug.L.1.
2023-01
2023-07
2024-01
2024-07
Date
Censoring
>LOD
114_P2_MW_5I

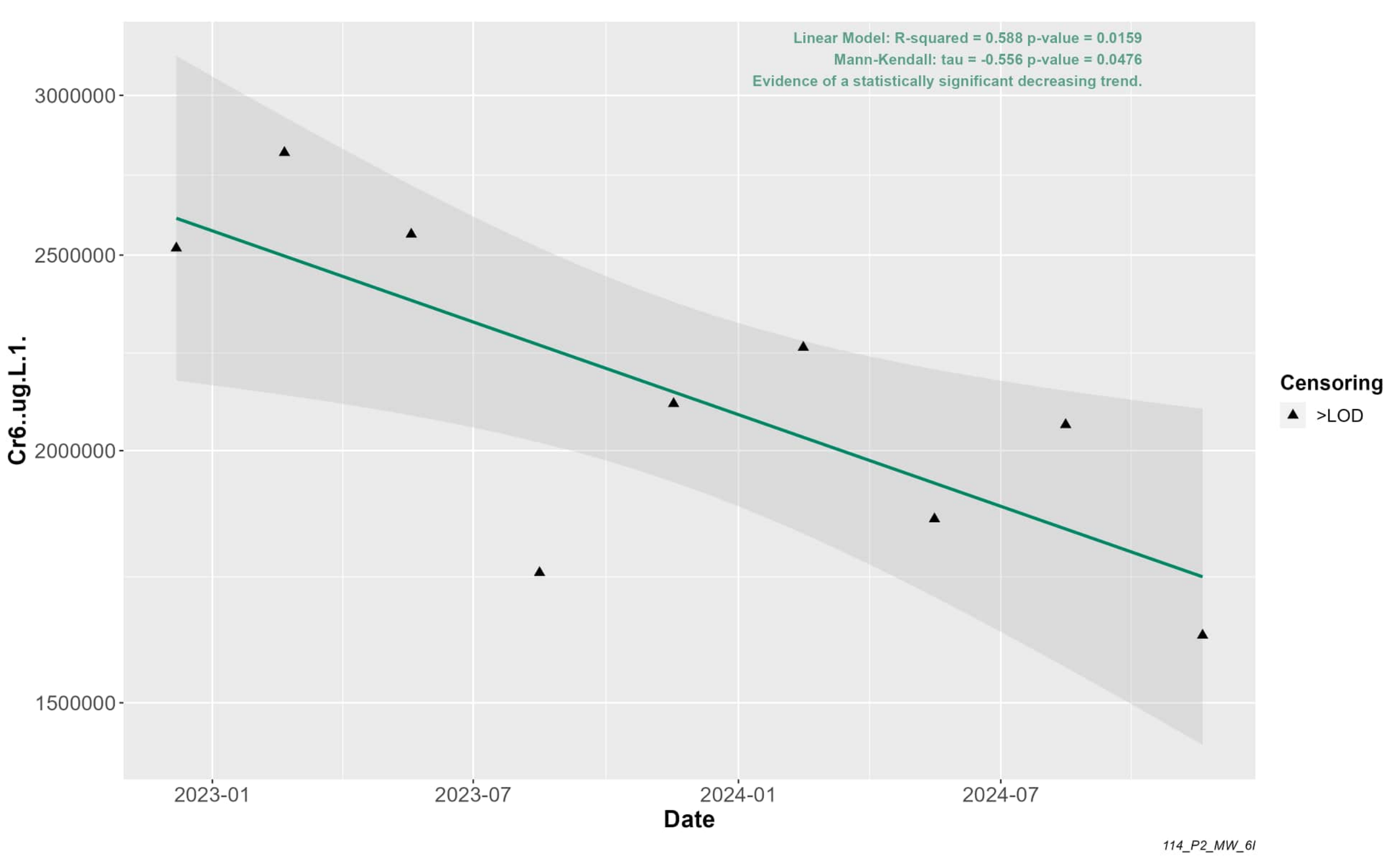
Linear Model: R-squared = 0.588 p-value = 0.0159
Mann-Kendall: tau = -0.556 p-value = 0.0476
Evidence of a statistically significant decreasing trend.
3000000
2500000
2000000
1500000
Cr6..ug.L.1.
2023-01
2023-07
2024-01
2024-07
Date
Censoring
>LOD
114_P2_MW_6I

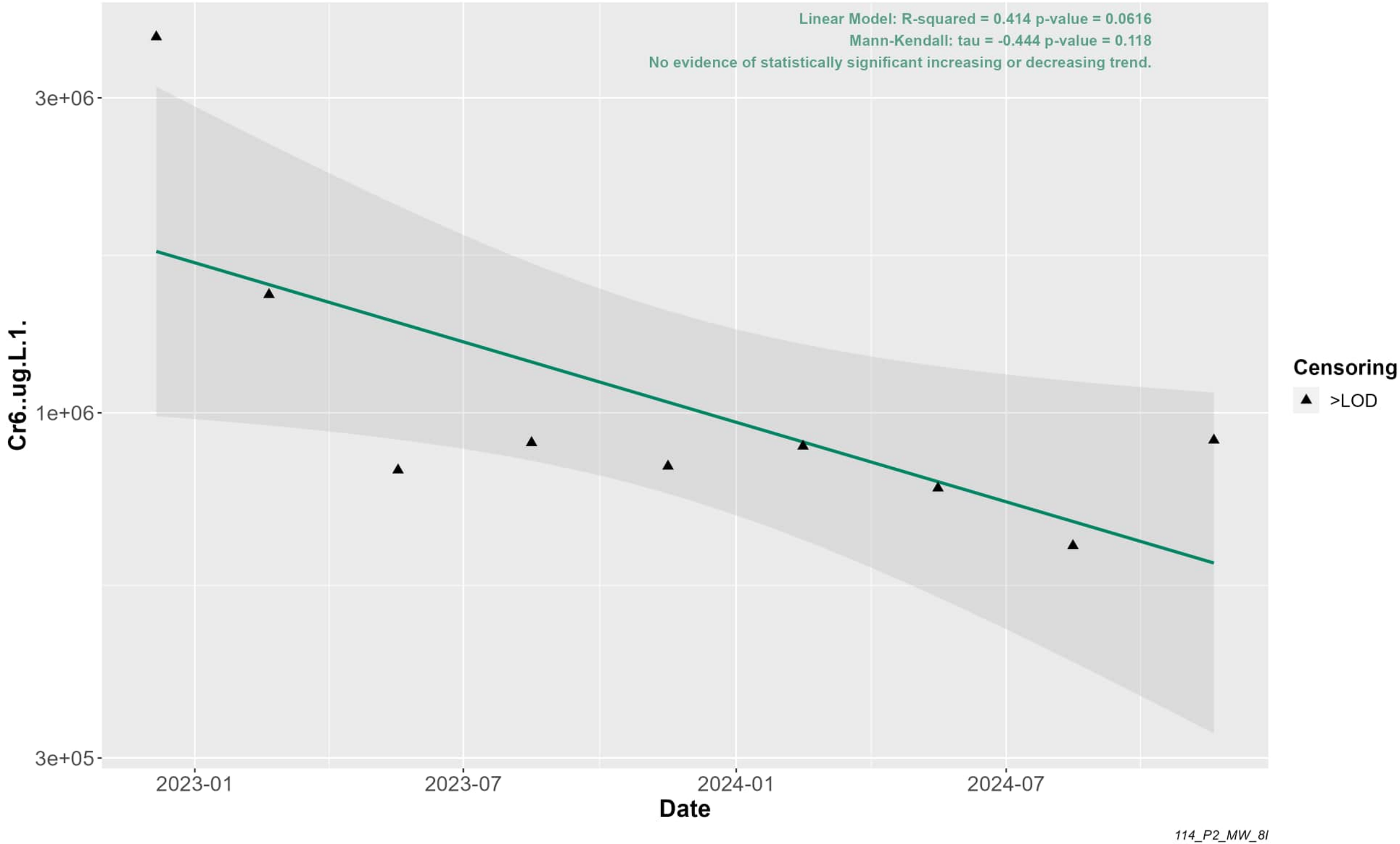
Linear Model: R-squared = 0.414 p-value = 0.0616
Mann-Kendall: tau = -0.444 p-value = 0.118
No evidence of statistically significant increasing or decreasing trend.
3e+06
1e+06
3e+05
Cr6..ug.L.1.
2023-01
2023-07
2024-01
2024-07
Date
Censoring
>LOD
114_P2_MW_8I

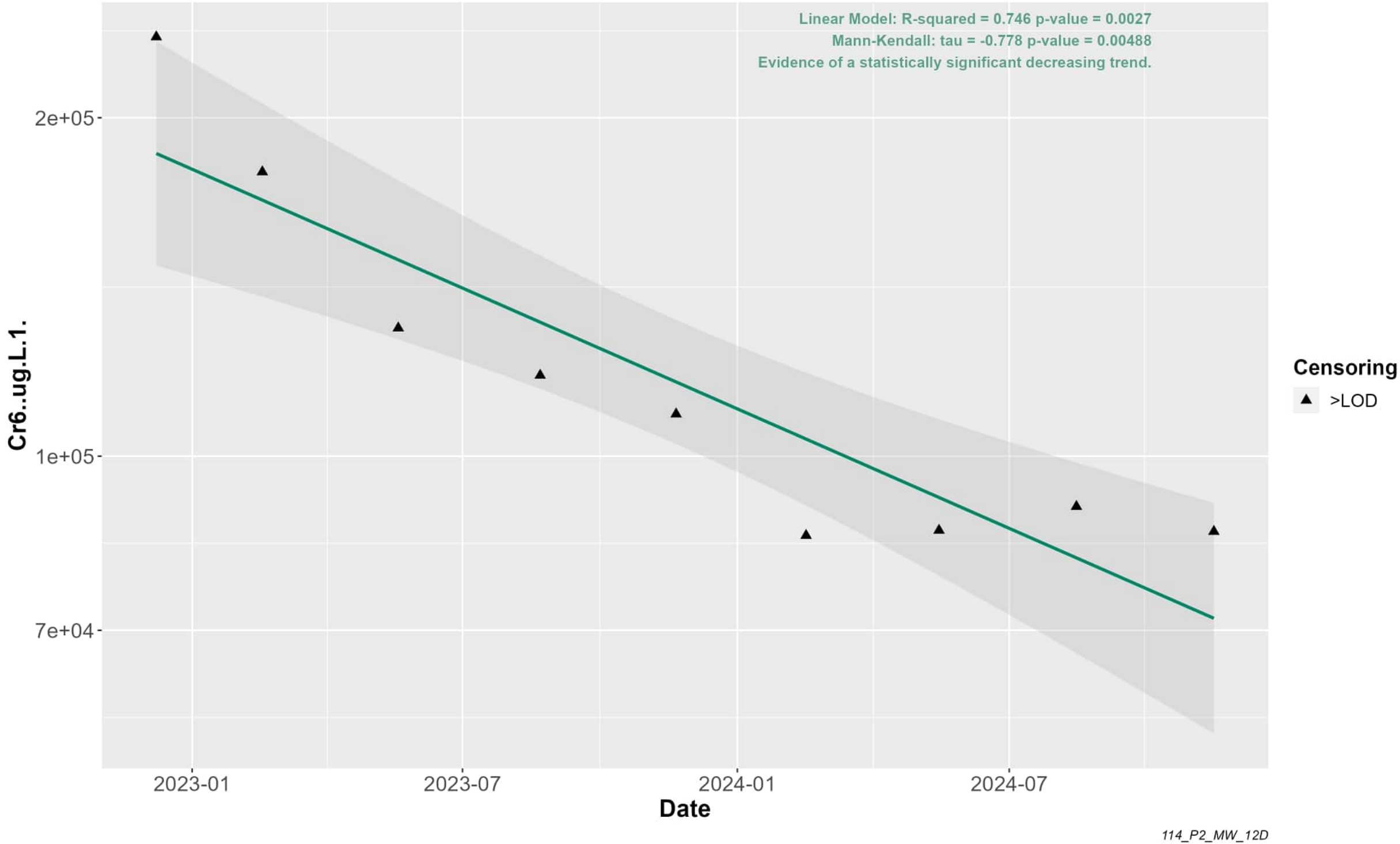
Linear Model: R-squared = 0.746 p-value = 0.0027
Mann-Kendall: tau = -0.778 p-value = 0.00488
Evidence of a statistically significant decreasing trend.
Cr6..ug.L.1.
2e+05
1e+05
7e+04
2023-01
2023-07
2024-01
2024-07
Date
Censoring
>LOD
114_P2_MW_12D

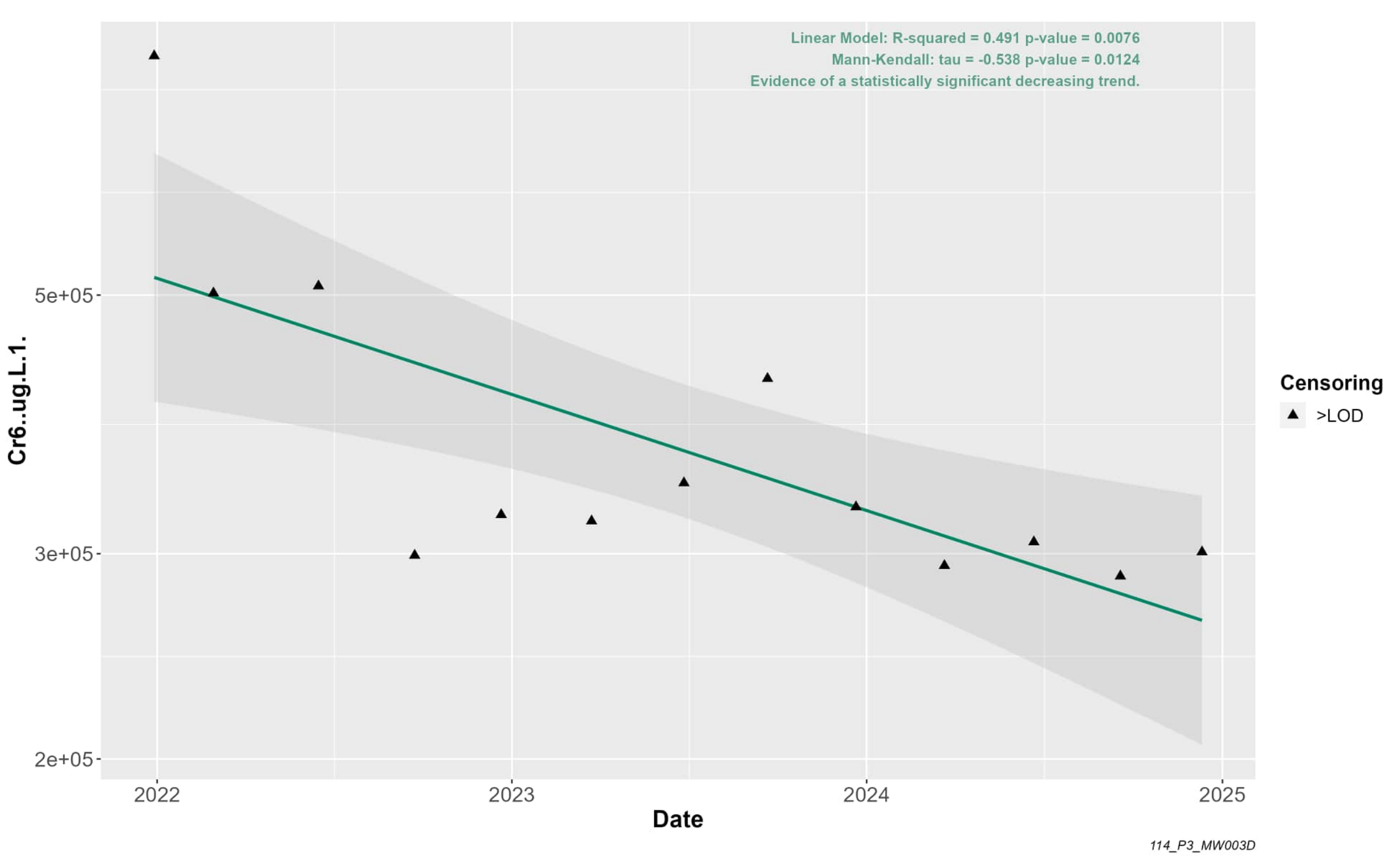
Linear Model: R-squared = 0.491 p-value = 0.0076
Mann-Kendall: tau = -0.538 p-value = 0.0124
Evidence of a statistically significant decreasing trend.
Cr6..ug.L.1.
5e+05
3e+05
2e+05
2022
2023
2024
2025
Date
Censoring
>LOD
114_P3_MW003D

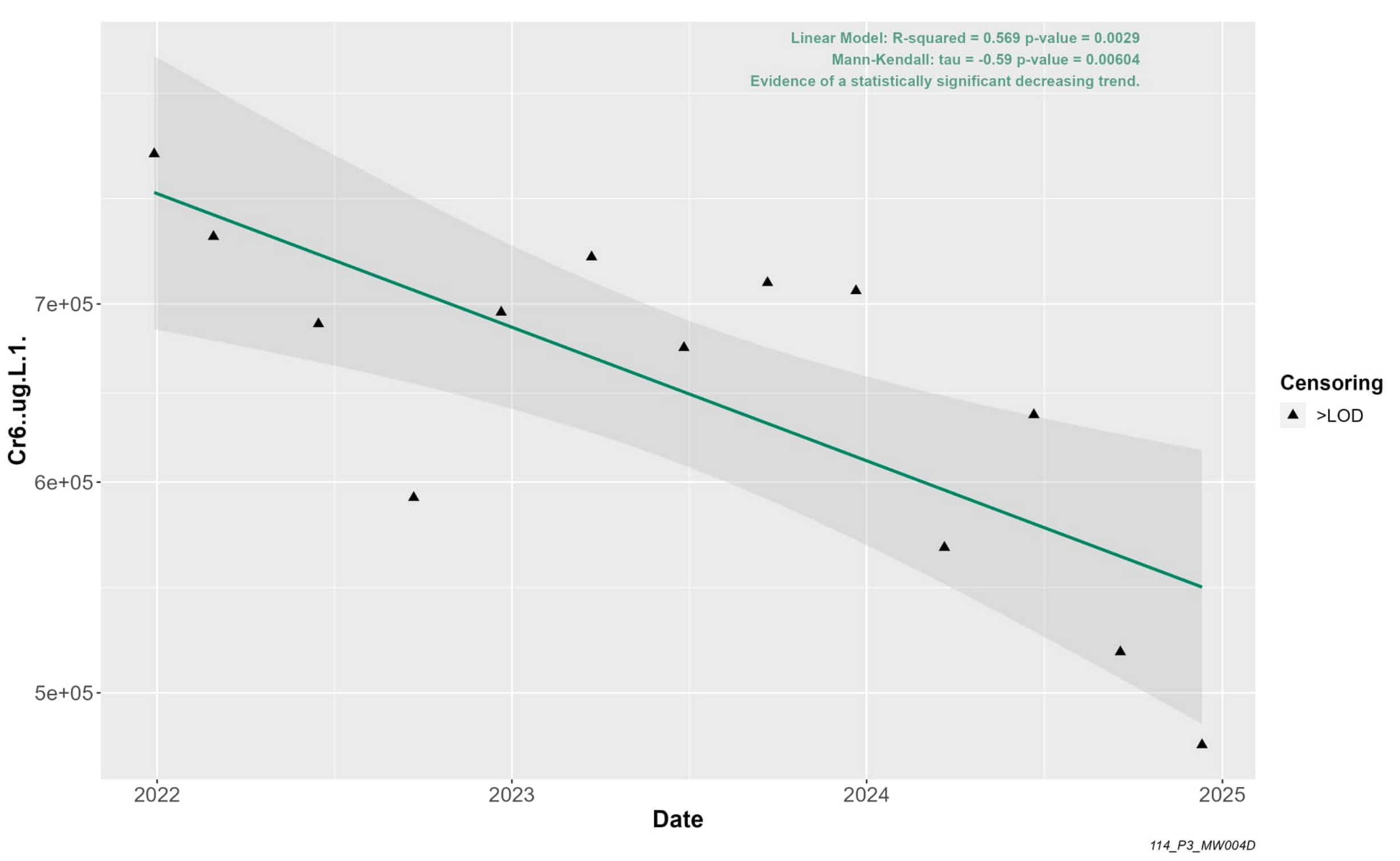
Linear Model: R-squared = 0.569 p-value = 0.0029
Mann-Kendall: tau = -0.59 p-value = 0.00604
Evidence of a statistically significant decreasing trend.
Cr6..ug.L.1.
7e+05
6e+05
5e+05
2022
2023
2024
2025
Date
Censoring
>LOD
114_P3_MW004D

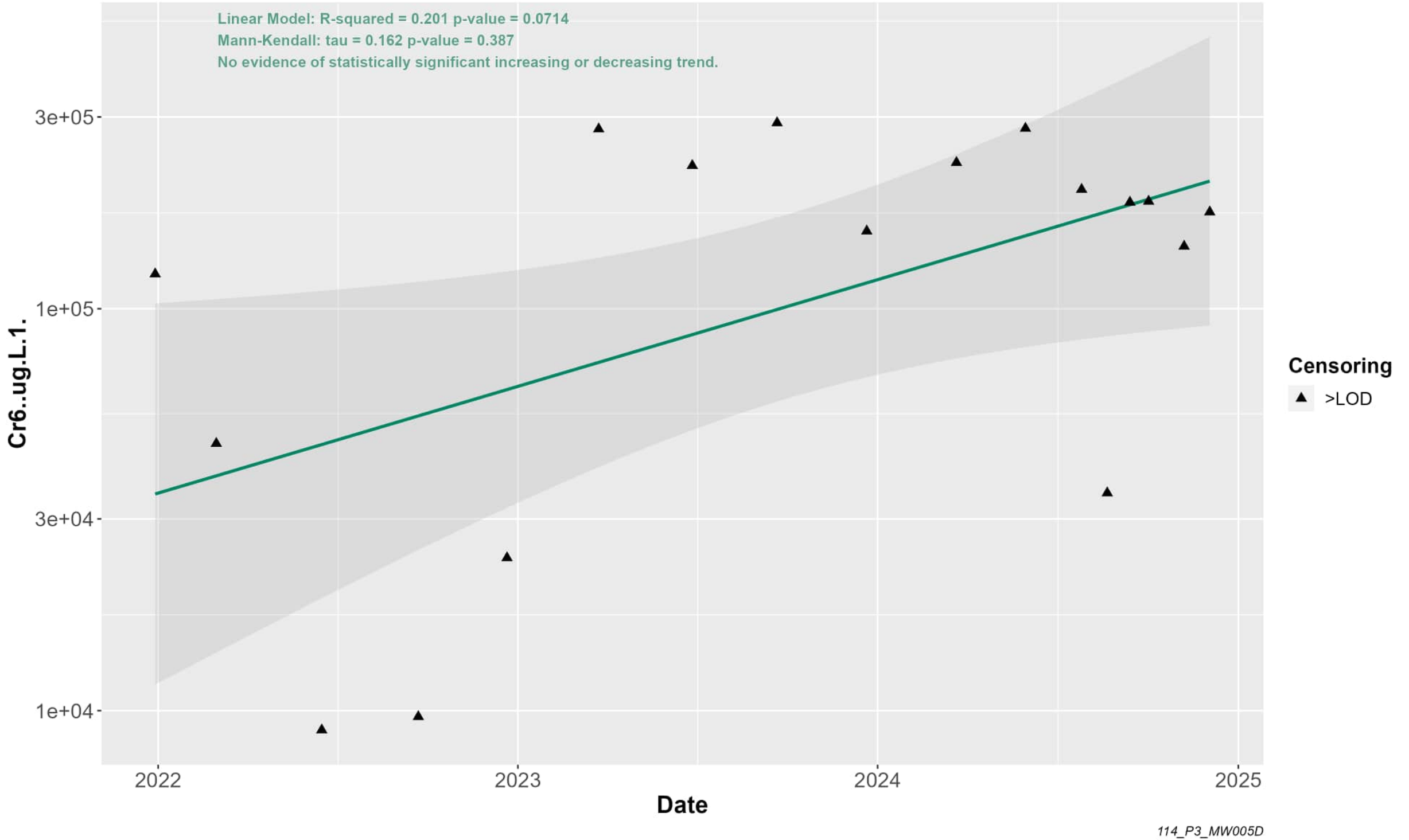
Linear Model: R-squared = 0.201 p-value = 0.0714
Mann-Kendall: tau = 0.162 p-value = 0.387
No evidence of statistically significant increasing or decreasing trend.
3e+05
1e+05
3e+04
1e+04
Cr6..ug.L.1.
2022
2023
2024
2025
Date
Censoring
>LOD
114_P3_MW005D

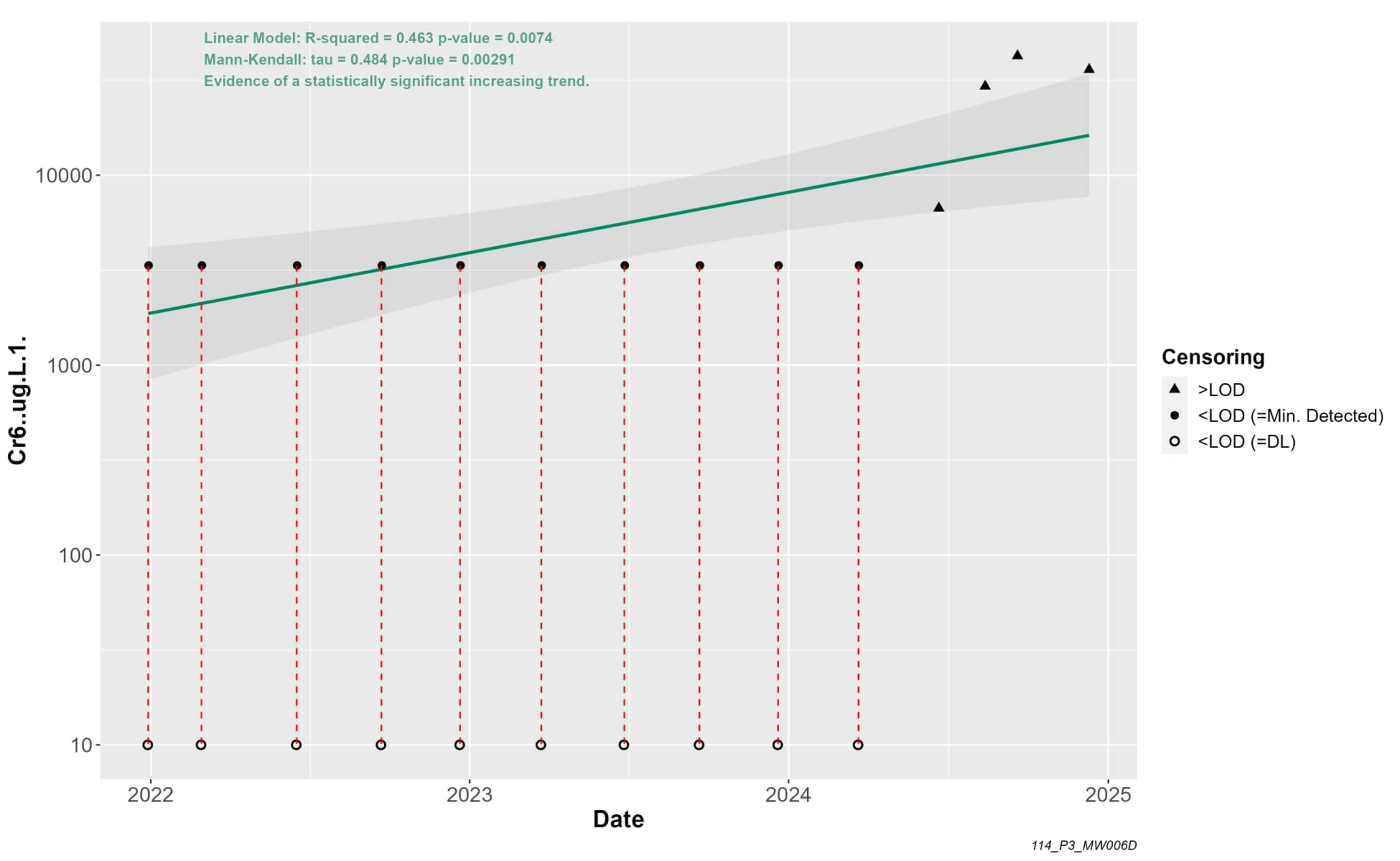
Linear Model: R-squared = 0.463 p-value = 0.0074
Mann-Kendall: tau = 0.484 p-value = 0.00291
Evidence of a statistically significant increasing trend.
10000
1000
100
10
Cr6..ug.L.1.
2022
2023
2024
2025
Date
Censoring
>LOD
<LOD (=Min. Detected)
<LOD (=DL)
114_P3_MW006D

# Appendix B
# Performance Trend Charts - Chromium, Hexavalent Chromium, and Geochemistry

# Appendix C
# Well Documentation*

**Decommissioning records for bedrock wells 114-MW73D and 114-MW74D are awaiting pin access from NJDEP prior to submittal. Both wells were decommissioned on May 6, 2024.*

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Well Permitting
Mail Code 401-04Q PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202411518**

# WELL PERMIT

New Well

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit

**Certifying Driller:** JOSEPH KURZYNOWSKI, MASTER LICENSE # 0001618

**Permit Issued to:** AQUIFER DRILLING & TESTING

**Company Address:** 75 EAST SECOND ST MINEOLA, NY 11501

## PROPERTY OWNER

Name: JERSEY CITY REDEVELOPMENT AGENCY

Organization: Redevelopment Agency

Address: 4 Jackson Square (39 KEARNEY AVE) 39 KEARNEY AVE

City: Jersey City State: New Jersey Zip Code: 07305

## PROPOSED WELL LOCATION

Facility Name: Hudson County Chormate Site 132

Address: 824 GARFIELD AVE

County: Hudson Municipality: Jersey City Lot: 2 Block: 21510

Easting (X): 610795 Northing (Y): 683048
Coordinate System: NJ State Plane (NAD83) - USFEET

**Local ID:** 114-MW81D

## SITE CHARACTERISTICS

## PROPOSED CONSTRUCTION

**WELL USE:** MONITORING

Other Use(s):

Diameter (in.): 6

Regulatory Program Requiring Wells/Borings:

Depth (ft.): 125

Case ID Number:

Pump Capacity (gpm): 1

Deviation Requested: N

Drilling Method: Sonic

Attachments:

## SPECIFIC CONDITIONS/REQUIREMENTS

**Approval Date:** October 30, 2024
**Expiration Date:** October 30, 2025

Approved by the authority of:
Shawn M. LaTourette
Commissioner

Kathleen Burkhard, Bureau Chief
Bureau of Water Allocation and Well Permitting

New Jersey State Department of Environmental Protection
Bureau of Water Allocation and Wells
PO BOX 420 Trenton, NJ 08625-0420 Tel: 609-984-6831

Well Permit Number
**E202411518**

# WELL PERMIT

New Well

| DEVIATION INFORMATION | |
|---|---|
| Purpose: | |
| Unusual Conditions: | |
| Reason for Deviation: | |
| Proposed Well Construction | |

| GENERAL CONDITIONS/REQUIREMENTS |
|---|
| A copy of this permit shall be kept at the worksite / on the property and shall be exhibited upon request. [N.J.A.C. 7:9D-1] |
| A well record must be submitted by the well driller to the Bureau of Water Systems and Well Permitting. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the well record shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Record: within ninety (90) days after the well is completed.[N.J.A.C. 7:9D-1] |
| All well drilling/pump installation activities shall comply with N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| For this permit to remain valid, the well approved in this permit shall be constructed within one year of the effective date of the permit. [N.J.A.C. 7:9D-1] |
| If the pump capacity applied for is less than 70 gpm, no subsequent increase to 70 gpm or more shall be made without prior approval of the Bureau of Water Systems and Well Permitting. [N.J.A.C. 7:9D-1] |
| If the use of the well is to be changed a well permit for the proposed use of the well shall be submitted for review and approval. [N.J.A.C. 7:9D-1] |
| If you or a future property owner intend to redesignate this well as a Category 1 well (domestic, non-public, community water supply or public non-community water supply wells), the well must be constructed as a Category 1 well per the Well Construction and Abandonment Regulations at N.J.A.C. 7:0D-1.1 et seq. In addition, if the current or future property owner intends to have this well redesignated as a community water supply well, the well must be constructed by a Master well driller, which would include having a Master well driller on-site at all times during construction of the well, as specified in the Well Construction and Abandonment Regulations. Otherwise, the New Jersey Department of Environmental Protection will not allow the well to be redesignated, and a new well would have to be installed. [N.J.A.C. 7:9D-1.7((a))1i] |
| In accepting this permit the Property Owner and Driller agree to abide by the following terms and conditions [N.J.A.C. 7:9D-1] |
| In the event that this well is not constructed the well driller shall notify the Bureau of Water Systems and Well Permitting of the permit cancellation. Unless prior written approval is obtained from the Bureau of Water Systems and Well Permitting the Cancellation notification shall be submitted electronically through the New Jersey Department of Environmental Protection's Regulatory Services Portal Submit Well Permit Cancellation : by the expiration date of this permit.[N.J.A.C. 7:9D-1] |
| In the event this well is abandoned, the Owner or Well driller shall assume full responsibility for having the well decommissioned in a manner satisfactory to the New Jersey Department of Environmental Protection in accordance with the provisions of N.J.A.C. 7:9D-1 et seq. [N.J.A.C. 7:9D-1] |
| The granting of this permit shall not be construed in any way to affect the title or ownership of property, and shall not make the New Jersey Department of Environmental Protection or the State a party in any suit or question of ownership of property. [N.J.A.C. 7:9D-1] |
| The issuance of this permit shall not be deemed to affect in any way action by the New Jersey Department of Environmental Protection on any future application. [N.J.A.C. 7:9D-1] |
| This permit conveys no rights, either expressed, or implied to divert water. [N.J.A.C. 7:9D-1] |
| This permit does not waive the obtaining of Federal or other State or local Government consent when necessary. This permit is not valid and no work shall be undertaken until such time as all other required approvals and permits have been obtained. [N.J.A.C. 7:9D-1] |
| This permit is NONTRANSFERABLE [N.J.A.C. 7:9D] |
| This well shall not be used for the supply of potable / drinking water. [N.J.A.C. 7:9D-1] |

AECOM
30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# 114-MW81D



| | | |
|---|---|---|
| **Project Name:** Bedrock Remedial Investigation | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.45 ft NAVD88 |
| **Project Number:** 60729481 | **Drilling Method:** Terra Sonic, Fratse XL Rig | **Coordinates (NJSPNAD83) x:** 610795.9 |
| **Date Started Drilling:** 11/14/2024 | **Rig Type:** Terra Sonic, Fratse XL Rig | **Coordinates (NJSPNAD83) y:** 683046.5 |
| **Date Finished Drilling:** 11/21/2024 | **Core Size:** 6 in | **Boring Total Depth:** 125.0 ft |
| **Logged By:** Eric Acs | **Project Manager:** Shannon Gleason | **Well Diameter (inches):** 6 in |
| **Physical Location:** HCC Site 114 | | **Surface Elevation:** 12.2 ft NAVD88 |

| Depth Range (ft bgs) | PID (ppm) | Recovery (%) | Moisture | USCS | Graphic | Material Description |
|---|---|---|---|---|---|---|
| 2 | 0 | | dry | FILL | | Well-graded sand (SW), fine to coarse, some fine to coarse gravel, trace silt, hand cleared to 5 ft (DGA) [FILL]<br>- 2.5Y 6/2 (light brownish gray), dry, very dense<br>- no odor, no staining |
| 4 | | | | | | |
| 6 | 0 | 80 | dry | | | Well-graded sand (SW), fine to coarse, some fine gravel, trace silt (DGA) [FILL]<br>- 10YR 5/1 (gray), dry, very dense<br>- no odor, no staining |
| | 1.1 | | dry | | | Well-graded sand (SW), fine to medium, trace silt, trace fine to coarse gravel [FILL]<br>- 10YR 2/1 (black), dry<br>- hydrocarbon odor, black staining |
| 8 | 1 | | dry | | | Well-graded sand (SW), fine to medium, some silt [FILL]<br>- 2.5YR 4/3 (reddish brown), dry, very dense<br>- hydrocarbon odor, black staining |
| 10 | 1.7 | 80 | wet | | | Well-graded sand (SW), fine to medium, trace silt, little ash and cinders [FILL]<br>- 10YR 2/1 (black), wet, loose<br>- no odor, black staining |
| 12 | | | | | | |

**Well Construction**

RISER
Type: Threaded Steel Casing
Diameter: 6 in
0 - 100 ft bgs

Bentonite-Cement Grout
0 - 100 ft bgs

**Notes:**

bgs = below surface grade
DGA = dense graded aggregate
NAD83 = North American Horizontal Datum of 1983
NAVD88 = North American Vertical Datum of 1988
NJSP = New Jersey State Plane
PID = photoionization detector
ppm = parts per million
USCS = Unified Soil Classification System
ft = feet
in = inches

**Comments:**

AECOM
30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# 114-MW81D



| | | |
|---|---|---|
| **Project Name:** Bedrock Remedial Investigation | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.45 ft NAVD88 |
| **Project Number:** 60729481 | **Drilling Method:** Terra Sonic, Fratse XL Rig | **Coordinates (NJSPNAD83) x:** 610795.9 |
| **Date Started Drilling:** 11/14/2024 | **Rig Type:** Terra Sonic, Fratse XL Rig | **Coordinates (NJSPNAD83) y:** 683046.5 |
| **Date Finished Drilling:** 11/21/2024 | **Core Size:** 6 in | **Boring Total Depth:** 125.0 ft |
| **Logged By:** Eric Acs | **Project Manager:** Shannon Gleason | **Well Diameter (inches):** 6 in |
| **Physical Location:** HCC Site 114 | | **Surface Elevation:** 12.2 ft NAVD88 |

| Depth Range (ft bgs) | PID (ppm) | Recovery (%) | Moisture | USCS | Graphic | Material Description | Well Construction |
|---|---|---|---|---|---|---|---|
| 14 | 1.7 | 80 | | | | Well-graded sand (SW), fine to medium, trace silt, little ash and cinders [FILL]<br>- 10YR 2/1 (black), wet, loose<br>- no odor, black staining | |
| | 0 | | moist | | | Well-graded sand (SW), fine to medium, trace silt, little ash and cinders [FILL]<br>- 10YR 2/1 (black), moist, loose<br>- no odor, black staining | |
| 16 | | | moist | PT | | Peat (PT), with fibers (80% fibers) [MEADOW MAT]<br>- 10YR 5/1 (gray), moist, hard<br>- no odor, no staining | |
| 18 | 0 | 100 | | | | | |
| | 0 | | moist | ML | | Silt (ML), trace fine sand [NATIVE]<br>- 10YR 5/1 (gray), moist, soft<br>- no odor, no staining | |
| 20 | | | moist | OL | | Organic soil (OL), medium stiff, organic clay [NATIVE]<br>- 10YR 5/1 (gray), moist<br>- no odor, no staining | |
| 22 | 0 | 100 | | | | | |
| 24 | 0 | | wet | SP | | Poorly graded sand (SP), fine to coarse, trace silt, little fine to coarse gravel [NATIVE]<br>- 10YR 7/6 (yellow), wet, loose<br>- no odor, no staining | RISER<br>Type: Threaded Steel Casing<br>Diameter: 10 in<br>0 - 75 ft bgs |
| | 0 | 100 | wet | SW | | | |
| 26 | | | | | | | |

**Notes:**

bgs = below surface grade
DGA = dense graded aggregate
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NAVD88 = North American Vertical Datum of 1988
NJSP = New Jersey State Plane
PID = photoionization detector
ppm = parts per million
USCS = Unified Soil Classification System
ft = feet
in = inches

**Comments:**

AECOM
30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# 114-MW81D



| | | |
|---|---|---|
| **Project Name:** Bedrock Remedial Investigation | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.45 ft NAVD88 |
| **Project Number:** 60729481 | **Drilling Method:** Terra Sonic, Fratse XL Rig | **Coordinates (NJSPNAD83) x:** 610795.9 |
| **Date Started Drilling:** 11/14/2024 | **Rig Type:** Terra Sonic, Fratse XL Rig | **Coordinates (NJSPNAD83) y:** 683046.5 |
| **Date Finished Drilling:** 11/21/2024 | **Core Size:** 6 in | **Boring Total Depth:** 125.0 ft |
| **Logged By:** Eric Acs | **Project Manager:** Shannon Gleason | **Well Diameter (inches):** 6 in |
| **Physical Location:** HCC Site 114 | | **Surface Elevation:** 12.2 ft NAVD88 |

| Depth Range (ft bgs) | PID (ppm) | Recovery (%) | Moisture | USCS | Graphic | Material Description | Well Construction |
|---|---|---|---|---|---|---|---|
| | 0 | | | | | Well-graded sand (SW), fine to medium, trace silt [NATIVE]<br>- 10YR 7/6 (yellow), wet<br>- no odor, no staining | |
| | | | wet | | | | |
| 28 | 0 | 100 | | | | Well-graded sand (SW), fine to medium, trace silt [NATIVE]<br>- 2.5YR 4/3 (reddish brown), wet<br>- no odor, no staining | |
| 30 | | | wet | | | Poorly-graded sand (SW), fine, trace silt [NATIVE]<br>- 2.5YR 4/3 (reddish brown), wet, loose<br>- no odor, no staining | |
| 32 | 0 | 100 | | | | | |
| 34 | | | | | | | |
| | | | wet | | | Poorly-graded sand (SW), fine, trace silt [NATIVE]<br>- 2.5YR 4/3 (reddish brown), wet, loose<br>- no odor, no staining | |
| 36 | 0 | 80 | | | | | |
| | | | wet | CL | | Lean clay (CL), stiff, varved [Transition Zone]<br>- 2.5YR 4/3 (reddish brown), wet<br>- no odor, no staining | |
| 38 | 0 | | | | | | |

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PID = photoionization detector
ppm = parts per million
USCS = Unified Soil Classification System
ft = feet
in = inches

**Comments:**

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# 114-MW81D



| | | |
|---|---|---|
| **Project Name:** Bedrock Remedial Investigation | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.45 ft NAVD88 |
| **Project Number:** 60729481 | **Drilling Method:** Terra Sonic, Fratse XL Rig | **Coordinates (NJSPNAD83) x:** 610795.9 |
| **Date Started Drilling:** 11/14/2024 | **Rig Type:** Terra Sonic, Fratse XL Rig | **Coordinates (NJSPNAD83) y:** 683046.5 |
| **Date Finished Drilling:** 11/21/2024 | **Core Size:** 6 in | **Boring Total Depth:** 125.0 ft |
| **Logged By:** Eric Acs | **Project Manager:** Shannon Gleason | **Well Diameter (inches):** 6 in |
| **Physical Location:** HCC Site 114 | | **Surface Elevation:** 12.2 ft NAVD88 |

| Depth Range (ft bgs) | PID (ppm) | Recovery (%) | Moisture | USCS | Graphic | Material Description | Well Construction |
|---|---|---|---|---|---|---|---|
| 40 | 0 | 80 | wet | CL | | Lean clay (CL), stiff, varved [Transition Zone]<br>- 2.5YR 4/3 (reddish brown), wet<br>- no odor, no staining | |
| | 0 | | | | | Lean clay (CL), stiff, varved [Transition Zone]<br>- 2.5YR 4/3 (reddish brown), wet<br>- no odor, no staining | |
| 42 | 0 | 100 | wet | SW | | Poorly-graded sand (SW), fine, trace silt [Transition Zone]<br>- 2.5YR 4/3 (reddish brown), wet, loose<br>- no odor, no staining | |
| 44 | 0 | | wet | CL | | Lean clay (CL), stiff, varved [Transition Zone]<br>- 2.5YR 4/3 (reddish brown), wet<br>- no odor, no staining | |
| 46 | 0 | 100 | wet | SW | | Poorly-graded sand (SW), fine, trace silt [Transition Zone]<br>- 2.5YR 4/3 (reddish brown), wet, loose<br>- no odor, no staining | |
| | 0 | | wet | CL | | Lean clay (CL), stiff, varved [Transition Zone] - 2.5YR 4/3 (reddish brown), wet<br>- no odor, no staining | |
| 48 | 0 | | wet | SW | | Poorly-graded sand (SW), fine, trace silt [Transition Zone]<br>- 2.5YR 4/3 (reddish brown), wet, loose<br>- no odor, no staining | |
| 50 | 0 | | wet | CL | | Lean clay (CL), stiff, varved [Transition Zone]<br>- 2.5YR 4/3 (reddish brown), wet<br>- no odor, no staining | |
| | 0 | 100 | wet | SW | | Poorly-graded sand (SW), fine, trace silt [Transition Zone]<br>- 2.5YR 4/3 (reddish brown), wet, loose<br>- no odor, no staining | |
| 52 | 0 | | wet | CL | | | |

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ppm = parts per million
USCS = Unified Soil Classification System
ft = feet
in = inches

**Comments:**

AECOM
30 Knightsbridge Road, Piscataway, NJ 08854
732.564.3200 office telephone

# 114-MW81D



| | | |
|---|---|---|
| **Project Name:** Bedrock Remedial Investigation | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.45 ft NAVD88 |
| **Project Number:** 60729481 | **Drilling Method:** Terra Sonic, Fratse XL Rig | **Coordinates (NJSPNAD83) x:** 610795.9 |
| **Date Started Drilling:** 11/14/2024 | **Rig Type:** Terra Sonic, Fratse XL Rig | **Coordinates (NJSPNAD83) y:** 683046.5 |
| **Date Finished Drilling:** 11/21/2024 | **Core Size:** 6 in | **Boring Total Depth:** 125.0 ft |
| **Logged By:** Eric Acs | **Project Manager:** Shannon Gleason | **Well Diameter (inches):** 6 in |
| **Physical Location:** HCC Site 114 | | **Surface Elevation:** 12.2 ft NAVD88 |

| Depth Range (ft bgs) | PID (ppm) | Recovery (%) | Moisture | USCS | Graphic | Material Description | Well Construction |
|---|---|---|---|---|---|---|---|
| | 0 | 100 | | | | Lean clay (CL), medium stiff, trace silt [Transition Zone]<br>- 2.5YR 4/3 (reddish brown), wet<br>- no odor, no staining | |
| 54 | 0 | | wet | SW | | Poorly-graded sand (SW), fine, trace silt [Transition Zone]<br>- 2.5YR 4/3 (reddish brown), wet, loose<br>- no odor, no staining | |
| | 0 | | wet | | | Poorly-graded sand (SW), fine, trace silt, some clay [Transition Zone]<br>- 2.5YR 4/3 (reddish brown), wet, loose<br>- no odor, no staining | |
| 56 | 0 | 80 | | | | | |
| | 0 | | wet | CL | | Lean clay (CL), stiff, varved [Transition Zone]<br>- 2.5YR 4/3 (reddish brown), wet<br>- no odor, no staining | |
| 58 | 0 | | wet | SM | | Fine to coarse sand (SM), some silt, little fine to coarse gravel [BASAL TILL]<br>- 2.5YR 4/3 (reddish brown), wet, dense<br>- no odor, no staining | |
| | 0 | | wet | | | Well-graded sand (SM), fine to coarse, fine to coarse gravel, trace cobbles [BASAL TILL]<br>- 2.5YR 4/3 (reddish brown), wet, dense<br>- no odor, no staining | |
| 60 | | | | | | | |
| | 0 | 60 | | | | | |
| 62 | | | | | | | |
| | | | | | | | |
| 64 | | | | | | | |

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|---|---|---|
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| **Date Started Drilling:** 11/14/2024 | **Rig Type:** Terra Sonic, Fratse XL Rig | **Coordinates (NJSPNAD83) y:** 683046.5 |
| **Date Finished Drilling:** 11/21/2024 | **Core Size:** 6 in | **Boring Total Depth:** 125.0 ft |
| **Logged By:** Eric Acs | **Project Manager:** Shannon Gleason | **Well Diameter (inches):** 6 in |
| **Physical Location:** HCC Site 114 | | **Surface Elevation:** 12.2 ft NAVD88 |

| Depth Range (ft bgs) | PID (ppm) | Recovery (%) | Moisture | USCS | Graphic | Material Description | Well Construction |
|---|---|---|---|---|---|---|---|
| 66 | 0 | 80 | wet | | | Well-graded sand (SM), fine to coarse, some fine to coarse gravel, trace cobbles [BASAL TILL]<br>- 2.5YR 4/3 (reddish brown), wet, dense<br>- no odor, no staining | |
| 68 | | | | | | | |
| 70 | | | wet | | | Well-graded sand (SM), fine to coarse, fine to coarse gravel, trace cobbles [BASAL TILL]<br>- 2.5YR 4/3 (reddish brown), wet, dense<br>- no odor, no staining | |
| 72 | | 80 | | BEDROCK | | Bedrock, highly weathered [LOCKATONG FORMATION]<br>- 10YR 5/2 (grayish brown) | |
| 74 | | | | | | Bedrock, moderately weathered, fine grained, faintly laminated, 10-inch steel casing set to 75 ft bgs [LOCKATONG FORMATION]<br>- 10YR 5/2 (grayish brown) | |
| 76 | | 70 | moist | | | Bedrock, highly weathered, some rounded fine to coarse gravel in a sand/clay matrix [LOCKATONG FORMATION]<br>- 10YR 6/1 (gray), moist | |
| 78 | | | | | | | |

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in = inches

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# 114-MW81D



| | | |
|---|---|---|
| **Project Name:** Bedrock Remedial Investigation | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.45 ft NAVD88 |
| **Project Number:** 60729481 | **Drilling Method:** Terra Sonic, Fratse XL Rig | **Coordinates (NJSPNAD83) x:** 610795.9 |
| **Date Started Drilling:** 11/14/2024 | **Rig Type:** Terra Sonic, Fratse XL Rig | **Coordinates (NJSPNAD83) y:** 683046.5 |
| **Date Finished Drilling:** 11/21/2024 | **Core Size:** 6 in | **Boring Total Depth:** 125.0 ft |
| **Logged By:** Eric Acs | **Project Manager:** Shannon Gleason | **Well Diameter (inches):** 6 in |
| **Physical Location:** HCC Site 114 | | **Surface Elevation:** 12.2 ft NAVD88 |

| Depth Range (ft bgs) | PID (ppm) | Recovery (%) | Moisture | USCS | Graphic | Material Description | Well Construction |
|---|---|---|---|---|---|---|---|
| 80 | | 70 | | | | Bedrock, highly weathered, some rounded fine to coarse gravel in a sand/clay matrix [LOCKATONG FORMATION] - 10YR 6/1 (gray), moist | |
| | | | | | | Bedrock, moderately weathered, fine grained [LOCKATONG FORMATION] - 10YR 5/2 (grayish brown) | |
| 82 | | 40 | | | | Bedrock, highly weathered, fine to coarse broken rock [LOCKATONG FORMATION] - 10YR 6/1 (gray) | |
| 84 | | | | | | Bedrock, moderately weathered, fine grained [LOCKATONG FORMATION] - 10YR 6/1 (gray) | |
| 86 | | 30 | | | | Bedrock, highly weathered, decomposed, fine to coarse broken rock [LOCKATONG FORMATION] - 10YR 6/1 (gray) | |
| 88 | | | | | | | |
| 90 | | 100 | | | | | |

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# 114-MW81D



| | | |
|---|---|---|
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| **Date Finished Drilling:** 11/21/2024 | **Core Size:** 6 in | **Boring Total Depth:** 125.0 ft |
| **Logged By:** Eric Acs | **Project Manager:** Shannon Gleason | **Well Diameter (inches):** 6 in |
| **Physical Location:** HCC Site 114 | | **Surface Elevation:** 12.2 ft NAVD88 |

| Depth Range (ft bgs) | PID (ppm) | Recovery (%) | Moisture | USCS | Graphic | Material Description | Well Construction |
|---|---|---|---|---|---|---|---|
| 92 | | 100 | | | | Bedrock, highly weathered, decomposed, fine to coarse broken rock in a sand/clay matrix [LOCKATONG FORMATION] - 10YR 6/1 (gray) | |
| 94 | | | | | | | |
| 96 | | 70 | | | | Bedrock, highly weathered, decomposed, broken rock in a sand/clay matrix, 6-inch steel casing set to 100 ft bgs [LOCKATONG FORMATION] - 10YR 6/1 (gray) | |
| 98 | | | | | | | |
| 100 | | 60 | | | | Bedrock, angular, broken rock with sand/clay matrix, hard drilling [LOCKATONG FORMATION] - 10YR 6/1 (gray) | 5 3/4-inch open borehole in rock:100 - 125 ft bgs |
| 102 | | | | | | | |
| 104 | | | | | | | |

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**Comments:**

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# 114-MW81D



| | | |
|---|---|---|
| **Project Name:** Bedrock Remedial Investigation | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.45 ft NAVD88 |
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| **Date Started Drilling:** 11/14/2024 | **Rig Type:** Terra Sonic, Fratse XL Rig | **Coordinates (NJSPNAD83) y:** 683046.5 |
| **Date Finished Drilling:** 11/21/2024 | **Core Size:** 6 in | **Boring Total Depth:** 125.0 ft |
| **Logged By:** Eric Acs | **Project Manager:** Shannon Gleason | **Well Diameter (inches):** 6 in |
| **Physical Location:** HCC Site 114 | | **Surface Elevation:** 12.2 ft NAVD88 |

| Depth Range (ft bgs) | PID (ppm) | Recovery (%) | Moisture | USCS | Graphic | Material Description | Well Construction |
|---|---|---|---|---|---|---|---|
| | | 60 | | | | Bedrock, angular, broken rock with sand/clay matrix, hard drilling [LOCKATONG FORMATION] - 10YR 6/1 (gray) | |
| 106 | | | | | | Bedrock, laminated, large angular broken pieces, hard drilling [LOCKATONG FORMATION] - 10YR 6/1 (gray) | |
| | | 60 | | | | | |
| 108 | | | | | | | |
| 110 | | | | | | Bedrock, large angular broken pieces, hard drilling [LOCKATONG FORMATION] - 10YR 6/1 (gray) | |
| 112 | | 60 | | | | Bedrock, small angular broken pieces, hard drilling [LOCKATONG FORMATION] - 10YR 6/1 (gray) | |
| 114 | | | | | | | |
| 116 | | 20 | | | | Bedrock, large angular and disc pieces of broken rock, very hard drilling [LOCKATONG FORMATION] - 10YR 6/1 (gray) | |

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**Comments:**

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# 114-MW81D



| | | |
|---|---|---|
| **Project Name:** Bedrock Remedial Investigation | **Drilling Company:** ADT | **Top of PVC Elevation:** 15.45 ft NAVD88 |
| **Project Number:** 60729481 | **Drilling Method:** Terra Sonic, Fratse XL Rig | **Coordinates (NJSPNAD83) x:** 610795.9 |
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| **Date Finished Drilling:** 11/21/2024 | **Core Size:** 6 in | **Boring Total Depth:** 125.0 ft |
| **Logged By:** Eric Acs | **Project Manager:** Shannon Gleason | **Well Diameter (inches):** 6 in |
| **Physical Location:** HCC Site 114 | | **Surface Elevation:** 12.2 ft NAVD88 |

| Depth Range (ft bgs) | PID (ppm) | Recovery (%) | Moisture | USCS | Graphic | Material Description | Well Construction |
|---|---|---|---|---|---|---|---|
| 118 | | 20 | | | | Bedrock, large angular and disc pieces of broken rock, very hard drilling [LOCKATONG FORMATION] - 10YR 6/1 (gray) | |
| 120 | | | | | | | |
| | | 60 | | | | Bedrock, large angular pieces of broken rock, very hard drilling [LOCKATONG FORMATION] - 10YR 6/1 (gray) | |
| 122 | | | | | | | |
| 124 | | | | | | | |
| 126 | | | | | | Boring terminated at 125 feet | |
| 128 | | | | | | | |
| 130 | | | | | | | |

**Notes:**

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in = inches

**Comments:**

**New Jersey Department of Environmental Protection**
Site Remediation Program

# MONITORING WELL CERTIFICATION FORM A - AS-BUILT CERTIFICATION

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: HUDSON COUNTY SITE 132
List all AKAs: JERSEY CITY REDEVELOPMENT AGENCY
Street Address: 4 JACKSON ST (39 KEARNEY AVE)
Municipality: JERSEY CITY (Township, Borough or City)
County: HUDSON Zip Code: 07305
Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner JERSEY CITY REDEVELOPMENT AGENCY
2. Well Location (Street Address) 824 GARFIELD AVE
3. Well Location (Municipal Block and Lot) Block# 21510 Lot # 2

## SECTION C. WELL LOCATION SPECIFICS

| | |
|---|---|
| 1. Well Permit Number (This number must be permanently affixed to the well casing): | E20241151B |
| 2. Site Well Number as shown on application or plans): | 114-MW81D |
| Well Completion Date: | 11/21/2024 |
| 4. Distance from Top of Casing (cap off) to ground surface (nearest 0.01'): | 3.00 |
| 5. Total Depth of Well to the nearest ½ foot: | 125.00 |
| 6. Depth to Top of Screen (or top of open hole) from top of casing (nearest 0.01'): | 128.00 |
| 7. Screen Length (or length of open hole) in feet: | 25' |
| 8. Screen or Slot Size: | N/A |
| 9. Screen or Slot Material: | N/A |
| 10. Casing Material (PVC, steel, or other – specify): | STEEL |
| 11. Casing Diameter (inches): | 6" |
| 12. Static Water Level from top of casing at the time of installation (nearest 0.01'): | 9.65 |
| 13. Yield (gallons per minute): | 1.5 GPM |
| 14. Development Techinque (specify): | PUMP + SURGE |
| 15. Length of Time well is developed/pumped or bailed (hours and minutes): | 4 HOURS |

**New Jersey Department of Environmental Protection**
Site Remediation Program

**Monitoring Well Certification Form B - Location Certification**

Date Stamp
(For Department use only)

## SECTION A. SITE NAME AND LOCATION

Site Name: Garfield Avenue Group Chrome Sites (PPG)
List all AKAs: PPG Site 114
Street Address: Garfield Avenue and Carteret Avenue
Municipality: City of Jersey City (Township, Borough or City)
County: Hudson Zip Code: 07305
Program Interest (PI) Number(s): Case Tracking Number(s):

## SECTION B. WELL OWNER AND LOCATION

1. Name of Well Owner: PPG Industries
2. Well Location (Street Address): PPG Site 114, Garfield Avenue and Carteret Avenue, Jersey City, NJ 07305
3. Well Location (Municipal Block and Lot): Block # 21501 Lot # 2

## SECTION C. WELL LOCATION SPECIFICS

1. Well Permit Number (This number must be permanently affixed to the well casing): E202411518
2. Site Well Number (As shown on application or plans): 114-MW81D
3. Geographic Coordinate NAD 83 to nearest 1/100 of a second:
   Latitude: North 40°42'28.18" Longitude: West 74°04'18.94"
4. New Jersey State Plane Coordinates NAD 83 datum, US survey feet units, to nearest foot:
   North 683046.5 East 610795.9
5. Elevation of Top of Inner Casing (cap off) at reference mark (nearest 0.01'): 15.45
   Elevation of Top of Outer Casing: 15.82 Elevation of Ground: 12.2
   *Check one:* [X] NAVD 88 [ ] NGVD29 [ ] On Site Datum [ ] Other
6. Source of elevation datum (benchmark, number/description and elevation/datum). If an on-site datum is used, identify here, assume datum of 100', and give approximated actual elevation (referencing NAVD 88).
   The vertical datum is the North American Vertical Datum of 1988 (NAVD88) GEOID09 verified by differential GPS observations from the Leica Smartnet Network on May 10, 2012. On site benchmarks have been set.
7. Significant observations and notes:
   Lot and Block information is for reference only and does not necessarily indicate that property, boundary, or lot lines have been surveyed relative to this well.

## SECTION D. LAND SURVEYOR'S CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

SEAL




Professional Land Surveyor's Signature: Date: 12/17/2024
Surveyor's Name: John D. Beattie License Number: 24GS04331900
Firm Name: Borbas Surveying & Mapping, LLC Certificate of Authorization #: 24GA28056200
Mailing Address: 402 Main Street
City/Town: Boonton State: New Jersey Zip Code: 07005
Phone Number: 973-316-8743 Ext: Fax:

Service ID: 1855859

This document has not yet been reviewed and approved or denied by the NJ DEP. Deficiencies in submittal information or actual construction may result in denial.

## WELL RECORD SUBMITTAL PDF

**PROPERTY OWNER:** Jersey City Redevelopment Agency Jersey City Redevelopment Agency

Organization: Redevelopment Agency

Address: 4 Jackson Square (39 KEARNEY AVE), 39 KEARNEY AVE, Jersey City (Hudson), New Jersey 07305

**WELL LOCATION:** Hudson County Chormate Site 132

Address: 824 GARFIELD AVE

County: Hudson Municipality: Jersey City Lot: 2 Block: 21510

Easting(X): 610795 Northing(Y): 683046 Coordinate System: NJ State Plane (NAD83) - USFEET

Method: Survey frm Benchmark Point of Reference: Well

GPS Manufacturer: Surveyor Name: JOHN D.BEATTIE

GPS Model: Surveyor License #: 24GS04331900

Accuracy: 1 Accuracy units: Feet

**WELL USE:** Monitoring **DATE WELL STARTED:** 11/14/2024

**Other Use(s):** **DATE WELL COMPLETED:** 11/21/2024

**WELL CONSTRUCTION**

**Permit Number** Total Depth Drilled(ft): 125 Drilling Company:

E202411518 Finished Well Depth(ft): 125 Driller Name: Joseph Kurzynowski

Local ID: 114-MW81D Well was finished: Above Grade License No.: 0001618

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Diameter (inches) | Material | Wgt./Rating/Screen Slot # (lbs/sch no.) |
|---|---|---|---|---|---|
| Borehole(s) | 0 | 75 | 14 | N/A | N/A |
| Borehole(s) | 75 | 100 | 10 | N/A | N/A |
| Borehole(s) | 100 | 125 | 6 | N/A | N/A |
| Casing(s) | 0 | 75 | 10 | Steel | SCH 40 |
| Casing(s) | 0 | 100 | 6 | Steel | SCH 40 |
| Screen(s) | | | | | |

| | Depth to Top (ft.) | Depth to Bottom (ft.) | Outer Diameter (in) | Inner Diameter (in) | Material | | |
|---|---|---|---|---|---|---|---|
| | | | | | Bentonite (lbs.) | Neat Cement (lbs.) | Water (gal.) |
| Grout | 0 | 75 | 14 | 10 | 90 | 1800 | 120 |
| Grout | 0 | 100 | 10 | 6 | 90 | 1800 | 120 |
| Gravel Pack | | | | | | | |

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Sonic

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Additional Information: OPEN 6 INCH BOREHOLE 100 TO 125 FEET

Attachments:

**RECORD OF TEST**

Test Date:

Static Water Level: 9.65 ft. below land surface

Pumping Water Level: ft. below land surface

Water Level Measure Tool: M SCOPE

Pumping Equipment:

Well Yield: gpm

Depth to Pump: ft. below land surface

Pump Capacity: gpm

Total Design Head: ft.

Pump Horsepower:

If pump tested Discharge Rate: gpm

Duration of Test: hours

Date Boring Decommissioned:

**PUMPING EQUIPMENT AND ADDITIONAL INFORMATION**

Installed:

Installer's Name:

Installer's Registration No.:

Pump Type:

Well Development Period: 4 hours

Method of Development:

Protective Casing: Yes

Drilling Fluid:

Drill Rig: SONIC

Health and Safety Plan: Yes

**GEOLOGIC LOG**

| Depth to Top | Depth to Bottom | Color | USCS | Additional Description |
|---|---|---|---|---|
| 0 | 19.5 | GRAY | SW - Well-graded sands and gravelly sands, little or no fines | DGA FILL |
| 19.5 | 23.5 | BLACK | OL - Organic silts and organic silty clays of low plasticity | |
| 23.5 | 37.5 | RED BROWN | SW - Well-graded sands and gravelly sands, little or no fines | |
| 37.5 | 45 | RED BROWN | CL - Inorganic clays of low to medium plasticity, gravelly/sandy/silty/lean clays | |
| 45 | 46 | RED BROWN | SW - Well-graded sands and gravelly sands, little or no fines | |
| 46 | 50 | RED BROWN | CL - Inorganic clays of low to medium plasticity, gravelly/sandy/silty/lean clays | |
| 50 | 57 | RED BROWN | SW - Well-graded sands and gravelly sands, little or no fines | |
| 57 | 71.5 | RED BROWN | SM - Silty sands, sand-silt mixtures | |
| 71.5 | 95 | GRAY | WR - Weathered Rock | LOCKATONG FORMATION |
| | | | | |

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| | | | | |
|---|---|---|---|---|
| 95 | 125 | GRAY | CR - Competent Rock | LOCKATONG FORMATION |

PENDING APPROVAL

# Appendix D
# Bedrock Injection Summary

## Introduction to Appendix D –Bedrock Injection Summary

The Site 114 Bedrock Injection Work Plan and associated Discharge to Groundwater Permit-by-Rule (DGW PBR) Application was submitted to the NJDEP on March 15, 2024 (AECOM, 2024b). Meetings were held with the NJDEP on April 12 and April 23, 2024 to discuss the submitted plan, which was subsequently approved by the NJDEP on May 16, 2024 (NJDEP, 2024b). Well installation, well development, groundwater sampling, and injection activities were conducted during Q2, Q3, and Q4 2024 in accordance with the approved Work Plan. The sequence of events and references to where the respective data are provided in this RAPR, or previously submitted RAPRs, are outlined below:

| Date | Task | Task Detail | Location Data Provided |
|---|---|---|---|
| May 2, 2024 – June 12, 2024 | Well Installation and Well Development | The injection and monitoring wells are 4 inches in diameter and completed with 10-foot wire-wrapped stainless-steel screens. | Table 1 - Monitoring and Remediation Well Network and Construction Details |
| | | Following installation, wells were developed by pumping and surging to ensure proper connection with the surrounding aquifer. | Appendix D – Well Documentation provided in the Q3 2024 RAPR |
| May 20, 2024 – June 21, 2024 | Baseline Groundwater Monitoring | Sampling was conducted to quantify baseline analytical and geochemical conditions in groundwater so that indications of injectate propagation could be assessed during the testing. | Appendix A - Groundwater Sampling Analytical and QA/QC Sample Results |
| | | | Appendix E – Deuterium Analytical Data Summary |
| June 27, 2024 – July 3, 2024, September 25, 2024, and October 1, 2024 | Flushwater Pressure Testing of Injection Wells 114-PW-01WR, -02WR, -03WR, -04WR, -05WR, -06WR, -07WR, -09WR, -10WR, and 114-MW77WR | Pressure testing was conducted prior to injections to quantify the rate of pressure increase and dissipation at corresponding flow rates to maintain injection well integrity and avoid development of preferential fractures during injections. | Appendix D, Table D-1 – Pressure Testing Results |
| July 11, 2024 – January 3, 2025 | Bedrock Injections | A total of 412,237 gallons of fluids (molasses and water) were injected into the bedrock. | Table 3a – Operational Summary of Injection - Bedrock |
| July 11, 2024 - December 6, 2024 | Treatment Groundwater Monitoring | Sampling was conducted daily during the first stages of the injection period to evaluate arrival of injectate (Total Organic Carbon [TOC]) and changes in geochemical parameters (pH and specific conductivity). After the first two weeks of injections, sampling was reduced from a daily to a monthly frequency. Monthly sampling was | Appendix A - Groundwater Sampling Analytical and QA/QC Sample Results |

| Date | Task | Task Detail | Location Data Provided |
|---|---|---|---|
| | | conducted to evaluate Chromium (Cr), Hexavalent Chromium (Cr[VI]), and geochemical conditions during injections. For sampling events conducted from July through October 2024, monitoring wells were also sampled for the inert tracer Deuterium (D2O), which was injected during the basal till pilot test to differentiate the treatment responses attributed to the bedrock injection program versus the basal till pilot test. A table summarizing the monitoring wells at which breakthrough of TOC occurred in response to bedrock injections is provided in Table D-2. | Table E – Deuterium Analytical Data Summary<br><br>Appendix D, Table D-2 – TOC Breakthrough Summary |
| January 2025 – present | Post-Treatment Groundwater Monitoring | Quarterly sampling is ongoing to evaluate Cr, Cr(VI), and geochemical conditions following injections. | Appendix A - Groundwater Sampling Analytical and QA/QC Sample Results |

Based on data collected through Q4 2024, the objectives of the bedrock injection program have been met. Key findings include:

- Following bedrock injection start-up, reagent breakthrough has been achieved at seven bedrock monitoring wells, with maximum detected TOC concentrations ranging from 47 mg/L to 3,200 mg/L (Table D-2). As shown on Table D-2, the duration of injections at which reagent breakthrough was observed at those monitoring wells ranged from 1 to 160 days, indicating variability in the rate of injectate propagation within bedrock.
- Significant reductions in Cr(VI) concentrations in bedrock wells were observed in response to the bedrock injection program. As of Q4 2024, only two bedrock monitoring wells (114-MW76WR and 114-MW66D-Port 1) remain with Cr(VI) concentrations greater than 1,000 µg/L (Figure 4F, Progress panels).
- Injections into bedrock affected wells screened within the deep water-bearing zone (i.e., the basal till and Lower Deep Zone) as demonstrated by reagent breakthrough at wells 114-PZ-57T, 114-PZ-66D, 114-PZ-66T, 114-MW54C, and 114-MW61C (Table D-2), indicating that there is an advective transport pathway in the southwestern quadrant of Site 114 from bedrock into the overburden. Based on this observation, changes in the concentrations of Cr and Cr(VI) can be expected to occur at wells completed within the bedrock and deep overburden in response to the injection program implemented in the bedrock.

**Table D-1 - Pressure Testing Results**
**Groundwater Remedial Action Progress Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| Bedrock Injections Pressure Testing Results | |
|---|---|
| **114-PW-01WR** | |
| Flowrate (gpm) | Wellhead Pressure (psi) |
| 1.0 | < 1 |
| **114-PW-02WR** | |
| Flowrate (gpm) | Wellhead Pressure (psi) |
| 0.6 | 1.5 |
| 1 | 3 |
| **114-PW-03WR** | |
| Flowrate (gpm) | Wellhead Pressure (psi) |
| 1.0 | < 1 |
| **114-PW-04WR** | |
| Flowrate (gpm) | Wellhead Pressure (psi) |
| 1.0 | < 1 |
| **114-PW-05WR** | |
| Flowrate (gpm) | Wellhead Pressure (psi) |
| 0.4 | 0.2 |
| 0.7 | 2 |
| **114-PW-06WR** | |
| Flowrate (gpm) | Wellhead Pressure (psi) |
| 0.3 | 0 |
| 0.4 | 7.5 |
| 0.5 | 10.5 |
| **114-PW-07WR** | |
| Flowrate (gpm) | Wellhead Pressure (psi) |
| 1.0 | 1 |
| **114-PW-09WR** | |
| Flowrate (gpm) | Wellhead Pressure (psi) |
| 0.4 | 1.5 |
| 1.0 | 2.1 |
| **114-PW-10WR** | |
| Flowrate (gpm) | Wellhead Pressure (psi) |
| 1.0 | < 1 |
| **114-MW77WR** | |
| Flowrate (gpm) | Wellhead Pressure (psi) |
| 0.2 | 1.6 |
| 1.0 | 2.5 |

**Abbreviations:**

| | |
|---|---|
| psi | pounds per square inch |
| gpm | gallons per minute |
| Q4 | fourth quarter |

**Table D-2 - TOC Breakthrough Summary**
**Groundwater Remedial Action Progress Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

AECOM

| Well ID | Water-Bearing Zone | Baseline TOC Concentration Prior to Bedrock Injections (mg/L)[1] | Bedrock Injections Start Date | Date Initial TOC Breakthrough observed | Bedrock Injections Duration (Days) | Initial TOC concentration at Breakthrough (mg/L) | Maximum TOC Concentration Observed (mg/L) |
|---|---|---|---|---|---|---|---|
| 114-MW57C | WEATHERED BEDROCK | 7.3 | 7/11/2024 | 7/17/2024 | 6 | 149 | 2190 |
| 114-MW76WR | WEATHERED BEDROCK | 9.0 | | 10/16/2024 | 97 | 16.8 | 47 |
| 114-MW79WR | WEATHERED BEDROCK | 1.7 | | 7/11/2024 | 1 | 861 | 3200 |
| 114-MW53C | WEATHERED BEDROCK | 4.6 | | 8/5/2024 | 25 | 547 | 1780 |
| 114-PZ-66WR | WEATHERED BEDROCK | < 5.0 U | | 7/26/2024 | 15 | 17.5 | 1830 |
| 114-MW52D-Port2 | BEDROCK | 43.9 | | 9/19/2024 | 70 | 87.8 | 131 |
| 114-MW57D-Port1 | BEDROCK | 31.6 | | 12/18/2024 | 160 | 232 | 232 |
| 114-MW57D-Port2 | BEDROCK | 28.7 | | 12/18/2024 | 160 | 214 | 214 |
| 114-MW57D-Port3 | BEDROCK | 17.4 | | 12/18/2024 | 160 | 387 | 387 |
| 114-MW57D-Port4 | BEDROCK | 20.6 | | 12/18/2024 | 160 | 355 | 355 |
| 114-PZ-57T | BASAL TILL | 1.3 | | 7/26/2024 | 15 | 4280 | 4280 |
| 114-PZ-66D | DEEP (LOWER) | 1.0 | | 11/6/2024 | 118 | 176 | 583 |
| 114-PZ-66T | BASAL TILL | < 5.0 U | | 8/7/2024 | 27 | 79.2 | 1210 |
| 114-MW54C | BASAL TILL | 1.6 | | 10/3/2024 | 84 | 171 | 222 |
| 114-MW61C | BASAL TILL | 1.0 | | 10/2/2024 | 83 | 217 | 229 |

**Notes and Abbreviations:**

(1) Baseline TOC data presented is the last sample collected prior to the start of Bedrock Injections on 7/11/2024.

| | |
|---|---|
| TOC | Total Organic Carbon |
| mg/L | milligrams per liter |
| Q4 | fourth quarter |
| < 5.0 U | Constituent not detected at concentration greater than the sample reporting limit. |

# Appendix E
# Deuterium Analytical Data Summary

**Appendix E – Deuterium Analytical Data Summary**
**Groundwater Remedial Action Progress Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| Well ID | Sample ID | Sample Collection | | Sample # | $\delta^{18}O$ | Aver | Stdv | $\delta^{2}H$ | Aver | Stdv |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Date | Time | | $H_2O$ | VSMOW | | $H_2O$ | VSMOW | |
| 114-MW52C | 114-MW52C-73.0-20241003 | 10/3/2024 | 11:05 | 172916 | X | -7.11 | 0.09 | X | -41.5 | 0.1 |
| 114-MW53C | 114-MW53C-47.9-20240528 | 5/28/2024 | 13:05 | 166482 | X | -7.90 | 0.10 | X | -47.5 | 0.4 |
| 114-MW53C | 114-MW53C-AM-20240711 | 7/11/2024 | 8:58 | 171233 | X | -7.00 | 0.06 | X | -43.1 | 0.3 |
| 114-MW53C | 114-MW53C-PM-20240716 | 7/16/2024 | 13:27 | 171234 | X | -7.01 | 0.11 | X | -42.6 | 0.3 |
| 114-MW53C | 114-MW53C-AM-20240724 | 7/24/2024 | 8:23 | 171235 | X | -7.12 | 0.10 | X | -43.8 | 0.4 |
| 114-MW53C | 114-MW53C-48.0-20240805 | 8/5/2024 | 13:30 | 171563 | X | -6.88 | 0.08 | X | -41.3 | 0.1 |
| 114-MW53C | 114-MW53C-48.0-20240904 | 9/4/2024 | 12:05 | 172551 | X | -6.80 | 0.05 | X | -40.9 | 0.4 |
| 114-MW53C | 114-MW53C-48.0-20241001 | 10/1/2024 | 9:35 | 172903 | X | -6.66 | 0.04 | X | -39.3 | 0.3 |
| 114-MW54C | 114-MW54C-77.0-20241003 | 10/3/2024 | 12:30 | 172917 | X | -7.21 | 0.06 | X | -41.8 | 0.2 |
| 114-MW56C | 114-MW56C-71.5-20240520 | 5/20/2024 | 10:05 | 166472 | X | -7.92 | 0.03 | X | -43.1 | 0.2 |
| 114-MW56C | 114-MW56C-PM-20240613 | 6/13/2024 | 11:55 | 167299 | X | -8.05 | 0.07 | X | -45.1 | 0.3 |
| 114-MW56C | 114-MW56C-PM-20240619 | 6/19/2024 | 12:58 | 167289 | X | -8.15 | 0.02 | X | -45.8 | 0.1 |
| 114-MW56C | 114-MW56C-PM-20240626 | 6/26/2024 | 12:40 | 168397 | X | -6.75 | 0.09 | X | -43.2 | 0.4 |
| 114-MW56C | 114-MW56C-AM-20240627 | 6/27/2024 | 11:23 | 168415 | X | -6.75 | 0.07 | X | -43.6 | 0.4 |
| 114-MW56C | 114-MW56C-71.5-20240729 | 7/29/2024 | 12:05 | 171231 | X | -7.22 | 0.03 | X | -43.5 | 0.1 |
| 114-MW56C | 114-MW56C-71.5-20240820 | 8/20/2024 | 10:00 | 172180 | X | -7.21 | 0.08 | X | -43.9 | 0.3 |
| 114-MW56C | 114-MW56C-71.5-20240820-X | 8/20/2024 | 10:05 | 172181 | X | -7.18 | 0.07 | X | -43.8 | 0.4 |
| 114-MW56C | 114-MW56C-71.5-20240911 | 9/11/2024 | 9:40 | 172565 | X | -7.04 | 0.07 | X | -41.6 | 0.3 |
| 114-MW56C | 114-MW56C-71.5-20241003 | 10/3/2024 | 10:15 | 172913 | X | -7.27 | 0.09 | X | -43.0 | 0.4 |
| 114-MW56C | 114-MW56C-71.5-20241003-X | 10/3/2024 | 10:20 | 172914 | X | -7.29 | 0.05 | X | -42.7 | 0.2 |
| 114-MW57C | 114-MW57C-70.9-20240520 | 5/20/2024 | 12:30 | 166473 | X | -7.75 | 0.07 | X | -42.8 | 0.2 |
| 114-MW57C | 114-MW57C-70.9-20240530 | 5/30/2024 | 10:10 | 166498 | X | -8.11 | 0.11 | X | -45.0 | 0.4 |
| 114-MW57C | 114-MW57C-70.9-20240530-X | 5/30/2024 | 10:15 | 166496 | X | -8.15 | 0.03 | X | -45.1 | 0.1 |
| 114-MW57C | 114-MW57C-AM-20240621 | 6/21/2024 | 11:17 | 168405 | X | -7.15 | 0.06 | X | -43.2 | 0.4 |
| 114-MW57C | 114-MW57C-PM-20240626 | 6/26/2024 | 12:32 | 168406 | X | -7.15 | 0.12 | X | -43.3 | 0.4 |
| 114-MW57C | 114-MW57C-AM-20240711 | 7/11/2024 | 8:28 | 171236 | X | -7.23 | 0.05 | X | -44.2 | 0.3 |
| 114-MW57C | 114-MW57C-AM-20240717 | 7/17/2024 | 10:56 | 171237 | X | -7.16 | 0.07 | X | -43.9 | 0.4 |
| 114-MW57C | 114-MW57C-PM-20240719 | 7/19/2024 | 12:45 | 171238 | X | -7.14 | 0.03 | X | -42.3 | 0.2 |
| 114-MW57C | 114-MW57C-PM-20240724 | 7/24/2024 | 12:10 | 171239 | X | -7.17 | 0.04 | X | -43.9 | 0.3 |
| 114-MW57C | 114-MW57C-70.9-20240726 | 7/26/2024 | 12:05 | 171227 | X | -7.25 | 0.02 | X | -40.0 | 0.3 |
| 114-MW57C | 114-MW57C-PM-20240731 | 7/31/2024 | 14:05 | 171268 | X | -7.30 | 0.02 | X | -46.1 | 0.1 |
| 114-MW57C | 114-MW57C-80.0-20240805 | 8/5/2024 | 10:55 | 171564 | X | -6.96 | 0.05 | X | -41.8 | 0.2 |
| 114-MW57C | 114-MW57C-70.9-20240821 | 8/21/2024 | 13:35 | 172186 | X | -6.96 | 0.03 | X | -41.5 | 0.3 |
| 114-MW57C | 114-MW57C-80.0-20240903 | 9/3/2024 | 11:25 | 172545 | X | -6.98 | 0.03 | X | -45.4 | 0.1 |
| 114-MW57C | 114-MW57C-70.9-20240930 | 9/30/2024 | 11:50 | 172895 | X | -6.33 | 0.13 | X | -38.4 | 0.2 |
| 114-MW61C | 114-MW61C-67.5-20241002 | 10/2/2024 | 12:00 | 172909 | X | -7.27 | 0.03 | X | -45.7 | 0.3 |
| 114-MW65C | 114-MW65C-64.3-20240523 | 5/23/2024 | 12:05 | 166474 | X | -7.85 | 0.09 | X | -42.8 | 0.2 |
| 114-MW65C | 114-MW65C-20240613 | 6/13/2024 | 15:26 | 167303 | X | -7.93 | 0.04 | X | -44.7 | 0.2 |
| 114-MW65C | 114-MW65C-PM-20240619 | 6/19/2024 | 13:24 | 167290 | X | -7.91 | 0.11 | X | -44.9 | 0.4 |
| 114-MW65C | 114-MW65C-PM-20240626 | 6/26/2024 | 12:52 | 168398 | X | -6.64 | 0.11 | X | -40.0 | 0.5 |
| 114-MW65C | 114-MW65C-AM-20240627 | 6/27/2024 | 9:39 | 168412 | X | -6.55 | 0.13 | X | -41.9 | 0.4 |
| 114-MW65C | 114-MW65C-64.3-20240725 | 7/25/2024 | 10:35 | 171221 | X | -7.19 | 0.03 | X | -42.2 | 0.4 |
| 114-MW65C | 114-MW65C-64.3-20240819 | 8/19/2024 | 14:40 | 172177 | X | -7.14 | 0.04 | X | -43.9 | 0.5 |
| 114-MW65C | 114-MW65C-64.3-20240912 | 9/12/2024 | 12:30 | 172566 | X | -7.04 | 0.14 | X | -41.8 | 0.2 |
| 114-MW65C | 114-MW65C-64.3-20241003 | 10/3/2024 | 10:35 | 172915 | X | -7.22 | 0.12 | X | -36.0 | 0.3 |
| 114-MW68C | 114-MW68C-54.7-20240523 | 5/23/2024 | 12:35 | 166475 | X | -7.91 | 0.04 | X | -42.8 | 0.3 |
| 114-MW68C | 114-MW68C-AM-20240624 | 6/24/2024 | 8:15 | 168407 | X | -7.15 | 0.09 | X | -43.0 | 0.4 |
| 114-MW68C | 114-MW68C-PM-20240626 | 6/26/2024 | 13:03 | 168408 | X | -7.13 | 0.12 | X | -42.0 | 0.5 |
| 114-MW68C | 114-MW68C-54.7-20240729 | 7/29/2024 | 12:35 | 171232 | X | -6.79 | 0.12 | X | -42.5 | 0.5 |
| 114-MW68C | 114-MW68C-54.7-20240820 | 8/20/2024 | 10:15 | 172179 | X | -7.00 | 0.10 | X | -43.5 | 0.2 |
| 114-MW68C | 114-MW68C-54.7-20240906 | 9/6/2024 | 12:00 | 172558 | X | -7.17 | 0.09 | X | -43.7 | 0.3 |
| 114-MW68C | 114-MW68C-54.7-20241002 | 10/2/2024 | 8:55 | 172910 | X | -7.03 | 0.08 | X | -43.2 | 0.2 |
| 114-MW75WR | 114-MW75WR-118.0-20240530 | 5/30/2024 | 9:20 | 166499 | X | -8.06 | 0.07 | X | -45.2 | 0.4 |
| 114-MW75WR | 114-MW75WR-AM-20240711 | 7/11/2024 | 11:46 | 171248 | X | -7.28 | 0.08 | X | -44.8 | 0.3 |
| 114-MW75WR | 114-MW75WR-AM-20240724 | 7/24/2024 | 10:32 | 171249 | X | -7.18 | 0.05 | X | -44.4 | 0.2 |
| 114-MW75WR | 114-MW75WR-118.0-20240807 | 8/7/2024 | 14:55 | 171581 | X | -7.11 | 0.04 | X | -42.7 | 0.2 |
| 114-MW75WR | 114-MW75WR-118.0-20240906 | 9/6/2024 | 9:30 | 172557 | X | -7.21 | 0.10 | X | -43.7 | 0.4 |
| 114-MW75WR | 114-MW75WR-118.0-20241001 | 10/1/2024 | 14:00 | 172900 | X | -7.27 | 0.06 | X | -42.4 | 0.1 |
| 114-MW76WR | 114-MW76WR-57.5-20240528 | 5/28/2024 | 12:05 | 166480 | X | -7.75 | 0.13 | X | -40.8 | 0.5 |
| 114-MW76WR | 114-MW76WR-62.5-20240528 | 5/28/2024 | 14:15 | 166481 | X | -7.81 | 0.04 | X | -43.1 | 0.5 |
| 114-MW76WR | 114-MW76WR-PM-20240715 | 7/15/2024 | 12:35 | 171259 | X | -7.44 | 0.02 | X | -48.6 | 0.2 |
| 114-MW76WR | 114-MW76WR-AM-20240725 | 7/25/2024 | 8:18 | 171260 | X | -7.46 | 0.04 | X | -49.4 | 0.2 |
| 114-MW76WR | 114-MW76WR-57.0-20240805 | 8/5/2024 | 10:30 | 171565 | X | -7.13 | 0.09 | X | -42.5 | 0.4 |
| 114-MW76WR | 114-MW76WR-62.0-20240806 | 8/6/2024 | 9:35 | 171570 | X | -7.23 | 0.07 | X | -43.4 | 0.4 |
| 114-MW76WR | 114-MW76WR-57.0-20240904 | 9/4/2024 | 9:35 | 172552 | X | -7.19 | 0.07 | X | -43.4 | 0.2 |
| 114-MW77WR | 114-MW77WR-57.0-20240528 | 5/28/2024 | 10:35 | 166478 | X | -7.99 | 0.05 | X | -42.4 | 0.2 |
| 114-MW77WR | 114-MW77WR-62.0-20240528 | 5/28/2024 | 11:35 | 166479 | X | -7.95 | 0.08 | X | -42.1 | 0.3 |
| 114-MW77WR | 114-MW77WR-AM-20240715 | 7/15/2024 | 10:46 | 171261 | X | -7.16 | 0.08 | X | -43.9 | 0.4 |
| 114-MW77WR | 114-MW77WR-AM-20240725 | 7/25/2024 | 8:48 | 171262 | X | -7.21 | 0.09 | X | -44.3 | 0.4 |
| 114-MW77WR | 114-MW77WR-62.0-20240805 | 8/5/2024 | 11:30 | 171566 | X | -7.22 | 0.08 | X | -43.2 | 0.4 |
| 114-MW77WR | 114-MW77WR-57.0-20240805 | 8/5/2024 | 13:30 | 171567 | X | -7.22 | 0.11 | X | -43.0 | 0.5 |
| 114-MW77WR | 114-MW77WR-57.0-20240903 | 9/3/2024 | 13:25 | 172546 | X | -7.41 | 0.03 | X | -47.3 | 0.1 |
| 114-MW78WR | 114-MW78WR-76.5-20240529 | 5/29/2024 | 9:45 | 166484 | X | -8.18 | 0.09 | X | -49.3 | 0.4 |
| 114-MW78WR | 114-MW78WR-81.5-20240529 | 5/29/2024 | 12:30 | 166483 | X | -8.27 | 0.06 | X | -49.1 | 0.2 |
| 114-MW78WR | 114-MW78WR-AM-20240711 | 7/11/2024 | 11:19 | 171263 | X | -7.34 | 0.01 | X | -45.0 | 0.1 |
| 114-MW78WR | 114-MW78WR-AM-20240724 | 7/24/2024 | 10:55 | 171264 | X | -7.40 | 0.09 | X | -45.3 | 0.2 |
| 114-MW78WR | 114-MW78WR-81.0-2240806 | 8/6/2024 | 9:40 | 171568 | X | -7.37 | 0.11 | X | -43.8 | 0.3 |
| 114-MW78WR | 114-MW78WR-76.0-20240806 | 8/6/2024 | 11:45 | 171569 | X | -7.29 | 0.16 | X | -43.8 | 0.4 |
| 114-MW78WR | 114-MW78WR-81.0-20240905 | 9/5/2024 | 10:00 | 172553 | X | -7.39 | 0.04 | X | -44.6 | 0.1 |
| 114-MW78WR | 114-MW78WR-81.0-20240930 | 9/30/2024 | 13:35 | 172893 | X | -7.21 | 0.11 | X | -43.3 | 0.2 |
| 114-MW79WR | 114-MW79WR-73.0-20240619 | 6/19/2024 | 9:50 | 167318 | X | -8.31 | 0.05 | X | -46.9 | 0.2 |
| 114-MW79WR | 114-MW79WR-78.5-20240619 | 6/19/2024 | 11:00 | 167317 | X | -8.20 | 0.09 | X | -46.2 | 0.2 |
| 114-MW79WR | 114-MW79WR-AM-20240624 | 6/24/2024 | 11:44 | 168409 | X | -7.27 | 0.04 | X | -44.3 | 0.3 |
| 114-MW79WR | 114-MW79WR-PM-20240626 | 6/26/2024 | 13:30 | 168410 | X | -7.28 | 0.09 | X | -44.1 | 0.4 |
| 114-MW79WR | 114-MW79WR-AM-20240711 | 7/11/2024 | 10:08 | 171243 | X | -7.32 | 0.07 | X | -45.0 | 0.2 |
| 114-MW79WR | 114-MW79WR-PM-20240711 | 7/11/2024 | 14:09 | 171244 | X | -7.48 | 0.02 | X | -45.8 | 0.3 |
| 114-MW79WR | 114-MW79WR-PM-20240716 | 7/16/2024 | 12:52 | 171245 | X | -6.94 | 0.02 | X | -41.9 | 0.1 |
| 114-MW79WR | 114-MW79WR-AM-20240722 | 7/22/2024 | 9:55 | 171246 | X | -7.31 | 0.03 | X | -42.0 | 0.4 |

**Appendix E – Deuterium Analytical Data Summary**
**Groundwater Remedial Action Progress Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| Well ID | Sample ID | Sample Collection | | Sample # | $\delta^{18}O$ | Aver | Stdv | $\delta^{2}H$ | Aver | Stdv |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Date | Time | | $H_2O$ | VSMOW | | $H_2O$ | VSMOW | |
| 114-MW79WR | 114-MW79WR-PM-20240725 | 7/25/2024 | 13:10 | 171247 | X | -7.16 | 0.03 | X | -42.7 | 0.4 |
| 114-MW79WR | 114-MW79WR-PM-20240731 | 7/31/2024 | 13:20 | 171267 | X | -7.14 | 0.03 | X | -44.9 | 0.1 |
| 114-MW79WR | 114-MW79WR-78.0-20240807 | 8/7/2024 | 10:45 | 171577 | X | -6.91 | 0.04 | X | -42.0 | 0.1 |
| 114-MW79WR | 114-MW79WR-78.0-20240807-X | 8/7/2024 | 10:50 | 171578 | X | -6.88 | 0.06 | X | -41.8 | 0.3 |
| 114-MW79WR | 114-MW79WR-73.0-20240807 | 8/7/2024 | 13:45 | 171576 | X | -6.86 | 0.10 | X | -42.1 | 0.2 |
| 114-MW79WR | 114-MW79WR-78.0-20240903 | 9/3/2024 | 14:00 | 172548 | X | -6.52 | 0.04 | X | -39.4 | 0.3 |
| 114-MW79WR | 114-MW79WR-78.0-20240930 | 9/30/2024 | 15:05 | 172896 | X | -6.31 | 0.05 | X | -38.2 | 0.2 |
| 114-MW79WR | 114-MW79WR-78.0-20240930-x | 9/30/2024 | 15:10 | 172897 | X | -6.32 | 0.09 | X | -38.5 | 0.3 |
| 114-MW80WR | 114-MW80WR-AM-20240711 | 7/11/2024 | 10:49 | 171265 | X | -7.43 | 0.04 | X | -45.6 | 0.1 |
| 114-MW80WR | 114-MW80WR-PM-20240724 | 7/24/2024 | 12:33 | 171266 | X | -7.49 | 0.05 | X | -45.9 | 0.3 |
| 114-MW80WR | 114-MW80WR-91.5-20240807 | 8/7/2024 | 9:55 | 171574 | X | -7.42 | 0.04 | X | -44.8 | 0.2 |
| 114-MW80WR | 114-MW80WR-86.5-20240807 | 8/7/2024 | 11:20 | 171575 | X | -7.44 | 0.02 | X | -44.8 | 0.1 |
| 114-MW80WR | 114-MW80WR-91.5-20240905 | 9/5/2024 | 13:00 | 172554 | X | -7.51 | 0.03 | X | -44.7 | 0.1 |
| 114-MW80WR | 114-MW80WR-91.5-20240930 | 9/30/2024 | 11:15 | 172894 | X | -7.71 | 0.10 | X | -44.2 | 0.5 |
| 114-P2-MW-7D | 114-P2-MW-7D-65.4-20240524 | 5/24/2024 | 10:35 | 166476 | X | -7.85 | 0.08 | X | -42.4 | 0.3 |
| 114-P2-MW-7D | 114-P2-MW-7D-AM-20240619 | 6/19/2024 | 11:14 | 167295 | X | -7.81 | 0.09 | X | -44.4 | 0.2 |
| 114-P2-MW-7D | 114-P2-MW-7D-AM-20240626 | 6/26/2024 | 8:56 | 168403 | X | -6.28 | 0.13 | X | -38.0 | 0.0 |
| 114-P2-MW-7D | 114-P2-MW-7D-65.4-20240723 | 7/23/2024 | 9:35 | 171215 | X | -7.02 | 0.09 | X | -42.6 | 0.3 |
| 114-P2-MW-7D | 114-P2-MW-7D-65.4-20240822 | 8/22/2024 | 11:10 | 172188 | X | -7.08 | 0.01 | X | -42.1 | 0.1 |
| 114-P2-MW-7D | 114-P2-MW-7D-65.4-20240912 | 9/12/2024 | 9:15 | 172567 | X | -6.79 | 0.04 | X | -41.7 | 0.4 |
| 114-P2-MW-7D | 114-P2-MW-7D-65.4-20241002 | 10/2/2024 | 13:40 | 172912 | X | -7.02 | 0.11 | X | -42.6 | 0.3 |
| 114-P3-MW001D | 114-P3-MW001D-45.5-20240524 | 5/24/2024 | 14:35 | 166477 | X | -7.65 | 0.14 | X | -41.1 | 0.4 |
| 114-P3-MW001D | 114-P3-MW001D-PM-20240619 | 6/19/2024 | 14:42 | 167296 | X | -8.07 | 0.03 | X | -45.4 | 0.2 |
| 114-P3-MW001D | 114-P3-MW001D-PM-20240626 | 6/26/2024 | 14:04 | 168404 | X | -7.09 | 0.07 | X | -43.2 | 0.3 |
| 114-P3-MW001D | 114-P3-MW001D-45.5-20240729 | 7/29/2024 | 9:45 | 171229 | X | -7.17 | 0.06 | X | -43.2 | 0.3 |
| 114-P3-MW001D | 114-P3-MW001D-45.5-20240819 | 8/19/2024 | 14:05 | 172178 | X | -6.87 | 0.05 | X | -42.0 | 0.3 |
| 114-P3-MW001D | 114-P3-MW001D-45.5-20240913 | 9/13/2024 | 12:20 | 172569 | X | -7.04 | 0.04 | X | -42.9 | 0.1 |
| 114-P3-MW001D | 114-P3-MW001D-45.5-20241007 | 10/7/2024 | 10:00 | 172918 | X | -7.15 | 0.09 | X | -41.9 | 0.4 |
| 114-P3-MW005D | 114-P3-MW005D-50.3-20240530 | 5/30/2024 | 12:15 | 166500 | X | -7.93 | 0.09 | X | -44.6 | 0.3 |
| 114-P3-MW005D | 114-P3-MW005D-50.3-20240726 | 7/26/2024 | 10:25 | 171228 | X | -7.37 | 0.03 | X | -41.7 | 0.4 |
| 114-P3-MW005D | 114-P3-MW005D-50.3-20240821 | 8/21/2024 | 10:15 | 172184 | X | -6.98 | 0.05 | X | -42.3 | 0.3 |
| 114-P3-MW005D | 114-P3-MW005D-50.3-20240913 | 9/13/2024 | 9:10 | 172568 | X | -7.03 | 0.10 | X | -42.8 | 0.3 |
| 114-P3-MW005D | 114-P3-MW005D-50.3-20241002 | 10/2/2024 | 13:50 | 172911 | X | -7.00 | 0.09 | X | -42.8 | 0.4 |
| 114-P3-MW006D | 114-P3-MW006D-50.0-20240813 | 9/13/2024 | 9:20 | 172570 | X | -7.09 | 0.07 | X | -43.1 | 0.3 |
| 114-PMW-01T | 114-PMW-01T-60.8-20240529 | 5/29/2024 | 11:05 | 166487 | X | -8.18 | 0.09 | X | -43.3 | 0.3 |
| 114-PMW-01T | 114-PMW-01T-62.8-20240529 | 5/29/2024 | 12:25 | 166486 | X | -8.19 | 0.10 | X | -49.9 | 0.5 |
| 114-PMW-01T | 114-PMW-01T-60.8-20240610 | 6/10/2024 | 10:55 | 167313 | X | -8.23 | 0.05 | X | -46.2 | 0.2 |
| 114-PMW-01T | 114-PMW-01T-63.6-20240610 | 6/10/2024 | 13:25 | 167312 | X | -8.20 | 0.08 | X | -46.0 | 0.3 |
| 114-PMW-01T | 114-PMW-01T-67.6-20240611 | 6/11/2024 | 10:10 | 167314 | X | -8.17 | 0.07 | X | -45.9 | 0.2 |
| 114-PMW-01T | 114-PMW-01T-PM-20240613 | 6/13/2024 | 11:15 | 167297 | X | -8.33 | 0.05 | X | -47.2 | 0.2 |
| 114-PMW-01T | 114-PMW-01T-AM-20240614 | 6/14/2024 | 8:37 | 167270 | X | -8.18 | 0.07 | X | 101.1 | 0.5 |
| 114-PMW-01T | 114-PMW-01T-PM-20240614 | 6/14/2024 | 12:02 | 167271 | X | -7.99 | 0.04 | X | 710.8 | 0.4 |
| 114-PMW-01T | 114-PMW-01T-AM-20240617 | 6/17/2024 | 9:17 | 167272 | X | -8.06 | 0.06 | X | 474.4 | 0.2 |
| 114-PMW-01T | 114-PMW-01T-AM-20240618 | 6/18/2024 | 8:30 | 167273 | X | -8.03 | 0.08 | X | 339.7 | 0.4 |
| 114-PMW-01T | 114-PMW-01T-AM-20240619 | 6/19/2024 | 9:15 | 167274 | X | -8.14 | 0.08 | X | 5.8 | 0.4 |
| 114-PMW-01T | 114-PMW-01T-PM-20240620 | 6/20/2024 | 12:45 | 168387 | X | -7.29 | 0.14 | X | 18.0 | 0.5 |
| 114-PMW-01T | 114-PMW-01T-PM-20240626 | 6/26/2024 | 12:25 | 168388 | X | -7.27 | 0.14 | X | -24.1 | 0.5 |
| 114-PMW-01T | 114-PMW-01T-67.6-20240723 | 7/23/2024 | 12:35 | 171216 | X | -7.31 | 0.07 | X | 1.3 | 0.5 |
| 114-PMW-01T | 114-PMW-01T-63.6-20240724 | 7/24/2024 | 11:10 | 171217 | X | -7.29 | 0.07 | X | 0.4 | 0.2 |
| 114-PMW-01T | 114-PMW-01T-60.8-20240724 | 7/24/2024 | 13:55 | 171218 | X | -7.07 | 0.06 | X | 1.4 | 0.2 |
| 114-PMW-01T | 114-PMW-01T-60.8-20240820 | 8/20/2024 | 14:05 | 172183 | X | -6.97 | 0.09 | X | -5.5 | 0.3 |
| 114-PMW-01T | 114-PMW-01T-60.8-20240906 | 9/6/2024 | 10:35 | 172559 | X | -7.13 | 0.04 | X | -7.6 | 0.2 |
| 114-PMW-01T | 114-PMW-01T-60.8-20241002 | 10/2/2024 | 9:30 | 172905 | X | -7.18 | 0.10 | X | -23.5 | 0.4 |
| 114-PMW-02T | 114-PMW-02T-64.0-20240531 | 5/31/2024 | 11:45 | 166503 | X | -8.03 | 0.12 | X | -44.9 | 0.5 |
| 114-PMW-02T | 114-PMW-02T-69.0-20240603 | 6/3/2024 | 13:40 | 166488 | X | -7.50 | 0.11 | X | -41.2 | 0.4 |
| 114-PMW-02T | 114-PMW-02T-PM-20240613 | 6/13/2024 | 11:35 | 167298 | X | -8.11 | 0.08 | X | -45.6 | 0.3 |
| 114-PMW-02T | 114-PMW-02T-PM-20240614 | 6/14/2024 | 12:30 | 167275 | X | -8.09 | 0.08 | X | -45.6 | 0.2 |
| 114-PMW-02T | 114-PMW-02T-PM-20240619 | 6/19/2024 | 13:20 | 167278 | X | -8.19 | 0.09 | X | 31.1 | 0.3 |
| 114-PMW-02T | 114-PMW-02T-AM-20240618 | 6/18/2024 | 8:51 | 167276 | X | -8.05 | 0.09 | X | -40.1 | 0.3 |
| 114-PMW-02T | 114-PMW-02T-AM-20240619 | 6/19/2024 | 9:48 | 167277 | X | -8.10 | 0.02 | X | -1.3 | 0.2 |
| 114-PMW-02T | 114-PMW-02T-PM-20240621 | 6/21/2024 | 13:44 | 168389 | X | -7.41 | 0.06 | X | 114.8 | 0.5 |
| 114-PMW-02T | 114-PMW-02T-AM-20240625 | 6/25/2024 | 9:18 | 168418 | X | -7.47 | 0.03 | X | 99.0 | 0.2 |
| 114-PMW-02T | 114-PMW-02T-AM-20240625-X | 6/25/2024 | 9:20 | 168419 | X | -7.41 | 0.08 | X | 100.5 | 0.3 |
| 114-PMW-02T | 114-PMW-02T-PM-20240626 | 6/26/2024 | 13:04 | 168390 | X | -7.41 | 0.03 | X | 141.0 | 1.1 |
| 114-PMW-02T | 114-PMW-02T-69.0-20240725 | 7/25/2024 | 11:00 | 171222 | X | -7.27 | 0.05 | X | -41.3 | 0.1 |
| 114-PMW-02T | 114-PMW-02T-69.0-20240725-X | 7/25/2024 | 11:05 | 171223 | X | -7.22 | 0.03 | X | -41.4 | 0.1 |
| 114-PMW-02T | 114-PMW-02T-64.0-20240725 | 7/25/2024 | 13:25 | 171224 | X | -7.17 | 0.07 | X | -41.2 | 0.4 |
| 114-PMW-02T | 114-PMW-02T-64.0-20240820 | 8/20/2024 | 12:30 | 172182 | X | -6.96 | 0.14 | X | -42.3 | 0.2 |
| 114-PMW-02T | 114-PMW-02T-64.0-20240906 | 9/6/2024 | 12:30 | 172560 | X | -7.19 | 0.03 | X | -41.1 | 0.1 |
| 114-PMW-02T | 114-PMW-02T-64.0-20241002 | 10/2/2024 | 11:35 | 172906 | X | -7.07 | 0.11 | X | -41.9 | 0.3 |
| 114-PMW-03T | 114-PMW-03T-64.5-20240610 | 6/10/2024 | 9:50 | 167310 | X | -8.24 | 0.08 | X | -46.8 | 0.3 |
| 114-PMW-03T | 114-PMW-03T-67.0-20240610 | 6/10/2024 | 11:00 | 167311 | X | -8.21 | 0.05 | X | -46.6 | 0.2 |
| 114-PMW-03T | 114-PMW-03T-PM-20240613 | 6/13/2024 | 13:33 | 167301 | X | -8.11 | 0.06 | X | -45.6 | 0.3 |
| 114-PMW-03T | 114-PMW-03T-PM-20240617 | 6/17/2024 | 12:58 | 167279 | X | -8.05 | 0.03 | X | 65.6 | 0.2 |
| 114-PMW-03T | 114-PMW-03T-AM-20240618 | 6/18/2024 | 8:45 | 167280 | X | -8.02 | 0.03 | X | 81.5 | 0.3 |
| 114-PMW-03T | 114-PMW-03T-PM-20240618 | 6/18/2024 | 12:37 | 167281 | X | -8.01 | 0.08 | X | 34.8 | 0.3 |
| 114-PMW-03T | 114-PMW-03T-AM-20240619 | 6/19/2024 | 9:21 | 167282 | X | -7.95 | 0.04 | X | 135.3 | 0.4 |
| 114-PMW-03T | 114-PMW-03T-PM-20240619 | 6/19/2024 | 12:54 | 167283 | X | -8.00 | 0.08 | X | 36.1 | 0.4 |
| 114-PMW-03T | 114-PMW-03T-AM-20240621 | 6/21/2024 | 9:00 | 168391 | X | -6.99 | 0.02 | X | 1308.2 | 0.7 |
| 114-PMW-03T | 114-PMW-03T-PM-20240626 | 6/26/2024 | 12:34 | 168392 | X | -7.02 | 0.01 | X | 1377.9 | 1.6 |
| 114-PMW-03T | 114-PMW-03T-AM-20240627 | 6/27/2024 | 9:23 | 168411 | X | -7.04 | 0.03 | X | 1308.0 | 0.4 |
| 114-PMW-03T | 114-PMW-03T-67.0-20240725 | 7/25/2024 | 11:00 | 171220 | X | -7.07 | 0.02 | X | 676.9 | 0.7 |
| 114-PMW-03T | 114-PMW-03T-64.5-20240725 | 7/25/2024 | 14:45 | 171219 | X | -6.97 | 0.02 | X | 628.9 | 1.8 |
| 114-PMW-03T | 114-PMW-03T-67.0-20240819 | 8/19/2024 | 11:35 | 172176 | X | -7.40 | 0.02 | X | 401.8 | 0.5 |
| 114-PMW-03T | 114-PMW-03T-67.0-20240909 | 9/9/2024 | 13:15 | 172561 | X | -7.07 | 0.12 | X | 490.0 | 1.1 |
| 114-PMW-03T | 114-PMW-03T-67.0-20241002 | 10/2/2024 | 10:20 | 172907 | X | -7.32 | 0.04 | X | 377.4 | 1.1 |
| 114-PMW-04T | 114-PMW-04T-65.5-20240604 | 6/4/2024 | 11:00 | 166508 | X | -7.61 | 0.08 | X | -44.3 | 0.1 |
| 114-PMW-04T | 114-PMW-04T-65.5-20240604-X | 6/4/2024 | 11:05 | 166511 | X | -7.96 | 0.08 | X | -44.4 | 0.3 |
| 114-PMW-04T | 114-PMW-04T-70.5-20240604 | 6/4/2024 | 13:45 | 166509 | X | -7.90 | 0.06 | X | -44.8 | 0.2 |

**Appendix E – Deuterium Analytical Data Summary**
**Groundwater Remedial Action Progress Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| Well ID | Sample ID | Sample Collection | | Sample # | $\delta^{18}O$ | Aver | Stdv | $\delta^{2}H$ | Aver | Stdv |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Date | Time | | $H_2O$ | VSMOW | | $H_2O$ | VSMOW | |
| 114-PMW-04T | 114-PMW-04T-PM-20240613 | 6/13/2024 | 14:22 | 167302 | X | -8.03 | 0.05 | X | -45.1 | 0.1 |
| 114-PMW-04T | 114-PMW-04T-PM-20240617 | 6/17/2024 | 13:25 | 167284 | X | -8.01 | 0.06 | X | -44.5 | 0.3 |
| 114-PMW-04T | 114-PMW-04T-PM-20240618 | 6/18/2024 | 13:58 | 167285 | X | -8.02 | 0.07 | X | -23.5 | 0.4 |
| 114-PMW-04T | 114-PMW-04T-AM-20240619 | 6/19/2024 | 9:54 | 167286 | X | -7.98 | 0.09 | X | 12.1 | 0.4 |
| 114-PMW-04T | 114-PMW-04T-PM-20240619 | 6/19/2024 | 13:58 | 167287 | X | -7.96 | 0.02 | X | 64.3 | 0.1 |
| 114-PMW-04T | 114-PMW-04T-AM-20240621 | 6/21/2024 | 10:18 | 168393 | X | -7.18 | 0.05 | X | 577.0 | 1.9 |
| 114-PMW-04T | 114-PMW-04T-PM-20240626 | 6/26/2024 | 13:13 | 168394 | X | -7.24 | 0.01 | X | 497.3 | 0.5 |
| 114-PMW-04T | 114-PMW-04T-AM-20240627 | 6/27/2024 | 10:07 | 168413 | X | -7.28 | 0.03 | X | 455.6 | 0.5 |
| 114-PMW-04T | 114-PMW-04T-70.5-20240722 | 7/22/2024 | 11:15 | 171213 | X | -7.02 | 0.06 | X | 273.7 | 1.6 |
| 114-PMW-04T | 114-PMW-04T-65.5-20240722 | 7/22/2024 | 13:35 | 171214 | X | -7.24 | 0.05 | X | 266.5 | 2.3 |
| 114-PMW-04T | 114-PMW-04T-70.5-20240819 | 8/19/2024 | 12:10 | 172175 | X | -7.26 | 0.09 | X | 296.3 | 0.4 |
| 114-PMW-04T | 114-PMW-04T-70.5-20240909 | 9/9/2024 | 10:10 | 172562 | X | -7.49 | 0.11 | X | 309.0 | 1.2 |
| 114-PMW-04T | 114-PMW-04T-70.5-20241002 | 10/2/2024 | 13:20 | 172908 | X | -7.50 | 0.07 | X | 168.6 | 1.2 |
| 114-PW-01T | 114-PW-01T-69.0-20240530 | 5/30/2024 | 10:00 | 166494 | X | -7.99 | 0.13 | X | -44.5 | 0.3 |
| 114-PW-01T | 114-PW-01T-74.0-20240530 | 5/30/2024 | 12:15 | 166495 | X | -8.15 | 0.04 | X | -45.4 | 0.2 |
| 114-PW-01WR | 114-PW-01WR-83.5-20240603 | 6/3/2024 | 11:05 | 166492 | X | -7.97 | 0.14 | X | -44.4 | 0.4 |
| 114-PW-01WR | 114-PW-01WR-88.5-20240603 | 6/3/2024 | 13:10 | 166493 | X | -8.14 | 0.13 | X | -44.9 | 0.4 |
| 114-PW-02T | 114-PW-02T-70.5-20240603 | 6/3/2024 | 14:50 | 166489 | X | -8.01 | 0.07 | X | -42.7 | 0.3 |
| 114-PW-02WR | 114-PW-02WR-88.8-20240606 | 6/6/2024 | 8:55 | 167308 | X | -8.34 | 0.09 | X | -46.7 | 0.3 |
| 114-PW-02WR | 114-PW-02WR-93.8-20240606 | 6/6/2024 | 11:40 | 167309 | X | -8.40 | 0.04 | X | -47.0 | 0.1 |
| 114-PW-03T | 114-PW-03T-63.1-20240605 | 6/5/2024 | 8:50 | 167304 | X | -8.11 | 0.04 | X | -46.0 | 0.1 |
| 114-PW-03T | 114-PW-03T-68.1-20240605 | 6/5/2024 | 10:00 | 167305 | X | -8.09 | 0.04 | X | -45.9 | 0.2 |
| 114-PW-03WR | 114-PW-03WR-87.0-20240620 | 6/20/2024 | 9:10 | 167319 | X | -8.25 | 0.02 | X | -46.2 | 0.1 |
| 114-PW-03WR | 114-PW-03WR-92.0-20240620 | 6/20/2024 | 10:30 | 167320 | X | -8.22 | 0.08 | X | -46.3 | 0.1 |
| 114-PW-03WR | 114-PW-03WR-92.0-20240620-X | 6/20/2024 | 10:35 | 167321 | X | -8.16 | 0.08 | X | -46.1 | 0.3 |
| 114-PW-04T | 114-PW-04T-69.0-20240604 | 6/4/2024 | 11:50 | 166506 | X | -7.93 | 0.07 | X | -44.6 | 0.4 |
| 114-PW-04T | 114-PW-04T-74.0-20240604 | 6/4/2024 | 14:15 | 166507 | X | -7.90 | 0.09 | X | -44.8 | 0.4 |
| 114-PW-04WR | 114-PW-04WR-50.0-20240621 | 6/21/2024 | 9:45 | 168375 | X | -7.14 | 0.12 | X | -42.1 | 0.5 |
| 114-PW-04WR | 114-PW-04WR-55.0-20240621 | 6/21/2024 | 11:40 | 168376 | X | -7.15 | 0.14 | X | -42.5 | 0.4 |
| 114-PW-05WR | 114-PW-05WR-86.9-20240606 | 6/6/2024 | 10:20 | 167306 | X | -8.36 | 0.06 | X | -47.3 | 0.3 |
| 114-PW-05WR | 114-PW-05WR-91.9-20240606 | 6/6/2024 | 12:15 | 167307 | X | -8.18 | 0.11 | X | -46.0 | 0.2 |
| 114-PW-06WR | 114-PW-06WR-81.5-20240603 | 6/3/2024 | 11:45 | 166490 | X | -8.14 | 0.14 | X | -43.7 | 0.5 |
| 114-PW-06WR | 114-PW-06WR-86.5-20240603 | 6/3/2024 | 13:50 | 166491 | X | -8.23 | 0.09 | X | -44.0 | 0.4 |
| 114-PW-07WR | 114-PW-07WR-72.0-20240612 | 6/12/2024 | 10:30 | 167315 | X | -8.33 | 0.06 | X | -46.8 | 0.2 |
| 114-PW-07WR | 114-PW-07WR-77.0-20240612 | 6/12/2024 | 11:55 | 167316 | X | -8.37 | 0.05 | X | -47.0 | 0.2 |
| 114-PW-09WR | 114-PW-09WR-77.0-20240624 | 6/24/2024 | 9:25 | 168378 | X | -7.30 | 0.05 | X | -44.3 | 0.5 |
| 114-PW-09WR | 114-PW-09WR-77.0-20240624-X | 6/24/2024 | 9:30 | 168379 | X | -7.30 | 0.08 | X | -44.0 | 0.5 |
| 114-PW-09WR | 114-PW-09WR-82.0-20240624 | 6/24/2024 | 11:00 | 168377 | X | -7.21 | 0.15 | X | -44.6 | 0.5 |
| 114-PW-10WR | 114-PW-10WR-82.0-20240627 | 6/27/2024 | 9:20 | 168380 | X | -7.30 | 0.13 | X | -44.0 | 0.1 |
| 114-PW-10WR | 114-PW-10WR-87.0-20240627 | 6/27/2024 | 10:40 | 168381 | X | -7.26 | 0.12 | X | -43.5 | 0.4 |
| 114-PW-80WR | 114-PW-80WR-86.5-20240627 | 6/27/2024 | 11:10 | 168382 | X | -7.31 | 0.12 | X | -44.0 | 0.3 |
| 114-PW-80WR | 114-PW-80WR-91.5-20240627 | 6/27/2024 | 14:15 | 168383 | X | -7.39 | 0.08 | X | -44.4 | 0.5 |
| 114-PZ-52WR | 114-PZ-52WR-74.0-20240531 | 5/31/2024 | 11:50 | 166504 | X | -7.95 | 0.09 | X | -47.0 | 0.3 |
| 114-PZ-52WR | 114-PZ-52WR-AM-20240715 | 7/15/2024 | 8:54 | 171250 | X | -6.93 | 0.03 | X | -46.0 | 0.3 |
| 114-PZ-52WR | 114-PZ-52WR-AM-20240719 | 7/19/2024 | 9:03 | 171251 | X | -7.61 | 0.03 | X | -48.3 | 0.3 |
| 114-PZ-52WR | 114-PZ-52WR-PM-20240724 | 7/24/2024 | 13:25 | 171252 | X | -7.58 | 0.03 | X | -49.7 | 0.4 |
| 114-PZ-52WR | 114-PZ-52WR-PM-20240731 | 7/31/2024 | 12:02 | 171269 | X | -7.62 | 0.02 | X | -52.0 | 0.3 |
| 114-PZ-52WR | 114-PZ-52WR-74.0-20240806 | 8/6/2024 | 13:00 | 171571 | X | -7.35 | 0.07 | X | -45.0 | 0.3 |
| 114-PZ-52WR | 114-PZ-52WR-74.0-20240905 | 9/5/2024 | 10:55 | 172555 | X | -7.71 | 0.03 | X | -45.6 | 0.1 |
| 114-PZ-52WR | 114-PZ-52WR-74.0-20241001 | 10/1/2024 | 12:40 | 172904 | X | -6.89 | 0.08 | X | -41.0 | 0.3 |
| 114-PZ-57I | 114-PZ-57I-30.2-20240529 | 5/29/2024 | 10:20 | 166485 | X | -7.98 | 0.02 | X | -47.9 | 0.1 |
| 114-PZ-57I | 114-PZ-57I-30.2-20240729 | 7/29/2024 | 9:35 | 171230 | X | -7.02 | 0.08 | X | -40.5 | 0.2 |
| 114-PZ-57I | 114-PZ-57I-30.2-20240821 | 8/21/2024 | 13:25 | 172187 | X | -7.03 | 0.04 | X | -40.8 | 0.4 |
| 114-PZ-57I | 114-PZ-57I-30.2-20240910 | 9/10/2024 | 12:00 | 172563 | X | -7.13 | 0.04 | X | -44.8 | 0.3 |
| 114-PZ-57I | 114-PZ-57I-30.2-20241001 | 10/1/2024 | 12:50 | 172901 | X | -6.99 | 0.08 | X | -40.2 | 0.4 |
| 114-PZ-57T | 114-PZ-57T-67.5-20240530 | 5/30/2024 | 14:40 | 166497 | X | -8.30 | 0.08 | X | -46.1 | 0.4 |
| 114-PZ-57T | 114-PZ-57T-PM-20240613 | 6/13/2024 | 12:38 | 167300 | X | -8.13 | 0.09 | X | -45.4 | 0.4 |
| 114-PZ-57T | 114-PZ-57T-PM-20240619 | 6/19/2024 | 13:47 | 167288 | X | -8.17 | 0.09 | X | -46.4 | 0.2 |
| 114-PZ-57T | 114-PZ-57T-AM-20240625 | 6/25/2024 | 10:15 | 168395 | X | -7.02 | 0.08 | X | -42.8 | 0.4 |
| 114-PZ-57T | 114-PZ-57T-AM-20240626 | 6/26/2024 | 10:55 | 168396 | X | -6.82 | 0.07 | X | -41.8 | 0.5 |
| 114-PZ-57T | 114-PZ-57T-AM-20240627 | 6/27/2024 | 11:03 | 168414 | X | -6.70 | 0.14 | X | -44.2 | 0.5 |
| 114-PZ-57T | 114-PZ-57T-67.5-20240726 | 7/26/2024 | 13:15 | 171226 | X | -6.35 | 0.03 | X | -37.8 | 0.3 |
| 114-PZ-57T | 114-PZ-57T-67.5-20240821 | 8/21/2024 | 11:35 | 172185 | X | -6.03 | 0.02 | X | -37.2 | 0.3 |
| 114-PZ-57T | 114-PZ-57T-67.5-20240910 | 9/10/2024 | 10:30 | 172564 | X | -6.10 | 0.10 | X | -35.0 | 0.5 |
| 114-PZ-57T | 114-PZ-57T-67.5-20241001 | 10/1/2024 | 11:15 | 172902 | X | -6.25 | 0.03 | X | -37.5 | 0.3 |
| 114-PZ-66D | 114-PZ-66D-48.3-20240604 | 6/4/2024 | 10:20 | 166510 | X | -8.12 | 0.07 | X | -45.9 | 0.5 |
| 114-PZ-66D | 114-PZ-66D-AM-20240619 | 6/19/2024 | 10:37 | 167291 | X | -8.31 | 0.09 | X | -46.5 | 0.3 |
| 114-PZ-66D | 114-PZ-66D-AM-20240626 | 6/26/2024 | 10:25 | 168399 | X | -7.04 | 0.13 | X | -44.5 | 0.4 |
| 114-PZ-66D | 114-PZ-66D-AM-20240715 | 7/15/2024 | 9:33 | 171253 | X | -7.20 | 0.10 | X | -43.6 | 0.5 |
| 114-PZ-66D | 114-PZ-66D-AM-20240725 | 7/25/2024 | 9:20 | 171254 | X | -7.25 | 0.09 | X | -44.1 | 0.4 |
| 114-PZ-66D | 114-PZ-66D-48.5-20240806 | 8/6/2024 | 13:40 | 171573 | X | -7.34 | 0.05 | X | -43.9 | 0.4 |
| 114-PZ-66D | 114-PZ-66D-48.5-20240904 | 9/4/2024 | 9:40 | 172549 | X | -7.43 | 0.04 | X | -44.2 | 0.3 |
| 114-PZ-66D | 114-PZ-66D-48.5-20240930 | 9/30/2024 | 14:20 | 172892 | X | -7.29 | 0.09 | X | -42.7 | 0.2 |
| 114-PZ-66I | 114-PZ-66I-39.8-20240531 | 5/31/2024 | 10:35 | 166501 | X | -7.98 | 0.12 | X | -44.7 | 0.2 |
| 114-PZ-66I | 114-PZ-66I-AM-20240619 | 6/19/2024 | 10:50 | 167292 | X | -8.11 | 0.07 | X | -45.4 | 0.3 |
| 114-PZ-66I | 114-PZ-66I-AM-20240626 | 6/26/2024 | 10:02 | 168400 | X | -7.01 | 0.07 | X | -43.7 | 0.5 |
| 114-PZ-66I | 114-PZ-66I-AM-20240627 | 6/27/2024 | 11:50 | 168416 | X | -6.81 | 0.12 | X | -43.7 | 0.4 |
| 114-PZ-66I | 114-PZ-66I-AM-20240715 | 7/15/2024 | 9:56 | 171255 | X | -7.46 | 0.03 | X | -45.6 | 0.1 |
| 114-PZ-66I | 114-PZ-66I-AM-20240725 | 7/25/2024 | 8:40 | 171256 | X | -7.44 | 0.03 | X | -46.0 | 0.1 |
| 114-PZ-66I | 114-PZ-66I-40.0-20240806 | 8/6/2024 | 11:55 | 171572 | X | -7.19 | 0.11 | X | -42.8 | 0.3 |
| 114-PZ-66I | 114-PZ-66I-40.0-20240904 | 9/4/2024 | 11:35 | 172550 | X | -7.25 | 0.02 | X | -43.2 | 0.1 |
| 114-PZ-66I | 114-PZ-66I-40.0-20241001 | 10/1/2024 | 10:00 | 172898 | X | -7.41 | 0.09 | X | -46.8 | 0.3 |
| 114-PZ-66T | 114-PZ-66T-69.8-20240531 | 5/31/2024 | 13:55 | 166502 | X | -7.96 | 0.10 | X | -43.4 | 0.4 |
| 114-PZ-66T | 114-PZ-66T-AM-20240619 | 6/19/2024 | 11:05 | 167293 | X | -8.14 | 0.07 | X | -45.7 | 0.2 |
| 114-PZ-66T | 114-PZ-66T-AM-20240626 | 6/26/2024 | 11:05 | 168401 | X | -7.07 | 0.12 | X | -43.7 | 0.3 |
| 114-PZ-66T | 114-PZ-66T-AM-20240715 | 7/15/2024 | 10:16 | 171257 | X | -7.46 | 0.01 | X | -46.5 | 0.3 |
| 114-PZ-66T | 114-PZ-66T-AM-20240725 | 7/25/2024 | 9:00 | 171258 | X | -7.44 | 0.07 | X | -47.5 | 0.4 |

**Appendix E – Deuterium Analytical Data Summary**
**Groundwater Remedial Action Progress Report, Q4 2024**
**Garfield Avenue Group Sites**
**PPG, Jersey City, New Jersey**

| Well ID | Sample ID | Sample Collection | | Sample # | $\delta^{18}O$ | Aver | Stdv | $\delta^{2}H$ | Aver | Stdv |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Date | Time | | $H_2O$ | VSMOW | | $H_2O$ | VSMOW | |
| 114-PZ-66T | 114-PZ-66T-70.0-20240807 | 8/7/2024 | 9:40 | 171580 | X | -7.10 | 0.10 | X | -42.8 | 0.4 |
| 114-PZ-66T | 114-PZ-66T-70.0-20240905 | 9/5/2024 | 13:00 | 172556 | X | -7.05 | 0.11 | X | -41.6 | 0.5 |
| 114-PZ-66T | 114-PZ-66T-70.0-20241001 | 10/1/2024 | 11:40 | 172899 | X | -7.05 | 0.09 | X | -40.9 | 0.2 |
| 114-PZ-66WR | 114-PZ-66WR-84.0-20240531 | 5/31/2024 | 14:15 | 166505 | X | -7.98 | 0.01 | X | -45.1 | 0.2 |
| 114-PZ-66WR | 114-PZ-66WR-AM-20240619 | 6/19/2024 | 11:22 | 167294 | X | -8.15 | 0.04 | X | -45.8 | 0.2 |
| 114-PZ-66WR | 114-PZ-66WR-AM-20240626 | 6/26/2024 | 10:47 | 168402 | X | -7.10 | 0.07 | X | -43.1 | 0.5 |
| 114-PZ-66WR | 114-PZ-66WR-AM-20240711 | 7/11/2024 | 9:38 | 171240 | X | -7.46 | 0.03 | X | -42.3 | 0.2 |
| 114-PZ-66WR | 114-PZ-66WR-PM-20240716 | 7/16/2024 | 12:32 | 171241 | X | -7.36 | 0.03 | X | -42.4 | 0.1 |
| 114-PZ-66WR | 114-PZ-66WR-AM-20240726 | 7/26/2024 | 9:02 | 171242 | X | -7.51 | 0.03 | X | -43.2 | 0.2 |
| 114-PZ-66WR | 114-PZ-66WR-84.0-20240807 | 8/7/2024 | 11:45 | 171579 | X | -7.08 | 0.03 | X | -42.8 | 0.3 |
| 114-PZ-66WR | 114-PZ-66WR-84.0-20240903 | 9/3/2024 | 11:00 | 172547 | X | -7.05 | 0.08 | X | -42.3 | 0.2 |
| 114-PZ-66WR | 114-PZ-66WR-84.0-20240930 | 9/30/2024 | 12:20 | 172891 | X | -6.71 | 0.10 | X | -39.3 | 0.4 |
| NA | BT-FB-20240822 | 8/22/2024 | 13:10 | 172189 | X | -6.66 | 0.03 | X | -38.3 | 0.2 |
| NA | BT-REAGENT-20240725 | 7/25/2024 | 11:45 | 171225 | X | -6.37 | 0.02 | X | -35.9 | 0.2 |
| NA | FB-20240801 | 8/1/2024 | 12:00 | 171271 | X | -7.08 | 0.07 | X | -43.2 | 0.2 |
| NA | P4-IRM-FB-20240520 | 5/20/2024 | 14:30 | 166512 | X | -8.18 | 0.04 | X | -44.3 | 0.2 |
| NA | P4-IRM-FB-20240523 | 5/23/2024 | 15:00 | 166513 | X | -7.93 | 0.12 | X | -43.8 | 0.3 |
| NA | P4-IRM-FB-20240524 | 5/24/2024 | 15:30 | 166514 | X | -8.18 | 0.10 | X | -44.4 | 0.3 |
| NA | P4-IRM-FB-20240528 | 5/28/2024 | 15:15 | 166515 | X | -6.12 | 0.07 | X | -35.7 | 0.4 |
| NA | P4-IRM-FB-20240529 | 5/29/2024 | 14:40 | 166516 | X | -6.00 | 0.10 | X | -35.3 | 0.4 |
| NA | P4-IRM-FB-20240530 | 5/30/2024 | 15:30 | 166517 | X | -6.02 | 0.04 | X | -35.1 | 0.2 |
| NA | P4-IRM-FB-20240531 | 5/31/2024 | 15:15 | 166518 | X | -6.10 | 0.10 | X | -35.5 | 0.5 |
| NA | P4-IRM-FB-20240603 | 6/3/2024 | 15:25 | 166519 | X | -8.19 | 0.14 | X | -44.7 | 0.4 |
| NA | P4-IRM-FB-20240604 | 6/4/2024 | 14:45 | 166520 | X | -8.23 | 0.10 | X | -44.8 | 0.4 |
| NA | P4-IRM-FB-20240605 | 6/5/2024 | 11:55 | 167322 | X | -8.26 | 0.05 | X | -45.6 | 0.3 |
| NA | P4-IRM-FB-20240606 | 6/6/2024 | 12:50 | 167323 | X | -8.24 | 0.07 | X | -45.4 | 0.3 |
| NA | P4-IRM-FB-20240610 | 6/10/2024 | 14:40 | 167324 | X | -8.22 | 0.04 | X | -45.4 | 0.2 |
| NA | P4-IRM-FB-20240611 | 6/11/2024 | 11:15 | 167325 | X | -8.21 | 0.08 | X | -45.3 | 0.3 |
| NA | P4-IRM-FB-20240612 | 6/12/2024 | 13:10 | 167326 | X | -8.07 | 0.08 | X | -46.0 | 0.2 |
| NA | P4-IRM-FB-20240619 | 6/19/2024 | 15:10 | 167327 | X | -8.09 | 0.04 | X | -44.5 | 0.2 |
| NA | P4-IRM-FB-20240620 | 6/20/2024 | 12:00 | 167328 | X | -8.02 | 0.08 | X | -43.5 | 0.1 |
| NA | P4-IRM-FB-20240621 | 6/21/2024 | 12:20 | 168386 | X | -7.34 | 0.06 | X | -42.4 | 0.5 |
| NA | P4-IRM-FB-20240624 | 6/24/2024 | 12:00 | 168385 | X | -7.25 | 0.04 | X | -42.0 | 0.5 |
| NA | P4-IRM-FB-20240627 | 6/27/2024 | 12:00 | 168384 | X | -7.12 | 0.06 | X | -42.1 | 0.4 |
| NA | P4-IRM-FB-20240627 | 6/27/2024 | 14:35 | 168417 | X | -6.74 | 0.12 | X | -41.6 | 0.4 |
| NA | WB-BT-FB-20240916 | 9/16/2024 | 14:30 | 172571 | X | -6.91 | 0.04 | X | -41.3 | 0.2 |
| NA | WB-FB-20240807 | 8/7/2024 | 15:15 | 171582 | X | -6.99 | 0.12 | X | -41.9 | 0.4 |
| NA | WB-REAGENT-20240731 | 7/31/2024 | 13:45 | 171270 | X | -6.73 | 0.04 | X | -43.3 | 0.1 |
| NA | WBBT-FB-20241007 | 10/7/2024 | 15:10 | 172919 | X | -6.53 | 0.08 | X | -39.1 | 0.4 |

**$^{18}O$ & $^{2}H$ (CRDS)**
**Instrument Used:** Cavity Ring Down Spectroscopy (CRDS)
CRDS (Model L2130-i) (Picarro, California, USA).
**Standard Used:**
IT2-12E / IT2-13D / IT2-14C/ IT2-15B Calibrated with IAEA Standards (V-SMOW, SLAP, and GISP)
**Typical Standard deviation:**
($^{18}O$ ±0.1‰) ($^{2}H$ ± 1‰)

# Appendix F
# List Of Issues

## NJDEP September 6, 2024 List of Issues for GAG Groundwater and PPG Responses – Status as of 3/5/25

| NJDEP Issue for GAG Groundwater | | PPG Response | | |
|---|---|---|---|---|
| **Item** | **Description** | **Response** | **Anticipated Completion Date** | **Status as of 3/5/25[1]** |
| **1** | **Demonstrate groundwater remedy effectiveness:** | | | |
| a | Confirm PPG's concurrence regarding the active groundwater remediation goal of 1,000 parts per billion (ppb) hexavalent chromium within a period of 8-10 years, to support transition from the active remedy to monitored natural attenuation (MNA). | It is PPG's position that items 1a to 1c are not required to demonstrate remedy effectiveness. Specifically, item 1a is not applicable as it was addressed to the NJDEP's satisfaction via responses to comments issued in October 2021 regarding GW-008 (the GAG Groundwater RAWP). Subsequent to PPG issuing the responses to comments, the Department approved the GAG Groundwater RAWP in January 2022 without further comments on this item. Furthermore, PPG does not concur with the Department's position that the NJDEP-approved remedial goal for GAG groundwater is to meet 1,000 ppb hexavalent chromium within a period of 8 to 10 years to support transition from the active remedy to MNA.<br><br>In review, remediation goals stated in the NJDEP-approved RAWP for GAG Groundwater include: "*Achieve compliance with the GWQS through the initial implementation of an active remedy where practicable in areas with groundwater $Cr^{+6}$ concentrations greater than 1,000 µg/L…."* and "*Transition to an MNA Category Groundwater RAP will be considered when monitoring data demonstrate that it is appropriate to do so*." The NJDEP-approved RAWP does not state that an active groundwater remediation goal of 1,000 ppb hexavalent chromium (CrVI) will be achieved within a period of 8-10 years nor that such a benchmark is the required criteria to support a transition from the active remedy to MNA. The 1,000 ppb Cr(VI) concentration is the basis for targeting areas for active treatment. The 8-10 years is the estimated timeframe for the duration of the enhanced attenuation period post injections. The NJDEP-approved RAWP does not indicate that 1,000 ppb Cr(VI) concentrations need to be achieved before a transition to MNA is appropriate and the NJDEP MNA guidance does not stipulate such a requirement. | Not Applicable (pending completion of additional investigation). | In progress.<br><br>Per 10/6/24 meeting with NJDEP, item is on hold until additional investigation requested by Item 5a and 5b is complete.<br><br>Anticipated schedule for additional investigation:<br>- Work Plan submittal to NJDEP in December 2024<br>- Field implementation from March-June 2025 |
| b | Demonstrate on a well-by-well basis, using statistical methods, that the active remediation goal of 1,000 ppb hexavalent chromium will be met within a period of 8-10 years. | | | |
| c | Evaluate the need for contingencies in locations where PPG cannot demonstrate achieving the active remediation goal in the timeframe as per item 1b above. | PPG's RAWP for GAG Groundwater contains a groundwater monitoring plan to monitor remedy effectiveness. Please refer to Section 7.4 and Table 7.2 of the RAWP that sets forth the steps PPG is taking to monitor remedy effectiveness. As a further effectiveness metric, PPG intends to utilize the conditions that must be met to obtain an Active Category Groundwater RAP. Specifically, the requirements specified in NJDEP Ground Water Remedial Action | | |

[1] Red = not resolved; Gold = in progress; no further discussion needed until additional data is collected; Green = resolved

| NJDEP Issue for GAG Groundwater | | PPG Response | | |
|---|---|---|---|---|
| **Item** | **Description** | **Response** | **Anticipated Completion Date** | **Status as of 3/5/25[1]** |

Permit Guidance for the Active Category Groundwater RAP include the following, which have been met or will be met by PPG prior to submittal of an application for the Active Category Groundwater RAP:

| Condition | Status |
|---|---|
| 1. The active ground water treatment system is effectively operating and functioning as designed. A minimum of four (4) consecutive quarterly rounds of ground water samples should be collected to demonstrate this. | In progress.<br>The active groundwater treatment system is effectively operating and functioning as designed. Refer to Section 6.0 of the Draft GAG GW RAR (GW-111). Four quarters of post-treatment groundwater monitoring are complete for the Phase I and Phase II (majority) areas and will be complete in Q2 2025 for the Phase II Northern Area and Q1 2026 for the Phase III area. |
| 2. All soil contamination in the unsaturated zone has been remediated to the applicable numeric Migration to Ground Water Soil Remediation Standard for all AOCs associated with the CEA. | Condition met.<br><br>Refer to Section 3.0 of the Draft GAG GW RAR (GW-111). |
| 3. The ground water plume is not migrating horizontally or vertically into an uncontaminated aquifer zone adjacent to or below the contaminant plume. | Condition met.<br><br>Refer to Figures 3A-3F and 5A-I of the GAG GW Remedial Action Progress Report discussing progress through Q4 2024. These figures depict the limits of total chromium concentrations greater than the NJDEP GWQS in baseline and current progress conditions. |

| | NJDEP Issue for GAG Groundwater | PPG Response | | |
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| | | 4. The ground water plume is contained and not impacting the sentinel well(s). — Condition met.<br><br>Refer to Figures 3A-3F and 5A-I of the GAG GW Remedial Action Progress Report discussing progress through Q4 2024. These figures depict the limits of total chromium concentrations greater than the NJDEP GWQS in baseline and current progress conditions. | | |
| | | 5. Financial Assurance (FA) has been established for the operation and maintenance of any engineering control necessary for the period that the control(s) will be operating. The FA must be established for the duration the engineering control will be in place. — Condition met.<br><br>PPG has an active letter of credit that was last sent to NJDEP on July 3, 2024. | | |
| | | 6. The ground water remedial action is demonstrated to be protective of public health and safety and of the environment. This includes an evaluation of all potential receptors as required by N.J.A.C. 7:26E. — Condition met.<br><br>Refer to Receptor Evaluation Form submitted with the Draft GAG GW RAR (GW-111). | | |
| **2** | **Remediate basal till and weathered bedrock aquifer zones:** | | | |
| a | Complete on-going remediation of the weathered bedrock. | Active remediation of the bedrock is complete. The implemented remedy includes both weathered and competent bedrock. | Bedrock remedy completion (end of 180-day PBR Permit): 1/6/2025 | No additional discussion needed at this time.<br><br>Bedrock remedy implementation is complete. Quarterly groundwater monitoring will continue through December 2026. |

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| b | Continue basal till pilot testing program and evaluate potential for "scaling-up" the remediation system consistent with Department-approved permit-by-rule (PBR). | The basal till pilot test is ongoing via post-treatment monitoring. | A technical meeting was held with NJDEP on October 22, 2024 to discuss findings of the basal till pilot test and path forward. | No additional discussion needed at this time.<br><br>Basal Till pilot test completed in June 2024. Quarterly groundwater monitoring will continue through June 2026.<br><br>Based on groundwater monitoring data, and if warranted, continuation of injection operations in the basal till will be combined with the Lower Deep Zone and Phase I Recalcitrant Area. Refer to item 5b |
| **3** | **Evaluate the intermediate and deep groundwater-bearing zones which are unsuitable for direct injection:** | | | |
| a | PPG to present sitewide graphics clearly depicting low-permeability (C3) soils which will continue to act as contaminant storage zones. | Zones of low permeability have been depicted on cross-sections included in quarterly RAPRs since Q2 2022.<br><br>For clarification, the depiction of low permeability zones on the cross-sections is based on a simplification of the site geology where soils were categorized into three types:<br>• C1: high permeability, assigned a value of 1.<br>• C2: medium permeability, assigned a value of 2.<br>• C3: low permeability, assigned a value of 3.<br><br>Using this dataset, soils at the site were modeled in three dimensions to generate a continuous permeability array across the model domain. The cross-sections are generated by slicing through the model to render the soil types in two dimensions. Only low permeability zones are depicted on the cross-sections. | Resolution on depiction of low permeability zones on RAPR cross-sections: Q1 2025 | Unresolved.<br><br>Discussed during SME meetings on 10/10/24, 12/9/24, 1/2/25, and 2/18/25. Additional meetings necessary to resolve issue. Next meeting to be scheduled in March 2025. |

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| | | In order to generate the soil permeability array, it is necessary to define the appropriate bin ranges that represent low permeability, medium permeability, and high permeability and these must be defined as some range between 3, 2, and 1. Therefore, low permeability could be defined as everything greater than 2.5, moderate permeability could be everything between 1.51 and 2.5, and high permeability could be everything less than 1.51. This would seem like a logical approach but is not the most appropriate approach to displaying zones of low permeability because site geology is heterogenous and gradational. A more appropriate approach is to categorize all data above 2.1 as exhibiting low permeability. In this fashion, all values within the low permeability spectrum (i.e., all data which fall within the low permeability range from 2.1 to 3) are adequately considered. This is the approach that was employed for depiction of low permeability zones on the cross-sections included in the Q2 2024 RAPR. | | |
| b | Where areas are determined to not be amenable to contingencies per item 1c above, PPG to demonstrate technical impracticability (TI) with supporting empirical data. | PPG has not identified any areas that require a technical impracticability determination. Previously discussed recalcitrant areas are being managed under the NJDEP approved remedy which includes reactive zones established in permeable soils around low permeability zones, sheet pile, capillary breaks, institutional controls, and a site-wide CEA.<br><br>In addition, NJDEP MNA guidance indicates that MNA is appropriate for inorganics when it is demonstrated that immobilization/stabilization has occurred. The MNA guidance does not identify concentrations or timeframes which need to be achieved before a practitioner can conclude that MNA is an appropriate remedy for inorganics. Based on the above, a TI determination should not be required. | Not required. | No additional discussion needed at this time.<br><br>PPG has not identified any areas that require a technical impracticability determination. |
| **4** | **Supplement existing monitoring well network as necessary to document treatment effectiveness in the following areas (see Department January 10, 2024 comments on GAG Groundwater Remedial Action Report [RAR] regarding Haymes Letter Item 4 for specific examples):** | | | |
| a | Where expansive portions of the plume or vertical thicknesses exist that are not currently being monitored – There are significant informational gaps, both horizontally and vertically, within the treatment zones of interim remedial measure (IRM) Phases I, II, and III where large distances exist between well monitoring points; this limits the understanding of treatment effectiveness in these zones. PPG and the Department must discuss and come | Per discussions between NJDEP and PPG held in July 2024, NJDEP is to provide specifics to PPG identifying where the expansive portions of the plume and vertical thicknesses are located. Once received, this evaluation can continue. To facilitate the evaluation, NJDEP has requested an interactive tool from PPG that includes the most recent site data in a geospatially referenced platform. PPG provided this tool to the Department before the October 22, 2024 technical meeting. | Complete. | No additional discussion needed at this time.<br><br>In October 2024, PPG provided stakeholders an interactive tool that includes recent site data in a geospatially |

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| | to consensus on the locations of these zones. | | | referenced platform (i.e., PlanEngage). |
| b | Where yellowish discolored water was observed in previously-treated areas – Following treatment within the footprint of IRM Phase I, discolored water was observed in the intermediate groundwater zone during basal till/pilot test well installation as well as during construction of the FerroBlack-H® Reactive Zones (FBRZ) in the lower deep water-bearing zone. PPG and the Department need to come to consensus on the areas where yellow water was detected and the path forward for this area. Also see Department 8/21/24 comments on 1st Quarter 2024 (1Q24) Groundwater Remedial Action Progress Report (GW RAPR). | Observations of yellow water in the intermediate water-bearing zone (WBZ) in the Phase I Area are consistent with observations of yellow water in the intermediate WBZ in the Phase II Recalcitrant Area (i.e., at 114-PMW-04T [35-40'] and 114-PW-04T [31-34']), which will be evaluated via Item 5a. Additional assessment will be conducted in the Phase I Area per Item 5c, which will provide insights and empirical data to support a decision on the path forward for this area. The data collected during implementation of Items 5a and 5c will be integrated into the site-wide CSM to describe the occurrence of yellow water within the intermediate WBZ. | Pending completion of Items 5a and 5c. | In progress.<br><br>HPT/VAP investigation in Phase I area to assess yellow water conditions is included in Work Plan for Items 5a and 5b.<br>- Work Plan submitted to NJDEP in December 2024<br>- Field implementation from March-June 2025 |
| c | Where full design volumes of treatment reagents were not injected – PPG must demonstrate that the remedy is effective in areas where the remedy injected less reductant than required by the remedial design. PPG to provide complete dosage information (i.e., % complete) to the Department to support determination of specific areas which may need additional monitoring well(s) based on this criterion. | This information is provided in Operational Summary Tables included in quarterly RAPRs and in the Phase I completion report.<br><br>PPG does not concur with the Department's assertion that there are areas where full design volume of treatment reagents were not injected. Target injection volumes and estimated treatment durations for the Phase I and II programs varied and were adaptive (i.e. more or less volume injected compared to design targets) based on observed remedial progress and performance data. At the time of Phase I and II programs completion, a total estimated volume of 9,400,000 gallons of fluid was injected for Phase I (target volume: 4,400,000 gallons, >200% complete), a total estimated volume of 3,835,729 gallons was injected in the Southeastern Area of the Phase II Program (target volume: 1,935,360 gallons, 198% complete), and a total estimated volume of 15,339,378 gallons was injected in the Northern Area of the Phase II Program (target volume: 8,166,000 gallons, 188% complete). Therefore, significantly more than the full design volume of treatment reagents has been injected in these areas. Phase III injections are ongoing.<br><br>It is acknowledged that not all injection wells perform the same and some are able to achieve higher flowrates at lower wellhead pressures than others based on the permeability of the targeted matrix and the design parameters of the well. Generally, in areas where individual wells did not meet the target volume, nearby and/or | Complete. The requested information is provided in quarterly progress reports. | No additional discussion needed at this time.<br><br>PPG provided NJDEP with a summary table of injection wells that have not reached their target volumes and reasons why in the Q3 2024 Remedial Action Progress Report. |

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| | | upgradient injection wells achieved greater than the target volume to compensate, unless performance data supported that a treatment response had already occurred at the targeted monitoring wells within the treatment footprint. Monitoring data in these areas demonstrates success, and none of the "recalcitrant wells" exist in areas where injection wells were underdosed. Design volumes during the PBR application stage are generated based on the density/spacing of the monitoring wells and simplified assumptions about the soil matrix (i.e. same mobile porosity value assumed across the treatment area). The design volumes are intended to be used as a target, but ultimately, performance data at the monitoring wells determines the success of the remedy.<br><br>Ongoing groundwater monitoring (quarterly during post-treatment phase and either semi-annual or annually thereafter) is conducted to evaluate remedy effectiveness. | | |
| d | Where injections were not conducted – PPG and the Department to collaborate on the need for monitoring wells in areas where direct injection has not been performed. A current example of these areas is non-C3 soils within the transition zone. | This item is Haymes Letter Item 4, sub-item 4. As per discussions between NJDEP and PPG in July 2024, this item was in reference to the Lower Deep Zone. Since PPG has agreed to implement a remedy for the Lower Deep Zone (as per Item 5c, Haymes Letter Item 4, sub-item 4), this item has been resolved. NJDEP agreed to this course of action during the July 22, 2024 technical meeting. Introduction of non-C3 soils within the Transition Zone was never contemplated or discussed during the July 2024 technical meetings. | Complete, pending completion of Item 5c. | No additional discussion needed at this time.<br><br>PPG has agreed to prepare a work plan and PBR Application for the Phase I Area near Carteret (Item 5b) and the Lower Deep Zone (Item 5c) followed by implementation of remediation in Q3 through Q4 2025. |
| e | Within and immediately adjacent to low-permeability zones – There are aquifer zones of low permeability which act as storage for contaminants which are released over time into the higher- permeability zones. Wells are required within and immediately adjacent to these storage zones to provide empirical data demonstrating the effectiveness of enhanced attenuation at the site. PPG and the Department to come to consensus on well locations pending identification of | As per discussions between NJDEP and PPG in July 2024, the location of two monitoring wells screened in low permeability materials was agreed upon. These two wells will be installed adjacent to existing wells 114-P2-MW8I/D and 114-P2-MW5I/D as part of Item 5a.<br><br>During these meetings, NJDEP indicated that additional wells would be required to meet long-term monitoring objectives. However, a long-term monitoring plan is premature at this time and is not required until the Remedial Action Report has been approved by the NJDEP. | Two wells are to be installed as part of implementation of Item 5a. Anticipated schedule is Q2 2026. | No additional discussion needed at this time.<br><br>Two wells to be installed are identified in the HPT/VAP Investigation Work Plan, which was submitted to the |

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| | contaminant storage zones per item 3a above. | | | NJDEP in December 2024. |
| **5** | **Evaluate and implement contingency measures in known recalcitrant areas:** | | | |
| a | IRM Phase II Northern Area – See Department 5/31/24 comments on 4th Quarter 2023 (4Q23) GW RAPR regarding this issue; the Department is currently awaiting PPG's proposed plan for this area in consideration of subsequent SME meetings. | Consensus on the scope of work, which includes Hydraulic Profile Tooling (HPT) and Vertical Aquifer Profiling (VAP) investigation work, for the Phase II Northern Recalcitrant Area was reached during a technical meeting between NJDEP and PPG held on July 18, 2024.<br><br>Based on the scope discussed with the NJDEP, PPG submitted a workplan for the requested HPT/VAP investigation to the NJDEP in December 2024, and field work is planned for the period late March through June 2025. Data evaluation and discussion with NJDEP will occur throughout the field program, as well as after data analytical results are available and the CSM figures have been updated. Pending the outcome of the discussion with NJDEP, PPG will then prepare a work plan and PBR Application for the Phase II Area followed by implementation of remediation in Q3 2026 through Q1 2027. | Data sharing and discussions with NJDEP to occur throughout the field investigation in March-June 2025, and presentation of data summary / meeting with NJDEP expected to be concluded in September 2025. | No additional discussion needed at this time.<br><br>- HPT/VAP Work Plan submitted to NJDEP in December 2024 and field implementation is expected from March-June 2025<br><br>PPG has agreed to prepare a work plan and PBR Application for the Phase II Area (Item 5a) followed by implementation of remediation in Q3 2026 through Q1 2027. |
| b | IRM Phase I Near Carteret Avenue – See Department 5/31/24 comments on 4Q23 GW RAPR regarding this issue; the Department is currently awaiting PPG's proposed plan for this area in consideration of subsequent SME meetings. | Consensus on the scope of work for the Phase I Recalcitrant Area, which includes HPT/VAP investigation work, was reached during a technical meeting between NJDEP and PPG held on July 18, 2024.<br><br>Based on the scope discussed with the NJDEP, PPG submitted a workplan for the requested HPT/VAP investigation to the NJDEP in December 2024, and field work is planned for the period late March through June 2025. Data evaluation and discussion with NJDEP will occur throughout the field program, as well as after data analytical results are available and the CSM figures have been updated. Pending the outcome of the discussion with NJDEP, PPG will prepare a work plan and PBR Application for the Phase I Area near Carteret (Item 5b) and the Lower Deep Zone (Item 5c) followed by implementation of remediation in Q3 2025 through Q4 2025. | Data sharing and discussions with NJDEP to occur throughout the field investigation in March-June 2025, and presentation of data summary / meeting with NJDEP expected to be concluded in September 2025. | No additional discussion needed at this time.<br><br>- HPT/VAP Work Plan submitted to NJDEP in December 2024 and field implementation is expected from March-June 2025<br><br>PPG has agreed to prepare a work plan and PBR Application for the Phase I Area near Carteret (Item 5b) and the Lower Deep Zone (Item 5c) |

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| | | | | followed by implementation of remediation in Q3 through Q4 2025. |
| c | FerroBlack-H® Reactive Zone (FBRZ) in the Lower Deep Water-Bearing Zone – See Department 5/31/24 comments on 4Q23 GW RAPR regarding this issue; the Department is currently awaiting PPG's proposed plan for this area in consideration of subsequent SME meetings. | Consensus on the scope of work for the Lower Deep Zone was reached during a technical meeting between NJDEP and PPG held on July 18, 2024.<br><br>PPG will prepare a work plan and PBR Application for the Phase I Area near Carteret (Item 5b) and the Lower Deep Zone (Item 5c) followed by implementation of remediation in Q3 2025 through Q4 2025. | Pending resolution of Item 2b. | No additional discussion needed at this time.<br><br>PPG has agreed to prepare a work plan and PBR Application for the Phase I Area near Carteret (Item 5b) and the Lower Deep Zone (Item 5c) followed by implementation of remediation in Q3 through Q4 2025. |
| d | Yellow Discolored Water in Intermediate Zone within IRM Phase I – See Department 8/21/24 comments on 1Q24 GW RAPR regarding this issue. The Department is currently awaiting PPG's proposed plan, required to be submitted by 9/20/24. | Please see response to Item 4b. | Pending completion of Items 5a and 5c. | In progress.<br><br>HPT/VAP investigation in Phase I area to assess yellow water conditions is included in Work Plan for Items 5a and 5b.<br>- Work Plan submitted to NJDEP in December 2024<br>- Field implementation from March-June 2025 |
| e | DNAPL/MGP Area – See Department 5/31/24 comments on 4Q23 GW RAPR regarding this issue; PPG must demonstrate remedy effectiveness in this area as per item 1b above. | Item 1b is not part of the NJDEP approved RAWP. The NJDEP approved RAWP does not state that an active groundwater remediation goal of 1,000 parts per billion (ppb) hexavalent chromium (CrVI) will be achieved within a period of 8-10 years nor that such a benchmark is the required criteria to support a transition from the active remedy to monitored natural attenuation (MNA). The 1,000 ppb Cr(VI) concentration is the basis for targeting areas for active treatment. The 8-10 years is the estimated timeframe for the duration | Not applicable | No additional discussion needed regarding DNAPL/MGP Area. |

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| | | of the enhanced attenuation period post injections. The NJDEP approved RAWP does not indicate that 1,000 ppb Cr(VI) concentrations need to be achieved before a transition to MNA is appropriate and the NJDEP MNA guidance does not stipulate such a requirement. | | |
| 6 | | | | |
| | Fully delineate competent bedrock: PPG recently installed a downgradient competent bedrock well in an effort to complete the bedrock delineation and submitted supporting data to the Department for review. At this time, hydraulic connection has not been demonstrated in the most downgradient well, and vertical delineation may not be fully complete. The Department and PPG are collaborating on the appropriate next steps to demonstrate delineation. Per the 8/8/24 Gantt chart, the Department understands that PPG currently plans to submit a Remedial Investigation Report/Remedial Action Work Plan (RIR/RAWP) Addendum for bedrock in October 2024. | Delineation in the competent bedrock is complete. A scope of work for installation of one additional competent bedrock well between existing wells 114-MW72D and 114-MW76D was agreed upon during a technical meeting between NJDEP and PPG held on September 12, 2024. During this meeting it was also agreed that extrapolation of the 70 ppb Cr contour in bedrock beneath 114-MW72D is appropriate for completion of the bedrock RI based on the data at nearby wells.<br><br>As agreed to by NJDEP during a technical meeting held between NJDEP and PPG on September 4, 2024, no additional bedrock wells beyond the one additional well requested by NJDEP will be required to complete delineation. If the new competent bedrock well does not meet delineation requirements (i.e., Cr concentrations less than 70 ppb and hydraulic connection with the well targeted for delineation [i.e., 114-MW72D]), then a variance from single point compliance (clean point delineation) will be granted by NJDEP to complete the RI for the bedrock. This variance (if necessary) will also support an application for a groundwater remedial action permit. | Completion of field work to delineate bedrock: Q1 2025 | No additional discussion needed at this time.<br><br>Field work to delineate bedrock completed in January 2025.<br><br>Final RIR/RAWP for Bedrock WBZ to be submitted to NJDEP in March 2025. |
| 7 | | | | |
| | Propose a remedy for competent bedrock: Per the 8/8/24 Gantt chart, the Department understands that PPG currently plans to submit a RIR/RAWP Addendum for bedrock in October 2024, within which a remedy for competent bedrock will be proposed. | An active remedy (in situ bioprecipitation via injections of organic carbon substrate) is complete in the weathered and competent bedrock. Also, see response to Item 2a.<br><br>A combined RIR/RAWP for the bedrock water-bearing zone will be submitted upon completion of the additional investigation related to the bedrock described in item 6. | Remedy is complete in the bedrock WBZ | No additional discussion needed at this time.<br><br>Injections in the bedrock WBZ completed on January 3, 2025.<br><br>Final RIR/RAWP Addendum for Bedrock WBZ to be submitted to NJDEP in March 2025. |

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| **8** | | | | |
| | Develop a consolidated and updated Conceptual Site Model (CSM): As per the Department's 5/31/24 comments on the 4Q23 GW RAPR, a consolidated CSM updated with recent information must be provided with the RIR/RAWP Addendum, which as per the 8/8/24 Gantt chart, is anticipated in October 2024. PPG indicated the consolidated and updated CSM would be provided as a standalone document; however, the CSM is not currently identified on the Gantt chart. | Based on the extensive amount of additional investigation requested by the NJDEP, a revised CSM inclusive of both the overburden and bedrock will be submitted upon completion of any agreed upon field activities related to items 2a, 2b, 4a, 4b, 4c, 4d, 4e, 5a, 5b, 5c, 5d, and 6.<br><br>An updated CSM specific to the bedrock will be included in the revised RIR/RAWP for the bedrock water-bearing zone. | Updated consolidated CSM: March 2025<br><br>Updated CSM for bedrock: to be included in the revised RIR/RAWP addendum for bedrock (March 2025) | No additional discussion needed at this time.<br><br>PPG agreed to develop an interim draft consolidated CSM for information only, which will not be formally reviewed by NJDEP. The CSM will present current understanding of the following aspects related to the groundwater remedy: geology, hydrogeology, source areas, distribution of Cr(VI) in groundwater, and remedy effectiveness. The updated CSM will be submitted to the Department in March 2025. |
| **9** | | | | |
| | Demonstrate within the RAR remedial effectiveness for all constituents for which PPG is responsible, including non-chromium contaminants (i.e., tetrachloroethene and 1,4-dioxane) and the DNAPL. | This will be documented in the revised groundwater RAR, which will be prepared after demonstrating remediation work required under Items 5a, 5b, 5c, and 5d is operating as designed. | To be included in the revised groundwater RAR | No additional discussion needed at this time.<br><br>The revised draft groundwater RAR will be prepared after demonstrating remediation work required under Items 5a, 5b, 5c, and 5d is operating as designed. |

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| **10** | **PPG Additional Items** | | | |
| a | Decommissioning of Groundwater Treatment Plant | Based on the conclusion of the PBRs for Phase I and II which included groundwater extraction, the groundwater treatment plant is no longer needed and decommissioning began in Q4 2024. | Q1 2025 | No additional discussion needed at this time.<br><br>The Groundwater Treatment Plant is scheduled to be decommissioned in Q1 2025. |
| b | Decommissioning of Phase II infrastructure | | Pending completion of Item 5a. | No additional discussion needed at this time.<br><br>On February 7, 2025, PPG submitted a list of wells in the Phase 1 Redevelopment Area along with a recommendation for protection, decommissioning, or decommissioning and reinstall (at a new location due to the building footprint). PPG is awaiting comments from NJDEP. |
| c | Decommissioning of Phase III infrastructure | | Pending completion of Phase III injection program and subsequent monitoring data collection period. | No additional discussion needed at this time.<br><br>On February 7, 2025, PPG submitted a list of wells in the Phase 1 Redevelopment Area along with a recommendation for protection, decommissioning, or |

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| | | | | decommissioning and reinstall (at a new location due to the building footprint). PPG is awaiting comments from NJDEP. |
| d | Decommissioning of basal till, bedrock, Lower Deep Zone, and Phase I/II recalcitrant areas infrastructure | | TBD | No additional discussion needed at this time.<br><br>On February 7, 2025, PPG submitted a list of wells in the Phase 1 Redevelopment Area along with a recommendation for protection, decommissioning, or decommissioning and reinstall (at a new location due to the building footprint). PPG is awaiting comments from NJDEP. |

Schuele, Frederik

From: Amin, Prabal <Prabal.Amin@WestonSolutions.com>
Sent: Thursday, March 6, 2025 11:09 AM
To: Schuele, Frederik; VanEck, David [DEP]; Costa, Ralph
Cc: Hastings, Brianne J; Krall, Scott M; Gleason, Shannon; Curtis, Ian [DEP]; Zhang, Lihua; Amend-Babcock, Laura
Subject: RE: [EXT]:PPG - Technical Memorandum for Hydraulic Testing at 114-MW81D

**This Message Is From an External Sender**

This message came from outside your organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Report Suspicious

Hello Frederik,

Based on our review of this technical memorandum, and discussions with NJDEP, we agree with the conclusions as presented. Understanding that PPG plans to soon submit the revised RIR/RAWP for the bedrock water bearing zone, please include within that submittal PPG's proposal for sentinel well monitoring within the weathered bedrock and competent bedrock zones. Also, for any bedrock wells contemplated to be abandoned by PPG in the future, please seek NJDEP's agreement prior to abandoning such wells.

Thanks.
Prabal

**Prabal N. Amin, P.E., LSRP**
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Cell: 609-240-5289
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From: Schuele, Frederik <frederik.schuele@aecom.com>
Sent: Wednesday, February 5, 2025 2:33 PM
To: VanEck, David [DEP] <David.VanEck@dep.nj.gov>; Costa, Ralph <Ralph.Costa@WestonSolutions.com>
Cc: Hastings, Brianne J <bhastings@ppg.com>; Krall, Scott M <skrall@ppg.com>; Gleason, Shannon <Shannon.Gleason@aecom.com>; Curtis, Ian [DEP] <Ian.Curtis@dep.nj.gov>; Amin, Prabal <Prabal.Amin@WestonSolutions.com>
Subject: [EXT]:PPG - Technical Memorandum for Hydraulic Testing at 114-MW81D

*** External Message *** -- PROBE message before clicking links or opening attachments.

Good afternoon. Attached for your review please find a draft technical memorandum presenting the findings and conclusions of the pump testing and packer testing conducted at bedrock well 114-MW81D. This memorandum,

once finalized, will be included as an appendix to the revised groundwater Remedial Investigation Report (RIR) and Remedial Action Work Plan (RAWP) addendum for the bedrock water-bearing zone. In summary, we did not identify a hydraulic connection between well 114-MW81D and wells 114-MW72D and 114-MW76D. In addition, below please find a table summarizing the analytical results for groundwater samples recently collected at 114-MW81D (concentrations are in ug/L).

| **Date** | **1/15/2025** | **1/15/2025** | **1/16/2025** | **1/16/2025** | **1/16/2025** | **1/17/2025** |
|---|---|---|---|---|---|---|
| **Depth (ft)** | 103.5 | 107.5 | 115 | 115 | 123 | 127 |
| **Sample Type** | N | N | N | FD | N | N |
| **114-MW81D** | | | | | | |
| Cr | 10 | 10.6 | 9.7 BJ | 10.3 | 10.2 | 10.1 |
| Cr(VI) | 7.4 B | 11 | 3.0 BJ | < 2.6 U | < 2.6 U | 14 |

As previously communicated with the Department, PPG will prepare the final RIR/RAWP addendum pursuant to these findings.

Best regards,

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Schuele, Frederik

| | |
|---|---|
| From: | VanEck, David [DEP] <David.VanEck@dep.nj.gov> |
| Sent: | Monday, July 28, 2025 8:24 AM |
| To: | Schuele, Frederik; Curtis, Ian [DEP] |
| Cc: | Gleason, Shannon; Albrecht, Erin; Hastings, Brianne J; Krall, Scott M; Laguzza, Dorothy M.; Prabal.Amin; Joseph.Lagrotteria; Faeth, Steve; Fisler, Robert; Zhang, Lihua; RRiccio; James D. Ray; ncolson; dspader; chrisjdaggett; iwilson; 'jbaumann@msbnj.com'; FioreC@JCNJ.org; ETomaszewski@MSBNJ.com; Omar Mansour; David Backman; neumann@dresdnerrobin.com; Amend-Babcock, Laura; Costa, Ralph; BMurray; Joseph Sorge; David Spader; Zervas, Gwen [DEP] |
| Subject: | RE: [EXT]:PPG – Groundwater RI Addendum and RAWP for Bedrock Water Bearing Zone (GW-105d) – Final |
| Follow Up Flag: | Follow up |
| Due By: | Monday, July 28, 2025 4:00 PM |
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Good morning,

In an effort to complete delineation of bedrock contamination at the Garfield Avenue Group site 114, following direction from NJDEP, PPG installed several bedrock wells. Groundwater analytical results from 114-MW72D has had variable concentrations of chromium above and below 70 µg/L, and as high as 517 µg/L. Delineation to the south/southwest was attempted since that is the primary groundwater flow direction in the competent bedrock. Bedrock well 114-MW-76D was installed approximately 120 feet southwest of 114-MW72D in order to complete delineation along strike. All groundwater results from well 114-MW76D were ND for chromium. However, the well did not demonstrate any hydraulic connection with 114-MW-72D.

As agreed to by NJDEP during a technical meeting held between NJDEP and PPG on September 4, 2024, no additional bedrock wells beyond one additional well requested by NJDEP would be required to complete delineation. It was agreed that if the new competent bedrock well does not meet delineation requirements (i.e., Cr concentrations less than 70 µg/L and hydraulic connection with the well targeted for delineation [i.e., 114-MW72D]), then a variance from single point compliance (clean point delineation) would be granted by NJDEP to complete the RI for the bedrock. This variance will also support an application for a groundwater remedial action permit.

A scope of work for installation of one additional competent bedrock well between existing wells 114-MW72D and 114-MW76D was agreed upon during a technical meeting between NJDEP and PPG held on September 12, 2024. During this meeting it was also agreed that extrapolation of the 70 µg/L Cr contour

in bedrock beneath 114-MW72D is appropriate for completion of the bedrock RI based on the data at nearby wells.

One open borehole bedrock well (114-MW81D) was completed in the Lockatong Formation from November 14, 2024 to November 21, 2024. A pumping test and packer testing were performed, but PPG did not identify a hydraulic connection between well 114-MW81D and wells 114-MW72D and 114-MW76D.

As agreed in technical meetings, the Department considers delineation in the competent bedrock to be complete. The Department hereby grants a variance from the Tech Rule requirement in N.J.A.C. 7:26E-4.3(a)4: "Delineating the horizontal and vertical extent of all ground water contamination to the ground water remediation standard". The variance is specifically for delineation of the horizontal extent of Cr in groundwater in the competent portion of the Lockatong Formation south/southwest of well 114-MW72D via clean point delineation. Continued groundwater monitoring will be conducted to demonstrate plume stability and, ultimately, compliance with the Ground Water Quality Standards.

The RAR should include, in an Appendix, a copy of this email from the Department, since it clarifies where the variance was granted, and provides the Department's rationale.

David

...
David Van Eck, Section Chief
NJ Dept. of Environmental Protection
Bureau of Ground Water Pollution Abatement
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